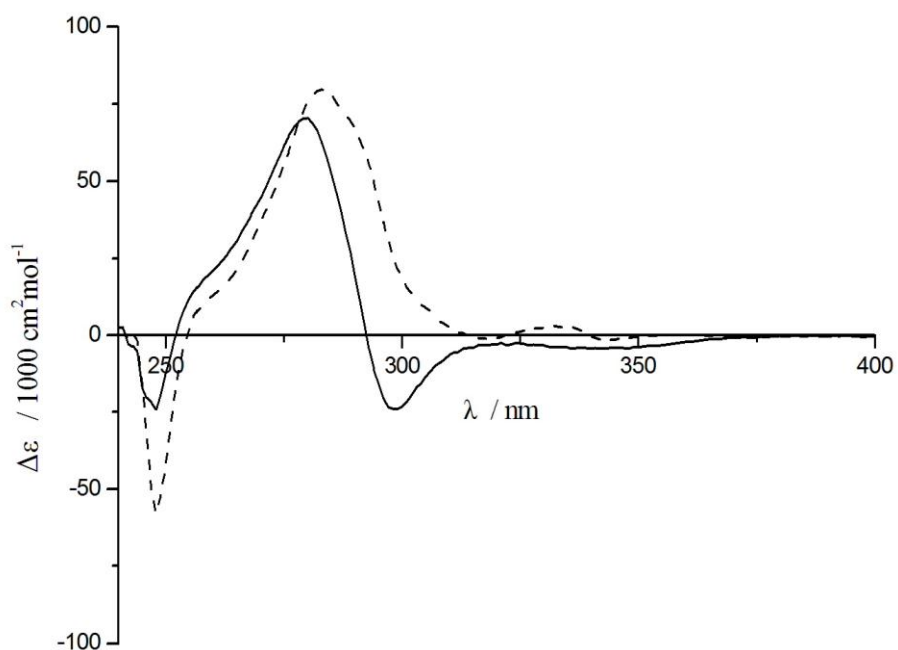


**Supporting Information**  
**Synthesis and Structures of (*R*)-Cyclopentadienyl-binaphthoxy Titanium(IV)**  
**Complexes and Catalytic Properties for Olefin Polymerization**

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**Figure S1.** CD spectra of the enantiomerically pure pro-ligands **1** (solid line) and **2** (dash line) in  $\text{CH}_2\text{Cl}_2$  at 25 °C.

