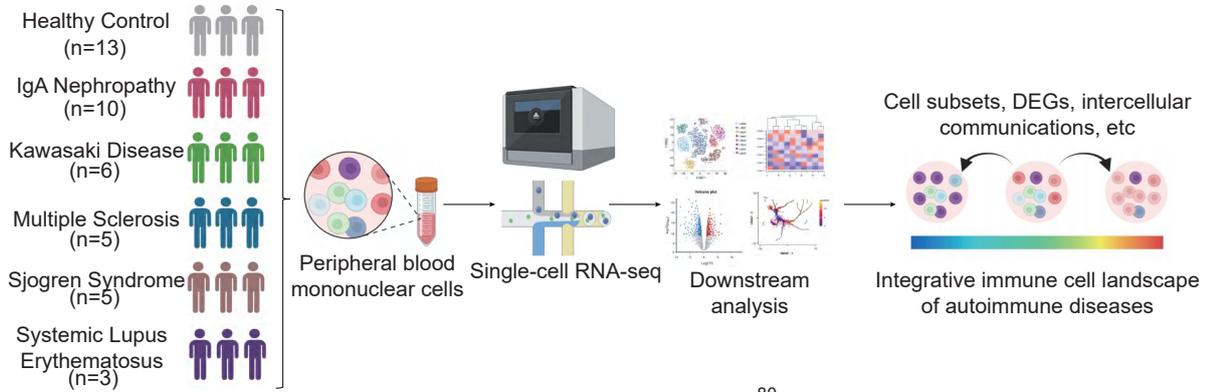
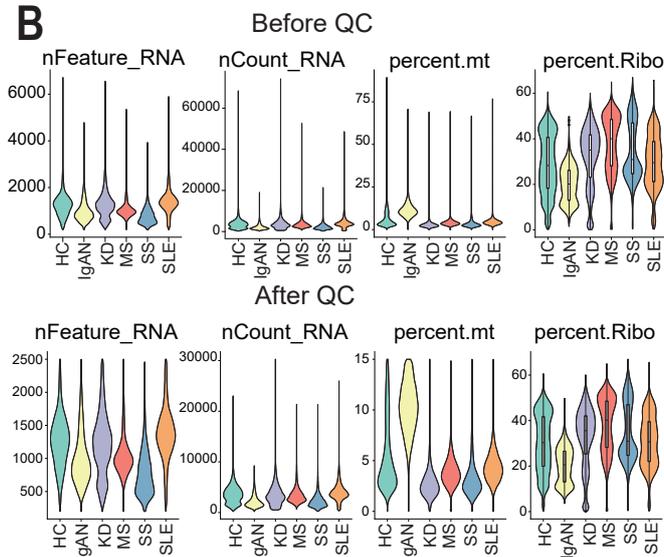


Additional file 1

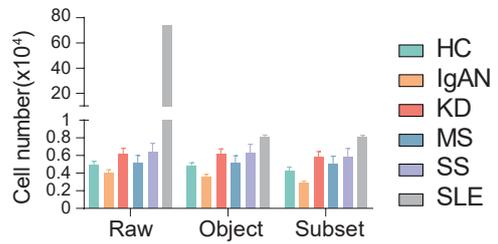
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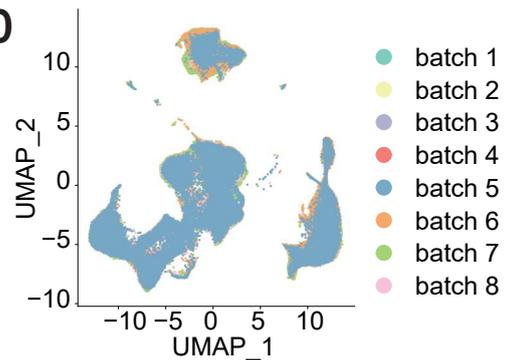
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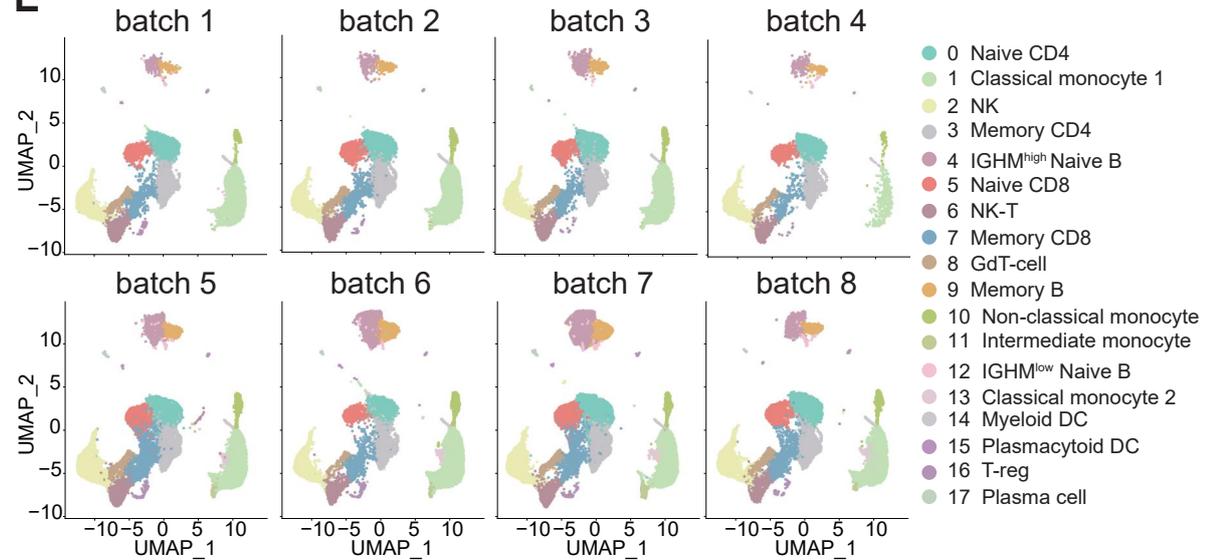
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D



