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**European Commission**

**Directorate-General for Research and Innovation**

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**Unit F2: Medical Research**

**Area: Brain Research**

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# European Brain Research

**Achievements under the EU Seventh  
Framework Programme for Research  
and Development (FP7) from 2007 till  
2012**

## Why brain research?

To understand the function of the human brain is one of the greatest scientific and philosophical challenges of our time and one of the ultimate frontiers of modern biology. The brain is the source of our intellectual capacities and emotional behaviour. Thus, it is essential for our professional and private life, and our participation on society. During the last decades, brain research has made great progress on all fronts but much more is still to be discovered.

Several dysfunctions may unfortunately also affect the brain, leading to a huge burden and impact on individuals and on society. The burden of diseases of the brain on our society is highly significant, with 260 million European citizens likely to experience some form of brain related diseases in the central or peripheral nervous system. In 2010 alone, the cost of brain diseases in EU member states and associated countries was estimated to be around the EUR 800 billion<sup>1</sup>. Demographic change will make those figures even worse, with an increased incidence of Alzheimer's disease and other neurodegenerative or age-related mental disorders. This will be one of the major societal challenge of the future in Europe but also other regions of the world.

Brain research is a particularly difficult challenge and involves a multidisciplinary approach from genetics, cell biology, physiology, imaging, bioinformatics, anatomy and clinical investigations, to behavioural sciences. Studying brain disease often requires long-term longitudinal studies in order to decipher the complex interplay between genetic, environment and life style factors. These results can be used for the development of various models, including animal models whose validations as models of diseases are particularly challenging. This complexity is one of the reasons for the long development cycles in brain research, where scientific work providing the basic results requires long term commitments and substantial investment.

Understanding pathophysiologic mechanisms is essential for target identification and verification. This knowledge is the prerequisite for rational development of new therapeutic concepts and identification of the mechanism of action of potential pharmaceutical (drug) candidates.

Several pharmaceutical companies have closed down neuroscience business areas in answer to several factors. In particular, the lack of understanding of brain diseases in conditions e.g. caused by neurodegenerative processes like Alzheimer's or mental disorders like schizophrenia is one of the main causes. This deficit of knowledge is definitely detrimental for keeping industry investing in new drug development in this area. Developing new drugs for brain diseases is more complex, lasts longer and is more expensive than alternative research and business areas, and therefore leading to lower promises on investment.

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1 Gustavsson et al. (2011) Cost of disorders of the brain in Europe 2010. *European Neuropsychopharmacology* 21, 718-779

Advances in neuroscience are therefore crucial to keep our ageing societies and our economy healthy. Deciphering how our brain works is good for our health, our society and our industrial competitiveness. It has an important role to play for the achievement of the Europe 2020 strategy and of the Innovation Union.

In answer to this challenge, the EU 7<sup>th</sup> Framework Programme for Research and Technological Development (FP7) has supported brain research as never before, with priority to promote further advancement in this field of high socio-economic relevance.

## EU commitment in supporting brain research is unique

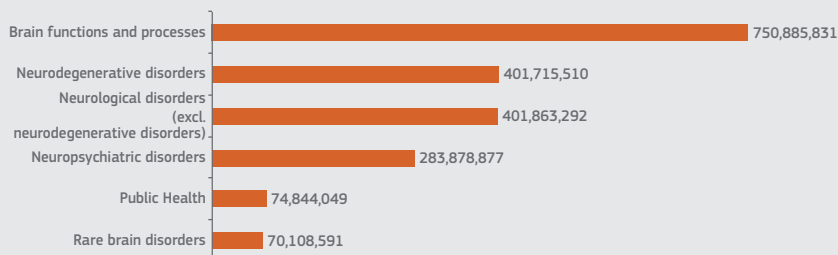
**In terms of budgetary support, the FP7 reached unprecedented levels with EUR 1.92 billion dedicated to brain research since 2007, making a yearly allocation of more than EUR 300 million, for a total of 1,268 projects and 4,312 participations.** In comparison, it was estimated that the total amount of public money dedicated to brain research in Europe in 2005 was of EUR 4.1 billion, of which EUR 855 million came from the public sector<sup>2</sup>. In contrast, the US dedicated in 2005 about EUR 6.1 billion to brain research via public sources and EUR 8.4 billion from industry funding. Public spending for brain research obviously increased between 2007 and 2012 compared to 2005. Nevertheless, considering that EU typically controls about 10% of the public spending in research compared to what lays in the hands of the Member States, the effort and priority given to brain research in Europe during the FP7 should be emphasised.

FP7 followed a comprehensive approach to support brain research, ranging from understanding higher brain functions to pathophysiology of diseases of the brain and healthcare assessments (Figure 1)<sup>3</sup>. Supported research mainly aimed at:

- Improving the knowledge about integrated structure and dynamics of the brain;
- Providing better understanding of brain diseases;
- Identifying new diagnostics and developing novel therapy concepts or regenerative therapeutic approaches;
- Enhancing the management of neurological diseases, i.e. by increasing therapy effectiveness and providing better cost-effectiveness of healthcare;
- Brain and neuronal processes modelling.

2 Sobocki et al., European Journal of Neuroscience (2006), 24 : 2691-2693.

3 Note that projects addressing more than one area are counted in each of those areas

**Figure 1: Overall FP7 funding support for brain research**

The supported research can be achieved through a variety of FP7 funding tools adapted to specific needs (Figure 2). A large amount of resources (EUR 750 million) were dedicated to the study of biological processes of the brain and to the study of higher brain functions. This area was mainly supported by (i) the European Research Council Executive Agency (ERCEA)<sup>4</sup>, through pan-European competition on the basis of excellence for frontier research, and (ii) the Mobility Programme (Marie Curie)<sup>5</sup>, making therefore the FP7 largely contributing to the training and mobility of young neuroscientists and neurologists in Europe.

More than EUR 400 million were dedicated to research on neurological diseases other than neurodegenerative diseases. Research on neurodegenerative diseases, a subset of neurological diseases, was supported with EUR 401 million, with priority on Alzheimer's disease and Parkinson's disease. Research on neuropsychiatric diseases such as depression or schizophrenia has been supported with EUR 283 million. This research on the patho-physiology of diseases (pre-clinical and clinical studies) was supported mainly by the collaborative research programmes. Collaborative research provides a unique multidisciplinary character to the supported projects mixing pre-clinical research (molecular and cellular neurobiology, electrophysiology, genetics and epigenetic), clinical research (cohort studies, identification and validation of biomarkers, imaging), therapeutic studies, neuroinformatics, bio banking and data basing, and therefore addressing the complexity of brain research in a unique manner.

EUR 70 million were also dedicated to research on rare diseases of neurological origin. International collaborations in rare diseases research are further fostered by the International Rare Diseases Research Consortium (IRDiRC)<sup>6</sup>, launched in April 2011. The IRDiRC programme level cooperation will teams up funding organisations investing in rare diseases research in order to achieve two main objectives, namely to deliver 200 new therapies for rare diseases and means to diagnose most rare diseases by the year 2020.

4 <http://erc.europa.eu/>

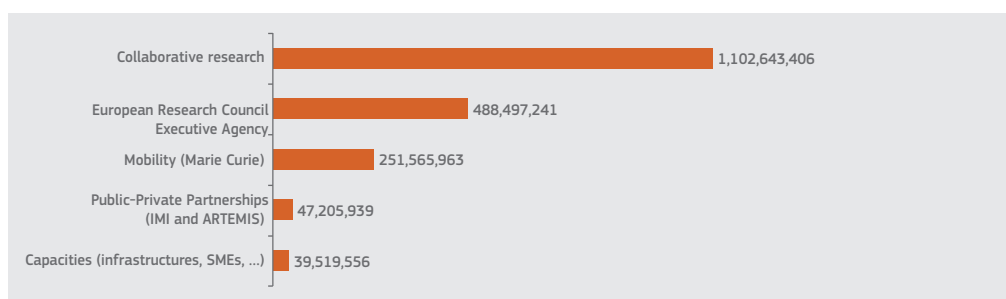
5 [http://ec.europa.eu/research/mariecurieactions/index\\_en.htm](http://ec.europa.eu/research/mariecurieactions/index_en.htm)

6 [http://ec.europa.eu/research/health/medical-research/rare-diseases/irdirc\\_en.html](http://ec.europa.eu/research/health/medical-research/rare-diseases/irdirc_en.html)

Other programmes such as Public-Private Partnerships between the European Commission and pharmaceutical industry (through the Innovative Medicines Initiative Joint Undertaking<sup>7</sup>), although less important in terms of financial envelope, have been determinant to push forward some specific areas of industrial non-competitive research in neurosciences.

Finally, EUR 74 million were dedicated to research on brain healthcare for translating research results into health policies as well as assessing the most efficient healthcare strategies in Europe.

**Figure 2: A variety of tools for supporting brain research in FP7**



Within the collaborative research programme, brain research was mainly supported by the ‘*Health*’ programme<sup>8</sup> (EUR 692 million) and the ‘*Information Communication Technology*’ (ICT) programme<sup>9</sup> (EUR 288 million) (Figure 3). This figure for the ‘*Health*’ Programme will even get higher because the last FP7 Call for proposals prioritized brain research with an indicative budget of EUR 126 million to support research on traumatic brain injury, conduct disorders, imaging tools for mental disorders, epilepsy and pain. Same is true for the ICT programme with the support announced for the Human Brain Project (see below). Other collaborative research was also supported through the nanotechnology (NMP)<sup>10</sup> and the food and nutrition (KBBE)<sup>11</sup> programmes.

Besides funding research projects, the EU FP7 also supported coordination between funding agencies for brain research. The largest actions developed in this area are the ERA-NETs ‘*NEURON*’<sup>12</sup> and ‘*NEURON II*’<sup>13</sup>. ‘*NEURON*’ proved to be a successful way to coordinate national and regional funding programmes, with 4 specific calls opened between 2007 and 2011 for a total of EUR 40 million in the areas of neurodegenerative diseases, mental disorders, cerebrovascular diseases and

7 <http://www.imi.europa.eu/>

8 [http://ec.europa.eu/research/health/index\\_en.html](http://ec.europa.eu/research/health/index_en.html)

9 [http://ec.europa.eu/information\\_society/nav/nav\\_res/index\\_en.htm](http://ec.europa.eu/information_society/nav/nav_res/index_en.htm)

10 [http://ec.europa.eu/nanotechnology/index\\_en.html](http://ec.europa.eu/nanotechnology/index_en.html)

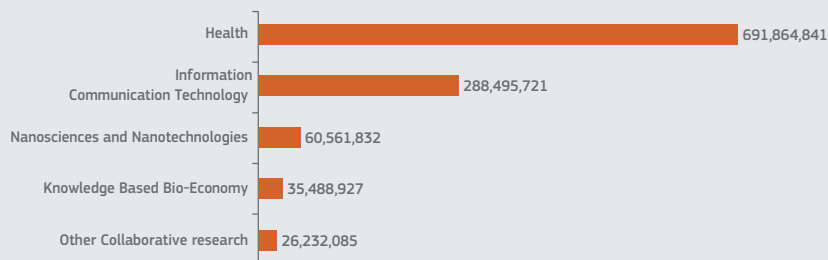
11 [http://ec.europa.eu/research/bioeconomy/food/index\\_en.htm](http://ec.europa.eu/research/bioeconomy/food/index_en.htm)

12 <http://www.neuron-eranet.eu/>

13 <http://www.neuron-eranet.eu/en/292.php>

technology development. The ERA-NET 'NEURON II' gathers 18 national funding agencies from 13 countries and published its first two calls on 'Novel Methods and Approaches towards the Understanding of Brain Diseases' and 'European Research Projects on Mental Disorders' respectively. Another important action of coordination and alignment of national programmes is the Joint Programming Initiative on Neurodegenerative Diseases (JPND), in particular Alzheimer's<sup>14</sup> (further described in the section on 'neurodegenerative diseases' below)<sup>15</sup>.

**Figure 3: Support for brain research through collaborative research in FP7**



The next sections highlight some specific areas and funding priorities in FP7 supported brain research.

## Frontier research to understand basic brain processes

The European Research Council Executive Agency (ERCEA) – the first pan-European funding body for frontier research – aims to enhance the creativity and excellence of European research at the frontiers of knowledge. Brain research has been supported through all ERCEA schemes (Starting and Advanced Grants, as well as the 'Proof of Concept' grants). For example, the NOGORISE project (ERCEA Advanced Grant) studies the mechanism of action of the Nogo-A membrane protein and has shown that inactivation of Nogo-A by neutralizing antibodies after spinal cord injury led to improved functional recovery and regeneration of injured fibres. The BRAINDEVELOPMENT project (ERCEA Starting Grant) analyses how brain development underlies advances in cognition and emotion in childhood and adolescence. The DEFCON1 project (ERCEA Advanced Grant) focuses on a new definition of consciousness and the dissociation of consciousness from cognition. The results will

<sup>14</sup> <http://www.neurodegenerationresearch.eu/>

<sup>15</sup> Note that in order to avoid overlaps with the JPND, the ERA-NET "NEURON II" will not address neurodegenerative diseases

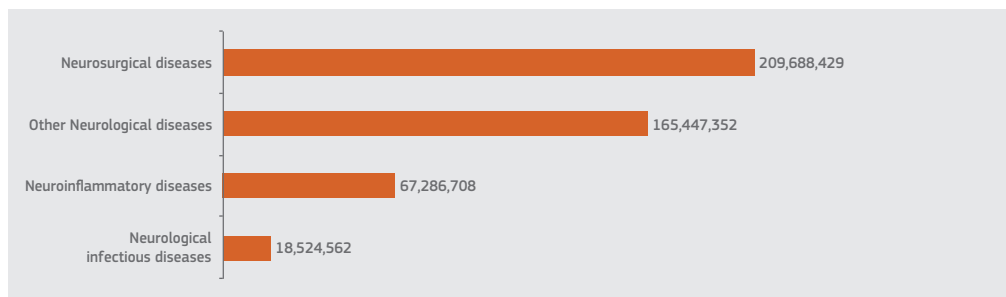


contribute to explain key features of conscious experience and will improve understand consciousness at a much more fundamental level.

## Research on neurology and the European stroke network

Research on neurological diseases have been supported to a very large extend in the FP7. Besides neurological diseases such as epilepsy, sleep disorders, pain, headache and migraine, optical nerve injury, mental retardation, or dyslexia, the main categories of diseases addressed were the neuro-surgical diseases (stroke, brain trauma, spinal cord injury, brain tumors), neuroinflammatory diseases (e.g. multiple sclerosis) and neurological infectious diseases (meningitis and prion) (Figure 4)<sup>16</sup>. Supported research focused on the understanding of the patho-physiology of those diseases, identification of new biomarkers for better diagnostic, follow-up and new therapeutic strategies, and on new devices and tools for diseases management by patients and healthcare systems.

**Figure 4: Overall FP7 funding support for research on neurological disorders (excl. neurodegenerative)**



Two specific highlights of the FP7-supported research on neurology are the establishment of the International Initiative for Traumatic Brain Injury Research (IntBIR, see next section) and of the European Stroke Network (ESN).

The ESN<sup>17</sup> is the combination of the projects EU-STROKE and ARISE funded with a total of EUR 22 million. Through those two projects, the ESN brings together 30 pre-clinical and clinical leading centres, as well as industrial partners and patient organizations, to speed up the discovery and implementation of new treatments for stroke and to tackle the translational roadblock. The

<sup>16</sup> Note that projects addressing more than one area are counted in each of those areas

<sup>17</sup> <http://www.europestrokenetwork.eu/>

main focus of the ESN, gathering neuroimmunologists, biochemists, cell biologists, neuropathologists, and neurologists, is to further elucidate the role of inflammation in stroke and to clarify why such clinical studies addressing inflammation have failed in the past. First results from the ESN challenge some dogma of stroke pathophysiology and led to a new approach for targeted, non-invasive gene therapy to the brain. Further ESN research also demonstrated that stroke outcome can be improved by enriching the treatment environment what leads to a remarkable formation of new brain connections.

## Traumatic brain injury: EU, US and Canada joining forces

The EU, together with the US (National Institute of Neurological Disorders and Stroke) and Canada (Canadian Institute of Health Research) established in October 2011 a programme level cooperation called International Initiative for Traumatic Brain Injury Research (InTBIR)<sup>18</sup>.

InTBIR is a global effort to coordinate and harmonise clinical research activities across the full spectrum of TBI injuries with the long-term goal of improving outcomes and lessening the global burden of TBI by 2020. The main focus is the identification of the most effective clinical interventions for different types of brain injuries. To achieve a better integration of data and results three specific objectives have been selected:

- Further establishing and promoting the use of harmonised international standards for TBI clinical data collection (TBI Common Data Elements<sup>19</sup>);
- Creating a TBI patient registry by building common databases and linking them through an accessible, user-friendly interface for both entry and data search;
- Developing and applying sophisticated analytical tools to enable Comparative Effectiveness Research for TBI and identify best practices in early diagnosis and treatment.

A call for proposals on TBI clinical data collection has been launched by the European Commission in July 2012 with an indicative budget of EUR 30 million. The US National Institute of Neurological Disorders and Stroke and the Canadian Institute of Health Research also published calls for applications for respectively US\$ 18 million and CAN\$ 8.5 million (indicative). Finally, the US Department of Defence also contributed US\$ 10 million to support the Federal Interagency TBI Research (FITBIR) Informatics System<sup>20</sup>, the international patient registry launched in July 2012 in which all InTBIR-related US studies have to store their data.

18 [http://ec.europa.eu/research/health/medical-research/brain-research/international-initiative\\_en.html](http://ec.europa.eu/research/health/medical-research/brain-research/international-initiative_en.html)

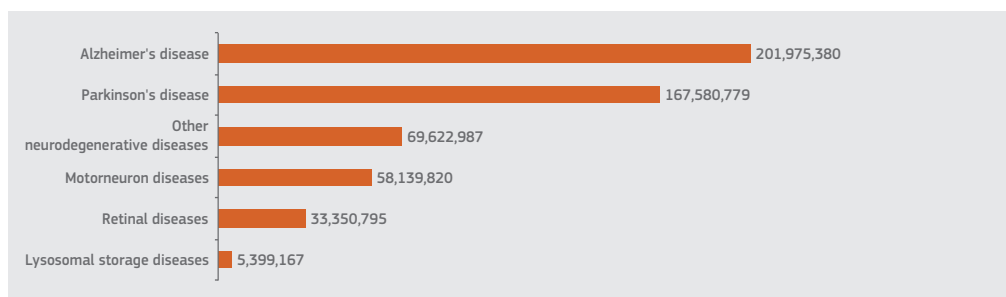
19 [http://www.commondataelements.ninds.nih.gov/tbi.aspx#tab=Data\\_Standards](http://www.commondataelements.ninds.nih.gov/tbi.aspx#tab=Data_Standards)

20 <http://fitbir.nih.gov/>

## Neurodegenerative diseases: towards more efficient cooperation in Europe

Neurodegenerative diseases become a growing threat, due to the demographic change and the resulting increase of elderly populations in Europe. It is estimated that in 2040, 14 million Europeans will be affected by Alzheimer's disease that will cost about EUR 140 billion in care per year. Research on neurodegenerative diseases was therefore a priority through all the FP7, with EUR 401 million invested for research in this area. While Alzheimer's and Parkinson's diseases have been the most prioritised, with respectively EUR 202 million and EUR 167 million, other neurodegenerative diseases were also addressed. In particular, Huntington's disease, ataxias, motorneuron neurodegenerative diseases (e.g. Amyotrophic Lateral Sclerosis), lysosomal storage diseases, retinal diseases were largely supported through the FP7 (Figure 5)<sup>21</sup>.

**Figure 5: Overall FP7 funding support for research on neurodegenerative diseases**



As examples, the project MEMOLOAD<sup>22</sup> aims at elucidating the molecular level mechanisms by which accumulation of  $\beta$ -amyloid peptide in the brain results in impaired synaptic plasticity and memory loss. The project LUPAS<sup>23</sup> aims at developing novel agents and methods for diagnostic, prevention of protein aggregation and treatment of Alzheimer's and prion diseases.

In addition to funding research on neurodegenerative diseases, the EU also played an important role in coordinating national efforts in this area. Following the conclusions of the European Council in September 2008, several EU Member States decided to unite their efforts in setting up the Joint Programming Initiative on Neurodegenerative Diseases (JPND), in particular Alzheimer's<sup>24</sup>. Joint Programming Initiatives are led by Member States. They are designed to address grand challenges

21 Note that projects addressing more than one area are counted in each of those areas

22 <http://www.uef.fi/memoload/home>

23 <http://www.lupas-amyloid.eu/>

24 <http://www.neurodegenerationresearch.eu/>

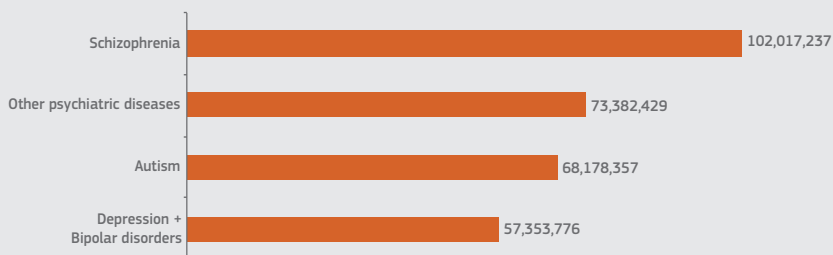
facing EU and considered beyond the scope and resources of each single Member State. The JPND is the pilot Joint Programming Initiative and is gathering a total of 27 member countries (including non-EU countries such as Canada).

The JPND published on 7 February 2012 its Research Strategy<sup>25</sup> that will guide research activities in the field of neurodegenerative diseases over the next 10 years. In particular, the JPND Research Strategy has defined five thematic priorities for future research: 1) the origins of neurodegenerative disease, 2) disease mechanisms and models, 3) disease definitions and diagnosis, 4) developing therapies, preventive strategies and interventions and 5) healthcare and social care. The first-phase JPND Implementation Plan for the period of 2012-2014 was agreed and published in December 2012. Up to now, the JPND already published 3 calls for proposals, committing about EUR 45 million and addressing the following research areas: (i) optimisation of biomarkers and harmonisation of their use (this call is closed and resulted in 4 supported projects); (ii) identification of genetic, epigenetic and environmental risk and protective factors; (iii) evaluation of health care policies, strategies and interventions.

## Neuropsychiatric diseases: supporting the European Pact for Mental Health

Mental health and research on neuropsychiatric diseases were priorities in the FP7, with more than EUR 280 million invested since 2007. Besides schizophrenia, autism and mood disorders (depression and bipolar disorders), the main supported areas were autism, anxiety, post-traumatic stress disorder and stress, Attention Deficit Hyperactivity Disorders (ADHD), Obsessive Compulsive Disorders (OCD), conduct disorders, addiction, eating disorders, Tourette's Syndrome, and development of new imaging tools for better diagnosis and management of mental health disorders (Figure 6)<sup>26</sup>.

**Figure 6: Overall FP7 funding support for research on neuropsychiatric diseases**



<sup>25</sup> <http://www.neurodegenerationresearch.eu/initiatives/strategic-research-agenda/>

<sup>26</sup> Note that projects addressing more than one area are counted in each of those areas

One of the flagships of the FP7 supported research in mental health is the European network on schizophrenia, resulting of the two projects EU-GEI and OPTIMISE supported for a total of EUR 23 million. The project EU-GEI<sup>27</sup> aims at identifying the interactive genetic, clinical and environmental determinants involved in the development, severity and outcome of schizophrenia, while the project OPTIMISE<sup>28</sup> aims at optimising treatments in schizophrenia and exploring novel therapeutic options.

Another specific effort was also put on public health research for suicide prevention, where three complementary focussed projects were funded for a total of EUR 9 million. The project OSPI-EUROPE<sup>29</sup> aims at developing an evidence-based prevention strategy for suicidality. Besides evaluation of the community-based intervention, the project OSPI-EUROPE evaluated primary and secondary outcomes (committed and non-fatal suicidal acts), intermediate outcomes (e.g. effects on the general population, general practitioners, and patients and their relatives), health economic aspects and evaluation of the implementation process. The project SEYLE<sup>30</sup> is assessing 3 different health promoting / suicide prevention programmes in 11,000 students across 11 European countries. Finally, the project WE-STAY<sup>31</sup> aims at reducing truancy rates in students by fighting depression and suicidality.

Finally, the ROAMER project<sup>32</sup> supports a consortium of renowned mental health experts assessing the state of play in mental health research, identifying opportunities and gaps, and proposing a roadmap for the promotion and integration of mental health and well-being research across Europe. This roadmap is covering the full spectrum of biological, psychological, epidemiological, public health, social and economic aspects of mental health and well-being.

The results of these supported projects will be an important base for policy and decision making in the health care sector. In this context, this specific effort on research on mental health is directly implementing the 'European Pact for Mental Health and Well-Being'<sup>33 34</sup>, an initiative launched by the European Commission in 2008 with the two following objectives: (i) to support and inform EU and Member States' policy-makers and other stakeholders; (ii) to develop recommendations and frameworks for action to prevent mental disorders, tackle health inequalities and promote mental well-being and social inclusion.

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27 <http://www.eu-gei.eu/>

28 <http://www.optimiserial.eu/>

29 <http://www.ospi-europe.com/>

30 <http://www.seyle.eu/>

31 <http://www.we-stay.org/>

32 <http://www.roamer-mh.org/>

33 [http://ec.europa.eu/health/ph\\_determinants/life\\_style/mental/docs/pact\\_en.pdf](http://ec.europa.eu/health/ph_determinants/life_style/mental/docs/pact_en.pdf)

34 <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+TA+P6-TA-2009-0063+0+DOC+XML+V0//EN>

## Establishing public-private partnerships for the development of more efficient medicines for brain diseases

The Innovative Medicines Initiative Joint Undertaking (IMI JU)<sup>35</sup> is a successful example of a private public partnership program developing novel approaches to promote health research. The IMI JU is a EUR 2 billion public-private partnership between the EU and the European Federation of Pharmaceutical Industries and Associations (EFPIA). Its objectives are to support pre-competitive research and modernise drug development by establishing joined initiatives between industry, academia, Small and Medium Enterprises (SME), patient organisations and regulatory agencies.

The IMI JU includes a strong brain research component, with a particular emphasis on neurodegenerative diseases, mental health and pain. In particular:

- The PharmaCog project<sup>36</sup> is developing new tools to identify potential drugs and screen out ineffective ones early in the drug development process. Through brain scans, blood tests, and cognitive testing, the project is also working on tests to determine how well a drug is working in individual patients.
- The NEWMEDS project<sup>37</sup> is successfully developing tools and tests methods to determine the efficacy of drug candidates for depression and schizophrenia at early stages of their development. It also showed how Copy Number Variations of genes may affect intellectual disability, autism, and schizophrenia.
- The EU-AIMS project<sup>38</sup> aims at generating new tools to study the biology behind Autism Spectrum Disorders (ASD), and coming up with methods and tools to develop diagnosis and effective treatments for ASD. The project will also create a pan-European network of clinical sites, making it easier to run clinical trials.
- The EURO-PAIN project<sup>39</sup> aims to improve the treatment of patients with chronic pain. Amongst other achievements, this project identified a molecule that causes the pain of sunburn, raising hopes for the development of new and more effective painkillers.

In total, EU funds and in-kind resources of the pharmaceutical industry for those supported brain-related projects are worth some EUR 115 million. These projects will contribute to increase safety and effectiveness of drug development programs in these areas of high medical need. The

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35 <http://www.imi.europa.eu/>

36 [www.pharmacog.eu](http://www.pharmacog.eu)

37 [www.newmeds-europe.com](http://www.newmeds-europe.com)

38 [www.eu-aims.eu](http://www.eu-aims.eu)

39 [www.imieuropain.org](http://www.imieuropain.org)

strong participation and commitments by the pharmaceutical industry in those projects constitute encouraging signs at a moment when several companies shortened their research facilities on neurosciences.

## Simulation and modelling of brain processes and functions: the Human Brain Project

The FP7 'Information Communication Technology' (ICT) collaborative programme strongly supported brain research. In particular, the 'Future and Emerging Technologies' (FET) flagship programme<sup>40</sup> will foster collaboration on a new scale and duration. This programme intends to support projects over a 10 year duration for leading to next generation technologies, and with up to EUR 1 billion of EU, national and regional funding per project. This massive financial incentive has driven the level of science in the project proposals to high levels, which will deliver greater benefits to Europe over the long-term, including new technologies and faster innovation.

One of the two first winners of the FET flagship competition is 'The Human Brain Project' (HBP)<sup>41</sup>. The HBP involves scientists from 87 research institutions and SMEs. It will create the world's largest experimental facility for developing the most detailed model of the brain, for studying how the human brain works and ultimately to develop personalised treatment of brain diseases. This research lays the scientific and technical foundations for medical progress that has the potential to dramatically improve the quality of life for millions of Europeans.

## Broad participation from Europe and beyond

FP7 programmes mobilised an impressive range of the brain research scientific community in 26 of the 27 EU Member States and in 10 of the 13 Associated Countries. Since 2007, a total of 1,515 legal entities (for a total of 4,312 participations) were involved in 1,268 brain-related FP7 projects for a total investment of EUR 2.4 billion, including an EU FP7 support of EUR 1.92 billion (Figures 7a and 7b). The large majority of those participations were from the EU Member States. However, the participation of Associated Countries and of Third Countries were also important, with respectively 141 and 91 institutions taking part to FP7 brain-related projects. Calculating EU contributions weighted by country population shows that larger and smaller Member States and Associated

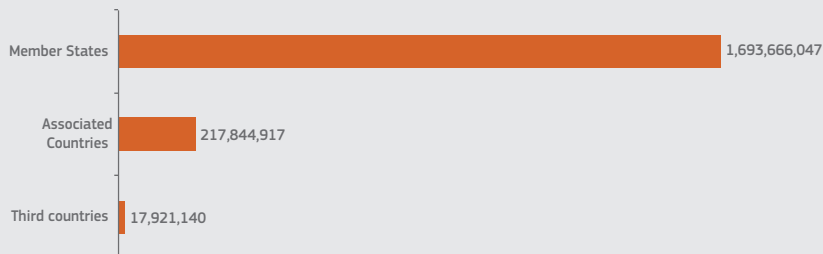
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40 <http://www.fet-f.eu/>

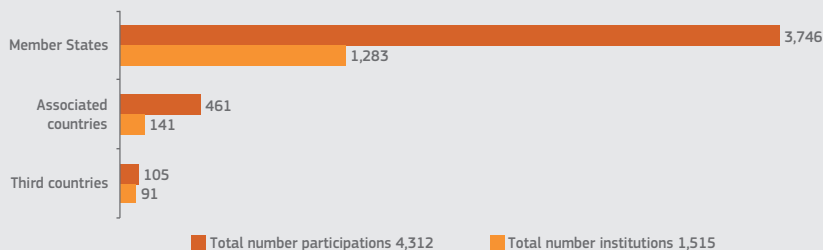
41 <http://www.fet-f.eu/hbp-ps>

Countries (in terms of population) participated to FP7-supported brain research projects to a high level (Figure 8).

**Figure 7a: Support for brain research by type of countries**

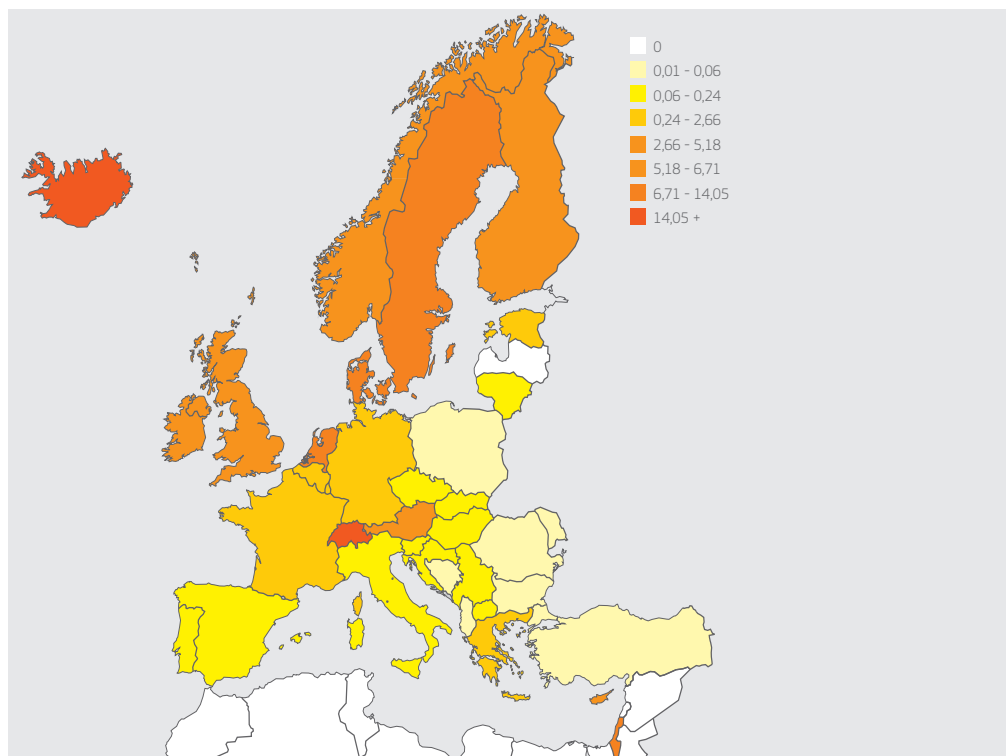


**Figure 7b: Number of participations by type of countries**



Looking beyond EU, it should also be noted that 105 FP7-supported brain research projects have involved 28 Third Countries supported with EUR 17.9 million. The USA is the most supported Third Country with more than EUR 7.7 million for 36 participants.



**Figure 8: Contribution per country (normalised by population)**

In terms of the type of institutions supported, the distribution of the EU FP7 contribution shows that the largest beneficiaries were the academic groups and research organisations (Figures 9, 10 and 11). Small and Medium Enterprises (SMEs) received around 7.6% and other industries 5.3% of EU contribution in this area. Those numbers must however take into account that the ERCEA supports essentially academic institutions. When looking more specifically at the collaborative research (e.g. 'Health' and 'ICT' themes), the SMEs received about 10% of the funds dedicated to brain research in collaborative projects. A total of 332 SMEs and 260 other industries have been supported in FP7 brain research projects till now. More than 2/3 of this support was granted through the FP7 collaborative research programme, demonstrating the key role played by this FP7 pillar for the support to SMEs.

Figure 9: Contribution per type or legal entity

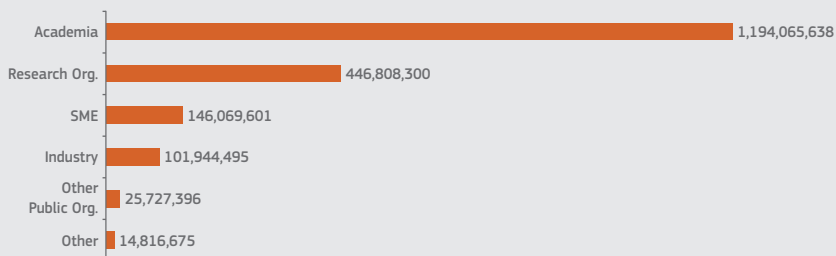


Figure 10: Number of supported institutions

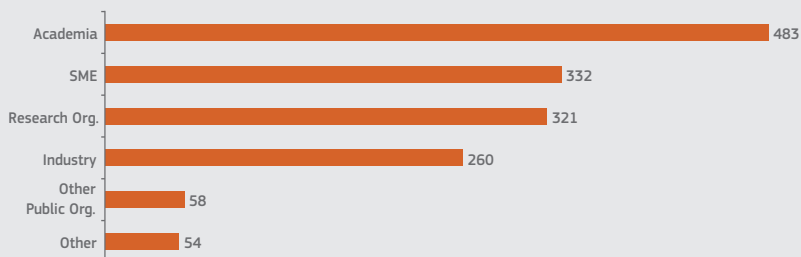
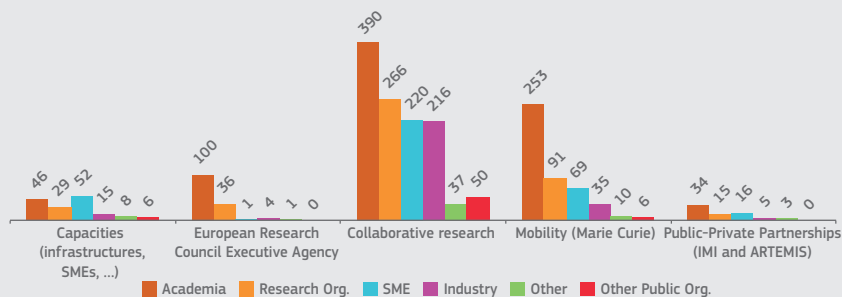
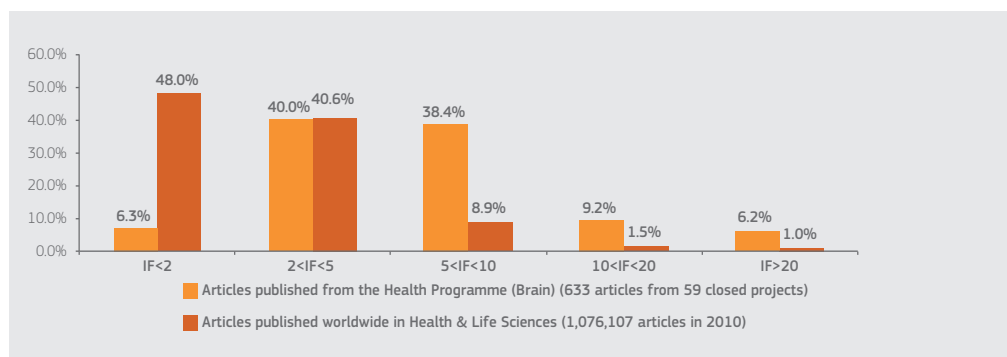


Figure 11: Number of supported institutions per FP7 programme



Finally, an analysis of the output of the 132 supported research projects in the collaborative 'Health' theme shows a total of 1,438 publications. A more detailed analysis of the publications resulting from 59 already finalised projects shows that more than 50% of those publications were accepted in journals with impact factor higher than 5, and more than 15% in journals with impact factors higher than 10 (Figure 12). This is higher compared to the world yearly publication trend in the health and life science area, demonstrating the quality of FP7 supported collaborative research.

**Figure 12: Impact of FP7 supported brain research**



In conclusion, the EU FP7 allowed supporting high-quality brain research all over Europe and beyond, networking resources and top experts in the field, showing outstanding results and greatly contributing to the understanding of the brain functions as well as to the development of new diagnostic tools and therapies for brain diseases.

## What's next? The European Month of the Brain and Horizon 2020

The FP7 massively invested in brain research, with a level of financial resources unmatched by any previous research framework programme. These resources were made available to the stakeholders in a variety of instruments, offering different opportunities for different needs. In order to cap those efforts and to prepare the future, the European Commission is organising the European Month of the Brain in May 2013<sup>42</sup>. The main objective of this communication event, in line with the Europe 2020 strategy and with the Innovation Union, is to provide a framework to raise awareness on brain (diseases) research and healthcare issues. In particular, the European Month of the Brain aims at:

42 <http://ec.europa.eu/research/brainmonth2013>

- Showcase EU-supported achievements in the area of brain research and healthcare
- Outline foresight research and policy lines in the area of brain research and healthcare
- Mobilise policy makers in Member States and Associated Countries to better coordinate and optimise resources allocated to brain research and healthcare
- Reach the public and raise awareness, including for lifting taboos associated with mental health issues, intended as a large dissemination/communication event.

The European Month of the Brain is closely associated to the Irish Presidency of the EU. It is a one-shot event addressing the whole spectrum of brain-related diseases, research and healthcare. It is opened to all stakeholders involved in brain research and healthcare in Europe.

The Commission's proposal for Horizon 2020 sets up the frame for the EU future research and innovation programmes for the period 2014-2020. Horizon 2020 is currently in negotiation with the European Council and the European Parliament. There will be plenty of opportunity for brain research in Horizon 2020, in all three pillars of the programme: 'Excellent science', 'Industrial leadership' and 'Societal Challenges', and in particular within the 'Health, demographic change and well-being' challenge.









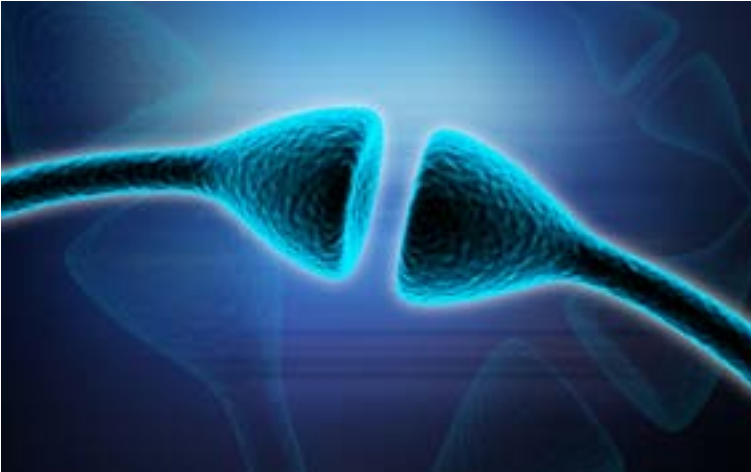


# Collaborative Research 'Health' Theme

**Projects synopses**

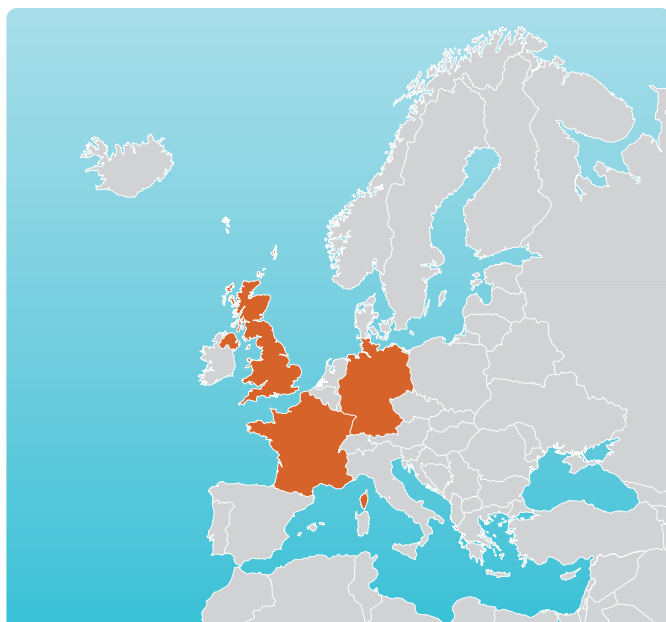
# Brain functions and processes

Source: Fotolia.com



# Advancing Binaural Cochlear Implant Technology

<b>Project acronym:</b>	ABCIT
<b>Coordinator:</b>	UNIVERSITY COLLEGE LONDON, United Kingdom
<b>Contact person:</b>	Prof. David McAlpine
<b>Project number:</b>	304912
<b>Duration:</b>	36 months
<b>Start date:</b>	01/09/2012
<b>End date:</b>	31/08/2015
<b>EC Contribution:</b>	4,000,000.00 €
<b>Total costs:</b>	5,279,350.40 €



**Other partners**

**UK** UNIVERSITY COLLEGE LONDON  
**Prof. David McAlpine**

---

**FR** NEURELEC SA  
**Dr. Dan Gnansia**

---

**DE** CARL VON OSSIETZKY UNIVERSITAET OLDENBURG  
**Dr. Mathias Dietz**

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**DE** HORTECH GGMBH  
**Dr. Rainer Huber**

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**Abstract**

Cochlear implants (CI) are the most successful sensory prosthetic devices developed to date, as judged by their ability to restore sensory and motor function (i.e. hearing and normal speech patterns) in the profoundly deaf. With 1 in 7 of the population affected by hearing impairment, and an increasingly ageing population Europe-wide, sensory therapies for hearing are critical for the future physical, social and economic health of the European Union. Nevertheless, considerable progress remains to be made if CI users are to be able to hear and communication in even moderately challenging 'cocktail party' environments, where sources must be localized and individual conversations heard out from a background of multiple talkers, room reverberations and extraneous noise sources. This requires two-eared, or binaural, hearing. To this end, the next generation of cochlear implants will be binaural and feature semi-automated fitting procedures, aided by the objective measurement of evoked brain responses. The restoration of binaural hearing, the ability to integrate information from the two ears is critical to hearing performance. Although bilateral implantation (an independent implant in each ear) provides some opportunity for this, the temporal information required to achieve true binaural hearing is completely absent. The current proposal will develop the first generation of binaural implants capable of exploiting the temporal information arriving at each ear to provide true cocktail party listening for deaf individuals using cochlear implants, and a new generation of medical devices that take account of the requirements of the binaural brain to restore effective hearing. Significant benefit will accrue to the SME, Neurelec, in the development of new stimulation algorithms and research interfaces, and both they and hearing-impaired individuals will benefit from the development of a sensory technology designed to enhance communication over the life course.

## Preclinical proof of concept of AF243 potency to prevent and/or treat sensorineural hearing loss

<b>Project acronym:</b>	AFHELO
<b>Coordinator:</b>	AFFICHEM SA, France
<b>Contact person:</b>	Dr. Michael Paillasse
<b>Project number:</b>	304900
<b>Duration:</b>	36 months
<b>Start date:</b>	01/09/2012
<b>End date:</b>	31/08/2015
<b>EC Contribution:</b>	2,796,376.00 €
<b>Total costs:</b>	3,602,529.00 €



**Other partners****FR** AFFICHEM SA**Dr. Michael Paillasse****BE** UNIVERSITE DE LIEGE**Dr. Brigitte Malgrange****ES** AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES  
CIENTIFICAS**Prof. Isabel Varela-Nieto****Abstract**

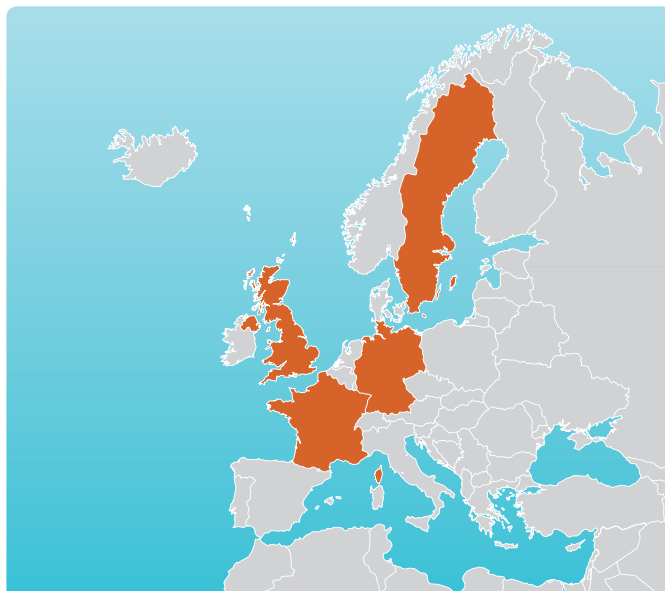
Approximately 10% of the global population (40% of people over 65), suffers hearing difficulties. The socio-economic impact is deep, since in children, early hearing impairment (HI) affects language learning, and in adults, acquired HI impairs social integration. The sense of hearing depends upon the integrity of the sensory epithelia in the inner ear. HI occurs when this tissue is disrupted, that is when the sensory hair cells (HC) die and the spiral ganglion neurons (SGN) subsequently degenerate and die. To date, there is no potent curative or preventive solution for HI, the clinical options are based on the use of prostheses such as cochlear implants. Studies are being conducted to develop alternative treatments combining both preventive and reparative strategies. Since HC and SGN are of the same developmental origin, transcription and growth factors that modulate early development of the inner ear have been under the scope. These studies gave rise to two main therapeutic hypotheses, the use of exogenous stem cell with induction of their differentiation to HC and/or SGN, or the proliferation/transdifferentiation of cells supporting HC in the inner ear. Up to now, problems of cell death and control of the cell differentiation have slowed down the emergence of new therapies.

To address this problem, AFHELO projects plans to evaluate potency of AF243, a small molecule which is a strong inducer of cell differentiation with interesting potencial on carcino-embryonic cells differentiation and neuron survival, and on an in vivo model of chemo-induced deafness, used for cochlear implant testing.

The strategy is to optimize AF243 development by first extending the therapeutic applications to two major types of HI (noise-induced and age related/presbycusis) and second by completing the preclinical studies (pharmacology, mechanism of action, ADME, safety) supporting the clinical evaluation of AF243 for prevention and/or treatment of sensorineural HI.

## European Obesity Consortium studying the Hypothalamus and its Interaction with Peripheral organs.

<b>Project acronym:</b>	EUROCHIP
<b>Coordinator:</b>	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE, United Kingdom
<b>Contact person:</b>	Dr. Giles Yeo
<b>Project number:</b>	241592
<b>Duration:</b>	48 months
<b>Start date:</b>	01/10/2009
<b>End date:</b>	30/09/2013
<b>EC Contribution:</b>	2,999,996.00 €
<b>Total costs:</b>	3,854,510.04 €
<b>Website:</b>	<a href="http://www.eurochip-obesity.com">www.eurochip-obesity.com</a>



### Other partners

<b>UK</b>	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE <b>Dr. Giles Yeo</b>
<b>UK</b>	IMPERIAL COLLEGE OF SCIENCE, TECHNOLOGY AND MEDICINE <b>Prof. Steve Bloom</b>
<b>FR</b>	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE (CNRS) <b>Prof. Philippe Froguel</b>
<b>FR</b>	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM) <b>Dr. Ralf Jockers</b>
<b>DE</b>	UNIVERSITAET ZU KOELN - UNIVERSITAETSKLINIKUM <b>Prof. Jens Claus Brüning</b>
<b>DE</b>	DEUTSCHES INSTITUT FUER ERNAHRUNGSFORSCHUNG POTSDAM REHBRUCKE <b>Prof. Hans-Georg Joost</b>
<b>SE</b>	GOETEBORGS UNIVERSITET <b>Prof. Suzanne Dickson</b>
<b>FR</b>	EUROQUALITY SARL <b>Dr. Angéline Serre</b>
<b>DE</b>	HELMHOLTZ ZENTRUM MUENCHEN DEUTSCHES FORSCHUNGSZENTRUM FUER GESUNDHEIT UND UMWELT GMBH <b>Prof. Matthias Tschöp</b>

### Objectives

The concept underlying this project is that an improved understanding of the normal physiology of energy homeostasis and the endocrine control of food intake will have profound implications for the development of effective therapeutic and preventative strategies for human obesity. EurOCHIP focuses on the interaction between the gastrointestinal tract and the brain in the control of energy homeostasis. The consortium aims to identify novel effector systems in the hypothalamus and brainstem, which are regulated by the gut, to examine the response of related brain areas to these hormones and to determine if genetic variation affects appetitive behaviour and predispose to childhood obesity. Furthermore, EurOCHIP will investigate strategies to modulate the gut peptide milieu in humans, either by administration of exogenous gut peptides or through dietary intervention.

### Main Achievements

The consortium has identified hypothalamic nuclei that are responsive to a number of different gut-peptides. Specifically, the response of hypothalamic nuclei to gut hormone PYY(3-36) and ghrelin has been studied. It has been shown that high-fat diet results in 'resistance' to ghrelin in rats. The



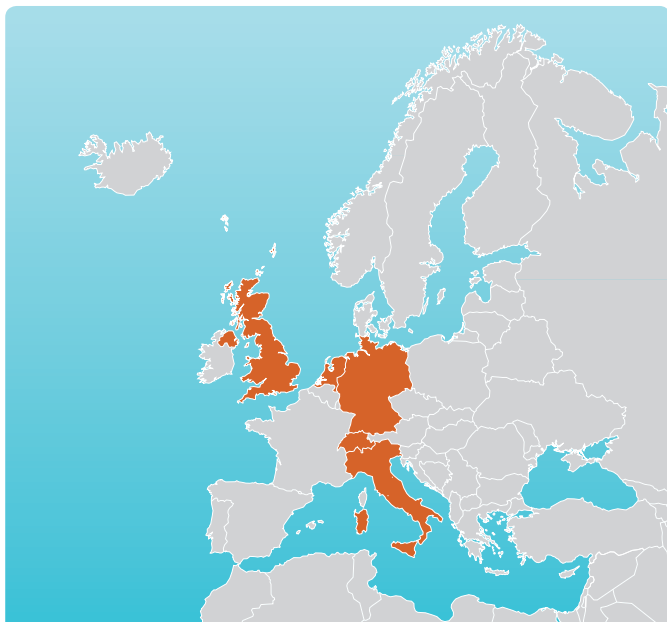
results demonstrate that ghrelin O-acyl transferase, which is required for the production of the active form of ghrelin, plays an important role in energy homeostasis. Achieved data suggest that central ghrelin signalling is important for the incentive value of palatable food. Additionally, ghrelin-induced food intake is partly mediated by the nicotine acetylcholine receptor and that nicotinic blockade decreases the rewarding properties of food. EurOCHIP has also shown that insulin signalling in catecholaminergic neurons is necessary for normal energy homeostasis *in vivo*, and also regulates the ability of cocaine to influence the dopaminergic system. Additionally, the consortium could show in human volunteers that there are differences in gut hormone release, particularly PYY(3-36) and GLP 1, when the macronutrient content of a meal is altered.

### Impact

Obesity increases the likelihood of various diseases like heart disease, stroke and type 2 diabetes and thus has a significant impact on mortality and morbidity. Due to rising obesity rates, the impact of obesity on the related disease burden as well as direct treatment and indirect socioeconomic costs are a major challenge for European societies. The development of integral strategies against obesity requires knowledge about the metabolic control of food intake as compared to the role it plays in the hedonic control of food intake. EurOCHIP has contributed to a better understanding of the physiologic mechanisms for example by demonstrating that ghrelin plays a key role in this hedonic drive, by directly acting upon reward areas of the brain.

## Imaging function and dysfunction of neuronal circuits in the visual cortex

<b>Project acronym:</b>	EUROVISION
<b>Coordinator:</b>	KONINKLIJKE NEDERLANDSE AKADEMIE VAN WETENSCHAPPEN - KNAW, Netherlands
<b>Contact person:</b>	Dr. Christiaan Levelt
<b>Project number:</b>	223326
<b>Duration:</b>	54 months
<b>Start date:</b>	01/12/2008
<b>End date:</b>	31/05/2013
<b>EC Contribution:</b>	2,598,906.00 €
<b>Total costs:</b>	3,479,957.60 €
<b>Website:</b>	<a href="http://www.eurovision.eu">http://www.eurovision.eu</a>



### Other partners

<b>NL</b>	KONINKLIJKE NEDERLANDSE AKADEMIE VAN WETENSCHAPPEN - KNAW <b>Dr. Christiaan Levelt</b>
<b>DE</b>	MAX PLANCK GESELLSCHAFT ZUR FOERDERUNG DER WISSENSCHAFTEN E.V. <b>Prof. Mark Huebener</b>
<b>UK</b>	UNIVERSITY COLLEGE LONDON <b>Dr. Thomas Mrsic-Flogel</b>
<b>IT</b>	UNIVERSITA DEGLI STUDI DI FIRENZE <b>Prof. Tommaso Pizzorusso</b>
<b>UK</b>	CARDIFF UNIVERSITY <b>Prof. Frank Sengpiel</b>
<b>CH</b>	BITPLANE AG <b>Mr. Christoph Laimer</b>
<b>UK</b>	MINDWEAVERS PLC <b>Prof. David Moore</b>
<b>UK</b>	THE UNIVERSITY OF NOTTINGHAM <b>Prof. Paul McGraw</b>

### Objectives

EuroV1sion aims to understand the dynamics of the structural and functional organisation of the primary visual cortex (V1) and the neurological reasons for the development of amblyopia (also known as 'lazy eye'). Amblyopia is a condition in which vision in an eye is deficient, while the degree of the deficiency cannot be explained by physical abnormalities of the eye. It develops during childhood if one of the eyes sends poor visual information to the visual cortex, for example when it is strongly far- or nearsighted, or if the two eyes do not work together, for example when one eye is not straight. Under such circumstances, the visual cortex will start to ignore the eye that is causing the double vision or providing the blurry input. Unfortunately, if the lazy eye is not corrected during early childhood, the visual cortex will keep ignoring the eye throughout adulthood even if the primary deficit in the eye is been corrected. EuroV1sion intends to translate the achieved knowledge into new treatments of amblyopia based on the stimulation of plasticity of the visual system.

### Main Achievements

Animal models for studying changes in the anatomy and function of neurons and their synapses using calcium sensitive fluorescence biosensors are available and under further development by the consortium. Together with novel analysis software developed by the consortium, this has enabled the scientists to evaluate how the visual cortex processes artificial and natural images, and how visual experience during development affects this. Moreover, it has led to valuable new insights about the involvement of inhibitory and excitatory synapses in the development of amblyopia and

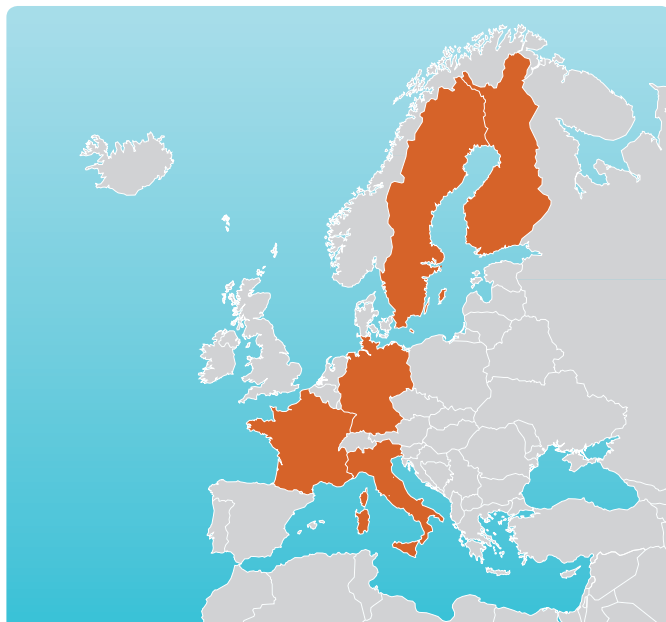
recovery of binocular vision. Moreover, the effects of behavioural training on visual performance and information coding in the visual cortex has been studied. Furthermore, progress was made in the understanding of the genetic mechanisms that regulate neuronal plasticity in the visual cortex of juvenile animals and its limitation in adult animals. During the on-going project the development of a prototype of gaming software for visual training of amblyopic children has been tested successfully.

### Impact

EuroVision is a good example of a multidisciplinary consortium translating scientific results achieved in basic research in approaches for treatment by using a better understanding of a pathophysiological condition. Amblyopia is the most important visual impairment in children (2 to 4% of the population). Therefore, effective and cost-efficient novel treatment options could have a valuable economic impact. This is especially true because a significant fraction of amblyopes (>3%) will become visually impaired in the unaffected eye due to unrelated causes. This means they then have to live with a binocular visual impairment. Currently, amblyopia cannot be cured after the age of 7 due to reduced plasticity in the mature visual cortex.

# Hybrid MEG-MRI Imaging System

<b>Project acronym:</b>	MEGMRI
<b>Coordinator:</b>	AALTO-KORKEAKOULUSAATIO, Finland
<b>Contact person:</b>	Prof. Risto Ilmoniemi
<b>Project number:</b>	200859
<b>Duration:</b>	48 months
<b>Start date:</b>	01/05/2008
<b>End date:</b>	30/04/2012
<b>EC Contribution:</b>	4,865,656.00 €
<b>Total costs:</b>	6,854,083.20 €
<b>Website:</b>	<a href="http://www.megmri.net/">http://www.megmri.net/</a>



**Other partners**

<b>FI</b>	AALTO-KORKEAKOULUSAATIO <b>Prof. Risto Ilmoniemi</b>
<b>FI</b>	AIVON OY <b>Dr. Jari Sakari Penttilä</b>
<b>FR</b>	CEDRAT TECHNOLOGIES SA <b>Mr. Patrick Meneroud</b>
<b>SE</b>	CHALMERS TEKNISKA HOEGSKOLA AB <b>Dr. Alexei Kalaboukhov</b>
<b>IT</b>	UNIVERSITA DEGLI STUDI GABRIELE D'ANNUNZIO DI CHIETI-PESCARA <b>Prof. Gian Luca Romani</b>
<b>FR</b>	COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES <b>Prof. Claude Fermon</b>
<b>SE</b>	ELEKTA AB <b>Dr. Antti Ahonen</b>
<b>IT</b>	ASSOCIAZIONE FATEBENEFRATELLI PER LA RICERCA BIOMEDICA E SANITARIA <b>Dr. Franca Tecchio</b>
<b>FI</b>	HELSINGIN JA UUDENMAAN SAIRAANHOITOPPIIRIN KUNTAYHTYMA <b>Dr. Jyrki Mäkelä</b>
<b>IT</b>	IMAGING TECHNOLOGY ABRUZZO S.R.L. <b>Prof. Antonello Sotgiu</b>
<b>DE</b>	PHYSIKALISCH-TECHNISCHE BUNDESANSTALT <b>Dr. Lutz Trahms</b>
<b>IT</b>	UNIVERSITA DEGLI STUDI DI PARMA. <b>Prof. Giacomo Rizzolatti</b>
<b>FI</b>	TEKNOLOGIAN TUTKIMUSKESKUS VTT <b>Mr. Juha Hassel</b>

**Objectives**

Magnetic resonance imaging (MRI) is a versatile non-invasive medical imaging technique widely used in research and clinical practice to visualise internal structures of the body. Magnetoencephalography (MEG) is a non-invasive imaging technique that measures the magnetic fields that are produced by electrically activated neurons in the brain. The concept of MEGMRI was to combine MEG and MRI. In a classical MRI experiment the signal-to-noise ratio increases with strength of the used static magnetic field. An alternative approach known as ultra-low-field MRI (ULF-MRI) replaces

a single static magnetic field with two separate fields of lower magnetic field strength. It is more tolerant to the presence of metallic objects in the imaging volume, can better discriminate between certain types of tissues and allows for using a separate weak field for imaging that enables utilising extremely sensitive superconducting quantum interference device (SQUID)-based magnetometers for magnetic resonance signal readout. SQUID sensor arrays are routinely used in MEG — recording tiny magnetic fields generated by neuronal currents inside the brain. This makes MEG SQUID arrays a natural choice for ULF-MRI of the head.

### Main Achievements

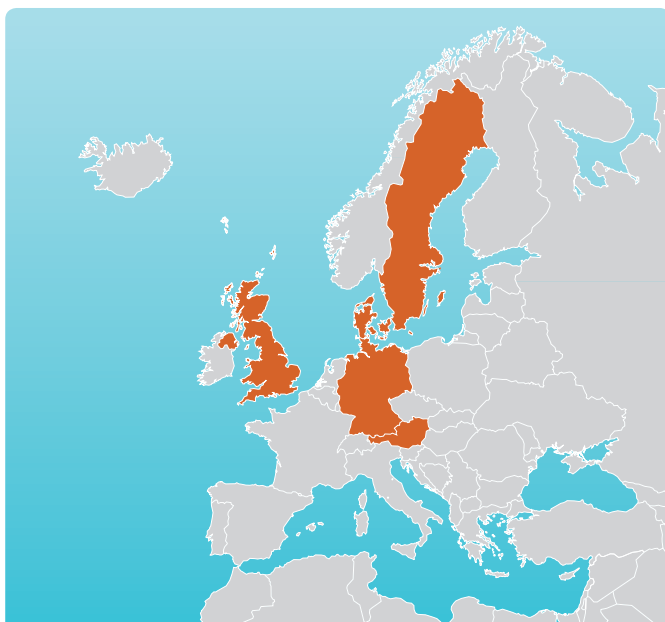
Our objective was to produce and validate a hybrid instrument able to perform simultaneous functional (MEG) and structural (ULF-MRI) imaging for obtaining undistorted structural brain images and time-resolved functional maps. Three different sensor types have been developed: low-temperature and high-temperature superconducting quantum interference devices (SQUIDs) and a new type of magnetometer, called mixed sensor, based on giant magnetoresistance. Three test systems, each with different sensors, geometry, coil system and electronics have been designed and tested. ULF-MRI software and sequences tools for 3D ULF-MRI have been implemented. A prepolarised spin-echo sequence which produces the maximum contrast-to-noise ratio between brain white and grey matter has been optimised. Based on the results with the test systems, a full-scale MEG-MRI prototype has been designed. The sensor array includes 72 low-temperature SQUIDs. Finally, the prototype has been extensively validated by obtaining brain images and recording MEG from several subjects. The validations proved that the goal to build a sensitive hybrid MEG-MRI scanner has been accomplished.

### Impact

In this project, the consortium developed a hybrid imaging scanner that combines MEG and MRI technology and allows simultaneous structural (MRI) and functional (MEG) imaging of the human brain. The technology will enhance the understanding of the link between neuronal activity and behavioural performance by allowing correlation of stimuli and/or brain operations. In patients with pharmacoresistant epilepsy, MEG-MRI has a potentially high diagnostic value by defining epileptogenic area and minimising damage during surgical resection of the epileptogenic cortex. Thus this new type of imaging device will provide a direct benefit for patients. The hybrid imaging scanner can be used for both ULF-MRI and MEG, which opens possibilities for considerable cost savings; the new instrument weighs less and the ULF-MRI coils are much cheaper to construct. The production of required mixed sensors at the wafer scale has already been established by a European company.

## Neurotrophic Cochlear Implant for Severe Hearing Loss

<b>Project acronym:</b>	NEUEAR
<b>Coordinator:</b>	NsGene A/S, Denmark
<b>Contact person:</b>	Dr. Lars Wahlberg
<b>Project number:</b>	304930
<b>Duration:</b>	36 months
<b>Start date:</b>	01/09/2012
<b>End date:</b>	31/08/2015
<b>EC Contribution:</b>	5,843,872.00 €
<b>Total costs:</b>	7,964,032.60 €





### Other partners

**DK** NSGENE A/S

**Dr. Lars Wahlberg**

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**SE** KAROLINSKA INSTITUTET

**Prof. Mats Ulfendahl**

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**AT** MED-EL Elektromedizinische Geraete GmbH

**Dr. Claude Jolly**

---

**DE** MEDIZINISCHE HOCHSCHULE HANNOVER

**Dr. Verena Scheper**

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**UK** DANDO, WEISS & COLUCCI LIMITED

**Dr. Isabelle Weiss**

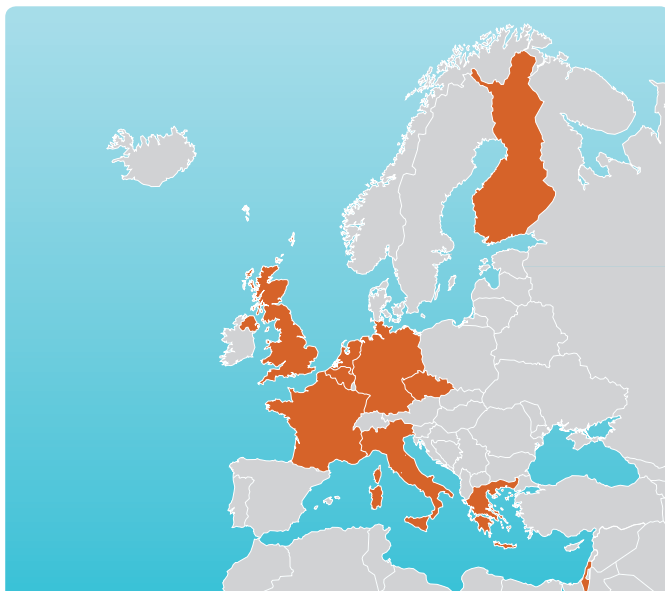
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### Abstract

Sixteen percent of adult Europeans suffer from hearing loss, great enough to adversely affect their daily life. Over the age of 80, 50% of the population is suffering from hearing loss. A large portion of this population is affected by sensoryneural hearing loss (SNHL), a consequence of a progressive degeneration of the primary auditory neurons (ANs), the afferent neurons of the cochlea. These ANs are the target cells of the neurotrophic cochlear implant – a neural prosthesis that will be designed by the partners of NeuEar to provide both electric auditory cues and regenerative neurotrophic factor(s) to severe-profoundly deaf patients. The ongoing degeneration of ANs that occurs over time is a limiting factor in current cochlear implant efficacy. The exogenous application of neurotrophic factors can prevent these degenerative changes. This project aims to develop an encapsulated cell (EC) therapy device capable of long-term intracochlear neurotrophin production in combination with a cochlear electrode implant. The aim is also to develop a versatile encapsulated cell implant that could be used to deliver regenerative factors to the cochlea even without the electrode part in future applications. The project brings together an SME capable of making clinically and regulatory compliant EC therapy devices with an industrial partner already on the market with a successful cochlear implant. These companies will work closely with two academic partners with expertise and resources to select, evaluate, and validate the neurotrophic cochlear implant. It is the intention of this consortium to make a clinically relevant implant with an associated preclinical package for regulatory submission over the next three years. Another SME will implement an efficient exploitation and dissemination structure, including a patent strategy to enable partnering and fund-raising for further clinical development, regulatory approval, commercialization, and marketing.

## Efficacy and Safety of Inhaled Budesonide in Very Preterm Infants at Risk for Bronchopulmonary Dysplasia

<b>Project acronym:</b>	NEUROSIS
<b>Coordinator:</b>	EBERHARD KARLS UNIVERSITAET TUEBINGEN, Germany
<b>Contact person:</b>	Dr. Dirk Bassler
<b>Project number:</b>	223060
<b>Duration:</b>	60 months
<b>Start date:</b>	01/03/2009
<b>End date:</b>	28/02/2014
<b>EC Contribution:</b>	5,623,414.00 €
<b>Total costs:</b>	7,383,283.20 €
<b>Website:</b>	<a href="http://www.neurosis-study.eu/">http://www.neurosis-study.eu/</a>



### Other partners

<b>DE</b>	EBERHARD KARLS UNIVERSITAET TUEBINGEN <b>Dr. Dirk Bassler</b>
<b>UK</b>	Belfast Health and Social Care Trust <b>Dr. David Millar</b>
<b>CZ</b>	UNIVERZITA KARLOVA V PRAZE AS* <b>Prof. Richard Plavka</b>
<b>FI</b>	OULUN YLIOPISTO <b>Prof. Mikko Hallman</b>
<b>IL</b>	CLALIT HEALTH SERVICES <b>Prof. Eric Shinwell</b>
<b>FR</b>	ASSISTANCE PUBLIQUE - HOPITAUX DE PARIS <b>Prof. Pierre-Henri Jarreau</b>
<b>IT</b>	Azienda Ospedaliero Univesitaria Ospedali Riuniti Umberto I- G.M. Lancisi- G. Salesi <b>Prof. Virgilio Carnielli</b>
<b>NL</b>	ERASMUS UNIVERSITAIR MEDISCH CENTRUM ROTTERDAM <b>Prof. Johannes Nicolaas Van Den Anker</b>
<b>DE</b>	ROBERT BOSCH GESELLSCHAFT FUR MEDIZINISCHE FORSCHUNG MBH <b>Prof. Matthias Schwab</b>
<b>FI</b>	POHJOIS-POHJANMAAN SAIRAANHOITOPPIIRIN KUNTAYHTYMA <b>Prof. Mikko Hallman</b>
<b>EL</b>	ARISTOTELIO PANEPISTIMIO THESSALONIKIS <b>Dr. Paraskevi Karagianni</b>
<b>DE</b>	UNIVERSITAETSMEDIZIN GOETTINGEN - GEORG-AUGUST- UNIVERSITAET GOETTINGEN - STIFTUNG OEFFENTLICHEN RECHTS <b>Prof. Thomas Paul</b>
<b>DE</b>	TECHNISCHE UNIVERSITAET DRESDEN <b>Prof. Mario Ruediger</b>
<b>BE</b>	ASSOCIATION HOSPITALIERE DE BRUXELLES-CENTRE HOSPITALIER UNIVERSITAIRE SAINT PIERRE <b>Prof. Dominique Haumont</b>

### Objectives

The Neonatal European Study of Inhaled Steroids (Neurosis) is a multinational, multi-centre clinical trial in a population of preterm infants. The aim of this study is to evaluate if early prophylactic inhalation of Budesonide reduces the absolute risk of developing bronchopulmonary dysplasia (BPD)

or death in preterm infants born at < 28 weeks' gestational age (GA) by at least 10%. Neurosis is powered to provide clinical evidence on a relevant efficacy outcome, survival without BPD at 36 weeks' GA. Within the study period, 850 infants of 23 to 27 weeks GA will be randomised during the first 12 hours of life to Budesonide or a placebo to prevent BPD. Study patients will be followed and neurodevelopmental outcomes will be assessed at a corrected age of 18 to 22 months.

### Main Achievements

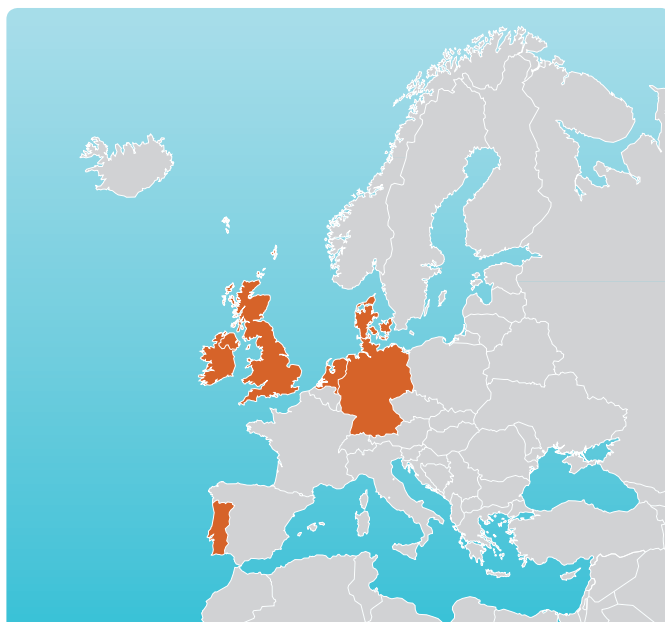
The study protocol has been developed by a panel of neonatologists from all over Europe. After development, it was critically reviewed by external experts. The main goal of the initial study period was the development of a central infrastructure. This included the development of essential study documents (e.g. case report forms, study operating manual, data management plan) and the development of a GCP-conform trial data system together with the development of standard operating procedures (SOPs). The protocol and further regulatory study documents have been developed and were approved by regulatory authorities and ethics committees. Study conduct and recruitment is on-going as scheduled. In collaboration with a major pharmaceutical company a paediatric investigation plan has been developed and subsequently approved by the European Medicines Agency.

### Impact

Neurosis will provide relevant efficacy outcome data for the prophylaxis of BPD with inhaled steroids. BPD not only contributes to the mortality of preterm infants but is also associated with impaired neurosensory development in 'extremely low birth weight' infants. This results in frequent re-admissions to hospital in the first 2 years of life and is associated with an increased risk of asthma, lung function abnormalities and persistent respiratory symptoms in adolescence and young adulthood. In the United States, the overall yearly costs of treating infants with BPD are estimated to be USD 2.4 billion. Thus a safe and effective treatment would be extremely valuable, not only from an individual patient perspective but also from an economic healthcare perspective.

# Repair of Diabetic Damage by Stromal Cell Administration

<b>Project acronym:</b>	REDDSTAR
<b>Coordinator:</b>	NATIONAL UNIVERSITY OF IRELAND, GALWAY, Ireland
<b>Contact person:</b>	Prof. Timothy O'Brien
<b>Project number:</b>	305736
<b>Duration:</b>	36 months
<b>Start date:</b>	01/11/2012
<b>End date:</b>	31/10/2015
<b>EC Contribution:</b>	5,894,387.00 €
<b>Total costs:</b>	8,018,880.80 €



**Other partners**

**IE** NATIONAL UNIVERSITY OF IRELAND, GALWAY  
**Prof. Timothy O'Brien**

**UK** THE QUEEN'S UNIVERSITY OF BELFAST  
**Prof. Alan Stitt**

**PT** UNIVERSIDADE DO PORTO  
**Prof. Isaura Tavares**

**DE** CHARITE - UNIVERSITAETSMEDIZIN BERLIN  
**Prof. Carsten Tschöpe**

**DE** LUDWIG-MAXIMILIANS-UNIVERSITAET MUENCHEN  
**Prof. Hans-Joachim Anders**

**IE** ORBSEN THERAPEUTICS LIMITED  
**Dr. Stephen Joseph Elliman**

**US** OWL BIOMEDICAL INC  
**Dr. John Foster**

**IE** PINTAIL LTD  
**Mr. Kay Clissmann**

**DK** Steno Diabetes Center A/S  
**Prof. John Nolan**

**NL** ACADEMISCH ZIEKENHUIS LEIDEN - LEIDS UNIVERSITAIR MEDISCH  
CENTRUM  
**Prof. Wim E. Fibbe**

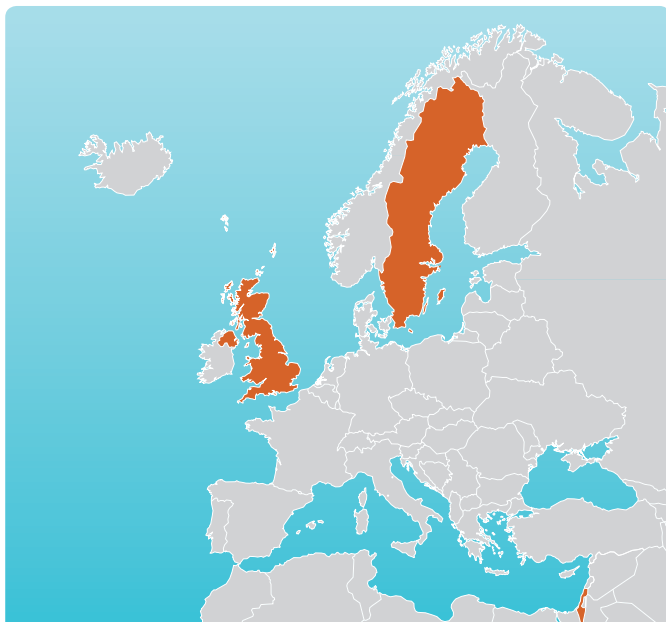
**Abstract**

50 million diabetic EU citizens are using approved anti-diabetic agents to control their glycaemia. However, suboptimal glycemic control leads to 6 progressive diabetic complications, namely: nephropathy, retinopathy, cardiomyopathy, neuropathy and foot ulceration. In 2010, 11% of EU adult deaths (634,000) were caused by diabetic complications. These distinct disorders have few effective medicines and present challenging management issues for clinicians. Stromal Stem Cells (SSC) are a mixed population of plastic-adherent (PA) cells isolated from adult bone marrow. PA-SSC secrete potent immunosuppressive and angiogenic proteins and over 100 clinical trials are testing PA-SSC in 40 distinct autoimmune and ischemic diseases. Notably, preclinical studies show a single intravenous administration of un-modified PA-SSC can control rodent hyperglycaemia, prompting 10 recent clinical safety studies in diabetic patients. REDDSTAR will comprehensively examine if SSC can safely repair all 6 damaged tissues and control glycaemia in three different species. To facilitate this we identified an antibody (S2) that prospectively isolates comparable, equivalent S2+SSC from human, rat, mouse and rabbit marrow, enabling testing of pure S2+/- SSC and mixed PA-SSC from each species for the first time. Furthermore, separation of PA-SSC into S2+ and S2- fractions reveal functionally distinct populations. REDDSTAR partners have collectively developed five distinct

clinically-relevant in vivo models of the 6 key diabetic complications. We will assess if S2+, S2- and PA-SSC exert differing control of glycaemia and tissue repair in each model. Finally, REDDSTAR partners are developing the first benchtop GMP-grade nanosorter, enabling clinical purification of S2+ and S2- SSC for human safety trials. We will dissect how S2+ and S2- SSC simultaneously repair tissue damage and maintain glycaemic control, an effect not observed with any current therapy.

## The role of striatum in selection of behaviour and motor learning - neuronal code, microcircuits and modelling

<b>Project acronym:</b>	SELECT-AND-ACT
<b>Coordinator:</b>	KAROLINSKA INSTITUTET, Sweden
<b>Contact person:</b>	Prof. Sten Grillner
<b>Project number:</b>	201716
<b>Duration:</b>	42 months
<b>Start date:</b>	01/08/2008
<b>End date:</b>	31/01/2012
<b>EC Contribution:</b>	2,495,781.00 €
<b>Total costs:</b>	3,253,587.00 €
<b>Website:</b>	<a href="http://www.neuro.ki.se/select/site/">http://www.neuro.ki.se/select/site/</a>





### Other partners

**SE** KAROLINSKA INSTITUTET  
**Prof. Sten Grillner**

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**UK** MEDICAL RESEARCH COUNCIL  
**Prof. J. Paul Bolam**

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**IL** THE HEBREW UNIVERSITY OF JERUSALEM.  
**Prof. Hagai Bergman**

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**SE** KUNGLIGA TEKNISKA HOEGSKOLAN  
**Prof. Anders Lansner**

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### Objectives

The aim of the Select-and-act project was to improve the understanding of how the brain is able to control our movements and the precise timing required for controlled motion processes. The project intended to define the cellular and the network organisation underlying the decision-making processes by analysing the microcircuitry of subpopulations of neurons in the input layer of the basal ganglia and the striatum, brain areas that are concerned with the control of different patterns of behaviour. A large number of neurological diseases (Parkinson's disease and Huntington's disease, dyskinesias, dystonias and attention deficit hyperactivity disorder (ADHD)) and psychiatric disorders are accounted for by a dysfunction of the basal ganglia and related structures.

### Main Achievements

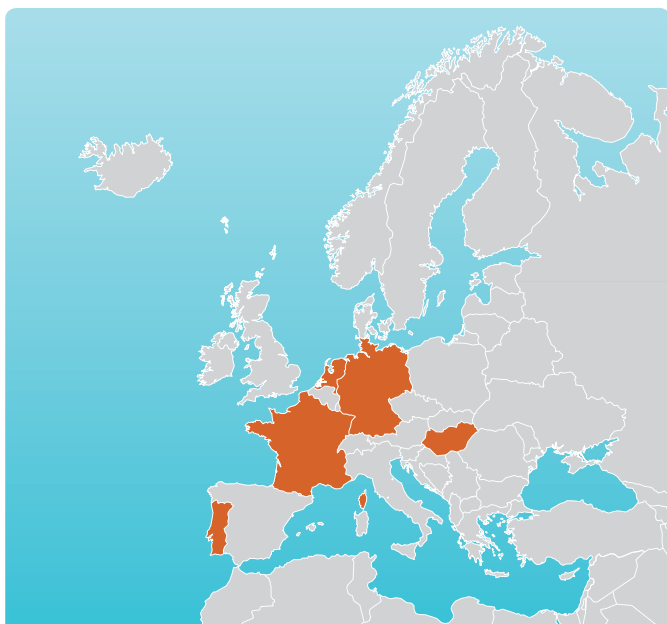
The consortium has shown that the basal ganglia are organised in a very conservative way. The basic design with types of nerve cells, how they interact via synaptic contacts, types of transmitters and receptors had actually evolved already when the first vertebrates appeared. This design has been maintained until today in all vertebrates including man. Select-and-act has characterised the microcircuitry within the striatum, the synaptic interaction between the different types of neurons, and the specific input to the striatum both with regard to the cortex/thalamus and the modulatory systems. Moreover, it was shown that the separate microcompartments within the striatum referred to as striosomes and matriosomes have input from separate types of cortex, and on the output side they affect either the dopamine system or pallidal neurons separately. The consortium identified and analysed the activity patterns of different classes of neurons in the striatum during different patterns of behaviour or during decision-making. This all provides a major step for achieving a deeper understanding of the intrinsic function and role of the basal ganglia and in particular the striatum.

### Impact

Millions of patients are affected by diseases of the basal ganglia, and at present these disorders are mostly chronic and last over many years and often decades. The costs for associated disorders of the nervous system represent around one third of the total costs of the healthcare systems in the different EU countries. Select-and-act has provided a better understanding of the neural mechanisms accounting for physiological basal ganglia function and dysfunction. Thus, this multi-disciplinary project has contributed with its results to an avenue towards new therapy concepts and treatments in an area of high medical need.

## Switchbox: Maintaining health in old age through homeostasis

<b>Project acronym:</b>	SWITCHBOX
<b>Coordinator:</b>	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE, France
<b>Contact person:</b>	Prof. Barbara Demeneix
<b>Project number:</b>	259772
<b>Duration:</b>	48 months
<b>Start date:</b>	01/02/2011
<b>End date:</b>	31/01/2015
<b>EC Contribution:</b>	5,996,688.00 €
<b>Total costs:</b>	8,558,040.80 €
<b>Website:</b>	<a href="http://www.switchbox-online.eu">http://www.switchbox-online.eu</a>



### Other partners

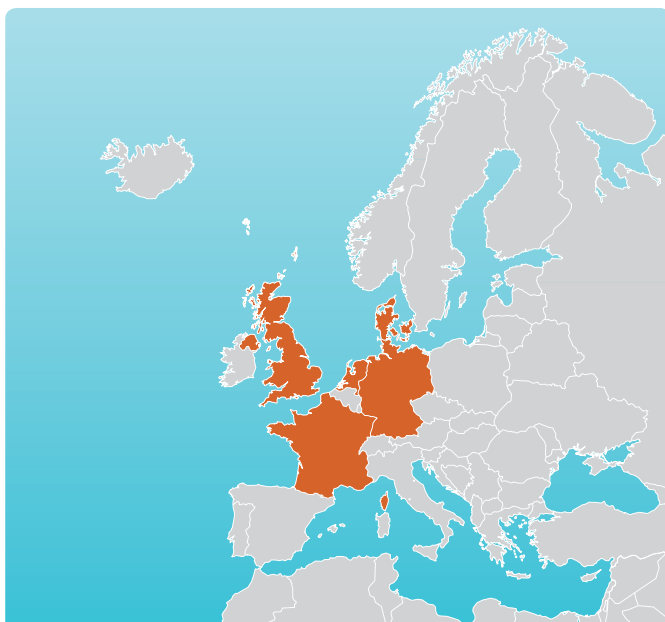
<b>FR</b>	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE <b>Prof. Barbara Demeneix</b>
<b>NL</b>	ACADEMISCH ZIEKENHUIS LEIDEN - LEIDS UNIVERSITAIR MEDISCH CENTRUM <b>Dr. Diana Van Heemst</b>
<b>DE</b>	MAX PLANCK GESELLSCHAFT ZUR FOERDERUNG DER WISSENSCHAFTEN E.V. <b>Dr. Osborne Almeida</b>
<b>PT</b>	UNIVERSIDADE DO MINHO <b>Prof. Nuno Jorge Carvalho Sousa</b>
<b>HU</b>	INSTITUTE OF EXPERIMENTAL MEDICINE - HUNGARIAN ACADEMY OF SCIENCES <b>Dr. Csaba Fekete</b>
<b>DE</b>	LUDWIG-MAXIMILIANS-UNIVERSITAET MUENCHEN <b>Prof. Joseph Zihl</b>

### Abstract

Healthy aging requires maintenance of homeostatic control of the physiological systems and functions that are integrated by the hypothalamus. Driven by work in previous EU projects (Crescendo/Lifespan) highlighting insulin signalling and the hypothalamic/pituitary/adrenal and thyroid axes in the regulation of aging, SWITCHBOX will examine the flexibility of these neuroendocrine systems in response to environmental challenges in three established human cohorts with variable aging potential. These human cohorts include offspring of exceptionally long-lived siblings and their partners (controls), people with good vs bad cognitive performance or with high vs low cognitive engagement. Maintaining brain function is emphasised as it reflects an individual's overall well-being, a major goal in aging research, and because age-related brain disorders represent a major socio-economic burden. To determine the genetic and cellular underpinnings of the findings in humans, hypothesis-based studies in rodents sharing phenotypes with the human cohorts will be carried out. To clarify the role of the brain in the differential regulation of endocrine axes critical for healthy aging, SWITCHBOX will examine the neuroendocrine and metabolic effects of intranasal (humans) and intra-cerebroventricular (rodents) administration of peptides involved in controlling metabolic homeostasis (e.g. insulin,  $\alpha$ -MSH). State-of-the-art technology will be used to measure circadian endocrine and metabolic profiles, brain structure and function (fMRI) and cognitive performance, as well as cellular and molecular features. All data will be entered into an already operational 'open access' database. The work aims to take key findings from basic research and translate them into clinically relevant concepts. It will benefit from combining expertise of gerontologists, endocrinologists, molecular and cellular neuroscientists and neuropsychologists. SWITCHBOX ultimately aims to develop conceptually new approaches for the prevention and treatment of age-related disorders.

## Systems Biology of Stem Cells and Reprogramming

<b>Project acronym:</b>	SYBOSS
<b>Coordinator:</b>	TECHNISCHE UNIVERSITAET DRESDEN, Germany
<b>Contact person:</b>	Prof. A. Francis Stewart
<b>Project number:</b>	242129
<b>Duration:</b>	60 months
<b>Start date:</b>	01/06/2010
<b>End date:</b>	31/05/2015
<b>EC Contribution:</b>	10,530,000.00 €
<b>Total costs:</b>	13,670,200.40 €
<b>Website:</b>	<a href="http://syboss.eu/">http://syboss.eu/</a>



### Other partners

<b>DE</b>	TECHNISCHE UNIVERSITAET DRESDEN <b>Prof. A. Francis Stewart</b>
<b>DK</b>	DANMARKS TEKNISKE UNIVERSITET <b>Prof. Søren Brunak</b>
<b>DE</b>	MAX PLANCK GESELLSCHAFT ZUR FOERDERUNG DER WISSENSCHAFTEN E.V. <b>Prof. Tony Hyman</b>
<b>DE</b>	EUROPEAN MOLECULAR BIOLOGY LABORATORY <b>Dr. Toby Gibson</b>
<b>NL</b>	ERASMUS UNIVERSITAIR MEDISCH CENTRUM ROTTERDAM <b>Prof. Frank Grosveld</b>
<b>FR</b>	INSTITUT CURIE <b>Dr. Edith Heard</b>
<b>DK</b>	Københavns Universitet <b>Dr. Chunaram Choudhary</b>
<b>UK</b>	GENOME RESEARCH LIMITED <b>Dr. William Skarnes</b>
<b>UK</b>	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE <b>Prof. Austin Smith</b>
<b>DE</b>	HELMHOLTZ ZENTRUM MUENCHEN DEUTSCHES FORSCHUNGSZENTRUM FUER GESUNDHEIT UND UMWELT GMBH <b>Prof. Wolfgang Wurst</b>

### Objectives

Stem cells are central to emerging concepts in health, medicine and therapy. Recent prospects for regenerative therapy have been promoted by the finding that somatic cells can be reprogrammed into pluripotent embryonic stem (iPS). A better understanding of stem cells will help clinicians to employ stem cells in therapies and improve the understanding of certain diseases. SyBoSS is investigating the regulatory networks of stem cells and the transitions between stem cell states, using embryonic (ESC), neural stem cells (NSC) and epiblast stem cells (EpiS), a recently described intermediate. SyBoSS mainly focuses on understanding the differences between ESCs and NSCs by analysing NSCs, proteomic, regulomic (ChIP-Seq, RNA-Seq, small RNA profiling), live cell assays, functional studies including genome-wide RNAi screens, gene specific depletion by RNAi for functional enquiry, and reprogramming assays.

### Main Achievements

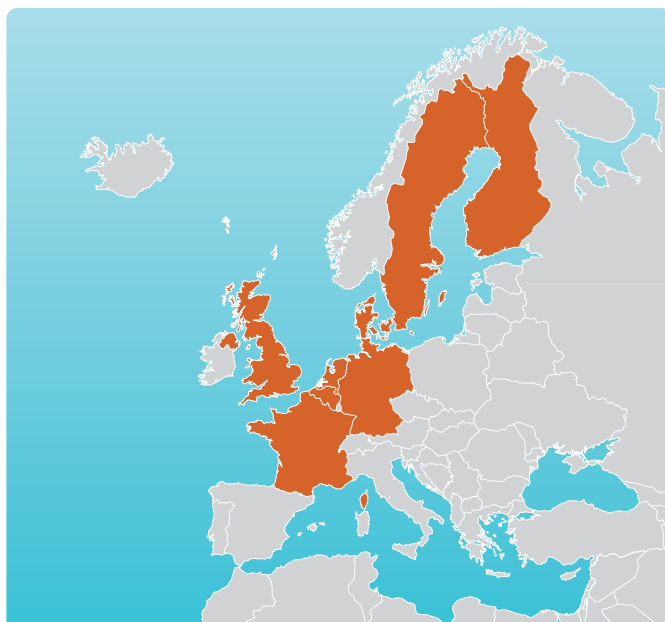
SyBoSS has established a pipeline for genetic engineering of ESCs to create cell lines expressing tagged proteins for immunoprecipitation, mass spectrometry of protein complexes and imaging including the effects of knockouts, knockdowns and live cell assays. Also, standardised high-throughput protocols for differentiating the engineered ESCs into intermediate epiblast stem cells (EpiSCs) and NSCs has been established as well as protocols for whole genome sequencing, RNA sequencing, imaging, RNAi functional enquiry and live cell assays. Standardised NSC differentiation from ESCs via EpiSC, neural rosettes and neural bodies has been developed. Early results include whole genome sequence data sets and individual analysis of cell lines after tamoxifen-induced protein ablations.

### Impact

The final results of the SyBoSS project are expected to be a comprehensive and understandable data resource for understanding the complex regulation of differentiation of embryonic stem cells into differentiated precursors, particularly neuronal stem cells. The data assembled will be used to provide the public and research community with a definitive resource for evaluating how stem cells differentiate and how they might be reprogrammed or affected by specific intervention into regulatory interactions. Thus the results of SyBoSS will contribute to the development of improved therapeutic management approaches, either pharmaceutically or by cell or gene therapy, providing benefit to academic research, industry and health management.

# Synaptic Systems: dissecting brain function in health and disease

<b>Project acronym:</b>	SYNSYS
<b>Coordinator:</b>	VERENIGING VOOR CHRISTELIJK HOGER ONDERWIJS WETENSCHAPPELIJK ONDERZOEK EN PATIENTENZORG, Netherlands
<b>Contact person:</b>	Prof. Guus Smit
<b>Project number:</b>	242167
<b>Duration:</b>	48 months
<b>Start date:</b>	01/07/2010
<b>End date:</b>	30/06/2014
<b>EC Contribution:</b>	10,739,837.00 €
<b>Total costs:</b>	14,135,609.33 €
<b>Website:</b>	<a href="http://www.synsys.eu/">http://www.synsys.eu/</a>



**Other partners**

<b>NL</b>	VERENIGING VOOR CHRISTELIJK HOGER ONDERWIJS WETENSCHAPPELIJK ONDERZOEK EN PATIENTENZORG <b>Prof. Guus Smit</b>
<b>UK</b>	GENOME RESEARCH LIMITED <b>Prof. Seth Grant</b>
<b>UK</b>	THE UNIVERSITY OF EDINBURGH <b>Dr. Douglas Armstrong</b>
<b>DE</b>	MAX PLANCK GESELLSCHAFT ZUR FOERDERUNG DER WISSENSCHAFTEN E.V. <b>Prof. Nils Brose</b>
<b>DE</b>	MAX DELBRUECK CENTRUM FUER MOLEKULARE MEDIZIN <b>Prof. Erich Wanker</b>
<b>DE</b>	EUROPEAN MOLECULAR BIOLOGY LABORATORY <b>Dr. Nicolas Le Novère</b>
<b>DK</b>	Københavns Universitet <b>Dr. Jakob Balslev Sørensen</b>
<b>SE</b>	KAROLINSKA INSTITUTET <b>Prof. Oleg Shupliakov</b>
<b>DE</b>	CHARITE - UNIVERSITAETSMEDIZIN BERLIN <b>Dr. Robert Preissner</b>
<b>FR</b>	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM) <b>Dr. Jean-Antoine Girault</b>
<b>BE</b>	VIB <b>Prof. Claudia Bagni</b>
<b>FI</b>	HELSINGIN YLIOPISTO <b>Prof. Aarno Palotie</b>
<b>UK</b>	Synome Ltd <b>Mr. Troels Jordansen</b>
<b>UK</b>	Brainwave-Discovery Limited <b>Prof. Wayne Davies</b>
<b>SE</b>	BEACTICA AB <b>Prof. Helena Danielson</b>
<b>NL</b>	SYNAPTOLOGICS BV <b>Ms. Evelyn Y. Van Royen</b>



## Objectives

Major neuronal disorders affect one in three people in the developed world, often seriously disabling the affected individuals, and together account for the single largest burden on the healthcare systems of the EU. Most of these disorders act at neuronal synapses, where nerve cells communicate with each other. Crosstalk between proteins and the complexity of the underlying synaptic signalling network pose a significant challenge to understand molecular mechanisms of disease, a prerequisite to design efficient drugs. The main objectives of the Synsys project are to provide a qualitative and quantitative description of the protein composition in mammalian glutamatergic synapses, to generate quantitative dynamic models describing the main functional features of the synaptic system and to identify and validate human genes that may be the target of future therapies.

## Main Achievements

In its first two years Synsys has focused on the implementation of workflows and the acquisition of data. The synapse protein parts list and protein interactome is well under way, with many new protein-protein connections being described. Data is being collected on the individual functions of selected proteins (including novel pre- and post-synapse proteins from the interactomics work) using physiological model systems. Importantly, evaluation of protein (complexes) in human genetics programmes is initiated. Furthermore, the consortium identified synaptic gene sets related to brain disorders, by systems biology analysis approaches.

## Impact

The synapse regulates chemical transmission in a neuronal activity-dependent manner. Pre- and postsynaptic plasticity are thought to be major determinants in information processing. Alterations in the signalling of the synaptic proteome network are believed to be central to plasticity, for instance underlying learning and memory processes in the brain. Quantitative functional (dynamic) models are necessary to identify disease factors within protein networks that are not accessible using classical approaches. This information is crucially needed to design future therapeutic strategies addressing many brain disorders for which synaptic dysfunction is a central aspect.

## Zebrafish Regulomics for Human Health

<b>Project acronym:</b>	ZF-HEALTH
<b>Coordinator:</b>	Karlsruher Institut fuer Technologie, Germany
<b>Contact person:</b>	Dr. Robert Geisler
<b>Project number:</b>	242048
<b>Duration:</b>	66 months
<b>Start date:</b>	01/07/2010
<b>End date:</b>	31/12/2015
<b>EC Contribution:</b>	11,375,000.00 €
<b>Total costs:</b>	14,911,236.09 €
<b>Website:</b>	<a href="http://zf-health.org/">http://zf-health.org/</a>



### Other partners

<b>DE</b>	Karlsruher Institut fuer Technologie <b>Dr. Robert Geisler</b>
<b>DE</b>	ALBERT-LUDWIGS-UNIVERSITAET FREIBURG <b>Prof. Wolfgang Driever</b>
<b>FR</b>	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE <b>Dr. Laure Bally-Cuif</b>
<b>UK</b>	GENOME RESEARCH LIMITED <b>Dr. Derek L Stemple</b>
<b>NL</b>	KONINKLIJKE NEDERLANDSE AKADEMIE VAN WETENSCHAPPEN - KNAW <b>Prof. Edwin Cuppen</b>
<b>FR</b>	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM) <b>Dr. Frederic Rosa</b>
<b>UK</b>	KING'S COLLEGE LONDON <b>Prof. Corinne Houart</b>
<b>NL</b>	UNIVERSITEIT LEIDEN <b>Prof. Herman Spaik</b>
<b>DE</b>	MAX PLANCK GESELLSCHAFT ZUR FOERDERUNG DER WISSENSCHAFTEN E.V. <b>Prof. Christiane Nuesslein-Volhard</b>
<b>DE</b>	TECHNISCHE UNIVERSITAET DRESDEN <b>Prof. Michael Brand</b>
<b>UK</b>	THE UNIVERSITY OF SHEFFIELD <b>Dr. Fredericus Van Eeden</b>
<b>IT</b>	UNIVERSITA DEGLI STUDI DI PADOVA <b>Prof. Argenton Francesco</b>
<b>DE</b>	UNIVERSITAET ZU KOELN <b>Prof. Matthias Hammerschmidt</b>
<b>CH</b>	UNIVERSITAET ZUERICH <b>Prof. Stephan Neuhauss</b>
<b>UK</b>	UNIVERSITY COLLEGE LONDON <b>Prof. Stephen Wilson</b>
<b>NO</b>	UNI RESEARCH AS <b>Dr. Boris Lenhard</b>
<b>UK</b>	THE UNIVERSITY OF BIRMINGHAM <b>Dr. Ferenc Mueller</b>

**AU** THE UNIVERSITY OF SYDNEY  
**Prof. Thomas Becker**

**ES** ZF BIOLABS SL  
**Dr. Ivan Rodriguez**

**UK** IMPERIAL COLLEGE OF SCIENCE, TECHNOLOGY AND MEDICINE  
**Dr. Boris Lenhard**

## Objectives

The zebrafish has been established as a new vertebrate model organism for biomedical research with advantages like a short generation time or transparency of the embryo that allows imaging of cell movement and gene expression in a developing organism. Furthermore, small-molecule high-throughput screenings for drug efficacy and toxicity studies are possible in zebrafish embryos arrayed on microtiter plates. The ZF-Health project applies this technology in particular for studying the genetic bases of brain development, behavioural and neurological disorders; genetic abnormalities of the eye and visual processing; genetic pathways underlying tissue regeneration and repair and studying homologues of human genes related to diabetes and obesity, as well as infectious disease and cancer.

## Main Achievements

By high-throughput sequencing of the entire exome, knockout mutations in 1,627 genes have been identified. Zinc finger nuclease technology for generating additional knockouts has also been established by the consortium. In the first project period initial morphological and behavioural phenotyping was carried out for 336 alleles; 14 protocols for behavioural phenotyping are available through the project website. Active epigenetic enhancer marks in genomic regulatory blocks regions strongly correlating with the expression state of four putative target genes have been identified using transgenic zebrafish lines. Protocols and methodology for gene expression mapping in the brain by confocal imaging has been established. Two thousand bioactive chemicals have been screened for their potential impact on hypoxia-inducible factors (HIF) signalling, which is relevant for inflammation and for angiogenesis in cancers. One candidate showed highly potent HIF activation outperforming the current standard HIF activators.

## Impact

The project will have a significant value for biomedical research. This contribution has the potential to improve the health of European citizens by addressing, for example, molecular basis of human behaviour. The increasing knowledge on regulatory factors in the zebrafish and their interactions with regulatory targets will be integrated with knowledge at cellular and organismic level. Thus this systems biology approach will gain knowledge complementing on-going work in mammalian systems. Furthermore ZF Health will increase the competitiveness and the innovative capacity of European health-related industries and businesses.



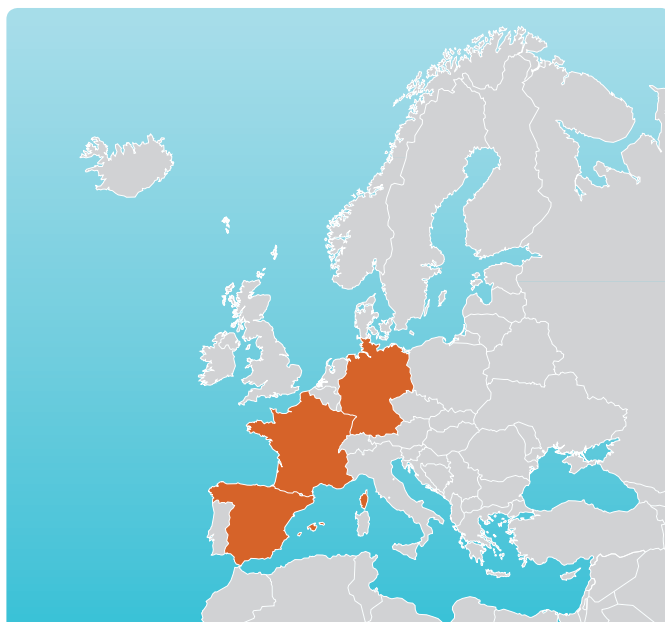
# Neurological diseases

Source: Fotolia.com



## Best EScalation Treatment in Multiple Sclerosis (MS)

<b>Project acronym:</b>	BEST MS
<b>Coordinator:</b>	CENTRE HOSPITALIER UNIVERSITAIRE DE TOULOUSE, France
<b>Contact person:</b>	Prof. David Brassat
<b>Project number:</b>	305477
<b>Duration:</b>	36 months
<b>Start date:</b>	01/10/2012
<b>End date:</b>	30/09/2015
<b>EC Contribution:</b>	4,880,575.00 €
<b>Total costs:</b>	6,372,094.80 €



**Other partners**

**FR** CENTRE HOSPITALIER UNIVERSITAIRE DE TOULOUSE  
**Prof. David Brassat**

**FR** INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)  
**Dr. Maria Martinez**

**ES** FUNDACIO INSTITUT DE RECERCA DE L'HOSPITAL UNIVERSITARI VALL D'HEBRON  
**Dr. Manuel Comabella**

**ES** PROGENIKA BIOPHARMA SA  
**Dr. Sergio Escorza**

**DE** WESTFAELISCHE WILHELMS-UNIVERSITAET MUENSTER  
**Prof. Heinz Wiendl**

**Abstract**

Multiple Sclerosis (MS) is a devastating disease of the central nervous system affecting 2.5 million worldwide. MS is a field of constant therapeutic innovation, a fact which brings hope to young adults since MS is one of the most frequent causes of severe handicap. A major unmet need is to rationalize treatment decisions. To date, there is no way of predicting which patients will best respond to one of the 15 drugs expected on the market by 2014 and which patients are at risk of severe adverse effects. Recent technical advances (the omics revolution) have brought the dream of personalized medicine (PM) closer to reality. Therefore the main objective of this project is to design a composite test (using genome based biomarkers associated with clinical and radiological information) in order to predict which patients are associated with the best benefit to risk ratio in MS treatment, using Natalizumab (NTZ) as the paradigm. For this purpose, we have already built up a unique cohort of 1,500 Europeans MS patients with. We will address 5 secondary objectives: #1 determine a qualitative definition of response to NTZ with clinical and radiological parameters; #2 determine a quantitative biological response test based on an in vitro assay; #3 determine DNA-based biomarkers associated with NTZ response; #4 determine genetic susceptibility to progressive multifocal encephalopathy and NTZ-related severe adverse events; and #5 determine RNA-based biomarkers associated with NTZ response. When this work is completed, we will use the data generated to build our composite test with a multivariate approach. We postulate that our predictive test for choosing the best patients to treat with NTZ will be a paradigm for all MS treatment and, beyond MS, for biotherapies in general. This project should have a positive impact on patients' quality of life and on the MS market, and will involve a network of 5 teams (4 academic and 1 SME) that will work in perfect synergy.



## Brains in Dialogue: Brain Science at the service of European citizens

<b>Project acronym:</b>	BID
<b>Coordinator:</b>	SCUOLA INTERNAZIONALE SUPERIORE DI STUDI AVANZATI, Italy
<b>Contact person:</b>	Prof. Vincent Torre
<b>Project number:</b>	201970
<b>Duration:</b>	42 months
<b>Start date:</b>	01/03/2008
<b>End date:</b>	31/08/2011
<b>EC Contribution:</b>	497,075.00 €
<b>Total costs:</b>	555,523.60 €
<b>Website:</b>	<a href="http://www.neuromedia.eu">http://www.neuromedia.eu</a>



### Other partners

**IT** SCUOLA INTERNAZIONALE SUPERIORE DI STUDI AVANZATI  
**Prof. Vincent Torre**

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### Objectives

The project BID (brains in dialogue) aimed to foster a true dialogue among key stakeholders on the scope and limits of new technologies in neuroscience and their impact on society. Focusing on brain imaging, brain devices and predictive medicine in brain science, BID provided sound and balanced information on the state of the art of these technologies and encouraged the discussion on their social, ethical and legal implications, involving neuroscientists, clinicians, philosophers, lawyers, social scientists, policymakers, patients and other citizens. To achieve its scientific and communicative mission, BID organised international workshops and public events, managed a press office active at the European level and the neuromedia corner website.

### Main Achievements

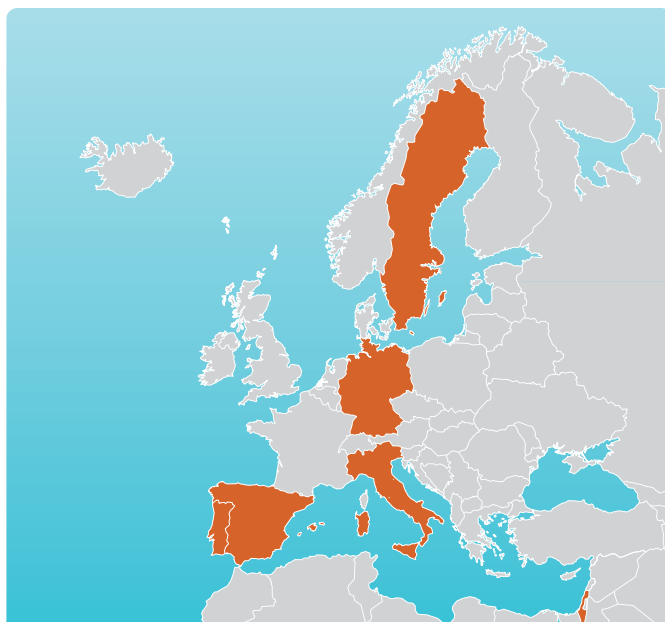
Advances in brain science are vital to help us understanding how the brain works and open new doors towards brain disease treatments. Although the potential applications of this new knowledge are still uncertain, they raise significant ethical, social and legal issues which involve people from all walks of life. In order to foster an interdisciplinary dialogue and raise public awareness on these issues, the BID project organised three interdisciplinary workshops and several public events addressing the state of the art of key scientific areas, their impact on society but also looking at the patients' perspective and the role of the media. Because of the crucial role of science communication, the team also organised a training workshop on neuroscience communication. The discussion started during the meetings continued virtually on the neuromedia corner website, a portal with original news and views, scientific papers, video interviews, lists of research centres and events, guidelines and useful links. The press office activity ensured the dissemination of BID initiatives to different targets, through the production of press releases, papers for lay and scientific journals and video-interviews. It also edited two special issues for open-access scientific journals with contributions from different stakeholders.

### Impact

The implementation of the BID project started at the local and national levels and broadened throughout the project to the European level, leading to the creation of an international and interdisciplinary network of neuroscientists, clinicians, philosophers, social scientists, patients, science journalists and other stakeholders. The main workshops and public events were organised in different locations in Europe to foster the participation of delegates from different member states and raise public engagement on brain related issues in different countries. The project involved even a broader community through the press office activities and the website. The involvement of European journalists ensured the coverage of BID activities on international press or radio programmes. The neuromedia corner provided a selection of material to gain an overview of and foster the discussion on the state of the art of BID scientific areas and their impact on society. A true interdisciplinary dialogue on the societal impact of brain science is an achievement that is crucial but difficult to put into practice and more experiences like BID are needed.

## Biohybrid templates for peripheral nerve regeneration

<b>Project acronym:</b>	BIOHYBRID
<b>Coordinator:</b>	MEDIZINISCHE HOCHSCHULE HANNOVER, Germany
<b>Contact person:</b>	Prof. Claudia Grothe
<b>Project number:</b>	278612
<b>Duration:</b>	48 months
<b>Start date:</b>	01/10/2011
<b>End date:</b>	30/09/2015
<b>EC Contribution:</b>	5,922,000.00 €
<b>Total costs:</b>	7,755,600.00 €
<b>Website:</b>	<a href="http://kongress.mh-hannover.de/biohybrid/">http://kongress.mh-hannover.de/biohybrid/</a>



**Other partners**

**DE** MEDIZINISCHE HOCHSCHULE HANNOVER  
**Prof. Claudia Grothe**

**ES** UNIVERSITAT AUTONOMA DE BARCELONA  
**Prof. Xavier Navarro**

**SE** LUNDS UNIVERSITET  
**Prof. Lars B. Dahlin**

**PT** UNIVERSIDADE DO MINHO  
**Dr. Antonio Salgado**

**IL** THE FOUNDATION FOR MEDICAL RESEARCH INFRASTRUCTURAL  
DEVELOPMENT AND HEALTH SERVICES NEXT TO THE MEDICAL  
CENTER TEL AVIV  
**Dr. Shimon Rockkind**

**IT** UNIVERSITA DEGLI STUDI DI TORINO  
**Prof. Stefano Geuna**

**IL** N.V.R RESEARCH LTD  
**Ms. Sara Neuman**

**DE** MEDOVENT GMBH  
**Dr. Thomas Freier**

**PT** ALTAKITIN SA  
**Dr. Eduardo Pires**

**DE** KLINIKUM RECHTS DER ISAR DER TECHNISCHEN UNIVERSITAT  
MUNCHEN  
**Prof. Martin Hildebrandt**

**Abstract**

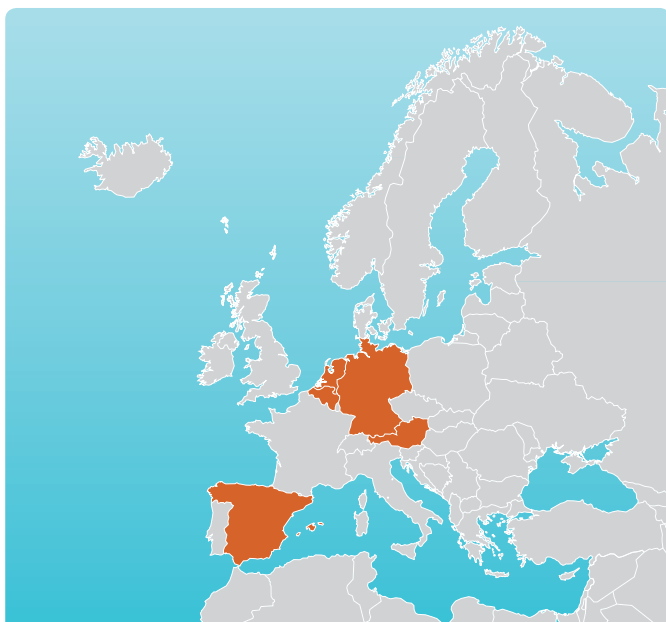
The BIOHYBRID consortium was build up with the overall aim to develop, in a preclinical perspective, an innovative biohybrid artificial nerve device for the regenerative treatment of traumatic injuries of peripheral nerves. This consortium consists of three active and well integrated SMEs as well as seven academic partners that are recognised leaders in the scientific areas of interest for this project. Furthermore, another partner has substantiated expertises to meet the regulatory work for ATMP development.

