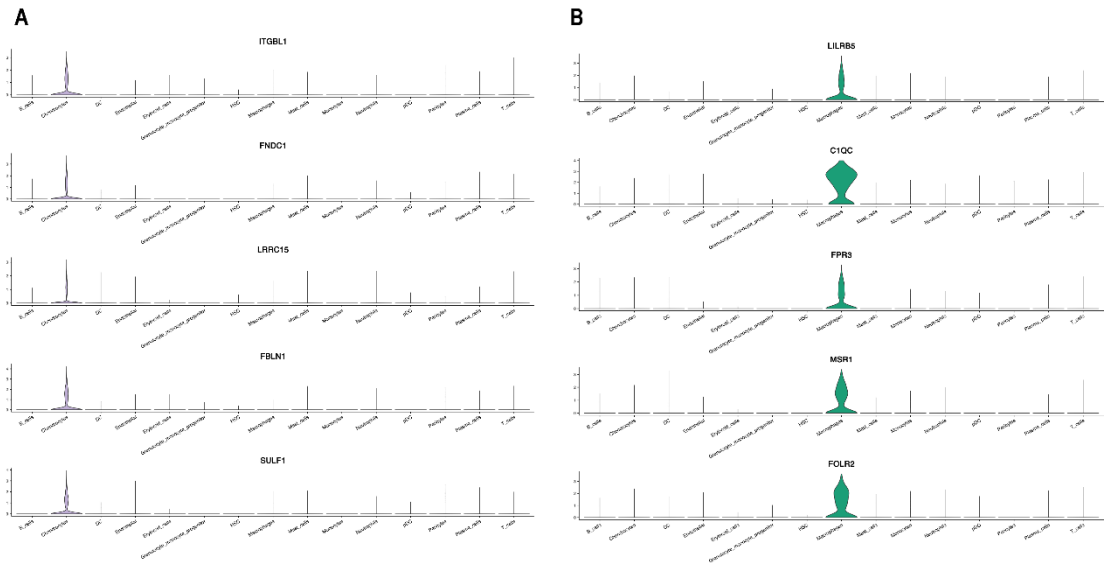
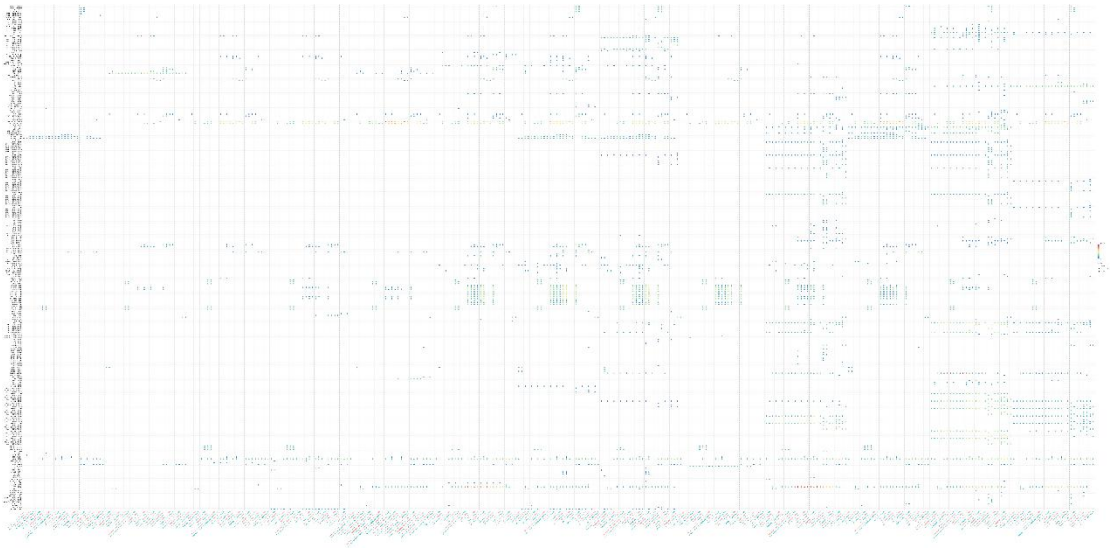
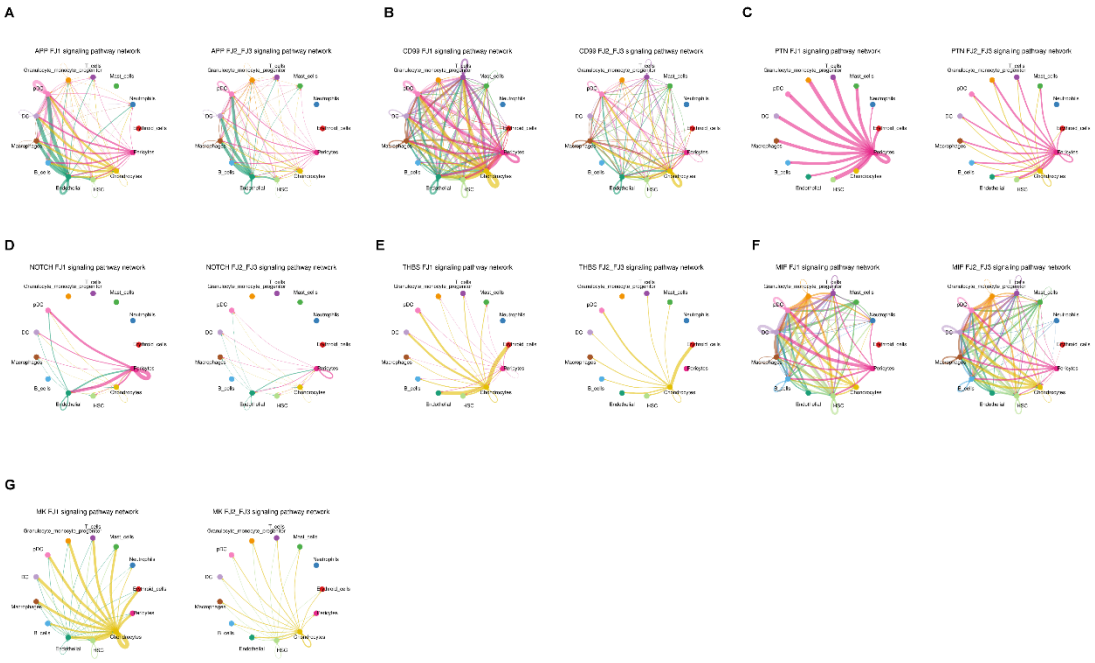


