



BRCA Tumour Panel – Sample Preparation and Shipping Guidelines

The quality of the *BRCA Tumor Panel* result depends on the following **critical pre-analytical steps** in order to obtain high-quality nucleic acids. This includes fixation, microtome section preparation, specimen preparation and shipping.

1. Fixation:

Fixation of the specimen with only **10% neutral-buffered formalin**, for a period of 24–72 hours, allows preservation of nucleic acids. Other fixatives may lead to false negative results and are not accepted (e.g. Bouin, B5, AZF, Holland's or strong acid decalcification procedures). Under fixation or over fixation can lead to suboptimal results.

2. Microtome Section Preparation:

Ribonucleases (RNases), which is present ubiquitously (e.g. normal human skin), can destroy nucleic acids. Careful preparation and clean material are necessary to avoid cross contamination and RNases. Disposable material and smooth tip tweezers cleaned with an ANTI-RNase product (eg. RNase Away™) are encouraged.

- Wear gloves and change them frequently, especially between specimens
- Change the microtome blade for each case
- Use clean instruments to transfer the sections (i.e. sterile needle to transfer the scrolls into clean 1.5 ml Eppendorf tubes)
- Use hot plate or a clean water bath (for unstained slides)
- All material (tube, slides) must be adequately labelled (two patient identifiers)

3. Specimen Preparation:

Specimen type	Requirements
Scrolls FFPE*	TCC is the number of viable nucleated tumour cells in proportion to the total number of cells. • ≥ 10% of tumour cell content (TCC) in the whole cut surface is required. • 10 scrolls at 10-µm (minimum 5 scrolls) in a 1.5 ml Eppendorf tube with 2 patients' identifiers should be submitted • 1 H&E slide
Unstained Slides FFPE*	Required for macrodissection when overall TCC <10% 1) 6 unstained labelled slides at 10-µm thickness, uncharged and unbaked 2) 1 H&E slide, pointed for tumour area if TCC < 10%

(*)FFPE: Formalin-fixed paraffin-embedded.

4. Shipping and return:

Samples and requisition must be send to the CMDL reception desk: **1001 boul. Décarie, E05.5051, Montréal, QC, H4A 3J1.**

For sample return, please provide a waybill following transport Canada regulations for biological material. Note that our laboratory **will not be responsible** for samples lost during transport.



BRCA Tumour Panel – Test Information

Indications for ordering

This test detects genomic abnormalities in the *BRCA1* and *BRCA2* genes that may give the patient eligibility for targeted therapy with PARP inhibitors. This test may be ordered for patients with the following tumour types:

- Breast (Triple-negative, HER2-negative, high-risk ER+, gBRCA-positive*)
- Ovarian (High-grade non-mucinous)
- Prostate (Castration-resistant)
- Pancreas (all)

*Patients with a germline *BRCA1/2* pathogenic variant

Test Methodology

The *BRCA Tumour Panel* is a targeted next generation sequencing capture panel for analysis of the entire *BRCA1* and *BRCA2* genes. This test only analyzes DNA and can detect multiple types of alterations including: (i) single nucleotide variants (SNVs), (ii) small insertion/deletions (indels), (iii) copy number variants (deletions and duplications).

Genes Tested

- *BRCA1*
- *BRCA2*

Test Interpretation

Only variants classified as Pathogenic or Likely pathogenic according to modified ACMG criteria are reported (PMID: 25741868, <https://cspec.genome.network/cspec/ui/svi/affiliation/50087>). Additional results are available upon request. This test cannot definitively determine whether a variant is present in the germline or restricted to the tumour.

Specimens accepted

- **Tumour cellularity $\geq 10\%$** is required. This information is mandatory to assess the validity of the test.
- **Scrolls or unstained slides** from Formalin-fixed paraffin-embedded (FFPE) specimens (cytology or histology) are accepted
- **FFPE blocks** are NOT accepted
- **Scrolls: Ten scrolls at 10um**
- **Unstained slides:** 5 unstained labelled slides of 10 μm thickness, unbaked and uncharged, with 1 H&E slide (tumour area should be outlined with permanent marker if macrodissection is needed).
- The full procedure is detailed in the document "*Sample Preparation and Shipping Guidelines*".

Limitations

Results must be interpreted in the context of clinical, radiological and histological findings. If results obtained do not match other clinical or laboratory findings, or if you have novel relevant information, please contact the laboratory as soon as possible for updated interpretation.

Results may be compromised if the recommended procedures (tissue fixation and preparation) have not been followed.

A negative result does not fully rule out the presence of an alteration and may be due to the limitations of this assay (i.e. insufficient % of tumour cell content or poor fixation).

CNV detection cannot be guaranteed if the tumour cellularity is $<40\%$

Turnaround time: 4-6 weeks