

Supporting Information

Healing of osteoporotic bone defects by micro-/nano-structured calcium phosphate bioceramics

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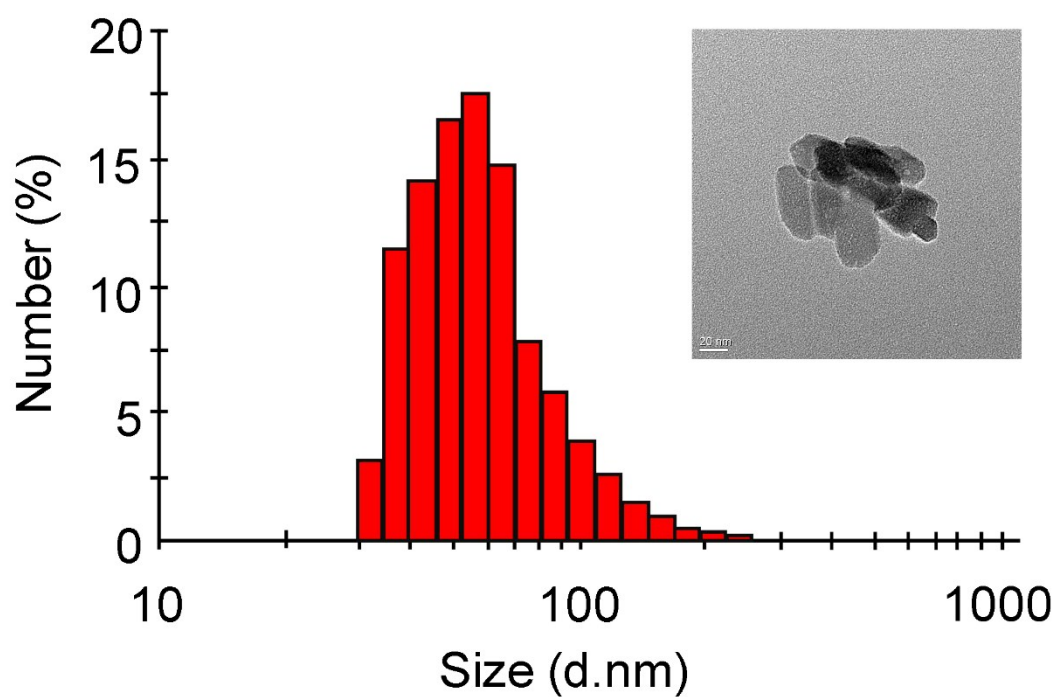


Fig. S1 TEM images of the CaP nanoparticles and particle size distributions.

