

Supporting Information

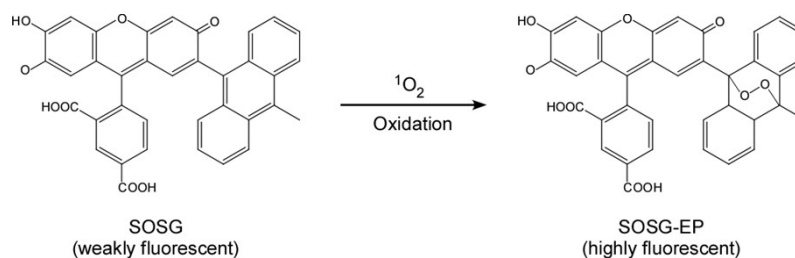
Preparation of thermo-responsive drug carrier consisting of biocompatible triblock copolymer and fullerene

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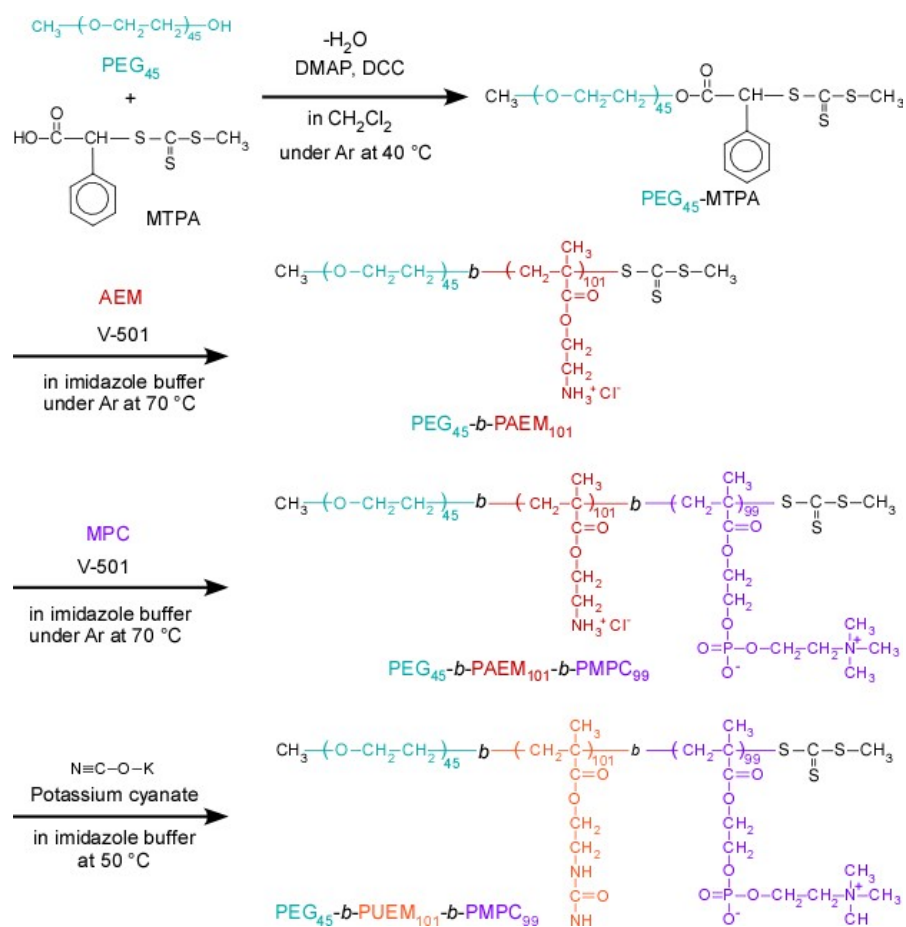
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Scheme S1. Change in the chemical structure of SOSG due to singlet oxygen ($^1\text{O}_2$) detection.



Scheme S2. Synthesis of PEG₄₅-*b*-PUEM₁₀₁-*b*-PMPC₉₉ (EUM).

