Supplementary Information for

Self-assembling peptide-polysaccharide hybrid hydrogel as a potential carrier for drug delivery

Renliang Huang Wei Qi Libin Feng Rongxin Su Zhimin He*

State Key Laboratory of Chemical Engineering, School of Chemical Engineering and Technology, Tianjin University, Tianjin 300072, China, Fax: (+86)22-2740-7599 E-mail: qiwei@tju.edu.cn

Supporting Figures

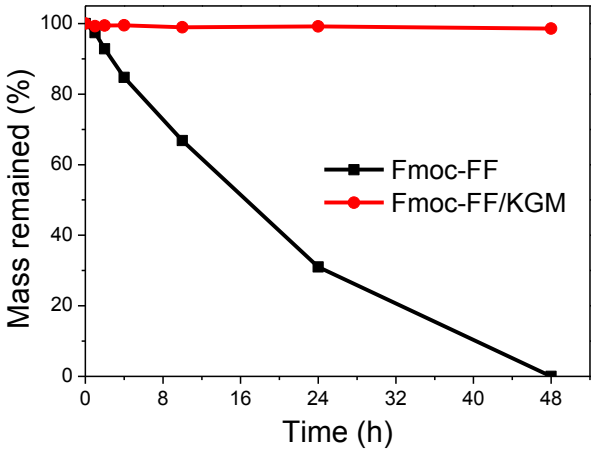

Fig. S1 The mass change of Fmoc-FF and Fmoc-FF/KGM hydrogel over incubation time in phosphate buffer solutions

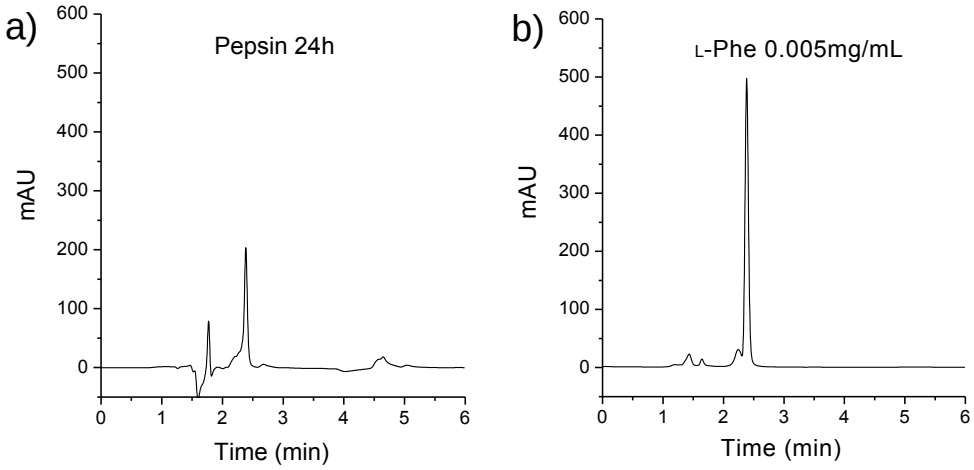

Fig. S2 HPLC spectra of supernatant after *in vitro* digestion test of Fmoc-FF hydrogel (a) and L-phenylalanine solution (b). Operating conditions: Aglient Eclipse XDB-C18 column, acetonitrile:water (30:70, v/v), 0.8 mL/min, injection volume of 100 μL, and 210 nm.

