

Electronic Supporting Information

Synthesis of S- or N-glycomimetics of D-galactono-1,4-lactone. Inhibitors of a β -galactofuranosidase

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Evangelina Repetto^{†,§,*}

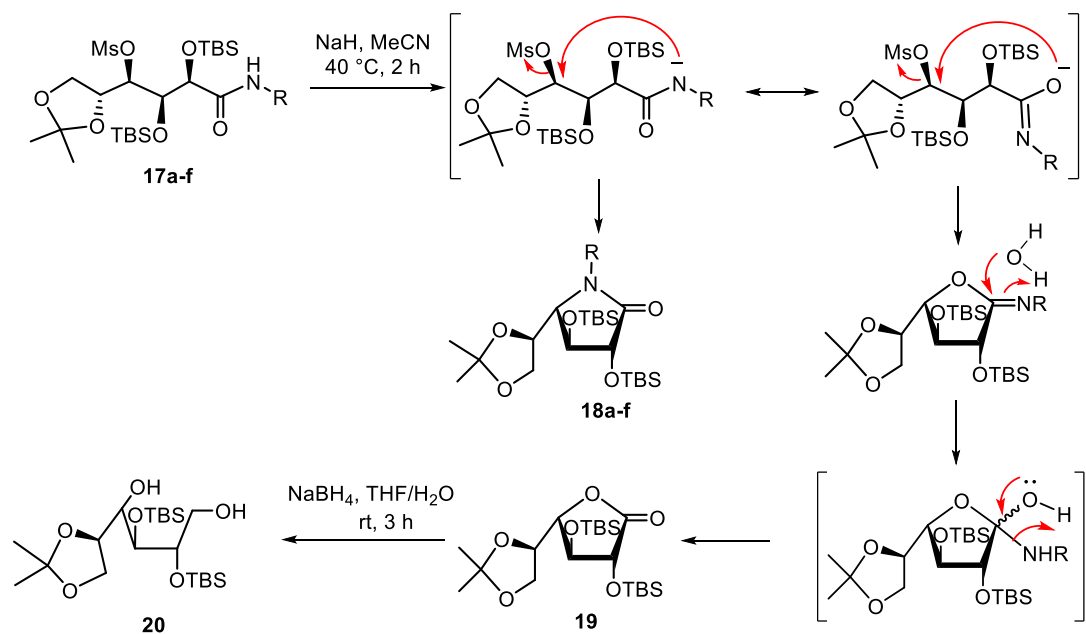
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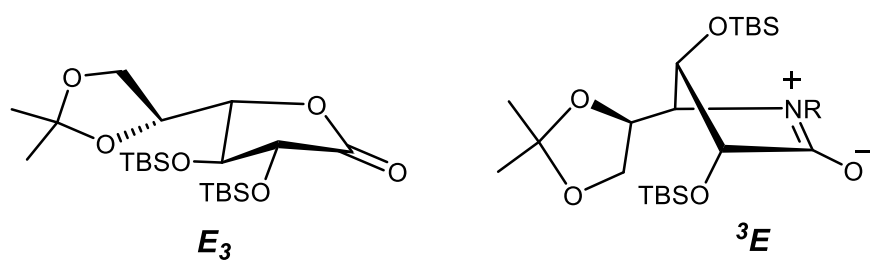
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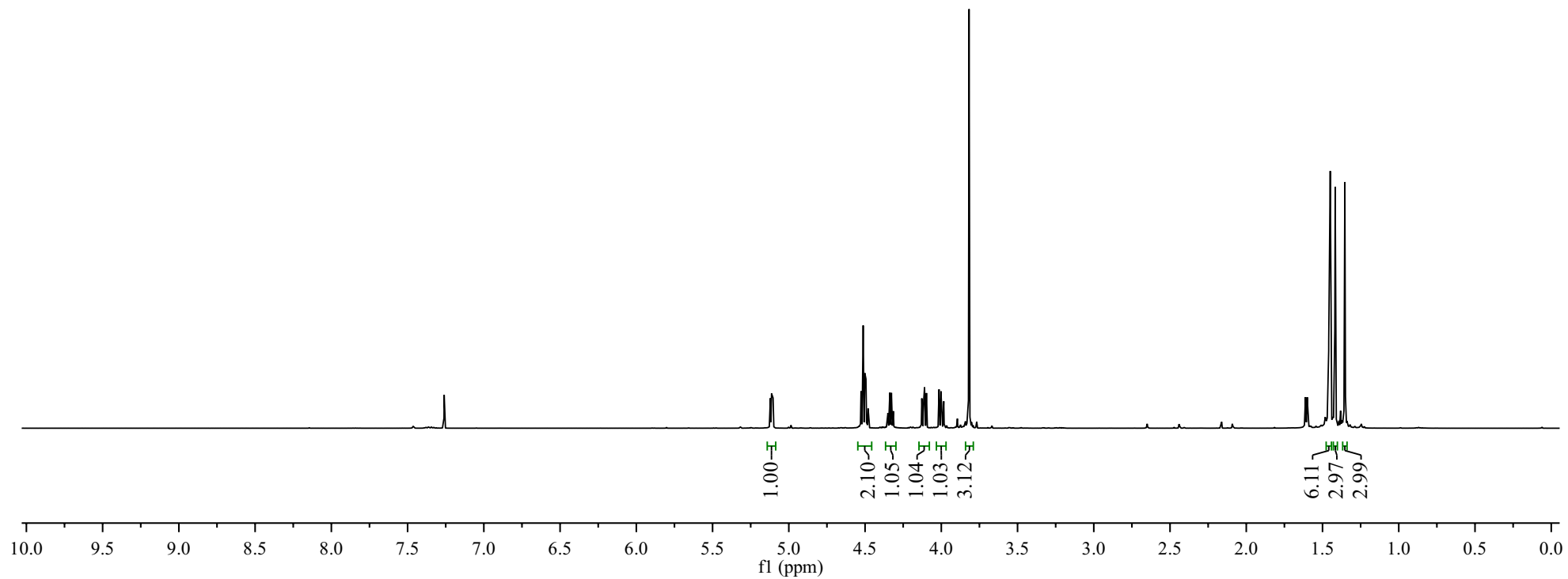
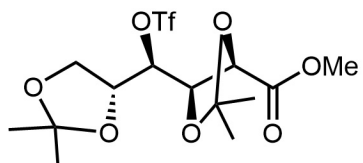
Scheme S1. Synthesis of amides **18a,f** and lactone **19** by cyclization of amides **17a,f**.



