

Mar 26, 2025

10x Protocols: Chromium GEM-X Single Cell 5' (CG000733|Rev A) -- University of Minnesota TMCs

DOI

<https://dx.doi.org/10.17504/protocols.io.bp2l6844dgge/v1>

Mythili Dileepan¹, 10X Genomics², Laura J Niedernhofer³, Paul Robbins³

¹University of Minnesota; ²10X Genomics; ³University of Minnesota, Minneapolis, MN

Cellular Senescence Net...



Allie Abdellatif

MIBAM, University of Minnesota, Minneapolis, MN

Create & collaborate more with a free account

Edit and publish protocols, collaborate in communities, share insights through comments, and track progress with run records.

Create free account

OPEN  ACCESS



DOI: <https://dx.doi.org/10.17504/protocols.io.bp2l6844dgge/v1>

Protocol Citation: Mythili Dileepan, 10X Genomics, Laura J Niedernhofer, Paul Robbins 2025. 10x Protocols: Chromium GEM-X Single Cell 5' (CG000733|Rev A) -- University of Minnesota TMCs. **protocols.io**
<https://dx.doi.org/10.17504/protocols.io.bp2l6844dgge/v1>

License: This is an open access protocol distributed under the terms of the **Creative Commons Attribution License**, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited

Protocol status: Working

We use this protocol and it's working

Created: March 25, 2025

Last Modified: March 26, 2025

Protocol Integer ID: 125024

Keywords: nuclei from human adipose tissue, isolated nuclei, human adipose tissue, chromium gem, university of minnesota genomics center, minnesota genomics center, nuclei, cdna production, next gem technology, nuclei qc

Funders Acknowledgements:

NIH

Grant ID: 5U54AG076041

NIH

Grant ID: 5U54AG079754

Abstract

The nuclei from human adipose tissue were isolated using a protocol adapted from three published articles. The isolated nuclei, kept on ice, were submitted to the University of Minnesota Genomics Center (UMGC) for nuclei QC, cDNA production, and library preparation. GEM-X uses the same Chromium scRNA-seq workflow but with optimized reagents and improved microfluidics to enable increased sensitivity, higher throughput, and improved sample recovery compared to the Next GEM technology.



Preparation

- 1 Complete single cell or nuclei isolation and 10x fixation prior to starting this protocol

Library Preparation

- 2  CG000733_ChromiumGEM-X_Singl... 19.7MB

FASTQ Generation

- 3 BCL data from Illumina sequencer is demultiplexed and converted into FASTQ format using bcl2fastq version 2.20.0