

# AML9\_Dx

jtrincado

2022-02-08 10:03:47

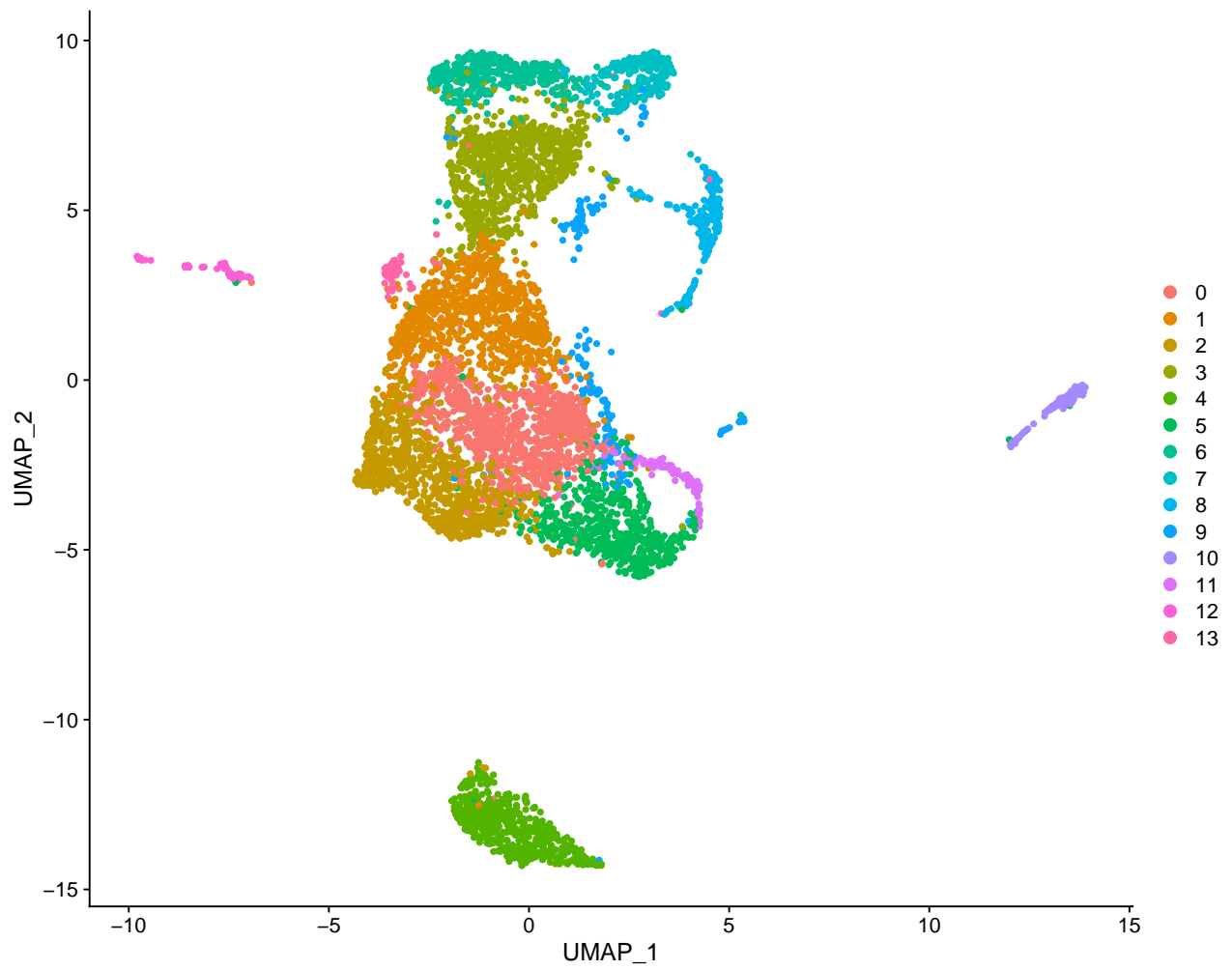
## Contents

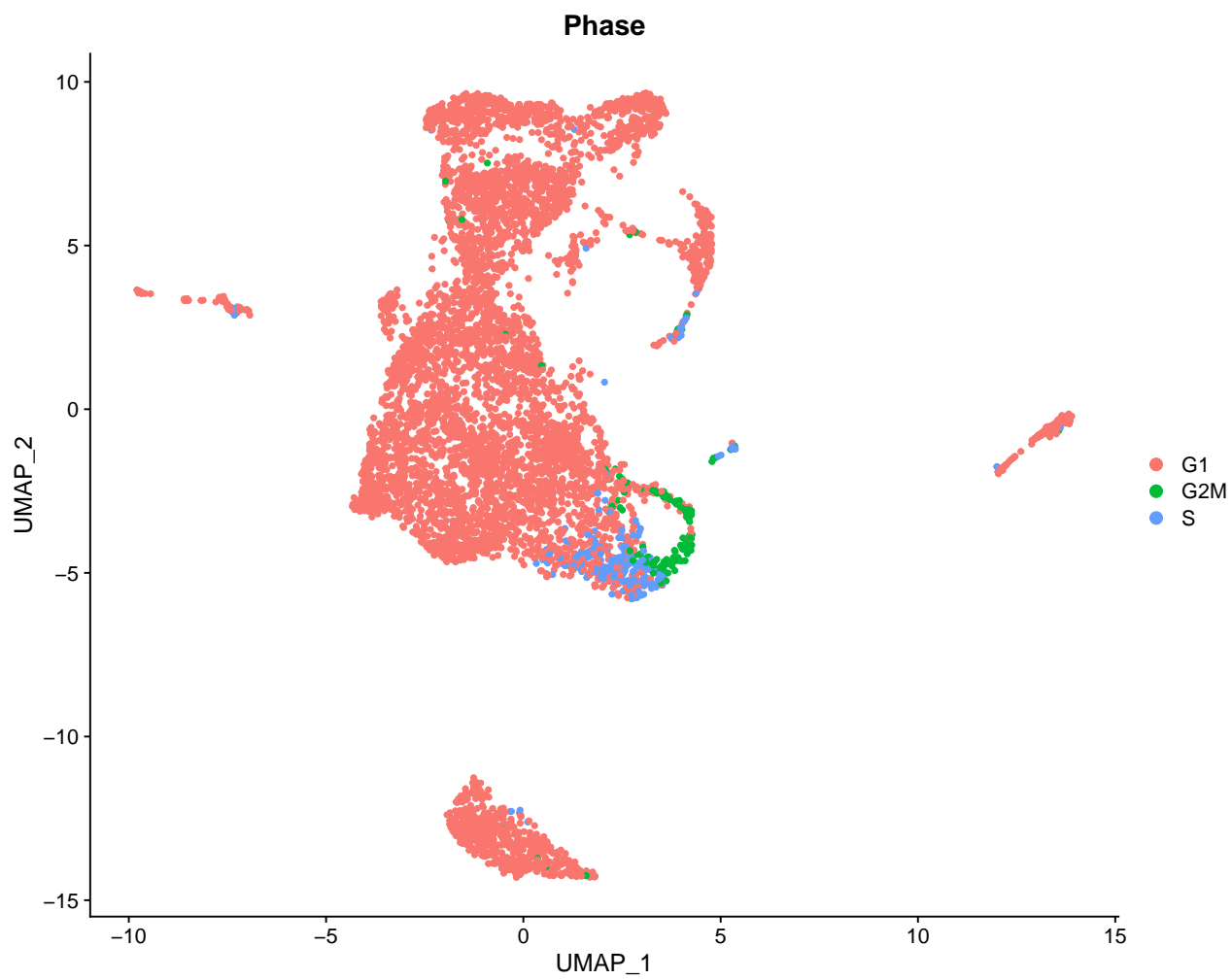
1. Put together both 34 and 38 libraries. Apply QC and dimensionality reduction. . . . .	1
2. Get the LSC6 score . . . . .	5
3. Predict the class of the cells using the markers and the expression of the BM cells from Van_Galen paper . . . . .	7
4. Project the predictions from Velten onto our UMAP . . . . .	11
Cluster 12 appears as the one more enriched on LSC6, but we observe very low expression of RUNX1T1, malignant marker for t(8;21). Cluster 2 shows upregulation of this gene. We propose cluster 2 as the most enriched in LSC . . . . .	12

