

cluster 1

1. Endosomal vacuolar pathway
2. Antigen presentation - folding, assembly and peptide loading of class I MHC.
3. Antigen processing - cross presentation
4. Antigen processing and presentation
5. Eukaryotic Translation Elongation

cluster 2

1. Primary immunodeficiency
2. Generation of second messenger molecules
3. TCR signaling in CD8+ T cells
4. role of mf2d in T-cell apoptosis
5. CD4 T cell receptor signaling-ERK cascade

cluster 3

1. Spinal cord injury
2. TCR (T cell receptors)
3. Preimplantation Embryo
4. Primary Focal Segmental Glomerulosclerosis FSGS
5. RET signaling

cluster 4

1. Natural killer cell mediated cytotoxicity
2. granzyme a mediated apoptosis pathway
3. Immunoregulatory interactions - lymphoid and non-lymphoid
4. Graft versus host disease
5. IL12 mediated signaling

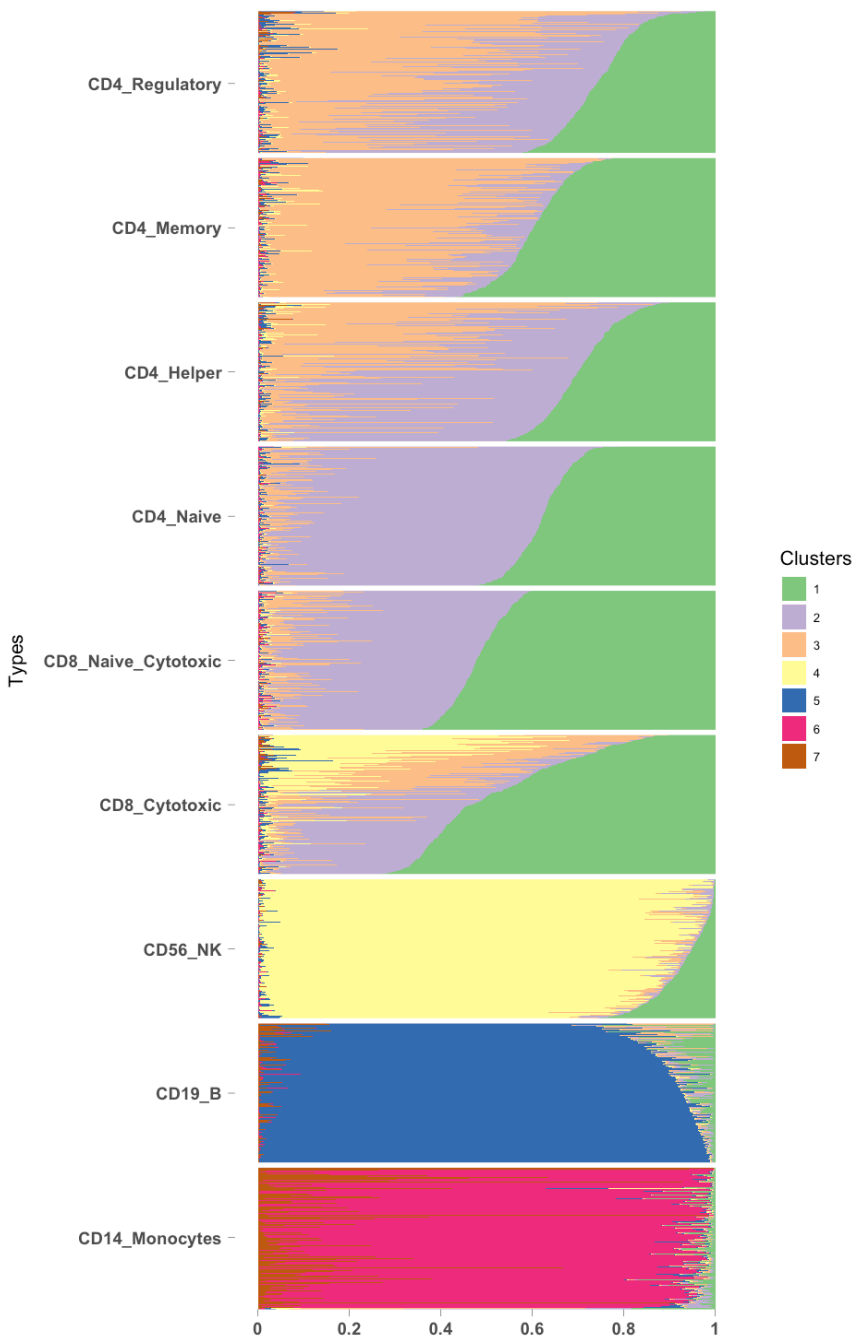
cluster 5

1. Neutrophil degranulation
2. Innate immune system
3. Metal sequestration by antimicrobial proteins
4. Vitamin D receptor pathway
5. Regulation of TLR by endogenous ligand

