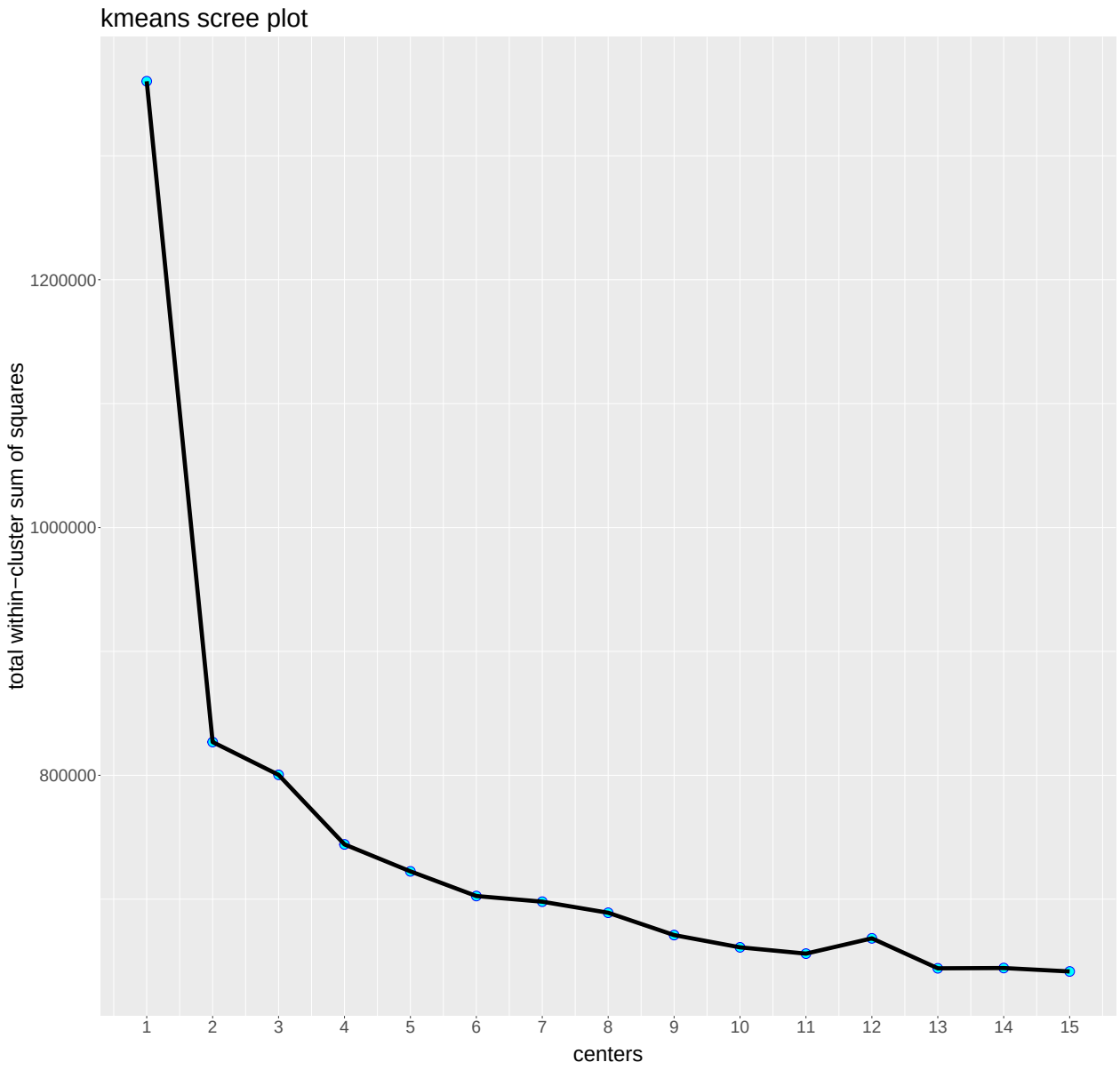
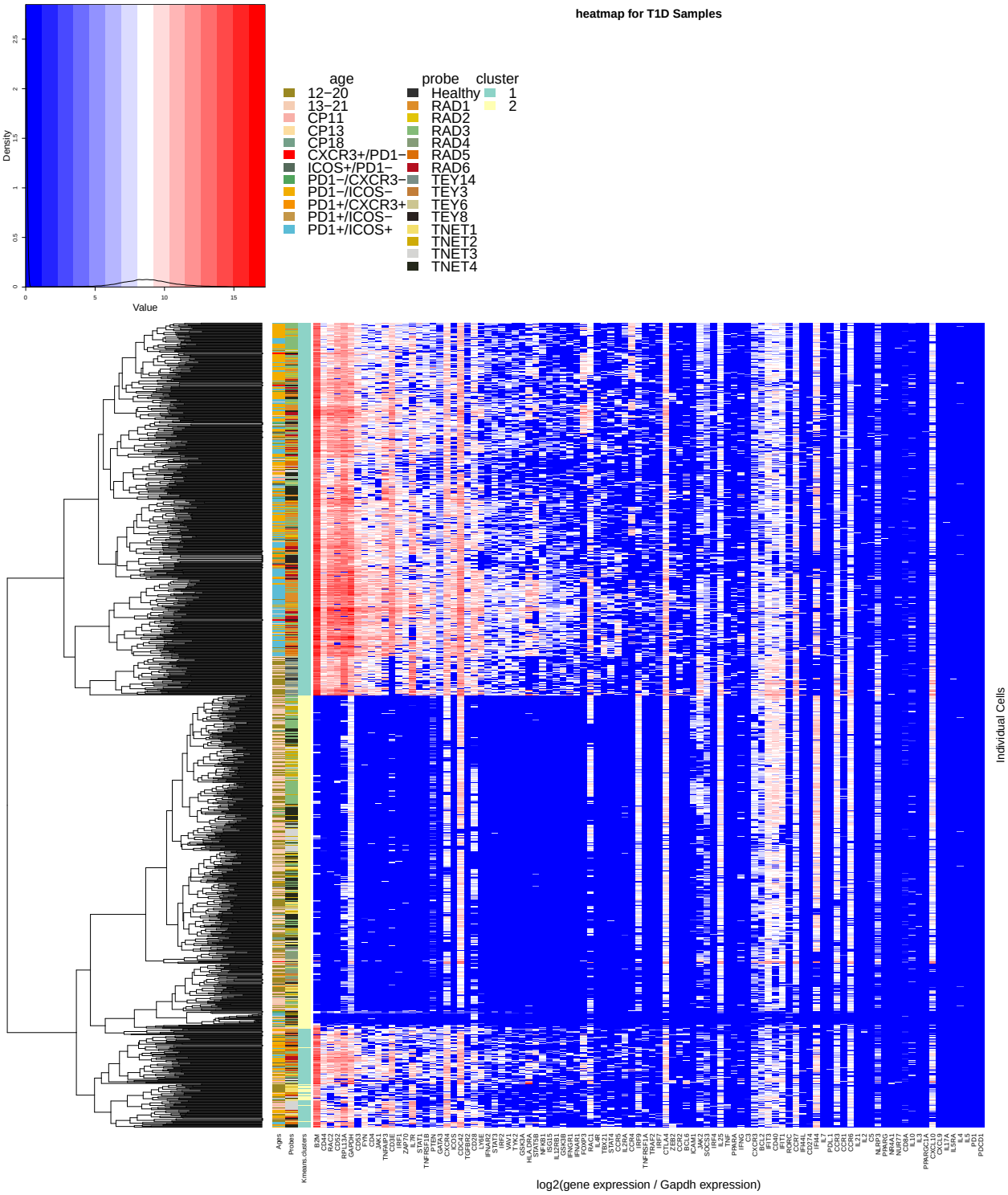
T1D_specific_analysis

```
No expression detected in 5/1291 cells
```

```
ctNorm[is.na(ctNorm)] <- 0
```

