querying the database

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_search by gene name_

enter a gene name and select one/all species of interest for a search by gene name

or select one/all species for an advanced search

list of recently added species

click on the thumbnail to view the basic species information

click the gene name to view the gene expression pattern

click the species name to view the species information

click the author name to view the authors profile

list of labs that have recently joined and contributed to the database (you have to belong to a lab to add genes/experiments)

database information about the number of species, genes, experiments and images added to the database

use the buttons in the tool section to add a new gene

add a new species

click on the arrows to get a complete list of species from which gene expression data are available

click on the arrows to get a complete list (in alphabetic order) of all genes from which gene expression data are available

click the icons to:

_add an experiment
_edit the gene
_delete the gene
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Advanced search

**All species**

- list of simplified developmental stages and gene expression domains optimized for inter-species comparison.

- check the boxes corresponding to the developmental stages and/or expression domains of interest. Click the SEARCH button to view the query results in all species or in one given species.

**Selected species**

- list of all developmental stages and gene expression domains optimized for the given species.
list of recent added genes for the given species. click the arrows on the right to get a complete list [alphabetic order]. check the boxes of several or all genes to compare their expression pattern. click on the gene name to view the single gene expression pattern.
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_query result (search by gene name) part I_

- Overview of available pictures representing the gene expression pattern (wild-type or treatment). Pictures with blue arrows underneath indicate a stack of pictures. Click on the arrows to get the next view. Click on the image itself to get a bigger view and more details.

- Grid-view of gene expression for one given gene. The rows (left) represent the developmental stages, the columns (upper part) the defined expression domains. Color code as indicated in legend. Mouse over the colored box shows the expression information and clicking on the colored box leads to the corresponding images.

- List of experiments added for the gene in the given species (the default view is the wild type expression). Click on the “Experiment” bar to view all available experiments.

- Toolbox, to add experiments, edit the given gene, add a new gene, and request the implementation of a new species (depending on required privileges).
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**Query Result** (search by gene name) part II

### Genes with a Similar Expression Pattern

<table>
<thead>
<tr>
<th>Gene</th>
<th>Species</th>
<th>Score</th>
<th>Added by</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mos1</td>
<td>Hermetia rollestoni</td>
<td>0.10</td>
<td>Kevin Pang on 22 Aug 2008</td>
</tr>
<tr>
<td>Act1</td>
<td>Hermetia rollestoni</td>
<td>0.10</td>
<td>Kevin Pang on 22 Aug 2008</td>
</tr>
<tr>
<td>Nvi0055</td>
<td>Hermetia rollestoni</td>
<td>0.10</td>
<td>Kevin Pang on 22 Aug 2008</td>
</tr>
<tr>
<td>Gtx</td>
<td>Hermetia rollestoni</td>
<td>0.10</td>
<td>Kevin Pang on 22 Aug 2008</td>
</tr>
<tr>
<td>Wnt16</td>
<td>Hermetia rollestoni</td>
<td>0.10</td>
<td>Kevin Pang on 22 Aug 2008</td>
</tr>
<tr>
<td>Arhox8b</td>
<td>Hermetia rollestoni</td>
<td>0.10</td>
<td>Kevin Pang on 22 Aug 2008</td>
</tr>
<tr>
<td>Arhox8a</td>
<td>Hermetia rollestoni</td>
<td>0.10</td>
<td>Kevin Pang on 22 Aug 2008</td>
</tr>
<tr>
<td>Rax</td>
<td>Hermetia rollestoni</td>
<td>0.10</td>
<td>Kevin Pang on 22 Aug 2008</td>
</tr>
<tr>
<td>Mix</td>
<td>Hermetia rollestoni</td>
<td>0.10</td>
<td>Kevin Pang on 22 Aug 2008</td>
</tr>
<tr>
<td>Mux2</td>
<td>Hermetia rollestoni</td>
<td>0.10</td>
<td>Kevin Pang on 22 Aug 2008</td>
</tr>
<tr>
<td>Wnt3</td>
<td>Hermetia rollestoni</td>
<td>0.10</td>
<td>Kevin Pang on 22 Aug 2008</td>
</tr>
<tr>
<td>Hedgehog</td>
<td>Hermetia rollestoni</td>
<td>0.10</td>
<td>Kevin Pang on 22 Aug 2008</td>
</tr>
<tr>
<td>Gp1</td>
<td>Hermetia rollestoni</td>
<td>0.10</td>
<td>Kevin Pang on 22 Aug 2008</td>
</tr>
</tbody>
</table>

*Check the boxes of several or all genes to compare their expression pattern. Click on the gene name to view the single gene expression pattern.*

### Gene Ontology, Pathways & Orthologs

- No protein ID has been added for this gene so we are unable to check our GO dataset.
- No protein ID has been added for this gene so we are unable to check our KOG (euKaryotic Orthologous Groups) dataset.
- No protein ID has been added for this gene so we are unable to check our EC dataset.

### Comments

- No comments have been added yet!

*Field to leave a comment* (wouah! what a beautiful expression pattern for example!) visible to all users.

