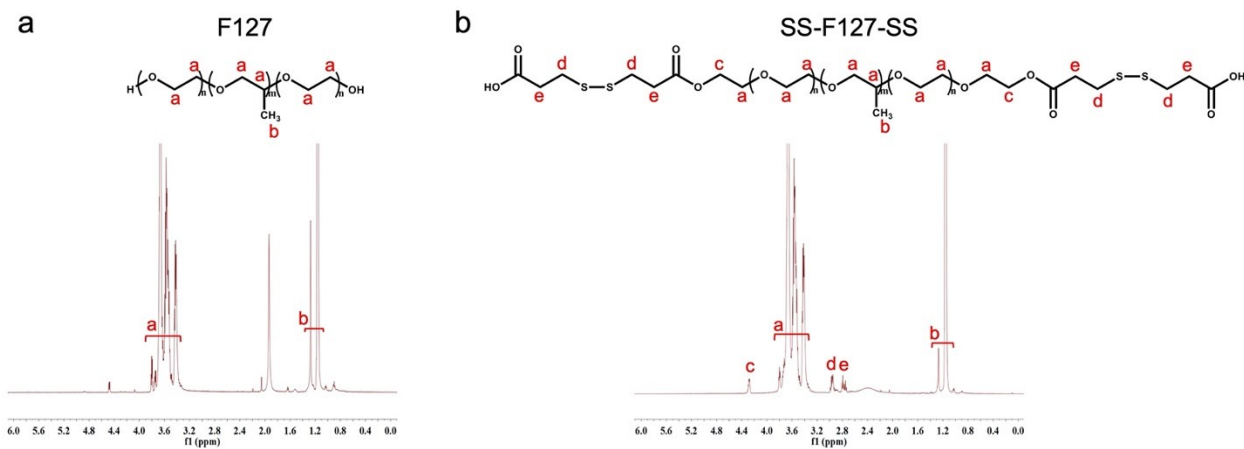


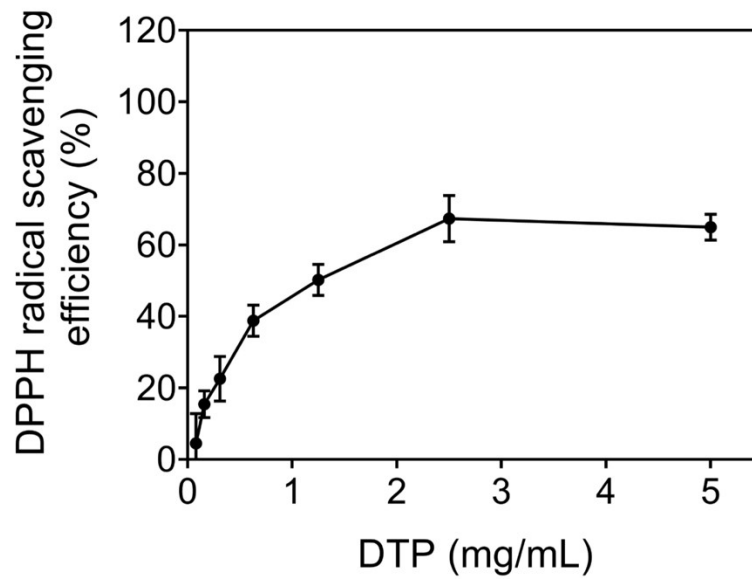
## Supplemental Data

### Figure S1



**Fig. S1. Structure of F127-DA and SS-F127-SS.** (a) The structure of F127 investigated by proton nuclear magnetic resonance spectroscopy ( $^1\text{H-NMR}$ ). (b) The structure of SS-F127-SS was confirmed by  $^1\text{H-NMR}$ .  $\delta$  1.1-1.25 ( $\text{CH}_3$ ), 2.75 ( $\text{CH}_2\text{COO}$ ), 2.95 ( $\text{S}-\text{CH}_2$ ), 3.4-3.8 ( $-\text{CH}_2-\text{CH}_2-\text{O}-$ ), 4.25 ( $\text{COOCH}_2$ ).

