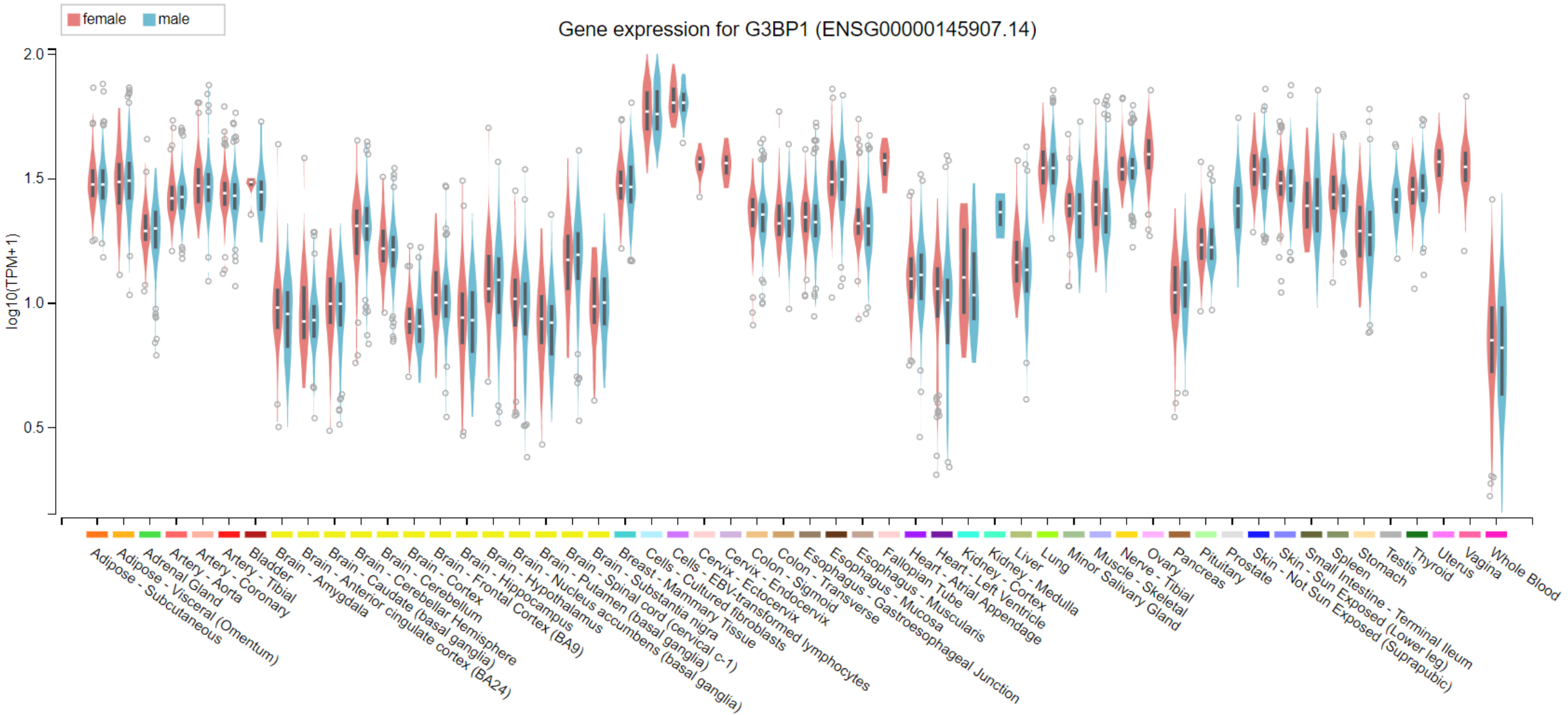
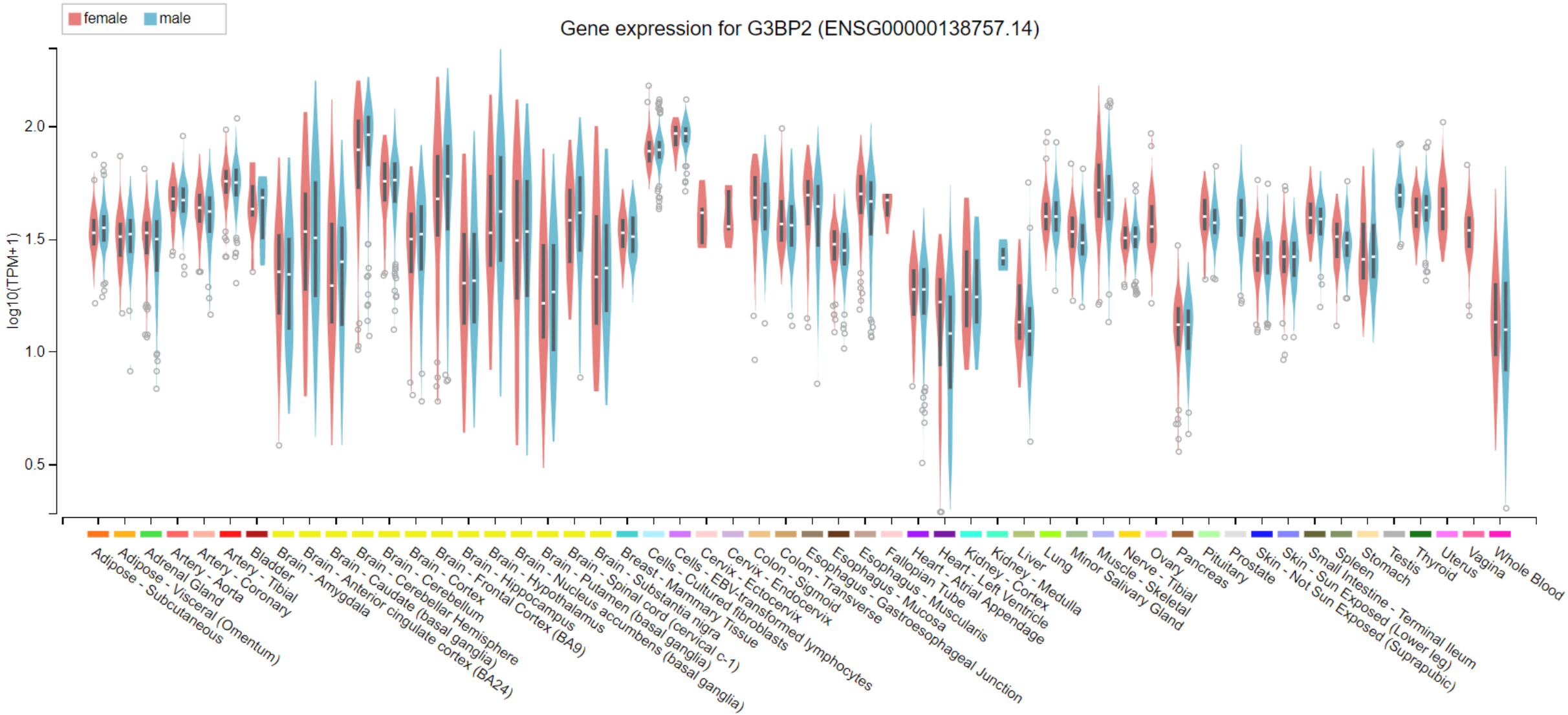
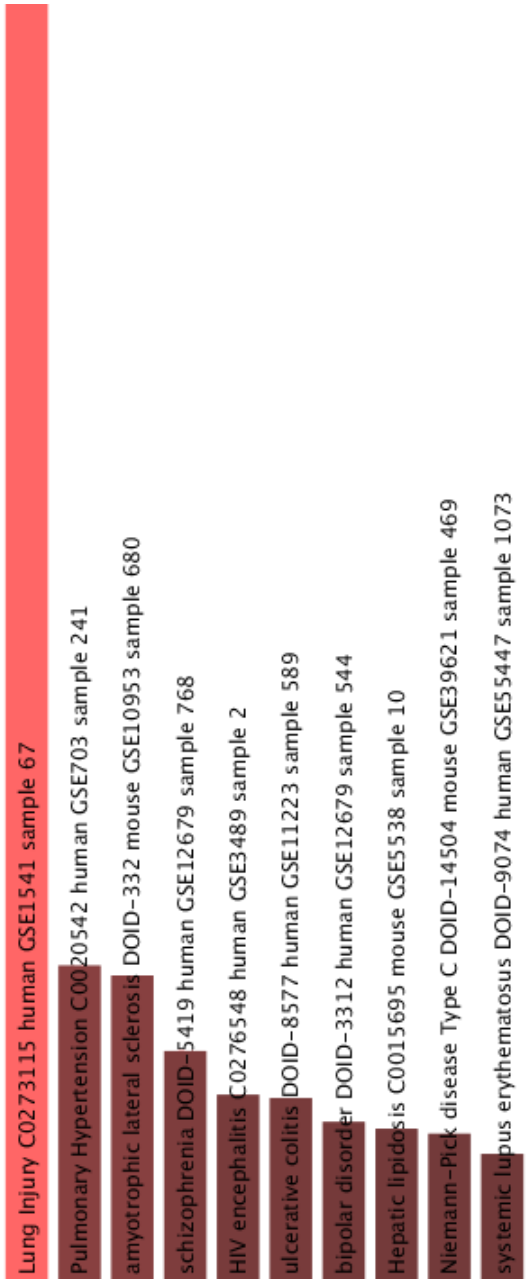
(A)

