



"ALEXANDER FLEMING"
Biomedical Sciences Research Center

COVID-19 ANNOUNCEMENT – updated 3/6/2020

BSRC Fleming supports Greek Public Health authorities in their effort to tackle the COVID-19 pandemic

COVID-19 pandemic has caused an unprecedented disruption for the global health with significant socioeconomic impacts. The Biomedical Sciences Research Center 'Alexander Fleming' offers its research infrastructures, technological expertise and experienced personnel to support the ongoing effort to tackle the COVID-19 pandemic in our country and globally.

BSRC Fleming, based in Vari - Attica, is a leading Greek research institution, internationally recognized for its contributions to understanding human diseases and development of novel diagnostic and therapeutic tools by generating and studying relevant animal models. With public health as one of its top priorities, BSRC Fleming supports the National Health System and the community by engaging in four specific actions to support diagnostic and research approaches against COVID-19:

- 1) Participating in efforts to **detect the virus in biological samples** using the Biosafety Level 2 (BSL-2) facilities available at the Center: Fleming possesses the necessary technological infrastructure to support diagnostic tests and to participate in the improvement of existent, or the development of new tests that will address immunity against SARS-CoV-2.
- 2) Supporting research aimed at understanding viral pathology, by **providing experimental animal models** that are relevant to SARS-CoV-2 infection, inflammation and the neurotropism of the virus. Specifically, Fleming can provide pre-existing animal models or, based on emerging needs from current clinical studies of the virus, generate novel animal models through its specialized units. Additionally, utilizing **platforms for the identification of clinical, cellular and molecular markers** it can undertake the characterization of underlying clinical, genetic and epigenetic factors that are associated with **susceptibility or resistance** to SARS-CoV-2 infection.
- 3) Providing technical expertise and the necessary **bioinformatics tools** required to analyse **viral genetic material** in the Greek population towards identification of potential variants associated with increased transmission or virulence. In addition, the Center can apply combinatorial bioinformatic methods on data from patient sample analyses to discover **biological markers of the disease**, as well as aid in drug repurposing. Fleming's researchers are already collaborating with international teams in basic research projects to discover [therapeutic targets](#) by modelling and analysing viral – host protein interaction networks. All data from these actions will be freely available to the scientific community in order to accelerate research against COVID-19. Furthermore, through the ELIXIR-GR infrastructure,



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Fleming manages an instance of the [Galaxy platform](#) in our country, which - in the context of COVID-19 - offers best practice **biocomputing resources for the analysis of SARS-CoV-2 data** which are open to the Greek research community.

4) Contributing to the [Flagship Research Action](#) "Epidemiological study of SARS-CoV-2 in Greece through extensive testing for virus and antibody detection, viral genome sequencing and genetic analysis of patients, in response to the SARS-CoV-2 crisis". This action aims to develop diagnostic tests, including immunological assays to detect virus antigens and antibodies against the virus, but also aims to analyse both viral and patient genomes. In the context of this Action, Fleming participates in the analysis of host genomics, to understand **how genetic variation in patients with COVID-19 shape risk for and severity of disease**.

At the European level, Fleming participates in efforts to tackle the pandemic as coordinator of two National Research Infrastructures, [InfrafrontierGR](#) and [ELIXIR-GR](#), and as a core partner of their respective European networks [INFRAFRONTIER](#) and [ELIXIR](#), that are already engaged in actions against COVID-19. Additional information is provided at the following links:

<https://www.infrafrontier.eu/knowledgebase/therapeutic-area/covid-19-resources-and-measures>

<https://elixir-europe.org/news/covid-19-support>

<https://covid19.galaxyproject.org>