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# EXTRACTION SERVICES

## User Guide

# DNA Extraction

Version 05

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# General Information

This document describes the procedure to follow when requesting DNA extraction. The detailed instructions for the sample preparation, the submission and shipping requirements are all provided in this guide.

To avoid any delay in the processing of the request, the instructions provided in the present guide must be followed carefully.

All samples submitted must come from healthy donors.

# Sample Preparation

## Starting Material

Different starting materials are accepted for the DNA extraction service.

Validated sample types:

Human / Animal: Saliva, whole blood and its derivatives, feces, and biopsy tissue.
Plant: Leaves and roots.
Environmental: Soil, water, and biofilm.
Other: Cultured cell pellet and Gram-positive bacterial strain.

For other types of samples, contact the Client Management Office to discuss the possibility of developing new options based on the project description.

## Requirements by Sample Type – Human / Animal

### Biological fluids

Instructions:

It is essential to follow the manufacturer's instructions during sample collection and preparation to ensure high-quality biological samples.
Whole blood samples containing clots may result in sample rejection during extraction.

Identification: The sample name indicated on the tube must be unique, legible, and simple, and must match exactly the name submitted in the Sample Submission Form. Any discrepancy will result in processing delays.
Note: You may use the original collection tube's barcode as the sample identifier, provided it is clearly visible and not covered by another label.

Requirement: Refer to Table 1.

Table 1 : Requirements by sample type Human / Animal – Biological Fluids

| Sample Type | Suggested collection kits | Minimum Volume | Container |
|---|---|---|---|
| Saliva | ORAgene DNAGenotek kits | 1 mL | Original collection tube or 1.5 to 2 mL micro-tube |
| Blood | • BD *Vacutainer* EDTA K2.<br>• *PAXgene*® Blood DNA Tube. | • BD *Vacutainer* EDTA K2: 300 uL<br>• *PAXgene*® Blood DNA: 600 uL | Original collection tube or 1.5 to 2 mL micro-tube |
| Red blood cells pellet or buffy coat | | 300 uL | 1.5 to 2 mL micro-tube |
| Plasma and serum | | • Circulating DNA analysis: 1 mL<br>• Proteomic analysis: 100 uL | • Circulating DNA analysis: 1.5 to 2 mL micro-tube<br>• Proteomic analysis: Matrix™ 500 µL ScrewTop Tubes<br><br>Matrix™ 500 µL ScrewTop Tubes can be provided upon request. |
| Blood spot on FTA® card, Whatman™ | | 6 discs of 3 mm | 1.5 to 2 mL micro-tube |

## Feces

Instructions:

It is essential to follow the manufacturer's instructions during sample collection and preparation to ensure high-quality biological samples.

Identification: The sample name indicated on the tube must be unique, legible, and simple, and must match exactly the name submitted in the Sample Submission Form. Any discrepancy will result in processing delays.
Note: You may use the original collection tube's barcode as the sample identifier, provided it is clearly visible and not covered by another label.

Requirement: Refer to Table 2.

Table 2: Requirements by sample type Human / Animal – Feces

| Sample Type | Suggested collection kits | Minimum Volume | Container |
|---|---|---|---|
| In preservative solution | *Omigene-gut* OM-200 | 250 uL and/or 250mg | Original collection tube or 1.5 to 2 mL micro-tube |
| Frozen, without preservative solution | | 50 mg | 1.5 to 2 mL micro-tube |

## Biopsies

Instructions:

Make sure to follow best practices for sample collection and preservation in order to obtain high-quality biological specimens. Ideally, tissue samples should be collected and immediately snap-frozen in liquid nitrogen and stored in a -80°C freezer. In other cases, tissue may have been preserved in paraffin, or when dealing with animal identification, collected using specific sampling kits.

Identification: The sample name indicated on the tube must be unique, legible, and simple, and must match exactly the name submitted in the Sample Submission Form. Any discrepancy will result in processing delays.

Requirement: Refer to Table 3.

Table 3: Requirements by sample type Human / Animal – Biopsies

| Sample Type | Suggested collection kits | Minimum Quantity | Container |
|---|---|---|---|
| Frozen, without preservative solution | | 20-25 mg | 1.5 to 2 mL micro-tube |
| FFPE | | Contact Client Management Office | 1.5 to 2 mL micro-tube |
| Animal ID Biopsy | Allflex collection kits (tweezer and tube). | 20-25 mg | AllFlex collection tube |

# Requirements by Sample Type – Plant

## Lyophilized plant tissue (leaves)

Sample preparation: follow best practices for lyophilization according to the species.

Quantity required: 10 mg

Container: 1.5 to 2 mL micro-tube
Depending on the scope of the project, specific collection plates may be provided.

Identification: The sample name indicated on the tube must be unique, legible, and simple, and must match exactly the name submitted in the Sample Submission Form. Any discrepancy will result in processing delays.

For any analysis of the present microbiome, and not just the plant's genomic DNA, please contact Client Management Office.

## Roots

Quantity required: 250 mg

Container: 1.5 to 2 mL micro-tube

Identification: The sample name indicated on the tube must be unique, legible, and simple, and must match exactly the name submitted in the Sample Submission Form. Any discrepancy will result in processing delays.

