

Press Release

Dr. Georgios Skretas, Senior Researcher at the National Hellenic Research Foundation, is awarded a Consolidator Grant from the European Research Council (ERC) to develop engineered bacteria that accelerate drug discovery against diseases caused by protein misfolding



**European
Research
Council**

Athens, 5.12.2018

A variety of human diseases with different pathologies, such as Alzheimer's disease, Huntington's disease, systemic amyloidoses, type 2 diabetes, cystic fibrosis and others, share a common molecular characteristic: the misfolding of specific proteins. These conditions are collectively termed "protein misfolding diseases" (PMDs). PMDs can arise due to the misfolding of both soluble and membrane proteins. Currently, there are more than 50 human disorders, which are classified as PMDs, and almost all of them remain incurable. PMDs include very serious conditions with a severe impact on the well-being of modern societies, and anti-PMD therapeutics are in enormous demand. A very promising approach for the discovery of potential therapeutics against PMDs is the identification of compounds that specifically bind to such problematically folded proteins and convert them back to their normal or benign conformations. Current technologies for discovering drugs of this type, however, allow the investigation of only a limited number of test compounds, they cannot be readily adapted to be widely applicable to different types of PMDs and they are laborious, time-consuming and expensive.

On November 29th 2018, the European Research Council (ERC) announced the recipients of its Consolidator Grant competition: 291 top scientists across Europe. Funding for these researchers, part of the Horizon 2020 research and innovation programme, is worth in total €573 million and will give them a chance to build up their teams and have far-reaching impact (<https://erc.europa.eu/news/erc-2018-consolidator-grants-results>). Towards the development of new technologies that will accelerate drug discovery against diseases caused by protein misfolding, **Dr. Georgios Skretas**, Research Associate

Professor at the **Institute of Biology, Medicinal Chemistry & Biotechnology** of the **National Hellenic Research Foundation**, has been awarded an **ERC Consolidator Grant** to develop engineered bacteria that will function as a stand-alone, high-performance, living drug discovery platform against PMDs. By applying principles of synthetic biology and molecular evolution, Georgios Skretas will develop a bacterial early drug discovery platform against PMDs which:

- will be widely applicable to potentially every protein misfolding disease
- will target the misfolding of both soluble & membrane proteins
- will allow the investigation of chemical libraries with greatly expanded diversities containing billions of different test compounds
- will be very simple to use, fast and cheap
- will deliver lead therapeutic compounds against four major PMDs: Huntington's disease, light chain amyloidosis, dialysis-related amyloidosis and retinitis pigmentosa.

This is the first ever ERC Grant for Greece in the "Applied Life Sciences" and only the second Consolidator Grant in the Life Sciences.

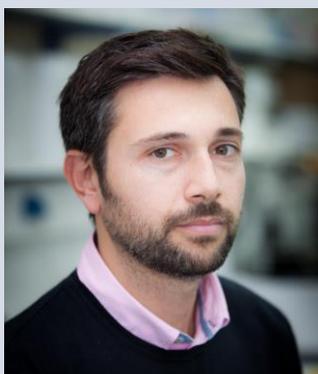
Project: A unified drug discovery platform for protein misfolding diseases (ProMiDis)

Researcher: Georgios Skretas

Host Institution: Institute of Biology, Medicinal Chemistry & Biotechnology,
National Hellenic Research Foundation | Athens, Greece

ERC Funding: € 1,972,000 for five years

Short biography



Georgios Skretas graduated from the School of Chemical Engineering of the National Technical University of Athens (Greece) in 1998 and received his PhD in Chemical Engineering from Princeton University (USA) in 2006. He then moved on to the University of Texas at Austin (USA) to carry out post-doctoral research training under the guidance of Prof. George Georgiou. In 2010, he received a Marie Curie International Reintegration Grant to return back to Greece and the National Hellenic Research Foundation. Since then, Dr. Skretas has been Principal Investigator of the Laboratory of Enzyme & Synthetic Biotechnology at the Institute of Biology, Medicinal Chemistry & Biotechnology of the National Hellenic Research Foundation, where he currently holds the rank of Research Associate Professor.



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