

Viewing HDBR gene expression data in the Image Data Resource

There are four HDBR datasets in the IDR:

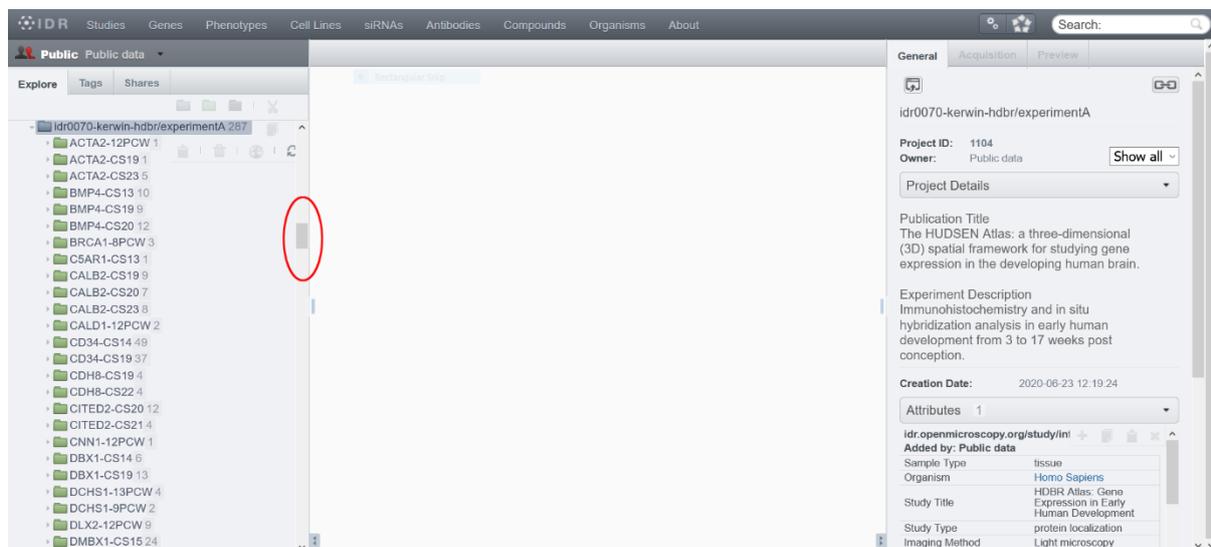
<https://idr.openmicroscopy.org/webclient/?show=project-1104>

<https://idr.openmicroscopy.org/webclient/?show=project-2151>

<https://idr.openmicroscopy.org/webclient/?show=project-2851>

<https://idr.openmicroscopy.org/webclient/?show=project-3159>

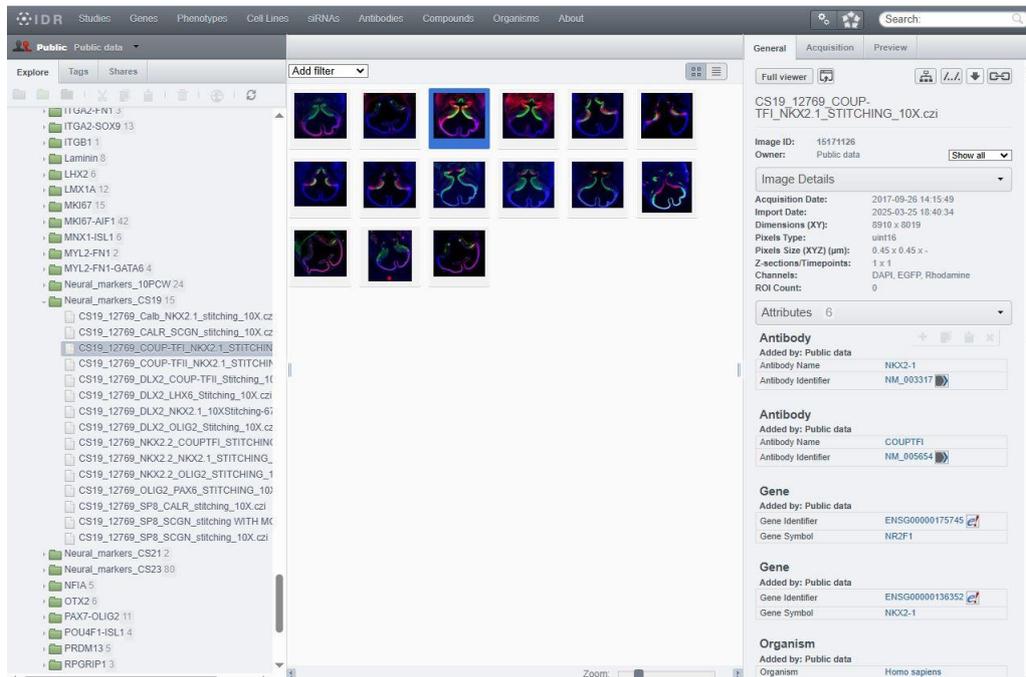
Scroll down the scroll bar on the left-hand side to view the folders. These are usually arranged by gene and stage, or the type of data e.g. Neural markers:



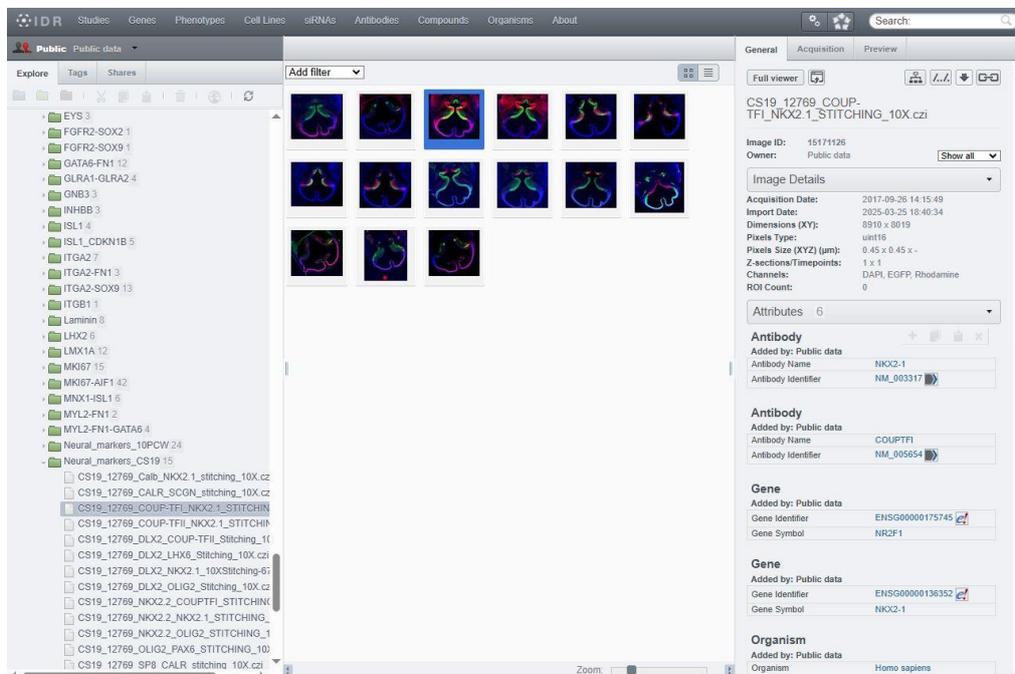
The screenshot shows the IDR web interface. On the left, there is a 'Public data' section with an 'Explore' tab. A tree view shows a folder named 'idr0070-kerwin-hdbr/experimentA 287' expanded, revealing a list of sub-folders such as 'ACTA2-12PCW 1', 'ACTA2-CS19 1', 'ACTA2-CS23 5', 'BMP4-CS13 10', 'BMP4-CS19 9', 'BMP4-CS20 12', 'BRCA1-8PCW 3', 'C5AR1-CS13 1', 'CALB2-CS19 9', 'CALB2-CS20 7', 'CALB2-CS23 8', 'CALD1-12PCW 2', 'CD34-CS14 49', 'CD34-CS19 37', 'CDH8-CS19 4', 'CDH8-CS22 4', 'CITED2-CS20 12', 'CITED2-CS21 4', 'CNN1-12PCW 1', 'DBX1-CS14 6', 'DBX1-CS19 13', 'DCHS1-13PCW 4', 'DCHS1-9PCW 2', 'DLX2-12PCW 9', and 'DMBX1-CS15 24'. A red circle highlights the vertical scroll bar on the right side of this folder tree. On the right side of the interface, the 'General' tab is active, displaying project details for 'idr0070-kerwin-hdbr/experimentA'. The details include Project ID: 1104, Owner: Public data, and a description: 'The HUDSEN Atlas: a three-dimensional (3D) spatial framework for studying gene expression in the developing human brain.' Below this, there is an 'Attributes' section with a table listing various metadata fields.

