

# Figures : SPRUCE - Single-cell Pairwise Relationships Untangled by Composite ETM

Park Lab

07:16:38 AM, Jul 04, 2022

## Cell topic analysis

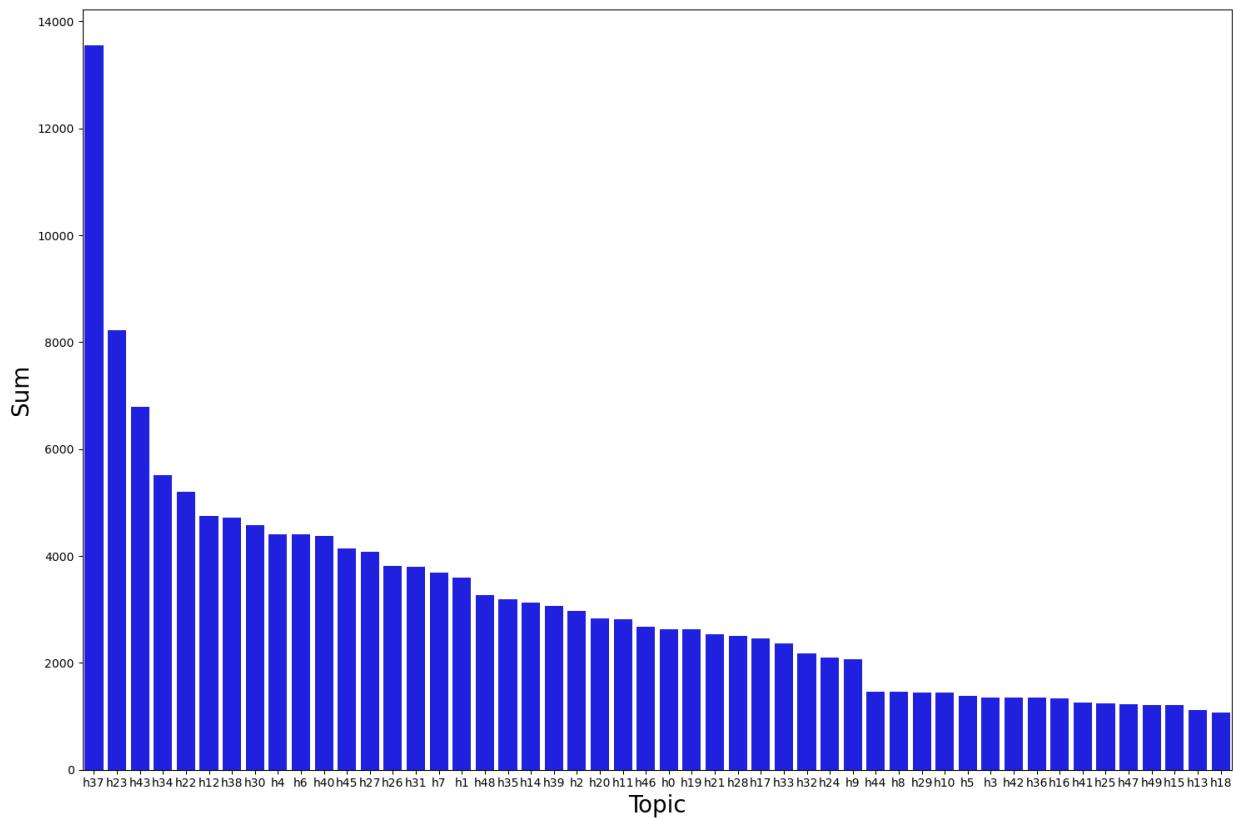


Figure 1: Topic sum

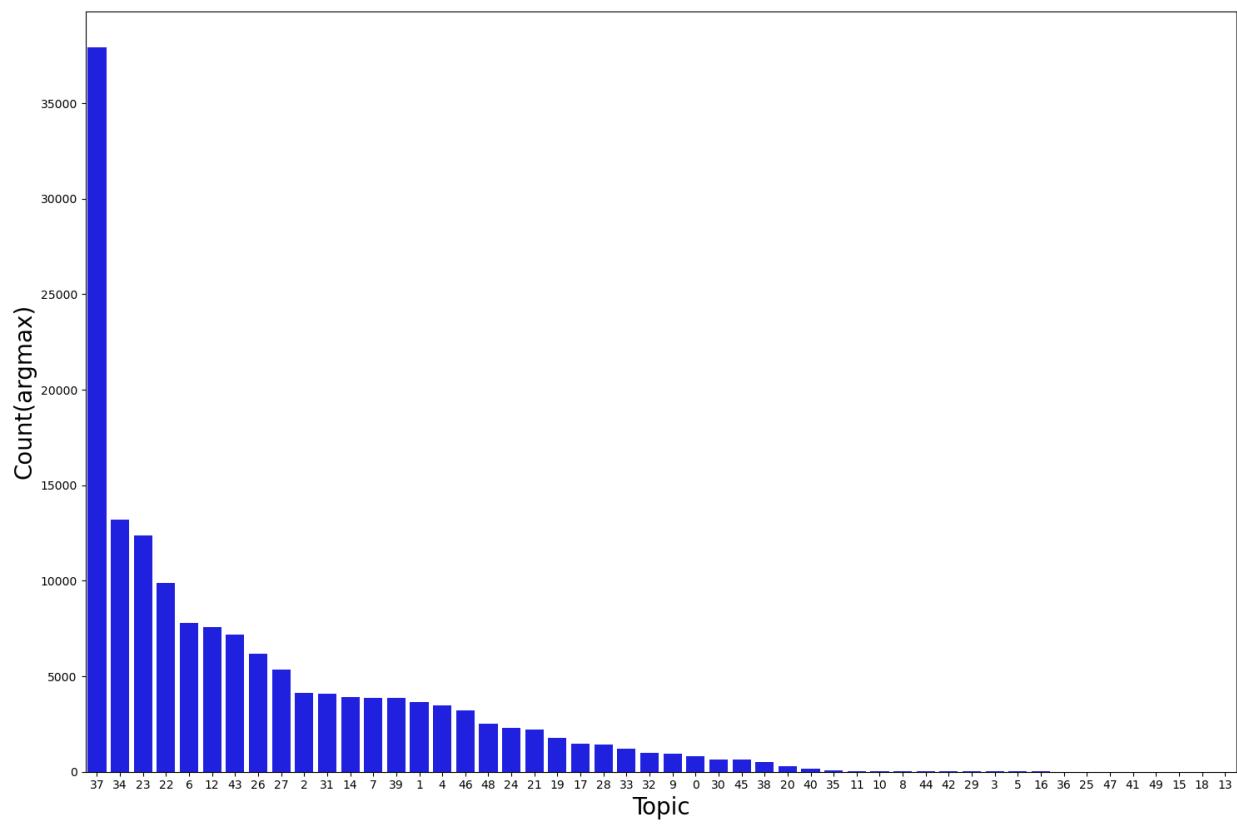


