Supporting Information for

Enhanced bioactivity and osteoinductivity of carboxymethyl chitosan/nanohydroxyapatite/graphene oxide nanocomposites

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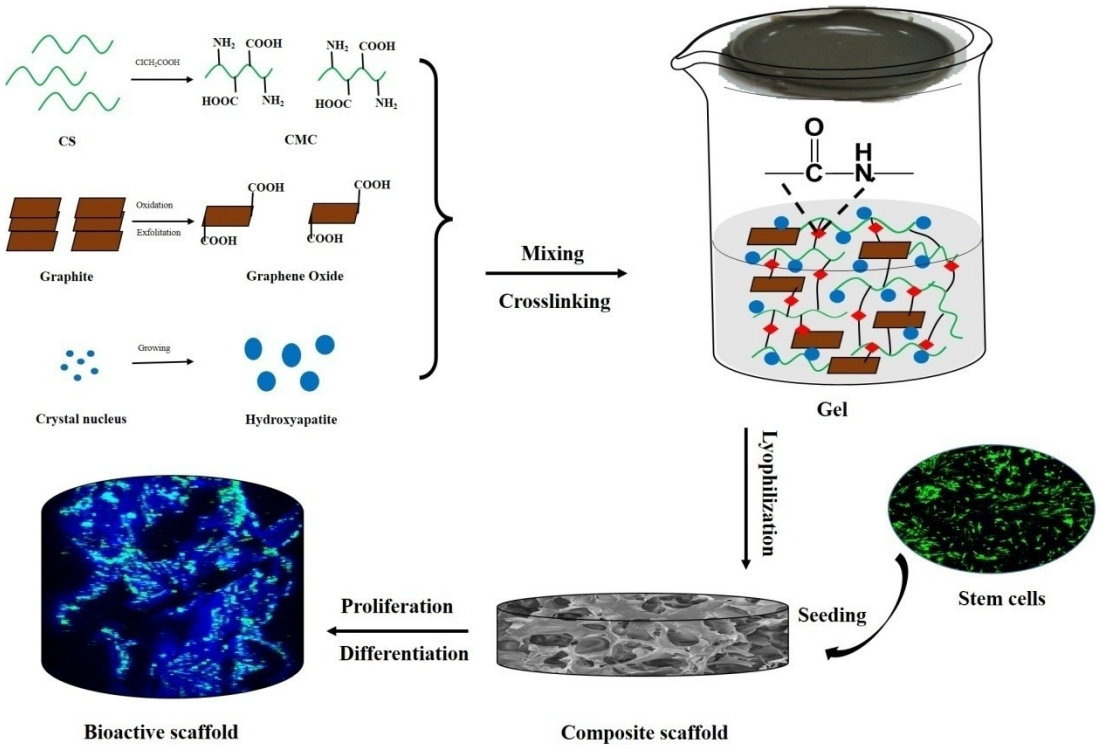
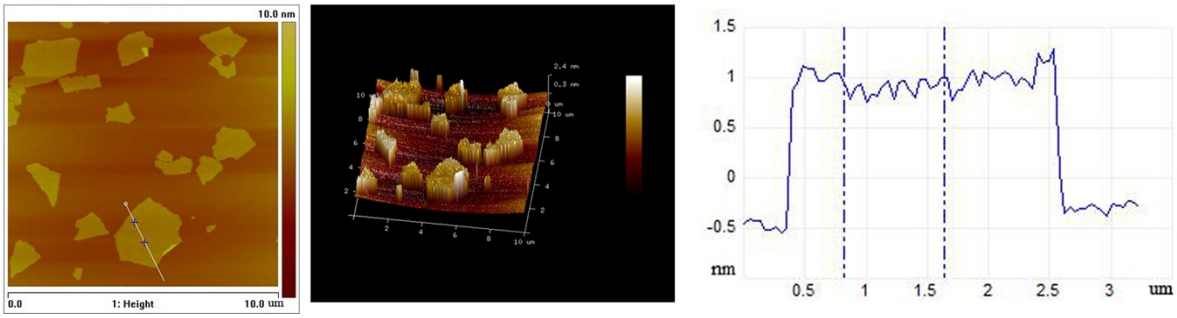