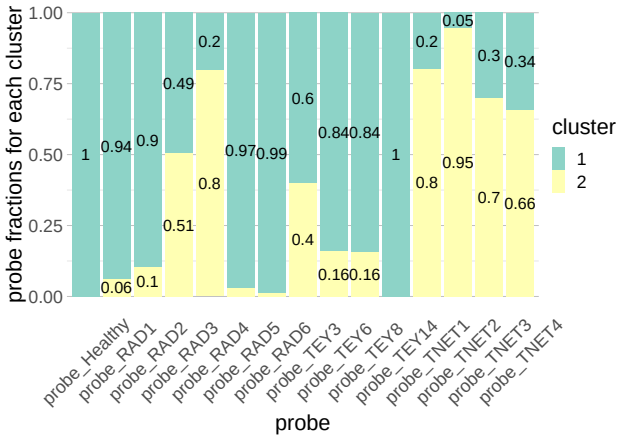


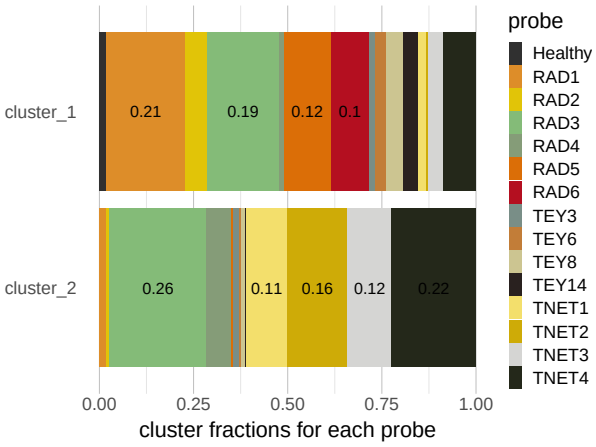


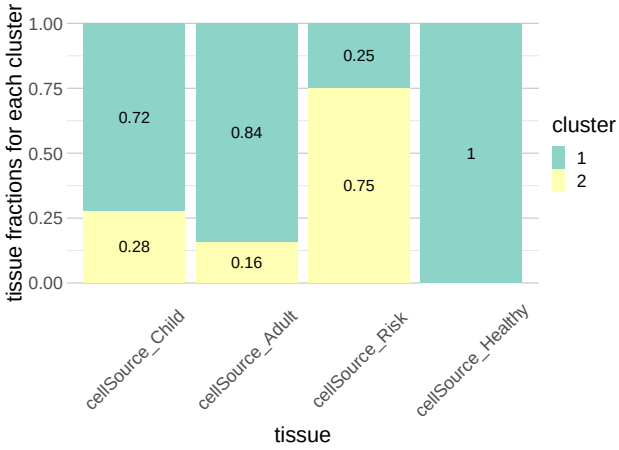

```
[1]
[1]
[1] Patient vs. Cluster
          probe_Healthy probe_RAD1 probe_RAD2 probe_RAD3 probe_RAD4
cluster_1            14        152         43        140          9
cluster_2             0         10          5        143         36
          probe_RAD5 probe_RAD6 probe_TEY3 probe_TEY6 probe_TEY8
```

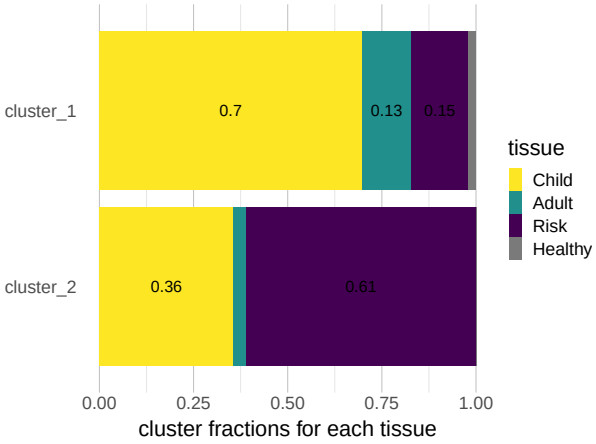
```
cluster_1         91         75         12         21         32
cluster_2          3          1          8          4          6
          probe_TEY14 probe_TNET1 probe_TNET2 probe_TNET3 probe_TNET4
cluster_1          30          15           5          28          64
cluster_2           0          61          89          65         124

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

data:  probeTable
X-squared = 521.83, df = NA, p-value = 0.0004998

[1]
[1]
[1] Cohort vs. Cluster
          cellSource_Child cellSource_Adult cellSource_Risk
cluster_1              510              95             112
cluster_2              198              18             339
          cellSource_Healthy
cluster_1                 14
cluster_2                  0

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

data:  sourceTable
X-squared = 299.74, df = NA, p-value = 0.0004998

[1]
[1]
[1] Marker vs. Cluster
          age_PD1+/ICOS+ age_PD1-/CXCR3- age_PD1-/ICOS- age_CP18 age_CP11
cluster_1            236             13            262        1       15
cluster_2             13              7             13       23       40
          age_13-21 age_12-20 age_PD1+/ICOS- age_PD1+/CXCR3+
cluster_1        64        75             22              19
cluster_2       196       222             13               2
          age_ICOS+/PD1- age_CP13 age_CXCR3+/PD1-
cluster_1             14        2               8
cluster_2              2       22               2

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

data:  ageTable
X-squared = 631.36, df = NA, p-value = 0.0004998
```

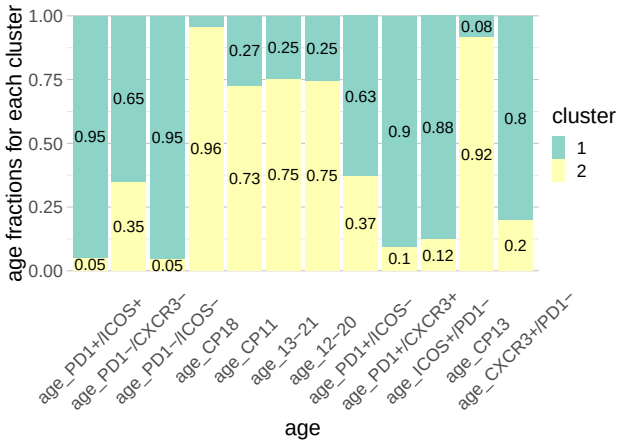
probe counts for each cluster
probe
cluster
1
2
Healthy RAD1 RAD2 RAD3 RAD4 RAD5 RAD6 TEY3 TEY6 TEY8 TEY14 TNET1 TNET2 TNET3 TNET4
14 152 43 140 9 91 75 12 21 32 30 15 5 28 64
0 10 5 143 36 3 1 8 4 6 0 61 89 65 124
value
150
100
50
0
tissue counts for each cluster
tissue
Child Adult Risk Healthy
510 95 112 14
198 18 339 0
age counts for each cluster
age
PD1+/ICOS+ PD1−/CXCR3− PD1−/ICOS− CP18 CP11 13−21 12−20 PD1+/ICOS− PD1+/CXCR3+ ICOS+/PD1− CP13 CXCR3+/PD1−
236 13 262 1 15 64 75 22 19 14 2 8
13 7 13 23 40 196 222 13 2 2 22 2

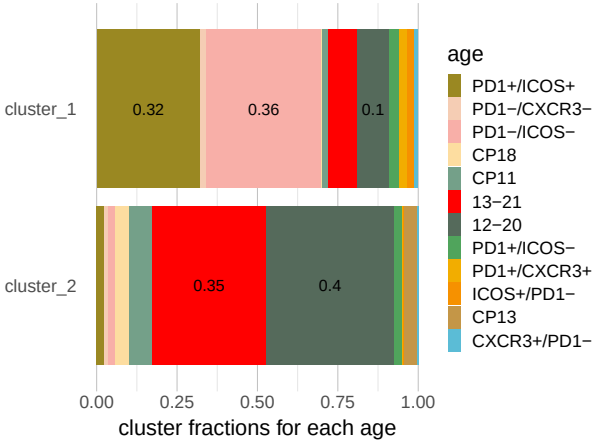

probe fractions for each cluster
1.00
0.75
0.50
0.25
0.00
1 0.94 0.9 0.49 0.2 0.97 0.99 0.6 0.84 0.84 1 0.2 0.05 0.3 0.34
0.06 0.1 0.51 0.8 0.4 0.16 0.16 0.8 0.95 0.7 0.66
probe_Healthy
probe_RAD1
probe_RAD2
probe_RAD3
probe_RAD4
probe_RAD5
probe_RAD6
probe_TEY3
probe_TEY6
probe_TEY8
probe_TEY14
probe_TNET1
probe_TNET2
probe_TNET3
probe_TNET4
probe
cluster
1
2

