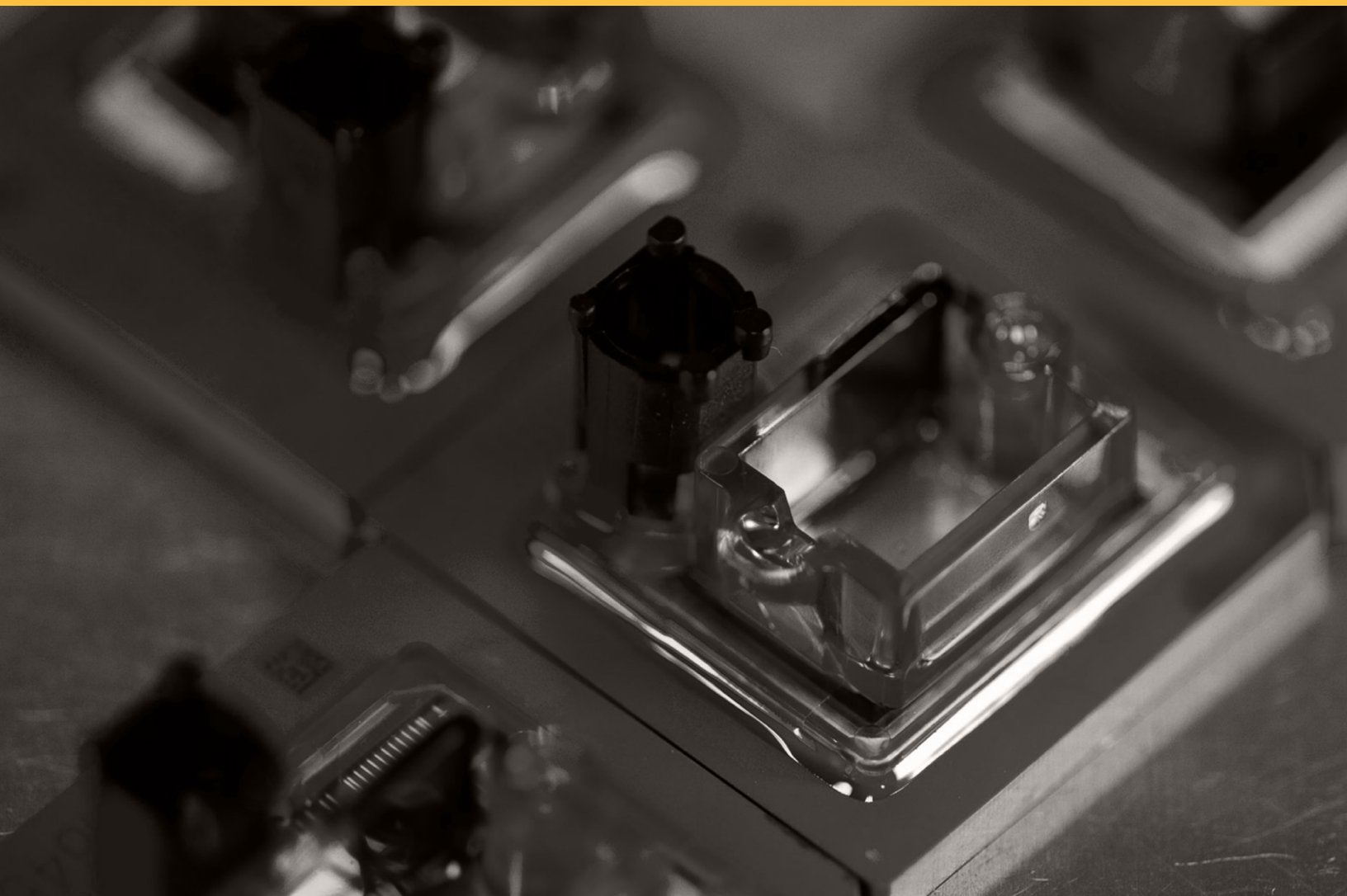




CANADA'S MICHAEL SMITH
GENOME SCIENCES CENTRE

From Nobel roots.

METAGENOMES



USER GUIDE

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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 **metagenome samples**.

