Disulfide crosslinked phosphorylcholine micelles for triggered release of camptothecin

Samantha McRae Page, Molly Martorella, Sangram Parelkar, Irem Kosif and Todd Emrick*

Polymer Science & Engineering Department, 120 Governors Drive,

University of Massachusetts, Amherst, Massachusetts, 01003

Supporting Information

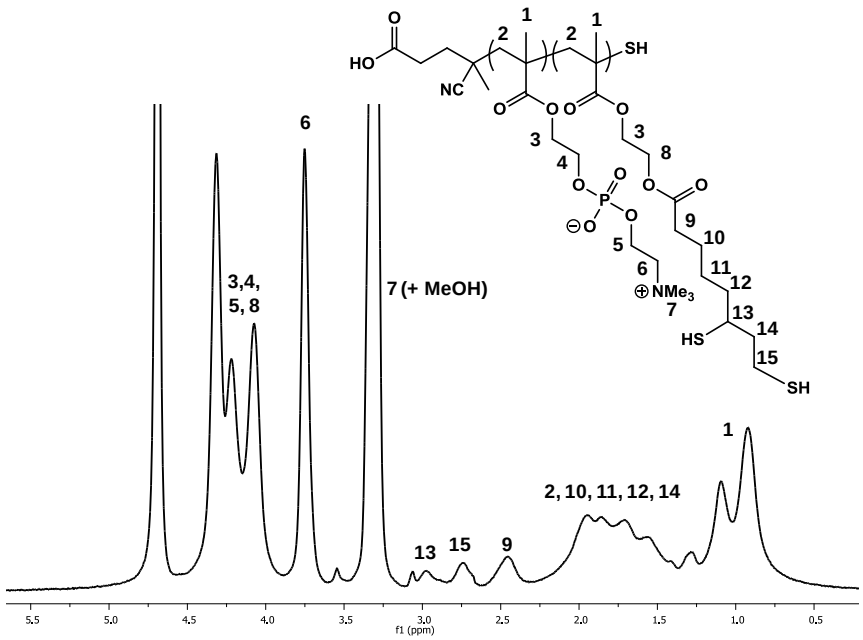

Figure S1. ^{1}H NMR spectrum (1:1 MeOD: $CDCl_3$) of block copolymer 3.

