

Supporting Information

Thermo-responsive Polymer Micelle with Liquid Crystalline Core

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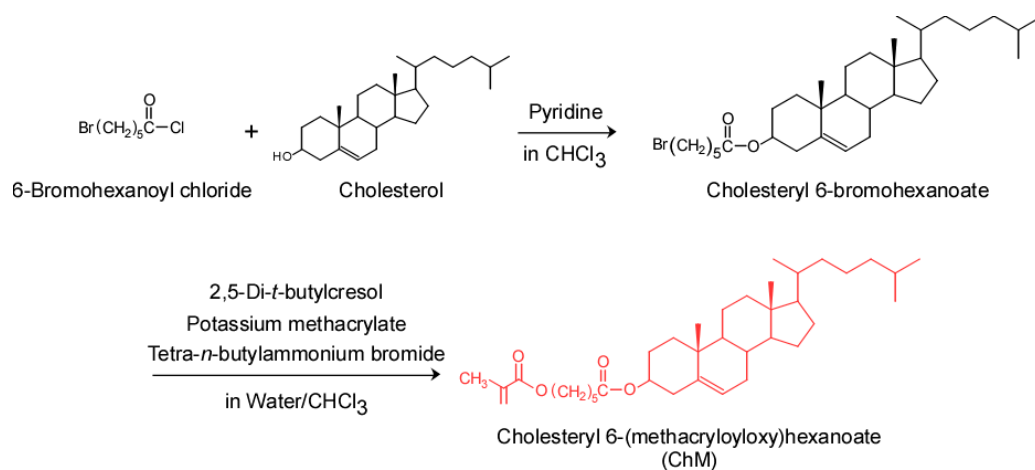
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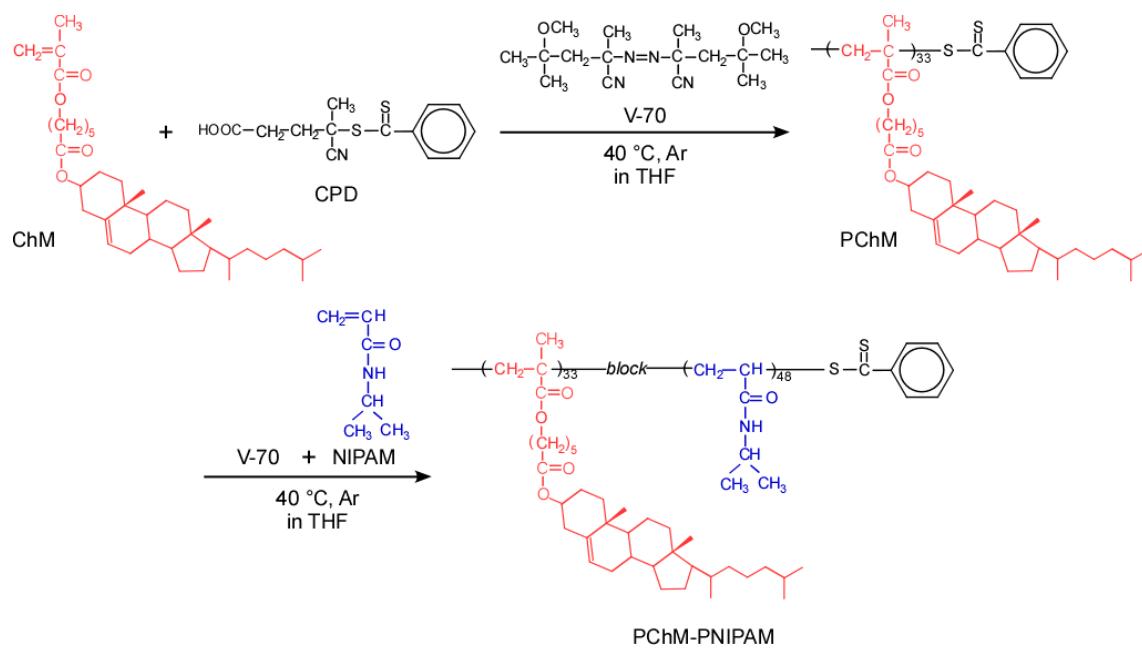
Table S1. Glass transition (T_g) and melting temperatures (T_m) of PChM and PChM-PNIPAM.

