Electronic Supplementary Material (ESI) for Polymer Chemistry

Supporting information

Rapidly thiol-responsive degradable block copolymer nanocarriers with facile bioconjugation

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Figure S1. Overlaid GPC traces of ssPES in presence of DTT (1 mole equivalent to disulfides) in THF over degradation time. The arrow indicates the lower limit in determining the molecular weight of ssPES.

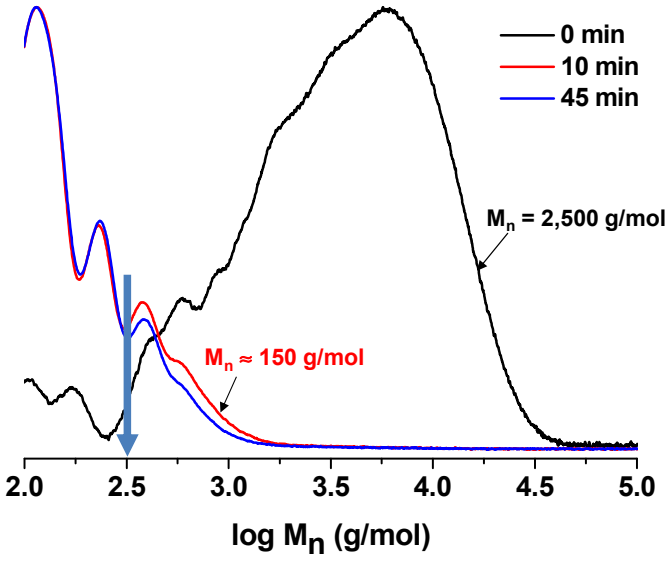
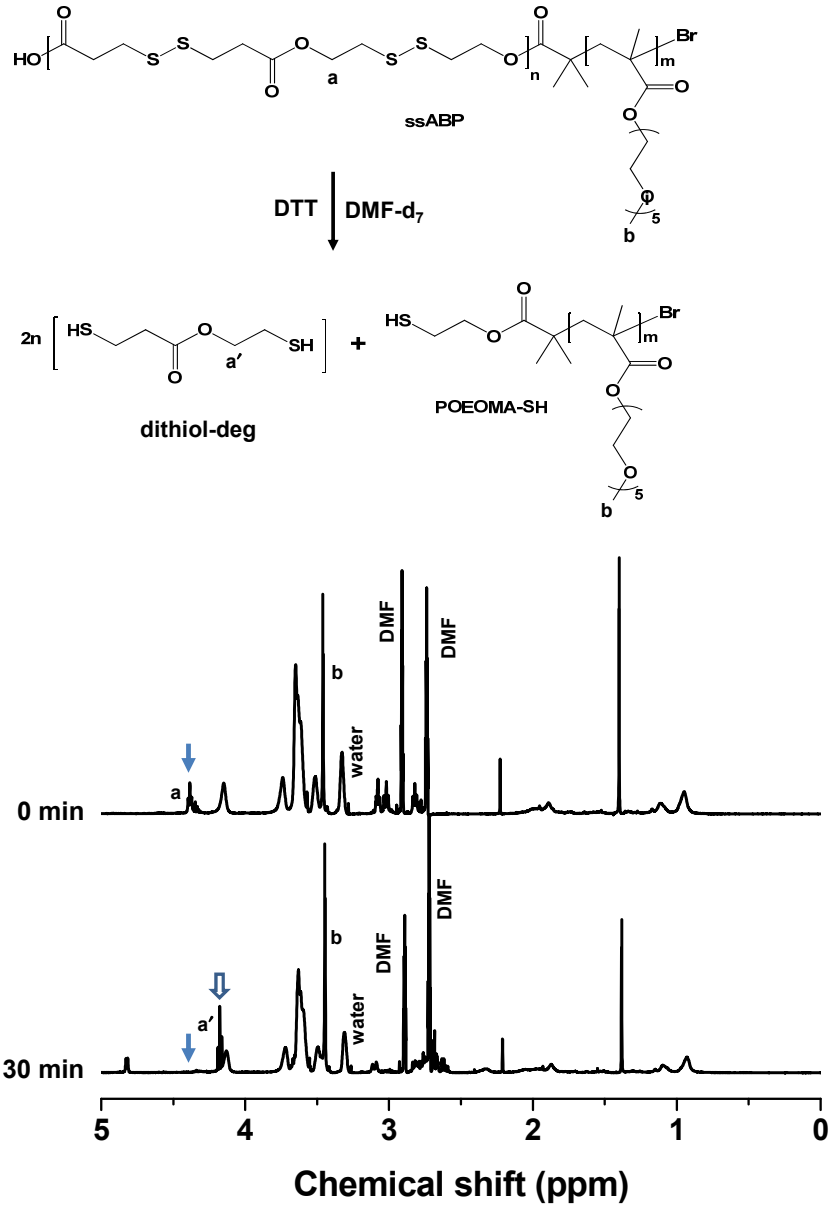


Figure S2. ^{1}H-NMR spectra of ssABP before and 30 min after addition of DTT (1 mole equivalent to disulfides) in DMF-d_7.



