

## Supporting Information

# One Pot Synthesis of Amino Acids Derived Chiral Disubstituted Morpholines and 1,4-Oxazepanes via Tandem Aziridine/Epoxyde Ring Opening Sequences†

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**Fig. S-44:**  $^{13}\text{C}$  Spectra of (( $3S,5S$ )-5-methyl-4-tosylmorpholin-3-yl)methanol **13a**.

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**Fig. S-47:** NOESY Spectra of (( $3S,5S$ )-5-methyl-4-tosylmorpholin-3-yl)methanol **13a**.

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**Fig. S-50:**  $^{13}\text{C}$  Spectra of (( $3S,5S$ )-5-(4-Methoxybenzyl)-4-tosylmorpholin-3-yl)methanol **13b**.

**Fig. S-51:** HPLC Spectrum of (( $3S,5S$ )-5-(4-Methoxybenzyl)-4-tosylmorpholin-3-yl)methanol **13b**.

**Fig. S-52:**  $^1\text{H}$  Spectra of ( $3S,6R$ )-3-(4-Methoxybenzyl)-4-tosyl-1,4-oxazepan-6-ol **14e**.

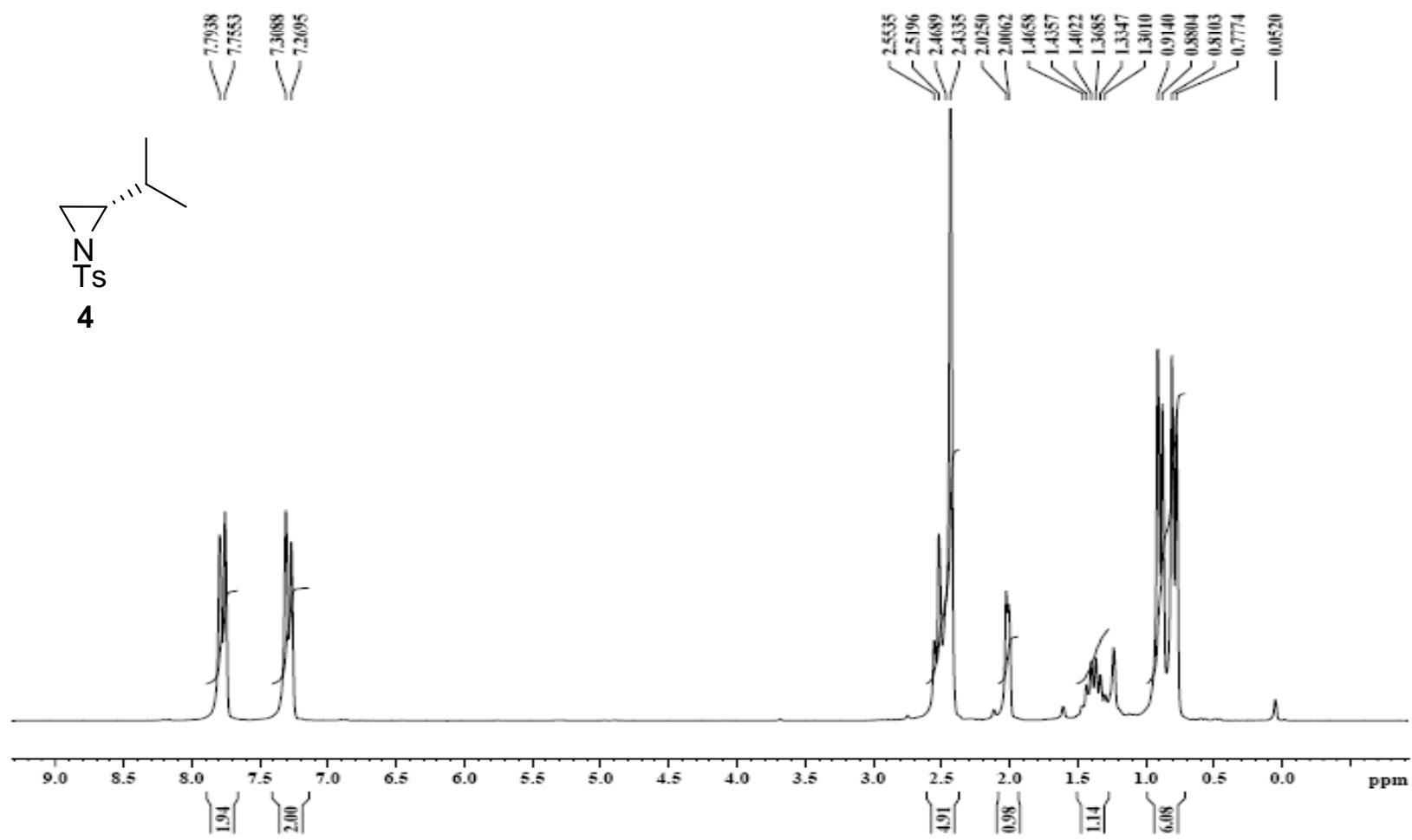
**Fig. S-53:**  $^{13}\text{C}$  Spectra of (( $3S,6R$ )-3-(4-Methoxybenzyl)-4-tosyl-1,4-oxazepan-6-ol **14e**.

**Fig. S-54:** HPLC Spectra of ( $3S,6R$ )-3-(4-Methoxybenzyl)-4-tosyl-1,4-oxazepan-6-ol **14e**.

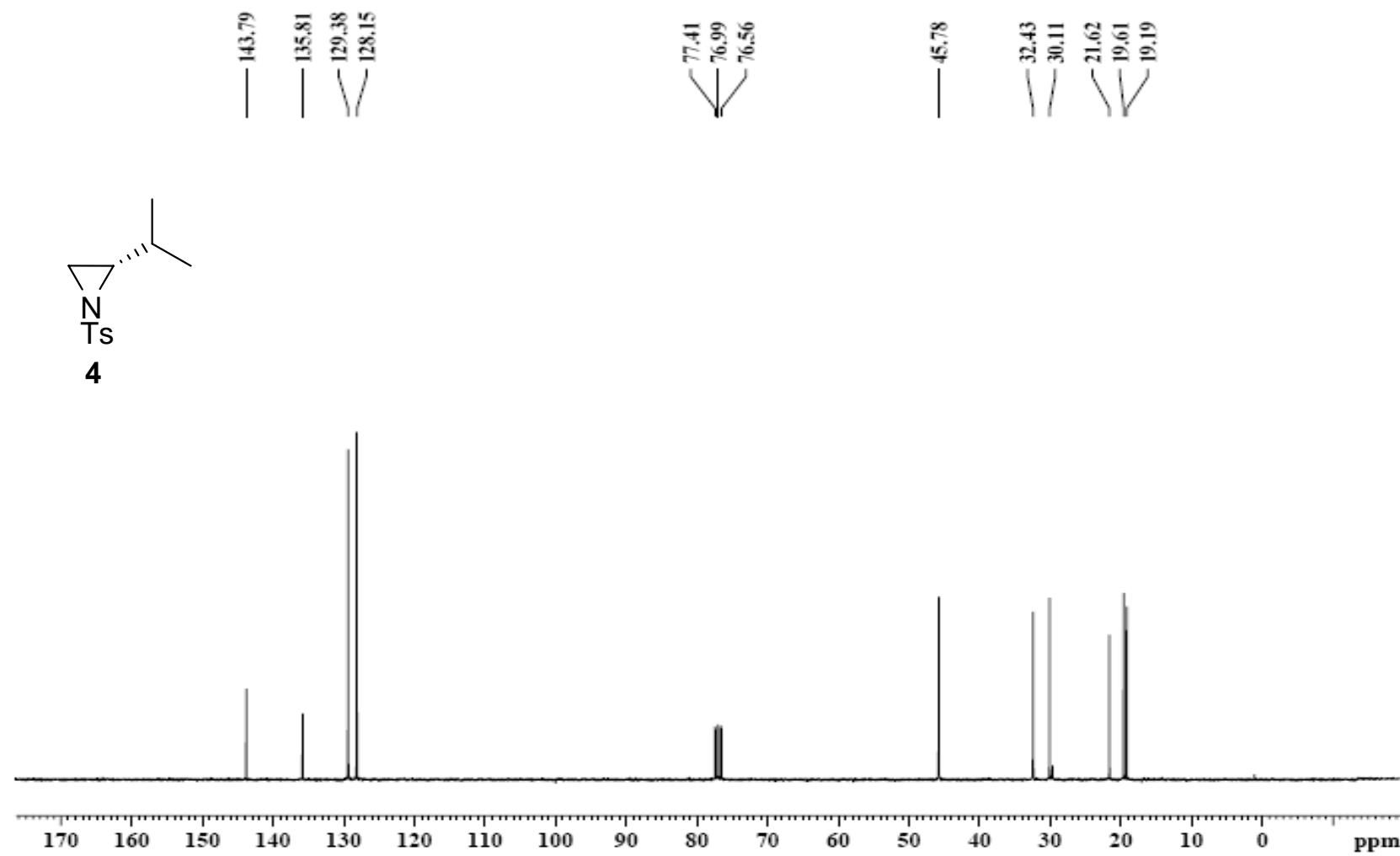
**Fig. S-55 :**  $^1\text{H}$  spectra of (*3S,6S*)-3-*iso*-Propyl-1,4-oxazepan-6-ol **15**.

**Fig. S-56:**  $^{13}\text{C}$  spectra of (*3S,6S*)-3-*iso*-Propyl-1,4-oxazepan-6-ol **15**.

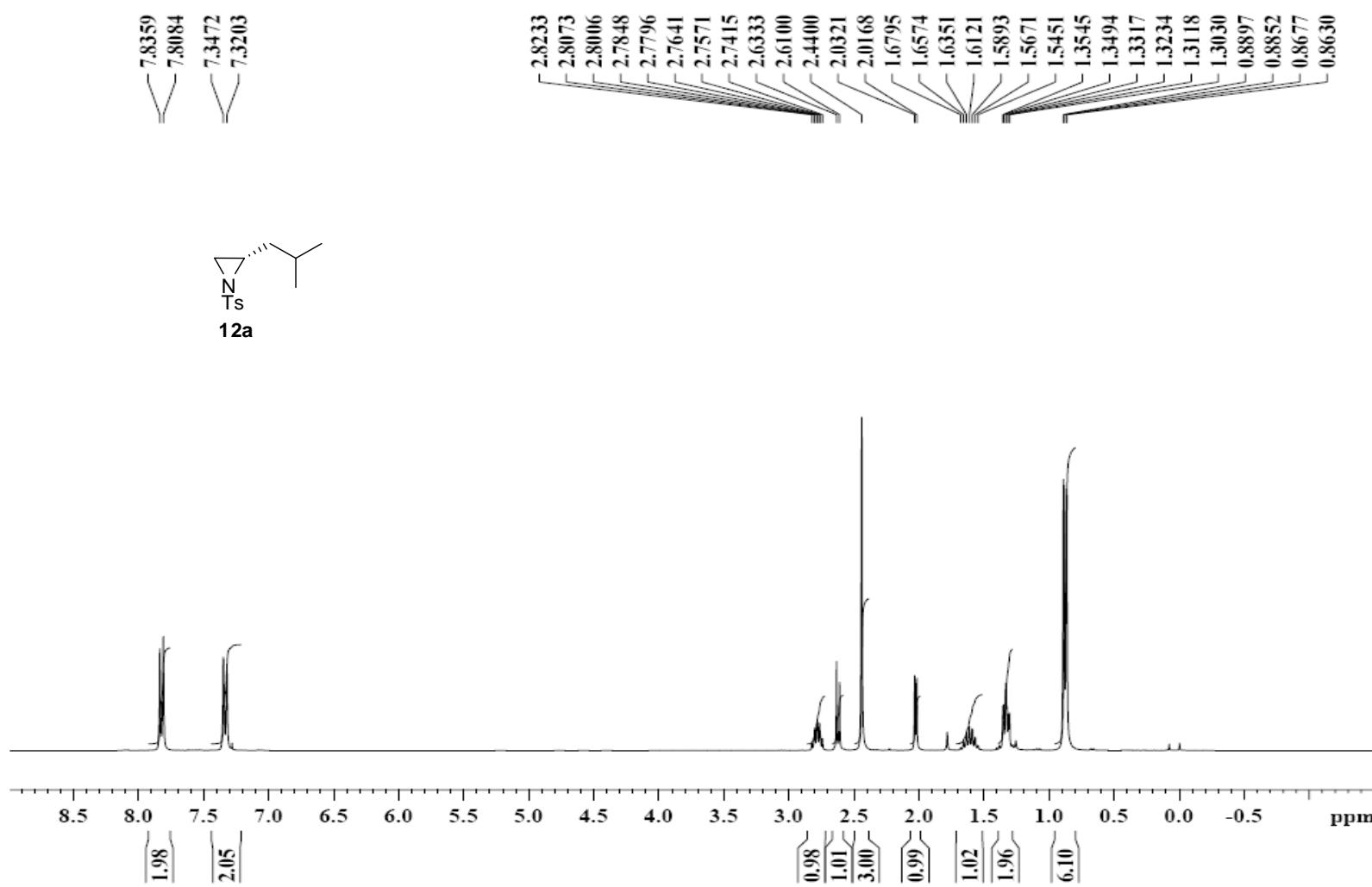
**Fig. S-57:**  $^1\text{H}$  spectra of (*3S,5S*)-3-((tert-butyldimethylsilyloxy)methyl)-5-isopropyl-4-tosylmorpholine **16**.



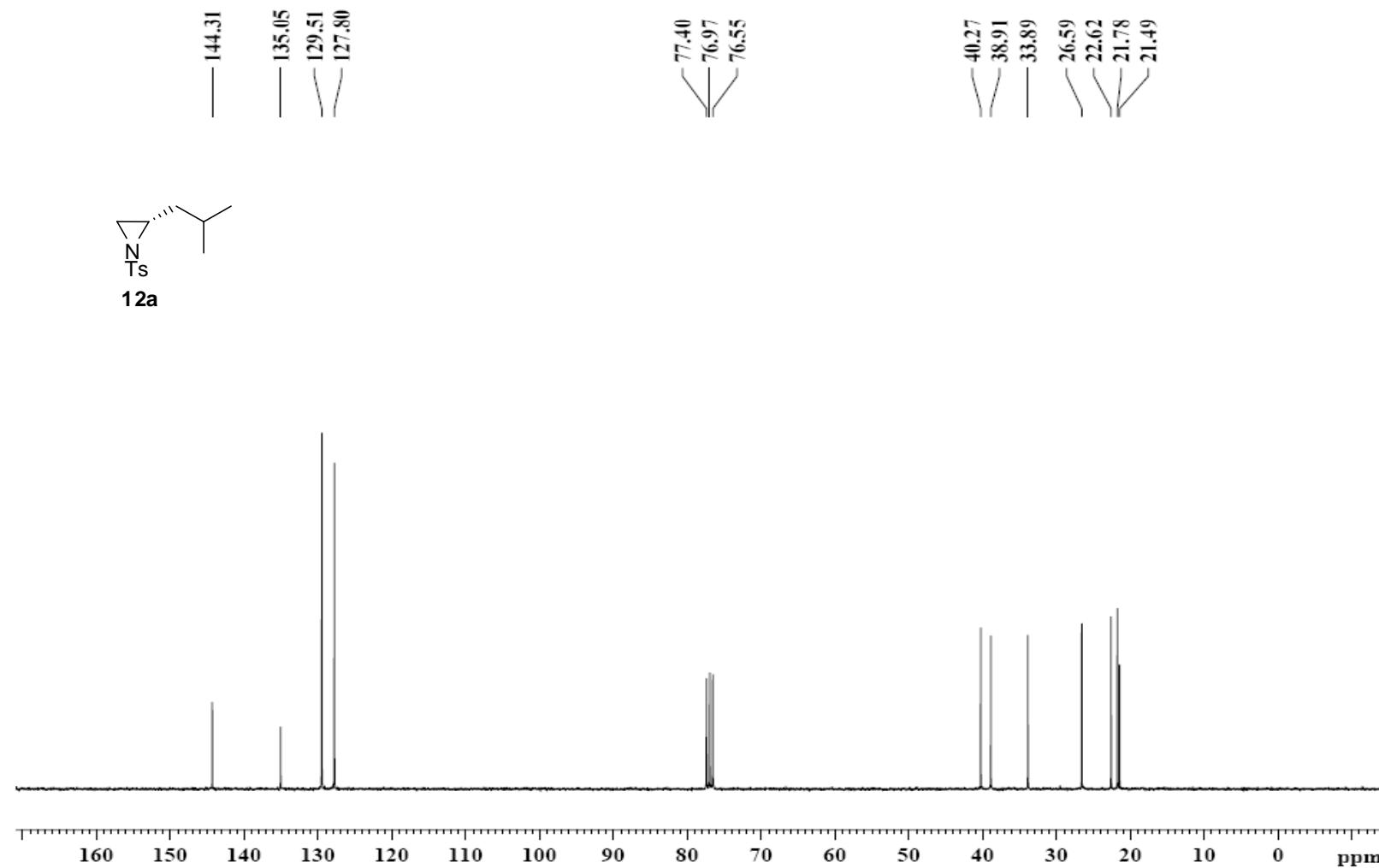
**Figure S-1:**  $^1\text{H}$  spectrum (200 MHz,  $\text{CDCl}_3$ ) of **4**.



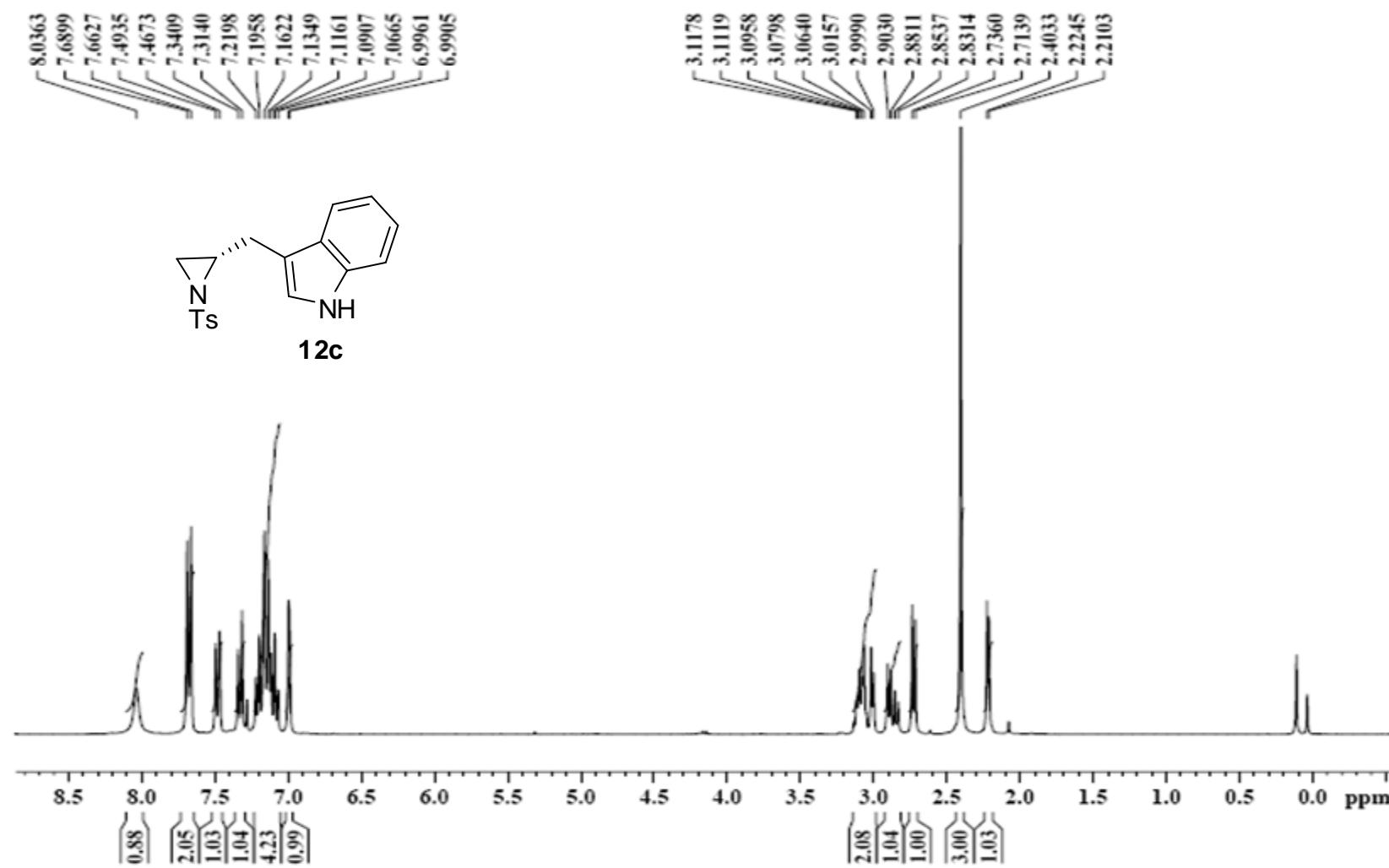
**Figure S-2:**  $^{13}\text{C}$  spectrum (75 MHz,  $\text{CDCl}_3$ ) of **4**.



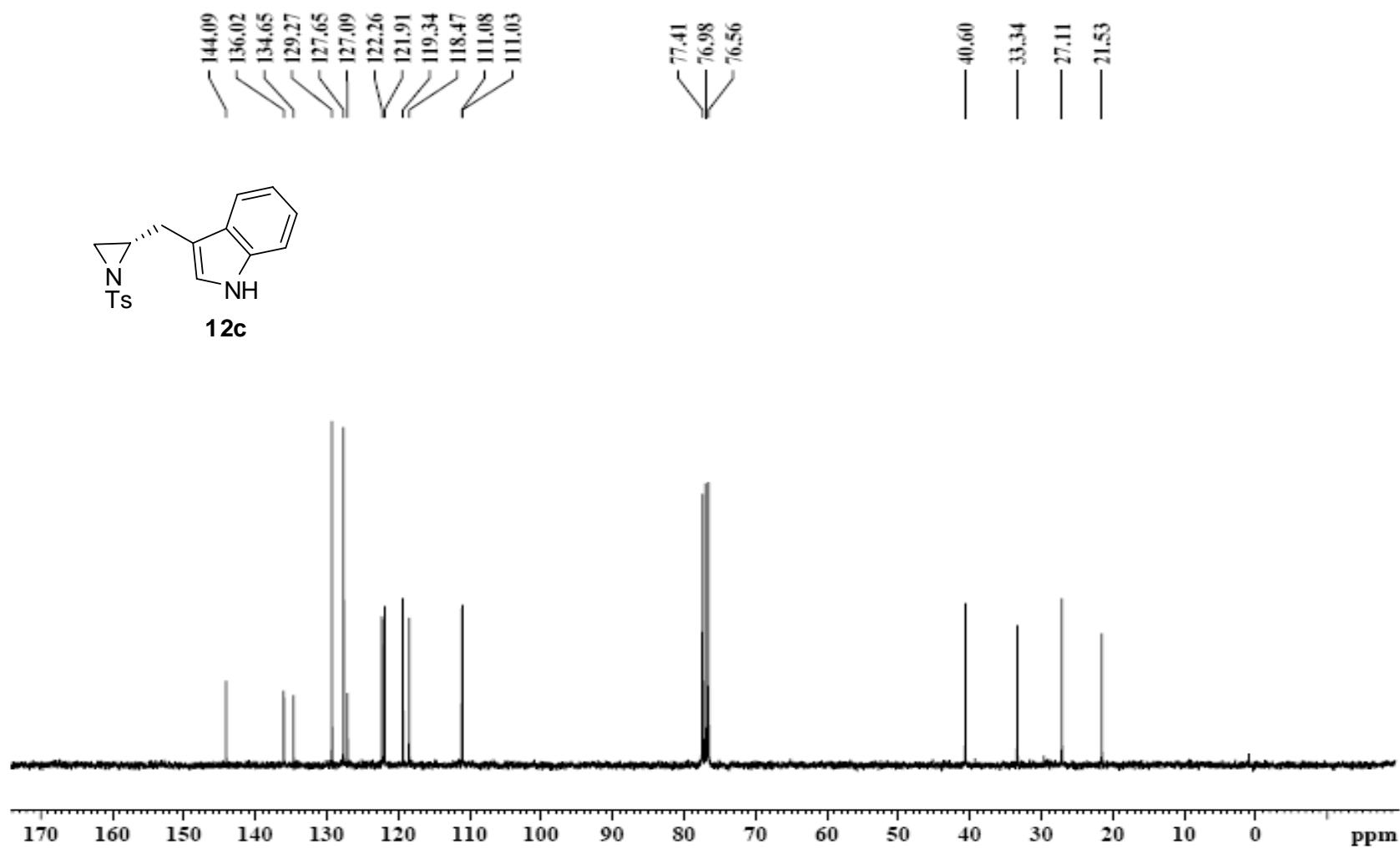
**Figure S-3:** <sup>1</sup>H spectrum (300 MHz, CDCl<sub>3</sub>) of **12a**.



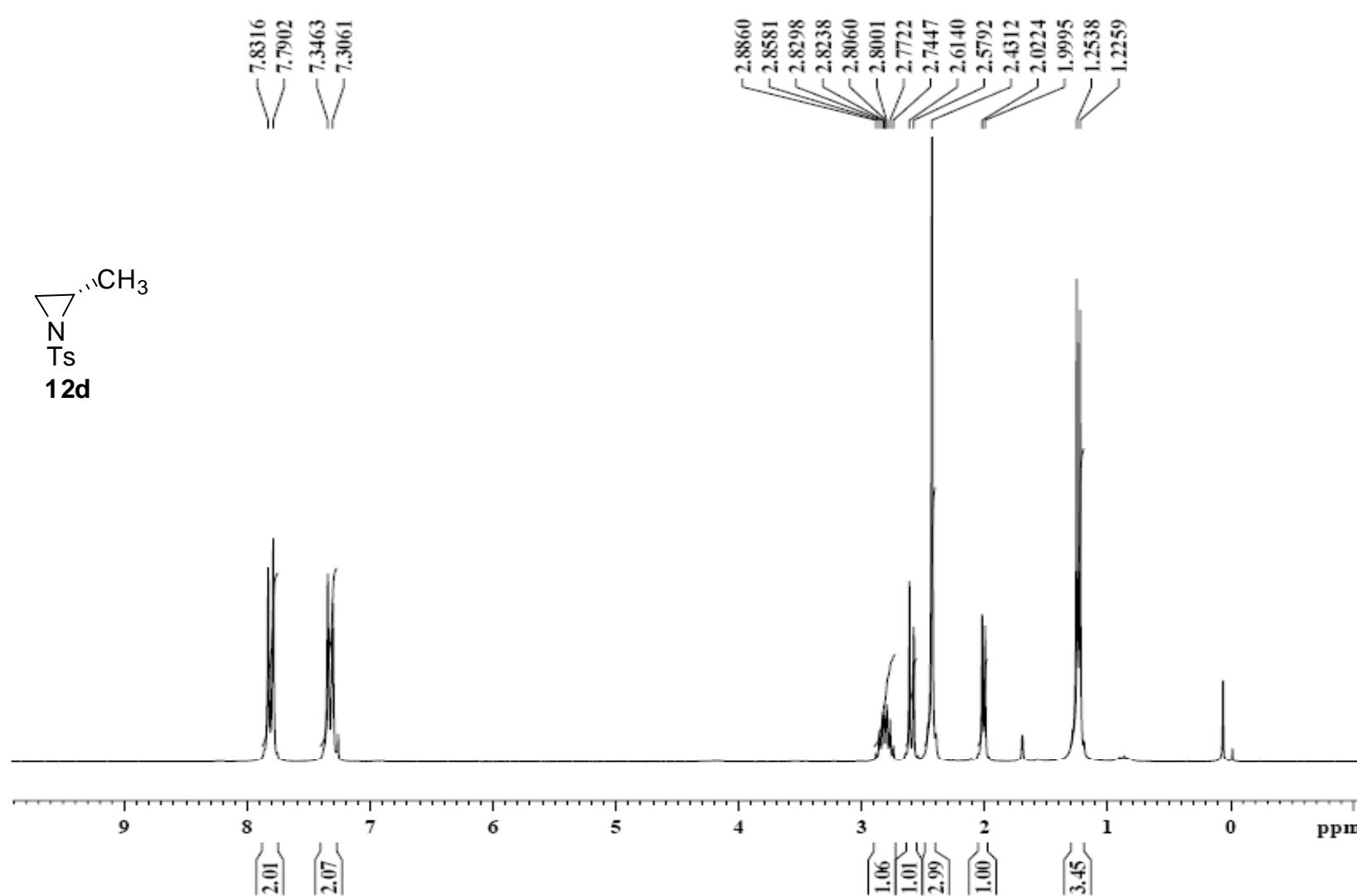
**Figure S-4:**  $^{13}\text{C}$  spectrum (75 MHz,  $\text{CDCl}_3$ ) of **12a**.



