

Supporting information

Injectable hydrogel loaded with 4-octyl Itaconate enhances cartilage regeneration by regulating macrophage polarization

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Gene		Primers (5'-3')
IL-6	Forward	CTGCAAGAGACTTCCATCCAG
	Reverse	AGTGGTATAGACAGGTCTGTTGG
iNOS	Forward	CCACAATAGTACAATACTACTTGG
	Reverse	ACGAGGTGTTTCAGCGTGCTCCACG
TNF- α	Forward	CGTCGTAGCAAACCACCAAG
	Reverse	TTGAAGAGAACCTGGGAGTAGACA
Arg-1	Forward	AGCTCTGGGAATCTGCATGG
	Reverse	ATGTACACGATGTCTTTGGCAGATA
IL-13	Forward	CAACAGCAGCATGGTATGGAGC

TGF- β	Reverse	CGATTTTGGTATCTGGGGGG
	Forward	CTAAGGCTCGCCAGTCCCC
GAPDH	Reverse	TGCGTTGTTGCGGTCCAC
	Forward	CCCTTAAGAGGGATGCTGCC
	Reverse	TACGGCCAAATCCGTTCACA

Table S1 The primer of macrophage polarization related gene

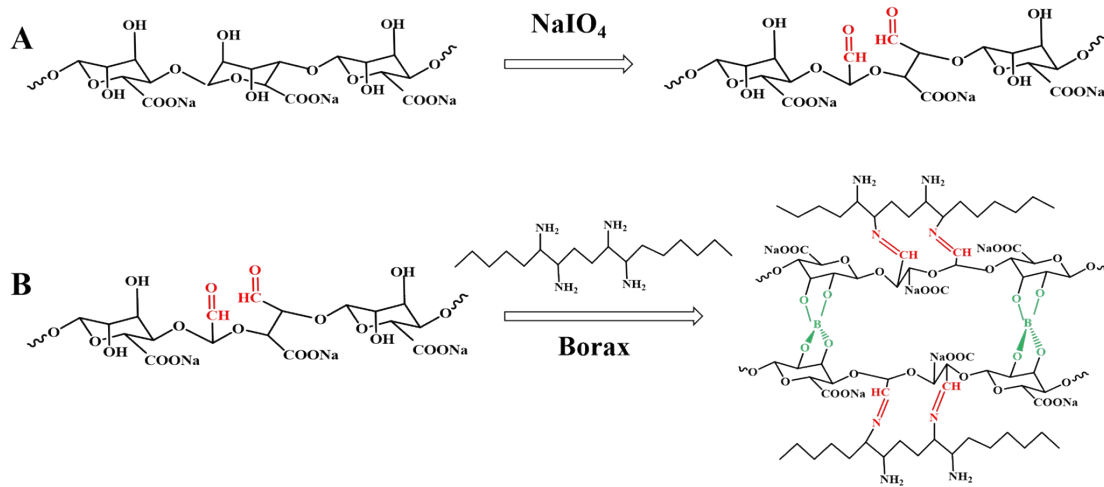


Fig. S1. OSA/GEL hydrogel formation reaction process.

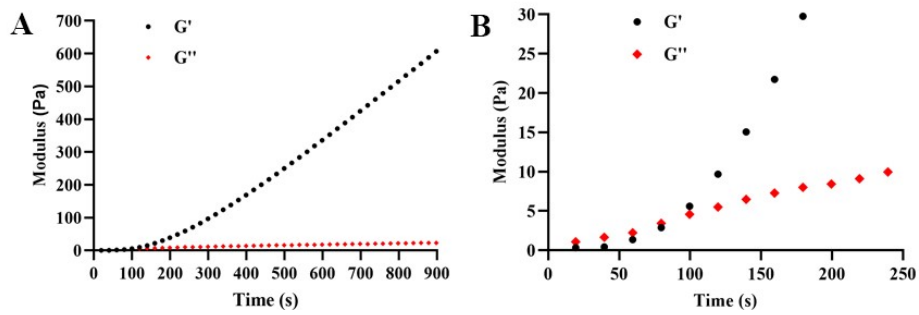


Fig. S2. Rheological results of 10OSA15GEL group, B is the enlarged view.

