

Electronic Supplementary Information

Synthesis of mesoporous carbon nanoparticles with large and tunable pore sizes

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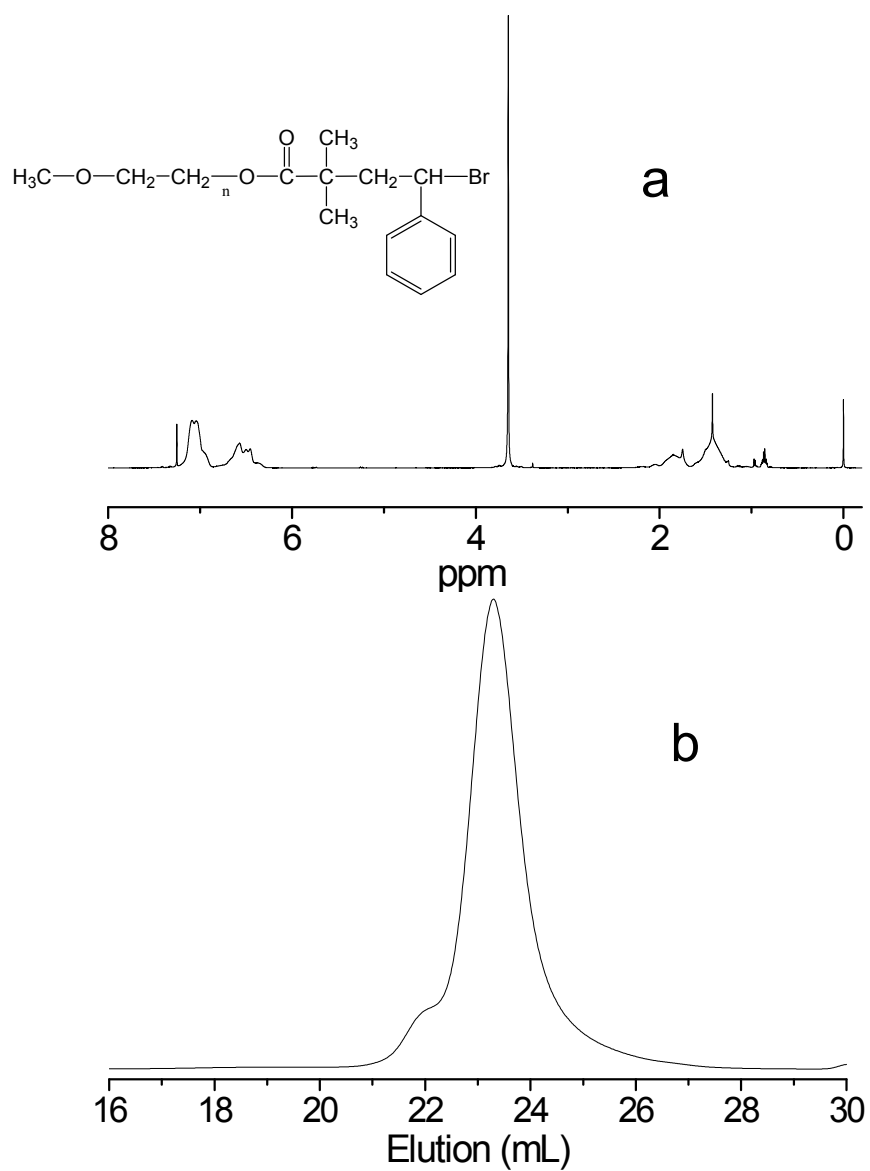


Figure S1. (a) ^1H NMR spectra, (b) GPC traces of $\text{PEO}_{125}\text{-}b\text{-PS}_{178}$.

