Abstracts contributed for oral and poster presentation at ESBB’s Inaugural Conference in Marseille, France

November 16–19, 2011

Conference Information

The theme of this conference is: “Identifying the challenges and the opportunities for biorepositories today and in the next 5 years.”

The conference aims to identify the major challenges and opportunities in biobanking in order to guide future activities of the society. This will influence the choice of ESBB working group activities, the topics of future meetings, the content of training courses and strategies taken by ESBB to advance the biobanking field.

The overall range of issues considered will be wide, extending from the sample donor to the repository to the generation of research results. The meeting will cater to all parties interested in biobanking from both human and non-human biobanks, with particular emphasis on issues relevant for Europe, the Middle East and Africa, since this is the geographic scope of ESBB.

The Programme Committee includes: Paolo Concio, Vincenzo Costigliola, Hans-Peter Deigner, Peter Doran, Maura Ferrari, Fiorella Guadagni, Robert Hewitt, Paul Hofman, Jonathan Horan, Jan Koschorreck, Rita Lawlor, Lorenzo Memeo, Derick Mitchell, Christian Oste, Giuseppe Pelagio, Walt Pennington, Mariaelena Salvaterra, Tobias Schulte in den Bäumen, Ole Seberg, Erik Steinfeld, and Holger Zetzsche

For more information please see: http://www.esbb.org.

ESBB is a chapter of the International Society for Biological and Environmental Repositories (ISBER)
Methods: On all levels from sample collection, sample processing, cell culture, cryoconservation, cryogenic storage to inventory management and documentation of sample related data standardized procedures are followed. Latest technological equipment ensures long-term maintenance of cell viability as well as mistake proof sample and data storage. Standard laboratory operating procedures result in a constant quality of the generated cell lines.

Conclusions: These features accumulate to produce a biobank of high scientific value, which can be used long-term and sustainably for research and development and to document wildlife biodiversity. The collection can contribute to solving questions related to wildlife, human and environmental research. Moreover, the cells can be used in wildlife reproductive technology. Though today associated with technical complexity, recent research indicates that fundamental problems can be solved. Therefore, a wide range of applications exists enabling for breaking new grounds in captive breeding of endangered species. Organizational and technical features of the biobank, research results applying wildlife cells in pharmacological research, further examples for current scientific uses as well as future applications will be summarized in this presentation.

AUTOMATION TECHNOLOGY

AT-01. Quality Control in Biobanking: Once the Collection Phase is Complete, What Next? How Do You Know What You Have in Storage, and That You Are Delivering What you Promise?

S. Sheard1, C. Walsh1

1RTS Life Science, Northbank, Irlam, Manchester, United Kingdom

Biobanking studies can be viewed as consisting of a number of phases – recruitment, storage, supply and analysis. Depending on the type of organization and, indeed, the type of study, these phases may run sequentially or in parallel. Further, the process may be wholly carried out by the biobank or may involve a number of different departments or even different organizations. For example, biological samples may be delivered to the biobank from an external organization for storage and analysis, or a sample within the biobank may be retrieved from storage and shipped (in whole or in part) to third parties to satisfy research requests.

Whether samples are processed wholly in-house or received from/shipped to internal or external clients, exchange of samples without some form of quality check can ultimately lead to problems downstream when the samples are analyzed.

Vision based sample inspection systems initially developed for small molecule drug discovery compound QA, offer the possibility of reliable, non-contact goods-in and goods-out QA checks.

The benefits of implementing such a QA system will be presented, supported by case study examples from leading international biobanks.

BIOBANK NETWORKS

BN-01. The Construction of the Italian Hub of Population Project

Italian Hub of Population Biobanks (HIBP)1

1Istituto Superiore di Sanità, Rome, Italy

HIBP Participants: A) Coordination Unit (Filippo Belardelli, Franca Moretti, Maria Puopolo, Department of Cell Biology and Neurosciences (BCN), ISS, Rome), B) Project manager and interoperability Unit (Elena Bravo, Filippo Santoro, Mariarosaria Napolitano, ISS, Rome); C) Informatics Unit (Paolo Roazzi, Information Technology, ISS, Rome); D) Population Biobanks: 1. CNESPS Biobank (ISS, Rome) including following collections: - CUORE (Simona Giampiato, Chiara Donfàncesco, Luigi Palmieri); - Italian Twin Register ( Maria Antonia Stazi);- IPREA (Emanuele Scafato, Lucia Galluzzo); 2. EURAC Biobank (Bolzano, - MICROS (Peter Pramstaller, Alessandro De Grandi, Deborah Mascalzoni); 3. GEHA Project biobank, University Bologna, (Claudio Franceschi, Federica Sevini; Elisa Cevenini); 4. Molibank ( Univ. Cattolica del S. Cuore of Campobasso);- Moli-Sani, -Gendiabe, -IMA-families, -Immidiet collections (Maria B. Donati, Amalia de Curtis).