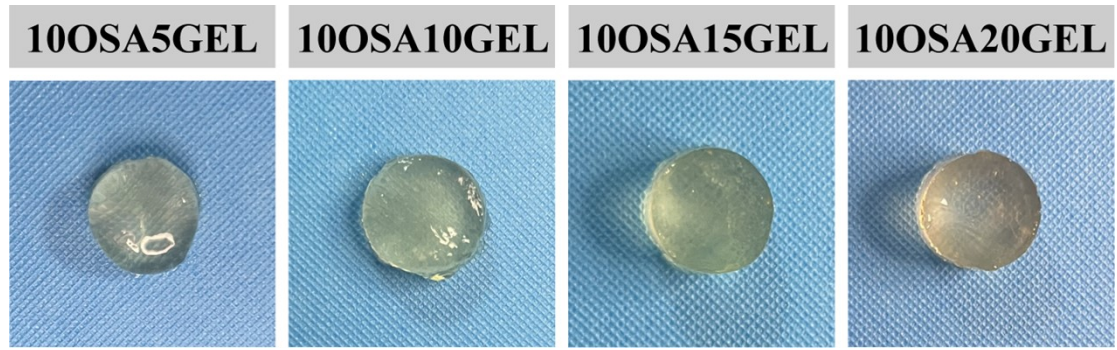


Fig. S3. Macro gelation diagram of four groups of hydrogels.

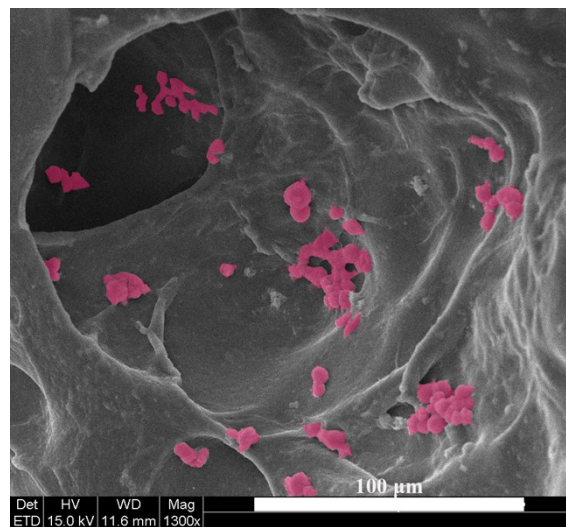


Fig. S4. Cell adhesion on 4-OI@OG hydrogel.

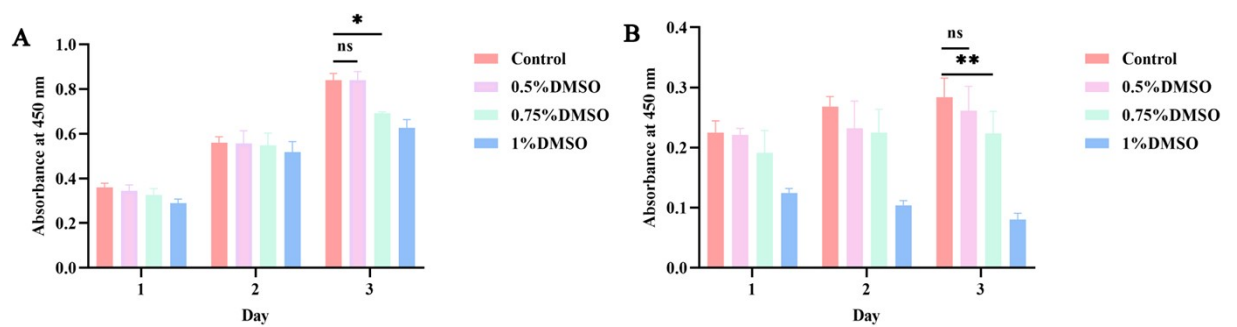


Fig. S5. Cytotoxic CCK-8 detection of DMSO. (A) L929 cells; (B) RAW264.7 cells. (Data are expressed as means \pm SE, $n=3$, * $P<0.05$, ** $P<0.01$, *** $P<0.001$)

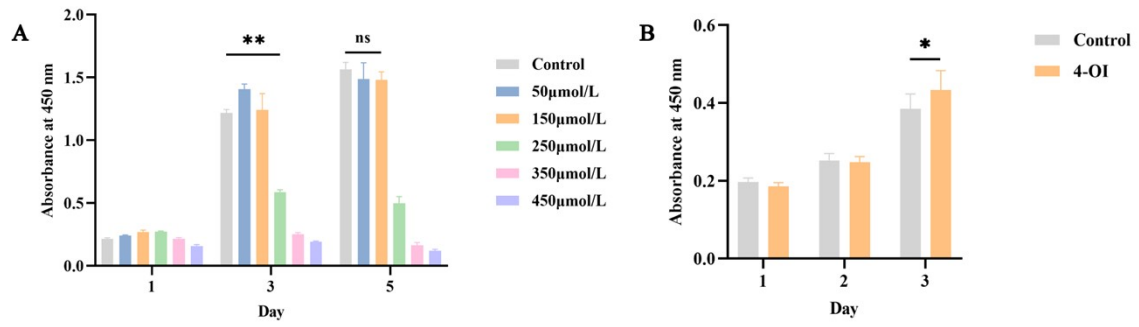


Fig. S6. Cytotoxic CCK-8 detection of 4-OI. (A) L929 cells; (B) RAW264.7 cells (4-OI concentration of 150 μM). (Data are expressed as means ± SE, n=3, *P<0.05, **P<0.01, ***P<0.001)

