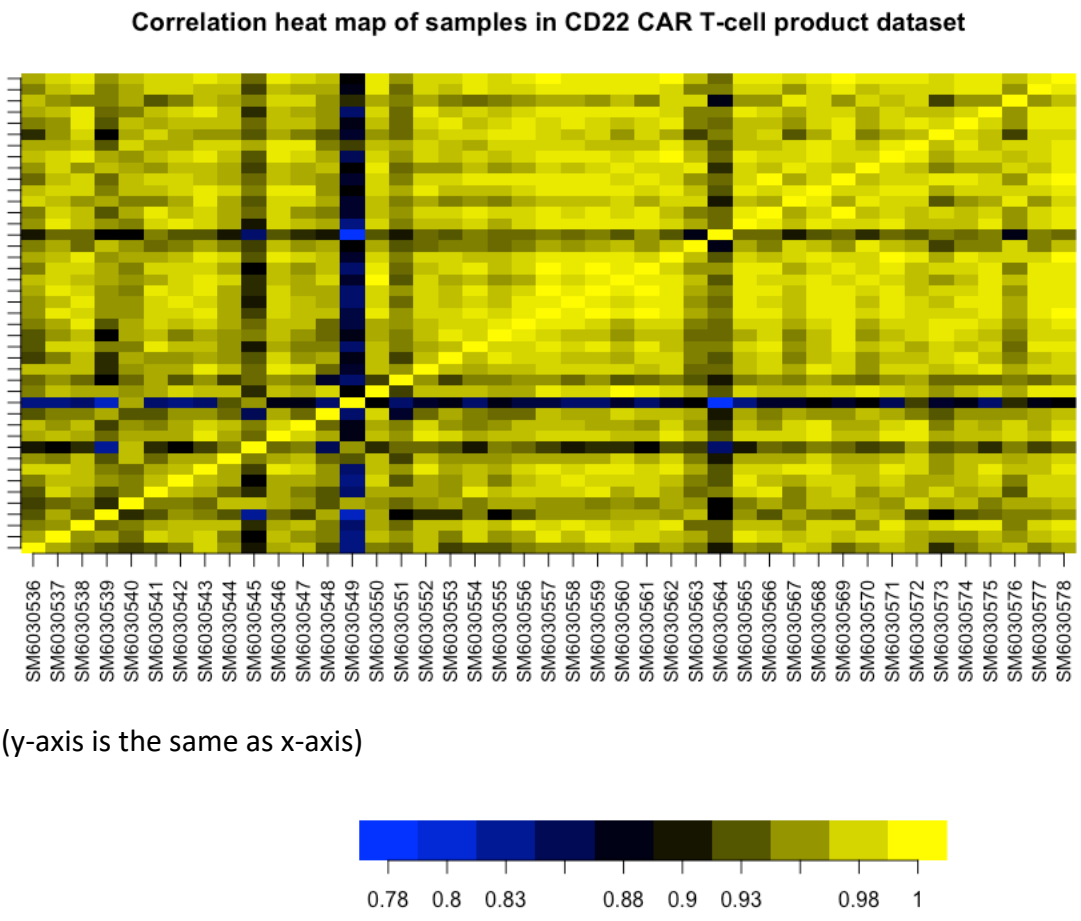
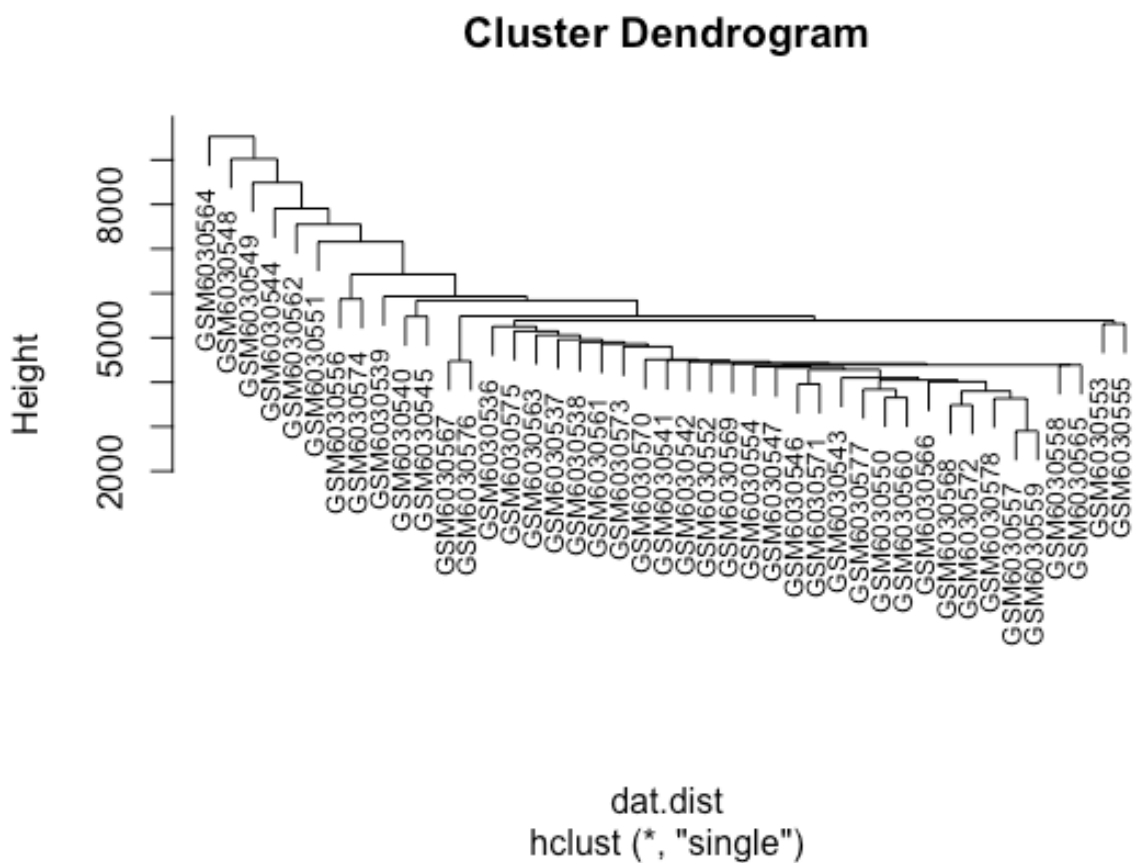
Figures and data from simple gene expression analysis

