## Fe<sup>3+</sup>-crosslinked pyrogallol-tethered gelatin adhesive hydrogel with antibacterial activity for wound healing

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## Cytotoxicity of GelTHB-Fe hydrogels

The cytotoxicity of leaching solution of GeITHB-Fe hydrogels was evaluated using MTT assay against mouse fibroblast cells (L929 cells, obtained from Peking Union Medical College). The leaching solution of GeITHB-Fe hydrogels was obtained by incubating approximately 100 mg of freshly prepared hydrogel specimens in 10 mL of PBS (pH 7.4) for 12 h. The resulting solutions were sterilized by sterile syringe filter.  $2 \times 10^4$  L929 cells were seeded for a well in a 96-well plate and incubated for 24 h. Then the culture medium was removed and refreshed with 20 µL of leaching solution and 180 µL of fresh culture medium. After culturing 24 h, the medium was replaced with 180 µL fresh complete medium and 20 µL MTT (5 mg mL<sup>-1</sup> in PBS), and the plate was further incubated for 4 h. Next, all medium was removed and replaced with 200 µL DMSO per well with shaking for 30 min at 37 °C. The absorbance (Abs) of each well was measured at a wavelength of 570 nm using a microplate reader (Bio-Red, Model 550, USA). Non-treated cells were used as a control and the relative cell viability (mean  $\pm$  SD, n=5) was calculated as Abs<sub>sample</sub>/Abs<sub>control</sub> × 100%.

Hydrogels	Gelation time
GelTHB-Fe-12-0.1-16	$40 \pm 2 \min$
GelTHB-Fe-16-0.1-16	$31 \pm 4 \min$
GelTHB-Fe-20-0.1-16	$12 \pm 2 \min$
GelTHB-Fe-20-0.05-16	$39 \pm 6 \min$
GelTHB-Fe-20-0.2-12	$16 \pm 1 \min$
GelTHB-Fe-20-0.2-16	<1 min
GelTHB-Fe-20-0.2-20	<1 min

Table S1. Gelation time of GelTHB-Fe hydrogels with different recipes



Figure S1. UV-vis absorbance spectra of gelatin, GelTHB and THB solution.



Figure S2. FT-IR spectra of gelatin, Gel-Fe and GelTHB-Fe hydrogel powder. The absorption peak of C=N derived from Schiff-base reaction was not be observed in GelTHB-Fe hydrogel because of the overlapping with the stretching vibration peak of C=O in gelatin around 1640 cm<sup>-1</sup>.



Figure S3. Adhesion strength of the GelTHB-Fe-20-0.2-16 hydrogels to PMMA with different curing time varying from 0.5 to 6 h.



Figure S4. Cytotoxicity evaluation against L929 cells using GelTHB-Fe hydrogels with different THB concentrations from 0.01 M to 0.2 M (gelatin and  $Fe^{3+}$  ion concentrations were fixed at 20 wt% and 16 mM, respectively).