Supplementary Information (SI) for Journal of Materials Chemistry B.

Supporting Materials

Modulation of Biomineralization Morphology by Phosphorylated Collagen Peptides: Insights into Osteogenesis Imperfecta Pathophysiology

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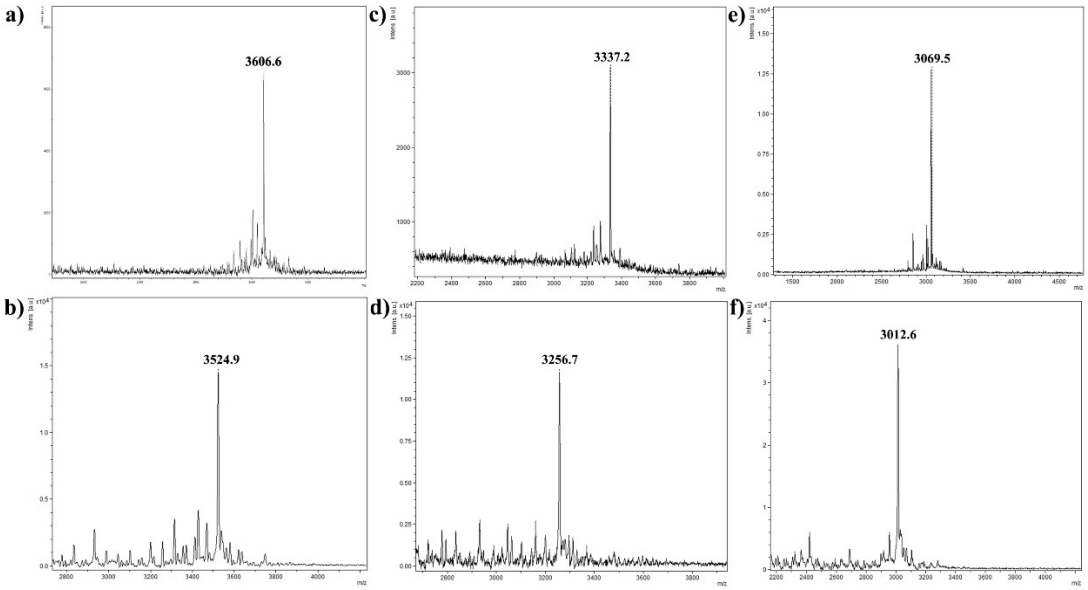

Figure S1. The mass spectrometry of $GPO_{13}pS$ (a), $GPO_{13}S$ (b), $GPO_{12}pS$ (c), $GPO_{12}S$ (d), $GPO_{11}pS$ (e), and $GPO_{11}S$ (f).

