

## **Injectable keratin hydrogels as hemostatic and wound dressing materials**

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### ***In vitro* drug release**

The samples used in this test were prepared at pH 7.2 with a cylindrical shape of about 2.7 cm in diameter and 1.7 mm in height. The drug loading amount was about 4 mg. In the test, 0.5 ml of PBS solution was added onto the top of the gel and incubated at 37 °C. At pre-determined time intervals, the PBS medium was collected and replaced with 0.5 ml of fresh PBS solution. The collected medium was mixed with FeCl<sub>3</sub>, and the concentration of DFO in the medium was measured by UV spectrophotometer at 485 nm.

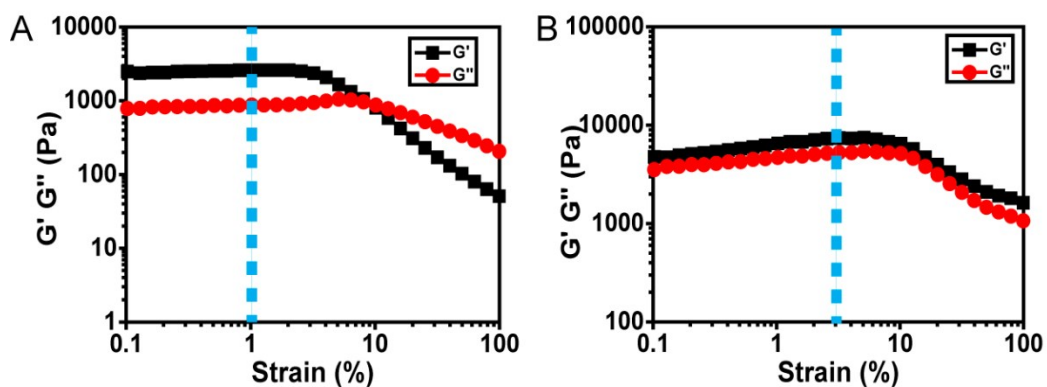


Figure S1. Determination of the linear viscoelastic region for the hydrogel prepared at pH 3.5 (A), and pH values of 6.0, 7.2, and 8.5 (B).



Figure S2. Photographs of the hydrogel prepared at a molar ratio of Au(III) / thiol groups = 1/1.

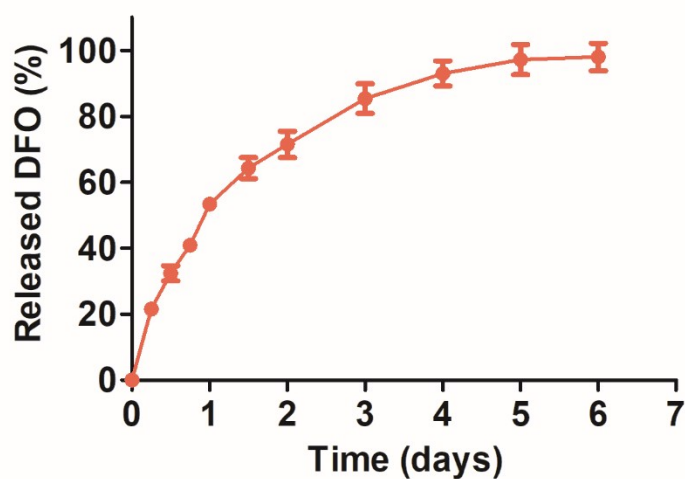


Figure S3. The release profile of DFO under PBS condition and 37 °C.