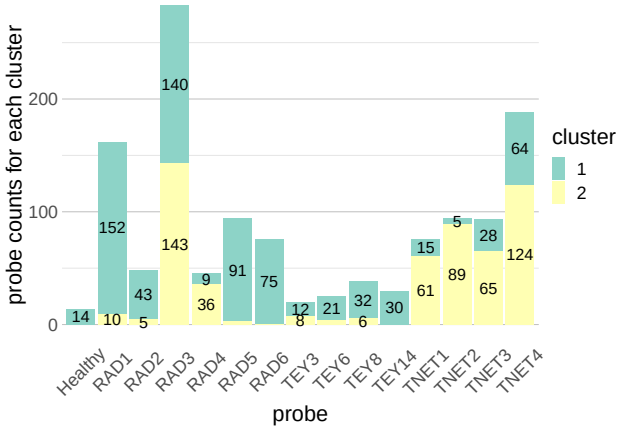

cluster_1
cluster_2
0.21 0.19 0.12 0.1
0.26 0.11 0.16 0.12 0.22
0.00 0.25 0.50 0.75 1.00
cluster fractions for each probe
probe
Healthy
RAD1
RAD2
RAD3
RAD4
RAD5
RAD6
TEY3
TEY6
TEY8
TEY14
TNET1
TNET2
TNET3
TNET4

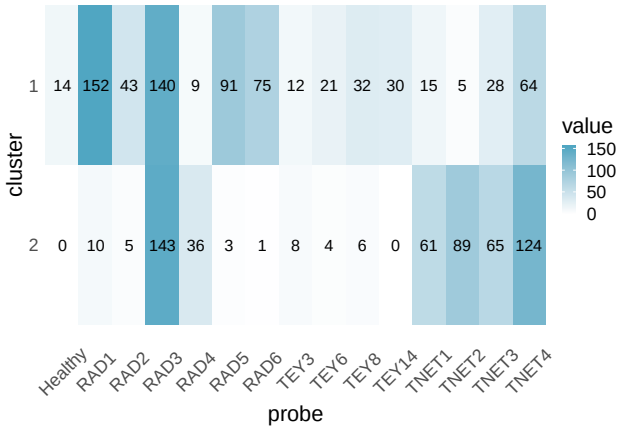

tissue fractions for each cluster
1.00
0.75
0.50
0.25
0.00
0.72 0.84 0.25 1
0.28 0.16 0.75
cellSource_Child
cellSource_Adult
cellSource_Risk
cellSource_Healthy
tissue
cluster
1
2

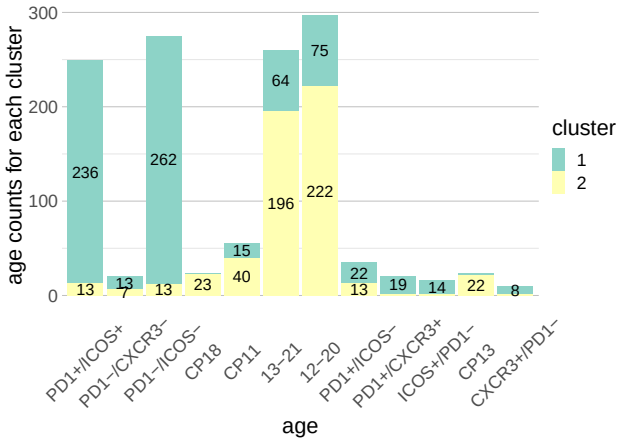

cluster_1
cluster_2
0.7 0.13 0.15
0.36 0.61
0.00 0.25 0.50 0.75 1.00
cluster fractions for each tissue
tissue
Child
Adult
Risk
Healthy

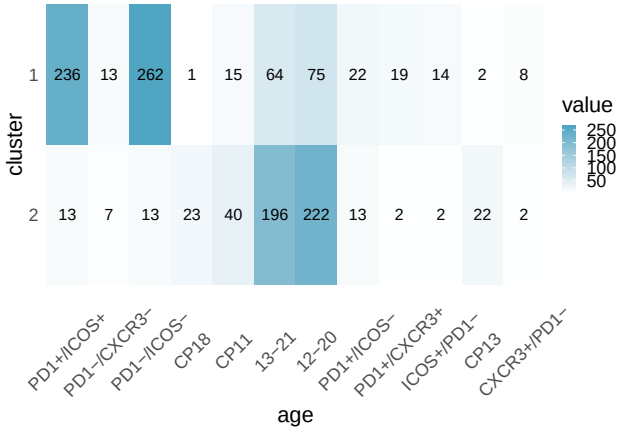

age fractions for each cluster
1.00
0.75
0.50
0.25
0.00
0.95 0.65 0.95 0.96 0.27 0.25 0.25 0.63 0.9 0.88 0.08 0.8
0.05 0.35 0.05 0.73 0.75 0.75 0.37 0.1 0.12 0.92 0.2
age_PD1+/ICOS+
age_PD1−/CXCR3−
age_PD1−/ICOS−
age_CP18
age_CP11
age_13−21
age_12−20
age_PD1+/ICOS−
age_PD1+/CXCR3+
age_ICOS+/PD1−
age_CP13
age_CXCR3+/PD1−
age
cluster
1
2

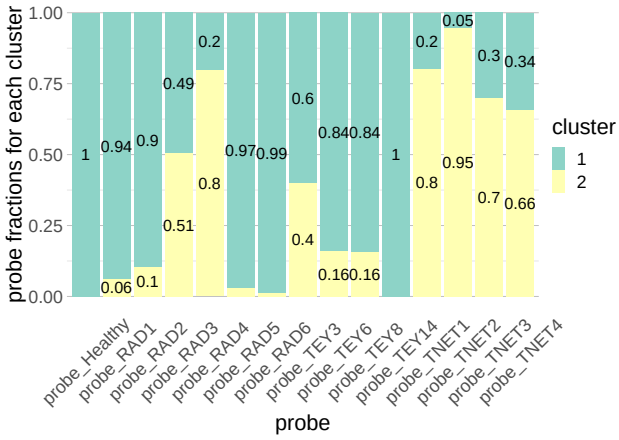

cluster_1
cluster_2
0.32 0.36 0.1
0.35 0.4
0.00 0.25 0.50 0.75 1.00
cluster fractions for each age
age
PD1+/ICOS+
PD1−/CXCR3−
PD1−/ICOS−
CP18
CP11
13−21
12−20
PD1+/ICOS−
PD1+/CXCR3+
ICOS+/PD1−
CP13
CXCR3+/PD1−

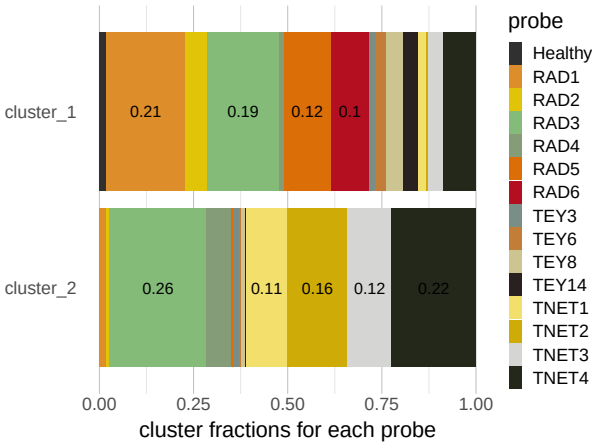

probe counts for each cluster
200
100
0
140
152
43
143
9
36
91
75
12
8
21
32
6
30
15
61
5
89
28
65
64
124
14
10
5
Healthy
RAD1
RAD2
RAD3
RAD4
RAD5
RAD6
TEY3
TEY6
TEY8
TEY14
TNET1
TNET2
TNET3
TNET4
probe
cluster
1
2

