Supporting Information

OEGylated Cyclodextrin-Based Thermoresponsive Polymers and Their Switchable Inclusion Complexation with Fluorescent Dyes

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Table S1. Polymerization condition and characterization of OEGylated CyD polymers

Polymers	Polymerization conditions			GPC results	
	temperature / °C	time / h	yield / %	$M_n \times 10^{-4}$	PDI
P-DEG	80	24	50	2.2	1.3
P-TEG	80	30	17	1.4	1.4

Table S2. Apparent association constants (K_a) for the complexation of TNS with **M-DEG** and **P-DEG** at room temperature. K_a^1 is determined by circular dichroism spectroscopy titrations, while K_a^2 determined by fluorescence titrations.

Hosts	$K_a^1 \times 10^{-3}$ / M^{-1}	$K_a^2 \times 10^{-3}$ / M^{-1}
M-DEG	1.24	2.42
P-DEG	1.28	3.64

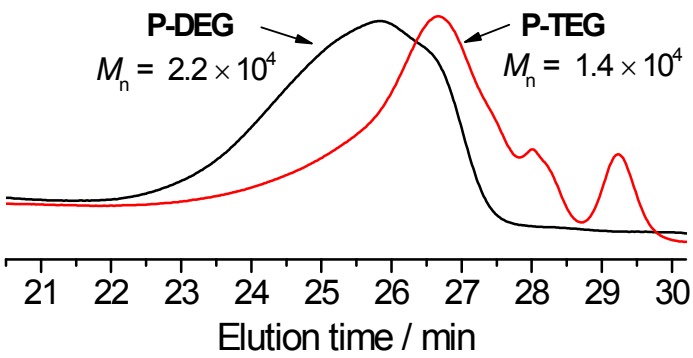


Figure S1. GPC elution curves of **P-DEG** and **P-TEG**.

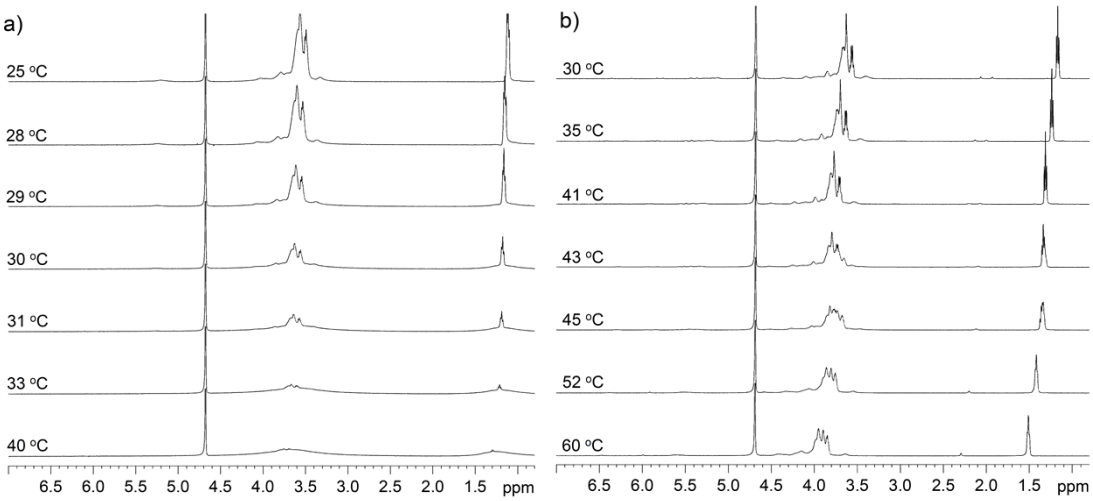


Figure S2. Temperature varied ^{1}H NMR spectroscopy of **P-DEG** (a) and **M-DEG** (b) in D_2O.

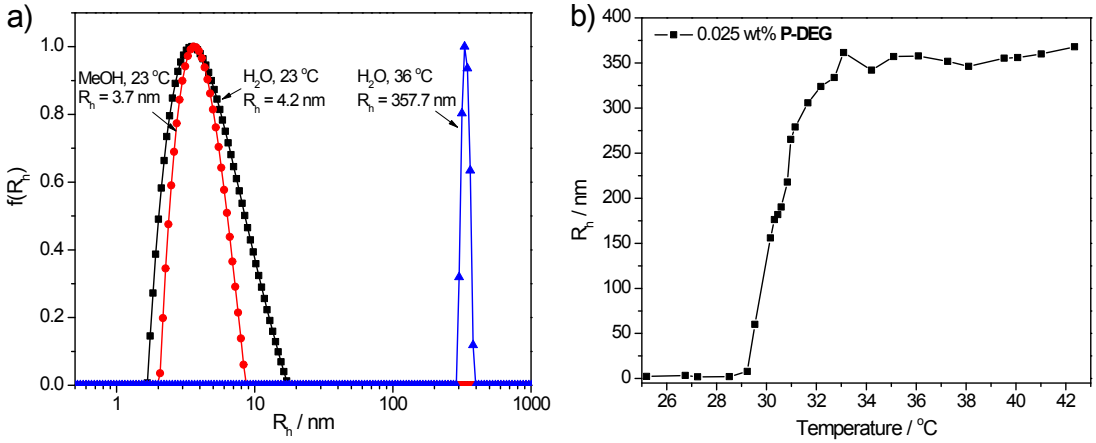


Figure S3. (a) The unweighted size distributions of **P-DEG** in methanol and water below or above T_{cp}. (b) Plot of hydrodynamic radius (R_h) vs. temperature for 0.025 wt% aqueous solution of **P-DEG**.