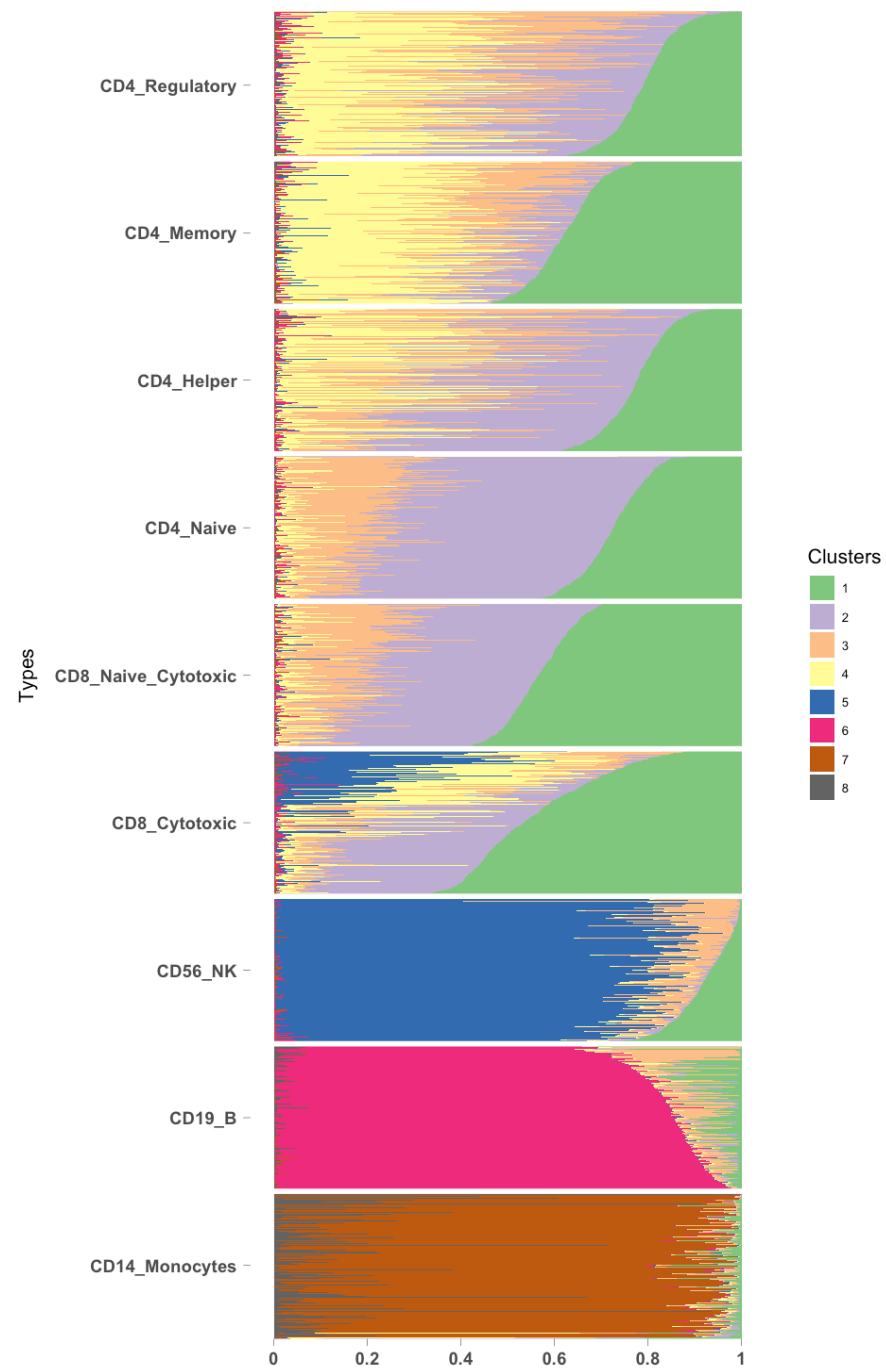
cluster 6

1. Hematopoietic cell lineage - Homo sapiens (human)
2. B cell receptor (BCR)
3. B cell receptor signaling pathway
4. T cell receptor (TCR) signaling
5. CXCL4 mediated signaling events

