

InfrafrontierGR/Phenotypos Research Infrastructure Trans-regional Phenotyping Call - October 2020

Free-of-charge mouse phenotyping services Micro PET/CT

Context and aim of the Call

InfrafrontierGR/Phenotypos (www.infrafrontier.gr) is the Greek Research Infrastructure for the Molecular, Behavioral and Phenotypic Analysis of Mouse Models for Human Chronic Degenerative Diseases. The infrastructure provides access to first-class expertise and tools for biomedical research, offering cutting edge technological platforms and standardized pipelines for disease-oriented mouse phenotyping, as well as the generation, archiving and distribution of mouse mutants through the Greek node of the European Mouse Mutant Archive (EMMA).

The objective of this Call is to **provide free access to state-of-the-art mouse PET/CT imaging services** to the Greek biomedical research community to monitor disease activity and treatment response. InfrafrontierGR services offered through this Call include:

1. **PET/CT imaging of mouse models and image analysis**
2. **Mouse Hosting**

Call information and application form

For more information, including eligibility criteria, selection procedure, application instructions and application form, please see the **Full Call text below**.

Deadline for submissions: 31/12/2020.

Full Call text

Trans-Regional Access (TA) activity of the InfrafrontierGR/Phenotypos project Free-of-charge mouse phenotyping services

The InfrafrontierGR/Phenotypos project (www.infrafrontier.gr) supports eligible researchers with **free-of-charge mouse phenotyping services** implemented as a Trans-regional Access activity. microPET/CT imaging, image analysis and animals hosting for the whole period of imaging will be offered for two groups of mice (control and diseased animals).

The services offered will be run by BRFAA InfrafrontierGR Units and may involve **one of the following assays**:

1. PET/CT imaging of mouse models

- a. Oncological 3D imaging and image analysis
- b. Cardiovascular 3D imaging and image analysis
- c. Brain 3D imaging and image analysis

Details of the analysis can be found at the end of this document for technical specifications

2. Mouse Hosting

- a. Long-term hosting of animals at IVC rack

- A collaboration agreement will be established between the successful applicants and BRFAA.
- All assays will be performed based on InfrafrontierGR Standard Operating Procedures.
- Results will be made available to successful applicants within a maximum of 3 months following provision of all required information and material.

Cost: Access to the InfrafrontierGR/Phenotypos mouse phenotyping services under this Call is free of charge, with the exception of shipment costs of the mice to/from their centre, which must be covered by the applicant.

Eligibility: Applications for this Call can be submitted by Researchers based anywhere in Greece. Members of the InfrafrontierGR/Phenotypos infrastructure are not eligible for applying.

Applications: Applications for the Call are made via the following [application form](#), which must be sent electronically to infrafrontierGR@fleming.gr by **31/12/2020**. The form includes a short description of the project focusing on research plans for utilising the assay results plus the impact of the mouse model under investigation.

Selection procedure: Proposals will be subject to a review procedure which will be initiated after the Call for applications is closed. Criteria for evaluation include scientific merit and soundness of the proposal, experience of the applicants, quality of preliminary data, feasibility of implementation, research plans and the impact/prospects for exploitation of the phenotyping data. A mixed panel of members of InfrafrontierGR/Phenotypos and potentially external evaluators will assess service requests supported by this activity. Applicants will be informed of

the outcome of the evaluation within 6 weeks after the Call deadline. In a further step, experts of InfrafrontierGR Units will assess the technical feasibility of projects.

The technical evaluation of projects may require the provision of additional data such as:

- Information about mouse models
- Information on the genetic modification of your mutant mouse line if applicable
- Description of DNA modification
- Mutant phenotype(s), special housing or care requirements
- Current sanitary status
- Intellectual property rights (who generated and who owns the mouse line)

Acknowledgements: Selected beneficiaries are obliged to acknowledge support under this scheme in all resulting publications using the following wording "*We acknowledge support of this work by project InfrafrontierGR-Phenotypos (MIS 5002135), which is implemented under the Action Reinforcement of the Research and Innovation Infrastructure, is funded by the Operational Programme Competitiveness, Entrepreneurship and Innovation (NSRF 2014-2020) and is co-financed by Greece and the European Union (European Regional Development Fund)*".

Information/Contact:

C. D. Anagnostopoulos, Research Director
BRFAA Soranou Efessiou 4, 11527, Athens
Email. cdanagnostopoulos@bioacademy.gr
tel. 210 6597125
www.infrafrontier.gr (or www.bioacademy.gr)

Anastasios Gaitanis, Research Scientist
BRFAA Soranou Efessiou 4, 11527, Athens
Email. agaitanis@bioacademy.gr
tel. 210 6597318
www.infrafrontier.gr (or www.bioacademy.gr ?)



Co-financed by Greece and the European Union

APPENDIX: Technical specifications

1. PET/CT imaging of mouse models-PET/CT image Analysis

a. Oncological 3D imaging

Oncological or cancer 3D imaging of up to 3 mice per day will be performed on the NanoScan PC 8/2 PET/CT scanner. This is a state-of-the-art preclinical PET/CT scanner with high sensitivity (9% in 150-750 keV) and high spatial resolution (<1mm) for PET scanner. The CT component has fully diagnostic capabilities at various dose levels. For cancer imaging two different radioisotopes can be employed; ^{18}F mainly in the form of FDG and ^{68}Ga . The scanning time is about 15 minutes for PET and 5 min for CT and the preparation time required for each animal is almost an hour. Longitudinal studies may take place if this kind of protocol is needed.

b. Cardiovascular imaging

Dynamic and ECG Gated images can be obtained and various parameters including myocardial viability, glucose metabolic rate and ejection fraction can be assessed.

c. Brain imaging

The quantification of several parts of mouse brain can be an indicator for the existence of a disease or the response to a specific treatment. PET/CT can be employed to image animals' brain and by using dedicated software to analyze the radioactivity concentration.

2. Mouse Hosting

BRFAA has developed dedicated room with IVC rack for the hospitality of animals coming by external collaborators. This process runs under the supervision of scientific personnel serving at BRFAA's animal facility.