Supporting Information

Inhibition and Disaggregation of Amyloid β Protein Fibrillation through Conjugated Polymers-Cored Thermoresponsive Micelles

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Instrument: MVL-210 visible light source (MEJIRO GENOSSEN Mubai, Japan); F-4600 fluorescence spectrophotometer (HITACHI, Japan); Malvern laser particle size analyzer (Zetasizer Nano ZS, UK); SpectraMax i3 multi-function microplate reader (Molecular Devices, American); Constant temperature culture oscillator (Tianjin Uno Instrument Co., Ltd.); UV-VIS Spectrophotometer (SPECORD 250 PLUS, Analytik Jena AG, Germany).

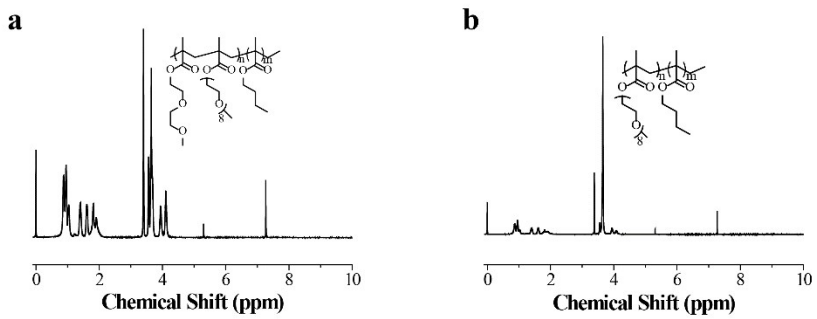

Figure S1. 1H NMR spectra of two amphiphilic polymers in $CDCl_3$. a) PMO-b-PBM, n : m = 0.42 : 0.58. b) POEG-b-PBM, n : m = 0.57 : 0.43.