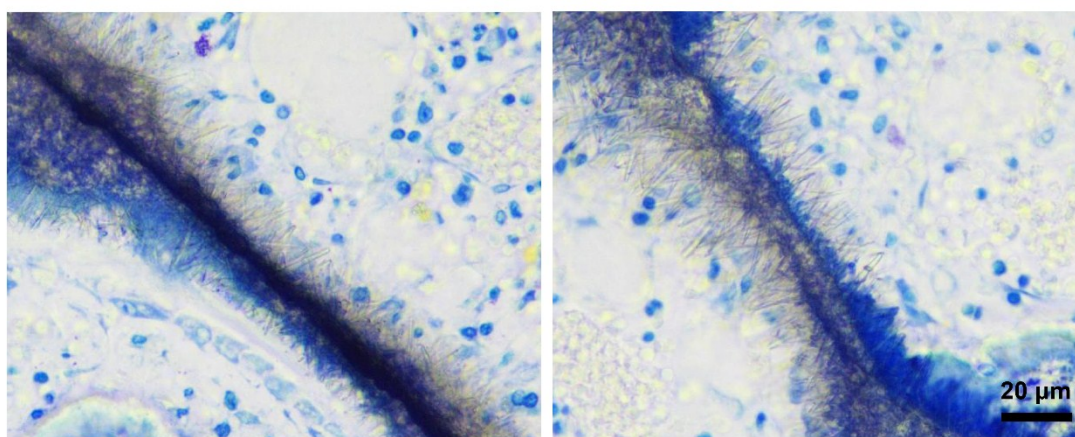
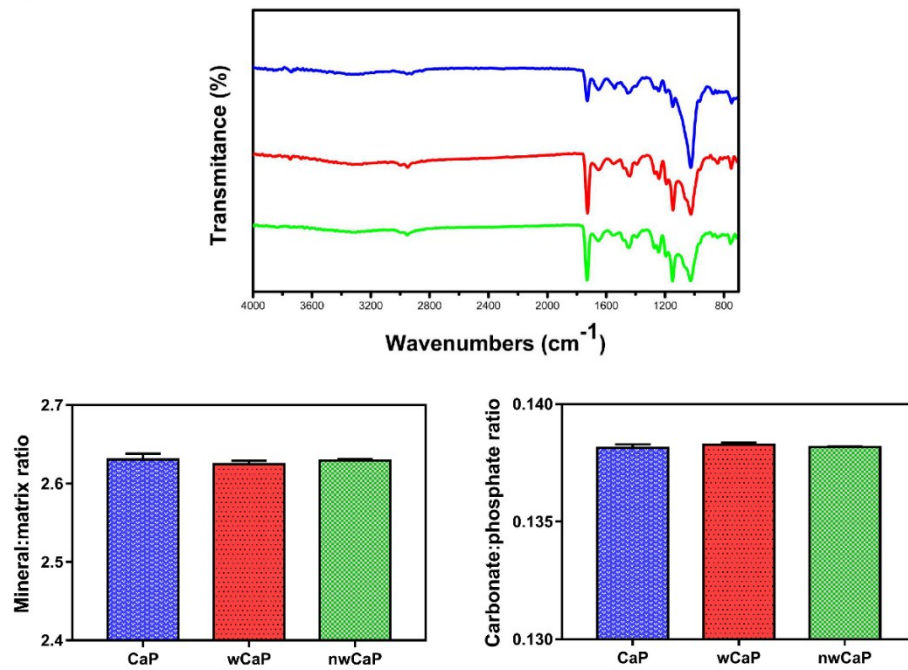


Fig. S2 Toluidine blue (TB) staining images of the cells cultured on the wCaP bioceramics.

Adjacent bone



Implanted material

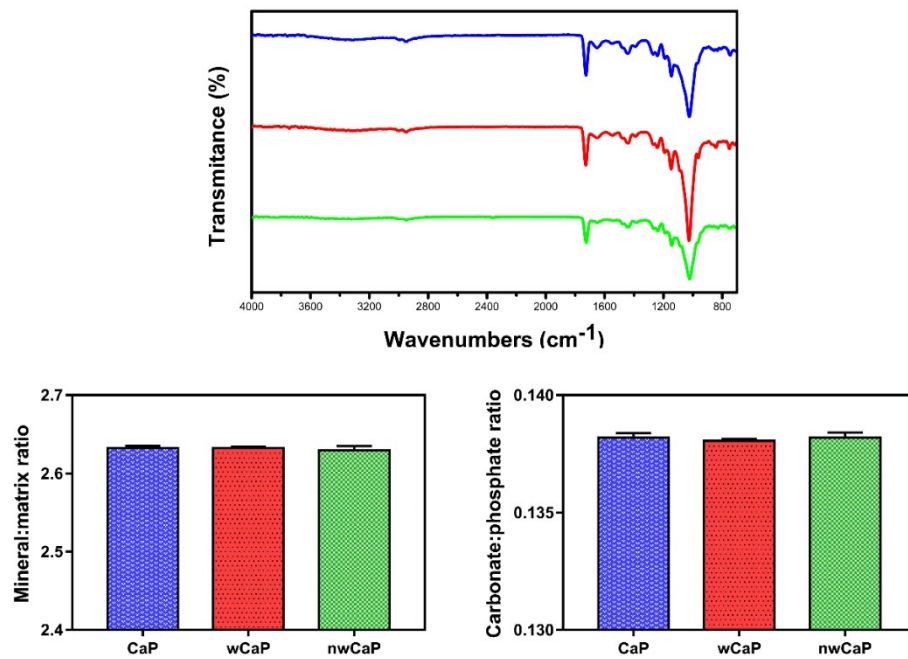


Fig. S3 Fourier transform infrared (FTIR) spectroscopy of the adjacent bone and the implanted material. The analyses refer to specimens from CaP, wCaP and nwCaP. Each sample was baseline corrected from 1850 to 1950 cm^{-1} .¹ No significant inter-