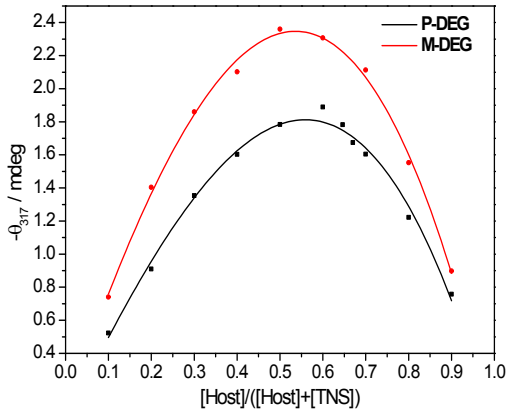


Figure S4. Job plots for the complexes between TNS and **M-DEG** or **P-DEG** in water. θ_{317} represents the signal intensity at $\lambda = 317$ nm. [TNS] + [Host] = 0.4 mM.

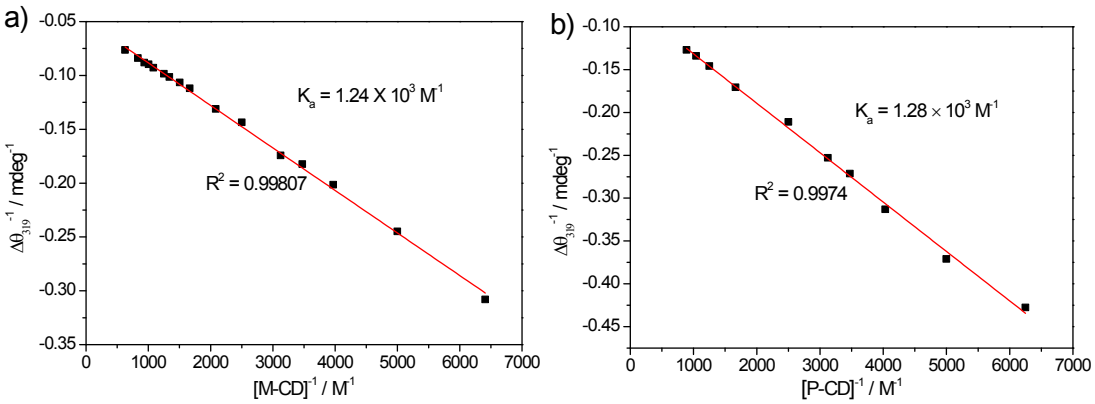
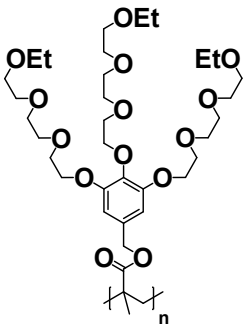


Figure S5. Benesi-Hildebrand plots obtained from circular dichroism spectroscopy titrations of TNS with **M-DEG** (a) or **P-DEG** (b) at 20 °C. $\Delta\theta_{319}$ represents the change of the signal intensity at $\lambda = 319$ nm. [TNS] = 0.4 mM.



PG1

Figure S6. Molecular structure of **PG1**.

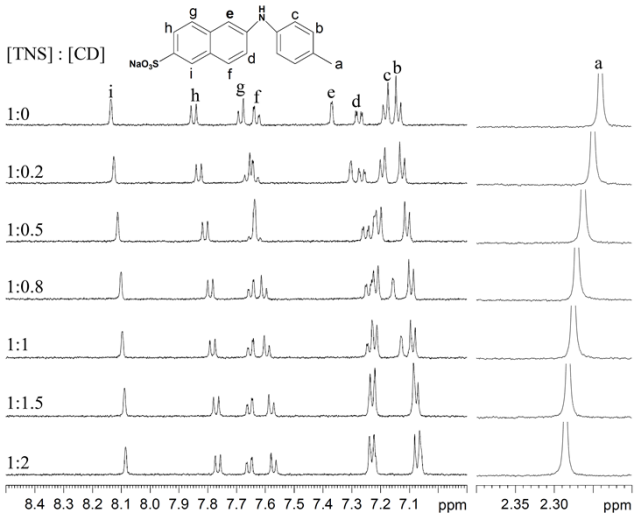


Figure S7. ^{1}H NMR spectra of TNS with different amounts of β-CyD in D_2O.

