DNA-based biosensors for molecular detection in complex matrices and in the body

Record number : OPR-459

Overview

RESEARCH DIRECTION

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INFORMATION

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ADMINISTRATIVE UNIT(S)

Faculté de médecine et des sciences de la santé
Faculté des sciences
Faculté de génie

LEVEL(S)

2e cycle
3e cycle

LOCATION(S)

Campus principal
Campus de la santé

Project Description

Rapid and real-time detection of molecules in complex matrices, like blood, or directly in the body, still remains challenging towards solving the paradigm of personnalized medicine. Current approaches used for measuring the concentrations of these molecules still requires trained personnel in state-of-the-art laboratory facilities and multiple days to return an answer. Having access to a technology that would, in contrast offer rapid (<15 minutes) and real-time detection of these molecules directly in complex matrices or in the body could significantly improve our ability with which we deliver therapeutics to patients, improve the outcomes of treatments and better understand how they are being metabolized by our body. My research group is thus looking for highly motivated graduate students interested at working at the interface of Chemistry, Engineering and Biology to pursue the development of electrochemical DNA based biosensors. These biosensors resemble a home glucometer but offer the ability to measure other molecules in complex matrices.

Discipline(s) by sector

Sciences de la santé

Biochimie, Pharmacologie

Sciences naturelles et génie

Biologie et autres sciences connexes, Chimie, Génie biomédical et génie biochimique, Génie électrique et génie électronique, Génie informatique et génie logiciel

Funding offered

Yes

The last update was on 19 February 2026. The University reserves the right to modify its projects without notice.