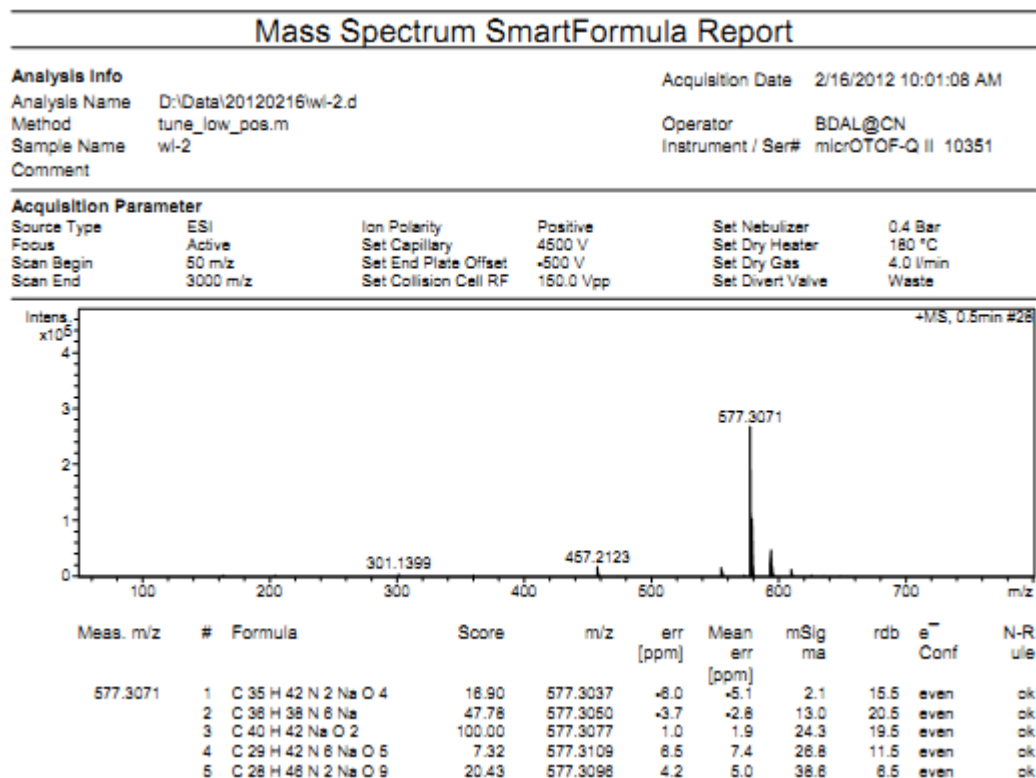


Fig S2. HRMS spectrum of the pro-ligand 1

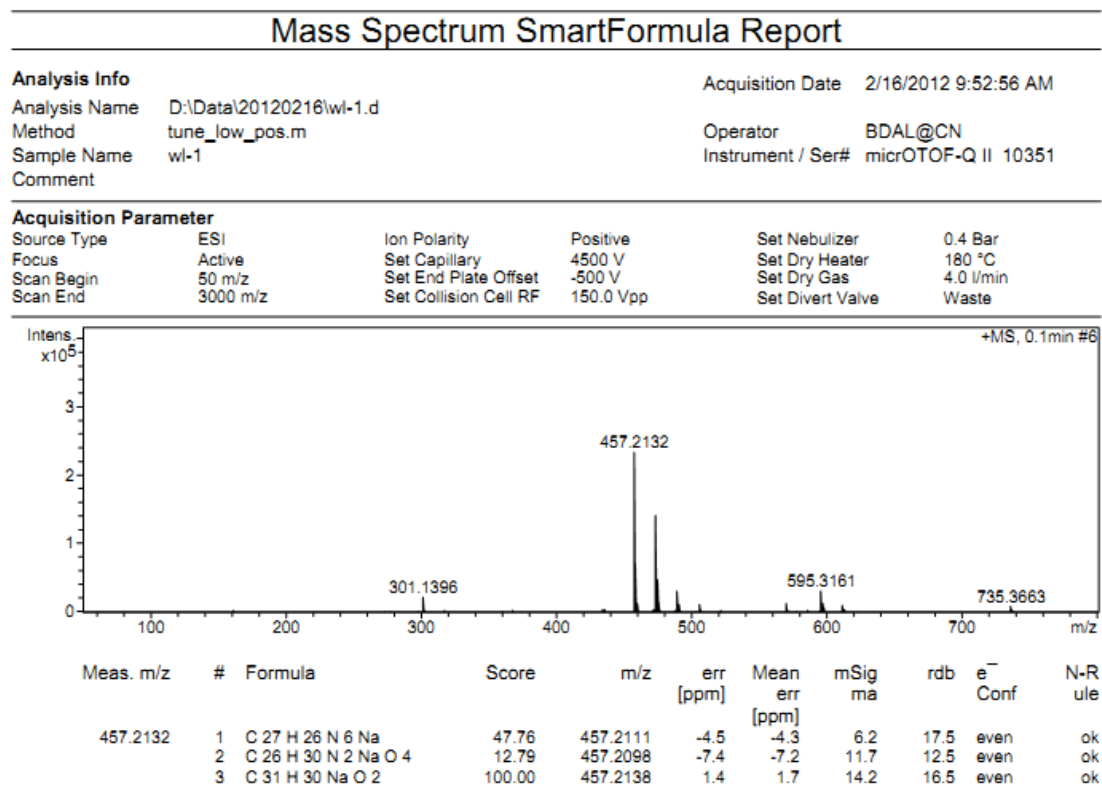


