

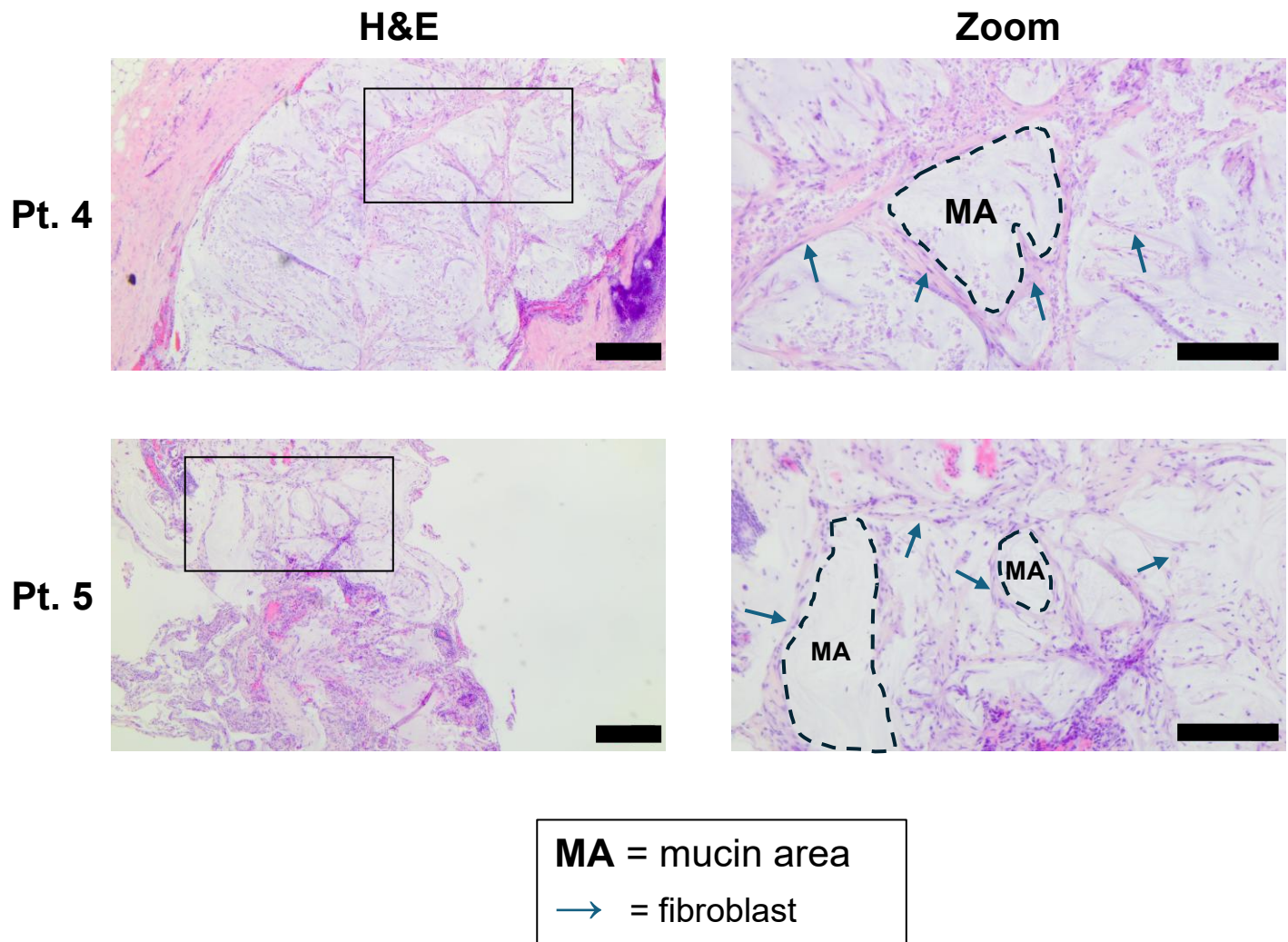


Figure S1 Representative images of PMP tissue sections: H&E (first column, magnification: 4x , scale bar = 300 μ m) and magnified view (second column, magnification: 10x, scale bar = 200 μ m) with selected indications of fibroblasts (arrows) and mucinous areas (dashed areas, MA).

