

Supplementary Information

Fabricating biodegradable calcium phosphate/calcium sulfate cement reinforced with cellulose: in vitro and in vivo studies

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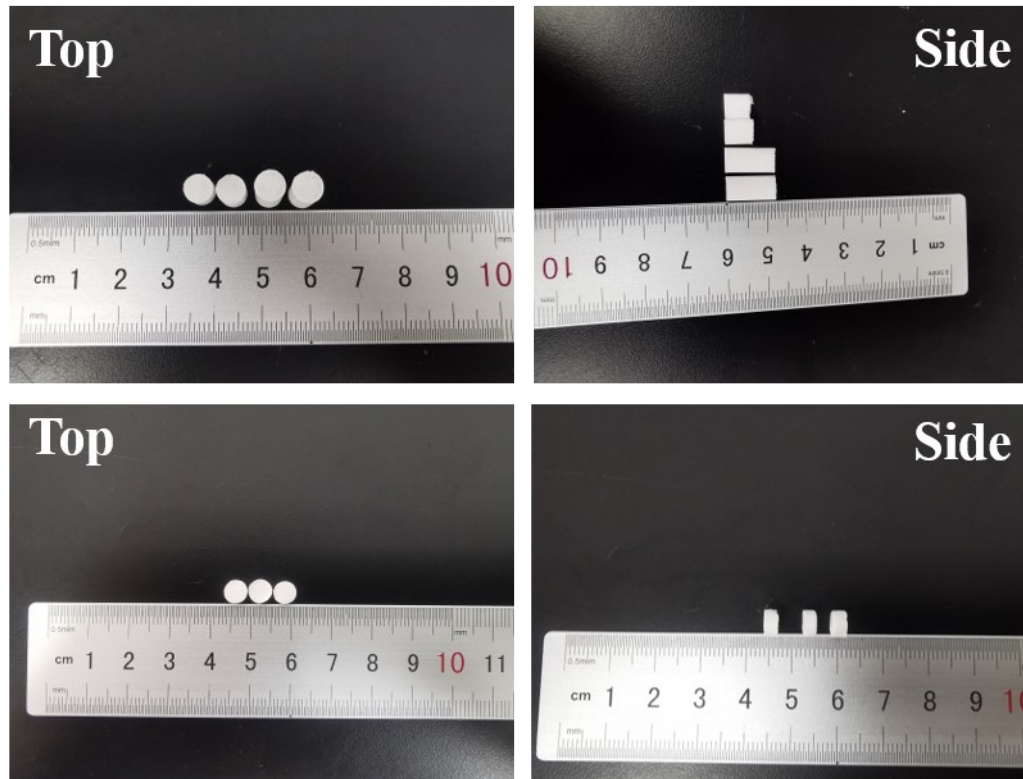