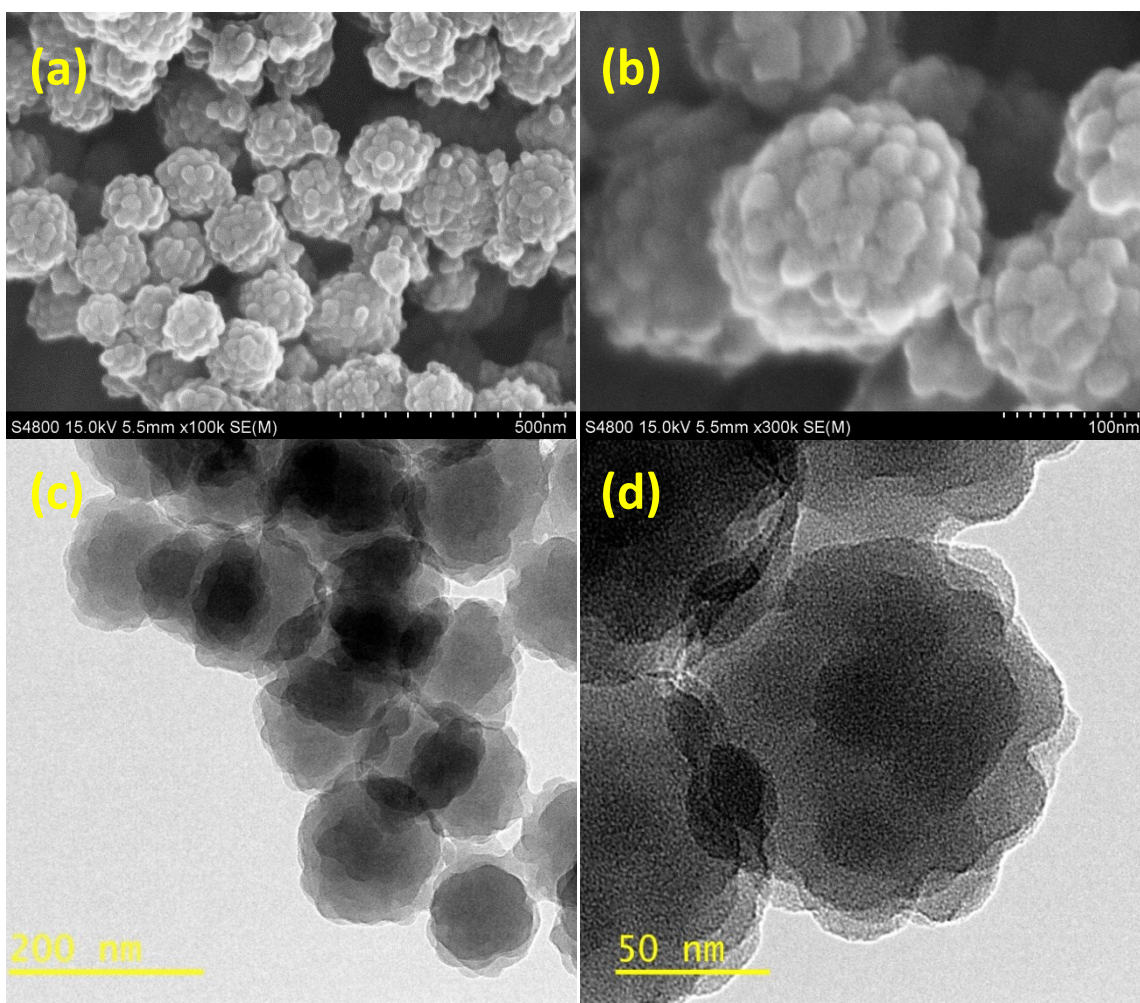


Figure S2. SEM images (a, b) and TEM images (c, d) of PR/PEO-*b*-PS composite nanoparticles.

