BioCanRx
Canada's Immunotherapy Network
Le réseau canadien d'immunothérapie

Clinical Trials Program

Phase Ib trial of pembrolizumab administered following adoptive cell therapy- A multiple cohort study; The ACTIVATE (Adoptive Cell Therapy InVigorated to Augment Tumor Eradication) Trial.

April 23rd, 2018 to March 31st, 2020

Highlights

- This therapeutic approach uses immune checkpoint inhibitors, a novel class of anti-cancer drugs and adoptive cell transfer (ACT) to eliminate cancer cells
- A number of preclinical studies suggest that a combination of checkpoint inhibitors and ACT could result in improved tumor control
- Pembrolizumab is a potent and highly selective humanized monoclonal antibody designed to directly block the interaction between PD-1 and its ligands PD-L1 and PD-L2
- Results from this study will determine the safety and effectiveness of the combination therapy and enable further development of cell therapies for Canadians suffering from different forms of cancer

Trial sites: 1

Patients: 24

Project value: $2,430,424
$ 500,000 from BioCanRx

Biotherapeutics: 1

Tumor infiltrating lymphocytes; checkpoint inhibitor antibody

Eligible cancer: **Melanoma and ovarian cancer**

The goal of the study is to assess the feasibility and safety of a combination therapy approach using pembrolizumab treatment following lymphodepleting chemotherapy, tumor infiltrating lymphocytes (TIL) administration, and low dose IL-2.

Partners: 2

MERCK

UHN The Princess Margaret Cancer Foundation

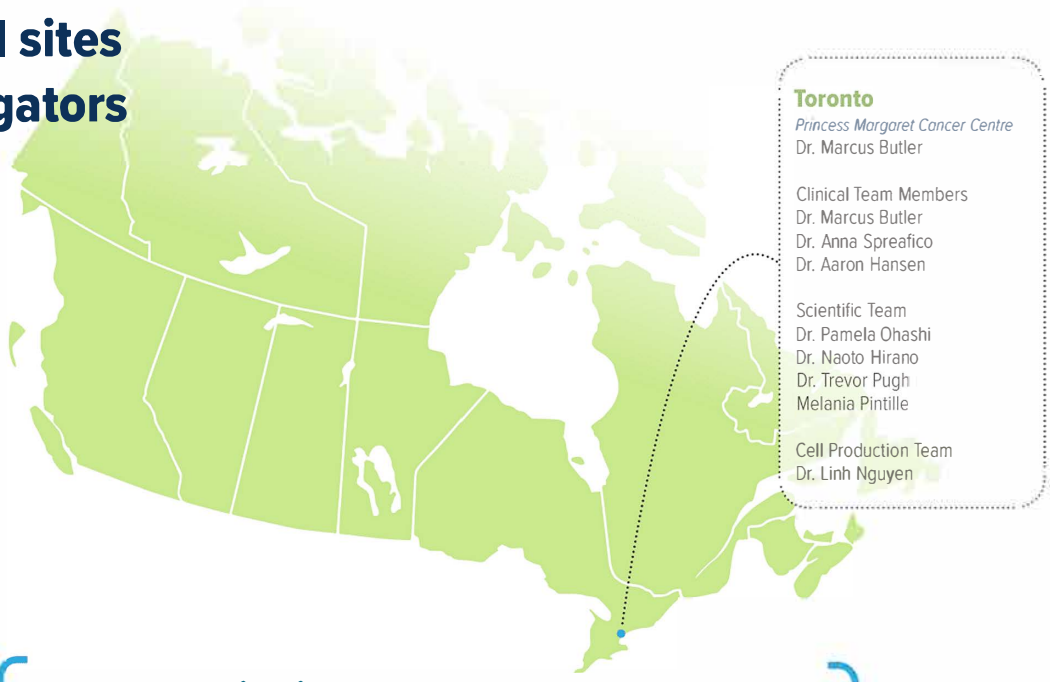
About the project

The ACTIVATE clinical study will investigate the combination of adoptive cell transfer (ACT) and treatment with an immune checkpoint inhibitor in cancer patients for whom standard treatments have failed. ACT uses cancer-fighting immune cells grown in the laboratory to large numbers, then infused back to patients. Several Canadian groups, including the group led by Drs. Butler, Ohashi and Hirano at the Princess Margaret, are developing this strategy to bring better treatments to Canadians. This includes the use of tumor-infiltrating lymphocytes (TILs), immune cells that attack tumors. Long- lasting responses have been seen in some patients in clinical trials of TILs.

Immune checkpoint inhibitors are a new class of anti-cancer drug. Immune checkpoints are the "brakes" of the immune system, and sometimes cancer cells use these checkpoints to prevent immune cells from attacking the cancer. These drugs block this process, allowing immune cells to eliminate cancer cells. However, for most cancers, tumor shrinkage occurs in only a minority of patients after treatment. As with ACT, improvements are needed to benefit more patients. It has been observed in the laboratory and in some patients that combining checkpoint inhibitors with ACT shows the potential for improved responses. Given these promising results, we are performing a clinical study of the combination of TILs and the immune checkpoint inhibitor pembrolizumab. In this study, we are investigating the feasibility, safety and potential clinical benefit of this novel approach in cancer patients who are left with few therapeutic options.

Key investigators:
Dr. Marcus Butler
UHN Princess Margaret Cancer Centre

Clinical trial sites and investigators



Toronto
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Dr. Marcus Butler

Clinical Team Members
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Scientific Team
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Cell Production Team
Dr. Linh Nguyen

Partner contributions

Merck Canada Inc.
$1,055,424 (cash & in-kind)

Princess Margaret Cancer Foundation
$875,000 (cash) Trial Sponsor.

Key Milestones

YEAR 1

- TIL products manufactured for 10 patients by Q4 end
- Enrollment of 10 patients on Cohort 1 of the ACTIVATE study by Q4; 4 patients have already been enrolled and treated with TIL by time of this application submission
- Correlative testing initiated on all treated patients by Q4 end

YEAR 2

- Completion of all TIL manufacture by Q2
- Enrollment of 2 additional patients in Cohort 1 by Q2
- Last patient treated by Q2
- Clinical data collected, QC monitored, and finalized by beginning of Q4 (January 2020)
- Initial response and correlative data evaluation during Q4
- First draft of manuscript by Q4 end (March 2020)