Resource Summary Report

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Mouse Connectome Project

RRID:SCR_004096
Type: Tool

Proper Citation

Mouse Connectome Project (RRID:SCR_004096)

Resource Information

URL: http://www.mouseconnectome.org/

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Description: Three-dimensional digital connectome atlas of the C57Black/6J mouse brain and catalog of neural tracer injection cases, which will eventually cover the entire brain. Serial sections of each case are available to view at 10x magnification in the interactive iConnectome viewer. The Image Gallery provides a glimpse into some of the highlights of their data set. Representative images of multi-fluorescent tracer labeling can be viewed, while more in depth examination of these and all other cases can be performed in the iConnectome viewer. Phase 1 of this project involves generating a physical map of the basic global wiring diagram by applying proven, state of the art experimental circuit tracing methods systematically, uniformly, and comprehensively to the structural organization of all major neuronal pathways in the mouse brain. Connectivity imaging data for the whole mouse brain at cellular resolution will be presented within a standard 3D anatomic frame available through the website and accompanied by a comprehensive searchable online database. A Phase 2 goal for the future will allow users to view, search, and generate driving direction-like roadmaps of neuronal pathways linking any and all structures in the nervous system. This could be looked on as a pilot project for more ambitious projects in species with larger brains, such as human, and for providing a reliable framework for more detailed local circuitry mapping projects in the mouse.

Abbreviations: MCP

Synonyms: UCLA Mouse Project

Resource Type: data or information resource, database, atlas

Defining Citation: PMID:22891053

Keywords: tract tracing assay, adult mouse, connectivity, c57bl/6j, brain, olfactory bulb, piriform cortical area, lateral olfactory tract, connectome, neuronal tract tracing, nissl, image collection

Funding: NIMH MH094360-01A1;
NCRR 3P41RR013642-12S3

Availability: LONI Software License

Resource Name: Mouse Connectome Project

Resource ID: SCR_004096

Alternate IDs: nlx_143548

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

Record Creation Time: 20220129T080222+0000

Record Last Update: 20260729T044052+0000

Ratings and Alerts

No rating or validation information has been found for Mouse Connectome Project.

No alerts have been found for Mouse Connectome Project.

Data and Source Information

Source: SciCrunch Registry

Usage and Citation Metrics

We found 28 mentions in open access literature.

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

Hawrylycz M, et al. (2023) A guide to the BRAIN Initiative Cell Census Network data ecosystem. PLoS biology, 21(6), e3002133.

Gao C, et al. (2023) Molecular and spatial profiling of the paraventricular nucleus of the thalamus. eLife, 12.

Benavidez NL, et al. (2021) Organization of the inputs and outputs of the mouse superior colliculus. Nature communications, 12(1), 4004.

Muñoz-Castañeda R, et al. (2021) Cellular anatomy of the mouse primary motor cortex. Nature, 598(7879), 159.

Spiegler A, et al. (2020) In silico exploration of mouse brain dynamics by focal stimulation reflects the organization of functional networks and sensory processing. Network neuroscience (Cambridge, Mass.), 4(3), 807.

Lin MK, et al. (2019) A high-throughput neurohistological pipeline for brain-wide mesoscale connectivity mapping of the common marmoset. eLife, 8.

Li R, et al. (2019) Precise segmentation of densely interweaving neuron clusters using G-Cut. Nature communications, 10(1), 1549.

Lin HM, et al. (2018) Reconstruction of Intratelencephalic Neurons in the Mouse Secondary Motor Cortex Reveals the Diverse Projection Patterns of Single Neurons. Frontiers in neuroanatomy, 12, 86.

Bienkowski MS, et al. (2018) Integration of gene expression and brain-wide connectivity reveals the multiscale organization of mouse hippocampal networks. Nature neuroscience, 21(11), 1628.

Gerfen CR, et al. (2018) Long distance projections of cortical pyramidal neurons. Journal of neuroscience research, 96(9), 1467.

Majka P, et al. (2016) Towards a comprehensive atlas of cortical connections in a primate brain: Mapping tracer injection studies of the common marmoset into a reference digital template. The Journal of comparative neurology, 524(11), 2161.

Hintiryan H, et al. (2016) The mouse cortico-striatal projectome. Nature neuroscience, 19(8), 1100.

Cazemier JL, et al. (2016) Connectomic Analysis of Brain Networks: Novel Techniques and Future Directions. Frontiers in neuroanatomy, 10, 110.

Rah JC, et al. (2015) From a meso- to micro-scale connectome: array tomography and mGRASP. Frontiers in neuroanatomy, 9, 78.

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Roe AW, et al. (2015) In Vivo Mapping of Cortical Columnar Networks in the Monkey with Focal Electrical and Optical Stimulation. Frontiers in neuroanatomy, 9, 135.

Feng D, et al. (2015) Exploration and visualization of connectivity in the adult mouse brain. Methods (San Diego, Calif.), 73, 90.

Laramée ME, et al. (2014) Visual cortical areas of the mouse: comparison of parcellation and network structure with primates. Frontiers in neural circuits, 8, 149.

Bota M, et al. (2014) BAMS2 workspace: a comprehensive and versatile neuroinformatic platform for collating and processing neuroanatomical connections. The Journal of comparative neurology, 522(14), 3160.

Mitra PP, et al. (2014) The circuit architecture of whole brains at the mesoscopic scale. Neuron, 83(6), 1273.