Figure 2: Topic argmax

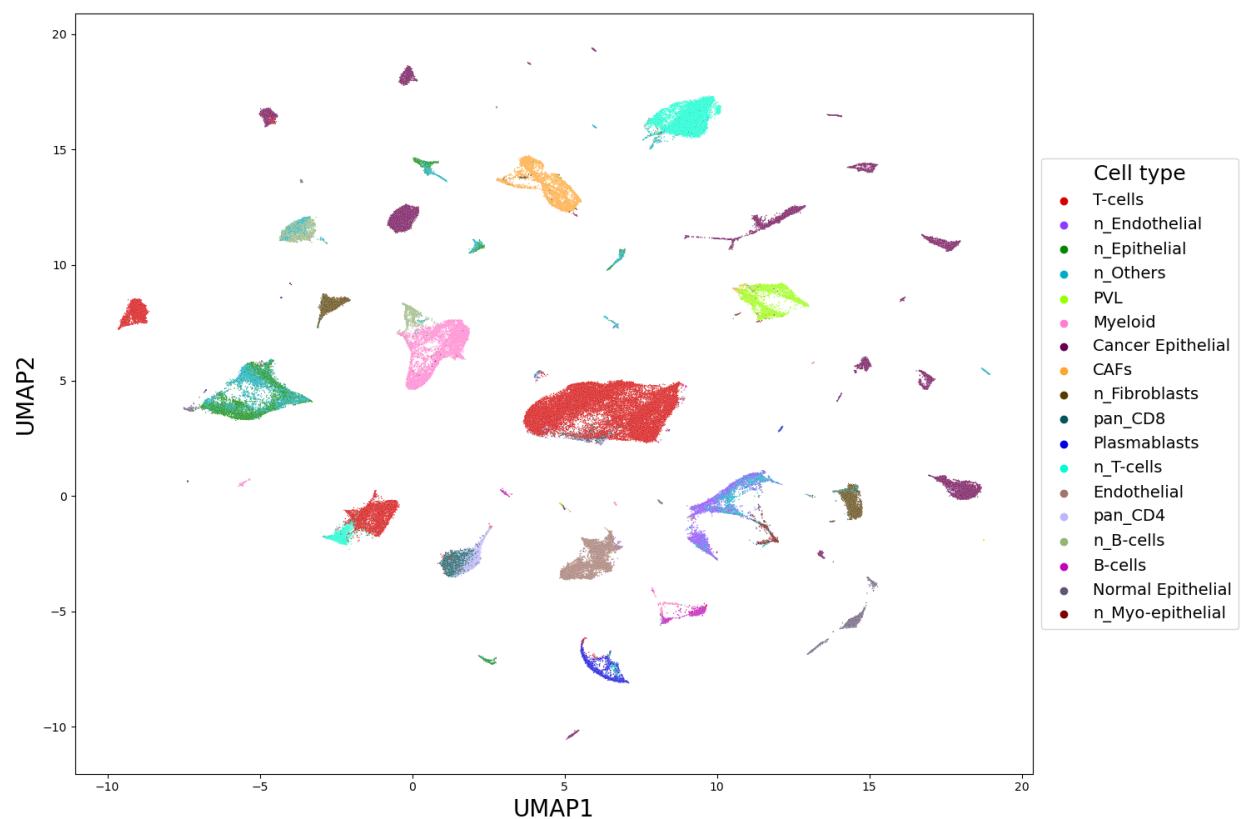


Figure 3: UMAP cell-type

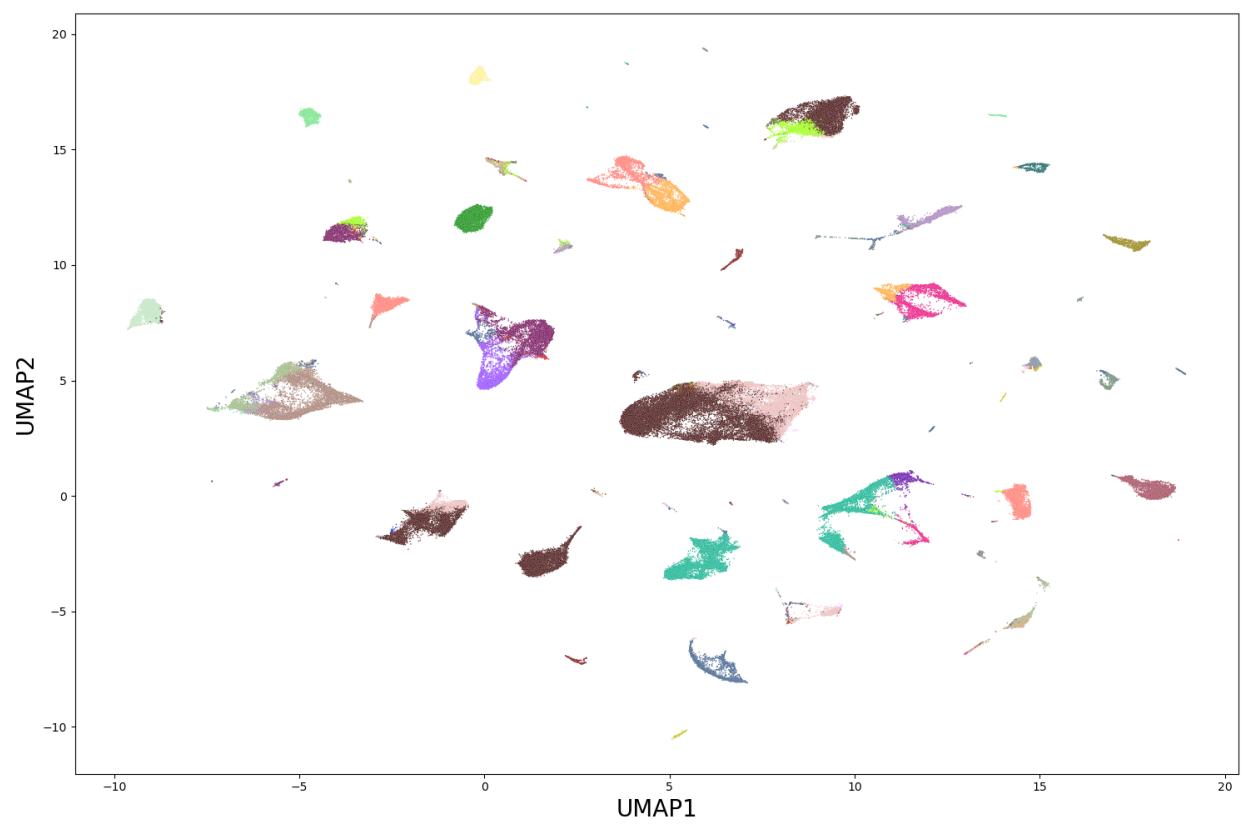


Figure 4: UMAP topic

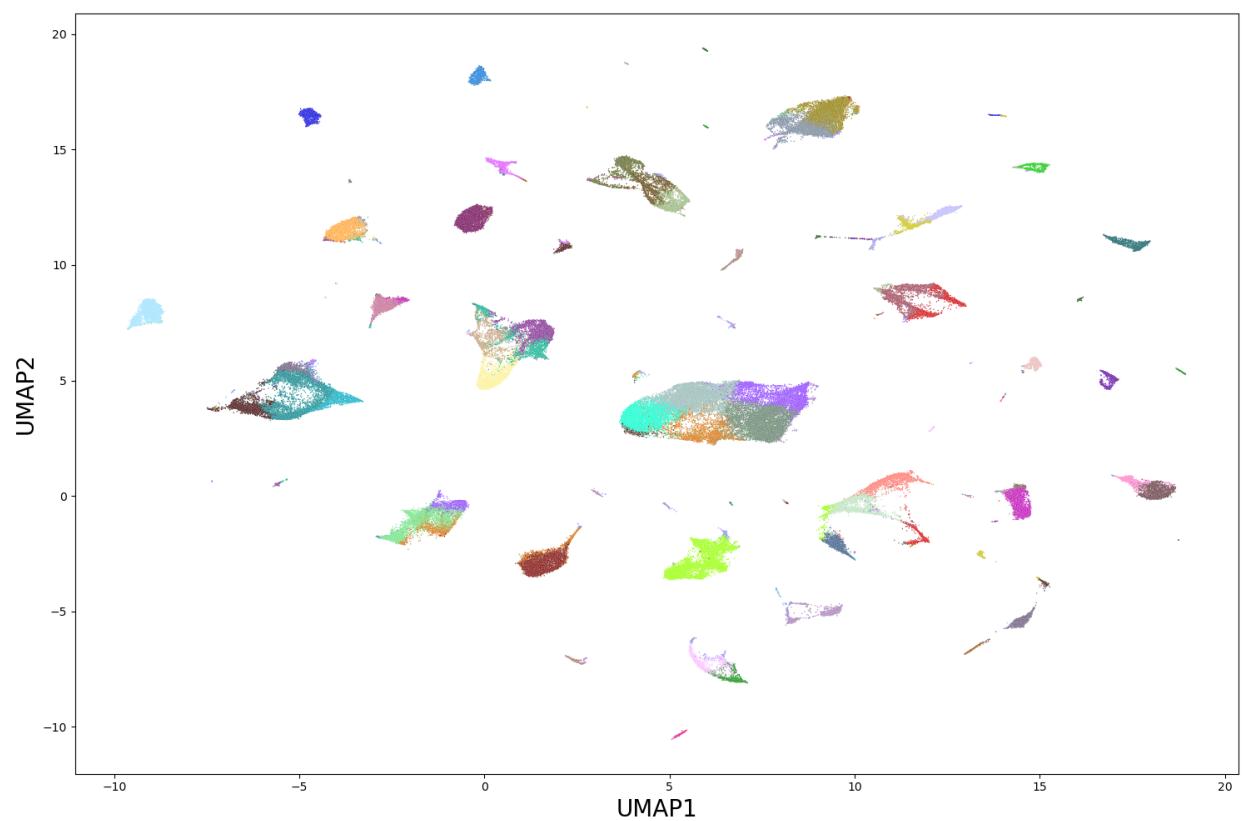


Figure 5: UMAP-kmeans ( $k=50$ )

