



Single Cell Flex Tested Tissues

Document Type

10x Genomics Sample Preparation Products

Last Modified

May 28, 2026

The tissue types listed below were tested in-house using:

GEM-X Flex or GEM-X Flex v2 Gene Expression

- Tissue Fixation & Dissociation for GEM-X Flex Gene Expression (CG000783) or
- Chromium Nuclei Isolation Kit (CG000505) followed by the Fixation of Cells & Nuclei for GEM-X Flex Gene Expression (CG000782)

Next GEM Flex Gene Expression

- Tissue Fixation & Dissociation for Chromium Fixed RNA Profiling Demonstrated Protocol (CG000553) or
- Chromium Nuclei Isolation Kit (CG000505) followed by the Fixation of Cells & Nuclei for Chromium Fixed RNA Profiling (CG000478)

Listed below are the cell yields from 25 mg of various mouse and human tissue types (flash-frozen or fresh). Variability of performance may be observed based on sample handling, quality, composition, and other properties.

Best practice is to minimize changes to sample preparation conditions between experiments in a given study to reduce the likelihood of introducing batch effects. For example, we recommend keeping enzymes used during the Tissue Fixation & Dissociation Demonstrated Protocol consistent.

Tissues with Special Considerations

The following tables summarize tissues having unique guidance at various steps in the Flex workflow.

Mouse

Tissue	Tissue Fixation & Dissociation* (Flash-frozen tissue)	Tissue Fixation & Dissociation* (Fresh tissue)	Nuclei Isolation** (Flash-frozen tissue)	Nuclei Isolation** (Fresh tissue)	Additional Notes
Adipose	Not recommended	Not recommended	3.00E+04	Not tested	High lipid content in adipose cells prevents cells from pelleting (cells are buoyant). Nuclei isolation recommended
Heart	9.90E+05	2.00E+06	3.00E+04	Not tested	Low yield; Tissue Fixation & Dissociation recommended
Leukocytes (cell suspension)	NA	NA	NA	NA	If working with freshly isolated leukocytes, fix for 16-24h at room temperature (20°C). No greater than 100k cells into Probe Hybridization for optimal performance.
Muscle	4.10E+05	Not tested	1.10E+04	Not tested	Lower than expected yield using Nuclei Isolation Kit. Tissue Fixation & Dissociation protocol is recommended to improve cell yield.
Pancreas	1.80E+06	9.20E+05	2.70E+05	1.90E+04	Pancreas can be a challenging tissue and variable data quality may be expected. We recommend generating an FFPE block, if working with fresh pancreas is available. See this article for more details. If performing Tissue Dissociation & Fixation, digestion using Liberase TH 1 mg/mL is recommended. No greater than 100k cells into Probe Hybridization for optimal performance.
Spinal Cord	1.50E+06	Not tested	2.20E+05	Not tested	High debris
Spleen	1.40E+07	6.30E+06	1.20E+05	5.30E+05	Nuclei prone to clumping, Tissue Dissociation & Fixation recommended. Fix for 16-24h at room temperature (20°C). No greater than 100k cells into

Tissue	Tissue Fixation & Dissociation* (Flash-frozen tissue)	Tissue Fixation & Dissociation* (Fresh tissue)	Nuclei Isolation** (Flash-frozen tissue)	Nuclei Isolation** (Fresh tissue)	Additional Notes
					Probe Hybridization for optimal performance.
Thymus	1.50E+07	2.60E+07	4.30E+04	7.90E+06	Nuclei are prone to clumping. Tissue Fixation & Dissociation protocol. recommended.

Human

Tissue	Tissue Fixation & Dissociation* (Flash-frozen tissue)	Tissue Fixation & Dissociation* (Fresh tissue)	Nuclei Isolation** (Flash-frozen tissue)	Nuclei Isolation** (Fresh tissue)	Additional Notes
Colon	4.00E+04	Not tested	6.10E+05	Not tested	Lower than expected yield from 25 mg colon tissue; using >25 mg tissue recommended.
Leukocytes (cell suspension)	NA	NA	NA	NA	See Demonstrated Protocol (CG000785) for Blood Fixation and Cell Isolation guidance. If working with freshly isolated leukocytes, fix for 16-24h at room temperature (20°C). No greater than 100k cells into Probe Hybridization for optimal performance.
Spleen	9.60E+06	Not tested	6.50E+06	Not tested	Nuclei prone to clumping, Tissue Dissociation & Fixation recommended. Fix for 16-24h at room temperature (20°C). No greater than 100k cells into Probe Hybridization for optimal performance.
Pancreas	1.78E+06	Not tested	9.11E+05	Not tested	No greater than 100k cells into Probe Hybridization for optimal performance.
BMMC (cell suspension)	NA	NA	NA	NA	Fix for 16-24h at room temperature (20°C). No greater than 100k cells into Probe

Tissue	Tissue Fixation & Dissociation* (Flash-frozen tissue)	Tissue Fixation & Dissociation* (Fresh tissue)	Nuclei Isolation** (Flash-frozen tissue)	Nuclei Isolation** (Fresh tissue)	Additional Notes
					Hybridization for optimal performance.

