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Supporting Information

Polylactide-*b*-poly(ethylene-*co*-butylene)-*b*-polylactide thermoplastic elastomers: Role of polylactide crystallization and stereocomplexation on microphase separation, mechanical and shape memory properties

Yongfeng Huang, Pengju Pan,* Guorong Shan and Yongzhong Bao

State Key Laboratory of Chemical Engineering, Department of Chemical and Biological Engineering, Zhejiang University, 38 Zheda Road, Hangzhou 310027, China

*Corresponding author. Tel.: +86-571-87951334; email: panpengju@zju.edu.cn

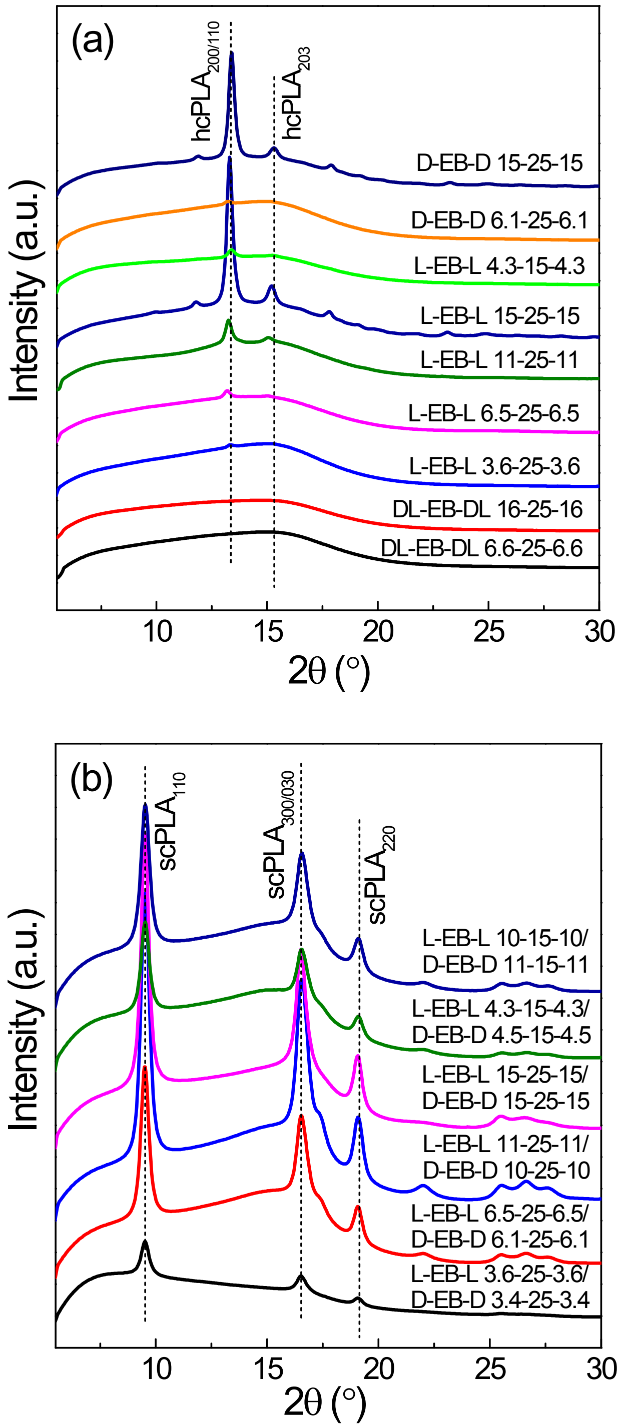


Fig. S1. WAXD patterns of (a) PLA-PEB-PLA and (b) PLLA-PEB-PLLA/PDLA-PEB-PDLA 1/1 blends after melt crystallization at 120 °C for 8h. The wavelength of X-ray is 0.124 nm. Hc and sc represent the homo and stereocomplex crystallites, respectively.