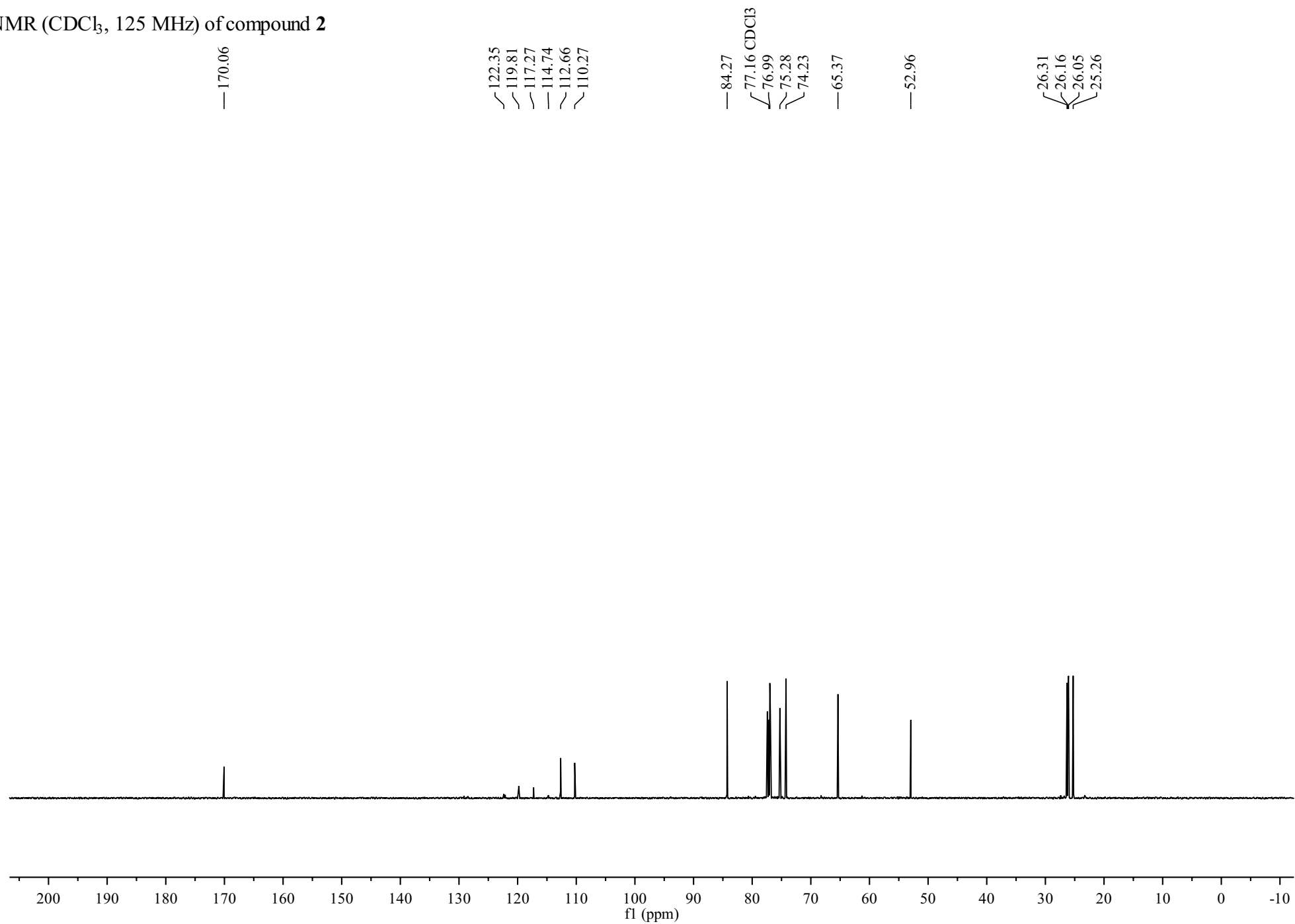
Scheme S2. Conformations of galactonolactone **19** and galactonolactams **20a,f**