Supplementary Figure 1 Violin plot of representative genes of chondrocytes and macrophages related to Figure 1. A: Violin plot showing representative gene expression in chondrocyte population; B: Violin plot showing representative gene expression in macrophages population.

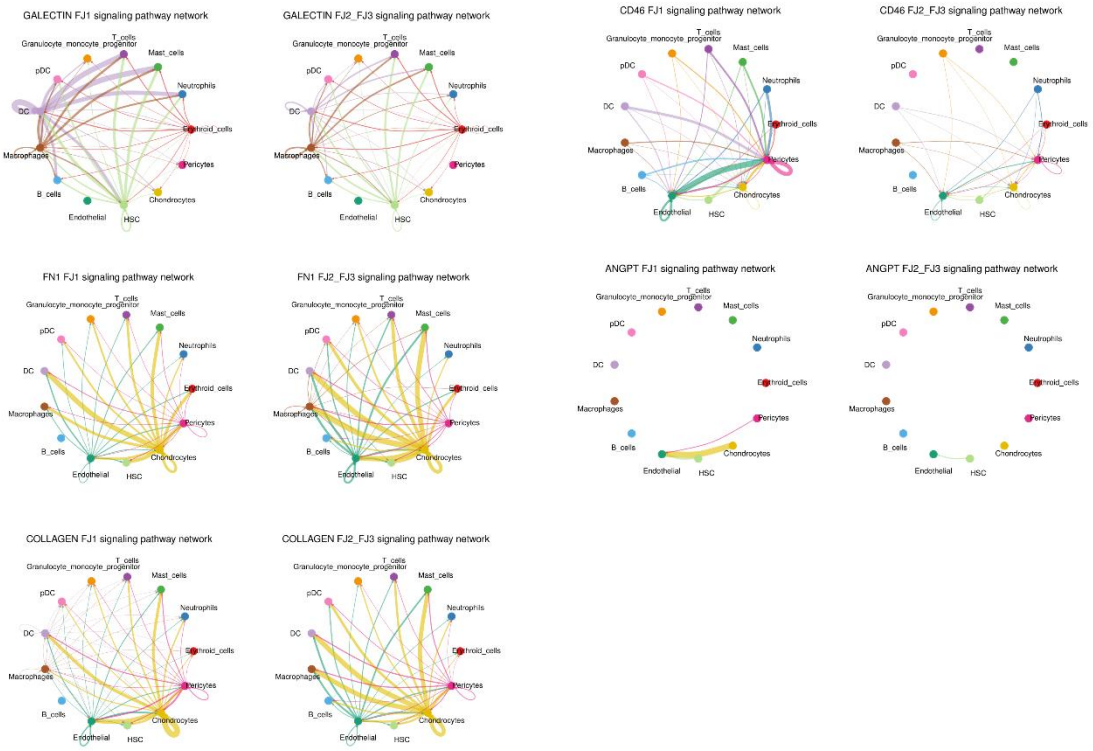


Supplementary Figure 2 Overview of the intercellular interactions between cell clusters in degenerated grade I (FJ1), II (FJ2), III (FJ3) LFJ cartilage related to Figure 7.



Supplementary Figure 3 The signaling pathway network between chondrocytes and other cells related to Figure 7.

A: APP signaling pathways in LFJs of different degeneration grades; B: CD99 signaling pathways in LFJs of different degeneration grades; C: PTN signaling pathways in LFJs of different degeneration grades; D: NOTCH signaling pathways in LFJs of different degeneration grades; E: THBS signaling pathways in LFJs of different degeneration grades; F: MIF signaling pathways in LFJs of different degeneration grades; G: MK signaling pathways in LFJs of different degeneration grades.



Supplementary Figure 4 The relative signaling pathway network of Chondrocytes receipted regulations by other cells related to Figure 7.