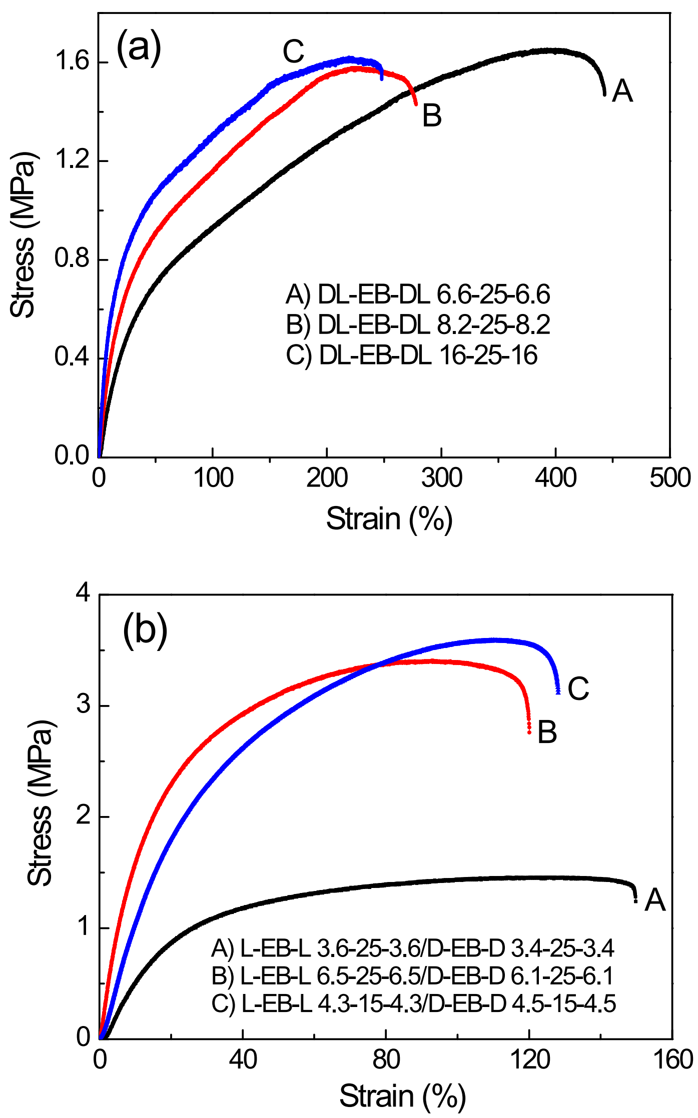


Fig. S2. Tensile stress-strain curves of (a) DL-EB-DL and (b) L-EB-L/D-EB-D 1/1 blends.

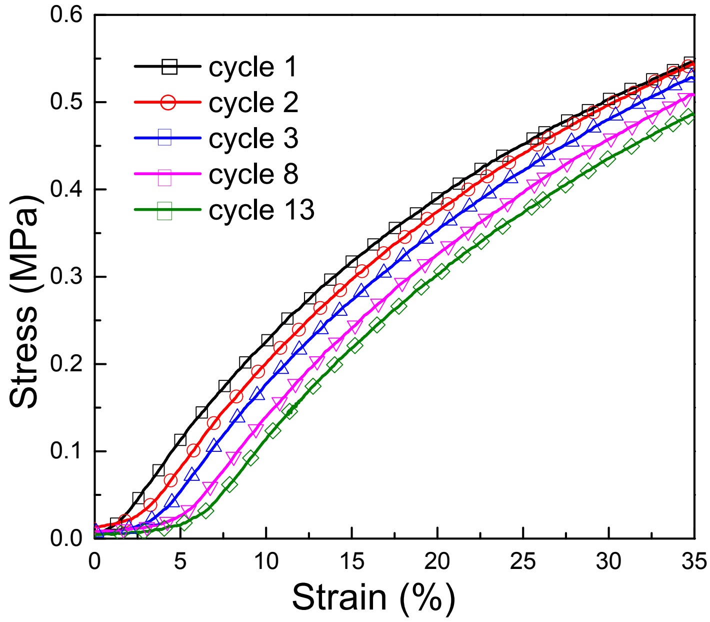
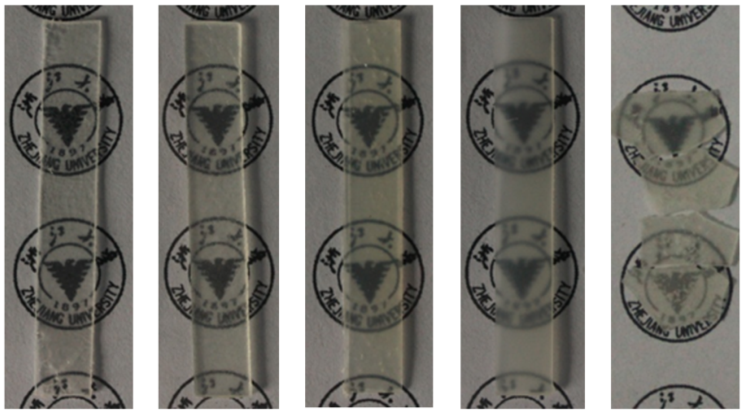


Fig. S3. Loading cycles 1, 2, 3, 8, and 13 for DL-EB-DL 6.6-25-6.6 copolymer. The sample was stretched to a strain of 35% at a rate of 20 mm/min, with 2 min delays between cycles.



