Electronic Supplementary Material (ESI) for Catalysis Science & Technology.

Supplementary Information

Coupling Reaction between CO_2 and Cyclohexene Oxide: Selective Control from Cyclic Carbonate to Polycarbonate by Ligand Design of Salen/Salalen Titanium Complexes

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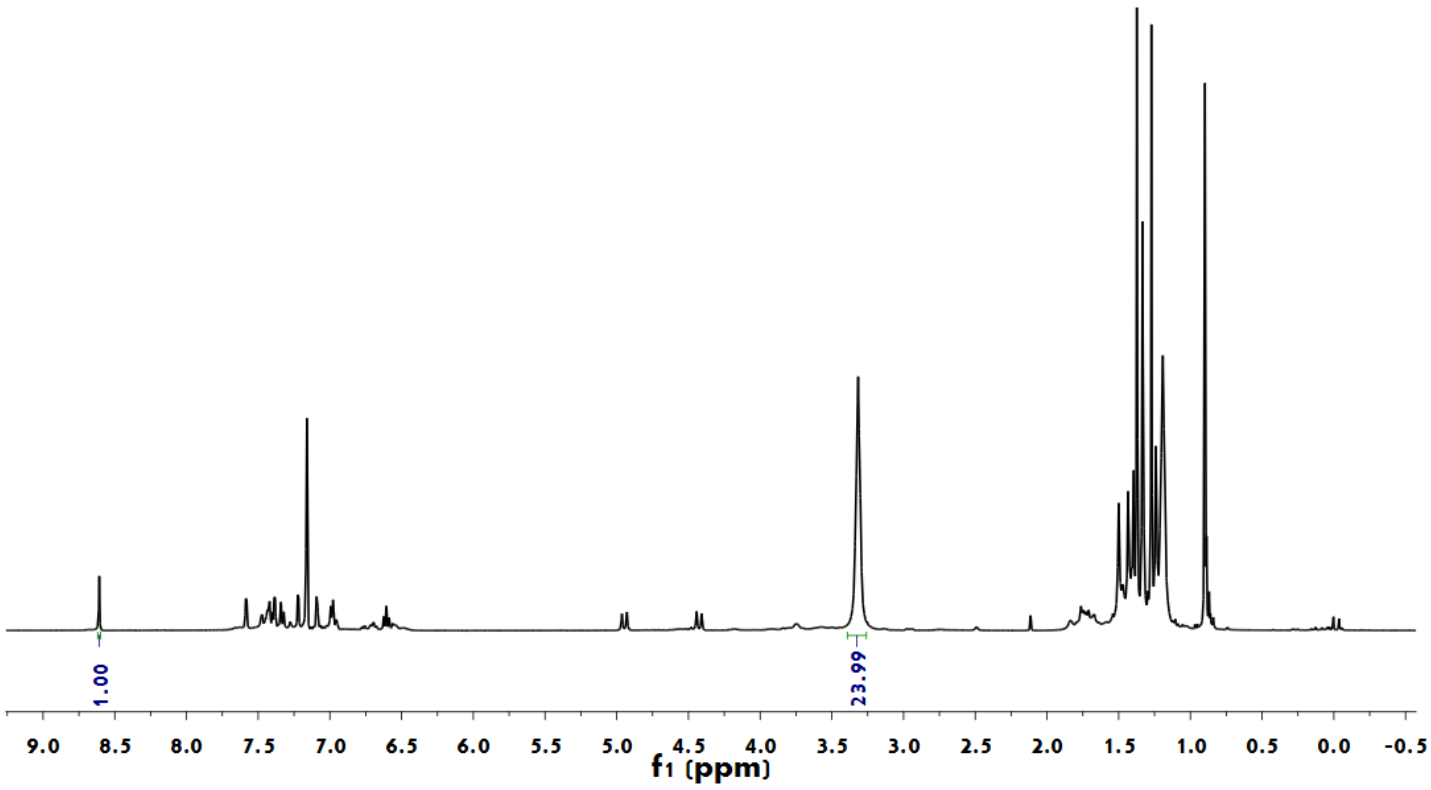

Fig. S1 ^{1}H NMR spectrum of the lithium salt of salalen (C_6D_6), the integral area of 1.00 stands for one H on the ligand (-C*H*=N-), thus the peak at 3.32ppm with an integral area of 23.99 stands for 24 H corresponding to hydrogen on THF(-O-CH_2-) corresponding to 6 THF.

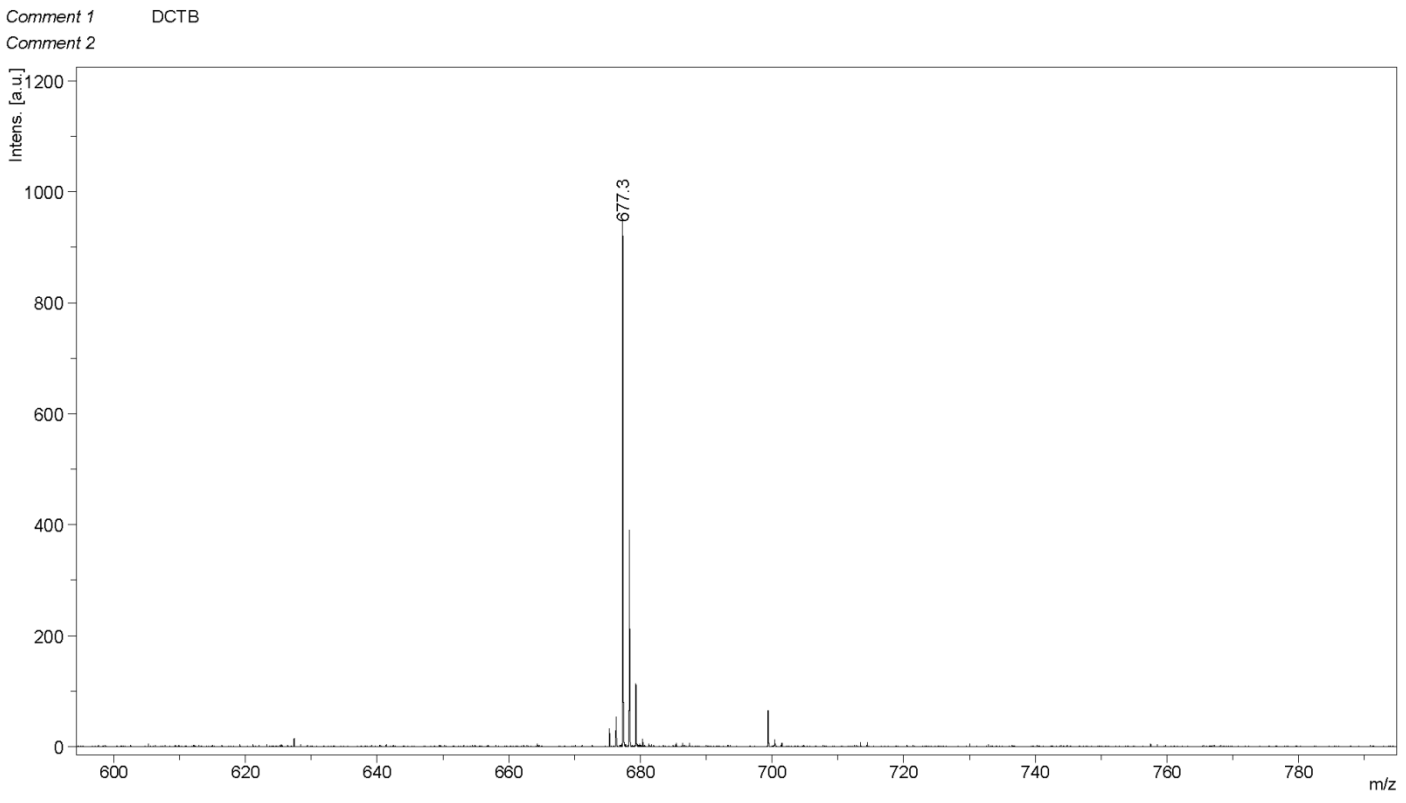

Fig. S2 MALDI-TOF-MS of complex **2**, DCTB, (2-[(2E)-3- (4-tert-buthylphenyl)-2-Methylprop-2-enylidene] malononitrile) as matrix, m/z 677.3^{+} is corresponding to [(Salalen)Ti(THF)Cl-Cl^{-}+H_2O]$^{+}$.

