Engineer in Biological Techniques

Novel therapeutic strategies against HBV and HDV infection

Starting date: June 2025 **City:** Lyon, France **Education:** Bac+3

Laboratory

Department:	Hepatitis Viruses and Liver Pathogenesis (HeLiP).
Unit:	INSERM UMR-1350 - Pathobiology and Therapy of Liver Diseases (PaThLiv).
Institute:	The Lyon Hepatology Institute, IHU EVEREST.

About the team: The HeLiP team provides an environment of scientific excellence, training, and innovation at the center of the newly formed Lyon Hepatology Institute. Our main objective is to gain a better understanding of the molecular mechanisms involved in the establishment and maintenance of chronic infection by the hepatitis B virus (HBV) and hepatitis delta virus (HDV). This knowledge is fundamental for the development of new direct-acting antivirals, immuno-modulatory agents and their combinations in order to eradicate infection and prevent associated pathologies (cirrhosis and hepatocellular carcinoma).

Address: 151 Cours Albert Thomas, 69424 Lyon Cedex 03.

Directors: Prof. Fabien Zoulim and Dr. Barbara Testoni.

Job description

Main mission: We are looking for two talented and dynamic engineers who will contribute to the pre-clinical development of novel therapies for viral liver diseases. Specifically, the persons recruited will be responsible for optimizing and validating protocols to study immuno-modulatory drugs as therapy against HBV/HDV. These experiments will be conducted with the use of *in vitro* and *ex vivo* infection models, as well as by the analysis of patient samples using state-of-the-art technologies. In addition, the engineers will be involved in the core tasks of the team, which include the isolation of primary human liver cells and the preparation of precision-cut liver slices (PCLS).

Main tasks:

- Implement the molecular and cellular biology techniques required for scientific projects.
- Remain up to date regarding the scientific and technological developments in the field of cellular/molecular biology associated with HBV/HDV.
- Perform primary liver cell isolation and culture activities (e.g., hepatocytes, macrophages, endothelial cells).
- Produce HBV/HDV stocks and perform infections with cell/tissue culture models.
- Perform molecular analyses of human liver cell/tissue culture models and patient samples (PBMCs, serum).
- Validate, interpret and guarantee the follow-up and quality of results obtained, as well as presenting them in the form of technical reports and oral presentations.
- Ensure the proper use of specific equipment (quantitative PCR, vibratome).
- Help technical supervision of trainees and master's students, including good laboratory practices and work in confined areas.
- Help manage the team's external collaborations (in particular technology transfer).

Specific requirements:	• Experience in BSL2/3 confined environments required. • Variable working hours possible. • HBV vaccination.
Scientific background:	• In-depth knowledge of cellular and molecular biology. • Knowledge of basic workflow principles for NGS analysis (i.e., single-cell RNA-seq). • Basic knowledge of statistical tools for biological data analysis. • Knowledge of health and safety regulations. • Experience in virology or immunology desirable.
Scientific techniques:	• Molecular biology techniques: RNA/DNA extraction, RT-PCR, ELISA, protein extraction, western blot. • Cell biology techniques: RNA interference, transgene expression, immunofluorescence, immunohistochemistry, flow cytometry. • Skills that may be acquired after taking up the position: primary culture and isolation of hepatic cells, PCLS preparation, use of statistical tools.
Personal skills:	• Organization, rigor and critical thinking. • Interpersonal and teamwork skills. • Command of the English language is required (understanding and expressing oneself orally, reading and writing complex and detailed protocols).
Study level:	• Bachelor's degree (Bac+3), Master's degree or equivalent diploma. • Desired field of training: Biology, bio-technology.
Working hours:	• Full time. • Possibility to work on weekends (occasionally).

How to apply

Available positions:	• Two positions as engineer in biological techniques are available in our team, with a duration of 18 and 24 months.
Application deadline:	• Please send your CV (including education, work experience, and academic references) before **March 15th 2025**. • Applications from highly motivated early-career engineers will also be considered.
Contact:	• Dr. Andres Roca (armando-andres.roca-suarez@inserm.fr). • Dr. Barbara Testoni (barbara.testoni@inserm.fr).