

Sample Submission Guide: Tissues, Blood and Cells

GenomeScan provides nucleic acid extraction services from various source materials and for most NGS applications. The table below (Table 1) specifies the requirements for source material for nucleic acid extraction. Depending on your project, required input may vary.

We would therefore advise you to reach out to us prior to sample collection, to ensure that sufficient material is collected. If your source material is not listed below, please contact us. We are happy to discuss with you how we can bring your project to fruition.

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 it also allows checking the cell type composition of your sample. This is important, for example, to ensure a high tumor-cell-percentage, exclude necrotic tissue, or avoid contamination of an epithelial tissue sample with high numbers of immune cells. Through collaboration with expert pathologists, we can support sectioning and

histological evaluation of your tissues.

When providing us with tissue sections, please adhere to the general recommendations for quantity and thickness of the sections as specified in Table 2. Because of variables, such as tissue cell-density and surface area, the resulting numbers may deviate. When providing tissue sections, please take into consideration that we are unable to assess the input material, and we always proceed with the nucleic acid extraction.

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 some cases, especially when working with small tissues, the surface area of the tissue is only a small proportion of the total surface area of the FFPE block. When estimating the number of sections required, please consider only the tissue inside the FFPE block, and not the excess paraffin. We also recommend trimming away the excess paraffin, as excessive amounts of paraffin can interfere with nucleic acid extraction (Figure 1).

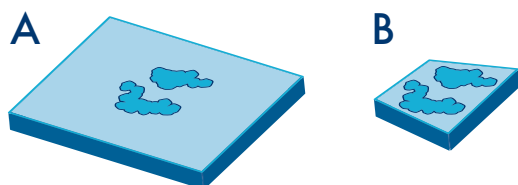


Figure 1: Trimming excess paraffin from FFPE block. **A:** before **B:** after



Sample QC

Our nucleic acid extraction service includes a sample QC, to assess quantity and quality of the extracted nucleic acid. If your project includes sequencing, and the extracted nucleic acid does not meet our entry requirements, we will contact you to discuss the options.



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 ship samples before we have emailed you to confirm receipt of your purchase order (PO). Upon project initiation, you will receive a confirmation email with a project number and a sample submission form (SSF). Please return the completed form by 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 indicated in the sample submission form.

We request all frozen samples (e.g. tissues, cell pellets or blood) to be shipped on dry-ice. Saliva collected with the Oragene® DNA Saliva Kit and soil samples can both be shipped at room temperature. Samples should be shipped in the vial types specified 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. Avoid shipment of samples on days that require transit over the weekend or over a holiday period.

We are closed on the following, generally recognized, public holidays: New Year's Day, Easter Monday, King's Day (27th April), Ascension Thursday, Whit Monday, and Christmas (25th, 26th December).

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

Shipping address:

GenomeScan
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.