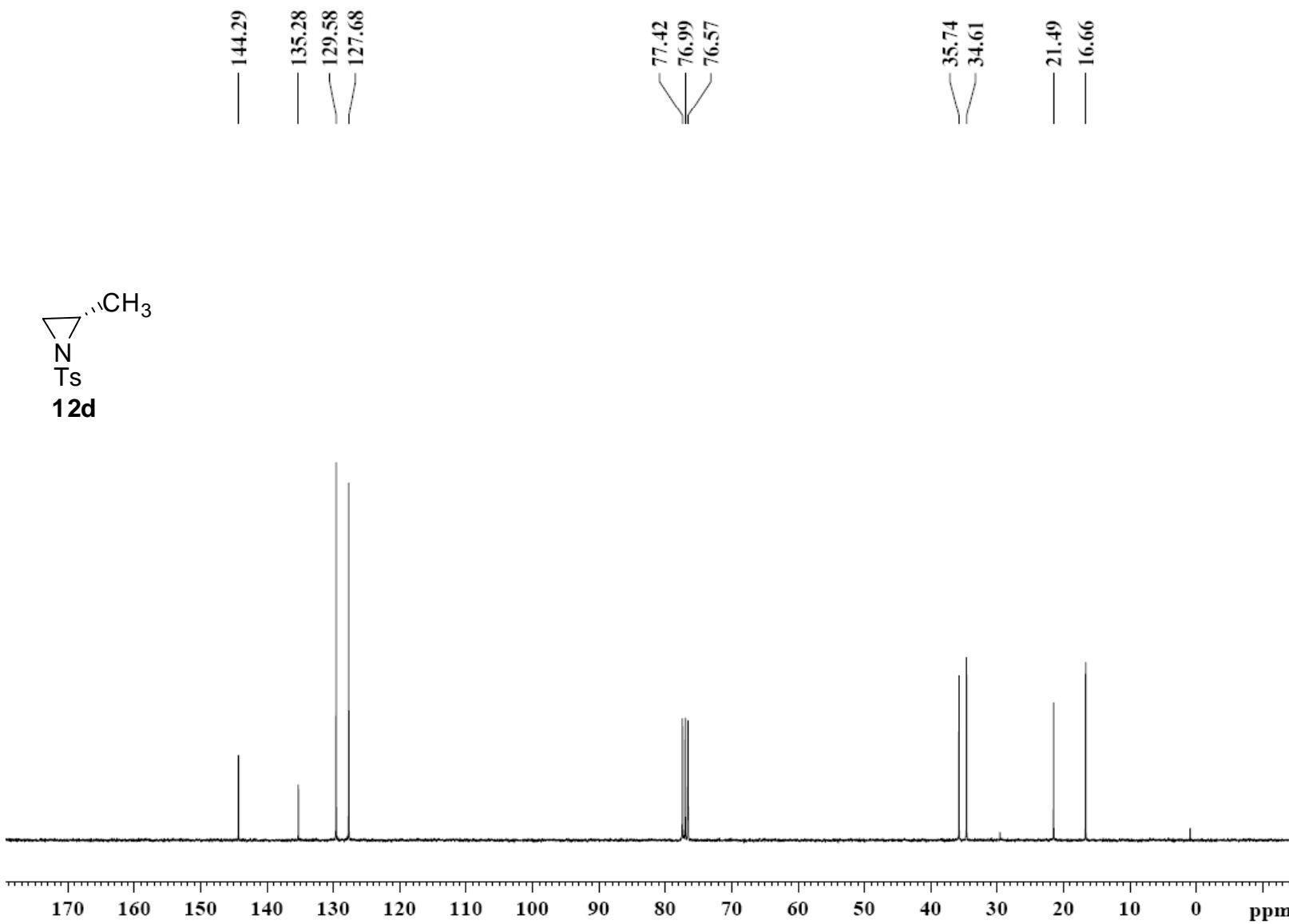
**Figure S-5:** <sup>1</sup>H spectrum (300 MHz, CDCl<sub>3</sub>) of **12c**.



**Figure S-6:**  $^{13}\text{C}$  spectrum (75MHz,  $\text{CDCl}_3$ ) **12c**.

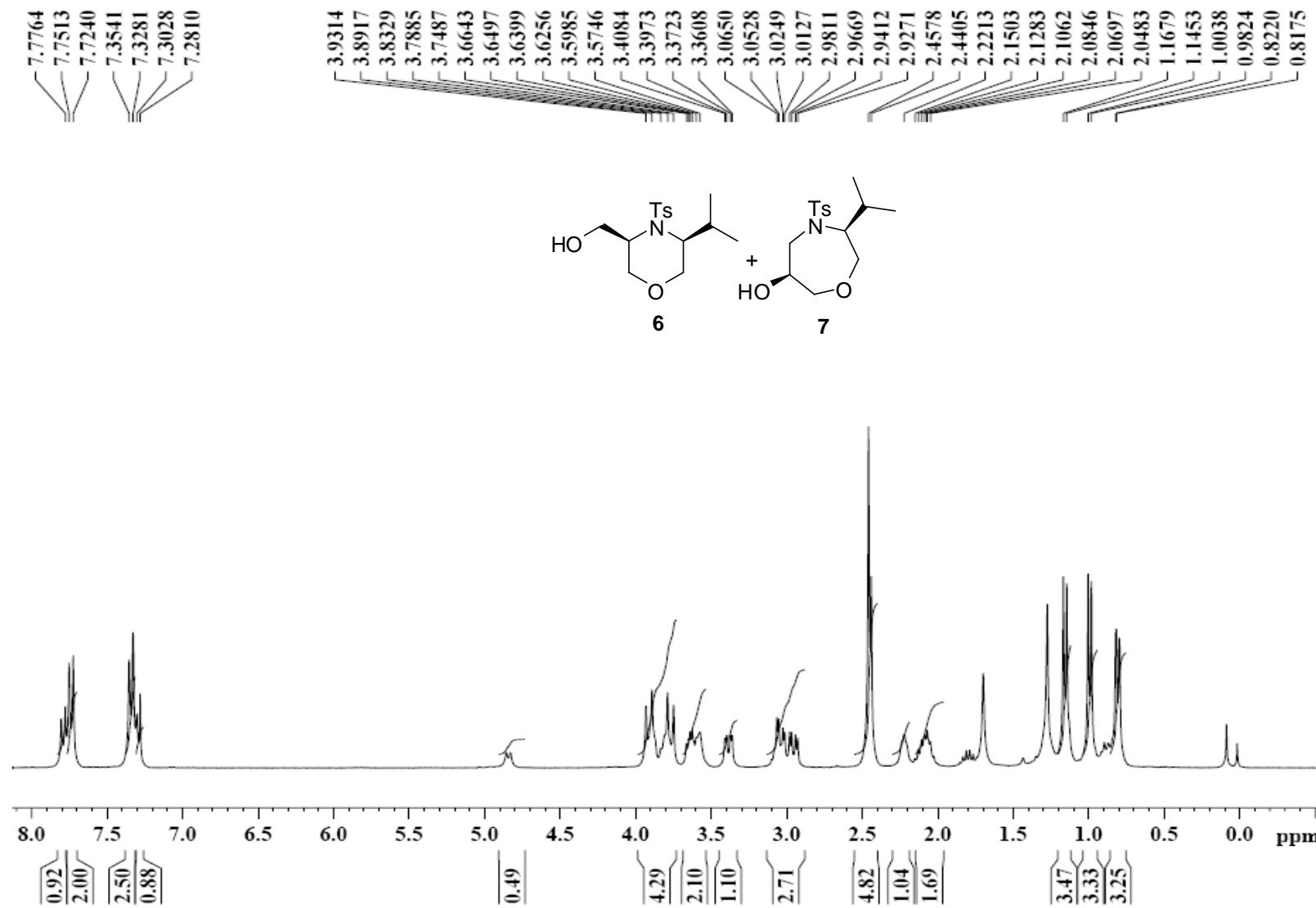


**Figure S-7:**  $^1\text{H}$  spectrum (300 MHz,  $\text{CDCl}_3$ ) of **12d**.



**Figure S-8:**  $^{13}\text{C}$  spectrum (75MHz,  $\text{CDCl}_3$ ) **12d.**

**12**

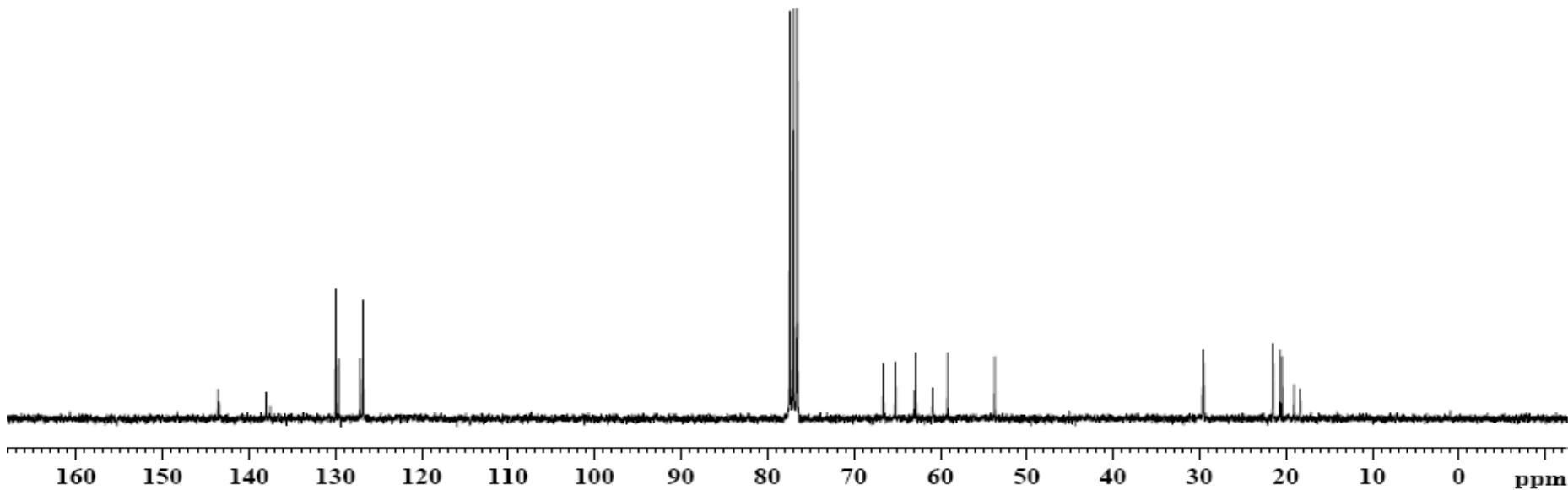
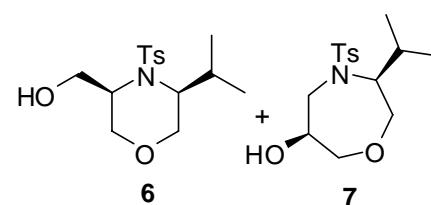


**Figure S-9:**  $^1\text{H}$  spectrum (300 MHz,  $\text{CDCl}_3$ ) of inseparable **6 + 7** (2.1:1).

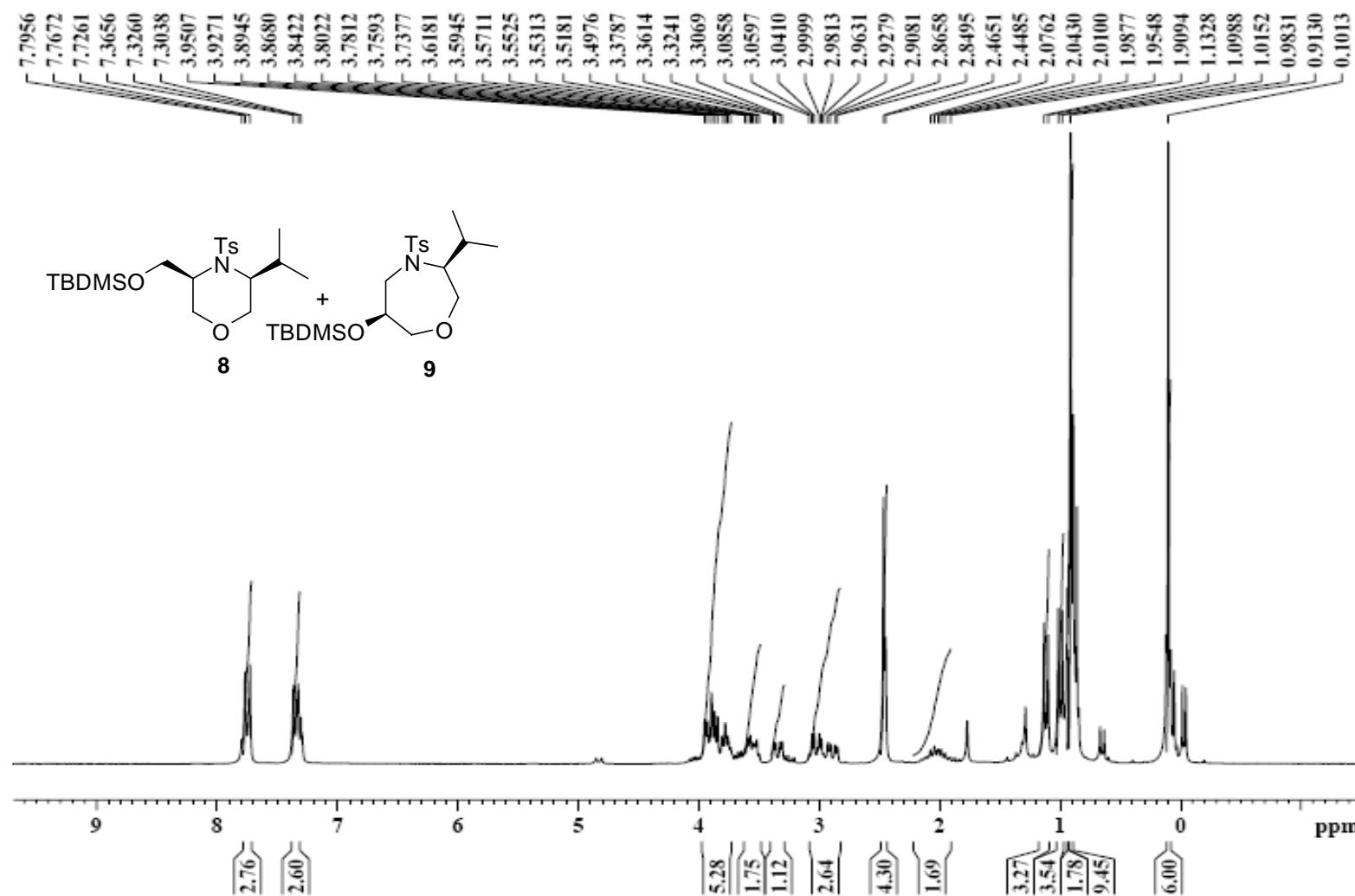
143.58  
143.47  
138.03  
137.53  
129.96  
129.63  
127.14  
126.80

77.41  
76.98  
76.56  
66.59  
65.20  
63.00  
62.85  
60.88  
59.16  
53.70

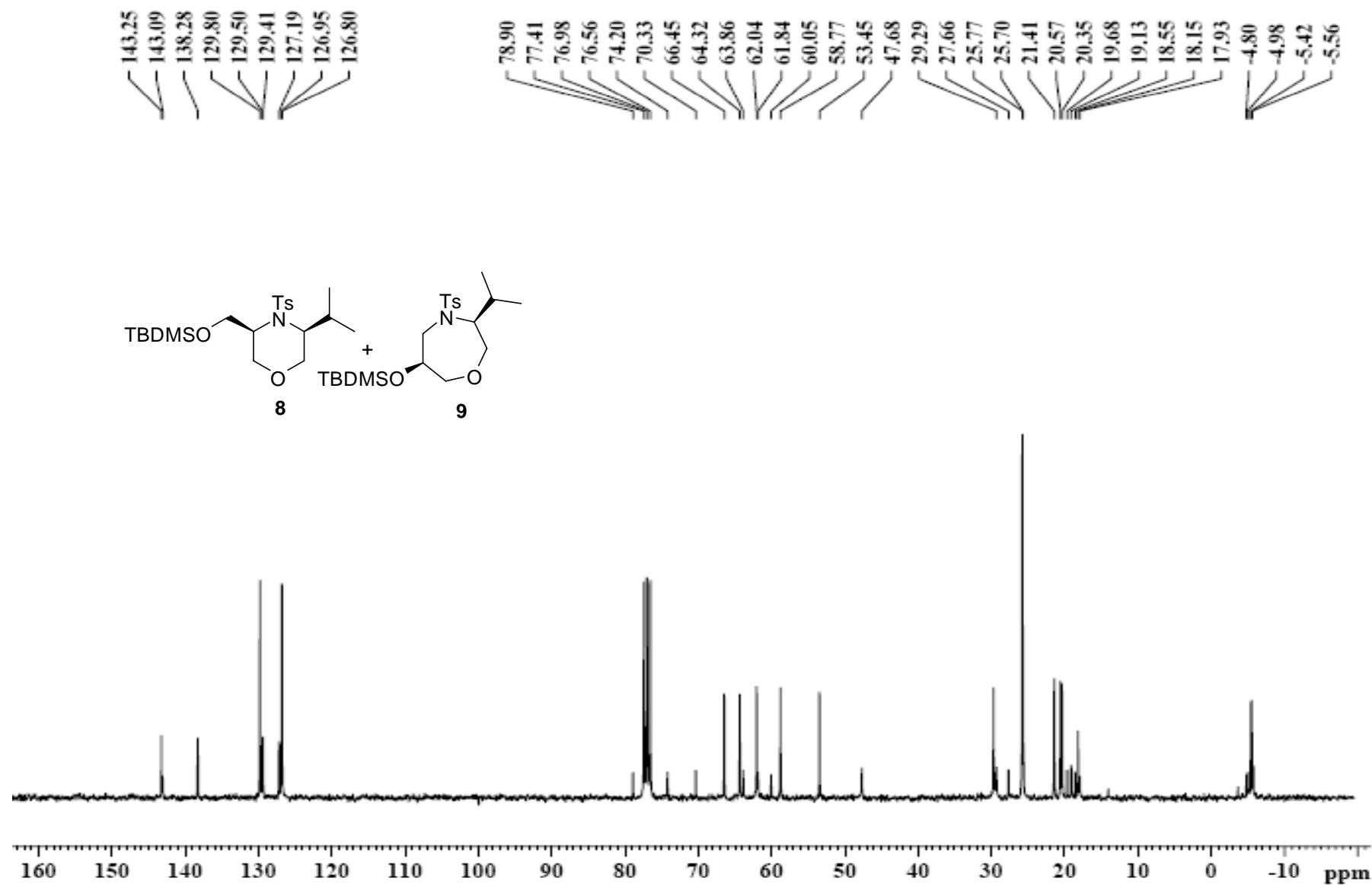
29.57  
29.48  
21.49  
20.67  
20.41  
19.05  
18.35



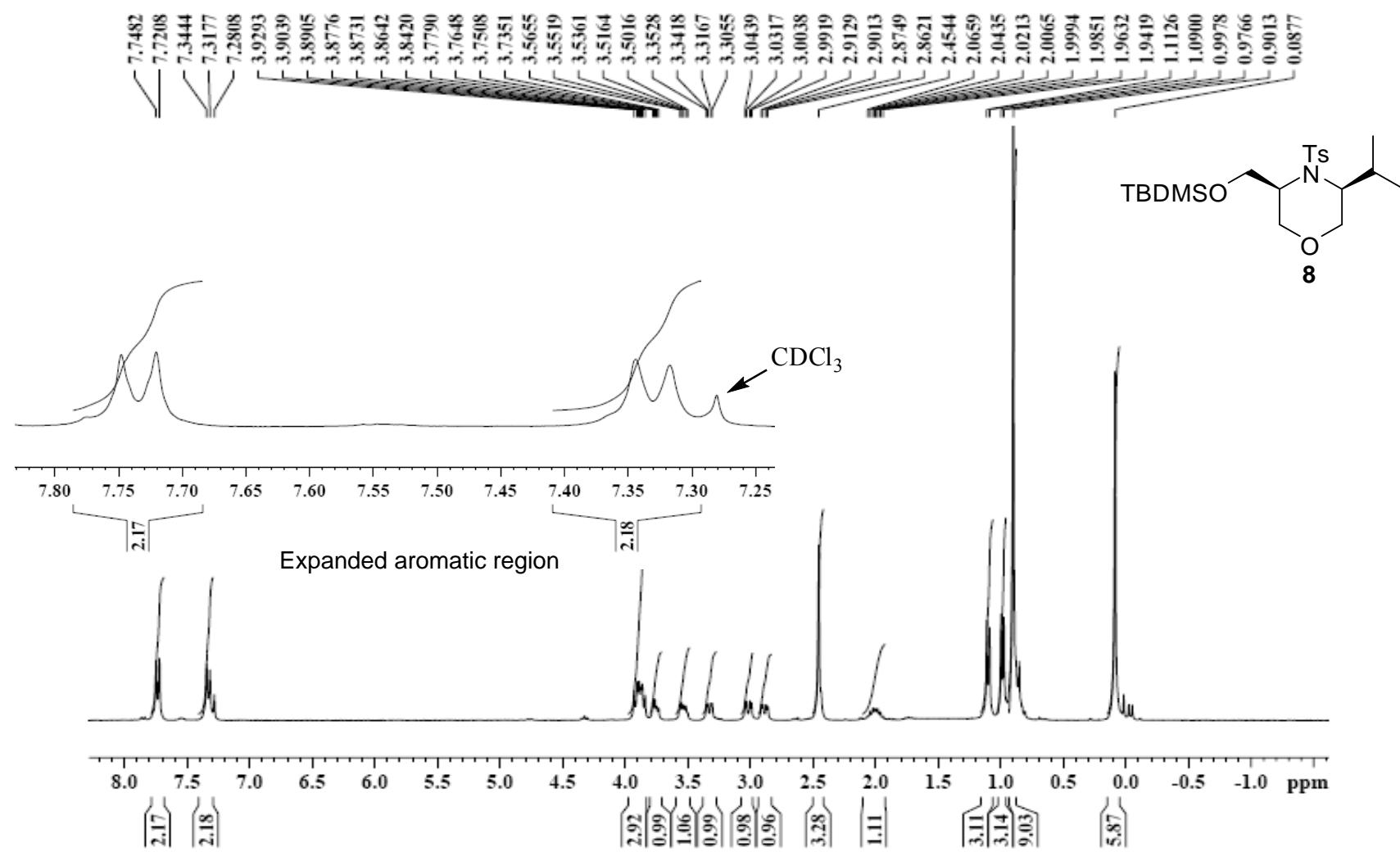
**Figure S-10:** <sup>13</sup>C spectrum (75MHz, CDCl<sub>3</sub>) of mixture compounds.



**Figure S-11:**  $^1\text{H}$  spectrum (300 MHz,  $\text{CDCl}_3$ ) of **8 + 9** (3.8:1). Reaction is performed at rt.



**Figure S-12:**  $^{13}\text{C}$  spectrum (75 MHz,  $\text{CDCl}_3$ ) of **8 & 9**.



**Figure S-13:** Pure  $^1\text{H}$  spectrum (300 MHz,  $\text{CDCl}_3$ ) of **8**. When reaction is carried out at 0 °C.

