AML10_Dx

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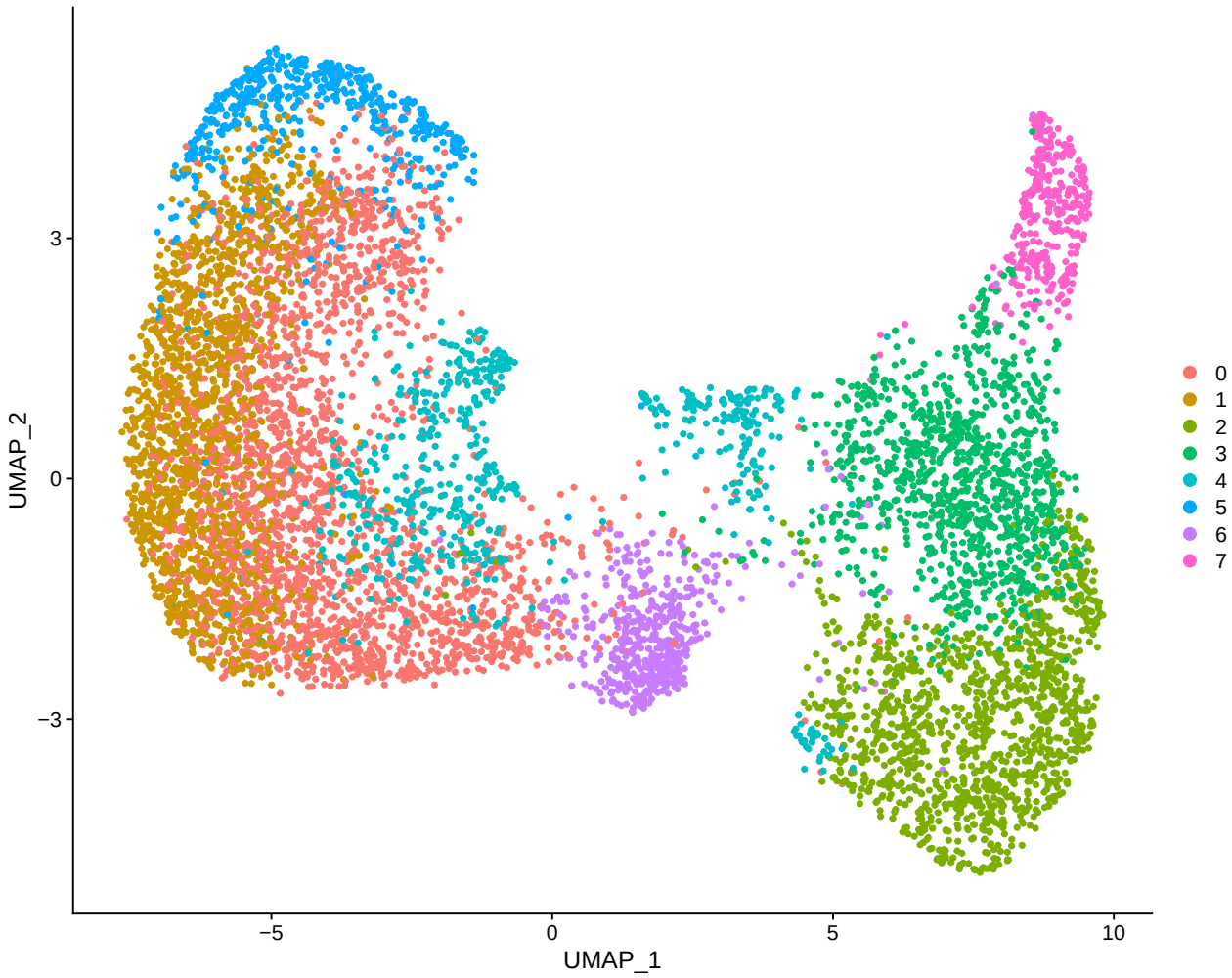
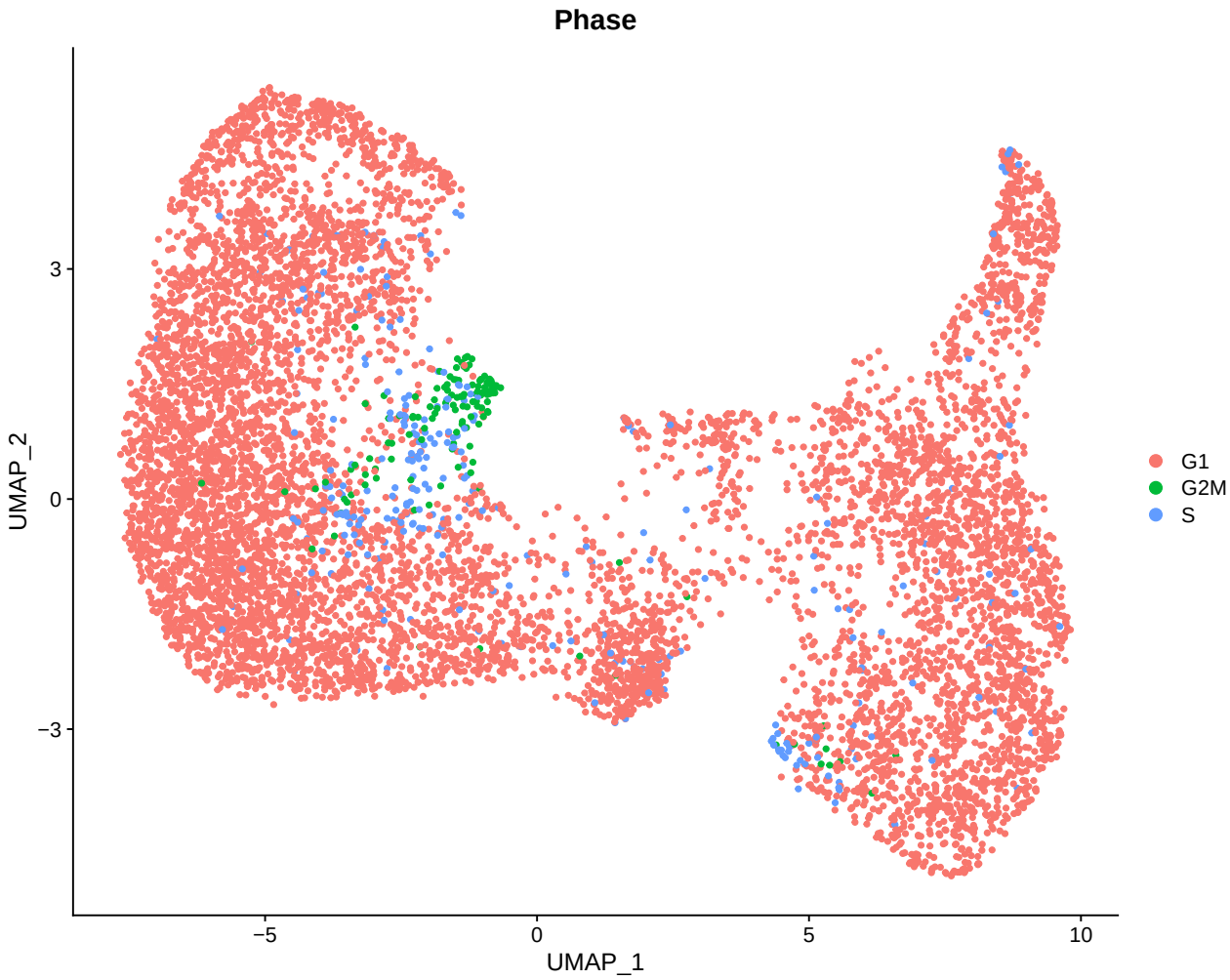
2022-02-08 13:27:35

