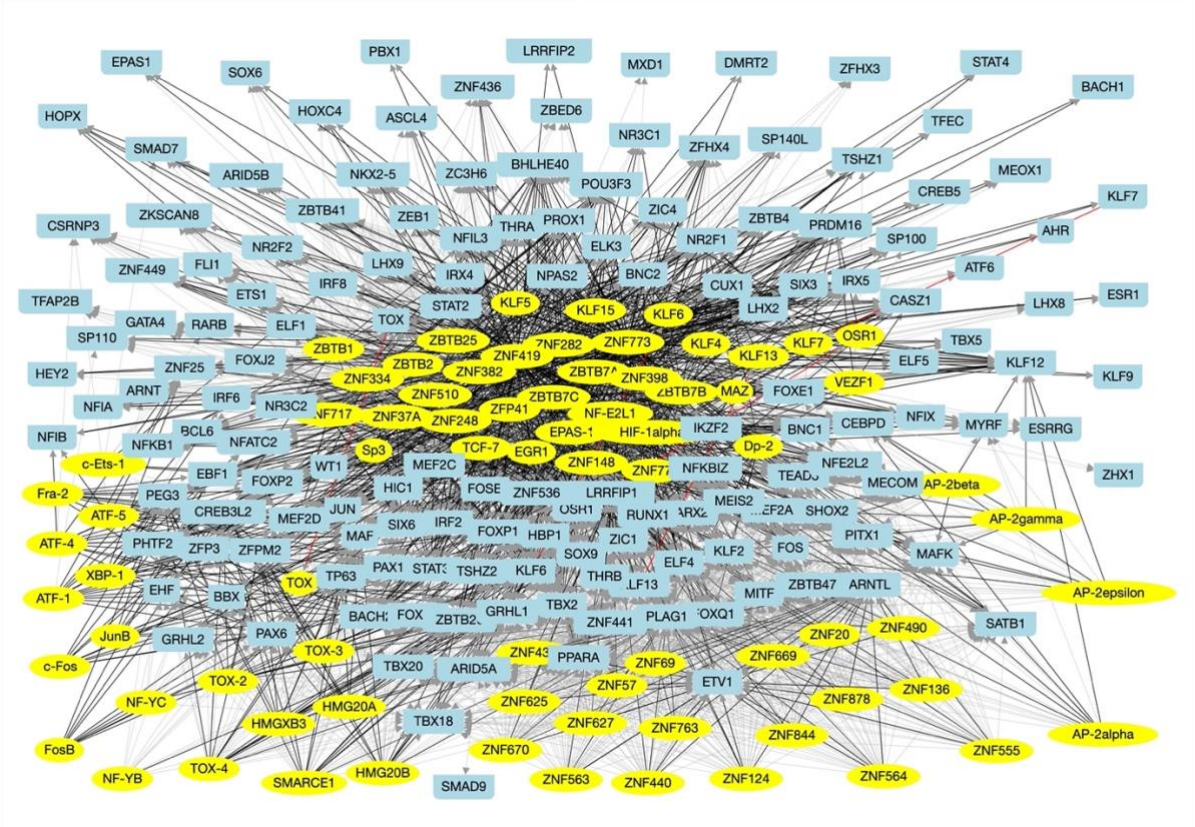
December 2023

geneXplain® platform 7.3 release

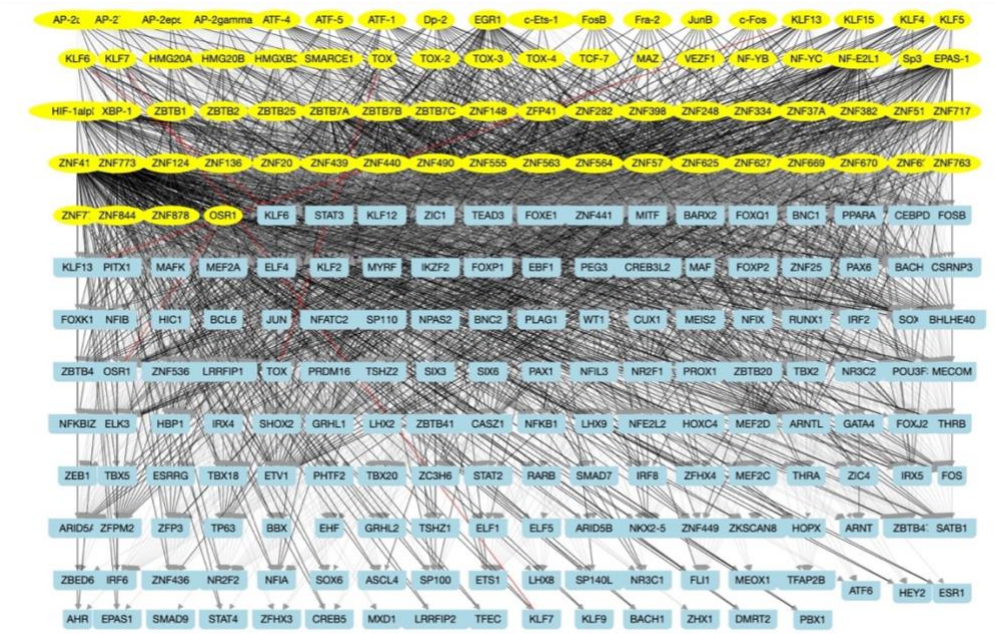
Gene regulatory networks construction via API:

This release of the geneXplain platform introduces new Jupyter notebook Python sample code that allows construction of gene regulatory networks using the geneXplain platform API. You can view the sample code via the Colab notebook or you can download it from here.

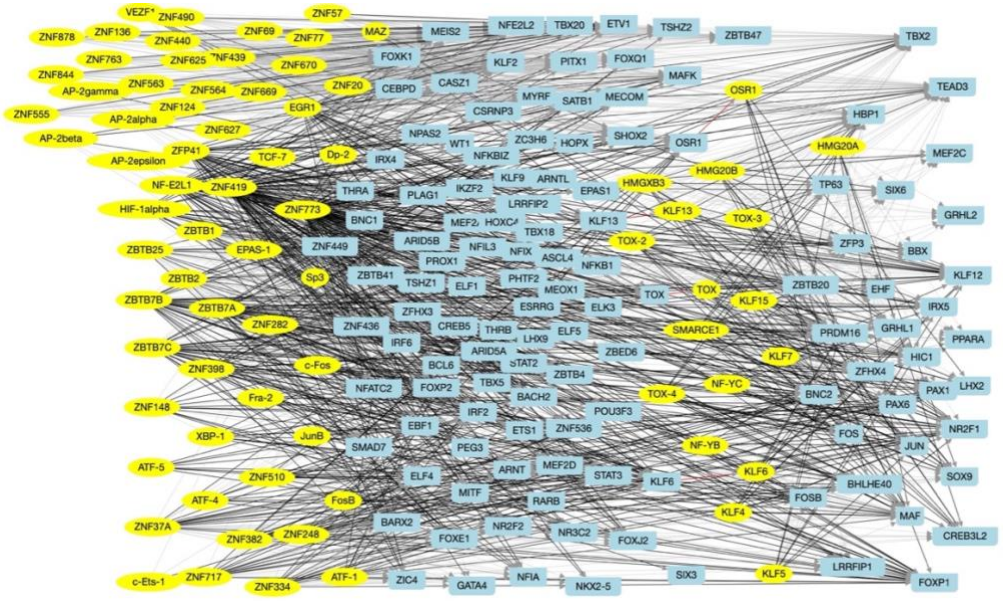
Gene regulatory network is a collection of regulatory relationships between transcription factors and their target genes. Below you can find example visualizations of the gene regulatory networks constructed with the code linked above:



The generated diagrams are interactive, and a number of automatic layouts can be applied to the network graph. Manual click-and-move layout for each element of the network is possible as well.



The connections between the transcription factors and the genes they regulate are shown by black lines (edges). The thickness of each edge is proportional to the number of transcription factor binding sites found in the promoter of the respective gene.



Any diagram can be then exported as an image and used in your publications or other materials.

A video demonstration of how such gene regulatory networks can be constructed using the platform API was done at this timepoint of one of our recent Coffee breaks with TRANSFAC.

Database updates:

- HumanPSD™ is updated to version 2023.2 (December 2023).
- TRANSFAC® is updated to version 2023.2 (December 2023).
- TRANSPATH® is updated to version 2023.2 (December 2023).