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# TRANSNATIONAL ACCESS (TNA) CATALOGUE

The MIRRI/IS\_MIRRI21 TNA programme provides financial and logistical support to the scientific and entrepreneurial community across the world for free access to microbial resource research institutions

**SUBMIT YOUR PROPOSAL**  
*starting from February 1<sup>st</sup>, 2022*

# TRANSNATIONAL ACCESS (TNA) PROGRAMME CATALOGUE

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# Why applying for a TNA?

The MIRRI/IS\_MIRRI21 TNA initiative offers access to a wide variety of microbial resources, services and state-of-the-art facilities and technological platforms.

IS\_MIRRI21 H2020 project supports this 2<sup>nd</sup> TNA call and invites **users from research organisations and bio-companies within European Member States and Associated countries and from non-EU countries** to submit a request.

Projects that meet technical, scientific and ethical requirements will benefit from funded access to any of the nine microbial facilities of the IS\_MIRRI21 partners across Europe participating to this call.

Successful applicants will obtain **free-of-charge** access to:



**Microbes and their derived products**



**Experimental facilities**



**Technology platforms and services**

The TNA programme provides:



**Physical access\***

Hands-on access, i.e., the user travels to the Access Provider's facility and is involved in the experiment



**Remote access**

Non-physical access of the user to the services offered by the Provider, i.e., **shipping of microbial strains or delivery of results.**



**Virtual access**

User access *via* communication networks, i.e., data are available simultaneously for multiple users

The TNA programme also covers expenses for:



**Shipping of material**  
(Up to € 400)



**Travelling\***  
(One round trip/person in economy class, up to € 800)



**Subsistence**  
(For up to 30 days, including weekends)


*\*Due to the current COVID-19 situation, travel to the facilities might be subjected to restrictions.*

# IS\_MIRRI21 partners participating to the call



For further information about the available partners, please visit <https://ismirri21.mirri.org/portfolio-category/partner/>

Our social media

A close-up, sepia-toned photograph of a microscope's objective lens and stage. The lens is in sharp focus on the left, while the background is blurred, showing a hand holding a pen. The text is overlaid in the center-right area.

**What do our  
partners offer for  
the 2<sup>nd</sup> TNA call?**

## IS\_MIRRI21 partners offer funded access to



### FACILITIES

e.g., access to wet and dry laboratories. Awarded users will also benefit from the expertise of the personnel. Travel expenses are sponsored by the TNA programme

Physical access



### SERVICES

Linked to their top-level expertise and platforms. Examples include phylogenomic studies, taxonomy, *in vitro* characterization of antimicrobial activities

Physical or remote/virtual access



### PRODUCTS

Access to a vast diversity of high-quality microorganisms and their derivatives. Shipping fees are sponsored by the TNA programme

Remote access

## OUR OFFER

### Facilities

- Heterologous expression of silent fungal gene clusters
- *In vitro* culture of arbuscular mycorrhizal fungi
- From the isolation of cyanobacteria, over their cultivation and preservation, to their characterization
- Microbial preservation methods and quality control procedures
- Pathogenic fungi: preservation, MALDI-TOF MS & medical importance of dermatophytes
- Identification of fungi in pure culture



### Services

- *In vitro* screening and testing of Minimal Inhibitory Concentration (MIC)
- Food Mycology
- Multi-Locus Microsatellite Typing (MLMT)
- Phylogenomics and phenotype prediction of prokaryotes



### Products

- Arbuscular mycorrhizal fungi strains produced *in vitro*
- Microbial strains from extreme Russian environments
- Archaea, bacteria, yeast and filamentous fungi from the UVEG-CECT public catalogue



**No pre-established workflows will be offered in this call.**

However, it is possible to build workflows combining up to two TNA offers above listed, based on users' needs and upon verification with the Access Officer.

We invite you to **get in touch with the Access Officer** at [access@mirri.org](mailto:access@mirri.org) to discuss about technical details and the feasibility of the requests **prior to submission.**





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# TNA to facilities

## Heterologous expression of silent fungal gene clusters

Koninklijke Nederlandse Akademie van Wetenschappen –  
KNAW Westerdijk Institute - WI