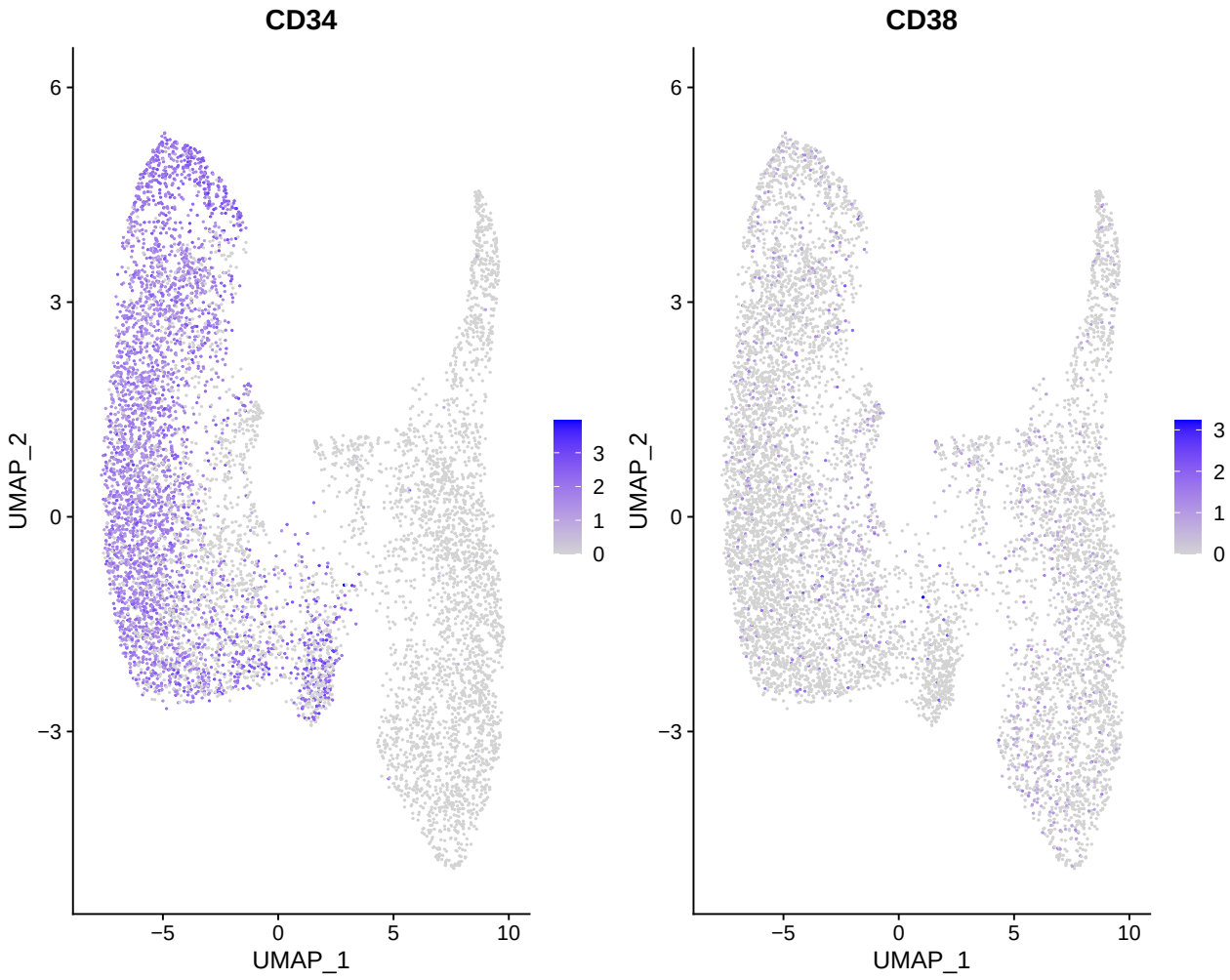
Contents

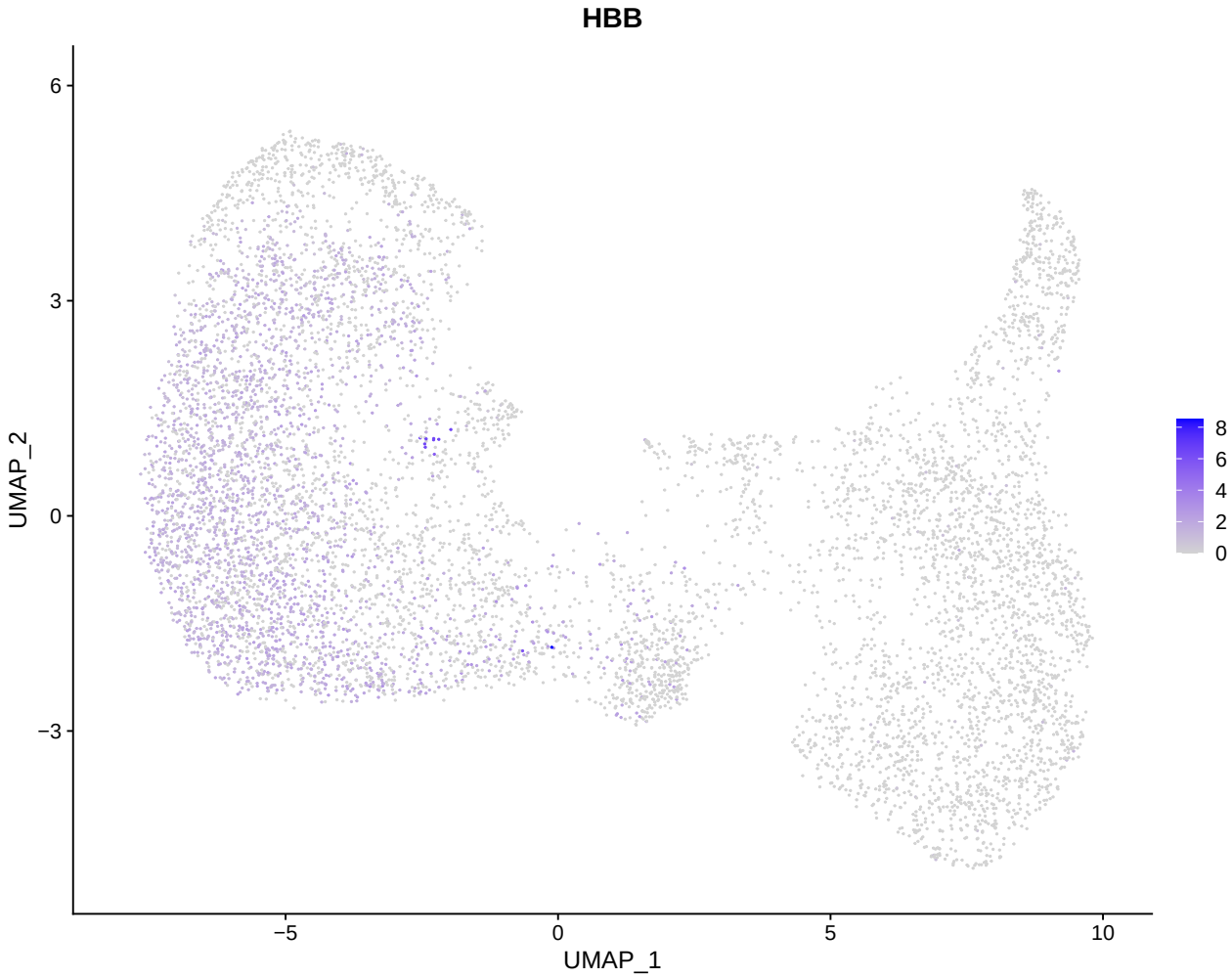
1. Put together both 34 and 38 libraries. Apply QC and dimensionality reduction.

```
## CD34_AAACCCAAGCGTGAGT-1 CD34_AAACCCACAAGCGAAC-1 CD34_AAACCCACACCTCAGG-1
##                       1                       0                       6
## CD34_AAACCCACATTGACTG-1 CD34_AAACCCATCTGTCGTC-1
##                       0                       0
## Levels: 0 1 2 3 4 5 6 7
```


