

Figure S1: Structural properties of uncrosslinked electrospun scaffolds; (A) SEM micrographs of uncrosslinked scaffolds, (B) FTIR spectra of uncrosslinked scaffolds and PGS prepolymer.

Figure S2: (A-C) Mechanical properties of uncrosslinked aligned and random scaffolds. (D) Water contact angles of crosslinked aligned and random scaffolds. Contact angles of aligned fibrous scaffolds were measured along with the fiber direction. (*: $P < 0.05$).

Figure S3: CFs nuclei orientation on aligned scaffolds as a function of culture time. Aligned PGS:2Gelatin fibrous scaffold significantly enhanced CFs nuclei alignment compared to day 5. (*: $P < 0.05$)).

Video S1: Beating cardiomyocytes that were cultured on (a) A(Gelatin), (b) A(PGS:2Gelatin) and (c) A(2PGS:Gelatin) fibrous scaffolds (Magnification $\times 10$).

Video S2: Beating cardiomyocytes that were cultured on (a) R(Gelatin), (b) R(PGS:2Gelatin) and (c) R(2PGS:Gelatin) fibrous scaffolds (Magnification $\times 10$).