

## **Providing Safe Storage and Controlled Access – The DSMZ as Patent Depositary and “Safe” for Microorganisms**

### **Depositing Biological Material in a Culture Collection**

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Biological resource centers are instrumental for the future advancement of science, public health and bioeconomy. Therefore, the high-quality long-term storage of the valuable living materials is essential.

To avoid the loss of material via staff shortage, supply problems and disasters, spatially separated back-up solutions are strongly recommended and often mandatory for biobanks.

Therefore, the DSMZ offers the safe deposit as a special service for the long-term preservation and safe storage of biological material, which is not included in the DSMZ catalogue or passed on to third parties without a written request by the depositor. Furthermore, the DSMZ has served as a depositary of microorganisms for patent purposes since 1974. Since 1981, the DSMZ has been recognised as an International Depositary Authority (IDA) under the Budapest Treaty. According to the Budapest Treaty, all biological material must be tested for viability and purity. Successfully deposited cultures are kept for at least 30 years under the terms of the Budapest Treaty. To enable that the biological material is stored in a genetically unchanged way, cryostorage in the vapor or liquid nitrogen (LN) phase at temperatures below -150 °C is used. Additionally, microorganisms are maintained as dried lyophilisates, if possible. As a quality measure, LN tanks are cleaned at certain intervals. To evaluate the potential risk of microbial cross-contaminations during cryostorage, LN tanks in different biobank facilities have been systematically examined for the presence of bacteria, fungi, plant, and human cells at different phases of LN storage in the framework of the GDK (Association of German Cryobanks) “Hygiene-Project” (Bajerski et al., 2020). In identifying potential contaminants, their sources, and evaluating their potential harms, it was found that the samples themselves, the LN, the human microbiome, and the environment are all potential routes of contamination. The freshly produced LN is usually not the source of contamination.

Bajerski, F., Bürger, A., Glasmacher, B., Keller, E. R. J., Müller, K., Mühldorfer, K., Nagel, M., Rüdell, H., Müller, T., Schenkel, J., & Overmann, J. (2020). Factors determining microbial colonization of liquid nitrogen storage tanks used for archiving biological samples [journal article]. *Applied Microbiology and Biotechnology*, 104(1), 131-144. <https://doi.org/10.1007/s00253-019-10242-1>