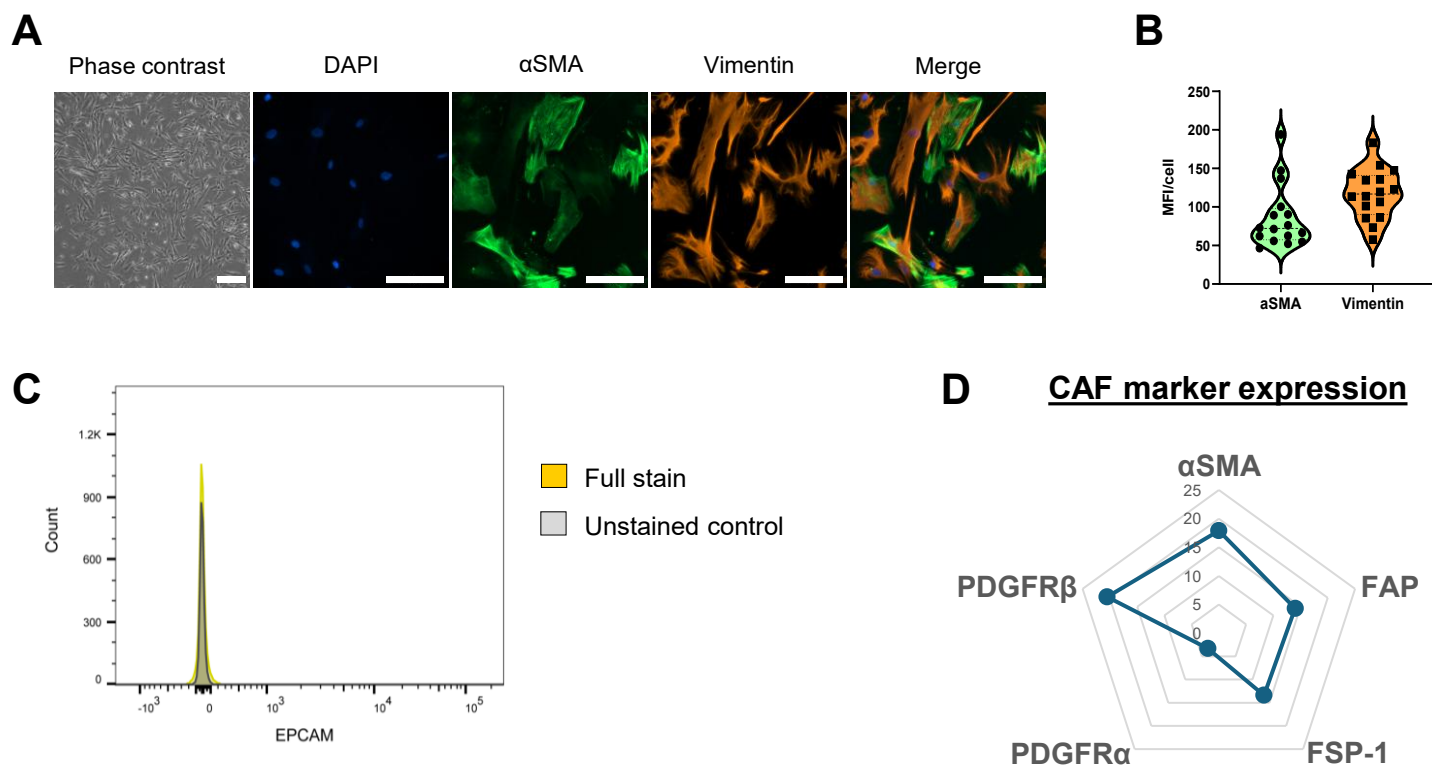


Figure S2 A. Phase contrast image (scale bar = 300μm) and immunofluorescent staining for αSMA and Vimentin (scale bar = 200 μm). **B.** Quantification of the mean fluorescent intensity (MFI) per cell for both αSMA and Vimentin. **C.** Histogram displaying fluorescent intensity of EPCAM, measured by flow cytometry, on both the stained and unstained sample. **D.** Spider plot representing percentage positivity of live cells for canonical CAF markers (αSMA, FAP, FSP-1, PDGFRα and PDGFRβ) in the CAF culture, measured by flow cytometry.

