# scRNA Sepsis Validation

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## Objective

Validate Geneset found in the longitudinal sepsis cohort in other sepsis dataset

## Dataset

- Study: Dynamic changes in human single cell transcriptional signatures during fatal sepsis
- GEO nubmer: GSE167363
- Gram negative bacterial septic shock
- Sample at sepsis diagnosis and 6 hours after sepsis diagnosis

## Structure

| GEO | Group | timepoint | group |
|---|---|---|---|
| GSM5102900 | HC1 | NA | Healthy |
| GSM5102901 | HC2 | NA | Healthy |
| GSM5102902 | NS LS T0 | 0 | Non-survivor |
| GSM5102903 | NS LS T6 | 6 | Non-survivor |
| GSM5102904 | S1 T0 | 0 | Survivor |
| GSM5102905 | S1 T6 | 6 | Survivor |
| GSM5511351 | NS ES_T0 | 0 | Non-survivor |
| GSM5511352 | NS ES_T6 | 6 | Non-survivor |
| GSM5511353 | S2_T0 | 0 | Survivor |
| GSM5511354 | S2_T6 | 6 | Survivor |
| GSM5511355 | S3_T0 | 0 | Survivor |
| GSM5511356 | S3_T6 | 6 | Survivor |

# Target Geneset

- cluster 1 : decreased in timpoint 1
- cluster 2 : increased in timepoint 1

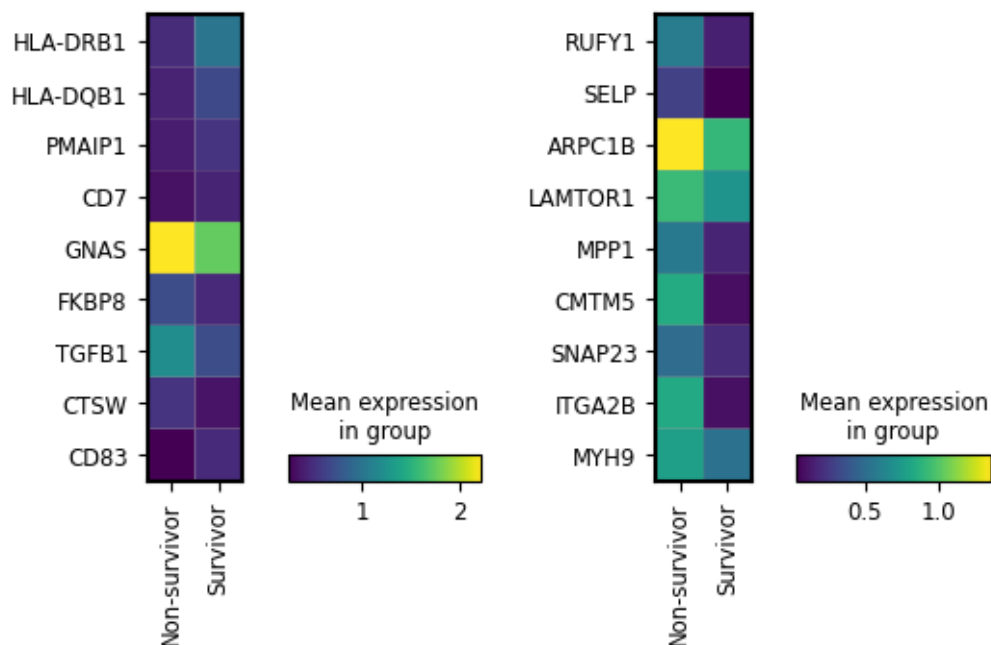# Geneset expression heatmap (Total Cell Target)



Figure 1: Cluster 1, 2 geneset expression heatmap

## Cluster 1

- CD83

  - MHC II stabilizer: CD4+ T cell activateion, reduced IL12
  - Mature dendritic ell

- HL-DRB1
- HL-DQB1
- PMAIP1(Noxa)

  - pro-apoptotic Bcl2 famility
  - associtaed with p53 mediated apoptosis

## Cluster 2

- ARPC1B
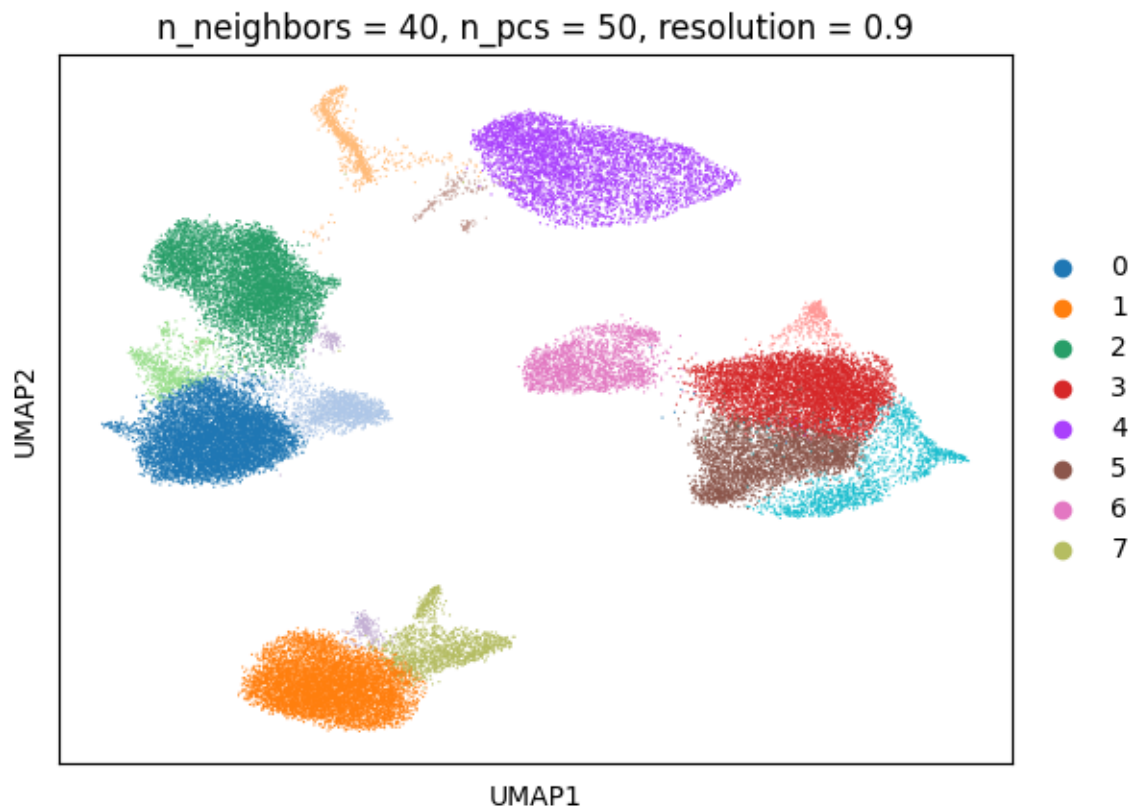- LAMTOR1
- MPP1
- RUFY1
- CMTM5
- SNAP23
- ITGA2B
- MYH9

# UMAP



Figure 2: DimPlot