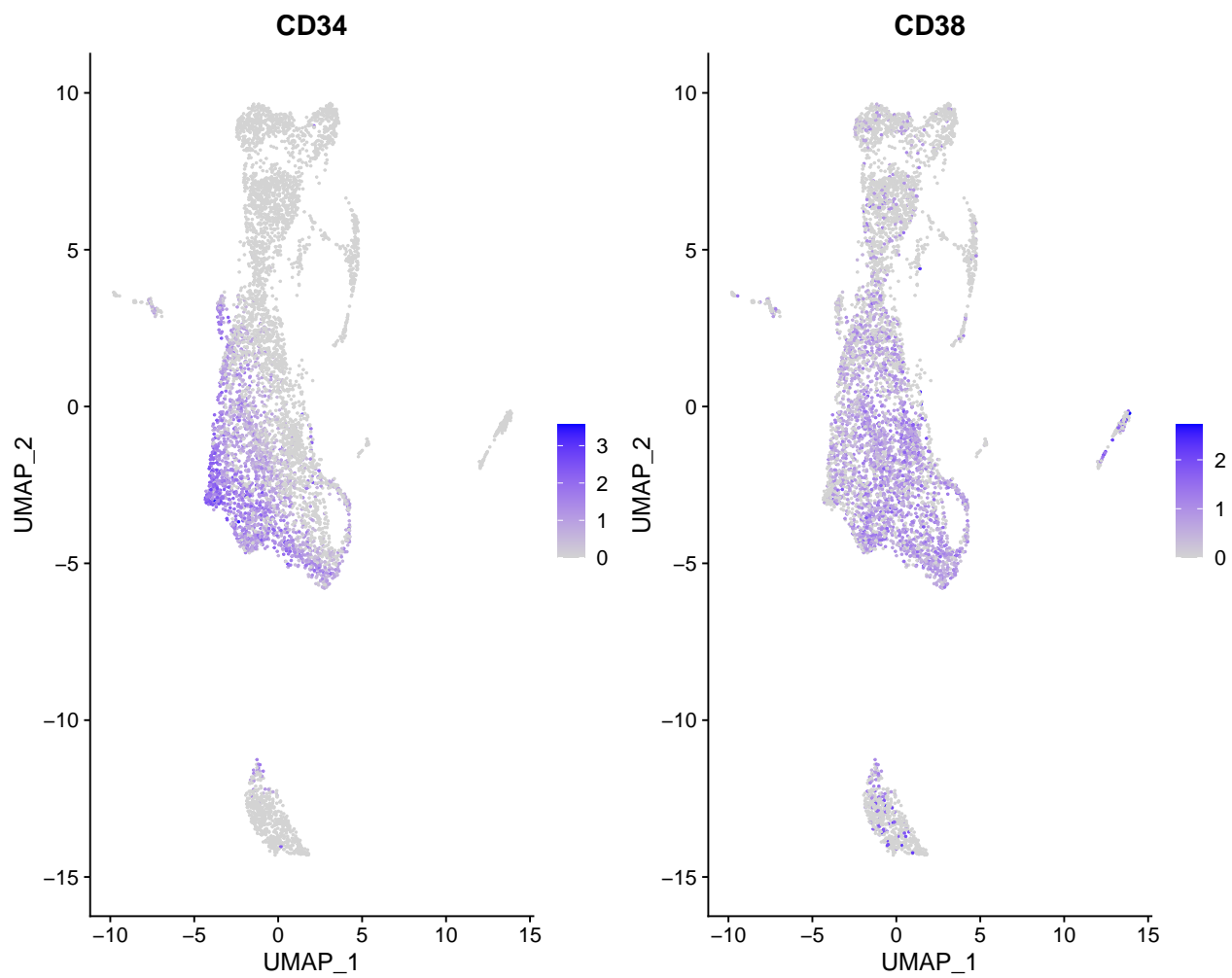
## 1. Put together both 34 and 38 libraries. Apply QC and dimensionality reduction.

```
## CD34_AAACCCAAGGAGCTGT-1 CD34_AAACCCACAGAGTGTG-1 CD34_AAACGAACAATACCCA-1
##                      12                      2                      2
## CD34_AAACGAATCAGGAAAT-1 CD34_AAACGAATCATTTCCTCA-1