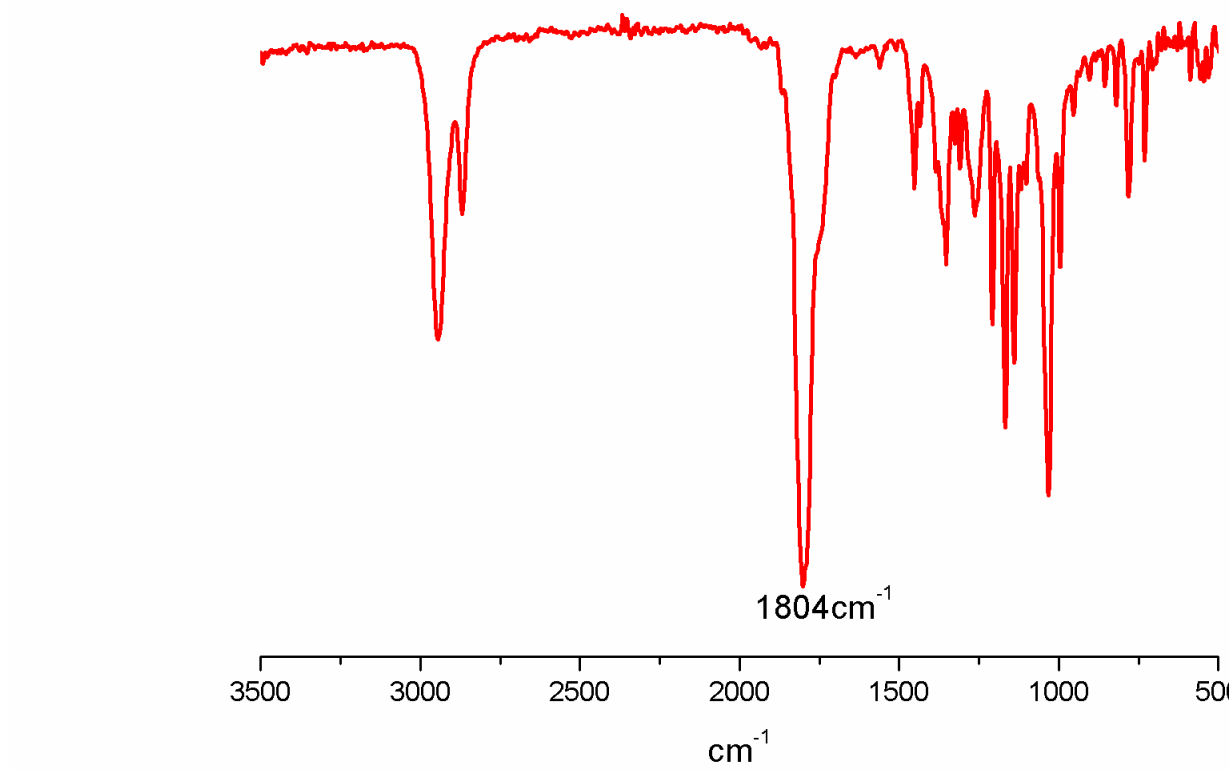

Fig. S3 FTIR spectrum of ***cis*-CHC**, peak at 1804 cm^{-1} stands for the carbonyl stretching frequency.

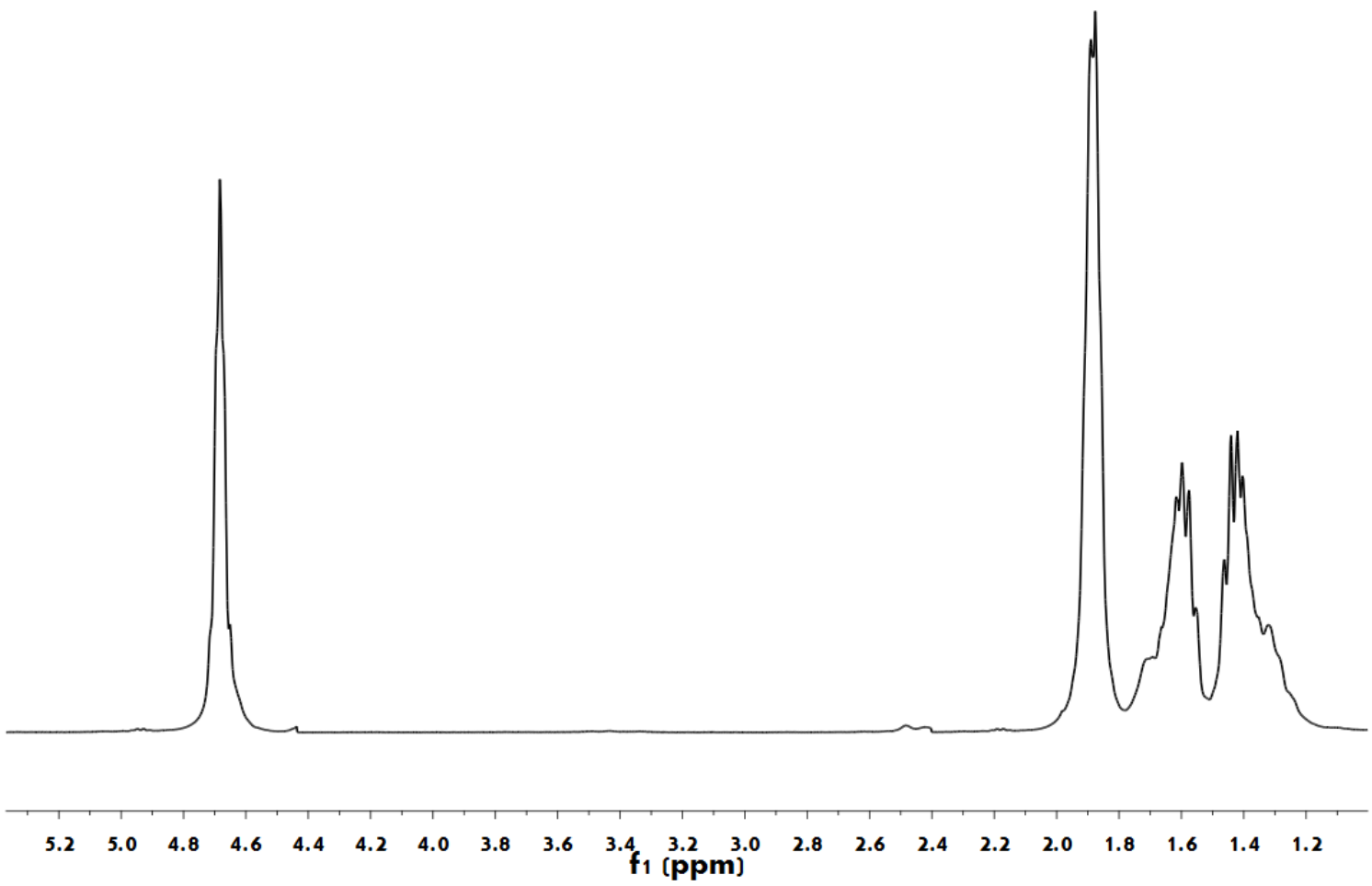

Fig. S4 ^{1}H NMR spectrum of ***cis*-CHC** ($CDCl_3$).

