



EXTRACTION SERVICES

User Guide

DNA Extraction

Version 4.0

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General Information

This document describes the procedure to follow when requesting DNA extraction. The detailed instructions for the preparation, the samples submission, the shipping requirements, as well as any additional information 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

The different starting material accepted for the DNA extraction service are:

- Saliva
- Whole blood
- Buffy coat
- Feces
- Environmental water sample on filter
- Soil
- Lyophilized plant tissue (leaf)

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

Requirements

When sending samples for DNA extraction, it is important to use the tubes listed below for each type of starting material. Some processes are standardized for specific extractors and in such cases only the recommended tubes will be compatible.

For samples in non-recommended tubes, please contact the [Client Management Office](#) to ensure the feasibility of the extraction.

Unless otherwise indicated, the residual material resulting from the extraction will be discarded once the project is complete.

Saliva

Saliva samples must be collected using the DNA Genotek's Oragene collection kits (OG-500 or OG-600).

The supplier's instructions must be carefully followed during saliva collection to ensure a clear, unstained sample and free of particles that could interfere with subsequent steps.

The minimum volume required is 1 mL.

Do not exceed the maximum collection volume indicated by the supplier.

Whole blood

Blood samples must be collected in the tubes listed in Table 1.

Table 1 – Tubes accepted for whole blood DNA extraction

Name	Anticoagulant	Supplier	Tube volume (mL)	Size (mm)	Catalog #
Vacutainer	K ₂ EDTA	BD Biosciences	10	16 x 100	366643
Vacutainer	K ₂ EDTA	BD Biosciences	6	13 x 100	367863
Vacutainer	K ₂ EDTA	BD Biosciences	4	13 x 75	367861
Vacutainer	K ₂ EDTA	BD Biosciences	3	13 x 75	367856
PAXgene	K ₂ EDTA	BD Biosciences	2.5	13 x 75	761165

It is important to follow best practices for sample collection.

Samples must be free of clots. Samples with clots will be rejected.

The minimum volume required is 1.4 mL.

If the minimum volume is not reached, it is possible to:

- add PBS to the samples before sending.
- ask the [Client Management Office](#) to convert the service request to a manual extraction. The work order and delivery time will then be adjusted accordingly.

Buffy coat

Samples of buffy coat must be sent in the tubes listed in Table 2.

Table 2 – Tubes accepted for buffy coat sample extraction

Name of tube	Supplier	Size	Catalog #
Screwcap microtubes with conical base	Sarstedt	2 mL	72.693
Screwcap microtube with skirted conical base	Sarstedt	2 mL	72.694

The whole blood that will be used to extract the buffy coat must be collected in a tube containing an anticoagulant. See Table 1 for examples of tubes.

The minimum volume required is 500 µL.

Do not exceed the maximum capacity of the tube. Content will expand when frozen.

Feces

Human samples

Human fecal samples must be collected using the DNA Genotek's Omnigene-Gut collection kits (OM-200).

The supplier's instructions must be carefully followed during sample collection to ensure homogenous samples.

Samples from other sources (mice, bee gut)

Samples must be sent in 1.5 mL tubes with snap cap.

The quantity required is as follows:

- 250 mg for “wet” samples such as bee gut
- 20 mg for “dry” samples such as mice feces

When in doubt about the required quantity, please contact the [Client Management Office](#).

Environmental water samples on filter

Samples must be sent in 1.5 mL tubes with snap cap.

Whatman GF/C filters are recommended (catalog number 1822-025).

Send ½ of the filter.

Soil

Samples must be sent in 1.5 mL tubes with snap cap.

The quantity required is 250 mg.

Lyophilized plant tissue (leaf)

Samples must be sent in 1.5 mL tubes with snap cap.

Depending on the size of the project, plates related to the sample collection can also be sent.

The quantity required is 10 mg.

Confirm with the Client Management Office if the species has been validated.

Identification

The name of the sample indicated on the tube must be unique, easy to read and exactly match the sample submitted in the [Sample Submission](#) form. Discrepancies will result in sample processing delays.

Service Request Form and Sample Submission

All service request forms and sample submissions must be done on the web through Nanuq by using a user’s account. To get an account contact the [Client Management Office](#).

Work in the laboratory will only start once all the documentation is submitted. An incomplete documentation will cause delays.

Service Request Form

1. Open a session in [Nanuq](#).
2. Click on [“Add new request”](#) in the section “Request” and follow the instructions.

The option "new request" does not need to be used to complete an already existing request.

Do not use the "Back" button in your browser to go back to the previous pages. Use the menu on the left to navigate through the form.

Click on "Next" to go to the next page of the request.

It is always possible to save the information by clicking "Save and continue later". The drafts are accessible through "[My request lists](#)" in the section "Request". The request will stay in draft until it gets submitted. To modify a request in draft, click on "Modify" in the menu on the left.

To request the return of extracted material once the project is completed, indicate it under the "Sample Information" tab and complete the requested information.

3. Click on "Submit" to have your request approved by the [Client Management Office](#). Requests that are not submitted will not be processed.

Sample Submission

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

1. Open a session in [Nanug](#).
2. If applicable, find the request using "[My request list](#)" and click to open it.
3. Click on the tab "Sample submission", and then on "Add new samples".
4. Depending on the service request, samples are submitted through the application interface (step a) or through an Excel file (step b).
 - a) When submitting through the application interface, follow the instructions on the screen.
 - b) When submitting through an Excel file, follow the instructions on the screen as well as those indicated in the file.

Additional information may be found as "comments" in some cells. These comments will be identified with a red triangle at the top right corner of each cell. Some examples are shown in the tab "Plate example" of the form.

The file extension must be in .xls and not .xlsx.

Submit the file in the application and confirm the information.

Do not add new samples to a submitted file. Submitted file cannot be modified.

5. Verify that the status of the submission is at "Submitted" under the "Sample submissions" tab in the Service request.

Follow the same steps to add new samples to the request or to add replacement samples.

Sample Shipment Preparation

Waybill

After the sample submission, return to the tab "Sample submission", select the sample submission(s) related to the package being prepared, and click on "Print waybill". By default, only one copy will print, but two 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.

Saliva and lyophilized tissue

- Ship at room temperature.

Whole blood, buffy coat, feces, environmental water sample on filter and soil

- Ship on dry ice.
- The package must contain enough dry ice to keep the samples frozen until they reach their destination.

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).

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 the directives concerning the delivery will be found on the waybill.

One copy of the waybill must be visible on the outside of the package. It can be glued to the package or placed in a transparent enveloped and glued to the package.

For More Information

Client Management Office

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Version History

Version	Summary of modifications	Author	Effective date (yyyy-mm-dd)
04	Document redesign and identification	A. Verville	2023-03-08