

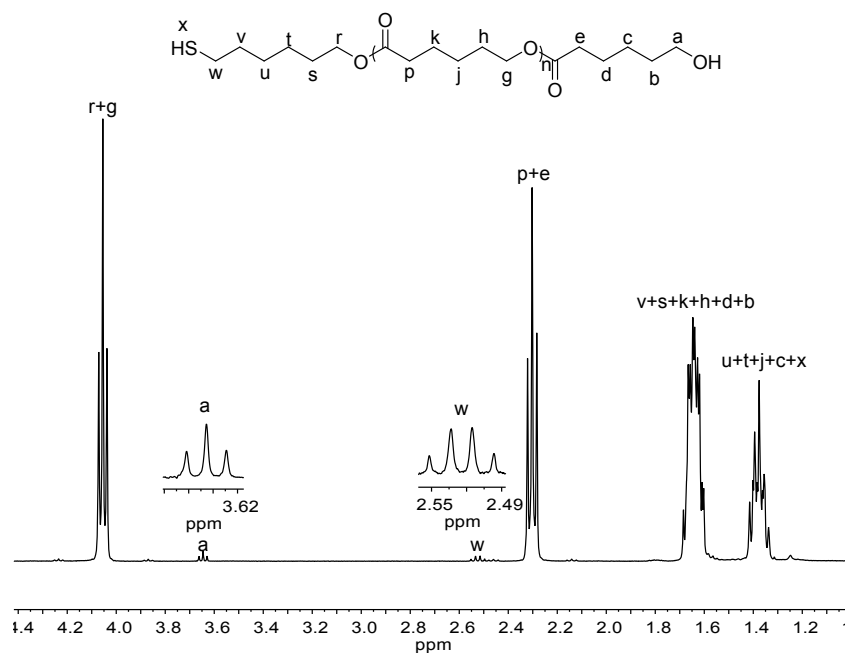
Supporting Information

**Direct synthesis of thiol-terminated poly( $\epsilon$ -caprolactone): study on polymerization kinetics, mechanism and rare earth phenolates' structure-activity relationship**

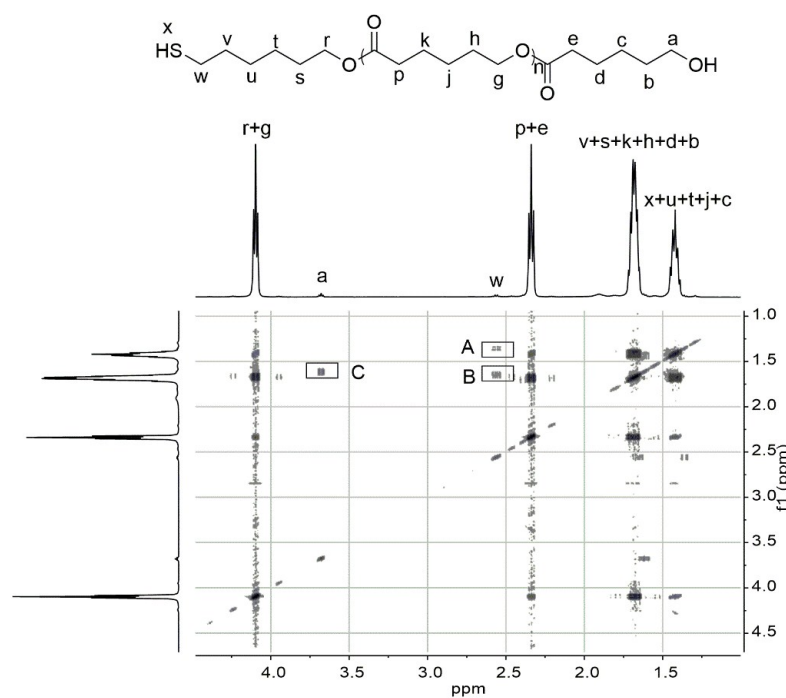
Yihuan Liu, Weijun Huang, Ning Zhu and Kai Guo\*

College of Biotechnology and Pharmaceutical Engineering, State Key Laboratory of Materials-Oriented Chemical Engineering, Nanjing Tech University, Nanjing 211800, China

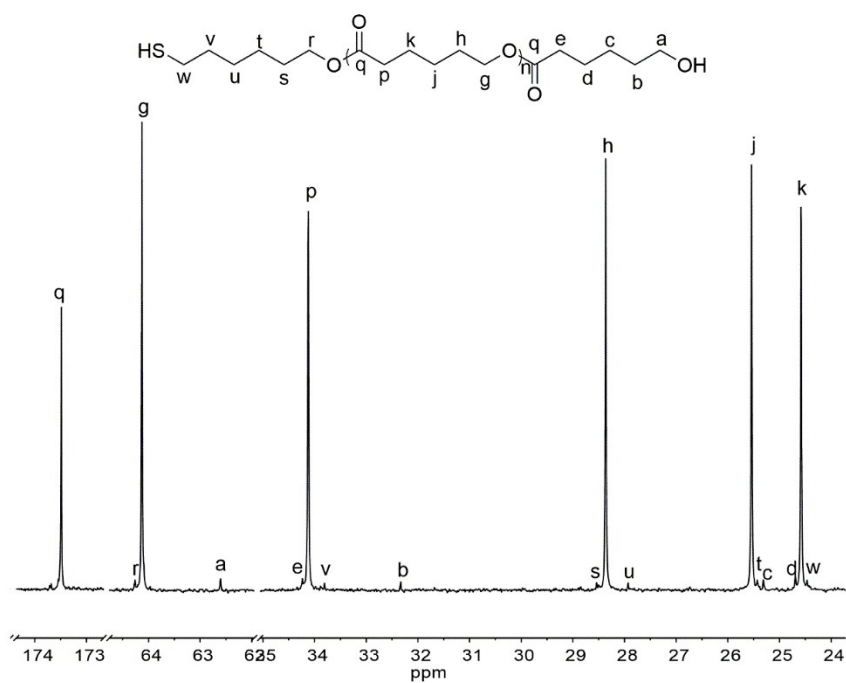
Corresponding author: guok@njtech.edu.cn



**Fig. S1**  $^1\text{H}$  NMR of thiol-terminated poly( $\epsilon$ -caprolactone) ( $[\text{CL}]/[\text{MH}]/[\mathbf{8}] = 40/1/0.2$ , 1 h,  $[\text{CL}] = 1.7$  mol/L 30  $^\circ\text{C}$ )



**Fig. S2**  $^1\text{H}$ - $^1\text{H}$  COSY of thiol-terminated poly( $\epsilon$ -caprolactone) ( $[\text{CL}]/[\text{MH}]/[\mathbf{8}] = 40/1/0.2$ , 1 h,  $[\text{CL}] = 1.7$  mol/L 30  $^\circ\text{C}$ )



**Fig. S3** <sup>13</sup>C NMR of thiol-terminated poly(ε-caprolactone) ([CL]/[MH]/[8] = 40/1/0.2, 1 h, [CL] = 1.7 mol/L 30 °C)