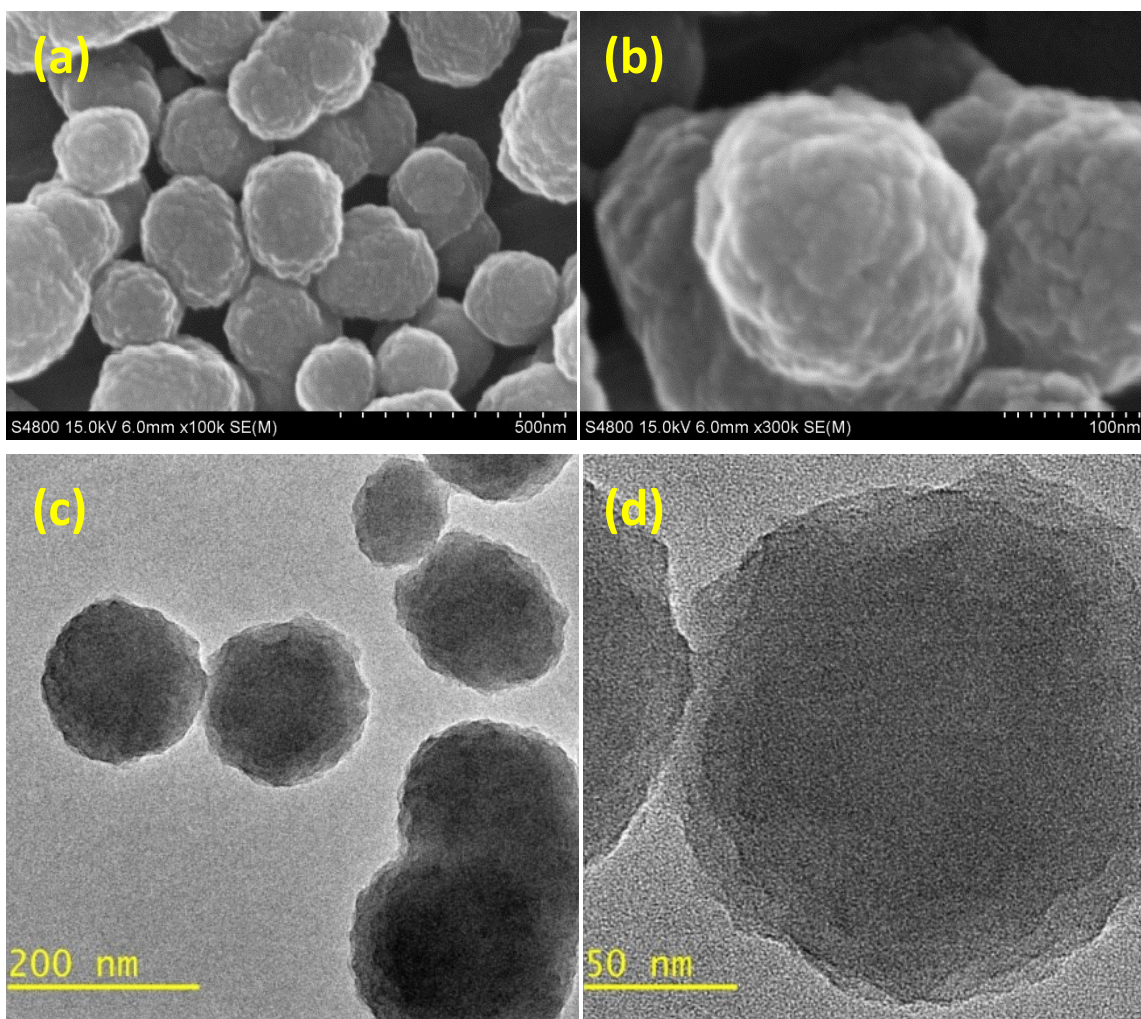


Figure S3. (a, b) SEM images of PR polymers , (c,d) TEM images of the corresponding carbon nanoparticles (CNs).

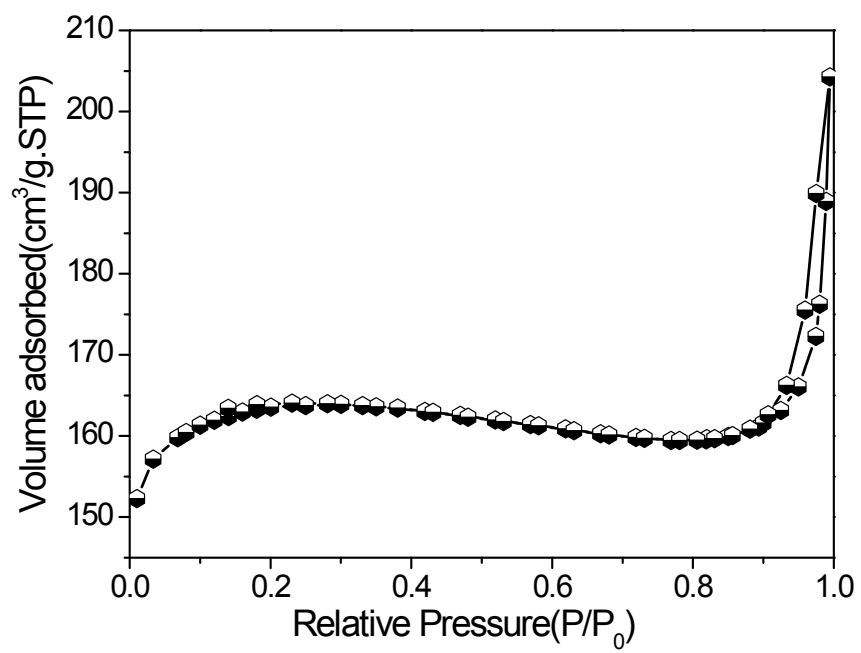


Figure S4. nitrogen adsorption-desorption isotherm of CSs

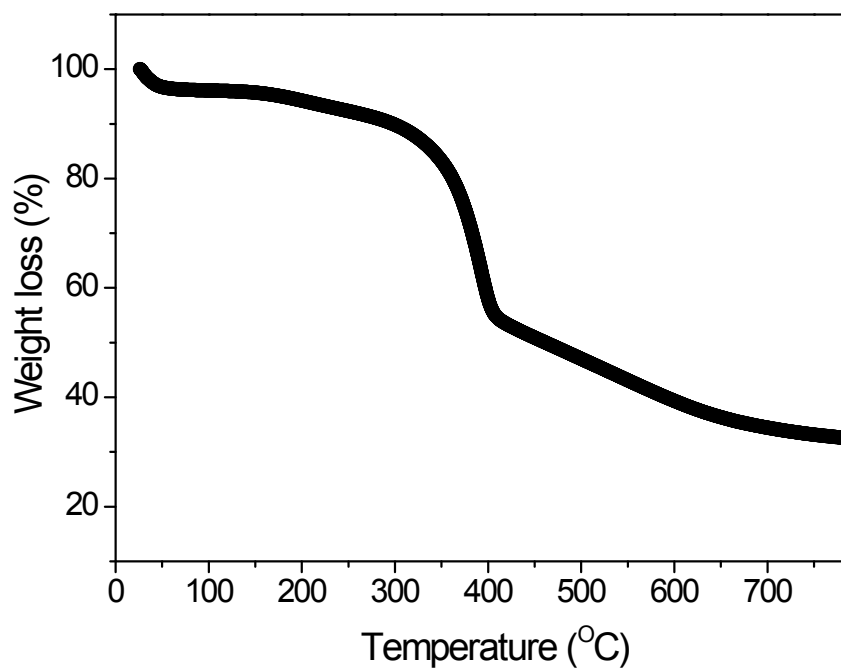


Figure S5. TGA curve of PR/PEO-*b*-PS composite nanoparticles. The pyrolysis process was conducted in N₂ with a heating rate 5 °C/min.