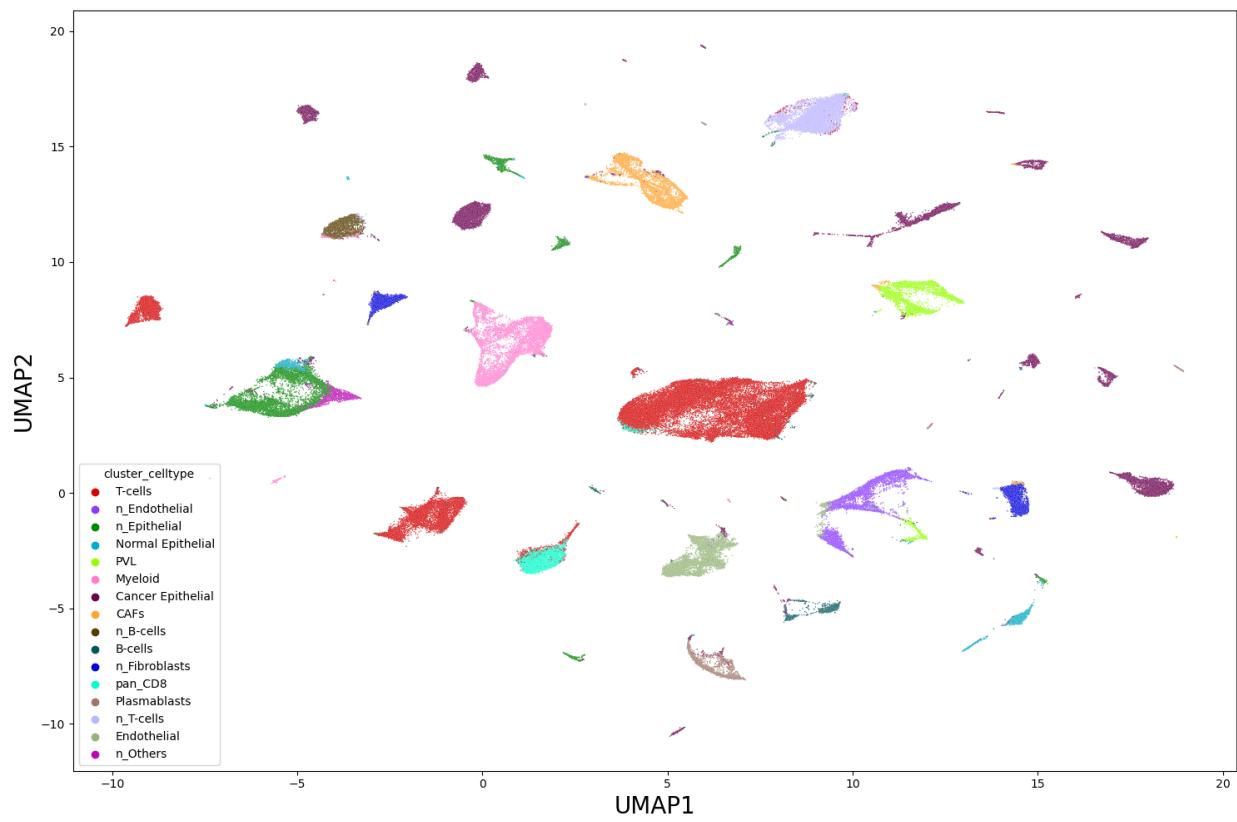


Figure 6: UMAP-kmeans( $k=50$ ) cell-type

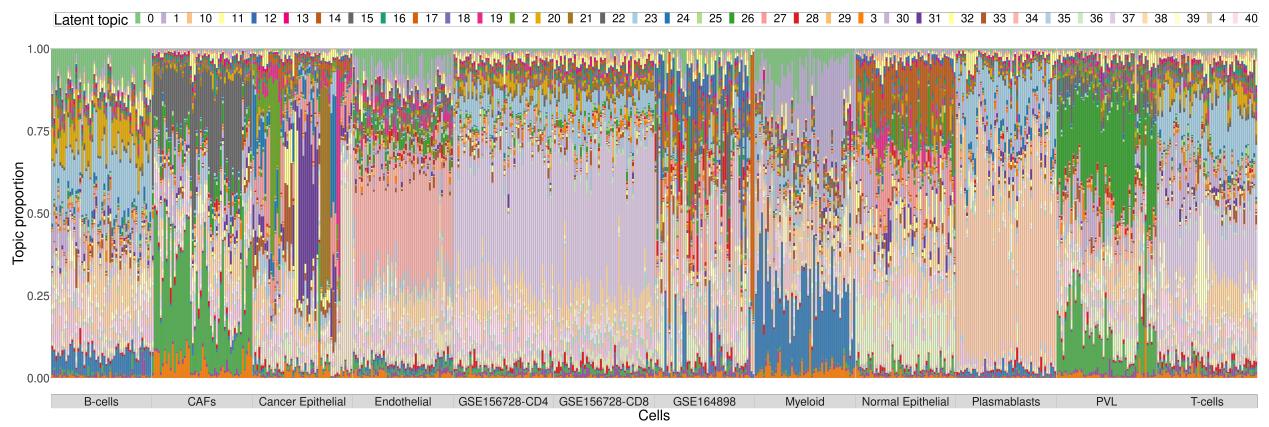


Figure 7: Structure plot cell-type

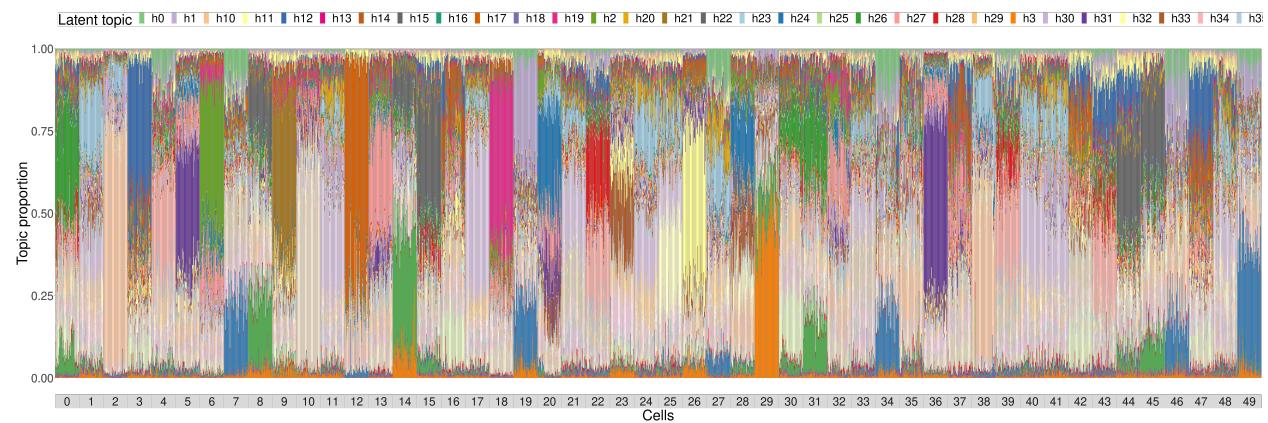


Figure 8: Structure plot kmeans cluster

## Interaction topic analysis

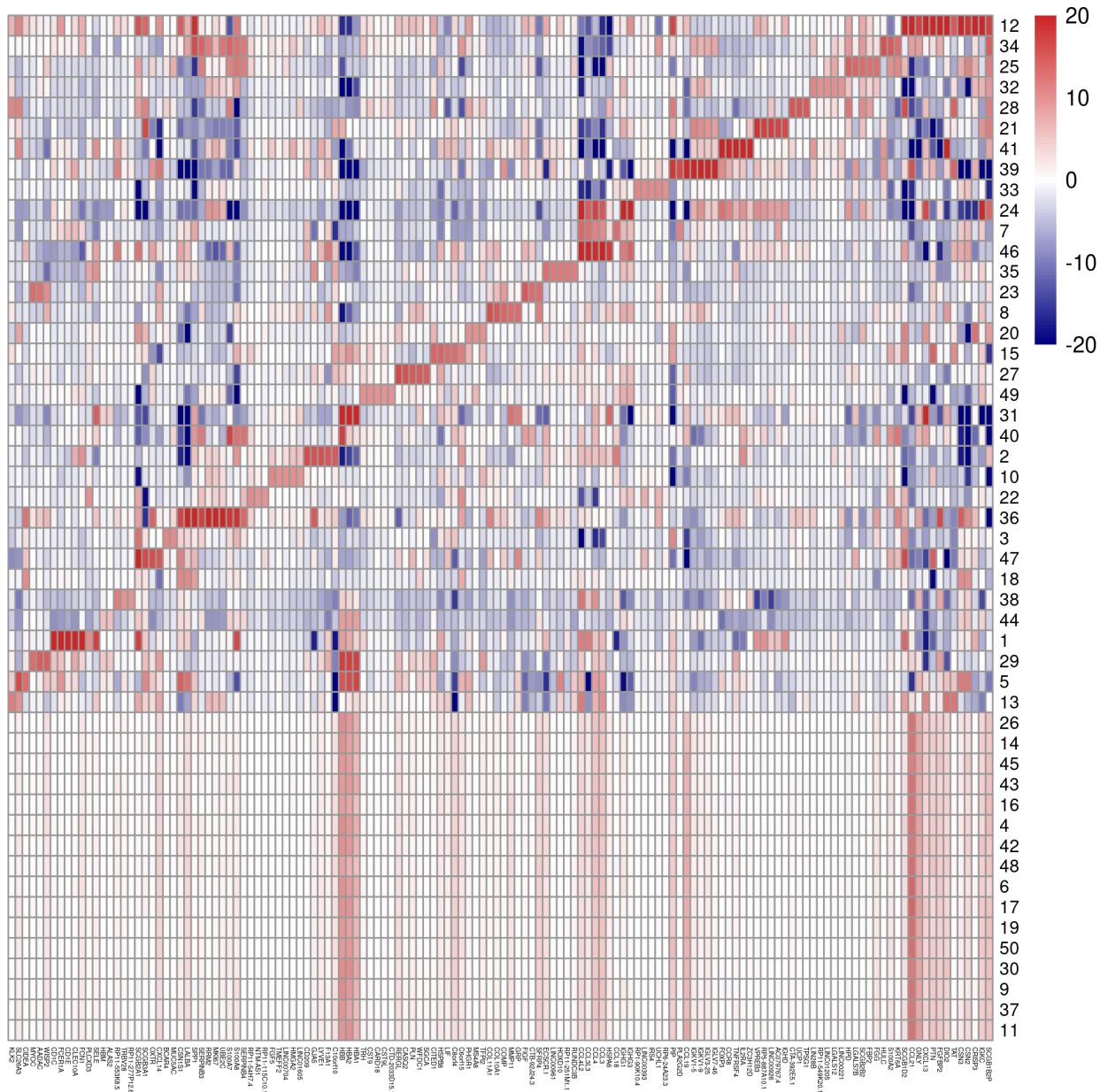


Figure 9: Beta - top genes

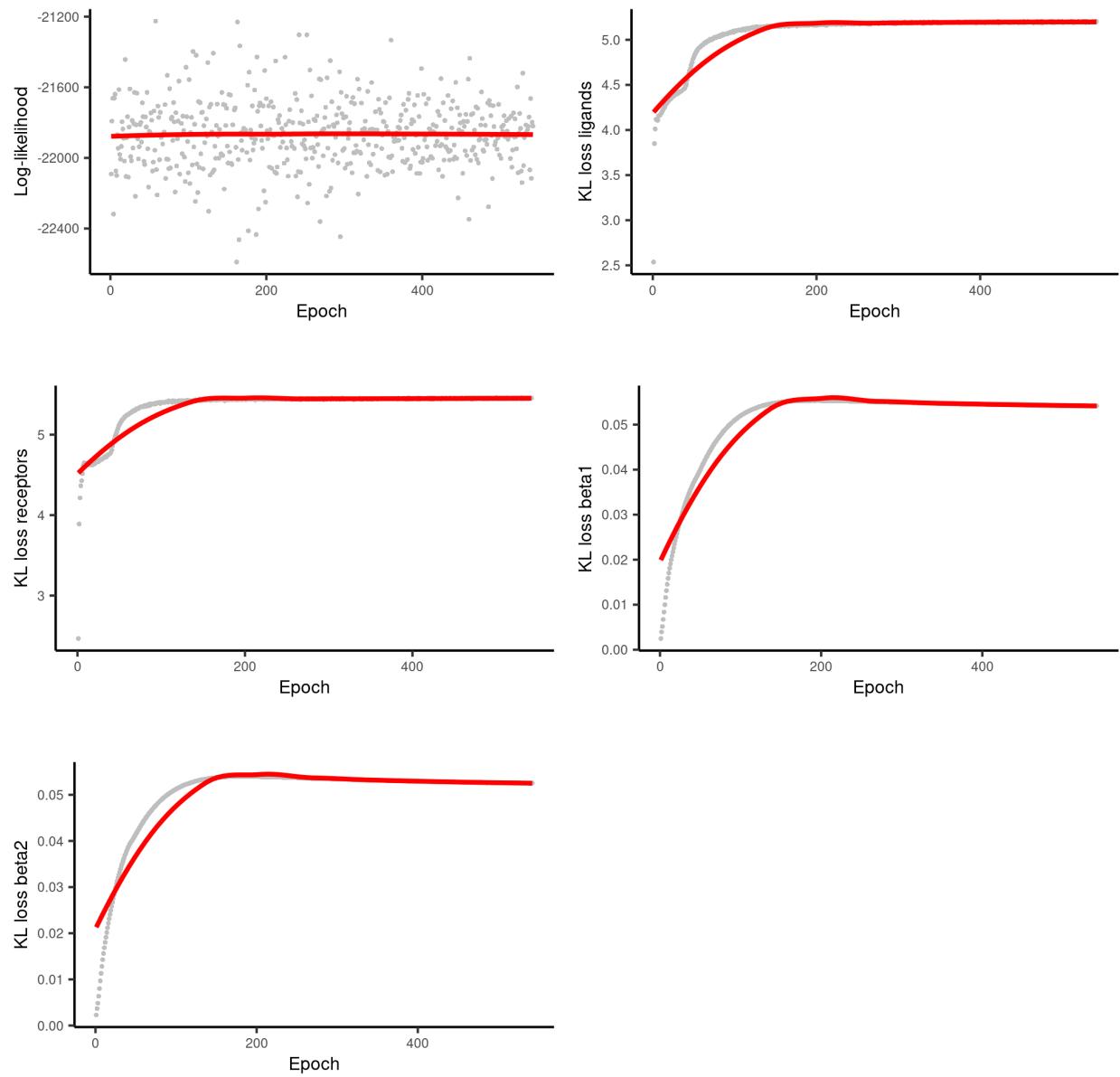


Figure 10: Loss plot