Sample	T_{g1}^a (°C)	T_{g2}^b (°C)	T_m (°C)
PChM	51	—	169
PChM-PNIPAM	50	140	171

^a Glass transition temperature of PChM. ^b Glass transition temperate of PNIPAM.



Scheme S1. Synthesis of ChM.



Scheme S2. Synthesis of (a) PChM and (b) PChM-PNIPAM.

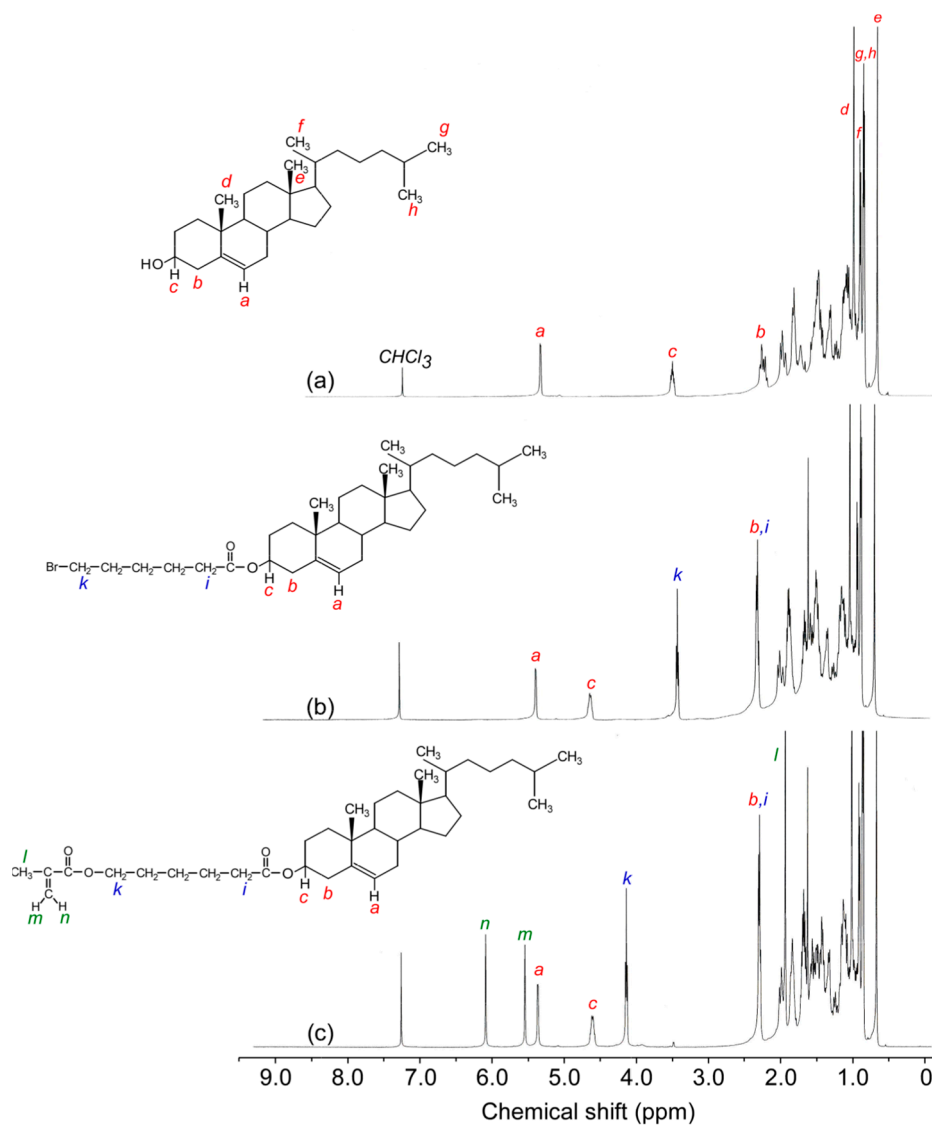


Figure S1. ^1H NMR spectra of (a) cholesterol, (b) cholesteryl 6-bromohexanoate, and (c) ChM in CDCl_3 .