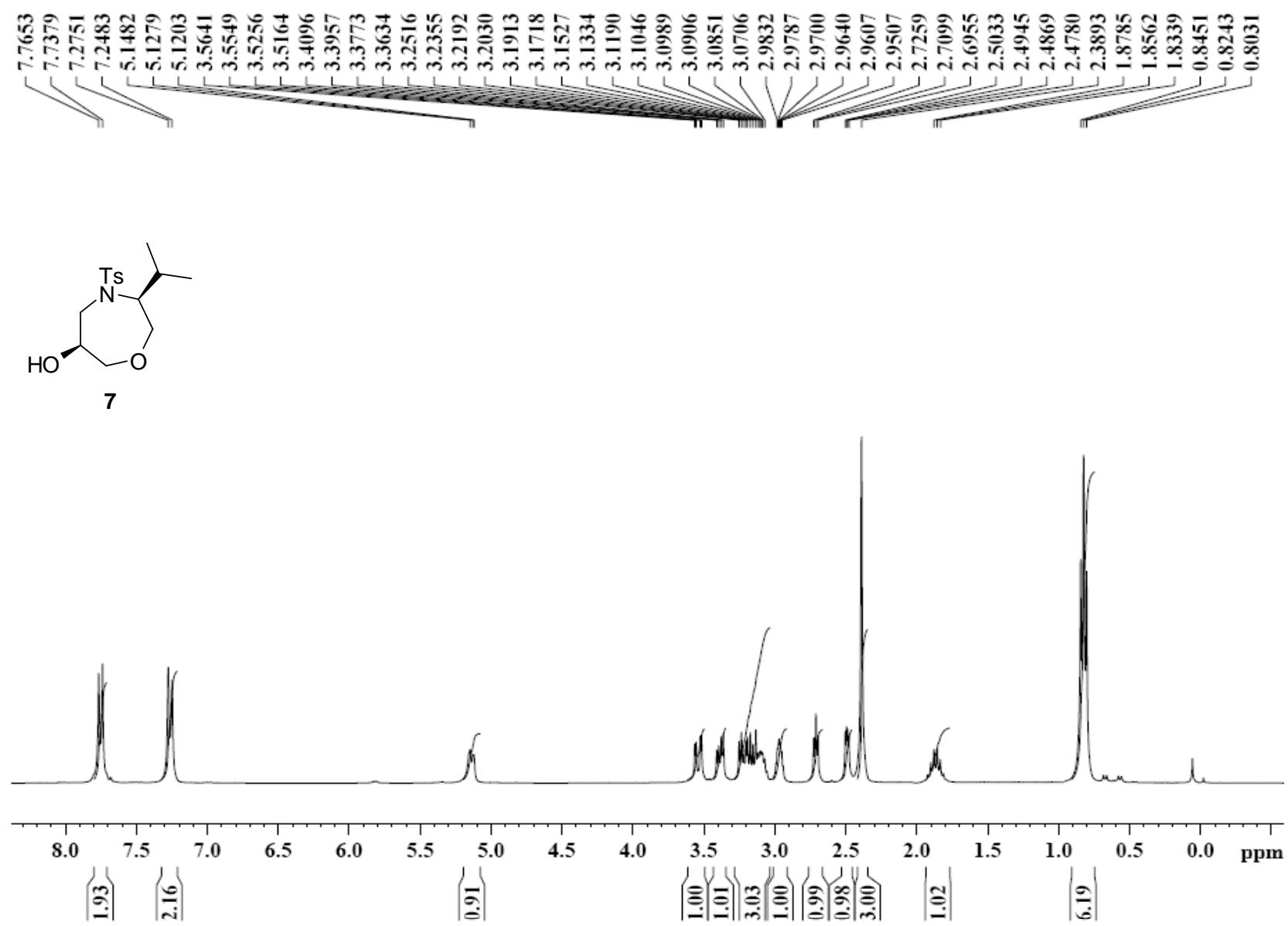
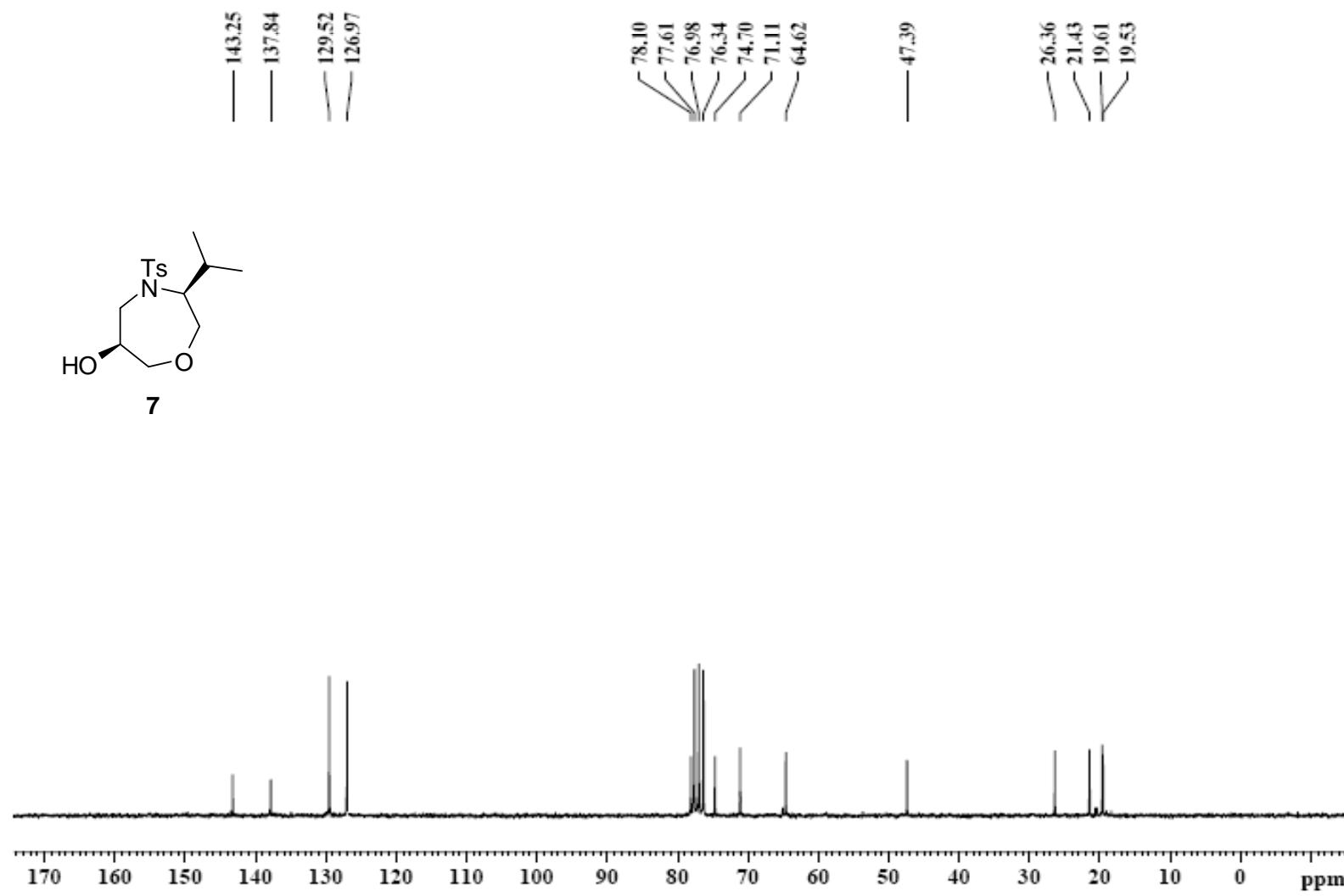
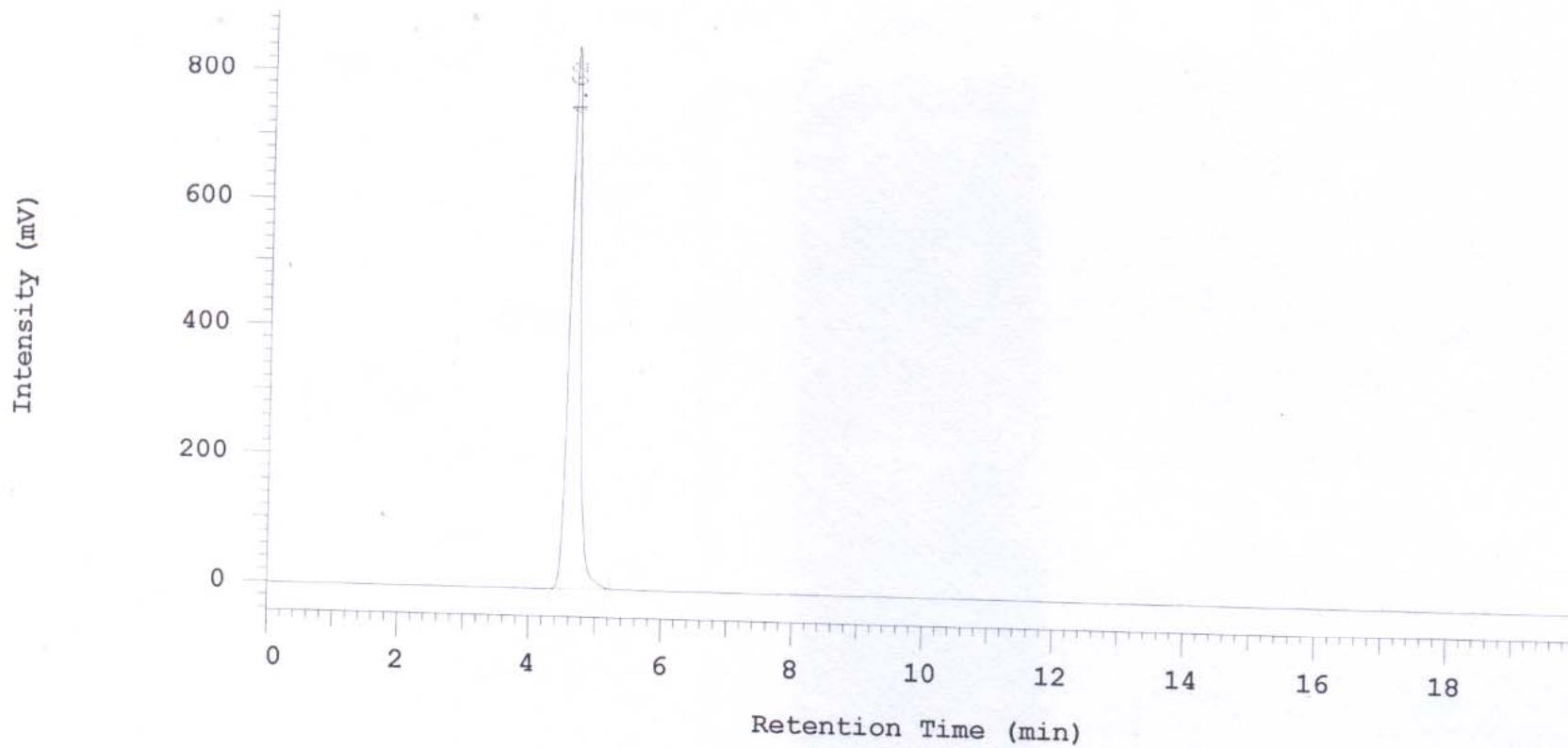
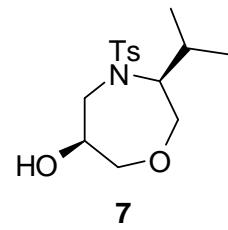


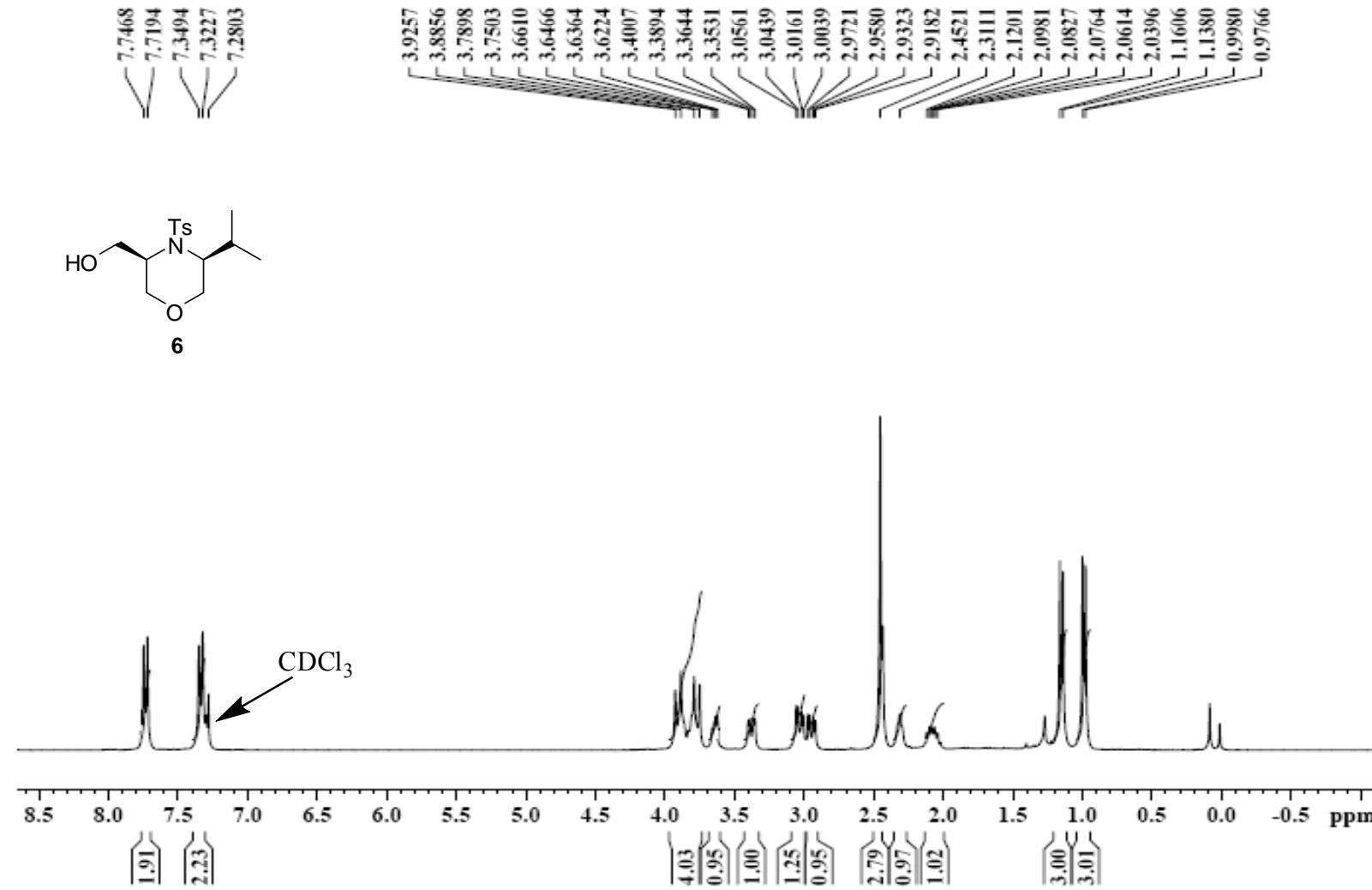
Figure S-14:  $^1\text{H}$  spectrum (300 MHz,  $\text{CDCl}_3$ ) of 7.



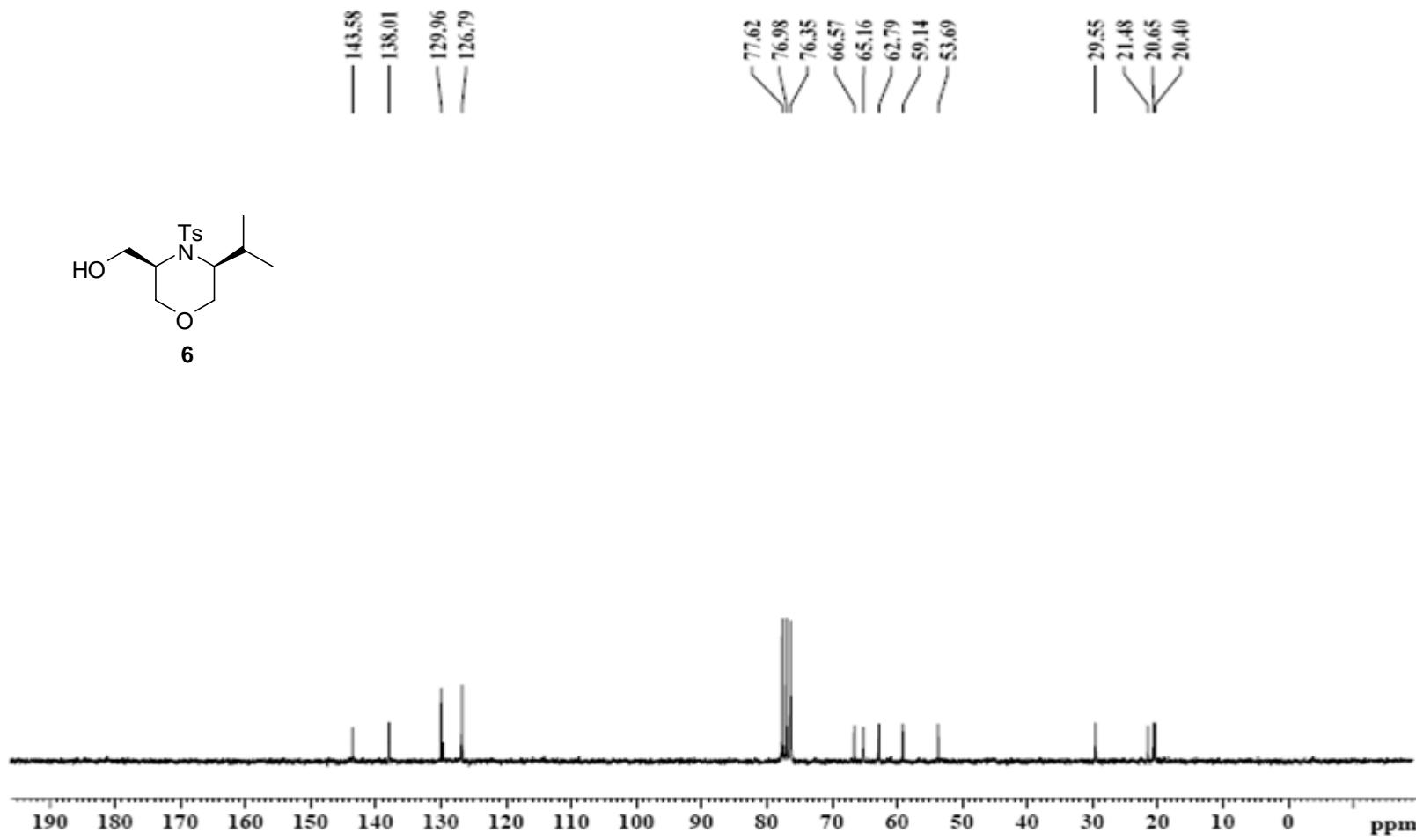
**Figure S-15:**  $^{13}\text{C}$  spectrum (50 MHz,  $\text{CDCl}_3$ ) of **7**.



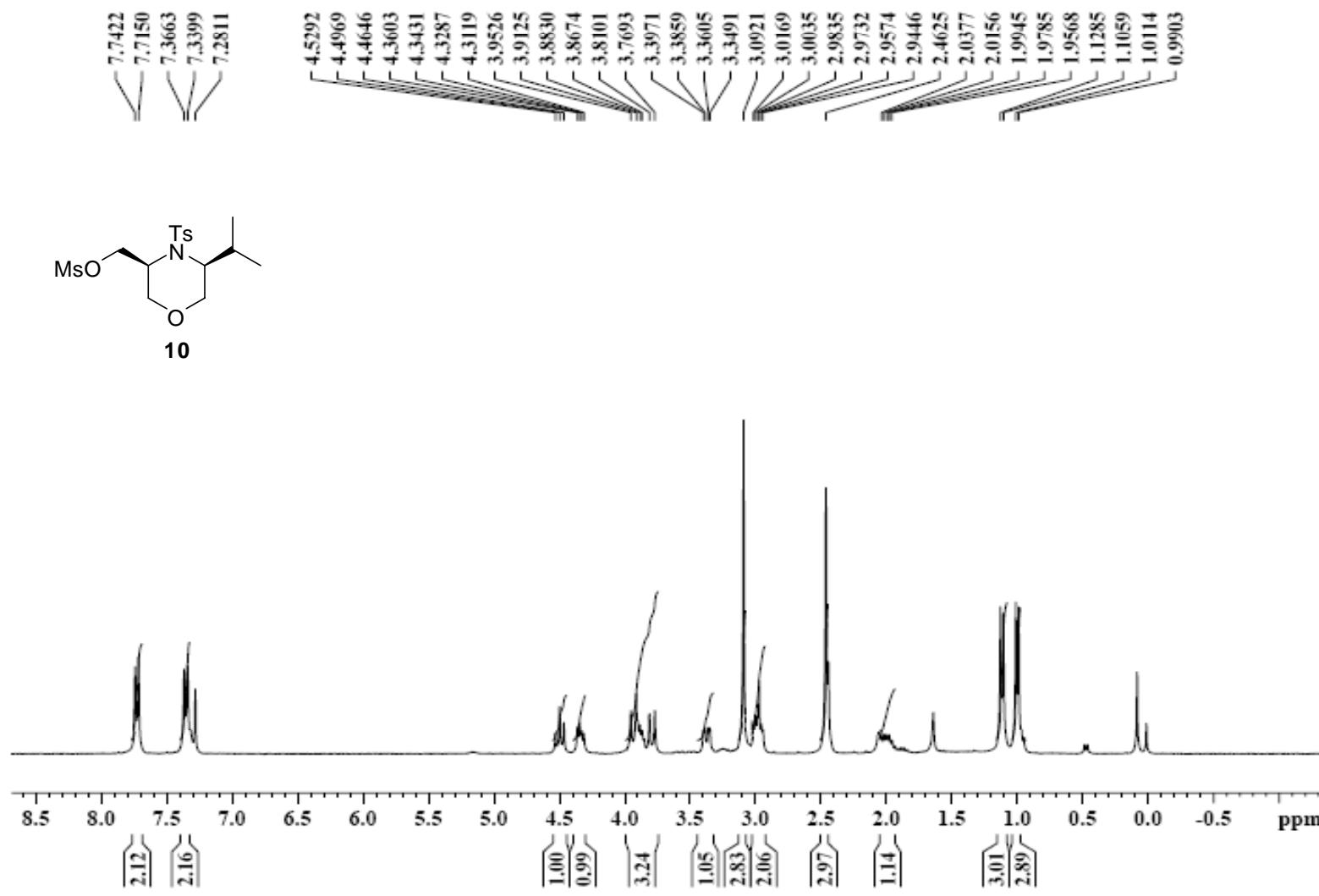
**Figure S-16:** HPLC spectrum of **7**.