Fig S3. HRMS spectrum of the pro-ligand 2

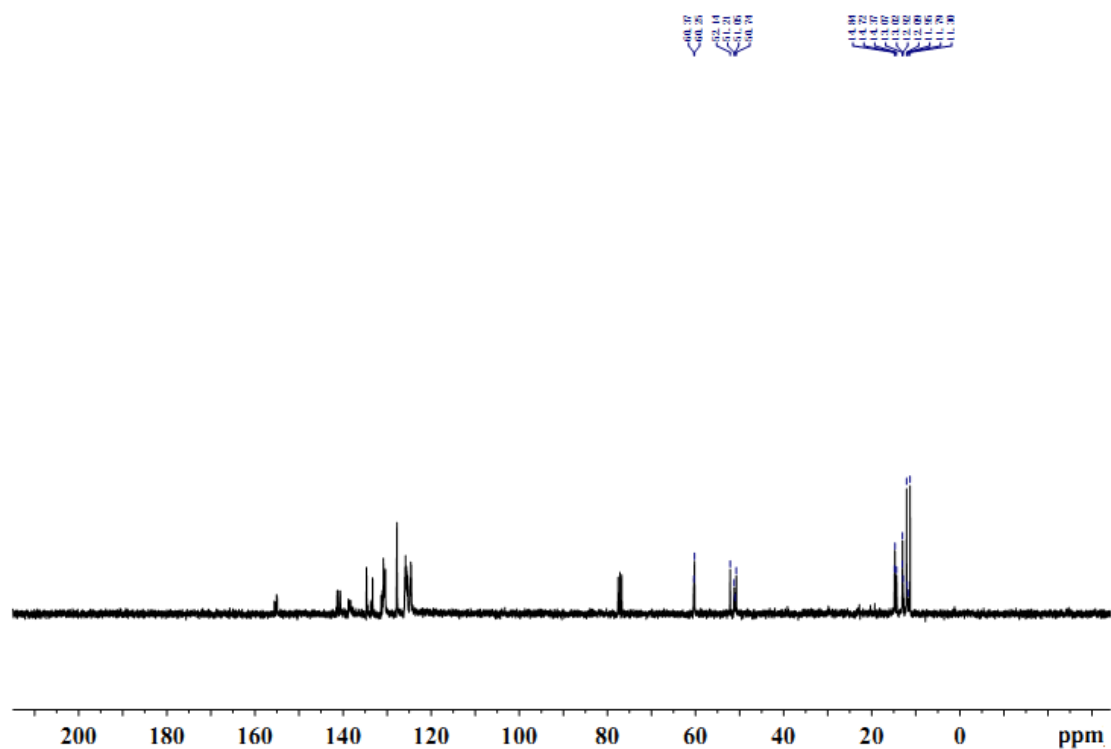


Fig S4.  $^{13}\text{C}$  NMR spectrum of the pro-ligand 1