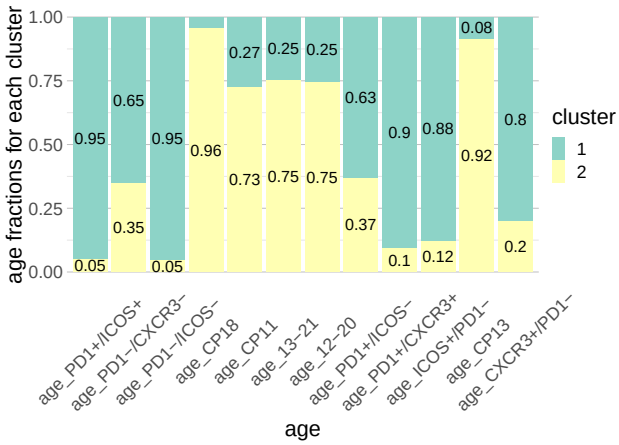

cluster
1
2
14
152
43
140
9
91
75
12
21
32
30
15
5
28
64
0
10
5
143
36
3
1
8
4
6
0
61
89
65
124
Healthy
RAD1
RAD2
RAD3
RAD4
RAD5
RAD6
TEY3
TEY6
TEY8
TEY14
TNET1
TNET2
TNET3
TNET4
probe
value
150
100
50
0

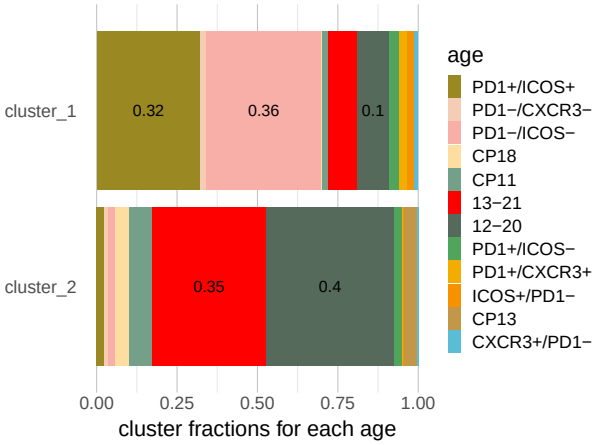

age counts for each cluster
300
200
100
0
236
13
13
7
262
13
23
15
40
64
196
75
222
22
13
19
14
22
8
PD1+/ICOS+
PD1−/CXCR3−
PD1−/ICOS−
CP18
CP11
13−21
12−20
PD1+/ICOS−
PD1+/CXCR3+
ICOS+/PD1−
CP13
CXCR3+/PD1−
age
cluster
1
2

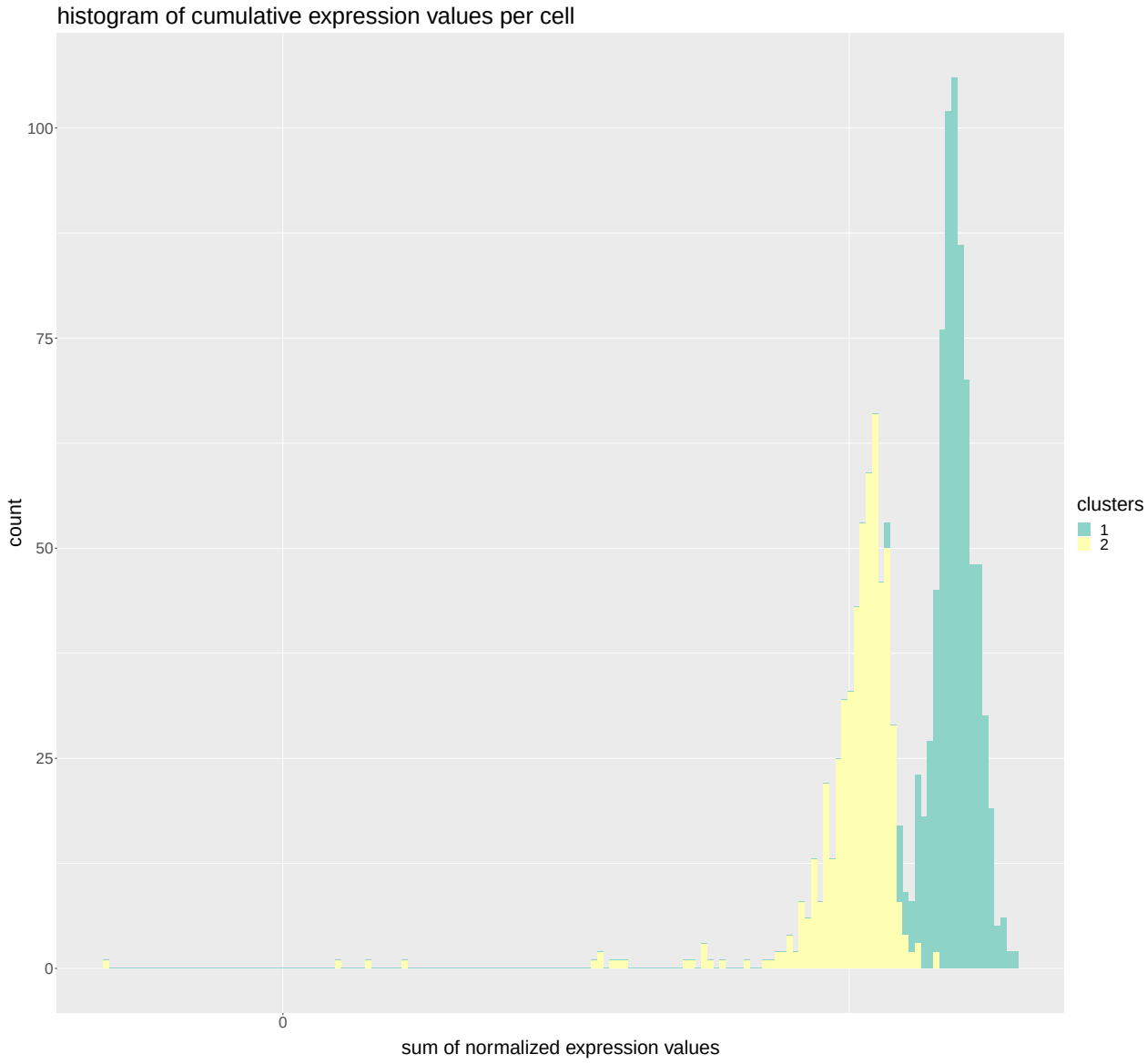

cluster
1
2
236
13
262
1
15
64
75
22
19
14
2
8
13
7
13
23
40
196
222
13
2
2
22
2
PD1+/ICOS+
PD1−/CXCR3−
PD1−/ICOS−
CP18
CP11
13−21
12−20
PD1+/ICOS−
PD1+/CXCR3+
ICOS+/PD1−
CP13
CXCR3+/PD1−
age
value
250
200
150
100
50


probe fractions for each cluster
1.00
0.75
0.50
0.25
0.00
1 0.94 0.9 0.49 0.2 0.97 0.99 0.6 0.84 0.84 1 0.2 0.05 0.3 0.34
0.06 0.1 0.51 0.8 0.4 0.16 0.16 0.8 0.95 0.7 0.66
probe_Healthy
probe_RAD1
probe_RAD2
probe_RAD3
probe_RAD4
probe_RAD5
probe_RAD6
probe_TEY3
probe_TEY6
probe_TEY8
probe_TEY14
probe_TNET1
probe_TNET2
probe_TNET3
probe_TNET4
probe
cluster
1
2


cluster_1
cluster_2
0.21 0.19 0.12 0.1
0.26 0.11 0.16 0.12 0.22
0.00
0.25
0.50
0.75
1.00
cluster fractions for each probe
probe
Healthy
RAD1
RAD2
RAD3
RAD4
RAD5
RAD6
TEY3
TEY6
TEY8
TEY14
TNET1
TNET2
TNET3
TNET4

