

MIRRI-ERIC awarded with the MALDIBANK Project



Braga (Portugal), July 4th 2024 - The Microbial Resource Research Infrastructure-European Research Infrastructure Consortium (MIRRI-ERIC) is proud to announce that it has been awarded the project, **MALDIBANK: Multi-domain Open MALDI Spectra BANK for Identification of Microorganisms**. MIRRI-ERIC will coordinate this innovative project, which aims to revolutionize the identification of microorganisms through the development of a comprehensive MALDI-TOF MS databank.

The primary objective of MALDIBANK is to establish a multi-domain, open-access MALDI-TOF MS databank, encompassing a wide range of microbial taxa from diverse environments. This databank will be supported by a robust data infrastructure, facilitating rapid and accurate identification of microorganisms. Key features of MALDIBANK will include:

Spectra Upload and Identification Service: Users can upload spectra to obtain fast and precise microorganism identifications.

Epidemiological Surveillance and Characterization: Innovative AI algorithms will enable advanced surveillance and characterization of microbial populations.

MALDIBANK aspires to become the international benchmark for MALDI-TOF MS users, transforming the landscape of microbial identification. The project will deliver essential training to research infrastructure staff, enabling them to incorporate MALDIBANK functionalities into their daily workflows.

Microbial culture collections (CCs) worldwide will contribute their MALDI-TOF MS spectra and associated data to build a comprehensive and diverse resource, covering pathogenic,

food, environmental bacteria, cyanobacteria, fungi (including yeasts), and microalgae. Additionally, selective spectra of poorly represented microorganisms will be included, with improvements in acquisition protocols starting from sample preparation.

Central Objectives of MALDIBANK:

Enhance and Expand the MALDI-TOF MS Databank: Achieve precise and rapid identification of a wide array of microorganisms, pivotal for samples dereplication in culturomics analyses across various fields such as food, soil, plants, tissues, and biological fluids.

Collaborative Data Contribution: Encourage researchers from diverse disciplines to enrich the microbial reference resource with a broader spectrum of information.

Progressive Access for External Users: Develop a user access policy to progressively engage external users, fostering collaboration and knowledge sharing.

Specific Objectives (SOs) of the Project:

SO1: Develop innovative AI algorithms for efficient comparison and identification of MALDI-TOF MS spectra and finding correlations with specific phenotypes.

SO2: Create a sustainable IT infrastructure to host a large, comprehensive, and open MALDI-TOF MS spectra database, prepared for connectivity with existing and future repositories.

SO3: Develop new protocols and an operational framework for standardized MALDI-TOF MS spectra acquisition.

SO4: Validate MALDI-TOF MS-based methods for identifying orphan taxa of health, environmental, and biotechnological importance.

SO5: Unlock the potential of MALDI-TOF MS for delivering phenotypic information and conducting epidemiological surveillance.

SO6: Implement a training program to enhance the skills of RI CCs staff in using MALDIBANK resources.

SO7: Promote MALDIBANK's innovative resources to attract a wide community of users, including SMEs, RIs, and CCs.

SO8: Establish long-term sustainability of MALDIBANK through partnerships with SMEs and industries for co-development.

SO9: Strengthen collaborative relationships between consortium RIs and connect with other HORIZON-INFRA-TECH projects for synergies and complementarities.

MIRRI-ERIC is excited to lead this transformative project, which promises to significantly advance the field of microbial identification and foster collaboration within the scientific community.



ABOUT MIRRI:

The **Microbial Resource Research Infrastructure – European Research Infrastructure Consortium (MIRRI-ERIC)** is the pan-European distributed Research Infrastructure for the preservation, systematic investigation, provision and valorisation of microbial resources and biodiversity. It brings together ~50 microbial domain Biological Resource Centres (mBRCs), culture collections and research institutes. MIRRI serves the bioscience and the bioindustry communities by facilitating the access, through a single point, to the broadest range of high-quality microorganisms, their derivatives, associated data and services, with a special focus on the domains of Health & Food, Agro-Food, and Environment & Energy. By serving its users, by collaborating with other research infrastructures and by working with public authorities and policy makers, MIRRI contributes to the advancement of research and innovation in life sciences and biotechnology, as well as for a sustainable, competitive and resilient bioeconomy. For more information, please visit www.mirri.org and <https://www.linkedin.com/company/microbial-resource-research-infrastructure/>.

MEDIA CONTACTS:

MIRRI

Ana Ferreira
info@mirri.org

###