Electronic Supplementary Information

Electrospun laponite-doped poly(lactic-co-glycolic acid) nanofibers for osteogenic differentiation of human mesenchymal stem cells

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Table S1 Tensile properties of electrospun PLGA and LAP doped PLGA nanofibers (all data are given as mean ± SD, n = 3)

| Sample	Breaking strength (MPa)	Failure strain (%)	Young's modulus (MPa)
PLGA	5.05 ± 0.11	156.88 ± 8.87	37.3 ± 2.84
PLGA/1% LAP	5.47 ± 0.46	123.11 ± 2.84	50.5 ± 5.99
PLGA/3% LAP	5.57 ± 0.35	69.33 ± 9.91	74.0 ± 4.21
PLGA/5% LAP	7.93 ± 0.11	41.04 ± 10.89	75.4 ± 0.47
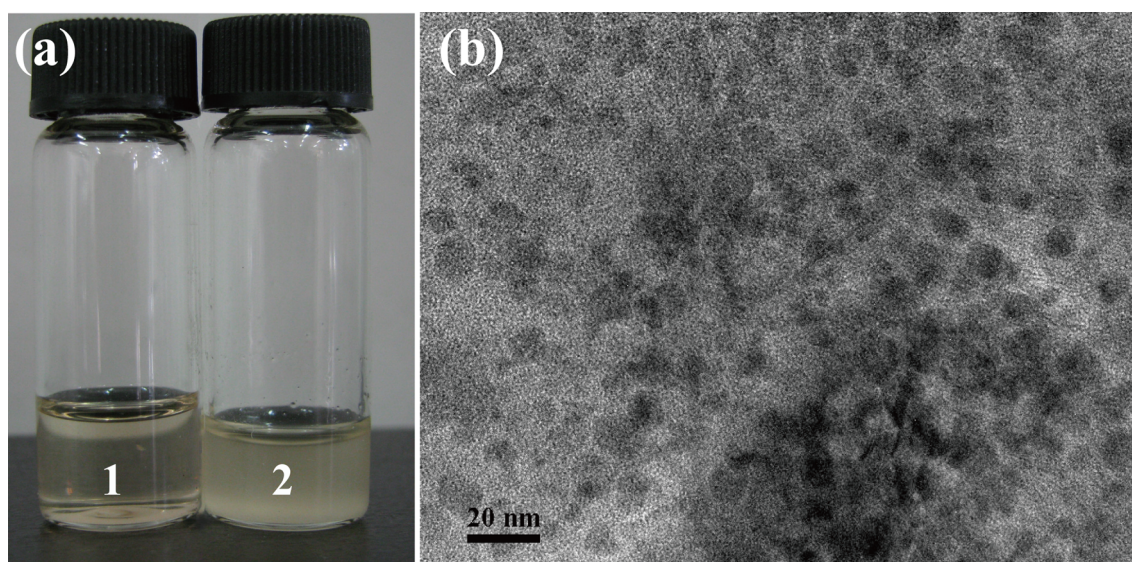
Figure S1. (a) Photographs of PLGA (vial 1) and LAP-containing PLGA solution (vial 2) used for electrospinning; (b) TEM micrographs of LAP nanodisks dispersed in THF/DMF (v/v = 3:1) solvent with a concentration of 5% in the absence of PLGA.

