

PhD position offer (ASAP)

Laboratory of Pharmaceutical Biotechnology
Faculty of Pharmacy,
Université de Montréal, QC, Canada
(514) 343-6111, ext. 0791

Development of microneedles for the painless transdermal delivery of biologics

Microneedles (MNs) are miniaturized needles with length in the order of hundreds of μm and generally considered as the midpoint between hypodermic injections and transdermal patches. Indeed, MNs avoid the pain experienced by using hypodermic injection taking advantage of their size: sufficient to break the stratum corneum, but not enough to reach pain-sensing neurons. In contrast to transdermal patches, on the other hand, they allow the delivery of a considerably larger variety of molecules to the dermis. This project will investigate the design and manufacturing of polymeric MNs for the non-invasive delivery of recently developed potent biological drugs.

Internship objectives:

- Microneedles manufacturing
- Microneedles characterization and performances evaluation *ex-vivo* and *in-vivo*
- PK/PD studies

Expected acquired knowledge:

- Scientific literature search and management
- Basic organic chemistry and bio-conjugation
- Micromanufacturing
- Drug delivery competences
- *Ex-vivo* and *In-vivo* manipulation

Profile:

- BSc in pharmacy, chemistry or related fields
- Exceptional scholar record
- Good oral and written communication skills (French and English)
- Independent and enthusiastic

Supervisor:

Prof. Davide Brambilla (www.brambillaudem.com)
Prof. Roxane Pouliot (ULaval)

Application process:

Provide updated CV, scholar records, motivation letter to davide.brambilla@umontreal.ca.