

**DEVELOPMENT OF A POST-SURGICAL POLYMER IMPLANT  
FOR THE TREATMENT OF GLIOBLASTOMA  
BY PHOTO- OR RADIODYNAMIC THERAPY (PDT/RDT)**

Glioblastoma (GB), a grade IV malignant glioma (tumor of the central nervous system), is one of the most lethal types of human cancer, due to its aggressive and highly invasive features. Approximately 40% of patients are eligible for surgery, and submitted afterwards to adjuvant radio- and oral chemotherapy. A major challenge for the neurosurgeon is the total removal of cancerous cells from the tumor site. Unfortunately, tumor resection is most of the time subtotal and remaining cancer cells are responsible of local or distant tumor relapses.

We have initiated a multidisciplinary research project involving chemists, biologists and clinicians to develop a **post-surgical implant** allowing the **local and controlled release of a therapeutic active ingredient** targeted against GB cells. The implant will consist in a **dynamic polymer-based hydrogel** whose mechanical properties will be adapted to the brain tissue. This soft hydrogel will be loaded with a **nanocarrier** consisting of a **biocompatible ROS-sensitive polypeptide** covalently coupled to a FDA-approved **photosensitizing molecule** (PS). The ultimate goal is the release of the PS upon local irradiation to induce the apoptosis of remanent GB cells.

The recruited post-doc will work on the optimization of the hydrogel (formulation and mechanical properties), loading of the PS-nanocarrier, and evaluate its efficacy in 3D-tumor models.

## Position offer

**12 month post-doctoral fellowship.** A grant has been submitted for the funding of an additional year.

The recruited post-doc will be working with 2 teams:

- At **LCPO**: **Self-Assembly and Life Sciences** (Prof. S. Lecommandoux)
- At **IBGC**: **Gbmetabo** (Dr. T Daubon)

Gross salary: between 2,750 and 3,035 € depending on the experience of the candidate.

## Candidate

We are looking for a highly motivated chemist ready to interact with biologists and clinicians. Applicants should hold a PhD in Chemistry with solid expertise in biomacromolecular chemistry, hydrogel formulation and characterization. A know-how in 3D cell culture experiments will be a plus.

## Application

Applicants are invited to submit a complete CV and a motivation letter to the contact persons indicated below.

Applications will be considered until the position is filled.

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