^1H NMR (CDCl_3 , 500 MHz) of compound **2**

—7.26 CDCl_3

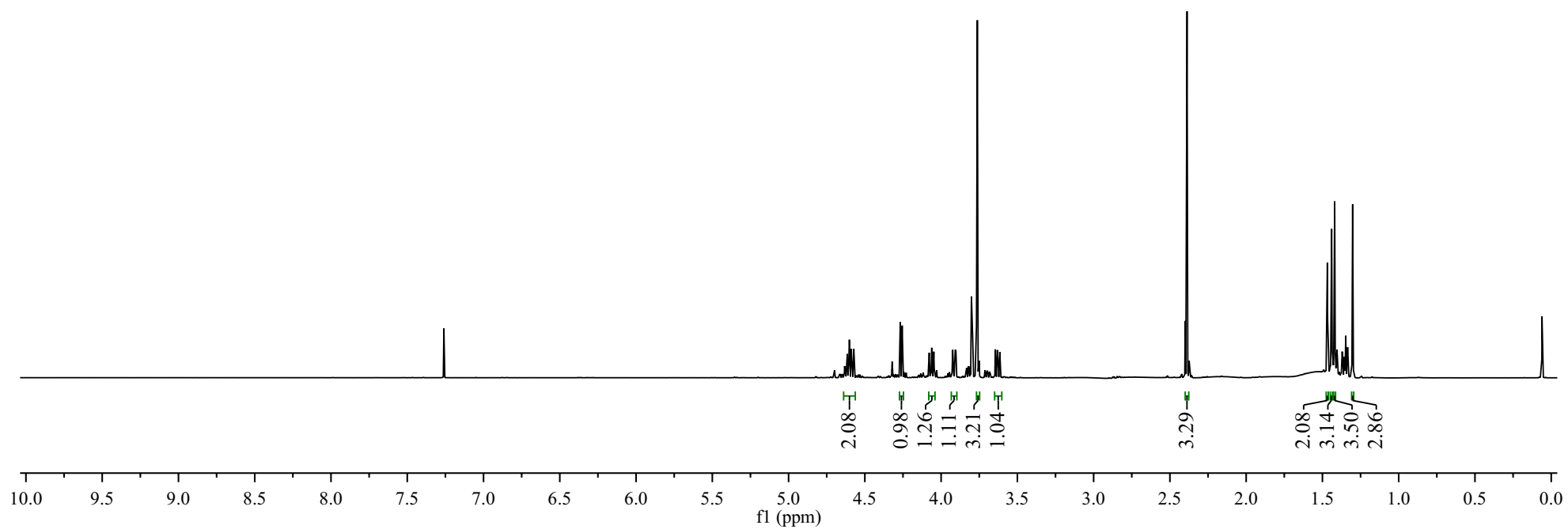
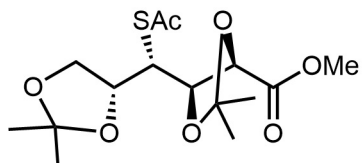


