

≡

User starts on near-empty page;
uploads file

Biosphere Knowledge graph annotation

Upload a file

A csv file that contains genes and their attributes

Drag and drop file here

Limit 200MB per file • CSV

[Browse files](#)

Visualization

Volcano Plot

Knowledge graph prediction

Reactome enrichment analysis

X

≡

Biosphere Knowledge graph annotation

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 test.csv
11.9KB

X

The column of gene names

Gene

Visualization

- Volcano Plot
- Knowledge graph prediction
- Reactome enrichment analysis

User selects column that corresponds
to gene names



Biosphere Knowledge graph annotation

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The column of gene names

Gene

Visualization

Volcano Plot

Knowledge graph prediction

Reactome enrichment analysis

Volcano plot

Please choose the right columns

On selecting Volcano Plot, this appears; this section applies ONLY to the user input file

User must select both volcano plot and knowledge graph prediction to enable full functionality of first visualization

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The column of gene names

Gene

Visualization

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Volcano plot

X-axis (Fold change)

None

Y-axis (P-value)

None

Color of genes (if any)

None

Please choose the right columns

User selects which columns represent Fold Change and p-value; can also include optional third column

Data from user input file

Biosphere Knowledge graph annotation

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Volcano plot

X-axis (Fold change)

T-Statistic

Y-axis (P-value)

P-Value

Color of genes (if any)

WNT pathway-KEGG

Prediction options

Choose a layer of interest

biological_process

Type a term of interest

Loading...

On selecting fold change and p-value columns above, Prediction Options section appears

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Volcano plot

X-axis (Fold change)

T-Statistic

Y-axis (P-value)

P-Value

Color of genes (if any)

WNT pathway-KEGG

Prediction options

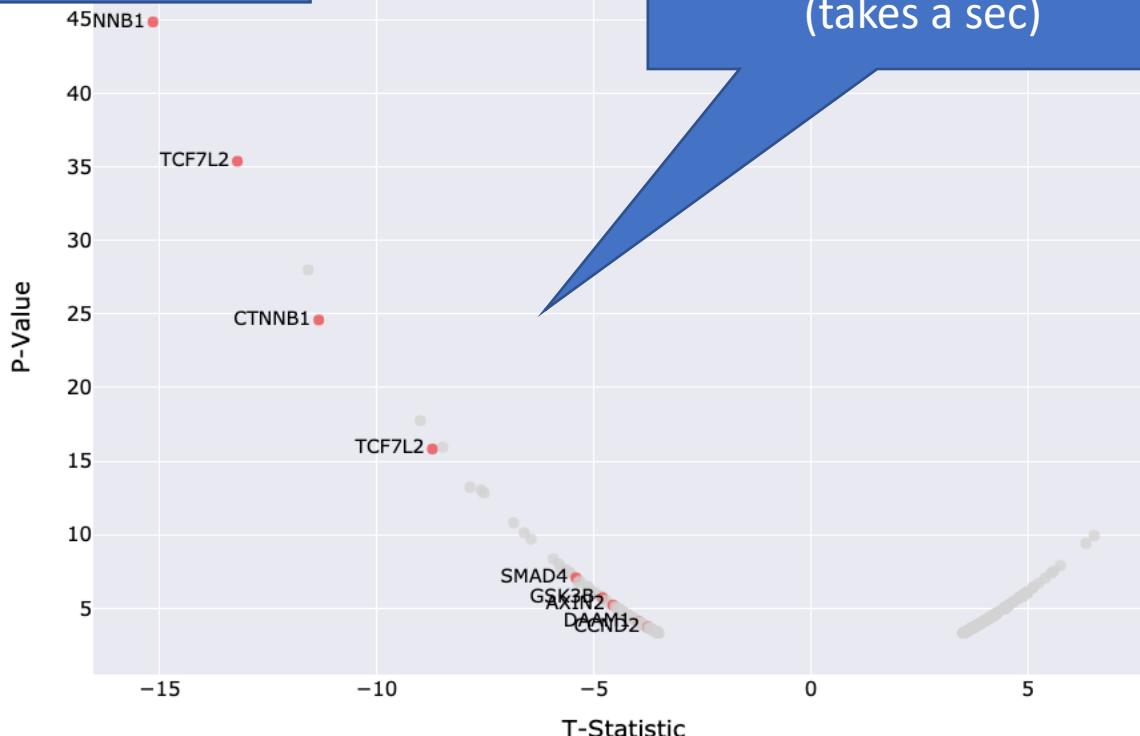
Choose a layer of interest

biological_process

Type a term of interest

This mapping corresponds to “Color of genes (if any)” column from uploaded document

Baseline
WNT pathway-KEGG



This image also loads after t-statistic and p-value columns selected (takes a sec)

NOTE: Columns/data from data model
(not user input)

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Volcano plot

X-axis (Fold change)

T-Statistic

Y-axis (P-value)

P-Value

Color of genes (if any)