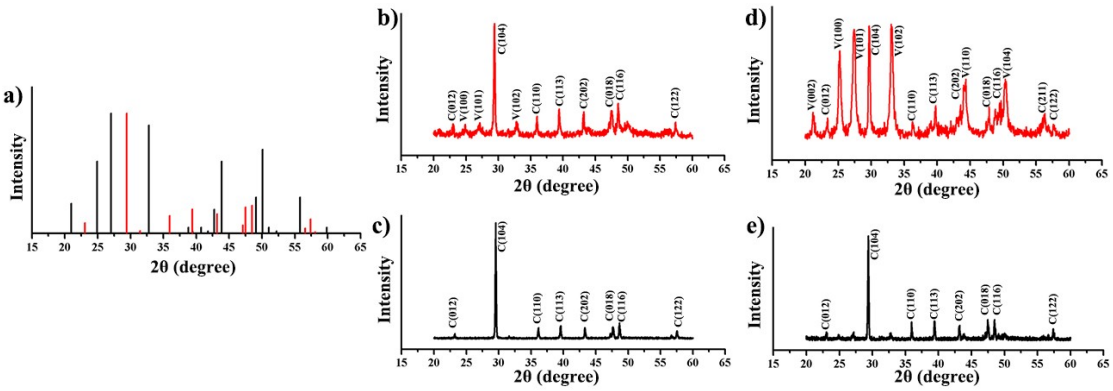

Figure S2. XRD characterization of the synthesized collagen peptide-calcium carbonate nanomaterials. (a) XRD patterns of the standard vaterite (JCPDS no. 72-506) (black) and calcite (JCPDS no. 24-27) (red). XRD patterns of $GPO_{12}pS\text{-}CaCO_3$ (b), $GPO_{12}S\text{-}CaCO_3$ (c), $GPO_{11}pS\text{-}CaCO_3$ (d), and $GPO_{11}S\text{-}CaCO_3$ (e).

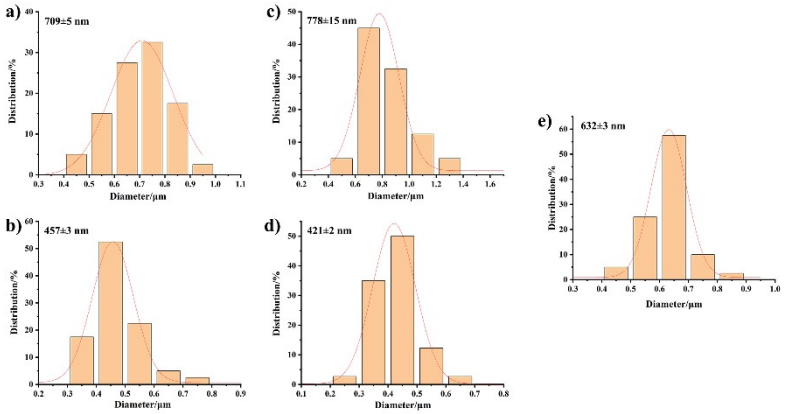

Figure S3. The average particle sizes of peptide-based $CaCO_3$ nanomaterials. The length (a) and width (b) of $GPO_{13}pS\text{-}CaCO_3$, the length (c) and width (d) of $GPO_{12}pS\text{-}CaCO_3$, and diameter (e) of $GPO_{11}pS\text{-}CaCO_3$.

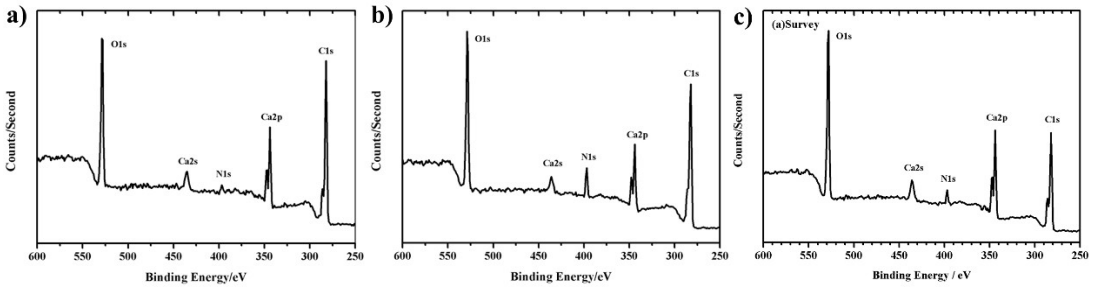

Figure S4. The XPS of $GPO_{13}S\text{-}CaCO_3$ (a), $GPO_{12}pS\text{-}CaCO_3$ (b), $GPO_{11}pS\text{-}CaCO_3$ (c).

