



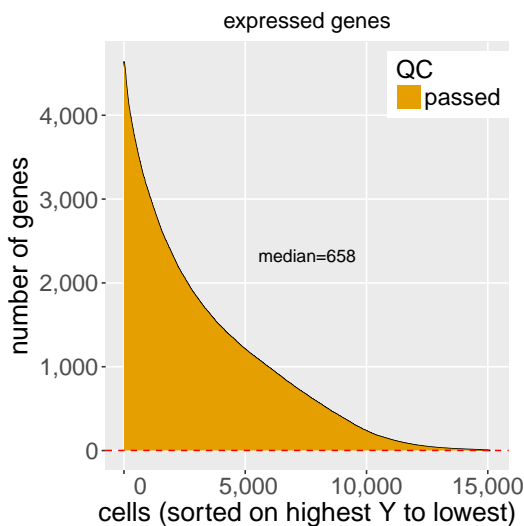
<https://alona.PanglaoDB.se>

1 Input details

filename	GSE72056_melanoma_single_cell_revised_v2.txt.gz
size	71.56 MiB
job id	5cbc34b783452
time finished	2019-04-21T09:33:42 UTC
description	NA
md5	9c05cb22103d01d3086a2a952e97e96b
time uploaded	Sun Apr 21 2019 16:58:21 GMT+0800 (äÿñâŽ;æăĈăĜĖæŮúéŮt)
species	<i>Homo sapiens</i>
data type	Normalized counts
QC strategy	min. 1 expressed genes per cell
delimiter	TAB
header	Yes
full length mRNA-seq	Yes
cell cluster statistic	median
remove mitochondrial genes	No
cluster resolution	small

2 Quality filtering

The red line indicates the pre-defined filtering threshold.



The plot normally shown in this box is not applicable if data are not raw read counts.

2.1 Metrics

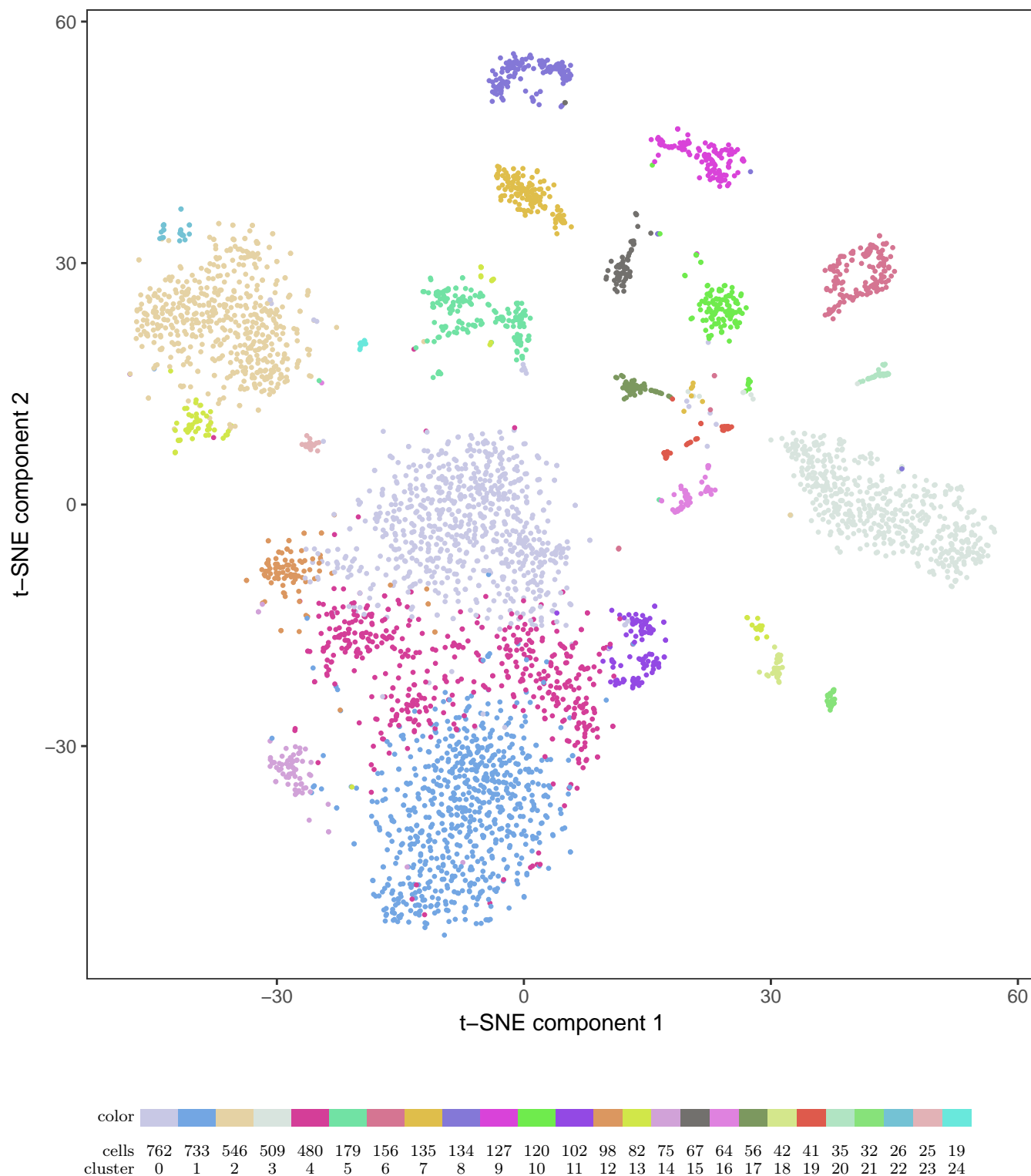
- 4,645 out of 4,645 cells were used in the analysis.
- 3 genes could not be mapped to internal gene symbols (unused genes are listed in section 10). This is usually because of a non-standard or non-official gene symbol/alias.
- 12,508 genes were used in the analysis.
- 25 cell cluster(s) were formed.
- 8 cell type(s) were predicted.

3 Top 20 expressed genes

This is a list of the top 20 most expressed genes in the data. Genes were ranked across all clusters.

symbol	description	biotype	median	mad
<i>B2m</i>	beta-2-microglobulin	protein-coding gene	3.499	0.159
<i>Rpl41</i>	ribosomal protein L41	protein-coding gene	3.347	0.131
<i>Rps27</i>	ribosomal protein S27	protein-coding gene	3.334	0.162
<i>Actb</i>	actin beta	protein-coding gene	3.321	0.209
<i>Rps18</i>	ribosomal protein S18	protein-coding gene	3.317	0.169
<i>Rpl3</i>	ribosomal protein L3	protein-coding gene	3.281	0.150
<i>Rpl19</i>	ribosomal protein L19	protein-coding gene	3.266	0.143
<i>Rps4x</i>	ribosomal protein S4 X-linked	protein-coding gene	3.240	0.175
<i>Rps3a1</i>	ribosomal protein S3A1	protein coding gene	3.234	0.161
<i>Rps14</i>	ribosomal protein S14	protein-coding gene	3.228	0.166
<i>Rpl7</i>	ribosomal protein L7	protein-coding gene	3.216	0.165
<i>Actg1</i>	actin gamma 1	protein-coding gene	3.166	0.191
<i>Rps25</i>	ribosomal protein S25	protein-coding gene	3.166	0.190
<i>Rps28</i>	ribosomal protein S28	protein-coding gene	3.164	0.193
<i>Rps15a</i>	ribosomal protein S15a	protein-coding gene	3.161	0.195
<i>Rps15</i>	ribosomal protein S15	protein-coding gene	3.159	0.187
<i>Gm10036</i>	uncharacterized transcript		3.158	0.172
<i>Rps11</i>	ribosomal protein S11	protein-coding gene	3.157	0.184
<i>Rps13</i>	ribosomal protein S13	protein-coding gene	3.157	0.179
<i>Rpl4</i>	ribosomal protein L4	protein-coding gene	3.151	0.175

4 t-distributed stochastic neighbor embedding (t-SNE)



5 Cell type predictions

5.1 Machine learning

These results are based on the machine learning classifier. Details of cell to cluster mappings is found in section 9.

cluster ^a	no. cells ^b	% cells	genes ^c	cell type	probability ^d
0	762	15.420	2,267	T cells	0.472
1	733	15.780	2,692	T cells	0.908
2	546	11.750	2,347	B cells	0.288
3	509	10.960	3,698	Melanocytes	0.072
4	480	10.330	2,604	T cells	0.912
5	179	3.850	3,439	Macrophages	0.926
6	156	3.360	4,755	Podocytes	0.078
7	135	2.910	4,642	Melanocytes	0.056
8	134	2.880	5,541	Podocytes	0.053
9	127	2.730	5,746	Podocytes	0.080
10	120	2.580	4,763	Podocytes	0.057
11	102	2.200	2,660	T cells	0.430
12	98	2.110	2,628	T cells	0.823
13	82	1.770	4,944	T memory cells	0.783
14	75	1.610	3,659	T cells	0.433
15	67	1.440	3,727	Melanocytes	0.058
16	64	1.380	3,378	Fibroblasts	0.990
17	56	1.210	2,595	Melanocytes	0.083
18	42	0.900	3,686	Endothelial cells	0.658
19	41	0.880	3,650	Fibroblasts	0.167
20	35	0.750	4,472	Podocytes	0.090
21	32	0.690	3,468	Endothelial cells	0.935
22	26	0.560	2,844	B cells	0.181
23	25	0.540	2,760	B cells	0.581
24	19	0.410	3,157	T memory cells	0.177

^a Cluster identifier.

^b Number of cells in the cluster.

^c For each cell in the cluster, counting the number of genes with > 0 expression and reporting the median.

^d Model probability reported by the SVM.

5.2 Hypergeometric test

These results are purely based on marker genes. Green rows indicate significant associations. The following markers were used: https://panglaodb.se/markers/Panglaodb_markers_21_Apr_2019.tsv.gz

cluster ^a	cell type	activity score ^b	p-value ^c	adjusted p-value ^d	significance ^e
0	T memory cells	40.7	6.0e-08	3.2e-05	*
1	T cells	41.3	1.8e-06	5.1e-04	*
2	B cells	38.1	2.8e-07	1.0e-04	*
3	Melanocytes	9.1	3.9e-02	1.0e+00	
4	T memory cells	41.4	1.8e-09	1.5e-06	*
5	Macrophages	35.8	1.4e-08	8.6e-06	*
6	Basal cells	8.3	4.0e-02	1.0e+00	
7	Melanocytes	16.6	2.1e-03	2.0e-01	
8	Melanocytes	19.2	1.0e-03	1.1e-01	
9	Basal cells	7.5	3.6e-01	1.0e+00	
10	Melanocytes	16.2	1.1e-03	1.1e-01	
11	NK cells	35.7	2.1e-06	5.5e-04	*
12	T memory cells	44.3	2.7e-10	3.8e-07	*
13	T memory cells	37.8	2.9e-09	2.0e-06	*
14	T cells	28.8	2.8e-04	3.6e-02	*
15	Melanocytes	15.2	4.8e-03	4.0e-01	
16	Fibroblasts	23.0	1.0e-04	1.7e-02	*
17	Melanocytes	24.2	8.3e-05	1.5e-02	*
18	Endothelial cells	30.2	2.0e-05	4.1e-03	*
19	Basal cells	12.9	7.2e-03	5.2e-01	
20	Ductal cells	6.4	4.8e-01	1.0e+00	
21	Endothelial cells	46.4	9.2e-11	2.0e-07	*
22	B cells	45.7	1.1e-09	1.1e-06	*
23	B cells	35.8	8.0e-07	2.4e-04	*
24	Plasmacytoid dendritic cells	39.2	5.0e-11	2.0e-07	*

^a Cluster identifier.

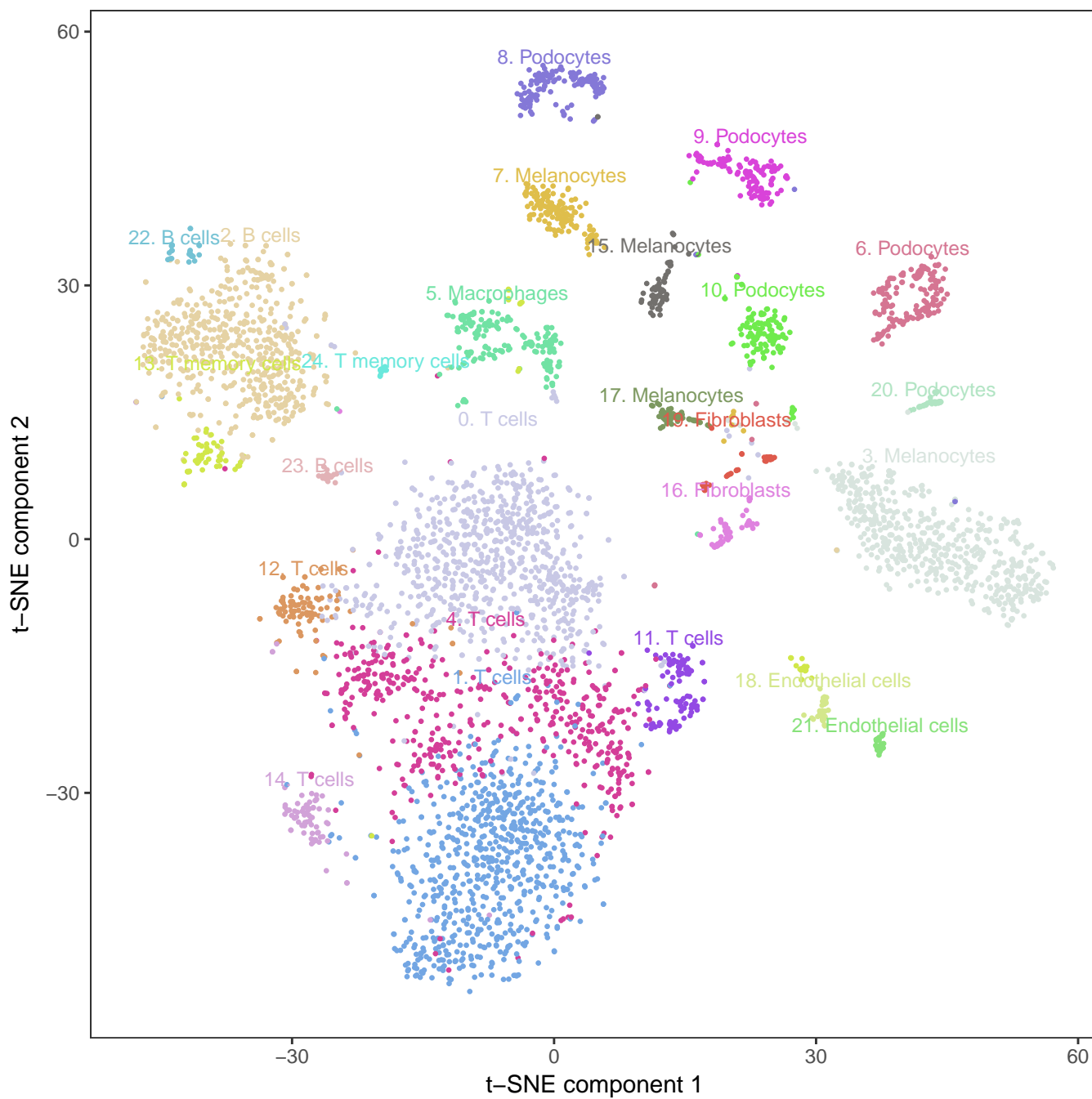
^b Activity score of expressed marker genes.

^c P-value from a hypergeometric test.

^d Adjusted p-value based on the Benjamini-Hochberg procedure.

^e * significant at FDR<10%.

6 Annotated t-SNE



7 Top 20 expressed genes per cluster

7.1 cluster 0 - T cells (n=762; prob=0.472)

symbol	description	biotype	median
<i>B2m</i>	beta-2-microglobulin	protein-coding gene	3.536
<i>Rps27</i>	ribosomal protein S27	protein-coding gene	3.444
<i>Rpl41</i>	ribosomal protein L41	protein-coding gene	3.438
<i>Rps18</i>	ribosomal protein S18	protein-coding gene	3.406
<i>Rpl3</i>	ribosomal protein L3	protein-coding gene	3.393
<i>Rps3a1</i>	ribosomal protein S3A1	protein coding gene	3.372
<i>Rps14</i>	ribosomal protein S14	protein-coding gene	3.364
<i>Rpl19</i>	ribosomal protein L19	protein-coding gene	3.363
<i>Rps4x</i>	ribosomal protein S4 X-linked	protein-coding gene	3.362
<i>Actb</i>	actin beta	protein-coding gene	3.334
<i>Rpl7</i>	ribosomal protein L7	protein-coding gene	3.316
<i>Rps25</i>	ribosomal protein S25	protein-coding gene	3.298
<i>Rps15a</i>	ribosomal protein S15a	protein-coding gene	3.290
<i>Rpl4</i>	ribosomal protein L4	protein-coding gene	3.278
<i>Rps13</i>	ribosomal protein S13	protein-coding gene	3.277
<i>Rps28</i>	ribosomal protein S28	protein-coding gene	3.274
<i>Gm10036</i>	uncharacterized transcript		3.271
<i>Rps5</i>	ribosomal protein S5	protein-coding gene	3.268
<i>Rpl30</i>	ribosomal protein L30	protein-coding gene	3.257
<i>Rps11</i>	ribosomal protein S11	protein-coding gene	3.249

Markers: *Cxcr4*, *Junb*, *Cd3d*, *Ptprcap*, *Cd69*, *Il7r*, *Lck*, *Ccr7*, *Ltb*, *Ccl5*, *Cd2*, *Tnfaip3*, *Cd3e*, *Cd3g*, *Tcf7*, *Tbc1d10c*, *Sept1*, *Itk*, *Maff*, *Cd28*

7.2 cluster 1 - T cells (n=733; prob=0.908)

symbol	description	biotype	median
<i>B2m</i>	beta-2-microglobulin	protein-coding gene	3.623
<i>Actb</i>	actin beta	protein-coding gene	3.426
<i>Rps27</i>	ribosomal protein S27	protein-coding gene	3.328
<i>Ccl5</i>	C-C motif chemokine ligand 5	protein-coding gene	3.310
<i>Rpl41</i>	ribosomal protein L41	protein-coding gene	3.292
<i>Nkg7</i>	natural killer cell granule protein 7	protein-coding gene	3.208
<i>Rps18</i>	ribosomal protein S18	protein-coding gene	3.205
<i>Rps3a1</i>	ribosomal protein S3A1	protein coding gene	3.195
<i>Rpl3</i>	ribosomal protein L3	protein-coding gene	3.189
<i>Rgs1</i>	regulator of G protein signaling 1	protein-coding gene	3.180
<i>Cd74</i>	CD74 molecule	protein-coding gene	3.179
<i>Rpl19</i>	ribosomal protein L19	protein-coding gene	3.177
<i>Ubc</i>	ubiquitin C	protein-coding gene	3.175
<i>Actg1</i>	actin gamma 1	protein-coding gene	3.162
<i>Rps14</i>	ribosomal protein S14	protein-coding gene	3.160
<i>Rps15a</i>	ribosomal protein S15a	protein-coding gene	3.157
<i>Rps4x</i>	ribosomal protein S4 X-linked	protein-coding gene	3.149
<i>Rpl7</i>	ribosomal protein L7	protein-coding gene	3.123
<i>Cd8a</i>	CD8a molecule	protein-coding gene	3.115
<i>Rps25</i>	ribosomal protein S25	protein-coding gene	3.110

Markers: *Ccl5*, *Nkg7*, *Cd8a*, *Ptprcap*, *Cd3d*, *Cxcr4*, *Gzmk*, *Cd2*, *Gzma*, *Lck*, *Dusp2*, *Ctsw*, *S100a4*, *Cd69*, *Cd3g*, *Cd3e*, *Jumb*, *Il2rb*, *Tnfaip3*, *Sept1*, *Tbc1d10c*, *Ifng*, *Sh2d1a*, *Lag3*, *Cd7*, *Cd247*, *Skap1*, *Itk*, *Rhoh*, *Ptpn22*, *Maff*, *Traf1*, *Cd6*, *Cd28*