Attributes	
Sample Type	tissue
Organism	Homo Sapiens
Study Title	HDBR Atlas: Gene Expression in Early Human Development
Study Type	protein localization
Imaging Method	Light microscopy

Clicking on one of the folders shows the image thumbnails in the main window:

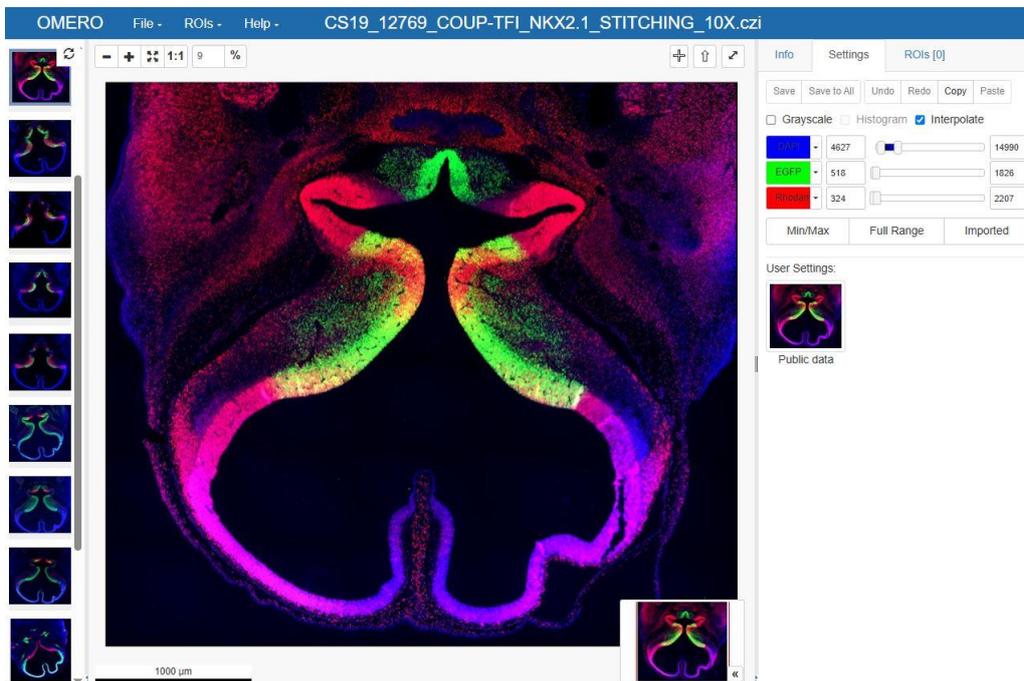


Select a thumbnail by clicking the image:

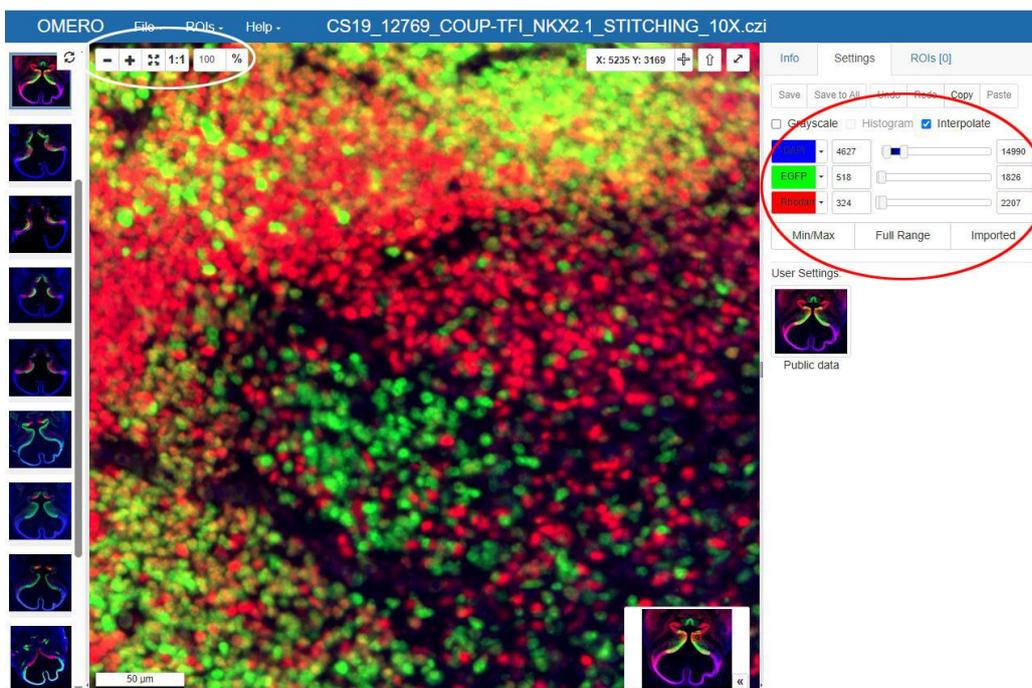


Scroll on the right hand side to view the gene and antibody/probe details for each section.

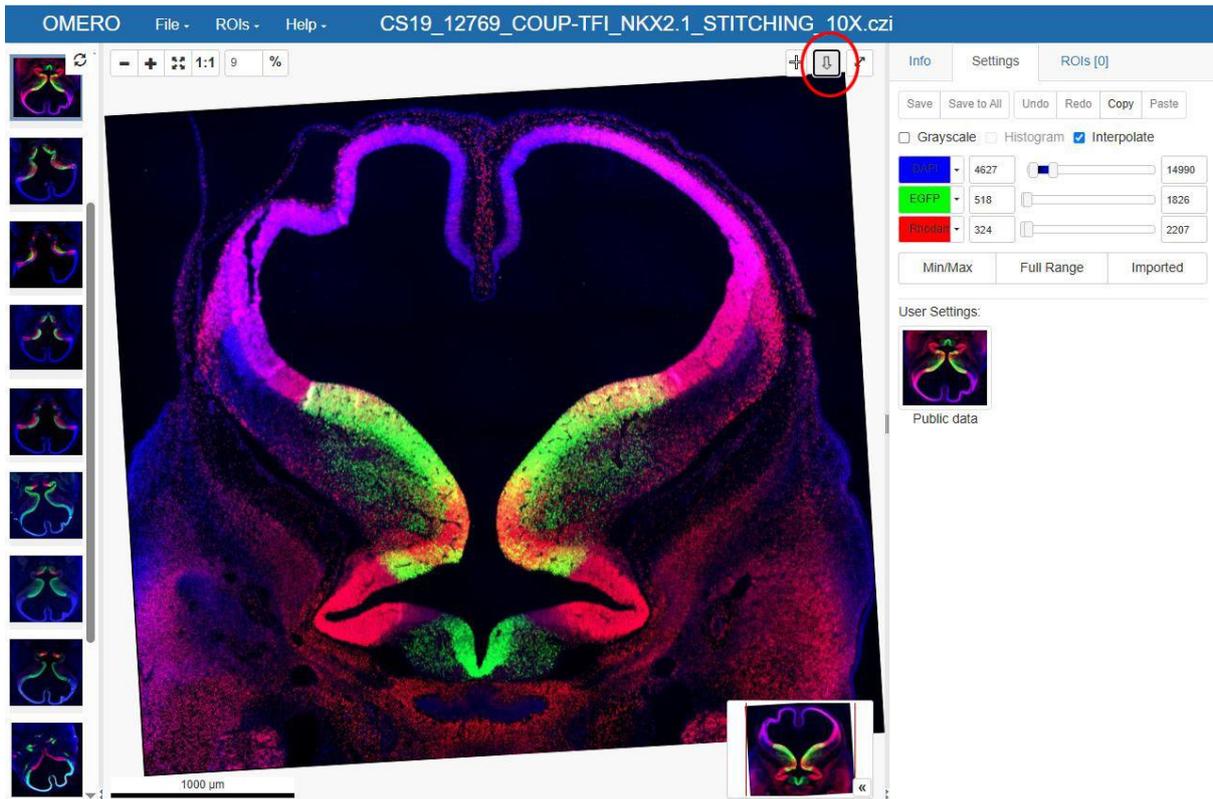
Double clicking on a thumbnail image will open the OMERO viewer in a new window:



Using the 1:1 button in the top left-hand corner the image can be viewed at its original resolution. Clicking the button with 4 arrows will reset the view.



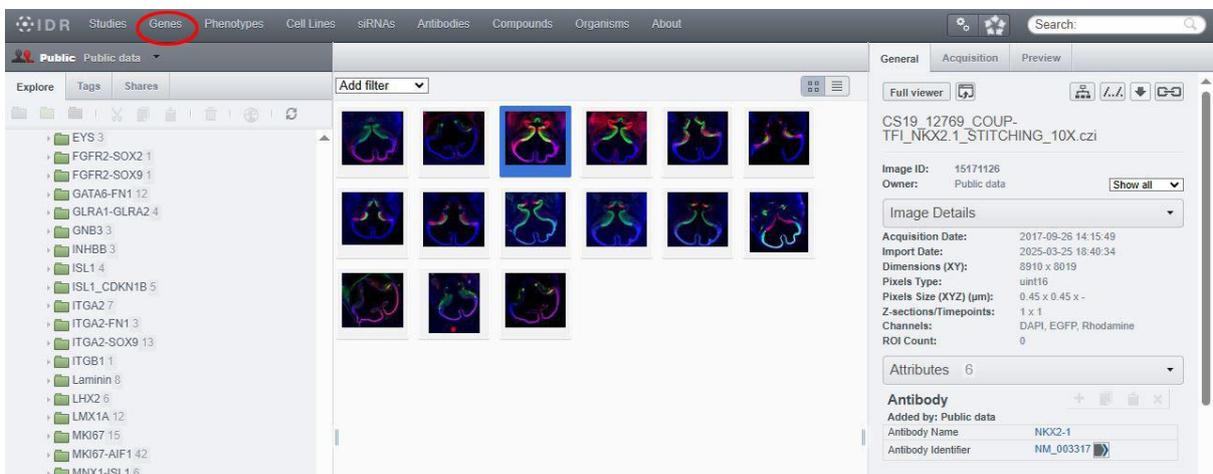
For fluorescent images with more than one channel, the tools on the right-hand side can be used to manipulate the image.



To rotate the image- hold down shift and drag the image with the mouse. The arrow button in the top right corner will reset the rotation.

To search for a gene:

Click the **Genes** tab at the top of the window:



Type the name of the gene

The screenshot shows the IDR search interface. The search criteria are: Attribute: Gene Symbol, Operator: contains, Value: pax6. A dropdown menu is open, showing suggestions such as 'Gene Symbol equals pax6 (2260 images)', 'Antibody Name equals pax6 (907 images)', and 'HGNC Gene Symbol equals pax6 (9 images)'. The 'Gene Symbol equals pax6' option is highlighted in blue. The background shows logos for OME, EURO-BIOIMAGING, and GLOBAL BIOIMAGING, along with copyright information for the University of Dundee & Open Microscopy Environment.