##                      0                      1
## Levels: 0 1 2 3 4 5 6 7 8 9 10 11 12 13

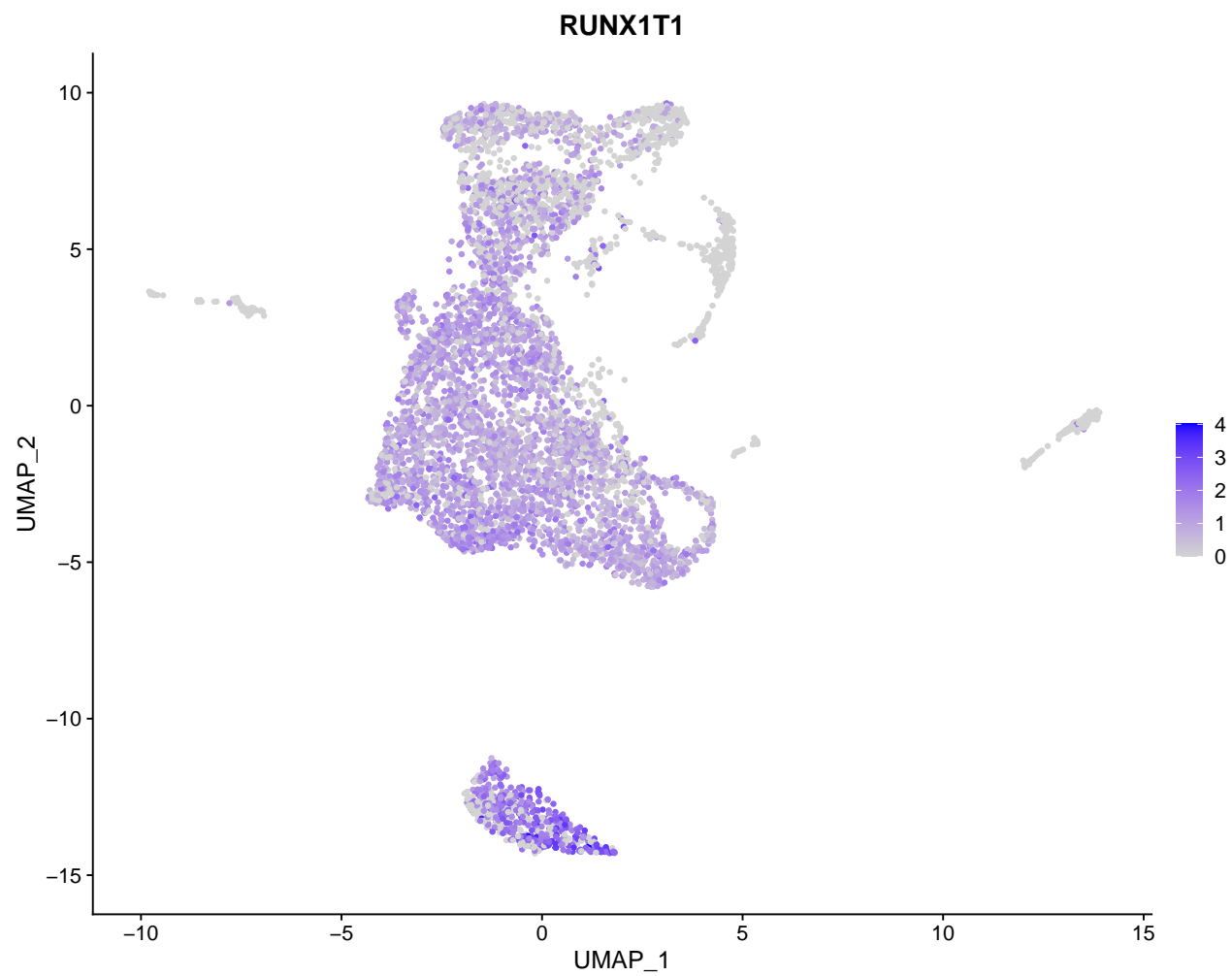
##
##      0   1   2   3   4   5   6   7   8   9  10  11  12  13
##  CD34 674 397 822  22  87 369   3   0   0  57   2  72  47  55
##  CD38 342 519  28 787 476 189 391 257 210 128 139  41  37   2
```





