

Description of Funded Research Projects

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



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Research Project Title:

**Exploring the neurodegenerative
potential of chronic stress in a
human alpha-synuclein
overexpression model**

Principal Investigator:
Alexia Victoria Polissidis

Popular Title:

**The role of chronic stress in
neurodegeneration**

Scientific Field:
Life Sciences

Host Institution:
**Biomedical Research Foundation
Academy of Athens, Greece**



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An appropriate stress response is vital for homeostasis and survival; however, chronic stress is predominantly detrimental and can negatively impact the brain and behaviour. Interestingly, there is evidence of bidirectional neural and immune system communication between the gut, its microbiota (bacteria that live in the gut) and the brain and these interactions are collectively termed the “microbiome-gut-brain axis”. The present study aims to examine the effects of gene-environment interactions in neurodegeneration: the mysterious process that leads to neuronal cell death. Specifically, we will use a model of neurodegenerative vulnerability that expresses enhanced levels of the protein that builds up in Parkinson’s disease, alpha-synuclein, to assess the role of chronic stress exposure in the microbiome-gut-brain axis.

This study will widen our understanding of everyday chronic stress and its consequences on brain health. In terms of scientific advancement, we aim to establish an ideal model of accelerated alpha-synuclein-induced neurodegeneration that can be used to test new therapeutics. Furthermore, understanding mechanisms of microbiota–gut–brain dysregulation, provides the opportunity for future development of preventive, diagnostic and therapeutic approaches. Finally, and most importantly, Greece possesses a particularly high incidence of alpha-synuclein mutation carriers, thus, research focused on the role of alpha-synuclein in neurodegeneration has an especially high relevance for Greek society.

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

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The H.F.R.I. Postdoctoral funding initiative has provided me the opportunity as a junior scientist to continue my research in Greece as an independent investigator. Such initiatives on the Government's part are not only vital to support young researchers eager to pursue a scientific career in Greece, but for Greek society as a whole, because an investment in research is an investment in our future.

*The Principal Investigator,
Alexia Victoria Polissidis*

Funding

Amount: **180,000 €**

Duration: **36 months**

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





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GENERAL SECRETARIAT FOR
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