Traumatic injuries of peripheral nerves represent a major cause for morbidity and morbidity in Europe and their social impact is considerably high. It has been estimated that the incidence of peripheral nerve injuries derived from trauma is about 300,000 cases per year. Moreover, nerve injuries are an important component of traumatic limb amputations, with an incidence of 2/100,000 persons per year described for hand amputations. Therefore, repair and regeneration of peripheral nerve injuries represent a major field where clinical application of innovative therapies in regenerative medicine

should be sought. Peripheral nerve fibers are able to regenerate and lead to functional recovery provided that an appropriate milieu and guide is available. However, the clinical outcome of neural repair after extended substance loss after nerve injury is often unsatisfactory and therefore innovative strategies for improving the outcome after neural damage are in demand. The main objective of the BIOHYBRID project is the development of a regenerative therapy using an innovative biohybrid artificial nerve device with the goal of repairing damaged nerve trunks. The work program includes an integrated experimental approach bringing together the main aspects of regenerative medicine: a) reconstructive microsurgery, b) regenerative scaffolds and c) transplantation. This approach will allow the biological pre-fabrication of biohybrid nerve devices, their transplantation into nerve gaps in various animal models and the comprehensive evaluation of the regenerative outcome. The SME involvement, for the first time in this biomedical field, will not be limited to production and supply of materials and services but includes also active participation in the conduction of the experiments for in vivo preclinical assessment and follow-up. Based on the extensive basic and clinical experience within this consortium a biohybrid artificial nerve device will be developed together with standardised application and evaluation parameters. A key objective of this study will be to generate, for the first time, a protocol that can serve as a template for future clinical trials in the regenerative therapy of damaged peripheral nerves. The BIOHYBRID project with its consortium partners combines excellent expertise to successfully reach the objectives and stands therefore on the front line of regenerative medicine approaches.

## Impact of Prenatal Stress on BRAIN AGEing

<b>Project acronym:</b>	BRAINAGE
<b>Coordinator:</b>	Universitätsklinikum Jena, Germany
<b>Contact person:</b>	Prof. Matthias Schwab
<b>Project number:</b>	279281
<b>Duration:</b>	60 months
<b>Start date:</b>	01/03/2012
<b>End date:</b>	28/02/2017
<b>EC Contribution:</b>	2,998,420.00 €
<b>Total costs:</b>	3,883,876.80 €
<b>Website:</b>	<a href="http://www.brain-age.eu/">http://www.brain-age.eu/</a>



### Other partners

**DE** Universitätsklinikum Jena  
**Prof. Matthias Schwab**

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**DE** LEIBNIZ-INSTITUT FÜR ALTERSFORSCHUNG – FRITZ-LIPMANN-  
INSTITUT E.V.  
**Dr. Jan Tuckermann**

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**BE** KATHOLIEKE UNIVERSITEIT LEUVEN  
**Prof. Bea Rh Van Den Bergh**

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**US** THE UNIVERSITY OF TEXAS SYSTEM  
**Dr. Peter Nathanielsz**

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**AT** BIOCRATES LIFE SCIENCES AG  
**Dr. Denise Sonntag**

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**NL** Academisch Medisch Centrum bij de Universiteit van Amsterdam  
**Dr. Tessa Roseboom**

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**ES** LIFE LENGTH SL  
**Dr. Juan Antonio Sánchez**

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**NL** STICHTING KATHOLIEKE UNIVERSITEIT BRABANT UNIVERSITEIT  
VAN TILBURG  
**Marijke Braeken**

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### Abstract

Healthy brain ageing is a major determinant of quality life-long health, allowing integration into society at all ages. Human epidemiological and animal studies indicate that in addition to life style and genetic factors, environmental influences in prenatal life have a major impact on brain ageing and age-associated brain disorders. We hypothesize that: (1) prenatal stress programs early brain ageing; (2) this predisposes to age-associated brain diseases including cognitive decline and stroke; (3) epigenetic changes affecting glucocorticoid receptor (GR) sensitivity, altered autonomic nervous system (ANS) reactivity and cerebrovascular tone are important mediators of these processes, (4) these changes represent targets for diagnosis and therapeutic interventions.

Our consortium has unique access to well-defined human and non-human primate cohorts (age range 25-115 y equivalents) that have been exposed to different types of prenatal stress. For experimental analysis of mechanisms of prenatal programming, we apply innovative techniques to characterize brain ageing, namely MRI based volumetry, non-linear analysis of EEG and ANS, advanced molecular techniques including epigenetics and metabolomics and neuropsychological and behavioral tests.

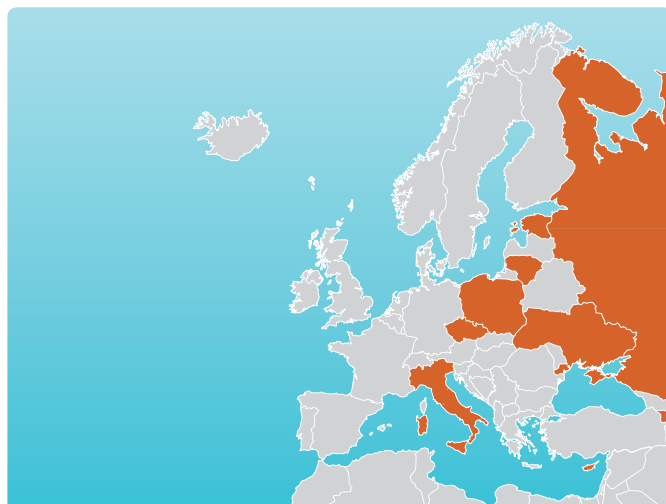
Human subjects, non-human primates and rodents (including transgenic models) exposed to maternal stress, glucocorticoids or undernutrition are examined in order to: (1) determine structural (MRI based volumetry) and functional (metabolomics, brain function, cerebrovascular tone) indicators

of brain age, (2) relate them to susceptibility to stroke and cognitive decline, (3) determine to what extent GR resistance, stress sensitivity, and cerebrovascular contractility mediate premature brain ageing and disease susceptibility; and, (4) dissect mechanisms and pharmacological interventions relevant for aged subjects. Data from the study allow to identify subjects at risk for premature brain ageing and to initiate interventional therapy.



# Improving Diagnoses of Mental Retardation in Children in Central Eastern Europe and Central Asia through Genetic Characterisation and Bioinformatics/-Statistics

<b>Project acronym:</b>	CHERISH
<b>Coordinator:</b>	ALMA MATER STUDIORUM-UNIVERSITA DI BOLOGNA, Italy
<b>Contact person:</b>	Prof. Giovanni Romeo
<b>Project number:</b>	223692
<b>Duration:</b>	42 months
<b>Start date:</b>	01/02/2009
<b>End date:</b>	31/07/2012
<b>EC Contribution:</b>	2,647,211.00 €
<b>Total costs:</b>	3,351,582.42 €
<b>Website:</b>	<a href="http://www.cherishproject.eu/">http://www.cherishproject.eu/</a>



**Other partners**

<b>IT</b>	ALMA MATER STUDIORUM-UNIVERSITA DI BOLOGNA <b>Prof. Giovanni Romeo</b>
<b>EE</b>	TARTU ULIKOOL <b>Prof. Ants Kurg</b>
<b>LT</b>	VILNIAUS UNIVERSITETAS <b>Prof. Vaidutis Kucinskas</b>
<b>CZ</b>	UNIVERZITA KARLOVA V PRAZE AS* <b>Prof. Zdenek Sedlacek</b>
<b>PL</b>	AKADEMIA MEDYCZNA IM KAROLA MARCINKOWSKIEGO*UNIwersytet Medyczny im Karola Marcinkowskiego w Poznaniu <b>Prof. Anna Latos-Bielenska</b>
<b>UA</b>	INSTYTUT MOLEKULARNOI BIOLOGII I GENETYKY NAN UKRAINY <b>Prof. Ludmila Livshits</b>
<b>CY</b>	THE CYPRUS FOUNDATION FOR MUSCULAR DYSTROPHY RESEARCH <b>Dr. Philippos Patsalis</b>
<b>RU</b>	NII MEDICINSKOY GENETIKI TOMSKOGO NAUCHNOGO CENTRA SIBIRSKOGO OTDELENIYA ROSSIYSKOY AKADEMII MEDICINSKIH NAUK <b>Dr. Igor Lebedev</b>
<b>AM</b>	Center of Medical Genetics and Primary Health Care <b>Dr. Susanna Midyan</b>
<b>IT</b>	MOLECULAR STAMPING SRL <b>Dr. Giorgia Faes</b>
<b>IT</b>	FONDAZIONE EUROPEA PER LA GENETICA <b>Mr. Michele Zadra</b>

**‘Imaging function and dysfunction of neuronal circuits in the visual cortex’****Objectives**

Mental retardation (MR) is defined as an intelligence quotient (IQ) below 70, an onset before the age of 18 years and limitations in adaptive functioning. Genetic abnormalities are the most common identifiable cause of MR. However for many patients the causative variant is not detected and many current methods of analysis are still too expensive to be applied for routine diagnosis of large cohorts of patients. The main objectives of the Cherish project are, to develop a standardised approach for MR diagnosis through clinical workshops, to create a large database of patients with clinically well-defined MR, to identify cryptic genomic rearrangements through molecular cytogenetic analysis, to analyse the molecular epidemiology of MR in east European populations and to identify new MR genes in X linked and autosomal recessive forms of the disorder.

### Main Achievements

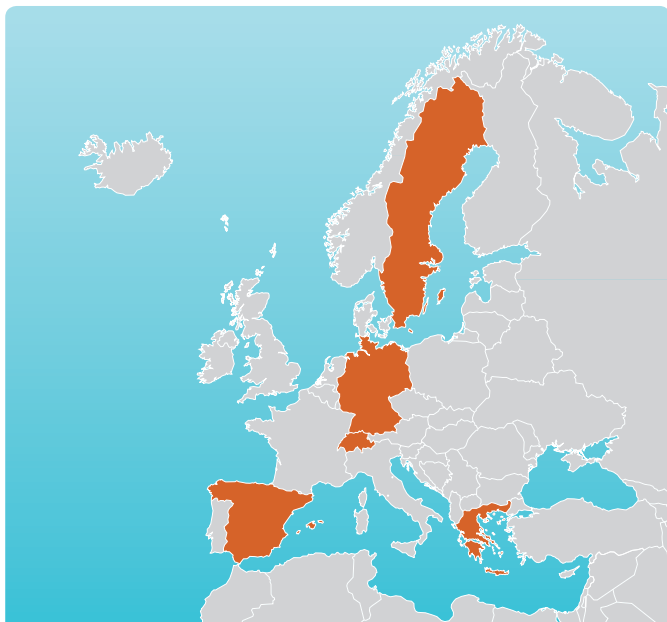
In the first period of the Cherish project the consortium has collaborated to setting up a standardised diagnostic questionnaire for patient recruitment. As many as 1,241 MR patients and 1,078 family members participated in the build-up of a comprehensive sample repository. Additional family data sets will be added to this database in the near future. Analyses using microarray comparative genomic hybridisation and high resolution SNP arrays have been carried out. Numerous specific aberrations have been identified in a large cohort of east European and central Asian MR patients. The analysis is still on-going for a minor subgroup of the samples. For X-linked MR families, the X chromosome exon-specific array has been used in order to identify cryptic rearrangements. Linkage analysis in selected families with MR cases showing no chromosomal aberrations was also carried out, leading to the identification of the predisposing gene in several cases. This part of the project was also important during the last part of the project period, during which the consortium applied next-generation sequencing technologies to identify the relevant mutations in families with multiple MR affected members with no cryptic rearrangements. The consortium is currently evaluating the most relevant changes in affected families to understand whether they can be etiological causes of MR.

### Impact

MR is a highly heterogeneous condition and has a prevalence of 1 to 3% in the general population. The availability of powerful analysis methodology established by Cherish will enhance the routine diagnosis of MR by enabling the detection of underlying genetic variations, which otherwise would have been overlooked. In particular, the activities within the project allowed a diagnostic improvement for MR in children in east European countries. The results of Cherish provide fundamental insights for genetic counselling and management for many families with MR.

## A novel drug discovery method based on systems biology: combination therapy and biomarkers for Multiple Sclerosis

<b>Project acronym:</b>	COMBIMS
<b>Coordinator:</b>	BIONURE FARMA SL, Spain
<b>Contact person:</b>	Mrs. Mar Massó
<b>Project number:</b>	305397
<b>Duration:</b>	24 months
<b>Start date:</b>	01/01/2013
<b>End date:</b>	31/12/2014
<b>EC Contribution:</b>	2,509,680.00 €
<b>Total costs:</b>	3,278,052.00 €



### Other partners

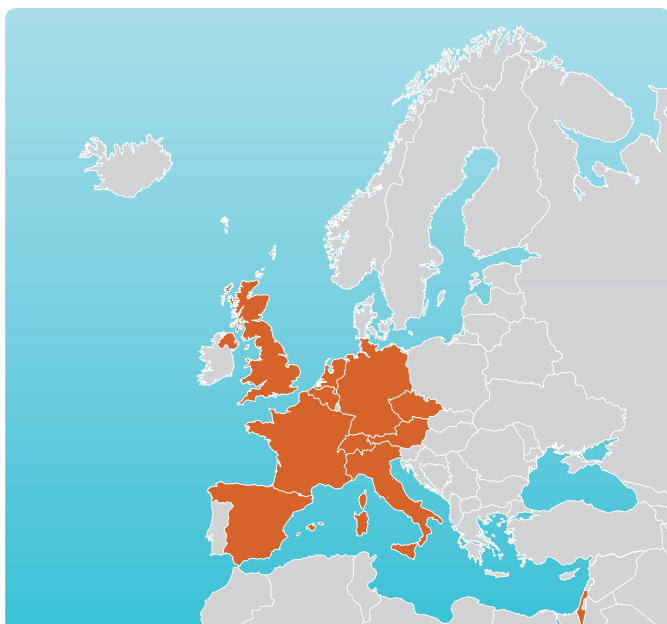
ES	BIONURE FARMA SL <b>Mrs. Mar Massó</b>
ES	ANAXOMICS BIOTECH, S.L. <b>Mr. Jordi Naval</b>
EL	PROTATOUANS - ETAIREIA EREYNAS VIOTECHNOLOGIAS MONOPROSOPI ETAIREIA PERIORISMENIS EYTHINIS <b>Dr. Leonidas Alexopoulos</b>
ES	CONSORCI INSTITUT D'INVESTIGACIONS BIOMEDIQUES AUGUST PI I SUNYER <b>Dr. Pablo Villoslada</b>
CH	UNIVERSITAET ZUERICH <b>Prof. Roland Martin</b>
SE	KAROLINSKA INSTITUTET <b>Prof. Jesper Tegnér</b>
DE	CHARITE - UNIVERSITAETSMEDIZIN BERLIN <b>Prof. Friedemann Paul</b>
DE	EUROPEAN MOLECULAR BIOLOGY LABORATORY <b>Dr. Julio Saez-Rodriguez</b>

### Abstract

The therapeutic challenge of complex diseases requires the use of combination therapies to target the distinct mechanisms and pathways involved. Such complex diseases will benefit from the design of computational models adopting a systems perspective to integrate the knowledge generated by 'omics technologies and clinical data. Multiple Sclerosis is a prototypic debilitating complex disease in which an autoimmune attack is launched against the brain. Current therapies for MS are far from effective and target only part of the immune response. Hence, the need to develop combination therapies with good safety profiles that better control this condition, the main aim of CombMS. By understanding how current MS therapies work in biological networks and taking advantage of novel compounds, more effective combination therapies will be designed for MS. Indeed, the tools developed will be applicable to other immune and complex diseases to improve their therapeutic options in the future. The data for the modelling process will be generated from biological and clinical samples, and the predictions about combination therapies from the computational models tested using in vitro and animal models of MS. Given the limitations of animal models in translational research, we shall focus on studying the phosphoproteome in samples from individuals with MS (PBMC) using xMAP technology. The phosphoproteome has been identified as a system likely to be affected in MS and the novel therapeutic compounds that will be tested are known to act through signalling pathways involving receptor tyrosine kinases. The mechanistic modelling will be extended to the different levels of the response to therapy by analysing biological networks integrating gene and protein networks, with drugs, their effects and side-effects. As well as developing new combination therapies for MS, CombMS will provide proof of concept of the useful short term results that a systems biology drug discovery approach can provide.

## European Network for Cell Imaging and Tracking Expertise

<b>Project acronym:</b>	ENCITE
<b>Coordinator:</b>	EIBIR GEMEINNUETZIGE GMBH ZUR FOERDERUNG DER ERFORSCHUNG DER BIOMEDIZINISCHEN BILDGEBUNG, Austria
<b>Contact person:</b>	Prof. Gabriel Krestin
<b>Project number:</b>	201842
<b>Duration:</b>	48 months
<b>Start date:</b>	01/06/2008
<b>End date:</b>	31/05/2012
<b>EC Contribution:</b>	11,997,945.00 €
<b>Total costs:</b>	15,430,164.00 €
<b>Website:</b>	<a href="http://www.encite.org">http://www.encite.org</a>



## Other partners

<b>AT</b>	EIBIR GEMEINNUETZIGE GMBH ZUR FOERDERUNG DER ERFORSCHUNG DER BIOMEDIZINISCHEN BILDGEBUNG <b>Prof. Gabriel Krestin</b>
<b>NL</b>	ERASMUS UNIVERSITAIR MEDISCH CENTRUM ROTTERDAM <b>Dr. Monique R. Bernsen</b>
<b>UK</b>	KING'S COLLEGE LONDON <b>Dr. Mike Modo</b>
<b>IL</b>	WEIZMANN INSTITUTE OF SCIENCE <b>Michal Neeman</b>
<b>DE</b>	MAX PLANCK GESELLSCHAFT ZUR FOERDERUNG DER WISSENSCHAFTEN E.V. <b>Prof. Mathias Hoehn</b>
<b>IL</b>	TEL AVIV UNIVERSITY <b>Prof. Gil Navon</b>
<b>IT</b>	UNIVERSITA DEGLI STUDI DI TORINO. <b>Silvio Aime</b>
<b>CZ</b>	Institut klinické a experimentální medicíny <b>Dr. Milan Hájek</b>
<b>DE</b>	UNIVERSITAETSKLINIKUM FREIBURG <b>Prof. Juergen Hennig</b>
<b>BE</b>	UNIVERSITE DE MONS <b>Prof. Robert Muller</b>
<b>FR</b>	UNIVERSITE PARIS DESCARTES <b>Olivier Clement</b>
<b>DE</b>	FRIEDRICH-ALEXANDER UNIVERSITAET ERLANGEN-NUERNBERG <b>Prof. Gerold Schuler</b>
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<b>ES</b>	FUNDACION PARA LA INVESTIGACION MEDICA APLICADA FIMA <b>Dr. Ignacio Melero</b>
<b>FR</b>	INSTITUT CURIE <b>Dr. Sebastian Amigorena</b>

<b>FR</b>	BIOSPACE LAB SA <b>Mr. Pierre-Alix Dancer</b>
<b>DE</b>	MEDRES-MEDICAL RESEARCH GMBH <b>Mr. Stefan Wecker</b>
<b>IT</b>	CAGE CHEMICALS SRL <b>Prof. Giovanni B Giovenzana</b>
<b>ES</b>	UNIVERSIDAD DE NAVARRA <b>Dr. Ignacio Melero</b>
<b>IL</b>	THE HEBREW UNIVERSITY OF JERUSALEM. <b>Prof. Dan Gazit</b>
<b>DE</b>	WESTFAELISCHE WILHELMS-UNIVERSITAET MUENSTER <b>Prof. Cornelius Faber</b>
<b>BE</b>	KATHOLIEKE UNIVERSITEIT LEUVEN <b>Prof. Uwe Himmelreich</b>
<b>UK</b>	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE <b>Prof. Kevin Brindle</b>
<b>ES</b>	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS <b>Dr. Marizela Velez</b>
<b>ES</b>	CONSORCI INSTITUT CATALÀ DE CIÈNCIES CARDIOVASCULARS <b>Prof. Lina Badimon</b>
<b>NL</b>	VERENIGING VOOR CHRISTELIJK HOGER ONDERWIJS WETENSCHAPPELIJK ONDERZOEK EN PATIENTENZORG <b>Dr. A.D. Windhorst</b>
<b>CH</b>	UNIVERSITAETSSPITAL BASEL <b>Prof. Klaus Scheffler</b>

## Objectives

Encite has the mission to develop and test new magnetic resonance imaging (MRI) and optical imaging methods and biomarkers to analyse tissue function, immune responses and improve cell therapy for the benefit of European patients. The project addresses the development of chemical probes and reporter genes to monitor specific cellular states that affect cell fate. This will be complemented by the development and validation of generic and specific imaging tools for five main application fields of cell-based therapy, particularly neurological disease and stroke, cardiovascular disease, musculoskeletal disorders, diabetes and cancer.



### Main Achievements

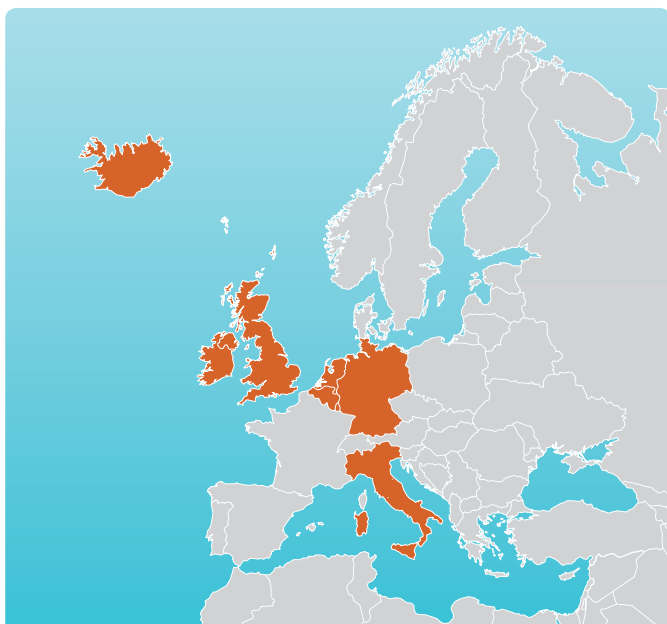
In the first three years Encite focused mainly on the integration of molecular, functional and anatomical imaging data. New algorithms were investigated that can be used to facilitate registration, matching and correction of motion at the anatomical level as well as detection and tracking of functional events at the cellular level. The developed methodology will enable quantified monitoring of disease progression and treatment response that is not possible with current visual interpretation. In the field of molecular biology probes, the objective is to develop two reporter genes for MRI to allow non-invasive monitoring of gene expression *in vivo*, which could be of use in developmental studies, tracking of implanted cells, or monitoring therapeutic transgene expression. Beside other accomplishments in different indications the visualisation and assessment of the functional state of transplanted stem cells in brain lesions has been achieved by <sup>19</sup>F cell labelling techniques.

### Impact

The expected outcome of the research work in respect of cell labelling is a portfolio of tools for non-invasive monitoring of cells within living organisms. Those tools will have an impact in understanding disease processes, and could aid in development and monitoring of cell-based therapeutic interventions. The imaging tools developed by Encite should significantly improve the translation of cell-based therapies towards the clinic.

## Epilepsy Pharmacogenomics: delivering biomarkers for clinical use

<b>Project acronym:</b>	EPIPGX
<b>Coordinator:</b>	UNIVERSITY COLLEGE LONDON, United Kingdom
<b>Contact person:</b>	Prof. Sanjay Sisodiya
<b>Project number:</b>	279062
<b>Duration:</b>	48 months
<b>Start date:</b>	01/11/2011
<b>End date:</b>	31/10/2015
<b>EC Contribution:</b>	5,997,996.00 €
<b>Total costs:</b>	7,838,258.80 €
<b>Website:</b>	<a href="http://www.epipgx.eu/">http://www.epipgx.eu/</a>



### Other partners

<b>UK</b>	UNIVERSITY COLLEGE LONDON <b>Prof. Sanjay Sisodiya</b>
<b>BE</b>	UNIVERSITE LIBRE DE BRUXELLES <b>Dr. Chantal Depondt</b>
<b>IT</b>	ISTITUTO GIANNINA GASLINI <b>Dr. Federico Zara</b>
<b>DE</b>	EBERHARD KARLS UNIVERSITAET TUEBINGEN <b>Prof. Holger Lerche</b>
<b>NL</b>	Stichting Epilepsie Instellingen Nederland <b>Prof. Josemir Sander</b>
<b>DE</b>	UNIVERSITAETSKLINIKUM BONN <b>Prof. Wolfram Kunz</b>
<b>IE</b>	ROYAL COLLEGE OF SURGEONS IN IRELAND <b>Dr. Gianpiero Cavalleri</b>
<b>UK</b>	Belfast Health and Social Care Trust <b>Dr. John Craig</b>
<b>IS</b>	ISLENSK ERFDAGREINING EHF <b>Dr. Hreinn Stefansson</b>
<b>LU</b>	UNIVERSITE DU LUXEMBOURG <b>Prof. Rudi Balling</b>
<b>NL</b>	UNIVERSITAIR MEDISCH CENTRUM UTRECHT <b>Dr. B.P.C. (Bobby) Koeleman</b>
<b>UK</b>	THE UNIVERSITY OF LIVERPOOL <b>Dr. Graeme Sills</b>
<b>UK</b>	IMPERIAL COLLEGE OF SCIENCE, TECHNOLOGY AND MEDICINE <b>Dr. Michael Johnson</b>
<b>UK</b>	UNIVERSITY OF GLASGOW <b>Prof. Matthew Walters</b>
<b>DE</b>	GABO:MI GESELLSCHAFT FUR ABLAUFORGANISATION:MILLIARIUM MBH & CO KG GAB O <b>Ms. Pamela Koch</b>

### Abstract

The purpose of the project is to identify genome-based biomarkers for use in clinical practice to individualise treatment of epilepsy, and stratify patients for clinical trials, aiming to avoid chronicity, prevent relapse and reduce adverse drug reactions (ADRs).

The need for improved treatments in epilepsy is undoubted. Epilepsy affects 50,000,000 people of all ages worldwide. Epilepsy is serious, increasing morbidity across all aspects of life, including a high risk of premature mortality. Over 20 antiepileptic drugs (AEDs) are licenced for its treatment. Seizures can be effectively controlled by AEDs in ~70% of people. Control of seizures leads to risk reduction for most of consequences of epilepsy, improves quality of life, permits social re-integration and leads to direct economic benefits. However, in 30% of patients, currently-available AEDs do not control seizures – recurrent seizures threaten life and impair its quality in these patients, and account for much of the €15.5 billion annual cost of epilepsy in the EU alone; there is currently no way to predict which patients will not respond to any or all AEDs; even in the 70% who do respond, only 47% respond to the first AED – whilst the correct drug is being sought, risks from seizures continue – we need to be able to predict the right drug for an individual from the outset; unrelated to responder status, AEDs can cause serious ADRs – a biomarker exists for only one ADR; there is a clear need for novel means of discovery of new AEDs – existing AEDs are anti-seizure drugs, not disease-modifying drugs.

We will use genome-wide analyses, including next-generation sequencing, in large, well-phenotyped patient cohorts to identify genome-based biomarkers, to improve use of current AEDs and identify new therapy targets.

SMEs, which are central to this project, will be able to take the data forward for development of clinical tests; data will also be invaluable for industry seeking to develop new treatments.

## 2013 Epilepsy Research Forum

<b>Project acronym:</b>	ERFIP2013
<b>Coordinator:</b>	CHANCEL LIMITED, Ireland
<b>Contact person:</b>	Mr. Eoin Sheanon
<b>Project number:</b>	306020
<b>Duration:</b>	18 months
<b>Start date:</b>	01/07/2012
<b>End date:</b>	31/12/2013
<b>EC Contribution:</b>	100,000.00 €
<b>Total costs:</b>	255,501.00 €



**Other partners**

**IE** CHANCEL LIMITED  
**Mr. Eoin Sheanon**

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**US** INTERNATIONAL BUREAU FOR EPILEPSY INC NON PROFIT CORPORATION  
**Ms. Ann Little**

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**US** INTERNATIONAL LEAGUE AGAINST EPILEPSY  
**Prof. Emilio Perucca**

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**Abstract**

Epilepsy is a brain disorder that is characterised by recurrent episodes of cerebral dysfunction, that is, seizures which are caused by excessive electrical discharges of nerve cells. It is one of the most common serious disorders of the brain.

Six million people in Europe have Epilepsy and approximately 300,000 new cases are diagnosed each year.

The Epilepsy Research Forum 2013 will seek to contribute to the debate on the coordination of research at national and European Union level as well and to focus on research achievements made to date and the opportunities for further advances.

By bringing together a wide spectrum of stakeholders it is hoped that national and European epilepsy research networks will be better coordinated and targeted.

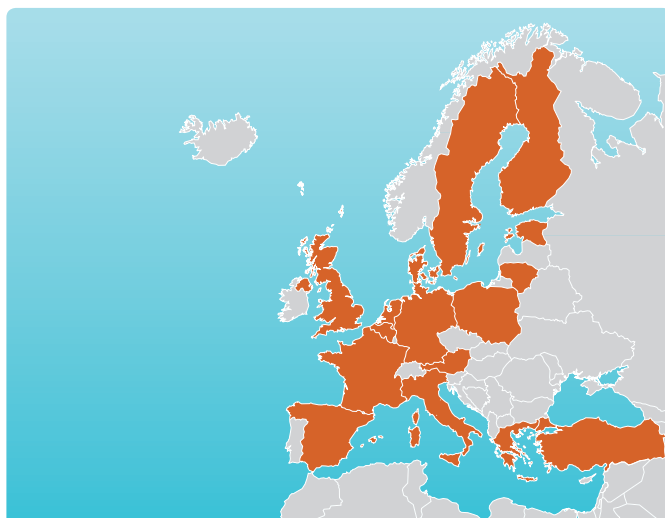
With an expected attendance of 500 stakeholders, the Conference will stimulate debate on, in the first instance, promoting research into improving the diagnosis and treatment of epilepsy. The Conference programme will also aim at improving awareness and reducing stigma, in what will essentially be a multifaceted conference engaging clinicians and patients alike.

The specific objectives are:

- to promote and discuss the opportunities for coordinated, targeted and precise innovative research efforts that would build on the significant gains made by basic and clinical research in the past
- the 2013 Forum, whilst aimed primarily at facilitating research opportunities in epilepsy, will also seek to address the optimal standards of care for people with epilepsy which are still unequally distributed in European Union

## European multicentre, randomised, phase III clinical trial of hypothermia plus best medical treatment versus best medical treatment alone for acute ischaemic stroke

<b>Project acronym:</b>	EUROHYP-1
<b>Coordinator:</b>	UNIVERSITAETSKLINIKUM ERLANGEN, Germany
<b>Contact person:</b>	Prof. Stefan Schwab
<b>Project number:</b>	278709
<b>Duration:</b>	60 months
<b>Start date:</b>	01/02/2012
<b>End date:</b>	31/01/2017
<b>EC Contribution:</b>	10,941,665.40 €
<b>Total costs:</b>	14,965,281.60 €
<b>Website:</b>	<a href="http://www.eurohyp1.eu/">http://www.eurohyp1.eu/</a>



**Other partners**

**DE** UNIVERSITAETSKLINIKUM ERLANGEN  
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**ES** INSTITUT CATALA DE LA SALUT  
**Dr. Carlos Molina**

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<b>BE</b>	ALGEMEEN ZIEKENHUIS SINT-JAN BRUGGE-OOSTENDE AUTONOME VERZORGINGSINSTELLING <b>Dr. Geert Vanhooren</b>
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**EE** TARTU ULIKOOL

**Dr. Janika Kõrv**

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**AT** MEDIZINISCHE UNIVERSITÄT INNSBRUCK

**Dr. Gregor Brössner**

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### Abstract

The consortium led by UKER and EuroHYP, the European Stroke Research Network for Hypothermia, proposes a large, multicentre clinical trial which will assess mild hypothermia as a novel treatment for ischemic stroke.

Stroke is the second cause of death world-wide and the second cause of lost disability-adjusted life years in high-income countries. Stroke incidence rises exponentially with age, so its social and economic burden will grow with the ageing of the European population. Current treatment options for the 80 to 85% of all strokes due to cerebral ischaemia – around 900,000 events in Europe every year, or one every 40 seconds – are extremely limited.

Systematic review of experimental studies suggests that hypothermia is the most promising intervention identified to date. Therapeutic cooling is effective in reducing ischaemic brain injury following cardiac arrest, and hypothermia is therefore considered by experts the most promising treatment for patients with acute ischaemic stroke, next to reperfusion strategies.

The EuroHYP-1 trial is a pan-European, open, randomised, phase III clinical trial which will assess the benefit or harm of therapeutic cooling in 1,500 awake adult patients with acute ischaemic stroke. In addition to efficacy and safety, the economic impact of therapeutic hypothermia will be assessed, along with several sub-studies involving imaging, ultrasound, and biomarker methods.

The investigators involved in the EuroHYP consortium are leading European experts in statistical design and analysis, therapeutic hypothermia, imaging, health economics, ultrasound, biomarkers, and trial execution (implementation and monitoring). Moreover – in addition to these academic experts the consortium also involves European patient and family advocacy groups and small and medium-size enterprises, and the joint endeavours of this extended team will ensure the successful enrolment of patients at eighty hospitals across 25 countries in Europe.

# Understanding chronic pain and improving its treatment

<b>Project acronym:</b>	EUROPAIN
<b>Coordinator:</b>	AstraZeneca AB, Sweden
<b>Contact person:</b>	Ms. Märta Segerdahl
<b>Project number:</b>	115007
<b>Duration:</b>	60 months
<b>Start date:</b>	01/10/2009
<b>End date:</b>	01/10/2014
<b>EC Contribution:</b>	5,999,413.00 €
<b>Total costs:</b>	9,497,520.00 €
<b>Website:</b>	<a href="http://www.imieuropain.org/">http://www.imieuropain.org/</a>



**Other partners**

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<b>UK</b>	UNIVERSITY COLLEGE LONDON <b>Dr. John Wood</b>
<b>UK</b>	University of Oxford <b>Dr. Irene Tracey</b>
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<b>DK</b>	Region Hovedstaden - Capital Region of Denmark <b>Dr. Henrik Kehlet</b>
<b>DK</b>	University of Southern Denmark <b>Dr. Soeren Sindrup</b>
<b>DE</b>	Boehringer Ingelheim International GmbH <b>Dr. Bernd Sommer</b>
<b>UK</b>	Pfizer Limited <b>Dr. Zahid Ali</b>
<b>UK</b>	Eli Lilly and Company Ltd <b>Dr. Jeffrey Kennedy</b>

**ES** Laboratorios del Dr Esteve, S.A.  
**Dr. Jose Miguel Vela Hernandez**

**BE** UCB Pharma SA  
**Dr. Marc DeRyck**

**FR** Sanofi Aventis R&D  
**Dr. Richard Alonso**

**DE** Grünenthal GmbH  
**Dr. Jens Rengelshausen**

### Objectives

Chronic pain affects one in five European citizens. As well as causing significant suffering to the individual, it places a major burden on the economy and society. With current treatments, only one third of patients obtain adequate pain relief. The Europain consortium aims at better understanding of the mechanisms of chronic pain, thereby contributing the development of better and more efficacious treatment options for this large group of patients by addressing the bottlenecks in drug development.

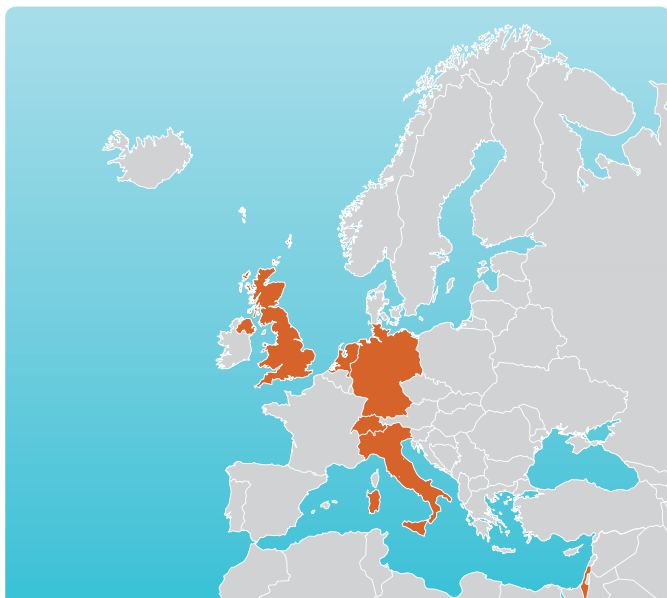
Three renowned academic pain consortia, from Germany, Denmark and the United Kingdom, have joined forces with a Spanish SME and with Europe's most active pharmaceutical companies working on pain. The scientists will search for changes in the nervous system that contribute to pain, in order to fill the gaps in the current knowledge of chronic pain. They will elucidate the mechanisms of pain, using novel experimental models, studies on human volunteers and clinical data from pain patients. They are investigating objective methods to measure pain in patients and examining the mechanisms that are activated by placebo ('fake') pain medication. The scientists are also examining how genetic factors, depression or anxiety, and psycho-social factors increase the risk of developing chronic pain, as well as the influence of gender on pain.

### Main Achievements and impact

Scientists from Europain have identified a molecule that causes the pain of sunburn, raising hopes for the development of new, more effective painkillers. Indeed, the consortium has identified a target which can be utilised to understand more about pain in other inflammatory conditions like arthritis and cystitis. With these results the project will potentially contribute to the development of a new type of analgesic for people who suffer from chronic pain. The project has also developed novel human and experimental pain surrogate models and endpoints (for example new imaging biomarkers for measuring ongoing pain) that will allow faster and more reliable testing of novel pain treatments. The clinical studies of the Europain consortium are progressing well, advancing the understanding of the placebo effect, of the risks factors for chronic pain development and of the differences between chronic pain patients. Thus, by delivering contributions along the whole value chain, from drug discovery to clinical studies, in chronic pain research, the Europain consortium will open up possibilities for better treatments for patients and reduce the burden of illness for large groups of the European population.

## European Consortium on Synaptic Protein Networks in Neurological and Psychiatric Diseases

<b>Project acronym:</b>	EUROSPIN
<b>Coordinator:</b>	MAX PLANCK GESELLSCHAFT ZUR FOERDERUNG DER WISSENSCHAFTEN E.V., Germany
<b>Contact person:</b>	Prof. Nils Brose
<b>Project number:</b>	241498
<b>Duration:</b>	48 months
<b>Start date:</b>	01/01/2010
<b>End date:</b>	31/12/2013
<b>EC Contribution:</b>	11,952,691.00 €
<b>Total costs:</b>	15,806,675.34 €
<b>Website:</b>	<a href="http://eurospin.mpg.de">http://eurospin.mpg.de</a>



## Other partners

<b>DE</b>	MAX PLANCK GESELLSCHAFT ZUR FOERDERUNG DER WISSENSCHAFTEN E.V. <b>Prof. Nils Brose</b>
<b>NL</b>	VERENIGING VOOR CHRISTELIJK HOGER ONDERWIJS WETENSCHAPPELIJK ONDERZOEK EN PATIENTENZORG <b>Prof. Matthijs Verhage</b>
<b>IL</b>	TECHNION - ISRAEL INSTITUTE OF TECHNOLOGY. <b>Prof. Noam Ziv</b>
<b>UK</b>	MEDICAL RESEARCH COUNCIL <b>Dr. Yukiko Goda</b>
<b>UK</b>	GENOME RESEARCH LIMITED <b>Dr. Seth Grant</b>
<b>DE</b>	MAX DELBRUECK CENTRUM FUER MOLEKULARE MEDIZIN <b>Prof. Erich Wanker</b>
<b>IT</b>	UNIVERSITA DEGLI STUDI DI MILANO <b>Prof. Michela Matteoli</b>
<b>UK</b>	UNIVERSITY COLLEGE LONDON <b>Prof. Michael Häusser</b>
<b>IL</b>	UNIVERSITY OF HAIFA <b>Prof. Kobi Rosenblum</b>
<b>UK</b>	THE UNIVERSITY OF EDINBURGH <b>Dr. James Douglas Armstrong</b>
<b>CH</b>	UNIVERSITAET ZUERICH <b>Prof. Hans-Peter Lipp</b>
<b>CH</b>	NOVARTIS FORSCHUNGSSTIFTUNG, ZWEIGNIEDERLASSUNG FRIEDRICH MIESCHER INSTITUTE FOR BIOMEDICAL RESEARCH <b>Prof. Andreas Lüthi</b>
<b>DE</b>	Synaptic Systems <b>Dr. Henrik Martens</b>
<b>NL</b>	SYNAPTOLOGICS BV <b>Prof. Arjen Brussaard</b>
<b>UK</b>	Synome Ltd <b>Mr. Troels Jordansen</b>
<b>JP</b>	RIKEN THE INSTITUTE OF PHYSICAL AND CHEMICAL RESEARCH <b>Dr. Yukiko Goda</b>

### Objectives

Signalling at nerve cell synapses — a key determinant of all aspects of brain function — depends on hundreds of synaptic proteins and their interactions. ‘Synaptopathies’ are pathological alterations of synaptic function which lead to a wide range of neurological and psychiatric disorders. Onset and progression of these synapse disorders are frequently influenced by mutations of synaptic proteins and subsequent synaptic dysfunctions. The Eurospin consortium was initiated with the objective of pursuing a multilevel systems biology approach to determine mechanistic relationships between mutations of synaptic proteins and neurological and psychiatric diseases. Furthermore, the consortium intends to develop new diagnostic tools and therapy strategies. Small molecules, starting from natural component libraries will be screened and optimised. Compounds identified will be tested within the consortium at all levels of analytical complexity. This will allow a systematic assessment of their efficacy and translational potential.

### Main Achievements

A systematic study of synaptic protein networks identified more than 3,800 interactions, using over 1,000 different synapse-related protein constructs. Until now over 25 knockout (KO) mice have been established and characterised including Munc18-1 KOs, SNAP-25 KOs (an attention deficit-hyperactivity disorder (ADHD) model), complexin 1 and 2 KO schizophrenia models, and SHANK2 KOs (an autism model). Five mouse lines have been evaluated so far, yielding interesting insights into the roles of Dlg3, Dlg4, Cyfip1 and TNK1 in addressing hippocampal synaptic transmission. A further 13 additional mouse lines — including additional models for ADHD and schizophrenia — are currently in the evaluation process and will be analysed at the cell biological, physiological and behavioural levels.

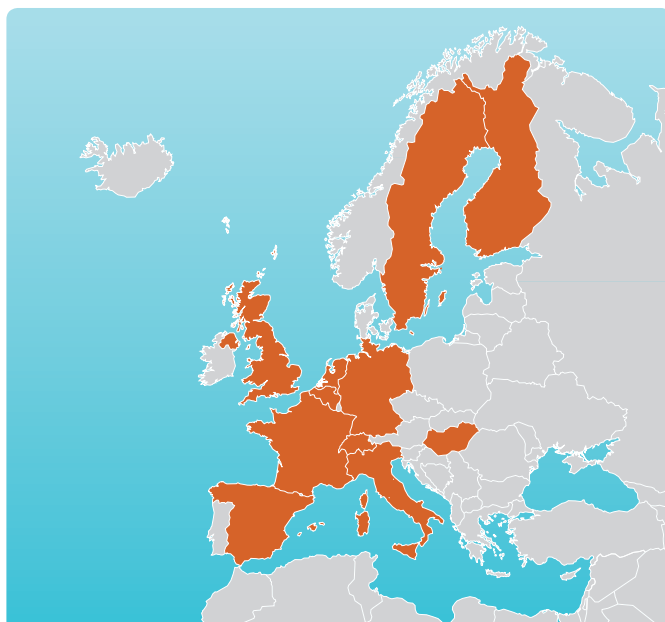
### Impact

Eurospin’s combined results will directly contribute to an increased understanding of brain function, particularly at the synapse level. The large-scale integration of data will allow for developing new pathway models, in order to understand the interplay between disease markers, and will provide knowledge to develop novel treatment strategies. The consortium is creating a series of new mouse models, research reagents and libraries of candidate molecules for therapeutic approaches. Eurospin will provide a major contribution to establish appropriate treatment through the availability of better understanding and development of better drugs. These results can help to reduce the overall healthcare burden posed by neuropsychiatric disorders.



## ESN

<b>Project acronym:</b>	EUSTROKE
<b>Coordinator:</b>	RUPRECHT-KARLS-UNIVERSITAET HEIDELBERG., Germany
<b>Contact person:</b>	Prof. Stephen Meairs
<b>Project number:</b>	202213
<b>Duration:</b>	66 months
<b>Start date:</b>	01/03/2008
<b>End date:</b>	31/08/2013
<b>EC Contribution:</b>	9,953,915.00 €
<b>Total costs:</b>	12,971,601.60 €
<b>Website:</b>	<a href="http://www.europeanstrokenetwork.eu">http://www.europeanstrokenetwork.eu</a>



**Other partners**

**DE** RUPRECHT-KARLS-UNIVERSITAET HEIDELBERG.  
**Prof. Stephen Meairs**

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**SE** KAROLINSKA INSTITUTET  
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**UK** THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY  
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**Prof. Markku Kaste**

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## Objectives

Although stroke creates a massive personal and societal burden, we unfortunately have few effective therapies. Intensive stroke research over the last few decades has suggested numerous targets for therapeutic interventions, and many have been successful in a variety of preclinical stroke models. However, associated clinical stroke trials have been very disappointing and unable to translate these advances into drugs with a clear benefit for patients. The reasons underlying this 'translational roadblock' are currently being intensely discussed by stroke researchers, industry and funding agencies worldwide. They are all struggling to develop strategies to overcome the roadblocks impeding the development of effective therapies.

The European Stroke Network (ESN) was created by the European Commission to bring together 30 centers with leading clinical and scientific stroke researchers in Europe to speed up the discovery and implementation of new treatments for stroke. The network was designed to bring in comprehensive expertise that will make new treatments a reality, even recruiting people who have never worked in stroke research before. Thus, internationally esteemed clinical and experimental stroke researchers and multidisciplinary experts in the fields of blood-brain barrier function, immunology, biochemistry, pharmacology and nanotechnology work hand-in-hand to tackle the translational roadblock. The inclusion of industrial partners and patient organizations from 23 countries forms a unique collaboration.

## Achievements

The strengths of such an intensive multidisciplinary cooperation can be illustrated through a recent breakthrough in unraveling the pathophysiology of stroke. As an example for one of the transformative results of the ESN, cells thought to be important in contributing to stroke damage are white blood cells called neutrophils, the natural scavengers of the blood stream. For over a century pathologists have taught us that in ischemic stroke these cells migrate across the endothelium lining the brain blood vessels to invade the affected tissue and then mediate inflammatory cascades leading to further death of nerve cells. Indeed, many experimental studies have stressed a critical role for neutrophils within the brain tissue in propagating damage after brain ischemia. Despite this knowledge, however, clinical stroke trials aimed at these cells have not succeeded in improving patient outcome. Thus, the objective of a team of neuroimmunologists, biochemists, cell biologists, neuropathologists, and neurologists in the ESN was to further elucidate the role of inflammation in stroke and to clarify why such clinical studies addressing inflammation have failed in the past.

Amazingly, the results of this study were totally unexpected. The team of scientists reported that neutrophils do not invade the brain tissue at all, but rather remain confined to the blood vessels. These revolutionary findings were made possible through recent developments in immunohistochemistry and microscopy. They challenge a major dogma of stroke pathophysiology with far reaching consequences for new therapeutic strategies.

Another example of the benefits of the multidisciplinary research of the ESN, cooperative efforts of experts in nanotechnology, blood-brain barrier, ultrasound physics and gene therapy have led to a new approach for targeted, non-invasive gene therapy to the brain. The group used focused ultrasound along with microbubbles to transiently open the blood brain barrier in a specific region of

the brain to allow entry of viral vectors that normally do not have access to the brain. This achievement, bordering on the idea of the 'magic bullet' as postulated by Paul Ehrlich, could also have important applications for a number of neurologic diseases other than stroke, including Alzheimer's and Parkinson's disease.

Further ESN research has demonstrated that stroke outcome can be improved by enriching the treatment environment. This can be accomplished, for example, if patients play video games or pursue interesting activities in the recovery phase. By employing sophisticated imaging techniques, ESN scientists have been able to show how the enriched environment leads to a remarkable formation of new brain connections. In another attempt to enhance the therapy of acute stroke, ultrasound physicists and stroke researchers have joined to develop new ways to break blood clots in brain vessels with acoustic energy. Further innovative research of the ESN has involved development of an immune therapy for limiting the side effects of tissue plasminogen activator, currently the only treatment for acute stroke. And significant progress has been made in learning how to stimulate the brain's own stem cells to enhance stroke recovery.

### Impact

The global burden of stroke on patients, their relatives, health systems and the economies that support them is tremendous. Worldwide more than 15 million strokes and 6 million stroke deaths occur each year. Moreover, studies show that stroke costs up to \$1,038 billion each year. Alarming, forecasts describe global doubling of these figures by 2030 due to an aging world population.

Through identification of new targets for stroke treatment and intensive dialogues with clinical stroke experts, the efforts of the ESN are leading to accelerated translation of experimental results to therapy of stroke victims. Successful verification of the research results in large clinical trials could have a tremendous impact upon reducing the global burden of stroke. Additionally, the successful multidisciplinary format of the research team serves as a powerful framework for new opportunities in stroke research. One of these is the development of international research consortia, the first of which has been a cooperative effort with the Canadian Stroke Network (CSN). The CSN, formed as a Center of Excellence in 2000, has strived to ensure that researchers collaborate and stay focused on creating valuable new knowledge in stroke. Like the ESN, this network has demonstrated that multidisciplinary expertise can provide high levels of complementarity. Pooling of resources, mutual training opportunities and exchange of research expertise serve to enhance and accelerate the process of translation. The vast experience of the European and Canadian Stroke Networks suggest that further benefits could be obtained from enhancement of their previously developed avenues of collaboration. Thus, a unique transatlantic pilot cooperation, the first of its kind in stroke research, was initiated recently between the ESN and CSN to bundle expertise of some of the best researchers across the Atlantic. Six joint projects utilizing expertise from 22 research centers were chosen for this unique cooperation, the results of which could set the stage for further international efforts to overcome the translational roadblock.

## Affording Recovery In Stroke

<b>Project acronym:</b>	ARISE
<b>Coordinator:</b>	CHARITE - UNIVERSITAETSMEDIZIN BERLIN, Germany
<b>Contact person:</b>	Prof. Ulrich Dirnagl
<b>Project number:</b>	201024
<b>Duration:</b>	66 months
<b>Start date:</b>	01/03/2008
<b>End date:</b>	31/08/2013
<b>EC Contribution:</b>	11,246,776.00 €
<b>Total costs:</b>	16,246,309.14 €
<b>Website:</b>	<a href="http://www.arise-europe.net/index-preview.php">http://www.arise-europe.net/index-preview.php</a>



**Other partners**

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<b>ES</b>	INSTITUT D'INVESTIGACIONS BIOMEDIQUES AUGUST PI-SUNYER <b>Dr. Anna M. Planas</b>
<b>UK</b>	THE UNIVERSITY OF MANCHESTER <b>Prof. Nancy Rothwell</b>
<b>FR</b>	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM) <b>Prof. Denis Vivien</b>
<b>CH</b>	UNIVERSITAET ZUERICH <b>Prof. Martin Schwab</b>
<b>PL</b>	INSTYTUT BIOLOGII DOSWIADCZALNEJ IM MARCELEGO NENCKIGO POLSKIEJ ACA NAUK <b>Prof. Leszek Kaczmarek</b>
<b>BE</b>	UNIVERSITEIT GENT <b>Prof. Stefaan De Smedt</b>
<b>SE</b>	QUICK COOL AB <b>Mr. Peter Sebelius</b>
<b>DE</b>	PAION DEUTSCHLAND GMBH <b>Prof. Karl-Uwe Petersen</b>
<b>DE</b>	SYGNIS BIOSCIENCE GMBH & CO. KG <b>Dr. Armin Schneider</b>
<b>DK</b>	NSGENE A/S <b>Dr. Lars Wahlberg</b>
<b>DE</b>	GABO:MI GESELLSCHAFT FUR ABLAUFORGANISATION:MILLIARIUM MBH & CO KG GAB O <b>Ms. Ameli Schwalber</b>
<b>DE</b>	UNIVERSITAETSKLINIKUM HEIDELBERG <b>Prof. Markus Schwaninger</b>
<b>DE</b>	UNIVERSITAET ZU LUEBECK <b>Prof. Markus Schwaninger</b>

**Objectives**

See project 202213 EUSTROKE

**Main Achievements**

See project 202213 EUSTROKE

**Impact**

See project 202213 EUSTROKE

## Innovative Midlife Intervention for Dementia deterrence

<b>Project acronym:</b>	IN-MINDD
<b>Coordinator:</b>	DUBLIN CITY UNIVERSITY, Ireland
<b>Contact person:</b>	Dr. Kate Irving
<b>Project number:</b>	304979
<b>Duration:</b>	36 months
<b>Start date:</b>	01/11/2012
<b>End date:</b>	31/10/2015
<b>EC Contribution:</b>	2,950,530.00 €
<b>Total costs:</b>	3,825,936.00 €





### Other partners

**IE** DUBLIN CITY UNIVERSITY  
**Dr. Kate Irving**

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**NL** UNIVERSITEIT MAASTRICHT  
**Prof. Frans Verhey**

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**FR** UNIVERSITE DE NICE - SOPHIA ANTIPOLIS  
**Prof. Robert Philippe**

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**UK** UNIVERSITY OF GLASGOW  
**Prof. Catherine O'donnell**

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**IE** PINTAIL LTD  
**Mr. Ciaran Clissmann**

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### Abstract

The European costs of dementia were estimated €177 billion and there is a growing gap between burden and budget. The debilitation associated with dementia makes it the most feared of conditions related to ageing.

Modelling studies have estimated that if obesity rates dropped by 5%, dementia prevalence rates would be lower by 6% and a decline in physical inactivity rate by 5% would reduce dementia by 11%. For even a very small delay in disease onset of 1 year it is estimated that this would decrease dementia prevalence worldwide by 12 million fewer cases by 2050.

The current European road map for the prevention of dementia indicated that prevention needs to start years before symptoms become apparent and needs to be multi-domain focussed. Dementia has complex and interacting aetiologies including, poor diet, cardiovascular problems, low exercise levels, low cognitive stimulation and mood problems. Clearly these risk factors are shared with many other diseases of ageing and interventions for them already exist around Europe in many cases.

This project seeks to design and test a state of the art electronic system for use in primary care to profile individual's dementia risks and respond to those risks with a combination of the best available on-line strategies and locally sourced options. This will be achieved through advanced web search and aggregation technologies. This will enable comprehensive state of the art assessment, multi-use of programmes already designed for such risk modification, flexibility for the end user, and ease of use for primary care staff. The intervention is aimed at people in their sixth decade.

## Development of an integrated SPECT/MRI system for enhanced stratification of brain tumour patients prior to patient-specific radio-chemo therapy and early assessment of treatment efficacy

**Project acronym:** INSERT

**Coordinator:** POLITECNICO DI MILANO, Italy

**Contact person:** Prof. Carlo Fiorini

**Project number:** 305311

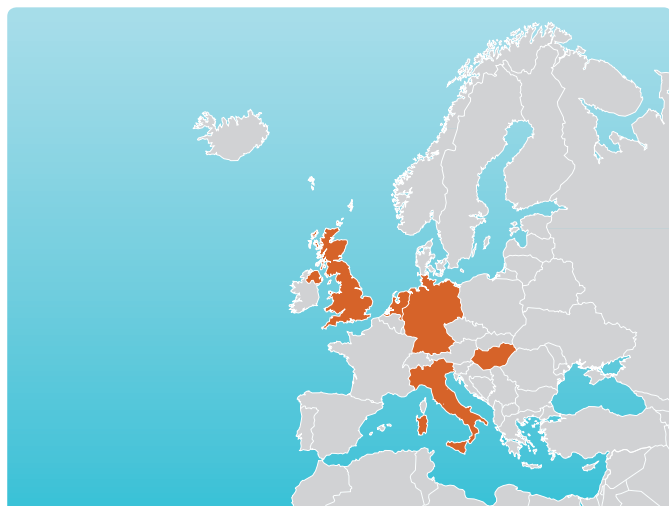
**Duration:** 48 months

**Start date:** 01/03/2013

**End date:** 28/02/2017

**EC Contribution:** 4,600,000.00 €

**Total costs:** 5,983,701.43 €



### Other partners

<b>IT</b>	POLITECNICO DI MILANO <b>Prof. Carlo Fiorini</b>
<b>HU</b>	Mediso Orvosi Berendezes Fejlesztő és Szervíz Kft. <b>Dr. Gabor Németh</b>
<b>IT</b>	FONDAZIONE BRUNO KESSLER <b>Dr. Gabriele Giacomini</b>
<b>NL</b>	NUCLEARFIELDS INTERNATIONAL BV <b>Mr. Pieter Van Mullekom</b>
<b>DE</b>	MRI. TOOLS GMBH <b>Prof. Thoralf Niendorf</b>
<b>UK</b>	UNIVERSITY COLLEGE LONDON <b>Prof. Brian Hutton</b>
<b>IT</b>	UNIVERSITA VITA-SALUTE SAN RAFFAELE <b>Dr. Letterio Salvatore Politi</b>
<b>IT</b>	UNIVERSITA DEGLI STUDI DI MILANO <b>Dr. Luisa Ottobrini</b>
<b>HU</b>	CROMED KUTATO ÉS SZOLGÁLTATÓ KÖZPONTOK KFT <b>Mr. Domokos Mátthé</b>
<b>IT</b>	CF CONSULTING FINANZIAMENTI UNIONE EUROPEA SRL <b>Ms. Carla Finocchiaro</b>

### Abstract

The purpose of the project INSERT is to provide clinically relevant stratification and improved personalized radio-chemo therapy for brain tumour patients using a specifically developed multi-modality imaging tool. The system will also be used for early assessment of treatment efficacy. The initial focus will be on patients with glioma but there is future potential to target a range of tumours in the head and neck region. The proposed system is based on the development of a novel SPECT (Single Photon Emission Computed Tomography) system, suitable for insertion in the bore of an existing MRI (Magnetic Resonance Imaging) system, a cost-effective solution for widespread application. The combined system will allow the simultaneous measurement of anatomical (MRI) and functional (SPECT & MRI) information and the evaluation of their correlation in space and time. The SPECT design will enable acquisition of fast dynamic studies, with possibility for simultaneous measurement using multiple radionuclides (emitting at different energies), a distinct advantage compared to positron emission tomography (PET). This property can allow in-vivo simultaneous visualisation of spectrally resolved molecular and biochemical tumour properties. The stationary SPECT system is based on recently developed innovative gamma-ray detectors made with Silicon Drift Photodetectors, technology that achieves high-spatial resolution and is compatible with MRI thanks to the use of a silicon photodetector instead of photomultiplier tubes. The multi-modality SPECT/MRI imaging here proposed will apply a fully translational, vertical integration of research and development from technology design through preclinical models to clinical validation.

## Blood-brain barrier junctions as targets for paracellular drug delivery to the brain

**Project acronym:** JUSTBRAIN

**Coordinator:** UNIVERSITAET BERN, Switzerland

**Contact person:** Prof. Britta Engelhardt

**Project number:** 241861

**Duration:** 48 months

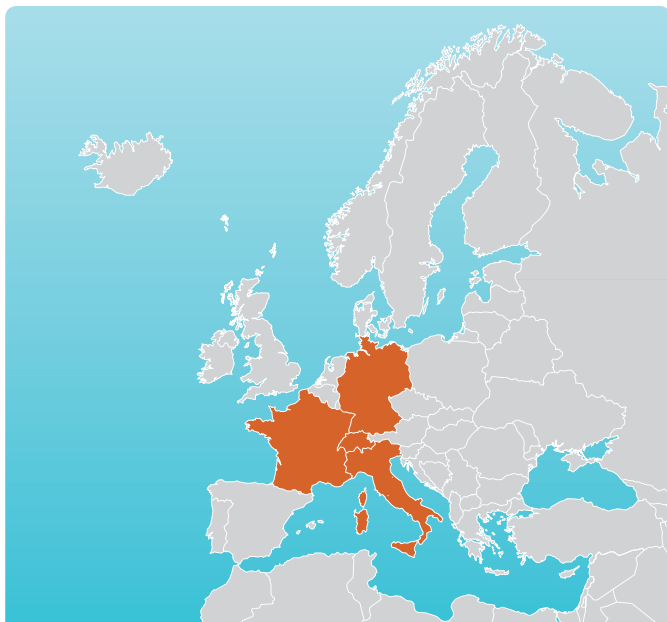
**Start date:** 01/11/2009

**End date:** 31/10/2013

**EC Contribution:** 2,989,845.00 €

**Total costs:** 4,062,475.00 €

**Website:** [www.justbrain-fp7.eu](http://www.justbrain-fp7.eu)



### Other partners

<b>CH</b>	UNIVERSITAET BERN <b>Prof. Britta Engelhardt</b>
<b>IT</b>	IFOM FONDAZIONE ISTITUTO FIRCA DI ONCOLOGIA MOLECOLARE <b>Prof. Elisabetta Dejana</b>
<b>DE</b>	KLINIKUM DER JOHANN WOLFGANG VON GOETHE UNIVERSITAET <b>Dr. Stefan Liebner</b>
<b>FR</b>	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM) <b>Dr. Pierre-Olivier Couraud</b>
<b>DE</b>	FORSCHUNGSVERBUND BERLIN E.V. <b>Dr. Ingolf Blasig</b>
<b>CH</b>	F. HOFFMANN-LA ROCHE AG <b>Dr. Helmut Jacobsen</b>
<b>DE</b>	TP21 GMBH <b>Dr. Petra Zalud</b>

### Objectives

The blood–brain barrier (BBB) separates the systemically circulating blood from the brain extracellular fluid in the central nervous system (CNS). The BBB is localized to the endothelial cells of CNS microvessels. Barrier characteristics of these endothelial cells are established by highly complex tight junctions that do not exist in microvascular endothelial cells of other tissues. In its physiologic neuroprotective role, the BBB hinders the delivery of many potentially important drugs to the CNS. Because most drugs cannot penetrate the BBB, the treatment of e.g. brain tumours is substantially limited. Due to the BBB there is a lack of bioavailability (availability at the cells/structures which should be reached) of diagnostic markers and therapies for many neurological conditions. Because of the impaired delivery, therapeutic compounds do not achieve their intended activity in the targeted region of the brain. The Justbrain working programme has been designed to gain fundamental insights into biological processes and mechanisms involved in the differentiation and maintenance of the BBB, with a specific focus on the complex BBB cell-to-cell junctions restricting paracellular diffusion.

### Main Achievements

During the first 18 months, Justbrain obtained a comprehensive overview of the molecular composition of cell-to-cell junctions of the BBB in healthy and diseased models of cerebral cavernous malformation, multiple sclerosis, Alzheimer's disease and brain tumours. A novel transmembrane tight junction protein has been identified as a potential therapeutic target for transient opening of the BBB. Furthermore, a proof-of-principle has been obtained that targeting adhesive interactions or expression of tight junction proteins allows paracellular drug delivery across the BBB.

### Impact

There is a general lack of bioavailability of compound targeting structures in the CNS. This is a major reason for the limited number of pharmaceutical therapies in neurological conditions. For brain tumours, multiple sclerosis, stroke, Alzheimer's disease and several further disorders which are currently either untreatable or with insufficient therapy, the results of Justbrain will contribute to improve the development of novel therapeutic concepts. Due to the increasing number of neurological disorders in an ageing population there is a high potential for a substantial socioeconomic impact of this project.

## Development of an innovative paediatric formulation of an antiepileptic agent for the treatment of absence epilepsy in children.

<b>Project acronym:</b>	KIEKIDS
<b>Coordinator:</b>	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM), France
<b>Contact person:</b>	Dr. Catherine Chiron
<b>Project number:</b>	282559
<b>Duration:</b>	48 months
<b>Start date:</b>	01/10/2011
<b>End date:</b>	30/09/2015
<b>EC Contribution:</b>	2,157,071.00 €
<b>Total costs:</b>	2,776,525.60 €
<b>Website:</b>	<a href="http://www.kiekids.eu/contact-kiekids.html">http://www.kiekids.eu/contact-kiekids.html</a>



**Other partners**

**FR** INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)

**Dr. Catherine Chiron**

**FR** ADVICENNE PHARMA SAS

**Ms. Catherine Guittet**

**CH** HOSPICES CANTONNAUX CHUV

**Dr. Thierry Buclin**

**BE** CLINBAY SPRL

**Dr. François Vandenhende**

**Abstract**

The KIEKIDS project is dedicated to the development of an innovative paediatric formulation of an antiepileptic agent for a safe alternative treatment of absence epilepsy in children.

Development of such an age-appropriate formulation is regarded by The European Medicines Agency (EMA) to be amongst one of highest priorities for the treatment of absence seizures, using a drug with identified and documented efficacy in the target population.

The KIEKIDS project has gathered a very strong consortium of well trained and qualified partners from industry, academy, and hospital with extensive experience in drug development in clinical, pharmacological, data analysis and regulatory areas. The proposed strategy for KIEKIDS implies to develop a dedicated paediatric formulation with sustained delivery and to conduct a clinical programme, which will be endorsed by approval of the Paediatric Investigation Plan (PIP).

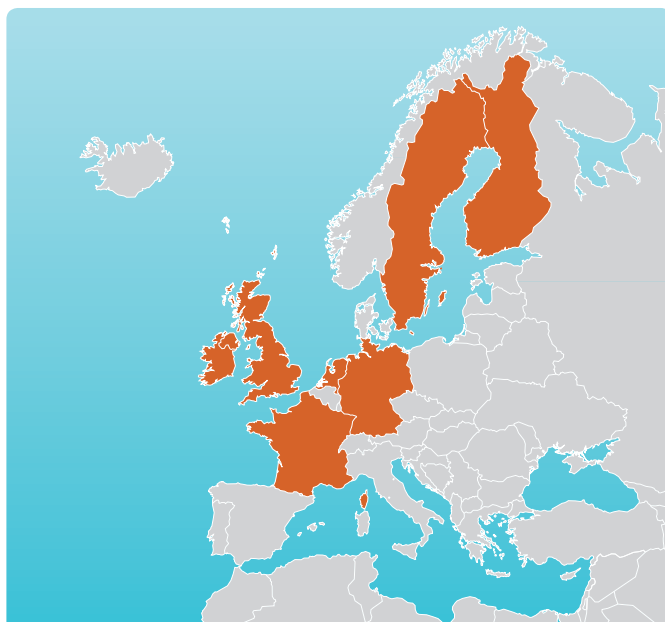
The consortium is coordinated by the Unit 663 of INSERM (INSERM U663), a French public organisation of research devoted to the paediatric epilepsies and brain plasticity. This consortium rallies all the competencies required to manage a paediatric drug development from the designing of an adapted formulation up to market. With its solid track record of clinical success in pharmaceutical and biotech companies, and its huge expertise in absence epilepsy, this consortium will be able to avoid the pitfalls of pharmaceutical drug development and is in a strong position to guarantee the success of the programme.

The ultimate goal of KIEKIDS is to submit in 2015 this novel age-adapted paediatric formulation as a Paediatric-Use Marketing Authorisation, a PUMA, the tool identified by the EMA to bridge the gap for off-patent drugs.



## Treatment of NEonatal seizures with Medication Off-patent: evaluation of efficacy and safety of bumetanide

<b>Project acronym:</b>	NEMO
<b>Coordinator:</b>	UNIVERSITY COLLEGE LONDON, United Kingdom
<b>Contact person:</b>	Dr. Ronit Pressler
<b>Project number:</b>	241479
<b>Duration:</b>	60 months
<b>Start date:</b>	01/10/2009
<b>End date:</b>	30/09/2014
<b>EC Contribution:</b>	5,800,000.00 €
<b>Total costs:</b>	7,590,402.90 €
<b>Website:</b>	<a href="http://www.nemo-europe.com/">http://www.nemo-europe.com/</a>



**Other partners**

**UK** UNIVERSITY COLLEGE LONDON  
**Dr. Ronit Pressler**

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**IE** UNIVERSITY COLLEGE CORK, NATIONAL UNIVERSITY OF IRELAND, CORK  
**Dr. Geraldine Boylan**

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**FR** INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)  
**Dr. Yezekiel Ben-Ari**

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**FI** HELSINGIN JA UUDENMAAN SAIRAANHOITOPUOLIN KUNTAYHTYMÄ  
**Dr. Sampsa Vanhatalo**

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**UK** UNIVERSITY OF LEEDS  
**Prof. Malcom Levene**

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**SE** UPPSALA UNIVERSITET  
**Dr. Lena Hellstrom-Westas**

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**DE** GABO:MI GESELLSCHAFT FÜR ABLAUFORGANISATION: MILLIARIUM MBH & CO KG GAB O  
**Ms. Reka Török**

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**FR** Only For Children Pharmaceuticals  
**Mr. Vincent Grek**

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**NL** UNIVERSITAIR MEDISCH CENTRUM UTRECHT  
**Prof. Linda De Vries**

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**FR** ASSISTANCE PUBLIQUE - HOPITAUX DE PARIS  
**Prof. Gerard Pons**

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**US** DUKE UNIVERSITY  
**Prof. Barry Mangum**

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**SE** KAROLINSKA INSTITUTET  
**Prof. Mats Blennow**

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**FR** CLININFO S.A.  
**Mr. Patrick Chevarier**

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**UK** Great Ormond Street Hospital for Children NHS Trust  
**Dr. Helen Cross**

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**NL** ERASMUS UNIVERSITAIR MEDISCH CENTRUM ROTTERDAM  
**Dr. Paul Govaert**

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## Objectives

The NEMO project will evaluate the efficacy of seizure treatment with bumetanide, a drug acting by an age-dependent mechanism, in neonatal new borns. This will be the first antiepileptic drug specifically developed for this age group which has been evaluated in large, adequately powered, randomised trials with EEG monitoring. EEG has been recognised to be the 'gold standard' method for seizure diagnosis in the new born. Bumetanide cannot be tested as an antiepileptic drug on older children or adults as this mechanism ceases to be effective during the first few months of life. To achieve this main objective the NEMO consortium will develop a clinical development plan and conduct clinical trials to assess the efficacy and safety of bumetanide for the treatment of neonatal seizures in babies with hypoxic ischaemic encephalopathy which are not controlled by phenobarbitone.

## Main Achievements

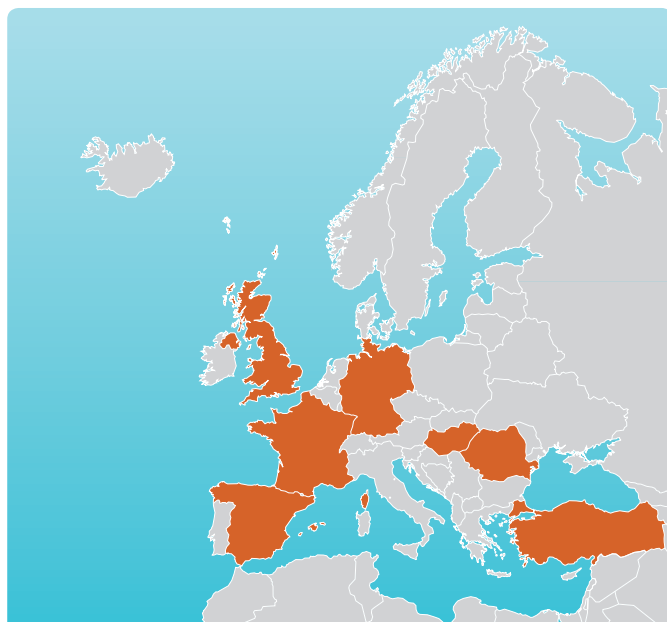
It has to be recognised that conducting multinational drug trials in neonatal seizures that involve emergency treatment is challenging, particular regarding logistic and ethical aspects. Study project plans have been developed and a quality management system with standard operating procedures (SOPs), data monitoring and a clinical trial database utilising electronic case report forms (eCRF) has been set up. A project data monitoring committee, an EEG expert group and a trial steering charter have been established. The protocol, investigator's brochure and further regulatory study documents for the first clinical trial have been developed and approved by regulatory authorities and ethics committees. An IV formulation of bumetanide specifically for new born infants has been developed for this programme as well as an electrode cap for EEG recordings especially in new born babies. An additional survey analysing the use of antiepileptic drugs in neonatal seizures has been initiated and will complement the data of the clinical trial programme.

## Impact

The aim of the NEMO study is to develop an effective antiepileptic drug regimen suitable for treatment of seizures in new born babies using innovative strategies targeted specifically to the needs and peculiarities of babies. The consortium has initiated a clinical development programme to develop and adapt a bumetanide formulation suitable for new borns with seizures. The consortium will apply for a paediatric-use marketing authorisation (PUMA). This will be the first drug in paediatric epilepsy and one of the very few examples of pharmaceutical products developed and authorised especially for paediatric indication. Additionally the results will provide a better understanding about the mechanisms of action for bumetanide in the immature brain.

## Dobutamine for NEOnatal CIRCulatory failure defined by novel biomarkers

<b>Project acronym:</b>	NEO-CIRC
<b>Coordinator:</b>	BRIGHTON AND SUSSEX UNIVERSITY HOSPITALS NHS TRUST, United Kingdom
<b>Contact person:</b>	Prof. Heike Rabe
<b>Project number:</b>	282533
<b>Duration:</b>	60 months
<b>Start date:</b>	01/10/2011
<b>End date:</b>	30/09/2016
<b>EC Contribution:</b>	5,999,167.55 €
<b>Total costs:</b>	7,814,643.80 €
<b>Website:</b>	<a href="http://www.neocirculation.eu/">http://www.neocirculation.eu/</a>



### Other partners

<b>UK</b>	BRIGHTON AND SUSSEX UNIVERSITY HOSPITALS NHS TRUST <b>Prof. Heike Rabe</b>
<b>FR</b>	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM) <b>Prof. Gerard Pons</b>
<b>DE</b>	MEDIZINISCHE HOCHSCHULE HANNOVER <b>Prof. Olaf Dammann</b>
<b>ES</b>	Servicio Vasco de Salud Osakidetza <b>Prof. Adolf Valls-I-Soler</b>
<b>DE</b>	UNIVERSITAET ZU LUEBECK <b>Prof. Wolfgang Göpel</b>
<b>UK</b>	THE UNIVERSITY OF LIVERPOOL <b>Dr. Mark Turner</b>
<b>DE</b>	VESTISCHE CARITAS KLINIKEN GMBH <b>Dr. Claudia Roll</b>
<b>ES</b>	SERVICIO MADRILEÑO DE SALUD <b>Prof. Fernando Cabañas</b>
<b>UK</b>	PROVECA LIMITED <b>Simon Bryson</b>
<b>UK</b>	Kite Innovation (Europe) Limited <b>Dr. Fleur Geoghegan</b>
<b>RO</b>	MED LIFE SA <b>Dr. Adrian Loan Toma</b>
<b>RO</b>	University of Medicine and Pharmacy <b>Prof. Gabriela Corina Zaharie</b>
<b>HU</b>	SEMMELWEIS EGYETEM <b>Prof. Miklós Szabó</b>
<b>HU</b>	PECSI TUDOMANYEGYETEM - UNIVERSITY OF PECS <b>Prof. Tibor Ertl</b>
<b>UK</b>	Onorach Ltd. <b>Prof. Christene Leiper</b>
<b>ES</b>	DYNAKIN SL <b>Dr. Monica Rodriguez</b>
<b>TR</b>	GAZI UNIVERSITESI <b>Prof. Ebru Ergenekon</b>

**US** TUFTS MEDICAL CENTER, INC CORPORATION  
**Dr. Ivan Frantz**

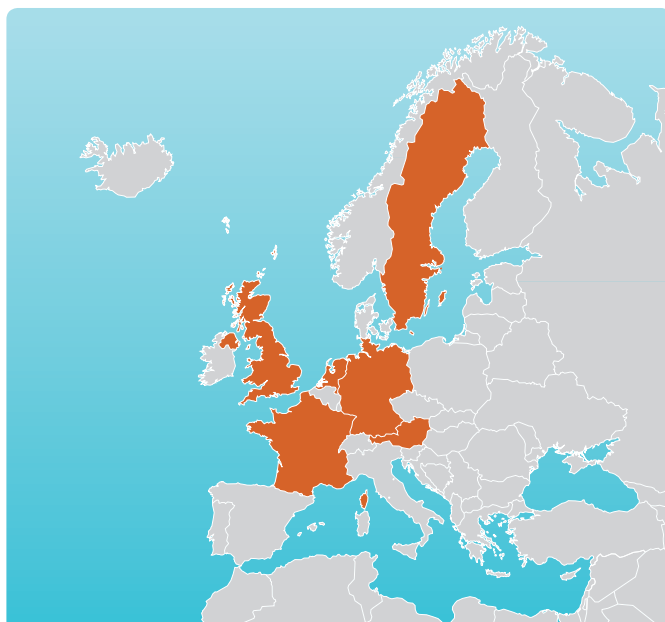
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### Abstract

Dobutamine and adrenaline are widely used as second line therapy for systemic hypotension in infants. Dopamine is currently the most widely used first line drug. In neonates, sustained hypotension may, and impaired organ perfusion will, cause brain injury and poor neurodevelopmental outcomes. All three catecholamines are currently used off-label and have different modes of action which may result in potentially harmful haemodynamic effects. No reliable safety or efficacy data exists for the use of these drugs in neonates or newborns. Furthermore, no uniform criteria exist to define hypotension and there is little evidence to support current intervention strategies, which vary widely. Recently, superior vena cava (SVC) flow has been proposed as a more reliable indicator of circulatory failure than low blood pressure and preliminary results suggest Dobutamine is the optimum therapeutic in such cases. NEO-CIRC proposes 1) a randomised placebo controlled trial to provide safety and efficacy data for Dobutamine as a first line inotrope for all gestational ages 2) to perform pre-clinical; pharmacokinetic; pharmacodynamic; metabolomic and pharmacogenomic studies 3) to develop improved biomarkers of hypotension 4) to develop and adapt a formulation of Dobutamine suitable for newborns with the aim to apply for a Paediatric Use Marketing Authorisation. The NEO-CIRC consortium includes international experts in neonatal medicine, pharmacology, pharmacogenomics, drug formulation and pre-clinical neonatal models and an experienced group of experienced multicentre clinical trials NICU's. Outcomes anticipated include improved biomarkers of organ perfusion; a new consensus definition of neonatal circulatory failure and answers to key clinical practice uncertainties, including variability of response to Dobutamine in common pathophysiological seen in newborn infants impact on longer term developmental outcomes so important to the patients, families and wider society.

## Neuroscience on Barriers in Development

<b>Project acronym:</b>	NEUROBID
<b>Coordinator:</b>	MEDIZINISCHE HOCHSCHULE HANNOVER, Germany
<b>Contact person:</b>	Prof. Olaf Dammann
<b>Project number:</b>	241778
<b>Duration:</b>	42 months
<b>Start date:</b>	01/01/2010
<b>End date:</b>	30/06/2013
<b>EC Contribution:</b>	2,996,324.00 €
<b>Total costs:</b>	4,195,911.60 €
<b>Website:</b>	<a href="http://www.neurobid.eu">http://www.neurobid.eu</a>



### Other partners

<b>DE</b>	MEDIZINISCHE HOCHSCHULE HANNOVER <b>Prof. Olaf Dammann</b>
<b>FR</b>	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM) <b>Dr. Jean-François Gherzi-Egea</b>
<b>NL</b>	UNIVERSITAIR MEDISCH CENTRUM UTRECHT <b>Dr. Annemieke Kavelaars</b>
<b>UK</b>	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF OXFORD <b>Dr. Helen Stolp</b>
<b>UK</b>	SIMCYP LTD <b>Dr. Trevor Nigel Johnson</b>
<b>AU</b>	UNIVERSITY OF MELBOURNE <b>Prof. Norman Ruthven Saunders</b>
<b>SE</b>	GOETEBORGS UNIVERSITET <b>Prof. Carina Mallard</b>
<b>FR</b>	Nathalie Strazielle <b>Dr. Nathalie Strazielle</b>
<b>AT</b>	Angewandte Biotechnologie GmbH <b>Dr. Hans-Christian Bauer</b>
<b>DE</b>	UNIVERSITAETSKLINIKUM WUERZBURG <b>Prof. Carola Foerster</b>

### Objectives

The blood–brain barrier (BBB) is an interface that separates the brain from the systemic circulatory system and protects the central nervous system from potentially harmful compounds while regulating transport of essential molecules and maintaining a stable environment. In the treatment of neurological disease, the BBB still represents an obstacle for the delivery of drugs to the brain and thus presents a major challenge for the development of therapeutic regimens. The major goal of the Neurobid project is to understand the molecular mechanisms and function of the BBB in healthy and diseased conditions, both in the developing brain and the adult central nervous system. This is a prerequisite to understand the involvement of a normal or disturbed BBB function in normal and abnormal brain development and to develop novel strategies for drug delivery to the brain.

### Main Achievements

Neurobid focuses primarily on non-inherited neurodevelopmental disorders arising from perinatal adverse exposure, such as cerebral palsy, and classic adult neurological disorders, such as multiple sclerosis and stroke. A functional gene list based on gene expression experiment data carried out for



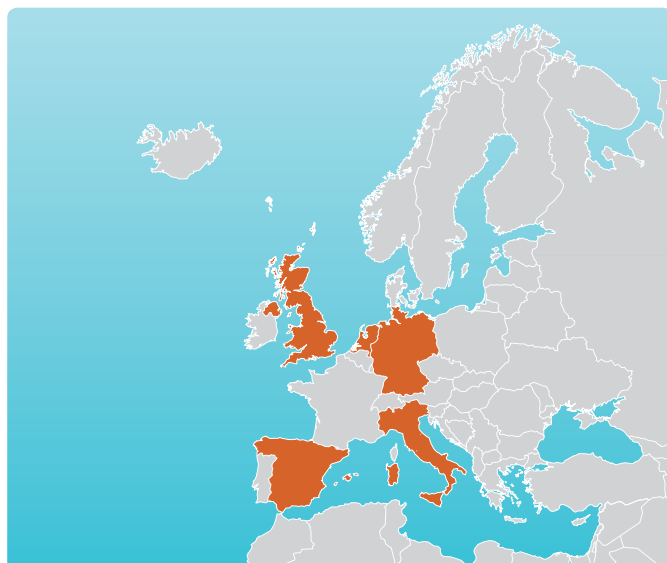
endothelial cells and choroid plexus has been established for studies in the various developmental and pathological animal models. Models of adult neuropathology have been established for middle cerebral artery occlusion and endothelin-1-dependent stroke and inflammatory demyelination. Experiments have been initiated aiming to identify a spectrum of molecular markers for barrier disruption and cellular activation in the endothelium. *In vivo* models for neonatal inflammatory brain damage have been established for hypoxia-ischemia and toll-like receptor 4 (lipopolysaccharide, endotoxin)-induced hypoxia-ischemia damage. The implementation of methods aiming to identify transport molecules in the mouse choroid plexus is on-going.

### Impact

The major immediate impact of the Neurobid project is its contribution towards a better understanding of the normal characteristics and function of the developing BBB. It will also lead to improved knowledge about its dysfunction, protection and restoration in disease. Thus, Neurobid intends to pave the way for new treatment strategies, making a substantial contribution towards the reduction of the neurologic disease burden in children and adults and reducing the economic and social burden of neurological disease.

## Molecular and cellular investigation of neuron-astroglia interactions: Understanding brain function and dysfunction

<b>Project acronym:</b>	NEUROGLIA
<b>Coordinator:</b>	UNIVERSITAETSKLINIKUM BONN, Germany
<b>Contact person:</b>	Prof. Christian Steinhäuser
<b>Project number:</b>	202167
<b>Duration:</b>	54 months
<b>Start date:</b>	01/01/2008
<b>End date:</b>	30/06/2012
<b>EC Contribution:</b>	2,988,450.00 €
<b>Total costs:</b>	3,917,986.40 €
<b>Website:</b>	<a href="http://www.neuroglia.eu/welcome.php">http://www.neuroglia.eu/welcome.php</a>



### Other partners

<b>DE</b>	UNIVERSITAETSKLINIKUM BONN <b>Prof. Christian Steinhäuser</b>
<b>ES</b>	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS <b>Dr. Alfonso Araque</b>
<b>UK</b>	CARDIFF UNIVERSITY <b>Prof. Vincenzo Crunelli</b>
<b>IT</b>	CONSIGLIO NAZIONALE DELLE RICERCHE <b>Dr. Giorgio Carmignoto</b>
<b>DE</b>	MAX PLANCK GESELLSCHAFT ZUR FOERDERUNG DER WISSENSCHAFTEN E.V. <b>Dr. Frank Kirchhoff</b>
<b>NL</b>	ACADEMIC MEDICAL CENTRE BY THE UNIVERSITY OF AMSTERDAM <b>Dr. Eleonora Aronica</b>
<b>DE</b>	EUROPEAN RESEARCH AND PROJECT OFFICE GMBH. <b>Ms. Claudia Giehl</b>
<b>DE</b>	UNIVERSITAET DES SAARLANDES <b>Prof. Frank Kirchhoff</b>

### Objectives

Recent work on neuroglial cell physiology has revealed that these cells, astrocytes in particular, are much more actively involved in brain information processing than previously thought. It is therefore not surprising that knowledge about a critical role of astrocyte dysfunction in neurological disorders is now gradually emerging. Specifically, disturbed astrocyte-neuron interactions have been identified to contribute to, or even cause, epilepsy. New insights into glia-related mechanisms underlying seizure generation and seizure spread will also promote understanding of the pathogenesis of other neurological diseases.

### Main Achievements

An animal model mimicking key features of human sclerotic temporal lobe epilepsy (MTLE-HS) has been developed. This mouse model, based on stereotactic unilateral intracortical kainate injection, will allow identifying molecular signalling cascades in hippocampal astrocytes underlying epileptogenesis, ictogenesis, and development/progression of hippocampal sclerosis. Astrocytes are usually coupled through gap junctions. In neurosurgical specimens from patients with hippocampal sclerosis, astrocytes and gap junction coupling have completely gone. In our mouse model of epilepsy we can show that astrocyte uncoupling starts already a few hours after status epilepticus, indicating its crucial involvement in epileptogenesis. In addition, up-regulation of cyclooxygenase 2 (Cox2) has been observed in MTLE-HS, and the effects of Cox2 inhibition on epileptogenesis and spontaneous seizures have been characterised. The data demonstrate prominent activation of both

innate and adaptive immunity, with involvement of different inflammatory pathways. Furthermore, activation of TLR4 receptor signalling in human malformations of cortical development has been characterized. In patients with lesion-associated epilepsy, we observed spontaneous astrocyte  $\text{Ca}^{2+}$  oscillations, investigated astrocyte responsiveness to synaptically released neurotransmitters, and identified underlying signalling pathways.

### Impact

The comparative analysis of basic neuron–glia interaction mechanisms in living tissue of animal models and of patients that underwent epilepsy surgery will provide novel insights into our understanding of brain function and potentially reveal signalling mechanisms unique to the human brain. *NeuroGlia*'s mission is to identify new, glial targets for the development of more specific and efficient antiepileptic drugs. This will eventually identify new routes for defined therapies of epilepsy patients. In addition, the identification and characterisation of processes leading to epilepsy can be expected to contribute to a better understanding of mechanisms underlying other brain disorders.

# Development of Functionalised Cell Seeded Bioartificial Organ for Transplantation in Nerve Repair

<b>Project acronym:</b>	NEUROGRAFT
<b>Coordinator:</b>	NATIONAL UNIVERSITY OF IRELAND, GALWAY, Ireland
<b>Contact person:</b>	Prof. Abhay Pandit
<b>Project number:</b>	304936
<b>Duration:</b>	36 months
<b>Start date:</b>	01/12/2012
<b>End date:</b>	30/11/2015
<b>EC Contribution:</b>	4,211,374.84 €
<b>Total costs:</b>	5,534,265.60 €



### Other partners

<b>IE</b>	NATIONAL UNIVERSITY OF IRELAND, GALWAY <b>Prof. Abhay Pandit</b>
<b>IE</b>	Vornia Limited <b>Dr. Colm O'Dowd</b>
<b>PT</b>	Stemmatters, Biotecnologia e Medicina Regenerativa SA <b>Prof. Rui Reis</b>
<b>FR</b>	BIOMATECH SAS <b>Dr. Gaelle Clermont</b>
<b>BE</b>	OBELIS SA <b>Mr. Doram Elkayam</b>

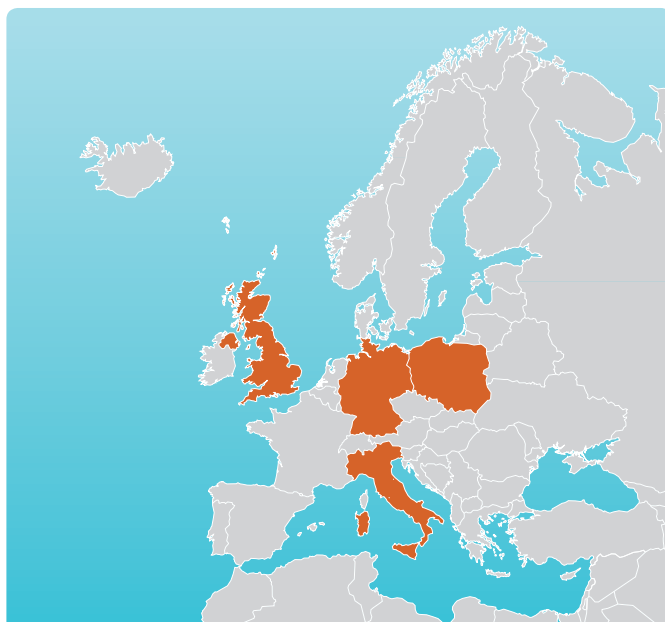
### Abstract

Injuries and degenerative diseases of the central nervous system constitute a bottleneck in medical and surgical practice for which no therapy currently exists. To ensure clinical translation, NeuroGraft is organised in three R&D Work-Packages. NeuroGraft will develop functionalised cell seeded bio-artificial organs, specifically spinal cord conduits for transplantation, incorporating a potent immunomodulatory cytokine (IL37) to target the initial inflammatory response to increase the survival and therapeutic efficacy of transplanted mesenchymal cells and the expression of potent neuro-regulatory molecules for enhanced functional nerve regeneration in the central nervous system.

This exciting concept will be realised through the NeuroGraft consortium, consisting of one academic and four industrial partners (all SMEs), across four countries, with distinct synergistic expertise (including regulatory expertise) to develop cell seeded functionalised bioartificial organs as valuable solutions towards spinal cord repair. Regulatory advice is incorporated at an early stage in the development cycle, to facilitate the translation of the novel bioartificial devices developed, to the market in as short a timeframe as possible. The NeuroGraft consortium will validate the safety, efficacy and biodistribution of the functionalised bioartificial organs developed in a pre-clinical model of spinal cord under GLP conditions. Full Quality Assurance reports will be completed towards CE Mark regulatory approval of the medical device for spinal cord repair. These studies will facilitate progression to clinical trials of the technology (post project) and the development of a marketable product within 6 years of the completion of the NeuroGraft project. Intellectual property will be patented ensuring that SME's have veto rights on commercial route for exploitation. An extensive business plan outlining detailed valorisation plan is presented.

## Non-invasive imaging of brain function and disease by pulsed near infrared light

<b>Project acronym:</b>	NEUROPT
<b>Coordinator:</b>	POLITECNICO DI MILANO, Italy
<b>Contact person:</b>	Prof. Rinaldo Cubeddu
<b>Project number:</b>	201076
<b>Duration:</b>	48 months
<b>Start date:</b>	01/04/2008
<b>End date:</b>	31/03/2012
<b>EC Contribution:</b>	5,738,653.00 €
<b>Total costs:</b>	7,529,109.00 €
<b>Website:</b>	<a href="http://www.neuropt.eu/">http://www.neuropt.eu/</a>



**Other partners**

<b>IT</b>	POLITECNICO DI MILANO <b>Prof. Rinaldo Cubeddu</b>
<b>DE</b>	PHYSIKALISCH-TECHNISCHE BUNDESANSTALT <b>Dr. Heidrun Wabnitz</b>
<b>UK</b>	UNIVERSITY COLLEGE LONDON <b>Dr. Simon Arridge</b>
<b>PL</b>	INSTITUTE OF BIOCYBERNETICS AND BIOMEDICAL ENGINEERING - POLISH ACADEMY OF SCIENCES <b>Dr. Adam Liebert</b>
<b>IT</b>	FONDAZIONE IRCCS ISTITUTO NEUROLOGICO CARLO BESTA <b>Dr. Silvana Franceschetti</b>
<b>DE</b>	CHARITE - UNIVERSITAETSMEDIZIN BERLIN <b>Dr. Hellmuth Obrig</b>
<b>PL</b>	WARSZAWSKI UNIWERSYTET MEDYCZNY <b>Prof. Ewa Mayzner-Zawadzka</b>
<b>DE</b>	INSTITUT FÜR LASERTECHNOLOGIEN IN DER MEDIZIN UND MESSTECHNIK AN DER UNIVERSITÄT ULM <b>Dr. Alwin Kienle</b>
<b>IT</b>	UNIVERSITÀ DEGLI STUDI DI FIRENZE <b>Dr. Fabrizio Martelli</b>
<b>UK</b>	UNIVERSITY OF BATH <b>Dr. William John Wadsworth</b>
<b>UK</b>	FIANUM LTD* <b>Dr. John Clowes</b>
<b>IT</b>	MICRO PHOTON DEVICES S.R.L. <b>Prof. Franco Zappa</b>
<b>DE</b>	BECKER & HICKL GMBH <b>Dr. Wolfgang Becker</b>
<b>IT</b>	CF CONSULTING FINANZIAMENTI UNIONE EUROPEA SRL <b>Ms. Carla Finocchiaro</b>

**Objectives**

The aim of the Neuropt project was the development and clinical validation of advanced non-invasive optical methodologies for *in vivo* diagnosis, monitoring and prognosis of major neurological diseases, based on diffuse optical imaging by pulsed near-infrared light. The major objectives were: the development of novel methodologies for optical imaging of the brain, yielding improved spatial



resolution; the development of clinical prototypes for exploiting the improved features offered by the novel approaches; and to adapt the technology to specific clinical applications in neurological assessment, e.g. by the development of suitable optical fibre probes or helmets. After characterisation of performance of the instruments the diagnostic value of time-domain brain imaging was assessed by clinical pilot studies which have addressed major neurological pathologies, e.g. epilepsy, cortical myoclonus, movement disorders and acute stroke.

### Main Achievements

The newly developed device is portable and comparably inexpensive and can be applied to adults and children. Time-domain techniques offer novel diagnostic options compared to other optical methods. Further main achievements during the development of the new technology were: to establish the ability to provide depth-selective signals suppressing signals by superficial tissues (skin, scalp); the ability to differentiate between the effects of scatter and those of absorption; and the ability to suppress motion artefacts which are often present in patients who show involuntary movements. The consequences are better quantification of physiological parameters (e.g. blood volume and oxygenation), improved spatial resolution and overall robustness of the measurements. The diagnostic value of time-domain diffuse optical imaging have been assessed by clinical pilot studies addressing specific neurological disorders, in comparison with established neurophysiological and neuroimaging techniques.

### Impact

Optical methods have the unique potential to detect transient changes in brain blood volume and oxygenation associated with paroxysmal electrical activity, including within deep brain regions that could be missed by electroencephalography (EEG). For patients with serious neurological conditions such as stroke or brain injury resulting from severe trauma, optical techniques offer a means to diagnose the extent of functional impairment, monitor progress of the condition and improve prognosis for recovery. Monitoring can be performed continuously and at the bedside, and without interfering with routine critical care. Optical imaging is also being developed as a means of imaging the brain of new born infants, particularly those at risk of hypoxic-ischaemic encephalopathy, which is a major cause of permanent disability in very preterm infants. Sufferers of epileptic seizure and dystonia are other groups of patients on whom this project can have a substantial benefit. The ability to assess brain function non-invasively will also aid the development of therapeutic procedures (such as new drugs or new forms of surgical intervention) by enabling the monitoring of changes over a long period of time.

## Genomic Regulatory Systems of Human X-linked neurological diseases

**Project acronym:** NEUROXSYS

**Coordinator:** UNIVERSITETET I BERGEN, Norway

**Contact person:** Dr. Thomas Becker

**Project number:** 223262

**Duration:** 42 months

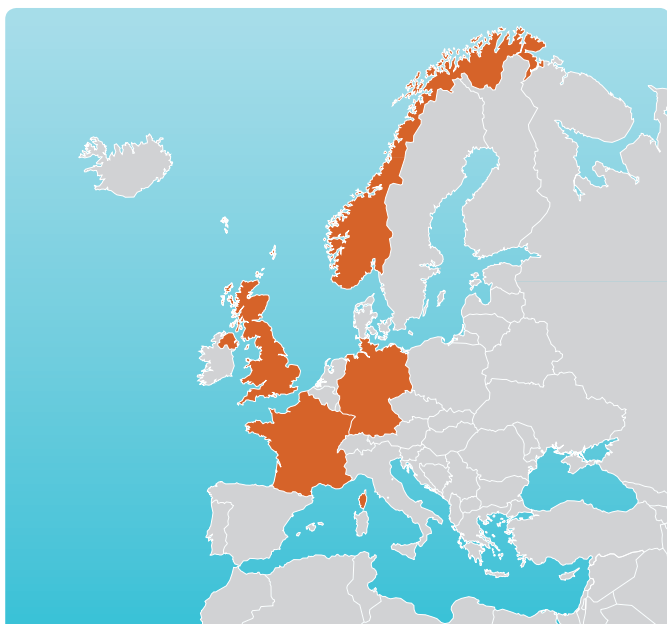
**Start date:** 01/06/2009

**End date:** 30/11/2012

**EC Contribution:** 2,997,197.00 €

**Total costs:** 3,970,394.00 €

**Website:** <http://neuroxsys.net/>



### Other partners

**NO** UNIVERSITETET I BERGEN  
**Dr. Thomas Becker**

**UK** MEDICAL RESEARCH COUNCIL  
**Prof. Veronica Van Heyningen**

**UK** UNIVERSITY COLLEGE LONDON  
**Prof. Stephen Wilson**

**DE** HELMHOLTZ ZENTRUM MUENCHEN DEUTSCHES  
FORSCHUNGSZENTRUM FUER GESUNDHEIT UND UMWELT GMBH  
**Dr. Laure Bally-Cuif**

**FR** ECOLE NORMALE SUPERIEURE  
**Dr. Hugues Roest Crollius**

**DE** Karlsruher Institut fuer Technologie  
**Prof. Uwe Strähle**

**AU** THE UNIVERSITY OF SYDNEY  
**Prof. Tom Becker**

**FR** CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE  
**Dr. Laure Bally-Cuif**

**UK** THE UNIVERSITY OF EDINBURGH  
**Prof. Veronica Van Heyningen**

### Objectives

The human X chromosome comprises about 5% of the total number of genes. A disproportionately high number of mendelian diseases have been mapped to the X chromosome because the reproductive fitness of carrier females is generally not affected. More than 90 genes have been identified to be related to X-linked intellectual disability. Nevertheless, sequencing of the exons of 718 genes on the X chromosome explains disease only in about one third of cases. Although the identification of genetic lesions underlying X-linked neurological diseases has made great progress in recent years, there is limited understanding of the molecular basis of disease development. NeuroXsys aims to focus on the following main objectives: establishing a database of the human X chromosome data sets containing all highly conserved non-coding elements (HCNEs); the generation of a cis-regulatory map of the human X chromosome; visualisation of neuronal patterns of expression driven by critical human HCNEs in zebrafish model; and identification of human elements mutated or deleted/duplicated in X-linked neurological disease of patient DNA.

### Main Achievements

A database with a set of 25,129 HCNEs has been established. This has been achieved by pairwise comparisons between genomic sequences, including human–mouse, human–opossum, human–chicken and human–zebrafish. Regarding cis-regulatory mapping, to date more than half of the

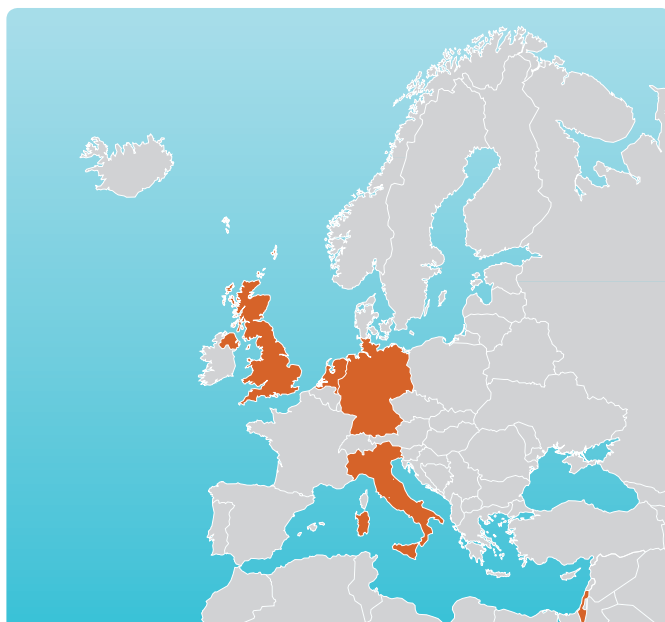
200 projected regulatory sequences have been constructed and injected into zebrafish. Several regulatory motives have been identified. The visualisation of neuronal expression patterns from human HCNEs has been achieved by identifying neuroanatomical structures and cell types expressing HCNE-driven in juvenile and adult zebrafish brains. Furthermore, numerous potential cis-regulatory elements have been identified by a whole chromosome sequencing approach comparing samples from the human fetal brain with three stages of the developing mouse brain.

### Impact

In contrast to the knowledge about mutations in coding gene sequences, the understanding of non-coding sequences variations and their functional relevance is limited. NeuroXsys is in the process of generating a database for the human X chromosome that includes regulatory regions. The expected impact of this work is the facilitation of mapping of any X-linked human genetic disease, but specifically aims at neurological disorders. The project aims to identify human sequences motives that are active in the developing and adult brain and thus will provide data for future disease mapping efforts. The regulatory regions active in the forebrain identified by NeuroXsys are potential targets for disease mutations and as such may be of diagnostic value for families with X-linked neurological diseases. These approaches will also promote the understanding of loci that are already mapped, but where the neurobiological basis for development of disease is currently not understood.

# Neuron-Glia Interactions in Nerve Development and Disease

<b>Project acronym:</b>	NGIDD
<b>Coordinator:</b>	ERASMUS UNIVERSITAIR MEDISCH CENTRUM ROTTERDAM, Netherlands
<b>Contact person:</b>	Dr. Dies Meijer
<b>Project number:</b>	201535
<b>Duration:</b>	48 months
<b>Start date:</b>	01/04/2008
<b>End date:</b>	31/03/2012
<b>EC Contribution:</b>	3,000,000.00 €
<b>Total costs:</b>	3,887,956.00 €
<b>Website:</b>	<a href="http://www.ngidd.eu/">http://www.ngidd.eu/</a>



**Other partners**

**NL** ERASMUS UNIVERSITAIR MEDISCH CENTRUM ROTTERDAM  
**Dr. Dies Meijer**

**IL** WEIZMANN INSTITUTE OF SCIENCE  
**Prof. Elior Peles**

**IT** FONDAZIONE CENTRO SAN RAFFAELE DEL MONTE TABOR  
**Dr. Maria Laura Feltri**

**UK** THE UNIVERSITY OF EDINBURGH  
**Prof. Peter James Brophy**

**DE** MAX PLANCK GESELLSCHAFT ZUR FOERDERUNG DER  
WISSENSCHAFTEN E.V.  
**Prof. Klaus-Armin Nave**

**UK** UNIVERSITY COLLEGE LONDON  
**Prof. Kristjan R Jessen**

**DE** WESTFAELISCHE WILHELMS-UNIVERSITAET MUENSTER  
**Prof. Christian Klämbt**

**IT** AXXAM SPA  
**Dr. Lia Scarabottolo**

**Objectives**

The NGIDD consortium is focusing on neuro–glia interactions in the peripheral nervous system (PNS); glial cells lying in close contact with the axon of neurons (Schwann cells in the PNS and oligodendrocytes in the central nervous system) building up the myelin sheath. Impairments in myelination processes result in diseases, called neuropathies. There is a substantial need to understand the numerous steps involved in the myelinating processes of axons because this knowledge is a prerequisite to develop new therapies for neuropathies. NGIDD aims to perform both basic research into how nerve axons become covered in a myelin sheath in the PNS and clinical research by identifying drugs which can ameliorate neuropathic conditions.

**Main Achievements**

Impairments in the crosstalk between the axon and Schwann cell result in neurological disorders. NGIDD has identified several of the protein signalling molecules and their receptors that are involved in the crosstalk between the axon and Schwann cells during this complicated series of biological processes. Animal models have been developed showing aberrant activity of a number of ‘dedifferentiation’ genes which precedes loss of myelination. A cell-based assay has been established for screening of small molecules which might rescue mutations that occur in a family of diseases called Charcot Marie Tooth (CMT). Furthermore, related mouse models for the CMT diseases are available now for further analysis of candidate compounds. Hereditary Neuropathy with liability to Pressure Palsies (HNPP) is a distinct neuropathy characterised by focal myelin overgrowths which disrupt Schwann cell/axon interactions. In a mouse model of the disease, the signalling pathway that is

disrupted has been identified. An inhibitor of this pathway (rapamycin) can rescue the problem both in culture and in live mouse models and is being considered for therapeutic use.

### Impact

The project has achieved substantial results by establishing mouse and cell-based models. This has generated valuable information on the topics of the axon/glia interactions required for myelination and the cellular organisation of myelinated fibres, and opened the door for possible approaches to therapeutic solutions to several neuropathies resulting from impairment of myelination processes of nerve axons. These types of neuropathies, such as multiple sclerosis, are severe conditions with a major impact on the quality of life of the patients and on the costs of European healthcare systems.

## Rapid Aptamer based diagnostics for bacterial meningitis

<b>Project acronym:</b>	RAPTADIAG
<b>Coordinator:</b>	UNIVERSIDAD POLITECNICA DE MADRID, Spain
<b>Contact person:</b>	Dr. Morten Andreas Geday
<b>Project number:</b>	304814
<b>Duration:</b>	36 months
<b>Start date:</b>	01/07/2012
<b>End date:</b>	30/06/2015
<b>EC Contribution:</b>	2,174,503.25 €
<b>Total costs:</b>	2,975,808.80 €





### Other partners

**ES** UNIVERSIDAD POLITECNICA DE MADRID  
**Dr. Morten Andreas Geday**

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**ES** BIOAPTER SOCIEDAD LIMITADA  
**Dr. José Miguel Escolano**

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**CH** DAVOS DIAGNOSTICS AG  
**Dr. Max Wiki**

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**DK** JONSMAN INNOVATION APS  
**Dr. Jacques Jonsman**

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### Abstract

The overall objective of this proposal is to develop a fast and cost-effective diagnostic tool for bacterial meningitis, i.e. the detection of *Streptococcus pneumoniae* and *Neisseria meningitidis* in cerebrospinal fluid.

Kits, consisting of disposable sensing chips and separate detector units, will be developed. The tool shall be low priced and easy to use so that health workers with limited analytical training can employ the kits in the field.

The tool shall lead to a faster diagnosis, speeding up a targeted antibiotics treatment, thus improving the survival chances of the patient, while facilitating the identification of the infection source and the isolation of individuals, in order to halt the epidemics.

The main project novelty is the use of aptamer receptors. Aptamers have several advantages over conventional antibodies e.g. significantly lower price, fast development and increased stability.

Three sensor technologies will be developed aiming to obtain at least one commercial product by the end of the project. All technologies share the same aptamers and surface activation of the active area. The project success depends on a tight and well-planned collaboration between partners. Partner 2 will develop the *S. pneumoniae* and *N. meningitidis* aptamers, and will provide already available micro-organism specific aptamers for parallel sensor development.

The near-market technology is evanescent fluorescence, already commercialised by Partner 3. Adaptation of the aptamers and of the Eva-Sensor Chip, will be done and validated in collaboration with Partners 2 & 4.

Partner 1 will develop sensors based on microelectromechanical systems and liquid crystals. Either of these–acoustic and volumetric– technologies have, with limited commercial success, been used with molecular targets. Compared hereto targeting micro-organisms generate amplified signals. Partner 4 will design the fluidic chip incorporating the sensor. The resulting system will be commercialised by Partners 3 & 4.

## Spinal locomotor circuits: organization and repair after injury

**Project acronym:** SPINAL CORD REPAIR

**Coordinator:** KAROLINSKA INSTITUTET, Sweden

**Contact person:** Prof. Abdeljabbar El Manira

**Project number:** 201144

**Duration:** 42 months

**Start date:** 01/01/2008

**End date:** 30/06/2011

**EC Contribution:** 2,998,000.00 €

**Total costs:** 3,935,200.00 €

**Website:** <http://www.spinalcordrepair.eu/>



### Other partners

**SE** KAROLINSKA INSTITUTET  
**Prof. Abdeljabbar El Manira**

**UK** THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY  
OF CAMBRIDGE  
**Prof. James Fawcett**

**CH** UNIVERSITAET ZUERICH  
**Prof. Volker Dietz**

**UK** DANDO, WEISS & COLUCCI LIMITED  
**Dr. Jonathan Dando**

**CH** Novartis Forschungsstiftung  
**Prof. Silvia Arber**

### Objectives

This collaborative research project aimed to gain better understanding of the function and plasticity of the spinal networks responsible for motor behaviour and their dysfunction after injury. The project has been designed to bridge the basic mechanism of spinal cord function with a translational approach to protect the injured tissue and promote re-growth and recovery of function in animal models as well as in patients.

### Main Achievements

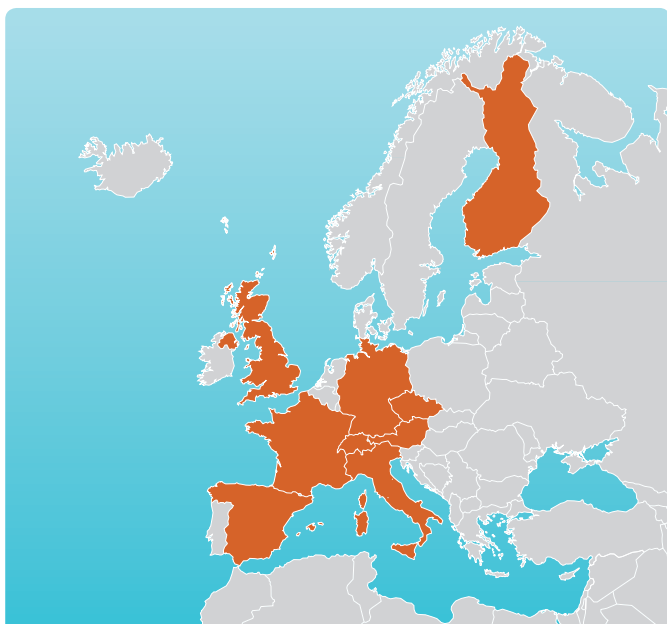
Spinal cord repair has improved significantly the knowledge of the mechanisms by which the neuronal activity in interneuron networks can be modulated. Based on these results, optimisation of network function in spinal cord may become possible. This will be of high importance for an understanding of how spinal cord functions can be modulated pharmacologically after spinal cord injury. Certain patients with partial spinal cord injury can be trained to regain some walking function, and in these cases pharmacological fine-tuning of the spinal cord locomotor network could become an effective therapeutic option. Three trials investigating behavioural recovery following treatment with the investigational drug chondroitinase have been completed within the course of the project. These results have demonstrated that axon regeneration, sprouting and recovery were efficiently improved regardless of whether the chondroitinase treatment started immediately, 7 days or 1 month after injury. Chondroitinase-induced plasticity opens a time window during which rehabilitation is dramatically more effective than normal.

### Impact

In Europe overall, neurological damage accounts for 40% of people who are severely disabled and who require daily help. It is estimated that 90 million people around the world currently suffer from some form of spinal cord injury. In Europe there are estimated to be at least 330,000 people living with spinal cord injury with over 15,000 new cases reported each year. The understanding gained within this project offers molecular foundations to develop strategies for restoring motor function following spinal cord injury. In light of proposed clinical translation plans the achieved results of Spinal cord repair may have a significant impact on patients' health status and socioeconomics in Europe.

