Liquid Crystals

[Manuscript DOI: 10.1080/02678292.2020.1759153]

Supplemental material

Straight-chain alkanediol derivatives leading to glassy cholesteric liquid crystals with visible reflection

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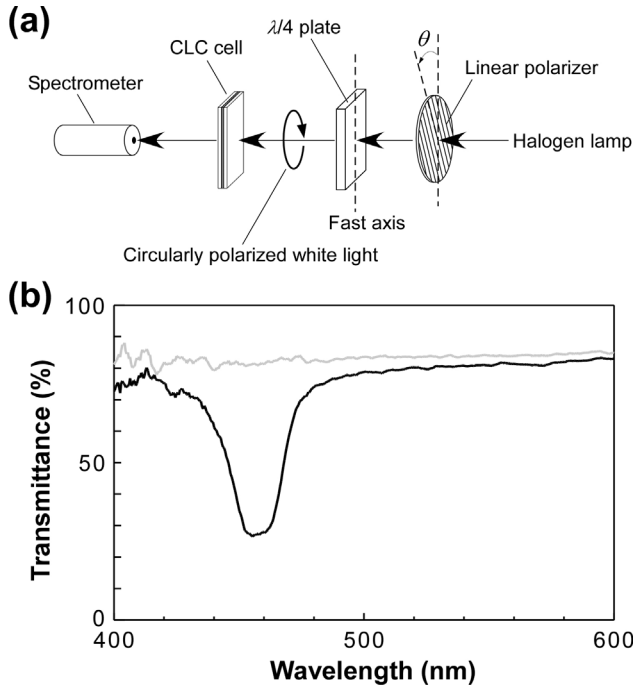

Fig. S1 (a) Experimental setup to measure the circularly polarized (CP) transmission spectrum of a CLC cell using both $\lambda/4$ plate and linear polarizer. (b) CP transmission spectra of a CLC cell of C8-DiCh heated at 130 °C. Gray and black spectra were obtained using right- (R-CP) and left-handed CP (L-CP) light as a probing white light, respectively.

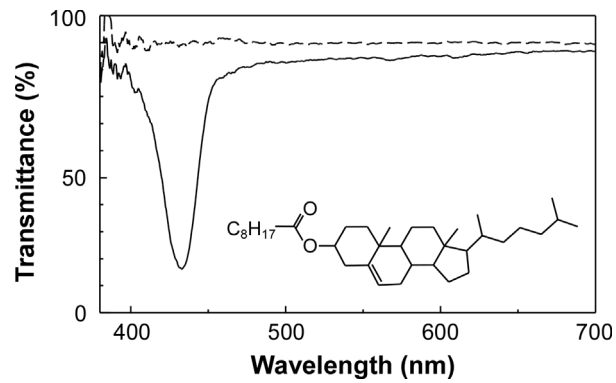

Fig. S2 Circularly polarized (CP) transmission spectra of cholesteryl nonanoate (CN). Dashed and solid curves were obtained using right- (R-CP) and left-handed CP (L-CP) white light as the probing light, respectively. The inset shows the chemical structure of CN.

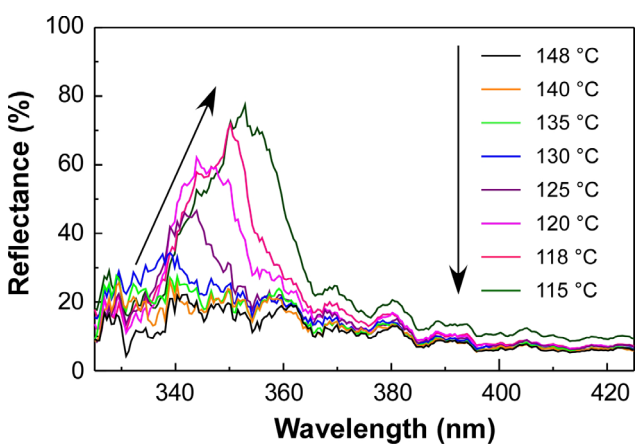

Fig. S3 Changes in the reflection spectrum of the asymmetric compound of C8-DiCh-EtCb on cooling from 148 °C to 115 °C.

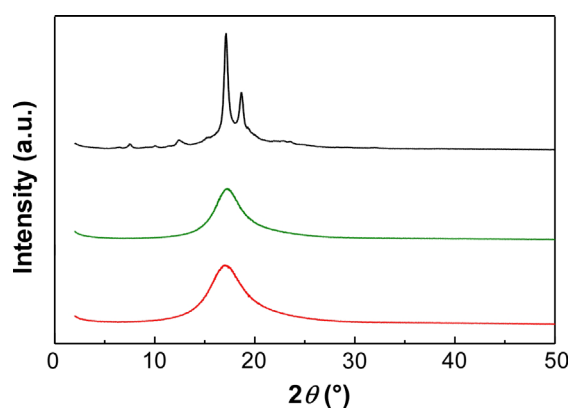

Fig. S4 XRD profiles of C8-DiCh solidified by slow cooling (black curve) and rapid cooling (green curve) from the CLC phase to room temperature. The XRD profile of a mixture of C8-DiCh and C10-DiCh (C8/10-DiCh) is also shown in this figure (red curve).

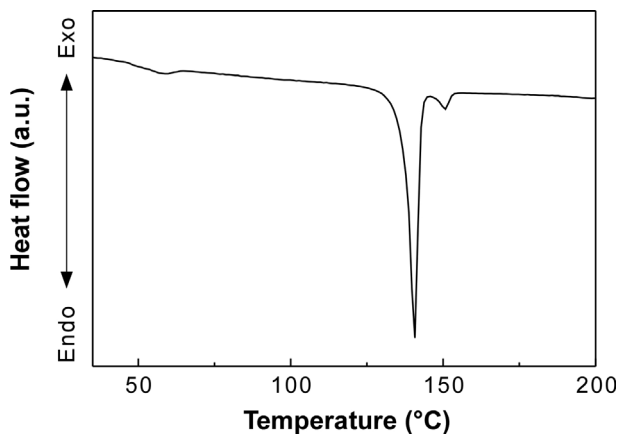

Fig. S5 Representative DSC profile of the solidified G-CLC state of C8-DiCh, which was rapidly cooled from the CLC temperature in advance, upon heating process. A broad peak around 55 °C is attributed to the glass transition, and two peaks at ~140 °C and ~150 °C are the melting of two kinds of crystalline structures in the solidified G-CLC of C8-DiCh.