

# **Xeno-miRNet tutorial**

## **Input processing**

# Computer and Browser Requirements

- **A modern web browser with Java Script enabled Chrome, Safari, Firefox, and Internet Explorer 9+**
- **For best performance and visualization, use:**
  - Latest Google Chrome
  - At least 4GB of physical RAM
  - A 15-inch screen or bigger

# Goal for this tutorial

## ➤ Upload different data types to Xeno-miRNet

1) Search: upload a list of xeno-miRNAs or genes

2) Browse: explorer Xeno-miRNet by interested hosts  
and xeno-species

# Upload a list of miRNAs or genes

Xeno-miRNet

Home About Tutorials Resources FAQs

A comprehensive database and analytical platform to explore  
Xeno-miRNAs & their potential targets

BROWSE SEARCH

Click "Search" to start when you have a list of interested miRNAs or genes

## Comprehensive Library

### Host organisms

Currently supports six hosts with xeno-miRNAs reported from over 50 species.

### Xeno-miRNAs

Over 400 experimentally detected xeno-miRNAs supplemented with 1000 computational predicted transportable miRNAs miRNA targets are predicted based on two algorithms - miRanda and TarPmiR.

## Analytical Features

### Flexible search and result creation

Intuitive interface for query the database. Multiple filtering options to customize the result table.

### Network visual exploration

Users can zoom, highlight, point-and-click, drag-and-drop, etc. Supporting enrichment analysis against KEGG, Reactome, GO, etc.

## News & Updates

- Update browse view to provide a better guidance (03/27/2018)
- Updated tutorials and code refactoring to improve performance (11/28/2017)
- Organized species to hierarchical structures for browsing (11/25/2017)
- Updated tutorials and enabled data download (11/08/2017)
- Updated homepage and FAQs (10/27/2017)
- Added support for gene enrichment analysis (10/20/2017)

# Upload a list of miRNA

Search view

Select a host: H. sapiens (human)

ID type: miRBase ID

Enter your data

You can enter *xeno-miRNAs* to see if they target any host genes; Or enter *host genes* to see if they are targeted by any *xeno-miRNAs*.

Include predicted xeno-miRNAs  (see details from Shu et al)

Submit

Proceed

Available host: human, mouse, pig, chicken, fruit fly, and *C. elegans*

miRNA is annotated based on current miRBase. miRNA ID is like *sja-miR-125b* and miRNA accession is like MIMAT000021.

Predicted miRNAs come from Shu *et al* study. Including them may return a large data result.

Click go to next page

# Upload a list of gene

Search view

Select a host

M. musculus (mouse)

ID type

Official gene symbol

Enter your data

You can enter *xeno-miRNAs* to see if they target any host genes; Or enter *host genes* to see if they are targeted by any *xeno-miRNAs*.

B4galt2  
Acox3  
Emp2  
Gtpbp2  
Duox1

Include predicted xeno-miRNAs  (see details from Shu et al)

Submit

Proceed

Available host: human, mouse, pig, chicken, fruit fly, and *C. elegans*

Gene ID type: NCBI entrez ID, ensembl ID and official gene symbol

Predicted miRNAs come from Shu *et al* study. Including them may return a large data result.

Click go to next page

# Explorer Xeno-miRNet database

Xeno-miRNet

Home About Tutorials Resources FAQs

A comprehensive database and analytical platform to explore Xeno-miRNAs & their potential targets

Click "Browse" to explore the data library by interested hosts and sources

BROWSE SEARCH

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# Browse page navigation

🏠 ▶ Browse view

Choose a detected xeno-species. So far 54 species in total.

1. Select a host	2. Select a miRNA source <small>(i.e. tissue, cell line, ELV: exosome-liked vesicle)</small>	3. Select a known xeno-species
<p>Human</p> <p>Mouse</p> <p>Pig</p> <p>Chicken</p> <p>Fruit fly</p> <p>C. elegans</p>	<p>adult-ELV</p> <p>blood_leukemia</p> <p>blood_normal</p> <p>bone</p> <p>brain</p> <p>breast</p> <p>cervix_hela</p> <p>cervix_normal</p> <p>cervix_tumor</p> <p>colon</p> <p>egg-ELV</p> <p>ELV</p> <p>embryonic_stem_cell</p>	<p>A. lyrata</p> <p>A. suum (roundworm)</p> <p>A. thaliana</p> <p>B. distachyon (stiff brome)</p> <p>B. taurus (cow)</p> <p>C. papaya (papaya)</p> <p>C. quinquefasciatus (mosquito)</p> <p>C. sinensis (sweet orange)</p> <p>Epstein Barr virus</p> <p>G. max (soybean)</p> <p>G. soja (wild soybean)</p> <p>Kaposi sarcoma-associated herpesvirus</p> <p>L. gigantea (owl limpet)</p> <p><input type="checkbox"/> Include predicted xeno-miRNAs <small>(see details from Shu et al)</small></p>

Choose one tissue type or cell line. So far we support 18 sources.

Submit

⏪ Back to default

➡ Proceed

Click go to next page



==END==