



**Figure 5 - Germinal center emigrant memory B cells are FCRL5<sup>+</sup>**

- (A) UMAP of B cells (n=27265 cells) from fine needle aspirates (FNAs) of draining axillary lymph nodes from a single healthy volunteer on days 0, 5, 12, 28 and 60 after quadrivalent influenza vaccine (QIV), as reported by Turner *et al.*.
- (B) The B cell receptors detected in germinal center (GC) B cells on day 12 after QIV immunization are shared with earlier LN B cells, and are detectable in peripheral blood mononuclear cells (PBMC) that have been enriched for B cell memory (IgD-) at days 28 and 60 post-vaccine. Sharing of a B cell receptor (BCR) requires: i. identical IGHV and IGHJ usage ii. identical heavy chain CDR3 length iii. identical IGLV and IGLJ usage and iv. identical light chain CDR3 length.
- (C) UMAP of circulating B cells (n=21568 cells) from IgD- enriched PBMCs at days 0, 5, 12, 28 and 60 after QIV. Clusters identified by Louvain clustering, and annotated based on (D).
- (D) Dotplot showing the expression of key genes, defined from the HA-specific B cell sequencing (Figure 2B), used to annotate the clusters identified in (C).
- (E) UMAP of circulating QIV-specific B cells from IgD- enriched PBMCs at day 28 which share a germinal center BCR, n=38 cells.
- (F) The percentage of QIV-specific B cells, present in the circulation at day 28, as in (E) is shown for each B cell cluster.

## SessionInfo

```
## R version 3.6.1 (2019-07-05)
## Platform: x86_64-pc-linux-gnu (64-bit)
## Running under: CentOS Linux 7 (Core)
##
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## LAPACK: /bi/apps/R/3.6.1/lib64/R/lib/libRlapack.so
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## attached base packages:
## [1] stats graphics grDevices utils datasets methods base
##
## other attached packages:
## [1] ggpubr_0.2.4 magrittr_1.5 ggplot2_3.3.2 Seurat_3.2.2
##
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