

Supporting Information

Large scale production of yolk-shell β -tricalcium phosphate powders, and their bioactivities as novel bone substitutes

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Keywords: yolk-shell structure, β -tri-calcium phosphate, biomaterial, bioactivity, spray drying

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Figure S7. SEM images of the β -TCP powders prepared from the spray solution with dextrin: a) dextrin concentration- 50 g L⁻¹, b) dextrin concentration- 200 g L⁻¹

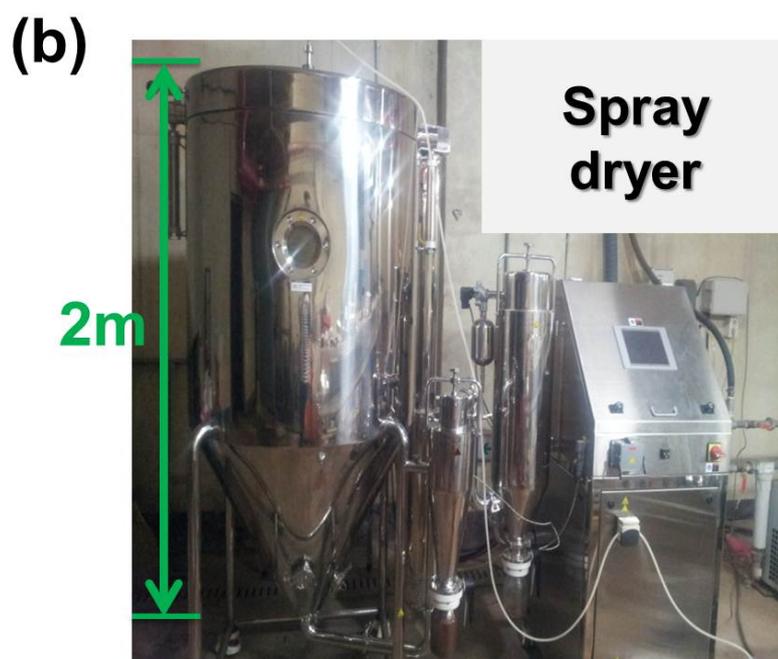
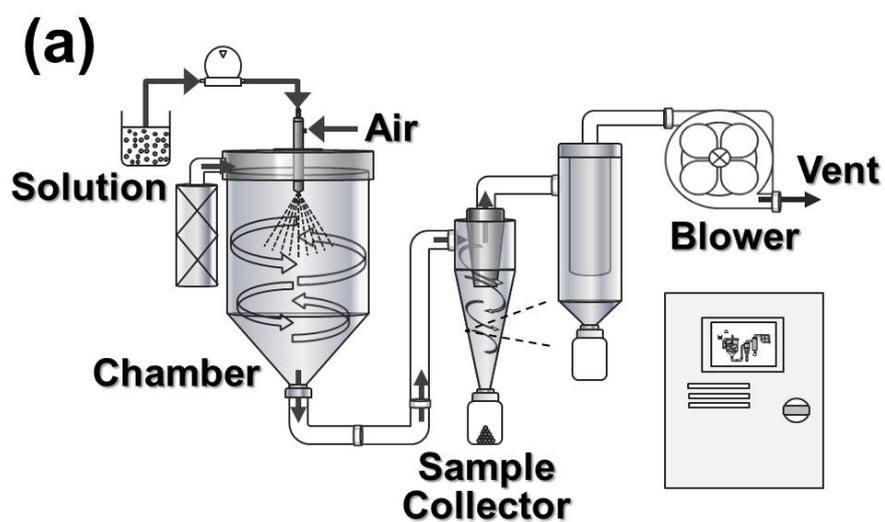


Figure S1. Schematic diagram and digital photo of spray dryer applied in the preparation of composite precursor powders of calcium nitrate, diammonium hydrogen phosphate, and carbon source material.

