

Figure.S1 The SEM potography of sericin nanogel.

Figure.S2 The Phase contrast microscope photos of MSCs cultured in various medium for 5 days. MSCs concentration began to form in 0.05% and 0.1% sericin nano-gel group. Control: normal media, 0.05% sericin protein: normal medium containing 0.05% sericin protein, 0.1% sericin protein: normal medium containing 0.1% sericin protein, 0.05% sericin nano-gel: normal medium containing 0.05% sericin nano-gel, 0.1% sericin nano-gel: normal medium containing 0.1% sericin nano-gel.

Figure.S3 The Phase contrast microscope photos of MSCs cultured in various medium for 21 days. Many micro-tissues formed in 0.05% and 0.1% sericin nano-gel group. Control: normal media, 0.05% sericin protein: normal medium containing 0.05% sericin protein, 0.1% sericin protein: normal medium containing 0.1% sericin protein, 0.05% sericin nano-gel: normal medium containing 0.05% sericin nano-gel, 0.1% sericin nano-gel: normal medium containing 0.1% sericin nano-gel.

Figure.S4 F-actin and nucleus fluorescence staining of MSCs cultured with 0.05% sericin nano-gel mediun for 7 days. The F-actin (A and B) and the nucleus (C) stained by phalloidin-FITC and DAPI, respectively. A and B are captured at a same place with different focusing distance.

Figure.S5 The Phase contrast microscope photos of MSCs cultured in 0.1% sericin nano-gel medium for 2 days (A) and sericin nano-gel soft aggregations (B) in the medium. They are captured at a same place with different focusing distance.