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

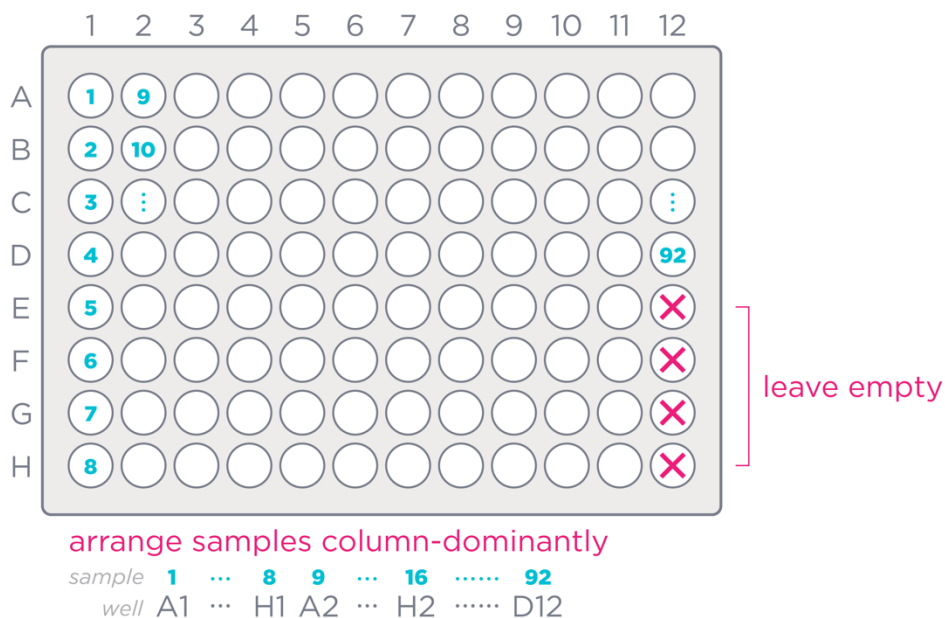
1.1. SUBMITTING EXTRACTED DNA FOR LIBRARY CONSTRUCTION

DNA samples are accepted in the following formats:

1. *Less than 24 samples:* **1.5 mL snap-top Eppendorf tubes** (or equivalent). Screw cap tubes are not accepted.
2. *24 or more samples:* **Axygen 96 FS-C plates**. If these are not available in your lab, you will be able to request a plate to be sent to you through our online submission system.

2.1. In special circumstances, *24 or more samples* may be submitted in **tubes**. Please contact GSC_Submissions@bcgsc.ca for approval.

If submitting in a 96-well plate format, arrange samples in a column-dominant format with no empty wells between samples (e.g., A1, B1, C1, ... H1, A2, B2, ...) (see figure below). Wells E12, F12, G12 and H12 must be left empty for internal controls.





2. LIBRARY PROTOCOLS

2.1. TERMS USED

gDNA	genomic DNA
TNA	total nucleic acid
A260/280	spectrophotometry ratio, used for quality assessment
A260/230	spectrophotometry ratio, used for quality assessment

2.2. SUBMISSION REQUIREMENTS

starting material	amount			quantification	quality assessment
	recommended	min	concentration		
PCR-FREE GENOME					
gDNA/TNA	1,000 ng	700 ng	> 17.5 ng/μL in 25–40 μL		
AMPLIFIED GENOME					
gDNA/TNA	300 ng	25 ng	> 0.625 ng/μL in 25–40 μL		

§ Quant-iT or Qubit dsDNA HS assay

† Spectrophotometry A260/280 1.8–2.0 and A260/230 2.0–2.2



3. SUBMITTING FOR SPECIFIC PLATFORMS

3.1. NANOPORE

For long-read **Nanopore** sequencing of genomic high molecular weight DNA extracted from frozen tissues, cells or bodily fluids, we strongly recommend size-selection to deplete DNA molecules **< 15 kb** in length.

We use a **Blue Pippin** instrument (Sage Bioscience) for this size-selection with **5 µg** DNA input in **30 µL** volume.

For samples in which **5 µg** is not available, size-selection can be bypassed if the submitter accepts the risk of shorter N50 read lengths and sequencing yields from the **PromethION**. In such cases, **2 µg** of high molecular weight DNA should be provided with a minimum concentration of **50 ng/µL**.

NANOPORE PLATFORM				
starting material	amount		quantification	quality assessment
	recommended	minimum		
gDNA/TNA	5 µg > 167 ng/µL in 30 µL	2 µg > 67 ng/µL in 30 µL	¶	†

¶ Quant-iT or Qubit dsDNA HS assay

† Spectrophotometry A260/280 1.8–2.0 and A260/230 2.0–2.2

3.2. PACBIO REVIO

PACBIO REVIO PLATFORM				
starting material	amount		quantification	quality assessment
	recommended	minimum		
gDNA/TNA	> 6 µg > 15 ng/µL in 30–300 µL¹	0.5 µg > 15 ng/µL in 30–300 µL¹	¶	†

¹ low TE or EB buffer

¶ Quant-iT or Qubit dsDNA HS assay

† Spectrophotometry A260/280 1.8–2.0 and A260/230 2.0–2.2



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4. 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.



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5. SAMPLE SHIPPING AND DROP-OFF

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

5.1. 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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5.2. SAMPLE SUBMISSION BY COURIER

5.2.1. BEFORE SHIPPING

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

5.2.2. 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

5.2.3. 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.

5.3. SAMPLE SUBMISSION BY DROP-OFF

5.3.1. 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.

5.3.2. SAMPLE DROP-OFF AND PLATE PICKUP HOURS

9:30 – 11:30 am & 1:30 – 3:30 pm

Monday – Friday

5.3.3. 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.