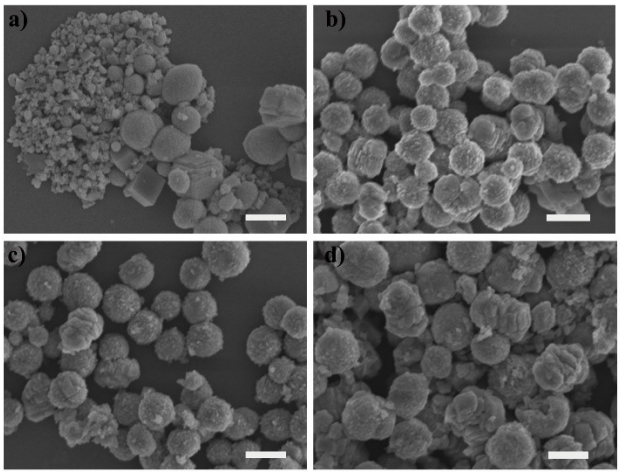

Figure S5. FESEM images of the $GPO_{11}pS$-$CaCO_3$ nanomaterials prepared at different incubation times: 5 min (a), 1 h (b), 2 h (c), and 24 h (d). The mixture of $GPO_{11}pS$ (2 mM), sodium carbonate (40 mM), and calcium chloride (40 mM) was incubated at 25 °C. Scale bar=1 μm.

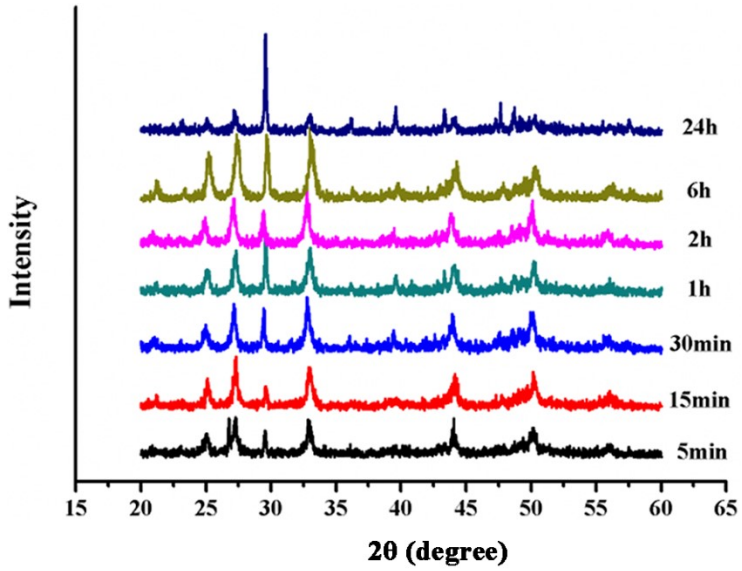

Figure S6. The XRD patterns of the $GPO_{11}pS$-$CaCO_3$ nanomaterials prepared at different incubation times: 5 min, 15 min, 30 min, 1 h, 2 h, 6 h, and 24 h.

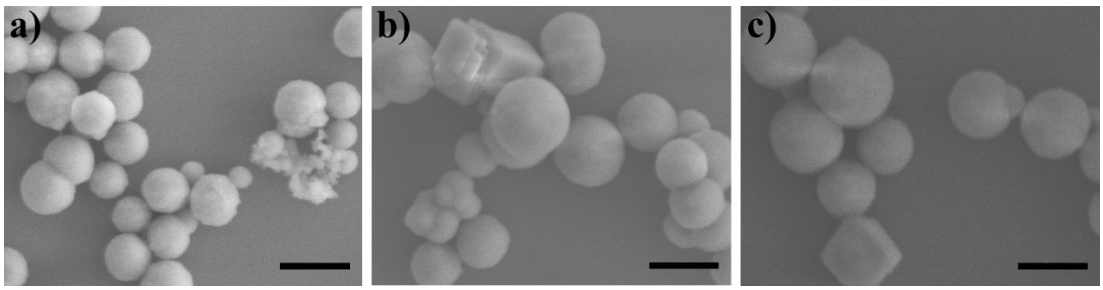

Figure S7. The SEM images of $GPO_{11}pS$-$CaCO_3$ (a), $GPO_{12}pS$-$CaCO_3$ (b), and $GPO_{13}pS$-$CaCO_3$ (c) corresponding to preheated peptide $GPO_{11}pS$, $GPO_{12}pS$ and $GPO_{13}pS$, respectively. Scale bar=1 μm.