

Resource Summary Report

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FishFace - An atlas of zebrafish craniofacial development

RRID:SCR_008894

Type: Tool

Proper Citation

FishFace - An atlas of zebrafish craniofacial development (RRID:SCR_008894)

Resource Information

URL: <https://www.facebase.org/fishface/home>

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Description: ishFace is an atlas of zebrafish craniofacial development. How do the elements of the craniofacial skeleton arise, grow, and reshape? Answers to this question are coming from both molecular-genetic and cell-biological approaches, which rely, first of all, on precise description of the developmental events and processes that comprise skeletogenesis. Zebrafish, with a sophisticated knowledge of its genetics and genomics, with favorable attributes for phenotypic analyses of development, and with patterns of development conserved among all vertebrates, provides a powerful animal model for learning about craniofacial development. In particular, with current transgenic approaches one can examine craniofacial skeletal elements in exquisite cellular detail during an extended period of development within living, intact embryos and larvae an investigative method unsurpassed in accuracy and sensitivity. We constructed this developmental atlas of the craniofacial skeleton, FishFace, to serve as a guide for such study. We hope that the FishFace Atlas will be particularly useful in comparative and mutational analyses where there is interest in understanding the cellular basis of early skeletogenesis. The heart of the FishFace Atlas uses high magnification (generally a 40x objective) confocal image stacks showing transgenically-labelled chondrocytes or osteoblasts, along with mineralized bone matrix, which is visualized by vital staining with Alizarin red. We present these stacks in sequences that follow particular individual cartilages and bones of the first two pharyngeal arches as they develop during embryonic and larval stages. To do so, we build on the foundation set out in the gold standard reference for describing comprehensively skeletal elements in the zebrafish craniofacial complex, Cubbage and Mabee (1996), which used fixed preparations stained for cartilage and bone through adult stages. The FishFace Atlas element development section adds considerable detail to arch one and two early development, particularly at the cellular level, but also in description of element growth and shaping. Other sections of the FishFace Atlas, at lower magnification,

provide anatomical context for the element development section, including an interactive tool made by optical projection tomography (OPT) for learning the anatomy of the entire larval skull. Hence, the FishFace Atlas provides the community with an interactive resource with which the user can understand not only the cellular details, but also complex 3D anatomical relationships, of developing elements in the craniofacial skeleton of the zebrafish.

Abbreviations: FishFace

Synonyms: FishFace: An Atlas of zebrafish craniofacial development, FishFace Atlas

Resource Type: atlas, data or information resource, reference atlas

Keywords: craniofacial development

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Ratings and Alerts

No rating or validation information has been found for FishFace - An atlas of zebrafish craniofacial development.

No alerts have been found for FishFace - An atlas of zebrafish craniofacial development.

Data and Source Information

Source: [SciCrunch Registry](#)

Usage and Citation Metrics

We found 4 mentions in open access literature.

Listed below are recent publications. The full list is available at [PRECISE-TBI](#) .

Clarkson MD, et al. (2016) Representation of anatomy in online atlases and databases: a survey and collection of patterns for interface design. BMC developmental biology, 16(1),

18.

Eames BF, et al. (2013) FishFace: interactive atlas of zebrafish craniofacial development at cellular resolution. *BMC developmental biology*, 13, 23.

Miyake A, et al. (2013) Fgf22 regulated by Fgf3/Fgf8 signaling is required for zebrafish midbrain development. *Biology open*, 2(5), 515.

Yamauchi H, et al. (2006) Fgf21 is essential for haematopoiesis in zebrafish. *EMBO reports*, 7(6), 649.