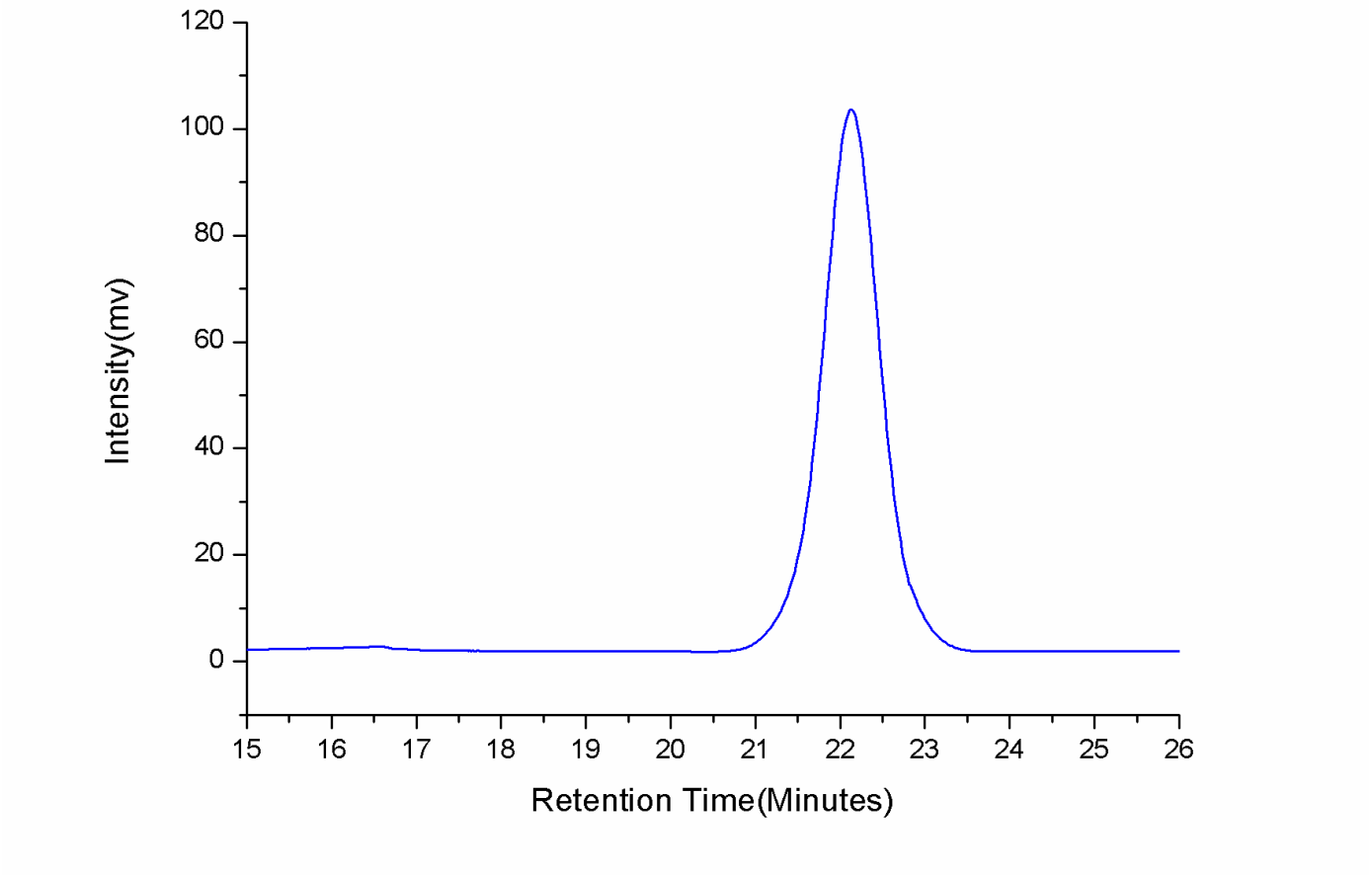

Fig. S4 GPC traces for PCHC produced using complex **2**，(Table 2 entry 11, Mn : 6000, Mw/Mn = 1.11) (CH_2Cl_2 eluent).

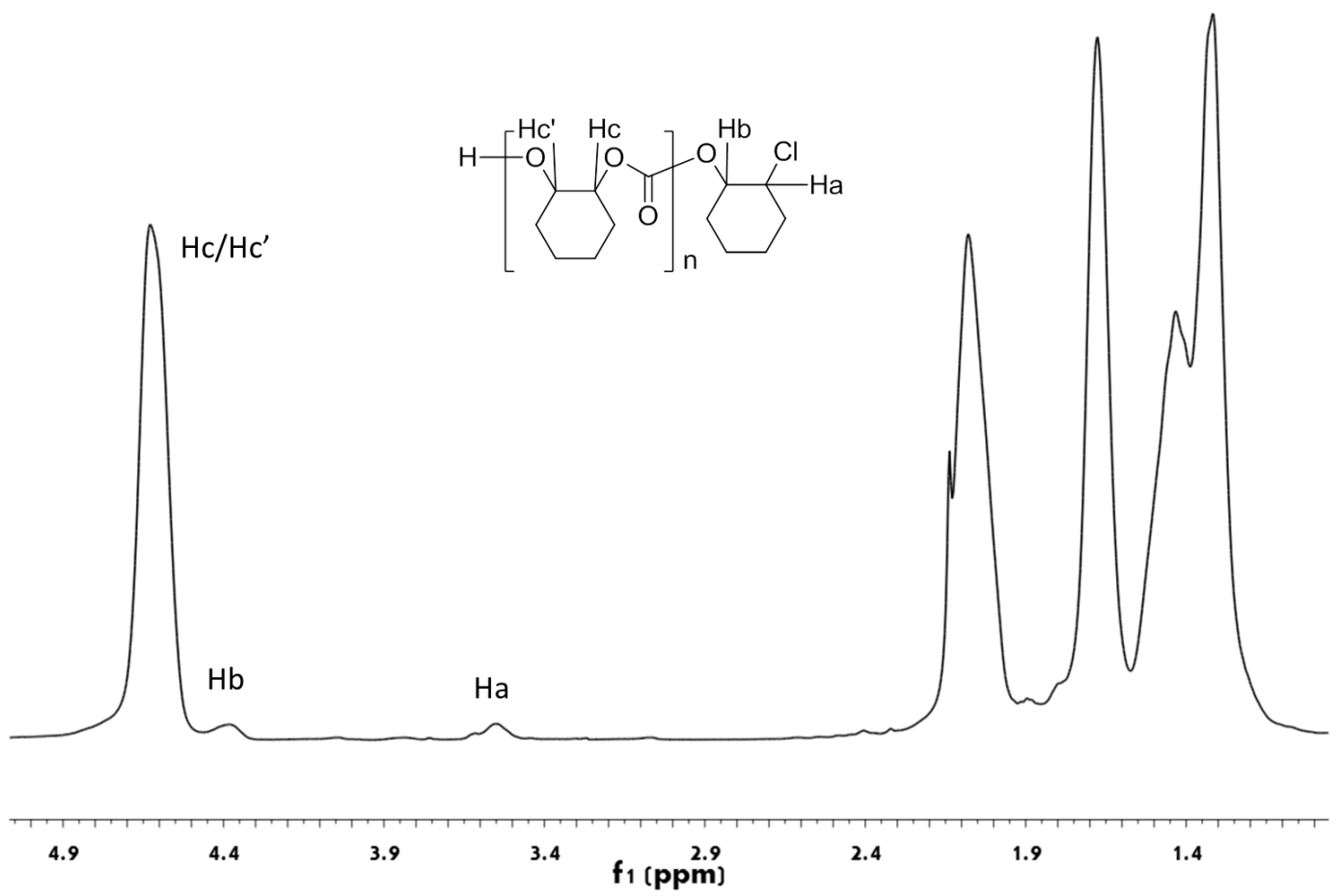

Fig. S5 ^1H NMR spectrum of the PCHC (Table 2, entry 11) ($CDCl_3$).