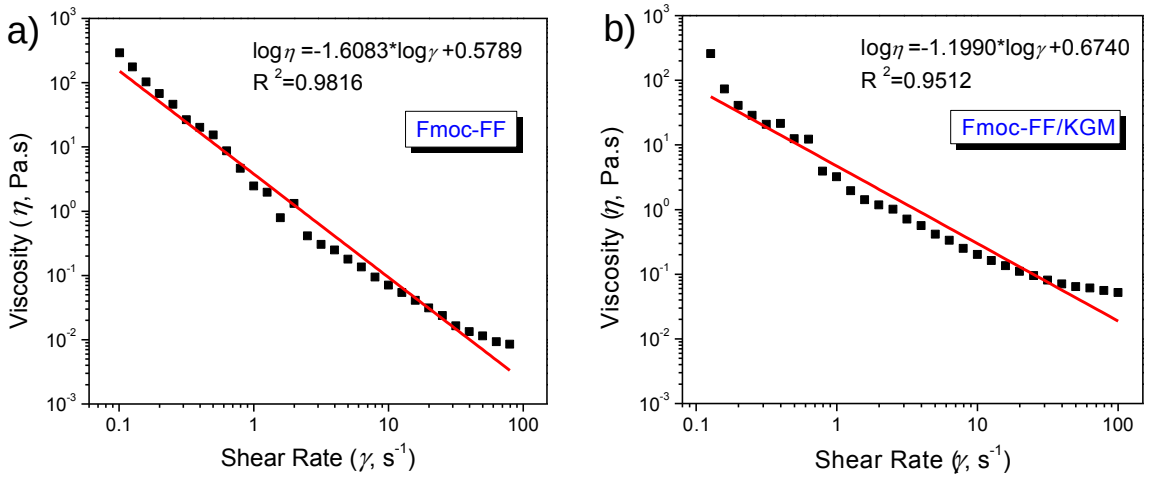

Fig. S3 Viscosity (η) versus shear rate (γ) curves of self-assembled Fmoc-FF peptide hydrogel (a) and Fmoc-FF/KGM hybrid hydrogel (b).

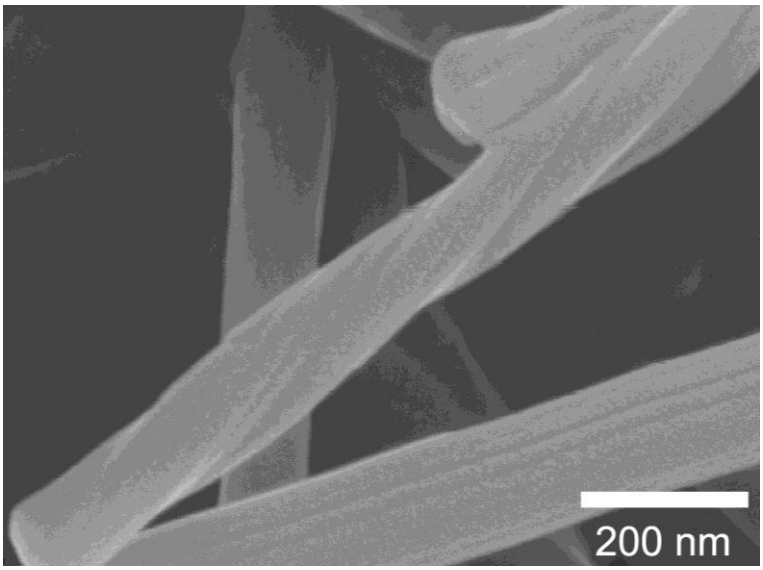

Fig. S4 A SEM image of self-assembled Fmoc-FF/KGM hybrid hydrogel dried using a quick-freeze/ vacuum drying method.

