

## TECNIOSPRING INDUSTRY PROGRAMME

IBEC opens a call to receive candidates to apply to the Tecniospring INDUSTRY programme

The candidates preselected by IBEC will be presented, together with the project proposals to the Tecniospring INDUSTRY programme launched by the Catalan Government.

### ABOUT

**What is Tecniospring INDUSTRY programme?** Tecniospring INDUSTRY programme is ACCIÓ's fellowship programme for experienced researchers at the postdoctoral level to join a TECNIO entity based on Catalonia, such as IBEC, or a company to develop applied research projects.

Tecniospring INDUSTRY fellowship programme is co-financed by the European Union through the Marie Skłodowska-Curie Action "Co-funding of regional, national and international programmes (COFUND)". Therefore, successful candidates will be Marie Skłodowska-Curie fellows as well as Tecniospring INDUSTRY fellows.

**Additional details:** you can find additional information in

<http://catalonia.com/innovate-in-catalonia/tecniospringplus/tecniospringcall.jsp>

### What is market driven technology transfer at IBEC?

The Institute for Bioengineering of Catalonia (IBEC) is one of the most important research centers in bioengineering worldwide. IBEC has been both in 2015 and 2019 awarded with the Severo Ochoa Excellence Award from the Spanish Ministry of Economy and Competitiveness, which identifies and promotes centers in Spain that stand out as international references in their fields. IBEC holds the HR Excellence in Research Award from the European Commission. Moreover, IBEC belongs to the Barcelona Institute of Science and Technology (BIST). IBEC holds the TECNIO label, provided by the Generalitat de Catalunya through ACCIO agency, which guarantees strong competencies in technology transfer, high quality standards in their processes and the delivery of differential technology in Catalonia and worldwide.

IBEC has vast experience in technology transfer activities and counts with its own Market Driven approach. Every patent filed is part of the Valorization Programme, defined internally in order to obtain finance for Proof of Concept, design the regulatory pathway, obtain feedback from Key Opinion Leaders in the field and initiate commercial contacts with industrial companies and venture capitalists to look for licenses/transfer opportunities and move to the market. IBEC has now in place an Open Lab initiative, which consist in the creation of new Research groups completely funded by a private company/investor with the unique objective of developing a new technology to the market.

One of IBEC strategic objectives is to develop and expand the technologies of the research groups through a market-oriented vision within the framework of the Advanced Technology Facilitators Support Action included in the Severo Ochoa Programme 2019-2023. The Action aims at incorporating to these research groups postdocs that would like to orientate their careers towards the market. These postdocs will develop and promote within the group market projects with the industry. These postdocs will develop and promote within the groups market-oriented projects with the industry. The incorporation of these profiles is crucial to

reinforce the market driven technology transfer model at IBEC and to obtain significant results in commercial and exploitation activities.

**Economic conditions:** Fellowships fund the salary and research costs of the researcher. ACCIÓ contribution for the fellowship is an amount of €58.500 annual gross salary. Furthermore, up to €7.620 per year per researcher will be granted as research costs (equipment; consumables and supplies needed for the researcher and/or the research project; travelling and participating into conferences; mobility for secondments and short visits, including health insurance; IPR costs); and €3.000€ for open access of publication.

## **PROJECT**

**Projects focus:** applied research and technology transfer project. Applications too focused on basic research, with no plans for transfer of knowledge, would be out of scope.

**Projects offered by IBEC:** here you can find a short description of the research projects for which IBEC is receiving candidacies.

### **Project Reference Number: TECNIO1**

#### **Inhibiting mechanotransduction for pancreatic cancer (INCOMING)**

Mechanical forces transmitted between cells and their microenvironment drive cell function and regulate tumorigenesis. In this context, we identified in the lab that the interaction between the cytoskeletal molecules vinculin and talin can be inhibited by a vinculin fragment (VD1) which blocks cell response to mechanical forces, and the activation of the major oncogene YAP that occurs in tissues with abnormally high mechanical stiffness. Both increased tissue stiffness and YAP activation drive tumor progression in most solid tumors, and thus inhibiting talin/vinculin interactions has a major potential as a therapeutic approach in several solid cancer types. We have designed and tested small molecule drugs reproducing the action of VD1. Among those, we identified one that specifically blocks the target interaction, and inhibits cell metabolism. Our aim is to valorize these drugs in the specific case of pancreatic cancer, which is a clear unmet clinical need since it is the one with the least therapeutic alternatives and worst prognosis.

