Resource Summary Report

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Synapse Web Reconstruct

RRID:SCR_002716
Type: Tool

Proper Citation

Synapse Web Reconstruct (RRID:SCR_002716)

Resource Information

URL: http://synapses.clm.utexas.edu/tools/reconstruct/reconstruct.stm

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Description: A Windows (Win32) software application for montaging, aligning, tracing, measuring, and reconstructing objects from serial microscopic section images. The software is designed for microscopy in which section resolution is much less than section thickness, such as transmitted electron microscopy (EM) where the resolution is a few nanometers while the section thickness is many tens of nanometers. Reconstruct can easily handle series with hundreds of very large, high-resolution section images. It facilitates image cropping, scaling and alignment. Multiple images can be placed side-by-side to make a montage of a section from a mosaic of images. The alignment of adjacent sections can be rapidly compared by either blending the two sections or by flickering between them. Sections can be moved while blended. Reconstruct aids in the calibration of image size. Images taken at different magnifications can be combined, calibrated and aligned. Tools for tracing and editing of objects on sections are provided. Objects can be surfaced from the traces and previewed in an OpenGL-based 3D scene window. The 3D scene can be saved as a bitmap or as a VRML file.

Abbreviations: Reconstruct

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

Keywords: electron microscopy, align, alignment, calibrate, image cropping, measure, microscopy, montage, reconstruct, scale, serial section image, trace, image, crop

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Alternate IDs: nif-0000-23420

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Ratings and Alerts

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

No alerts have been found for Synapse Web Reconstruct.

Data and Source Information

Source: SciCrunch Registry

Usage and Citation Metrics

We found 72 mentions in open access literature.

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

Zió?kowska M, et al. (2025) Projections from thalamic nucleus reuniens to hippocampal CA1 area participate in context fear extinction by affecting extinction-induced molecular remodeling of excitatory synapses. eLife, 13.

Wilson CE, et al. (2024) Death in the taste bud: Morphological features of dying taste cells and engulfment by Type I cells. bioRxiv : the preprint server for biology.

Voglewede MM, et al. (2024) Loss of the polarity protein Par3 promotes dendritic spine neoteny and enhances learning and memory. iScience, 27(7), 110308.

Rydzanicz M, et al. (2024) Mutation in the mitochondrial chaperone TRAP1 leads to autism with more severe symptoms in males. EMBO molecular medicine, 16(11), 2976.

Zió?kowska M, et al. (2023) Phosphorylation of PSD-95 at serine 73 in dCA1 is required for extinction of contextual fear. PLoS biology, 21(5), e3002106.

Maher EE, et al. (2023) 3D electron microscopy and volume-based bouton sorting reveal the selectivity of inputs onto geniculate relay cell and interneuron dendrite segments. Frontiers in neuroanatomy, 17, 1150747.

Kleinjan MS, et al. (2023) Dually innervated dendritic spines develop in the absence of excitatory activity and resist plasticity through tonic inhibitory crosstalk. Neuron, 111(3), 362.

Joyce MKP, et al. (2023) Subgenual and Hippocampal Pathways in Amygdala Are Set to Balance Affect and Context Processing. The Journal of neuroscience : the official journal of the Society for Neuroscience, 43(17), 3061.

Harris KM, et al. (2022) Dendritic Spine Density Scales with Microtubule Number in Rat Hippocampal Dendrites. Neuroscience, 489, 84.

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.

Ostroff LE, et al. (2022) Persistent up-regulation of polyribosomes at synapses during long-term memory, reconsolidation, and extinction of associative memory. Learning & memory (Cold Spring Harbor, N.Y.), 29(8), 192.

Joyce MKP, et al. (2022) Pathways for Memory, Cognition and Emotional Context: Hippocampal, Subgenual Area 25, and Amygdalar Axons Show Unique Interactions in the Primate Thalamic Reuniens Nucleus. The Journal of neuroscience : the official journal of the Society for Neuroscience, 42(6), 1068.

Wilson CE, et al. (2022) Taste Bud Connectome: Implications for Taste Information Processing. The Journal of neuroscience : the official journal of the Society for Neuroscience, 42(5), 804.

Li J, et al. (2022) Dnmt3a knockout in excitatory neurons impairs postnatal synapse maturation and increases the repressive histone modification H3K27me3. eLife, 11.

Fehr T, et al. (2022) Neonatal exposures to sevoflurane in rhesus monkeys alter synaptic ultrastructure in later life. iScience, 25(12), 105685.

Franceschi Biagioni A, et al. (2021) Graphene oxide prevents lateral amygdala dysfunctional synaptic plasticity and reverts long lasting anxiety behavior in rats. Biomaterials, 271, 120749.

Long SM, et al. (2021) Variations on a theme: Morphological variation in the secondary eye

visual pathway across the order of Araneae. The Journal of comparative neurology, 529(2), 259.

Wang J, et al. (2021) Pathways for Contextual Memory: The Primate Hippocampal Pathway to Anterior Cingulate Cortex. Cerebral cortex (New York, N.Y. : 1991), 31(3), 1807.

Gindina S, et al. (2021) Upregulation of eIF4E, but not other translation initiation factors, in dendritic spines during memory formation. The Journal of comparative neurology, 529(11), 3112.

Kuwajima M, et al. (2020) Ultrastructure of light-activated axons following optogenetic stimulation to produce late-phase long-term potentiation. PloS one, 15(1), e0226797.