

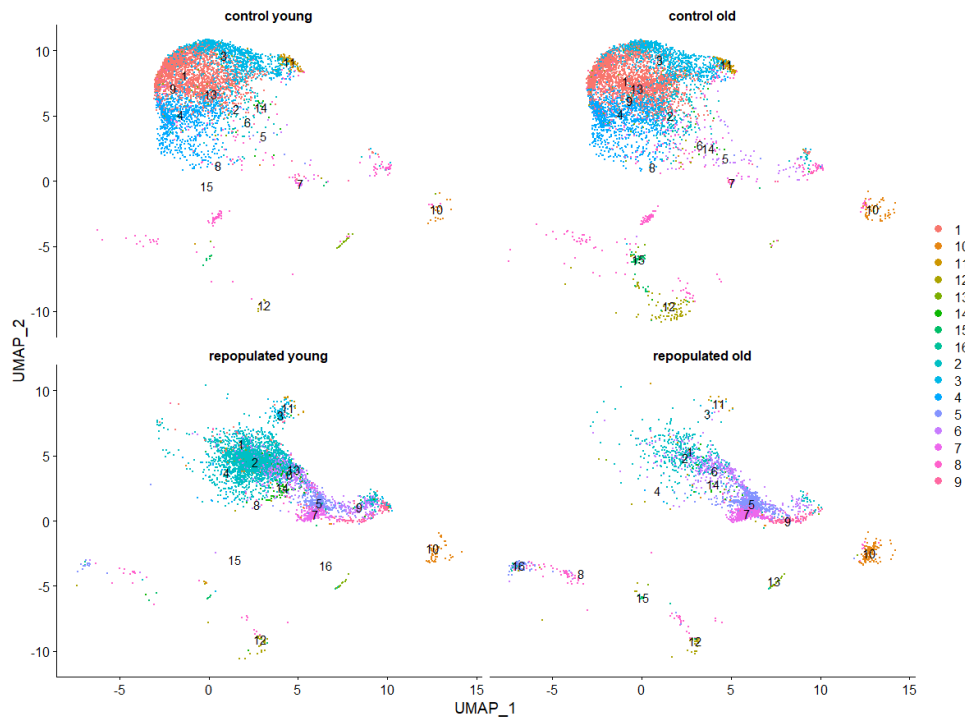
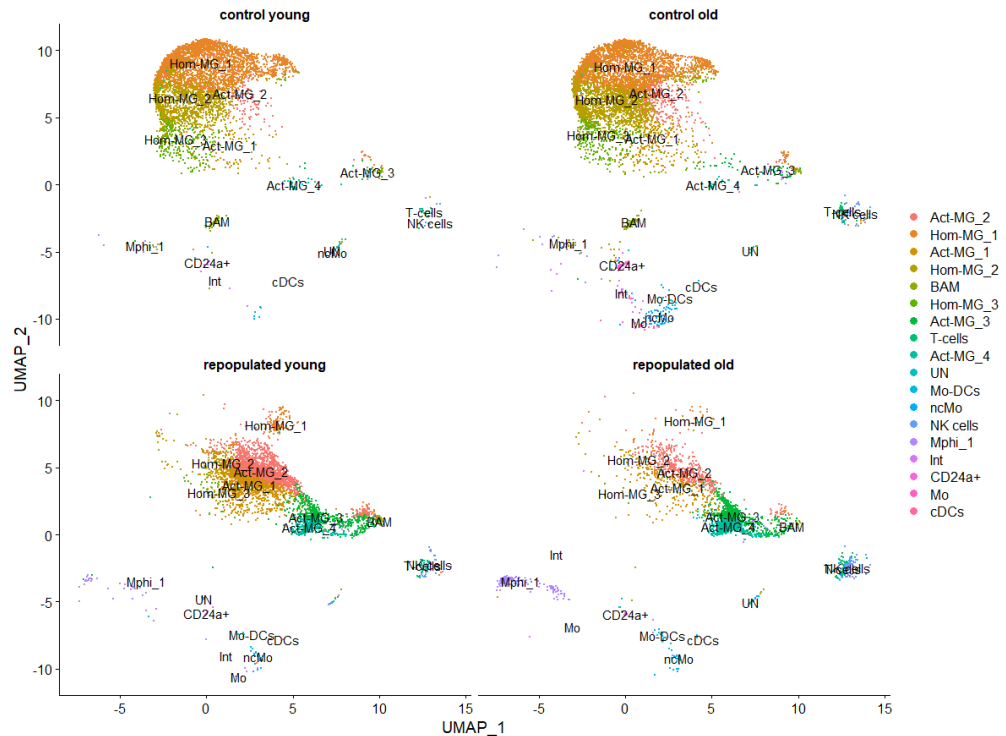
Figure S1

Single-cell data clustering.