### **Project Reference Number: TECNIO2**

#### **Universal enrichment-free circulating tumor cell detection (INCOMING)**

During the intravasation process of metastasis occurring in some cancers, the blood vessel within the tumor's vicinity can provide a route for the detached cells to enter the circulatory system and metastasize to distant sites. These cells known as Circulating Tumor Cells (CTCs) represent a transitory element between the primary tumor and metastasis. Traditionally, it has been demonstrated that epithelial tumor cells exhibit epithelial properties and express on their surface molecules of epithelial origin. The expression of EpCAM in epithelial tumor cells allowed to differentiate CTCs from blood cells. This is the principle of CellSearch® which is the standard method for CTCs enrichment and is the only blood test accepted by the Food and Drug Administration (FDA) for detecting CTCs in patients with metastatic breast, prostate, and colorectal cancer. Nonetheless, the evidence suggests that consider EpCAM as a universal marker for CTCs detection seems inadequate, and new alternative methods are required for recognizing the broad spectrum of CTC phenotypes. We are working on a microfluidic platform using micro and nanotechnology for isolating CTCs based on inertial focusing and affinity binding

principle methods. The proposal will be to apply these methods into microfluidic devices and an electronic system for its control.

**Project Reference Number: TECNIO3**

**Light-regulated drugs for sensory restoration (INCOMING)**

Sensory impairments like blindness and deafness often result from the loss of sensory cells or of their function located in the retina and in the cochlea. Currently, no drug-based treatments are available for sensory restoration. However, the neural circuitry typically persists after the loss of sensory cells, which allows prosthetic stimulation. Photoswitchable drugs act as “molecular prostheses” that control the remaining endogenous receptors and functionally replace the missing sensory cells. Ongoing projects at IBEC aim at developing photoswitchable drugs targeting the retina and the cochlea to improve vision and hearing restoration beyond what can be achieved by current electrical prostheses. We aim to identify and characterize safe and effective photoswitchable drugs that lay the foundations of the first clinical assay of drug-based sensory restoration (blindness and deafness). In particular, in this Tecniospring proposal we will complement the fundamental science actions carried out in ongoing projects (photoswitchable drug development and testing) by focusing on valorization and technology transfer actions, including evaluating their safety, selectivity, biodistribution, and scaling up of synthesis of drug candidate(s) which are essential to demonstrate the clinical use of these technologies and to engage industrial partners and venture capitalists in their full commercial development.

## Life at IBEC

### IBEC support in HHRR:

- IBEC ensures equality of access to professional development opportunities irrespective of employment status, length at IBEC or other factors. The IBEC’s yearly training catalogue offers a wide range of training in technical and transferable skills.
- Stimulating, interdisciplinary research and high-quality international scientific environment.
- Induction programme to facilitate incorporation at IBEC and additional support is provided for foreigners to obtain Visa-working permit and to install in Barcelona.

IBEC has a consolidated tutoring/ mentoring program, which is part of IBEC’s career development program aimed at postdoctoral researchers. Each postdoctoral researcher (mentee) participating in the program will be assigned a mentor (i.e. Group Leader, Senior researcher or Head of Unit). Mentors will support postdoctoral researchers and will share their experiences as highly qualified scientists, as well as giving guidance about their scientific field and their network of contacts. Both researchers meet regularly during a set period and the specific aims to be achieved will depend on the career phase and needs of the mentee. Usually, these aims fall into the categories of career development, working-life balance or acquisition of soft skills. The range of benefits for the mentees will range from sharing the mentors’ experiences and benefitting from his/her knowledge to counselling to develop their qualification profile, establishing contacts, foster networking and collaborations or receiving feedback to facilitate self-assessment and to fully develop their future career. However, at the end of the

program, both sides will profit from this relationship, and the mentor gets in contact with new perspectives while discussing the above-mentioned aspects; skills such as leading, communicating or gender-related are strongly reinforced while sharing their own experience. Mentors and mentees will receive specific training at the beginning of the program to assure the success and effectiveness of the mentoring process.