(a) 128.7 ± 3.6°

(b) 120.2 ± 0.8°

**(c)** 112.6 ± 1.1°

(d) 113.2 ± 3.4°
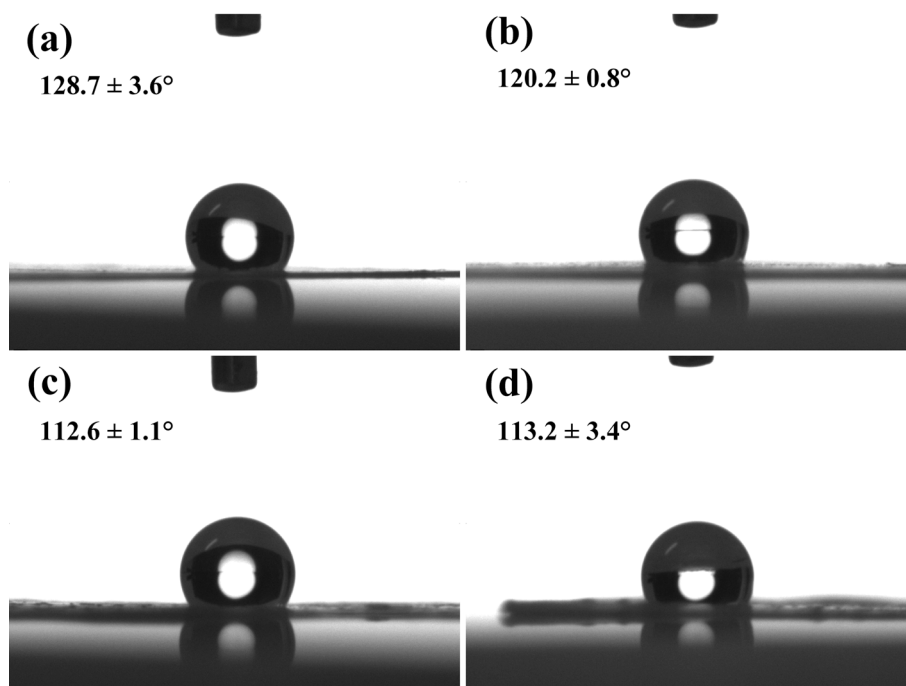
Figure S2. Water droplet shape and contact angle on the surface of electrospun PLGA (a), PLGA/1% LAP (b), PLGA/3% LAP (c), and PLGA/5% LAP nanofibrous mats. All contact angle data are given as mean ± SD, n = 3.
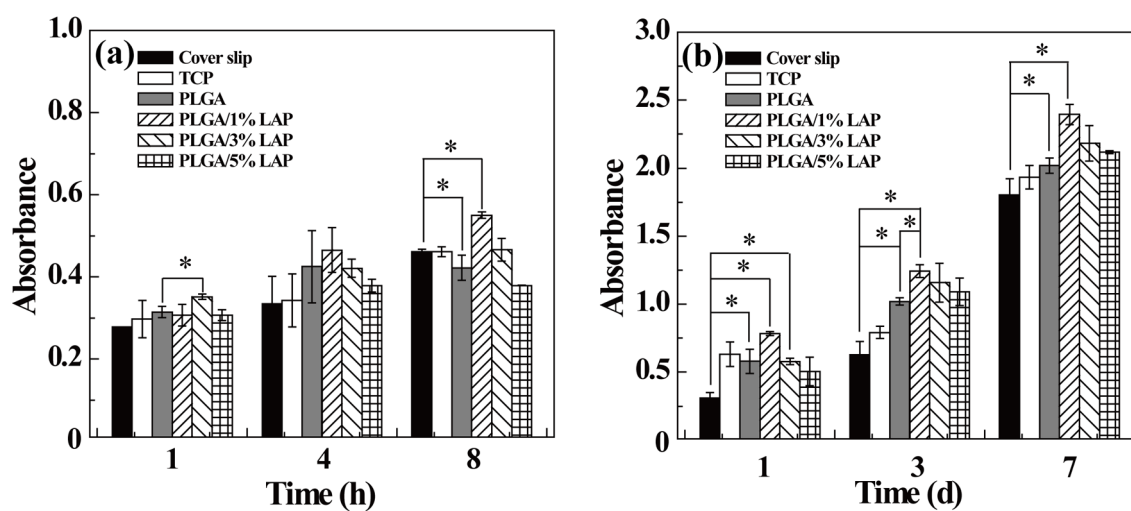