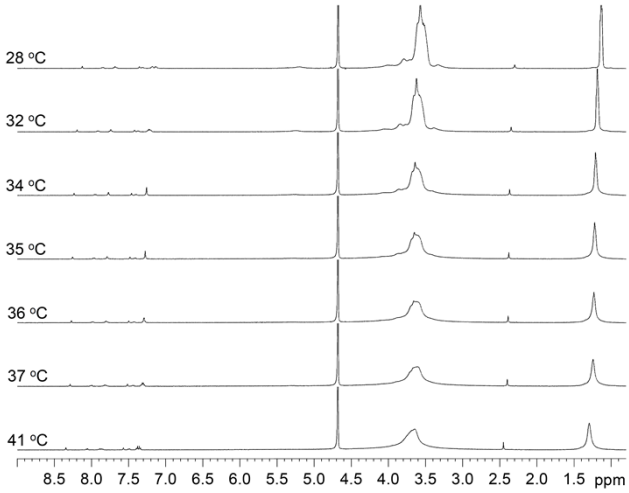


Figure S8. Temperature varied ^{1}H NMR spectroscopy of the equivalent mixture of TNS and **P-DEG**. [TNS] = 0.93 mM.

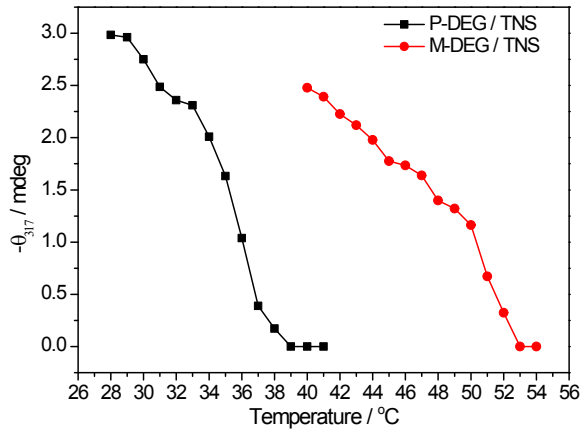


Figure S9. Dependence of θ_{317} for the complexes of TNS with **M-DEG** or **P-DEG** on solution temperature. [TNS] = 0.4 mM.

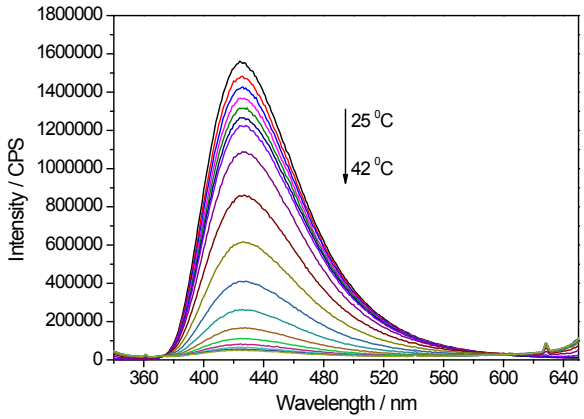


Figure S10. Temperature varied fluorescence spectra for the complex between **P-DEG** and TNS. [TNS] = 20 μM, [**P-DEG**] = 200 μM.

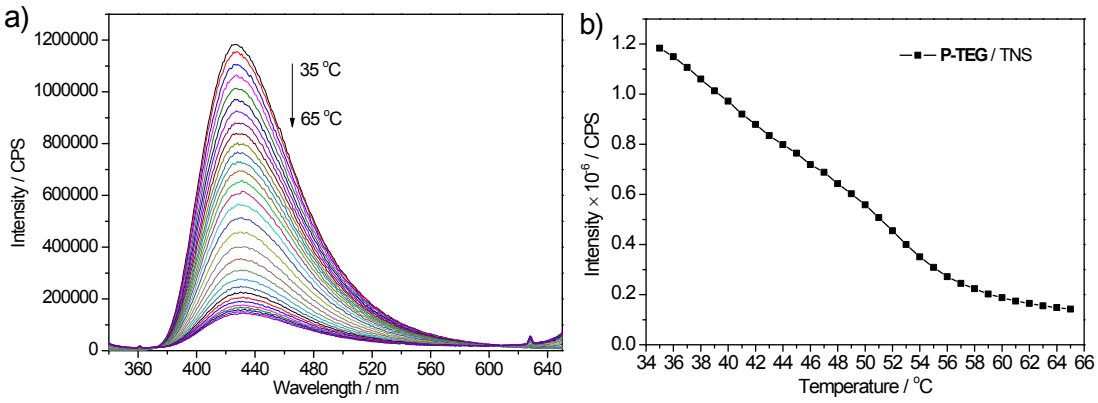


Figure S11. (a) Temperature varied fluorescence spectra for the complex between **P-TEG** and TNS. (b) Plot of fluorescence intensity at λ = 426 nm vs. temperature for the complex between **P-TEG** and TNS. [TNS] = 20 μM, [**P-TEG**] = 200 μM.

