

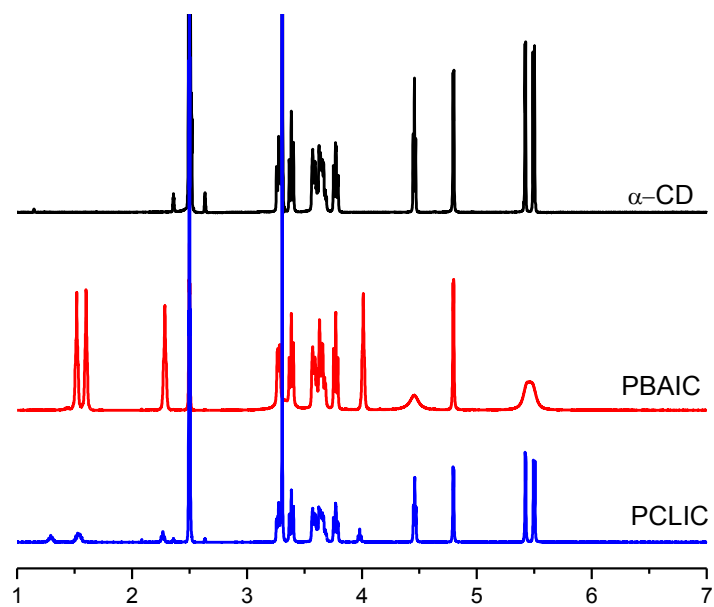
**Supplementary information**

**Nucleation Effect of  $\alpha$ -Cyclodextrin Inclusion Complexes  
on the Crystallization behaviors of biodegradable Poly (1,4-butylene adipate)**

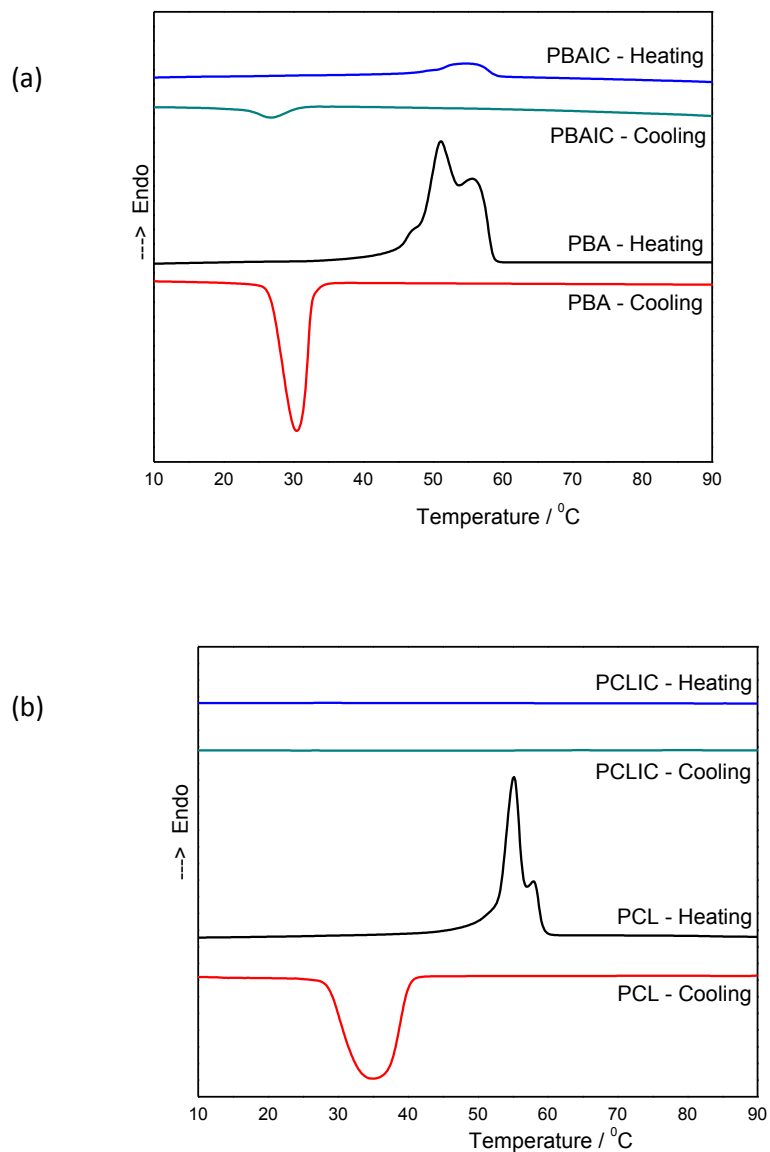
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**S1.** Host-guest stoichiometry of α-CD, PBAIC and PCLIC estimated using <sup>1</sup>H NMR



**S2.** DSC observation of the nonisothermal crystallization and melting behavior of the (a) pure PBA and PBAIC, (b) pure PCL and PCLIC samples at a rate of 10 °C /min.

The isothermal heat flow curve was integrated to determine the degree of crystallinity of the polymer as a function of crystallization time. The relative crystallinity  $X_t$  at a given time was calculated from the integrated area of the DSC curve from  $t = 0$  to  $t = t$  divided by the integrated area of the whole heat flow curve

$$X_t = 1 - \exp(-kt^n), \quad (1)$$

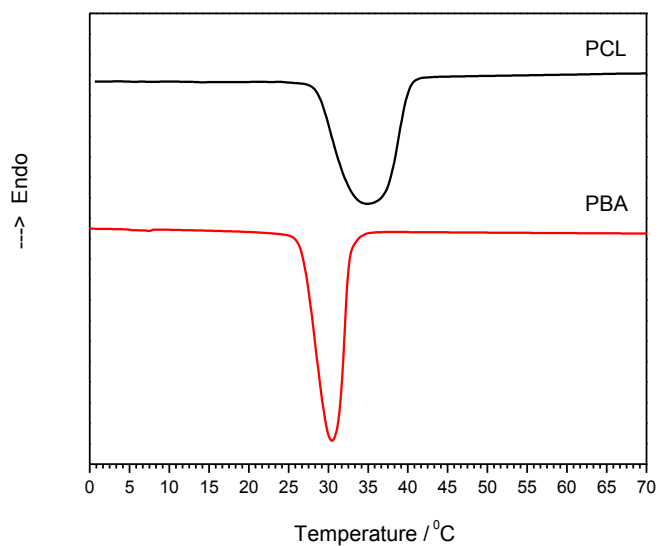
where  $n$  is an index related to the dimensional growth and the way of formation of primary nuclei and  $k$  is the overall rate constant associated with both nucleation and growth contributions. The linear form of eq 1 is given as in eq 2

$$\ln[-\ln(1-X_t)] = \ln k + n \ln t, \quad (2)$$

$n$  and  $k$  are obtained by plotting  $\ln[-\ln(1 - X_t)]$  against  $\ln t$ . Figure 6b illustrates the plot of  $\ln[-\ln(1 - X_t)]$  vs  $\ln t$  and the linear fitting of data for the PBA samples crystallized at 36 °C. Meanwhile, the crystallization halftime  $t_{1/2}$ , which is defined as the time when the crystallinity arrives at 50 %, can be determined from the kinetics parameters measured by using the following equation:

$$t_{1/2} = [(\ln 2)/k]^{1/n}. \quad (3)$$

**S3** Isothermal crystallization behavior and crystallization kinetics (Avrami equation based on the isothermal DSC measurements)



- S4.** DSC observations of the nonisothermal crystallization behavior of the (a) PBA, and (b) PCL samples at a rate of 10<sup>0</sup>C /min.