

IMIBIC CALL FOR EXPRESSIONS OF INTEREST:
POST-DOCTORAL RESEARCHERS: Inflammation and cancer

Reference: PostdocMSCA2017GC4

Description of IMIBIC

The biomedical research institute, IMIBIC, located in Cordoba, southern Spain, is a partnership between the University of Cordoba and the Reina Sofia University Hospital. IMIBIC offers a multidisciplinary environment focused on results-oriented research and based on precision medicine and excellence in science. IMIBIC is accredited with the Excellence distinction from the Carlos III Spanish National Institute of Health.

The Institute is structured in research groups that cooperate in the implementation of its various scientific programmes. Our major goal is to promote biomedical innovation as a powerful engine for economic and social development. To this end, the Institute offers an active environment in which to conduct high-level scientific research. Regular seminars and research events offer the opportunity to meet with national and international speakers covering a diverse range of topics in biomedicine.

The IMIBIC building is located within the University Health Sciences Campus, nearby the Reina Sofia University Hospital. It hosts a wide variety of core facilities for researchers, including the Biomedical Research Support Units that host brand new equipment and laboratories to support the technical needs of the IMIBIC community, as well as a Clinical Research Unit to support clinical trial research.

In 2015, IMIBIC managed to continue increasing its scientific output, with 359 papers and the total impact factor was 1303.75 points. Furthermore, 21 property registries were fostered at the heart of the Institute, and a total of 5 EU and international projects (private, FP7, H2020, IMI) were active in 2015.

Aim of the call

The Maimonides Biomedical Research Institute of Cordoba (IMIBIC) is seeking to develop proposals with **experienced researchers** for submission under the **Horizon 2020 Marie Skłodowska-Curie Actions**.

<http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/msca-if-2017.html>

IMPORTANT: Applicants should check their CV against the eligibility and mobility conditions of Marie Skłodowska-Curie Actions.

Brief description of the Research Group

Inflammation and cancer (GC-04)

The group “Inflammation and Cancer” is a consolidated group (GC-04) of the IMIBIC and participates in the research program Chronic Inflammatory Diseases that is described in the Institute’s strategic plan. Overall the research undertaken by the group is very collaborative with other national and international research groups and with SMEs. The main research lines are:

1. Study of the mechanism of action of cannabinoids (endocannabinoids, phytocannabinoids and synthetic cannabinoids) (PI. Eduardo Muñoz). In this line of research we are focused on

studying the mechanism of action of some phytocannabinoids and endocannabinoids in order to explore their therapeutic potential in inflammatory and neurodegenerative diseases. We aim to identify the hyoximimetic mechanism of action of endocannabinoids type N-acyl dopamines and explore pharmacological strategies to increase the levels of these endocannabinoids in the CNS. We are also investigating the pharmacological potential of new semi-synthetic compounds derived from phytocannabinoids Cannabidiol and Cannabigerol by studying novel mechanisms of actions and their efficacy in different in vivo models of neuroinflammation and fibrosis.

2. Molecular identification of signalling pathways that regulate certain processes involved in inflammation and cancer (PI. Marco A. Calzado). This line of research aims to identify the role of kinase DYRK2 in carcinogenesis. One of the main objectives is to identify new molecular targets for the development of novel potential therapies. Moreover, we are studying the metabolomic profile in human lung cancer and in murine models of prostate cancer. In addition, we have a particular interest in the study of new chemical entities able to inhibit molecular targets of pharmacological interest in cancer.

Project description:

Most biological processes in mammals are regulated by reversible phosphorylation mechanisms carried out by protein kinases, which are mainly in charge of the control, coordination and interactions among the different cell signalling pathways. In the last decade a great interest has arisen in the study of the role of kinases individually, especially as targets for pharmacological manipulation. It is precisely in the struggle against cancer where the use of this type of proteins and their possible manipulation has become extremely important due to the need to find new molecular targets.

One of these kinases with a relevant role in the control of carcinogenesis is DYRK2 (dual- specificity tyrosine-(Y)-phosphorylation regulated kinase 2), a key protein in the regulation of cell processes such as cell proliferation and differentiation, and which has been attributed a key role in tumour development and/or progression. These data have centred the attention of the scientific community on this kinase, which can be considered an “essential protein” in the control of tumorigenesis, and thus becoming a key candidate for the development of regulatory mechanisms as a possible anticancer therapy. Nevertheless, there are only few known substrates and functions able to be regulated by DYRK2, and therefore, those signalling pathways that could be altered by the use of pharmacological regulators, represent a key point to be studied in detail.

In the last years, our group has been interested in knowing new functions of this significant kinase. The use of different experimental approximations have given us solid preliminary data about a group of proteins candidate to be regulated by DYRK2, which have not been described yet, and which would open a road to knowing new functions. It seems remarkable that, among these candidates, the majority are proteins showing a relevant role in processes of tumour control and carcinogenesis. The candidate's project would consist mainly in analysing the possible regulation of these new substrates by DYRK2, with the objective to find new signalling pathways in tumorigenesis, with a special attention paid to those associated with lung cancer.

Profile

Skills/Qualifications:

- PhD in Biological sciences with outstanding academic track record and at least one first authored publication in an internationally peer-reviewed journal.
- Capable of working in a team, but able to plan and work independently.

Specific Requirements:

- Strong background in Biochemistry and Molecular Cell Biology methods.
- Experience and strong interest in signal transduction research and how disruptions of these pathways are linked to human disease.

Required Languages:

-Excellent level of spoken and written English.

Benefits:

The project will be developed at the biomedical research institute IMIBIC, located in Cordoba, southern Spain, a partnership between the University of Cordoba and the Reina Sofia University Hospital. IMIBIC offers a multidisciplinary environment focused on results-oriented research and based on precision medicine and excellence in science, and is accredited with the Excellence distinction from the Carlos III Spanish National Institute of Health.

More specifically, the present project will be performed in the Inflammation and Cancer Group, under the supervision of Prof. Dr. Marco A Calzado, a consolidated emerging researcher. This research line is in charge of a young researcher who has already proven his ability to publish in high quality journals in the last few years and to obtain his own funding. This offers the possibility to participate in projects directed by emergent group leaders, with promising scientific contributions and differentiated research lines, something that can surely motivate young researchers.

Eligibility criteria:

The candidate must fulfil the eligibility and mobility conditions of Marie Skłodowska-Curie Actions.

Selection Process:

The process consists of an analysis, evaluation and ranking of all CVs received. Following the evaluation, the highest ranked applicants will be called for a personal interview in order to evaluate more precisely the skills of the candidate.

Additional comments:

How to Apply: Applicants should send their CV to the following address: personal@imibic.org stating clearly in the subject of the email the reference “**PostdocMSCA2017GC4**”. Deadline for sending your CV: 10th May, 2017.

Warning: Application emails that do not include reference will not be considered.

For more information about the Marie Skłodowska-Curie actions, see:

<http://ec.europa.eu/research/mariecurieactions/>