

December 2024

geneXplain® platform 7.5 release

New methods:

This release of the geneXplain platform introduces ability to launch Gene Ontology (GO) functional classification on Zebrafish, Arabidopsis, Nematoda, Fruit fly or Baker's yeast gene lists and to further visualize the obtained results with a tree map diagram. Human, Mouse and Rat species are still supported since previous releases.

You will find the functional classification tool under the:

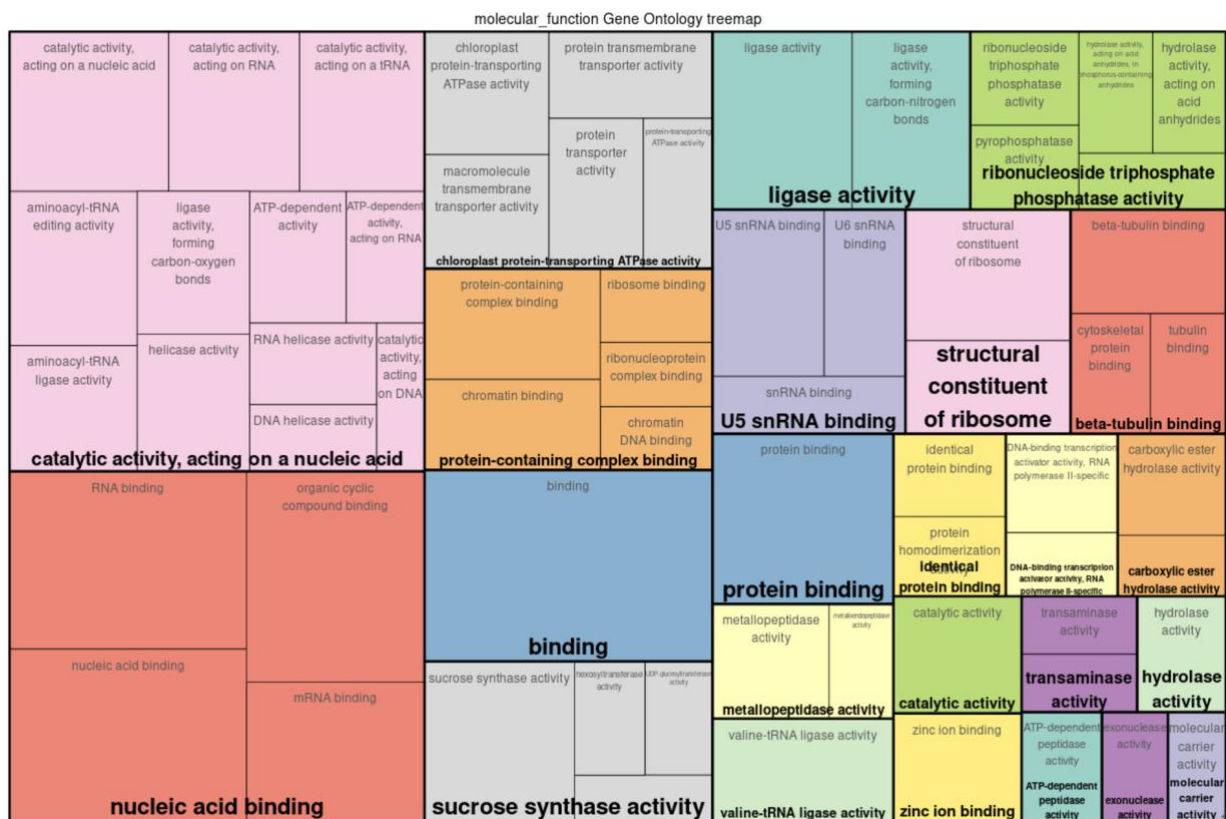
Analyses → Methods → Functional classification:

- [Functional classification](#) – for performing the GO-based classification of the studied gene set
- [TreeMap on Functional classification](#) – for visualizing the results of functional classification in a form of a colorful tree map




Example visualization of the GO functional classification result for Arabidopsis gene set:

ID	Title	Ontology type	Hierarchical #	Parent in cluster	Level	Frequency in %	-log10(P-value)	Hit names
GO:0001216	DNA-binding transcription activator activity	molecular_function	99.1	GO:0001228	3	0.19989	1.48689	GATA18, NFYB9
GO:0001228	DNA-binding transcription activator activity, RNA polymerase II-specific	molecular_function	99	GO:0001228	4	0.07438	2.31324	GATA18, NFYB9
GO:0002161	aminoacyl-tRNA editing activity	molecular_function	31.6	GO:0140640	5	0.06043	4.11829	EMB2247, EMB2369, TWN2, ARF5, DGAT1, EMB1006, EMB1025, EMB1270, EMB1687, EMB1796, EMB1865, EMB1968, EMB2076, EMB2261, ... (more)
GO:0003676	nucleic acid binding	molecular_function	21	GO:0003676	3	14.68018	8.53262	EMB2247, EMB2369, TWN2, ARF5, DGAT1, EMB1006, EMB1025, EMB1270, EMB1687, EMB1796, EMB1865, EMB1968, EMB2076, EMB2261, ... (more)
GO:0003678	DNA helicase activity	molecular_function	31.10	GO:0140640	3	0.13946	1.78003	MCM7, emb2411
GO:0003682	chromatin binding	molecular_function	48.1	GO:0044877	3	0.69264	3.33179	FGT1, FIE, FIS2, MEA, NFYB9, SMC3
GO:0003723	RNA binding	molecular_function	21.1	GO:0003676	4	8.47899	8.7916	EMB1006, EMB1025, EMB1270, EMB1687, EMB1796, EMB1865, EMB2076, EMB2261, EMB2271, EMB2279, EMB2453, ... (more)
GO:0003724	RNA helicase activity	molecular_function	31.8	GO:0140640	3	0.27427	2.15859	BRR2A, ESP3, RH3
GO:0003729	mRNA binding	molecular_function	21.2	GO:0003676	5	6.62886	5.18895	EMB1006, EMB1270, EMB1796, EMB1865, EMB2076, EMB2261, EMB2279, EMB2453, EMB2654, EMB2745, EMB2750, ... (more)
GO:0003735	structural constituent of ribosome	molecular_function	42	GO:0003735	2	0.62291	4.51808	EMB2654, RPL13, RPL23A (AT3G04400), RPL31, RPL6, RPS16-1, emb1129
GO:0003824	catalytic activity	molecular_function	73	GO:0003824	1	27.50558	3.12981	ACC1, ADCS, AIH, AMP1, ARL2, BIO2, BIO3-BIO1, BRR2A, CYT1, DGAT1, DME, EMB1144, EMB1187, EMB1290, ... (more)

Example visualization of the tree map constructed on the results of GO functional classification by molecular function for Arabidopsis gene set:



Database updates:

-  HumanPSD™ is updated to version 2024.2 (December 2024).
-  TRANSFAC® is updated to version 2024.2 (December 2024).
-  TRANSPATH® is updated to version 2024.2 (December 2024).

Ensembl databases were updated to the following versions:

- Ensembl Human 112 (hg38)
- Ensembl Mouse 112 (mm10)
- Ensembl Rat 112 (mRatBN7.2)
- Ensembl Zebrafish 112 (GRCz11)
- Ensembl Nematoda 112 (wbcel235)
- Ensembl Fruit fly 112 (dm6)
- Ensembl Saccharomyces Cerevisiae 112 (sacCer3)
- Ensembl Schizosaccharomyces Pombe 112 (ASM294v2)
- Ensembl Arabidopsis Thaliana 112 (TAIR10)

Please note that with the new release the analysis results might vary from the previous ones.