

### Infected cell vaccines in the treatment of acute leukemia: laying the groundwork for a clinical trial

Oct. 14, 2016 to October 1, 2018

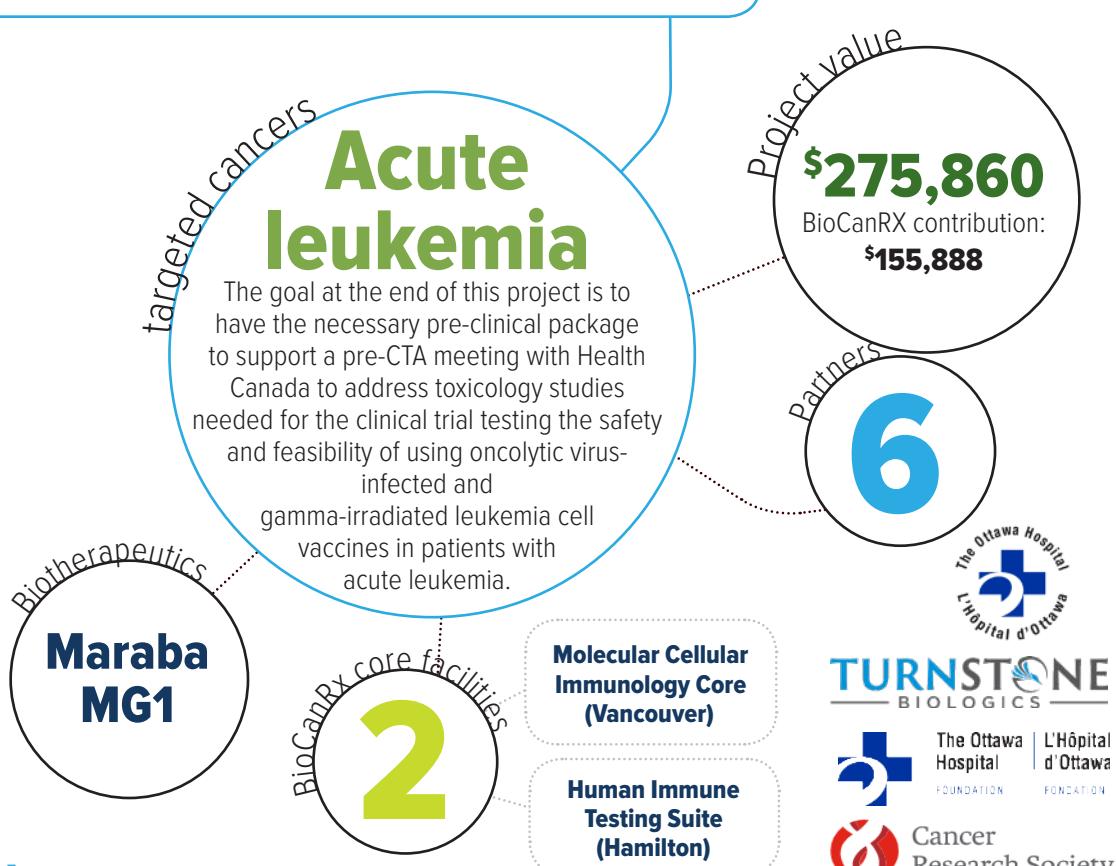
#### Highlights

- Personalized strategy with a virus-infected leukemia cell vaccine can offer more ammunition against acute leukemia
- Vaccine strategy combines cancer-killing viruses with the added ability to stimulate the patient's own immune system against their leukemia
- Creates the foundation for further studies that will bring this new approach for the treatment of leukemia towards a clinical trial
- Leukemia vaccines are being created in a number of ways, but the use of oncolytic viruses as part of the vaccine is a novel approach

#### About the project

Acute leukemia is a type of blood cancer that remains difficult to treat with standard therapies, most of which are dangerous and associated with a high risk of complications and death. Despite aggressive chemotherapy and stem cell transplantation, less than 5% of patients with relapsed acute leukemia are cured. Patients with acute leukemia need more ammunition against their disease. This project proposes that a personalized strategy with a virus-infected leukemia cell vaccine can offer just that needed ammunition.

This vaccine strategy combines cancer-killing viruses, an existing BioCanRX technology, with the added ability to stimulate the patient's own immune system against his/her leukemia. This strategy would provide patients with a less toxic and more personalized approach to defeating leukemia. Based upon on their discovery that infected leukemia cell vaccines induce a protective leukemia specific immune response in mice, they propose to test in a clinical trial, whether vaccines created using a patient's own leukemia cells infected with a cancer-killing virus and inactivated with radiation can protect



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# Catalyst Program Investigators

Partners		
Bone Marrow Transplantation Foundation, The Ottawa Hospital	\$40,000	Turnstone Biologics \$10,000 (in-kind)
Hematology Division, The Ottawa Hospital	\$20,000 (in-kind)	Ottawa Regional Cancer Foundation \$53,916
		Cancer Research Society \$29,972

## About, continued...

This project will develop an infected cell vaccine, a personalized immunotherapy, as a possible approach to treating patients with refractory leukemia or those unable to safely receive chemotherapy. Leukemia vaccines are being created in a number of ways, but the use of oncolytic viruses as part of the vaccine remains a novel approach. This proposal brings new clinical and biologic expertise in hematologic malignancies into the BioCanRx organization, including stem cell transplantation, a field in which clinicians are already comfortable with adopting new immune therapies in the clinic.

## Key Milestones

### October 2016 – January 2017

- Murine experimental design
- Ethics application for patient samples

### October 2016 – October 2017

- Murine survival experiments
- Immune assays for immune response and potency to ILCV

### January 2017 – January 2018

- Banking patient samples

### October 2017 – March 2018

- Compare methods of ILCV cryopreservation and production with patient samples

### March 2018 – October 2018

- Manufacture and characterize ILCV with patient samples

### June 2018 – October 2018

- Validate potency assay in patient samples

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