UMAP_2
3
0
−3
−5
0
5
10
UMAP_1
0
1
2
3
4
5
6
7

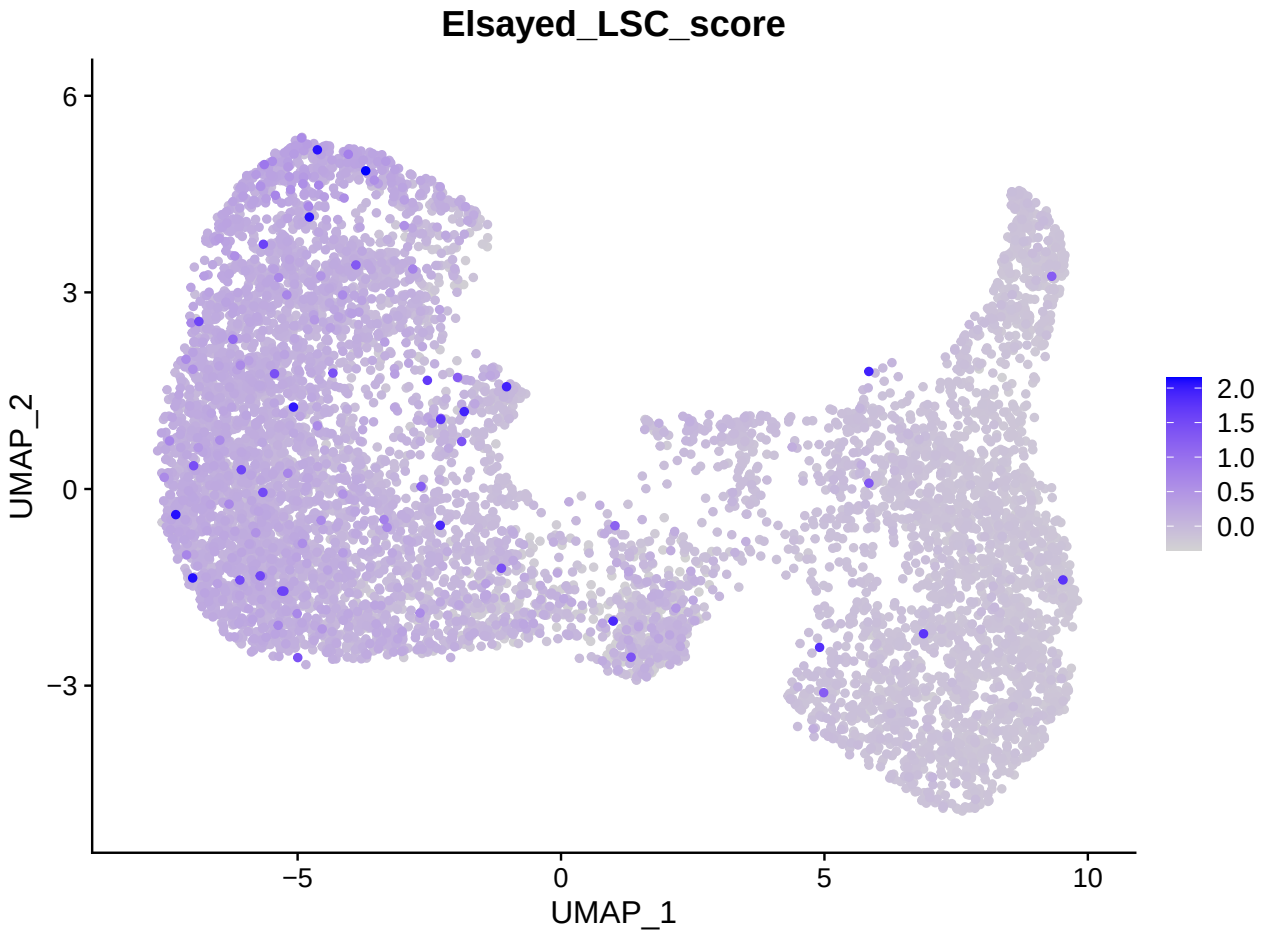

Phase
UMAP_2
3
0
−3
−5
0
5
10
UMAP_1
G1
G2M
S

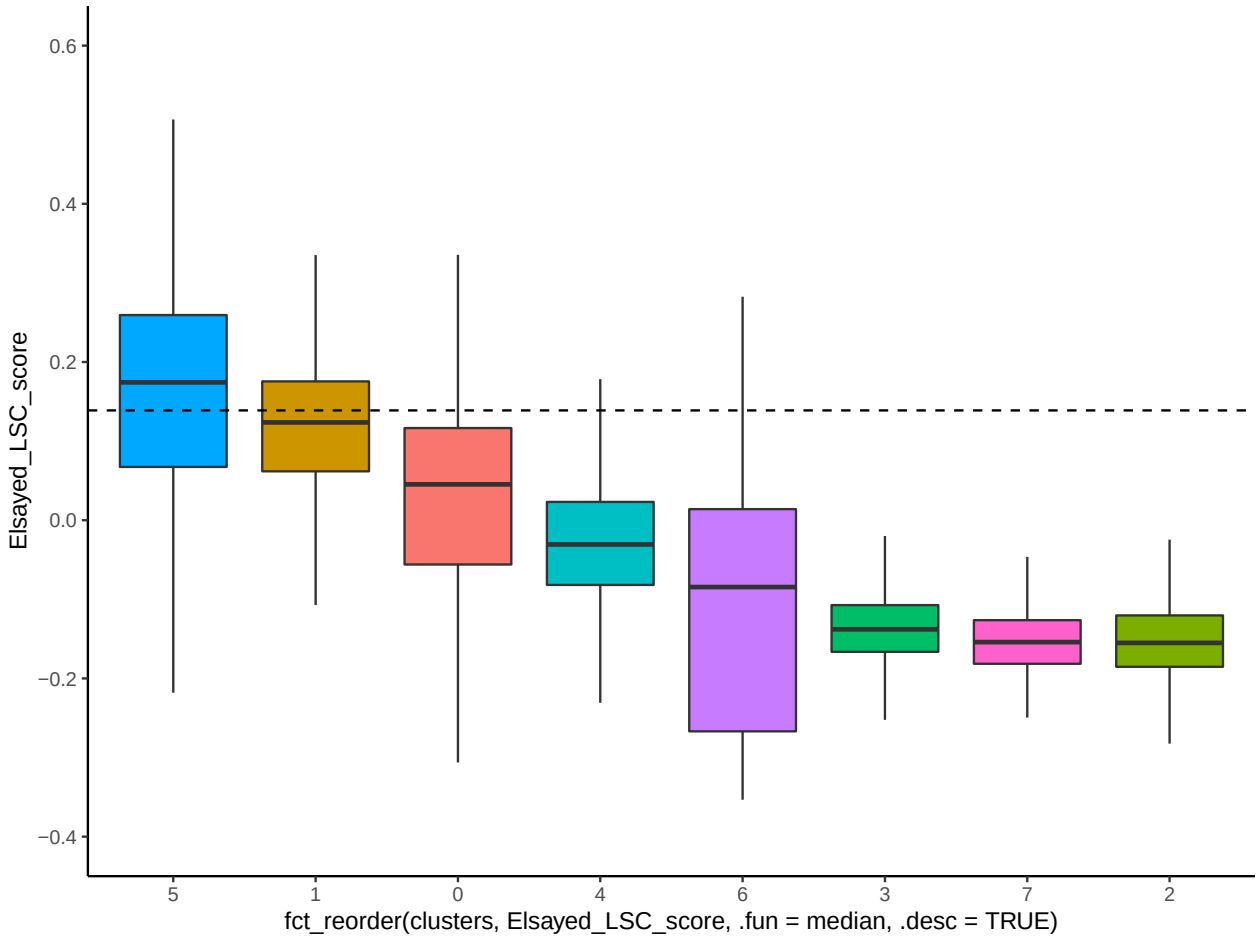

CD34
CD38
UMAP_2
UMAP_1
6
3
0
−3
−5
0
5
10
3
2
1
0



2. Get the LSC6 score

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

