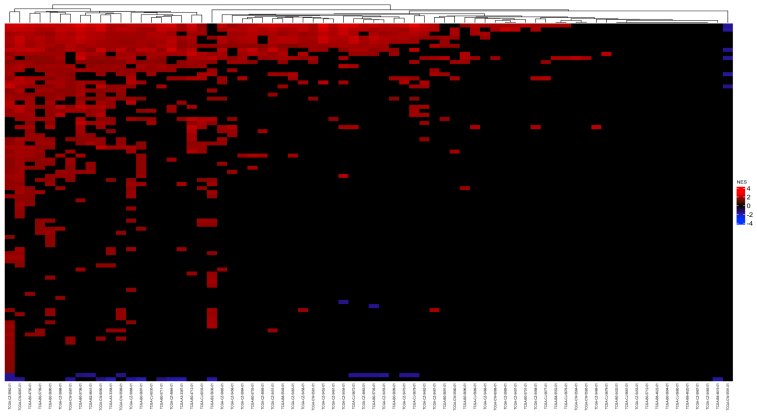
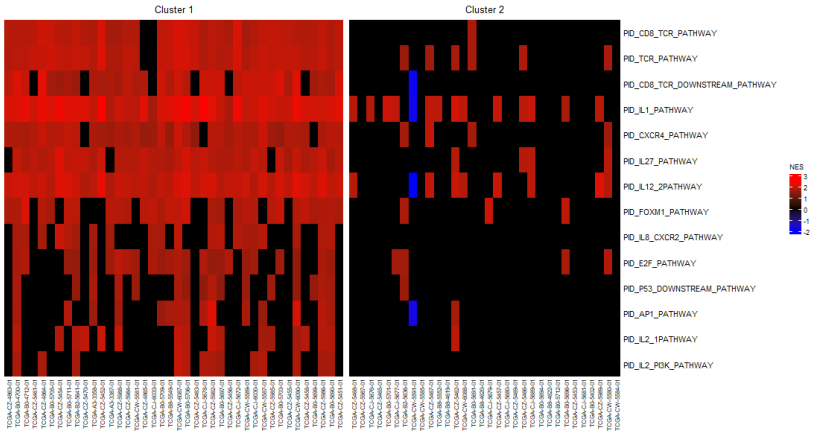
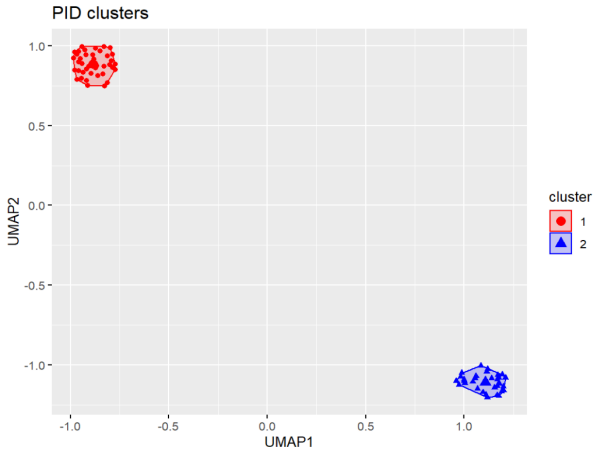
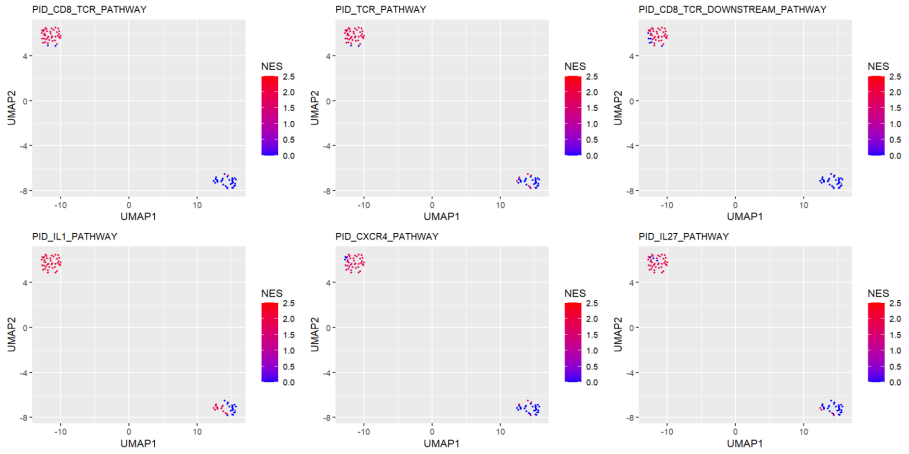
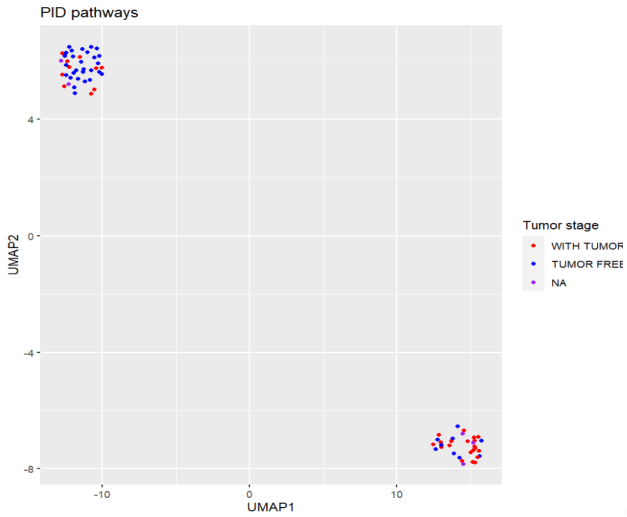
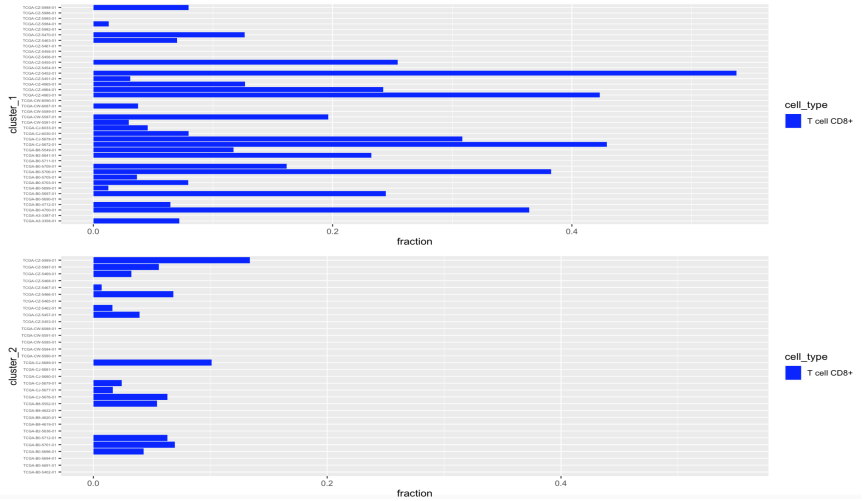

