

## POSTDOCTORAL POSITION IN CELL BIOLOGY -SYNEBIO PROJECT (H/F)

We are looking for a talented scientist who wants to join an interdisciplinary team developing an innovative platform to predict drug synergies. As a postdoctoral researcher, you will lead the development of 3D hydrogel-based cell models.

### Project background

**Synebio promotes the research work carried out in the Biophysics and Evolution Laboratory (LBE) at ESPCI Paris-PSL. This project should lead to the creation of a start-up in 2023.**

We have developed an innovative technology to predict the efficacy and toxicity of drug combinations. This technology combines **high-throughput screening of drug combinations on 3D microfluidic cell models** and a **Virtual Cell model based on deep learning** to predict a synergy score (to maximize) and a toxicity score (to minimize). Leveraging the power of microfluidic technology and translating high-quality data sets into relevant therapeutics solutions, we aim to repurpose already approved drugs to become **a leader in drug combination therapies for rare diseases**. We have predicted synergistic effects on first cellular models and we aim to develop our platform to industrialize it within 24 months. To this end, we are launching two projects in collaboration with teams from Necker Hospital in Paris and Sanofi. To carry out these projects, we are recruiting a scientist to lead the building of the the cellular models corresponding to the diseases of interest.

Synebio benefits from the financial and technical support of public and private institutions: Sanofi, PSL University, ESPCI Paris, and BPI France.

### The team

Located in the **center of Paris**, ESPCI is a major institution of higher education, an internationally renowned research center (6 Nobel Prizes), and a fertile ground of innovation for industry (3 start-ups created/year). ESPCI is a highly multidisciplinary environment with teaching and research in physics, chemistry, and biology. LBE is directed by Dr. Philippe NGHE. The lab's research activities are based on experimental evolution, molecular biology, screening technologies, quantitative analysis, and modeling. Dr. NGHE is awarded a Human Frontier Science Program grant and the European Research Council. He is also a member of the scientific board of the Pfizer-Inserm Innovation School and Future4care start-up incubator.

To date, Synebio's team is **composed by 5 persons** and is led by Reza KOWSARI who initiated the project during his PhD. As the leader of the biology topic, you will be part of the core members of the future company.

### Your main missions

- Prepare and validate a 3D models in natural and synthetic hydrogels
- Adapt the cell model to our microfluidic platform
- Perform drug sensitivity within and without microfluidic devices
- Qualitative and quantitative analysis of cell growth
- Develop laboratory methods and protocols
- Work according to project schedules and report on progress internally
- Work closely with an interdisciplinary team of engineers, biologists, and business developers – close interactions with our partners teams

### Your profile

- PhD (ideally recent) in Biology or related fields with a focus on *in vitro* models
- Extensive experience in 3D cell culture, cell characterization, and assay development
- Extensive experience in fluorescence and confocal microscopy
- A previous experience with microfluidics would be highly appreciated
- A previous experience with bioimage analysis would be highly appreciated
- The desire to contribute to a collective entrepreneurial project in a highly dynamic team

- Ability to work independently and with a problem-solving mindset
- Fluency in English and excellent communication skills

#### Terms and Conditions

You will be recruited by the ESPCI on an 18-month renewable contract. You will have the possibility to join the start-up company which is planned to be created in 2023 as one of the first employees. Compensation package will be competitive, depending on your experience.

#### Contact and Candidature

We look forward to receiving your CV by contacting Dr. Reza KOWSARI ([reza.kowsari@espci.fr](mailto:reza.kowsari@espci.fr)) or Dr. Philippe NGHE ([philippe.nghe@espci.fr](mailto:philippe.nghe@espci.fr)). Review of applications will begin on January 15<sup>th</sup> 2023, with the position to start as soon as filled (negotiable).