Additional Mouse (Healthy) Tested Tissue List

- List of mouse tissue types that were tested in-house for compatibility with Flex.

Tissue	Tissue Fixation & Dissociation* (Flash-frozen tissue)	Tissue Fixation & Dissociation* (Fresh tissue)	Nuclei Isolation** (Flash-frozen tissue)	Nuclei Isolation** (Fresh tissue)
Bladder	7.00E+05	Not tested	1.70E+05	Not tested
Brain (Forebrain)	1.00E+06	7.90E+05	7.10E+05	3.00E+05
Brain (Cerebellum)	Not tested	3.10E+06	Not tested	5.20E+05
Brain (Whole)	1.60E+06	8.40E+05	7.90E+05	7.00E+05
Colon	2.20E+06	Not tested	9.80E+05	Not tested
Eye	1.60E+06	Not tested	3.70E+05	Not tested
Intestine	3.10E+06	1.60E+06	9.00E+05	2.50E+04
Kidney	2.70E+06	2.50E+06	1.20E+06	1.00E+06
Liver	1.30E+06	5.70E+05	1.00E+06	2.80E+05
Lung	2.00E+06	3.10E+06	7.40E+05	3.40E+05
Ovary	3.20E+06	Not tested	1.20E+06	Not tested
Stomach	2.50E+06	Not tested	3.60E+05	Not tested
Testis	4.20E+06	Not tested	8.60E+05	Not tested
Tongue	1.40E+06	Not tested	2.10E+04	Not tested

Additional Human Tested Tissue List

- List of human tissue types that were tested in-house and found to perform well with Flex.

Tissue	Tissue Fixation & Dissociation* (Flash-frozen tissue)	Tissue Fixation & Dissociation* (Fresh tissue)	Nuclei Isolation** (Flash-frozen tissue)	Nuclei Isolation** (Fresh tissue)
Jejunum	1.37E+06	Not tested	4.18E+05	Not tested
Lung	3.40E+06	Not tested	Not tested	Not tested
Kidney	2.00E+06	Not tested	Not tested	Not tested
Liver	1.80E+06	Not tested	6.60E+05	Not tested
Ileum	1.40E+05	Not tested	2.37E+05	Not tested
Testes	2.05E+06	Not tested	8.08E+05	Not tested
Duodenum	3.20E+05	Not tested	1.28E+05	Not tested
Breast Cancer	9.60E+05	Not tested	9.20E+05	Not tested
Melanoma	3.18E+06	Not tested	5.98E+05	Not tested
Ovarian Cancer	9.30E+05	Not tested	6.93E+05	Not tested
Pancreatic Cancer	1.78E+06	Not tested	9.11E+05	Not tested
Tonsils	1.76E+07	Not tested	5.15E+05	Not tested

Rat (Healthy) Tested Tissue List

- List of rat tissue types that were tested in-house and found to perform well with GEM-X Flex v2 (GEM-X Flex Apex).
- Special considerations identified for human and mouse tissues in the tables above likely apply to rat samples, although these have not been tested in-house.

Tissue	Tissue Fixation & Dissociation* (Flash-frozen tissue)	Tissue Fixation & Dissociation* (Fresh tissue)	Nuclei Isolation** (Flash-frozen tissue)	Nuclei Isolation** (Fresh tissue)	Additional Notes
Brain	Not tested	Not tested	1.25E+06	Not tested	
Heart	Not tested	Not tested	2.68E+04	Not tested	Low yield; Tissue Fixation & Dissociation recommended
Kidney	4.25E+06	Not tested	2.26E+06	Not tested	
Large Intestine	4.51E+06	Not tested	2.13E+06	Not tested	
Liver	3.09E+06	Not tested	4.94E+05	Not tested	
Lung	Not tested	Not tested	1.10E+06	Not tested	
Nose	Not tested	Not tested	1.08E+06	Not tested	
Olfactory Bulb	Not tested	Not tested	8.45E+05	Not tested	
Small Intestine	Not tested	Not tested	6.32E+05	Not tested	
Testis	2.25E+06	Not tested	2.55E+06	Not tested	

* Tissue Fixation & Dissociation for GEM-X Flex Gene Expression (CG000783)

** Chromium Nuclei Isolation Kit (CG000505) followed by the Fixation of Cells & Nuclei for GEM-X Flex Gene Expression (CG000782)



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support@10xgenomics.com

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