Supplementary Information

Minerals Substituted Hydroxyapatite Reinforced Poly (raffinose-citric acid)-Polyethylene Glycol Nanocomposite Enhances Osteogenic Differentiation and Induces Ectopic Bone Formation†

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Materials and methods

Table S1. Primer Sequence

Gene	Primer Sequence	Product length
Runx2	GCCTTCAAGGTGGTAGCCC CGTTACCCGCCATGACAGTA	67
osteocalcin	GCAAAGGTGCAGCCTTTGTG GGCTCCCAGCCATTGATACAG	80
osteonectin	AGGTATCTGTGGGAGCTAATC ATTGCTGCACACCTTCTC	224

Result and Discussions

Table S2: XPS Spectra of M-HA/PRC-PEG-PRC nanocomposite composition.

Core level	Binding energy (eV)	Atomic percentage (%)
Ca $2p_{1/2}$	351.1	2.080
Ca $2p_{3/2}$	348.1	-
Sr $3d_{5/2}$	132±0.5	0.232
Mg 2p	49.6	11.335
Mg 2s	88.8	-
Zn $2p_{3/2}$	1022.1	3.730
Zn $2p_{1/2}$	1045.1	-
O 1s	531.2	37.281
C 1s	285.4	45.988
P 2s	133.2	0.631
P 2p	190.5	-

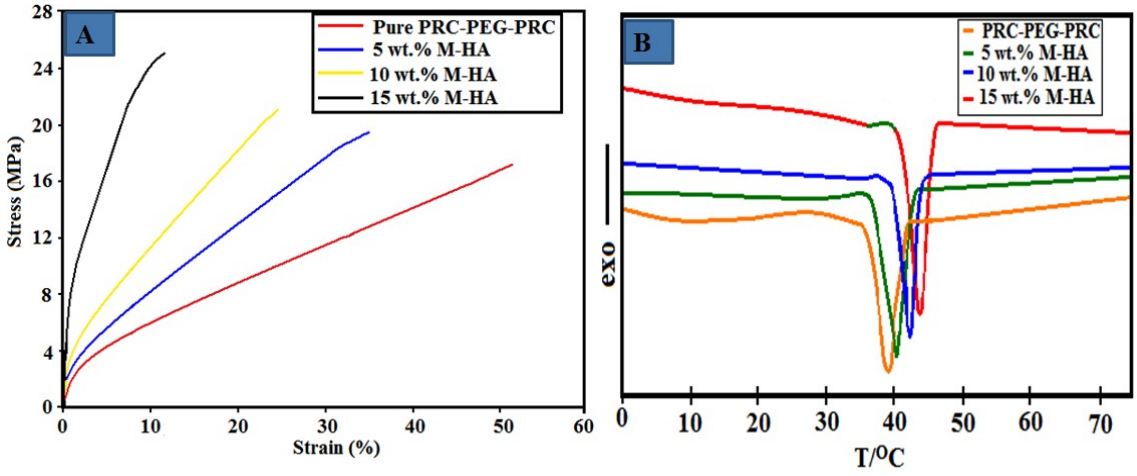

Fig. S 1. Mechanical strength (A) and DSC curves (B) of the M-HA/PRC-PEG-PRC nanocomposites

Table S 3. Mechanical and thermal properties of M-HAP/PSSA nanocomposites.

Samples	**PRC-PEG-PRC**	**5 Wt.%**	**10 Wt.%**	**15 Wt.%**
Tensile strength (MPa)	17.01±1.23	19.26±1.22	22.23±1.66	25.02±1.45
Tensile Modulus (MPa)	650.82 ± 60.12	690.82± 86.14	710.55 ± 12.18	1140.30 ± 108.21
Elongation at break (%)	52.11 ± 2.90	35.26 ± 1.41	24.12 ± 1.10	12.10 ± 1.12
Tg's (°C)	39.02	41.16	43.02	45.26