A. Clustering projected on UMAP plot.

B. Clustering projected on UMAP plot, divided into 4 experimental conditions.

C. Clustering projected on UMAP plot, divided into 16 samples.

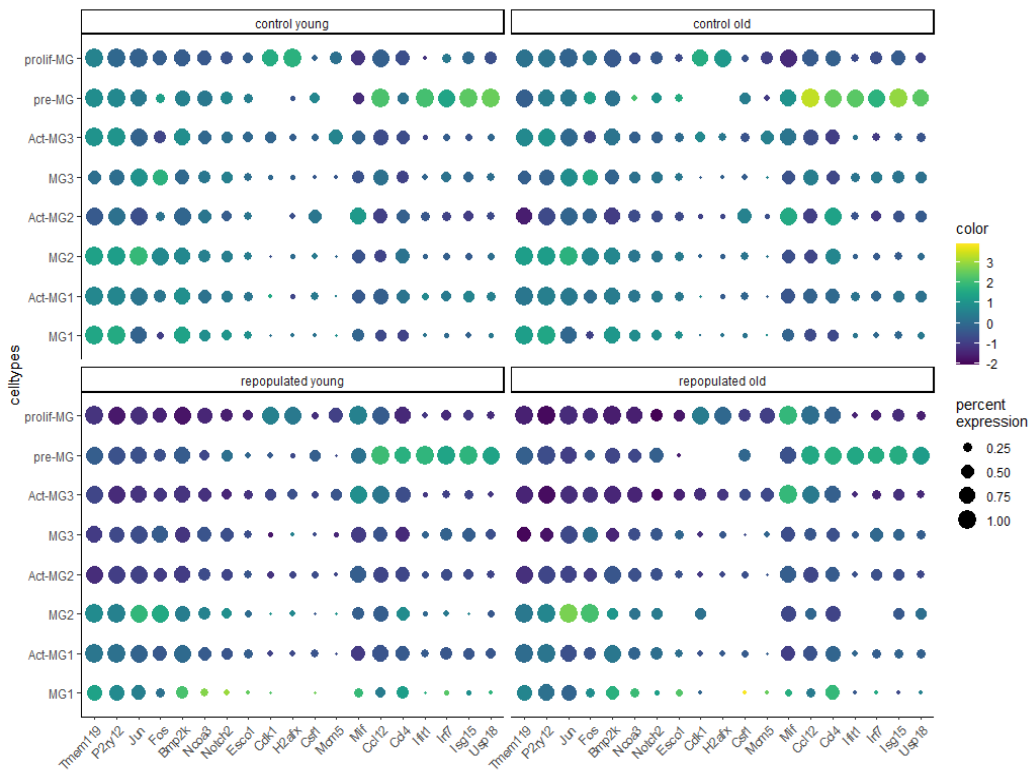
A**B****Figure S2**

Labeling cell clusters.

