AML7_Dx

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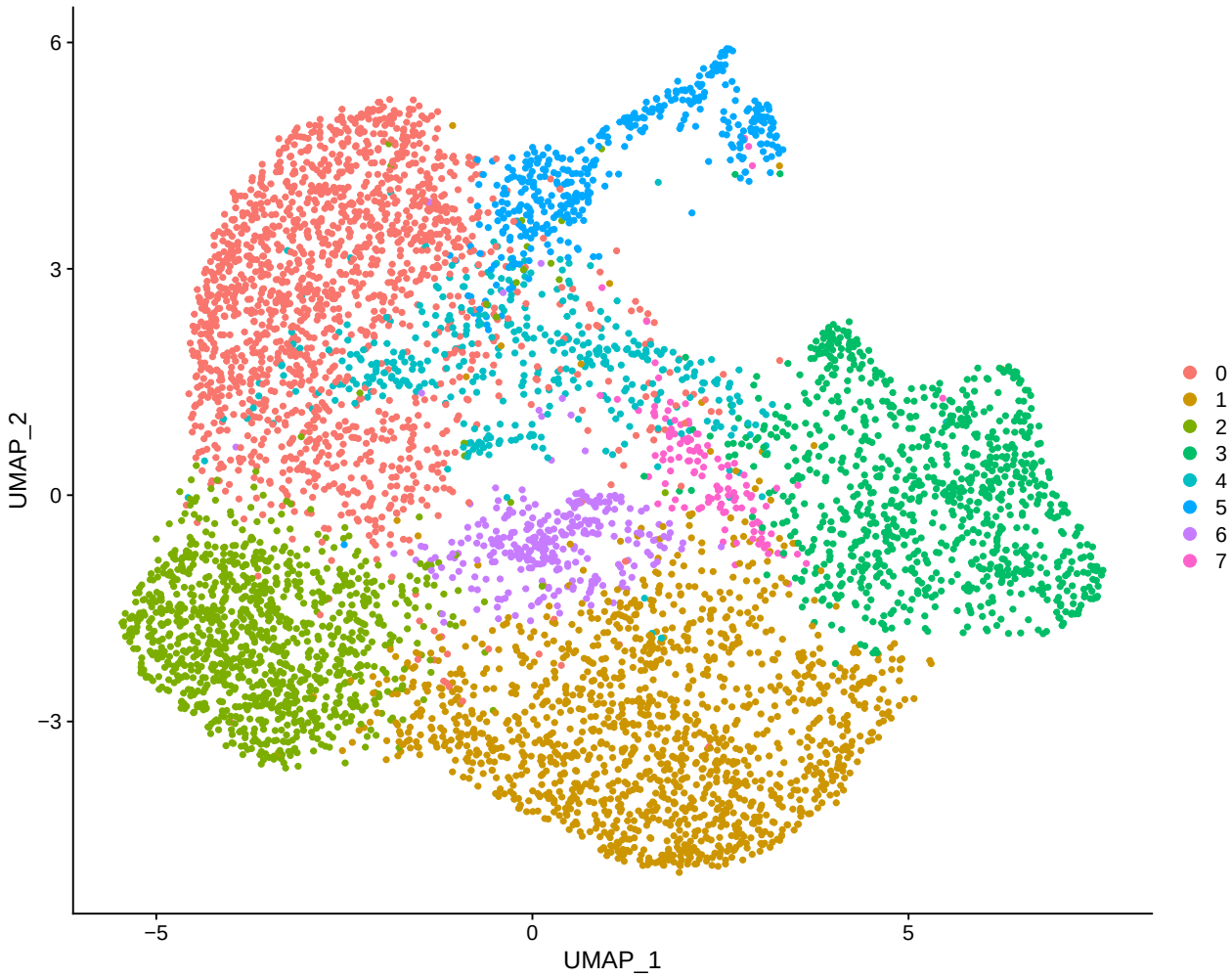
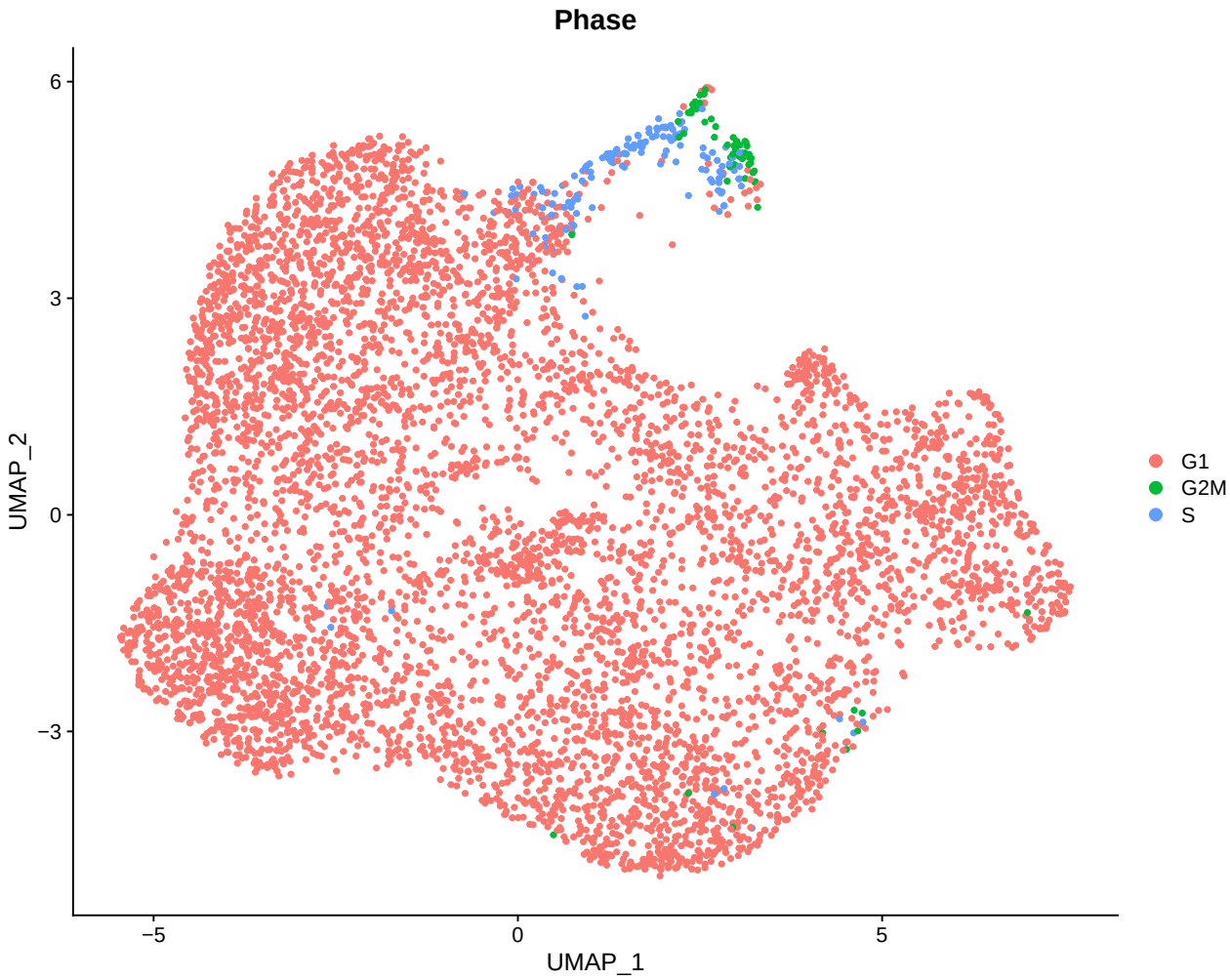
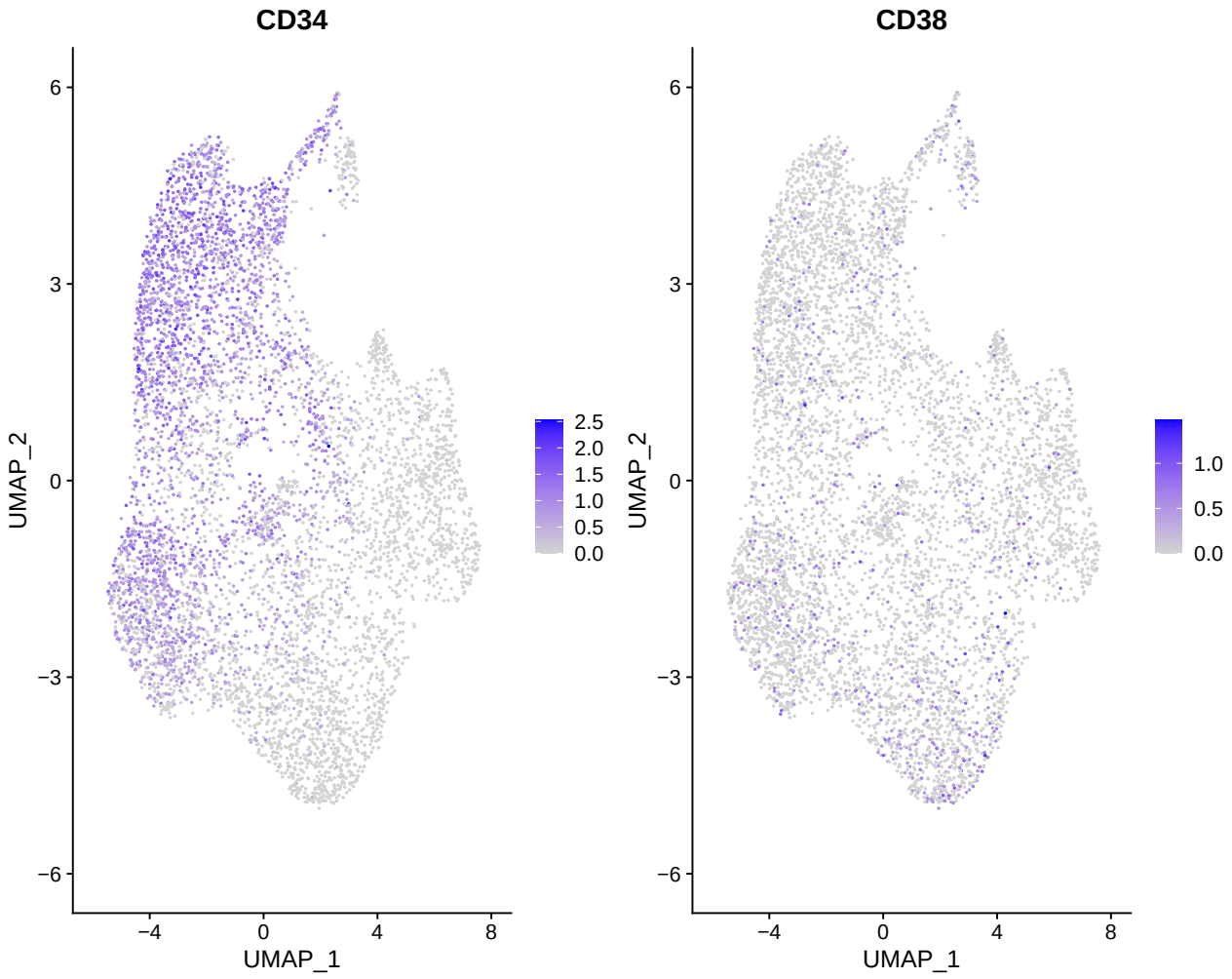
1. Put together both 34 and 38 libraries. Apply QC and dimensionality reduction.

```
## Modularity Optimizer version 1.3.0 by Ludo Waltman and Nees Jan van Eck
##
## Number of nodes: 6214
## Number of edges: 209221
##
## Running Louvain algorithm...
## Maximum modularity in 10 random starts: 0.8405
## Number of communities: 8
## Elapsed time: 0 seconds
```