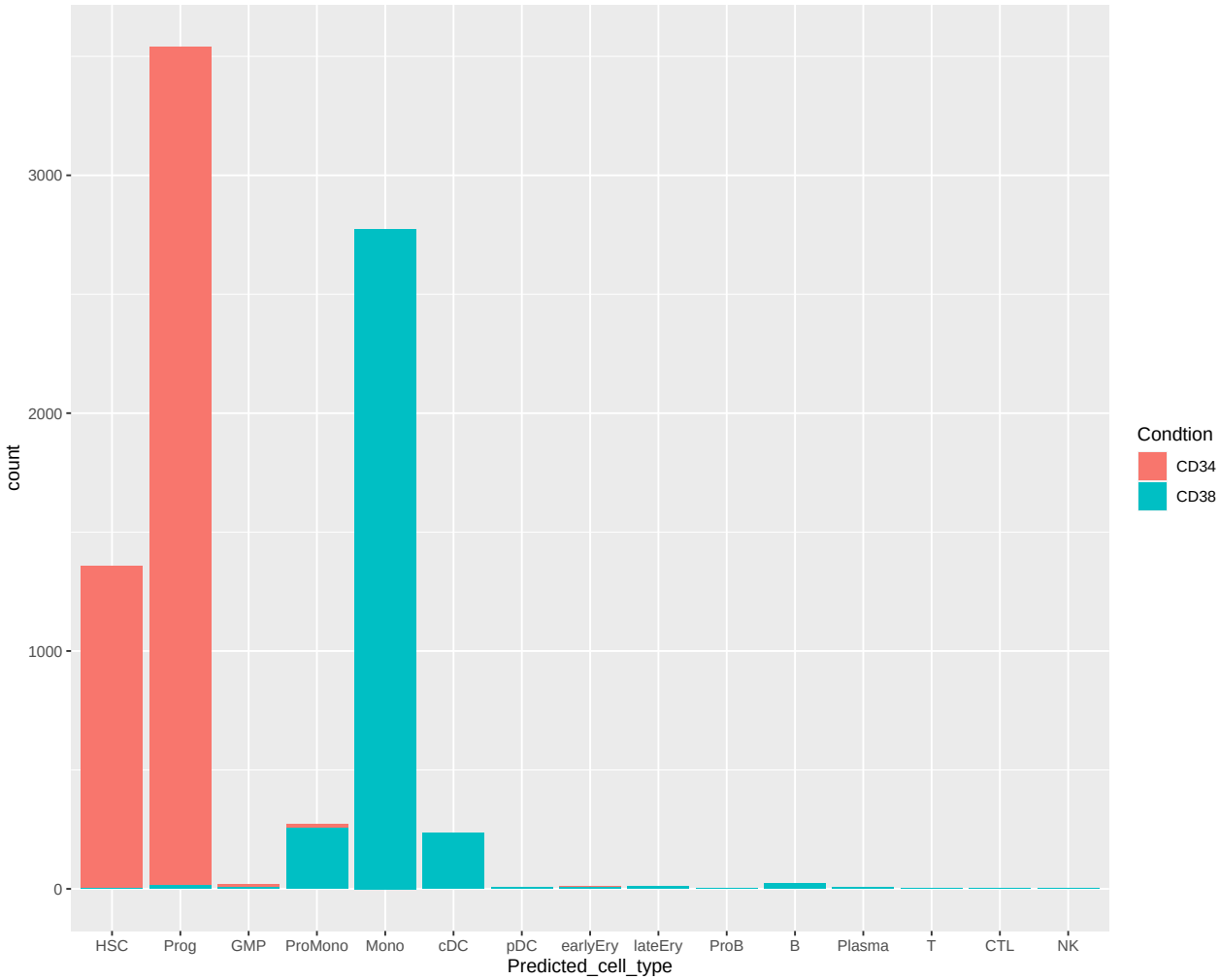

Elsayed_LSC_score
6
3
0
−3
UMAP_2
−5
0
5
10
UMAP_1
2.0
1.5
1.0
0.5
0.0

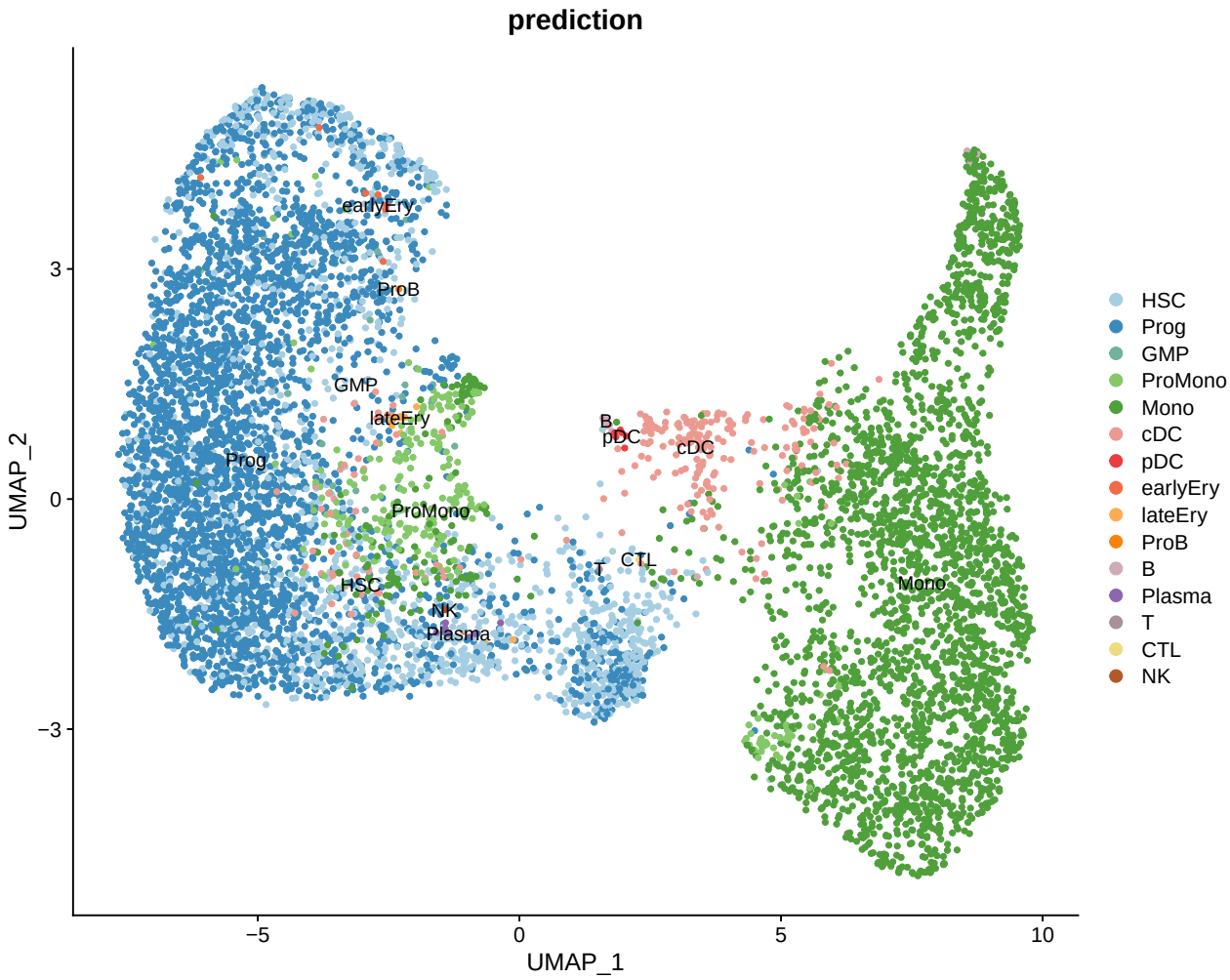


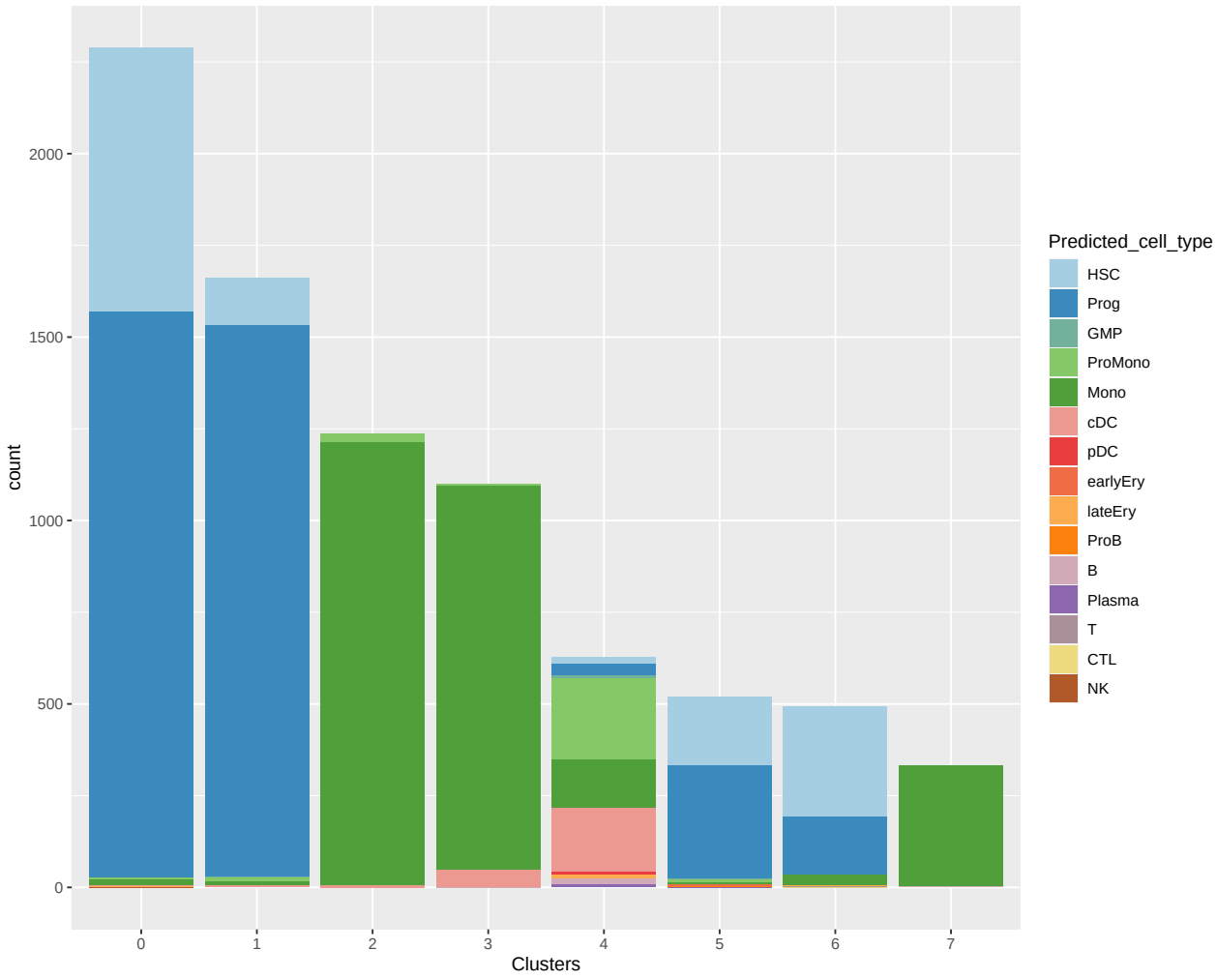
3. Predict the class of the cells using the markers and the expression of the BM cells form Van_Galen paper

```