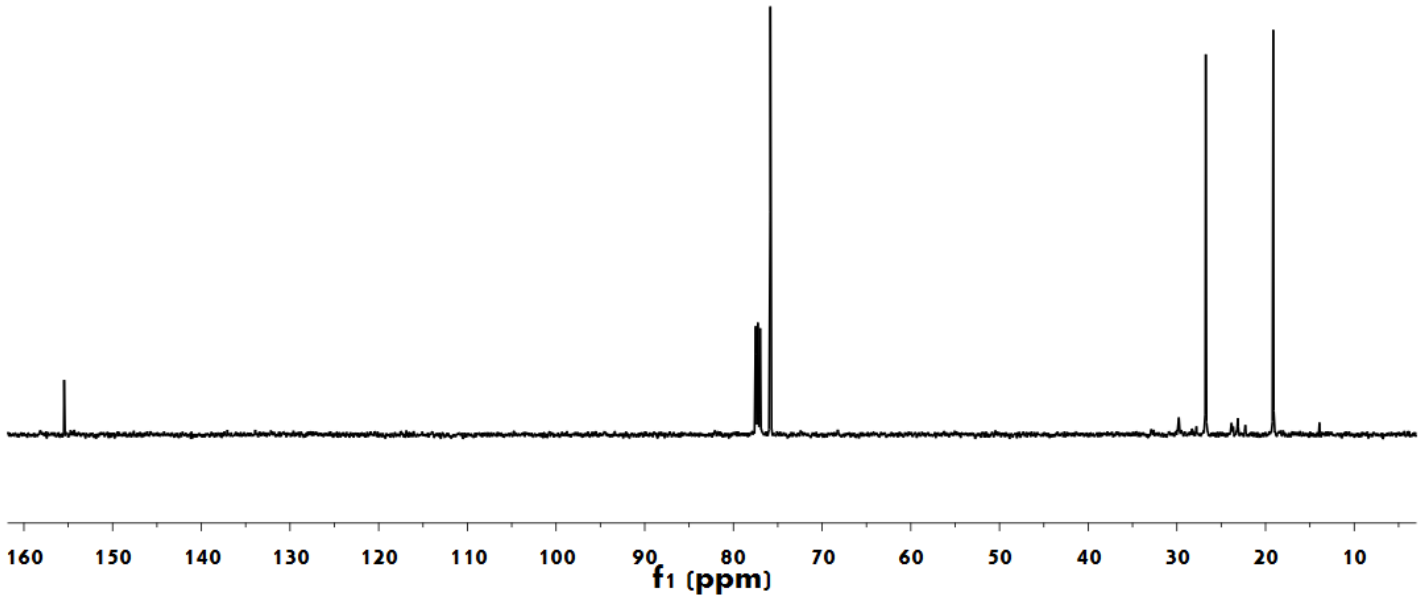

Fig. S7 ^{13}C NMR spectrum of ***cis*-CHC** ($CDCl_3$).

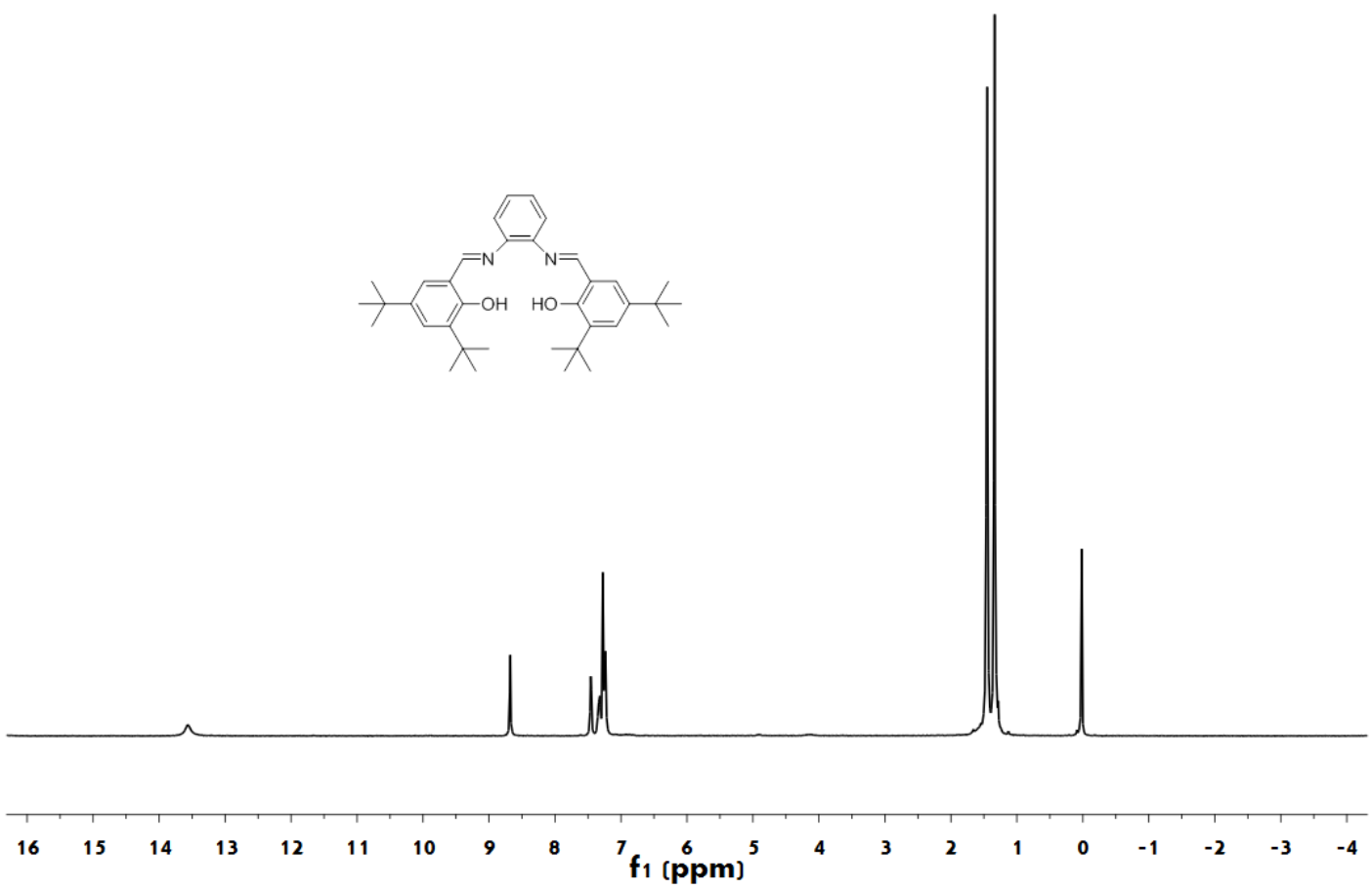

Fig. S8 ^{1}H NMR spectrum of **salen ligand** ($CDCl_3$)