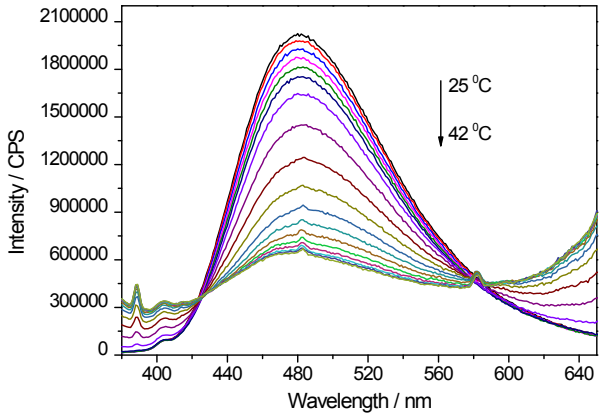


Figure S12. Temperature varied fluorescence spectra for the complex between **P-DEG** and ANS. [ANS] = 20 μM, [**P-DEG**] = 200 μM.

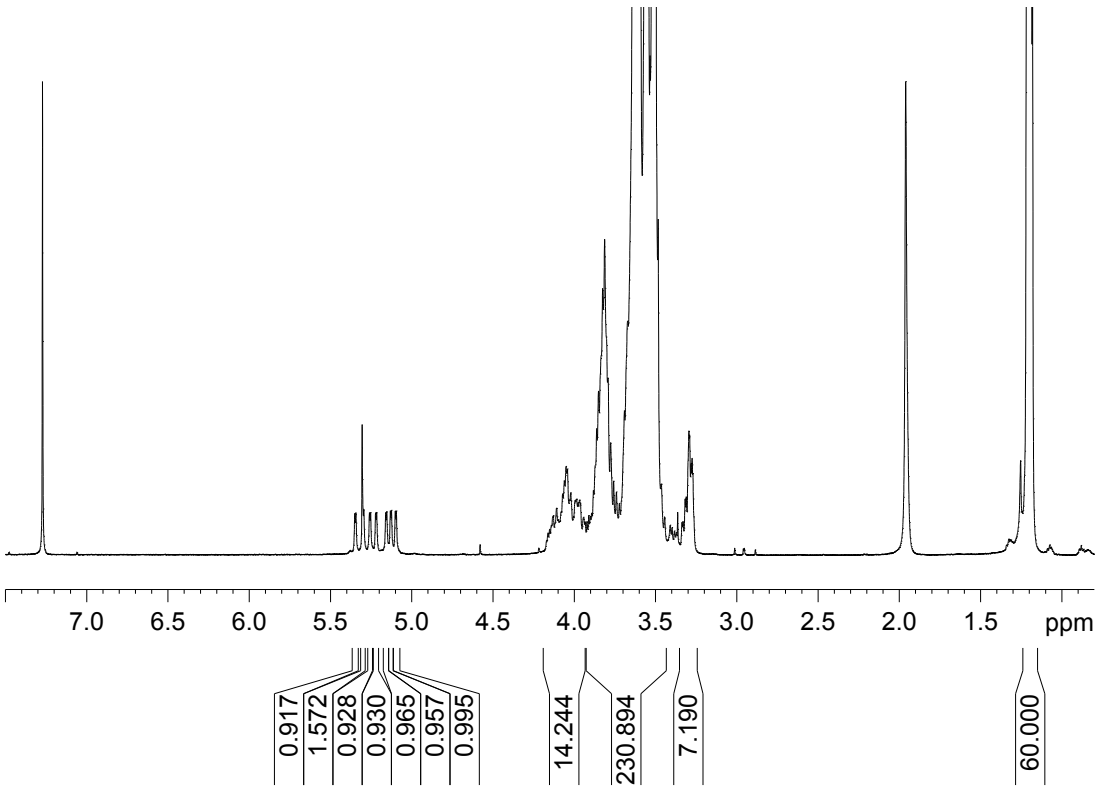


Figure S13. ^{1}H NMR spectrum of **2a** in $CDCl_3$.

