NEXT GEM

Reveal the Full Complexity of Cellular Diversity, Cell by Cell

SINGLE CELL GENE EXPRESSION V3.1 (WITH NEXT GEM TECHNOLOGY)

Dissecting cell-type differences in complex biological systems is critical to our understanding of cellular contributions during development and in disease progression. Until recently, most molecular studies have relied on bulk analysis, combining all cells into a single average readout. The Chromium Single Cell Gene Expression Solution (with Next GEM technology) provides an unparalleled approach to uncover cell-to-cell gene expression variability and identify rare cell types from complex biological samples. Our latest improvements vastly increase sensitivity, so you can detect even *more* unique transcripts per cell.

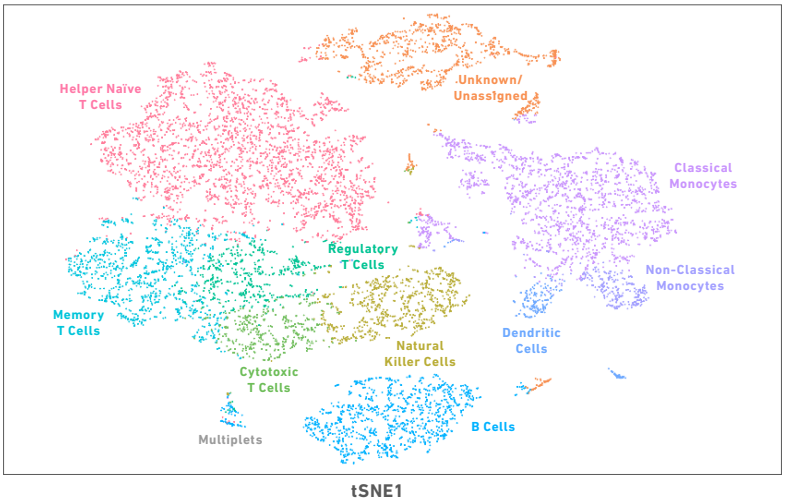
Go beyond traditional gene expression analysis to characterize cell populations, cell types, cell states, and more on a cell-by-cell basis. From assessing tumor heterogeneity and stem cell composition, to dissecting neuronal populations—the technological advancements provided by the Chromium Single Cell Gene Expression Solution, along with turnkey software tools, allow you to maximize insight from any sample type.

HIGHLIGHTS

- Identify and characterize rare cell types
- Characterize cell populations without prior knowledge of cell subtypes or cell markers
- Define novel cell types and cell states
- Discover new biomarkers for specific cell subpopulations
- Analyze and understand cellular heterogeneity and how this contributes to your biological system
- Based on Next GEM technology

Major Subpopulations Observed Within a Heterogeneous PBMC Sample

tSNE projections of ~10,000 peripheral blood mononuclear cells (PBMCs) output by Cell Ranger. PBMCs are grouped together based on digital gene expression information. Major cell populations were identified based on gene markers that are enriched in each cluster. Each cell type is color-coded based on classification.



Learn More at
10xgenomics.com/single-cell

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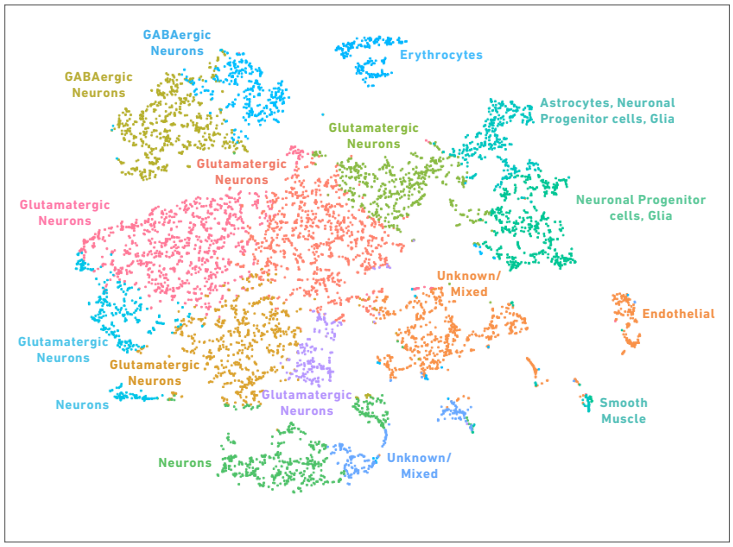
Single Cell Profiling of Brain Cells Reveal Multiple Neuronal and Non-neuronal Cell Types



tSNE projection of ~7,000 mouse brain cells derived from the combined cortex, hippocampus, and ventricular zones of embryonic day 18 brain tissue. Major subpopulations were identified based on gene markers that are enriched in each class.