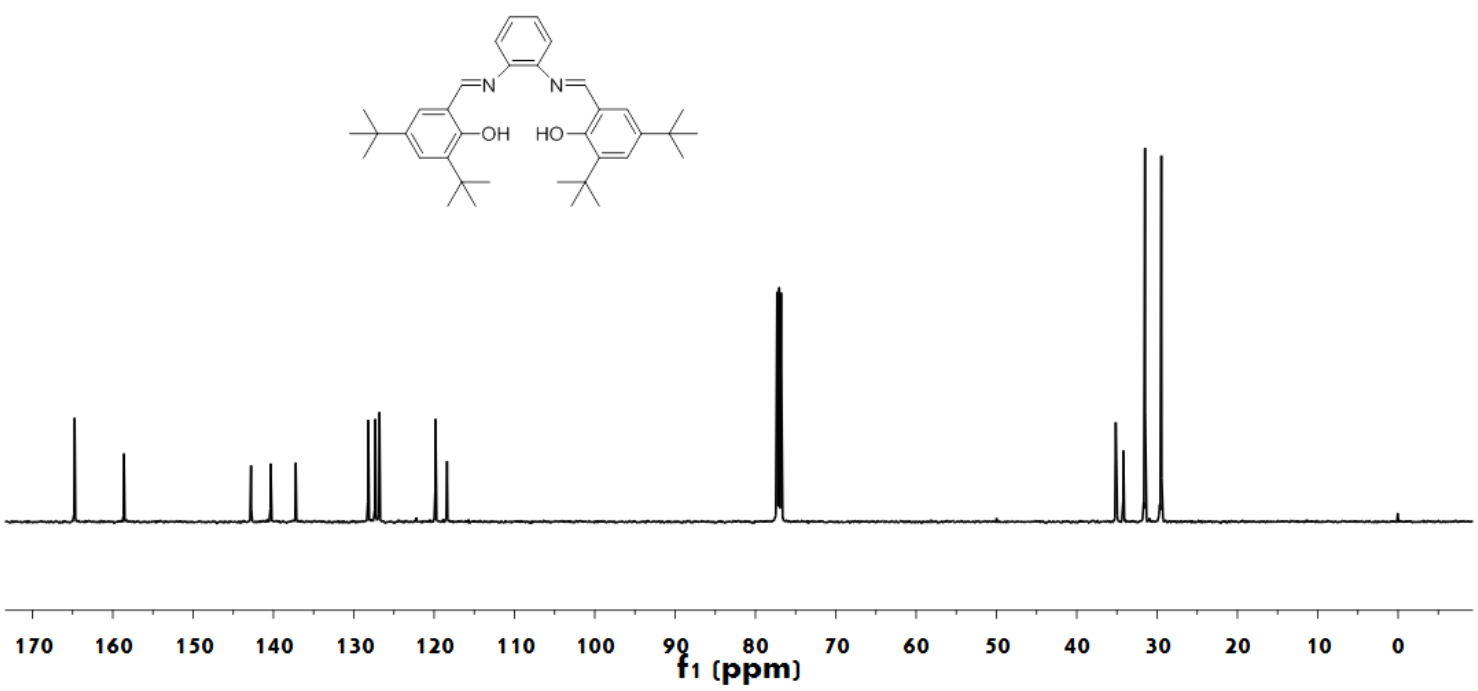

Fig. S9 ^{13}C NMR spectrum of **salen ligand**($CDCl_3$)

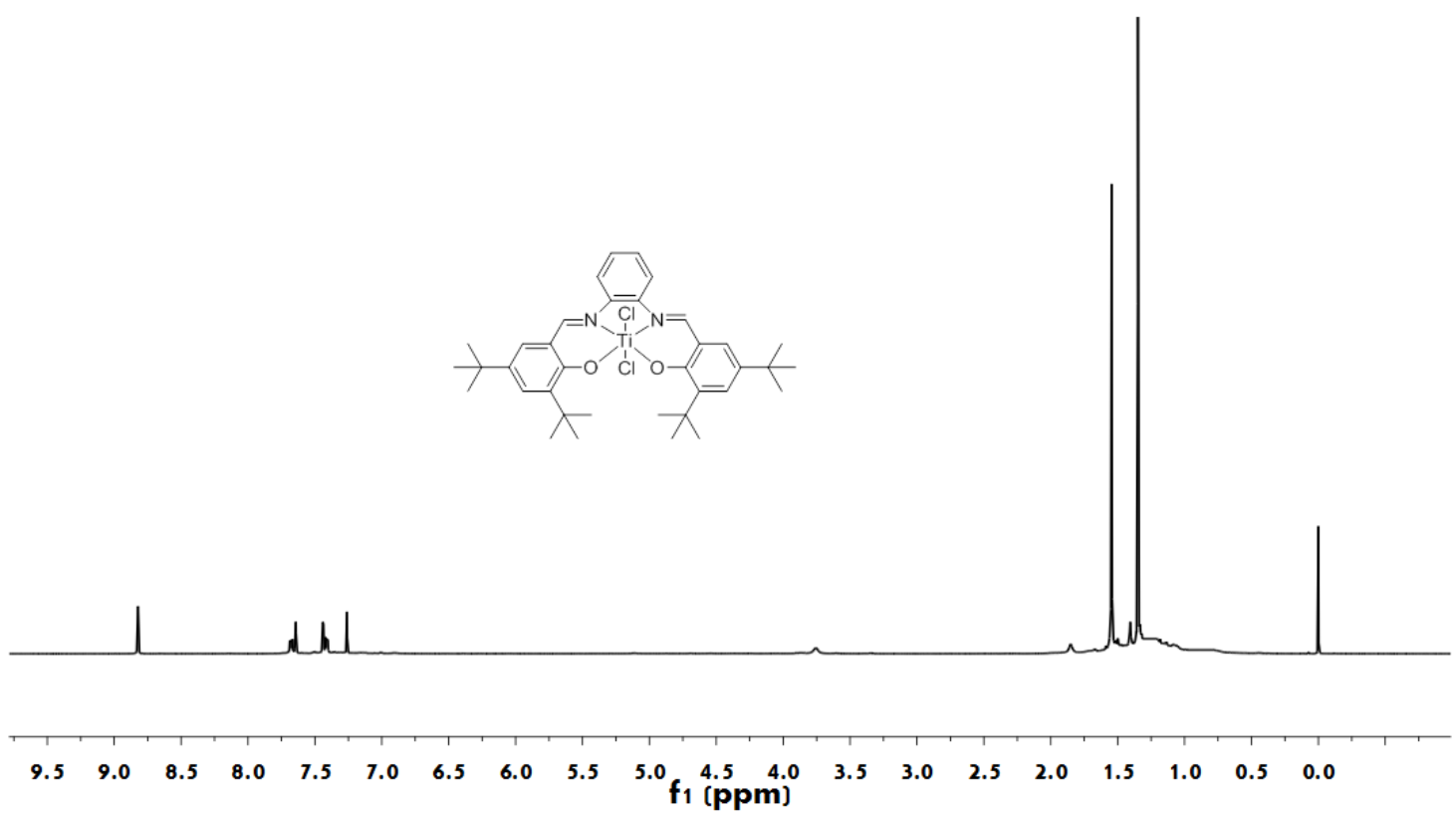

Fig. S10 ^{1}H NMR spectrum of **(Salen)Ti(IV)Cl_2**($CDCl_3$)

