

Biomimetics of Mg^{2+} -Concentration-Resolved Microenvironment for Bone and Cartilage Repairing Materials Design

Supplementary materials

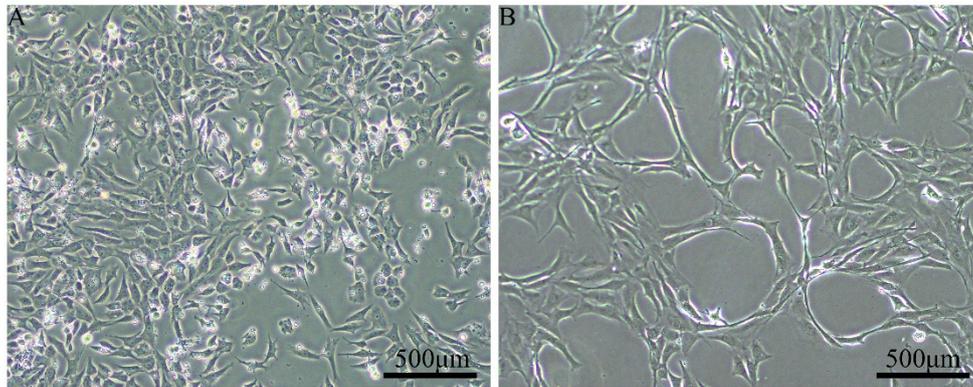


Figure S1. The morphology of passage one chondrocytes (A) and MC3T3-E1 subclone 4 (B).

