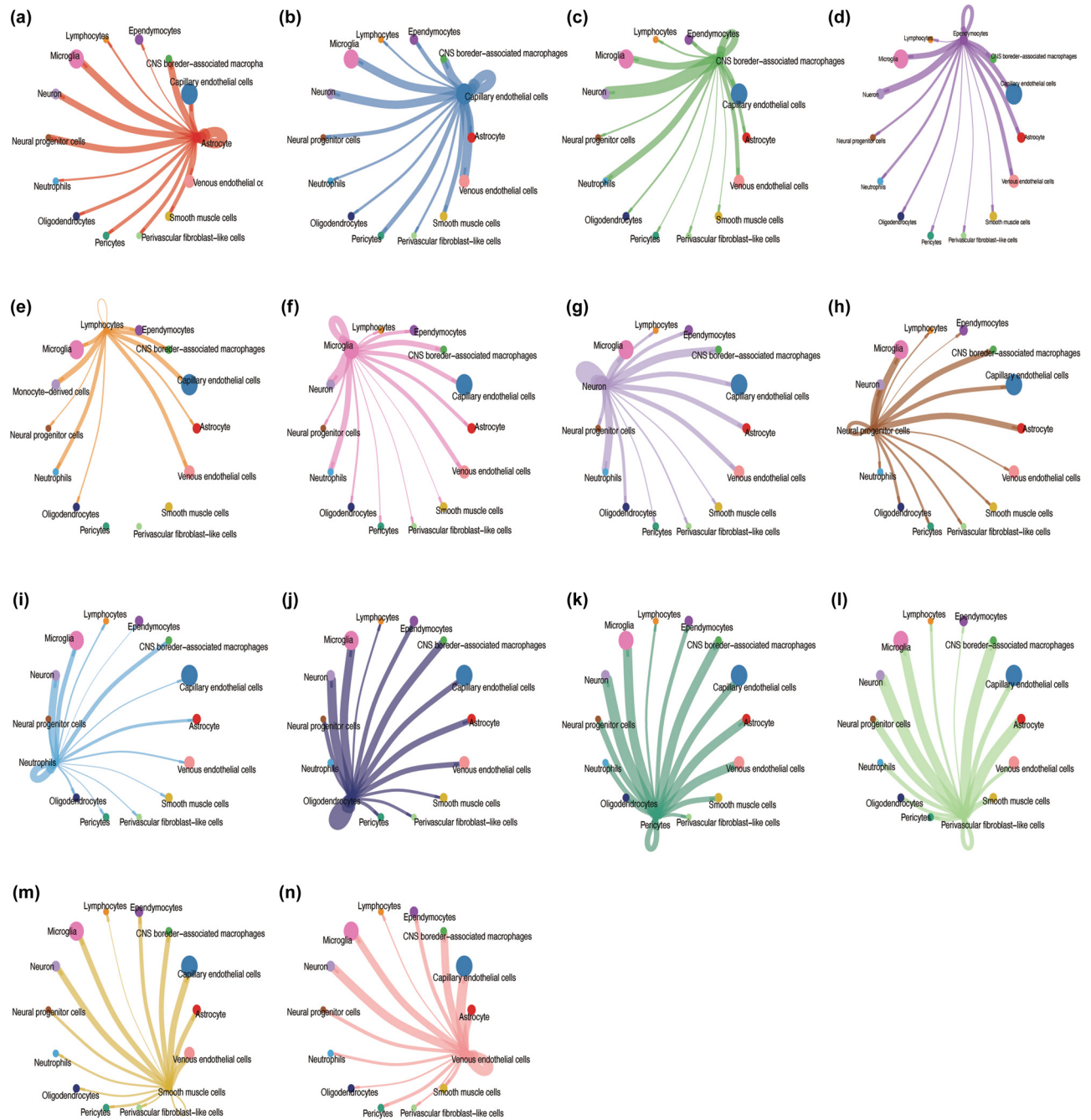
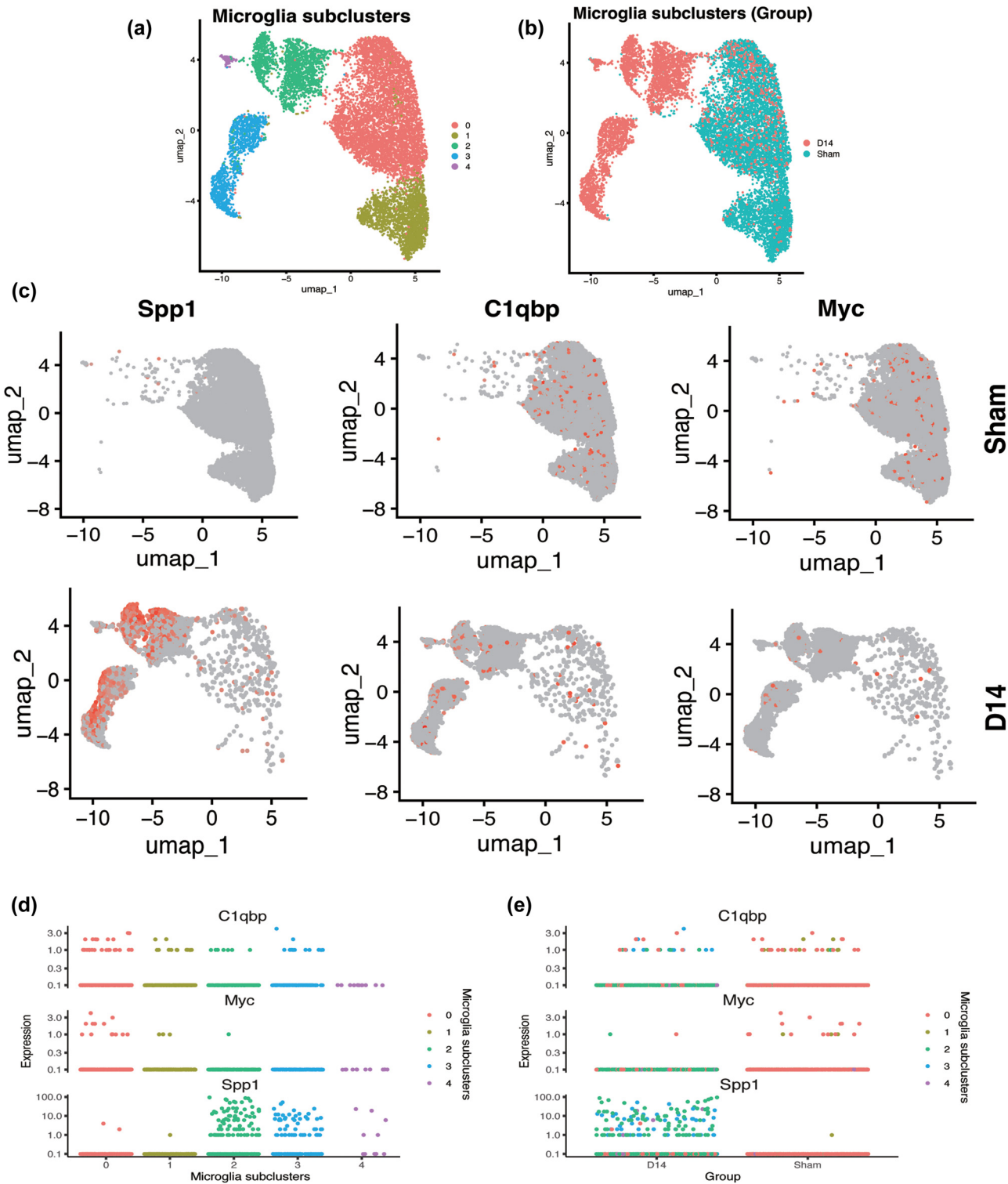


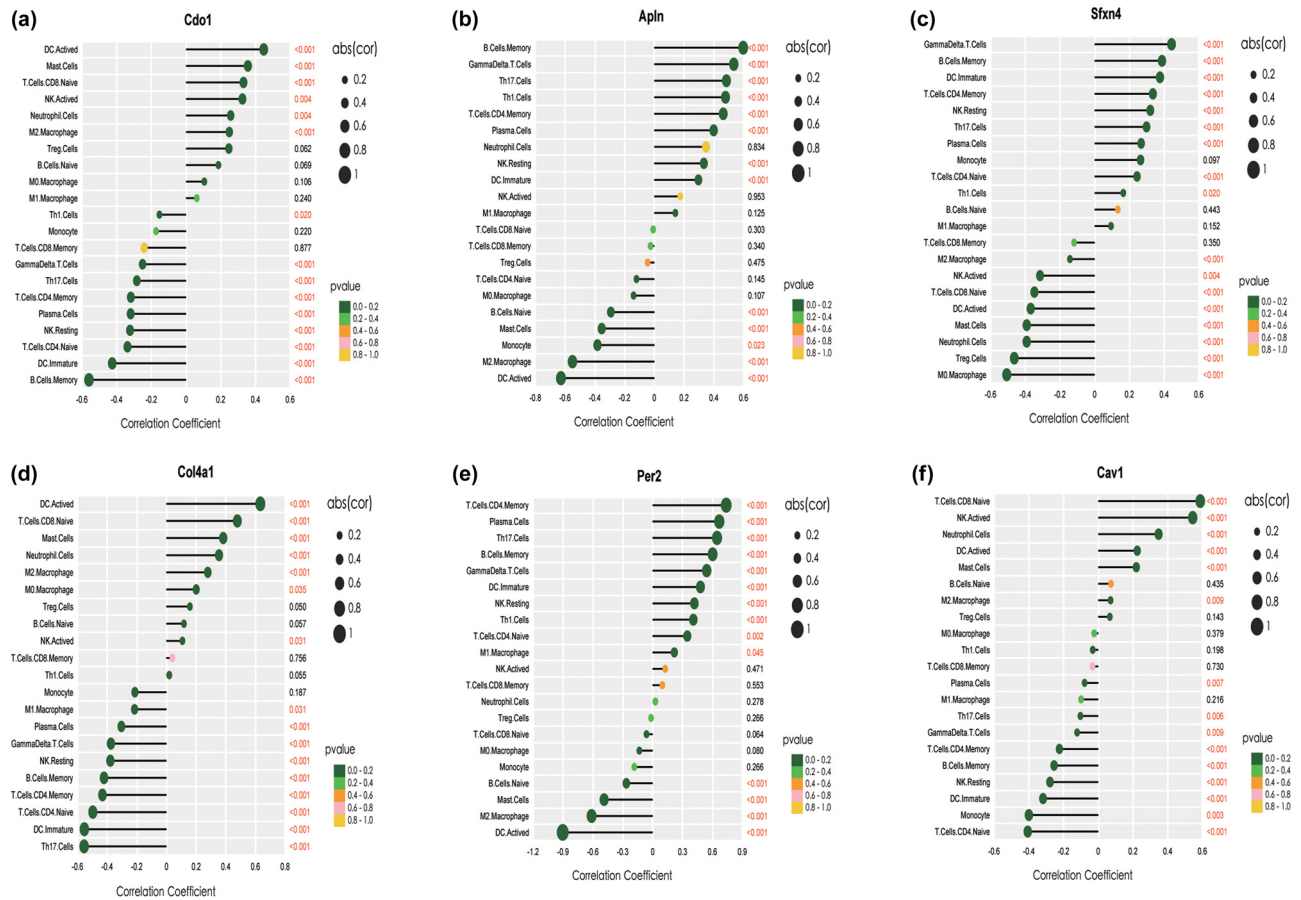
**Figure S1:** Differential expression analysis. (a) Volcano plot of the DEGs between MCAO and IS groups. (b) Volcano plot of the DEGs across MCAO and IS groups among in various cell types.



**Figure S2:** Intercellular communication analysis. (a–n) Cell-Cell communication among various cell type.



**Figure S3:** Analysis of microglia subclusters and dynamic changes of LRGs at 14 days post-stroke. (a) Microglia were classified into five distinct subclusters based on transcriptional profiles. (b) MG0 and MG1 were predominantly observed in the sham group, while MG2-MG4 were primarily identified at 14 days post-stroke. (c and d) Spatial distribution of LRGs across different microglia subclusters. (e) Comparative expression levels of LRGs in the sham group and at 14 days post-stroke (D14).



**Figure S4:** Immune cells infiltration. (a–f). Correlation between expression levels of the Cdo1, Apln, Sfnx4, Col4a1, Per2 and Cav1. The larger the circle, the stronger the correlations.