

Sample Submission Guide: Tissues, Blood and Cells

GenomeScan offers nucleic acid extraction services from various source materials suitable for most NGS applications. Table 1 outlines the specific requirements for source materials used in nucleic acid extraction. Depending on your project, the required input quantities may vary.

We recommend contacting us prior sample collection, to ensure that sufficient material is collected. If your source material is not listed in Table 1, please contact us. We are eager to discuss the best approach to achieve your project goals.

Table 1: Recommended input material for nucleic acid extraction.

Source material*	Nucleic acid**	Recommended Quantity	Shipping / Collection Vial
Fecal Samples	DNA	Min. of 100 µL	Screw-cap microcentrifuge tube with O-ring seal
Blood	DNA/RNA	1 mL	EDTA vacutainer tubes; PAXgene® Blood RNA Tubes
Blood Cells (e.g., PBMCs)	DNA/RNA	Min. of 10 ⁵ cells in 200 µL	Cryovial or 1.5 mL Eppendorf tube
Cells (Human/Non-human)	DNA/RNA	Min. of 10 ⁵ cells in 200 µL	Cryovial
Soil Samples (Bacteria)	DNA	At least 10 grams	Sterile plastic containers with screw-on lids
Saliva	DNA	1 mL	Oragene® DNA Saliva Kit***
FF Tissue	DNA/RNA	Min. of 25 mg	Cryovial or 1.5 mL Eppendorf tube
FFPE tissue sections/curls	TNA	See 'Tissue sections' section	Sarstedt tube
FFPE tissue cores	TNA	0.6 mm core: 3 cores 3 mm core: 1 core	Sarstedt tube
Other sample types	Please contact us		

* FF = fresh frozen, FFPE = formalin fixed paraffin embedded, PBMC = peripheral blood mononuclear cells

** TNA = total nucleic acid

*** Oragene DNA Saliva kit or similar kit with stabilizing buffer like Zymo Safecollect Saliva, PAXgene Saliva Collectors

Tissue sections

For fresh frozen (FF) and formalin fixed paraffin embedded (FFPE) tissues, tissue sections are preferred over tissue blocks or tissue cores. Tissue sectioning eliminates the need for tissue disruption and allows to for check the cell type composition of your sample. This is crucial to ensure a high tumor-cell percentage, exclude necrotic tissue, and prevent contamination of epithelial tissue sample with high immune cell counts. Through collaboration with expert pathologists,

we can assist with sectioning and histological evaluation of your tissues.

When providing tissue sections, please follow the general recommendations for section quantity and thickness as outlined in Table 2. Due to variables, such as tissue cell density and surface area, actual numbers may vary. Note that we are unable to assess the input material provided, and nucleic acid extraction will proceed based on the provided tissue sections.

Table 2: Recommended number of tissue sections for FF and FFPE tissues.

Preservation	Tissue surface area	Section thickness	Number of sections
FF	> 1 cm ²	5 µm	10
	< 1 cm ²	5 µm	20
FFPE	> 1 cm ²	5 µm	5
	< 1 cm ²	5 µm	10



Considerations for FFPE sections

In cases involving small tissues, the tissue's surface area within the FFPE block may represent only a fraction of the total block surface area. When estimating the number of sections needed, please consider the actual tissue within the FFPE block, and exclude the excess paraffin. We also advise trimming away the excess paraffin, as excessive amounts of paraffin can interfere with nucleic acid extraction (see Figure 1).

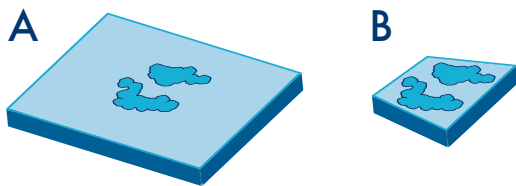


Figure 1: Trimming excess paraffin from FFPE block. A: before B: after



Sample QC

Our nucleic acid extraction service includes a sample quality control (QC) step to evaluate the quantity and quality of the extracted nucleic acid. If your project includes sequencing and the extracted nucleic acid fails to meet our entry requirements, we will contact you to discuss the available options with you.



Project initiation and sample submission form

Your project will be initiated upon receipt of the completed and signed purchase order (PO) form. Please, do not proceed to sample shipment before we have emailed you to confirm receipt of your purchase order (PO). Upon project initiation, you will receive a confirmation email containing your project number and a sample submission form (SSF). Please return the completed SSF via email and include a hard copy along with the sample shipment.



Sample shipment

Every sample must be clearly labelled with the GenomeScan ID (GS_ID) as specified in the sample submission form.

We require all frozen samples (e.g., tissues, cell pellets, or blood) to be shipped on dry-ice. Saliva collected with Oragene® DNA Saliva Kit and soil samples be shipped at room temperature. Samples should be shipped in the vial types outlined in Table 1. Other containers are also acceptable, but if we have to transfer your sample to a different type of vial before proceeding with nucleic acid extraction, loss of material may occur.

International shipment may take longer than expected. Therefore, please make sure your package contains sufficient cooling materials to preserve the quality of your samples during transport. We highly recommend for sensible and/or unique samples, to use cold chain shipment.

Avoid scheduling sample shipments on days that would result in transit over weekends or during public holidays. As a company based in The Netherlands, we are closed on the following generally recognized public holidays: New Year's Day, Easter Monday, Kings Day (27th April), Ascension Day, Whit Monday and Christmas (25th and, 26th December).

If you are considering delivering your samples in person, please consult our lab team in advance.

Shipping address:

GenomeScan B.V.
Plesmanlaan 1d, 4th floor
2333 BZ LEIDEN
The Netherlands



Biological Contaminants

Samples shipped to GenomeScan must be free of biological contaminants. Our laboratory operates in compliance with BSL-1 and BSL-2 regulations and cannot handle potentially hazardous materials. If you suspect your samples require higher biosafety levels, please contact us prior to sending your samples to us.