7.3 cluster 2 - B cells (n=546; prob=0.288)

symbol	description	biotype	median
<i>Cd74</i>	CD74 molecule	protein-coding gene	3.573
<i>B2m</i>	beta-2-microglobulin	protein-coding gene	3.439
<i>Rpl41</i>	ribosomal protein L41	protein-coding gene	3.409
<i>Rps18</i>	ribosomal protein S18	protein-coding gene	3.394
<i>Rps27</i>	ribosomal protein S27	protein-coding gene	3.391
<i>Rpl3</i>	ribosomal protein L3	protein-coding gene	3.362
<i>Rpl19</i>	ribosomal protein L19	protein-coding gene	3.339
<i>Rps3a1</i>	ribosomal protein S3A1	protein coding gene	3.337
<i>Actb</i>	actin beta	protein-coding gene	3.324
<i>Rps14</i>	ribosomal protein S14	protein-coding gene	3.305
<i>Rps4x</i>	ribosomal protein S4 X-linked	protein-coding gene	3.301
<i>Rps5</i>	ribosomal protein S5	protein-coding gene	3.289
<i>Rpl7</i>	ribosomal protein L7	protein-coding gene	3.289
<i>Rps11</i>	ribosomal protein S11	protein-coding gene	3.278
<i>Rps25</i>	ribosomal protein S25	protein-coding gene	3.262
<i>Gm10036</i>	uncharacterized transcript		3.252
<i>Rps13</i>	ribosomal protein S13	protein-coding gene	3.244
<i>Cxcr4</i>	C-X-C motif chemokine receptor 4	protein-coding gene	3.235
<i>Rpl4</i>	ribosomal protein L4	protein-coding gene	3.227
<i>Rpl8</i>	ribosomal protein L8	protein-coding gene	3.219

Markers: *Cd74*, *Cxcr4*, *Ms4a1*, *Cd79b*, *Cd79a*, *Cd69*, *Bank1*, *Cd19*, *Ltb*, *Ptpnc*, *Hvcn1*, *Cd22*, *Bcl11a*, *Birc3*, *H2-Ob*, *Blnk*, *Vpreb3*, *Pou2af1*, *Pax5*, *Spn*, *Fam129c*, *Ccr7*, *H2-Oa*, *Fcer2a*, *Ralgps2*, *Tnfrsf9*, *Smad2*, *Fchs2*, *Klhl6*, *Slamf6*

7.4 cluster 3 - Melanocytes (n=509; prob=0.072)

symbol	description	biotype	median
<i>B2m</i>	beta-2-microglobulin	protein-coding gene	3.392
<i>Apod</i>	apolipoprotein D	protein-coding gene	3.377
<i>Pmel</i>	premelanosome protein	protein-coding gene	3.356
<i>Serpine2</i>	serpin family E member 2	protein-coding gene	3.353
<i>S100a6</i>	S100 calcium binding protein A6	protein-coding gene	3.321
<i>Cd63</i>	CD63 molecule	protein-coding gene	3.281
<i>Ctsb</i>	cathepsin B	protein-coding gene	3.244
<i>Vim</i>	vimentin	protein-coding gene	3.241
<i>Rpl19</i>	ribosomal protein L19	protein-coding gene	3.231
<i>Rpl3</i>	ribosomal protein L3	protein-coding gene	3.227
<i>Rpl41</i>	ribosomal protein L41	protein-coding gene	3.227
<i>Actg1</i>	actin gamma 1	protein-coding gene	3.215
<i>Ubc</i>	ubiquitin C	protein-coding gene	3.213
<i>Lgals3</i>	galectin 3	protein-coding gene	3.209
<i>Fos</i>	Fos proto-oncogene, AP-1 transcription factor subunit	protein-coding gene	3.206
<i>Mif</i>	macrophage migration inhibitory factor	protein-coding gene	3.205
<i>S100b</i>	S100 calcium binding protein B	protein-coding gene	3.202
<i>Tyr</i>	tyrosinase	protein-coding gene	3.175
<i>Rps18</i>	ribosomal protein S18	protein-coding gene	3.156
<i>Lgals1</i>	galectin 1	protein-coding gene	3.138

Markers: *Pmel*, *Tyr*, *Gpnmb*, *Hspb1*, *Mlana*, *Mitf*, *Pax3*, *Tfap2a*, *Ppard*, *Enpp1*, *Ahnak2*, *Ppara*

7.5 cluster 4 - T cells (n=480; prob=0.912)

symbol	description	biotype	median
<i>B2m</i>	beta-2-microglobulin	protein-coding gene	3.583
<i>Actb</i>	actin beta	protein-coding gene	3.416
<i>Rps27</i>	ribosomal protein S27	protein-coding gene	3.372
<i>Rpl41</i>	ribosomal protein L41	protein-coding gene	3.366
<i>Rps18</i>	ribosomal protein S18	protein-coding gene	3.313
<i>Rpl3</i>	ribosomal protein L3	protein-coding gene	3.288
<i>Rpl19</i>	ribosomal protein L19	protein-coding gene	3.262
<i>Rps3a1</i>	ribosomal protein S3A1	protein coding gene	3.259
<i>Rps4x</i>	ribosomal protein S4 X-linked	protein-coding gene	3.249
<i>Rps14</i>	ribosomal protein S14	protein-coding gene	3.248
<i>Rps15a</i>	ribosomal protein S15a	protein-coding gene	3.246
<i>Rps25</i>	ribosomal protein S25	protein-coding gene	3.214
<i>Rpl7</i>	ribosomal protein L7	protein-coding gene	3.203
<i>Rps28</i>	ribosomal protein S28	protein-coding gene	3.164
<i>Actg1</i>	actin gamma 1	protein-coding gene	3.164
<i>Cxcr4</i>	C-X-C motif chemokine receptor 4	protein-coding gene	3.163
<i>Rps11</i>	ribosomal protein S11	protein-coding gene	3.160
<i>Ccl5</i>	C-C motif chemokine ligand 5	protein-coding gene	3.155
<i>Rpl23a</i>	ribosomal protein L23a	protein-coding gene	3.153
<i>Rps16</i>	ribosomal protein S16	protein-coding gene	3.148

Markers: *Cxcr4*, *Ccl5*, *Cd3d*, *Ptprcap*, *Gzmk*, *Cd2*, *Junb*, *Lck*, *Nkg7*, *Cd69*, *Gzma*, *Dusp2*, *Cd3g*, *Cd3e*, *Tbc1d10c*, *S100a4*, *Lat*, *Sept1*, *Sh2d1a*, *Tnfrsf3*, *Cd247*, *Cd8a*, *Itk*, *Skap1*, *Il2rb*, *Rhoh*, *Tcf7*, *Cd6*, *Il7r*, *Cd28*, *Maff*

7.6 cluster 5 - Macrophages (n=179; prob=0.926)

symbol	description	biotype	median
<i>Cd74</i>	CD74 molecule	protein-coding gene	3.587
<i>B2m</i>	beta-2-microglobulin	protein-coding gene	3.568
<i>Actb</i>	actin beta	protein-coding gene	3.434
<i>Sat1</i>	spermidine/spermine N1-acetyltransferase 1	protein-coding gene	3.270
<i>Rpl41</i>	ribosomal protein L41	protein-coding gene	3.269
<i>Psap</i>	prosaposin	protein-coding gene	3.265
<i>Tyrobp</i>	TYRO protein tyrosine kinase binding protein	protein-coding gene	3.238
<i>RP24-208F10.1</i>	uncharacterized transcript		3.231
<i>Fcer1g</i>	Fc fragment of IgE receptor Ig	protein-coding gene	3.205
<i>Rps18</i>	ribosomal protein S18	protein-coding gene	3.173
<i>Cst3</i>	cystatin C	protein-coding gene	3.169
<i>Rps27</i>	ribosomal protein S27	protein-coding gene	3.167
<i>Dusp1</i>	dual specificity phosphatase 1	protein-coding gene	3.149
<i>Ctsb</i>	cathepsin B	protein-coding gene	3.137
<i>Rpl19</i>	ribosomal protein L19	protein-coding gene	3.125
<i>Rps14</i>	ribosomal protein S14	protein-coding gene	3.124
<i>Rpl3</i>	ribosomal protein L3	protein-coding gene	3.118
<i>Srgn</i>	serglycin	protein-coding gene	3.115
<i>Actg1</i>	actin gamma 1	protein-coding gene	3.111
<i>Fos</i>	Fos proto-oncogene, AP-1 transcription factor subunit	protein-coding gene	3.104

Markers: *Cd74*, *Tyrobp*, *Cd68*, *Cd14*, *H2-DMa*, *Rgs1*, *Lgals3*, *S100a4*, *Ucp2*, *Fgl2*, *Csf1r*, *Cxcl16*, *Cybb*, *C3ar1*, *Clec7a*, *Ms4a7*, *Cd163*, *Itgax*, *Samsn1*, *Gpnmb*, *Cd83*, *Fgd2*, *Tlr2*, *Ccl5*, *Fpr1*, *Cd86*, *Parp14*, *Rbpj*, *Fgr*, *C5ar1*, *Scimp*, *Cyth4*, *Naaa*, *Cpm*, *Slc11a1*, *Lpcat2*, *Tlr4*, *Slc37a2*, *Slco2b1*, *Slamf7*, *Stab1*, *Ccl22*, *Itgal*, *Dab2*, *Arl11*, *Snx20*, *Irf5*, *Rab20*, *Hilpda*, *Cd36*, *Nr4a3*, *Gpr132*

7.7 cluster 6 - Podocytes (n=156; prob=0.078)

symbol	description	biotype	median
<i>Rps18</i>	ribosomal protein S18	protein-coding gene	3.460
<i>Rps28</i>	ribosomal protein S28	protein-coding gene	3.386
<i>Rpl41</i>	ribosomal protein L41	protein-coding gene	3.379
<i>Rpl7</i>	ribosomal protein L7	protein-coding gene	3.372
<i>Rps14</i>	ribosomal protein S14	protein-coding gene	3.371
<i>Rps4x</i>	ribosomal protein S4 X-linked	protein-coding gene	3.366
<i>Rps15</i>	ribosomal protein S15	protein-coding gene	3.352
<i>Rpl19</i>	ribosomal protein L19	protein-coding gene	3.352
<i>Rps27</i>	ribosomal protein S27	protein-coding gene	3.334
<i>Rps25</i>	ribosomal protein S25	protein-coding gene	3.299
<i>Rps13</i>	ribosomal protein S13	protein-coding gene	3.297
<i>Rpl4</i>	ribosomal protein L4	protein-coding gene	3.280
<i>Vim</i>	vimentin	protein-coding gene	3.267
<i>Rpl26</i>	ribosomal protein L26	protein-coding gene	3.252
<i>Rpl3</i>	ribosomal protein L3	protein-coding gene	3.231
<i>Rpl23a</i>	ribosomal protein L23a	protein-coding gene	3.230
<i>Rpl8</i>	ribosomal protein L8	protein-coding gene	3.211
<i>Rpl23</i>	ribosomal protein L23	protein-coding gene	3.209
<i>Ldha</i>	lactate dehydrogenase A	protein-coding gene	3.199
<i>Rplp0</i>	ribosomal protein lateral stalk subunit P0	protein-coding gene	3.198

Markers: *Tob1*, *Emc7*, *Lamb2*, *Loxl2*, *Plod2*, *Trib2*, *Etf1*, *Ctgf*, *Optn*, *Wsb2*, *Zbtb8a*, *Golim4*, *Sh2d4a*, *Dock5*, *Adm*, *Vegfa*, *Itgb5*, *Qk*, *Met*, *Srgap1*, *Plekhh2*, *Rab3b*, *Nphs1*, *Sema3e*, *Lmx1b*, *Itga3*

7.8 cluster 7 - Melanocytes (n=135; prob=0.056)

symbol	description	biotype	median
<i>Pmel</i>	premelanosome protein	protein-coding gene	3.467
<i>Rpl3</i>	ribosomal protein L3	protein-coding gene	3.432
<i>Rps4x</i>	ribosomal protein S4 X-linked	protein-coding gene	3.430
<i>Rps18</i>	ribosomal protein S18	protein-coding gene	3.405
<i>Rps27</i>	ribosomal protein S27	protein-coding gene	3.387
<i>Rpl41</i>	ribosomal protein L41	protein-coding gene	3.373
<i>Actg1</i>	actin gamma 1	protein-coding gene	3.340
<i>Rpl19</i>	ribosomal protein L19	protein-coding gene	3.316
<i>Vim</i>	vimentin	protein-coding gene	3.303
<i>Rpl4</i>	ribosomal protein L4	protein-coding gene	3.278
<i>Rps3a1</i>	ribosomal protein S3A1	protein coding gene	3.258
<i>Rpl8</i>	ribosomal protein L8	protein-coding gene	3.256
<i>Rpl7</i>	ribosomal protein L7	protein-coding gene	3.243
<i>Rps14</i>	ribosomal protein S14	protein-coding gene	3.242
<i>Rplp0</i>	ribosomal protein lateral stalk subunit P0	protein-coding gene	3.238
<i>Rps15</i>	ribosomal protein S15	protein-coding gene	3.223
<i>Rpl10a</i>	ribosomal protein L10a	protein-coding gene	3.211
<i>Cd63</i>	CD63 molecule	protein-coding gene	3.211
<i>Rps13</i>	ribosomal protein S13	protein-coding gene	3.208
<i>Rpl26</i>	ribosomal protein L26	protein-coding gene	3.203

Markers: *Pmel*, *Tyr*, *Mlana*, *Dct*, *Hspb1*, *Gpnmb*, *Rab38*, *Mitf*, *Pax3*, *Slc45a2*, *Trpm1*, *Tfap2a*, *Zc3h7a*, *Ppard*, *Bnc2*, *Enpp1*, *Ppara*, *Prkca*, *Ctns*

7.9 cluster 8 - Podocytes (n=134; prob=0.053)

symbol	description	biotype	median
<i>Pmel</i>	premelanosome protein	protein-coding gene	3.510
<i>Rps27</i>	ribosomal protein S27	protein-coding gene	3.416
<i>Rpl41</i>	ribosomal protein L41	protein-coding gene	3.392
<i>Actg1</i>	actin gamma 1	protein-coding gene	3.358
<i>Rps18</i>	ribosomal protein S18	protein-coding gene	3.356
<i>Vim</i>	vimentin	protein-coding gene	3.344
<i>Rps3</i>	ribosomal protein S3	protein-coding gene	3.334
<i>Rpl3</i>	ribosomal protein L3	protein-coding gene	3.293
<i>Rps15</i>	ribosomal protein S15	protein-coding gene	3.289
<i>Rps28</i>	ribosomal protein S28	protein-coding gene	3.265
<i>Rpl7</i>	ribosomal protein L7	protein-coding gene	3.247
<i>Rps5</i>	ribosomal protein S5	protein-coding gene	3.245
<i>Gm10036</i>	uncharacterized transcript		3.236
<i>Rps16</i>	ribosomal protein S16	protein-coding gene	3.231
<i>Lgals1</i>	galectin 1	protein-coding gene	3.221
<i>Rpl8</i>	ribosomal protein L8	protein-coding gene	3.211
<i>Dct</i>	dopachrome tautomerase	protein-coding gene	3.209
<i>Rpl19</i>	ribosomal protein L19	protein-coding gene	3.208
<i>Rps11</i>	ribosomal protein S11	protein-coding gene	3.202
<i>Rps15a</i>	ribosomal protein S15a	protein-coding gene	3.201

Markers: *Hspb8, Tob1, Lamb2, Trib2, Emc7, Emc2, Met, Myo1e, Optn, Myo1d, Aif1l, Kank1, Etf1, Wsb2, Zbtb8a, Dock1, Ehd4, Srgap1, Qk, Arhgap24, Golim4, Rab3b, Nphs1, Lmx1b, Plekhh2, Slc2a4*

7.10 cluster 9 - Podocytes (n=127; prob=0.08)

symbol	description	biotype	median
<i>Rps18</i>	ribosomal protein S18	protein-coding gene	3.386
<i>Lgals1</i>	galectin 1	protein-coding gene	3.369
<i>Actb</i>	actin beta	protein-coding gene	3.356
<i>Vim</i>	vimentin	protein-coding gene	3.347
<i>Pmel</i>	premelanosome protein	protein-coding gene	3.345
<i>Mif</i>	macrophage migration inhibitory factor	protein-coding gene	3.306
<i>S100b</i>	S100 calcium binding protein B	protein-coding gene	3.291
<i>Rps4x</i>	ribosomal protein S4 X-linked	protein-coding gene	3.263
<i>Rpl41</i>	ribosomal protein L41	protein-coding gene	3.250
<i>Rps15</i>	ribosomal protein S15	protein-coding gene	3.247
<i>Cd63</i>	CD63 molecule	protein-coding gene	3.236
<i>Apod</i>	apolipoprotein D	protein-coding gene	3.227
<i>Rpl3</i>	ribosomal protein L3	protein-coding gene	3.226
<i>Rpl7</i>	ribosomal protein L7	protein-coding gene	3.225
<i>Rps27</i>	ribosomal protein S27	protein-coding gene	3.222
<i>Rps3a1</i>	ribosomal protein S3A1	protein coding gene	3.216
<i>Rpl19</i>	ribosomal protein L19	protein-coding gene	3.215
<i>Rpl8</i>	ribosomal protein L8	protein-coding gene	3.212
<i>Actg1</i>	actin gamma 1	protein-coding gene	3.211
<i>Serpine2</i>	serpin family E member 2	protein-coding gene	3.204

Markers: *Emc7*, *Emc2*, *Trib2*, *Pros1*, *Lamb2*, *Tob1*, *Etf1*, *Plod2*, *Optn*, *Kank1*, *Ctnnal1*, *Srgap1*, *Wsb2*, *Aif1l*, *Hspb8*, *Golim4*, *Adcy1*, *Ehd4*, *Zbtb8a*, *Itgb5*, *Qk*, *Myo1d*, *Sh2d4a*, *Cd2ap*, *Arhgap24*, *Fat1*, *Myo1e*

7.11 cluster 10 - Podocytes (n=120; prob=0.057)

symbol	description	biotype	median
<i>B2m</i>	beta-2-microglobulin	protein-coding gene	3.417
<i>Pmel</i>	premelanosome protein	protein-coding gene	3.408
<i>Vim</i>	vimentin	protein-coding gene	3.313
<i>Rps18</i>	ribosomal protein S18	protein-coding gene	3.313
<i>Lgals3</i>	galectin 3	protein-coding gene	3.308
<i>Rpl41</i>	ribosomal protein L41	protein-coding gene	3.286
<i>Cd63</i>	CD63 molecule	protein-coding gene	3.273
<i>Actg1</i>	actin gamma 1	protein-coding gene	3.247
<i>Rps27</i>	ribosomal protein S27	protein-coding gene	3.195
<i>Rpl3</i>	ribosomal protein L3	protein-coding gene	3.175
<i>Gm10036</i>	uncharacterized transcript		3.165
<i>Rps4x</i>	ribosomal protein S4 X-linked	protein-coding gene	3.159
<i>Rps3a1</i>	ribosomal protein S3A1	protein coding gene	3.153
<i>Tyr</i>	tyrosinase	protein-coding gene	3.139
<i>Sdcbp</i>	syndecan binding protein	protein-coding gene	3.126
<i>Rps28</i>	ribosomal protein S28	protein-coding gene	3.123
<i>Rpl7</i>	ribosomal protein L7	protein-coding gene	3.121
<i>Actb</i>	actin beta	protein-coding gene	3.119
<i>Rps5</i>	ribosomal protein S5	protein-coding gene	3.116
<i>Rps13</i>	ribosomal protein S13	protein-coding gene	3.116

Markers: *Emc7*, *Tob1*, *Emc2*, *Pros1*, *Trib2*, *Itga3*, *Hspb8*, *Lamb2*, *Etf1*, *Ehd4*, *Srgap1*, *Aif1l*, *Zbtb8a*, *Cttnal1*, *Optn*, *Wsb2*, *Rab3b*, *Myo1d*, *Golim4*, *Qk*, *Plod2*, *Fat1*, *Slc2a4*, *Nphs1*, *Plekhh2*, *Lmx1b*, *Kank1*, *Adcy1*