### We provide physical access to

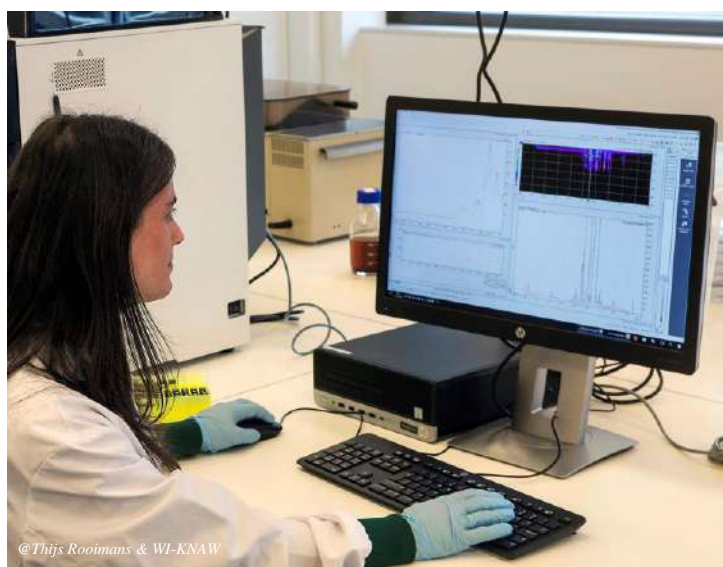
- Fully equipped laboratory and scientific staff
- Genomic DNA of the species of interest and PCR primers should be provided for cloning purposes.

### Output

The user will obtain *Aspergillus oryzae* transformants expressing the core genes from the cluster of interest or the complete predicted cluster. Only transformants that produce new compounds according to profiling of organic extracts will be selected.

### About us

KNAW-WI (formerly Centraalbureau voor Schimmelcultures, KNAW-CBS) performs mycological research that contributes to the discovery and understanding of the biodiversity of fungi, their biology and potential solutions to societal challenges. Secondary metabolite biosynthetic pathways are cryptic under regular laboratory conditions. Activating these gene clusters is a challenge that can be tackled using heterologous expression in *A. oryzae*.



@Thijs Rooimans & WI-KNAW

Liaison officer: Gerard Verkleij

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## In vitro culture of arbuscular mycorrhizal fungi

Agro-food & Environmental Fungal Collection – BCCM/MUCL

**We offer in-person guidance** to set up *in vitro* cultures of the obligate arbuscular mycorrhizal fungi (AMF) roots symbionts, from the sampling of in pot cultures to their maintenance and *in vitro* sub-subculture. *In vitro* cultivation of AMF on root organs (ROC-system) and on autotrophic plants (Medicago, potato and others) will be tested, as well as the more recent systems developed (e.g., mycelium donor plant system).

### Output

The user will learn methodologies to cultivate *in vitro* AMF.

### About us

BCCM/MUCL has expertise in identification of fungal strains (via morphology, molecular biology and physiology), consultancy, personalized trainings in mycology (morphology, molecular methods) and *in vitro* cultivation of AMF. *In vitro* cultivation is an important tool for the genetic, cell biology, biodiversity and physiological investigation of AMF and their hosts. Other applications include non-destructive microscopic observations, studies with other microorganisms and mass production at an industrial scale.

## From the isolation of cyanobacteria, over their cultivation and preservation, to their characterization

*Cyanobacteria Collection – BCCM/ULC*

### We offer physical access to

- Our expertise and the needed equipment
- « Hands-on » training in microscopic and molecular characterization of cyanobacteria, as well as in their polyphasic taxonomy.
- An overview on quality management system applied to our culture collection and the ISO 9001 certification.

The programme will be tailored to the user's biological material.

### Output

The user will learn how to handle cyanobacteria, from sampling, isolation and cultivation of unicyanobacterial or axenic strains to their characterization.

**About us** BCCM/ULC possesses the necessary equipment for microbiological and molecular analyses involving cyanobacteria. Furthermore, BCCM/ULC is experienced in polyphasic taxonomy and their molecular identification.



@BCCM-ULC



@BCCM-ULC

@BCCM-ULC

**Liaison officer: Annick Wilmotte**

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Allée du 6 Août, 11 - University of Liège  
B-4000 Liège

<https://bccm.belspo.be/about-us/bccm-ulc>



## Microbial preservation methods and quality control procedures

*Universitat de València Estudi General – UVEG  
Colección Española de Cultivos Tipo – CECT*

### We offer physical access to

- Specialized guidance and laboratory equipment
- Training on quality control procedures (authentication and viability tests), in compliance with OECD Best Practice Guidelines for Biological Resource Centres, if requested.

Alternative preservation methods can also be explored when lyophilization is not possible.

### Output

The user will gain expertise on long-term preservation of archaea, bacteria, yeast and filamentous fungi, with a special focus on lyophilization.

**About us** The University of Valencia (UVEG) is a leading academic organisation at national level and recognized internationally. The Spanish Type Culture Collection (CECT) is a central service of the UVEG, and it has more than 10,000 different microorganisms. The CECT continuously works on new procedures for quality control and to improve microbial culture and preservation.



