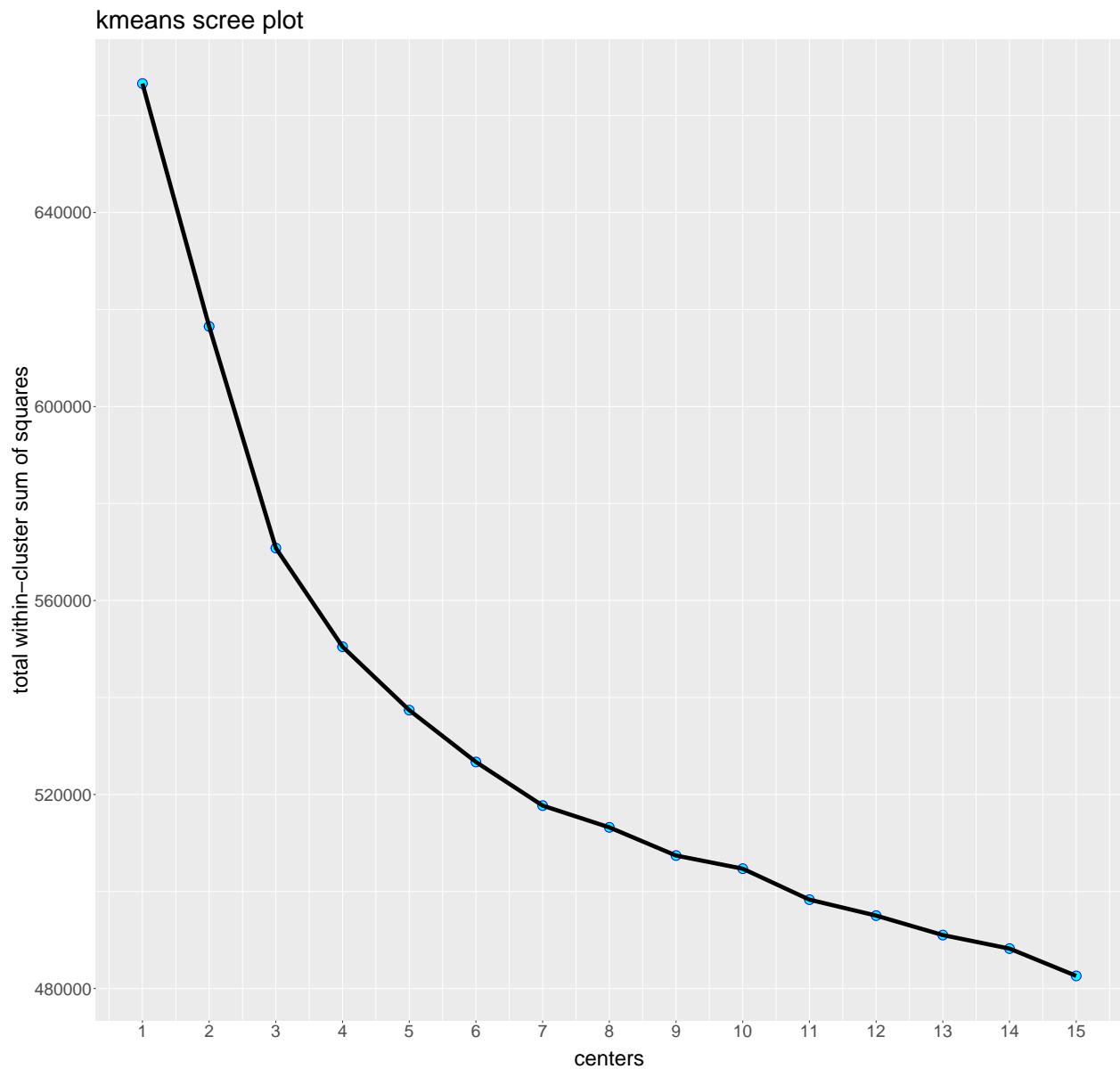
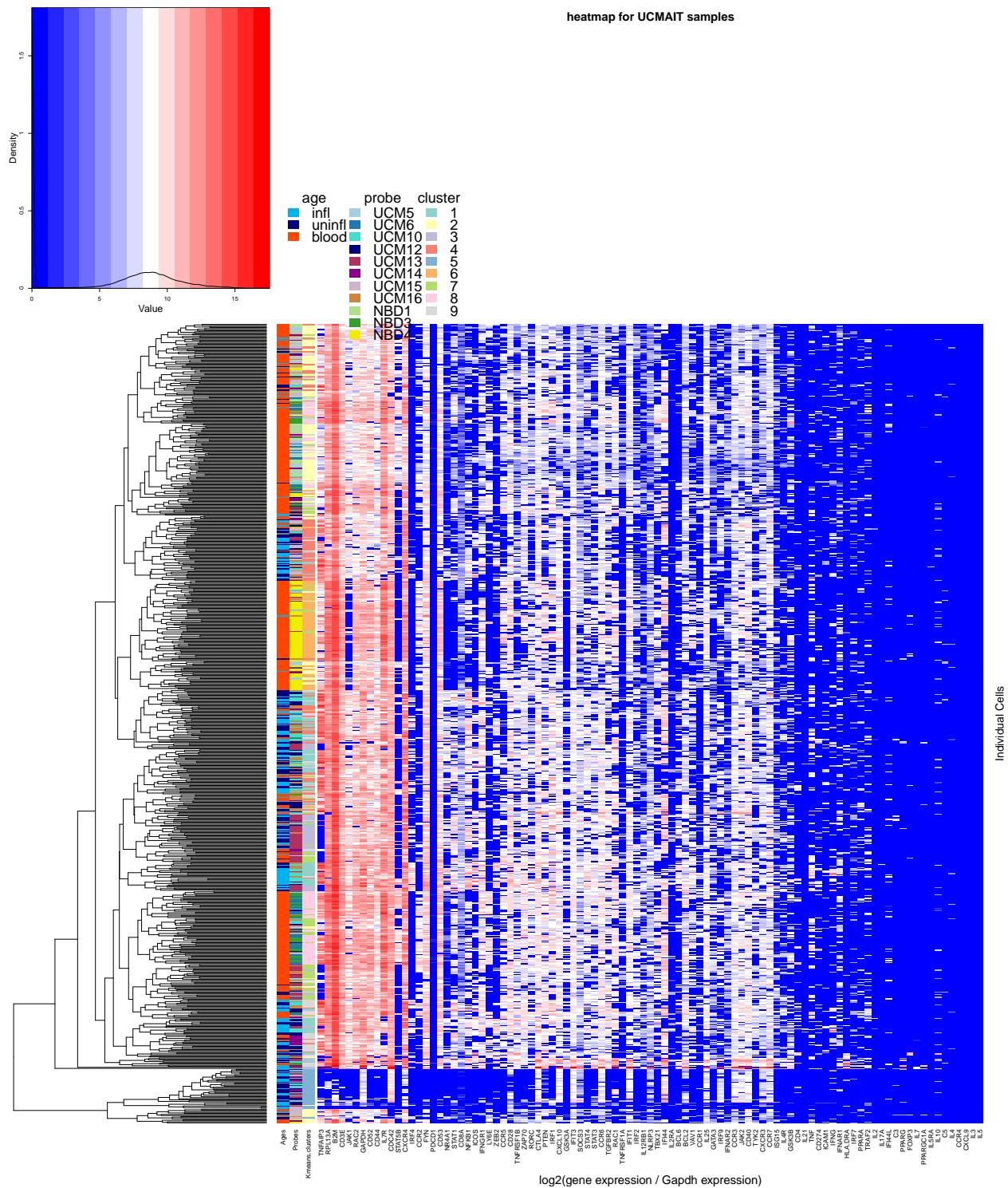


UC-MAIT analysis

No expression detected in 15/778 cells





[1]

[1]

[1] Probe vs. Cluster

probe_UCM5 probe_UCM6 probe_UCM10 probe_UCM12 probe_UCM13

	cluster_1	cluster_2	cluster_3	cluster_4	cluster_5	cluster_6	cluster_7	cluster_8	cluster_9	NBD1	NBD3	NBD4
probe_UCM5	0	0	0	39	29	1						
probe_UCM6				2	1							
probe_UCM10					0							
probe_UCM12												
probe_UCM13												

cluster_4	1	0	11	21	1
cluster_5	0	0	10	10	6
cluster_6	0	0	0	1	0
cluster_7	1	0	14	7	30
cluster_8	4	44	0	4	0
cluster_9	0	2	14	16	0
	probe_UCM14	probe_UCM15	probe_UCM16	probe_NBD1	probe_NBD3
cluster_1	0	2	16	0	0
cluster_2	12	31	9	39	0
cluster_3	0	0	1	0	0
cluster_4	7	25	34	3	3
cluster_5	7	5	0	0	0
cluster_6	0	0	5	0	1
cluster_7	7	3	13	3	0
cluster_8	2	2	2	3	39
cluster_9	20	0	14	0	5
	probe_NBD4				
cluster_1	0				
cluster_2	10				
cluster_3	0				
cluster_4	0				
cluster_5	0				
cluster_6	80				
cluster_7	3				
cluster_8	0				
cluster_9	1				

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

```
data: probeTable
X-squared = 2098.7, df = NA, p-value = 0.0004998
```

```
[1]
[1]
[1] Tissue vs. Cluster
      cellSource_blood cellSource_tissue
cluster_1          0            87
cluster_2         114           22
cluster_3          1            55
cluster_4          16            90
cluster_5          0            38
cluster_6          86            1
cluster_7          80            1
cluster_8         100            0
cluster_9          26            46
```

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

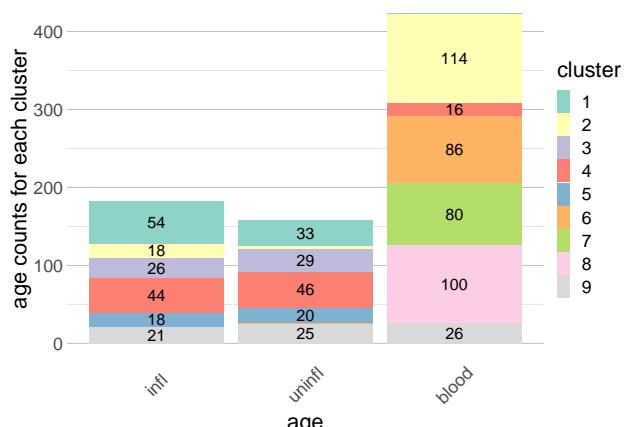
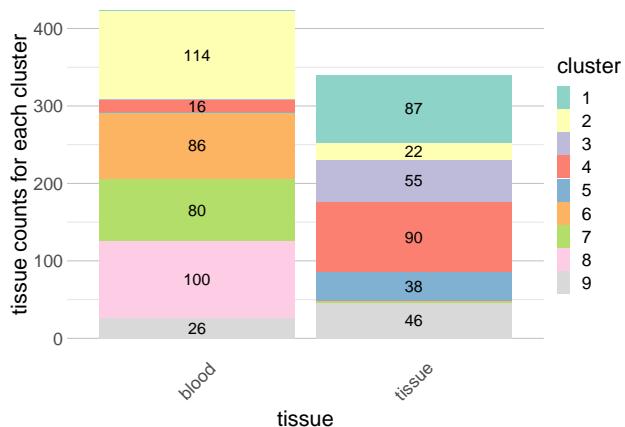
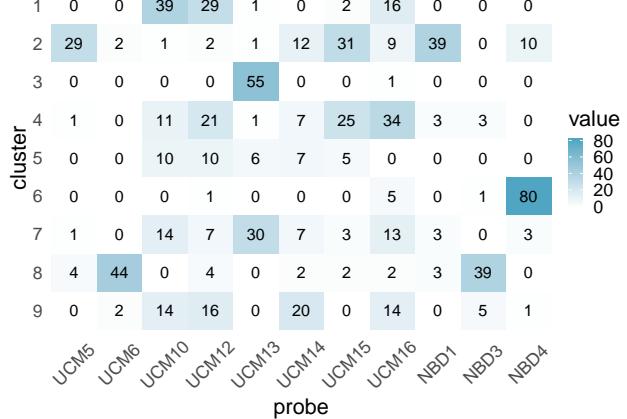
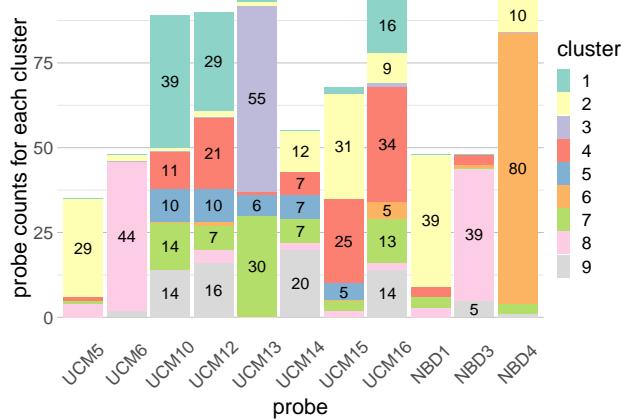
```
data: sourceTable
X-squared = 554.15, df = NA, p-value = 0.0004998
```

