*DOCTORAL INPhINIT FELLOWSHIPS PROGRAMME – INCOMING FRAME*
*INFORMATION CALL 2021*

# PhD POSITION IN THE STUDY OF THE EPITHELIAL PLASTICITY IN CANCER

# THE INPhINIT PROGRAMME

## Position

1. **Project Title/ Job Position title: PhD in the study of the epithelial plasticity in cancer**

2. Area of Knowledge:
   LIFE SCIENCES
3. Group of disciplines:
   LIFE SCIENCES

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| 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** |
| Agriculture, Veterinary Science, Animal Production, Forestry |
| Biotechnology, Bioinformatics, Pharmacy, Food Technology |

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

The Dra. Figueroa Research Group works on understanding the molecular mechanisms involved in epithelial plasticity programs such as the epithelial-mesenchymal transition (EMT) and its clinically implications during tumor progression, metastasis, stemness and drug resistance. Metastases are responsible for around 90% of cancer deaths; however, despite the great advances reached in understanding the molecular mechanisms involved in the invasion and metastasis process, the control of the dissemination of this disease remains one of the major challenges that cancer research still faces today. Carcinoma, the most common type of cancer, arises from the transformation of epithelial cells. At early stages of tumor progression and carcinoma metastasis, epithelial tumor cells activate a crucial program named epithelial–to–mesenchymal transition (EMT), which has emerged as a key regulator of metastasis in some cancers such as colon cancer by conferring an invasive phenotype. Cancer-associated EMT is

characterized by the disruption of cell–cell contacts, cell–substratum adhesions and apical–basal polarity, accompanied by the reorganization of the cytoskeleton. All these changes cause the loss of epithelial phenotype and the acquisition of a mesenchymal phenotype, which includes a gain of migratory and invasive capabilities, important for the dissemination of cancer cells. EMT has been also implicated stemness and cancer drug resistance highlighting the potential to develop pharmacological therapies to target epithelial plasticity in cancer.
The Epithelial Plasticity and Metastasis Group, led by Dra. Angélica Figueroa, is constituted by basic and clinic researches involved in understanding of the molecular mechanism by which EMT influence metastasis, resistance and stemness and to develop novel therapeutic strategies that can be transfer our to the clinic and to the market.

5. Job position description (max. 2.000 characters)

The global objective of this project is determine the role of novel drug targets in EMT, stemness and drug resistance and to identify new antitumor compounds in order to develop novel therapeutic strategies that can be transferred to the clinic and to the market. The phD position will combine molecular and cellular biology methodology and microscopy, using *in vitro, ex vivo* and *in vivo* models, including cultures of tumor lines in 2D and 3D (spheroids, organoides,) as well as using tumor cell xenoimplants in immunosuppressed mouse models. Moreover, clinical samples will be used including tissue biopsies and serum/plasmas from cancer patients. The PhD candidate will work on this project and is also expected to participate in the group activities (seminars, courses, conferences, etc.), and have regular meetings with his/her supervisor.

## Group Leader

1. Title: Research Group Leader, PhD in Molecular Biology from Autónoma University of Madrid.
2. Full name: Dra. Angélica Figueroa
3. Email: angelica.figueroa.conde-valvis@sergas.es
4. Research project/ Research Group website (Url):
http://www.inibic.es/portfolio-items/plasticidad-epitelial-y-metastasis/?portfolioCats=89
5. Website description: Institutional Website at the INIBIC

## Additional website (optional, max. 5 websites)

1. Url: http://www.epithelial-plasticity-metastasis.com/
2. Website description: Epithelial Plasticity and Metastasis Group Web

**PROGRAMME DESCRIPTION – CALL**
https://fundacionlacaixa.org/en/educacion-becas/becas-la-caixa/doctorado-inphinit/descripcion-del-programa?utm_source=newsletter&utm_medium=email&utm_campaign=3761_BEC_Email&utm_content=ES&utm_term=Educacion&crm_i=EDU_1_GEN