Fig. S1. The dimension of CMC/OPC composite bone cement

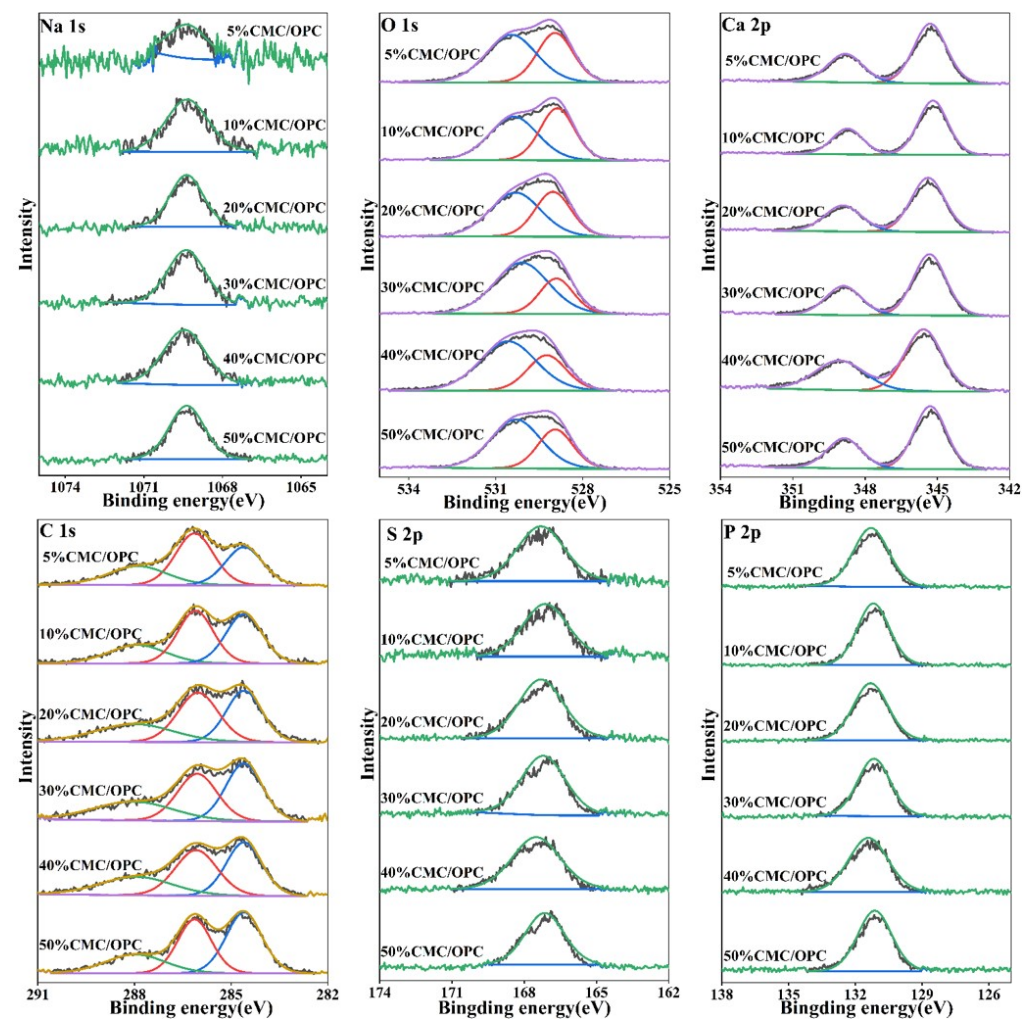


Fig. S2. XPS of composite bone cement for 5-50% CMC/OPC.