(a) (b) (c) (d) (e)

Fig. S4. Transparency of PLA-PEB-PLAs and their enantiomeric blends. a) DL-EB-DL 16-25-16, b) L-EB-L 6.5-25-6.5, c) L-EB-L 15-25-15, d) L-EB-L 6.5-25-6.5/L-EB-L 6.1-25-6.1, e) L-EB-L 11-25-11/D-EB-D 10-25-10.

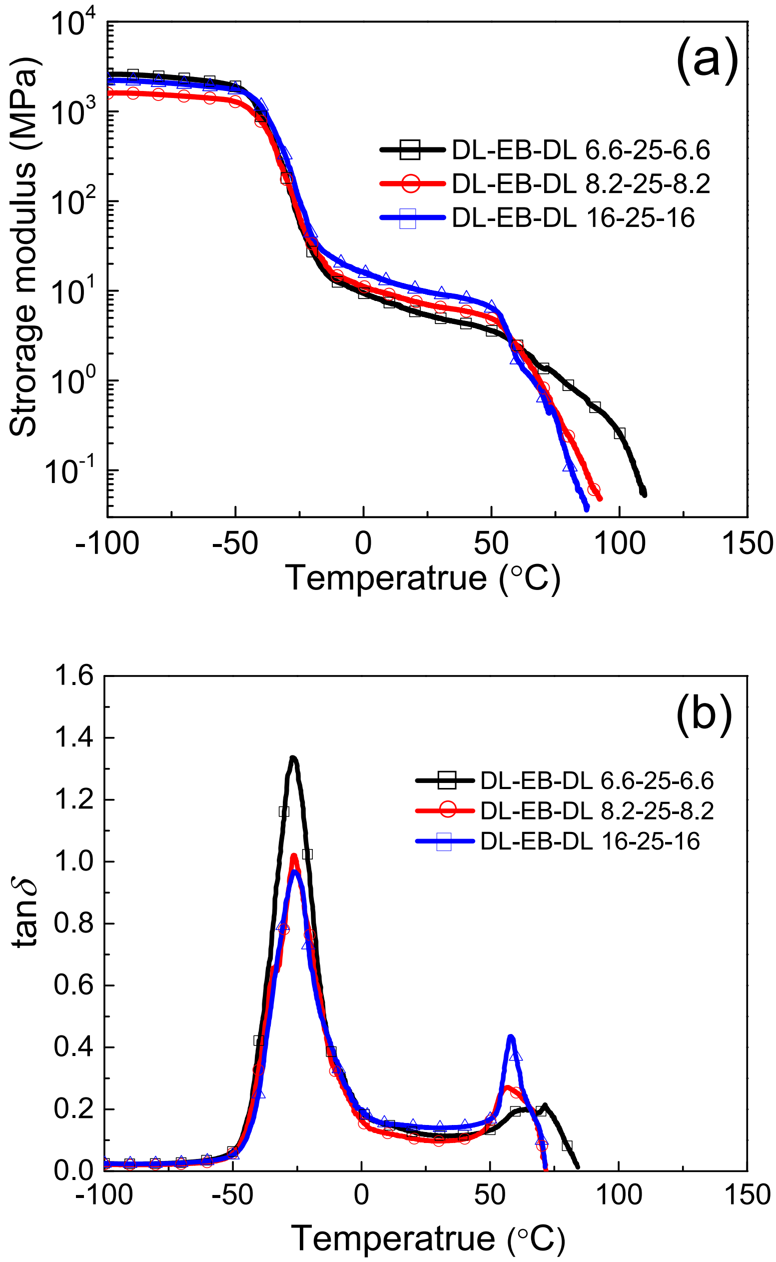


Fig. S5. DMA curves of (a) storage modulus and (b) tanδ as a function of temperature for DL-EB-DL triblock copolymers.

