

Resource Summary Report

Generated by [NIF](#) on Aug 30, 2026

CompuCell3D

RRID:SCR_003052

Type: Tool

Proper Citation

CompuCell3D (RRID:SCR_003052)

Resource Information

URL: <http://www.compuCell3d.org/>

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Description: Open-source simulation environment for multi-cell, single-cell-based modeling of tissues, organs and organisms. It uses Cellular Potts Model to model cell behavior.

Abbreviations: CC3D

Resource Type: simulation software, software application, software resource

Defining Citation: [PMID:22482955](#)

Keywords: model, simulation, cellular, multi-cellular, windows, mac os x, linux, tissue, organ, organism, cell behavior

Funding: NIH ;
EPA

Availability: Free, Available for download, Freely available

Resource Name: CompuCell3D

Resource ID: SCR_003052

Alternate IDs: nlx_157668

Record Creation Time: 20220129T080216+0000

Record Last Update: 20260829T182141+0000

Ratings and Alerts

No rating or validation information has been found for CompuCell3D.

No alerts have been found for CompuCell3D.

Data and Source Information

Source: [SciCrunch Registry](#)

Usage and Citation Metrics

We found 75 mentions in open access literature.

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

Cabrera HS, et al. (2026) Biophysical Modeling Reveals How Gene Expression Drives Tissue-Scale Fat Deposition in Beef Breeds. *Biology*, 15(8).

Harris Snell P, et al. (2026) Coordinated regulation of mRNA translation and stability by ZC3H7A and ZC3H7B RNA-binding proteins. *Cell reports*, 45(6), 117511.

Vanin J, et al. (2025) V-Cornea: A computational model of corneal epithelium homeostasis, injury, and recovery. *bioRxiv : the preprint server for biology*.

Berkhout JH, et al. (2025) A computational dynamic systems model for in silico prediction of neural tube closure defects. *Current research in toxicology*, 8, 100210.

Bruch R, et al. (2025) Improving 3D deep learning segmentation with biophysically motivated cell synthesis. *Communications biology*, 8(1), 43.

Braat QJS, et al. (2025) Shape matters: inferring the motility of confluent cells from static images. *Soft matter*, 21(33), 6504.

Vanin J, et al. (2025) V-Cornea: A computational model of corneal epithelium homeostasis, injury, and recovery. *PLoS computational biology*, 21(12), e1013410.

Siegel F, et al. (2025) Proliferation and regeneration of the healthy human urothelium: A multi-scale simulation approach with 16 hypotheses of cell differentiation. *PloS one*, 20(6), e0325132.

Dutt T, et al. (2025) Rheological transition driven by matrix makes cancer spheroids resilient under confinement. *Life science alliance*, 8(6).

Morikis VA, et al. (2025) Cadherin-1-mediated communication at the leader-follower boundary controls mouse breast tumor organoid collective migration. *Cell reports*, 44(12), 116631.

Shen Y, et al. (2025) Simulation approach for common female cancers: a brief review. *Frontiers in oncology*, 15, 1479225.

Wang H, et al. (2025) Protrusion force and cell-cell adhesion-induced polarity alignment govern collective migration modes. *Biophysical journal*, 124(10), 1674.

Wang H, et al. (2025) Protrusion force and cell-cell adhesion-induced polarity alignment govern collective migration modes. *bioRxiv : the preprint server for biology*.

Chandrasegaran S, et al. (2024) Modelling the spatiotemporal dynamics of senescent cells in wound healing, chronic wounds, and fibrosis. *bioRxiv : the preprint server for biology*.

Haase M, et al. (2024) Agent-based model demonstrates the impact of nonlinear, complex interactions between cytokines on muscle regeneration. *eLife*, 13.

Zha L, et al. (2024) Morphological basis of the lung adenocarcinoma subtypes. *iScience*, 27(5), 109742.

Una R, et al. (2024) A Cellular Potts Model of the interplay of synchronization and aggregation. *PeerJ*, 12, e16974.

Korkmaz HI, et al. (2024) An in silico modeling approach to understanding the dynamics of the post-burn immune response. *Frontiers in immunology*, 15, 1303776.

Link R, et al. (2024) Modelling cell shape in 3D structured environments: A quantitative comparison with experiments. *PLoS computational biology*, 20(4), e1011412.

Prasanna CVS, et al. (2024) Spatial heterogeneity in tumor adhesion qualifies collective cell invasion. *Biophysical journal*, 123(12), 1635.