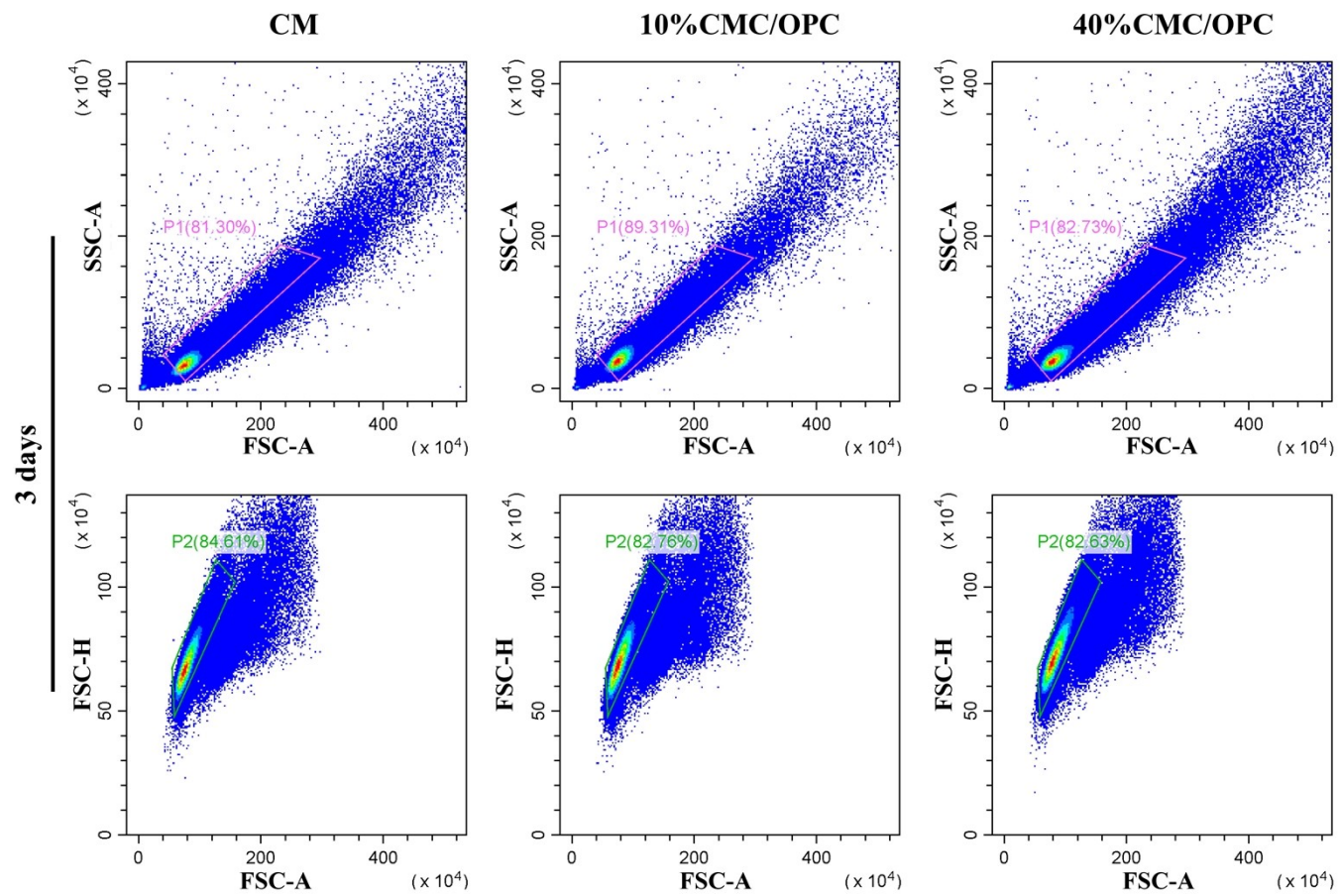


Fig. S3. Flow cytometry data analysis.

