Resource Summary Report

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Mouse Atlas Project

RRID:SCR_007281
Type: Tool

Proper Citation

Mouse Atlas Project (RRID:SCR_007281)

Resource Information

URL: http://www.emouseatlas.org/emap/home.html

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Description: Detailed multidimensional digital multimodal atlas of the C57BL/6J mouse nervous system with a high-throughput data and informatics pipeline that can automatically register, annotate, and visualize large scale neuroanatomical and connectivity data produced in commonly used methodologies including histology, neuronal tract tracing, MR imaging, and genetic labeling. Using multimodal imaging methods on adult mouse brains, this high-resolution atlas forms the basis of a useful interchange reference system for the mouse. MAP2.0 interoperates with commonly used publicly available databases to bring together brain architecture, gene expression, and imaging information into a single, simple interface. The project enables scientists to leverage the results of brain atlasing efforts in their investigations of gene function, connectomics, and detailed mouse neuroanatomy. The MAP atlas is comprised of a magnetic resonance microscopy (MRM) and an anatomic delineation volume, and a set of software tools for visualization, navigation, and registration of image volumes. The software tools bundled with the atlas volumes are SHIVA (visualization and analysis), BrainGraph (navigation and connectivity), and GEMporter (registration and importation). A database of ancillary volumes is available online, a supplement to the Mouse Atlas Project core volumes. They represent different developmental time points and methods of preparation. To facilitate the process of selecting and analyzing image data from this collection, we have developed a relational database application to manage and catalog the images and related data. Attributes of the subject such as age, strain, weight and anatomical structure are recorded, as are image volume properties such as modality, resolution and anatomical structure. The ongoing partnership with the Brain Architecture Center has led to the development of a robust and flexible nomenclature and anatomical ontology for MAP2.0. This collaboration extends both Mouse Atlas Project and the Brain Architecture Management System.

Abbreviations: MAP, EMAP

Resource Type: data or information resource, database, atlas

Keywords: molecular neuroanatomy resource, adult mouse, mouse, brain, c57bl/6j, magnetic resonance microscopy, diffusion-weighted image, blockface imaging, immunohistochemistry, in situ hybridization, neuroanatomy, mri, dti, brain architecture, gene expression, neuroimaging, ontology, connectivity, histology, neuronal tract tracing, genetic labeling, newborn mouse, experimental protocol, bio.tools, bio.tools

Related Condition: Aging

Funding: NINDS ;
NIBIB ;
NIDA ;
NIDCD ;
NIA

Resource Name: Mouse Atlas Project

Resource ID: SCR_007281

Alternate IDs: nif-0000-00038, biotools:emap, biotools:ma

Alternate URLs: https://bio.tools/emap, https://bio.tools/ma

Old URLs: http://www.loni.ucla.edu/MAP/

Record Creation Time: 20220129T080240+0000

Record Last Update: 20260903T234931+0000

Ratings and Alerts

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

No alerts have been found for Mouse Atlas Project.

Data and Source Information

Source: SciCrunch Registry

Usage and Citation Metrics

We found 17 mentions in open access literature.

Listed below are recent publications. The full list is available at kravitz2 .

Chen A, et al. (2022) Spatiotemporal transcriptomic atlas of mouse organogenesis using DNA nanoball-patterned arrays. Cell, 185(10), 1777.

de Goederen V, et al. (2022) Hinge point emergence in mammalian spinal neurulation. Proceedings of the National Academy of Sciences of the United States of America,

119(20), e2117075119.

Osanlouy M, et al. (2021) The SPARC DRC: Building a Resource for the Autonomic Nervous System Community. Frontiers in physiology, 12, 693735.

Ruyani A, et al. (2021) Leaf ethanolic extract of Etlingera hemesphaerica Blume mitigates defects in fetal anatomy and endochondral ossification due to mercuric chloride during the post-implantation period in Mus musculus. PloS one, 16(3), e0247467.

Mittnenzweig M, et al. (2021) A single-embryo, single-cell time-resolved model for mouse gastrulation. Cell, 184(11), 2825.

Yokomizo T, et al. (2019) Hlf marks the developmental pathway for hematopoietic stem cells but not for erythro-myeloid progenitors. The Journal of experimental medicine, 216(7), 1599.

Xie C, et al. (2019) Off-Target Deletion of Conditional Dbc1 Allele in the Foxp3YFP-Cre Mouse Line under Specific Setting. Cells, 8(11).

Blois SM, et al. (2017) NK cell-derived IL-10 is critical for DC-NK cell dialogue at the maternal-fetal interface. Scientific reports, 7(1), 2189.

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O'Shea NR, et al. (2016) Critical Role of the Disintegrin Metalloprotease ADAM-like Decysin-1 [ADAMDEC1] for Intestinal Immunity and Inflammation. Journal of Crohn's & colitis, 10(12), 1417.

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Hill B, et al. (2015) Constrained distance transforms for spatial atlas registration. BMC bioinformatics, 16, 90.

Hayamizu TF, et al. (2015) Mouse anatomy ontologies: enhancements and tools for exploring and integrating biomedical data. Mammalian genome : official journal of the International Mammalian Genome Society, 26(9-10), 422.

Freitag N, et al. (2014) Influence of relative NK-DC abundance on placentation and its relation to epigenetic programming in the offspring. Cell death & disease, 5(8), e1392.

Zaslavsky I, et al. (2014) Cyberinfrastructure for the digital brain: spatial standards for integrating rodent brain atlases. Frontiers in neuroinformatics, 8, 74.

Gustafson C, et al. (2007) NeuroTerrain--a client-server system for browsing 3D biomedical image data sets. BMC bioinformatics, 8, 40.