## Systems Biology of T-cell Activation in Health and Disease

<b>Project acronym:</b>	SYBILLA
<b>Coordinator:</b>	MAX PLANCK GESELLSCHAFT ZUR FOERDERUNG DER WISSENSCHAFTEN E.V., Germany
<b>Contact person:</b>	Dr. Wolfgang Schamel
<b>Project number:</b>	201106
<b>Duration:</b>	60 months
<b>Start date:</b>	01/04/2008
<b>End date:</b>	31/03/2013
<b>EC Contribution:</b>	11,100,000.00 €
<b>Total costs:</b>	14,636,311.72 €
<b>Website:</b>	<a href="http://www.sybilla-t-cell.de/">http://www.sybilla-t-cell.de/</a>



## Other partners

<b>DE</b>	MAX PLANCK GESELLSCHAFT ZUR FOERDERUNG DER WISSENSCHAFTEN E.V. <b>Dr. Wolfgang Schamel</b>
<b>UK</b>	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF OXFORD <b>Prof. Oreste Acuto</b>
<b>ES</b>	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS <b>Prof. Balbino Alarcon</b>
<b>AT</b>	MEDIZINISCHE UNIVERSITAET INNSBRUCK <b>Dr. Natascha Hermann</b>
<b>CH</b>	EIDGENOESSISCHE TECHNISCHE HOCHSCHULE ZUERICH <b>Dr. Matthias Gstaiger</b>
<b>DE</b>	DEUTSCHES KREBSFORSCHUNGSZENTRUM <b>Prof. Thomas Höfer</b>
<b>FI</b>	TURUN YLIOPISTO <b>Prof. Riitta Lahesmaa</b>
<b>FR</b>	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE (CNRS) <b>Dr. Bernard Malissen</b>
<b>CH</b>	UNIVERSITAETSSPITAL BASEL <b>Prof. Ed Palmer</b>
<b>DE</b>	OTTO VON GUERICKE UNIVERSITAET MAGDEBURG <b>Prof. Burkhard Schraven</b>
<b>IT</b>	FONDAZIONE HUMANITAS PER LA RICERCA <b>Dr. Antonella Viola</b>
<b>FI</b>	MEDICEL OY <b>Dr. Christophe Roos</b>
<b>CZ</b>	EXBIO PRAHA AS <b>Dr. Miloslav Suchánek</b>
<b>FR</b>	ACIES SAS <b>Mr. Frédéric Crutel</b>
<b>US</b>	Immune Disease Institute <b>Prof. Anjana Rao</b>
<b>IT</b>	INTERNATIONAL CENTRE FOR GENETIC ENGINEERING AND BIOTECHNOLOGY <b>Dr. Kanury V.S. Rao</b>

<b>US</b>	Joslin Diabetes Center <b>Prof. Christophe Benoist</b>
<b>FR</b>	NOVAMEN SAS <b>Dr. Marie-Laure Muiras</b>
<b>FI</b>	TTY-SAATIO <b>Dr. Harri Lähdesmäki</b>
<b>ES</b>	CONSORCI INSTITUT D'INVESTIGACIONS BIOMEDIQUES AUGUST PI I SUNYER <b>Dr. Pablo Villoslada</b>

### Objectives

T-cell activation, whether induced by foreign pathogens or by autoantigens, is a complex process relying on multiple layers of tightly controlled intracellular signalling modules that form a comprehensive network. Defects in this network can cause severe disorders such as autoimmune diseases like multiple sclerosis (MS). The knowledge about pathomechanisms in these diseases is limited. To a large extent this is attributed to the lack of systems-level insight, which would provide concepts of how to modulate T-cell activation. Sybilla's main objective is to understand, at the systems level, how T-cells discriminate foreign from autoantigens, by activating quantitatively distinct signalling pathways. Sybilla will generate quantitative proteome data sets of T-cells stimulated under different conditions to identify, characterise and verify the dynamic systems properties of the T-cell receptor (TCR)–CD3 signalling network in T-cells. Based on these results the project will analyse the signatures in pathological contexts and generate predictive models of T-cell activation and integrate them towards a 'virtual T-cell'.

### Main Achievements

Models based on large experimental data sets generated by the project have allowed the mechanistic analysis of multivalent antigen-binding. Sybilla's new concept of antigen-discrimination based on the finding that only multivalent antigen-engagement by the TCR induces conformational changes in CD3. These findings were validated *in vivo*. A large number of results from specific and global mass-spectroscopy-based proteomics projects have been accomplished. Sybilla has identified novel proteins involved in the TCR signalling network. Of particular interest is a large set of new knock-in mice models carrying a purification tag appended to an important signalling protein of the TCR network. Comprehensive qualitative Boolean models of TCR and CD28 signalling have been developed and merged with new models for cytokine signalling networks. The last period of Sybilla will be dedicated to model validation and testing in autoimmune settings as well as bioinformatic description of the large 'omics' data sets.

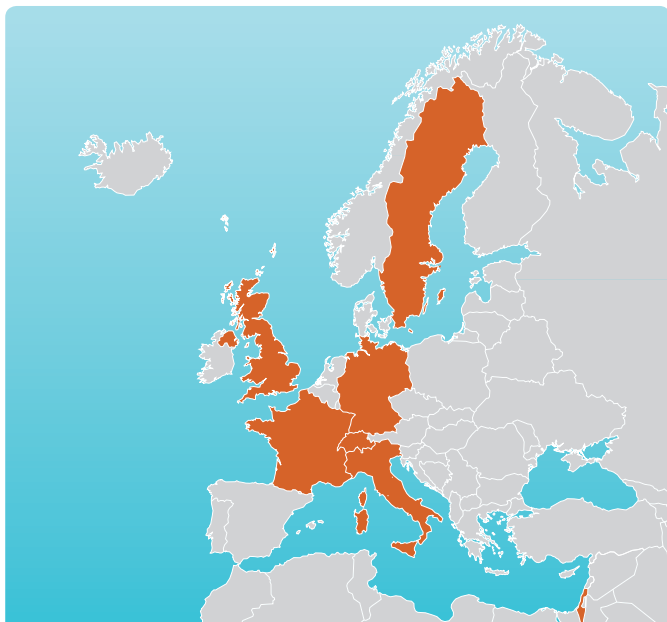
### Impact

Although 5% of the population suffers from immune deficiency disorders, no efficient therapeutic treatment is currently available, e.g. MS is an inflammatory autoimmune disease. Furthermore, underlying neuroinflammatory processes might contribute to pathophysiology of Alzheimer's and/or Parkinson's disease. Sybilla aims to gain knowledge and understanding about the T-cell intracellular

signalling network, and to develop innovative data collection technologies to generate novel quantitative and mathematical simulation tools. These tools will allow modelling T-cell activation ('virtual T-cell') through generation and integration of dense quantitative data sets in both healthy and pathological context and thus directly impact drugs development towards the treatment of autoimmune diseases.

## Targeting Brain Inflammation For Improved Functional Recovery in Acute Neurodegenerative Disorders

<b>Project acronym:</b>	TARGETBRAIN
<b>Coordinator:</b>	LUNDS UNIVERSITET, Sweden
<b>Contact person:</b>	Prof. Zaal Kokaia
<b>Project number:</b>	279017
<b>Duration:</b>	60 months
<b>Start date:</b>	01/12/2011
<b>End date:</b>	30/11/2016
<b>EC Contribution:</b>	11,989,162.00 €
<b>Total costs:</b>	15,716,317.80 €





### Other partners

**SE** LUNDS UNIVERSITET  
**Prof. Zaal Kokaia**

**IL** WEIZMANN INSTITUTE OF SCIENCE  
**Prof. Michal Schwartz**

**IT** UNIVERSITA VITA-SALUTE SAN RAFFAELE  
**Prof. Gianvito Martino**

**DE** MAX PLANCK GESELLSCHAFT ZUR FOERDERUNG DER  
WISSENSCHAFTEN E.V.  
**Prof. Mathias Hoehn**

**CH** UNIVERSITAET ZUERICH  
**Prof. Burkhard Becher**

**UK** ST GEORGE'S HOSPITAL MEDICAL SCHOOL  
**Dr. Claudia Eder**

**SE** GOETEBORGS UNIVERSITET  
**Prof. Milos Pekny**

**IL** PRONEURON BIOTECHNOLOGIES (ISRAEL) LTD  
**Dr. Eti Yoles**

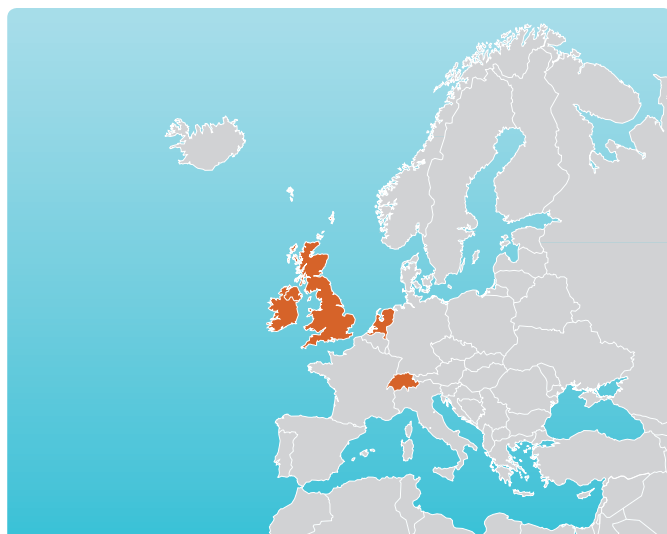
**FR** GEMAC  
**Dr. Marie Claire Goichon**

### Abstract

In acute neurodegenerative disorders, following a sudden insult, neurons are rapidly damaged and usually die but cellular loss can occur hours and days thereafter. These diseases cause massive morbidity and mortality and tremendous economic and societal burden, especially ischemic stroke, which is a leading cause of death and disability with no effective treatment to promote recovery. The brain responds to a stroke, i.e., occlusion of a cerebral artery, with an inflammatory process characterized by rapid activation of resident cells including microglia and astrocytes, production of proinflammatory mediators, and infiltration of various types of immune cells. Recent studies have suggested that the local inflammation is not only detrimental but can also be beneficial for the repair process. Our proposal unites 7 leading academic teams and 2 experienced SMEs and aims to develop a pre-clinical protocol for immunomodulation leading to enhancement of cellular plasticity and improved functional recovery in stroke patients. To achieve this goal we will study the temporal and spatial role of inflammatory cells in stroke-induced brain damage and determine the action of inflammatory cells in the activation and support of regenerative processes, including the formation of new neurons from endogenous and transplanted neural stem cells (NSCs). We will investigate the ability of transplanted NSCs to modulate the inflammatory response and to affect the characteristics of the stroke-induced lesion and subsequent recovery. The overriding social objective of our project is to develop a novel therapeutic strategy which will shorten the recovery phase, minimize the motor impairments, and improve the patients'quality of life after stroke.

## Multi-modal effects of thyroid hormone replacement for untreated older adults with subclinical hypothyroidism; a randomised placebo-controlled trial

<b>Project acronym:</b>	TRUST
<b>Coordinator:</b>	UNIVERSITY OF GLASGOW, United Kingdom
<b>Contact person:</b>	Prof. David J Stott
<b>Project number:</b>	278148
<b>Duration:</b>	60 months
<b>Start date:</b>	01/11/2011
<b>End date:</b>	31/10/2016
<b>EC Contribution:</b>	5,963,787.00 €
<b>Total costs:</b>	7,795,994.13 €
<b>Website:</b>	<a href="http://www.trustthyroidtrial.com/">http://www.trustthyroidtrial.com/</a>



### Other partners

**UK** UNIVERSITY OF GLASGOW  
**Prof. David J Stott**

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**IE** UNIVERSITY COLLEGE CORK, NATIONAL UNIVERSITY OF IRELAND, CORK  
**Dr. Patricia Kearney**

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**NL** ACADEMISCH ZIEKENHUIS LEIDEN - LEIDS UNIVERSITAIR MEDISCH CENTRUM  
**Prof. Jacobijn Gussekloo**

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**CH** UNIVERSITAET BERN  
**Prof. Nicolas Rodondi**

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**NL** LEYDEN ACADEMY ON VITALITY AND AGEING  
**Prof. Rudi Westendorp**

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### Abstract

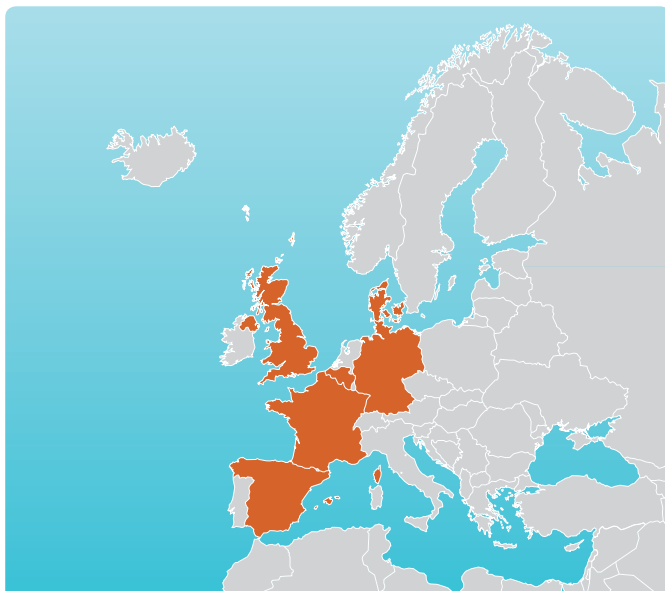
Subclinical hypothyroidism (SCH) is a common condition (8-18%) among European older men and women. Although by definition SCH comprises biochemically mild thyroid hormone deficiency without overt symptoms, it is a likely contributor to multiple problems in older age. Thyroid hormone has multiple pleiotropic effects on numerous physiological systems, including the vascular tree, heart, skeletal muscle and brain. Therefore, thyroxine substitution to overcome thyroid hormone deficiency has the potential to give multi-system benefits to older people with SCH. Small studies have reported reduced atherosclerosis and improved cardiac function with thyroxine replacement, but no large clinical trials have been performed. Therefore the available evidence is limited, leading to major variations in guidelines and clinical practice, with uncertainty regarding the indications for screening and treatment.

We propose a multicentre randomised placebo-controlled trial to assess the impact of thyroxine replacement in 3,000 older adults with persisting SCH (excluding those in whom it is a temporary phenomenon who are less likely to benefit). We will include older men and women with a wide age range and of varying health status. Outcomes include cardiovascular events, health-related quality of life, muscle strength and executive cognitive function over 3-years of follow-up. We have the support of patient advocacy groups and a consortium with the wide range of expertise and experience required to conduct large-scale multicentre clinical trials.

The proposal fits with the call, exploring the multi-system and quality-of-life benefits to older people of a tailored approach to management of SCH. This clinical trial should definitively clarify whether thyroxine treatment for SCH provides benefits that are relevant for patients. This trial will provide strong evidence with the potential to improve clinical practice, reduce healthcare costs and promote healthy ageing of European older adults.

## Efficacy and safety of MRI-based thrombolysis in wake-up stroke: a randomised, double-blind, placebo-controlled trial

<b>Project acronym:</b>	WAKE-UP
<b>Coordinator:</b>	UNIVERSITAETSKLINIKUM HAMBURG-EPPENDORF, Germany
<b>Contact person:</b>	Dr. Götz Thomalla
<b>Project number:</b>	278276
<b>Duration:</b>	60 months
<b>Start date:</b>	01/12/2011
<b>End date:</b>	30/11/2016
<b>EC Contribution:</b>	11,599,987.00 €
<b>Total costs:</b>	16,050,808.02 €
<b>Website:</b>	<a href="http://www.wakeup-stroke.eu/">http://www.wakeup-stroke.eu/</a>



### Other partners

<b>DE</b>	UNIVERSITAETSKLINIKUM HAMBURG-EPPENDORF <b>Dr. Götz Thomalla</b>
<b>DK</b>	AARHUS UNIVERSITETSHOSPITAL, AARHUS SYGEHUS <b>Prof. Leif Ostergaard</b>
<b>DE</b>	CHARITE - UNIVERSITAETSMEDIZIN BERLIN <b>Prof. Matthias Endres</b>
<b>ES</b>	INSTITUT D'INVESTIGACIO BIOMEDICA DE GIRONA DOCTOR JOSEP TRUETA <b>Prof. Salvador Pedraza</b>
<b>BE</b>	KATHOLIEKE UNIVERSITEIT LEUVEN <b>Prof. Vincent Thijs</b>
<b>FR</b>	HOSPICES CIVILS DE LYON <b>Prof. Norbert Nighoghossian</b>
<b>UK</b>	UNIVERSITY OF GLASGOW <b>Prof. Keith Muir</b>
<b>BE</b>	STROKE ALLIANCE FOR EUROPE <b>Dr. Markus Wagner</b>
<b>DE</b>	FRAUNHOFER-GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V <b>Prof. Matthias Günther</b>
<b>DE</b>	Medical Imaging Research Institute <b>Dr. Johannes Gregori</b>
<b>DE</b>	ZYTOSERVICE DEUTSCHLAND GMBH <b>Mrs. Pia Sundermann</b>
<b>DE</b>	GABO:MI GESELLSCHAFT FUR ABLAUFORGANISATION:MILLIARIUM MBH & CO KG GAB O <b>Ms. Kathrin Seibold</b>
<b>UK</b>	ORION CLINICAL SERVICES LTD <b>Dr. Jörg Rennecke</b>

### Abstract

WAKE-UP is an investigator-initiated, multicentre, randomised, double-blind, placebo-controlled trial designed to test efficacy and safety of MRI-based intravenous thrombolysis in patients with wake-up stroke. Every year 1.5 million patients suffer a stroke in the EU. Up to 20% of stroke patients wake up with stroke symptoms. Currently these patients are excluded from thrombolysis which is the only approved specific treatment available for acute stroke. However, recently the potential of MRI to identify patients likely to be within a time-window for thrombolysis ( $\leq 4.5$  hours) was

demonstrated. WAKE-UP will use a specific MRI pattern, i.e. the mismatch between a visible lesion on diffusion weighted imaging (DWI) and a normal fluid attenuated inversion recovery (FLAIR) image, to randomise patients waking up with stroke symptoms to either treatment with Alteplase or placebo. The primary endpoint will be favourable outcome at 3 months. A total of 800 patients will be enrolled in 40 centres in six EU countries. Additional MRI information such as vessel occlusion or perfusion lesion will not be used for enrolment but will be studied as possible modifiers of the response to thrombolysis. Software will be developed to facilitate the processing and analysis of multiparametric stroke MRI and to assist the integration of modern stroke imaging into acute treatment decisions. The trial will be accompanied by activities increasing the awareness for acute stroke in the public and results will be disseminated within the scientific community as well as within the public. WAKE-UP is aimed to promote a paradigm-change in acute stroke treatment, and to provide effective treatment to a large new group of patients. The results of WAKE-UP are expected to change guidelines of acute stroke management and clinical practice. WAKE-UP will help to reduce the burden of stroke related disability in the EU.



# Neurodegenerative diseases

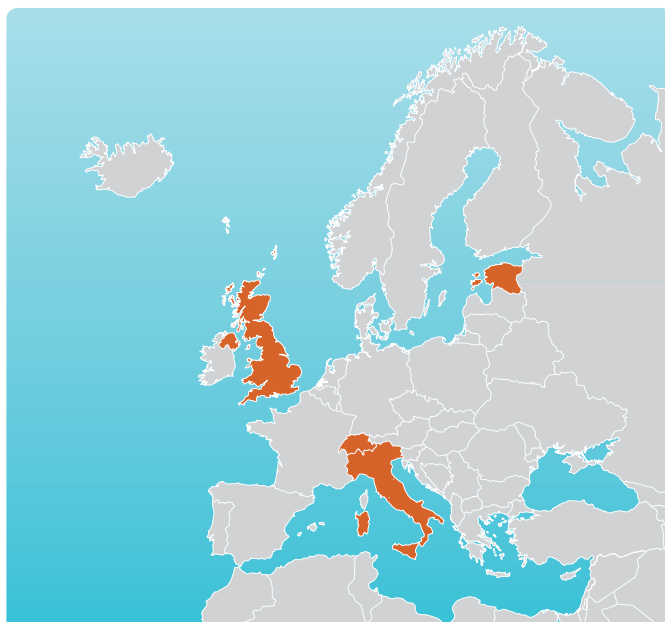
Source: Fotolia.com





## Gene therapy for inherited severe photoreceptor diseases

<b>Project acronym:</b>	AAVEYE
<b>Coordinator:</b>	FONDAZIONE TELETHON, Italy
<b>Contact person:</b>	Prof. Alberto Auricchio
<b>Project number:</b>	223445
<b>Duration:</b>	36 months
<b>Start date:</b>	01/11/2008
<b>End date:</b>	31/10/2011
<b>EC Contribution:</b>	2,971,000.00 €
<b>Total costs:</b>	3,907,401.00 €



**Other partners**

**IT** FONDAZIONE TELETHON  
**Prof. Alberto Auricchio**

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**UK** UNIVERSITY COLLEGE LONDON  
**Prof. Robin Ali**

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**CH** FONDATION ASILE DES AVEUGLES  
**Dr. Yvan Arsenijevic**

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**EE** ASPER BIOTECH AS  
**Dr. Katrin Sak**

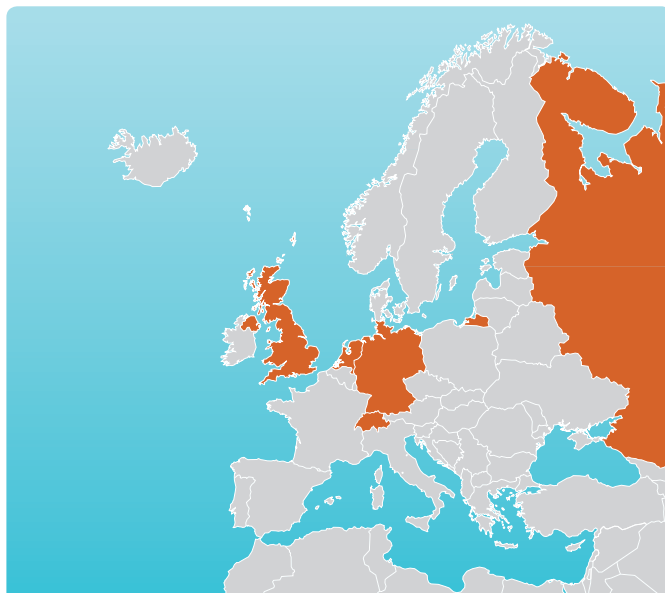
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**Abstract**

The retina represents the visual sensory receptor of the nervous system (CNS). Inherited diseases like Retinitis Pigmentosa (RP) and Leber Congenital Amaurosis (LCA), for which no therapies are available, are due to mutations in genes preferentially expressed in the photoreceptor cells of the retina. Vectors derived from the adeno-associated virus (AAV) efficiently transduce the retina of animal models. AAV-mediated gene transfer reverts retinal pigment epithelium (RPE) defects and the safety of this strategy is being tested for the first time in humans by an AAVEYE partner. However, approaches to correct photoreceptor-specific diseases are inefficient. The objective of the AAVEYE consortium is to develop state-of-the art gene transfer to photoreceptors in the retina, and to provide pre-clinical proof-of-concept of gene therapy for severe blinding retinal photoreceptor diseases to be transferred from bench to bedside. AAVEYE, which uniquely combines leading European scientists in the fields of: AAV-mediated gene transfer to the retina, elucidation of the pathogenesis of photoreceptor degeneration and design of molecular diagnostics for inherited retinal diseases, will accomplish this through: 1) development of AAV-based long-term and safe gene transfer to photoreceptors through combinations of endogenous promoters and AAV serotypes. 2) assessment of the impact of AAV-mediated photoreceptor transduction on rescue of visual function in animal models of severe RP and LCA. 3) evaluation of the efficacy of combination of gene replacement with adjuvant molecules on photoreceptor survival. 4) characterization of patients with severe inherited photoreceptor diseases to move from bench to bedside the gene therapies strategies tested. The results of this proposal will provide the knowledge and validation to further develop novel AAV-mediated therapeutic approaches with a broad potential application in the retina and central nervous system.

# Genomic variations underlying common behavior diseases and cognition trait in human populations

<b>Project acronym:</b>	ADAMS
<b>Coordinator:</b>	MAX PLANCK GESELLSCHAFT ZUR FOERDERUNG DER WISSENSCHAFTEN E.V., Germany
<b>Contact person:</b>	Prof. Hans Lehrach
<b>Project number:</b>	242257
<b>Duration:</b>	36 months
<b>Start date:</b>	01/10/2009
<b>End date:</b>	30/09/2012
<b>EC Contribution:</b>	3,000,000.00 €
<b>Total costs:</b>	5,678,333.60 €
<b>Website:</b>	<a href="http://genseq.molgen.mpg.de/cms/">http://genseq.molgen.mpg.de/cms/</a>



**Other partners**

<b>DE</b>	MAX PLANCK GESELLSCHAFT ZUR FOERDERUNG DER WISSENSCHAFTEN E.V. <b>Prof. Hans Lehrach</b>
<b>CH</b>	UNIVERSITAET BASEL <b>Prof. Andreas Papassotiropoulos</b>
<b>NL</b>	ERASMUS UNIVERSITAIR MEDISCH CENTRUM ROTTERDAM <b>Prof. Cornelia Van Duijn</b>
<b>UK</b>	KING'S COLLEGE LONDON <b>Dr. John Francis Powell</b>
<b>DE</b>	ZENTRALINSTITUT FUER SEELISCHE GESUNDHEIT <b>Prof. Marcella Rietschel</b>
<b>DE</b>	UNIVERSITAETSKLINIKUM BONN <b>Prof. Wolfgang Maier</b>
<b>RU</b>	ENGELHARDT INSTITUTE OF MOLECULAR BIOLOGY OF RUSSIAN ACADEMY <b>Dr. Tatyana Nasedkina</b>
<b>RU</b>	Vavilov Institute of General Genetics - Russian Academy of Sciences <b>Prof. Evgeny Rogaev</b>
<b>RU</b>	NATIONAL RESEARCH CENTER OF MENTAL HEALTH - RUSSIAN ACADEMY OF MEDICAL SCIENCES <b>Dr. Anastasia Grigorenko</b>
<b>RU</b>	INSTITUTE OF BIOCHEMISTRY AND GENETICS, UFA SCIENTIFIC CENTRE OF RAS <b>Prof. Elza Khusnutdinova</b>
<b>RU</b>	NII MEDICINSKOY GENETIKI TOMSKOGO NAUCHNOGO CENTRA SIBIRSKOGO OTDELENIYA ROSSIYSKOY AKADEMII MEDICINSKIH NAUK <b>Dr. Vadim Stepanov</b>
<b>RU</b>	University Medicine OOO <b>Dr. Larisa Samokhodskaya</b>

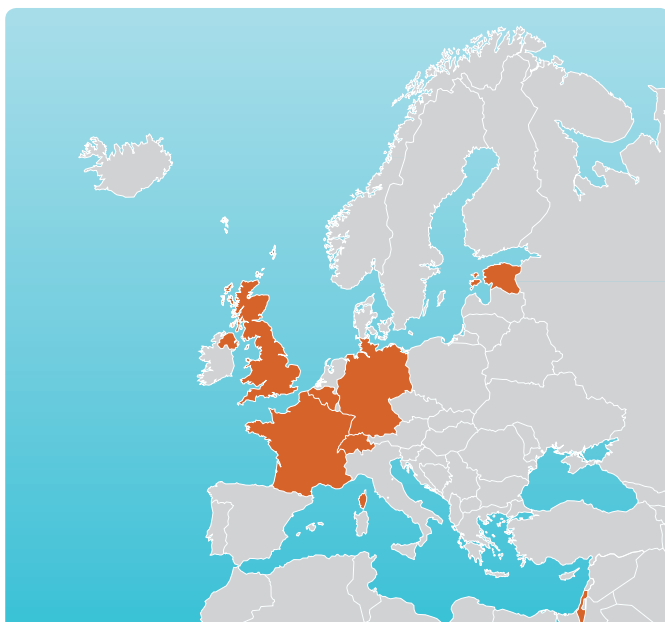
**Abstract**

The subject of the proposal is the search and analysis of genomic variations underlying Alzheimer's disease (AD), alcoholism and schizophrenia – wide-spread diseases in human populations. Schizophrenia and alcoholism are common forms of behavior pathology and disability in adult life. AD is a most common form of dementia in human populations. Though the genomic

variations presumably associated with AD, alcoholism and schizophrenia were described in preliminary studies for European populations, the significance of the putatively associated alleles, genetic background as well as the role of environmental factors is still poorly understood for them. Within the framework of this project we plan to extend the studies of genomic variations underlying these diseases by performing genome-wide association analysis in cohorts of patients and normal individuals from several ethnic populations of Europe and Russia. The genetic factors for cognition endophenotype will also be studied. Candidate regions, both newly found and reported previously for these diseases will be additionally analyzed by sequencing. Such large scale population studies combined with deep analysis of particular genes and genomic regions will allow us to reveal genetic reasons for susceptibility to these diseases. On the basis of this research we propose to contribute to development of a diagnostic instrument for the analysis of genetic risk factors for AD, alcoholism and schizophrenia. Comparison of several ethnic cohorts (different populations from Russia and Central/Western and Southern Europe) will also help to elucidate the influence of genetic background and environmental factors on the etiology of neuropsychiatric diseases. Consortium includes 6 groups from EU/AC and 7 groups from Russia. The participants are leading specialists in their fields and have joint publications on subjects related to this proposal.

## SYSTEMS BIOLOGY OF PATHWAYS INVOLVING BRAIN AGEING

<b>Project acronym:</b>	AGEDBRAINSYSBIO
<b>Coordinator:</b>	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM), France
<b>Contact person:</b>	Prof. Michel Simonneau
<b>Project number:</b>	305299
<b>Duration:</b>	48 months
<b>Start date:</b>	01/01/2013
<b>End date:</b>	31/12/2016
<b>EC Contribution:</b>	6,000,000.00 €
<b>Total costs:</b>	8,222,461.40 €



### Other partners

<b>FR</b>	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM) <b>Prof. Michel Simonneau</b>
<b>BE</b>	VIB <b>Prof. Christine Van Broeckhoven</b>
<b>FR</b>	INSTITUT PASTEUR DE LILLE <b>Dr. Jean Charles Lambert</b>
<b>FR</b>	CENTRE EUROPEEN DE RECHERCHE EN BIOLOGIE ET MEDECINE <b>Dr. Yann Herault</b>
<b>DE</b>	HEINRICH-HEINE-UNIVERSITAET DUESSELDORF <b>Prof. James Adjaye</b>
<b>IL</b>	TEL AVIV UNIVERSITY <b>Prof. Tal Pupko</b>
<b>FR</b>	HYBRIGENICS SA <b>Dr. Jean-Christophe Rain</b>
<b>EE</b>	OU QURETEC <b>Dr. Jaak Vilo</b>
<b>DE</b>	GENE BRIDGES GMBH <b>Dr. Stefanie Hager</b>
<b>BE</b>	reMYND NV <b>Mr. Dick Terwel</b>
<b>DE</b>	EUROPEAN MOLECULAR BIOLOGY LABORATORY <b>Mr. Henning Hermjakob</b>
<b>CH</b>	SWISS INSTITUTE OF BIOINFORMATICS <b>Prof. Ioannis Xenarios</b>
<b>UK</b>	THE BABRAHAM INSTITUTE <b>Dr. Nicolas Le Novère</b>
<b>FR</b>	INSERM - TRANSFERT SA <b>Dr. Christiane Dascher-Nadel</b>

### Abstract

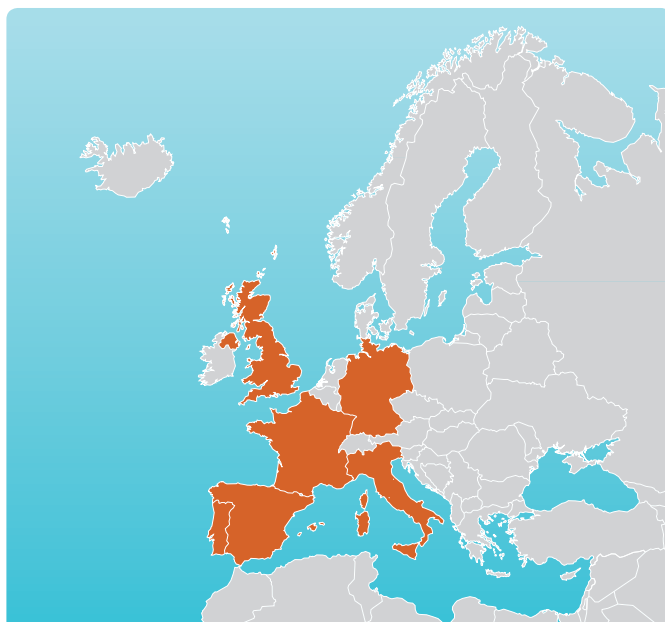
In spite of valuable approaches applied to get a broad understanding of genetic, epidemiologic and molecular and system-level biological principles of human aging, cognitive decline remains as one of the greatest health challenges of the old age, with nearly 50% of adults over 85 afflicted of Alzheimer's disease. Furthermore, drug development has not performed as expected in clinical trials, at least in part because of an insufficient mechanistic understanding at the systemic level in

human. AgedBrainSYSBIO is a timely and straightforward project based on the integration of available transcriptomics, proteomics and metabolomics data, addition of relevant novel sets of data, their modeling and experimental testing in both human, mouse and drosophila. The concept is to identify subsets of pathways with two unique druggable hallmarks: (i) the validation of interactions occurring locally in subregions of neurons and (ii) a human and/or primate accelerated evolutionary signature, using six interacting approaches: (1) the identification of interacting protein networks from recent Late-Onset Alzheimer Disease- Genome Wide Association Studies (LOAD-GWAS) data, (2) the experimental validation of interconnected networks working in subregion of a neuron (such as dendrites and dendritic spines), (3) the inclusion of these experimentally validated networks in larger networks obtained from available databases to extend possible protein interactions, (4) the identification of human and/or primate positive selection either in coding or in regulatory gene sequences, (5) the manipulation of these human and/or primate accelerated evolutionary interacting proteins in human neurons derived from induced Pluripotent Stem Cells (iPSCs) and modeling prediction challenged in drosophila and novel mouse transgenic models. This work will finally allow (6) the validation of new druggable targets and markers as a proof-of-concept towards the prevention and cure of aging cognitive defects.



## Nonhuman Adenovirus Vectors for Gene Transfer to the Brain

<b>Project acronym:</b>	BRAINCAV
<b>Coordinator:</b>	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE (CNRS), France
<b>Contact person:</b>	Dr. Eric J. Kremer
<b>Project number:</b>	222992
<b>Duration:</b>	48 months
<b>Start date:</b>	01/10/2008
<b>End date:</b>	30/09/2012
<b>EC Contribution:</b>	2,984,999.00 €
<b>Total costs:</b>	4,424,394.40 €
<b>Website:</b>	<a href="http://www.braincav.eu/">http://www.braincav.eu/</a>



**Other partners**

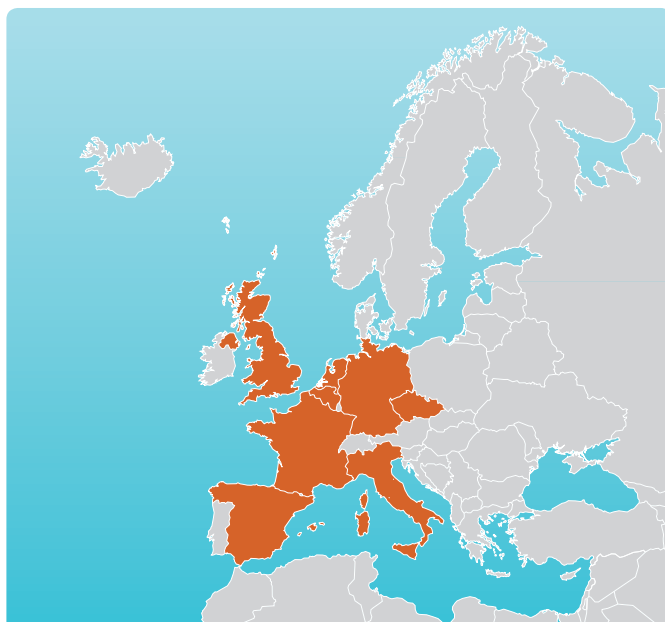
<b>FR</b>	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE (CNRS) <b>Dr. Eric J. Kremer</b>
<b>UK</b>	CANCER RESEARCH UK <b>Dr. Giampietro Schiavo</b>
<b>IT</b>	UNIVERSITA DEGLI STUDI DI ROMA LA SAPIENZA <b>Dr. Isabella Saggio</b>
<b>PT</b>	INSTITUTO DE BIOLOGIA EXPERIMENTAL E TECNOLÓGICA <b>Dr. Paula Marques Alves</b>
<b>ES</b>	UNIVERSITAT AUTONOMA DE BARCELONA <b>Dr. Assumpció Bosch</b>
<b>UK</b>	UNIVERSITY OF GLASGOW <b>Prof. Andrew Baker</b>
<b>ES</b>	FUNDACION PARA LA INVESTIGACION MEDICA APLICADA FIMA <b>Dr. Rosario Luquin</b>
<b>DE</b>	UNIVERSITAET LEIPZIG <b>Dr. Johannes Schwarz</b>
<b>FR</b>	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM) <b>Prof. Jean-Michel Verdier</b>
<b>PT</b>	GENIBET - BIOPHARMACEUTICALS SA <b>Dr. Manuel Carrondo</b>
<b>FR</b>	INSERM - TRANSFERT SA <b>Mr. Christophe Dalban Moreynas</b>

**Abstract**

Formidable challenges remain to prevent and treat successfully neurodegenerative diseases. Traditional pharmacological approaches, as well as those using stem cells, have made progress but their impact remain limited. As suggested by clinical results in Canavan and Parkinson's disease, gene transfer offers substantial potential. However, this strategy of therapeutic intervention also brings unique obstacles - in particular the need to address feasibility, efficacy and safety. BrainCAV's foundation is the potential of canine adenovirus type 2 (CAV-2) vectors, which preferentially transduce neurons and undergo a very efficient long-distance targeting via axonal transport. Moreover, the episomal long-term expression leads to safe, efficient neuron-specific gene delivery. We proposed a structured translational approach that spans basic research through pre-clinical model feasibility, efficacy and safety. To provide a proof-of-principle of the effectiveness of CAV-2, we tackle mucopolysaccharidosis type VII, a global, orphan disease commonly affecting children, and Parkinson's disease, a focal degeneration of dopaminergic neurones commonly affecting aged population. To develop and execute this project, BrainCAV brings together an interdisciplinary combination of partners with unique expertise that will take CAV-2 vectors to the doorstep of clinical trials.

## Large scale interactions in brain networks and their breakdown in brain diseases

<b>Project acronym:</b>	BRAINSYNC
<b>Coordinator:</b>	UNIVERSITA DEGLI STUDI GABRIELE D'ANNUNZIO DI CHIETI-PESCARA, Italy
<b>Contact person:</b>	Prof. Maurizio Corbetta
<b>Project number:</b>	200728
<b>Duration:</b>	36 months
<b>Start date:</b>	01/03/2008
<b>End date:</b>	28/02/2011
<b>EC Contribution:</b>	2,978,242.00 €
<b>Total costs:</b>	3,933,811.00 €



### Other partners

<b>IT</b>	UNIVERSITA DEGLI STUDI GABRIELE D'ANNUNZIO DI CHIETI-PESCARA <b>Prof. Maurizio Corbetta</b>
<b>BE</b>	KATHOLIEKE UNIVERSITEIT LEUVEN <b>Prof. Wim Vanduffel</b>
<b>NL</b>	STICHTING KATHOLIEKE UNIVERSITEIT <b>Dr. Pascal Fries</b>
<b>FR</b>	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM) <b>Dr. Jean-Philippe Lachaux</b>
<b>UK</b>	UNIVERSITY COLLEGE LONDON <b>Prof. Jon Driver</b>
<b>ES</b>	FUNDACIO BARCELONA MEDIA UNIVERSITAT POMPEU FABRA <b>Dr. Gustavo Deco</b>
<b>CZ</b>	USTAV INFORMATIKY AVCR VEREJNA VYZKUMNA INSTITUTE <b>Dr. Milan Palus</b>
<b>DE</b>	UNIVERSITAETSKLINIKUM HAMBURG-EPPENDORF <b>Prof. Andreas Karl Engel</b>

### Objectives

The overall goal of this project was to understand how neuronal assemblies and brain areas exchange information, and how variability of this neuronal communication explains variability in behaviour, both in the healthy and injured brain. Neural communication involves temporal interactions, not only locally within an area but also on a larger-scale between brain areas. BrainSync focused on large-scale interactions that arise at two distinct but potentially related temporal scales: 'slow' fluctuations of the blood oxygen level-dependent (BOLD) signal, as readily measured with functional magnetic resonance imaging (fMRI); and 'fast' neuronal oscillations, as can be measured at various spatial scales, e.g. multi-unit activity (MUA) and local field potentials (LFP) at fine spatial scale; electroencephalography (EEG), magnetoencephalography (MEG) at intermediate scale.

### Main Achievements

The consortium has developed three novel MEG analysis methods to measure spatial and temporal covariance structures (functional connectivity), and used these methods to identify for the first time functional networks of spontaneous activity using the neuromagnetic signal. In a group of epileptic subjects implanted with a series of deep electrodes for clinical reasons, it was possible to show prominent decreases in intracranial EEG when the subjects become engaged in a demanding perceptual task involving searching for a target in a field of visual distracters. These findings indicate that the role of neural activity suppression is an important mechanism of cortical processing. The consortium developed new methods to compare functional networks of spontaneous activity

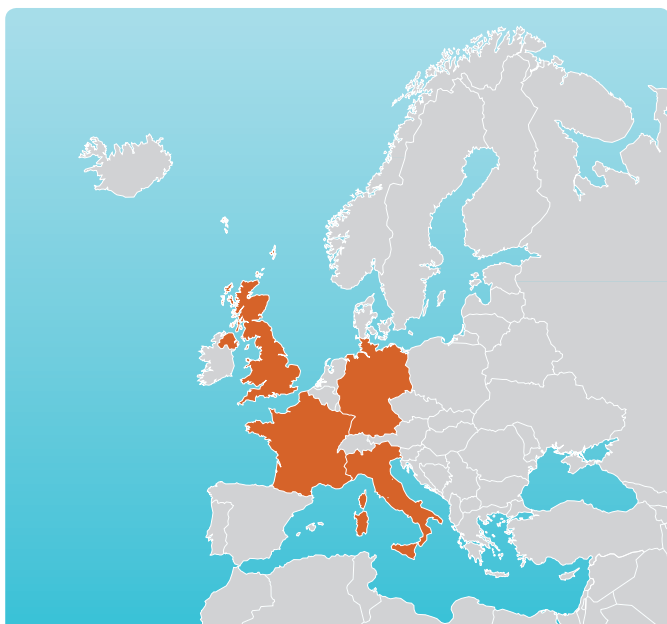
in human and non-human primates. The results of these studies allowed for conducting comparative studies across species without the need to study the anatomy of brain regions. BrainSync has pioneered some of the early studies in humans using transcranial magnetic stimulation and fMRI to record distant effects and established electromagnetic stimulation in monkey, coupled with simultaneous recordings with fMRI.

### Impact

BrainSync has contributed to the knowledge about complexities and dynamic behaviour of neural networks. Probably the most important aspect of this work is the potential to contribute to answer important scientific questions in neurology and psychiatry. Why do some patients with stroke improve and why do some not? What is the mechanism of schizophrenia? Why do kids with attention deficit disorders respond to drugs that make other people anxious and restless? A better understanding of these mechanisms will improve the development of novel treatment options for neuronal disorders, with a high impact on healthcare systems and the well-being of affected patients.

## Cis-regulatory logic of the transcriptional control in neural stem cells

<b>Project acronym:</b>	CISSTEM
<b>Coordinator:</b>	Institut Nationale de la Recherche Agronomique INRA, France
<b>Contact person:</b>	Dr. Jean-Stéphane Joly
<b>Project number:</b>	223210
<b>Duration:</b>	42 months
<b>Start date:</b>	01/10/2008
<b>End date:</b>	31/03/2012
<b>EC Contribution:</b>	2,984,169.00 €
<b>Total costs:</b>	4,002,786.88 €
<b>Website:</b>	<a href="http://www.cisstem.eu/">http://www.cisstem.eu/</a>



### Other partners

<b>FR</b>	Institut Nationale de la Recherche Agronomique INRA <b>Dr. Jean-Stéphane Joly</b>
<b>DE</b>	Karlsruher Institut fuer Technologie <b>Prof. Joachim Wittbrodt</b>
<b>IT</b>	UNIVERSITA DEGLI STUDI DI MILANO-BICOCCA <b>Prof. Angelo Luigi Vescovi</b>
<b>DE</b>	EUROPAISCHES LABORATORIUM FUR MOLEKULARBIOLOGIE <b>Dr. François Spitz</b>
<b>UK</b>	THE UNIVERSITY OF MANCHESTER <b>Dr. Casey Maury Bergman</b>
<b>DE</b>	RUPRECHT-KARLS-UNIVERSITAET HEIDELBERG. <b>Dr. Laurence Ettwiller</b>
<b>UK</b>	MEDICAL RESEARCH COUNCIL <b>Dr. Francois Guillemot</b>
<b>FR</b>	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE (CNRS) <b>Dr. Sylvie Retaux</b>
<b>FR</b>	INRA TRANSFERT S.A. <b>Ms. Lucie Hofmann</b>

### Objectives

The application of novel neural stem cells (NSCs)-based strategies offers new opportunities for the treatment of neurodegenerative diseases. Neurodegenerative conditions are becoming a major health issue in European countries, due to the ageing of the population. It is essential to reach a better understanding of NSCs at the cellular and molecular levels, in order to better diagnose and safely manipulate them. Currently, these cells are much less studied than the embryonic stem (ES). Cisstem's overall aim was to understand the nature of the nodes of this network, i.e. the regulatory principles of the DNA elements that govern NSC-specific gene expression. Major steps were the prediction of relevant elements and the identification of the temporal, spatial and quantitative activities of predicted conserved regulatory motifs associated with pluripotency genes.

### Main Achievements

Cisstem started by identifying several markers in a list of candidate genes expressed in NSCs. The list was generated from fish genes expressed in tectum zones — where slow cycling stem cells were found — and genes that are active during eye development. Mice genes associated with pluripotency in NSC cell culture have been added. A genome browser was developed, providing accurate genome-wide homology assignments, handling duplications at any stage of the evolutionary tree with a sophisticated indel aware model of evolution. To identify cis-regulatory modules active in neural stem cells, a *de novo* motif discovery strategy was applied in order to distinguish regions

in the proximity of genes that were significantly down-regulated during differentiation of cultured NSCs or expressed in an overlapping fashion to NSC regions *in vivo*. Subsequently the consortium confirmed elements acting as transcriptional enhancers and defined their pattern of activities by functional characterisation in transiently transfected NSCs obtained from the adult mouse subventricular zone and NSC-differentiated progeny, including neurons, astrocytes and oligodendrocytes.

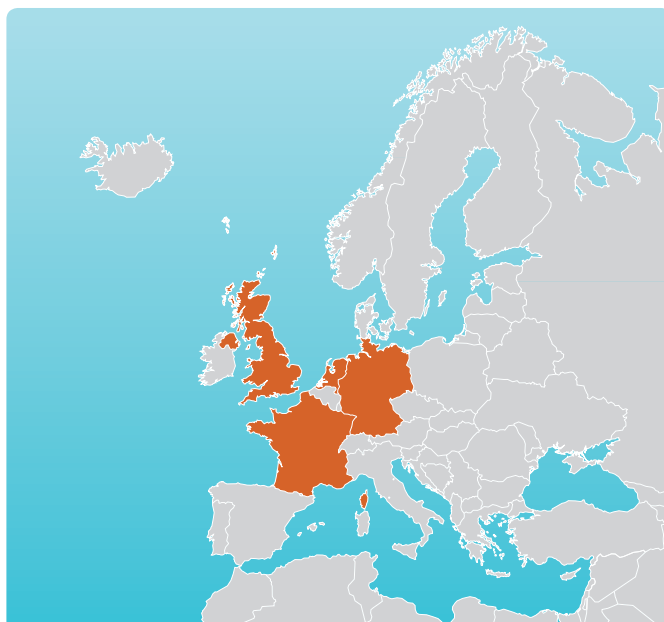
### Impact

Neurodegenerative diseases like Alzheimer's disease are a substantial and growing societal challenge to societies in developed and developing countries. The application of NSC technology in the development of novel therapies for neurodegenerative diseases provides a realistic chance to achieve new treatment options in these indications. It is thus crucial to understand the basic principles of gene regulation in NSC on the transcriptional/epigenetic level delivered by Cisstem. Furthermore, the outcome of Cisstem could lead to progress in several scientific directions and thus contribute to strengthen innovation and competitiveness of research and development in Europe.



## Restoring Mueller glia cell – photoreceptor interactions with Crumbs

<b>Project acronym:</b>	CRUMBS IN SIGHT
<b>Coordinator:</b>	KONINKLIJKE NEDERLANDSE AKADEMIE VAN WETENSCHAPPEN - KNAW, Netherlands
<b>Contact person:</b>	Dr. Jan Wijnholds
<b>Project number:</b>	200234
<b>Duration:</b>	50 months
<b>Start date:</b>	01/04/2008
<b>End date:</b>	31/05/2012
<b>EC Contribution:</b>	2,999,900.00 €
<b>Total costs:</b>	3,960,715.60 €
<b>Website:</b>	<a href="http://crfb.univ-mrs.fr/Crumbs/">http://crfb.univ-mrs.fr/Crumbs/</a>



### Other partners

<b>NL</b>	KONINKLIJKE NEDERLANDSE AKADEMIE VAN WETENSCHAPPEN - KNAW <b>Dr. Jan Wijnholds</b>
<b>NL</b>	AMSTERDAM MOLECULAR THERAPEUTICS (AMT) NV <b>Prof. Sander Van Deventer</b>
<b>DE</b>	EBERHARD-KARLS UNIVERSITAET TUEBINGEN <b>Dr. Mathias Seeliger</b>
<b>DE</b>	MAX PLANCK GESELLSCHAFT ZUR FOERDERUNG DER WISSENSCHAFTEN E.V. <b>Prof. Elisabeth Knust</b>
<b>FR</b>	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE (CNRS) <b>Dr. André Le Bivic</b>
<b>UK</b>	THE UNIVERSITY OF SHEFFIELD <b>Dr. Penny Rashbass</b>
<b>NL</b>	STICHTING KATHOLIEKE UNIVERSITEIT <b>Dr. Frans Cremers</b>

### Objectives

Retinitis pigmentosa (RP) typically begins already early in life with night blindness. The progressive degeneration of rod photoreceptors often results in the loss of central vision and blindness. The Crumbs transmembrane protein acts as a key player in epithelial polarisation and cell–cell adhesion, and prevents degeneration of photoreceptors. The Crumbs homologue 1 (CRB1) gene is mutated in progressive types of RP. It is the overall aim of the ‘Crumbs in sight’ consortium to decipher the function of CRB1 in Müller glia cell–photoreceptor interactions and to develop therapies to restore Müller glia cell–photoreceptor interactions mediated by CRB1 in the visual system. The objectives are to determine the cellular function of CRB and CRB-interacting proteins (CIPs), to study the primary defects leading to loss of Müller glia cell–photoreceptor interaction, the development of Müller glia progenitor cell transplantation and the optimisation of gene therapeutic vectors for specific transduction of Müller glia cells. The activities of ‘Crumbs in sight’ are complementary to a parallel ongoing viral hCRB1 gene therapy development programme.

### Main Achievements

The consortium established a neurobiological model system that allowed gaining insight into neuron–glia interactions in general. Several results providing a better understanding of the function of CRB-interacting proteins have been achieved which underline the prominent role of CRB proteins in maintaining adhesion between Müller glia cells and photoreceptors and in timely exiting the cell cycle in late retinal progenitor cells to prevent outgrowth of retinal tissue. Furthermore it could be shown that PATJ is essential for polarised epithelial migration in human mammary cells. Various CRB knockout mouse models have been generated. Müller glia progenitor cell transplantation and

an AAV-hCRB1 gene therapy vector, in principle suitable for production of clinical grade vectors for transduction of Müller glia cells, have been tested in animal models.

### Impact

Although approximately 1 in 3,000 people are affected by RP and allied disorders, no drugs or therapeutics against these diseases are currently available. The knowledge obtained about the Müller glia cell–photoreceptor interaction, and the generated materials and protocols in Müller glia cell transplantation and AAV-based CRB1 gene therapy will be patented, published and disseminated by the consortium. ‘Crumbs in sight’ will contribute to the development and optimisation of safe and efficient therapeutic strategies for neurosensory eye disorders.

## Identification of genes important for human midbrain dopamine neuron development and Parkinson's disease

<b>Project acronym:</b>	DDPDGENES
<b>Coordinator:</b>	KAROLINSKA INSTITUTET, Sweden
<b>Contact person:</b>	Dr. Linnarsson Sten
<b>Project number:</b>	278871
<b>Duration:</b>	48 months
<b>Start date:</b>	01/01/2012
<b>End date:</b>	31/12/2015
<b>EC Contribution:</b>	2,817,939.80 €
<b>Total costs:</b>	3,700,382.40 €



### Other partners

**SE** KAROLINSKA INSTITUTET  
**Dr. Linnarsson Sten**

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**CH** ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE  
**Dr. Jesper Ryge**

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**UK** THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY  
OF CAMBRIDGE  
**Dr. Roger Barker**

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**ES** FUNDACION INSTITUTO DE INVESTIGACION BIOMEDICA  
Y DESARROLLO TECNOLÓGICO INBIOMED  
**Dr. Rosario Sanchez Pernaute**

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**ES** ORYZON GENOMICS SA  
**Dr. Tamara Maes**

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### Abstract

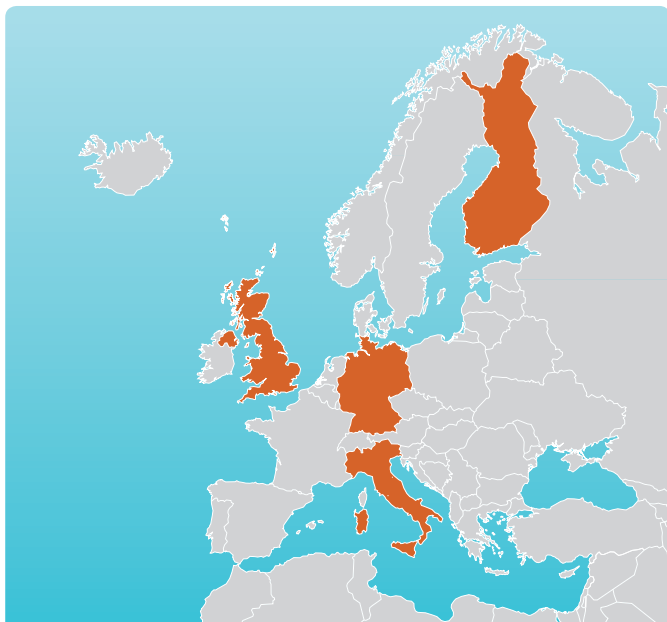
The goal of this project is to determine whether the expression of developmental genes in defined subpopulations of DA neurons contributes to the specification of currently unrecognized midbrain DA neuron subtypes and whether their misexpression may contribute to the loss of DA neurons in the adulthood and to the pathogenesis of PD.

Many developmental genes have been found to be implicated in the maintenance of midbrain DA neurons at postnatal and adult stages, as assessed by the loss of DA neurons in transgenic mice heterozygous for: *Nurr1*, *Pitx3*, *FoxA2*, *en1*. On the other hand, genes involved in the pathogenesis of genetic forms of PD, such as *Lrrk2* and *PINK1*, do not cause cell death. In this project we hypothesize that a dysregulation of the expression of developmental genes may play a previously unrecognized role in PD.

We propose to identify subtypes of midbrain DA neurons at a molecular and functional level in: (i) the developing rodent and human ventral midbrain (VM), (ii) human neural and embryonic stem cell preparations differentiated into midbrain DA neurons, and (iii) DA neurons derived from induced pluripotent stem (iPS) cells generated from control and PD patients.

## A Treatment-Oriented Research Project of NCL Disorders as a Major Cause of Dementia in Childhood

<b>Project acronym:</b>	DEM-CHILD
<b>Coordinator:</b>	UNIVERSITAETSKLINIKUM HAMBURG-EPPENDORF, Germany
<b>Contact person:</b>	Dr. Angela Schulz
<b>Project number:</b>	281234
<b>Duration:</b>	36 months
<b>Start date:</b>	01/10/2011
<b>End date:</b>	30/09/2014
<b>EC Contribution:</b>	2,998,795.00 €
<b>Total costs:</b>	3,933,072.40 €



### Other partners

<b>DE</b>	UNIVERSITAETSKLINIKUM HAMBURG-EPPENDORF <b>Dr. Angela Schulz</b>
<b>FI</b>	SAMFUNDET FOLKHALSAN I SVENSKA FINLAND RF <b>Prof. Anna-Elina Lehesjoki</b>
<b>UK</b>	UNIVERSITY COLLEGE LONDON <b>Dr. Sara Mole</b>
<b>IT</b>	UNIVERSITA DEGLI STUDI DI VERONA <b>Prof. Alessandro Simonati</b>
<b>IN</b>	POST GRADUATE INSTITUTE OF MEDICAL EDUCATION AND RESEARCH <b>Prof. Pratibha Singhi</b>
<b>DE</b>	IMAGENES GMBH <b>Dr. Steffen Hennig</b>
<b>DE</b>	ZENTRUM FUR STOFFWECHSELDIAGNOSTIKREUTLINGEN GMBH <b>Dr. Herbert Korall</b>
<b>UK</b>	KING'S COLLEGE LONDON <b>Dr. Jonathan Cooper</b>
<b>UK</b>	GUYS AND ST THOMAS' NHS FOUNDATIONTRUST <b>Dr. Ruth Williams</b>
<b>DE</b>	GABO:MI GESELLSCHAFT FUR ABLAUFORGANISATION:MILLIARIUM MBH & CO KG GAB O <b>Ms. Saskia Narloch</b>

### Abstract

The DEM-CHILD project focusses on the main cause for childhood dementia in Europe, the neuronal ceroid lipofuscinoses (NCLs). The NCLs are neurodegenerative diseases characterized by dementia, blindness, epilepsy and physical decline leading to an early death of the patients. Since no cure is currently available, these disorders represent a serious social, medical, and economic challenge.

To date, eight NCL genes have been characterised. There is evidence suggesting that further gene loci remain to be identified. NCLs are under-diagnosed in many countries around the world as there is an overall lack of research, early diagnosis, treatment and expert availability. Furthermore, due to their broad genetic heterogeneity it is difficult to collect large numbers of genetically similar patients. As such, large therapeutic studies required for advances in treatment are difficult to initiate. The DEM-CHILD project will combine the expertise of (i) recognized European research teams with (ii) high-technology SMEs, and will (iii) collaborate with Indian experts on the following objectives:

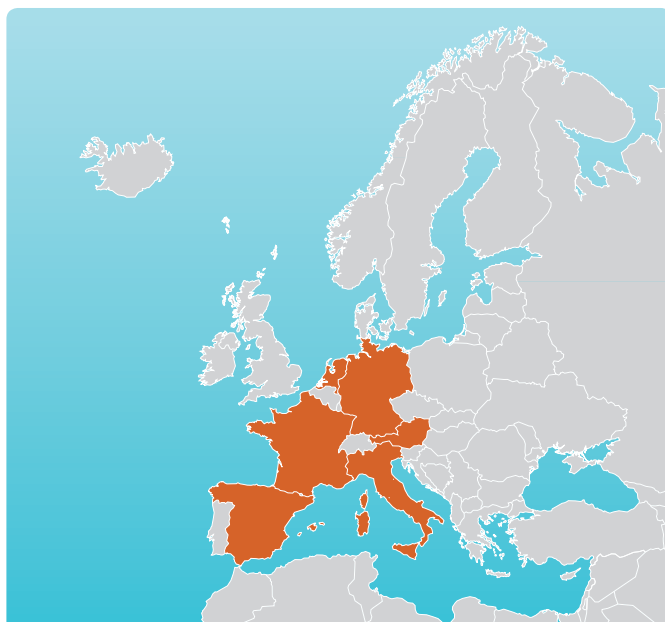
- 1) High-technology SMEs will develop innovative cost- and time-effective testing and screening methods for all NCLs in order to ensure early diagnosis and thereby prevention.

- 2) DEM-CHILD will collect the world's largest, clinically and genetically best characterised set of NCL patients in order to study disease prevalence and precisely describe the natural history of the NCLs leading to the development of an evaluation tool for experimental therapy studies.
- 3) Novel biomarkers and modifiers of NCL will be identified to support the development of innovative therapies.
- 4) Focussing on the development of therapies for NCLs caused by mutations in intracellular trans-membrane proteins, two complementary therapeutic strategies will be used and compared in eye and brain of mouse models: a) viral-mediated gene transfer and b) neural stem cell-mediated delivery of neuroprotective factors.



## Pathways common to brain development and ageing: defining strategies for preventive therapy and diagnostics

<b>Project acronym:</b>	DEVELAGE
<b>Coordinator:</b>	MEDIZINISCHE UNIVERSITAET WIEN, Austria
<b>Contact person:</b>	Dr. Gabor Geza Kovacs
<b>Project number:</b>	278486
<b>Duration:</b>	36 months
<b>Start date:</b>	01/01/2012
<b>End date:</b>	31/12/2014
<b>EC Contribution:</b>	2,994,137.00 €
<b>Total costs:</b>	3,881,830.13 €
<b>Website:</b>	<a href="http://www.develage.eu/">http://www.develage.eu/</a>



**Other partners**

**AT** MEDIZINISCHE UNIVERSITAET WIEN  
**Dr. Gabor Geza Kovacs**

**ES** FUNDACIO PRIVADA INSTITUT D'INVESTIGACIO BIOMEDICA DE BELLVITGE  
**Prof. Isidre Ferrer**

**NL** Academisch Medisch Centrum bij de Universiteit van Amsterdam  
**Mrs. Eleonora Aronica**

**IT** UNIVERSITA DEGLI STUDI DI ROMA LA SAPIENZA  
**Prof. Adriano Tocchi**

**DE** STIFTUNG TIERAERZTLICHE HOCHSCHULE HANNOVER  
**Prof. Elke Zimmermann**

**FR** UNIVERSITE MONTPELLIER 2 SCIENCES ET TECHNIQUES  
**Prof. Jean-Michel Verdier**

**FR** INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)  
**Dr. Homa Adle-Biassette**

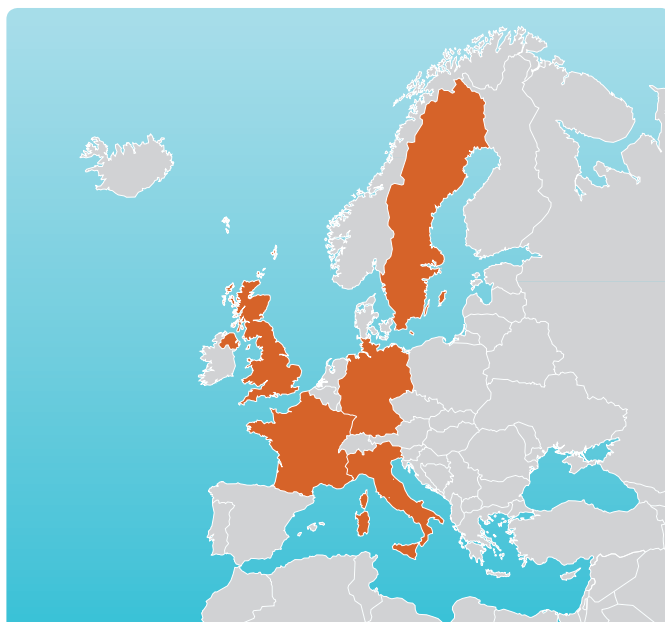
**AT** BIOLUTION GMBH  
**Dr. Iris Grünert**

**Abstract**

The increasing number of elderly people will have a major impact on the prevalence of age-related diseases, which will pose major challenges to keep health systems in Europe sustainable. Current knowledge is insufficient to identify the transition of normal brain ageing into Alzheimer's Disease (AD)-like brain damage. Elucidation of the genes and pathways contributing to the earliest stages of AD pathology and associated neurodegeneration should be instrumental to allow intervention when the condition is still reversible. The aim of the DEVELAGE project is to characterise shared molecular pathways between early developmental processes in the brain and brain ageing. Our concept is based on the hypothesis that disorders of neural development contribute to age-related neurodegeneration, that developmentally essential proteins might have a role in neurodegeneration, and that neurodegeneration-related proteins and genes are important during the development of the brain. The DEVELAGE approach is unique in that it is brain tissue-based, derived from neuropathological diagnosis with detailed molecular analysis of the spectrum of developmental and ageing changes in the very same brain samples used for a comprehensive array of investigations in humans as well as in experimental models at genetic, epigenetic, transcription and protein levels. DEVELAGE contributes to the understanding of biological variation by examining relevant number of cases with different phases of ageing and neurodegeneration as well as developing brains with or without developmental disorders. Pathways examined in humans will be validated in animal models, including a non-human primate, and vice versa. The combination of human samples and animal models susceptible to experimental manipulation will promote the translation of clinically relevant data into experimentally testable predictions and promotes the exploitation of therapeutically relevant targets to reverse or halt disease progression.

# Molecular Networks of Dopaminergic Neurons in Chordates

<b>Project acronym:</b>	DOPAMINET
<b>Coordinator:</b>	SCUOLA INTERNAZIONALE SUPERIORE DI STUDI AVANZATI, Italy
<b>Contact person:</b>	Prof. Stefano Gustincich
<b>Project number:</b>	223744
<b>Duration:</b>	42 months
<b>Start date:</b>	01/02/2009
<b>End date:</b>	31/07/2012
<b>EC Contribution:</b>	2,967,180.00 €
<b>Total costs:</b>	3,831,030.00 €
<b>Website:</b>	<a href="http://www.dopaminet.eu/">http://www.dopaminet.eu/</a>



### Other partners

<b>IT</b>	SCUOLA INTERNAZIONALE SUPERIORE DI STUDI AVANZATI <b>Prof. Stefano Gustincich</b>
<b>IT</b>	Consorzio per il Centro di Biomedicina Molecolare S.c.r.l. <b>Dr. Remo Sanges</b>
<b>JP</b>	RIKEN THE INSTITUTE OF PHYSICAL AND CHEMICAL RESEARCH <b>Dr. Piero Carninci</b>
<b>FR</b>	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE (CNRS) <b>Dr. Patrick Lemaire</b>
<b>DE</b>	ALBERT-LUDWIGS-UNIVERSITAET FREIBURG <b>Prof. Wolfgang Driever</b>
<b>UK</b>	THE UNIVERSITY OF BIRMINGHAM <b>Dr. Ferenc Mueller</b>
<b>DE</b>	Karlsruher Institut fuer Technologie <b>Dr. Urban Liebel</b>
<b>SE</b>	CLINICAL GENE NETWORKS AB <b>Prof. Jesper Tegner</b>
<b>UK</b>	UNIVERSITY COLLEGE LONDON <b>Mr. Elia Stupka</b>
<b>SE</b>	YH YOUHEALTH AB <b>Prof. Jesper Tegnér</b>

### Objectives

Parkinson's disease (PD) is the second most common progressive neurodegenerative disorder, affecting 1 to 2% of all individuals above the age of 65. The selective degeneration of subsets of mid-brain dopaminergic neurons is believed to be the primary cause for disruption of the ability to control movements. Meaningful hypothesis on the causes of PD and the design of new therapeutics have to consider reasons and mechanisms of the selective vulnerability of mesencephalic dopaminergic neurons. This project applies a highly interdisciplinary approach to construct complex networks consisting of protein, coding genes, non-protein-coding genes and cis-regulatory elements within dopaminergic neurons in the brain.

### Main Achievements

The general approach of Dopaminet is applied across four chordate organisms (human, mouse, zebrafish and *Ciona intestinalis*) to identify core network modules that might play key roles in the biology of these neurons. During the first reporting period, the consortium has established and validated several animal models. Bioinformatics and high-throughput screening tools for subsequent gene networks analysis have been established and first results are available; e.g. the consortium has identified, in a group of *de novo* PD volunteers, transcripts, including non-coding RNAs, which

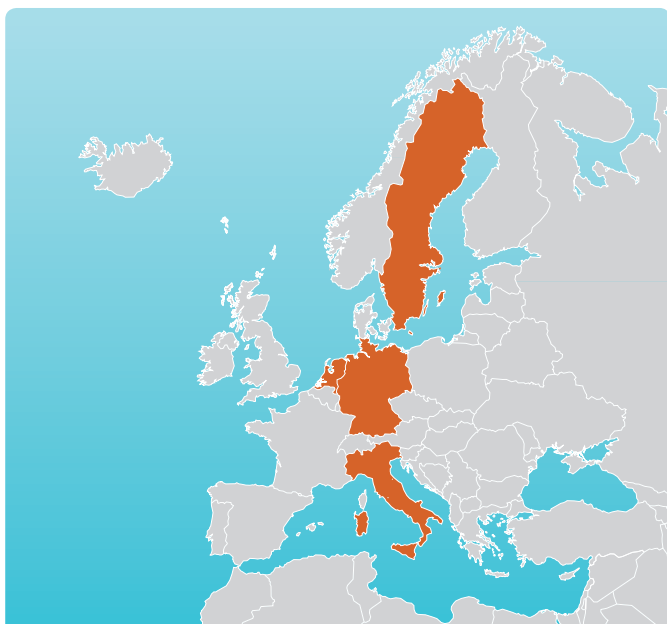
are specific for PD patients. These results will be further analysed and validated in the course of the project.

### Impact

The prevalence of PD in Europe today is around 2 million people. Within the next 50 years, the number is expected to rise to 5 million. In contrast, the population providing care is projected to decrease from a ratio of 60 people of working age per person with the disease today to less than 20 by 2050. Thus, the burden placed by neurodegenerative diseases on the working-age population will rise dramatically. This is a great challenge for European society. None of the currently available treatments, including levodopa, have been proven to slow the progression of the disease. By analysing the basic networks of dopaminergic neurons, unconventional drug targets may be identified, leading to novel diagnostic and therapeutic target candidates.

## Preclinical development of drugs and drug delivery technology for the treatment of inherited photoreceptor degeneration

<b>Project acronym:</b>	DRUGSFORD
<b>Coordinator:</b>	EBERHARD KARLS UNIVERSITAET TUEBINGEN, Germany
<b>Contact person:</b>	Dr. Francois Paquet-Durand
<b>Project number:</b>	304963
<b>Duration:</b>	36 months
<b>Start date:</b>	01/09/2012
<b>End date:</b>	31/08/2015
<b>EC Contribution:</b>	4,971,428.00 €
<b>Total costs:</b>	6,552,837.33 €



### Other partners

**DE** EBERHARD KARLS UNIVERSITAET TUEBINGEN  
**Dr. Francois Paquet-Durand**

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**NL** TO-BBB TECHNOLOGIES BV  
**Dr. Pieter Gaillard**

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**DE** BIOLOG LIFE SCIENCE INSTITUTE, FORSCHUNGSLABOR UND  
BIOCHEMICA- VERTRIEB GMBH  
**Dr. Frank Schwede**

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**IT** UNIVERSITA DEGLI STUDI DI MODENA E REGGIO EMILIA  
**Prof. Valeria Marigo**

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**SE** LUNDS UNIVERSITET  
**Dr. Per Ekström**

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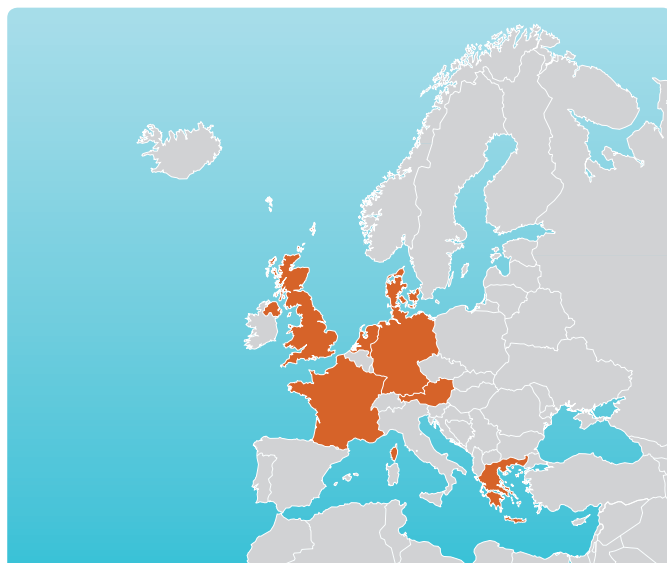
### Abstract

Dysregulation of cGMP is a pathological hallmark of inherited retinal degenerations (RD) affecting photoreceptors, the sensory cells of the retina. These RDs, including Retinitis Pigmentosa, Lebers Congenital Amaurosis, and Achromatopsia, are major causes of blindness, affecting approximately one in every 2,000 individuals worldwide, and remain without effective treatment. In photoreceptors, cGMP is produced by retinal guanylyl cyclase (GC). The two main cGMP targets are cyclic nucleotide gated ion channels (CNGC) and cGMP-dependent protein kinase (PKG). Since attenuation of PKG and CNGC activity can reduce photoreceptor cell death, both proteins constitute potential targets to prevent RD. Recent data suggest that blocking retinal GC may also constitute a viable therapeutic approach.

This consortium will study and develop targeted compounds and delivery systems aimed at preventing photoreceptor damage in preclinical disease models. Towards this goal, two SMEs have teamed up with three academic research groups focused on retinal degeneration: the German company BIOLOG specializes on development of cyclic nucleotide based drugs targeting PKG, CNGC, and GC; the Dutch company to-BBB develops systems to deliver drugs across the blood brain/retinal barrier (BBB, BRB, resp.); the groups of V. Marigo (Modena, Italy), P. Ekström (Lund, Sweden), and F. Paquet-Durand (Tübingen, Germany) have a strong and joint collaborative track record of studying photoreceptor degenerative mechanisms as well as on testing and evaluating drug treatment effects. Manufacturing of the most promising drugs fitted to a suitable delivery system will be scaled up towards clinical-size batches and studied towards efficacy, toxicology and off-target effects in model animals. The results of the project will allow the SMEs to further co-develop these drugs towards translation into clinical studies, addressing the high needs of RD patients and the high economic benefit of such therapies.

## European Research initiative to develop Imaging Probes for early In-vivo Diagnosis and Evaluation of response to therapeutic Substances

<b>Project acronym:</b>	EURIPIDES
<b>Coordinator:</b>	UNIVERSITY COLLEGE LONDON, United Kingdom
<b>Contact person:</b>	Dr. Matthias Koepp
<b>Project number:</b>	201380
<b>Duration:</b>	54 months
<b>Start date:</b>	01/02/2008
<b>End date:</b>	31/07/2012
<b>EC Contribution:</b>	6,994,850.00 €
<b>Total costs:</b>	9,086,523.40 €
<b>Website:</b>	<a href="http://www.euripides-europe.com/">http://www.euripides-europe.com/</a>





### Other partners

<b>UK</b>	UNIVERSITY COLLEGE LONDON <b>Dr. Matthias Koepp</b>
<b>AT</b>	MEDIZINISCHE UNIVERSITAET WIEN <b>Prof. Markus Müller</b>
<b>AT</b>	AIT Austrian Institute of Technology GmbH <b>Dr. Oliver Langer</b>
<b>DE</b>	STIFTUNG TIERAERZTLICHE HOCHSCHULE HANNOVER <b>Prof. Wolfgang Löscher</b>
<b>DE</b>	LUDWIG-MAXIMILIANS-UNIVERSITAET MUENCHEN <b>Prof. Heidrun Potschka</b>
<b>FR</b>	HOSPICES CIVILS DE LYON <b>Prof. Philippe Ryvlin</b>
<b>UK</b>	THE UNIVERSITY OF MANCHESTER <b>Dr. Marie-Claude Asselin</b>
<b>UK</b>	THE UNIVERSITY OF LIVERPOOL <b>Prof. Munir Pirmohamed</b>
<b>NL</b>	UNIVERSITEIT LEIDEN. <b>Dr. Elisabeth De Lange</b>
<b>NL</b>	Stichting Epilepsie Instellingen Nederland <b>Dr. Robert A. Voskuyl</b>
<b>EL</b>	NATIONAL CENTER FOR SCIENTIFIC RESEARCH 'DEMOKRITOS' <b>Dr. Alexandra Varvarigou</b>
<b>DE</b>	GABO:mi Gesellschaft für Ablauforganisation:milliarium mbH & Co. KG <b>Ms. Sandra Hanschke</b>
<b>NL</b>	VERENIGING VOOR CHRISTELIJK HOGER ONDERWIJS WETENSCHAPPELIJK ONDERZOEK EN PATIENTENZORG <b>Prof. Adriaan Anthonius Lammertsma</b>
<b>DK</b>	REGION HOVEDSTADEN <b>Prof. Gitte Moos Knudsen</b>

### Objectives

Euripides aims to develop an *in vivo* imaging biomarker based on a multidrug transporter function as a generic tool for the prediction, diagnosis, monitoring and prognosis of major CNS diseases. Multidrug transporters actively transport substrates (including multiple CNS drugs) against concentration gradients across the blood–brain barrier (BBB). Over activity of these transporters results in inadequate access by CNS drugs to their targets and greatly limits their therapeutic efficacy. This

'transporter hypothesis' of drug resistance is applicable to a broad range of CNS drugs. Many radiotracers based on known P glycoprotein (P gp) substrates have been developed but none of these radiotracers is ideal for positron emission tomography (PET — computed tomography) imaging.

### Main Achievements

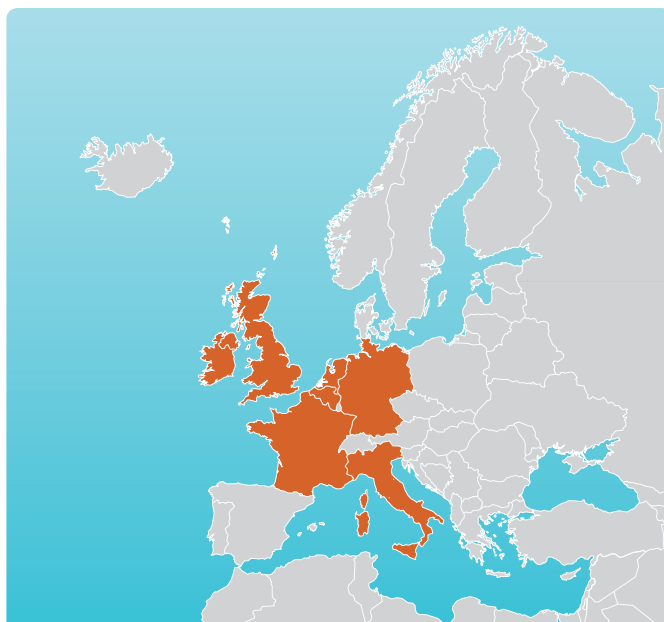
Radio synthesis methods have been developed for four radiotracers. Radiotracers have been tested and the results indicate that three radiotracers have a stable metabolic profile, a significantly increased and P gp specific brain uptake. For the biological evaluation of the newly developed compounds, studies were performed to assess distribution, function and the effect of inhibition on P gp by different PET scanners in rats. Euripides has established the production procedures for three compounds under GMP conditions. These tracers are now available for clinical studies in humans. A clinical trial including 10 participants with drug-resistant temporal lobe epilepsy patients was enrolled. The results demonstrated that radiotracers PET scans — after P-gp blockade with mechanistic antagonists — allow the identification of those individuals in whom P gp over-expression contributes to therapeutic failure.

### Impact

Euripides concentrates on the neurological diseases with the highest socioeconomic impact: Alzheimer's disease and epilepsy. The development of an *in vivo* surrogate (imaging) marker for the quantification of a multidrug transporter function will enable the prediction of treatment response. This will allow the early identification of patients who will not benefit from certain drugs that are multidrug transporter substrates. Furthermore, the new technology contributes to the identification of specific efflux transporter inhibitors at the BBB for the treatment of drug-resistant patients. These results might also be relevant for other major diseases, such as cancer. Euripides will contribute to improve therapeutic options through individualised treatment strategies and additionally reduce healthcare costs by discontinuing ineffective therapies.

## European multidisciplinary ALS network identification to cure motor neuron degeneration

<b>Project acronym:</b>	EURO-MOTOR
<b>Coordinator:</b>	UNIVERSITAIR MEDISCH CENTRUM UTRECHT, Netherlands
<b>Contact person:</b>	Prof. Leonard Van Den Berg
<b>Project number:</b>	259867
<b>Duration:</b>	60 months
<b>Start date:</b>	01/02/2011
<b>End date:</b>	31/01/2016
<b>EC Contribution:</b>	8,994,361.75 €
<b>Total costs:</b>	11,939,816.20 €
<b>Website:</b>	<a href="http://www.euromotorproject.eu/">http://www.euromotorproject.eu/</a>



**Other partners**

<b>NL</b>	UNIVERSITAIR MEDISCH CENTRUM UTRECHT <b>Prof. Leonard Van Den Berg</b>
<b>BE</b>	VIB <b>Dr. Wim Robberecht</b>
<b>FR</b>	ASSISTANCE PUBLIQUE - HOPITAUX DE PARIS <b>Prof. Vincent Meininger</b>
<b>FR</b>	UNIVERSITE DE STRASBOURG <b>Dr. Jean-Philippe Loeffler</b>
<b>DE</b>	UNIVERSITAET ULM <b>Prof. Albert Christian Ludolph</b>
<b>DE</b>	MAX PLANCK GESELLSCHAFT ZUR FOERDERUNG DER WISSENSCHAFTEN E.V. <b>Prof. Matthias Mann</b>
<b>DE</b>	UNIVERSITAETSKLINIKUM WUERZBURG - KLINIKUM DER BAYERISCHEN JULIUS-MAXIMILIANS-UNIVERSITAT <b>Prof. Michael Sendtner</b>
<b>IE</b>	THE PROVOST FELLOWS & SCHOLARS OF THE COLLEGE OF THE HOLY AND UNDIVIDED TRINITY OF QUEEN ELIZABETH NEAR DUBLIN <b>Prof. Orla Hardiman</b>
<b>IT</b>	ISTITUTO DI RICERCHE FARMACOLOGICHE MARIO NEGRI <b>Dr. Ettore Beghi</b>
<b>IT</b>	UNIVERSITA DEGLI STUDI DI TORINO <b>Dr. Adriano Chiò</b>
<b>NL</b>	ACADEMISCH ZIEKENHUIS GRONINGEN <b>Dr. Lude H. Franke</b>
<b>UK</b>	KING'S COLLEGE LONDON <b>Prof. Ammar Al-Chalabi</b>
<b>UK</b>	UNIVERSITY COLLEGE LONDON <b>Dr. Linda Greensmith</b>
<b>UK</b>	THE UNIVERSITY OF SHEFFIELD <b>Prof. Pamela Shaw</b>
<b>UK</b>	IMPERIAL COLLEGE OF SCIENCE, TECHNOLOGY AND MEDICINE <b>Dr. Hector Keun</b>

## Abstract

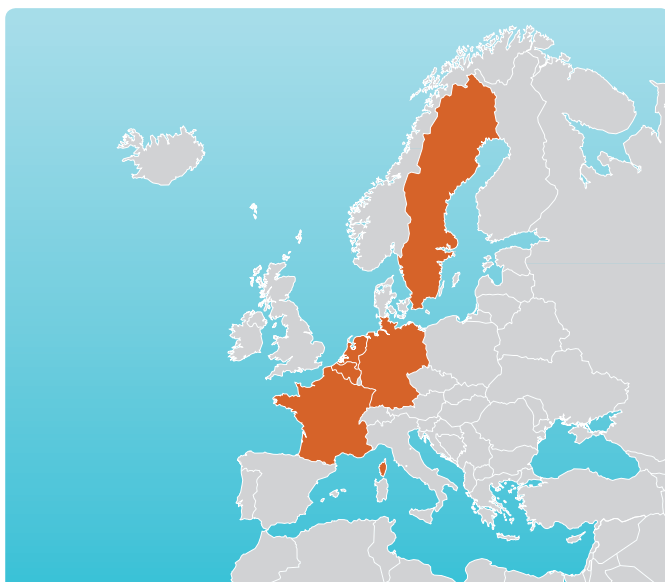
Amyotrophic Lateral Sclerosis is one of the most devastating diseases in neurology affecting in Europe 50,000 individuals at any time, and causing around 10,000 deaths each year. ALS is characterized by progressive degeneration of motor neurons in brain and spinal cord leading to muscle weakness. ALS affects otherwise healthy people at any time in adulthood. The patient becomes paralyzed and dies as the result of respiratory failure on average 3 years after onset of symptoms. There is no cure for ALS. The only available drug (Riluzole) is marginally effective in extending the lifespan of ALS patients with 3 to 6 months.

Despite recent scientific breakthroughs in the discovery of (1) multiple ALS associated genes, (2) evidence for metabolic dysregulation, (3) environmental risk factors, and (4) the protein TDP43 in aggregates of 95% of ALS patients, mechanistic models applicable to patients are still unknown. This shows that ALS can best be tackled through a systems biology approach which can only be achieved in a large integrative effort at the European level.

Euro-MOTOR unites a multidisciplinary partnership of world-leading experts of clinicians, basic scientists and bioinformaticians, and is able to exploit excellent infrastructures for patient sampling, -omics platforms, disease modelling and bioinformatics. Euro-MOTOR will integrate large quantitative -omics data sets from new functional models and from patients in two prospective European, population-based inception cohorts. By leveraging on the variation in the multilevel -omics data, Euro-MOTOR aims to detect key genetic drivers of disease susceptibility/progression, while parametric modelling of the causal connections in identified molecular networks will generate a model of disease. Major findings will be validated in a second prospective patient cohort and adequate functional models, resulting in robust targets that pave the way for novel therapeutic interventions for this disabling and fatal disease.

## Improving the lives of Parkinson's Disease patients while reducing side-effects through tailored deep brain stimulation

<b>Project acronym:</b>	IMPACT
<b>Coordinator:</b>	SAPIENS STEERING BRAIN STIMULATION BV, Netherlands
<b>Contact person:</b>	Mr. Daniel Schobben
<b>Project number:</b>	305814
<b>Duration:</b>	48 months
<b>Start date:</b>	01/09/2012
<b>End date:</b>	31/08/2016
<b>EC Contribution:</b>	4,980,907.00 €
<b>Total costs:</b>	6,470,220.00 €



### Other partners

**NL** SAPIENS STEERING BRAIN STIMULATION BV  
**Mr. Daniel Schobben**

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**BE** ICSense  
**Dr. Bram De Muer**

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**NL** TWENTE MEDICAL SYSTEMS INTERNATIONAL B.V.  
**Mr. Leo Hoogendoorn**

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**DE** FRAUNHOFER-GESELLSCHAFT ZUR FÖRDERUNG DER  
ANGEWANDTEN FORSCHUNG E.V.  
**Dr. Stefan Heldmann**

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**SE** LINKÖPINGS UNIVERSITET  
**Prof. Karin Wårdell**

---

**FR** INSTITUT DU CERVEAU ET DE LA MOELLE EPINIERE FONDATION  
**Mr. Alexis Genin**

---

**DE** KLINIKUM DER UNIVERSITÄT ZU KÖLN  
**Prof. Lars Timmermann**

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**SE** VÄSTERBOTTENS LANS LANDSTING  
**Prof. Patric Blomstedt**

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### Abstract

The IMPACT project is about improving the lives of brain diseased patients through a novel approach that leaps beyond currently available Deep Brain Stimulation (DBS) devices and procedures. The initial project focus is on Parkinson's Disease (PD), but further brain-disease indications will be included in the later phase of the project. The personalized approach that IMPACT brings is essential in delivering full therapeutic benefits to DBS patients while preventing the stimulation-induced side-effects that occur with today's DBS implants.

PD is well known for its characteristic symptoms: shaking, rigidity, slowness of movement and postural instability. Millions are suffering from PD including famous people like Michael J. Fox. Drugs are used as first treatment, but as the disease progresses they become ineffective and increasingly higher doses are needed. This leads to many side-effects, while symptoms still persist.

DBS is a 'pacemaker for the brain', analogous to the function of pacemakers for the heart: mild electrical stimuli are delivered to brain tissue to suppress unwanted activity and restore desired neuronal functions. When stimulation is optimal, the impact of DBS is spectacular: shaking and rigidity are strongly improved, and medication doses may be lowered significantly.

Despite its successes, DBS is still in its infancy. Programming for optimal therapy is complicated since physicians lack the appropriate tools to support them. Around 15 – 30% of DBS patients suffer from stimulation-induced side-effects resulting from stimulation leaking outside intended target

regions. IMPACT addresses these barriers to adoption exploiting the directivity provided by next generation high-resolution implants.

IMPACT delivers a physician tool for tuning the high-resolution implant based on a personalized patient brain stimulation model that takes into account imaging data (MRI, X-ray) as well as pre-operative data (local field potentials).



# Imaging of Neuroinflammation in Neurodegenerative Diseases

<b>Project acronym:</b>	INMIND
<b>Coordinator:</b>	WESTFAELISCHE WILHELMS-UNIVERSITAET MUENSTER, Germany
<b>Contact person:</b>	Prof. Andreas H. Jacobs
<b>Project number:</b>	278850
<b>Duration:</b>	60 months
<b>Start date:</b>	01/03/2012
<b>End date:</b>	28/02/2017
<b>EC Contribution:</b>	11,998,478.00 €
<b>Total costs:</b>	24,810,174.20 €
<b>Website:</b>	<a href="http://www.uni-muenster.de/InMind/">http://www.uni-muenster.de/InMind/</a>



**Other partners**

<b>DE</b>	WESTFAELISCHE WILHELMS-UNIVERSITAET MUENSTER <b>Prof. Andreas H. Jacobs</b>
<b>IT</b>	UNIVERSITA DEGLI STUDI DI MILANO <b>Prof. Adriana Caterina Maggi</b>
<b>AT</b>	PARACELSUS MEDIZINISCHE PRIVATUNIVERSITAT SALZBURG <b>Prof. Ludwig Aigner</b>
<b>FR</b>	UNIVERSITE FRANCOIS RABELAIS DE TOURS <b>Dr. Sylvie Chalon</b>
<b>IT</b>	UNIVERSITA DEGLI STUDI DI TORINO <b>Prof. Enzo Terreno</b>
<b>ES</b>	CONSORCI INSTITUT D'INVESTIGACIONS BIOMEDIQUES AUGUST PI I SUNYER <b>Dr. Anna Planas</b>
<b>BE</b>	UNIVERSITEIT ANTWERPEN <b>Prof. Anne-Marie Van Der Linden</b>
<b>FR</b>	COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES <b>Prof. Bertrand Tavitian</b>
<b>NL</b>	VERENIGING VOOR CHRISTELIJK HOGER ONDERWIJS WETENSCHAPPELIJK ONDERZOEK EN PATIENTENZORG <b>Prof. Adriaan Lammertsma</b>
<b>UK</b>	THE UNIVERSITY OF MANCHESTER <b>Prof. Karl Herholz</b>
<b>IT</b>	UNIVERSITA VITA-SALUTE SAN RAFFAELE <b>Prof. Daniela Perani</b>
<b>SE</b>	KAROLINSKA INSTITUTET <b>Prof. Christer Halldin</b>
<b>BE</b>	KATHOLIEKE UNIVERSITEIT LEUVEN <b>Prof. Koen Van Laere</b>
<b>DK</b>	REGION HOVEDSTADEN <b>Prof. Gitte Moos Knudsen</b>
<b>IT</b>	CONSIGLIO NAZIONALE DELLE RICERCHE <b>Dr. Sabina Pappatà</b>
<b>FI</b>	VARSINAIS-SUOMEN SAIRAANHOITOPPIIRIN KUNTAYHTYMA <b>Prof. Juha Rinne</b>
<b>UK</b>	UNIVERSITY OF SOUTHAMPTON <b>Prof. Clive Holmes</b>

**UK** IMPERIAL COLLEGE OF SCIENCE, TECHNOLOGY AND MEDICINE  
**Dr. Federico Roncaroli**

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**AU** THE UNIVERSITY OF SYDNEY  
**Prof. Michael Kassiou**

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**HU** SEMMELWEIS EGYETEM  
**Prof. Msz Kellermayer**

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**DE** UNIVERSITAETSKLINIKUM BONN  
**Prof. Michael Heneka**

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**IT** TOP (TRANSGENIC OPERATIVE PRODUCTS) S.R.L.  
**Dr. Paolo Ciana**

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**NL** CYCLOTRON VRIJE UNIVERSITEIT BV  
**Dr. Lars Perk**

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**IT** CAGE CHEMICALS SRL  
**Dr. Camilla Cavallotti**

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**UK** Pharmidex Pharmaceutical Services Limited  
**Mr. Mo Alavijeh**

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**HU** Mediso Orvosi Berendezes Fejlesztő és Szervíz Kft.  
**Dr. Domokos Máthé**

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**DK** NEUROSEARCH AS  
**Dr. Lars Christian B. Rønn**

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## Abstract

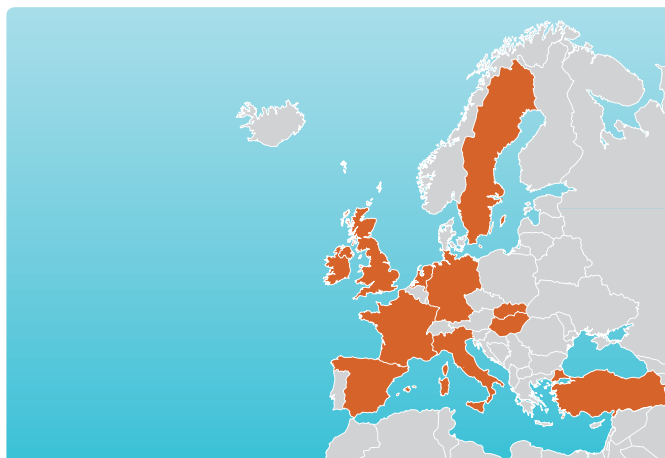
The goal of this proposal (INMiND) is to carry out collaborative research on molecular mechanisms that link neuroinflammation with neurodegeneration in order to identify novel biological targets for activated microglia, which may serve for both diagnostic and therapeutic purposes, and to translate this knowledge into the clinic. The general objectives of INMiND are:

- (i) to identify novel mechanisms of regulation and function of microglia under various conditions (inflammatory stimuli; neurodegenerative and -regenerative model systems);
- (ii) to identify and implement new targets for activated microglia, which may serve for diagnostic (imaging) and therapeutic purposes;
- (iii) to design new molecular probes (tracers) for these novel targets and to implement and validate them in in vivo model systems and patients;
- (iv) to image and quantify modulated microglia activity in patients undergoing immune therapy for cognitive impairment and relate findings to clinical outcome.

Within INMiND we bring together a group of excellent scientists with a proven background in efficiently accomplishing common scientific goals (FP6 project DiMI, [www.dimi.eu](http://www.dimi.eu)), who belong to highly complementary fields of research (from genome-oriented to imaging scientists and clinicians), and who are dedicated to formulate novel image-guided therapeutic strategies for neuroinflammation related neurodegenerative diseases. The strength of this proposal is that, across Europe, it will coordinate research and training activities related to neuroinflammation, neurodegeneration/-regeneration and imaging with special emphasis on translating basic mechanisms into clinical applications that will provide health benefits for our aging population. With its intellectual excellence and its crucial mass the INMiND consortium will play a major role in the European Research Area and will gain European leadership in the creation of new image-guided therapy paradigms in patients with neurodegenerative diseases.

## Coordination Action in support of the implementation of a Joint Programming Initiative for Combating Neurodegenerative Diseases, in particular Alzheimer's disease

<b>Project acronym:</b>	JUMPAHEAD
<b>Coordinator:</b>	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM), France
<b>Contact person:</b>	Prof. Philippe Amouyel
<b>Project number:</b>	260774
<b>Duration:</b>	36 months
<b>Start date:</b>	01/09/2010
<b>End date:</b>	31/08/2013
<b>EC Contribution:</b>	2,000,000.00 €
<b>Total costs:</b>	2,598,124.04 €
<b>Website:</b>	<a href="http://www.neurodegenerationresearch.eu/about/jumpahead/">http://www.neurodegenerationresearch.eu/about/jumpahead/</a>



**Other partners**

<b>FR</b>	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM) <b>Prof. Philippe Amouyel</b>
<b>UK</b>	MEDICAL RESEARCH COUNCIL <b>Dr. Robin Buckle</b>
<b>DE</b>	BUNDESMINISTERIUM FUER BILDUNG UND FORSCHUNG <b>Dr. Birgit Wetterauer</b>
<b>DE</b>	DEUTSCHES ZENTRUM FUER LUFT - UND RAUMFAHRT EV <b>Dr. Marlies Dorloechter</b>
<b>IE</b>	THE HEALTH RESEARCH BOARD <b>Dr. Caitriona Creely</b>
<b>NL</b>	THE NETHERLANDS ORGANISATION FOR HEALTH RESEARCH AND DEVELOPMENT <b>Dr. Edvard Beem</b>
<b>IT</b>	MINISTERO DELL'ISTRUZIONE, DELL'UNIVERSITA' E DELLA RICERCA <b>Prof. Adriana Maggi</b>
<b>TR</b>	TURKIYE BILIMSEL VE TEKNOLOJIK ARASTIRMA KURUMU <b>Mrs. Didem Celikkanat Ozan</b>
<b>ES</b>	INSTITUTO DE SALUD CARLOS III <b>Dr. José Jerónimo Navas</b>
<b>SK</b>	NEUROIMUNOLOGICKY USTAV SLOVENSKEJAKADEMIA VIED <b>Prof. Michal Novak</b>
<b>HU</b>	NEMZETI KUTATASI ES TECHNOLOGIAI HIVATAL <b>Ms. ágnes Gulyás</b>
<b>FR</b>	INSERM - TRANSFERT SA <b>Dr. Karine Baudin</b>
<b>SE</b>	VETENSKAPSRADET - SWEDISH RESEARCH COUNCIL <b>Mr. Mats Ulfendahl</b>

**Abstract**

The objective of the Coordination Action JUMPAHEAD is to support the implementation of the pilot Joint Programming Initiative on combating neurodegenerative diseases, in particular Alzheimer's disease (JPND).

Neurodegenerative disorders are incurable and debilitating conditions that result in progressive degeneration or death of nerve cells. Of these, the dementias are responsible for the greatest

burden of disease, and today in Europe over 7 million people suffer from Alzheimer's disease and related disorders, with this figure expected to double by 2020 as the European population ages.

Although our understanding of the mechanisms of neurodegenerative disease has greatly improved over the past few years, there is no effective treatment able to stop or even slow down the deterioration of brain functions associated with these disorders.

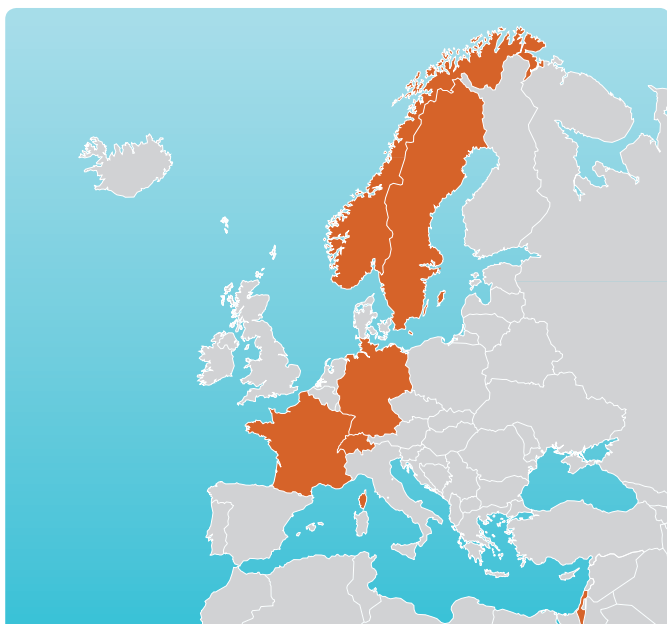
To tackle this pan-European health and societal challenge more effectively, 22 EU countries have launched the JPND. This is an innovative programme based on a common vision to improve the impact of their combined research effort to accelerate progress towards new treatments, identify preventative strategies, and improve patient care.

JUMPAHEAD will build the foundations for this initiative by supporting the development and implementation of a Strategic Research Agenda, as well as its dissemination and evaluation. This will be achieved under the direction of the JPND Management Board.

The output of JUMPAHEAD over its 36 month duration will include innovative ways of pooling national expertise and resources and the establishment of closer and robust research collaborations among the participating States in the field of neuro-degeneration research. JUMPAHEAD will contribute to the European Research Area by addressing fragmentation and improving integration of national research programmes to offer a competitive and attractive image of European research prosecuted for the greatest benefit of Europe's populations and economies.

## Luminescent polymers for in vivo imaging of amyloid signatures

<b>Project acronym:</b>	LUPAS
<b>Coordinator:</b>	LINKOPINGS UNIVERSITET, Sweden
<b>Contact person:</b>	Prof. Per Hammarström
<b>Project number:</b>	242098
<b>Duration:</b>	36 months
<b>Start date:</b>	01/11/2009
<b>End date:</b>	31/10/2012
<b>EC Contribution:</b>	4,978,094.80 €
<b>Total costs:</b>	6,475,643.20 €
<b>Website:</b>	<a href="http://www.lupas-amyloid.eu/">http://www.lupas-amyloid.eu/</a>





### Other partners

**SE** LINKOPINGS UNIVERSITET  
**Prof. Per Hammarström**

**FR** UNIVERSITE CLAUDE BERNARD LYON 1  
**Prof. Stephane Parola**

**DE** EBERHARD KARLS UNIVERSITAET TUEBINGEN  
**Prof. Mathias Jucker**

**NO** NTNU - NORGES TEKNISK-NATURVITENSKAPELIGE UNIVERSITET  
**Prof. Mikael Lindgren**

**CH** UNIVERSITAET ZUERICH  
**Prof. Adriano Aguzzi**

**DE** CHARITE - UNIVERSITAETSMEDIZIN BERLIN  
**Prof. Frank Heppner**

**SE** GENOVIS AB  
**Dr. Sarah Fredriksson**

**IL** APPLIED SPECTRAL IMAGING LTD  
**Dr. Sluszny Chanan**

### Objectives

In Alzheimer's disease (AD), prion disorders, and many other age-associated neurodegenerative disorders, the accumulation of soluble and insoluble protein aggregates, called amyloids, is central to their pathogenesis. The LUPAS project developed novel agents and methods for diagnostic imaging centred on reporter molecules based on luminescent conjugated polythiophenes, LCPs. The LCP molecules target the pathogenic protein aggregates with high selectivity and specificity. The technology should improve the quality of diagnosis of neurodegenerative diseases, and will also be of great advantage for monitoring and understanding disease progression. Secondly, LCPs can be properly adapted for conventional imaging configurations, such as magnetic resonance imaging (MRI). Moreover, the imaging agents developed within LUPAS, by virtue of molecular selectivity, have the potential to be used for mitigation of protein aggregate pathogenesis and could thereby facilitate treatment of neurodegenerative disorders.

### Main Achievements

LUPAS generated different amyloid molecular targets *in vitro* and screened the LCP library towards these targets. A number of candidate LCPs with distinct chemical functionalisations that are selective amyloid ligands were developed within the consortium. These LCPs can also be synthesised in gram scale amounts and are now being implemented within a variety of subprojects within LUPAS and affiliated collaborators worldwide. Multiphoton imaging is an excellent technique for studying protein aggregation diseases in real time in living transgenic mouse models. The consortium showed that the unique optical properties of LCPs make these dyes highly efficient for multiphoton imaging *in vivo*. Several LCPs cross the blood–brain barrier and specifically label amyloid plaques in the

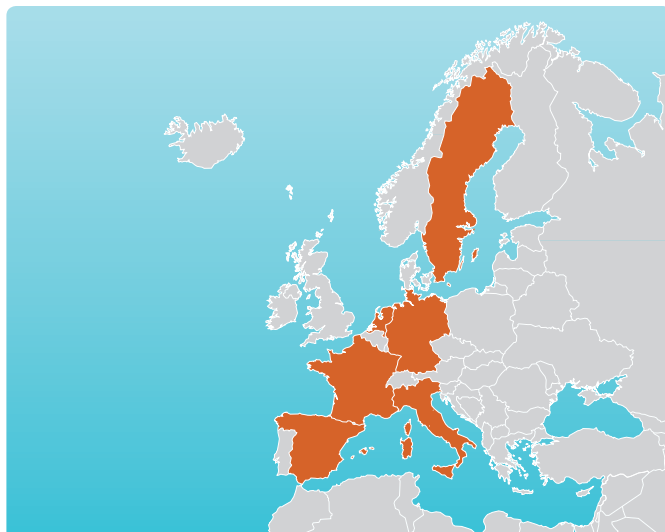
parenchyma, deposits in the vasculature, as well as intraneuronal Tau in transgenic mouse models with AD pathology. The diagnostic efficacy in humans has been demonstrated in post-mortem tissue sections from patients with AD and prion diseases. The LUPAS consortium also aimed to develop novel multimodal LCPs that can be used for both optical imaging and MRI. Contrast agents based on paramagnetic nanoparticles and nanocomplexes (MNPs) hold great promise for MRI. Within LUPAS, a variety of nanoparticles were synthesized showing enhanced T1 and T2 relaxation dispersion rendering potent contrast agents for MRI. The first prototype of a LCP-MNP conjugate can specifically target amyloid *in vitro*, in tissue samples, and promising results have also been obtained *in vivo* in transgenic mice. In terms of therapeutics, the LCP based molecules conceptualized a mechanism based on hyperstabilization of prion aggregates as an avenue for therapeutic intervention of prion disease. This track is especially intriguing for rapid disease progression but is also of interest for slow onset dementia such as Alzheimer's disease.

### Impact

There is a tremendous need for quantitative diagnostic methods for early detection and evaluation of neurodegenerative disorders. The need is underlined by the recent development of proposed therapeutic interventions targeting disease, so called disease modifiers. Herein, quantitative physical outcome measures are urgently needed in terms of amyloid pathology within living patients. Within the brief 3 year time frame of LUPAS, the consortium developed important research tools for use in disease model systems (mouse models) *in vivo* and on histological *ex vivo* samples from humans. The LUPAS project exemplifies that broad cross-disciplinary expertise within diverse subjects can realize unmet needs within biomedicine. The realistic prognosis is that it will take a few more years to validate this technology in the preclinical phase prior to going to the clinic. The LUPAS consortium strives for continuing towards these goals beyond the project time frame pending future generous support from various stakeholders such as industry, academia, patients and politicians.

## Molecular coding and subset specification of dopamine neurons generating the the meso-limbic and nigro-striatal system

<b>Project acronym:</b>	MDDANEURODEV
<b>Coordinator:</b>	UNIVERSITAIR MEDISCH CENTRUM UTRECHT, Netherlands
<b>Contact person:</b>	Prof. Marten Smidt
<b>Project number:</b>	222999
<b>Duration:</b>	39 months
<b>Start date:</b>	01/01/2009
<b>End date:</b>	31/03/2012
<b>EC Contribution:</b>	2,582,749.00 €
<b>Total costs:</b>	3,420,935.00 €
<b>Website:</b>	<a href="http://www.mddaneurodev.eu/">http://www.mddaneurodev.eu/</a>



**Other partners**

**NL** UNIVERSITAIR MEDISCH CENTRUM UTRECHT  
**Prof. Marten Smidt**

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**SE** KAROLINSKA INSTITUTET  
**Prof. Thomas Perlmann**

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**DE** ALBERT-LUDWIGS-UNIVERSITAET FREIBURG  
**Prof. Wolfgang Driever**

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**ES** UNIVERSIDAD MIGUEL HERNANDEZ DE EL CHE  
**Dr. Oscar Marín Parra**

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**IT** CEINGE BIOTECNOLOGIE AVANZATE SCARL  
**Prof. Antonio Simeone**

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**DE** HELMHOLTZ ZENTRUM MUENCHEN DEUTSCHES  
FORSCHUNGSZENTRUM FUER GESUNDHEIT UND UMWELT GMBH  
**Prof. Wolfgang Wurst**

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**FR** CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE  
**Dr. Alain Prochiantz**

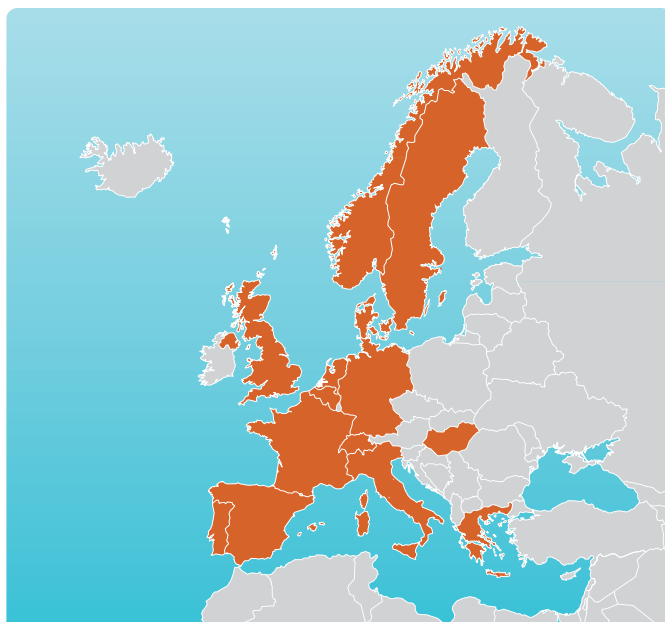
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**Abstract**

This project aims to elucidate the molecular coding of meso-diencephalic dopaminergic (mdDA) neurons forming the complex meso-limbic and nigro-striatal dopaminergic system in the vertebrate central nervous system. Recent advances in molecular and developmental biology have shown that this system harbors a multitude of functional units that are defined by spatial and temporal cues and are represented by specific molecular codes. These codes are essential to understand specific mdDA neuronal pathology as Parkinson's diseases and schizophrenia. In this collaborative project we gather the expertise on early and late development, cross species molecular-coding conservation, migration and axonal pathfinding to capture the significance of the understanding of mdDA neuronal development to generate a real advance in clinical understanding and treatment of mdDA pathology.

## European Project on Mendelian Forms of Parkinson's Disease

<b>Project acronym:</b>	MEFOPA
<b>Coordinator:</b>	EBERHARD KARLS UNIVERSITAET TUEBINGEN, Germany
<b>Contact person:</b>	Prof. Thomas Gasser
<b>Project number:</b>	241791
<b>Duration:</b>	36 months
<b>Start date:</b>	01/04/2010
<b>End date:</b>	31/03/2013
<b>EC Contribution:</b>	5,759,468.00 €
<b>Total costs:</b>	8,053,958.61 €
<b>Website:</b>	<a href="http://www.mefopa.eu">http://www.mefopa.eu</a>



**Other partners**

<b>DE</b>	EBERHARD KARLS UNIVERSITAET TUEBINGEN <b>Prof. Thomas Gasser</b>
<b>EL</b>	BIOMEDICAL RESEARCH FOUNDATION, ACADEMY OF ATHENS <b>Dr. Leonidas Stefanis</b>
<b>SE</b>	LUNDS UNIVERSITET <b>Prof. Deniz Kirik</b>
<b>DK</b>	AARHUS UNIVERSITET <b>Prof. Poul Henning Jensen</b>
<b>PT</b>	INSTITUTO DE MEDICINA MOLECULAR <b>Prof. Tiago Outeiro</b>
<b>UK</b>	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE <b>Prof. David Chaim Rubinsztein</b>
<b>CH</b>	NOVARTIS PHARMA AG <b>Dr. Giorgio Rovelli</b>
<b>FR</b>	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM) <b>Dr. Olga Corti</b>
<b>BE</b>	KATHOLIEKE UNIVERSITEIT LEUVEN <b>Prof. Veerle Baekelandt</b>
<b>UK</b>	THE UNIVERSITY OF SHEFFIELD <b>Dr. Alexander Whitworth</b>
<b>FR</b>	TROPHOS SA <b>Dr. Rebecca Pruss</b>
<b>EL</b>	NATIONAL AND KAPODISTRIAN UNIVERSITY OF ATHENS <b>Dr. Leonidas Stefanis</b>
<b>ES</b>	FUNDACIO PRIVADA CLINIC PER A LA RECERCA BIOMEDICA <b>Dr. Eduard Tolosa</b>
<b>IT</b>	FONDAZIONE CASA SOLLIEVO DELLA SOFFERENZA <b>Prof. Enza Maria Valente</b>
<b>DE</b>	UNIVERSITAET ZU LUEBECK <b>Prof. Christine Klein</b>
<b>ES</b>	FUNDACION DE ESTUDIOS NEUROLOGICOS ILUNDAIN <b>Prof. Marti Masso Jose Felix</b>
<b>HU</b>	SEMMELWEIS EGYETEM <b>Dr. Benjamin Bereznai</b>

**NL** VERENIGING VOOR CHRISTELIJK HOGER ONDERWIJS  
WETENSCHAPPELIJK ONDERZOEK EN PATIENTENZORG  
**Prof. August Smit**

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**UK** UNIVERSITY COLLEGE LONDON  
**Dr. Dan Healy**

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**NO** OSLO UNIVERSITETSSYKEHUS HF\*OSLO UNIVERSITY HF  
**Dr. Mathias Toft**

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**AE** UNITED ARAB EMIRATES UNIVERSITY  
**Prof. Omar El-Agnaf**

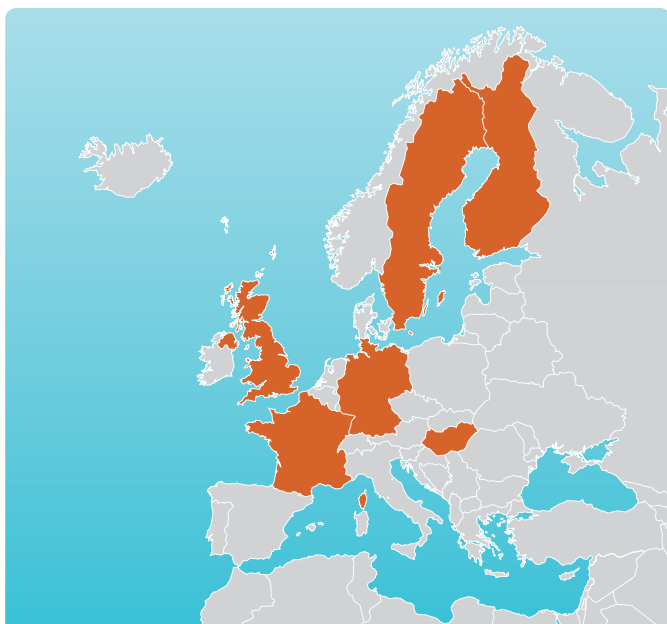
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### Abstract

The Collaborative Project on Mendelian Forms of Parkinson's Disease (MEFOPA) will bring together the major groups in Europe with a track-record in basic and clinical research on rare Mendelian forms of Parkinson's disease (PD) in order to identify and validate relevant disease-related molecular pathways, drug-targets and biomarkers for disease susceptibility and progression.. Over the last years it has become increasingly clear that progress in the understanding of the molecular basis of PD, the second most common neurodegenerative disorder, and hence the chance to develop effective disease-modifying treatments, will most likely be brought about by focusing on the rare variants of the disease with known genetic defects. The groups forming the MEFOPA-consortium will therefore analyze the molecular pathways underlying inherited forms of PD with autosomal-dominant and autosomal-recessive inheritance in an integrative way, using cellular and animal models and cutting-edge technology. These two subprojects will provide targets for novel, disease-modifying treatment strategies. In a third subproject, a European registry and biobank for patients with rare Mendelian forms of PD will be established. Body fluids will be collected and systematically analyzed by unbiased proteomic techniques as well as by focussed analysis of candidate proteins, and ex vivo cellular models will be generated, in order to allow validation of disease-related alterations detected in the models analyzed in subprojects 1 and 2. Through this integrated, translational approach combining basic and clinical research groups, the project aims to achieve measurable progress in defining the relevant targets and readouts for disease-modifying therapies and will set the stage for rationally designed drug trials in carefully selected groups of patients and even presymptomatic mutation carriers.