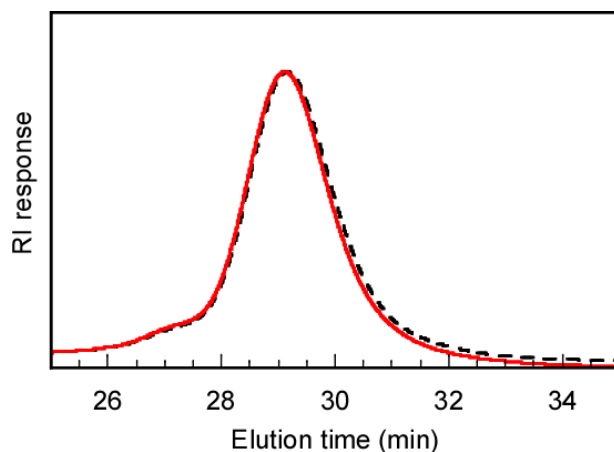


Figure S2. Gel-permeation chromatography (GPC) elution curve for PChM (---) and PChM-PNIPAM (—) using THF as the eluent with a flow rate of 1.0 mL/min at 40 °C.

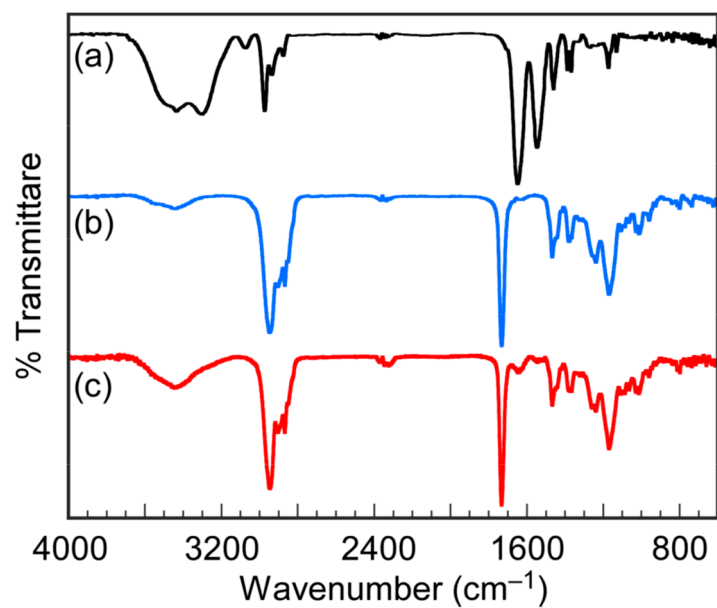


Figure S3. Fourier-transform infrared (FTIR) spectra using KBr pellets for (a) PNIPAM, (b) PChM, and (c) PChM-PNIPAM.

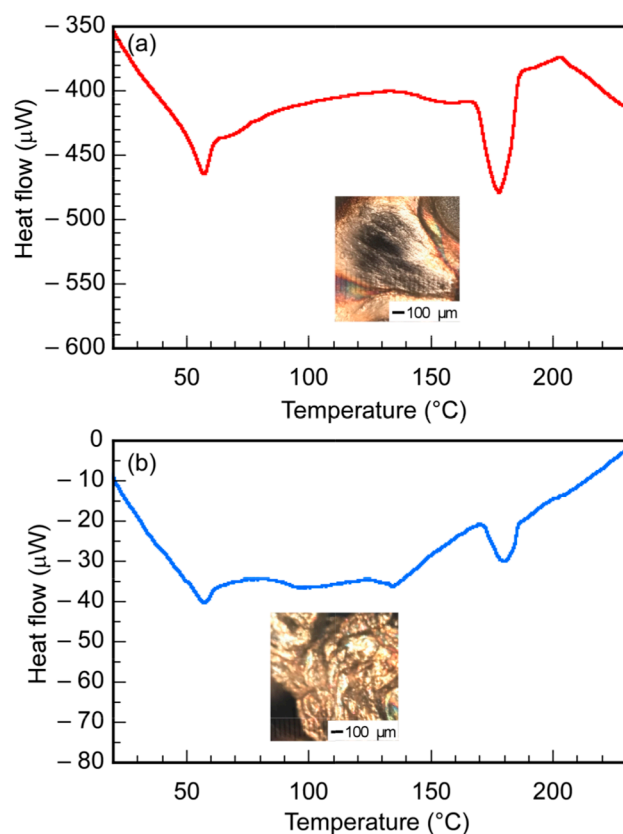


Figure S4. Differential scanning calorimetry (DSC) curves of (a) PChM and (b) PChM-PNIPAM with the second heating processes. The inserts are typical polarizing optical micrographs for (a) PChM at 140 °C and PChM-PNIPAM at 110 °C.