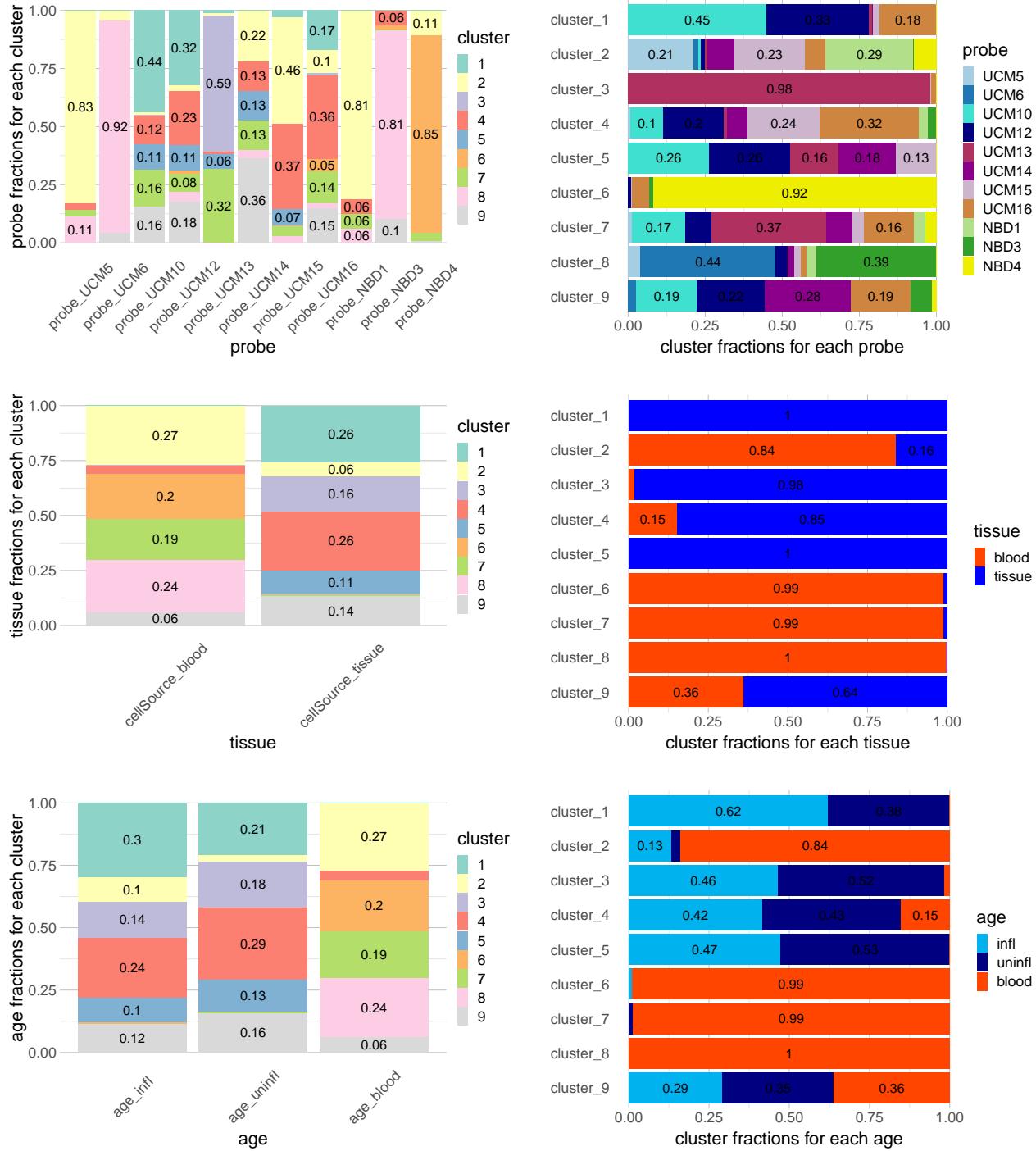
```
[1]
```

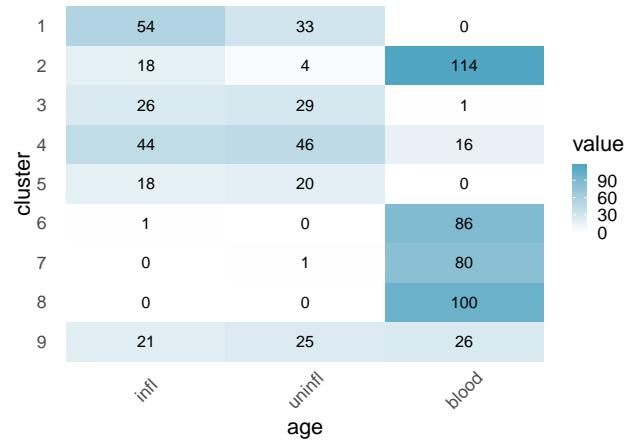
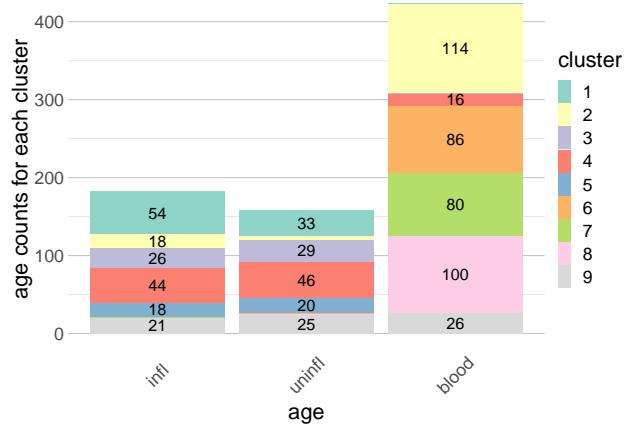
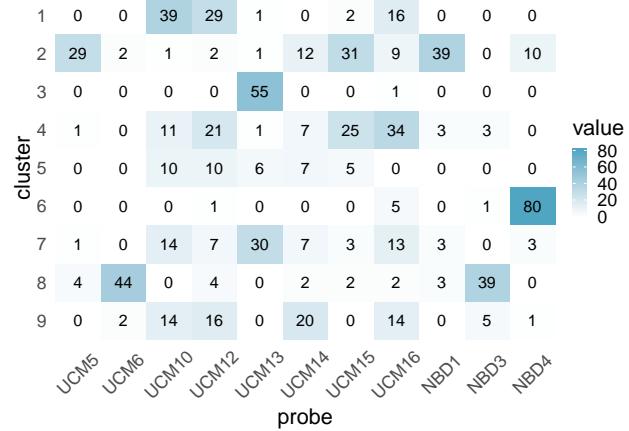
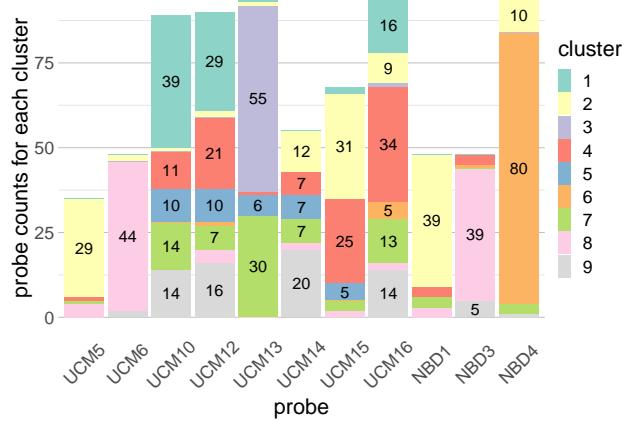
```
[1]
[1] age vs. Cluster
      age_infl age_uninfl age_blood
cluster_1      54        33        0
cluster_2      18         4       114
cluster_3      26        29        1
cluster_4      44        46       16
cluster_5      18        20        0
cluster_6       1         0       86
cluster_7       0         1       80
cluster_8       0         0      100
cluster_9      21        25       26

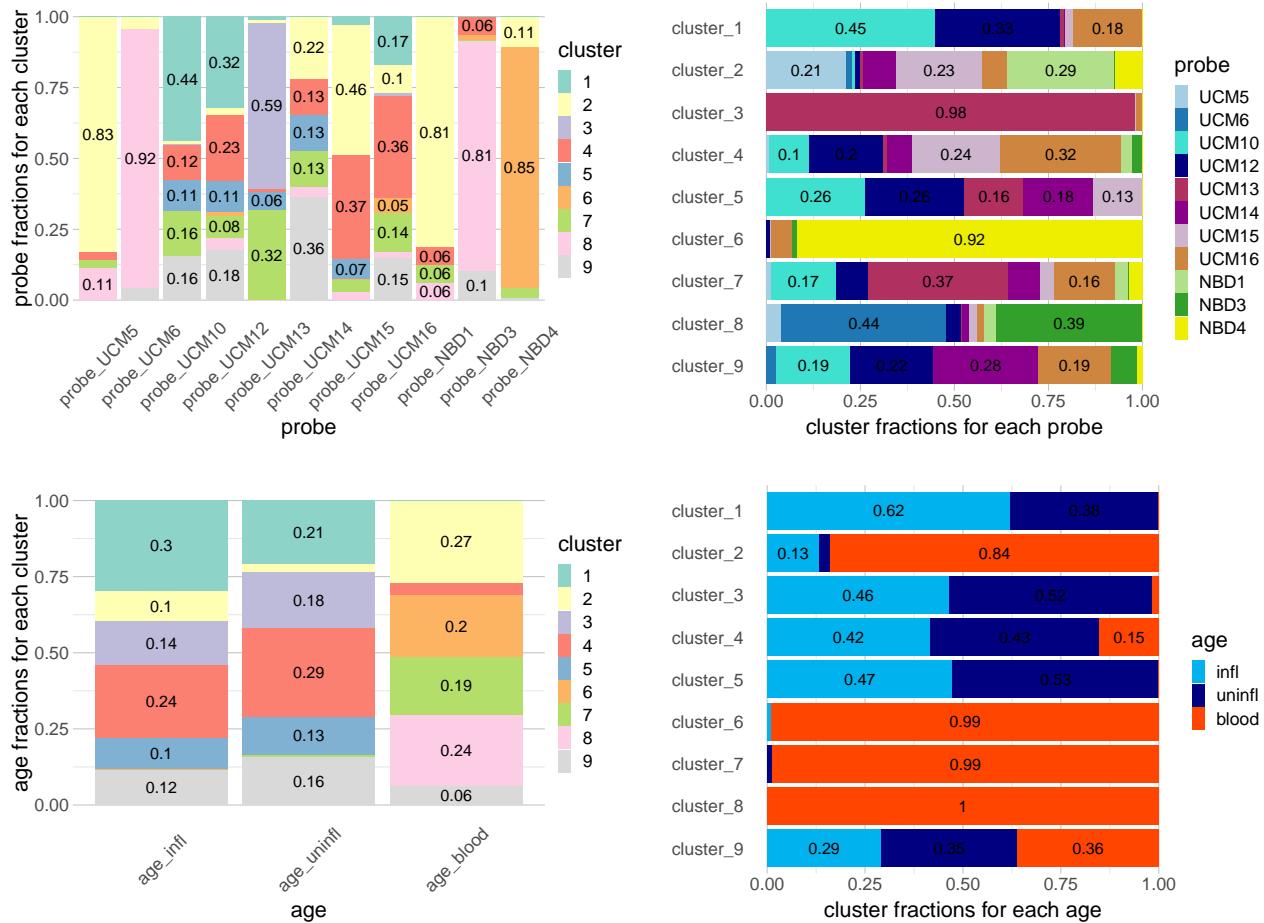
Pearson's Chi-squared test with simulated p-value (based on 2000
replicates)

data: ageTable
X-squared = 568.83, df = NA, p-value = 0.0004998
```

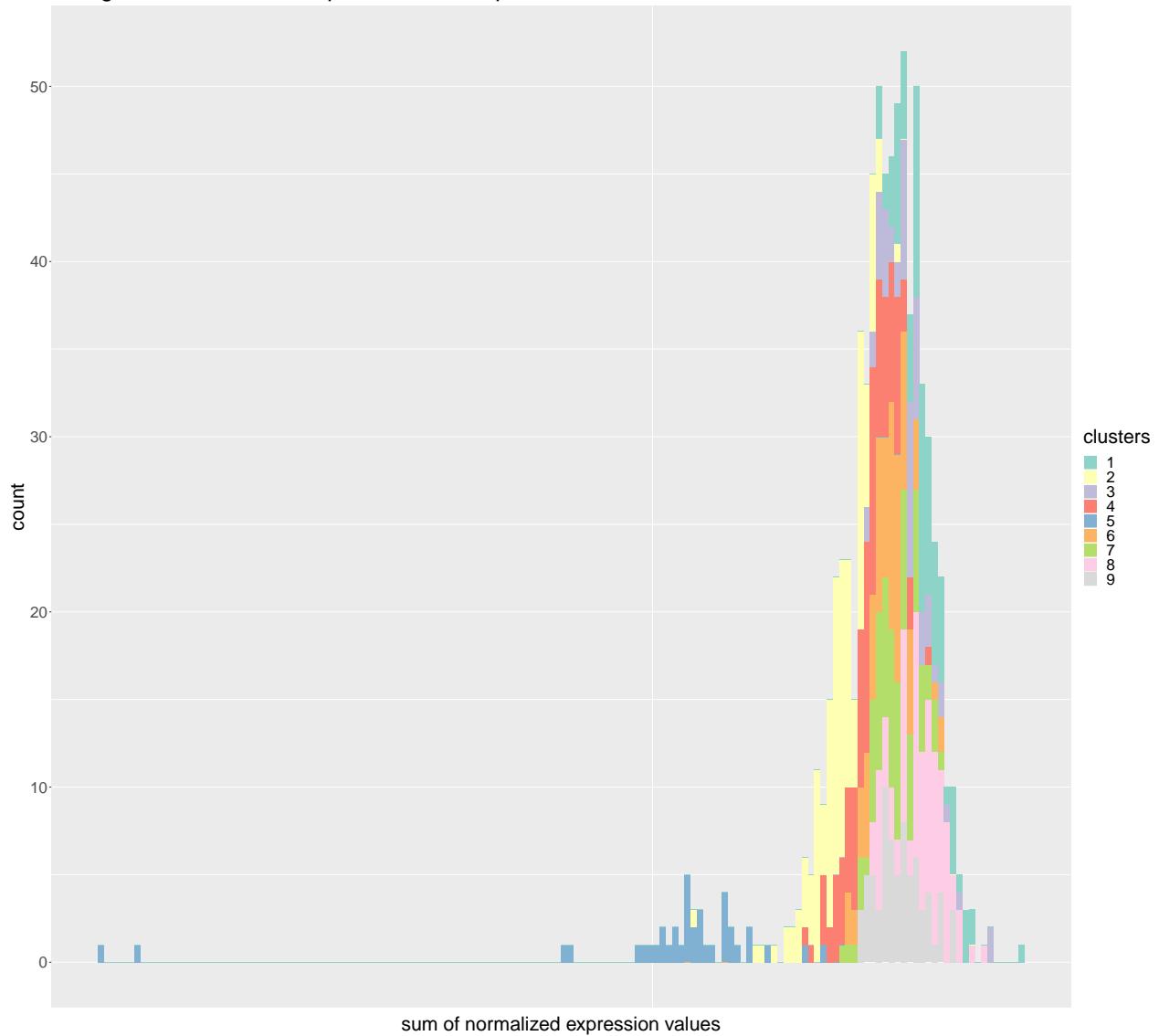






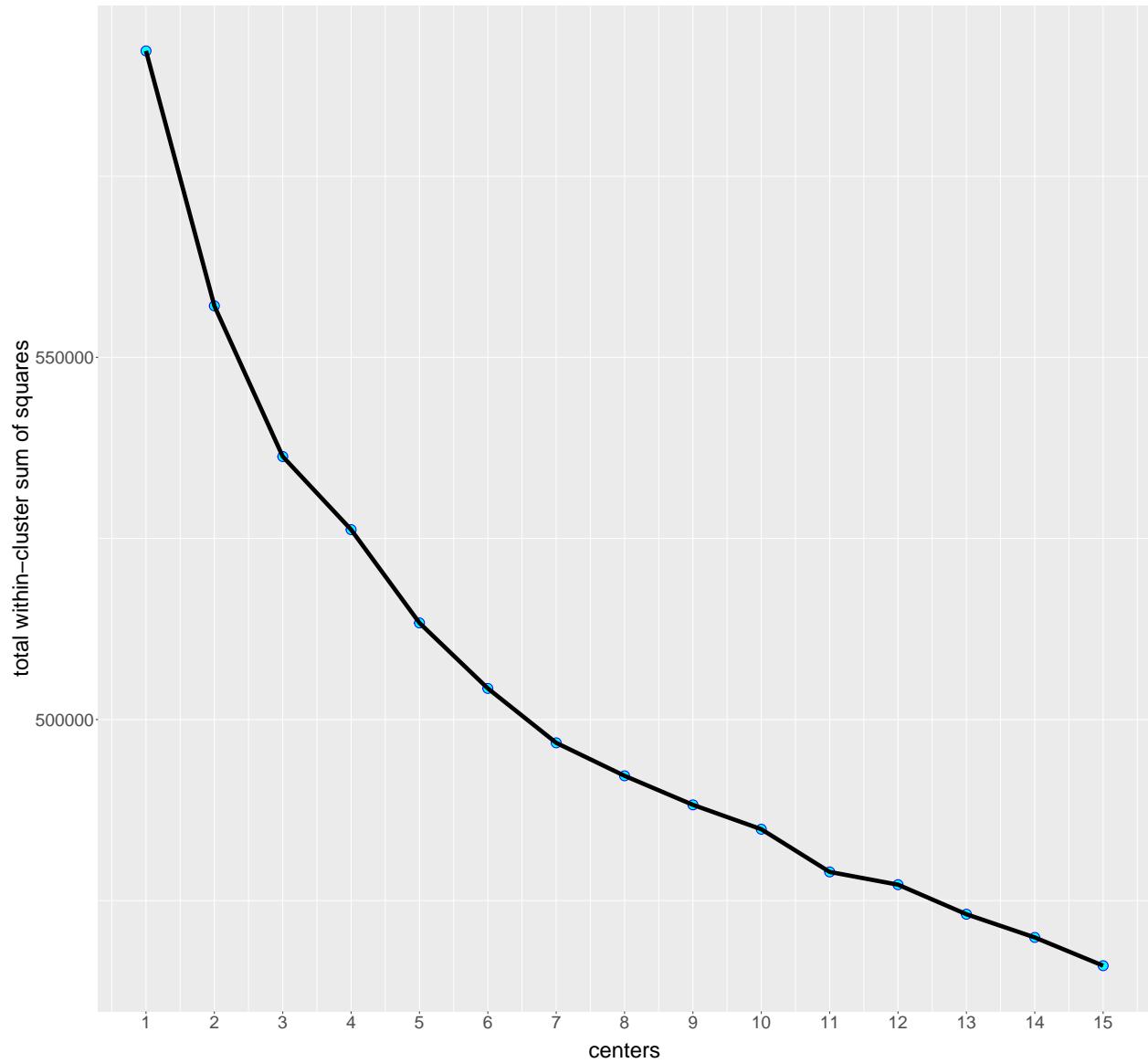


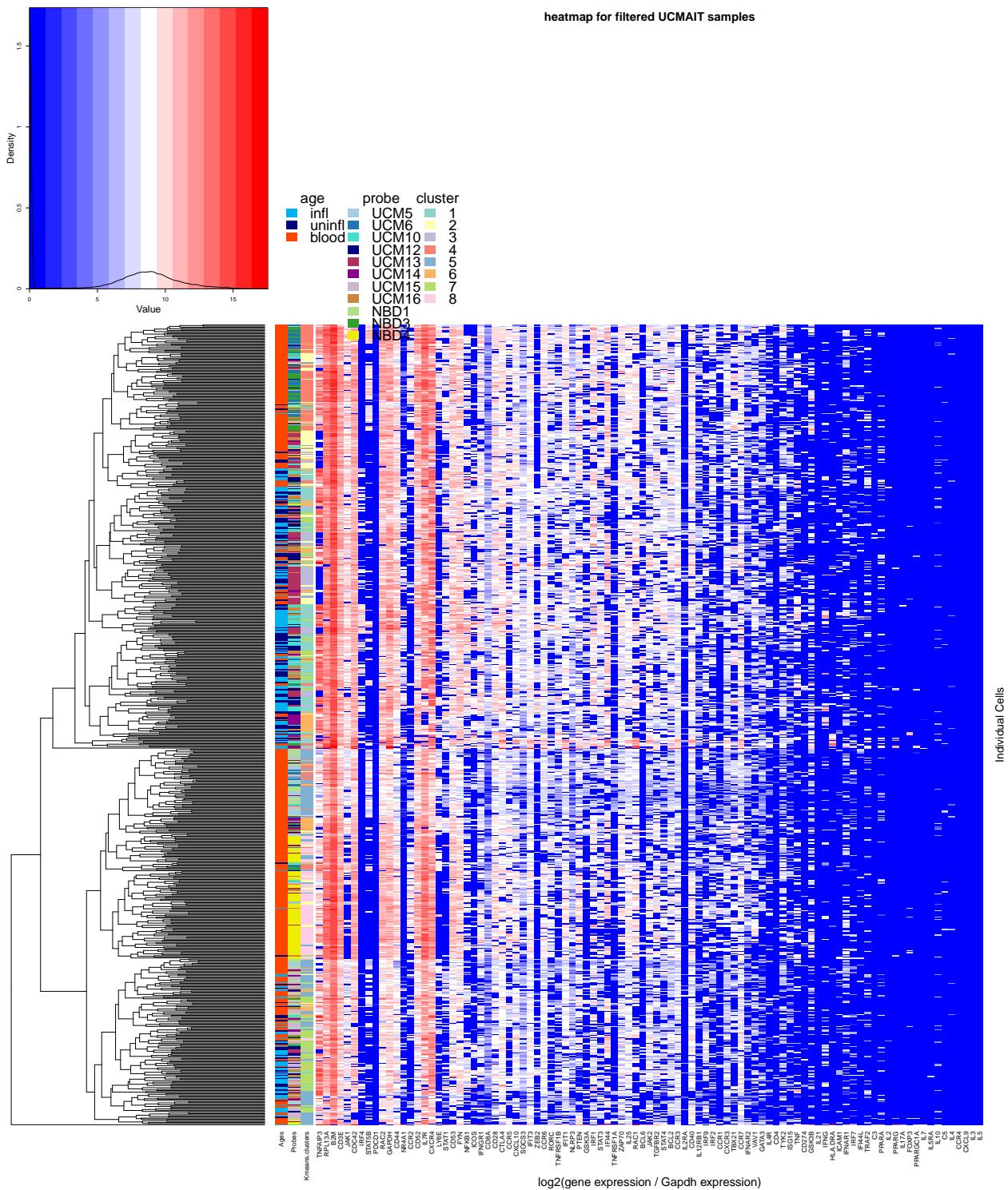
histogram of cumulative expression values per cell



38 / 763 cells were removed due to low gene expression (cluster ID of removed clusters: 5)

kmeans scree plot





[1]