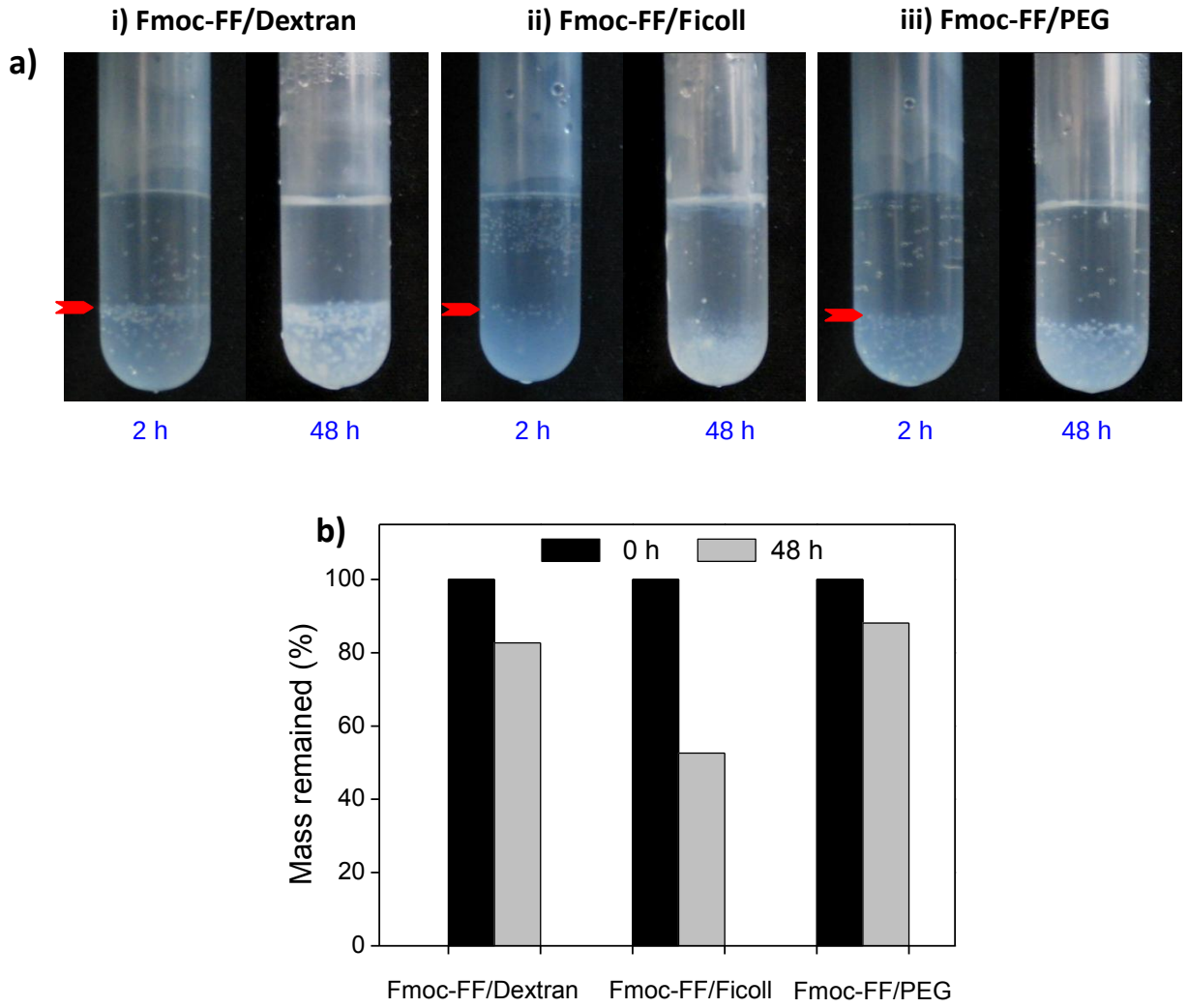

Fig. S5 The stability in buffer solutions of self-assembled Fmoc-FF/Dextran (i), Fmoc-FF/Ficoll (ii), Fmoc-FF/PEG (iii) hybrid hydrogels. a) Macroscopic images of the Fmoc-FF hybrid hydrogels incubated at 37°C in phosphate buffer solutions (10 mM, pH 7.4), the concentration of Fmoc-FF, Dextran, Ficoll , and PEG were 2 mg/mL, respectively. b) The remained quantity of Fmoc-FF hybrid hydrogels after incubation in phosphate buffer solutions.

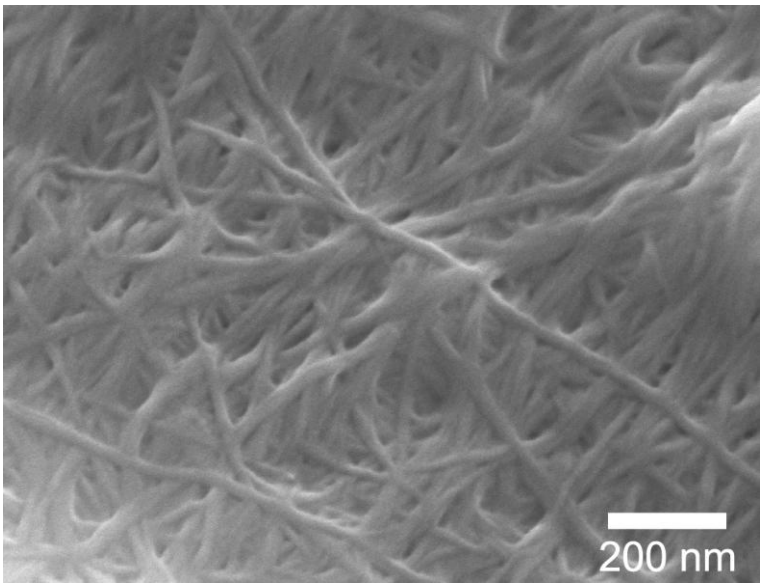

Fig. S6 A SEM image of docetaxel-loaded Fmoc-FF peptide hydrogel. The concentration of docetaxel and Fmoc-FF was 0.1 mg/mL and 2 mg/mL, respectively.

