Supporting information for:

Stability of Self-assembled Polymeric Micelles in Serum

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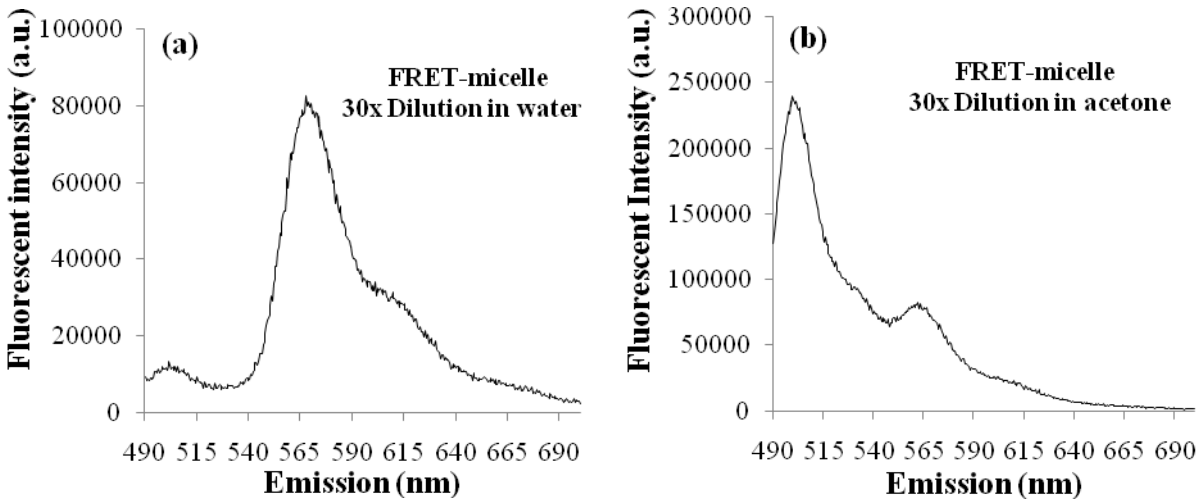


Figure S1. Fluorescence spectra of FRET encapsulated P(LA-*co*-TMCC)-*g*-PEG micelles diluted by (a) 30 times in water where the micelles are stable allowing energy transfer between the FRET pair; and (b) 30 times in acetone where the micelles are unstable, allowing the FRET pairs to escape the micelle and resulting in no energy transfer between the pair.