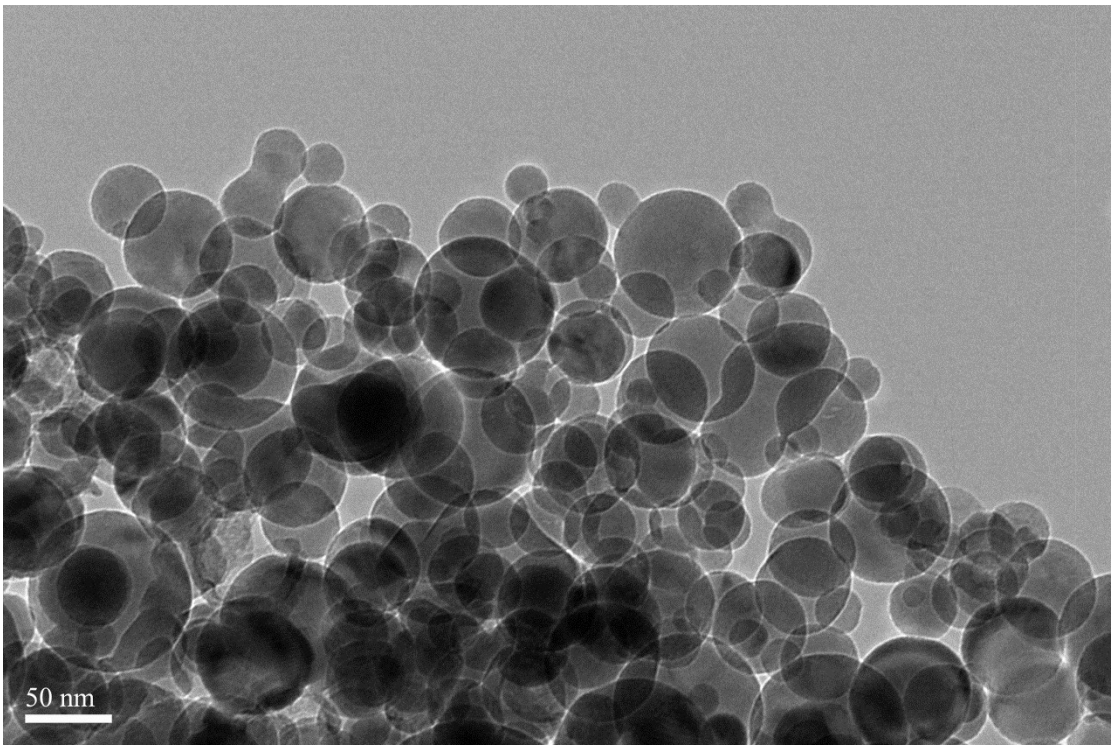
Supplementary Scheme 1. Schematic illustration of the preparation of CMC/nHA/GO scaffolds and their applications in vivo.