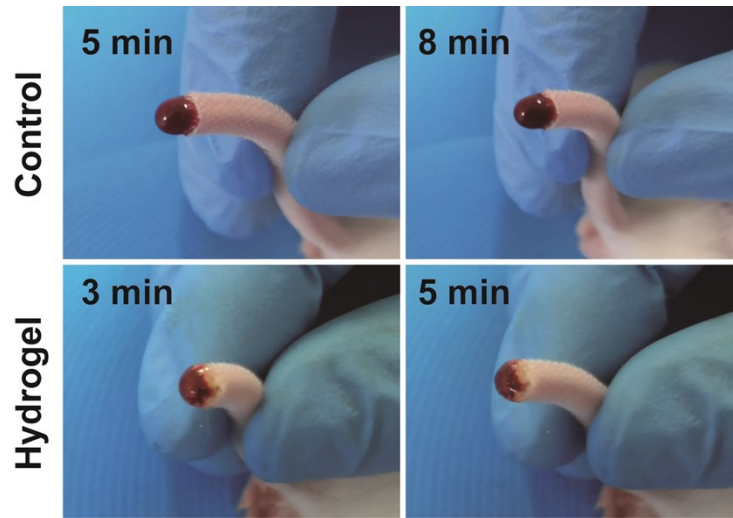


Figure S4. Photographs of hemostasis test in a standardized mouse tail amputation model. The top images are the control group at 5 and 8 min post wounding, and the bottom images are the hydrogel group at 3 and 5 min post wounding.

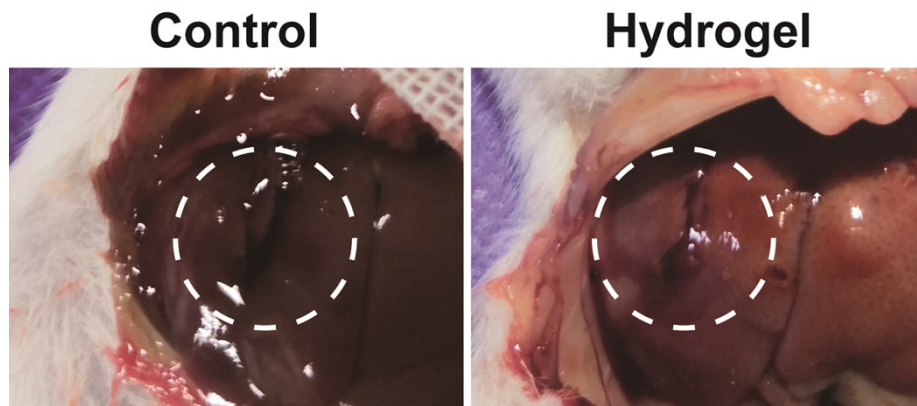


Figure S5. Photographs of the bleeding liver at 90 seconds post coating with the hydrogel. A completely hemostasis was realized for the hydrogel group, while further bleeding happened for the control group.

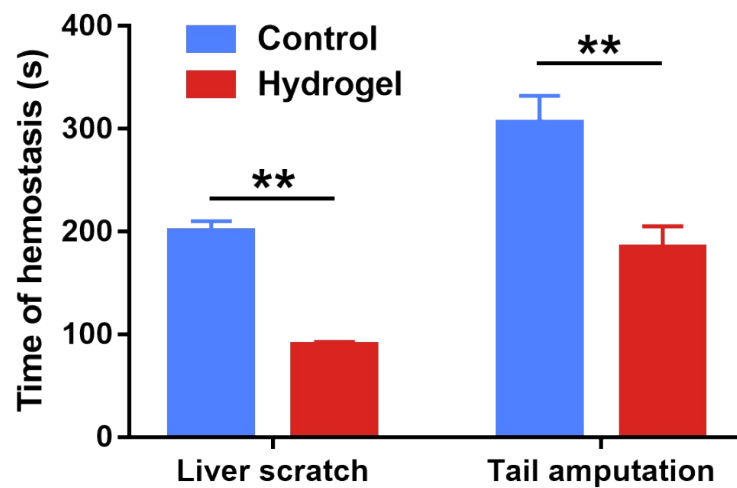


Figure S6. Hemostasis time of the hydrogel and control in both the liver scratch and tail amputation models. Data points represented mean  $\pm$  SD ( $n = 3$ ). Error bars indicated SD. \*\* $p < 0.01$ .