Supplementary Information

Carboxymethyl cellulose-stabilized calcium phosphate particles for injectable hydrogel-based bone tissue engineering

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Preparation of CMC-stabilized calcium phosphate particles via two-step wet chemical process

To prepare the CaP particles, 20 mL of calcium nitrate solution was measured into a 100 mL beaker and placed under an overhead stirrer set to 300 rpm. Subsequently, 20 mL of ammonium phosphate solution was added dropwise over a period of 5 min. Ammonia solution was then added until the pH reached 10, and the mixture was stirred at room temperature with varied maturation times, 5 min, 30 min, 1 h, 3 h, and 6 h. The CaPs were then separated from the solution by centrifugation at 5000 rpm and washed with Milli-Q water three times until the pH of the washing medium became neutral. The CaP particles were then resuspended in a 20 mL solution of Milli-Q water containing CMC. After stirring for 30 min, the excess solution was removed by centrifugation at 300 rpm, and the particles were collected and freeze-dried for XRD characterization.

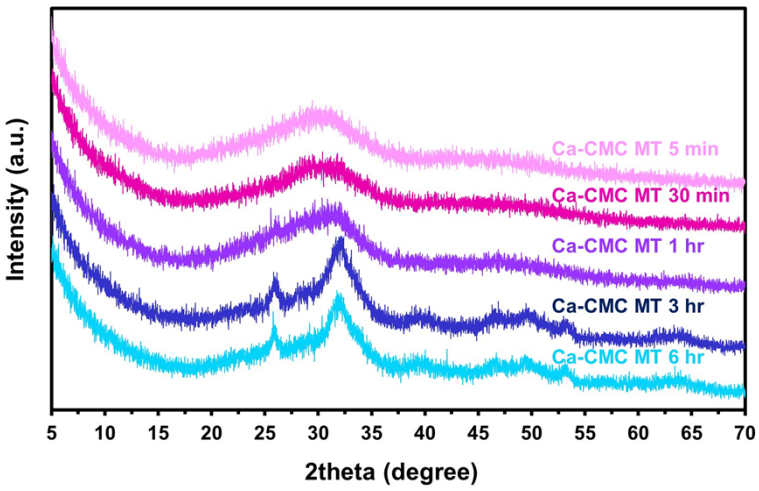
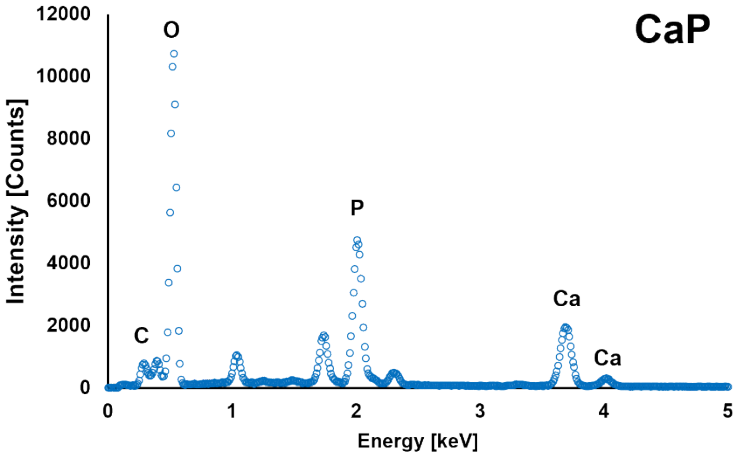
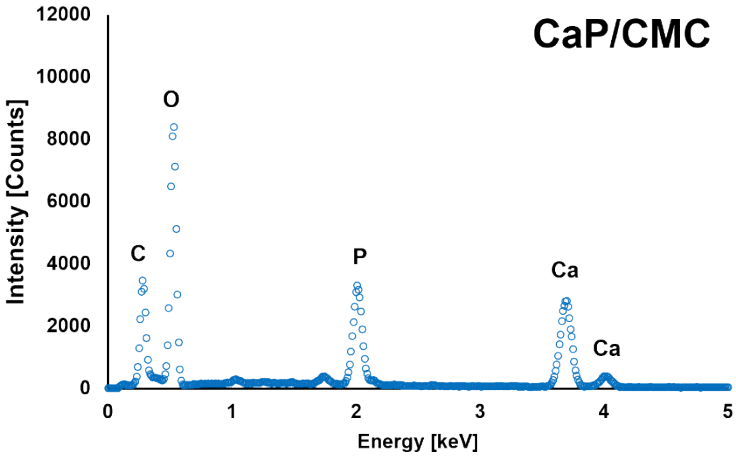


Fig. S1. XRD patterns of CaP/CMC prepared by the two-step wet chemical process at different maturing time.



Element	Atom%
C	9.64 ± 3.77
O	64.82 ± 10.30
Na	0.91 ± 0.81
Si	1.48 ± 0.71
P	11.53 ± 3.66
S	0.43 ± 0.30
K	2.04 ± 2.07
Ca	9.14 ± 5.17
Total	100
Ca/P ratio	0.79



Element	Atom%
C	35.94 ± 5.43
O	50.46 ± 3.41
Na	0.22 ± 0.10
Si	0.33 ± 0.07
P	5.80 ± 0.92
Ca	7.26 ± 1.09
Total	100
Ca/P ratio	1.25

Fig. S2 EDS spectra on randomly selected area of CaP (top) and CaP/CMC (bottom) particles and their corresponding elemental composition.