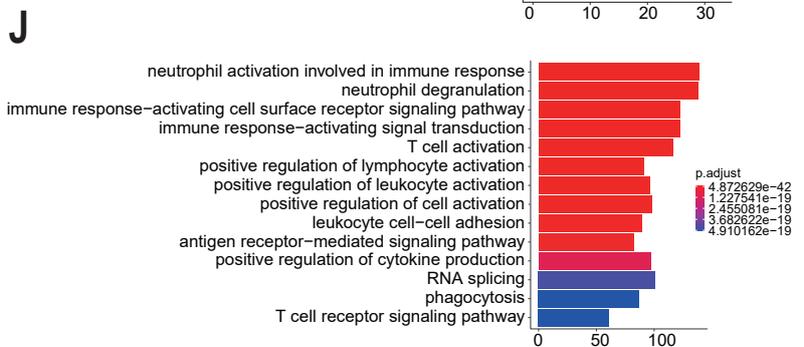
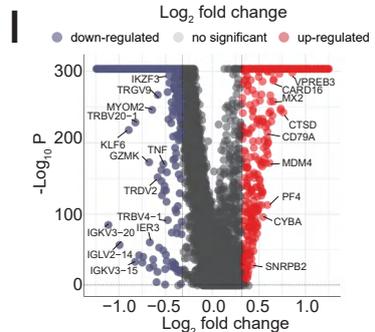
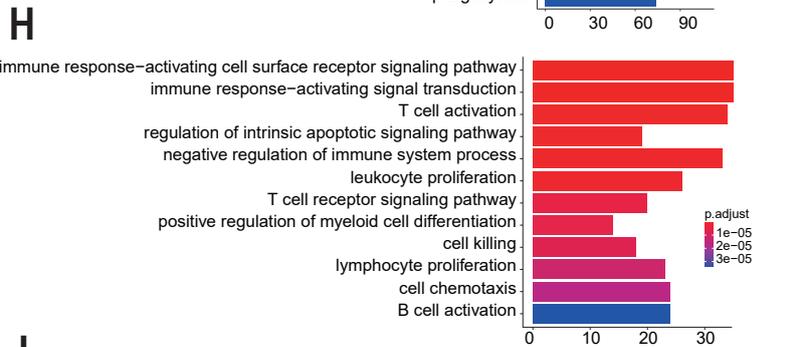
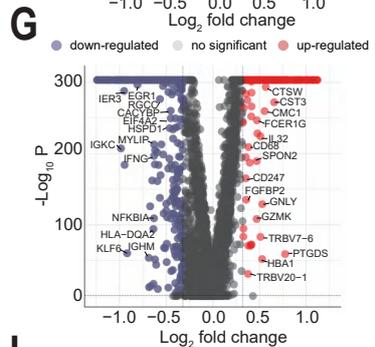
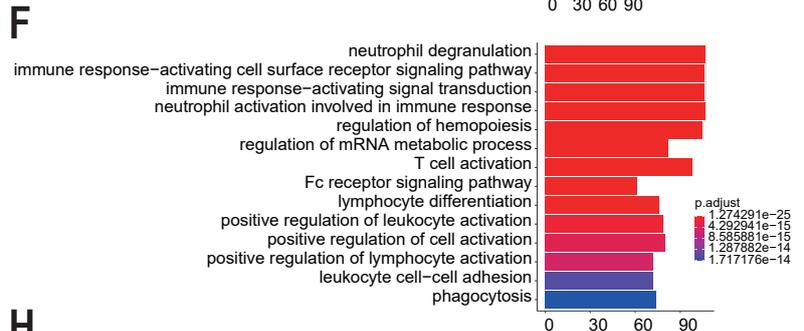
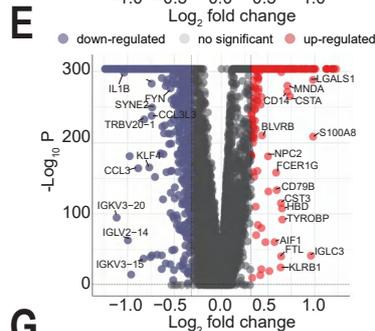
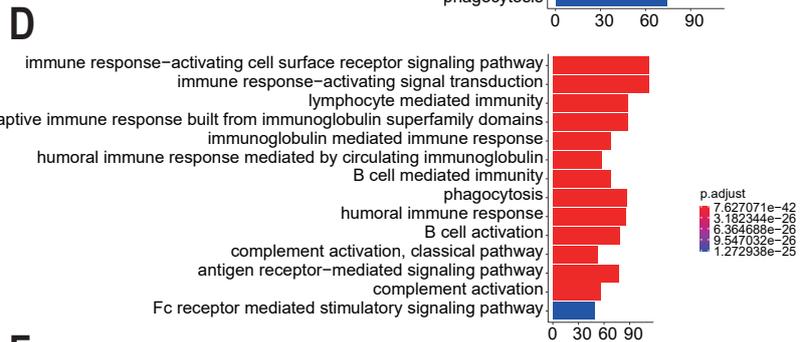
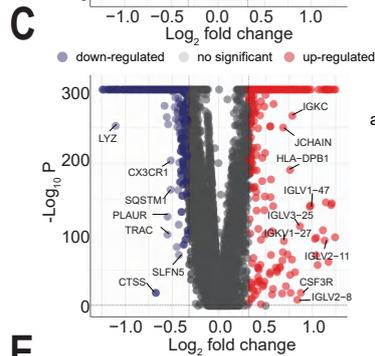
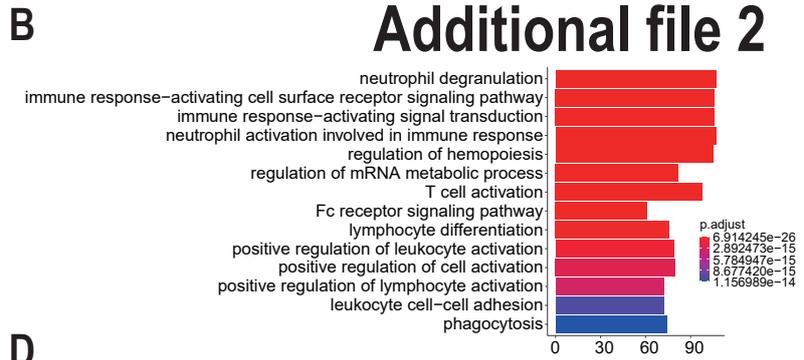
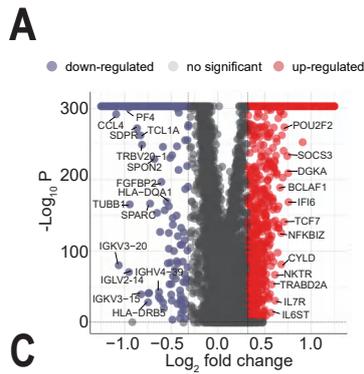
E



