Supporting Information

Glycopolymer-Peptide Bioconjugates with Antioxidant Activity via RAFT Polymerization

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Determination of Pyridyldisulfide Functionality. PAcGlcEMA-PDS (1 mg) was dissolved in 1 mL of acetonitrile. 22.4 μl of DTT (10 mg/mL) solution was added in the solution. After 3 h, UV absorbance of the solution was measured at 370 nm to determine the concentration of pyridine-2-thione in acetonitrile. The pyridyldisulfide functionality of the polymer was calculated by the following equation:

Pyridyldisulfide functionality = (Absorbance of polymer sample at 370 nm / ε) × $(1/C_{polymer})$

Where ε is the extinction coefficient of 2-pyridinethione in acetonitrile at 370 nm (ε = 2170 M^{-1} cm^{-1}),[1] and $C_{polymer}$ is the molar concentration of polymer calculated based on the molecular weight determined by ^1H NMR.

Turbidity Assay. A typical example is described as follows: PGlcEMA-GSH (1 mg) was dissolved in 1 mL of pH 7.4 PBS (phosphate buffered saline) buffer solution.The solution of Con A in PBS (pH 7.4) was added to PGlcEMA-GSH solutions. The transmittance of the mixed aqueous solution were determined by UV-vis spectroscopy at λ = 420 nm at various time.

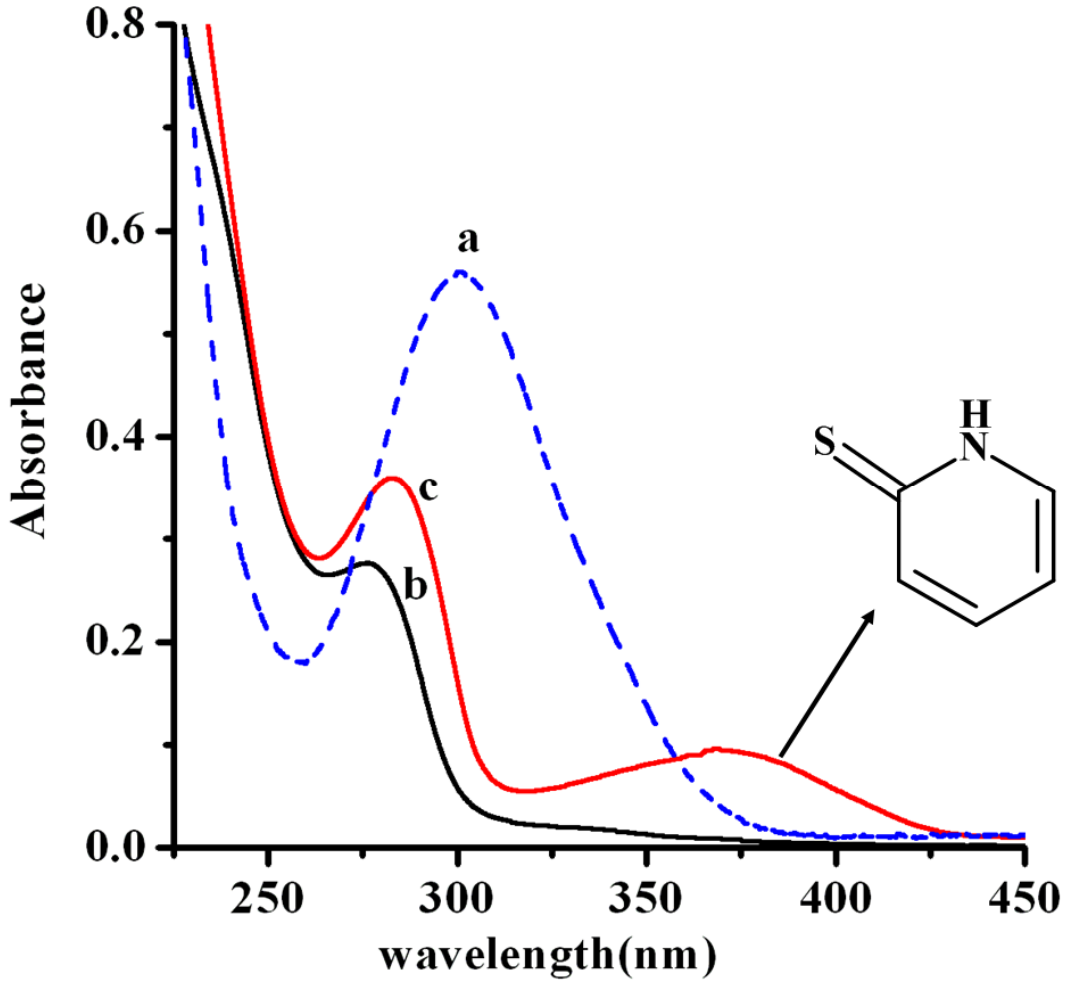

Fig. S1. Uv-vis spectra of (a) protected glycopolymers PAcGlcEMA (b) after modification with PDS (PAcGlcEMA-PDS) and (c) after reaction with DTT in acetonitrile.