**Figure S2**



**Fig. S2. Antioxidative effect of DTP by free radical DPPH assay.** 3,3'-dithiobis(propanoic acid) (DTP, dissolved in dimethylformamide) showed a dose-depend scavenging effect for DPPH.

Figure S3

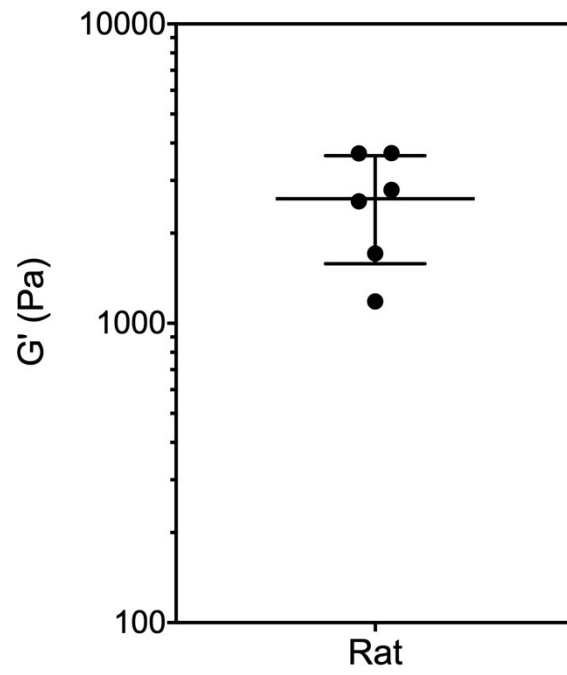
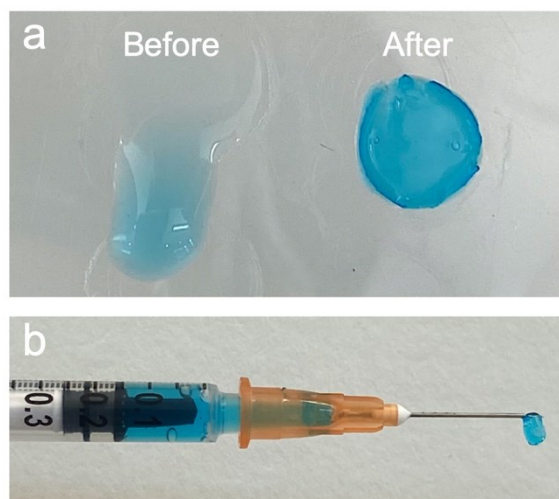


Fig. S3. Shear storage modulus ( $G'$ : 2.8 kPa) of rat gastrocnemius muscle.

**Figure S4**



**Fig. S4. Hydrogel morphology.** (a) Morphologies of hydrogels before and after gelation.  
(b) Hydrogel could be injected through 25G needle.

