

# DNA Bank Network – connecting biological collections and sequence databases by long-term DNA storage with online accession

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**Abstract** — In times of increasing numbers of methods and tools for the molecular identification of organisms, it is inevitable that researchers have to deal with an additional flood of samples: the extracted DNA of organisms which are in the researcher's focus. Today, voucher specimens – the specimens from which DNA was extracted – have to be placed in adequate biological collections and organisms' sequence data can officially be deposited in online databases such as Genbank, often a prerequisite for publication of results in peer-reviewed journals. DNA extracts do not underlie such rules, but adequate housing of DNA extracts, especially of rare or difficult to obtain species, will be a major task in the near future.

The DNA Bank Network bridges the gap between natural history collections and molecular sequence databases by providing online references to analysed specimens and inferred molecular data. DNA samples are linked to their respective vouchers and inferred molecular data are stored in public sequence databases, facilitating taxonomic verification of molecularly analysed organisms.

We provide the opportunity for long-term storage of DNA in the DNA Bank Network, giving other researchers the opportunity to access DNA for further projects dealing with the same organisms. In this way, multiple sampling can be avoided and there is a direct link between the three main sources of information, i.e. the sampled organism, the DNA, and the sequence data. Here we present the functioning and layout of the DNA Bank Network, which currently connects DNA banks of four research museums in Germany: the Bavarian State Collection of Zoology (ZSM), the Botanic Garden and Botanical Museum Berlin-Dahlem (BGBM), the German Collection of Microorganisms and Cell Cultures Braunschweig (DSMZ), and the Zoologisches Forschungsmuseum Alexander Koenig (ZMFK). Presently, the DNA Bank Network allows to access DNA samples of more than 35.000 DNA samples and 11.000 taxa.

**Index Terms** — DNA, databases, molecular identification.

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