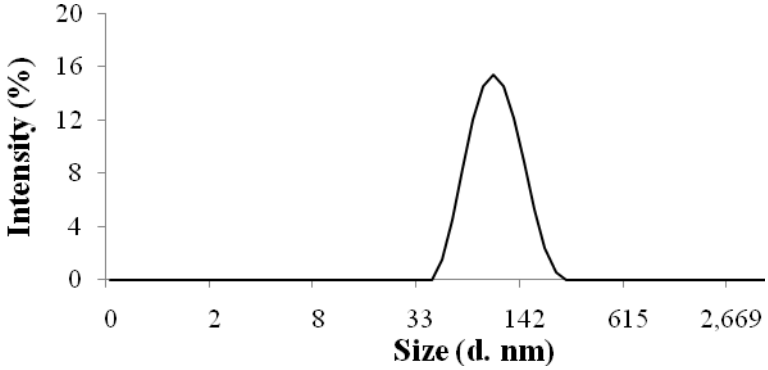
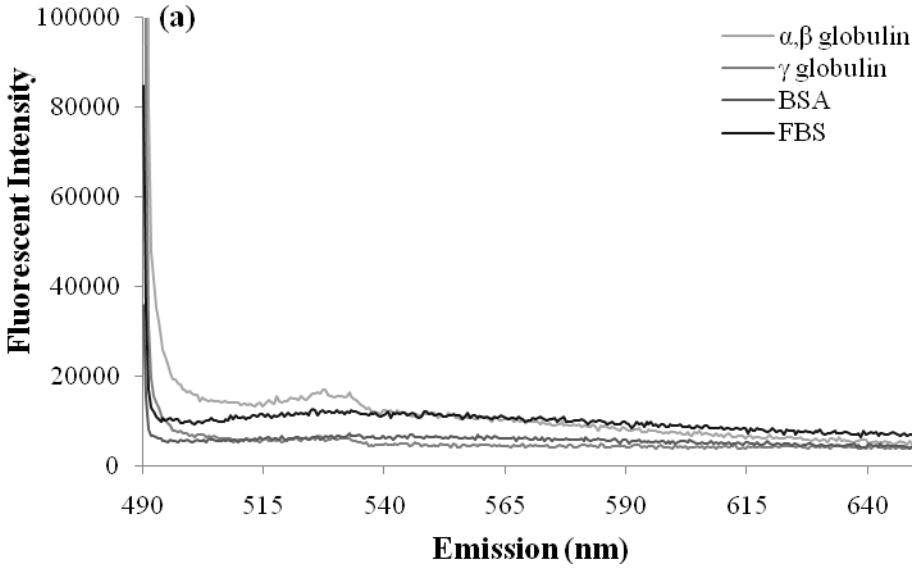
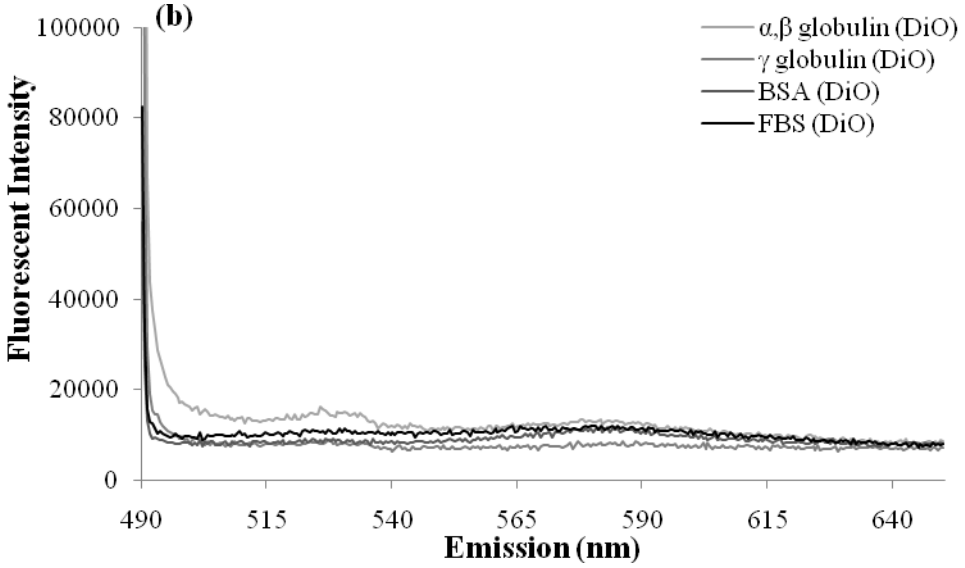


Figure S2. Size distribution of FRET encapsulated micelles with an average (± standard deviation) hydrodynamic diameter of 80 ± 4 nm as measured by DLS.


(a)
Fluorescent Intensity
100000
80000
60000
40000
20000
0
490
515
540
565
590
615
640
Emission (nm)
α,β globulin
γ globulin
BSA
FBS


(b)
Fluorescent Intensity
100000
80000
60000
40000
20000
0
490
515
540
565
590
615
640
Emission (nm)
α,β globulin (DiO)
γ globulin (DiO)
BSA (DiO)
FBS (DiO)

