

Supporting Information

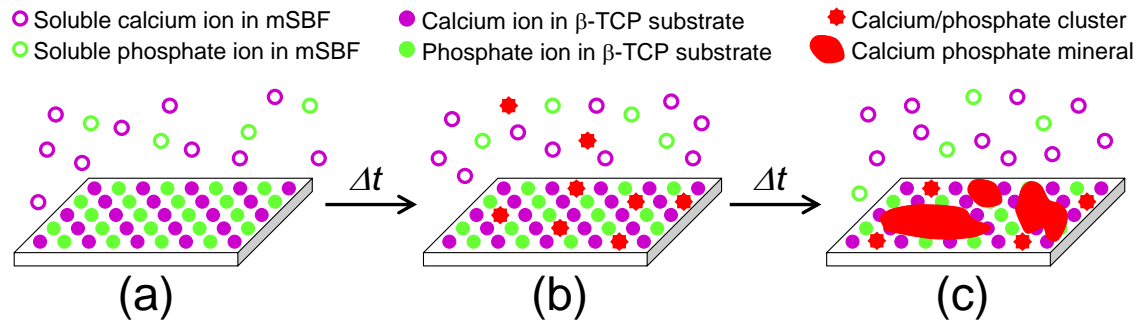


Figure S1. Schematic representation of mineral coating formation on β -TCP by mSBF incubation. (a) Incubation of β -TCP in mSBF solution at pH 6.8 and 37 °C, (b) formation of calcium/phosphate clusters in the solution and nucleus formation on negatively charged phosphate sites on β -TCP surface, and (c) heterogeneous growth of calcium phosphate crystals.

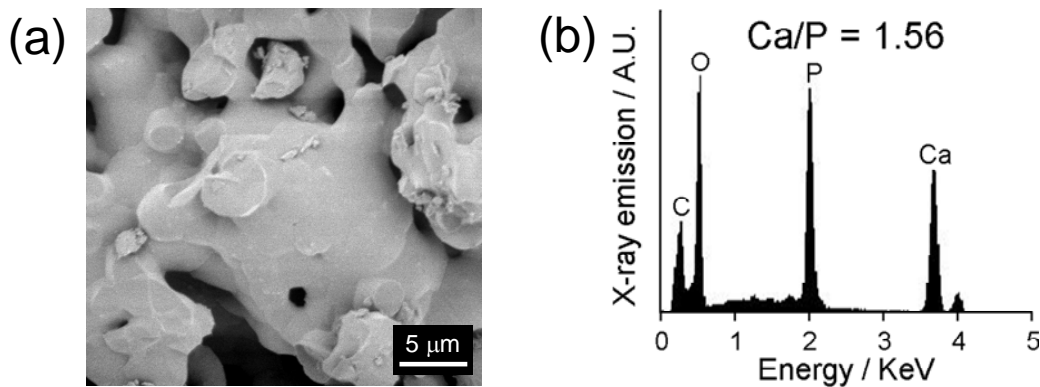


Figure S2. SEM image (a) and EDS spectrum (b) of an as-received β -TCP granule.

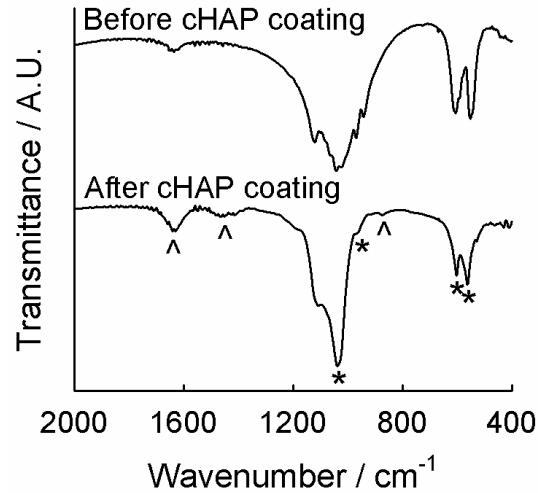


Figure S3. FT-IR spectra of a β -TCP granule before and after cHAP coating. * and ^ indicate the characteristic peaks associated with phosphate and carbonate, respectively.

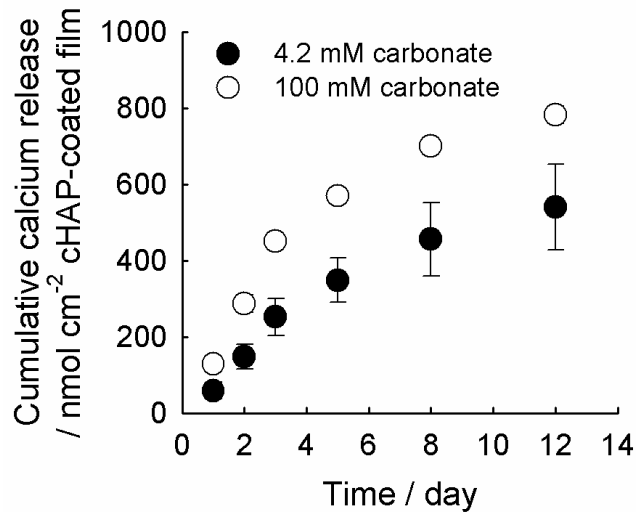


Figure S4. Cumulative calcium release from cHAP coating formed on poly(lactide-co-glycolide) (PLG) films. The cHAP coatings were grown in mSBF with 4.2 and 100 mM carbonate concentrations. Results indicate a faster dissolution rate with higher carbonate content.