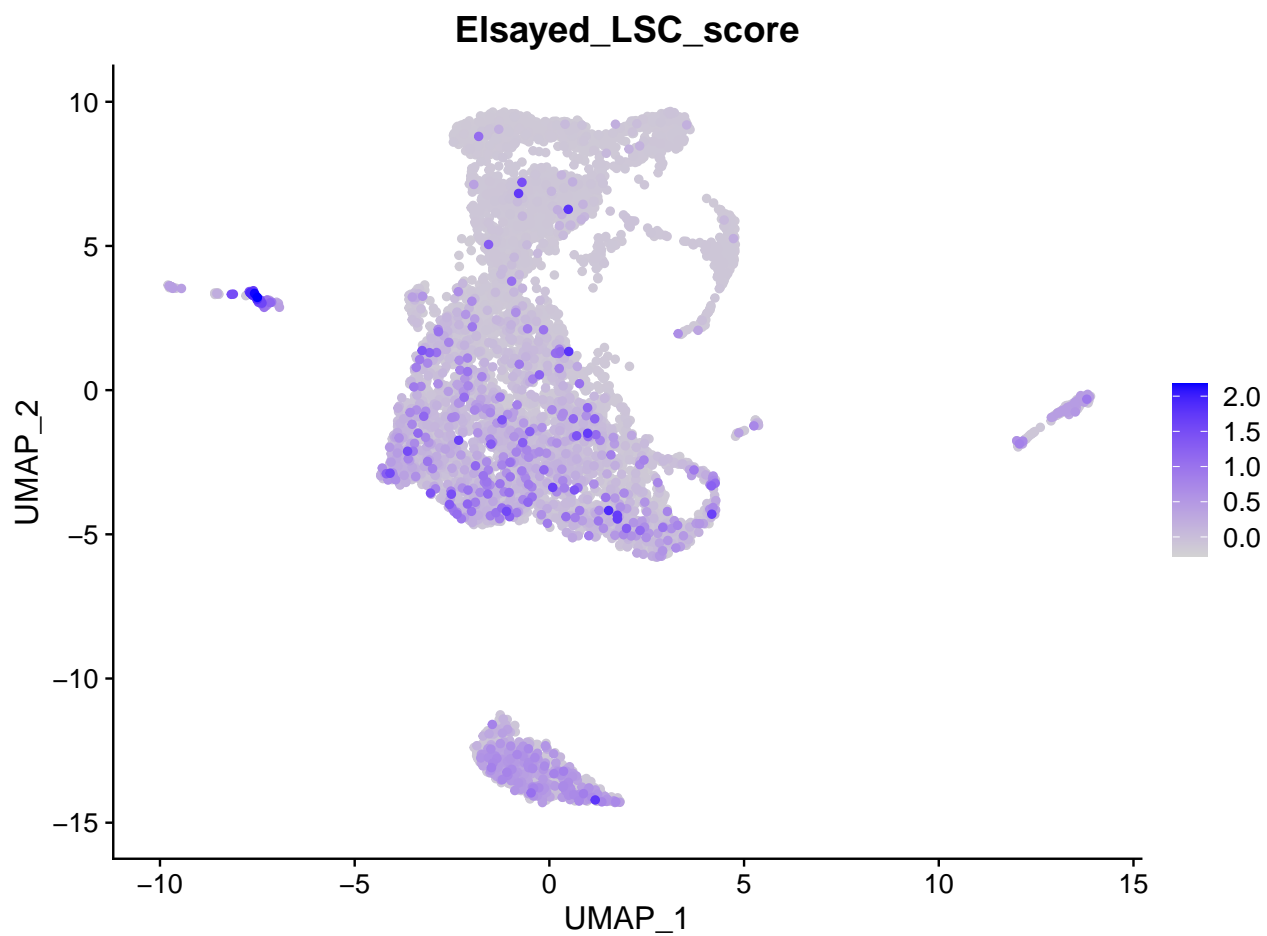


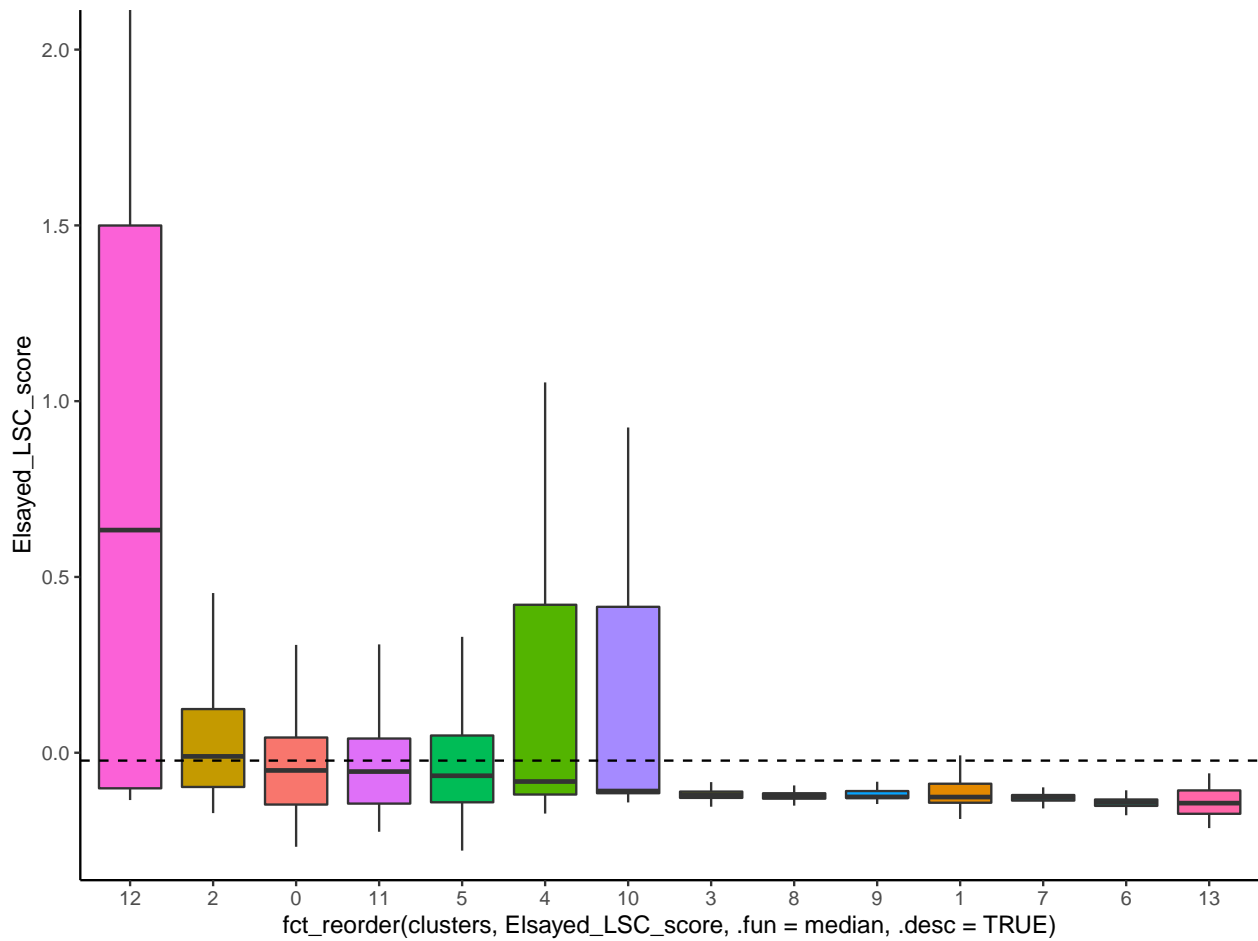
## Check for expression of malignant marker for t(8;21) RUNX1T1