Supplementary Table 1. RNA Primers applied in this study

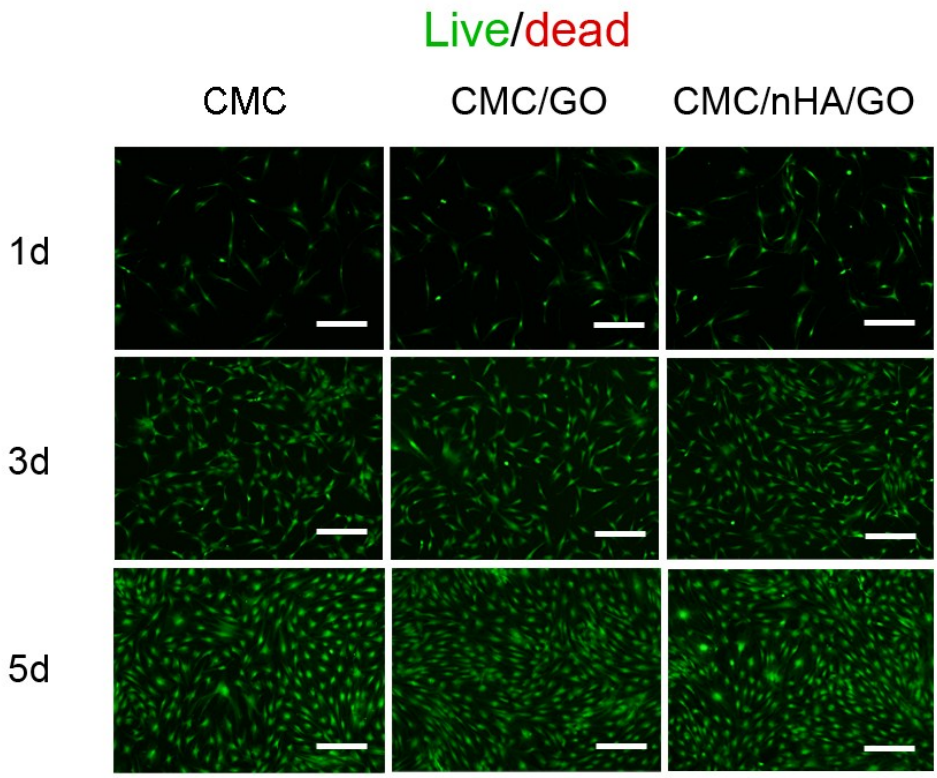
Genes	Primer sequences
OSX	Forward: CCTCTGCGGGACTCAACAAC
	Reverse: AGCCCATTAGTGCTTGTAAAGG
OPN	Forward: GAAGTTTCGCAGACCTGACAT
	Reverse: GTATGCACCATTCAACTCCTCG
BSP	Forward: CCCCACCTTTTGGGAAAACCA
	Reverse: TCCCCGTTCTCACTTTCATAGAT
OCN	Forward: CACTCCTCGCCCTATTGGC
	Reverse: CCCTCCTGCTTGGACACAAAG
ALP	Forward: GTGAACCGCAACTGGTACTC
	Reverse: GAGCTGCGTAGCGATGTCC
GAPDH	Forward: CTGGGCTACACTGAGCACC
	Reverse: AAGTGGTCGTTGAGGGCAATG



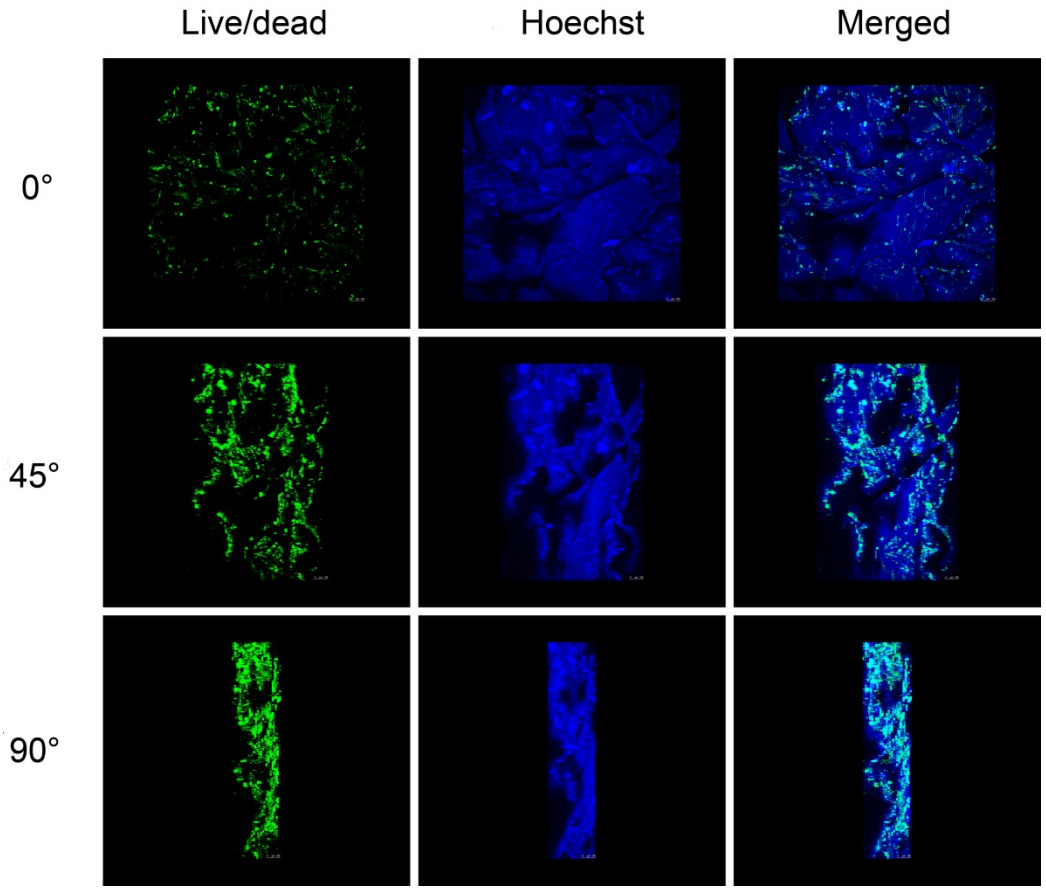
Supplementary Figure 1. The AFM of the GO.