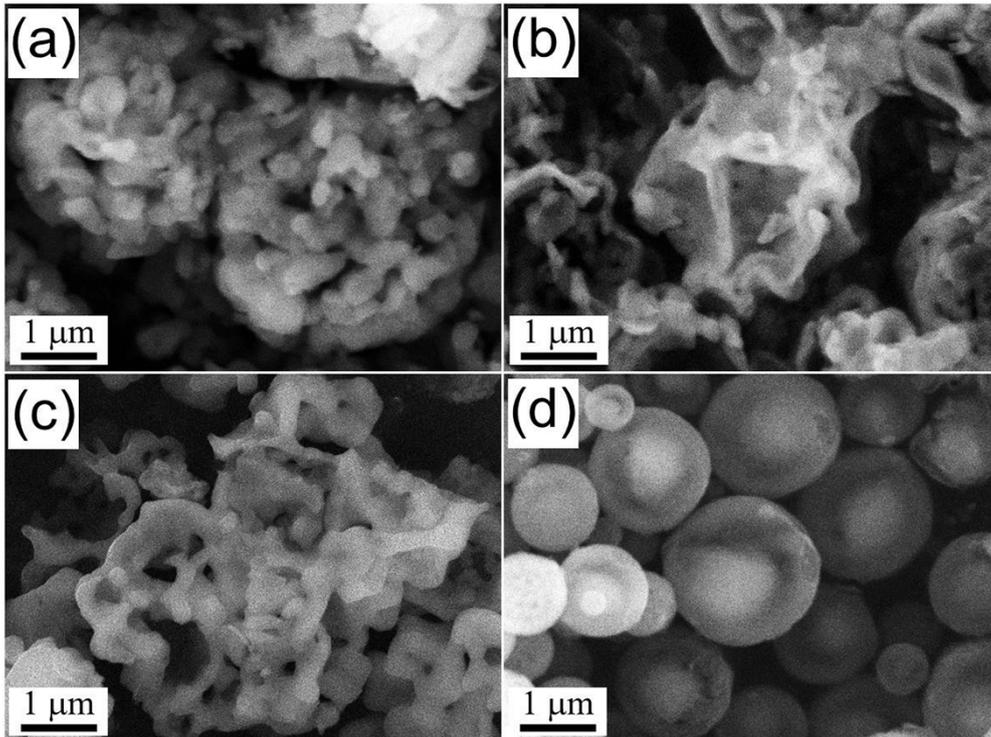


Figure S2. SEM images of the combusted β -TCP powders obtained from the spray solutions (a) without carbon source material and with (b) PVP, (c) sucrose, and (d) dextrin.

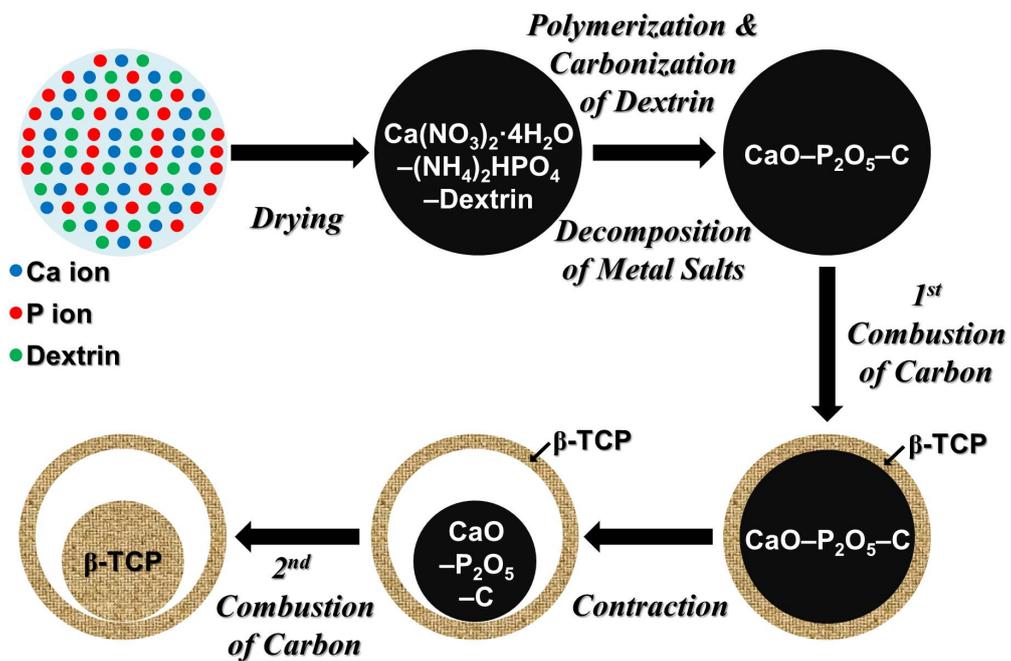


Figure S3. Formation mechanism of the yolk-shell-structured β -TCP powder by spray-drying method using dextrin as carbon source.