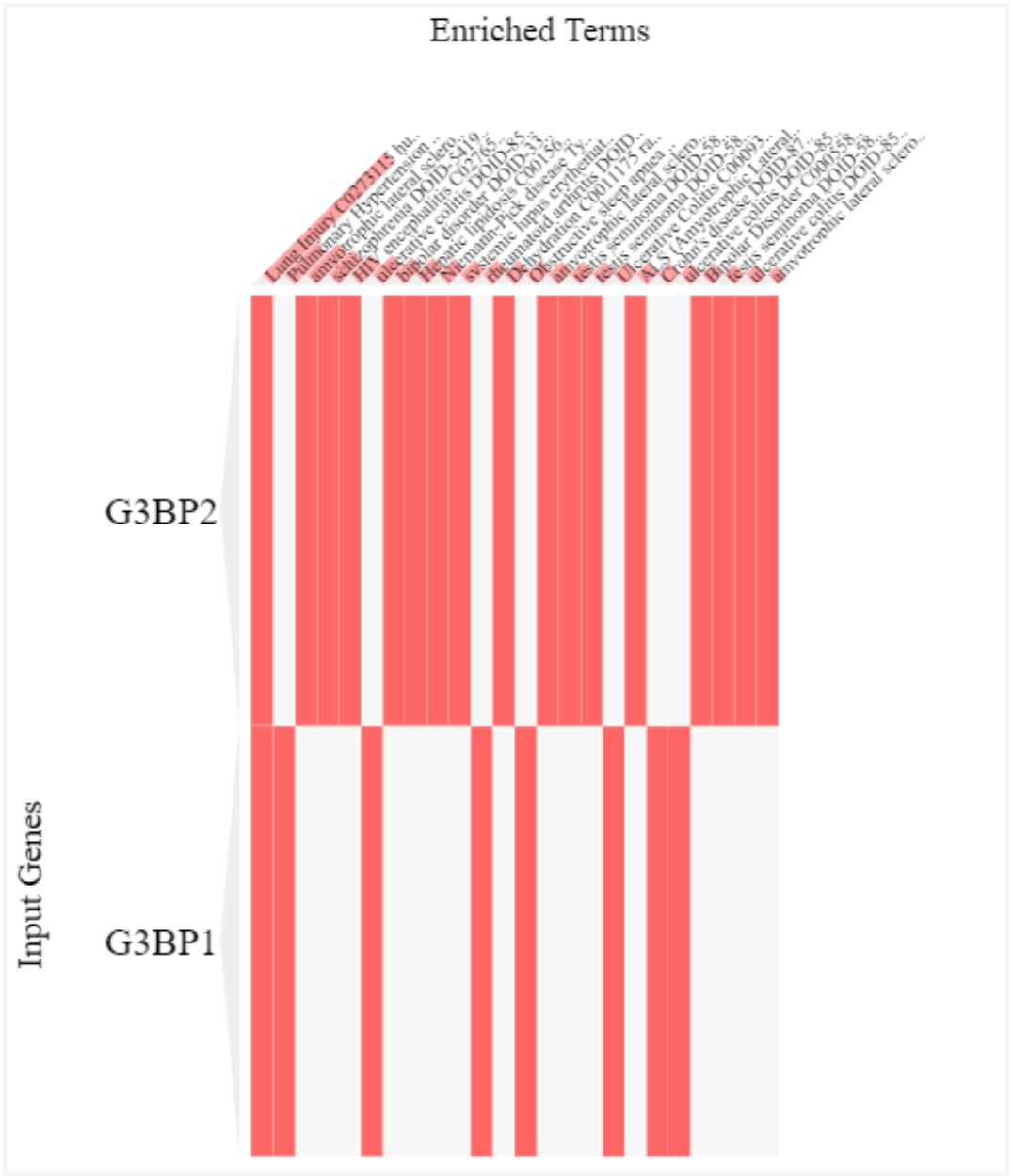

female
male
Gene expression for G3BP1 (ENSG00000145907.14)
log10(TPM+1)
2.0
1.5
1.0
0.5
Adipose - Subcutaneous
Adipose - Visceral (Omentum)
Adrenal Gland
Artery - Aorta
Artery - Coronary
Artery - Tibial
Bladder
Brain - Amygdala
Brain - Anterior cingulate cortex (BA24)
Brain - Caudate (basal ganglia)
Brain - Cerebellar Hemisphere
Brain - Cerebellum
Brain - Cortex
Brain - Frontal Cortex (BA9)
Brain - Hippocampus
Brain - Hypothalamus
Brain - Nucleus accumbens (basal ganglia)
Brain - Putamen (basal ganglia)
Brain - Spinal cord (cervical c-1)
Brain - Substantia nigra
Breast - Mammary Tissue
Cells - Cultured fibroblasts
Cells - EBV-transformed lymphocytes
Cervix - Ectocervix
Cervix - Endocervix
Colon - Sigmoid
Colon - Transverse
Esophagus - Gastroesophageal Junction
Esophagus - Mucosa
Esophagus - Muscularis
Fallopian Tube
Heart - Atrial Appendage
Heart - Left Ventricle
Kidney - Cortex
Kidney - Medulla
Liver
Lung
Minor Salivary Gland
Muscle - Skeletal
Nerve - Tibial
Ovary
Pancreas
Pituitary
Prostate
Skin - Not Sun Exposed (Suprapubic)
Skin - Sun Exposed (Lower leg)
Small Intestine - Terminal Ileum
Spleen
Stomach
Testis
Thyroid
Uterus
Vagina
Whole Blood

(B)

