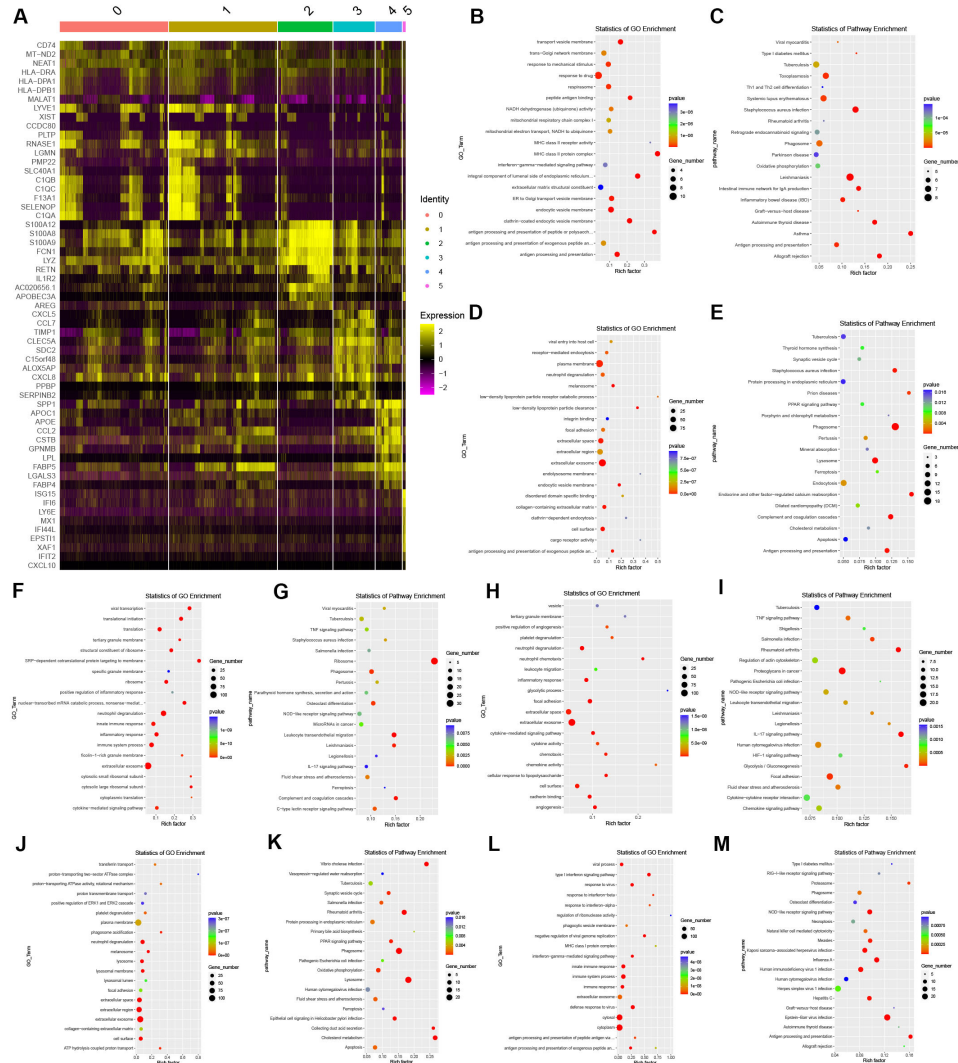


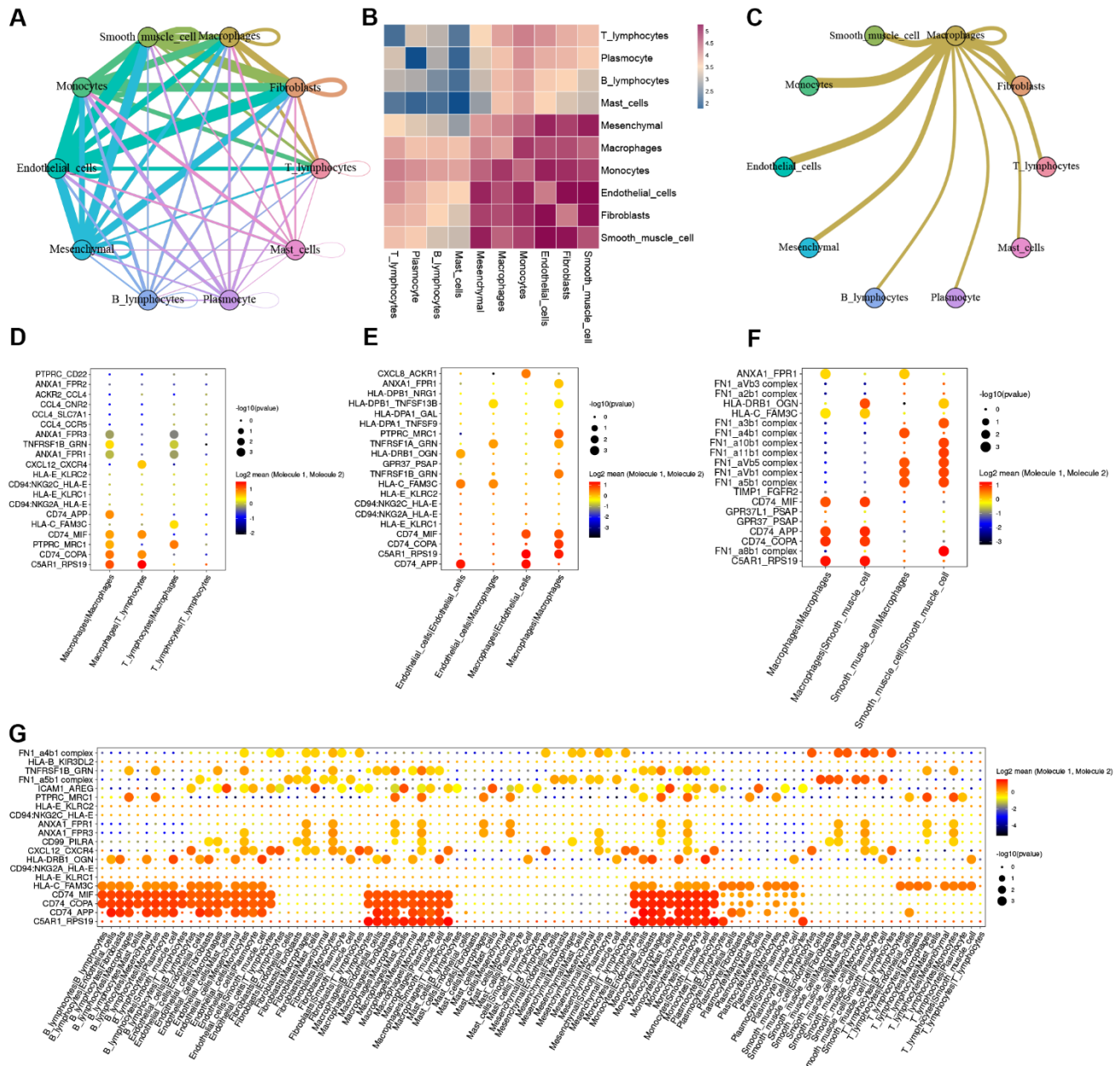
# Supplementary Material

## 1 Supplementary Figures and tables

### 1.1 Supplementary Figures S1, S2



**Supplementary Figure S1 |** Transcriptome distribution characteristics of each macrophage subclusters. **(A)**Heatmap showing distinct expression profiles of the six macrophage subclusters. **(B, C)** GO and KEGG terms enriched in the molecular signatures of subcluster 0. **(D, E)** GO and KEGG terms enriched in the molecular signatures of subcluster 1. **(F, G)** GO and KEGG terms enriched in the molecular signatures of subcluster 2. **(H, I)** GO and KEGG terms enriched in the molecular signatures of subcluster 3. **(J, K)** GO and KEGG terms enriched in the molecular signatures of subcluster 4. **(L, M)** GO and KEGG terms enriched in the molecular signatures of subcluster 5. Adjusted P value of hypergeometric test <0.05.



**Supplementary Figure S2 | Cell-cell communication between macrophages and other cells in the normal group. (A)** Network diagram of the weight and number of receptor - ligand interactions between main cells. **(B)** Heat map of the strength of communication between major cells. **(C)** Network diagram of communication between macrophages and other cells. **(D, E, F)** Bubble plot of receptor-ligand pairs for communication between macrophages and T cells, endothelial cells and smooth muscle cells, respectively. **(G)** Bubble plot of the receptor-ligand pairs between the 10 major cells.

## 1.2 Supplementary Tables

**Table S1.** Patient Information for Ascending Aortic Samples (n = 9).

**Table S2.** Number and proportion of each cell.

**Table S3.** Top 10 DEGs among the 10 major clusters defined in ascending aorta tissue.

**Table S4.** Marker gene of macrophage subclusters.

**Table S5.** Number and proportion of macrophages subclusters.

**Table S6.** Number and proportion of macrophage subclusters in AD and normal groups.

**Table S7.** Differentially expressed genes between macrophages in AD group and normal group.

**Table S8.** Differentially expressed gene characteristics between macrophages in AD group and normal group.