Figure S1. Features of ECM-producing stromal cells. The heatmap displays the expression of the top 20 marker genes of each cell type **(A)**, proteoglycan genes **(B)**, collagen genes **(C)** and glycoprotein genes **(D)** for each ECM-producing stromal cell type.

Figure S2. Features of myo-/fibroblasts subtypes. (A) UMAP shows the myo-/fibroblasts from different datasets. **(B)** The bar plot represents the cell proportion of the 6 myo-/fibroblasts subtypes among the 8 datasets. **(C)** The heatmap displays the expression of the top 10 marker genes of each myo-/fibroblasts subtype. **(D)** Violin plot displays the expression of selected feature genes in myo-/fibroblast subtypes.

Figure S3. Characteristics and marker gene expression in fibroblasts derived from peripheral circulating cells and from tissue-resident cells. (A) Bubble plots show expression of collagen, HSC, and MSC marker genes in myo-/fibroblast subtypes across datasets. Bubble size indicates the proportion of cells expressing each marker; color intensity represents the average expression level. **(B)** UMAP of cell clusters representing different cell types (left panel) and cells from three kidney biopsy tissues (right panel). PT, proximal tubular cells; IC, intercalated cells; LOH, loop of Henle; NK, natural killer cells; vSMC, vascular smooth muscle cells; HK-healthy kidney biopsy tissue; AK1 and AK2-allograft kidney biopsy tissues. **(C)** UMAP of cell clusters representing different cell types from human fetal bone marrow (left panel) and cells from different samples (right panel). MSC, mesenchymal stem cells; PreB, B cell progenitors; CLP, common lymphoid progenitors; pDC, plasmacytoid dendritic cells; NK, natural killer cells; PCW, post-conception weeks. **(D)** Bubble plot shows expression of canonical cell marker genes in each cell type in the human fetal bone marrow dataset. Bubble size indicates the proportion of cells of inferred cell type expressing each marker; color intensity represents the average expression level. **(E)** The circulating and resident gene scores of myo-/fibroblasts. **(F)** Boxplot shows the proportion of circulating and resident myo-/fibroblasts subtypes. Statistical analysis was performed using the Wilcoxon test. * $p < 0.05$, and ** $p < 0.01$.
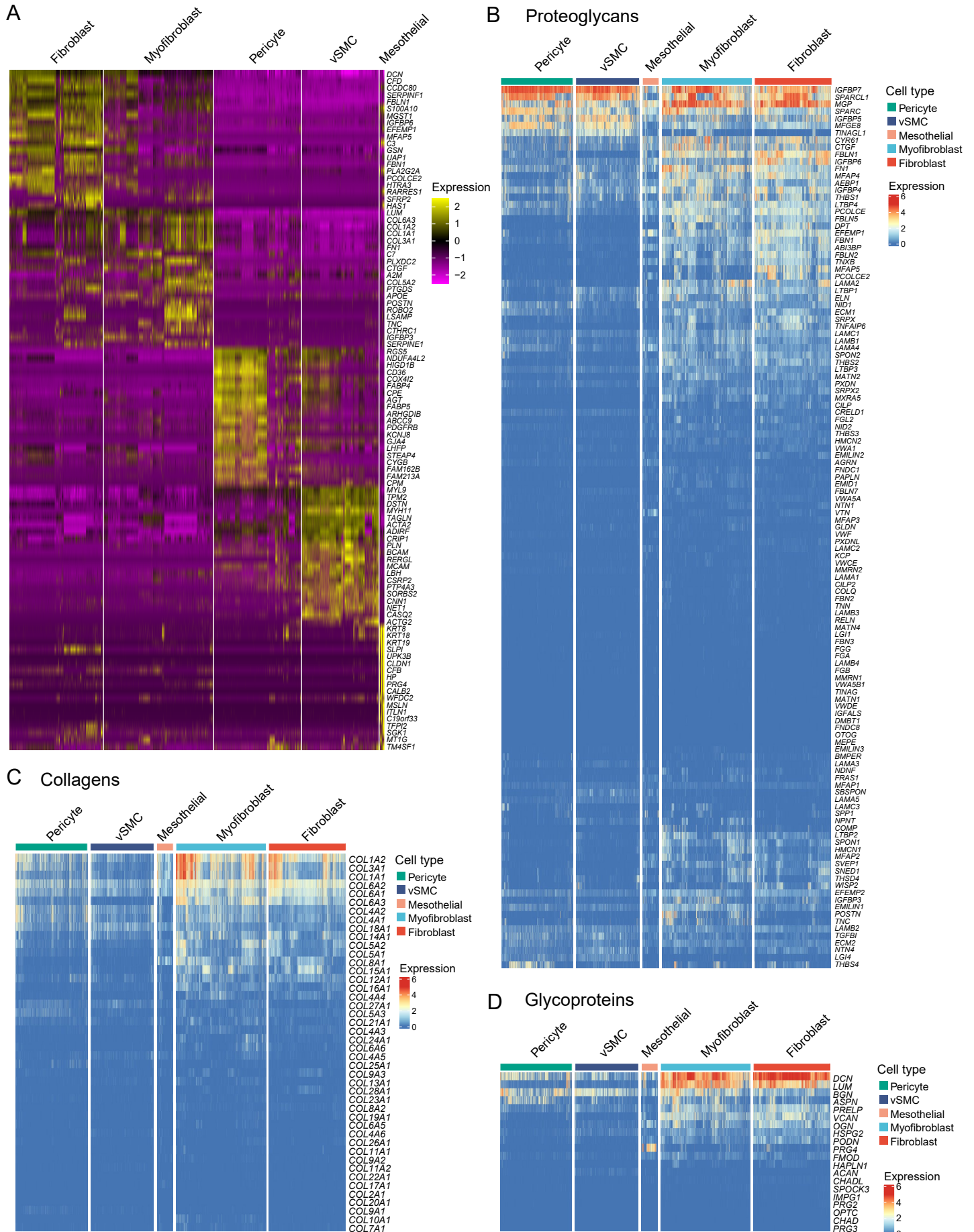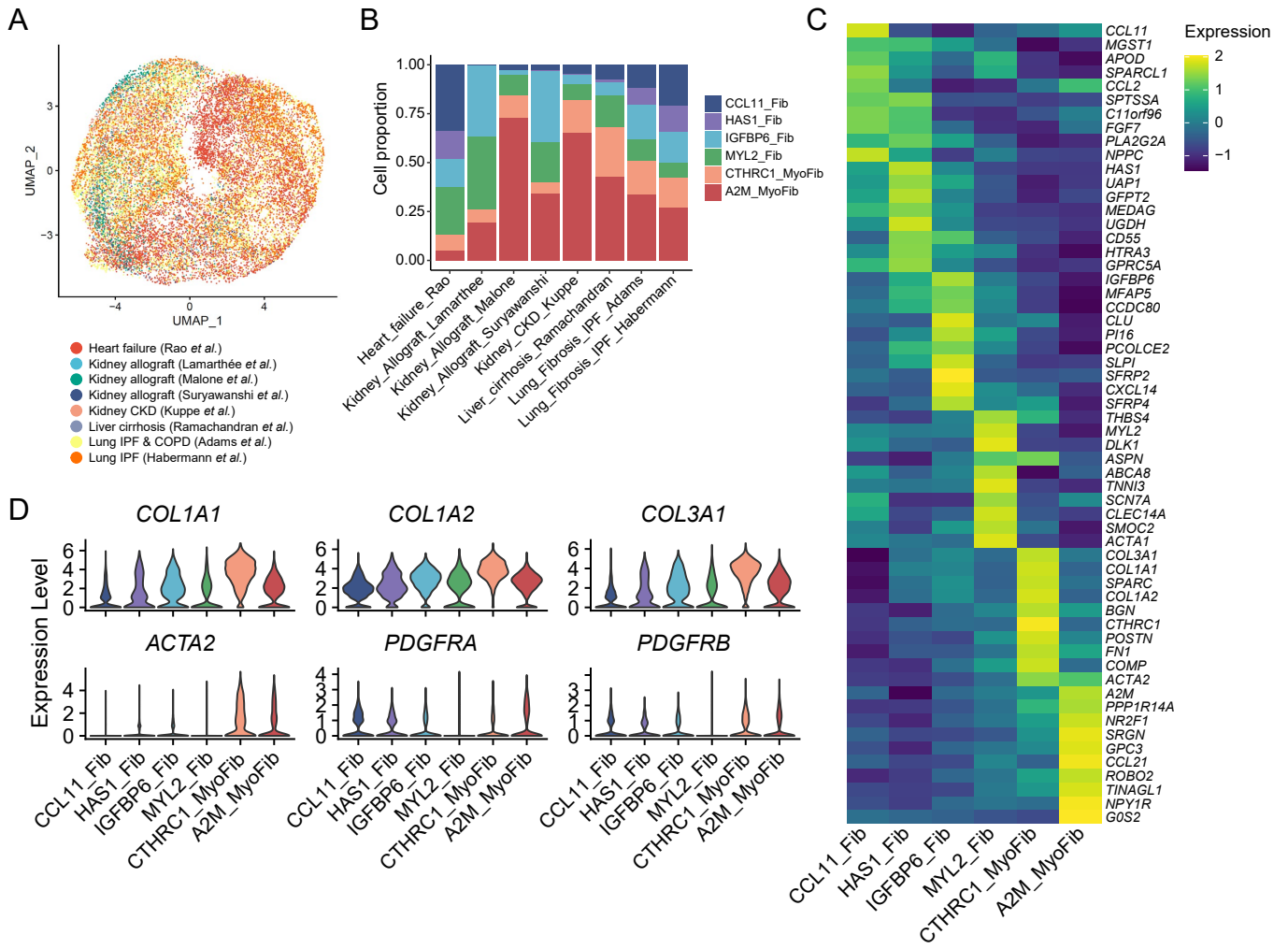
Figure S1

Figure S2

Figure S3