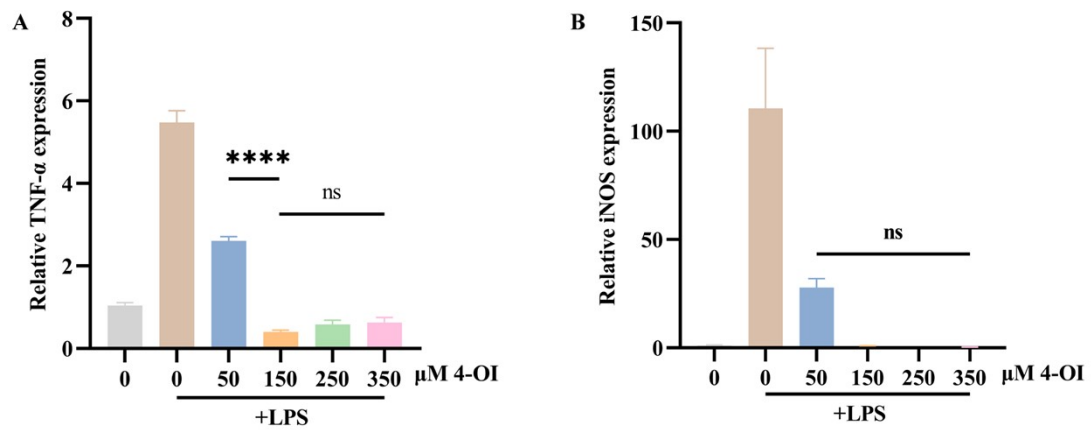


Fig. S7. qRT-PCR results of different 4-OI concentrations. (A) TNF-α; (B) iNOS (Data are expressed as means ± SE, n=3, *P<0.05, **P<0.01, ***P<0.001, ****P<0.0001)

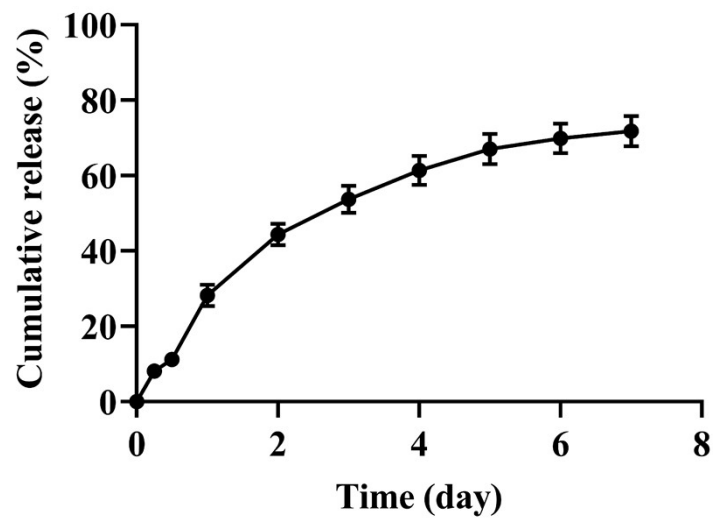


Fig. S8. the release kinetics of 4-OI from the 4-OI@OG hydrogel.

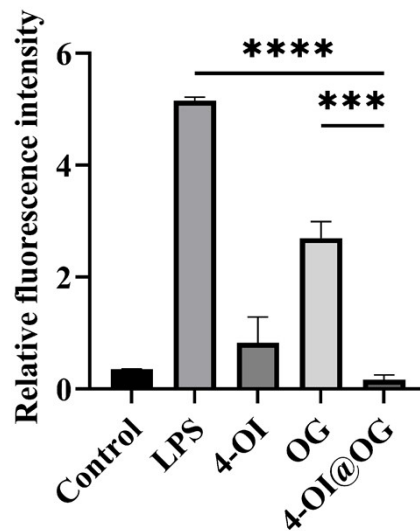


Fig. S9. Average fluorescence intensity to scavenge ROS *in vitro*. (Data are expressed as means \pm SE, n=3, *P<0.05, **P<0.01, ***P<0.001, ****P<0.0001)