NES
4
2
0
-2
-4

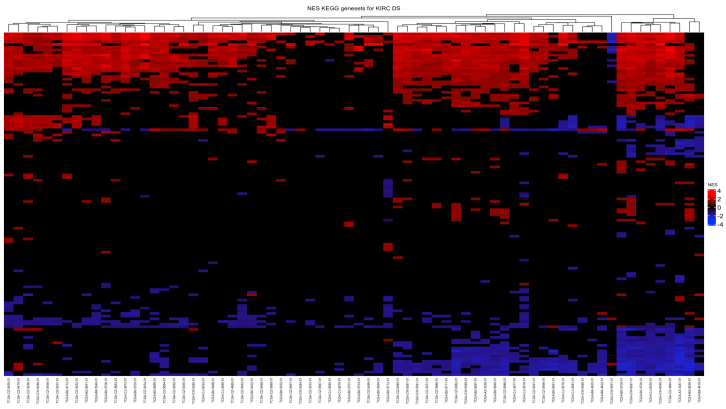

Cluster 1
Cluster 2
PID_CD8_TCR_PATHWAY
PID_TCR_PATHWAY
PID_CD8_TCR_DOWNSTREAM_PATHWAY
PID_IL1_PATHWAY
PID_CXCR4_PATHWAY
PID_IL27_PATHWAY
PID_IL12_2PATHWAY
PID_FOXM1_PATHWAY
PID_IL8_CXCR2_PATHWAY
PID_E2F_PATHWAY
PID_P53_DOWNSTREAM_PATHWAY
PID_AP1_PATHWAY
PID_IL2_1PATHWAY
PID_IL2_PI3K_PATHWAY
NES
3
2
1
0
-1
-2

