Cifre PhD student: Improved prediction of hepatic metabolism and transport of new chemical entities using primary human liver cells in dynamic pumpless co-culture models

- Location France : R&D Sanofi Montpellier – INSERM U1183/IRMB/Université de Montpellier
- Job type: CIFRE CDD, Full time, 3 years

Within the Biomarker and Clinical Bioanalyses (BCB) platform, the Enzymology and Metabolism unit is in charge of evaluating new chemical entities from a ADME point of view, but also in the context of prediction of Drug Drug interaction (DDI) risks during development phases. This work requires robust in vitro models capable of predicting the fate of molecules in the body and identifying the key proteins involved in their in vivo management. Scientific and regulatory evolutions require an adaptation of our in vitro models to mimic as much as possible physiological conditions, i.e., express the different enzymes and key transporters of ADME at relevant rates and over longer culture periods.

In this context, we are seeking a candidate for a PhD position funded by a French CIFRE fellowship, to develop, and validate new in vitro approaches (pumpless dynamic liver co-culture models) in the field of predicting the metabolism and transport of new chemical entities (NEC) in humans. The candidate will improve the prototypes that have been developed by the team with the aim of making cellular models more predictive. The PhD student will be in charge of exploring the most favorable growing conditions and will compare the new model to the usual models. This new way of growing cells will be also challenged on subjects developed by the IRMB team.

The candidate will then be co-supervised at Sanofi by Ms Priscilla Brun, Dr Franck Da-silva and Dr Olivier Fedeli for the development of a pumpless dynamic liver co-culture models which will be characterized in collaboration with INSERM laboratories (IRMB, University of Montpellier), under the supervision of Dr Martine Daujat and Dr Sabine Gerbal-chaloin. For this PhD, the candidate will be enrolled in the doctoral school of Sciences Chimiques et Biologiques pour la santé (CBS2).

To accomplish this mission, we seek a candidate with a strong taste for laboratory work having a master's degree in biology or biochemistry and who would be highly interested in enzymatic reactions as well as cell culture. The candidate should ideally be able to design and run enzymatic/transport experiments in an autonomous way, as well as showing creativity in troubleshooting and tackling a wide range of scientific challenges.

- State of the art knowledge in cellular in vitro models (2D, co-culture 3D and microfluidics);
- Knowledge in enzyme and transporter assay (ADME field)
- Proactive in developing inventions and prototyping (interested in 3D printing, CAD design)
- Ability to manage experiment failure and strong tenacity to achieve scientific objectives.
- Experience with hepatocytes cells and mass spectrometry equipment is a plus.
- Team spirit, autonomy, rigor, and ability to work in a multidisciplinary environment.
- Highly motivated to work in both academia and industry.
- Very good communication skills (written and oral) in French and English.

Please send your application to :
Priscilla.brun@sanofi.com
Martine.daujat@inserm.fr
Sabine.gerbal-chaloin@inserm.fr