Electronic Supplementary Material (ESI) for Polymer Chemistry.

Controllable Synthesis of Narrow Polydispersity CO_2-Based Oligo(carbonate-ether) tetraol

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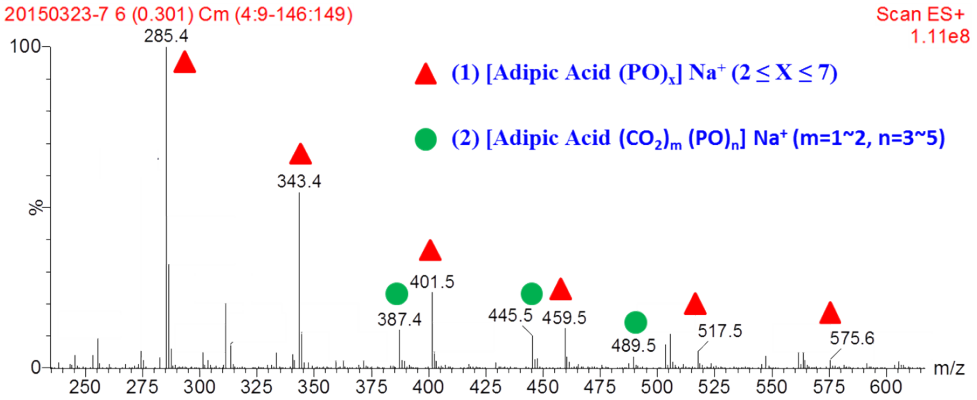

Fig. S1 ESI-MS spectrum of the product, copolymerization was carried out at 80 °C and 4 MPa for 5 min (less than 10% conversion), where 0.52 g adipic acid (n_{COOH} = 0.007 mol), 20 mg Zn-Co-DMC catalyst and 10 ml PO were added.

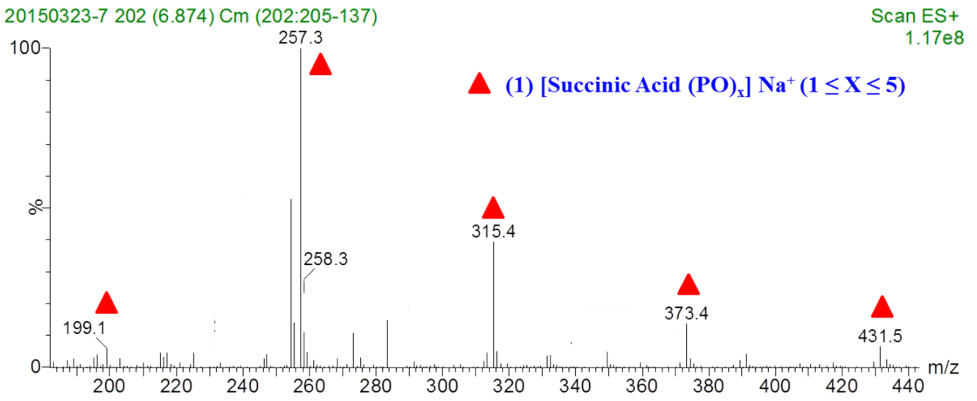

Fig. S2. ESI-MS spectrum of the product, the copolymerization was carried out at 80 °C and 4 MPa for 5 min (less than 9% conversion), where 0.42 g succinic acid (n_{COOH} = 0.007 mol), 20 mg Zn-Co-DMC and 10 ml PO were added.

