

Resource Summary Report

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Monocle3

RRID:SCR_018685

Type: Tool

Proper Citation

Monocle3 (RRID:SCR_018685)

Resource Information

URL: <https://cole-trapnell-lab.github.io/monocle3/>

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Description: Software analysis toolkit for single cell RNA-seq. Used for single cell RNA-Seq experiments. Unsupervised algorithm that increases temporal resolution of transcriptome dynamics using single-cell RNA-Seq data collected at multiple time points.

Synonyms: Monocle, Monocle 3

Resource Type: data analysis software, software resource, software application, data processing software, software toolkit

Defining Citation: [PMID:24658644](#)

Keywords: Data analysis, single cell RNAseq data, single cell RNAseq experiment, transcriptome dynamics

Funding: NIH Office of the Director DP2 OD00667;
NIGMS P01 GM099117;
NIH Office of the Director DP2 OD008514;
NHGRI P50 HG006193;
Single Cell Genomics initiative

Availability: Free, Available for download, Freely available

Resource Name: Monocle3

Resource ID: SCR_018685

Alternate URLs: <https://github.com/cole-trapnell-lab/monocle3>

License: MIT License

Record Creation Time: 20220129T080341+0000

Record Last Update: 20260728T043548+0000

Ratings and Alerts

No rating or validation information has been found for Monocle3.

No alerts have been found for Monocle3.

Data and Source Information

Source: [SciCrunch Registry](#)

Usage and Citation Metrics

We found 270 mentions in open access literature.

Listed below are recent publications. The full list is available at [SPARC SAWG](#) .

Hua S, et al. (2026) Spatiotemporal profiling of endocytic regulators in the immunosuppressive TAM microenvironment of glioma. Brain research, 1872, 150086.

Richards C, et al. (2025) Matrix directs trophoblast differentiation in a bioprinted organoid model of early placental development. Nature communications, 16(1), 8267.

Bedia JS, et al. (2025) Coordinated protein modules define DNA damage responses to carboplatin at single-cell resolution in human ovarian carcinoma models. Cell reports. Medicine, 6(9), 102295.

Zhou D, et al. (2025) Essential Regulation of Spermatogonial Stem Cell Fate Decisions and Male Fertility by APBB1 via Interaction with KAT5 and GDF15 in Humans and Mice. Research (Washington, D.C.), 8, 0647.

Hameed SA, et al. (2025) Direct cell interactions potentially regulate transcriptional programmes that control the responses of high grade serous ovarian cancer patients to therapy. Scientific reports, 15(1), 14484.

Kono T, et al. (2025) Protocol for characterizing craniopharyngioma subtypes and their microenvironments using single-cell RNA sequencing and immunohistochemistry. STAR protocols, 6(2), 103760.

Xu Y, et al. (2025) Single-Cell RNA Sequencing Delineates Renal Anti-Fibrotic Mechanisms Mediated by TRPC6 Inhibition. Advanced science (Weinheim, Baden-Wurttemberg, Germany), 12(33), e01175.

Gao S, et al. (2025) Integrating single-cell sequencing analysis, bioinformatics analysis, and Mendelian randomization analysis to explore FABP4 prediction of prognosis and immune microenvironment in patients with lung squamous cell carcinoma. Discover oncology, 16(1), 1225.

Masschelin PM, et al. (2025) Islet single-cell transcriptomic profiling during obesity-induced beta cell expansion in female mice. *iScience*, 28(3), 112031.

Wang T, et al. (2025) Multiomics analysis provides insights into musk secretion in muskrat and musk deer. *GigaScience*, 14.

Lv Y, et al. (2025) CD14^{lo}CD301b⁺ macrophages gathering as a proangiogenic marker in adipose tissues. *Journal of lipid research*, 66(1), 100720.

Chen B, et al. (2025) Single-cell and spatial transcriptomics reveals an anti-tumor neutrophil subgroup in microwave thermochemotherapy-treated lip cancer. *International journal of oral science*, 17(1), 40.

Li X, et al. (2025) MIG-21 is a novel regulator of Wnt and Netrin signaling in gonad migration identified from published scRNA-seq data and functionally validated in *C. elegans*. *bioRxiv : the preprint server for biology*.

Zou X, et al. (2025) Multi-omics and single-cell approaches reveal molecular subtypes and key cell interactions in hepatocellular carcinoma. *Frontiers in pharmacology*, 16, 1605162.

Chen Y, et al. (2025) CITED2 Binding to EP300 Regulates Human Spermatogonial Stem Cell Proliferation and Survival Through HSPA6. *Stem cells international*, 2025, 2362489.

Jin W, et al. (2025) Bayesian-optimized deep learning for identifying essential genes of mitophagy and fostering therapies to combat drug resistance in human cancers. *Journal of cellular and molecular medicine*, 29(2), e18254.

Zhou Y, et al. (2025) Potential Role of CD99 Signaling Pathway in Schwann Cell Dysfunction in Diabetic Foot Ulcers Based on Single-Cell Transcriptome Analysis. *Journal of diabetes research*, 2025, 9935400.

Shen J, et al. (2025) Spatiotemporal dynamics of RERE in schizophrenia pathogenesis: insights from multi-omics and single-cell sequencing. *Schizophrenia (Heidelberg, Germany)*, 11(1), 155.

Zhou Z, et al. (2025) SMN deficiency inhibits endochondral ossification via promoting TRAF6-induced ubiquitination degradation of YBX1 in spinal muscular atrophy. *Bone research*, 13(1), 97.

Chen T, et al. (2025) Lipoxin A4 Regulates M2 Macrophage-Derived Exosomal miR-25-5p to Protect Cell Pyroptosis in Bronchopulmonary Dysplasia. *FASEB journal : official publication of the Federation of American Societies for Experimental Biology*, 39(22), e71218.