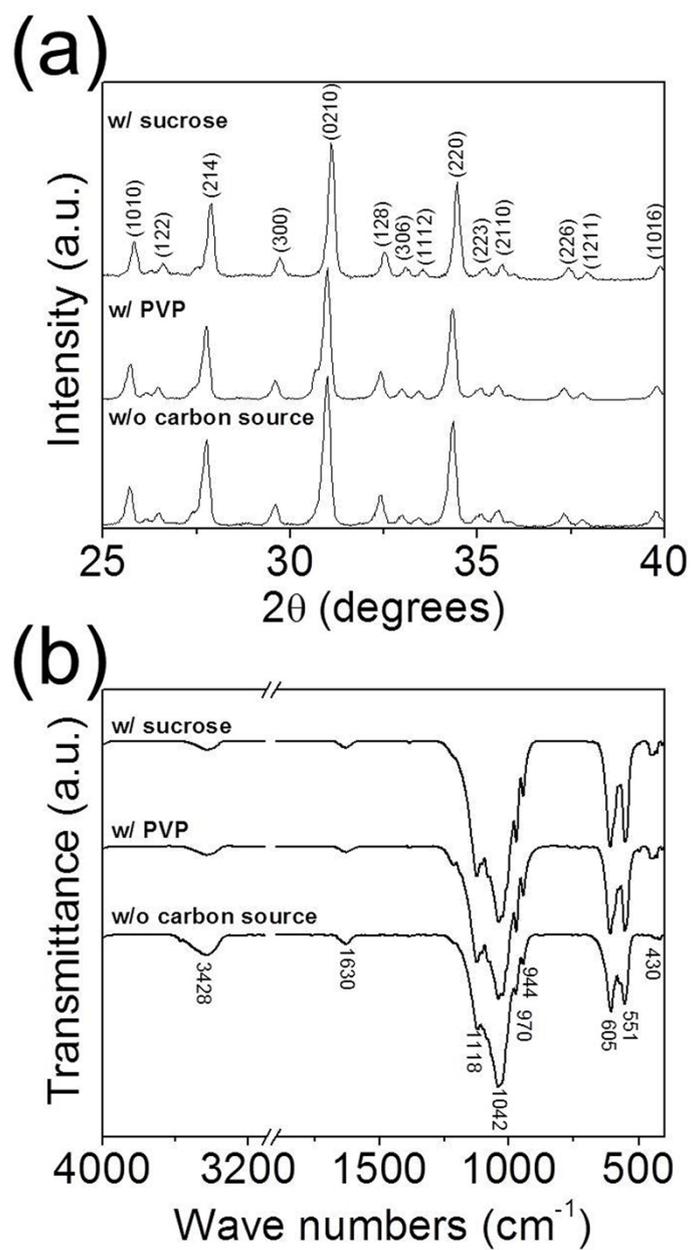


Figure S4. (a) XRD patterns and (b) FT-IR spectra of the combusted β -TCP powders obtained from the spray solutions without carbon source material and with PVP and sucrose.