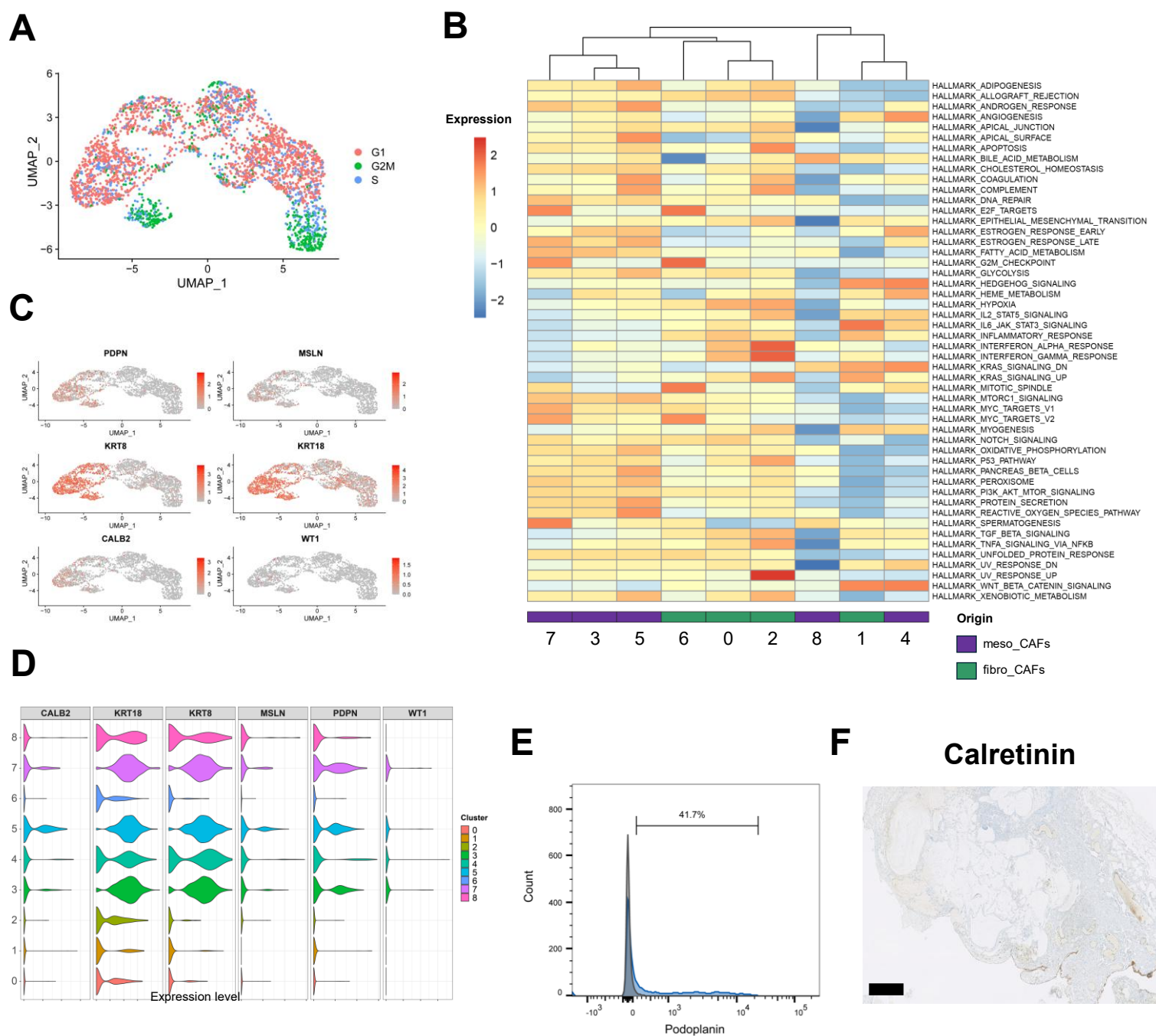


Figure S3 A. UMAP visualization of single-cell transcriptomes from the PMP-derived CAF culture, grouped by cell cycle phase. **B.** Heatmap representing expression levels with hierarchical cluster of the 50 Hallmark gene sets across the clusters. **C.** Feature plots showing the expression profile of six canonical mesothelial cell marker genes (*PDPN*, *MSLN*, *KRT8*, *KRT18*, *CALB2*, *WT1*). **D.** Violin plots showing expression of the canonical mesothelial cell markers across clusters. **E.** Histogram displaying fluorescent intensity of podoplanin, measured by flow cytometry, on both the stained and unstained sample. **F.** Representative histological image of a PMP tissue sample stained for calretinin (scale bar = 300 μ m).

