Resource Summary Report

Generated by dkNET on Apr 29, 2025

Adult Wistar Rat Atlas

RRID:SCR_006288
Type: Tool

Proper Citation

Adult Wistar Rat Atlas (RRID:SCR_006288)

Resource Information

URL: http://www.civm.duhs.duke.edu/neuro2012ratatlas/

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Description: Multidimensional atlas of the adult Wistar rat brain based on magnetic resonance histology (MRH). The atlas has been carefully aligned with the widely used Paxinos-Watson atlas based on optical sections to allow comparisons between histochemical and immuno-marker data, and the use of the Paxinos-Watson abbreviation set. Our MR atlas attempts to make a seamless connection with the advantageous features of the Paxinos-Watson atlas, and to extend the utility of the data through the unique capabilities of MR histology: a) ability to view the brain in the skull with limited distortion from shrinkage or sectioning; b) isotropic spatial resolution, which permits sectioning along any arbitrary axis without loss of detail; c) three-dimensional (3D) images preserving spatial relationships; and d) widely varied contrast dependent on the unique properties of water protons. 3D diffusion tensor images (DTI) at what we believe to be the highest resolution ever attained in the rat provide unique insight into white matter structures and connectivity. The 3D isotropic data allow registration of multiple data sets into a common reference space to provide average atlases not possible with conventional histology. The resulting multidimensional atlas that combines Paxinos-Watson with multidimensional MRH images from multiple specimens provides a new, comprehensive view of the neuroanatomy of the rat and offers a collaborative platform for future rat brain studies. To access the atlas, click view supplementary materials in CIVMSpace at the bottom of the following webpage.

Abbreviations: Adult Wistar Rat Atlas

Synonyms: Multidimensional Magnetic Resonance Histology Atlas of the Wistar Rat Brain

Resource Type: data or information resource, atlas

Defining Citation: PMID:22634863

Keywords: magnetic resonance histology, wistar rat, brain, mri, diffusion tensor imaging, histology, magnetic resonance imaging, neuroanatomy, histology

Funding: NIBIB ;
NCRR P41 RR005959

Availability: Free for academic use, We ask that you provide contact information, Acknowledgement required

Resource Name: Adult Wistar Rat Atlas

Resource ID: SCR_006288

Alternate IDs: nlx_151935

Record Creation Time: 20220129T080235+0000

Record Last Update: 20250429T055042+0000

Ratings and Alerts

No rating or validation information has been found for Adult Wistar Rat Atlas.

No alerts have been found for Adult Wistar Rat Atlas.

Data and Source Information

Source: SciCrunch Registry

Usage and Citation Metrics

We found 5 mentions in open access literature.

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

Pan YP, et al. (2020) Involvement of orexin-A in the regulation of neuronal activity and emotional behaviors in central amygdala in rats. Neuropeptides, 80, 102019.

Moustafa PE, et al. (2018) Liraglutide ameliorated peripheral neuropathy in diabetic rats: Involvement of oxidative stress, inflammation and extracellular matrix remodeling. Journal of neurochemistry, 146(2), 173.

Gupta S, et al. (2018) Citalopram attenuated neurobehavioral, biochemical, and metabolic alterations in transient middle cerebral artery occlusion model of stroke in male Wistar rats.

Journal of neuroscience research, 96(7), 1277.

Luan X, et al. (2017) Lateral hypothalamic Orexin-A-ergic projections to the arcuate nucleus modulate gastric function in vivo. Journal of neurochemistry, 143(6), 697.

Johnson GA, et al. (2012) A multidimensional magnetic resonance histology atlas of the Wistar rat brain. NeuroImage, 62(3), 1848.