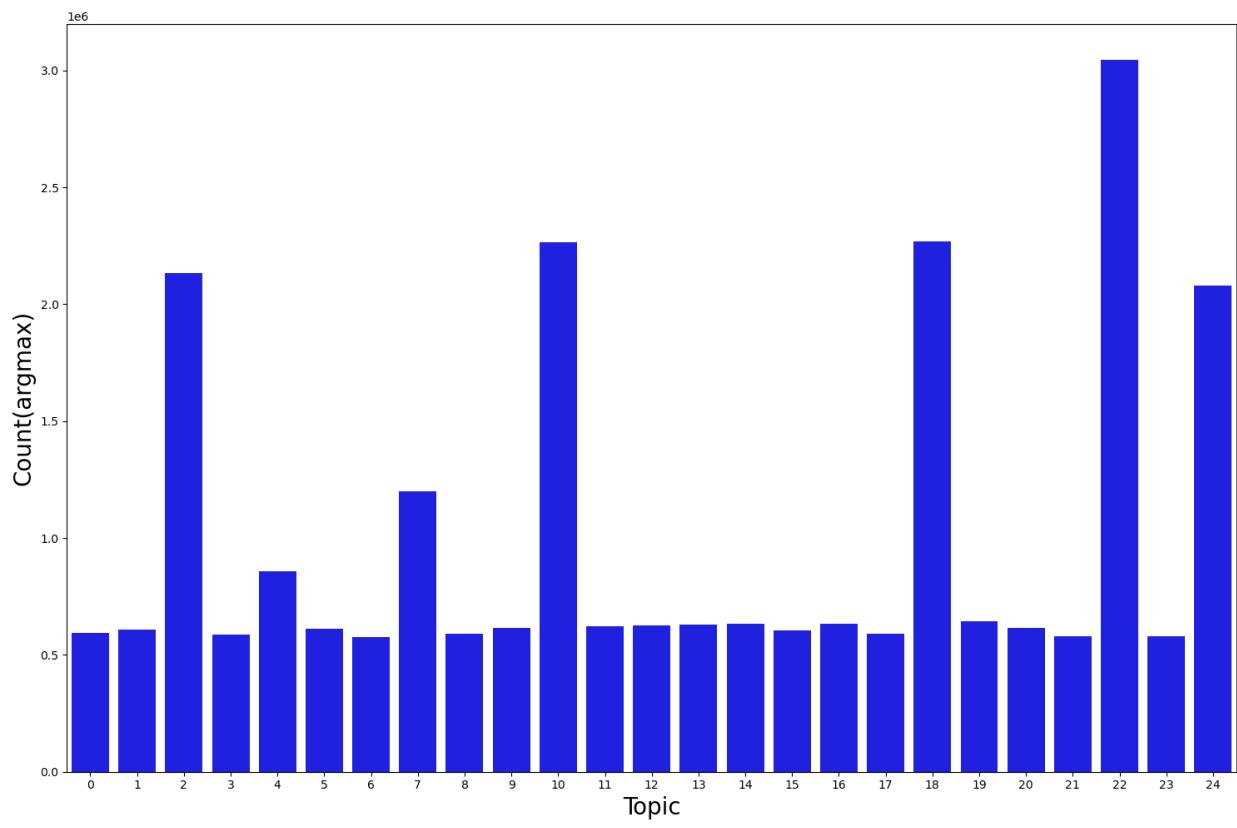


Figure 11: Interaction topic argmax

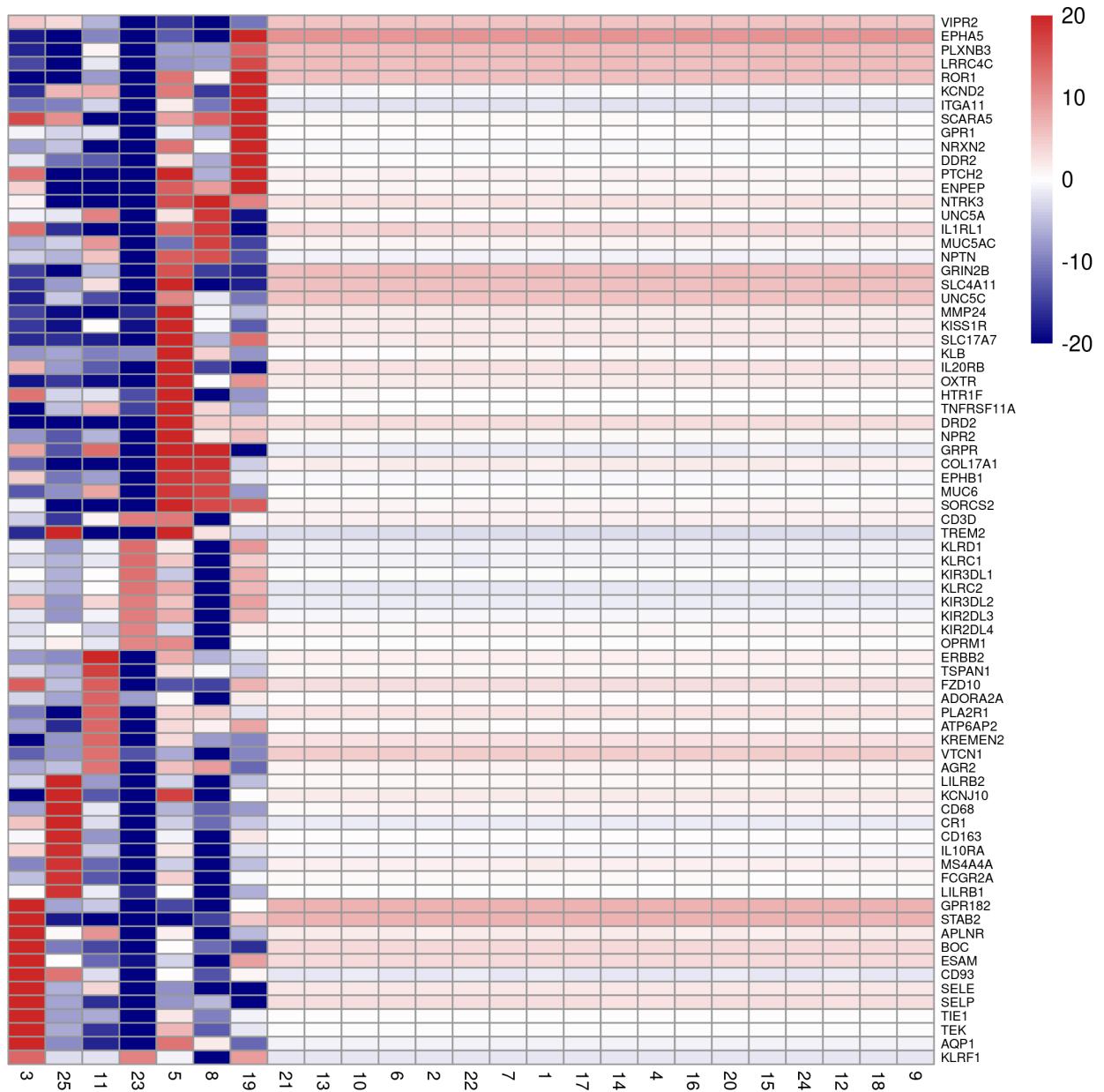


Figure 12: Beta - top receptor genes

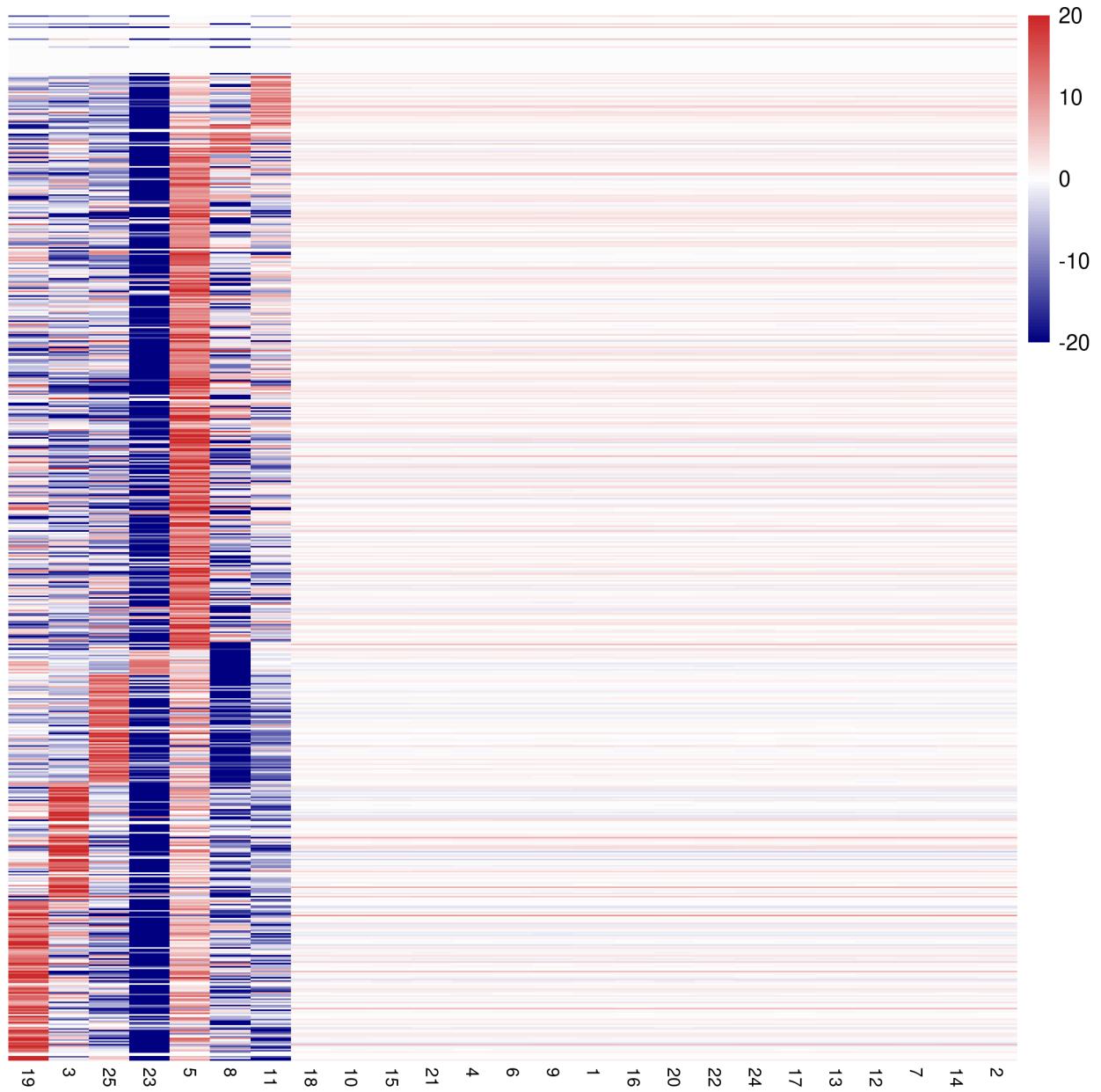


Figure 13: Beta - all receptor genes

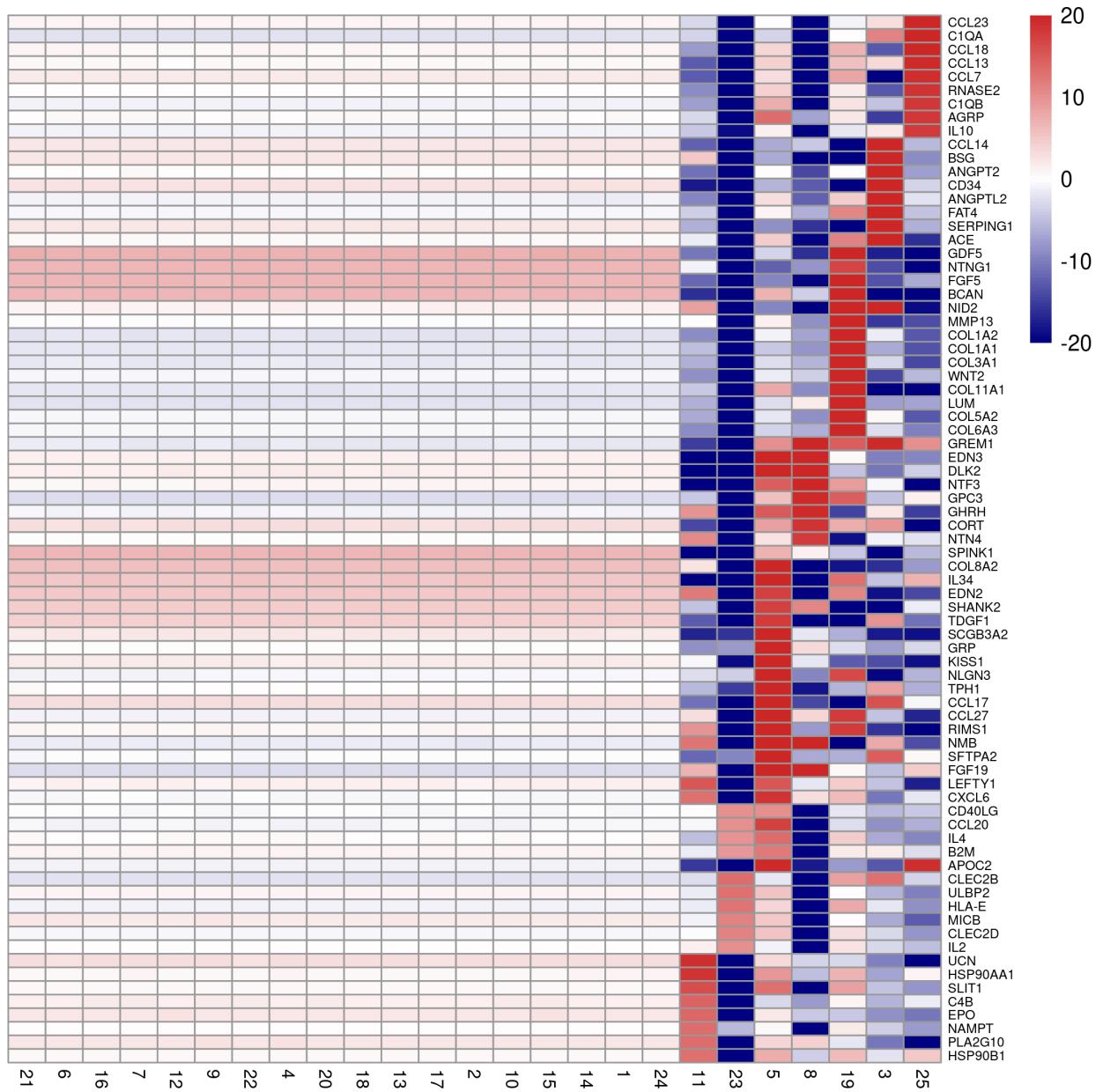


Figure 14: Beta - top ligand genes

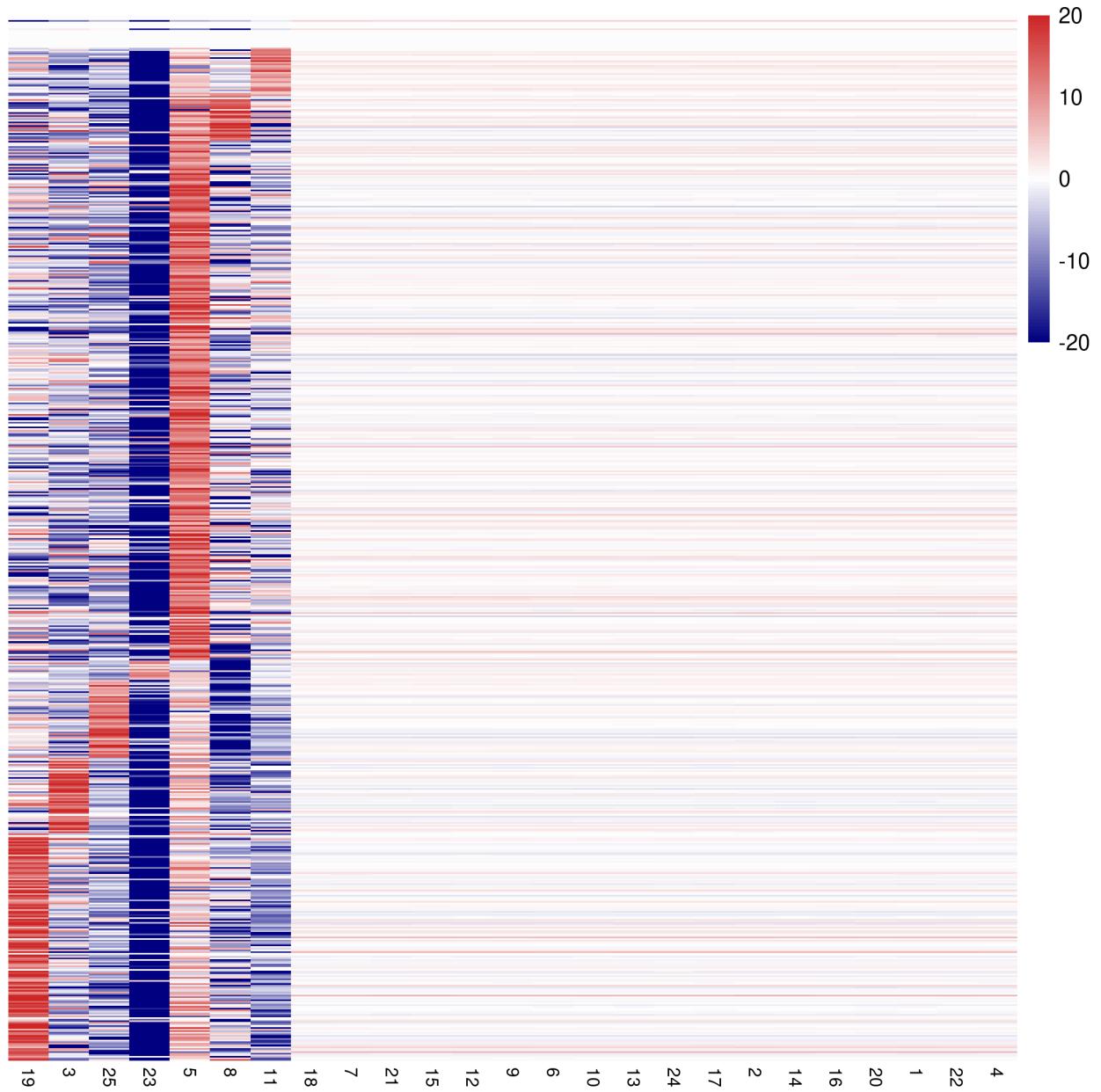


Figure 15: Beta - all ligand genes

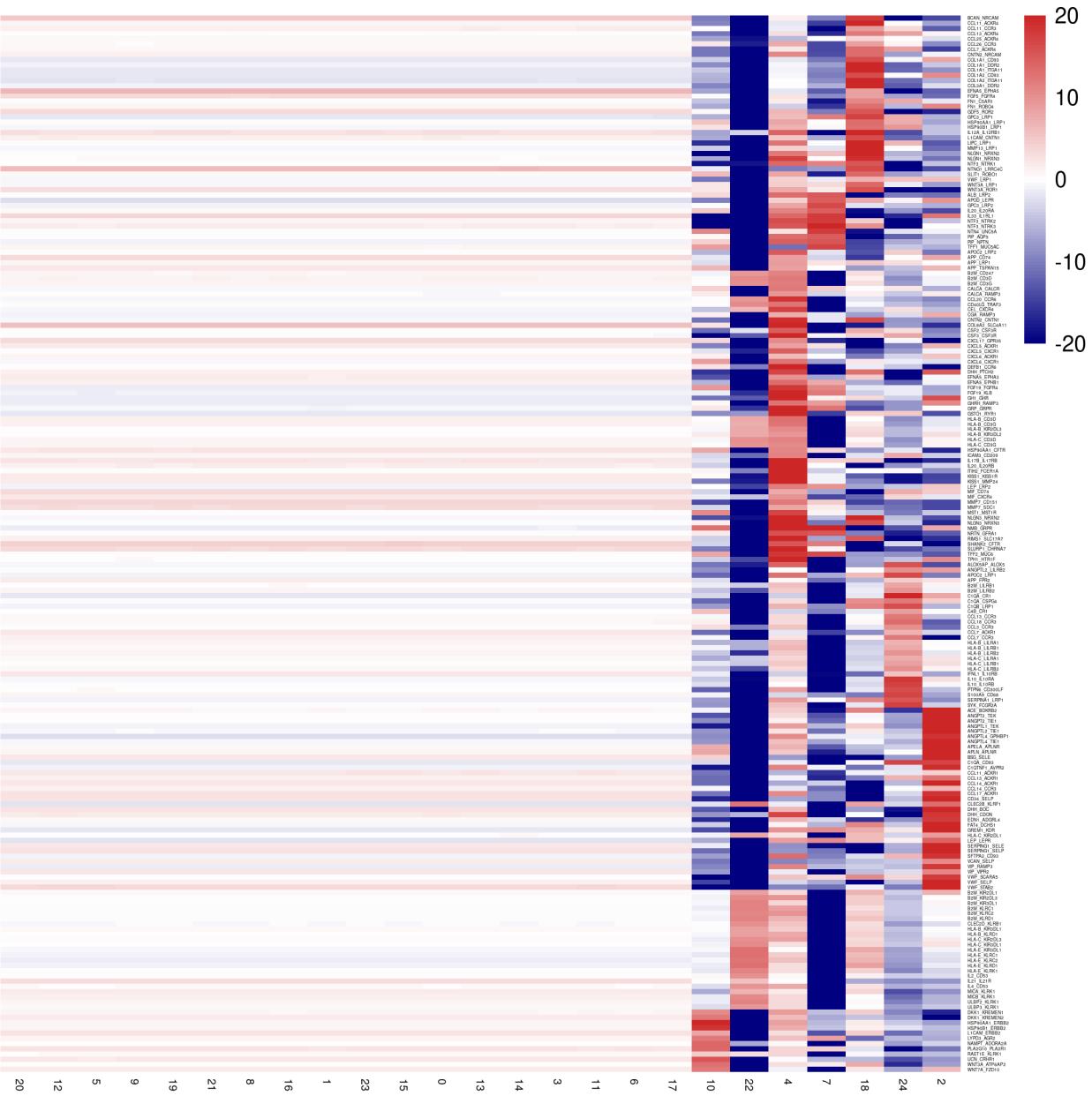


