Resource Summary Report

Generated by RRID on May 22, 2025

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

Funding:

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: 20250522T055949+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 3162 mentions in open access literature.

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

Banovac I, et al. (2025) Morphological and Molecular Characteristics of Perineuronal Nets in the Human Prefrontal Cortex-A Possible Link to Microcircuitry Specialization. Molecular neurobiology, 62(1), 1094.

Flierman NA, et al. (2025) Encoding of cerebellar dentate neuron activity during visual attention in rhesus macaques. eLife, 13.

Lee DH, et al. (2025) Enhancement of motor functional recovery in thoracic spinal cord injury: voluntary wheel running versus forced treadmill exercise. Neural regeneration research, 20(3), 836.

Milligan C, et al. (2025) Enhanced Interleukin 6 Trans-Signaling Modulates Disease Process in Amyotrophic Lateral Sclerosis Mouse Models. Brain sciences, 15(1).

Ballester-Rosado CJ, et al. (2025) IGF-1 impacts neocortical interneuron connectivity in epileptic spasm generation and resolution. Neurotherapeutics : the journal of the American Society for Experimental NeuroTherapeutics, 22(1), e00477.

Ito T, et al. (2025) Segregated input to thalamic areas that project differently to core and shell auditory cortical fields. iScience, 28(2), 111721.

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.

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

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.

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

King DP, et al. (2025) Microglia Morphology in the Developing Primate Amygdala and Effects of Early Life Stress. eNeuro, 12(1).

Zhu Z, et al. (2025) Long-Term Creatine Supplementation Improves Cognitive and Hippocampal Structural Plasticity Impairments in a D-Gal-Induced Aging Model via Increasing CK-BB Activity in the Brain. Food science & nutrition, 13(1), e4767.

Pérez-Revuelta L, et al. (2025) Neuroprotective Effects of VEGF-B in a Murine Model of Aggressive Neuronal Loss with Childhood Onset. International journal of molecular sciences, 26(2).

Yang D, et al. (2025) Linking altered neuronal and synaptic properties to nicotinic receptor Alpha5 subunit gene dysfunction: a translational investigation in rat mPFC and human cortical layer 6. Translational psychiatry, 15(1), 12.

Ruff DS, et al. (2024) Reduced Bergmann glial process terminations and lateral appendages in essential tremor. Annals of clinical and translational neurology, 11(2), 377.

Rudolf J, et al. (2024) Night-time neuronal activation of Cluster N in a North American songbird. PloS one, 19(3), e0300479.

Ferreira JCCG, et al. (2024) Postnatal Zika virus infection leads to morphological and cellular alterations within the neurogenic niche. Disease models & mechanisms, 17(2).

Rhodes CT, et al. (2024) Loss of Ezh2 in the medial ganglionic eminence alters interneuron fate, cell morphology and gene expression profiles. Frontiers in cellular neuroscience, 18, 1334244.

Barbas H, et al. (2024) Cortical circuit principles predict patterns of trauma induced tauopathy in humans. bioRxiv : the preprint server for biology.

Ono M, et al. (2024) Spatiotemporal development of the neuronal accumulation of amyloid precursor protein and the amyloid plaque formation in the brain of 3xTg-AD mice. Heliyon, 10(7), e28821.