Two Growth Modes of Semicrystalline Cylindrical Poly(ε-caprolactone)-b-Poly(ethylene oxide) Micelles

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Figure S1. Schematic temperature profile for preparation of the seed micelles and micellar growth.
Figure S2. Changes of the apparent hydrodynamic diameter ($D_{h}^{\text{app}}$) with holding time for the PCL$_{59}$-b-PEO$_{113}$ micelles in H$_2$O/THF (5/1 v/v) (a), H$_2$O/dioxane (5/1 v/v) (b) and H$_2$O/DMSO (5/1 v/v) (c) solutions detected by DLS upon holding at 53 °C.
Figure S3. Enlarged HRTEM images for the seed micelles prepared from different solutions. (a): H$_2$O/THF (5/1 v/v); (b): H$_2$O/DMF (5/1 v/v); (c): H$_2$O/DMSO (5/1 v/v). Insets in (b) and (c) are the Fourier transformation of the square-framed areas. The letters a and c in the HRTEM images indicate crystalline micelles and amorphous micelles, respectively.

The lattices fringes can be seen more clearly in the enlarged HRTEM images. It is found that all the micelles are amorphous for the H$_2$O/THF (5/1 v/v) solution, a minor parts of the micelles are crystalline for the H$_2$O/DMF (5/1 v/v) solution, but most of the micelles are crystalline for the H$_2$O/DMSO (5/1 v/v) solution.
Figure S4. TEM micrographs of PCL$_{59}$-b-PEO$_{113}$ micelles in H$_2$O/THF (5/1 v/v) (a) and H$_2$O/dioxane (5/1 v/v) (b) solutions after holding at 53 °C for 5 min and then growth at 4 °C for 7 days.

Figure S4 shows that no growth takes place for the PCL$_{59}$-b-PEO$_{113}$ micelles in both H$_2$O/THF (5/1 v/v) and H$_2$O/dioxane (5/1 v/v) solutions after placement at 4 °C for 7 days. This is probably due to the absence of the seeds of semicrystalline micelles in these two solutions.
Figure S5. Changes of the apparent hydrodynamic diameters ($D_h^{\text{app}}$) measured by DLS with growth time in a long period the PCL$_{59}$-$b$-PEO$_{113}$ micelles in H$_2$O/DMF (5/1 v/v) (a) and H$_2$O/DMSO (5/1 v/v) (b) solutions.

Figure S5 shows that the growth rate of the semicrystalline micelles becomes much slower after 6 hours for the H$_2$O/DMF (5/1 v/v) solution and 4 days for the H$_2$O/DMSO (5/1 v/v) (b) solution.