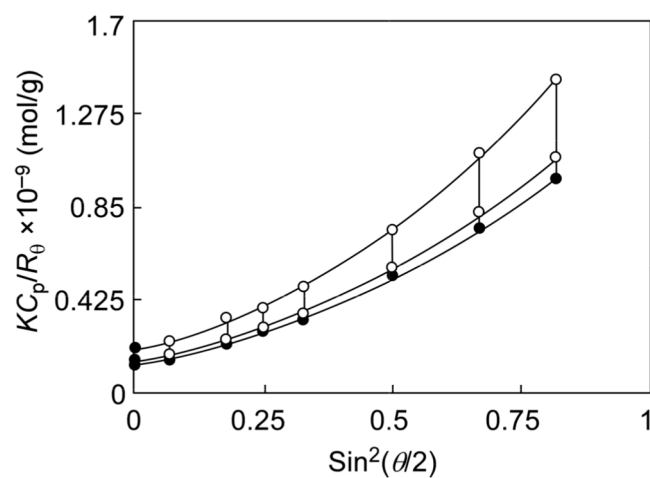


Figure S5. Zimm plot for PChM-PNIPAM in water at 25 °C.

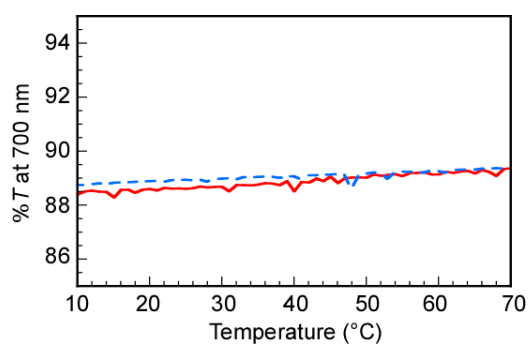


Figure S6. Percentage transmittance (% T) for the PChM-PNIPAM aqueous solution with a polymer concentration (C_p) = 0.04 g/L as a function of temperature: heating (—) and cooling processes (---).

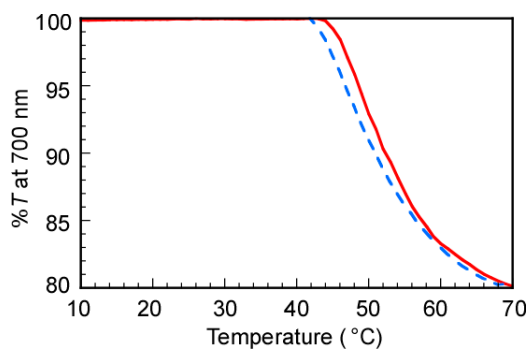


Figure S7. Percentage transmittance (% T) of the PNIPAM₅₃ with degree of polymerization (DP) = 53 aqueous solution with polymer concentration (C_p) = 0.05 g/L as a function of temperature: heating (—) and cooling processes (---).

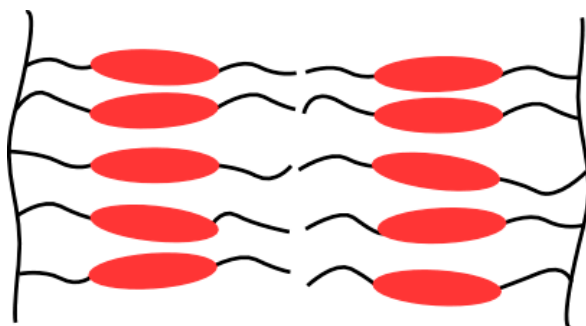


Figure S8. Conceptual illustration of the packing structures of the pendant cholesteryl groups of PChM-PNIPAM in an aqueous solution.