A peak (a) at 4.4 ppm corresponding to methylene protons adjacent to ester linkages in ssPES block completely disappeared and a new peak at 4.2 ppm appeared. In addition, peaks at 2.5-2.8 ppm corresponding to other methylene protons in ssPES block changed. These results suggest the degradation of significant amount of ssABP upon cleavage of disulfide linkages in ssPES.

Table S1. Degradation of aqueous micellar aggregates mixed with DTT, determined by ^{1}H-NMR.

Time (min)	Integral			Degradation/%
	peak a	peak e	a/e	
0	0.92	3	0.31	100
15	0.4	3	0.13	42.9
30	0.3	3	0.1	32.2
90	0	3	0	0

Peak a: methylene protons adjacent to ester linkages in ssPES block
Peak e: pendent methoxy protons in EO units of POEOMA block

Figure S3. GPC traces of ssABP micellar aggregates mixed with DTT in aqueous solutions over degradation time. For GPC measurements, micellar aggregates were dissolved in THF after evaporation of water at given time intervals.

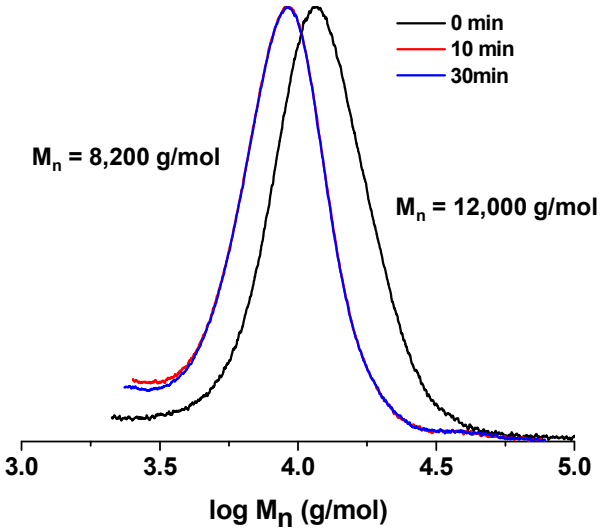


Figure S4. Evolution of fluorescence spectra of NR in mixtures of the same amount of NR with an increasing amount of ssABP-based micelles.

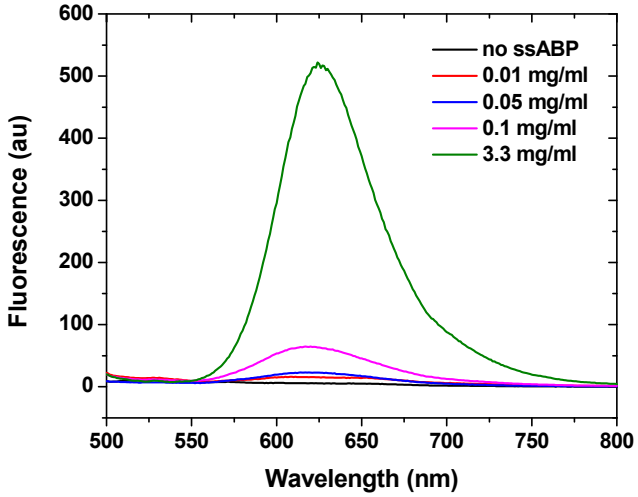


Figure S5. Overlaid fluorescence spectra of NR in mixtures of ssABP-based micelles without (A) and with 5 mM DTT (B) in water.

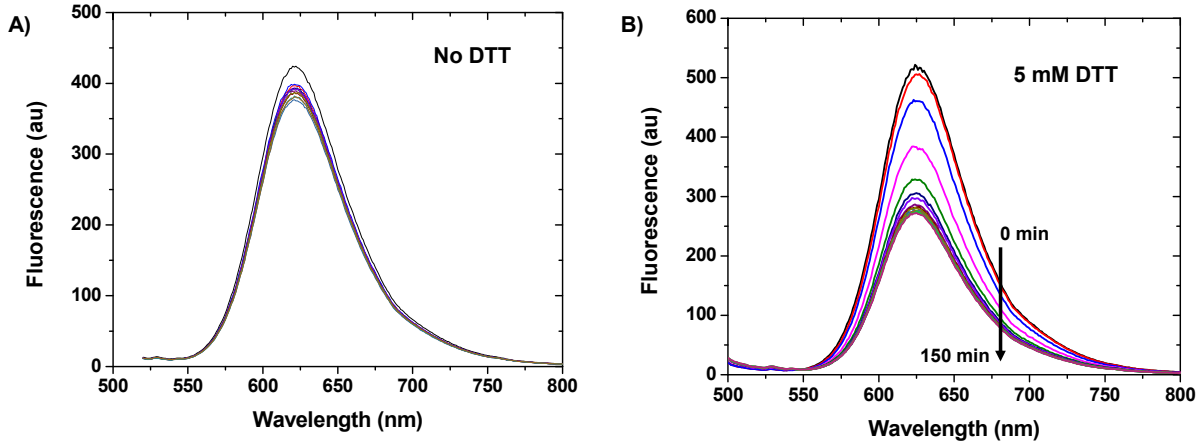


Figure S6. Pressure vs. concentration of ssABP-Biotin to determine CMC = 7 µg/mL using Tensiometry.