Electronic Supplementary Material (ESI) for Soft Matter.
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Electronic Supplementary Information (ESI)

Design of micellized α-cyclodextrin based supramolecular hydrogel system

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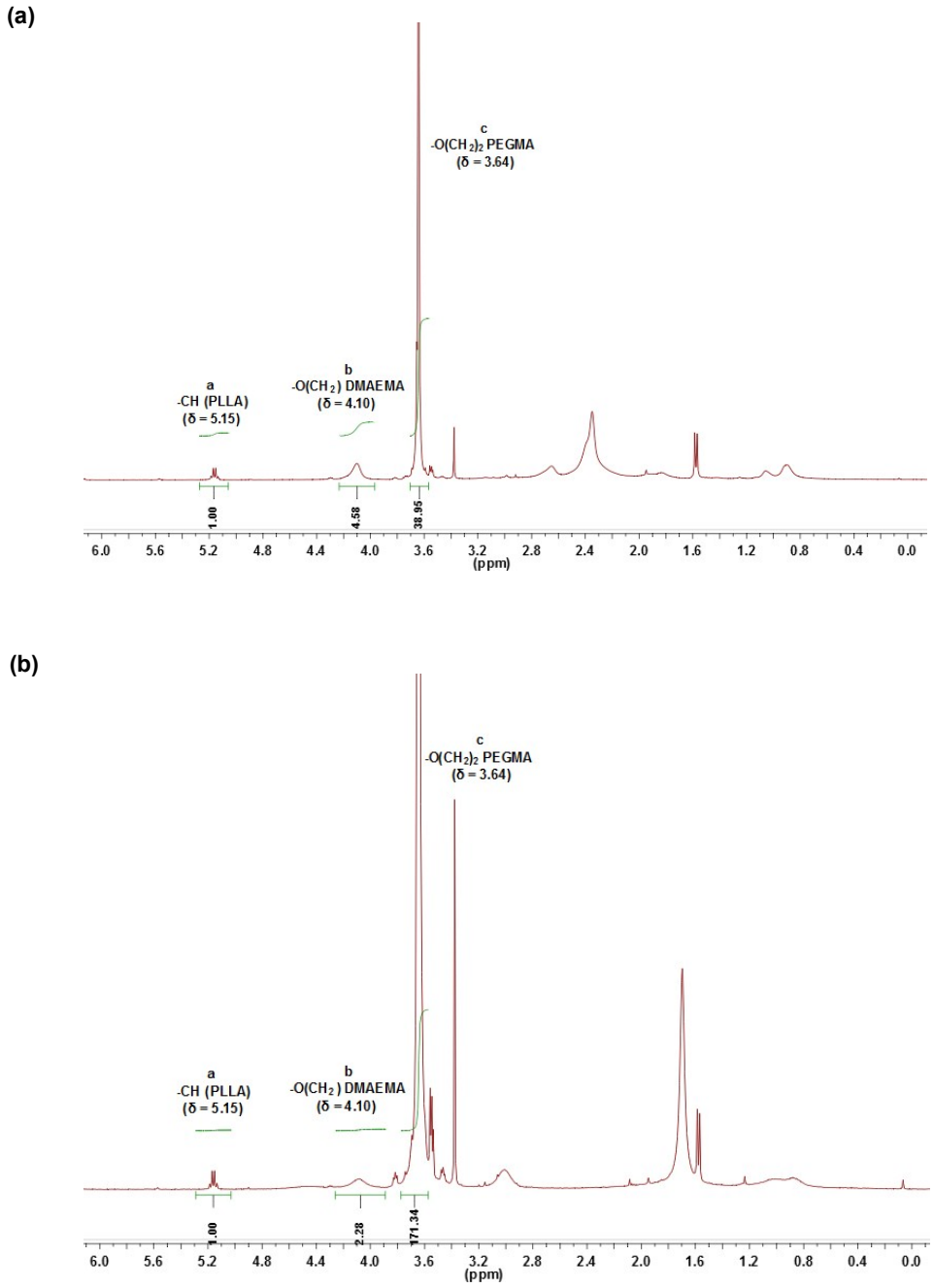


Fig. S1 400 MHz ^{1}H NMR spectra of (a) PLPED1 and (b) PLPED3 in $CDCl_3$.

