

The Greek Research Infrastructure for Molecular and Behavioural Phenotyping of biological model organisms for chronic degenerative diseases (INFRAFRONTIER-GR/Phenotypos)

(www.infrafrontier.gr)

INFRAFRONTIER-GR/Phenotypos is an expansion of INFRAFRONTIER-GR, the Greek node of ESFRI Infrafrontier: The European Infrastructure for phenotyping and archiving model mammalian genomes. INFRAFRONTIER-GR is a sustainable, open access pan-Hellenic Research Infrastructure that provides access to mouse tools and resources necessary to unravel the role of gene function in human health and disease and to translate this knowledge into therapeutic approaches and disease prevention strategies. The Infrastructure offers services for the generation, distribution and disease-oriented phenotyping of mutant mouse genomes and is a full member of INFRAFRONTIER's archiving node, the European Mutant Mouse Archive (EMMA) - a major European biomedical repository that provides collection, archiving and distribution services of mutant mouse strains to the biomedical research community. INFRAFRONTIER-GR currently provides specialist secondary phenotyping services in the field of immunological diseases and cancer. In its next phase of development ("Phenotypos"), the Infrastructure will expand its current services to include: (a) macroscopic and analytical platforms for detailed description of complex disease phenotypes in mouse models that is required for the clinical/ biomarker description of human disease; and (b) animal modeling and phenotyping of additional important disease areas in which Greek research is also highly competitive, including metabolic and neurological diseases.

This second phase will complement the "mouse clinic" initiative of INFRAFRONTIER-GR by renewing, upgrading and expanding its current capacities and establishing new facilities that will allow the integrated study of additional biological parameters towards the generation of comprehensive phenotypic profiles. This will be achieved through the incorporation of systematic screens for an organism's metabolites and the macroscopic behavioural patterns altered during disease development. The expanded facility will offer state-of-the-art, standardized services for biomedical discovery to national and European stakeholders, both from academia and industry, through the phenotypic analysis of mouse models of chronic degenerative diseases, such as type 2 diabetes, atherosclerosis, dementias and cancer, which are now recognized as worldwide epidemics.

INFRAFRONTIER-GR/Phenotypos aims to enhance research excellence by networking expertise and technological platforms currently located in different research centres and industry, and is expected to boost Greek research productivity and innovation in biomedicine. INFRAFRONTIER-GR/Phenotypos places particular emphasis on enhancing territorial development and cooperation through the generation of regional outposts in distant peripheries of Greece, thus facilitating entry points for access to the RI's service pipelines. This will have significant benefits towards reducing regional disparities, upgrading less-favoured territories and contributing to knowledge-based regional development. The creation of a Northern outpost will also serve as an access point and interface for cross-border activities and the attraction of additional regional users from the Balkans and surrounding areas, thus setting a foundation for transnational and inter-regional clusters and networks. Furthermore, as a full partner of the ESFRI Infrafrontier, INFRAFRONTIER-GR has direct connectivity and strategic partnerships to Global Projects and Consortia on mammalian genetics and phenotyping, including the International Knock-out consortium (IKMC), the European conditional mutagenesis program (EUCOMM), the International Mouse Phenotyping Consortium (IMPC) and others.

