

Ph. D. position in DNA nanotechnology

Laboratory of Biosensors & Nanomachines (LBN)
Research group of Prof. Alexis Vallée-Bélisle
Université de Montréal, Complexe des Sciences
Montréal, QC, Canada
H2V 0B3

DNA-based drug delivery systems and molecular buffer

Starting date: Fall, 2022

Stipend: 19k/year (+ supplement for teaching assistant program)

Duration: 4 years

Project's description

The Laboratory of Biosensors & Nanomachines is looking for a highly motivated student to pursue research on DNA-based drug delivery systems. The project involves the design, the synthesis, and the functionalization of novel DNA-based buffers for improved drug-release properties (pharmacokinetic, toxicology, immunogenicity, etc.). The project will also involve direct collaboration with clinical research physicians and experts in the field of DNA nanotechnology, and drug delivery. The project will also require working with mice. For more information, see our published work, such as *J. Controlled Release* 2017, 251, 82-91, *Nanoscale* 2018, 10, 4607-4641 and *Nanomedicine (Lond)* 2016, 12, 175-179.

Qualifications

The candidate must hold a master's degree in chemistry or biochemistry (or any related discipline) with good experience in drug delivery system, mice model, pharmacokinetic, DNA nanotechnology, DNA synthesis and/or fluorescence spectroscopy. Experience in DNA origami, cell culture, mice studies, drug toxicology, drug immunogenicity, and drug biodistribution will also be valued.

Personal skills

- Creativity and capacity to think outside of the box
- Ability to work within a team and to collaborate with other research partners
- Proactive in problem-solving and troubleshooting
- Good aptitude in scientific communication (presentations and publications)
- Good mentoring skill (i.e., the candidate will have to supervise master and undergrad students)
- Highly motivated and organized
- Fluent in English (spoken and written)

How to apply

Interested candidates are invited to read our recent publications and submit: 1) a cover letter highlighting their background, any relevant expertise, and their interest towards the proposed project, including ideas on how to improve existing drug delivery system using DNA; 2) a resume; and 3) the contact information of two referees. Please send your candidature to Prof. Alexis Vallée-Bélisle (a.vallee-belisle@umontreal.ca) with the title "Ph.D. candidate Drug delivery 2022".