WNT pathway-KEGG

Prediction options

Choose a layer of interest

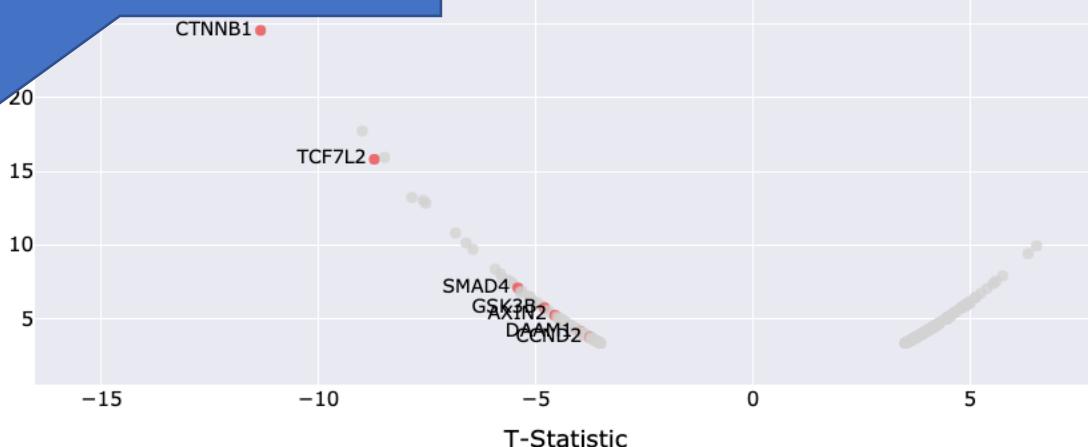
biological_process

Type a term of interest

wnt

Press Enter to apply

Type in terms of interest
to search on



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Volcano plot

X-axis (Fold change)

T-Statistic

Y-axis (P-value)

P-Value

Color of genes (if any)

WNT pathway-KEGG

Prediction options

Choose a layer of interest

biological_process

Type a term of interest

wnt

Select related term(s) of interest

Choose an option

Please choose a term!

Not sure why this part disappeared now!

Drop down populated with terms that match term of interest searched above (in this case, 'wnt')

There may be a way to make this more efficient

Biosphere Knowledge graph annotation

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Gene

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Volcano plot

X-axis (Fold change)

T-Statistic

Y-axis (P-value)

P-Value

Color of genes (if any)

negative regulation of canonical Wnt signaling pathway involved in osteo...

cell-cell signaling by wnt

positive regulation of Wnt-mediated midbrain dopaminergic neuron differ...

negative regulation of canonical Wnt signaling pathway

negative regulation of Wnt signaling pathway involved in heart developm...

negative regulation of Wnt signaling pathway

Wnt signaling pathway

Wnt signaling pathway assembly

Please choose a term!

Select as many as desired

Biosphere Knowledge graph annotation

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The column of gene names

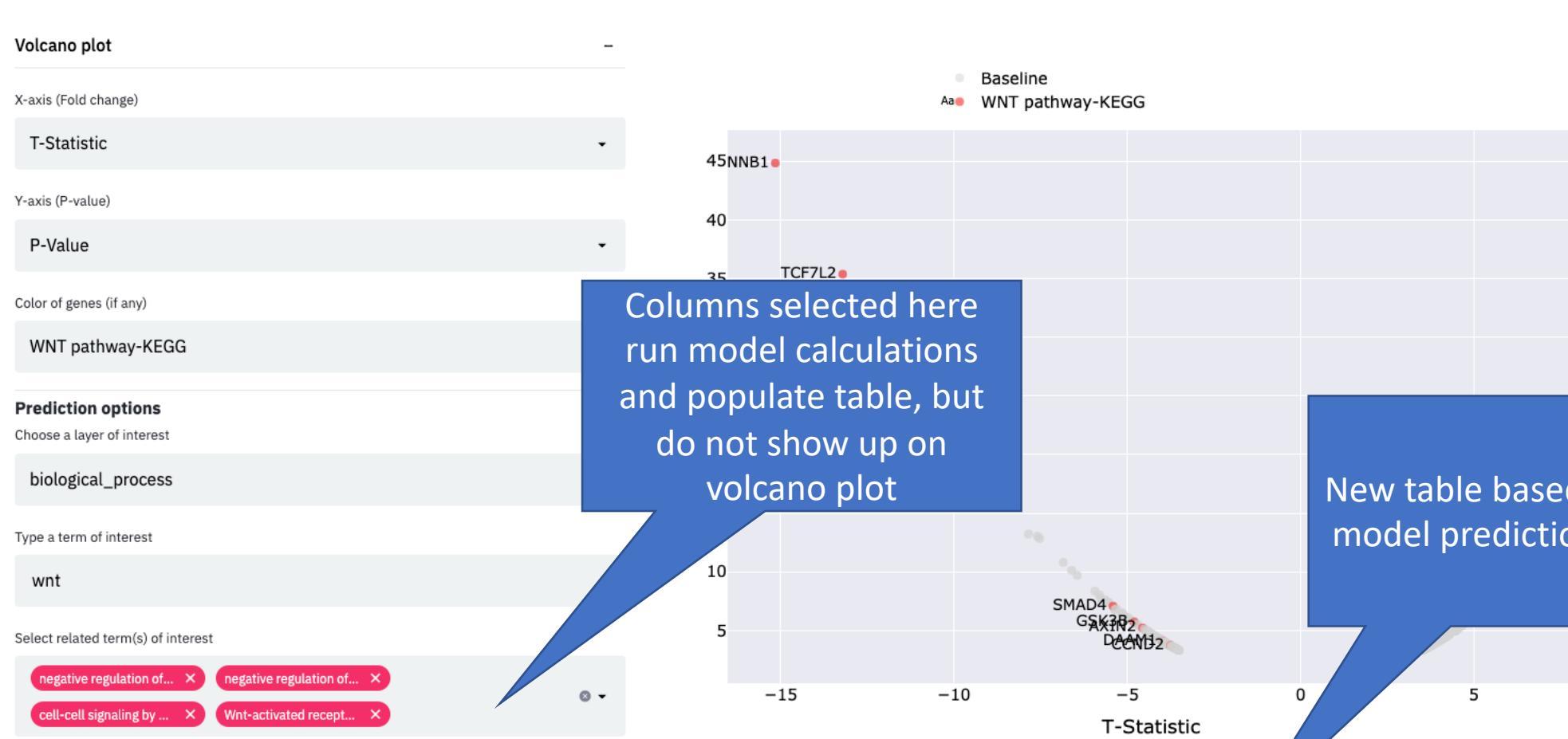
Gene

Visualization

Volcano Plot

Knowledge graph prediction

Reactome enrichment analysis



Extra associated genes from knowledge graph predictions

head	rel	tail	score
0	involved_in	negative regulation of Wnt signaling pathway	
1	involved_in	negative regulation of Wnt signaling pathway	
2	involved_in	negative regulation of Wnt signaling pathway	
3	involved_in	negative regulation of Wnt signaling pathway	
4	involved_in	negative regulation of Wnt signaling pathway	
5	involved_in	negative regulation of Wnt signaling pathway	
6	involved_in	negative regulation of Wnt signaling pathway	

