

Development of Reovirus-Based, Orally Administered, Colon Cancer Vaccines

Project duration: 2025-5-1 to 2027-4-30

Targeted cancer type:

Colorectal cancer

The team will generate safe and cancer-specific Reoviruses that, when administered orally, will eliminate malignant polyps and act prophylactically to prevent their recurrence.

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BioCanRx Funded
Core Facility

**The Ottawa Hospital's
Biotherapeutics
Manufacturing Centre**

Project value:

\$1,518,550

BioCanRx Contribution:
\$350,000

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Partners

Key Investigators:

Project Lead:

Dr. Tommy Alain

CHEO RESEARCH INSTITUTE
INSTITUT DE RECHERCHE

Biotherapeutic:

Oncolytic virus

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

 CIHR
IRSC Canadian Institutes of
Health Research
Instituts de recherche
en santé du Canada

 **Cure-V**
Science

 **genvira**
BIOSCIENCES

 **virica**

 **ViroCure**
Good Viruses in Nature

About the project:

Colorectal cancer represents the second and third leading cause of death from cancer in Canadian men and women, respectively. This year 27,000 Canadians will be diagnosed with the disease and 10,000 will die from it. This project will examine the potential of oral administration of Reoviruses for colorectal cancer treatment and prevention of recurrence.

The team's data demonstrate that orally-administered Reoviruses can restrict colon cancer progression. Importantly, they have developed a strategy to bioengineer Reovirus to display cancer antigens and thus improve its immunotherapeutic properties. The team will generate safe and cancer-specific Reoviruses that, when administered orally, will eliminate malignant polyps and act

prophylactically to prevent their recurrence. The ultimate goal is to have the Reovirus-based cancer vaccine platform ready for clinical trial development, offering a unique and novel immunotherapeutic approach to patients.

Developing Reoviruses as an oral-based cancer vaccine therapeutic approach against colorectal cancer is a novel and distinct approach. Furthermore, this unique Reovirus project presents several innovative advantages as it will produce safe and stable recombinant particles that can be orally administered to limit the progression of, prevent recurrence, and provide a treatment for this often-fatal disease of colorectal cancer.



Partners:

The Ottawa Hospital's
Biotherapeutics
Manufacturing Centre

Genvira Biosciences

Virica Biotech

CIHR

Virocure Inc.

CuroV Science Inc.

Total Pledged Partner Contributions: \$1,168,550

Total Matched Pledged Contributions: \$350,000

Total Leveraged Partner Contributions: \$818,550

Key Deliverables

1. Design, rescue and amplify up to twenty recombinant Reovirus cancer oncolytic vaccines exposing specific human and mouse colon cancer epitopes.
2. Demonstrate the anti-tumour efficiency and prolonged therapeutic responses offered by recombinant Reovirus cancer vaccines in clinically relevant mouse models of colon cancer.
3. Optimize the preparation and the high-titer production of recombinant Reovirus cancer vaccines for the next stage of clinical assessment.

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