## Neurobiological Mechanisms of Memory Loss in Alzheimer's Disease

<b>Project acronym:</b>	MEMOLOAD
<b>Coordinator:</b>	Itä-Suomen yliopisto, Finland
<b>Contact person:</b>	Prof. Heikki Tanila
<b>Project number:</b>	201159
<b>Duration:</b>	60 months
<b>Start date:</b>	01/02/2008
<b>End date:</b>	31/01/2013
<b>EC Contribution:</b>	2,602,352.00 €
<b>Total costs:</b>	3,401,005.20 €
<b>Website:</b>	<a href="http://www.uku.fi/MEMOLOAD">http://www.uku.fi/MEMOLOAD</a>





### Other partners

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### Objectives

The Memoload project focuses on the molecular and biological mechanisms underlying memory loss that occurs early on in Alzheimer's disease (AD). There is growing evidence that accumulation of amyloid-beta peptide species causes memory loss by directly or indirectly interacting with the known key signalling pathways involved in memory consolidation. However, at present the data are fragmentary and there is still a lack of evidence on the level of molecular interaction regarding memory impairment *in vivo*. The objective of this project is to elucidate these mechanisms at the molecular level. The consortium aims furthermore to develop new peptidomimetics that could neutralise the effects of the most harmful forms of amyloid-beta peptide.

### Main Achievements

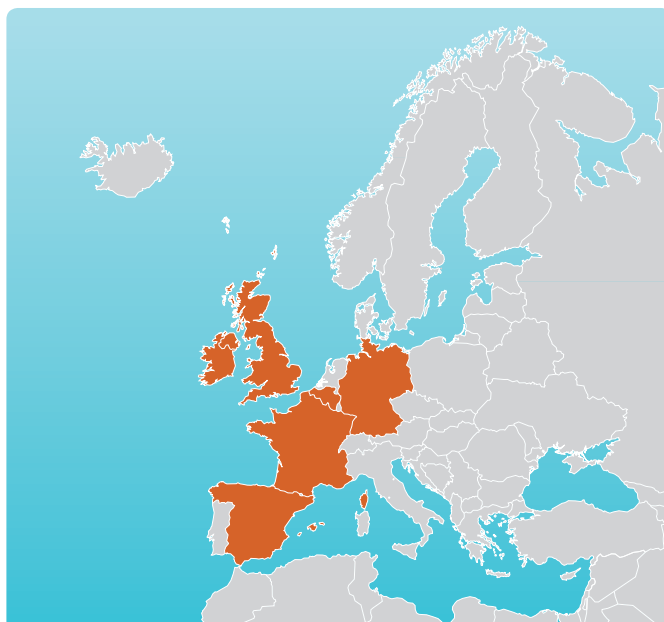
During the first period of this project the role of a brain-derived neurotrophic factor and the tyrosine kinase (Trk) B receptor was assessed in memory loss associated with AD. In addition, the consortium systematically determined the effect of various forms of amyloid-beta peptides on the induction of long-term potentiation in the hippocampus. Several new details of amyloid-beta peptide interactions with excitatory and inhibitory synapses have been revealed. These results may explain the increased susceptibility of AD patients to epileptic seizures. The in depth analysis of amyloid-beta peptide interactions with phosphatidylinositol 3-Kinase (PI3K) — Akt (protein kinase B) — glycogen synthase kinase 3 signalling pathway has shown that pharmacological manipulations of PI3K strongly modify the behavioural outcome of amyloid-beta peptides. A novel amyloid-beta 1-42 isopeptide has been developed that maintains its stability in a solution for much longer than conventional amyloid-beta peptides. Further analysis of this interesting new molecule in animal and cell-based models is planned. Furthermore several peptidomimetic compounds that interact with harmful amyloid-beta peptide species have been developed. The consortium was able to demonstrate that these peptidomimetic compounds have the potential to improve memory impairment conditions induced by amyloid-beta peptide species.

### Impact

AD is the main cause of dementia and is a substantial medical, social and economic challenge in Europe. Memoload significantly contributed to a better understanding of the involvement of known brain memory mechanisms at the behavioural, network, synaptic and molecular levels in early AD pathology. It also led to the identification of new drug targets and the development of novel peptid-omimetic compounds that neutralise the deleterious effects of most harmful amyloid-beta peptide species. These results are of high value in the development of needed new drugs that would be able to interact with the causative agents of AD.

## Memory loss in Alzheimer disease: underlying mechanisms and therapeutic targets

<b>Project acronym:</b>	MEMOSAD
<b>Coordinator:</b>	VERUM- STIFTUNG FUER VERHALTEN UND UMWELT, Germany
<b>Contact person:</b>	Prof. Franz Adlkofer
<b>Project number:</b>	200611
<b>Duration:</b>	42 months
<b>Start date:</b>	01/01/2008
<b>End date:</b>	30/06/2011
<b>EC Contribution:</b>	2,998,696.00 €
<b>Total costs:</b>	4,023,079.80 €
<b>Website:</b>	<a href="http://www.verum-foundation.de/memosad">http://www.verum-foundation.de/memosad</a>



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<b>IE</b>	UNIVERSITY COLLEGE DUBLIN, NATIONAL UNIVERSITY OF IRELAND, DUBLIN <b>Prof. Dominic Walsh</b>
<b>DE</b>	LUDWIG-MAXIMILIANS-UNIVERSITAET MUENCHEN <b>Prof. Christian Haass</b>
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### Objectives

Dementia is a brain disease characterised by memory loss, personality change and impaired intellectual functions. Alzheimer's disease (AD) is the most common type of dementia, accounting for 50 to 70% of all cases. AD, like most brain diseases, is currently incurable. Because the risk of developing the disease increases with age and the life expectancy of Europeans is increasing, we anticipate a dramatic rise in the number of cases in the years to come. The development of effective treatments has been limited by the lack of knowledge about the disease mechanisms. Advances in disease-modifying therapies may only be possible when a detailed understanding of the molecular basis of the disease process is available. Memosad aimed at defining the molecular mechanisms of Abeta- and tau-induced synaptotoxicity and at developing disease-modifying therapeutics for the prevention of memory loss in AD.

### Main Achievements

Memosad has validated four therapeutic targets and demonstrated therapeutic efficacy for two compounds in mouse models of AD. Among the targets identified and validated in the consortium

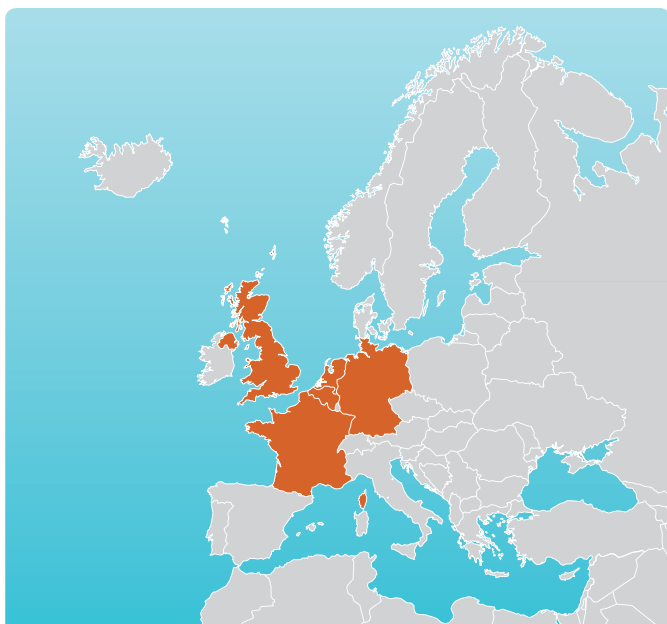
the most relevant are the Aph1B subunit of gamma-secretase, the CREB transcriptional co-activator CRTC1 (also called TORC1), the tau ser422 epitope, toxic ratios of Abeta40 to Abeta42, and autophagy. Furthermore two non-peptidic Abeta aggregation inhibitors have demonstrated their beneficial effects on memory tasks *in vivo* in two different murine models. Finally tau immunotherapy (against tau ser422) has been validated as a useful therapeutic strategy for AD and other tauopathies. Large-scale drug screening efforts focusing on these validated targets will be done in the follow-up of Memosad, in collaboration with the pharmaceutical industry. The targets identified may also have an additional value as biomarkers with a potential use as diagnostic tool.

### Impact

Dementias in general and AD in particular constitute a major public health problem affecting about 7.2 million citizens in Europe. The total cost of dementia disorders in the EU-27 in 2008 was estimated at EUR 160 billion, of which 56% were costs of informal care. If the number of AD cases rises as expected, this will have a major impact on European healthcare systems and the socioeconomic environment. Memosad has significantly contributed to the development of novel diagnostics and new therapy concepts for AD patients. Beside the potential value for health and quality of life of patients this contribution could help to substantially decrease the economic burden of AD. Furthermore the results of Memosad have strengthened the innovative capacity of health-related industries in Europe.

## Mitochondrial dysfunction in neurodegenerative diseases: towards new therapeutics

<b>Project acronym:</b>	MITOTARGET
<b>Coordinator:</b>	TROPHOS SA, France
<b>Contact person:</b>	Dr. Rebecca Pruss
<b>Project number:</b>	223388
<b>Duration:</b>	38 months
<b>Start date:</b>	01/02/2009
<b>End date:</b>	31/03/2012
<b>EC Contribution:</b>	5,999,980.00 €
<b>Total costs:</b>	10,332,037.60 €
<b>Website:</b>	<a href="http://www.mitotarget.eu">http://www.mitotarget.eu</a>



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<b>FR</b>	HOSPICES CIVILS DE LYON <b>Dr. Nadia Vandenberghe</b>
<b>FR</b>	UNIVERSITE D'AIX MARSEILLE <b>Dr. Brigitte Pettmann</b>

## Objectives

Mitochondrial dysfunction is a major hallmark of various neurodegenerative disorders including Alzheimer's disease, Parkinson's disease, Huntington's disease and amyotrophic lateral sclerosis (ALS). However, there is still a need for more detailed understanding of the links between mitochondrial dysfunction and the onset as well as progression of neurodegenerative diseases. A first objective of the project was to gain a comprehensive insight into the mechanisms of mitochondrial dysfunction association with neurodegenerative diseases. The second objective of the project was to establish novel therapeutic intervention in humans, employing a new class of therapeutic agent targeting the underlying mitochondrial dysfunction in neurons or their supporting cells.

## Main Achievements

The consortium provided enlarged insight into how mitochondrial processes are involved in neuronal plasticity — defined by the ability of neurons to adapt their structure and function in response to physiological and pathophysiological changes. Mitotarget also increased the understanding of how mitochondrial processes are involved in the pathogenesis and/or worsening of neurodegenerative disorders, e.g. mitochondrial axonal transport defects in ALS. The newly developed compound olesoxime was tested in an number of neurodegenerative disease models as well as in a phase 2/3 clinical trial in a cohort of 512 ALS patients. The compound was proved to be safe and well tolerated in this large scale clinical study although it had little or no effect on disease progression or survival in ALS patients treated with riluzole. Beyond the outcome of olesoxime treatment, this trial allowed collecting important data on the disease evolution under the current standard of care set-up over the last 5 to 10 years. Indeed what has been shown by the Mitotarget trial is that overall patients' survival significantly improved over the last 15 years thanks to the current management of the disease.

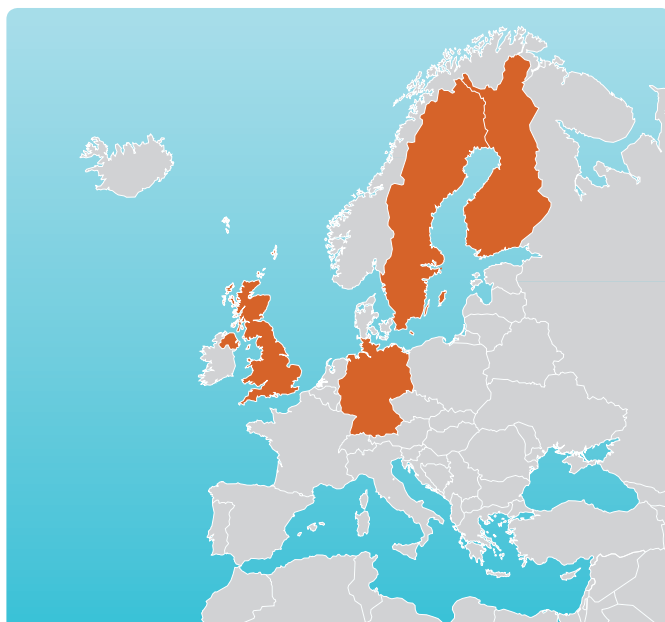
## Impact

ALS is a devastating illness that is usually fatal within 5 years after diagnosis and is estimated to affect over 100,000 people worldwide. There is no cure for ALS and still only a single drug approved for the treatment of ALS, riluzole (Sanofi-Aventis), which provides only a modest, 2 to 3 month survival benefit to ALS patients. What the results of the Mitotarget study highlighted is the urgent need for reliable biomarkers of the progression of the disease which are the critical step needed to bring forward successful therapies to large scale trials. Such research is now underway using the samples from the Mitotarget clinical study. Beyond ALS, Mitotarget has provided a better understanding of mitochondrial dysfunction and identified novel biomarkers that will contribute to a better diagnosis and monitoring of neurodegenerative disease progression. Furthermore, the consortium has provided evidence for the future development of a novel mitochondrial pore modulator derived from the cholesterol-oxime compound family with promising beneficial effects in Alzheimer's disease or Huntington's disease preclinical models and proof of a good safety profile.



# Molecular mechanisms of neuronal restoration: novel approaches for Parkinson's Disease

<b>Project acronym:</b>	MOLPARK
<b>Coordinator:</b>	CARDIFF UNIVERSITY, United Kingdom
<b>Contact person:</b>	Prof. Alun Davies
<b>Project number:</b>	223489
<b>Duration:</b>	42 months
<b>Start date:</b>	01/04/2009
<b>End date:</b>	30/09/2012
<b>EC Contribution:</b>	3,472,653.00 €
<b>Total costs:</b>	4,590,740.40 €
<b>Website:</b>	<a href="http://www.molpark.co.uk">http://www.molpark.co.uk</a>



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**Objectives**

The degeneration and loss of dopaminergic (DA) nigrostriatal neurons is the hallmark of Parkinson's disease (PD). Molpark aims to contribute to gaining a better understanding of the basic cellular and molecular mechanisms underlying the generation and survival of nigrostriatal neurons and the establishment and maintenance of their connections. This knowledge will contribute to provide strategies for novel therapeutic concepts approaching needed new PD treatments. The work focuses on neuron generation from neural stem cells (NSCs), on novel factors that promote the survival of DA neurons and promote their growth and on a novel epigenetic mechanism regulating NSC self-renewal.

**Main Achievements**

The recruitment of the Phosphoinositide 3-kinase-related kinase signalling pathway and histone H2AX phosphorylation following GABA-A-receptor activation limits proliferation in the subventricular zone of the brain. Consequently, NSC self-renewal and niche size is dynamic and can be directly modulated in both directions by pharmacological modulation or by genetically targeting H2AX activation. Such homeostatic suppression of NSC self-renewal may contribute to the limited self-repair capacity of the damaged brain. Bex1 (brain expressed, X-linked 1) has been identified as an interactor of the intracellular domain of p75NTR, the low affinity neurotrophin receptor. The Molpark consortium demonstrated that Bex1 inhibits neuronal differentiation for example in neural progenitor cells. Modulation of this pathway could contribute to regenerative therapies in the future. The cerebral dopamine neurotrophic factor (CDNF) has been discovered and the consortium demonstrated that this and the related mesencephalic astrocyte-derived neurotrophic factor (MANF) are efficacious in animal models of PD. CDNF protects and repairs dopamine neurons, and also

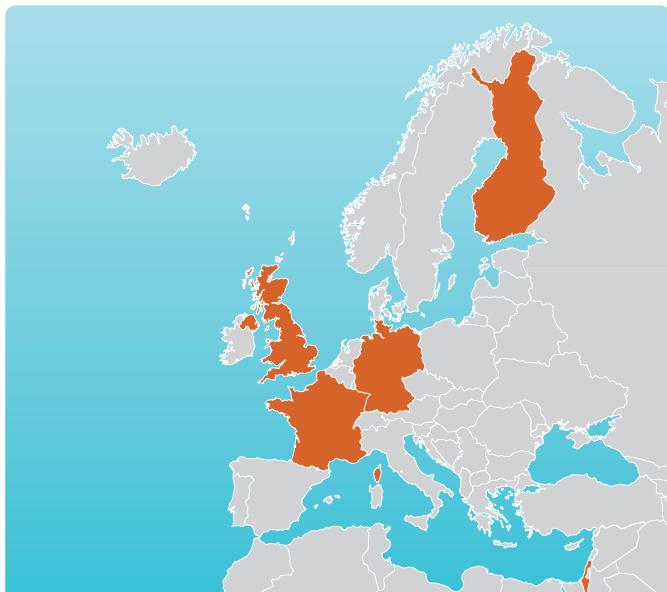
stimulates functionality of these neurons more efficiently than any known neurotrophic factor. CDFN and MANF are very stable proteins that diffuse well in the rodent midbrain. These results suggest that they are promising candidates for neurotrophic factor therapy for PD. A novel cell survival role of DJ 1 a PD gene in DA neurons has been revealed. DJ 1 is required for survival of substantia nigra neurons only in ageing conditions and only in neurons that are partially impaired in receiving trophic signals. Ageing mice that lack DJ 1 and Ret, a receptor for GDNF (glial cell line-derived neurotrophic factor), lose more DA neurons in the substantia nigra compared with ageing mice that only lack Ret. Because Ret and DJ 1 show convergence of their signalling and pro-survival activities, activation of Ret signalling might be able to mitigate neurodegeneration in PD patients carrying DJ 1 mutations. Further evaluation of achieved results is on-going.

### Impact

To provide novel treatment in PD it is necessary to improve both basic scientific knowledge of physiology and disease pathology and to develop a new concept for treatment. Molpark is an example how new knowledge in basic science can complement understanding of diseases helping to develop new treatment options for neurodegenerative conditions like PD, one of the major challenges for the future regarding the global demographic changes.

## Quantum Dot-Based Highly Sensitive Immunoassays for Multiplexed Diagnostics of Alzheimer's Disease

<b>Project acronym:</b>	NANOGNOSTICS
<b>Coordinator:</b>	FRAUNHOFER-GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V, Germany
<b>Contact person:</b>	Dr. André Geßner
<b>Project number:</b>	242264
<b>Duration:</b>	42 months
<b>Start date:</b>	01/10/2009
<b>End date:</b>	31/03/2013
<b>EC Contribution:</b>	4,037,064.00 €
<b>Total costs:</b>	5,281,158.66 €
<b>Website:</b>	<a href="http://www.nanognostics.org/">http://www.nanognostics.org/</a>



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### Objectives

A combination of psychological testing, brain imaging and exclusion of other neurological disorders makes the diagnosis of Alzheimer's disease complicated and time consuming (taking up to 20 months). A rapid, sensitive and specific immunoassay for protein markers inside blood would largely improve early diagnosis and lead to a better treatment of dementia. Nanognostics aims to contribute to this development by providing novel highly sensitive dyes of different colours allowing specific, highly sensitive detection of several protein markers in parallel. Colloidal nanomaterials like semiconductor quantum dots (QDs) are the ideal candidates but QDs display long luminescence lifetimes only in combination with lanthanide complexes (LCs). Thus, fluorescence resonance energy transfer (FRET) applications using QDs are to date restricted to academic research; general understanding of QD-based FRET is not available. Nanognostics will contribute to gain a profound understanding of QD-based FRET. Furthermore, the consortium will synthesise novel highly efficient QD immune sensors and develop a modular high-throughput-screening immune analyser for the integration of QD-based multiplexing immunoassays into early diagnostics in dementia therapy.

### Main Achievements

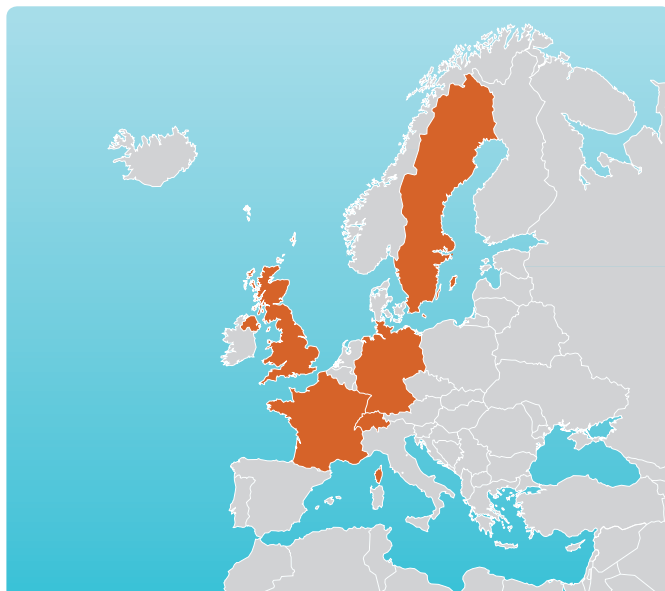
The most sensitive and specific AD biomarkers for multiplexed optical detection have been selected. Novel water-soluble dye modified QDs have been synthesised and surface modifications have been developed to enhance the colloidal stability and allow the linkage with diagnostic antibodies. Also, novel non-macrocyclic luminescent lanthanide complexes have been synthesised that are stable in biological media. In order to achieve a better understanding of QD-based FRET, photo physical properties of biotinylated QDs and FRET parameters have been determined. The establishment of multiplex bioassays is on-going; essential parameters like wavelength separation, decay time and sensitivity have been characterised. Significant progress has been made in the development of system modular subassemblies for future use in immunoanalyser systems. The evaluation of AD markers in human serum has started.

### Impact

As many as 6.1 million people currently live with a form of dementia in the European Union, with an addition of 1.4 million new cases every year. Diagnosis of dementia, like Alzheimer's disease, is time consuming and often unspecific, leading to delayed and ineffective therapies. There is a substantial medical need for more specific and more rapid diagnostic methods. Nanognostics will have a high impact on the scientific as well as the economic field of *in vitro* diagnostics. The results of this project will provide an important contribution in the bio analytical and clinical field and will significantly improve the outcome for Alzheimer patients.

## Advanced gene therapy tools for treatment of CNS-specific disorders

<b>Project acronym:</b>	NEUGENE
<b>Coordinator:</b>	UNIVERSITAETSMEDIZIN GOETTINGEN - GEORG-AUGUST-UNIVERSITAET GOETTINGEN - STIFTUNG OEFFENTLICHEN RECHTS, Germany
<b>Contact person:</b>	Prof. Mathias Baehr
<b>Project number:</b>	222925
<b>Duration:</b>	42 months
<b>Start date:</b>	01/10/2008
<b>End date:</b>	31/03/2012
<b>EC Contribution:</b>	3,000,000.00 €
<b>Total costs:</b>	4,026,267.60 €
<b>Website:</b>	<a href="http://www.neugene.eu/">http://www.neugene.eu/</a>



**Other partners**

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<b>CH</b>	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE <b>Prof. Patrick Aebischer</b>
<b>UK</b>	OXFORD BIOMEDICA (UK) LIMITED <b>Dr. Kyriacos Mitrophaous</b>

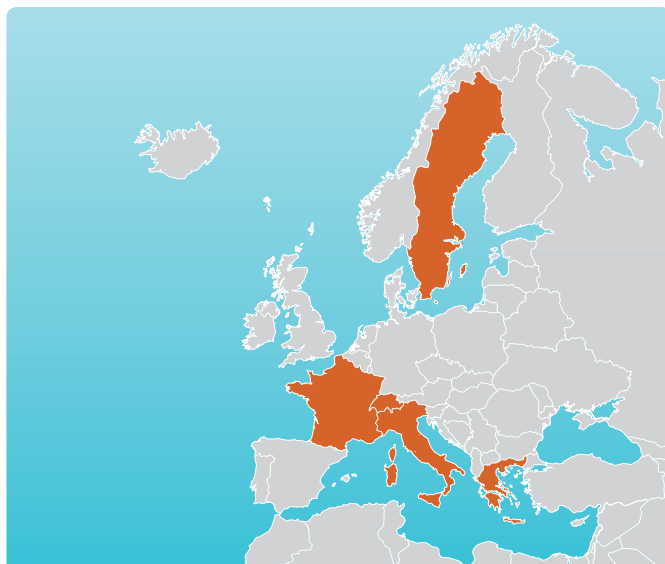
**Abstract**

Curative therapies still do not exist for most CNS diseases but gene therapy is a promising new approach. We propose that it will be possible to modify brain function and pathophysiology by targeted delivery of specific curative factors to selected populations of brain cells that are affected by disease. This opens the door for effective treatment regimes, which can be tailored to individual patients needs. However, currently available gene transfer vectors have limitations regarding safety and efficacy, as they do not allow for targeting of specific populations of neurons or glia or regulation of transgene expression. The NEUGENE consortium has been founded by leading European scientists from academia and industry to overcome these limitations. The consortium will develop Adeno-associated virus (AAV) and Lentivirus (LV)- based tools for targeted and regulated gene transfer into different populations of CNS cells. The consortium will provide a selection of vectors that are optimized for different therapeutic approaches, e.g. regulated expression of neurotrophic factors or manipulation of neurotransmitter synthesis in specific neurons. NEUGENE has three major goals: 1) targeting gene transfer vectors to specific populations of neurons and glia, by transcriptional regulation and miRNA-mediated de-targeting and by exploiting the cell-specific tropism of novel types of viral vectors, 2) tight control over expression levels of therapeutic genes by using regulated systems based on different principles, and 3) establishing the safety of the novel vector tools. NEUGENE will verify the functional efficacy of the novel CNS gene transfer tools in a well-established animal model of Parkinson's Disease (PD). This disorder affects over 1.000.000 Europeans and is increasing in prevalence with the aging population. Importantly, principles and mechanisms developed and evaluated within the consortium will also be of direct relevance for gene therapy of many other brain disorder.



# NOX enzymes as mediators of inflammation-triggered neurodegeneration: modulating NOX enzymes as novel therapies

<b>Project acronym:</b>	NEURINOX
<b>Coordinator:</b>	UNIVERSITE DE GENEVE, Switzerland
<b>Contact person:</b>	Dr. Vincent Jaquet
<b>Project number:</b>	278611
<b>Duration:</b>	60 months
<b>Start date:</b>	01/01/2012
<b>End date:</b>	31/12/2016
<b>EC Contribution:</b>	11,425,095.00 €
<b>Total costs:</b>	15,444,503.20 €
<b>Website:</b>	<a href="http://www.neurinox.eu/">http://www.neurinox.eu/</a>



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**AU** THE UNIVERSITY OF SYDNEY  
**Prof. Roland Stocker**

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**CH** NEURIX SA  
**Mr. Christophe Delgado**

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**Abstract**

NEURINOX aims at elucidating the role of NADPH oxidases (NOX) in neuroinflammation and its progression to neurodegenerative diseases (ND), as well as evaluating the potential of novel ND therapeutics approaches targeting NOX activity. NOX generate reactive oxygen species (ROS) and have emerged as regulators of neuroinflammation. Their role is complex: ROS generated by NOX lead to tissue damage in microglia-mediated neuroinflammation, as seen in amyotrophic lateral sclerosis (ALS), while absence of ROS generation enhances the severity of autoimmune-mediated neuroinflammation, as seen for e.g. in multiple sclerosis (MS).

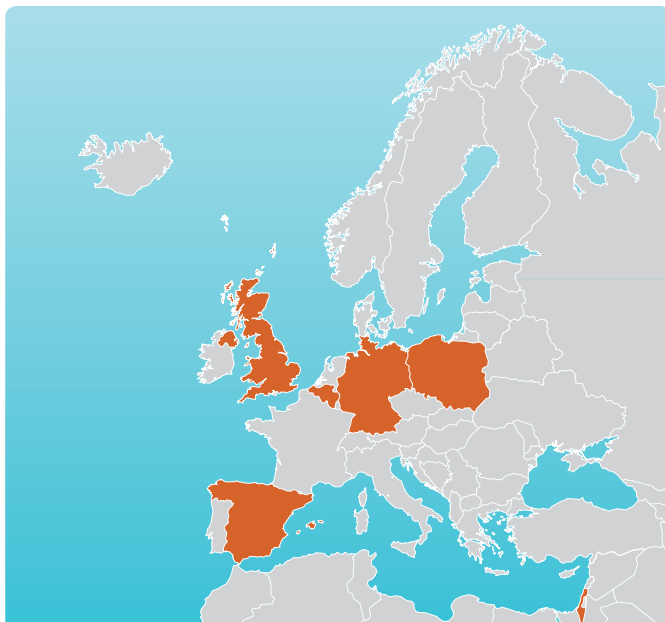
The objective of the 5 years NEURINOX project is to understand how NOX controls neuroinflammation, identify novel molecular pathways and oxidative biomarkers involved in NOX-dependent neuroinflammation, and develop specific therapies based on NOX modulation. The scientific approach will be to: (i) identify NOX-dependent molecular mechanisms using dedicated ND animal models (ii) develop therapeutic small molecules either inhibiting or activating NOX and test their effects in animal models (iii) test the validity of identified molecular pathways in clinical studies in ALS and MS patients.

NEURINOX will contribute to better understand brain dysfunction, and more particularly the link between neuroinflammation and ND and to identify new therapeutic targets for ND. A successful demonstration of the benefits of NOX modulating drugs in ALS and MS animal models, and in ALS early clinical trials will validate a novel high potential therapeutics target for ALS and also many types of ND. NEURINOX has hence a strong potential for more efficient ND healthcare for patients and thus for reducing ND healthcare costs.

This multi-disciplinary consortium includes leading scientists in NOX research, ROS biology, drug development SMEs, experts in the neuroinflammatory aspects of ND, genomics and proteomics, and clinicians able to translate the basic science to the patient.

## GSK-3 in neuronal plasticity and neurodegeneration: basic mechanisms and pre-clinical assessment

<b>Project acronym:</b>	NEURO.GSK3
<b>Coordinator:</b>	KATHOLIEKE UNIVERSITEIT LEUVEN, Belgium
<b>Contact person:</b>	Prof. Fred Van Leuven
<b>Project number:</b>	223276
<b>Duration:</b>	39 months
<b>Start date:</b>	01/10/2008
<b>End date:</b>	31/12/2011
<b>EC Contribution:</b>	3,573,842.00 €
<b>Total costs:</b>	5,082,027.48 €
<b>Website:</b>	<a href="http://med.kuleuven.be/neurogsk3/gsk3.html">http://med.kuleuven.be/neurogsk3/gsk3.html</a>



### Other partners

**BE** KATHOLIEKE UNIVERSITEIT LEUVEN  
**Prof. Fred Van Leuven**

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**UK** MEDICAL RESEARCH COUNCIL  
**Dr. Michel Goedert**

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**IL** TEL AVIV UNIVERSITY  
**Prof. Hagit Eldar-Finkelman**

---

**DE** LUDWIG-MAXIMILIANS-UNIVERSITAET MUENCHEN  
**Prof. Jochen Herms**

---

**DE** TECHNISCHE UNIVERSITAET DARMSTADT  
**Prof. Boris Schmidt**

---

**PL** INTERNATIONAL INSTITUTE OF MOLECULAR AND CELL BIOLOGY  
**Dr. Jacek Jaworski**

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**ES** NOSCIRA SA  
**Dr. Miguel Medina**

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### Objectives

Synapses and spines are vulnerable to stress and insults that cause gradual deterioration and cognitive decline in normal ageing. Normal decline becomes pathological in Alzheimer's disease (AD) and related neurodegenerative disorders, e.g. frontotemporal dementia (FTD), which has in common a severe neuronal tau-pathology. Tau proteins are microtubule-associated proteins. The physiological function of tau proteins is to stabilise and anchor microtubules as architectural elements and to act as transport paths for motor proteins. The consortium focused on identification of glycogen synthase kinase 3 (GSK3) tau-kinases and their systematic characterisation primarily *in vivo* in adult, ageing and degenerating brain in cell-based and animal models.

### Main Achievements

Among the more than 800 kinases encoded in our genome, the GSK3a / b kinases have been identified as the most prevalent tau-kinases, also in the living mouse brain. The consortium accomplished establishment and characterisation of mutant mouse strains that either lacked GSK3a or GSK3b completely, or lacked one of the two proteins in neurons only. The total lack of GSK3 is lethal. Multigenic knockout mouse strains have been generated combining the strains lacking GSK3a / b with different validated preclinical mouse models for AD and FTD. The pathological effects of amyloid and tau proteins on synaptic and neuronal degeneration have been analysed in the young, adult and ageing mouse brain. These transgenic mouse strains have been established and validated as preclinical models. Furthermore, the consortium has established *in vitro* models based on primary neuronal cultures transfected with various isoforms and mutants of tau proteins. Based on the developed *in vitro* and *in vivo* models, novel chemical compounds have been characterised as GSK3 inhibitors.

### Impact

Neurodegenerative disorders like AD have a substantial impact on the quality of life of affected patients and their relatives and belong to the most costly diseases for societies in developed countries. Essential knowledge on the function and roles in neurophysiology and neuropathology of the GSK3 kinases has been achieved. This knowledge has been translated into candidate compounds that have been identified during this project. Thus the results of NEURO.GSK3 have helped to understand GSK3 kinases pathways in healthy and diseased neurons and to contribute to the development of new therapeutic compounds — all aimed at developing novel therapy options for the unmet needs of patients suffering from Alzheimer's dementia.

# Neurotransmitter Cys-loop receptors: structure, function and disease

<b>Project acronym:</b>	NEUROCYPRES
<b>Coordinator:</b>	VERENIGING VOOR CHRISTELIJK HOGER ONDERWIJS WETENSCHAPPELIJK ONDERZOEK EN PATIENTENZORG, Netherlands
<b>Contact person:</b>	Prof. August Smit
<b>Project number:</b>	202088
<b>Duration:</b>	54 months
<b>Start date:</b>	01/02/2008
<b>End date:</b>	31/07/2012
<b>EC Contribution:</b>	10,488,922.40 €
<b>Total costs:</b>	13,926,772.08 €
<b>Website:</b>	<a href="http://www.neurocypres.eu/">http://www.neurocypres.eu/</a>



**Other partners**

<b>NL</b>	VERENIGING VOOR CHRISTELIJK HOGER ONDERWIJS WETENSCHAPPELIJK ONDERZOEK EN PATIENTENZORG <b>Prof. August Smit</b>
<b>NL</b>	VERENIGING HET NEDERLANDS KANKER INSTITUUT <b>Prof. Titia Sixma</b>
<b>BE</b>	KATHOLIEKE UNIVERSITEIT LEUVEN <b>Prof. Chris Ulens</b>
<b>DE</b>	FRIEDRICH-ALEXANDER UNIVERSITAET ERLANGEN-NUERNBERG <b>Dr. Christoph Kluck</b>
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<b>FR</b>	INSTITUT PASTEUR <b>Dr. Pierre-Jean Corringer</b>
<b>RU</b>	SHEMYAKIN AND OVCHINNIKOV INSTITUTE OF BIOORGANIC CHEMISTRY - RUSSIAN ACADEMY OF SCIENCE <b>Prof. Utkin Yuri</b>
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<b>DE</b>	EUROPEAN MOLECULAR BIOLOGY LABORATORY <b>Prof. Cornelius Gross</b>
<b>UK</b>	UNIVERSITY COLLEGE LONDON <b>Prof. Trevor Smart</b>
<b>CH</b>	UNIVERSITE DE GENEVE <b>Prof. Daniel Bertrand</b>
<b>IT</b>	CONSIGLIO NAZIONALE DELLE RICERCHE <b>Dr. Cecilia Gotti</b>
<b>EL</b>	HELLENIC PASTEUR INSTITUTE <b>Prof. Socrates Tzartos</b>
<b>EL</b>	UNIVERSITY OF PATRAS <b>Prof. Georgios A. Spyroulias</b>
<b>DE</b>	UNIVERSITAET KONSTANZ <b>Prof. Wolfram Welte</b>
<b>DE</b>	PROTEOSYS AG <b>Prof. André Schrattenholz</b>
<b>EL</b>	REGULON AE <b>Dr. Michael Roberts</b>



<b>SE</b>	BEACTICA AB <b>Prof. Helena Danielson</b>
<b>NL</b>	SYNAPTOLOGICS <b>Prof. Peter Heutink</b>
<b>IT</b>	UNIVERSITA DEGLI STUDI DI MODENA E REGGIO EMILIA. <b>Prof. Michele Zoli</b>
<b>EL</b>	NATIONAL AND KAPODISTRIAN UNIVERSITY OF ATHENS <b>Prof. George P. Chrousos</b>
<b>CH</b>	HIQSCREEN SARL <b>Prof. Daniel Bertrand</b>

### Objectives

Dysfunction of Cys-loop receptors (CLRs) is linked to muscle disorders (e.g. myasthenic syndromes), hyperexcitability of the brain (e.g. epilepsy) and spinal cord (e.g. hyperekplexia / stiff baby syndrome) as well as nicotine addiction, while CLR subunit genes are candidates for frequent psychiatric diseases (e.g. schizophrenia). The CLRs are molecular targets for clinically important drugs, including curare-like muscle relaxants, tranquilisers and anticonvulsants like the benzodiazepines, as well as anti-emetics. Neurocypres has four interconnected research areas: aiming at the synthesis and production of the receptors; the analysis of receptor structure and function; the design, synthesis and screening for new compounds for these receptors; and the investigation of specific dysfunction of receptors in disease.

### Main Achievements

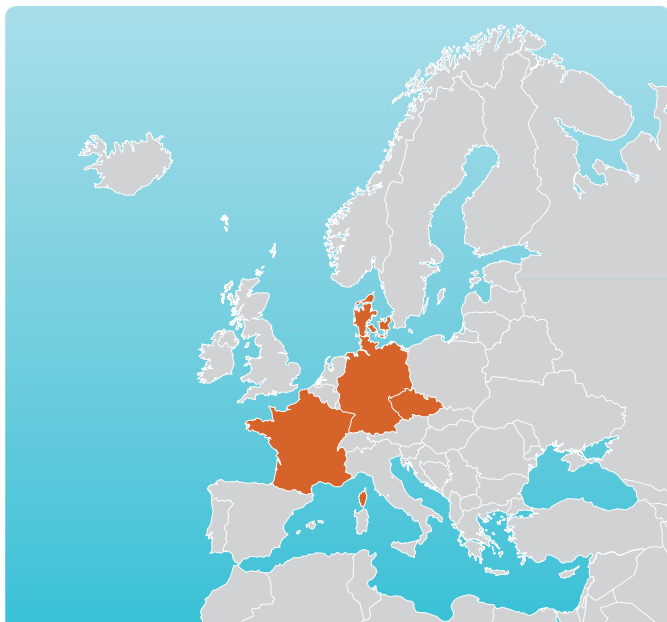
The consortium has achieved substantial progress regarding structural and functional analysis of the acetylcholine binding proteins (AChBPs), like identifying the structure of the CLR ligand-binding domains. Furthermore, several high-throughput screening assays have been developed, for example performing electrophysiological analysis of CLRs. Novel in-silico screening technologies analysing AChBP and 5HT<sub>3</sub> were employed. First promising results have been achieved with small molecules targeting different members of the CLR family. Analysis of new mutations in the GABA receptor led to the discovery of a novel broadband antagonist. As a new therapeutic strategy against myasthenia gravis, recombinantly expressed extracellular domains of acetylcholine nicotinic receptors were successfully used as immunoadsorbents and will soon enter clinical trials. Also, the characterisation of acetylcholine nicotinic receptor mutations has led to a better understanding of their causative role within epilepsy.

### Impact

In this project, the knowledge concerning an important class of membrane-bound receptors has improved substantially. This will have significant impact for the drug discovery industry. In particular, Neurocypres generates high-resolution crystallography data and screening methods to allow drug design and testing, both on the ligand binding domain of these receptors or on whole receptors. Also, the consortium will deliver insight into orthosteric and allosteric binding sites of these receptors, by mutational analysis and compound screening. The results can be used by pharma companies to provide new pharmacological treatment options for cys-loop receptor-related diseases. In addition, Neurocypres allows the participating SMEs to develop their technology portfolio.

## Development of a novel FGL therapy and translational tests for regenerative treatment of neurological disorders

<b>Project acronym:</b>	NEUROFGL
<b>Coordinator:</b>	Københavns Universitet, Denmark
<b>Contact person:</b>	Prof. Kristian Strømgaard
<b>Project number:</b>	278006
<b>Duration:</b>	36 months
<b>Start date:</b>	01/01/2012
<b>End date:</b>	31/12/2014
<b>EC Contribution:</b>	5,978,735.00 €
<b>Total costs:</b>	8,653,874.90 €



**Other partners**

**DK** Københavns Universitet  
**Prof. Kristian Strømgaard**

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**DK** ENKAM PHARMACEUTICALS A/S  
**Dr. Morten Albrechtsen**

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**FR** FORENAP PHARMA  
**Dr. Sandra Werner**

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**DK** H. LUNDBECK A/S  
**Dr. Jan Egebjerg**

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**FR** QUALISSIMA  
**Dr. Severine Pitel**

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**DE** KLINIKUM DER UNIVERSITAET ZU KOELN  
**Prof. Michael Schroeter**

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**CZ** PSYCHIATRICKÉ CENTRUM PRAHA  
**Dr. Tomas Palenicek**

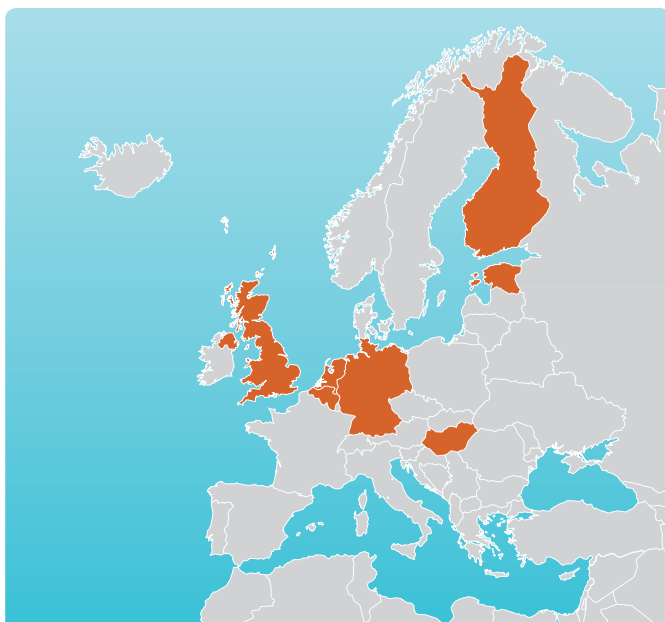
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**Abstract**

Neurodegenerative disorders such as, Alzheimer's disease (AD), Mild Cognitive Impairment (MCI), stroke, Traumatic Brain Injury (TBI) and chronic stress create a major economic burden to society and a substantial reduction in quality of life for patients and families. The development of neuroregenerative therapies is notoriously difficult and requires significant investment. NeuroFGL will contribute to decrease these barriers through: (1) the clinical advancement of a promising novel regenerative therapy (FGLs) for neurological disorders, (2) hedging the clinical development by developing tests that enable early clinical assessments to be made, thereby maximising the chance that FGL and other neurogenerative therapies actually become developed to the benefit of patients and society; and (3) Selecting a target patient population with less variability and thereby easier to study – reducing and time resources needed, and increase predictability. FGLs is a promising and novel regenerative therapy being the clinical lead development candidate selected from a group of allosteric FGF-receptor modulators (referred to as FGL) mimicking NCAM. FGL has demonstrated positive effects in a number of in vivo models of neurodegeneration, e.g. beta-amyloid induced toxicity, global ischemia and chronic stress. The in vivo effects of FGL suggest a disease-modifying activity in several neurodegenerative disorders, such as neurogenesis. A phase I clinical study has demonstrated a FGL peptide to be well tolerated and safe. NeuroFGL will refine existing and develop new tests and techniques, that will at an early stage of the clinical development: (1) provide better information on the mechanisms of action (NCAM mimicking allosteric FGF recoter modulation) in man, (2) deliver translational effects seen between animal and man, (3) provide results earlier and cheaper, increasing the iteration and (4) select patients with conditions associated with less variability, e.g. patients with AD with a specific EEG or patients progressing to AD identified in patients with MCI. These developments will together provide a more robust basis for the development of FGLs, other drugs with a similar mechanism of action and other therapies for neurodegenerative disorders.

## Oligopeptidase Inhibitors in Brain Function and Dysfunction: Towards New Therapeutic Strategies for Neuroprotection

<b>Project acronym:</b>	NEUROPRO
<b>Coordinator:</b>	KATHOLIEKE UNIVERSITEIT LEUVEN, Belgium
<b>Contact person:</b>	Prof. John Creemers
<b>Project number:</b>	223077
<b>Duration:</b>	48 months
<b>Start date:</b>	01/10/2008
<b>End date:</b>	30/09/2012
<b>EC Contribution:</b>	4,788,220.00 €
<b>Total costs:</b>	6,290,178.40 €
<b>Website:</b>	<a href="http://www.neuropro.eu">http://www.neuropro.eu</a>



### Other partners

**BE** KATHOLIEKE UNIVERSITEIT LEUVEN  
**Prof. John Creemers**

**FI** HELSINGIN YLIOPISTO  
**Dr. Juan Arturo García-Horsman**

**DE** UNIVERSITÄT LEIPZIG  
**Dr. Steffen Rossner**

**HU** MAGYAR TUDOMÁNYOS AKADEMIA SZEGEDI BIOLÓGIAI KOZPONT  
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**UK** THE UNIVERSITY OF WARWICK  
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**EE** TARTU ÜLIKOOL  
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**BE** UNIVERSITEIT ANTWERPEN  
**Prof. Anne-Marie Lambeir**

**DE** PROBIODRUG AG  
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**NL** PEPSCAN PRESTO BV  
**Dr. Jos Joore**

**FI** CEREBRICON OY  
**Dr. Juha Yrjanheikki**

**FI** Itä-Suomen yliopisto  
**Dr. Markus Forsberg**

### Objectives

Prolyl oligopeptidase (PREP) has been a target for memory deficit and neuroprotection and could therefore play an important role in neurodegenerative diseases like Alzheimer's disease (AD) and Parkinson's disease (PD). PREP was hypothesised to function as a neuropeptide cleaving protease, altering the physiology of the brain. Recently, the impact of PREP inhibitors on neuropeptide metabolism has been challenged. The overall objectives of this project are to unravel the mode of action of PREP and PREP-like (PREPL) enzymes in health and disease, to develop new drugs for treatment of neurodegenerative diseases and to discover new therapeutic targets.

### Main Achievements

The aim of the first part of this project was to establish the relevance of PREP in well controlled biological models of neurodegeneration. It was shown that there is a connection between PREP function and the signalling to control axonal transport, secretion and the processing of prohormones and proneuropeptides, and it is involved in the activation of immunoactive cells and the control of neural

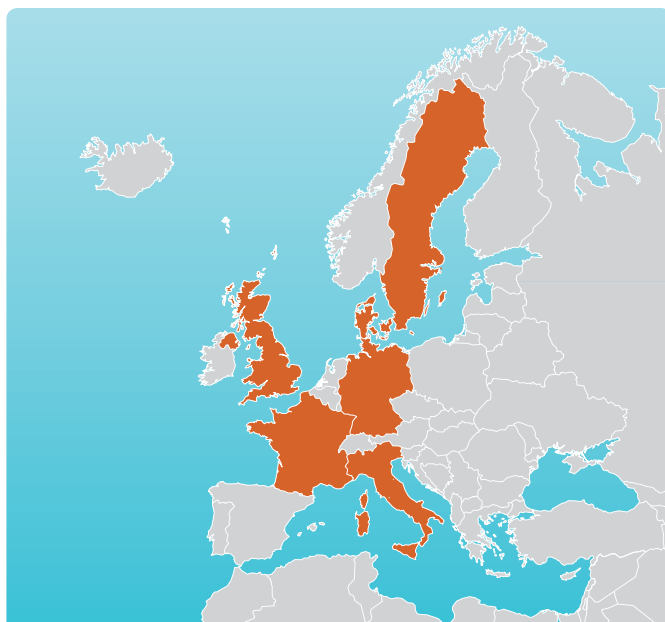
plasticity and migration. Importantly, all these processes are compromised in neurodegeneration and one of the main conclusions derives from the role of PREP in neuroinflammation. Interactions of PREP with alpha-synuclein, GAP43 and structural cytoskeletal proteins have been established, which are respectively related to Parkinson's disease (PD), nerve outgrowth and vesicle traffic. Furthermore it was possible to determine the interaction of PREP on amyloid polypeptide (APP) cleavage, a neurotoxic peptide that forms plaques in the brain of Alzheimer diseased patients. The results indicate that the APP C-terminus fragment can indeed be a substrate of PREP. The effects of PREP inhibitors were investigated in an AD animal model; indicating that inhibitors suppress glial fibrillary acidic protein, acute phase proteins and Interleukin-6. Cellular and animal models, in which PREP mRNA expression was knocked down or knocked out, were established. PREPL was found to interact with adaptor protein AP-1, which provides novel insights into its role in secretion. These models helped to clarify the biological relevance of PREP/PREPL and are also instrumental in identifying other proteins that are affected by PREP inhibitors and to investigate physiological effects not related to neuroprotection. The consortium achieved significant new results discovering the role of PREP/PREPL in PD and AD.

### Impact

This project aimed to contribute to the development of new avenues for the detection and treatment of neurodegenerative diseases, as well as to unveil the physiological role of the PREP family of enzymes. Specifically, in neurodegenerative diseases of an inflammatory nature, the results show that PREP can be used as a disease marker and/or an indicator of disease progression. On the other hand, there is a remarkable and direct link between PREP and plaque deposition in neurodegeneration. PREP inhibitors are decreasing the level of synuclein plaques *in vitro* and *in vivo*. This opens a new possibility for PD treatment.

# European Consortium for Stem Cell Therapy for Neurodegenerative Diseases

<b>Project acronym:</b>	NEUROSTEMCELL
<b>Coordinator:</b>	UNIVERSITA DEGLI STUDI DI MILANO, Italy
<b>Contact person:</b>	Prof. Elena Cattaneo
<b>Project number:</b>	222943
<b>Duration:</b>	48 months
<b>Start date:</b>	01/12/2008
<b>End date:</b>	30/11/2012
<b>EC Contribution:</b>	11,900,000.00 €
<b>Total costs:</b>	15,687,869.27 €
<b>Website:</b>	<a href="http://www.neurostemcell.org/">http://www.neurostemcell.org/</a>



**Other partners**

<b>IT</b>	UNIVERSITA DEGLI STUDI DI MILANO <b>Prof. Elena Cattaneo</b>
<b>SE</b>	LUNDS UNIVERSITET <b>Prof. Anders Björklund</b>
<b>DE</b>	UNIVERSITAETSKLINIKUM BONN <b>Prof. Oliver Brüstle</b>
<b>SE</b>	KAROLINSKA INSTITUTET <b>Prof. Thomas Perlmann</b>
<b>UK</b>	CARDIFF UNIVERSITY <b>Prof. Stephen Dunnett</b>
<b>FR</b>	COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES <b>Dr. Philippe Hantraye</b>
<b>UK</b>	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE <b>Prof. Austin Smith</b>
<b>FR</b>	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM) <b>Dr. Anselme Perrier</b>
<b>UK</b>	IMPERIAL COLLEGE OF SCIENCE, TECHNOLOGY AND MEDICINE <b>Dr. Meng Li</b>
<b>IT</b>	BIOREP SRL <b>Dr. Ida Biunno</b>
<b>DK</b>	NSGENE A/S <b>Dr. Lars Wahlberg</b>
<b>UK</b>	Stem Cell Sciences PLC <b>Dr. Timothy Allsopp</b>
<b>US</b>	Sloan-Kettering Institute for Cancer Research CORPORATION <b>Dr. Lorenz Studer</b>

**Objectives**

NeuroStemcell aims to contribute to the development of novel stem-cell-based therapies for Parkinson's disease (PD) and Huntington's disease (HD). PD and HD are ideal candidate diseases for restorative stem-cell-based therapies. The pathology is slowly progressive and characterised by the preferential loss of one type of neuron, i.e. the mesencephalic dopamine (mesDA) neurons in PD. Cell replacement strategy aims at substituting these neurons and effective restorative therapies may be possible in these two diseases. Further development of this approach, however, is critically



dependent on the availability of alternative sources of therapeutically effective cells derived from stem cells. Main objectives are the development of transplantable mesDA and striatal GABAergic progenitors from human embryonic stem (ES), neural stem (NS) and induced pluripotent stem (iPS) cells to carry out preclinical testing and to identify procedures that will eliminate the risk of proliferation/tumour-induction. Furthermore, the project aims to develop *in vivo* imaging tools for non-invasive monitoring of the survival and growth of the grafted cells, as well as tools to reveal adverse immune/inflammatory reactions to the graft. It is also intended to develop clinical protocols to be used in phase I trials in patients with PD and HD.

### Main Achievements

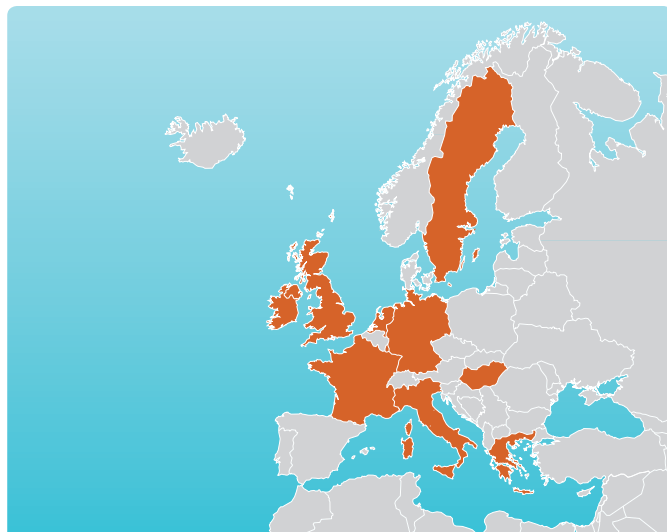
A major achievement has been the development of a new protocol for the generation of substantia nigra DA neurons from iPS cells that ameliorated PD symptoms in animal models without forming tumours. A new differentiation protocol is under refinement for the generation of striatal medium spiny projection neurons from human pluripotent stem cells. Additional major advancements are represented by the development of a chemical-based strategy that enhances migration of donor-derived neurons and by parallel sorting strategies that allow for excluding the risk of overgrowth. Finally, novel animal models have been developed for PD and HD, allowing for testing any donor cells for motor and cognitive improvements. Collectively, these achievements, in addition to the recently developed tolerisation model, represent key assets in NeuroStemcell's final year effort to move stem cell therapy towards the clinics.

### Impact

Neurodegenerative diseases like PD and HD are diseases which lead to severe disability. Thus they are causing high disease burden. PD alone affects 1% of the population over 60 and 4% of the elderly over 80. The purpose of NeuroStemcell is to speed up the transformation of stem cell transplantation from a highly experimental procedure to a clinically useful therapy for HD and PD. The results will be the provisions of a roadmap to the clinics, which will include cells, protocols and a set of functional and regulatory criteria that the cells have to fulfil in order to be of therapeutic interest.

## A European multicentre double-blind placebo-controlled phase III trial of nilvadipine in mild to moderate Alzheimer's disease

<b>Project acronym:</b>	NILVAD
<b>Coordinator:</b>	THE PROVOST, FELLOWS, FOUNDATION SCHOLARS & THE OTHER MEMBERS OF BOARD OF THE COLLEGE OF THE HOLY & UNDIVIDED TRINITY OF QUEEN ELIZABETH NEAR DUBLIN, Ireland
<b>Contact person:</b>	Prof. Brian Lawlor
<b>Project number:</b>	279093
<b>Duration:</b>	60 months
<b>Start date:</b>	01/01/2012
<b>End date:</b>	31/12/2016
<b>EC Contribution:</b>	5,999,978.00 €
<b>Total costs:</b>	7,880,917.88 €
<b>Website:</b>	<a href="http://www.nilvad.eu/">http://www.nilvad.eu/</a>



### Other partners

**IE** THE PROVOST, FELLOWS, FOUNDATION SCHOLARS & THE OTHER MEMBERS OF BOARD OF THE COLLEGE OF THE HOLY & UNDIVIDED TRINITY OF QUEEN ELIZABETH NEAR DUBLIN  
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**IE** MOLECULAR MEDICINE IRELAND LBG  
**Ms. Siobhan Gaynor**

**LU** ALZHEIMER EUROPE  
**Mr. Jean Georges**

**US** ARCHER PHARMACEUTICALS INC CORP  
**Dr. Michael Mullan**

**IE** E-SEARCH LIMITED  
**Ms. Marie Moynihan**

**IE** UNIVERSITY COLLEGE DUBLIN, NATIONAL UNIVERSITY OF IRELAND, DUBLIN  
**Prof. Leslie Daly**

**DE** GABO:MI GESELLSCHAFT FUR ABLAUFORGANISATION:MILLIARIUM MBH & CO KG GAB O  
**Ms. Pamela Koch**

**UK** KING'S COLLEGE LONDON  
**Prof. Robert Howard**

**IT** ISTITUTO DI RICERCHE FARMACOLOGICHE MARIO NEGRI  
**Mr. Ugo Lucca**

**FR** CENTRE HOSPITALIER REGIONAL ET UNIVERSITAIRE DE LILLE  
**Prof. Florence Pasquier**

**DE** UNIVERSITAET ULM  
**Prof. Matthias Riepe**

**HU** SZEGEDI TUDOMANYEGYETEM  
**Prof. János Kálmán**

**SE** GOETEBORGS UNIVERSITET  
**Dr. Anne Börjesson-Hanson**

**IE** UNIVERSITY COLLEGE CORK, NATIONAL UNIVERSITY OF IRELAND, CORK  
**Prof. William Molloy**

**EL** ARISTOTELIO PANEPISTIMIO THESSALONIKIS  
**Prof. Magda Tsolaki**

**NL** STICHTING KATHOLIEKE UNIVERSITEIT  
**Prof. Marcel Olde Rikkert**

**IE** BORD OSPIDEIL NAOIMH SHEAMUIS  
**Prof. Rose Anne Kenny**

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### Abstract

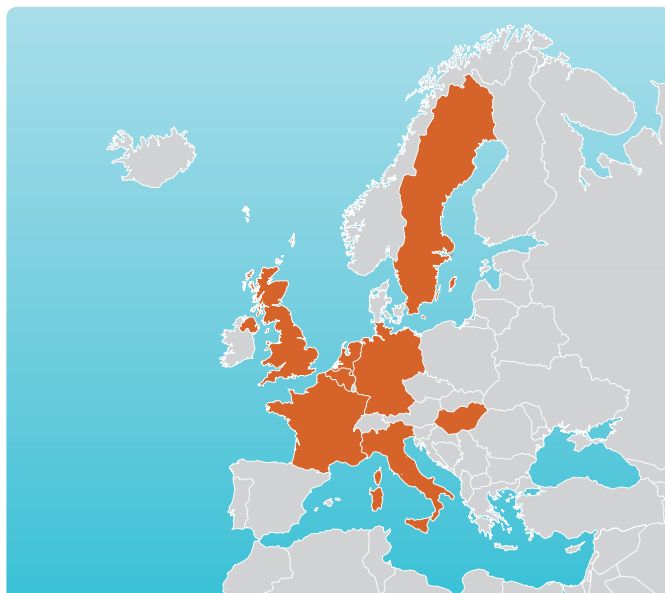
Alzheimer's disease (AD) is an ever-increasing public health concern among the aging population and is the most common form of dementia affecting more than 15 million individuals worldwide and around 5 million Europeans. The direct and indirect costs of AD and other dementias amount to more than €440,000 million each year ([www.alz.org](http://www.alz.org), 2010).

Even modest therapeutic advances that delay disease onset and progression could significantly reduce the global burden of the disease and the level of care required by patients. While there are symptomatic-based drug therapies available for AD, these medications do not prevent the disease process itself. There is therefore an imperative to develop new treatments for AD that have disease modifying effects.

This double-blind placebo controlled study will test the efficacy and safety of nilvadipine in 500 subjects with mild to moderate AD over a treatment period of 18 months. There is a strong scientific rationale for this study: Nilvadipine, a licensed calcium channel enhancer, enhances A $\beta$  clearance from brain and restores cortical perfusion in mouse models of AD. Nilvadipine is safe and well tolerated in AD patients and clinical studies with this medication have shown stabilization of cognitive decline and reduced incidence of AD, pointing to both symptomatic and disease modifying benefits. Male and female patients with mild to moderate AD aged between 50 and 90 with a range of medical morbidities and frailty will be included in the study. If this trial is successful, nilvadipine would represent an advance in the treatment of AD patients and would have a major impact on the health and social care costs incurred in Europe by this neurodegenerative disorder. Furthermore, the creation of the NILVAD network will support future clinical trials and research innovation in AD across Europe.

## Development of targeted DNA-Chips for High Throughput Diagnosis of NeuroMuscular Disorders

<b>Project acronym:</b>	NMD-CHIP
<b>Coordinator:</b>	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM), France
<b>Contact person:</b>	Dr. Nicolas Levy
<b>Project number:</b>	223026
<b>Duration:</b>	36 months
<b>Start date:</b>	01/10/2008
<b>End date:</b>	30/09/2011
<b>EC Contribution:</b>	2,697,883.98 €
<b>Total costs:</b>	3,497,319.45 €
<b>Website:</b>	<a href="http://www.nmd-chip.eu/">http://www.nmd-chip.eu/</a>



**Other partners**

<b>FR</b>	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM) <b>Dr. Nicolas Levy</b>
<b>FR</b>	PARTNERCHIP SAS <b>Dr. Pascal Soularue</b>
<b>SE</b>	KAROLINSKA INSTITUTET <b>Dr. Thomas Sejersen</b>
<b>BE</b>	PHENOSYSTEMS SA <b>Dr. David Atlan</b>
<b>UK</b>	UNIVERSITY OF NEWCASTLE UPON TYNE <b>Prof. Volker Straub</b>
<b>HU</b>	ORSZAGOS KORNYEZETEGESZSEGUGYI INTEZET <b>Dr. Veronika Karcagi</b>
<b>FR</b>	ASSOCIATION GENETHON <b>Dr. Isabelle Richard</b>
<b>FR</b>	ASSOCIATION INSTITUT DE MYOLOGIE <b>Dr. Gisèle Bonne</b>
<b>IT</b>	UNIVERSITA DEGLI STUDI DI FERRARA <b>Prof. Alessandra Ferlini</b>
<b>NL</b>	ACADEMISCH ZIEKENHUIS LEIDEN - LEIDS UNIVERSITAIR MEDISCH CENTRUM <b>Dr. Johan Den Dunnen</b>
<b>DE</b>	JULIUS-MAXIMILIANS UNIVERSITAET WUERZBURG <b>Prof. Clemens Müller-Reible</b>
<b>DE</b>	TECHNISCHE UNIVERSITAET DRESDEN <b>Ms. Angela Huebner</b>
<b>UK</b>	UNIVERSITY COLLEGE LONDON <b>Prof. Francesco Muntoni</b>

**Objectives**

Inherited neuromuscular disorders (NMDs) form a very large and heterogeneous group of genetic diseases that cause progressive degeneration of the muscles and/or motor nerves. The precise diagnosis of NMDs requires a conjunction of extensive clinical examination and time-consuming targeted complementary tests (2 weeks to 1 year). As a consequence, many patients remain devoid of genetic confirmation of their disease. The aim of NMD-Chip project is to design, develop and validate new sensitive high-throughput DNA arrays to efficiently diagnose patients affected by NMDs. The new sensitive and reliable tools intended to be developed by this project will assess all known

genes implied in a group of diseases at one time and will allow complete analysis within 1 week. Beside the development of these new high-throughput molecular diagnostics tools, NMD-Chip also fosters the knowledge of NMDs by accelerating new disease-causing mutations discovery by using a candidate gene approach.

### Main Achievements

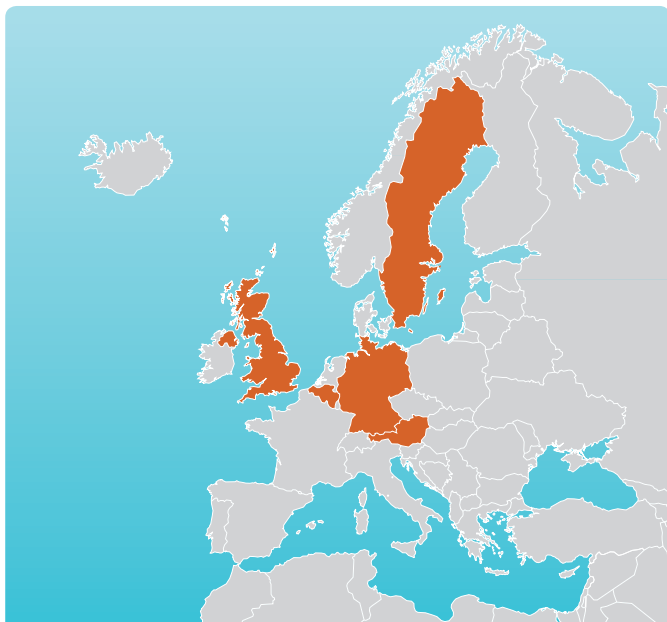
Promising concepts for potential experimental NMD therapies are in development, mainly consisting of exon skipping, AAV-mediated gene transfer, cell therapies or nonsense read-through. Performing clinical trials of such therapies will require cohorts of patients with accurate genetic diagnosis. Thus the strategy of NMD-Chip is to design four test assays, two for known NMD genes variants, and two for candidate genes exploration. The genetic variants which will be analysed by these gene chip assays are based on two separate lists that have been defined: one for the 'muscular' pathologies, namely Duchenne/Becker muscular dystrophies, limb girdle muscular dystrophies and congenital muscular dystrophies; and the other one for more 'neurological' and hereditary motor-sensory neuropathies or Charcot-Marie-Tooth neuropathies. The assay development and validation is on-going as well as the identification of novel genetic markers by a re-sequencing approach.

### Impact

Most NMD types result in chronic long-term disability, posing a significant burden to the patients, their families and public healthcare. Premature death may result from cardiac and respiratory muscle involvement. These pathologies are present in all populations, affecting children as well as adults. The overall prevalence of NMDs is difficult to evaluate, but it is estimated that 1 out of 1,500 inhabitants in developed countries may have a disabling inherited neuromuscular disease. There is currently no curing treatment available for these diseases. It is thus crucial to improve molecular diagnosis of these pathologies, and to apply the new technologies developed at the whole genome scale to the NMD field. The results will contribute to the development of new treatment options in this area of high medical need.

## Phase II clinical trial of PDGF-BB for the neurological regeneration and recovery in Parkinson 's disease

<b>Project acronym:</b>	NRT
<b>Coordinator:</b>	NEURONOVA AB, Sweden
<b>Contact person:</b>	Dr. Anders Haegerstrand
<b>Project number:</b>	279102
<b>Duration:</b>	36 months
<b>Start date:</b>	01/01/2012
<b>End date:</b>	31/12/2014
<b>EC Contribution:</b>	5,962,457.70 €
<b>Total costs:</b>	8,136,025.00 €





### Other partners

<b>SE</b>	NEURONOVA AB <b>Dr. Anders Haegerstrand</b>
<b>SE</b>	LUNDS UNIVERSITET <b>Prof. Patrik Brundin</b>
<b>UK</b>	TONIC LIFE COMMUNICATIONS LIMITED <b>Ms. Moira Gitsham</b>
<b>AT</b>	LIFE SCIENCE GOVERNANCE INSTITUTE <b>Prof. Herbert Gottweis</b>
<b>BE</b>	ASSOCIATION EUROPEENNE POUR LA MALADIE DE PARKINSON <b>Ms. Susanna Lindvall</b>
<b>SE</b>	SKANE LANS LANDSTING <b>Prof. Håkan Widner</b>
<b>SE</b>	STOCKHOLMS LAENS LANDSTING <b>Dr. Per Svenningsson</b>
<b>UK</b>	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF OXFORD <b>Dr. Alexander Green</b>
<b>UK</b>	KING'S COLLEGE HOSPITAL NHS TRUST <b>Prof. Ray Chaudhuri</b>
<b>DE</b>	KLINIKUM BREMERHAVEN-REINKENHEIDE GGMBH <b>Prof. Per Odin</b>

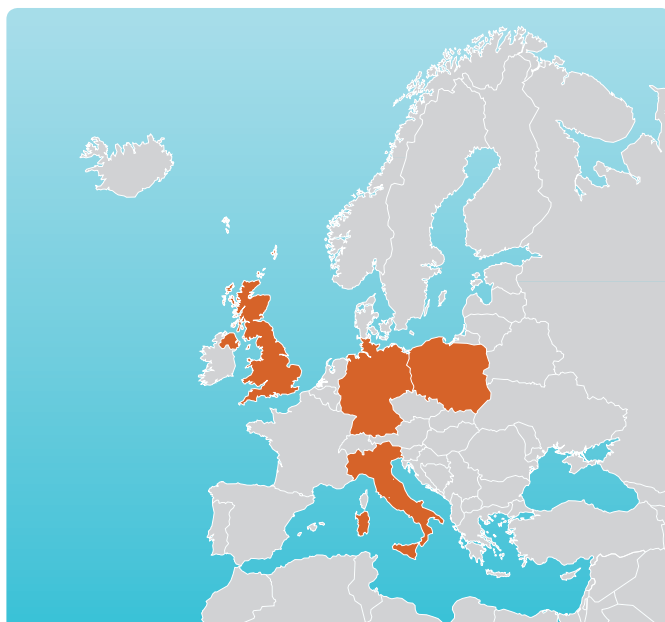
### Abstract

The goal of this project is to perform a European phase II clinical trial to demonstrate that PDGF-BB acts as a unique regenerative therapy for Parkinson's Disease (PD), aimed at reversing the course of the disease, by promotion of endogenous brain repair mechanisms. Current pharmacological therapies for PD carry side-effects and become less effective as the disease progresses. This causes immense suffering for patients in their daily lives. There is currently no established disease-modifying, regenerative or neuroprotective treatment for PD. Such a therapy would revolutionize the capacity to effectively treat PD patients and could dramatically reduce the multi-billion € annual cost to Europe. The project will conduct a multi-centre clinical trial in PD using intracerebroventricular administration of PDGF-BB. To obtain the most relevant information from the clinical trial, state-of-the-art disease rating scales and brain imaging technology will be used to monitor changes related to restoration of brain function. Planning and conduct of the clinical study will involve investigators and advisors with extensive expertise in the disease-area and experience with participating in clinical studies. To further advance the understanding of the regenerative mechanism, preclinical studies will be performed. We will set up a framework of partners to ensure proper governance of the clinical study, compliant with fundamental ethical principles of European regulations concerning

studies on 'advanced therapies medicinal products'. PD patient associations and experts in ethics will assist the project with patient information and recruitment strategies. Internal training sessions, external meetings and dissemination of results will be coordinated by a communication expert firm. A robust and realistic commercialization strategy including IP, health economy and reimbursement will be developed.

## Pharmacodynamic Approaches to Demonstration of Disease-Modification in Huntington's Disease by SEN0014196

<b>Project acronym:</b>	PADDINGTON
<b>Coordinator:</b>	SIENA BIOTECH SPA, Italy
<b>Contact person:</b>	Dr. Giovanna Tripepi
<b>Project number:</b>	261358
<b>Duration:</b>	36 months
<b>Start date:</b>	01/07/2010
<b>End date:</b>	30/06/2013
<b>EC Contribution:</b>	5,816,313.60 €
<b>Total costs:</b>	8,568,021.40 €
<b>Website:</b>	<a href="http://www.paddingtonproject.eu">http://www.paddingtonproject.eu</a>



**Other partners**

**IT** SIENA BIOTECH SPA  
**Dr. Giovanna Tripepi**

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**DE** UNIVERSITÄT ULM  
**Prof. Georg Bernhard Landwehrmeyer**

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**UK** UNIVERSITY COLLEGE LONDON  
**Prof. Sarah Tabrizi**

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**PL** KCR SA  
**Dr. Anna Dryja**

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**UK** LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE  
**Prof. Chris Frost**

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**Objectives**

The aim of the project is to undertake clinical research activities to ascertain feasibility of obtaining pharmacodynamic readouts for use in the clinical development of SEN0014196 (selisistat), aiming to provide a disease-modifying therapy for Huntington's disease. SEN0014196 is a novel and selective SirT1 inhibitor, currently in Phase II of the clinical development with orphan status in the EU since 2 September 2009. A multi-factorial approach is used in Paddington, including assessment of both novel and compound-specific measures of molecular action as well as previously identified predictors of disease progression. The translational approaches addressed by this project are instrumental in the progression of SEN0014196 to clinical proof-of-concept and, if successful, will play a pivotal role in future patient stratification and outcomes research.

**Main Achievements**

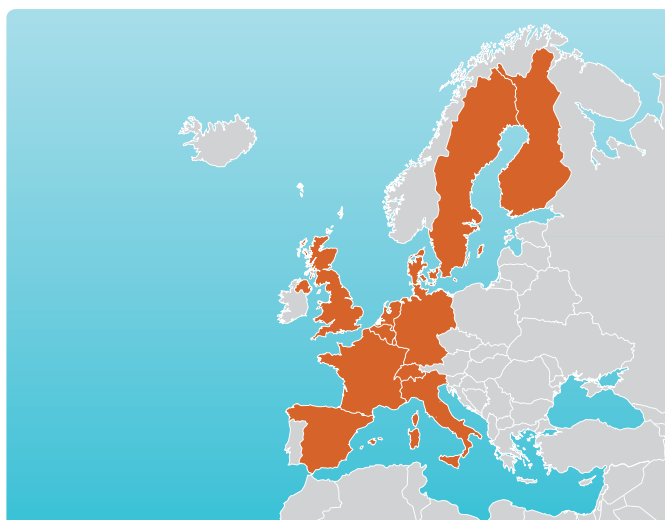
The consortium comprises four partners based within the EU, all with a proven track-record in research and development in the Huntington's disease area. Interim regulatory and patient recruitment objectives have been met; samples for analyses have been collected and multiple wet and dry biomarkers assessment activities have been initiated and are on-going. All the activities have been performed as originally planned and delivered the expected results. Additionally, within the Paddington project, five genes have been identified to be differentially modulated by SEN0014196 in blood samples from Huntington's disease patients.

**Impact**

Huntington's disease is a devastating genetic disorder resulting in significantly reduced health status and quality of life, with a high impact on affected families. No effective treatments existing at present. Thus, successful results from Paddington will represent prospectively a significant benefit for all Huntington's disease patients, since the project will provide an initial evidence of disease modification differently from the existing symptomatic treatments.

## Prediction of cognitive properties of new drug candidates For neurodegenerative diseases in early clinical development

<b>Project acronym:</b>	PHARMA-COG
<b>Coordinator:</b>	Glaxosmithkline Research and Development LTD, United Kingdom
<b>Contact person:</b>	Dr. Jill C. Richardson
<b>Project number:</b>	115009
<b>Duration:</b>	60 months
<b>Start date:</b>	01/01/2010
<b>End date:</b>	01/01/2015
<b>EC Contribution:</b>	9,893,739.00 €
<b>Total costs:</b>	20,837,235.00 €
<b>EFPIA in kind contribution:</b>	8,247,830.0
<b>Website:</b>	<a href="http://www.alzheimer-europe.org/Research/PharmaCog">http://www.alzheimer-europe.org/Research/PharmaCog</a>



**Other partners**

**UK** Glaxosmithkline Research and Development LTD  
**Dr. Jill C. Richardson**

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**FR** Université de la Méditerranée  
**Dr. Joelle Micallef**

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**ES** Institut d'Investigacions Biomediques August Pi-Sunyer  
**Dr. David Bartrès-Faz**

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**FR** Université Lille 2  
**Prof Régis Bordet**

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**DE** Universität Leipzig  
**Prof Ulrich Hegerl**

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**ES** Universidad de Murcia  
**Dr. M-T Herrero Ezquerro**

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**DE** Universitaetsklinikum Essen  
**Prof Jens Wifftfang**

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**FR** Centre National de la Recherche Scientifique  
**Dr. Fabienne Aujard**

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**FR** Institut National de la Santé et de la Recherche Médicale  
**Dr. Pierre Payoux**

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**IT** Università degli Studi di Verona  
**Prof Marina Bentivoglio**

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**IT** Provincia Lombardo-Veneta - Ordine Ospedaliero di San Giovanni di Dio— Fatebenefratelli  
**Prof Giovanni Frisoni**

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**IT** Università degli Studi di Foggia  
**Prof Claudio Babiloni**

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**IT** Istituto di Ricerche Farmacologiche 'Mario Negri'  
**Dr. Gianluigi Forloni**

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**FR** Innovative Concepts in Drug Development (ICDD-sas)  
**Dr Nathalie Compagnone**

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**FR** SAS Alzprotect  
**Dr Philippe Verwaerde**

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**FR** Qualissima  
**Dr Séverine Pitel**

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**FR** Exonhit Therapeutics SA  
**Dr Pascale Beurdeley**

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<b>FR</b>	Innovative Health Diagnostics <b>Dr Jean de Barry</b>
<b>LU</b>	ALZHEIMER EUROPE <b>Mr. Jean Georges</b>
<b>SE</b>	AstraZeneca AB <b>Dr Hans-Goran Hardermark</b>
<b>DE</b>	Boehringer Ingelheim International GmbH <b>Dr Bernd Sommer</b>
<b>CH</b>	NOVARTIS PHARMA AG <b>Dr Cristina Lopez Lopez</b>
<b>FR</b>	Institut de Recherches Internationales Servier <b>Dr Esther Schenker</b>
<b>BE</b>	UCB Pharma SA <b>Dr Yves Lamberty</b>
<b>DE</b>	Merck KGaA <b>Dr Dirk Beher</b>
<b>UK</b>	Eli Lilly and Company Ltd <b>Dr Sophie Dix</b>
<b>BE</b>	Janssen Pharmaceutica NV <b>Dr John Atack</b>
<b>CH</b>	F. HOFFMANN-LA ROCHE AG <b>Dr Willem Riedel</b>
<b>DK</b>	H. LUNDBECK A/S <b>Dr Jan Egeberg</b>
<b>UK</b>	Eisai Limited <b>Dr Lee Dawson</b>
<b>IT</b>	UNIVERSITA DEGLI STUDI DI GENOVA <b>Dr. Flavio Nobili</b>
<b>UK</b>	University of Bristol <b>Dr. Jon Brown</b>
<b>FI</b>	University of Eastern Finland
<b>IT</b>	Università Cattolica del Sacro Cuore
<b>NL</b>	Stichting VU-VUMC

## Objectives

The PharmaCog project aims to develop and validate new tools to test candidate drugs for the treatment of symptoms and disease in a faster and more sensitive way. By bringing together databases of previously-conducted clinical trials and combining the results from blood tests, brain scans and behavioural tests, the scientists are developing a 'signature' that gives more accurate information on the progression of the disease and the effect of candidate drugs than current methods do. The scientists are conducting parallel studies in laboratory models, healthy volunteers and patients in order to better identify good new drugs as early as possible. This will enable them, for instance, to find out how memory loss in Alzheimer's disease can be simulated in healthy volunteers, for example with sleep deprivation or transcranial magnetic stimulation that temporarily affect the memory, in order to test the effect of candidate medicines early in the drug development process. Combining the expertise of 29 public and private partners, PharmaCog has the unique opportunity to fundamentally change the drug discovery process in Alzheimer's disease and to accelerate in Europe the development of effective drugs for patients. The consortium is working in close cooperation with the European Medicines Agency.

## Main achievements and impact

Currently, approved drugs for patients with Alzheimer's disease only treat symptoms and their effect is limited or absent in many patients. No drugs have been approved yet that can actually slow the progression of the disease. Trials with candidate drugs take years and cost tens of millions of euros, as the beneficial effect in patients may only become clearly apparent after long treatment due to the insensitivity of the tools available to measure the effect of a drug on the progression of the disease. The focus of the PharmaCog project is on increasing our ability to predict new medicines from laboratory studies and clinical models. While other initiatives are focused on improving clinical trial design, PharmaCog is focused on improving our ability to identify the most promising new medicines of the future. PharmaCog has made good progress on the main tenet of the project, i.e. the development of an innovative multidimensional matrix that combines advanced statistical methodology with systems biology, pharmacology, neuroanatomy, neurophysiology (EEG), biochemistry, and neuropsychology. Parallel studies are underway in animals, healthy volunteers and selected patient cohorts and are structured around three central themes described below:

- 1) Development of translational challenge models in support of efficacy studies: sleep deprivation, Transcranial Magnetic stimulation (TMS) and hypoxia elicit transient and reversible cognitive impairments in animals and healthy volunteers.
- 2) Development and validation of pharmacodynamic markers suitable for supporting the determination of efficacious exposure to the drug.
- 3) Development of markers sensitive to early disease progression and development of animal models with greater predictive value.

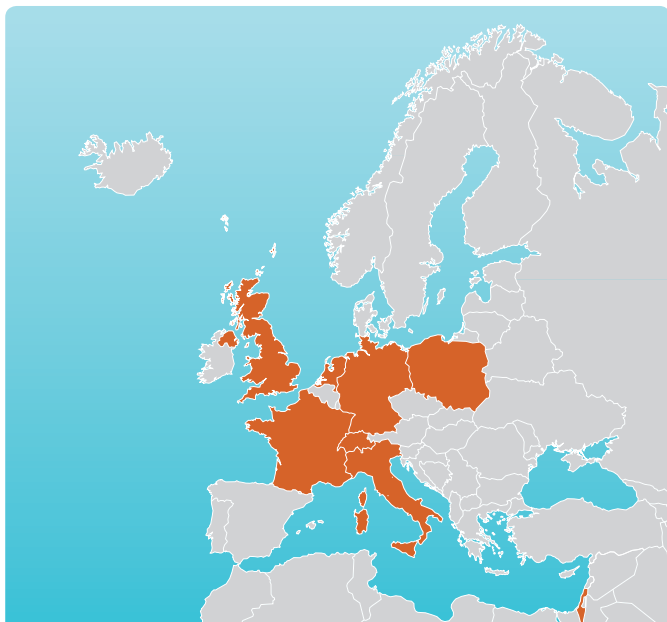
PharmaCog is developing new tools to identify potential drugs (and screen out ineffective ones) early in the drug development process. The project is also working on tests to determine how well a drug is working in individual patients, e.g. through brain scans, blood tests and cognitive testing.



Collection and integration of different datasets has been performed. The combination of the different datasets will allow the description of the disease symptoms across a wide time span, and the assessment of the covariate factors so far neglected (neuroimaging, new biomarkers). Based on the literature reviews and information gathered from the EFPIA partners, four clinical trials have been designed with parallel pre-clinical research plans. Subjects have already been enrolled in the clinical trials and at completion, 250 subjects across Europe will have participated in the PharmaCog project. All clinical sites have been fully harmonised based on common and validated procedures. A multicentric clinical study (8 centres, 4 countries) is enrolling Mild Cognitive Impaired (MCI) patients by assessing a translational broad range of endpoints (MRI based on ADNi, EEG, cognition, novel biomarkers characterised by PharmaCog SMEs) in order to identify a validated and translational marker battery of disease progression which will allow for measuring the effects of disease modifying treatments.

## Promotion of plasticity as a treatment for neurodegenerative conditions

<b>Project acronym:</b>	PLASTICISE
<b>Coordinator:</b>	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE, United Kingdom
<b>Contact person:</b>	Prof. James Fawcett
<b>Project number:</b>	223524
<b>Duration:</b>	48 months
<b>Start date:</b>	01/12/2008
<b>End date:</b>	30/11/2012
<b>EC Contribution:</b>	5,199,445.00 €
<b>Total costs:</b>	6,767,727.40 €
<b>Website:</b>	<a href="http://www.plasticise.eu">http://www.plasticise.eu</a>



### Other partners

<b>UK</b>	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE <b>Prof. James Fawcett</b>
<b>CH</b>	UNIVERSITAET ZUERICH <b>Prof. Martin Schwab</b>
<b>IT</b>	CONSIGLIO NAZIONALE DELLE RICERCHE <b>Prof. Tommaso Pizzorusso</b>
<b>NL</b>	KONINKLIJKE NEDERLANDSE AKADEMIE VAN WETENSCHAPPEN - KNAW <b>Prof. Joost Verhaagen</b>
<b>CH</b>	NOVARTIS FORSCHUNGSTIFTUNG, ZWEIGNIEDERLASSUNG FRIEDRICH MIESCHER INSTITUTE FOR BIOMEDICAL RESEARCH <b>Prof. Pico Caroni</b>
<b>CH</b>	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE <b>Prof. Patrick Aebischer</b>
<b>UK</b>	UNIVERSITY COLLEGE LONDON <b>Prof. Nick Ward</b>
<b>CH</b>	UNIVERSITE DE GENEVE <b>Prof. Anthony Holtmaat</b>
<b>DE</b>	UNIVERSITAETSKLINIKUM FREIBURG <b>Prof. Cornelius Weiller</b>
<b>PL</b>	NENCKI INSTITUTE OF EXPERIMENTAL BIOLOGY- POLISH ACADEMY OF SCIENCES <b>Prof. Leszek Kaczmarek</b>
<b>DE</b>	MAX PLANCK GESELLSCHAFT ZUR FOERDERUNG DER WISSENSCHAFTEN E.V. <b>Prof. Nikos Logothetis</b>
<b>FR</b>	PHARMAXON SAS <b>Dr. Jean-Christien Norreel</b>
<b>IL</b>	D-Pharm LTD <b>Dr. Tami Horovitz</b>
<b>UK</b>	DANDO WEISS & COLUCCI LIMITED <b>Dr. Isabelle Weiss</b>
<b>CH</b>	NOVARTIS PHARMA AG <b>Dr. Anis Mir</b>
<b>UK</b>	GLAXOSMITHKLINE RESEARCH AND DEVELOPMENT LTD. <b>Dr. Rabinder Prinjha</b>

## Objectives

The overall concept behind the Plasticise project is that the mechanism of plasticity can be enhanced to enhanced recovery from a variety of forms of brain and spinal cord damage. Plasticity is the mechanism that allows the brain to bypass damage; it occurs through the formation of new functional connections, withdrawal of inappropriate connections and modulation of synaptic strength. Plasticity is very much reduced after childhood: however treatments developed in Plasticise are able to reactivate plasticity in the adult nervous system, and this is a powerful method of enhancing recovery of function in animal models of disease. Plasticity-promoting treatments could therefore be beneficial in a wide range of conditions that damage the CNS. The revolutionary concept in Plasticise was to ask whether plasticity-enhancing treatments might also be effective in restoring memory in Alzheimer's disease/tauopathy.

## Main Achievements

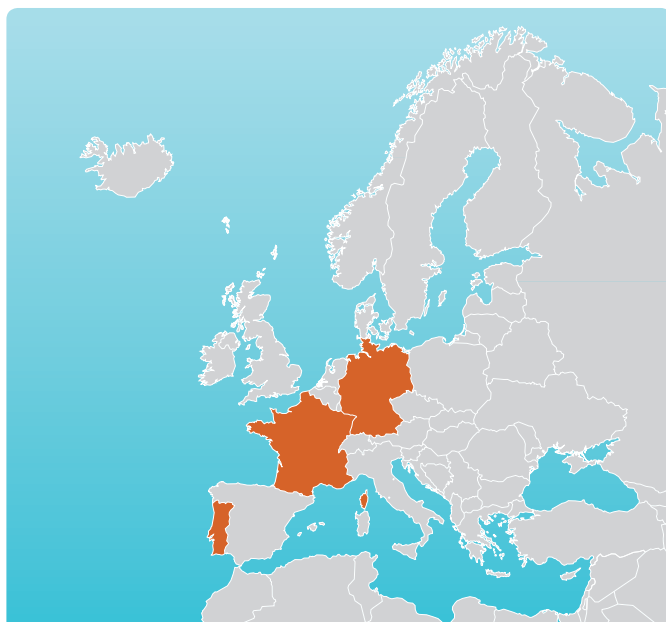
Plasticise encompasses a spectrum of research from basic molecular/cell biology to clinical investigation. It discovered basic mechanisms of memory, elucidated mechanisms of plasticity, developed new plasticity treatments, and studied plasticity in human patients. For the study of restoration of memory in Alzheimer's disease and recovery of function after stroke, new animal models were created, and new assessment methods for human patients established. Profound new knowledge on the mechanism of how creation of new connections leads to memory was discovered. In understanding how plasticity is controlled in the adult nervous system, there was a focus on extracellular matrix structures known as perineuronal nets, which are responsible for turning off plasticity after childhood, and can be removed to reactivate plasticity. The way in which Semaphorin 3A interacts with perineuronal nets provides information on how plasticity is controlled, and a potential new form of treatment for nervous damage. The most revolutionary finding for potential new therapeutics was that reactivation of plasticity can completely restore memory in a model of Alzheimer's disease. Major advances have been made on the clinical side, with the development of new imaging methods for evaluating plasticity in human patients and a trial of stroke patients with combined plasticity treatment and rehabilitation. A multicentre Phase 1 trial of anti-NOGO antibodies in spinal cord injury is on-going. Progress has been made in identifying parameters that might predict recovery in individual patients after a stroke as well as showing which patients may benefit from particular forms of therapy. A Phase 2 study for which a new compound has been completed in stroke patients showed strong evidence of plasticity-related neuroprotection as a new therapy concept in this indication. The clinical study protocol for a clinical trial of the development of Phase 3 has been approved by the FDA, and the study is in preparation.

## Impact

In Europe overall, neurological damage accounts for 40% of people who are severely disabled and who require daily help. Neurodegenerative diseases, including stroke and Alzheimer's disease, are the major causes of chronic disability in European communities. Spinal cord injury: it is estimated that there are at least 330,000 people living with spinal cord injury (paraplegia and tetraplegia) with over 15,000 new cases reported each year. The development of new treatment concepts will give new hope for both the person and family with degenerative diseases. In addition, the direct and indirect as well as the socioeconomic costs have a major budgetary impact in European countries.

# Rod-derived Cone Viability Factor

<b>Project acronym:</b>	RDCVF
<b>Coordinator:</b>	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM), France
<b>Contact person:</b>	Prof. Jose-Alain Sahel
<b>Project number:</b>	241683
<b>Duration:</b>	36 months
<b>Start date:</b>	01/03/2010
<b>End date:</b>	28/02/2013
<b>EC Contribution:</b>	2,411,433.00 €
<b>Total costs:</b>	3,714,801.40 €
<b>Website:</b>	<a href="http://www.rdcvf.eu/">http://www.rdcvf.eu/</a>



**Other partners**

**FR** INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)

**Prof. Jose-Alain Sahel**

**DE** EBERHARD KARLS UNIVERSITAET TUEBINGEN

**Dr. Thomas H. Wheeler-Schilling**

**PT** UNIVERSIDADE DE COIMBRA

**Prof. Maria Helena Gil**

**FR** FOVEA PHARMACEUTICALS

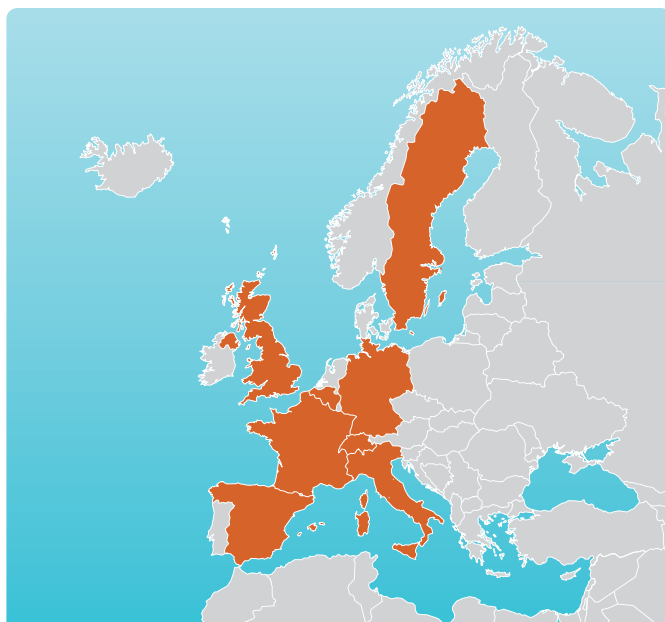
**Mr. Bernard Gilly**

**Abstract**

The discovery of RdCVF (Rod-derived Cone Viability Factor) has provided a clue to understanding the secondary loss of cone photoreceptors (and of central and light-adapted vision) following the degeneration of rod photoreceptors as a consequence of mutations expressed only in rods in most cases of rod-cone degenerations (or retinitis pigmentosa: RP). In two different rodent models of RP, intraocular administration of RdCVF increased significantly cone survival and function. Given the unparalleled genetic heterogeneity of retinal dystrophies, including RP, the delivery of RdCVF appears as a promising, mutation independent strategy for preserving central vision, even at late stages of the disease, opening a wide window for neuroprotection. RdCVF, discovered by team 1, and developed by team 5, has been granted by the EMEA and FDA the Orphan Status. Reaching the stage of phase I/II trials with RdCVF protein therapy in RP implies several key preclinical milestones: 1) the production of GMP grade proteins and their functional validation in in vitro and in vivo assays, 2) pharmacokinetic and pharmacodynamic studies determining, the dosage, half life, site of injection of the protein, while 3) toxicology studies will be performed in normal and mutant mice and rats, and in monkeys. In parallel, based on the knowledge gained by partner 1 on tryparedoxins (the family of RdCVF) and on RdCVF sequence and paralogs, attempts will be made to 4) optimize the therapeutic protein. In order to reduce the injected dose and to provide a steady level of RdCVF, innovative delivery systems such as nanoparticles will be developed. These steps, conducted by renown academic partners in the fields of neuroprotection and toxicology, experienced industrials and subcontractants, will lead to a proof of safety and concept in advanced RP. This may provide a novel, widely applicable approach to an untreatable blinding condition, while hinting towards extension to other neurodegenerative diseases.

# Restorative Plasticity At Corticostriatal Excitatory Synapses

<b>Project acronym:</b>	REPLACES
<b>Coordinator:</b>	UNIVERSITA DEGLI STUDI DI MILANO, Italy
<b>Contact person:</b>	Prof. Monica Di Luca
<b>Project number:</b>	222918
<b>Duration:</b>	48 months
<b>Start date:</b>	01/11/2008
<b>End date:</b>	31/10/2012
<b>EC Contribution:</b>	4,219,766.00 €
<b>Total costs:</b>	5,454,740.01 €
<b>Website:</b>	<a href="http://www.replaces-pd.org">http://www.replaces-pd.org</a>



**Other partners**

<b>IT</b>	UNIVERSITA DEGLI STUDI DI MILANO <b>Prof. Monica Di Luca</b>
<b>IT</b>	FONDAZIONE SANTA LUCIA <b>Prof. Paolo Calabresi</b>
<b>DE</b>	LEIBNIZ-INSTITUT FUER NEUROBIOLOGIE <b>Prof. Eckart D. Gundelfinger</b>
<b>FR</b>	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM) <b>Prof. Etienne Hirsch</b>
<b>UK</b>	CARDIFF UNIVERSITY <b>Prof. Stephen Dunnett</b>
<b>SE</b>	LUNDS UNIVERSITET <b>Prof. Anders Bjorklund</b>
<b>ES</b>	FUNDACION PARA LA INVESTIGACION MEDICA APLICADA FIMA <b>Dr. Jose Obeso</b>
<b>UK</b>	UNIVERSITY COLLEGE LONDON <b>Prof. John Christopher Rothwell</b>
<b>FR</b>	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE (CNRS) <b>Dr. Laurent Fagni</b>
<b>BE</b>	ASSOCIATION EUROPEENNE POUR LA MALADIE DE PARKINSON <b>Ms. Mary Baker</b>
<b>IT</b>	CF CONSULTING FINANZIAMENTI UNIONE EUROPEA SRL <b>Mrs. Carla Finocchiaro</b>
<b>CH</b>	XIGEN SA <b>Dr. Christophe Bonny</b>

**Objectives**

Alteration of brain plasticity may lead to the motor and cognitive disturbances observed in neurodegenerative diseases like Parkinson's disease (PD). The Replaces project addresses brain/synaptic changes in physiological and neurodegenerative conditions using corticostriatal plasticity as a paradigmatic model. The overall aim of the project will be to characterise corticostriatal synaptic plasticity from molecular aspects to clinical neurophysiology, involving behavioural as well as morphological analysis of the basal ganglia system. An additional specific objective of this project is the development of restorative approaches for synaptic alterations in PD animal models.



### Main Achievements

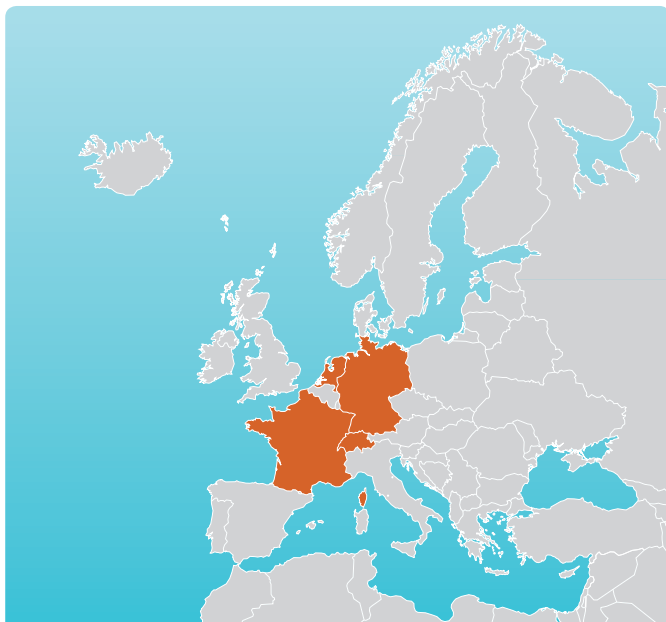
Replaces characterised the role of metabotropic glutamate receptors 1/5 (mGluRs1/5) and N-Methyl-D-aspartate receptor (NMDAR) subunits at corticostriatal synapses in experimental models of PD and L-DOPA-induced dyskinesia. Major progress has been obtained by demonstrating the role of membrane-associated guanylate kinase (MAGUK)/NMDARs complexes and mGluRs in the regulation of corticostriatal plasticity. A full behavioural characterisation of experimental models of PD has been achieved together with the study of behavioural consequences of changed plasticity in PD patients. To evaluate potential novel treatment options for L-DOPA induced dyskinesia, cell-permeable peptides targeting MAGUK/NMDARs complexes have been administered in *in vivo* models as a rescue strategy. Molecular, electrophysiological and behavioural studies have provided evidence of the beneficial effect.

### Impact

PD is the second most common neurodegenerative disorder after Alzheimer's disease. The prevalence of PD is estimated at a proportion of about 0.3% of the whole population in developed countries. The life expectancy of people with PD is reduced. Furthermore, PD is one of the main reasons for disabilities, with a high impact on the quality of life for PD patients. Replaces will focus on the role of brain/synaptic changes in physiological conditions and in PD using corticostriatal plasticity as paradigmatic model, with the final goal of highlighting conditions of restoration and repair. The identification of cellular, molecular and synaptic alterations in rodents and primates models will go deeper to the mechanisms underlying PD as well as L-DOPA- and graft-induced dyskinesias and will be instrumental to establish novel targets for drug intervention. Thus, Replaces has a high potential for providing a relevant contribution to improve the knowledge and the therapy of PD and L-DOPA induced dyskinesia.

## Circuit specific approaches to retinal diseases

<b>Project acronym:</b>	RETICIRC
<b>Coordinator:</b>	KONINKLIJKE NEDERLANDSE AKADEMIE VAN WETENSCHAPPEN - KNAW, Netherlands
<b>Contact person:</b>	Prof. Maarten Kamermans
<b>Project number:</b>	223156
<b>Duration:</b>	36 months
<b>Start date:</b>	01/01/2009
<b>End date:</b>	31/12/2011
<b>EC Contribution:</b>	2,250,000.00 €
<b>Total costs:</b>	2,979,560.00 €
<b>Website:</b>	<a href="http://www.reticirc.eu/">http://www.reticirc.eu/</a>



### Other partners

<b>NL</b>	KONINKLIJKE NEDERLANDSE AKADEMIE VAN WETENSCHAPPEN - KNAW <b>Prof. Maarten Kamermans</b>
<b>FR</b>	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM) <b>Dr. Serge Picaud</b>
<b>DE</b>	CARL VON OSSIETZKY UNIVERSITAET OLDENBURG <b>Prof. Reto Weiler</b>
<b>CH</b>	NOVARTIS FORSCHUNGSSTIFTUNG, ZWEIGNIEDERLASSUNG FRIEDRICH MIESCHER INSTITUTE FOR BIOMEDICAL RESEARCH <b>Dr. Botond Roska</b>
<b>CH</b>	UNIVERSITAET ZUERICH <b>Prof. Stephan Neuhauss</b>
<b>FR</b>	INSERM - TRANSFERT SA <b>Dr. Olivier Lorentz</b>

### Objectives

The Reticirc project focused on neuronal mechanisms of vision from photoreceptor level to the visual cortex. Physiological knowledge of the visual system was used to address pathophysiological neuronal mechanisms of diseases affecting vision. Blindness in man often results from dysfunction of the retina. For a number of retinal diseases, the retinal circuitry is a major part of the problem. For the development of effective strategies for treatment of those diseases and for further developments aiming to restore vision in general, understanding of the retinal circuitries is essential.

### Main Achievements

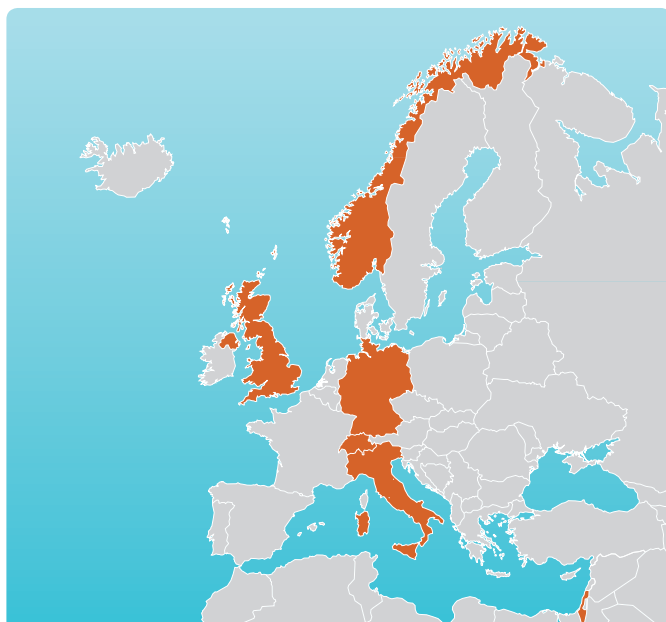
Reticirc identified and characterised the critical processing steps in the retina: contrast adaptation, gain control, subtractive inhibition, synaptic amplification and lateral integration. This allowed the consortium to develop a full quantitative model of the outer retina. This accomplishment is a novelty. Furthermore, major progress has been achieved by gaining a better understanding of the highly specialised neuronal sub-networks in the inner retina. Knowledge of such specialised sub-networks is essential for any strategy to restore function to a diseased retinal network. In mice models for retinitis pigmentosa (in these mice, photoreceptors degenerate) it was found that the photoreceptors do not disappear completely but that cell bodies and synaptic terminals remain functionally connected to the rest of the retina. The Reticirc consortium was able to restore light responses of retinal neurons in this animal model by transfecting these degenerated photoreceptors with constructs encoding for halorhodopsin. The retinal ganglion cells in these mice showed normal centre surround properties and these mice were able to perform visual tasks again. In pilot experiments it was shown that a similar restoration of vision could potentially be obtained in the human retina.

### Impact

Reticirc has delivered better understanding of the retinal circuitry, provided new results addressing the bystander hypothesis and delivered a proof of principle of the optogenetic approach in animals to restore vision to blind patients. This opens the door for new treatment options. Even a part restoration of vision or a retardation of a disease progression resulting in blindness would have a major socioeconomic impact and would provide a substantial increase in the quality of life for patients.

## Space coding in hippocampo-entorhinal neuronal assemblies

<b>Project acronym:</b>	SPACEBRAIN
<b>Coordinator:</b>	NORWEGIAN UNIVERSITY OF SCIENCE AND TECHNOLOGY, Norway
<b>Contact person:</b>	Prof. Edvard Moser
<b>Project number:</b>	200873
<b>Duration:</b>	42 months
<b>Start date:</b>	01/02/2008
<b>End date:</b>	31/07/2011
<b>EC Contribution:</b>	3,000,000.00 €
<b>Total costs:</b>	7,996,767.00 €
<b>Website:</b>	<a href="http://www.ntnu.no/cbm/spacebrain">http://www.ntnu.no/cbm/spacebrain</a>



**Other partners**

**NO** NORWEGIAN UNIVERSITY OF SCIENCE AND TECHNOLOGY  
**Prof. Edvard Moser**

**UK** AXONA LIMITED  
**Dr. James Donnett**

**IT** SCUOLA INTERNAZIONALE SUPERIORE DI STUDI AVANZATI  
**Prof. Alessandro Treves**

**UK** UNIVERSITY COLLEGE LONDON.  
**Prof. John O'keefe**

**CH** UNIVERSITAET ZUERICH  
**Prof. Fritjof Helmchen**

**DE** UNIVERSITAETSKLINIKUM HEIDELBERG  
**Prof. Hannah Monyer**

**IL** WEIZMANN INSTITUTE OF SCIENCE  
**Prof. Michail Tsodyks**

**Objectives**

Despite impressive advances in almost every field of neuroscience, our understanding of brain function has largely been confined to the brain's building blocks at the microscopic level, and to phenomenological descriptions at the macroscopic level. We know much less about the link between these levels — how complex mental functions originate from electrical and chemical processes. The aim of the Spacebrain project was to initiate the search for principles of microcircuit computation in the relatively accessible spatial representation system of rodents, using a powerful combination of novel computational, electrophysiological, optical and molecular research tools that had not been applied before to the analysis of brain circuitry.

**Main achievements**

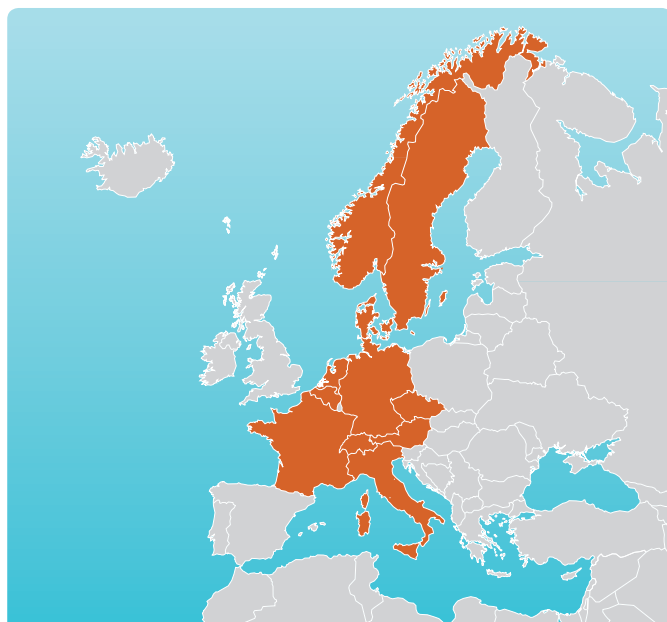
The project has achieved significant increase our understanding of how space is represented in neural networks of the entorhinal cortex and hippocampus, brain regions known to form internal maps of the local environment. Key scientific advances include, first of all, new insights into the intrinsic wiring of the entorhinal cortex. The project has shown how grid cells — one of the key cell types of the space circuit — connect to other cell types in the circuit and in neighbouring regions, and we have learned that grid cells are strongly linked by inhibitory connections. The project has shown that space-coding cells develop a lot earlier than researchers thought before, and that a rudimentary spatial representation is present already when rats make their first navigational experiences outside the nest, at the beginning of the third postnatal week. Additional miniaturised microdrives for recording electrical activity at multiple brain locations in small animals have been developed as well as a portable high-resolution microscope for population studies of local neural networks during behaviour.

### Impact

Deeper understanding of the neuronal microcircuitry responsible for distinct mental experiences will undoubtedly have a benefit impact. Such mechanistic insights can help to improve prevention and treatment of neurological diseases where spatial orientation and memory are impaired, including Alzheimer's disease. This will increase health status and quality of life for patients and will reduce the socioeconomic burden for European societies.

## Standardisation and improvement of generic pre-analytical tools and procedures for in vitro diagnostics

<b>Project acronym:</b>	SPIDIA
<b>Coordinator:</b>	QIAGEN GMBH, Germany
<b>Contact person:</b>	Dr. Uwe Oelmüller
<b>Project number:</b>	222916
<b>Duration:</b>	54 months
<b>Start date:</b>	01/10/2008
<b>End date:</b>	31/03/2013
<b>EC Contribution:</b>	8,981,796.00 €
<b>Total costs:</b>	13,823,601.00 €
<b>Website:</b>	<a href="http://www.spidia.eu/">http://www.spidia.eu/</a>





## Other partners

<b>DE</b>	QIAGEN GMBH <b>Dr. Uwe Oelmüller</b>
<b>AT</b>	MEDIZINISCHE UNIVERSITÄT GRAZ <b>Prof. Kurt Zatloukal</b>
<b>IT</b>	CONSORZIO INTERUNIVERSITARIO RISONANZE MAGNETICHE DI METALLOPROTEINE PARAMAGNETICHE <b>Prof. Ivano Bertini</b>
<b>SE</b>	TATAA BIOCENTER AB <b>Dr. Robert Sjöback</b>
<b>CH</b>	PREANALYTIX GMBH <b>Dr. Christian Lenz</b>
<b>NO</b>	DIAGENIC ASA <b>Dr. Anders Lönneborg</b>
<b>DK</b>	AROS APPLIED BIOTECHNOLOGY AS <b>Dr. Mogens Kruhoffer</b>
<b>DK</b>	DAKO DENMARK A/S <b>Ms. Rosa Winther</b>
<b>FR</b>	ACIES SAS <b>Dr. Marie-Laure Muiras</b>
<b>CZ</b>	BIOTECHNOLOGICKÝ ÚSTAV AV ČR VVI <b>Prof. Mikael Kubista</b>
<b>BE</b>	COMITE EUROPEEN DE NORMALISATION <b>Mr. Alexandre Della Faille De Leverghem</b>
<b>FR</b>	IMMUNID TECHNOLOGIES <b>Dr. Sebastien Weisbuch</b>
<b>IT</b>	UNIVERSITÀ DEGLI STUDI DI FIRENZE <b>Prof. Mario Pazzagli</b>
<b>NL</b>	ERASMUS UNIVERSITEIT MEDISCH CENTRUM ROTTERDAM <b>Dr. Peter Hendrik Jan Riegman</b>
<b>DE</b>	TECHNISCHE UNIVERSITÄT MÜNCHEN <b>Prof. Heinz Höfler</b>
<b>IT</b>	FONDAZIONE IRCCS ISTITUTO NAZIONALE DEI TUMORI <b>Dr. Paolo Verderio</b>
<b>FR</b>	NOVAMEN SAS <b>Ms. Marie-Laure Muiras</b>

## Objectives

The main aim of Spidia is to establish yet missing standardisation and to improve pre-analytical procedures for *in vitro* diagnostics. This project will establish pan-European quality assurance schemes and guidelines for the pre-analytical phase of *in vitro* diagnostics, based on results achieved during ring trials. These procedures will have a specific focus on DNA, RNA, protein and metabolite targets isolated from tissue, tumour, whole blood, serum and plasma samples. The consortium also intends to develop new diagnostic tests based on biomarkers. One of the major objectives was the development and validation of an optimised pre-analytical workflow in a clinical cohort of Alzheimer's disease patients using gene expression analysis for disease prediction and distinguishing Alzheimer's disease from other forms of dementia. Furthermore, the consortium aims to develop novel stabilisation technologies for tissues, blood and non-invasive samples, such as swab samples, to the integration of multiple pre-analytical steps in an automated workflow.