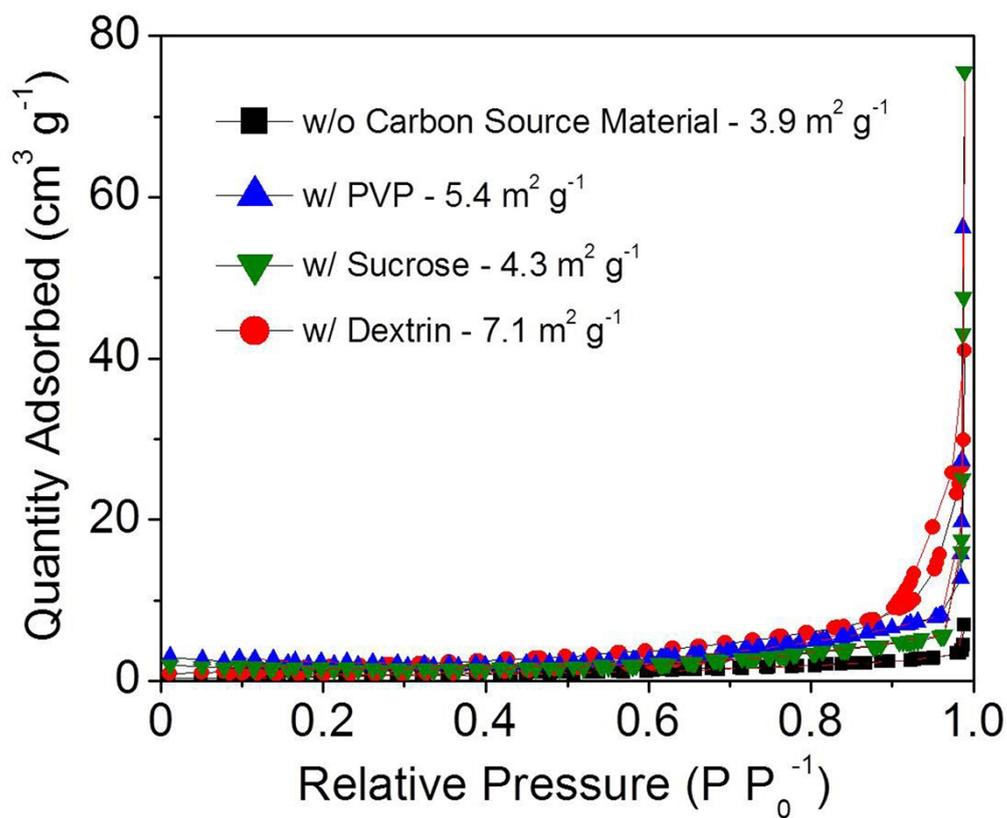


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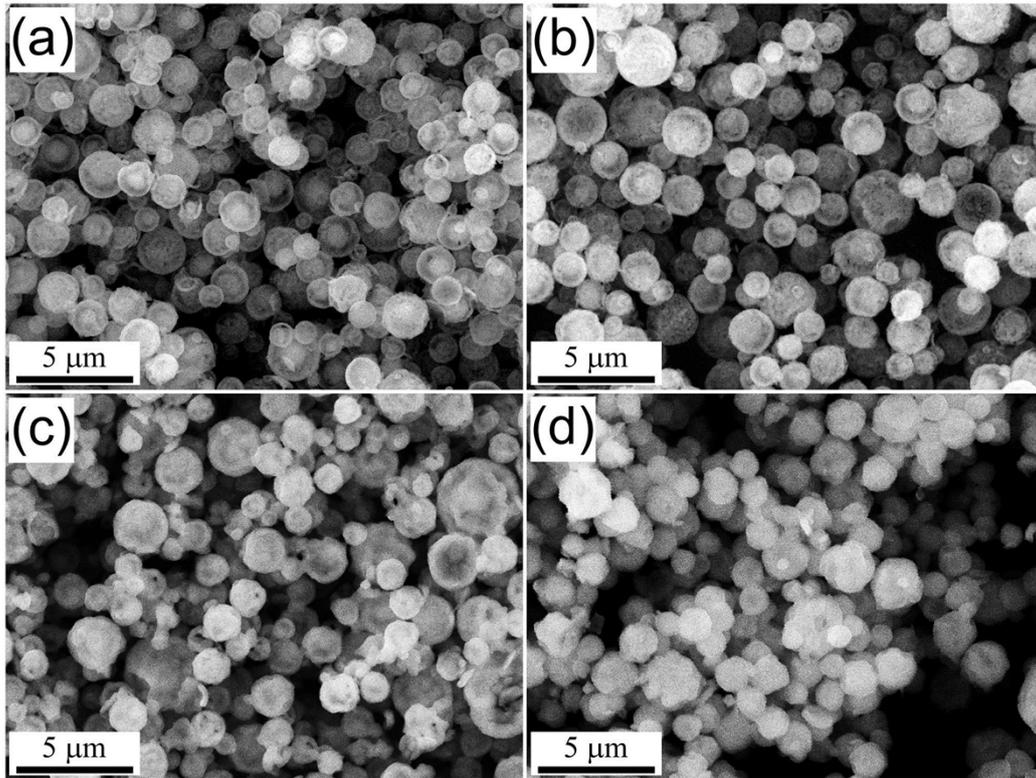