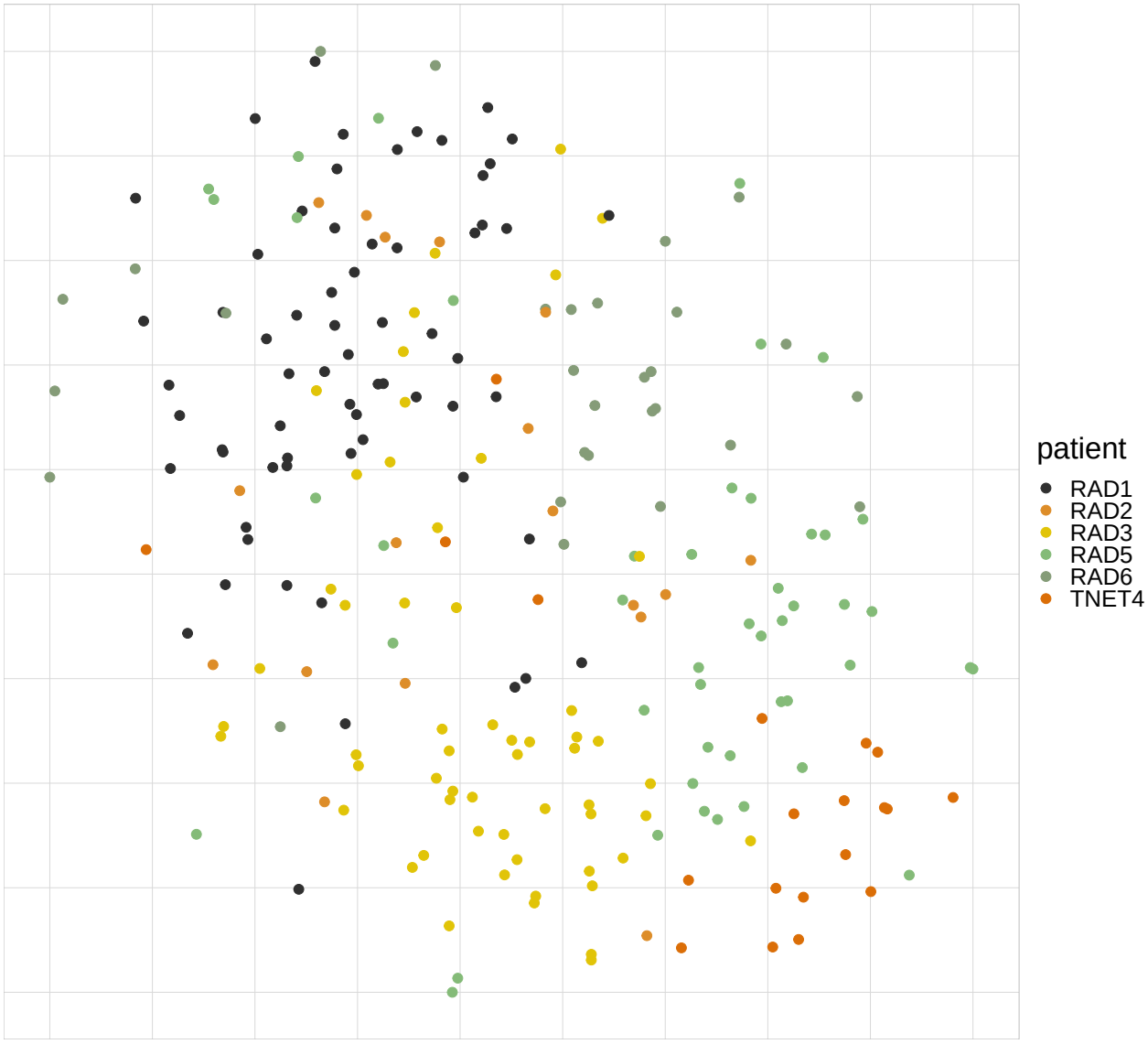

age fractions for each cluster
1.00
0.75
0.50
0.25
0.00
0.95 0.65 0.95 0.96 0.27 0.25 0.25 0.63 0.9 0.88 0.08 0.8
0.05 0.35 0.05 0.73 0.75 0.75 0.37 0.1 0.12 0.92 0.2
age_PD1+/ICOS+
age_PD1−/CXCR3−
age_PD1−/ICOS−
age_CP18
age_CP11
age_13−21
age_12−20
age_PD1+/ICOS−
age_PD1+/CXCR3+
age_ICOS+/PD1−
age_CP13
age_CXCR3+/PD1−
age
cluster
1
2


cluster_1
cluster_2
0.32 0.36 0.1
0.35 0.4
0.00
0.25
0.50
0.75
1.00
cluster fractions for each age
age
PD1+/ICOS+
PD1−/CXCR3−
PD1−/ICOS−
CP18
CP11
13−21
12−20
PD1+/ICOS−
PD1+/CXCR3+
ICOS+/PD1−
CP13
CXCR3+/PD1−

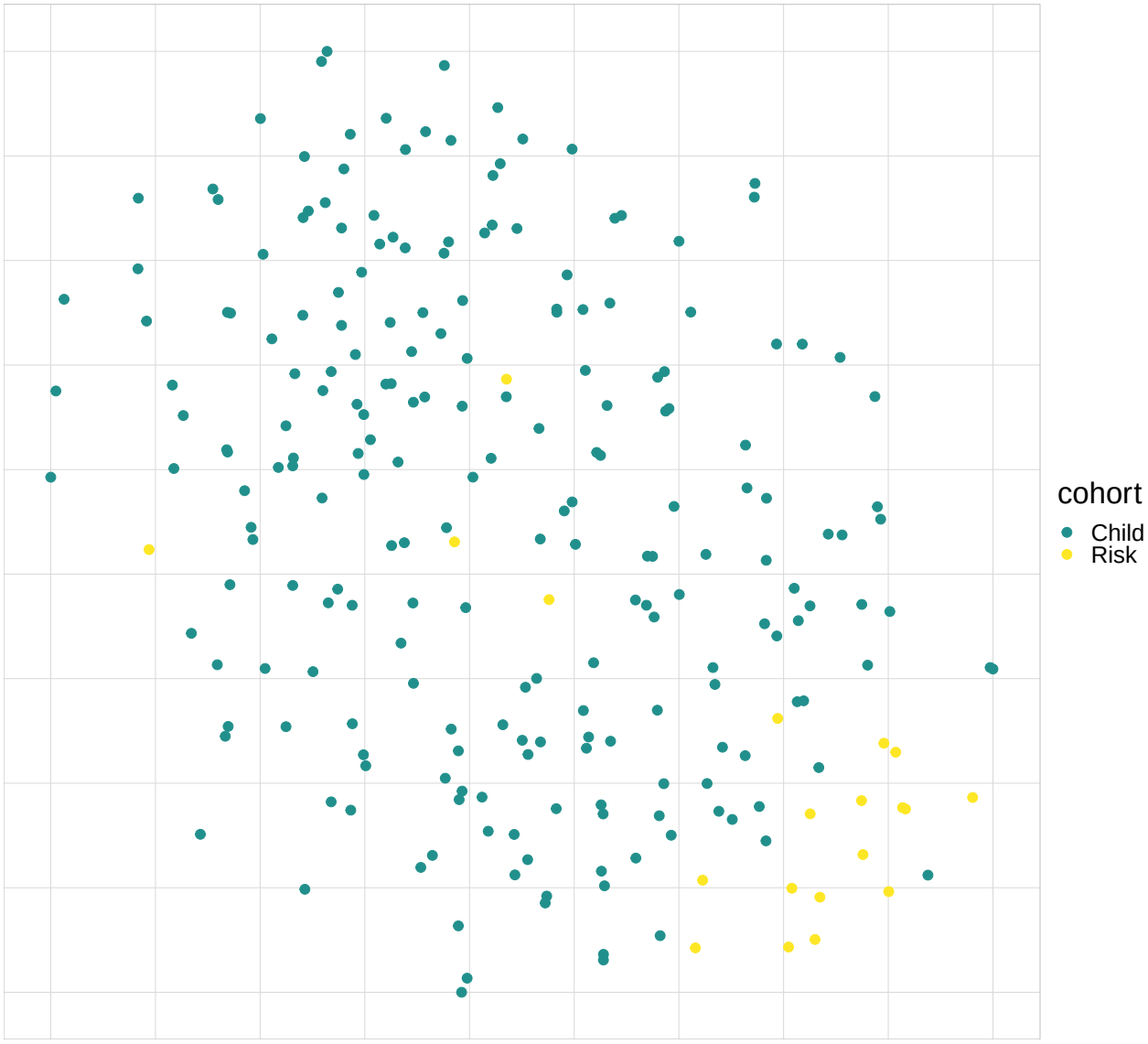



```
555 / 1286 cells were removed due to low gene expression (cluster ID of removed clusters: 2)
```