## Main Achievements

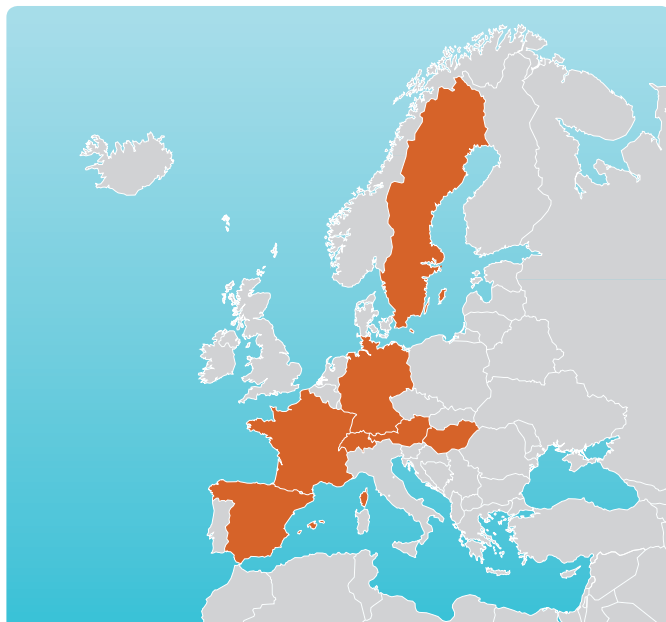
Ring trials have been conducted for analysing the status quo of pre-analytical workflow standardisation in Europe. Based on these results, the consortium is currently developing guidelines. A new tissue fixation and stabilisation technology has been developed showing significant advantages concerning RNA and DNA preservation in tissue samples. A microarray study has been conducted to identify novel biomarker candidates. Selection of candidates for further biomarker development according to internal guidelines is on-going. The NMR analysis of blood samples in a cohort of patients and controls has shown that a metabolic signature for patients with metastatic colorectal cancer exists. This metabolomic signature predicts overall survival and provides insight into potential new biomarkers that can be used to predict disease progression and to personalise treatment. Spidia has developed a diagnostic test for early diagnosis of Alzheimer's disease using gene expression analysis of RNA in blood.

## Impact

Molecular diagnostics can be limited by the lack of guidelines for collection, handling, stabilisation and storage of biological samples. The development of evidence-based guidelines will improve the quality of pre-analytical procedures, which will increase specificity and sensitivity of *in vitro* diagnostic tests. This will reduce the disease burden to patients by improving the quality of results from diagnostic tests and will subsequently lead to more accurate diagnosis, therefore reducing diagnostic and therapeutic failure. Thus, Spidia will also contribute to reduce direct and indirect costs of healthcare systems. A test for early diagnosis of Alzheimer's disease has been developed and is already commercially available. Alzheimer's disease is one of the major causes in the elderly in developed countries and implies a substantial burden to patients and healthcare systems.

## Transposon-based, targeted ex vivo gene therapy to treat age-related macular degeneration (AMD)

<b>Project acronym:</b>	TARGETAMD
<b>Coordinator:</b>	UNIVERSITE DE GENEVE, Switzerland
<b>Contact person:</b>	Prof. Gabriele Thumann
<b>Project number:</b>	305134
<b>Duration:</b>	48 months
<b>Start date:</b>	01/11/2012
<b>End date:</b>	31/10/2016
<b>EC Contribution:</b>	5,976,298.00 €
<b>Total costs:</b>	7,760,903.00 €



**Other partners**

<b>CH</b>	UNIVERSITE DE GENEVE <b>Prof. Gabriele Thumann</b>
<b>DE</b>	RHEINISCH-WESTFAELISCHE TECHNISCHE HOCHSCHULE AACHEN <b>Mrs. Maria Perdikomati-Dahmen</b>
<b>DE</b>	MAX DELBRUECK CENTRUM FUER MOLEKULARE MEDIZIN <b>Prof. Zsuzsanna Izsvák</b>
<b>DE</b>	BUNDESINSTITUT FUR IMPFSTOFFE UND BIOMEDIZINISCHE ARZNEIMITTEL <b>Prof. Zoltán Ivics</b>
<b>ES</b>	UNIVERSIDAD DE NAVARRA <b>Prof. Alfredo García-Layana</b>
<b>SE</b>	HOTSWAP STOCKHOLM AB <b>Dr. Per-Ola Forsgren</b>
<b>HU</b>	UD-GENOMED MEDICAL GENOMIC TECHNOLOGIES KUTATAS- FEJLESZTESI ES SZOLGALTATO KFT <b>Dr. Goran Petrovski</b>
<b>FR</b>	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE <b>Prof. Daniel Scherman</b>
<b>ES</b>	3P BIOPHARMACEUTICALS SL <b>Dr. Pablo Aranda</b>
<b>FR</b>	GENOSAFE SAS <b>Dr. Muriel Audit</b>
<b>AT</b>	MAGISTRAT DER STADT WIEN <b>Prof. Susanne Binder</b>
<b>DE</b>	NOVARTIS PHARMA GMBH <b>Dr. Stefan Scheidl</b>
<b>DE</b>	UNIVERSITAETSKLINIKUM AACHEN <b>Dr. Sandra Johnen</b>

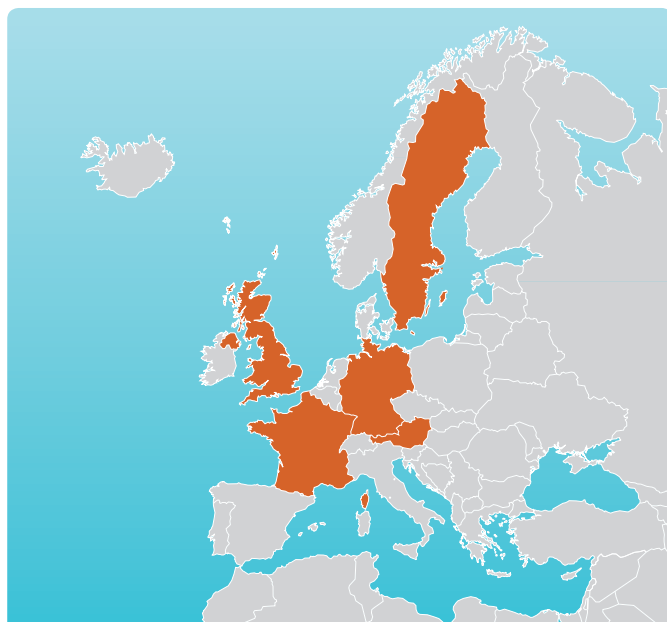
**Abstract**

Age-related Macular Degeneration (AMD), a neurodegenerative disease of the retina, is a major cause of blindness in elderly people. Due to the aging population, AMD has been referred to as a 'time bomb' in society. In the exudative form of AMD, high levels of vascular endothelial cell growth factor (VEGF) and low levels of pigment-epithelial derived factor (PEDF), an inhibitor of vascularization and a neuroprotective factor produced by retinal pigment epithelial (RPE) cells result in subretinal neovascularization and retinal pigment cell degeneration. The current treatment by monthly injections of anti-VEGF antibodies is only effective for ~30% of patients. To avoid the

severe side effects, high costs and the overall continuing burden on health care associated with monthly antibody injections, inducing a higher level of PEDF expression to inhibit neovascularization would be a viable therapeutic alternative. TargetAMD will subretinally transplant genetically modified, patient-derived, iris- or RPE cells that overexpress PEDF to provide a long-lasting cure of AMD. Stable PEDF gene delivery will be based on the non-viral Sleeping Beauty transposon system, which combines the efficacy of viral delivery with the safety of naked DNA plasmids. Academic scientists and SME partners will produce innovative gene delivery technologies, reagents and devices to be translated into a simple and safe gene therapeutic treatment for exudative AMD. Experienced clinicians will perform two clinical trials, comprising isolation and PEDF-transfection of a patient's pigment epithelial cells and implantation of transfected cells into the patient during a single, 60-minute surgical session. This project will bring a significant enhancement on quality of life to AMD patients, highlight the synergistic power of academic, clinical and industrial cooperation to the scientific arena, and open new markets for novel products for clinical applications of transposon-based gene therapy to industry.

## NEURAL TRANSPLANTATION IN THE TREATMENT OF PATIENTS WITH PARKINSON'S DISEASE

<b>Project acronym:</b>	TRANSEURO
<b>Coordinator:</b>	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE, United Kingdom
<b>Contact person:</b>	Dr. Roger Barker
<b>Project number:</b>	242003
<b>Duration:</b>	60 months
<b>Start date:</b>	01/01/2010
<b>End date:</b>	31/12/2014
<b>EC Contribution:</b>	11,994,095.00 €
<b>Total costs:</b>	15,550,252.00 €
<b>Website:</b>	<a href="http://www.transeuro.org.uk/">http://www.transeuro.org.uk/</a>



### Other partners

<b>UK</b>	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE <b>Dr. Roger Barker</b>
<b>SE</b>	LUNDS UNIVERSITET <b>Prof. Anders Björklund</b>
<b>UK</b>	CARDIFF UNIVERSITY <b>Prof. Steve Dunnnett</b>
<b>UK</b>	IMPERIAL COLLEGE OF SCIENCE, TECHNOLOGY AND MEDICINE <b>Prof. Paola Piccini</b>
<b>UK</b>	UNIVERSITY COLLEGE LONDON <b>Dr. Thomas Foltynie</b>
<b>DE</b>	UNIVERSITAETSKLINIKUM FREIBURG <b>Prof. Guido Nikkhah</b>
<b>AT</b>	LIFE SCIENCE GOVERNANCE INSTITUTE <b>Prof. Herbert Gottweis</b>
<b>FR</b>	ASSISTANCE PUBLIQUE - HOPITAUX DE PARIS <b>Prof. Stephane Palfi</b>
<b>FR</b>	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM) <b>Prof. Jacques Demotes</b>
<b>UK</b>	DANDO, WEISS & COLUCCI LIMITED <b>Dr. Isabelle Weiss</b>
<b>UK</b>	LIFE TECHNOLOGIES LIMITED <b>Dr. Ruth Mcdermott</b>
<b>DE</b>	Inomed Medizintechnik GmbH <b>Dr. Rudi Mattmueller</b>
<b>UK</b>	Cambridge Cognition LTD <b>Dr. Andrew Blackwell</b>
<b>SE</b>	SKANE LANS LANDSTING <b>Prof. Håkan Widner</b>

### Objectives

The overall concept behind the Transeuro project is to develop an efficient, reproducible and safe methodology for grafting patients with Parkinson's disease (PD) using fetal dopaminergic (DA) cells. One of the most effective reparative therapies in patients to date has been with allo-transplants of DA neuroblasts obtained from fetal ventral mesencephalic (VM) tissue. However, this approach has

failed to generate consistent benefits across all centres. Therefore, a principal objective of Transeuro is to show that the reliability and efficacy of DA cell replacement in PD can be improved by careful attention to tissue preparation and delivery, patient selection, immunosuppressive treatment and trial design. This will be proven by a new round of VM allograft trials in PD patients.

### Main Achievements

The consortium has established, validated and approved a protocol for human fetal tissue dissection/preparation including the establishment of good manufacturing practice protocols and required reagents. The protocol is now being used in all centres. Good progress has been made towards resolving the problem of graft-induced dyskinesias (GIDs), which have been seen as a major adverse effect in some of the transplanted patients. Studies in animal models have revealed that GIDs only occur in animals with pre-existing L-DOPA-induced dyskinesias and that serotonin neurons in the grafts may also contribute. The clinical programme started in late 2010. A trial steering committee has been established; the protocol and required regulatory documents have been developed and were subsequently approved from responsible national authorities and ethics committees. Patients have been enrolled for an observational study period. After 12 months, followed-up suitable participants are randomly selected and offered a neural graft. The clinical programme is on-going.

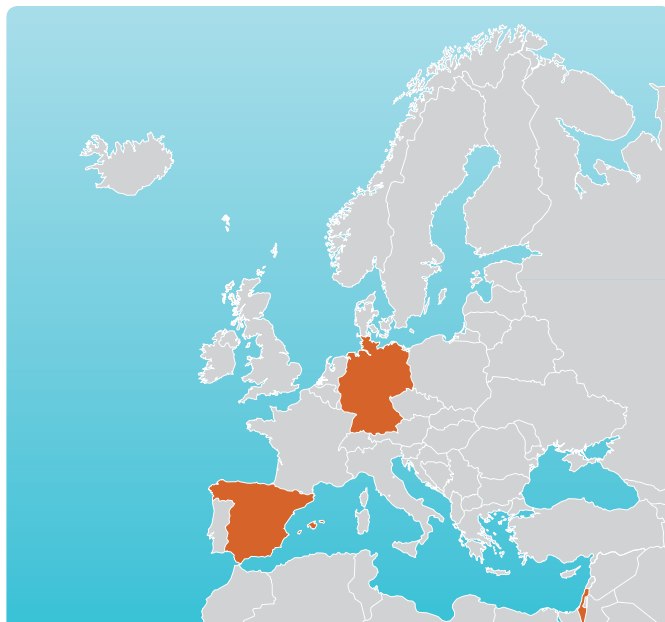
### Impact

Neurodegenerative diseases, including PD, are one of the major causes of chronic disability in European communities. PD affects approximately 1% of people over 65 years of age and, as such, is likely to become more common as the population ages and live longer. Degenerative diseases create a life-altering experience for the affected person and their partner, parents, siblings and children. In addition to the disease burden of affected patients and direct medical costs on society, degenerative diseases also result in indirect costs, primarily related to reduced productivity due to disability. Thus, there is a need for effective and widely applicable therapies which can have a significant impact on the disease burden. Transeuro is contributing to the alleviation of these chronic diseases by developing a cell-based clinical treatments strategy which has the potential to improve treatment within a short time frame, with the hope that it will pave the way for stem cell based therapies for this condition in the future.



## Prolonged inhibition of semaphorine3a pathway via a bio-degradable implant towards a better therapy for visual sensory impairments

<b>Project acronym:</b>	VISION
<b>Coordinator:</b>	TEL AVIV UNIVERSITY, Israel
<b>Contact person:</b>	Prof. Arie Solomon
<b>Project number:</b>	304884
<b>Duration:</b>	36 months
<b>Start date:</b>	01/09/2012
<b>End date:</b>	31/08/2015
<b>EC Contribution:</b>	5,195,093.00 €
<b>Total costs:</b>	6,798,680.00 €



**Other partners**

**IL** TEL AVIV UNIVERSITY  
**Prof. Arie Solomon**

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**IL** NICAST LTD  
**Dr. David Simhon**

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**DE** SYNOVO GMBH  
**Dr. Michael Burnet**

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**ES** AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES  
CIENTIFICAS  
**Dr. Angel Messegue**

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**Abstract**

The visual pathway is a component of the central nervous system (CNS) and therefore is not regenerative. Acute optic nerve injury, ischemic optic neuropathy and glaucoma are conditions that initially lead to partial blindness and eventually could lead to total blindness. Extensive neuron and retinal ganglion cells (RGC) death is evidenced in these pathologies. Semaphorin 3A (Sema3A) is a cell secreted protein that participates in the axonal guidance pathways. Partner TAU was the first to show that Sema-3A is also capable of inducing neuronal cell death. Elevated levels of Sema3A were than found in glaucoma. TAU further showed the viscous role of Sema3a that is mediating the vast RCG apoptosis following optic nerve injury. Importantly, marked inhibition of RGC loss was achieved when axotomized eyes were co-treated by intravitreal injection of antibodies against the Sema3A providing the proof of concept for the therapeutic approach to inhibit the Sema3A pathway following optic nerve injury. This concept was recently validated by partner SIC who developed a small molecule weight inhibitor of Sema3A and showed that this inhibitor promotes neural regeneration of damaged axons. Acute or chronic assault to neural cells create an immediate death of part of the population and a signal for further death of the remaining cells close to the damaged area. The project goal is to develop a therapeutic approach to stop further death of neural cells by providing prolonged inhibition of the apoptotic pathway of Sema-3A using antibody targeted to this protein or a low MW inhibitor of sema3A. The Sema3A inhibitors would be constantly released from a novel intraocular biodegradable implant. The clinical efficacy of this approach will be evaluated in two common devastating pathologies: optic nerve injury and glaucoma.



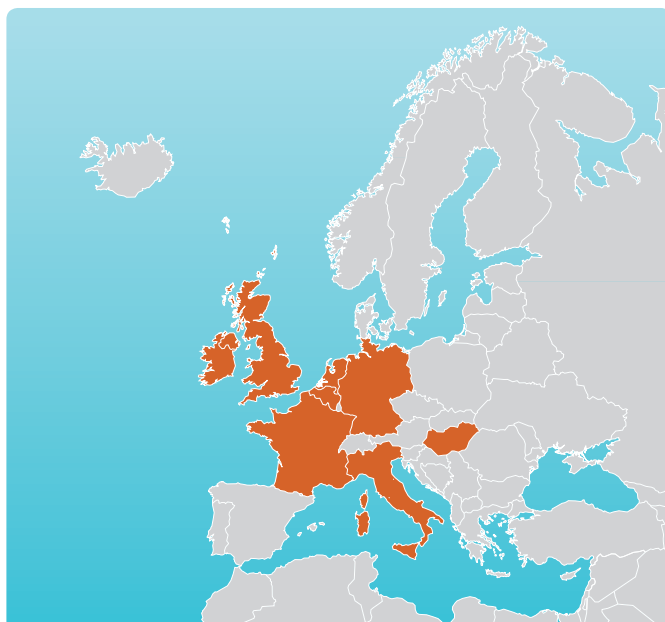
# Neuropsychiatric disorders

Source: Fotolia.com



# Attention Deficit Hyperactivity Disorder Drugs Use Chronic Effects

<b>Project acronym:</b>	ADDUCE
<b>Coordinator:</b>	UNIVERSITY OF DUNDEE, United Kingdom
<b>Contact person:</b>	Dr. David Coghill
<b>Project number:</b>	260576
<b>Duration:</b>	60 months
<b>Start date:</b>	01/11/2010
<b>End date:</b>	31/10/2015
<b>EC Contribution:</b>	2,999,559.60 €
<b>Total costs:</b>	3,946,173.80 €
<b>Website:</b>	<a href="http://adhd-adduce.org/page/view/32/KU+Leuven">http://adhd-adduce.org/page/view/32/KU+Leuven</a>



**Other partners**

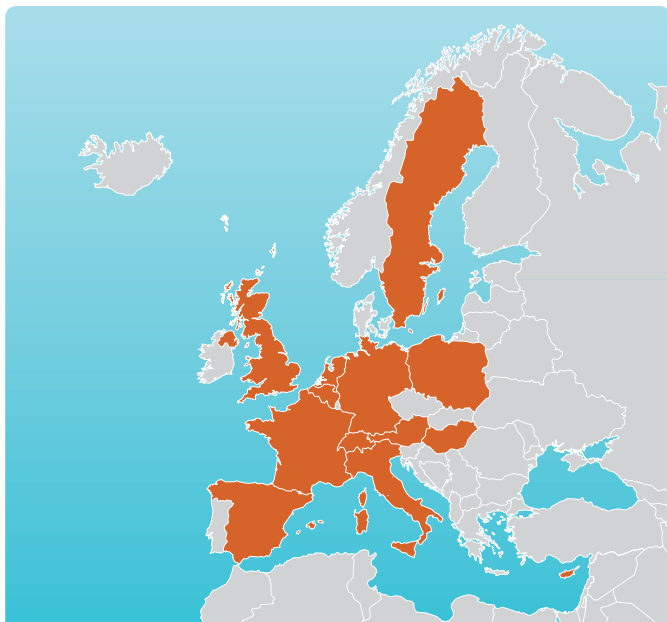
<b>UK</b>	UNIVERSITY OF DUNDEE <b>Dr. David Coghill</b>
<b>NL</b>	STICHTING KATHOLIEKE UNIVERSITEIT <b>Prof. Jan Buitelaar</b>
<b>DE</b>	ZENTRALINSTITUT FUER SEELISCHE GESUNDHEIT <b>Prof. Tobias Banaschewski</b>
<b>UK</b>	UNIVERSITY COLLEGE LONDON <b>Prof. Ian Chi Kei Wong</b>
<b>UK</b>	THE UNIVERSITY OF NOTTINGHAM <b>Prof. Chris Hollis</b>
<b>DE</b>	UNIVERSITAETSKLINIKUM AACHEN <b>Prof. Kerstin Konrad</b>
<b>IE</b>	UNIVERSITY COLLEGE CORK, NATIONAL UNIVERSITY OF IRELAND, CORK <b>Dr. Suzanne Mccarthy</b>
<b>BE</b>	KATHOLIEKE UNIVERSITEIT LEUVEN <b>Prof. Marina Danckaerts</b>
<b>IT</b>	UNIVERSITA DEGLI STUDI DI CAGLIARI <b>Prof. Alessandro Zuddas</b>
<b>FR</b>	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM) <b>Prof. Bruno Falissard</b>
<b>NL</b>	STICHTING EUNETHYDIS FOUNDATION <b>Prof. Joseph Sergeant</b>
<b>HU</b>	VADASKERT ALAPITVANY A GYERMEKEK LELKI EGESZSEGEERT <b>Dr. Julia Gadoros</b>
<b>UK</b>	Therakind Ltd <b>Dr. Susan Conroy</b>
<b>UK</b>	GUYS AND ST THOMAS' NHS FOUNDATIONTRUST <b>Dr. Eric Rosenthal</b>
<b>IT</b>	ISTITUTO SUPERIORE DI SANITA <b>Dr. Pietro Panei</b>
<b>UK</b>	UNIVERSITY OF SOUTHAMPTON <b>Prof. Edmund Sonuga-Barke</b>
<b>UK</b>	THE SCHOOL OF PHARMACY, UNIVERSITY OF LONDON <b>Prof. Ian Chi Kei Wong</b>

## Abstract

Attention deficit hyperactivity disorder (ADHD) is one of the most common neurodevelopmental disorders in children, affecting approximately 5% children in Europe. Methylphenidate (MPH) is the most-commonly prescribed medication for ADHD children; it is also increasingly used in ADHD adults. In 2007, the European Commission requested a referral to the Committee for Medicinal Products for Human Use (CHMP) under Article 31 of Directive 2001/83/EC, as amended, for MPH because of safety concerns. The CHMP concluded that study of the long-term effects of MPH on growth, sexual development, neurological system, psychiatric states and cardiovascular system is needed. In response to the CHMP's concerns, the ADDUCE (Attention Deficit Hyperactivity Disorder Drugs Use Chronic Effects) research team has been formed by a consortium of experts in the fields of ADHD, drug safety, neuropsychopharmacology and cardiovascular research. The ADDUCE project aims to investigate the long-term adverse effects of MPH on growth, neurological system, psychiatric states and cardiovascular system in children and adults. The ADDUCE team will use multiple pharmacoepidemiological research methods to achieve its aim: (1) Retrospective analysis of existing databases. (2) 2-year prospective cohort study recruiting 800 MPH-treated children and adolescents and 800 controls. (3) Cross-sectional study (600 MPH-treated patients and 600 controls) in late adolescents and young adults. Furthermore the ADDUCE team will develop research tools for the evaluation of adverse effects of MPH on cognition and motivation. The ADDUCE consortium comprises 12 academic partners, 1 SME and 1 EU professional network. The ADDUCE team will directly interact with the European Medicines Agency to assist them in making regulatory decisions on the safety of MPH in children and adults. The ADDUCE team will adopt an open-access policy to ensure the information and results have the maximum public health impact.

## Assessment of Hearing in the Elderly: Aging and Degeneration - Integration Through Immediate Intervention

<b>Project acronym:</b>	AHEAD III
<b>Coordinator:</b>	CONSIGLIO NAZIONALE DELLE RICERCHE, Italy
<b>Contact person:</b>	Prof. Ferdinando Grandori
<b>Project number:</b>	200835
<b>Duration:</b>	42 months
<b>Start date:</b>	01/05/2008
<b>End date:</b>	31/10/2011
<b>EC Contribution:</b>	1,088,190.00 €
<b>Total costs:</b>	1,392,131.92 €
<b>Website:</b>	<a href="http://www.ahead.polimi.it/">http://www.ahead.polimi.it/</a>





**Other partners**

<b>IT</b>	CONSIGLIO NAZIONALE DELLE RICERCHE <b>Prof. Ferdinando Grandori</b>
<b>AT</b>	MEDIZINISCHE UNIVERSITAET WIEN <b>Prof. Wolf-Dieter Baumgartner</b>
<b>CY</b>	CH. & M. CYPRUS AUDIOLOGY CENTER -INTERACOUSTICS LIMITED <b>Dr. ChrysSoula Thodi</b>
<b>DE</b>	VEREIN FUER BERUFGSGENOSSENSCHAFTLICHE HEILBEHANDLUNG BERLIN EV <b>Prof. Arne Ernst</b>
<b>DE</b>	KLINIKUM RECHTS DER ISAR DER TECHNISCHEN UNIVERSITAT MUNCHEN <b>Prof. Thomas Janssen</b>
<b>NL</b>	VERENIGING VOOR CHRISTELIJK HOGER ONDERWIJS WETENSCHAPPELIJK ONDERZOEK EN PATIENTENZORG <b>Dr. S.E. Kramer</b>
<b>PL</b>	UNIVERSYTET MEDYCZNY W LODZI. <b>Prof. Mariola Sliwinska-Kowalska</b>
<b>SE</b>	LINKOPINGS UNIVERSITET <b>Prof. Stefan Stenfelt</b>
<b>CH</b>	UNIVERSITAET ZUERICH <b>Prof. Rudolf Probst</b>
<b>UK</b>	THE UNIVERSITY OF MANCHESTER <b>Prof. Adrian Davis</b>
<b>BE</b>	UNIVERSITEIT ANTWERPEN <b>Prof. Guy Van Camp</b>
<b>FR</b>	CHU HOPITAUX DE BORDEAUX <b>Prof. René Dauman</b>
<b>DE</b>	KLINIKUM DER UNIVERSITAET ZU KOELN <b>Prof. Martin Walger</b>
<b>HU</b>	PECSI TUDOMANYEGYETEM - UNIVERSITY OF PECS <b>Prof. József Pytel</b>
<b>NL</b>	ERASMUS UNIVERSITAIR MEDISCH CENTRUM ROTTERDAMERASMUS MC <b>Dr. J. Verschuure</b>
<b>PL</b>	INSTYTUT FIZIOLOGII I PATOLOGII SLUCHU <b>Prof. Henryk Skarzynski</b>

**ES** AGENCIA VALENCIANA DE SALUD  
**Prof. Jaime Marco**

**SE** OREBRO UNIVERSITY  
**Prof. Claes Möller**

**UK** Royal Free Hospital, Royal Free Hampstead NHS Trust  
**Prof. Adrian Davis**

## Objectives

The AHEAD III project was designed to provide data about the effects of hearing impairment in adults, especially the elderly. The project intended to increase awareness among administrators, policymakers, healthcare professionals and the general public about early detection and intervention for hearing impairment. To address this main objective, the project focused on a spectrum of relevant issues, including: the aetiology and epidemiology of age-related hearing loss; the main effects of age-related hearing loss; diagnostic techniques; and outcome measures. Also, the consortium worked to promote and initiate pilot programmes for hearing screening in adults.

## Main Achievements

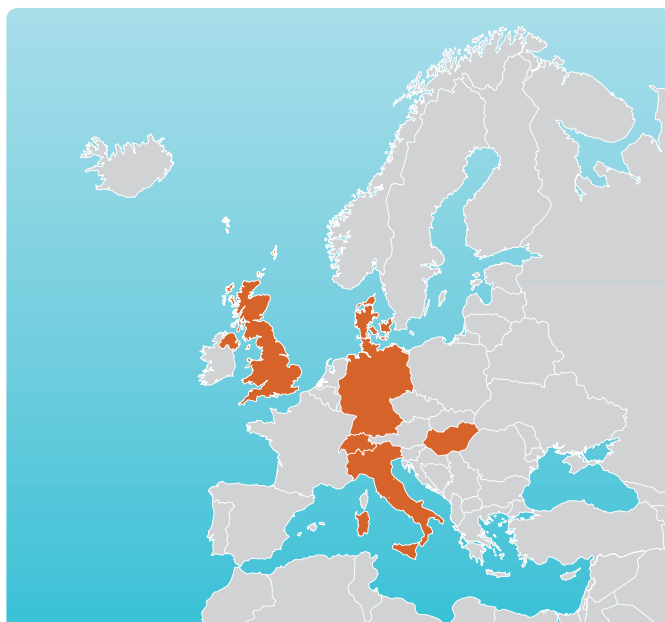
AHEAD III published an up-to-date comprehensive review of the prevalence of age-related hearing loss (ARHL) in Europe, with the evaluation of more than 1,000 references. Furthermore, the consortium reviewed the most relevant pathophysiological mechanisms and the most relevant interactions with other health conditions, classical and recently proposed screening methods, and interventions following screening for hearing loss. AHEAD III implemented a new concept and methodology for adult hearing screening and initiated a two-stage campaign on ARHL in Germany and in the German-speaking countries in Europe. Other pilot initiatives and hearing screening programmes were initiated in Belgium, Italy, Cyprus, and Malta. AHEAD III also supported the organization of the first 'International Conference on Adult Hearing Screening – AHS 2010', which was held in June 10-12, 2010 in Cernobbio, Italy, with more than 250 delegates representing more than 40 countries from Europe, the USA and other continents.

## Impact

Hearing impairment in the elderly is an important health and psychosocial problem. The deterioration in hearing ability with increasing age is a multifactorial process that can vary in severity from mild to substantial and which may, if left untreated, affect communication, often leading to social isolation and depression. Comprehensive identification and rehabilitation methods are available but under-used. A big benefit of the AHEAD III project is that it has contributed significantly to the implementation of health protocols, programmes and models for a variety of healthcare systems to be tuned to the local, social and economic status in each Country and thus contributed to homogenise the quality of screening programmes and the standards of care in the European Union.

# Clinical decision making and outcome in routine care for people with severe mental illness

<b>Project acronym:</b>	CEDAR
<b>Coordinator:</b>	UNIVERSITAET ULM, Germany
<b>Contact person:</b>	Dr. Bernd Puschner
<b>Project number:</b>	223290
<b>Duration:</b>	42 months
<b>Start date:</b>	01/04/2009
<b>End date:</b>	30/09/2012
<b>EC Contribution:</b>	1,763,856.00 €
<b>Total costs:</b>	2,252,734.08 €



**Other partners**

**DE** UNIVERSITAET ULM  
**Dr. Bernd Puschner**

**UK** KING'S COLLEGE LONDON  
**Dr. Mike Slade**

**IT** SECONDA UNIVERSITÀ DEGLI STUDI DI NAPOLI  
**Prof. Lorenza Magliano**

**HU** DEBRECENI EGYETEM  
**Prof. István Degrell**

**DK** REGION NORDJYLLAND  
**Prof. Povl Munk-Jørgensen**

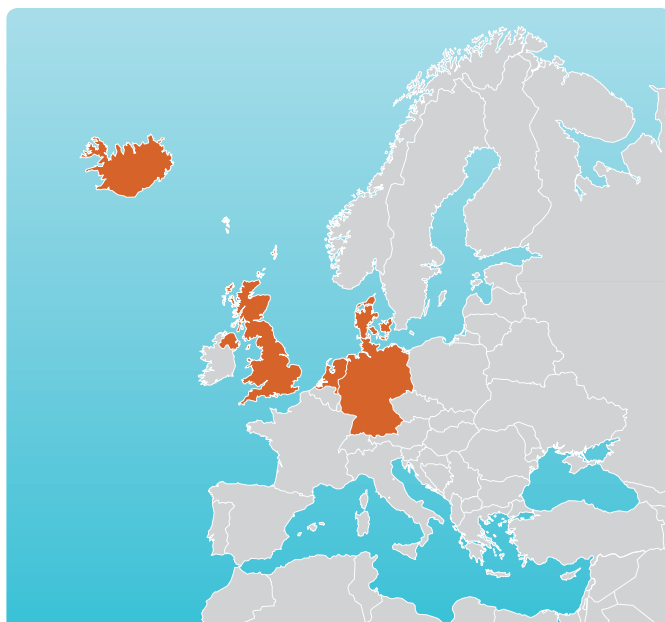
**CH** UNIVERSITAET ZUERICH  
**Prof. Wulf Roessler**

**Abstract**

**Background:** A considerable amount of research has been conducted on clinical decision making (CDM) in short-term physical conditions. However, there is a lack of knowledge on CDM and its outcome in long-term illnesses, especially in care for people with severe mental illness. Thus, this project entitled 'Clinical decision making and outcome in routine care for people with severe mental illness' (CEDAR) is proposed by participants in six European countries (Denmark, Germany, Hungary, Italy, Switzerland and UK). **Methods:** First, CEDAR will establish a methodology to assess CDM in people with severe mental illness. Specific instruments will be developed (and psychometric properties established) to measure CDM style, key elements of CDM in routine care, as well as CDM involvement and satisfaction from patient and therapist perspectives. Second, these instruments will be put to use in a multi-national prospective observational study (monthly assessments during a one-year observation period; N = 540). This study will investigate the immediate, short- and long-term effect of CDM on crucial dimensions of clinical outcome (symptom level, quality of life, needs) by taking into account significant variables moderating the relationship between CDM and outcome. **Expected results/impact:** The results of this study will make possible to delineate quality indicators of CDM, as well as to specify prime areas for further improvement. Ingredients of best practice in CDM in the routine care for people with severe mental illness will be extracted and recommendations formulated. With its explicit focus on the patient role in CDM, CEDAR will also contribute to strengthening the service user perspective. Beyond dissemination of results in scientific journals, a number of steps to ensure swift transfer of the results to routine practice are proposed. Thus, this project will substantially add to improving the practice of CDM in mental health care across Europe.

## Pharmacogenomic biomarkers as clinical decision making tools for clozapine treatment of schizophrenia

<b>Project acronym:</b>	CRESTAR
<b>Coordinator:</b>	KING'S COLLEGE LONDON, United Kingdom
<b>Contact person:</b>	Prof. David Collier
<b>Project number:</b>	279227
<b>Duration:</b>	48 months
<b>Start date:</b>	01/11/2011
<b>End date:</b>	31/10/2015
<b>EC Contribution:</b>	6,000,000.00 €
<b>Total costs:</b>	7,830,480.60 €
<b>Website:</b>	<a href="http://www.crestar-project.eu/">http://www.crestar-project.eu/</a>



**Other partners**

**UK** KING'S COLLEGE LONDON  
**Prof. David Collier**

**IS** ISLENSK ERFDAGREINING EHF  
**Dr. Hreinn Stefansson**

**IS** LANDSPÍTALI UNIVERSITY HOSPITAL  
**Prof. Engilbert Sigurdsson**

**DE** LUDWIG-MAXIMILIANS-UNIVERSITÄT MÜNCHEN  
**Prof. Dan Rujescu**

**UK** CARDIFF UNIVERSITY  
**Dr. James Walters**

**DK** ÅRHUS UNIVERSITET  
**Prof. Preben Bo Mortensen**

**DE** ZENTRALINSTITUT FÜR SEELISCHE GESUNDHEIT  
**Prof. Marcela Rietschel**

**DE** Concentris Research Management GmbH  
**Ms. Ameli Schwalber**

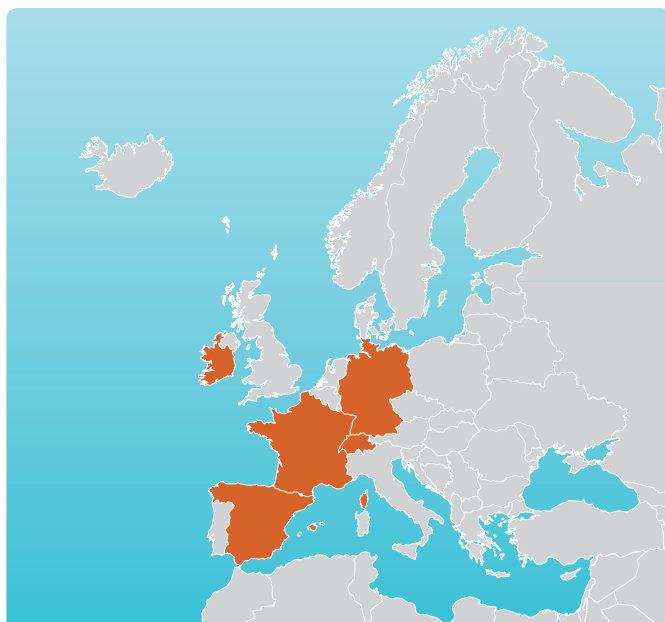
**NL** LEYDEN DELTA BV  
**Dr. Esther Nijholt-Faber**

**Abstract**

Treatment resistant schizophrenia (TRS) is the most disabling of all psychiatric illnesses, affecting about 1/3 of patients (~1 million Europeans), a considerable economic and social burden. First-line treatments include atypical (e.g. olanzapine) and typical (e.g. haloperidol) antipsychotics. The original atypical, clozapine, is a final option, and although it is the only antipsychotic shown to be effective in TRS, about half of TRS patients are also resistant to clozapine. CRESTAR is an SME-driven project, focusing on the development of pharmacogenomic biomarkers for schizophrenia. It aims to develop tools to predict i) who will NOT respond to usual antipsychotics, indicating treatment with clozapine as early as possible, ii) the 1% of patients who will develop potentially fatal side effects, agranulocytosis, which is the main factor limiting clozapine use, and diabetic ketoacidosis, occurring in up to 2% of patients, and often fatal. We will also predict patients likely to be non-responders to all antipsychotics, i.e. extreme TRS, so that they can be stratified in clinical trials. CRESTAR will address these questions by examining genome-wide association data, genome sequence, epigenetic biomarkers and epidemiological data in European patient cohorts characterized for treatment response, and adverse drug reaction using data from clozapine therapeutic drug monitoring and linked National population medical and pharmacy databases, alongside existing European projects (e.g. PSYCNVs and EU-GEI) national initiatives (e.g. UK10K genome sequencing) to identify predictive factors. In parallel CRESTAR will perform health economic research on potential benefits, and ethics and patient-centered research with stakeholders. The outcome of CRESTAR will be a genomic test and associated clinical decision making tools, designed to improve pharmacological treatment of schizophrenia in both efficacy and safety, piloted with existing and new clinical trials such as OPTiMiSE.

## Serotonin and GABA-B receptors in anxiety: from developmental risk factors to treatment.

<b>Project acronym:</b>	DEVANX
<b>Coordinator:</b>	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM), France
<b>Contact person:</b>	Ms. Patricia Gaspar
<b>Project number:</b>	201714
<b>Duration:</b>	54 months
<b>Start date:</b>	01/02/2008
<b>End date:</b>	31/07/2012
<b>EC Contribution:</b>	2,841,578.00 €
<b>Total costs:</b>	3,788,652.80 €
<b>Website:</b>	<a href="http://devanx.vitamib.com/">http://devanx.vitamib.com/</a>



### Other partners

<b>FR</b>	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM) <b>Ms. Patricia Gaspar</b>
<b>DE</b>	EUROPEAN MOLECULAR BIOLOGY LABORATORY <b>Dr. Cornelius Gross</b>
<b>CH</b>	UNIVERSITAET BASEL <b>Prof. Bernhardt Bettler</b>
<b>IE</b>	UNIVERSITY COLLEGE CORK, NATIONAL UNIVERSITY OF IRELAND, CORK <b>Dr. John Cryan</b>
<b>ES</b>	UNIVERSIDAD PABLO DE OLAVIDE <b>Dr. Agnès Gruart I Massó</b>
<b>DE</b>	ZENTRALINSTITUT FUER SEELISCHE GESUNDHEIT <b>Prof. Dusan Bartsch</b>

### Objectives

The project focuses on mechanisms and genesis of anxiety disorders. New findings have changed our understanding of the neurobiological action of the two transmitters that are in the focus of this proposal. Devanx intends to gain knowledge about the developmental role of serotonin (5-HT) in the genesis of anxiety disorders and the interactions between 5-HT-related genes and environmental risk factors. The second main objective of the project is to provide a better understanding of how the GABA(gamma-aminobutyric acid)ergic system acts in the developmental programming of anxiety. The developmental effects of 5-HT and GABA, the interaction of these two neuro-transmitters and their impact on genesis of anxiety disorders will be explored. Additionally, it is intended to develop two novel GABA-B modulators with anxiolytic effects.

### Main Achievements

The consortium has developed and characterised animal models with variable sources of serotonin depletion and evaluated their anxiety phenotype. New results based on 5-HT1A KO mice and the characterisation of the 5-HT1A-R transgenic mice help to explain how neural circuits are involved in causing anxiety. These mechanisms could potentially be used as a tool to silence specifically identified neural circuits. Further progress has been made by exploring the critical period during maternal care for interactions between 5-HT and anxiety. To identify the function of GABA-B receptors in serotonin neurons the required mouse strains have been established and the GABA-B function during development and their plasticity have been characterised. The disease model has been proven by postnatal treatment with the GABA-B agonist baclofen which results in anxious phenotype in adulthood.

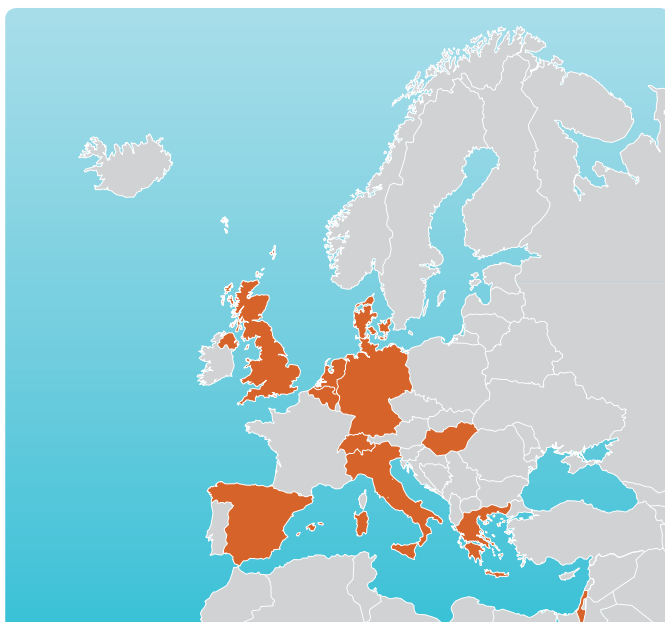


### Impact

Anxiety is one of the major mood disorders. Around 14 to 18% of the European population are affected by one or more forms of anxiety. The emotions present in anxiety disorders range from simple nervousness to episodes of serious panic attacks. Serious anxiety syndromes like social anxiety disorder are severe conditions with high prevalence that lead to significant disability in the social and professional lives of patients. Due to side effects, the medical treatment options are still unsatisfying. There is an unmet need for new treatment strategies in this indication. The results of the project will contribute to gain better understanding of the mechanisms and genesis of anxiety disorders. Furthermore, Devanx can help to identify new targets and therapeutic concepts.

## European Multicentre Tics in Children Studies

<b>Project acronym:</b>	EMTICS
<b>Coordinator:</b>	ACADEMISCH ZIEKENHUIS GRONINGEN, Netherlands
<b>Contact person:</b>	Dr. Pieter J. Hoekstra
<b>Project number:</b>	278367
<b>Duration:</b>	66 months
<b>Start date:</b>	01/12/2011
<b>End date:</b>	31/05/2017
<b>EC Contribution:</b>	6,000,000.00 €
<b>Total costs:</b>	8,067,584.40 €
<b>Website:</b>	<a href="http://www.emtics.eu/">http://www.emtics.eu/</a>



**Other partners**

<b>NL</b>	ACADEMISCH ZIEKENHUIS GRONINGEN <b>Dr. Pieter J. Hoekstra</b>
<b>IT</b>	UNIVERSITA DEGLI STUDI DI BARI 'ALDO MORO' <b>Dr. Maura Buttiglione</b>
<b>UK</b>	UNIVERSITY COLLEGE LONDON <b>Dr. Anette Schrag</b>
<b>DE</b>	LUDWIG-MAXIMILIANS-UNIVERSITAET MUENCHEN <b>Prof. Norbert Mueller</b>
<b>CH</b>	URWYLER ADRIAN - CYTOLAB <b>Mr. Adrian Urwyler</b>
<b>IT</b>	ISTITUTO SUPERIORE DI SANITA <b>Dr. Roberta Creti</b>
<b>UK</b>	HEALTH PROTECTION AGENCY HPA <b>Dr. Androulla Efstratiou</b>
<b>DE</b>	TECHNISCHE UNIVERSITAET DRESDEN <b>Prof. Veit Roessner</b>
<b>EL</b>	DEMOCRITUS UNIVERSITY OF THRACE <b>Prof. Peristera Paschou</b>
<b>UK</b>	PROIMMUNE LTD <b>Dr. Nikolai Schwabe</b>
<b>IT</b>	NOVARTIS VACCINES AND DIAGNOSTICS S.R.L. <b>Dr. Immaculada Margarit Y Ros</b>
<b>IL</b>	CLALIT HEALTH SERVICES <b>Prof. Alan Apter</b>
<b>UK</b>	THE UNIVERSITY OF BIRMINGHAM <b>Dr. Andrea Eugenio Cavanna</b>
<b>IT</b>	UNIVERSITA DEGLI STUDI DI ROMA LA SAPIENZA <b>Dr. Francesco Cardona</b>
<b>BE</b>	Advanced Practical Diagnostics <b>Dr. Aye Mu Myint</b>
<b>UK</b>	QUEEN MARY AND WESTFIELD COLLEGE, UNIVERSITY OF LONDON <b>Dr. Ute-Christiane Meier</b>
<b>IT</b>	UNIVERSITA DEGLI STUDI DI CATANIA <b>Prof. Renata Rizzo</b>
<b>DE</b>	Concentris Research Management GmbH <b>Ms. Ameli Schwalber</b>

<b>DE</b>	UNIVERSITAETSKLINIKUM HAMBURG-EPPENDORF <b>Prof. Alexander Münchau</b>
<b>HU</b>	VADASKERT ALAPITVANY A GYERMEKEK LELKI EGESZSEGEERT <b>Dr. Zsanett Tárnok</b>
<b>ES</b>	Servicio Andaluz de Salud <b>Dr. Pablo Mir</b>
<b>CH</b>	UNIVERSITAET ZUERICH <b>Prof. Susanne Walitza</b>
<b>ES</b>	FUNDACIO PRIVADA CLINIC PER A LA RECERCA BIOMEDICA <b>Dr. Astrid Morer</b>
<b>DK</b>	REGION HOVEDSTADEN <b>Dr. Kerstin Von Plessen</b>
<b>DE</b>	MEDIZINISCHE HOCHSCHULE HANNOVER <b>Prof. Kirsten Müller-Vahl</b>
<b>UK</b>	GUYS AND ST THOMAS' NHS FOUNDATIONTRUST <b>Dr. Tammy Hedderly</b>
<b>IT</b>	AZIENDA SANITARIA LOCALE BARI <b>Dr. Cesare Porcelli</b>

## Abstract

This project will undertake pre-clinical and cohort studies that address susceptibility factors for paediatric and adolescent tic disorders, with a particular focus on comorbid obsessive-compulsive symptomatology, from clinical, epidemiological, genetic, microbiological and immunological angles. EMTICS aims to elucidate the complex aetiology of the onset and clinical course of chronic tic disorders and associated obsessive-compulsive symptoms, through disentangling the interplay between environmental factors and genetic background; translate research findings into clinical applications by developing disease prediction models and investigation of a treatment strategy; and will establish a Pan-European infrastructure for the study of tic disorders. We hypothesise that the onset and/or exacerbation of tic and comorbid obsessive-compulsive disorders is associated with increased preceding occurrence of Group A beta-haemolytic Streptococcus (GAS) infections of specific molecular subtypes, and that this association is based on genetic susceptibility factors and mediated through immunological mechanisms related to psychosocial stress and immunological factors in host and GAS strains. Large-scale cohort studies will involve affected patients and at-risk first-degree relatives within an integrated, multidisciplinary research strategy. Treatment effects of active surveillance and standardized antibiotic treatment of GAS colonisation, thus addressing one of the main environmental factors involved (GAS infections) will be evaluated. Our approach will result in the identification of genetic and environmental susceptibility factors and will greatly contribute to a better understanding of the underlying mechanisms of tic disorders, with a focus on elucidating the role of autoimmunity. Our consortium brings together the highest expertise in the field of tic disorders across Europe in academia and industry, including a number of SMEs and a professional management company.

## European Network of Bipolar Research Expert Centres

<b>Project acronym:</b>	ENBREC
<b>Coordinator:</b>	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM), France
<b>Contact person:</b>	Prof. Chantal Henry
<b>Project number:</b>	223102
<b>Duration:</b>	24 months
<b>Start date:</b>	01/07/2009
<b>End date:</b>	30/06/2011
<b>EC Contribution:</b>	662,900.00 €
<b>Total costs:</b>	877,369.20 €
<b>Website:</b>	<a href="http://www.chusa.upmc.fr/ENBREC/">http://www.chusa.upmc.fr/ENBREC/</a>



### Other partners

<b>FR</b>	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM) <b>Prof. Chantal Henry</b>
<b>ES</b>	FUNDACIO PRIVADA CLINIC PER A LA RECERCA BIOMEDICA <b>Dr. Eduard Vieta</b>
<b>UK</b>	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF OXFORD <b>Prof. Guy Goodwin</b>
<b>IT</b>	ISTITUTO DI RICERCHE FARMACOLOGICHE <b>Dr. Angelo Barbato</b>
<b>DE</b>	TECHNISCHE UNIVERSITAET DRESDEN <b>Prof. Michael Bauer</b>
<b>NO</b>	UNIVERSITETET I OSLO <b>Prof. Ole Andreassen</b>

### Objectives

The pathophysiology of bipolar disorders (BP) is not yet clearly established. There is a broad heterogeneity of the clinical presentations and complex interactions between genetic and environmental factors. The purpose of Enbrec was to establish a network for collaborative clinical and non-clinical studies that use shared protocols and resources. The main objective was to improve quality and efficiency of research by pooling the relevant resources like access to patients and a common computerised database, defining diagnostic criteria or sharing biomaterial for biomarker and genetic studies. The intention was to foster translational research and improved healthcare in a neglected priority area.

### Main Achievements

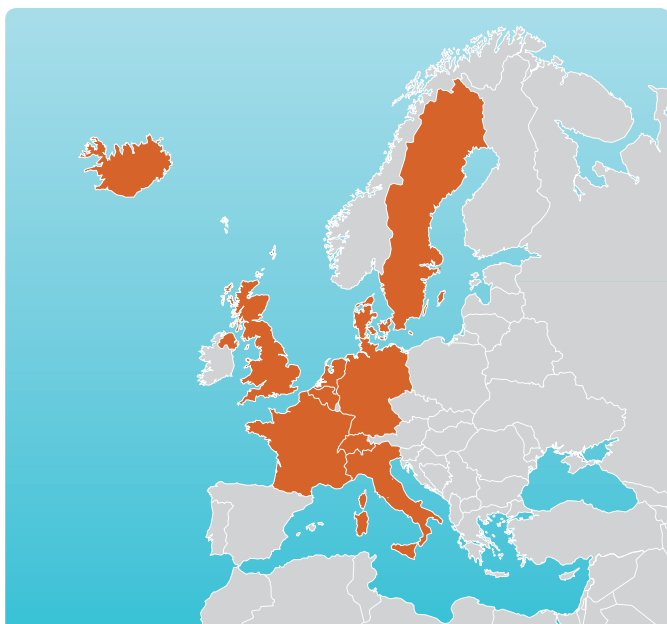
The nature and complexity of BP mean that successful translational research requires the integration of clinical and basic science. In this respect Enbrec developed a standardised assessment package for a wide-ranging psycho-bio-social assessment that systematically explores all potential aspects of BP including clinical presentation, personal history and exploration of factors that influence the course and outcome of BP. The measures provide a high-quality structured evaluation that can inform clinical decision-making, but are also relevant for research purposes. In addition, procedures to set up joint studies on biomarkers and genetics and the development of a secure infrastructure for conducting analyses of pooled brain imaging data have been established. To improve the quality of results and ensure GCP, regulatory and 21CFR11 compliance a data management environment has been established in ECRIN-certified data centres. In parallel, a survey and a pilot study were performed to develop strategies for implementing innovative and effective care (psycho-education) in routine practice.

### Impact

BP are characterised by recurrent manic and depressive episodes that affect 1 to 3% of the population. According to the World Health Organisation study, BP are ranked sixth amongst the most disabling illnesses in working age adults worldwide. Despite the high prevalence, BP are often unrecognised or misdiagnosed. This frequently leads to inappropriate or delayed treatments, with devastating consequences for health and well-being. Enbrec provided resources by improving multinational collaborative studies, to foster the quality and efficiency of research in a neglected high priority area — mental health, and specifically mood disorder.

## European Autism Interventions – a Multicentre Study for Developing New Medications

<b>Project acronym:</b>	EU-AIMS
<b>Coordinator:</b>	F. Hoffmann-la Roche AG, Switzerland
<b>Contact person:</b>	Dr. Will Spooren F.
<b>Project number:</b>	115300
<b>Duration:</b>	60 months
<b>Start date:</b>	01/01/2012
<b>End date:</b>	01/01/2017
<b>EC Contribution:</b>	19,467,204.00 €
<b>Total costs:</b>	26,248,901.00 €
<b>EFPIA in kind contribution:</b>	8,247,830.0
<b>Website:</b>	<a href="http://www.eu-aims.eu/">http://www.eu-aims.eu/</a>





### Other partners

<b>CH</b>	F. HOFFMANN-LA ROCHE AG <b>Dr. Will Spooren F.</b>
<b>UK</b>	King's College London <b>Prof. Murphy Declan</b>
<b>DE</b>	Zentralinstitut für Seelische Gesundheit (Central Institute of Mental Health) <b>Prof. Dr. Andreas Meyer-Lindenberg</b>
<b>NL</b>	STICHTING KATHOLIEKE UNIVERSITEIT <b>Prof. Dr. Jan Buitelaar</b>
<b>UK</b>	University of Cambridge <b>Prof. Dr. Simon Baron Cohen</b>
<b>IS</b>	ISLENSK ERFDAGREINING EHF <b>Mr. G. Bragi Walters</b>
<b>NL</b>	UNIVERSITAIR MEDISCH CENTRUM UTRECHT <b>Prof. Dr. J. Peter H. Burbach</b>
<b>SE</b>	Universität Basel <b>Prof. Dr. Peter Scheiffele</b>
<b>FR</b>	INSTITUT PASTEUR <b>Prof. Dr. Thomas Bourgeron</b>
<b>DE</b>	GABO:mi Gesellschaft für Ablauforganisation: milliarium mbH & Co. KG <b>Dr. Claudia Speiser</b>
<b>DE</b>	Max-Planck-Gesellschaft zur Foerderung der Wissenschaften e.V. <b>Prof. Dr. Nils Brose</b>
<b>DE</b>	EUROPEAN MOLECULAR BIOLOGY LABORATORY <b>Dr. Ugis Sarkans</b>
<b>DK</b>	NeuroSearch A/S
<b>SE</b>	KAROLINSKA INSTITUTET <b>Dr. Jacqueline Borg</b>
<b>UK</b>	Eli Lilly and Company Ltd <b>Dr. Mark Tricklebank</b>
<b>BE</b>	Janssen Pharmaceutica NV <b>Dr. Thomas Steckler</b>
<b>FR</b>	Institut de Recherches Internationales Servier <b>Dr. Esther Schenker</b>
<b>CH</b>	VIFOR SA <b>Dr. Christian Terreaux</b>

<b>UK</b>	Birkbeck College <b>Prof. Dr. Mark Johnson</b>
<b>UK</b>	Institute of Education, University of London
<b>IT</b>	Università Campus Bio Medico de Roma <b>Prof. Dr. Antonio Persico</b>
<b>US</b>	Autism Speaks Inc. <b>Dr. Robert Ring</b>
<b>UK</b>	Pfizer Limited <b>Dr. Ilyas Singec</b>
<b>FR</b>	COMMISSARIAT A L'ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES <b>Dr. Jean-Baptiste Poline</b>
<b>DE</b>	Universität Ulm <b>Dr. Michael Schmeisser</b>

## Objectives

Autism Spectrum Disorders (ASD) refers to a diverse group of development disorders that are characterised by difficulties in social interaction and communication, and the presence of unusual repetitive behaviours. It affects one child in 110, with boys at greater risk of developing ASD than girls. ASD is a lifelong condition, and for reasons which are not fully understood, the prevalence of ASD is rising. Today, there are no drugs designed specifically to treat ASD; instead, those affected are treated with medicines designed for other conditions. Despite the lack of effective, dedicated ASD treatments, almost three quarters of children with ASD are on medication developed to tackle symptoms like tics, seizures, and hyperactivity. The good news is that recent research has shed new light on the neurobiology behind ASD and identified some genes that increase the risk of autism. The findings suggest that it may actually be possible to treat ASD, something that was once thought to be impossible. The EU-AIMS 'European Autism Interventions — A Multicenter Study for Developing New Medications' project was launched in April 2012 and represents an integrated, translational effort to achieve key objectives for ASD research in the EU, deliver new research tools and standards for clinical development and pave the way for drug discovery and clinical trials.

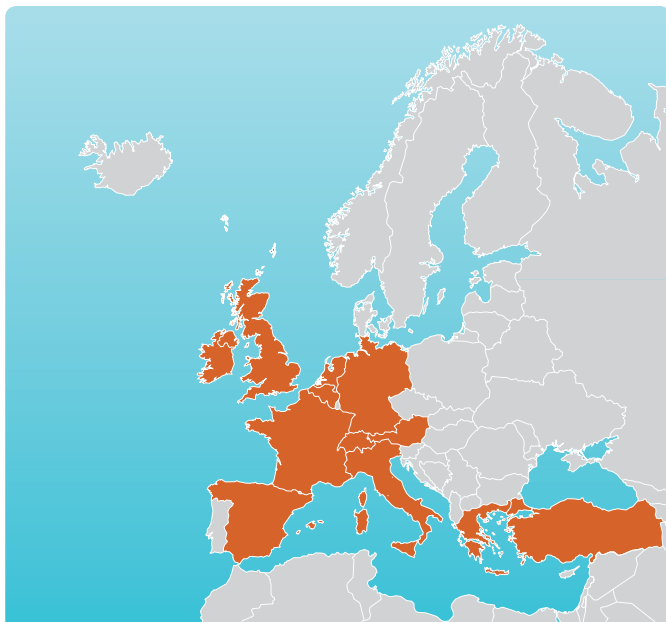
To implement this effort, 14 leading European academic centres have partnered with Autism Speaks (a leading autism research charity), representatives of patients and carers (Autism Europe), three small to medium-sized enterprises and six members of the European Federation of Pharmaceutical Industries and Associations (EFPIA). The goal of EU-AIMS is to generate tools that will enhance our understanding of autism spectrum disorders (ASD), and ultimately pave the way for the development of new, safe and effective treatments for use in both children and adults. Furthermore the project will allow the identification and development of expert clinical sites across Europe to run clinical studies and trials, and the creation of an interactive platform for ASD professionals and patients.

### Main Achievements

EU-AIMS starred as Nature's cover story with its research revealing that the father's age when a child is conceived is the biggest single contributor to the number of new mutations passed on to a child. The findings suggest that the increase in the number of autism cases may be due in part to the fact that the average age of fathers at the time of conception is on the rise. The researchers arrived at their results after studying the genomes of around 2,000 Icelanders, including some with a diagnosis of autism or schizophrenia. On average, for every one-year increase in the father's age, an additional two mutations were passed on to the offspring. Furthermore, EU-AIMS is already making progress in understanding the key molecular mechanisms at the basis of neural circuit development and synaptic plasticity that are dysfunctional in ASD, and is developing tests and tools (e.g. iPS cells derived from ASD patients, new translational imaging tools and protocols) that will allow translational approaches for the advancement of novel therapies to treat ASD, setting new standards in research and clinical development to aid the drug discovery process. By the end of the 5 year project EU-AIMS hopes to provide novel validated cellular assays, animal models, new fMRI methods with dedicated analysis techniques, new PET radioligands, as well as new genetic and proteomic biomarkers for patient-segmentation or individual response prediction. It will provide a research network that can rapidly test new treatments in man. These tools should provide the pharmaceutical industry with an added competitive advantage in developing new drugs for ASD.

## European Network of National Schizophrenia Networks Studying Gene-Environment Interactions

<b>Project acronym:</b>	EU-GEI
<b>Coordinator:</b>	UNIVERSITEIT MAASTRICHT, Netherlands
<b>Contact person:</b>	Prof. Jim Van Os
<b>Project number:</b>	241909
<b>Duration:</b>	60 months
<b>Start date:</b>	01/05/2010
<b>End date:</b>	30/04/2015
<b>EC Contribution:</b>	11,616,855.00 €
<b>Total costs:</b>	15,060,090.20 €
<b>Website:</b>	<a href="http://www.eu-gei.eu">http://www.eu-gei.eu</a>



## Other partners

<b>NL</b>	UNIVERSITEIT MAASTRICHT <b>Prof. Jim Van Os</b>
<b>UK</b>	KING'S COLLEGE LONDON <b>Prof. Philip McGuire</b>
<b>UK</b>	CARDIFF UNIVERSITY <b>Prof. Michael O'donovan</b>
<b>DE</b>	ZENTRALINSTITUT FUER SEELISCHE GESUNDHEIT <b>Prof. Andreas Meyer-Lindenberg</b>
<b>TR</b>	ANKARA UNIVERSITESI <b>Prof. Meram Saka</b>
<b>ES</b>	SERVICIO MADRILEÑO DE SALUD <b>Dr. Celso Arango</b>
<b>NL</b>	Academisch Medisch Centrum bij de Universiteit van Amsterdam <b>Dr. Lieuwe De Haan</b>
<b>FR</b>	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM) <b>Prof. Marion Leboyer</b>
<b>BE</b>	KATHOLIEKE UNIVERSITEIT LEUVEN <b>Prof. Marc De Hert</b>
<b>EL</b>	UNIVERSITY MENTAL HEALTH RESEARCH INSTITUTE <b>Prof. Nicholas Stefanis</b>
<b>AT</b>	MEDIZINISCHE UNIVERSITAET WIEN <b>Prof. Gabriele Sachs</b>
<b>CH</b>	UNIVERSITAET BASEL <b>Prof. Anita Riecher-Rössler</b>
<b>DE</b>	KLINIKUM DER UNIVERSITAET ZU KOELN <b>Prof. Joachim Klosterkötter</b>
<b>ES</b>	SERMES PLANIFICACION <b>Dr. Rafael Levitch</b>
<b>NL</b>	WINGZ BV <b>Mr. Ron Niesten</b>
<b>NL</b>	E.C.S. INTERNATIONAL BV <b>Mr. Peter Emonds</b>
<b>TR</b>	Omega Pro Proje Arastirma Gelistirme ve Danismanlik Ltd Şti <b>Dr. Murat Hayran</b>

<b>NL</b>	MEDIAMENS B.V. <b>Mr. Paul Hamer</b>
<b>HK</b>	The University of Hong Kong <b>Prof. Pak Chung Sham</b>
<b>ES</b>	UNIVERSIDAD DEL PAIS VASCO <b>Dr. Aitziber Emaldi</b>
<b>UK</b>	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE <b>Prof. Peter Jones</b>
<b>IE</b>	ROYAL COLLEGE OF SURGEONS IN IRELAND <b>Prof. Mary Cannon</b>
<b>DE</b>	LUDWIG-MAXIMILIANS-UNIVERSITAET MUENCHEN <b>Prof. Dan Rujescu</b>
<b>IT</b>	ALMA MATER STUDIORUM-UNIVERSITA DI BOLOGNA <b>Dr. Ilaria Tarricone</b>
<b>IT</b>	UNIVERSITA DEGLI STUDI DI PALERMO <b>Prof. Daniele La Barbera</b>
<b>AU</b>	UNIVERSITY OF MELBOURNE <b>Prof. Patrick McGorry</b>

## Objectives

The aim of EU-GEI is to identify the interactive genetic, clinical and environmental determinants, involved in the development, severity and outcome of schizophrenia. Beside determination of genetic risk factors, epidemiological research has established that rates of schizophrenia and related psychotic disorders vary substantially under the influence of a number of non-genetic factors. Thus, for example, children growing up in big cities have a more than twofold risk of developing schizophrenia or related disorder compared to children in rural environments. In order to identify genetic and environmental determinants and their interactions, EU-GEI will employ family based, multidisciplinary study paradigms. Translation of results to clinical practice will be facilitated by additional experimental research and risk assessment bioinformatics research. The objectives of this project are the identification of modifiable biological, cognitive pathways and mechanisms as well as the development of tools which can be used for the early prediction of schizophrenia.

## Main Achievements

An important aspect of the project is the development of tools that allow the measurement of the behavioural expression of vulnerability that is caused by gene-environment interactions. A prototype, the PSYMATE, has been developed. This mobile device will be carried by individuals during the day for easy data input on mental state and context. PSYMATE will allow for capturing activities as a 'film' rather than a 'snapshot' of the daily life reality of patients. Ethical approvals for most

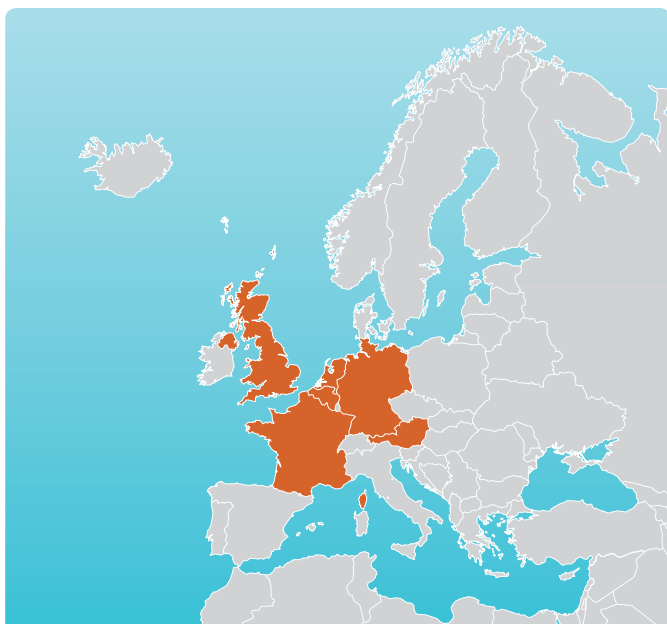
clinical studies have been obtained; patient recruitment, data collection and collection of genomic samples are on-going.

### Impact

Schizophrenia and related psychotic disorders without doubt represent the most mysterious and costliest of mental disorders in terms of human suffering and societal expenditure. Psychotic disorders mostly affect young people: around 2 to 3% of adolescents and young adults will develop a psychotic disorder, often with a persistent course requiring lifelong treatments that currently still cause many side effects. The aim of this project is to carry out a comprehensive assessment of gene–environment interactions in schizophrenia. The results have the potential to enhance early prediction diagnosis and outcome monitoring in the treatment of psychotic disorders.

## Genetic and Epigenetic Networks in Cognitive Dysfunction

<b>Project acronym:</b>	GENCODYS
<b>Coordinator:</b>	STICHTING KATHOLIEKE UNIVERSITEIT, Netherlands
<b>Contact person:</b>	Prof. Hans Van Bokhoven
<b>Project number:</b>	241995
<b>Duration:</b>	60 months
<b>Start date:</b>	01/05/2010
<b>End date:</b>	30/04/2015
<b>EC Contribution:</b>	11,647,068.00 €
<b>Total costs:</b>	15,864,799.19 €
<b>Website:</b>	<a href="http://www.gencodys.eu/">http://www.gencodys.eu/</a>





### Other partners

<b>NL</b>	STICHTING KATHOLIEKE UNIVERSITEIT <b>Prof. Hans Van Bokhoven</b>
<b>DE</b>	MAX PLANCK GESELLSCHAFT ZUR FOERDERUNG DER WISSENSCHAFTEN E.V. <b>Prof. Hans Hilger Ropers</b>
<b>FR</b>	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM) <b>Prof. Jamel Chelly</b>
<b>IR</b>	University of Social Welfare and Rehabilitation Sciences; Genetics Research Center <b>Prof. Hossein Najmabadi</b>
<b>UK</b>	GENOME RESEARCH LIMITED <b>Prof. Seth Grant</b>
<b>UK</b>	Synome Ltd <b>Mr. Troels Jordansen</b>
<b>AT</b>	FORSCHUNGSINSTITUT FUER MOLEKULARE PATHOLOGIE Ges.m.b.H <b>Dr. Barry Dickson</b>
<b>UK</b>	MEDICAL RESEARCH COUNCIL <b>Prof. Chris Ponting</b>
<b>FR</b>	CENTRE EUROPEEN DE RECHERCHE EN BIOLOGIE ET MEDECINE <b>Dr. Yann Herault</b>
<b>UK</b>	Aktogen Limited <b>Dr. Zoltan Asztalos</b>
<b>BE</b>	EUROPEAN GENETIC ALLIANCES' NETWORK <b>Dr. Cor Oosterwijk</b>
<b>PK</b>	LAHORE MEDICAL COLLEGE - ALLAMA IQBAL MEDICAL COLLEGE <b>Prof. Sheikh Riazuddin</b>
<b>UK</b>	THE UNIVERSITY OF EDINBURGH <b>Prof. Seth Grant</b>

### Objectives

Mutations in over 400 different genes have been associated with early onset cognitive disorders (CD), such as intellectual disability (ID), autism and some neuropsychiatric disorders, including schizophrenia. However, the molecular basis for the majority of patients with a CD remains unknown, which creates an enormous burden to families confronted with such a disorder. Although individual cases of ID are highly divergent, extensive functional interactions are seen between the corresponding protein products of ID genes, indicating that individual ID genes converge onto a more limited

number of common molecular and cellular pathways, such as synaptic morphology and plasticity and epigenetic control of neuronal gene expression. Gencodys follows a systems biology approach to gain pathways-based insights into mechanisms leading to cognitive dysfunction in humans by: the identification of genes involved in cognitive disorders; elucidation of molecular networks that are commonly disrupted in CD; and the identification of genetic modifiers and compounds that may modulate the disease phenotype.

### Main Achievements

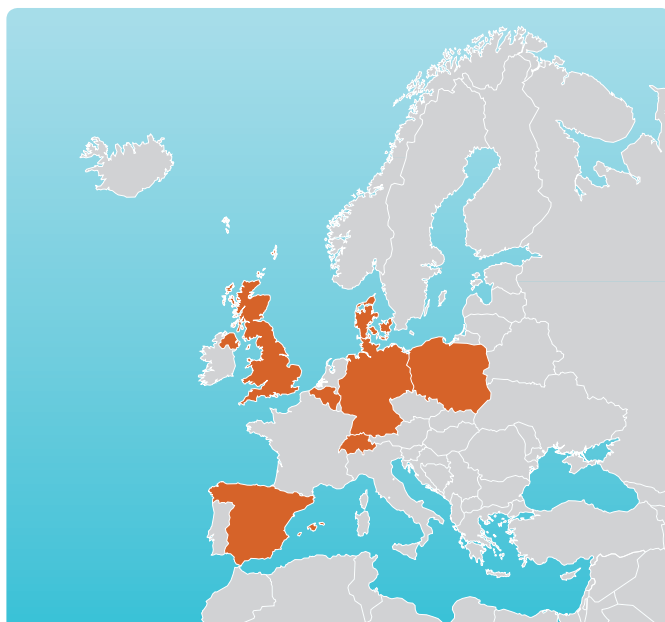
Identification of the molecular defects that give rise to the early onset of CD is the key to diagnosis and prevention of this heterogeneous disorder. Gencodys made significant progress using functional neurogenomics approaches. This has generated results clarifying subcellular distribution of CD proteins in neurons and the synaptic and extra-synaptic roles of these proteins. A plethora of novel disease-associated genetic variants and over 50 new CD-associated genes have already been identified during the first years of the project. Both autosomal recessive and dominant *de novo* mutations were indicated to represent an important cause of ID, utilizing exome sequencing as an effective diagnostic strategy. We very recently showed that mutations in vertebrate gene families, such as *Dlg*, underlie psychiatric disorders, suggesting that genome evolution expanded the complexity of vertebrate cognition, at the cost of susceptibility to mental illness. For *in vivo* investigation of pathological mechanisms we use a range of CD model organisms, including hundreds of already established *Drosophila* CD mutant flies and about 50 CD mouse models that are at various stages of construction.

### Impact

Cognitive disorders impose a major medical and socioeconomic problem owing to their high incidence in our population. Intellectual disabilities alone account for 10% of the total healthcare expenditure in most European countries. Elucidation of the complete landscape of all CD-associated genes will allow us to recognize the underlying common pathological mechanisms. Although ID and other CDs have a neurodevelopmental origin, studies with model organisms show that neurological defects can be rescued at least in part at the adult stage. These observations offer promise for possible therapy based on the correction of commonly disrupted networks despite the involvement of different genetic etiologies. Members of Gencodys are conducting preclinical studies to test the efficacy of potential drugs in CD model organisms. Gencodys has set the ambition to apply its generated knowledge and technology to improve the possibilities for genetic testing and counselling for patients and to foster the identification of lead compounds to mitigate the disease phenotype of identified targeted genetic conditions.

## Synaptic mechanisms of memory loss: novel cell adhesion molecules as therapeutic targets

<b>Project acronym:</b>	MEMSTICK
<b>Coordinator:</b>	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE, Switzerland
<b>Contact person:</b>	Prof. Carmen Sandi
<b>Project number:</b>	201600
<b>Duration:</b>	39 months
<b>Start date:</b>	01/02/2008
<b>End date:</b>	30/04/2011
<b>EC Contribution:</b>	2,970,372.00 €
<b>Total costs:</b>	4,138,676.19 €
<b>Website:</b>	<a href="http://www.memstick.org/">http://www.memstick.org/</a>



**Other partners**

**CH** ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE  
**Prof. Carmen Sandi**

**DK** ENKAM PHARMACEUTICALS A/S  
**Prof. Vladimir Berezin**

**BE** KATHOLIEKE UNIVERSITEIT LEUVEN  
**Prof. Fred Van Leuven**

**DE** MAX PLANCK GESELLSCHAFT ZUR FOERDERUNG DER  
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**Dr. Mathias Schmidt**

**ES** AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES  
CIENTIFICAS  
**Dr. Liset Menendez De La Prida**

**UK** THE OPEN UNIVERSITY.  
**Prof. Michael Stewart**

**PL** INSTYTUT BIOLOGII DOSWIADCZALNEJ IM. M. NENCKIEGO  
POLSKIEJ AKADEMII NAUK  
**Prof. Leszek Kaczmarek**

**CH** SCIPROM SARL  
**Dr. Kirsten Leufgen**

**DK** NEOLOCH PHARMACEUTICALS APS  
**Prof. Vladimir Berezin**

**Objectives**

Memory loss is a central symptom in different diseases, and represents a significant social and economic burden for a large percentage of European citizens. The molecular and neurobiological bases of memory deficiencies are largely unknown and there are currently no drugs available that can markedly decelerate or prevent memory decline. MemStick addressed this major problem by researching recently identified synaptic cell adhesion molecules (CAMs). The project focused on the therapeutic value of targeting these CAMs. The final goal was the preclinical development and validation of mimetic peptides of CAMs as potential drug candidates to treat memory deficiencies or prevent memory decline. This project opened the research of memory function to a new set of molecular pathways for which *vivo* functions were largely unknown.

**Main Achievements**

Several CAMs were identified as targets for peptide development. In a first step, the structural characteristics at the molecular level of each selected adhesion molecule were investigated either through a first crystallisation step followed by X-ray analyses, or through nuclear magnetic resonance spectroscopy. Based on these results new peptide molecules with similar binding domains

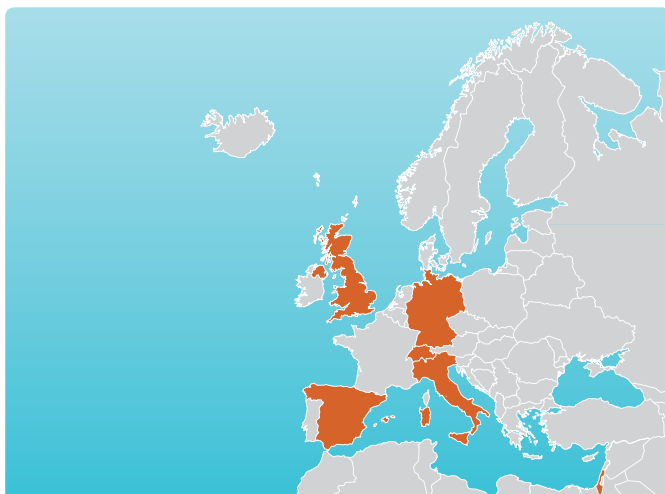
were designed. When interaction with relevant binding partners of a synthesised peptide was proven this candidate was selected for further characterisation. Thus, a number of CAMs and their ligands/counter-receptors were recombinant expressed. In order to determine the association of specific CAMs with specific morphological and functional aspects of the synapse, several antibodies were developed and characterised. Peptides targeting specific CAMs (notably, Nectins and Neuroligins) were found to have memory-promoting effects in several preclinical models of memory dysfunction.

### Impact

MemStick has substantially improved current knowledge about brain function and dysfunction, addressing mechanisms and targets relevant for neurological and psychiatric disorders with a focus on restorative therapeutic approaches. The consortium has identified numerous new molecular targets. In addition, the results have opened new avenues for future studies to refine strategies to treat memory problems. Subsequent development of new therapies could have significant impact on benefit for patients and the socioeconomic burden of related diseases in Europe. The achieved results have a strong potential for increasing competitiveness by improving the innovative capacity of European health-related industries and business. Two biomedical SMEs are immediate direct users of the knowledge.

## Prevalence, 1-year incidence and symptom severity of mental disorders in the elderly: Relationship to impairment, functioning (ICF) and service utilisation

<b>Project acronym:</b>	MENTDIS_ICF65+
<b>Coordinator:</b>	UNIVERSITAETSKLINIKUM HAMBURG-EPPENDORF, Germany
<b>Contact person:</b>	Prof. Sylke Andreas
<b>Project number:</b>	223105
<b>Duration:</b>	54 months
<b>Start date:</b>	01/10/2008
<b>End date:</b>	31/03/2013
<b>EC Contribution:</b>	2,997,684.00 €
<b>Total costs:</b>	3,919,217.00 €
<b>Website:</b>	<a href="http://www.mentdiselderly.eu/">http://www.mentdiselderly.eu/</a>



### Other partners

**DE** UNIVERSITAETSKLINIKUM HAMBURG-EPPENDORF  
**Prof. Sylke Andreas**

**IT** UNIVERSITA DEGLI STUDI DI FERRARA  
**Prof. Luigi Grassi**

**UK** ROYAL COLLEGE OF PSYCHIATRISTS  
**Prof. Mike Crawford**

**ES** UNIVERSIDAD COMPLUTENSE DE MADRID  
**Dr. Manuel Muñoz**

**CH** LES HOPITAUX UNIVERSITAIRES DE GENEVE  
**Dr. Alessandra Canuto**

**IL** HADASSAH MEDICAL ORGANIZATION  
**Prof. Arie Y. Shalev**

**DE** TECHNISCHE UNIVERSITAET DRESDEN  
**Prof. Hans-Ulrich Wittchen**

### Objectives

Despite a growing demand on reliable diagnostic assessment instruments for mental disorders in the elderly — due to demographic development — there is still a lack of these diagnostic tools. This is the case both in clinical research and the daily practice of patient care. The first objective of the MentDis\_ICF65+ project was to develop reliable diagnostic assessment instruments for mental disorders that are appropriate and valid for the elderly. The second aim of the project was to collect data on the prevalence, incidence and natural course and prognosis of mental disorders of older people living in different European and associated countries.

### Main Achievements

The core and additional diagnostic instruments to be used in clinical assessments for MentDis\_ICF65+ were selected, based on the International Classification of Functioning, Disability, and Health (ICF) model, the Composite International Diagnostic Interview (CIDI) — Elderly, and a comprehensive literature review. The established set of diagnostic instruments was refined during pre-tests in a sample of elderly patients with mental disorders, somatic disorders and/or mild cognitive impairment. Subsequently the set of diagnostic instruments was validated in an additional pilot study. A cross-sectional data collection study (MentDis) with 3,142 elderly participants was carried out in 2011. The longitudinal data collection with 2,634 followed in 2012. The analysis of results followed.

### Impact

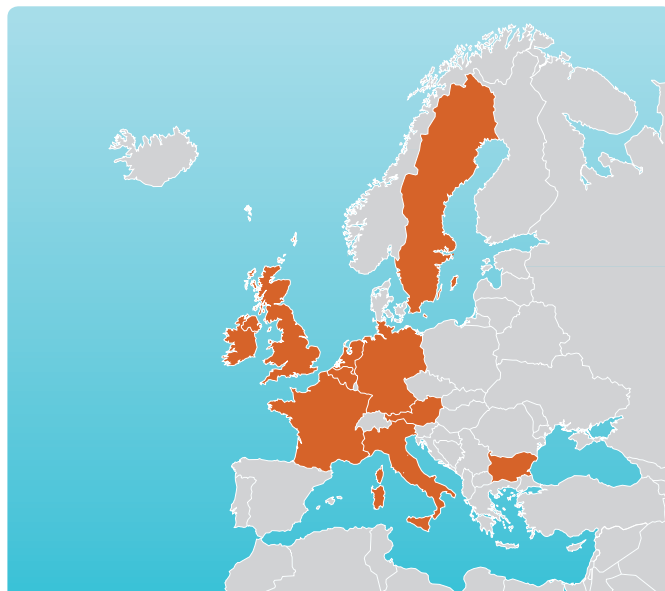
MentDis\_ICF65+ aimed to develop an age- and gender-sensitive diagnostic assessment instrument especially designed for use with elderly people. The assessment measures symptom severity of mental disorders, quality of life, activities and social participation. This data will contribute to improve related clinical research in Europe. Moreover, during the project, there was a significant

gain of knowledge about the prevalence, incidence and course of mental and physical disorders in the elderly. This knowledge about mental health in the elderly will become increasingly relevant in Europe because of demographic development in the future.



## Early diagnosis, treatment and prevention of mood disorders targetting the activated inflammatory response system

<b>Project acronym:</b>	MOODINFLAME
<b>Coordinator:</b>	ERASMUS UNIVERSITAIR MEDISCH CENTRUM ROTTERDAM, Netherlands
<b>Contact person:</b>	Prof. Hemmo A. Drexhage
<b>Project number:</b>	222963
<b>Duration:</b>	48 months
<b>Start date:</b>	01/11/2008
<b>End date:</b>	31/10/2012
<b>EC Contribution:</b>	10,235,585.00 €
<b>Total costs:</b>	13,727,701.00 €
<b>Website:</b>	<a href="http://moodinflamm.eu/">http://moodinflamm.eu/</a>



**Other partners**

<b>NL</b>	ERASMUS UNIVERSITAIR MEDISCH CENTRUM ROTTERDAM <b>Prof. Hemmo A. Drexhage</b>
<b>DE</b>	LUDWIG-MAXIMILIANS-UNIVERSITAET MUENCHEN <b>Prof. Norbert Mueller</b>
<b>DE</b>	WESTFAELISCHE WILHELMS-UNIVERSITAET MUENSTER <b>Prof. Volker Arolt</b>
<b>NL</b>	ACADEMISCH ZIEKENHUIS GRONINGEN <b>Prof. Willem A. Nolen</b>
<b>AT</b>	MEDIZINISCHE UNIVERSITAET INNSBRUCK <b>Prof. Barbara Sperner-Unterweger</b>
<b>BE</b>	KATHOLIEKE UNIVERSITEIT LEUVEN <b>Prof. Stephan Claes</b>
<b>UK</b>	KING'S COLLEGE LONDON <b>Dr. Carmine Maria Pariante</b>
<b>IT</b>	FONDAZIONE CENTRO SAN RAFFAELE DEL MONTE TABOR <b>Prof. Francesco Benedetti</b>
<b>BG</b>	Foundation Biological Psychiatry <b>Dr. Olya Mikova-Demireva</b>
<b>IE</b>	THE PROVOST FELLOWS & SCHOLARS OF THE COLLEGE OF THE HOLY AND UNDIVIDED TRINITY OF QUEEN ELIZABETH NEAR DUBLIN <b>Dr. Thomas Connor</b>
<b>UK</b>	UNIVERSITY OF BRADFORD <b>Dr. James W. Smythe</b>
<b>FR</b>	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM) <b>Dr. Alain Bessis</b>
<b>IT</b>	HUMANITAS MIRASOLE SPA <b>Prof. Silvano Sozzani</b>
<b>SE</b>	UPPSALA UNIVERSITET <b>Dr. Fredrik öberg</b>
<b>NL</b>	CROSSLINKS BV <b>Dr. Andrew Stubbs</b>
<b>BE</b>	Advanced Practical Diagnostics <b>Dr. Aye Mu Myint</b>

## Objectives

The concept of this project is that at least part of bipolar disorders, major depressive disorders and postpartum psychoses are the result of mild 'chronic inflammation' of certain brain areas important for mood regulation, such as the limbic system. The main objectives of Moodinflamm are the development of diagnostic blood tests detecting this type of inflammation and the development of animal models with a depressive-like behaviour associated with inflammation to study the basic mechanisms underlying the immune activations in psychiatric patients. Furthermore, therapeutic effects of anti-inflammatory medicines, such as Cox-2 inhibitors, will be studied as well as the anti-inflammatory properties of regular psychiatric medications.

## Main Achievements

Numerous samples from well characterised patients of major mood disorders, such as unipolar depression disorder, bipolar disorder and postpartum psychosis and depression have been collected and analysed with newly developed blood tests and brain scans to study interrelation with inflammatory processes. Patients with bipolar disorder and children of a bipolar patient are characterised by monocyte activation, increases in circulating T-regulator cells (when younger than 40 years of age) and higher levels of serum IL-1 $\beta$ , PTX3 and sCD25. The response rate of venlafaxine treatment was predicted with a specificity and sensitivity between 70 and 80% using a newly developed test based on 16 classifier monocyte genes. Animal models based on mice and rats have been developed and studies in these animals have provided first results supporting the accuracy and performance of the models and the concept of the project. A trial with the Cox-2 inhibitor Cimicoxib as an add-on medication has been finalised in patients. Data show beneficial effects in patients with severe major mood disorder.

## Impact

The aim of this project is on the one hand to develop clinically applicable test systems to detect the immune activation state of microglia and peripheral immune cells and their consequences, e.g. abnormal tryptophan breakdown products. These results will improve the characterisation of patients to increase response rates of existing therapies. Additionally, Moodinflamm develops new therapeutic concepts for mood disorders based on the 'chronic inflammation' thesis.

## Novel methods leading to new medications in depression and schizophrenia

<b>Project acronym:</b>	NEWMEDS
<b>Coordinator:</b>	H. Lundbeck A/S, Denmark
<b>Contact person:</b>	Dr Tine Bryan Stensbøl
<b>Project number:</b>	115008
<b>Duration:</b>	60 months
<b>Start date:</b>	01/09/2009
<b>End date:</b>	01/09/2014
<b>EC Contribution:</b>	8,986,216.00 €
<b>Total costs:</b>	11,737,604.00 €
<b>EFPIA in kind contribution:</b>	8,247,830.0
<b>Website:</b>	<a href="http://www.newmeds-europe.com/">http://www.newmeds-europe.com/</a>



**Other partners**

<b>DK</b>	H. LUNDBECK A/S <b>Dr Tine Bryan Stensbøl</b>
<b>UK</b>	King's College London <b>Prof. Shitij Kapur</b>
<b>SE</b>	KAROLINSKA INSTITUTET <b>Prof. Christer Halldin</b>
<b>UK</b>	University of Cambridge <b>Prof. Trevor Robbins</b>
<b>DE</b>	Zentralinstitut fuer Seelische Gesundheit (Central Institute of Mental Health) <b>Prof. Andreas Meyer-Lindenberg</b>
<b>ES</b>	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS <b>Dr. Francesc Artigas</b>
<b>UK</b>	University of Manchester <b>Prof. Shôn Lewis</b>
<b>UK</b>	PSYNOVA NEUROTECH LTD <b>Mr. Paul Rodgers</b>
<b>IS</b>	ISLENSK ERF DAGREINING EHF <b>Dr. Hreinn Stefánsson</b>
<b>DE</b>	GABO:mi Gesellschaft für Ablauforganisation: milliarium mbH & Co. KG <b>Ms Kathrin Stoller</b>
<b>SE</b>	AstraZeneca AB <b>Dr. Erik Wong</b>
<b>UK</b>	Eli Lilly and Company Ltd <b>Mr. Mark Tricklebank</b>
<b>BE</b>	Janssen Pharmaceutica NV <b>Dr. Thomas Steckler</b>
<b>CH</b>	NOVARTIS PHARMA AG <b>Ms. Cristina Lopez-Lopez</b>
<b>FI</b>	Orion Corporation <b>Mr. Jukka Sallinen</b>
<b>UK</b>	Pfizer Limited <b>Ms. Sarah Grimwood</b>
<b>CH</b>	F. HOFFMANN-LA ROCHE AG <b>Mr. Enrico Domenici</b>

**FR** Institut de Recherches Internationales Servier  
**Mr. Michael Spedding**

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**IL** Bar Ilan University  
**Prof. Jonathan Rabinowitz**

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**DE** Abbott GmbH & CoKG  
**Mr. Georg Terstappen**

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## Objectives

Despite remarkable advances in medical technologies and nearly 15,000 articles on schizophrenia and depression every year, there have been few truly innovative new medicines which have made it to the patients. There has been a tremendous explosion of new knowledge: dozens of genetic variations linked to the disease; hundreds of new molecules and mechanisms in the body identified; and numerous scanning techniques distinguishing patients from healthy people. But it has been hard to translate these findings into novel therapies for patients. Therefore, the NEWMEDS consortium is developing three important missing tools that will facilitate the translation of scientific findings into benefits for patients. They are hunting for detectable signs of disease (biomarkers) in the DNA and the proteins of patients, in order to develop tests, based on these biomarkers, that can divide patients into subcategories of disease. A more precise characterisation of their disease within the biologically heterogeneous group of 'depression' or 'schizophrenia' will allow a more targeted treatment. In order to decrease the long time needed to test the efficacy of new treatments, the scientists are developing new techniques for the interpretation of brain scan images, in order to predict which candidate drugs are most likely to have a beneficial effect, in an early stage of testing on human volunteers. Additionally, they are developing improved experimental models that mimic schizophrenia or depression in humans. NEWMEDS has assembled one of the largest repositories of data from randomised controlled trials of antipsychotics in patients with schizophrenia. To date, the NEWMEDS repository includes 60 studies: 59 industry-sponsored studies from 5 drug companies and 1 from the National Institute of Mental Health (NIMH). The industry-sponsored studies included 29 placebo-controlled trials and 30 active comparator trials for a total of 23,401 patients.

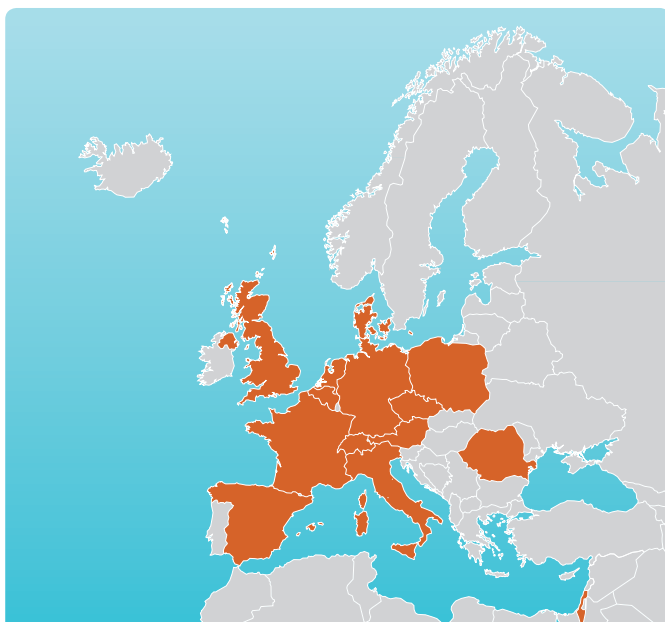
## Main Achievements

'Negative' symptoms of schizophrenia could respond better to existing treatments than was previously thought, according to new research from the NEWMEDS project. Schizophrenia patients are said to have negative symptoms when they lack behaviours that are found in healthy people. For example, people with schizophrenia may appear to lack emotion or the ability to feel pleasure or act spontaneously. (For comparison, symptoms such as hallucinations, which are not normally experienced by healthy people, are called 'positive' symptoms). It has generally been maintained that negative symptoms do not respond to currently-used second generation antipsychotic medications. However taking advantage of their unique database from randomized controlled trials of antipsychotics and novel analytical approaches developed by their scientists the NEWMEDS project revealed that the overall response to treatment was similar in patients with only prominent negative symptoms to patients who had either only prominent positive symptoms or both prominent negative and positive symptoms before treatment. The findings suggest that it will be harder than

expected for new medicines to prove themselves against existing medicines. In another analysis NEWMEDS showed that placebo-controlled efficacy trials could be shortened by 1 to 2 weeks, and that an increase in the number of women in studies would dramatically decrease the number of patients needed to demonstrate treatment efficacy. NEWMEDS results show that it is possible to make clinical trials of antipsychotics in patients with schizophrenia smaller and faster, decreasing both the costs for the development of novel treatments and the exposure of patients to experimental medications.

## OPTimization of Treatment and Management of Schizophrenia in Europe (OPTiMiSE)

<b>Project acronym:</b>	OPTIMISE
<b>Coordinator:</b>	UNIVERSITAIR MEDISCH CENTRUM UTRECHT, Netherlands
<b>Contact person:</b>	Prof. Rene Kahn
<b>Project number:</b>	242114
<b>Duration:</b>	72 months
<b>Start date:</b>	01/02/2010
<b>End date:</b>	31/01/2016
<b>EC Contribution:</b>	11,187,685.42 €
<b>Total costs:</b>	14,784,057.71 €
<b>Website:</b>	<a href="http://www.optimisetrial.eu/">http://www.optimisetrial.eu/</a>





## Other partners

<b>NL</b>	UNIVERSITAIR MEDISCH CENTRUM UTRECHT <b>Prof. Rene Kahn</b>
<b>UK</b>	KING'S COLLEGE LONDON <b>Prof. Shitij Kapur</b>
<b>FR</b>	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM) <b>Prof. Marion Leboyer</b>
<b>UK</b>	THE UNIVERSITY OF MANCHESTER <b>Prof. Shon Lewis</b>
<b>DE</b>	ZENTRALINSTITUT FUER SEELISCHE GESUNDHEIT <b>Prof. Andreas Meyer-Lindenberg</b>
<b>DE</b>	KLINIKUM RECHTS DER ISAR DER TECHNISCHEN UNIVERSITAT MUNCHEN <b>Dr. Stefan Leucht</b>
<b>DK</b>	REGION HOVEDSTADEN <b>Prof. Birte Glenthøj</b>
<b>ES</b>	SERVICIO MADRILEÑO DE SALUD <b>Dr. Celso Arango</b>
<b>AT</b>	MEDIZINISCHE UNIVERSITAET INNSBRUCK <b>Prof. Wolfgang Fleischhacker</b>
<b>BE</b>	KATHOLIEKE UNIVERSITEIT LEUVEN <b>Prof. Jozef Peuskens</b>
<b>IL</b>	MEDICAL RESEARCH INFRASTRUCTURE DEVELOPMENT AND HEALTH SERVICES FUND BY THE SHEBA MEDICAL CENTER <b>Prof. Michael Davidson</b>
<b>PL</b>	UNIwersytet Medyczny im Karola Marcinkowskiego w Poznaniu <b>Prof. Janusz Rybakowski</b>
<b>CH</b>	Clenia Schloessli AG <b>Dr. Gregor Berger</b>
<b>DE</b>	LUDWIG-MAXIMILIANS-UNIVERSITAET MUENCHEN <b>Prof. Dan Rujescu</b>
<b>IT</b>	SECONDA UNIVERSITÀ DEGLI STUDI DI NAPOLI <b>Prof. Silvana Galderisi</b>
<b>DE</b>	HELMHOLTZ ZENTRUM MUENCHEN DEUTSCHES FORSCHUNGSZENTRUM FUER GESUNDHEIT UND UMWELT GMBH <b>Prof. Thomas Illig</b>

**RO** TANGENT DATA SRL  
**Mr. Paull Radu**

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**CZ** UNIVERZITA KARLOVA V PRAZE  
**Prof. Jan Libiger**

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**CZ** PSYCHIATRICKÉ CENTRUM PRAHA  
**Dr. Pavel Mohr**

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### Objectives

Despite nearly 50 years of pharmacological and psychosocial research, the overall prognosis of schizophrenia has improved only marginally. The consortium has identified the following objectives to optimise treatment: exclude underlying 'organic' pathology followed by inappropriate antipsychotic treatment; provide a rational basis for antipsychotic choices in the treatment of first episode schizophrenia by optimising and evaluating treatment regimens; and reduce drug discontinuation by applicable psychosocial interventions. Additionally Optimise will evaluate whether glutamatergic markers potentially improve response prediction and explore the potential of cannabidiol, a modulator of endocannabinoid functioning, as an alternative to Dopamine D2 receptor-based antipsychotics.

### Main Achievements

The project has started by establishing a protocol that ensures that data acquired with spectroscopy scanners are processed and evaluated in a standardised way, using a single analysis programme. Regulatory approval from both the ethical review boards and the national competent authorities are obtained. The first patient of the first study was enrolled on 26 May 2011. Data acquisition and conduct of all proposed clinical trials are on-going.

### Impact

Schizophrenia affects around 0.3 to 0.7% of the population at some point in their lives. It causes approximately 1% of worldwide disability adjusted life years. The results of Optimise will provide directly applicable and evidence-based guidelines that will prevent inappropriate treatment, increase treatment response and increase therapy adherence in schizophrenia patients. All three impacts combined will lead to the optimisation of current treatments in schizophrenia, with increased treatment effectiveness as well as cost-effectiveness. Moreover, Optimise will contribute to the development of personalised treatments in schizophrenia and will evaluate the potential benefit of a novel pharmacological intervention for this indication, the use of cannabidiol.

## Psychosocial fActors Relevant to BrAin DISorders in Europe

<b>Project acronym:</b>	PARADISE
<b>Coordinator:</b>	LUDWIG-MAXIMILIANS-UNIVERSITAET MUENCHEN, Germany
<b>Contact person:</b>	Dr. Alarcos Cieza
<b>Project number:</b>	241572
<b>Duration:</b>	36 months
<b>Start date:</b>	01/01/2010
<b>End date:</b>	31/12/2012
<b>EC Contribution:</b>	1,482,092.00 €
<b>Total costs:</b>	1,675,933.21 €
<b>Website:</b>	<a href="http://www.paradiseproject.eu">www.paradiseproject.eu</a>



### Other partners

<b>DE</b>	LUDWIG-MAXIMILIANS-UNIVERSITAET MUENCHEN <b>Dr. Alarcos Cieza</b>
<b>ES</b>	UNIVERSIDAD AUTONOMA DE MADRID <b>Prof. Jose Luis Ayuso</b>
<b>IT</b>	FONDAZIONE IRCCS ISTITUTO NEUROLOGICO CARLO BESTA <b>Prof. Matilde Leonardi</b>
<b>CH</b>	WORLD HEALTH ORGANIZATION. <b>Dr. Somnath Chatterji</b>
<b>CH</b>	Schweizer Paraplegiker-Forschung AG <b>Prof. Jerome Bickenbach</b>
<b>BE</b>	THE EUROPEAN BRAIN COUNCIL AISBL <b>Dr. Alastair Benbow</b>
<b>UK</b>	UNIVERSITY OF EAST ANGLIA <b>Prof. Sally Hartley</b>
<b>PL</b>	INSTYTUT PSYCHIATRII I NEUROLOGII <b>Prof. Czeslaw Czabala</b>
<b>IT</b>	CF CONSULTING FINANZIAMENTI UNIONE EUROPEA SRL <b>Ms. Carla Finocchiaro</b>
<b>FI</b>	A-klinikkasäätiö <b>Dr. Jouni Tourunen</b>

### Objectives

Even though the burden and cost of mental health and neurological problems is very high, the full personal, social and economic impact of these disorders has yet to be accurately estimated. There is a lack of suitable mechanisms for collecting information at the stages for which data are available. As a consequence, the data are derived from the diagnostic criteria, which results in the accessibility of this information being fragmented. Paradise addresses this need by taking preliminary steps to develop a new 'horizontal epidemiology' approach to collect and analyse information about the lived experience of brain disorders. Paradise will coordinate epidemiological research in eight European countries with regard to data collection and analysis for the following nine brain disorders: dementia, depression, epilepsy, migraine, multiple sclerosis, Parkinson's disease, schizophrenia, stroke and substance use disorders.

### Main Achievements

Relevant patients were identified and recruited by the partners, and focus groups were formed for the related disorders. A harmonised protocol for documenting psychosocial difficulties has been developed, providing data about psychosocial difficulties associated with brain disorders and the determinants of onset. These results have been harmonised using the Composite International

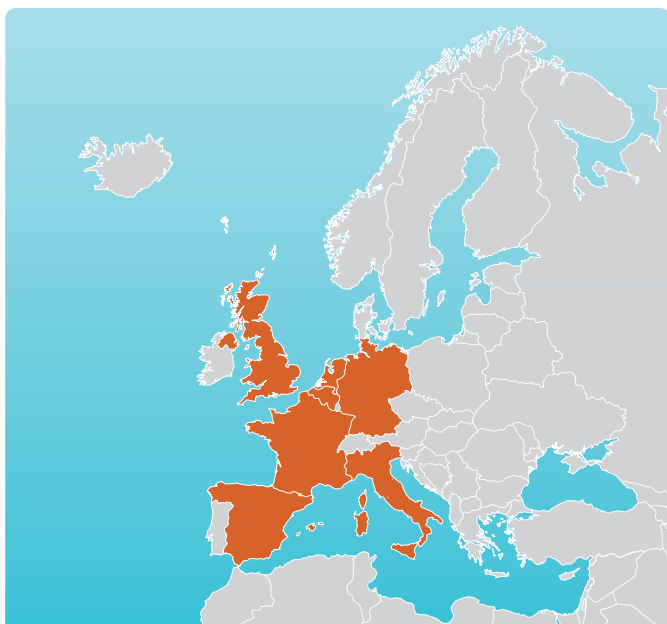
Diagnostic Interview (CIDI). The patient input study yielded information about the psychosocial difficulties experienced by individuals with the brain disorders under consideration. Out of the 44 sub-themes identified in the analysis, 39 were shared by at least two patient groups, and 12 were shared by at least six of the nine groups. The most common shared difficulties were in the area of emotional functions and coping strategies, with sleep, energy and drive, attention and memory problems being the most common. In the area of activities and participation, the most common across brain disorders were: work-related issues, organising and carrying out daily routines, looking after one's health, interpersonal relationships and community life.

### Impact

Considering the socioeconomic impact and wider societal implications Paradise will deliver valid and complete information about the actual impact of mental health and neurological conditions on the lives of people. These results are essential, not only for individual treatment and services, but also for health and social service planning from the wider perspective. Paradise will provide insights about the way to create appropriate clinical and epidemiological information about mental health, enhancing health and social planning.

## Paediatric European Risperidone Studies

<b>Project acronym:</b>	PERS
<b>Coordinator:</b>	STICHTING KATHOLIEKE UNIVERSITEIT, Netherlands
<b>Contact person:</b>	Prof. Jan Buitelaar
<b>Project number:</b>	241959
<b>Duration:</b>	60 months
<b>Start date:</b>	01/05/2010
<b>End date:</b>	30/04/2015
<b>EC Contribution:</b>	5,600,000.00 €
<b>Total costs:</b>	7,360,763.20 €
<b>Website:</b>	<a href="http://www.pers-project.com/">http://www.pers-project.com/</a>



### Other partners

<b>NL</b>	STICHTING KATHOLIEKE UNIVERSITEIT <b>Prof. Jan Buitelaar</b>
<b>NL</b>	ACADEMISCH ZIEKENHUIS GRONINGEN <b>Dr. Pieter J Hoekstra</b>
<b>DE</b>	ZENTRALINSTITUT FUER SEELISCHE GESUNDHEIT <b>Prof. Ralf Dittmann</b>
<b>UK</b>	UNIVERSITY COLLEGE LONDON <b>Dr. Paramala Santosh</b>
<b>UK</b>	UNIVERSITY OF DUNDEE <b>Dr. David Coghill</b>
<b>UK</b>	THE SCHOOL OF PHARMACY, UNIVERSITY OF LONDON <b>Prof. Ian Ck Wong</b>
<b>FR</b>	ASSISTANCE PUBLIQUE - HOPITAUX DE PARIS <b>Dr. Diane Purper-Ouakil</b>
<b>ES</b>	SERVICIO MADRILEÑO DE SALUD <b>Dr. Celso Arango Lopez</b>
<b>ES</b>	FUNDACIO PRIVADA CLINIC PER A LA RECERCA BIOMEDICA <b>Dr. Josefina Castro-Fornieles</b>
<b>IT</b>	UNIVERSITA DEGLI STUDI DI CAGLIARI <b>Prof. Alessandro Zuddas</b>
<b>BE</b>	KATHOLIEKE UNIVERSITEIT LEUVEN <b>Prof. Marina Danckaerts</b>
<b>IT</b>	Fondazione Stella Maris <b>Dr. Gabriele Masi</b>
<b>IT</b>	OSPEDALE PEDIATRICO BAMBINO GESU <b>Prof. Stefano Vicari</b>
<b>FR</b>	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM) <b>Prof. Bruno Falissard</b>
<b>DE</b>	UNIVERSITAET ULM <b>Dr. Ulrike M.E. Schulze</b>
<b>UK</b>	WOCKHARDT UK LTD <b>Mr. Neil Wynne</b>
<b>ES</b>	SERMES PLANIFICACION <b>Dr. Rafael Levitch</b>

<b>DE</b>	Medicomp Gesellschaft fuer Versuchsplanung und Datenanalyse mbH <b>Ms. Doris Wiegel</b>
<b>NL</b>	MediServ BV <b>Dr. Odette Jochems</b>
<b>UK</b>	Campbell Charles Associates (2000) Ltd <b>Ms. Debbie Galea</b>
<b>IT</b>	Dimensione Ricerca S.r.l. <b>Dr. Stefano Marini</b>

### Objectives

The PERS project addresses major gaps in the evidence-based use of risperidone for the treatment of conduct disorder (CD) in children and adolescents. CD is a repetitive and persistent pattern of behaviour in which the basic rights of others or major age-appropriate societal norms or rules are violated. The overarching goal of PERS is to perform clinical trials that will contribute towards a paediatric-use marketing authorisation (PUMA) for risperidone in children with CD. But the results of PERS will also improve the therapy of adult CD patients. The clinical programme will address scientific questions regarding moderating and/or mediating factors of the short-term efficacy and maintenance of clinical response. Additionally the short-term and long-term safety of risperidone in children and adolescents with CD and further psychiatric disorders will be evaluated.

### Main Achievements

The PERS consortium has built up resources required for the planned clinical programme e.g. establishing the data management infrastructure. The study protocols for the clinical trials have been developed as well as further required documents. Approvals for these clinical trials have been achieved by national competent authorities and ethics committees. A clinical CRO and a central diagnostic lab facility have been recruited. The clinical assessment instruments have been selected and a central ECG facility has been established. The consortium acquired scientific and regulatory advice for the paediatric investigational plan from the European Medicines Agency (EMA) during two general assembly meetings. The paediatric investigational plan has been submitted. The request for the PUMA will be submitted by an international pharmaceutical company included in this consortium as a partner, when the clinical results are analysed.

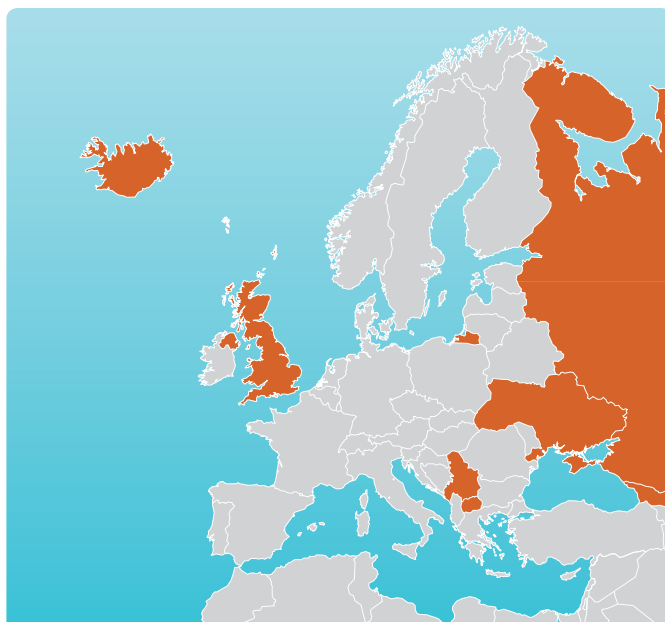
### Impact

Currently there is no regulatory approval for any medication in CD with normal IQ. The provision of data to allow this for risperidone would mark an important first step in ensuring adequate efficacy and safety data in normal IQ paediatric and adolescent populations with CD. Persistent antisocial behaviour/CD is the most common mental health problem in childhood and adolescence. CD is a serious public health concern because of its high psychiatric morbidity and association with risk-taking behaviours, legal complications and overall impairment of adaptive functioning.



## Copy number variations conferring risk of psychiatric disorders in children

<b>Project acronym:</b>	PSYCHCNVS
<b>Coordinator:</b>	ISLENSK ERF DAGREINING EHF, Iceland
<b>Contact person:</b>	Dr. Hreinn Stefansson
<b>Project number:</b>	223423
<b>Duration:</b>	42 months
<b>Start date:</b>	01/01/2009
<b>End date:</b>	30/06/2012
<b>EC Contribution:</b>	2,999,798.00 €
<b>Total costs:</b>	4,291,496.00 €
<b>Website:</b>	<a href="http://www.psych-cnvs.eu/index.php">http://www.psych-cnvs.eu/index.php</a>



### Other partners

<b>IS</b>	ISLENSK ERFDAGREINING EHF <b>Dr. Hreinn Stefansson</b>
<b>IS</b>	LANDSPÍTALI UNIVERSITY HOSPITAL <b>Prof. Hannes Petursson</b>
<b>UK</b>	KING'S COLLEGE LONDON <b>Prof. David Collier</b>
<b>RU</b>	NATIONAL RESEARCH CENTER OF MENTAL HEALTH - RUSSIAN ACADEMY OF MEDICAL SCIENCES <b>Dr. Vera Golimbet</b>
<b>UA</b>	UKRAINE RESEARCH INSTITUTE OF SOCIAL AND FORENSIC PSYCHIATRY AND DRUG ABUSE OF THE MINISTRY OF HEALTH <b>Prof. Igor Martsenkovsky</b>
<b>GE</b>	Tbilisi State Medical University <b>Prof. Teimuraz Silagadze</b>
<b>MK</b>	University Clinic of Psychiatry <b>Prof. Marija Raleva</b>
<b>RS</b>	INSTITUT ZA MENTALNO ZDRAVLJE <b>Prof. Milica Pejovic Milovancevic</b>

### Objectives

PsychCNVs aims at generating knowledge on genetic variants conferring a risk of psychiatric disorders in children and adolescents. The focus is on autism spectrum disorder and psychosis (schizophrenia and bipolar disorder) and the goal is to recruit subjects for a genome-wide association scan for uncovering and characterising causative variants. The main objective of this project is the identification and characterisation of significant gene loci and to search for causative variants or genes.

### Main Achievements

Childhood psychiatric disorders are heterogeneous and can be difficult to diagnose. A set of diagnostic instruments (psychometric tests like ADI-R, Kiddie SADS-PL) was selected, translated into languages necessary for the project and validated. Samples from volunteers participating in this study were analysed using genome-wide sequencing technology. Already available data sets have been evaluated and genetic variants conferring a risk of schizophrenia, bipolar disorder and psychosis have been identified and characterised like for example variants of the Zinc-Finger-Protein gene 804 on chromosome 2, a risk factor of both schizophrenia and bipolar disorders. The characterisation of five novel loci for schizophrenia is on-going.

