## **Supplementary Data**

**Figure S1.** SEM images of Gel-MA hydrogel (A). Rheology of modulus over strain (B). Shear viscosity over shear rate (C); Lap shear stress of HGM and Gel-MA (D); Swelling ratio within 72

h (E); Degradation ratio within 22 h in collagenase solution (F).

Figure S2. Tube formation (A) and statistical analyses (B) assay; Scratch wound healing assay

(C); Live-dead staining of L929 cells (D); Cell viability of L929 cells after 24h and 48 h (E).

Figure S3. Immunohistochemistry (A) at 14 days of IL-6, IL-1 $\beta$ , TNF- $\alpha$  and TGF- $\beta$ 1; Analysis of

expression of IL-6, IL-1 $\beta$ , TNF- $\alpha$  and TGF- $\beta$  at 7 days (B) and 14 days (C).

Figure S4. Quantitative statistic of WB at 7 days (A) and 14 days (B).



Figure S1.



Figure S2.



Figure S3.



Figure S4.