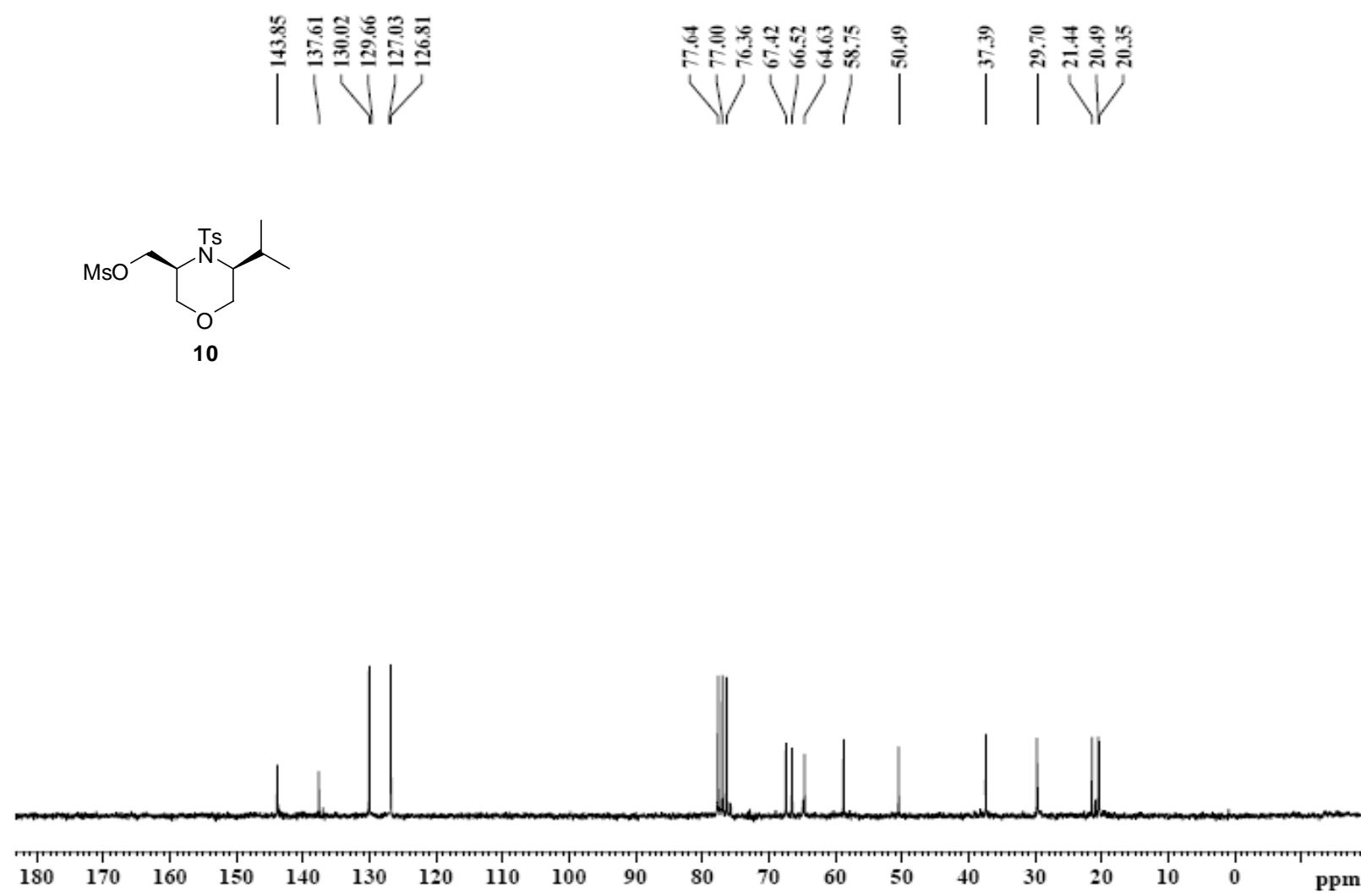


**Figure S-17:**  $^1\text{H}$  spectrum (300 MHz,  $\text{CDCl}_3$ ) of **6**.

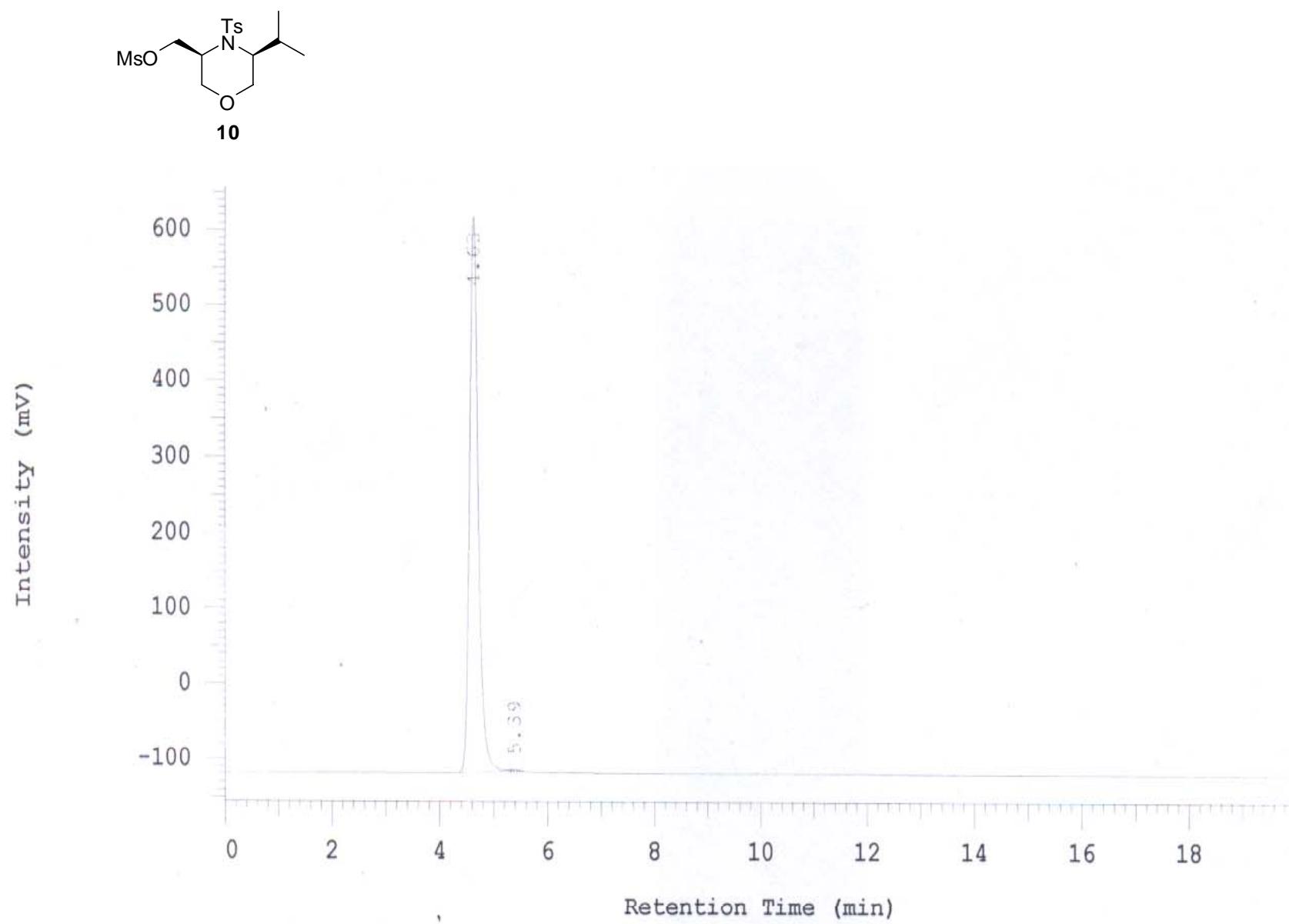


**Figure S-18:**  $^{13}\text{C}$  spectrum (50 MHz,  $\text{CDCl}_3$ ) of **6**.

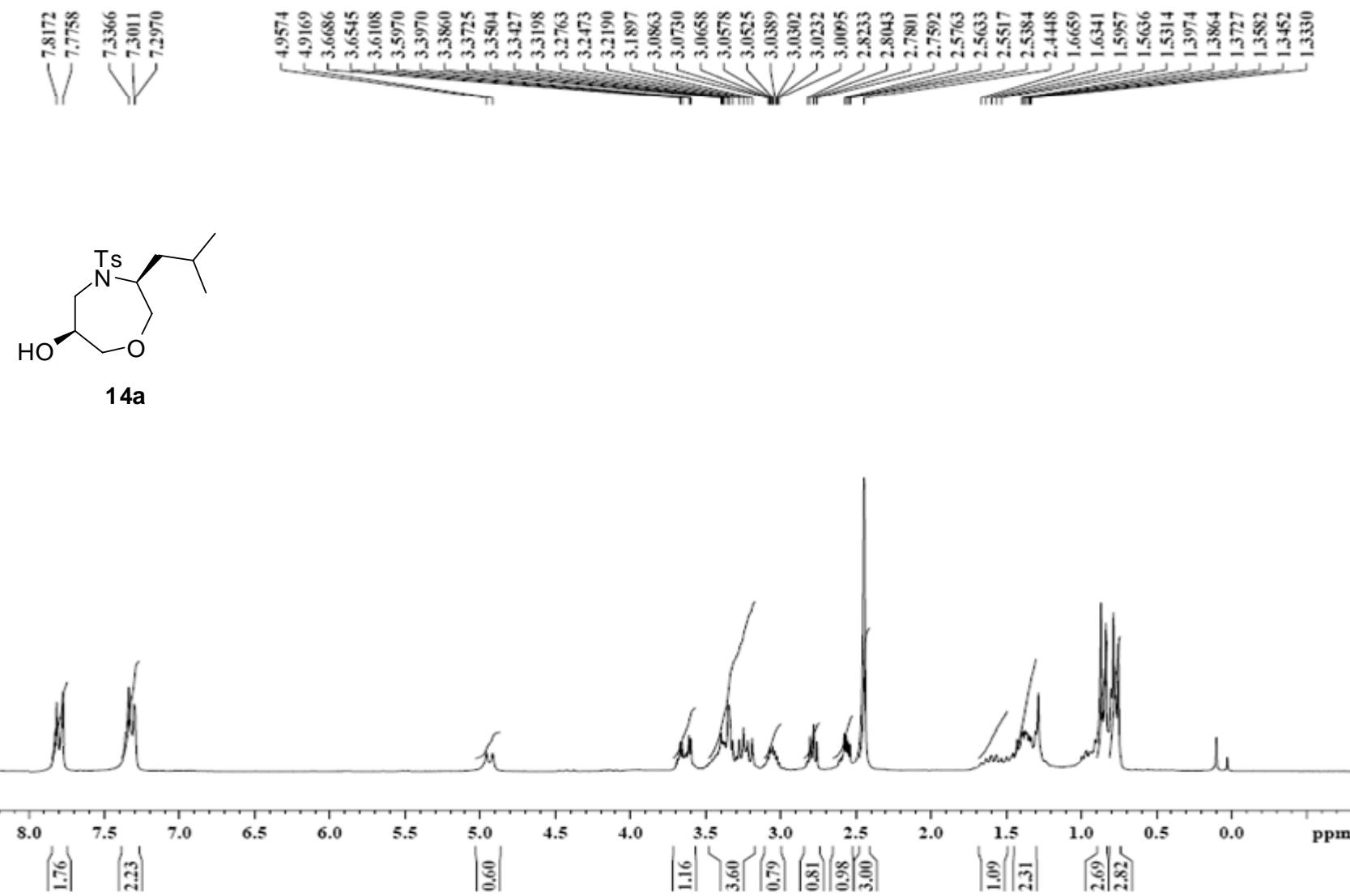




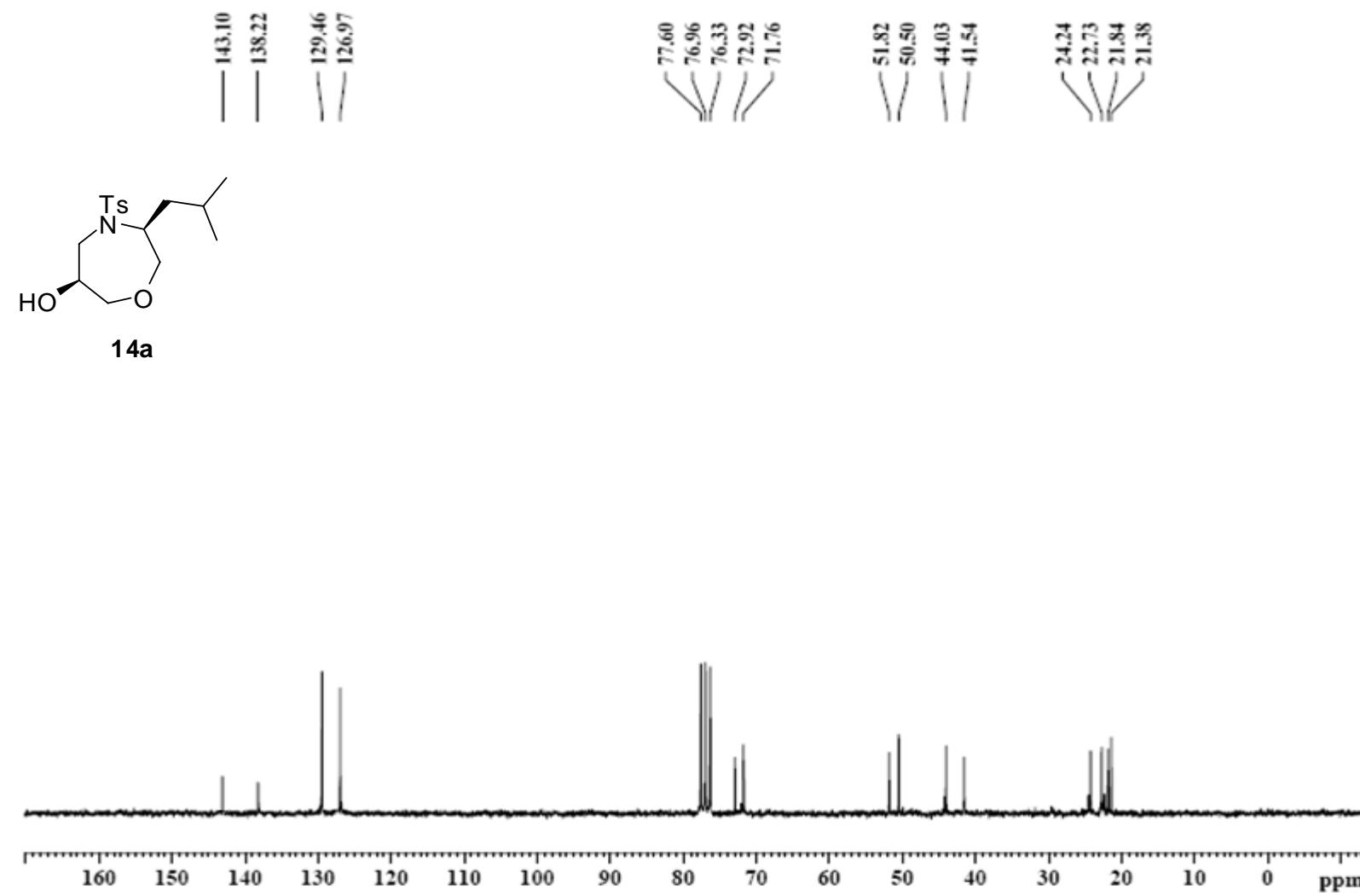
**Figure S-20:** <sup>1</sup>H spectrum (50 MHz, CDCl<sub>3</sub>) of **10**.



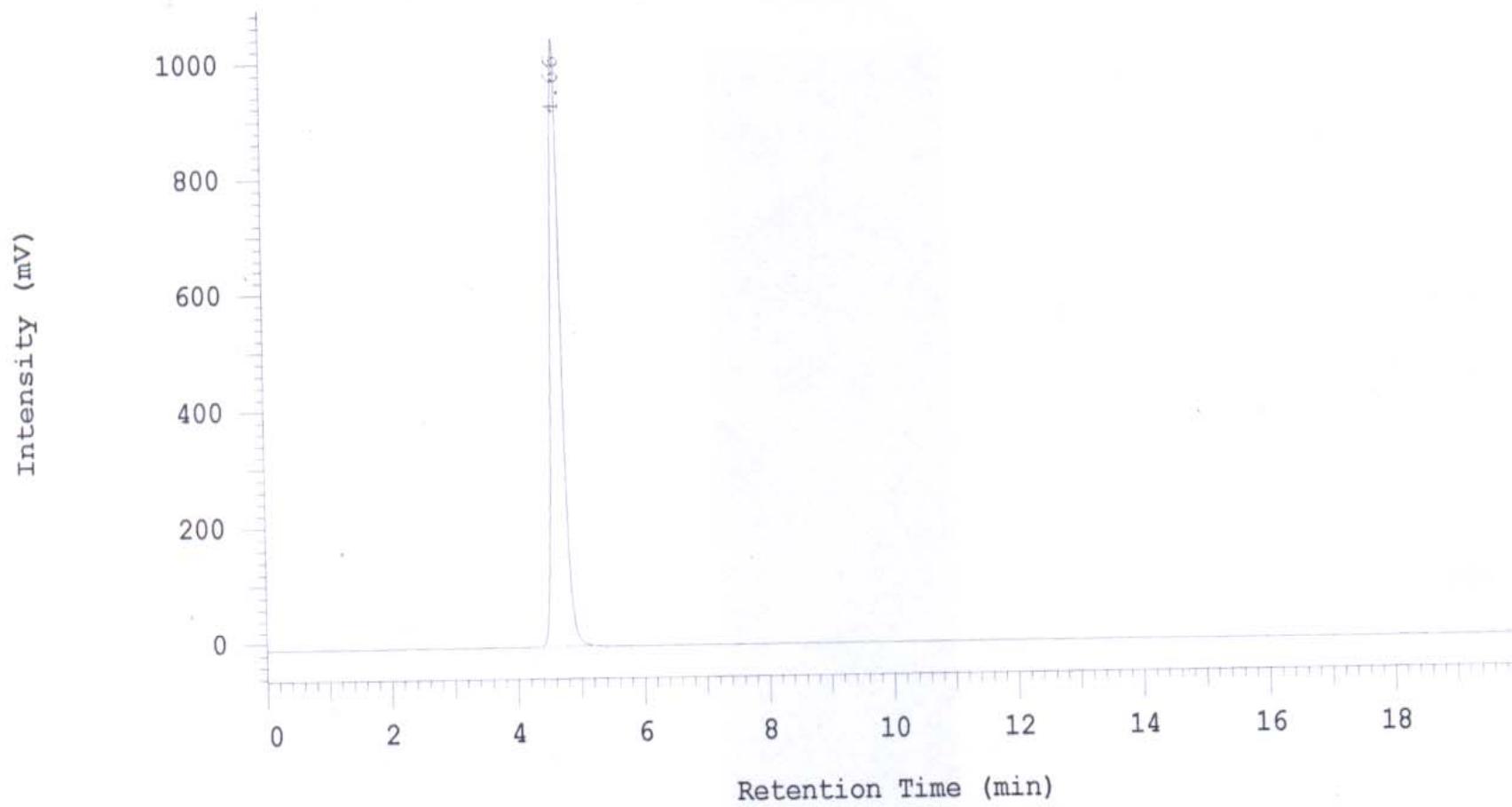
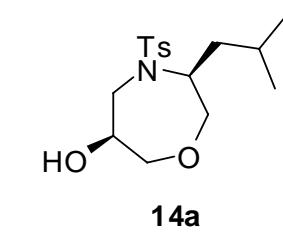
**Figure S-21:** HPLC spectrum of **10**



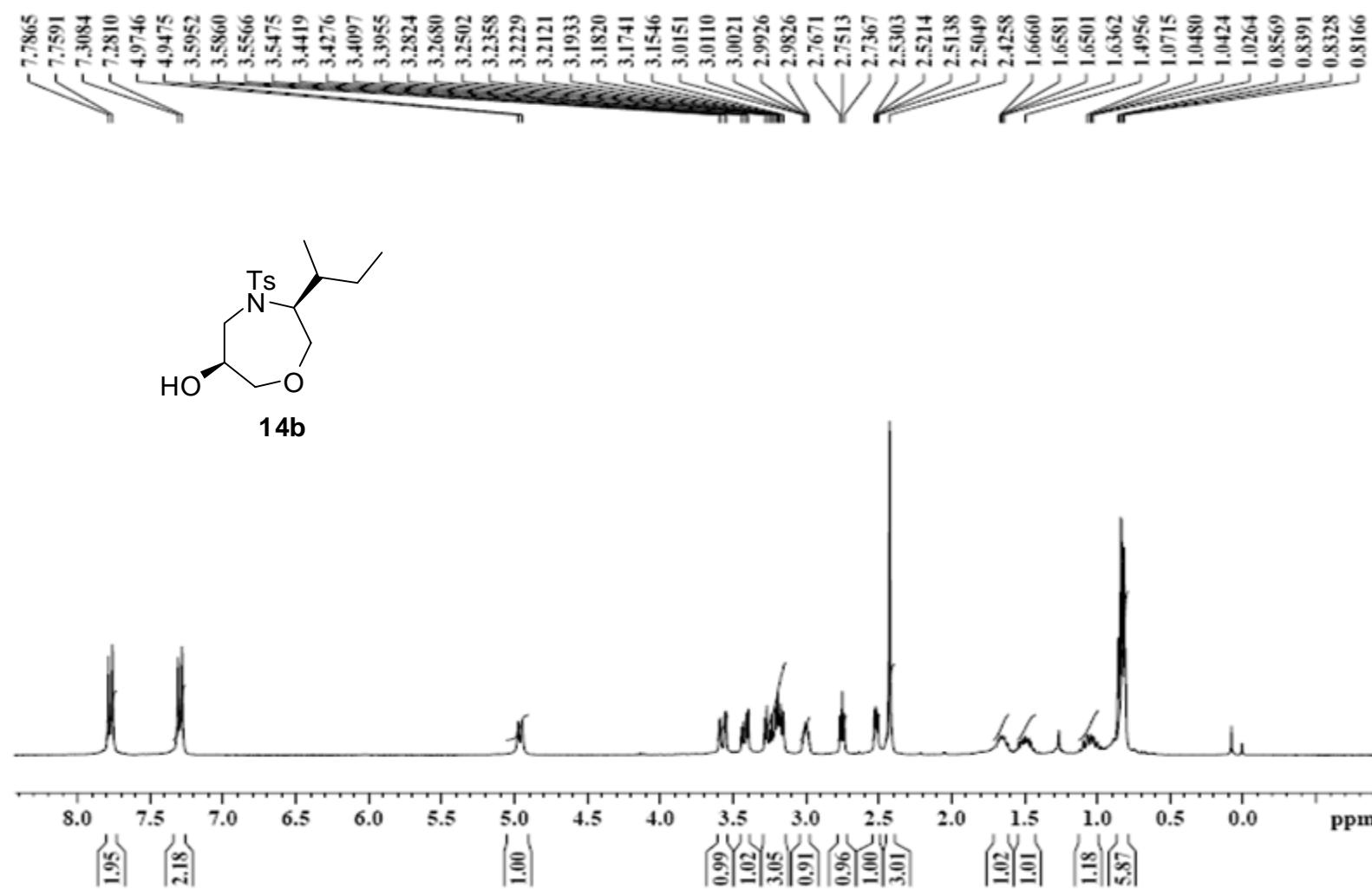
**Figure S-22:** <sup>1</sup>H spectrum (200 MHz, CDCl<sub>3</sub>) **14a**.



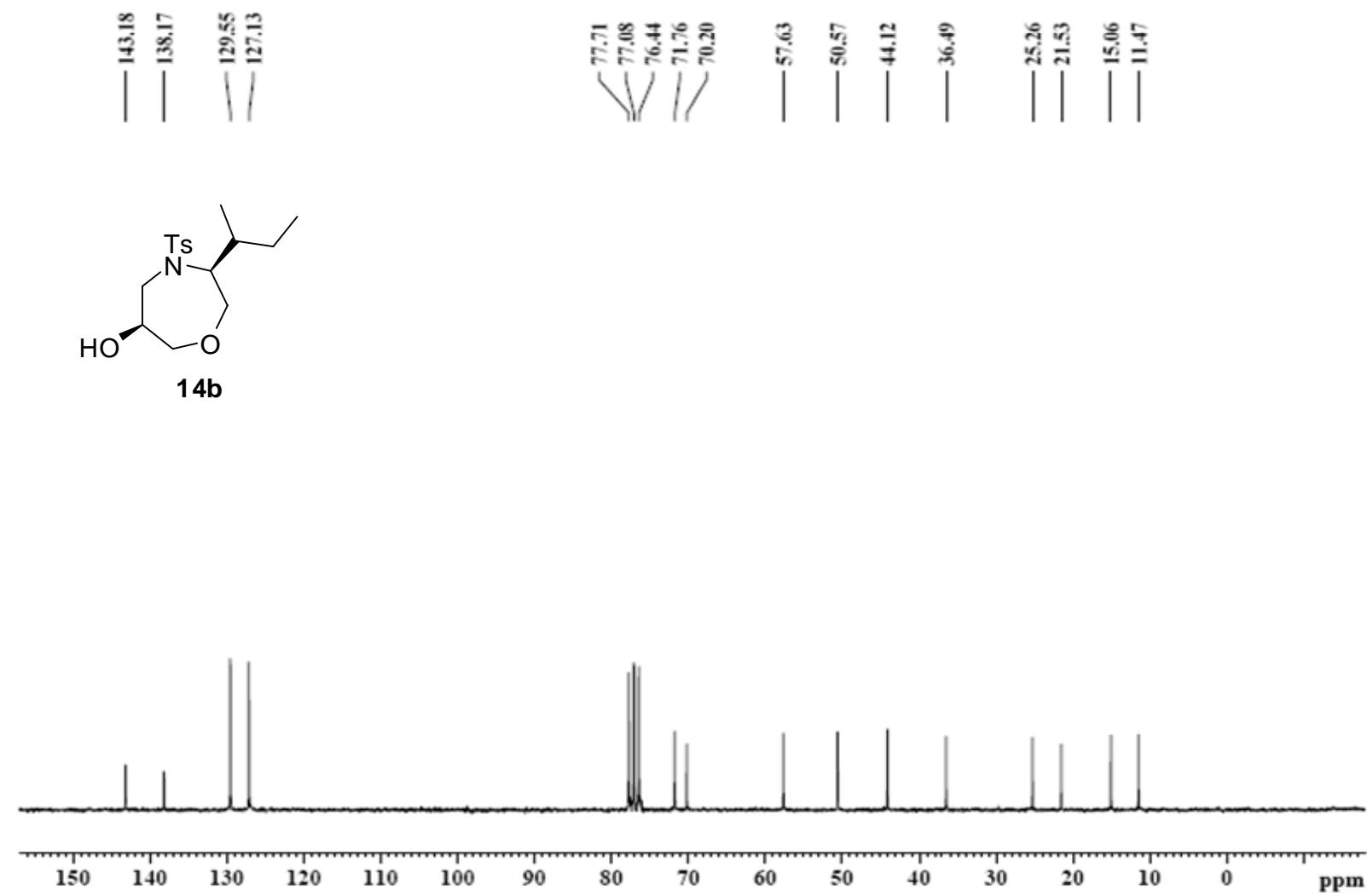
**Figure S-23:**  $^{13}\text{C}$  spectrum (50 MHz,  $\text{CDCl}_3$ ) **14a**.



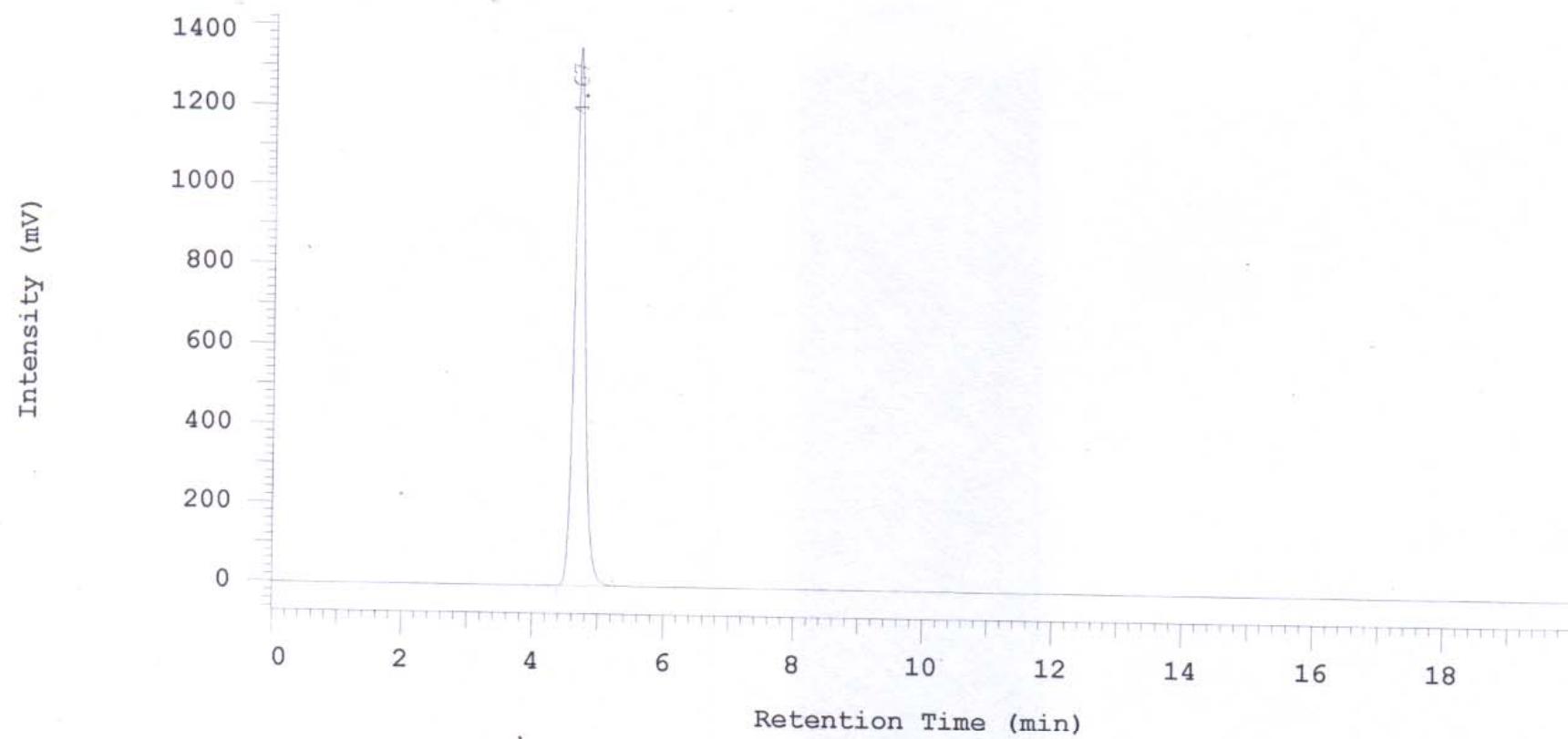
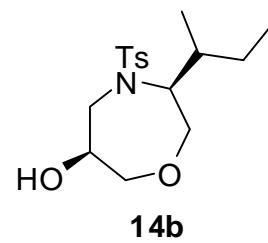
**Figure S-24:** HPLC spectrum of **14a**.



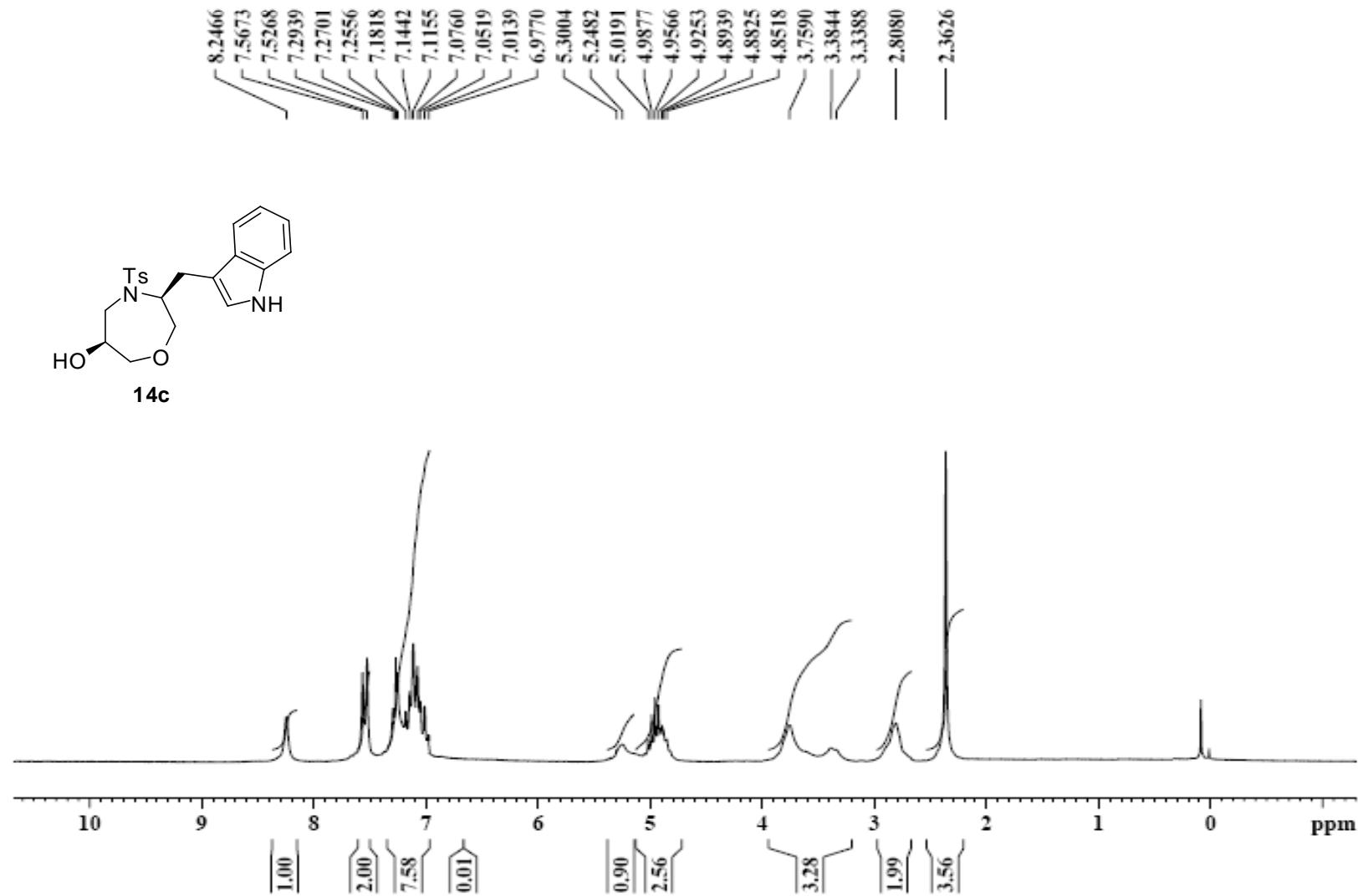
**Figure S-25:** <sup>1</sup>H spectrum (300 MHz, CDCl<sub>3</sub>) **14b**.



