Resource Summary Report

Generated by dkNET on Apr 18, 2025

ModelDB

RRID:SCR_007271
Type: Tool

Proper Citation

ModelDB (RRID:SCR_007271)

Resource Information

URL: http://senselab.med.yale.edu/modeldb/

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Description: Curated database of published models so that they can be openly accessed, downloaded, and tested to support computational neuroscience. Provides accessible location for storing and efficiently retrieving computational neuroscience models.Coupled with NeuronDB. Models can be coded in any language for any environment. Model code can be viewed before downloading and browsers can be set to auto-launch the models. The model source code has to be available from publicly accessible online repository or WWW site. Original source code is used to generate simulation results from which authors derived their published insights and conclusions.

Abbreviations: ModelDB

Synonyms: Model_DB, Model Database, Model DB, Model-DB

Resource Type: database, data or information resource, service resource, data repository, storage service resource

Defining Citation: PMID:15218350, PMID:15055399, PMID:8930855

Keywords: repository, collection, network, neuron, computational, neuroscience, model, simulation, neural, data

Funding: NIMH ;
NINDS ;
NCI ;
Human Brain Project ;
NIDCD P01 DC004732;

NIDCD R01 DC009977

Availability: Free, Freely available, Acknowledgement requested

Resource Name: ModelDB

Resource ID: SCR_007271

Alternate IDs: nif-0000-00004

Record Creation Time: 20220129T080240+0000

Record Last Update: 20250418T055145+0000

Ratings and Alerts

No rating or validation information has been found for ModelDB.

No alerts have been found for ModelDB.

Data and Source Information

Source: SciCrunch Registry

Usage and Citation Metrics

We found 292 mentions in open access literature.

Listed below are recent publications. The full list is available at dkNET.

Takács V, et al. (2024) Synaptic and dendritic architecture of different types of hippocampal somatostatin interneurons. PLoS biology, 22(3), e3002539.

Kamiya H, et al. (2024) Ectopic burst induced by blockade of axonal potassium channels on the mouse hippocampal mossy fiber. Frontiers in cellular neuroscience, 18, 1434165.

Ibañez S, et al. (2024) Myelin dystrophy impairs signal transmission and working memory in a multiscale model of the aging prefrontal cortex. eLife, 12.

Cirtala G, et al. (2024) Branch-specific clustered parallel fiber input controls dendritic computation in Purkinje cells. iScience, 27(9), 110756.

Chardon MK, et al. (2024) Supercomputer framework for reverse engineering firing patterns of neuron populations to identify their synaptic inputs. eLife, 12.

Blömer LA, et al. (2024) Kinetics and functional consequences of BK channels activation by N-type Ca2+ channels in the dendrite of mouse neocortical layer-5 pyramidal neurons.

Frontiers in cellular neuroscience, 18, 1353895.

Diekman CO, et al. (2024) COVID-19 and silent hypoxemia in a minimal closed-loop model of the respiratory rhythm generator. Biological cybernetics, 118(3-4), 145.

Tomko M, et al. (2024) A voltage-based Event-Timing-Dependent Plasticity rule accounts for LTP subthreshold and suprathreshold for dendritic spikes in CA1 pyramidal neurons. Journal of computational neuroscience, 52(2), 125.

Kan P, et al. (2024) Computational modeling to study the impact of changes in Nav1.8 sodium channel on neuropathic pain. Frontiers in computational neuroscience, 18, 1327986.

Kamiya H, et al. (2024) Modeling analysis of depolarization-assisted afterdischarge in hippocampal mossy fibers. Frontiers in neural circuits, 18, 1505204.

Xie YF, et al. (2024) Similar excitability through different sodium channels and implications for the analgesic efficacy of selective drugs. eLife, 12.

Couppey T, et al. (2024) NRV: An open framework for in silico evaluation of peripheral nerve electrical stimulation strategies. bioRxiv : the preprint server for biology.

Manubens-Gil L, et al. (2024) Deficits in neuronal architecture but not over-inhibition are main determinants of reduced neuronal network activity in a mouse model of overexpression of Dyrk1A. Cerebral cortex (New York, N.Y. : 1991), 34(1).

Park K, et al. (2024) Egocentric neural representation of geometric vertex in the retrosplenial cortex. Nature communications, 15(1), 7156.

Marasco A, et al. (2023) An Adaptive Generalized Leaky Integrate-and-Fire Model for Hippocampal CA1 Pyramidal Neurons and Interneurons. Bulletin of mathematical biology, 85(11), 109.

Dura-Bernal S, et al. (2023) Data-driven multiscale model of macaque auditory thalamocortical circuits reproduces in vivo dynamics. Cell reports, 42(11), 113378.

Tikidji-Hamburyan RA, et al. (2023) Synaptic and circuit mechanisms prevent detrimentally precise correlation in the developing mammalian visual system. eLife, 12.

Guarina L, et al. (2023) SanPy: A whole-cell electrophysiology analysis pipeline. bioRxiv : the preprint server for biology.

Park P, et al. (2023) Dendritic voltage imaging reveals biophysical basis of associative plasticity rules. bioRxiv : the preprint server for biology.

Combe CL, et al. (2023) Cholinergic modulation shifts the response of CA1 pyramidal cells to depolarizing ramps via TRPM4 channels with potential implications for place field firing. eLife, 12.