A. Clusters projected using the reference data (from Ochocka et al., Cell Rep. 2023).

B. Annotations from the reference data labeled on the UMAP plot.

A



B

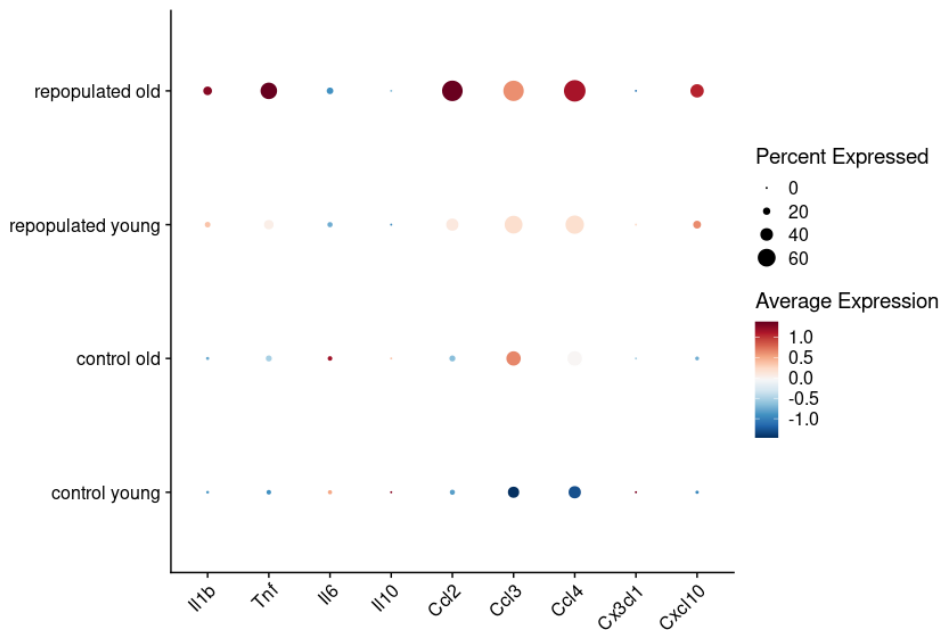


Figure S3

A. Dot plot of average gene expression of selected