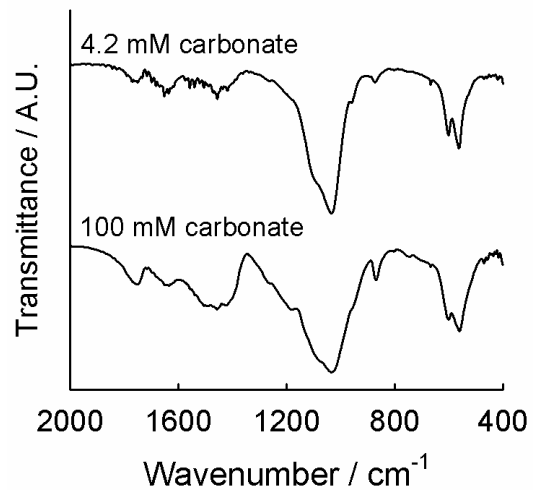


Figure S5. FT-IR spectra of cHAP coatings formed on poly(lactide-co-glycolide) (PLG) films. The cHAP coatings were grown in mSBF with 4.2 and 100 mM carbonate concentrations. The coating created from mSBF with 100 mM carbonate showed significantly increased peak around 1450 cm⁻¹, which is associated with carbonate.

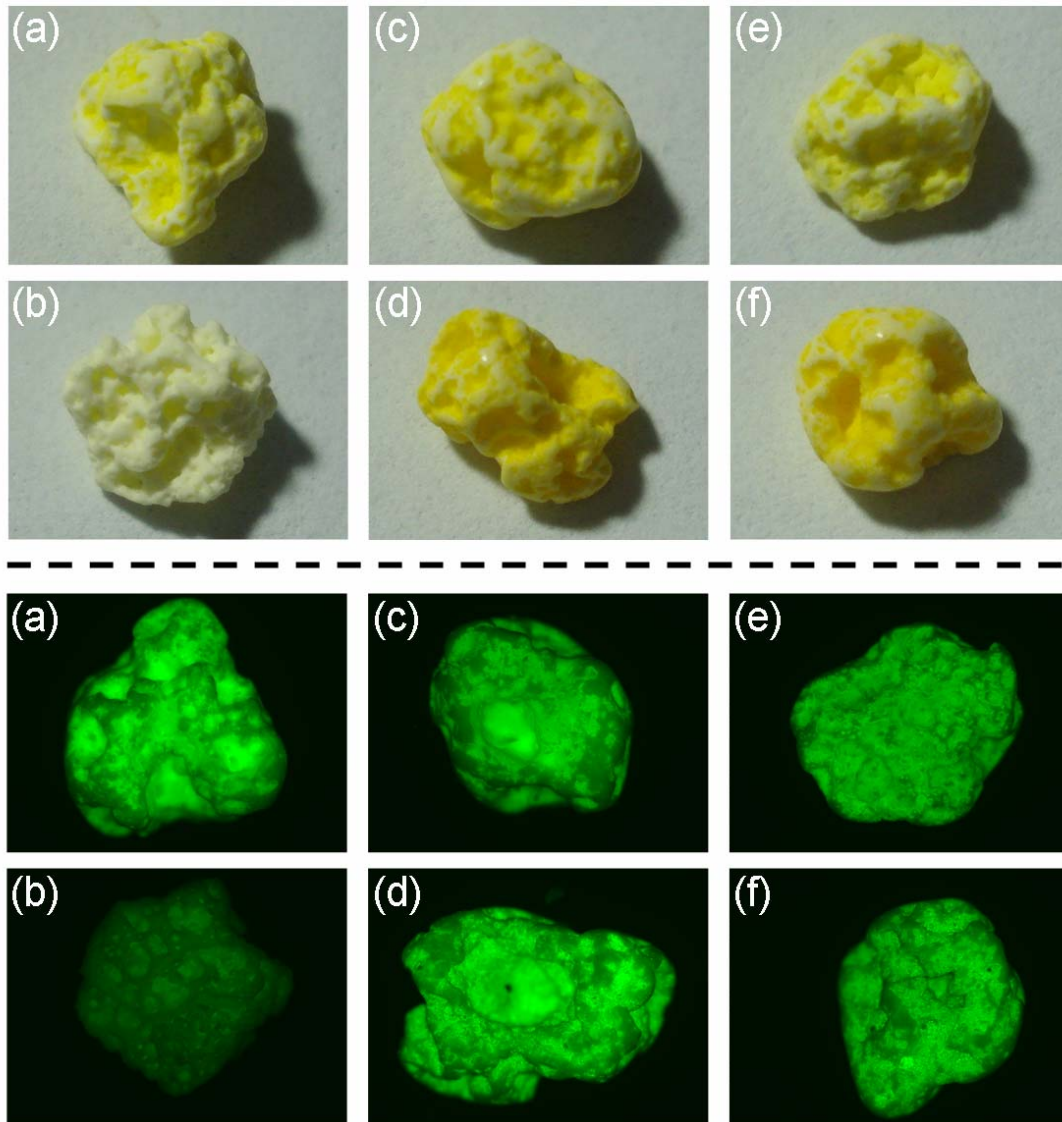


Figure S6. Photographs (top panel) and fluorescence micrographs (bottom panel) of (a) cHAP-coated and (b) uncoated β -TCP granules which was incorporated with fluorescein-conjugated bovine albumin serum (FITC-BSA). (c-f) Fluorescence micrographs of cHAP-coated, FITC-BSA-bound β -TCP granules after additional cHAP coatings were created in mSBF with 4.2 (c, e) or 100 (d, f) mM carbonate for 0.5 (c, d) or 5 days (e, f).