

Supporting Information

Biocompatible Polyethylene Glycol/Alginate Composite Hydrogel with Significant Reactive Oxygen Species Consumption for Promoting Wound Healing

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Contents

- 1. ^1H NMR spectrum of purified of poly (ethylene glycol) diacrylate**
- 2. The relationship between time and dehydration ratio in first 95 minutes**
- 3. In vitro response experiment of *hdg*-PEGDA to active oxygen consumption and the self-consumption of hypochlorous acid within 60 minutes**
- 4. Nucleus and cytoskeleton morphology of HepG2 cells**
- 5. Dead images of L929 cells treated with different conditions**
- 6. Nucleus and cytoskeleton morphology of L929 cells after treated with different concentrations of SA degradation products and live/dead images of L929 cells after co-cultured with SA degradation products for 24 h**
- 7. Analysis of the expression percentage of collagen fiber in Masson staining experiment**

1. Characterization of purified poly (ethylene glycol) diacrylate.

Poly (ethylene glycol) diacrylate was purified and characterized by Agilent AV 400. ^1H NMR (400 MHz, CDCl_3) δ 6.45 – 6.37 (m, 2H), 6.18 – 6.09 (m, 2H), 5.86 – 5.79 (m, 2H), 4.34 – 4.24 (m, 4H), 3.72 (dt, $J = 11.6, 4.5$ Hz, 4H), 3.62 (d, $J = 0.6$ Hz, 72H).

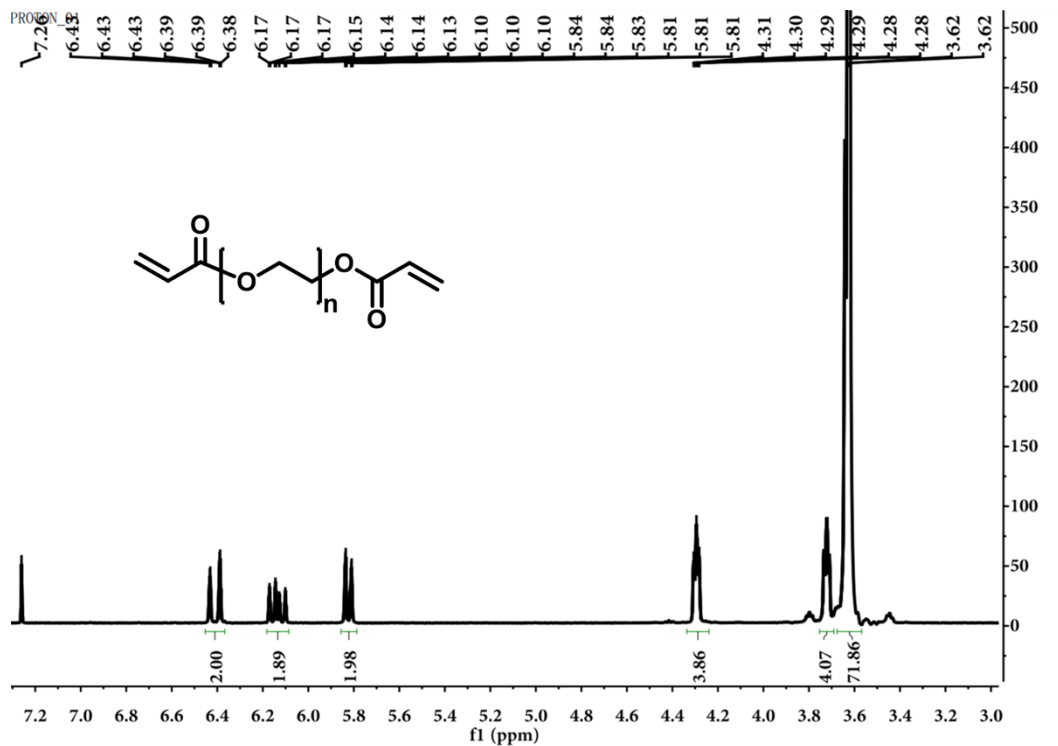


Figure S1. ^1H NMR spectrum of purified poly (ethylene glycol) diacrylate in CDCl_3 .