[1]

[1] Probe vs. Cluster

	probe_UCM5	probe_UCM6	probe_UCM10	probe_UCM12	probe_UCM13
cluster_1	0	0	47	34	0
cluster_2	1	0	12	6	30
cluster_3	0	0	0	0	55

cluster_4	3	42	0	4	0
cluster_5	27	2	2	2	1
cluster_6	3	4	7	12	1
cluster_7	1	0	11	21	1
cluster_8	0	0	0	1	0
	probe_UCM14	probe_UCM15	probe_UCM16	probe_NBD1	probe_NBD3
cluster_1	4	2	23	0	0
cluster_2	4	2	14	3	0
cluster_3	0	0	1	0	0
cluster_4	1	2	2	2	38
cluster_5	12	27	7	38	0
cluster_6	23	4	10	2	6
cluster_7	4	26	32	3	3
cluster_8	0	0	5	0	1
	probe_NBD4				
cluster_1	0				
cluster_2	2				
cluster_3	0				
cluster_4	0				
cluster_5	11				
cluster_6	1				
cluster_7	0				
cluster_8	80				

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

```
data: probeTable
X-squared = 2028.5, df = NA, p-value = 0.0004998
```

```
[1]
[1]
[1] Tissue vs. Cluster
      cellSource_blood cellSource_tissue
cluster_1          0            110
cluster_2         72             2
cluster_3          0            56
cluster_4         94             0
cluster_5        110            19
cluster_6         47            26
cluster_7         14            88
cluster_8        86             1
```

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

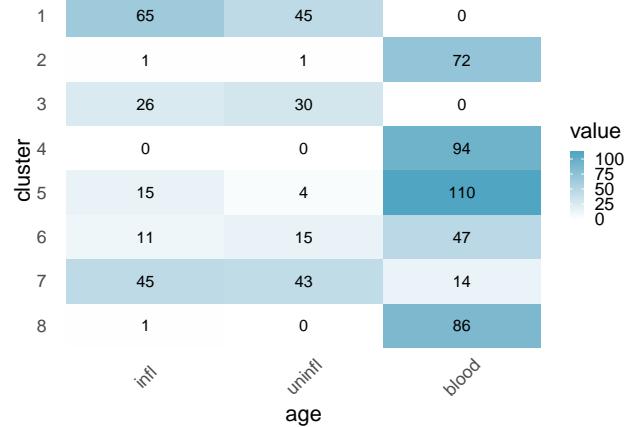
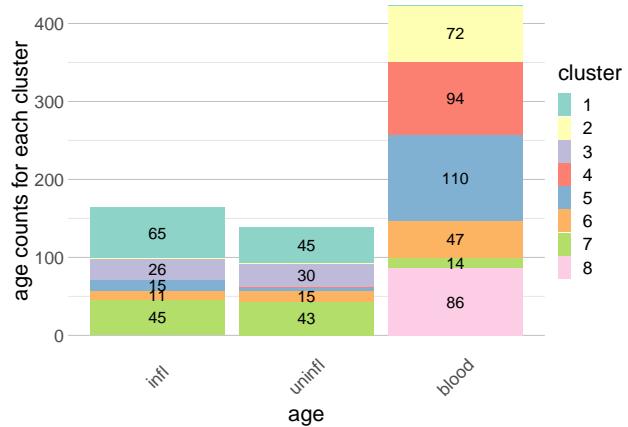
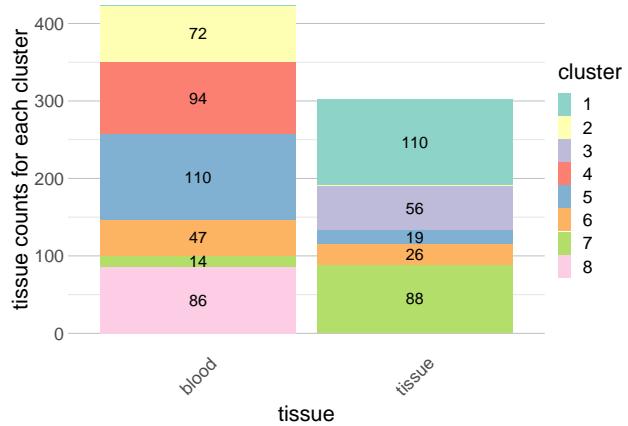
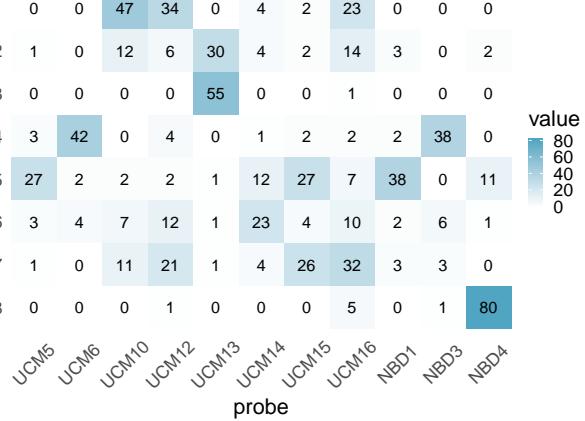
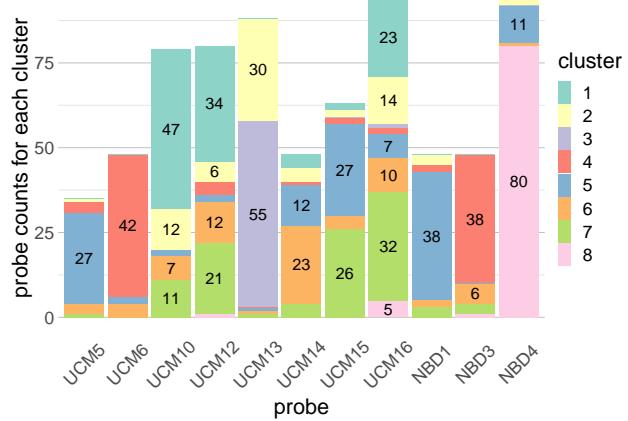
```
data: sourceTable
X-squared = 527.69, df = NA, p-value = 0.0004998
```

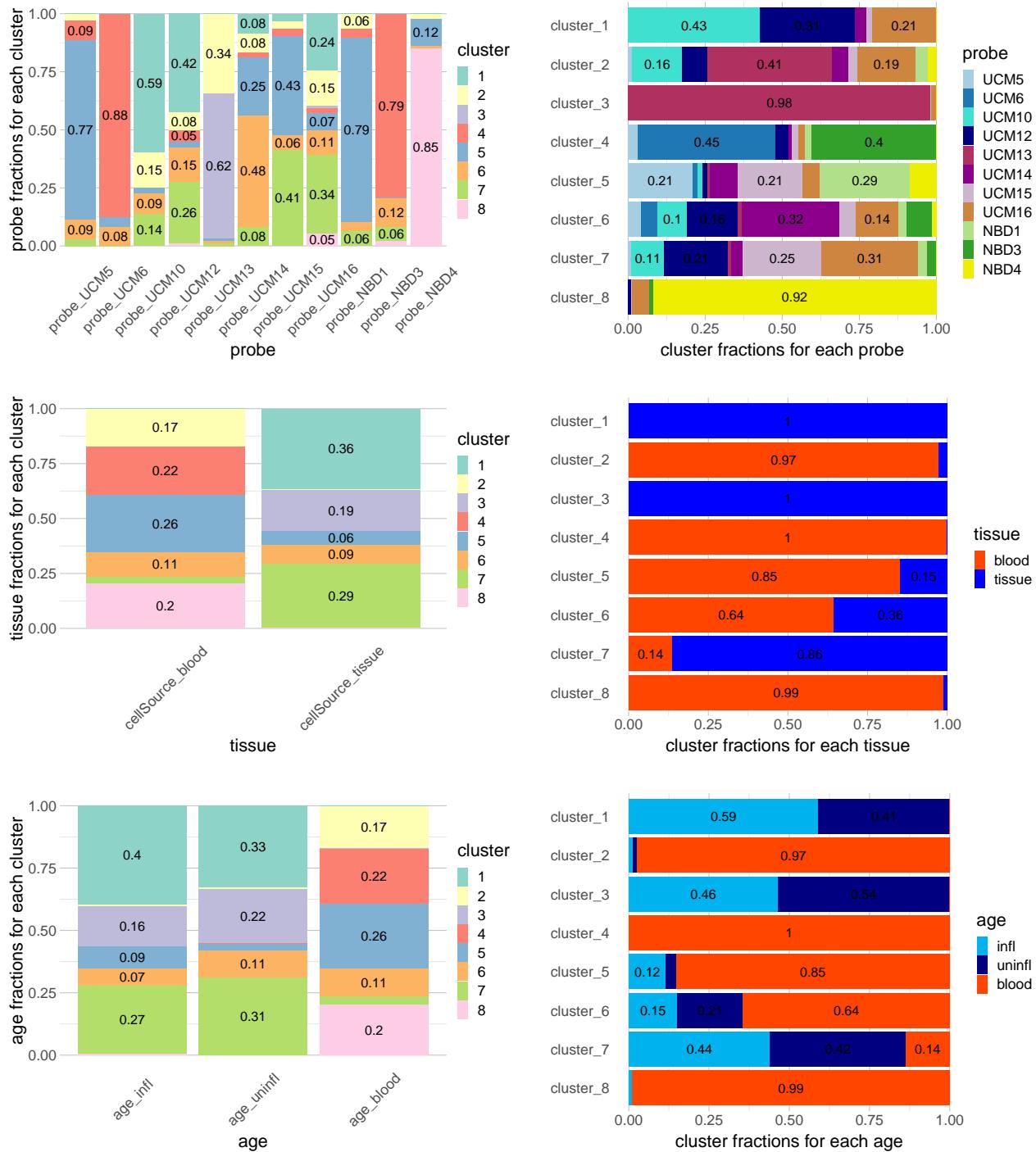
```
[1]
[1]
[1] age vs. Cluster
      age_infl age_uninfl age_blood
cluster_1       65        45         0
```

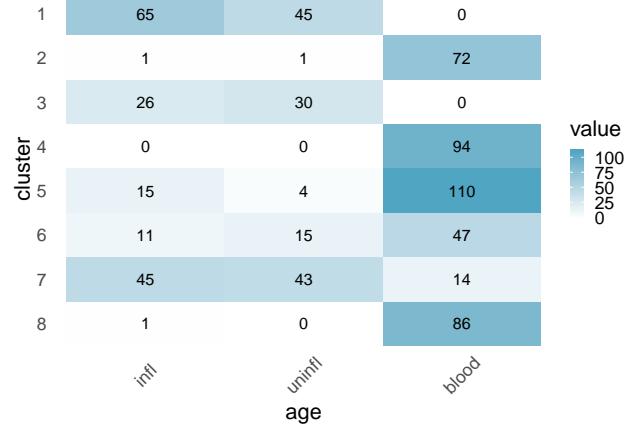
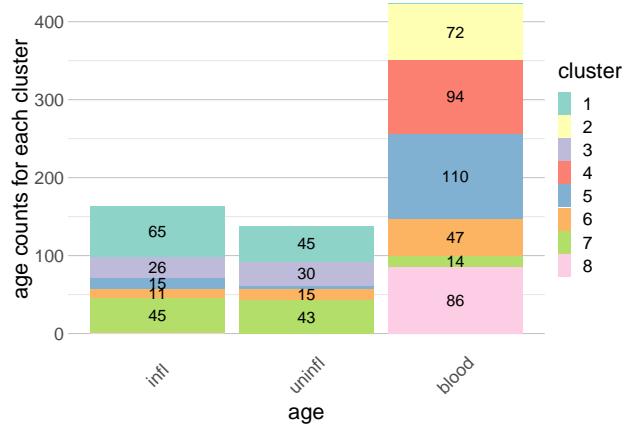
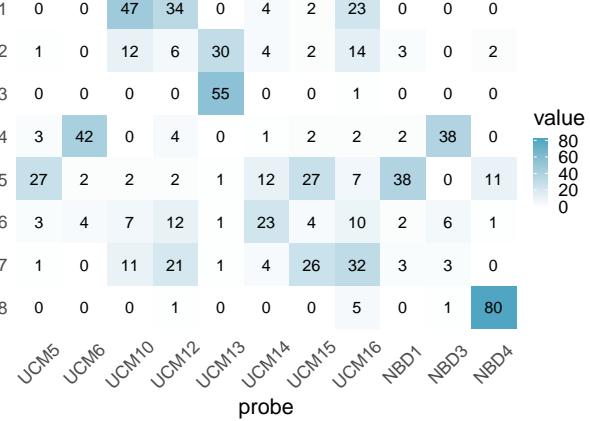
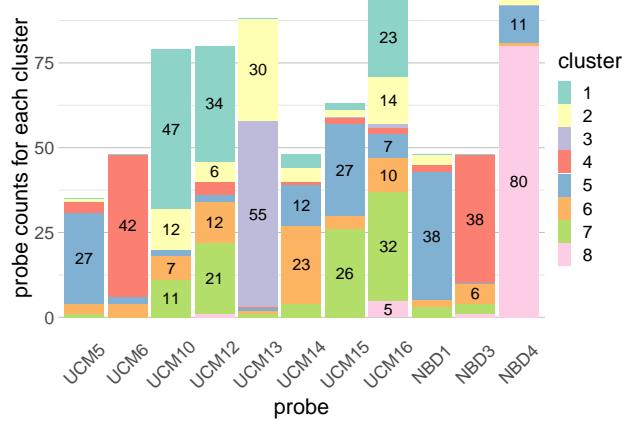
cluster_2	1	1	72
cluster_3	26	30	0
cluster_4	0	0	94
cluster_5	15	4	110
cluster_6	11	15	47
cluster_7	45	43	14
cluster_8	1	0	86

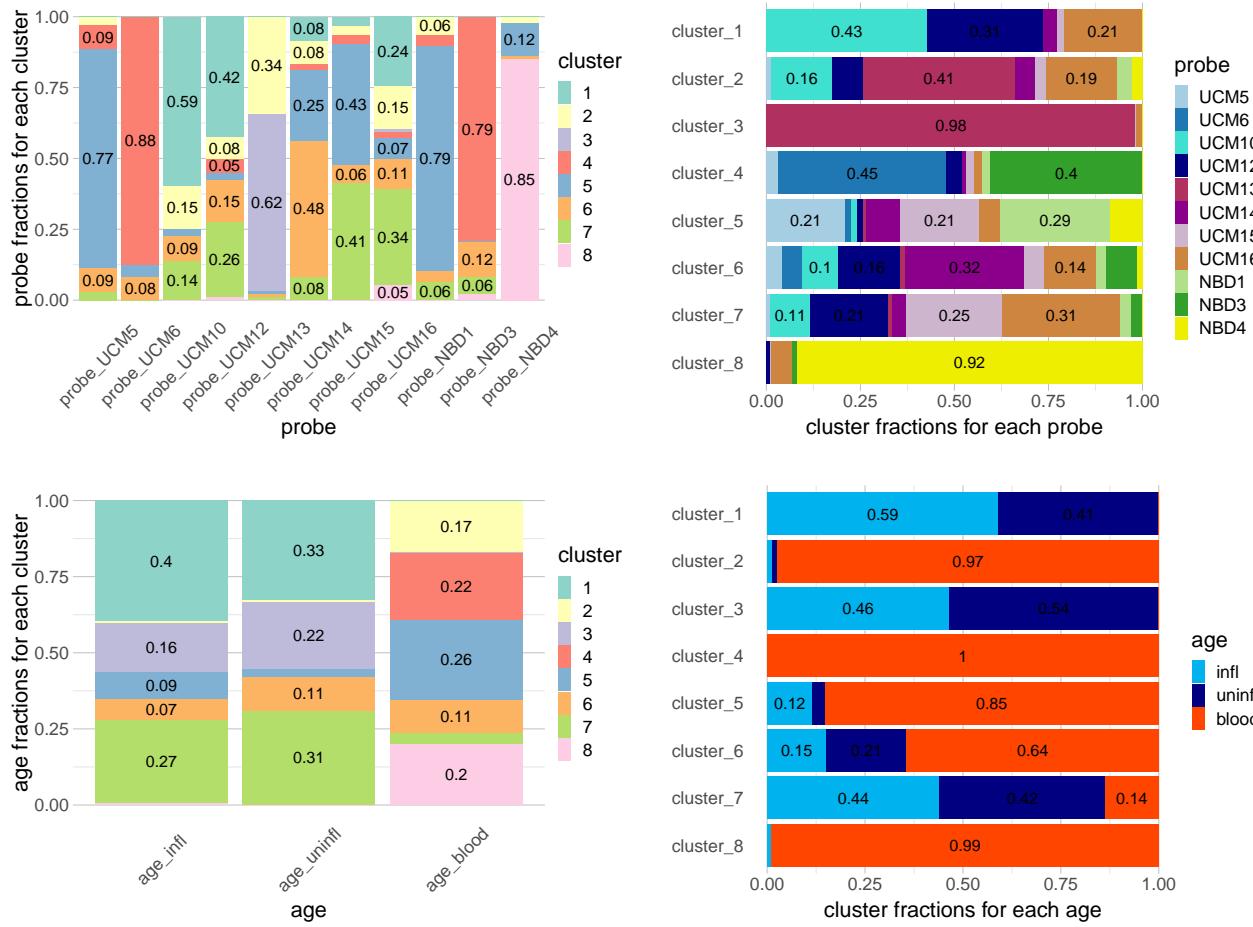
Pearson's Chi-squared test with simulated p-value (based on 2000 replicates)

```
data: ageTable  
X-squared = 537.18, df = NA, p-value = 0.0004998
```

