

5 Figure S1. (A) ¹H-NMR spectra in D₂O (400 MHz) of HA-furan DS1 and DS3 showing that the furan groups had been successfully grafted to HA. The peaks at 6.26, 6.46, 7.41 ppm (furan protons) and 1.9 ppm (N-acetyl glucosamine of HA) were labeled by red rectangle.

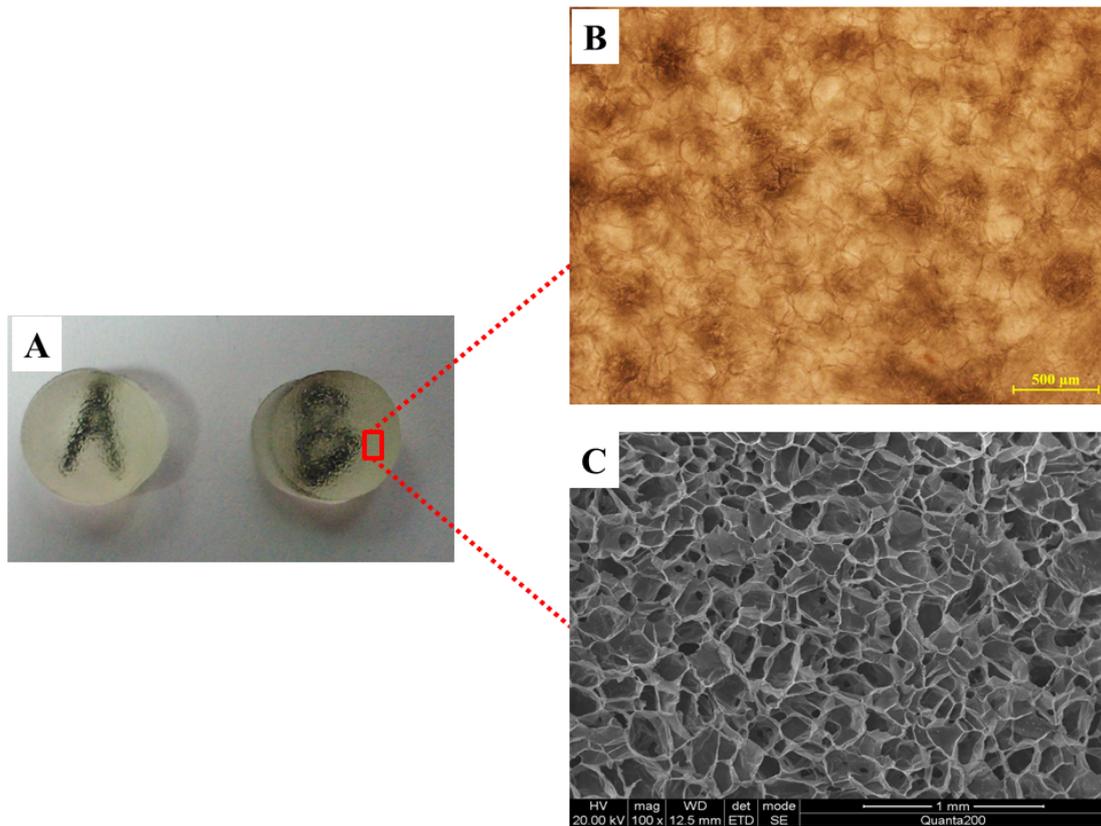


Figure S2. (A) The digital photo of HA/PEG hydrogels. The hydrogel covered on letter A was DS1 9:1 and the other on letter B was DS1 1:1. (B) Light microscope images of HA/PEG hydrogel in the swollen state. (C) The morphology of freeze-dried HA/PEG hydrogel by SEM.

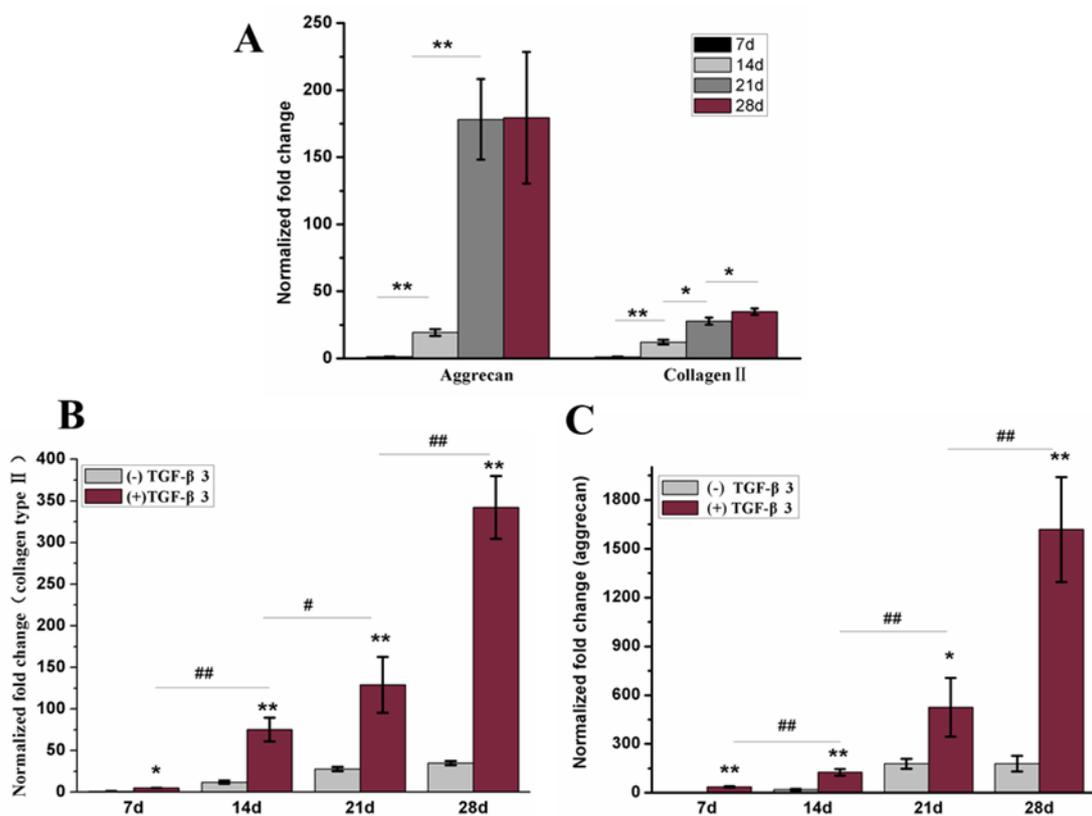


Figure S2. (A) The normalized fold change for gene expression of collagen II and aggrecan at different culture time (7d, 14d, 21d and 28d). The hydrogels were cultured in medium without TGF-β3. The expression level of controls (day 7) is represented as 1. Samples with significantly higher gene expression than the day 7 value (control) is noted with (*, $p < 0.05$). (B, C) Gene expression levels of collagen II and aggrecan from hydrogels which cultured in medium with TGF-β3. The control (day 7, (-) TGF-β3) is represented as 1. Samples indicated with (*) had significantly higher gene expression than another at the same time point. Symbol (#) represented the significantly difference among the hydrogels with TGF-β3 at different culture time. (* $p < 0.05$; ** $p < 0.01$; # $p < 0.05$; ## $p < 0.01$)