marker genes, by experimental conditions.

B. Dot plot of average gene expression of selected cytokine marker genes, by experimental conditions.

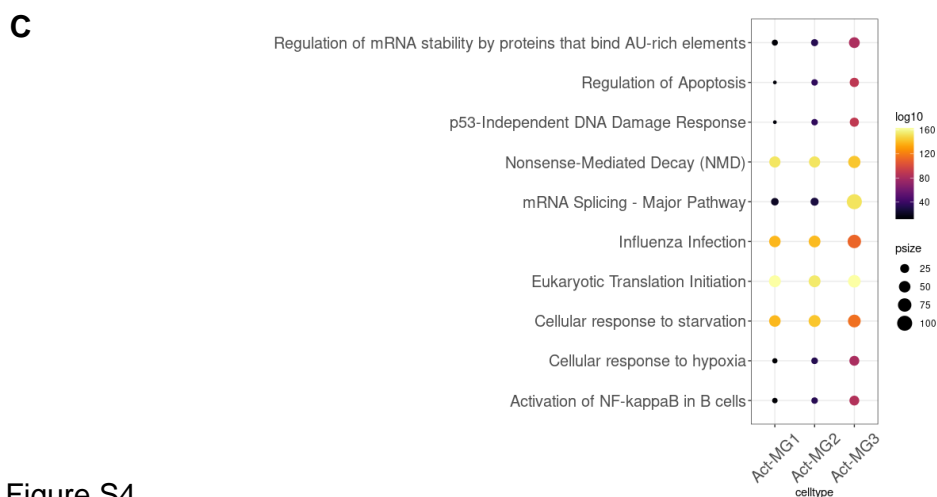
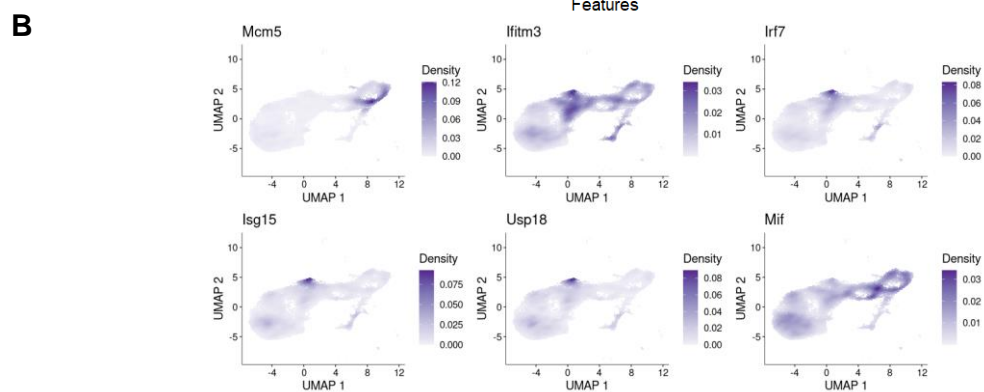
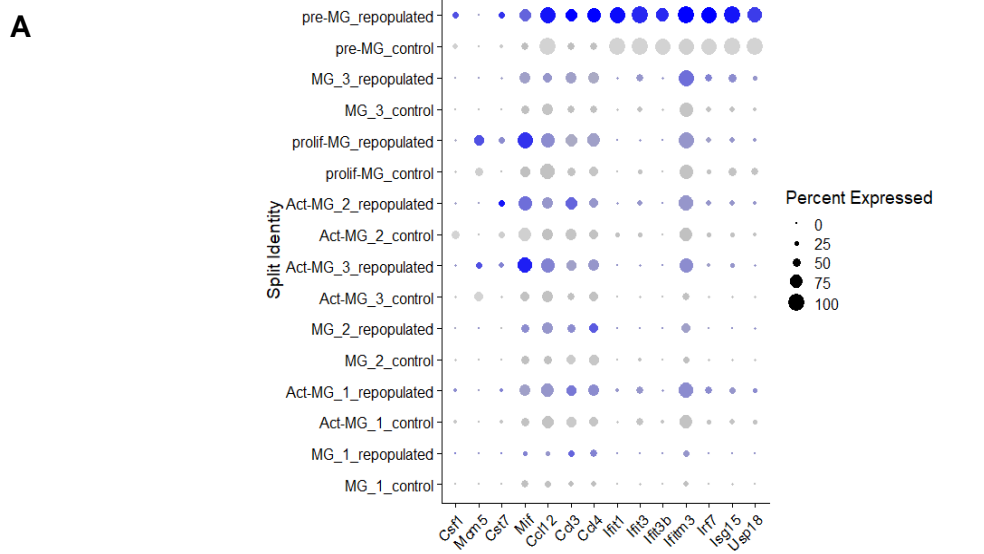