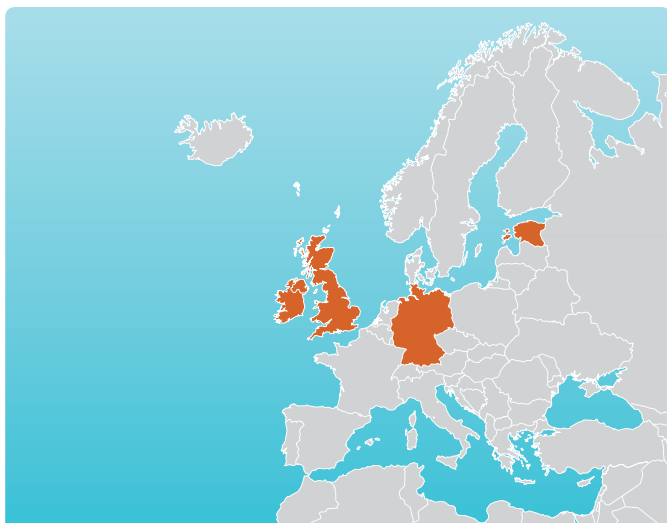
### Impact

Autism spectrum disorder and psychosis are psychiatric disorders with a high influence either on the quality of life of patients or having significant socioeconomic impact, especially when children are

affected. The results of the PsychCNVs project will allow for the testing of these variants in early onset cases. The deeper knowledge of genetic background will help to gain a better understanding of pathophysiological mechanisms and help to develop new treatment options for psychiatric disorders, especially in children.

## Developing minimally invasive, tools and technologies for high throughput, low cost molecular assays for the early diagnosis of schizophrenia and other psychiatric disorders

<b>Project acronym:</b>	SCHIZDX
<b>Coordinator:</b>	PSYNOVA NEUROTECH LTD, United Kingdom
<b>Contact person:</b>	Dr. Paul Rodgers
<b>Project number:</b>	223427
<b>Duration:</b>	42 months
<b>Start date:</b>	01/10/2008
<b>End date:</b>	31/03/2012
<b>EC Contribution:</b>	2,387,044.00 €
<b>Total costs:</b>	3,096,751.40 €
<b>Website:</b>	<a href="http://schizdx.pera.com/">http://schizdx.pera.com/</a>



### Other partners

**UK** PSYNOVA NEUROTECH LTD  
**Dr. Paul Rodgers**

**UK** THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY  
OF CAMBRIDGE  
**Dr. Sabine Bahn**

**DE** ZENTRALINSTITUT FUER SEELISCHE GESUNDHEIT  
**Prof. Markus Leweke**

**DE** WESTFAELISCHE WILHELMS-UNIVERSITAET MUENSTER  
**Prof. Matthias Rothermundt**

**DE** EDI EXPERIMENTELLE UND DIAGNOSTISCHE IMMUNOLOGIE GMBH  
**Dr. Manfred Schmolz**

**UK** PERA INNOVATION LIMITED  
**Mr. David Cartlidge**

**IE** National Institute for Bioprocessing Research and Training Ltd  
**Prof. Pauline Rudd**

**EE** STORKBIO  
**Ms. Kristi Kurg**

### Objectives

The key goal of the SchizDX project was to develop 'minimally invasive, high-throughput, low-cost molecular assays for the early diagnosis of schizophrenia and other psychiatric disorders'. The project had three key phases: (1) discovering candidate biomarkers that may be capable of accurately classifying schizophrenia patients, based on the expression profiles of these proteins in the blood of individuals; (2) developing a panel of high throughput assays to measure the biomarker fingerprints of selected proteins in larger numbers of individuals in a minimally invasive, cost-effective manner; and (3) validating the candidate biomarkers and defining their classification performance. This will allow for the identification of patients and control samples from a prospectively collected cohort of individuals suffering from a range of psychiatric disorders.

### Main Achievements

Glycoprotein analysis was carried out on samples from schizophrenia patients and healthy controls. Statistically significant glycoprotein changes were found in samples from first-onset schizophrenia patients compared to the control subjects. Twenty-four proteins were identified with altered levels in schizophrenia and 10 of these were phosphoproteins. Samples were collected from first-onset drug naive schizophrenia patients before and after treatment with antipsychotic drugs. Two proteins, lumican and apolipoprotein C2, were increased by all treatments. Glycosylation-specific changes were also found in serum from schizophrenic patients after treatment with olanzapine. Multiplex immunoassay profiling of drug treated schizophrenic patients before and after treatment identified seven candidate treatment response biomarkers that changed in expression levels. A novel *ex vivo*

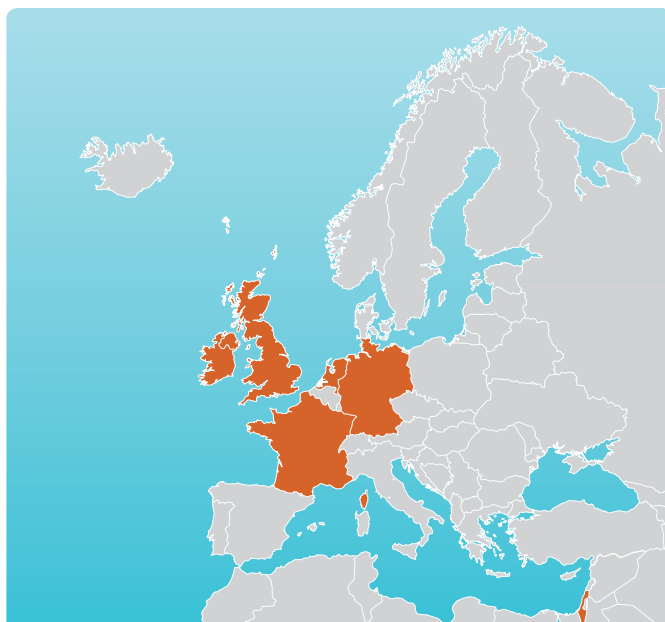
blood culture system combined with the use of a 33-plex cytokine/chemokine immuno assay panel was implemented to identify further schizophrenia biomarkers. The project has resulted in the filing of nine patent applications.

### Impact

Schizophrenia and related disorders are a major burden to affected individuals, to their families and to society. These severe mental illnesses affect at least 2% of the population worldwide, while 50% do not receive adequate treatment. The current diagnosis of schizophrenia involves examination and monitoring by psychiatrists, a process which can take between 2 and 5 years and is a rather subjective. The SchizDX project resulted in the launch of the first molecular test for the diagnosis of schizophrenia (VeriPsych®) by Psynova Neurotech and Myriad-RBM in the USA. The test is being marketed to assist with the diagnosis of first-onset schizophrenia and may result in a quicker and more cost-effective diagnosis. Earlier appropriate treatment will potentially contribute to improve the course of the disease.

# Translational Adolescent and Childhood Therapeutic Interventions in Compulsive Syndromes

<b>Project acronym:</b>	TACTICS
<b>Coordinator:</b>	STICHTING KATHOLIEKE UNIVERSITEIT, Netherlands
<b>Contact person:</b>	Prof. Jan Buitelaar
<b>Project number:</b>	278948
<b>Duration:</b>	60 months
<b>Start date:</b>	01/01/2012
<b>End date:</b>	31/12/2016
<b>EC Contribution:</b>	6,000,000.00 €
<b>Total costs:</b>	7,871,883.40 €
<b>Website:</b>	<a href="http://www.tactics-project.eu">www.tactics-project.eu</a>



**Other partners**

**NL** STICHTING KATHOLIEKE UNIVERSITEIT  
**Prof. Jan Buitelaar**

**UK** KING'S COLLEGE LONDON  
**Prof. Declan Murphy**

**DE** ZENTRALINSTITUT FUER SEELISCHE GESUNDHEIT  
**Prof. Ralf Dittmann**

**IL** TEL AVIV UNIVERSITY  
**Prof. Daphna Joel**

**IE** UNIVERSITY COLLEGE CORK, NATIONAL UNIVERSITY OF IRELAND,  
CORK  
**Dr. John Cryan**

**US** The General Hospital Corporation  
**Dr. Tracey Petryshen**

**NL** UNIVERSITAIR MEDISCH CENTRUM UTRECHT  
**Prof. Sarah Durston**

**UK** WOCKHARDT UK LTD  
**Mr. Gordon Urquhart**

**FR** GENOWAY S.A.  
**Dr. Angelique Heckmann**

**UK** THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY  
OF CAMBRIDGE  
**Prof. Sabine Bahn**

**DE** Concentris Research Management GmbH  
**Ms. Ameli Schwalber**

**Abstract**

Compulsivity is characterized by a repetitive, irresistible urge to perform a behavior, the experience of loss of voluntary control over this intense urge, the diminished ability to delay or inhibit thoughts or behaviors, and the tendency to perform repetitive acts in a habitual or stereotyped manner. Compulsivity is a cross-disorder trait underlying phenotypically distinct psychiatric disorders that emerge in childhood (autism spectrum disorder, ASD; obsessive-compulsive disorder, OCD) or adolescence (substance abuse). Our approach integrates clinical data sets for 'addictive' (ADHD high risk for substance use), 'anxious' (OCD) and 'stereotypical' (ASD) compulsive behaviors with highly predictive animal models for new pharmacotherapy. In a series of 'proof-of-concept' studies, the cohesion of structural neuroimaging studies (MRI/DTI), neurochemistry (MRS/microdialysis), behavior, genetics (GWAS), proteomics and (Bayesian) machine learning tools in both male and female paediatric clinical populations and behavioral animal models will seek to better understand underlying mechanisms related to glutamate dysfunction in frontostriatal circuits and its remediation / prevention by



early intervention studies with glutamate-based (riluzole and memantine) clinically used drugs. The leading drug-based interventions will be tested in pilot Phase IIb-like studies for 'proof-of-principle' efficacy in paediatric OCD and ASD populations. This approach will 1) establish predictive neural, genetic and molecular markers of compulsivity in pediatric populations; 2) provide evidence of disorder modifying pharmacologic strategies as a therapeutic approach; 3) develop a novel animal model for pharmaceutical screening and proof of concept studies, 4) build and valorize a translational biomarker compulsivity database and 5) provide pilot efficacy and safety data in paediatric clinical populations to support future large scale clinical trials according to these strategies.

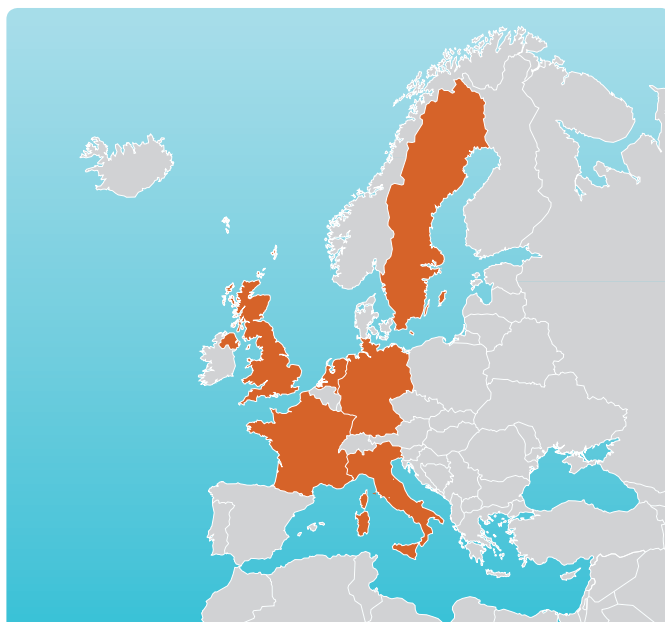
# Rare diseases of the brain

Source: Fotolia.com



# Identifying and validating pre-clinical biomarkers for diagnostics and therapeutics of Neuromuscular Disorders

<b>Project acronym:</b>	BIO-NMD
<b>Coordinator:</b>	UNIVERSITA DEGLI STUDI DI FERRARA, Italy
<b>Contact person:</b>	Prof. Alessandra Ferlini
<b>Project number:</b>	241665
<b>Duration:</b>	36 months
<b>Start date:</b>	01/12/2009
<b>End date:</b>	30/11/2012
<b>EC Contribution:</b>	5,558,756.00 €
<b>Total costs:</b>	7,435,273.00 €
<b>Website:</b>	<a href="http://www.bio-nmd.eu">www.bio-nmd.eu</a>



**Other partners**

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<b>NL</b>	ACADEMISCH ZIEKENHUIS LEIDEN - LEIDS UNIVERSITAIR MEDISCH CENTRUM <b>Dr. Peter A.C. 't Hoen</b>
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<b>UK</b>	UNIVERSITY COLLEGE LONDON <b>Prof. Francesco Muntoni</b>
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<b>FR</b>	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM) <b>Dr. Christophe Beroud</b>
<b>IT</b>	UNIVERSITA DEGLI STUDI DI MILANO <b>Prof. Cecilia Gelfi</b>
<b>SE</b>	KUNGLIGA TEKNISKA HOEGSKOLAN <b>Prof. Mathias Uhlén</b>
<b>US</b>	Ariadne Genomics Inc <b>Mr. Nikolai Daraselia</b>
<b>DE</b>	LIFE TECHNOLOGIES GmbH <b>Dr. Simone Günther</b>
<b>FR</b>	NOVAMEN SAS <b>Dr. Loïc Courtot</b>

**Objectives**

The BIO-NMD project aims to discover and validate biomarkers in genetic, rare, neuromuscular diseases (NMDs). The main focus is to improve development of appropriate, harmonised and efficacious therapies for NMDs by bridging basic research to clinical research. Two pivotal diseases have been chosen: dystrophinopathies and collagen VI-related myopathies (COL6 disease). Biomarkers are used as surrogate endpoints for establishing the efficacy during clinical trials and for predicting the severity of disease course (disease stratification and prognosis).

### Main Achievements

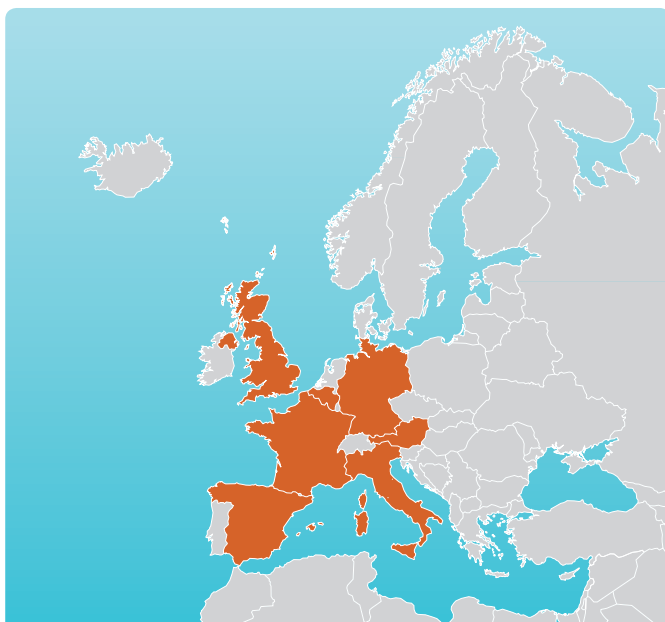
BIO-NMD is based on targeted biomarkers research and on OMIC approaches (genomics, transcriptomics, proteomics) analysing different human tissues, cells and fluids. During the first reporting period BIO-NMD has achieved and published several results. The consortium demonstrated that macrophages are biomarkers that could potentially replace skeletal muscle biopsies by allowing monitor efficacy during clinical trial in COL6 disease. Furthermore, the consortium found that the autophagic process is impaired in COL6 diseases and reactivation of the defective autophagy in COL6 mice enhanced muscle cell survival, accompanied with structural and functional improvements. Components involved in this process have been established as biomarkers and a customised design fluidic card containing the whole dystrophin messengers has been developed. This card can be used both for diagnostic purposes and for studying the configuration of the dystrophin transcript. Additionally, serum matrix metalloproteinase-9 (MMP-9) was identified to be an exploratory serum biomarker monitoring disease progression in Duchenne muscular dystrophy.

### Impact

The new genomic and proteomic biomarkers discovered within BIO-NMD will be validated, both in animal models and in human samples, before entering into a qualification process at the EMA. The qualified biomarkers resulting from the BIO-NMD project will be valuable tools for on-going and further clinical trials. Furthermore, these biomarkers will increase the therapy efficacy and efficiency and also reduce adverse effects, with impacts on patients' health status, quality of life and health economics.

## European Friedreich's Ataxia Consortium for Translational Studies

<b>Project acronym:</b>	EFACTS
<b>Coordinator:</b>	UNIVERSITE LIBRE DE BRUXELLES, Belgium
<b>Contact person:</b>	Prof. Massimo Pandolfo
<b>Project number:</b>	242193
<b>Duration:</b>	48 months
<b>Start date:</b>	01/05/2010
<b>End date:</b>	30/04/2014
<b>EC Contribution:</b>	5,983,379.00 €
<b>Total costs:</b>	7,931,154.40 €
<b>Website:</b>	<a href="http://www.e-facts.eu/">http://www.e-facts.eu/</a>



### Other partners

<b>BE</b>	UNIVERSITE LIBRE DE BRUXELLES <b>Prof. Massimo Pandolfo</b>
<b>DE</b>	UNIVERSITAETSKLINIKUM AACHEN <b>Prof. Jörg B. Schulz</b>
<b>BE</b>	KATHOLIEKE UNIVERSITEIT LEUVEN <b>Prof. Gunnar Buyse</b>
<b>IT</b>	FONDAZIONE IRCCS ISTITUTO NEUROLOGICO CARLO BESTA <b>Dr. Caterina Mariotti</b>
<b>AT</b>	MEDIZINISCHE UNIVERSITAET INNSBRUCK <b>Prof. Sylvia Boesch</b>
<b>UK</b>	UNIVERSITY COLLEGE LONDON <b>Dr. Paola Giunti</b>
<b>UK</b>	IMPERIAL COLLEGE OF SCIENCE, TECHNOLOGY AND MEDICINE <b>Prof. Richard Festenstein</b>
<b>UK</b>	BRUNEL UNIVERSITY <b>Dr. Mark Pook</b>
<b>UK</b>	MEDICAL RESEARCH COUNCIL <b>Prof. Annalisa Pastore</b>
<b>UK</b>	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF OXFORD <b>Dr. Richard Wade-Martins</b>
<b>ES</b>	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS <b>Prof. Francesc Palau</b>
<b>FR</b>	CENTRE EUROPEEN DE RECHERCHE EN BIOLOGIE ET MEDECINE <b>Dr. Hélène Puccio</b>
<b>FR</b>	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM) <b>Dr. Alexandra Dürr</b>
<b>US</b>	REPLIGEN CORPORATION <b>Dr. James Rusche</b>

### Objectives

Friedreich's ataxia (FRDA) is a severely debilitating disease that leads to loss of the ability to walk, and dependency for all activities. Some patients have cardiomyopathy that can cause premature death, visual and auditory loss, kyphoscoliosis, pes cavus or diabetes. Onset is usually in childhood, but it may vary from infancy to adulthood. FRDA-affected individuals and clinical specialists

are dispersed. This is a hindrance for patients to receive the care they need, and for clinicians and researchers to make progress. The aim of Efacts is to overcome this limitation. The overall concept is to assemble a body of expertise ranging from clinical neurology, biochemistry, structural biology, systems biology, genetics and epigenetics to develop a translational research strategy based on this infrastructure.

### Main Achievements

A European FRDA database and bio bank, using global standards for common data elements, has been established. The consortium made substantial progress in defining frataxin's primary function and this will improve the development of new cellular and animal models. Cellular models and cell lines, including cerebellar cells as well as pluripotent and neural stem cells, have been established. The development of a humanised mouse model closely replicating the genetic and epigenetic features of the human disease is under way. Biomarker sets allowing monitoring disease progression have been identified as well as several targets for the development of therapeutic drugs. RG2833, a compound derived from a novel class of histone deacetylase inhibitors, has been registered as an orphan drug. Scientific advice by the EMA has been obtained and the clinical development of this candidate and a possible second generation compound are on-going.

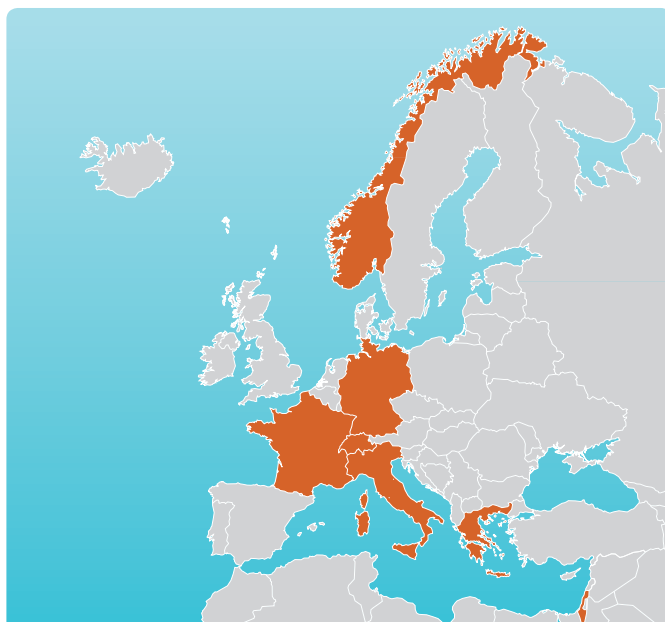
### Impact

Friedreich's ataxia is a rare neurological disease with a prevalence of 1 per 30,000 in the European population. There is no pharmacological treatment currently available for the disease, but an advantage is that the gene 'frataxin' has been identified as the primary disease-causing component. The results of this project will improve therapy by delivering potential strategies for new diagnostics and novel therapeutic drugs. Efacts will have a more indirect impact on the wider spinocerebellar ataxia field, by providing progress that may translate to other forms of ataxias, particularly neurodegenerative disorders involving mitochondrial dysfunction and oxidative stress.



## Myasthenias, a group of immune mediated neurological diseases: from etiology to therapy.

<b>Project acronym:</b>	FIGHT-MG
<b>Coordinator:</b>	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM), France
<b>Contact person:</b>	Dr. Sonia Berrih-Aknin
<b>Project number:</b>	242210
<b>Duration:</b>	48 months
<b>Start date:</b>	01/12/2009
<b>End date:</b>	30/11/2013
<b>EC Contribution:</b>	5,917,421.00 €
<b>Total costs:</b>	7,767,251.00 €
<b>Website:</b>	<a href="http://www.fight-mg.eu/">http://www.fight-mg.eu/</a>



**Other partners**

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<b>EL</b>	HELLENIC PASTEUR INSTITUTE <b>Prof. Socrates Tzartos</b>
<b>IL</b>	THE OPEN UNIVERSITY* <b>Prof. Miriam Souroujon</b>
<b>IT</b>	FONDAZIONE IRCCS ISTITUTO NEUROLOGICO CARLO BESTA <b>Dr. Renato Mantegazza</b>
<b>NO</b>	OSLO UNIVERSITETSSYKEHUS HF*OSLO UNIVERSITY HF <b>Dr. Chantal Tallaksen</b>
<b>IL</b>	HADASSAH MEDICAL ORGANIZATION <b>Prof. Talma Brenner</b>
<b>IL</b>	TECHNION - ISRAEL INSTITUTE OF TECHNOLOGY. <b>Prof. Ariel Miller</b>
<b>FR</b>	UNIVERSITE PIERRE ET MARIE CURIE - PARIS 6 <b>Prof. Gillian Butler-Browne</b>
<b>CH</b>	UNIVERSITAET BASEL <b>Prof. Markus Ruegg</b>
<b>DE</b>	PROTEOSYS AG <b>Prof. André Schrattenholz</b>
<b>IT</b>	GENOPOLIS CONSORZIO DI GENOMICA FUNZIONALE <b>Dr. Francesca Zolezzi</b>
<b>FR</b>	INSERM - TRANSFERT SA <b>Ms. Dahlia Tsakiropoulos</b>

**Objectives**

Myasthenia gravis (MG) is a heterogeneous rare autoimmune neurological disease affecting the neuromuscular junction, characterised by the presence of auto-antibodies against acetylcholine receptors or the muscle-specific kinase (MuSK). This proposal aims to shed light on the course of MG, but also on the etiological and pathological mechanisms of MG by identifying new genetic risk factors and analysing molecular mechanisms that trigger the disease. New assays for the diagnosis and monitoring of MG will be developed. Furthermore, FIGHT-MG will participate in the development of new therapeutic options by establishing the proof of concept for novel cell-mediated therapies based on immunoregulation, by eliminating pathogenic antibodies, by developing new non-cell-based therapies and by targeting epigenetic regulators.

### Main Achievements

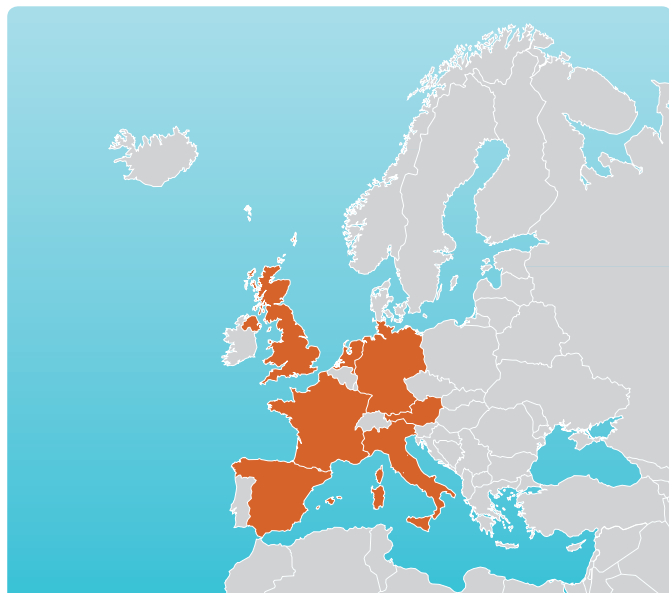
By performing a genetic analysis of 38 genes in 400 patients, three genes highly associated with MG were discovered as well as four others with weaker association to the disease. The results were then confirmed in a series of 1,200 patients. The transcription factor AIRE was shown to be involved in the susceptibility of MG, and also in the susceptibility of women to autoimmune diseases. It was possible to demonstrate that viruses such as the Epstein–Barr virus contribute to the onset or perpetuation of the intra-thymic autoimmune response in MG. A molecule mimicking viral components (double strand RNA) was shown to activate the anti-AChR autoimmune response. A mouse model with anti-MuSK antibodies (MuSK+) has been successfully established. In this model the levels of MuSK differ from one muscle to another, which may explain, at least in part, the differential response of the different muscles in the disease. A new very sensitive diagnostic assay has been validated for anti-MuSK antibodies and a novel autoantigen (LRP4) has been discovered and efforts are underway to develop a sensitive diagnostic assay for this antigen. The proteomics study in the sera revealed that several proteins are dysregulated in MG. The development of new treatment strategies targeting different types of molecules are in progress, e.g. the elimination of pathogenic autoantibodies from MG sera was successful by using specific columns. This technology is in development for future clinical application. The establishment of an immunodeficient mice grafted with human MG tissue was successful and represents an important tool to test cell based therapies.

### Impact

The molecular events causing and maintaining MG are still unknown, and current treatments do not lead to remission and entail considerable side-effects, stressing the need for improved therapies. At the level of etiological factors, the results of this project will improve the knowledge of the molecular events associated with or at the origin of MG diseases. At the diagnostic level, the identification of the pathogenic antibodies and protective factors in the serum will lead to a better monitoring of MG patients. The identification of molecules in the serum that are dysregulated in MG and normalized after treatment is a hope for new monitoring biomarkers. At the level of innovative therapies, FIGHT-MG will contribute to the development of novel pharmacological, molecular and cell-based therapies. New therapeutics options and improved diagnostic will finally alleviate the negative impact of the disease on the quality of life of the patients and their families.

## Therapeutic challenge in Leukodystrophies: Translational and ethical research towards clinical trials

<b>Project acronym:</b>	LEUKOTREAT
<b>Coordinator:</b>	UNIVERSITE D'Auvergne CLERMONT-FERRAND 1, France
<b>Contact person:</b>	Prof. Catherine Vours-Barrière
<b>Project number:</b>	241622
<b>Duration:</b>	36 months
<b>Start date:</b>	01/03/2010
<b>End date:</b>	28/02/2013
<b>EC Contribution:</b>	5,978,126.00 €
<b>Total costs:</b>	8,965,779.40 €
<b>Website:</b>	<a href="http://leukotreat.eu/">http://leukotreat.eu/</a>



## Other partners

<b>FR</b>	UNIVERSITE D'Auvergne CLERMONT-FERRAND 1 <b>Prof. Catherine Vours-Barrière</b>
<b>IT</b>	OSPEDALE PEDIATRICO BAMBINO GESU <b>Prof. Enrico Bertini</b>
<b>IT</b>	ISTITUTO GIANNINA GASLINI <b>Dr. Mirella Filocamo</b>
<b>DE</b>	UNIVERSITAETSKLINIKUM BONN <b>Prof. Volkmar Gieselmann</b>
<b>FR</b>	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM) <b>Mr. Patrick Aubourg</b>
<b>FR</b>	Soluscience SA <b>Mr. Yann Dantal</b>
<b>UK</b>	THE UNIVERSITY OF MANCHESTER <b>Dr. Graham David Pavitt</b>
<b>ES</b>	FUNDACIO PRIVADA INSTITUT D'INVESTIGACIO BIOMEDICA DE BELLVITGE <b>Prof. Aurora Pujol</b>
<b>DE</b>	MAX PLANCK GESELLSCHAFT ZUR FOERDERUNG DER WISSENSCHAFTEN E.V. <b>Prof. Klaus-Armin Nave</b>
<b>AT</b>	MEDIZINISCHE UNIVERSITAET WIEN <b>Prof. Johannes Berger</b>
<b>FR</b>	TROPHOS SA <b>Dr. Thierry Bordet</b>
<b>UK</b>	UNIVERSITY COLLEGE LONDON <b>Prof. David Attwell</b>
<b>IT</b>	FONDAZIONE CENTRO SAN RAFFAELE DEL MONTE TABOR <b>Dr. Alessandra Biffi</b>
<b>NL</b>	Academisch Medisch Centrum bij de Universiteit van Amsterdam <b>Prof. Ronald Wanders</b>
<b>FR</b>	UNIVERSITE PARIS DESCARTES <b>Dr. Grégoire Moutel</b>
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<b>DE</b>	UNIVERSITÄETSKLINIKUM HAMBURG-EPPENDORF <b>Prof. Alfried Kohlschütter</b>
<b>DE</b>	EBERHARD KARLS UNIVERSITÄT TUEBINGEN <b>Prof. Ingeborg Krägeloh-Mann</b>
<b>AU</b>	UNIVERSITY OF NEW SOUTH WALES <b>Dr. Matthias Klugmann</b>

## Objectives

Leukodystrophies (LDs) are inherited rare neurodegenerative diseases of the white matter which affects predominantly children. Severity of the disease is related to the axonal dysfunction due to myelin deficiency or destruction. The aim of LeukoTreat is to promote the development of therapeutic strategies for LD-affected patients and further white matter disorders such as multiple sclerosis (MS) or white matter disorders of premature babies (WDP). To develop efficient therapies, the LeukoTreat project is based on five complementary approaches: the establishment of a database archiving epidemiological data, patient records and genotype/phenotype correlation data of at least 500 LD patients; the identification and validation of biomarkers for therapeutic decisions which also might help to identify new therapeutic targets; the development and validation of pharmacological strategies; the establishment of innovative gene and cell therapies; and tackling ethical impacts of the proposed therapeutic challenges.

## Main Achievements

The LD European database of patients affected by LDs has been created. Biomarkers with predictive value for diagnosis and prognosis have been validated; new biomarkers have been established. Compounds reducing abnormal aggregates observed in astrocytes of GFAP-mutated patients have been identified. Amongst them bezafibrate will be tested in a proof-of-concept clinical trial with 10 patients. Infusion of recombinant human arylsulfatase (ARSA) has demonstrated to be effective in a metachromatic leukodystrophy mouse model. A proof-of-concept clinical trial testing direct delivery of ARSA enzyme replacement therapy to the brain (intrathecal administration) will be initiated. Furthermore, hematopoietic stem cell (HSC) transplantation using lentiviral vector to deliver therapeutic proteins to the brain have been performed in metachromatic leukodystrophy patients as phase I/II clinical trials. First results demonstrated an arrest in progression of cerebral demyelinating

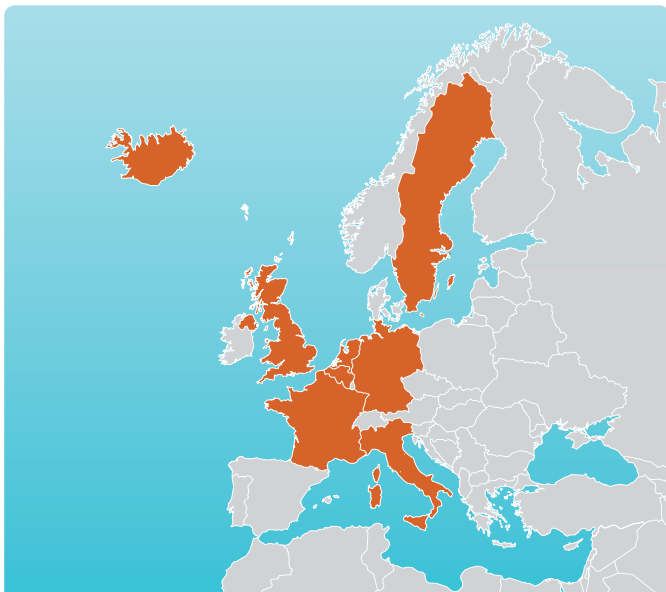
lesions in patients with good tolerability and safety. The preclinical development of an HSC-based gene therapy is on-going. Strategies allowing direct delivery of the therapeutic gene to the brain have been tested in two animal models. Proof of efficiency and safety was established in mice and non-human primates. Preclinical and toxicological studies are on-going.

### Impact

Leukodystrophies cause a progressive loss in body tone, movements, gait, speech, ability to eat, vision, hearing and behaviour. There is often a slowdown in mental and physical development in affected children. The LeukoTreat project is a translational research project whose final objective is to provide patients with new challenging therapeutic strategies that will significantly improve LDs treatment. There is no curative therapy available today. Thus, this research and the development activities will have a strong impact on patients and their families. Patients and families directly participate in the definition and evolution of the research programme. Ultimately, the development of new European reference centres for rare disease in Europe will be enhanced, in particular thanks to the diagnosis assistance tool developed during LeukoTreat.

## Integrated European – omics research project for diagnosis and therapy in rare neuromuscular and neurodegenerative diseases

<b>Project acronym:</b>	NEUROMICS
<b>Coordinator:</b>	EBERHARD KARLS UNIVERSITAET TUEBINGEN, Germany
<b>Contact person:</b>	Prof. Olaf Riess
<b>Project number:</b>	305121
<b>Duration:</b>	60 months
<b>Start date:</b>	01/10/2012
<b>End date:</b>	30/09/2017
<b>EC Contribution:</b>	11,520,000.00 €
<b>Total costs:</b>	16,208,604.16 €





## Other partners

<b>DE</b>	EBERHARD KARLS UNIVERSITAET TUEBINGEN <b>Prof. Olaf Riess</b>
<b>NL</b>	ACADEMISCH ZIEKENHUIS LEIDEN - LEIDS UNIVERSITAIR MEDISCH CENTRUM <b>Prof. Gert-Jan B Van Ommen</b>
<b>DE</b>	KLINIKUM DER UNIVERSITAET ZU KOELN <b>Prof. Brunhilde Wirth</b>
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<b>NL</b>	BIO-PRODUCT BV <b>Dr. Henk-Jan Joosten</b>

**AU** THE UNIVERSITY OF WESTERN AUSTRALIA  
**Prof. Nigel Laing**

**DE** UNIVERSITAETSKLINIKUM FREIBURG  
**Dr. Janbernd Kirschner**

### Abstract

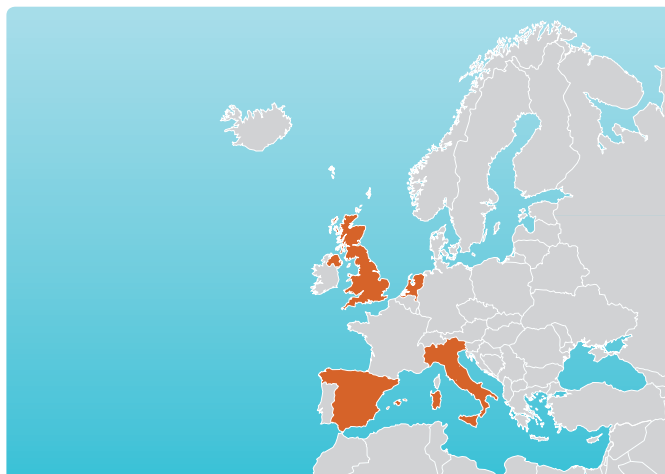
Neurodegenerative (ND) and neuromuscular (NM) disease is one of the most frequent classes of rare diseases, affecting life and mobility of 500,000 patients in Europe and millions of their caregivers, family members and employers. This NEUROMICS project brings together the leading research groups in Europe, five highly innovative SMEs and relevant overseas experts using the most sophisticated Omics technologies to revolutionize diagnostics and to develop pathomechanism-based treatment for ten major ND and NM diseases. Specifically we aim to:

- (i) use next generation WES to increase the number of known gene loci for the most heterogeneous disease groups from about 50% to 80%,
- (ii) increase patient cohorts by large scale genotyping by enriched gene variant panels and NGS of so far unclassified patients and subsequent phenotyping,
- (iii) develop biomarkers for clinical application with a strong emphasis on presymptomatic utility and cohort stratification,
- (iv) combine -omics approaches to better understand pathophysiology and identify therapeutic targets,
- (v) identify disease modifiers in disease subgroups cohorts with extreme age of onset
- (vi) develop targeted therapies (to groups or personalized) using antisense oligos and histone deacetylase inhibitors, translating the consortiums expertise in clinical development from ongoing trials toward other disease groups, notably the PolyQ diseases and other NMD.

To warrant that advances affect a large fraction of patients we limited the selection to a number of major categories, some of which are in a promising stage of etiological and therapeutic research while some others are in great need of further classification. The efforts will be connected through a NEUROMICS platform for impact, communication and innovation that will provide tools and procedures for ensuring trial-readiness, WP performance, sustainability, interaction with the chosen Support IRDiRC and RD-Connect project and involvement of stakeholders in the NDD/NMD field.

# Nuclease Immune Mediated Brain and Lupus-like conditions (NIMBL): natural history, pathophysiology, diagnostic and therapeutic modalities with application to other disorders of autoimmunity

<b>Project acronym:</b>	NIMBL
<b>Coordinator:</b>	THE UNIVERSITY OF MANCHESTER, United Kingdom
<b>Contact person:</b>	Prof. Yanick Crow
<b>Project number:</b>	241779
<b>Duration:</b>	36 months
<b>Start date:</b>	01/06/2010
<b>End date:</b>	31/05/2013
<b>EC Contribution:</b>	5,396,993.00 €
<b>Total costs:</b>	6,942,185.80 €
<b>Website:</b>	<a href="http://www.nimbl.eu/ni/Home">http://www.nimbl.eu/ni/Home</a>



### Other partners

**UK** THE UNIVERSITY OF MANCHESTER  
**Prof. Yanick Crow**

**NL** ACADEMISCH ZIEKENHUIS LEIDEN - LEIDS UNIVERSITAIR MEDISCH CENTRUM  
**Mr. Arn Van Den Maagdenberg**

**IT** FONDAZIONE ISTITUTO NEUROLOGICO CASIMIRO MONDINO  
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**UK** UNIVERSITY OF LEEDS  
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**NL** Academisch Medisch Centrum bij de Universiteit van Amsterdam  
**Prof. Taco Kuijpers**

**ES** FUNDACIO PRIVADA INSTITUT DE RECERCA BIOMEDICA IRB  
**Dr. Celada Cotarelo Antonio**

**US** UNIVERSITY OF WASHINGTON  
**Dr. Daniel Stetson**

**US** Children's Research Institute (CRI)  
**Dr. Adeline Vanderver**

### Objectives

Nuclease immune mediated brain and lupus-like (NIMBL) conditions, comprising Aicardi–Goutières syndrome, retinal vasculopathy with cerebral leukodystrophy and some cases of systemic lupus erythematosus, are devastating genetic disorders resulting in substantially reduced quality of life, high childhood mortality and a significant risk of recurrence within affected families. To enable optimum patient care in Europe and worldwide, a better understanding of the natural course of these disorders and their underlying pathological basis is essential. In the NIMBL project, European and US clinical and basic scientists have united to develop a translational approach to address these problems.

### Main Achievements

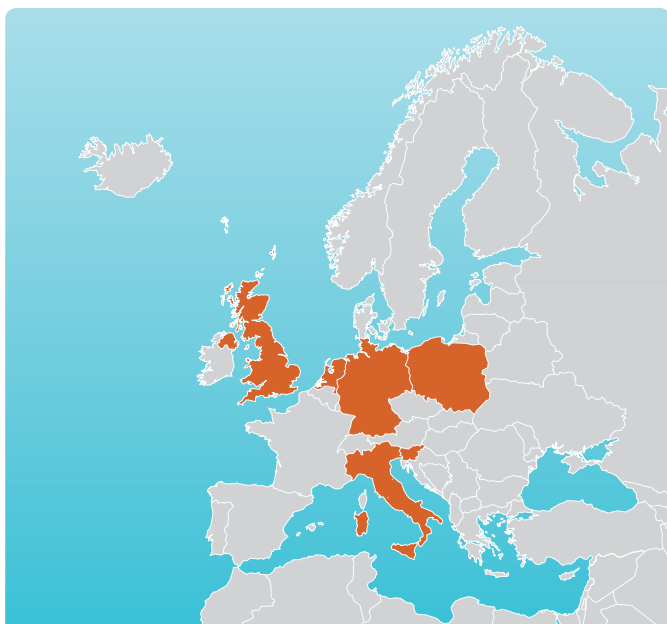
The NIMBL project started in June 2010 and builds on very recent discoveries of the cell-intrinsic initiation of autoimmunity. Linked to a newly created database and biological sample repository, the established laboratory arm of the project will allow the integration of clinical, laboratory and radiological phenotypes and experimentally derived data. Beside other significant novel results, the NIMBL consortium has developed a portfolio of mouse models to explore the origins and progression patterns of autoimmune reactions in NIMBL-related diseases. The consortium has elucidated the biochemical function of SAMHD1, which is now known to be a potent dGTP-stimulated triphosphohydrolase. Furthermore, currently available treatments in patients demonstrating NIMBL-relevant phenotypes have been assessed, with the future aim of evaluating existing and novel drugs in NIMBL-derived cellular and animal models.

### Impact

NIMBL conditions are rare, but under-diagnosed. No effective treatments or cures exist at present. This project will provide seminal insights into NIMBL-related phenotypes and, more broadly, deliver a better understanding of nucleic acid metabolism in the genesis of autoimmunity. The detailed registry of patients will reveal the natural history of NIMBL diseases, whilst our investigation of patients' samples and the use of existing and newly derived cellular and animal models will help to define disease pathogenesis and identify possible biomarkers and potential drug targets. The investigation of NIMBL diseases will not only improve the health and well-being of affected patients and their families, it will also lead to better treatment of more common autoimmune disorders, including lupus.

## Treat Iron-Related Childhood-Onset Neurodegeneration

<b>Project acronym:</b>	TIRCON
<b>Coordinator:</b>	LUDWIG-MAXIMILIANS-UNIVERSITAET MUENCHEN, Germany
<b>Contact person:</b>	Prof. Thomas Klopstock
<b>Project number:</b>	277984
<b>Duration:</b>	48 months
<b>Start date:</b>	01/11/2011
<b>End date:</b>	31/10/2015
<b>EC Contribution:</b>	5,215,219.80 €
<b>Total costs:</b>	6,726,746.20 €
<b>Website:</b>	<a href="http://tircon.eu/">http://tircon.eu/</a>



### Other partners

<b>DE</b>	LUDWIG-MAXIMILIANS-UNIVERSITAET MUENCHEN <b>Prof. Thomas Klopstock</b>
<b>DE</b>	KLINIKUM RECHTS DER ISAR DER TECHNISCHEN UNIVERSITAT MUENCHEN <b>Dr. Holger Prokisch</b>
<b>PL</b>	INSTYTUT POMNIK CENTRUM ZDROWIA DZIECKA <b>Dr. Tomasz Kmiec</b>
<b>IT</b>	FONDAZIONE IRCCS ISTITUTO NEUROLOGICO CARLO BESTA <b>Dr. Valeria Tiranti</b>
<b>NL</b>	ACADEMISCH ZIEKENHUIS GRONINGEN <b>Prof. Ody C. M. Sibon</b>
<b>US</b>	OREGON HEALTH AND SCIENCE UNIVERSITY <b>Prof. Susan Hayflick</b>
<b>US</b>	CHILDREN'S HOSPITAL & RESEARCH CENTER AT OAKLAND <b>Dr. Elliott Vichinsky</b>
<b>UK</b>	UNIVERSITY OF NEWCASTLE UPON TYNE <b>Prof. Patrick Chinnery</b>
<b>SI</b>	ACIES BIO BIOTEHNOLOSKE RAZISKAVE IN RAZVOJ DOO <b>Dr. Hrvoje Petkovic</b>
<b>US</b>	NBIA DISORDERS ASSOCIATION <b>Ms. Patricia Wood</b>
<b>DE</b>	HOFFNUNGSBAUM EV VEREIN ZUR FORDERUNG DER ERFORSCHUNG UND BEHANDLUNG VON NBIA (VORMALS: HALLERVORDEN-SPATZ-SYNDROM)*TREE OF HOPE EV <b>Mrs. Angelika Klucken</b>
<b>DE</b>	BAYERISCHE FORSCHUNGSALLIANZ GEMEINNUTZIGE GMBH <b>Dr. Florence Gauzy</b>

### Abstract

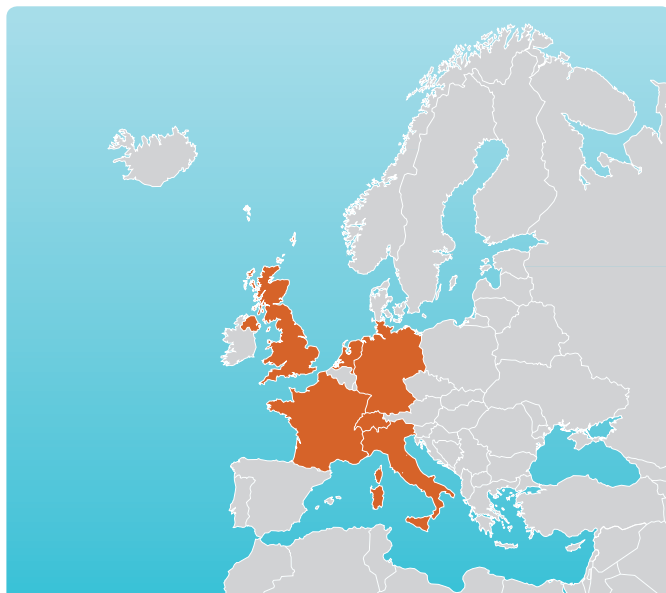
Neurodegeneration with brain iron accumulation (NBIA) is a heterogeneous group of rare hereditary neurodegenerative disorders characterized by high levels of brain iron. The most common form is pantothenate kinase-associated neurodegeneration (PKAN). Classic PKAN and most other NBIA cases are characterised by early childhood onset and rapid progression. Currently, there is no proven therapy to halt or reverse PKAN or any other NBIA. This is especially unfortunate as both the iron accumulation in NBIA and the biochemical defect in PKAN are predicted to be amenable to drug-based treatment. Thus, the current absence of clinical trials is not due to lack of therapeutic options but to rarity of the disease, lack of patient registries and fragmentation of therapeutic research

worldwide. For example, the iron-chelating drug deferiprone has been administered to PKAN patients on an individual basis or in pilot trials, both precluding firm conclusions about its efficacy. With TIRCON, we will address this urgent and unmet need for NBIA/PKAN therapy with an ambitious and highly collaborative plan that leverages worldwide expertise. We propose a large investigator-driven randomized clinical trial of deferiprone in PKAN, bringing together leading centres and patient advocacy groups from Europe and the US to reach the required patient cohort size. In addition, together with a European SME, we propose to pursue preclinical development of pantethine and its derivatives which have shown promising efficacy in a *Drosophila* PKAN model. To facilitate future research, we will develop a harmonized patient registry and biomaterial bank to allow for natural history studies and biomarker development, two critical needs in NBIA research. TIRCON partners, apart from their unique clinical and basic science expertise in NBIA, have longstanding experience in investigator-driven and industry-driven randomized clinical trials. Importantly, they have been closely collaborating in recent years.



## Fighting blindness of Usher syndrome: diagnosis, pathogenesis and retinal treatment (TreatRetUsher)

<b>Project acronym:</b>	TREATRUSH
<b>Coordinator:</b>	UNIVERSITE PIERRE ET MARIE CURIE - PARIS 6, France
<b>Contact person:</b>	Prof. Christine Petit
<b>Project number:</b>	242013
<b>Duration:</b>	48 months
<b>Start date:</b>	01/02/2010
<b>End date:</b>	31/01/2014
<b>EC Contribution:</b>	6,000,000.00 €
<b>Total costs:</b>	7,959,530.45 €
<b>Website:</b>	<a href="http://www.treatrush.eu">http://www.treatrush.eu</a>



### Other partners

<b>FR</b>	UNIVERSITE PIERRE ET MARIE CURIE - PARIS 6 <b>Prof. Christine Petit</b>
<b>FR</b>	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM) <b>Dr. Isabelle Audo</b>
<b>DE</b>	EBERHARD KARLS UNIVERSITAET TUEBINGEN <b>Prof. Eberhart Zrenner</b>
<b>UK</b>	MEDICAL RESEARCH COUNCIL <b>Prof. Steve Brown</b>
<b>IT</b>	FONDAZIONE TELETHON <b>Prof. Alberto Auricchio</b>
<b>NL</b>	AMSTERDAM MOLECULAR THERAPEUTICS (AMT) BV <b>Dr. Harald Petry</b>
<b>CH</b>	Novartis Forschungsstiftung <b>Dr. Botond Roska</b>
<b>DE</b>	FAUN - STIFTUNG NURNBERG <b>Mr. Steffen Suchert</b>
<b>US</b>	THE TRUSTEES OF THE UNIVERSITY OF PENNSYLVANIA <b>Prof. Jean Bennett</b>
<b>FR</b>	FONDATION DE COOPERATION SCIENTIFIQUE VOIR ET ENTENDRE <b>Prof. Jose Sahel</b>
<b>DE</b>	JOHANNES GUTENBERG UNIVERSITAET MAINZ <b>Prof. Uwe Wolfrum</b>

### Objectives

Usher syndrome (USH) is the most frequent cause of monogenic inherited sensory disorder associated with deafness and profound visual impairment due to the retinal degeneration underlying retinitis pigmentosa (RP). In young children affected by USH1, the most severe form, ability to maintain a sitting posture is delayed, as well as their further developing of the ability to walk. The diagnosis is established on average at 17 years of age. In patients affected by USH2, deafness, also congenital, is moderate to severe with no sign of balance defect. USH3 is not so strictly defined. Hearing impairment is progressive. Balance problems are present in about half of the cases. The main goal of the Treatrush project is to develop tools for early diagnosis of Usher syndrome, and especially for USH1, preventing and treating the retinal degeneration in this disease. The main objectives of Treatrush are the development of novel protocols and guidelines for early diagnosis of USH as well as the generation of suitable animal- and cell-based models. A further main objective is to uncover retinal pathogenesis in USH by identifying its underlying cellular and molecular mechanisms with the intention of developing curative retinal gene therapy strategies up to clinical trials.

### Main Achievements

To improve to an early diagnosis, novel diagnostic algorithms have been developed based on best current medical and scientific knowledge of the disease. New molecular diagnosis tools have been set up, demonstrating that all Usher genes need to be screened for mutations in Usher affected patients. An anonymous data base of patients has been set up with the perspective of conducting clinical trials. Novel animal models for Usher types 1 and 2 are currently under development to improve the understanding of retinal pathogenesis. Regarding the development of a gene therapy approach, the efficiency, safety and persistence of known and new viral vectors for gene therapy have been tested for retina transfection. The development of this new treatment strategy is on-going.

### Impact

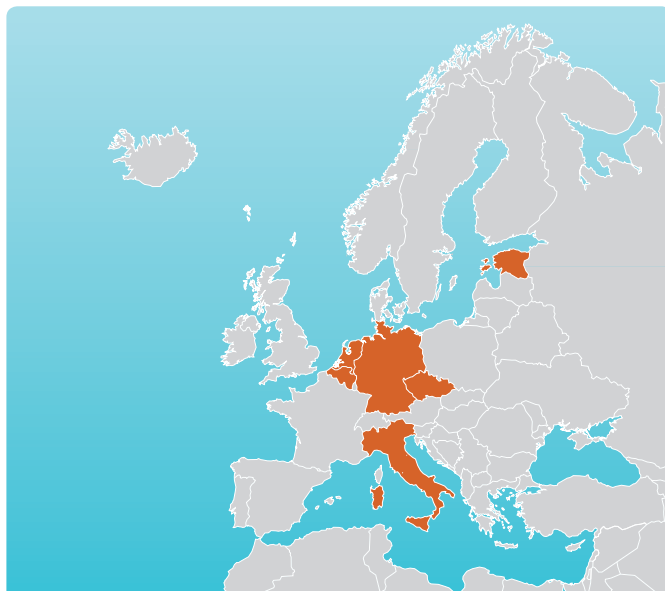
This dual sensory deficit that affects young individuals is an extreme disability. Patients affected by the USH1 form suffer from severe to profound congenital deafness and balance defects. The lack of an early diagnosis of Usher syndrome, and especially USH1, is devastating, e.g. losing the opportunity for an early cochlear implantation with the consequence of resulting deafness. At present, there is no treatment targeting progressive visual impairment. Optimally, appropriate retinal gene therapy trials will be initiated. Undoubtedly, improvements in diagnosis and new, potentially curative, treatment options will have a substantially impact in the health and socioeconomic status of affected patients.

Source: Fotolia.com



# Effective Environmental Strategies for the Prevention of Alcohol Abuse among Adolescents in Europe

<b>Project acronym:</b>	AAA-PREVENT
<b>Coordinator:</b>	STICHTING DR HILDA VERWEY-JONKER INSTITUUT, Netherlands
<b>Contact person:</b>	Dr. Majone Steketee
<b>Project number:</b>	242204
<b>Duration:</b>	36 months
<b>Start date:</b>	01/01/2010
<b>End date:</b>	31/12/2012
<b>EC Contribution:</b>	1,601,589.00 €
<b>Total costs:</b>	2,025,955.20 €
<b>Website:</b>	<a href="http://www.aaaprevent.eu/">http://www.aaaprevent.eu/</a>



**Other partners**

**NL** STICHTING DR HILDA VERWEY-JONKER INSTITUUT  
**Dr. Majone Steketee**

**CZ** UNIVERZITA KARLOVA V PRAZE  
**Dr. Jiri Burianek**

**EE** TARTU ULIKOOL  
**Ms. Anna Markina**

**DE** FREIE UNIVERSITAET BERLIN  
**Prof. Herbert Scheithauer**

**IT** UNIVERSITA DEGLI STUDI DI GENOVA  
**Prof. Uberto Gatti**

**BE** UNIVERSITEIT GENT  
**Prof. Nicole Vettenburg**

**DE** STIFTUNG UNIVERSITAT HILDESHEIM  
**Prof. Renate Soellner**

**Objectives**

The consumption of alcohol among young people in Europe has risen during recent years. Not only is the number of young people drinking alcohol growing but problematic drinking, e.g. binge drinking, is an issue of growing concern, particularly the increase among 12 to 14 year olds. The project aimed to study the different possible approaches for the prevention of alcohol abuse among adolescents in different European countries. It analysed existing environmental strategies at different governance levels and confronted these with identified risk factors which influence the initiation of alcohol use among young people in Europe.

**Main Achievements**

Various analyses have been carried out to compare the use of alcohol and drugs among young people between 12 and 16 years old in 25 European countries. The consortium compared samples from individual and clusters of countries to distinguish between universal and context-specific influences on behaviour across countries and cultures. Multilevel analyses of data in the different countries were carried out in relation to culture, local and national environments, including analysis of prevention programmes to tackle the problem of substance use and on national and local structural indicators. All strategies or interventions which are proven to be effective will be published in a web-based guideline.

**Impact**

The project aimed to give a major contribution to the development of evidence-based policy by providing policy recommendations on the prevention of early adolescents' alcohol and drug use and on prevention programmes that are expected to be most effective in combating underage drinking and drug use. In addition, the project aimed to put forward best practices for the implementation of effective and promising interventions on a broader scale, in different countries.

## Balkan Epidemiological Study on Child Abuse and Neglect

<b>Project acronym:</b>	BECAN
<b>Coordinator:</b>	INSTITOUTON YGEIAS TOU PAIDIOU, Greece
<b>Contact person:</b>	George Nikolaidis
<b>Project number:</b>	223478
<b>Duration:</b>	40 months
<b>Start date:</b>	01/10/2009
<b>End date:</b>	31/01/2013
<b>EC Contribution:</b>	2,323,346.00 €
<b>Total costs:</b>	2,881,858.11 €
<b>Website:</b>	<a href="http://www.becan.eu/">http://www.becan.eu/</a>



**Other partners**

**EL** INSTITOUTON YGEIAS TOU PAIDIOU  
**George Nikolaidis**

**AL** QENDRA PER MBROJTJEN E TE DREJTAVETE FEMIJEVE SHOQATES  
**Edlira Haxhiymeri**

**BG** SOUTH-WEST UNIVERSITY NEOFIT RILSKI  
**Vaska Stancheva-Popkostadinova**

**HR** SVEUCILISTE U ZAGREBU  
**Marina Ajdukovic**

**MK** University Clinic of Psychiatry  
**Marija Raleva**

**RO** UNIVERSITATEA BABES BOLYAI  
**Maria Roth-Szamoskozy**

**RS** Faculty for Special Education and Rehabilitation, University of Belgrade  
**Veronika Ispanovic-Radojkovic**

**TR** Ambulance and Emergency Physicians Association  
**Zeynep Olmezoglu**

**IT** ISTITUTO DEGLI INNOCENTI DI FIRENZE  
**Donata Bianchi**

**BA** UNIVERZITET U SARAJEVU  
**Jelena Brkic**

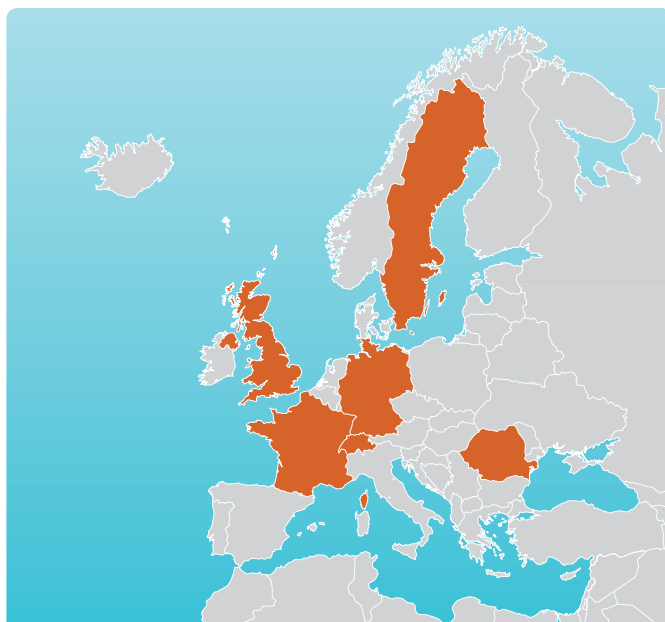
**Abstract**

BECAN is an epidemiological study aiming at mapping child abuse and neglect (CAN) in the general population of 11 to 16-year-old children that attend and those that have dropped-out school and at identifying the number of reported/detected cases of CAN being recorded in at least 8 Balkan countries. Mapping of CAN will be achieved by applying two of the I-CAST questionnaires (ICAST-CH for children and ICAST\_P for parents, created by ISPCAN with the support of UNICEF) to matched pairs of children and parents. I-CAST questionnaires will first be translated into the official languages of the participating countries and culturally validated. There is no information on the prevalence of CAN in the general population of children in Balkan countries, and this study is certainly the larger in sample size ever conducted in the Balkan area (over 30.000 children and parents), and probably one of the biggest globally. CAN is associated with unhealthy behaviour in children and adolescents. Particularly, due to the well established 'circle of violence' phenomenon, domestic violence tends to reproduce itself. Preventive cutting off of that circle contributes substantially and more effectively in the disappearance of such unhealthy behaviour in both children and adults. It is also believed that this study will provide the basis for the harmonization of CAN screening procedures in the Balkan area, and offer valuable tools to relevant policy-making activities in all participating Balkan countries.



## Children of Prisoners, Interventions & Mitigations to Strengthen Mental Health

<b>Project acronym:</b>	COPING
<b>Coordinator:</b>	THE UNIVERSITY OF HUDDERSFIELD, United Kingdom
<b>Contact person:</b>	Adele Jones
<b>Project number:</b>	241988
<b>Duration:</b>	36 months
<b>Start date:</b>	01/01/2010
<b>End date:</b>	31/12/2012
<b>EC Contribution:</b>	2,682,813.40 €
<b>Total costs:</b>	3,796,819.60 €
<b>Website:</b>	<a href="http://www.coping-project.eu/">http://www.coping-project.eu/</a>



**Other partners**

**UK** THE UNIVERSITY OF HUDDERSFIELD  
**Adele Jones**

**DE** TECHNISCHE UNIVERSITÄT DRESDEN  
**Matthias Schützwohl**

**RO** Asociația Alternative Sociale  
**Catalin Luca**

**RO** UNIVERSITATEA ALEXANDRU IOAN CUZA  
**Cristina Gavrilita**

**CH** Quaker United Nations Office, Geneva  
**Rachel Brett**

**UK** Partners of Prisoners and Families Support Group  
**Diane Curry**

**SE** KAROLINSKA INSTITUTET  
**Anne H Berman**

**FR** EUROCHIPS  
**Elizabeth Ayre**

**SE** Riksbryggan  
**Niina Koivumaa**

**DE** TREFFPUNKT E.V.  
**Hilde Kugler**

**Objectives**

The Coping project aimed to investigate the characteristics of children with imprisoned parents, to enhance our understanding of their vulnerability to emotional and mental health problems. The research was conducted across four EU partner countries (Germany, Romania, Sweden and the United Kingdom) reflecting a spectrum of different incarceration levels, welfare policies and interventions to support children of prisoners. The Coping project therefore brought together diverse European perspectives on the nature and extent of mental health problems affecting these children, whilst providing a test bed for the development of impacts at the wider European level. This included identifying any gaps in the data sets in relation to children of prisoners in Europe that currently inhibit the development of policy to mitigate mental health risks. Using a child-centred, positive psychology methodology, the project also aimed to understand childhood resilience and coping strategies, including sources of support and interventions which can impact on the child's well-being during the period of enforced separation, and to assess the value of these for identifying and planning any additional interventions. A further central aim of the project was to raise awareness amongst policymakers to the needs of what is a much under-researched and 'at risk' group.

### Main Achievements

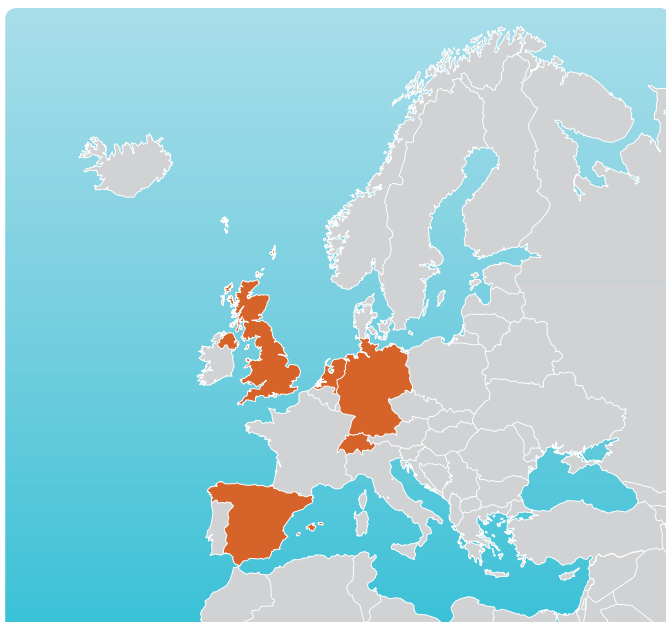
The research design was developed by a multi-disciplinary team of childcare, psychology and criminology experts. Representative prisons in each of the four countries were identified. Management procedures were implemented to assist all partners. The designs of the child questionnaire and the parent/carer questionnaire were completed and translated across all partner country languages. A coding framework for the analysis of interview data was developed. Ethical approvals were received and all surveys were carried out in the identified services. A total of 1,040 questionnaires were completed across the four countries involved and data analysis was undertaken. The development of recommendations was initiated by identifying policy-relevant research areas and a 'work package interactions framework' was developed.

### Impact

There has been a paucity of research attention and a general lack of public interest in the plight of children of prisoners. It is estimated that there are 800,000 children having one or more parent in prison in the EU. Obtainable data are limited, derived small-scale studies with constricted value and validity, either in area, time or number of participants. Coping was a large-scale pan-European project, explicitly child-centred. Coping will make available comprehensive data and meaningful results to raise awareness and provide evidence for policy decisions.

## Emerging mental health systems in low- and middle-income countries

<b>Project acronym:</b>	EMERALD
<b>Coordinator:</b>	KING'S COLLEGE LONDON, United Kingdom
<b>Contact person:</b>	Prof. Graham Thornicroft
<b>Project number:</b>	305968
<b>Duration:</b>	60 months
<b>Start date:</b>	01/11/2012
<b>End date:</b>	31/10/2017
<b>EC Contribution:</b>	5,994,028.00 €
<b>Total costs:</b>	7,554,874.37 €



### Other partners

<b>UK</b>	KING'S COLLEGE LONDON <b>Prof. Graham Thornicroft</b>
<b>ES</b>	UNIVERSIDAD AUTONOMA DE MADRID <b>Prof. Jose L. Ayuso-Mateos</b>
<b>CH</b>	WORLD HEALTH ORGANIZATION <b>Dr. Daniel Hugh Chisholm</b>
<b>ET</b>	ADDIS ABABA UNIVERSITY <b>Dr. Atalay Alem</b>
<b>IN</b>	PUBLIC HEALTH FOUNDATION OF INDIA <b>Dr. Rahul Shidhaye</b>
<b>NP</b>	Transcultural Psychosocial Organization Nepal <b>Dr. Mark Jordans</b>
<b>NG</b>	College of Medicine, University of Ibadan <b>Prof. Oye Gureje</b>
<b>ZA</b>	UNIVERSITY OF CAPE TOWN <b>Prof. Crick Lund</b>
<b>ZA</b>	UNIVERSITY OF KWAZULU-NATAL <b>Prof. Inge Petersen</b>
<b>UG</b>	BUTABIKA NATIONAL MENTAL HOSPITAL <b>Dr. Fred Kigozi</b>
<b>DE</b>	GABO:MI GESELLSCHAFT FÜR ABLAUFORGANISATION: MILLIARIUM MBH & CO KG GAB O <b>Mrs. Birgit Fuchs</b>
<b>NL</b>	STICHTING HEALTHNET INTERNATIONAL TRANSCULTURAL PSYCHOSOCIAL ORGANIZATION <b>Dr. Mark Jordans</b>

### Abstract

The objective of the EMERALD Project is to improve mental health outcomes by enhancing health system performance.

The key issues addressed are: (i) adequate, fair & sustainable resourcing: using human, infrastructural, informational & financial resource inputs to effectively deliver better mental health services; (ii) integrated service provision: enhancing access to integrated community care; and (iii) improved coverage & goal attainment: scaled-up, appropriate and cost-effective care in the community & reduction of disease burden & economic impacts.

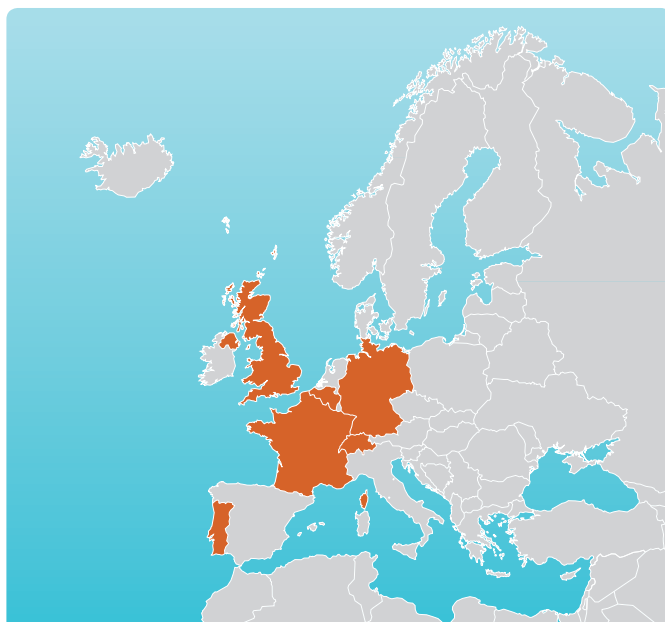
We are innovative in: (i) our track record to work collaboratively across health system boundaries; (ii) excellent ability to deliver on agreed work packages; (iii) delivering high quality & precisely relevant capacity development materials to our key target groups; & (iv) key leadership roles eg in developing the WHO mhGAP Implementation Guide. We are committed to taking the health system strengthening steps necessary for its realization in Ethiopia, India, Nepal, Nigeria, South Africa & Uganda.

The specific objectives are:

- to promote and discuss the opportunities for coordinated, targeted and precise innovative research efforts that would build on the significant gains made by basic and clinical research in the past
- the 2013 Forum, whilst aimed primarily at facilitating research opportunities in epilepsy, will also seek to address the optimal standards of care for people with epilepsy which are still unequally distributed in European Union

# Visual Impairment and Degeneration: A Road-map for Vision Research within Europe

<b>Project acronym:</b>	EUROVISIONNET
<b>Coordinator:</b>	EUROPEAN VISION INSTITUTE - EEIG, Belgium
<b>Contact person:</b>	Dr. Thomas H. Wheeler-Schilling
<b>Project number:</b>	200641
<b>Duration:</b>	48 months
<b>Start date:</b>	01/03/2008
<b>End date:</b>	29/02/2012
<b>EC Contribution:</b>	795,211.00 €
<b>Total costs:</b>	802,606.80 €
<b>Website:</b>	<a href="http://www.eurovisionnet.eu/">http://www.eurovisionnet.eu/</a>



**Other partners**

**BE** EUROPEAN VISION INSTITUTE - EEIG  
**Dr. Thomas H. Wheeler-Schilling**

**DE** UNIVERSITAETSKLINIKUM BONN  
**Dr. Hendrik Scholl**

**FR** INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)  
**Prof. José Alain Sahel**

**DE** FRIEDRICH-ALEXANDER UNIVERSITAET ERLANGEN-NUERNBERG  
**Prof. Jan Kremers**

**PT** AIBILI ASSOCIACAO PARA INVESTIGACAO BIOMEDICA E INNOVACAO EM LUZ E IMAGEM  
**Prof. José Guilherme Cunha-Vaz**

**CH** UNIVERSITAET ZUERICH  
**Dr. Christian Grimm**

**CH** RETINA INTERNATIONAL  
**Christina Fasser**

**DE** EBERHARD-KARLS UNIVERSITAET TUEBINGEN  
**Dr. Emanuela De Luca**

**UK** UNIVERSITY COLLEGE LONDON  
**Prof. Anthony T Moore**

**FR** FONDATION DE COOPERATION SCIENTIFIQUE VOIR ET ENTENDRE  
**Dr. Olivier Lorentz**

**Objectives**

The impact on the notable accomplishments of vision research and ophthalmology in clinical and basic research and patient care in Europe are obviously underestimated in comparison to other areas of the life sciences and medicine. To address this lack of visibility, EuroVisionNet aimed to coordinate and consolidate vision research activities and policies. The main objectives addressed under this action were: a better definition and acceptance of vision research within the scientific community; overcome national fragmentation as well as the reduction of duplications of research efforts in Europe; enhance communication between clinical and basic researchers; foster collaborations between academic research and industry; support clarity regarding national and international policy mandates related to clinical research activities; and develop a better educational concept in the vision research community.

**Main Achievements**

EuroVisionNet brought together coordinators and key players of EU-funded projects in the framework programmes FP5, FP6 and FP7. The project raises awareness for age-related blinding disorders



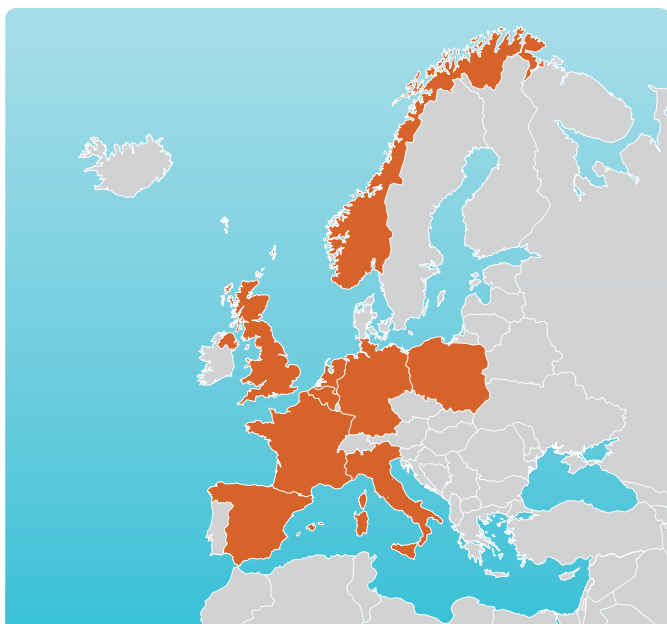
and rare eye diseases and has approached to overcome the fragmentation of research efforts within Europe. The project also fostered the development of private–public partnership initiatives in vision research and accelerated clinical research by creating the ‘White Paper on translational research in ophthalmology and vision sciences in the European Union’. A round table of the major European ophthalmological societies has been initiated with the mission to promote collaboration potential and maximise partnership opportunities. As a result, an action plan has been created followed by the foundation of the Alliance for the Advancement of Vision Research. A standardised statistics sheet for vision research based on epidemiological figures has been developed. Numerous conferences have been conducted and training courses have been initiated to disseminate research results, perform professional information policies and better integrate patient organisations.

### Impact

EuroVisionNet opened a unique opportunity for better integration of the European vision research and ophthalmology community. The project started an interdisciplinary dialogue between researchers, clinicians, major stakeholders and the European parliament in order to initiate a strategic discussion for future activities. Significant results were achieved but further steps may be necessary to give this specific field the visibility it deserves in accordance with societal challenges in the near future.

## Implementation of quality indicators in PAlliative Care sTudy

<b>Project acronym:</b>	IMPACT
<b>Coordinator:</b>	STICHTING KATHOLIEKE UNIVERSITEIT, Netherlands
<b>Contact person:</b>	Dr. Yvonne Engels
<b>Project number:</b>	258883
<b>Duration:</b>	48 months
<b>Start date:</b>	01/02/2011
<b>End date:</b>	31/01/2015
<b>EC Contribution:</b>	2,999,900.00 €
<b>Total costs:</b>	3,821,940.00 €
<b>Website:</b>	<a href="http://www.impactpalliativecare.eu">www.impactpalliativecare.eu</a>



### Other partners

<b>NL</b>	STICHTING KATHOLIEKE UNIVERSITEIT <b>Dr. Yvonne Engels</b>
<b>NO</b>	NORGES TEKNISK-NATURVITENSKAPELIGE UNIVERSITET NTNU <b>Prof. Stein Kaasa</b>
<b>IT</b>	ALMA MATER STUDIORUM-UNIVERSITA DI BOLOGNA <b>Prof. Rabih Chattat</b>
<b>UK</b>	UNIVERSITY COLLEGE LONDON <b>Prof. Steve Iliffe</b>
<b>PL</b>	UNIwersytet Medyczny im Karola Marcinkowskiego w Poznaniu <b>Prof. Wojciech Leppert</b>
<b>UK</b>	THE UNIVERSITY OF SHEFFIELD <b>Prof. Sam Ahmedzai</b>
<b>UK</b>	KING'S COLLEGE LONDON <b>Prof. Jill Manthorpe</b>
<b>BE</b>	KATHOLIEKE UNIVERSITEIT LEUVEN <b>Prof. Johan Menten</b>
<b>ES</b>	FUNDACION INTRAS <b>Ms. Yolanda Bueno</b>
<b>NL</b>	VERENIGING VOOR CHRISTELIJK HOGER ONDERWIJS WETENSCHAPPELIJK ONDERZOEK EN PATIENTENZORG <b>Prof. Rose-Marie Dröes</b>
<b>DE</b>	UNIVERSITAETSKLINIKUM BONN <b>Prof. Lukas Radbruch</b>
<b>FR</b>	ASSISTANCE PUBLIQUE - HOPITAUX DE PARIS <b>Dr. Inge Cantegreil</b>

### Abstract

New knowledge is not necessarily readily applied in medicine, even when there is evidence of its effectiveness. As a result of the gap between knowing and doing, policy makers, professional care providers, patients and their families have benefited too little from new developments. Implementation research has developed models for stepwise implementation but it is still unclear which strategies are effective for whom and which factors influence the effectiveness of implementation strategies.

From the point of view of implementation sciences changing palliative care is a major challenge, since adequate organization of palliative care requires collaboration between a range of different

professionals and healthcare organizations. Besides, as a consequence of the ageing population, the number of people in need for cancer and dementia palliative care will rise. Therefore we will focus on implementation strategies in palliative care.

The overall aim of this project is to develop optimal implementation strategies for using quality indicators to improve the organization of palliative cancer and dementia care in Europe and to study factors influencing the effectiveness of the strategies. We will focus on the implementation process and concentrate the work packages on: the organization of palliative care, the development of a set of setting-specific implementation strategies including an interactive website and instruction by consultants, the evaluation of the use of selected strategies to improve the organization of palliative care and factors influencing the effectiveness of the implementation strategies.

This information will be used to build a conceptual model that should be applicable across diverse healthcare settings and that allows rigorous assessment of the effectiveness of implementation strategies. Dissemination of the results will be enhanced by involving stakeholders, including two European networks related to the subject of this implementation process study.

## Optimizing delivery of health care interventions

<b>Project acronym:</b>	ODHIN
<b>Coordinator:</b>	FUNDACIO PRIVADA CLINIC PER A LA RECERCA BIOMEDICA, Spain
<b>Contact person:</b>	Dr. Antoni Gual
<b>Project number:</b>	259268
<b>Duration:</b>	48 months
<b>Start date:</b>	01/01/2011
<b>End date:</b>	31/12/2014
<b>EC Contribution:</b>	2,999,300.00 €
<b>Total costs:</b>	3,867,247.00 €
<b>Website:</b>	<a href="http://www.odhinproject.eu/">http://www.odhinproject.eu/</a>



**Other partners**

**ES** FUNDACIO PRIVADA CLINIC PER A LA RECERCA BIOMEDICA  
**Dr. Antoni Gual**

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**NL** STICHTING KATHOLIEKE UNIVERSITEIT  
**Dr. Miranda Laurant**

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**UK** THE UNIVERSITY OF SHEFFIELD  
**Dr. Petra Meier**

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**UK** UNIVERSITY OF YORK  
**Prof. Christine Godfrey**

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**IT** AZIENDA PER I SERVIZI SANITARI n°2 ISONTINA  
**Dr. Pierluigi Struzzo**

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**UK** UNIVERSITY OF NEWCASTLE UPON TYNE  
**Prof. Eileen F. S. Kaner**

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**UK** KING'S COLLEGE LONDON  
**Prof. Colin Drummond**

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**SE** GOETEBORGS UNIVERSITET  
**Dr. Fredrik Spak**

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**SE** LINKOPINGS UNIVERSITET  
**Prof. Preben Bendtsen**

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**ES** DEPARTAMENT DE SALUT - GENERALITAT DE CATALUNYA  
**Ms. Lidia Segura**

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**PL** PANSTWOWA AGENCJA ROZWIĄZYWANIA PROBLEMOW  
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**Ms. Jadwiga Fudala**

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**UK** UNIVERSITY COLLEGE LONDON  
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**SI** UNIVERZA V LJUBLJANI  
**Prof. Marko Kolsek**

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**PT** INSTITUTO DA DROGA E DA TOXICODEPENDENCIA  
**Dr. Cristina Ribeiro**

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**IT** ISTITUTO SUPERIORE DI SANITA  
**Dr. Emanuele Scafato**

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**NL** UNIVERSITEIT MAASTRICHT  
**Prof. Onno Van Schayck**

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**CZ** STATNI ZDRAVOTNI USTAV  
**Dr. Hana Sovinova**

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**PL** POMORSKI UNIWERSYTET MEDYCZNY W SZCZECINIE  
**Prof. Andrzej Ciechanowicz**

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**PL** WARSZAWSKI UNIWERSYTET MEDYCZNY  
**Prof. Marcin Wojnar**

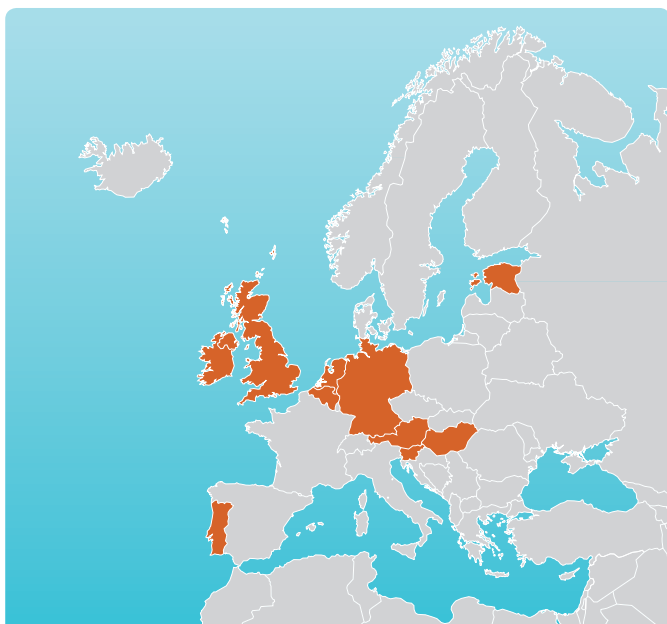
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### Abstract

ODHIN is a Europe wide project involving research institutions from nine European countries that will help to optimize the delivery of health care interventions by understanding how better to translate the results of clinical research into every day practice. ODHIN will use the implementation of identification and brief intervention (IBI) programmes for hazardous and harmful alcohol consumption (HHAC) in primary health care (PHC) as a case study. There is strong evidence for the effectiveness and cost-effectiveness of IBI in reducing HHAC and its consequences, which include more than 60 clinical diagnoses and conditions. A series of systematic reviews investigating the impact of different behavioural, organizational and financial strategies in changing provider behaviour across a range of clinical lifestyle interventions will be undertaken. The knowledge base of potential barriers and facilitators to implementing IBI will be updated. A stepped cluster randomised controlled trial will be undertaken with five arms and three time phases to test the incremental effect of strategies. Phase A will aim at raising awareness, insight, and acceptance of performance of IBI in PHC. Phases B and C will aim at acceptance, change and maintenance of implementation with financial and organisational strategies used in a different order to test the impact of both separately and in sequence. Modelling studies will test the impact of different IBI approaches on changes in alcohol consumption and the resulting impacts on healthcare costs and health-related quality of life. ODHIN will build a clinical evidence-based database on effective and cost-effective IBI measures for use in PHC and will develop a tool to assess the extent of provision of clinical practice. A project website and a series of scientific publications, reports and fact sheets will widely disseminate the documented and evaluated conceptual models across diverse health care settings throughout Europe.

## Optimizing suicide prevention programs and their implementation in Europe

<b>Project acronym:</b>	OSPI-EUROPE
<b>Coordinator:</b>	UNIVERSITAET LEIPZIG, Germany
<b>Contact person:</b>	Prof. Ulrich Hegerl
<b>Project number:</b>	223138
<b>Duration:</b>	54 months
<b>Start date:</b>	01/10/2008
<b>End date:</b>	31/03/2013
<b>EC Contribution:</b>	2,991,727.00 €
<b>Total costs:</b>	3,840,135.62 €
<b>Website:</b>	<a href="http://www.ospi-europe.com/">http://www.ospi-europe.com/</a>





## Other partners

<b>DE</b>	UNIVERSITAET LEIPZIG <b>Prof. Ulrich Hegerl</b>
<b>EE</b>	EESTI-ROOTSI VAIMSE TERVISE JA SUITSIDOLOOGIA INSTITUUT <b>Prof. Airi Värnik</b>
<b>UK</b>	LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE <b>Mr. David Mcdaid</b>
<b>BE</b>	KATHOLIEKE UNIVERSITEIT LEUVEN <b>Prof. Chantal Van Audenhove</b>
<b>NL</b>	STICHTING TRIMBOS- INSTITUUT, NETHERLANDS INSTITUTE OF MENTAL HEALTH AND ADDICTION <b>Prof. Christina M. Van Der Feltz-Cornelis</b>
<b>UK</b>	THE UNIVERSITY OF STIRLING <b>Prof. Margaret Maxwell</b>
<b>IE</b>	NATIONAL SUICIDE RESEARCH FOUNDATION <b>Dr. Ella Arensman</b>
<b>HU</b>	SEMMELWEIS EGYETEM <b>Dr. György Purebl</b>
<b>SI</b>	INSTITUT ZA VAROVANJE ZDRAVJA REPUBLIKE SLOVENIJE <b>Dr. Saska Roskar</b>
<b>DE</b>	JULIUS-MAXIMILIANS UNIVERSITAET WUERZBURG <b>Prof. Armin Schmidtke</b>
<b>PT</b>	UNIVERSIDADE NOVA DE LISBOA <b>Prof. Ricardo Gusmão</b>
<b>SI</b>	UNIVERZA NA PRIMORSKEM- UNIVERSITA DELLA PRIMORSKA UNIVERSITA DEL LITORALE <b>Prof. Marco Sarchiapone</b>
<b>DE</b>	GABO:MI GESELLSCHAFT FUR ABLAUFORGANISATION:MILLIARIUM MBH & CO KG GAB O <b>Ms. Patrizia Torremante</b>
<b>AT</b>	GESELLSCHAFT FUER PSYCHISCHE GESUNDHEIT - PRO MENTE TIROL <b>Prof. Ullrich Meise</b>
<b>DE</b>	UNIVERSITAETSKLINIKUM WUERZBURG - KLINIKUM DER BAYERISCHEN JULIUS-MAXIMILIANS-UNIVERSITAT <b>Dr. Bruno Pfuhlmann</b>

## Objectives

The main objective of OSPI-Europe was the development of a state-of-the-art intervention concept for the prevention of suicidality. The concept was based on a review of available evidence for efficacy of best practice interventions for suicide prevention and the experiences and results provided by comparable multilevel community-based intervention programme implemented within the European Alliance against Depression (EAAD). The introduced community-based intervention was evaluated regarding primary and secondary outcomes (suicidal acts: committed and non-fatal), intermediate outcomes (e.g. effects on the general population, general practitioners, and community facilitators), and the implementation process of the intervention as well as health economic analysis of suicidality and cost-effectiveness of the interventions introduced.

## Main Achievements

OSPI-Europe implemented its suicide prevention intervention programme in four model regions in Germany, Ireland, Hungary and Portugal. The programme comprised 5 levels: trainings for general practitioners; awareness of the general public; trainings for community facilitators; offers for high-risk groups and relatives; and restriction of lethal means. Using a train-the-trainer concept, training sessions for general practitioners and community facilitators such as social workers, teachers, police, were realized. To assure effectiveness and comparability of the trainings, sessions were conducted and training materials were developed in a standardised manner. Public relations activities comprised repeated poster campaigns in the regions, information flyers as well as cinema and radio spots. Further, offers for high-risk groups, self-help activities and help for relatives were realized.

Rates of committed suicides and non-fatal suicidal acts are considered as primary outcomes. Baseline and follow-up data have been successfully assessed as far as possible. Two repeated general population surveys regarding attitudes towards depression and suicidality were conducted in every intervention and control region. Further, the trainings sessions for general practitioners and community facilitators were evaluated regarding change of knowledge and attitudes towards depression and suicidality. Analyses on the implementation process and health economic aspects were carried out based on a comprehensive questionnaire developed by the consortium.

Additionally, a manual with recommendations for the implementation of multilevel community-based suicide prevention programme including materials will be prepared.

## Impact

The main aim of the project was to provide health politicians, stakeholders and the European Commission with an evidence-based and efficient concept for suicide prevention. This concept was complemented with materials and recommendations for the implementation process. Additionally, the evaluation results will improve scientific knowledge in this field and will have an impact on related research areas. Furthermore, the project aimed to have an indirect or direct effect on the intervention target groups, such as an increased awareness and decreased stigma on conditions such as depression and suicidality, improved capability of primary care providers in diagnosing and treating depression, and also a decreased rate of people at risk of deliberately harming themselves, through the provision of information, counselling and therapy.

# Pricing Policies and Control of Tobacco in Europe

<b>Project acronym:</b>	PPACTE
<b>Coordinator:</b>	TobaccoFree Research Institute Ireland LBG, Ireland
<b>Contact person:</b>	Prof. Luke Clancy
<b>Project number:</b>	223323
<b>Duration:</b>	39 months
<b>Start date:</b>	01/02/2009
<b>End date:</b>	30/04/2012
<b>EC Contribution:</b>	2,991,656.00 €
<b>Total costs:</b>	3,749,399.40 €
<b>Website:</b>	<a href="http://www.ppacte.eu/">http://www.ppacte.eu/</a>



**Other partners**

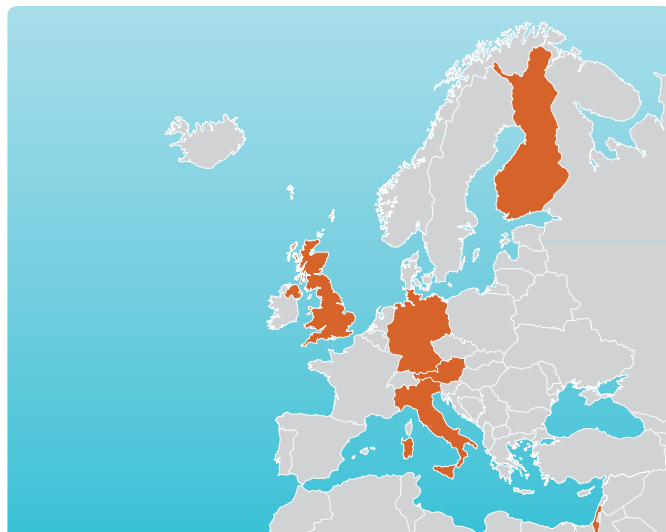
<b>IE</b>	TobaccoFree Research Institute Ireland LBG <b>Prof. Luke Clancy</b>
<b>UK</b>	UNIVERSITY OF BATH <b>Dr. Anna Gilmore</b>
<b>US</b>	HBSA Inc <b>Dr. David Levy</b>
<b>FR</b>	CENTRE INTERNATIONAL DE RECHERCHE SUR LE CANCER <b>Dr. Paolo Boffetta</b>
<b>IT</b>	ISTITUTO DI RICERCHE FARMACOLOGICHE MARIO NEGRI <b>Dr. Silvano Gallus</b>
<b>ES</b>	INSTITUT CATALA D'ONCOLOGIA <b>Dr. Esteve Fernandez Munoz</b>
<b>FR</b>	UNION INTERNATIONALE CONTRE LA TUBERCULOSE ET LES MALADIES RESPIRATOIRES <b>Ms. Fiona Godfrey</b>
<b>FI</b>	TERVEYDEN JA HYVINVOINNIN LAITOS <b>Prof. Markku Pekurinen</b>

**Abstract**

Price is the single most important intervention in tobacco control (TC). To protect the health of its citizens the EU now has a major role in regulating tobacco fiscal policy (FP) through a number of EU directives. The aims of these directives initially were to ensure the proper functioning of the internal market. The directives aided harmonization in EU Member States (MS) but now with EU enlargement price differentials have increased problems for the market and health protection. Price elasticity of tobacco is estimated using econometric analysis of demand but is limited in MS by availability of relevant data. The interaction of FP with other TC policies is poorly defined. The effects of price on smuggling and the tobacco industry response to price changes are complex. Gradually tools are evolving to look at some of these problems. The World Bank has produced a toolkit for economic analysis of tobacco demand with clear guidance on methodology. SimSmoke has allowed the analysis of various TC components to be investigated. This project allows us to perform an econometric analysis at EU level with routinely collected aggregated time series data examining differences in EU MS and the influence of EU border countries. A new cross sectional survey will provide standardised data for EU MS. We will examine the effect of the rate of price changes using historical data comparing steep rapid changes e.g. in France with gradual changes in e.g. UK and Ireland. Using SimSmoke we will examine the effects of the interaction of price with: Smoking Cessation Services, Smuggling in high, (Finland, Ireland, UK) and low, (Baltic, Romania) price countries, Smoke free laws (Ireland, Scotland and Italy), Advertising and warnings (Belgium, UK) and predict the effects on other MS. Outputs: Recommendations for policymakers at EU and MS levels with SimSmoke models and a Fiscal Policy Handbook for MS to strengthen tobacco control policies and lead to an equitable EU tobacco market

# Polypharmacy in chronic diseases: Reduction of Inappropriate Medication and Adverse drug events in elderly populations by electronic Decision Support

<b>Project acronym:</b>	PRIMA-EDS
<b>Coordinator:</b>	PARACELUS MEDIZINISCHE PRIVATUNIVERSITÄT SALZBURG, Austria
<b>Contact person:</b>	Prof. Andreas Sönnichsen
<b>Project number:</b>	305388
<b>Duration:</b>	48 months
<b>Start date:</b>	01/12/2012
<b>End date:</b>	30/11/2016
<b>EC Contribution:</b>	4,618,515.00 €
<b>Total costs:</b>	5,960,344.80 €



**Other partners**

**AT** PARACELSUS MEDIZINISCHE PRIVATUNIVERSITÄT SALZBURG  
**Prof. Andreas Sönnichsen**

**FI** KUSTANNUS OY DUODECIM  
**Prof. Ilkka Antero Kunnamo**

**DE** Universitätsmedizin Rostock  
**Prof. Attila Altiner**

**IT** SUDRITOLER AKADEMIE FÜR ALLGEMEINMEDIZIN STIFTUNG  
ACCADEMIA ALTOATESINA DI MEDICINA GENERALE FONDAZIONE  
SAKAM ACAMG  
**Dr. Giuliano Piccoliori**

**UK** THE UNIVERSITY OF MANCHESTER  
**Prof. Aneez Esmail**

**IL** TEL AVIV UNIVERSITY  
**Dr. Doron Garfinkel**

**Abstract**

**Background:** Treatment of chronic diseases in the elderly with polypharmacy poses a threat to patient outcome and involves extensive costs. Little evidence exists regarding the benefits of polypharmacy, but rising evidence shows its harmful effects. Several approaches to reduce polypharmacy have been proposed, but none have been evaluated using clinically relevant endpoints.

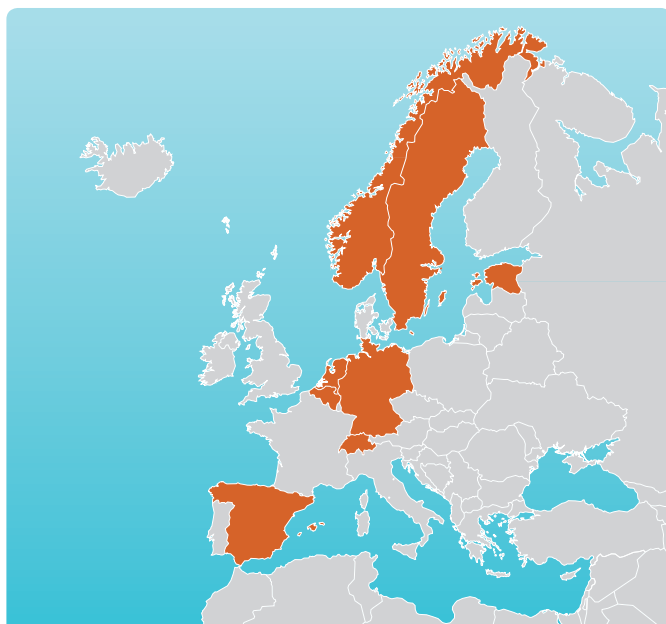
**Aims:** Based on a systematic review we will gather current best evidence and develop recommendations to optimize treatment of polymorbid elderly with cardiovascular disease, heart failure, hypertension, atrial fibrillation, diabetes mellitus type 2, musculoskeletal disorders, COPD, and mental diseases. We will then design an electronic decision support (eDS) tool incorporating the recommendations to be applied in primary care. The tool will be evaluated in a randomised controlled trial (RCT) to show that reduction of polypharmacy in the treatment of the target-diseases is beneficial and safe. Using the results of the RCT, the eDS-tool will be optimized and then disseminated for general utilization.

**Workplan:** The project is scheduled for 4 years and will contain 12 work packages. WP1 comprises management of the project. The evidence regarding treatment of chronic diseases gathered within WP2 will be used to develop the eDS tool and an electronic case report form (eCRF) in WPs 3-4. After recruitment of surgeries and patients, and implementation of the tool in WP 5, the tool will be evaluated within a cluster-randomized controlled trial (WPs 6-10). The results of the RCT will be used to optimize the eDS tool (WP 11) which will then be disseminated (WP 12).

**Impact:** The project will contribute to the EIP 'Active and Healthy Ageing'. It will improve treatments suited to the needs of older people and lower health care costs by promoting standardized care and reducing hospital admissions. The tool will be exploited by one of the partners (Duodecim Medical Publications) to achieve widespread implementation

# Benchmarking Integrated Care for better Management of Chronic and Age-related Conditions in Europe

<b>Project acronym:</b>	PROJECT INTEGRATE
<b>Coordinator:</b>	UNIVERSIDAD DE NAVARRA, Spain
<b>Contact person:</b>	Dr. Magdalene Rosenmöller
<b>Project number:</b>	305821
<b>Duration:</b>	48 months
<b>Start date:</b>	01/09/2012
<b>End date:</b>	31/08/2016
<b>EC Contribution:</b>	2,898,468.00 €
<b>Total costs:</b>	3,676,649.00 €



**Other partners**

**ES** UNIVERSIDAD DE NAVARRA  
**Dr. Magdalene Rosenmöller**

**ES** FUNDACIO PRIVADA CLINIC PER A LA RECERCA BIOMEDICA  
**Dr. Albert Alonso**

**NL** STICHTING KATHOLIEKE UNIVERSITEIT BRABANT UNIVERSITEIT  
VAN TILBURG  
**Dr. H. J. M. Bert Vrijhoef**

**DE** CHARITE - UNIVERSITAETSMEDIZIN BERLIN  
**Mr. Mehmet Goevercin**

**SE** KAROLINSKA INSTITUTET  
**Dr. Mats Brommels**

**NO** STIFTELSEN SINTEF  
**Dr. Jorid Kalseth**

**BE** VRIJE UNIVERSITEIT BRUSSEL  
**Prof. Dirk Devroey**

**EE** TARTU ULIKOOL  
**Prof. Ruth Kalda**

**CH** UNIVERSITA DELLA SVIZZERA ITALIANA  
**Prof. Stefano Calciolari**

**NL** STICHTING INTERNATIONAL FOUNDATION FOR INTEGRATED CARE  
**Dr. Lourdes Ferrer**

**Abstract**

INTEGRATE aims at gaining valuable insights into integrated care, starting from the premise that it offers benefits for patients and for Europe's health and social security systems, which are facing the challenges of an ageing population and increased chronic conditions. For these benefits to be realised, there is still much to be learnt in terms of process design, service delivery, skills mix, patients' involvement, funding flows, regulatory conditions, and enabling information technologies to create connectivity, alignment and collaboration within and between the cure and care sectors.

INTEGRATE will look into best practices of integrated care that have a proven impact in terms of positive patient care experiences; care outcomes and cost-effectiveness. The key aim is to define what constitutes good quality integrated care provision. By studying real case studies considered to be examples of interesting integrated approaches to medical care and a defined set of horizontal issues across different European health systems, we will identify generic success factors of care integration, taking into account context dependency. The results will be contrasted with international evidence and feed into operational and policy recommendations.

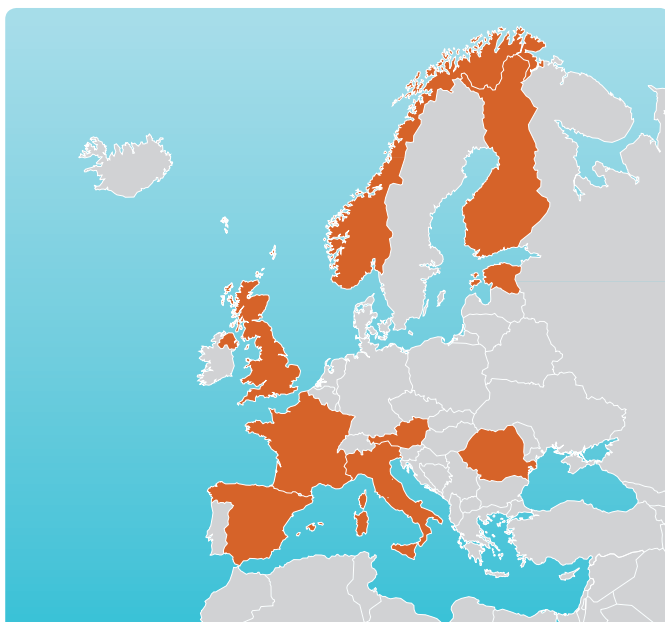


INTEGRATE brings together a multi-disciplinary team with extensive knowledge of the challenges involved in promoting integrated care, drawing on financial, regulatory, human resources, technological, and managerial perspectives, covering very different European settings, including a new Member State, building on existing collaborative relationships. To ensure scientific coherence and maximise the chances of achieving effective policy change, INTEGRATE builds on the strong, existing network of IFIC (International Foundation of Integrated Care).

INTEGRATE will impact on European health policies by providing managerial and policy recommendations, based on evidence from successful integrated care experiences, with the aim to support health providers and Member States in better organising health care and systems.

## Financing systems' effects on the Quality of Mental health care in Europe

<b>Project acronym:</b>	REFINEMENT
<b>Coordinator:</b>	UNIVERSITA DEGLI STUDI DI VERONA, Italy
<b>Contact person:</b>	Prof. Francesco Amaddeo
<b>Project number:</b>	261459
<b>Duration:</b>	36 months
<b>Start date:</b>	01/01/2011
<b>End date:</b>	31/12/2013
<b>EC Contribution:</b>	2,999,195.55 €
<b>Total costs:</b>	3,816,043.40 €
<b>Website:</b>	<a href="http://rpc.spsichiatria.univr.it/refinementproject/">http://rpc.spsichiatria.univr.it/refinementproject/</a>



### Other partners

<b>IT</b>	UNIVERSITA DEGLI STUDI DI VERONA <b>Prof. Francesco Amaddeo</b>
<b>AT</b>	LUDWIG BOLTZMANN GESELLSCHAFT OSTERREICHISCHE VEREINIGUNG ZUR FORDERUNG DER WISSENSCHAFTLICHEN FORSCHUNG <b>Prof. Heinz Katschnig</b>
<b>UK</b>	LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE <b>Mr. David Mcdaid</b>
<b>FI</b>	TERVEYDEN JA HYVINVOINNIN LAITOS <b>Prof. Kristian Wahlbeck</b>
<b>ES</b>	ASOCIACION CIENTIFICA PSICOST <b>Prof. Luis Salvador Carulla</b>
<b>NO</b>	STIFTELSEN SINTEF <b>Dr. Jorid Kalseth</b>
<b>EE</b>	TARTU ULIKOOL <b>Prof. Raul Kiivet</b>
<b>FR</b>	UNIVERSITE PARIS XII - VAL DE MARNE <b>Dr. Karine Chevreul</b>
<b>RO</b>	ROMANIAN ACADEMY NATIONAL INSTITUTE FOR ECONOMIC RESEARCH <b>Dr. Carmen Beatrice Pauna</b>

### Abstract

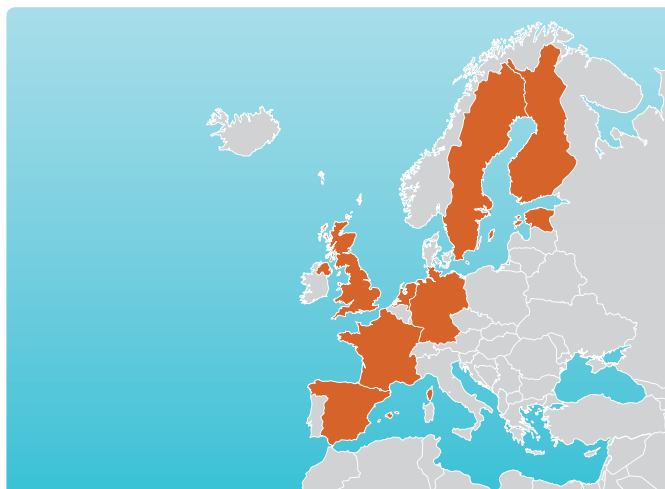
REFINEMENT will conduct the first ever comparative and comprehensive overview of links between the financing of mental health care in Europe and the outcomes of mental health services. Mental health is a key priority area for Europe, as evidenced by the publication by the European Commission in June 2008 of its European Pact on Mental Health and Wellbeing. Conducted across nine European Countries (Italy, Austria, UK, Spain, Finland, Norway, France, Estonia and Romania) it will bring together an experienced team of health economists, mental health service researchers, public health specialists and cover, in term of funding models and interfaces with social care services, a representative range of health care systems across Europe.

Four core scientific objectives of REFINEMENT will help us attain our overarching goal of determining how variations in the structure and characteristics of mental health financing systems in nine European states: (1) impact on quality of care; (2) impact on the appropriateness of pathways through the services system; (3) help identify best practice and effective innovations and components of the financing system; and (4) allow us to draw conclusions and present recommendations on how best to structure funding systems in different country contexts. The first objective is to map and

describe characteristics (including incentives) of financing systems for mental health care. In objective 2 using detailed descriptions of nine mental health systems, we wish to describe the outcomes of mental health services, including quality of care and met/unmet needs. Objective 3 will describe typical pathways through the health and social care system by people with mental health needs. Finally objective 4 is to build a series of health care financing models conducive to the promotion of high quality mental health care associated with better outcomes, drawing on data obtained as part of the three previous objectives.

## Improving health services for European citizens with dementia: Development of best practice strategies for the transition from ambulatory to institutional long-term care facilities

<b>Project acronym:</b>	RIGHTTIMEPLACECARE
<b>Coordinator:</b>	Private Universitaet Witten/Herdecke gGmbH, Germany
<b>Contact person:</b>	Prof. Gabriele Meyer
<b>Project number:</b>	242153
<b>Duration:</b>	42 months
<b>Start date:</b>	01/01/2010
<b>End date:</b>	30/06/2013
<b>EC Contribution:</b>	2,982,797.50 €
<b>Total costs:</b>	3,897,650.00 €
<b>Website:</b>	<a href="http://www.righttimeplacecare.eu/">http://www.righttimeplacecare.eu/</a>



**Other partners**

**DE** Private Universitaet Witten/Herdecke gGmbH  
**Prof. Gabriele Meyer**

**NL** UNIVERSITEIT MAASTRICHT  
**Prof. Jan Hamers**

**SE** LUNDS UNIVERSITET  
**Prof. Ingalill Rahm Hallberg**

**UK** THE UNIVERSITY OF MANCHESTER  
**Prof. Alistair Burns**

**FI** TURUN YLIOPISTO  
**Prof. Helena Leino-Kilpi**

**EE** TARTU ULIKOOL  
**Prof. Kai Saks**

**FR** CENTRE HOSPITALIER UNIVERSITAIRE DE TOULOUSE  
**Prof. Bruno Vellas**

**ES** FUNDACIO PRIVADA CLINIC PER A LA RECERCA BIOMEDICA  
**Dr. Adela Zabalegui**

**Abstract**

Given the increasing number of patients/consumers with dementia, political action is urgently required to prepare the health care services throughout Europe to deliver cost effective high quality long-term care to people concerned. Currently there is a lack of clinical research data of patients/consumers and informal caregivers to develop best practice strategies for long-term care. RightTimePlaceCare intends to deliver best practice strategies for need-tailored dementia care throughout the dementia care sectors and aims to preserve best available health outcomes for both patients/consumers with dementia and their informal caregivers at affordable cost-benefit ratios. RightTimePlaceCare will describe and analyse the European health, social care and welfare systems, advocacy and informal caregiver support systems for patients/consumers with dementia and intersectorial communication. A European survey will assess the factors influencing the time of admission to institutional long-term nursing care facilities, investigate living conditions and gather clinical data of patients/consumers with dementia and their informal caregivers in long-term formal professional home care and institutional nursing care facilities, and the related economic impact. Consecutively best practice strategies will be developed for intersectorial arrangements needed to improve the effectiveness and efficiency of integrated health care in European dementia care systems, and recommendations for best practice models or interventions in long-term care facilities. RightTimePlaceCare will advance the state of the art in health systems research in dementia care and will improve cooperation between researchers to promote integration and excellence of European dementia care research. The knowledge generated by RightTimePlaceCare will empower the policy and decision makers to manage and reform dementia health care systems in view of common challenges and within the common framework of the EU.

# A Roadmap for Mental Health Research in Europe

<b>Project acronym:</b>	ROAMER
<b>Coordinator:</b>	CONSORCIO CIBER PARA EL AREA TEMATICA DE SALUD MENTAL, Spain
<b>Contact person:</b>	Prof. Josep Maria Haro
<b>Project number:</b>	282586
<b>Duration:</b>	36 months
<b>Start date:</b>	01/10/2011
<b>End date:</b>	30/09/2014
<b>EC Contribution:</b>	1,999,138.00 €
<b>Total costs:</b>	2,253,616.00 €
<b>Website:</b>	<a href="http://www.roamer-mh.org/">http://www.roamer-mh.org/</a>



**Other partners**

<b>ES</b>	CONSORCIO CIBER PARA EL AREA TEMATICA DE SALUD MENTAL <b>Prof. Josep Maria Haro</b>
<b>UK</b>	KING'S COLLEGE LONDON <b>Prof. Til Wykes</b>
<b>FR</b>	Fondation FondaMental <b>Prof. Marion Leboyer</b>
<b>FR</b>	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM) <b>Prof. Jacques Demotes-Mainard</b>
<b>NL</b>	UNIVERSITEIT MAASTRICHT <b>Prof. Jim Van Os</b>
<b>DE</b>	TECHNISCHE UNIVERSITAET DRESDEN <b>Prof. Hans-Ulrich Wittchen</b>
<b>UK</b>	LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE <b>Mr. David Mcdaid</b>
<b>DE</b>	ZENTRALINSTITUT FUER SEELISCHE GESUNDHEIT <b>Prof. Andreas Meyer-Lindenberg</b>
<b>SE</b>	NORDISKA HÖGSKOLAN FÖR FOLKHÄLSOVETENSKAP <b>Prof. Anders Foldspang</b>
<b>IT</b>	SECONDA UNIVERSITÀ DEGLI STUDI DI NAPOLI <b>Prof. Mario Maj</b>
<b>HU</b>	SEMMELWEIS EGYETEM <b>Prof. István Bitter</b>
<b>UK</b>	THE UNIVERSITY OF MANCHESTER <b>Prof. Shon Lewis</b>
<b>UK</b>	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE <b>Prof. Trevor William Robbins</b>
<b>IT</b>	CF CONSULTING FINANZIAMENTI UNIONE EUROPEA SRL <b>Ms. Grazia Pagano</b>

**Abstract**

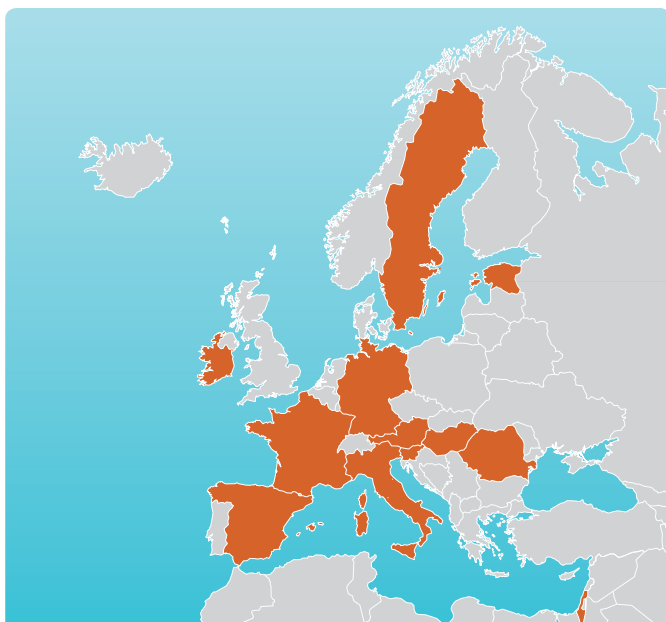
On the regional level, Europe has one of the highest levels of resources for mental health care. Despite this, the high burden and impact of mental disorders in Europe is expected to rise. 'ROADmap for Mental health Research' (ROAMER) is designed to develop a comprehensive, consensus-based roadmap to promote and integrate mental health and well-being research in Europe.