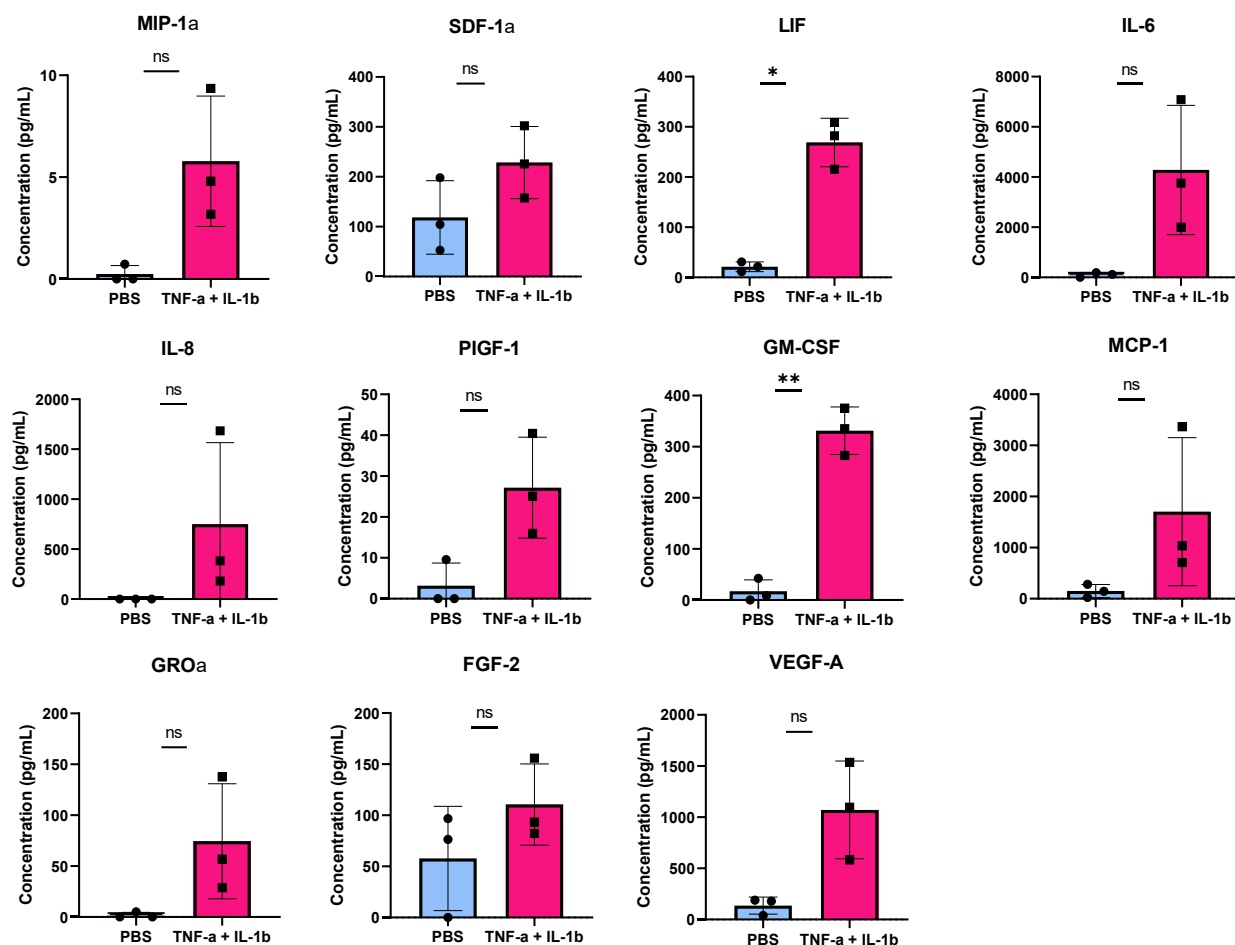
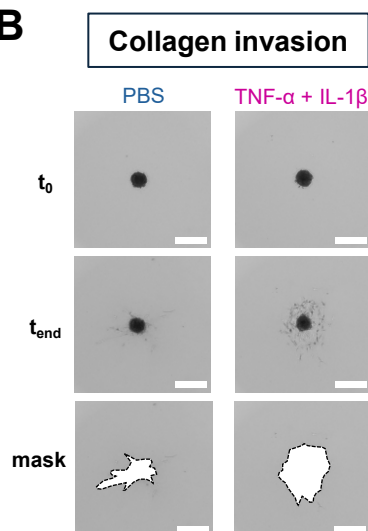
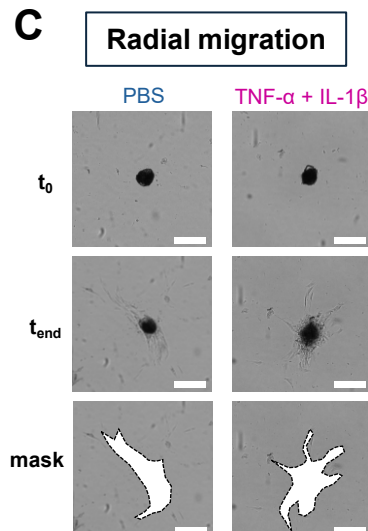
A**B****C****D**

Figure S4 A. Concentrations of the detected secreted factors in the CM of the CAF culture treated with either PBS (control) or TNF- α and IL-1 β , shown in pg/mL. Results were analyzed with the Welch's t test test. * p -value ≤ 0.05 , ** p -value ≤ 0.01 . **B-D.** Representative images of functional assay: collagen invasion (B, scale bar = 300 μ m), radial migration (C, scale bar = 300 μ m), and gel contraction (D, scale bar = 3 mm) in treated versus untreated CAFs.