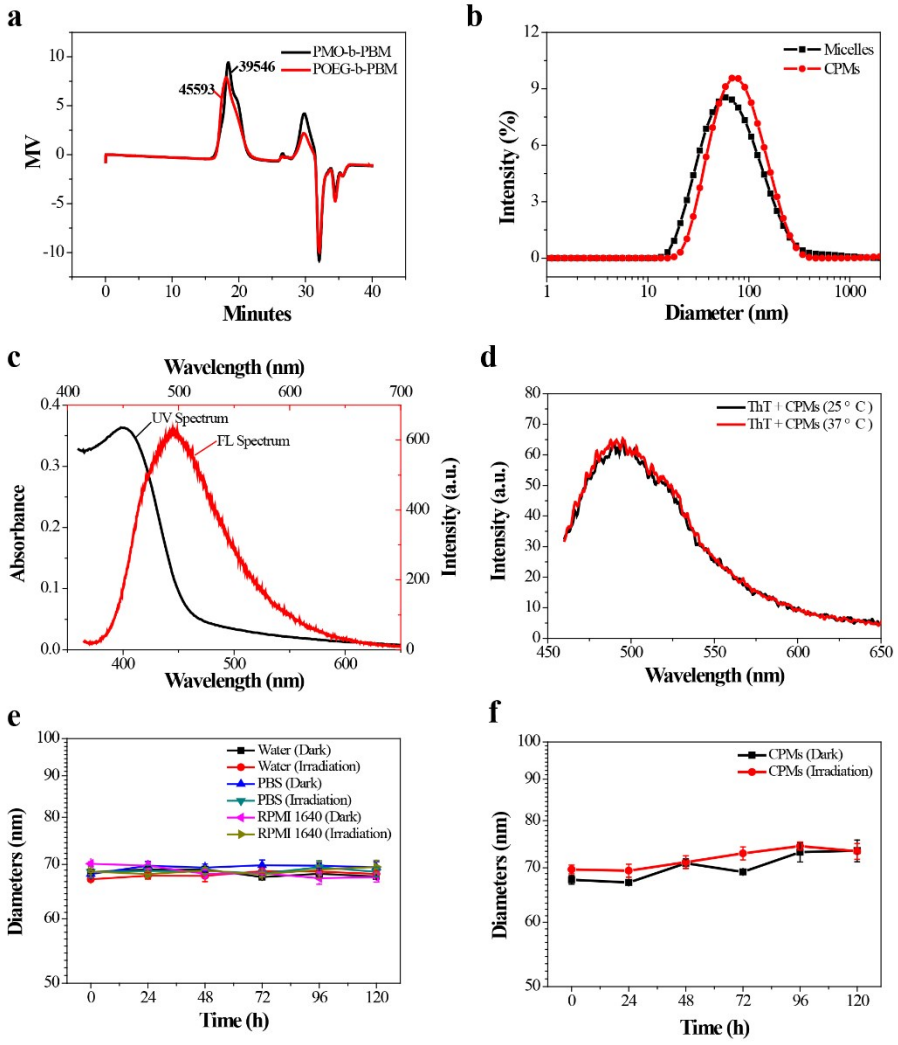

Figure S2. Characterization of CPMs. a) The GPC spectra of the amphiphilic polymers of PMO-b-PBM (*M*P = 39546 g/mol, *M*n =28888 g/mol) and POEG-b-PBM (*M*P = 45593 g/mol, *M*n = 32144 g/mol). b) The average hydrodynamic radius of CPMs and micelles (without PF). c) The UV spectrum and Fluorescence spectrum (FL spectrum) of CPMs. d) The intensity

profiles of ThT/CPMs fluorescence at 25 °C and 37 °C. e) The diameters changes of CPMs in water, phosphate buffer saline (PBS, 10 mM, PH = 7.4), and Roswell Park Memorial Institute (RPMI) 1640 media with and without white light irradiation. f) The diameters changes of CPMs in the PBS buffer (10 mM, PH = 7.4) with different incubation times with and without white light irradiation.

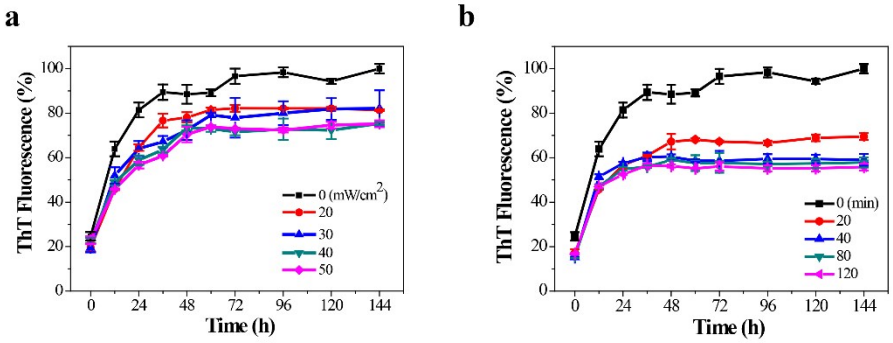

Figure S3. The influence of white light irradiation on Aβ42 alone. a) The ThT fluorescence of Aβ42 with different irradiation intensities (0, 20, 30, 40, 50 mW/cm^2) for 20 min white light irradiation. b) The ThT fluorescence of Aβ42 with different irradiation time (0, 20, 40, 80, 120 min) for 50 mW/cm^2 white light irradiation. [ThT] = 20.0 μM. [Aβ42] = 30.0 μM. Buffer: 10.0 mM PBS, PH = 7.4. Temperature = 37 °C. The data were shown as the mean ± SD of 3 replicate groups.