Figure S6. SEM images of the combusted β -TCP powders from the calcium phosphate solution with dextrin at various temperatures: (a) 700 °C, (b) 800 °C, (c) 900 °C, and (d) 1000 °C.

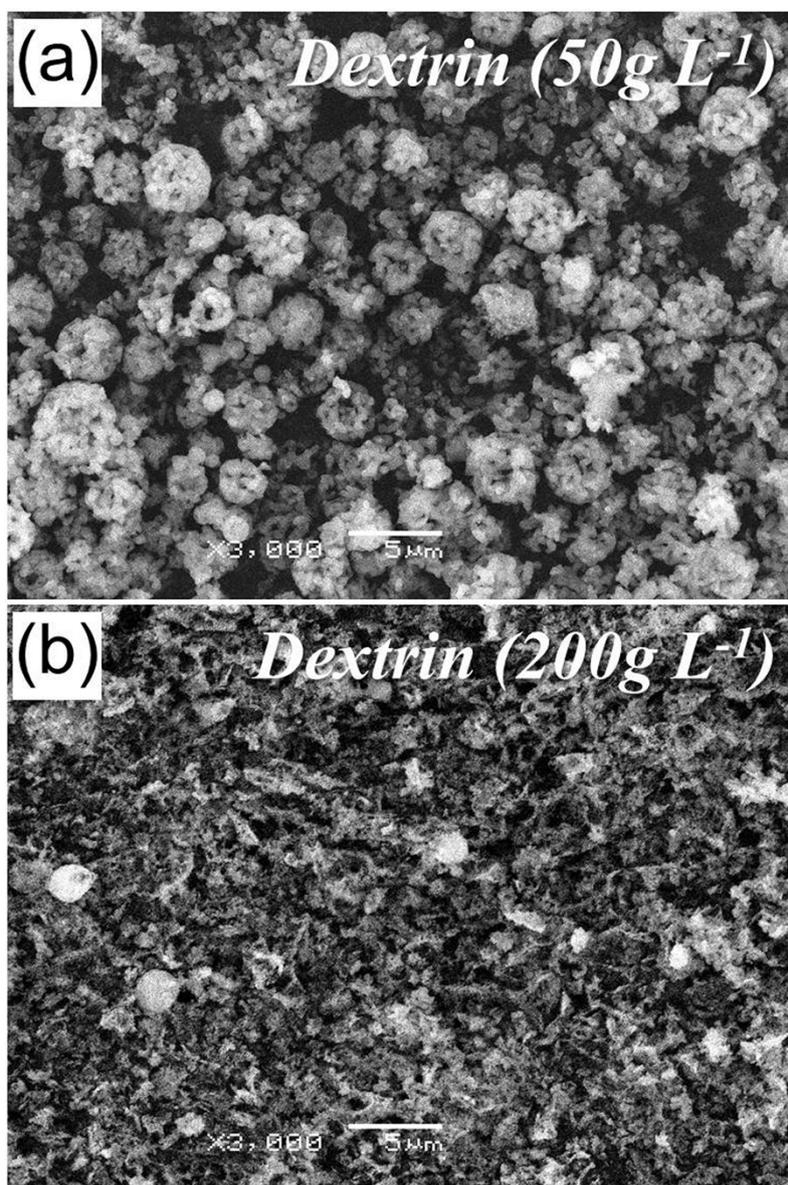


Figure S7. SEM images of the β -TCP powders prepared from the spray solution with dextrin: a) dextrin concentration- 50 g L⁻¹, b) dextrin concentration- 200 g L⁻¹