

Description of Funded Research Projects

1st Call for H.F.R.I. Research Projects
to support Post-Doctoral Researchers



H.F.R.I.
Hellenic Foundation for
Research & Innovation

Research Project Title:
**Rapid field diagnostic
technology for detection of major
swine viral diseases**

Principal Investigator:
Eleni Gkana

Popular Title:

**Rapid field diagnostic technology for
detection of major swine viral diseases**

Scientific Field:
Agricultural Sciences

Host Institution:
Agricultural University of Athens



H.F.R.I.
Hellenic Foundation for
Research & Innovation

Diseases affecting livestock can have a devastating impact on animal productivity and production, on live animal trade, meat and other animal products, on human health and, consequently, on the overall process of economic development. Among them, Porcine Reproductive and Respiratory Syndrome virus (PRRSV), Porcine Circovirus (PCV2) and Swine Influenza A (SIV) have a significant impact on the economy of the swine industry. During the last 10 years, much emphasis has been focused on emerging infectious zoonotic diseases, such as Hepatitis E virus (HEV), that have recently drawn more attention. Thus, there is a need for evaluation of reliable, rapid and simple diagnostic testing directly on the field, that would enable rapid local decision making which is crucial to prevent further spreading of the disease. One promising solution that can help address this issue is loop-mediated isothermal amplification (LAMP).

The main objective of this study will be the development and evaluation of an assay based on LAMP for rapid detection of major swine viruses. Furthermore, since there is no active surveillance for the aforementioned viruses undertaken in Greece, during this project both serological and virological data will be collected in order to generate valuable information regarding the epidemiology of the targeted viral diseases. The diagnosis of viral infections will be confirmed by detection of antibodies in the serum by ELISA and virus isolation using nucleic acid extraction & purification, and PCR-based amplification (RT-PCR, Real Time PCR). This project will also investigate, through questionnaire, the association between certain farm-level risk factors and the prevalence of targeted viral diseases, since management and environmental factors are considered important determinants of the risk of the introduction and maintenance of an infectious agent in swine herds and also affect many measures of herd productivity.

The recently experienced animal disease crises have provided a clearer understanding to the international community, of the benefits of applying appropriate animal health policies and programs in order to safeguard public health and ensure food safety. Thus, identification of risk factors affecting viral diseases is important to identify and implement adequate control measures and to design cost effective surveillance strategies in order to prevent them.

A key goal of EU's strategy for animal health is to ensure early diagnosis, in order to prevent and reduce animal diseases. Consequently, the development of a Point-of-care (POC) diagnostic assay will provide reliable and simple diagnostic testing directly on site, thus enabling rapid local decision making which is crucial to prevent further spreading of the disease. This is crucial both for animal & food safety, but also for human health in general.

To me, H.F.R.I. funding
would mean...

“



This fellowship is a great opportunity for me to remain in my country and conduct research in the agricultural sector, of great impact to society. It will also help me collaborate with other researchers and further broaden my knowledge and skills. Finally, my position as a scientific manager will boost my career, increase competitiveness, add new perspectives and areas of expertise and overall prepare me for future challenges.

*The Principal Investigator,
Eleni Gkana*

Funding

Amount: **200,000 €**

Duration: **36 months**

Foundation: **H.F.R.I.**





H.F.R.I.
Hellenic Foundation for
Research & Innovation

CONTACT

127, Vasilissis Sofias Avenue
115 21 Athens, Greece
info@elidek.gr
www.elidek.gr



HELLENIC REPUBLIC
MINISTRY OF
DEVELOPMENT AND INVESTMENTS



GENERAL SECRETARIAT FOR
RESEARCH AND TECHNOLOGY