## CCTG PM.2: Canadian initiative to measure, predict and assess cancer treatment outcomes in patients treated with immune-oncotherapeutics (CAN-IMPACT-IO)


Scientific abstract

**Background and rationale:** Although durable responses can be observed, cancer immunotherapy (IO) treatment only benefits a minority of patients with advanced solid tumors who are treated. The biological mechanisms are not well understood. Novel biomarkers are needed to identify patients who will respond to IO treatment.

**Objective(s):** The primary objective of the Canadian Clinical Trials Group Precision Medicine 2 (CCTG PM.2) trial is profile biological samples from patients treated in IO therapeutic trials currently active in CCTG, using whole genome and transcriptome sequencing (WGTS) either before treatment, or at time of disease progression with IO to uncover prognostic biomarkers as well as predictive biomarkers of response or resistance.

**Research Plan:** CCTG PM.2 is linked to two MOHCCN prospective pan-Canadian projects: CAN-PREDICT, a Canadian framework to improve predictive models for immunotherapy interventions; and CAN-PIVOT, a Canadian platform to investigate primary and acquired resistance to cancer immunotherapy. Patients enrolled in CCTG IO therapeutic trials who enroll in PM.2 will undergo a fresh tumor biopsy before or after IO treatment for WGTS and multiple immunohistochemistry (IHC) to assess immune biomarkers. WGTS will be performed at a MOHCCN sequencing hub and reports with clinical findings will be returned to the patient's treating physician and shared with the patient to inform future clinical treatment decisions. Clinical, genomic, transcriptomic, and IHC data will be made available to Canadian researchers across MOHCCN.

**Anticipated Results and Impact:** CCTG PM.2 will provide opportunities for patients across Canada enrolled in CCTG IO trials to have access to WGTS to inform treatment decisions. Genomic characterization of their tumors will help identify new biomarkers of response to IO treatment.



Plain language abstract

**Background and rationale:** Cancer immunotherapy is a type of treatment that uses the body's immune system to fight cancer. While it works well for some people with advanced tumors, it doesn't help everyone, and scientists aren't sure why. To solve this problem, researchers are looking for "biomarkers," which are clues in the body that can predict if a treatment will work.

**Objective(s):** A Canadian research project, called Canadian Clinical Trials Group Precision Medicine 2 (CCTG PM.2) trial, is studying cancer patients' tumors to find these biomarkers. The study uses advanced sequencing techniques to analyze tumors' genetic information before or after treatment. This research is linked to two other Canadian projects that aim to improve cancer treatment by predicting who will benefit from immunotherapy and understanding why some cancers stop responding to it.

Research Plan: Patients who are receiving new immunotherapy drug treatments in clinical trials run by the CCTG will be eligible to participate. They will undergo biopsies to obtain samples of their tumor either before or after receiving immunotherapy treatment. Genetic information from patients biopsy samples will tested in a specialized lab, and the results will be shared with their doctors to guide their future treatment. The data collected will also help other researchers in Canada.

Anticipated Results and Impact: The goal of CCTG PM.2 is to improve immunotherapy success rates and make it a more reliable option for cancer patients.