Figure 16: Beta - top lr pair genes

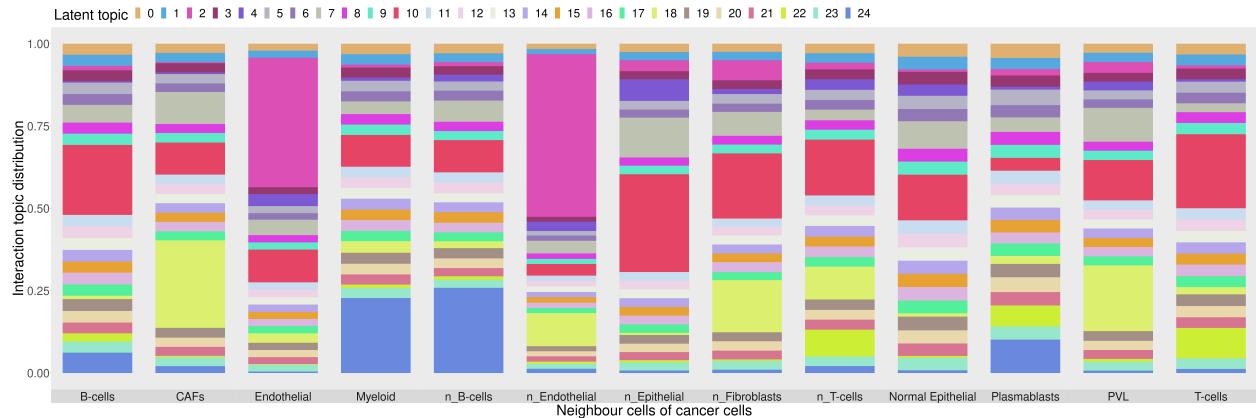


Figure 17: Cancer centric view - Cancer cells neighbour and interaction states

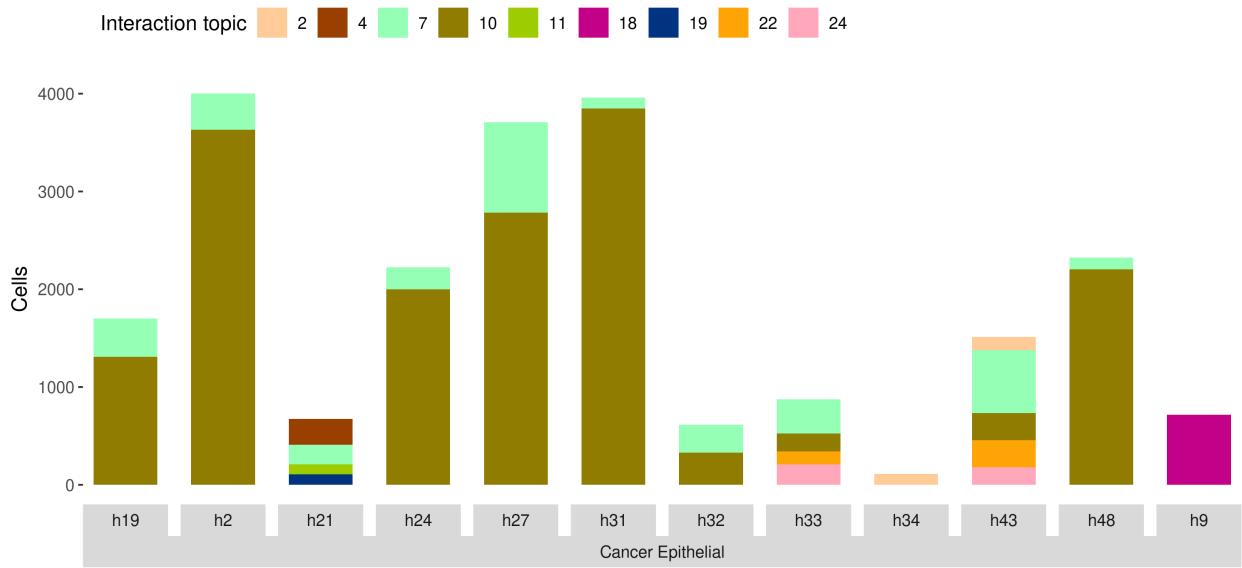


Figure 18: Model summary - cancer cells

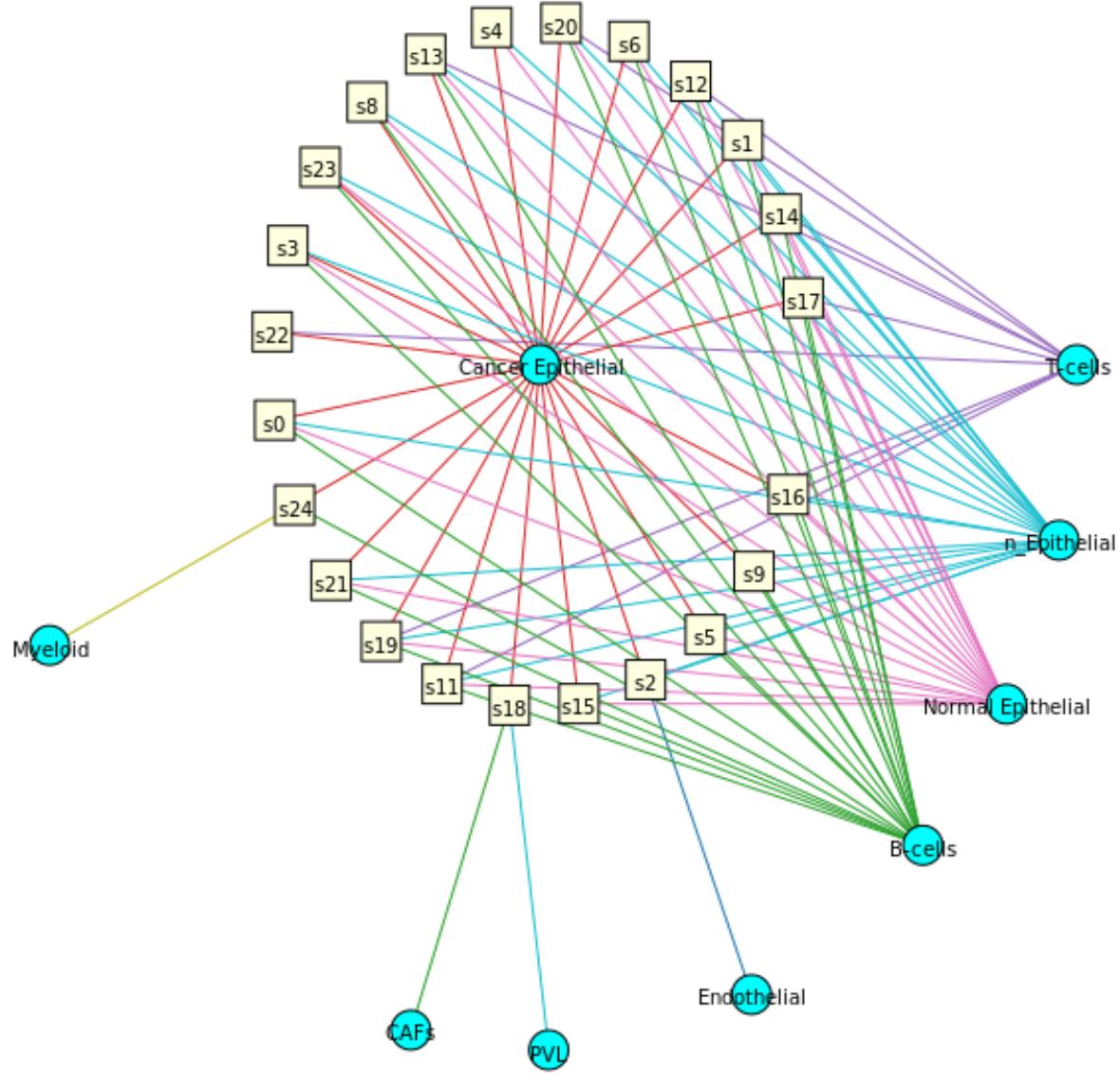


Figure 19: Network plot

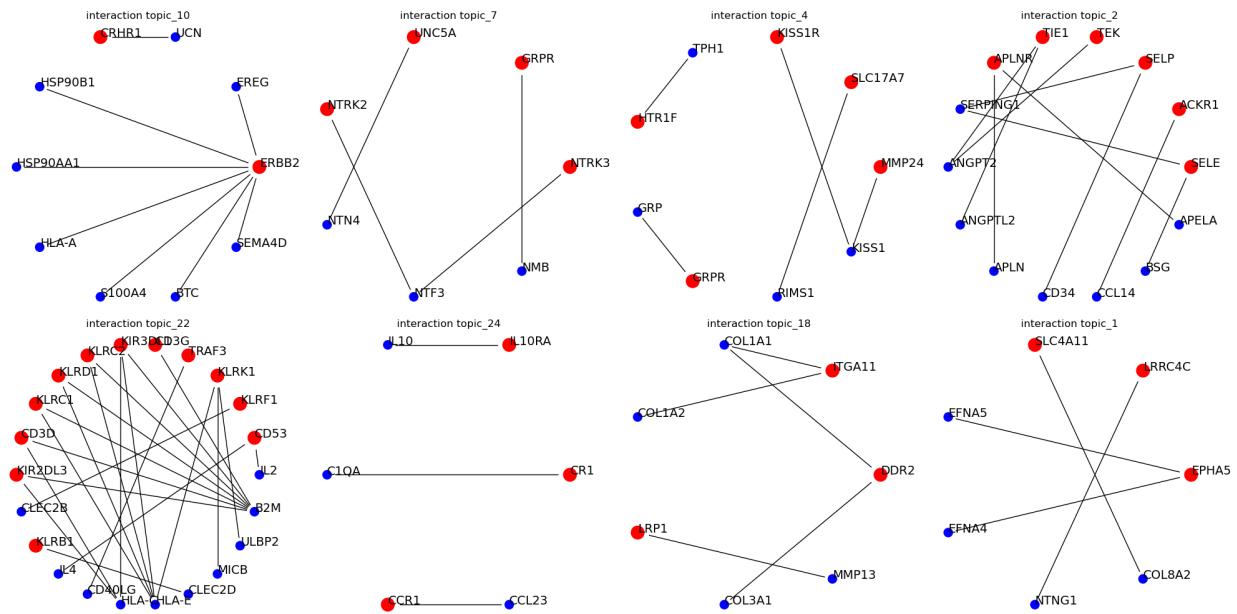


Figure 20: Interaction states and LR network in LRdb

