BioCanRx
Biotherapeutics for Cancer Treatment
Biothérapies pour le traitement du cancer

Catalyst Program

Optimizing a personalized infected cell vaccine (ICV) for peritoneal carcinomatosis

Oct. 14, 2016 to Sept. 30, 2018

Highlights

- Preclinical models of colon cancer peritoneal carcinomatosis show that an ICV using the oncolytic virus Maraba expressing the immune stimulating protein, interleukin 12 (IL-12), can eradicate multiple large tumours when delivered into the peritoneal cavity
- Evaluates the potentiating effects of IL18 and a TLR2/4 adjuvant on efficacy of an ICVs using an IL-12 expressing Maraba virus, the project's lead clinical candidate
- Brings together a combination of clinical, methodological, scientific and commercial development expertise

Biotherapeutics: **Maraba (MG1) expressing the immune stimulating protein + Interleukin 12 (IL-12)**

Project value: **$391,692**
BioCanRX contribution: **$251,692**

Target cancers: **Abdominal cancers (Peritoneal carcinomatosis)**

This project aims to refine an infected cell vaccine (ICV) prior to manufacturing and clinical testing for the eventual treatment of peritoneal carcinomatosis.

Partners: **4**

TURNSTONE BIOLOGICS
biodextris
The Ottawa Hospital Foundation | L'Hôpital d'Ottawa Fondation
uOttawa

About the project

Peritoneal carcinomatosis (spread of cancer throughout the abdomen) is the leading cause of death for patients with abdominal cancers. Many patients die with massive abdominal distention, unable to eat or breathe comfortably. Despite the dismal prognosis, biotherapies hold significant promise, even in bulky and widespread disease. This study is proposing to optimize an infected cell vaccine (ICV) prior to manufacturing and clinical testing to address this pressing unmet clinical need.

A personalized ICV is made from an individual's own tumour cells, harvested and infected with an oncolytic virus expressing an immune stimulatory protein. In preclinical models of colon cancer peritoneal carcinomatosis, they have demonstrated that an ICV using the oncolytic virus Maraba expressing the immune stimulating protein, interleukin 12 (IL-12), can eradicate multiple large tumours when delivered into the peritoneal cavity.

In collaboration with BioCanRx, and two Canadian start-up companies (Turnstone Biologics and Biodextris), they propose to further improve the efficacy of the ICV. At the end of the project an optimal ICV candidate will be identified to move forward with manufacturing and clinical trials.

Key investigators

Project co-leads:
Dr. Rebecca **Auer**
Dr. Jean-Simon **Diallo**

Principal Investigator:
Dr. Dean **Fergusson**

The Ottawa Hospital Research Institute | L'Hôpital d'Ottawa Institut de recherche
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Catalyst Program Investigators

Ottawa
Ottawa Hospital Research Institute, The Ottawa Hospital, University of Ottawa
Dr. Rebecca Auer
Dr. Jean-Simon Diallo
Dr. Dean Fergusson
Dr. Blair MacDonald

Hamilton
McMaster Immunology Research Center
Dr. Ali Ashram
Dr. Brian Lichty

Partners

The Ottawa Hospital Foundation
$50,000

Turnstone Biologics (in-kind)

Division of General Surgery, University of Ottawa
$40,000

Biodextris (in-kind)
$50,000

Key Milestones

October 2016 – March 2017
Establish a safe and immune stimulatory does for MG1-IL12/18 and IVX-908 seperately

March 2017 – May 2018
Compare efficacy of MG1-ICV combinations in the treatment of peritoneal carcinomatosis with survival studies in four murine models and conduct correlative studies

February 2018 – April 2018
Intellectual Property

May 2017 – September 2018
Academic Output

August 2018
Health Canada pre-CTA meeting

The power to kill cancer lies within us. Let's tell our bodies how.

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