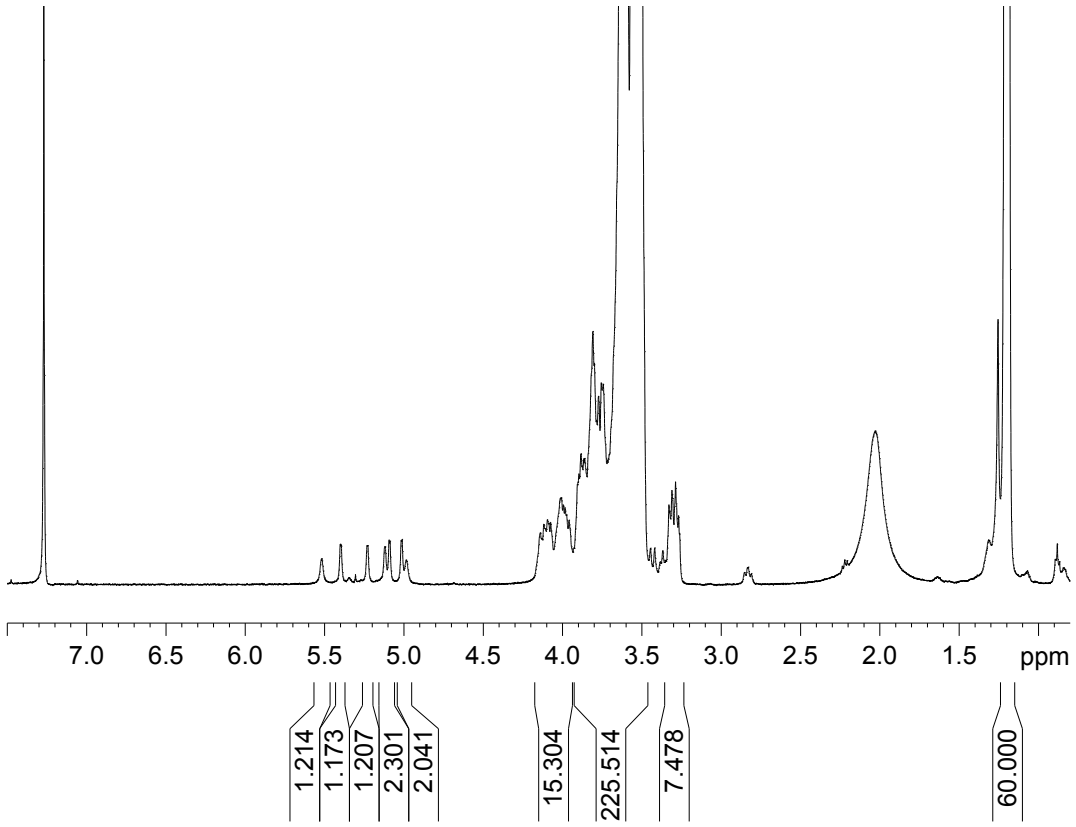


Figure S14. ^{1}H NMR spectrum of **2b** in $CDCl_3$.

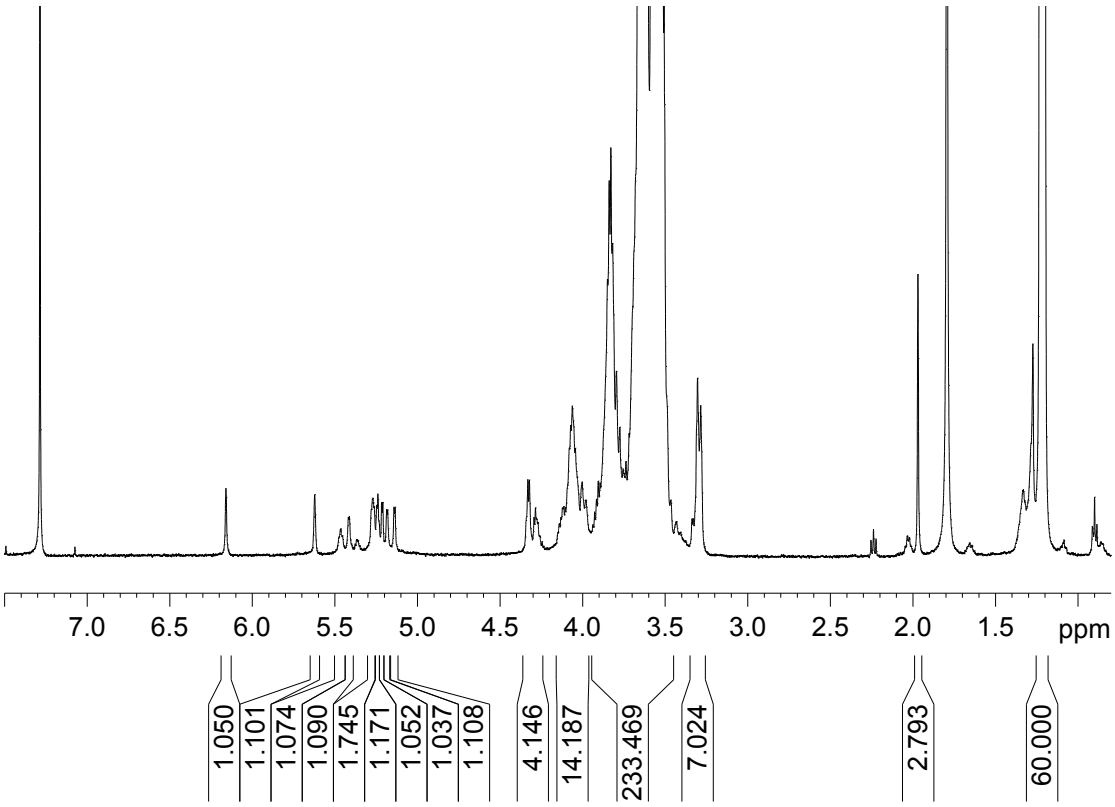


Figure S15. ^{1}H NMR spectrum of **M-DEG** in $CDCl_3$.