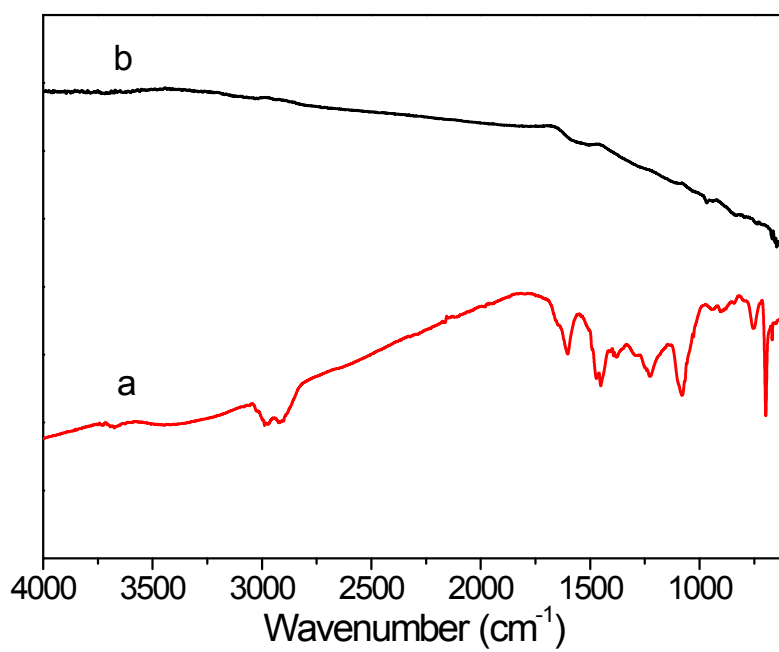


Figure S6. FT-IR spectra of as-made (a) PR/PEO-*b*-PS composite nanoparticles, (b) corresponding MCNs-1.

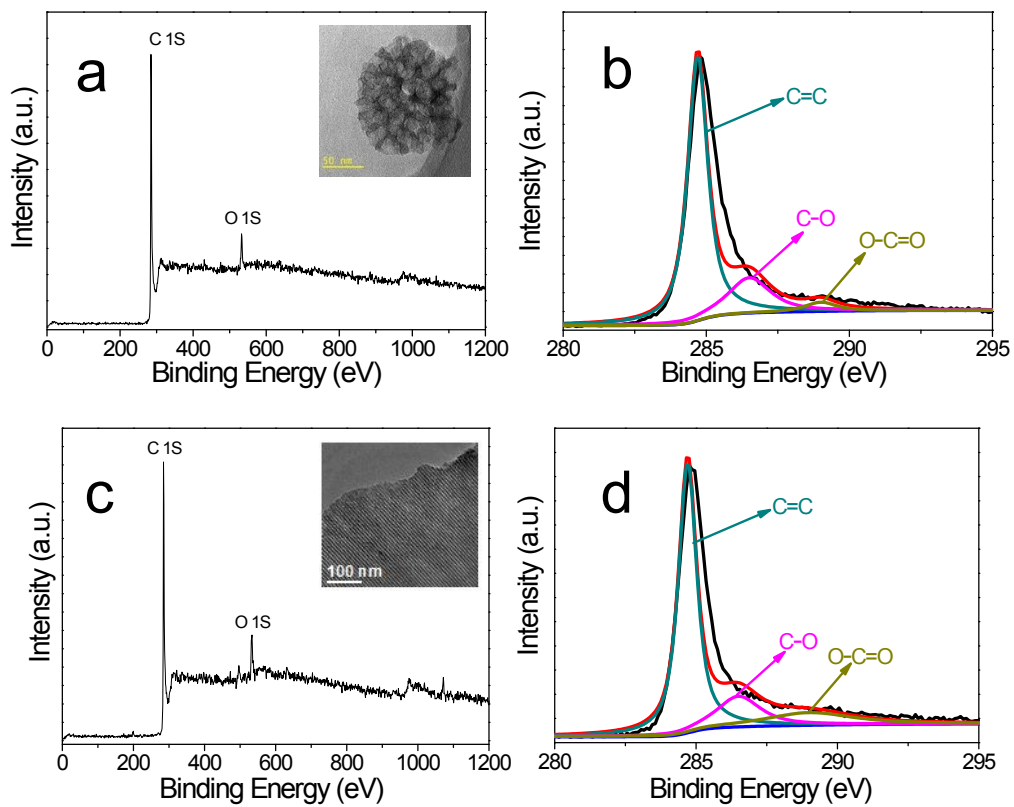


Figure S7. XPS survey spectrum of (a) MCNs, (c) OMC; High-resolution XPS spectra of C1s of (b) MCNs, (d) OMC.

