



Thanasis Rogdakis (ESR 11)

Evaluation of microneurotrophins activity on neurotrophin receptors and their role in signalling in *in vitro* and *in vivo* neurodegenerative conditions, such as Alzheimer's Disease

Profile

Thanasis Rogdakis
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Host:



Foundation for Research and
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My Research

My research project is engaging in the screening and biological assessment of novel steroidal and natural compounds for their ability to bind to and activate neurotrophin receptors, such as TrkA, as well as to prevent cell death. Compounds that are active and present favourable pharmacokinetic profiles will be selected to be further tested in *in vitro* and *in vivo* models of Alzheimer's Disease. I will evaluate their capacity to promote neuronal survival against A β in primary neuronal cultures and animal models of the disease. Lastly, the impact on synapse number and function, as well as the behavioural phenotype will also be examined.

Social

Twitter: @eneurotrophin
Group: EuroNeurotrophin
Project: EuroNeurotrophin



Scientific CV

- October 2018 - Present: **EuroNeurotrophin Early Stage Researcher** PhD candidate, Foundation for Research and Technology – Hellas, Institute of Molecular Biology and Biotechnology & Medical School, University of Crete
- February 2018 – September 2018: **Research Technician**, Neural Computation lab, Wolfson Institute for Biomedical Research, University College London. Supervisor: Professor Michael Hausser
- February 2016 – January 2018: **Research Technician**, Cell and Developmental Biology Department, University College London. Supervisor: Professor Patricia Salinas
- September 2015: **Msc in Neuroscience**, Institute of Psychiatry, Psychology and Neuroscience, King's College London
- July 2013: **Bsc in Biology**, Faculty of Biology, University of Athens, Greece





EuroNeurotrophin

A European training network for the discovery of neurotrophins small molecule mimetics as candidate therapeutic agents for neurodegeneration and neuroinflammation

Project Coordinator

Dr Theodora Calogeropoulou,
National Hellenic Research
Foundation, Greece

Project Partners



ΕΘΝΙΚΟ ΙΔΡΥΜΑ ΕΡΕΥΝΩΝ
National Hellenic Research Foundation

Heidelberg Institute for
Theoretical Studies



HELLENIC REPUBLIC
National and Kapodistrian
University of Athens



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Introduction

Neurodegenerative diseases like Alzheimer's disease or Parkinson's disease are on the rise in developed societies worldwide affecting millions of people. Neurodegenerative diseases primarily affect neurons in the human brain and currently there exists no cure for any of them since most of the available drugs fail to tackle the pathogenesis of neurodegenerative diseases.

Preclinical studies point to the therapeutic potential of neurotrophins, which have been shown to control a number of aspects of survival, development and function of neurons. However, the poor pharmacokinetic properties of neurotrophins render their use as drugs prohibitive.

Objectives

EuroNeurotrophin will address the major limitations of neurotrophins by developing novel small molecule, neurotrophin mimetics with favourable profiles of stability, tissue penetration and targeted biological actions. In the long term, the project will contribute to the further development of small molecule therapeutics for the treatment of neurodegenerative diseases and neuroinflammation, revealing new concepts of neurotrophin receptors signalling and to create a pan-European Neurotrophin Network.

Furthermore, EuroNeurotrophin aims at creating a new generation of young scientists with a broad understanding and skill set in chemical biology with emphasis on the neuroscience field and to educate 14 young researchers regarding the knowledge underpinning the neurotrophin related field as well as on drug and natural products research for neurodegenerative diseases.

Impact

Neurotrophins offer one of the most compelling opportunities to significantly improve the treatment of serious age-related, neurological diseases such as Alzheimer's, Parkinson's, MND/ALS. A major therapeutic advantage of neurotrophic factors is that they tackle both the symptoms of a disease (improving clinical status) as well as its pathogenesis (delaying disease progression) without any prerequisite deep insight into the aetiology or specific pathogenic variables driving the disease process.

We will study neurotrophin small molecule mimetics (synthetic or natural) in depth, and will use them as molecular probes to interrogate the role of neurotrophins and their receptors. It will contribute important new knowledge to the next frontier in biomedical sciences.