^{13}C NMR (CDCl_3 , 125 MHz) of compound **2**

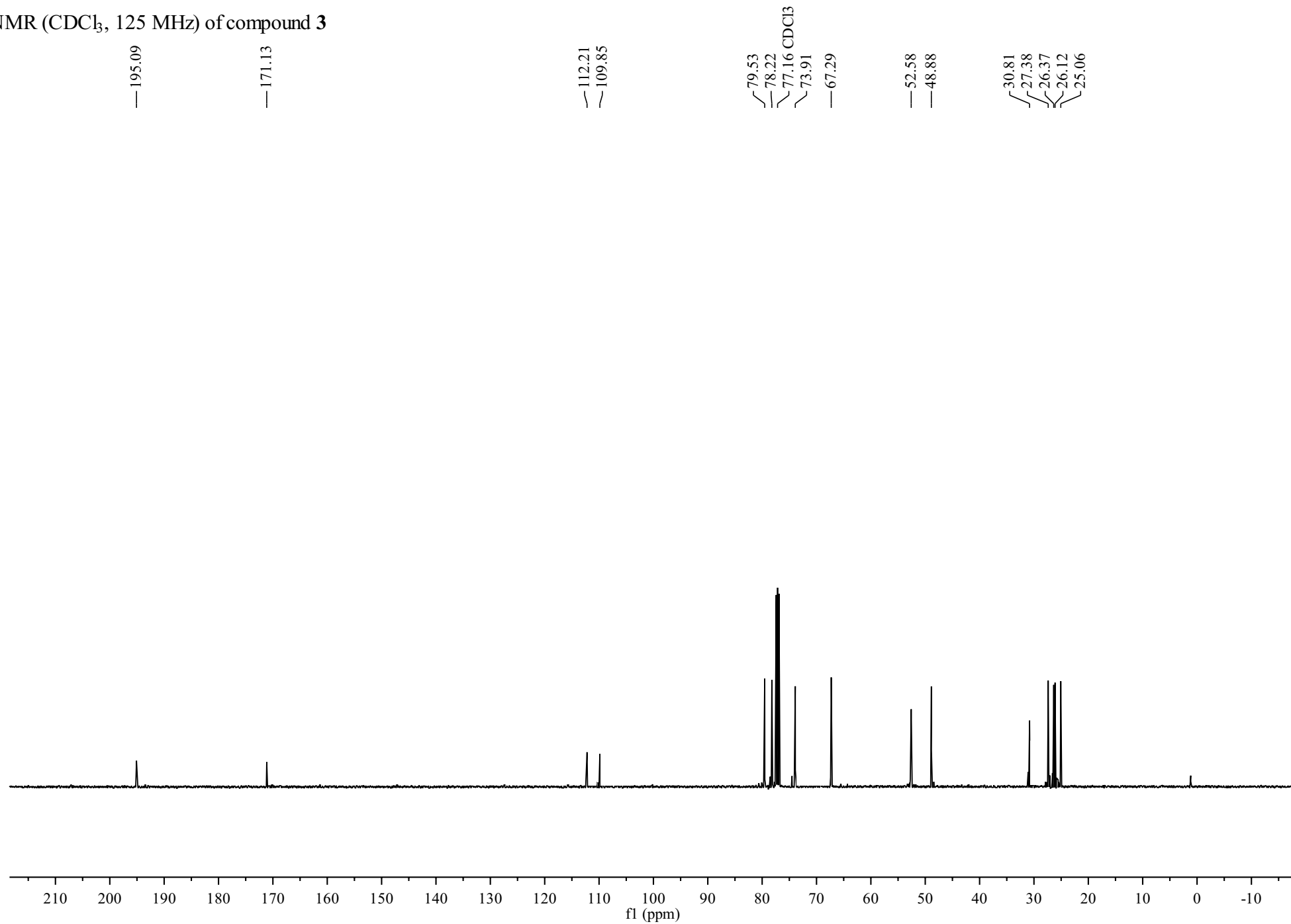


^1H NMR (CDCl_3 , 500 MHz) of compound **3**

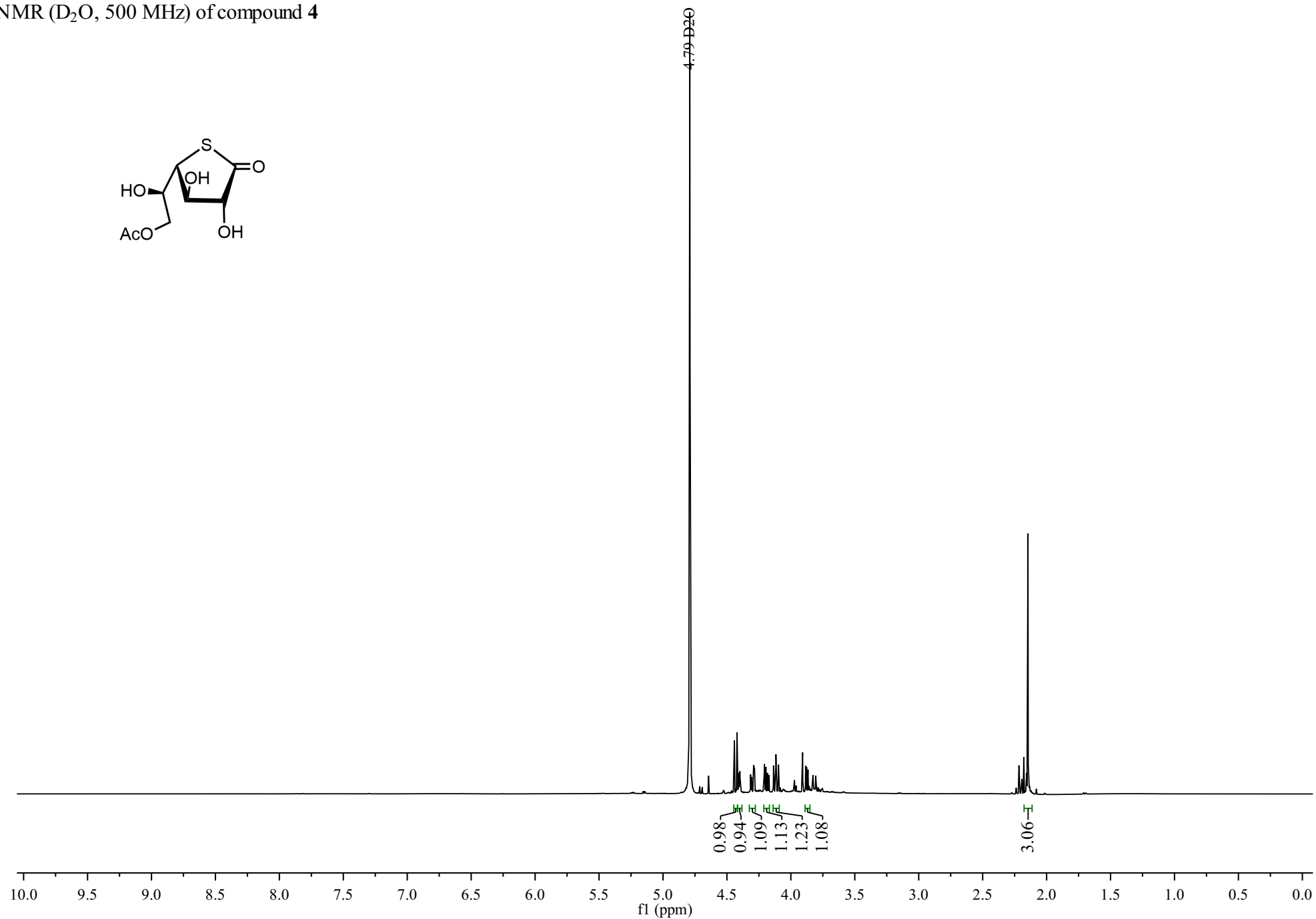
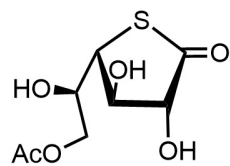
— 7.26 CDCl_3