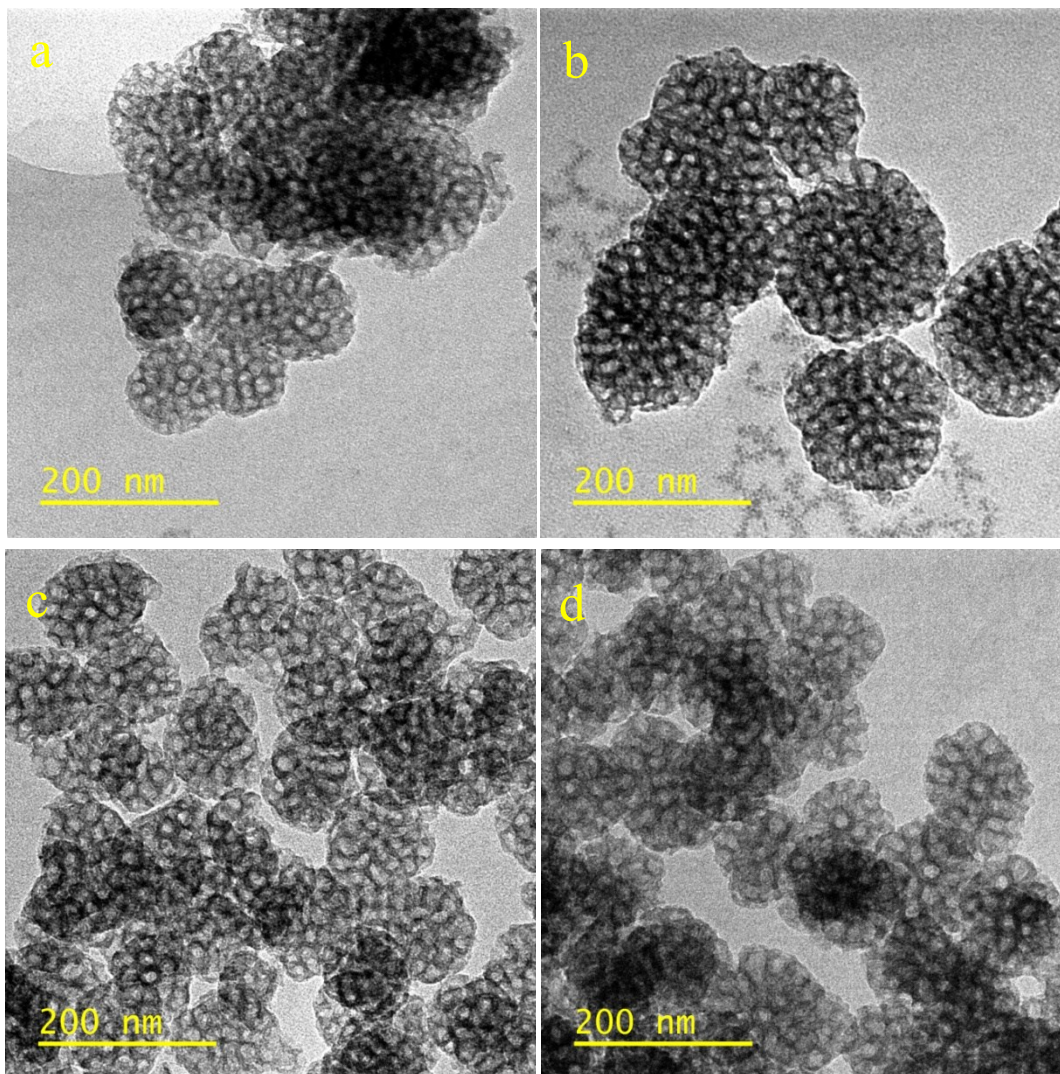


Figure S8. TEM images of MCNs obtained from synthesis condition of (a) 20 °C, (b) 40 °C, (c) 5 mL ethanol, (d) 15 mL ethanol.