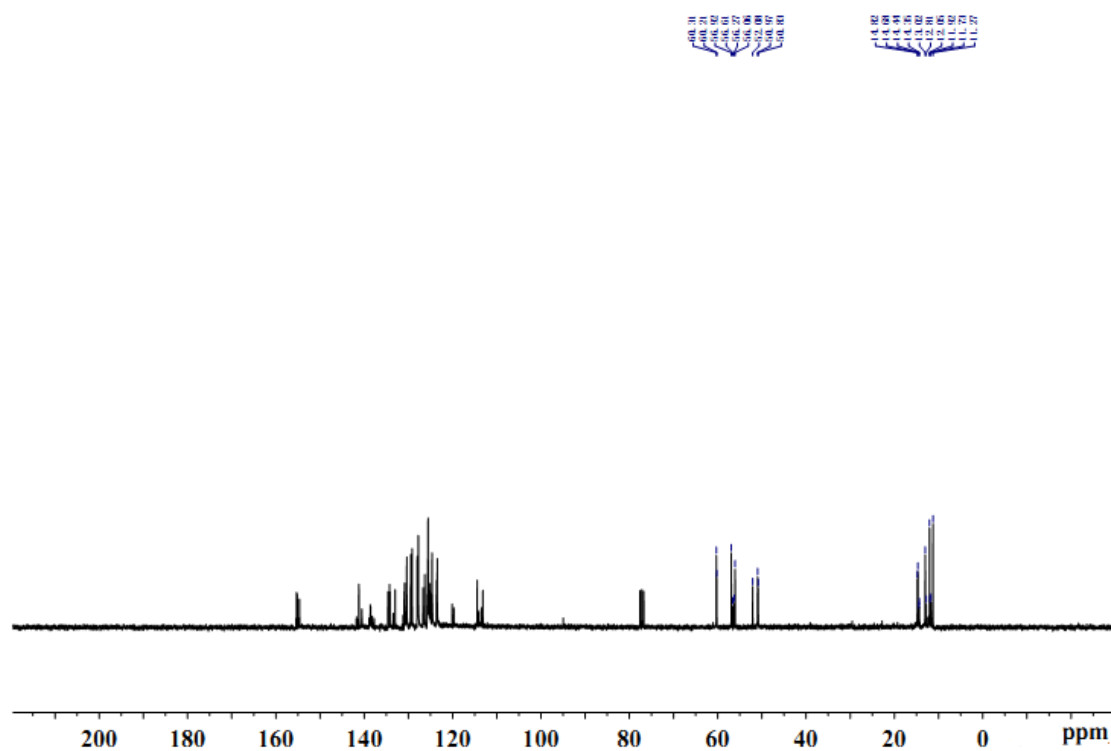
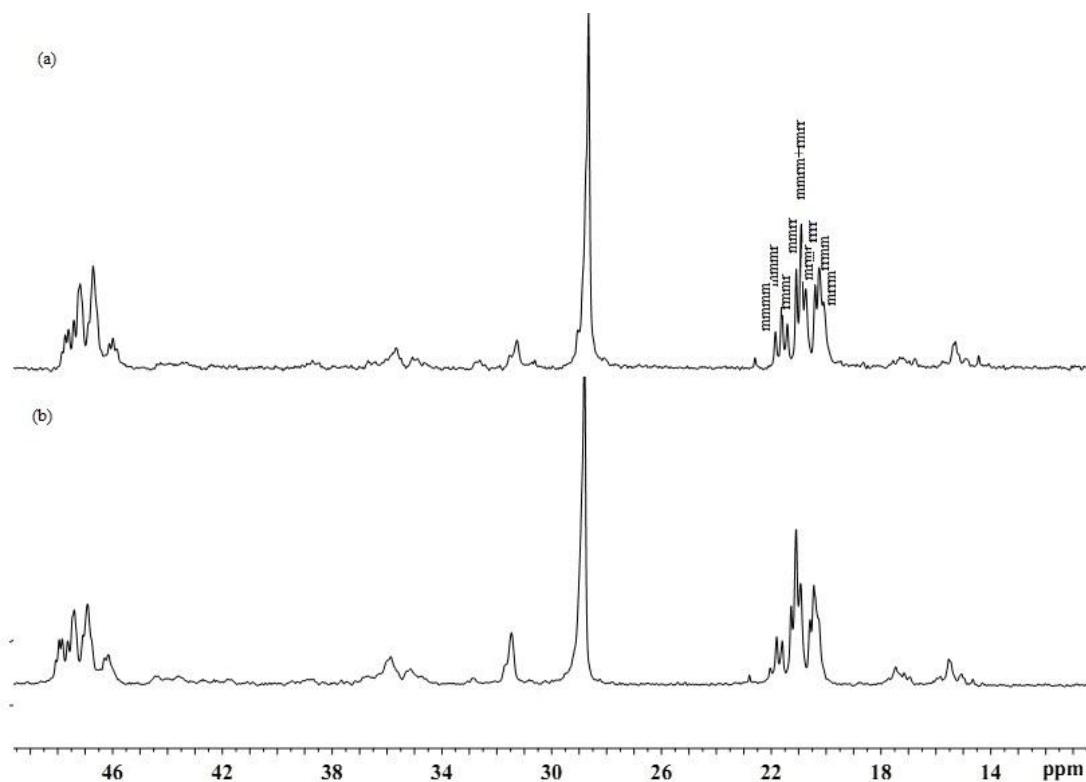
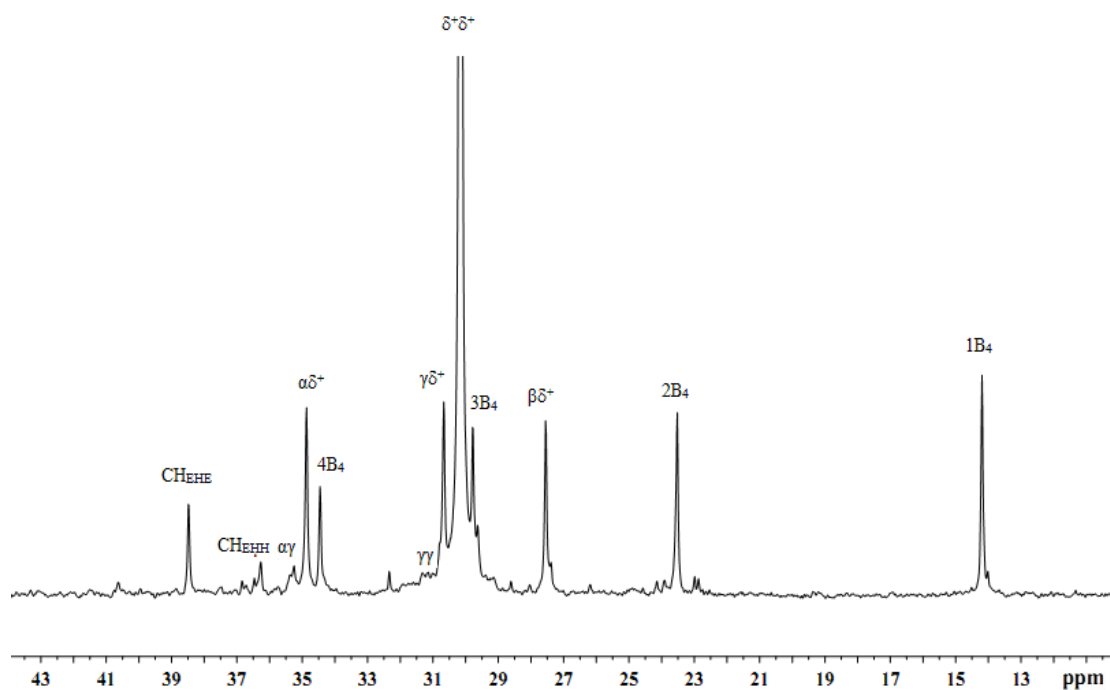