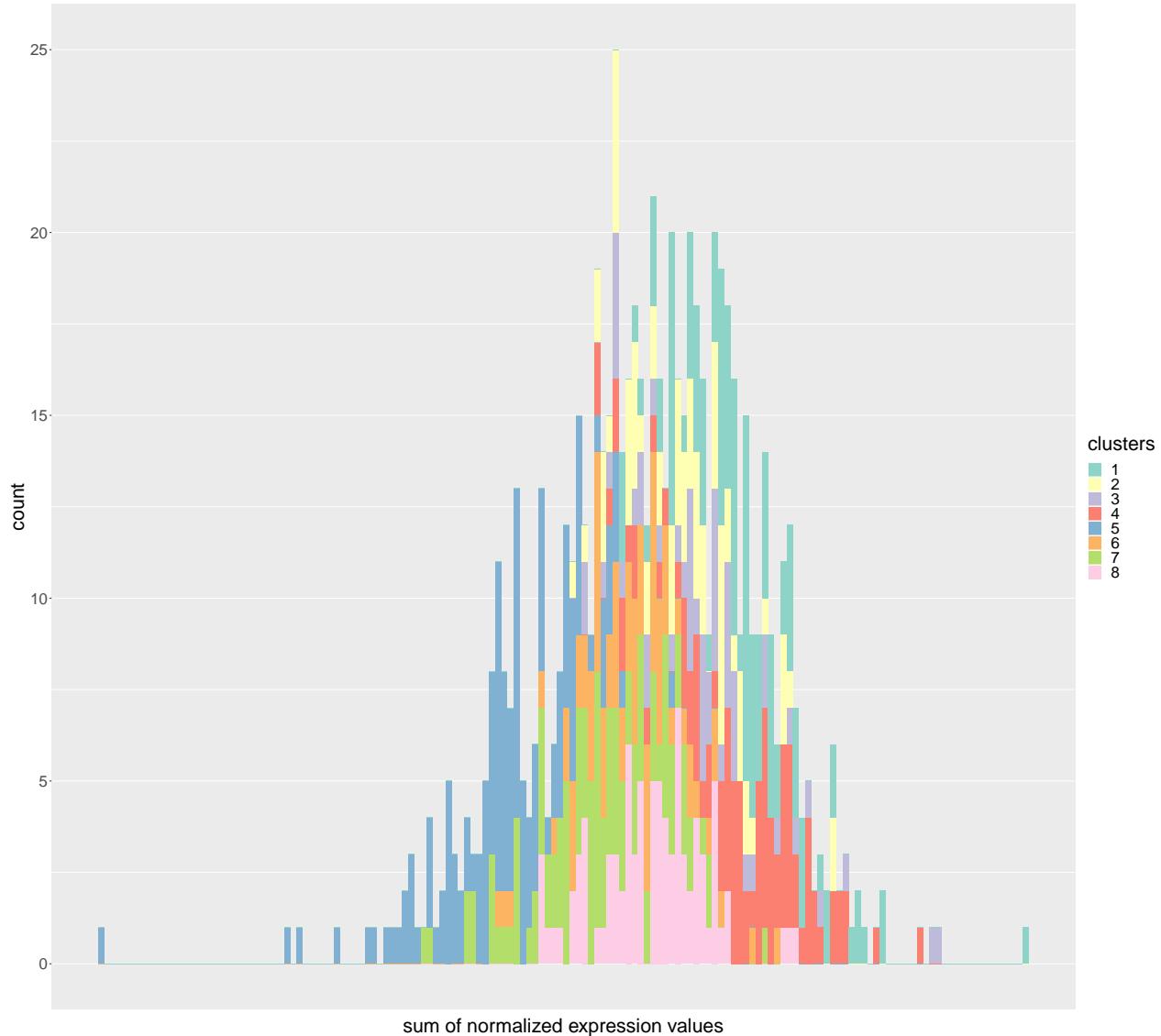




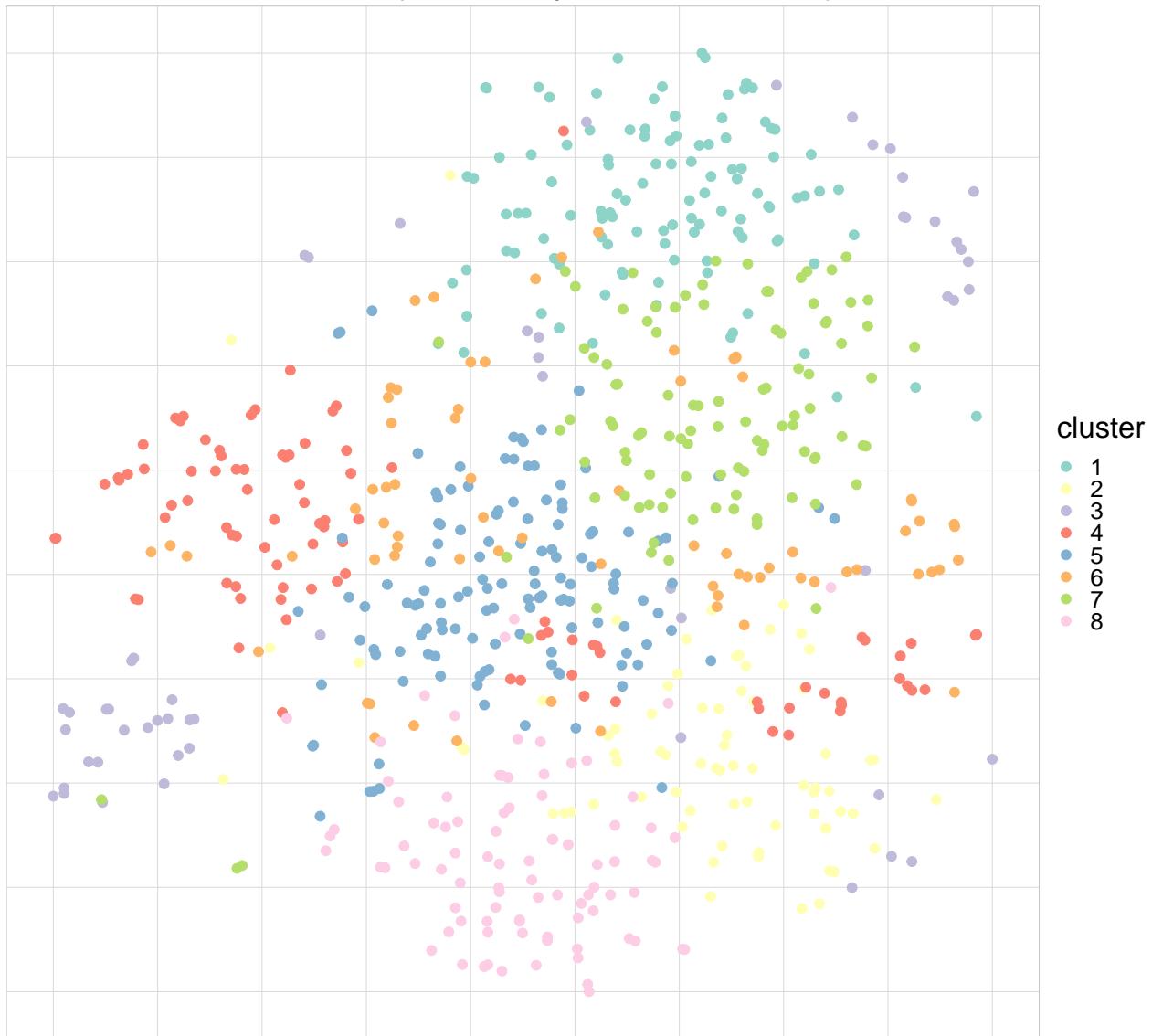




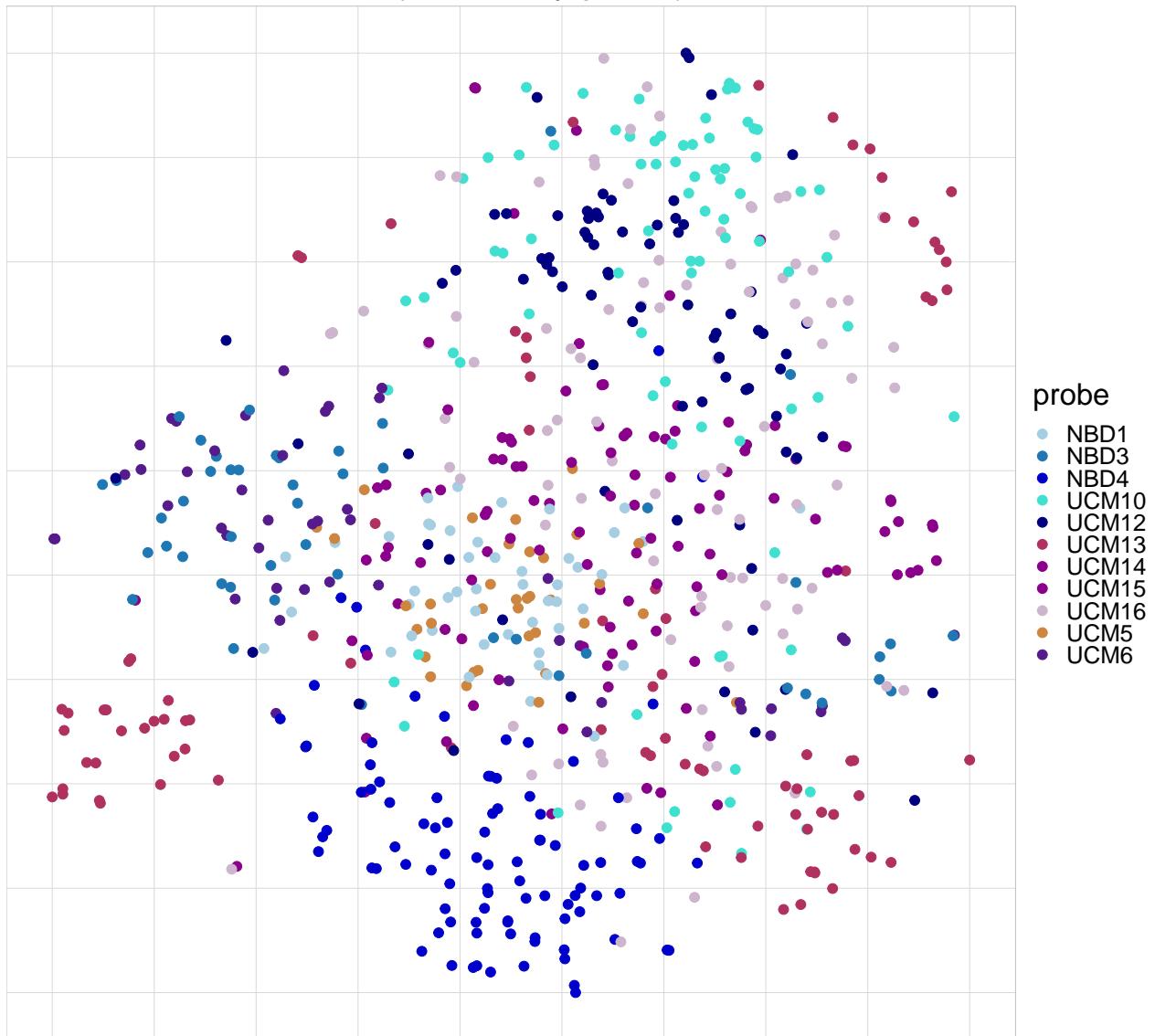
histogram of cumulative expression values per cell



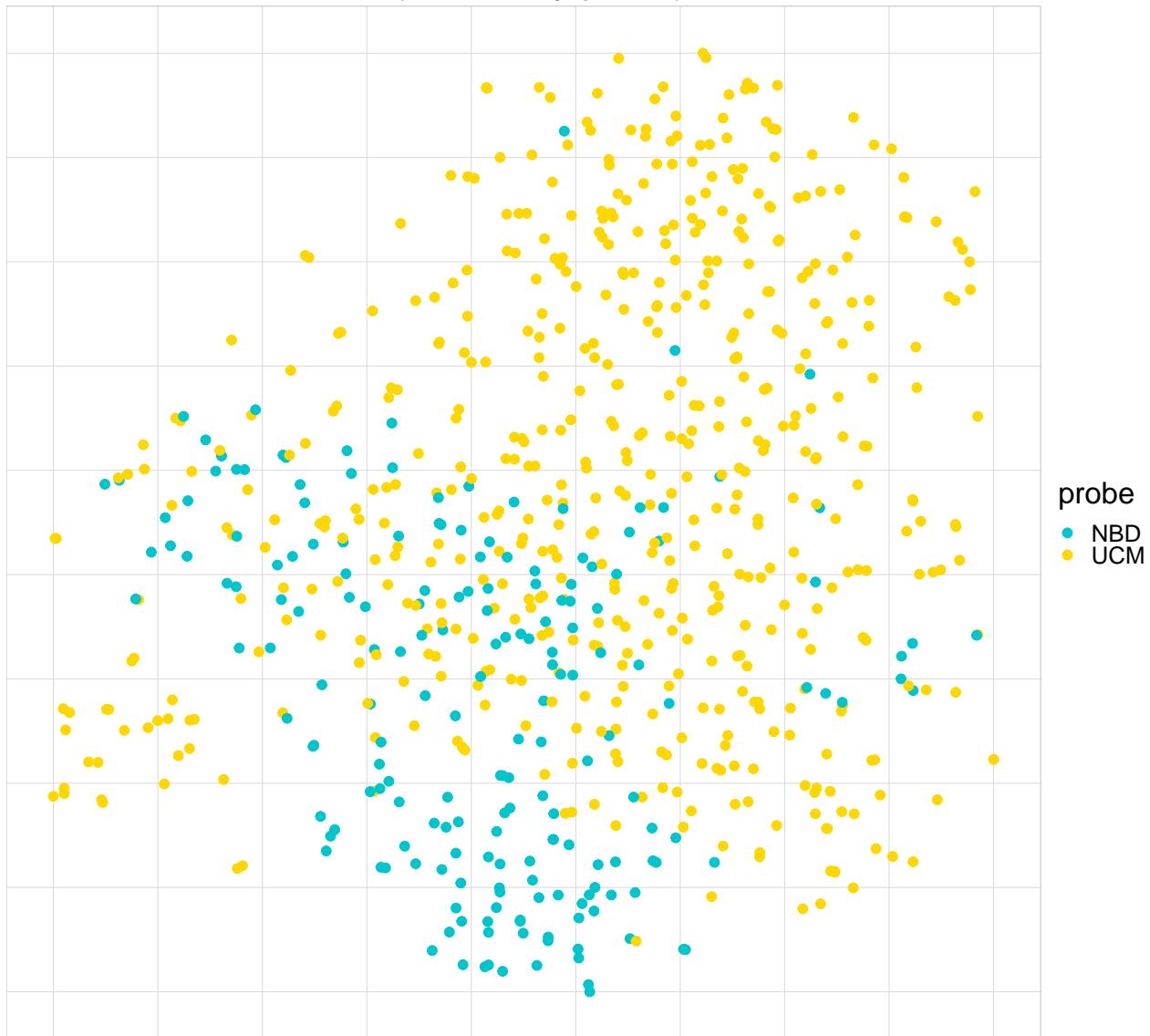
t-SNE between tissues (colored by kmeans.cluster)



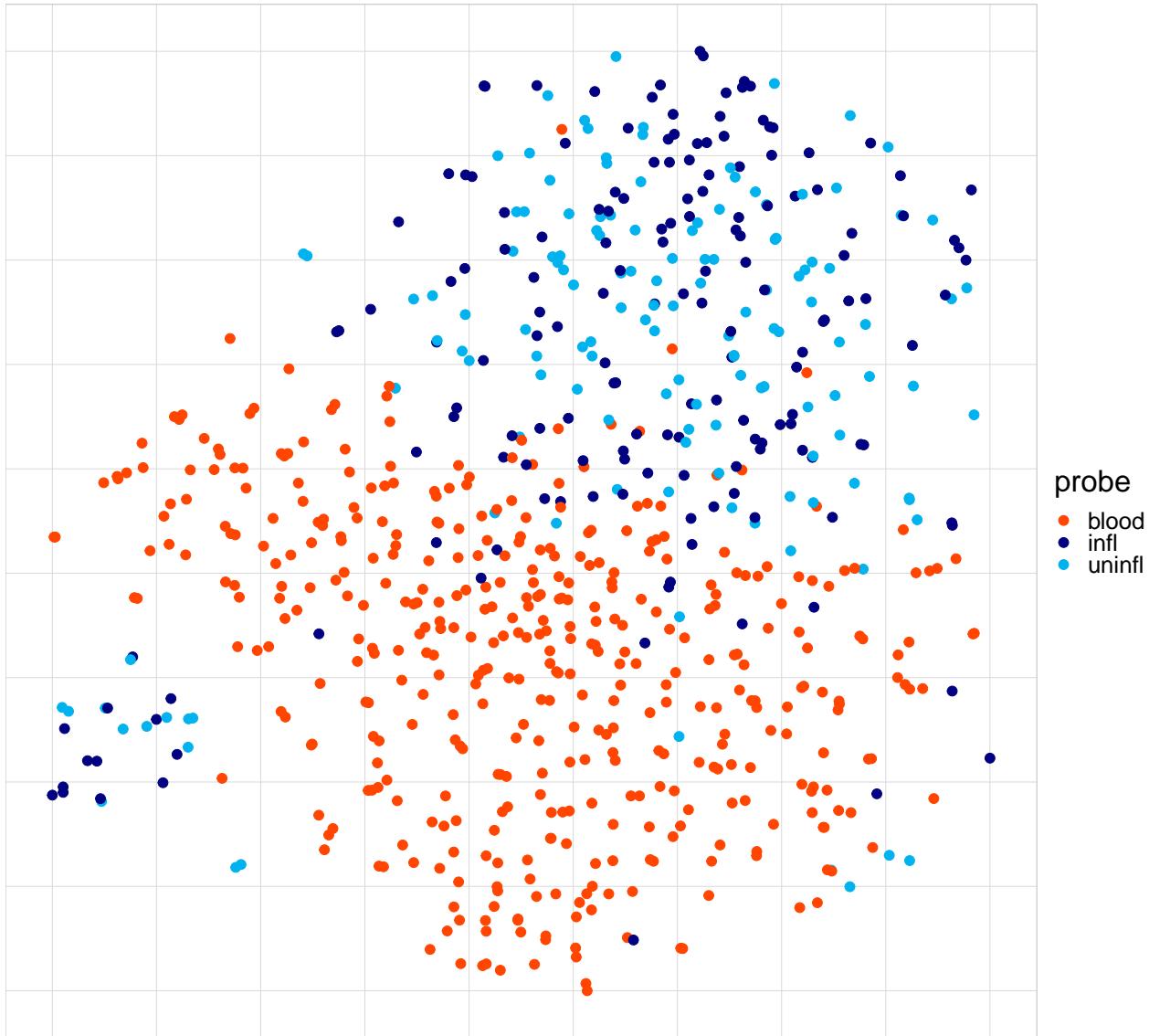
t-SNE between tissues (colored by probe)



t-SNE between tissues (colored by probe)



t-SNE between tissues (colored by probe)