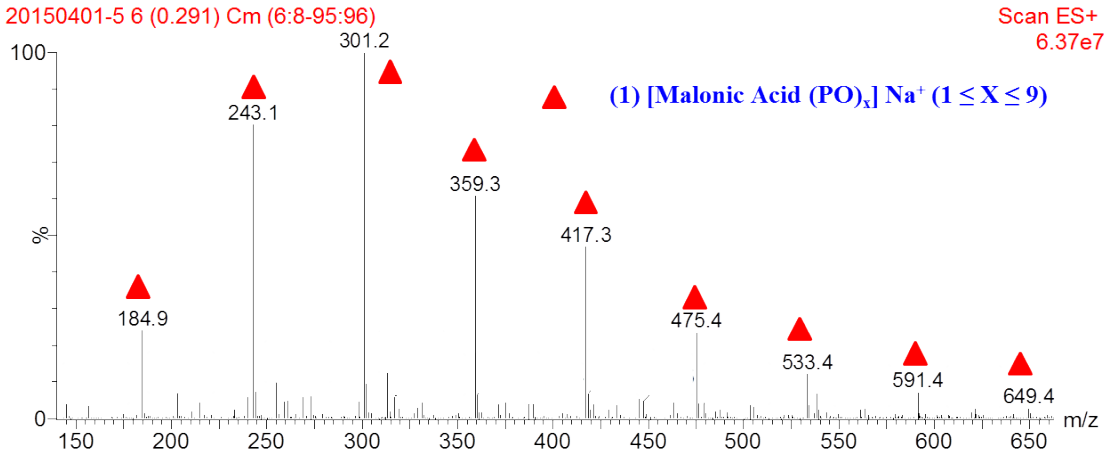

Fig. S3. ESI-MS spectrum of the product, the copolymerization was carried out at 80 °C and 4 MPa for 5 min (less than 8% conversion), where 0.37 g malonic acid (n_{COOH} = 0.007 mol), 20 mg Zn-Co-DMC and 10 ml PO were added.

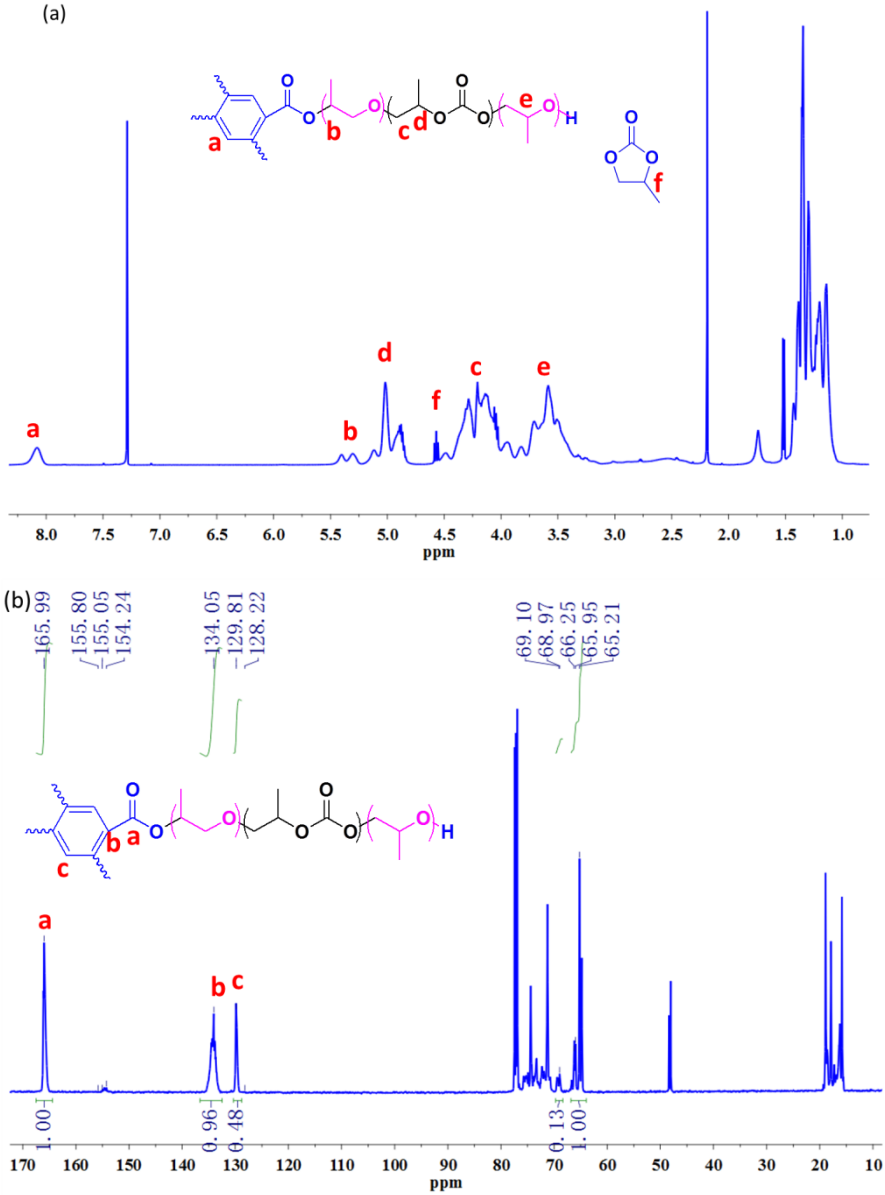

Fig. S4. ^{1}H NMR spectrum (a) and ^{13}C NMR spectrum (b) of oligo(carbonate-ether) tetraol from entry 8 Table 1.