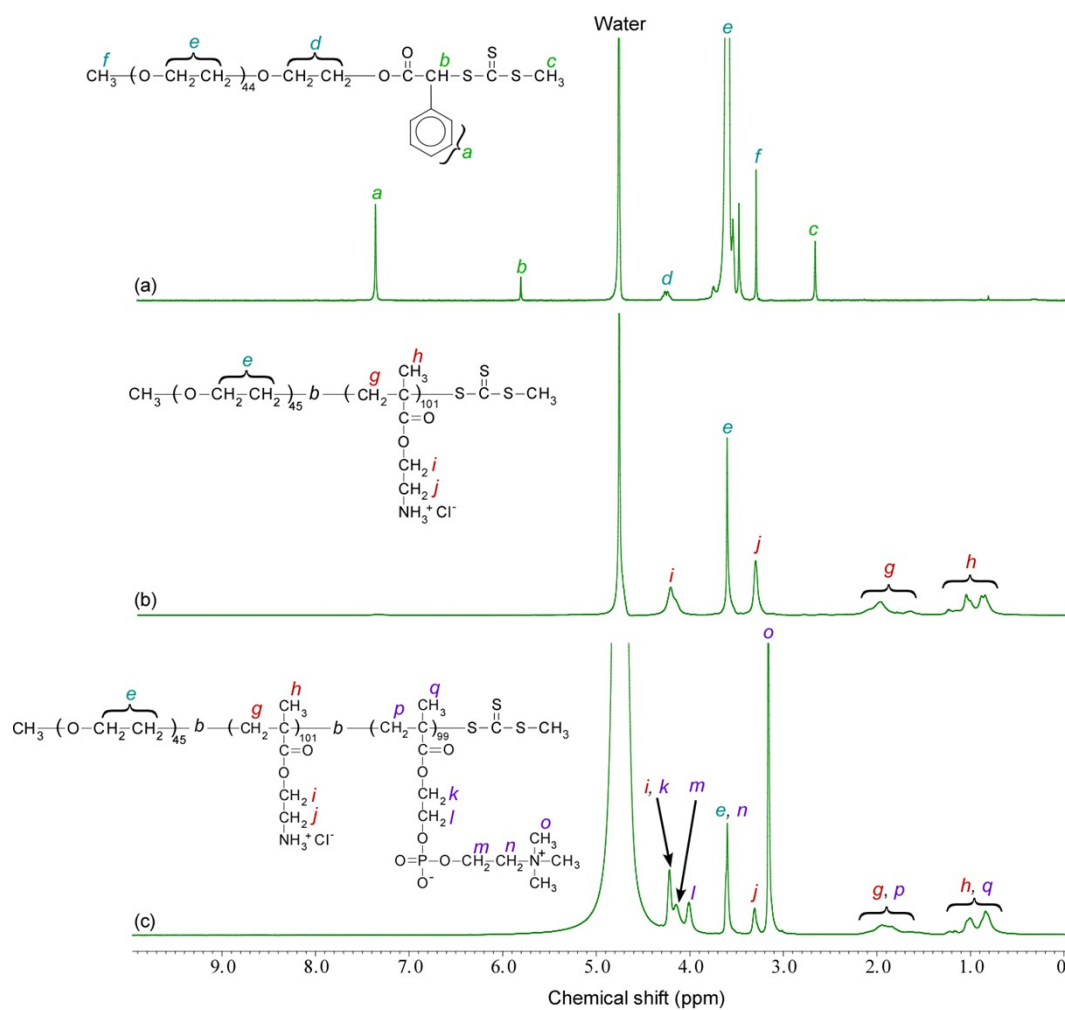


Fig. S1 ^1H NMR spectra for (a) PEG₄₅-MTPA, (b) PEG₄₅-b-PAEM₁₀₁, and (c) PEG₄₅-b-PAEM₁₀₁-b-PMPC₉₉ (EAM) in D_2O at 25°C .

