# Development of peptide and antibody mimetics targeting gene nanotherpies to brain tumours

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Glioblastoma (GBM) is the most malignant form of brain tumour. Life expectancy for GBM is roughly 15 months and most patients die from tumour relapse after surgery, radiotherapy, and chemotherapy. Current treatments for GBM have very low efficacy due to their incapacity to cross the blood-brain barrier (BBB) and to eliminate resilient cancers stem cells (CSCs). The goal of the **highly interdisciplinary project in which you will participate is to develop nanotherapies** capable of overcoming the BBB and of eliminating all tumour cells, including CSCs.
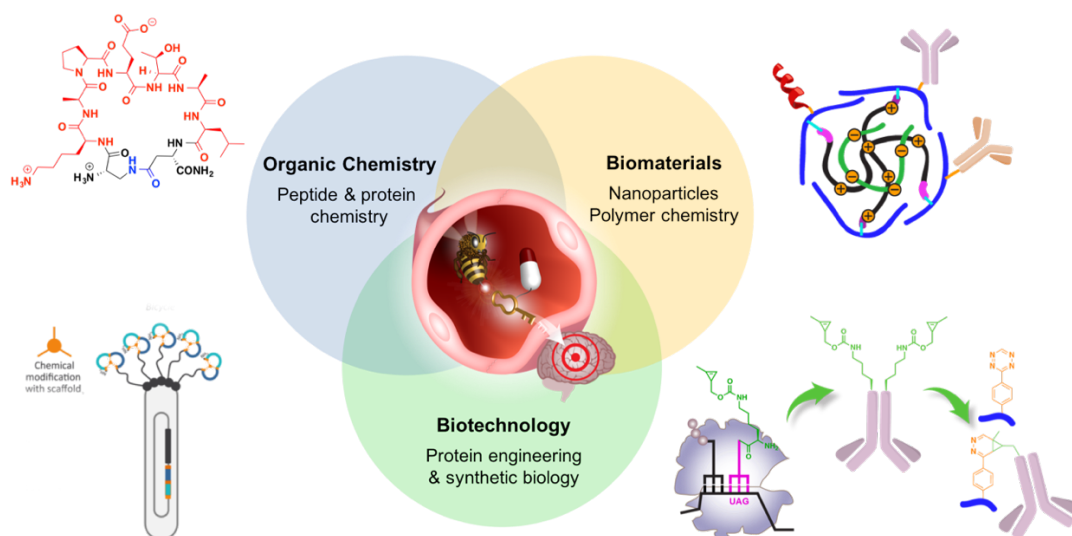
The TFG and TFM projects offered will focus on the **generation of stimulus-sensitive and metabolically-stable targeting ligands** to enable transport of gene nanotherapies across the BBB and selective targeting of CSCs. You may choose to work on the design and chemical synthesis of **peptide mimetics or on the development of antibody derivatives**. Conjugation to gene nanocarriers will involve **bioorthogonal chemistry and site-specific protein modification techniques based on genetic code expansion**. Furthermore, you will study and screen the ligands and the nanotherapeutics using a broad range of techniques, such as UPLC-MS, MALDI-TOF, NMR, western blot, ELISA, DLS, flow cytometry, and confocal microscopy.

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If you are a **motivated and hardworking** student seeking to join an **ambitious transformative project and a highly dynamic team**, please visit our webpage https://www.oller-salvia.com/ and contact us at benjami.oller@iqs.url.edu !

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