@Fundació Parc Científic Universitat de València (FPCUV)

**Liaison officer: Lidia Rodrigo**

Campus de Burjassot-Paterna  
Calle Catedrático Agustín Escardino, 9 46980  
Paterna. Valencia, Spain  
<https://www.cect.org>



## Pathogenic fungi: preservation, MALDI-TOF MS & medical importance

*Fungi Collection: Human & Animal Health - BCCM/IHEM*

We offer in-person guidance to 2-days' workshop on dermatophytes fungi (taxonomy, identification and medical importance), with theoretical/practical sessions and specialized guidance/equipment for their identification and taxonomy.

### Output

The user will learn how to correctly identify dermatophytes, especially using tools such as microscopy and MALDI-TOF mass spectrometry (MS).

### About us

BCCM/IHEM is a fungi collection dedicated to human and veterinary health, embedded in the Mycology & Aerobiology service of Sciensano, the public health institute in Belgium. It is equipped with a biosafety level 3 laboratory. Certifications: ISO 14001, ISO 9001 and ISO 17025. Research activities include MALDI-TOF MS identification of fungal strains, antifungal resistance and dermatophytes. Dermatophytes are the most common cause of fungal infections responsible for skin diseases and other superficial mycoses. Their identification is reputedly difficult due to often subtle or atypical characters.



@BCCM-IHEM

(c) Sciensano



@BCCM-IHEM

@BCCM-IHEM

**Liaison officer: Pierre Becker**

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Rue J. Wytsmanstraat 14  
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@UNITO-MUT

@UNITO-MUT

@UNITO-MUT

**Liaison officer: Cristina Varese**

## Identification of fungi in pure culture

*Università degli Studi di Torino – UNITO  
Mycotheca Universitatis Taurinensis – MUT*

### We offer physical access to

- Our facilities with experienced scientists, technical staff and appropriate equipment
- Training with practical sessions; users are welcome to bring their own material for identification.

### Output

The user will receive a training in identification of fungal strains in axenic cultures by (i) macroscopic and microscopic characterization (ii) DNA extraction, followed by PCR-amplification (iii) sequencing and analysis of genetic markers.

### About us

Identification of fungi to species level is pivotal in scientific research and several agricultural, industrial, and pharmaceutical applications. The MUT fungal collection is specialized in identification, characterization, preservation and distribution of microorganisms to support research and bio-based economy.



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# TNA to services

## **In vitro** screening and testing of Minimal Inhibitory Concentration (MIC)

University of Latvia – UL  
Microbial Strain Collection of Latvia – MSCL

We provide remote access to *in vitro* MIC determination of antibacterial/antifungal agents and compounds of biological origin provided by users, following agar and broth-dilution methodologies. Test cultures preserved at MSCL will be used by the expert personnel.

### About us

MSCL holds more than 1,600 strains of bacteria, filamentous fungi and yeasts, which are of present and future interest for the Life Sciences, biotechnology and industry. Apart from the culture collection activities, MSCL carries out research in collaboration with scientific institutions in the aforementioned areas.



@Vizma Nikolajeva - UL

**Liaison officer: Vizma Nikolajeva**

University of Latvia, Faculty of Biology  
Microbial Strain Collection of Latvia  
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@Uminho-MUM

**Liaison officers: Nelson Lima and Celia Soares**

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[www.ceb.uminho.pt](http://www.ceb.uminho.pt)



## Food mycology

University of Minho – UMINHO  
Micoteca da Universidade do Minho – MUM

We offer physical/remote access to\* tools and methods for identification of fungal contaminants in food, including:

- A polyphasic approach including classical taxonomy based on macro- and micro-morphologies (access to optical, fluorescent, confocal and SEM microscopes);
- Biochemical characterization, including enzymatic and secondary metabolites/mycotoxins profiles;
- Spectral analyses using SARAMIS software for MALDI-TOF ICMS and Bionumerics for FT-NIR;
- Genotypic analysis based on housekeeping genes for phylogenetic studies.

RFPL, RAPD and other approaches for strain typing, and specific primer analysis of genes involved in the mycotoxins metabolic pathways can be also used.

*\*depending on the user's request*

### About us

UMinho is a University with a strong interest in valorisation of Research, Development and Innovation. MUM is a filamentous fungi culture collection with a main focus on *Aspergillus* and *Penicillium* and the mission of being a resource centre for fungal biodiversity preservation. MUM provides services mainly for food industry (identification and consultancy).

