

Figure S1. Identification of BMSCs in flow cytometry.

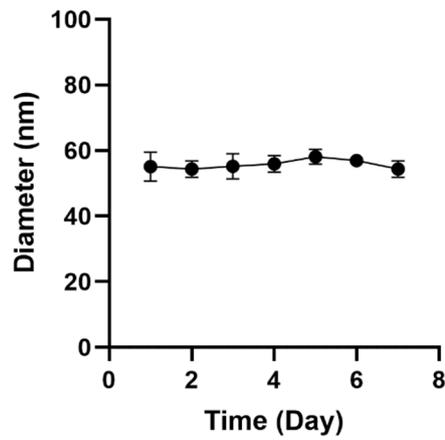


Figure S2. Particle size variation of Mg-NPs for 7 days

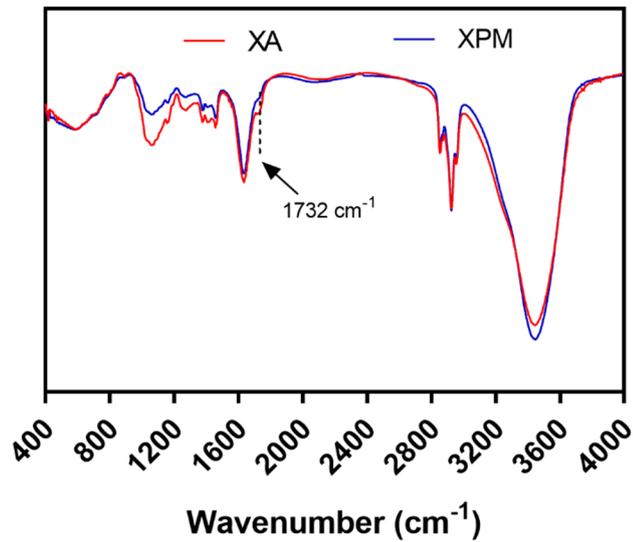


Figure S3. IR spectra of XA and XPM.

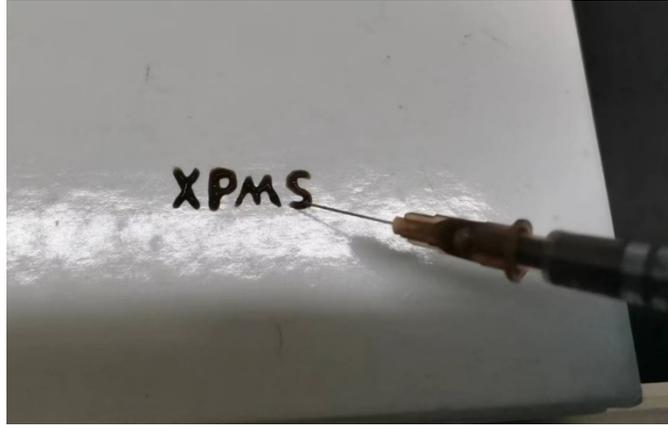


Figure S4. Injectable properties of XPMS hydrogel

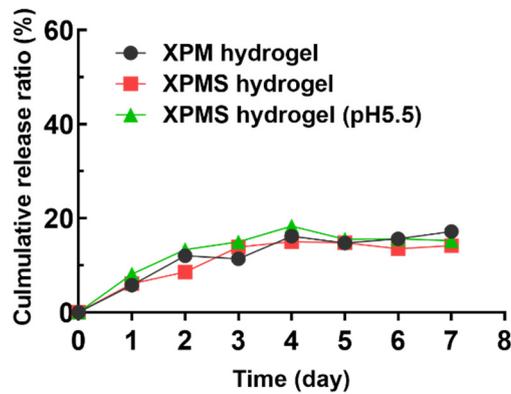


Figure S5. Cumulative release ratio of Mg^{2+} from the XPMS hydrogel under different conditions in vitro.

Abbreviations:

SDF-1 α , Stromal derived factor-1 α ; CXCL12, C-X-C Motif Chemokine Ligand 12; CXCR4, C-X-C motif chemokine receptor 4; Mg^{2+} , Magnesium ions; PDA, polydopamine; Mg-NPs, Mg^{2+} included nanoparticles; XG, xanthan gum; Xan-CHO, aldehyde xanthan gum; SEM, scanning electronic microscope; TEM, Transmission Electron Microscope; EDS, Energy Dispersive Spectroscopy; BMSCs, bone mesenchymal stem cells; XA, pure xanthan gum; XP, polydopamine modified xanthan gum; XS, SDF-1 α included pure xanthan gum; XPS, SDF-1 α included polydopamine modified xanthan gum; XPM, Mg^{2+} included polydopamine modified xanthan gum; XPMS, SDF-1 α and Mg^{2+} included polydopamine modified xanthan gum; ALP, Alkaline phosphatase; ARS, alizarin red staining; BV/TV, bone volume fraction; Tb.N, trabecular number; Tb.Sp, trabecular separation