# Requirements by Sample Type – Environmental

## Soil

Quantity required: 250 mg

Container: 1.5 to 2 mL micro-tube

Identification: The sample name indicated on the tube must be unique, legible, and simple, and must match exactly the name submitted in the Sample Submission Form. Any discrepancy will result in processing delays.

## Water sample on filter

Sample preparation: follow best practices for sample filtration.

Recommended filter type:

- Whatman® glass microfiber grade GF/C filter discs, 25 mm x 0.26mm (diameter x think).

In case the filter used does not correspond to the one recommended, contact Client Management Office.

Container: place the filter into 1.5 to 2 mL micro-tube.

Identification: The sample name indicated on the tube must be unique, legible, and simple, and must match exactly the name submitted in the Sample Submission Form. Any discrepancy will result in processing delays.

## Biofilm

Quantity required: 250 mg

Container: 1.5 to 2 mL micro-tube

Please refer to water sample on filter if the biofilm is filtered.

Identification: The sample name indicated on the tube must be unique, legible, and simple, and must match exactly the name submitted in the Sample Submission Form. Any discrepancy will result in processing delays.

# Requirements by Sample Type – Other

## Cultured cell pellet

Sample preparation: follow best practices for cells cultured.

Requirement: $5x10^6$ frozen pelleted cells

Container: 1.5 to 2 mL micro-tube

Identification: The sample name indicated on the tube must be unique, legible, and simple, and must match exactly the name submitted in the Sample Submission Form. Any discrepancy will result in processing delays.

### Gram-positive bacterial strain (NC1)

Sample preparation: follow best practices for cells cultured.

Requirement: at least two (2) tubes of $1x10^9$ cultured bacteria

Container: 1.5 to 2 mL micro-tube

Identification: The sample name indicated on the tube must be unique, legible, and simple, and must match exactly the name submitted in the Sample Submission Form. Any discrepancy will result in processing delays.

## Service Request Form and Sample Submission

All service request form and sample submissions must be done on the web through Nanuq by using a user account. To obtain a user account, contact the Client Management Office.

The laboratory work will only begin once all documentation has been submitted. Incomplete documentation will cause delays.

### Service Request Form

1. Log into Nanuq.

2. Click "Add new request" under the section "Request" and follow the instructions.

   The "new request" option should not be used for an existing request.
   Do not use the "Back" button in your browser to go back to previous pages. Use the left-hand menu to navigate the form.
   Click "Next" to move to the subsequent page of the request.

   At any time during the process, save the work by clicking "Save and continue later". Drafts are accessible through "My request lists" under "Request". Requests will stay in drafts until they are submitted. To change a request under draft, click "Modify" in the lefthand menu.

   To request the return of samples once the project is complete, go to the "Sample Information" tab and provide the information requested.

3. Click on "Submit" for the request to be approved by the Client Management Office. Unsubmitted requests will not be processed.

## Sample Submission

Once the service request is complete and submitted, submit the samples.

1. Log into Nanuq.
2. If applicable, find the request using "My request list" and open it.
3. Click on the "Sample submission" tab followed by "Add new samples".
4. Follow the instructions on the screen.
   For assistance, contact Client Management Office.
5. Make sure the status of the sample submission is "Submitted" by going to the "Sample submission" tab in the Service request.

Repeat these steps to add a new sample to the request or send replacement samples.

# Sample Shipment Preparation

## Waybill

Once samples are submitted, go back to the "Sample submission" tab, select the submission(s) associated with the package being prepared and click on "Print Waybill." By default, only one copy will be printed. However, two copies are required.

## Package Preparation

Send the tubes in a box with dividers or any other container that will keep the tubes in order. Place the tubes in the box from left to right following the same order indicated in the Sample Submission form.

The container must stay closed throughout the shipping process.

Only saliva samples collected using the ORAgene kits from DNAGenotek, lyophilized leaves, and Allflex biopsies may be shipped at room temperature. All other materials must be shipped frozen, on dry ice.

One copy of the waybill must accompany the samples. Make sure that the waybill stays dry by placing it in a sealed plastic bag (type of Ziploc).

Delivery directly to the Expertise Center

Samples may be delivered directly to our laboratory.
Regular business hours are Monday to Friday, between 8:00 a.m. and 4:00 p.m.
Please contact the Client Management Office to coordinate the delivery.

Shipping by Courier Service

Shipments must be of appropriate size to accommodate the samples and enough dry ice to keep them frozen until arrival. Failure to do so may compromise sample quality.

Since our offices are closed on weekends, we strongly recommend that frozen samples be shipped **between Monday and Wednesday at the latest** to reduce the risk of sample loss due to courier delivery delays.

Samples crossing the Canadian border should be sent at the beginning of the week to avoid the risk of them being stored at the carrier's warehouse over the weekend. The use of clear phrases such as: "non-biohazardous biological samples", "For research use only" and "No commercial value" on the commercial invoice will help expedite customs clearance.

## Samples Shipment

The delivery address and instructions for the shipping of samples are found on the waybill.

One copy of the waybill must be clearly visible on the outside of the package. It can be taped directly to the package or placed in a clear protective envelope taped to the package.

# For More Information

## Client Management Office

Telephone: 514-398-7211
Email: infoservices@genomequebec.com
Web site: https://genomequebec.com/en/technological-services/centre-dexpertise-et-de-services-2/

# Additional Information

N/A