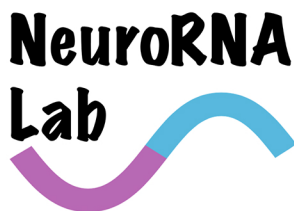


## MSc thesis (Trabajo Fin de Master TFM)

### Group leaders:

Dr. Lorea Blazquez,  
Ikerbasque Research  
Fellow

 @BlazquezLorea



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### 3D Bioengineered models of glioblastoma: dormancy vs. tumor growth

**Biomedicine, Molecular Biology, Biotechnology, Biomedical Engineering or similar**  
at Biogipuzkoa Health Research Institute  
as collaboration areas of Neuroscience and Bioengineering

**Research team:** We are two interdisciplinary teams lead by Dr. Lorea Blazquez (Neurogenetics, RNA biology and therapies group), interested in understanding the contribution of RNA-misprocessing to neurological diseases, and Dr. Amaia Cipitria (Bioengineering in Regeneration and Cancer group), investigating how biophysical and biochemical properties of native extracellular matrix and synthetic biomaterials guide cell response in tissue regeneration, cancer dormancy and metastasis. More information: <https://www.blazquezlab.info/>; <https://cipitrialab.com>

**Master thesis project:** The project will focus on the development of 3D bioengineered models that induce/maintain dormancy in patient-derived glioma stem cells (GSCs) to study the RNA-processing signature of dormant cancer cells associated with therapy resistance. The project will involve molecular and cell biology techniques including cell culture, RNA isolation, PCR, Western blot, immunofluorescence, RNA-seq and bioinformatics (1, 2). The bioengineering part will involve the fabrication and characterization of biomaterial-based 3D matrices, imaging and 3D image analysis of GSCs (3, 4).

Specific objectives of this project consist of:

- Develop a 3D bioengineered model of cell-dormancy in patient-derived glioma stem cells (GSCs) using biomaterials.
- Perform transcriptomics experiments in the established cell models.

**Profile:** You should have a background in Biomedicine, Molecular Biology, Biotechnology, Biomedical Engineering or similar. You will work in a multidisciplinary and international environment. Good interpersonal skills and written/oral communication skills in English are required. Experience with hydrogel fabrication and in vitro cell culture are of advantage but not a requirement. Based on performance, the candidate will be supported to apply for predoctoral fellowships from public and private research organizations (i.e. Basque predoctoral fellowship program, Formación de profesorado Universitario (FPU), Carlos III Health Research Institute (ISCIII), University of the Basque Country, etc.), to continue the research as a PhD project.

**References:** (1) Iruzubieta et al. Brain, 2024; (2) Rovira et al. Mol Ther Nucleic Acids, 2022; (3) Garrido et al. Biomat Adv, 2023; (4) Bakhshandeh, Heras et al. bioRxiv preprint, 2024 <https://doi.org/10.1101/2023.01.25.525382>.

**Starting date:** Flexible between Sept 2024 – beginning 2025.

**Want to join? Please send your application including a motivation letter, your CV and a full transcript of your university record to [LOREA.BLAZQUEZGARCIA@bio-gipuzkoa.eus](mailto:LOREA.BLAZQUEZGARCIA@bio-gipuzkoa.eus) and [AMAIA.CIPITRIASAGARDIA@bio-gipuzkoa.eus](mailto:AMAIA.CIPITRIASAGARDIA@bio-gipuzkoa.eus). Please indicate “TFM - 3D model glioblastoma” in the subject line.**