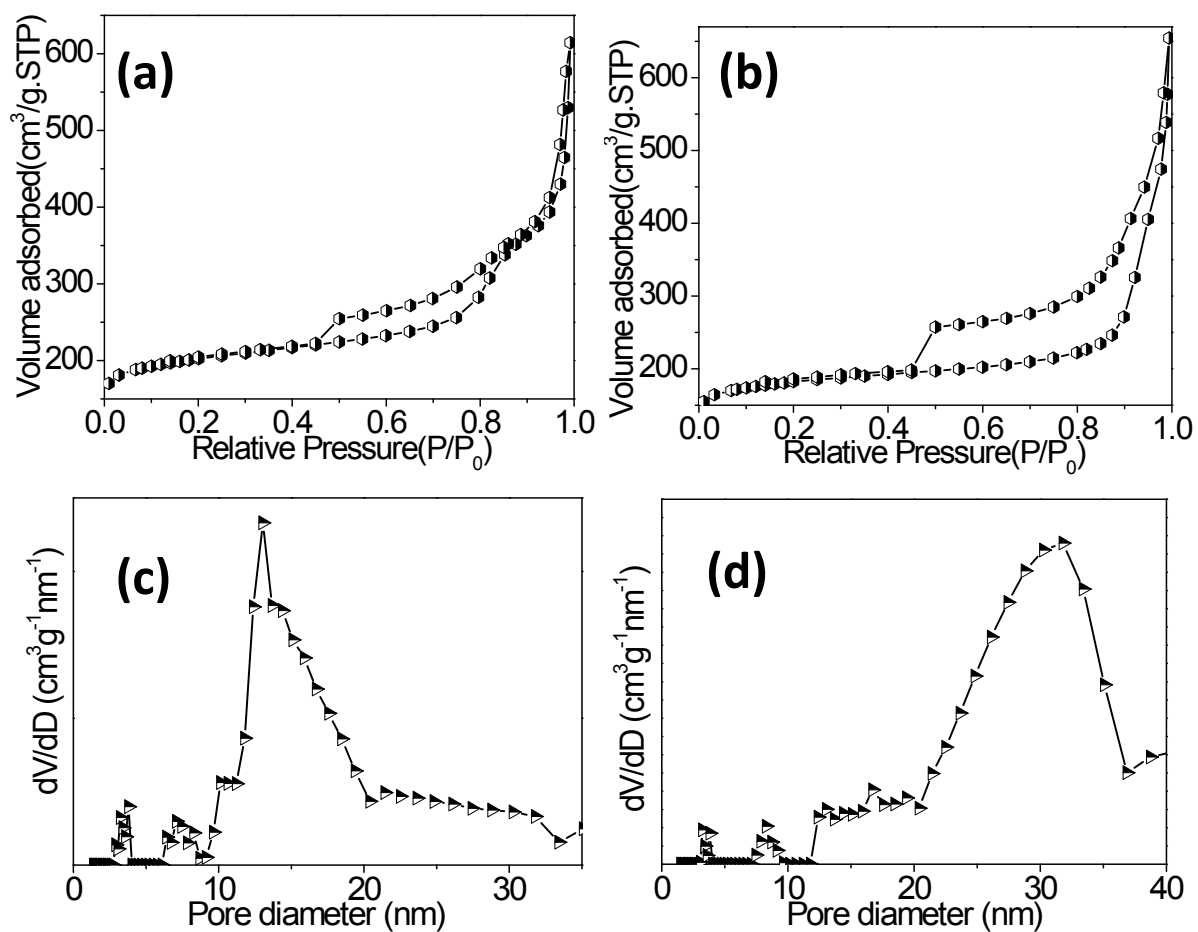


Figure S9. Nitrogen adsorption-desorption isotherm and NLDFT pore diameter distribution curve from adsorption branch of (a, c) MCN-0, (b, d) MCN-2.

Table 1. Textural parameters of the samples

Sample	BET surface area (m ² g ⁻¹)	Pore volume (cm ³ g ⁻¹)	Pore size (nm)
MCNs-0	686	0.66	13
MCNs-2	656	0.69	32