## 2. Get the LSC6 score

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

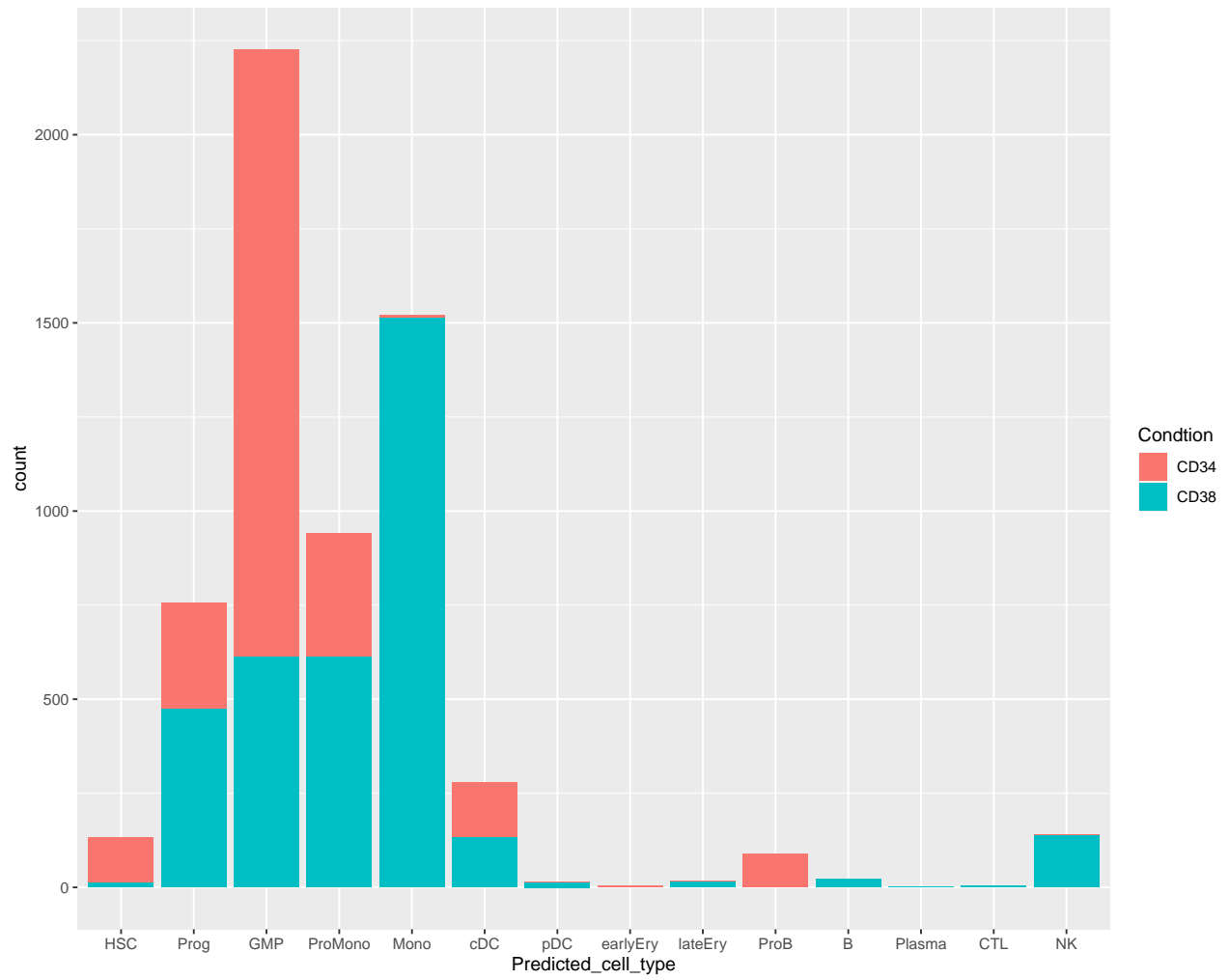




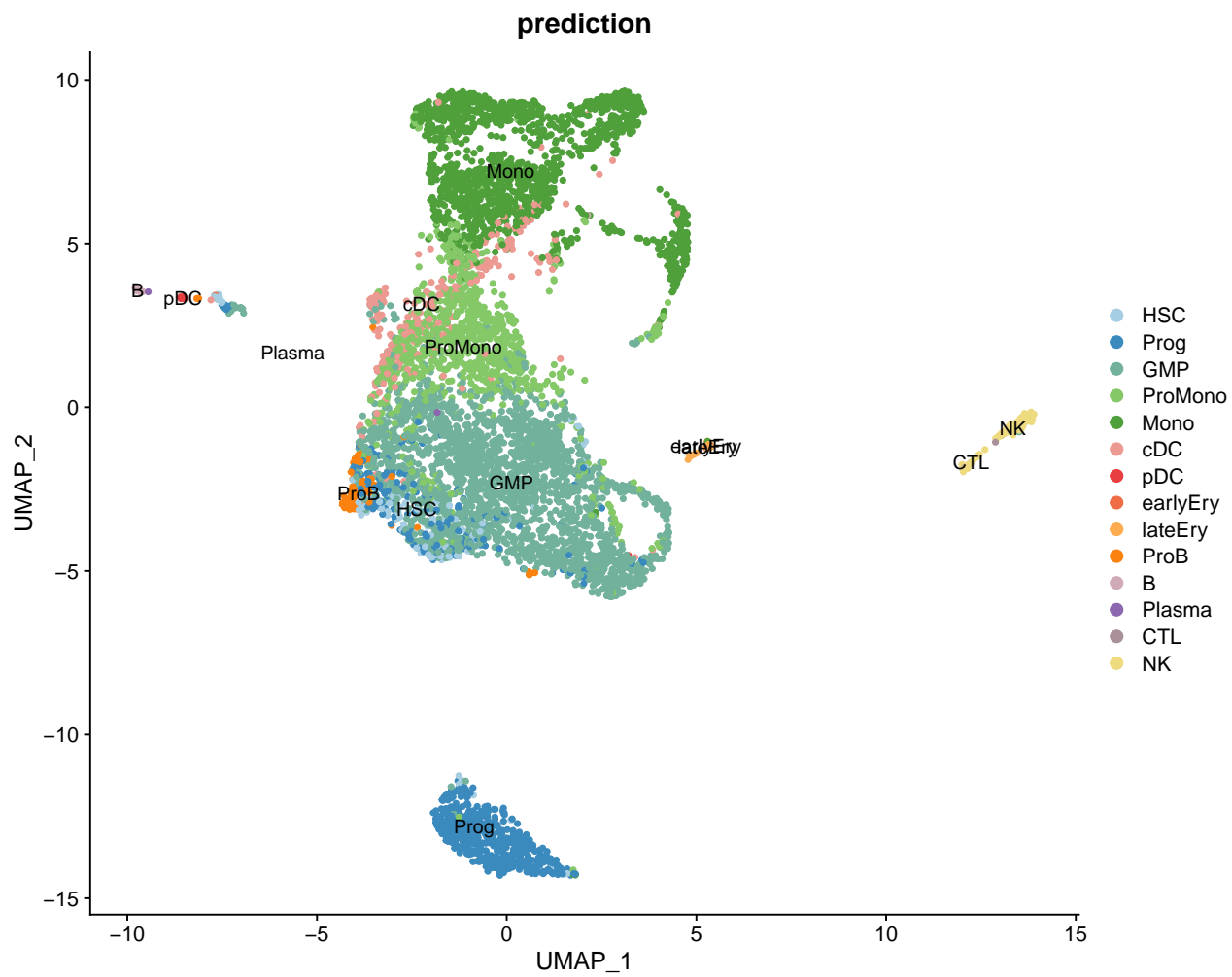
### 3. Predict the class of the cells using the markers and the expression of the BM cells form Van\_Galen paper