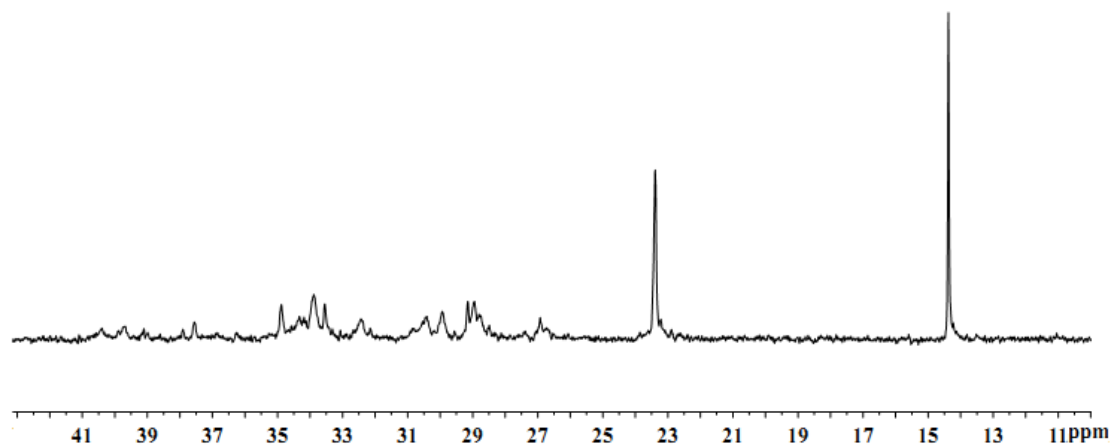
Fig S5.  $^{13}\text{C}$  NMR spectrum of the pro-ligand 2



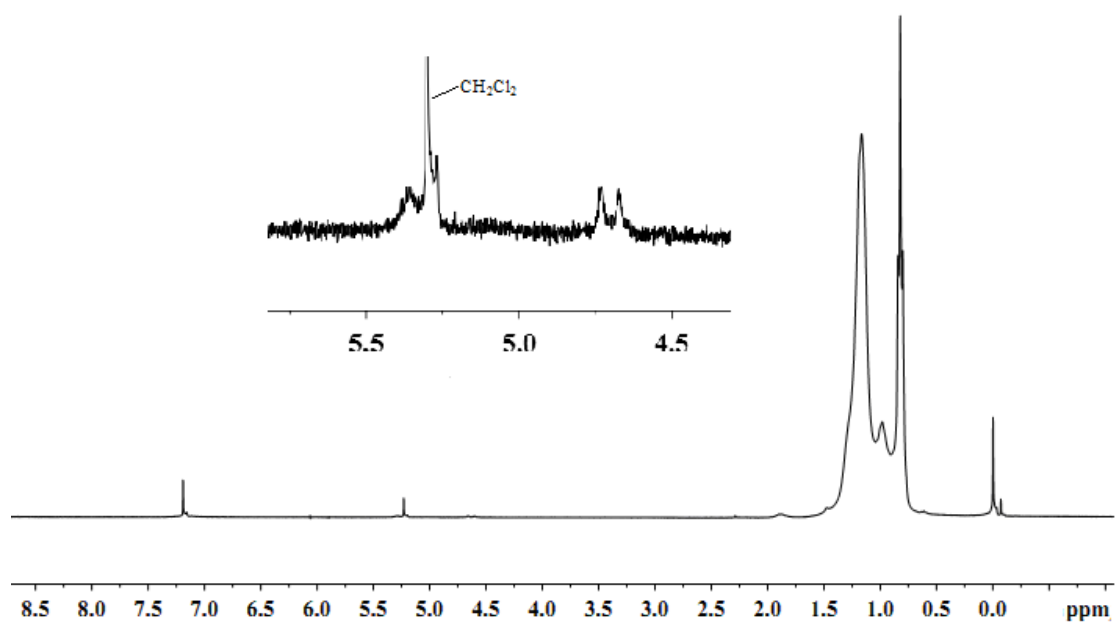
**Fig S6.**  $^{13}\text{C}$  NMR spectra for poly(propylene) obtained with (a)  $5/\text{Al}^i\text{Bu}_3/\text{Ph}_3\text{CB}(\text{C}_6\text{F}_5)_4$  (70 °C) (b)  $\text{I}/\text{Al}^i\text{Bu}_3/\text{Ph}_3\text{CB}(\text{C}_6\text{F}_5)_4$  (70 °C)