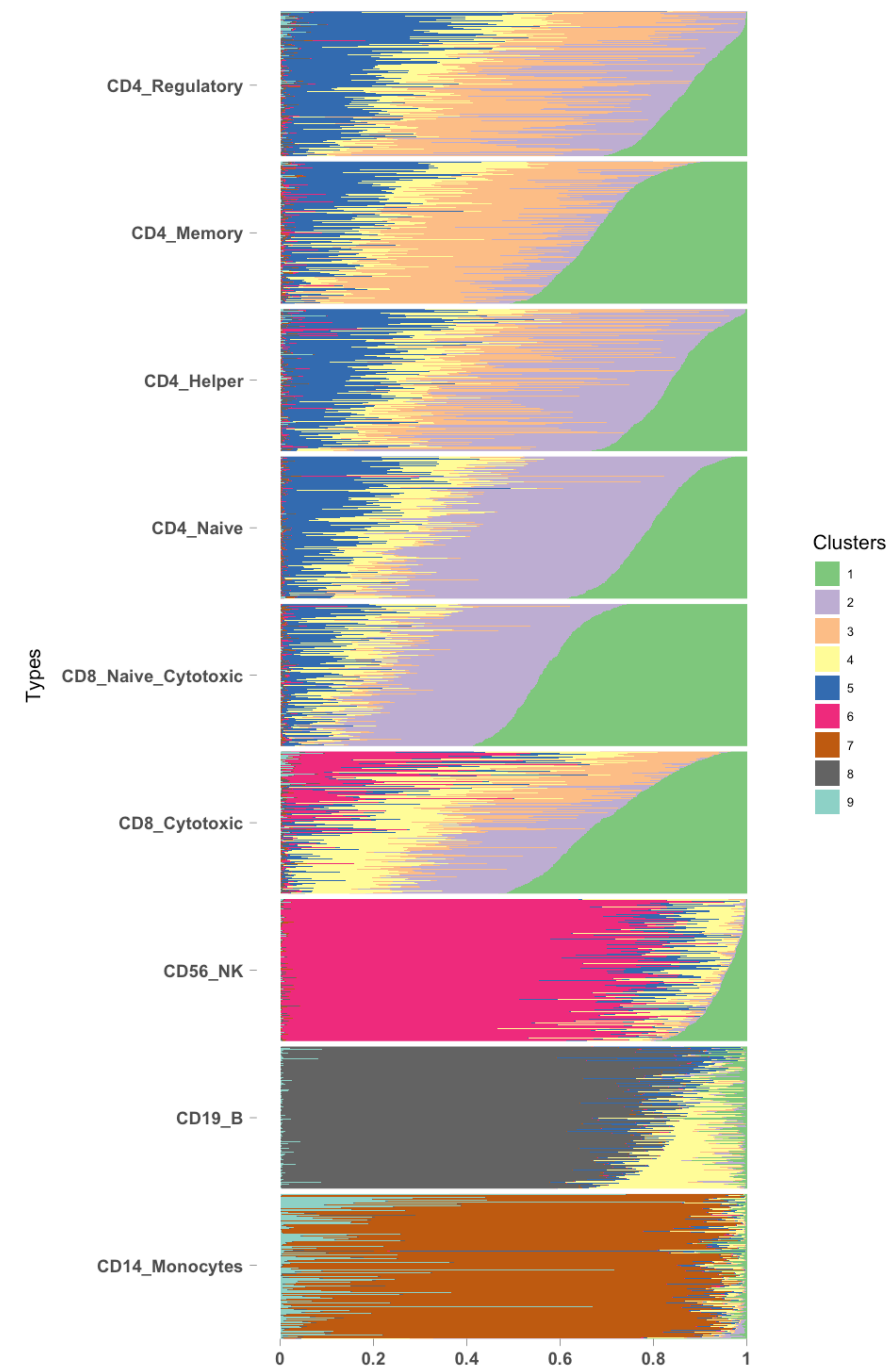
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k = 8

