Biodiversity Romanian research team is offering its research services and the capabilities to create new products and technologies under commercial agreement with technical assistance or research and development cooperation agrements.

Summary

Profile type	Company's country	POD reference
Technology offer	**Romania**	**TORO20241009015**
Profile status	**Type of partnership**	**Targeted countries**
PUBLISHED	**Research and development cooperation agreement** **Commercial agreement with technical assistance**	**• World**
Contact Person	**Term of validity**	**Last update**
Cristina-Maria BALGARADEAN	**22 Nov 2024** **22 Nov 2025**	**22 Nov 2024**

General Information

Short summary

Transylvanian research institute represented by the team offers its research services (soil science, biodiversity & ecosystem services) under commercial agreement with technical assistance and also is looking for project partners under research and development cooperation agreement within a consortium (Horizon Europe Cluster 6).

Full description

Located in Transylvania, the Romanian research institute is active in the fundamental and applied research and has decades of experience in applied analytical chemistry in three main directions:
- Environment and Health;
- Bioenergy and Biomass;
- Analytics and Instrumentation.

The Romanian research institute has experienced scientists and researchers, as well as a remarkable endowment, that allow approaching projects from industrial research to stages "prototype realization" and "technology transfer".

The biodiversity laboratory assesses soil microbiodiversity and functions with the aim of generating know-how that

can be used to develop strategies to conserve soil microbiodiversity and maintain the ecosystem functions and services it supports. The laboratory team conducts research that describes for the first time the complex ecological functional relationships mediated by the soil microbiota.

The BIODIVERSA laboratory carries out activities to assess microbiodiversity and soil functions both in the field and in the laboratory. The BIODIVERSA laboratory exploits the identified interactive relationships to contribute to the formulation of best practice guidelines for the conservation of soil biodiversity and the maintenance of soil ecosystem functions and services. Access is physical for discussions between the beneficiary and the research team based on the results of the evaluation studies. The research team provides support for both the development of remediation strategies and the subsequent effective evaluation of the effectiveness of the implemented strategies.

Laboratories and equipment involved:
The laboratory consist of: • complex mass spectrometric and chromatographic systems (GC-MS/MS, GC-FID, GC-ECD) that allow: soil microbiome phenotypic structure and metabolic and volatilomic profile assessment; • complex sequencing system (MALDI-TOF/TOM MS IMS) that allow multiple “omics” analysis in soil (proteomics, lipidomics, metabolomics, etc.); • complex spectroscopic system that allow biochemical reactions establishment and quantitative description (MicroPlate-Reader); • complex microscopic systems that allow soil microbiome physiological characterizations (Inverted Epi=Fluorescence Mycroscope); • complex climate chamber that allow to simulate global change drivers impact on soil microbiome with aim to formulate mitigation solutions at current and future challenges.

Willing to further develop green technologies, the Romanian research institute would like to conclude commercial agreement with technical assistance with partners that need research services or research and development cooperation agreement within a consortium (Horizon Europe - Cluster 6: Food, Bioeconomy, Natural Resources, Agriculture and Environment).

Advantages and innovations

Representative parameters and accuracy
The complex mass spectrometric and chromatographic systems GC-MS/MS, GC-FID, GC-ECD) allow soil microbiome phenotypic structure quantification at nmol level and formulate the metabolic profile of components between 50 - 1000 m/z molecular fractions. The complex sequencing system (MALDI-TOF/TOM MS IMS) allow identification and annotation of molecules till 500 kDA. The complex spectroscopic system for biochemical reactions establishment and quantitation allows multimode analysis in absorbance, fluorescence and luminescence. The complex microscopic systems permit fluorescence and visible assessment of soil microorganism physiological pattern. The complex climate chamber has a 1 m3 capacity for controlled conditions.

The biodiversity projects have allowed both the expansion of scientific capabilities and their testing with research teams from the following universities and academies: Sun-Yat Sen University (Guangzhou, China), Capital Normal University (Beijing, China), Nagoya University (Nagoya, Japan); Tsukuba Research Centre (Tsukuba, Japan); Polish Academy of Sciences (Poznan, Polland); etc.

Technical specification or expertise sought

Stage of development

Concept stage

Sustainable Development goals

• Goal 9: Industry, Innovation and Infrastructure

IPR Status

No IPR applied

IPR Notes

Partner Sought

Expected role of the partner

Under the commercial agreement with technical assistance the Romanian research institute is looking for foreign partners that require the development of new analytical and numerical approaches that allow microbiome assessment; soil functions evaluation; and services prediction; experimental reports that describe soil microbiodiversity, functions and services.

Under research and development cooperation agreement the Romanian research institute is looking for foreign partners within a consortium (Horizon Europe: Cluster 6: Food, Bioeconomy, Natural Resources, Agriculture and Environment).

The Romanian research institute will support its foreign partners with the provision of all required documents.

Type of partnership

Research and development cooperation agreement

Commercial agreement with technical assistance

Type and size of the partner

- **SME 50 - 249**
- **University**
- **R&D Institution**
- **SME 11-49**
- **SME <=10**
- **Big company**

Dissemination

Technology keywords

- **06004 - Micro- and Nanotechnology related to Biological sciences**
- **010002002 - Biodiversity**
- **10002005 - Biodiversity / Natural Heritage**

Market keywords

- **09003007 - Other services (not elsewhere classified)**

Targeted countries

- **World**

Sector groups involved

- **Agri-Food**
- **Health**