

Supporting Information

Injectable Hydrogel Systems with Multiple Biophysical and Biochemical Cues for Bone Regeneration

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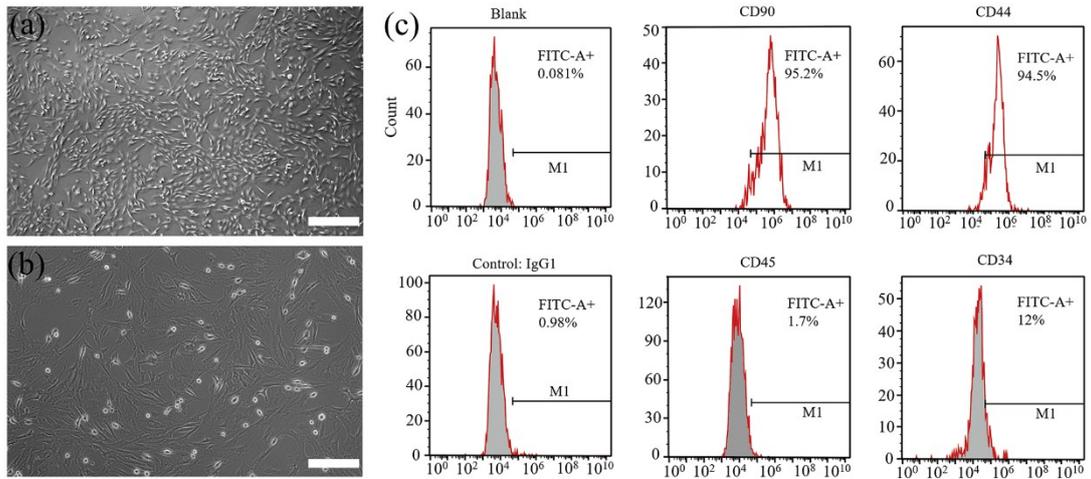


Fig. S1 Representative images of cells and flow cytometry analysis of CD marker expression in third-passaged BMSCs: (a, b) Morphology of third-passaged BMSCs (P3). Scale bars: 200 μm (a) and 100 μm (b), respectively. (c) The expression of CD90 (95.2%), CD44 (94.5%), CD45 (1.7%) and CD34 (12%) in the BMSCs. FITC-conjugated mouse IgG1 was used as a negative control.