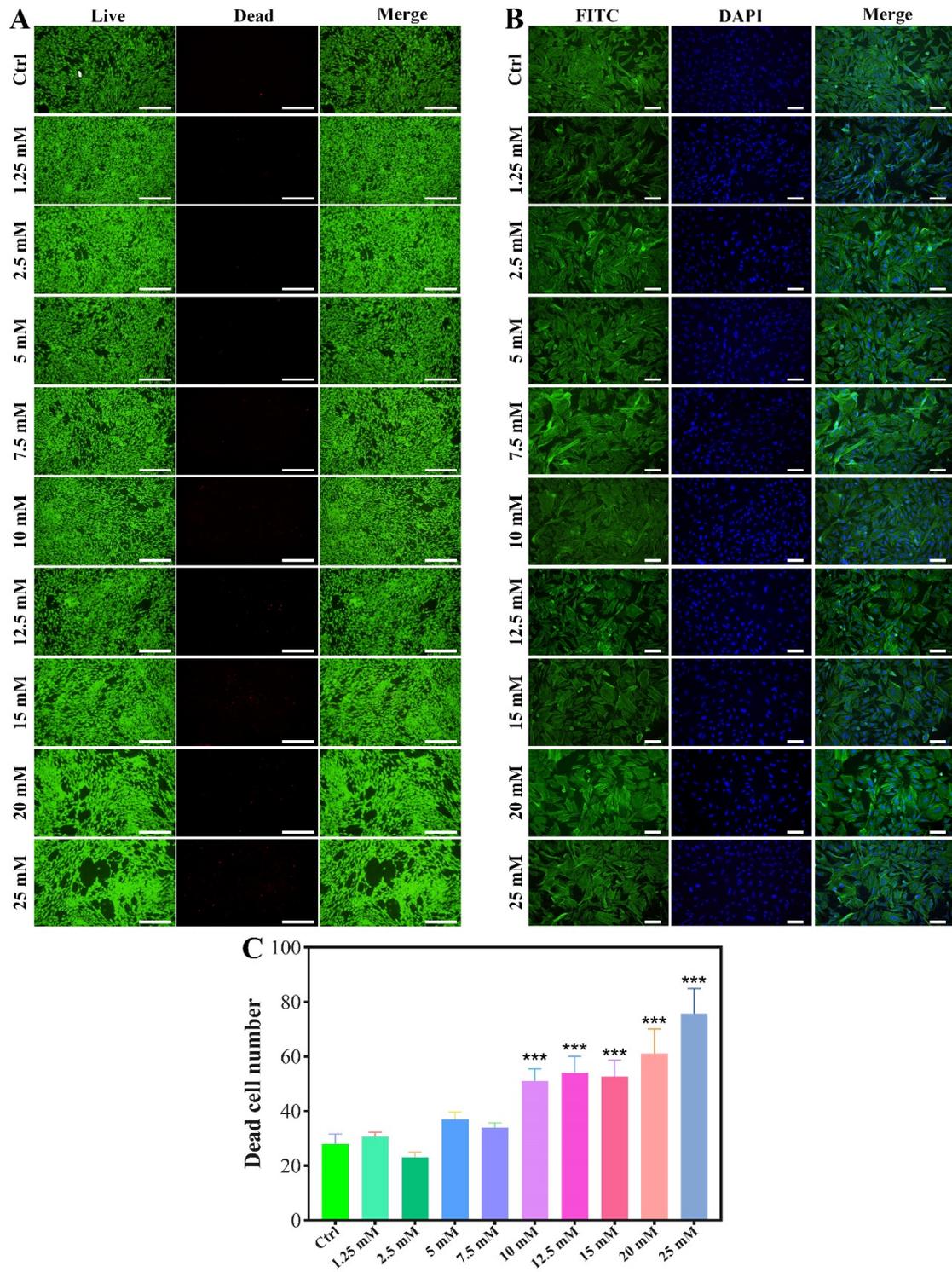


Figure S2. Chondrocytes activity after cultured in varied Mg^{2+} concentration for 72h by the Live/Dead staining (A), chondrocytes morphology after cultured in varied Mg^{2+} concentration for 24h by the FITC-phalloidin and DAPI fluorescence staining (B), the number of dead cells counted from Live/Dead staining (C), scale bar 200 μm .