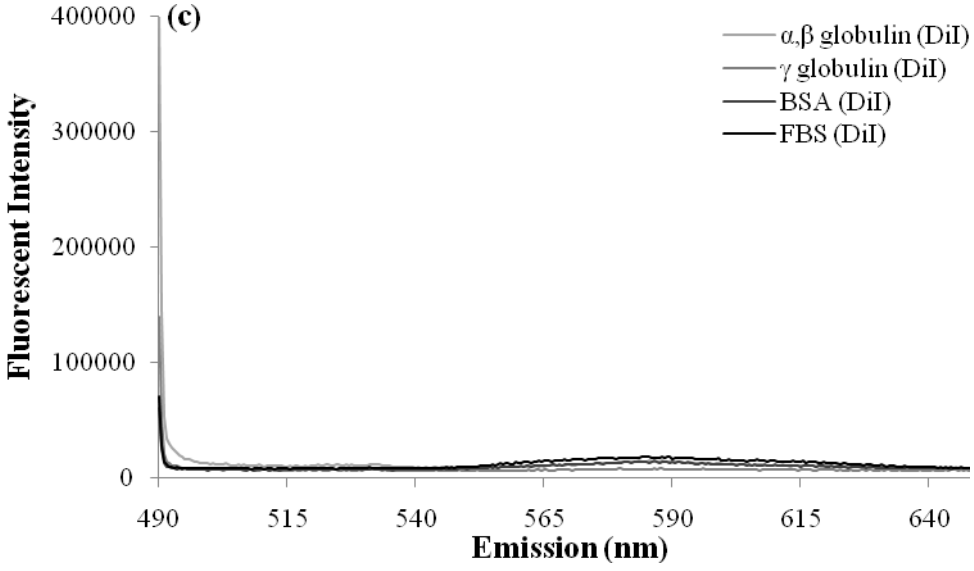

(c)
Fluorescent Intensity
400000
300000
200000
100000
0
490
515
540
565
590
615
640
Emission (nm)
α,β globulin (DiI)
γ globulin (DiI)
BSA (DiI)
FBS (DiI)

Figure S3. Fluorescence spectral measurement of: (a) proteins and FBS alone without dye molecules; (b) proteins and FBS with 7 μg/mL of DiO; and (c) proteins and FBS with 7 μg/mL of DiI. The protein concentrations for each of α, β- and γ-globulins was 15 mg/mL and for BSA was 45 mg/mL.

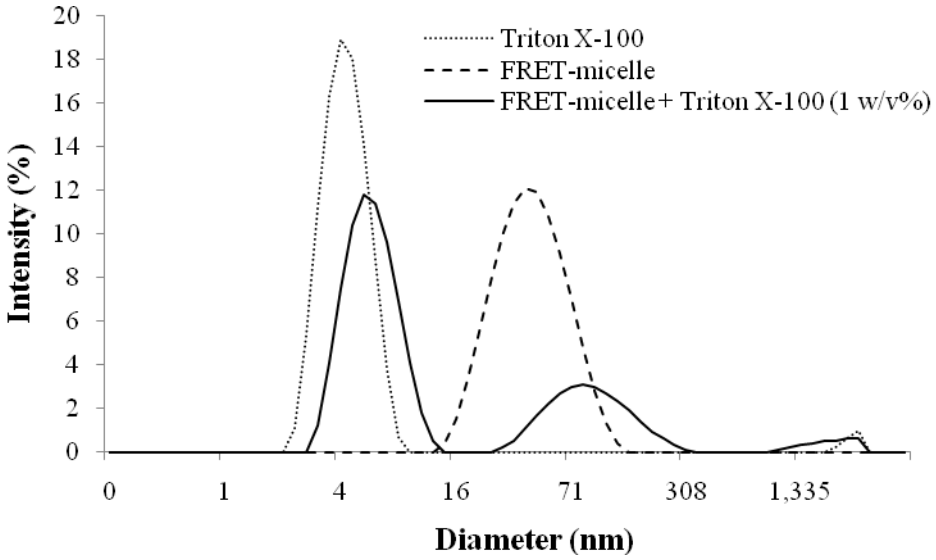


Figure S4. DLS measurement of FRET-micelle alone (dashed); 1 w/v% Triton X-100 solution (dotted); and micelles incubated with 1 w/v% of Triton X-100 (solid).