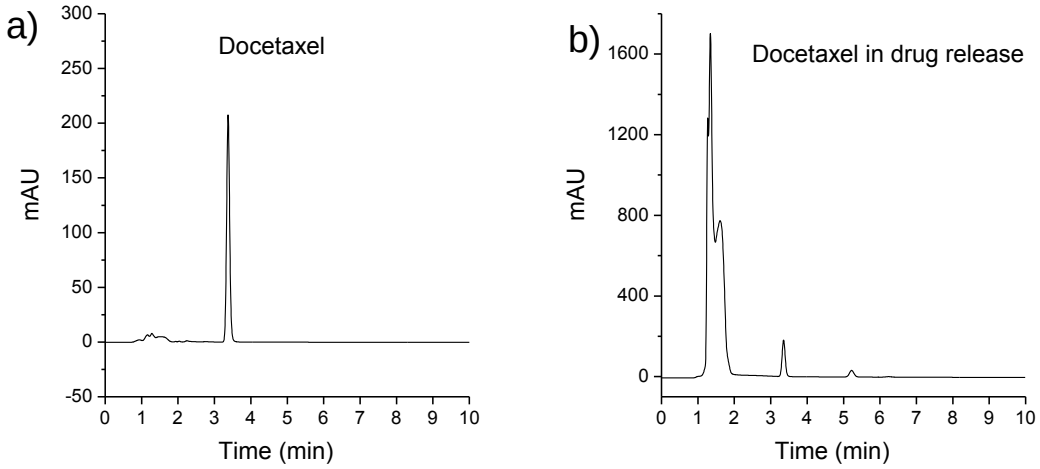

Fig. S7 HPLC spectra of docetaxel solution (a) and buffer solution containing docetaxel in drug release study (b). Operating conditions: Aglient Eclipse XDB-C18 column, acetonitrile:water (60:40, v/v), 1.0 mL/min, injection volume of 100 μL, and 229 nm.

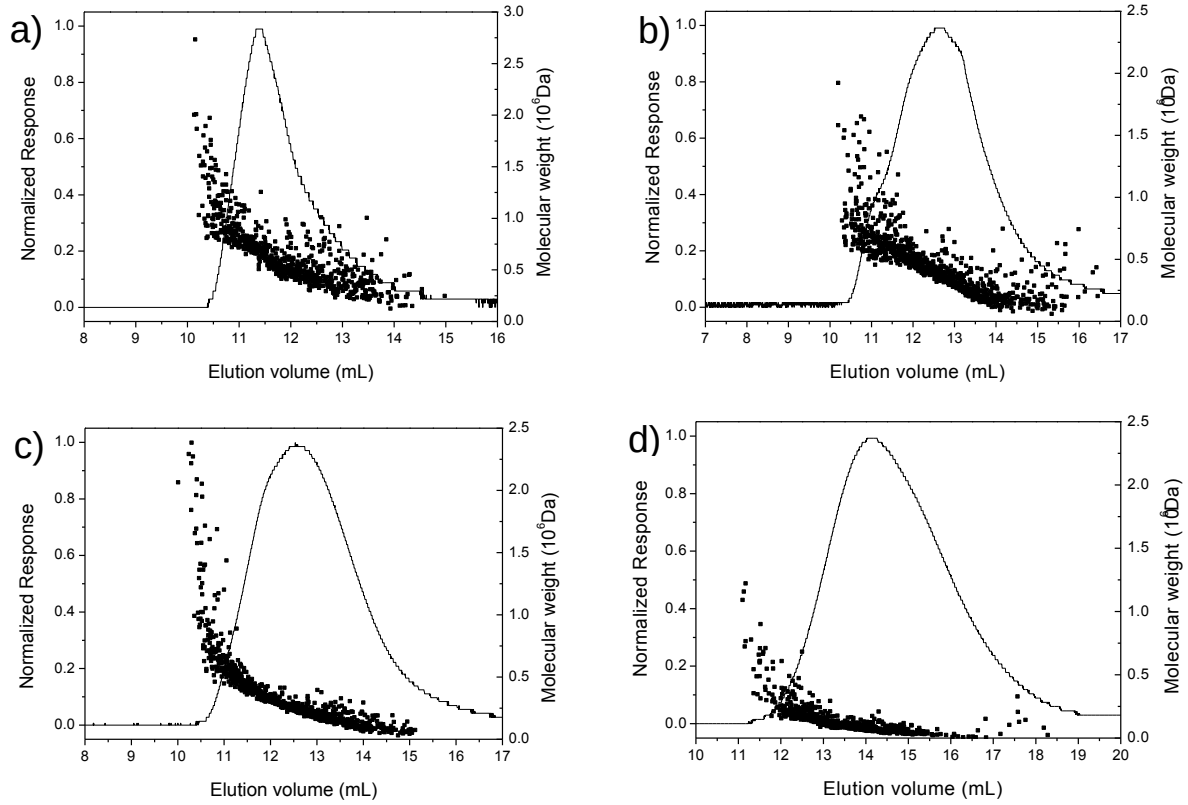

Fig. S8 SEC-MALLS-RI elution profile and its calculated molecular weight distribution of KGM. The KGM concentration was 2 mg/mL, the average molecular weights of KGM was 720 kDa (a), 470 kDa (b), 300 kDa (c), and 100 kDa (d), respectively. Operating conditions: two columns in series (TSK-G3000PW and TSK-G5000PW), column temperature of 35 ^{o}C, mobile phase used was 0.1 mol/L NaCl, flow rate of 1.0 mL/min, and injection volume of 100 μL.