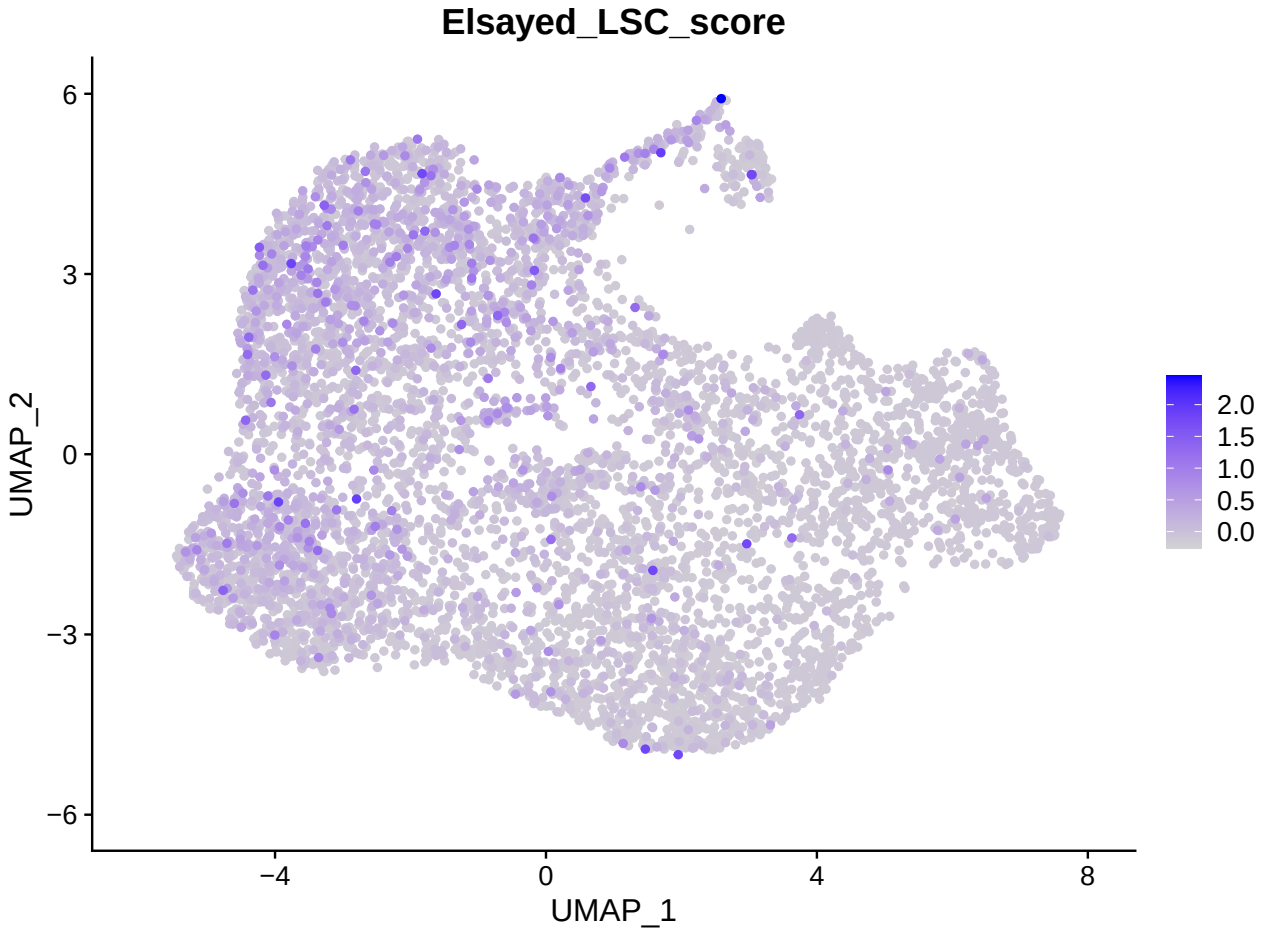

6
3
0
−3
UMAP_2
−5
0
5
UMAP_1
0
1
2
3
4
5
6
7

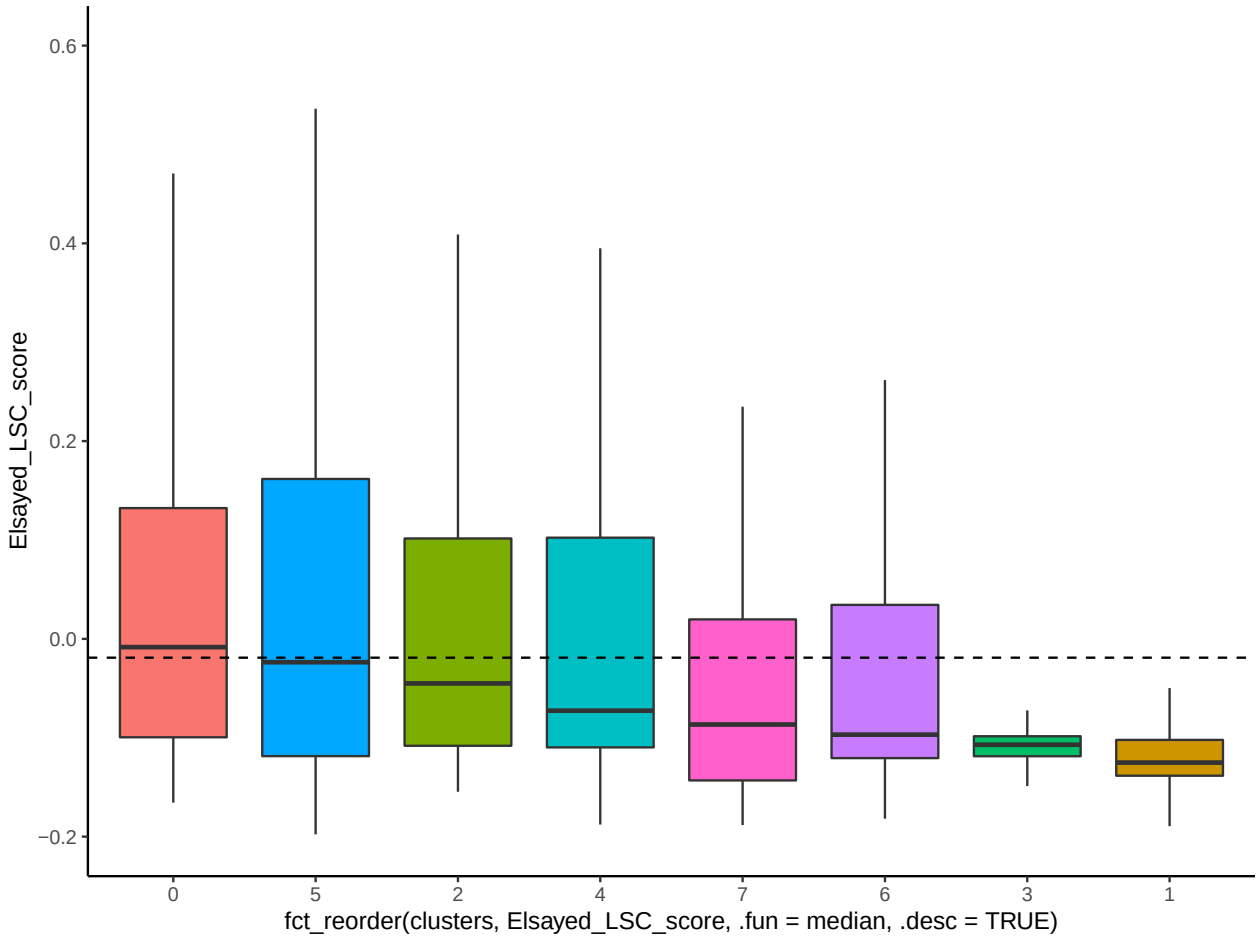

Phase
6
3
0
−3
UMAP_2
−5
0
5
UMAP_1
G1
G2M
S



2. Get the LSC6 score

```
## [1] "CD34"   "SPINK2" "SOCS2"  "FAM30A" "ADGRG1" "DNMT3B"
```

