

Would you like to harness synthetic biology to study brain transport and create new systems for brain delivery?

The project and the team

Current treatments against brain diseases have very low efficacy due to the incapacity of most drugs to cross the blood-brain barrier (BBB) and target particular cell populations. In our group we are developing targeted delivery systems that transport biotherapeutics across the BBB.

We have recently been awarded a highly prestigious grant by the European Research Council to develop new strategies to deliver large therapeutics into the brain with unprecedented efficiency and selectivity. In your PhD project, you will be applying cellular and synthetic biology, as well as protein engineering, to study transcytosis at the BBB and create a paradigm-shifting system for brain delivery. This project will involve application of molecular and cell biology techniques, including but not restricted to protein engineering, intracellular analysis of protein interactions, advanced microscopy, and blood-brain barrier cellular models.

You'll be part of a young, dynamic, and international team at IQS Barcelona. We invite you to visit our website www.pptn.iqs.edu We aim to contribute to pushing the boundaries of knowledge but our main goal is to grow and enjoy science together!

Your profile

- MSc degree, 60 ECTS credits at the master's level or equivalent.
- Background in biotechnology, cell/molecular biology, biochemistry, or related.
- Experience in molecular biology is required. Knowledge on intracellular trafficking or protein engineering will be valued.
- Strong motivation, proactivity, and creativity.
- Good social skills to work in a team. Excellent communication skills and fluency in English.

Fellowship details

- Three years of funding with a competitive salary and with the potential of an extension to a fourth year.
- Many training opportunities on scientific and horizontal skills. Attendance to international conferences.
- Space for creativity combined with close mentorship and team support.
- Expected starting date: preferably June 2023, September 2023 the latest.

Applications are welcome until the candidate is selected

Applications should be addressed to Dr. Benjamí Oller-Salvia at benjami.oller@iqs.url.edu

Please include "PhD SynBioBrain" in the subject of your email

The following documents should be combined as a single pdf with your name:

- Motivation letter explaining your why you would be a good fit for this position and our team.
- Two reference letters and contact details of the referees who wrote them.
- *Curriculum Vitae*
- Academic record with the grade average. For non-Spanish students, a conversion to Spanish equivalent grades will be appreciated:

<https://www.educacionyfp.gob.es/dam/jcr:c49dc8ae-8f47-47e5-8ec7-563e98dae077/anexoii-equivalencias.pdf>

Would you like to generate smart antibody biotherapeutics targeting brain tumors?

The project and the team

Current treatments against brain tumors have very low efficacy due to the incapacity of most drugs to cross the blood-brain barrier (BBB) and to eliminate resistant cell populations.

In our group, we are developing efficient delivery systems to transport targeted nano- and bio-therapeutics across the BBB for the treatment of brain tumors. To support this challenging endeavor, we have recently received a highly prestigious grant from the European Research Council. In parallel, we are developing new strategies to render conditionally active antibodies capable of engaging targets previously considered undruggable.

In your project you will apply antibody engineering and biorthogonal chemistry to create smart brain permeable antibodies and conjugates. The project may involve everything from biotherapeutic design and characterization to testing their effect on cells and biodistribution and efficacy in mice.

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Your profile

- MSc degree, 60 ECTS credits at the master's level, or equivalent.
- Background in biotechnology, chemistry, pharmacy, or related.
- Experience in the following areas is not essential but will be valued: protein engineering, chemistry, experimental animal handling.
- Strong motivation, proactivity and creativity.
- Good social skills to work in a team. Excellent communication skills and fluency in English.

Fellowship details

- Three years of funding with a competitive salary.
- Many training opportunities on scientific and horizontal skills. Attendance to international conferences.
- Space for creativity combined with close mentorship and team support.
- Expected starting date: preferably June 2023, September 2023 the latest.

Applications are welcome until the candidate is found

Applications should be addressed to Dr. Benjamí Oller-Salvia at benjami.oller@iqs.url.edu

Please include "PhD Biotherapeutics" in the subject of your email

The following documents should be combined as a single pdf with your name:

- Motivation letter explaining your why you would be a good fit for this position and our team.
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