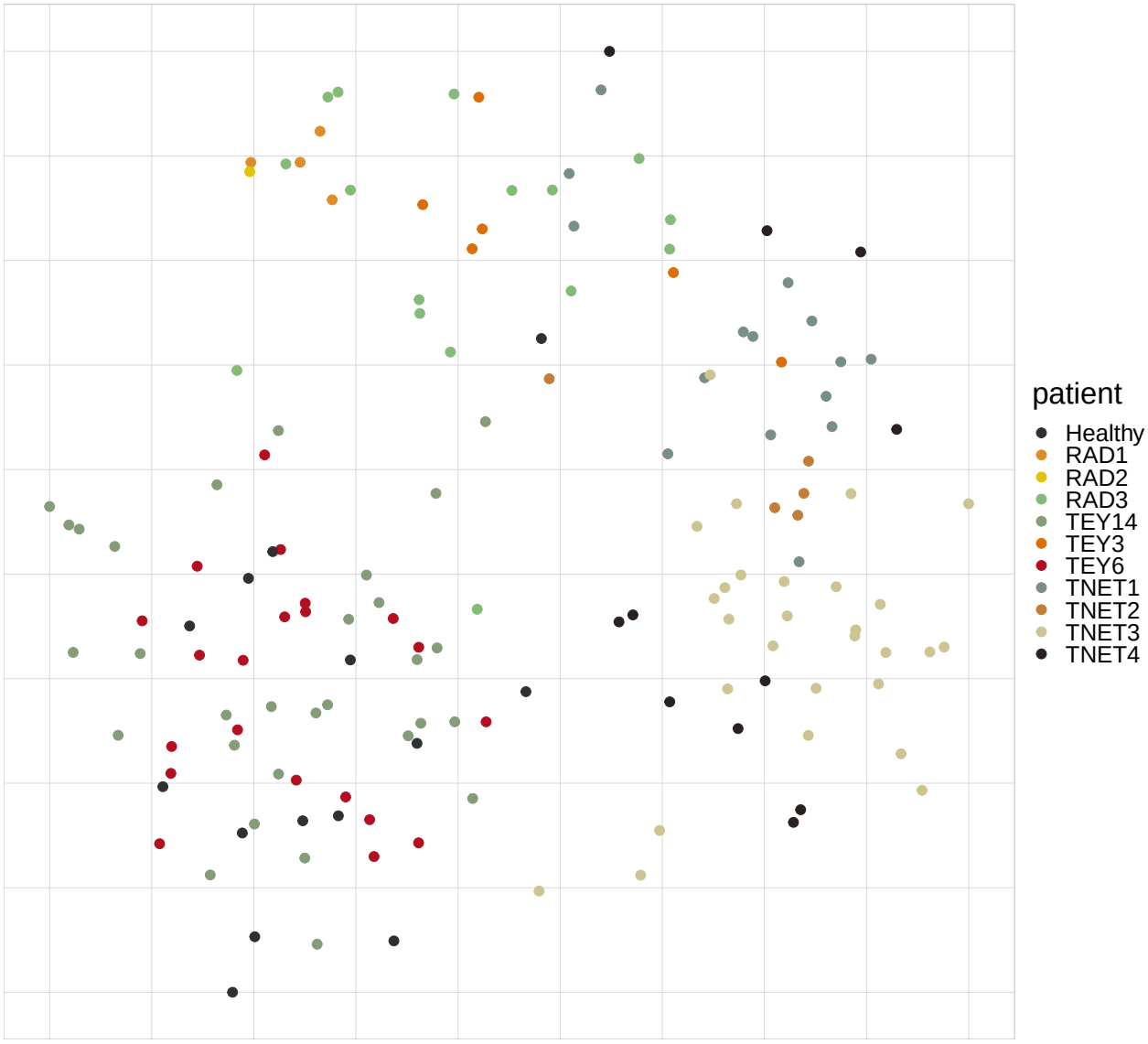
t−SNE colored by different patients



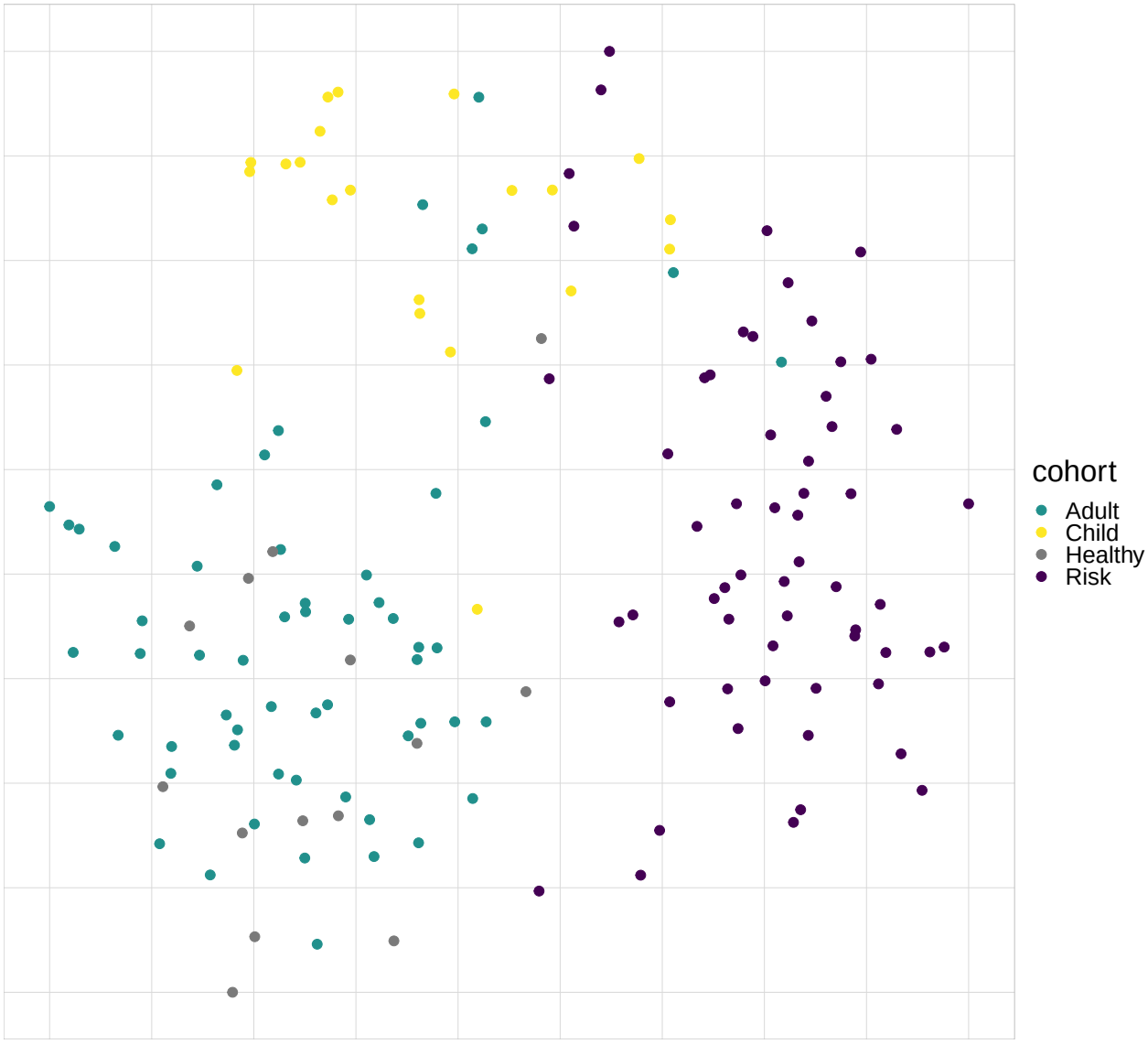
t−SNE colored by patient cohorts



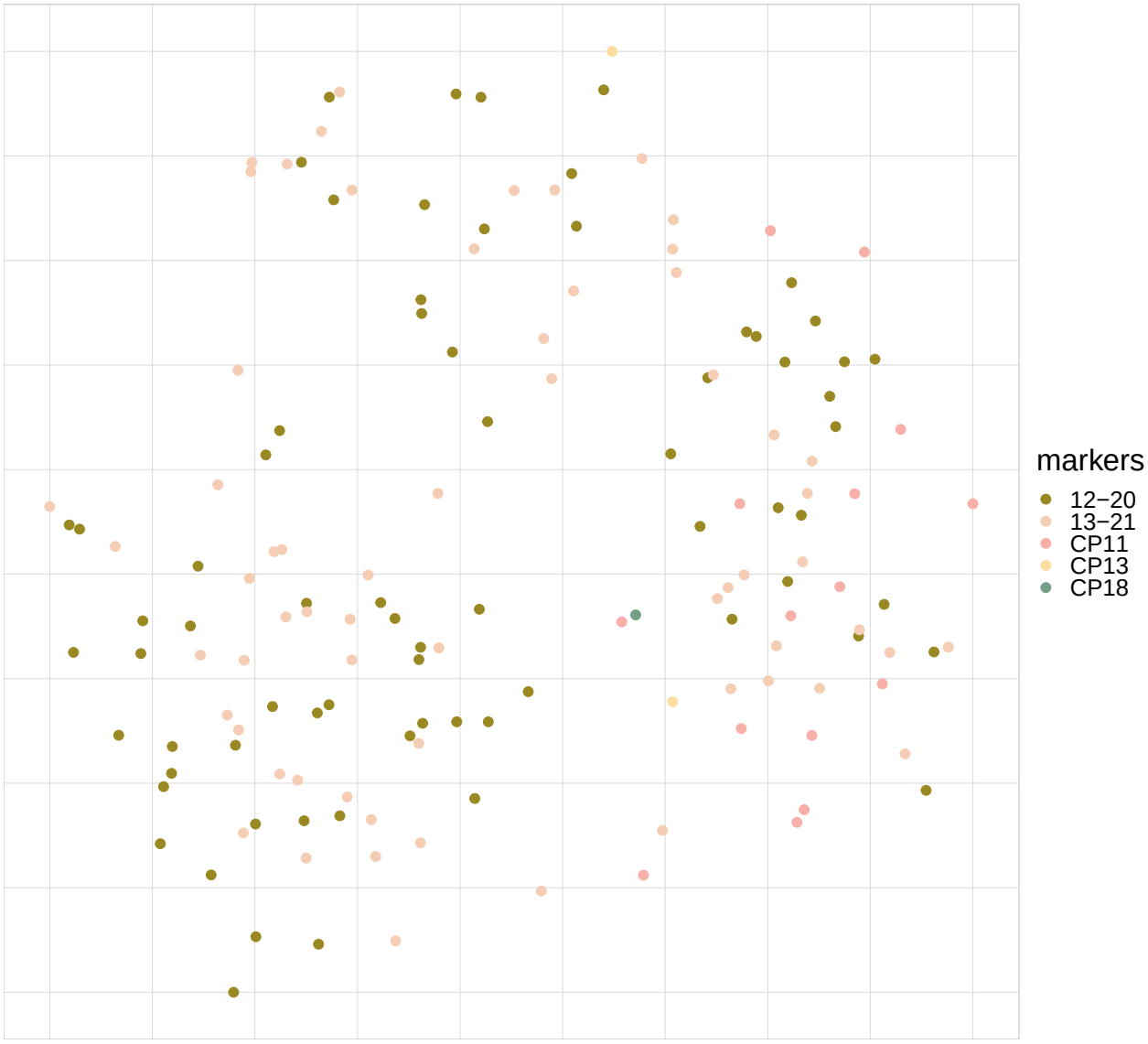
