Resource Summary Report

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NeuroMorph

RRID:SCR_002091
Type: Tool

Proper Citation

NeuroMorph (RRID:SCR_002091)

Resource Information

URL: http://cvlab.epfl.ch/NeuroMorph

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Description: A toolset for the morphometric analysis and visualization of 3D models derived from electron microscopy image stacks. It is designed to import, analyze, and visualize mesh models. It has been designed specifically for the morphological analysis of 3D objects derived from serial electron microscopy images of brain tissue, although much of its functionality can be applied to any 3D mesh. These models can be generated by software that allows the images to be segmented so that 3D objects can be built. These objects can be generated by any 3D image segmentation software, such as ilastik or Fiji. The NeuroMorph toolset has been developed as a set of add-ons for Blender, a widely used free and open source 3D modeling software package.

Abbreviations: NeuroMorph

Synonyms: NeuroMorph Toolkit

Resource Type: software resource

Keywords: electron microscopic imaging assay, morphometry, analysis, visualization, 3d

Funding:

Resource Name: NeuroMorph

Resource ID: SCR_002091

Alternate IDs: SciRes_000156

Record Creation Time: 20220129T080211+0000

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Ratings and Alerts

No rating or validation information has been found for NeuroMorph.

No alerts have been found for NeuroMorph.

Data and Source Information

Source: SciCrunch Registry

Usage and Citation Metrics

We found 32 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.

Bragulat-Teixidor H, et al. (2024) The endoplasmic reticulum connects to the nucleus by constricted junctions that mature after mitosis. EMBO reports, 25(7), 3137.

Paulussen I, et al. (2024) SV2B defines a subpopulation of synaptic vesicles. Journal of molecular cell biology, 15(9).

Lukács Á, et al. (2024) Physical structure of the environment contributes to the development of diversity of microalgal assemblages. Scientific reports, 14(1), 13498.

Iyer M, et al. (2024) Oligodendrocyte calcium signaling promotes actin-dependent myelin sheath extension. Nature communications, 15(1), 265.

Hut T, et al. (2023) Virtual surgery to predict optimized conduit size for adult Fontan patients with 16-mm conduits. Interdisciplinary cardiovascular and thoracic surgery, 37(5).

Rigby M, et al. (2023) Multi-synaptic boutons are a feature of CA1 hippocampal connections in the stratum oriens. Cell reports, 42(5), 112397.

Georgiou C, et al. (2022) A subpopulation of cortical VIP-expressing interneurons with highly dynamic spines. Communications biology, 5(1), 352.

Ma Z, et al. (2022) Single-Cell Transcriptomics Reveals a Conserved Metaplasia Program in Pancreatic Injury. Gastroenterology, 162(2), 604.

Hayashi S, et al. (2021) Maturation of Complex Synaptic Connections of Layer 5 Cortical Axons in the Posterior Thalamic Nucleus Requires SNAP25. Cerebral cortex (New York, N.Y. : 1991), 31(5), 2625.

Hwang YS, et al. (2021) 3D Ultrastructure of Synaptic Inputs to Distinct GABAergic Neurons in the Mouse Primary Visual Cortex. Cerebral cortex (New York, N.Y. : 1991), 31(5), 2610.

Jenkins J, et al. (2021) Resolving physical interactions between bacteria and nanotopographies with focused ion beam scanning electron microscopy. iScience, 24(7), 102818.

Song YH, et al. (2020) Somatostatin enhances visual processing and perception by suppressing excitatory inputs to parvalbumin-positive interneurons in V1. Science advances, 6(17), eaaz0517.

Savage JC, et al. (2020) Microglial physiological properties and interactions with synapses are altered at presymptomatic stages in a mouse model of Huntington's disease pathology. Journal of neuroinflammation, 17(1), 98.

Vasquez C, et al. (2020) Connexin43 expression in bone marrow derived cells contributes to the electrophysiological properties of cardiac scar tissue. Scientific reports, 10(1), 2617.

Vezzoli E, et al. (2020) Ultrastructural Evidence for a Role of Astrocytes and Glycogen-Derived Lactate in Learning-Dependent Synaptic Stabilization. Cerebral cortex (New York, N.Y. : 1991), 30(4), 2114.

Tamada H, et al. (2020) Ultrastructural comparison of dendritic spine morphology preserved with cryo and chemical fixation. eLife, 9.

Calì C, et al. (2018) The effects of aging on neuropil structure in mouse somatosensory cortex-A 3D electron microscopy analysis of layer 1. PloS one, 13(7), e0198131.

Grillo FW, et al. (2018) A Distance-Dependent Distribution of Presynaptic Boutons Tunes Frequency-Dependent Dendritic Integration. Neuron, 99(2), 275.

Puppo F, et al. (2018) An Optimized Structure-Function Design Principle Underlies Efficient Signaling Dynamics in Neurons. Scientific reports, 8(1), 10460.