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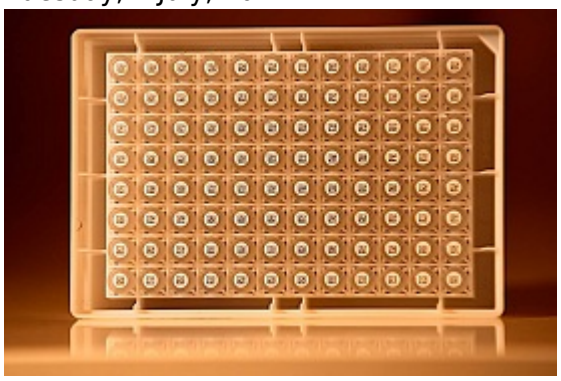
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Access to biological resources such as cells and tissue samples is the lifeblood of biomedical research. Biobanks and biomolecular resource centres collect, store and distribute this material, the related data and powerful analytical tools, but none of them can single-handedly meet the growing, diverse needs of Europe's research community. EU funding has enabled major repositories to link up and share these resources.

Human biological samples with 2D barcode replacing donor's identity

BBMRI-ERIC, the Biobanking and BioMolecular resources Research Infrastructure that will start operations in 2014, aims to give researchers a user-friendly means to access such resources. It strives to make human biological material from repositories across Europe available through a single, integrated online portal.

"Biological material and data on diseases lay the foundation for the advancement of medicine," says Professor Kurt Zatloukal of the Medical University Graz, the coordinator of the preparatory phase project to establish BBMRI. *"The problem is that these key resources are currently dispersed throughout a highly fragmented research landscape. And the challenge was finding a way to bring these resources together and make them more easily accessible to academic and industrial research."*

The establishment of a European Research Infrastructure Consortium (ERIC) in November 2013 provided the framework for the construction and operation of this joint endeavour. It marked a new milestone in the development of the infrastructure, which already spans 16 countries and an international organisation, says Professor Jan-Eric Litton, the newly appointed Director General of BBMRI-ERIC.

Extensive preparations were needed before construction of this service could begin. They were handled with financial support from the EU.

Creating consensus

"Biobanks are a key resource for research into the diversity of human diseases and, therefore, are critically important for the advancement of personalised medicine, particularly in the context of

ageing societies," says Zatloukal. *"Furthermore, biobanks provide key information on the impact of environment and lifestyle on health, thereby providing a basis for disease prevention programmes and the improvement of public health. Biological samples and data on diseases are required essentially for the development of any new drug or diagnostic assay. Therefore, biobanks provide a key resource for biotech and pharma industry."*

Part of the preparations for BBMRI focused on coordination within the member states, prior to integration into a European structure. But initiating large-scale cooperation was not a matter of coordination alone. It was, in fact, a whole new concept in this field, Zatloukal notes.

"Biomedical research does not really have an established culture of large-scale collaborative projects, contrary to the physical sciences, for instance," he says. *"It was not easy to achieve agreement on a way in which groups that were used to competing with each other could now start working together."*

Overcoming this reticence involved developing win-win models of governance, he explains, to ensure that all who contribute also benefit. It also involved a new take on intellectual property, a shift away from attempts to protect even very general knowledge towards a willingness to share results from early stages of research.

Engaging with society was another priority. Human biological samples, says Zatloukal, are collected from many to benefit all. BBMRI-ERIC is thus an infrastructure built on links between society and scientists, and developing this interaction ranked highly among the team's priorities.

"In order to understand the diversity of human diseases, you have to investigate disease in different populations," he adds. *"If you want to understand the diversity of human diseases in Europe, you have to reach out to patients and populations in all European countries."*

The response, notably from patient organisations, was highly encouraging, highlighting the importance of dialogue. *"Patients,"* says Zatloukal, *"are the strongest advocates of research. If they don't understand the context, they are concerned. But if they do, they are highly supportive."*

Towards a single interface

BBMRI-ERIC is an example of a distributed research infrastructure: one with operational units in a number of locations that cooperate to provide an integrated service through a single access point. It will simplify the complex task of researchers sourcing human biospecimens in countries with very diverse cultural and legal environments. The partners are currently developing the sophisticated tools, techniques, technologies and methodologies needed to achieve this level of simplification.

The new service will resolve a major innovation bottleneck, says Litton, and thereby facilitate advances that are urgently needed in healthcare. And the partners are preparing for integration at an even larger scale. As part of a related EU-funded project, BBMRI-LPC, they are collaborating with the World Health Organization's International Agency for Research on Cancer (IARC).

This joint endeavour focuses on large prospective cohort (LPC) studies — research following groups of people over a number of years to see how their health develops. Researchers use such studies to investigate health risks and their role in the onset of diseases. BBMRI-LPC, which was launched in February 2013, will integrate the access to both organisations' large study sets, creating the world's biggest pool of such material.

See also:
CORDIS [2]
Project:

Biobanking and biomolecular resources research infrastructure

Project Acronym:

BBMRI

Source URL: http://ec.europa.eu/programmes/horizon2020/en/news/biospecimens-beyond-borders

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[2] http://cordis.europa.eu/projects/index.cfm?fuseaction=app.details&TXT=BBMRI&FRM=1&STP=10&SIC=&PGA=&CCY=&PCY=&SRC=&LNG=en&REF=88365