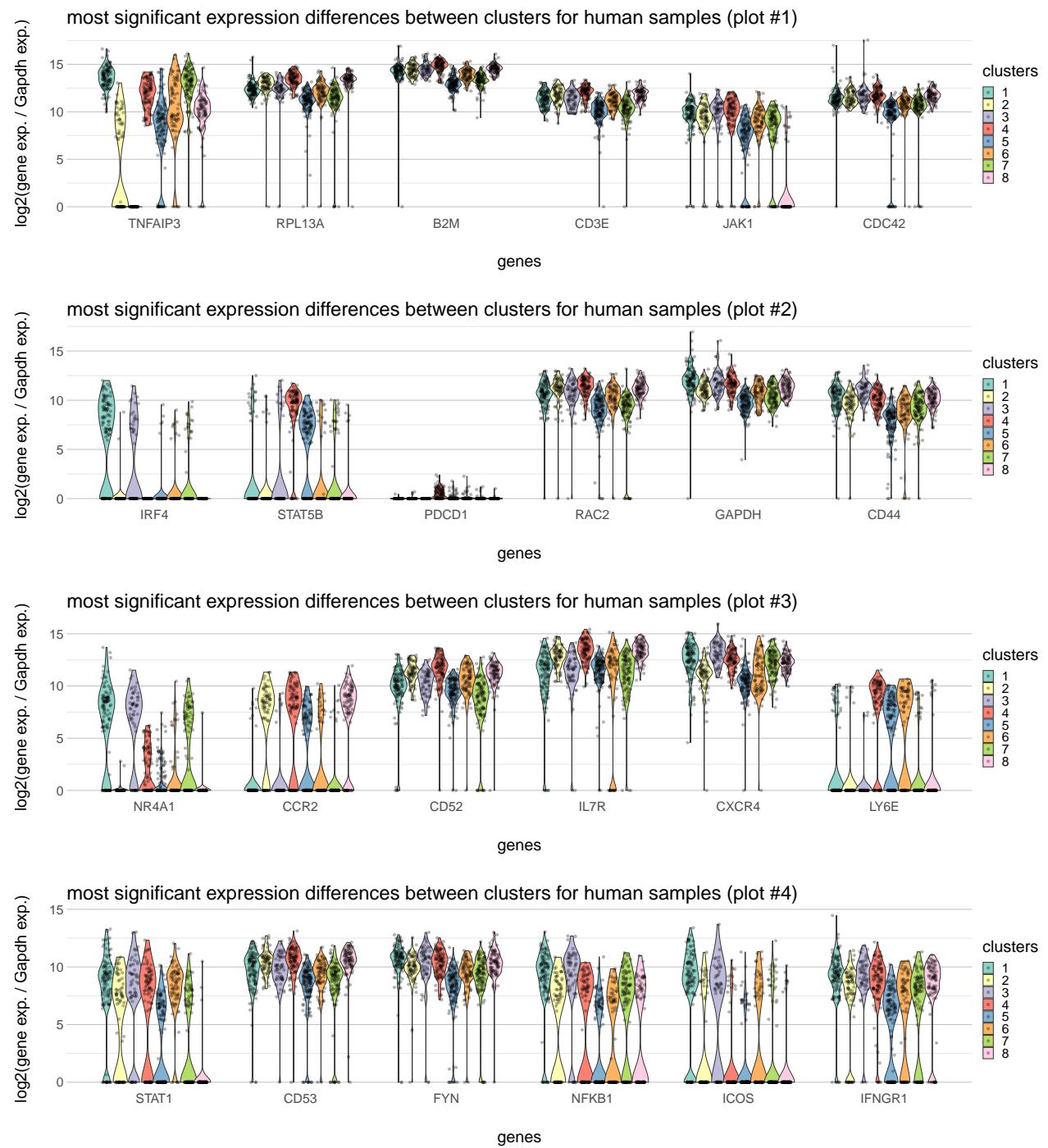
[1] Differentially expressed genes between clusters for human samples:

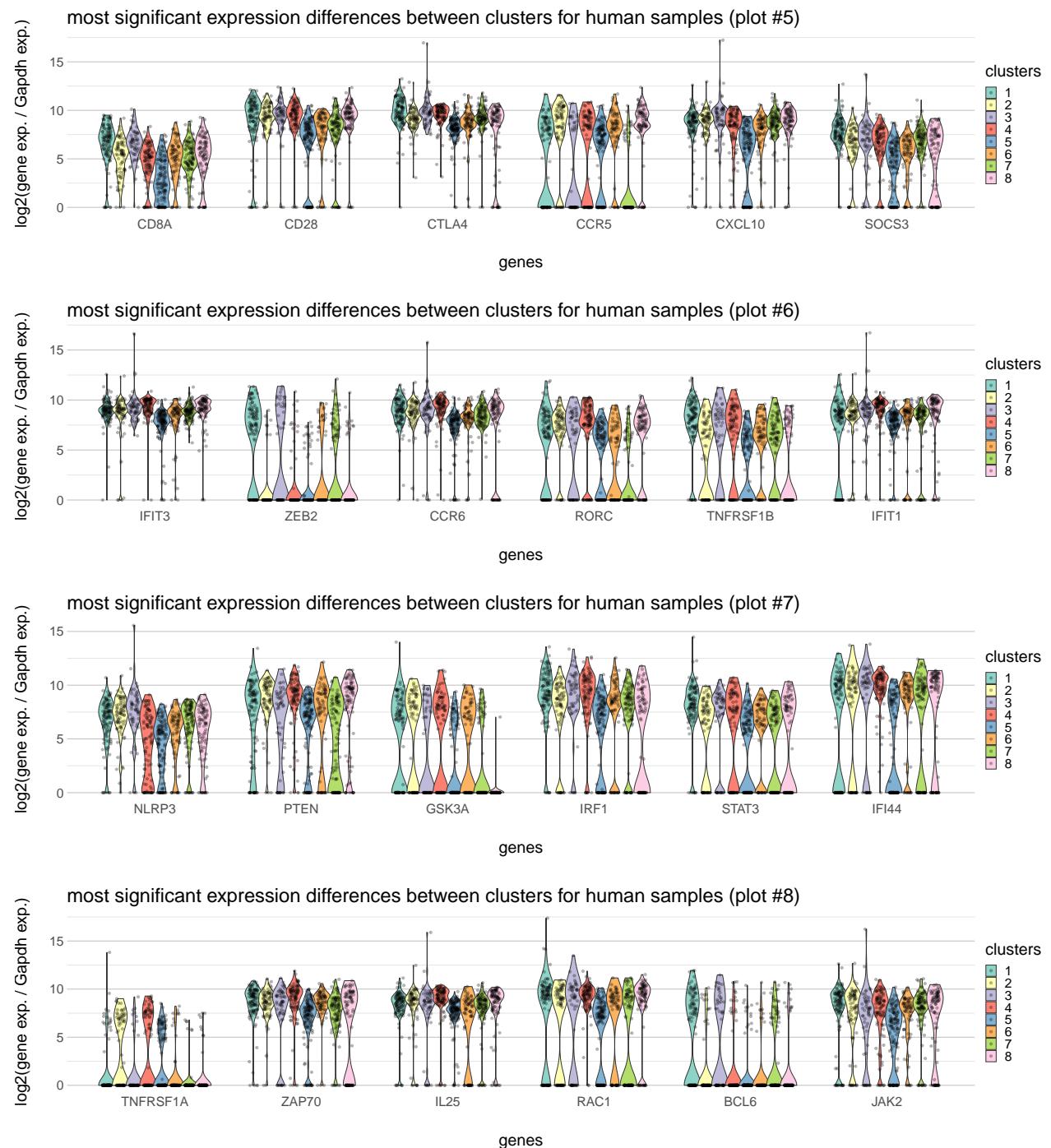
```

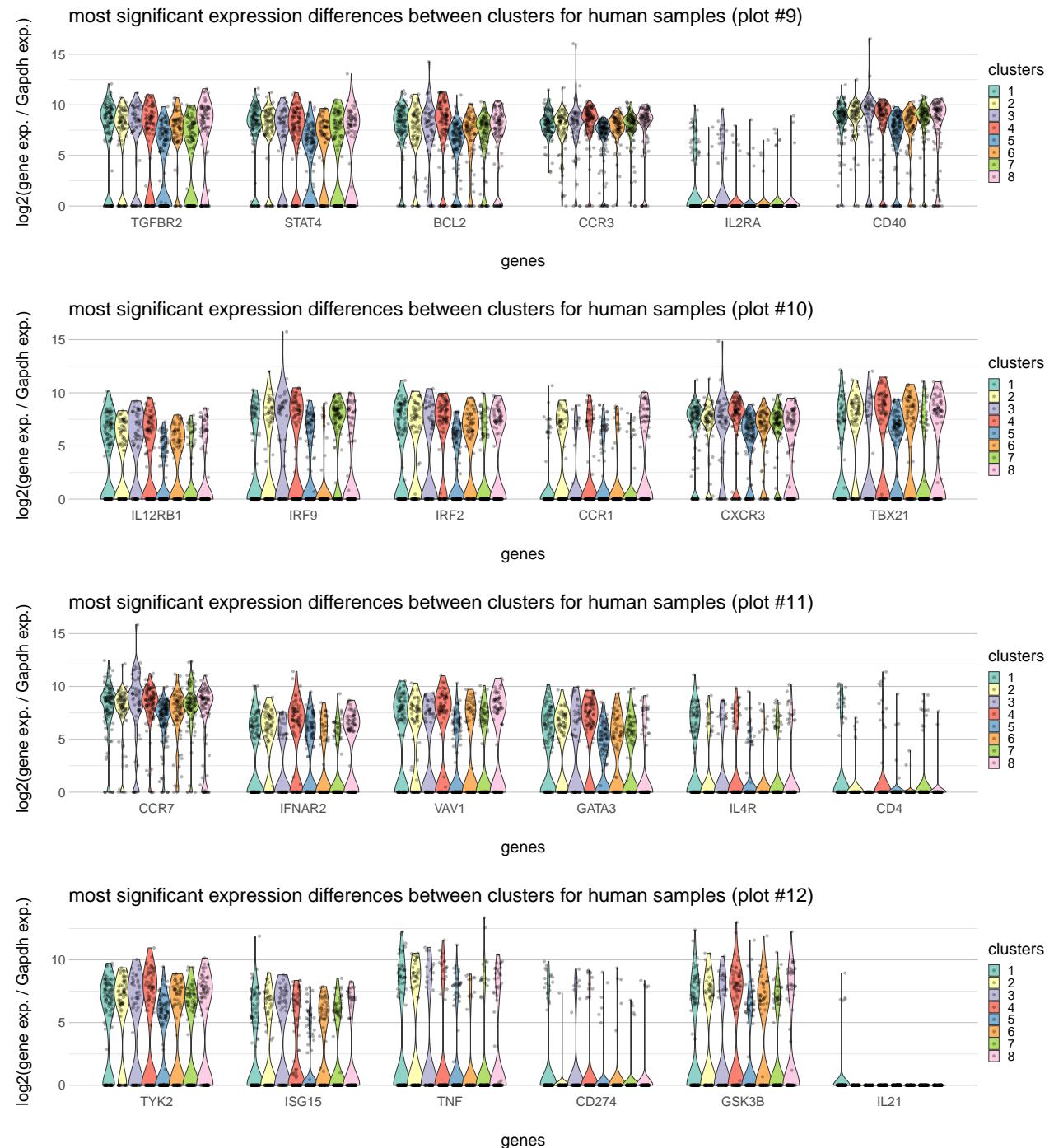
[1] TNFAIP3: 5.263e-91   RPL13A: 3.592e-77   B2M: 5.029e-77
[4] CD3E: 9.099e-60     JAK1: 9.099e-60     CDC42: 4.123e-57
[7] IRF4: 1.173e-56     STAT5B: 4.099e-56    PDCD1: 1.228e-55
[10] RAC2: 2.038e-55    GAPDH: 4.498e-53    CD44: 7.902e-53
[13] NR4A1: 1.27e-52    CCR2: 2.565e-52    CD52: 5.172e-52
[16] IL7R: 1.365e-49    CXCR4: 1.948e-49   LY6E: 5.668e-49
[19] STAT1: 6.201e-49   CD53: 1.498e-43   FYN: 1.727e-42
[22] NFKB1: 3.264e-42   ICOS: 2.605e-40   IFNGR1: 1.666e-37
[25] CD8A: 1.777e-37   CD28: 1.144e-34   CTLA4: 3.956e-34
[28] CCR5: 5.628e-34   CXCL10: 5.579e-33  SOCS3: 8.094e-33
[31] IFIT3: 1.429e-32   ZEB2: 2.647e-32   CCR6: 1.18e-28
[34] RORC: 3.978e-28   TNFRSF1B: 2.151e-26  IFIT1: 2.307e-25
[37] NLRP3: 1.452e-24   PTEN: 1.601e-23   GSK3A: 3.281e-23
[40] IRF1: 1.547e-22   STAT3: 2.29e-21    IFI44: 2.307e-21
[43] TNFRSF1A: 2.709e-21  ZAP70: 5.336e-21  IL25: 3.964e-20

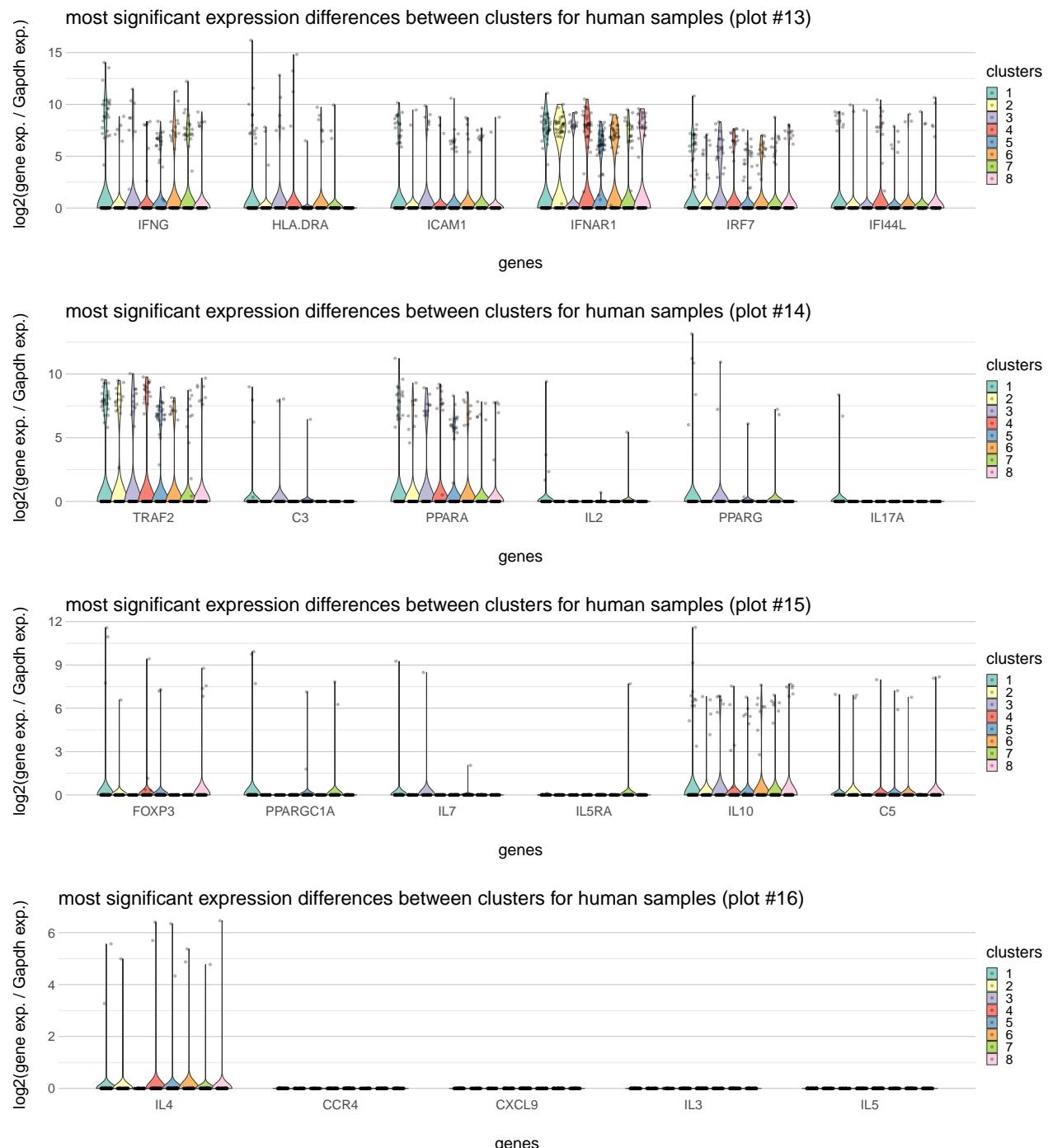
```