Choosing the Gene Symbol option shows all the experiments containing e.g.PAX6:

The screenshot shows the search results for 'pax6'. The search criteria are: Attribute: Gene Symbol, Operator: equals, Value: pax6. The results show 2260 images found in 10 experiments/screens. A table lists the results with columns for ID, Images, and Publication Title. The first five rows are highlighted with red boxes.

ID	Images	Publication Title
idr0043A	1027	Proteomics. Tissue-based map of the human proteome.
idr0070A	760	The HUDSEN Atlas: a three-dimensional (3D) spatial framework for studying gene ...
idr0022A	288	Uncovering the signaling landscape controlling breast cancer cell migration identi...
idr0114A	136	Enabling research with human embryonic and fetal tissue resources
idr0009A	14	Genome-wide RNAi screening identifies human proteins with a regulatory functio...
idr0164A	13	Tyramide signal amplification coupled with multiple immunolabeling and RNASco...
idr0013A	9	Phenotypic profiling of the human genome by time-lapse microscopy reveals cell ...
idr0093A	9	High content genome-wide siRNA screen to investigate the coordination of cell siz...
idr0010A	2	RNF168 binds and amplifies ubiquitin conjugates on damaged chromosomes to a...
idr0012A	2	Clustering phenotype populations by genome-wide RNAi and multiparametric im...

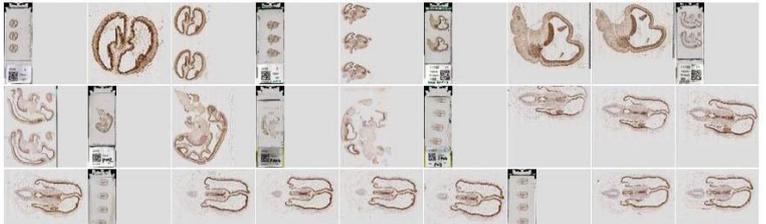
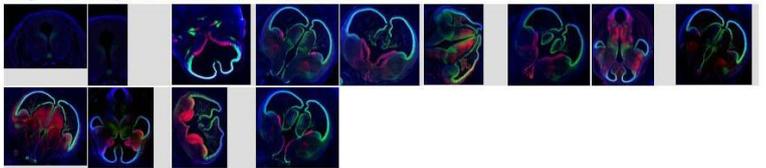
Expanding the highlighted images will show the HDBR datasets:

 CELL - IDR TISSUE - IDR
ABOUT ▾ RESOURCES ▾ SUBMISSIONS ▾

◀ Home

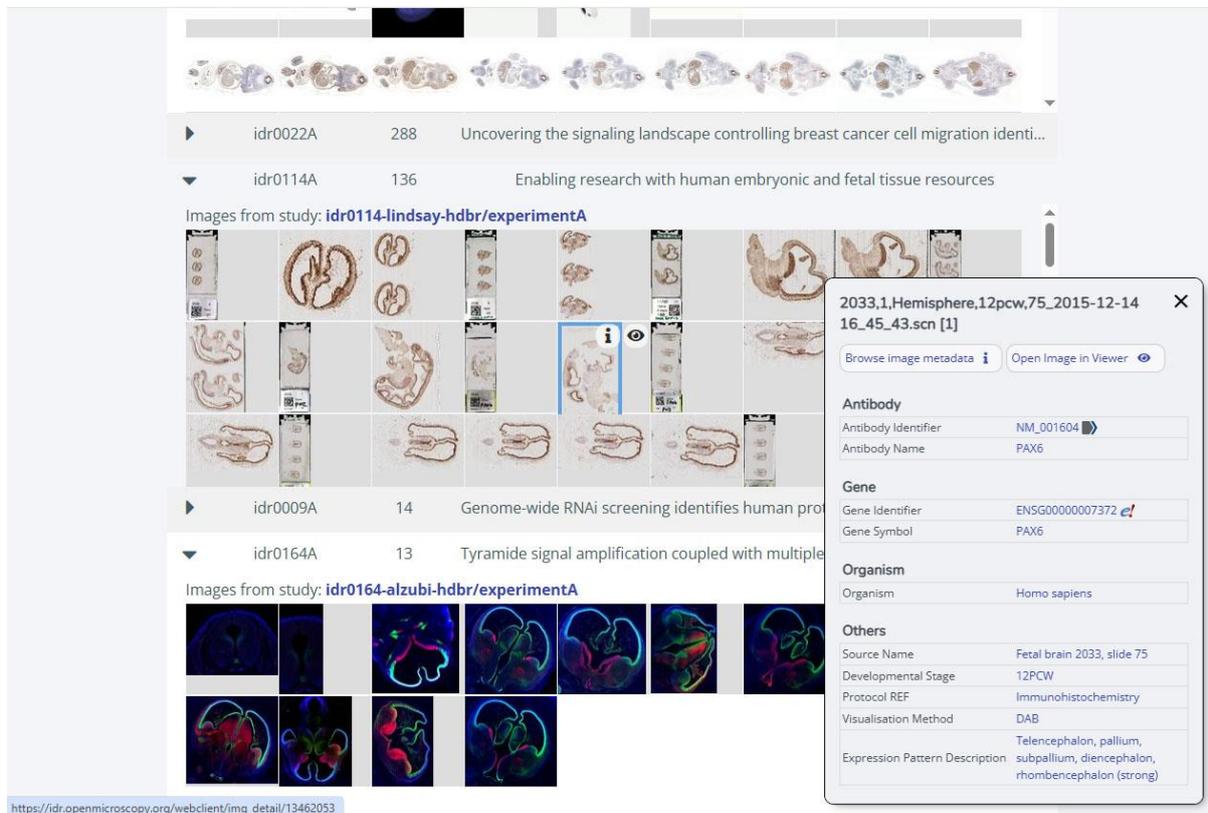
Attribute	Operator	Value
Gene Symbol ▾	equals ▾	pax6