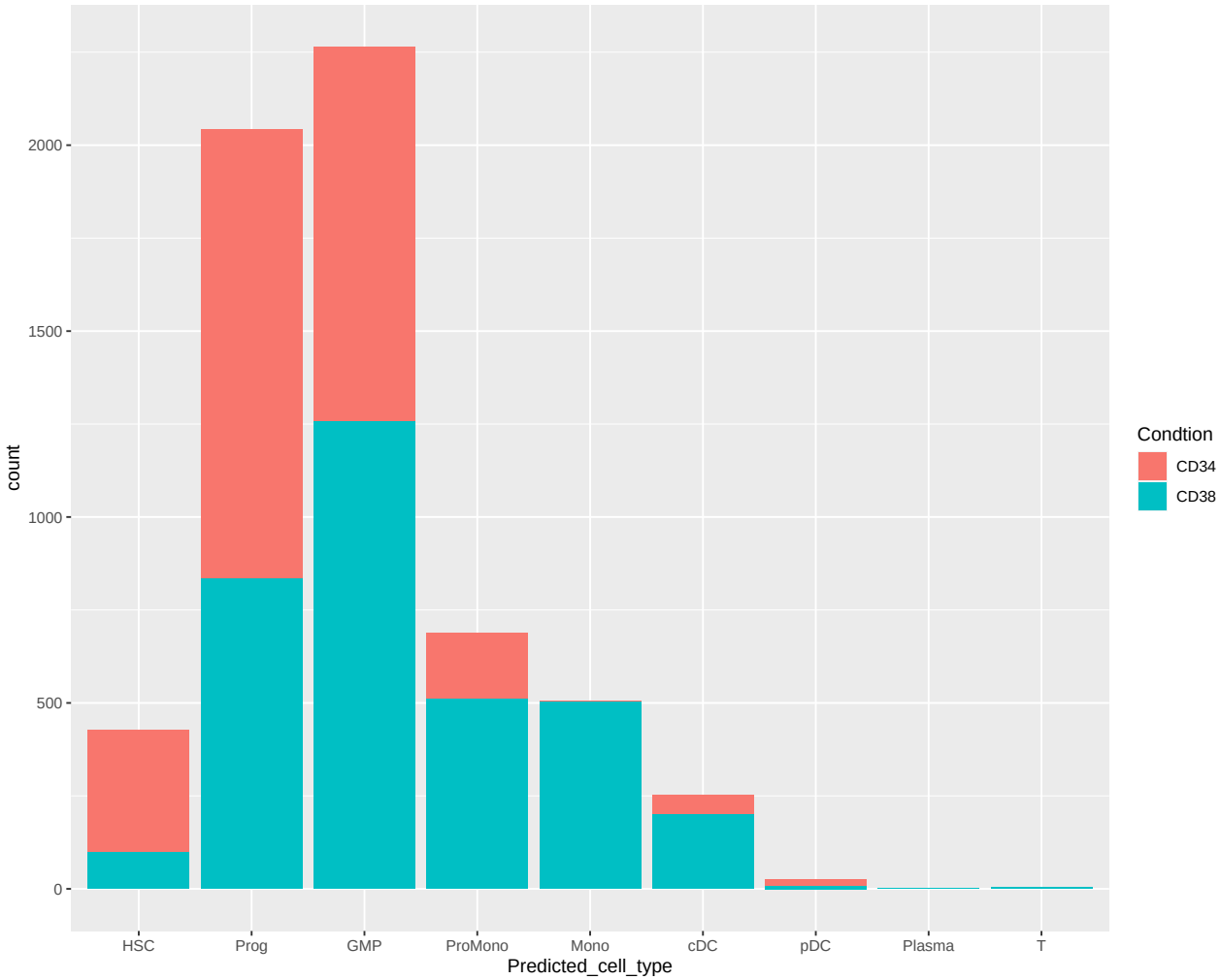

Elsayed_LSC_score
6
3
0
−3
−6
UMAP_2
−4
0
4
8
UMAP_1
2.0
1.5
1.0
0.5
0.0

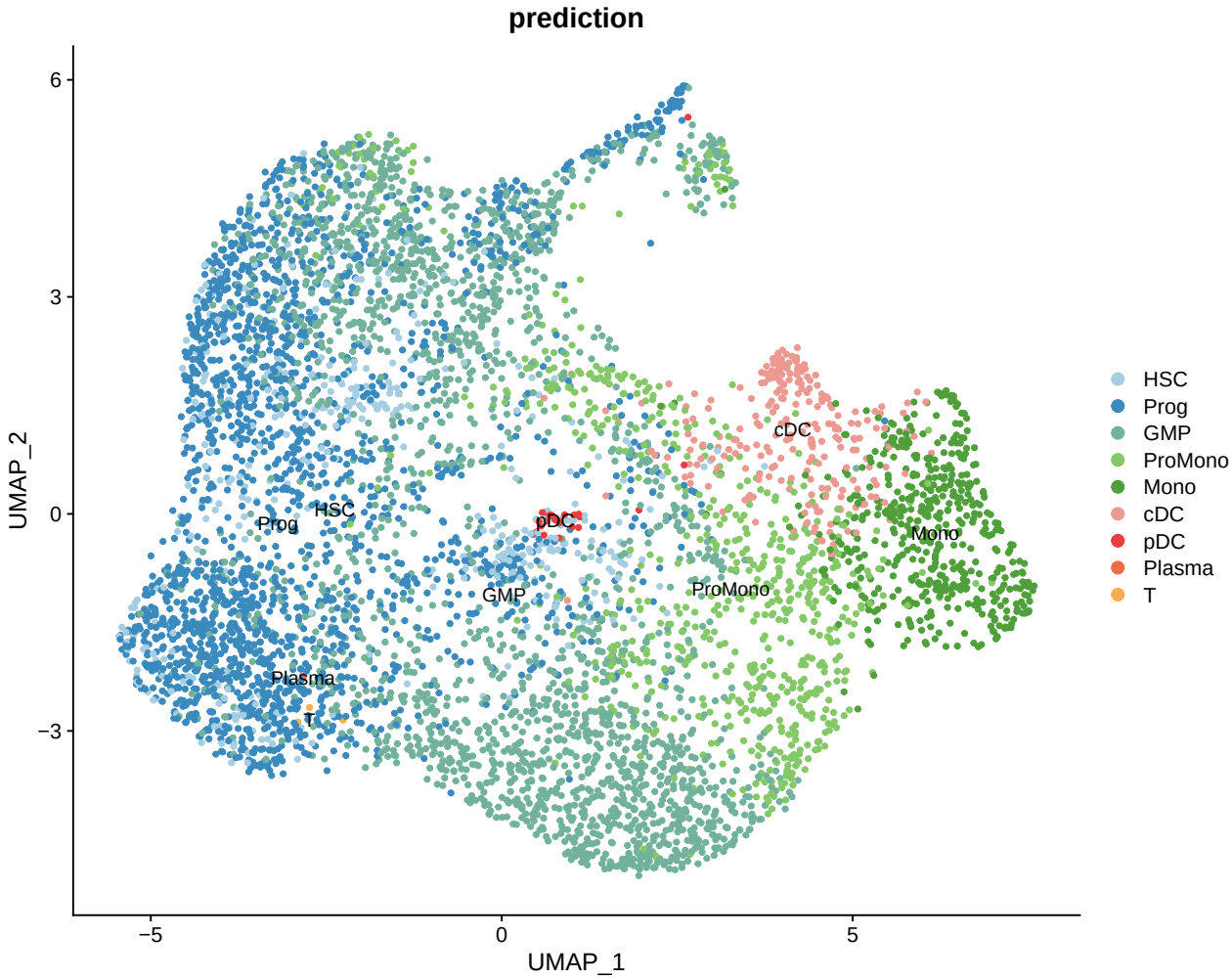


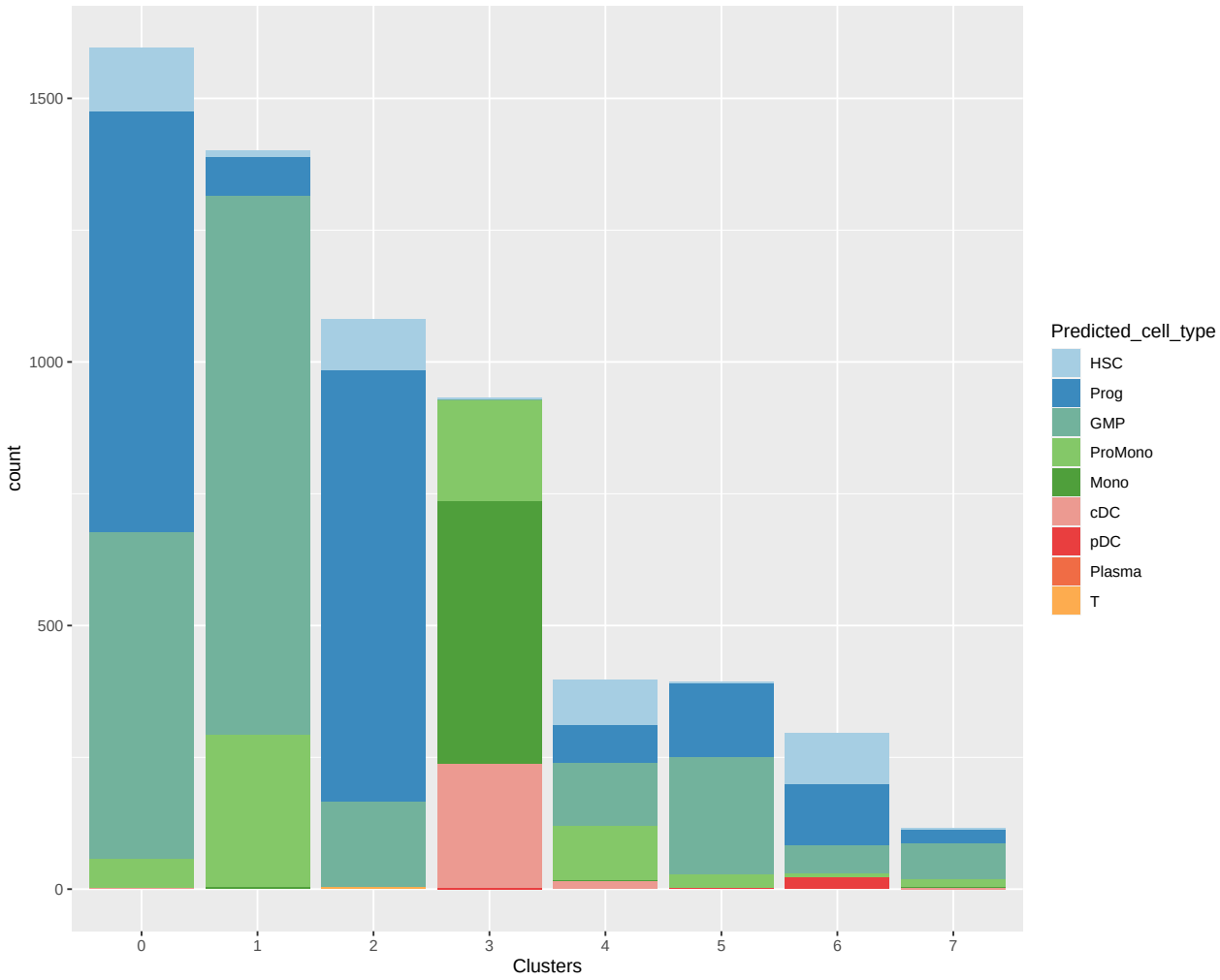
3. Predict the class of the cells using the markers and the expression of the BM cells form Van_Galen paper

```
## Performing PCA on the provided reference using 1821 features as input.
## Projecting cell embeddings
## Finding neighborhoods
## Finding anchors
##  Found 2055 anchors
## Filtering anchors
##  Retained 1132 anchors
## Finding integration vectors
## Finding integration vector weights
## Predicting cell labels
##
##         HSC Prog  GMP ProMono Mono  cDC  pDC earlyEry lateEry ProB    B Plasma
##   CD34  330 1210 1009     177    5   54   17        0       0    0    0      0
##   CD38   98  834 1256     511  502  199    8        0       0    0    0      1
```