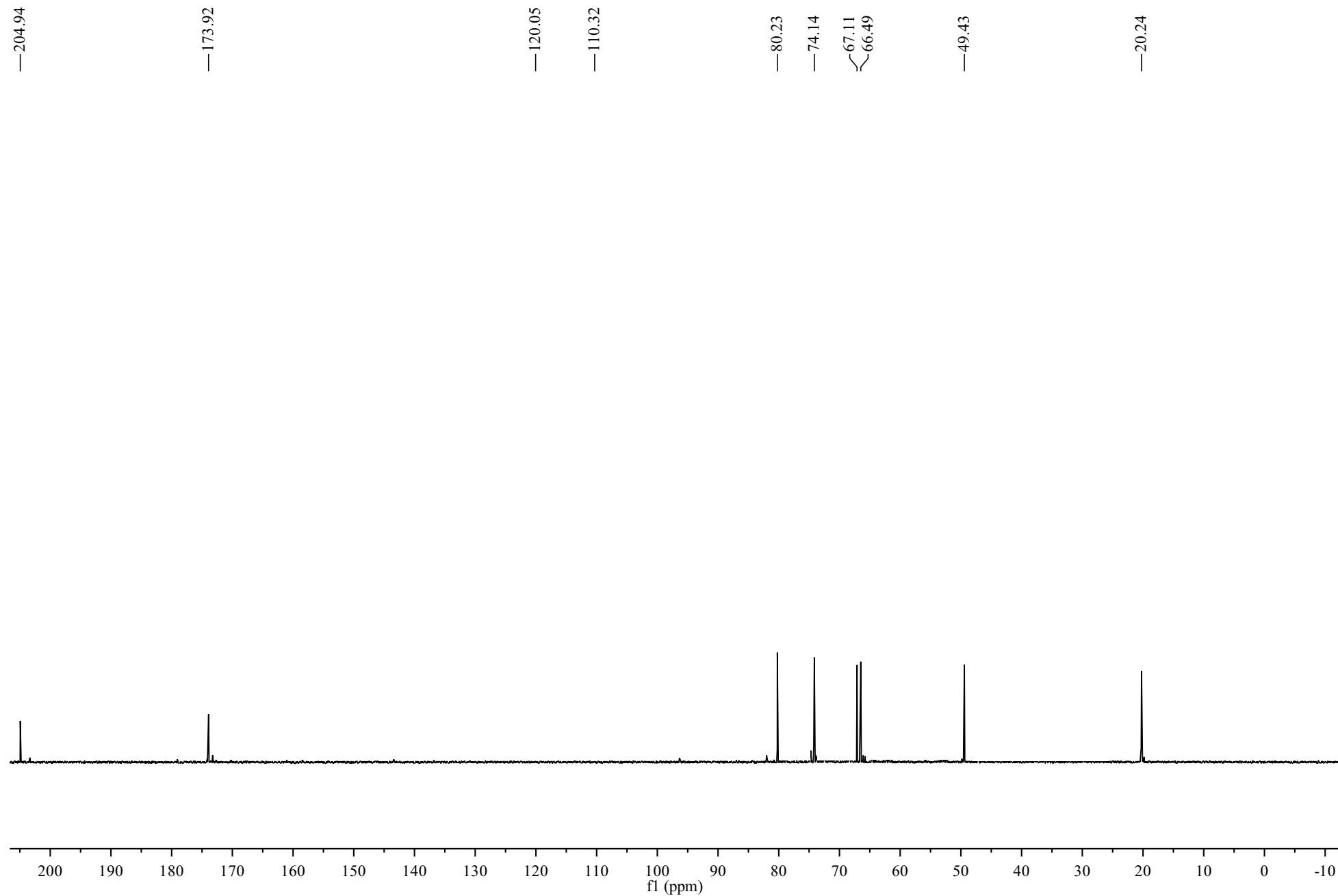
^{13}C NMR (CDCl_3 , 125 MHz) of compound **3**