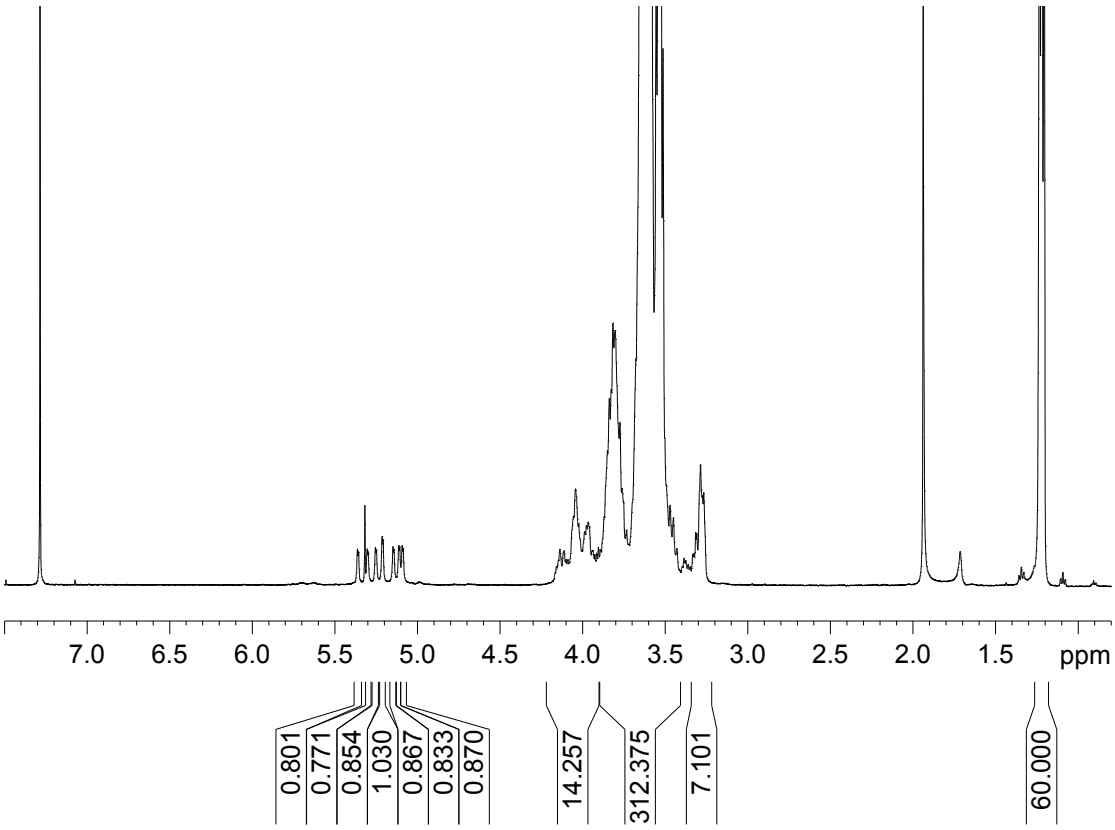


Figure S16. ^{1}H NMR spectrum of **2c** in $CDCl_3$.