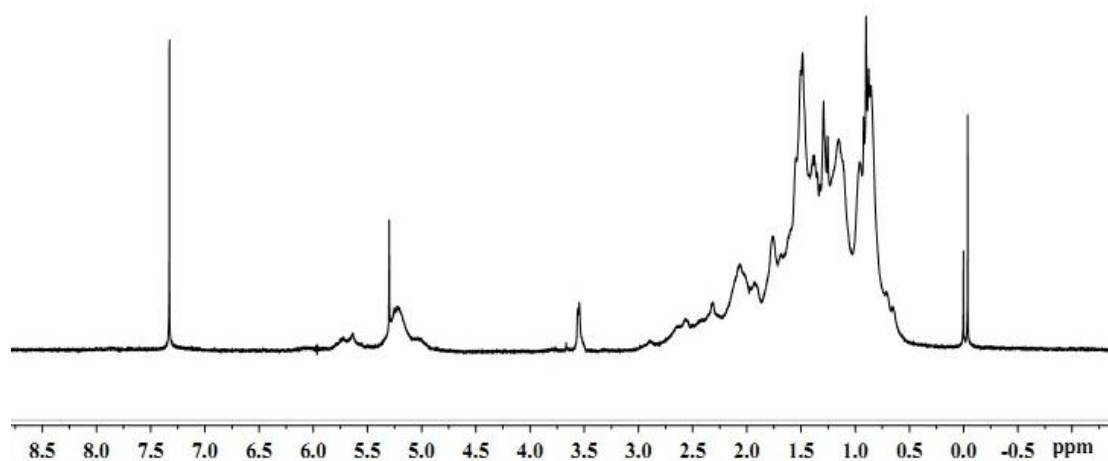
**Fig S7.**  $^{13}\text{C}$  NMR spectrum for poly(ethylene-co-1-hexene) obtained with  $5/\text{Al}^i\text{Bu}_3/\text{Ph}_3\text{CB}(\text{C}_6\text{F}_5)_4$  (run 3 in Table 4)



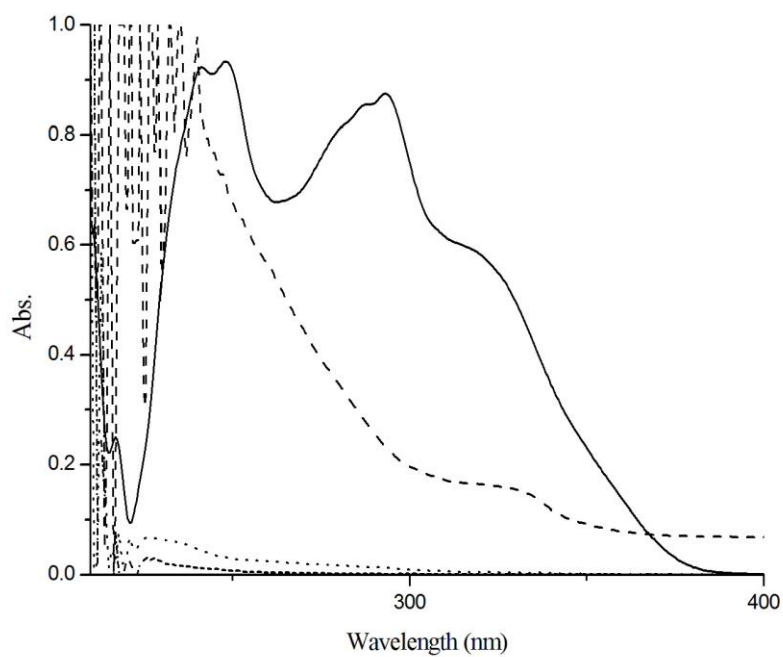
**Fig S8.**  $^{13}\text{C}$  NMR spectrum for poly(ethylene-*co*-1-hexene) obtained with  $5/\text{Al}^i\text{Bu}_3/\text{Ph}_3\text{CB}(\text{C}_6\text{F}_5)_4$  (run 9 in Table 4)