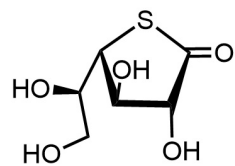
^1H NMR (D_2O , 500 MHz) of compound **4**



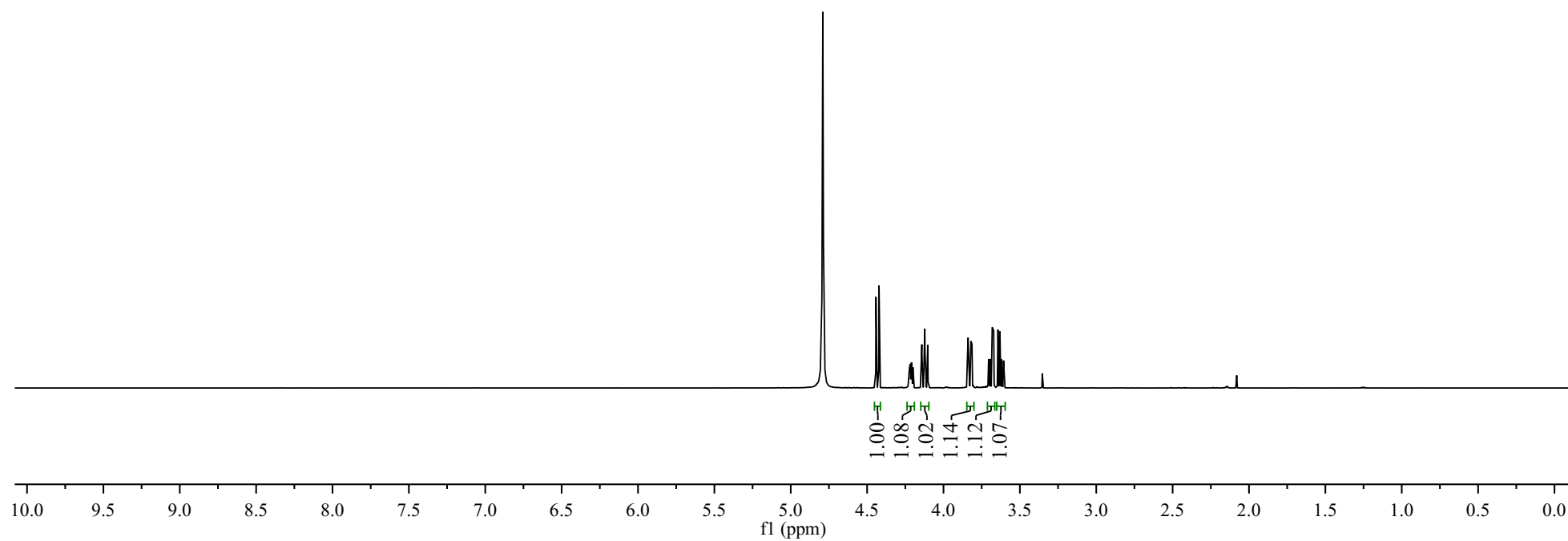
^{13}C NMR (D_2O , 125 MHz) of compound **4**