group difference was revealed by FTIR spectra of bone matrix and the implanted material, in terms of carbonate to phosphate ratio and the mineral to matrix ratio.

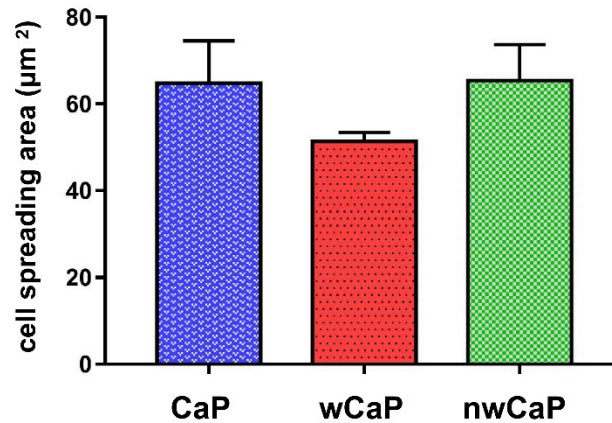


Fig. S4 The cell spreading area on the different bioceramics quantified by CLSM images.

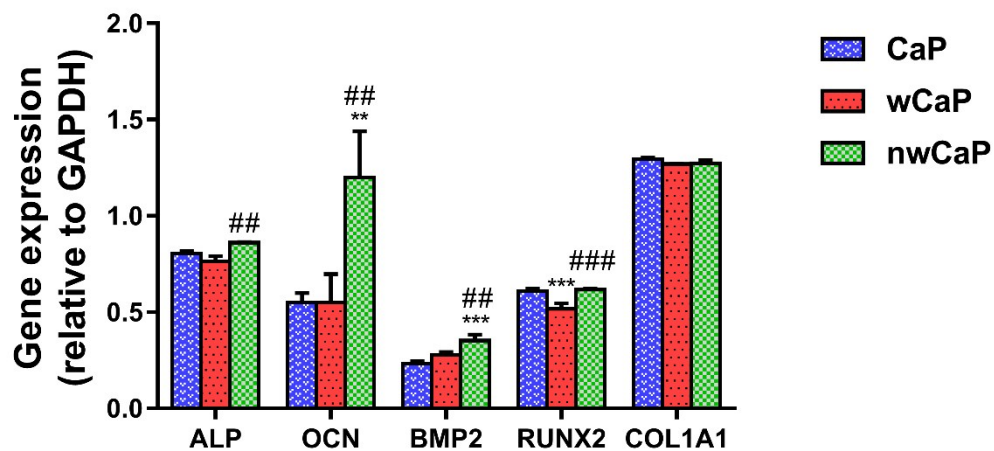


Fig. S5 qRT-PCR analysis for the osteogenic gene expressions in MSCs cultured with the CaP, wCaP and nwCaP bioceramics. (n = 3, * p < 0.05 vs the CaP group, ** p < 0.01 vs the CaP group, *** p < 0.001 vs the CaP group; # p < 0.05 vs the wCaP group, ## p < 0.01 vs the wCaP group, ### p < 0.001 vs the wCaP group).

References

1. Milovanovic, P.; Zimmermann, E. A.; Riedel, C.; Scheidt, A. V.; Herzog, L.;

Krause, M.; Djonic, D.; Djuric, M.; Püschel, K.; Amling, M., Multi-level characterization of human femoral cortices and their underlying osteocyte network reveal trends in quality of young, aged, osteoporotic and antiresorptive-treated bone. *Biomaterials* **2015**, *45*, 46-55.