Electronic Supplementary Information

A novel fluorometric assay for trypsin on the basis of gemini anionic surfactant/BSA/NR supramolecular assembly system with favorable salt resistance

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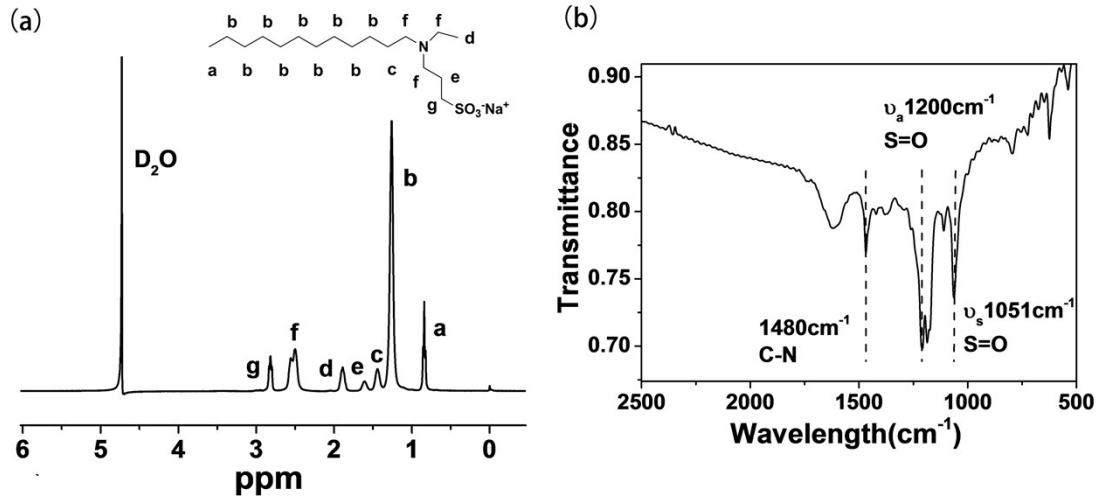

Fig. S1 (a)^{1}H NMR spectrum and (b) FT-IR spectrum of $C_3C_{12}C_3(SO_3)_2$

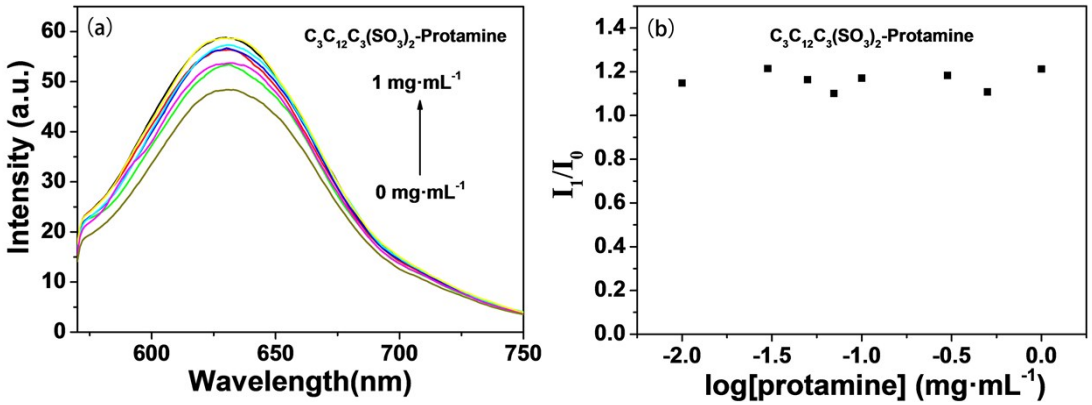

Fig. S2 (a) Fluorescence emission spectra of $C_3C_{12}C_3(SO_3)_2$-protamine solutions with different concentration of protamine; (b) Plot of the I_1/I_0 as a function of logarithm concentrations of protamine in $C_3C_{12}C_3(SO_3)_2$-protamine solutions.

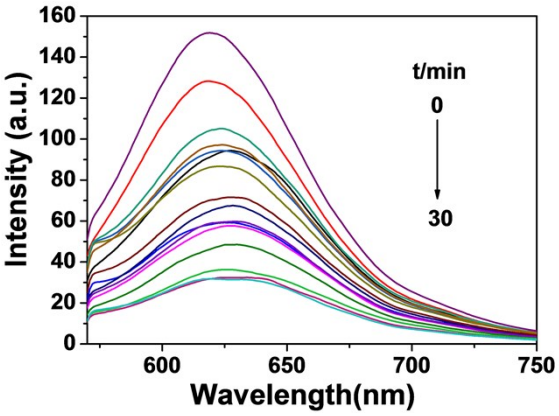

Fig. S3 Time-dependent fluorescence quenching of $C_3C_{12}C_3(SO_3)_2$/BSA /NR assemblies in the presence of trypsin (0.05 mg mL^{-1}).