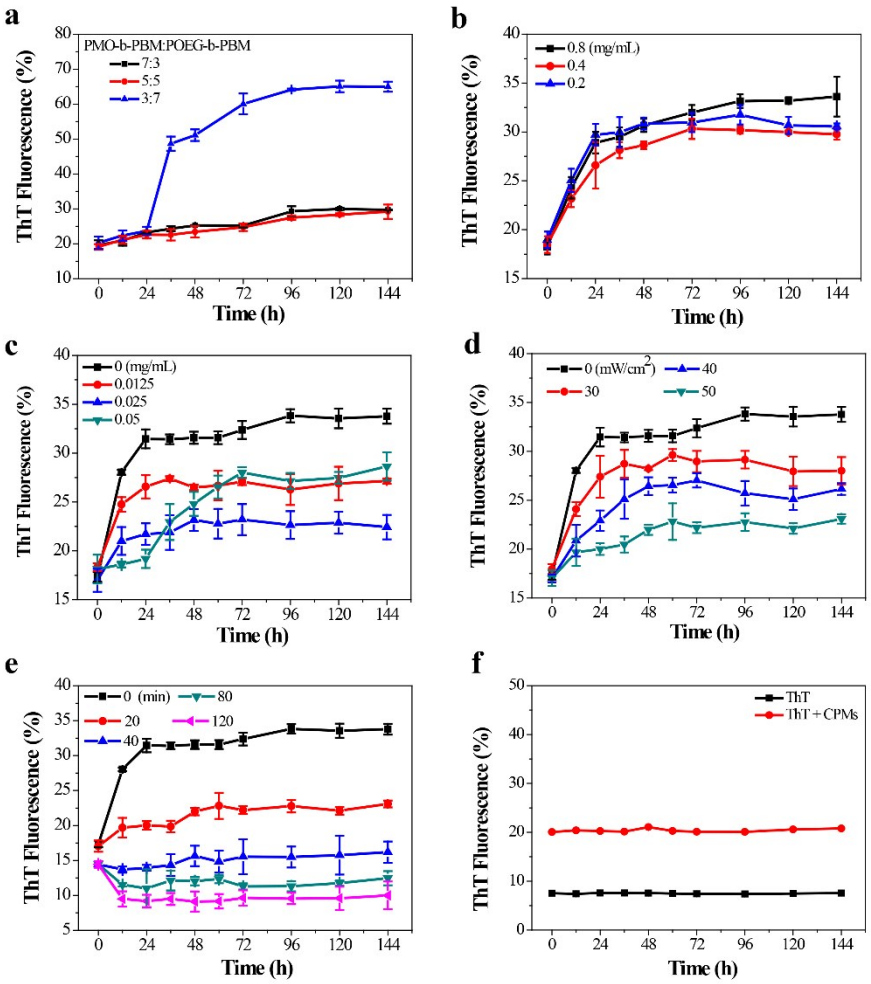

Figure S4. The optimization of conditions of CPMs on inhibiting and disaggregating Aβ42 fibrillation. a) The ThT fluorescence of Aβ42 with different mass ratios of PMO-b-PBM and POEG-b-PBM in different incubation time, [micelles] = 0.4 mg/mL. b) The ThT fluorescence of Aβ42 with different concentrations of micelles in different incubation time, PMO-b-PBM : POEG-b-PBM =1:1. c) Under white light irradiation, the ThT fluorescence of Aβ42 with different loading dosages of PF, [CPMs] = 0.4 mg/mL. d) The ThT fluorescence of Aβ42 with different irradiation intensities on Aβ42/CPMs in different incubation time. e) The ThT fluorescence of Aβ42 with different irradiation time on Aβ42/CPMs in different incubation time. f) The relative ThT fluorescence of ThT and ThT/CPMs. [ThT] = 20.0 μM. [Aβ42] = 30.0 μM. Buffer: 10.0 mM PBS, PH = 7.4. Temperature = 37 °C. The data were shown as the mean ± SD of 3 replicate groups.

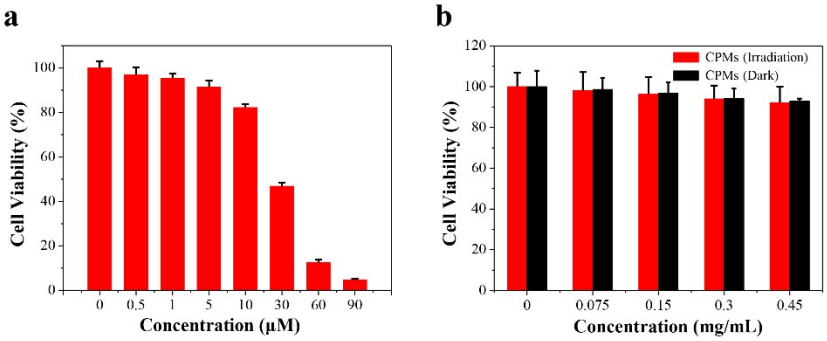

Figure S5. The PC-12 cells viability of a) Aβ42 and b) Aβ42 with different concentrations of CPMs for 48 h incubation at 37 °C. The data were shown as the mean ± SD of 3 replicate groups.