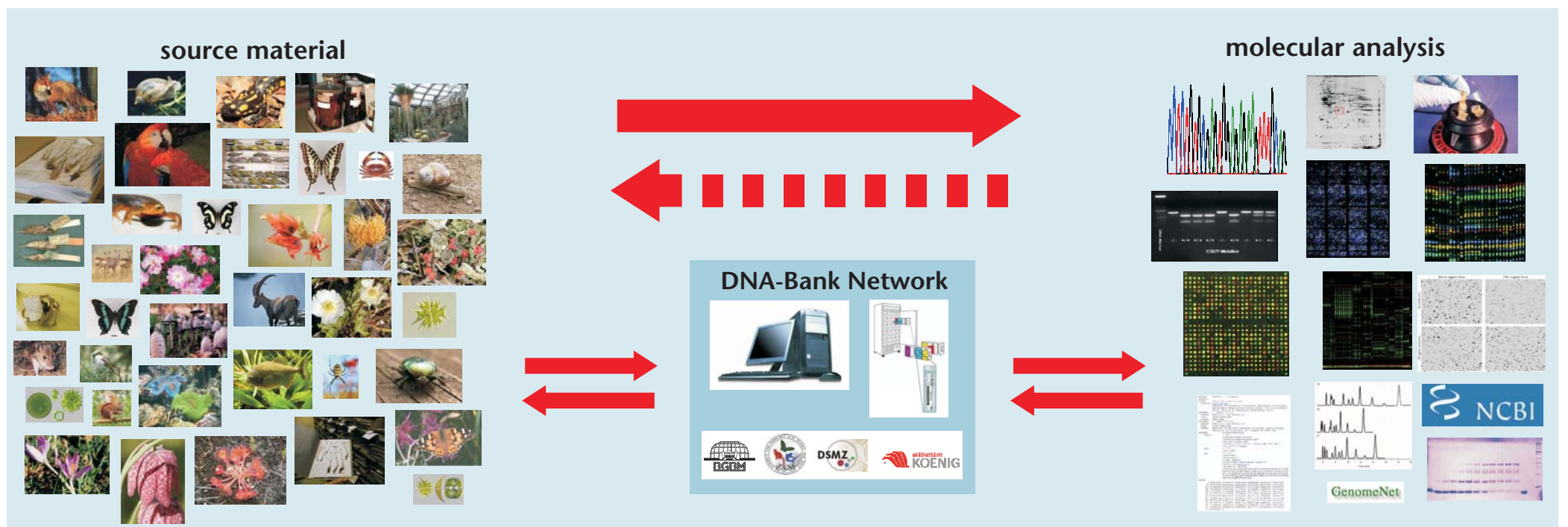


# Establishment of the DNA-Bank Network in Germany

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Since the rise of DNA-based methods biological research changed dramatically. However, the scientific community has not yet made the storage of DNA material in natural history collections a matter of general routine. To verify or continue molecular studies of an object, it is currently necessary to contact the author or the institutions in which the studies took place. With short term contracts and rapid turnover of personnel now the norm in scientific institutions, it is often difficult or even impossible to access original specimens or DNA samples. Thus, falsifiability of results and original data – the foundation of good scientific practice – can no longer be guaranteed.

A network of DNA banks was established in spring 2007, and is supported by the DFG. The network covers the whole range of biological diversity, and will be maintained by four partner institutions: Botanic Garden and Botanical Museum Berlin-Dahlem (BGIBM), Bavarian State Collection of Zoology Munich (ZSM), Forschungsmuseum Alexander Koenig Bonn (ZFMK), and German Collection of Microorganisms and Cell Cultures Braunschweig (DSMZ).

The main focus of the network is to enhance taxonomic, systematic, genetic, and evolutionary studies by providing

- 1 at-cost availability of DNA material
- 2 high quality, long-term storage of DNA material on which molecular studies have been performed, so that results can be verified, extended, and complemented
- 3 full on-line documentation of each sample, including the provenance of the original material, the place of voucher deposit, links to previously published molecular data and digital images of vouchers.

The network promotes deposition of well documented DNA samples after project completion or data publication from scientists of on-site research as well as from other institutions. In addition to DNA storage, scientists will be given the opportunity to store tissue material.

The network is intended to serve the interests of recipients and donors of DNA samples to create added value through cooperation and cumulative characterization of genomic data. A large number of high quality, thoroughly and critically documented DNA samples is a key factor for the success of the project, and will determine the acceptance of the DNA Bank Network in the long run. Therefore, one crucial objective is to convince external scientists to process and store their DNA material in the DNA banks of the Network.

Operational position of activities of the DNA-Bank Network as a DNA storage and service facility to support life science research

Quality standards for long term DNA storage will be established for the handling of DNA, technical infrastructure for storage at -80°C, documentation (including digitalization of voucher specimens), and standardization in a European context.

The design of a new database system and shared Web portal will greatly facilitate physical access to DNA samples, the linking of information, and order processing.

Prototype of the DNA-Bank input mask containing voucher information and DNA specific parameters

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Further research will be conducted to optimize the highly elaborate process of DNA sample storage and access, which will focus on new and suitable protective substances, storage at higher temperatures, rehydration of lyophilized DNA as well as to optimize DNA extraction.

The network's shared Web portal will be available at [www.dnabank-network.org](http://www.dnabank-network.org) in the weeks ahead. The BGIBM DNA bank is currently accessible via [www.bgbm.org/bgbm/research/dna/](http://www.bgbm.org/bgbm/research/dna/)

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