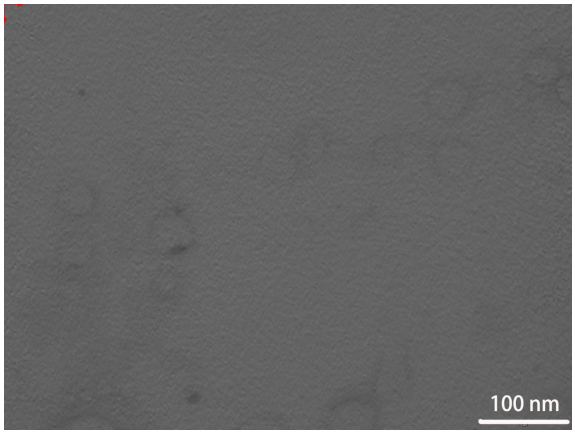

Fig. S4 TEM image of $C_3C_{12}C_3(SO_3)_2$/BSA /NR assemblies with 0.1 mg·mL^{-1} trypsin.

Table S1 A comparison of different methods for trypsin determination

Materials	Methods	Linear range	LODs	Ref.
Electrochemical probe	Electro-chemical	0.005–0.15 μg·mL^{-1}	1.8 ng·mL^{-1}	8
Ag NPs	Colorimetric	2.5–200 ng mL^{-1}	2 ng·mL^{-1}	34
Au nanoclusters	Colorimetric	0.9 μg·mL^{-1}–1.0 mg·mL^{-1}	0.6 μg·mL^{-1}	35
Ag nanoclusters	Fluormetric	0.0–50.0 n·mL^{-1}	1 ng·mL^{-1}	36
Au nanoclusters	Fluormetric	0.01–2 μg·mL^{-1}	0.004 μg·mL^{-1}	37
Fluorescent probe	Fluormetric	0–0.4 μg mL^{-1}	0.0282 ng mL^{-1}	38
Cu nanoclusters	Fluormetric	2–20 ng·mL^{-1}	2 ng·mL^{-1}	39
Carbon dots	Fluormetric	2.5–80 ng mL^{-1}	0.84 ng·mL^{-1}	40
Au nanoclusters	Fluormetric	0.2–100 μg mL^{-1}	0.08 μg mL^{-1}	41
Nile red	Fluormetric	1.6 - 150 ng mL^{-1}	1.6 ng·mL^{-1}	This work

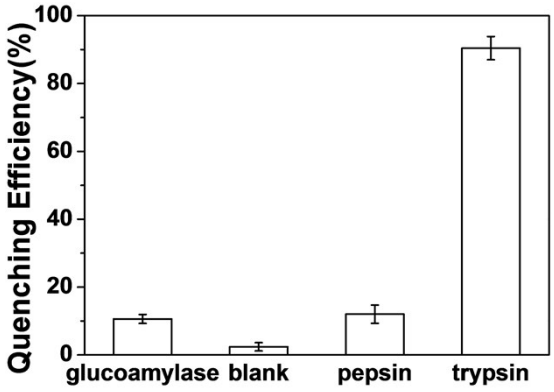

Fig. S5 Quenching efficiency of $C_3C_{12}C_3(SO_3)_2$/BSA/NR solutions at 630 nm with different proteins. The concentration of each protein was 0.1 mg ·mL^{-1}.

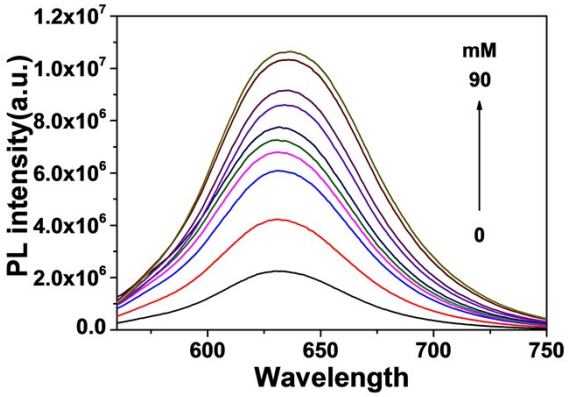

Fig. S6 Fluorescence emission spectra of SDS/protamine/NR solutions with trypsin (0.1 mg·mL^{-1}) at different NaCl concentrations.