Numbers between 0 and 1

Biosphere Knowledge graph annotation

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The column of gene names

Gene

Visualization

Volcano Plot

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Reactome enrichment analysis

Volcano plot

X-axis (Fold change)

T-Statistic

Y-axis (P-value)

P-Value

Color of genes (if any)

WNT pathway-KEGG

Prediction options

Choose a layer of interest

biological_process

Type a term of interest

wnt

Select related term(s) of interest

[negative regulation of...](#) [negative regulation of...](#)

[cell-cell signaling by ...](#) [Wnt-activated recept...](#)

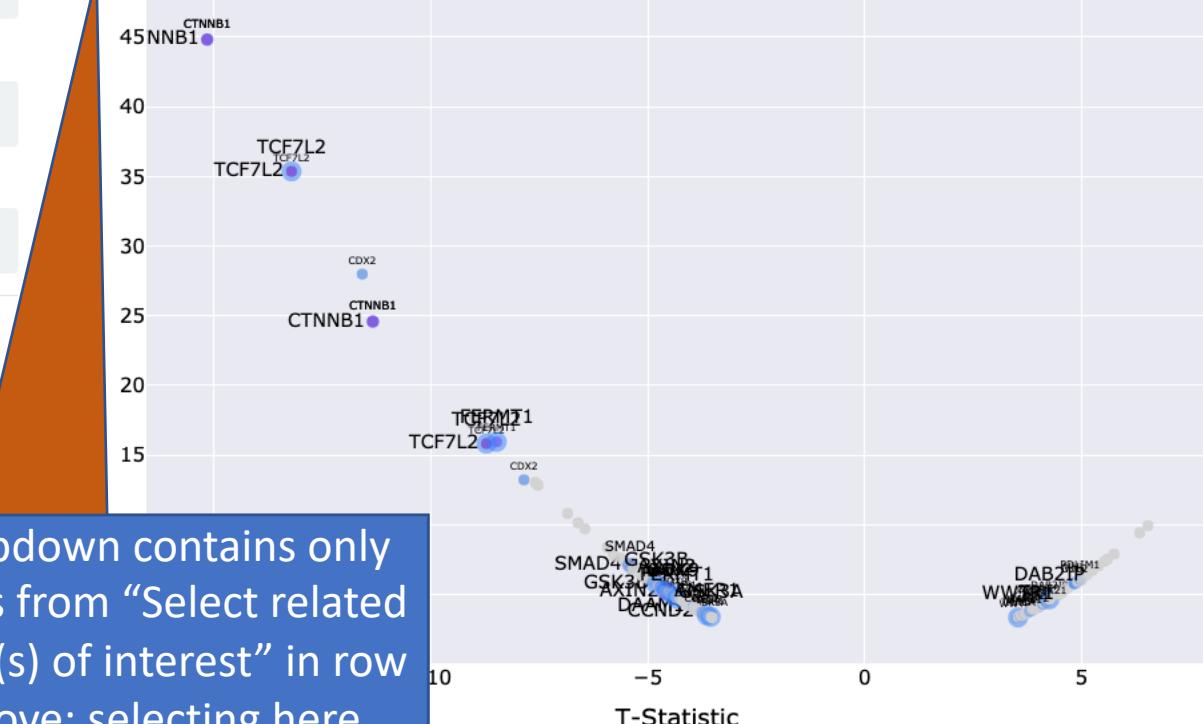
Layers added to the plot

[negative regulation of...](#) [negative regulation of...](#)

Select the range of prediction scores

0.00

- Baseline
- WNT pathway-KEGG
- negative regulation of Wnt signaling pathway
- negative regulation of canonical Wnt signaling pathway



Dropdown contains only items from “Select related term(s) of interest” in row above; selecting here adds them to volcano plot

Extra associated genes from knowledge graph predictions

head	rel	tail	score
0	ZNRF3	involved_in	negative regulation of Wnt signaling pathway
1	DKK1	involved_in	negative regulation of Wnt signaling pathway
2	HMGXB4	involved_in	negative regulation of Wnt signaling pathway
3	APC2	involved_in	negative regulation of Wnt signaling pathway
4	LZTS2	involved_in	negative regulation of Wnt signaling pathway
5	CUSTOS	involved_in	negative regulation of Wnt signaling pathway
6	DKK3	involved_in	negative regulation of Wnt signaling pathway

Numbers between 0 and 1

Biosphere Knowledge graph annotation

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test.csv
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The column of gene names