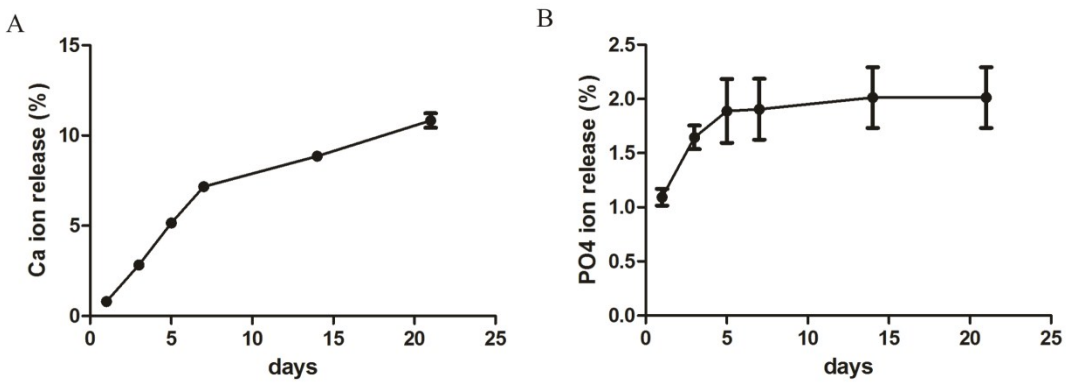
Supplementary Figure 2. TEM image of the nHA. (Scale bars: 50 nm)