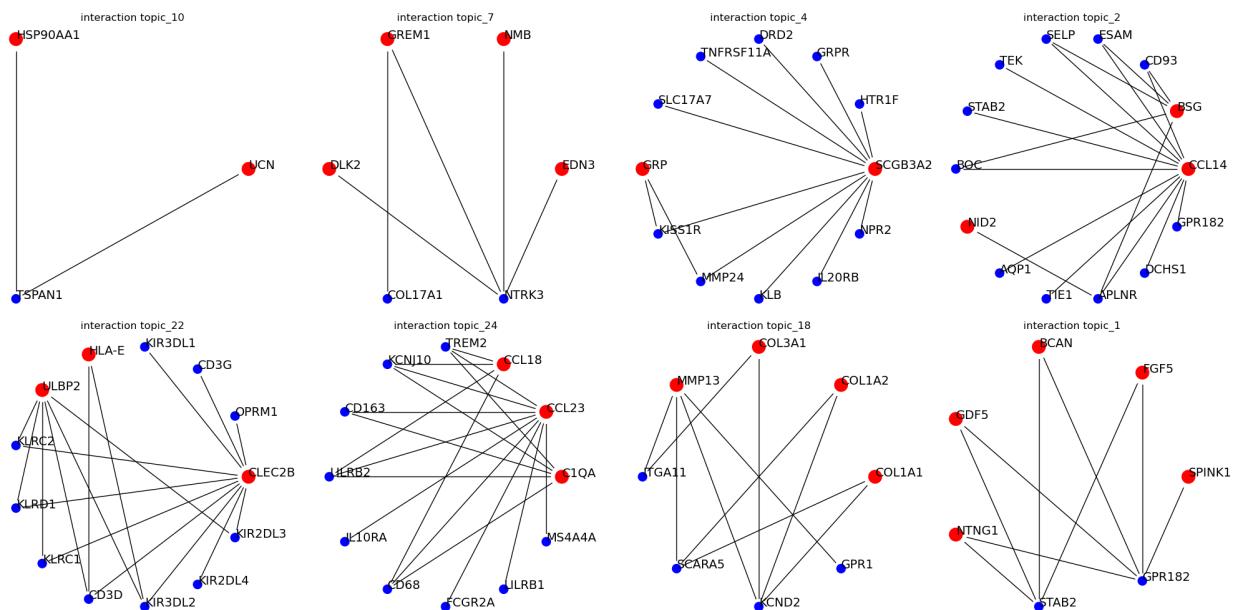


Figure 21: Interaction states and LR network not in LRdb

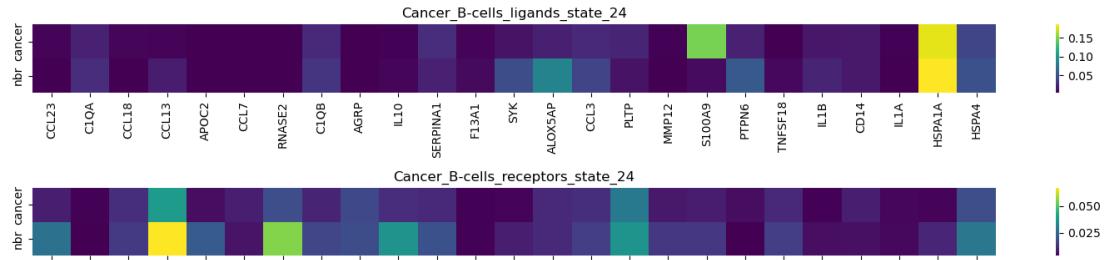


Figure 22: Cancer centric view - B cells

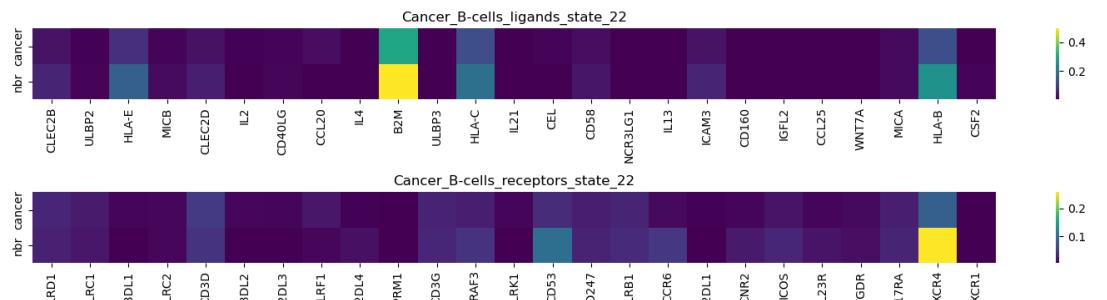


Figure 23: Cancer centric view - B cells

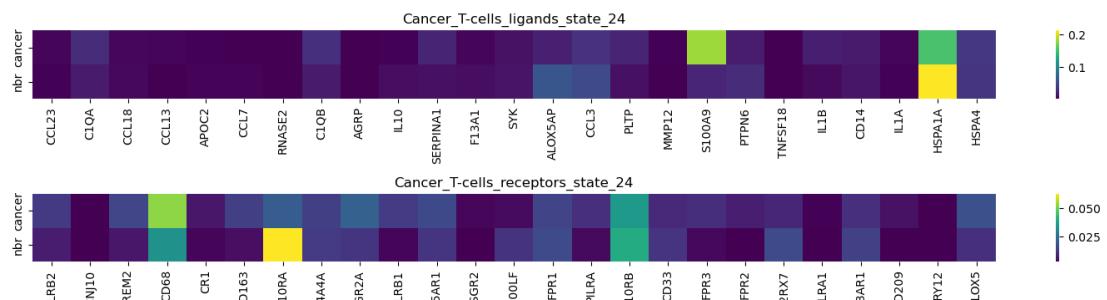


Figure 24: Cancer centric view - T cells

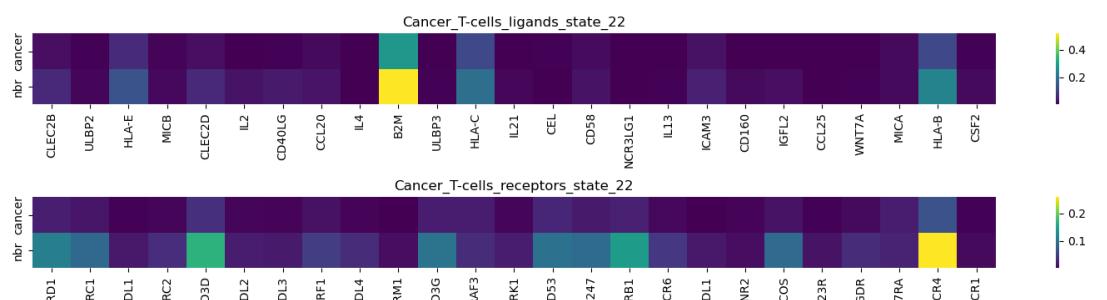


Figure 25: Cancer centric view - T cells

