



ESR Project Information Sheet

Project title	Development of a novel biomarker cocktail for the diagnosis-screening of drug delivery and treatment efficacy in age-related ocular diseases.
Reference number	ORBITAL_ESR_2019_Project 14
Host Company	Ocupharm Diagnostics SL
Academic institute of registration	Universidad Complutense de Madrid
Supervisor(s)	Principal Supervisor: Croke Almudena, Carracedo Gonzalo Academic Co-Supervisors: Kaja S and Reynolds A Non-Academic Supervisor: Huete F, Gasco P
Department / School	Departamento de Bioquímica y Biología Molecular
Duration	36-month employment contract provided and ESR enrolled on 4-year PhD. ESR will be required to self-fund after the initial 36 months
Status: Full-time / part-time	Full time
Funding information	Funding agency: H2020-MSCA-ITN-2018
Early Stage Researcher Allowances:	Living allowance: €37,434 p/a + mobility allowance of €7,200 p/a + family allowance where applicable (all values before tax and social security payments) Fees: PhD enrolment fees at UCM
Closing date and time	5 p.m. (CET) Friday 28 th June, 2019
Commencement date	2 nd September 2019

Post summary

The principal causes of visual impairment and blindness in the world population are age-related ocular diseases including glaucoma, age-related macular degeneration (AMD) and diabetic retinopathy. Additionally, United Nations estimates that the proportion of European population aged over 60 will be of 35% by 2050. Consequently, there is a need for new diagnostic as well as on-treatment monitoring biomarkers of the aforementioned diseases that prevent and reduce the expected visual impairment (including blindness) burden. This project aims to address this challenge through the development of novel biomarker cocktails for the early diagnosis and effective monitoring of age-related ocular diseases. Research and experimental work will involve the study of the main molecular mechanisms underlying ageing process and that are present in all age-related diseases: oxidative stress and inflammation. Subsequently, we will choose potential biomarkers and we will design biomarkers cocktails. Finally, we will analyse the diagnostic and monitoring efficacy of such cocktails on animal models and patients of the mentioned age-related ocular diseases.

The project is transdisciplinary in nature, incorporating biochemical, medical, industrial and clinical expertise, as well as being highly relevant to patients and industry.

The main phases of the research can be summarised as follows:

- Identification of potential diagnostic and on-treatment monitoring biomarkers of glaucoma, AMD and diabetic retinopathy. Potential biomarkers will be selected through a bibliographic and experimental study of oxidative stress as well as inflammation pathways in ocular cells/structures.

- Design and evaluation of the diagnostic as well as monitoring efficacy of biomarkers cocktails. The efficacy of individual and combined biomarkers previously selected will be tested on animal models and patients of the mentioned diseases.

Standard duties and responsibilities of the ESR

For the 36 months of employment contract the ESR will be required to work exclusively on the MSCA programme.

In all cases, all duties and responsibilities will be clearly outlined in the researchers Personal Career Development Plan, as determined in the early stages of the project between the ESR and their supervisory committee.

Person specification

Qualifications

Essential

- Applicants should hold or expect to attain, as a minimum a 2:1 Honours degree, or equivalent, in Biomedical Science or related area, associated with the Clinical Eye Research.

Desirable

- A postgraduate education and professional specialization in eye and vision science research is positively valued.

Knowledge & Experience

Essential

- Research project carried out with the above disciplines.
- A demonstrated experience in translational medicine: basic, preclinical (animal testing) and clinical research skills are required.
- A demonstrated knowledge of at least three of the following: eye physiology, pharmaceutical formulation development and evaluation, ocular surface biomarker development, nanotechnology, drug delivery and contact lenses.
- Qualification in statistics and data management: extensive knowledge of software such as SPSS Statistics, MATLAB or similar.

Desirable

- Work placement undertaken in a Research Organization related to the above disciplines.

Skills & Competencies

Essential

- Applicants whose first language is not English must submit evidence of competency in English.
- Evidence of interest, aptitude and research experience in the above discipline.

- Scientific writing and communication skills to present the results at international conferences and journals.
- Open-minded person with availability to travel and capacity to develop the project within an international environment.

Further information

For any informal queries, please contact Dr. Basilio Colligris on +34 635129390 or by email on bcolligr@ocupharm.com

For queries relating to the application and admission process please contact Dr Laurence Fitzhenry at orbital@wit.ie or by telephone at +353 (0)51 302624.

Website: www.orbital-itn.eu

Website: www.ocupharm.com

Ocupharm may decide to interview only those applicants who appear from the information available, to be the most suitable, in terms of experience, qualifications and other requirements of the position.



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