

Electronic Supplementary information

A shear-thinning electrostatic hydrogel with antibacterial activity by nanoengineering of polyelectrolytes

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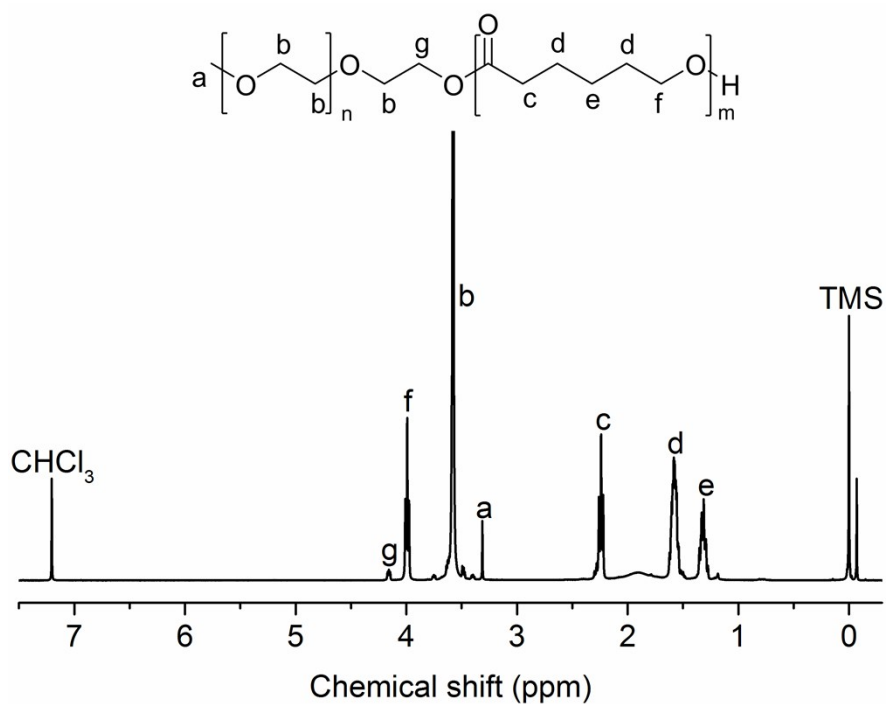


Fig. S1 ^1H NMR spectra of PEG-*b*-PCL in chloroform-*d*.

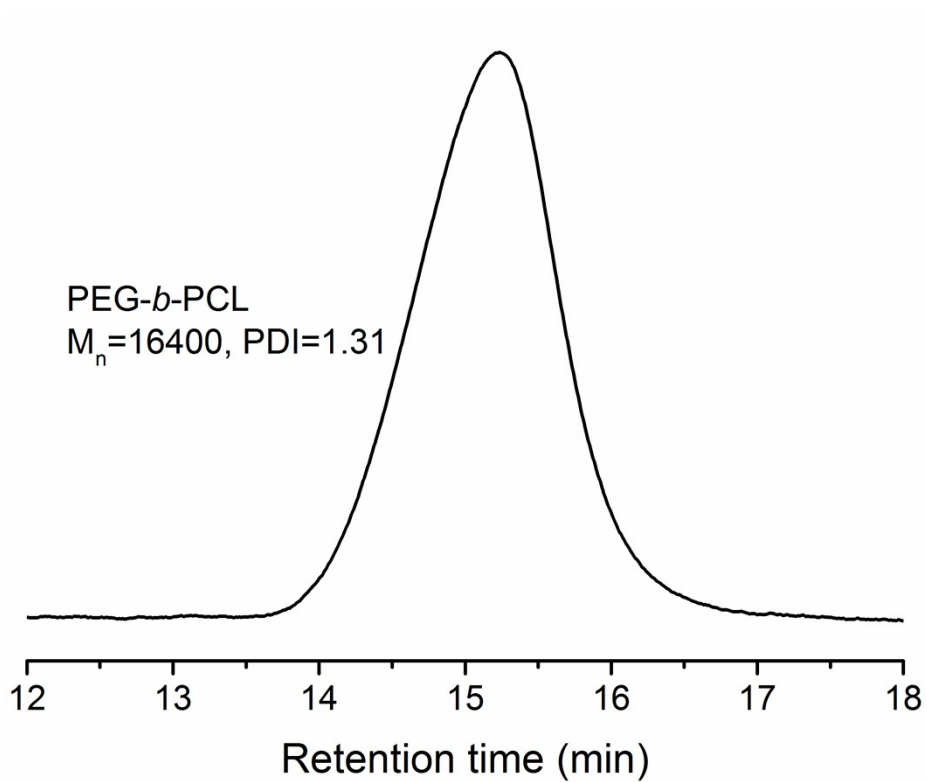


Fig. S2 Gel permeation chromatography trace of PEG-*b*-PCL.