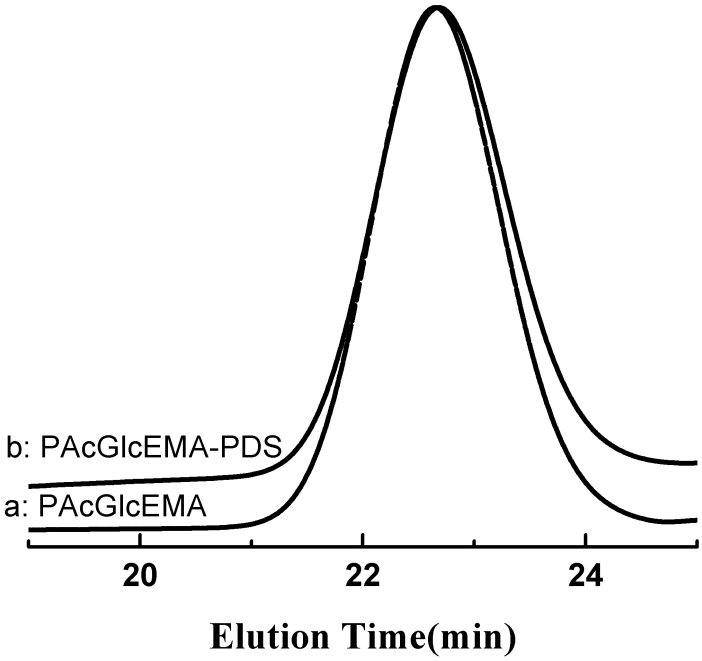

Fig. S2. GPC traces of (a) PAcGlcEMA and (b) PAcGlcEMA-PDS.

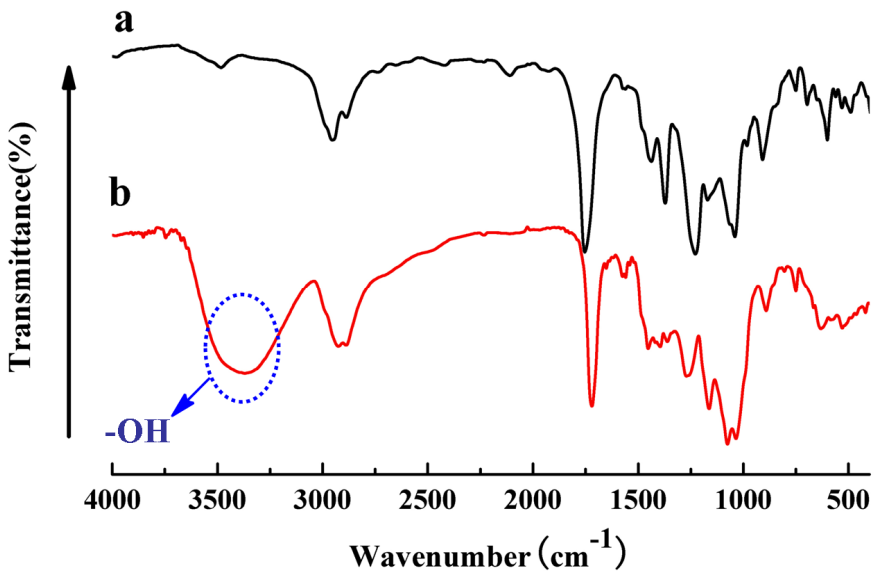

Fig. S3. FTIR spectra of (a) before and (b) after hydrolysis of PAcGlcEMA-PDS.