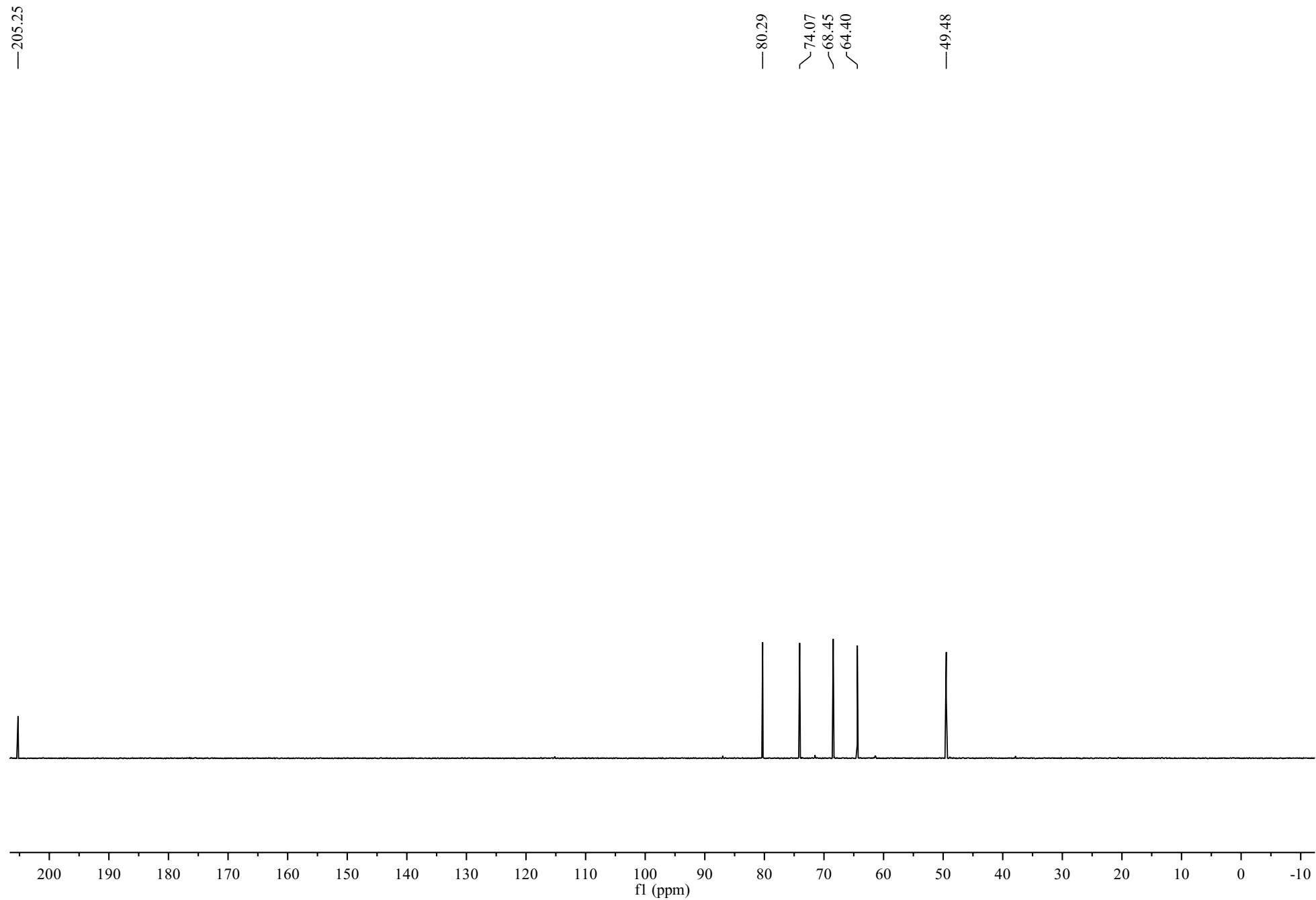
^1H NMR (D_2O , 500 MHz) of compound **5**



—4.79 D₂O

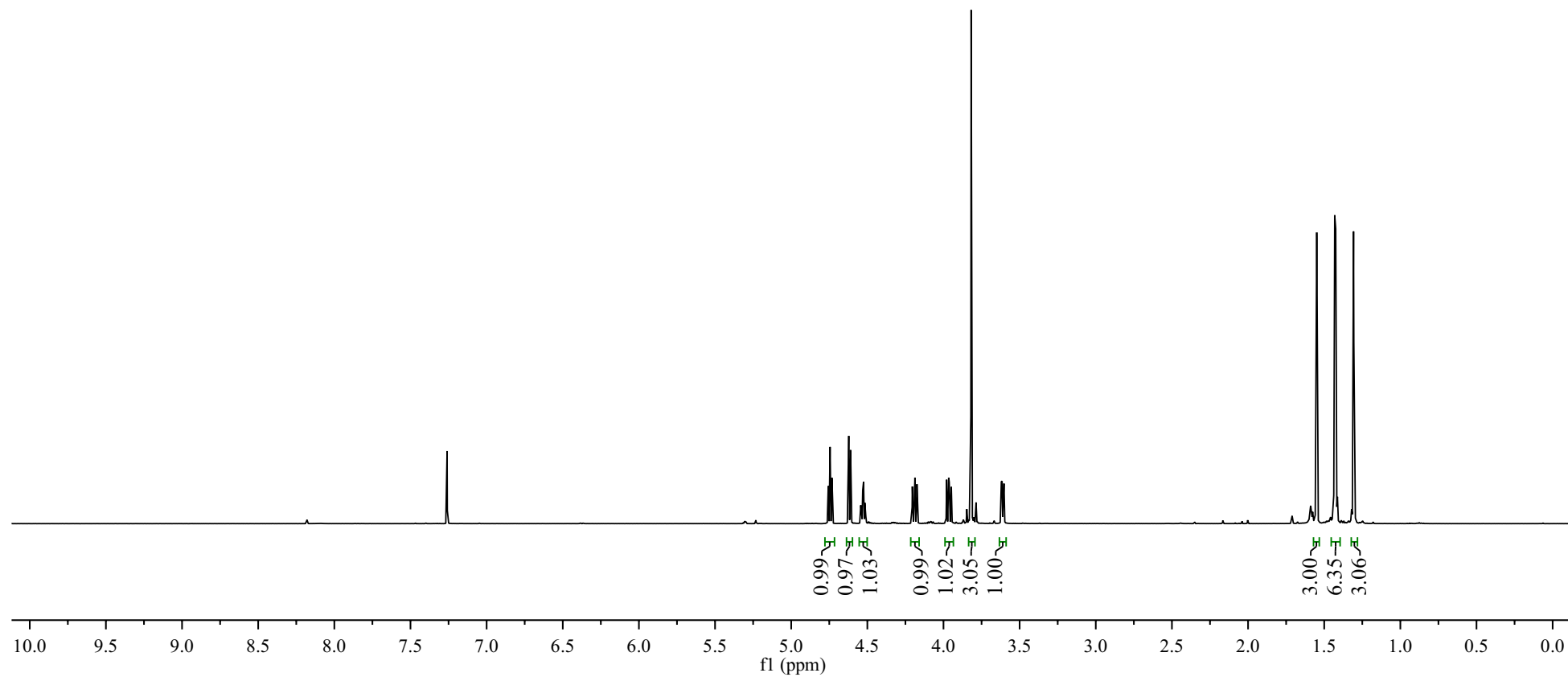
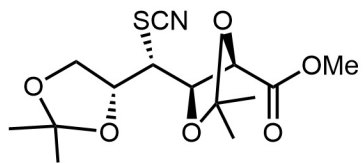