7.12 cluster 11 - T cells (n=102; prob=0.43)

symbol	description	biotype	median
<i>B2m</i>	beta-2-microglobulin	protein-coding gene	3.579
<i>Actb</i>	actin beta	protein-coding gene	3.482
<i>Nkg7</i>	natural killer cell granule protein 7	protein-coding gene	3.364
<i>Rpl41</i>	ribosomal protein L41	protein-coding gene	3.354
<i>Rps27</i>	ribosomal protein S27	protein-coding gene	3.332
<i>Rpl3</i>	ribosomal protein L3	protein-coding gene	3.325
<i>Rps18</i>	ribosomal protein S18	protein-coding gene	3.313
<i>Rpl19</i>	ribosomal protein L19	protein-coding gene	3.262
<i>Rps14</i>	ribosomal protein S14	protein-coding gene	3.254
<i>Rps4x</i>	ribosomal protein S4 X-linked	protein-coding gene	3.253
<i>Rps3a1</i>	ribosomal protein S3A1	protein coding gene	3.246
<i>Ccl5</i>	C-C motif chemokine ligand 5	protein-coding gene	3.240
<i>Actg1</i>	actin gamma 1	protein-coding gene	3.226
<i>Rps11</i>	ribosomal protein S11	protein-coding gene	3.211
<i>Rpl7</i>	ribosomal protein L7	protein-coding gene	3.183
<i>Prf1</i>	perforin 1	protein-coding gene	3.172
<i>Rps15</i>	ribosomal protein S15	protein-coding gene	3.164
<i>Rps3</i>	ribosomal protein S3	protein-coding gene	3.161
<i>Gm10036</i>	uncharacterized transcript		3.160
<i>Rps5</i>	ribosomal protein S5	protein-coding gene	3.159

Markers: *Nkg7*, *Ccl5*, *Gzma*, *Ptprcap*, *Ctsw*, *Cxcr4*, *Junb*, *Cd247*, *S100a4*, *Cd69*, *Gzmm*, *Dusp2*, *Lck*, *Hopx*, *Il2rb*, *Cd2*, *Tbc1d10c*, *Tnfaip3*, *Cd7*, *Skap1*, *Cd3g*, *Cd3e*, *Maff*, *Sept1*, *Txk*, *Ptpn22*, *Crem*, *Myo1g*

7.13 cluster 12 - T cells (n=98; prob=0.823)

symbol	description	biotype	median
<i>B2m</i>	beta-2-microglobulin	protein-coding gene	3.626
<i>Actb</i>	actin beta	protein-coding gene	3.489
<i>Rpl41</i>	ribosomal protein L41	protein-coding gene	3.317
<i>Rps27</i>	ribosomal protein S27	protein-coding gene	3.274
<i>Actg1</i>	actin gamma 1	protein-coding gene	3.264
<i>Rps18</i>	ribosomal protein S18	protein-coding gene	3.248
<i>Rpl19</i>	ribosomal protein L19	protein-coding gene	3.229
<i>Rpl3</i>	ribosomal protein L3	protein-coding gene	3.219
<i>Rpl7</i>	ribosomal protein L7	protein-coding gene	3.215
<i>Rps4x</i>	ribosomal protein S4 X-linked	protein-coding gene	3.196
<i>Arhgdib</i>	Rho GDP dissociation inhibitor beta	protein-coding gene	3.171
<i>Rps14</i>	ribosomal protein S14	protein-coding gene	3.171
<i>Rps3a1</i>	ribosomal protein S3A1	protein coding gene	3.168
<i>Rps25</i>	ribosomal protein S25	protein-coding gene	3.161
<i>Rps15a</i>	ribosomal protein S15a	protein-coding gene	3.159
<i>Rgs1</i>	regulator of G protein signaling 1	protein-coding gene	3.157
<i>Rps11</i>	ribosomal protein S11	protein-coding gene	3.156
<i>S100a4</i>	S100 calcium binding protein A4	protein-coding gene	3.128
<i>Rps15</i>	ribosomal protein S15	protein-coding gene	3.128
<i>Cd74</i>	CD74 molecule	protein-coding gene	3.121

Markers: *S100a4*, *Cd3d*, *Ptprcap*, *Cd2*, *Ltb*, *Lck*, *Cxcr4*, *Junb*, *Cd4*, *Cd247*, *Cd3g*, *Lat*, *Cd3e*, *Tnfaip3*, *Il2rb*, *Icos*, *Tnfrsf4*, *Ccl5*, *Sept1*, *Rhoh*, *Tbc1d10c*, *Il2ra*, *Skap1*, *Cxcr6*, *Cd28*, *Cd7*, *Il7r*, *Nabp1*, *Itk*, *Crem*, *Maff*, *Rora*, *Traf1*

7.14 cluster 13 - T memory cells (n=82; prob=0.783)

symbol	description	biotype	median
<i>B2m</i>	beta-2-microglobulin	protein-coding gene	3.492
<i>Rps27</i>	ribosomal protein S27	protein-coding gene	3.432
<i>Actb</i>	actin beta	protein-coding gene	3.415
<i>Rpl41</i>	ribosomal protein L41	protein-coding gene	3.406
<i>Cd74</i>	CD74 molecule	protein-coding gene	3.387
<i>Rps18</i>	ribosomal protein S18	protein-coding gene	3.355
<i>Rps4x</i>	ribosomal protein S4 X-linked	protein-coding gene	3.350
<i>Rpl3</i>	ribosomal protein L3	protein-coding gene	3.346
<i>Rpl19</i>	ribosomal protein L19	protein-coding gene	3.344
<i>Rps3a1</i>	ribosomal protein S3A1	protein coding gene	3.337
<i>Rpl7</i>	ribosomal protein L7	protein-coding gene	3.294
<i>Rps5</i>	ribosomal protein S5	protein-coding gene	3.284
<i>Rps14</i>	ribosomal protein S14	protein-coding gene	3.283
<i>Rps25</i>	ribosomal protein S25	protein-coding gene	3.259
<i>Rps28</i>	ribosomal protein S28	protein-coding gene	3.256
<i>Gm10036</i>	uncharacterized transcript		3.249
<i>Rps11</i>	ribosomal protein S11	protein-coding gene	3.238
<i>Rps13</i>	ribosomal protein S13	protein-coding gene	3.231
<i>Rps15a</i>	ribosomal protein S15a	protein-coding gene	3.227
<i>Rpl23a</i>	ribosomal protein L23a	protein-coding gene	3.222

Markers: *Ptprcap*, *Cd3d*, *Ptprc*, *Cd69*, *Sell*, *Ltb*, *Lck*, *Il7r*, *Cytip*, *Arhgap15*, *Rhoh*, *Gimap4*, *Cd2*, *Ccr7*, *Cd27*, *Bin2*, *Tbc1d10c*, *Arhgef1*, *Cd3g*, *Dgka*, *Sept1*, *Cd3e*, *Lat*, *Cd4*, *Cd247*, *Tcf7*, *Skap1*, *Ikzf1*, *Acp5*, *Apbb1ip*, *Gimap1*, *Lef1*, *Ccr6*, *Epsti1*, *Satb1*, *Cd28*, *Enpp1*, *Kpna4*, *Cd7*, *Grap2*, *Itgae*

7.15 cluster 14 - T cells (n=75; prob=0.433)

symbol	description	biotype	median
<i>B2m</i>	beta-2-microglobulin	protein-coding gene	3.572
<i>Actb</i>	actin beta	protein-coding gene	3.549
<i>Rpl41</i>	ribosomal protein L41	protein-coding gene	3.291
<i>Actg1</i>	actin gamma 1	protein-coding gene	3.282
<i>Rps18</i>	ribosomal protein S18	protein-coding gene	3.257
<i>Tuba1b</i>	tubulin alpha 1b	protein-coding gene	3.254
<i>Cd74</i>	CD74 molecule	protein-coding gene	3.247
<i>Rps27</i>	ribosomal protein S27	protein-coding gene	3.190
<i>Ptma</i>	prothymosin alpha	protein-coding gene	3.186
<i>Rps4x</i>	ribosomal protein S4 X-linked	protein-coding gene	3.183
<i>Rpl3</i>	ribosomal protein L3	protein-coding gene	3.179
<i>Rps3a1</i>	ribosomal protein S3A1	protein coding gene	3.173
<i>Rpl19</i>	ribosomal protein L19	protein-coding gene	3.158
<i>Pfn1</i>	profilin 1	protein-coding gene	3.157
<i>Tubb5</i>	tubulin, beta 5 class I	protein coding gene	3.156
<i>Arhgdib</i>	Rho GDP dissociation inhibitor beta	protein-coding gene	3.152
<i>Rplp0</i>	ribosomal protein lateral stalk subunit P0	protein-coding gene	3.152
<i>Rpl7</i>	ribosomal protein L7	protein-coding gene	3.150
<i>Ccl5</i>	C-C motif chemokine ligand 5	protein-coding gene	3.149
<i>Rps15a</i>	ribosomal protein S15a	protein-coding gene	3.136

Markers: *Ccl5*, *Nkg7*, *Cd3d*, *Ptprcap*, *Gzma*, *Cxcr4*, *Cd8a*, *Cd2*, *S100a4*, *Lck*, *Ctsw*, *Gzmk*, *Cd3g*, *Tbc1d10c*, *Cd3e*, *Sh2d1a*, *Sept1*, *Cd69*, *Ifng*, *Lat*, *Skap1*, *Il2rb*, *Tnfrsf3*, *Cd247*, *Junb*, *Myo1g*, *Dusp2*, *Rhoh*, *Ptpn22*, *Itk*, *Lag3*, *Cd7*, *Cd6*, *Cd28*, *Maff*, *Nabp1*, *Cerk*

7.16 cluster 15 - Melanocytes (n=67; prob=0.058)

symbol	description	biotype	median
<i>Rps18</i>	ribosomal protein S18	protein-coding gene	3.513
<i>Rpl19</i>	ribosomal protein L19	protein-coding gene	3.437
<i>Rpl3</i>	ribosomal protein L3	protein-coding gene	3.418
<i>Rpl41</i>	ribosomal protein L41	protein-coding gene	3.414
<i>Rps14</i>	ribosomal protein S14	protein-coding gene	3.407
<i>Rpl7</i>	ribosomal protein L7	protein-coding gene	3.397
<i>Rps27</i>	ribosomal protein S27	protein-coding gene	3.388
<i>Rps3a1</i>	ribosomal protein S3A1	protein coding gene	3.377
<i>Rps5</i>	ribosomal protein S5	protein-coding gene	3.367
<i>Rps13</i>	ribosomal protein S13	protein-coding gene	3.361
<i>Rpl27-ps3</i>	uncharacterized transcript		3.358
<i>Rpl23</i>	ribosomal protein L23	protein-coding gene	3.354
<i>B2m</i>	beta-2-microglobulin	protein-coding gene	3.334
<i>Rps15</i>	ribosomal protein S15	protein-coding gene	3.332
<i>Rpl4</i>	ribosomal protein L4	protein-coding gene	3.328
<i>Rpl38</i>	ribosomal protein L38	protein-coding gene	3.322
<i>Rps28</i>	ribosomal protein S28	protein-coding gene	3.315
<i>Actg1</i>	actin gamma 1	protein-coding gene	3.311
<i>Rps11</i>	ribosomal protein S11	protein-coding gene	3.309
<i>Rplp0</i>	ribosomal protein lateral stalk subunit P0	protein-coding gene	3.306

Markers: *Pmel*, *Mlana*, *Gpnmb*, *Tyr*, *Tyrp1*, *Dct*, *Mitf*, *Pax3*, *Tfap2a*, *Hspb1*, *Rab38*, *Zc3h7a*, *Enpp1*, *Prkca*, *Trpm1*

7.17 cluster 16 - Fibroblasts (n=64; prob=0.99)

symbol	description	biotype	median
<i>B2m</i>	beta-2-microglobulin	protein-coding gene	3.381
<i>Rpl41</i>	ribosomal protein L41	protein-coding gene	3.335
<i>Rps18</i>	ribosomal protein S18	protein-coding gene	3.318
<i>Actb</i>	actin beta	protein-coding gene	3.290
<i>Rpl3</i>	ribosomal protein L3	protein-coding gene	3.286
<i>Rps4x</i>	ribosomal protein S4 X-linked	protein-coding gene	3.258
<i>Vim</i>	vimentin	protein-coding gene	3.256
<i>Rpl7</i>	ribosomal protein L7	protein-coding gene	3.241
<i>Rpl19</i>	ribosomal protein L19	protein-coding gene	3.233
<i>Col3a1</i>	collagen type III alpha 1 chain	protein-coding gene	3.219
<i>Rps3a1</i>	ribosomal protein S3A1	protein coding gene	3.204
<i>Rplp0</i>	ribosomal protein lateral stalk subunit P0	protein-coding gene	3.201
<i>Rps27</i>	ribosomal protein S27	protein-coding gene	3.189
<i>Col1a2</i>	collagen type I alpha 2 chain	protein-coding gene	3.185
<i>Timp1</i>	TIMP metalloproteinase inhibitor 1	protein-coding gene	3.175
<i>Rps14</i>	ribosomal protein S14	protein-coding gene	3.171
<i>Actg1</i>	actin gamma 1	protein-coding gene	3.169
<i>Rpl10a</i>	ribosomal protein L10a	protein-coding gene	3.152
<i>Rps5</i>	ribosomal protein S5	protein-coding gene	3.150
<i>Rps11</i>	ribosomal protein S11	protein-coding gene	3.143

Markers: *Vim*, *Col3a1*, *Col1a2*, *Dcn*, *Col1a1*, *Sparc*, *Lum*, *Egr1*, *Nnmt*, *Mgp*, *Rarres2*, *Gsn*, *Fstl1*, *Thy1*, *Ctsk*, *Serpinh1*, *Fn1*, *Col6a2*, *Efemp1*, *S100a4*, *Col6a3*, *Mmp2*, *Fbln2*, *Cd248*, *Dpt*, *Cd44*, *Ctgf*, *Thbs2*, *Pdgfrb*, *Klf6*, *Col5a2*, *Mdk*, *Stat3*, *Cdh11*, *Col14a1*, *Fosb*, *Tcf4*, *Hif1a*, *Col5a1*, *Lamb1*, *Fbn1*, *Igfbp6*, *Cyp1b1*, *Lamc1*, *Prrx1*, *Fkbp10*, *Gstm5*, *Angptl2*, *Col12a1*, *Palld*, *Zeb2*, *Itih5*, *Lox*, *Ercc1*, *Nfat5*, *Eln*, *Nr4a1*, *Mfap5*, *Igf1*, *Pip4k2a*, *Il1r1*, *Tnfrsf1b*, *P4ha1*, *Pkd2*, *Ddr2*, *Fosl2*, *Arap1*

7.18 cluster 17 - Melanocytes (n=56; prob=0.083)

symbol	description	biotype	median
<i>Rpl8</i>	ribosomal protein L8	protein-coding gene	3.638
<i>Rpl6</i>	ribosomal protein L6	protein-coding gene	3.560
<i>Rps18</i>	ribosomal protein S18	protein-coding gene	3.539
<i>Rpl7</i>	ribosomal protein L7	protein-coding gene	3.500
<i>Rps4x</i>	ribosomal protein S4 X-linked	protein-coding gene	3.455
<i>Rpl3</i>	ribosomal protein L3	protein-coding gene	3.426
<i>Rpl19</i>	ribosomal protein L19	protein-coding gene	3.409
<i>Rps27</i>	ribosomal protein S27	protein-coding gene	3.393
<i>Rpl41</i>	ribosomal protein L41	protein-coding gene	3.369
<i>Rps16</i>	ribosomal protein S16	protein-coding gene	3.362
<i>Rps5</i>	ribosomal protein S5	protein-coding gene	3.362
<i>Gm10036</i>	uncharacterized transcript		3.360
<i>Rps28</i>	ribosomal protein S28	protein-coding gene	3.358
<i>Rps14</i>	ribosomal protein S14	protein-coding gene	3.348
<i>Rpl26</i>	ribosomal protein L26	protein-coding gene	3.337
<i>Rps15a</i>	ribosomal protein S15a	protein-coding gene	3.325
<i>Rpl10a</i>	ribosomal protein L10a	protein-coding gene	3.317
<i>Rps13</i>	ribosomal protein S13	protein-coding gene	3.316
<i>Rplp0</i>	ribosomal protein lateral stalk subunit P0	protein-coding gene	3.315
<i>Rps3a1</i>	ribosomal protein S3A1	protein coding gene	3.297

Markers: *Pmel*, *Slc45a2*, *Gpnmb*, *Dct*, *Mlana*, *Hspb1*, *Mitf*, *Pax3*, *Tyr*, *Tfap2a*, *Tyrp1*, *Rab38*, *Bnc2*

7.19 cluster 18 - Endothelial cells (n=42; prob=0.658)

symbol	description	biotype	median
<i>B2m</i>	beta-2-microglobulin	protein-coding gene	3.488
<i>Vim</i>	vimentin	protein-coding gene	3.352
<i>Actb</i>	actin beta	protein-coding gene	3.272
<i>Igfbp7</i>	insulin like growth factor binding protein 7	protein-coding gene	3.266
<i>Rpl3</i>	ribosomal protein L3	protein-coding gene	3.253
<i>Rpl41</i>	ribosomal protein L41	protein-coding gene	3.252
<i>Rps4x</i>	ribosomal protein S4 X-linked	protein-coding gene	3.225
<i>Rps18</i>	ribosomal protein S18	protein-coding gene	3.224
<i>Anxa2</i>	annexin A2	protein-coding gene	3.221
<i>Myl6</i>	myosin light chain 6	protein-coding gene	3.204
<i>Rps28</i>	ribosomal protein S28	protein-coding gene	3.191
<i>Rpl7</i>	ribosomal protein L7	protein-coding gene	3.190
<i>Rpl19</i>	ribosomal protein L19	protein-coding gene	3.159
<i>Rps14</i>	ribosomal protein S14	protein-coding gene	3.136
<i>Actg1</i>	actin gamma 1	protein-coding gene	3.131
<i>Fabp5</i>	fatty acid binding protein 5	protein-coding gene	3.118
<i>Rps3a1</i>	ribosomal protein S3A1	protein coding gene	3.117
<i>Rpl23</i>	ribosomal protein L23	protein-coding gene	3.093
<i>Rpl26</i>	ribosomal protein L26	protein-coding gene	3.084
<i>Rplp0</i>	ribosomal protein lateral stalk subunit P0	protein-coding gene	3.076

Markers: *Igfbp7, Cd9, Cldn5, Hyal2, Gng11, Fabp4, Tm4sf1, S100a10, Lyve1, Egfl7, Timp3, Mmrn1, Eng, Cav1, Cdh5, Pecam1, Thbd, Pdpn, Tie1, Elk3, Tgfbr2, Flt4, Vwf, Calcr1, Id1, Prox1, Icam2, Mgp, Ece1, S100a13, Cd36, Stab1, F8, Epas1, Ramp3, Procr, Robo4, Podxl, Hspg2, Nrp2, Scarf1, Fli1, Cd46, Ets1, Erg, Id3, Prkch, Sgk1, Cd34, Rasgrp3, Ednrb, Kdr, Emp1, Sema3d, Plec, Cd93, Ptprb, Tek, Bmx, Apold1, Cd82, Bdp1, Arap3, Tbx1, Sox7, Nos3, Ctgf, Mmrn2, Acvrl1*

7.20 cluster 19 - Fibroblasts (n=41; prob=0.167)

symbol	description	biotype	median
<i>Actb</i>	actin beta	protein-coding gene	3.525
<i>Vim</i>	vimentin	protein-coding gene	3.412
<i>Actg1</i>	actin gamma 1	protein-coding gene	3.381
<i>Anxa2</i>	annexin A2	protein-coding gene	3.323
<i>Rps18</i>	ribosomal protein S18	protein-coding gene	3.289
<i>Rpl41</i>	ribosomal protein L41	protein-coding gene	3.282
<i>Lgals1</i>	galectin 1	protein-coding gene	3.260
<i>Myl6</i>	myosin light chain 6	protein-coding gene	3.228
<i>Tagln</i>	transgelin	protein-coding gene	3.217
<i>Rps4x</i>	ribosomal protein S4 X-linked	protein-coding gene	3.200
<i>B2m</i>	beta-2-microglobulin	protein-coding gene	3.197
<i>Rpl19</i>	ribosomal protein L19	protein-coding gene	3.183
<i>Rpl3</i>	ribosomal protein L3	protein-coding gene	3.172
<i>Tuba1b</i>	tubulin alpha 1b	protein-coding gene	3.171
<i>Rplp0</i>	ribosomal protein lateral stalk subunit P0	protein-coding gene	3.166
<i>Rps27</i>	ribosomal protein S27	protein-coding gene	3.155
<i>S100a6</i>	S100 calcium binding protein A6	protein-coding gene	3.154
<i>Calm2</i>	calmodulin 2	protein-coding gene	3.153
<i>S100a11</i>	S100 calcium binding protein A11	protein-coding gene	3.145
<i>Rpl7</i>	ribosomal protein L7	protein-coding gene	3.145

