

SeekOne[®] DD Single Cell 3' Transcriptome-seq

● Platform Overview

SeekOne[®] DD (Digital Droplet) Single Cell 3' Transcriptome-seq Kit, self-developed by Beijing SeekGene BioSciences Co., Ltd., is the first commercialized high-throughput single-cell RNA-seq library kit in China using microfluidic digital droplets and barcoded beads. The kit is designed to be used in conjunction with our SeekOne[®] Digital Droplet System (SeekOne[®] DD), to complete the entire process from single-cell mRNA labelling to library construction. Combined with “SeekSoul Tools”, our single-cell data analysis software, we provide you with a one-stop-shop single-cell transcriptome solution.

Highlights

- Explore the **expression of thousands of genes at the single cell level** to gain new insights into cell states and subtypes.
- Investigate the **role of cellular heterogeneity** in the biological system at the single cell level.
- Detect **differentially expressed genes** between different cell populations to find significant genes, investigate relevant pathways, and explore cellular phenotypes.
- Analyze **cell dynamic changes** in various cellular states associated with a continuous process, such as differentiation, by performing trajectory analysis.
- Address a **variety of research needs** in cancer, immunity, cell development, viral infection, drug discovery, and target screening.

● Applications

Medical and Life Sciences:

1. Construction of large-scale single cell atlases
2. Identification of cell subpopulations/intermediate states/rare cell types
3. Disease heterogeneity/microenvironment/drug resistance/progression
4. Immune cell atlas and differentiation
5. Reproduction/organic neuron/stem cell differentiation and development
6. Disease typing/biomarker discovery

Agronomy:

1. Construction of cell atlas
2. Cell differentiation and development
3. Environmental stress, virus control and other mechanisms

● Core Technologies

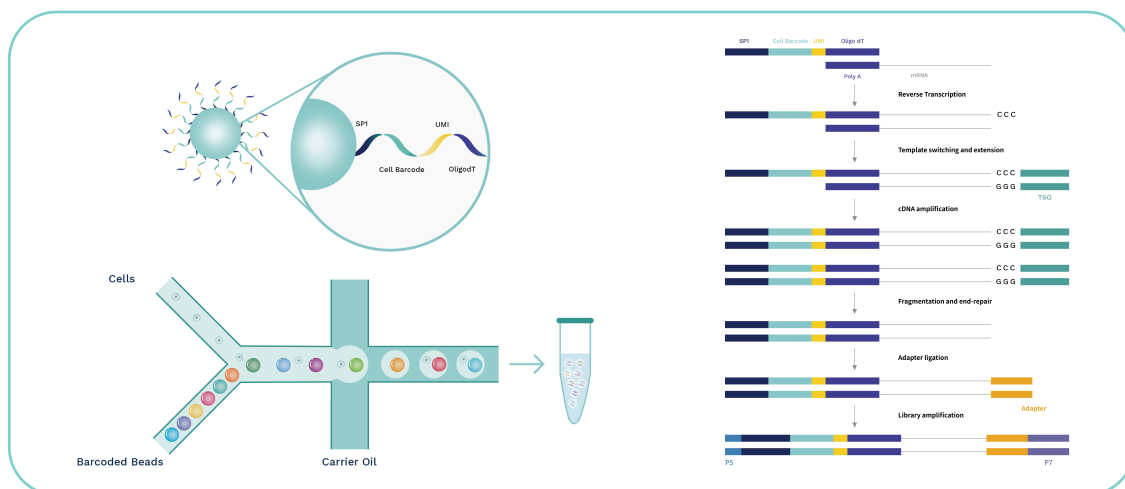


Figure 1. The core technology of SeekOne[®] DD Single Cell 3' Transcriptome-seq. Cells and barcoded beads are added separately and then react in the carrier oil to form emulsion droplets in the Y-shaped channel. After that, mRNA molecules released by the cells are captured by oligo(dT) on the barcoded beads.

● Product Features

Compatible	Compatible with single cell 3' transcriptome sequencing (3' scRNA-seq) and single nucleus RNA sequencing (snRNA-seq). Dual index libraries compatible with both Illumina and MGI sequencers.
Fast	Rapid generation of 150,000 water-in-oil droplets in 3 minutes with high success rates, especially for precious and sensitive samples.
Cost-saving	Unique place chip design reduces chip waste, reducing operation time and cost.
Suitable sample types	<p>a. Delicate samples with low cell viability: brain tissue, retinal tissue, all tissues from aged individuals</p> <p>b. Tissues requiring nuclei isolation: frozen tissues, pancreatic tissues, neurons, adipose tissue, etc.</p> <p>c. Large cohort or atlas studies where multiple samples need to be processed simultaneously.</p>

● Product Specifications

- Rapid generation of **150,000** water-in-oil droplets in **3** minutes
- Efficiently capturing **500-12,000** cells per channel
- Flexible running of **1~8** samples in parallel
- Cell size flexibility: cell diameter of **5~40µm**
- High cell capture rates of up to **65%**
- Low doublet rates of under **0.3%** per **1,000** cells

● Workflow Steps



Figure 2. SeekOne® DD Single Cell 3' Transcriptome-seq workflow. The process begins with the collection of single cell suspension. After single cell partitioning, capture and labelling, a single cell library compatible with Illumina and MGI sequencers is constructed for high-throughput sequencing. Data can be processed using SeekSoul® Tools — our efficient data analysis software to explore cell heterogeneity.

● Data Presentation

Sample Type	Estimated Number of Cells	Mean Reads per Cell	Median Genes per Cell	Number of Reads	Valid Barcodes	Sequencing Saturatiønn	Fraction reads in cells	Total Genes Detected	Median UMI Counts per Cell
Human-Fresh PBMCs	1,085	19,3061	2,116	209,664,853	94.54%	92.14%	77.19%	18,705	7,272
Human-Glioma	9,475	10,986	2,226	104,092,350	95.07%	30.26%	89.99%	26,004	4,527
Mouse-Subcutaneously Transplanted Tumor	9,506	37,866	2,906	359,953,834	95.99%	44.78%	82.99%	21,558	7,563
Mouse-Frozen Brain Tissue	9,025	9,848	998	88,873,704	94.65%	90.99%	76.22%	22,113	1,521
Human-Adipose Tissue	12,106	24880	1,122	301,197,280	93.89%	91.28%	75.54%	22,334	1,954

● SeekOne® DD (Digital Droplet) Single Cell 3' Transcriptome-seq Kit

SeekOne® DD Single Cell 3' Transcriptome-seq Kit

Product	Product code
SeekOne® DD Single Cell 3' Transcriptome-seq Kit, 2 tests/8 tests	K00202-02/K00202-08
Product Components	Component code
SeekOne® DD Chip S3 Kit, 2 tests/8 tests	K00202-0201/K00202-0801
SeekOne® DD Single Cell 3' Barcoded Beads Kit, 2 tests/8 tests	K00202-0202/K00202-0802
SeekOne® DD Single Cell 3' Reverse Transcription Kit, 2 tests/8 tests	K00202-0203/K00202-0803
SeekOne® DD Library Construction Kit, 2 tests/8 tests	K00202-0204/K00202-0804
SeekOne® DD Single Cell Cleanup Kit, 2 tests/8 tests	K00202-0205/K00202-0805

Compatible Instrument

Compatible Instrument	Product code
SeekOne® Digital Droplet System	M001A

Compatible Software

Compatible Software
SeekSoul®Tools single-cell data analysis software

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Contact us

info@seekgene.com

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