## Performing PCA on the provided reference using 1821 features as input.
## Projecting cell embeddings
## Finding neighborhoods
## Finding anchors
##  Found 2785 anchors
## Filtering anchors
##  Retained 1482 anchors
## Finding integration vectors
## Finding integration vector weights
## Predicting cell labels
##
##         HSC Prog  GMP ProMono Mono  cDC  pDC earlyEry lateEry ProB    B Plasma
##   CD34 1353 3527   14       18    0    1    0        1       2    0    0      0
##   CD38    3   14    7      254 2774  235    7        8       9    1   22      8
```

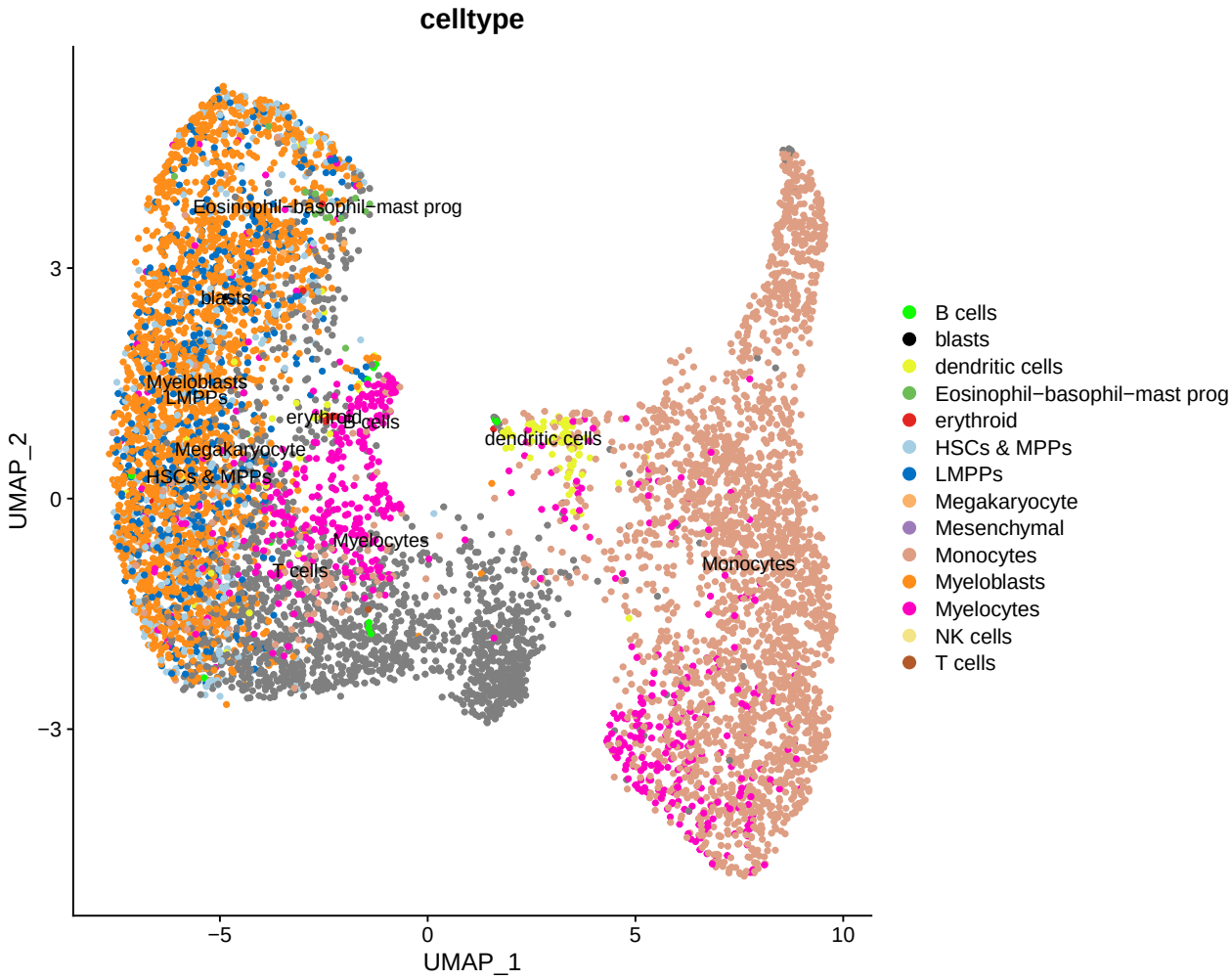
```
##
##          T  CTL   NK
##    CD34  0    0    0
##    CD38  1    1    1
```

