Resource Summary Report

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Synapse Web

RRID:SCR_003577
Type: Tool

Proper Citation

Synapse Web (RRID:SCR_003577)

Resource Information

URL: http://synapses.clm.utexas.edu

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Description: A portal into the 3D ultrastructure of the brain providing: Anatomy of astrocytes, axons, dendrites, hippocampus, organelles, synapses; procedures of 3D reconstruction and tissue preparation; as well as an atlas of ultrastructural neurocytology (by Josef Spacek), online aligned images, and reconstructed dendrites. Synapse Web hosts an ultrastructural atlas containing more than 500 electron micrographs (added to regularly) that identify unique ultrastructural and cellular components throughout the brain. Additionally, Synapse Web has raw images, reconstructions, and quantitative data along with tutorial instructions and numerous tools for investigating the functional structure of objects that have been serial thin sectioned for electron microscopy.

Synonyms: SynapseWeb

Resource Type: image collection, training material, narrative resource, data or information resource, atlas

Keywords: electron microscopy, 3d reconstruction, neuroanatomy, astrocyte, axon, brain, cellular, dendrite, hippocampus, micrograph, microscopy, neurocytology, organelle, structure, synapse, tissue, ultrastructural, light microscopy, neuron, rat, experimental protocol, synapse structure

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NIBIB EB002170

Availability: Copyrighted, Acknowledgement required

Resource Name: Synapse Web

Resource ID: SCR_003577

Alternate IDs: nif-0000-00026

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Record Last Update: 20250528T060557+0000

Ratings and Alerts

No rating or validation information has been found for Synapse Web.

No alerts have been found for Synapse Web.

Data and Source Information

Source: SciCrunch Registry

Usage and Citation Metrics

We found 53 mentions in open access literature.

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

Li JM, et al. (2022) Swimming exercise prevents hippocampal dendritic spine changes and memory loss caused by aging: An application of a new semi-automated spine analysis software. Molecular and cellular neurosciences, 121, 103755.

Esmaili Z, et al. (2022) A stereological study reveals nanoscale-alumina induces cognitive dysfunction in mice related to hippocampal structural changes. Neurotoxicology, 91, 245.

Hagadorn MA, et al. (2021) Age-related mushroom body expansion in male sweat bees and bumble bees. Scientific reports, 11(1), 17039.

Tan Z, et al. (2021) Tetramethylpyrazine Alleviates Behavioral and Psychological Symptoms of Dementia Through Facilitating Hippocampal Synaptic Plasticity in Rats With Chronic Cerebral Hypoperfusion. Frontiers in neuroscience, 15, 646537.

Shi X, et al. (2021) Stroke subtype-dependent synapse elimination by reactive gliosis in mice. Nature communications, 12(1), 6943.

Henneberger C, et al. (2020) LTP Induction Boosts Glutamate Spillover by Driving

Withdrawal of Perisynaptic Astroglia. Neuron, 108(5), 919.

Kim HW, et al. (2020) Differential synapse density between Purkinje cell dendritic spine and parallel fiber varicosity in the rat cerebellum among the phylogenic lobules. Applied microscopy, 50(1), 6.

Pérez-Villegas EM, et al. (2020) HERC1 Ubiquitin Ligase Is Required for Hippocampal Learning and Memory. Frontiers in neuroanatomy, 14, 592797.

Yu M, et al. (2019) Gallic acid disruption of A?1-42 aggregation rescues cognitive decline of APP/PS1 double transgenic mouse. Neurobiology of disease, 124, 67.

Garcia GC, et al. (2019) Mitochondrial morphology provides a mechanism for energy buffering at synapses. Scientific reports, 9(1), 18306.

Rodriguez C, et al. (2019) Functional and evolutionary perspectives on gill structures of an obligate air-breathing, aquatic snail. PeerJ, 7, e7342.

Gire DH, et al. (2019) Balancing Extrasynaptic Excitation and Synaptic Inhibition within Olfactory Bulb Glomeruli. eNeuro, 6(4).

Klok MD, et al. (2018) Axonal abnormalities in vanishing white matter. Annals of clinical and translational neurology, 5(4), 429.

Boldog E, et al. (2018) Transcriptomic and morphophysiological evidence for a specialized human cortical GABAergic cell type. Nature neuroscience, 21(9), 1185.

Noorafshan A, et al. (2018) Could curcumin protect the dendritic trees of the CA1 neurons from shortening and shedding induced by chronic sleep restriction in rats? Life sciences, 198, 65.

Zhuang TT, et al. (2018) Chronic asthma-induced behavioral and hippocampal neuronal morphological changes are concurrent with BDNF, cofilin1 and Cdc42/RhoA alterations in immature mice. Brain research bulletin, 143, 194.

Savtchenko LP, et al. (2018) Disentangling astroglial physiology with a realistic cell model in silico. Nature communications, 9(1), 3554.

Llewellyn-Smith IJ, et al. (2018) Long-term, dynamic synaptic reorganization after GABAergic precursor cell transplantation into adult mouse spinal cord. The Journal of comparative neurology, 526(3), 480.

Noorafshan A, et al. (2017) Restorative effects of curcumin on sleep-deprivation induced memory impairments and structural changes of the hippocampus in a rat model. Life sciences, 189, 63.

Han F, et al. (2017) Novel derivative of Paeonol, Paeononlsilatie sodium, alleviates behavioral damage and hippocampal dendritic injury in Alzheimer's disease concurrent with cofilin1/phosphorylated-cofilin1 and RAC1/CDC42 alterations in rats. PloS one, 12(9), e0185102.