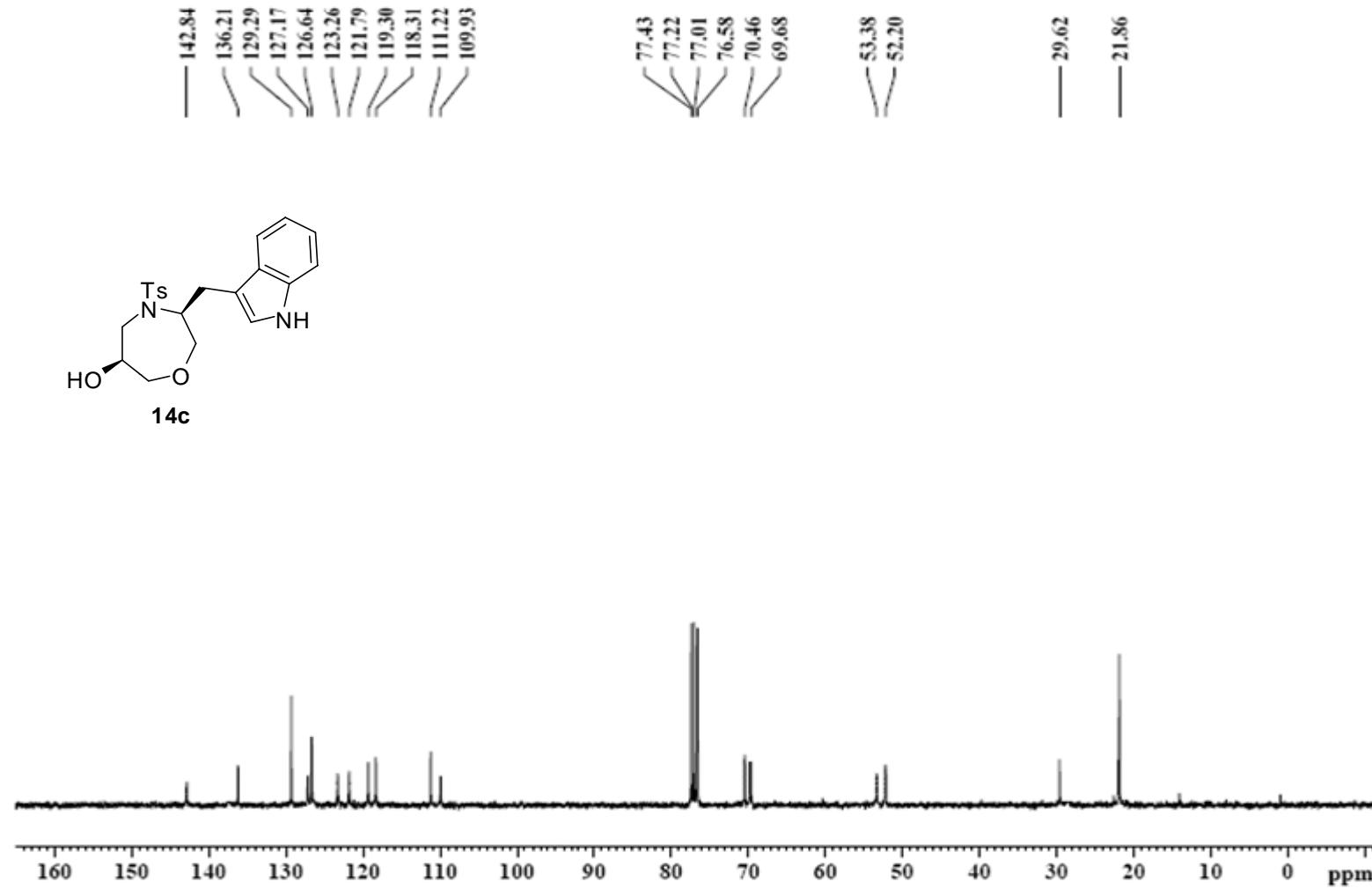
**Figure S-26:**  $^{13}\text{C}$  spectrum (75 MHz,  $\text{CDCl}_3$ ) **14b**.



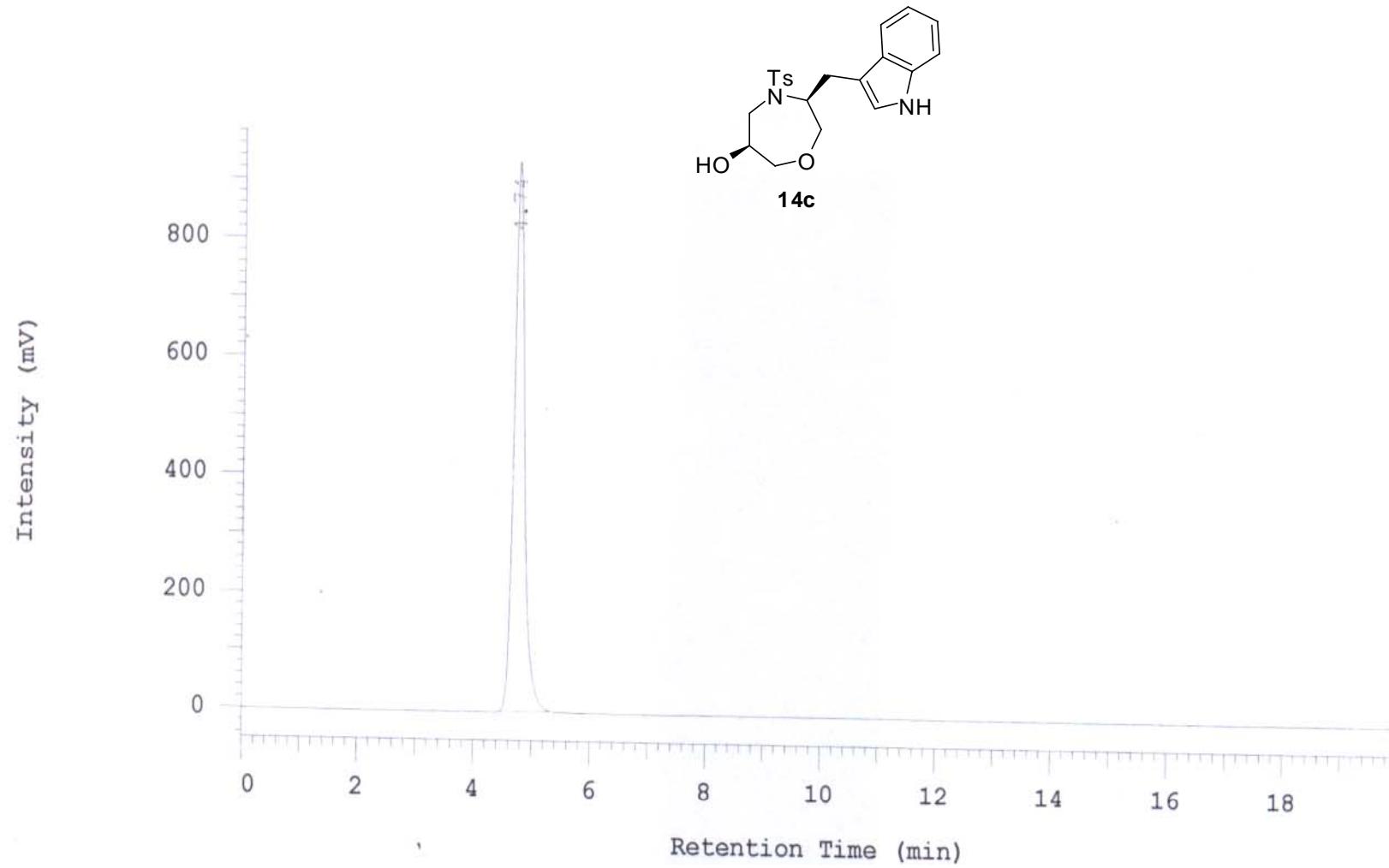
**Figure S-27:** HPLC spectrum of **14b**.



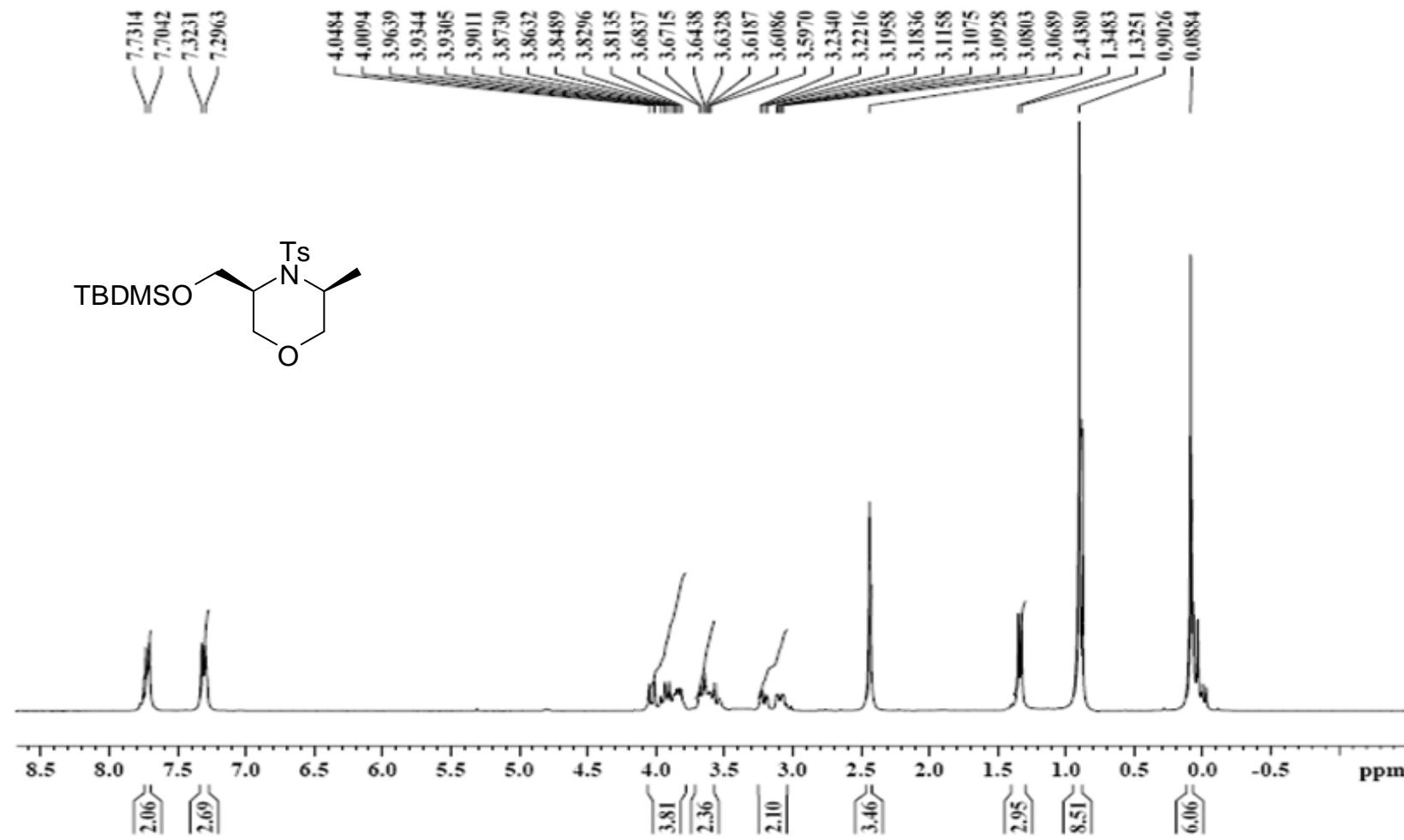
**Figure S-28:** <sup>1</sup>H spectrum (200 MHz, CDCl<sub>3</sub>) **14c**.



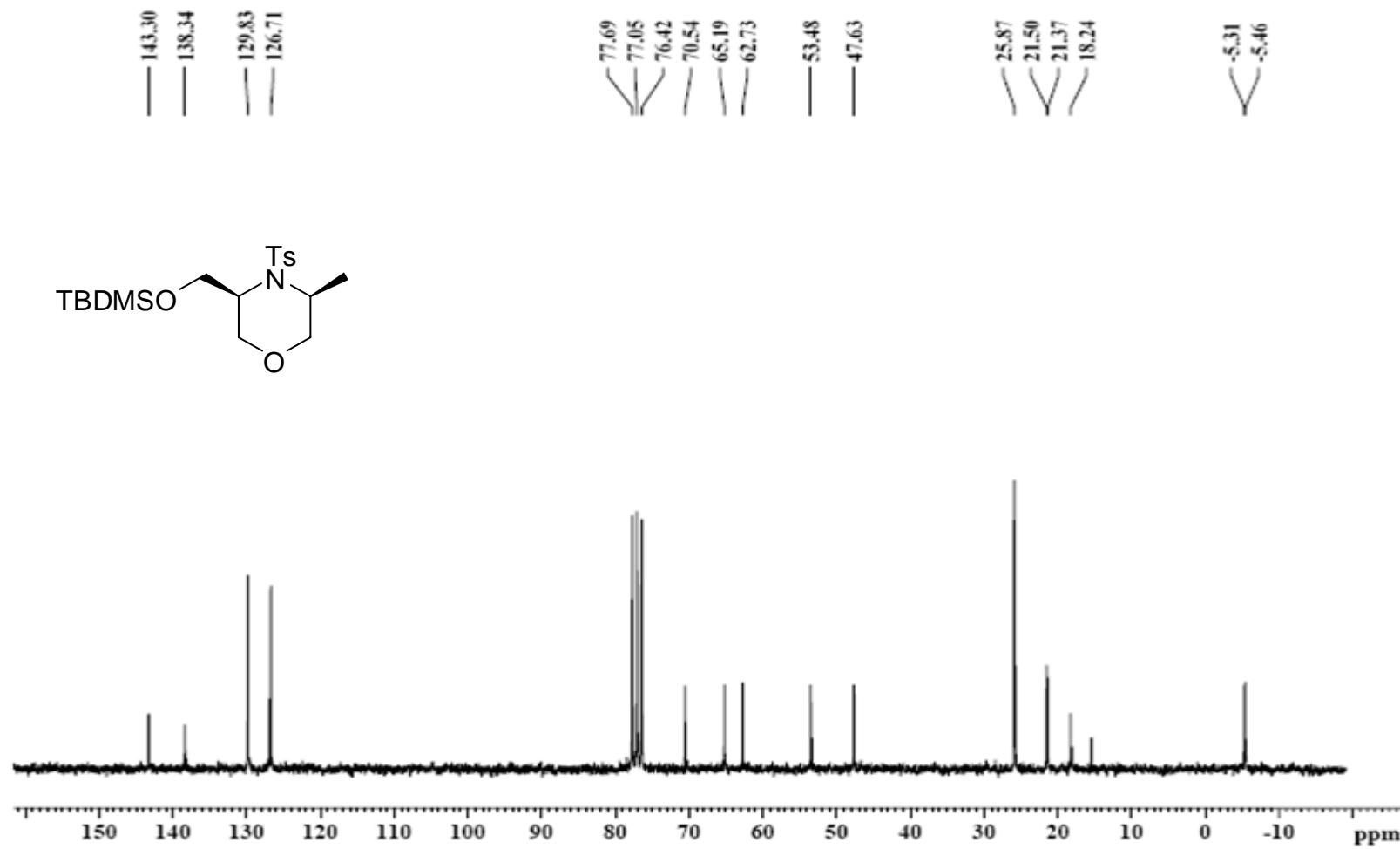
**Figure S-29:**  $^{13}\text{C}$  spectrum (75 MHz,  $\text{CDCl}_3$ ) **14c**.



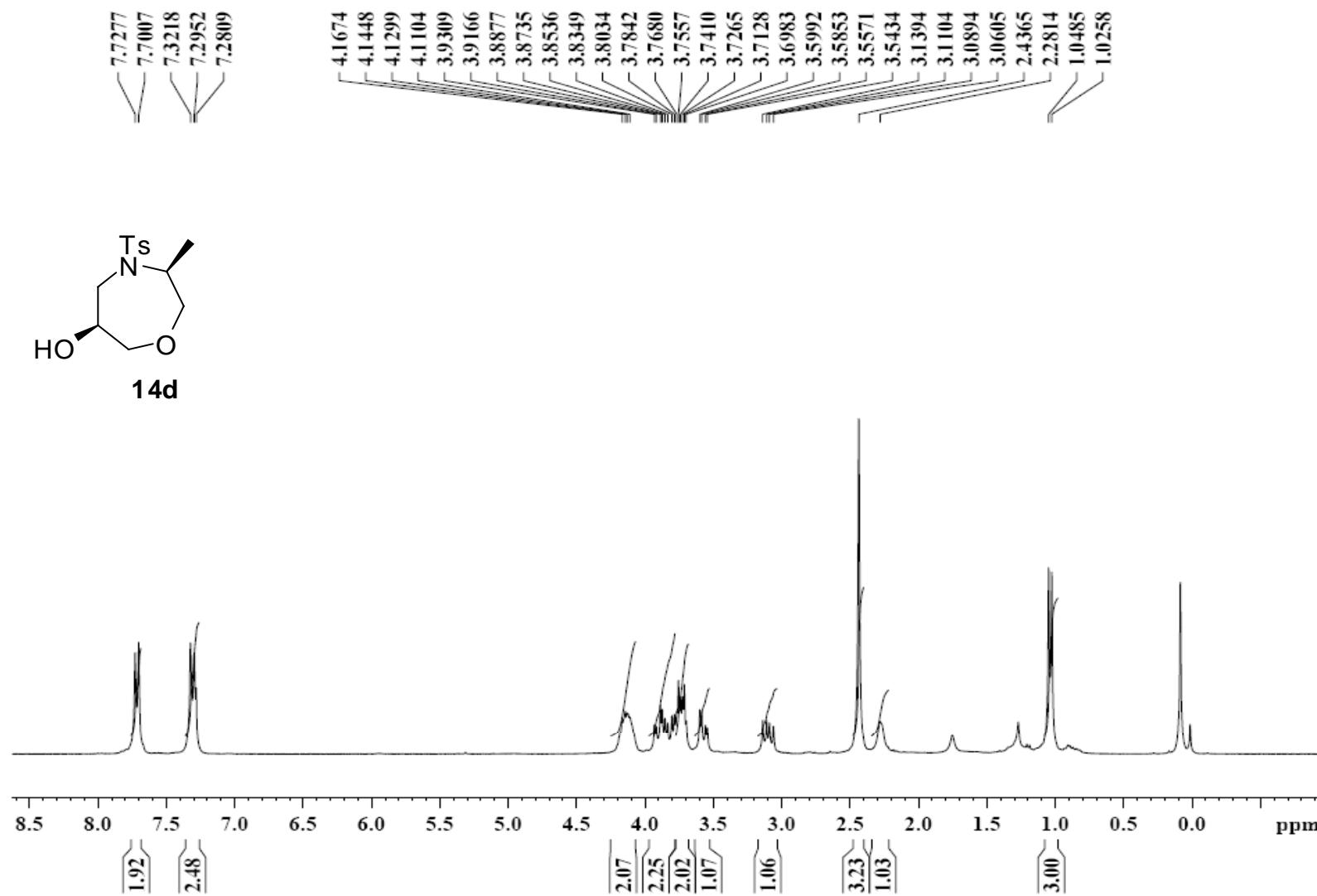
**Figure S-30:** HPLC spectrum of **14c**.



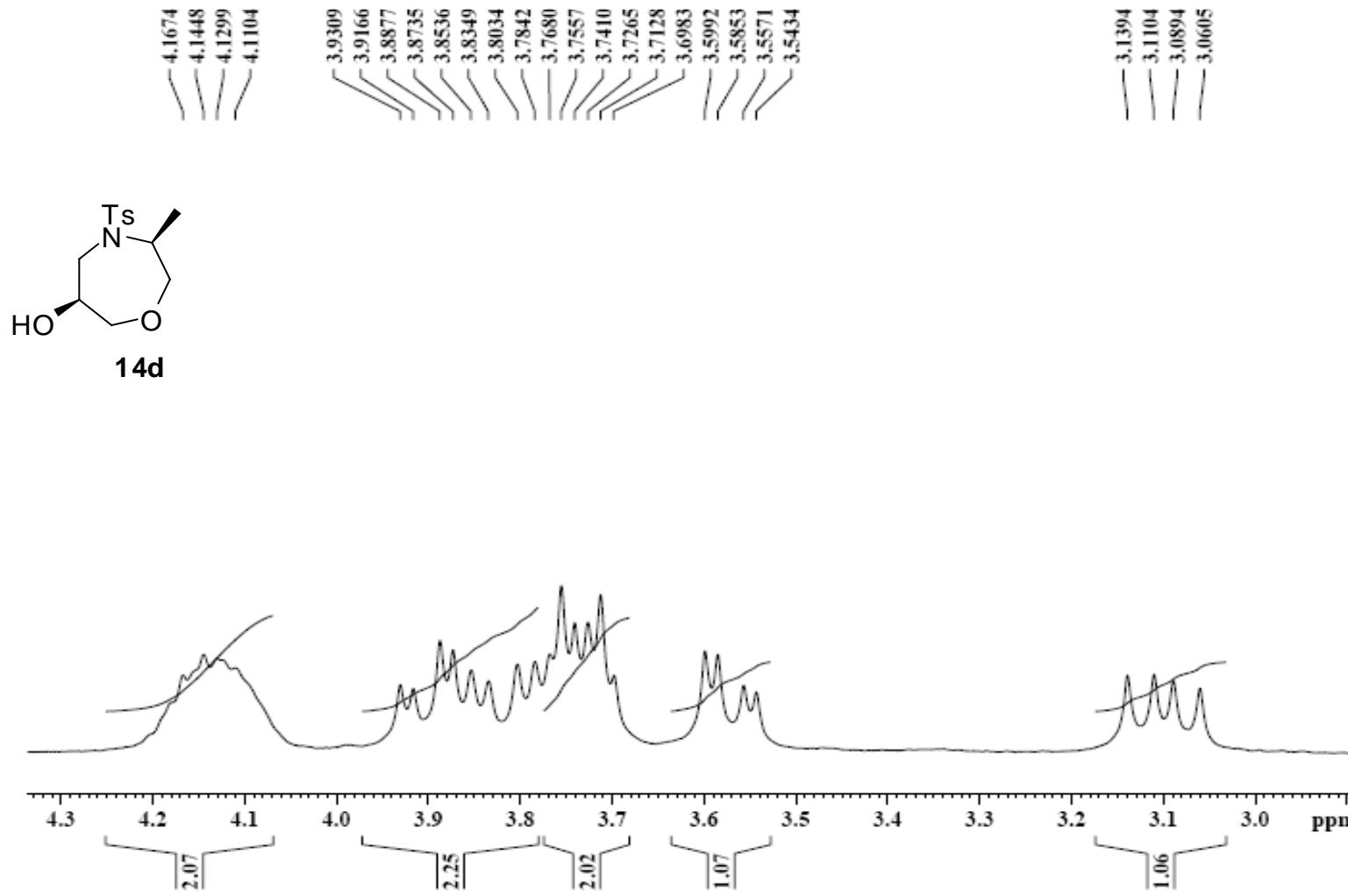
**Figure S-31:**  $^1\text{H}$  spectrum (300 MHz,  $\text{CDCl}_3$ ) of (3*S*,5*S*)-3-((tert-butyldimethyl silyloxy)methyl)-5-methyl-4-tosylmorpholine .



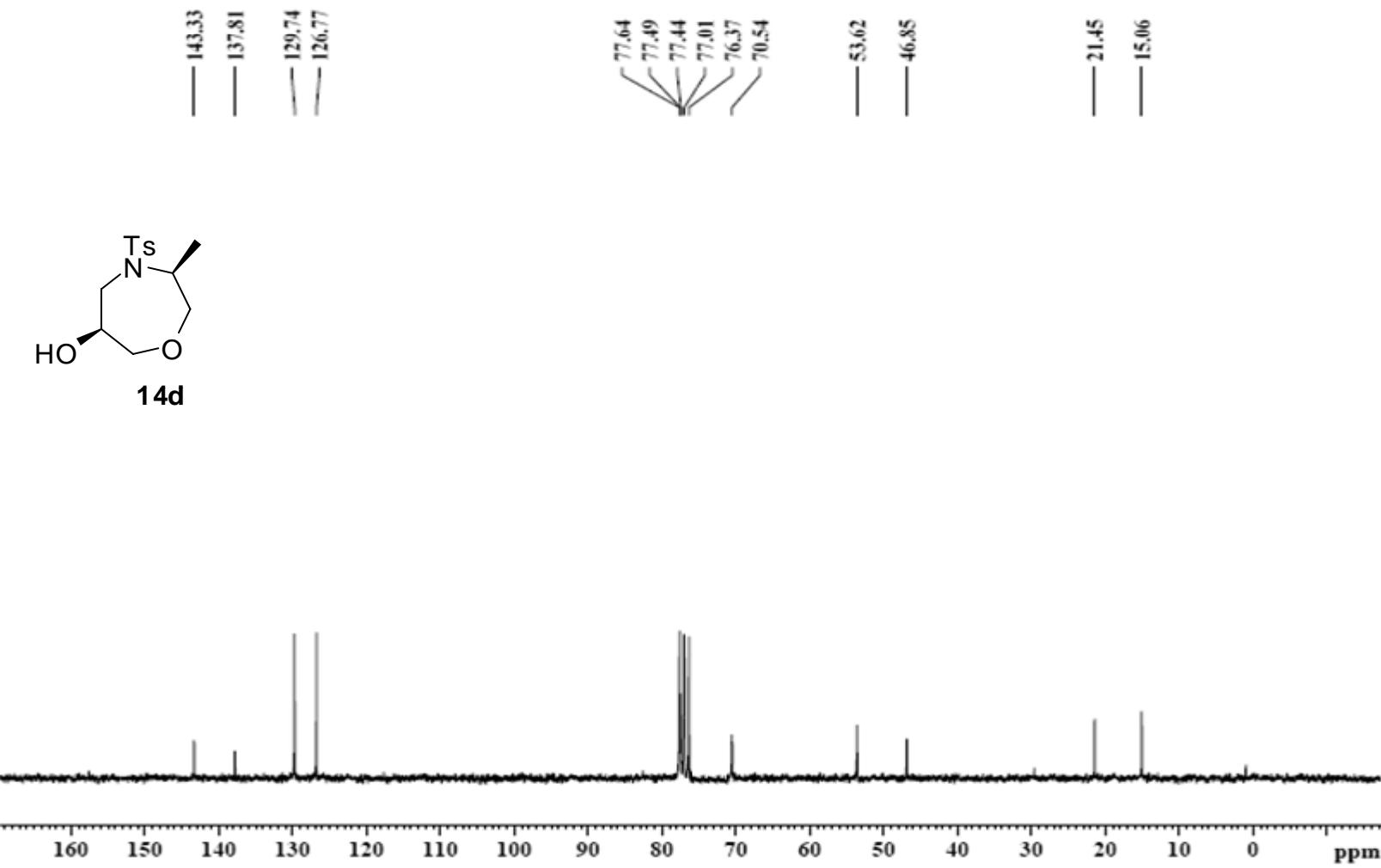
**Figure S-32:**  $^{13}\text{C}$  spectrum (50 MHz,  $\text{CDCl}_3$ ) of (3*S*,5*S*)-3-((tert-butyldimethylsilyloxy)methyl)-5-methyl-4-tosylmorpholine.



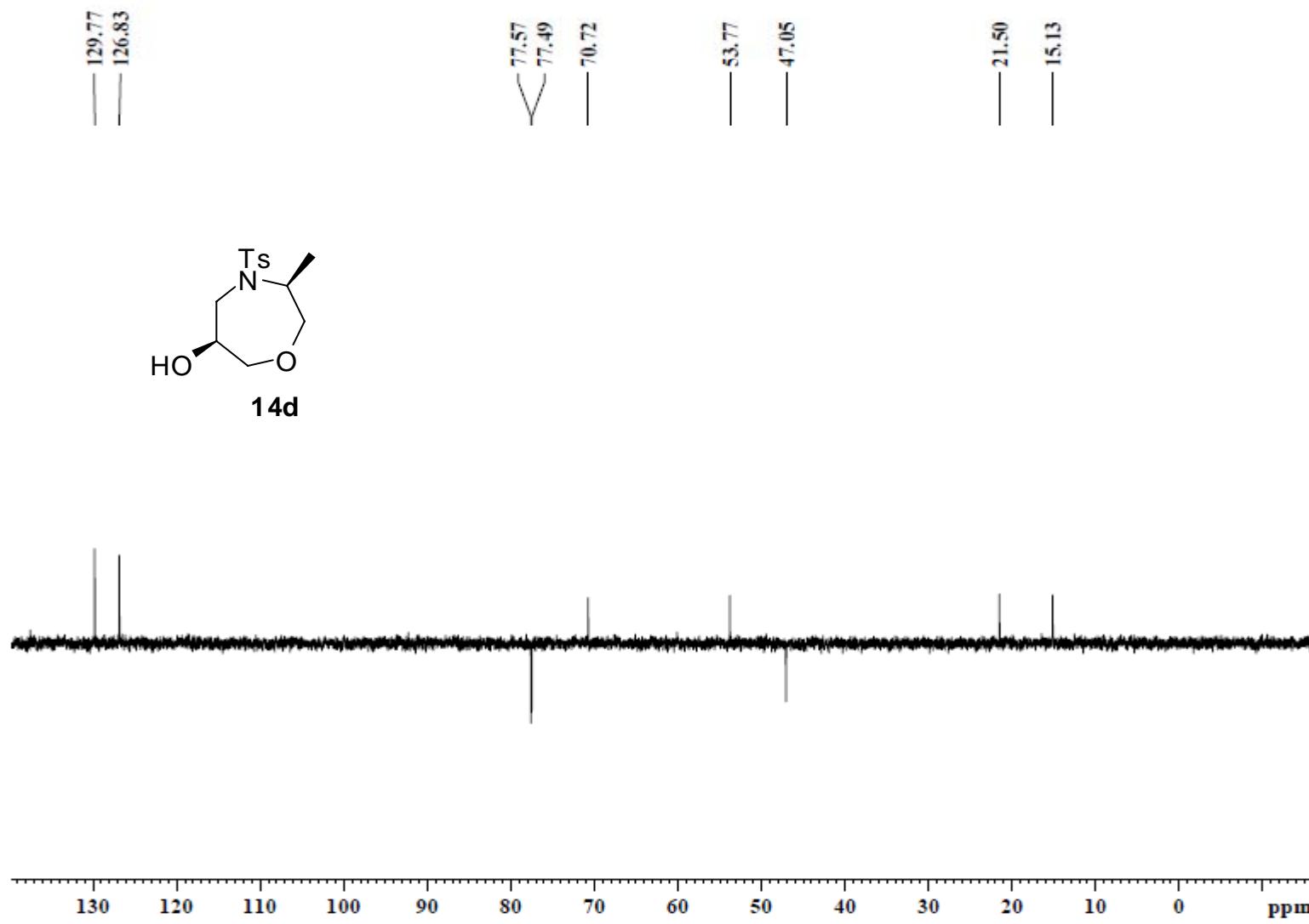
**Figure S-33:**  $^1\text{H}$  spectrum (300 MHz,  $\text{CDCl}_3$ ) **14d**.