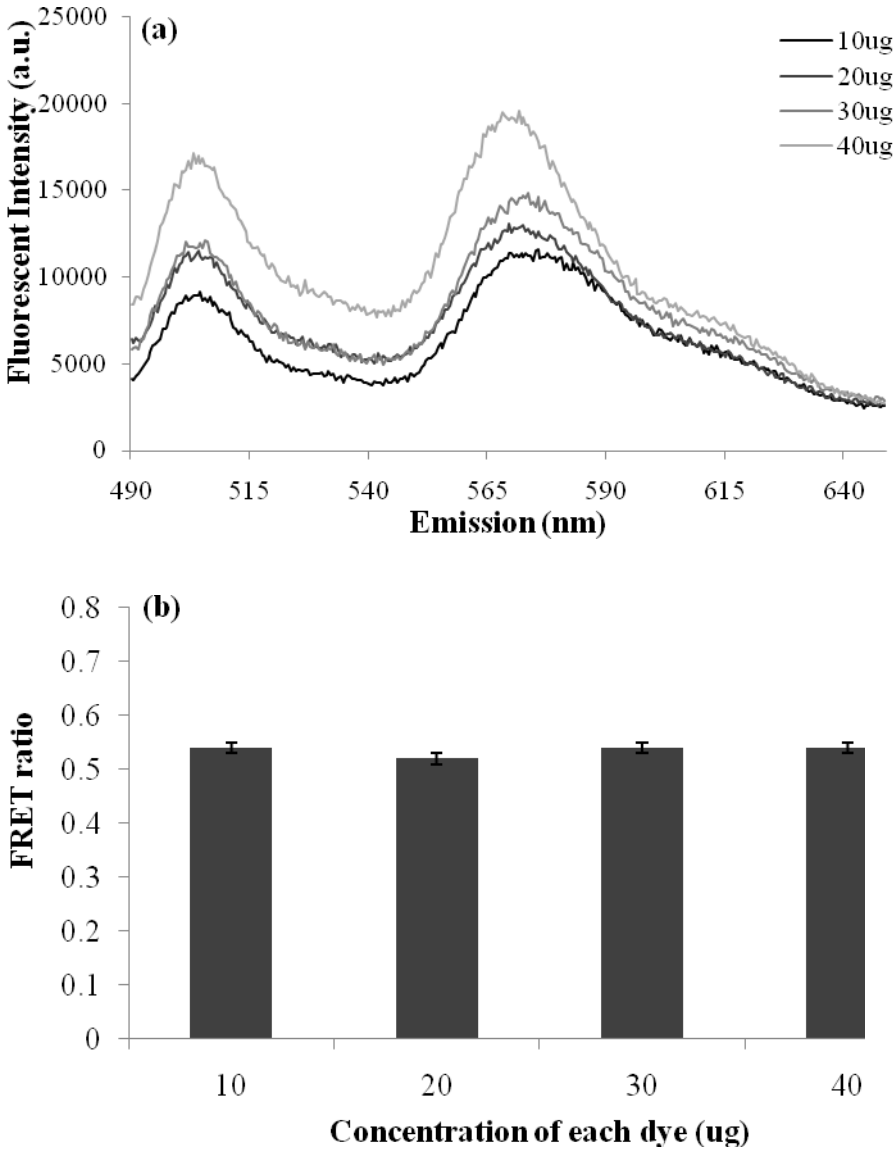


Figure S5. (a) A mixture of DiO and DiI molecules were dissolved in 90% of FBS at final dye concentration of 10, 20, 30 or 40 ug each, and the emission spectra were recorded with an excitation wavelength at 484 nm. (b) The FRET ratio, $I_{565}/(I_{565}+I_{501})$, was calculated at each dye concentration.

