Resource Summary Report

Generated by nidm-terms on Jul 29, 2026

Neurolucida

RRID:SCR_001775
Type: Tool

Proper Citation

Neurolucida (RRID:SCR_001775)

Resource Information

URL: http://www.mbfbioscience.com/neurolucida

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Description: Neurolucida is advanced scientific software for brain mapping, neuron reconstruction, anatomical mapping, and morphometry. Since its debut more than 20 years ago, Neurolucida has continued to evolve and has become the worldwide gold-standard for neuron reconstruction and 3D mapping. Neurolucida has the flexibility to handle data in many formats: using live images from digital or video cameras; stored image sets from confocal microscopes, electron microscopes, and scanning tomographic sources, or through the microscope oculars using the patented LucividTM. Neurolucida controls a motorized XYZ stage for integrated navigation through tissue sections, allowing for sophisticated analysis from many fields-of-view. Neurolucidas Serial Section Manager integrates unlimited sections into a single data file, maintaining each section in aligned 3D space for full quantitative analysis. Neurolucidas neuron tracing capabilities include 3D measurement and reconstruction of branching processes. Neurolucida also features sophisticated tools for mapping delineate and map anatomical regions for detailed morphometric analyses. Neurolucida uses advanced computer-controlled microscopy techniques to obtain accurate results and speed your work. Plug-in modules are available for confocal and MRI analysis, 3D solid modeling, and virtual slide creation. The user-friendly interface gives you rapid results, allowing you to acquire data and capture the full 3D extent of neurons and brain regions. You can reconstruct neurons or create 3D serial reconstructions directly from slides or acquired images, and Neurolucida offers full microscope control for brightfield, fluorescent, and confocal microscopes. Its added compatibility with 64-bit Microsoft Vista enables reconstructions with even larger images, image stacks, and virtual slides. Adding the Solid Modeling Module allows you to rotate and view your reconstructions in real time. Neurolucida is available in two separate versions Standard and Workstation. The Standard version enables control of microscope hardware, whereas the Workstation version is used for offline analysis away from the microscope. Neurolucida provides quantitative analysis with results presented in graphical or spreadsheet format exportable to Microsoft Excel. Overall, features include: - Tracing Neurons - Anatomical Mapping - Image Processing and Analysis Features - Editing -

Morphometric Analysis - Hardware Integration - Cell Analysis - Visualization Features
Sponsors: Neurolucida is supported by MBF Bioscience.

Synonyms: MBF Neurolucida

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

Defining Citation: PMID:2224829

Keywords: electron microscope, fluorescent, 3d mapping, anatomical, brian, brightfield, camera, confocal, digital, hardware, mapping, microscope, morphometry, neuron, reconstruction, scanning tomographic, software, tissue, virtual, video, image

Availability: Restricted

Resource Name: Neurolucida

Resource ID: SCR_001775

Alternate IDs: nif-0000-10294

Alternate URLs: http://www.nitrc.org/projects/neurolucida

Old URLs: http://www.mbfbioscience.com/neurolucida/neurolucida

Record Creation Time: 20220129T080209+0000

Record Last Update: 20260729T044016+0000

Ratings and Alerts

No rating or validation information has been found for Neurolucida.

No alerts have been found for Neurolucida.

Data and Source Information

Source: SciCrunch Registry

Usage and Citation Metrics

We found 3319 mentions in open access literature.

Listed below are recent publications. The full list is available at nidm-terms .

Philips T, et al. (2026) Astrocyte MCT1 Expression Does Not Contribute to the Axonal Degenerative Phenotype Observed With Ubiquitous MCT1 Depletion. Glia, 74(2), e70113.

Blin N, et al. (2026) Long-lived adult-born hippocampal neurons promote successful cognitive aging. Molecular psychiatry, 31(1), 217.

Zhang Z, et al. (2026) Autophagy controls the hippocampal postsynaptic organization and affects cognition in a mouse model of Fragile X syndrome. Molecular psychiatry, 31(1), 75.

Shen D, et al. (2026) Direct and indirect neurogenesis from radial glial progenitor cell clones in the mouse neocortex. The EMBO journal, 45(1), 182.

Di Matteo F, et al. (2025) Neuronal hyperactivity in neurons derived from individuals with gray matter heterotopia. Nature communications, 16(1), 1737.

Tennin M, et al. (2025) Sleep Deprivation Alters Hippocampal Dendritic Spines in a Contextual Fear Memory Engram. bioRxiv : the preprint server for biology.

Dellal S, et al. (2025) Inhibitory and disinhibitory VIP IN-mediated circuits in neocortex. bioRxiv : the preprint server for biology.

Marcassa G, et al. (2025) Synaptic signatures and disease vulnerabilities of layer 5 pyramidal neurons. Nature communications, 16(1), 228.

Jing J, et al. (2025) Molecular logic for cellular specializations that initiate the auditory parallel processing pathways. Nature communications, 16(1), 489.

Feleke R, et al. (2025) Seeding-competent early tau multimers are associated with cell type-specific transcriptional signatures. Acta neuropathologica, 149(1), 31.

Hoffe B, et al. (2025) The link between impact-induced tensile strain and dendritic spine morphology in porcine brain tissue. PloS one, 20(2), e0318932.

Kushner JK, et al. (2025) Characterizing the Diversity of Layer 2/3 Human Neocortical Neurons in Pediatric Epilepsy. eNeuro, 12(5).

De Paolis ML, et al. (2025) Repetitive prefrontal tDCS activates VTA dopaminergic neurons, resulting in attenuation of Alzheimer's Disease-like deficits in Tg2576 mice. Alzheimer's research & therapy, 17(1), 94.

Merino-Serrais P, et al. (2025) Parvalbumin interneurons in the hippocampal formation of individuals with Alzheimer's disease: a neuropathological study of abnormal phosphorylated tau in neurons. Frontiers in neuroanatomy, 19, 1571514.

Fernández Del Campo IS, et al. (2025) Anodal direct current stimulation of the auditory cortex at the onset of presbycusis delays cortical aging. Brain structure & function, 230(4), 56.

Futácsi A, et al. (2025) Quantification and correlation of amyloid-? plaque load, glial activation, GABAergic interneuron numbers, and cognitive decline in the young TgF344-AD rat model of Alzheimer's disease. Frontiers in aging neuroscience, 17, 1542229.

Hibbard EA, et al. (2025) Polyethylene glycol fusion repair of severed rat sciatic nerves reestablishes axonal continuity and reorganizes sensory terminal fields in the spinal cord. Neural regeneration research, 20(7), 2095.

Pardillo-Díaz R, et al. (2025) The subventricular zone neurogenic niche provides adult born functional neurons to repair cortical brain injuries in response to diterpenoid therapy. Stem cell research & therapy, 16(1), 1.

Chaudhari K, et al. (2025) Temporally-segregated dual functions for Gfi1 in the development of retinal direction-selectivity. bioRxiv : the preprint server for biology.

Heredi J, et al. (2025) Increased excitatory synapse size in hippocampal place cells compared to silent cells. Proceedings of the National Academy of Sciences of the United States of America, 122(23), e2505322122.