t−SNE colored by different patients

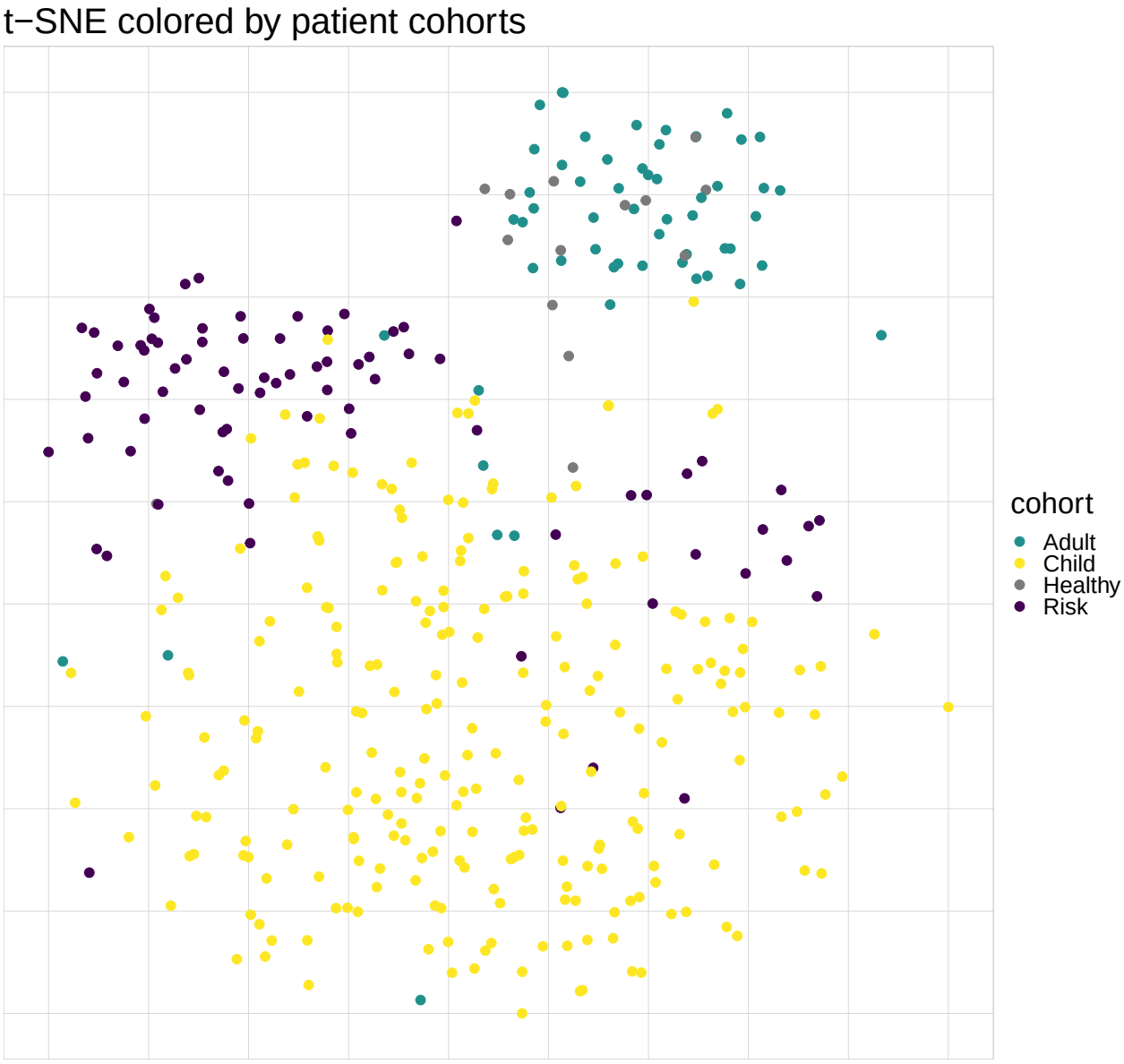


t−SNE colored by patient cohorts

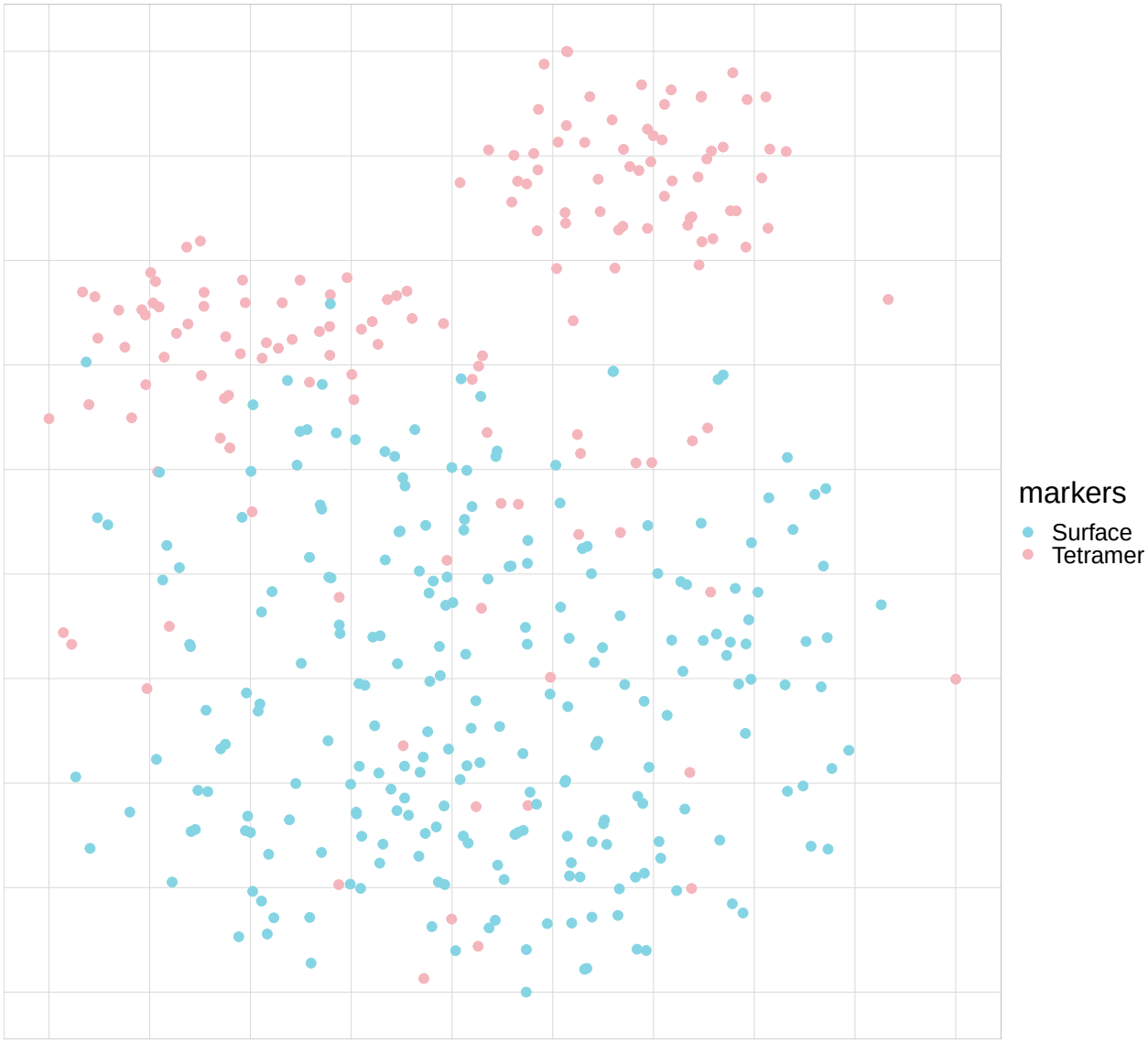
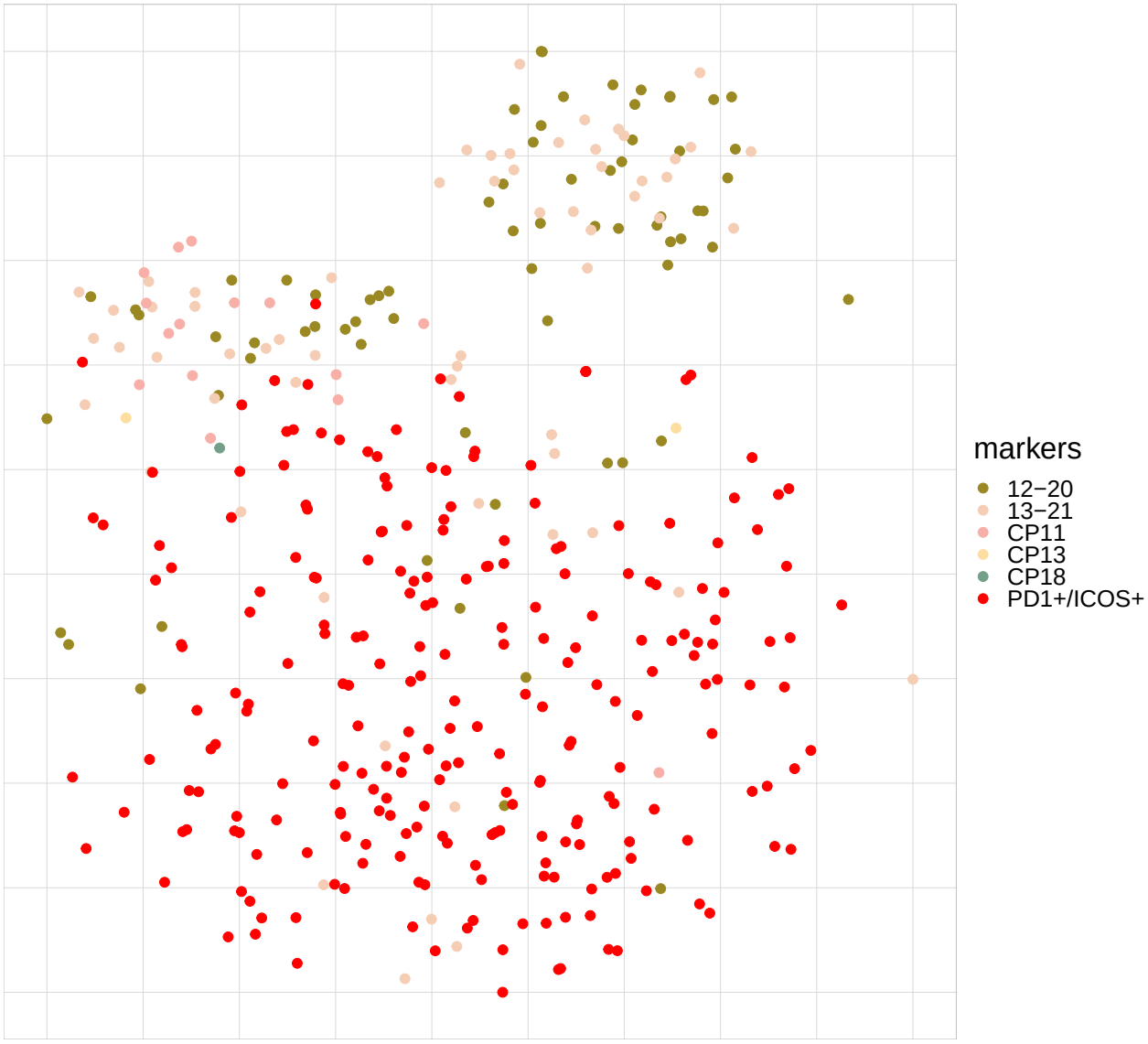


t−SNE colored by different markers




t−SNE colored by patient cohorts
cohort
Adult
Child
Healthy
Risk

t−SNE colored by different types of markers



t−SNE colored by different markers