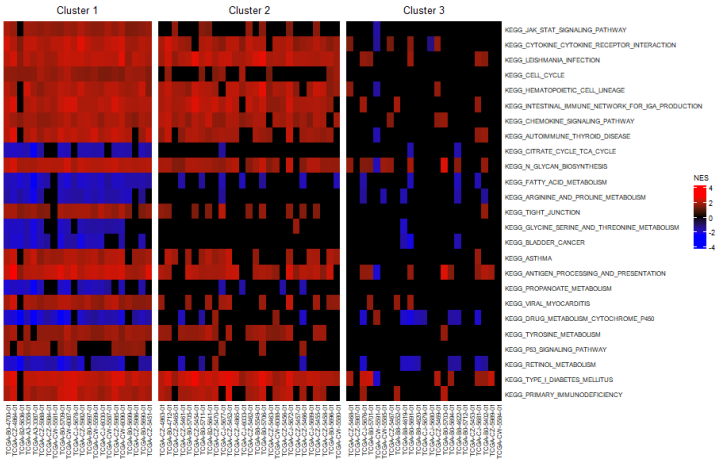

PID clusters
UMAP2
UMAP1
1.0
0.5
0.0
-0.5
-1.0
cluster
1
2

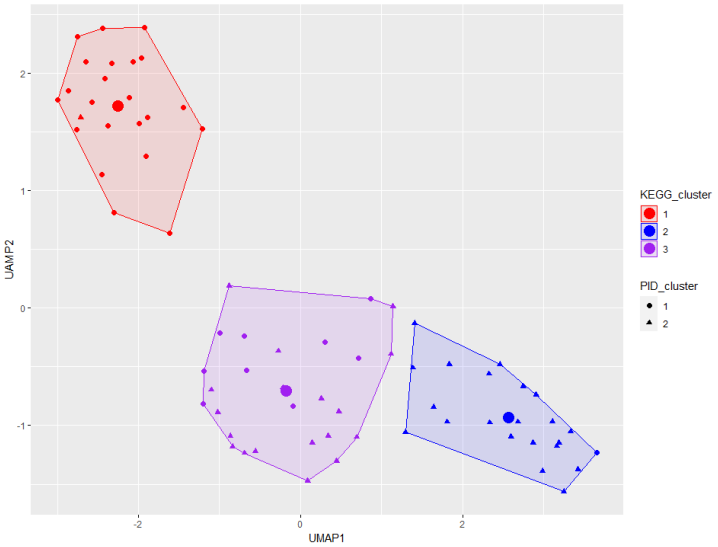

PID_CD8_TCR_PATHWAY
PID_TCR_PATHWAY
PID_CD8_TCR_DOWNSTREAM_PATHWAY
PID_IL1_PATHWAY
PID_CXCR4_PATHWAY
PID_IL27_PATHWAY
UMAP2
UMAP1
NES
2.5
2.0
1.5
1.0
0.5
0.0

