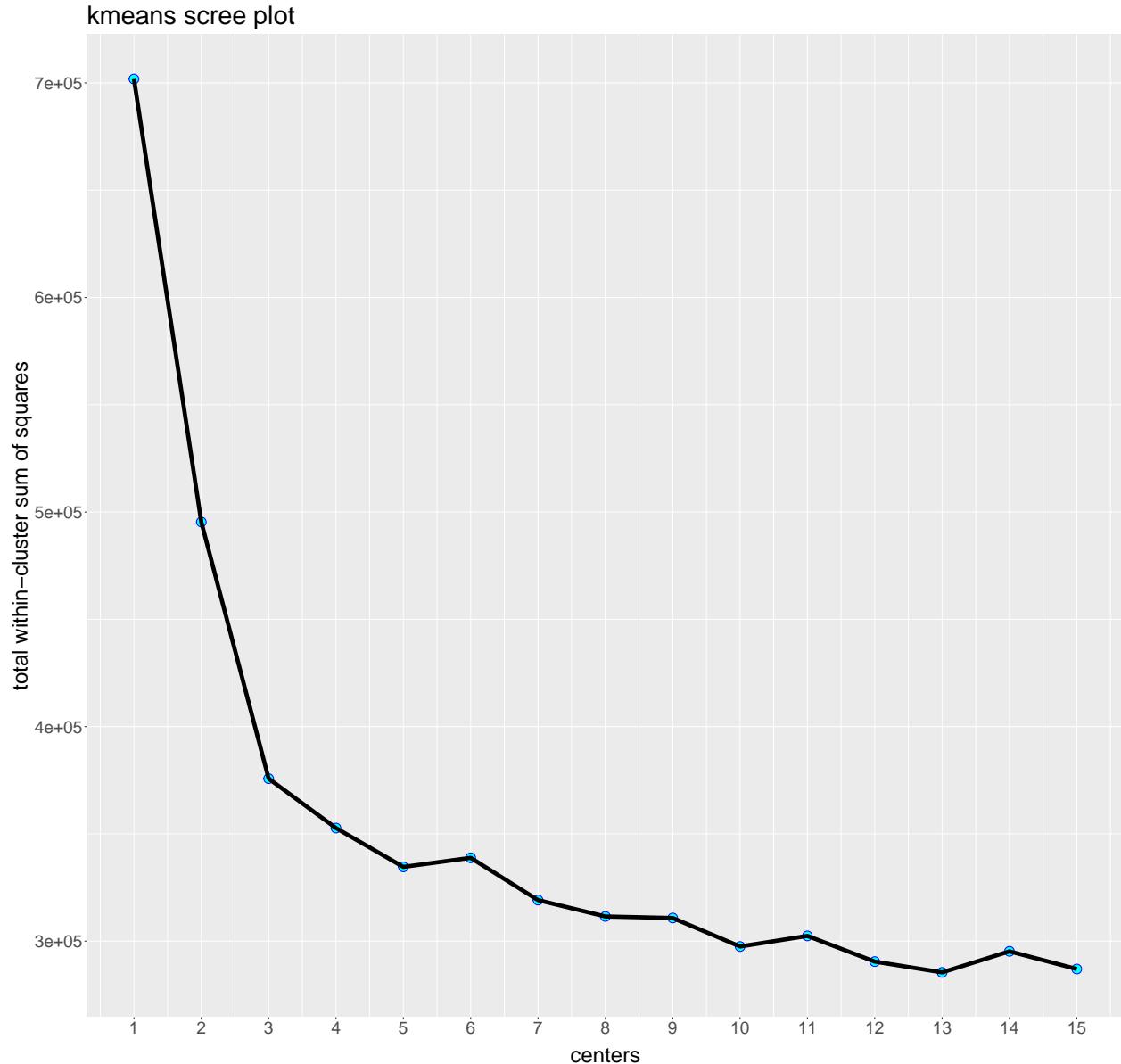
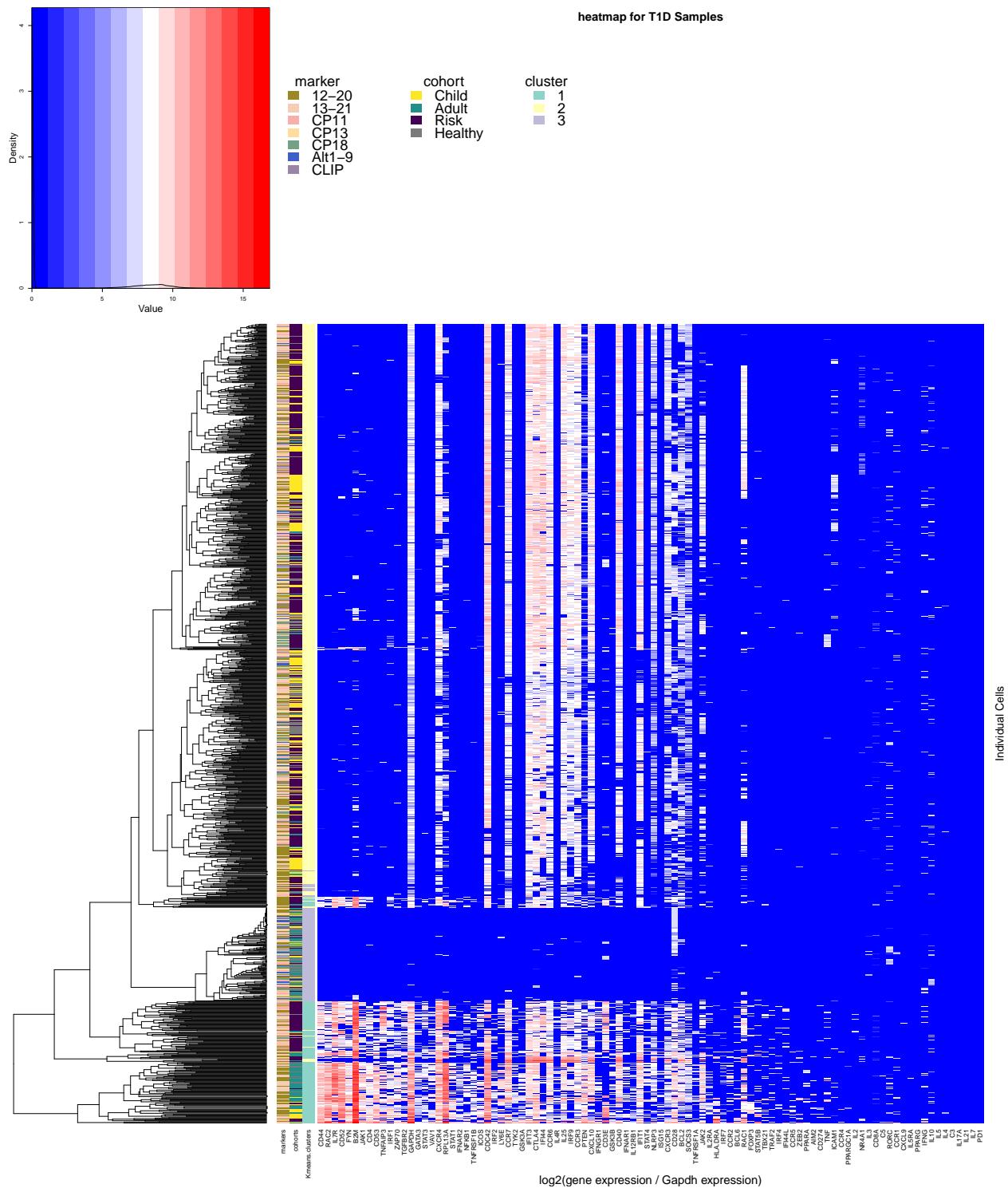


# T1D\_Tetramer\_Cells\_Analysis

No expression detected in 47/1950 cells

No expression detected in 19/1223 Tetramer cells





[1]

[1]