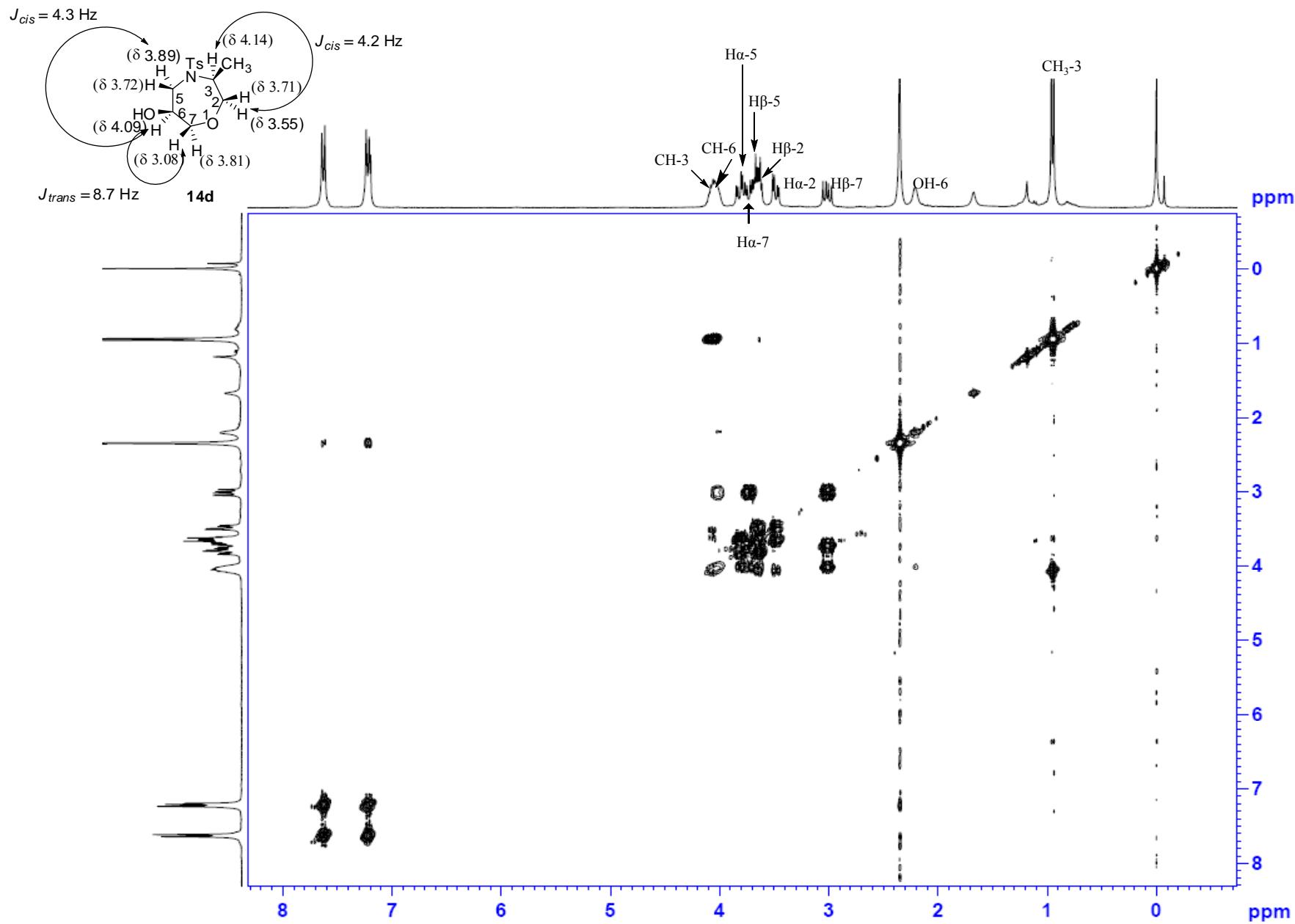
**Figure S-34:** Expanded aliphatic region of **14d**.



**Figure S-35:**  $^{13}\text{C}$  spectrum (50 MHz,  $\text{CDCl}_3$ ) **14d**.



**Figure S-36:** DEPT spectrum (75 MHz,  $\text{CDCl}_3$ ) of **14d**.



**Figure S-37:** COSY spectrum of **14d** (300 MHz,  $\text{CDCl}_3$ ).

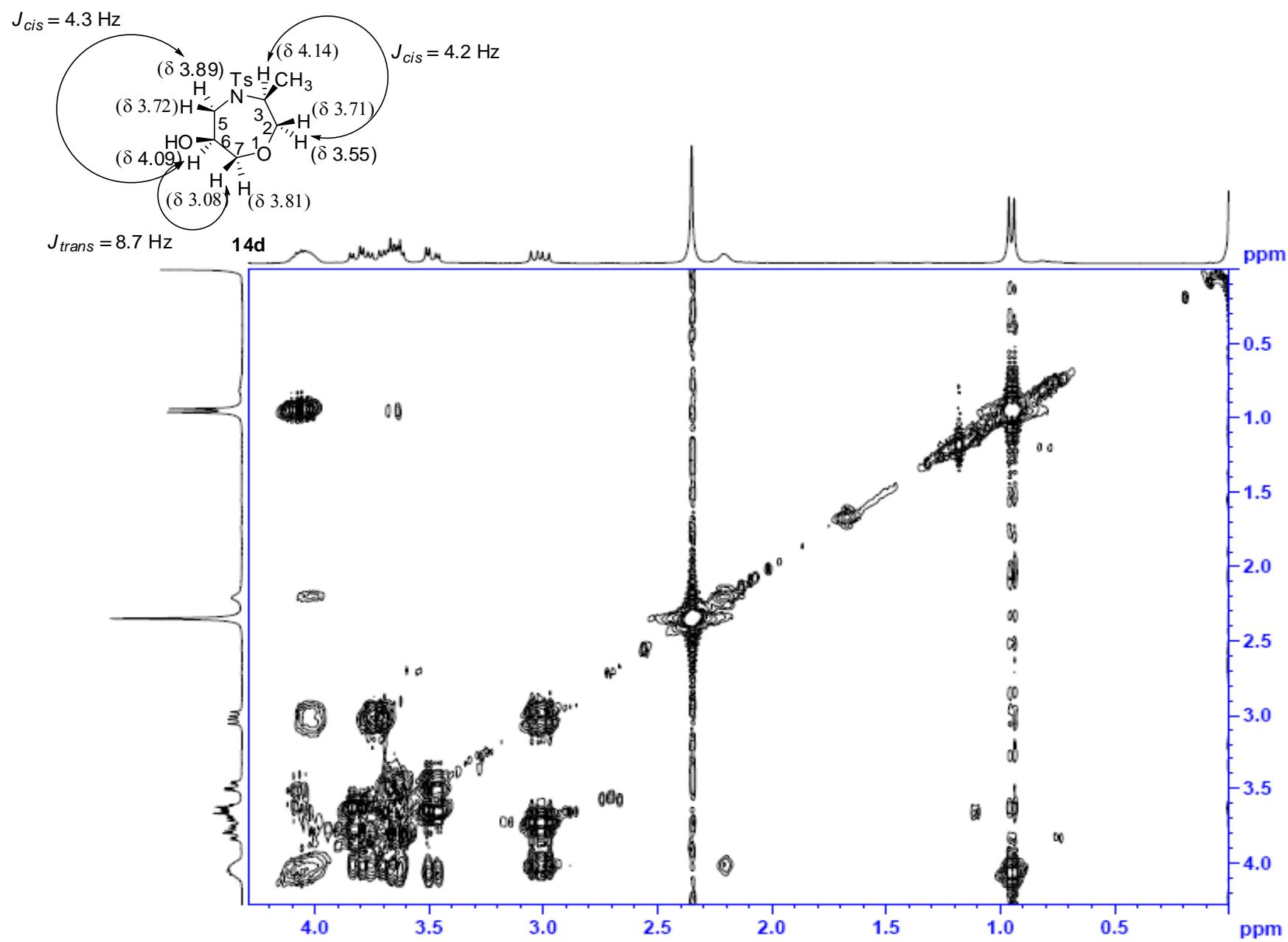
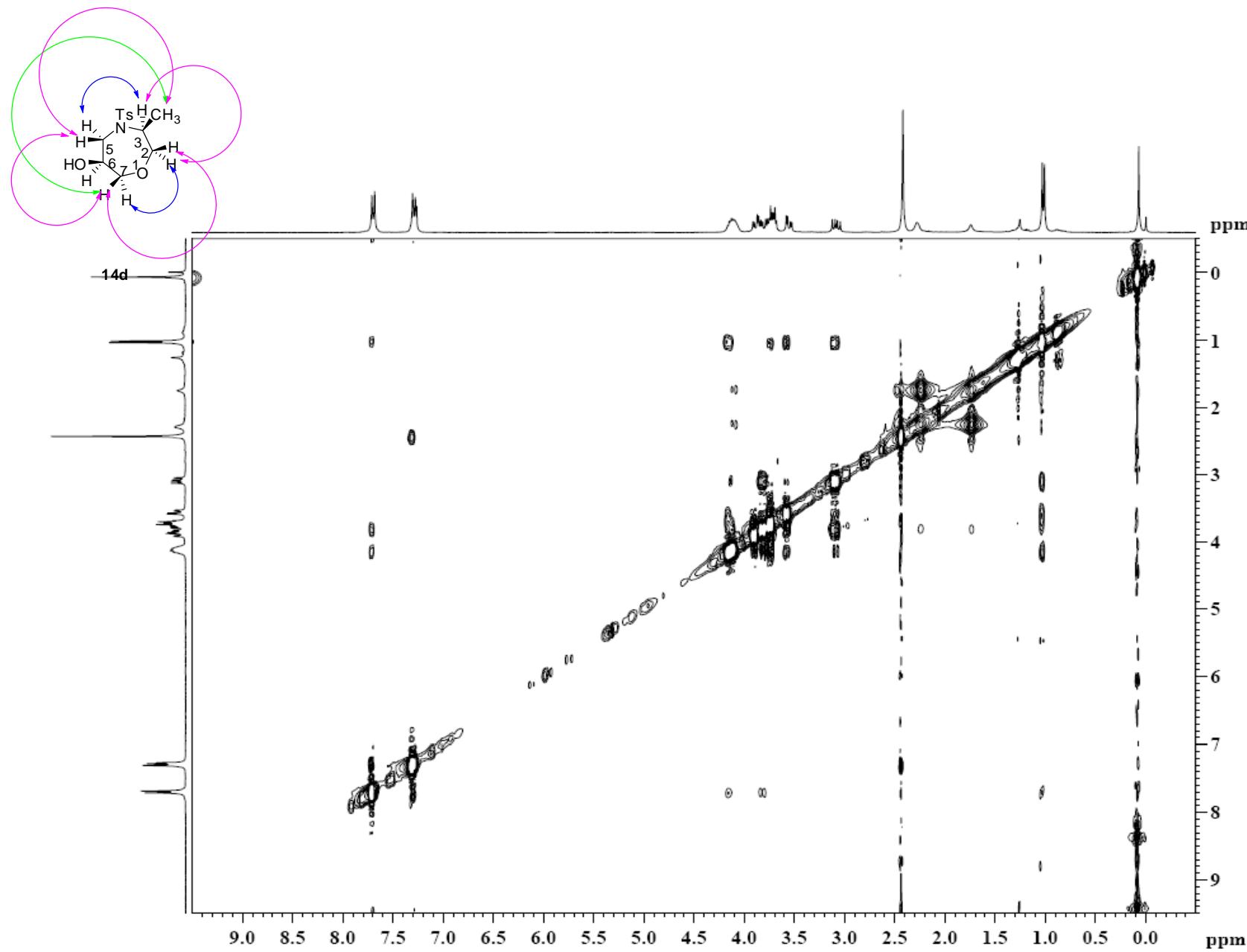


Figure S-38: Expanded COSY spectrum of 14d.



**Figure S-39:** NOESY spectrum (400 MHz,  $\text{CDCl}_3$ ) of **14d**.

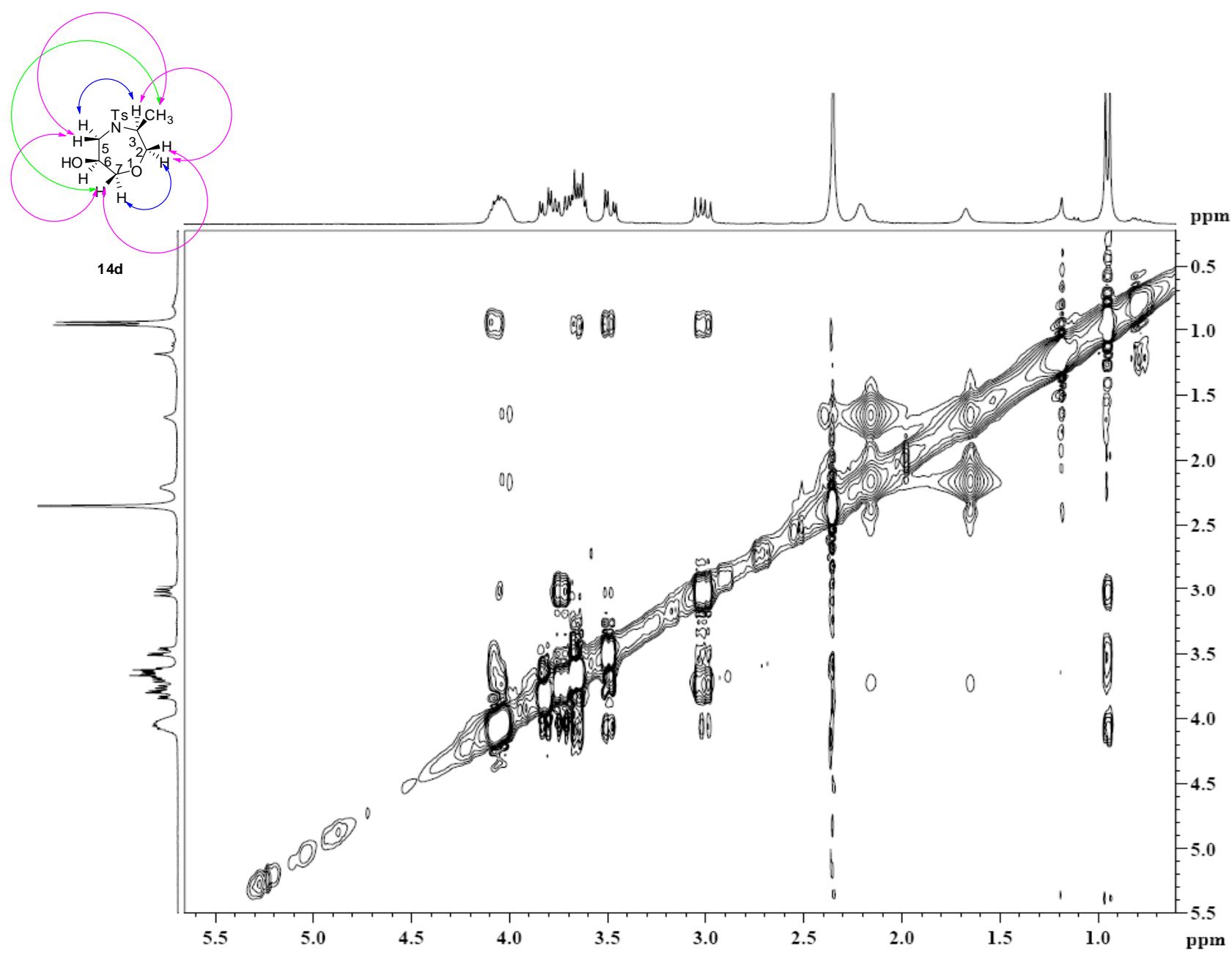
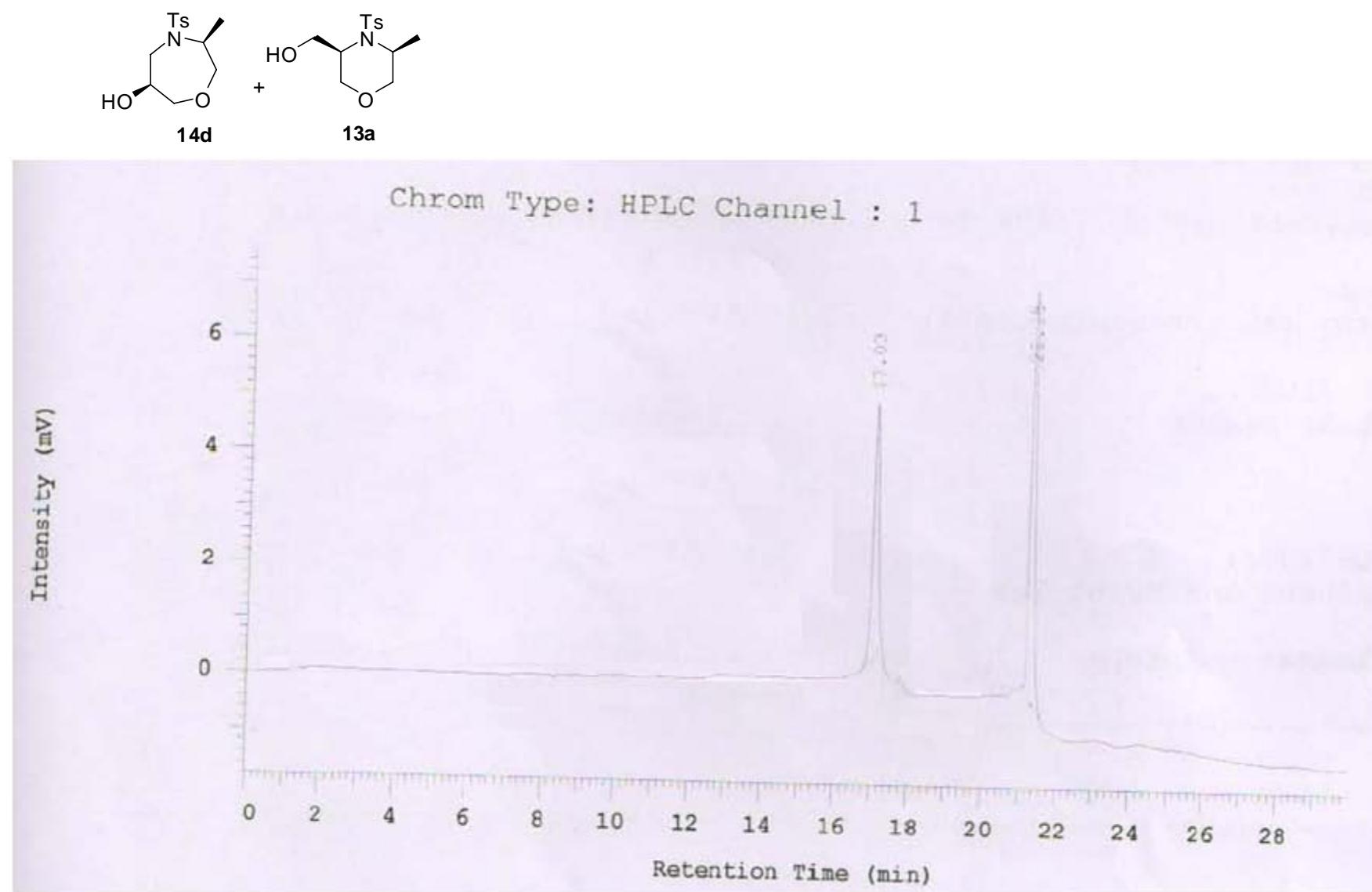
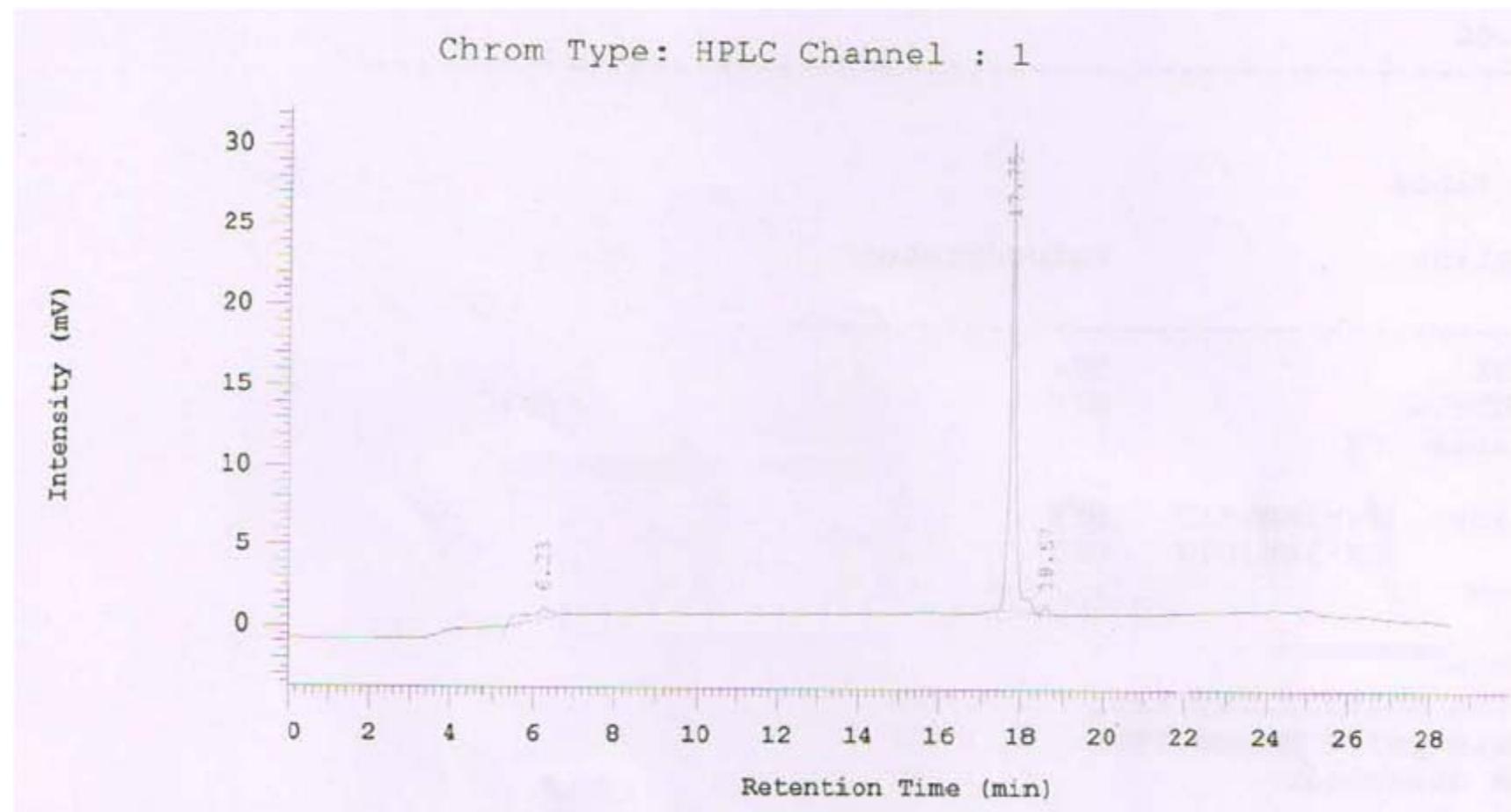
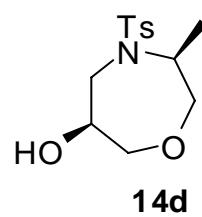


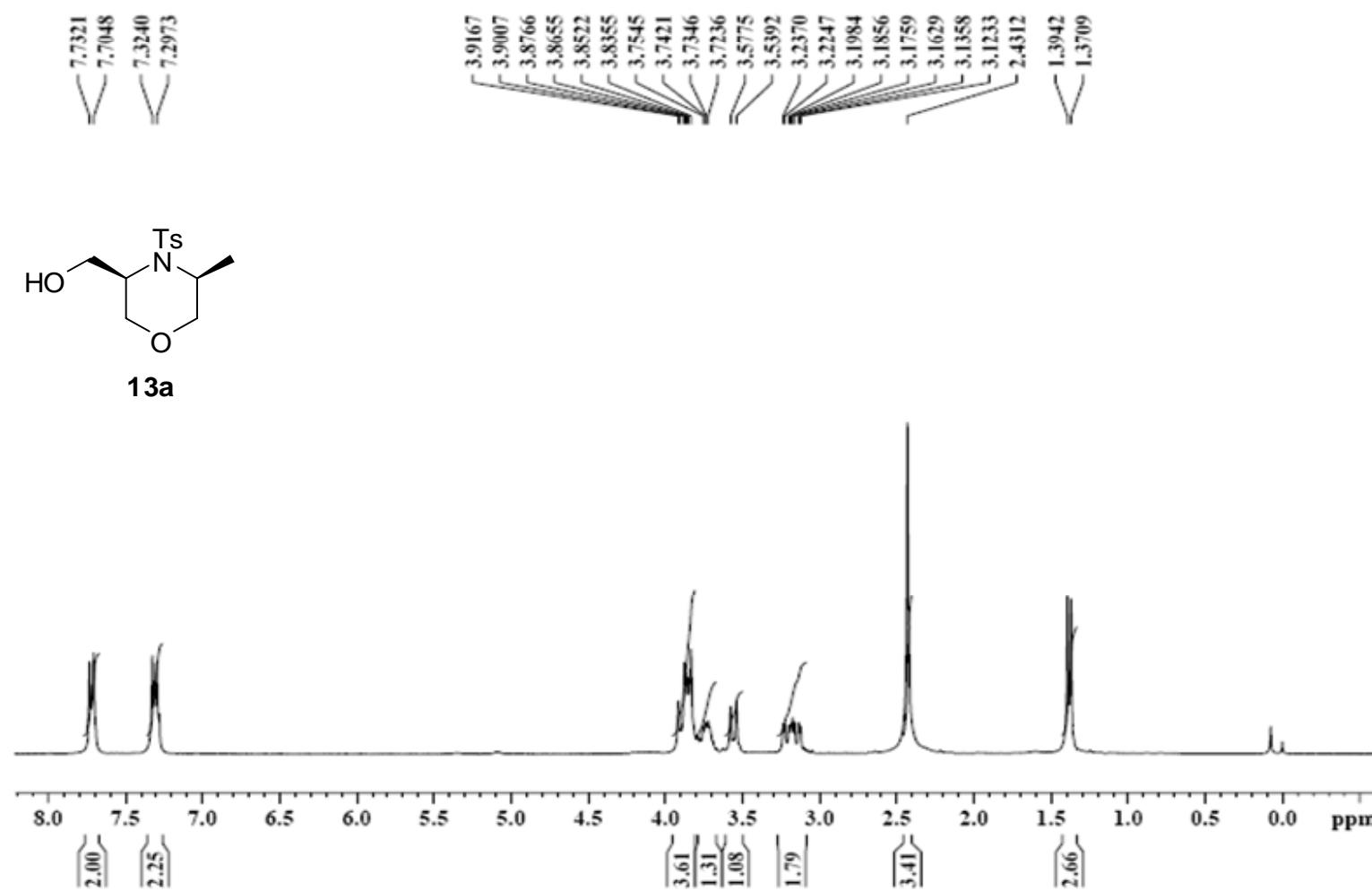
Figure S-40: Expanded NOESY spectrum of 14d.