[46]	RAC1:	8.36e-20	BCL6:	1.816e-19	JAK2:	3.564e-16
[49]	TGFBR2:	6.074e-16	STAT4:	6.862e-16	BCL2:	1.648e-15
[52]	CCR3:	1.869e-15	IL2RA:	2.089e-15	CD40:	1.213e-14
[55]	IL12RB1:	2.094e-14	IRF9:	3.042e-14	IRF2:	3.342e-14
[58]	CCR1:	1.309e-12	CXCR3:	1.336e-12	TBX21:	1.328e-11
[61]	CCR7:	1.921e-11	IFNAR2:	3.388e-11	VAV1:	7.539e-11
[64]	GATA3:	5.101e-10	IL4R:	5.258e-08	CD4:	5.459e-08
[67]	TYK2:	6.872e-06	ISG15:	8.931e-06	TNF:	2.498e-05
[70]	CD274:	0.0001866	GSK3B:	0.0002294	IL21:	0.0002655
[73]	IFNG:	0.0003755	HLA.DRA:	0.000404	ICAM1:	0.0004906
[76]	IFNAR1:	0.003435	IRF7:	0.007304	IFI44L:	0.01108
[79]	TRAF2:	0.02418	C3:	0.02453		









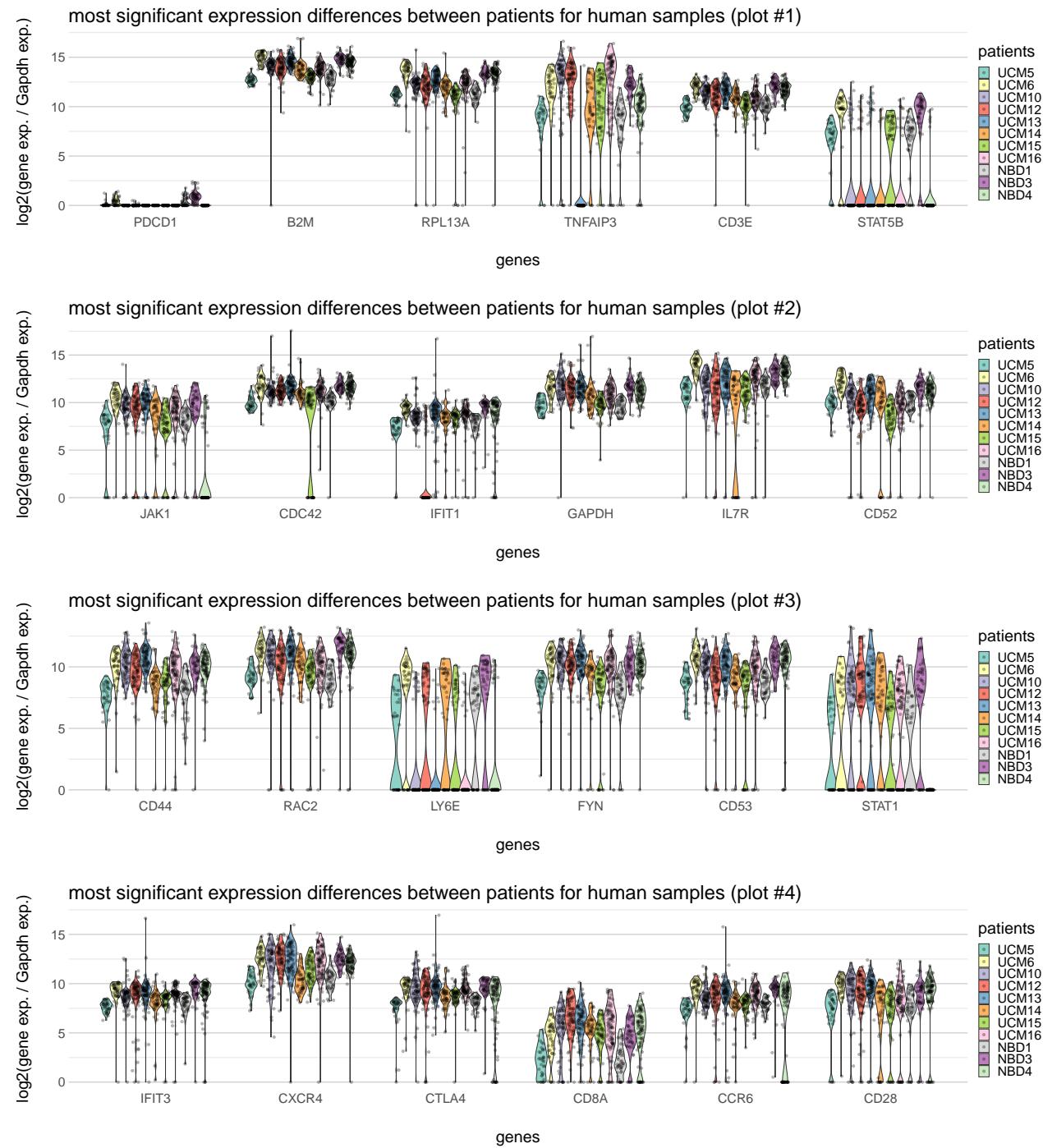
[1] Differentially expressed genes between patients for human samples:

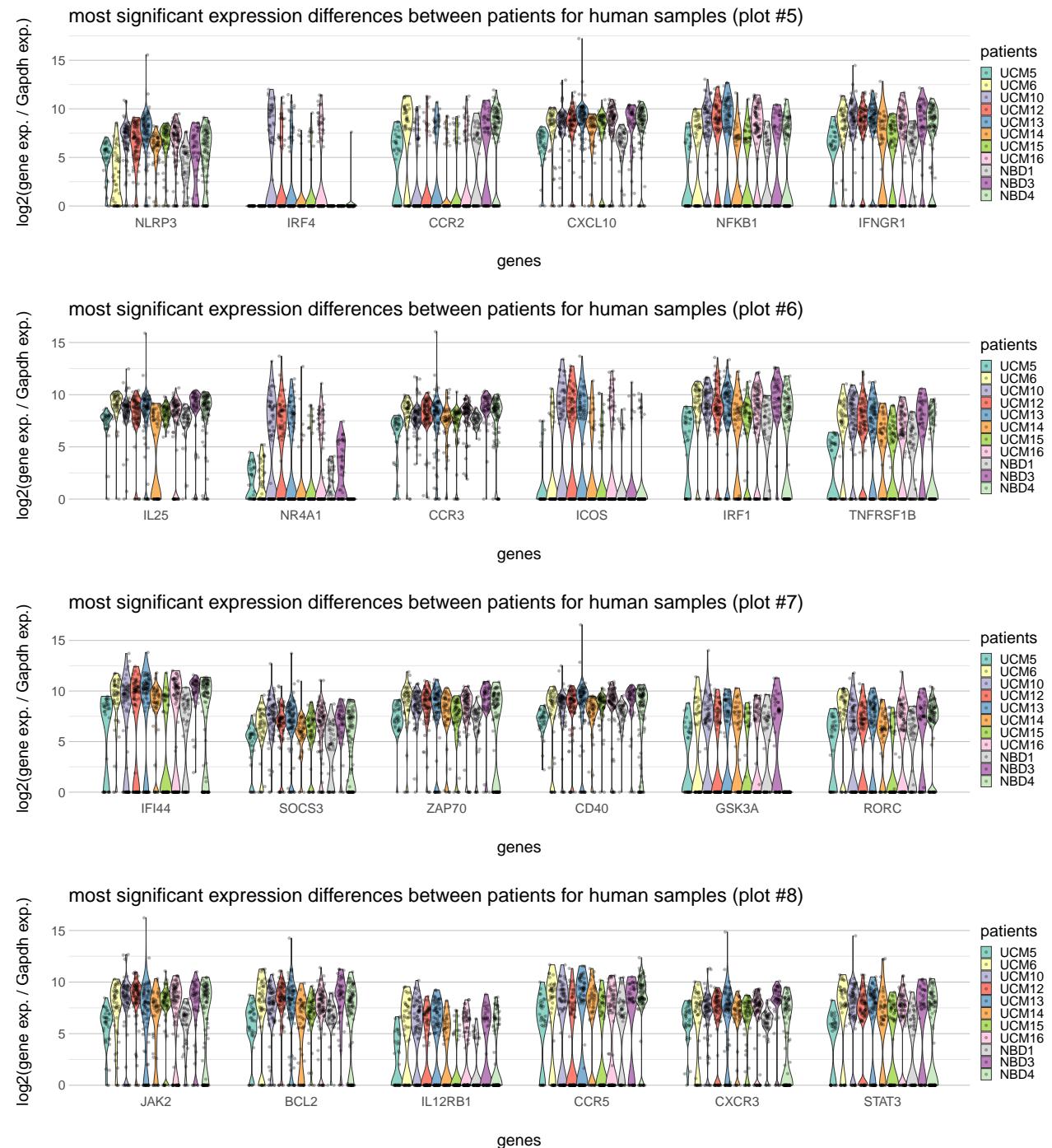
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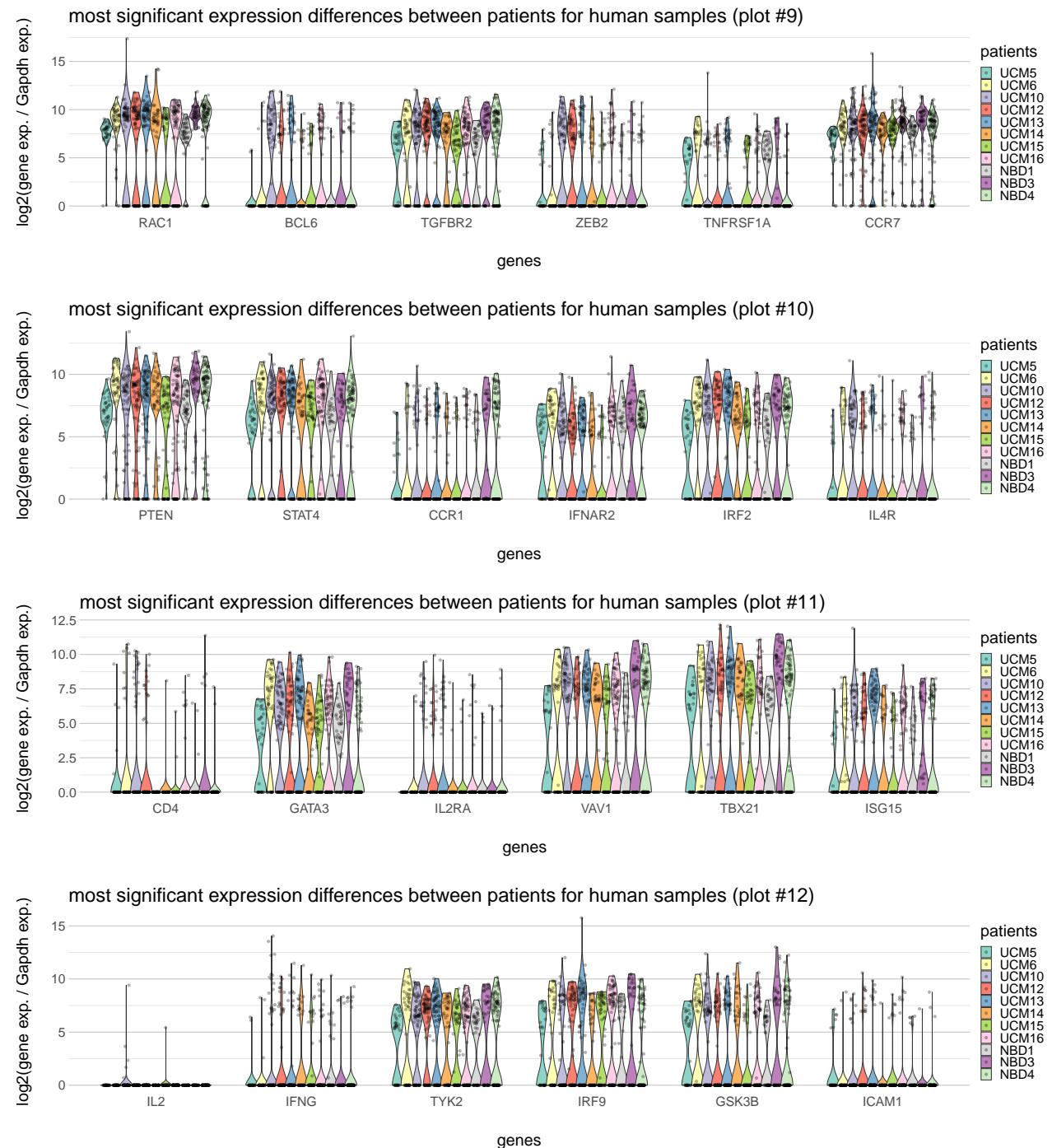
[1] PDCD1: 7.849e-89    B2M: 1.517e-76      RPL13A: 6.987e-73
[4] TNFAIP3: 4.197e-70   CD3E: 9.872e-58      STAT5B: 3.289e-55
[7] JAK1: 5.095e-53     CDC42: 1.226e-52      IFIT1: 1.561e-52
[10] GAPDH: 1.161e-48    IL7R: 1.21e-48       CD52: 1.471e-48
[13] CD44: 3.683e-46     RAC2: 1.929e-42      LY6E: 1.328e-41
[16] FYN: 4.892e-41      CD53: 2.226e-38      STAT1: 3.471e-36
[19] IFIT3: 3.471e-36    CXCR4: 5.035e-36     CTLA4: 2.839e-33
[22] CD8A: 3.414e-32     CCR6: 1.158e-30      CD28: 8.98e-30
[25] NLRP3: 3.094e-28    IRF4: 8.883e-26      CCR2: 1.178e-25