[1] Cohort vs. Cluster

cohort\_Child cohort\_Adult cohort\_Risk cohort\_Healthy

cluster_1	22	65	86	15
cluster_2	227	35	486	115
cluster_3	20	55	22	56

```
Pearson's Chi-squared test with simulated p-value (based on 2000  
replicates)
```

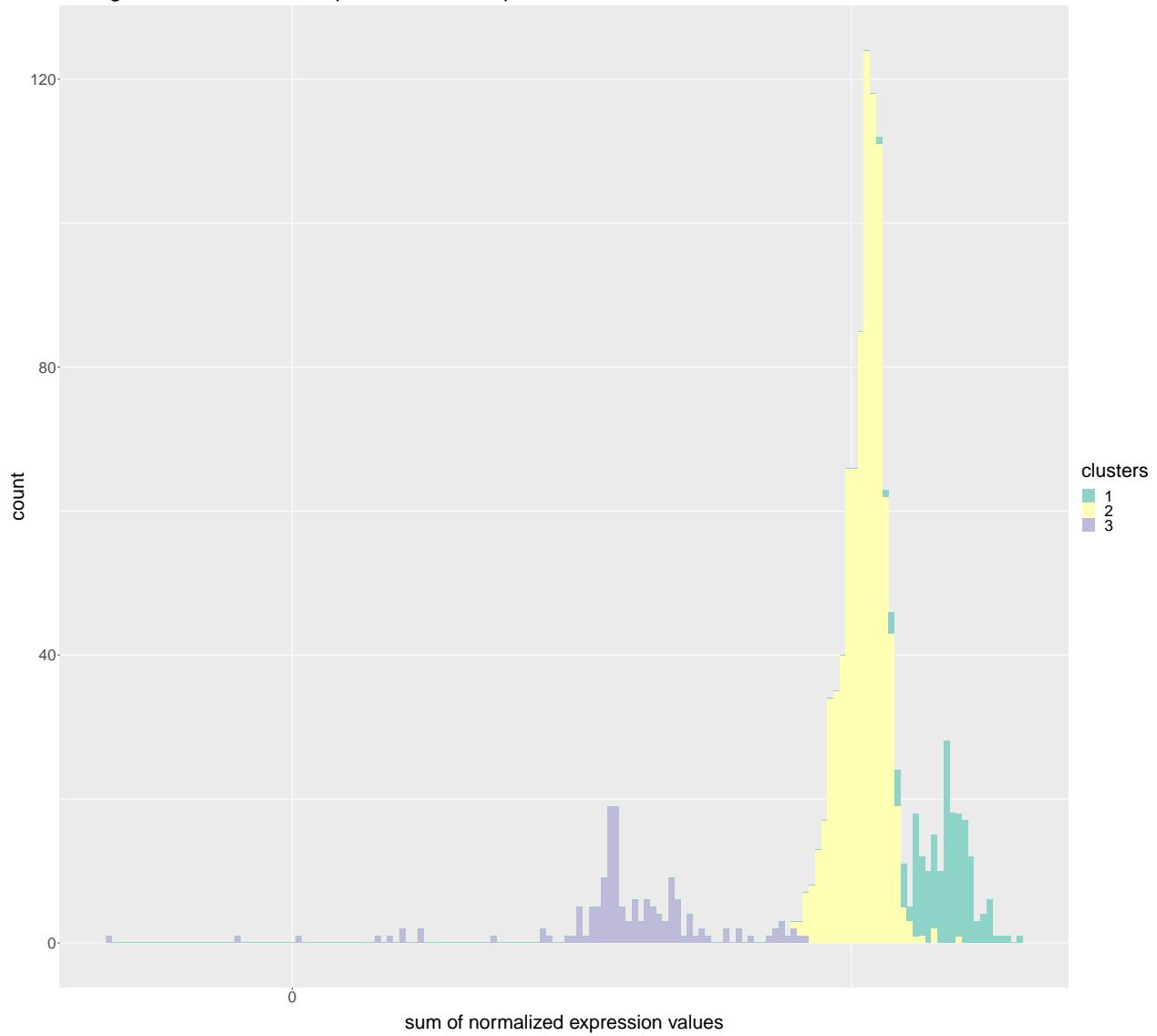
```
data: cohortTable  
X-squared = 306.17, df = NA, p-value = 0.0004998
```

```
[1]  
[1]  
[1] marker vs. Cluster  
      marker_12-20 marker_13-21 marker_CP11 marker_CP13 marker_CP18  
cluster_1          86           68           27            4            3  
cluster_2         271          253          102           94           83  
cluster_3          34           32           22           21           18  
      marker_Alt1-9 marker_CLIP  
cluster_1           0            0  
cluster_2          25           35  
cluster_3          23            3
```

```
Pearson's Chi-squared test with simulated p-value (based on 2000  
replicates)
```

```
data: markerTable  
X-squared = 117.24, df = NA, p-value = 0.0004998
```

histogram of cumulative expression values per cell

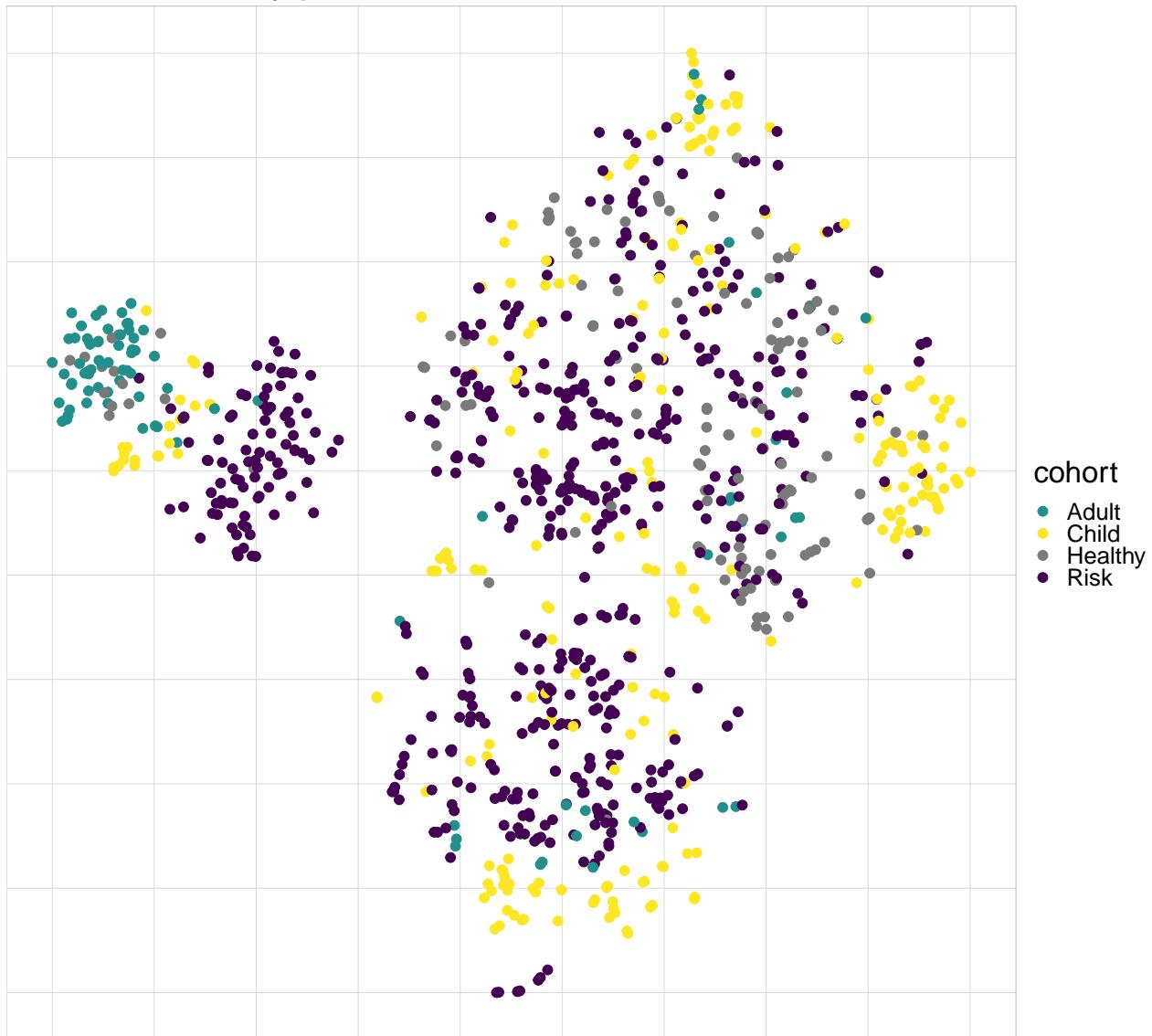


153 / 1204 cells were removed due to low gene expression (cluster ID of removed clusters: 3)

