Title of the PhD project:

Development of a PBPK model to quantitatively describe absorption and bioavailability after subcutaneous administration of therapeutical biologics

At Sanofi, we currently have an opening for a talented and innovative PhD student to join our physiologically-based pharmacokinetic (PBPK) project realized in collaboration with the consulting company Pharmetheus (www.pharmetheus.com) and the COMPO group (https://team.inria.fr/compo/) in Aix Marseille University. This setting will allow the student to gain experience in PBPK modelling within pharma industry, consulting, and academia.

Description:

New modalities of drugs, like therapeutic proteins and monoclonal antibodies (mAbs), have changed the paradigm in the treatment landscape of many therapeutic areas/diseases like immuno-oncology and immuno-inflammation. Subcutaneous administration is increasingly becoming a more flexible and patient-friendly option for the administration of such treatment options. The integration of this administration route in a PBPK modeling framework is crucial, in order to access the full potential of this modeling technique and to optimize the subcutaneous administration of mAbs. The objective of this project is to extend the PBPK model available in the open-source platform Open Systems Pharmacology (OSP) Suite in order to integrate the subcutaneous administration of therapeutical proteins, with particular focus on mAbs. The model will be developed and qualified for different mAbs format, such as nanobodies and bi-specific mAbs.

Location and duration

With the PhD project been conducted in collaboration with Pharmetheus, and Aix Marseille University, the student is expected to spent part of the PhD duration in the three different partner locations: i) at Sanofi, within the Translational Medicine & Early Development department located at our research and development site in Chilly-Mazarin, France (near Paris), ii) at Pharmetheus, primarily the main site situated in the vibrant student town of Uppsala, Sweden (near Stockholm) and/or at the new office planned to open in Paris (Montparnasse), and iii) at the School of Pharmacy of Marseille, within the COMPO group. The time spent within each site will be defined and agreed together with the candidate.

Skills

- Master or equivalent degree in Pharmaceutical sciences, Mathematics, Statistics, Engineering or similar disciplines with demonstrated expertise in modelling and simulation
- Previous training or experience with PK-Sim and R are an asset
- Good understanding of physiology and in vitro readouts related to pharmacokinetic processes
- Ability to conduct deep bibliographic searches
- Strong problem-solving skills
- Excellent oral and written communication skills in English
- Knowledge of French language is an advantage but not a requirement

Compensation

The student will receive a market-level salary for PhD students, as well as social benefits including paid vacations days. Accommodation and living costs are the responsibility of the candidate.

To apply, please contact donato.teutonico@sanofi.com