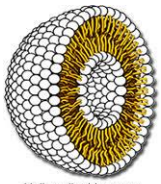
First entreprise (Région Wallonne) - Microfluidics design optimization for vaccine formulation development

Purpose

GlaxoSmithKline's Vaccine Research Group in Belgium seeks an applicant for a First Entreprise individual career-development fellowship (Région Wallonne-funded First Entreprise Action) in the field of liposome-based vaccine development. Nanoparticle technologies have the potential to improve existing vaccines and extend the scope of medical conditions that can be treated by vaccines. These liposomes formulations can include protein antigens and/or immunomodulators. Therefore we want to support the training of a postdoctoral fellow by providing the opportunity to pursue an interdisciplinary and applied (industry-based) research project.



Unilamellar Liposome

The aim of the project would be to characterize fluid flows and mixing efficiency in a microfluidic chip designed for the purpose of liposome based adjuvant preparation, using both a CFD-based numerical model and a dedicated experimental set-up. First, the candidate will evaluate different geometries of an existing chip in order to further optimize the design through a DoE (Design of experiment) and using fluorescence techniques for visualizing flow patterns. Next, the simulated conditions should be experimentally verified with the existing chip and possibly optimized chips fabricated by soft-lithography. The objectives would include the comprehension of the mixing process and potentially improve the design in order to have the best microfluidic chip for the preparation of liposomes. The optimization will rely on the particle size distribution measurements and possibly on the increase of the productivity.

This project will take place in close collaboration with Prof. Benoit Scheid of the TIPs-microfluidics laboratory at the University Libre de Bruxelles, where the candidate will spend a part (+/-20%) of his working time.

Profile

- Applicants should hold a PhD preferably in the field of chemistry or physical-chemistry, chemical engineering or bio-engineering, and should have a publication record in line with their research experience.
- Previous experience with biopolymers and nanoparticles, including experience with methods for the preparation of self-assembly nanoparticles and for the evaluation of nanoparticle-biological activity, would be an asset, as well as previous experience in microfluidics, especially in computational flow dynamics.
- Applicants should be able to write activities and scientific reports in French.

Applicants are invited to send their CV together with a cover letter explaining their motivation to Laurent.x.strodiot@gsk.com before 23:59 p.m. CET, 30/11/2017.

Please include minimum 3 references: company, name, first name, connection to you (N+1/ N-1/ Promoter/ etc.), phone number and e-mail address. Please give only the information of the references that GSK can contact in the process of references.

If one of your references is your current employer, please confirm if we can approach.

About GSK

GSK is a science-led global healthcare company with a special purpose: to help people do more, feel better, live longer.
We have 3 global businesses that research, develop and manufacture innovative pharmaceutical medicines, vaccines and consumer healthcare products.

Our Pharmaceutical business has a broad portfolio of innovative and established medicines. We currently focus on developing new medicines in respiratory and HIV/infectious diseases, oncology and immuno-inflammation; with discovery research exploring these and other areas

Our Vaccines business has a broad portfolio and innovative pipeline of vaccines to protect people of all ages. We deliver over two million vaccine doses per day to people living in over 160 countries.

Our Consumer Healthcare business develops and markets consumer preferred and expert recommended brands in the Oral health, Pain relief, Respiratory, Nutrition/gastro-intestinal and Skin health categories.