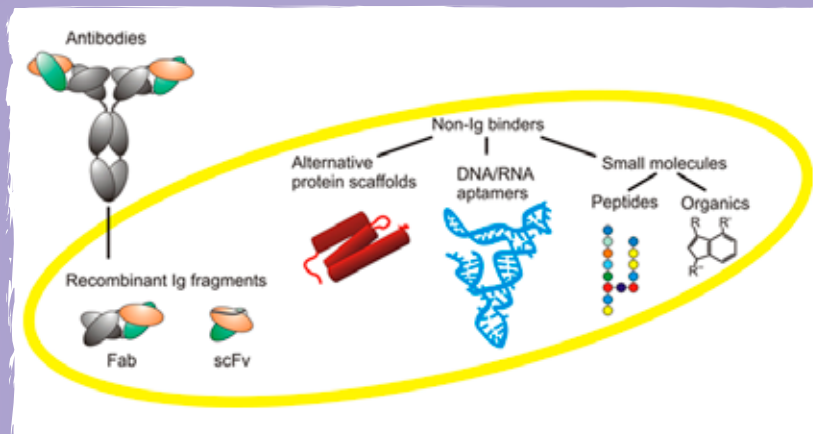


ProteomeBinders: A European Infrastructure of Ligand Binding Molecules against the Human Proteome

The study of the human genome has taken biomedical science to a different and altogether more personal level than most other areas of research. It analyses the material that determines much of our health, enabling scientists to pinpoint some of the underlying genetic causes of certain diseases. However, genes do their work through the proteins they encode. Therefore, finding effective ways of treatment requires a detailed understanding of the presence or absence, behaviour and whereabouts of the proteins in our bodies. The EU-funded ProteomeBinders project, which started in March 2006, aims to understand the functioning of the human genome by studying its proteins. Specifically, the project aims to provide the tools required to detect and characterise all the relevant proteins in tissues and fluids in health and disease.

● STUDYING THE BOOK OF LIFE

The ProteomeBinders project sets the stage for the establishment of an open-access resource of binding molecules for detection of the human proteome, as well as the necessary tools to study proteome function and organisation. The study of the proteome, the full set of over 100 000 proteins specified by the DNA of the human genome, requires a comprehensive, standardised collection of specific protein-binding molecules. To date, antibodies are the most widely-used protein-binders, but novel binder types have significant advantages and are being carefully evaluated. The ProteomeBinders consortium coordinates the planning for a new European resource by reviewing existing infrastructures, comparing technologies and production methods, standardising tools and applications and establishing consistent and comprehensive database standards. ProteomeBinders is one of the most ambitious genome-scale projects in Europe which in future project stages ultimately aims to produce and collect hundreds of thousands of specific binders. Such a binder resource promises to be of huge advantage to the research, medical and biotechnology communities.



● BINDING PROTEOMIC RESEARCHERS TOGETHER

The ProteomeBinders Coordination Action is composed of interlinked networking activities, which identify the steps and resources necessary to build a large binder collection, create and refine research tools using large sets of binders, link the binders and binder tools to specific biomedical applications and develop a database to make information on the binders available to the scientific community. Project management coordinates the overall resource planning, dissemination and personnel exchanges. Many

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of the partners have close ties with SMEs that work in this field. Both sides benefit from the dissemination platform, which offers knowledge, material inventories and protocols from the individual partners to the whole consortium and beyond. In addition, the ProteomeBinders consortium coordinates benchmarking studies comparing data on the production, properties and applications of binders, and establishes standards and protocols for methods and reagents. It holds regular open workshops, attracting participants

from academia and industry, and has set up the public web-portals Antibodypedia (www.antibodypedia.org) and MolMeth (www.molmeth.org). The project also increases mobility among the participating partners. With 23 EU partners and 2 partners from the US, ProteomeBinders advocates the organisation of an infrastructure of binders; available at cost and with no restrictions for research use. There is currently no other European platform for the systematic generation and quality control of these essential reagents.

● PROTEOMEBINDERS IN SUMMARY

Project acronym: ProteomeBinders

Funding scheme (FP6): Coordination Action (CA)

EU financial contribution: €1.8 million

EU project officer: Jean-Emmanuel Faure

Duration: 48 months

Start date: 1 March 2006

Completion date: 28 February 2010

Project webpage: www.proteomebinders.org

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Molecular Biology Laboratory, Heidelberg and Monterotondo (INO), European Bioinformatics Institute, Hinxton (INO), SomaLogic Inc. (US), Department of Biochemistry, University of Kassel (DE), NMI University of Tübingen (DE), Max Planck Institute of Molecular Genetics (DE), Department of Chemistry, University of Konstanz (DE), School of Biotechnology KTH (SE), VTT Technical Research Centre of Finland (FI), Uppsala University (SE), Department of Biochemistry, University of Zurich (CH), Vlaams Interuniversitair Instituut voor Biotechnologie (BE), Ecole Nationale Supérieure d'Electronique, Informatique & Radiocommunications de Bordeaux (FR), Medical Faculty University of Rijeka (HR), Helmholtz Centre Munich – German Research Centre for Environmental Health (DE), Helmholtz Centre for Infection Research, Braunschweig (DE), Leiden University Medical Center (NL), German Cancer Research Center Heidelberg (DE), Technische Universität München (DE), Babraham Institute (UK)