Recently, it has been established in the HIBP: In Italy, the potential capability of population biobank collections to contribute to preventive and predictive medicine was hampered by the lack of a common platform of epidemiological biobanks.

The project for the construction of the HIBP, founded by National Centre for Disease Prevention and Control (Ccm), aims to construct the network of the Italian population biobanks, which will function as a tool for common and fast information as well as for standardization and harmonization of the archives of biosamples. HIBP promote the values concerning predictive and preventive medicine of national biobanking and increase competitiveness of HIBP in European and international initiatives. A detailed description of HIBP’s collection and activities is reported at the site: www.iss.it/hibp.

BN-02. Virtual Biobank as Model for Translational Biomedical Research Collaboration in Flanders

E. Smits12, P. In’t Veld1-3, S. Bekaert1-4, V. Somers1-5, N. Ectors1-5, E. Tambuyzer1

1Center for Medical Innovation, Heverlee, Belgium
2CRC Antwerp, Edegem, Belgium
3CRC Brussel, Brussels, Belgium
4CRC Gent, Gent, Belgium
5CRC Leuven-Hasselt, Diepenbeek, Belgium

Translational biomedical innovation refers to the research and development of new preventive, diagnostic or therapeutic applications in a patient centered environment. Through this kind of research, strategic basic research is linked to clinical research, which is often bi-directional.

An integrated approach which facilitates harmonization between all stakeholders in Flanders will stimulate and improve the position in translational biomedical innovation. The Flemish government established this integration in setting up the Center for Medical Innovation, a strategic research center. The mission of CMI is to support a faster and more efficient translation of research findings into the development and application of innovative strategies for prevention, diagnosis and treatment of diseases with medical priority.

The CMI assembles all stakeholders involved in translational biomedical research into one single virtual platform in Flanders, which in turn functions as an interface with international translational biomedical initiatives. The first activity of CMI is to set up the Flemish biobank project. This virtual biobank infrastructure involves organizational and structural measures that are crucial to support translational research in Clinical Research Centers (Antwerp-Brussels-Ghent-Hasselt-Leuven). Validated and harmonized biobanks with patient samples linked with
BN-06. **The Italian Node of the Research Infrastructure BBMRI**

E. Bravo1, F. Belardelli1, G. D’Agnolo1, M. Catalano2, P. De Blasio3, M. Filocamo4, P. Gasparini3, A. Paradiso5, B. Parodi7, P. Rebulla6, P. Roazzi1, M. Rossi1, L.G. Spagnoli10, G. Stanta11, G. Marcon12

1Istituto Superiore Sanità, Rome; 2VAS-Vascular-Independent Research and Education - European Organization c/o University of Milan; 3BioRep, srl, Milan; 4G. Gaslini Institute, Genoa; 5IRCCS-Burlo Garofolo, University of Trieste; 6Istituto Tumori “G. Paolo II” IRCCS, Bari; 7Istituto nazionale per la Ricerca sul Cancro, Genoa; 8IRCCS Ospedale Maggiore Policlinico, Milan; 9Regione Liguria, Genoa; 10Alliance Against Cancer, Rome; 11Department of Medical Sciences, University of Trieste; 12da Vinci European BioBank (Sesto F.no - Florence)

Biobanking and Biomolecular Resources Research Infrastructure (BBMRI) will be implemented under the ERIC (European Research Infrastructure Consortium) legal entity. BBMRI-ERIC foresees central headquarters in Graz, responsible for coordination of the activities of National Nodes established in participating countries.

The Minister of Health, aware of these initiatives, and convinced of the importance for the Italian researchers to participate in BBMRI, gave mandate to the Istituto Superiore di Sanità (ISS) to establish the Italian Node of BBMRI to coordinate the formation of the Italian network.

Elena Bravo was appointed as Coordinator and an Advisory Committee, constituted by scientists involved in biobanking activities and representing stakeholders as well, was set to collaborate with the Italian node of BBMRI. During the first year of activity, BBMRI-IT promoted virtuous collaboration among scientists and with the Regional Authorities.

