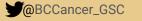


Whole genome and transcriptome-assisted immune profiling of metastatic tumours: a precision medicine approach to immunotherapy trial design

> Zakhar Krekhno, PhD Canada's Michael Smith Genome Sciences Centre at BC Cancer Vancouver, BC, Canada

🔗 bcgsc.ca

Zkrekhno@bcgsc.ca





Disclosure Information



CAPTIV-8 is an investigator-initiated study from BC Cancer, Vancouver that is partially funded by Roche Canada

Whole genome and transcriptome-assisted immune profiling of metastatic tumours:



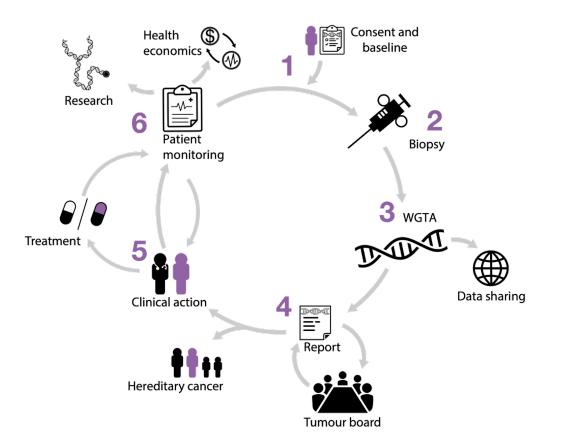
a precision medicine approach to immunotherapy trial design





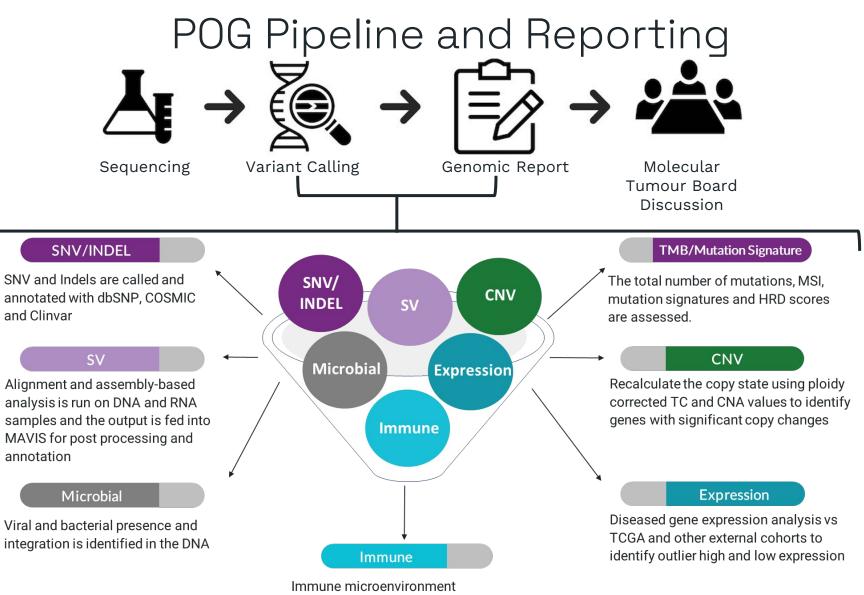
- Whole genomes and transcriptomes (WGTA) short read sequencing from 1668 adult cases and 179 pediatric cases
- Research results are discussed at a molecular tumour board
- **Clinically actionable** findings are identified in 83% of cases
- WGTA-informed therapies are administered in 37% of cases
- **Patients show clinical benefit** in 46% of treated cases

Whole genome and transcriptome-assisted immune profiling of metastatic tumours: a precision medicine approach to immunotherapy trial design Pleasance, Bohm *et al., Annals of Oncology, 2022* Pleasance, Titmuss, Williamson *et al., Nature Cancer, 2020*









Immune microenvironment deconvolution, T- and B-cell clonality, HLA subtyping, and neoantigen expression

Whole genome and transcriptome-assisted immune profiling of metastatic tumours:

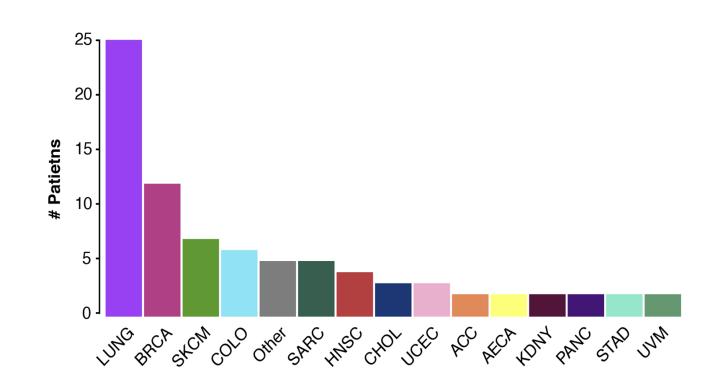
a precision medicine approach to immunotherapy trial design