Additional file 1: Quality control and batch effect correction of scRNA-seq data.

(A) Flow chart indicating the scRNA-seq integration and down-stream analysis procedures. HC n = 13; IgAN n = 10; KD n = 6; MS n = 5, SS n = 5; SLE n = 3. **(B)** Changes in the number of genes, cells, mitochondrial genes, and ribosomal genes in six subgroups before and after QC. **(C)** Histogram of the change in the number of cells in each group of samples after filtration and quality control. **(D, E)** UMAP for each cluster after de-batch integration analysis.

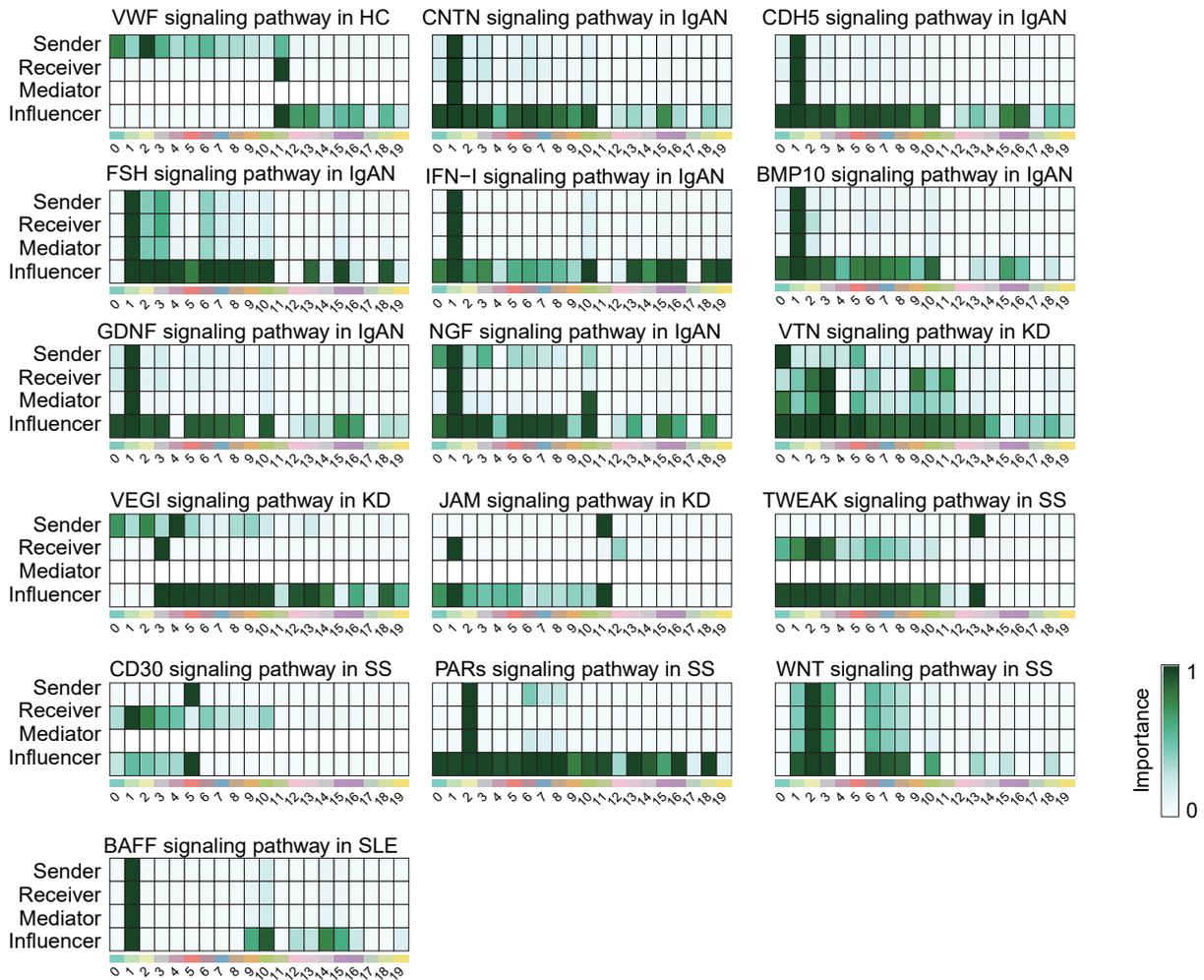
Additional file 2



Additional file 2: Differential expression gene and functional enrichment analysis between control and autoimmune diseases.

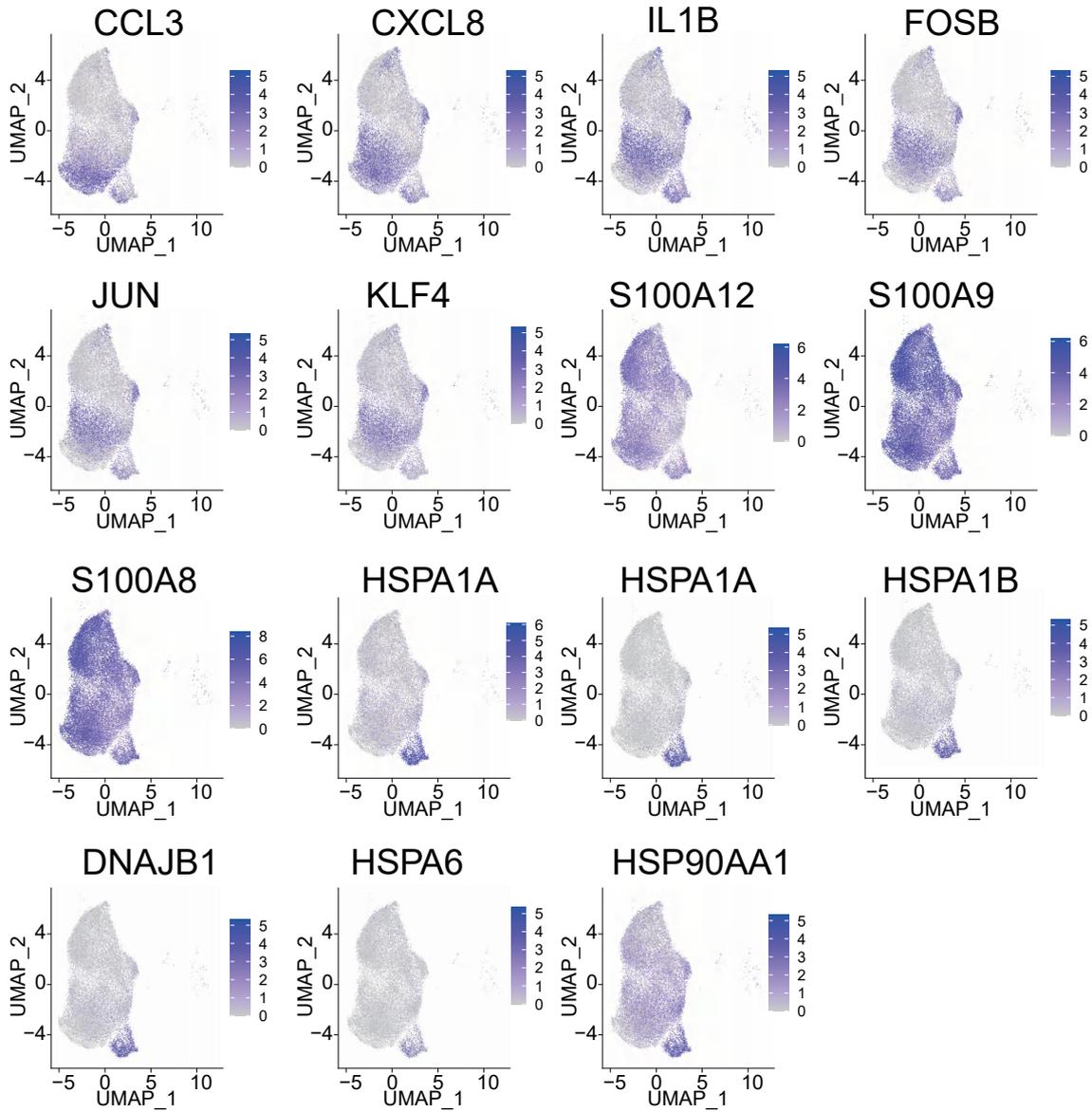
(A) Differential genetic volcano plot of the IgAN group relative to healthy controls. **(B)** Functional enrichment of biological processes of differential genes in the IgAN group relative to healthy controls. **(C)** Differential genetic volcano plot of the KD group relative to healthy controls. **(D)** Functional enrichment of biological processes of differential genes in the KD group relative to healthy controls. **(E)** Differential genetic volcano plot of the MS group relative to healthy controls. **(F)** Functional enrichment of biological processes of differential genes in the MS group relative to healthy controls. **(G)** Differential genetic volcano plot of the SS group relative to healthy controls. **(H)** Functional enrichment of biological processes of differential genes in the SS group relative to healthy controls. **(I)** Differential genetic volcano plot of the SLE group relative to healthy controls. **(J)** Functional enrichment of biological processes of differential genes in the SLE group relative to healthy controls.