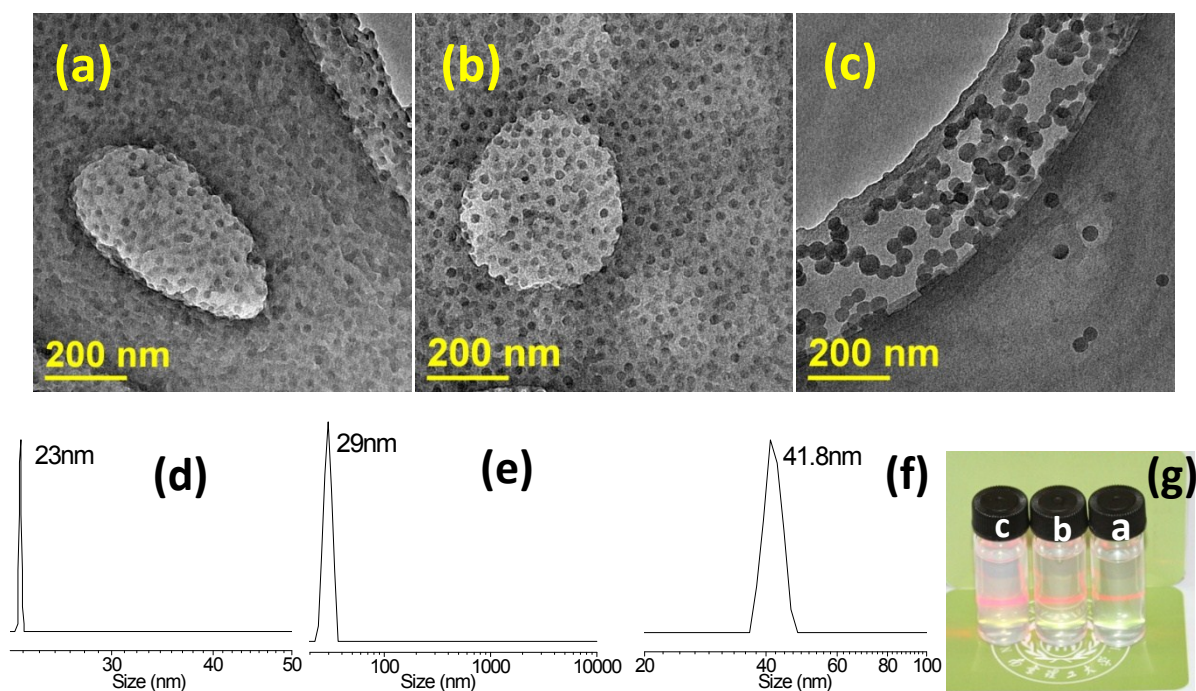


Figure S10. TEM images and DLS profiles of (a, d) PEO₁₂₅-*b*-PS₁₂₀ micelle, (b, e) PEO₁₂₅-*b*-PS₁₇₈ micelle, (d, f) PEO₁₂₅-*b*-PS₂₅₀ micelle; (g) Photograph of PEO-*b*-PS micelles, (a) PEO₁₂₅-*b*-PS₁₂₀, (b) PEO₁₂₅-*b*-PS₁₇₈, (c) PEO₁₂₅-*b*-PS₂₅₀.

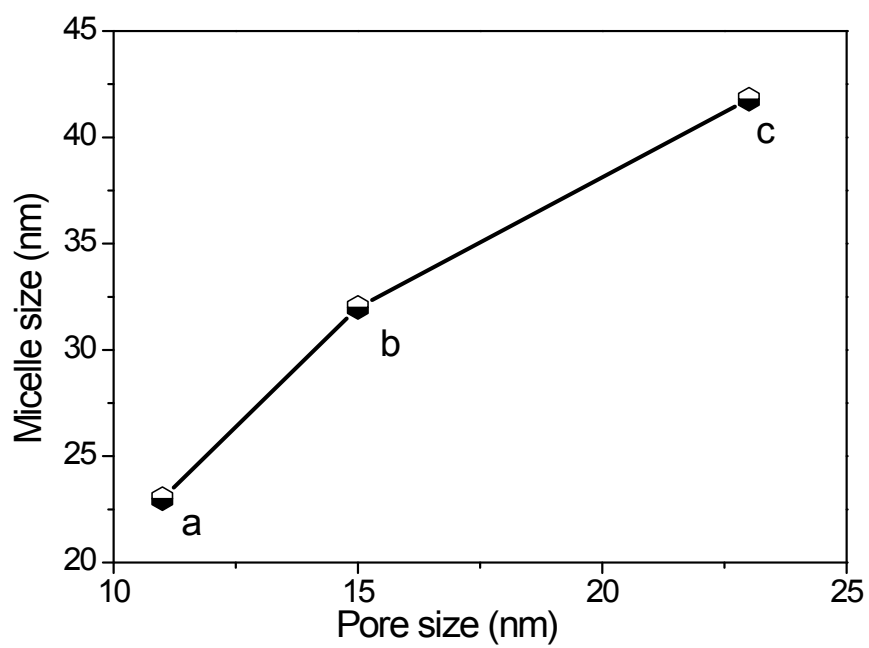


Figure S11. Pore size- micelle size curve of the three kinds of MCNs and corresponding micelles, (a) MCNs-0, (b) MCNs-1, MCNs-2.

