

Module 4: Function and Expression

iii. How can I find possible molecular markers for an anatomical structure?

Aims


- Describe the ZFIN gene expression search form
- Suggest ways to customize a search for molecular markers for an anatomical structure

Introduction

The zebrafish anatomical dictionary, <http://zfin.org/cgi-bin/webdriver?Mlval=aa-anatdict.apg&mode=search>, plays a central role in our curation of gene expression data. Associating anatomical structure with gene expression patterns supports queries that can locate possible molecular markers for specific anatomical structures.

Finding a possible molecular marker

ZFIN integrates a large number of expression patterns from large scale *in situ* screens. These data provide the best source for molecular markers for anatomical structures. In many cases high quality probes have been identified and are listed on the representative anatomy page. This is a good place to begin.

 **ZFIN**

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Search by anatomical structure(s)
A word completion feature will provide you with a list of structures matching what you have entered. Select the desired structure from the list.

Specify the anatomical structure of interest in the **Anatomy Term** box. A word completion feature will provide you with a list of structures matching your input text as you type. Select the desired structure from the list.

A search for **floor plate diencephalon** lead you to the following anatomy page.



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ZFIN ID: ZDB-ANAT-020309-24

Your Input Welcome

Name: *floor plate diencephalon*

Synonyms: floorplate diencephalon

Appears at	Evident until
Segmentation:10-13 somites (14.00h-16.00h)	Juvenile:Days 45-89 (45d-90d, 14 mm, 12 teeth)

Relationships

Contained by: diencephalon	
Contains:	

High Quality Probes: ([Thisse et al., 2001](#))

[fgf8 \[cb110\]](#)

All Expressed Genes

[atp1b2a](#) [fgf8](#) [pitx2a](#) [rap1b](#) [rfx2](#) [sb:cb101](#) [shha](#) [tuba1](#)

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In this case, a high quality probe, cb110, has been identified by Thisse et al.. This does not mean that this is the best probe for the structure merely that it is a good probe that possibly can be used as a marker for the structure. High quality probes are not yet identified for all structures. In those cases, you may follow the All Expressed Genes links to look for a clone that will meet your needs. Large scale in situ screens offer the best opportunity for identifying a probe. In all cases, check the images available on ZFIN before using the probe to ensure that it will meet your needs.

Exercises

- Find a possible molecular marker for a structure of interest.