Figure S5

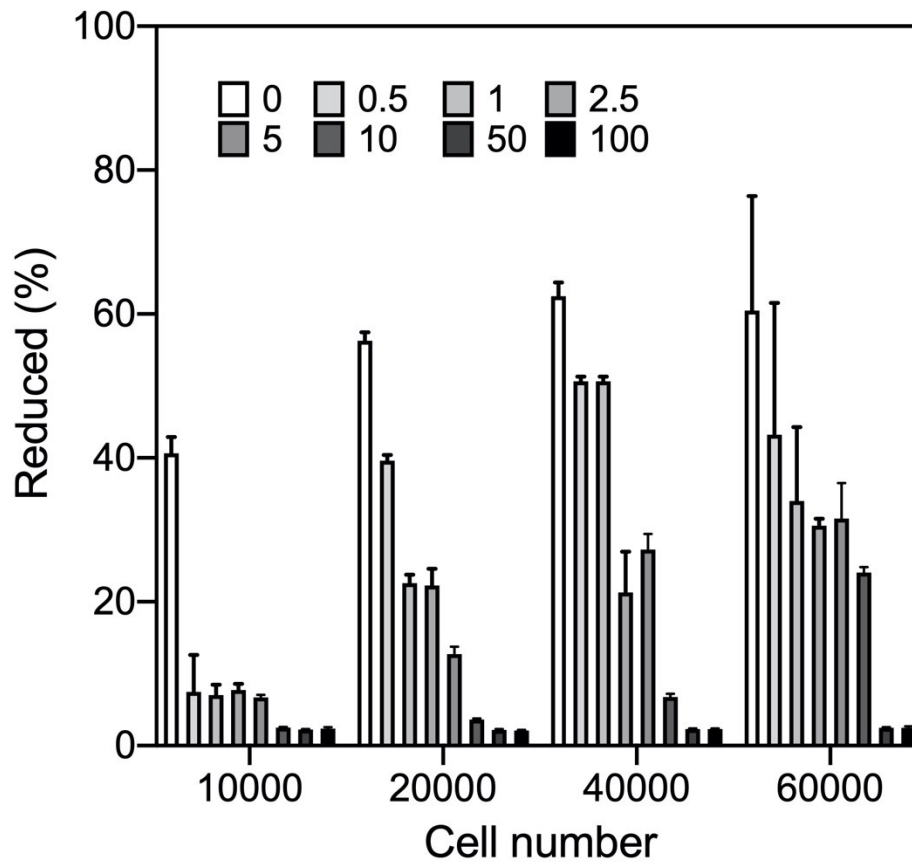


Fig. S5. Viability of HUVECs of different numbers in a well of a 96-well plate under different concentrations of H<sub>2</sub>O<sub>2</sub> investigated by alamarBlue assay.

Figure S6

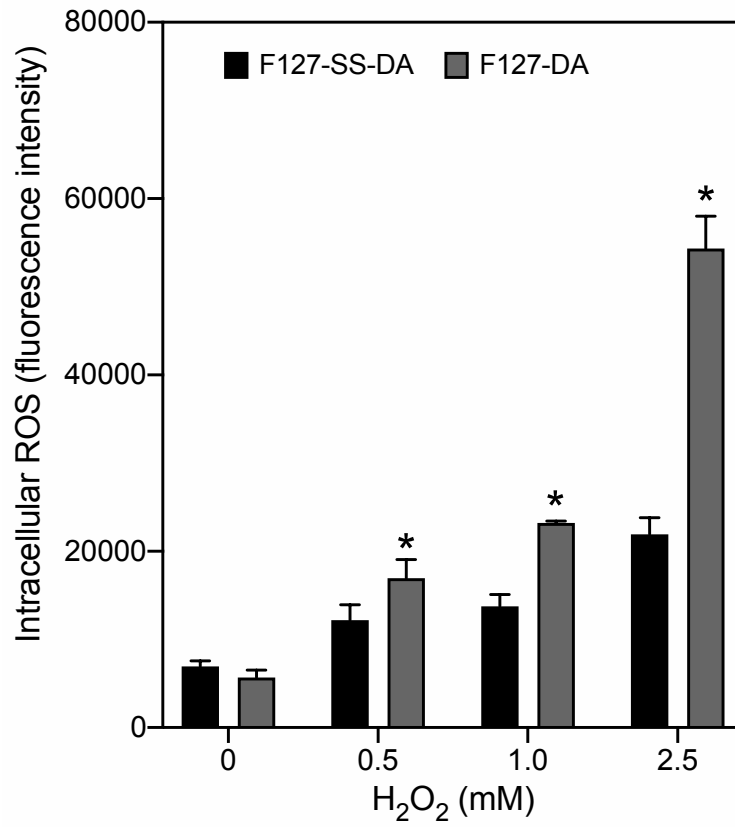


Fig. S6. Intracellular ROS levels of HUVECs with HA hydrogels under H<sub>2</sub>O<sub>2</sub> condition (0, 0.5, 1.0, and 2.5 mM). ROS levels were quantified by fluorescence intensity.