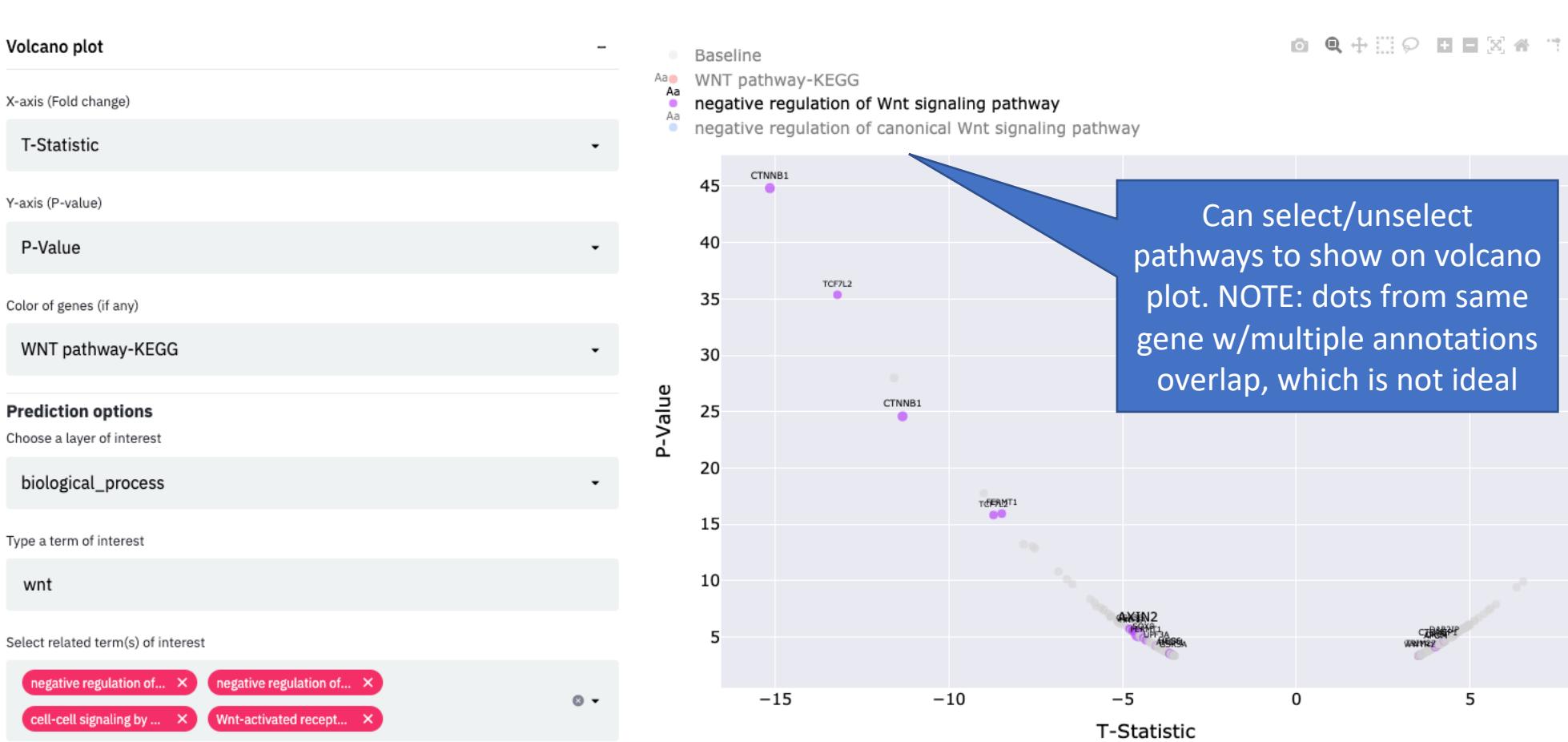
Gene

Visualization

Volcano Plot

Knowledge graph prediction

Reactome enrichment analysis



Extra associated genes from knowledge graph predictions

head	rel	tail	score
0	ZNRF3	involved_in	negative regulation of Wnt signaling pathway
1	DKK1	involved_in	negative regulation of Wnt signaling pathway
2	HMGXB4	involved_in	negative regulation of Wnt signaling pathway
3	APC2	involved_in	negative regulation of Wnt signaling pathway
4	LZTS2	involved_in	negative regulation of Wnt signaling pathway
5	CUSTOS	involved_in	negative regulation of Wnt signaling pathway
6	DKK3	involved_in	negative regulation of Wnt signaling pathway

Numbers between 0 and 1

Reminder: columns/data from data model (not user input)

Biosphere Knowledge graph annotation

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A csv file that contains genes and their attributes

Drag and drop file here
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[Browse files](#)

test.csv
11.9KB

The column of gene names

Gene

Visualization

Volcano Plot

Knowledge graph prediction

Reactome enrichment analysis

Volcano plot

X-axis (Fold change)

Y-axis (P-value)

