



CANADA'S MICHAEL SMITH
GENOME SCIENCES CENTRE

From Nobel roots.

FFPE TISSUE



USER GUIDE

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CANADA'S MICHAEL SMITH
GENOME SCIENCES CENTRE

ABOUT US

Our **CAP**, **DAP**, **ISO 15189**, and **ISO 27001** certified technology platform is a high-throughput, large-scale DNA and RNA sequencing and analysis facility that has been designed to maximize analytical capacity, diversity, efficiency, scalability and flexibility.

Our state-of-the-art clinical, sequencing, bioinformatics, and proteomics platforms are ready to be put to use for your research or clinic.

We partner with researchers, guide experimental design, execute high quality processing of complex and valuable biological samples and provide extensive bioinformatics analyses with the aim of making genomics research accessible to our partners and collaborators within the scientific community.

Please feel free to contact us at SOW@bcgsc.ca if you have any questions about the services we provide.

ABOUT THIS GUIDE

This user guide describes requirements and recommendations for the preparation and submission of **formalin-fixed paraffin-embedded (FFPE) tissue**.

The recommended starting materials and amounts described in this guide work well for human or mouse derived nucleic acids. *For best results, please submit the recommended amount of starting material or more.*

If working with other organisms, please file a **Collaborative Services Inquiry** at <https://bcgsc.ca/services/collaborative-services-inquiries>.

If you are submitting a different sample type, please refer to the other user guides at bcgsc.ca/services.

CONTACTS

Submissions

GSC_submissions@bcgsc.ca

Statements of Work

SOW@bcgsc.ca

Data Support and Access

data_support@bcgsc.ca

Shipping

GSC_submissions@bcgsc.ca

General

info@bcgsc.ca



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1. SAMPLE PREPARATION

1.1. TERMS USED

FFPE formalin-fixed paraffin-embedded

TNA total nucleic acid

1.2. FFPE TISSUE

All scrolls and cores taken from FFPE tissue blocks should be frozen at -80°C to prevent the degradation of nucleic acids by minimizing the activity of nucleases and slowing the chemical damage to nucleic acids at room temperature.

Samples must be submitted in clearly labeled **1.0 mL Matrix tubes** (**Thermo Scientific, Cat #3740**). We can provide the tubes, if needed.

Scrolls: **min $120\text{ mm}^2 \times 10\text{ }\mu\text{m}$** . For tissue surface area $\leq 120\text{ mm}^2$, up to **6 scrolls** per 1.0 mL Matrix tube.

Cores: **$2.5\text{ mm} \times 1\text{--}3\text{ mm}$** (up to **4 cores** per **1.0 mL Matrix tube**).

1.3. NON-FFPE SAMPLES

Cell samples are accepted in tube format.

Non-archival (FFPE) tissue samples must be frozen at -80°C .

Blood or saliva samples can be submitted at ambient temperature according to instructions on the collection tubes.



2. ONLINE SAMPLE SUBMISSION

Refer to [Introduction to Our Collaborative Services guide](#) for instructions on using the [Online Sample Submission System](#). We recommend that you fully review this guide to working with us before initiating your submission.

The online sample submission form must be completed and approved prior to submitting your samples to the GSC.

If you have any questions, contact us at GSC_Submissions@bcgsc.ca.

2.1. SPECIFYING MATRIX TUBE INFORMATION

When you are entering information about your sample in our Online Sample Submission system, please pay particular attention to the sections about [matrix tubes](#), [Patient ID](#), and [scrolls](#). Wrong or missing information in these columns will delay your submission.

1. *Number of Samples*: Enter the number of samples being submitted. Unless otherwise instructed, samples must be submitted in [1.0 mL Matrix tubes](#) ([Thermo Scientific, Cat # 3740](#)). We do not accept other sizes of Matrix tubes.
 - 1.1. When submitting more than one sample, tubes must be [arranged by columns](#) in the rack (i.e., A1, B1, C2).
 - 1.2. You will be provided with an option to request a rack of tubes. We will contact you when the rack is ready to be picked up from the GSC or shipped to your lab. If you choose to have the plate shipped, we will ask you to provide your shipping address and FedEx account number.

Request a rack of 1.0mL Matrix tubes: *

☒ Yes

☐ No

A request will be submitted to the GSC Biospecimen Core team to prepare a rack for pickup or shipment once the questionnaire section is completed.

Please use the 'prepopulate the form by uploading an excel file' feature to submit the sample IDs and tube labels for your samples.

- 1.2.1. You must use the [Prepopulate the form by uploading an Excel file](#) feature to submit [Sample IDs](#) and [Tube Labels](#) for your samples. Refer to Step 7 for more details.
 - 1.2.2. Once [Sample IDs](#) and [Tube Labels](#) have been uploaded, we will receive your request and start preparing your tubes. Your online submission form will be locked while we are preparing your tubes.
 - 1.2.3. When your tubes are ready to be picked up, we will send you a [Ready for Pickup](#) email notification. At this point, your online submission form will be unlocked and you can proceed to complete the rest of the form. Before unlocking your form, we



will update your submission with **Factory Barcode**, **Well Location**, and **Rac ID**. *Do not change any entries in these fields.* If changes are necessary, contact GSC_Submissions@bcgsc.ca to see how you should proceed.

