DOCTORAL INPhINIT FELLOWSHIPS PROGRAMME – INCOMING FRAME INFORMATION CALL 2022

PhD POSITION OFFER FORM

Position

1. Project Title/ Job Position title:

2. Area of Knowledge: **(choose one option)**

- **LIFE SCIENCES X**

  or

- PHYSICAL SCIENCES, MATHEMATICS AND ENGINEERING

3. Group of disciplines: **(choose one option)**

LIFE SCIENCES

Medicine, Public Health, Sport Sciences, Nutrition, Clinical Psychology, Health Management
Animal, Plant, Environmental Biology, Physiology, Ecology and Conservation
Human Biology, Microbiology, Molecular Biology, Genetics, Cellular Biology, Genomics and Proteomics, Biochemistry X
Agriculture, Veterinary Science, Animal Production, Forestry
Biotechnology, Bioinformatics, Pharmacy, Food Technology

PHYSICAL SCIENCES, MATHEMATICS AND ENGINEERING

Theoretical and Applied Mathematics, Computer Sciences
Physics

Geology, Earth Sciences, Environmental and Atmosphere Sciences, Mines, Geological Engineering, Oceanography, Hydrology
Civil and Construction Engineering, Energy, Nuclear Energy and Renewable Energy Engineering
Chemistry and Chemical Engineering
Telecommunications, Electronics, Robotics, Biomedical Engineering, Automation Engineering, ICT
Industrial Engineering, Mechanical Engineering, Metallurgy, Materials, Nanotechnology, Aeronautical, Naval and Aerospace Engineering

4. Research project/ Research Group description (max. 2.000 characters)

Pathological angiogenesis is involved in many highly prevalent diseases as cancer, and also in many rare diseases. For this reason, many pharmaceutic, medical chemistry and biotechnology research groups are interested in finding and developing new drugs targeting angiogenesis for the therapeutic treatment of theses angiogenesis-related or -dependent diseases. Metabolic reprogramming, another common feature of many diseases, also receives attention as a target for therapeutic treatments of diseases. Inflammation is a third hallmark of cancer and many other diseases. In the microenvironments where pathological angiogenesis takes place, there are complex regulatory cross-talks not always well understood yet and involving connections with metabolic reprogramming and inflammation.

Angiogenesis, metabolic rewiring, inflammation and diseases as cancer or atherosclerosis are complex biomedical systems that can be systematically studied with a mixture of classical and systems biology approaches. Based on this rationale and making use of a previous and successful experience of more than 20 years, in this interdisciplinary Project our group proposes the achievement of three objectives:

Objective 1. To contribute to the knowledge of metabolism of cells present in the angiogenic microenvironments and the metabolic integration and cross-talks among them.

Objective 2. To find and characterize new modulators, as well as new targets for known modulators of these processes.

Objective 3. To use network systems biology to predict novel targets related to angiogenesis, inflammation or metabolic reprogramming, as well as new repurpose uses of existing drugs for angiogenesis related diseases, and to test these predictions experimentally.

For years our group maintains a wide relationship with biotechnological companies interested in our results and their exploitation. We have also an extensive and growing collaborative network with other national and international groups.

5. Job position description (max. 2.000 characters) Ph.D. contract to achieve a Doctoral Thesis and Degree within 3-4 years in the fields of angiogenesis, metabolism and inflammation. The selected candidate will integrate within an interdisciplinary research team with a wide experience in metabolism, basic oncology and angiogenesis. The Ph. D. candidate would be directly involved in tasks related with the objectives mentioned above, including in vitro, in vivo and biocomputational in silico approaches. Direct supervision in the laboratory will be provided by Dr. Melissa García-Caballero and our team of professors and postdoctoral researchers. The holder of this position will gain experience, capabilities and skills in cell culture management, cell biology, biochemistry and molecular biology assays as well as in the use of bioinformatics and biocomputational tools to aid the experimental approaches.

Group Leader

1. Title: Full Professor of Biochemistry and Molecular Biology
2. Full name: Miguel Ángel Medina Torres
3. Email: medina@uma.es
4. Research project/ Research Group website (Url): ***(it is not updated***: http://www.bmbq.uma.es/procel/eng/index.html)
5. Website description:

Additional website (optional, max. 5 websites)

1. Url: : Please visit the Group Leader profile in ORCID (https://orcid.org/). Search ORCID ID: 0000-0001-7275-6462. Group Leader profile in ResearchGate (https://www.researchgate.net/).
2. Please, visit Dr. Melissa García-Caballero profile in ORCID. Search ORCID ID: 0000-0002-4263-5536