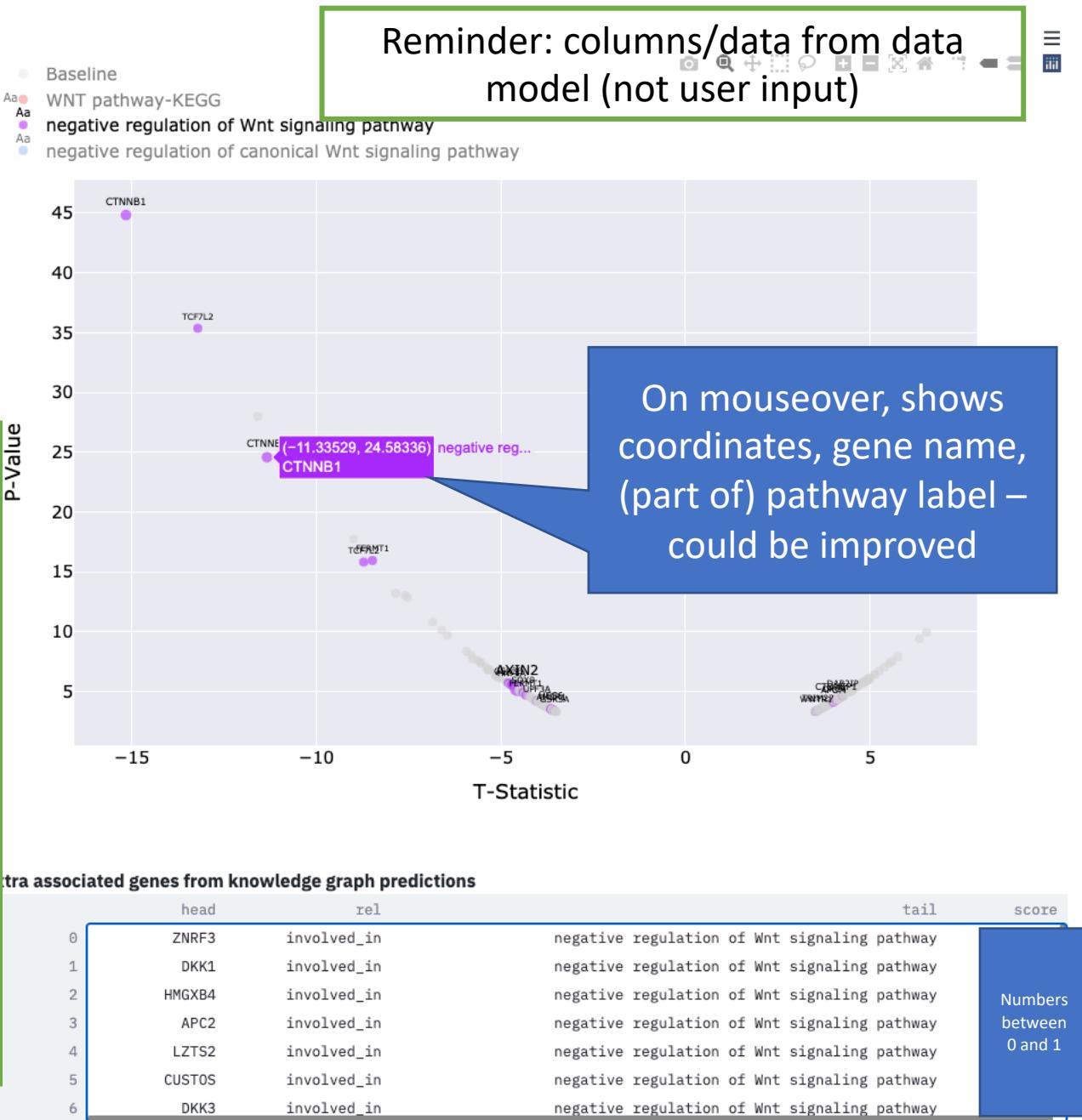
Color of genes (if any)

Prediction options
Choose a layer of interest

Type a term of interest
Select related term(s) of interest
negative regulation of... negative regulation of...
cell-cell signaling by ... Wnt-activated recept...

Layers added to the plot
negative regulation of... negative regulation of...

Select the range of prediction scores



JIMMY: Can you explain what each of these does?
I couldn't figure it out from playing around.



Biosphere Knowledge graph annotation

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The column of gene names

Gene

Visualization

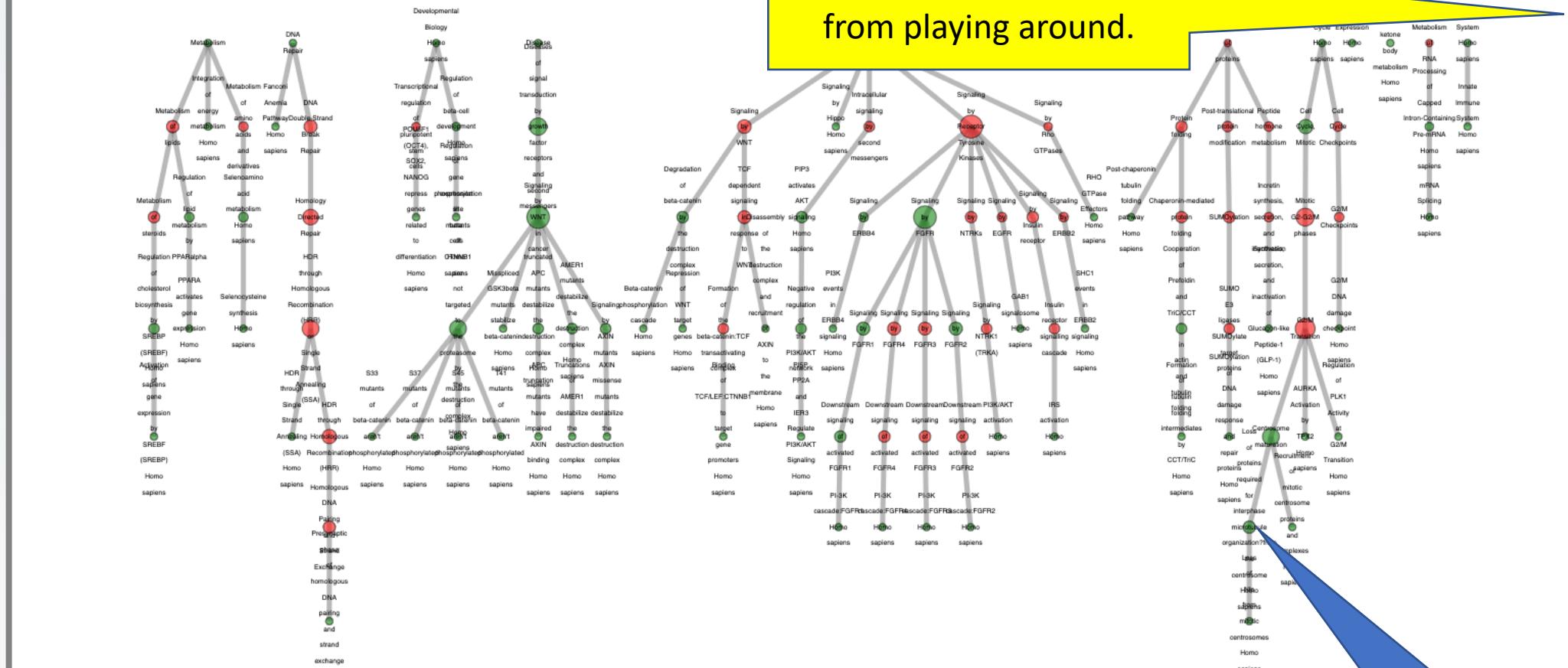
Volcano Plot

Knowledge graph prediction

Reactome enrichment analysis

Visualization

Enriched pathways network



Now select new plot!