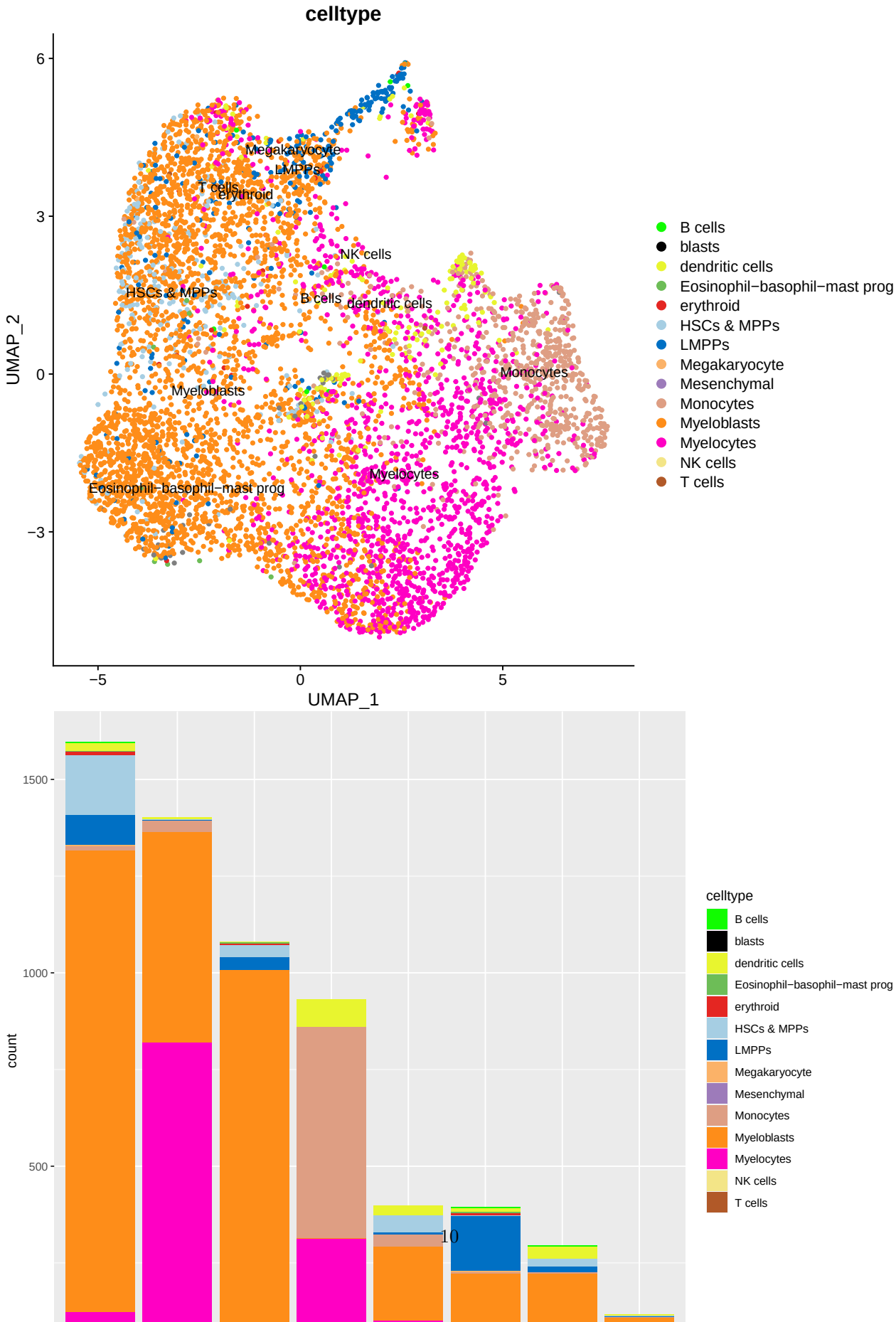
```
##
##          T  CTL   NK
##    CD34  0    0    0
##    CD38  3    0    0
```




prediction
UMAP_2
UMAP_1
6
3
0
−3
−5
0
5
HSC
Prog
GMP
ProMono
Mono
cDC
pDC
Plasma
T
Prog
HSC
pDC
cDC
Mono
GMP
ProMono
Plasma
T


1500
1000
500
0
count
0
1
2
3
4
5
6
7
Clusters
Predicted_cell_type
HSC
Prog
GMP
ProMono
Mono
cDC
pDC
Plasma
T

4. Project the predictions from Velten onto our UMAP



Cluster 0 seems the most likely to be enriched in LSC