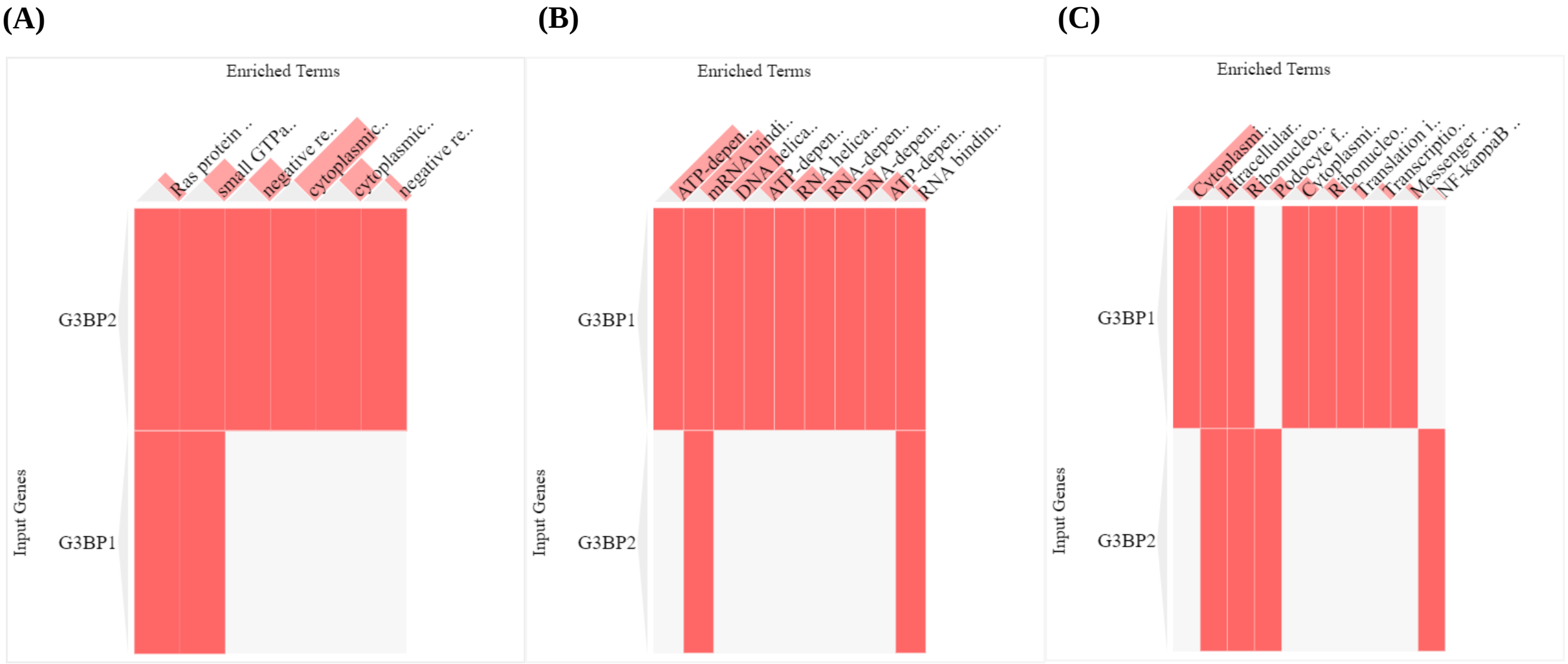


Supplementary Figure 1. RNA-Seq expression data of (A) G3BP1, and (B) G3BP2 genes from GTEx web portal.

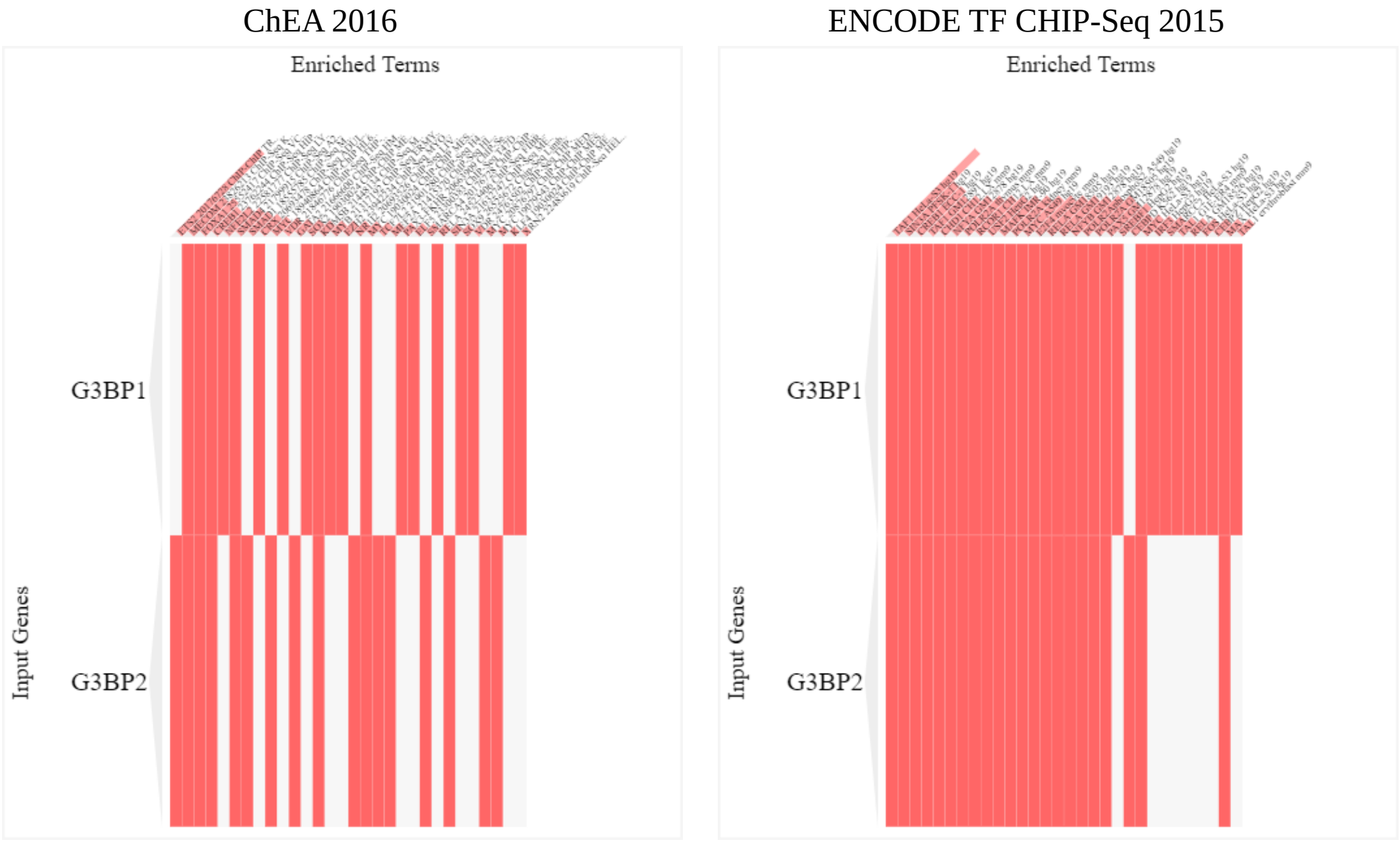




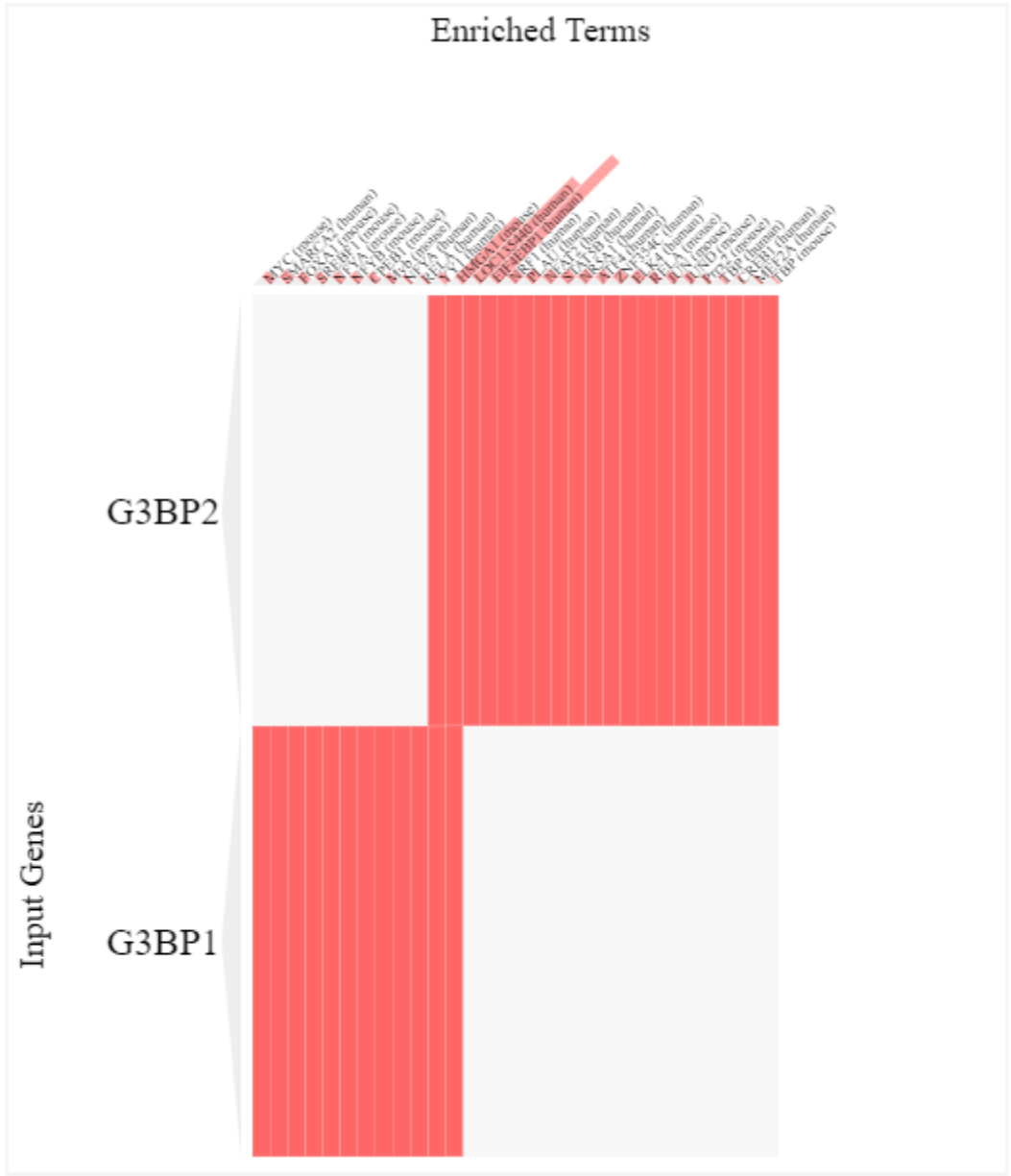
Supplementary Figure 2. Human disease perturbation through downregulation of G3BP1 and G3BP2 from Enrichr web server