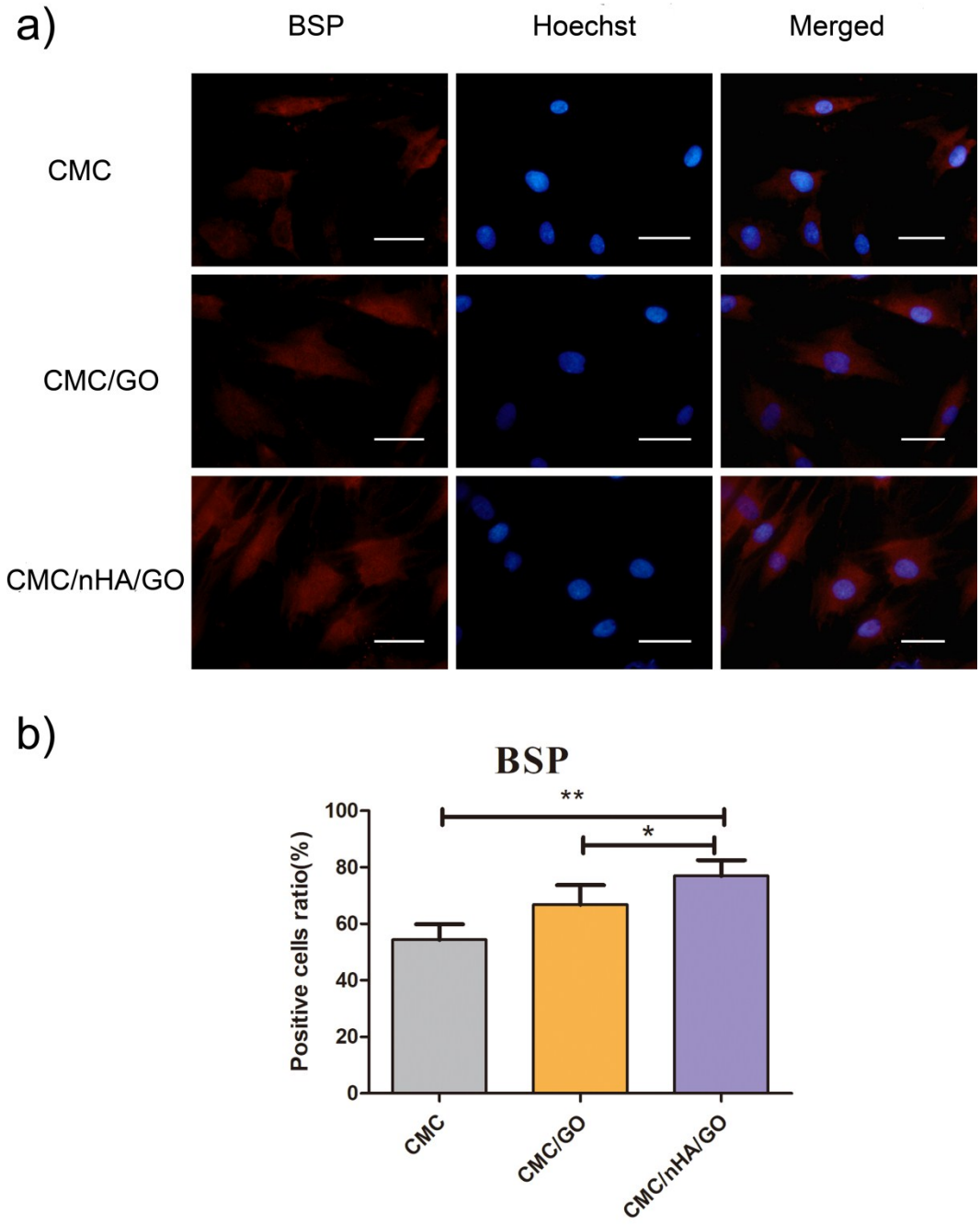
Supplementary Figure 3. Effects of the CMC/nHA/GO scaffold on cell viability. The live/dead staining images of hADSCs on CMC, CMC/GO and CMC/nHA/GO substrates after cutured in PM for 1, 3 and 5d. (Scale bars: 20 μm)



Supplementary Figure 4. Biocompatibility of the CMC/nHA/GO scaffold. The 3D live/dead staining images of hADSCs on the CMC/nHA/GO scaffold at different degrees (0°, 45° and 90°) by confocal microscopy.



Supplementary Figure 5. Cumulative release of Ca^{2+} and PO_4^{3-} of the CMC/nHA/GO scaffold before and after immersion in dd-H_2O of different durations (1, 3, 5, 7, 10, 14 and 21 days)



Supplementary Figure 6. Evaluation of the osteogenic differentiation of hADSCs on CMC/nHA/GO substrates. a) BSP immunofluorescence staining of hADSCs on substrates incubated in DM for 7d (Scale bars: 50 μm); b) Positive cell ratios of BSP were determined by dividing the number of immune-positive cells to the number of nuclei stained with Hoechst (* $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$).