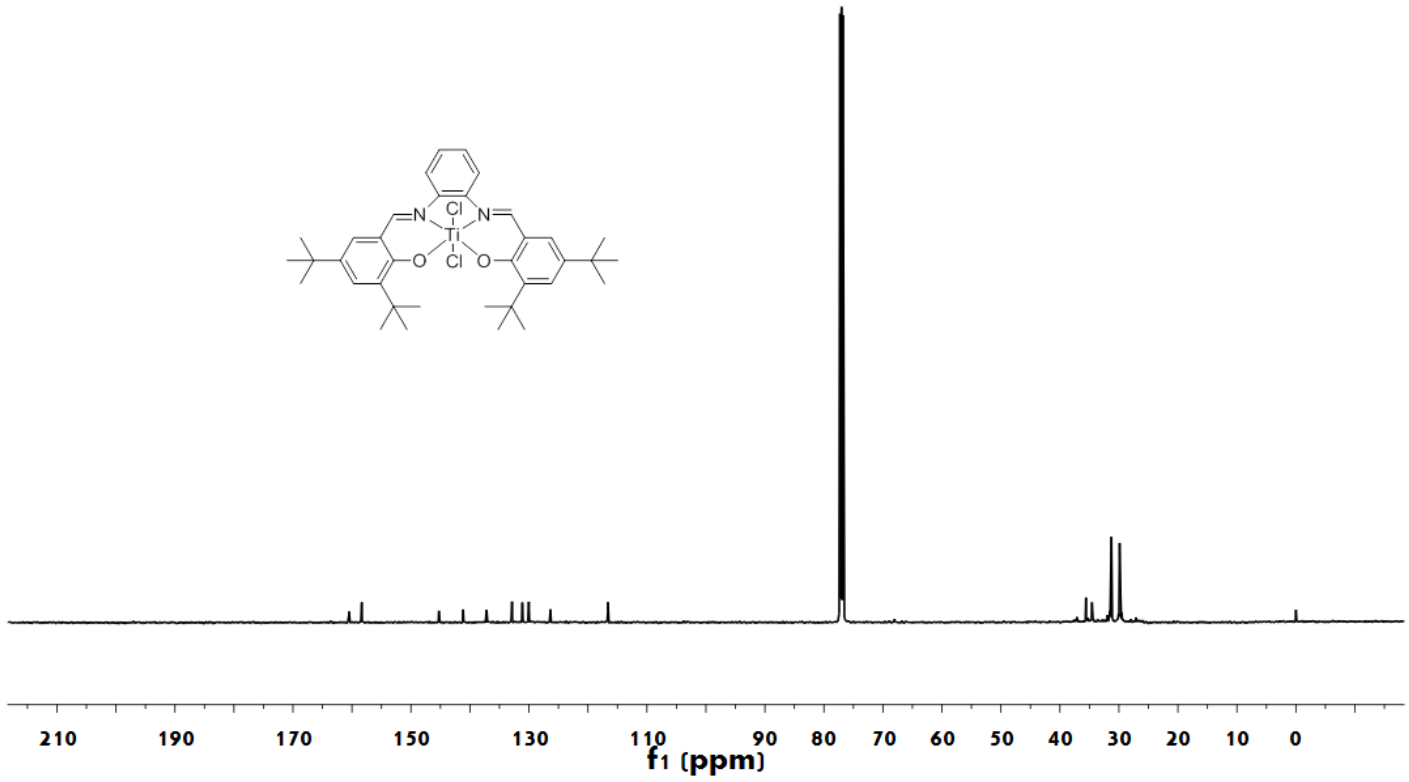

Fig. S11 ^{13}C NMR spectrum of **(Salen)Ti(IV)Cl_2**($CDCl_3$)

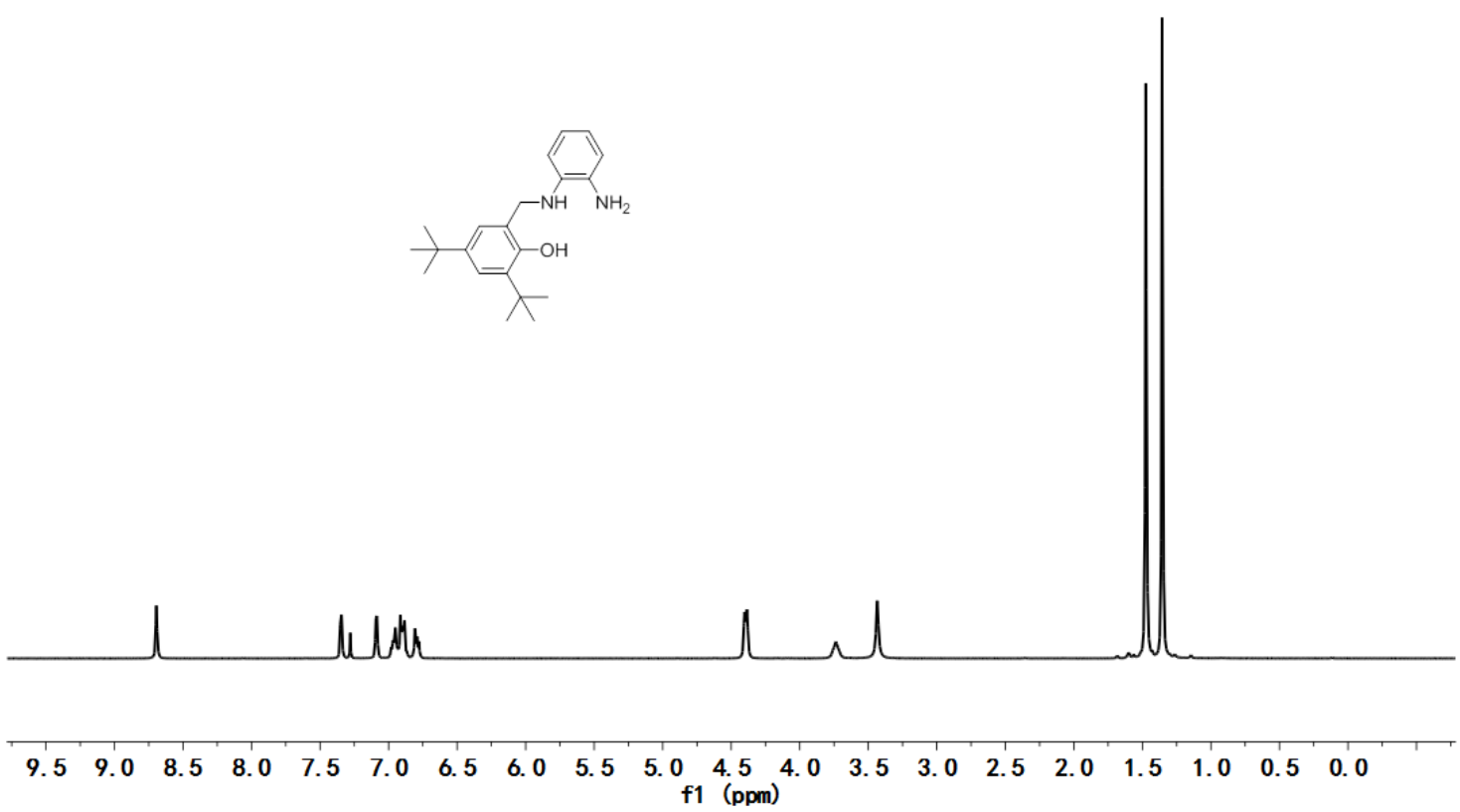

Fig. S12 ^{1}H NMR spectrum of compound **b** ($CDCl_3$)