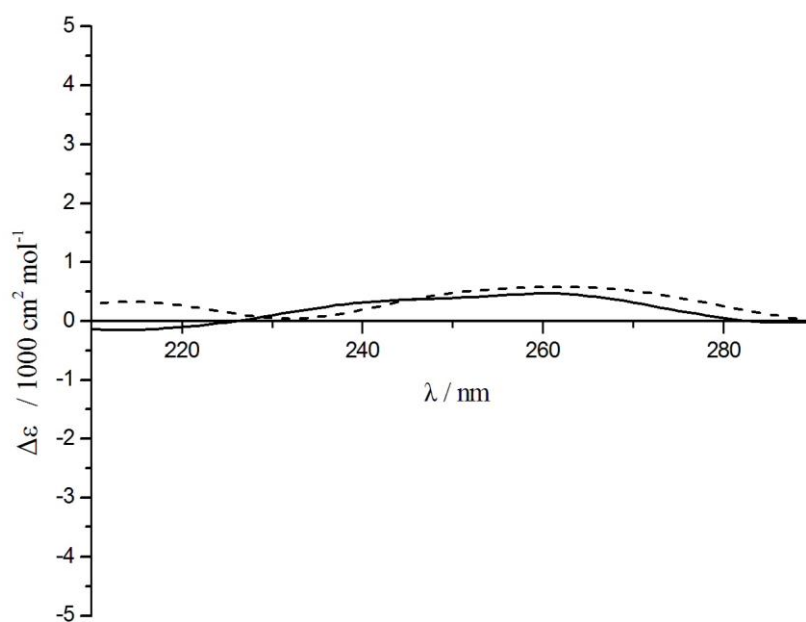
**Fig S9.**  $^1\text{H}$  NMR spectrum of the poly(hexane-1) in  $\text{CDCl}_3$



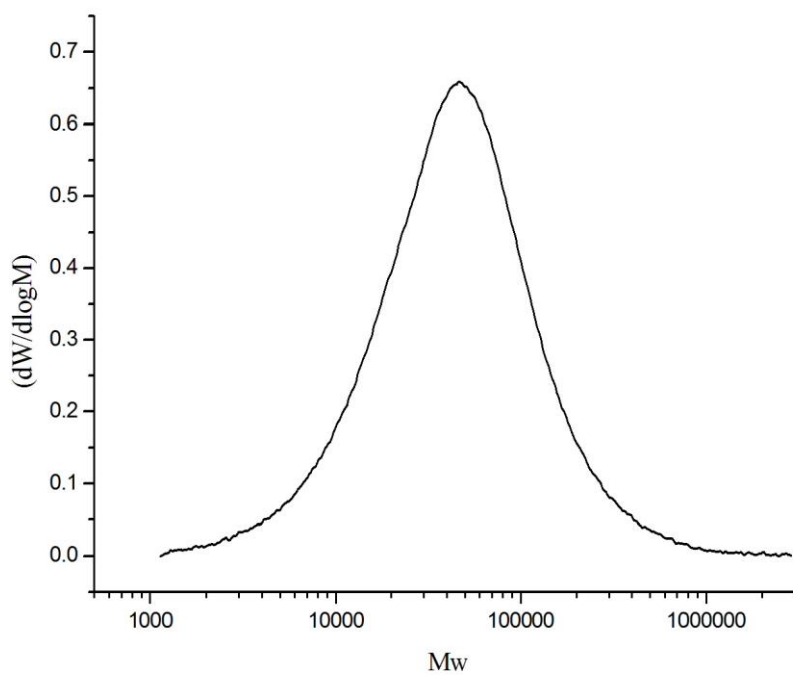
**Fig S10.**  $^1\text{H}$  NMR spectrum of the poly(ENB) in  $\text{CDCl}_3$



**Fig S11.** UV-vis spectra of pro-ligand **1** (solid line), complex **5** (dash line), the poly(hexane-1) (short dash dot), the poly(ENB) (dot) in  $\text{CH}_2\text{Cl}_2$  at  $25^\circ\text{C}$ .