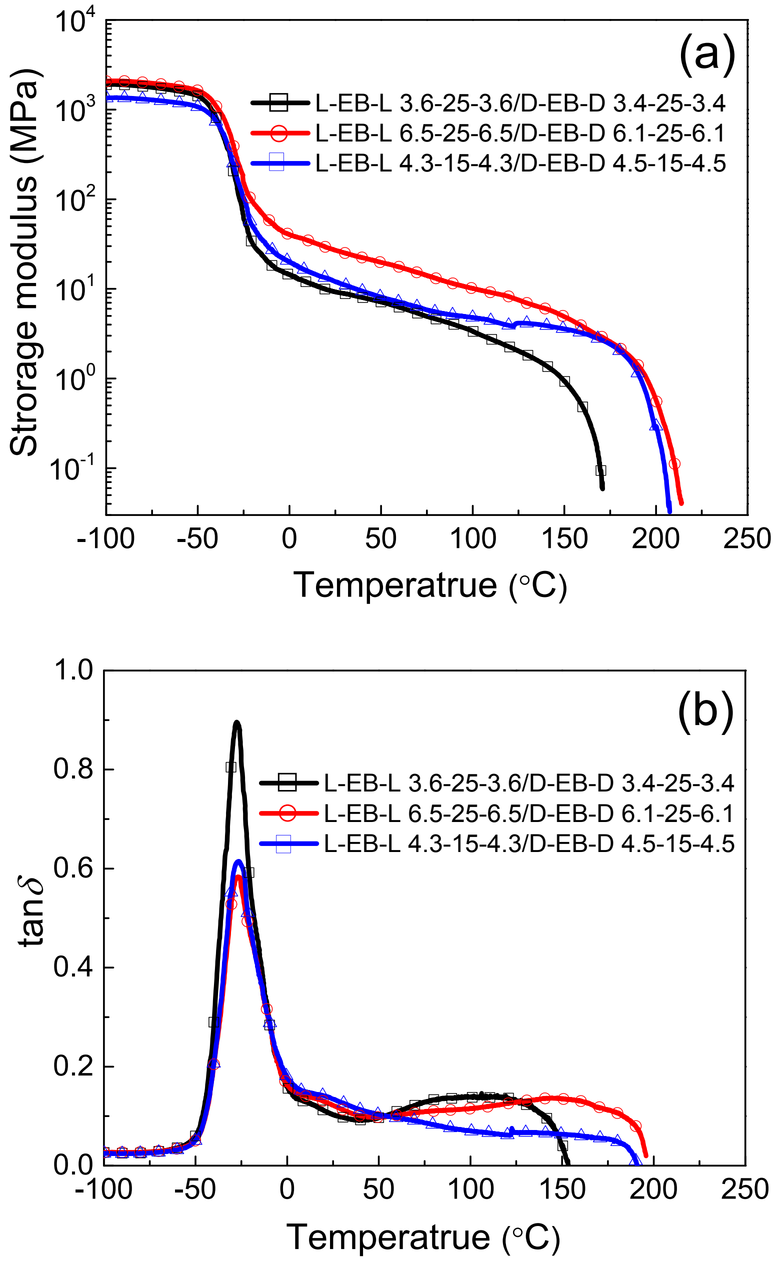


Fig. S6. DMA curves of (a) storage modulus and (b) tanδ as a function of temperature for L-EB-L/D-EB-D 1:1 blends.

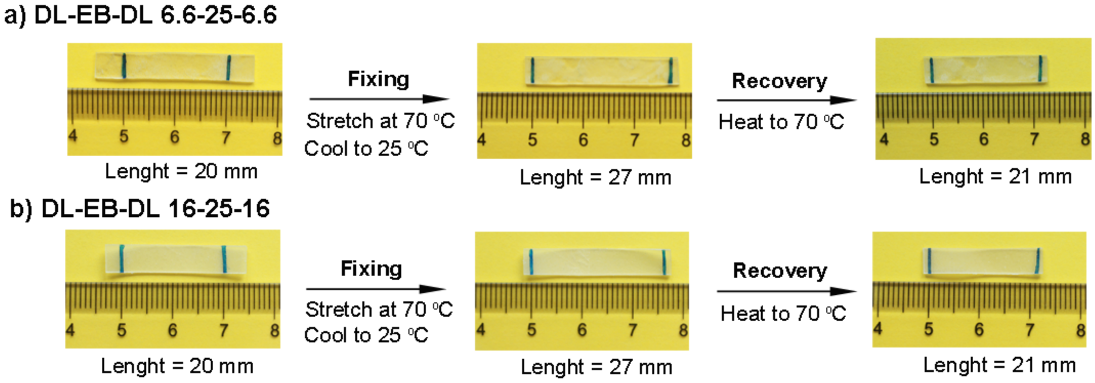


Fig. S7. Shape memory properties of DL-EB-DL triblock copolymers. Left: permanent shape; middle: temporary shape; right: recovered permanent shape.