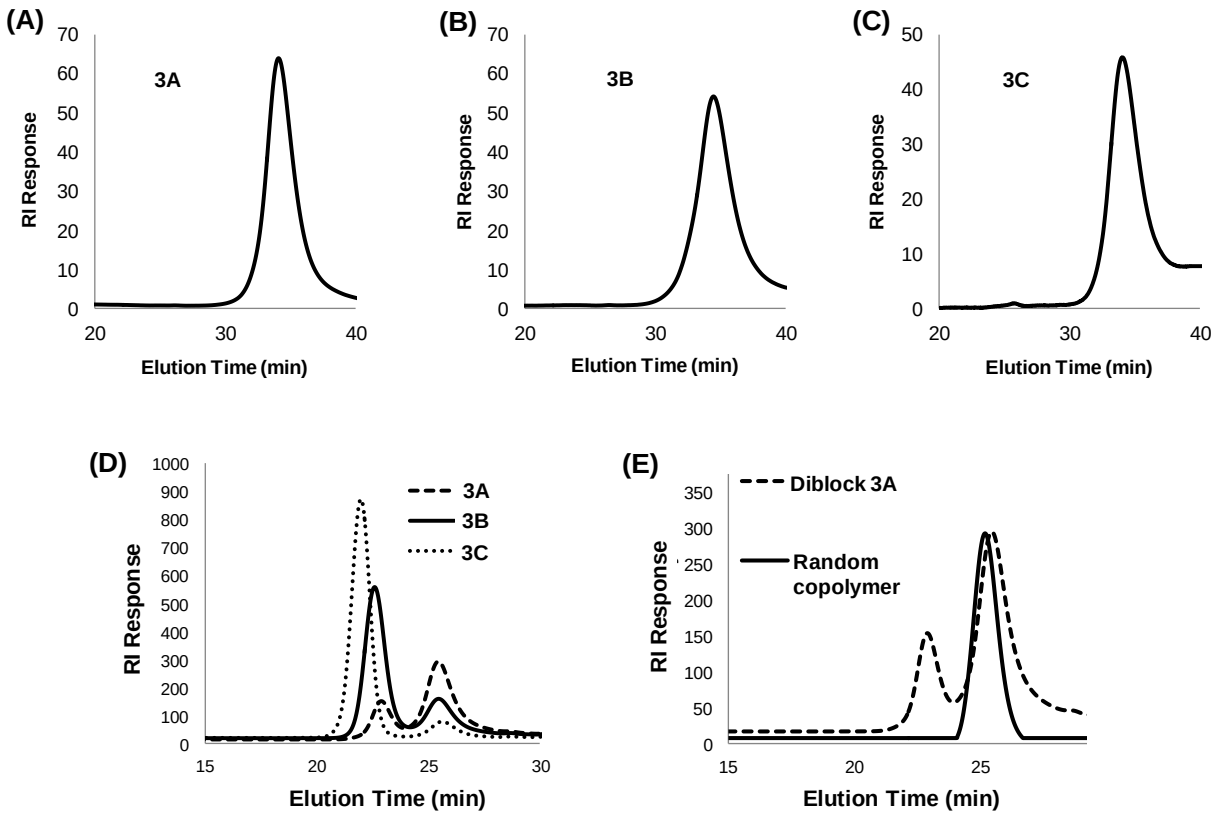

Figure S2. (A)-(C): GPC trace of copolymers 3A-C in TFE (0.2 M NaTFAc) (copolymers were treated with DTT prior to injection to minimize aggregation from disulfide formation); (D): GPC of block copolymers 3A-3C in water (0.1 M $NaNO_3$ + 0.01 % NaN_3), showing increased aggregation with DHLA-block length; (E): GPC of block copolymer 3A compared with a random copolymer sample of comparable theoretical molecular weight and % DHLA (Mn 15,000 g/mole; 15% DHLA).