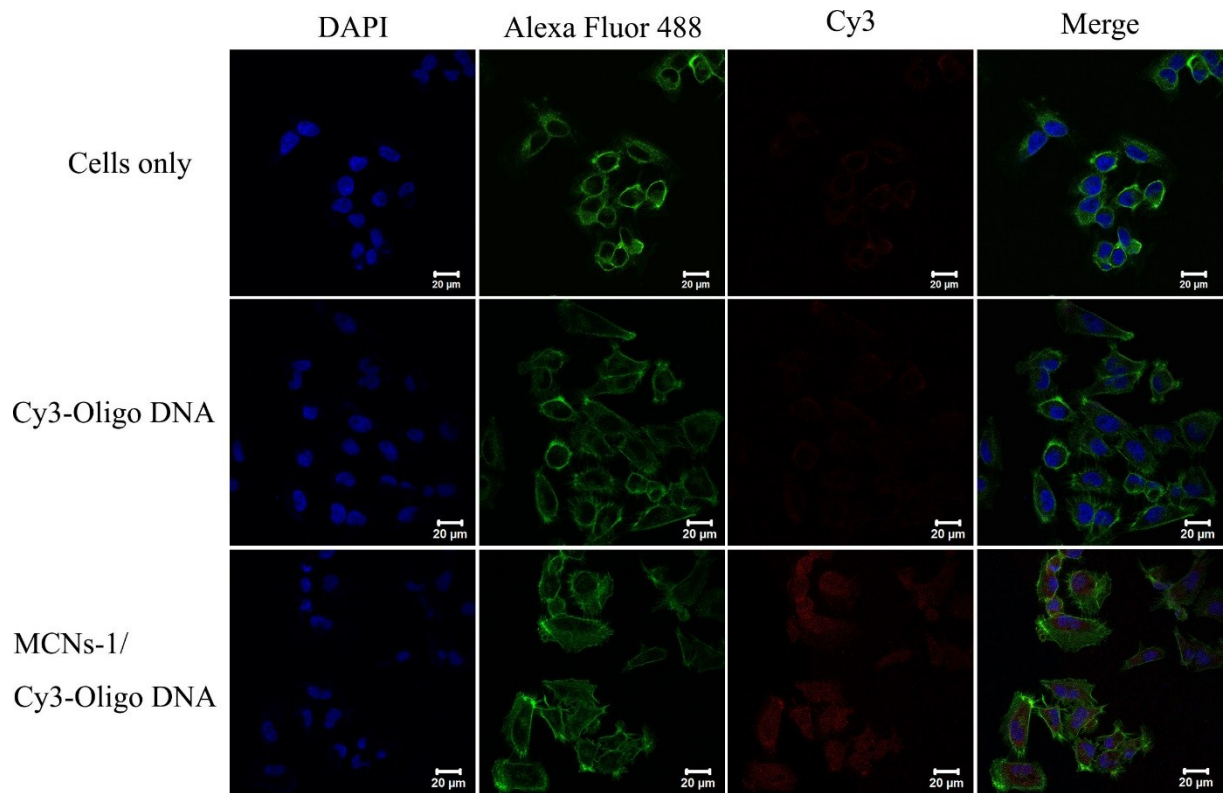


Figure S12. Confocal microscopy images of KHOS cells only without any treatment (first row), with the treatment of free Cy3-Oligo DNA (100nM) (second row), the complex of MSNs-1 (80 ug/ml) and Cy3-Oligo DNA (100nM) (third row). The cytoskeleton and nuclei in cells were stained by Alexa Fluor® 488 phalloidin (green) and DAPI (blue), respectively.

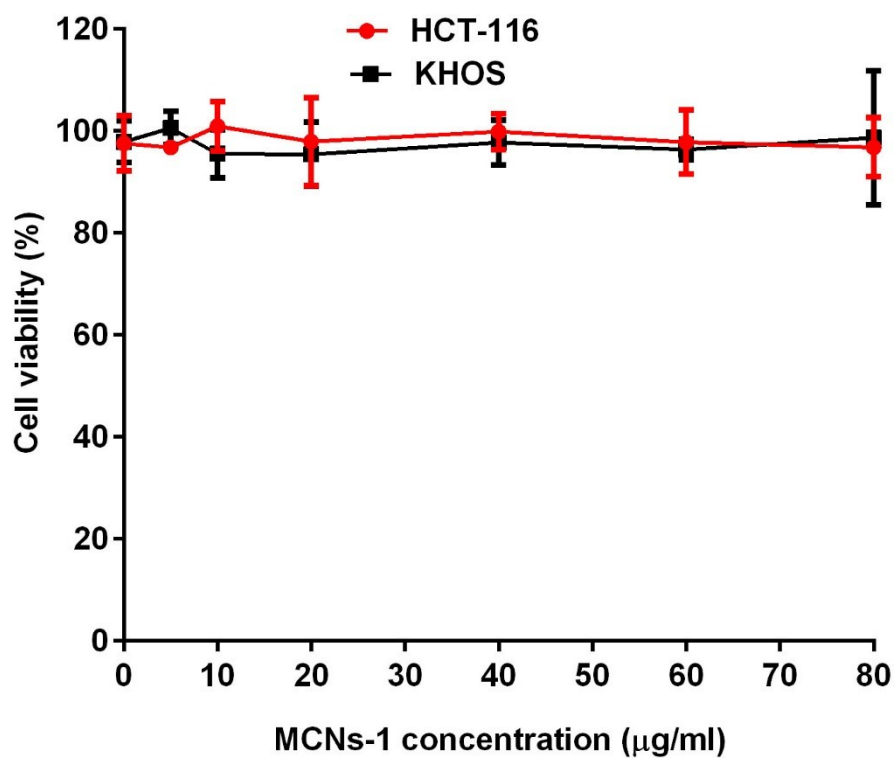


Figure S13. Cell viability of KHOS and HCT-116 cells after treated with MCNs-1 at different concentrations.