Supplementary Figure 3. Gene Ontology (GO) analysis of G3BP1 and G3BP2 genes. (A) Biological process, (B) Molecular process, and (C) Jensen compartments

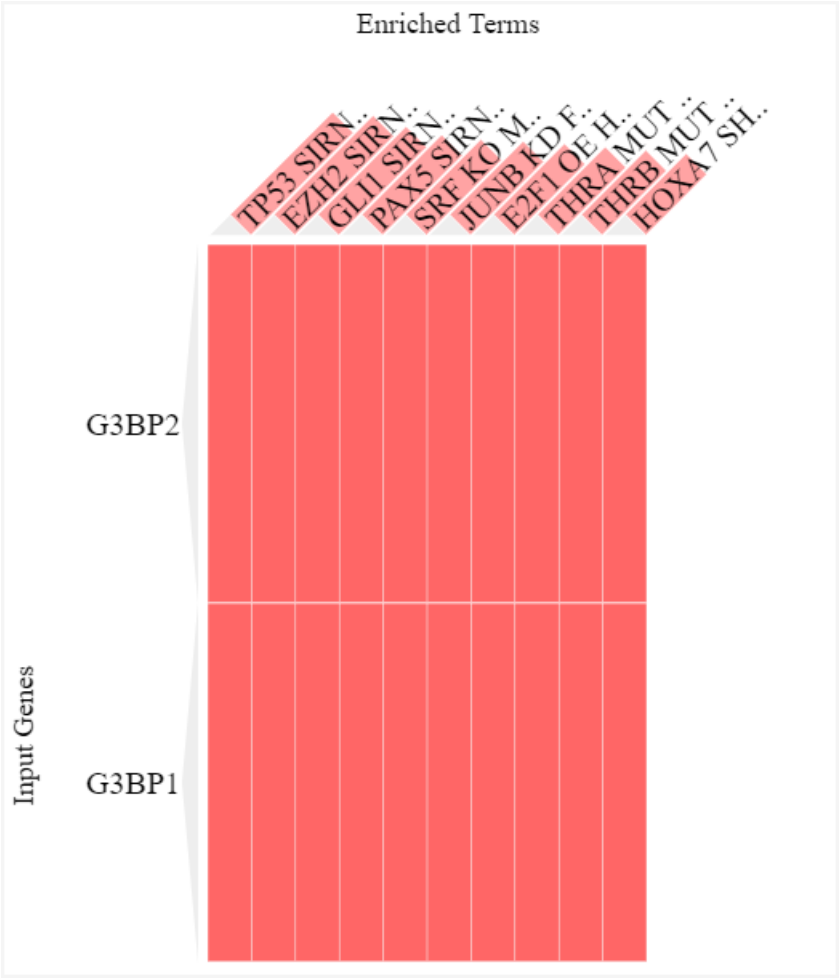


Supplementary Figure 4. Possible mechanisms affecting gene expression of G3BP1 and G3BP2 genes. Identifications of the enriched records of transcription factor-binding sites.

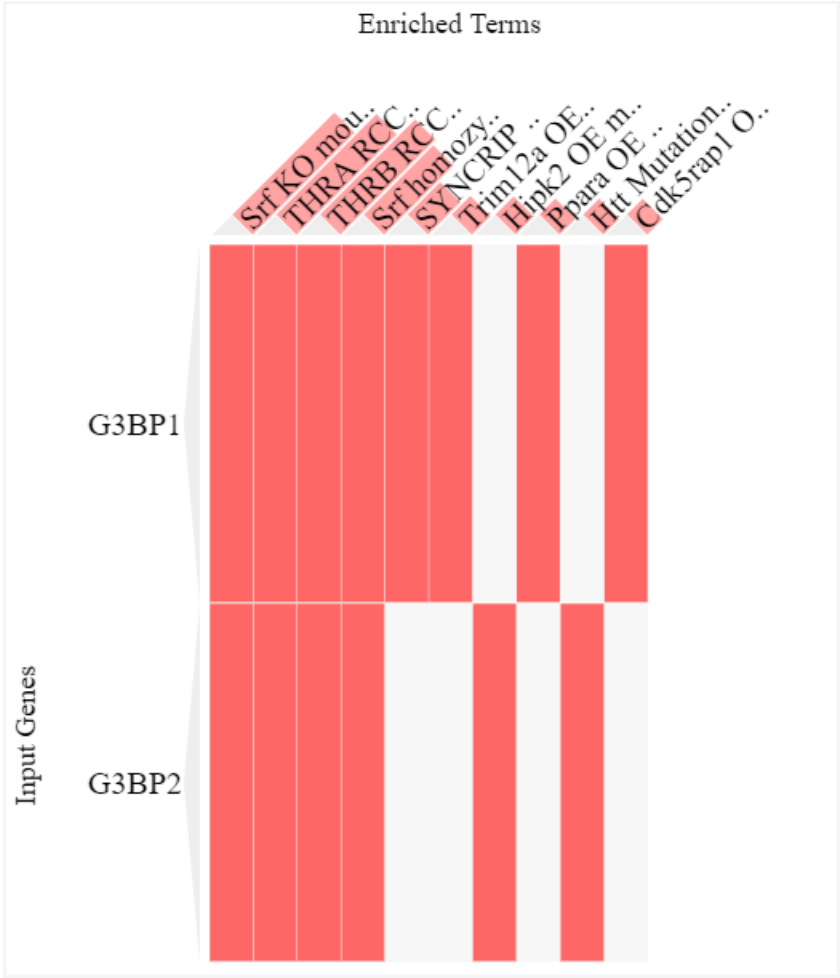


Supplementary Figure 5. Binding motifs were detected at the gene promoter of G3BP1 and G3BP2 using Enrichr tool through scanning the TRANSFAC and JASPAR databases.