Figure S4

A. Dot plot of average gene expression of selected marker genes of premature microglia in young mice, divided by a cell type and experimental condition.

B. Feature plot of marker genes of inflammatory processes on the UMAP plot.

C. Dot plot of top enriched KEGG pathways in three types of activated microglia.

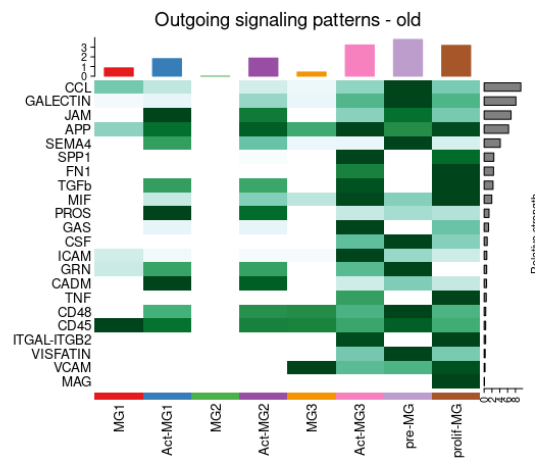
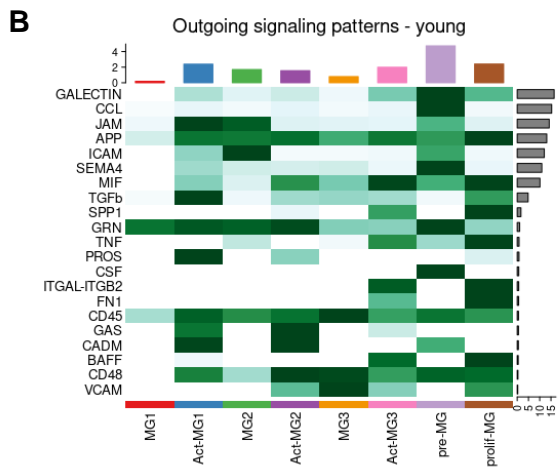
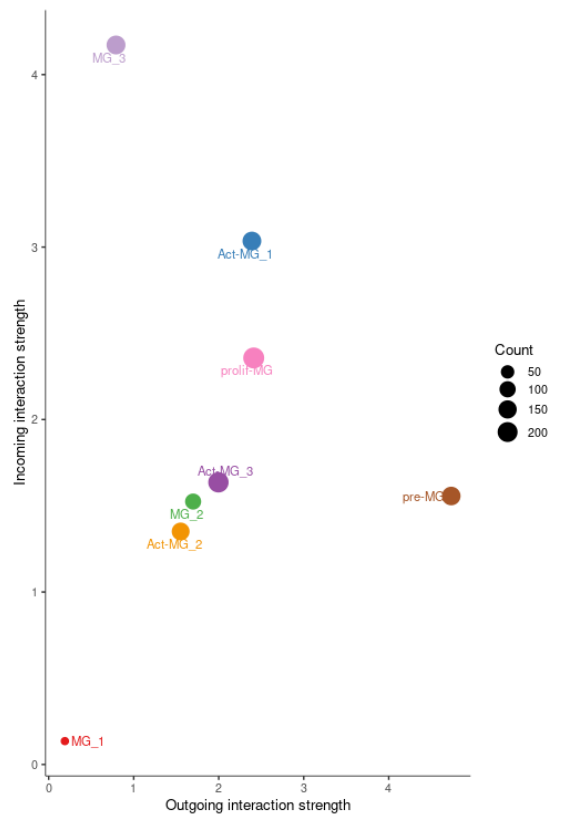
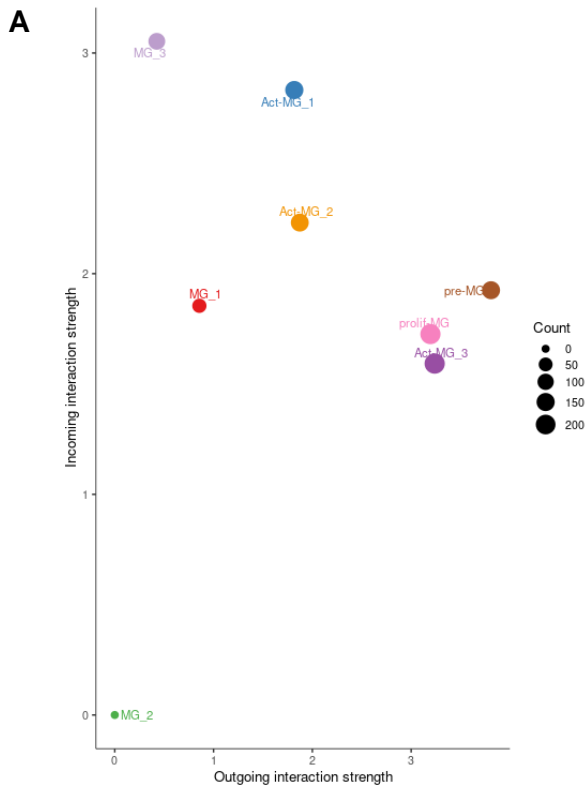


Figure S5

A. CellChat enriched ratio of outgoing/incoming interactions in repopulated microglia, on the left in young mice, on the right in aging mice.

