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INFRAFRONTIER2020 Project - Trans-national Access call

**Specialised phenotyping:**

**Induced secondary phenotyping screen under acute or more chronic inflammatory conditions**

Call information and application form

**Context and aims of the call**

Main objective of this INFRAFRONTIER2020 Trans-national Access call is to facilitate access for the wider biomedical research community to the unique infrastructure and scientific expertise of our INFRAFRONTIER partner **Biomedcode** **Hellas SA** providing an induced secondary phenotyping screen under acute or more chronic inflammatory conditions.

While primary phenotyping of mutant mouse lines can provide useful information on the involvement of genes in physiology, often their role in pathology can be only revealed when studied in a disease context or following a pathogenic trigger. Such a trigger can be for example inflammation, which has been implicated in a number of pathologic conditions.

To uncover gene function in pathologic processes we offer a specialised phenotyping screen under inflammatory conditions. The proposed screen involves the phenotypic analysis of mutant animals combined with one acute and one chronic inflammatory model.

The user’s research interests, the nature of the mutated gene and the strain of the mutant animal under investigation will dictate the selection of the most appropriate combination of one acute and one chronic model, to provide the most informative customized output for the user. Through this secondary screening of mutants under inflammatory and disease conditions, the user will be able to uncover the role of their mutant of interest in pathologic conditions.

Access will be granted on the basis of scientific excellence and supports the development and indepth characterisation of mouse models for investigating gene function and human pathophysiology. INFRAFRONTIER will provide open access to all characterised disease models and phenotyping data.

**INFRAFRONTIER** is the European Research Infrastructure for phenotyping and archiving of model mammalian genomes. The INFRAFRONTIER Research Infrastructure provides access to first-class tools and data for biomedical research, and thereby contributes to improving the understanding of gene function in human health and disease using the mouse model. The core services of INFRAFRONTIER comprise the systemic phenotyping of mouse mutants in the participating mouse clinics, and the archiving and distribution of mouse mutant lines by the **European Mouse Mutant Archive (EMMA).**

H2020 The **INFRAFRONTIER2020 project** has received funding from the EU Research and Innovation programme **Horizon 2020** (H2020-EU.1.4.1.1. Developing new world class research infrastructures)

**Participating INFRAFRONTIER partner**



**BIOMEDCODE** <http://www.biomedcode.com/gr/en>

**Biomedcode Hellas SA** is a Contract Research Organization (CRO) providing full preclinical drug evaluation services using a unique collection of proprietary mouse models of human inflammatory diseases.

Biomedcode was founded in 2006 as a spin-off company of the **Biomedical Sciences Research Center "Alexander Fleming”,** another partner in the INFRAFRONTIER consortium. Biomedcode is capitalising on BSRC´s long lasting expertise of its Board of Directors and scientific management team in successfully generating genetic mouse models mimicking Rheumatoid Arthritis, Intestinal Inflammation, Psoriasis, Multiple Sclerosis, Osteoporosis and other diseases.

With a primary focus on anti-TNF therapeutics, Biomedcode’s humanized animal models were instrumental in demonstrating the therapeutic efficacy of Infliximab (Remicade®) currently one of the most successful anti-TNF therapeutics. Biomedcode is also equipped with a number of standard induced models of inflammatory diseases such as Collagen Antibody Induced Arthritis (CAIA), Experimental Autoimmune Encephalomyelitis (EAE, a model of MS), induced colitis, psoriasis and others and employs advanced platforms for comprehensive phenotyping of disease progression. The combination of humanized animal models with either spontaneous or induced inflammatory diseases offers a diverse array for drug evaluation platforms ideal for the preclinical testing of therapeutics targeting human molecules with no cross-species reactivity.

Biomedcode combines scientific consulting and custom-tailored solutions towards optimizing the efficacy evaluation of novel and biosimilar pharmaceuticals, as well as novel therapeutic approaches. Offered services include animal model development and analysis, in-vivo and ex-vivo preclinical drug evaluation, PK/PD standardized sample collection, histopathological evaluation, immunohistochemistry, molecular, cellular, and immunological assays, and pharmacotranscriptomics.