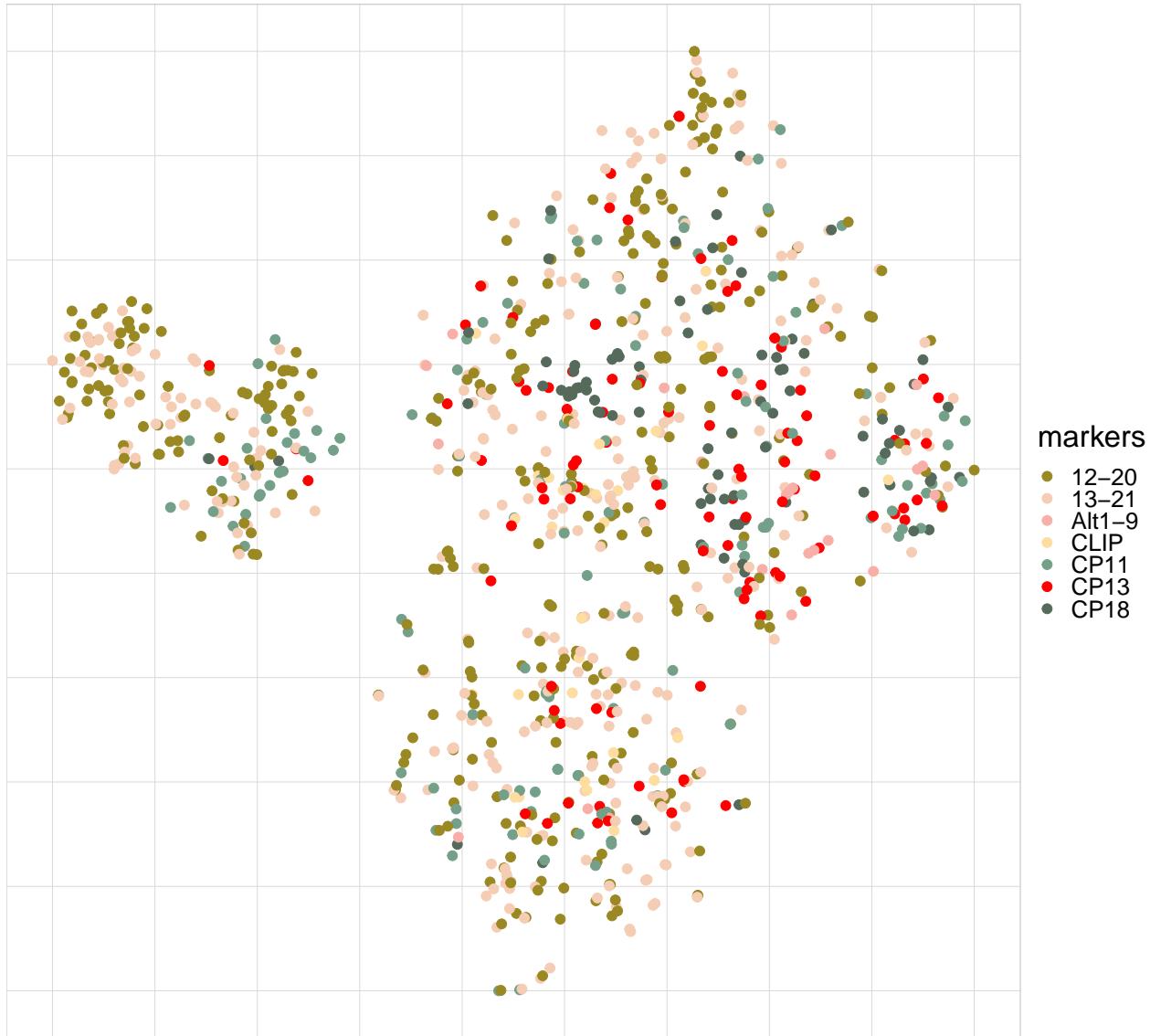
t-SNE colored by kmeans.cluster



t-SNE colored by patient cohorts



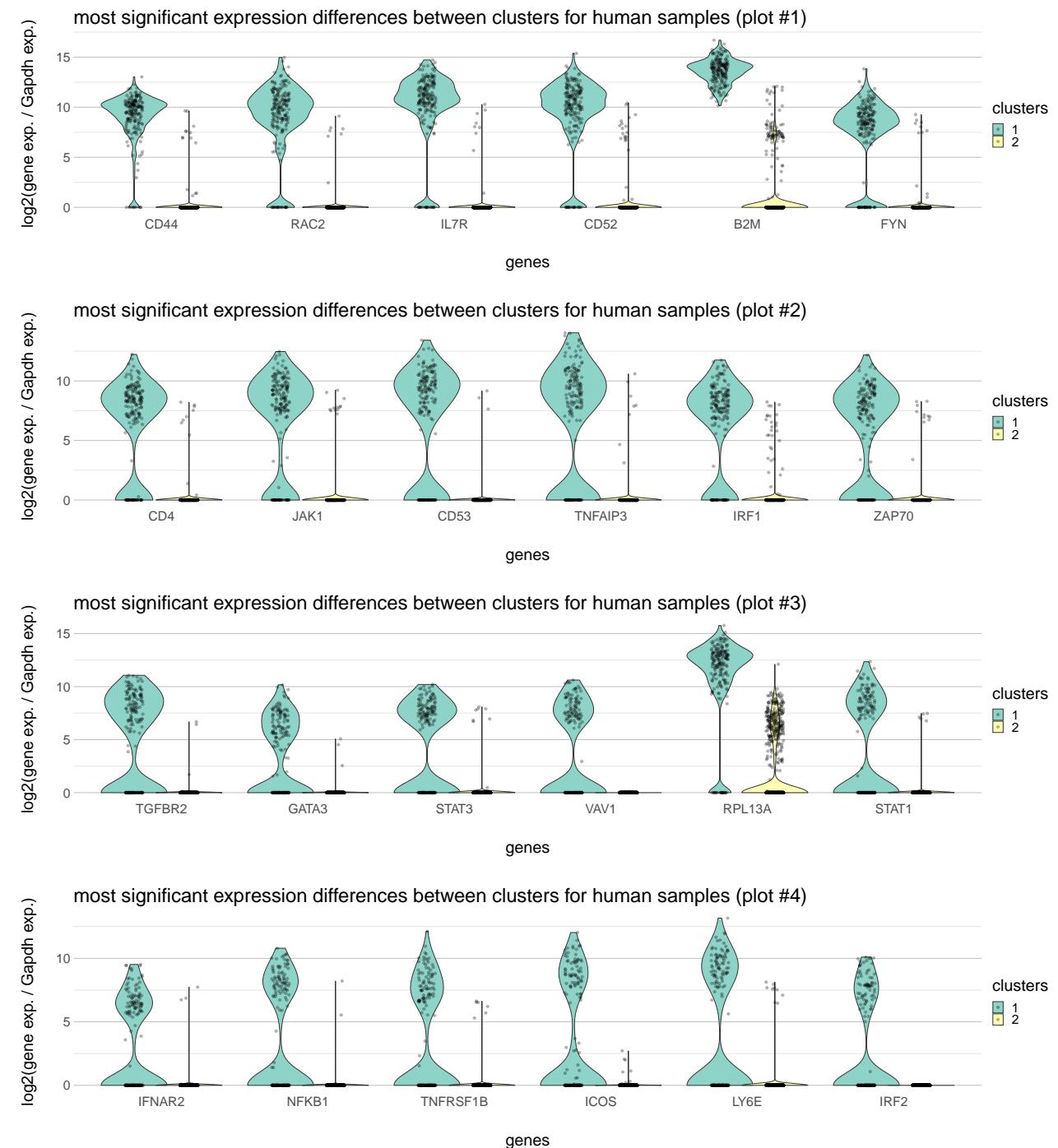