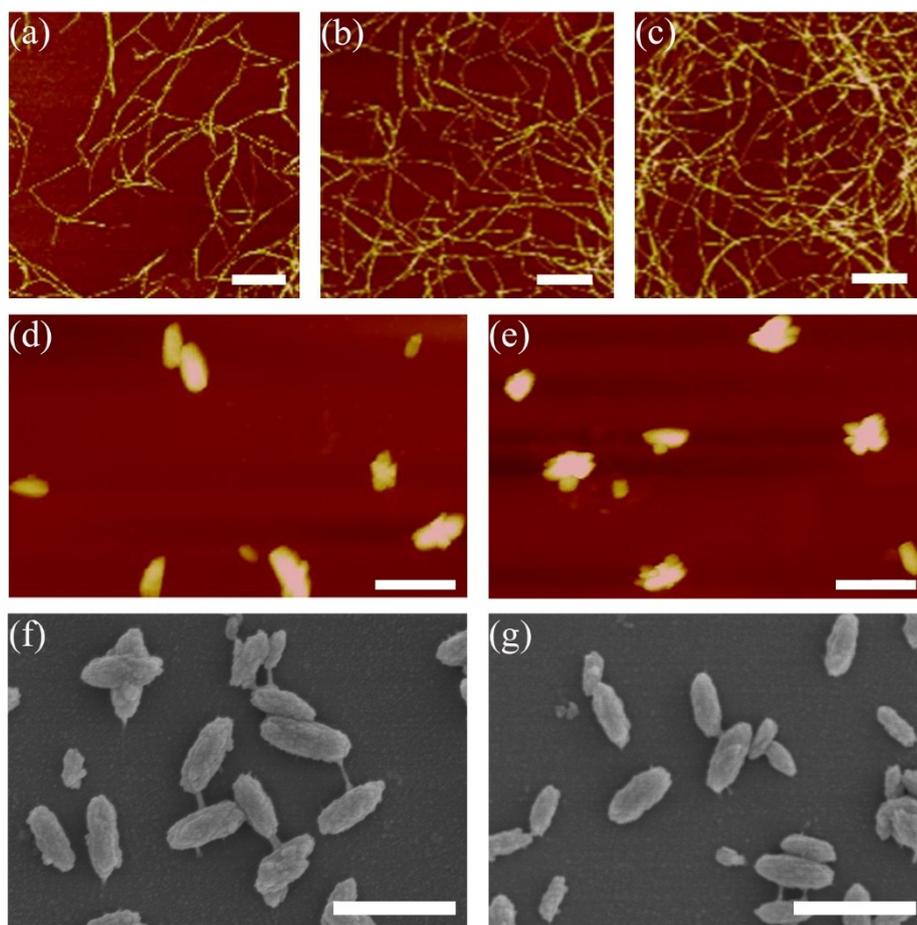


Fig. S2 The micromorphologies of different silk nanofibers (SNF) and hydroxyapatite nanoparticles (HA): AFM images of (a) SNFs, (b) DFO-loaded SNFs, (c) BMP-2-loaded SNFs, (d) HA and (e) BMP-2-loaded HA. Scale bar, 500 nm. (f, g): SEM images of HA and BMP-2-loaded HA nanoparticles respectively. Scale bar, 500 nm.

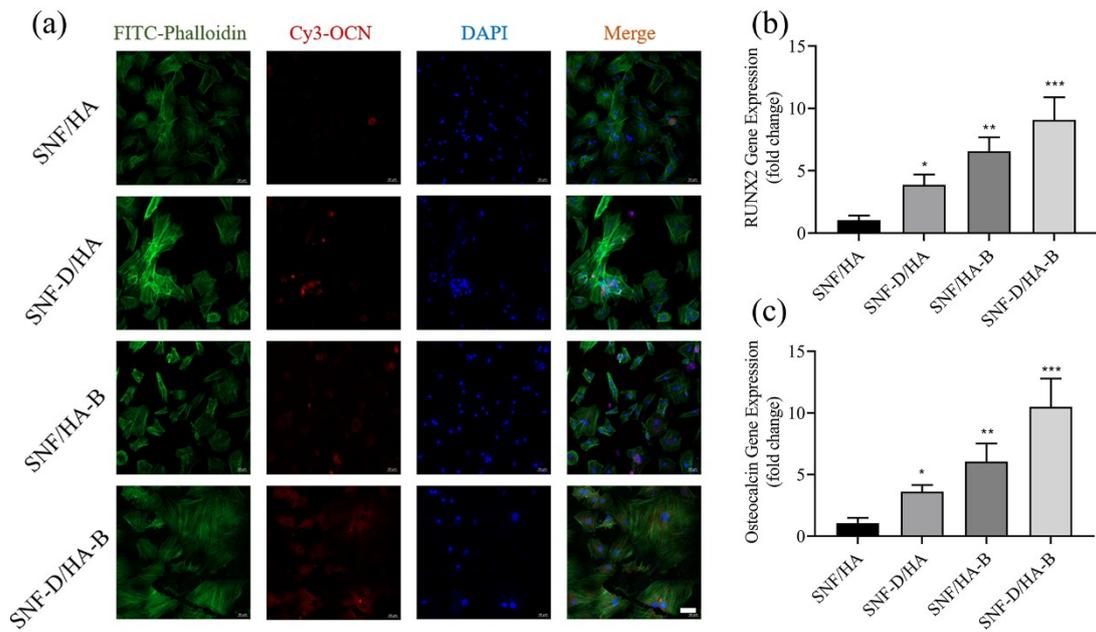


Fig. S3 Osteogenesis of BMSCs on different composite hydrogels measured by immunofluorescence assay: (a) OCN expression at day 14. Scale bar, 50 μ m. (b, c) mRNA levels of RUNX2 and OCN detected by real time PCR at day 14, respectively.