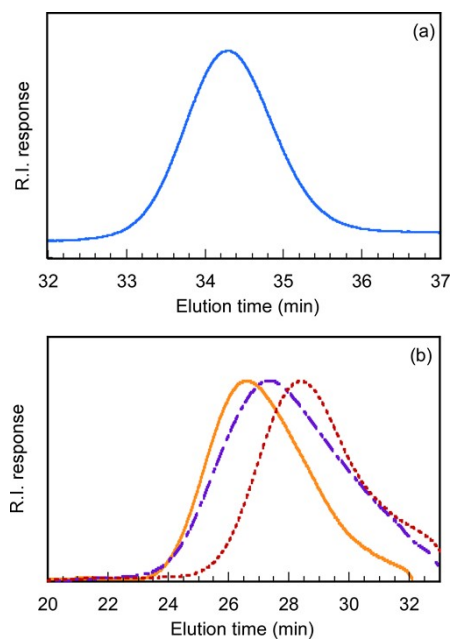


Fig. S2 GPC elution curves for (a) PEG₄₅-MTPA using THF as an eluent at 40°C detected by RI and (b) PEG₄₅-*b*-PAEM₁₀₁ (·····), EAM (-----), and EUM (——) using acetate buffer (0.5 M CH₃COOH and 0.3 M Na₂SO₄) as an eluent at 40°C detected by RI.

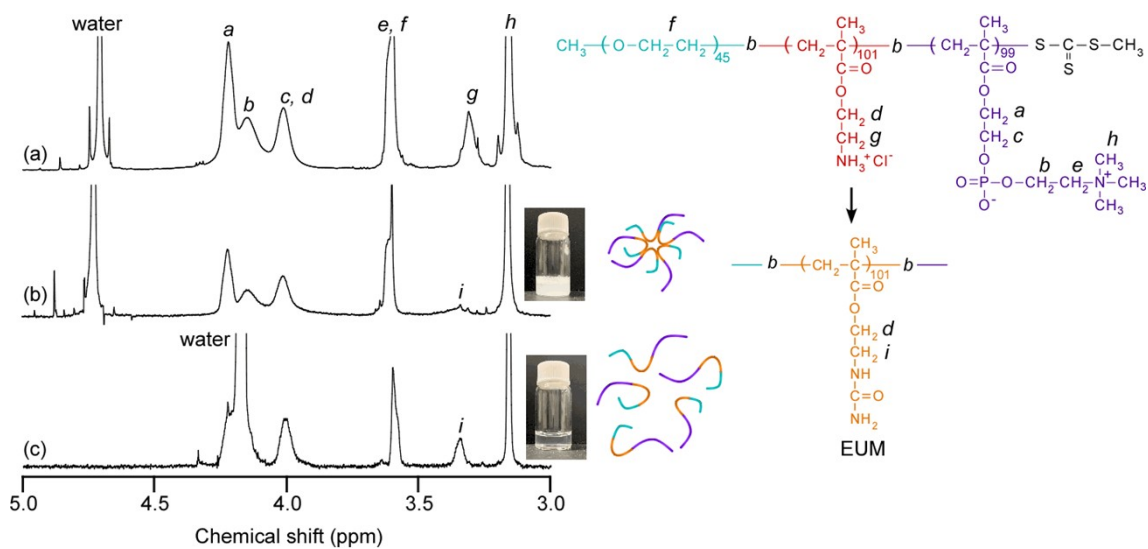


Fig. S3 ¹H NMR spectra for (a) PEG₄₅-*b*-PAEM₁₀₁-*b*-PMPC₉₉ (EAM), (b) PEG₄₅-*b*-PUEM₁₀₁-*b*-PMPC₉₉ (EUM) in D₂O at 25°C, and (c) at 80°C.