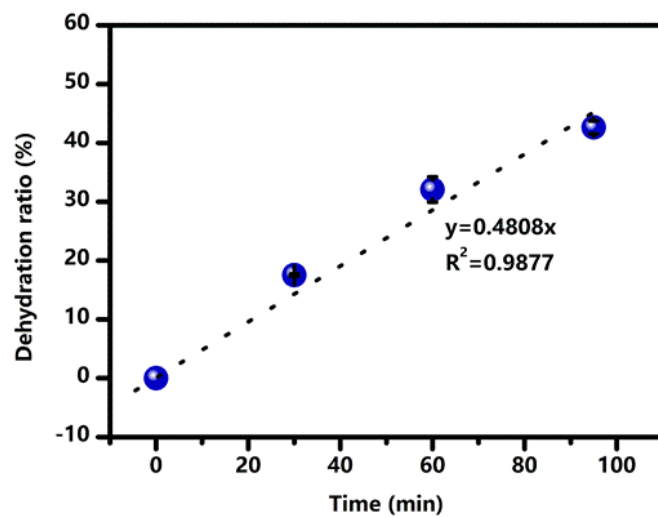


Figure S2. Simulation of *hdg*-PEGDA dehydration in the first 95 minutes.

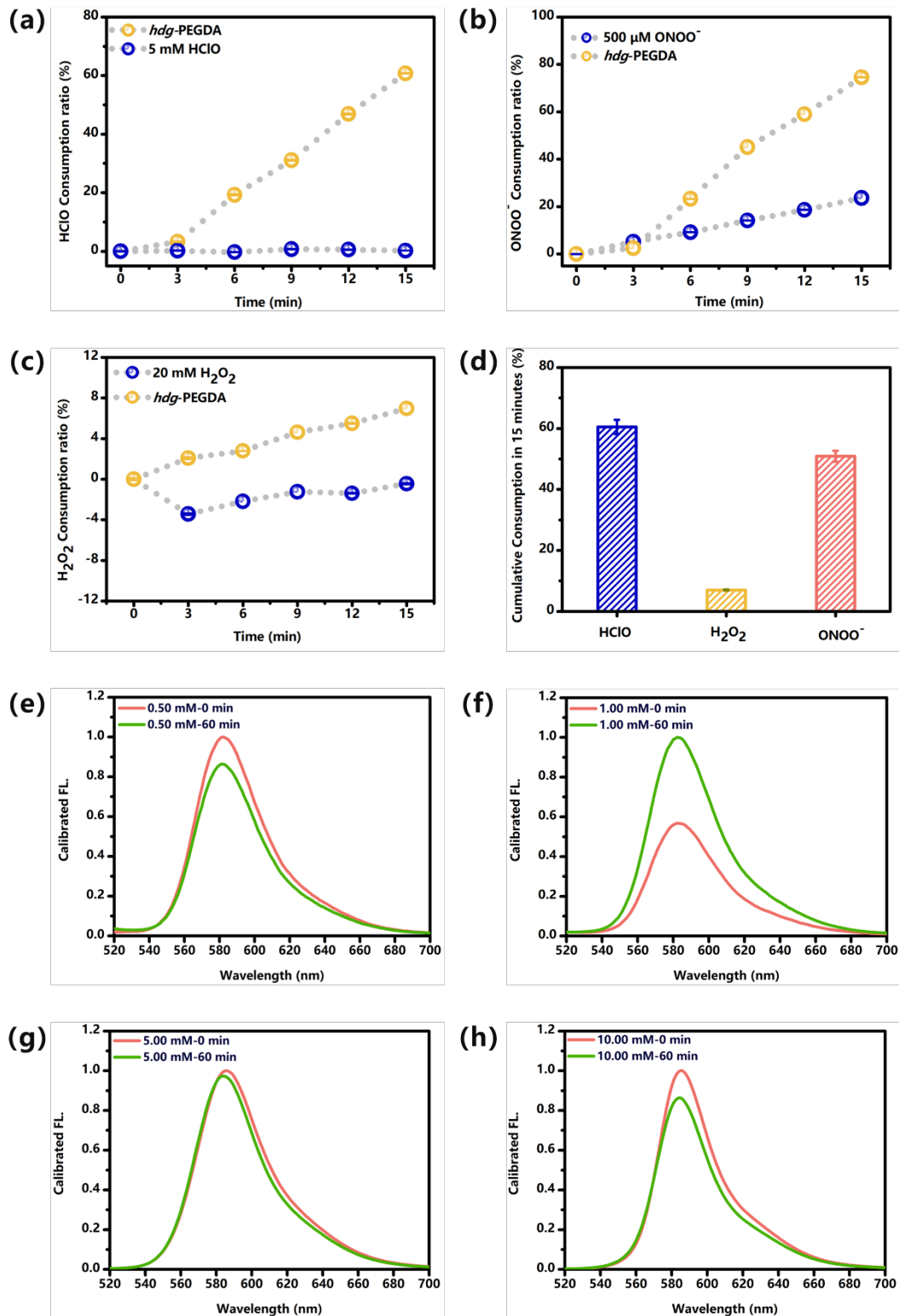


Figure S3. (a-c) *hdg*-PEGDA consumption on different types of reactive oxygen species (ROS).

(d) The cumulative consumption in 15 minutes of hydrogel *hdg*-PEGDA on different types of