NOTE: only gene column needed from user input file

Default option (one of two)

Note: pathway names can be VERY LONG; would be good to fix viz of these somehow...



Biosphere Knowledge graph annotation

Upload a file

A csv file that contains genes and their attributes
A csv file that contains genes and their attributes

Drag and drop file here

Limit 200MB per file • CSV

[Browse files](#)

test.csv
11.9KB

The column of gene names

Gene

Visualization

Volcano Plot

Knowledge graph prediction

Reactome enrichment analysis

Visualization

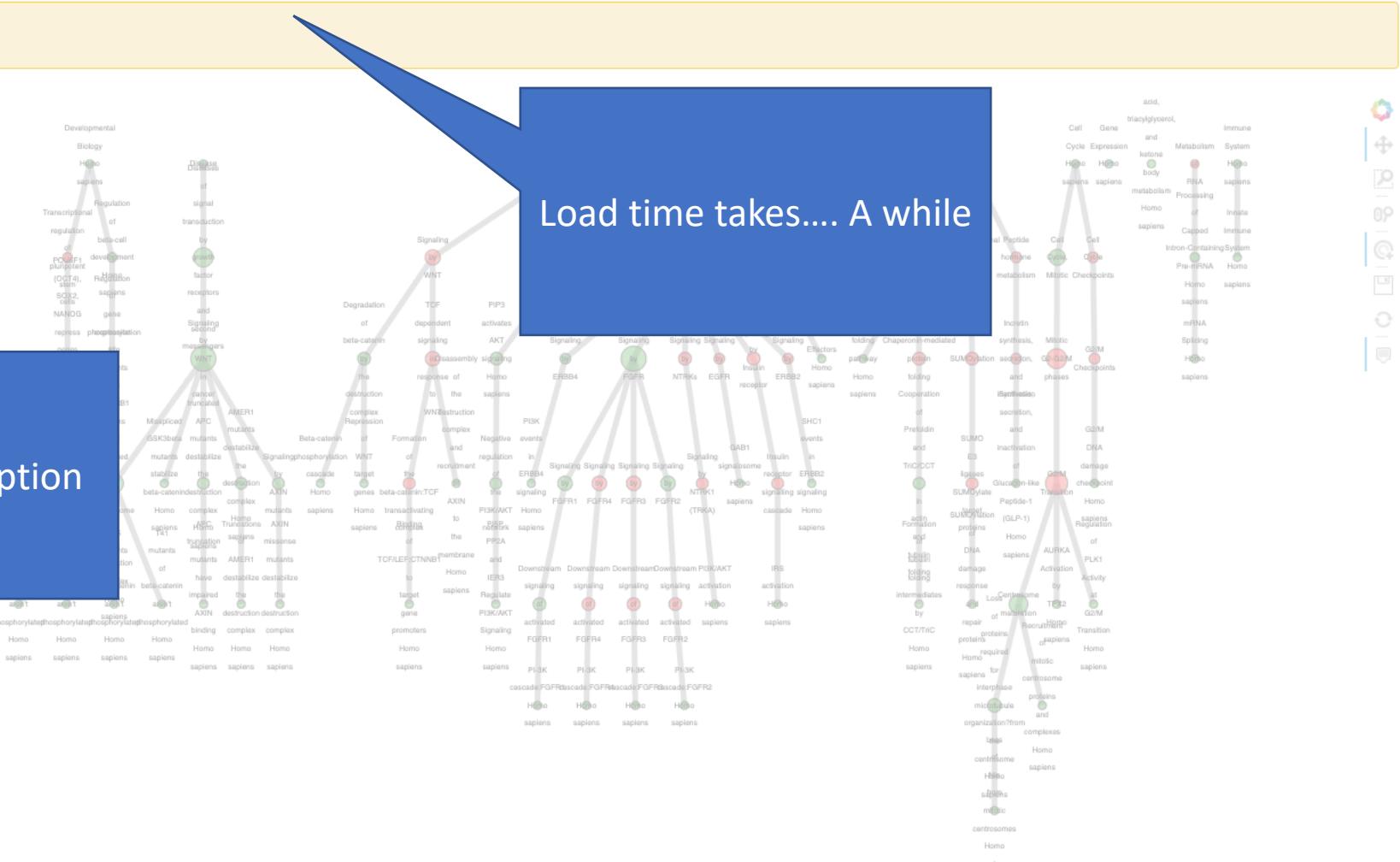
[Gene-gene cooccurrence net...](#)

Running `find_enriched_pathway(...)`.

Running `cooccur_network(...)`.

Load time takes.... A while

Switch to second option



Would like to add filters
for this viz (see word
document for details)