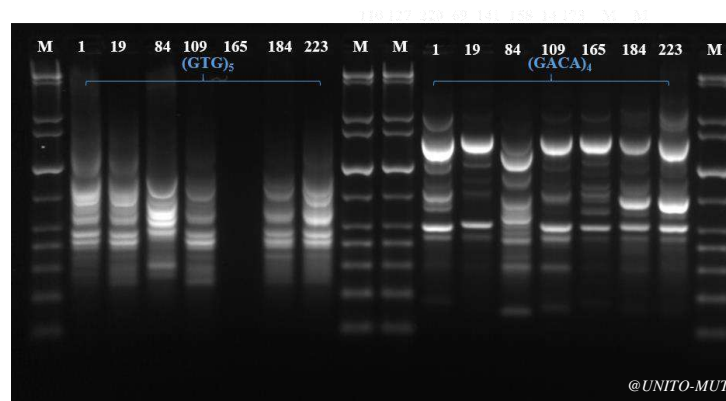
## Multi-Locus Microsatellite Typing (MLMT)

University of Torino – UNITO  
*Mycotheca Universitatis Taurinensis (MUT)*

**We provide remote access to** Multi-Locus Microsatellites Typing (MLMT), with the supervision of experienced scientists and technical staff. The service includes DNA extraction from pure cultures, PCR amplification (2 microsatellite primers), image analysis, cluster analysis.

### About us

UNITO-MUT is specialized in fungi identification and characterization. Microsatellites, or short tandem repeats (STRs), are regions of repetitive non-coding DNA (1-6 bp in length) with high mutation rate. For this reason, they are useful for detecting polymorphisms in strains of a single species and for evaluating relations between groups and individuals (population genetics).



Liaison officer: **Cristina Varese**

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Valencia, Spain  
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## Phylogenomics and phenotype prediction of prokaryotes

Universitat de València Estudi General – UVEG  
Colección Española de Cultivos Tipo – CECT

**We offer remote access to** *de novo* sequencing and analysis of one pure microbial culture. The user will be guided by experienced researchers in the topic (more than 20 published articles in the last five years). The analysis pipeline includes assembly, functional annotation, phylogenomic analysis with closer taxa, and phenotype predictions. This service can be provided for strains of the public catalogue of IS\_MIRRI21 partners, or for isolates coming from the user.

### About us

Next-generation sequencing has expanded the possibilities for inferring phylogeny and phenotype prediction using comparative genomics. Taking advantage of this, the UVEG-CECT research team has gained considerable experience working mainly with prokaryotes from aquatic environments and from fermented food.

# TNA to products



## Arbuscular mycorrhizal fungi strains produced *in vitro*

Agro-food & Environmental Fungal Collection – BCCM/MUCL

We provide remote access to the first world collection of *in vitro* produced arbuscular mycorrhizal fungi (GINCO: Glomeromycota *in vitro* Collection in BCCM/MUCL).

### About us

BCCM is a consortium of seven microbial Biological Resource Centres (mBRCs) organised around a coordinating cell at BELSPO. BCCM/MUCL is a fungi collection (~ 25,000 strains) dedicated to agro-food and environment, embedded in the laboratory of mycology of the Université Catholique de Louvain.



@BCCM-MUCL

Liaison officer: Sylvie Cranenbrouck

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<https://bccm.belspo.be/about-us/bccm-mucl>



## Microbial strains from extreme Russian environments

Institute of Biochemistry and Physiology of Microorganisms, Russian Academy of Sciences – IBPM – RAS  
All Russian Collection of Microorganisms – VKM

We provide remote access to microbial strains isolated from permafrost and high salinity environments. These microorganisms are sources of metabolites suitable for biotechnological applications (mycotoxins, enzymes and others).

### About us

VKM is the largest non-medical microbe collection in Russia including over 20,000 isolates of archaea, bacteria, fungi and yeasts from various sources, both identified and not-yet-identified. Nearly 7,500 strains are presented in the on-line catalogue.



IBPM RAS - VKM

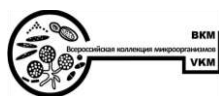
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## Archea, bacteria, yeast and filamentous fungi from the UVEG-CECT public catalogue

Universitat de València Estudi General – UVEG  
Colección Española de Cultivos Tipo – CECT

We provide remote access to strains or derived products such as DNA, inactivated cells or extracts. Access to the complete catalogue at <https://links.uv.es/cect2/catalogue>

### About us

UVEG-CECT holds most WDCM/quality control strains, delicate (*Frankia*) and recalcitrant (Planctomycetes) strains, halophylic archaea, wine and dairy related strains from different Spanish regions and other countries, Spanish *Xylella* strains and several Oomycota plant pathogenic strains from the genus *Pythium* and *Phytophthora*, among others.



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