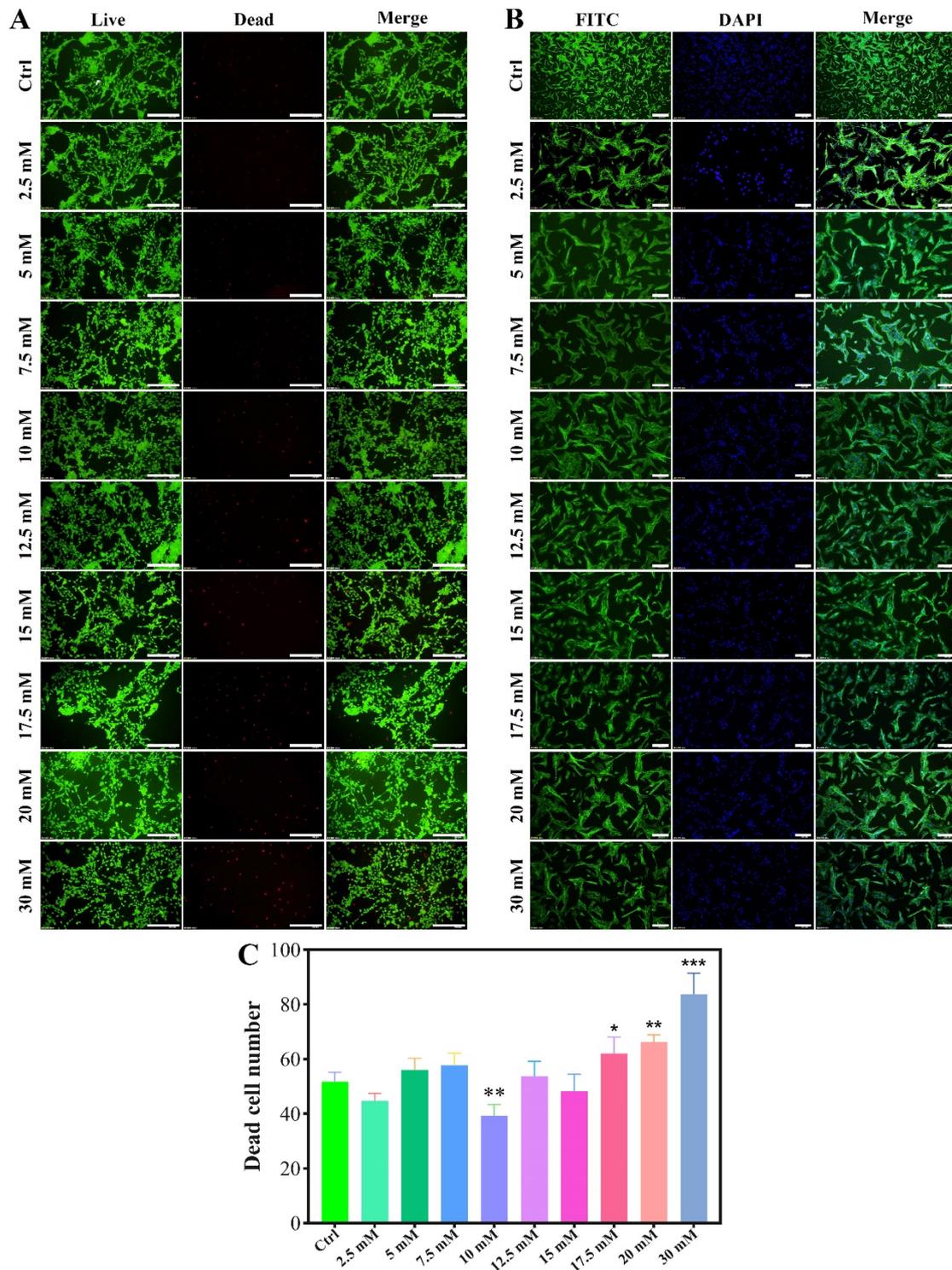


Figure S3. MC3T3-E1 activity after cultured in varied Mg²⁺ concentration for 72h by the Live/Dead staining (A), MC3T3-E1 morphology after cultured in varied Mg²⁺ concentration for 24h by the FITC-phalloidin and DAPI fluorescence staining (B), the number of dead cells counted from Live/Dead staining (C), scale bar 200 μ m.

Table S1. Forward (F) and reverse (R) primers used for quantitative RT-PCR.

Gene	Primer sequence	Product length	GenBank no.
"Glyceraldehyde-3-phosphate dehydrogenase (GAPDH)"	F: cgggaaggccatcacatct R: gctccgcccttcaaatgagc	138	NM_001082253.1
Collagen type I	F: cgtggttacctggcaatgc R: agcaccgacgggaccaatag	135	NM_001195668.1
Collagen type II	F: ccatcaatggcggcttccac R: gtaggccacgctgttcttgc	143	NM_001195671.1
Collagen type X	F: ctgcaaggagaccagggtt R: ggtagaccagctggcccaat	137	XM_002714724.3
Aggrecan	F: tgaccacgtcccaaagctt R: cagatgtctcggctgggat	135	XM_008251722.2
SOX-9	F: gcggaggaagtcggtgaaga R: ctgcagcgccttgaagatgg	94	XM_008271763.2
IL-1 β	F: ggcaggtcttgcagtcggttg R: gcagaggacgggttcttctcaaag	131	NM_001082201.1
MMP13	F: tgcgggaatcctgaagaagaatgc R: tcaagttgcctgtcaccttaagc	96	NM_001082037.1
ADAMTS5	F: agtgtggagtatgcggaggagac R: gctttgaactgtcgaaccttgatgtg	136	XM_002716775.3
TIMP3	F: gacatgtctccaacttcggctac R: ggtggcgttgatggctcttg	129	NM_001195682.1
HIF-1 α	F: tctccattacctgctctgaatctcc R: acttgcctggctgatcttgaatctgg	150	NM_001082782.1
GAPDH	F: ggttgtctctgcgactca R: tggccagggttcttactcc	183	NM_008084.3
Runx2	F: gatgatgacactgccaccttgac R: tgagggatgaatgcttgggaactg	127	NM_001146038.2
ALP	F: cggcgtccatgagcagaactac R: caggcacagtggtcaagggttg	81	NM_007431.3
Collagen type I	F: gacaggcgaacaaggtgacagag R: caggagaaccaggagaaccaggag	86	NM_007742.4
Osteocalcin	F: caagcaggagggaataaggtagtg R: catactggtctgatagctcgtcacaag	137	NM_007541.3