Biosphere Knowledge graph annotation

Upload a file

A csv file that contains genes and their attributes

Drag and drop file here

Limit 200MB per file • CSV

[Browse files](#)

test.csv
11.9KB

X

The column of gene names

Gene

Visualization

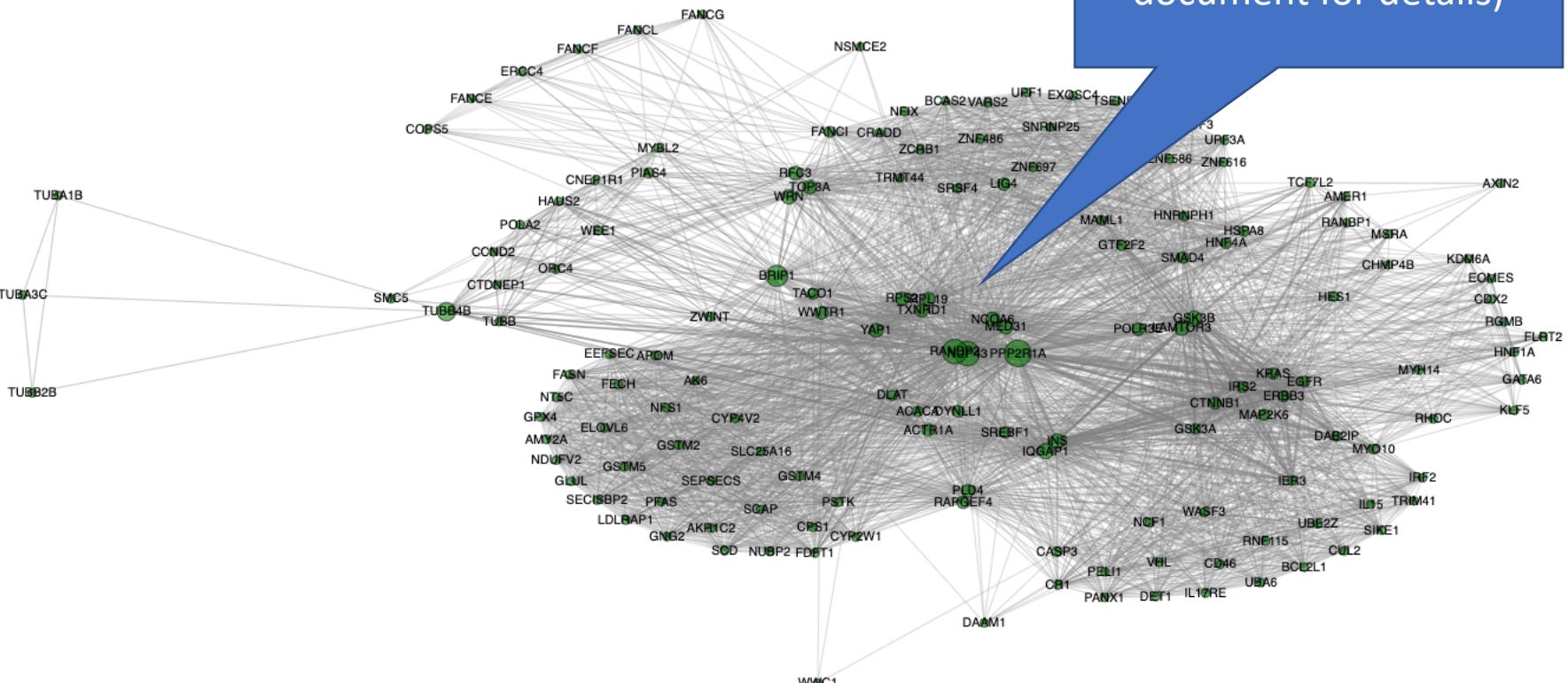
Volcano Plot

Knowledge graph prediction

Reactome enrichment analysis

Visualization

Gene-gene cooccurrence net...





