

Supplementary figures

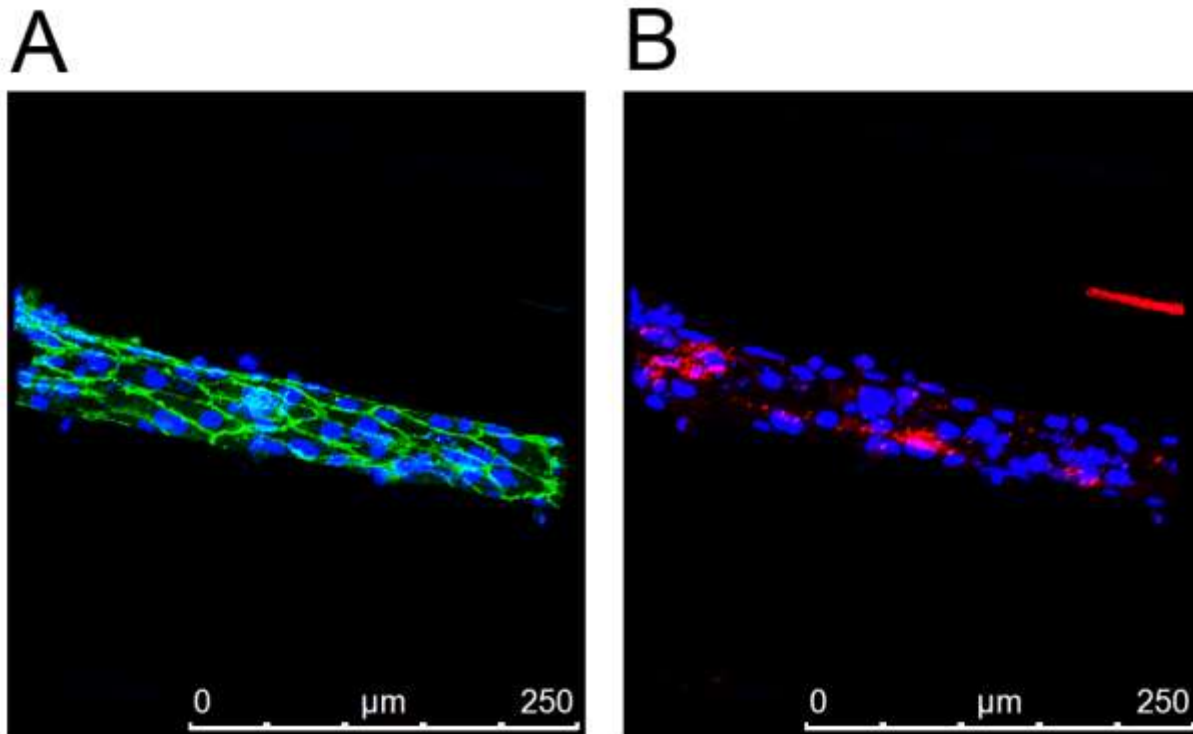


Figure S1. Vascular structures under control conditions. A. PECAM-1 staining reveals a mature monolayer of endothelial cells, organized in a tubular fashion. B. PKH-26-labeled pericytes are recruited inside the structures and interact closely with the endothelial layer.

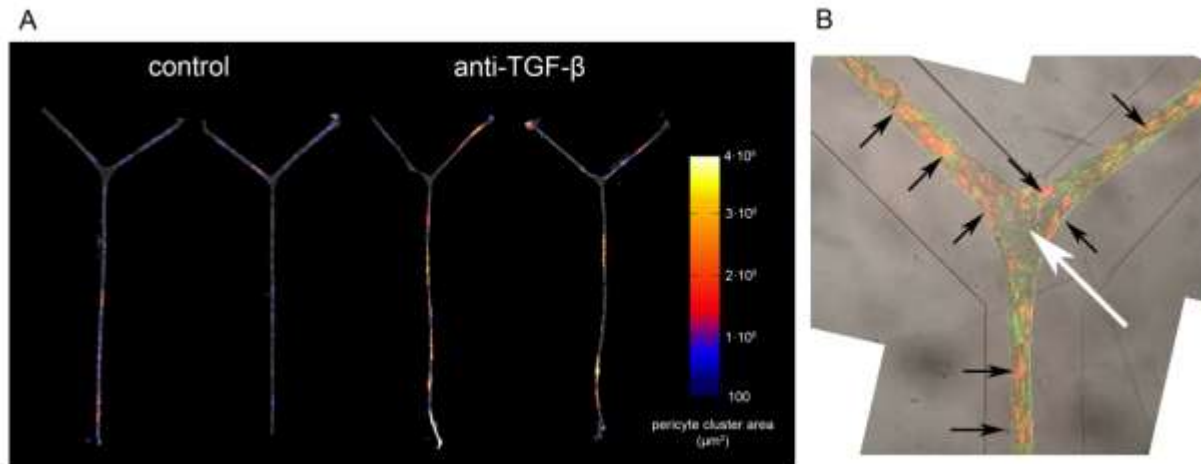


Figure S2. Pericyte clustering and density. A. Overview of entire structures with color-coded pericyte cluster area. Anti-TGF-beta-treated structures have clearly more pericyte clustering. B. Branching point in a control channel. Pericytes in red, endothelium in green. Pericytes (black arrows) tend to reside in the straight sections of the structure and not in the middle of the branching point (white arrow).