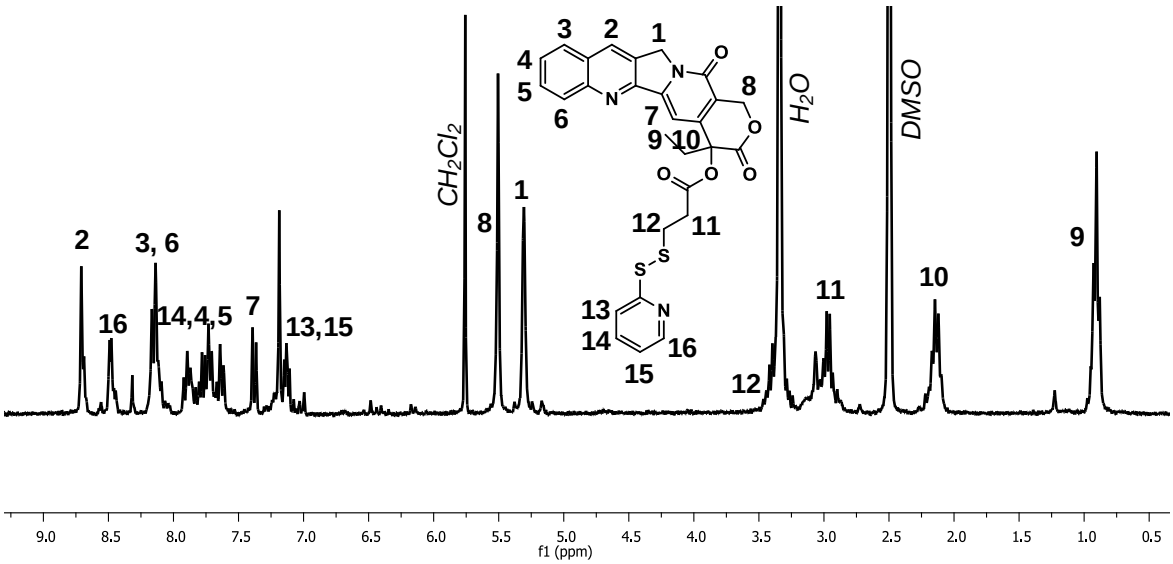

Figure S3. ^{1}**H NMR spectrum (DMSO-*d*6) of CPT-pyridyl disulfide (6).**

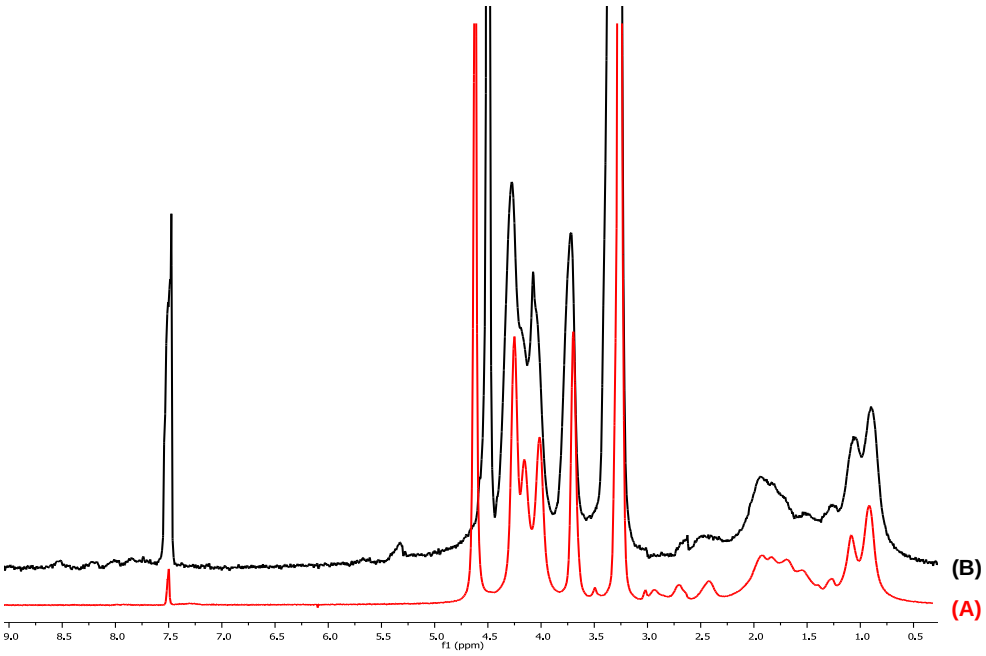

Figure S4. ^{1}**H NMR spectra of (A) uncross-linked polymer and (B) cross-linked polymer micelles loaded with CPT, showing the disappearance of the distinct DHLA resonances from 2.5 to 3.5 ppm, an overall broadening of peaks, and broad CPT signals from 8 to 9 ppm.**

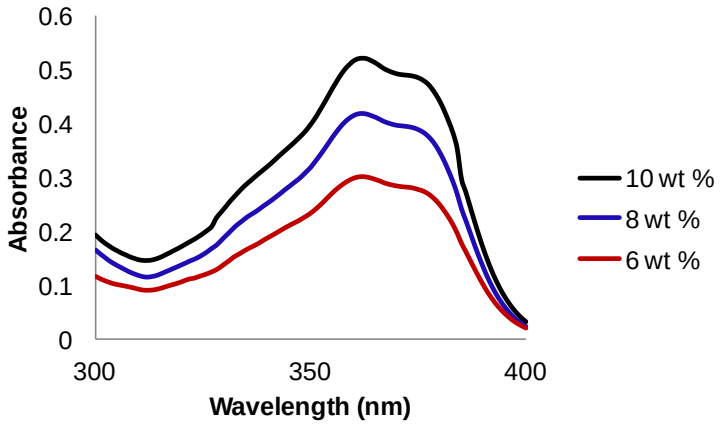

Figure S5. UV/Vis spectroscopy of CPT-loaded cross-linked polymer micelles at various weight percent camptothecin.

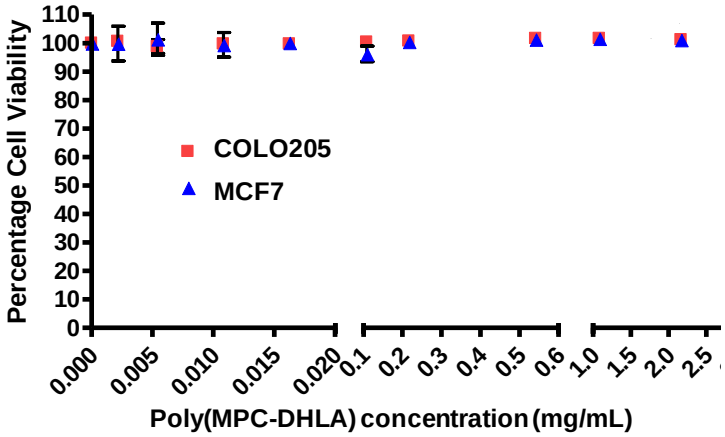

Figure S6. In vitro cytotoxicity of poly(MPC-DHLA) in cell culture of human breast (MCF7) and colorectal (COLO205) adenocarcinoma cells. The polymer is non-toxic at all concentrations tested. Error bars represent ± standard deviation.