Additional file 3



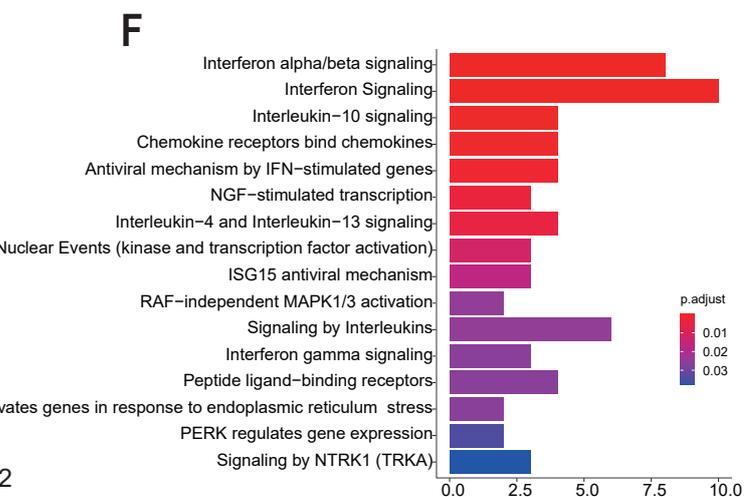
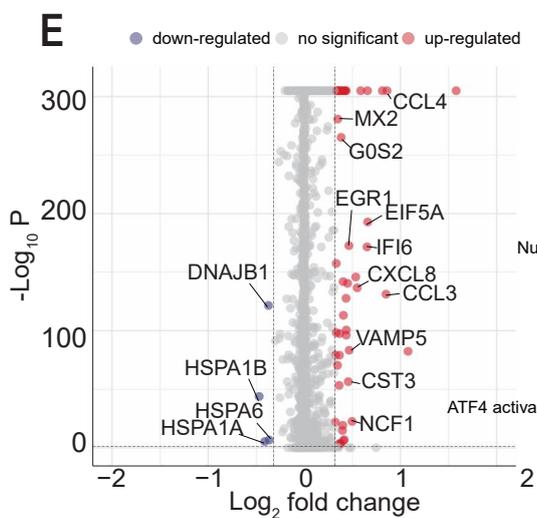
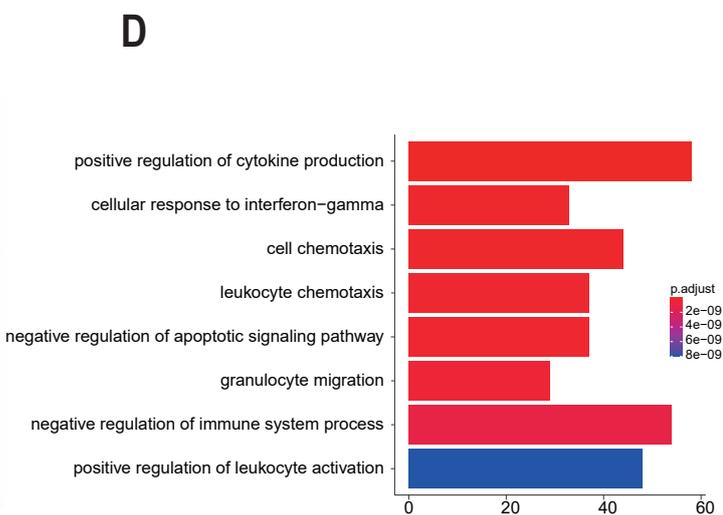
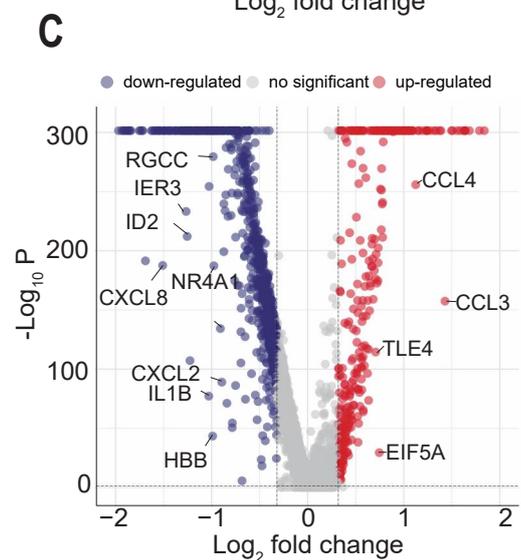
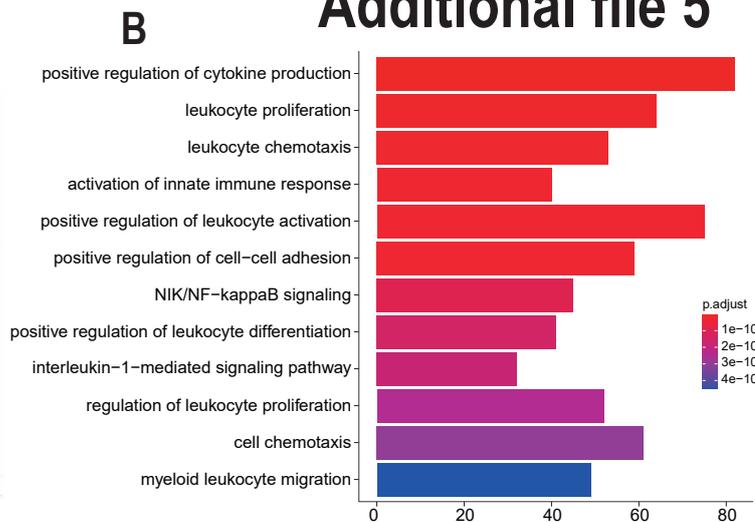
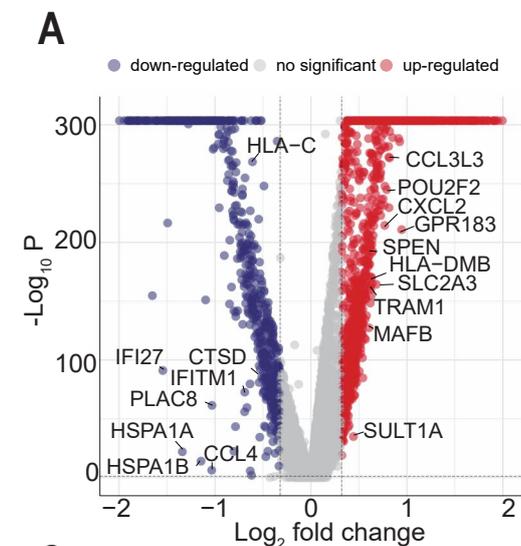
Additional file 3: Heatmaps of disease-related signaling pathways in Cellchat with high strength of interactions.

