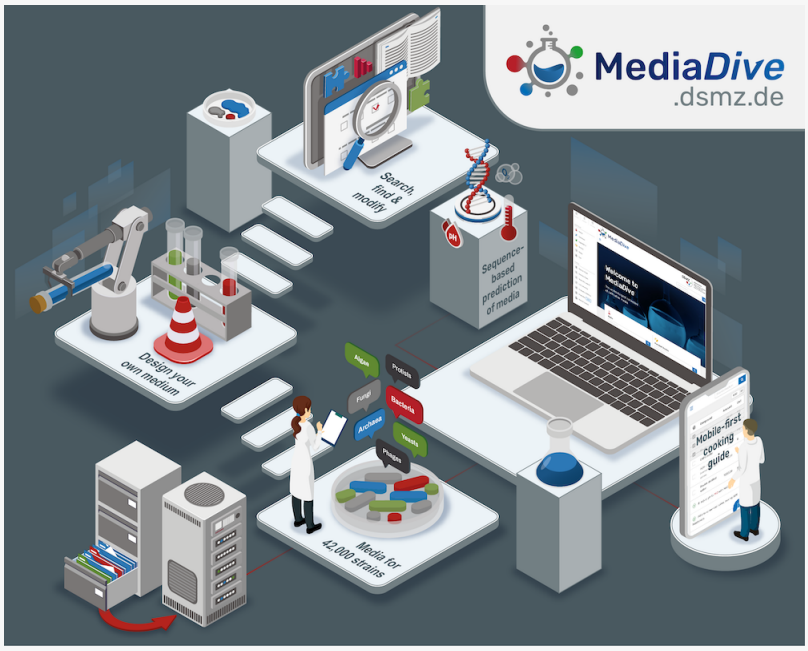
MediaDive: Recipe database supports global biodiversity research

DSMZ publishes unique database for the cultivation of microorganisms



Schematic representation of the functionalities of the new database MediaDive

BRAUNSCHWEIG, LOWER SAXONY, GERMANY, November 2, 2022 /EINPresswire.com/ -- Researchers at the Leibniz Institute DSMZ-German Collection of Microorganisms and Cell Cultures GmbH in Braunschweig, Germany have published a freely accessible database for growth media of microorganisms. The content and functions of this worldwide unique database – MediaDive (https://mediadive.dsmz.de/) – are explained by the researchers in their article published in the renowned journal Nucleic Acids Research.

Microorganisms such as bacteria and fungi are the basis for life and survival on Earth. Despite this, it is estimated that only one percent of existing microorganisms have been identified and characterised to date. One of the reasons for this is that many microorganisms do not grow in the laboratory and thus cannot be studied. This is where the novel database MediaDive comes in. It offers the scientific community free access to currently over 3,270 cultivation media for more than 44,000 different prokaryotes, fungi, algae, and protozoa. The registered growth media are continuously curated by DSMZ researchers. MediaDive is thus setting worldwide standards for the documentation and development of cultivation media for the first time. For example, the Taxonomy Search, which suggests growth media for closely related organisms, helps to search for the right cultivation media for previously unculturable microorganisms. The data for this originates from the linked DSMZ database LPSN (List of

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>
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Prokaryotic names with Standing in Nomenclature), among others. In addition, researchers can carry out a search for ingredients and their concentrations using the Medium Finder.

Dr. Julia Koblitz, data scientist at the Leibniz Institute DSMZ

MediaDive also supports researchers with questions regarding the composition and production of cultivation media. For example, the production steps for each cultivation medium are listed in detail. Users also have the option of modifying stored media recipes according to their own needs. Another tool within MediaDive, the Medium Builder, is currently in the test phase. Here, researchers can create their own cultivation medium and store it in the database. "It will be a great benefit for the research community when more bioresource collections, but also individual researchers, were to deposit their medium recipes in MediaDive, in order to support the cultivation of previously uncultivable microorganisms," wishes first author Dr. Julia Koblitz, biologist and database developer at the DSMZ. So far, the cultivation media of other bioresource centres such as the Japanese Collection of Microorganisms and the British Culture Collection of Algae & Protozoa have already been integrated, and more are to follow. The database, which has been further extended in this way, is intended to help predict new cultivation media with the use of artificial intelligence.

Original publication
Koblitz J., Halama P., Spring S., Thiel V., Baschien C., Hahnke R.L., Pester M., Overmann J., Reimer L.C. MediaDive: the expert-curated cultivation media database. Nucleic Acids Res. 2022 Sep 22;gkac803. doi: 10.1093/nar/gkac803

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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, fungi, 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 was the first registered collection in Europe (Regulation (EU) No. 511/2014) and is 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 82,000 cultures and biomaterials and has around 200 employees. www.dsmz.de

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