Figure S3. Attachment (a) and proliferation (b) viability of PIEC seeded on the cover slips (control), TCP, electrospun PLGA and LAP doped PLGA nanofibers (mean ± SD, n = 3, $p < 0.05$).
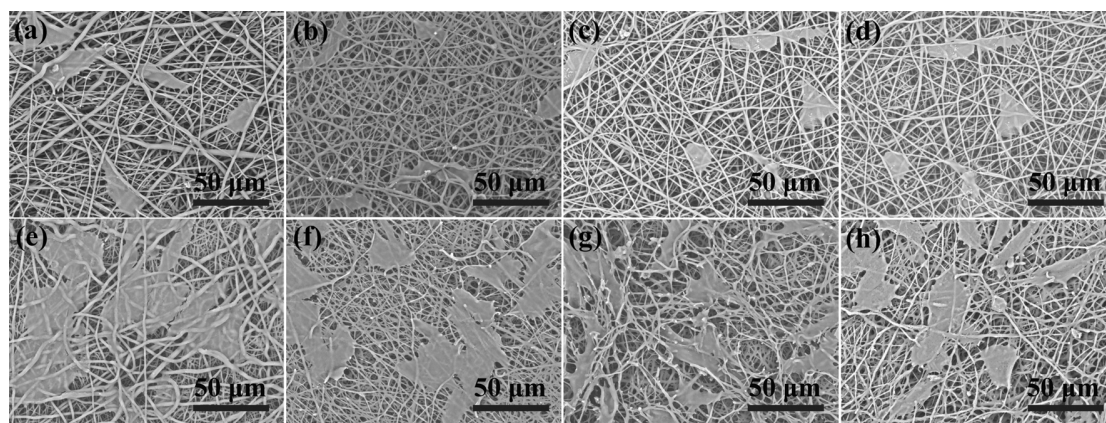
Figure S4. (a)-(d) and (e)-(h) show the SEM micrographs of PIEC attached and proliferated onto (a) PLGA nanofibers, and LAP ((b) 1%, (c) 3% and (d) 5% relative to PLGA, respectively) doped PLGA nanofibers after 8 h and 3 d culture, respectively.
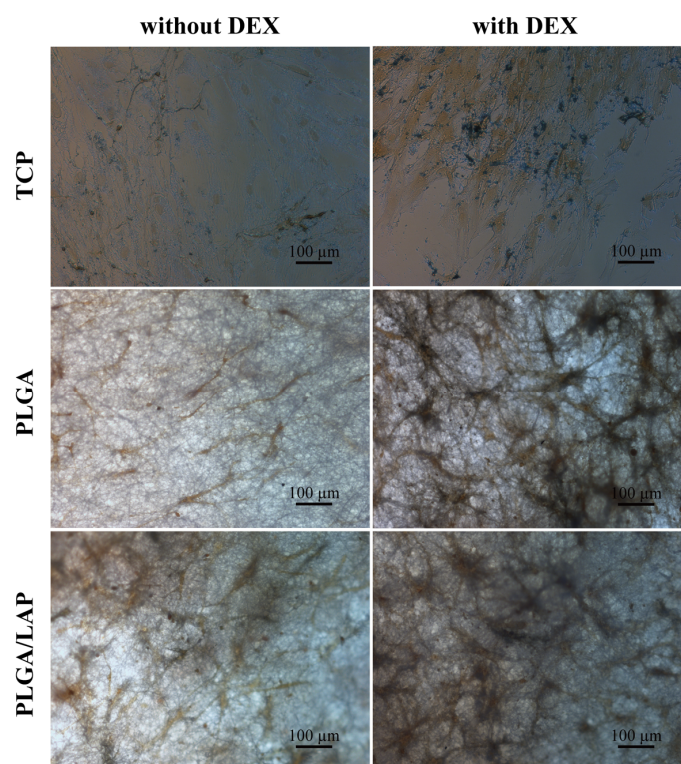
Figure S5. ALP staining results of hMSCs cultured onto TCP, PLGA nanofibers, and PLGA/5%LAP nanofibers in growth medium and osteogenic medium on day 21.
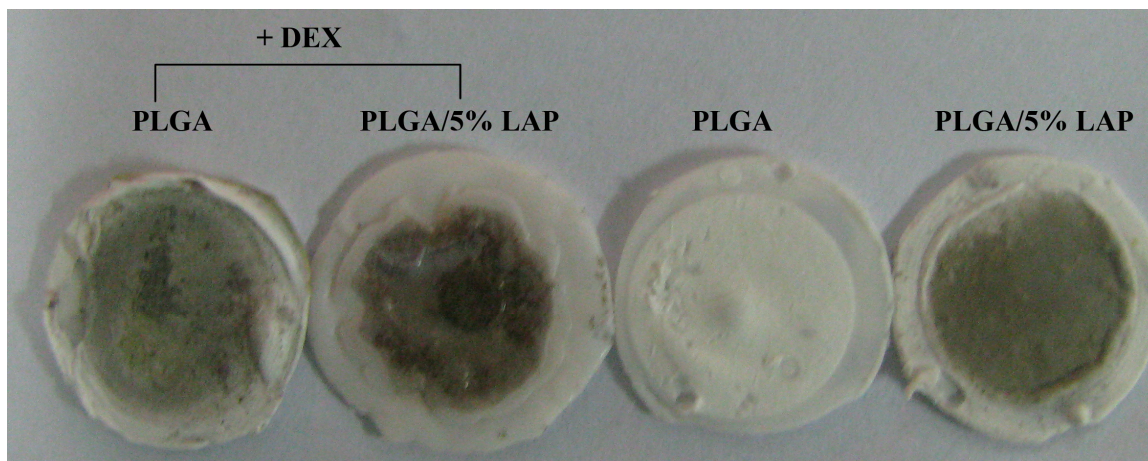
Figure S6. Picture of Von Kossa staining of hMSCs cultured onto PLGA and PLGA/5%LAP nanofibers in growth medium without inducing factors and osteogenic medium supplemented with DEX on day 21.