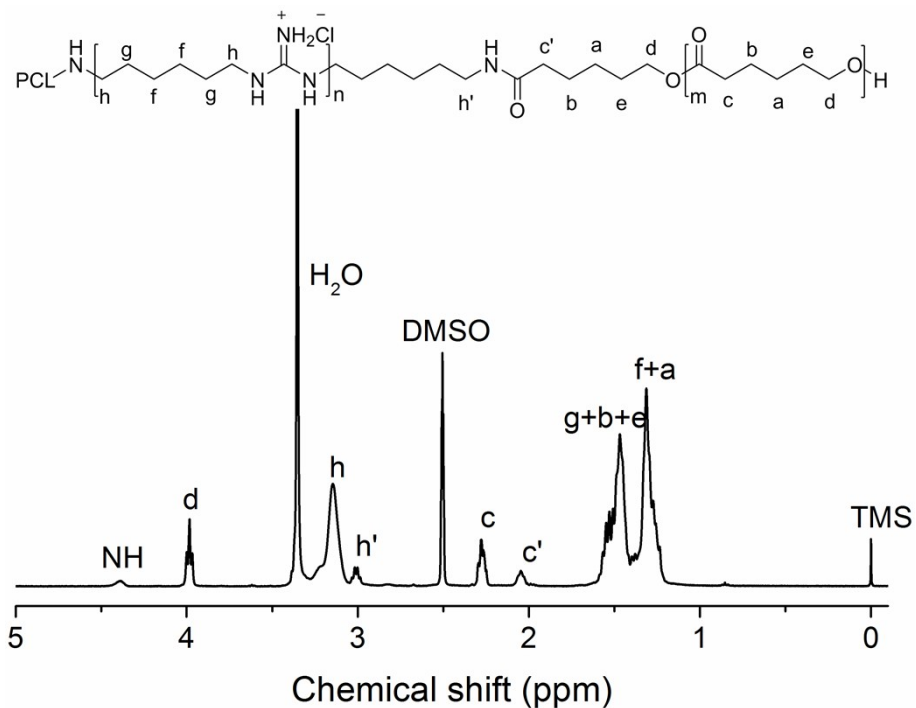


Fig. S3 ^1H NMR spectra of PCL-*b*-PHMG-*b*-PCL in $\text{DMSO-}d_6$.