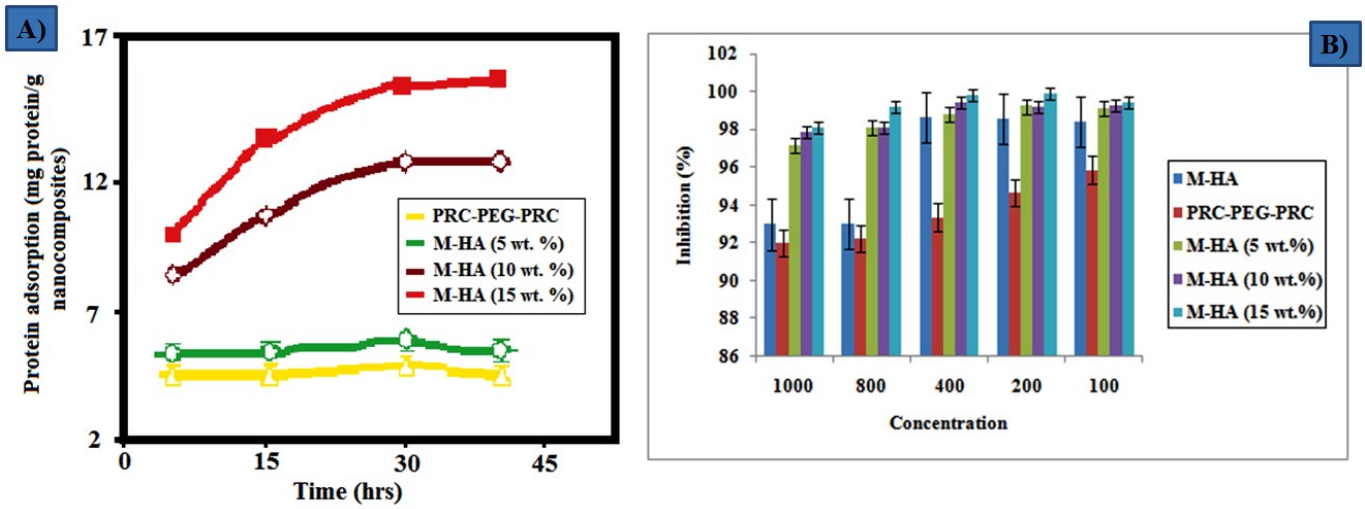

Fig. S 2. Protein adsorption (A) and Anti-inflammatory activity (B) M-HA/PRC-PEG-PRC nanocomposites

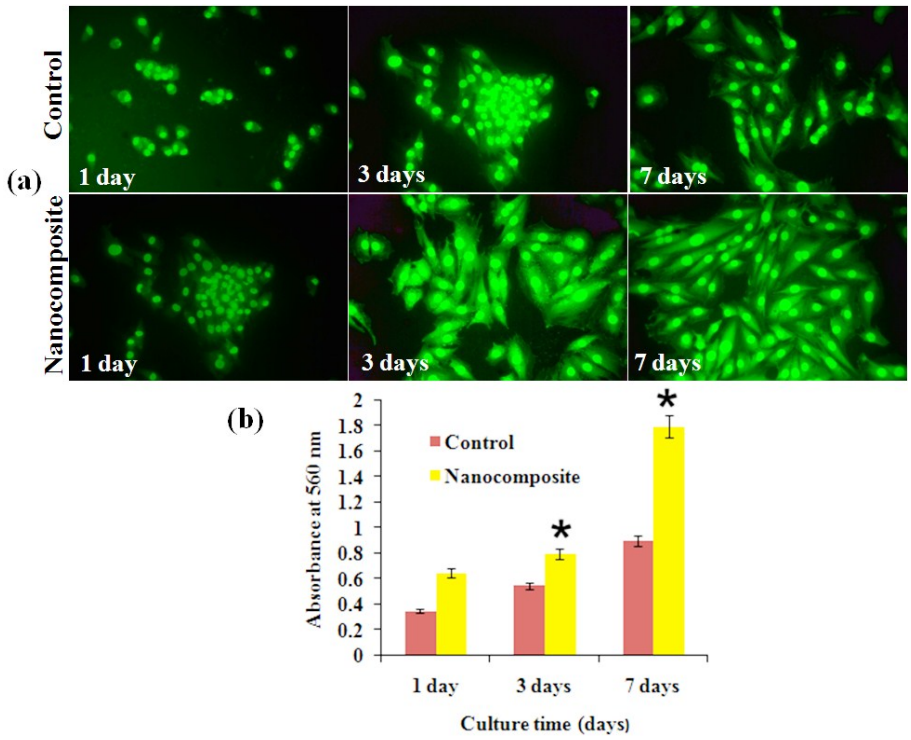

Fig. S 3. a: Fluorescence images of HOS MG63 cell cultured on M-HA (15wt.%)/PRC-PEG-PRC nanocomposite for 1, 3 and 7 days. b: MTT analyze of HOS MG63 cell incubated on nanocomposite for 1, 3 and 7 days. (Asterisk indicates a major variation contrasted with control, $P < 0.05$).