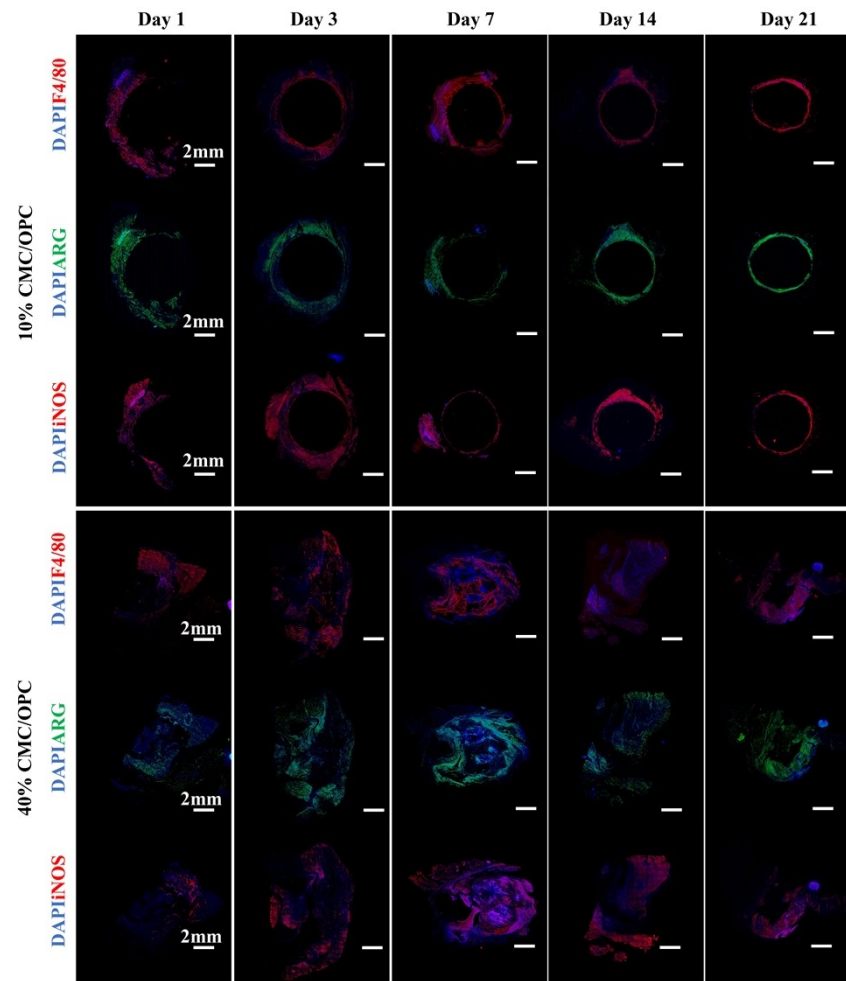


Fig. S4. Representative immunostainings of F4/80⁺, ARG⁺, and iNOS⁺ macrophages.

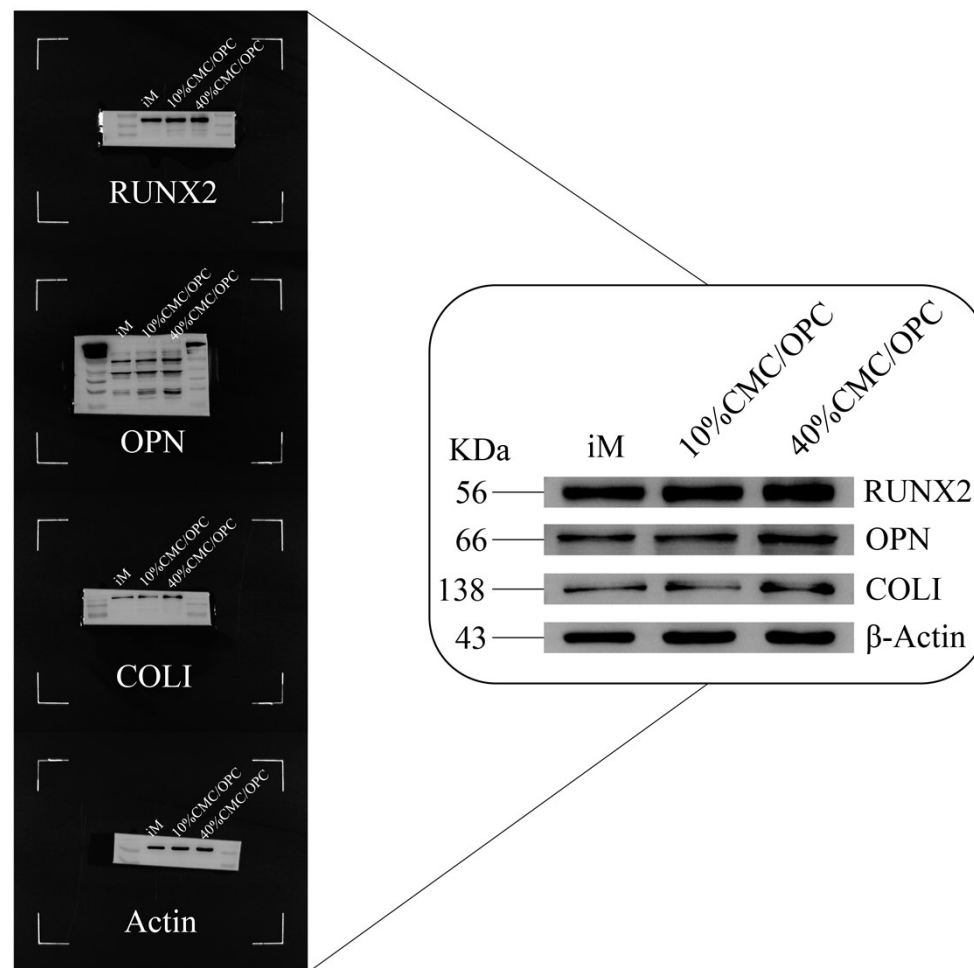


Fig. S5. Uncropped western blot images corresponding to Fig. 4I.