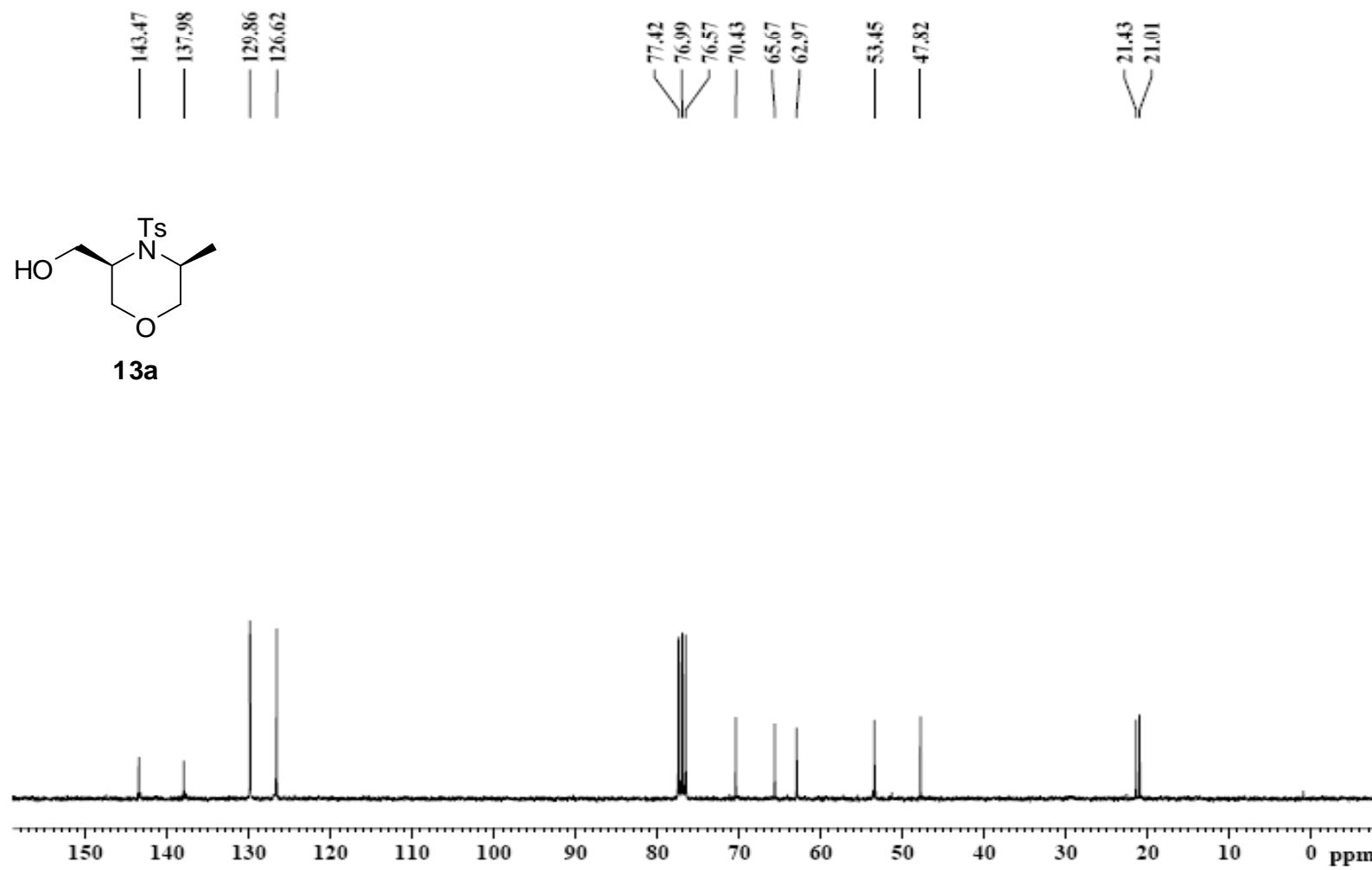
**Figure S-41:** HPLC spectrum for mixture of **14d + 13a**.



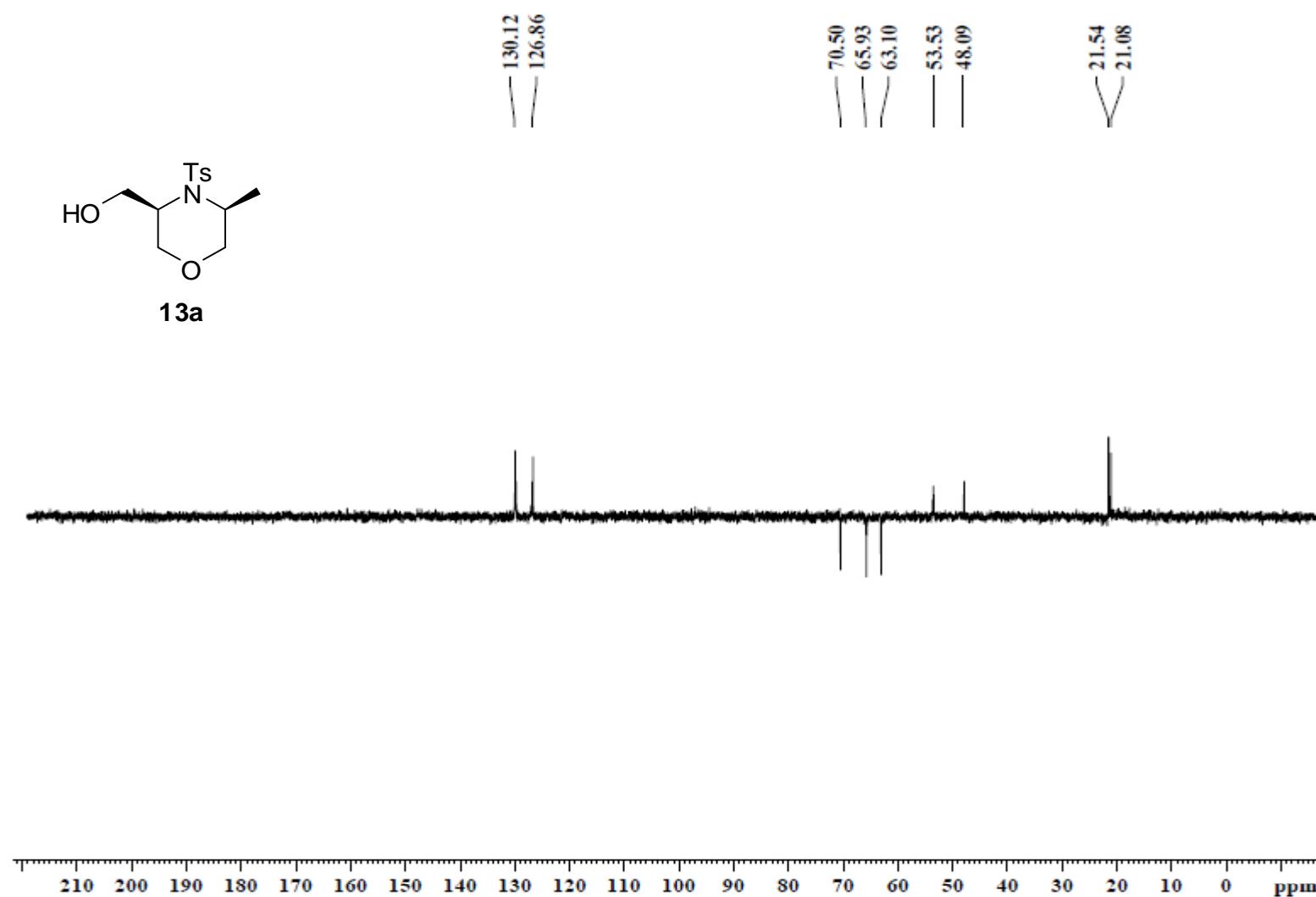
**Figure S-42:** HPLC spectrum of pure **14d**.



**Figure S-43:**  $^1\text{H}$  spectrum (300 MHz,  $\text{CDCl}_3$ ) **13a**.

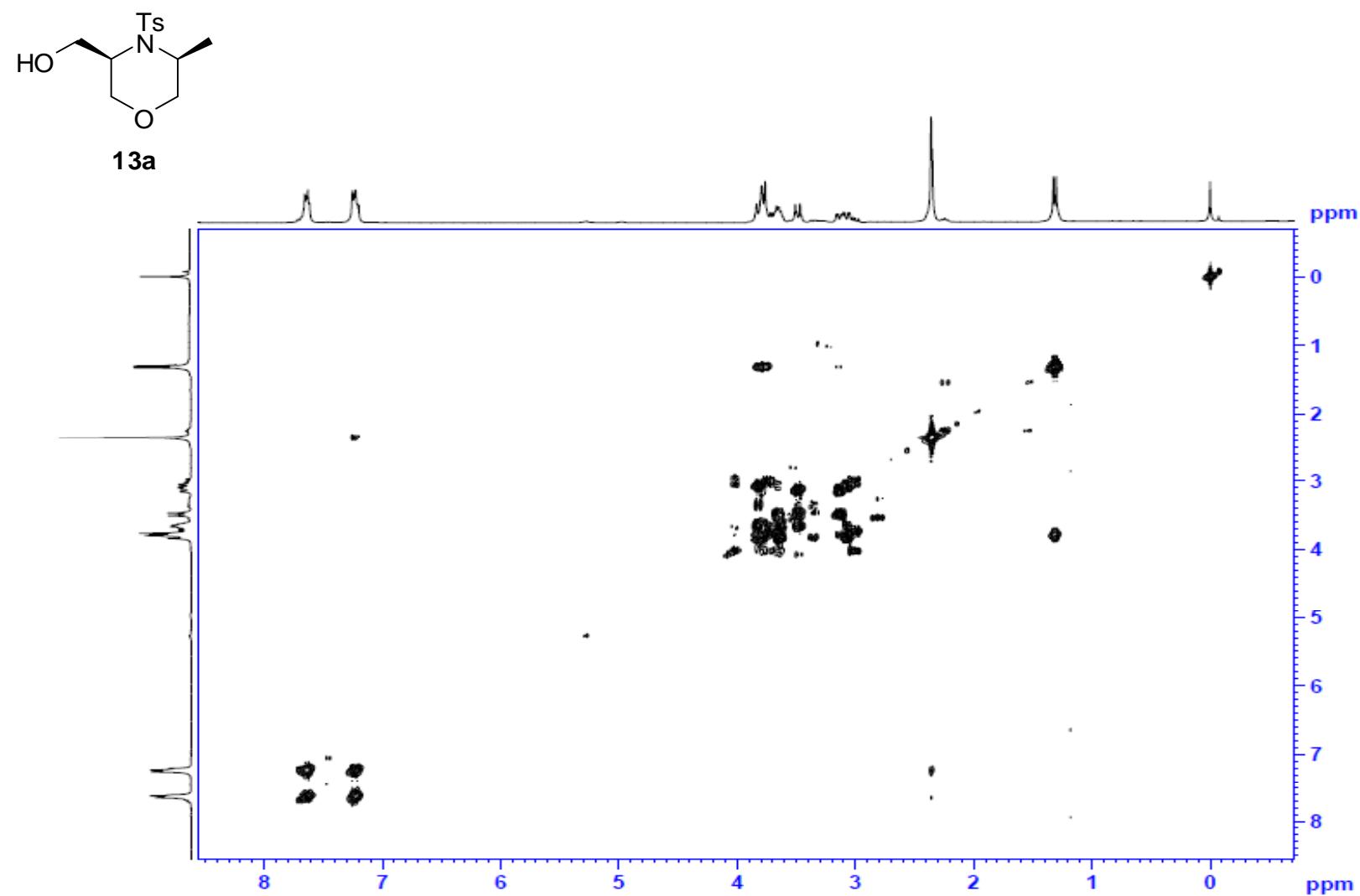


**Figure S-44:**  $^{13}\text{C}$  spectrum (50 MHz,  $\text{CDCl}_3$ ) **13a.**

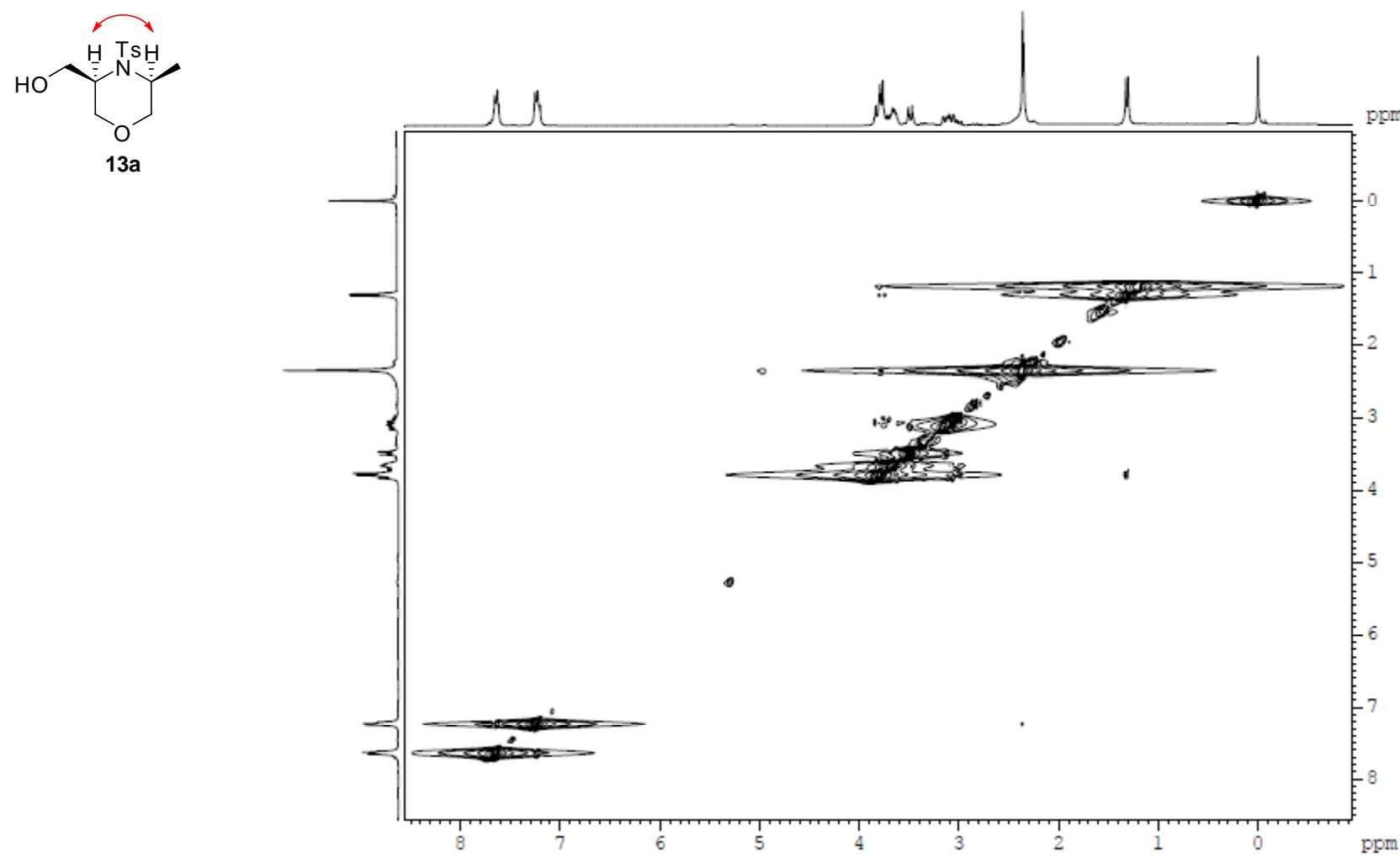


**Figure S-45:** DEPT spectrum (50 MHz,  $\text{CDCl}_3$ ) of **13a**.

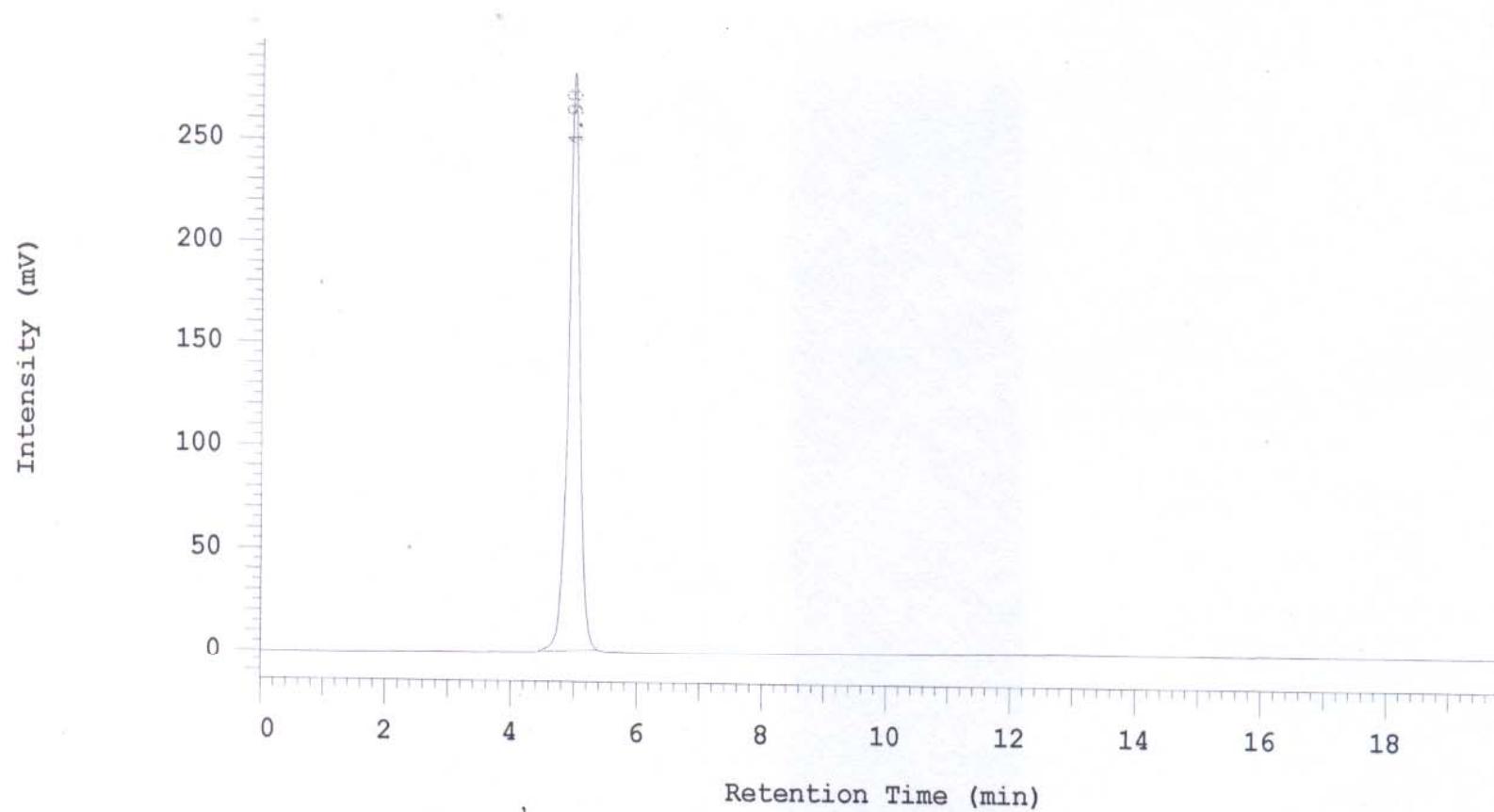
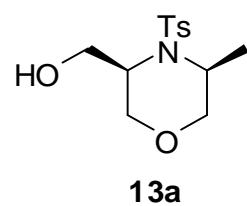
49



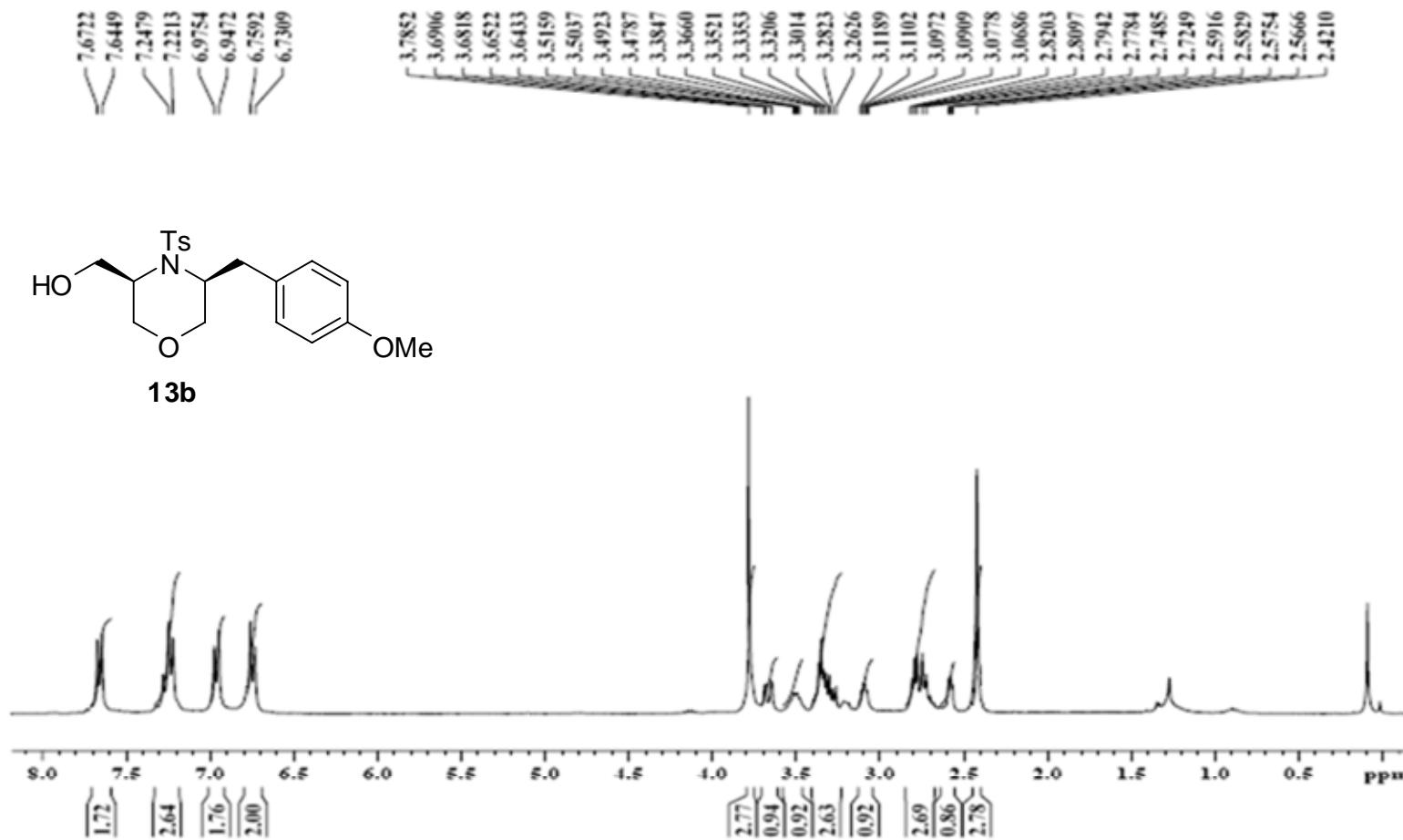
**Figure S-46:** COSY spectrum of **13a** (300 MHz,  $\text{CDCl}_3$ ).



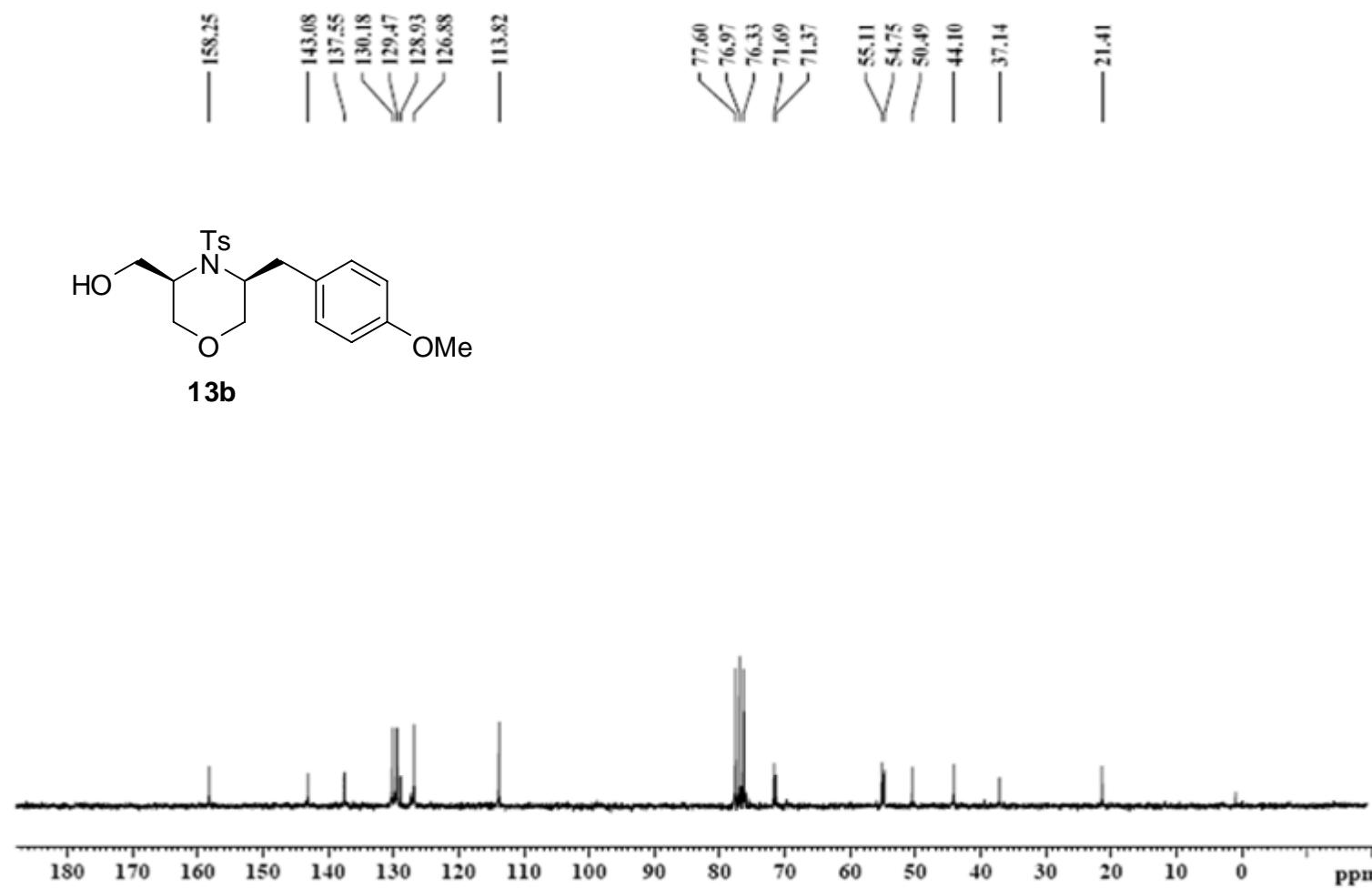
**Figure S-47:** NOESY spectrum of **13a** (300 MHz,  $\text{CDCl}_3$ ).