A website (www.bbmri-eric.it), reporting all ongoing activities of the Node, has been rapidly published and constantly updated to allow participation of whole biobanking community.

BBMRI-IT worked to recognize the main criticalities and to improve the Italian system of biobanking. As Italy lacks a specific legislation for research biobanks, BBMRI-IT aims to contribute to the definition of criteria and shared rules for the management of research biobanks. For this purpose, a working group (WG) has been instituted with the aim, as well, of drafting documents related to the Partner-charta of BBMRI. In parallel, a pilot initiative to set the national bioresources catalogue has been launched and constitution of the Italia Group of Stakeholders is being promoted.

Alliance Against Cancer has strongly supported this work.

BN-07. **The Biological Resource Center of the National Institute for Cancer Research of Genoa**

P. Visconti1, T. Ruzzon1, M. Truini1, B. Parodi1

1Istituto Nazionale per la Ricerca sul Cancro (IST), Genoa, Italy

The Centro di Risorse Biologiche (CRB-IST) has been recently established as an institutional facility of IST, coordinating seven biobanking and cell banking activities already existing in the institute. The main aims are: to facilitate high quality translational research dependent on biological material and data, to address ethical issues on biobanking, to promote the project at the population level, to harmonize technical and management SOPs according to international best practices, to help reduce costs for collection and storage of biological material, to favor institutional recognition at a regional, national and international level. CRB-IST participates in the Liguria network of biobanks, in the National networks Rete Italiana BioBanche Oncologiche (RIBBO) and Network of Italian Pathology Biobanks (NIPB) and in the European Infrastructure of Biobanks and Biomolecular Resources (BBMRI).

Seven specialized biobanks belong to CRB-IST: the Tumor tissue biobank (biological material from diagnostics and surgery of IST patients); the Hereditary Tumor Centre Biobank; the Cancer of RESpiratory Tract (CREST) biobank; the Lymphoproliferative disorders Biobank; the Interlab Cell Line Collection (IQLC); the European Collection For Biomedical Research (human B lymphoblastoid cell lines); the Urological Tumor Biobank.

CRB-IST has developed common SOPs for collection and preservation of samples, a common procedure for informed consent and a common Material Transfer Agreement for distribution of samples and information. All projects are evaluated by a Scientific Committee and by the Ethical Committee of IST. CRB-IST has produced a website and brochures for the patients that keep the population informed on the ongoing scientific projects.

BN-08. **Regional Accreditation of Biobanks and Liguria Network**

B. Parodi1, M. Filocamo2, M. Rossi3

1Istituto Nazionale per la Ricerca sul Cancro (IST), Genoa, 2Istituto Giannina Gaslini, Genoa, 3Agenzia Regionale Sanitaria Liguria, Genoa, Italy

Disease-oriented biobanks are recognized as a key resource for biomarker discovery and are closely related to the health care system. In Italy, the governance of the health care system is devolved to regional authorities.

Liguria region is traditionally rich in initiatives in the field of biobanks and recently the region has officially recognized the role of biobanks for diagnosis and research. In the resolution (n.34 Jan.2010), the region has established the criteria for accreditation of existing resources and further initiatives.

To be accredited, the Biobank should: a) be formally established within the Hospital - research center, b) have dedicated space and equipment, c) be active for at least three years, d) use dedicated staff to ensure quality and continuity of services, e) operate within a certified quality system, f) document the presence of SOPs for involvement of patients, acceptance, preparation and storage of samples, information management and catalogue, distribution of biological material, g) act as a service unit and document “in” and “out” activities.

The regional network includes:
- two genetic biobanks: Gaslini Institute Genetic Bank (mainly metabolic diseases), coordinator of the Telethon biobank network; Galliera Genetic Bank (rare diseases);
- three oncological biobanks: Genoa Tissue Bank (University of Genoa); IST Biological Resource Centre (coordinating seven specialized cancer biobanks); Integrated Tissue-Genomic Biobank (Gaslini Institute, pediatric);
- one cell line bank (IST) which handles the only patent deposit authority for cell lines and hybridomas in Italy.

The network coordinates the State-Regions Conference working group on biobanks and participates in the BBMRI national node.

BN-09. **Telethon Network of Genetic Biobanks (TGBN)**

M. Filocamo1, C. Baldo2, S. Goldwurm3, A. Renieri4, C. Angelini5, M. Moggio6, M. Mora7, G. Merla8, L. Politano9, B. Garavaglia10

The network coordinates the State-Regions Conference working group on biobanks and participates in the BBMRI national node.