Tissue Requirements for Solid Tumor Genetic Testing

NRL-IMPACT (**I**ntegrated **M**utation **P**rofiling of **A**ctionable **C**ancer **T**argets) is a cutting-edge next-generation sequencing (NGS) test developed by Memorial Sloan Kettering Cancer Center (MSKCC, New York, USA). The test is performed at the National Reference Laboratory of M42 and powered by SOPHiA DDM™ for streamlined sequencing data analysis and interpretation.

This comprehensive genomic profiling (CGP) test identifies genetic mutations and other critical changes in solid cancers. **By analyzing 505 cancer-related genes, NRL-IMPACT provides a comprehensive molecular profile of tumors,** helping match patients to targeted therapies and clinical trials based on their specific genetic alterations.

Specimen Requirements for NRL-IMPACT Test

The following specimen requirements help avoid rejection and testing delays, ensuring higher chances of successful sequencing results. Notably, a normal matched sample is required along with the tumor tissue.

	Specimen Type	Requirements	Storage & Transport
TUMOR SAMPLE	Formalin-Fixed Paraffin-Embedded (FFPE) tissue (preferred)	Tissue should be fixed in 10% neutral-buffered formalin for 6-72 hours. Other fixatives are not acceptable	**Labelling:** The primary specimen containers (e.g. blocks, slides) must be labelled with two patient-specific identifiers. **Packaging:** Slides must be packed in glass slide container. Peripheral blood sample must be labelled with two patient-specific identifiers. Place the labelled specimen(s), along with the completed test requisition form into the biohazard bag. **Storing**: Refrigerate at 4-8°C for storage. **Shipping:** Send at refrigerated (4-8°C) temperature.
	Unstained slides (USS)	10 unstained slides at 5-micron thickness + 1 H&E slide	
	Core needle biopsy	3-5 cores from the tumor	
	Cytology smear	3 slides prepared from fine needle aspirations or touch preps. Slides prepared from Thin Prep. Minimum 3,000 cells. Do not add coverslips.	
	Decalcified FFPE bone sample	EDTA decalcification is accepted. **Acid decalcification is not accepted.**	
	Tissue Size & Tumor Content **Tissue surface area**: Minimum 25 mm^2. For tissue specimens with smaller surface area, please provide additional block or unstained slides. **Tumor nuclear content:** Minimum 20% required. Percent Tumor Nuclei (%TN) = $\frac{\text{Number of tumor cells}}{\text{Total number of all nucleated cells}} \times 100$ **Note:** For liver specimens: higher tumor content may be required because hepatocyte nuclei have twice the DNA content of other somatic nuclei.		
MATCHED NORMAL SAMPLE	Peripheral blood is preferred	3-5 mL in EDTA, should reach the lab within 7 days or less	
	Normal tissue FFPE block as an alternative	Tissue should be fixed as described above	
	Note: In case of receiving only tumor sample, MSI testing will not be reported.		

EDTA, Ethylenediamine Tetra-Acetic Acid; FFPE, Formalin-Fixed Paraffin-Embedded; MSI, Microsatellite Instability

Contact NRL Logistics at **800-NRL** or email CustomerCare@nrl.ae for any questions or clarifications.