ROS. (e-h) The self-consumption of different concentrations of hypochlorous acid within 60 minutes.

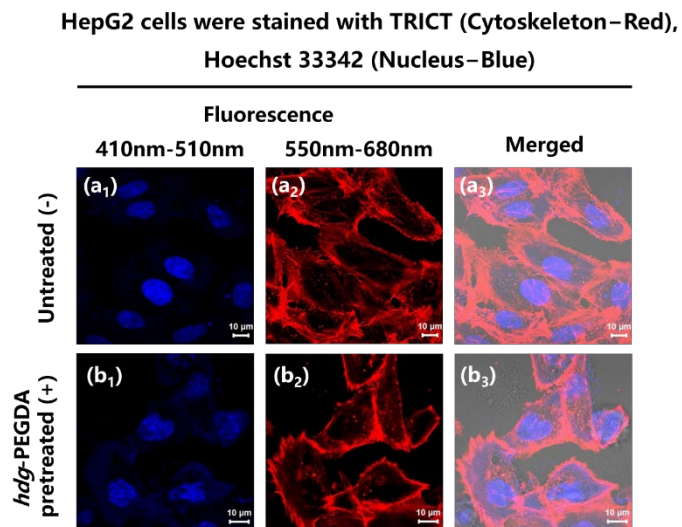


Figure S4. Nucleus and cytoskeleton morphology of HepG2 cells after *hdg*-PEGDA treatment (b₁-b₃) and untreated (a₁-a₃).

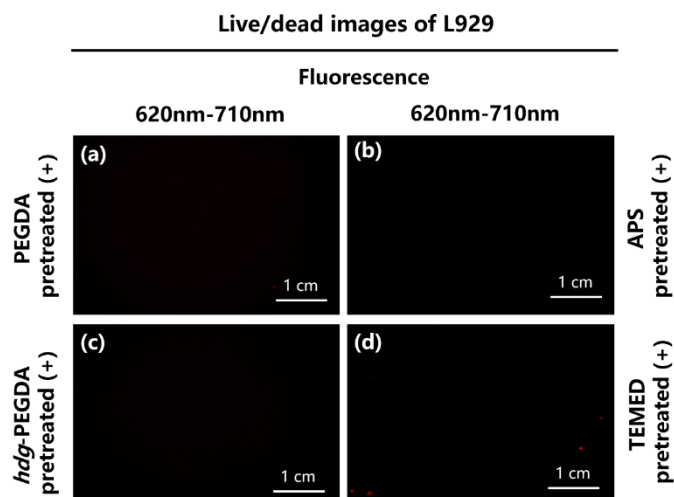


Figure S5. (a-d) Dead images of L929 cells treated with different conditions.

