



# Postdoctoral Position in Corneal Regeneration

## Using Bioengineered Epitheliostromal Substitutes for Surgical Applications

**COBRAS : Corneal BioimpReession for Advanced Surgical reparation**



**Type and duration of contract:** Fixed-term contract, 36 month; **Desired start date:** October 2025

**Employer:** Université Paris Cité, Institut de Recherche Saint Louis (U1342)

**Supervisors:** Pr. Eric Gabison & Dr. Benoit Souquet

**Location:** TREX group (Translational Research and Experimental Corneal Surgery)

Hôpital Fondation A. de Rothschild, 75019 Paris

### Project Description

In the frame of a research and development collaborative program in corneal tissue engineering, we are seeking a highly motivated, rigorous and talented postdoctoral researcher. The objective of the project is to produce 3D bioprinted corneal epithelia-stromal equivalents that are compliant with Good pharmaceutical Manufacturing Practices (GMP) and suitable for corneal transplantation. These engineered tissue constructs are designed to prevent major complications associated with corneal pathologies, such as ulceration, fibrosis, or inflammation, particularly in the current context of donor tissue shortages.

This project is embedded within a translational research framework focused on regenerative medicine and cell therapy, integrating multidisciplinary approaches and advanced technologies such as 3D bioprinting and tissue cryopreservation. The overarching goal is to revolutionize the management of corneal disorders leading to blindness by reducing treatment delays and production costs, while increasing the availability of grafts. In addition to their clinical applications, these corneal bioequivalents will be adapted to serve as complex *in vitro* models for experimental pharmacological and toxicological studies.

### Work environment

The successful candidate will carry out their research at the “Translational Research and Experimental Corneal Surgery” group (TREX group) at the Hôpital Fondation A. de Rothschild in Paris, a private nonprofit hospital, specialized in head and neck pathologies. The TREX group belong to the “Stem Cell and Biotechnology” team of the “Institut de Recherche Saint Louis” (U1342 : INSERM and Université Paris Cité). Depending on the needs of the project, the candidate will travel to Marseille as necessary.

This collaborative project is carried out by a consortium of French research teams (Pr. Gabison, Université Paris Cité et Hôpital Fondation A. de Rothschild in Paris, Dr. Julie Veran Hôpital de la conception AP-HM in Marseille and Pr. Marc Muraine CHU Rouen). The project is funded within the framework of the “Programme et Équipements Prioritaires de Recherche (PEPR), Biothérapies et Bioproduction des Thérapies Innovantes (BBTI)”.

### Main missions

The successful candidate will be responsible for the isolation, expansion, comprehensive molecular and functional characterization, and biobanking of primary human corneal epithelial and stromal cells, which are critical to achieving the project’s objectives. Throughout the development of bioprinting and cryopreservation protocols, the candidate will establish and maintain organotypic cultures to enable detailed molecular, physical and functional analyses of these corneal epitheliostromal equivalents. In addition, the candidate will adapt, develop, and assess the application of this allogeneic 3D bioprinted corneal model for experimental pharmacological and toxicological studies. Following *in vivo* experimentation, the candidate will be responsible for the histological and molecular evaluation of the bioprinted grafts. Moreover, the candidate will play an active role in the operational management and coordination of the project, ensuring effective communication and collaboration within the consortium.

### Candidates/Skills

We place great importance on teamwork, self-motivation, creativity, clear communication, scientific rigor and strong organisational skills. We are looking for enthusiastic and highly motivated researchers holding a PhD in biology who are willing to join a challenging, collaborative bioengineering project at the interface of cellular biology, cell therapy, bioprinting, and translational science. Applicants should have a solid background and a proven track record in cellular or tissue biology, bioengineering, or organoid research. Experience in cell, stem cell and organotypic culture, microscopy, histology and molecular biology is expected, and familiarity with biophysical methods will be considered an asset. Finally, we are seeking a candidate whose interpersonal skills and personality are well-suited to playing a pivotal role in this collaborative project and facilitating effective communication with all stakeholders involved. Proficiency in French is not required for this position.

**Send application including CV, cover letter and at least 2 references to**

- Pr. Eric Gabison, group leader and project coordinator [egabison@for.paris](mailto:egabison@for.paris)
- Dr. Benoit Souquet, Lab Manager/Research [bsouquet@for.paris](mailto:bsouquet@for.paris)