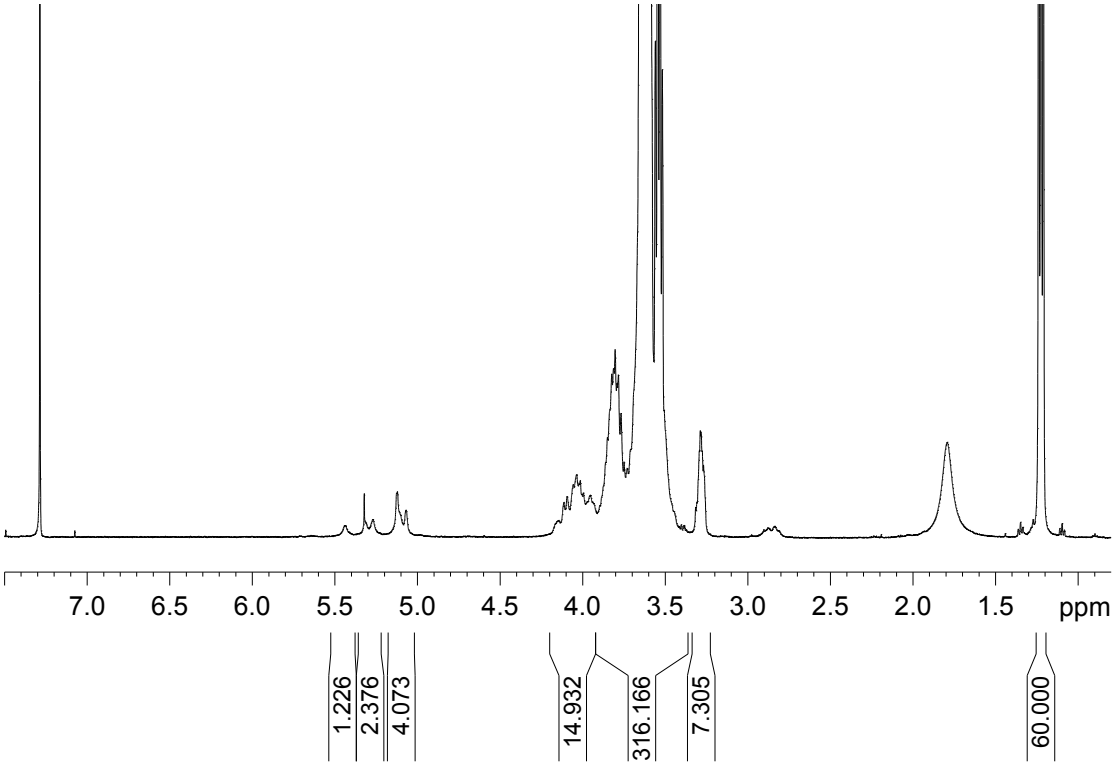


Figure S17. ^{1}H NMR spectrum of **2d** in $CDCl_3$.

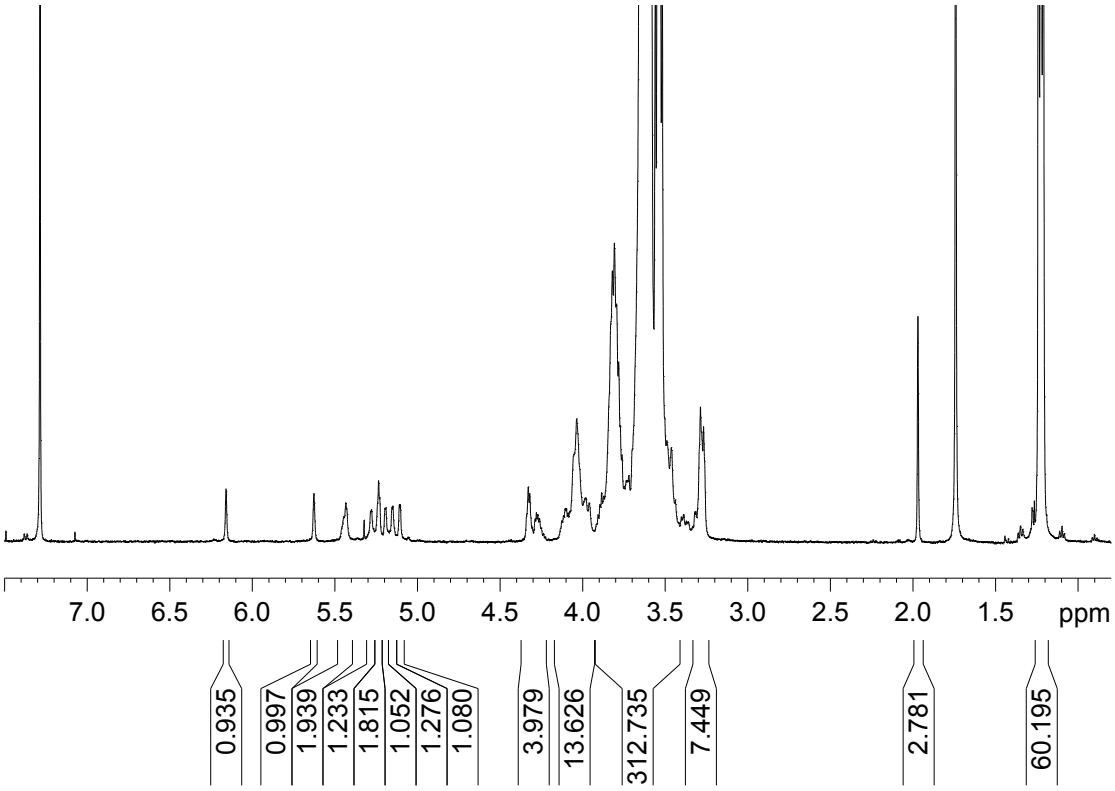


Figure S18. ^{1}H NMR spectrum of **M-TEG** in $CDCl_3$.