Research advances and innovations are to be devoted to decreasing the burden of mental disorders and increasing the mental health and well-being of Europeans. ROAMER will combine a neutral, fact-based methodology with extensive stakeholder involvement in consultation and dissemination. During the kick-off phase, the methodology (including comprehensive EU-wide indicators to assess the current state of the art, gaps and advances) and the desired situation (scoping and objectives) will be finalised. Secondly, the current state of the art will be examined, using these tools. In the third phase, the desired situation will be compared with the current situation to identify gaps and advances. Phase four prioritises these gaps and advances, as well as solutions. In the fifth phase, this information is translated into roadmaps covering infrastructures, capacity building and funding strategies for scientific areas relevant to mental health and well-being: biomedical, psychological, social, economic and public health. Geographical, interdisciplinary, developmental, gender and age perspectives will be taken into account. To achieve consensus among a broad group of scientists, service users, carers, government and funding institutions and other stakeholders, ROAMER uses web-based survey's, scientific workshops, scientific advisory board meetings, stakeholder meetings, consensus meetings, and policy meetings. The consortium consists of leading experts in the field, and is well balanced in terms of geographical distribution and complementary expertises across all relevant aspects of mental health research.

## Saving and Empowering Young Lives in Europe: Promote health through prevention of risk-taking and self-destructive behaviors

<b>Project acronym:</b>	SEYLE
<b>Coordinator:</b>	KAROLINSKA INSTITUTET, Sweden
<b>Contact person:</b>	Prof. Danuta Wasserman
<b>Project number:</b>	223091
<b>Duration:</b>	36 months
<b>Start date:</b>	01/01/2009
<b>End date:</b>	31/12/2011
<b>EC Contribution:</b>	2,983,941.00 €
<b>Total costs:</b>	4,781,263.00 €
<b>Website:</b>	<a href="http://www.seyle.eu/">http://www.seyle.eu/</a>



### Other partners

<b>SE</b>	KAROLINSKA INSTITUTET <b>Prof. Danuta Wasserman</b>
<b>AT</b>	UMIT - PRIVATE UNIVERSITAET FUER GESUNDHEITSWISSENSCHAFTEN, MEDIZINISCHE INFORMATIK UND TECHNIK GESELLSCHAFT MBH <b>Prof. Christian Haring</b>
<b>EE</b>	EESTI-ROOTSI VAIMSE TERVISE JA SUITSIDOLOOGIA INSTITUUT <b>Dr. Airi Värnik</b>
<b>FR</b>	Centre Hospitalier Universitaire de Nancy <b>Prof. Jean-Pierre Kahn</b>
<b>DE</b>	UNIVERSITAETSKLINIKUM HEIDELBERG <b>Dr. Romuald Brunner</b>
<b>HU</b>	VADASKERT ALAPITVANY A GYERMEKEK LELKI EGESZSEGEERT <b>Dr. Judit Balazs</b>
<b>IE</b>	NATIONAL SUICIDE RESEARCH FOUNDATION <b>Dr. Paul Corcoran</b>
<b>IL</b>	CLALIT HEALTH SERVICES <b>Ms. Cendrine Bursztein</b>
<b>IT</b>	UNIVERSITA DEGLI STUDI DEL MOLISE <b>Prof. Marco Sarchiapone</b>
<b>RO</b>	University of Medicine and Pharmacy <b>Prof. Doina Maria Constanța Cozman</b>
<b>SI</b>	UNIVERZA NA PRIMORSKEM- UNIVERSITA DELLA PRIMORSKA UNIVERSITA DEL LITORALE <b>Prof. Marco Sarchiapone</b>
<b>ES</b>	UNIVERSIDAD DE OVIEDO <b>Dr. Julio Bobes</b>

### Objectives

SEYLE was a randomised, controlled trial evaluating interventions aimed at promoting mental health among adolescents in European schools. The SEYLE project was performed during January 2009 to December 2011 in 12 countries: Austria, Estonia, France, Germany, Hungary, Ireland, Israel, Italy, Romania, Slovenia, Spain and Sweden (serving as the coordinating centre). Its main objectives were to gather information on health and well-being in European adolescents and to lead adolescents to better mental health through decreased risk-taking and suicidal behaviour. Additional intentions were to evaluate outcomes of different preventive programmes and to recommend effective culturally adjusted models for promoting adolescent mental health in different European countries.

### Main Achievements

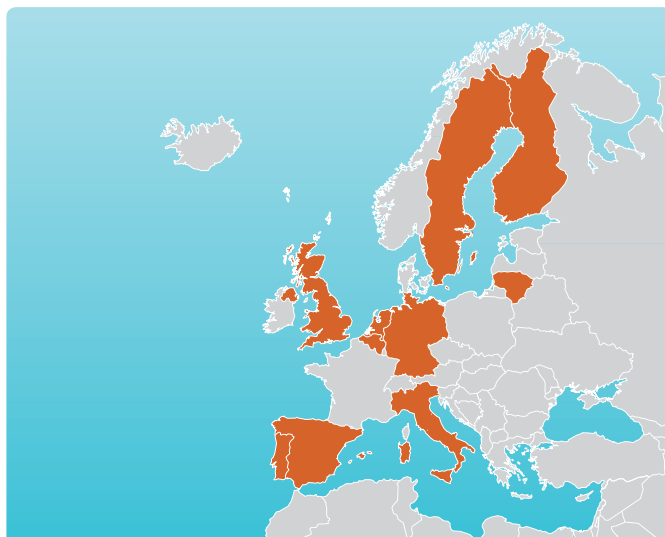
*Cross-sectional outcomes:* SEYLE generated a large epidemiological database containing information regarding sociodemographics, other risk factors, lifestyles, and the mental health of adolescents in Europe. The analysis of this database is still in progress and the data will be used for several studies in the coming years. Preliminary prevalence is available. This includes parameters regarding psychopathology such as depressive and anxiety symptoms, hyperactivity, suicidal ideation and behaviour and lifestyles such as substance abuse (alcohol, smoking and illegal drugs), sleep, nutrition and physical activity, and Internet use. The longitudinal analysis has identified improvements following SEYLE interventions in several mental health outcomes. Depressive symptoms in the whole sample, as measured by the Beck Depression Inventory (BDI-II), significantly decreased in all arms at the 3 months' follow-up. But the most important results of the SEYLE research study are related to effects on suicide. At 3 months and 12 months, follow-up evaluation showed a significant decrease in the suicide attempts (4 vs 21;  $p < 0.01$ ) and (11 vs 24;  $p < 0.05$ ) for the awareness arm of the programme.

### Impact

The scientific and societal impact of the findings from the SEYLE study is highly relevant. The cross-sectional results confirm that risk behaviours and mental health problems among adolescents are a serious public health concern, with higher prevalence than expected. The longitudinal results of SEYLE revealed important effects of the interventions on the studied mental health-related outcomes. These findings support a series of recommendations regarding interventions for mental health promotion among adolescents. The awareness programme had a significant influence on suicide attempts in both the short and the long term.

# Tackling socioeconomic inequalities in smoking: learning from natural experiments by time trend analyses and cross-national comparisons

<b>Project acronym:</b>	SILNE
<b>Coordinator:</b>	Academisch Medisch Centrum bij de Universiteit van Amsterdam, Netherlands
<b>Contact person:</b>	Dr. Anton Kunst
<b>Project number:</b>	278273
<b>Duration:</b>	36 months
<b>Start date:</b>	01/01/2012
<b>End date:</b>	31/12/2014
<b>EC Contribution:</b>	1,795,000.00 €
<b>Total costs:</b>	2,253,420.00 €
<b>Website:</b>	<a href="http://www.ensp.org/node/738">http://www.ensp.org/node/738</a>



**Other partners**

**NL** Academisch Medisch Centrum bij de Universiteit van Amsterdam  
**Dr. Anton Kunst**

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**NL** UNIVERSITEIT MAASTRICHT  
**Prof. Marc Willemsen**

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**DE** MARTIN-LUTHER-UNIVERSITAET HALLE-WITTENBERG  
**Prof. Matthias Richter**

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**BE** UNIVERSITE CATHOLIQUE DE LOUVAIN  
**Prof. Vincent Lorant**

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**UK** THE UNIVERSITY OF EDINBURGH  
**Prof. Amanda Amos**

---

**BE** EUROPEAN NETWORK FOR SMOKING PREVENTION  
**Mr. Cornel Radu-Loghin**

---

**ES** UNIVERSIDAD COMPLUTENSE DE MADRID  
**Dr. Enrique Regidor**

---

**IT** UNIVERSITA DEGLI STUDI DI CASSINO  
**Dr. Bruno Federico**

---

**LT** LIETUVOS SVEIKATOS MOKSLU UNIVERSITETAS  
**Ms. Edita Sakyte**

---

**SE** SODERTORNS HOGSKOLA  
**Dr. Mall Leinsalu**

---

**FI** TAMPEREEN YLIOPISTO  
**Prof. Arja Rimpelä**

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**PT** ESCOLA NACIONAL DE SAUDE PUBLICA  
**Prof. Julian Perelman**

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**Abstract**

For any strategy aimed to reduce socioeconomic inequities in health in Europe it is vital to tackle the large and widening inequalities in smoking. However, there is only limited evidence on effectiveness of tobacco control policies in terms of reducing inequalities. Especially lacking are evaluations of the effects of policies that have actually been implemented in different European countries. In addition, no studies have assessed the role of 'strategic drivers' such as social welfare or educational policies.

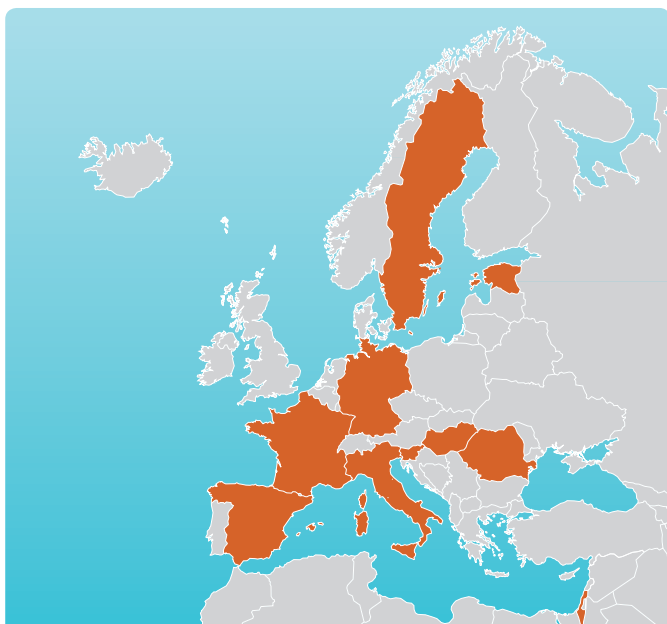
The aim of the proposed project is to analyse various 'natural policy experiments' within Europe with the aim to generate new empirical evidence on the effectiveness of possible strategies to reduce inequalities in smoking. The project has three parts. First, time trends in various European countries will be analyzed with the aim to assess whether changes in national tobacco control policies have influenced inequalities in smoking cessation among adults. Second, comparisons between European

countries will be made with the aim to assess whether cross-national differences in specific tobacco control policies were associated with inequalities in smoking initiation among adolescents. These cross-national comparisons will also assess whether different types of educational systems are associated with inequalities in smoking initiation. Third, the project will review the published results of intervention studies, and integrate these with our results. The combined evidence base will be disseminated across Europe, especially among those who are involved in the development of tobacco control policies and health-in-all policies.

This innovative project will develop comparative research into a new strategy for the evaluation of natural experiments, combining methods from different disciplines. Top researchers from different European countries will work together, and bring together four large international networks relevant to inequities in smoking.

## Work Together to Stop Truancy Among Youth

<b>Project acronym:</b>	WE-STAY
<b>Coordinator:</b>	KAROLINSKA INSTITUTET, Sweden
<b>Contact person:</b>	Prof. Danuta Wasserman
<b>Project number:</b>	241542
<b>Duration:</b>	36 months
<b>Start date:</b>	01/05/2010
<b>End date:</b>	30/04/2013
<b>EC Contribution:</b>	2,995,947.00 €
<b>Total costs:</b>	3,670,569.60 €
<b>Website:</b>	<a href="http://ki.se/ki/jsp/polopoly.jsp?d=39844&amp;a=128060&amp;l=en">http://ki.se/ki/jsp/polopoly.jsp?d=39844&amp;a=128060&amp;l=en</a>





### Other partners

<b>SE</b>	KAROLINSKA INSTITUTET <b>Prof. Danuta Wasserman</b>
<b>EE</b>	EESTI-ROOTSI VAIMSE TERVISE JA SUITSIDOLOOGIA INSTITUUT <b>Dr. Airi Varnik</b>
<b>FR</b>	Centre Hospitalier Universitaire de Nancy <b>Prof. Jean Pierre Kahn</b>
<b>DE</b>	UNIVERSITAETSKLINIKUM HEIDELBERG <b>Dr. Romuald Brunner</b>
<b>HU</b>	VADASKERT ALAPITVANY A GYERMEKEK LELKI EGESZSEGEERT <b>Dr. Judit Balazs</b>
<b>IL</b>	CLALIT HEALTH SERVICES <b>Prof. Alan Apter</b>
<b>IT</b>	UNIVERSITA DEGLI STUDI DEL MOLISE <b>Prof. Marco Sarchiapone</b>
<b>RO</b>	University of Medicine and Pharmacy <b>Prof. Doina Cozman</b>
<b>SI</b>	UNIVERZA NA PRIMORSKEM- UNIVERSITA DELLA PRIMORSKA UNIVERSITA DEL LITORALE <b>Prof. Dragan Marusic</b>
<b>ES</b>	UNIVERSIDAD DE OVIEDO <b>Prof. Julio Bobes</b>

### Objectives

Truancy is considered to be a serious public health problem that affects adolescents from all countries around the world. However, little is known about the short- and long-term outcomes for the psychological and mental health of those adolescents who truant. The WE-STAY project comprises a randomised, controlled trial that will examine truancy and its potential association with psychological distress and mental health. The main objectives of WE-STAY are to map the prevalence of truancy in European Union countries by gathering epidemiological information on truancy of European adolescents and to implement and evaluate three kinds of preventive interventional school-based programmes for adolescents, aimed to reduce truancy rates and improve the mental health of students.

### Main achievements

During the first 18 months of the project, instruments for psychometric and outcome measures were selected and evaluated based on current results of preventive research on truancy. Detailed prevention-kit materials have been developed for the selected prevention interventions. The protocol for the randomised, controlled trial has been developed and ethical approval has been obtained for

all participating centres. Baseline evaluation has been completed in four countries (Estonia, German, Israel and Romania) and is on-going in the further two intervention sites. Intervention implementation has been completed in four countries. Data entry for baseline data has also been completed in four countries. As many as 9,793 pupil participants have been recruited. This exceeds the initial expected sample size of 9,600.

### Impact

Knowledge on truancy is limited. Published data are frequently affected by methodological shortcomings that make evaluation of the effectiveness of these programmes difficult. Furthermore, many of the findings are mainly based on US population, samples of insufficient size and inadequate sampling (e.g. youth from only one high school). Thus, the yielding results cannot be generalised. WE-STAY will generate valuable data about the behaviour of European adolescents regarding attendance at school. WE-STAY will compare three interventions that are aimed to raise awareness about family- or school-related factors that are associated with truancy. Achieved results evaluating effectiveness of these interventions will be used to recommend best practices to prevent truancy and school dropouts. The outcome of the project will provide precise information about specific methods to promote mental health among European adolescents.





# BRAIN RESEARCH SUPPORTED BY OTHER FP7 PROGRAMMES

**Projects listing**

Collaborative research

‘Information and  
Communication  
Technology’ (ICT)

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
211713	EPILEPSIAE	Evolving Platform for Improving Living Expectation of Patients Suffering from Ictal Events	UNIVERSIDADE DE COIMBRA	Portugal	2,919,805
215190	ROBOCAST	ROBot and SENSors Integration as Guidance FOR Enhanced Computer Assisted Surgery and Therapy	POLITECNICO DI MILANO	Italy	3,450,000
215366	COMOESTAS	Continuous Monitoring of Medication Overuse Headache in Europe and Latin America: development and Standardization of an Alert and decision support System	FONDAZIONE ISTITUTO NEUROLOGICO NAZIONALE CASIMIRO MONDINO	Italy	1,600,000
215387	VM	Vital Mind	COGNIFT LTD	Israel	2,749,338
215486	BRAIN STORM	On-chip simultaneous intracellular recording and stimulation of electrical and biochemical activities from hundreds of neurons	INTERUNIVERSITAIR MICRO-ELECTRONICA CENTRUM VZW	Belgium	3,200,000
215756	MIMICS	Multimodal Immersive Motion Rehabilitation with Interactive Cognitive Systems	Eidgenössische Technische Hochschule Zürich	Switzerland	1,600,000
215843	POETICON	The 'Poetics' of Everyday Life: Grounding Resources and Mechanisms for Artificial Agents	ATHENA RESEARCH AND INNOVATION CENTER IN INFORMATION COMMUNICATION & KNOWLEDGE TECHNOLOGIES	Greece	3,250,000
215866	SEARISE	SmartEyes: Attending and Recognizing Instances of Salient Events	FRAUNHOFER-GESELLSCHAFT ZUR FÖRDERUNG DER ANGEWANDTEN FORSCHUNG E.V	Germany	2,150,000
215952	PERFORM	A sophisticated multi-parametric system for the continuous-effective assessment and monitoring of motor status in parkinson's disease and other neurodegenerative diseases	UNIVERSIDAD POLITÉCNICA DE MADRID	Spain	6,756,492
216100	LAMPETRA	Life-like Artefact for Motor-Postural Experiments and Development of new Control Technologies inspired by Rapid Animal Locomotion	SCUOLA SUPERIORE DI STUDI UNIVERSITARI E DI PERFEZIONAMENTO SANT'ANNA	Italy	1,700,000
216125	ROSSI	Emergence of communication in Robots through Sensorimotor and Social Interaction	ALMA MATER STUDIORUM-UNIVERSITA DI BOLOGNA	Italy	2,800,000

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
216227	SPARK II	SPATIAL TEMPORAL PATTERNS FOR ACTION-ORIENTED PERCEPTION IN ROVING ROBOTS II: AN INSECT BRAIN COMPUTATIONAL MODEL	UNIVERSITA DEGLI STUDI DI CATANIA	Italy	1,000,000
216528	CYBERRAT	A Brain-Chip Interface for High-resolution Bi-directional Communication	UNIVERSITA DEGLI STUDI DI PADOVA	Italy	1,800,000
216593	SECO	Self-Constructing Computing Systems	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	France	4,600,000
216809	RENACHIP	Rehabilitation of a discrete sensory motor learning function by a prosthetic chip	UNIVERSITY OF NEWCASTLE UPON TYNE	United Kingdom	2,599,917
216916	NEUROCHEM	Biologically inspired computation for chemical sensing	UNIVERSITAT DE BARCELONA	Spain	2,150,000
217148	SF	Synthetic Forager	UNIVERSITAT POMPEU FABRA	Spain	2,750,000
224012	TIME	Transverse, Intrafascicular Multichannel Electrode system for induction of sensation and treatment of phantom limb pain in amputees	AALBORG UNIVERSITET	Denmark	3,650,000
224051	TREMOR	An ambulatory BCI-driven tremor suppression system based on functional electrical stimulation	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS	Spain	2,493,775
224156	BRAIN	BCIs with Rapid Automated Interfaces for Nonexperts	UNIVERSITÄT BREMEN	Germany	2,699,988
224328	PREDICTAD	FROM PATIENT DATA TO PERSONALISED HEALTHCARE IN ALZHEIMER'S DISEASE	TEKNOLOGIAN TUTKIMUSKESKUS VTT	Finland	2,891,526
224651	TOBI	Tools for Brain-Computer Interaction	FONDATION DE L'INSTITUT DE RECHERCHE IDIAP	Switzerland	9,049,996
231168	SCANDLE	acoustic SCene Analysis for Detecting Living Entities	UNIVERSITY OF PLYMOUTH	United Kingdom	2,649,938
231266	COSPATIAL	Communication and Social Participation: collaborative Technologies for interaction And Learning	FONDAZIONE BRUNO KESSLER	Italy	1,649,591
231267	ORGANIC	Self-organized recurrent neural learning for language processing	JACOBS UNIVERSITY BREMEN GMBH	Germany	2,700,000
231467	EMORPH	Event-Driven Morphological Computation for Embodied Systems	FONDAZIONE ISTITUTO ITALIANO DI TECNOLOGIA	Italy	1,250,000



Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
231722	IM-CLEVER	Intrinsically Motivated Cumulative Learning Versatile Robots	CONSIGLIO NAZIONALE DELLE RICERCHE	Italy	5,899,884
231724	HUMOUR	Human behavioral Modeling For enhancing learning by Optimizing Human-Robot interaction	FONDAZIONE ISTITUTO ITALIANO DI TECNOLOGIA	Italy	2,562,000
231830	XDELIA	Excellence in Public and Professional Decision Making: Boosting Deliberate Practice and Handling Biases through Immersive Cognitive and Emotional Reinforcement Strategies and Tools	CENTRE INTERNACIONAL DE METODES NUMERICIS EN ENGINYERIA	Spain	3,096,905
213219	BION	Synthetic Pathways to bio-inspired information processing	UNIVERSITA DEGLI STUDI DI PARMA	Italy	1,303,000
222079	HIVE	Hyper Interaction Viability Experiments	STARLAB BARCELONA SL	Spain	2,299,998
225929	CLONS	A closed-loop neural prosthesis for dizziness suppression	SCUOLA SUPERIORE DI STUDI UNIVERSITARI E DI PERFEZIONAMENTO SANT'ANNA	Italy	3,329,699
247447	BRAINABLE	Autonomy and social inclusion through mixed reality Brain-Computer Interfaces: Connecting the disabled to their physical and social world	FUNDACIO PRIVADA BARCELONA DIGITAL CENTRE TECNOLGIC	Spain	2,300,000
247685	INTERSTRESS	Intereality in the management and treatment of stress-related disorders	ISTITUTO AUXOLOGICO ITALIANO	Italy	3,009,653
247777	PSYCHE	Personalised monitoring SYstems for Care in mental Health	UNIVERSITA DI PISA	Italy	2,909,971
247846	EURETILE	European Reference Tiled Architecture Experiment	ISTITUTO NAZIONALE DI FISICA NUCLEARE	Italy	4,599,080
247919	DECODER	Deployment of Brain-Computer Interfaces for the Detection of Consciousness in Non-Responsive Patients	JULIUS-MAXIMILIANS UNIVERSITAET WUERZBURG	Germany	2,799,921
247935	BETTER	BNCI-driven Robotic Physical Therapies in Stroke Rehabilitation of Gait Disorders	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS	Spain	3,250,000
247959	MINDWALKER	MIND CONTROLLED ORTHOSIS AND VIRTUAL REALITY TRAINING ENVIRONMENT FOR WALK EMPOWERING	SPACE APPLICATIONS SERVICES NV	Belgium	2,750,000

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
248189	NMS PHYSIOME	VPHP-SIMBIOS cooperation: Tools to develop the NeuroMusculoSkeletal Physiome	ISTITUTO ORTOPEDICO RIZZOLI	Italy	929,450
248320	FUTURE BNCI	Future Directions in Brain/Neuronal Computer Interaction (BNCI) Research	TECHNISCHE UNIVERSITAET GRAZ	Austria	500,000
248326	MUNDUS	Multimodal Neuroprosthesis for Daily Upper limb Support	POLITECNICO DI MILANO	Italy	3,350,000
248544	OPTIMI	Online Predictive Tools for Intervention in Mental Illness (OPTIMI)	EVERIS SPAIN SLU	Spain	3,760,598
248545	MONARCA	MONitoring, treatMent and pRediction of bipolar Disorder Episodes	CREATE-NET (CENTER FOR RESEARCH AND TELECOMMUNICATION EXPERIMENTATION FOR NETWORKED COMMUNITIES)	Italy	3,670,000
248587	THE	The Hand Embodied	UNIVERSITA DI PISA	Italy	7,175,692
248765	HELP4MOOD	A Computational Distributed System to Support the Treatment of Patients with Major Depression	THE UNIVERSITY OF EDINBURGH	United Kingdom	2,819,993
248778	ICT4DEPRESSION	Use-Friendly ICT tools to enhance self-management and effective treatment of depression in the EU	VERENIGING VOOR CHRISTELIJK HOGER ONDERWIJS WETENSCHAPPELIJK ONDERZOEKEN PATIENTENZORG	Netherlands	2,701,845
258654	NEUWALK	Neuroprosthetic interface systems for restoring motor functions	INSTITUT FUER MIKROTECHNIK MAINZ GMBH	Germany	8,800,000
269459	CORONET	Choreographing neural networks: coupling attractor dynamics and state-dependent computations across biomimetic brain interfaces with neuromorphic VLSI	OTTO-VON-GUERICKE-UNIVERSITAET MAGDEBURG	Germany	2,665,000
269921	BRAINSCALES	Brain-inspired multiscale computation in neuromorphic hybrid systems	RUPRECHT-KARLS-UNIVERSITAET HEIDELBERG	Germany	9,199,970
270108	GOAL-LEADERS	Goal-directed Adaptive Builder Robots	CONSIGLIO NAZIONALE DELLE RICERCHE	Italy	1,800,000
270182	EMICAB	Embodied Motion Intelligence for Cognitive, Autonomous Robots	UNIVERSITAET BIELEFELD	Germany	1,549,973

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
270212	ESMS	Extending Sensorimotor Contingencies to Cognition	UNIVERSITAETSKLINIKUM HAMBURG-EPPENDORF	Germany	3,645,135
270247	NEURALDYNAMICS	A neuro-dynamic framework for cognitive robotics: scene representations, behavioural sequences, and learning	RUHR-UNIVERSITAET BOCHUM	Germany	3,050,070
270259	TBICARE	Evidence based Diagnostic and Treatment Planning Solution for Traumatic Brain Injuries	TEKNOLOGIAN TUTKIMUSKESKUS VTT	Finland	3,158,000
270318	ARTSENSE	Augmented Reality Supported adaptive and personalized Experience in a museum based on processing real-time Sensor Events	FORSCHUNGSZENTRUM INFORMATIK AN DER UNIVERSITAET KARLSRUHE	Germany	3,099,980
270434	REALNET	Realistic Real-time Networks: computation dynamics in the cerebellum	FONDAZIONE ISTITUTO NEUROLOGICO NAZIONALE CASIMIRO MONDINO	Italy	2,390,000
270436	TOMSY	Topology based Motion Synthesis for dexterous manipulation	KUNGLIGA TEKNISKA HOGSKOLAN	Sweden	3,000,000
270460	ACTIVE	Active Constraints Technologies for ill-defined or Volatile Environments	POLITECNICO DI MILANO	Italy	5,778,000
270490	EFAA	Experimental Functional Android Assistant (EFAA)	UNIVERSITAT POMPEU FABRA	Spain	2,850,000
238292	CONNECT	Consortium Of Neuroimagers for the Noninvasive Exploration of Brain Connectivity and Tractography	TEL AVIV UNIVERSITY	Israel	2,402,067
243914	BRAIN-I-NETS	Novel Brain-Inspired Learning Paradigms for Large-Scale Neuronal Networks	TECHNISCHE UNIVERSITAET GRAZ	Austria	1,998,408
249867	OPTONEURO	Optogenetic Neural stimulation platform	UNIVERSITY OF NEWCASTLE UPON TYNE	United Kingdom	2,190,000
287320	CONTRAST	An individually adaptable, BNCI-based, remote controlled Cognitive Enhancement Training for successful rehabilitation after stroke including home support and monitoring	JULIUS-MAXIMILIANS UNIVERSITAET WUERZBURG	Germany	3,241,745
287351	INTERACTION	training and monitoring of daily-life physical INTERACTION with the environment after stroke	UNIVERSITEIT TWENTE	Netherlands	2,620,000

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
287509	EHEALTHMONITOR	Intelligent Knowledge Platform for Personal Health Monitoring Services	UNIVERSITÄT HOHENHEIM	Germany	2,779,000
287677	REMPARK	Personal Health Device for the Remote and Autonomous Management of Parkinson's Disease	UNIVERSITAT POLITÈCNICA DE CATALUNYA	Spain	3,282,912
287720	ARMOR	Advanced multi-parametric Monitoring and analysis for diagnosis and Optimal management of epilepsy and Related brain disorders	SENSING & CONTROL SYSTEMS SL	Spain	3,186,935
287774	ABC	Augmented BNCI Communication	INSTITUTO DE BIOMECÁNICA DE VALENCIA	Spain	2,449,869
287888	COGLABORATION	Co-laboration. Successful Real World Human-Robot Collaboration: From the Cognition of Human-Human Collaboration to the Cognition of Fluent Human-Robot Collaboration	TREELÓGIC TELEMÁTICA Y LÓGICA RACIONAL PARA LA EMPRESA EUROPEA SL	Spain	2,519,920
287932	CARETOY	A Modular Smart System for Infants' Rehabilitation At Home based on Mechatronic Toys	SCUOLA SUPERIORE DI STUDI UNIVERSITARI E DI PERFEZIONAMENTO SANT'ANNA	Italy	2,292,972
288199	DEM@CARE	Dementia Ambient Care: Multi-Sensing Monitoring for Intelligent Remote Management and Decision Support	CENTRE FOR RESEARCH AND TECHNOLOGY HELLAS	Greece	7,300,000
288241	MICHELANGELO	Patient-centric model for remote management, treatment and rehabilitation of autistic children	FIMI S.R.L.	Italy	2,871,997
288382	POETICON++	Robots need Language: A computational mechanism for generalisation and generation of new behaviours in robots	FONDAZIONE ISTITUTO ITALIANO DI TECNOLOGIA	Italy	3,880,000
288516	CUPID	Closed-loop system for personalized and at-home rehabilitation of people with Parkinson's Disease	ALMA MATER STUDIORUM-UNIVERSITA DI BOLOGNA	Italy	2,680,000
288551	WAY	Wearable interfaces for hand function recovery	SCUOLA SUPERIORE DI STUDI UNIVERSITARI E DI PERFEZIONAMENTO SANT'ANNA	Italy	2,249,843
288557	SENSE-PARK	SENSE-PARK: Supporting and Empowering Parkinson patients in their home environment using a Novel Sensory information system that monitors daily-life-relevant parameters of PARKINSON disease and their	EBERHARD KARLS UNIVERSITÄT TUEBINGEN	Germany	2,160,000

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
288692	STROKEBACK	Telemedicine System Empowering Stroke Patients to Fight Back	IHP GMBH - INNOVATIONS FOR HIGH PERFORMANCE MICROELECTRONICS/LEIBNIZ-INSTITUT FUER INNOVATIVE MIKROELEKTRONIK	Germany	3,030,978
288698	SCRIPT	Supervised Care & Rehabilitation Involving Personal Tele-robotics	THE UNIVERSITY OF HERTFORDSHIRE HIGHER EDUCATION CORPORATION	United Kingdom	3,311,961
288912	COGWATCH	Cognitive Rehabilitation of Apraxia and Action Disorganisation Syndrome	THE UNIVERSITY OF BIRMINGHAM	United Kingdom	3,649,658
288914	VERVE	Vanquishing fear and apathy through E-inclusion: Personalised and populated Realistic Virtual Environments for clinical, home and mobile platforms	THE PROVOST, FELLOWS, FOUNDATION SCHOLARS & THE OTHER MEMBERS OF BOARD OF THE COLLEGE OF THE HOLY & UNDIVIDED TRINITY OF QUEEN ELIZABETH NEAR DUBLIN	Ireland	4,804,994
289021	ASC-INCLUSION	Integrated Internet-Based Environment for Social Inclusion of Children with Autism Spectrum Conditions (ASC)	TECHNISCHE UNIVERSITAET MUENCHEN	Germany	1,929,760
317635	ANGELAB	A New Genetic Laboratory for non-invasive prenatal diagnosis	IKERLAN S.COOP.	Spain	8,265,938
317923	EMOTE	Embodied-perceptive Tutors for Empathy-based learning	THE UNIVERSITY OF BIRMINGHAM	United Kingdom	2,898,747
318132	LASAGNE	multi-Layer Spatiotemporal Generalized Networks	MEDIZINISCHE UNIVERSITAET WIEN	Austria	2,075,000
318597	SYMONE	Synaptic Molecular Networks for Bio-inspired Information Processing	CHALMERS TEKNISKA HOEGSKOLA AB	Sweden	2,120,000
318723	MATHEMACS	MATHEmatics of Multi-level Anticipatory Complex Systems	MAX PLANCK GESELLSCHAFT ZUR FOERDERUNG DER WISSENSCHAFTEN E.V.	Germany	2,552,916
284553	SI-CODE	Towards new Brain-Machine Interfaces: state-dependent information coding	FONDAZIONE ISTITUTO ITALIANO DI TECNOLOGIA	Italy	2,471,230
284772	BRAINBOW	Linking biological and artificial neuronal assemblies to restore lost brain functions: towards the design of innovative bi-directional neuroprostheses	FONDAZIONE ISTITUTO ITALIANO DI TECNOLOGIA	Italy	997,107

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
284801	ENLIGHTENMENT	Exploring the neural coding in behaving animals by novel optogenetic, high-density microrecordings and computational approaches. Towards cognitive Brain-Computer Interfaces	KATHOLIEKE UNIVERSITEIT LEUVEN	Belgium	2,235,100
296257	BOC	The Body-on-a-Chip (BoC)	INSPHERO AG	Switzerland	1,395,000
296590	3DNEURON	Blomimiking the brain - towards 3D neuronal network dynamics	TTY-SAAPIO	Finland	3,123,093
284941	HBP	Human Brain Project	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE	Switzerland	1,414,388



Collaborative research

‘Knowledge Based  
Bio-Economy’ (KBBE)



Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
211696	LIPIDDIET	THEURAPEUTIC AND PREVENTIVE IMPACT OF NUTRITIONAL LIPIDS ON NEURONAL AND COGNITIVE PERFORMANCE IN AGING, ALZHEIMER'S DISEASE AND VASCULAR DEMENTIA	UNIVERSITÄT DES SAARLANDES	Germany	5,899,843
212652	NUTRIMENTHE	'Effect of diet on the mental performance of children'	UNIVERSIDAD DE GRANADA	Spain	5,902,570
222887	PRIORITY	Protecting the food chain from prions: shaping European priorities through basic and applied research	UNIVERSIDADE DE SANTIAGO DE COMPOSTELA	Spain	5,999,499
227448	TERPMED	Plant Terpenoids for Human Health: a chemical and genomic approach to identify and produce bioactive compounds	UNIVERSITAT DE BARCELONA	Spain	2,694,418
245009	NEUROFAST	The Integrated Neurobiology of Food Intake, Addiction and Stress.	GOETEBORGS UNIVERSITET	Sweden	5,999,984
266408	FULL4HEALTH	Understanding food-gut-brain mechanisms across the lifespan in the regulation of hunger and satiety for health	THE UNIVERSITY COURT OF THE UNIVERSITY OF ABERDEEN	United Kingdom	8,992,613

Collaborative research

‘Nanosciences and  
Nanotechnologies, Materials  
and new Productions  
technologies’ (NMP)

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
212043	NAD	NANOPARTICLES FOR THERAPY AND DIAGNOSIS OF ALZHEIMER DISEASE	UNIVERSITA' DEGLI STUDI DI MILANO-BICOCCA	Italy	10,921,350
214547	NEURONANO	Do nanoparticles induce neurodegenerative diseases? Understanding the origin of reactive oxidative species and protein aggregation and mis-folding phenomena in the presence of nanoparticles	UNIVERSITY COLLEGE DUBLIN, NATIONAL UNIVERSITY OF IRELAND, DUBLIN	Ireland	2,498,000
214566	NANOSCALE	Understanding interactions between cells and nanopatterned surfaces	SCUOLA INTERNAZIONALE SUPERIORE DI STUDI AVANZATI	Italy	3,030,405
228844	NANOBIOTOUCH	Nano-resolved multi-scale investigations of human tactile sensations and tissue engineered nanobiosensors	THE UNIVERSITY OF BIRMINGHAM	United Kingdom	3,744,590
228916	NOMS	NANO-OPTICAL MECHANICAL SYSTEMS	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS	Spain	2,549,965
246513	NADINE	Nanosystems for the early Diagnosis of Neuro-degenerative diseases	DANMARKS TEKNISKE UNIVERSITET	Denmark	9,000,000
280433	NEUROCARE	Neuronal NanoCarbon Interfacing Structures	COMMISSARIAT A L'ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES	France	3,619,985
280772	I-ONE	Implantable Organic Nano-Electronics	CONSIGLIO NAZIONALE DELLE RICERCHE	Italy	3,834,336
280778	MERIDIAN	Micro and Nano Engineered Bi-Directional Carbon Interfaces for Advanced Peripheral Nervous System Prosthetics and Hybrid Bionics	INTERUNIVERSITAIR MICRO-ELECTRONICA CENTRUM VZW	Belgium	3,780,000
281056	NANOCI	Nanotechnology based cochlear implant with gapless interface to auditory neurons	UNIVERSITAET BERN	Switzerland	3,599,853
280804	LANIR	Label Free Nanoscopy Using Infra Red	UNIVERSITY OF LIMERICK	Ireland	4,150,000
309820	NANOATHERO	Nanomedicine for target-specific imaging and treatment of atherosclerosis: development and initial clinical feasibility	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	France	9,833,348

Collaborative research

Other themes

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
308914	BRAINFLIGHT	Brain controlled aircraft flight using multiple feedback mechanisms	TEKEVER ASDS	Portugal	598,801
226873	MOBI-KIDS	Risk of brain cancer from exposure to radiofrequency fields in childhood and adolescence	FUNDACIO CENTRE DE RECERCA EN EPIDEMIOLOGIA AMBIENTAL - CREAL	Spain	3,499,748
282957	DENAMIC	Developmental neurotoxicity assessment of mixtures in children	VERENIGING VOOR CHRISTELIJK HOGER ONDERWIJS WETENSCHAPPELIJK ONDERZOEK EN PATIENTENZORG	Netherlands	6,993,863
312395	PSYCRIS	Psycho-Social Support in CRISis Management	LUDWIG-MAXIMILIANS-UNIVERSITAET MUENCHEN	Germany	3,827,529
312783	OP5IC	Operationalising Psychosocial Support in Crisis	DANSK RODE KORS (DANISH RED CROSS)	Denmark	3,333,918
266813	ALICE RAP	Addictions and Lifestyles in Contemporary Europe – Reframing Addictions Project	FUNDACIO PRIVADA CLINIC PER A LA RECERCA BIOMEDICA	Spain	7,978,226

# Private Public Partnerships

‘Innovative Medicines  
Initiative’ (IMI)

&

‘ARTEMIS Embedded  
Computing Systems  
Initiative’ (ARTEMIS)

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
115007	EUROPAIN	Understanding chronic pain and improving its treatment	AstraZeneca AB	Sweden	5,999,413
115008	NEWMEDS	Novel methods leading to new medications in depression and schizophrenia	H. Lundbeck A/S	Denmark	8,986,216
115009	PHARMA-COG	Prediction of cognitive properties of new drug candidates For neurodegenerative diseases in early clinical development	Glaxosmithkline Research and Development LTD	United Kingdom	9,893,739
115300	EU-AIMS	European Autism Interventions - a Multicentre Study for Developing New Medications	F. Hoffmann-la Roche AG	Switzerland	19,467,204
269356	HIGH PROFILE	High-throughput Production of Functional 3D Images of the brain	PHILLIPS MEDICAL SYSTEMS NEDERLAND BV	Netherlands	2,859,367

‘CAPACITIES’ programme

‘Infrastructures’



Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
211714	NEUGRID	A GRID-BASED e-INFRASTRUCTURE FOR DATA ARCHIVING/COMMUNICATION AND COMPUTATIONALLY INTENSIVE APPLICATIONS IN THE MEDICAL SCIENCES	PROVINCIA LOMBARDO VENETA ORDINE OSPEDALIERO DI SAN GIOVANNI DI DIO - FATEBENEFRATELLI	Italy	2,800,000
246690	OUTGRID	A WORLDWIDE E-INFRASTRUCTURE FOR COMPUTATIONAL NEUROSCIENTISTS (outGRID)	PROVINCIA LOMBARDO VENETA ORDINE OSPEDALIERO DI SAN GIOVANNI DI DIO - FATEBENEFRATELLI	Italy	439,982
261593	DECIDE	Diagnostic Enhancement of Confidence by an International Distributed Environment	CONSORTIUM GARR	Italy	2,399,998
283562	N4U	NeuGRID for you: expansion of NeuGRID services and outreach to new user communities	PROVINCIA LOMBARDO VENETA ORDINE OSPEDALIERO DI SAN GIOVANNI DI DIO - FATEBENEFRATELLI	Italy	3,600,000

‘CAPACITIES’ programme

‘SMEs’

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
219795	SUPROGAL	Sustainable PROduction of GALanthamine by both in vitro and agricultural crops of highly galanthamine-containing plants	UNIVERSITAT DE BARCELONA	Spain	787,160
222503	BRAINHEALTH-FOOD	Bioactive compounds from blackcurrant processing waste for brain health	Itä-Suomen yliopisto	Finland	870,100
232545	BRAINSAFE	Development of a new, non invasive absolute Intracranial Pressure (aICP) measurement device based on ultrasound and Doppler technologies	UAB Vitamed	Lithuania	895,517
262127	TREM-END	Development of a wrist orthotic device for tremor suppression through biomechanical loading by means of a novel rotary actuator	ESPECIALIDADES MEDICO ORTOPEDICAS S.L. - EMO	Spain	1,124,434
262266	OPTI-FOX	OPTimization of the automated Fitting to Outcomes expert with language-independent hearing-in-noise test battery and electro-acoustical test box for cochlear implant users	OTOCONSULT NV	Belgium	1,274,929
262291	DIPAR	Diagnosing Parkinson's Disease by neuromuscular function evaluation	FRAUNHOFER-GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V	Germany	1,374,117
262569	WALKX	Development of a raising, walking and exercise device with upper body support for rehabilitation of stroke victims	Made for Movement Group AS	Norway	1,083,795
286517	PROFIT	Protein Fabrication for Innovative Therapeutics	Neurotune AG	Switzerland	1,170,100
286610	DYNICP	Innovative Intracranial Pressure and Volume Wave Monitoring System	OSAHING EESTI INNOVATSIOONI INSTITUUT	Estonia	1,125,991
313976	HOMEHOIST	A novel, integrated, wheelchair and hoist system	Hi Tech Automation Limited	United Kingdom	1,025,766
315032	GAME-ABLING	'PLATFORM OF GAMES FOR PEOPLE WITH CEREBRAL PALSY TO ENHANCE LIVING ADJUSTMENT'	CENTRE DE RECERCA I INNOVACIO DE CATALUNYA S.A.	Spain	1,136,995

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
315114	PUMA	Development of a non-invasive and portable tissue viability measurement and intelligent actuation system for the prevention and early detection of Pressure Ulcer risk at Tetraplegic SCI users	QIMOVA AS	Denmark	1,056,000
315549	BRAINSAFE II	Development of a Novel Autonomous Non-Invasive Absolute Intracranial Pressure Measurement Device Based on Ultrasound Doppler Technology	UAB Vitamed	Lithuania	1,274,000



‘CAPACITIES’ programme

Other themes

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
266308	NEURO-RESCUE	NEUROsciences RESEARCH Clusters of Excellence	CONSEIL REGIONAL PROVENCE ALPES COTE D'AZUR	France	1,599,418
205773	ESTBIOREG	Advancing scientific performance and regional potential of Estonian biomedical research	TARTUUELIKOO	Estonia	1,100,000
229750	IMPACTG	Improvement of the research competitiveness in neuroscience at the Ernst Moritz Arndt University of Greifswald	ERNST-MORITZ-ARNDT-UNIVERSITY OF GREIFSWALD	Germany	1,042,530
245928	TRANSMED	Translating basic research findings in major human diseases	BIOMEDICAL RESEARCH FOUNDATION, ACADEMY OF ATHENS	Greece	1,479,316
245807	NEUROMED	Mediterranean Neurosciences Network	UNIVERSITE D'AIX MARSEILLE	France	1,000,000
264083	NEURO5IGN	Development of a Center of Excellence in Neurosignalling	HELLENIC PASTEUR INSTITUTE	Greece	1,869,910
316120	GLOWBRAIN	Combining Stem Cells and Biomaterials for Brain Repair - Unlocking the Potential of the Existing Brain Research through Innovative In Vivo Molecular Imaging	SVEUCILISTE U ZAGREBU, MEDICINSKI FAKULTET	Croatia	3,771,823
230307	EPOKS	European Patient Organizations in Knowledge Society	ASSOCIATION POUR LA RECHERCHE ET LE DEVELOPPEMENT DES METHODES ET PROCESSUS INDUSTRIELS - ARMINES	France	905,242
321464	NERRI	Neuro-Enhancement: Responsible Research and Innovation	CENCIA VIVA-AGENCIA NACIONAL PARA A CULTURA CIENTIFICA E TECNOLÓGICA	Portugal	3,312,433

EUROPEAN RESEARCH  
COUNCIL Executive Agency

‘Advance Grants’



Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
227135	CARBONANO-BRIDGE	Neuron Networking with Nano Bridges via the Synthesis and Integration of Functionalized Carbon Nanotubes	UNIVERSITA DEGLI STUDI DI TRIESTE	Italy	2,500,000
227632	BCCI	Bidirectional cortical communication interface	EBERHARD KARLS UNIVERSITAET TUEBINGEN	Germany	1,169,400
227747	NERVI	From single neurons to visual perception	INSTITUT NATIONAL DE RECHERCHE EN INFORMATIQUE ET EN AUTOMATIQUE	France	1,706,839
227985	TRAVERSE	Transcending Reality: Activating Virtual Environment Responses through Sensory Enrichment	UNIVERSITAT DE BARCELONA	Spain	2,409,768
229445	STANIB	Space, Time and Number in the Brain	UNIVERSITA DEGLI STUDI DI FIRENZE	Italy	2,376,000
230331	PROPERMO	Production and perception of emotion: An affective sciences approach	UNIVERSITE DE GENEVE	Switzerland	2,371,331
230355	DEFCON1	A NEW DEFINITION OF CONSCIOUSNESS	UNIVERSITEIT VAN AMSTERDAM	Netherlands	2,344,800
230374	GMI	Genetics of Mental Illness	VERENIGING VOOR CHRISTELIJK HOGER ONDERWIJS WETENSCHAPPELIJK ONDERZOEKEN PATIENTENZORG	Netherlands	2,466,923
230570	NEUROLEX	Neurocognitive systems for morpho-lexical analysis: The cross-linguistic foundations for language comprehension	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE	United Kingdom	2,414,558
230604	SOMACCA	The Syntax of the Mind: A Comparative Computational Approach	UNIVERSITAET WIEN	Austria	1,957,598
232608	CIRCUIT	Neural circuits for sparse representation in the mammalian cortex	NORGES TEKNISK - NATURVITENSKAPELIGE UNIVERSITET	Norway	2,499,112
232657	NEURO-BEHAVIOR	From Neuron to Behavior	HUMBOLDT-UNIVERSITAET ZU BERLIN	Germany	2,499,600
232675	STEMRENEWAL	Identification of a new mechanism of stem cell self-renewal; direct implications on self-repair and tumor initiating cells in the brain	KAROLINSKA INSTITUTET	Sweden	2,492,593

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
232717	INTERPLASTICITY	Long-term synaptic plasticity in interneurons: mechanisms and computational significance	UNIVERSITY COLLEGE LONDON	United Kingdom	2,500,000
232835	IMMUNE/MEMORY AGING	Can immune system rejuvenation restore age-related memory loss?	WEIZMANN INSTITUTE OF SCIENCE	Israel	1,650,000
232881	SUMOBRAIN	Mechanisms and consequences of synaptic SUMOylation in health and disease	UNIVERSITY OF BRISTOL	United Kingdom	2,148,871
232908	OVOC	Ultra Fast Magnetic Resonance Imaging using One-Voxel-One-Coil Acquisition	UNIVERSITÄTSKLINIKUM FREIBURG	Germany	2,495,600
232942	NANO-DYN-SYN	Nano-Scale Organization Dynamics and Functions of Synapses: from single molecule tracking to the physiopathology of excitatory synaptic transmission	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE (CNRS)	France	3,100,000
232944	TOPAS	Towards the Quantal Nature of Receptor/cAMP Signals	JULIUS-MAXIMILIANS UNIVERSITÄT WÜRZBURG	Germany	2,493,358
232946	BRAIN2BRAIN	Towards two-person neuroscience	AALTO-KORKEAKOULUSÄÄTÖ	Finland	2,489,643
233024	NUCLEAR CALCIUM	The biology of nuclear calcium: general principles of adaptations and strategies to develop a light-induced signaling enhancer	RUPRECHT-KARLS-UNIVERSITÄT HEIDELBERG	Germany	2,400,000
233147	IRLVGMND	IMPROVED RETROGRADE LENTIVIRAL VECTORS FOR GENE THERAPY IN MOTOR NEURON DISEASES	IMPERIAL COLLEGE OF SCIENCE, TECHNOLOGY AND MEDICINE	United Kingdom	2,000,000
233174	CORTEX	Computations by Neurons and Populations in Visual Cortex	UNIVERSITY COLLEGE LONDON	United Kingdom	2,499,921
233306	FRU CIRCUIT	Neural basis of Drosophila mating behaviours	FORSCHUNGSINSTITUT FUER MOLEKULARE PATHOLOGIE Ges.m.b.H	Austria	2,492,164
233358	NEURONAGE	Molecular Basis of Neuronal Ageing	FOUNDATION FOR RESEARCH AND TECHNOLOGY HELLAS	Greece	2,376,000
247035	SYSTEAM	Systems and Signals Tools for Estimation and Analysis of Mathematical Models in Endocrinology and Neurology	UPPSALA UNIVERSITET	Sweden	2,379,000

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
247170	MICRONANO	Modeling Brain Circuitry using Scales Ranging from Micrometer to Nanometer	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE	Switzerland	2,495,982
247300	PATCH	Computational Theory of Haptic Perception	UNIVERSITE PIERRE ET MARIE CURIE - PARIS 6	France	2,302,000
247401	MICRONANO-TELEHAPTICS	Micro/Nano Exploration, Manipulation and Assembly: Telehaptics and Virtual Reality System Development and Investigation of Biomechanics and Neuroscience of Touch	UNIVERSITY COLLEGE LONDON	United Kingdom	3,264,188
249145	DNAREPAIR	Defects in DNA strand break repair and links to inheritable disease	CANCER RESEARCH UK	United Kingdom	2,449,091
249399	MOTOR CIRCUITS	Neuronal circuits controlling motor behavior	NOVARTISFORSCHUNGSSTIFTUNG, ZWIGNIEDERLAS-SUNG FRIEDRICH MIESCHER INSTITUTE FOR BIOMEDICAL RESEARCH	Switzerland	2,499,354
249425	CRITICALBRAIN-CHANGES	Development and plasticity of multisensory functions to study the principles of age dependent learning plasticity in humans	UNIVERSITAET HAMBURG	Germany	2,396,640
249516	VOICE	'Hearing voices' - From cognition to brain systems	UNIVERSITETET I BERGEN	Norway	2,281,572
249519	OSTREFCOM	Human infants' preparedness for relevance-guided learning through ostensive-referential communication	KOZEP-EUROPA I EGYETEM	Hungary	1,557,428
249640	PERCEPCON	From perception to conception: How the brain processes meaningful concepts	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE	United Kingdom	2,111,581
249670	BRAINPOWER	Brain energy supply and the consequences of its failure	UNIVERSITY COLLEGE LONDON	United Kingdom	2,499,947
249830	NEUROCONSC	Converging Criteria for Consciousness: Using neuroimaging methods to characterize subliminal and conscious processing	COMMISSARIAT A L'ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES	France	2,486,640
249939	SYNVGLUT	Vesicular glutamate transporters as molecular regulators of neural communication	CHARITE - UNIVERSITAETSMEDIZIN BERLIN	Germany	2,413,200
250013	COG5SYSTEMS	Understanding actions and intentions of others	UNIVERSITA DEGLI STUDI DI PARMA	Italy	1,992,000

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
250047	GABACELL SAND-MEMORY	Linking GABAergic neurones to hippocampal-entorhinal system functions	UNIVERSITÄTSKLINIKUM HEIDELBERG	Germany	1,872,000
250106	FRONTX	Decision-making and prefrontal executive function	ECOLE NORMALE SUPERIEURE	France	2,500,000
250117	TIMESIGNAL	Signaling within the mammalian circadian timing system	UNIVERSITE DE GENEVE	Switzerland	2,360,136
250124	FUNSEL	Generation of AAV-based, arrayed genetic libraries for in vivo functional selection: an innovative approach to identify secreted factors and microRNAs against degenerative disorders	INTERNATIONAL CENTRE FOR GENETIC ENGINEERING AND BIOTECHNOLOGY	Italy	1,824,000
250128	DHISP	Dorsal Horn Interneurons in Sensory Processing	UNIVERSITÄT ZÜRICH	Switzerland	2,467,000
250154	CLEAR	Modulating cellular clearance to cure human disease	FONDAZIONE TELETHON	Italy	2,100,000
250197	NEUROMAN	Identifying the genes responsible for the expansion of the human cerebral cortex	MAX PLANCK GESELLSCHAFT ZUR FÖRDERUNG DER WISSENSCHAFTEN E.V.	Germany	2,496,000
250334	5HT-OPTOGENETICS	Optogenetic Analysis of Serotonin Function in the Mammalian Brain	FUNDACAO CALOUSTE GULBENKIAN	Portugal	2,318,636
250342	NEUROSYSTEM	A Systems Level Approach to Proliferation and Differentiation Control in Neural Stem Cell Lineages	INSTITUT FUER MOLEKULARE BIOTECHNOLOGIE GMBH	Austria	2,499,875
250345	DENDRITE	Cellular and circuit determinants of dendritic computation	UNIVERSITY COLLEGE LONDON	United Kingdom	2,416,078
250349	SMILE	Study of the molecular and cellular mechanisms of incentive learning	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	France	2,500,000
250356	PRIONS	The prion protein in health and disease	UNIVERSITÄT ZÜRICH	Switzerland	2,500,000
267351	NEUROCMOS	Seamless Integration of Neurons with CMOS Microelectronics	Eidgenössische Technische Hochschule Zürich	Switzerland	2,498,000
267888	DEMOVE	DECODING THE NEURAL CODE OF HUMAN MOVEMENTS FOR A NEW GENERATION OF MAN-MACHINE INTERFACES	UNIVERSITÄTSMEDIZIN GOETTINGEN - GEORG-AUGUST-UNIVERSITÄT GOETTINGEN - STIFTUNG ÖFFENTLICHEN RECHTS	Germany	2,431,473

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
268479	BREATHE	Brain development and Air pollution ultrafine particles in school children	FUNDACIO CENTRE DE RECERCA EN EPIDEMIOLOGIA AMBIENTAL - CREAL	Spain	2,499,230
268548	NANOPHYS	Nanophysiology of fast-spiking, parvalbumin-expressing GABAergic interneurons	Institute of Science and Technology Austria	Austria	2,500,000
268598	ENSEMBLE	Neural mechanisms for memory retrieval	NORGES TEKNISK-NATURVITENSKAPELIGE UNIVERSITET NTNU	Norway	2,499,074
268628	NEURONSINNOVATION	Linking glutamatergic spinal cord and brainstem neuronal circuits to the control of locomotor behavior	KAROLINSKA INSTITUTET	Sweden	2,500,000
268675	MIRNA_AD	Role of microRNA dysregulation in Alzheimers Disease	VIB	Belgium	2,500,000
268689	MULTIRULES	Synaptic multi-factor learning rules: from action potentials to behaviour	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE	Switzerland	2,449,218
268800	NEUROSCHEMA	The neurobiology of schemas: knowledge acquisition and consolidation	THE UNIVERSITY OF EDINBURGH	United Kingdom	3,051,404
268858	NEURAL RENEWAL	Neurogenesis in the adult human brain	KAROLINSKA INSTITUTET	Sweden	2,491,235
268870	WNT FOR BRAIN	Transcriptional regulation of endothelial blood brain barrier differentiation by Wnt signaling	IFOM FONDAZIONE ISTITUTO FIRCC DI ONCOLOGIA MOLECOLARE	Italy	2,390,200
268911	VOTECOM	Vocal template computations in the songbird brain	UNIVERSITAET ZUERICH	Switzerland	2,011,440
268955	METABOMIT	Metabolic consequences of mitochondrial dysfunction	HELSINGIN YLIOPISTO	Finland	2,500,000
268970	MELOVISION	Melanopsin-based vision in health and disease	THE UNIVERSITY OF MANCHESTER	United Kingdom	2,499,636
269020	AXOGLIA	The role of myelinating glia in preserving axon function	MAX PLANCK GESELLSCHAFT ZUR FOERDERUNG DER WISSENSCHAFTEN E.V.	Germany	2,477,800
269058	ACMO	Systematic dissection of molecular machines and neural circuits coordinating C. elegans aggregation behaviour	MEDICAL RESEARCH COUNCIL	United Kingdom	2,439,996
269064	PRISTINE-PD	Prior-like transmission of $\alpha$ -synuclein in Parkinson's disease	LUNDS UNIVERSITET	Sweden	2,499,998

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
269065	INTERIMPACT	Impact of identified interneurons on cellular network mechanisms in the human and rodent neocortex	SZEGEDI TUDOMANYEGYETEM	Hungary	2,391,695
269505	NEUROSYNTAX	Neural basis of syntax in the developing brain	MAX PLANCK GESELLSCHAFT ZUR FOERDERUNG DER WISSENSCHAFTEN E.V.	Germany	2,366,688
269661	PLACEBO	The placebo effect – a window into the relationship between mind and body	UNIVERSITAETSKLINIKUM HAMBURG-EPPENDORF	Germany	2,499,120
269670	WORDS	WORDS: Asymmetry, change and processing in phonological mental representation	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF OXFORD	United Kingdom	2,367,789
269716	MULTISENSE	The merging of the senses: understanding multisensory experience	UNIVERSITAETSKLINIKUM HAMBURG-EPPENDORF	Germany	3,472,800
269853	COLUMNARCODE-CRACKING	Cracking the columnar-level code in the visual hierarchy: Ultra high-field functional MRI, neuro-cognitive modelling and high-resolution brain-computer interfaces	UNIVERSITEIT MAASTRICHT	Netherlands	2,473,381



EUROPEAN RESEARCH  
COUNCIL Executive Agency

‘Starting Grants’



Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
200500	INSTINCTIVE DRIVES	Orchestration of instinctive drives	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE	United Kingdom	1,299,999
200512	INSPIRE	Interhemispheric stimulation promotes reading: two brains are better than one	BAR ILAN UNIVERSITY	Israel	638,400
200758	ANXIETY & COGNITION	How anxiety transforms human cognition: an Affective Neuroscience perspective	UNIVERSITEIT GENT	Belgium	812,986
200808	CORTEX-SELF-CONTROL	Self-Modulating Neurons in the Cerebral Cortex: From Molecular Mechanisms to Cortical Network Activities	INSTITUT DU CERVEAU ET DE LA MOELLE EPINIERE FOUNDATION	France	996,000
200850	ODORS-SPACE	Predicting odor perception from odorant structure and neural activity in the olfactory system	WEIZMANN INSTITUTE OF SCIENCE	Israel	1,596,000
201312	AORVM	The Effects of Aging on Object Representation in Visual Working Memory	THE UNIVERSITY OF EDINBURGH	United Kingdom	500,000
201936	NANOMAP	The Synapse Nanomap	UNIVERSITAETSMEDIZIN GOETTINGEN - GEORG-AUGUST-UNIVERSITAET GOETTINGEN - STIFTUNG OEFFENTLICHEN RECHTS	Germany	1,670,000
202579	LEPTINMS	Leptin, metabolic state and natural regulatory T cells: cellular and molecular basis for a novel immune intervention in autoimmunity	CONSIGLIO NAZIONALE DELLE RICERCHE	Italy	880,000
202893	SELF	Studying Developmental, Neural, Cognitive and Affective Aspects of the Self in Humans	THE UNIVERSITY COURT OF THE UNIVERSITY OF ABERDEEN	United Kingdom	791,549
203994	BRAINPLASTICITY	In vivo imaging of functional plasticity in the mammalian brain	THE HEBREW UNIVERSITY OF JERUSALEM	Israel	1,750,000
204034	MYELIN	Mechanisms of myelin biogenesis and repair	MAX PLANCK GESELLSCHAFT ZUR FÖRDERUNG DER WISSENSCHAFTEN E.V.	Germany	1,290,000
204643	SPATIAL MEMORY	Neural correlates of spatial memory in children and adults	RADBOUD UNIVERSITEIT NIJMEGEN - STICHTING KATHOLIEKE UNIVERSITEIT	Netherlands	873,476

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205095	SENSORINEURAL	Elaboration and refinement of sensorineural dendritic architecture	HELMHOLTZ-ZENTRUM MÜNCHEN DEUTSCHES FORSCHUNGS-ZENTRUM FUER GESUNDHEIT UND UMWELT I GMBH	Germany	1,100,000
205202	OLFACTORY/GLURS	Olfactory perception in Drosophila: analysis of a novel iGluR-related family of odorant receptors	UNIVERSITE DE LAUSANNE	Switzerland	1,500,000
205557	EMPATHICBRAIN	Plasticity of the Empathic Brain: Structural and Functional MRI Studies on the Effect of Empathy Training on the Human Brain and Prosocial Behaviour	MAX PLANCK GESELLSCHAFT ZUR FÖRDERUNG DER WISSENSCHAFTEN EV.	Germany	1,499,821
205819	GLIOMA	Molecular Mechanisms of Glioma Genesis and Progression	FUNDACIO PRIVADA INSTITUT D'INVESTIGACIO ONCOLOGICA DE VALL-HEBRON	Spain	1,566,000
206634	ISCATAXIA	Unraveling the molecular mechanisms leading to cellular dysfunction in diseases linked to defects in mitochondrial iron-sulfur cluster metabolism	CENTRE EUROPEEN DE RECHERCHE EN BIOLOGIE ET MEDECINE GIE	France	1,449,924
206726	CLIP	Mapping functional protein-RNA interactions to identify new targets for oligonucleotide-based therapy	MEDICAL RESEARCH COUNCIL	United Kingdom	900,000
206912	OSSMA	Multiple Systems of Spatial Memory: Their role in Reasoning and Action	UNIVERSITY OF CYPRUS	Cyprus	500,000
207047	BODY-OWNERSHIP	Neural mechanisms of body ownership and the projection of ownership onto artificial bodies	KAROLINSKA INSTITUTET	Sweden	909,850
207638	CODING_IN_V1	How visual information is represented by neuronal networks in the primary visual cortex	UNIVERSITY COLLEGE LONDON	United Kingdom	1,080,000
207807	INTERMIG	Migration and integration of GABAergic interneurons into the developing cerebral cortex: a transgenic approach	UNIVERSITY COLLEGE LONDON	United Kingdom	1,250,000
208132	AN07AT	Understanding computational roles of new neurons generated in the adult hippocampus	NORGES TEKNISK - NATURVITENSKAPELIGE UNIVERSITET	Norway	1,991,743
209234	SPIN	Natural speech comprehension: Comprehension of speech in noise	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE (CNRS)	France	600,000

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209540	GEVM	Genetic and Environmental Variation of Memory phases	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE (CNRS)	France	534,000
209656	NEURODEVELOPMENT	A neurodevelopmental approach to human language processing	UNIVERSITÄT HAMBURG	Germany	822,000
209704	NEUROSEMANTICS	Neurosemantics: the human brain as a meaning processor	BANGOR UNIVERSITY	United Kingdom	961,958
210007	TEMPUS_G	Temporal Enhancement of Motor Performance Using Sensory Guides	QUEEN'S UNIVERSITY BELFAST	United Kingdom	860,924
210345	MICROGLIA AND AMD	Subretinal Microglia accumulation play a decisive role in the development of Age-related Macular Degeneration	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	France	1,560,000
210922	GENMOD	Generative Models of Human Cognition	UNIVERSITA DEGLI STUDI DI PADOVA	Italy	492,200
211055	OPTISTIM	Patterned optical activation of retinal ganglion cells	TECHNION - ISRAEL INSTITUTE OF TECHNOLOGY	Israel	1,600,000
211078	GRASP-CN	Human reaching and grasping - cognitive networks of visual action control	EBERHARD-KARLS-UNIVERSITÄT TUBINGEN	Germany	1,120,440
211089	OLFPERCEPT	Neural Basis of Olfactory Perception in Drosophila	MEDICAL RESEARCH COUNCIL	United Kingdom	1,750,000
239749	WEEG	'Chips on the go': towards truly wearable EEG systems	IMPERIAL COLLEGE OF SCIENCE, TECHNOLOGY AND MEDICINE	United Kingdom	1,775,713
240132	SPIKEHEAR	Spiking neural models of auditory perception	ECOLE NORMALE SUPERIEURE	France	1,244,640
240629	ASPIRE	Aqueous Supramolecular Polymers and Peptide Conjugates in Reversible Systems	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE	United Kingdom	1,700,000
240891	EMOTER	Emoting the Embodied Mind	THE UNIVERSITY OF EXETER	United Kingdom	685,301
241077	PRORECONT	Pro- and Re-active cognitive control	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	France	1,997,020
241111	MINDREHAB	Consciousness in basic Science And Neurorehabilitation	AARHUS UNIVERSITET	Denmark	1,641,232
241176	ODMIR	The origins and development of the human mirror neuron system	UNIVERSITA DEGLI STUDI DI MILANO-BICOCCA	Italy	1,208,400

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241242	HEMSDEV	Human Embodied MultiSensory Development: An investigation of the construction of embodied multisensory experience in human infancy and early childhood	GOLDSMITHS' COLLEGE	United Kingdom	1,227,752
242389	FPMICROGLIA	Towards a dynamic quantitative understanding of neuronal microglial Interactions.	EUROPEAN MOLECULAR BIOLOGY LABORATORY	Germany	663,090
242666	NEUROAGE	From Environment to Physiology: Neuroendocrine Circuits and Genetic Mechanisms that Modulate Ageing and Development	KING'S COLLEGE LONDON	United Kingdom	1,501,957
242689	HIPPOCHRONO - CIRCUITRY	The chronocircuitry of the hippocampus during cognitive behaviour	MEDIZINISCHE UNIVERSITÄT WIEN	Austria	1,760,911
242809	MINDTRAVEL	Travels of the Mind: Modes of brain functioning in complex dynamic environments	FONDAZIONE SANTA LUCIA	Italy	1,219,597
242834	RECORTHA	Rewiring cortical areas through thalamocortical inputs	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTÍFICAS	Spain	1,478,400
242852	GABA NETWORKS	Maturation of functional cortical GABAergic microcircuits	UNIVERSITÉ D'AX MARSEILLE	France	1,591,300
242932	TREATPD	Cell and gene therapy based approaches for treatment of Parkinson's disease: from models to clinics	LUND'S UNIVERSITET	Sweden	1,508,940
242949	HORAB	Source and efficacy of human olfactory ensheathing cells in the repair of brachial plexus avulsion.	UNIVERSITY COLLEGE LONDON	United Kingdom	1,600,000
242965	LUNELY	ALK as a common target for the pathogenesis and therapy in lymphoma, lung carcinoma and neuroblastoma	UNIVERSITÀ DEGLI STUDI DI TORINO	Italy	1,010,000
243106	ZEBRAFISH PERCEPTION	Sensory perception: neural representation and modulation	INSTITUT NATIONAL DE LA SANTÉ ET DE LA RECHERCHE MÉDICALE (INSERM)	France	1,851,600

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243108	RLPHARFMRI	Beyond dopamine: Characterizing the computational functions of midbrain modulatory neurotransmitter systems in human reinforcement learning using model-based pharmacological fMRI.	THE PROVOST FELLOWS & SCHOLARS OF THE COLLEGE OF THE HOLY AND UNDIVIDED TRINITY OF QUEEN ELIZABETH NEAR DUBLIN	Ireland	1,841,404
243153	BRAINANNABINOIDS	Understanding the molecular blueprint and functional complexity of the endocannabinoid metabolome in the brain	INSTITUTE OF EXPERIMENTAL MEDICINE - HUNGARIAN ACADEMY OF SCIENCES	Hungary	1,638,000
243182	NOVEL TOOLS IN PD	Novel tools for real time monitoring and quantification of protein aggregation in Parkinson's disease and related neurodegenerative disorders	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE	Switzerland	1,495,400
243261	SCINSCF	Repair Spinal Cord Injury by Controlling Migration of Neural Stem Cells - multidisciplinary approaches of electric stimulation and nanotechnology	CARDIFF UNIVERSITY	United Kingdom	1,759,613
243273	ACTIVE_NEURO-GENESIS	Activity-dependent signaling in radial glial cells and their neuronal progeny	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF OXFORD	United Kingdom	1,284,808
243344	NEUROCHEMS	From neurons to behavior: analysis of the mechanisms underlying sensory coding and plasticity in chemical senses	UNIVERSITE DE GENEVE	Switzerland	1,399,998
243393	NEUROHABIT	Neural mechanisms of action learning and action selection; from intent to habit	FUNDACAO CALOUSTE GULBENKIAN	Portugal	1,526,304
257182	CNTBBB	Targeting potential of carbon nanotubes at the blood brain barrier	IMPERIAL COLLEGE OF SCIENCE, TECHNOLOGY AND MEDICINE	United Kingdom	1,229,998
257219	NEUROP	Neuromorphic processors: event-based VLSI models of cortical circuits for brain-inspired computation	UNIVERSITAET ZUERICH	Switzerland	1,494,023
257253	MATHANA	Mathematical modeling of anaesthetic action	INSTITUT NATIONAL DE RECHERCHE EN INFORMATIQUE ET EN AUTOMATIQUE	France	856,500
260328	NEUROMIR	microRNA Function in homeostatic plasticity in the mammalian brain	PHILIPPS UNIVERSITAET MARBURG	Germany	1,452,720

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260347	COMPU\$LANG	Neural and computational determinants of left cerebral dominance in speech and language	UNIVERSITE DE GENEVE	Switzerland	1,500,000
260379	CELLTYPESAND-CIRCUITS	Neural circuit function in the retina of mice and humans	Novartis Forschungsstiftung	Switzerland	1,499,000
260424	ACTSELECT-CONTEXT	Action Selection under Contextual Uncertainty: the Role of Learning and Effective Connectivity in the Human Brain	UNIVERSITY COLLEGE LONDON	United Kingdom	1,341,805
260435	PAINEURONS	Functional significance of nociceptive primary sensory neurons diversity	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	France	1,457,455
260463	EURO - NEUROSTRESS	Dissecting the Central Stress Response: Bridging the Genotype-Phenotype Gap	WEIZMANN INSTITUTE OF SCIENCE	Israel	1,500,000
260511	SEM_SEM	SEcreted Membrane vesicles: role in the therapeutic plasticity of neural STEM cells	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE	United Kingdom	1,500,000
260515	ENDOFOOD	Neurocircuitry of endocannabinoid regulation of food intake	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	France	1,500,000
260562	DENDRITICINFORMATION-PROC	Dendritic Information Processing In Vivo	UNIVERSITAETSKLINIKUM BONN	Germany	0
260590	BRAINSTATES	Brain states, synapses and behaviour	MAX DELBRUECK CENTRUM FUER MOLEKULARE MEDIZIN	Germany	1,463,125
260604	MUMID	Multimodal tools for Molecular Imaging, Diagnostics and Therapeutics	LINKOPINGS UNIVERSITET	Sweden	1,498,800
260607	BRAINSHAPE	Objects in sight: the neural basis of visuomotor transformations for actions towards objects	KATHOLIEKE UNIVERSITEIT LEUVEN	Belgium	1,499,200
260678	SYNAPSEFUNCTION	Molecular studies of synaptic vesicle recycling in health and disease	VIB	Belgium	1,498,522
260725	IRPHRCSTIP	Investigating the role of pre-synaptic HCN1 channels in regulating cortical synaptic transmission and plasticity	UNIVERSITY COLLEGE LONDON	United Kingdom	1,400,547

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260747	BIOMOTIV	Why do we do what we do? Biological, psychological and computational bases of motivation	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	France	1,346,000
260820	ADDITIONCIRCUITS	Drug addiction: molecular changes in reward and aversion circuits	LINKOPINGS UNIVERSITET	Sweden	1,500,000
260821	PROTOBRAIN	Sensory-motor circuits in marine zooplankton and early evolution of the nervous system	MAX PLANCK GESELLSCHAFT ZUR FÖRDERUNG DER WISSENSCHAFTEN E.V.	Germany	1,270,800
260827	OPTO-SLEEP	Optogenetic probing of dopamine modulation of sleep and sleep-dependent processes	UNIVERSITE DE LIEGE	Belgium	0
260888	CBCD	Understanding the basis of cerebellar and brainstem congenital defects: from clinical and molecular characterisation to the development of a novel neuroembryonic in vitro model	FONDAZIONE CASA SOLLIEVO DELLA SOFFERENZA	Italy	1,367,960
260914	SIAMCP	Follow the PAIN: Novel Somatotopically-Based Integrative Approach to Study Mechanisms of Detection, Transmission and Perpetuation of Nociceptive, Inflammatory and Neuropathic Pain	THE HEBREW UNIVERSITY OF JERUSALEM	Israel	1,500,000
260916	SYT ACTIVITY	Modulation of synaptic plasticity and circuit function by regulation of neurotrophin exocytosis	UNIVERSITÄTSMEDIZIN GOETTINGEN - GEORG-AUGUST-UNIVERSITÄT GOETTINGEN - STIFTUNG ÖFFENTLICHEN RECHTS	Germany	1,484,000
260932	ANXIETY MECHANISMS	'Neurocognitive mechanisms of human anxiety: identifying and targeting disrupted function'	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF OXFORD	United Kingdom	1,708,407
260964	CBSCS	Physiology of the adult carotid body stem cell niche	UNIVERSIDAD DE SEVILLA	Spain	1,476,000
260997	DOGPSYCH	Canine models of human psychiatric disease: identifying novel anxiety genes with the help of man's best friend	HELSINGIN YLIOPISTO	Finland	1,381,807
261063	BRAINCELL	Charting the landscape of brain development by large-scale single-cell transcriptomics and phylogenetic lineage reconstruction	KAROLINSKA INSTITUTET	Sweden	1,496,032

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261079	NEUROTRAF-FICKING	Molecular mechanisms controlling leukocyte trafficking in the central nervous system	UNIVERSITA' DEGLI STUDI DI VERONA	Italy	1,199,880
261114	ENCODING IN AXONS	Identifying mechanisms of information encoding in myelinated single axons	KONINKLIJKE NEDERLANDSE AKADEMIE VAN WETENSCHAPPEN - KNAW	Netherlands	1,994,640
261177	RECONTEXT	From neurons to behaviour: Context representation and memory reconsolidation in the entorhinal hippocampal system	STICHTING KATHOLIEKE UNIVERSITEIT	Netherlands	1,474,872
261247	WALK AGAIN	Multi-pronged Strategies to Regain Voluntary Motor Functions after Spinal Cord Injury	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE	Switzerland	1,395,540
261286	ENDOSWITCH	'Network Principles of Neuroendocrine Control: Tuberoinfundibular Dopamine (TIDA) Oscillations and the Regulation of Lactation'	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE	Switzerland	1,395,540
261352	OBJECTPOP-CODESIMMM	'Visual object population codes relating human brains to nonhuman and computational models with representational similarity analysis'	MEDICAL RESEARCH COUNCIL	United Kingdom	1,499,241
263067	HUVAC	Neurophysiological and functional mechanisms of human voluntary action control	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	France	1,466,160
263145	MIA	Multisensory Integration and Attention	UNIVERSITAT POMPEU FABRA	Spain	1,450,672
263179	MATHCONS-TRUCTION	Constructing Mathematical knowledge beyond Core Intuitions	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	France	1,394,130
263234	BRAINDEVELOPMENT	How brain development underlies advances in cognition and emotion in childhood and adolescence	UNIVERSITEIT LEIDEN	Netherlands	1,500,000
263318	NEUROINT	How the brain codes the past to predict the future	UNIVERSITA' DEGLI STUDI DI TRENTO	Italy	978,678
263472	BRAINBALANCE	'Rebalancing the brain: Guiding brain recovery after stroke'	UNIVERSITEIT LEIDEN	Netherlands	1,500,000
263567	MULTISENSORY-MIND	The multisensory mind: From neural mechanisms to cognition	CHARITE - UNIVERSITAETSMEDIZIN BERLIN	Germany	1,483,408



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263575	LIPS	Lexical information processes and their spatio-temporal dynamics	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	France	1,251,345
263584	MINDTIME	From implicit timing in the brain to explicit time abstraction in the mind.	COMMISSARIAT A L'ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES	France	1,500,000
263623	DYNAMIND	A Dynamic View on Conscious and Unconscious Processes	ECOLE NORMALE SUPERIEURE	France	1,437,520
263657	PPPHS	Prescriptive Prescriptions: Pharmaceuticals and Healthy Subjectivities	LINKOPINGS UNIVERSITET	Sweden	1,121,760
280532	NEUROBAT	Neural codes for space in complex multi-scale environments: Insights from the bat	WEIZMANN INSTITUTE OF SCIENCE	Israel	1,499,999
280565	THERMOREG	Peripheral and Central Mechanisms of Temperature Detection and Core Body Thermoregulation	MAX DELBRUECK CENTRUM FUER MOLEKULARE MEDIZIN	Germany	1,400,725
281010	LATELIFEHEALTH	Mapping the late-life health promoting mechanisms in worms and mammals	THE HEBREW UNIVERSITY OF JERUSALEM	Israel	1,438,899
281072	R55CEMSR	Role of Secondary Sensory Cortices in Emotional Memory Storage/Retrieval	UNIVERSITA DEGLI STUDI DI TORINO	Italy	1,116,000
281168	NEUROFEAR	Neuronal circuits controlling fear behavior	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	France	1,496,300
281171	NEURALCODES_EMO	Deciphering neural codes of valence-based emotional memories	WEIZMANN INSTITUTE OF SCIENCE	Israel	1,671,620
281338	GXE-MOLMECH	Gene x environment interactions in affective disorders - elucidating molecular mechanisms	MAX PLANCK GESELLSCHAFT ZUR FORDERUNG DER WISSENSCHAFTEN EV.	Germany	1,254,120
281348	METACLOCK	Metabolic oscillations and the 24 hour (circadian) clockwork	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE	United Kingdom	1,998,056
281403	ABATSYNAPSE	Evolution of Alzheimer's Disease: From dynamics of single synapses to memory loss	TEL AVIV UNIVERSITY	Israel	2,000,000
281408	OBESITY53	p53 as a New Mediator of Energy Balance in the Brain	UNIVERSIDADE DE SANTIAGO DE COMPOSTELA	Spain	1,477,680

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281443	BRAINSIGNALS	Optical dissection of circuits underlying fast cholinergic signalling during cognitive behaviour	VERENIGING VOOR CHRISTELIJK HOGER ONDERWIJS WETENSCHAPPELIJK ONDERZOEKEN PATIENTENZORG	Netherlands	1,499,242
281511	HIPEMEM	Memory-Related Information Processing in Neuronal Circuits of the Hippocampus and Entorhinal Cortex	Institute of Science and Technology Austria	Austria	1,441,119
281559	GENANX	A cross-species neurogenetics approach to anxiety	HELSINGIN YLIOPISTO	Finland	1,499,863
281604	YODA	Topographic signalling and spatial landmarks of key polarized neuro-developmental processes	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	France	1,498,971
281622	PDCONTROL	Protein damage control: regulation of toxic protein aggregation in aging-associated neurodegenerative diseases	ACADEMISCH ZIEKENHUIS GRONINGEN	Netherlands	1,450,249
281628	URGENCY	Neurocomputational determinants of decision urgency in humans	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF OXFORD	United Kingdom	1,182,176
281847	HUMGENSIZE	Cellular pathways determining growth and human brain size	THE UNIVERSITY OF EDINBURGH	United Kingdom	1,499,666
281854	OBERSTRESS	Hypothalamic Lipotoxicity and Endoplasmic Reticulum Stress: a New Pathophysiological Mechanism of Obesity	UNIVERSIDADE DE SANTIAGO DE COMPOSTELA	Spain	1,484,000
281869	ELEGANSNEURO-CIRCUITS	Neuromodulation of Oxygen Chemosensory Circuits in <i>Caenorhabditis elegans</i>	FORSCHUNGSINSTITUT FUER MOLEKULARE PATHOLOGIE Ges.m.b.H	Austria	1,500,000
281884	FLYVISUALCIRCUITS	Linking neural circuits to visual guidance in flying flies	FORSCHUNGSINSTITUT FUER MOLEKULARE PATHOLOGIE Ges.m.b.H	Austria	1,500,000
281885	PERCEPT	Cortical circuits of visual perception	EBERHARD KARLS UNIVERSITAET TUEBINGEN	Germany	1,299,992
281910	GLIOMADDS	Development of tumor penetrating peptides for glioma targeting	TARTU ULIKOOL	Estonia	1,499,931
281920	SEROTONINAND-DISEASE	Dissecting the gene regulatory mechanisms that generate serotonergic neurons and their link to mental disorders	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS	Spain	1,931,621

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281961	ASTROFUNC	Molecular Studies of Astrocyte Function in Health and Disease	VIB	Belgium	1,490,168
281964	DENOVO	Detection and Interpretation of de novo mutations and structural genomic variations in mental retardation	STICHTING KATHOLIEKE UNIVERSITEIT	Netherlands	1,499,154
282012	SENSTRIATUM	Sensory Integration in the Striatal Microcircuit	KAROLINSKA INSTITUTET	Sweden	1,494,445
282027	ZFISHSLEEP	Resolving the Neuroparmacology and Genetics of Zebrafish Sleep	UNIVERSITY COLLEGE LONDON	United Kingdom	1,902,750
282036	TARGET-IN-PANR	Determination of specific components from 'stromal PDAC signature' involved in PDAC Associated Neural Remodeling (PANR) and their use as clinical tool-box.	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	France	952,686
282047	CEIDNFSTTAIS	Controlling excitability in developing neurons: from synapses to the axon initial segment	KING'S COLLEGE LONDON	United Kingdom	1,500,000
282091	DEVSPACE	The development of the hippocampal spatial representation system	UNIVERSITY COLLEGE LONDON	United Kingdom	1,491,930
282111	PROTEASYS	Protease Systems Biology in Tumorigenesis and Neurodegeneration	UNIVERSITAETSKLINIKUM FREIBURG	Germany	1,499,760
282122	NEUROOPTOGEN	Optogenetic examination of the role of feedback on visual processing and perception	EBERHARD KARLS UNIVERSITAET TUEBINGEN	Germany	1,903,114
282220	BRAINGAIN	NOVEL STRATEGIES FOR BRAIN REGENERATION	KAROLINSKA INSTITUTET	Sweden	1,500,000
282329	WIRINGVISION	Wiring up visual circuits: Interplay between gene expression and spontaneous and experience-dependent activity	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS	Spain	1,500,000
282330	GENOVAR	Sequence based strategies to identify genetic variation associated with mental retardation and schizophrenia	UPPSALA UNIVERSITET	Sweden	1,496,574
282345	RANGEMRI	Rapid Adaptive Nonlinear Gradient Encoding for Magnetic Resonance Imaging	UNIVERSITAETSKLINIKUM FREIBURG	Germany	1,497,672

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282430	FUELLINGSYN-APSES	Regulation of neuronal connectivity and plasticity by activity-dependent mitochondrial trafficking to synapses	UNIVERSITY COLLEGE LONDON	United Kingdom	1,997,567
283314	NOREPI	Noradrenergic control of human cognition	UNIVERSITEIT LEIDEN	Netherlands	1,495,200
283404	WIN2CON	Brain-State Dependent Perception: Finding the Windows to Consciousness	UNIVERSITA DEGLI STUDI DI TRENTO	Italy	1,499,000
283435	ABACUS	Advancing Behavioral and Cognitive Understanding of Speech	VRIJE UNIVERSITEIT BRUSSEL	Belgium	1,276,620
283530	SEMBIND	Wedding bells or bedding wells? Lexical and semantic influences on phoneme binding	UNIVERSITY OF YORK	United Kingdom	691,284
283567	PACE	Perception and Action in Accelerating Environments	STICHTING KATHOLIEKE UNIVERSITEIT	Netherlands	1,495,750
283597	MULTITASK	Towards safe and productive human multitasking	RIJKSUNIVERSITEIT GRONINGEN	Netherlands	1,434,574
283605	CATEGORIES	THE ORIGIN AND IMPACT OF COLOUR CATEGORIES IN THOUGHT AND LANGUAGE	UNIVERSITY OF SUSSEX	United Kingdom	1,480,265
283634	CONSTRUCTIVE-MEM	Emergence and decline of constructive memory – Life-span changes in a common brain network for imagination and episodic memory	UNIVERSITETET I OSLO	Norway	1,499,088
283763	EARLYDEV	Brain networks for processing social signals of emotions: early development and the emergence of individual differences	TAMPEREEN YLIOPISTO	Finland	1,397,351
284025	FACESVPEP	UNDERSTANDING THE NATURE OF FACE PERCEPTION: NEW INSIGHTS FROM STEADY-STATE VISUAL EVOKED POTENTIALS	UNIVERSITE CATHOLIQUE DE LOUVAIN	Belgium	1,490,360
284101	MODULAREXPERIENCE	How the modularization of the mind unfolds in the brain	KATHOLIEKE UNIVERSITEIT LEUVEN	Belgium	1,474,800
284167	ADDITION	Beyond the Genetics of Addiction	VERENIGING VOOR CHRISTELIJK HOGER ONDERWIJS WETENSCHAPPELIJK ONDERZOEK EN PATIENTENZORG	Netherlands	1,491,964

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
284236	REPCOLLAB	Representational preconditions for understanding other minds in the service of human collaboration and social learning	KOZEP-EUROPAL EGYETEM	Hungary	1,449,836
284364	EMBER	Embodied Emotion Regulation	VERENIGING VOOR CHRISTELIJK HOGER ONDERWIJS WETENSCHAPPELIJK ONDERZOEK EN PATIENTENZORG	Netherlands	1,487,027
284366	ELSI	Emotional Learning in Social Interaction	KAROLINSKA INSTITUTET	Sweden	1,498,244
306321	SKIPPERAD	'Simulation of the Kinetics and Inverse Problem for the Protein PolymyERization in Amyloid Diseases (Prion, Alzheimer's)	INSTITUT NATIONAL DE RECHERCHE EN INFORMATIQUE ET EN AUTOMATIQUE	France	1,203,569
306707	FUNMANIA	Functional nano Materials for Neuronal Interfacing Applications	TEL AVIV UNIVERSITY	Israel	1,499,560
306890	ILLUMINATING NERVES	Hybrid imaging agents for the illumination of peripheral nerve structures	ACADEMISCH ZIEKENHUIS LEIDEN - LEIDS UNIVERSITAIR MEDISCH CENTRUM	Netherlands	1,498,800
307494	PCCELL	Physicochemical principles of efficient information processing in biological cells	FREIE UNIVERSITÄT BERLIN	Germany	1,397,328
309337	ALCOHOL-LIFE-COURSE	Alcohol Consumption across the Life-course: Determinants and Consequences	UNIVERSITY COLLEGE LONDON	United Kingdom	1,032,815
309349	MULTISENS	Limits and prerequisites of information integration in the human brain: attention, awareness & vigilance	University of Birmingham	United Kingdom	1,498,660
309377	NEUROCOMMUNICATION	The Molecular Communication Mechanism of Motor Neuron Survival and Synapse Maintenance	TEL AVIV UNIVERSITY	Israel	1,499,800
309384	HEAVYMETHYL	Regulation of gene expression and cell fate by DNA (hydroxy)methylation	UNIVERSITAIR MEDISCH CENTRUM UTRECHT	Netherlands	1,499,776
309516	PROCUREPM	'Protein Misfolding: Prion-like Propagation and Cure. Implications for Neurodegenerative Diseases.'	MEDICAL RESEARCH COUNCIL	United Kingdom	1,431,408
309545	RIBOMYLOWE	The Role of Non-coding RNA in Protein Networks and Neurodegenerative Diseases	FUNDACIO PRIVADA CENTRE DE REGULACIO GENOMICA	Spain	1,465,351

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
309595	ORGANIZING CORTEX	Cellular Mechanisms Underlying the Topographical Organization of Entorhinal Cortical Circuits	Høgskoleingen 1	Norway	1,500,000
309633	CORTEXFOLDING	Understanding the development and function of cerebral cortex folding	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS	Spain	1,701,116
309657	HEAATS	Molecular bases of human excitatory neurotransmitter transport across the plasma membrane	INSTITUT PASTEUR	France	1,684,040
309674	EXPAT	Exploring the human brain using magnetic resonance imaging and parallel transmission at ultra-high field	COMMISSARIAT A L'ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES	France	1,499,292
309712	IN-BRAIN	IN VIVO REPROGRAMMING: A NOVEL ROUTE TO BRAIN REPAIR	Lunds Universitet	Sweden	1,500,000
309731	STROKETHERAPY	Improving arm and hand function after stroke with clinically-relevant delivery of neurotrophin-3 to elderly disabled muscles: from rats to humans	KING'S COLLEGE LONDON	United Kingdom	1,499,909
309742	DYNAMITO	The analysis of mitochondrial dynamics in ageing and neurodegeneration	THE UNIVERSITY OF SHEFFIELD	United Kingdom	1,486,761
309767	INTERACT	Counteracting psychosis by optimizing interaction	Maastricht University	Netherlands	1,499,400
309776	OPTOGENRET	Microbial opsins for mammalian vision: Optogenetics in the retina	FONDATION DE COOPERATION SCIENTIFIQUE VOIR ET ENTENDRE	France	1,499,200
309865	NEUROCODEC	Neurobiological basis of collective decision making in the human brain	UNIVERSITY COLLEGE LONDON	United Kingdom	1,486,197
310021	SYNAPDOMAIN	Molecular Mechanisms of GABAergic synapse formation: spatial segregation in cortical inhibitory inputs	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS	Spain	1,499,999
310320	METACYCLES	Uncovering metabolic cycles in mammals and dissecting their interplay with circadian clocks	WEIZMANN INSTITUTE OF SCIENCE	Israel	1,499,980
310360	MSCRNA	Cytosine-5 methylated RNAs as stem cell regulators in normal tissues and diseases	The Chancellor, Masters and Scholars of the University of Cambridge. Organisation	United Kingdom	1,999,120
310411	BRAINGUTTALK	Brain-gut interactions in Drosophila melanogaster	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE	United Kingdom	0

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
310659	RNA DISEASES	UNDERSTANDING THE CAUSES OF THE RNA GAIN OF FUNCTION DISEASES	Centre Européen de Recherche en Biologie et Médecine (CERBM)	France	1,550,000
310790	VIP	Blood vessels as a target for infection	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	France	1,500,000
310829	WMOSPOTWU	What makes our subjective perception of the world unique?	UNIVERSITY COLLEGE LONDON	United Kingdom	1,294,840
310932	NEMESIS	Neuroprotection in Multiple Sclerosis: From Molecular Imaging to Screenable Models	LUDWIG-MAXIMILIANS-UNIVERSITAET MUENCHEN	Germany	1,487,200
310938	PERICYTESCAR	The role of pericytes in central nervous system scarring and fibrosis	KAROLINSKA INSTITUTET	Sweden	1,750,000
310973	PIPE	Physiology of the Intestine: Proteases from the Epithelium	INSERM	France	1,287,000
311083	SYNAPSECODE	Uncovering the role of new synaptic adhesion molecules in encoding synaptic connectivity in the brain	VERENIGING VOOR CHRISTELIJK HOGER ONDERWIJS WETENSCHAPPELIJK ONDERZOEK EN PATIENTENZORG	Netherlands	0
311149	ER-HSP	Role of endoplasmic reticulum in neurodegeneration: physiopathology of a form of hereditary spastic paraplegia as a model	Institut National de la Santé et de la Recherche Médicale	France	1,500,000
311159	ZEBRATECTUM	Anatomical and Functional Dissection of Neural Circuits in the Zebrafish Optic Tectum	INSTITUT CURIE	France	1,920,000
311194	2STEPPARKIN	A novel two-step model for neurodegeneration in Parkinson's disease	UNIVERSITAET BERN	Switzerland	1,518,960
311238	NEURO-POPCODE	Learning to read the code of large neural populations	WEIZMANN INSTITUTE OF SCIENCE	Israel	1,438,996
311292	BIOFINDER	New biomarkers for Alzheimer's & Parkinson's diseases - key tools for early diagnosis and drug development	Lunds Universitet	Sweden	1,500,000
311367	NEUROVASCULAR LINK	Neuro-vascular communication in the neural tube during development	RUPRECHT-KARLS-UNIVERSITAET HEIDELBERG	Germany	1,498,419

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
311394	PAROSIN	Protection against reactive oxygen species in neurodegeneration	The Chancellor, Masters and Scholars of the University of Oxford	United Kingdom	1,328,956
311403	GLISFCO	Glia, Smell, Food & Courtship in Drosophila	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	France	1,500,000
311435	DEMORY	Dissecting the Role of Dendrites in Memory	FOUNDATION FOR RESEARCH AND TECHNOLOGY HELLAS	Greece	1,398,000
311596	IEWTX	Therapies for inborn errors of metabolism	FONDAZIONE TELETHON	Italy	1,491,520
311610	MITOMYELIN	Roles of mitochondria in healthy and diseased myelin	INSERM	France	1,918,878
311673	OPTOLOCO	Dynamic sensory-motor integration in spinal circuits	ICM	France	1,498,500
311686	MUTRIPS	Mechanisms Underlying Treatment Responses in Psychosis	KING'S COLLEGE LONDON	United Kingdom	1,498,902
311695	HOMEOSTASIS_IN_VIVO	Mechanisms of homeostatic plasticity in the intact mouse visual cortex	KING'S COLLEGE LONDON	United Kingdom	1,494,474
311701	EMOTIONCIRCUITS	Circuit mechanics of emotions in the limbic system	FORSCHUNGSINSTITUT FUER MOLEKULARE PATHOLOGIE Ges.m.b.H	Austria	1,499,922
311710	MU TUNING	Fine Tuning the Final Common Pathway: Molecular Determinants of Motor Unit Development and Plasticity	UNIVERSITAETSMEDIZIN GOETTINGEN - GEORG-AUGUST-UNIVERSITAET GOETTINGEN - STIFTUNG OEFFENTLICHEN RECHTS	Germany	1,456,807
311736	PD-HUMMODEL	Elucidating early pathogenic mechanisms of neurodegeneration in Parkinson's disease through a humanized dynamic in vitro model	Universitat de Barcelona	Spain	1,324,802
311751	BRAINREADFB-PREDCODE	Brain reading of contextual feedback and predictions	UNIVERSITY OF GLASGOW	United Kingdom	1,494,714
312227	PREDSPIKE	Spike-based predictive coding: Closing the loop between neural dynamics and computation	ECOLE NORMALE SUPERIEURE	France	1,276,800
312292	CACTUS	developmental social Cognition and ACTION UnderStanding	Uppsala universitet	Sweden	1,498,920



Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
312445	UTM	Updating the mind: The mechanisms behind behavioural change	THE UNIVERSITY OF EXETER	United Kingdom	1,138,518
312511	VICARIOUSBRAIN	Cracking the code and flow of empathy	KONINKLIJKE NEDERLANDSE AKADEMIE VAN WETENSCHAPPEN – KNAW	Netherlands	1,761,239
312519	BIOCON	Biological origins of linguistic constraints	Universitat Pompeu Fabra	Spain	1,305,973
312787	DRASTIC	Apathy in schizophrenia: time for a DRASTIC (Dual Routes to Apathy in Schizophrenia: Treatment, Imaging, Cognition) study	ACADEMISCH ZIEKENHUIS GRONINGEN	Netherlands	1,500,000
313000	SOCIAL BRAIN	Fitting The World to Minds: Brain Basis of Sharing and Transmitting Representations of the Social World	Aalto-Korkeakoulusaatio	Finland	1,280,480
313341	BEHAVIORAL THEORY	Behavioral Theory and Economic Applications	KOZEP-EUROPAI EGYETEM	Hungary	1,275,448
313398	INTERACT	Understanding Mechanisms of Human Social Interaction using Interactive Avatars	The University of Nottingham	United Kingdom	1,383,371
313440	NEUROCOGNPLASTICITY	Neurocognitive -Plasticity – Lifespan Mechanisms of Change	University of Oslo	Norway	1,498,737
313454	NEURO COOPERATION	Trust & Reciprocity: neural and psychological models of social cooperation	Stichting Katholieke Universiteit	Netherlands	1,499,927
313481	SPEED	Speeded decision-making in the basal ganglia: An integrative model-based approach	UNIVERSITEIT VAN AMSTERDAM	Netherlands	1,487,587
313552	ARCHOFCON	The Architecture of Consciousness	THE UNIVERSITY OF MANCHESTER	United Kingdom	1,477,483
313610	SEMEXP	Psycho-semantics: new data for formal semantics models, stronger frameworks for experimental studies	CNRS-Délégation Paris B	France	1,429,030
313658	COPEST	Construction of perceptual space-time	UNIVERSITA DEGLI STUDI DI TRENTO	Italy	1,002,117
313692	LEX-MEA	Life EXperience Modulations of Executive function Asymmetries	SISSA	Italy	1,475,950
313749	NEURODEFENSE	Neural control of human freeze-flight	Stichting Katholieke Universiteit	Netherlands	1,500,000

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
313755	BODILY SELF	Embodied Minds and Mentalised Bodies	King's College London	United Kingdom	1,453,284
313820	COMBATTRAUMA	From warfare to welfare: a comparative study of how combat trauma is internalized and institutionalized	Universiteit van Amsterdam	Netherlands	1,492,087
313841	TUNINGLANG	Tuning Attention during Language Learning	Universitat de Barcelona	Spain	1,485,600



# EUROPEAN RESEARCH COUNCIL Executive Agency

‘Proof of concept’

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
297407	SNIFFCONTROL	Sniff-Controlled Devices	WEIZMANN INSTITUTE OF SCIENCE	Israel	149,907
297409	MITO BY-PASS POC	Molecular by-pass therapy for mitochondrial dysfunction - Proof of Concept	TAMPEREEN YLIOPISTO	Finland	150,000
324602	DD-PD	A novel mechanism to regulate gene expression in the brain	LUNDS UNIVERSITET	Sweden	150,000
324616	PROC0G	Cognitive Training Method for Enhancing Semantic Processing	BAR ILAN UNIVERSITY	Israel	149,791
324621	ALKVAX	Market potentials of ALK vaccination as a new strategy for the cure of ALK positive tumors such as lymphoma, lung carcinoma and neuroblastoma	UNIVERSITA DEGLI STUDI DI TORINO	Italy	0
324631	FUNCTIONAL-BIOMARKERS	Functional Biomarkers as in vitro diagnostic tools for managing patients with chronic disease	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	France	0

Mobility Programme  
(Marie Curie)

‘Initial Training Networks’  
(ITN)

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
212877	UEPHA-MS	United Europeans for the Development of Pharmacogenomics in Multiple Sclerosis	UNIVERSIDAD DEL PAIS VASCO	Spain	2,359,000
214003	AXREGEN	Axonal regeneration, plasticity & stem cells	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE	United Kingdom	4,440,000
214570	ITN-LAN	Initial Training Network: Lateralized Attention Networks	EBERHARD-KARLS-UNIVERSITÄT TUEBINGEN	Germany	1,877,407
215618	NEUROMODEL	Initial Training Network on therapeutic approaches and predictive models for neurodegenerative diseases	EBERHARD KARLS UNIVERSITÄT TUEBINGEN	Germany	2,544,492
235065	ROBOT-DOC	ROBOTics for Development Of Cognition	UNIVERSITY OF PLYMOUTH	United Kingdom	3,492,830
237955	FACETS-ITN	Fast Analog Computing with Emergent Transient States - Initial Training Network (FACETS-ITN)	RUPRECHT-KARLS-UNIVERSITÄT HEIDELBERG	Germany	4,677,779
237956	EDU-GLIA	Innovative Techniques and Models to Study Glia-Neuron Interactions	EBERHARD KARLS UNIVERSITÄT TUEBINGEN	Germany	3,285,554
238055	BRAINTRAIN	BrainTrain: integrative neuroscience school on brain function and disease	VERENIGING VOOR CHRISTELIJK HOGER ONDERWIJS WETENSCHAPPELIJK ONDERZOEK EN PATIENTENZORG	Netherlands	3,316,876
238157	EBRAMUS	Europe, Brain and Music: New perspectives for stimulating cognitive and sensory processes	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	France	2,341,796
238214	C7	Cerebellar-Cortical Control: Cells, Circuits, Computation, and Clinic	UNIVERSITY COLLEGE LONDON	United Kingdom	3,662,670
238316	NEURASYNC	Academic-Industrial Training Network on Alpha-Synuclein-related Brain Diseases	EBERHARD KARLS UNIVERSITÄT TUEBINGEN	Germany	2,419,227
238593	NEUROPHYSICS	Methods in Neuroimaging	UNIVERSITEIT MAASTRICHT	Netherlands	2,912,936
238608	SYMBAD	Synapses: from molecules to higher brain function and diseases	UNIVERSITE VICTOR SEGALEN BORDEAUX II	France	5,057,750

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
238665	NINA	Neuroendocrine Immune Networks in Ageing	THE UNIVERSITY OF BIRMINGHAM	United Kingdom	3,034,226
238686	CEREBNET	Timing and plasticity in the olivo-cerebellar system	CONSORZIO NAZIONALE INTERUNIVERSITARIO PER LE SCIENZE FISICHE DELLA MATERIA	Italy	3,659,811
238690	SPINEFX	SPINEFX: A University-Industry Network for the Training of High-quality Multidisciplinary Researchers to Deliver Enterprising, Cost-effective Surgical Solutions for Spinal Disease and Trauma	UNIVERSITY OF LEEDS	United Kingdom	2,967,204
264301	TRACKDEV	Tracking Early Development: From Basic Science to Applications	BIRKBECK COLLEGE - UNIVERSITY OF LONDON	United Kingdom	1,915,975
264417	ENGACABRA	Biomedical engineering for cancer and brain disease diagnosis and therapy development	TECHNISCHE UNIVERSITAET WIEN	Austria	3,496,556
264508	TREATPOLYQ	TreatPolyQ – Industrial Academic Initial Training Network towards treatment of Polyglutamine Diseases.	EBERHARD KARLS UNIVERSITAET TUEBINGEN	Germany	3,757,318
264872	NAMASEN	Neuroelectronics and nanotechnology: towards a Multidisciplinary Approach for the Science and Engineering of Neuronal Networks	UNIVERSITEIT ANTWERPEN	Belgium	2,906,854
289146	NETT	Neural Engineering Transformative Technologies	THE UNIVERSITY OF NOTTINGHAM	United Kingdom	5,329,091
289404	ACT	Action research: Improving understanding and methodologies in early development	UNIVERSITY OF DURHAM	United Kingdom	3,026,278
289581	NPLAST	NPlast - A neuroscience school that aims to preserve and restore neuroplasticity in brain disorders	LEIBNIZ-INSTITUT FUER NEUROBIOLOGIE	Germany	3,954,679
289941	FLIACT	Systems neuroscience of Drosophila: from genes to circuits to behaviour	FUNDACIO PRIVADA CENTRE DE REGULACIO GENOMICA	Spain	3,152,307
290011	ABC	Adaptive Brain Computations	THE UNIVERSITY OF BIRMINGHAM	United Kingdom	3,805,431
316639	MOVING BEYOND	Industrial Academic Initial Training Network towards focused treatment of age-related motor symptoms.	EBERHARD KARLS UNIVERSITAET TUEBINGEN	Germany	2,438,657
316679	TRANSACT	Transforming Magnetic Resonance Spectroscopy into a Clinical Tool	KATHOLIEKE UNIVERSITEIT LEUVEN	Belgium	3,445,287



Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
316716	HIMR	Ultra-High Field Magnetic Resonance Imaging	THE UNIVERSITY OF NOTTINGHAM	United Kingdom	3,597,440
316722	NEUROKINE	Initial Training Network for Neurological disorders orchestrated by cytokines	UNIVERSITÄTSMEDIZIN DER JOHANNES GUTENBERG-UNIVERSITÄT MAINZ	Germany	3,536,796
316746	PRISM	Perceptual Representation of Illumination, Shape and Material	JUSTUS-LIEBIG-UNIVERSITÄT GIESSEN	Germany	3,014,866
316748	LANPERCEPT	Language and Perception	NORGES TEKNISK-NATURVITENSKAPELIGE UNIVERSITET NTNU	Norway	4,152,363
316790	INSECTIME	Inset Timing	UNIVERSITY OF LEICESTER	United Kingdom	3,999,988
316795	MARATONE	Mental Health Training through Research Network in Europe	UNIVERSITY OF SOUTHAMPTON	United Kingdom	3,689,476
316832	OLIMPIA	TRAINING NETWORK ON ORGANIC OPTOELECTRONICS INTEGRATED WITH LIVING SYSTEMS FOR NEUROSCIENCE INVESTIGATIONS AND APPLICATIONS	CONSIGLIO NAZIONALE DELLE RICERCHE	Italy	4,011,185
316978	TS-EUROTRAIN	Interdisciplinary training network for Tourette Syndrome; structuring European Training capacities for neurodevelopmental disorders	DEMOCRITUS UNIVERSITY OF THRACE	Greece	3,076,398
317100	PROTOTOUCH	Virtual Prototyping of Tactile Displays	THE UNIVERSITY OF BIRMINGHAM	United Kingdom	4,061,243
317172	NEPTUNE	Multidisciplinary training in evo-devo and neurobiology of marine animal models	EUROPEAN MOLECULAR BIOLOGY LABORATORY	Germany	3,341,427
317259	PHENORAT	EID on the advanced science and technology of rat models for neurodegenerative diseases	EBERHARD KARLS UNIVERSITÄT TUEBINGEN	Germany	924,517
317472	EYETN	Beyond the Genome; training the next generation of ophthalmic researchers	UNIVERSITY OF LEEDS	United Kingdom	3,090,797

# Mobility Programme (Marie Curie)

‘Intra-European Fellowships  
for career development’  
(IEF)

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
219611	CIRCUIT-HUBS	Functional connectivity of developing hippocampal networks: characterization of 'circuit-hubs'	UNIVERSITE DE LA MEDITERRANEE D'AIX-MARSEILLE II	France	162,510
219953	MCAHBC	Molecular and cellular analysis of hindbrain boundary cells	MEDICAL RESEARCH COUNCIL	United Kingdom	178,307
220031	HCN PAIN	Role of HCN ion channels in somatic sensation and pain	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE	United Kingdom	178,874
220139	DA AND DECISIONS	The role of dopamine and novelty in decision-making in humans: behavioral and neuroimaging studies	UNIVERSITY COLLEGE LONDON	United Kingdom	169,391
220357	NEUROFEEDBACK	Investigating Visual Perception with Neurofeedback	UNIVERSITY COLLEGE LONDON	United Kingdom	177,740
220656	SITAU	siRNA-based therapy for cerebral tauopathies	PHILIPPS UNIVERSITÄT MARBURG	Germany	158,695
220727	CP-AMPA TRAFFICKING	Molecular mechanisms regulating the trafficking of calcium-permeable and -impermeable AMPA receptors in synaptic plasticity	UNIVERSITY COLLEGE LONDON	United Kingdom	168,257
220731	GABACORT	Analysis of Neuregulin-1 function in the maturation of cortical GABAergic interneurons: Implications for the etiology of schizophrenia	UNIVERSIDAD MIGUEL HERNANDEZ DE ELICHE	Spain	151,369
220913	MCI-AD	Natural history of Mild Cognitive Impairment and Alzheimer's Disease: factors influencing early detection, clinical course, and prognosis.	FONDAZIONE SANTA LUCIA	Italy	162,986
221013	SENSORY SUBSTITUTION	Spatial cognition and sensory substitution	Department of Experimental Psychology, University of Oxford	United Kingdom	168,257
221088	MS, FMRI, ERP	Assessment of cognitive dysfunction in Multiple Sclerosis using the simultaneous acquisition of event-related potentials and functional magnetic resonance imaging during executive tasks.	FONDAZIONE CENTRO SAN RAFFAELE DEL MONTE TABOR	Italy	162,986
221095	CLOCKWORK	Work around the Clock: effects of shift work on cognitive performance and circadian organization in behavior and physiology.	RIJKSUNIVERSITEIT GRONINGEN	Netherlands	157,733

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
221158	MEMORY CAPACITY	Investigating the neural correlates of working memory capacity using functional magnetic resonance imaging and transcranial magnetic stimulation	UNIVERSITY COLLEGE LONDON	United Kingdom	181,142
221234	BRAIN TOUCH	3D Flexible Probe for Deep Brain Stimulation and Recording	INTERUNIVERSITAIR MICRO-ELECTRONICA CENTRUM	Belgium	157,856
221254	REDOXSLEEP/IRCADIAN	Redox Potential as an Interface between Sleep homeostasis and Circadian Rhythms	UNIVERSITE DE LAUSANNE.	Switzerland	177,597
221263	FROM ES TO NEURONS	Identification of mechanisms controlling temporal neurogenesis in the cortex using an embryonic stem cells-based model.	UNIVERSITE LIBRE DE BRUXELLES	Belgium	164,320
221365	WIERDA-HETEROGENEITY	Analyzing Heterogeneity in Release of Synaptic Vesicles	MAX PLANCK GESELLSCHAFT ZUR FOERDERUNG DER WISSENSCHAFTEN E.V.	Germany	166,415
221446	CHAPERONES IN ND	The Role of Molecular Chaperones in Parkinson's Disease	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE	Switzerland	178,164
221545	RETACTIVITY/IMAGING	Imaging light evoked activity at different strata of the mammalian retina	NOVARTIS FORSCHUNGSSTIFTUNG, ZWEIGNIED-ERLASSUNG FRIEDRICH MIESCHER-INSTITUT FOR BIOMEDICAL RESEARCH	Switzerland	187,660
221613	PROCYDIF	Pioneural mechanisms coupling cell cycle exit and differentiation	MEDICAL RESEARCH COUNCIL	United Kingdom	169,391
221618	MULTIMODAL-ATTENTION	Multimodal imaging of spatial attention networks in the human brain	KING'S COLLEGE LONDON	United Kingdom	168,257
221666	HNO AND CVD	Role of Nitroxyl (HNO) in the cardio and cerebrovascular system.	UNIVERSITAETSKLINIKUM HAMBURG-EPPENDORF	Germany	167,549
221700	NEURAL CIRCUITS	Functional Analysis of Genetically Identified Retinal Interneurons	NOVARTIS FORSCHUNGSSTIFTUNG, ZWEIGNIED-ERLASSUNG FRIEDRICH MIESCHER-INSTITUT FOR BIOMEDICAL RESEARCH	Switzerland	181,566
221755	NCAN	Neurophysiological correlates of the anatomically discrete organization of the auditory nerve	KATHOLIEKE UNIVERSITEIT LEUVEN	Belgium	165,454

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
221844	AXON TARGETING	Anterograde regulation of axon targeting in the Drosophila visual system	MEDICAL RESEARCH COUNCIL	United Kingdom	168,257
221855	PICK1 AND DAT	Regulation of dopamine transporter function by the PDZ domain protein PICK1	KOBENHAVNS UNIVERSITET	Denmark	201,924
235073	KARTRAF	SYNAPTIC TRAFFICKING OF KAINATE RECEPTORS IN HIPPOCAMPAL CA3 PYRAMIDAL CELLS IN VIVO	UNIVERSITE VICTOR SEGALEN BORDEAUX II	France	165,445
235076	AGING_ HORMONE	The reward system in healthy ageing and its modulation by gonadal steroid hormones: multimodal neuroimaging studies (fMRI/PET)	THE PROVOST FELLOWS & SCHOLARS OF THE COLLEGE OF THE HOLY AND UNDIVIDED TRINITY OF QUEEN ELIZABETH NEAR DUBLIN	Ireland	245,451
235106	HYPOTHALAMIC T3	The role of hypothalamic thyroid hormone in the neuroendocrine regulation of appetite, energy balance and glucose homeostasis.	THE UNIVERSITY COURT OF THE UNIVERSITY OF ABERDEEN	United Kingdom	171,868
235223	CALYX MMFF	Molecular mechanisms of the formation and early function of calyx of Held synapses in the auditory brainstem	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE	Switzerland	189,730
235256	CHANNELRHO-DOPSIN	Information processing in distal dendrites of neocortical layer 5 pyramidal neurons	MEDICAL RESEARCH COUNCIL	United Kingdom	180,217
235321	EMOTIONS IN INSOMNIA	The neurobiological bases of emotion processing in Primary Insomnia	UNIVERSITAETSKLINIKUM FREIBURG	Germany	160,997
235413	PATTERN AND GROWTH	Coordination of patterning and growth in the developing neural tube	MEDICAL RESEARCH COUNCIL	United Kingdom	171,301
235552	GLUTRAF	Ultra-high resolution imaging of GluR1 trafficking in neuronal spines	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE (CNRS)	France	173,969
235934	ATTENTION & CONSCIOUS	Attention and consciousness in the brain	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	France	165,445
236021	NEUROTOME	Neural bases of temporal processing in the human brain	UNIVERSITY COLLEGE LONDON	United Kingdom	182,485