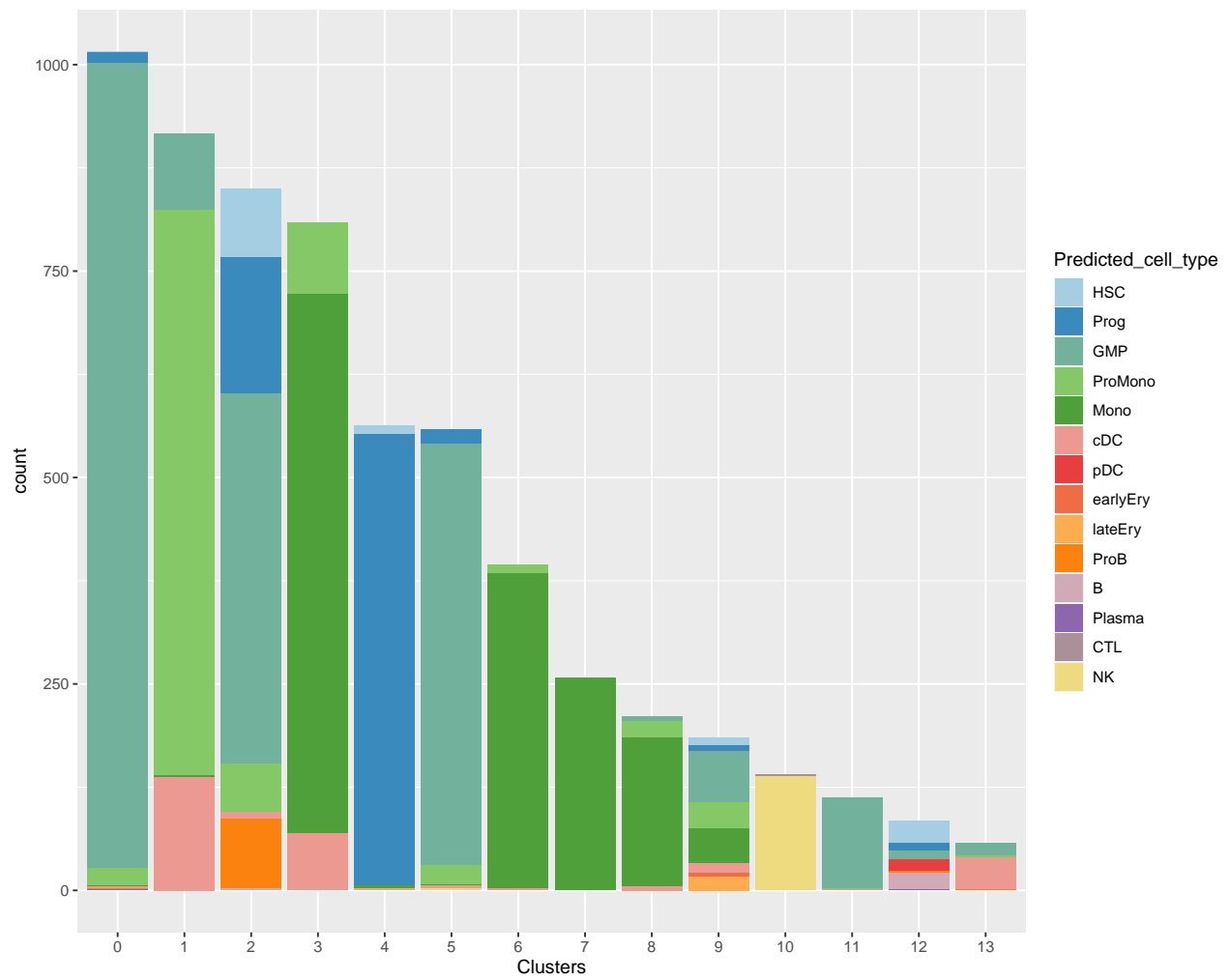
```
## Performing PCA on the provided reference using 1821 features as input.
## Projecting cell embeddings
## Finding neighborhoods
## Finding anchors
## Found 2089 anchors
## Filtering anchors
## Retained 1371 anchors
## Finding integration vectors
## Finding integration vector weights
## Predicting cell labels
##
##           HSC Prog  GMP ProMono Mono  cDC  pDC earlyEry lateEry ProB    B Plasma
##  CD34   121  283 1614    330    9  148    1      5      3  89    2      0
##  CD38    11  474  613    611 1513  132   13      0     15   0    21     2
```