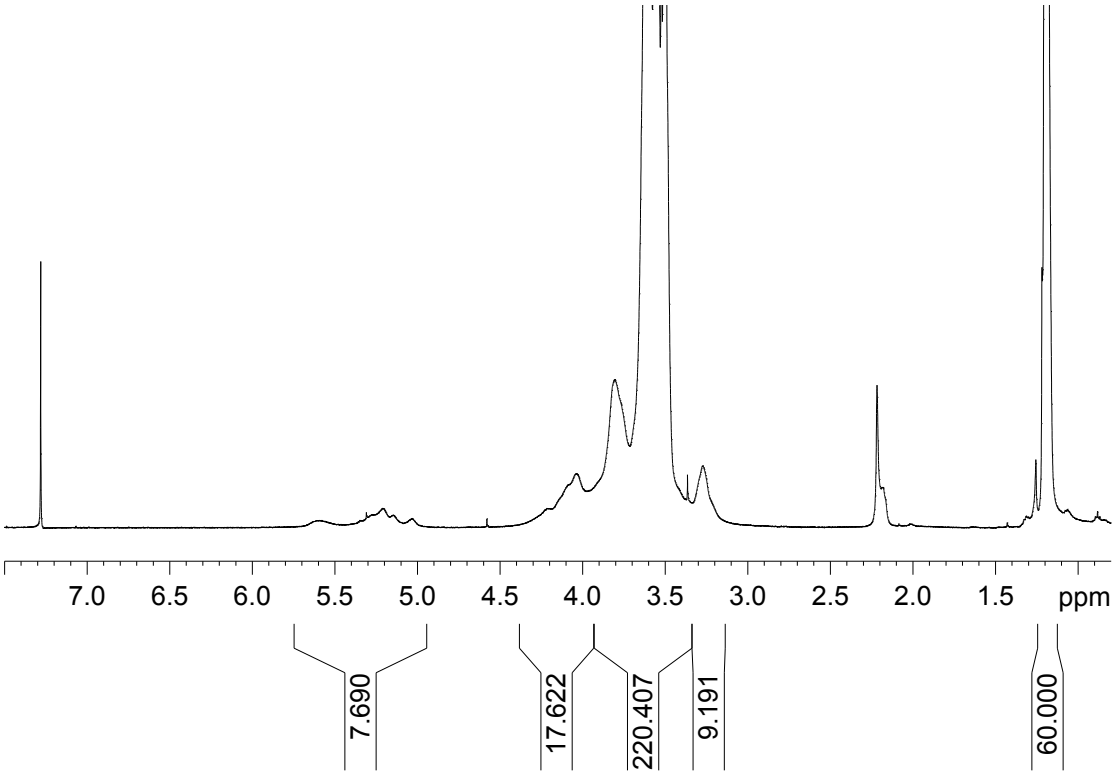


Figure S19. ^{1}H NMR spectrum of **P-DEG** in $CDCl_3$.

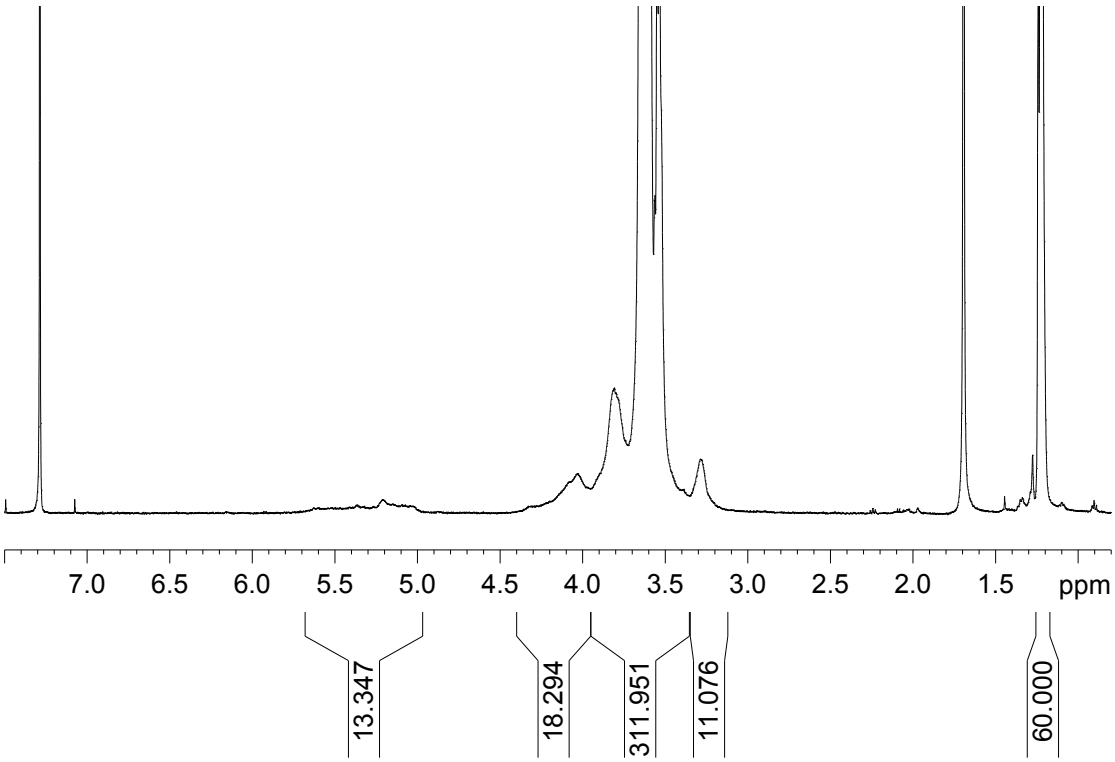


Figure S20. ^{1}H NMR spectrum of **P-TEG** in $CDCl_3$.