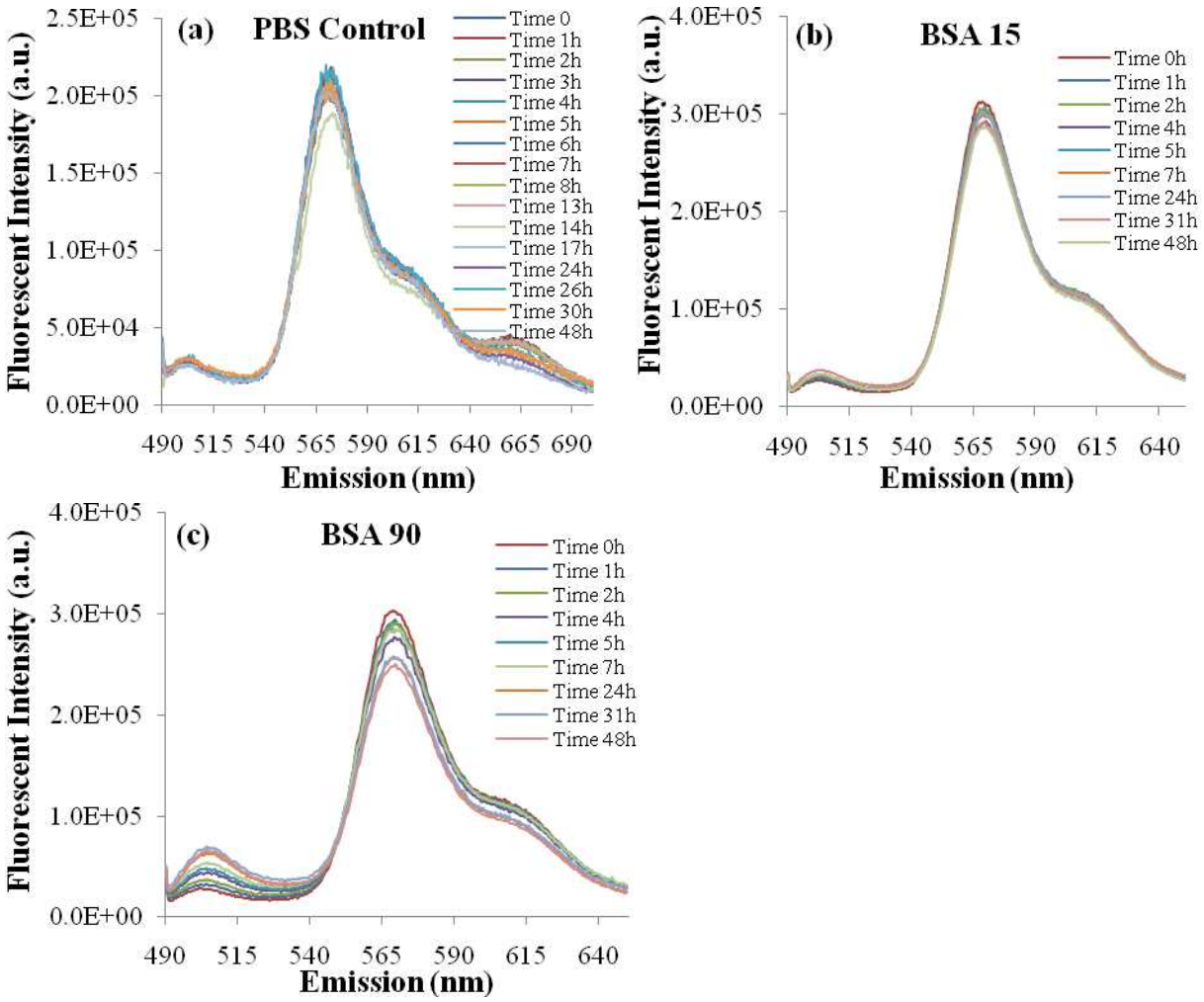


Figure S6. Fluorescence spectral measurement of FRET encapsulated P(LA-*co*-TMCC)-*g*-PEG micelles. (a) Time-resolved spectra of FRET micelles in PBS control; (b) BSA at 15 mg/mL and (c) BSA at 90 mg/mL over 48 h.