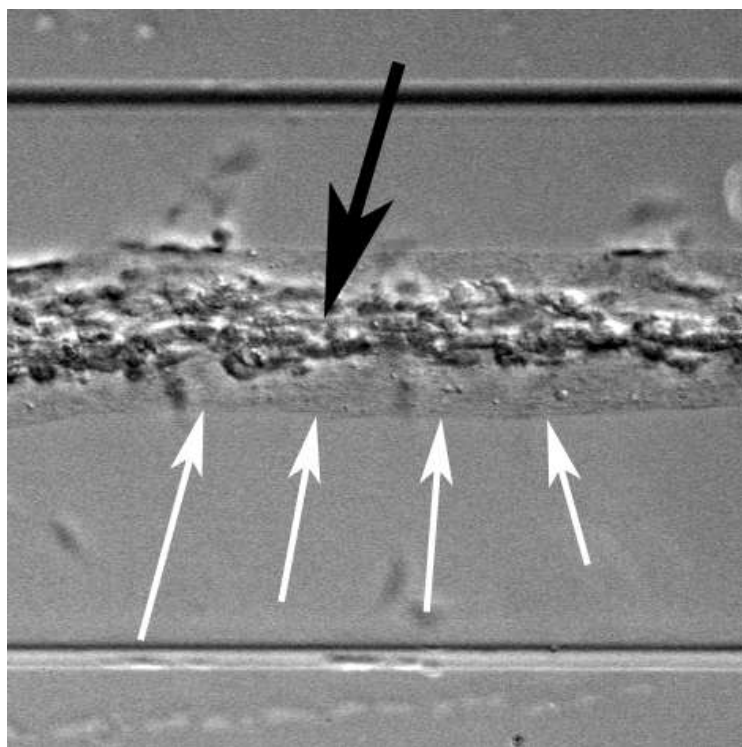


Figure S3. Contraction of the collagen matrix. After 8 hours, in the presence of anti-TGF- β , cells (black arrow) have formed a tube. They are surrounded by a 'halo' of what is presumably collagen (white arrows) that they have recruited over time by contraction.

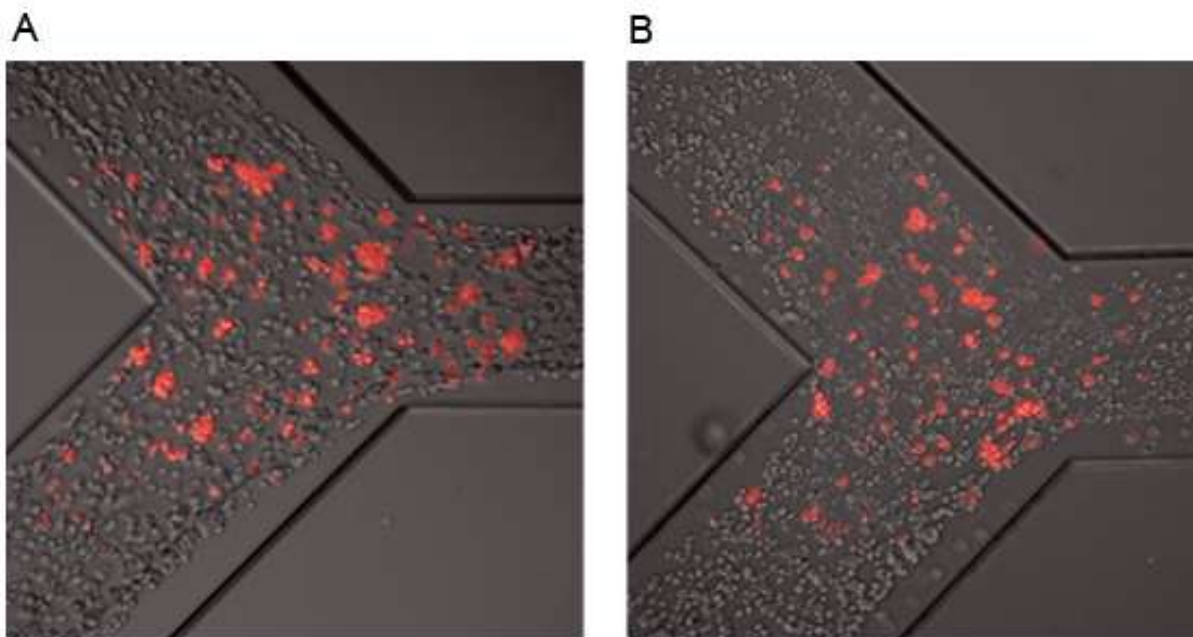


Figure S4. Cell loading after one hour. Pericytes are labeled in red and are mixed with endothelial cells in a 1:10 ratio. Importantly, control (A) and TGF-beta-neutralizing conditions (B) display equivalent pericyte loading.