Markers: *Vim, Fn1, Sparc, Gsn, Fstl1, Hif1a, Cd44, Ctgf, Serpinh1, Ercc1, Cthrc1, Nnmt, Cd248, Lox, Col1a2, Nt5e, Col1a1, Palld, Fkbp10, Thy1, Col6a2, Cyp1b1, Grem1, Klf6, Stat3, Fap, Ckap4, Lamc1, Mmp2, Pip4k2a, Prrx1, Col12a1, Gstm5, Thbs2, Nfat5, P4ha1, Zeb2, Tcf4, Mmp14, Col6a3, Igfbp6, Col5a1, Ctsk, Lamb1, Mfap5, Egr1, Col5a2*

7.21 cluster 20 - Podocytes (n=35; prob=0.09)

symbol	description	biotype	median
<i>Sparc</i>	secreted protein acidic and cysteine rich	protein-coding gene	3.409
<i>S100b</i>	S100 calcium binding protein B	protein-coding gene	3.295
<i>B2m</i>	beta-2-microglobulin	protein-coding gene	3.279
<i>Igfbp3</i>	insulin like growth factor binding protein 3	protein-coding gene	3.259
<i>Timp1</i>	TIMP metalloproteinase inhibitor 1	protein-coding gene	3.241
<i>Ubc</i>	ubiquitin C	protein-coding gene	3.239
<i>Cd63</i>	CD63 molecule	protein-coding gene	3.221
<i>Rnase1</i>	ribonuclease A family member 1, pancreatic	protein-coding gene	3.215
<i>S100a6</i>	S100 calcium binding protein A6	protein-coding gene	3.176
<i>Rpl19</i>	ribosomal protein L19	protein-coding gene	3.165
<i>Rpl41</i>	ribosomal protein L41	protein-coding gene	3.155
<i>Rps18</i>	ribosomal protein S18	protein-coding gene	3.152
<i>Mif</i>	macrophage migration inhibitory factor	protein-coding gene	3.138
<i>Ppib</i>	peptidylprolyl isomerase B	protein-coding gene	3.122
<i>Actb</i>	actin beta	protein-coding gene	3.115
<i>Actg1</i>	actin gamma 1	protein-coding gene	3.093
<i>Ssr4</i>	signal sequence receptor subunit 4	protein-coding gene	3.092
<i>Apod</i>	apolipoprotein D	protein-coding gene	3.087
<i>Rpl3</i>	ribosomal protein L3	protein-coding gene	3.086
<i>Cst3</i>	cystatin C	protein-coding gene	3.086

Markers: *Emc7, Tob1, Pros1, Hspb8, Etf1, Adm, Lamb2, Podxl, Emc2, Golim4, Met, Plod2, Trib2, Wsb2, Kank1, Qk, Aif1, Dpp4, Optn, Ctnnal1, Dock5, Zbtb8a, Itga3, Srgap1, Rab3b*

7.22 cluster 21 - Endothelial cells (n=32; prob=0.935)

symbol	description	biotype	median
<i>B2m</i>	beta-2-microglobulin	protein-coding gene	3.479
<i>Cd74</i>	CD74 molecule	protein-coding gene	3.339
<i>Rps18</i>	ribosomal protein S18	protein-coding gene	3.293
<i>Rpl3</i>	ribosomal protein L3	protein-coding gene	3.268
<i>Rpl41</i>	ribosomal protein L41	protein-coding gene	3.252
<i>Vim</i>	vimentin	protein-coding gene	3.248
<i>Rps28</i>	ribosomal protein S28	protein-coding gene	3.227
<i>Rpl7</i>	ribosomal protein L7	protein-coding gene	3.224
<i>Rpl19</i>	ribosomal protein L19	protein-coding gene	3.222
<i>Igfbp7</i>	insulin like growth factor binding protein 7	protein-coding gene	3.208
<i>Rps4x</i>	ribosomal protein S4 X-linked	protein-coding gene	3.198
<i>Actb</i>	actin beta	protein-coding gene	3.190
<i>Rps27</i>	ribosomal protein S27	protein-coding gene	3.161
<i>Rps14</i>	ribosomal protein S14	protein-coding gene	3.158
<i>Eng</i>	endoglin	protein-coding gene	3.152
<i>Actg1</i>	actin gamma 1	protein-coding gene	3.152
<i>Gm10036</i>	uncharacterized transcript		3.143
<i>Sparcl1</i>	SPARC like 1	protein-coding gene	3.133
<i>Rps11</i>	ribosomal protein S11	protein-coding gene	3.133
<i>Ubc</i>	ubiquitin C	protein-coding gene	3.132

Markers: *Igfbp7, Eng, Sparcl1, Ramp3, Ptvap, Hyal2, Rnase1, Sparc, Egfl7, Id1, Vwf, Id3, Gng11, Epas1, Mgp, Clec14a, Cd34, S100a10, Tm4sf1, Cdh5, Hspg2, Pecam1, Icam2, Notch4, Cd9, Cd93, Srgn, Cd46, S100a13, Ece1, Cldn5, Calcr1, Emcn, Erg, Elk3, Stab1, Palmd, Aplnr, Cav1, Emp1, Mcam, Tie1, Mgl1, Tgfbr2, Robo4, Fli1, Timp3, Prkch, Kdr, Ptpnb, Sgk1, Podxl, Clic4, Tek, Thbd, Mmrn2, Icam1, Plec, Nrp2, Apold1, Vwa1, Cd82, Arhgef15, Ets1, Flt1, Plac8, Acvrl1, Scarf1, Nostrin, Nos3, Spns2, Rasgrp3, Rbp7, Sox7, Slc9a3r2, Pdgfb, Arap3, Lifr, Cd36, C7, Bdp1, Cd300lg, Npr1, Meox2, Flt4*

7.23 cluster 22 - B cells (n=26; prob=0.181)

symbol	description	biotype	median
<i>Cd74</i>	CD74 molecule	protein-coding gene	3.554
<i>Actb</i>	actin beta	protein-coding gene	3.494
<i>Actg1</i>	actin gamma 1	protein-coding gene	3.374
<i>Rps4x</i>	ribosomal protein S4 X-linked	protein-coding gene	3.301
<i>Rps3a1</i>	ribosomal protein S3A1	protein coding gene	3.276
<i>Rpl3</i>	ribosomal protein L3	protein-coding gene	3.272
<i>Rpl7</i>	ribosomal protein L7	protein-coding gene	3.261
<i>Rps18</i>	ribosomal protein S18	protein-coding gene	3.241
<i>Laptm5</i>	lysosomal protein transmembrane 5	protein-coding gene	3.228
<i>B2m</i>	beta-2-microglobulin	protein-coding gene	3.226
<i>Rpl41</i>	ribosomal protein L41	protein-coding gene	3.224
<i>Rps5</i>	ribosomal protein S5	protein-coding gene	3.220
<i>Rpl19</i>	ribosomal protein L19	protein-coding gene	3.206
<i>Arhgdib</i>	Rho GDP dissociation inhibitor beta	protein-coding gene	3.189
<i>Coro1a</i>	coronin 1A	protein-coding gene	3.181
<i>Rps27</i>	ribosomal protein S27	protein-coding gene	3.181
<i>Rps16</i>	ribosomal protein S16	protein-coding gene	3.170
<i>Rps11</i>	ribosomal protein S11	protein-coding gene	3.156
<i>Rpl10a</i>	ribosomal protein L10a	protein-coding gene	3.155
<i>Rpl4</i>	ribosomal protein L4	protein-coding gene	3.142

Markers: *Cd74*, *Cd79b*, *Ms4a1*, *Lrmp*, *Cxcr4*, *Cd79a*, *Cd19*, *Ltb*, *Vpreb3*, *Ptpnc*, *Eaf2*, *H2-Ob*, *Cd22*, *Cd40*, *Cd38*, *Pou2af1*, *Hvcn1*, *Klhl6*, *Blnk*, *Pax5*, *Bcl11a*, *Rasgrp3*, *Mzb1*, *Cd27*, *Birc3*, *Slamf6*, *Edem1*, *Pxk*, *Bach2*, *H2-Oa*, *Spn*, *Fam129c*, *Ebf1*, *Tnfrsf9*, *Fchsd2*, *Dok3*, *Smad2*, *Fli1*, *Cd72*, *Il21r*

7.24 cluster 23 - B cells (n=25; prob=0.581)

symbol	description	biotype	median
<i>B2m</i>	beta-2-microglobulin	protein-coding gene	3.528
<i>Ssr4</i>	signal sequence receptor subunit 4	protein-coding gene	3.422
<i>Mzb1</i>	marginal zone B and B1 cell specific protein	protein-coding gene	3.373
<i>Rpl41</i>	ribosomal protein L41	protein-coding gene	3.293
<i>Cd74</i>	CD74 molecule	protein-coding gene	3.288
<i>Rps18</i>	ribosomal protein S18	protein-coding gene	3.214
<i>Xbp1</i>	X-box binding protein 1	protein-coding gene	3.190
<i>Herpud1</i>	homocysteine inducible ER protein with ubiquitin like domain 1	protein-coding gene	3.186
<i>Rps4x</i>	ribosomal protein S4 X-linked	protein-coding gene	3.185
<i>Rps5</i>	ribosomal protein S5	protein-coding gene	3.171
<i>Ubc</i>	ubiquitin C	protein-coding gene	3.161
<i>Rpl3</i>	ribosomal protein L3	protein-coding gene	3.158
<i>Rps11</i>	ribosomal protein S11	protein-coding gene	3.148
<i>Fkbp11</i>	FK506 binding protein 11	protein-coding gene	3.138
<i>Ppib</i>	peptidylprolyl isomerase B	protein-coding gene	3.133
<i>Sec11c</i>	SEC11 homolog C, signal peptidase complex subunit	protein-coding gene	3.128
<i>Rpl8</i>	ribosomal protein L8	protein-coding gene	3.123
<i>Rps14</i>	ribosomal protein S14	protein-coding gene	3.123
<i>Hsp90b1</i>	heat shock protein 90 beta family member 1	protein-coding gene	3.123
<i>Rplp0</i>	ribosomal protein lateral stalk subunit P0	protein-coding gene	3.107

Markers: *Mzb1*, *Cd74*, *Fkbp11*, *Derl3*, *Cd79a*, *Cxcr4*, *Cd38*, *Creld2*, *Sec61a1*, *Pou2af1*, *Tnfrsf17*, *Sdc1*, *Cd79b*, *Eaf2*, *Txnrc11*, *Trp53inp1*, *Cd27*, *Blnk*, *Edem1*, *Dok3*, *Edem2*, *Birc3*, *Ptpnc1*, *Spn*, *Fchs2*, *Klhl6*, *Tnfrsf9*, *Il21r*, *Slamf6*, *Ralgps2*, *H2-Oa*

7.25 cluster 24 - T memory cells (n=19; prob=0.177)

symbol	description	biotype	median
<i>Cd74</i>	CD74 molecule	protein-coding gene	3.557
<i>B2m</i>	beta-2-microglobulin	protein-coding gene	3.531
<i>Rps27</i>	ribosomal protein S27	protein-coding gene	3.375
<i>Rpl41</i>	ribosomal protein L41	protein-coding gene	3.375
<i>Rps3a1</i>	ribosomal protein S3A1	protein coding gene	3.332
<i>Rpl19</i>	ribosomal protein L19	protein-coding gene	3.328
<i>Rpl3</i>	ribosomal protein L3	protein-coding gene	3.311
<i>Rps4x</i>	ribosomal protein S4 X-linked	protein-coding gene	3.307
<i>Rps18</i>	ribosomal protein S18	protein-coding gene	3.303
<i>Rps14</i>	ribosomal protein S14	protein-coding gene	3.290
<i>Actb</i>	actin beta	protein-coding gene	3.279
<i>Rps11</i>	ribosomal protein S11	protein-coding gene	3.279
<i>Rps13</i>	ribosomal protein S13	protein-coding gene	3.276
<i>Rps28</i>	ribosomal protein S28	protein-coding gene	3.253
<i>Rps5</i>	ribosomal protein S5	protein-coding gene	3.251
<i>Rplp0</i>	ribosomal protein lateral stalk subunit P0	protein-coding gene	3.238
<i>Irf8</i>	interferon regulatory factor 8	protein-coding gene	3.237
<i>Gpr183</i>	G protein-coupled receptor 183	protein-coding gene	3.235
<i>Rpl7</i>	ribosomal protein L7	protein-coding gene	3.229
<i>Rps25</i>	ribosomal protein S25	protein-coding gene	3.217

Markers: *Sell*, *Cd4*, *Ptprcap*, *Ltb*, *Arhgap15*, *Sept1*, *Ptprc*, *Apbb1ip*, *Cytip*, *Ikzf1*, *Arhgef1*, *Bin2*, *Ccr6*, *Enpp1*, *Kpna4*, *Satb1*

8 Appendix - Top 10 cell type predictions

8.1 cluster 0

cell type	probability
T cells	0.472
T memory cells	0.387
B cells	0.011
Neutrophils	0.007
Acinar cells	0.006
Macrophages	0.005
NK cells	0.005
Germ cells	0.004
Clara cells	0.004
Gamma delta T cells	0.004

8.2 cluster 1

cell type	probability
T cells	0.908
NK cells	0.011
T memory cells	0.006
Gamma delta T cells	0.005
Dendritic cells	0.003
B cells	0.002
Macrophages	0.002
Neutrophils	0.002
Alveolar macrophages	0.002
Germ cells	0.002

8.3 cluster 2

cell type	probability
B cells	0.288
T cells	0.070
T memory cells	0.061
Unknown	0.056
Macrophages	0.027
Neutrophils	0.025
Acinar cells	0.023
Dendritic cells	0.021
Clara cells	0.017
Microglia	0.016

8.4 cluster 3

cell type	probability
Melanocytes	0.072
Schwann cells	0.063
Podocytes	0.057
Fibroblasts	0.028
Ependymal cells	0.026
Endothelial cells	0.023
Unknown	0.023
Enteroendocrine cells	0.022
Myofibroblasts	0.022
Cholangiocytes	0.019

8.5 cluster 4

cell type	probability
T cells	0.912
T memory cells	0.019
NK cells	0.005
Gamma delta T cells	0.003
Dendritic cells	0.002
B cells	0.002
Unknown	0.002
Neutrophils	0.002
Macrophages	0.002
Alveolar macrophages	0.002

8.6 cluster 5

cell type	probability
Macrophages	0.926
Dendritic cells	0.032
Neutrophils	0.004
Microglia	0.003
Alveolar macrophages	0.003
Monocytes	0.002
Platelets	0.001
Melanocytes	0.001
T memory cells	0.001
Basophils	0.001

8.7 cluster 6

cell type	probability
Podocytes	0.078
Fibroblasts	0.075
Melanocytes	0.052
Peri-islet Schwann cells	0.032
Unknown	0.027
Schwann cells	0.024
Ependymal cells	0.024
Germ cells	0.022
Myofibroblasts	0.022
Embryonic stem cells	0.020

8.8 cluster 7

cell type	probability
Melanocytes	0.056
Podocytes	0.046
Peri-islet Schwann cells	0.038
Schwann cells	0.033
Fibroblasts	0.028
Neurons	0.025
Unknown	0.024
Germ cells	0.023
Ependymal cells	0.021
Embryonic stem cells	0.021

8.9 cluster 8

cell type	probability
Podocytes	0.053
Melanocytes	0.043
Peri-islet Schwann cells	0.038
Embryonic stem cells	0.033
Germ cells	0.031
Fibroblasts	0.029
Unknown	0.025
Neurons	0.023
Ependymal cells	0.023
Schwann cells	0.022

8.10 cluster 9

cell type	probability
Podocytes	0.080
Peri-islet Schwann cells	0.057
Melanocytes	0.044
Embryonic stem cells	0.033
Germ cells	0.029
Fibroblasts	0.028
Kidney progenitor cells	0.024
Schwann cells	0.023
Neurons	0.023
Myofibroblasts	0.021

8.11 cluster 10

cell type	probability
Podocytes	0.057
Melanocytes	0.050
Peri-islet Schwann cells	0.037
Schwann cells	0.034
Fibroblasts	0.029
Unknown	0.026
Germ cells	0.024
Neurons	0.023
Ependymal cells	0.023
Myofibroblasts	0.022

8.12 cluster 11

cell type	probability
T cells	0.430
NK cells	0.268
Gamma delta T cells	0.033
T memory cells	0.019
Neutrophils	0.016
Dendritic cells	0.013
Alveolar macrophages	0.011
Macrophages	0.010
Basophils	0.007
Platelets	0.007

8.13 cluster 12

cell type	probability
T cells	0.823
T memory cells	0.099
Dendritic cells	0.006
Macrophages	0.004
B cells	0.003
Neutrophils	0.003
NK cells	0.003
Alveolar macrophages	0.003
Gamma delta T cells	0.002
Platelets	0.002

8.14 cluster 13

cell type	probability
T memory cells	0.783
T cells	0.027
Dendritic cells	0.015
B cells	0.014
Podocytes	0.009
Melanocytes	0.009
Neutrophils	0.006
Macrophages	0.006
Hematopoietic stem cells	0.005
Germ cells	0.004

8.15 cluster 14

cell type	probability
T cells	0.433
T memory cells	0.259
NK cells	0.055
Dendritic cells	0.015
Gamma delta T cells	0.013
Neutrophils	0.011
Melanocytes	0.010
B cells	0.008
Hematopoietic stem cells	0.007
Unknown	0.007

8.16 cluster 15

cell type	probability
Melanocytes	0.058
Podocytes	0.041
Unknown	0.032
Germ cells	0.029
Peri-islet Schwann cells	0.028
Ependymal cells	0.026
Schwann cells	0.025
Embryonic stem cells	0.025
Fibroblasts	0.025
Endothelial cells	0.024

8.17 cluster 16

cell type	probability
Fibroblasts	0.990
Podocytes	0.0005
Myofibroblasts	0.0005
Pericytes	0.0005
Smooth muscle cells	0.0004
Mesothelial cells	0.0004
Unknown	0.0004
Melanocytes	0.0004
Endothelial cells (aorta)	0.0003
Myoepithelial cells	0.0003

8.18 cluster 17

cell type	probability
Melanocytes	0.083
Schwann cells	0.058
Unknown	0.038
Fibroblasts	0.032
Epithelial cells	0.027
Enteroendocrine cells	0.025
Endothelial cells	0.025
Macrophages	0.022
Keratinocytes	0.020
Podocytes	0.020

8.19 cluster 18

cell type	probability
Endothelial cells	0.658
Endothelial cells (aorta)	0.046
Podocytes	0.022
Fibroblasts	0.017
Pericytes	0.011
Melanocytes	0.011
Müller cells	0.009
Smooth muscle cells	0.008
Myofibroblasts	0.007
Epithelial cells	0.007

8.20 cluster 19

cell type	probability
Fibroblasts	0.167
Podocytes	0.062
Melanocytes	0.043
Unknown	0.037
Smooth muscle cells	0.030
Peri-islet Schwann cells	0.028
Platelets	0.023
Myofibroblasts	0.023
Endothelial cells	0.019
Schwann cells	0.019

8.21 cluster 20

cell type	probability
Podocytes	0.090
Neurons	0.052
Peri-islet Schwann cells	0.047
Melanocytes	0.042
Fibroblasts	0.037
Schwann cells	0.034
Ependymal cells	0.027
Unknown	0.023
Myofibroblasts	0.023
Embryonic stem cells	0.020

8.22 cluster 21

cell type	probability
Endothelial cells	0.935
Endothelial cells (aorta)	0.017
Pericytes	0.003
Podocytes	0.003
Fibroblasts	0.002
Melanocytes	0.002
Schwann cells	0.001
Smooth muscle cells	0.001
Unknown	0.001
Epithelial cells	0.001