Search **Gene Symbol** equals **pax6** found **2260** images in **10** experiments/screens

ID	Images	Publication Title
▶ idr0043A	1027	Proteomics. Tissue-based map of the human proteome.
▼ idr0070A	760	The HUDSEN Atlas: a three-dimensional (3D) spatial framework for studying gene ... Images from study: idr0070-kerwin-hdbr/experimentA
		
▶ idr0022A	288	Uncovering the signaling landscape controlling breast cancer cell migration identi...
▼ idr0114A	136	Enabling research with human embryonic and fetal tissue resources Images from study: idr0114-lindsay-hdbr/experimentA
		
▶ idr0009A	14	Genome-wide RNAi screening identifies human proteins with a regulatory functio...
▼ idr0164A	13	Tyramide signal amplification coupled with multiple immunolabeling and RNASco... Images from study: idr0164-alzubi-hdbr/experimentA
		
▶ idr0013A	9	Phenotypic profiling of the human genome by time-lapse microscopy reveals cell ...
▶ idr0093A	9	High content genome-wide siRNA screen to investigate the coordination of cell siz...
▶ idr0010A	2	RNF168 binds and amplifies ubiquitin conjugates on damaged chromosomes to a...
▶ idr0012A	2	Clustering phenotype populations by genome-wide RNAi and multiparametric im...



Clicking on a thumbnail will allow you to view the image in the main browser:



The screenshot displays the IDR Open Microscopy web client interface. It features a grid of image thumbnails representing various studies. A popup window is open over one of the thumbnails, displaying detailed metadata for the image.

2033,1,Hemisphere,12pcw,75_2015-12-14 16_45_43.scn [1]

[Browse image metadata](#) [Open Image in Viewer](#)

Antibody

Antibody Identifier	NM_001604
Antibody Name	PAX6

Gene

Gene Identifier	ENSG00000007372 <i>e!</i>
Gene Symbol	PAX6

Organism

Organism	Homo sapiens
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Others

Source Name	Fetal brain 2033, slide 75
Developmental Stage	12PCW
Protocol REF	Immunohistochemistry
Visualisation Method	DAB
Expression Pattern Description	Telencephalon, pallium, subpallium, diencephalon, rhombencephalon (strong)

https://idr.openmicroscopy.org/webclient/img_detail/13462053

For any further information, or to give feedback, please contact hdbr@newcastle.ac.uk