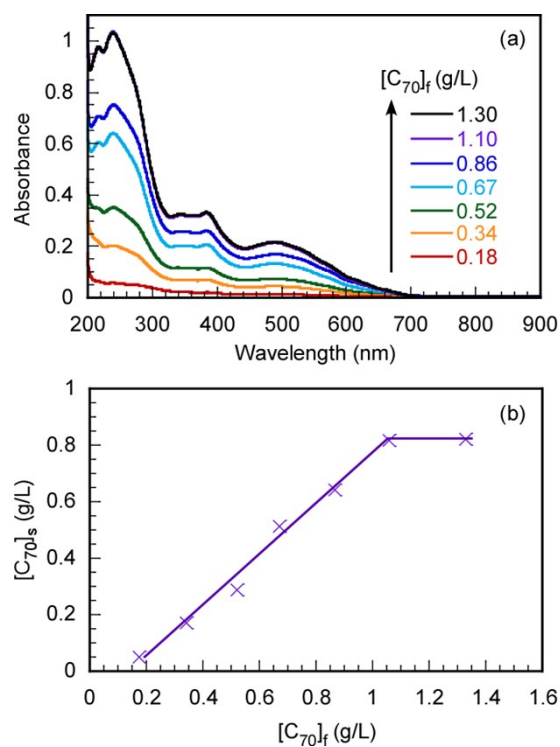


Fig. S4 (a) UV-vis absorption spectra of C₇₀/PMPC at C_p = 2 g/L at varying amounts of used C₇₀ ([C₇₀]_f) and (b) amount of solubilized C₇₀ in PBS ([C₇₀]_s) as a function of [C₇₀]_f.

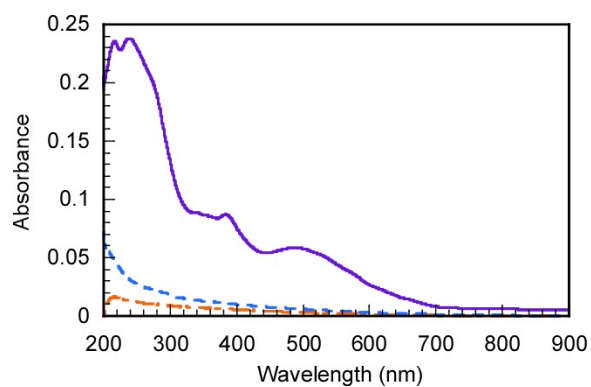


Fig. S5 UV-vis absorption spectra of C₇₀/PMPC (—), C₇₀ with PEG₄₅ (- - - -), and C₇₀ with PUEM₁₀₀ (- · - · -) at C_p = 2 g/L in PBS at 25°C.

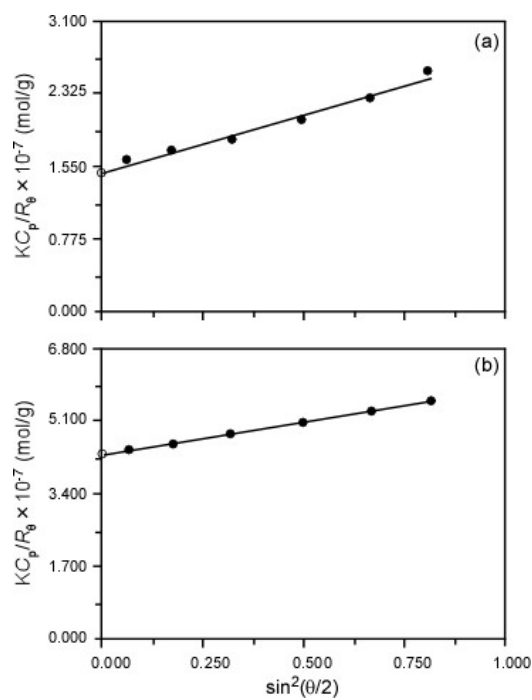


Fig. S6 Zimm plots for (a) C_{70}/EUM and (b) $C_{70}/PMPC$ at $C_p = 0.05$ g/L in PBS at 25°C.

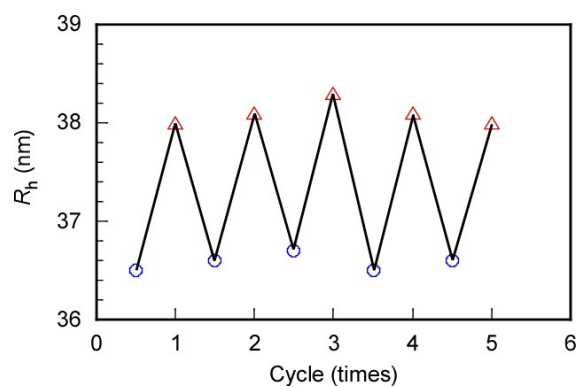


Fig. S7 Hydrodynamic radius (R_h) of C_{70}/EUM ($C_p = 2$ g/L, $[C_{70}]_s = 0.313$ g/L) at (○) 25°C and (△) 70°C in PBS with 5 cycle heating and cooling processes.

