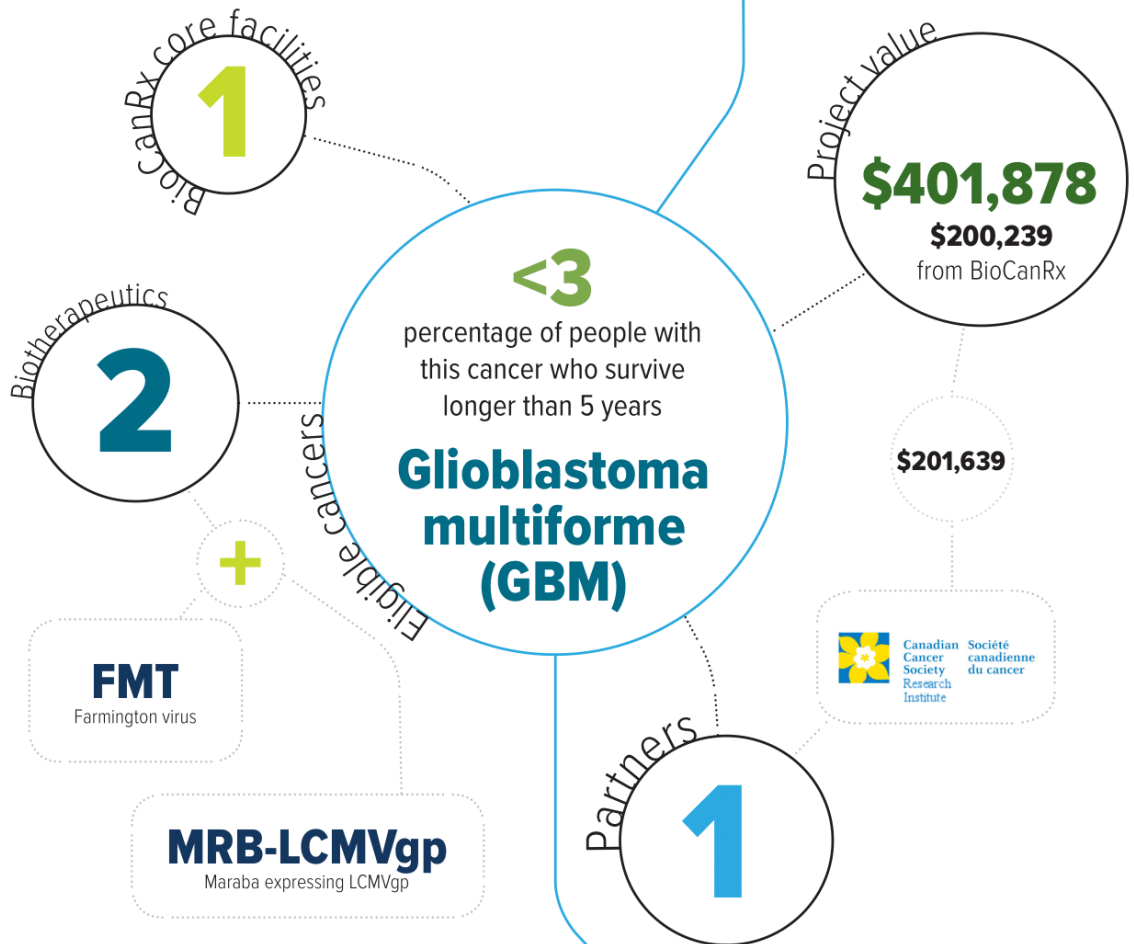


Development of an oncolytic vaccine for brain cancer

July 1, 2015 to Dec 31, 2016

Highlights

- Adapts the Canadian innovation of oncolytic vaccines to a potential treatment for glioblastoma multiforme (GBM)
- Evaluates two rhabdovirus platforms, Farmington (FMT) and Maraba, that are engineered to express the CMV antigens found in GBM tumours
- Builds on internationally recognized Canadian leadership in the development of oncolytic rhabdovirus vaccines



About the project

There have been no significant improvements in the treatment of glioblastoma multiforme (GBM) for the past 35 years. The overall five-year survival rate is less than 3% for GBM patients. Even for those who can undergo the current gold standard-of-care (surgical resection, radiation and the specialty chemotherapeutic, temozolomide) the five-year survival rate is just 34%. Clearly, there is a tremendous need to improve the outlook for this disease.

Dr. Stojdl's lab has developed a new approach to GBM therapy that uses cancer-killing viruses to harness a patient's own immune cells to fight their tumour. This immune activation is critically important during oncolytic virotherapy because patients whose tumours are packed with immune cells have a much better prognosis. These viruses have proven extremely safe in the brain and effective at dealing with issues that frustrate current GBM therapies.

This project will engineer an adapted virus designed to activate immune cell populations that are already established at high levels in the majority of individuals with GBM. Almost all GBM patients in Canada would be eligible for this therapy at the clinical trial phase. The virus will also be designed to act as a beacon that guides these activated immune cells to the tumour site.

With previous success in bringing oncolytic viruses to clinical trial, this streamlined and highly rational project is uniquely positioned to succeed in its goal of bringing this technology to Phase I/IIa trials, and ultimately vastly improving the outlook of GBM patients in Canada.

Key investigator

Dr. David Stojdl
Children's Hospital of Eastern Ontario
Research Institute, University of Ottawa

CHERO
RESEARCH INSTITUTE

Catalyst project investigators

Ottawa

CHEO Research Institute,
University of Ottawa
Scientific investigator
Dr. David Stojdl

The Ottawa Hospital,
University of Ottawa

Clinical advisors
Dr. Garth Nicholas
Dr. Vasco Ferreira Da Silva

Hamilton

McMaster University
Scientific investigator
Dr. Yonghong Wan

BioCanRx

\$200,239

approved on
June 10, 2015

BioCanRx core facilities

GMP viral vector laboratory
The Ottawa Hospital

July 1, 2015

• Project starts

July 1, 2015 to June 30, 2016

- Engineer FMT and MRB-LG viruses that express human CMV pp65/IE1
- Evaluate and compare the efficacy and safety of these FMT and Maraba viruses in mouse models and their ability to stimulate an immune response, or immunogenicity.

July 1, 2016 to June 30, 2017

- Evaluate immunogenicity of the engineered FMT and MRB-LG viruses in mice with an immune system that mimics the human immune system
- Model, evaluate and compare translational efficacy in the context of primary patient material.

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