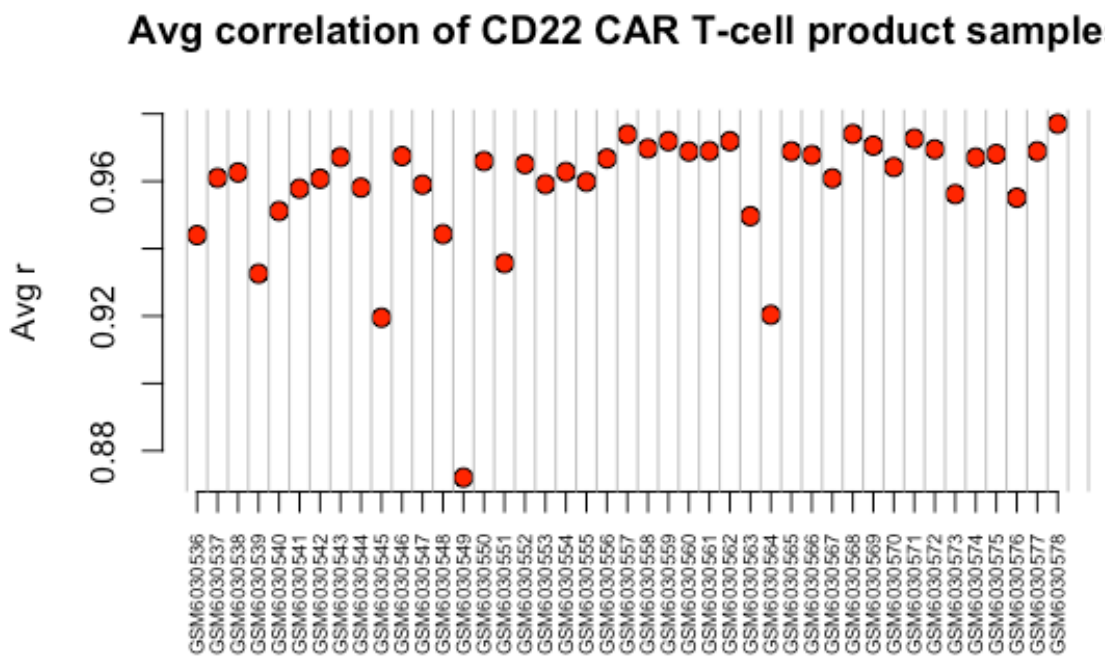
Citation for data source:
Shao L, Pelayo A, Shi R, Ma J, Liu H, Cai Y, Prochazkova M, Somerville RP, Panch SR, Shah NN, Stroncek DF, Jin P. Identification of genomic determinants contributing to cytokine release in immunotherapies and human diseases. J Transl Med. 2022 Jul 28;20(1):338. doi: 10.1186/s12967-022-03531-3. PMID: 35902861

