

## GEXSCOPE® Single Cell RNA Library Kit

The GEXSCOPE® Single Cell RNA Library Kit offers a complete solution for transforming tissues into single cells and converting the mRNA contained in the single cells into NGS libraries (Figure 1).

The GEXSCOPE Single Cell RNA Library Kit uses the SCOPE-chip®, a portable, microfluidic chip with microwells. There are two main configuration available for the SCOPE-chip: a standard microchip (SD) and a high density (HD) microchip.



**Figure 1.**  
GEXSCOPE Single Cell RNA Library Kit

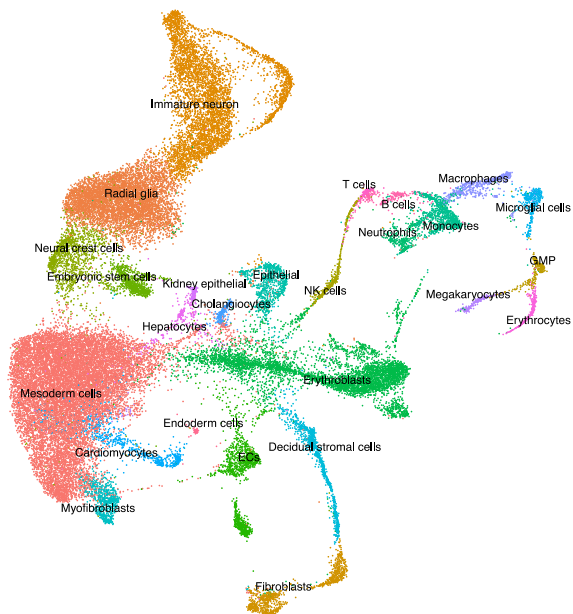
### GEXSCOPE Kit Advantages:

- **Complete solution:** all reagents from cell partitioning to ready-to-sequence NGS libraries
- **Easy-to-use:** operated without special equipment with a possibility for automation
- **Gentle cell handling** that does not damage sensitive cell types
- **High throughput:** over 30,000 cells captured in the HD configuration
- **High sensitivity:** large number of genes detected

### Analysis of Rare Cell Populations

While SD microchip can be used for sequencing of up to 20,000 cells, the HD microchip can capture over 30,000 cells per sample, both with low number of doublets.

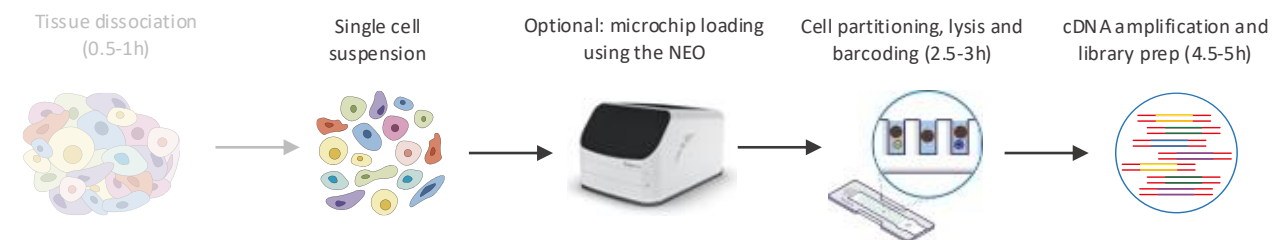
The ultra-high throughput HD format is ideal for detection and analysis of rare cell populations (Figure 2).



**Figure 2.** Ultra-high throughput single cell sequencing of a complete mouse embryo processed with GEXSCOPE Single Cell RNA Library Kit (HD) Transcriptome analysis of a complete mouse embryo detected gene expression in 42,641 cells and identified a rare cell population accounting for as little as 0.15% of total cells .

## GEXSCOPE Single Cell RNA Library Kit Workflow

Single cell suspension are loaded onto the SCOPE-chip, alongside barcoding beads. (For customers with need of dissociation solutions, we also offer respective kits). The microchip handles single cell capture, cell lysis, capture of the cellular mRNA and molecular labelling. The barcoded cDNA is then amplified and used for the construction of single cell NGS libraries (Figure 3). To automatize the procedure, the loading of the SCOPE-chip can be performed using the Singleron Matrix® NEO instrument.



**Figure 3.** Overview of the GEXSCOPE workflow

GEXSCOPE Single Cell RNA Library Kit: Manual or Automated Workflow

The easy-to-use GEXSCOPE microchip can be operated manually, with a 200  $\mu$ L pipette, without any special equipment. Alternatively, to reduce the manual labor and shorten the operation procedure, the loading of the microchip can be automated using the NEO instrument (Figure 4).

GEXSCOPE Single Cell RNA Library Kit: High sensitivity

The GEXSCOPE Single Cell RNA Library Kit offers high sensitivity: increased number of median UMI per cell and total genes were detected in mouse subcutaneous implantation of human kidney organoid (Figure 5).

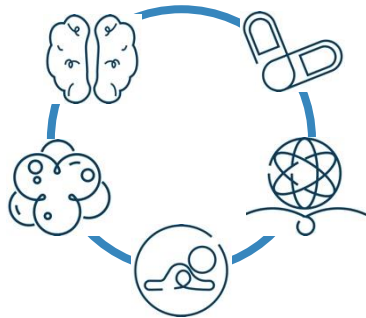


Figure 4. Singleron Matrix® NEO instrument processing four GEXSCOPE microchips simultaneously

	Mean Reads per Cell	Median UMI per Cell	Total Genes	Median Genes per Cell
Supplier X	29,854	6,205	56,694	2,300
Singleron	29,087	7,662	59,151	2,687

Figure 5: Single cell RNA-seq performance comparison

GEXSCOPE Single Cell RNA Library Kit: Applications



Single-cell analysis provides detailed insights into the identity and transcriptomic state of individual cells, enabling the characterization of diverse cell types and their functions. This powerful approach uncovers cellular subpopulations, maps the heterogeneity within complex tissues, and reveals dynamic changes in response to treatments. By dissecting phenotypic and molecular characteristics at single cell resolution, researchers can make precise conclusions about developmental processes, disease mechanisms, and therapeutic impacts.

Ordering information:

The GEXSCOPE Single Cell RNA Library Kits contain GEXSCOPE microchip, Barcoding Beads, and reagents for transcriptome amplification and library construction.

Product	Reactions	Catalog number
GEXSCOPE® Single Cell RNA Library Kit V3	2 RXNs 16 RXNs	4580011 4580012
GEXSCOPE® Single Cell RNA Library Kit for HD V3	2 RXNs 16 RXNs	4580031 4580032
GEXSCOPE® Single Cell RNA Library Kit for NEO V3	4 RXNs 16 RXNs	45800251 45800221
GEXSCOPE® Single Cell RNA Library Kit for NEO (HD) V3	4 RXNs 16RXNs	45800451 45800421
GEXSCOPE® Single Cell RNA Library Kit for Testing	2 RXNs	1180061

