



CANCER STEM CELL

Dr. John Dick, Program Director

PROGRAM HIGHLIGHTS



- Led by Dr. John Dick, who first proved the existence of cancer stem cells;
- Aiming to determine the role of CSC biology in cancer prognosis and treatment;
- Studying the vulnerabilities and resistance of CSC to determine how to best exploit these in the clinic;
- More than 1,000 primary samples xenografted;
- Ability to conduct revolutionary preclinical trials in xenograft mice;
- Expertise from bench to clinic, leveraging the scientist and clinician relationship to translate results;
- Numerous successful interactions and outcomes made with industry collaborators.

GOAL

OICR's Cancer Stem Cell (CSC) Program has brought together the highest concentration of CSC researchers in the world to focus on mining CSC biology for potential improved methods of cancer diagnosis and prognosis and the development of more targeted therapies.

FEATURED PROJECTS

DEVELOPMENT OF HIGHLY ACTIVE ANTI-LEUKEMIA STEM CELL THERAPY (HALT)

- Recurrence and persistence of many leukemias are due to the relative resistance of leukemic stem cells (LSCs) to current treatments;
- Development of drugs that preferentially target LSCs and biomarkers may be valuable in attacking both lymphoid and myeloid malignancies;
- Working with industry on approved drugs for different indications.

PRINCESS MARGARET HOSPITAL-OICR-PFIZER-CURE (POP-CURE)

This project used state of the art genomic and molecular pathology approaches to develop a large clinical biobank to identify molecular signatures in colorectal cancer. These molecular signatures can be used to accelerate the development of biomarkers for early detection, monitoring and treatment of cancer. Pfizer Global Research and Development contributed \$6 million over three years for the participating laboratories in Ontario.

- Established a large series of new tumour xenograft models that better reflect human disease and capture the genomic heterogeneity in colon cancer;
- Established and interrogated a large, well-annotated tissue microarray for assessment of new targets and biomarkers in colon cancer;
- Carried out extensive phenotypic characterization of tumour models using clinically relevant approaches;
- Discovery of new essential genes (targets) using functional genomics;
- Carried out proof-of-principle personalized medicine strategies in the new xenograft models with novel targeted-agents.

Contact

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For commercialization opportunities please contact: commercialization@oicr.on.ca

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