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236113	BRAIN & MATE CHOICE	The neural basis of mate choice: Which brain structures are involved in mate assessment in mice?	FUNDACAO CALOUSTE GULBENKIAN	Portugal	93,114
236168	LOADATCMC08	Perceptual load and neural competition. Determinant factors in selective attention	UNIVERSITY COLLEGE LONDON	United Kingdom	183,619
236307	JNKNEUROREG	The role of JNK/c-Jun pathway in axonal damage and neuronal regeneration	CANCER RESEARCH UK	United Kingdom	171,868
236342	EARLY AMYLOID STATES	Structural characterisation of early alpha-synuclein amyloidogenic species relevant to Parkinson's disease: Validation as therapeutic targets	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE	United Kingdom	171,868
236370	MICE SPINAL CORD CM	Neuronal circuitry and plasticity of the spinal cord using in-vivo electrophysiology in transgenic mice	Københavns Universitet	Denmark	203,818
236638	ELANSCI	Role of Lgi and Adam proteins in nerve development and function	ERASMUS UNIVERSITEIT MEDISCH CENTRUM ROTTERDAM	Netherlands	161,162
236641	TOAFOLNR	Exploring the dark matter of the human brain transcriptome: The origin and function of long non-coding RNAs	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF OXFORD	United Kingdom	181,351
236662	NBIDPSTM	Neural basis for individual differences in pSTM in the normal and dyslexic populations	MEDICAL RESEARCH COUNCIL	United Kingdom	171,868
236721	AMYLOID HOT SPOTS	Cellular and structural determinants of amyloid toxicity	FUNDACIO PRIVADA INSTITUT DE RECERCA BIO-MEDICA IRB	Spain	161,333
236738	AMYLOID-INTERMEDIATE	The structural and dynamical ensemble of an amyloidogenic intermediate	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE	United Kingdom	171,868
236777	PARAPLEGIA ENDOSOMES	Spastic paraplegia genes and endosomal signaling in Drosophila	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE	United Kingdom	170,734
236858	GWAS BMI T2D AND DEP	A genome wide association study of the relationship between BMI, type II diabetes and recurrent depression	KING'S COLLEGE LONDON	United Kingdom	171,868

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237096	NARRATIVE-EPILEPTOLOGY	Narrative Epileptology: A Discourse Analytical Study of Epilepsy Aimed at Clinical Applicability.	KING'S COLLEGE LONDON	United Kingdom	163,703
237191	SEMISYNTHESIS	Semisynthesis of caged a-Syn	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE	Switzerland	180,801
237253	GLURES PROBES	Design, Synthesis and Characterization of 'Responsive' MR Contrast Agents Sensitive to Glutamate	UNIVERSITY OF DURHAM	United Kingdom	180,784
237327	KBMGABA	ketone Body Mediated Modulation of GABAergic Signaling, Mechanisms and Consequences.	UNIVERSITE DE LA MEDITERRANEE D'AX-MARSEILLE II	France	165,445
237369	BET-ORG-OWN	Towards A Behavioral Theory of Organizational Ownership: A Comparative Study in Shareholder Behavior	LUDWIG-MAXIMILIANS-UNIVERSITAET MUENCHEN	Germany	152,265
237502	SOCIAL BRAIN	How does our brain learn to be social?	UNIVERSITAET ZU KOELN - UNIVERSITAETS KLINIKUM	Germany	168,717
237608	MODEL OF IMPULSIVITY	Characterization of a rodent model of impulsivity with implications for drug addiction	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE	United Kingdom	171,868
237622	SUMOKAINATE	SUMOylation and kainate receptor synaptic plasticity	UNIVERSITY OF BRISTOL	United Kingdom	172,435
237641	BIOENGINEERED NICHES	Bioengineering the neural stem cell niche to identify regulators of fate determination	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE	Switzerland	190,297
237651	METALZCOMP	Understanding the role of transition metals in Alzheimer's disease on a molecular level	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE (CNRS)	France	83,573
237688	PLKS IN PD	Elucidating the Role of Phosphorylation by Polo-like kinases in Modulating Alpha-Synuclein Aggregation and Toxicity in Parkinson's disease and Related Disorders	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE	Switzerland	180,234
237765	SIM-ON	Single Cell Imaging of Gene Activation during Oxidative Neuron Death: Towards Quantitative Systems Approaches	ROYAL COLLEGE OF SURGEONS IN IRELAND	Ireland	177,354
251357	THOUGHT-SHAPE FUSION	Cognitive distortions in eating disorders: Development and application of a model for thought-shape fusion	UNIVERSITE DE SAVOIE	France	165,646

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251494	LEUOBES	METABOLIC EFFECTS OF LEUCINE SUPPLEMENTATION ON THE PREVENTION AND TREATMENT OF DIET-INDUCED OBESITY	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	France	166,146
251727	ZF OPTOGENETICS	Optogenetic analysis of neural circuits controlling behavior in zebrafish	NOVARTIS FORSCHUNGSSTIFTUNG	Switzerland	177,065
251864	MAPKMOOD	A new logic to control signalling pathways in the mouse brain: The role of MAPK in emotional behavior	HELMHOLTZ ZENTRUM MUENCHEN DEUTSCHES FORSCHUNGSZENTRUM FUER GESUNDHEIT UND UMWELT GMBH	Germany	162,161
251867	MIPHISNELO	Role of microglial phagocytosis in ischemic-hypoxic neuronal loss	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE	United Kingdom	172,741
251938	FGCMOG	Functional genetic characterization of a mouse model of Glioma	STICHTING HET NEDERLANDS KANKER INSTITUUT	Netherlands	161,249
251950	SEMP2	Subjectivity and Self-Effectivity. Investigating Self-Determination in Mentally Ill People from the First-Person-Perspective	UNIVERSITAET GRAZ	Austria	218,174
252126	MAPNE	Mechanobiology of Aplysia neurons	UNIVERSITY COLLEGE DUBLIN, NATIONAL UNIVERSITY OF IRELAND, DUBLIN	Ireland	178,374
252147	FRUITLESS TARGETS	Transcriptional regulation of male courtship behaviour: understanding Fruitless molecular networks	FORSCHUNGSINSTITUT FUER MOLEKULARE PATHOLOGIE Ges.m.b.H	Austria	163,123
252267	MTORC IN MYELINATION	The functions of mTOR complex subunits Rictor and Raptor in myelination	Eidgenössische Technische Hochschule Zürich	Switzerland	174,065
252320	NEUROGLYCE-CELLADS	Role of adult-generated neurons in hippocampal network activity for stress integration and antidepressant effects	NORGES TEKNISKE HOGSKOLEN UNIVERSITET NTNU	Norway	214,072
252377	RELATION WITH PAIN	Relationship with pain: Investigation of couple interaction in the maintenance of medically unexplained pain	UNIVERSITAET ZUERICH	Switzerland	172,565
252424	EYE POSITION	How do cortical representations of eye position impact spatial cognition?	EBERHARD KARLS UNIVERSITAET TUEBINGEN	Germany	161,661



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252440	NIMBLE	Neuromagnetic Imaging, Multiobject Bayesian Localization and Estimation	THE UNIVERSITY OF WARWICK	United Kingdom	173,403
252598	PRIMLID	Priming for L-dopa-induced dyskinesia and neurotransmitter receptor trafficking dysregulation in parkinsonism	UNIVERSITE VICTOR SEGALEN BORDEAUX II	France	165,146
252713	BOI	Body-Object Integration (BOI): The neurocognitive basis of integrating conceptual object knowledge in the body representation	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE	Switzerland	180,971
252829	FEAR AND TRAUMA	Neurobiology of the persistence of traumatic memories	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE	Switzerland	172,565
252860	RETROGRADE TRANSPORT	The role of Rab7 in axonal retrograde transport and human pathologies	CANCER RESEARCH UK	United Kingdom	173,241
252915	HISTONESTEM	Histone arginine methylation and citrullination in stem cell maintenance and specification	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE	United Kingdom	240,290
252988	MODIFYPD	Effects of posttranslational modifications of alpha-synuclein on dopaminergic neurodegeneration in a novel viral vector mediated in vivo model of Parkinson's disease	LUNDS UNIVERSITET	Sweden	179,669
253127	SCHIZOAMINE	The role of histamine dysfunction in sensory and cognitive deficits in schizophrenia	KING'S COLLEGE LONDON	United Kingdom	129,431
253502	SYNAPSE ARCHITECTURE	Molecular architecture of the neuronal synapse	MAX PLANCK GESELLSCHAFT ZUR FOERDERUNG DER WISSENSCHAFTEN E.V.	Germany	81,581
253541	SPICES, GUT & BRAIN	TRP Channels in Gut and Brain – Function, Role and Ligand Crosstalk	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE	Switzerland	173,565
253917	STROKECELLFUSION	Cell fusion as regenerative tool for stroke treatment	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS	Spain	152,917
253965	BILATERAL MODULATION	Modulating interhemispheric interaction in physiology and disease	UNIVERSITY COLLEGE LONDON	United Kingdom	180,103

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254020	POP CODE	Statistical methods for modelling population activity in visual cortex	UNIVERSITY COLLEGE LONDON	United Kingdom	165,041
254086	I-SECRETASE AGING	Study of the aging-related changes of the gamma-secretase complex and evaluation to what extent those contribute to amyloid accumulation in sporadic Alzheimer's disease	VIB	Belgium	160,100
254106	CANCER STEM CELLS	Similarities and differences between neural stem cells and cancer stem cells	WESTFAELISCHE WILHELMS-UNIVERSITAET MUENSTER	Germany	161,161
254127	POP IN INFLAMMATION	Role of prolyl oligopeptidase in neuroinflammation and novel therapeutic use of specific POP inhibitors	HELSINGIN YLIOPISTO	Finland	178,088
254195	CCMEBAZ	Molecular basis of cell communication during a migratory event that establishes brain asymmetry in zebrafish	UNIVERSITY COLLEGE LONDON	United Kingdom	181,103
254270	OPTIMEYES	Optimal Control of Eye Movements	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE	United Kingdom	180,603
254341	DETECTAMYLOID	Detection of membrane-interacting cytotoxic amyloid intermediates with novel fluorescent probes	MAX PLANCK GESELLSCHAFT ZUR FOERDERUNG DER WISSENSCHAFTEN E.V.	Germany	162,161
254446	MULTI-SENSORYSPACE	Multisensory integration in the cognitive representation of space	UNIVERSITEIT UTRECHT	Netherlands	169,035
254512	SELF-CONSCIOUSNESS	Somatosensory signals and the 'I' of conscious experience in healthy subjects and neurological patients	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE	Switzerland	172,565
254528	VESDYN	Synaptic vesicle acidification and refilling dynamics	WESTFAELISCHE WILHELMS-UNIVERSITAET MUENSTER	Germany	161,161
254638	EYELEVEL	Levels of cognitive organization in human eye movements	AALTO-KORKEAKOULUS AATTO	Finland	139,364
254647	EXOSYTS	Dissecting synaptotagmin isoform function: from vesicle docking to fusion pore formation.	Københavns Universitet	Denmark	206,629

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254661	ANANDAMIDE AND PAIN	The role of anandamide-synthesising pathways of primary sensory neurons in the development of pathological pain	IMPERIAL COLLEGE OF SCIENCE, TECHNOLOGY AND MEDICINE	United Kingdom	181,103
254774	GENGEED	GWAS, endophenotypes and gene environment interactions in eating disorders	KING'S COLLEGE LONDON	United Kingdom	172,741
254791	SINGLEMOLE-ALZHEIMER	Dissecting Alzheimer's disease at a single molecule level	LABORATORIO EUROPEO DI SPETTROSCOPIE NON LINEARI	Italy	164,459
254801	ABETACOGNITION	The functional significance of soluble amyloid beta (Abeta) oligomers for learning and memory deficits in Alzheimer's disease	MAX PLANCK GESELLSCHAFT ZUR FÖRDERUNG DER WISSENSCHAFTEN E.V.	Germany	161,661
254919	RAPHE	Cell-type specific features of serotonergic neurons in the raphe nuclei	FUNDAÇÃO CALOUSTE GULBENKIAN	Portugal	156,364
254977	PROTEASOME-AMYLOID	Linking aggregation of alpha-synuclein to proteasomal dysfunction: an investigation of the causes leading to Parkinson's disease	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE	United Kingdom	172,741
254985	CHROMALC1HCC	'The role of ALC1, a novel ATP-dependent chromatin remodelling protein, in transcriptional regulation, tumorigenesis and neurodegeneration'	CANCER RESEARCH UK	United Kingdom	172,741
255019	BEAUVERIOLIDE	Beauveriolide-Derived Cyclopeptides as a New Class of Anti Alzheimer's Drugs	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF OXFORD	United Kingdom	180,603
255024	DYNAMICBRAIN NETWORKS	A Bayesian Model of EEG Source Dynamics and Effective Connectivity	THE UNIVERSITY OF MANCHESTER	United Kingdom	173,403
255140	QUANTITY IN NUMBER	Symbolic and non-symbolic number processing, a developmental perspective	KATHOLIEKE UNIVERSITEIT LEUVEN	Belgium	159,100
255202	ROUTES TO AROUSAL	Routes to arousal: a simultaneous EEG-fMRI investigation of pharmacological sedation in humans.	CARDIFF UNIVERSITY	United Kingdom	181,103

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255211	ZEBRAFISHFORE-BRAIN	Organization, plasticity and perceptual functions of neuronal circuits in a higher olfactory forebrain area	NOVARTIS FORSCHUNGSSTIFTUNG, ZWEIGNIED-ERLASSUNG FRIEDRICH MIESCHER INSTITUTE FOR BIOMEDICAL RESEARCH	Switzerland	242,482
255378	DOPAMINE NEURON CODE	Developmental Transcription Factors in Dopamine Neuron Maintenance	KAROLINSKA INSTITUTET	Sweden	180,669
255394	OMFLC55	Functional long-term imaging of single bouton-spine pairs during optogenetically controlled synaptic plasticity	NOVARTIS FORSCHUNGSSTIFTUNG, ZWEIGNIED-ERLASSUNG FRIEDRICH MIESCHER INSTITUTE FOR BIOMEDICAL RESEARCH	Switzerland	180,471
255559	THE DIABETIC BRAIN	The Diabetic Brain	ROYAL COLLEGE OF SURGEONS IN IRELAND	Ireland	246,940
255605	GI-MRI	Dynamic and multi-nuclear magnetic resonance imaging for the assessment of nutrient and drug delivery in the human gastrointestinal tract	UNIVERSITAET ZUERICH	Switzerland	180,471
271738	AMYLIN_ROLE_PAIN	Breaking the riddle of amylin's role in nociception: a comprehensive study on the action of amylin in multiple pain models	ISTITUTO DE BIOLOGIA MOLECULAR E CELLULAR - IBMC	Portugal	153,047
271927	STAT3-SCHWANN CELLS	Role of the transcription factor STAT3 in Schwann cells in the processes of degeneration and regeneration in damaged nerves	UNIVERSITY COLLEGE LONDON	United Kingdom	200,550
272156	MDPTAR	Microtubule Dynamics and Protein Trafficking in Axon Regeneration	UNIVERSITEIT UTRECHT	Netherlands	176,186
272247	FAN	Defining the functions of Elongator in adult brain neurogenesis	UNIVERSITE DE LIEGE	Belgium	170,500
272351	DYNASPINE	Nanoscale Photoactivation and Imaging of Synaptic Spine Dynamics	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	France	186,748
272548	PLACEBO	Placebo effects of marketing actions. How prior experience modulates the effect of price on expectations about product efficacy.	ERASMUS UNIVERSITEIT ROTTERDAM	Netherlands	184,041

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272633	SPANUM	Uncovering the spatial nature of numbers: An investigation of its origins and neural basis	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	France	261,975
272805	PLASTICITY-INAMPUITES	Multimodal plasticity in the human brain following hand amputation: Bridging the gap between neuronal reorganization and rehabilitation	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF OXFORD	United Kingdom	202,050
272823	FSES	Fast and slow endocytosis at the synapse	MEDICAL-RESEARCH COUNCIL	United Kingdom	209,093
273024	VTHAND-CENTRED SPACE	Visuo-tactile cortical mechanisms for a hand-centred spatial representation in humans	KAROLINSKA INSTITUTET	Sweden	186,465
273101	MOMENTA	Modeling Mental Agency: habits, self and intentionality	CENTRE NATIONAL DELA RECHERCHE SCIENTIFIQUE	France	0
273243	PRONEURODEG	Regulation of cellular proliferation in chronic neurodegenerative disease: Microglial proliferation and neurogenesis in prion disease	UNIVERSITY OF SOUTHAMPTON	United Kingdom	200,550
273266	CACCINNP	Microglia and Neuropathic Pain: The role of calcium activated chloride channels	EUROPEAN MOLECULAR BIOLOGY LABORATORY	Germany	181,084
273381	TUMOUR-STEMCELLS	Molecular and cellular heterogeneity of tumour stem cells in human glioblastoma	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE	United Kingdom	200,550
273420	MAGFORCE4AXON-GROWTH	Application of Mechanical Forces on Axon Growth Cones via Magnetic Nanoparticles to Enhance Axon Regeneration in Central Nervous System	UNIVERSITY COLLEGE DUBLIN, NATIONAL UNIVERSITY OF IRELAND, DUBLIN	Ireland	194,810
273519	VOCAL ATHLETES	Vocal athletes: Behavioural and brain bases for phonetic aptitude in monolingual and bilingual learners of a foreign language	BCBL BASQUE CENTER ON COGNITION BRAIN AND LANGUAGE	Spain	167,066
273567	SYNAPSEMAP	Dynamic super-resolution mapping of neurotransmitter release events and synaptic glutamate receptors	CENTRE NATIONAL DELA RECHERCHE SCIENTIFIQUE	France	185,748
273680	ΓSECRETASE STRUCTURE	Structure and function of γ-secretase studied by single particle cryo-electron microscopy	VIB	Belgium	173,000

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273720	STRESSAMYLOID-CASCADE	Stress cascades and Alzheimer's disease	MAX PLANCK GESELLSCHAFT ZUR FOERDERUNG DER WISSENSCHAFTEN E.V.	Germany	169,863
273737	GRASP CONTROL & BMI	Grasp-Related Neuronal Activity in Monkey and Human and Its Applicability in BMI	UNIVERSITY COLLEGE LONDON	United Kingdom	209,093
273790	REVERSIBLE COGNITION	Prefrontal and cingulate interactions in cognitive control: reversible inactivation and electrocorticograms.	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	France	185,748
273805	PAIN MODULATION	Neurobiological mechanisms of endogenous pain modulation	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF OXFORD	United Kingdom	200,050
273936	STRESSED-ASTROCYTES	The interplay between astrocytes and neurons in the progression of stress-induced cognitive disorders	UNIVERSIDADE DO MINHO	Portugal	153,047
273989	5HT	Serotonergic Modulation of Olfactory Information Processing	FUNDACAO CALOUSTE GULBENKIAN	Portugal	0
274148	DDR-MYCN-NB	The DNA damage response pathway in MYCN amplified neuroblastoma	DEUTSCHES KREBSFORSCHUNGSZENTRUM	Germany	169,363
274384	BRAINENERGY-CONTROL	Quantifying control of brain energy supply by the neuron-glia-vasculature unit	UNIVERSITY COLLEGE LONDON	United Kingdom	200,050
274409	MITOFUSIN-PD	Regulation of mitochondria-endoplasmic reticulum tethering by Parkin: implication for Parkinson's disease	UNIVERSITE DE GENEVE	Switzerland	178,102
274559	NEUROGLIAFORM CELLS	Contribution of neurogliaform cells to signal flow in the barrel cortex during whisking behaviour	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE	Switzerland	178,602
274612	ICPEF	The Interaction between the Central and Peripheral Exercise-Related Fatigue	UNIVERSITAETSMEDIZIN GOETTINGEN - GEORG-AUGUST-UNIVERSITAET GOETTINGEN - STIFTUNG OFFENTLICHEN RECHTS	Germany	162,242
274748	STIMVISION	The effect of functionally targeted optical stimulation on visual perception	UNIVERSITY COLLEGE LONDON	United Kingdom	200,050
274882	REPROGRAMMING FOR PD	Cell fusion-mediated reprogramming as neuronal rescue mechanism in Parkinson's disease	FUNDACIO PRIVADA CENTRE DE REGULACIO GENOMICA	Spain	167,066

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274934	EMOTION-REGULATIONOCD	Investigation of emotion regulation in obsessive-compulsive disorder using combined repetitive transcranial magnetic stimulation and functional magnetic resonance imaging	VERENIGING VOOR CHRISTELIJK HOGER ONDERWIJS WETENSCHAPPELIJK ONDERZOEK EN PATIENTENZORG	Netherlands	0
274950	MOLEMPATHY	Molecular mechanism of empathy	UNIVERSITAT POMPEU FABRA	Spain	230,980
274972	SYNAPSE NL	When Neurons Touch-Elucidating the Role of Neurotrophins in the Formation, Development, Maturation, and Maintenance of Synapses	MAX PLANCK GESELLSCHAFT ZUR FÖRDERUNG DER WISSENSCHAFTEN E.V.	Germany	162,742
275107	SYNAPSES FXS	Characterization of the molecular components of synapses in Fragile-X mental retardation syndrome: new insights into the FMRP regulatory mechanisms.	VIB	Belgium	219,500
275137	GLIO_IL23	EFFECT OF IL23 ON IMMUNE CELL INFILTRATION AND TUMOR GROWTH IN A GLIOMA MODEL	Eidgenössische Technische Hochschule Zürich	Switzerland	179,102
275182	HSP70ASYN	Structural studies of the interaction between Hsp70 and alpha-synuclein	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE	United Kingdom	209,593
275270	AGING STEM CELLS	Mechanisms of stem cell proliferation and senescence in the aged and damaged mouse brain	KAROLINSKA INSTITUTET	Sweden	195,766
275329	5-HT RADIOTRACERS	Development of New PET tracers for in vivo 5-HT2A and 5-HT7 Brain Imaging	Københavns Universitet	Denmark	219,590
275672	BIMATH	Brain and Behavior of Math Cognition in bilinguals. Implications for dyscalculia.	BCBL BASQUE CENTER ON COGNITION BRAIN AND LANGUAGE	Spain	224,165
275757	AB-STRUCT	Stoichiometrically controlled amyloid $\beta$ oligomers for structural determination	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE	United Kingdom	0
275800	ATTENTIONLOOP	Investigating the neural mechanisms of feature-based and spatial attention in a network model of two coupled brain areas	CONSORCI INSTITUT D'INVESTIGACIONS BIO-MEDIEQUES AUGUST PII SUNYER	Spain	167,181
275808	EPIREGAD	Epigenetic regulation of Alzheimer's disease related genes	UNIVERSITY OF LEEDS	United Kingdom	101,275

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275812	HIPPOPROJECTION	Role of descending hippocampal outputs in anxiety studied using a novel pharmacogenetic effluent inhibition tool	EUROPEAN MOLECULAR BIOLOGY LABORATORY	Germany	181,084
275978	EM ZF OTIC 082010	Regulation of ventral otic patterning and integration with general programmes of neurogenesis in the zebrafish embryo	THE UNIVERSITY OF SHEFFIELD	United Kingdom	210,093
276004	MG INTERACTIONS	Towards understanding neuron-microglia communication in the brain	EUROPEAN MOLECULAR BIOLOGY LABORATORY	Germany	162,242
276051	NANONEUROHOP	Assessment of the hazard and opportunities of using carbon nanotubes as a new nanocarrier for drug delivery in neural tissue	UNIVERSITY COLLEGE LONDON	United Kingdom	199,550
276130	HUMAN IPS IN SCI	Human IPS cell therapy for spinal cord injury	KAROLINSKA INSTITUTET	Sweden	194,766
276322	OLIGROCESS-EXTENSION	Study of proteins involved in oligodendrocyte process extension that regulate axon-glia interactions	INSTITUTO DE BIOLOGIA MOLECULAR E CELULAR - IBMC	Portugal	159,650
276456	A LIGHT ON VISION	Controlling conscious visual perception with light.	KONINKLIJKE NEDERLANDSE AKADEMIE VAN WETENSCHAPPEN - KNAW	Netherlands	184,041
276523	HEBBIANNEWS-PINES	Visualizing the structural synaptic memory trace: presynaptic partners of newly formed spines	MAX PLANCK GESELLSCHAFT ZUR FÖRDERUNG DER WISSENSCHAFTEN E.V.	Germany	168,863
276529	MUSICMOVES	Let the music move you: involvement of motor networks of the brain in music processing.	THE UNIVERSITY OF EDINBURGH	United Kingdom	200,050
297679	STEROLOSUME	Targeting common mechanisms of pathogenesis in diseases of sterol homeostasis associated with lysosomal dysfunction; development of novel and rapidly translatable clinical therapies	CARDIFF UNIVERSITY	United Kingdom	200,372
297917	HOLOSTED	Combining holographic optogenetics and STED microscopy for studying synaptic plasticity in Alzheimer's disease	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	France	193,595



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298065	RESEARCHING CPE	Researching Consumer Perceived Ethicality (CPE) of Companies and Brands	ESMT EUROPEAN SCHOOL OF MANAGEMENT AND TECHNOLOGY GMBH	Germany	174,475
298420	ATTMAIN	Comparing the properties and the consequences of attainment versus maintenance goals	IE UNIVERSIDAD	Spain	168,896
298498	ENHANCING SUGGESTION	Enhancing hypnotic suggestibility using noninvasive brain stimulation: Cognitive and neural mechanisms	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF OXFORD	United Kingdom	200,372
298633	EASCEP	Embodied Approaches to Social Cognition: Empathy and Perception	RUHR-UNIVERSITÄT BOCHUM	Germany	167,390
298635	INFANTBILINGUAL-BRAIN	Language learning in monolingual and bilingual infants: Evidence from electrophysiological and optical signals	MEDIZINISCHE UNIVERSITÄT INNSBRUCK	Austria	180,191
298838	ASTROAGE	Astrocytes in aging brain exhibit altered glutamate homeostasis: Implications for age related cognitive decline?	København's Universitet	Denmark	228,082
298905	NEUROBRAINTRANS-PORT	Molecular mechanisms of mRNA transport in neurons	MEDICAL RESEARCH COUNCIL	United Kingdom	200,372
299185	DISCOM	Discourse connectives and the mind: a cross-linguistic analysis of processing and acquisition	UNIVERSITEIT UTRECHT	Netherlands	191,675
299221	ADAPTOGENE	Functional evaluation of newly identified deregulated genes in Alzheimer's Disease patients using neuronal cultures and mouse model of the Disease, and possible contributions to Prion Disease	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTÍFICAS	Spain	168,896
299232	ET4AN	New technologies to support eating in Anorexia Nervosa: a neuroimaging study	KING'S COLLEGE LONDON	United Kingdom	200,372
299283	BRAIN STED	Intravital optical super-resolution imaging in the brain	MAX PLANCK GESELLSCHAFT ZUR FÖRDERUNG DER WISSENSCHAFTEN E.V.	Germany	167,390
299286	CBTOUCH	The cerebellar control of motor tuning during sensory discrimination.	ECOLE NORMALE SUPERIEURE	France	193,595

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299379	CDC42 AND GLIOMA	Specific functions of individual Cdc42 and polarity protein variants in cellular processes and glioblastoma progression	INSTITUT PASTEUR	France	193,595
299385	FIBCAT	Direct investigation of the autocatalytic effect in protein fibrillation – from molecular mechanism to macroscopic polymorphism	København's Universitet	Denmark	228,082
299434	CANNABIDIM	Molecular modelling of the cannabinoid CB1 receptor homodimer and its interaction with ligands: the role of membrane cholesterol and the CRIP1a protein	Itä-Suomen yliopisto	Finland	272,232
299605	SP-MORPH	Spectral Mesh Processing for Craniofacial Dymorphology	DUBLIN CITY UNIVERSITY	Ireland	191,938
299648	NIL50	Investigating the role of adult neurogenesis in spatial memory through optogenetic monitoring of neural activity	NORGES TEKNISK-NATURVITENSKAPELIGE UNIVERSITET NTNU	Norway	217,397
299852	CREA.DIV	When Diversity Helps or Hurts Creative Cognition: Effects of Counter-stereotypicality, Information Processing Motivation, and Regulatory Closure	UNIVERSITEIT VAN AMSTERDAM	Netherlands	183,806
299864	SYNAPTOCHOL	Role of cholesterol in neurotransmitter receptor trafficking and synaptic plasticity	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS	Spain	168,896
299962	MOUSEOLF	Characterization of a novel population of olfactory sensory neurons in the main olfactory epithelium	UNIVERSITE DE GENEVE	Switzerland	256,364
299972	THERAPY OPTIONS THD	Neurotransmitter synthesis disorders: towards a therapeutic correction	UNIVERSITEIT I BERGEN	Norway	208,354
300002	MIT SAXON-REGENERATION	Microtubule dynamics and neuronal cargo trafficking during dendrite to axon switching	UNIVERSITEIT UTRECHT	Netherlands	183,806
300086	NUMBERINSPACE	Development of spatial representations for numerical and non-numerical ordinal sequences	UNIVERSITE CATHOLIQUE DE LOUVAIN	Belgium	0
300184	EXPECT_CONSCIOUS	When and how do expectations affect conscious perception?	UNIVERSITY OF SUSSEX	United Kingdom	209,033

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
300200	DELIACIRCUIT	The subiculum as an organizer of the grid cell network: an in vivo dissection of network development	THE UNIVERSITY OF MANCHESTER	United Kingdom	0
300272	SERPINOPATHIES	Determination of the structure of the pathological neuroserpin polymer and development of an intrabody strategy to prevent disease-associated inclusions in cell and animal models of disease	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE	United Kingdom	200,372
300303	TIVMOANSFP	Translational in vivo modelling of a novel 5-HT feedback pathway	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF OXFORD	United Kingdom	200,372
300330	NMRGPCR	Structure and dynamics of G protein-coupled receptors by NMR spectroscopy	PAUL SCHERRER INSTITUT	Switzerland	192,622
300355	STAGED	Stress and the aging brain: the interplay between genetic susceptibility, aging and psychosocial stress on early symptoms of dementia	KAROLINSKA INSTITUTET	Sweden	136,064
300485	SCIREGENASENSE	TARGETED DELIVERY OF NEW ANTISENSE MOLECULES FOR REGENERATION ENHANCEMENT AFTER SPINAL CORD INJURY	INEB-INSTITUTO NACIONAL DE ENGENHARIA BIO-MEDICA ASSOCIACAO	Portugal	157,748
300586	METABONOMICS IN NETS	Evolving landscape of neuroendocrine tumor disease: Predicting tumor behaviour using metabolic profiling	IMPERIAL COLLEGE OF SCIENCE, TECHNOLOGY AND MEDICINE	United Kingdom	209,033
300602	ZF OPTOMODULOMICS	Dopaminergic modulation of neuronal circuit function in the zebrafish olfactory system	Novartis Forschungsinstitut	Switzerland	184,709
300757	EMIRAD	Impact of neuronal exosomes-delivered microRNA and proteins on the pathogenesis of Alzheimer's disease	VIB	Belgium	177,000
300814	NEUROTRAF	Molecular mechanisms of synapto-dendritic cargo trafficking	UNIVERSITEIT UTRECHT	Netherlands	183,806
300815	CHECKMATE-TO-HUNGER	Checking Melanoidins Satiating Efficiency Through Evaluation of Human Gut-Brain Response to Novel-Bread Ingestion	UNIVERSITA DEGLI STUDI DI NAPOLI FEDERICO II.	Italy	257,875
300945	HEALTHYMYELIN	Molecular mechanisms of myelination in peripheral nerves	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	France	269,096

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
301134	FLUENTBRAND	'No Risk, No Innovation?' - The Effects of the Fluency of Brand Names on Consumers' Responses to Innovations	COPENHAGEN BUSINESS SCHOOL	Denmark	228,082
301157	RHOHIPPOMEMO	Role of Rnd proteins in the regulation of dendrite, spine and synapse formation in the developing hippocampus and their implication in hippocampal-dependent memory	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	France	193,595
301187	IMPACT OF INEQUALITY	Understanding and reducing the impact of economic inequality on personal and social psychological functioning	KATHOLIEKE UNIVERSITEIT LEUVEN	Belgium	0
301362	VISUALDENDRITE	In vitro and in vivo examination of the spatial and temporal distribution of synaptic inputs and synaptic integration in layer 2/3 visual cortical neurons	INSTITUT PASTEUR	France	193,595
301528	TEMCOM	Testing the multi-component model of human cognitive abilities	UNIVERSITEIT VAN AMSTERDAM	Netherlands	191,675
301587	MULTIMODAL MRI IN HD	A multimodal MRI approach to Huntington Disease to disclose a marker of onset and evolution in presymptomatic mutation carriers	FONDAZIONE SANTA LUCIA	Italy	185,764
301638	CYCLATTR	Application of novel cyclic ligation auxiliaries in the study of Transferrin and derived pathologies	HUMBOLDT-UNIVERSITÄT ZU BERLIN	Germany	167,390
301671	NONRANDOM CIRCUITS	Origin and function of nonrandom cortical connectivities	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	France	193,595
301796	OEAN	Organic Electronic Artificial Neurons	LINKÖPINGS UNIVERSITET	Sweden	174,017
301897	NEURONAD	Isoform-specific functions of NAD-synthesising enzyme NMNAT in compartmentalised neuronal death	THE UNIVERSITY OF NOTTINGHAM	United Kingdom	270,146
301901	WORD-SEW STORE	How words and semantic are stored in the brain?	BCBL BASQUE CENTER ON COGNITION BRAIN AND LANGUAGE	Spain	168,896

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
302004	PATHOGEN DETECTORS	'Collective disease defence and pathogen detection abilities in ant societies: a chemo-neuro-immunological approach'	Institute of Science and Technology Austria	Austria	180,191
302208	DYNNETLAC	Dynamic Networks for Lexical Access; Design, Navigation and Interface.	UNIVERSITE D'AIX MARSEILLE	France	260,759
302215	BRAIN PERCEPTS	Synaptic foundations of low level perception	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	France	260,759
302277	TOUCHANDACTION	Touch and action in spatial perception	UNIVERSITY COLLEGE LONDON	United Kingdom	200,372
302435	ZFMICRO-CIRCUITCOMP	Mechanistic analysis of microcircuits and their role in forebrain information processing	Novartis Forschungstiftung	Switzerland	184,709
302477	OLIG3-LBX1 BREATHING	Function of the transcription factors Olig3 and Lbx1 in brainstem respiratory nuclei	MAX DELBRUECK CENTRUM FUER MOLEKULARE MEDIZIN	Germany	167,390
302515	AC FOR PKU TREATMENT	Artificial Cells for Enzyme Replacement Therapy for Phenylketonuria	AARHUS UNIVERSITET	Denmark	228,082
302549	SYNTAX	Neurophysiology of birdsong syntax: perception	UNIVERSITEIT UTRECHT	Netherlands	255,069
302724	DCXGLIOMA	Dissemination of proneural brain cancer cells: implication of partial and reversible differentiation into Dcx+ cells.	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	France	193,595
302807	ILP	The Role of Intention in Language Processing	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	France	201,932
302819	INTERNEURON NETWORK	cerebellar molecular layer Interneuron network imaging in awake animal	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	France	201,932
302862	ALS-PHD-METABOLISM	Unraveling the role of PHD1 as a novel neuroprotective target in ALS	VIB	Belgium	0
302881	MODELMOOD	INNOVATIVE APPROACHES TO PHENOTYPE MOOD DISORDERS IN MOUSE MODELS	UNIVERSITAET ZUERICH	Switzerland	128,182
303007	NEUROPROTEIN PROFILE	Large-scale protein expression profiling of genes implicated in cognitive disorders and dissection of their role in neural tissue development and plasticity	MAX PLANCK GESELLSCHAFT ZUR FOERDERUNG DER WISSENSCHAFTEN EV.	Germany	167,390

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
303153	BRAININATURAL-SOUND	The anatomy and dynamics of the cortical processing of naturalistic sounds	UNIVERSITY OF GLASGOW	United Kingdom	278,807
303313	OBINNSC1	The Physiological Control of Stem Cells: Obesity, Insulin, and Neural Stem Cell Dynamics.	KAROLINSKA INSTITUTET	Sweden	181,418
303344	ENIGMAS	Explicitly Normalized Imaging Mass Spectrometry	ACADEMISCH ZIEKENHUIS LEIDEN - LEIDS UNIVERSITAIR MEDISCH CENTRUM	Netherlands	183,806



Mobility Programme  
(Marie Curie)

‘European Reintegration  
Grants’ (ERG)



Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
207858	COLQ AND THE NMJ	Role of ColQ, a specific collagen in the functional organisation of the neuromuscular junction	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	France	30,000
224753	REHABCI	Neurorehabilitation using Brain-Computer Interface	UNIVERSITAET BREMEN	Germany	45,000
224919	WORDH	Written language processing in Hearing and Deaf	CONSIGLIO NAZIONALE DELLE RICERCHE	Italy	45,000
228583	NEUROINF	Neuroendocrine-immune interaction during inflammation - a phylogenetic study	UNIWERSYTET JAGIELLONSKI	Poland	45,000
230981	AD SYNAPTIC DEFICITS	Functional and synaptic deficits in cerebral cortical neurons in Alzheimer's Disease model mice	BAR ILAN UNIVERSITY	Israel	45,000
231111	FALSERIC	FALSE RECOGNITION JUDGEMENTS: COGNITIVE MECHANISMS AND NEURAL CORRELATES	UNIVERSITAT DE BARCELONA	Spain	33,750
234727	NSFCSTRANS-PLANTATION	Neuronal and glial fate of neurosphere forming cells from olfactory neuroepithelium	FONDAZIONE SANTA LUCIA	Italy	45,000
234785	DOPAMINE	The role of the dopamine system in human reinforcement learning.	UNIVERSITEIT LEIDEN	Netherlands	30,000
239324	MIPAN	Memory and information processing in assemblies of neurons	CONSIGLIO NAZIONALE DELLE RICERCHE	Italy	45,000
239393	ATTENTYSDIS-TRACT	Distraction and task-performance optimization: an integrative neurocognitive approach	RESEARCH CENTRE FOR NATURAL SCIENCES, HUNGARIAN ACADEMY OF SCIENCES	Hungary	45,000
239525	DYNACO	Brain dynamics of conscious perception: does conscious perception arise in a gradual or discontinuous fashion? Combined MEG and fMRI studies	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	France	30,000

Mobility Programme  
(Marie Curie)

‘Industry-Academia  
Partnerships and Pathways’  
(IAAP)

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
217902	CPADS	Cell permeable peptides as drug delivery system: a way towards innovative therapeutic strategies for neurodegeneration	UNIVERSITA DEGLI STUDI DI MILANO	Italy	904,965
218251	PSYCHGENE	Copy Number Variation and Endophenotypes in Psychiatric Disorders	ISLENSK ERFDAGREINNING EHF	Iceland	652,086
230596	MARKMD	IAPP on novel genetic and phenotypic markers of Parkinson's disease and Essential Tremor	EBERHARD KARLS UNIVERSITAET TUEBINGEN	Germany	1,173,548
230641	OXY-SENSE	OXY-SENSE - A biosensor, image analysis, and work flow system platform for the study of neuronal injury and assessment of cellular bioenergetics	ROYAL COLLEGE OF SURGEONS IN IRELAND	Ireland	579,387
230654	PEP2BRAIN	Selected peptides as drug candidates directed to pain and neurodegeneration	ISTITUTO DE MEDICINA MOLECULAR	Portugal	659,895
230766	NMS-CNT	Biocompatibility of carbon nanoparticles with tissues of the neuromuscular system	UNIVERSITY OF BRIGHTON	United Kingdom	633,648
251482	PET BRAIN	Mapping the brain with PET radiolabeled cannabinoid (CB1) ligands	THE UNIVERSITY COURT OF THE UNIVERSITY OF ABERDEEN	United Kingdom	930,577
285827	EPIXCHANGE	Innovative gene therapies for epilepsy treatment	UNIVERSITA DEGLI STUDI DI FERRARA	Italy	1,426,776
286021	DOPANEW	Dopaminergic Neurons for Cell Therapy in Parkinson's Disease	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	France	728,596
286071	BRAINVECTORS	From Brain Gene Transfer Towards Gene Therapy: Pharmacological Assessment of AAV, CAV and LVV	HOSPICES CANTONAUX CHUV	Switzerland	1,597,783
286089	ONCONANOBBB	Development and evaluation of a quantitative imaging technique for assessment of nanoparticle drug delivery across the blood-brain barrier: Applications for brain cancer therapeutics	TECHNOLOGICAL EDUCATIONAL INSTITUTION OF ATHENS	Greece	849,958
286145	MICRO-THERAPY	Eco Friendly Tuneable Microwave continuous Flow Reactor for the Synthesis of Lecucettamines in Therapeutic Activity Against Alzheimer's Disease	LIVERPOOL JOHN MOORES UNIVERSITY	United Kingdom	653,242

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
286208	MYOSENS	MYOELECTRIC INTERFACING WITH SENSORY-MOTOR INTEGRATION	UNIVERSITAETSMEDIZIN GOETTINGEN - GEORG-AUGUST-UNIVERSITAET GOETTINGEN - STIFTUNG OFFENTLICHEN RECHTS	Germany	1,728,666
286213	PSYCHDPC	Psychiatric Diagnostic and Prevention Consortium	ISLENSK ERFADAGREINING EHF	Iceland	1,779,259
286334	PSYCH-AID	Advanced Immuno-neuro-endocrine Diagnostics in Psychiatry	ERASMUS UNIVERSITAIR MEDISCH CENTRUM ROTTERDAM	Netherlands	3,649,514
286337	LOAD PROFILE	Development of a late-onset-Alzheimer's disease (LOAD) profile for accurate diagnosis and identification of potential therapeutic approaches	MEDIZINISCHE UNIVERSITAET WIEN	Austria	747,300
286403	NEUROACT	NEUROACT: A collaborative training program to develop multi-electrode array (MEA) platforms to understand synaptic function and treat diseases of the nervous system	UNIVERSITY OF LEICESTER	United Kingdom	1,979,673
324316	INSPIRED	Targeting JRE1 in Disease	NATIONAL UNIVERSITY OF IRELAND, GALWAY	Ireland	0
324451	STEMMAD	Patient-specific stem cell-derived models for Alzheimer's disease and related neurodegenerative disorders	KOBENHAVNS UNIVERSITET	Denmark	2,782,410
324495	SWITCH-HD	Switching the disease off: Effects of spatial and temporal inactivation of mutant huntingtin in Huntington disease	EBERHARD KARLS UNIVERSITAET TUEBINGEN	Germany	999,006



# Mobility Programme (Marie Curie)

‘International Outgoing  
Fellowships for career  
development’ (IOF)

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
219500	NEURONAL POLARITY	Pyramidal neuron polarity decisions during migration and axonal outgrowth in the developing mammalian cerebral cortex	UNIVERSITE CATHOLIQUE DE LOUVAIN	Belgium	228,653
219605	PK2-KISS	Physiological characterization of PK2 in the control of fertility, and its interaction with kisspeptins	UNIVERSIDAD DE CORDOBA	Spain	225,999
219622	ANAMNISIS	Computational modeling and physiological studies of neural form and function in the aging brain.	FOUNDATION FOR RESEARCH AND TECHNOLOGY HELLAS	Greece	204,142
220005	NEURAL STEM-IMAGING	Imaging of the neural stem cell origin, proliferation, and fate within the stem cell niches of the mammalian brain.	UNIVERSITA DEGLI STUDI DI TORINO	Italy	230,669
220871	RENZI_FP7_IOf2007	CryoEm structure of gamma secretase: a key component in Alzheimer neurodegenerative disease	UNIVERSITA DEGLI STUDI DI ROMA 'LA SAPIENZA'	Italy	238,305
221187	MULTISENSORY-BRAIN	The Multisensory Human Brain - Solving the debate on direct and indirect pathways	UNIVERSITEIT MAASTRICHT	Netherlands	237,282
221462	MCI_AD PIB-PET_FMRI	Alterations in Memory Networks in Mild Cognitive Impairment and Alzheimer's disease: Relating the Impact of Amyloid Burden with PIB-PET on Neuronal Activation as Assessed with fMRI	KAROLINSKA INSTITUTET	Sweden	221,370
221507	1CELL-MICRO-PROBE	Microfluidic electrochemical probes for both stimulation of single neuronal cells and real-time detection of inflammatory signalling compounds released from the cell.	UNIVERSITE CLAUDE BERNARD LYON 1	France	188,250
221834	DIECNBO	Differential Involvement of Electrically Coupled Networks in Brain Oscillations	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	France	230,964
235560	META-GNRH	Metabolic Targeting of GnRH Neurons: Molecular Mechanisms and Neuropeptide Pathways	UNIVERSIDAD DE CORDOBA	Spain	222,090
235569	TOPLACIR	A two-photon survey of the plasticity of the neocortical microcircuit: searching for plasticity hotspots.	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	France	234,427
235902	14_3_3	Allosteric effects induced in 14-3-3 targets	Masarykova univerzita	Czech Republic	235,256

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
235943	C - LEARNING	Learning context dependent behavior: neural and synaptic mechanisms	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE (CNRS)	France	230,385
236183	CNMIA	A cognitive neuroscientific model of impulsivity and anxiety	BAR ILAN UNIVERSITY	Israel	246,892
236836	MAPBYADMIX-TURECHL	Mapping Genes involved in Psychiatric Disorders by Admixture Linkage Disequilibrium in Chilean populations	UNIVERSITAT POMPEU FABRA	Spain	272,968
236975	NMOIERFMT: FMRI	Neural Mechanisms of Improved Emotion Regulation Following Mindfulness Training: an fMRI Study	JUSTUS-LIEBIG-UNIVERSITÄT GIESSEN	Germany	232,968
237194	SYNC	Synchrony among Neighbor Neurons in Cerebellum	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	France	254,849
251684	PHARMACO-FMRI	The interplay between the appetitive dopaminergic and the aversive serotonergic system in motivational control of behavior	UNIVERSITEIT MAASTRICHT	Netherlands	237,912
252075	COCONET	Connectivity in Complex Networks of interacting stochastic nonlinear systems. Applications in neuroscience	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	France	205,983
253103	BRAIN IRON IN ADHD	BRAIN IRON LEVELS IN CHILDREN WITH ATTENTION-DEFICIT/HYPERACTIVITY DISORDER: AN IMAGING AND NEUROPHYSIOLOGICAL STUDY	UNIVERSITA' DEGLI STUDI DI VERONA	Italy	239,605
253303	IMPLICIT PERCEPTION	Finding the Neural Correlates of Implicit Object Perception	THE HEBREW UNIVERSITY OF JERUSALEM	Israel	250,539
253380	FEAR MEMORY TRACE	Cellular mechanisms underlying formation of the fear memory trace in the mouse amygdala	FOUNDATION FOR RESEARCH AND TECHNOLOGY HELLAS	Greece	205,091
253628	CB1R ARRESTIN	Contribution of beta-arrestin-dependent receptor signaling to the physiological regulation of the endo-cannabinoid system	SEMMELEWSIS EOYETEM	Hungary	223,578
253635	NEUGLIANET	ROLE OF ASTROCYTES IN NEURONAL NETWORK FUNCTION IN VISUAL CORTEX	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS	Spain	234,338



Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
254235	BRADIMO	Brain Diagnostics and Monitoring in early neonatal period (BrADiMo)	HELSINGIN JA UUDENMAAN SAIRAANHOITOPIIRIN KUNTAYHTYMÄ	Finland	266,265
255472	DROMIT	Parkinson disease susceptibility gene mutations in Drosophila melanogaster and the therapeutic potential of transgenes alternative oxidase and alternative NADH dehydrogenase	TAMPEREEN YLIOPISTO	Finland	210,036
255508	INTRAMEMPROT	Mechanistic and structural insight into di-aspartyl intramembrane proteases	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	France	239,918
272834	AWESOME	Attention Waprs Early Sensory Maps	UNIVERSITÄT PISA	Italy	230,085
273180	AUDITORYFLY	Auditory Processing in Insect Brains	UNIVERSITÄT KONSTANZ	Germany	228,278
273487	GCS-CNS-IS	Pro-inflammatory and anti-inflammatory effects of glucocorticosteroids in the Central Nervous System.	UNIVERSIDAD DEL PAIS VASCO	Spain	223,670
274337	ANTE-JUVENILE	Antecedents and Consequences of Mental Health Problems in Juvenile Justice Boys and Girls	UNIVERSITEIT VAN AMSTERDAM	Netherlands	150,392
274920	INTERNEURONS	Optogenetic decomposition of inhibitory micro-circuits in the mouse V1 and S1	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE	Switzerland	236,034
275214	MAPPING THE MIND	The psychological construction of mental states: How the mind is realized by distributed networks in the brain.	UNIVERSITEIT VAN AMSTERDAM	Netherlands	192,471
275707	HND	Mechanisms of Human Neuronal Development and Functional Integration in Neural Network	UNIVERSITÉ D'AIX MARSEILLE	France	232,677
276083	ITCSCEN	Binuclear Non-Coupled Copper Enzymes in Neurobiology: An Integrated Computational/Spectroscopic Investigation	UNIVERSITY OF NORTHUMBRIA AT NEWCASTLE	United Kingdom	258,387
298094	ALLEGRO	Consumer Behavior and Energy Taxation: Exploiting Psychological Biases in Designing a Green Tax Reform	UNIVERSITÀ DEGLI STUDI DI SIENA	Italy	147,505

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
298559	FIBRILLATION	The structure-based design of a blocker of formation of amyloid fibers of the segment AADTWE in the mutant D38A of the protein transthyretin, which causes familial amyloidosis.	EIDGENÖSSISCHE TECHNISCHE HOCHSCHULE ZÜRICH	Switzerland	275,363
299372	THEPREDICTIVE-BRAIN	Dynamic Predictions: It's all Rhythms	MAX PLANCK GESELLSCHAFT ZUR FÖRDERUNG DER WISSENSCHAFTEN E.V.	Germany	353,579
299500	MIND	Modelling and Inference on brain Networks for Diagnosis	UNIVERSITE DE GENEVE	Switzerland	275,363
299777	MITO5BR	The role of mitochondrial DNA double-strand break repair in human disease and normal ageing	GOETEBORGS UNIVERSITET	Sweden	358,327
299993	FAST MAPPING	Fast Mapping: How to acquire new declarative memories independently from the Hippocampus?	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	France	244,670
300217	AMYDA	Disentangling the contributions of dopamine and amyloid burden to age-related changes in cognition and brain network connectivity in healthy older adults	UMEA UNIVERSITET	Sweden	258,766
300300	ANXIETY IN CHILDHOOD	Approaching an answer to the complex question 'how do childhood anxiety disorders develop?' by merging attachment and social learning theory and their methodologies	Københavns Universitet	Denmark	307,886
300452	MIPFORACTION	Understanding the organisation of the medial parietal cortex: Sensorimotor integration for goal-directed behaviour	ALMA MATER STUDIUM-UNIVERSITA DI BOLOGNA	Italy	0
300504	CCVP	Cross-linguistic and Cross-population Verb Processing	BCBL BASQUE CENTER ON COGNITION BRAIN AND LANGUAGE	Spain	138,023
300723	POLYQ MUTANT AR/SBMA	SBMA as a model of polyglutamine diseases: generation of a suitable cell system to study the post-transcriptional modifications of mutant androgen receptor and to discover potential therapeutic drugs	FONDAZIONE ISTITUTO ITALIANO DI TECNOLOGIA	Italy	178,761
300753	NONSTATEN-CODING	Intensity and timing encoding of naturalistic sounds in auditory brainstem neurons of cats and owls	KATHOLIEKE UNIVERSITEIT LEUVEN	Belgium	207,868

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
301647	NBATTENTION	The role of the basal forebrain in attention and learning	INSTITUTE OF EXPERIMENTAL MEDICINE – HUNGARIAN ACADEMY OF SCIENCES	Hungary	253,192
301704	ILSDD	Implicit Learning in Specific Developmental Disorders	THE UNIVERSITY OF EDINBURGH	United Kingdom	271,944
302281	MORPHING-SYNAPSES	The coordination of dendritic spine morphogenesis and function during synaptic plasticity and pathology	UNIVERSITY OF BRISTOL	United Kingdom	283,568
302346	INCAS	Institutionalised care for people with mental disorders in South America: indicators and trends	QUEEN MARY AND WESTFIELD COLLEGE, UNIVERSITY OF LONDON	United Kingdom	208,240
302530	UBICOM MENTAL HEALTH	Ubiquitous mental health support systems for managing long-term mental health illness	THE PROVOST FELLOWS, FOUNDATION SCHOLARS & THE OTHER MEMBERS OF BOARD OF THE COLLEGE OF THE HOLY & UNDIVIDED TRINITY OF QUEEN ELIZABETH NEAR DUBLIN	Ireland	279,150
302896	SYNEURGY	Synergistic modeling of gene-brain couplings with applications in affective neuroscience	GOETEBORGS UNIVERSITET	Sweden	250,483
302915	TR1 CELLS	Molecular mechanisms leading to generation of Type 1 regulatory cells and their role in autoimmunity	UNIVERSITY COLLEGE LONDON	United Kingdom	271,944
303101	TOXICITY IN MND	Screening of candidate targets for astrocytic toxicity in motor neurone disease	THE UNIVERSITY OF SHEFFIELD	United Kingdom	271,944
303172	B-REACTABLE	B-reactable, multimodal tabletop system for collaborative physiology monitoring and training	LINKÖPINGS UNIVERSITET	Sweden	188,324
303293	DYNPSNAP	Dynamic and Plasticity of Spatial Perception and Attention Neural Processes	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	France	291,379

# Mobility Programme (Marie Curie)

‘International Incoming  
Fellowships’ (IIF)

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
219939	TEMPINTSHH	Temporal regulation by Sonic Hedgehog of neural progenitor identity during vertebrate neurogenesis.	MEDICAL RESEARCH COUNCIL	United Kingdom	178,874
220450	ARTIFICIAL-NEURON	Action Potential Dynamics in a Lipid Nanotube - A Minimal Model of the Neuron	INSTITUT CURIE	France	164,778
220527	REGENERATION	The role of neuronal progenitor cells in axolotl spinal cord regeneration	MAX PLANCK GESELLSCHAFT ZUR FÖRDERUNG DER WISSENSCHAFTEN EV.	Germany	168,116
221091	NANOSMARTS	Smart nondimensional biosensors for detection of tumor cells and cytotoxic amyloids intermediates.	MAX PLANCK GESELLSCHAFT ZUR FÖRDERUNG DER WISSENSCHAFTEN EV.	Germany	156,994
221097	OSCILLATORY DYNAMICS	Examining Oscillatory Dynamics with Magnetoencephalography and Intracranial Electroencephalography	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	France	163,644
221362	EPINER2007	Epigenetics and DNA repair. Is a chromatin remodeling process involved in the higher UV sensitivity of nucleotide excision repair defective cells?	UNIVERSITA DEGLI STUDI DELLA TUSCIA	Italy	233,872
221363	YTANIZAWA	Dissecting dynamic monoaminergic nervous system in C. elegans with genetically-encoded neuron activator protein chanelhodopsin-2.	MEDICAL RESEARCH COUNCIL	United Kingdom	178,874
221486	BCHI FOR AD THERAPY	Discovery and evaluation of novel butyrylcholinesterase inhibitors for the treatment of Alzheimer's disease	THE UNIVERSITY OF NOTTINGHAM	United Kingdom	169,958
221524	PAGALINNET	Parallel Grid-aware Library for Neural Networks Training	UNIVERSITA DELLA CALABRIA	Italy	231,604
235694	STPRD	Significance of TDP-43 in the population in relation to dementia	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE	United Kingdom	182,485
236076	ENTORHINAL CIRCUITS	Spatial representation in the entorhinal neural circuit	NORGES TEKNISK - NATURVITENSKAPELIGE UNIVERSITET NTU ORGANISASJONSLEDD	Norway	202,543
236208	NEURAL DEVELOPMENT	Development of the circuits in the locust brain for the early detection and avoidance of looming objects.	UNIVERSITY OF NEWCASTLE UPON TYNE	United Kingdom	182,485

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
236999	SYNACTAUD	Requirement for hair cell electrical activity in the auditory sensory map formation. Assessment by genetically controlled inhibition of synaptic activity in mice	INSTITUT PASTEUR	France	228,759
237305	TOPONEURONAL	Topoisomerase Function in genome and epigenome regulation during Neuronal Differentiation	NOVARTIS FORSCHUNGSSTIFTUNG, ZWIEGNER-ERLASSUNG, FRIEDRICH MIESCHER INSTITUTE FOR BIOMEDICAL RESEARCH	Switzerland	191,431
237407	AC BREAKS THE SPHERE	The physiological role of ADF/cofilin in neuronal development	MAX-PLANCK GESELLSCHAFT ZUR FÖRDERUNG DER WISSENSCHAFTEN E.V.	Germany	170,418
237644	VESTIBULLODYNAMICS	Voltage and calcium dynamics and synaptic transmission within neuronal microcircuits in the vestibular cerebellum	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE (CNRS)	France	166,012
237781	CANNABISTARG	Regulation of normal and pathological activity of cortical networks by cannabinoids: focus on direct modulation of inhibitory GABAA and glycine receptors	UNIVERSITE DE LA MEDITERRANEE D'AIX-MARSEILLE II	France	226,491
903208	NEURAL DEVELOPMENT	Development of the circuits in the locust brain for the early detection and avoidance of looming objects.	UNIVERSIDAD DE BUENOS AIRES	Argentina	15,000
252096	TDP-43	Taming TDP43: High-throughput screening for compounds to reduce aggregation of the new player in MND.	KING'S COLLEGE LONDON	United Kingdom	174,241
252665	CODEC	Real-time decoding of conscious and non-conscious perceptual events in the human brain	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	France	174,162
253110	NEONATAL HI INJURY	Modulation of Triggering receptor expressed in myeloid cells 2 by gene transfer as novel neuroprotective strategy for neonatal hypoxic ischemic brain injury using behavioural outcome as readout	UNIVERSITAT AUTONOMA DE BARCELONA	Spain	162,293
253873	BASALGANGLIANETWORKS	Basal ganglia and the control of locomotion	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	France	161,293

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
254022	DMANDYB ASTROMORPH	Studying the dynamic structural interactions between neurons and glial cells at synapses of the central nervous system by using novel technical approaches	UNIVERSITE DE GENEVE	Switzerland	181,971
254060	COCHLEAR SENSOR	Development of high sensitivity, wide dynamic range, mechanoelectrical transducer integrating artificial hair cell with artificial neurons.	UNIVERSITY OF BATH	United Kingdom	120,145
254368	ASTRO-HD	Role of astrocytes in Huntington's Disease: characterization of a novel mouse model with targeted expression of mutant huntingtin in the striatum.	COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES	France	223,230
254397	NCRNANURO	Non-coding RNAs in neurodegeneration	VIB	Belgium	214,800
254419	ACTION COORDINATION	Cognitive and neural representations of action in temporally coordinated behaviour	STICHTING KATHOLIEKE UNIVERSITEIT	Netherlands	162,249
254603	LEARNING AND MEMORY	The zebrafish as a new vertebrate model for molecular and cellular mechanisms of learning and memory, including synaptic dysfunction in Alzheimer's disease	GOETEBORGS UNIVERSITET	Sweden	231,852
254711	MAPPING FEAR MEMORY	Identification and selective targeting of neuronal networks underlying memory	ERASMUS UNIVERSITEIT AIR MEDISCH CENTRUM ROTTERDAM	Netherlands	169,535
255463	NEUROANT	NEUROanatomy, neurochemistry and genotype: genetic diversity and division of labour in leaf-cutting ANTs	UNIVERSITY OF LEEDS	United Kingdom	240,290
272006	EVOSPIKE	Evolving Probabilistic Spiking Neural Networks for Spatio-Temporal Pattern Recognition	UNIVERSITAET ZUERICH	Switzerland	121,353
272289	EMLNPRGT	Enhancing motor learning and neural plasticity in robotic gait training	Eidgenössische Technische Hochschule Zürich	Switzerland	187,029
272517	LOADENWS10	The Role of Human Motivation in Visual Attention and Awareness under Load	UNIVERSITY COLLEGE LONDON	United Kingdom	201,050
273433	MOLREGNEU- ROGEN	Characterisation of molecules: regulating adult hippocampal neurogenesis	TECHNISCHE UNIVERSITAET DRESDEN	Germany	226,945

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
273895	FRZMD	Contribution of calcium-independent isoforms of phospholipase A2 in the pathogenesis of Duchenne muscular dystrophy.	UNIVERSITE DE GENEVE	Switzerland	187,029
274177	FATOKUNEUF-P7IIF2010	Blending biophysical and drug discovery platforms to investigate allostereism in G-protein-coupled receptors (GPCRs) and find novel allosteric modulators for neurotherapeutics development	THE UNIVERSITY OF NOTTINGHAM	United Kingdom	210,093
274258	ILMA	The interplay of learning and motivational systems in addictive behaviour	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF OXFORD	United Kingdom	210,093
274268	AMPAZETA	'Regulation of AMPA type of glutamate receptor surface diffusion by Protein Kinase $\zeta$ '	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	France	195,064
274393	NPN	Molding the Brain: Drosophila Neurotrophins in Brain Plasticity and Neurodegeneration	THE UNIVERSITY OF BIRMINGHAM	United Kingdom	201,050
274665	DOPAMINE & PLASTICITY	Dopaminergic modulation of plasticity during social learning	UNIVERSITÄT ZÜRICH	Switzerland	179,102
274684	AIRGAL	Physiological function and potential therapeutic utility of the neuropeptide galanin in airway inflammation	GEMEINNÜTZIGE SALZBURGER LANDESKLINIKEN BETRIEBSGESELLSCHAFT	Austria	175,845
274896	ACTION AND TIME	Perception of Time during Action Preparation	UNIVERSITY COLLEGE LONDON	United Kingdom	210,093
275078	H2R	Bringing Human Neuromotor Intelligence to Robots	UNIVERSITY OF PLYMOUTH	United Kingdom	194,850
275303	SRNA5 REMYELINATION	The role of small RNAs in remyelination	Eidgenössische Technische Hochschule Zürich	Switzerland	179,102
275751	PSPSWR	Prediction in Speech Perception and Spoken Word Recognition	BCBL BASQUE CENTER ON COGNITION BRAIN AND LANGUAGE	Spain	174,381
275823	DINUMA	Development of an integrated numerical model of the intra-cranial space (including the brain parenchyma, blood flow and cerebrospinal fluid) for clinical application	Eidgenössische Technische Hochschule Zürich	Switzerland	187,029



Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
276147	SIHI	Stress-induced Hypertension and the Role of the Neuroimmune System	UNIVERSITY OF BRISTOL	United Kingdom	280,680
276164	ANTSAN	Analysis of the neural transcriptome of the sea anemone <i>Nematostella vectensis</i> .	UNI RESEARCH AS	Norway	209,979
276386	HUMAN VISCERAL PAIN	The anatomical, physiological, and molecular basis of chronic visceral pain in humans	QUEEN MARY AND WESTFIELD COLLEGE, UNIVERSITY OF LONDON	United Kingdom	281,680
276565	GENMED	Genetic imprinting and mental disease	Københavns Universitet	Denmark	223,427
910078	H2R	Bringing Human Neuromotor Intelligence to Robots	Beijing Institute of Technology	China (People's Republic of)	15,000
298386	REAL-DEPTH	Interaction of relative and absolute depth signals in the primate brain	UNIVERSITE PAUL SABATIER TOULOUSE III	France	201,932
298418	BRAINPROP	Brain mechanisms of human limb movement sense	KAROLINSKA INSTITUTET	Sweden	174,017
298683	MITOABETA	Investigation of Beta-Amyloid Peptide Effects On Mitochondria Protein Homeostasis: From Pathogenesis to Therapy of Alzheimer Disease	UNIVERSITÄTSKLINIKUM BONN	Germany	167,390
299194	IMAGINGGABA	Optical real-time imaging of inhibitory GABA <sub>A</sub> receptors activity using chimeric GABA channel subunit	UNIVERSITE D'AIX MARSEILLE	France	269,096
299346	GABAAR	Development of novel tools and techniques for the study of the structure and dynamics of GABAergic inhibitory synapses.	ECOLE NORMALE SUPERIEURE	France	201,932
299610	COMPLEX3D	'Neural substrates of depth perception: from surfaces to complex 3D forms'	THE UNIVERSITY OF BIRMINGHAM	United Kingdom	200,372
299687	MARS	Modeling Arm Recovery after Stroke	UNIVERSITE MONTPELLIER I	France	269,096
300106	BIOPROBE	Organic bio-electronic neural probe for in vivo molecular sensing and stimulation	Ecole Nationale Supérieure des Mines de Saint-Etienne	France	193,595
300197	HDLIPIDS2011	Role of sphingolipids in white matter dysfunction in Huntington's disease	ISTITUTO NEUROLOGICO MEDITERRANEO-NEUROMED SRL	Italy	249,912

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
300536	NRX CODE	Deciphering the neuexin code in neuronal circuitry	UNIVERSITAET BASEL	Switzerland	184,709
300718	CONOTOX	Functional characterization of neuroactive toxins using an engineered bacterial type-III secretion system	UNIVERSITE DE FRIBOURG	Switzerland	184,709
301368	RBC MIRNA	The role of microRNAs in the Retinal Bipolar Cell	Novartis Forschungstiftung	Switzerland	192,622
301424	HANGOVER (KEELE)	Health consequences of the alcohol hangover	UNIVERSITY OF KEELE	United Kingdom	200,372
301440	CELNIC	Role of gene silencing pathways in C. elegans nicotine dependence	GOETEBORGS UNIVERSITET	Sweden	241,042
301674	ENTORHINAL SILENCING	Elucidating the role of the entorhinal cortex through precise optogenetic and pharmacogenetic manipulations	NORGES TEKNISK-NATURVITENSKAPELIGE UNIVERSITET NTNU	Norway	208,354
301728	HUBS IN EPILEPSY	Functional connectivity and the role of hub neurons in epilepsy	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	France	201,932
301742	RODATTN	Mechanisms of attentional modulation of neural responses in visual cortex of mice	UNIVERSITY COLLEGE LONDON	United Kingdom	200,372
302040	HEROGEN	The Molecular Genetics of Heroin Dependence	KING'S COLLEGE LONDON	United Kingdom	200,372
302421	IAFBG	Integration of Analyses among fMRI, Biophysical Models and Genetic Data	THE UNIVERSITY OF WARWICK	United Kingdom	278,807
302473	ROSETTE NSC SCREEN	Mechanisms of Neurogenesis from Drosophila to Human	INSTITUT FUER MOLEKULARE BIOTECHNOLOGIE GMBH	Austria	187,888
302583	NOTCH PATHWAY IN GSC	Role of Notch signaling pathway in Glioma Stem Cells	FUNDACIO PRIVADA INSTITUT D'INVESTIGACIO ONCOLOGICA DE VALL-HEBRON	Spain	233,705
302939	CELESTIAL	Identification of molecular pathways underlying activity-dependent neuron-glia communication using in vitro microfluidic systems	UNIVERSITE DE LAUSANNE	Switzerland	184,709

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
303091	ODOR CONTEXT	Neural mechanisms underlying the encoding of sensory and contextual information in primary olfactory cortex	FUNDACAO D. ANNA SOMMER CHAMPALIMAUD E DR. CARLOS MONTEZ CHAMPALIMAUD	Portugal	151,427

Mobility Programme  
(Marie Curie)

‘International Reintegration  
Grants’ (IRG)

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
200405	SOMATOLEARNING	The cortical circuits of associative learning	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	France	100,000
200632	KV CHANNELS & MEMORY	The role of the voltage-gated potassium channels and their modulators in mechanisms of plasticity underlying learning and memory in <i>Drosophila</i>	UNIVERSITY OF BRISTOL	United Kingdom	100,000
201029	NEUROTROPHINS-ARMS	Molecular mechanisms underlying BDNF functions in the brain: role of ARMS protein	UNIVERSIDAD DE SALAMANCA	Spain	100,000
201148	AMYGDALA IMAGING	Functional in vivo two-photon imaging of fear memory traces in identified neuronal networks of the amygdala	NOVARTIS FORSCHUNGSSTIFTUNG, ZWEIGNIEDERLASSUNG FRIEDRICH MIESCHER-INSTITUT FOR BIOMEDICAL RESEARCH	Switzerland	100,000
203123	PROTEASOME-ADAPTORS	Adapting proteasomes to Protectotoxicity	TECHNION - ISRAEL INSTITUTE OF TECHNOLOGY	Israel	100,000
203312	NEUROFOLD	Deciphering the molecular basis of neurodegenerative diseases associated with protein misfolding for the development of novel therapeutics	INSTITUTO DE MEDICINA MOLECULAR	Portugal	100,000
203376	ATTACHMENT AND OCD	Attachment anxiety, Self Structures and Obsessive Compulsive Disorder (OCD)	INTERDISCIPLINARY CENTER (IDC) HERZLIYA	Israel	100,000
205357	SEEING WITH SOUNDS	Neural and behavioral correlates of 'seeing' without visual input using auditory-to-visual sensory substitution in blind and sighted: a combined fMRI-TMS study.	THE HEBREW UNIVERSITY OF JERUSALEM	Israel	100,000
205443	SENSORY THALAMUS	Thalamic sensory processing during different behaviours	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE	Switzerland	100,000
206269	NERVE/REGENERATION	Nerve guidance channels based on synthetic polymer - polysaccharide biomaterials	POLITECHNIKA LODZKA	Poland	100,000
206918	APPERAD	Regulation of APP Metabolism by ER-Associated Degradation	HELSINGIN YLIOPISTO	Finland	75,000
207326	AMPA PHOSPHORYLATION	MOLECULAR MECHANISMS OF APPETITIVE ASSOCIATIVE MEMORY	UNIVERSITY OF SUSSEX	United Kingdom	100,000

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
208116	GENETICS OF TIMING	A Genetics Approach to the Interval Timing Mechanism	ERASMUS UNIVERSITAIR MEDISCH CENTRUM ROTTERDAM	Netherlands	75,000
208572	EMOTION AND AGEING	Neural substrates of emotion regulation across the lifespan	THE UNIVERSITY OF READING	United Kingdom	75,000
208779	SPINDLESIN-SCHIZO	A study of the spontaneous and evoked spindle activity in schizophrenic and control subjects	UNIVERSITA DEGLI STUDI DI MILANO	Italy	100,000
209064	PSYCHIAPRO-TEGENOMIC	Transcriptional control of dendritic arbor morphology in pathology and therapy of neuropsychiatric diseases.	FUNDACIO SANT JOAN DE DEU	Spain	110,417
210080	GABA CELL TYPES	Differentiation of GABAergic interneuron subtypes in the mouse cerebral cortex	UNIVERSITAT DE BARCELONA	Spain	100,000
210459	DIRCALLOSDVPT	Role and development of the corpus callosum for the interhemispheric transfer of visual motion	COLLEGE DE FRANCE	France	75,000
210538	C. ELEGANS MOTION	Neural control of locomotion in C. elegans worms: combination of mathematical modeling and molecular-cellular biology.	INSTITUTE OF BIOCYBERNETICS AND BIOMEDICAL ENGINEERING - POLISH ACADEMY OF SCIENCES	Poland	75,000
224757	TOR AND NEUROGENESIS	THE ROLE OF THE MTOR SIGNALING PATHWAY IN NEUROGENESIS AND ITS IMPLICATIONS FOR THE REGULATION OF ENERGY BALANCE	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	France	50,000
224763	AUDITORY LEARNING	The effects of auditory training on human communication skills: behavior and physiology	UNIVERSITY OF HAIFA	Israel	100,000
224844	SYNAPSE STABILITY	Molecular Analysis of Synapse Formation, Maintenance and Disassembly at the Drosophila neuromuscular junction	NOVARTIS FORSCHUNGSSTIFTUNG, ZWEIFNIEDERLASSUNG FRIEDRICH MIESCHER-INSTITUT FOR BIOMEDICAL RESEARCH	Switzerland	100,000
224847	ADAMNEURON	Study and identification of ADAM10 as Neuronal $\alpha$ -secretase in relation to Alzheimer's disease	VLAAMS INSTITUUT VOOR BIOTECHNOLOGIE VZW	Belgium	100,000
224849	NEURONAL SPECIFICITY	Longitudinal analysis to study neurodegenerative diseases mechanisms in specific neuronal subtypes	Foundation for Applied Medical Research	Spain	100,000

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
224882	INFLAMMATION-PAIN	Role of spinal anti-inflammatory lipid mediators in inflammation and arthritis-induced pain	KAROLINSKA INSTITUTET	Sweden	100,000
224884	SENESCENCE THERAPY	'PRO-SENESCENCE' THERAPY IN PEDIATRIC BRAIN TUMORS	Erte Ospedallero Cantonale	Switzerland	100,000
224892	ADPROGRES	Alzheimer disease progression: Molecular studies of Abeta amyloid peptides aggregation and trafficking in neuronal cells	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	France	75,000
224903	PSYCHO-PATHOLOGY	The development of aggressive and depressive problems during adolescence	PANEPISTIMIO KYPROU	Cyprus	100,000
224918	MNRGN	The elucidation of the nuclear receptor gene regulatory network in mouse microglia	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE	Switzerland	100,000
226502	WTAINCNS	Winner-Take-All readout mechanisms in the Central Nervous System	BEN-GURION UNIVERSITY OF THE NEGEV	Israel	100,000
229604	PROTEIN SYNTHESIS	The control of protein synthesis in health and disease	UNIVERSITY OF SOUTHAMPTON	United Kingdom	100,000
230908	HSPB8 AND NEUROPATHY	Role of the HspB8/Bag3 chaperone complex in neurodegenerative disorders	ACADEMISCH ZIEKENHUIS GRONINGEN	Netherlands	75,000
230941	DECANT	Development of Culturally Appropriate Neuropsychological Tests for the Greek Population	ARISTOTELIO PANEPISTIMIO THESSALONIKIS	Greece	75,000
230957	AMY-MPFC EXTINCTION	Functional connectivity between the primate amygdala and the medial prefrontal cortex: role in extinction of emotional memories.	WEIZMANN INSTITUTE OF SCIENCE	Israel	100,000
230959	MS COGNITIVE REHAB	Development and Evaluation of a Cognitive Rehabilitation Program for Persons with Multiple Sclerosis	TEL AVIV UNIVERSITY	Israel	100,000
230976	BASALGANGLIA-DYNAMIC	Dynamic of neuronal network interactions in the basal ganglia	INSTITUT D'INVESTIGACIONS BIOMEDIQUES AUGUST PI-SUNYER	Spain	100,000

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
230978	MICROGLIA IN ALS	Role of microglial cells during neurodegeneration in Amyotrophic Lateral Sclerosis	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	France	100,000
230992	EPITARGENE	SRF target genes in epilepsy	INSTYTUT BIOLOGII DOSWIADCZALNEJ IM MARCELEGO NENCKIGO POLSKIEJ AKA NAUK	Poland	100,000
231027	PRF MODELS	Computational neuroimaging: quantitative models of human visual neurons	UNIVERSITEIT UTRECHT	Netherlands	100,000
231029	DNLP	The development of neural systems for language	BAR ILAN UNIVERSITY	Israel	100,000
231032	NEUROGENCREB	CREB-dependent mechanisms regulating neural stem/progenitor cell proliferation and neurogenesis	UNIVERSITY OF PATRAS	Greece	100,000
231083	DENDRITIC MRNAS	'Linking dendritic mRNA metabolism to neuronal functions and disorders'	EUROPEAN BRAIN RESEARCH INSTITUTE RITA LEVI-MONTALCINI FONDAZIONE EBRI	Italy	100,000
231108	NMRPAMS	NMDA receptor processing in an animal model for schizophrenia	Københavns Universitet	Denmark	100,000
231115	CUE INTEGRATION	How well can humans perform: Testing human cue integration across multiple systems	UNIVERSITY COLLEGE LONDON	United Kingdom	75,000
239126	VNTME-GAVARD	Vascular niche and tumor microenvironment	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE (CNRS)	France	100,000
239174	HSF-1 LONGEVITY/PROT	'Identifying the Heat Shock Factor -1. Longevity Assurance and Proteostasis Co-regulators and Target genes'	THE HEBREW UNIVERSITY OF JERUSALEM	Israel	100,000
239230	PTSD AND SMOKING	Posttraumatic Stress Disorder and Smoking Cessation	UNIVERSITY OF HAIFA	Israel	100,000
239247	DEBRA	Detection of Brain Abnormality	UNIVERSITY OF PATRAS	Greece	75,000
239248	AXON RE-EXTENSION	The molecular mechanisms of axon re-extension following developmental axon pruning	WEIZMANN INSTITUTE OF SCIENCE	Israel	100,000
239430	SECRETASES & MYELIN	Role of secretases in myelination	FONDAZIONE CENTRO SAN RAFFAELE DEL MONTE TABOR	Italy	100,000



Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
239482	MANIPULATING TILING	Manipulating neuronal outgrowth using a novel pneumatic micro gene gun	BAR ILAN UNIVERSITY	Israel	100,000
239512	ZEBRAFISH PLASTICITY	Experience-dependent modifications of developing neural circuits and animal behaviours	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	France	100,000
239527	NEUROACTION	Neural mechanisms of action learning in mouse models	FUNDACAO CALOUSTE GULBENKIAN	Portugal	100,000
239546	MCM	Neural Mechanisms Underlying Mate Preference and selection in Mice	FUNDACAO CALOUSTE GULBENKIAN	Portugal	100,000

Mobility Programme  
(Marie Curie)

‘International Research  
Staff Exchange Scheme’  
(IRSES)

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
247513	MEMPEACROSS	Membrane-active peptides across disciplines and continents: An integrated approach to find new strategies to fight bacteria, dengue virus and neurodegeneration.	ISTITUTO DE MEDICINA MOLECULAR	Portugal	181,800
247621	LAEL	Latin America and Europe Liaison	SCUOLA INTERNAZIONALE SUPERIORE DI STUDI AVANZATI	Italy	936,000
269118	EYE2E	Building a Visual Brain for Fast Human Machine Interaction	UNIVERSITY OF LINCOLN	United Kingdom	798,000
269213	EUSARNAD	Joint European and South African Research Network in Anxiety Disorders	UNIVERSITY OF SOUTHAMPTON	United Kingdom	289,800
269263	CERVISO	CEREBELLUM IN VISUAL SPATIAL ORIENTATION	UNIVERSITA' DEGLI STUDI DI SIENA	Italy	136,500
269273	EMOLEARN	Emotional learning and extinction: integration of central and peripheral neural correlates.	WESTFAELISCHE WILHELMUS-UNIVERSITAET MÜNSTER	Germany	100,800
295151	LIVCODE	Life-like visual information processing for robust collision detection	UNIVERSITY OF LINCOLN	United Kingdom	724,500
295192	TRIP	Translational Research into Psychiatric disorders: genetics, genomics and neurobiology of psychosis and autism	KING'S COLLEGE LONDON	United Kingdom	573,300
318907	HAZCEPT	Towards zero road accidents - nature inspired hazard perception	University of Lincoln	United Kingdom	0
318980	SVETA	Vestibular System, Cognition and Vegetative Regulations	UNIVERSITE DE CAEN BASSE NORMANDIE	France	160,500
318997	NEUREN	NEUREN - Neuroscience Research Exchange Network (NEUREN)	UNIVERSITE VICTOR SEGALEN BORDEAUX II	France	304,200

Mobility Programme  
(Marie Curie)

‘Reintegration Grants’ (RG)

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
240705	MODOPFATE	Modulation of oligodendrocyte precursor cells differentiation fate during CNS remyelination.	INSTYTUT BIOLOGII DOSWIADCZALNEJ IM. M. NENCKIEGO POLSKIEJ AKADEMII NAUK	Poland	45,000
246724	FB	Deconstructing the function and pharmacology of voltage-activated sodium channels: novel perspectives for drug design	KATHOLIEKE UNIVERSITEIT LEUVEN	Belgium	75,000
246761	VISATT	Interactions between prefrontal cortex and area V4 in attention	FOUNDATION FOR RESEARCH AND TECHNOLOGY HELLAS	Greece	100,000
247841	ALCO_CAMK	Alpha CamKII autophosphorylation as a mechanism to regulate alcohol consumption.	INSTYTUT BIOLOGII DOSWIADCZALNEJ IM. M. NENCKIEGO POLSKIEJ AKADEMII NAUK	Poland	45,000
247872	MEYEREG	Mueller cells as regulators of retinal expansion and eye size	UNIVERSITAET LEIPZIG	Germany	45,000
247918	DNA-DAMAGE REDOX AGE	Synergistic effect of DNA damage and oxidative stress in aging	ERASMUS UNIVERSITAIR MEDISCH CENTRUM ROTTERDAM	Netherlands	100,000
248169	SLEEP LOSS IN TEENS	Sleep Loss in Adolescence: Effects on Cognition, Mood, and Behavior	The Academic College of Tel-Aviv-Yaffo	Israel	100,000
248866	TRHE	Translational research in human epilepsies	KING'S COLLEGE LONDON	United Kingdom	100,000
249181	INC	Innate Neuronal Circuits	FUNDACAO CALOUSTE GULBENKIAN	Portugal	100,000
249199	MMDTIAN	Multi-modal Diffusion Tensor Imaging of Active Neurons: Searching for Functional and Other Biophysical Components	TEL AVIV UNIVERSITY	Israel	100,000
249204	INSOWNOTCH	Role of Notch-dependent Neuron-glia signalling in sleep and brain function	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	France	75,000
249220	GCPII_SYSTEM	Design and development of novel reagents, tools, and techniques targeting human glutamate carboxypeptidases II and III	BIOTECHNOLOGICKY USTAV - AV CR, VVI.	Czech Republic	100,000
249222	PREDICTIVE-NEUROSENS	Neural correlates of predictive mechanisms in multi-sensory perception	COMMISSARIAT A L'ENERGIE ATOMIQUE	France	100,000
249223	RTPAMON	Diffuse-Optical Monitor of Cerebral Hemodynamics after rPPA Administration in Acute Ischemic Stroke	Institut de Ciències Fotoniques, Fundacio Privada	Spain	100,000

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
249251	IDENTIFYING PAIN	Novel approaches to identify brain responses specifically related to the perception of pain in humans	UNIVERSITE CATHOLIQUE DE LOUVAIN	Belgium	45,000
249253	COSERMI	Content and Ontology based Search and Retrieval of Medical Images	Sabanci University	Turkey	30,000
249274	ROLPASI	Role of lysophosphatidic acid in the pathophysiology of spinal cord injury	UNIVERSITAT AUTONOMA DE BARCELONA	Spain	100,000
249329	NBCEFFORT	Neural and behavioral correlates of mental effort	UNIVERSITA DEGLI STUDI DI MODENA E REGGIO EMILIA	Italy	50,000
256284	GABASYNAPSES	Local interactions between GABAergic and glutamatergic plasticity	UNIVERSITEIT UTRECHT	Netherlands	45,000
256303	AGELYSPARK	Role of the lysosomal dysfunction during aging, and implication for Parkinson's Disease.	UNIVERSITE VICTOR SEGALEN BORDEAUX II	France	45,000
256319	TAM IN AMD	Role of TAM signaling in Retinal Homeostasis	THE HEBREW UNIVERSITY OF JERUSALEM	Israel	100,000
256360	EYLCPD/IS-SYSBIO	A Computational Systems Biology Approach to Reveal the Molecular Basis of Complex Diseases	BEN-GURION UNIVERSITY OF THE NEGEV	Israel	100,000
256403	VISUAL PROSTHESIS	Visual Prosthesis: From Clinical Trials to the Psychophysics Lab and Back	SAMI SHAMOON COLLEGE OF ENGINEERING (R.A.) FRIENDLY SOCIETY	Israel	75,000
256429	SPATIAL MEMORY	Cerebral representation of object-location memory	TEL AVIV UNIVERSITY	Israel	100,000
256447	ATTENTION REGULATION	Regulatory effects of mindfulness meditation on attention and epilepsy: behavioral, clinical, and neuronal correlates	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	France	100,000
256448	POLYQ/AR	POLYGLUTAMINE DISEASES: IMPACT OF PROTEIN AND CELL CONTEXT ON NEUROTOXICITY	FONDAZIONE ISTITUTO ITALIANO DI TECNOLOGIA	Italy	100,000
256456	VISUAL ATTENTION	Revealing the neural mechanisms of attentional selection in the human visual cortex	STICHTING KATHOLIEKE UNIVERSITEIT	Netherlands	100,000
256477	NGINFAD	Targeting Inflammation and Neurogenesis using cannabinoids to delay the onset of Alzheimer's disease	UNIVERSITE D'AIX MARSEILLE	France	100,000

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
256484	ATTENDANT	Slow Food, Fast Food: How mindful eating increases satiation	WAGENINGEN UNIVERSITEIT	Netherlands	0
256488	NMVLRGB	Neural mechanisms of vocal learning: role of the basal ganglia	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	France	100,000
256518	BRAINBOWAKT	Novel genetic engineering approaches for lineage analysis and exploration of Akt function in cortical development	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	France	100,000
256528	31P_SPECTRA_3T	Phosphorus MR Spectroscopic Imaging of Brain Tumors at 3T	YEDITEPE UNIVERSITY	Turkey	100,000
256545	MTLE-HS	Genomic sequence variants that correlate with gene expression and different epigenetic patterns modify risk for mTLE+HS	UNIVERSITY COLLEGE LONDON	United Kingdom	56,250
256552	ZEBRAFISH MYELIN	Analysis of myelinated axon development in zebrafish	THE UNIVERSITY OF EDINBURGH	United Kingdom	100,000
256563	IVOR	Neuronal substrates of invariant visual object recognition in rats	SCUOLA INTERNAZIONALE SUPERIORE DI STUDI AVANZATI	Italy	100,000
256581	IMAGING LEARNING	Linking hippocampus-dependent discriminative learning to hippocampal neuronal ensemble separation using Arc/Homer1a FISH imaging	FYZIOLOGICKY USTAV AKADEMIE VED CESKE REPUBLIKY VEREJNA VYZKUMNA INSTITUTE (VVI)	Czech Republic	100,000
256592	INTRICA	Development and Neuromodulation of Intrinsic Cortical Activity	BIOMEDICAL RESEARCH FOUNDATION, ACADEMY OF ATHENS	Greece	100,000
256598	SNAP-PD	Striatal Neuron Anatomy and Physiology in Parkinsons Disease	MEDICAL RESEARCH COUNCIL	United Kingdom	45,000
268224	RISK-UPDATE	Identification of the process by which patients recall and UPDATE their subjective RISK assessments for various diseases to incorporate objective genetic risk information	ONO ACADEMIC COLLEGE ASSOCIATION	Israel	100,000

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268247	SCHIZOGENES	Role of genetic interaction between COMT and Dysbindin in cognitive and schizophrenia-related abnormalities	FONDAZIONE ISTITUTO ITALIANO DI TECNOLOGIA	Italy	100,000
268248	HESC DIFFERENTIATION	Generation of Striatal Neurons from Mouse and Human Embryonic Stem Cells: its Relevance for Regenerative Medicine in Huntington's Disease and for Studying Striatal Development.	UNIVERSITA DEGLI STUDI DI MILANO	Italy	100,000
268250	ERTMABTU	Experimental Radiotherapy for Malignant Brain Tumours	UNIVERSITAETSKLINIKUM FREIBURG	Germany	100,000
268273	PERISLEEP	Imaging dendrites across wake and sleep: fiber-optic measurements of calcium activity in freely behaving animals	HUMBOLDT-UNIVERSITÄT ZU BERLIN	Germany	100,000
268282	AXON REGENERATION	Regeneration and Target Reinnervation after Spinal Cord Injury	UNIVERSITAETSKLINIKUM HEIDELBERG	Germany	100,000
268292	RACS	The role of Rac1 and Rac3 in cortical interneuron development	FOUNDATION FOR RESEARCH AND TECHNOLOGY HELLAS	Greece	45,000
268298	MIRNAS/22Q1.1/05	NEUROGENESIS IN 22Q11.2 DELETION SYNDROME: ROLE OF microRNAs	FONDAZIONE ISTITUTO ITALIANO DI TECNOLOGIA	Italy	100,000
268303	GAMNG	Identification of the genetic and/or epigenetic events that lead to mesenchymal transformation in glioblastoma	UNIVERSITAETSKLINIKUM FREIBURG	Germany	75,000
268323	MODULATION-SPINALCORD	Modulating motor output in the mammalian spinal cord	BIOMEDICAL RESEARCH FOUNDATION, ACADEMY OF ATHENS	Greece	100,000
268325	TEAM INNOVATION	Developing Innovative Capabilities in Teams	TECHNION - ISRAEL INSTITUTE OF TECHNOLOGY	Israel	100,000
268336	GPCR-LGIC COUPLING	Interactions between G-protein Coupled Receptors and Ligand Gated Ion Channels	MIDDLE EAST TECHNICAL UNIVERSITY	Turkey	100,000
268358	NIL-4 IN AUTISM	Investigating the role of Neuroligin-4 in the development of autism-related synaptic and behavioral abnormalities in mice	MAX PLANCK GESELLSCHAFT ZUR FÖRDERUNG DER WISSENSCHAFTEN E.V.	Germany	100,000



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268377	LOCUS COERULEUS-PAIN	ROLE OF LOCUS COERULEUS IN NEUROPATHIC PAIN	UNIVERSIDAD DE CADIZ	Spain	45,000
268381	DEPRESSION IN MS	Pathogenetic mechanisms of depression in multiple sclerosis	UNIVERSITAETSKLINIKUM HAMBURG-EPPENDORF	Germany	100,000
268382	NETDYNCORTEX	Network dynamics of auditory cortex and the impact of correlations on the encoding of sensory information.	CONSORCI INSTITUT D'INVESTIGACIONS BIOMEDIQUES AUGUST PI I SUNYER	Spain	100,000
268433	NAS	Neuronal Alternative Splicing	KOC UNIVERSITY	Turkey	100,000
268436	CIFINE	Controlling information flow in multi-layered neuronal networks.	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE	Switzerland	100,000
268446	ENDAMPAR	Endosomal sorting of AMPA receptors for synaptic plasticity	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS	Spain	75,000
268460	SHSPCOMPLEX	Structural studies of human small heat shock proteins and their complexes	KATHOLIEKE UNIVERSITEIT LEUVEN	Belgium	100,000
268466	TOPO-BREAKS	Topoisomerase-induced DNA breaks: link with cancer and neurodegeneration	UNIVERSIDAD DE SEVILLA	Spain	45,000
268471	PEPSTEM	'Effect of neuropeptides on selective neuronal differentiation of mouse embryonic stem cells.'	BIOTALENTUMTUDASFEJLESZTO KFT	Hungary	45,000
269438	QFATIGUE	Quantification of mental fatigue by means of visual and physiological measures	UNIVERZA V MARIBORU	Slovenia	45,000
274059	PEDIAVIR	New Therapeutics Strategies for the Treatment of Pediatric Brain Tumors	UNIVERSIDAD DE NAVARRA	Spain	100,000
274333	SLEEP PLASTICITY	The role of rhythmic synaptic plasticity in regulating sleep and behavioral performance	BAR ILAN UNIVERSITY	Israel	100,000
276664	NEURO5EDUC-TION2010	The Seductive Power of the Neurosciences: An Intellectual Genealogy	THE UNIVERSITY OF NOTTINGHAM	United Kingdom	45,000
276684	HIRESBRAIN7T	High Resolution Segmentation of Brain MR Images at 7 Teslas	MAX PLANCK GESELLSCHAFT ZUR FOERDERUNG DER WISSENSCHAFTEN E.V.	Germany	100,000

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276791	NUVASCOG	Nutrition and microVAscular dynamics in COgnitive health	THE HEBREW UNIVERSITY OF JERUSALEM	Israel	100,000
276795	CONEURON	Drawing neuronal circuits without seeing them	FUNDACIO SANT JOAN DE DEU	Spain	100,000
276798	VERTICAL DIMENSION	The Role of the Vertical Dimension in Memory and Navigation	UNIVERSITA DEGLI STUDI DI ROMA LA SAPIENZA	Italy	75,000
276827	SALMANDNMDA	Elucidating the role of SALMs in the regulation of synapses and NMDA receptors	FYZIOLOGICKY USTAV AKADEMIE VED CESKE REPUBLIKY VEREJNA VYZKUMNA INSTITUTE (VVI)	Czech Republic	100,000
276868	NEURO-MIR-NETWORKS	MicroRNA Networks in Neuronal Development and Plasticity	STICHTING KATHOLIEKE UNIVERSITEIT	Netherlands	100,000
276869	ODORPROCESSING	Genetic analysis of olfactory processing and function	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	France	100,000
276926	RETROGRADE SIGNALING	Molecular Mechanisms of Neurodegeneration	TEL AVIV UNIVERSITY	Israel	100,000
276950	NEURODOPA DEGEN	Elucidating mechanisms of dopaminergic neuronal degeneration using C. elegans and high-throughput genetic approaches	UNIVERSITETET I STAVANGER	Norway	75,000
276957	RTP801 PARKIN	RTP801, A NEGATIVE REGULATOR OF mTOR AND AKT, AS A TARGET OF PARKIN	UNIVERSITAT DE BARCELONA	Spain	100,000
276981	OXYGENE	Genetic predictors of brain responses underlying social behavior and implications for oxytocin treatment	FONDAZIONE ISTITUTO ITALIANO DI TECNOLOGIA	Italy	100,000
276989	FIB	Molecular mechanisms of fibrinogen function regulating NSC differentiation in CNS injury or disease	UNIVERSITAETSKLINIKUM FREIBURG	Germany	100,000
276995	SYNTWOGLOTIS	In the brain, at the level of a single synapse an individual astrocyte releases several gliotransmitters	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	France	100,000
276998	NEUROBLASTOMA CHEMO	Chemotherapy of neuroblastoma	FUNDACIO SANT JOAN DE DEU	Spain	100,000
277015	OPTIMAL TIMING	Interval Timing, Decision Making, and Reward Maximization	KOC UNIVERSITY	Turkey	100,000

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277016	CHARM	Cognitive mechanisms that lead to age related memory deficits	KOC UNIVERSITY	Turkey	100,000
277023	VR STROKE REHAB	Virtual Reality Intervention for Stroke Rehabilitation	TEL AVIV UNIVERSITY	Israel	100,000
277033	NEUROCHOICE	Neural Mechanisms of Emotional Economic Interactions	UNIVERSITEIT MAASTRICHT	Netherlands	45,000
277053	DISC1 & AXOGENESIS	In vivo analysis of DISC1 function in synaptogenesis and axonal transport	INSTITUT CURIE	France	100,000
277078	RETROMER	The mechanism of retrograde trafficking by retromer.	INSTITUT CURIE	France	100,000
277081	PEPTISTEM	Effect of neuropeptides on selective neuronal differentiation of mouse and human pluripotent stem cells.	BIOTALENTUMTUDASFEJLESZTO KFT	Hungary	0
277091	MERE-GLU	Mental Retardation: Harnessing the Glutamate Hypofunction Hypothesis	STICHTING KATHOLIEKE UNIVERSITEIT	Netherlands	100,000
277098	TDCCPCS	Targeted delivery of charged membrane impermeant compounds to pain-sensing and cancer cells	THE HEBREW UNIVERSITY OF JERUSALEM	Israel	100,000
277118	CYLOCK	Cell cycle clock in nervous system and cancer	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	France	100,000
277147	FOLDTOX	Understanding the cytotoxicity of aberrantly folded proteins in neurodegeneration	Eidgenössische Technische Hochschule Zürich	Switzerland	45,000
277150	OPTO-REW	Optogenetic investigation of GABAergic interneurons in the limbic system during reward and addiction	KAROLINSKA INSTITUTET	Sweden	100,000
277151	MODNEURDEYDIS	Title: Self-Renewal, Fate Potential and Plasticity of Human Embryonic and Induced Pluripotent Stem Cell-Derived Neural Stem cells	TEL AVIV UNIVERSITY	Israel	100,000
277200	OPTO-LOCO	Unraveling the circuits of locomotion with opto-genetic manipulation of neuronal activity in awake behaving animals	INSTITUT DU CERVEAU ET DE LA MOELLE EPINIÈRE FONDATION	France	100,000

Mobility Programme  
(Marie Curie)

‘Career Integration Grants’  
(CIG)

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293462	FORCEPROT	Conformational dynamics of 'single molecules under force	KING'S COLLEGE LONDON	United Kingdom	100,000
293498	MOAMAUX	Modulation of AMPA receptor properties by auxiliary subunits	FUNDACIO PRIVADA INSTITUT D'INVESTIGACIO BIO-MEDICA DE BELLVITGE	Spain	100,000
293565	HTDDSFMT	HIGH THROUGHPUT DRUG DISCOVERY STUDIES FOR MENINGIOMA THERAPEUTICS	MEDIZINISCHE UNIVERSITAET WIEN	Austria	100,000
293589	SOCIALBRAIN	The young social brain at work: From neurobiology to innovative pharmacotherapies for autism spectrum disorders	UNIVERSITA DEGLI STUDI ROMA TRE	Italy	100,000
293604	MECHANONSENSORY TREES	Role of Mechanosensory Touch-Based Cues on Arborization of Neuronal Dendritic Trees	TECHNION - ISRAEL INSTITUTE OF TECHNOLOGY	Israel	100,000
293615	OXYSTEROLS AND TRI	Oxysterols and IL-27-induced Type 1 regulatory T cells in Experimental Autoimmune Encephalomyelitis	UNIVERSITE DE GENEVE	Switzerland	75,000
293733	HUMAN ROBOT FLUENCY	Embodied Cognitive Models for Fluent Human-Robot Interaction	INTERDISCIPLINARY CENTER (IDC) HERZLIYA	Israel	100,000
293738	NEUROSENS	Reactive Oxygen Species and Hypothalamic Glucose Sensitive Neurons: a new mechanism in glucose homeostasis	INSTITUT NATIONAL DE LA RECHERCHE AGRONOMIQUE	France	75,000
293763	SEROTONIN	Dissecting the gene regulatory mechanisms that generate serotonergic neurons.	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS	Spain	100,000
293800	FETAL THYROXINE	'Cognitive Adverse Effects of In Utero Exposure to Medications: Role for Impaired Delivery of Thyroid Hormones into the Fetal Brain'	THE HEBREW UNIVERSITY OF JERUSALEM	Israel	100,000
293818	TMVP	From Theory of Mind to Vicarious Perception	UNIVERSITEIT ANTWERPEN	Belgium	100,000

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293832	VSTM UPDATING	Cognitive and Electrophysiological Mechanisms of Visual Short-Term Memory Updating	BEN-GURION UNIVERSITY OF THE NEGEV	Israel	100,000
293836	ACODEMEM	Tracking accumulation processes in memory decisions	RIJKS UNIVERSITEIT GRONINGEN	Netherlands	100,000
293848	NOVEL ALS MODELS	Developing novel models of Amyotrophic Lateral Sclerosis using motor neuron cultures and zebrafish	INSTITUT DU CERVEAU ET DE LA MOELLE EPINIERE FOUNDATION	France	100,000
293850	COND	The Cognitive Neuroscience of Deception	UNIVERSITY OFPLYMOUTH	United Kingdom	100,000
293901	POEM	Perceptual Organization and Eye Movements	TECHNISCHE UNIVERSITAET KAISERSLAUTERN	Germany	100,000
293902	NEUROVASCULAR LINK	Role of the vasculature in neuronal migration. 'The neurovascular link'	JOHANN WOLFGANG GOETHE UNIVERSITAET FRANKFURT AM MAIN	Germany	100,000
293980	NEUROMIGRATION	Novel Molecular Mechanisms of Neuron Migration in the Developing Cortex and their Contribution to Related Diseases	UNIVERSIDAD DELEIDA	Spain	100,000
294001	MOUSE OPTO-FMRI	DISTRIBUTED FUNCTIONAL BRAIN NETWORKS MAPPING VIA OPTOGENETIC FMRI	TECHNION - ISRAEL INSTITUTE OF TECHNOLOGY	Israel	100,000
294004	CELL THERAPY	Harnessing of hematopoietic stem cells for targeting of brain metastases	UNIVERSITY OF LEEDS	United Kingdom	100,000
294010	ATO1/MEUULLO	Atoh1/Math1 regulation and function during cerebellar normal development and medulloblastoma	INSTITUT CURIE	France	100,000
294037	NEUROFEEDBACK	Modulating Human Brain Function and Dysfunction with Neurofeedback	UNIVERSITE DE GENEVE	Switzerland	75,000
294049	FISHBRAIN	Neural Circuits Underlying Visually Guided Behaviour	FUNDACAO D. ANNA SOMMER CHAMPALIMAUD E DR. CARLOS MONTEZ CHAMPALIMAUD	Portugal	100,000
294051	NEURO-GLIAL SYNAPSES	Neuronal Activity: Targets for Stimulating Myelin Formation and Repair in the Brain	THE UNIVERSITY OF WARWICK	United Kingdom	72,917

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294144	COGNITSIMS	Simulating Brains: Cognition Grounded in the Simulation of Sensorimotor Processes in the Human Neocortex	UNIVERSITY OF PLYMOUTH	United Kingdom	100,000
294217	EMOCOG	Exploring the Effects of Emotion on Human Cognition	UNIVERSIDAD POLITECNICA DE MADRID	Spain	0
294233	UNDERNEATH MIGRAINE	Underneath the attack: cortical network function in migraine	ACADEMISCH ZIEKENHUIS LEIDEN - LEIDS UNIVERSITAIR MEDISCH CENTRUM	Netherlands	100,000
294266	GABAXONETDEV	mechanisms of GABAergic interneurons axonal branching in developing cerebellum network	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	France	100,000
302077	GATSNC	Genetic Analysis of Temperature Sensation and Nociception in <i>Caenorhabditis elegans</i>	UNIVERSITE DE FRIBOURG	Switzerland	52,083
303502	TASTE	TAKING STOCK: EXTERNAL ENGAGEMENT BY ACADEMICS	ALMA MATER STUDIUM-UNIVERSITA DI BOLOGNA	Italy	100,000
303559	IMANILBCAT	Interferometric Microscopy and Nanoscopy in Live Biological Cells and Tissues	TEL AVIV UNIVERSITY	Israel	100,000
303564	MIC-SN	Microbial Ion Channels for Synthetic Neurobiology	Institute of Science and Technology Austria	Austria	100,000
303573	OSCILL_A	Non-amyloid-related hippocampal network dysfunction as an early biomarker of Alzheimer's disease	UNIVERSITE DE STRASBOURG	France	100,000
303644	ZEB1	The transcriptional network of the zinc-finger factor ZEB1 and its function in the embryonic nervous system and glioma development	FUNDACAO CALOUSTE GULBENKIAN	Portugal	100,000
303680	YOUNG MINDS	The synaptic development of cortical circuitry in the young brain	UNIVERSITY OF BRISTOL	United Kingdom	100,000
303701	DREAM IN AD	The role of DREAM in synaptic dysfunction in Alzheimer's disease.	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS	Spain	60,417
303741	ABETAALPHASYN-TAU	Insight into the synergistic interactions between A $\beta$ amyloid, $\alpha$ -synuclein and Tau	BEN-GURION UNIVERSITY OF THE NEGEV	Israel	100,000

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303750	NEUROIMAGEEG	FAST AND HIGH FIDELITY EEG FORWARD SOLUTIONS FOR HIGH DEFINITION SOURCE IMAGING OF FOCAL EPILEPTIC ACTIVITY	Institut Telecom	France	100,000
303785	GNRH & REPRODUCTION	Role of GnRH neurons in Reproductive Behavior and Physiology	THE HEBREW UNIVERSITY OF JERUSALEM	Israel	100,000
303795	RECURRENT GLIOMA TX	Phase I trial in recurrent high-grade glioma: High-dose vorinostat with concurrent hypofractionated radiation therapy	MEDICAL RESEARCH INFRASTRUCTURE DEVELOPMENT AND HEALTH SERVICES FUND BY THE SHEBA MEDICAL CENTER	Israel	100,000
303797	HVGC	Imaging neural gain control in the human visual system	UNIVERSITY OF YORK	United Kingdom	100,000
303812	L1-DIGEORGE-SYNDROME	Role of LINE-1 retrotransposons in the human disease DiGeorge Syndrome	FUNDACION PUBLICA ANDALUZA PROGRESO Y SALUD	Spain	100,000
303814	TRRAP & BRAIN CANCER	Targeted inhibition of TRRAP as a strategy against aggressive brain cancer	UNIVERSITY OF LEEDS	United Kingdom	100,000
303818	DENDRITIC PROCESSING	Local Processing of Dendritically Synthesized Membrane Proteins	MAX PLANCK GESELLSCHAFT ZUR FÖRDERUNG DER WISSENSCHAFTEN E.V.	Germany	75,000
303820	MIGCP	Characterization of the role of Scrib1 and Vangl2 in neuronal migration	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	France	75,000
303840	3DNSBT	Three-dimensional nanofiber scaffolds as a model for the study of brain tumour migration	UNIVERSITY OF LEEDS	United Kingdom	100,000
303845	M1SYNC	Circuit mechanisms underlying dynamic spike time synchronization in mouse motor cortex	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF OXFORD	United Kingdom	100,000
303849	OPT	Optimality Principles in Human Motor Control	VERENIGING VOOR CHRISTELIJK HOGER ONDERWIJS WETENSCHAPPELIJK ONDERZOEK EN PATIENTENZORG	Netherlands	75,000
303862	GEC	A model of generalised evaluative conditioning	UNIVERSITY COLLEGE DUBLIN, NATIONAL UNIVERSITY OF IRELAND, DUBLIN	Ireland	50,000
303864	PROFITS	Bridging the world of fungi and dementia	TECHNISCHE UNIVERSITÄT BERLIN	Germany	100,000



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303880	SCOPE	Stress and Coping among Portuguese Police Officers	UNIVERSIDADE DO PORTO	Portugal	100,000
303891	REHABNET	REHABNET: NEUROSCIENCE BASED INTERACTIVE SYSTEMS FOR MOTOR REHABILITATION	MITI - MADEIRA INTERACTIVE TECHNOLOGIES INSTITUTE - ASSOCIACAO	Portugal	100,000
303927	BRAINCI	Neural basis of auditory processing in young congenitally deaf subjects with cochlear implants	SVEUCILISTE U SPLITU (UNIVERSITY OF SPLIT)	Croatia	75,000
303972	CELLMECH	Molecular-Physical Basis of cell-Biomaterial Mechanical Coupling	TECHNION - ISRAEL INSTITUTE OF TECHNOLOGY	Israel	100,000
304054	NEUROVASCULAR LINK	Role of Angiogenic Factors in Neurodevelopment	RUPRECHT-KARLS-UNIVERSITÄT HEIDELBERG	Germany	100,000
304108	PDGENNI	Gene-Environment Interactions in the Etiopathogenesis of Parkinson's Disease: Role of Inflammation	DEUTSCHES ZENTRUM FUER NEURODEGENERATIVE ERKRANKUNGEN EV	Germany	100,000
304111	MASDUHID	Molecular Analysis of Synaptic Dysfunctions Underlying Human Intellectual Disabilities	FUNDACIO PRIVADA INSTITUT DE RECERCA DE L'HOSPITAL DE LA SANTA CREU I SANT PAU	Spain	100,000
304165	TSPO & BRAIN	Role of the mitochondrial Translocator Protein (mtSPO) in Brain Cellular Physiology: a Neglected Pathway in Signalling and Self-conservation Mechanisms	EUROPEAN BRAIN RESEARCH INSTITUTE RITA LEVI-MONTALCINI FONDAZIONE EBRI	Italy	100,000
304201	DISTRACTIBILITY	Competition between bottom-up and top-down mechanisms of auditory attention: neurophysiological and physiopathological mechanisms of distractibility.	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	France	100,000
304235	TICS	Temporal Information in Crossmodal Stimuli	THE UNIVERSITY OF BIRMINGHAM	United Kingdom	100,000
304248	EMOTIONCOG	Exploring the Effects of Emotion on Human Cognition	UNIVERSIDAD POLITÉCNICA DE MADRID	Spain	100,000
304255	SRCD-IP	Self-regulation and cognitive development of infants facing poverty	UNIVERSYTET WARSZAWSKI	Poland	100,000
320553	THYROIDREPRO	Deciphering the role of thyroid hormones in seasonal reproduction	INSTITUT NATIONAL DE LA RECHERCHE AGRONOMIQUE	France	100,000

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320898	LEPTINT1DM	Unraveling the mechanism underlying the anti-diabetic action of lepin	UNIVERSITE DE GENEVE	Switzerland	100,000
321721	BRAINIK	Identification and validation of cerebral KCa3.1/KCa2.3 potassium channels as drug targets for the prevention and treatment of cerebral ischemia associated with diabetes and Alzheimer's disease	INSTITUTO ARAGONES DE CIENCIAS DE LA SALUD	Spain	100,000
321748	TRW SCHIZO	Temporal dimensions of information processing as a functional marker of mental state: evidence from schizophrenia	THE FOUNDATION FOR MEDICAL RESEARCH INFRA-STRUCTURAL DEVELOPMENT AND HEALTH SERVICES NEXT TO THE MEDICAL CENTER TEL AVIV	Israel	100,000
321851	CAMP-PKA LIGHTCLOCK	Interplay between the light and cAMP/PKA signaling in the Drosophila clock neurons	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	France	0
321855	IMPROVINGADHERENCE	Improving medical treatment adherence: taking into account patients' perception of uncertainty in the causal relationship between their adherence behaviour and their health condition.	UNIVERSITE DE LILLE II - DROIT ET SANTE	France	75,000
321890	STORAGE PROTEOMICS	Quantitative Large Scale Proteomics of Lysosomal Storage Disease	UNIVERSITAETSKLINIKUM BONN	Germany	100,000
321905	MEREMY6	Uncovering the mechanism and physiological relevance of myosin-VI-dependent AMPA receptor trafficking in neurons.	UNIVERSITAETSKLINIKUM HAMBURG-EPPENDORF	Germany	100,000
321919	HIPPOFRONTAL-SYN	Hippocampal-prefrontal synaptic transmission in cognitive function	WEIZMANN INSTITUTE OF SCIENCE	Israel	100,000
321945	OLDER LISTNERS	Listening in noise with older native and non-native speakers: The time-line for segregating speech from noise, real-time lexical processing of spoken-words, and the identification of verbal emotions.	INTERDISCIPLINARY CENTER (IDC) HERZLIYA	Israel	100,000
322001	SMOLDIF	Small-Molecule Probes of Neuronal Differentiation	Masarykova univerzita	Czech Republic	100,000

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322003	PPRITCEB	Prenylated protein regulation in the Caenorhabditis elegans brain	THE HEBREW UNIVERSITY OF JERUSALEM	Israel	100,000
322013	ENDOGENOUS AED	Supply-rate depression as endogenous anti-epileptic mechanism	FUNDACION PARA LA INVESTIGACION MEDICA APLICADA FIMA	Spain	100,000
322033	LOCALTOGLOBAL	Global Organization from Local Signals in Neural and Artificial Networks	UNIVERSITAT POMPEU FABRA	Spain	100,000
322034	MECHAGGRE-NAMICS	Mechanisms of cell dysfunction by aggregation dynamics of polyQ-containing proteins	FUNDACION PARA LA INVESTIGACION DEL HOSPITAL UNIVERSITARIO LA FE DE LA COMUNIDAD VALENCIANA	Spain	100,000
322050	SLEEPNEED	Cortical neuronal mechanisms of behavioural and cognitive deficits after sleep deprivation	UNIVERSITY OF SURREY	United Kingdom	100,000
322113	ALZHEIMERSDRUG	Discovery of drugs for the treatment and prevention of Alzheimer's disease	BAR ILAN UNIVERSITY	Israel	100,000
322120	AGGREGATING-PROTEOME	Understanding the regulation of physiological protein aggregation with age	DEUTSCHES ZENTRUM FUER NEURODEGENERATIVE ERKRANKUNGEN EV	Germany	100,000
322156	NRF24NDDS	Non-conventional target approach for drug discovery against neurodegenerative diseases: Nrf2 upregulation	SERVICIO MADRILENO DE SALUD	Spain	100,000
322160	GLIOMAGENESIS	Molecular and Cellular Mechanisms of Glioma Genesis	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	France	100,000
322180	SOX-BMI1	Role of SOX9-BMI1 in adult neural stem cells and in glioma stem cells	ASOCIACION INSTITUTO BIODONOSTIA	Spain	100,000
322194	MICROFLOW	Molecular mechanisms of microvascular dysfunction following hemorrhagic stroke	LUDWIG-MAXIMILIANS-UNIVERSITÄT MÜNCHEN	Germany	100,000
322210	TOPOCHROMSTEM	Genomic Targets and Function of Topoisomerase II isoforms during Stem Cell Differentiation	INSTITUT FÜR MOLEKULARE BIOLOGIE GMBH	Germany	100,000
322256	WATCH AND LEARN	The Impact of Observational Learning on Brain and Behaviour Throughout the Lifespan	BANGOR UNIVERSITY	United Kingdom	75,000

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
322298	DECIPAIN	An integrated approach towards drug discovery and target validation for pain	NATURWISSENSCHAFTLICHES UND MEDIZINISCHES INSTITUT AN DER UNIVERSITÄT TUEBINGEN	Germany	100,000
322304	ADOLESCENT DEV	Genetics and physiology of adolescent development in telencephalic interneurons	KAROLINSKA INSTITUTET	Sweden	100,000
322339	SOUNDSOURCE_ RAT_AC	Sound Localization by Neuronal Populations in the Rat Auditory Cortex	FUNDACAO D. ANNA SOMMER CHAMPALIMAUD E DR. CARLOS MONTEZ CHAMPALIMAUD	Portugal	100,000
322368	SAVING DYING NEURONS	Immune responses in neurodegenerative diseases: Protection or progression?	ACADEMISCH ZIEKENHUIS GRONINGEN	Netherlands	100,000



Mobility Programme  
(Marie Curie)

Others

Project ID	Project Acronym	Project Title	Coordinator	Participant Country Name	EC Financial contribution
324285	TANDEM	Talent and Extended Mobility in the European Innovation Union	EIDGENÖSSISCHE TECHNISCHE HOCHSCHULE ZÜRICH	Switzerland	278,628
324351	AMBER	American Bridge for the Excellence in Research with Europe	UNIVERSIDAD DE ZARAGOZA	Spain	375,125
267171	BRIDGE	Brain & Behaviour Interdisciplinary research	UNIVERSITE DE GENEVE	Switzerland	2,263,580
267239	OLM	International postdoctoral program Optimizing Learning and Memory – From Deficiency to Excellence	UNIVERSITÄT BERN	Switzerland	0
265742	BRAINNIGHT	Night of the Brains	STICHTING KATHOLIEKE UNIVERSITEIT	Netherlands	30,000





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