B. CellChat outgoing interactions pattern on the left in young mice, on the right in aging mice.

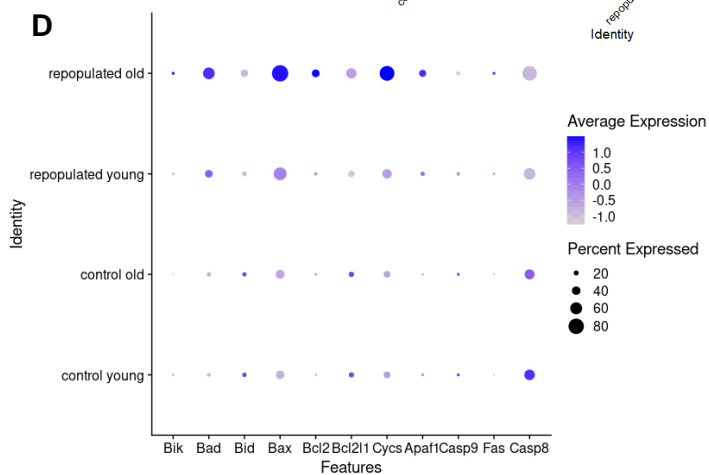
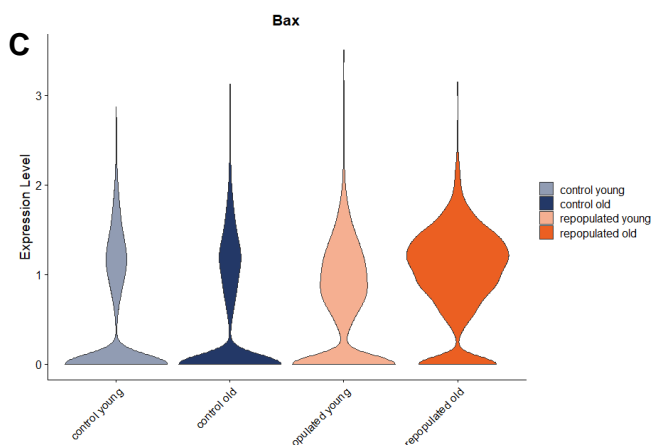
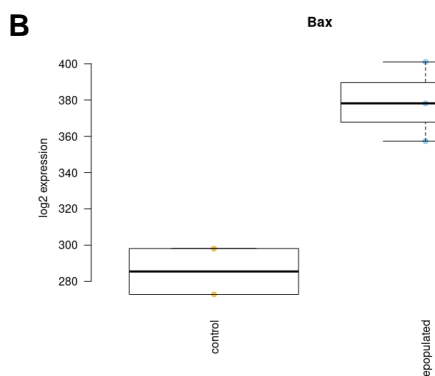
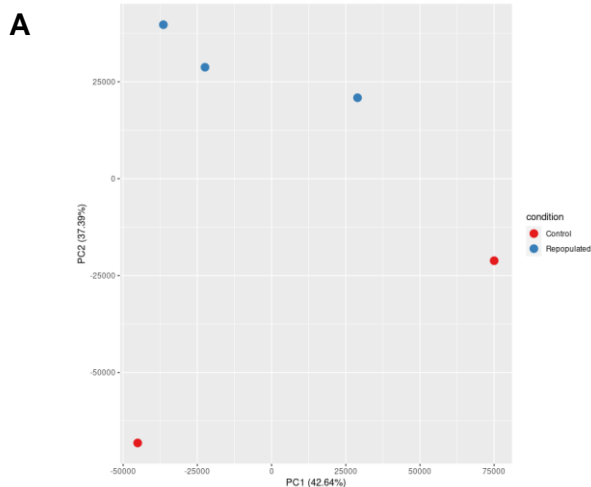