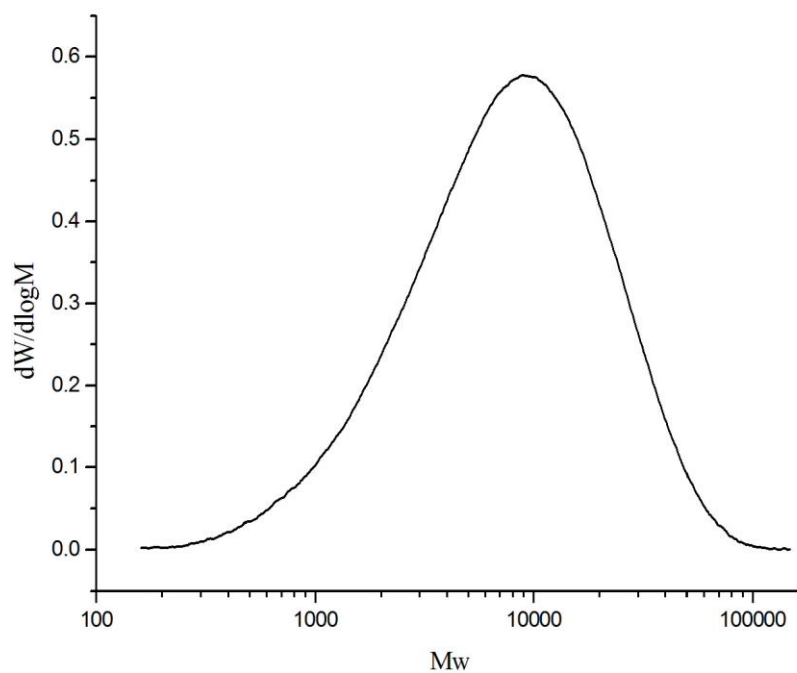


**Figure S12.** CD spectra of the poly(hexane-1) (solid line) and poly(ENB) (dash line) in  $\text{CH}_2\text{Cl}_2$  at 25 °C.



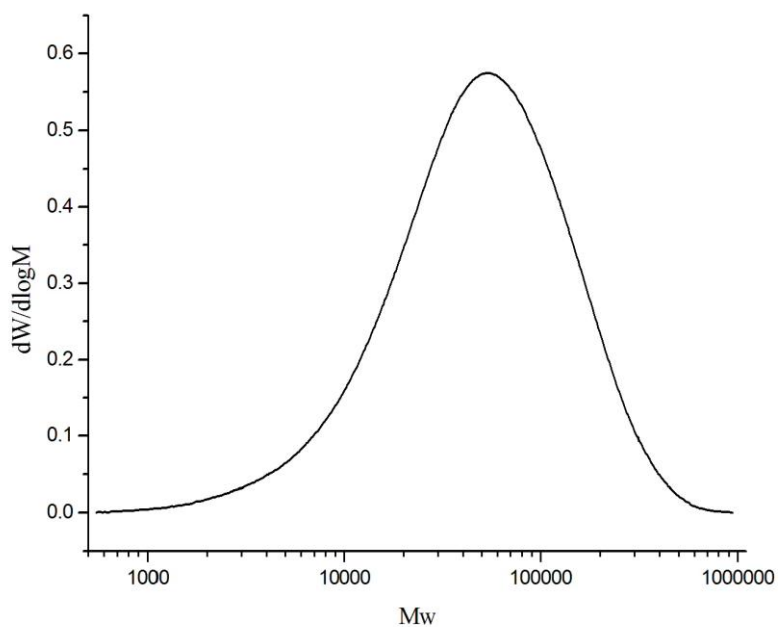
$M_n = 2.2 \times 10^4$ ,  $M_w = 7.5 \times 10^4$ ,  $M_w/M_n = 3.4$

**Figure S13.** GPC curve of polypropylene (run 2 in Table 1)



$M_n = 4030$ ,  $M_w = 9367$ ,  $M_w/M_n = 2.4$

**Figure S14.** GPC curve of poly(hexene-1) (run 2 in Table 3)



$M_n = 2.2 \times 10^4$ ,  $M_w = 7.5 \times 10^4$ ,  $M_w/M_n = 3.4$

**Figure S15.** GPC curve of poly(ethylene-co-1-hexene) (run 3 in Table 4)