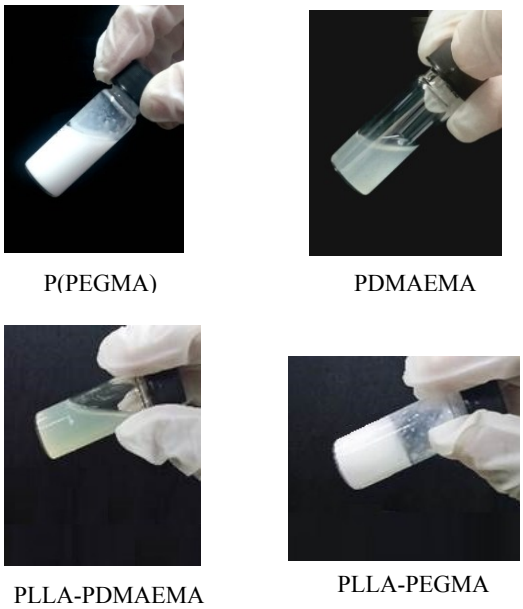
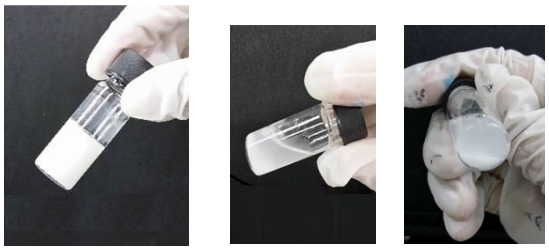


Fig. S2 Control diagrams: (a) Homopolymer P(PEGMA); (b) Homopolymer PDMAEMA; (c) Copolymer PLLA-PDMAEMA; (d) Copolymer PLLA-PEGMA. 10% (w/v) polymer mixed with 10% (w/v) α-CD in phosphate buffer solution, pH 7.

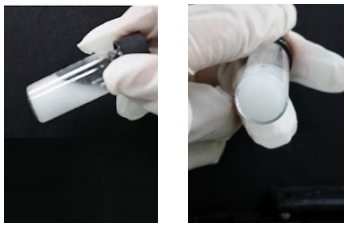
Table S1. Physicochemical properties of cyclodextrins[1]

Physicochemical properties	α	β	γ
No. of glucopyranose units	6	7	8
Molecular weight	972	1135	1297
Central cavity diameter (A°)	4.7-5.3	6.0-6.5	7.5-8.3
Water solubility at 25°C (g/100 mL)	14.5	1.85	23.2



PLPED2 / α-CD
gel formed

PLPED2 / β-CD
no inclusion complex
gel did not form



PLPED2 / γ-CD
inclusion complex formed
gel did not form

Fig. S3 Polymer sample 10% (w/v) with α-, β-, γ- CD 10% (w/v) in phosphate buffer solution, pH 7

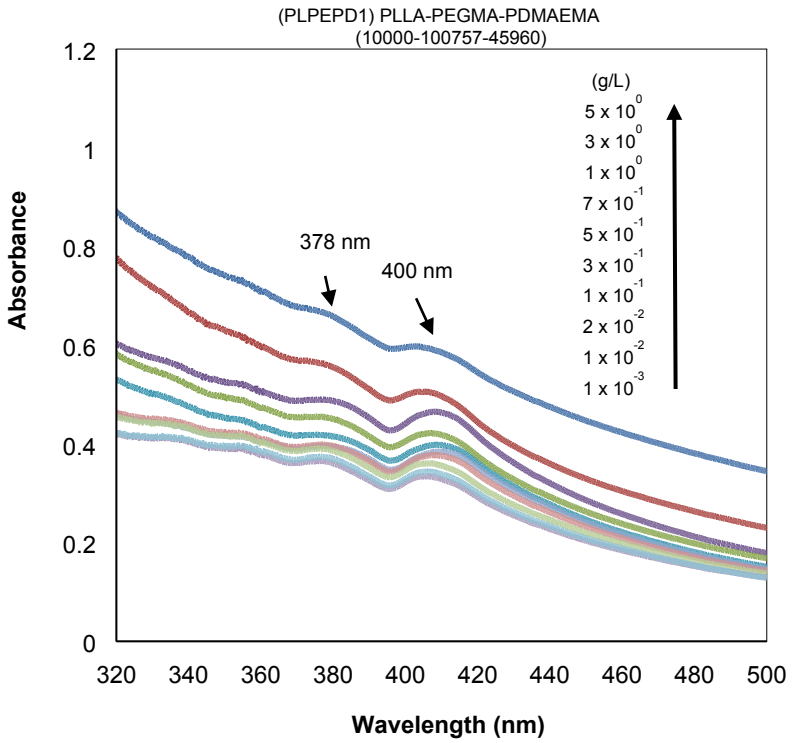


Fig. S4 UV-vis spectra changes of DPH with increasing PLPEPD1 compolymer concentration in water at 25°C. DPH concentration was fixed at 6mM, and the polymer concentration varied between 0.0001 and 0.5 wt%. The increase in the absorbance band at 378 nm indicates the formation of a hydrophobic environment in the water.

Reference:

1. T. Loftsson, P. Jarho, M. Másson and T. Järvinen, *Expert Opinion on Drug Delivery*, 2005, **2**, 335-351.