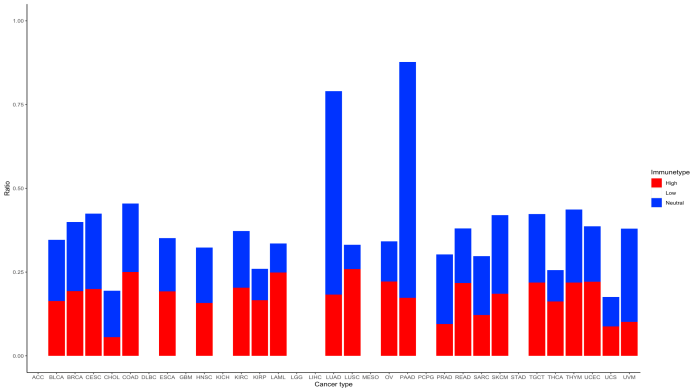

PID pathways
UMAP2
UMAP1
4
0
-4
-8
-10
0
10
Tumor stage
WITH TUMOR
TUMOR FREE
NA

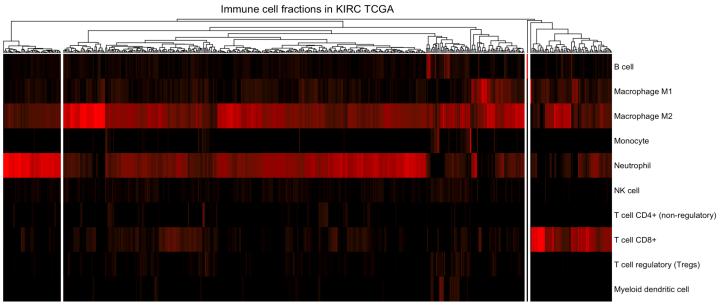

cluster_1
cluster_2
fraction
0.0
0.2
0.4
cell_type
T cell CD8+

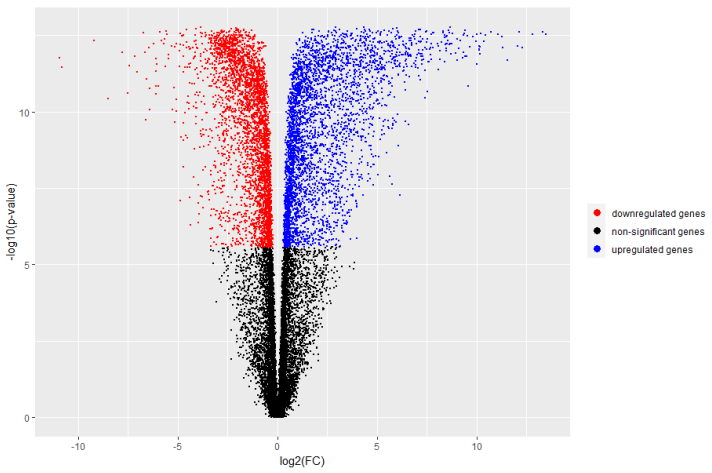

NES KEGG genesets for KIRC DS
NES

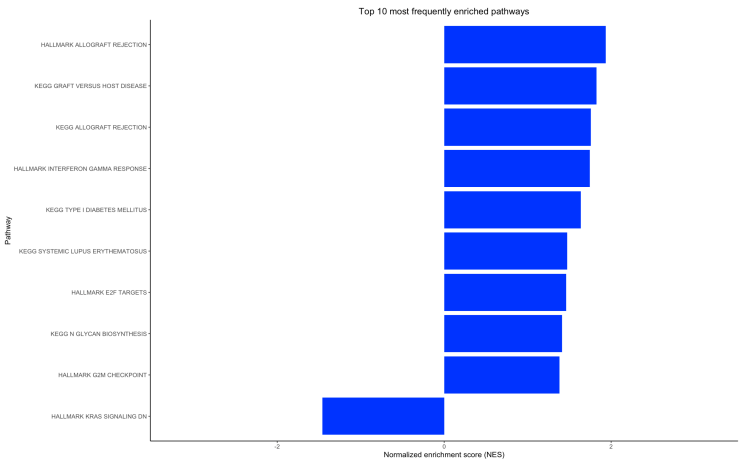

Cluster 1
Cluster 2
Cluster 3
KEGG_JAK_STAT_SIGNALING_PATHWAY
KEGG_CYTOKINE_CYTOKINE_RECEPTOR_INTERACTION
KEGG_LEISHMANIA_INFECTION
KEGG_CELL_CYCLE
KEGG_HEMATOPOIETIC_CELL_LINEAGE
KEGG_INTESTINAL_IMMUNE_NETWORK_FOR_IGA_PRODUCTION
KEGG_CHEMOKINE_SIGNALING_PATHWAY
KEGG_AUTOIMMUNE_THYROID_DISEASE
KEGG_CITRATE_CYCLE_TCA_CYCLE
KEGG_N_GLYCAN_BIOSYNTHESIS
KEGG_FATTY_ACID_METABOLISM
KEGG_ARGININE_AND_PROLINE_METABOLISM
KEGG_TIGHT_JUNCTION
KEGG_GLYCINE_SERINE_AND_THREONINE_METABOLISM
KEGG_BLADDER_CANCER
KEGG_ASTHMA
KEGG_ANTIGEN_PROCESSING_AND_PRESENTATION
KEGG_PROPANOATE_METABOLISM
KEGG_VIRAL_MYOCARDITIS
KEGG_DRUG_METABOLISM_CYTOCHROME_P450
KEGG_TYROSINE_METABOLISM
KEGG_P53_SIGNALING_PATHWAY
KEGG_RETINOL_METABOLISM
KEGG_TYPE_I_DIABETES_MELLITUS
KEGG_PRIMARY_IMMUNODEFICIENCY
NES