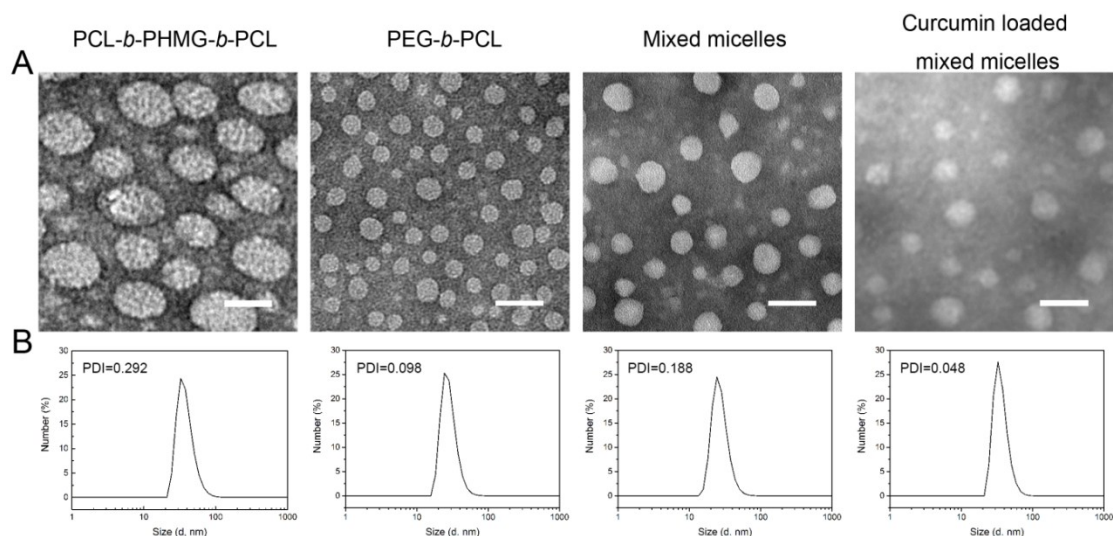


Fig. S4 (A) Transmission electron microscopy (TEM) images of micelles. The scar bar in TEM images is 50 nm. (B) Size distribution of micelles determined by dynamic light scattering. Mixed micelles for measurement were obtained by dilution of micellar solution consisting of PEG-*b*-PCL (14 wt%) and PCL-*b*-PHMG-*b*-PCL (0.6 wt%).

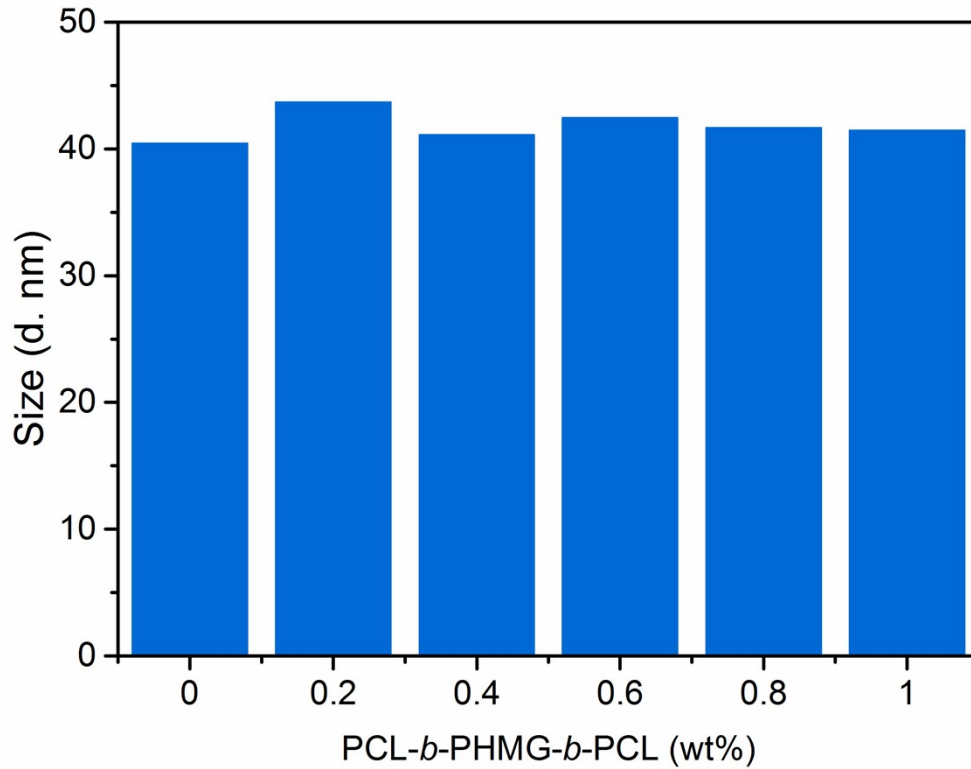


Fig. S5 Hydrodynamic size of mixed micelles which were obtained for measurement by dilution of corresponding micellar solution containing PEG-*b*-PCL (14 wt%) and CL-*b*-PHMG-*b*-PCL (0-1 wt%).