Trans-national Access (TA) activity of the INFRAFRONTIER2020 project

**Induced secondary phenotyping screen under acute or more chronic inflammatory conditions**

**Access modalities:**

* The EC Horizon2020 funded INFRAFRONTIER2020 project (2017 – 2020) supports eligible customers with a free-of-charge mouse model phenotyping screen under inflammatory conditions implemented as a Trans-national Access activity supporting a total of 3 projects in this call.
* The access unit offered covers the induced phenotyping screen of a mouse mutant line under acute or more chronic inflammatory conditions, and the preparation of a comprehensive phenotyping report.
* Details of the specific phenotyping pipeline and service offer are described on page 6 of this application form.
* Biomedcode will provide a phenotyping report discussing the generated results.
* A collaboration agreement will be established between applicants and Biomedcode.
* Starting material for the phenotyping projects are 16 mutant and 16 wild type littermate age-matched (8-10 weeks) mice (the sex of the mice will be determined based on the models selected). Acceptance of mice depends on the status of the health certificates. Mouse mutants from various sources (transgenes, knockout mice, mutants from mutagenesis screens like ENU) and of different genetic backgrounds can be accepted.
* The analysed mouse models and the generated phenotyping data will be made available to the scientific community. An optional grace period of up to 1 year for mouse resources and phenotype data may apply, with immediate release of mouse resources and data after expiry of the grace period. A phenotyping report with all phenotyping data will be prepared, and data will also be uploaded onto the INFRAFRONTIER portal at http://www.infrafrontier.eu. Mouse mutant lines will be deposited into the INFRAFRONTIER/EMMA repository for subsequent use by the scientific community, and will be distributed using the applicant’s institutional MTAs.
* **Costs:** The access to the INFRAFRONTIER2020 phenotyping service is free of charge. However, all shipment costs to and from Biomedcode in Vari/Greece, related to the shipment of mice as well as the shipment of biological material generated during the phenotyping project, must be borne by the applicants. In addition, in case of selection of the CAIA model, the costs of ArthritoMAB must also be borne by the applicants.
* **Eligibility:** The INFRAFRONTIER2020 Trans-national Access call is open and proposals can be submitted from applicants around the world.
* **Application:** Service requests for the INFRAFRONTIER2020 specialised phenotyping service can be made via this application form. Applications for the Trans-national Access activity must include a short description of the research plans for utilising the phenotyped mouse model that is being characterised by the INFRAFRONTIER2020 TA service.
* **Selection procedure:** Proposals from eligible customers for free of charge access to the INFRAFRONTIER2020 specialised phenotyping service will be subject to a review procedure. The review will be based on short descriptions of the projects involving the mouse mutants that will be phenotyped by the TA service. A mixed panel of members of INFRAFRONTIER and of an external Evaluation Committee will assess service requests supported by the TA activity. In addition to scientific merit of applicants, relevance and quality of preliminary data, soundness of the proposal and research plans, and the project objectives and prospects for exploitation of phenotype data will be assessed. In a further step Biomedcode scientists will assess the technical feasibility of projects.

The technical evaluation of projects requires the provision of data including:

- Information on the current sanitary status of mice (health reports required)

- Information on the genetic background of the mice that will be phenotyped. The selection of the model will also depend on the genetic background of the mice.

- Information on the genetic modification of your mutant mouse line (e.g. affected gene, MGI ID of the gene, type of mutation, ES-cell line used, number of backcross generations)

- Description of DNA modification (vector, remaining non-recipient DNA, donor organism)

- Mutant phenotype(s), special housing or care requirements

- Intellectual property rights (who generated and who owns the mouse line)

Applicants will be informed on the outcome of the evaluation within 4 weeks after the end of the call for which the TA application was submitted. All applications will be handled with strict confidentiality.