Table S1. Primer sequences for RT-PCR

Genes	ID	Direction	Sequences
GAPDH	14433	FORWARD	GGTTGTCTCCTGCGACTTCA
		REVERSE	TGGTCCAGGGTTTCTTACTCC
COL1	12842	FORWARD	TAAGGGTCCCCAATGGTGAGA
		REVERSE	GGGTCCCTCGACTCCTACAT
Runx2	12393	FORWARD	CCTTCAAGGTTGTAGCCCTC
		REVERSE	GGAGTAGTTCTCATCATTCCCG
OPN	20750	FORWARD	AAACACACAGACTTGAGCATTG
		REVERSE	TTAGGGTCTAGGACTAGCTTGT
β-Actin	11461	FORWARD	GTGCTATGTTGCTCTAGACTTCG
		REVERSE	ATGCCACAGGATTCCATACC
iNOS	18126	FORWARD	ACTCAGCCAAGCCCTCACCTAC
		REVERSE	TCCAATCTCTGCCTATCCGTCTCG
ARG	11846	FORWARD	CATATCTGCCAAAGACATCGTG
		REVERSE	GACATCAAAGCTCAGGTGAATC

Table S2. Atomic percentages of different elements for the red rectangular region in Fig. 1C

	5%CMC/OPC	10%CMC/OPC	20%CMC/OPC	30%CMC/OPC	40%CMC/OPC	50%CMC/OPC
Elements	CaSO ₄	CaHPO ₄	CaSO ₄	CaHPO ₄	Ca(OH) ₂	CMC
C	17.96	15.00	20.64	21.68	19.93	46.90
O	61.87	58.88	55.83	61.92	57.55	37.45
Na	0.05	0.89	0.21	1.44	0.49	4.47
P	2.26	12.52	1.07	7.12	2.02	4.20
S	7.54	0.32	9.88	0.68	1.46	0.44
Ca	10.33	12.39	12.38	7.17	18.55	6.55

Table S3. Binding energy position of Na 1s, Ca 2p, P 2p, S 2p, O 1s, and C 1s for 5-50%CMC/OPC.

Sets	Na 1s	O 1s	Ca 2p		C 1s		P 2p	S 2p		
5%CMC/OPC	1069.65	530.46	528.95	348.82	345.30	287.89	286.14	284.60	131.30	167.31
10%CMC/OPC	1069.35	530.38	528.88	348.73	345.18	287.91	286.10	284.60	131.19	167.13
20%CMC/OPC	1069.37	530.32	529.02	348.92	345.39	288.00	286.03	284.60	131.32	167.31
30%CMC/OPC	1069.38	530.11	528.91	348.90	345.33	288.04	286.05	284.60	131.16	167.21
40%CMC/OPC	1069.45	530.57	529.24	349.05	345.57	287.94	286.08	284.60	131.42	167.51
50%CMC/OPC	1069.36	530.31	528.95	348.86	345.30	287.98	286.14	284.60	131.13	167.15

Table S4. Anti-washout properties of CMC/OPC cement.

Sets	Anti-washout (%)
5%CMC/OPC	0.96 ± 0.42
10%CMC/OPC	1.07 ± 0.36
20%CMC/OPC	2.00 ± 0.30
30%CMC/OPC	2.54 ± 1.06
40%CMC/OPC	3.14 ± 0.80
50%CMC/OPC	1.95 ± 0.59

Table S5. Atomic percentages of different elements for the red rectangular region in Fig. 3D.

elements	5%CMC/OPC	10%CMC/OPC	20%CMC/OPC	30%CMC/OPC	40%CMC/OPC	50%CMC/OPC
P	39.19	42.76	41.15	41.59	40.74	41.35
Ca	60.81	57.24	58.85	58.41	59.26	58.65
Ca/P	1.55	1.34	1.43	1.40	1.45	1.42