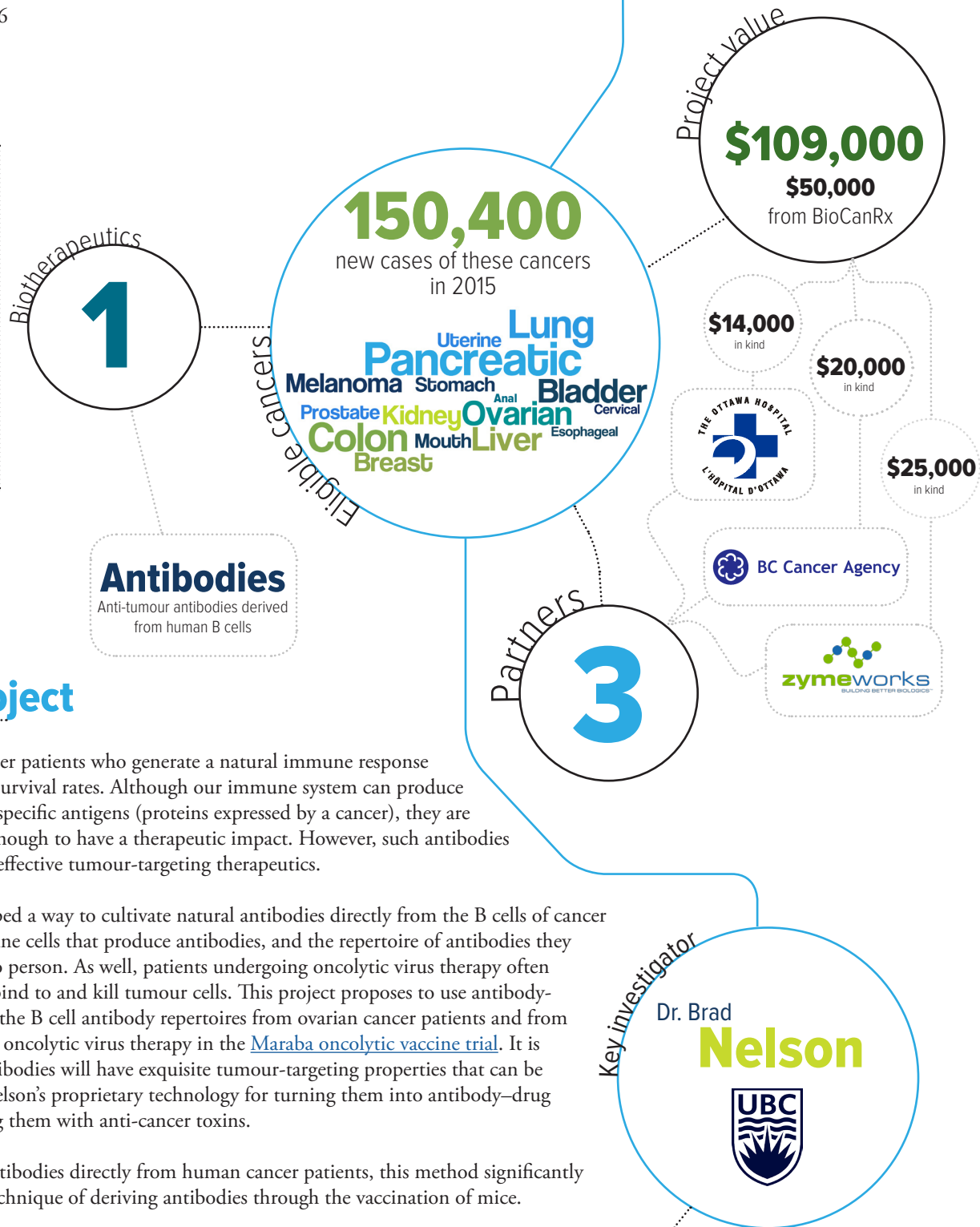


Novel anti-tumour antibodies isolated from cancer patient immune B-cell repertoires

July 1, 2015 to June 30, 2016

Highlights

- Provides potent antibodies for use by proprietary Canadian technology that produces antibody–drug conjugates (ADCs)
- Capitalizes on a superior method for deriving antibodies, beyond the conventional vaccination of mice.



About the project

Research has shown that cancer patients who generate a natural immune response to their tumours have better survival rates. Although our immune system can produce antibodies that target cancer-specific antigens (proteins expressed by a cancer), they are often too few or not potent enough to have a therapeutic impact. However, such antibodies have the potential to be very effective tumour-targeting therapeutics.

Dr. Nelson's team has developed a way to cultivate natural antibodies directly from the B cells of cancer patients. B cells are the immune cells that produce antibodies, and the repertoire of antibodies they produce varies from person to person. As well, patients undergoing oncolytic virus therapy often produce antibodies that can bind to and kill tumour cells. This project proposes to use antibody-cloning technology to isolate the B cell antibody repertoires from ovarian cancer patients and from patients who have undergone oncolytic virus therapy in the [Maraba oncolytic vaccine trial](#). It is expected that the isolated antibodies will have exquisite tumour-targeting properties that can be further enhanced with Dr. Nelson's proprietary technology for turning them into antibody–drug conjugates (ADCs) by arming them with anti-cancer toxins.

By isolating a repertoire of antibodies directly from human cancer patients, this method significantly improves upon the current technique of deriving antibodies through the vaccination of mice.

Catalyst Project investigators



Vancouver

BC Cancer Agency,
University of British Columbia
Scientific investigator
Dr. Brad Nelson

Ottawa

The Ottawa Hospital,
University of Ottawa
Scientific investigator
Dr. John Bell

BioCanRx

\$50,000

approved on
June 10, 2015

BioCanRx partners

BC Cancer Agency
\$20,000 in-kind for tumour
samples and doctoral student

The Ottawa Hospital
\$14,000 in-kind for blood samples
with antibodies to tumour cells

Kairos Therapeutics
\$25,000 in-kind for antibody-drug
conjugate (ADC) validation and development

July 1, 2015
• Project starts

July 1, 2015 to June 30, 2016

- Isolate B cell repertoire from ovarian cancer tumours and from peripheral blood mononuclear cells (PBMC) of cancer patients treated with an oncolytic virus therapy.
- *In vitro* testing of biochemical and biological properties to determine lead candidates as antibodies alone and as antibody–drug conjugates
- File patents

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

BioCanRx
Biotherapeutics for Cancer Treatment
Biothérapies pour le traitement du cancer