Additional file 4



Additional file 4: Feature plots of classical monocyte identification marker

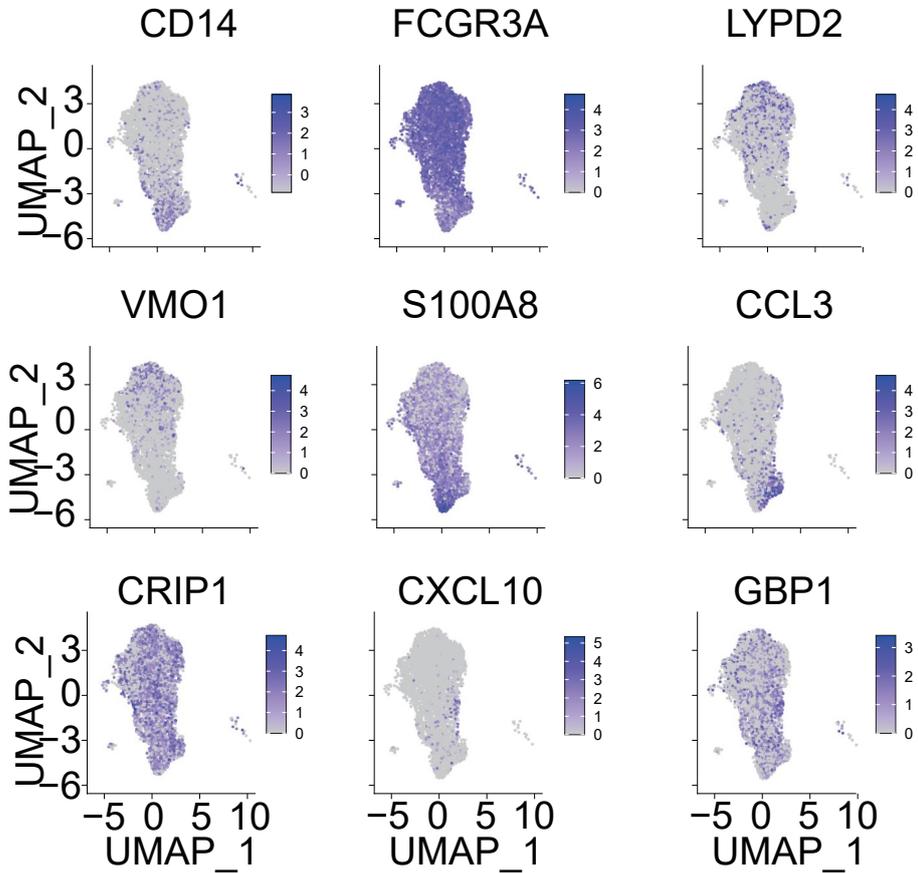
Additional file 5



Additional file 5: Differential gene analysis and functional enrichment of classical monocyte subsets.

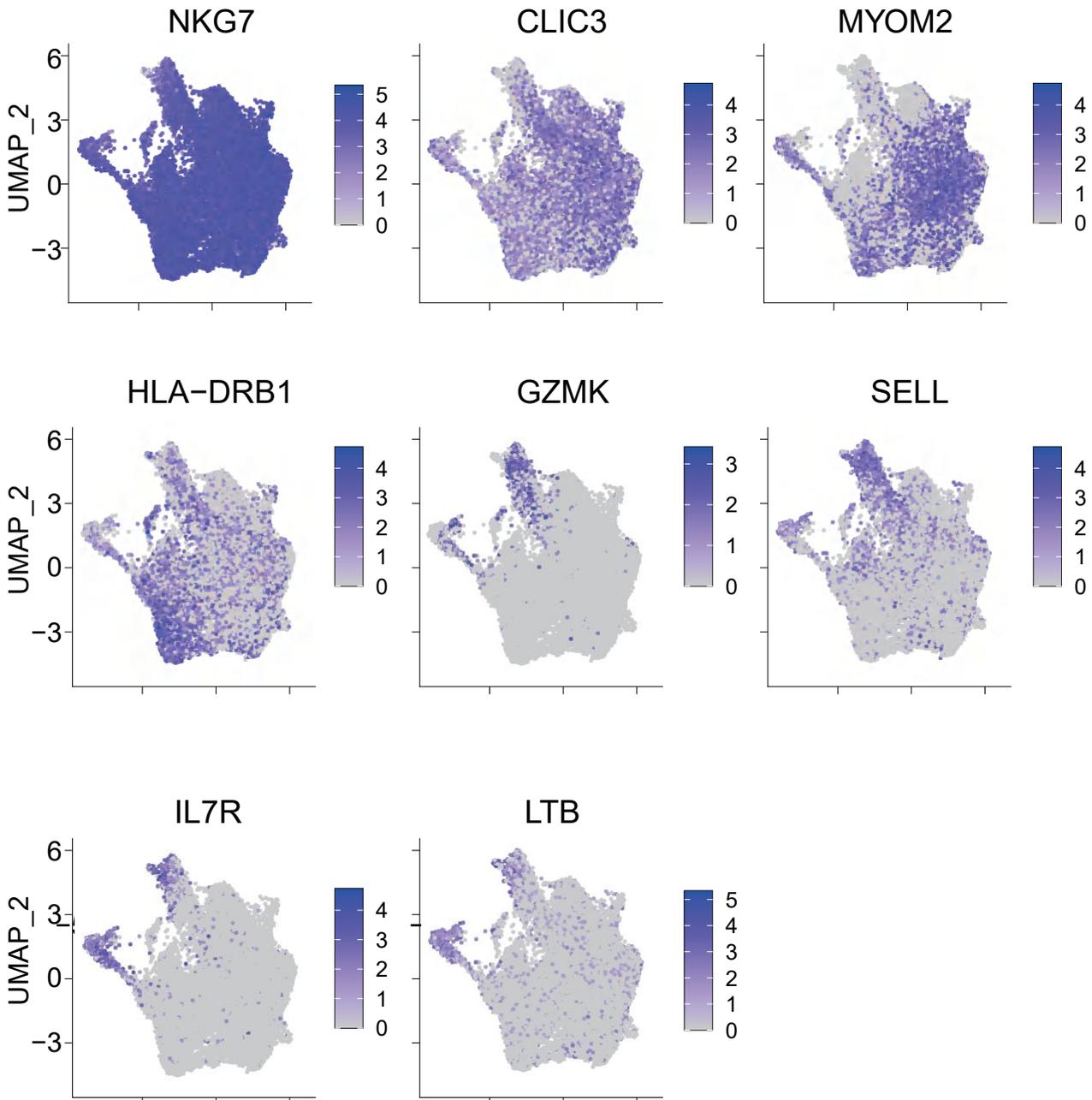
(A) Differential gene volcano plot of IgAN relative to all other groups in CCL3 highly expressed classical monocyte subsets. **(B)** Functional enrichment of differential genes for biological processes in the CCL3 highly expressed classical monocyte subset in the IgAN relative to all other groups. **(C)** Differential gene volcano plot of SLE relative to all other groups in CCL3 highly expressed classical monocyte subsets. **(D)** Functional enrichment of differential genes for biological processes in the CCL3 highly expressed classical monocyte subset in the SLE relative to all other groups. **(E)** Differential gene volcano plot of SLE relative to all other groups in CCL3 low expressed classical monocyte subsets. **(F)** Functional enrichment of differential genes for biological processes in the CCL3 low expressed classical monocyte subset in the SLE relative to all other groups.

