

# Bioinformatics of non-coding RNAs: Characterization of small nucleolar RNAs and their multiple roles as cellular regulators

Record number : OPR-878

## Overview

### RESEARCH DIRECTION

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### INFORMATION

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### ADMINISTRATIVE UNIT(S)

Faculté de médecine et des sciences de la santé  
Département de biochimie et de génomique fonctionnelle

### LEVEL(S)

2e cycle  
3e cycle  
Stage postdoctoral

### LOCATION(S)

Campus de la santé

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## Project Description

SnoRNAs (small nucleolar RNAs) are small non-coding RNAs present in all eukaryotes and well characterized for their role in ribosome biogenesis, thanks to their capacity for sequence-specific chemical modification. However, over the past 2 decades, more and more studies have demonstrated additional functions for snoRNAs including the ability to regulate expression at multiple levels including alternative splicing, alternative polyadenylation and transcript stability. The expression of snoRNAs is deregulated in many diseases, including ovarian cancer, which we are particularly studying. Despite the breadth of functions described for snoRNAs, the majority of snoRNAs are poorly characterized and some are even missing from annotations of the best annotated genomes. To increase the characterization of snoRNAs and our understanding of their cellular roles in healthy cells and in pathological conditions, we seek in parallel to :

- 1) determine the set of snoRNAs in different eukaryotes and study their phylogeny;
- 2) identify their targets and their functions;
- 3 ) determine their mechanisms of action.

We use approaches from bioinformatics, machine learning, phylogeny and comparative biology, as well as network biology.

### SPECIFIC REQUIREMENTS:

Studies in bioinformatics, molecular biology or related field and knowledge of programming or interest in acquiring this expertise. Experience in RNA-seq analysis and/or comparative genomics is an asset.

## Discipline(s) by

## Funding offered

Yes

# sector

## Sciences de la santé

Biochimie, Biologie cellulaire, Biologie moléculaire, Épidémiologie et biostatistique

## Sciences naturelles et génie

Biologie et autres sciences connexes, Informatique

The last update was on 1 March 2024. The University reserves the right to modify its projects without notice.