## **Supplemental Figure S1**



**Supplemental Fig. S1.** Progressive differentiation of donor BMSCs on nanofiber meshes as indicated by induction of alkaline phosphatase staining (A) and osteocalcin gene expression over time (B).

## **Supplemental Figure S2**



**Supplemental Fig. S2.** Week 5 TEP treated samples were stained with anti-CD31 and Emcn antibodies. Donor callus is indicated by GFP<sup>+</sup> cells (green in A and B). Note that the fluorescence intensity of CD31 (gray signals in A) was higher in the donor cell-derived callus (white arrows) than in quiescent bone marrow (red arrows). In comparison, the fluorescence intensity of Emcn (gray signals in B) was the same in donor cell-derived callus and in bone marrow, suggesting CD31<sup>high</sup> blood vessels play a key role in repair (see Figure 6).