

Enabling Studies for a First-in-Human Clinical Trial of BCMA-directed TAC-T Cells

Duration: 11/1/2024 to 4/1/2026

Targeted Cancer:

Multiple myeloma

Researchers are developing BCMA-directed TAC-T cells for the treatment of multiple myeloma. This therapeutic promises to be better tolerated by patients, reducing the cost and toxicity of cell therapy and potentially lengthening remission.

1

BioCanRx Funded
Core Facility

The Ottawa
Hospital's
Biotherapeutics
Manufacturing
Centre

Project value:

\$2,894,729

BioCanRx Contribution:
\$766,997

Biotherapeutic:
Adoptive Cell Therapy

11

Partners

Key Investigators:

Project Lead:

Dr. Jennifer Quizi



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

Dr. Jean-Sébastien Delisle



CENTRE DE RECHERCHE
CENTRE AFFILIÉ À
L'UNIVERSITÉ DE MONTRÉAL

Dr. Jonathan Bramson

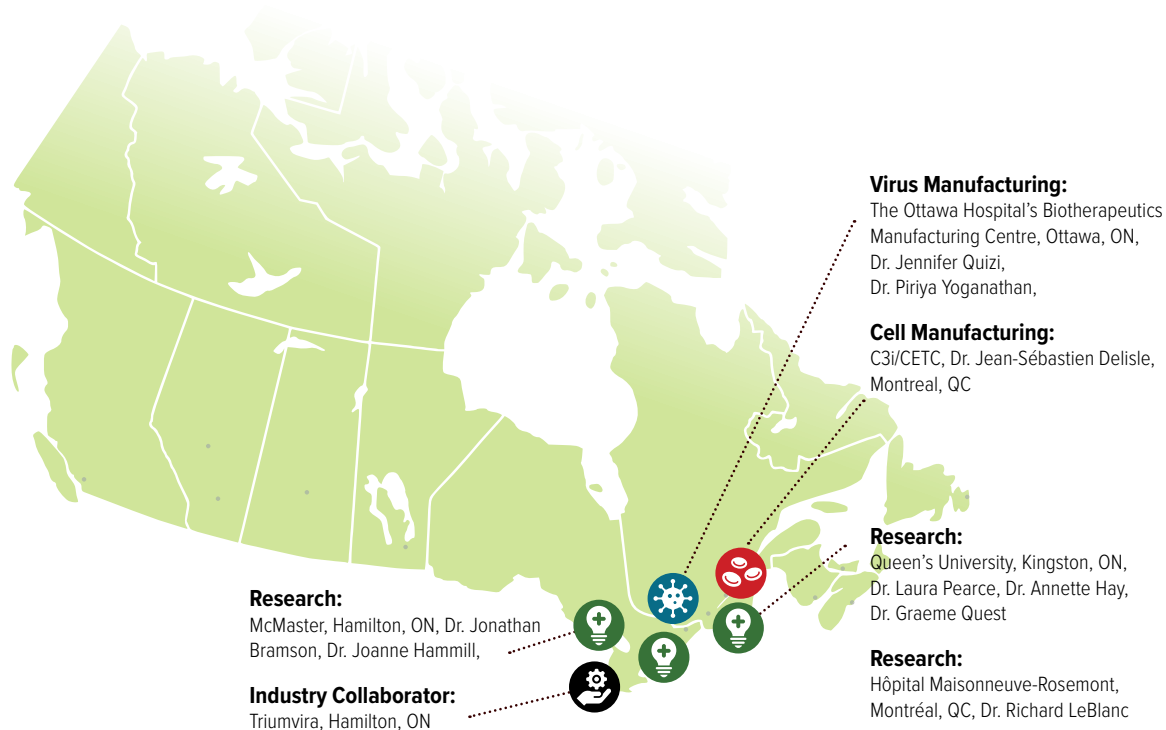


About the project:

A promising new treatment strategy has emerged where white blood cells are removed from patients with multiple myeloma and modified in the laboratory to augment the white blood cells' ability to attack myeloma tumors. The modified white blood cells are administered back to the patient where they can mediate destruction of the myeloma leading to long-term remission of the disease and reduced treatment frequency. Two such white blood cell therapies are approved by Health Canada (ide-cel, cilta-cel). Enthusiasm for the approved cell therapies has been

tempered by severe toxicities, high cost of treatment and a variable duration of remission. This research team has developed a novel form of the modified white blood cells, called T cell antigen coupler (TAC) receptor-engineered T cell (TAC T cell), which promises to be better tolerated by the patient. The team hypothesizes that the TAC T cells will offer patients a therapeutic option with reduced toxicity and provide an option for patients who cannot receive the approved white blood cell therapies. To test this hypothesis, the team has developed the "TACTful" early-phase

clinical trial which will be led by the Canadian Cancer Trials Group, and will involve clinics in Montreal, Ottawa, Hamilton and Calgary. With the BioCanRx funding, they will produce the clinical-grade reagents that are required to modify the white blood cells, develop a protocol for producing the clinical-grade modified white blood cells and prepare the documentation for approval to test this novel therapy in humans. These critical steps must be completed to deliver this promising new treatment to myeloma patients in Canada.



Key Deliverable

1. GMP BCMA TAC Lentivirus manufacture
2. Developed GMP protocol for manufacturing autologous BCMA TAC-T cell products
3. Safety and pharmacokinetic data sets for BCMA TAC-T cell products manufactured
4. CTA Submission (including CMC documents and Investigator Brochure): The ultimate deliverable will be the successful filing of the TACTful CTA to Health Canada

Partners:

C3i/CETC	Myeloma Canada/ Leukemia and Lymphoma Society
Canadian Cancer Trials Group	Queen's University
Juravinski Research Institute	Samuel Family Foundation
Kingston Health Sciences Centre	The Ottawa Hospital's Biotherapeutics Manufacturing Centre
Lonza	Triumvira Immunologics

Total Pledged Partner Contribution: \$1,278,810

Total Pledged Matched Contributions: \$1,278,810

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