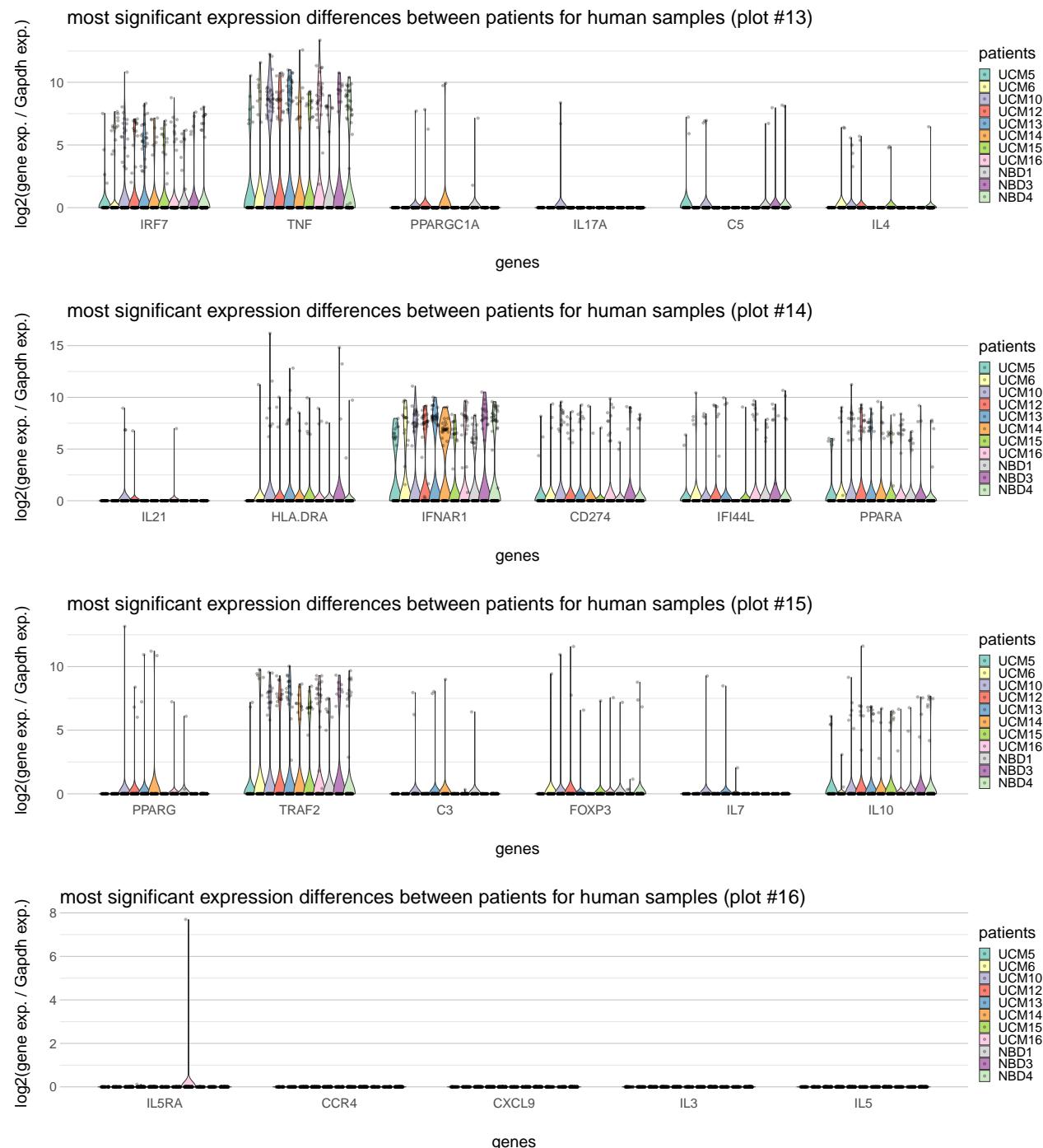
```

[28]	CXCL10:	1.357e-25	NFKB1:	1.879e-25	IFNGR1:	4.83e-25
[31]	IL25:	1.813e-24	NR4A1:	1.874e-23	CCR3:	6.022e-22
[34]	ICOS:	2.601e-21	IRF1:	6.762e-21	TNFRSF1B:	7.445e-20
[37]	IFI44:	4.853e-19	SOCS3:	6.677e-18	ZAP70:	1.521e-17
[40]	CD40:	1.148e-15	GSK3A:	1.421e-15	RORC:	2.528e-15
[43]	JAK2:	1.513e-14	BCL2:	1.928e-14	IL12RB1:	2.111e-14
[46]	CCR5:	5.28e-14	CXCR3:	6.848e-14	STAT3:	1.018e-13
[49]	RAC1:	3.146e-13	BCL6:	5.845e-13	TGFBR2:	2.484e-12
[52]	ZEB2:	5.413e-12	TNFRSF1A:	9.385e-12	CCR7:	1.175e-11
[55]	PTEN:	2.746e-10	STAT4:	4.639e-09	CCR1:	9.113e-09
[58]	IFNAR2:	9.682e-08	IRF2:	1.114e-07	IL4R:	2.613e-07
[61]	CD4:	4.025e-07	GATA3:	2.273e-06	IL2RA:	2.386e-06
[64]	VAV1:	4.653e-06	TBX21:	4.975e-06	ISG15:	3.645e-05
[67]	IL2:	0.0002192	IFNG:	0.002184	TYK2:	0.002398
[70]	IRF9:	0.01892	GSK3B:	0.0196		









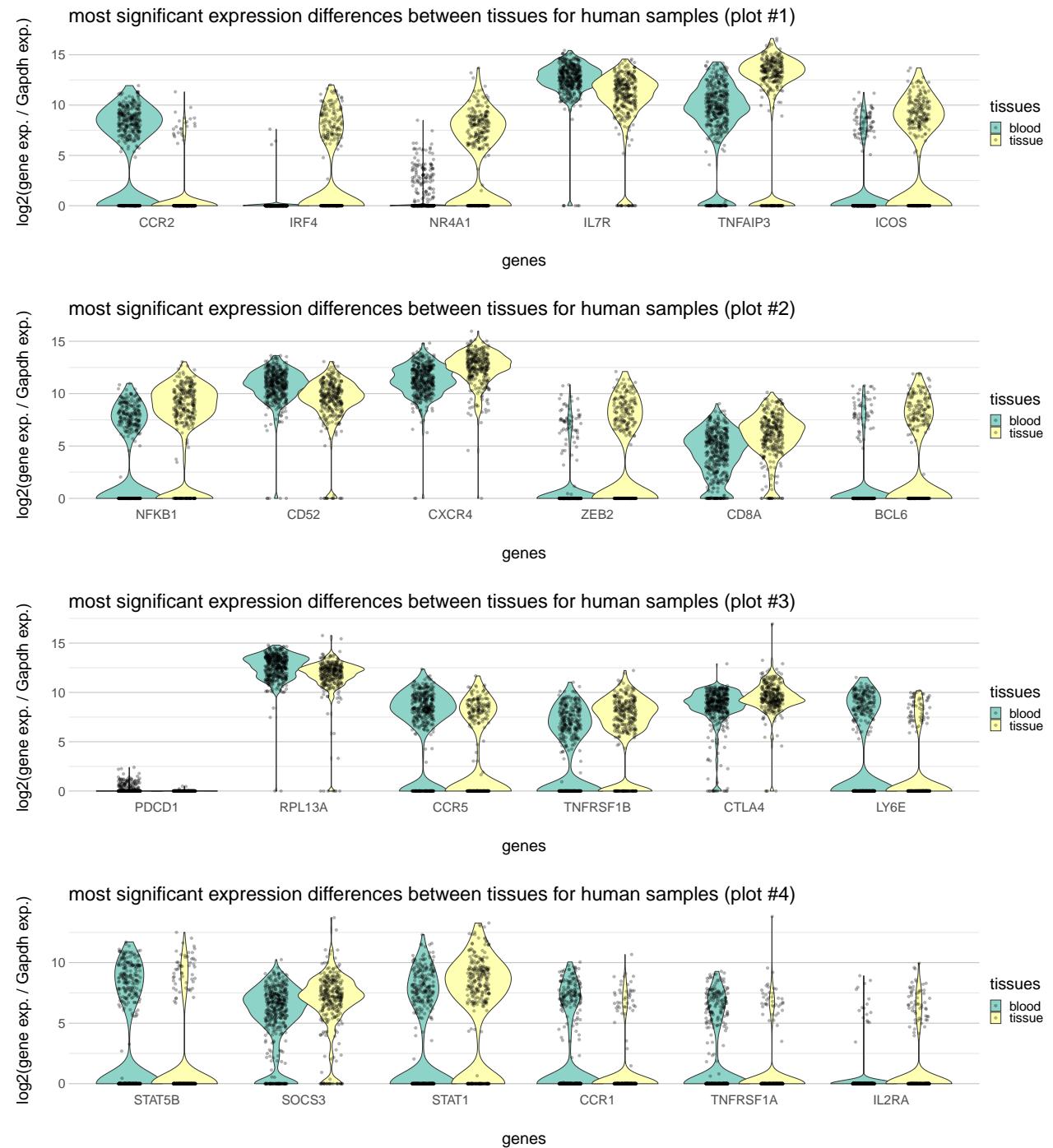
[1] Differentially expressed genes between tissues for human samples:

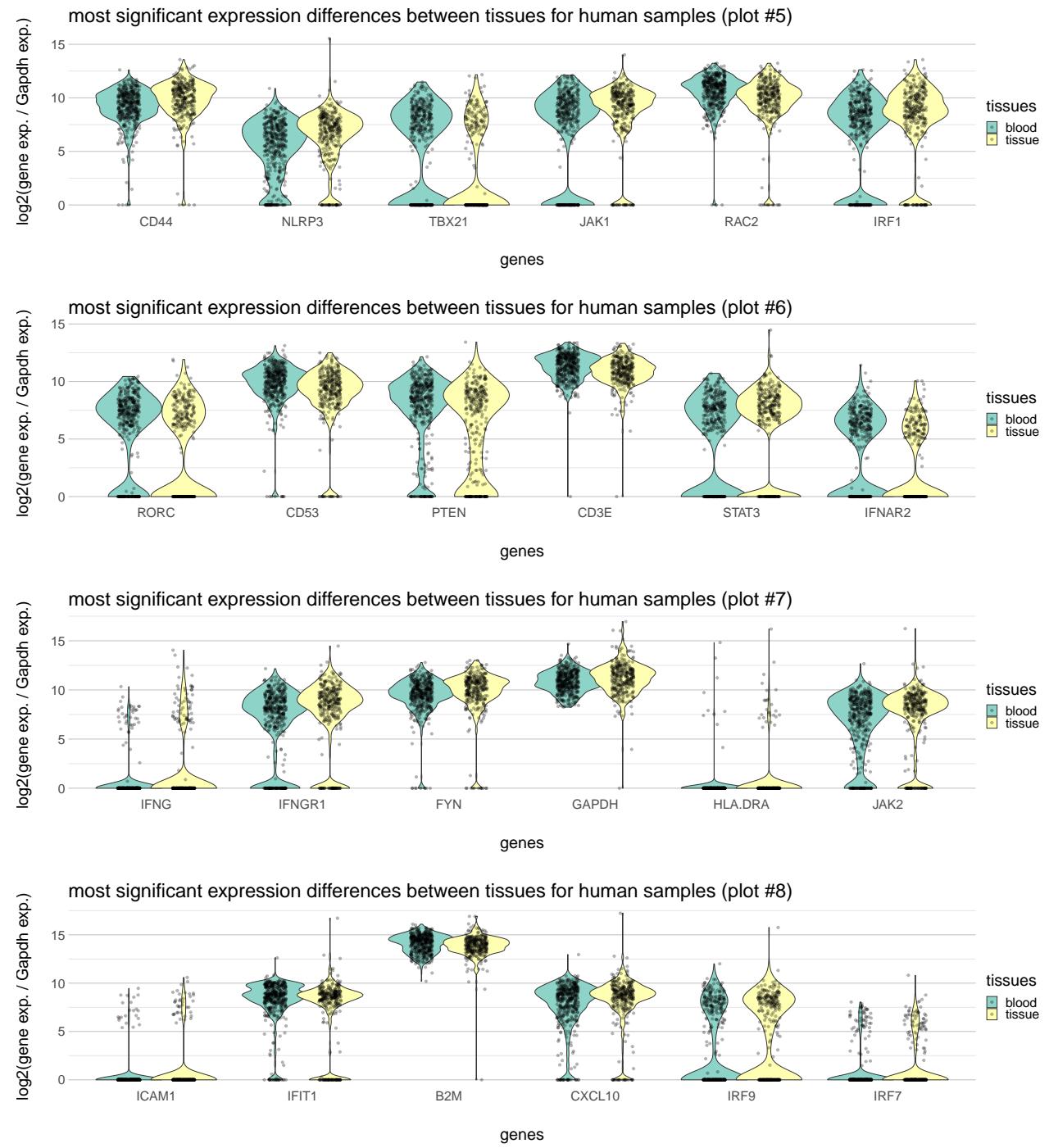
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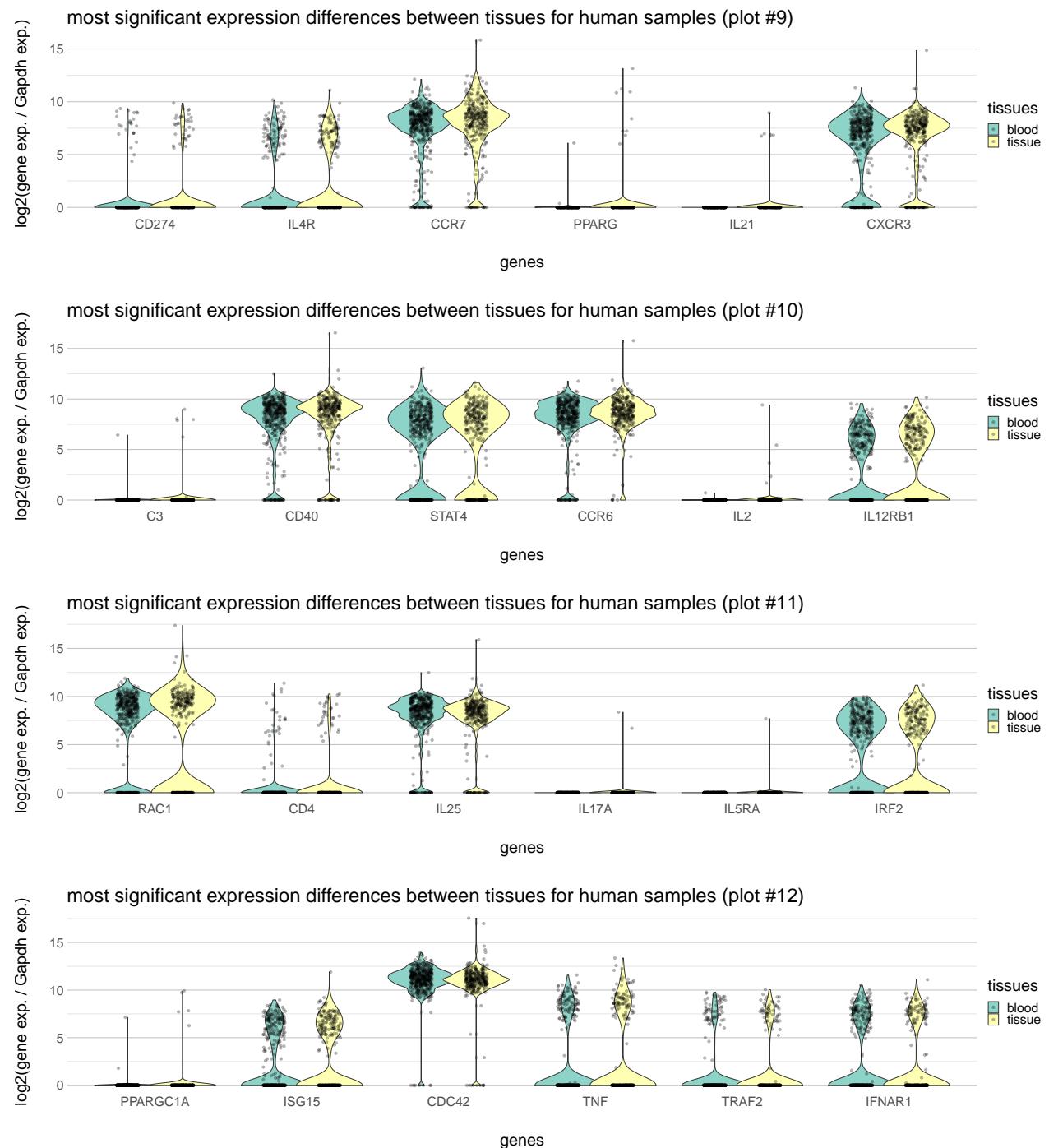
[1] CCR2: 2.787e-48    IRF4: 1.895e-45    NR4A1: 3.104e-37
[4] IL7R: 8.061e-34    TNFAIP3: 6.478e-31    ICOS: 4.124e-30
[7] NFKB1: 2.828e-28    CD52: 1.208e-26    CXCR4: 2.508e-26
[10] ZEB2: 5.676e-26    CD8A: 2.856e-23    BCL6: 1.873e-19
[13] PDCD1: 3.599e-18    RPL13A: 7.367e-18    CCR5: 5.433e-15
[16] TNFRSF1B: 3.725e-14    CTLA4: 8.435e-14    LY6E: 2.426e-12
[19] STAT5B: 2.52e-12    SOCS3: 5.6e-12    STAT1: 1.576e-11
[22] CCR1: 3.106e-11    TNFRSF1A: 5.652e-11    IL2RA: 6.442e-11
[25] CD44: 2.654e-09    NLRP3: 4.839e-09    TBX21: 4.839e-09

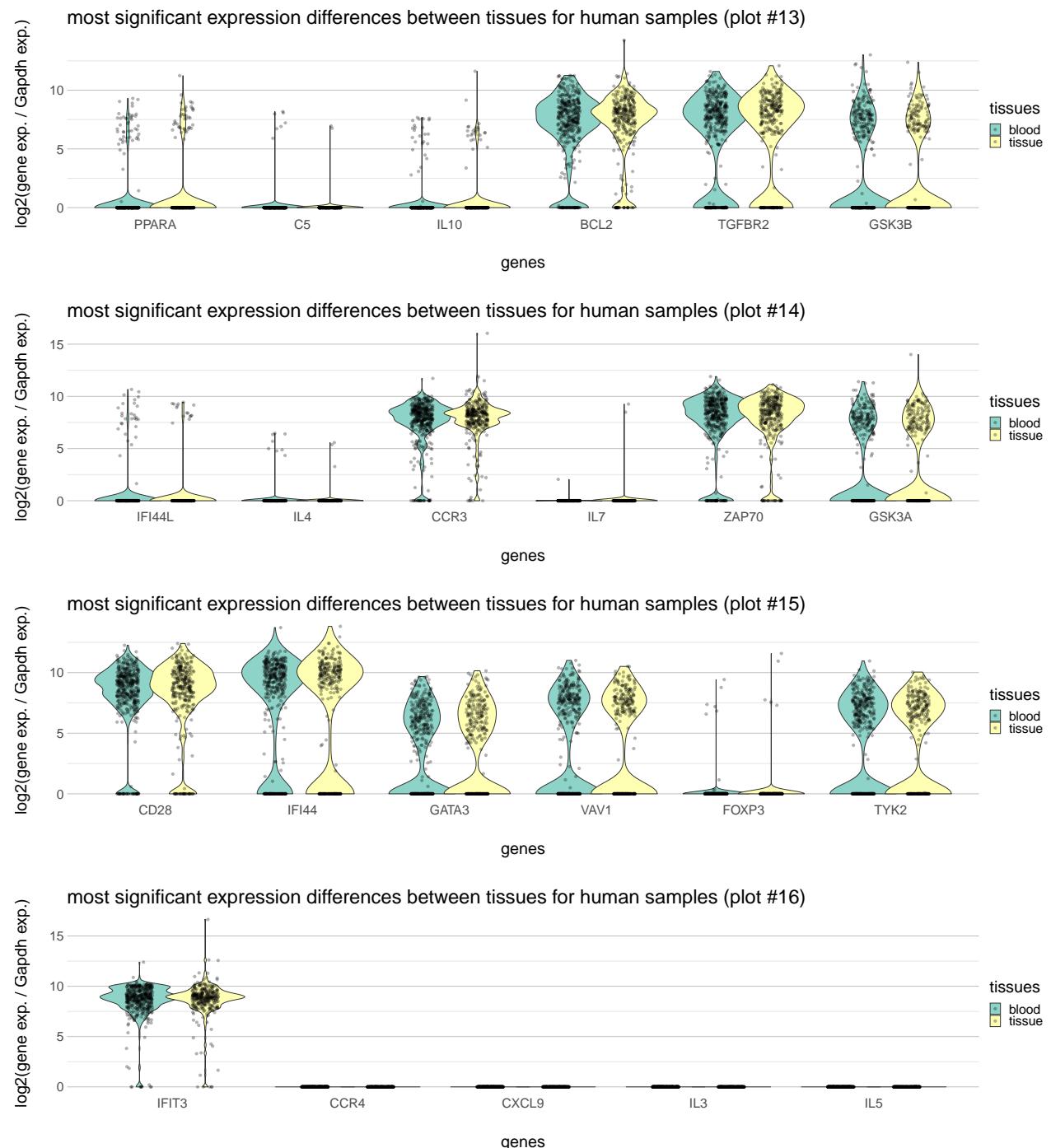
```

[28] JAK1: 1.33e-08	RAC2: 1.672e-08	IRF1: 2.543e-08
[31] RORC: 5.062e-08	CD53: 1.232e-07	PTEN: 1.232e-07
[34] CD3E: 1.426e-07	STAT3: 2.903e-07	IFNAR2: 4.973e-07
[37] IFNG: 4.973e-07	IFNGR1: 1.386e-06	FYN: 1.163e-05
[40] GAPDH: 0.0001063	HLA.DRA: 0.0003181	JAK2: 0.0003741
[43] ICAM1: 0.0005254	IFIT1: 0.001006	B2M: 0.001463
[46] CXCL10: 0.001609	IRF9: 0.001615	IRF7: 0.004421
[49] CD274: 0.004988	IL4R: 0.01006	CCR7: 0.01105
[52] PPARG: 0.01105	IL21: 0.01367	CXCR3: 0.02395
[55] C3: 0.02892	CD40: 0.03437	STAT4: 0.04273
[58] CCR6: 0.045		



