

Supporting Information

Design of hydroxyapatite bioceramics with micro-/nano- topographies to regulate the osteogenic activities of bone morphogenetic protein-2 and bone marrow stromal cells

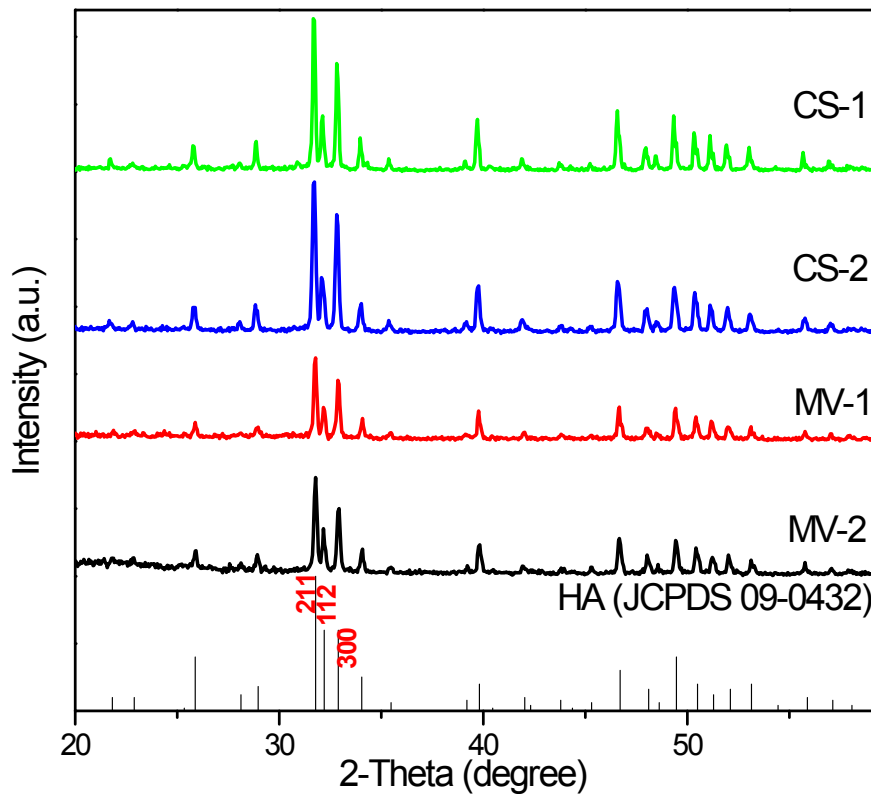
Xiangfeng Li, Minjun Liu, Fuying Chen, Yuyi Wang, Menglu Wang, Xuening Chen, Yumei Xiao*, Xingdong Zhang*

National Engineering Research Center for Biomaterials, Sichuan University, Chengdu 610064, China

**Corresponding author: xchen6@scu.edu.cn (X. Chen); xymzl2000@126.com (Y. Xiao)*

S-1

XRD patterns of the four kinds of HA bioceramics were characterized by X-ray diffractometry (XRD; Philips X'Pert 1 X-ray diffractometer, Netherlands) with CuK α radiation at a current of 20 mA and voltage of 30 kV, and the obtained peaks were compared with standard references for HA (09-0432). From the XRD patterns, it could be found that all the four kinds of HA bioceramics were composed of HA phase from determining their diffraction peaks. Furthermore, the crystallinity (X_c) of samples were calculated by the following equations: $X_c = I-V_{112/300}/I_{300}$, where I_{300} represent the (300) diffraction peak intensity of XRD patterns of the sample, $V_{112/300}$ is the intensity of the hollow between (112) and (300) reflections. By calculating, the crystallinities of CS-1, CS-2, MV-1 and MV-2 were 95.0%, 95.3%, 96.5% and 92.5%, respectively. MV-2 had the relatively low crystalline among the four samples.



XRD patterns of CS-1, CS-2 MV-1 and MV-2.

S-2 Primers utilized for qRT-PCR amplification

Gene	5' to 3'	Primers
Runx-2	Sense	5'-AGATGGGACTGTGGTTACCG-3'
	Anti-Sense	5'-GGACCGTCCACTGTCACCTT-3'
OSX	Sense	5'-GCTGCCTACTTACCCGTCTG-3'
	Anti-Sense	5'-AGGTTTGCCTGCACCACTC-3'
COL-1	Sense	5'-CCAGCTGACCTTCCTGCGCC-3'
	Anti-Sense	5'-CGGTGTGACTCGTGCAGCCA-3'
ALP	Sense	5'-ATGGTAACGGGCCTGGCTACA-3'
	Anti-Sense	5'-AGTTCTGCTCATGGACGCCGT-3'
BSP	Sense	5'-CCAGCCAGGACTGCCGAAGG-3'
	Anti-Sense	5'-CGCTGCCTCCCTGGACTGGA-3'
OPN	Sense	5'-CCCTCGATGTCATCCCTGTT-3'
	Anti-Sense	5'-CCCTTCCGTTGTTGTCTG-3'
OCN	Sense	5'-CCTGGCAGGTGCAAAGCCCA-3'
	Anti-Sense	5'-GGGGGCTGGGGCTCCAAGT-3'
GAPDH	Sense	5'-GGCAAGTTCAACGGCACAGT-3'
	Anti-Sense	5'-TGGTGAAGACGCCAGTAGACTC-3'