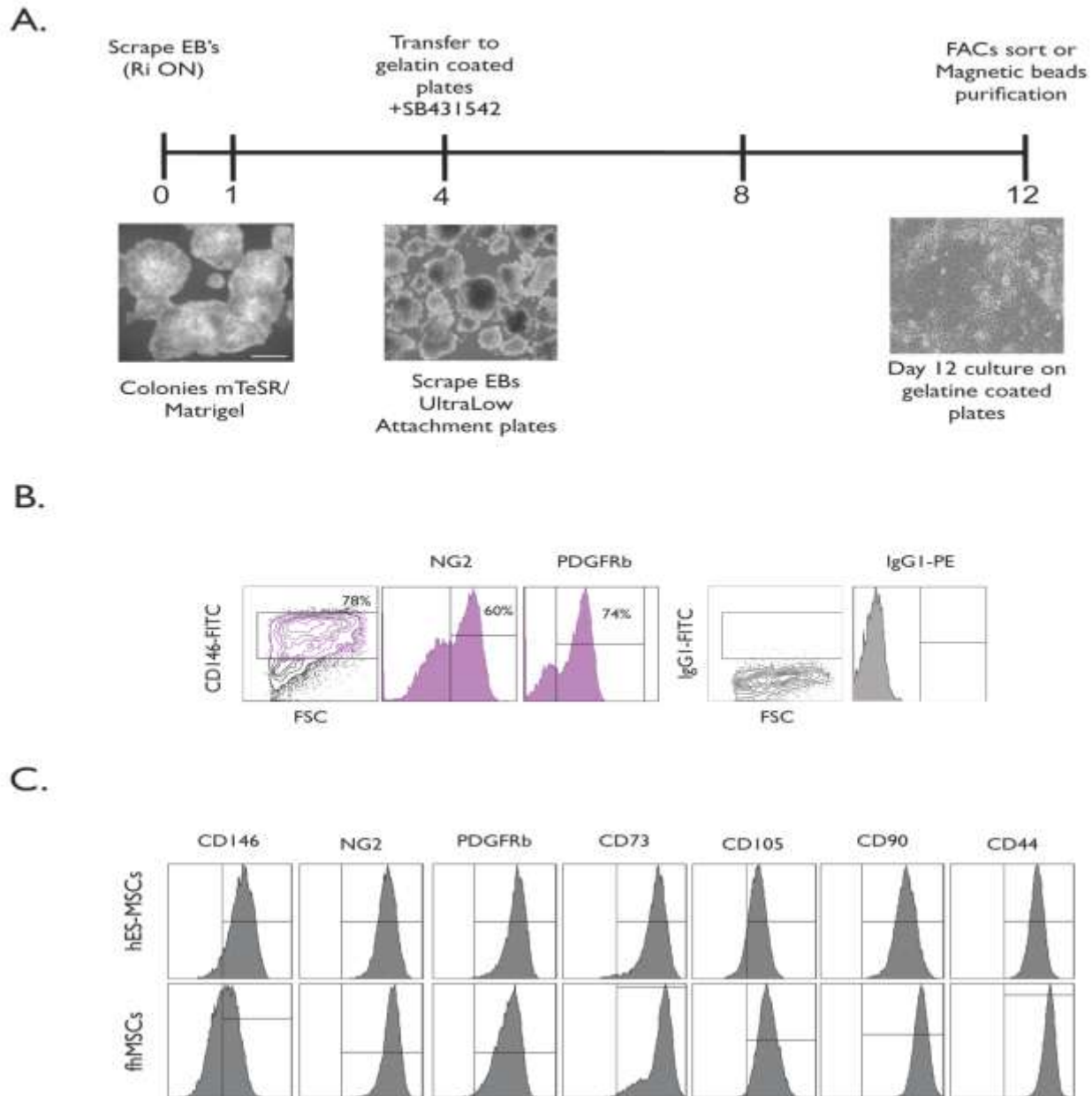


Figure S5. Differentiation and characterization of ES-derived pericytes/MSCs. (A) Schematic overview of the differentiation protocol. (B) Flow cytometric analysis of the day 12 differentiating hES-cell culture for the expression of pericyte/MSCs markers CD146, PDGFRb and NG2. (C) Flow cytometric characterization of hES-derived pericytes/MSCs (hES-MSCs). hES-derived pericytes/MSCs (upper panel) express comparable levels of surface pericyte/MSC markers (CD146, NG2, PDGFRb, CD73, CD105, CD90, CD44) as observed in human fetal derived MSCs (fhMSCs) (low panel).