

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

Oct. 14, 2016 to Sept. 30, 2019

### 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)**

### 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.

*Targeted cancers*

*Project value*  
**\$406,730**  
BioCanRX contribution:  
**\$220,230**

*Partners*  
**6**



THE TERRY FOX RESEARCH INSTITUTE  
L'INSTITUT DE RECHERCHE TERRY FOX



Hair  
Donation  
Ottawa



The Ottawa  
Hospital | L'Hôpital  
d'Ottawa  
FOUNDATION FONDATION



Cancer  
Research Society



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 | L'Hôpital  
d'Ottawa  
RESEARCH INSTITUTE INSTITUT DE RECHERCHE



uOttawa

# Catalyst Program Investigators



## Hamilton

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

## Ottawa

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

## Partners

Biodextris  
\$25,000 (cash & in-kind)

Cancer Research Society  
\$31,500

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

Hair Donation Ottawa/ The  
Ottawa Hospital Foundation  
\$50,000

Terry Fox Research Institute  
\$40,000

## Key Outputs

Establish a safe and immune  
stimulatory does for MG1-IL12/18 and  
IVX-908 seperately

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

Intellectual Property

Academic Output

Health Canada pre-CTA meeting

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

**BioCanRx**  
Biotherapeutics for Cancer Treatment  
Biothérapies pour le traitement du cancer