2. **Factory Barcode:** If you have a 2D barcode reader available in your lab, scan the 2D barcode on the bottom of your **1.0 mL Matrix tube** for this information. If not, leave it blank. If your tubes have been pre-labeled by the GSC, we will fill in this field for you.
3. **Well Location:** Samples must be sorted by columns (A1, B1, C1, etc.) and NOT by row (A1, A2, A3, etc.). *If samples are not sorted by columns, additional rearraying costs may apply.* If your tubes have been pre-labeled by the GSC, we will fill in this field for you.
4. **Patient ID:** This is used as a common identifier in our database to link all samples received from the same patient; this assists with our QC processes as well as downstream analysis. **Patient ID** requirements are:
 - 4.1. A minimum of five characters with no symbols and no spaces (hyphen & underscore are allowed).
 - 4.2. Sufficiently complex to avoid unrelated individuals from having the same **Patient ID**.
 - 4.3. The field must be de-identified. **Do not use hospital ID or PHN** which may link back to the patient or patient records.
 - 4.4. If two or more samples are from the same patient, they must have the same **Patient ID**. Do not add a prefix or suffix to differentiate normal/tumour pairs or different aliquots of the same sample.
5. **Number of Scrolls or Cores:** Enter the number of **scrolls** or **cores** per tube. The recommended submissions amounts are as follows.
 - 5.1. For **scrolls**:
 - 5.1.1. Scrolls **10 µm** and minimum tissue surface of **120 mm²**.
 - 5.1.2. For tissue surface areas $\geq 120 \text{ mm}^2$, **3 × 10 µm** scrolls per Matrix tube.
 - 5.1.3. For tissue surface areas $\leq 120 \text{ mm}^2$, up to **6 × 10 µm** scrolls per Matrix tube.
 - 5.1.4. For very small tissue, multiple tubes of **6 × 10 µm** scrolls may be required
 - 5.2. For **cores**:
 - 5.2.1. Up to **4 cores** in one Matrix tube sized **2.5 mm × (1–3 mm)**.
6. **Scrolls Thickness (µm):** Enter the scroll thickness in µm. *Do not include the unit.*



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3. SAMPLE SHIPPING AND DROP-OFF

Before shipping your sample, please make sure that your sample submission form has been reviewed and approved.

3.1. DRY ICE SHIPPING REQUIREMENTS

If shipping samples on dry ice, please adhere to the requirements listed below.

DO NOT FULLY SEAL	USE ENOUGH DRY ICE	AFFIX UN1845 LABEL
For safety, dry ice must never be sealed in a container with an airtight seal. A typical shipping container is an internal foam box with cardboard box exterior. To allow sublimating CO₂ to vent, DO NOT completely tape the Styrofoam top or the box top.	Samples must be shipped with a minimum of 10 lbs (4.54 kg) of dry ice. Dry ice sublimates at rate of 5–10 lbs per 24 hours. If you anticipate any delays during shipping (more than 24 hours), ensure that there is enough dry ice to sample integrity.	To comply with dangerous goods regulations, the outermost container must be labeled with a hazard class 9 label (UN1845), and a net weight of dry ice (in kilograms). 



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3.2. SAMPLE SUBMISSION BY COURIER

3.2.1. BEFORE SHIPPING

Before shipping your sample, please make sure that your sample submission form has been reviewed and approved.

3.2.2. WHERE TO SHIP

We recommend shipping Monday to Wednesday — we cannot accept packages on weekends.

Once your sample submission form is reviewed and approved, ship your samples to:

Dr. Andrew Mungall
Biospecimen Core, Room 508
Canada's Michael Smith Genome Sciences Centre
100 – 570 West 7th Avenue
Vancouver BC V5Z 1B3 Canada

email: amungall@bcgsc.ca

tel: 604-707-5900 ext. 675411

3.2.3. AFTER SHIPPING

Once samples have been shipped, please notify us of your shipment by email to

GSC_Submissions@bcgsc.ca.

Make sure to include the shipment tracking number so we can monitor the progress during transit.

3.3. SAMPLE SUBMISSION BY DROP-OFF

3.3.1. BEFORE DROPPING OFF

Before dropping off your sample, please make sure that your sample submission form has been reviewed and approved.

When you are on your way to us with the sample, please email us at GSC_Submissions@bcgsc.ca so that we know when to expect you.

3.3.2. SAMPLE DROP-OFF AND PLATE PICKUP HOURS

9:30 – 11:30 am & 1:30 – 3:30 pm

Monday – Friday

3.3.3. ADDRESS

Canada's Michael Smith Genome Sciences Centre
100 – 570 West 7th Avenue
Vancouver BC V5Z 1B3 Canada

Once you arrive at our location, please call our office directly at **604-707-5900** ext. **675411**.



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Bringing genomics to life.