Link to GEO page with data: https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE200296



(y-axis is the same as x-axis)


Cluster Dendrogram
Height
2000
5000
8000
GSM6030564
GSM6030548
GSM6030549
GSM6030544
GSM6030562
GSM6030551
GSM6030556
GSM6030574
GSM6030539
GSM6030540
GSM6030545
GSM6030567
GSM6030576
GSM6030536
GSM6030575
GSM6030563
GSM6030537
GSM6030538
GSM6030561
GSM6030573
GSM6030570
GSM6030541
GSM6030542
GSM6030552
GSM6030569
GSM6030554
GSM6030547
GSM6030546
GSM6030571
GSM6030543
GSM6030577
GSM6030550
GSM6030560
GSM6030566
GSM6030568
GSM6030572
GSM6030578
GSM6030557
GSM6030559
GSM6030558
GSM6030565
GSM6030553
GSM6030555
dat.dist
hclust (*, "single")


Avg correlation of CD22 CAR T-cell product samples
Avg r
0.88
0.92
0.96
GSM6030536
GSM6030537
GSM6030538
GSM6030539
GSM6030540
GSM6030541
GSM6030542
GSM6030543
GSM6030544
GSM6030545
GSM6030546
GSM6030547
GSM6030548
GSM6030549
GSM6030550
GSM6030551
GSM6030552
GSM6030553
GSM6030554
GSM6030555
GSM6030556
GSM6030557
GSM6030558
GSM6030559
GSM6030560
GSM6030561
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GSM6030563
GSM6030564
GSM6030565
GSM6030566
GSM6030567
GSM6030568
GSM6030569
GSM6030570
GSM6030571
GSM6030572
GSM6030573
GSM6030574
GSM6030575
GSM6030576
GSM6030577
GSM6030578

Differentially expressed genes with p-value < 0.05

```
> pv[pv < 0.05]
       CCL5        CD8A        CTSD        NKG7      PFKFB4      TNFSF9      TRAV19     TRBV7-4
0.028857025 0.014039904 0.023625708 0.030171948 0.001353091 0.029974824 0.024916979 0.044381774
```

Fold change of those genes:

```
> fold[names(pv[pv<0.05])]
      CCL5       CD8A       CTSD       NKG7     PFKFB4     TNFSF9     TRAV19    TRBV7-4
 0.6888487  0.5667767  0.2315774  0.5473447 -1.2178337  0.5464836  0.3301870 -0.3548841
```

Conclusion:

This relatively simple analysis turned up the main gene this paper is about PFKFB4. It also turned up some other genes that would be interesting to explore further with laboratory experiments.