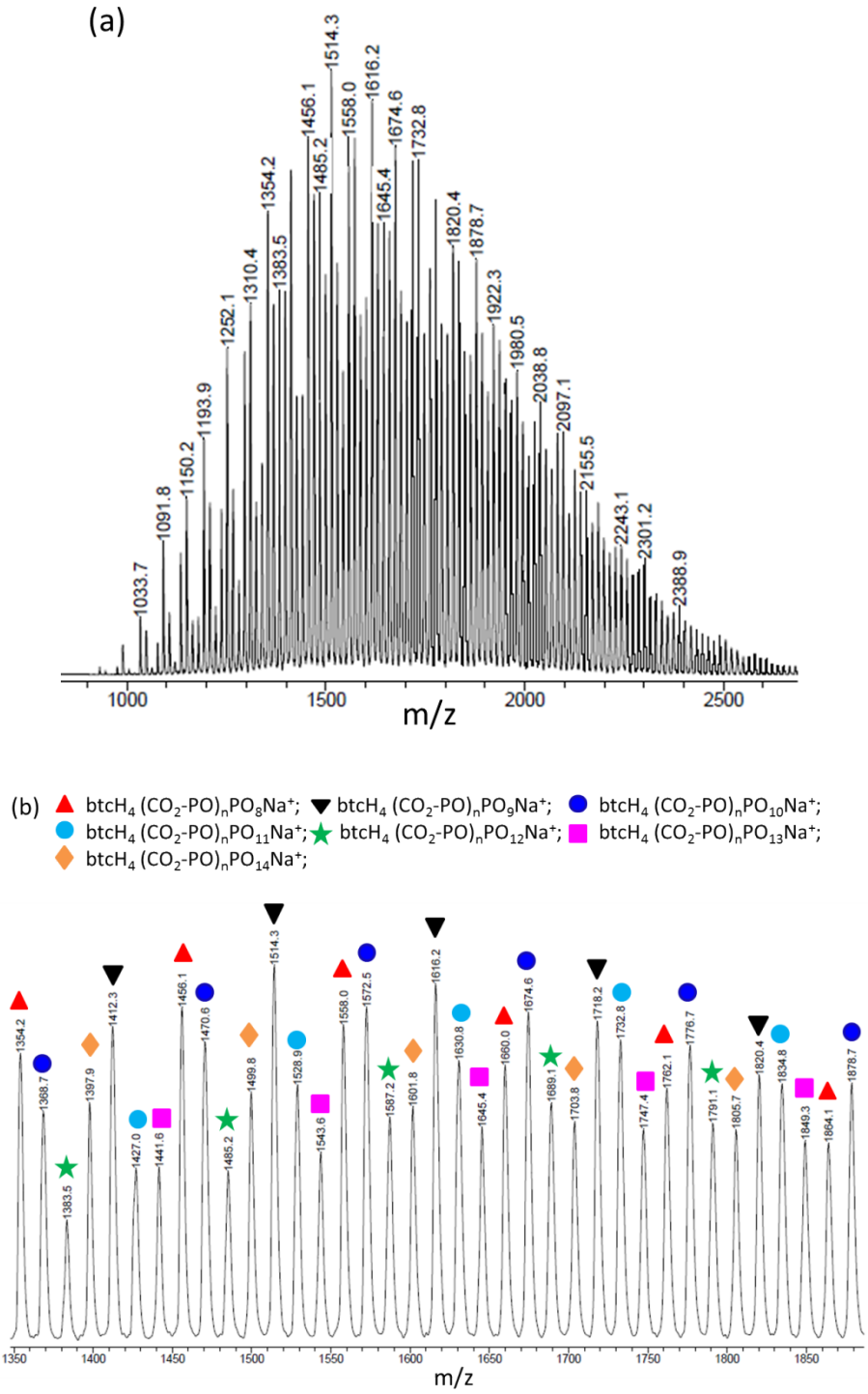

Fig. S5. MALDI-TOF-MS spectrum of oligo(carbonate-ether) tetraol (entry 8, Table 1). a: full spectrum, b: mass from 1300 to 1900 g mol^{-1}.