

BIOC 462/491 Internship Position in Industry

Winter 2024

Restrictions

Open only to Honours Students enrolled in BIOC 462/491 during the winter 2024 semester

Company:

RE₃PARE

THERAPEUTICS

Repare Therapeutics,

7171, Rue Frederick Banting, Building 2

Ville Saint-Laurent, QC H4S 2A1

<https://www.reparerx.com/>

Project Title: Oncology drug mechanism of action studies: Evaluating cell toxicity and delineating the mechanism of action of inhibitors of PKMYT1 and WEE1 in CCNE1 cancer cell line models.

Project Description:

The purpose of this research project is to:

1. Explore single agent and combination drug treatment with Repare Therapeutics clinical/late-stage pre-clinical drug candidates in lesion-defined cell-based oncology models and to determine their impact on cellular viability. Major emphasis will be devoted to exploring drug combination opportunities with lunresertib (RP-6306), a first-in-class small molecule inhibitor of PKMYT1, in combination with WEE1 inhibitors in cell models of enhanced replication stress such as CCNE1 amplification as well as other lesions of interest.
2. Explore the mechanism of action of these compounds in combination in the various cell models tested. Focus will be on delineating an apoptosis signature in lesion vs normal cell types and differentiating compounds on this basis.

The candidate will become familiar with the culturing of cancer cells (adherent and suspension systems) and the manipulation of these cells in medium throughput cell plating formats (96-well predominantly). The candidate will also become acquainted with the handling of small molecules and the use of liquid handling instrumentation to dispense drugs onto cells. Further to this, the candidate will be able to track cell growth in real-time using state-of-the-art instrumentation and measure the impact of these combination drug treatments on cellular growth. Finally, an investigation of various markers of cell death including caspase-3/7 activation, will be explored using various biochemical techniques. Data analysis will involve software training designed to evaluate synergy of drug combinations. There will be opportunities to present the data sets to a wider audience to gain presentation experience.

Contact Information

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