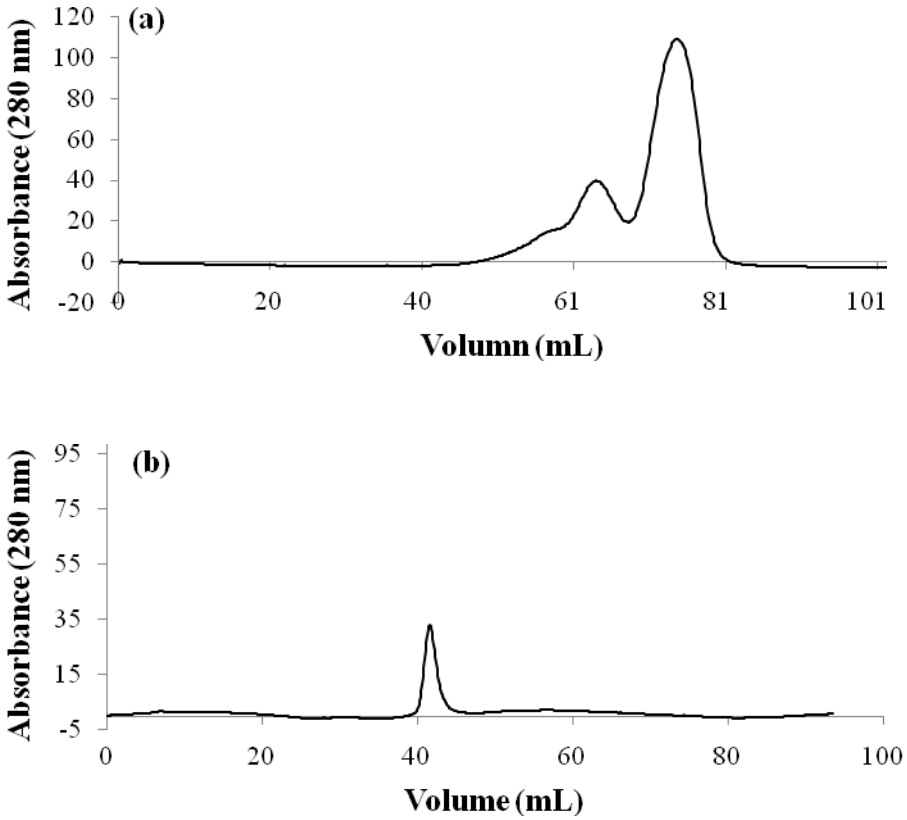


Figure S7. The elution peaks for (a) BSA and (b) micelles from FPLC confirm that peaks are non-overlapping.

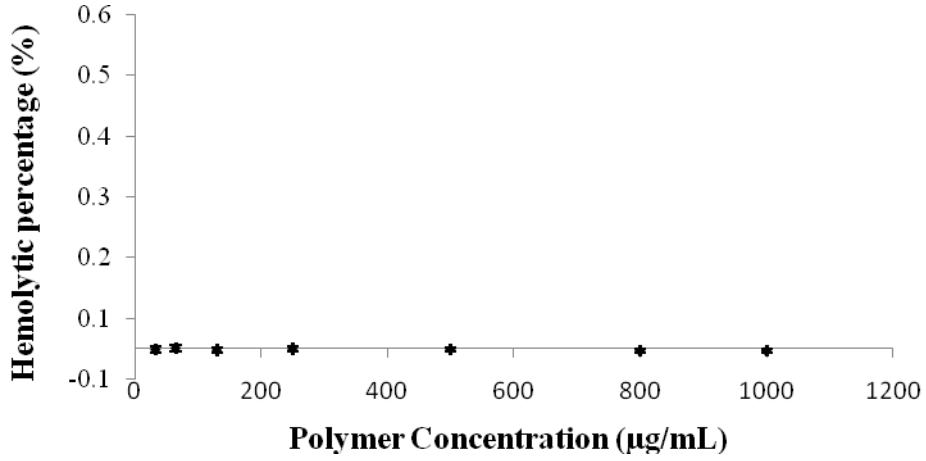


Figure S8. Hemolytic activities of the P(LA-*co*-TMCC)-*g*-PEG micelles as a function of polymer concentrations demonstrate that these micelles are cytocompatible with red blood cells. (n = 3 independent experiments, mean ± standard deviation plotted)

Table 1. Micelles were incubated with BSA at 45 mg/mL for 0, 6, 24 and 48 h, and then separated on Superdex 200 column by FPLC. The elution peak at 42 mL is from micelles whereas the elution peaks at 61 and 71 mL are from BSA. The peak areas were obtained using software UNICORN version 4.12. The ratio of micelle peak area to total BSA peak area was calculated and normalized to time 0.

	Micelle peak	BSA 1	BSA 2		
Time (h)	41.66	60.56	71.42	Micelle/BSA	normalize to time 0
0	91	343	744	0.084	1
6	89	401	770	0.076	0.908
24	96	456	935	0.069	0.824
48	72	332	740	0.067	0.802

Table 2. The diameter of micelles recovered from FPLC after 0, 6, 24 and 48 h incubation in BSA were measured by DLS and compared to the original micelle diameter prior to incubation.

DLS data	z-average in diameter (nm)	PDI
Original micelle	56 ± 2	0.15 ± 0.03
0 h	54 ± 1	0.17 ± 0.01
6 h	52 ± 3	0.17 ± 0.02
24 h	55 ± 1	0.16 ± 0.01
48 h	56 ± 2	0.15 ± 0.02