##		T	CTL	NK
##	CD34	0	0	2
##	CD38	0	3	138

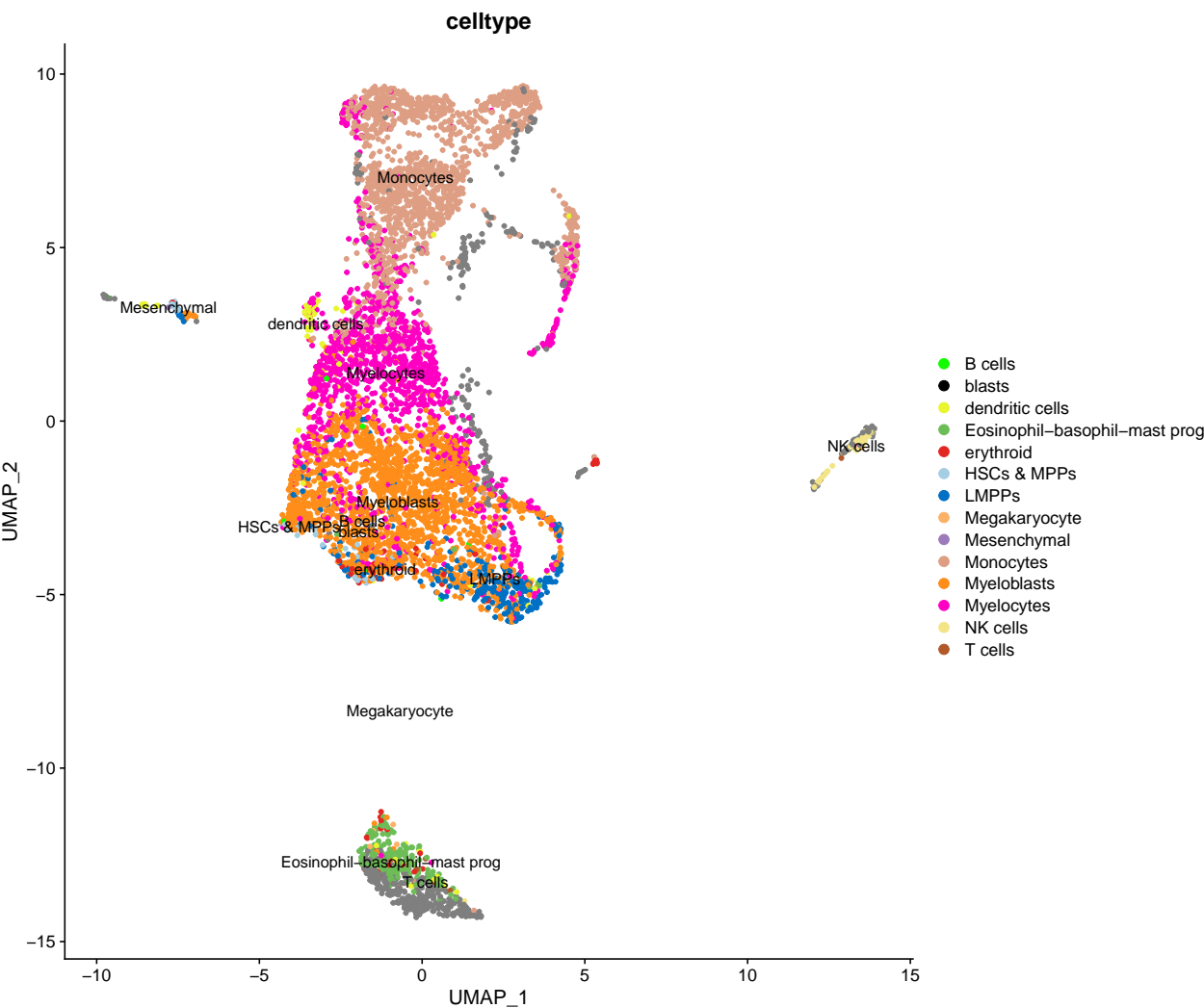




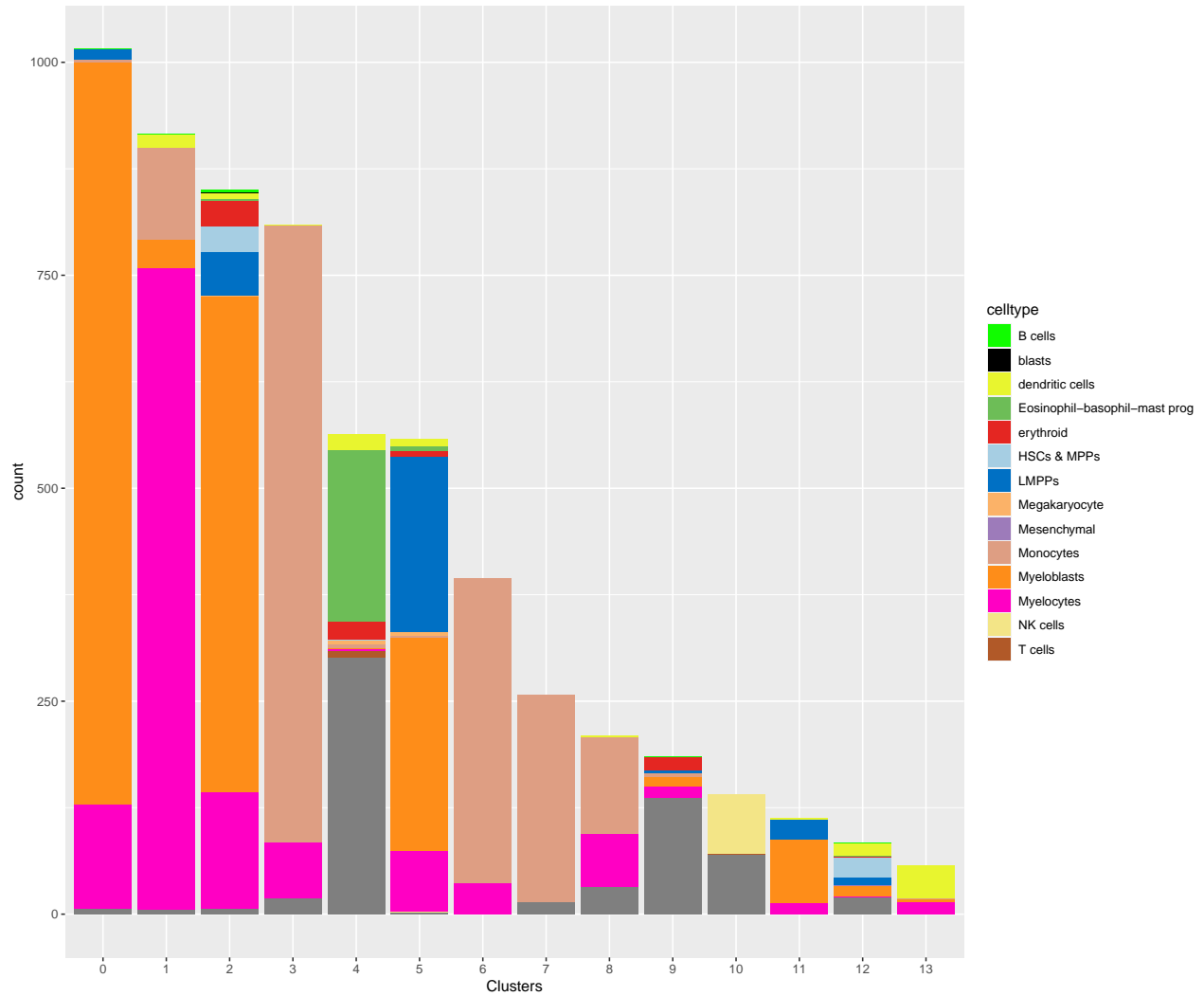




4. Project the predictions from Velten onto our UMAP



##		
##	B cells	blasts
##	7	1
##	dendritic cells	Eosinophil-basophil-mast prog
##	110	210
##	erythroid	HSCs & MPPs
##	74	54
##	LMPPs	Megakaryocyte
##	305	10
##	Mesenchymal	Monocytes
##	1	1562
##	Myeloblasts	Myelocytes
##	1838	1292
##	NK cells	T cells
##	71	9



Cluster 12 appears as the one more enriched on LSC6, but we observe very low expression of RUNXIT1, malignant marker for t(8;21). Cluster 2 shows upregulation of this gene. We propose cluster 2 as the most enriched in LSC