8.23 cluster 22

cell type	probability
B cells	0.181
Unknown	0.091
T cells	0.078
Dendritic cells	0.042
T memory cells	0.039
Neutrophils	0.032
Macrophages	0.024
Microglia	0.024
Platelets	0.017
Acinar cells	0.016

8.24 cluster 23

cell type	probability
B cells	0.581
Unknown	0.021
T memory cells	0.018
Neutrophils	0.015
Macrophages	0.014
T cells	0.012
Platelets	0.012
Germ cells	0.010
Podocytes	0.009
Dendritic cells	0.009

8.25 cluster 24

cell type	probability
T memory cells	0.177
Dendritic cells	0.159
Unknown	0.046
Neutrophils	0.043
Macrophages	0.034
Microglia	0.032
T cells	0.031
B cells	0.027
Alveolar macrophages	0.022
Podocytes	0.013

9 Appendix - cell to cluster assignments

1. cluster cell	72. 0 Cy72_CD45_E01_S721_c...	143. 0 cy80-Cd45-pos-Pd1-ne...
2. 0 Cy72_CD45_D09_S717_c...	73. 0 Cy72_CD45_B12_S696_c...	144. 0 cy80-Cd45-pos-PD1-po...
3. 0 CY58_1_CD45_D03_S999...	74. 0 Cy72_CD45_D06_S714_c...	145. 0 cy80-Cd45-pos-Pd1-ne...
4. 0 Cy72_CD45_C01_S697_c...	75. 0 CY58_1_CD45_G12_S104...	146. 0 cy80-Cd45-pos-Pd1-ne...
5. 0 Cy81_FNA_CD45_C12_S2...	76. 0 Cy72_CD45_H08_S764_c...	147. 0 cy80-Cd45-pos-Pd1-ne...
6. 0 Cy74_CD45_C11_S419_c...	77. 0 Cy81_FNA_CD45_G06_S2...	148. 0 cy80-Cd45-pos-Pd1-ne...
7. 0 Cy81_FNA_CD45_D07_S2...	78. 0 Cy81_FNA_CD45_A11_S2...	149. 0 cy80-Cd45-pos-Pd1-ne...
8. 0 Cy72_CD45_D07_S715_c...	79. 0 Cy71_CD45_H09_S573_c...	150. 0 cy80-Cd45-pos-Pd1-ne...
9. 0 Cy72_CD45_E08_S728_c...	80. 0 Cy72_CD45_G10_S754_c...	151. 0 cy80-Cd45-pos-PD1-po...
10. 0 Cy72_CD45_E02_S722_c...	81. 0 Cy74_CD45_G09_S465_c...	152. 0 cy80-Cd45-pos-Pd1-ne...
11. 0 Cy71_CD45_B08_S500_c...	82. 0 Cy74_CD45_F11_S455_c...	153. 0 cy80-Cd45-pos-Pd1-ne...
12. 0 Cy72_CD45_F12_S744_c...	83. 0 Cy72_CD45_E03_S723_c...	154. 0 cy79-p1-CD45-pos-PD1...
13. 0 Cy72_CD45_C07_S703_c...	84. 0 Cy72_CD45_B11_S695_c...	155. 0 cy79-p1-CD45-pos-PD1...
14. 0 Cy81_FNA_CD45_D02_S2...	85. 0 Cy74_CD45_D09_S429_c...	156. 0 cy79-p1-CD45-pos-PD1...
15. 0 CY58_1_CD45_A10_S970...	86. 0 Cy72_CD45_H09_S765_c...	157. 0 cy79-p1-CD45-pos-PD1...
16. 0 Cy72_CD45_D12_S720_c...	87. 0 Cy72_CD45_G07_S751_c...	158. 0 cy79-p1-CD45-pos-PD1...
17. 0 CY58_1_CD45_F11_S103...	88. 0 Cy72_CD45_G05_S749_c...	159. 0 cy79-p1-CD45-pos-PD1...
18. 0 Cy74_CD45_A04_S388_c...	89. 0 Cy81_FNA_CD45_F05_S2...	160. 0 cy79-p1-CD45-pos-PD1...
19. 0 CY58_1_CD45_B01_S973...	90. 0 Cy72_CD45_B03_S687_c...	161. 0 cy79-p3-CD45-pos-PD1...
20. 0 CY58_1_CD45_F05_S102...	91. 0 Cy72_CD45_C11_S707_c...	162. 0 cy79-p1-CD45-pos-PD1...
21. 0 Cy72_CD45_G12_S756_c...	92. 0 CY58_1_CD45_G06_S103...	163. 0 cy79-p1-CD45-pos-PD1...
22. 0 Cy72_CD45_B02_S686_c...	93. 0 Cy72_CD45_F01_S733_c...	164. 0 cy79-p1-CD45-pos-PD1...
23. 0 Cy72_CD45_E06_S726_c...	94. 0 Cy71_CD45_H03_S567_c...	165. 0 cy79-p1-CD45-pos-PD1...
24. 0 Cy72_CD45_E11_S731_c...	95. 0 CY58_1_CD45_A02_S962...	166. 0 cy79-p1-CD45-pos-PD1...
25. 0 Cy72_CD45_B07_S691_c...	96. 0 CY58_1_CD45_C12_S996...	167. 0 cy79-p3-CD45-pos-PD1...
26. 0 Cy81_FNA_CD45_C06_S2...	97. 0 Cy72_CD45_H01_S757_c...	168. 0 cy79-p3-CD45-pos-PD1...
27. 0 Cy72_CD45_B06_S690_c...	98. 0 Cy72_CD45_A09_S681_c...	169. 0 cy79-p1-CD45-pos-PD1...
28. 0 Cy74_CD45_B03_S399_c...	99. 0 Cy71_CD45_F09_S549_c...	170. 0 cy79-p1-CD45-pos-PD1...
29. 0 Cy72_CD45_D01_S709_c...	100. 0 Cy74_CD45_H09_S477_c...	171. 0 cy79-p1-CD45-pos-PD1...
30. 0 Cy74_CD45_G01_S457_c...	101. 0 Cy81_FNA_CD45_H10_S2...	172. 0 cy79-p1-CD45-pos-PD1...
31. 0 Cy81_FNA_CD45_B08_S2...	102. 0 Cy81_FNA_CD45_G12_S2...	173. 0 cy79-p1-CD45-pos-PD1...
32. 0 Cy72_CD45_H06_S762_c...	103. 0 Cy81_FNA_CD45_B05_S2...	174. 0 cy79-p1-CD45-pos-PD1...
33. 0 CY58_1_CD45_D04_S100...	104. 0 Cy74_CD45_H10_S478_c...	175. 0 cy79-p1-CD45-pos-PD1...
34. 0 Cy72_CD45_A11_S683_c...	105. 0 Cy72_CD45_G02_S746_c...	176. 0 cy79-p4-CD45-neg-PDL...
35. 0 Cy72_CD45_E10_S730_c...	106. 0 CY58_1_CD45_B12_S984...	177. 0 cy80-CD45-neg-B11-S8...
36. 0 Cy71_CD45_C01_S505_c...	107. 0 Cy72_CD45_D08_S716_c...	178. 0 cy79-p5-CD45-pos-PD1...
37. 0 CY58_1_CD45_G09_S104...	108. 0 Cy72_CD45_C05_S701_c...	179. 0 cy82-CD45-pos-1-F08...
38. 0 Cy74_CD45_G04_S460_c...	109. 0 Cy71_CD45_G01_S553_c...	180. 0 cy82-CD45-pos-1-H09...
39. 0 CY58_1_CD45_C03_S987...	110. 0 Cy72_CD45_F08_S740_c...	181. 0 cy79-p4-CD45-pos-PD1...
40. 0 Cy72_CD45_F05_S737_c...	111. 0 Cy71_CD45_G07_S559_c...	182. 0 cy79-p4-CD45-pos-PD1...
41. 0 Cy74_CD45_D03_S423_c...	112. 0 Cy72_CD45_H04_S760_c...	183. 0 cy82-CD45-pos-3-C07...
42. 0 Cy74_CD45_G03_S459_c...	113. 0 Cy81_FNA_CD45_D05_S2...	184. 0 cy79-p4-CD45-pos-PD1...
43. 0 Cy81_FNA_CD45_A07_S1...	114. 0 Cy72_CD45_E12_S732_c...	185. 0 cy79-p5-CD45-pos-PD1...
44. 0 Cy72_CD45_B05_S689_c...	115. 0 Cy74_CD45_E01_S433_c...	186. 0 cy82-CD45-pos-1-C04...
45. 0 CY58_1_CD45_F03_S102...	116. 0 Cy72_CD45_E05_S725_c...	187. 0 cy79-p4-CD45-pos-PD1...
46. 0 Cy81_Bulk_CD45_G05_S...	117. 0 Cy72_CD45_A08_S680_c...	188. 0 cy79-p4-CD45-pos-PD1...
47. 0 Cy72_CD45_F02_S734_c...	118. 0 Cy72_CD45_F11_S743_c...	189. 0 cy82-CD45-pos-1-D05...
48. 0 Cy81_FNA_CD45_C02_S2...	119. 0 Cy72_CD45_C09_S705_c...	190. 0 cy79-p4-CD45-pos-PD1...
49. 0 Cy72_CD45_C10_S706_c...	120. 0 Cy72_CD45_F09_S741_c...	191. 0 cy82-CD45-pos-1-E06...
50. 0 Cy81_FNA_CD45_A05_S1...	121. 0 Cy81_FNA_CD45_H07_S2...	192. 0 cy82-CD45-pos-1-B09...
51. 0 Cy72_CD45_F07_S739_c...	122. 0 Cy81_FNA_CD45_B07_S2...	193. 0 cy82-CD45-pos-3-C06...
52. 0 Cy71_CD45_C08_S512_c...	123. 0 CY58_1_CD45_C06_S990...	194. 0 cy82-CD45-pos-1-A07...
53. 0 CY58_1_CD45_H08_S105...	124. 0 Cy72_CD45_A02_S674_c...	195. 0 cy82-CD45-pos-1-E09...
54. 0 CY58_1_CD45_F08_S102...	125. 0 Cy72_CD45_H11_S767_c...	196. 0 cy72-CD45-pos-H11-S9...
55. 0 CY58_1_CD45_D06_S100...	126. 0 Cy72_CD45_H12_S864_c...	197. 0 cy72-CD45-pos-C08-S8...
56. 0 Cy72_CD45_D04_S712_c...	127. 0 Cy81_FNA_CD45_H09_S2...	198. 0 cy82-CD45-pos-2-B09...
57. 0 Cy72_CD45_C12_S708_c...	128. 0 cy80-Cd45-pos-Pd1-ne...	199. 0 cy72-CD45-pos-B07-S8...
58. 0 Cy72_CD45_E04_S724_c...	129. 0 cy80-Cd45-pos-PD1-po...	200. 0 cy72-CD45-pos-D03-S9...
59. 0 Cy74_CD45_D10_S430_c...	130. 0 cy80-Cd45-pos-Pd1-ne...	201. 0 cy72-CD45-pos-B03-S8...
60. 0 Cy72_CD45_D11_S719_c...	131. 0 cy80-Cd45-pos-Pd1-ne...	202. 0 cy53-1-CD45-pos-1-H0...
61. 0 Cy72_CD45_H03_S759_c...	132. 0 cy80-Cd45-pos-PD1-po...	203. 0 cy72-CD45-pos-G10-S9...
62. 0 Cy72_CD45_C02_S698_c...	133. 0 cy80-Cd45-pos-Pd1-ne...	204. 0 cy72-CD45-pos-F07-S9...
63. 0 Cy72_CD45_F03_S735_c...	134. 0 cy80-Cd45-pos-Pd1-ne...	205. 0 cy53-1-CD45-pos-1-E0...
64. 0 Cy72_CD45_G06_S750_c...	135. 0 cy80-Cd45-pos-Pd1-ne...	206. 0 cy72-CD45-pos-A06-S8...
65. 0 Cy81_FNA_CD45_B06_S2...	136. 0 cy80-Cd45-pos-Pd1-ne...	207. 0 cy72-CD45-pos-C02-S8...
66. 0 CY58_1_CD45_B10_S982...	137. 0 cy80-Cd45-pos-Pd1-ne...	208. 0 cy72-CD45-pos-E01-S9...
67. 0 Cy72_CD45_A10_S682_c...	138. 0 cy80-Cd45-pos-Pd1-ne...	209. 0 cy53-1-CD45-pos-1-B1...
68. 0 Cy72_CD45_A12_S684_c...	139. 0 cy80-Cd45-pos-Pd1-ne...	210. 0 cy72-CD45-pos-E07-S9...
69. 0 CY58_1_CD45_G02_S103...	140. 0 cy80-Cd45-pos-PD1-po...	211. 0 cy72-CD45-pos-H10-S9...
70. 0 CY58_1_CD45_G03_S103...	141. 0 cy80-Cd45-pos-Pd1-ne...	212. 0 cy58-1-CD45-pos-B02...
71. 0 Cy72_CD45_D10_S718_c...	142. 0 cy80-Cd45-pos-Pd1-ne...	213. 0 cy72-CD45-pos-A08-S8...
		214. 0 cy72-CD45-pos-E08-S9...
		215. 0 cy72-CD45-pos-H01-S9...
		216. 0 cy58-1-CD45-pos-H02...
		217. 0 cy72-CD45-pos-F03-S9...
		218. 0 cy72-CD45-pos-B09-S8...
		219. 0 cy72-CD45-pos-A07-S8...

925. 1 cy79-p5-CD45-pos-PD1...	1002. 1 cy58-1-CD45-pos-D06-...	1079. 1 Cy67-CD45pos-S2-H1_S...
926. 1 cy79-p4-CD45-pos-PD1...	1003. 1 cy74-CD45-pos-G03-S7...	1080. 1 CY65_NEG_E_AGAACATT...
927. 1 cy79-p4-CD45-pos-PD1...	1004. 1 cy74-CD45-pos-C05-S7...	1081. 1 CY65_NEG_E_AGAACATT...
928. 1 cy79-p5-CD45-pos-PD1...	1005. 1 cy58-1-CD45-pos-A07-...	1082. 1 CY65_NEG_E_AGAACATT...
929. 1 cy79-p5-CD45-pos-PD1...	1006. 1 cy74-CD45-pos-A09-S6...	1083. 1 CY65_NEG_E_AGAACATT...
930. 1 cy79-p5-CD45-pos-PD1...	1007. 1 cy74-CD45-pos-D02-S7...	1084. 1 CY65_POS_A_AGAACATT...
931. 1 cy79-p5-CD45-pos-PD1...	1008. 1 cy74-CD45-pos-F12-S7...	1085. 1 CY65_POS_A_AGAACATT...
932. 1 cy79-p4-CD45-pos-PD1...	1009. 1 cy74-CD45-pos-B06-S6...	1086. 1 CY65_POS_A_AGAACATT...
933. 1 cy79-p4-CD45-pos-PD1...	1010. 1 cy58-1-CD45-pos-C12-...	1087. 1 CY65_POS_A_AGGATGTG...
934. 1 cy79-p5-CD45-pos-PD1...	1011. 1 cy74-CD45-pos-C09-S7...	1088. 1 CY65_POS_B_AGGATGTG...
935. 1 cy79-p5-CD45-pos-PD1...	1012. 1 cy80-CD45-pos-PD1-po...	1089. 1 CY65_POS_G_CAAGGCGA...
936. 1 cy79-p5-CD45-pos-PD1...	1013. 1 cy58-1-CD45-pos-H01-...	1090. 1 CY65_POS_H_CAAGGCGA...
937. 1 cy82-CD45-pos-3-H10-...	1014. 1 cy74-CD45-pos-B05-S6...	1091. 1 CY65_POS_H_CAAGGCGA...
938. 1 cy79-p4-CD45-pos-PD1...	1015. 1 cy82-CD45-pos-2-A07-...	1092. 1 CY65_POS_H_CAAGGCGA...
939. 1 cy79-p5-CD45-pos-PD1...	1016. 1 cy74-CD45-pos-E02-S7...	1093. 1 CY67_NEG_A_CAAGGCGA...
940. 1 cy79-p5-CD45-pos-PD1...	1017. 1 cy58-1-CD45-pos-F03-...	1094. 1 CY67_NEG_A_CAGAGAGG...
941. 1 cy79-p5-CD45-pos-PD1...	1018. 1 cy74-CD45-pos-G11-S7...	1095. 1 CY67_NEG_A_CAGAGAGG...
942. 1 cy79-p4-CD45-pos-PD1...	1019. 1 cy58-1-CD45-pos-G09-...	1096. 1 CY67_NEG_B_CAGAGAGG...
943. 1 cy79-p4-CD45-pos-PD1...	1020. 1 cy74-CD45-pos-C07-S7...	1097. 1 cy80-CD45-neg-F02-S4...
944. 1 cy79-p5-CD45-pos-PD1...	1021. 1 cy58-1-CD45-pos-E08-...	1098. 1 cy80-CD45-neg-A09-S3...
945. 1 cy79-p4-CD45-pos-PD1...	1022. 1 cy74-CD45-pos-E03-S7...	1099. 1 cy84-Met-CD45-pos-F0...
946. 1 cy79-p5-CD45-pos-PD1...	1023. 1 cy53-1-CD45-pos-2-B0...	1100. 1 cy80-CD45-neg-D03-S4...
947. 1 cy79-p5-CD45-pos-PD1...	1024. 1 cy74-CD45-pos-G07-S7...	1101. 1 cy80-CD45-neg-G01-S4...
948. 1 cy79-p5-CD45-pos-PD1...	1025. 1 cy74-CD45-pos-F03-S7...	1102. 1 cy80-CD45-neg-C12-S4...
949. 1 cy79-p4-CD45-pos-PD1...	1026. 1 cy80-CD45-pos-PD1-po...	1103. 1 cy80-CD45-neg-H07-S4...
950. 1 cy79-p4-CD45-pos-PD1...	1027. 1 cy74-CD45-pos-F01-S7...	1104. 1 cy80-CD45-neg-C05-S4...
951. 1 cy79-p5-CD45-pos-PD1...	1028. 1 cy53-1-CD45-pos-1-B0...	1105. 1 cy80-CD45-neg-A03-S3...
952. 1 cy79-p4-CD45-pos-PD1...	1029. 1 cy74-CD45-pos-E09-S7...	1106. 1 cy80-CD45-neg-H11-S4...
953. 1 cy79-p5-CD45-pos-PD1...	1030. 1 cy74-CD45-pos-A07-S6...	1107. 1 cy80-CD45-neg-B08-S4...
954. 1 cy79-p4-CD45-pos-PD1...	1031. 1 cy58-1-CD45-pos-F01-...	1108. 1 cy80-CD45-neg-E07-S4...
955. 1 cy79-p4-CD45-pos-PD1...	1032. 1 cy58-1-CD45-pos-D02-...	1109. 1 cy84_Primary_CD45_po...
956. 1 cy79-p5-CD45-pos-PD1...	1033. 1 cy80-CD45-pos-PD1-po...	1110. 1 cy84_Primary_CD45_po...
957. 1 cy79-p5-CD45-pos-PD1...	1034. 1 cy74-CD45-pos-G08-S7...	1111. 1 cy84_Primary_CD45_po...
958. 1 cy79-p5-CD45-pos-PD1...	1035. 1 cy58-1-CD45-pos-A05-...	1112. 1 cy84_Primary_CD45_po...
959. 1 cy79-p5-CD45-pos-PD1...	1036. 1 cy74-CD45-pos-E05-S7...	1113. 1 cy88_cd_45_pos_F11_S...
960. 1 cy79-p4-CD45-pos-PD1...	1037. 1 cy58-1-CD45-pos-H04-...	1114. 1 cy88_cd_45_pos_3_C01...
961. 1 cy79-p4-CD45-pos-PD1...	1038. 1 cy58-1-CD45-pos-B11-...	1115. 1 cy60_1_cd_45_pos_HC...
962. 1 cy79-p5-CD45-pos-PD1...	1039. 1 cy58-1-CD45-pos-B04-...	1116. 1 cy60_1_cd_45_pos_HC...
963. 1 cy79-p4-CD45-pos-PD1...	1040. 1 cy58-1-CD45-pos-H07-...	1117. 1 cy60_1_cd_45_pos_4_C...
964. 1 cy79-p5-CD45-pos-PD1...	1041. 1 cy74-CD45-pos-D10-S7...	1118. 1 cy88_cd_45_pos_C03_S...
965. 1 cy79-p5-CD45-pos-PD1...	1042. 1 cy58-1-CD45-pos-G06-...	1119. 1 cy60_1_cd_45_pos_3_A...
966. 1 cy79-p5-CD45-pos-PD1...	1043. 1 cy74-CD45-pos-B10-S6...	1120. 1 cy60_1_cd_45_pos_3_B...
967. 1 cy79-p5-CD45-pos-PD1...	1044. 1 cy74-CD45-pos-D06-S7...	1121. 1 cy60_1_cd_45_pos_3_A...
968. 1 cy79-p5-CD45-pos-PD1...	1045. 1 cy80-CD45-pos-PD1-po...	1122. 1 cy60_1_cd_45_pos_4_D...
969. 1 cy79-p4-CD45-pos-PD1...	1046. 1 cy74-CD45-pos-H05-S7...	1123. 1 cy88_cd_45_pos_H11_S...
970. 1 cy79-p5-CD45-pos-PD1...	1047. 1 cy74-CD45-pos-B08-S6...	1124. 1 cy60_1_cd_45_pos_3_C...
971. 1 cy79-p5-CD45-pos-PD1...	1048. 1 cy74-CD45-pos-C01-S6...	1125. 1 cy60_1_cd_45_pos_HC...
972. 1 cy79-p4-CD45-pos-PD1...	1049. 1 cy58-1-CD45-pos-G07-...	1126. 1 cy88_cd_45_pos_3_D03...
973. 1 cy79-p5-CD45-pos-PD1...	1050. 1 cy74-CD45-pos-F09-S7...	1127. 1 cy88_cd_45_pos_F03_S...
974. 1 cy79-p5-CD45-pos-PD1...	1051. 1 cy58-1-CD45-pos-H10-...	1128. 1 cy60_1_cd_45_pos_4_H...
975. 1 cy79-p4-CD45-pos-PD1...	1052. 1 cy80-CD45-pos-PD1-po...	1129. 1 cy88_cd_45_pos_3_D11...
976. 1 cy79-p5-CD45-pos-PD1...	1053. 1 cy58-1-CD45-pos-A08-...	1130. 1 cy60_1_cd_45_pos_3_F...
977. 1 cy79-p5-CD45-pos-PD1...	1054. 1 cy74-CD45-pos-G01-S7...	1131. 1 cy60_1_cd_45_pos_3_C...
978. 1 cy79-p5-CD45-pos-PD1...	1055. 1 cy74-CD45-pos-C08-S7...	1132. 1 cy60_1_cd_45_pos_4_G...
979. 1 cy79-p5-CD45-pos-PD1...	1056. 1 cy74-CD45-pos-F08-S7...	1133. 1 cy60_1_cd_45_pos_3_G...
980. 1 cy79-p5-CD45-pos-PD1...	1057. 1 cy74-CD45-pos-C06-S7...	1134. 1 cy88_cd_45_pos_3_B11...
981. 1 cy79-p4-CD45-pos-PD1...	1058. 1 cy74-CD45-pos-B07-S6...	1135. 1 cy60_1_cd_45_pos_3_D...
982. 1 cy79-p4-CD45-pos-PD1...	1059. 1 cy58-1-CD45-pos-F05-...	1136. 1 cy60_1_cd_45_pos_HC...
983. 1 cy79-p4-CD45-pos-PD1...	1060. 1 cy74-CD45-pos-C10-S7...	1137. 1 cy60_1_cd_45_pos_HC...
984. 1 cy79-p5-CD45-pos-PD1...	1061. 1 cy74-CD45-pos-F10-S7...	1138. 1 cy88_cd_45_pos_G01_S...
985. 1 cy79-p4-CD45-pos-PD1...	1062. 1 cy74-CD45-pos-G05-S7...	1139. 1 CY89A_CD45_POS_4_D02...
986. 1 cy79-p4-CD45-pos-PD1...	1063. 1 cy58-1-CD45-pos-G08-...	1140. 1 CY89A_Core_15_E01_S4...
987. 1 cy79-p5-CD45-pos-PD1...	1064. 1 cy58-1-CD45-pos-G12-...	1141. 1 CY89A_CD45_POS_10_A0...
988. 1 cy79-p4-CD45-pos-PD1...	1065. 1 cy58-1-CD45-pos-H03-...	1142. 1 CY89A_CD45_POS_4_D03...
989. 1 cy79-p4-CD45-pos-PD1...	1066. 1 cy58-1-CD45-pos-D09-...	1143. 1 CY89A_CD45_POS_6_G11...
990. 1 cy79-p5-CD45-pos-PD1...	1067. 1 cy58-1-CD45-pos-B06-...	1144. 1 CY89A_CD45_POS_6_H11...
991. 1 cy79-p5-CD45-pos-PD1...	1068. 1 cy74-CD45-pos-D08-S7...	1145. 1 CY89A_Core_15_F11_S7...
992. 1 cy79-p4-CD45-pos-PD1...	1069. 1 cy74-CD45-pos-F11-S7...	1146. 1 CY89A_CD45_POS_4_A04...
993. 1 cy79-p5-CD45-pos-PD1...	1070. 1 cy74-CD45-pos-D05-S7...	1147. 1 CY89A_Core_15_H06_S9...
994. 1 cy79-p4-CD45-pos-PD1...	1071. 1 cy80-CD45-pos-PD1-po...	1148. 1 CY89A_CD45_POS_4_A12...
995. 1 cy79-p4-CD45-pos-PD1...	1072. 1 cy74-CD45-pos-B01-S6...	1149. 1 CY89A_CD45_POS_6_H04...
996. 1 cy79-p4-CD45-pos-PD1...	1073. 1 cy74-CD45-pos-D01-S7...	1150. 1 CY89A_CD45_POS_6_B12...
997. 1 cy74-CD45-pos-A12-S6...	1074. 1 cy58-1-CD45-pos-F09-...	1151. 1 CY89A_CD45_POS_4_E12...
998. 1 cy58-1-CD45-pos-D08-...	1075. 1 cy58-1-CD45-pos-B12-...	1152. 1 CY89A_Core_15_C10_S3...
999. 1 cy74-CD45-pos-D09-S7...	1076. 1 Cy67-CD45pos-S2-A11...	1153. 1 CY89A_CD45_POS_6_F10...
1000. 1 cy58-1-CD45-pos-D10-...	1077. 1 Cy67-CD45pos-S2-C5_S...	1154. 1 CY89A_Core_15_B06_S1...
1001. 1 cy80-CD45-pos-PD1-po...	1078. 1 Cy67-CD45pos-S2-F11...	1155. 1 CY89A_CD45_POS_6_C08...
		1156. 1 CY89A_Core_15_G06_S7...
		1157. 1 CY89A_CD45_POS_4_D08...
		1158. 1 CY89A_CD45_POS_6_B08...
		1159. 1 CY89A_CD45_POS_6_B02...