**Acknowledgements:**

Please do acknowledge any support under this scheme in all resulting publications with ***‘Part of this work has been funded by the European Union Research and Innovation programme Horizon 2020 (Grant Agreement Number 730879)’***.

**INFRAFRONTIER**, the infrastructure providing the service, must be specifically mentioned in any publication resulting from the service.

**Specialised phenotyping pipeline**

Biomedcode - <http://www.biomedcode.com/gr/en>

**Induced secondary phenotyping screen under acute or more chronic inflammatory conditions**

The generation of mice with mutated genes resulting in gain and loss of function are very useful tools in studying the functions of specific genes. While primary phenotyping of such animals can provide useful information on the involvement of genes in physiology, often their role in pathology can be only revealed when studied in a disease context or following a pathogenic trigger. Such a trigger can be for example inflammation, which has been implicated in a number of pathologic conditions.

To uncover gene function in pathologic processes we offer an **induced secondary phenotyping screen** under acute or more chronic inflammatory conditions. The proposed screen involves the **phenotypic analysis of mutant animals combined with one acute and one chronic inflammatory model** among the ones outlined below. The user’s research interests, the nature of the mutated gene and the strain of the mutant animal under investigation will dictate the selection of the most appropriate combination of one acute and one chronic model, to provide the most informative customized output for the user.

**Acute Models of general inflammation** will serve for the fast and sensitive detection of the involvement of the mutated gene in inflammatory mechanisms assessed by the response of mutant mice in cytokine secretion and/or cell recruitment processes. Available acute models include: 1) **Lipopolysaccharide (LPS) Induced Cytokine cascade**, 2) **Zymosan Induced cell recruitment,** 3) **Thioglucolate Induced cell recruitment**

**Induced Disease Models** will serve for the evaluation of the involvement of the mutated genes in a disease setting, assessed by the response of mutant mice in disease development and progression evaluated at the clinical and histopathological level. Available disease models include: 1) **Collagen Antibody induced arthritis** (CAIA) *(\*Arthritomab must be provided by the interested party)*, 2) **TNBS-colitis,** 3) **IMQ-induced psoriasis,** 4) **MOG-induced Experimental Autoimmune Encephalomyelitis**.

Through this secondary screening of mutants under inflammatory and disease conditions, the user will be able to uncover the role of their mutant of interest in pathologic conditions.

**Application Form - INFRAFRONTIER2020 specialised phenotyping**

**The call has a rolling deadline.** Applications will be collected at the beginning of every month and then evaluated. The call will close as soon as three proposals have been selected. Deadline for input is **30 June 2020.** We recommend to send in proposals as soon as possible.

**Contact details of applicant**

|  |  |
| --- | --- |
| **First name** |  |
| **Family name** |  |
| **Email** |  |
| **Phone** |  |
| **Fax** |  |
| **Institution** |  |
| **Address** |  |
| **Town** |  |
| **Postcode** |  |
| **Country** |  |
| **Link to lab website** |  |
| **Link to publication list** |  |

**The following data is required by the EC for statistical purposes**

Applications can only be considered if all data are provided

|  |  |
| --- | --- |
| **Gender** |  |
| **Birth year** |  |
| **Nationality** |  |
| **Researcher status**  (e.g. Prof, Postdoc) |  |
| **Scientific background** |  |

I have read, understood and agree to the [INFRAFRONTIER data privacy policy](https://www.infrafrontier.eu/procedures/legal-issues/data-privacy-statement)

**Description of proposed project**

Please describe briefly the proposed project involving the mouse mutant line to be phenotyped. This proposal will be the foundation for the evaluation of your project. Informal enquiries prior to proposal submission are welcome via [proposals@infrafrontier.eu](mailto:proposals@infrafrontier.eu)

|  |  |
| --- | --- |
| **Gene of interest** |  |
|  | |

Please do not extend beyond the provided space (max 2 pages including references).

**Send your proposal to** [proposals@infrafrontier.eu](mailto:proposals@infrafrontier.eu) by 30 April 2020.