



Genomics Core Lab - Rm N109
Dalhousie University
1348 Summer Street
Halifax, Nova Scotia, B3H 0A8

Contact: Genomics@dal.ca

Sample submission guidelines for 10X Genomics Single Cell Platform

Prior to sample submission:

Single Cell runs are time sensitive so please contact Genomics@dal.ca prior to beginning your assay so we can coordinate personnel and instrument availability.

Complete the sample submission form.

Provide a cell phone number for a point of contact for any potential issues during assay preparation.

Sample drop off:

If dropping off samples by hand to the Dalhousie Genomics Core lab, contact Genomics@dal.ca to ensure a seamless handover.

Day of sample submission:

- Run sample quality control check with Trypan Blue using hemocytometer and determine total cell yield, viability, and concentration prior to submission.
- Please update any estimated time of arrival changes and provide at least 30 minutes lead time. Email Dalhousie Genomics Core lab contact person if you are arriving earlier or later than your assigned time slot.
- Instruments and reagents are prepared as per your submission form to be at their freshest prior to your timeslot for efficient processing of your sample on arrival.
- We accept samples any week day from 8:00 AM – 1:00 PM to allow us to get to a safe stop point before the end of the day.

Sample drop off:

Please schedule your drop off date and time in advance with your Dalhousie Genomics Core lab contact person.

Transport samples using appropriate means of storage (e.g. on dry ice for frozen samples, wet ice for fresh samples). Please confirm with Dalhousie Genomics Core lab if you have any questions.

Submission receiving conditions:

Preparation of Fresh Single Cell/Nuclei Suspension

Wash samples in loading buffer (PBS containing 0.04% BSA) with final concentration adjusted in the range below:

Target Capture Recovery	Required Submission Concentration
10,000 to 20,000 (for GEM-X chemistries)	1300 – 1600 cells/ μ l or nuclei/ μ l

- 10X Genomics information for flow sorted samples can be found [here](#).
- A minimum of 50,000 cells or nuclei are needed, and more if available is preferred. Note: 10X Genomics reaction is approximately 68% efficient for their GEM-X chemistries.
- Ensure samples are single cell or single nuclei suspensions without clumping.
- Samples should be devoid of large debris. Samples with large debris >40 μ M risk clogging during the initial GEM creation step and potential loss of precious samples.
- For cryo-preserved or methanol-fixed cells: Cells must be at \geq 80% viability prior to preservation (See 10X Genomics protocols for [Fresh Frozen](#) or [Methanol-Fixed](#) cells).
- Required viability is >80%. If samples are precious and lower viability is acceptable, let us know the threshold. NOTE: Data will be messy and require filtering at the data analysis stage

Storage:

- 1.5mL Lo-bind tubes or equivalent (Ex: Eppendorf DNA LoBind Tube 1.5mL Part number 022431021)
- For Larger Volumes: 5mL FACS Collection tubes or 15mL conical tubes.
- Keep fresh samples on wet ice. Keep cryopreserved samples on dry ice.

Cell Supportive Media:

- If you need us to dilute your samples please provide your cell samples in a supportive media.
- Buffers must be compatible with 10X Genomics. Buffers composed predominantly of PBS can cause cell stress and lead to changes to the transcriptome after extended periods.
- Alternative Supportive Media (up to 10% FBS or up to 2% BSA):

EMEM + 10% FBS

DMEM + 10% FBS

RPMI + 10% FBS

Hams F12 + 10% FBS

IMDM + 10% FBS

DMEM:F12 + 10% FBS

- Media should not contain excessive amounts of EDTA (> 0.1mM), or magnesium (> 3mM), or surfactants (Tween-20, etc.) as those components will inhibit the reverse transcription reaction or interfere with GEM generation.
- Please contact Dalhousie Genomics Core if there are any concerns with assay compatibility.

WARNING:

Emulsion-safe plastics are required for 10X Genomics sample handling. Non-approved plasticware raises the risk of chip wetting failures due to the presence of plasticizers.

Please see the 10X Genomics approved list of recommended pipette tips [here](#).

Avoid: FroggBio, Axygen and Starstedt tubes and tips.

Sample shipping of cryo preserved or methanol fixed samples:

Please only ship on Monday or Tuesday to prevent weekend delays.

Place a generous supply of dry ice to ensure dry ice will remain for the duration of the delivery time.

For international clients, we recommend shipping with World Courier for cells.

Within Canada, we recommend FedEx Next Day Priority services.

Shipping address:

Attn: Mat Nightingale

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