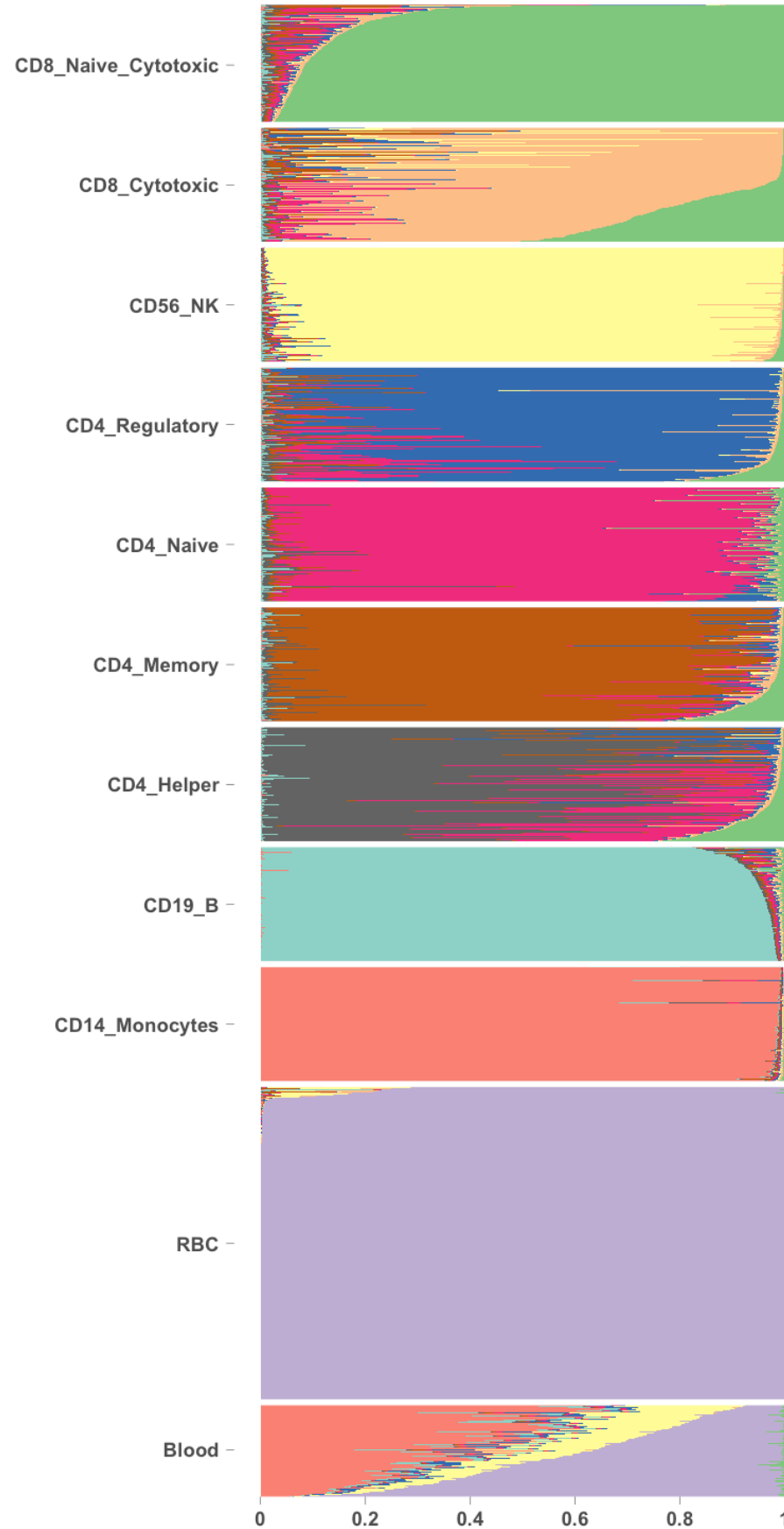


k = 9



GTEx Blood CountClust supervised on Zheng et al + RBC (MCC data)

