Supporting Information for Supramolecular chirality of amphiphilic block copolymer films made through two steps:

self-assembling first, and then solution coating

Yingjue Wang^a, Zhenzhen Zhang^a, Yanggang Gao^a, Gang Zou^a and Qijin Zhang^{a*}



Figure S1 Microphotographs of vesicles' film.



Figure S2 SEM images of solution film surface (a and c) and vesicles' film surface (b and d).



Figure S3 Liner dichroism (LD) spectra of vesicles' film composed of pNIPAM-b-p(L-Phe). The rotation angles of the quartz around its center are 0°, 45°, 90°, 180° and 270°.



Figure S4 Left: XRD curves for 2 Θ between 1o and 10o of solution film (black) and vesicles' film (red); right: XRD curves for 2 Θ between 10o and 60o of solution film (black) and vesicles' film (red).



Figure S5 Microscope images of vesicles' film after being immersed in aqueous solution for more than 48h.



Figure S6 GPC of macro chain transition agent (Macro-CTA) of N, N-isoprop-ylacrylamide.



Figure S7 1H-NMR spectra of the copolymers PNIPAM-b-P(L-Phe) (left) and PNIPAM-b-P(D-Phe) (right).

The molecular weights of copolymers are calculated according to the ¹H NMR spectra. The shift at 3.5 ppm (c) is assigned to the methyl of the NIPAM in copolymers and the shift at 0.8 ppm (d) is assigned to the methyl of the phenylalanine-methyl ester. Herein, the block ratio of the copolymers could be calculated according to the integral area ratio of c and d. The number of L-phenylalanine and D-phenylalanine repeating units among the copolymers is 57 and 90 while the number of NIPAM is 126 for both enantiomers.

Table S1 Characterization of block copolymers PNIPAM-b-P[L(or D)-Phe]

Polymer	PNIPAM	Poly(Phenylalanine)
PNIPAM- <i>b</i> -P(L-Phe)	126	57
PNIPAM- <i>b</i> -P(D-Phe)	126	90