



## MARIE SKŁODOWSKA-CURIE POSTDOCTORAL FELLOWSHIPS 2023

### EXPRESSION OF INTEREST FOR HOSTING MARIE CURIE FELLOWS

#### HOST INSTITUTION

NOVA Medical School, iNOVA4Health-research unit

#### RESEARCH GROUP AND URL

Proteostasis and Intercellular Signaling

<https://www.nms.unl.pt/pt-pt/investigacao/grupos-de-investigacao/grupo-de-investigacao/n/proteostase-e-comunicacao-intercelular>

#### SUPERVISOR (NAME AND E-MAIL)

Paulo Pereira; [paulo.pereira@nms.unl.pt](mailto:paulo.pereira@nms.unl.pt)

#### SHORT CV OF THE SUPERVISOR

Professor Paulo Pereira (h-index: 37; i10: 67; citations:14762) is currently a Group Leader (since 2016) and the coordinator of iNOVA4Health -Nova Medical School. Paulo received a PhD in Cell Biology (1997) and the title habilitation (2007) from the University of Coimbra and he also worked at the Division of Clinical Toxicology, University College of London and at Tufts University, Boston, USA. Paulo was vice-dean for research at Faculty of Medicine University of Coimbra, Vice-President of the Portuguese Science Foundation, Portuguese Delegate to ESFRI Research Infrastructures (EC), Portuguese Delegate to the High level Group for Joint Programming Committee (EC), Representative to the General Assembly of the European Science Foundation (ESF), among other national and international positions. Professor Paulo Pereira has published ~80 articles in peer reviewed journals. He has published 5 book Chapter(s). Has 1 patent registered. Supervised 6 Postdocs and 22 PhD students . Has received 2 awards and/or honors. Participates and/or participated as Principal investigator in 14 project(s). His research interests are the study of molecular mechanisms of age-related diseases and particularly retinal diseases such as Age-related macular degeneration. Professor Paulo Pereira made important contributions on the regulation of proteostasis upon ageing and diseases and particularly on the pivotal role of proteolysis and extracellular vesicles on ageing.

#### 5 SELECTED PUBLICATIONS

1. *LAMP2A mediates the loading of proteins into endosomes and selects exosomal cargo.* João Vasco Ferreira, Ana da Rosa Soares, **Paulo Pereira**. *Autophagy*, 2022 <https://doi.org/10.1080/15548627.2022.2092315>
2. *Cell Non-autonomous Proteostasis Regulation in Aging and Disease.* João Vasco Ferreira, Ana da Rosa Soares, **Paulo Pereira**. *Frontiers in Neuroscience*, 2022 <https://doi.org/10.3389/fnins.2022.878296>.
3. *LAMP2A regulates the loading of proteins into exosomes.* João Vasco Ferreira, Ana da Rosa Soares, José Ramalho, Catarina Máximo Carvalho, Maria Helena Cardoso, Petra Pintado, Ana Sofia Carvalho, Hans Christian Beck, Rune Matthiesen, Mónica Zuzarte, Henrique Girão, Guillaume van Niel, **Paulo Pereira**. *Science Advances*, 2022; 8 (12), DOI: 10.1126/sciadv.abm1140
4. *Exosomes and STUB1/CHIP cooperate to maintain intracellular proteostasis.* Ferreira JV, Rosa Soares A, Ramalho JS, Ribeiro-Rodrigues T, Máximo C, Zuzarte M, Girão H, **Pereira P**. *PLoS One*. 2019 Oct 15;14(10):e0223790. doi: 10.1371/journal.pone.0223790. PMID: 31613922; PMCID: PMC6794069.

5. *Gap junctional protein Cx43 is involved in the communication between extracellular vesicles and mammalian cells.* Ana Rosa Soares, Tania Martins-Marques, Teresa Ribeiro-Rodrigues, Joao Vasco Ferreira, Steve Catarino, Maria João Pinho, Monica Zuzarte, Sandra Isabel Anjo, Bruno Manadas, Joost PG Sluijter, **Paulo Pereira**, Henrique Girao. Scientific reports 5 (1), 1-14. PMID: 26285688 PMCID: PMC4541155 DOI: 10.1038/srep13243.

## PROJECT TITLE AND SHORT DESCRIPTION

### **Extracellular vesicles are critical players in the transcellular regulation of proteostasis in Age-related Macular Degeneration**

Age-related macular degeneration (AMD) is a progressive and degenerative eye disease affecting the macula in the central region of the retina and remains a primary cause of vision loss in the elderly in developed countries. The causes of the disease are still unclear, however mounting evidence suggests that AMD originates from the degeneration of a single monolayer of post-mitotic cells called the Retinal Pigment Epithelium (RPE). In this project we will analyze whether that proteotoxic stress and disruption of proteostasis networks, which are major features of many ageing microenvironments, lead to dysfunction of the RPE, death of photoreceptors and, as a consequence, to degeneration of the macula and vision loss.

This proposal builds on a collaborative effort between four different groups at iNOVA4Health research unit (Labs from P.Pereira, M.Seabra, C.Santos and MMatthiesen) an ophthalmology department in Lisbon (RFlores) and a team in Paris (van Niel Co-PI) with complementary expertise in proteostasis, vision research, extracellular vesicles and drug design.

## SCIENTIFIC AREA WHERE THE PROJECT FITS BEST\*

Life Sciences (LIF)