## t-SNE colored by different markers

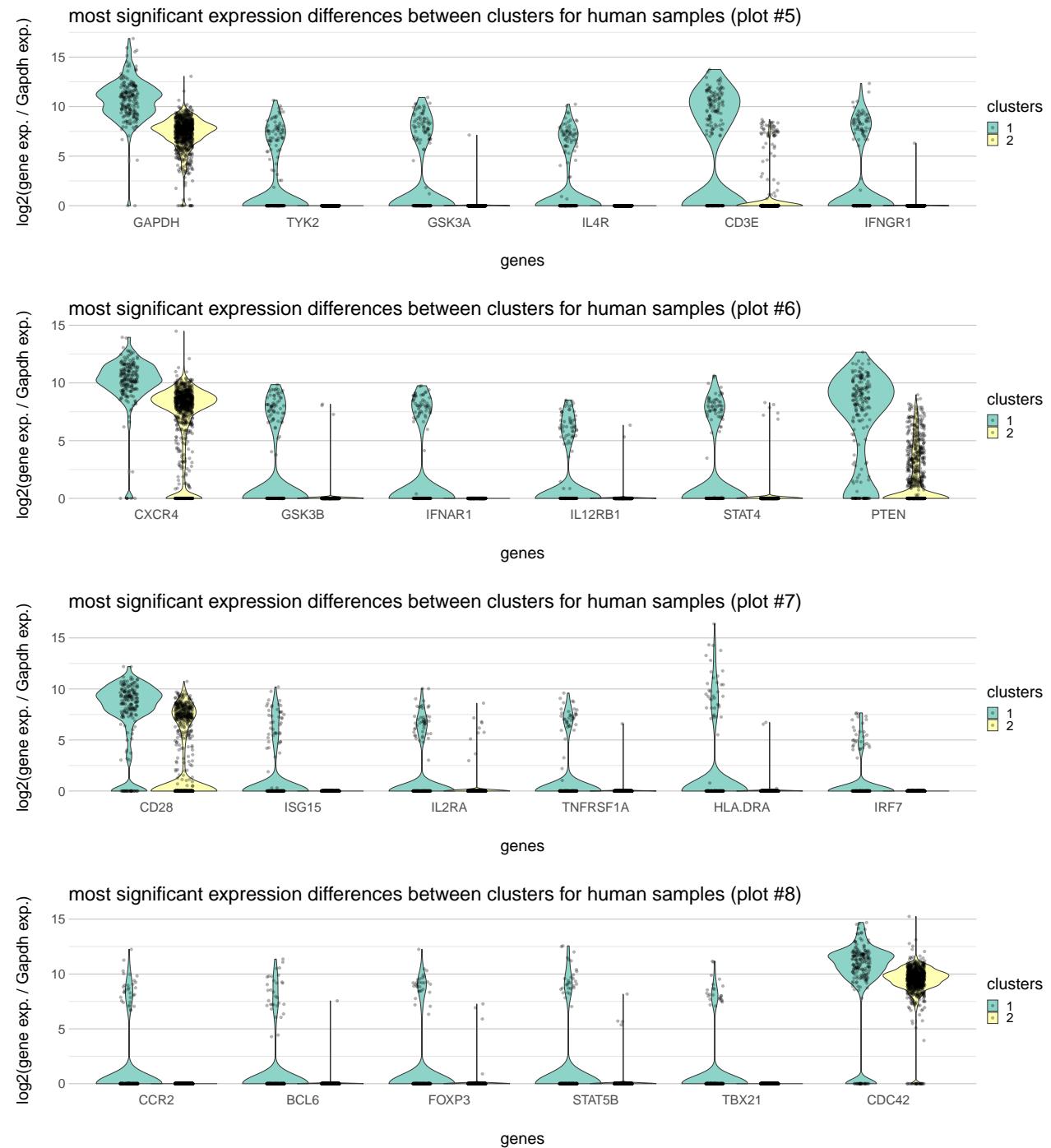


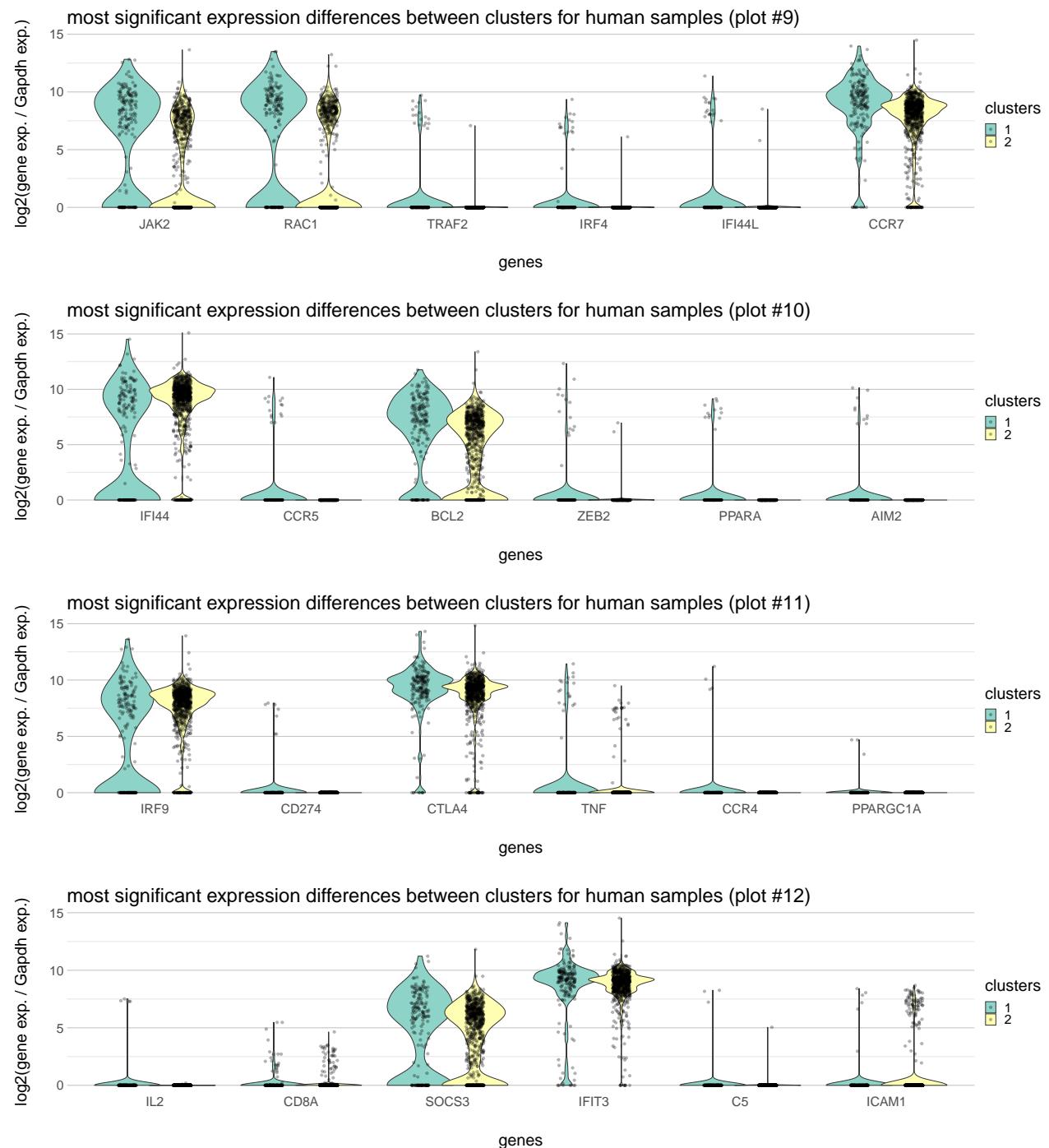
[1] Differentially expressed genes between clusters for human samples:

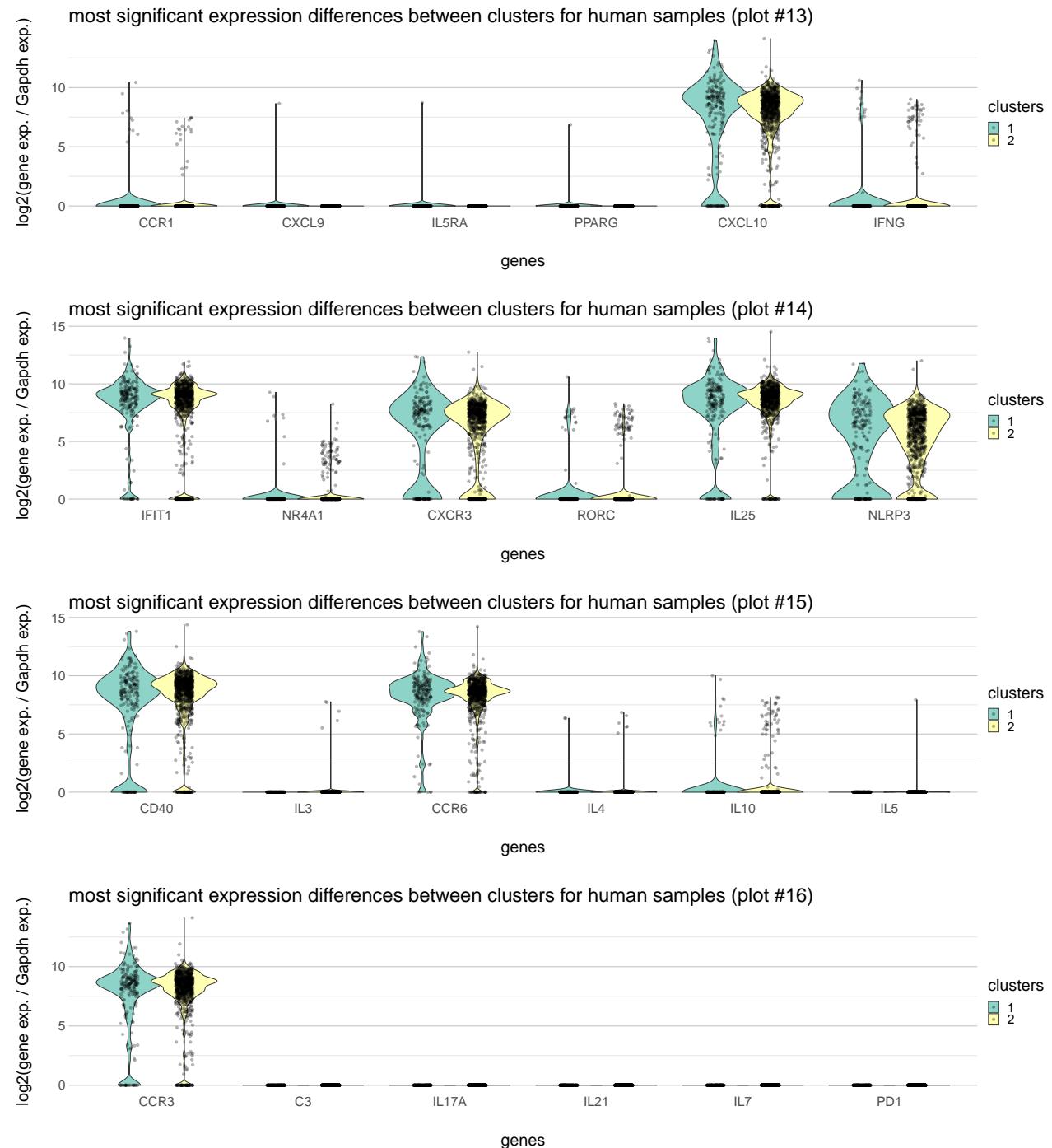
[1]	CD44: 2.94e-198	RAC2: 3.227e-190	IL7R: 5.313e-190
[4]	CD52: 1.21e-178	B2M: 1.215e-167	FYN: 2.077e-166
[7]	CD4: 1.791e-149	JAK1: 3.123e-149	CD53: 1.502e-145
[10]	TNFAIP3: 8.207e-136	IRF1: 2.756e-133	ZAP70: 1.869e-132
[13]	TGFBR2: 8.511e-126	GATA3: 5.137e-111	STAT3: 5.961e-107
[16]	VAV1: 2.425e-100	RPL13A: 1.487e-94	STAT1: 2.461e-94
[19]	IFNAR2: 1.85e-92	NFKB1: 1.135e-90	TNFRSF1B: 1.618e-88
[22]	ICOS: 2.862e-85	LY6E: 8.127e-82	IRF2: 1.634e-79
[25]	GAPDH: 3.816e-79	TYK2: 5.64e-75	GSK3A: 8.958e-75
[28]	IL4R: 2.44e-69	CD3E: 4.133e-68	IFNGR1: 1.439e-63
[31]	CXCR4: 2.201e-63	GSK3B: 5.603e-63	IFNAR1: 1.459e-61
[34]	IL12RB1: 6.052e-60	STAT4: 4.836e-56	PTEN: 6.821e-53
[37]	CD28: 1.171e-49	ISG15: 1.713e-49	IL2RA: 5.535e-40
[40]	TNFRSF1A: 1.826e-39	HLA.DRA: 4.709e-37	IRF7: 2.196e-33
[43]	CCR2: 2.196e-33	BCL6: 4.577e-33	FOXP3: 1.794e-27

[46]	STAT5B: 1.794e-27	TBX21: 5.067e-26	CDC42: 4.394e-23
[49]	JAK2: 2.914e-21	RAC1: 9.404e-20	TRAF2: 1.952e-18
[52]	IRF4: 1.954e-18	IFI44L: 3.026e-18	CCR7: 5.987e-18
[55]	IFI44: 9.222e-18	CCR5: 1.076e-16	BCL2: 1.047e-15
[58]	ZEB2: 3.586e-14	PPARA: 1.325e-13	AIM2: 1.539e-11
[61]	IRF9: 4.929e-10	CD274: 1.922e-08	CTLA4: 7.398e-06
[64]	TNF: 9.843e-06	CCR4: 2.488e-05	PPARGC1A: 0.0002807
[67]	IL2: 0.0003771	CD8A: 0.001308	SOCS3: 0.001667
[70]	IFIT3: 0.003621	C5: 0.003621	ICAM1: 0.003639
[73]	CCR1: 0.02814	CXCL9: 0.0385	IL5RA: 0.0385
[76]	PPARG: 0.0385		