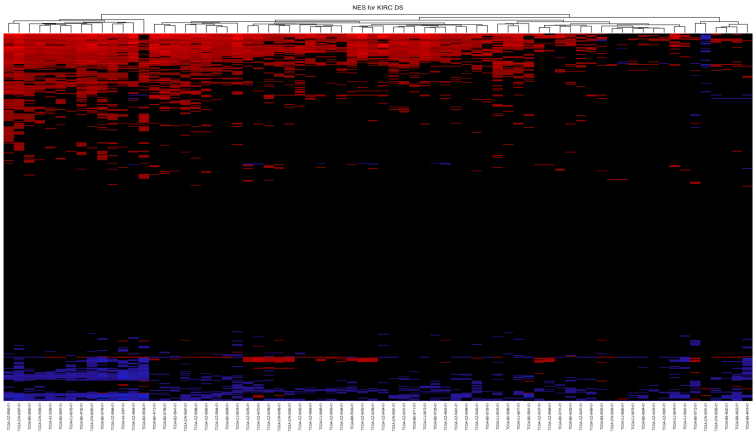

UMAP2
UMAP1
KEGG_cluster
1
2
3
PID_cluster
1
2

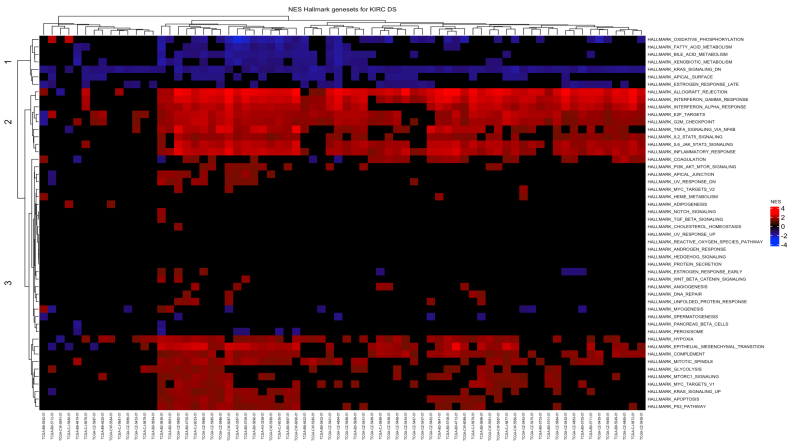

1.00
0.75
0.50
0.25
0.00
Ratio
ACC BLCA BRCA CESC CHOL COAD DLBC ESCA GBM HNSC KICH KIRC KIRP LAML LGG LIHC LUAD LUSC MESO OV PAAD PCPG PRAD READ SARC SKCM STAD TGCT THCA THYM UCEC UCS UVM
Cancer type
Immunetype
High
Low
Neutral


Immune cell fractions in KIRC TCGA
B cell
Macrophage M1
Macrophage M2
Monocyte
Neutrophil
NK cell
T cell CD4+ (non-regulatory)
T cell CD8+
T cell regulatory (Tregs)
Myeloid dendritic cell
mat
0.8
0.6
0.4
0.2
0


-log10(p-value)
log2(FC)
downregulated genes
non-significant genes
upregulated genes


Top 10 most frequently enriched pathways
HALLMARK ALLOGRAFT REJECTION
KEGG GRAFT VERSUS HOST DISEASE
KEGG ALLOGRAFT REJECTION
HALLMARK INTERFERON GAMMA RESPONSE
KEGG TYPE I DIABETES MELLITUS
KEGG SYSTEMIC LUPUS ERYTHEMATOSUS
HALLMARK E2F TARGETS
KEGG N GLYCAN BIOSYNTHESIS
HALLMARK G2M CHECKPOINT
HALLMARK KRAS SIGNALING DN
Pathway
Normalized enrichment score (NES)


NES for KIRC DS
NES


NES Hallmark genesets for KIRC DS
NES