1630. 2 cy74-CD45-pos-E07-S7... 1707. 2 CY65_POS_G_CAAGGCCGA... 1784. 2 cy60_1_cd_45_pos_3_E...

1631. 2 cy72-CD45-pos-B06-S8... 1708. 2 cy84-Met-CD45-pos-B0... 1785. 2 cy60_1_cd_45_pos_3_D...

1632. 2 cy80-CD45-pos-PD1-po... 1709. 2 cy84-Met-CD45-pos-H1... 1786. 2 cy60_1_cd_45_pos_HC...

1633. 2 cy72-CD45-pos-H04-S9... 1710. 2 cy80-CD45-neg-D02-S4... 1787. 2 cy88_cd_45_pos_F06_S...

1634. 2 cy72-CD45-pos-G09-S9... 1711. 2 cy80-CD45-neg-C08-S4... 1788. 2 cy60_1_cd_45_pos_4_C...

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2642. 4 cy80-Cd45-pos-PD1-po... 2719. 4 cy79-p4-CD45-pos-PD1... 2796. 4 cy72-CD45-pos-D01-S9...
2643. 4 cy80-Cd45-pos-PD1-po... 2720. 4 cy79-p4-CD45-pos-PD1... 2797. 4 cy80-CD45-pos-PD1-po...
2644. 4 cy80-Cd45-pos-PD1-po... 2721. 4 cy79-p4-CD45-pos-PD1... 2798. 4 cy74-CD45-pos-E10-S7...
2645. 4 cy80-Cd45-pos-PD1-po... 2722. 4 cy79-p4-CD45-pos-PD1... 2799. 4 cy80-CD45-pos-PD1-po...
2646. 4 cy80-Cd45-pos-Pd1-ne... 2723. 4 cy79-p4-CD45-pos-PD1... 2800. 4 cy58-1-CD45-pos-B01-...
2801. 4 cy80-CD45-pos-PD1-po...
2802. 4 cy80-CD45-pos-PD1-po...
2803. 4 cy53-1-CD45-pos-2-C0...
2804. 4 cy80-CD45-pos-PD1-po...

4450.	18	CY80-neg-E03-S51-com...	4516.	20	cy82-CD45-neg-2-H12-...	4582.	22	cy72-CD45-pos-G01-S9...
4451.	18	CY80-neg-C10-S34-com...	4517.	20	cy82-CD45-pos-3-H01-...	4583.	22	cy72-CD45-pos-A03-S8...
4452.	18	CY80-neg-E01-S49-com...	4518.	20	cy82-CD45-pos-1-B11-...	4584.	22	Cy67-CD45pos-S2-A5_S...
4453.	18	CY80-neg-C04-S28-com...	4519.	20	cy82-CD45-pos-1-D01-...	4585.	22	Cy67-CD45pos-S2-D7_S...
4454.	18	CY80-neg-C02-S26-com...	4520.	20	cy82-CD45-pos-3-A12-...	4586.	22	Cy67-CD45pos-S2-E6_S...
4455.	18	CY80-neg-H09-S93-com...	4521.	20	cy82-CD45-pos-3-H12-...	4587.	22	Cy67-CD45pos-S2-G10...
4456.	18	CY80-neg-H10-S94-com...	4522.	20	cy82-CD45-pos-1-H12-...	4588.	22	cy84_Primary_CD45_po...
4457.	18	cy94_cd45neg_cd90pos...	4523.	20	cy82-CD45-pos-3-A08-...	4589.	22	cy84_Primary_CD45_po...
4458.	18	cy94_cd45neg_cd90pos...	4524.	20	cy82-CD45-pos-3-G06-...	4590.	22	cy60_1_cd_45_pos_4_D...
4459.	18	cy94_cd45neg_cd90pos...	4525.	20	cy82-CD45-pos-3-E02-...	4591.	22	cy60_1_cd_45_pos_HC...
4460.	18	cy94_cd45neg_cd90pos...	4526.	20	cy82-CD45-pos-3-G12-...	4592.	22	cy60_1_cd_45_pos_4_B...
4461.	18	cy94_cd45neg_cd90pos...	4527.	20	cy82-CD45-pos-1-G08-...	4593.	22	cy60_1_cd_45_pos_3_A...
4462.	18	CY94_CD45NEG_CD90POS...	4528.	20	cy82-CD45-pos-3-A10-...	4594.	22	cy60_1_cd_45_pos_3_H...
4463.	18	CY94_CD45NEG_CD90POS...	4529.	20	cy82-CD45-pos-3-C01-...	4595.	22	cy60_1_cd_45_pos_3_E...
4464.	18	CY94_CD45NEG_CD90POS...	4530.	20	cy82-CD45-pos-2-H12-...	4596.	22	CY89A_CD45_POS_6_E01...
4465.	18	CY94_CD45NEG_CD90POS...	4531.	20	cy82-CD45-pos-2-D11-...	4597.	22	CY89COREQ1_E06_S342...
4466.	18	CY94_CD45NEG_CD90POS...	4532.	20	cy82-CD45-pos-2-B03-...	4598.	22	cy88_cd45pos_5_B05_S...
4467.	18	CY94_CD45NEG_CD90POS...	4533.	20	cy82-CD45-pos-2-E07-...	4599.	22	CY88CD45POS_7_C03_S2...
4468.	18	CY94_CD45NEG_CD90POS...	4534.	20	cy82-CD45-pos-2-F11-...	4600.	22	CY88CD45_150813_D09...
4469.	19	cy53-1-CD45-neg-C06-...	4535.	20	cy82-CD45-neg-1-D05-...	4601.	22	CY94CD45POS_1_C05_S1...
4470.	19	cy53-1-CD45-neg-E04-...	4536.	20	cy82-CD45-neg-3-D09-...	4602.	22	CY88CD45_150813_E05...
4471.	19	cy53-1-CD45-neg-B02-...	4537.	20	cy82-CD45-pos-2-E02-...	4603.	23	cy80-CD45-pos-Pd1-ne...
4472.	19	cy53-1-CD45-neg-E12-...	4538.	20	cy82-CD45-pos-2-G05-...	4604.	23	cy82-CD45-pos-3-G11-...
4473.	19	cy53-1-CD45-neg-D06-...	4539.	20	cy82-CD45-neg-3-A11-...	4605.	23	cy82-CD45-pos-2-G12-...
4474.	19	cy53-1-CD45-neg-A12-...	4540.	20	cy82-CD45-pos-2-F02-...	4606.	23	cy58-1-CD45-pos-C01-...
4475.	19	cy53-1-CD45-neg-F07-...	4541.	20	cy82-CD45-pos-2-D12-...	4607.	23	cy88_cd_45_pos_E05_S...
4476.	19	cy53-1-CD45-neg-C09-...	4542.	20	cy82-CD45-pos-2-D03-...	4608.	23	cy60_1_cd_45_pos_3_G...
4477.	19	cy53-1-CD45-neg-F08-...	4543.	20	cy82-CD45-neg-3-D03-...	4609.	23	cy60_1_cd_45_pos_HC...
4478.	19	cy53-1-CD45-neg-B06-...	4544.	20	cy82-CD45-pos-2-E03-...	4610.	23	cy88_cd_45_pos_F05_S...
4479.	19	cy53-1-CD45-neg-A07-...	4545.	21	Cy81_Bulk_CD45_F10_S...	4611.	23	cy60_1_cd_45_pos_3_B...
4480.	19	cy53-1-CD45-neg-D05-...	4546.	21	cy79-p3-CD45-neg-PD1...	4612.	23	cy60_1_cd_45_pos_HC...
4481.	19	cy53-1-CD45-neg-H11-...	4547.	21	cy80-CD45-neg-A04-S8...	4613.	23	cy60_1_cd_45_pos_HC...
4482.	19	Cy59_93	4548.	21	cy81-Bulk-CD45-neg-E...	4614.	23	CY89A_CD45_POS_6_D06...
4483.	19	cy80_CD_90_pos_A04_S...	4549.	21	cy53-1-CD45-neg-D12-...	4615.	23	CY89A_CD45_POS_6_G06...
4484.	19	cy80_CD_90_pos_F08_S...	4550.	21	cy53-1-CD45-neg-E02-...	4616.	23	CY89A_Core_15_F06_S6...
4485.	19	cy80_CD_90_pos_E04_S...	4551.	21	cy53-1-CD45-neg-A10-...	4617.	23	CY89A_CD45_POS_4_B03...
4486.	19	cy80_CD_90_pos_E09_S...	4552.	21	cy53-1-CD45-neg-C04-...	4618.	23	CY89A_CD45_POS_4_G10...
4487.	19	cy80_CD_90_pos_D10_S...	4553.	21	cy53-1-CD45-neg-H05-...	4619.	23	cy88_cd45pos_5_G04_S...
4488.	19	cy80_CD_90_pos_C11_S...	4554.	21	cy53-1-CD45-neg-H03-...	4620.	23	cy94_cd45pos_B02_S11...
4489.	19	cy80_CD_90_pos_C04_S...	4555.	21	cy53-1-CD45-neg-B11-...	4621.	23	CY88CD45POS_2_G05_S4...
4490.	19	cy80_CD_90_pos_B04_S...	4556.	21	cy53-1-CD45-neg-H07-...	4622.	23	CY88CD45POS_7_F05_S2...
4491.	19	cy80_CD_90_pos_F09_S...	4557.	21	cy53-1-CD45-neg-E03-...	4623.	23	CY88CD45POS_7_D03_S2...
4492.	19	cy80_CD_90_pos_F03_S...	4558.	21	cy53-1-CD45-neg-D08-...	4624.	23	CY94CD45POS_1_H04_S1...
4493.	19	cy80_CD_90_pos_F07_S...	4559.	21	cy53-1-CD45-neg-G07-...	4625.	23	CY88CD45POS_7_C05_S2...
4494.	19	cy80_CD_90_pos_C05_S...	4560.	21	cy79-p3-CD45-neg-PDL...	4626.	23	CY94_CD45NEG_CD90POS...
4495.	19	cy80_CD_90_pos_B02_S...	4561.	21	cy84-Primary-CD45-ne...	4627.	23	CY94_CD45NEG_CD90POS...
4496.	19	cy80_CD_90_pos_G06_S...	4562.	21	CY89NEG_C11_S35_comb...	4628.	24	Cy72_CD45_H07_S763_c...
4497.	19	cy80_cd_90_neg_C03_S...	4563.	21	cy94_cd45neg_cd90pos...	4629.	24	CY58_1_CD45_B06_S978...
4498.	19	cy80_CD_90_pos_E03_S...	4564.	21	cy94_cd45neg_cd90pos...	4630.	24	Cy74_CD45_C10_S418_c...
4499.	19	cy80_CD_90_pos_D03_S...	4565.	21	cy94_cd45neg_cd90pos...	4631.	24	Cy72_CD45_A06_S678_c...
4500.	19	cy80_cd_90_neg_G12_S...	4566.	21	cy94_cd45neg_cd90pos...	4632.	24	cy58-1-CD45-pos-B10-...
4501.	19	cy80_CD_90_pos_B06_S...	4567.	21	cy94_cd45neg_cd90pos...	4633.	24	cy53-1-CD45-pos-2-D0...
4502.	19	cy80_CD_90_pos_E05_S...	4568.	21	cy94_cd45neg_cd90pos...	4634.	24	cy53-1-CD45-pos-1-E0...
4503.	19	cy80_cd_90_neg_H12_S...	4569.	21	cy94_cd45neg_cd90pos...	4635.	24	cy53-1-CD45-pos-2-A1...
4504.	19	cy80_CD_90_pos_C02_S...	4570.	21	cy94_cd45neg_cd90pos...	4636.	24	cy53-1-CD45-pos-2-F0...
4505.	19	cy80_CD_90_pos_A02_S...	4571.	21	cy94_cd45neg_cd90pos...	4637.	24	cy53-1-CD45-pos-2-E0...
4506.	19	cy80_cd_90_neg_H04_S...	4572.	21	CY94_CD45NEG_CD90POS...	4638.	24	cy88_cd_45_pos_G05_S...
4507.	19	cy80_CD_90_pos_C07_S...	4573.	21	CY94_CD45NEG_CD90POS...	4639.	24	CY89A_Core_15_B03_S1...
4508.	19	cy80_CD_90_pos_H08_S...	4574.	21	CY94_CD45NEG_CD90POS...	4640.	24	CY89A_CD45_POS_10_A0...
4509.	19	cy94_cd45neg_cd90pos...	4575.	21	CY94_CD45NEG_CD90POS...	4641.	24	CY89A_CD45_POS_6_A08...
4510.	20	cy82-CD45-pos-3-A03-...	4576.	21	CY94_CD45NEG_CD90POS...	4642.	24	CY89FNA_D05_S233_com...
4511.	20	cy82-CD45-neg-2-B02-...	4577.	22	Cy81_FNA_CD45_G11_S2...	4643.	24	cy94_cd45pos_4_B06_S...
4512.	20	cy82-CD45-pos-3-B11-...	4578.	22	Cy72_CD45_D02_S710_c...	4644.	24	cy94_cd45pos_H01_S18...
4513.	20	cy82-CD45-pos-3-C11-...	4579.	22	Cy72_CD45_D05_S713_c...	4645.	24	cy94_cd45pos_4_H01_S...
4514.	20	cy82-CD45-pos-1-E08-...	4580.	22	cy72-CD45-pos-A11-S8...	4646.	24	CY94CD45POS_1_B07_S1...
4515.	20	cy82-CD45-pos-1-H05-...	4581.	22	cy72-CD45-pos-D02-S9...			

10 Appendix - Unused genes

The followings genes were not used because they could not be mapped to the internal gene symbols.