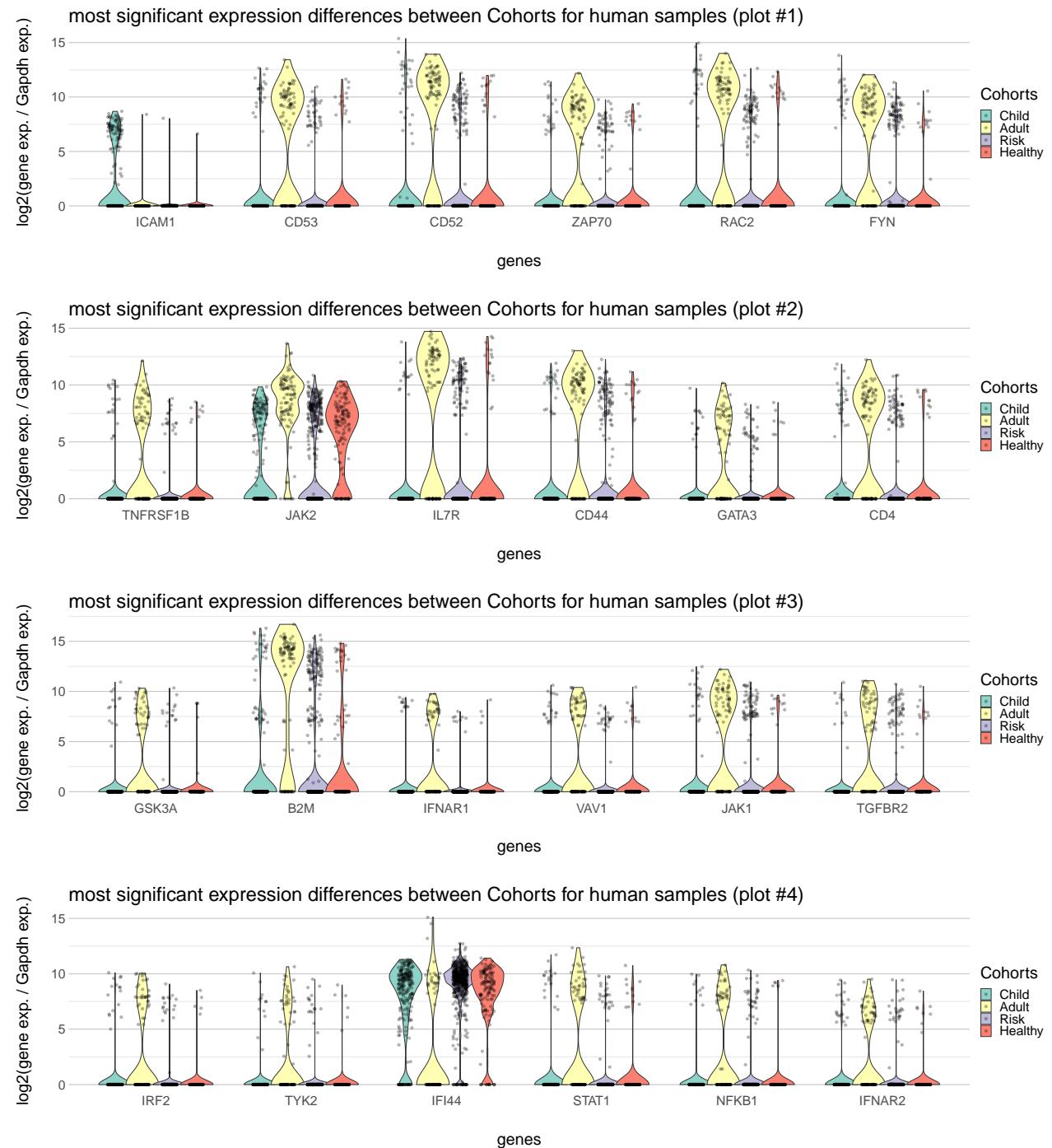


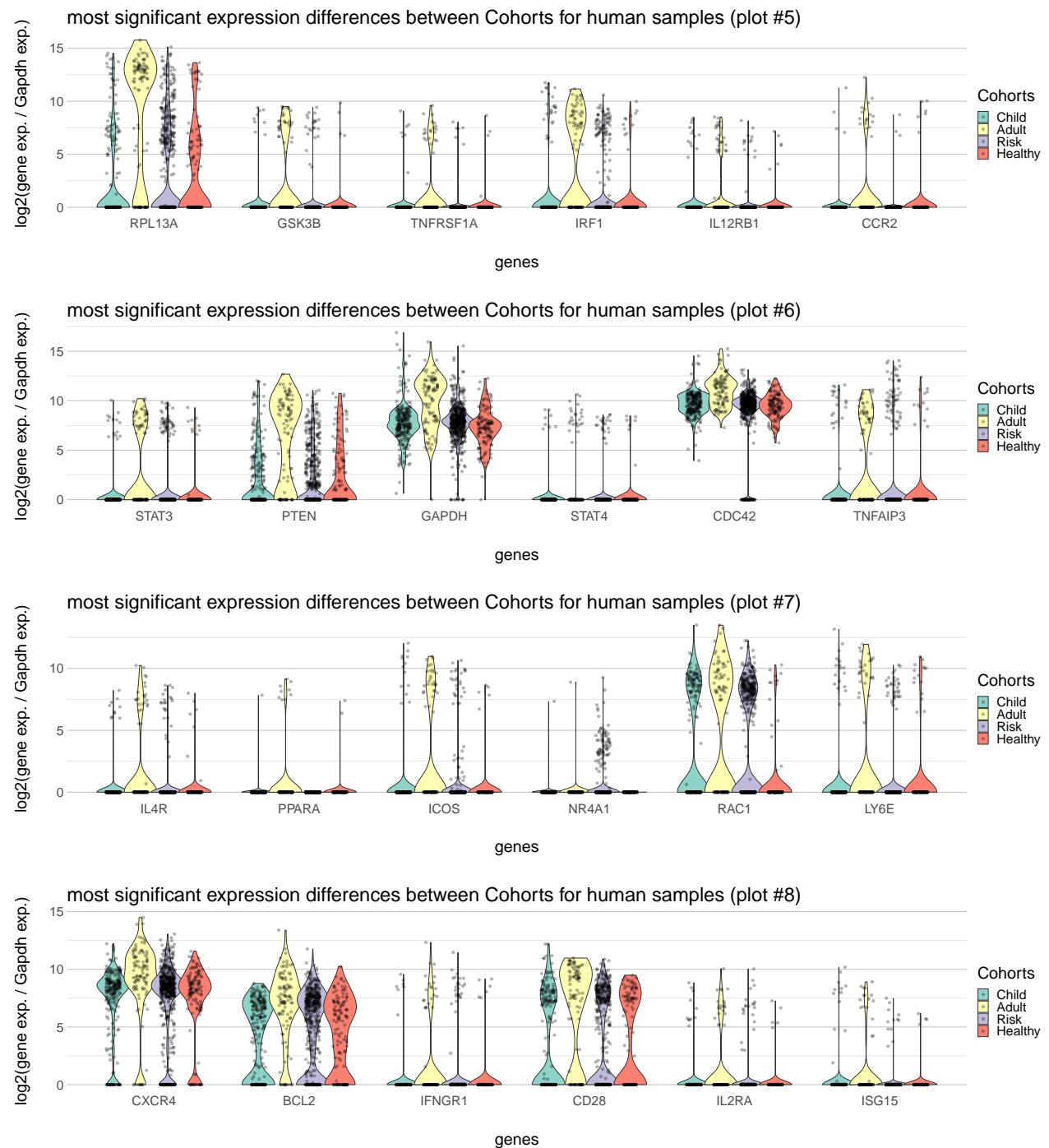


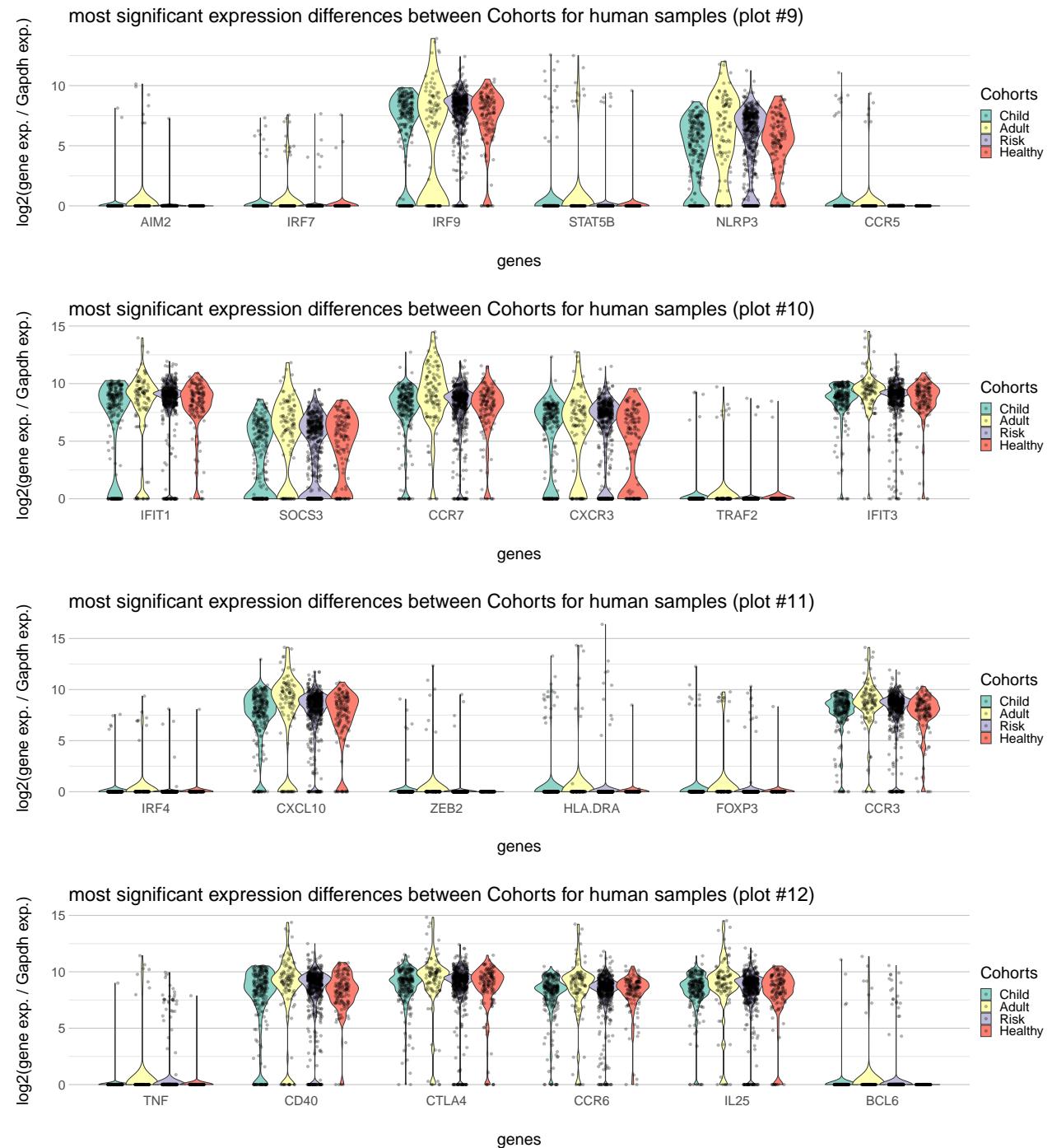


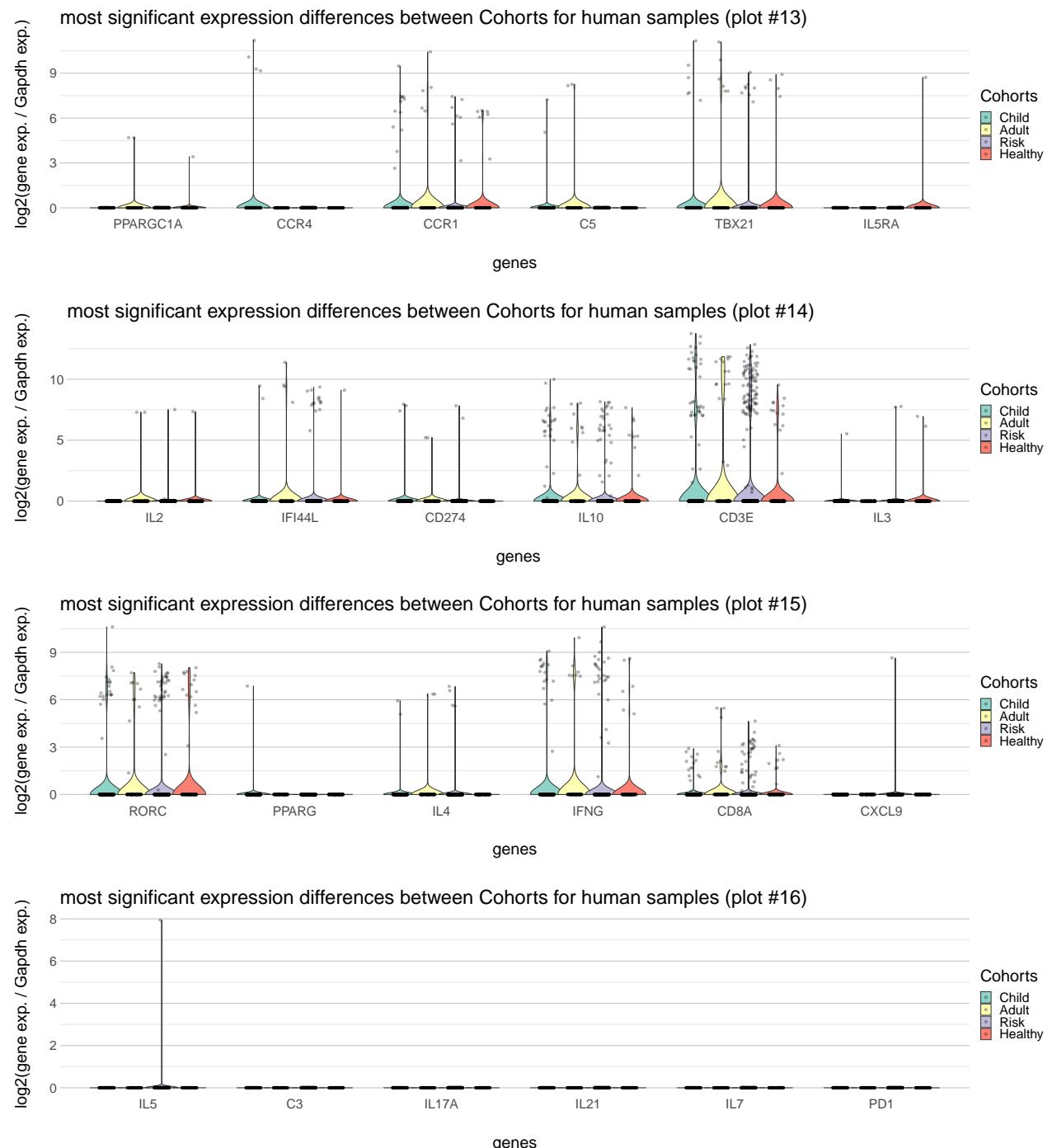
```
[1] Differentially expressed genes between Cohorts for human samples:
[1] ICAM1: 1.265e-62    CD53: 1.158e-46    CD52: 1.057e-44
[4] ZAP70: 1.539e-44    RAC2: 8.522e-43    FYN: 1.294e-41
[7] TNFRSF1B: 1.294e-41 JAK2: 1.239e-40    IL7R: 1.824e-39
[10] CD44: 3.731e-39    GATA3: 2.239e-38    CD4: 1.096e-35
[13] GSK3A: 6.767e-34    B2M: 1.328e-33    IFNAR1: 1.167e-32
[16] VAV1: 5.779e-31    JAK1: 8.18e-31    TGFBR2: 4.117e-30
[19] IRF2: 1.569e-27    TYK2: 7.123e-27    IFI44: 1.062e-26
[22] STAT1: 2.202e-26    NFKB1: 1.097e-25    IFNAR2: 7.825e-25
[25] RPL13A: 8.711e-23    GSK3B: 9.353e-23    TNFRSF1A: 3.695e-22
```