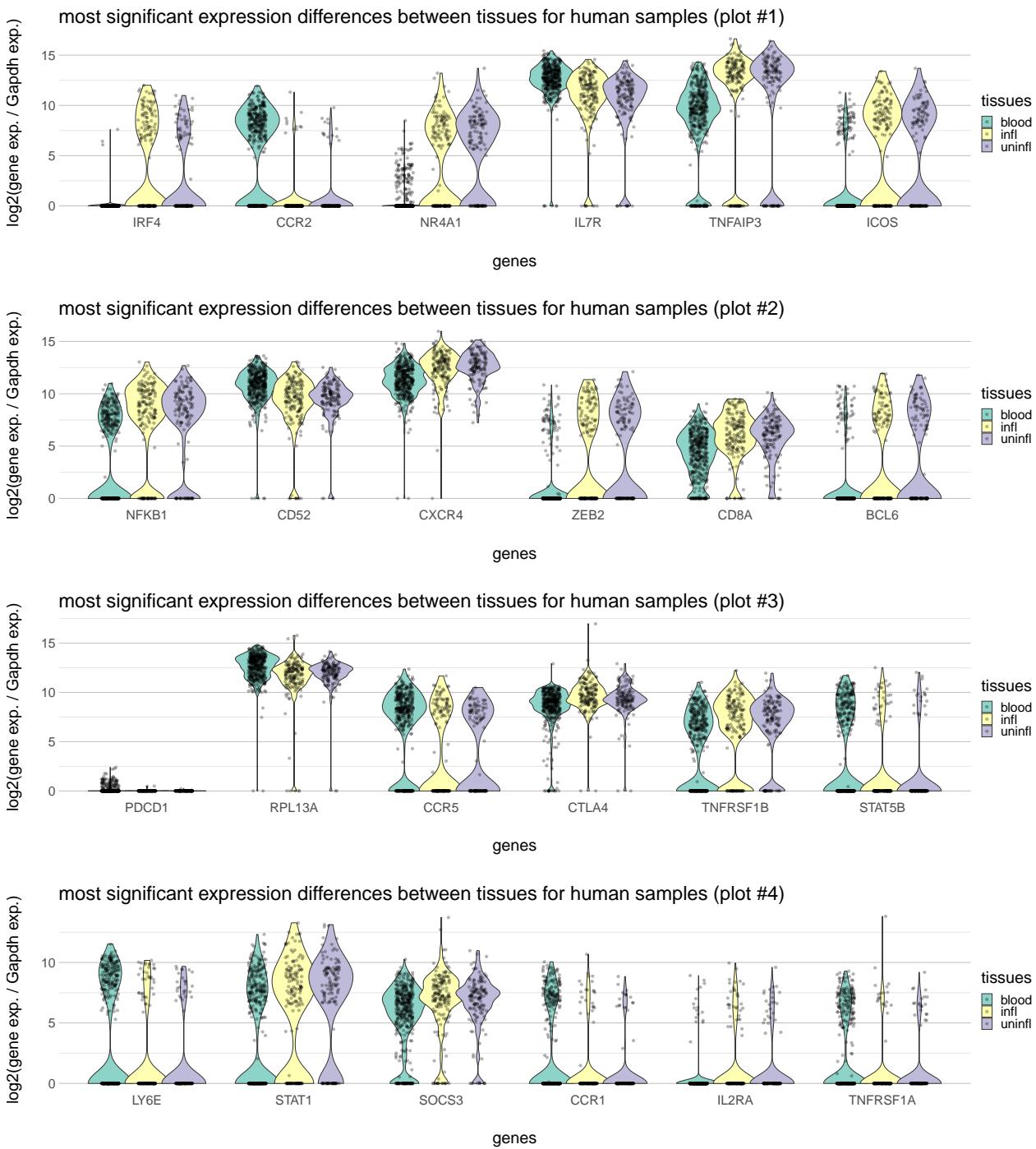


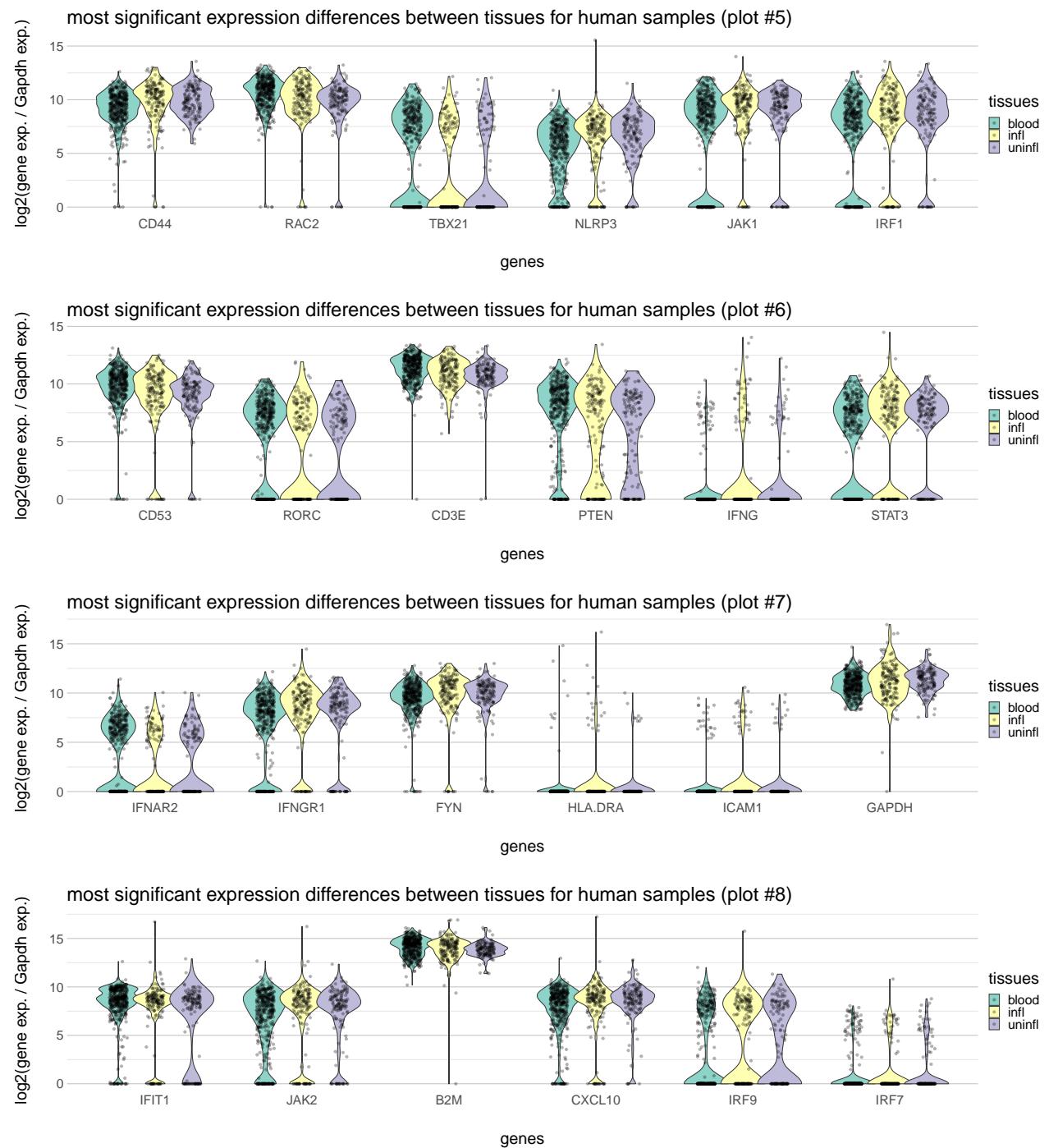


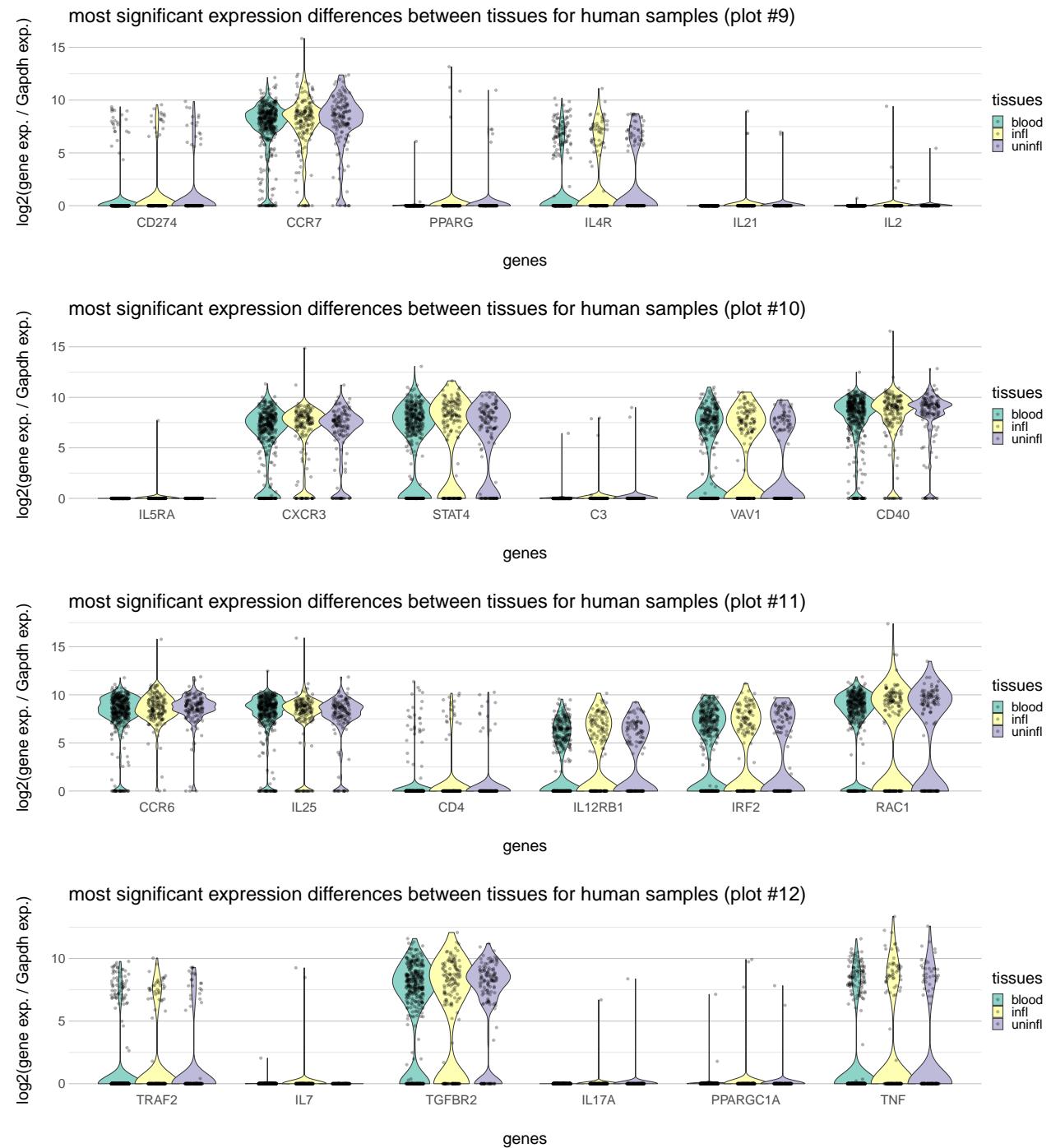


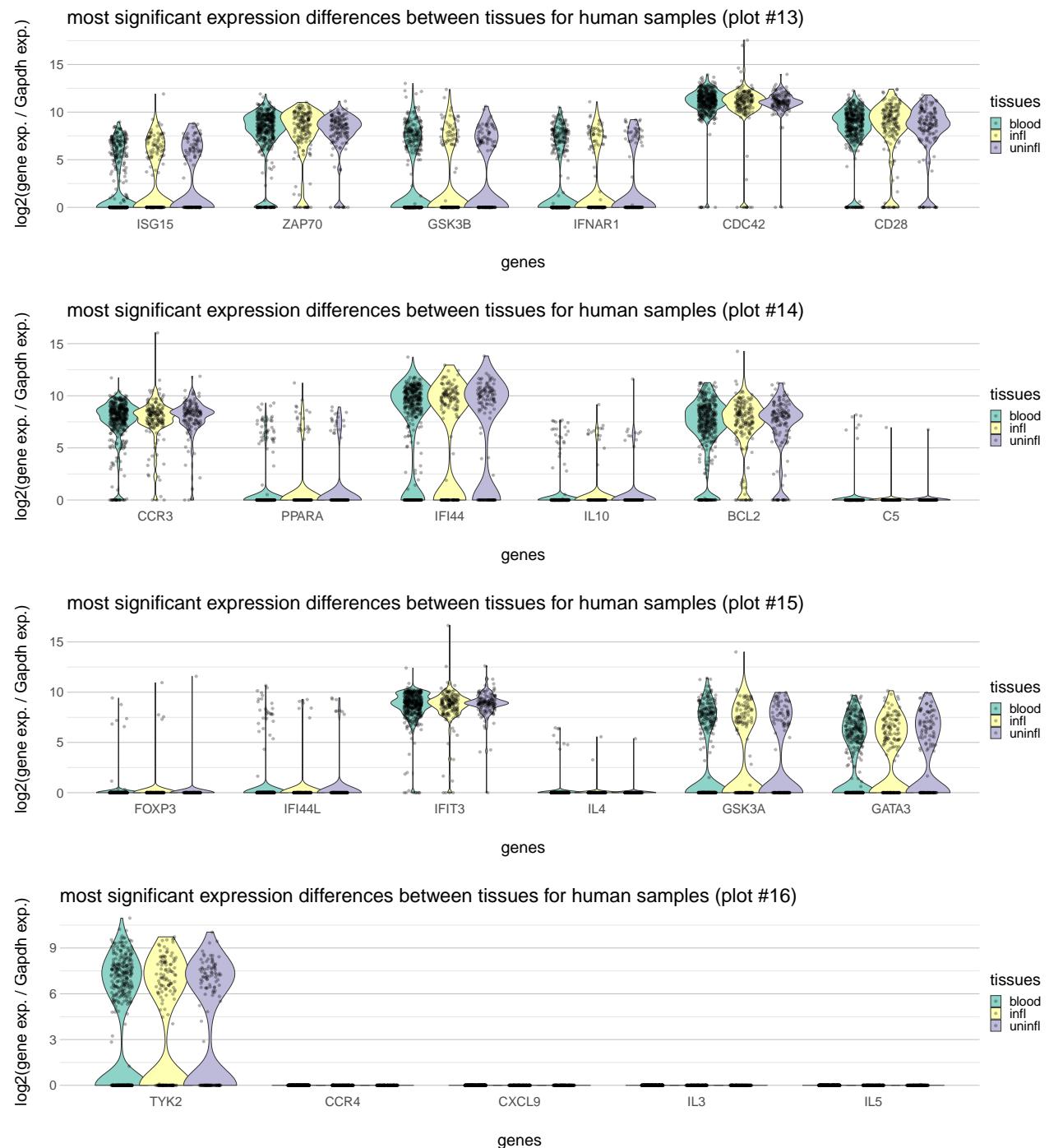
```
[1] Differentially expressed genes between tissues for human samples:
[1] IRF4: 4.106e-47      CCR2: 4.106e-47      NR4A1: 3.09e-37
[4] IL7R: 2.928e-33      TNFAIP3: 7.798e-30    ICOS: 3.41e-29
[7] NFKB1: 3.971e-27      CD52: 1.649e-25      CXCR4: 1.794e-25
[10] ZEB2: 5.264e-25      CD8A: 3.266e-22      BCL6: 1.747e-18
[13] PDCD1: 4.067e-17     RPL13A: 4.45e-17     CCR5: 5.406e-14
[16] CTLA4: 1.902e-13     TNFRSF1B: 2.956e-13   STAT5B: 1.225e-11
[19] LY6E: 1.569e-11      STAT1: 4.098e-11     SOCS3: 4.098e-11
[22] CCR1: 2.455e-10      IL2RA: 4.207e-10    TNFRSF1A: 4.369e-10
[25] CD44: 8.83e-09       RAC2: 2.549e-08     TBX21: 3.419e-08
```

[28]	NLRP3:	3.597e-08	JAK1:	6.946e-08	IRF1:	1.79e-07
[31]	CD53:	2.137e-07	RORC:	2.462e-07	CD3E:	4.201e-07
[34]	PTEN:	6.217e-07	IFNG:	6.33e-07	STAT3:	1.436e-06
[37]	IFNAR2:	2.041e-06	IFNGR1:	5.75e-06	FYN:	2.23e-05
[40]	HLA.DRA:	0.0001836	ICAM1:	0.000207	GAPDH:	0.0002126
[43]	IFIT1:	0.001084	JAK2:	0.001694	B2M:	0.002308
[46]	CXCL10:	0.00601	IRF9:	0.006382	IRF7:	0.01106
[49]	CD274:	0.01748	CCR7:	0.02737	PPARG:	0.03038
[52]	IL4R:	0.03612	IL21:	0.04685		









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

```

[1] PDCD1: 8.179e-21    JAK1: 1.757e-17    CCR2: 3.884e-15
[4] IL7R: 8.274e-14     ICOS: 3.631e-12    IRF4: 4.094e-12
[7] STAT1: 6.041e-12    RPL13A: 5.969e-11   CD52: 2.116e-09
[10] CCR1: 1.463e-08    NLRP3: 2.056e-08   CD8A: 7.811e-07
[13] NFKB1: 1.179e-06   NR4A1: 1.685e-06   ZEB2: 3.074e-06
[16] CCR5: 9.158e-06    BCL6: 1.759e-05   SOCS3: 3.83e-05
[19] IFIT1: 3.941e-05   CD53: 5.517e-05   GSK3A: 6.855e-05
[22] IFNAR2: 0.0001641  CD3E: 0.0002162  TNFRSF1B: 0.0005193
[25] CTLA4: 0.0007115   B2M: 0.001329   STAT5B: 0.001627

```

[28]	RAC1: 0.002094	STAT3: 0.002556	STAT4: 0.002655
[31]	IL12RB1: 0.002655	PTEN: 0.005764	TBX21: 0.006336
[34]	IL2RA: 0.006366	RAC2: 0.00653	CDC42: 0.009779
[37]	LY6E: 0.0119	PPARA: 0.01243	CXCR3: 0.01456
[40]	RORC: 0.02002	GATA3: 0.02002	IFIT3: 0.02156
[43]	TNFAIP3: 0.03208	CCR3: 0.03257	JAK2: 0.036
[46]	IL25: 0.04367		