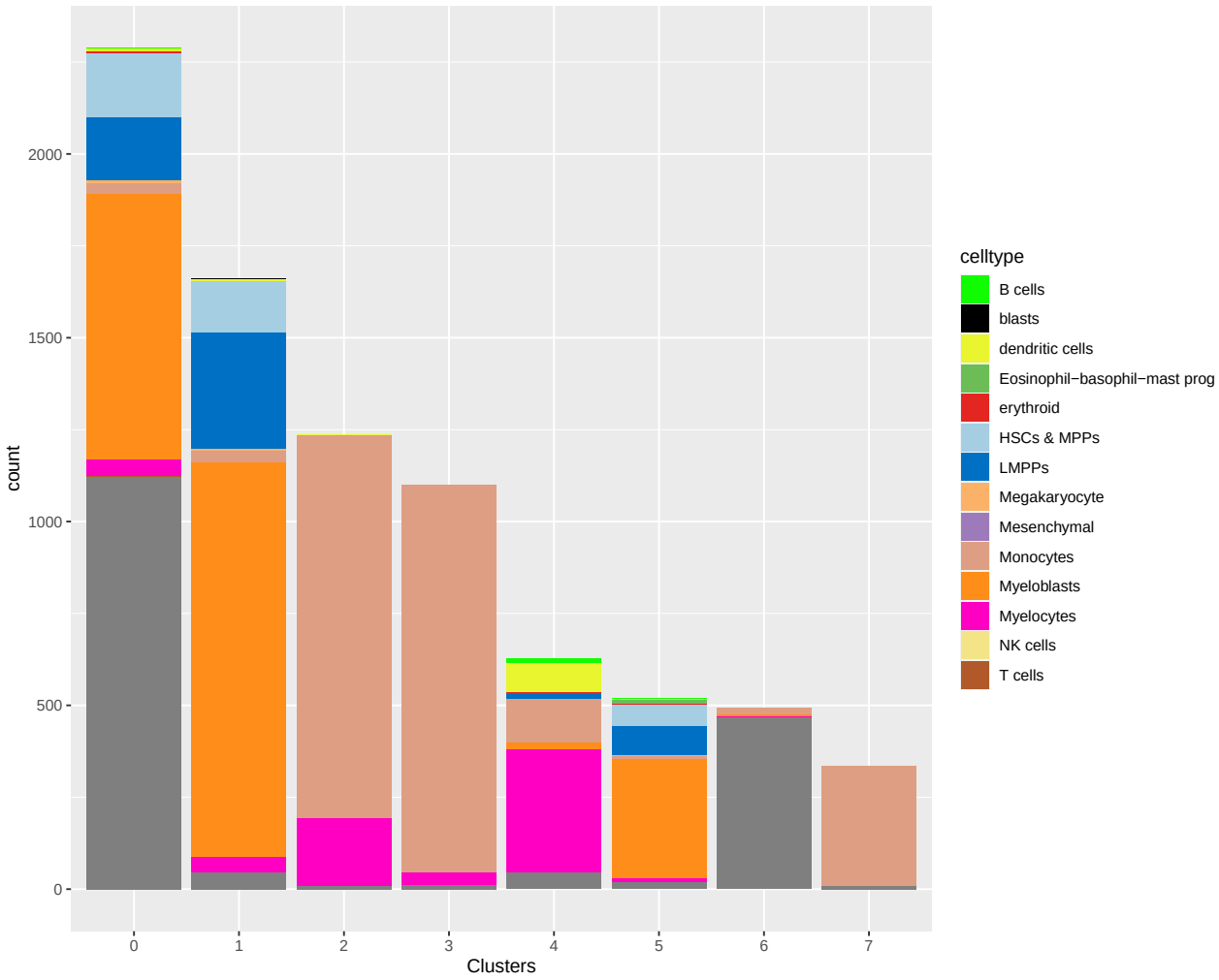



prediction
earlyEry
ProB
GMP
lateEry
Prog
ProMono
HSC
NK
Plasma
B
pDC
cDC
T
CTL
Mono
UMAP_2
UMAP_1
3
0
−3
−5
0
5
10
HSC
Prog
GMP
ProMono
Mono
cDC
pDC
earlyEry
lateEry
ProB
B
Plasma
T
CTL
NK


count
2000
1500
1000
500
0
0
1
2
3
4
5
6
7
Clusters
Predicted_cell_type
HSC
Prog
GMP
ProMono
Mono
cDC
pDC
earlyEry
lateEry
ProB
B
Plasma
T
CTL
NK

4. Project the predictions from Velten onto our UMAP





Cluster 5 seems the most likely to be enriched in LSC