1. tumor	69. KIAA0368	140. LOC100506054	211. LOC442459
2. malignant(1=no,2=yes,3=undetermined)	70. LOC1001289673	141. LOC644961	212. LOC283174
3. non-malignant	71. LOC100128993	142. LOC100506190	213. LOC643201
cell type	72. C2orf53	143. LOC100507389	214. LOC400654
(1=T,2=B,3=Macro.4=Endo.,5=CAF,6=NK)	73. MGC34796	144. C1orf86	215. HOXA10-HOXA9
4. LOC653712	74. FOLR4	145. ILF3-AS1	216. PMS2L2
5. GPR98	75. PARK2	146. HRSP12	217. SNORD81
6. BSN-AS2	76. GPR124	147. KIAA1751	218. LOC645434
7. LOC728040	77. ACPL2	148. MIR219-2	219. SPANXB2
8. LOC100216546	78. LOC728724	149. PHOSPHO2-KLHL23	220. LOC100132077
9. PROSC	79. LOC649133	150. LOC154761	221. LOC100130992
10. FLJ26850	80. SERF2-C15ORF63	151. LOC653160	222. C1orf110
11. KIAA1199	81. LOC285593	152. PCNA-AS1	223. HIAT1
12. EPT1	82. LOC285627	153. NUDT4P1	224. DEFB131
13. TMEM180	83. EFCAB4A	154. SNAR-A7	225. RQCD1
14. C11orf93	84. CCDC129	155. RTDR1	226. GAGE2D
15. GLUD1P7	85. LOC100500773	156. LOC441155	227. RFPL1-AS1
16. IPW	86. C11orf57	157. FAM127C	228. C5orf54
17. LOC338758	87. WIBG	158. FAM109A	229. LOC100507373
18. LINC00597	88. FLJ34503	159. LOC257358	230. PET112
19. AGPHD1	89. FLJ41200	160. FP588	231. C9orf117
20. DKFZP434I0714	90. KIAA1045	161. C2Oorf24	232. LOC100287834
21. LOC100133091	91. FAM73B	162. LOC285484	233. C3orf27
22. C11orf73	92. LOC399715	163. ZFP106	234. FAM25B
23. ERBB2IP	93. LOC100144597	164. TCEB3CL	235. C9orf114
24. RNU6-33	94. LOC727915	165. LOC728323	236. LOC732275
25. LOC729603	95. BET3L	166. LOC646813	237. C21orf15
26. FLJ42709	96. C15orf26	167. LINC00260	238. LOC643623
27. C19orf55	97. SNORD50A	168. FDP5L2A	239. LOC100506025
28. FONG	98. LOC100270746	169. LOC100169752	240. LOC390660
29. LOC654342	99. FAM134A	170. RNU6-83	241. KIAA1737
30. RNU6-34	100. FLJ13197	171. C14orf182	242. LOC100422737
31. FLJ45974	101. FAM22F	172. LOC339442	243. PAPD5
32. LOC100132707	102. C4orf32	173. HPO7349	244. LOC646268
33. FLJ39739	103. LOC392196	174. OR9G9	245. AGAP8
34. BAGE4	104. SKIV2L2	175. LOC100130894	246. LOC442132
35. LINC00675	105. FKSG29	176. C2Oorf201	247. FAM105A
36. PP14571	106. LOC100289187	177. C9orf37	248. LOC100505624
37. LOC284344	107. OBFC1	178. TMEM66	249. LOC285768
38. LOC100506172	108. C14orf79	179. MT1IP	250. LOC144742
39. EMR1	109. LOC100128420	180. LEPRE1	251. C17orf104
40. LOC729177	110. FAM134C	181. LOC150776	252. LOC644936
41. LOC100527964	111. LOC493754	182. LOC100507299	253. LPHN1
42. LOC100128252	112. POU4F1-AS1	183. C21orf88	254. LOC100507433
43. C1orf145	113. C16orf11	184. PAR4	255. LOC441204
44. ECRP	114. LOC284837	185. LOC100506474	256. LOC645638
45. LOC440311	115. LOC285972	186. PPAP2C	257. C14orf1
46. LOC400752	116. KIAA1239	187. CTSL1P8	258. SKP1P2
47. LOC338799	117. C11orf92	188. C11orf34	259. FLJ42102
48. LOC100132735	118. C21orf33	189. FLJ31813	260. C2orf71
49. LOC653486	119. BRE	190. LINC00696	261. C15orf57
50. LOC392232	120. TOMM70A	191. LOC100507140	262. LOC349160
51. LINC00577	121. LOC100507003	192. LOC646938	263. LOC100128338
52. LOC340073	122. PAR-SN	193. UFD1L	264. FAM74A2
53. C15orf60	123. MGC39372	194. FLJ25363	265. SNORA43
54. LOC574538	124. MGC27382	195. SLC22A20	266. LOC100289473
55. LRRC16B	125. HFE2	196. LOC415056	267. LOC100130238
56. FLJ13224	126. TMEM133	197. CCDC104	268. LOC100292680
57. C7orf53	127. LOC731779	198. LOC100128568	269. C6orf195
58. LOC100505474	128. LOC100128593	199. LYRM5	270. RAD51L3-RFFL
59. LOC100133161	129. LOC100507537	200. KIAA1524	271. REXO1L1
60. LPPR4	130. LOC387723	201. HDGFRP3	272. LOC646498
61. LOC100129046	131. LOC401109	202. LOC100132356	273. STL
62. ZMYM6NB	132. SNAR-A10	203. LOC100289495	274. NPIP
63. RNU6-79	133. DOPEY1	204. FLJ45513	275. DSCR3
64. LINC00516	134. LOC253039	205. LOC100505841	276. LOC90834
65. MS4A8B	135. LOC283922	206. DDX26B	277. EMCN-IT3
66. LOC100130155	136. BREA2	207. LOC100499405	278. C5orf48
67. LOC284412	137. FLJ42875	208. LOC100506136	279. LOC100507244
68. LOC729852	138. RABL5	209. LOC338963	280. FAM211B
	139. LOC100133957	210. XAGE1C	281. RNU6-67
			282. RUNX1-IT1
			283. LOC152217
			284. APCDD1L-AS1
			285. C19orf60
			286. LOC283070
			287. LOC730091

288. FLJ46066	365. LOC730159	442. ERO1LB	519. C19orf45
289. FAM115A	366. CNIH	443. LOC253573	520. TTC18
290. DYX1C1	367. LOC284933	444. LOC729609	521. MRE11A
291. LOC339166	368. MNF1	445. LOC100652999	522. LOC728819
292. LOC100507651	369. EFHA2	446. LOC100130872	523. LOC647323
293. C1orf213	370. DKFZP434K028	447. KGFLP1	524. LOC100271722
294. PTPLAD2	371. C5orf4	448. LOC100190940	525. LOC100288814
295. LOC100130093	372. FAM22D	449. C10orf129	526. C10orf76
296. LOC441461	373. METTL21D	450. LOC100131635	527. GUCY1B3
297. WDR52	374. FLJ40292	451. LOC100272216	528. LOC440563
298. TMEM2	375. LOC283038	452. LOC145474	529. GPR133
299. LINC00238	376. LOC100131691	453. C7orf63	530. LOC729506
300. FLJ22184	377. LINC00439	454. GATSL1	531. FLJ46300
301. LOC100506233	378. SNAR-F	455. PRAMEF3	532. LOC100132062
302. LOC286184	379. LOC340508	456. FLJ41278	533. MIR549
303. GPR111	380. LOC729737	457. LPPR1	534. SGO1L
304. LOC441025	381. LOC388906	458. PDIA3P	535. LOC440600
305. FAM58A	382. NGFRAP1	459. C10orf32-AS3MT	536. GAGE4
306. LOC100507472	383. LOC643923	460. C13orf35	537. C11orf85
307. LOC644172	384. LOC100498859	461. LOC100131096	538. TMEM57
308. FTSJ2	385. SNAR-A1	462. ZCCHC11	539. GLT25D1
309. PYCRL	386. LOC340017	463. LOC440970	540. C8orf42
310. LOC283332	387. LOC440288	464. C16orf80	541. AA06
311. LOC100652768	388. LOC440900	465. SMCR9	542. LOC100506548
312. LOC100507564	389. EPB49	466. LOC100302640	543. LOC286190
313. CAR KD	390. LOC284788	467. LOC100507584	544. C10orf35
314. SMEK2	391. C7orf49	468. ATP5L2	545. LOC100129794
315. C1orf172	392. GTPBP5	469. LOC283585	546. TMEM55B
316. SCXA	393. LOC100129550	470. LOC648987	547. MGC16025
317. LUST	394. ZNF664-FAM101A	471. ANKRD32	548. C20orf196
318. C10orf11	395. LOC642366	472. SNORD85	549. CCL4L1
319. LOC286189	396. HOXD-AS1	473. LOC646903	550. KCNE1L
320. LOC253044	397. C12orf39	474. LOC100288255	551. LOC643037
321. LOC284100	398. LOC100130849	475. AGSK1	552. C3orf43
322. PTPLA	399. NARFL	476. LOC100130673	553. LOC100133123
323. ZCCHC16	400. INMT-FAM188B	477. GCN1L1	554. C16orf52
324. NCRNA00185	401. C20orf166-AS1	478. LOC286359	555. ANKRD20A12P
325. LOC440518	402. FLJ42393	479. LOC440297	556. LDOC1L
326. MESDC2	403. LINC00341	480. LEPREL1	557. FAM92A1
327. LOC727896	404. KIAA1984-AS1	481. LINC00035	558. ALS2CR11
328. LOC100506343	405. FLVCR1-AS1	482. FAM101B	559. C4orf40
329. 1-Dec	406. LOC389023	483. PPIAL4B	560. C18orf56
330. DKFZP434A062	407. C6orf57	484. LOC100505812	561. LOC100128531
331. FLJ35024	408. LOC100272228	485. LOC200772	562. LOC100505695
332. LOC100130348	409. LOC389895	486. LOC283731	563. LOC100131551
333. LOC100499484-C9ORF174	410. C9orf156	487. LOC339975	564. C11orf30
334. C10orf12	411. AGPAT6	488. FAM212A	565. EFCAB4B
335. CCDC64	412. LOC100133331	489. AGPAT9	566. FAM60A
336. TMEM14E	413. LOC100129520	490. FLJ30403	567. LOC340357
337. LOC641515	414. FAM21A	491. AMICA1	568. LOC100132352
338. CCDC11	415. LOC100507351	492. LOC100129534	569. LINC00202-1
339. C15orf52	416. CSTF3-AS1	493. FAM5C	570. LOC285548
340. LOC100506388	417. C6orf211	494. C19orf40	571. LOC100131564
341. FAM63B	418. LINC00704	495. LOC100133612	572. RNY5
342. AKR1CL1	419. ZCCHC6	496. LOC202781	573. FLJ33630
343. KIAA2018	420. FLJ30679	497. LOC100507391	574. C7orf29
344. LOC554223	421. LOC100130231	498. LOC100499227	575. LOC650368
345. LOC340515	422. LOC100133050	499. FAM46B	576. SNORD77
346. LOC100505738	423. RNU86	500. LINC00086	577. LOC151484
347. LOC645249	424. FAM24B-CUZD1	501. LOC100126784	578. CSN1S2BP
348. SNORD31	425. LOC100128770	502. CYP3A7-CYP3AP1	579. LOC100128264
349. ASAP1-IT1	426. HN1L	503. KIAA1430	580. GLTSCR1
350. LOC284889	427. C10orf128	504. TSSC1	581. GATM-AS1
351. LOC100288069	428. C8orf46	505. LOC100240734	582. GPR115
352. CTSL2	429. ZNF271	506. FAM150B	583. PPAPDC1A
353. C4orf52	430. C19orf52	507. LOC158696	584. LOC100505964
354. WBSR22	431. PTPN20A	508. LOC91450	585. C22orf29
355. ASUN	432. C9orf172	509. HTT-AS1	586. LOC255025
356. C1orf168	433. TCEB1	510. LOC150197	587. LOC100128164
357. LOC503519	434. ITFG3	511. PPAP2A	588. C2orf62
358. C2orf57	435. C10orf137	512. LOC155060	589. LOC401127
359. ADCK4	436. LINC00483	513. FAM183B	590. C4orf21
360. PHF16	437. FAM154A	514. ATP5B	591. LOC283143
361. ERO1L	438. LINC00657	515. CPSF3L	592. LOC100144604
362. BAGE	439. C1orf65	516. CCDC108	593. LOC100130700
363. PPP1R2P3	440. FAM175B	517. PNMAL2	594. LINC00617
364. LOC100132146	441. LOC100287879	518. FAM27A	595. LOC100630923
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			597. LOC100996291
			598. TMEM35
			599. C19orf77
			600. FLJ35282

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603. GBAS	680. LOC283299	757. LOC100506421	834. AQPEP
604. SNORD80	681. LOC152225	758. MKL2	835. GPR112
605. KLRAP1	682. LOC642852	759. RNU6-53	836. LOC285629
606. LOC100506050	683. DSCR6	760. LOC400084	837. LOC100133985
607. FAM26E	684. LOC728558	761. LOC100506082	838. FLJ39639
608. PPY2	685. C4orf29	762. ZNRD1-AS1	839. LINC00669
609. ATP1A10S	686. SLM01	763. KIAA1731	840. GATS
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611. LOC400027	688. FLJ38576	765. CIRH1A	842. WDR85
612. WDR67	689. C21orf59	766. PRAC	843. INTS4L2
613. ZFP112	690. TENC1	767. NT5C3	844. LOC729911
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615. LOC644554	692. HOXA-AS4	769. LOC145845	846. HTA
616. C11orf63	693. LOC440356	770. KIAA0125	847. MLL4
617. LOC731223	694. C1orf151-NBL1	771. C10orf131	848. LINS
618. LINC00152	695. C6orf1	772. DAK	849. PRG1
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621. C21orf37	698. FLI1-AS1	775. CCRL1	852. LOC387895
622. MIR3607	699. LOC399744	776. LOC286367	853. LOC402779
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625. LOC100132111	702. EMR2	779. LOC643406	856. ZNF259
626. LOC284080	703. DOPEY2	780. LOC100144602	857. RNU6-66
627. FLJ44511	704. C15orf38	781. C14orf142	858. LOC339505
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629. LOC100134259	706. LOC157381	783. KIAA1462	860. LOC440434
630. FRG1B	707. LOC400680	784. LOC100287072	861. ZNF818P
631. SNAR-A3	708. LOC100131234	785. CSDAP1	862. C18orf62
632. NAPRT1	709. CSRP2BP	786. LOC152578	863. WBSR17
633. LOC375295	710. LOC652276	787. LOC100130370	864. LOC100505875
634. C7orf34	711. LOC100506207	788. LPPR5	865. SYT14L
635. FAM65C	712. LOC220729	789. C3orf55	866. LOC729966
636. MKI67IP	713. C1orf180	790. GAREML	867. LOC100131257
637. LOC284294	714. LOC100133286	791. LOC149086	868. LOC730102
638. ATP5C1	715. LOC100288911	792. C19orf21	869. LOC613038
639. FLJ45079	716. C6orf170	793. PSIMCT-1	870. LOC286083
640. LOC348761	717. LOC728024	794. FLJ43663	871. LOC100130451
641. LOC256021	718. LOC100286793	795. LOC81691	872. SUV420H2
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643. PVRL3	720. LOC158376	797. C17orf103	874. HDHD1
644. LOC100505865	721. SRG7	798. LOC151009	875. DHFRL1
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648. APITD1	725. LINC00094	802. LOC284276	879. LOC100129722
649. LOC100128714	726. LOC643802	803. LOC100288122	880. LOC729176
650. MIR1270-2	727. FLJ46361	804. DKFZp68601327	881. LOC400043
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654. LOC642846	731. LINC00340	808. LOC151475	885. LOC643723
655. ZNF645	732. LOC100287314	809. C18orf8	886. LOC654433
656. LOC643339	733. LOC100507577	810. KIAA2022	887. LOC100289561
657. C12orf69	734. ATP5A1	811. WASH1	888. TCEB3C
658. SPANXE	735. ATP5J2	812. RFW2	889. LOC100130691
659. LOC728537	736. TRIM49D1P	813. FAM5B	890. C16orf55
660. FAM134B	737. LOC146880	814. LOC100287015	891. CCDC111
661. LOC643648	738. C14orf183	815. C1orf227	892. FLJ11235
662. LOC389332	739. PPP1R2P9	816. LOC286437	893. MTVR2
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664. C4orf22	741. GPR97	818. C8orf4	895. GAGE12I
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666. FLJ40288	743. CXorf31	820. MT1P2	897. LOC100131047
667. LOC255130	744. WHAMMP1	821. C12orf61	898. LOC643770
668. LOC145783	745. LOC90246	822. C9orf171	899. SPANXF1
669. LOC93432	746. C12orf5	823. LOC100272217	900. C20orf26
670. KIAA1033	747. FLJ44313	824. LAMB2P1	901. PEG3-AS1
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674. LOC100132078	751. SNORA34	828. LOC283214	905. PPAP2B
675. LOC285740	752. LINC00087	829. C7orf76	906. QTRTD1
676. CN5H6.4	753. LOC79015	830. MEF2BNB-MEF2B	907. GNN
677. KIAA0020	754. LOC101055625	831. GPR64	908. PAR5
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			910. LOC440896
			911. HSD52
			912. LOC100505648
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917. LOC400684	994. LINC00548	1071. SNAR-C2	1148. FAM26F
918. GPER	995. FLJ33360	1072. LOC100131289	1149. LOC100505478
919. LOC100506368	996. LOC100506810	1073. PVRL4	1150. PVRL2
920. EEF1E1-MUTED	997. LOC100129083	1074. LOC389705	1151. LOC100505933
921. C1orf192	998. C7orf41	1075. LOC100505718	1152. SNORA3
922. LOC100130950	999. ICT1	1076. RNU6-57	1153. LOC400657
923. SNORA39	1000. SMCR7	1077. LOC100289019	1154. LOC730227
924. TMEM48	1001. USMG5	1078. LINC00277	1155. B3GALT1
925. C10orf68	1002. RNU6-6	1079. MIR219-1	1156. FAM179A
926. ATP5E	1003. TMEM5	1080. LOC100288181	1157. SNAR-H
927. PCNXL2	1004. MIR511-2	1081. LOC550643	1158. C1orf95
928. AZI1	1005. LOC100288432	1082. LOC401242	1159. LOC100505545
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933. HYALP1	1010. LECT1	1087. LOC149950	1164. FAM103A1
934. ZAK	1011. LOC100130776	1088. C20orf195	1165. SMCR7L
935. LOC441601	1012. LOC100129935	1089. LOC100133267	1166. FAM195B
936. LOC401557	1013. LOC100129518	1090. LOC285547	1167. PHF17
937. ZNF788	1014. LOC284661	1091. LOC284454	1168. LOC144486
938. TISP43	1015. WDR52-AS1	1092. BAI3	1169. FAM101A
939. FAM45B	1016. LOC100192426	1093. LOC100127888	1170. LOC100287177
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941. MGC16275	1018. LOC642929	1095. GPR116	1172. ATP50
942. ZNF205-AS1	1019. SCARNA9L	1096. LOC100507300	1173. LOC100130954
943. LINC00651	1020. GPR128	1097. LOC339240	1174. SDPR
944. SCAND3	1021. LOC646214	1098. C16orf59	1175. GRIK1-AS2
945. LOC100134317	1022. LOC727982	1099. DISC2	1176. CTSL1
946. C1orf27	1023. LOC150622	1100. LOC339666	1177. LOC100128822
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949. ZCCHC5	1026. PRMT10	1103. LOC641367	1180. CCDC101
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953. SPATA31A2	1030. LOC100287042	1107. LOC254559	1184. LOC100131655
954. LOC649330	1031. ATP5J	1108. LOC100130581	1185. KIAA1467
955. LEPREL2	1032. KIAA1967	1109. ZNF812	1186. LOC644838
956. LOC400620	1033. LOC255512	1110. PPAPDC3	1187. LOC283440
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958. CXXC11	1035. LOC100132247	1112. LOC100507117	1189. LOC90784
959. METTL20	1036. LOC729683	1113. LOC100130899	1190. C6orf165
960. KIAA1704	1037. LHFP	1114. LOC728716	1191. KIAA1468
961. KGFLP2	1038. C21orf7	1115. LOC644669	1192. LOC400794
962. FLJ42627	1039. C7orf55	1116. LPPR2	1193. AGXT2L2
963. C7orf62	1040. DKFZp686K1684	1117. NUPR1L	1194. CCDC135
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968. CSDA	1045. LOC100506195	1122. LOC158435	1199. GTF2H2D
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971. C10orf40	1048. C9orf53	1125. LOC728606	1202. SNORA80
972. FAM154B	1049. SELV	1126. LOC341056	1203. LOC646736
973. SNORD76	1050. SELM	1127. FLJ37505	1204. LOC286114
974. LOC150381	1051. LOC730811	1128. FRMPD2P1	1205. SCARNA27
975. SETD8	1052. SEPW1	1129. LOC389791	1206. SNAR-A2
976. MGC21881	1053. FAM205B	1130. LOC100144603	1207. RSNB1L-AS1
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979. WDR96	1056. C21orf90	1133. ZFYVE20	1210. LOC284798
980. RRP7B	1057. RBAK-LOC389458	1134. BLOC1S1-RDH5	1211. LSAMP-AS3
981. ADC	1058. LOC388948	1135. CCDC79	1212. FBX018
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983. C21orf49	1060. LOC100289341	1137. LINC00263	1214. LOC613037
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986. MGC16121	1063. LINC00673	1140. LOC100289230	1217. LOC100506134
987. HIATL2	1064. MTL5	1141. LOC729444	1218. LOC644145
988. FLJ35390	1065. INADL	1142. LOC646168	1219. LOC101054525
989. SOLH	1066. LOC339524	1143. LOC727924	1220. PVRL3-AS1
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			1222. ZNF487P
			1223. GRAMD3
			1224. LOC606724
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			1226. ATP5G1

