

Details

Hannover Unified Biobank (HUB)

Biomaterial plays an important role in biomedical research. The quality of the biomaterials is particularly important for meaningful results. A high quality of biomaterials can often only be provided by specialized large biobanks. In 2012 the Hanover Medical School (MHH) founded the Hannover Unified Biobank (HUB) as the central, uniform biobank of MHH. HUB's goal is to build up a modern, highly automated and standardized biobank, thus enabling the entire MHH as well as external partners an advanced and innovative biobanking. In addition to a modern biobank repository, a standardized, automated sample processing and a professional data management system were developed. Standardization and automation as the basis for a modern, quality-assured, centralized biobank, the HUB is equipped with state-of-the-art biobank infrastructure, such as temperature monitoring, oxygen control, air conditioning, automated repository, storage in liquid nitrogen tanks, emergency power supply and a central Biobank Information Managements System (BIMS). The HUB has been DIN ISO 9001 certified since 2015 and adheres to national and international guidelines for biobanking. A data protection concept, a positive ethics votum, a pseudonymization tool, selected access rights to the samples, a governance structure and its own by laws regulate the legal and ethical framework. There is also close co-operation with other national and international biobanks, which build a common sample and data exchange and adapt their approach and quality standard.

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Host Institution

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<https://www.mhh.de/>

Scientific Domain

Primary Subjects:

- Biology
- Medicine

Secondary Subjects:

Category

Biobanks including Seed banks

Scientific Services

In the Hannover Unified Biobank (HUB), the central biobank of MHH, various biomaterial types are processed, stored and managed. In addition to tissue, body fluids (e.g., blood and blood derivatives, urine, pulmonary lavage, cerebrospinal fluid, saliva), stool, hair or various swabs (e.g., skin, mouth, nose) are also processed and deposited. Cells, cell lines, microorganisms, isolates, but also DNA and RNA are also biomaterials managed by the HUB and safely stored and partly generated. The HUB extraction and aliquoting robots (ChemagicSTAR / Easyblood, Hamilton) are available for automated DNA / RNA extraction. These, as well as the storage robot, are connected to the biobank information management system (CentraXX, Kairos) via interface. Both are part of a comprehensive sample tracking system, which documents every processing and rearrangement process of the samples, as well as the temperature profiles during transport and storage and enables the biobank to generate and store extensive quality data on the samples. HUB supports partners in project and quality management, pseudonymization and data protection, in coordinating sample management in large multicenter projects, in sample and data management and in the integration of biobanks into studies and projects.

Scientific Equipment

- -80°C automated sample storage system (BiOS M, Hamilton) (-80°C)
- DNA/RNA extraktion robot (ChemagicSTAR, Hamilton)
- Liquid fraction workstation (easyBlood, Hamilton)
- Biobank Information Management System (Centraxx, Kairos)
- Askion work bench (-110°C)
- Cryo Cart, MVE
- Gas phase liquid nitrogen tanks (-196°C)
- -80°C freezer (top-opening)
- 1D/2D label printer
- 1D/2D scanner
- Temperature Monitoring Systems (ELPRO)
- Capper/Decapper
- Laminar flow for cell culture

Keywords

- biobanking
- pre-analytics
- sample and data management
- sample processing
- DNA / RNA extraction
- quality management
- automatic sampe storage
- biomaterials
- ultra-low temperature sample storage
- long-term storage
- data protection
- temperature monitoring
- certification

Networks

German Biobank Alliance (GBA)

<https://www.bbmri.de/ueber-gbn/german-biobank-alliance/>

German Center for Lung Research (DZL)

<https://dzl.de/>

German Center for Infection Research (DZIF)

<http://www.dzif.de/>

Users per annum

Internal Users: 290

External Users in total: 200

External Users: 185

External Users in the EU: 10

External Users outside of EU: 5