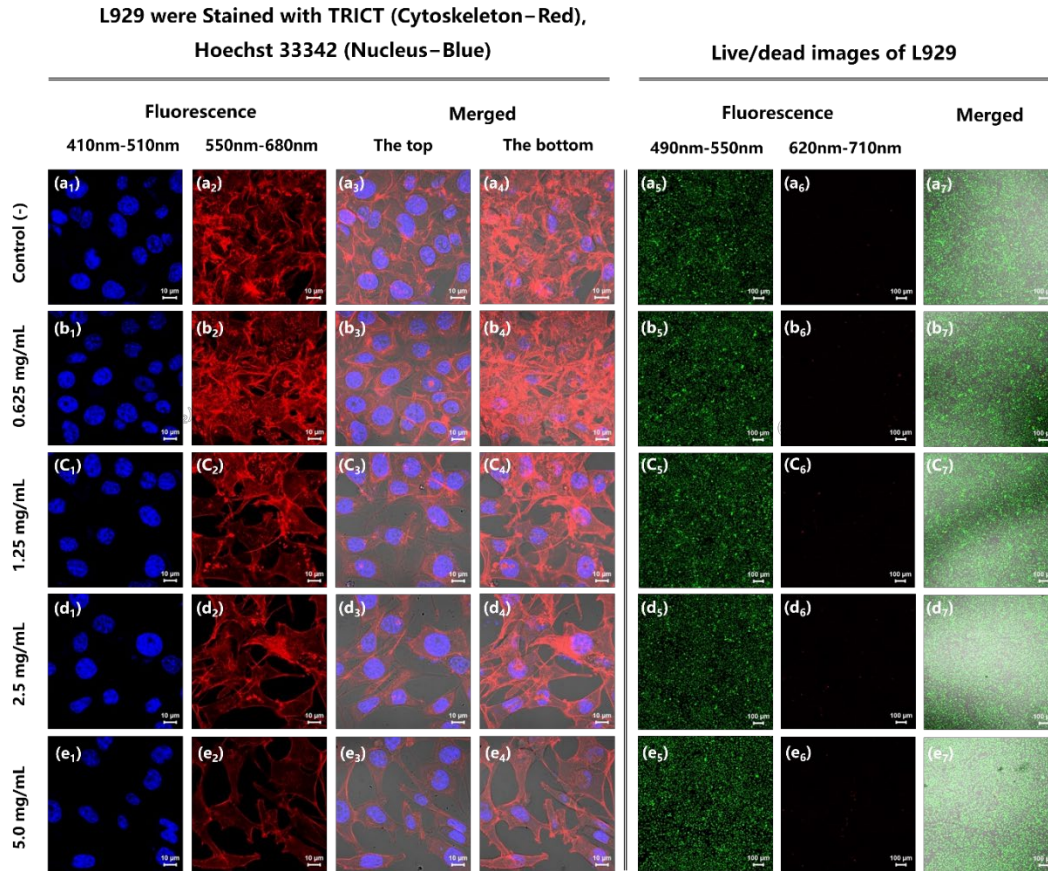


Figure S6. (a₁-a₄), (b₁-b₄), (c₁-c₄), (d₁-d₄) and (e₁-e₄): nucleus and cytoskeleton morphology of L929 cells after treated with different concentrations of SA degradation products. (a₅-a₇), (b₅-b₇), (c₅-c₇), (d₅-d₇) and (e₅-e₇): Live/dead images of L929 cells after co-cultured with SA degradation products for 24 hours.

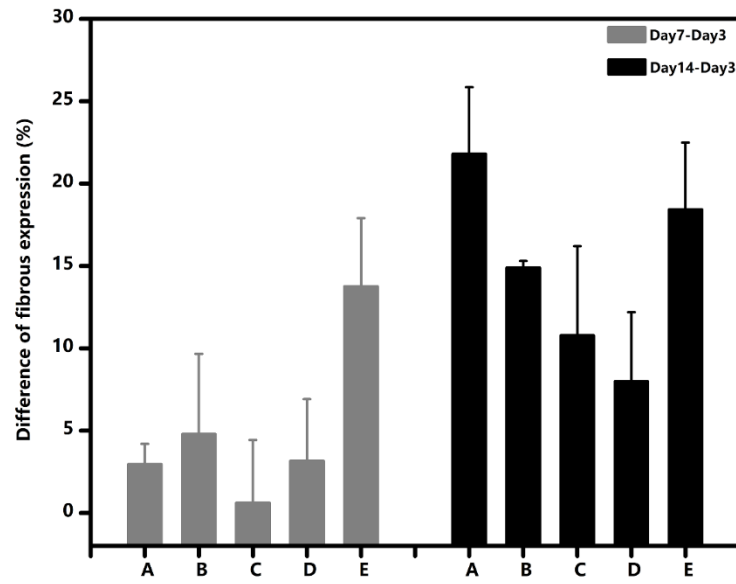


Figure S7. Analysis of the expression percentage of collagen fiber in Masson staining experiment.