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1232. MTERF	1309. XAGE1E	1386. LOC100507173	1463. LOC643669
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1239. CRHR1-IT1	1316. FAM203A	1393. C1orf101	1470. SLC24A6
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1245. LOC96610	1322. LOC440905	1399. LOC401497	1476. PION
1246. GRAMD2	1323. LOC653786	1400. ERICH1-AS1	1477. LOC728084
1247. LOC649395	1324. SNAR-A5	1401. RNU6-52	1478. LOC100507032
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1276. CXorf23	1353. STRA13	1430. BRE-AS1	1507. MRPL42P5
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1302. C17orf62	1379. BAIAP2-AS1	1456. IGJ	1533. KIAA1715
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			1539. LOC1720

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1541. PRSS46	1618. LOC100507424	1695. SNAR-I	1772. C17orf96
1542. LOC100132781	1619. LOC283683	1696. C6orf164	1773. LOC100506730
1543. FKBP1A-SDCBP2	1620. METTL21B	1697. LOC100129250	1774. C9orf174
1544. LOC100129175	1621. GPR144	1698. LOC285819	1775. CENPVP2
1545. ANXA8L2	1622. FAM132A	1699. LOC158572	1776. LOC100130539
1546. XRCC6BP1	1623. C2orf43	1700. ACPT	1777. LOC643529
1547. LOC440243	1624. LOC729013	1701. AIM1L	1778. C15orf55
1548. SLMQ2-ATP5E	1625. LOC92249	1702. LOC100506746	1779. LOC100506274
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1551. AURKAPS1	1628. FLJ26245	1705. C14orf169	1782. KIAA0195
1552. LOC100505679	1629. KAL1	1706. SSX9	1783. LOC284385
1553. C10orf107	1630. GPR113	1707. DUX2	1784. LOC285084
1554. LOC285889	1631. C10orf118	1708. LOC340094	1785. FLJ45445
1555. LOC100131496	1632. SNAR-A8	1709. ATP5J2-PTCD1	1786. DKFZp434L192
1556. LOC254099	1633. LOC100288123	1710. LOC100129316	1787. LOC100507600
1557. FAIM3	1634. C3orf45	1711. ATHL1	1788. LOC100131094
1558. LOC100129055	1635. LOC100130301	1712. C14orf105	1789. C18orf42
1559. LOC399753	1636. GM140	1713. FLJ21408	1790. MRP63
1560. M1	1637. LOC100132354	1714. TMEM257	1791. LOC100505989
1561. SNAR-G1	1638. LOC100379224	1715. LOC338651	1792. LOC100128881
1562. LOC402160	1639. C5orf55	1716. RNU6-35	1793. PPAPDC2
1563. LOC339807	1640. LOC100507377	1717. C2orf82	1794. LOC100134229
1564. CCDC132	1641. MIR4520A	1718. KIAA1407	1795. LOC100131067
1565. LOC100129480	1642. PIR-FIGF	1719. TRIM49D2P	1796. BAI2
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1567. LOC100216479	1644. LOC100093698	1721. LOC100130855	1798. MST4
1568. LOC100507066	1645. C4orf6	1722. H2BFXP	1799. GDEP
1569. AGXT2L1	1646. PIDD	1723. WTH3DI	1800. NHEG1
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1571. LOC254896	1648. C7orf73	1725. LOC115110	1802. FAM196A
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1573. LOC644649	1650. SRPR	1727. LOC283761	1804. LOC100652739
1574. ZNF767	1651. DCDC5	1728. PRUNE	1805. EMR4P
1575. CCDC176	1652. LOC285696	1729. SNORD75	1806. MGC15885
1576. LOC653501	1653. MLL2	1730. HCG26	1807. FLJ27352
1577. PAPP4	1654. C12orf70	1731. LOC100506844	1808. RNMTL1
1578. LOC650226	1655. SF3B14	1732. LOC494127	1809. TARP
1579. FAM127A	1656. LOC100506688	1733. JHDM1D	1810. APOA1BP
1580. TMPRSS4-AS1	1657. FKBP9L	1734. KLHL7-AS1	1811. SC5DL
1581. UQCC	1658. C9orf169	1735. CYBASC3	1812. LOC494558
1582. CCDC23	1659. C1orf228	1736. LOC100506035	1813. LPPR3
1583. LOC729080	1660. C2orf47	1737. MLK7-AS1	1814. HIATL1
1584. ALMS1P	1661. APOBEC3A_B	1738. C14orf159	1815. LOC100131825
1585. LOC389033	1662. LOC100131434	1739. LOC100506124	1816. LOC283587
1586. LOC255167	1663. RP1-177G6.2	1740. LOC646762	1817. LRRC16A
1587. LOC91948	1664. LOC728554	1741. LOC400927	1818. MKL1
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1589. ZNF663	1666. LPHN2	1743. LOC100130000	1820. LOC100128554
1590. MIR203	1667. ZUFSP	1744. LOC441666	1821. C1orf186
1591. LOC100294362	1668. LOC100505876	1745. LOC100506403	1822. PNMA6D
1592. PAR1	1669. LOC441009	1746. SETD5-AS1	1823. LOC100505768
1593. LINC00478	1670. C10orf32	1747. FLJ30838	1824. ANP32A-IT1
1594. FBXO22-AS1	1671. LOC339788	1748. MB21D1	1825. LOC100505795
1595. LOC440894	1672. LOC100505918	1749. LOC100130480	1826. C15orf37
1596. SNAR-C1	1673. DEFB130	1750. LOC642423	1827. LOC285033
1597. FLJ45340	1674. LOC286059	1751. LOC401321	1828. LOC143666
1598. LOC728431	1675. LOC550113	1752. C3orf37	1829. C21orf67
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1600. LOC100130075	1677. GSTTP1	1754. LOC100630918	1831. LOC100132832
1601. LOC100652770	1678. LEPREL4	1755. PROL1	1832. C5orf42
1602. RCAN3AS	1679. FLJ12825	1756. LOC728739	1833. PP12613
1603. LOC731424	1680. LOC100507334	1757. C7orf13	1834. C15orf27
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1605. MFSD7	1682. LOC100505495	1759. LINC00521	1836. LOC541473
1606. SNORD103A	1683. TUSC5	1760. C7orf45	1837. LOC554206
1607. C1orf173	1684. C20orf111	1761. LOC344887	1838. C9orf91
1608. LINC00441	1685. LOC730183	1762. LOC100506393	1839. FLJ40194
1609. RNU6-28	1686. LOC399815	1763. C9orf142	1840. C1orf85
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1611. PRAMEF16	1688. LOC283663	1765. FAM108C1	1842. LOC440117
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1613. FLJ37453	1690. LOC100506013	1767. FLJ39080	1844. MGC2889
1614. RSG1	1691. SNORD59B	1768. LOC201651	1845. MLF1IP
1615. C19orf26	1692. LOC729739	1769. HNRPDL	1846. CT60
1616. FLJ16779	1693. LINC00515	1770. LOC100271832	1847. SNAR-A6
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			1849. CTAGE5
			1850. PRH1-PRR4
			1851. LOC152742
			1852. LOC100129917

1853. GJA9-MYCBP	1930. LOC100128076	2007. LOC643355	2084. LOC100132287
1854. FAM73A	1931. LOC646743	2008. LOC157273	2085. FLJ22763
1855. WHSC1	1932. MESDC1	2009. LINC00085	2086. LOC644248
1856. LOC729970	1933. SMIM16	2010. TXLNG2P	2087. ZNF542
1857. LOC283688	1934. LOC100287036	2011. MIR664	2088. LOC100288846
1858. LRRC33	1935. LOC729121	2012. C5orf28	2089. FCGR1C
1859. C19orf43	1936. LINC00684	2013. MURC	2090. ATP5L
1860. WHSC1L1	1937. ATP5G3	2014. LOC339622	2091. LOC100128675
1861. AGAP7	1938. C14orf37	2015. DFNB59	2092. WBP5
1862. RNU6-78	1939. CGB	2016. LOC286297	2093. KIAA0907
1863. FAM159A	1940. LOC284581	2017. C1orf63	2094. LOC100288570
1864. PTRF	1941. BAGE3	2018. C17orf59	2095. FLJ10038
1865. LOC100506469	1942. LOC643714	2019. LOC100129636	2096. FOXD4L2
1866. UPK3BL	1943. LOC100130298	2020. LOC644189	2097. LOC100129924
1867. LOC202181	1944. LOC100129034	2021. FAM105B	2098. TMEM8C
1868. LOC642426	1945. LOC100507362	2022. LOC728407	2099. FLJ43879
1869. LOC100507346	1946. LOC100133445	2023. LOC100505659	2100. LOC100507217
1870. LOC100128176	1947. CTBP1-AS1	2024. C9orf41	2101. PDDC1
1871. C17orf85	1948. LOC100130880	2025. MFI2-AS1	2102. CCDC53
1872. LRRC48	1949. GSTTP2	2026. C12orf52	2103. DEC1
1873. SPG20	1950. BMS1P6	2027. LOC388553	2104. LOC642361
1874. LINC00162	1951. KIAA0922	2028. ST7-OT3	2105. LOC100507501
1875. RNU6-81	1952. LOC100335030	2029. LINC00338	2106. FAM109B
1876. C14orf166B	1953. FLJ25758	2030. LOC100506314	2107. CECR5-AS1
1877. FAM108A1	1954. LOC100130015	2031. DKFZp434J0226	2108. LOC100506123
1878. FAM195A	1955. GPR56	2032. C1orf64	2109. SGOL1-AS1
1879. LSMD1	1956. C16orf93	2033. MIR486	2110. FLJ46446
1880. UG0898H09	1957. LOC100505783	2034. LOC646862	2111. LOC389906
1881. C17orf72	1958. CEBPA-AS1	2035. PCNX	2112. LIMS3L
1882. LOC100507489	1959. XGPY2	2036. D21S2088E	2113. LOC595101
1883. KIAA0226L	1960. LOC153910	2037. LOC100506668	2114. WBCR27
1884. SMA5	1961. LOC728613	2038. NOTCH2NL	2115. FLJ23867
1885. LOC440925	1962. LOC643486	2039. ZNF724P	2116. SELT
1886. EP400NL	1963. LOC100009676	2040. MAGOH2	2117. EFTUD1
1887. NBPF16	1964. C5orf27	2041. GATSL3	2118. RGAG1
1888. LOC100507462	1965. C19orf35	2042. LOC388942	2119. LOC646471
1889. LOC286467	1966. SGK494	2043. AIM1	2120. C9orf96
1890. FAM22G	1967. LOC340074	2044. LOC100508120	2121. CCDC90A
1891. C2orf61	1968. LOC100130705	2045. FAM21B	2122. C9orf89
1892. LOC407835	1969. SNORA76	2046. IFLTD1	2123. MTERFD2
1893. LOC153684	1970. FLJ27354	2047. SNAR-A11	2124. LOC441081
1894. LOC285762	1971. MIR3545	2048. KDM5B-AS1	2125. TCEB2
1895. ATP5H	1972. C12orf36	2049. KIAA1244	2126. LOC100506963
1896. CECR5	1973. C3orf65	2050. MGC72080	2127. LOC100506229
1897. LOC100271836	1974. LOC100506874	2051. C3orf17	2128. GPR125
1898. MGC57346	1975. LOC731275	2052. HOXC-AS5	2129. LOC100507632
1899. LOC440700	1976. FLJ41649	2053. LOC100507205	2130. MEF2BNB
1900. LOC100505817	1977. FTSJD2	2054. UNQ6975	2131. FLJ31485
1901. LOC442028	1978. FAM46C	2055. SNAR-A13	2132. KIAA0430
1902. FLJ42969	1979. C16orf3	2056. LOC100128573	2133. LOC284998
1903. LOC653513	1980. LOC284950	2057. C11orf35	2134. LOC100505716
1904. VPRBP	1981. LOC100506305	2058. CD97	2135. LOC440300
1905. LOC100132891	1982. LOC400655	2059. LOC729732	2136. LOC100506710
1906. LOC100506990	1983. C14orf2	2060. SNORD44	2137. XAGE1D
1907. C17orf105	1984. LOC145820	2061. SMEK1	2138. LOC100506100
1908. CXorf64	1985. FAM127B	2062. LOC729041	2139. LOC116437
1909. LOC100129961	1986. N6AMT2	2063. LOC441242	2140. LOC100129213
1910. BZRAP1-AS1	1987. KIAA1432	2064. LOC340113	2141. LOC401010
1911. FAS-AS1	1988. GAGE6	2065. C10orf10	2142. C10orf54
1912. FAM211A	1989. NRD1	2066. SCXB	2143. LOC284751
1913. LOC392364	1990. LOC440173	2067. SEPT5-GP1BB	2144. LOC100131626
1914. LOC150568	1991. C22orf43	2068. FLJ44635	2145. LOC100287704
1915. GPR110	1992. LOC389634	2069. LOC100507254	2146. LOC646626
1916. LOC344595	1993. LOC728875	2070. LOC284023	2147. FLJ43681
1917. LOC441455	1994. LOC100507410	2071. DARC	2148. LOC100506384
1918. CCDC64B	1995. GAGE2C	2072. FLJ22447	2149. CXorf22
1919. LOC644656	1996. LINC00854	2073. SPRNP1	2150. LOC100505835
1920. LOC400456	1997. NBPF24	2074. PNMA6C	2151. C13orf45
1921. LOC63930	1998. EFTUD1P1	2075. LOC146513	2152. LOC285758
1922. KIAA1429	1999. C1orf106	2076. C1orf233	2153. AHS2
1923. LOC388796	2000. FAM65A	2077. MIR2964A	2154. SNORD103B
1924. CCDC94	2001. LOC100133920	2078. LOC100506713	2155. FAM91A2
1925. LOC100499489	2002. C17orf76-AS1	2079. C11orf82	2156. LOC100652791
1926. ADRBK1	2003. C14orf23	2080. LOC100506497	2157. LOC100130331
1927. PCDP1	2004. PRR24	2081. LOC730441	2158. ATP5D
1928. GMCL1P1	2005. PTPLAD1	2082. LOC643542	2159. LINC00693
1929. RNU6-71	2006. LOC650293	2083. SELK	2160. PTPN20B
			2161. LOC643733
			2162. KIAA1919
			2163. C22orf26
			2164. TOP1P2
			2165. LOC100505687

2166. CXorf61	2240. LOC100128054	2314. LOC100133315	2388. RNU6-19
2167. GSG2	2241. KIAA1644	2315. LOC285692	2389. LOC100128361
2168. GOLGA6L5	2242. CT49	2316. LOC728392	2390. LOC100288346
2169. RNU6-16	2243. CXorf28	2317. LOC727677	2391. LOC284578
2170. GLTSCR2	2244. C10orf2	2318. IP011-LRRC70	2392. AATK-AS1
2171. GPR114	2245. LOC440335	2319. LOC100130264	2393. FLJ35424
2172. C4orf27	2246. SPATA31A4	2320. C15orf43	2394. PTGER4P2-CDK2AP2P2
2173. LOC641746	2247. TCEB3CL2	2321. LOC100131726	2395. LOC728012
2174. LOC100506394	2248. LOC146481	2322. LOC339529	2396. PNMAL1
2175. FYB	2249. LOC728743	2323. FAM26D	2397. DEFB109P1
2176. FLJ42289	2250. CCDC74B-AS1	2324. C9orf9	2398. MIR3676
2177. LOC619207	2251. FAM179B	2325. LOC200726	2399. SNAR-C3
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2179. MIR4520B	2253. LOC100131320	2327. LOC284688	2401. LOC100505715
2180. SLED1	2254. ALS2CR8	2328. LOC285626	2402. LOC100506714
2181. KIAA0317	2255. LOC100506776	2329. FLJ35946	2403. C5orf20
2182. FLJ41350	2256. LOC728463	2330. LINC00116	2404. LOC100190986
2183. LOC148145	2257. SRCRB4D	2331. C1orf111	2405. BRD7P3
2184. C9orf173	2258. SSX6	2332. LOC440354	2406. MGC12916
2185. OR8G2	2259. LOC100506834	2333. LOC401177	2407. HOXB-AS5
2186. RNU6-64	2260. MCIN	2334. MGC27345	2408. MGC32805
2187. METTL12	2261. CXorf27	2335. NUPL1	2409. LOC388499
2188. PCDHB18	2262. HDGFRP2	2336. LOC255411	2410. TMEM194A
2189. TAAR3	2263. LOC553103	2337. CCDC144C	2411. LOC100289511
2190. PLEKHM1P	2264. MINA	2338. LOC100288842	2412. GLT25D2
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2194. FLJ31306	2268. TTTY9A	2342. REG1P	2416. WBSR28
2195. C17orf66	2269. LOC100128288	2343. LOC399829	2417. FLJ36777
2196. KIAA1161	2270. KIAA0226	2344. CTAGE6P	2418. LOC149373
2197. LOC401320	2271. SNAR-E	2345. NACAP1	2419. TMEM55A
2198. LOC550112	2272. LOC442497	2346. RTFDC1	2420. FLJ25328
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2201. BAI1	2275. FLJ40852	2349. TGIF2-C20orf24	2423. LOC728190
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2205. MIR3687	2279. DYX1C1-CCPG1	2353. FLJ33581	2427. SELRC1
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2213. LOC285577	2287. LOC339298	2361. MTERFD3	2435. C11orf31
2214. LOC100507443	2288. HEATR2	2362. TMEM27	2436. LOC401134
2215. C7orf72	2289. LOC147093	2363. KIAA1875	2437. KIAA0947
2216. LOC100128505	2290. C11orf70	2364. FLJ31662	2438. GLTPD1
2217. LOC151171	2291. SMIM11	2365. B3GNT1	2439. LOC148709
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2223. PRAMEF21	2297. C8orf12	2371. UTS2D	2445. LOC284801
2224. LPHN3	2298. PROSAP1P1	2372. LOC645212	2446. SGK196
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2227. FAM63A	2301. SNORD78	2375. C7orf10	2449. C6orf147
2228. C1orf114	2302. LOC390705	2376. LOC100128946	2450. DKFZP586I1420
2229. TTC40	2303. THEG5	2377. FAM35A	2451. CENPVP1
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2232. LOC100271702	2306. LOC100129269	2380. UNQ6494	2454. LOC286094
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2234. HEATR8-TTC4	2308. MIR644B	2382. SGK223	2456. C14orf101
2235. YAE1D1	2309. KIAA0141	2383. LOC100506178	2457. ADRBK2
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2237. FLJ46906	2311. CCBP2	2385. SNORD119	2459. SELO
2238. LOC729059	2312. FAM22A	2386. T	
2239. PCNXL4	2313. KIAA1683	2387. LOC284632	