[28]	IRF1: 1.425e-20	IL12RB1: 3.626e-20	CCR2: 1.013e-19
[31]	STAT3: 4.474e-18	PTEN: 1.09e-17	GAPDH: 1.659e-16
[34]	STAT4: 3.376e-16	CDC42: 7.832e-16	TNFAIP3: 1.285e-13
[37]	IL4R: 1.63e-13	PPARA: 3.363e-13	ICOS: 1.01e-12
[40]	NR4A1: 1.135e-12	RAC1: 2.087e-12	LY6E: 2.909e-12
[43]	CXCR4: 1.978e-11	BCL2: 2.547e-11	IFNGR1: 3.579e-11
[46]	CD28: 6.008e-11	IL2RA: 7.019e-11	ISG15: 6.739e-10
[49]	AIM2: 3.033e-09	IRF7: 4.026e-09	IRF9: 6.836e-09
[52]	STAT5B: 3.281e-08	NLRP3: 1.924e-07	CCR5: 4.504e-07
[55]	IFIT1: 1.11e-06	SOCS3: 1.513e-06	CCR7: 5.221e-06
[58]	CXCR3: 1.326e-05	TRAF2: 1.82e-05	IFIT3: 1.928e-05
[61]	IRF4: 1.929e-05	CXCL10: 2.247e-05	ZEB2: 2.928e-05
[64]	HLA.DRA: 3.331e-05	FOXP3: 3.688e-05	CCR3: 6.822e-05
[67]	TNF: 0.0001257	CD40: 0.0007441	CTLA4: 0.0007572
[70]	CCR6: 0.001354	IL25: 0.002858	BCL6: 0.002858
[73]	PPARGC1A: 0.00407	CCR4: 0.005917	CCR1: 0.008365
[76]	C5: 0.0155	TBX21: 0.03945	







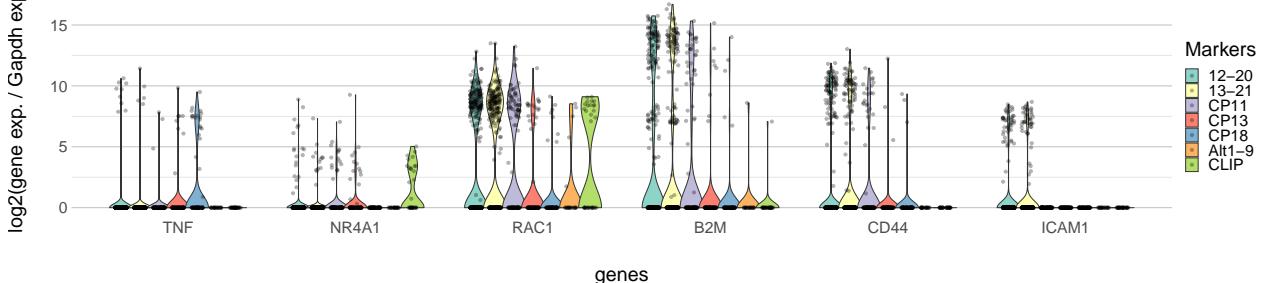


[1] Differentially expressed genes between Markers for human samples:

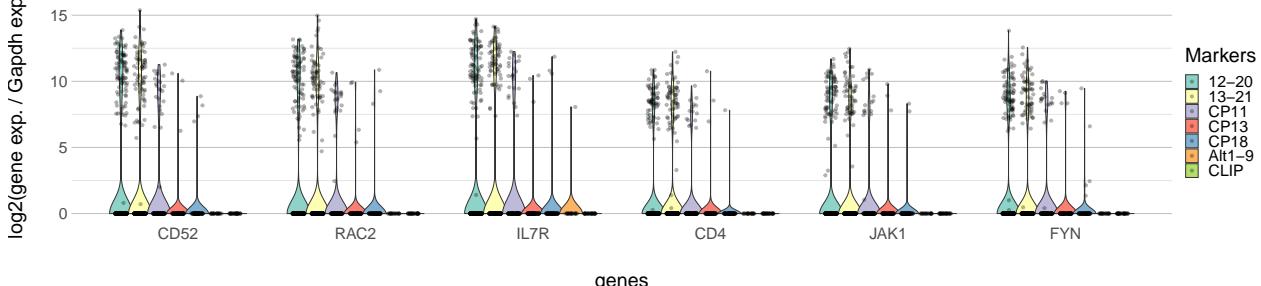
[1] TNF: 2.505e-15	NR4A1: 2.505e-15	RAC1: 4.72e-15
[4] B2M: 1.678e-12	CD44: 2.813e-09	ICAM1: 3.907e-09
[7] CD52: 6.016e-09	RAC2: 7.262e-08	IL7R: 7.262e-08
[10] CD4: 8.797e-08	JAK1: 1.925e-07	FYN: 8.61e-07
[13] CD53: 8.61e-07	TNFRSF1B: 7.826e-06	GAPDH: 8.773e-06
[16] GATA3: 1.806e-05	TGFBR2: 2.17e-05	TNFAIP3: 2.319e-05
[19] ZAP70: 2.463e-05	IRF9: 3.981e-05	PTEN: 9.043e-05
[22] VAV1: 0.0001093	STAT1: 0.0002502	LY6E: 0.0003128
[25] CD28: 0.0005862	IFNAR2: 0.0005984	GSK3A: 0.001082

[28]	STAT3: 0.001096	IFI44: 0.001312	NFKB1: 0.001582
[31]	CD3E: 0.001582	CXCR3: 0.00284	IRF1: 0.004311
[34]	IRF2: 0.005678	IL12RB1: 0.00626	TYK2: 0.007732
[37]	CXCR4: 0.01196	IL2RA: 0.01196	ISG15: 0.01561
[40]	RPL13A: 0.01709	GSK3B: 0.01849	CD40: 0.02055
[43]	TNFRSF1A: 0.02055	IFNAR1: 0.02334	STAT4: 0.02602
[46]	IL4R: 0.02852	CTLA4: 0.03089	CCR2: 0.03657
[49]	STAT5B: 0.03805	AIM2: 0.04897	

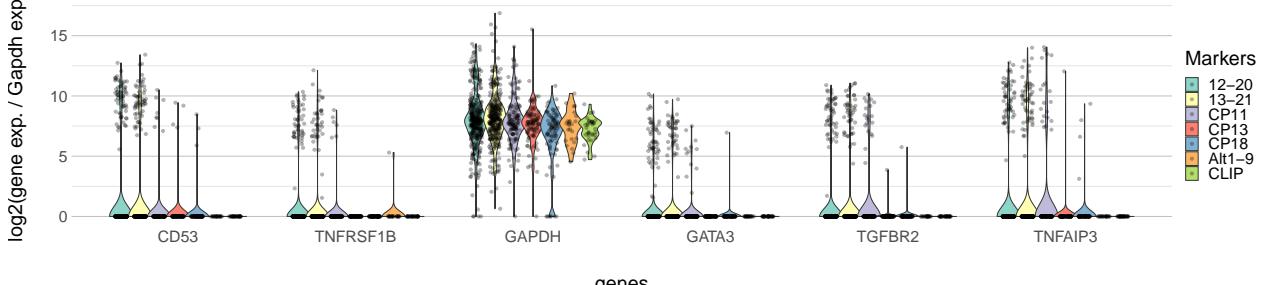
most significant expression differences between Markers for human samples (plot #1)



most significant expression differences between Markers for human samples (plot #2)



most significant expression differences between Markers for human samples (plot #3)



most significant expression differences between Markers for human samples (plot #4)