During the two years of this fellowship, the candidate will be trained in different aspects with the objective of reinforcing his abilities in research, technology transfer and additional training.

- Research training: the candidate's technological and materials science background will be complemented by the multidisciplinary experience of the host research group.

- Technology transfer training: the candidate will attend 3 professional development courses in entrepreneurial skills and technology transfer organized by IBEC on the topics: How to reach the industry, entrepreneurship, and Tech Transfer and IP rights: Contract strategy and negotiation. These courses can be complemented with external short workshops and/seminars.

- Additional training: the candidate will also attend to other courses on the Leadership & Managerial skills category that are available for postdocs and sponsored by IBEC, intended to instruct in time management and personal effectiveness, career development for postdocs, and Laboratory research management (extensive IBEC's training catalogue at [www.ibecbacelona.eu](http://www.ibecbacelona.eu)).

## **ELIGIBILITY**

**Who can apply?** Researchers with doctoral studies of any nationality willing to join an IBEC research group for two years to develop the project proposal presented in the call.

We are looking for individuals with a genuine interest to develop, valorize, and bring to the market new disruptive pharmaceutical and device technologies.

**Eligibility criteria:** experienced researchers of any nationality who, at the time of the relevant deadline for submission of proposals, fulfil the following conditions:

- Level of experience:
  - hold a doctoral degree and two additional years of full-time research experience after obtaining it; or
  - have at least six years of full-time equivalent research experience, including the period of research training, after obtaining the degree which would formally entitle them to embark on a doctorate.
- the researcher must not have resided or carried out her/his main activity (work, studies) in Spain for more than 12 months in the 3 years immediately prior to the deadline for the submission of applications (16<sup>th</sup> November 2020).
- The researcher must not hold a permanent contract with IBEC.
- the researcher cannot benefit, at the same time, from more than one Marie Skłodowska-Curie Action.

**Selection criteria of the Candidate:** Candidacies received for each project will be evaluated based on the following criteria:

- Research experience in the topic addressed by the project
- Experience in applied research

Applicants should demonstrate a research track record in the project's field, proficiency in English language, ability to work independently and in collaboration with multidisciplinary teams. Previous experience in technology transfer activities is an asset, and candidates are requested to explain their motivations to develop the selected project.

## APPLY

**How to proceed:** If you are interested in applying to the programme, please proceed as follows:

- Send the following documentation to: [jobs@ibecbarcelona.eu](mailto:jobs@ibecbarcelona.eu) before the 30<sup>th</sup> September 2020.
- Indicate in the subject: (project reference number)-Tecniospring20
- Documentation to be sent:
  - Detailed CV
  - Letter of interest in the specific program
  - Confirmation that at the time to apply you don't benefit from a Marie Skłodowska-Curie Action.
  - Two letters of recommendation from scientists with whom the researcher has collaborated.

### Principles of the Selection Process:

- Our Recruitment and Selection Policy is based on the OTM Strategy (Open, Transparent and Merit-based recruitment) [www.ibecbarcelona.eu/jobs/](http://www.ibecbarcelona.eu/jobs/) and accept applications without distinction on any grounds. Candidates with disabilities are strongly encouraged to apply. Our commitment to OTM-R principles can also be found in our Gender and Diversity plan.



- HR EXCELLENCE IN RESEARCH

### Protection of personal data:

- IBEC ensures that applicants' personal data are processed as required by EU General Data Protection Regulation (GDPR) and Spanish Law 3/2018 on Data Protection.
- Personal data shall thus be processed solely for the purpose of the selection procedure.

## DATES

- Up to the 30<sup>th</sup> September 2020: Reception of candidacies and IBEC selection of the candidacies based on the eligibility and selection criteria. Virtual interview will be considered. One candidate per project will be selected.
- 30<sup>th</sup> September: Communication of the evaluation result to the candidates.
- 30<sup>th</sup> September to 15<sup>th</sup> November: Final preparation of the full proposal to be submitted to the TecnioSpring INDUSTRY programme in coordination

- with the Group Leader of the research program selected, and with the Projects Office and Technology transfer team in IBEC.
- 16<sup>th</sup> November: Submission of the full proposal to the TecnioSpring INDUSTRY programme.