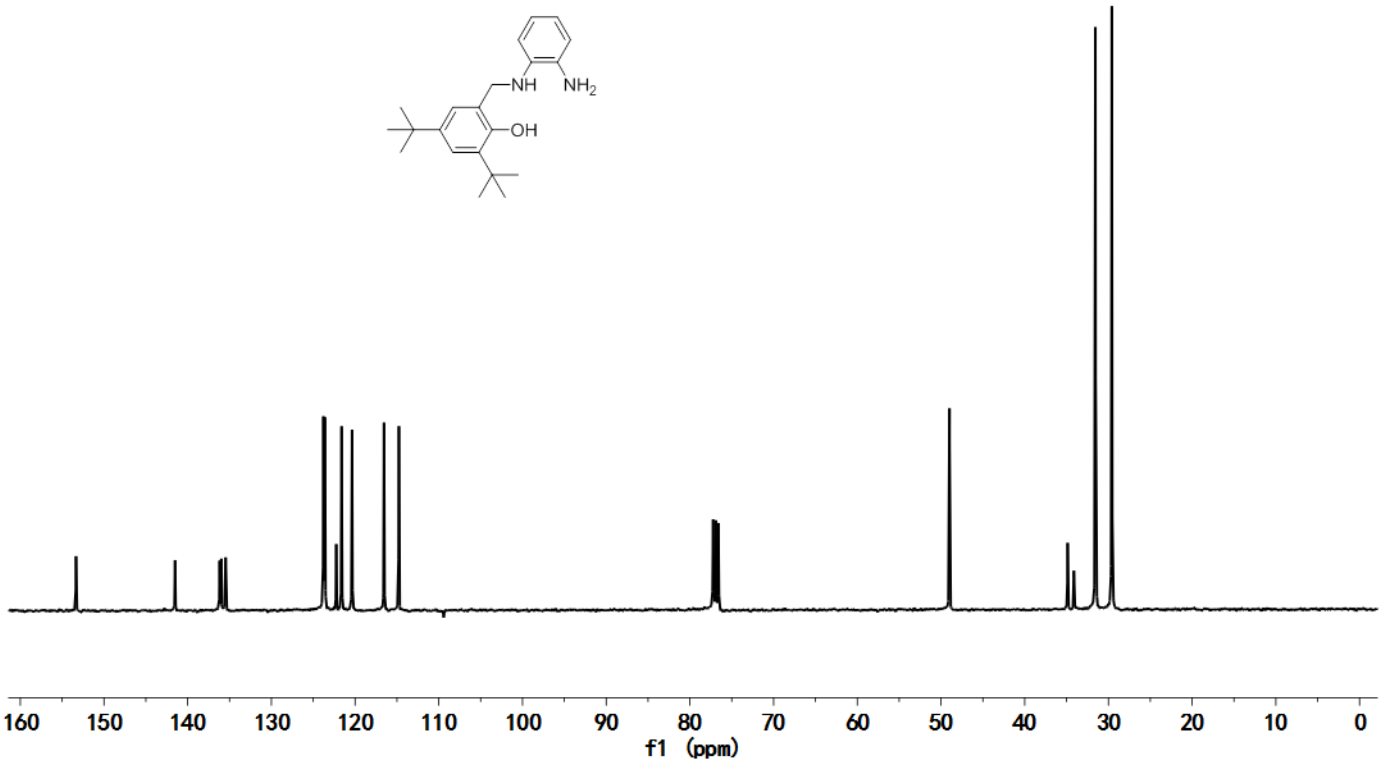

Fig. S13 ^{13}C NMR spectrum of compound **b** ($CDCl_3$)

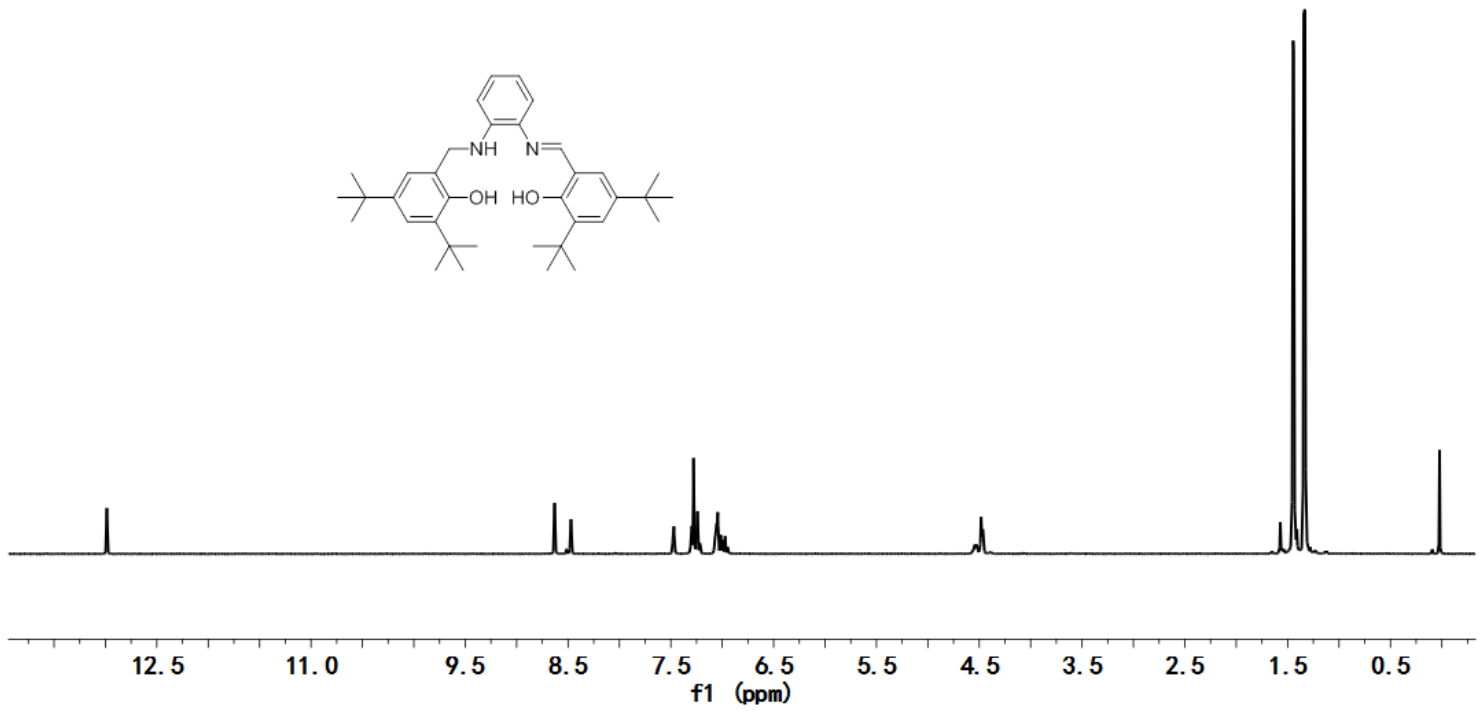

Fig. S14 ^{1}H NMR spectrum of **salalen ligand** ($CDCl_3$)