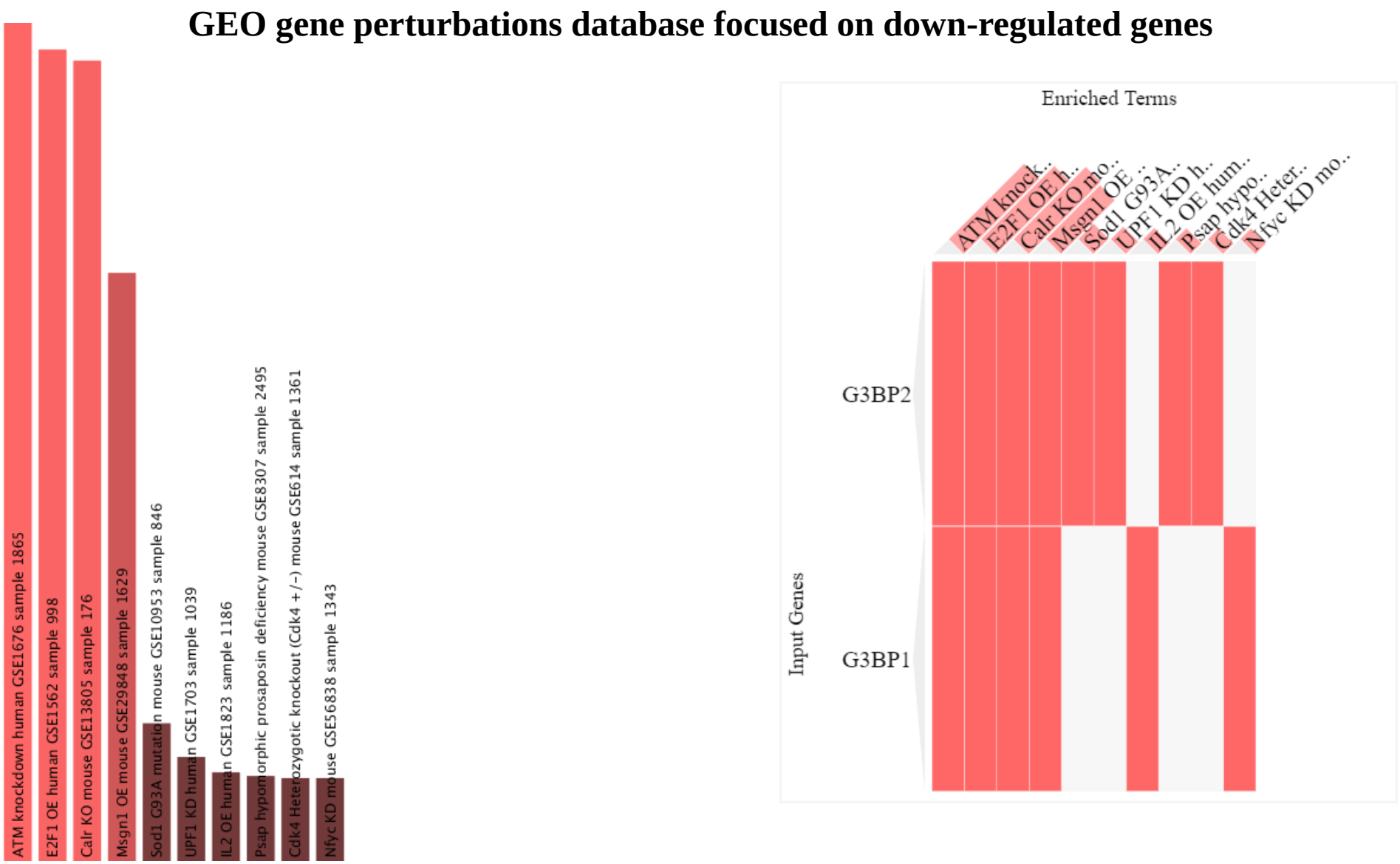
TF perturbations followed by expression



GEO gene perturbations focused on upregulated genes



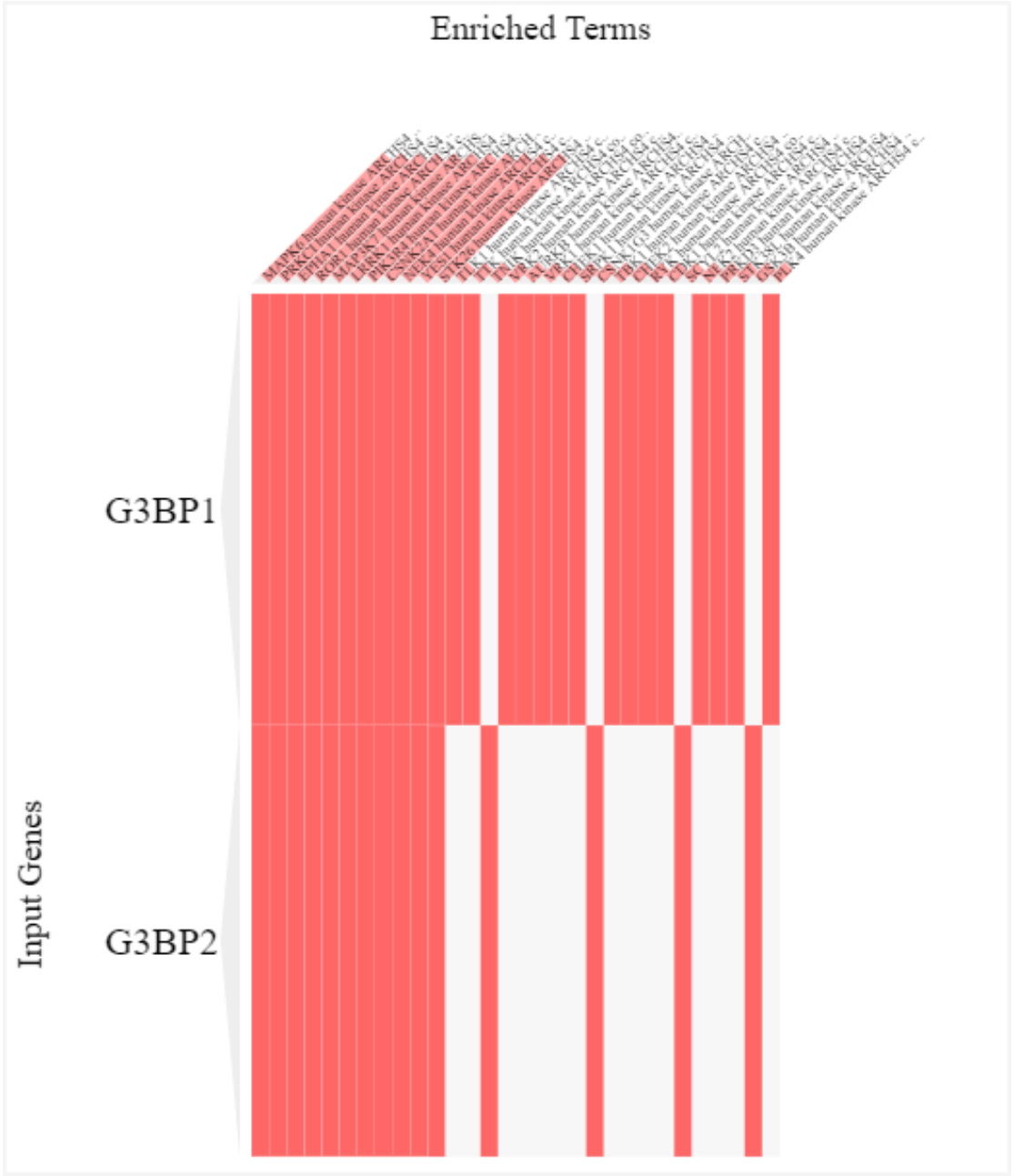
Supplementary Figure 6. Possible mechanisms affecting gene expression of G3BP1/2 genes. Mostly different transcription factors affect expression of the target genes. *SRF* and *THRA/B* gene product as potential repressor of the G3BP1/2 gene expression.



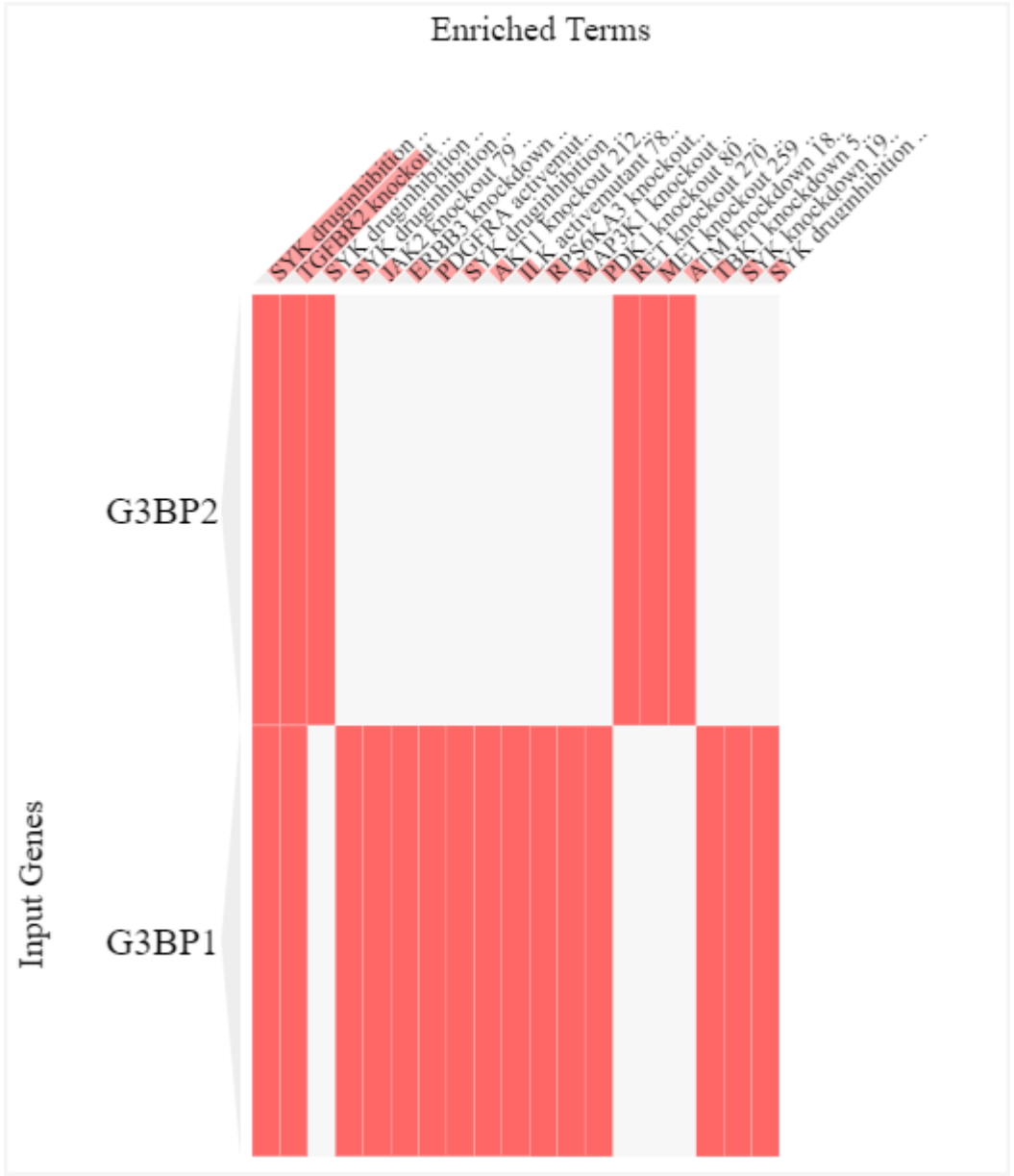
Supplementary Figure 7. Possible mechanisms affecting gene expression of G3BP1/2 genes. Mostly different transcription factors affect expression of the target genes. *ATM* and *E2F-1* gene product as potential activator and repressor, respectively of G3BP1/2 gene expression.