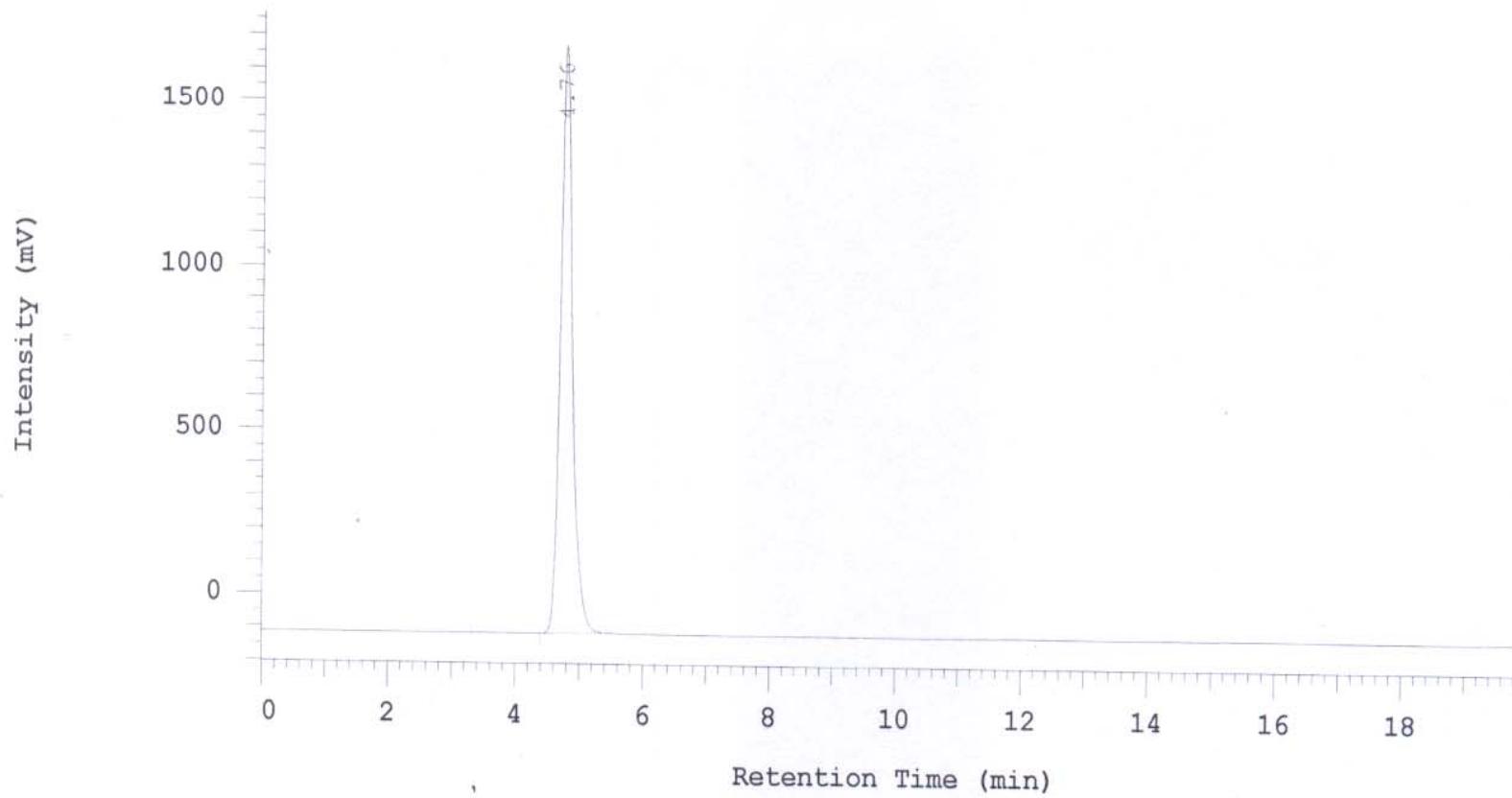
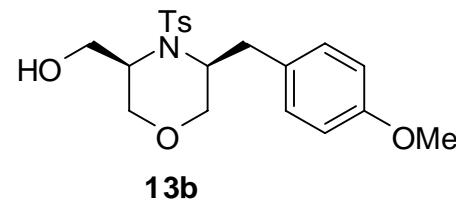
**Figure S-48:** HPLC spectrum of **13a**.



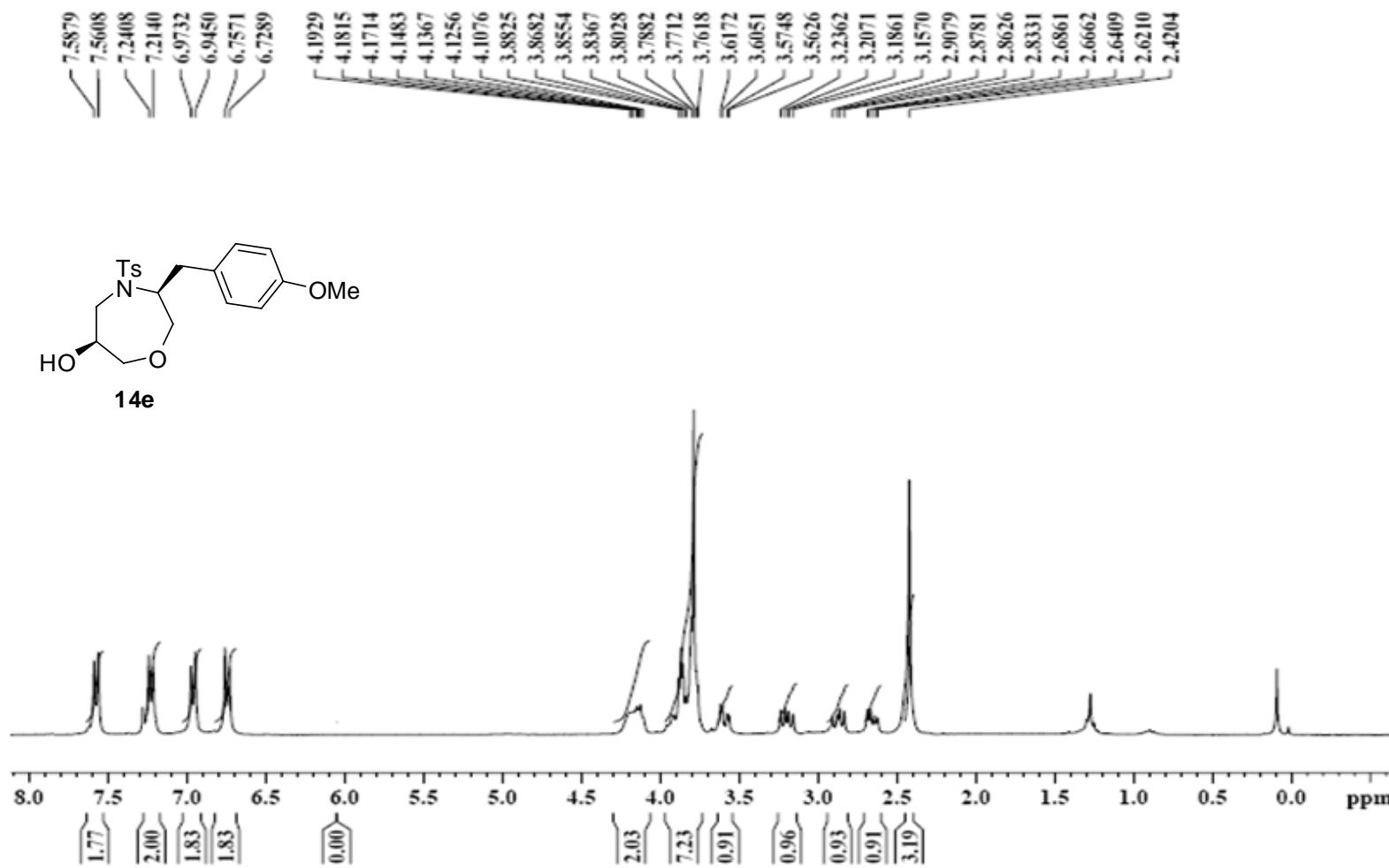
**FigureS-49:** <sup>1</sup>H spectrum (300 MHz, CDCl<sub>3</sub>) of **13b**.



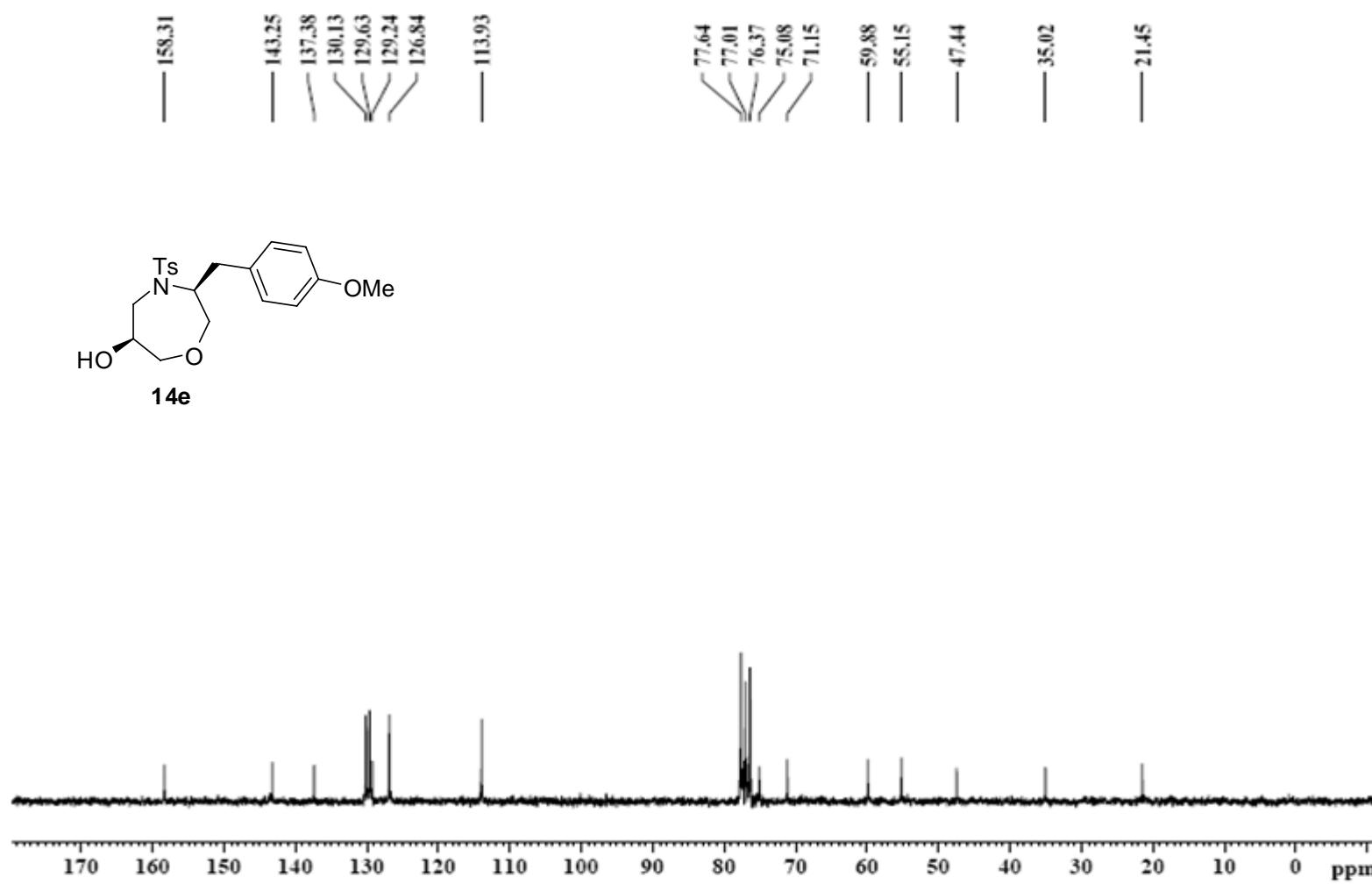
**FigureS-50:**  $^{13}\text{C}$  spectrum (50 MHz,  $\text{CDCl}_3$ ) **13b**.



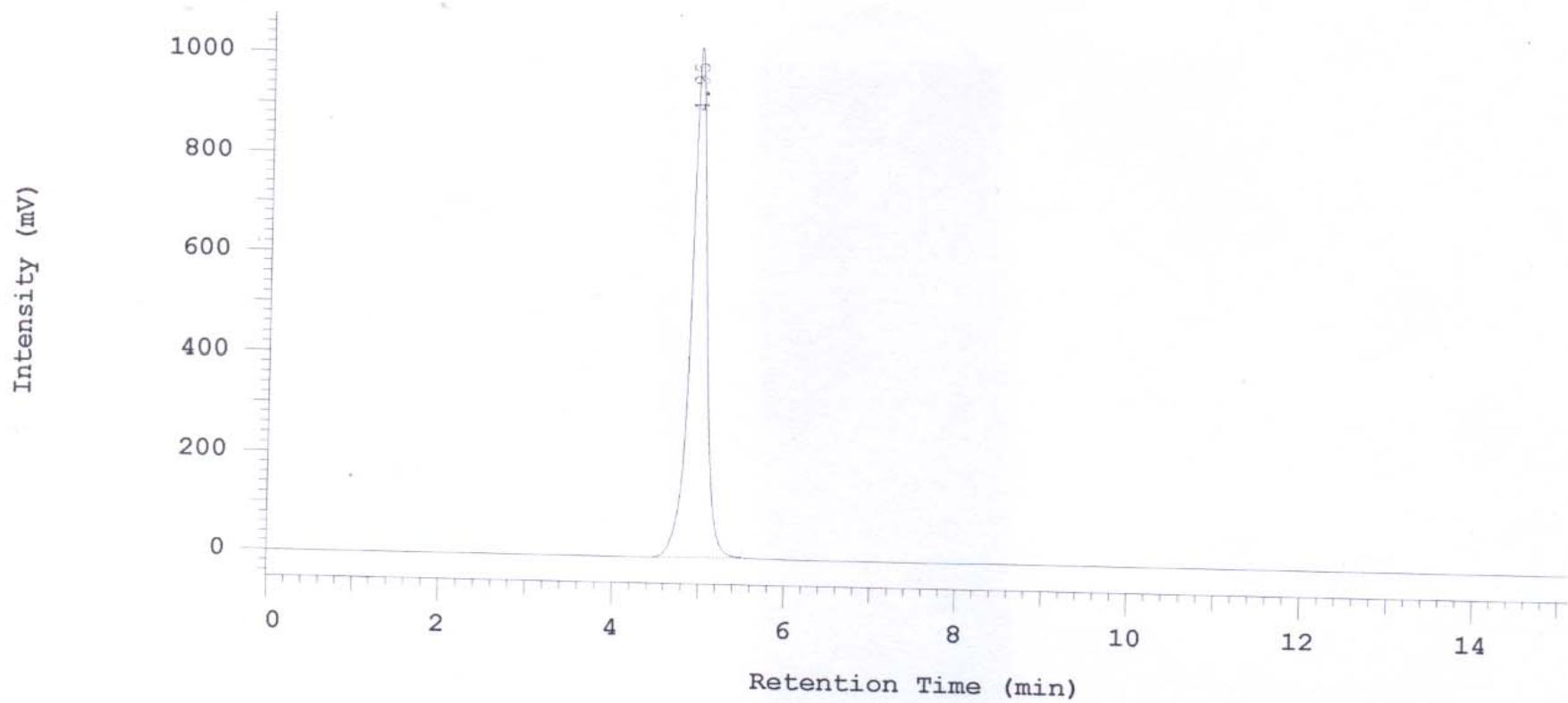
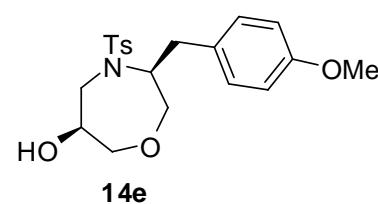
**Figure S-51:** HPLC Spectrum of **13b**



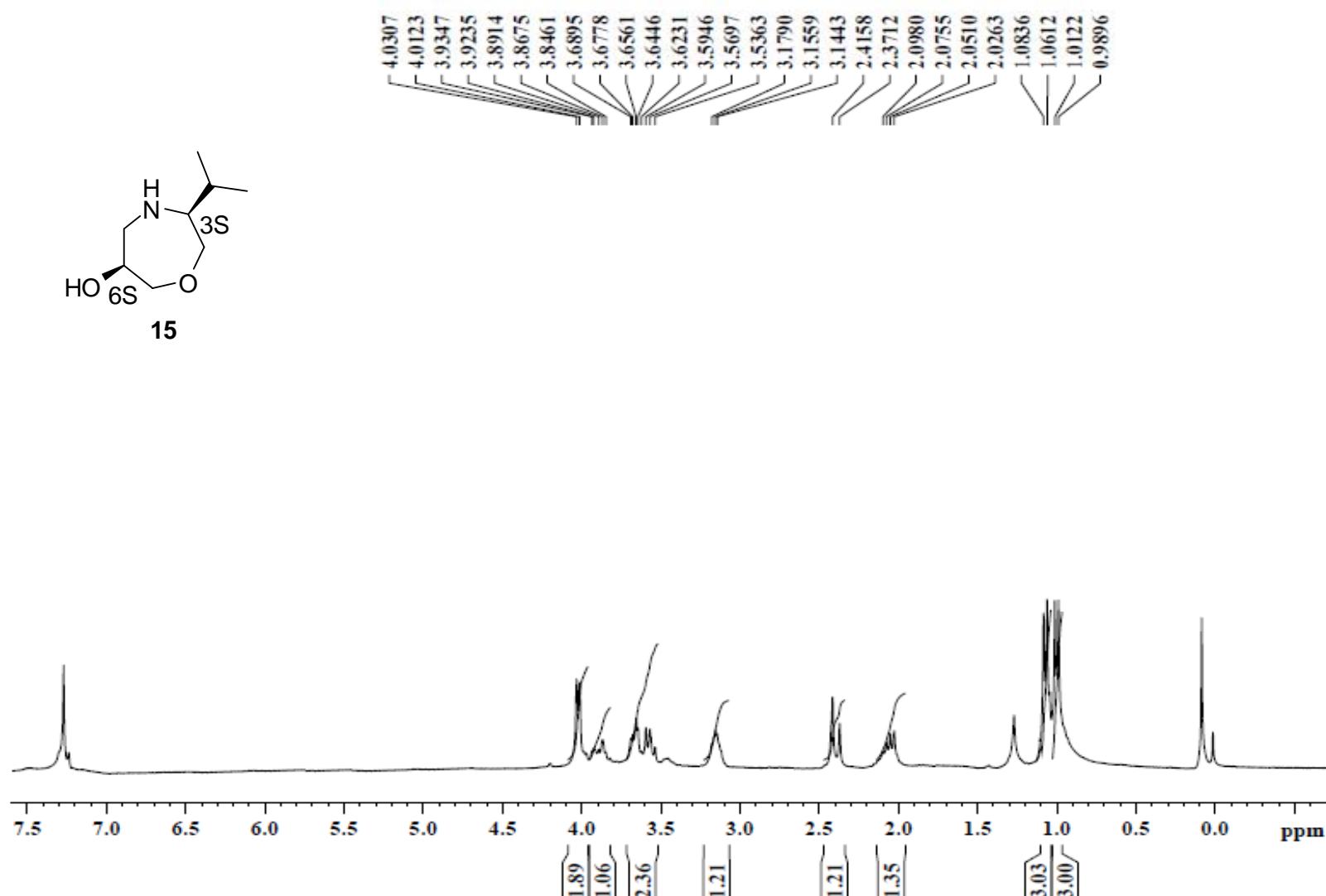
**Figure S-52:**  $^1\text{H}$  spectrum (300 MHz,  $\text{CDCl}_3$ ) of **14e**.



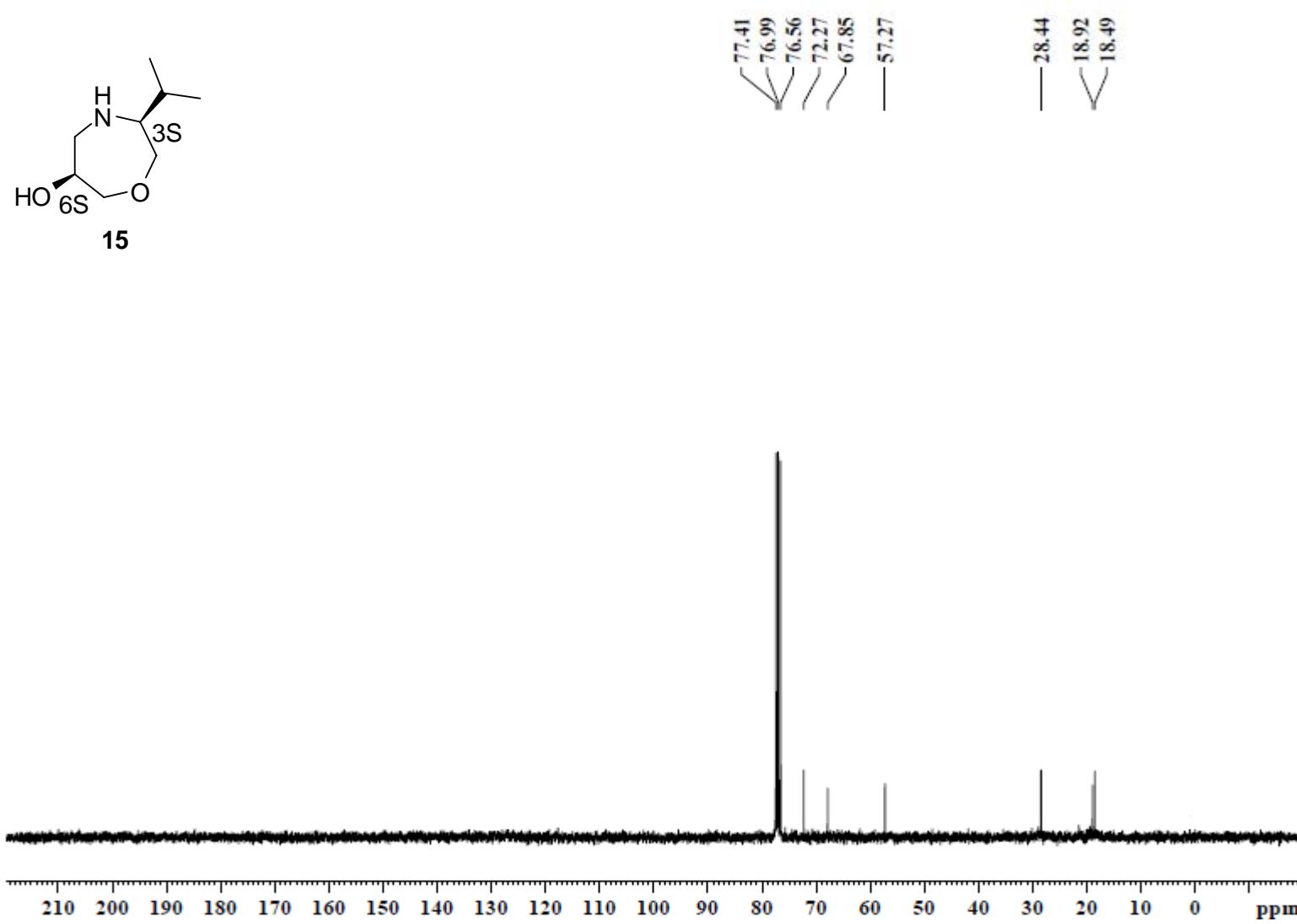
**Figure S-53:**  $^{13}\text{C}$  spectrum (50 MHz,  $\text{CDCl}_3$ ) **14e**.



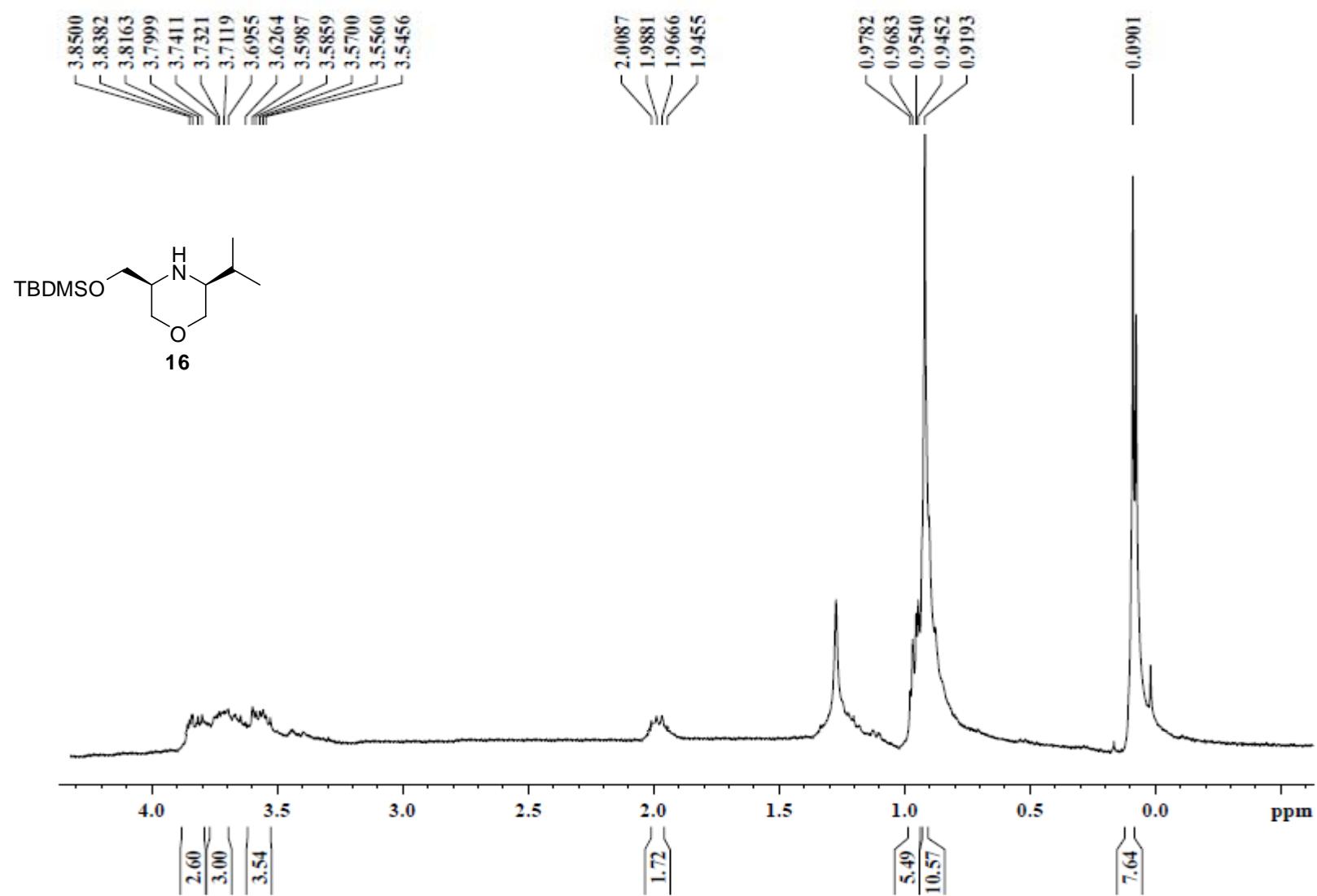
**Figure S-54:** HPLC spectrum of **14e**.



**Figure S-55:** <sup>1</sup>H spectrum (300 MHz, CDCl<sub>3</sub>) of 15.



**Figure S-56:**  $^{13}\text{C}$  spectrum (75 MHz,  $\text{CDCl}_3$ ) **15.**



**Figure S-57:**  $^1\text{H}$  spectrum (75 MHz,  $\text{CDCl}_3$ ) **16**.