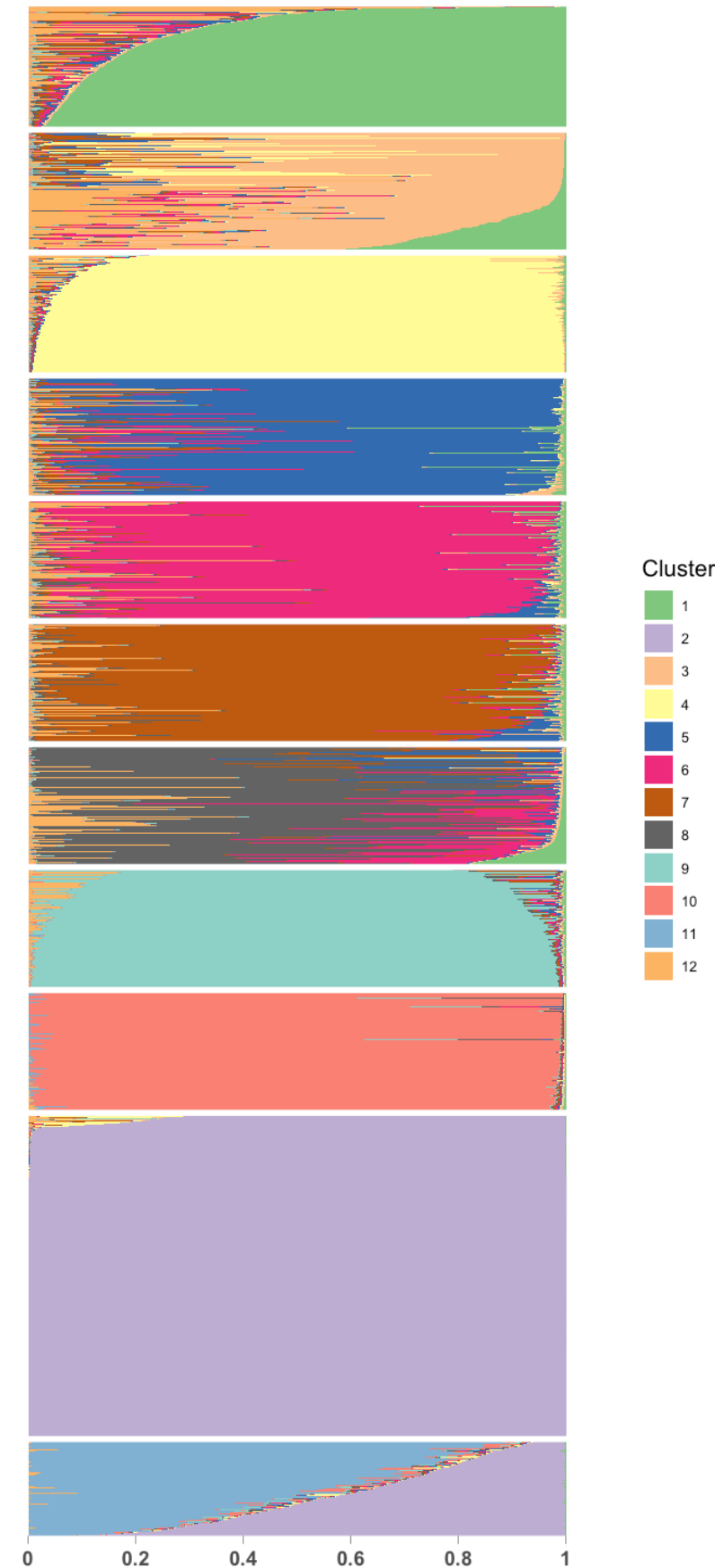
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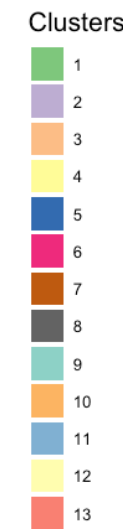
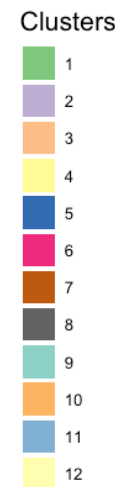
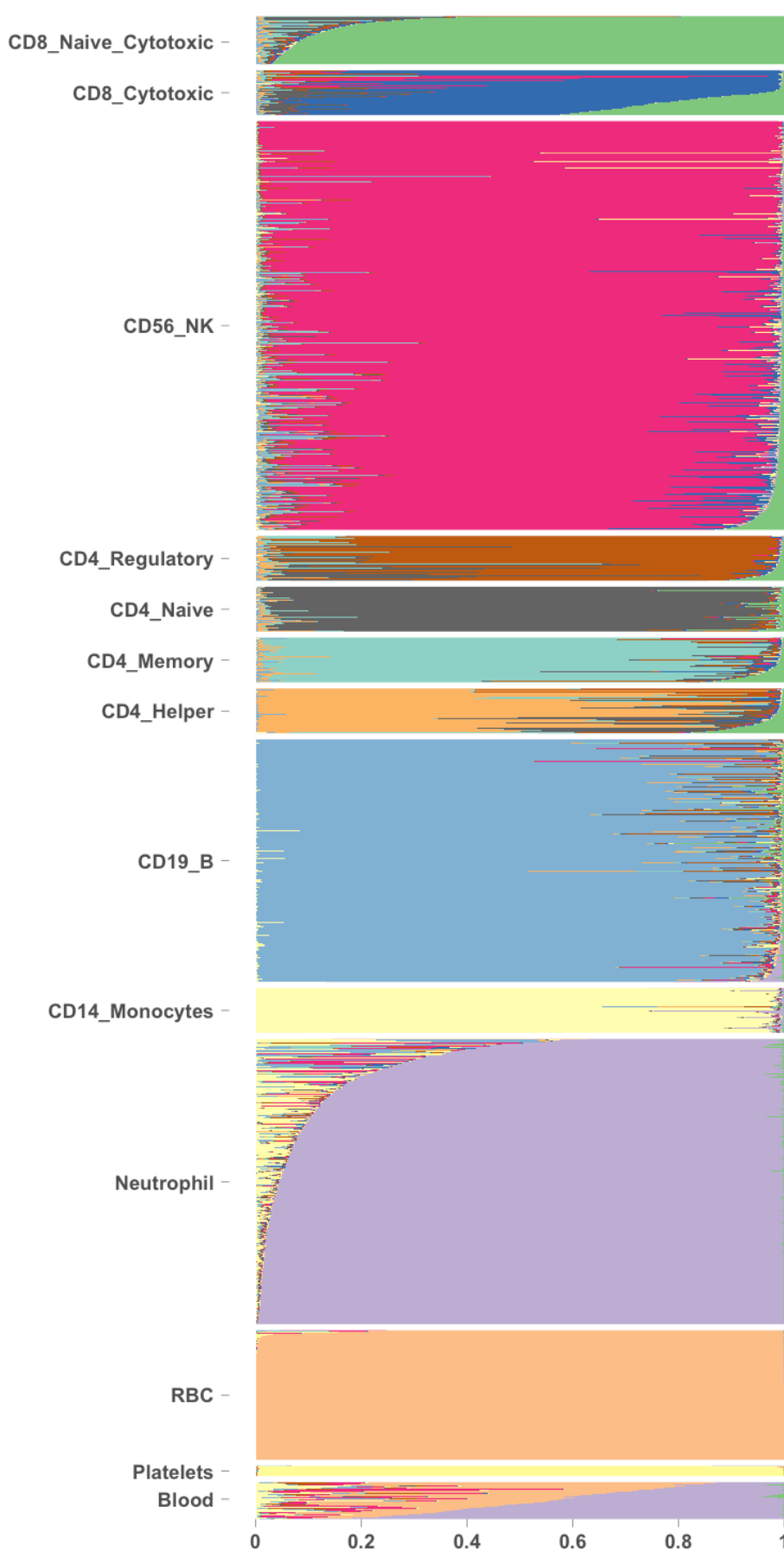
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added_k = 2



GTEx Blood CountClust supervised on Zheng et al + MCC neutrophil, RBC, platelets clusters



left: supervised CountClust on 12 cell types, 9 cell types from Zheng et and Neutrophil, RBC and platelets annotated clusters from MCC data

right: partially supervised CountClust on 12 cell types as before but with an extra added cluster which is unsupervised.

GSEA - cluster 13

1. Neutrophil degranulation
2. Microglia pathogen phagocytosis pathway
3. IL1 and megakaryocytic in obesity
4. Phagosome
5. Innate Immune system
6. IL8- and CXCR1-mediated signaling events
7. CXCR4-mediated signaling events
8. Vitamin D receptor pathway
9. Osteoclast differentiation
10. Toll like Receptor cascades