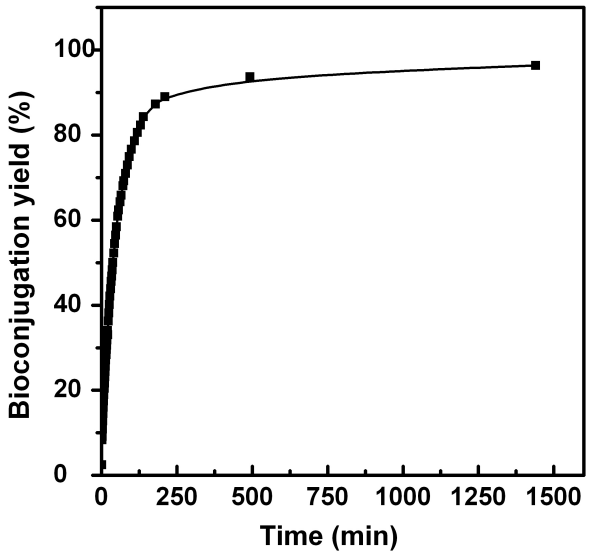

Fig. S4. Dependence of the bioconguation yield of the reaction of PGlcEMA-PDS and peptide GSH on time.

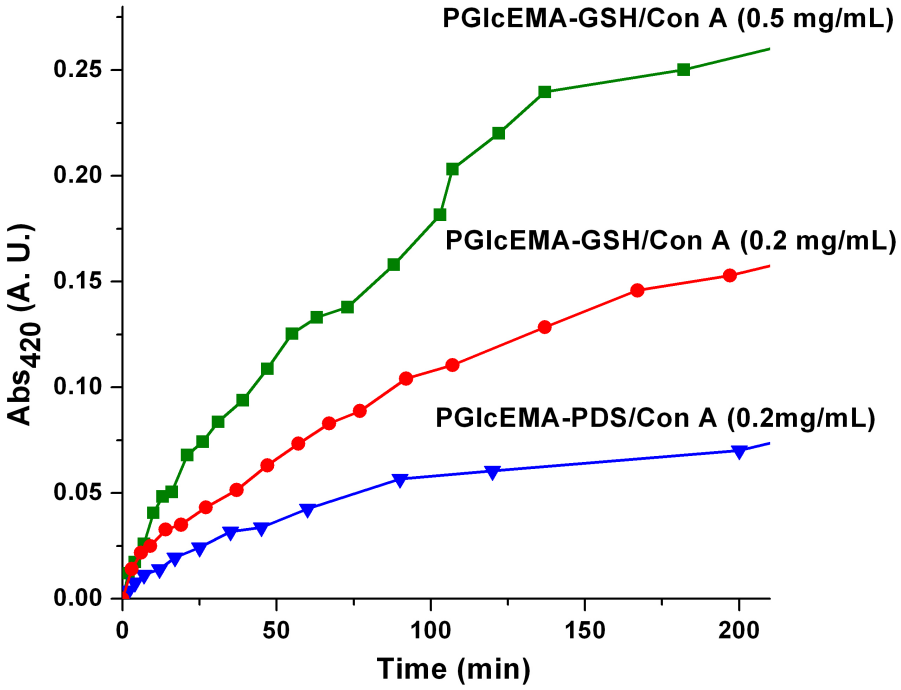

Fig. S5. Turbidimetry assay results. PGLcEMA-GSH (0.5 mg/mL), PGlcEMA-PDS (0.5 mg/mL), pH 7.4, PBS.

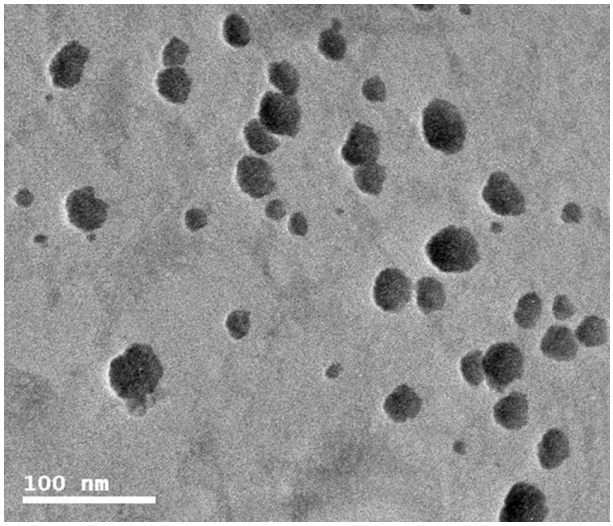

Fig. S6. TEM image of PGlcEMA-GSH/Con A in PBS solution (pH7.4).

References:

1. C. Boyer, V. Bulmus, T. P. Davis, *Macromol. Rapid Commun.* 2009, **30,** 493–497.