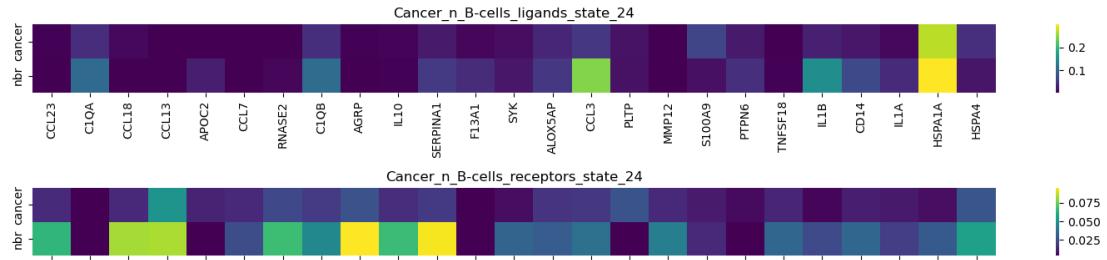


Figure 26: Cancer centric view - B cells

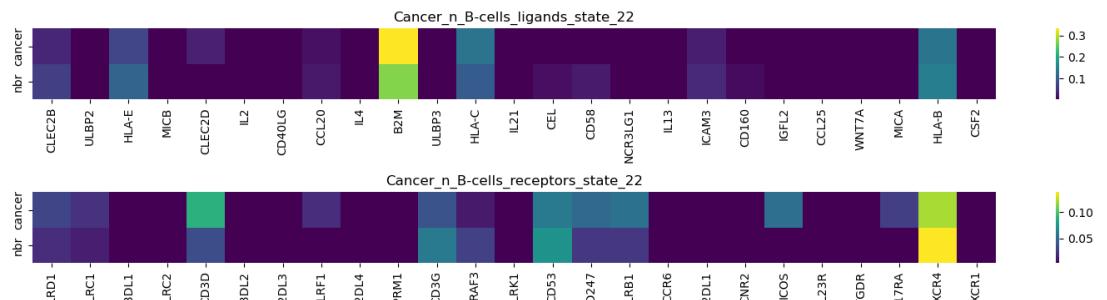


Figure 27: Cancer centric view - B cells

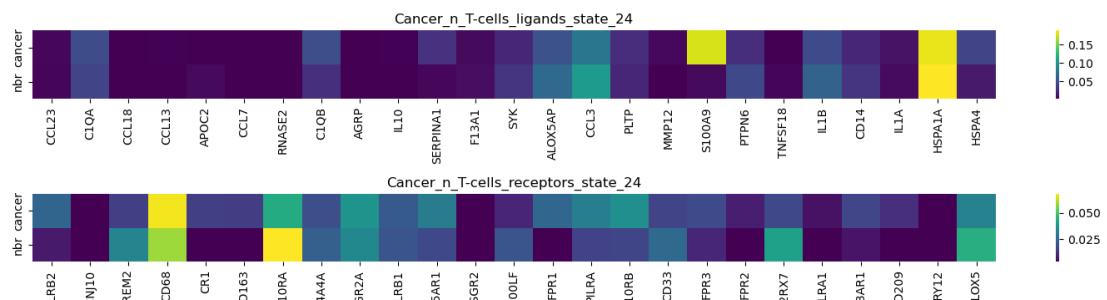


Figure 28: Cancer centric view - T cells

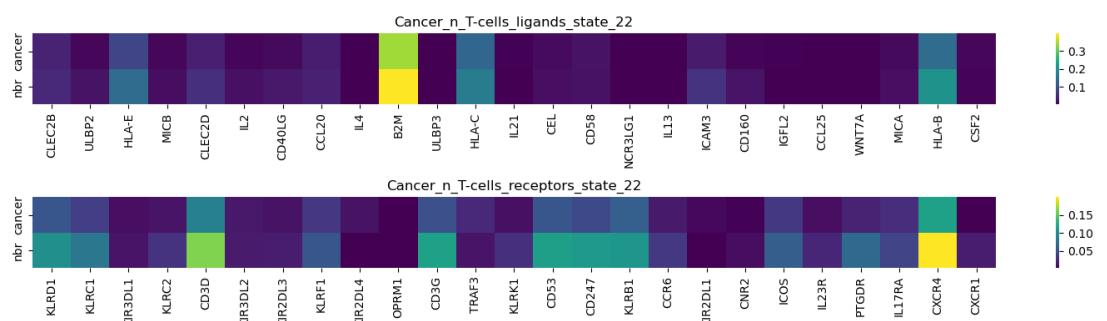


Figure 29: Cancer centric view - T cells

Term	fdr	topic
Angiogenesis	0.000000000	2
Interferon Gamma Response	0.000000000	4
Allograft Rejection	0.000000000	7
Hypoxia	0.000000000	7
Epithelial Mesenchymal Transition	0.000000000	18
PI3K/AKT/mTOR Signaling	0.000000000	22
Allograft Rejection	0.000000000	22
IL-6/JAK/STAT3 Signaling	0.000000000	22
Interferon Gamma Response	0.000000000	22
Allograft Rejection	0.000000000	24
IL-6/JAK/STAT3 Signaling	0.000000000	24
Inflammatory Response	0.000000000	24
Interferon Gamma Response	0.000000000	24
Complement	0.003938731	24