Resource Summary Report

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Zebrafinch Brain Architecture Project

RRID:SCR_004277
Type: Tool

Proper Citation

Zebrafinch Brain Architecture Project (RRID:SCR_004277)

Resource Information

URL: http://zebrafinch.brainarchitecture.org/

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Description: Atlas of high resolution Nissl stained digital images of the brain of the zebra finch, the mainstay of songbird research. The cytoarchitectural high resolution photographs and atlas presented here aim at facilitating electrode placement, connectional studies, and cytoarchitectonic analysis. This initial atlas is not in stereotaxic coordinate space. It is intended to complement the stereotaxic atlases of Akutegawa and Konishi, and that of Nixdorf and Bischof. (Akutagawa E. and Konishi M., stereotaxic atalas of the brain of zebra finch, unpublished. and Nixdorf-Bergweiler B. E. and Bischof H. J., A Stereotaxic Atlas of the Brain Of the Zebra Finch, Taeniopygia Guttata, http://www.ncbi.nlm.nih.gov.) The zebra finch has proven to be the most widely used model organism for the study of the neurological and behavioral development of birdsong. A unique strength of this research area is its integrative nature, encompassing field studies and ethologically grounded behavioral biology, as well as neurophysiological and molecular levels of analysis. The availability of dimensionally accurate and detailed atlases and photographs of the brain of male and female animals, as well as of the brain during development, can be expected to play an important role in this research program. Traditionally, atlases for the zebra finch brain have only been available in printed format, with the limitation of low image resolution of the cell stained sections. The advantages of a digital atlas over a traditional paper-based atlas are three-fold. * The digital atlas can be viewed at multiple resolutions. At low magnification, it provides an overview of brain sections and regions, while at higher magnification, it shows exquisite details of the cytoarchitectural structure. * It allows digital re-slicing of the brain. The original photographs of brain were taken in certain selected planes of section. However, the brains are seldom sliced in exactly the same plane in real experiments. Re-slicing provides a useful atlas in user-chosen planes, which are otherwise unavailable in the paper-based version. * It can be made available on the internet. High resolution histological datasets can be independently evaluated in light of new experimental anatomical, physiological and molecular studies.

Abbreviations: Zebrafinch Brain Architecture Project

Resource Type: atlas, data or information resource

Keywords: nissl stain, sagittal, horizontal plane, transverse plane, myelin stain, brain

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Alternate IDs: nlx_143663

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Ratings and Alerts

No rating or validation information has been found for Zebrafinch Brain Architecture Project.

No alerts have been found for Zebrafinch Brain Architecture Project.

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 ASWG .

Zhao C, et al. (2025) Head Color Morph- and Sex-Specific Differences in Follistatin Gene Expression in the Gouldian Finch Brain. The Journal of comparative neurology, 533(10), e70098.

Gedman G, et al. (2021) As above, so below: Whole transcriptome profiling demonstrates strong molecular similarities between avian dorsal and ventral pallial subdivisions. The Journal of comparative neurology, 529(12), 3222.

Mello CV, et al. (2019) Molecular architecture of the zebra finch arcopallium. The Journal of comparative neurology, 527(15), 2512.

Wild JM, et al. (2016) Second tectofugal pathway in a songbird (Taeniopygia guttata) revisited: Tectal and lateral pontine projections to the posterior thalamus, thence to the

intermediate nidopallium. The Journal of comparative neurology, 524(5), 963.

Karten HJ, et al. (2013) Digital atlas of the zebra finch (Taeniopygia guttata) brain: a high-resolution photo atlas. The Journal of comparative neurology, 521(16), 3702.