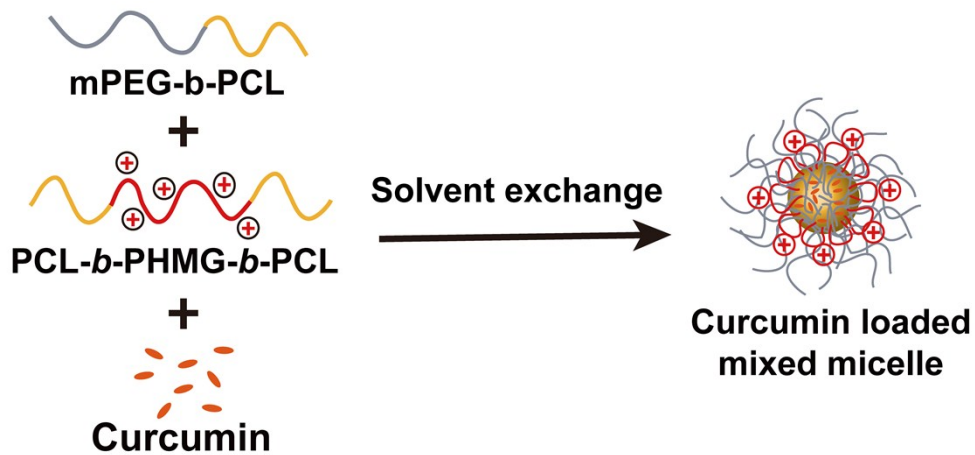


Fig. S6 The schematic preparation of curcumin loaded mixed micelles.

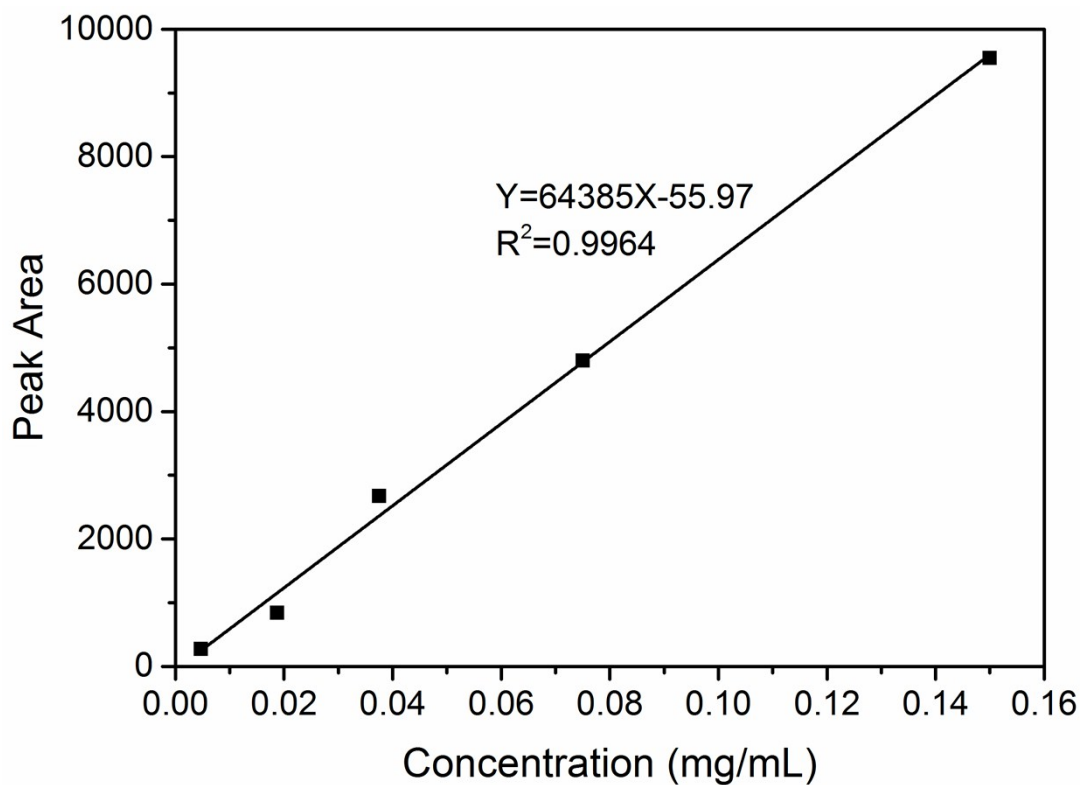


Fig. S7 Standard curve of curcumin determined by the high-performance liquid chromatography method.

Sample concentraion: 600 $\mu\text{g}/\text{mL}$.

Absorption area: 3565.68.

The standard equation is: $Y = 64385X - 55.97$ (X: the concentraion of Cur, Y: the absorption peak area of Cur) and $R^2 = 0.9964$.

Cur concetration in sample solution: 56.2 $\mu\text{g}/\text{mL}$. DL and EE are calculated as follows:

$$DL = \frac{56.2}{600} \times 100\% = 9.37\%$$

$$EE = \frac{9.37\%}{10\%} \times 100\% = 93.67\%$$