POG Patients Treated with Immune Therapy





ICI received	n (%)
PD-1	45 (55)
PD-L1	10 (12)
PD-1/IDO1	8 (10)
PD-L1/CTLA-4	8 (10)
NKG2A	2 (2)
CTLA-4	1 (1)
PD-L1/OX40	1 (1)
PD-1/CTLA-4	1 (1)
OX40	1 (1)
PD-1/Chemo	1 (1)
PD-1/LAG-3	1 (1)
PD-L1/CTLA-4/Chemo	1 (1)
PD-L1/HER2	1 (1)
PD-L1/SMAC	1 (1)

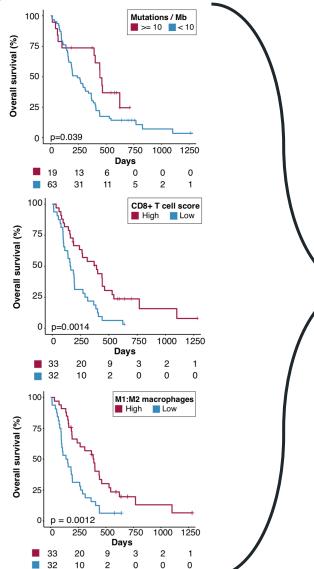
Whole genome and transcriptome-assisted immune profiling of metastatic tumours: a precision medicine approach to immunotherapy trial design Pender, Titmuss *et al., Clin Cancer Res., 2021*

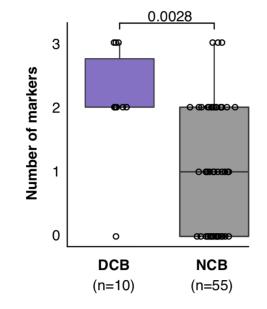


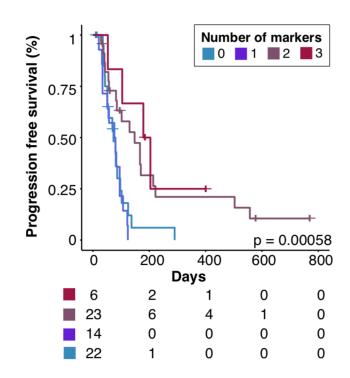


Combinations of Markers are Effective









Whole genome and transcriptome-assisted immune profiling of metastatic tumours: a precision medicine approach to immunotherapy trial design Pender, Titmuss *et al., Clin Cancer Res., 2021*

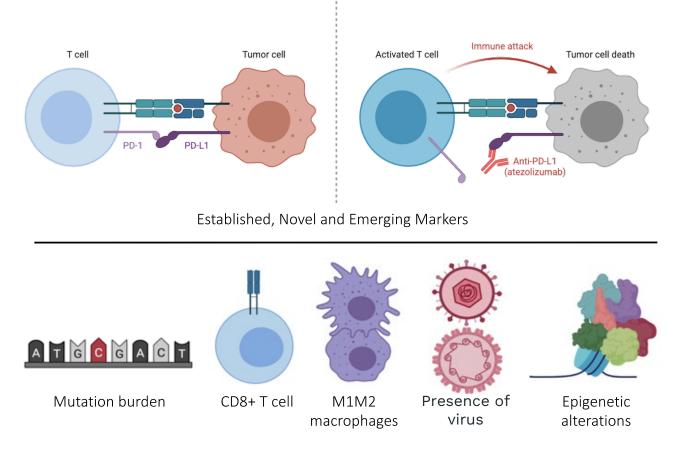




CAPTIV-8 (NCT04273061)



- CAPTIV-8 is an investigator-initiated study from BC Cancer, Vancouver that is partially funded by Roche Canada
- Open label, phase 2 study matching Canadian subjects, who have undergone whole genome and transcriptome analysis (WGTA).
- To date, 31 patients have been enrolled with a target of 50 participants total by April 2026



Whole genome and transcriptome-assisted immune profiling of metastatic tumours:

a precision medicine approach to immunotherapy trial design









- By integrating multiple alteration classes, WGTA can broaden the number of molecularly informed therapies
- Retrospective analysis of immune therapy treated patients revealed integration of multiple biomarkers improved prediction of therapeutic response
- CAPTIV-8 will determine if the information from WGTA-derived biomarkers corresponds with response to atezolizumab





Acknowledgements



<u>POG PIs:</u> Marco Marra Janessa Laskin

This work would not be possible without the participation of our patients and families, the POG team, the GSC platform, and the generous support of the BC Cancer Foundation, Genome British Columbia, the Terry Fox Research Institute Marathon of Hope Cancer Centres Network, and Roche Canada.

> personalizedoncogenomics.org POG team

https://www.cbioportal.org/study/summary?id=pog570_bcgsc_2020 Searchable POG data for POG570 cohort

zkrekhno@bcgsc.ca

Whole genome and transcriptome-assisted immune profiling of metastatic tumours:

a precision medicine approach to immunotherapy trial design

9