Figure S6

A. PCA plot on RNA-seq samples.

B. Box plot of *Bax* gene expression in bulk RNA-seq data.

C. Violin plot of *Bax* gene expression in scRNA-seq data, shown by experimental conditions.

D. Dot plot of selected marker genes of apoptosis process, in experimental conditions.

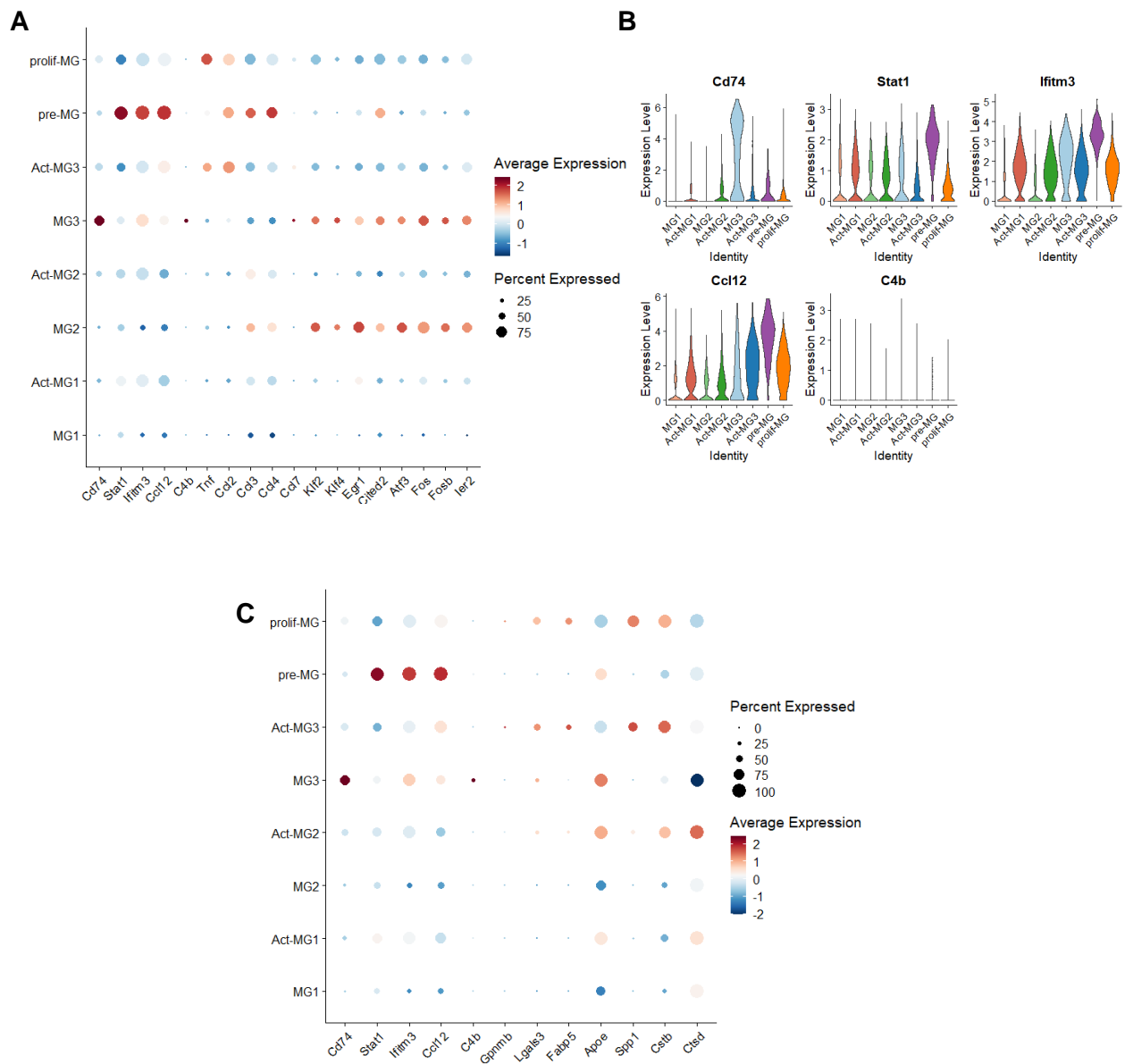


Figure S7

A. Dot plot of gene expression selected marker genes of Act-MG1, based on annotation from Ochocka et al. Cell Rep. 2023, in cell types

B. Violin plot of gene expression of selected marker genes of Act-MG2 in cell types

C. Dot plot of gene expression selected marker genes of Act-MG3 in cell types

Supplementary table 1

Microglia cell clustering using manual and automatic cell labeling.

Ochocka et al., 2021 cluster	Ochocka et al., 2023 cluster	Seurat cluster (this study)	Subtype (this study)
MG1	Hom-MG1	1	MG1
N/A	Act-MG1	2	Act-MG1
MG1	Hom-MG1	3	MG1
MG2	Hom-MG2	4	MG2
N/A	Act-MG3	5	Act-MG3
N/A	Act-MG2	6	Act-MG2
prolif-MG	Act-MG4	7	prolif-MG
MG3	Hom-MG3	8	MG3
N/A	Act-MG3	9	Act-MG3
T-cells/NK cells	T-cells/NK cells	10	N/A
MG1	Hom-MG1	11	MG1
Mo	Mo	12	N/A
pre-MG	N/A	13	pre-MG
N/A	Act-MG1	14	Act-MG1
N/A	Cd24a+	15	N/A
MΦ	MΦ	16	N/A
MG4	N/A	N/A	N/A
MG5	N/A	N/A	N/A
MG6	N/A	N/A	N/A