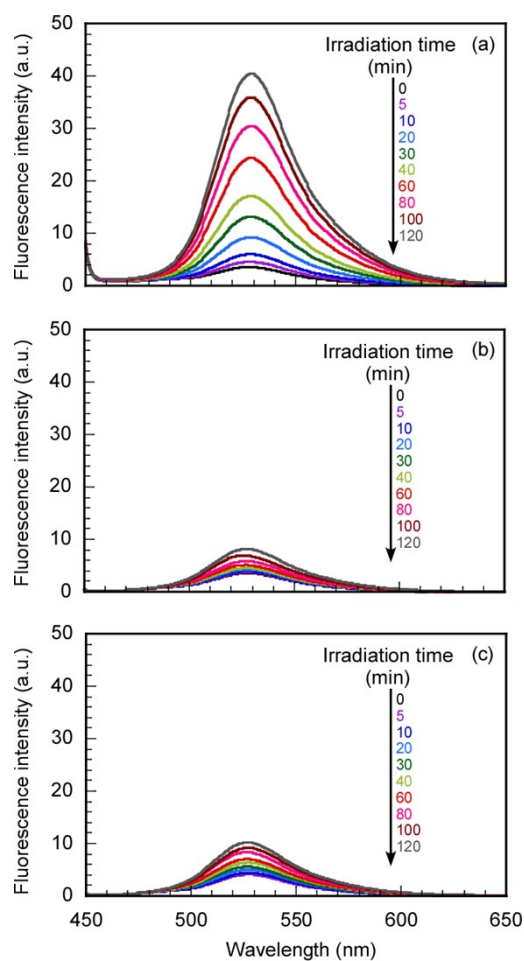


Fig. S8 Changes in fluorescence spectra for SOSG (2 μ M) (a) with C_{70} /EUM ($[C_{70}] = 0.03$ (g/L)), (b) without C_{70} , and (c) without EUM and C_{70} as a function of irradiation time at 25°C.

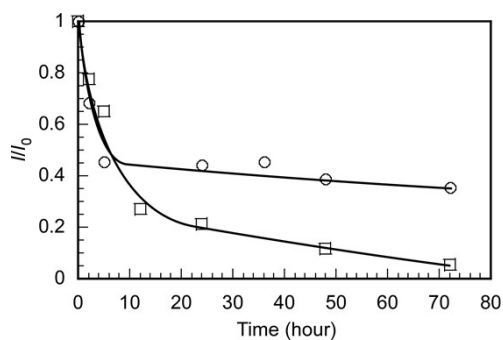


Fig. S9 Release profiles estimated from the fluorescence intensity of (○) DOX@ C_{70} /EUM and (□) DOX as a function of dialysis time at 25°C. I is the fluorescence intensity and I_0 is the initial intensity.

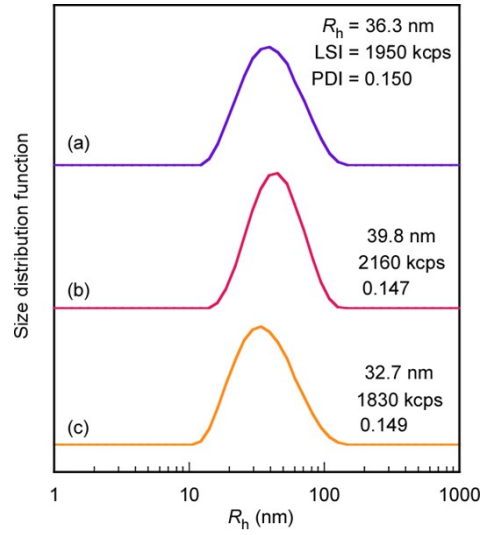


Fig. S10 Hydrodynamic radius (R_h) distributions of DOX@C₇₀/EUM (a) before, (b) after encapsulating DOX, and (c) after DOX release in PBS at 25°C.