* $P \leq 0.05$, ** $P \leq 0.01$, and *** $P \leq 0.001$.

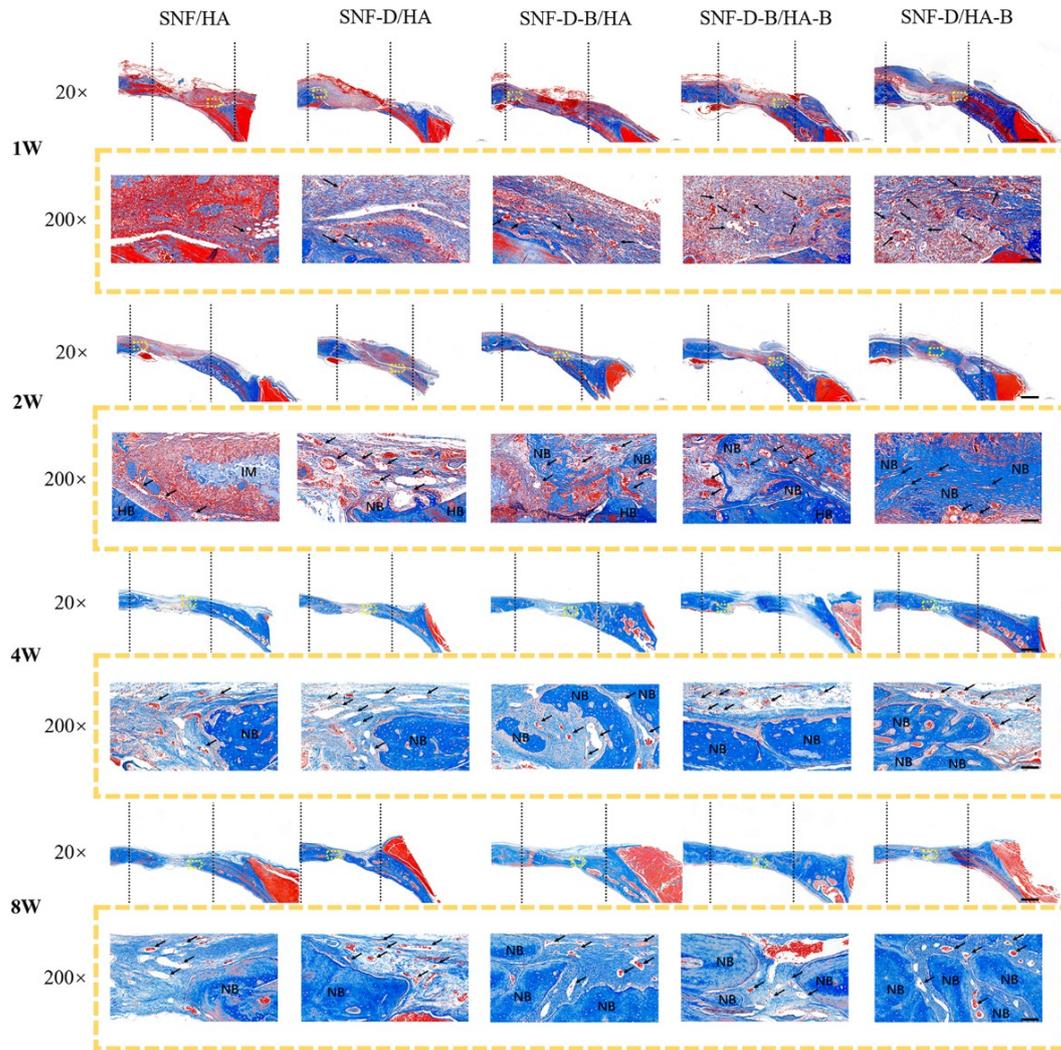


Fig. S4 Masson's trichrome staining of the defects treated with different composite hydrogels at 1 week, 2 weeks, 4 weeks and 8 weeks after the implantation. Scale bar, 20X: 1 mm, 200X: 100 μ m.