Supplementary Figure 8. Possible mechanisms affecting activity of G3BP1/2 genes. The kinases found to be co-expressed with the target genes.

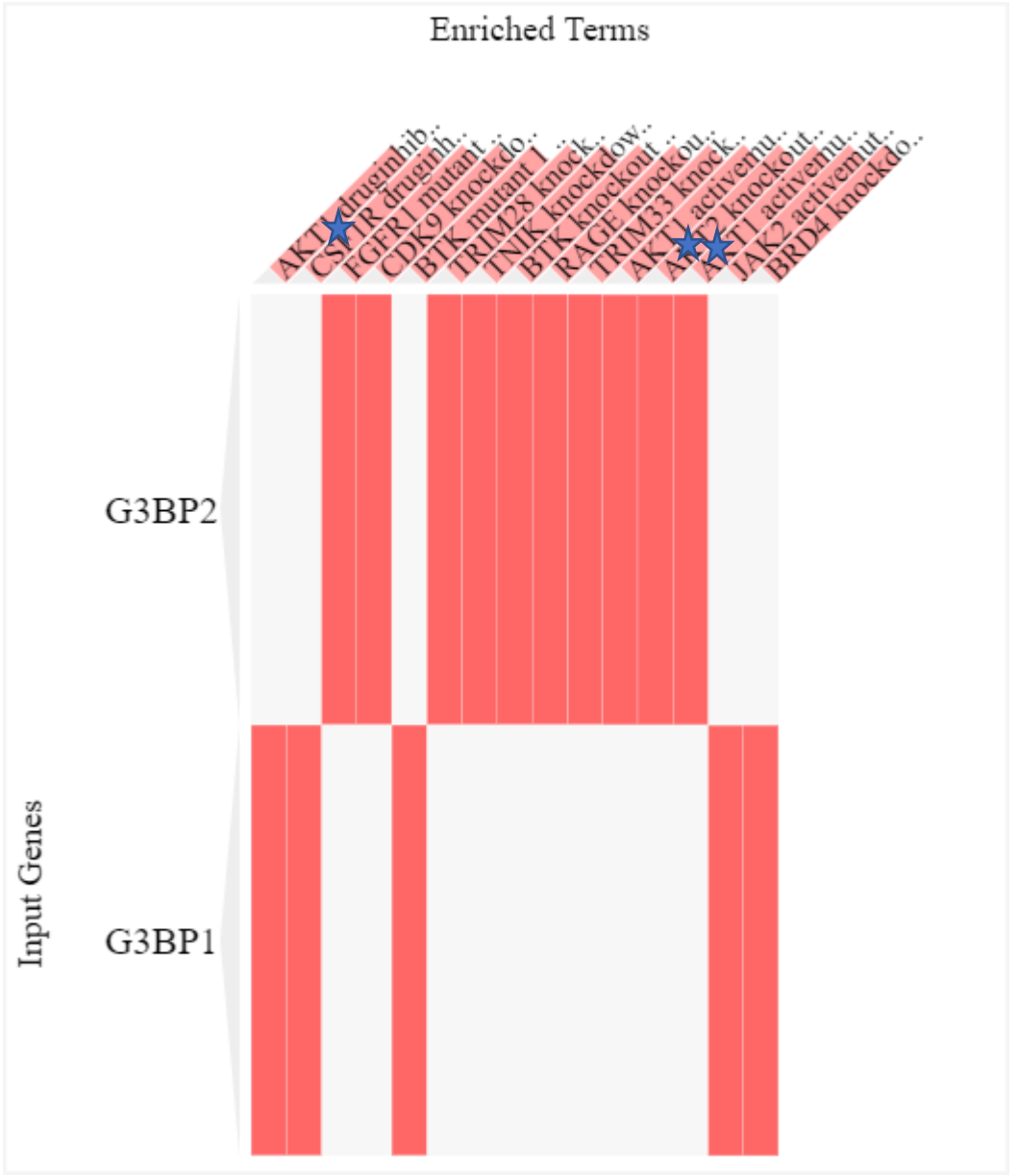
ARCHS4 Kinases co-expression



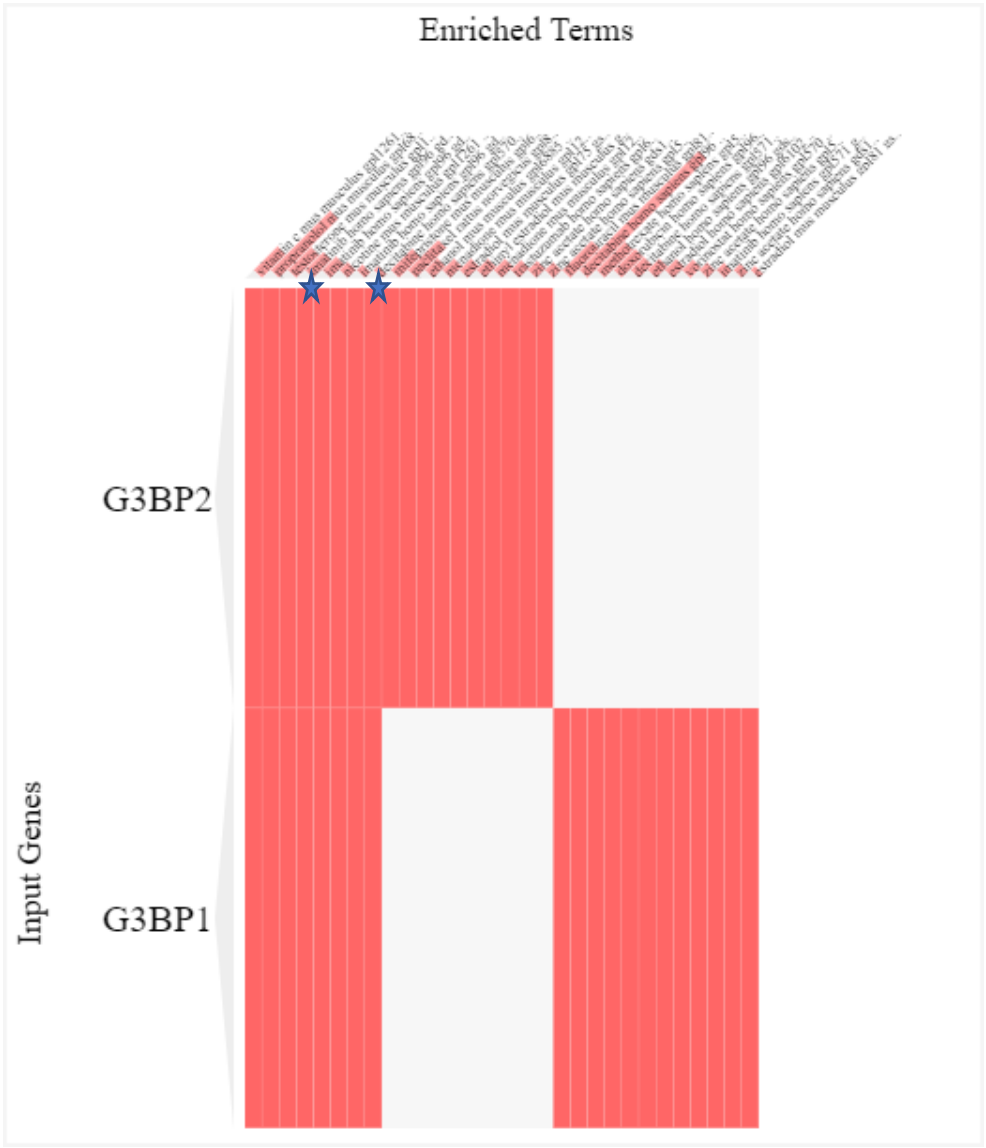
Kinase perturbations from the GEO database focused on downregulated genes