Additional file 6



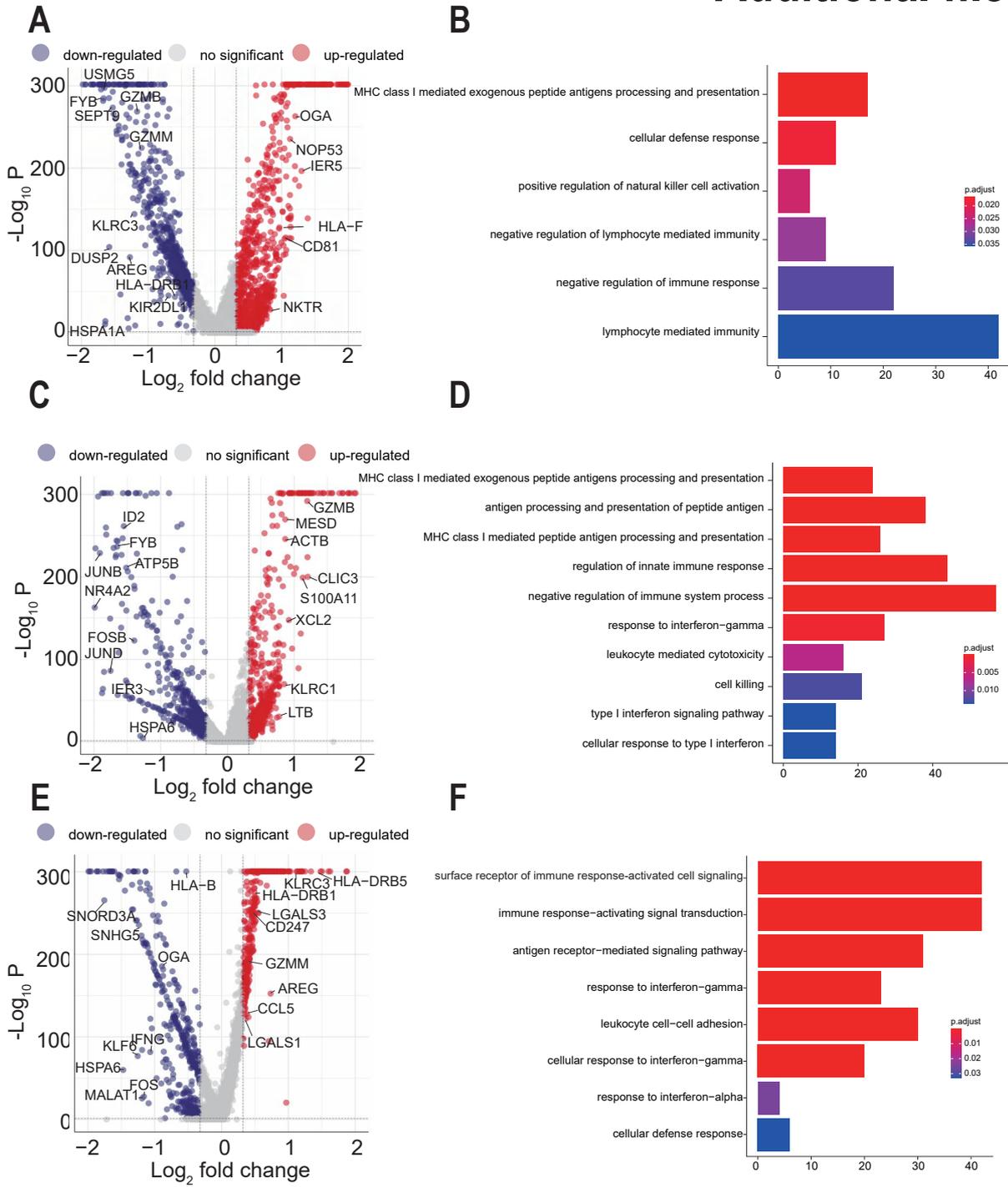
Additional file 6: Feature plots of non-classical monocyte identification marker.

Additional file 7



Additional file 7: Feature plots of NK identification marker.

Additional file 8



Additional file 8: Differential expression gene analysis and functional enrichment of NK in IgAN, KD and SS.

(A) Volcano of differential gene of IgAN relative to other groups except KD in NK cells.

(B) Biological processes functional enrichment of differential genes in NK cells for IgAN relative to other groups except KD. **(C)** Volcano of differential gene of KD relative to other groups except IgAN in NK cells. **(D)** Biological processes functional enrichment of differential genes in NK cells for KD relative to other groups except IgAN. **(E)** Volcano of differential gene of SS relative to other groups in NK cells. **(F)** Biological processes functional enrichment of differential genes in NK cells for SS relative to other groups.