SOLUTION FEATURES

- Ready-to-use, robust workflow, including demonstrated protocols for various sample types such as cell lines, primary cells, dissociated fresh tissue
- Compatible with whole cells and nuclei
- Latest improvements increase sensitivity enabling the detection of more unique transcripts per cell, potentially decreasing sequencing requirements
- Easy-to-use and convenient software with Cell Ranger Analysis Pipelines and Loupe Cell Browser visualization tool
- Compatible with Feature Barcoding technology

SYSTEM FEATURES

- Partition 100 – 80,000+ cells efficiently
- Scalable; run up to 8 samples in parallel
- Simple workflow
- Superior sensitivity
- Cell size flexibility, no lower limits
- High cell capture rates of up to 65%
- Low doublet rates of under 0.9% in 1000 cells

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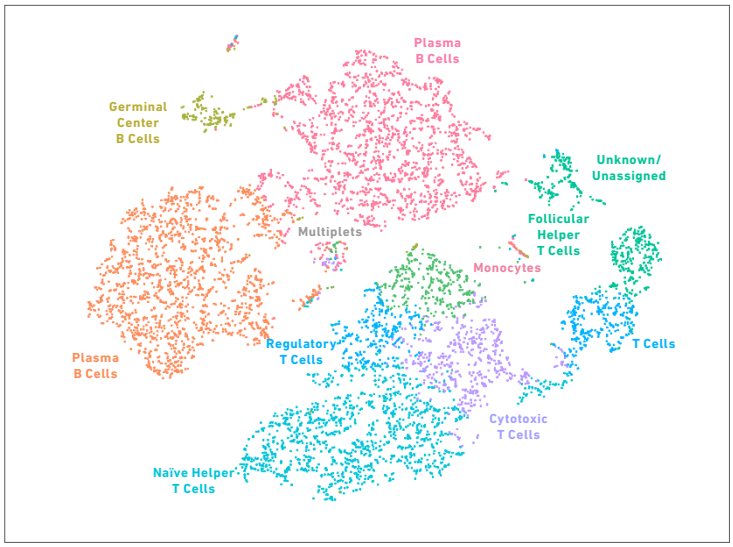

Identification of Specific Subpopulations in MALT Lymphoma

tSNE projection of 7,000 cells derived from dissociated Mucosa-Associated Lymphoid Tissue (MALT). Major subpopulations were identified based on gene markers that are enriched in each class. We show clear identification of CD4 T cells, CD8 T cells, Treg cells, and Tfh cells. The B cell populations correspond to B cells and B cell lymphoma undergoing plasmacytic differentiation (plasma cells).

APPLICATIONS

- Single Cell RNA Sequencing
- Rare Cell Detection
- Tumor Heterogeneity
- Mechanisms of Cellular Development
- Response to Therapeutic Interventions
- Biomarker Discovery
- Cell Atlassing

RESEARCH AREAS

- Cancer Biology
- Neuroscience
- Immunology
- Developmental Biology
- Stem Cell Biology

ADDITIONAL RESOURCES

DATASETS	go.10xgenomics.com/scRNA-3/datasets
SEMINARS	go.10xgenomics.com/scRNA-3/seminars
APPLICATION NOTES	go.10xgenomics.com/scRNA-3/app-notes
TECHNICAL SUPPORT	go.10xgenomics.com/scRNA-3/support
PUBLICATIONS	go.10xgenomics.com/scRNA-3/pubs

PRODUCTS	PRODUCT CODE
Chromium Next GEM Single Cell 3' GEM, Library & Gel Bead Kit v3, 4 rxns	1000128
Chromium Next GEM Single Cell 3' GEM, Library & Gel Bead Kit v3, 16 rxns	1000121
Chromium Next GEM Chip G Single Cell Kit, 48 rxns	1000120
Chromium Next GEM Chip G Single Cell Kit, 16 rxns	1000127
Chromium Next GEM Single Cell 3' Library Construction Kit v3.1, 16 rxns	1000157
Chromium i7 Multiplex Kit, 96 rxns	120262
Chromium Controller & Next GEM Accessory Kit, 12 Mo. Warranty	120223
Chromium Controller & Next GEM Accessory Kit, 24 Mo. Warranty	120246
Cell Ranger	go.10xgenomics.com/scRNA-3/cell-ranger
Loupe Cell Browser	go.10xgenomics.com/scRNA-3/loupe-cell

LIT000040 *Rev A Single Cell Gene Expression v3.1 Product Sheet*

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