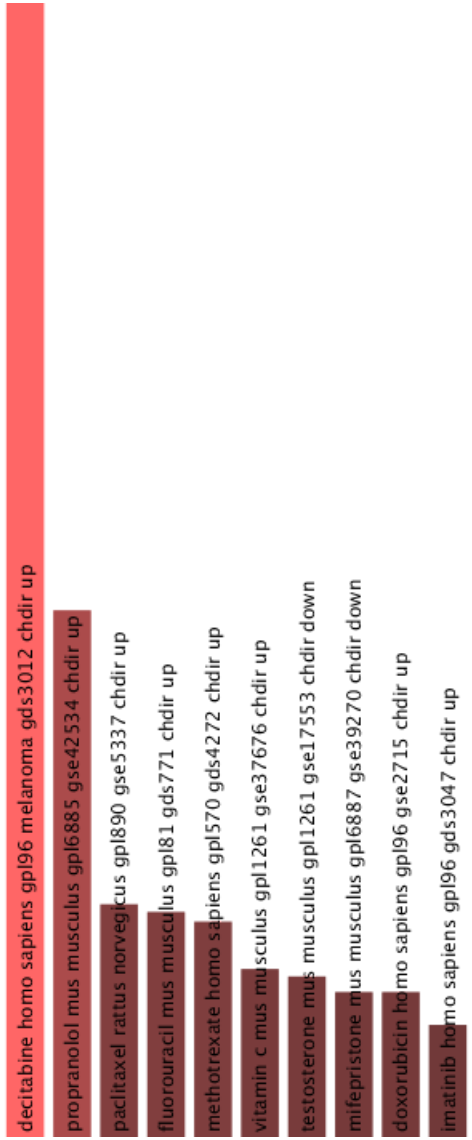


Kinase perturbations from the GEO database on upregulated genes

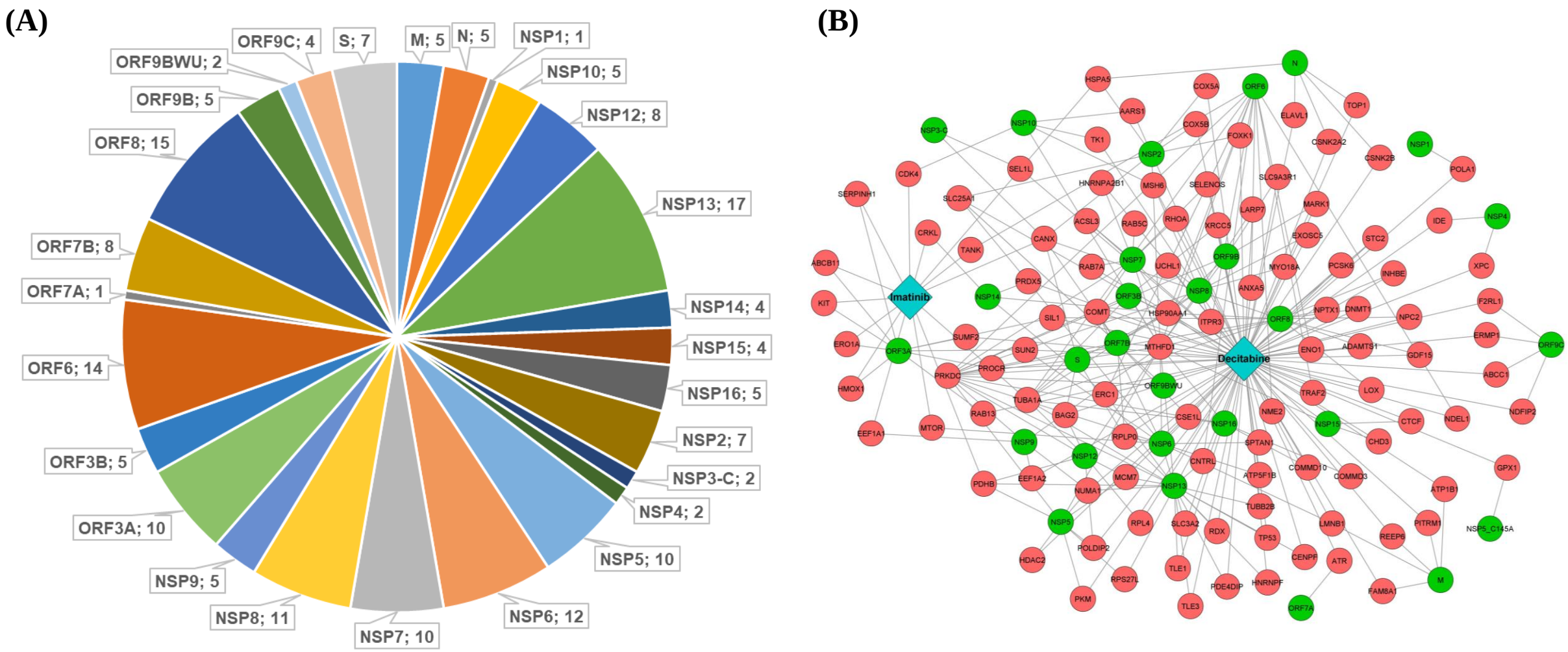


Drug Perturbations fromGEO_2014

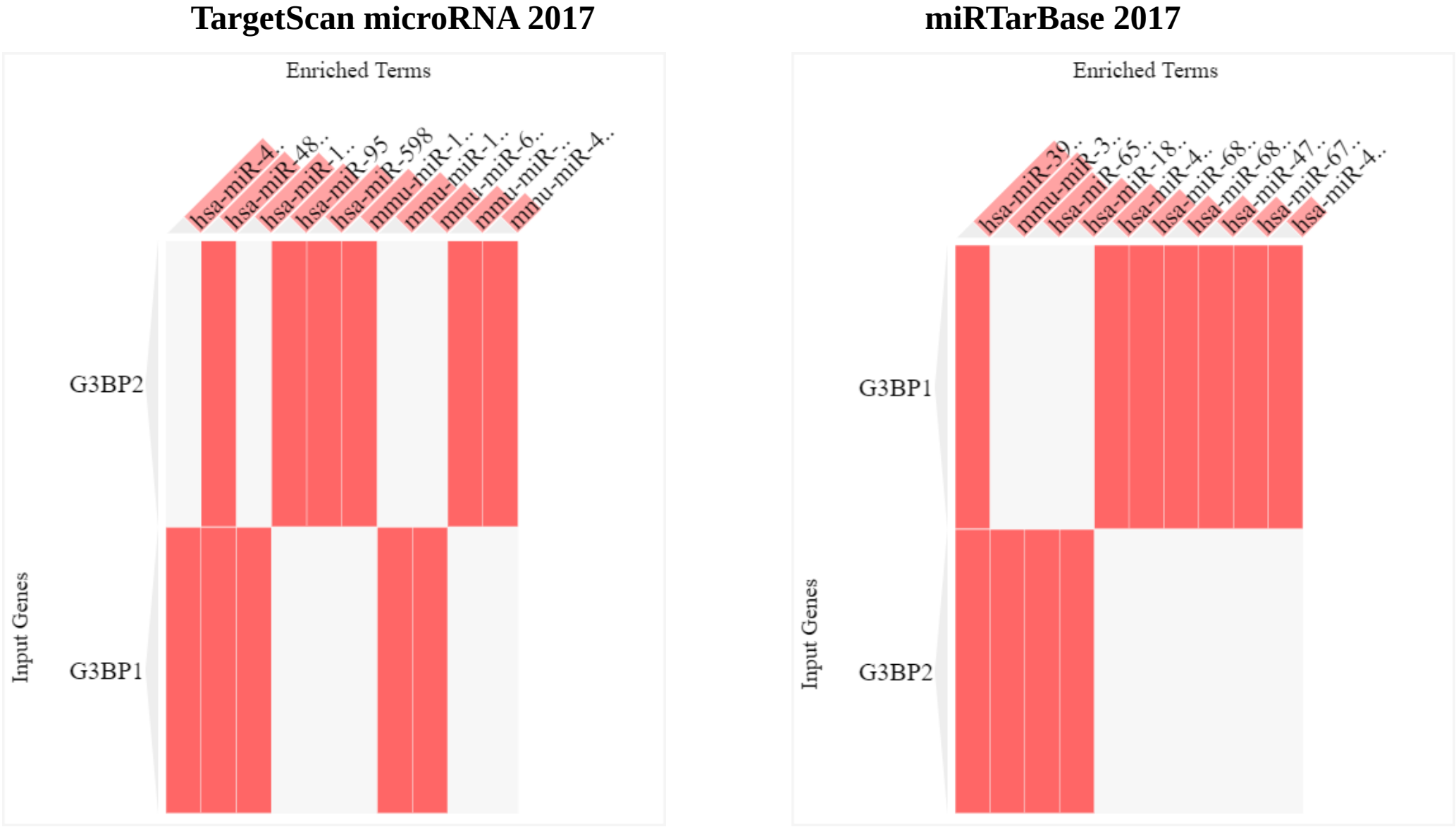




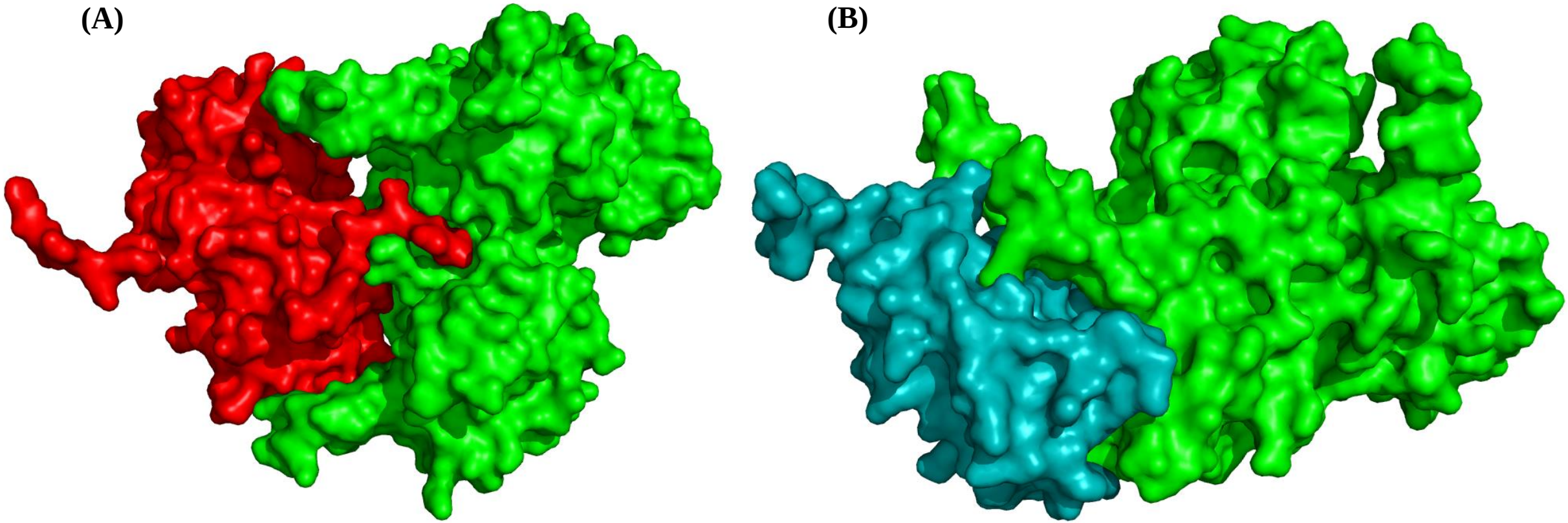
Supplementary Figure 9. GSEA identify Imatinib and Decitabine as potential drug candidate against SARS-CoV-2 infection.



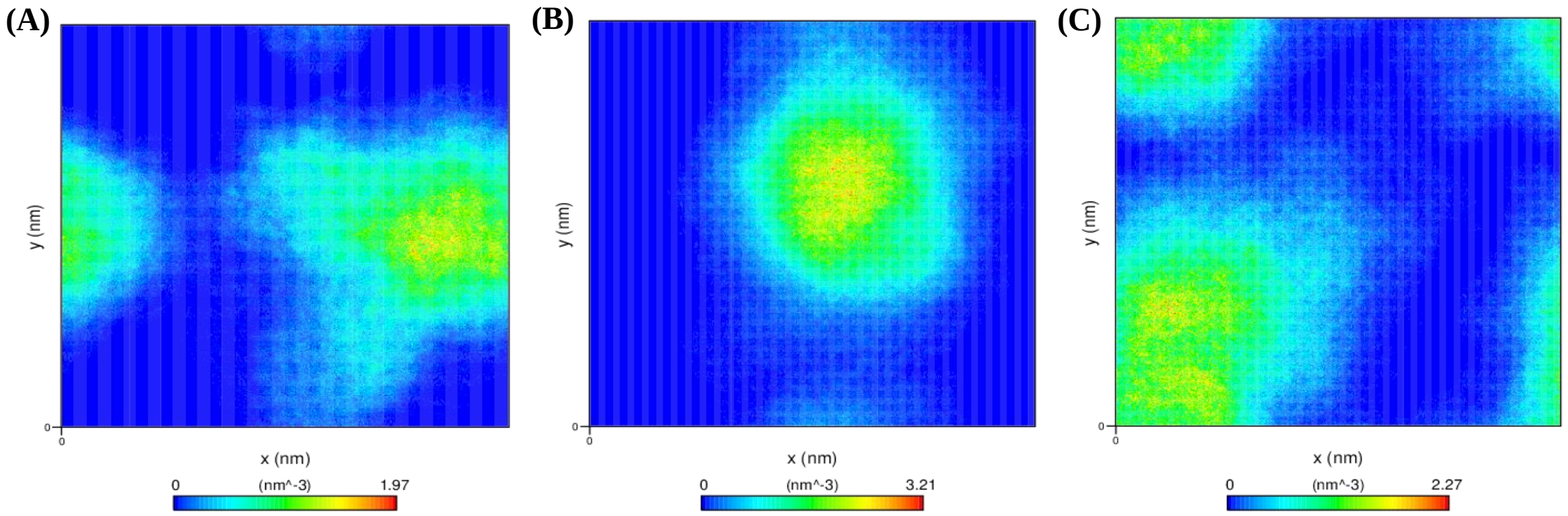
Supplementary Figure 10. Effect of bipartite combinations of imatinib and decitabine on the gene-drug network of SARS-CoV-2-human interactome. (A) Out of 809 SARS-CoV-2 human target proteins, the drug combination interacts with 106 (i.e ~13%) proteins, making 184 interactions in total, and potentially interfering all 27 SARS-CoV-2 protein. (B) Interaction network of the 106 human genes (pink) with 27 SARS-CoV-2 proteins (green).



Supplementary Figure 11. miRNAs as potential modulators of G3BP1/2 expression.



Supplementary Figure 12. Protein-protein docking from HDOCK server. The docking of (A) SARS-CoV-2 N (PDB ID:6M3M, green) to G3BP1 (PDB ID: 4FCJ, red) and (B) SARS-CoV-2 N (PDB ID:6M3M, green) to G3BP2 (PDB ID: 5DRV, teal). The binding pockets are similar in both the docking.



Supplementary Figure 13. Density distribution plot for (A) unbound G3BP1, (B) G3BP1- decitabine, and (C) G3BP1-imatinib complexes.