Press release

Unlimited access to microbiological research data at Bac*Dive*

Update of the freely accessible database BacDive enables access to more than 900,000 metadata

(Braunschweig, 26 April 2019): **The scientists Dr. Lorenz Reimer, Joaquim Sardà and Prof. Dr. Jörg Overmann from the Leibniz Institute DSMZ-German Collection of Microorganisms and Cell Cultures have extended the database Bac*Dive* (https://bacdive.dsmz.de) extensively with the update in April 2019.** Since 2012, the bioinformaticians of the DSMZ have been developing Bac*Dive* (*the Bacterial Diversity Metadatabase*), a database that is unique in the world and makes data on bacteria and archaea that are not yet available freely accessible. The development follows the FAIR principles, according to which scientific data should be **f**indable, **a**ccessible, **i**nteroperable and **r**e-usable.

More than 600 data fields available

The possibilities of using Bac*Dive* are continuously being expanded, currently scientists can use more than 600 data fields to search for microbiological information. The repertoire includes initial species descriptions and metabolic profiles as well as data on enzymatic activities and antibiotic resistance. In addition, Bac*Dive* offers 9,000 *Analytical Profile Tests* (API) for over 5,000 bacterial strains, the largest publicly available API data collection worldwide.

External Data Integration and Interoperability

In order to provide the scientific community with a comprehensive database, the DSMZ scientists also continuously maintain the microbiological metadata of other European collections in Bac*Dive*. With the current update, DSMZ integrated data from more than 19,505 bacterial strains from the Swedish Culture Collection University of Gothenburg (CCUG). Bac*Dive* thus provides up-to-date information on 80,584 bacteria and archaea. For scientific work with cross-source data sets, the various information sources must be linked as directly as possible via unique identifiers. For example, direct links to the 16S rRNA sequence of a bacterial strain in the database SILVA or to the enzymes involved in metabolic reactions in the database BRENDA have been established. Via links in PubMed, NCBI Taxonomy, NCBI Nucleotide, but also in species descriptions of Wikipedia, users can access the structured metadata in Bac*Dive*.

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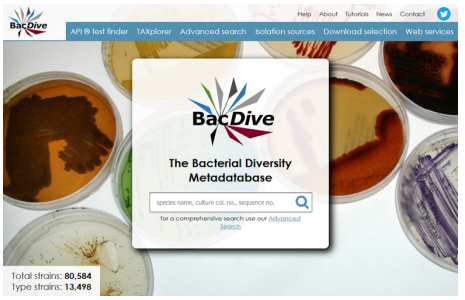
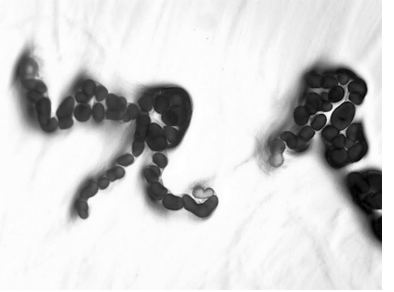


Landing page of the online database
Picture: DSMZ/BacDive



Microscopic image of the bacterium *Cystobacter ferrugineus* (DSM 14716)
Picture: DSMZ/BacDive

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About the Leibniz Institute DSMZ

The Leibniz Institute DSMZ-German Collection of Microorganisms and Cell Cultures is the world's most diverse collection of biological resources (bacteria, archaea, protists, yeasts, fun-gi, bacteriophages, plant viruses, genomic bacterial DNA as well as human and animal cell lines). Microorganisms and cell cultures are collected, investigated and archived at the DSMZ. As an institution of the Leibniz Association, the DSMZ with its extensive scientific services and biological resources has been a global partner for research, science and industry since 1969. The DSMZ is the first registered collection in Europe (Regulation (EU) No. 511/2014) and certified according to the quality standard ISO 9001:2015. As a patent depository, it offers the only possibility in Germany to deposit biological material in accordance with the requirements of the Budapest Treaty. In addition to scientific services, research is the second pillar of the DSMZ. The institute, located on the Science Campus Braunschweig-Süd, accommodates more than 69,00 cultures and biomaterials and has 198 employees. www.dsmz.de

The Leibniz Association

The Leibniz Association connects 95 independent research institutions that range in focus from the natural, engineering and environmental sciences via economics, spatial and social sciences to the humanities. Leibniz Institutes address issues of social, economic and ecological relevance. They conduct knowledge-driven and applied basic research, maintain scientific infrastructure and provide research-based services. The Leibniz Association identifies focus areas for knowledge transfer to

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policy-makers, academia, business and the public. Leibniz institutions collaborate intensively with universities – in the form of “Leibniz ScienceCampi” (thematic partnerships between university and non-university research institutes), for example – as well as with industry and other partners at home and abroad. They are subject to an independent evaluation procedure that is unparalleled in its transparency. Due to the importance of the institutions for the country as a whole, they are funded jointly by the Federation and the Länder, employing some 19,100 individuals, including 9,900 researchers. The entire budget of all the institutes is approximately 1.9 billion Euros. www.leibniz-gemeinschaft.de

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