Biosphere Knowledge graph annotation

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test.csv
11.9KB



The column of gene names

Gene



Visualization

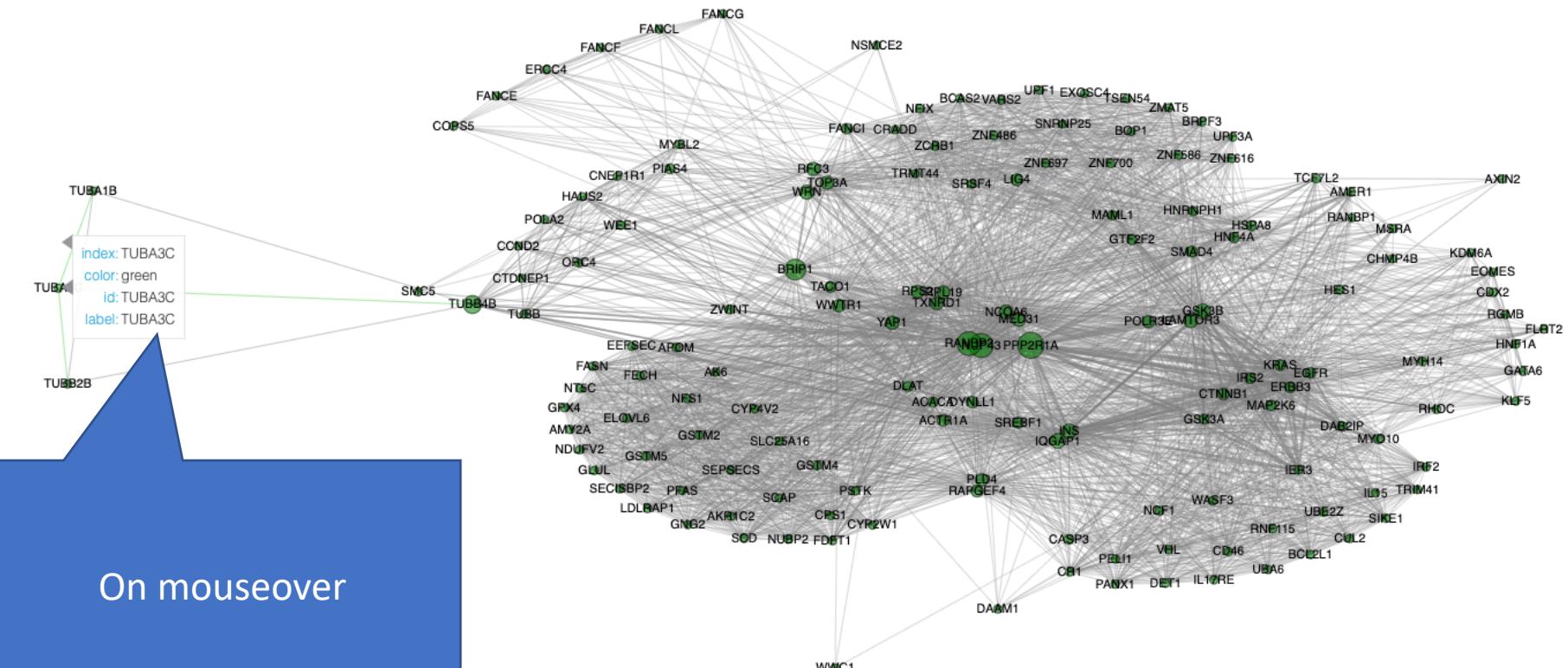
Volcano Plot

Knowledge graph prediction

Reactome enrichment analysis

Visualization

[Gene-gene cooccurrence net...](#)





Hamburger menu – same
for all viz

Biosphere Knowledge graph annotation

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Limit 200MB per file • CSV

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test.csv
11.9KB

The column of gene names

[Gene](#) ▾

Visualization

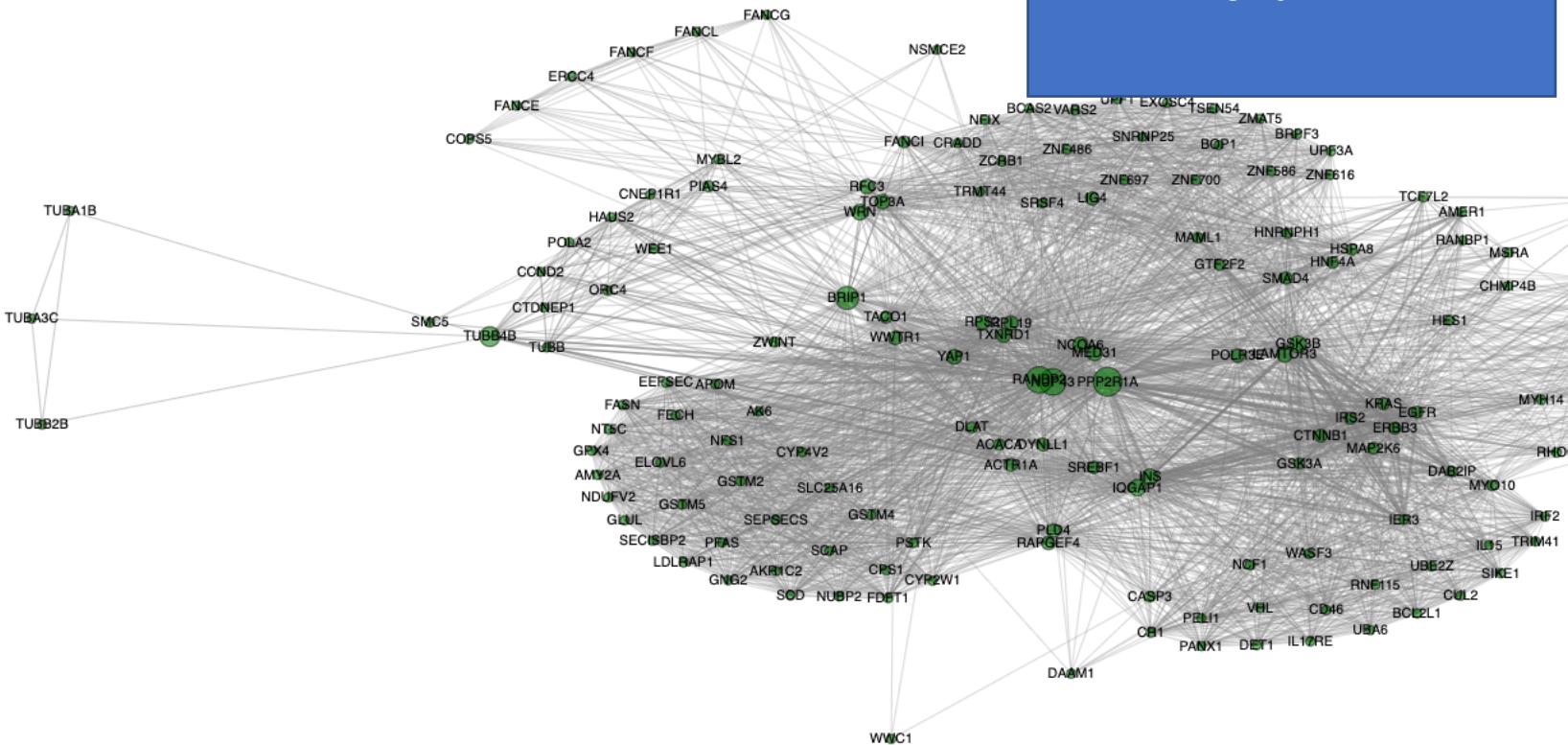
Volcano Plot

Knowledge graph prediction

Reactome enrichment analysis

Visualization

[Gene-gene cooccurrence net...](#) ▾



- [Rerun](#) R
- [Clear cache](#) C
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11.9KB

The column of gene names

Gene

Visualization

Volcano Plot

Knowledge graph prediction

Reactome enrichment analysis

Please deselect Volcano plot and Knowledge graph prediction to visualize the enrichment

Volcano plot



Please choose the right columns

When all three selected,
get error (see top)

Biosphere Knowledge graph annotation

Upload a file

A csv file that contains genes and their attributes

Drag and drop file here
Limit 200MB per file • CSV

[Browse files](#)

 test.csv X

The column of gene names

Gene

Visualization

Volcano Plot

Knowledge graph prediction

Reactome enrichment analysis

Volcano plot

+

Please choose the right columns

When return to volcano plot (+/- Knowledge graph prediction), all user input resets 😞