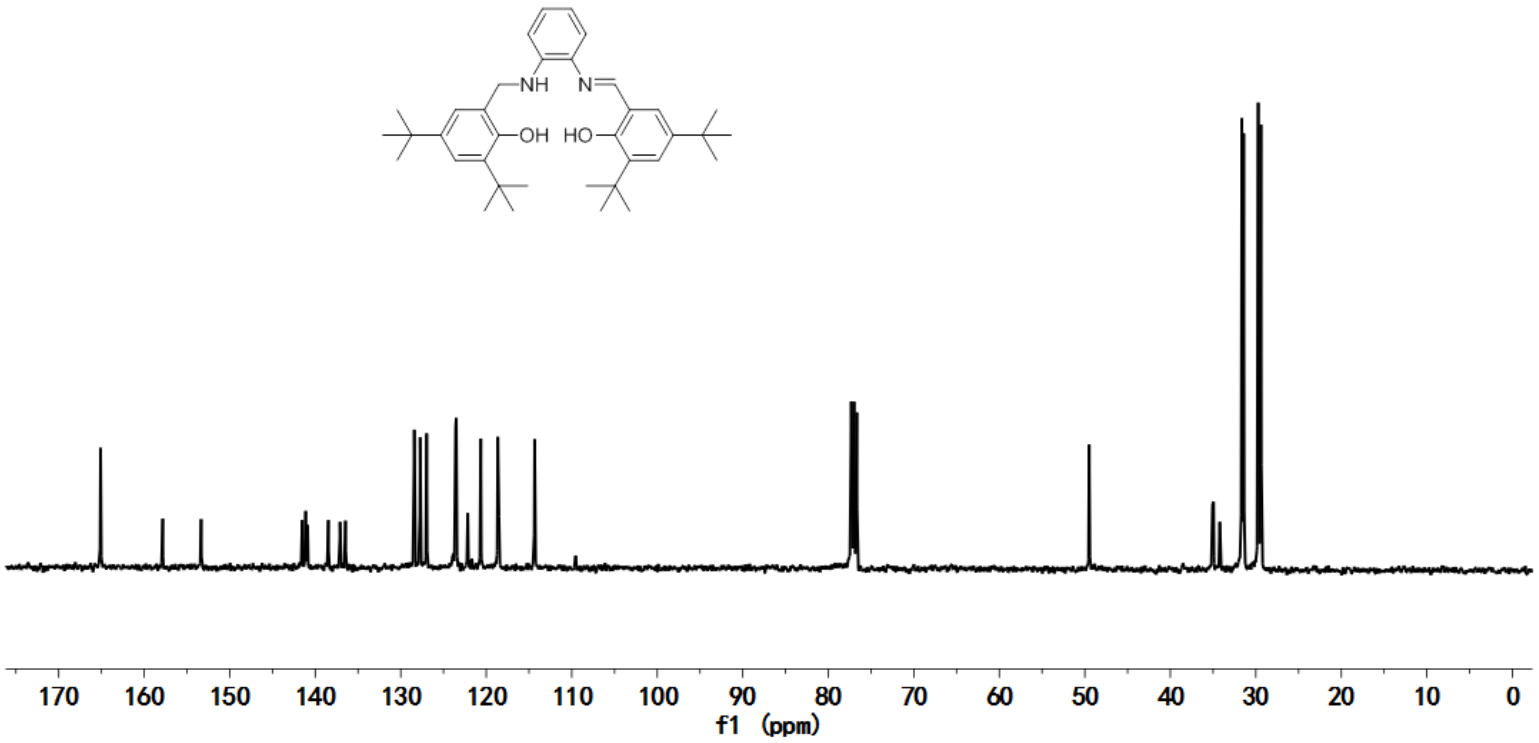

Fig. S15 ^{13}C NMR spectrum of **salalen ligand** ($CDCl_3$)

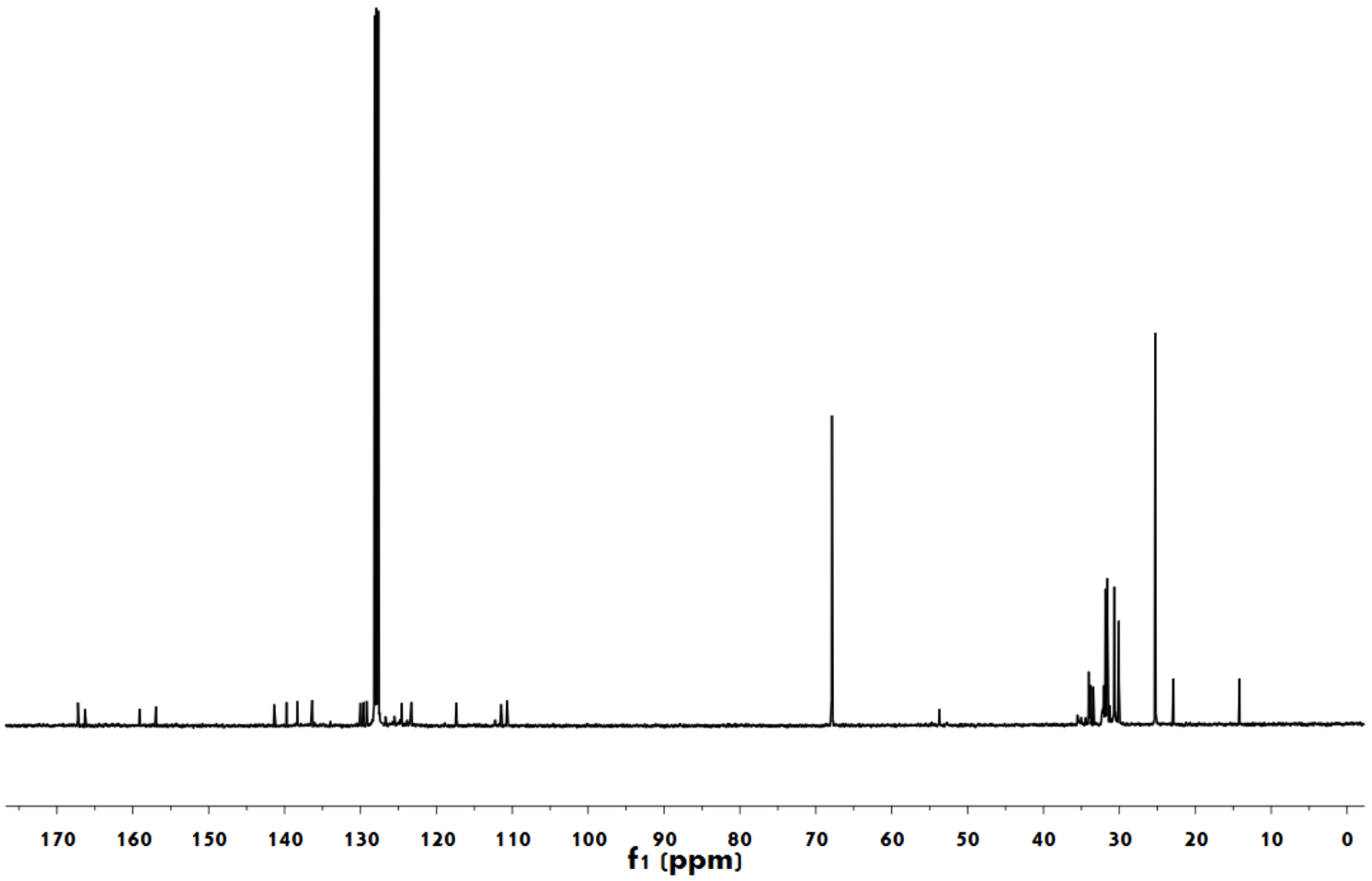

Fig. S16 ^{13}C NMR spectrum of the lithium salt of salalen (C_6D_6).