List of genes with a similar expression pattern, automatically created based on the information provided by the users while adding gene expression data to the database. The lower the value the lower the similarity!
overview of all available information concerning the given gene expression image.

you are able to visualize and even download a high resolution image for your personal use. please contact the person who uploaded the image to the database and credit the person accordingly if you wish to use the image for presentation/publication. these images are not for commercial use in any case!
_how to enter data to the database - overview -

In order to be able to add data to the database/website and for security reason you have to be a registered member!!!

_adding a new species

if you wish to add a new species to the database, please use the "species request form", follow the instruction by providing as much details as needed, and we will add the new species to the database as soon as possible.

_adding a new gene

to add a new gene to the database, please use the "new gene" feature in the toolbox and follow the instructions. for a good performance of the database, please use the general gene name, no abbreviations and add synonyms if available.

_adding a new experiment

to add a new experiment (wild-type, drug treatment, injection etc...) associated to a given gene please select the "add experiment" feature in the gene specific toolbox and follow the instructions. after adding a new experiment you can decide to "publish" it allowing all KahiKai members to see the experiment or maintaining it unpublished. in the latter case, the experiment will only be visible by the members of your lab. in addition you can create a group, invite people outside your lab to that group and share experiments with them.

_editing genes or experiments

if you are the person who added the gene/experiment to the database, you have the authorization to edit them at any time. if you wish to edit gene/experiment information not added by you, please contact the submitting person. in case there are other problems please contact us and we will try to resolve them as soon as possible.
In order to get a homogenous and easy to use gene expression database, please use the following guidelines to add new gene expression patterns.

1. For optimal performance of the database and to get most out of it, please provide as much information as possible.

2. Please cite correctly the original work and where the uploaded experiments are coming from.

3. If possible, the picture you upload should be square (and cropped to have as little empty space as possible) and be not bigger than 3000x3000px or 4mb. The picture can be in tiff or jpg.

4. Please orient the pictures always the same within a species. If possible and depending on the stages the animal pole and the dorsal side should be up, the vegetal pole and the ventral side should be down. The anterior and the oral side to the left and the posterior and aboral side to the right. Of course, these guidelines may vary depending on the view provided.
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adding a new species

if you wish to add a new species to the database, please provide as much details as possible using the "add species" form.

1. enter general and genomic information if available for the given species.

2. provide a high quality picture representing the new species

3. provide a detailed list of developmental stages (modifications need to be done by us!)

4. provide a detailed list of expression domains (modifications need to be done by us!)

5. if available please provide a general reference about the species
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adding a new gene

if you wish to add a new gene to the database, please provide as much details as possible.

1. please enter a general gene name and its synonyms if available and select the species for which you wish to add the gene.

2. if available please provide the reference(s) in which the gene expression is discussed
if you wish to add a new experiment to the database, please provide as much details as possible.

1. enter general information about the experiment.
2. you have to specify in which lab this experiment was performed. to add your labs to the list below, you first have to check if your lab exists in our community. you can do that by searching on the community page, and if it already exist you can send an application to join (this is a necessary security measure since all lab-members of a lab can see unpublished data). if the lab does not exist you can create a new labgroup in your settings. you can't add your experiment unless a lab is specified!
3. please provide experimental details
4. upload information (pubmed ID) for publications, if available

you can add gene RNA in situ or Immunohistochemistry experiments

you can add gene expression patterns performed on microinjected, drug treated embryos etc... the only thing you have to specify first is a wild type gene expression pattern!
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_adding a new experiment II - image upload_

for the image upload please follow the guidelines described above. you can upload several pictures at a time and assign the developmental stage and view in the next step.

1. after the picture upload, all new images will appear above the gene expression pattern ready to be assigned to a given developmental stage.

2. by clicking on the selected picture, a popup window will appear allowing you to enter information about the stage and the view. you can also delete the image.

3. after saving you information, the picture will appear in the gene expression pattern at the defined position.

4. to edit please click on the picture and the pop-up window will appear allowing you to modify your entries.
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Adding a new experiment III - expression information -

The last step to add a new experiment is to provide accurate gene expression information. This information is highly important for the functioning of various features of the database (e.g., query by expression domain, automatic search for synexpression groups, etc...)

1. By clicking on the stage next to the red (new entry) or green square (edit), a detailed list of gene expression domains will appear. Please select the corresponding information and save your entry.

2. Now the red square should be turned into green. You’re done!

**Green** squares indicate stage for which expression information is available.
**Red** squares indicate the absence of information.
**Black** squares indicate no expression for that stage.
**White** squares indicate no data/image for that stage.
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adding a new experiment IV -publishing or sharing the data-

at this point you can decide if you wish to “publish” your experiment (to allow all the KahiKai members to appreciate your work) or to keep it “unpublished”.
in the latter case only you, the lab members, and the website administrators are able to see your data.
in order to promote interactions and communication we added a feature allowing you to invite members (not belonging to your lab) to share selected expression pattern experiments. to do so you have to create a group (in your settings), define it as a lab-project and then invite all the persons you wish to join this group. all non-published experiments (and of course published patterns) associated to that lab-project group will be visible to the group members.

1. select your experiment

2. select the lab-project you wish to add the experiment to.
(you have to create a lab-project in your settings first!)
we hope that you will enjoy using the database!

if you have any suggestions about how we can improve this gene expression database or if you have any concerns regarding this project, please feel free to contact us any time.

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