^{13}C NMR (D_2O , 125 MHz) of compound **5**

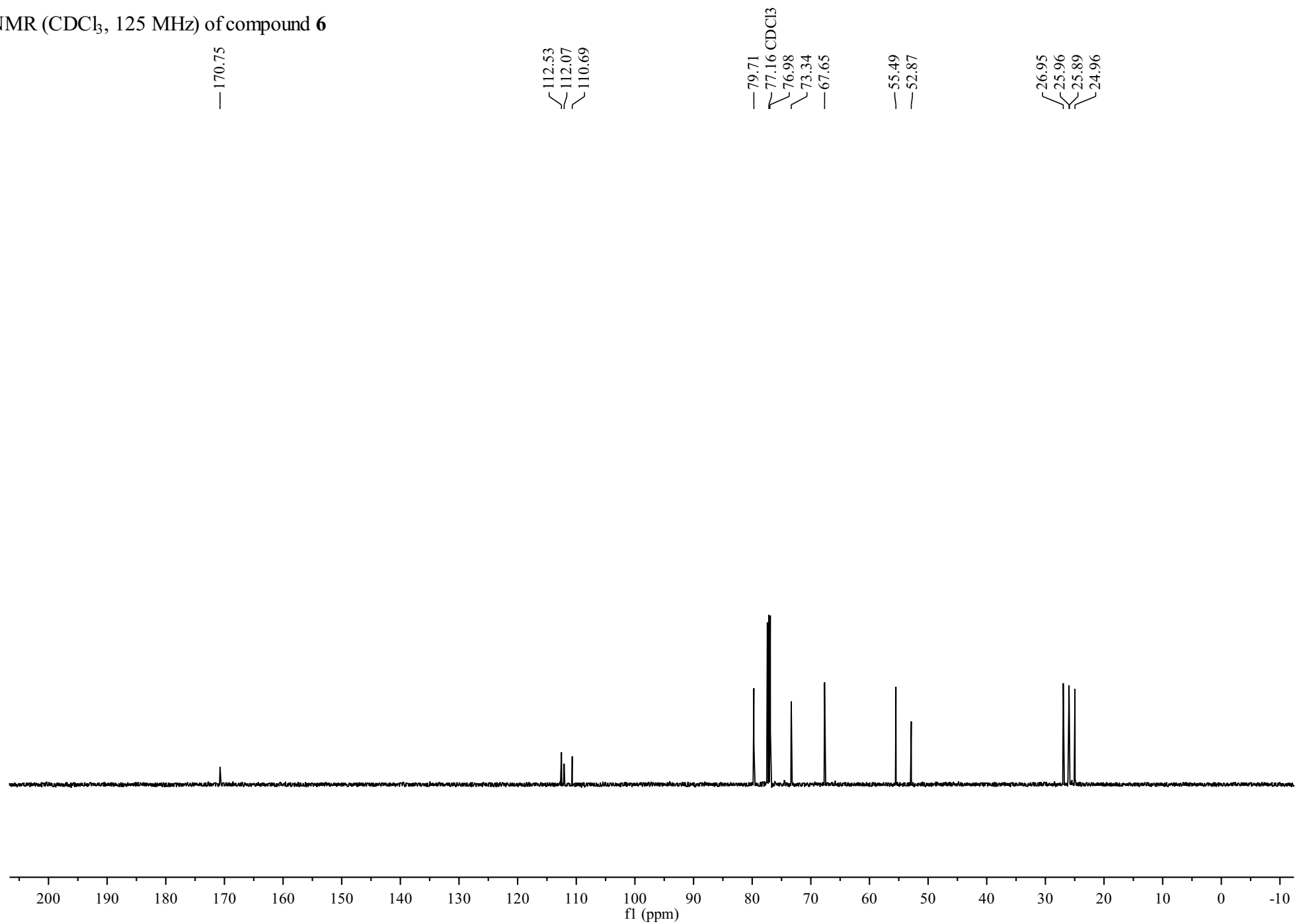


¹H NMR (CDCl₃, 500 MHz) of compound **6**

—7.26 CDCl₃

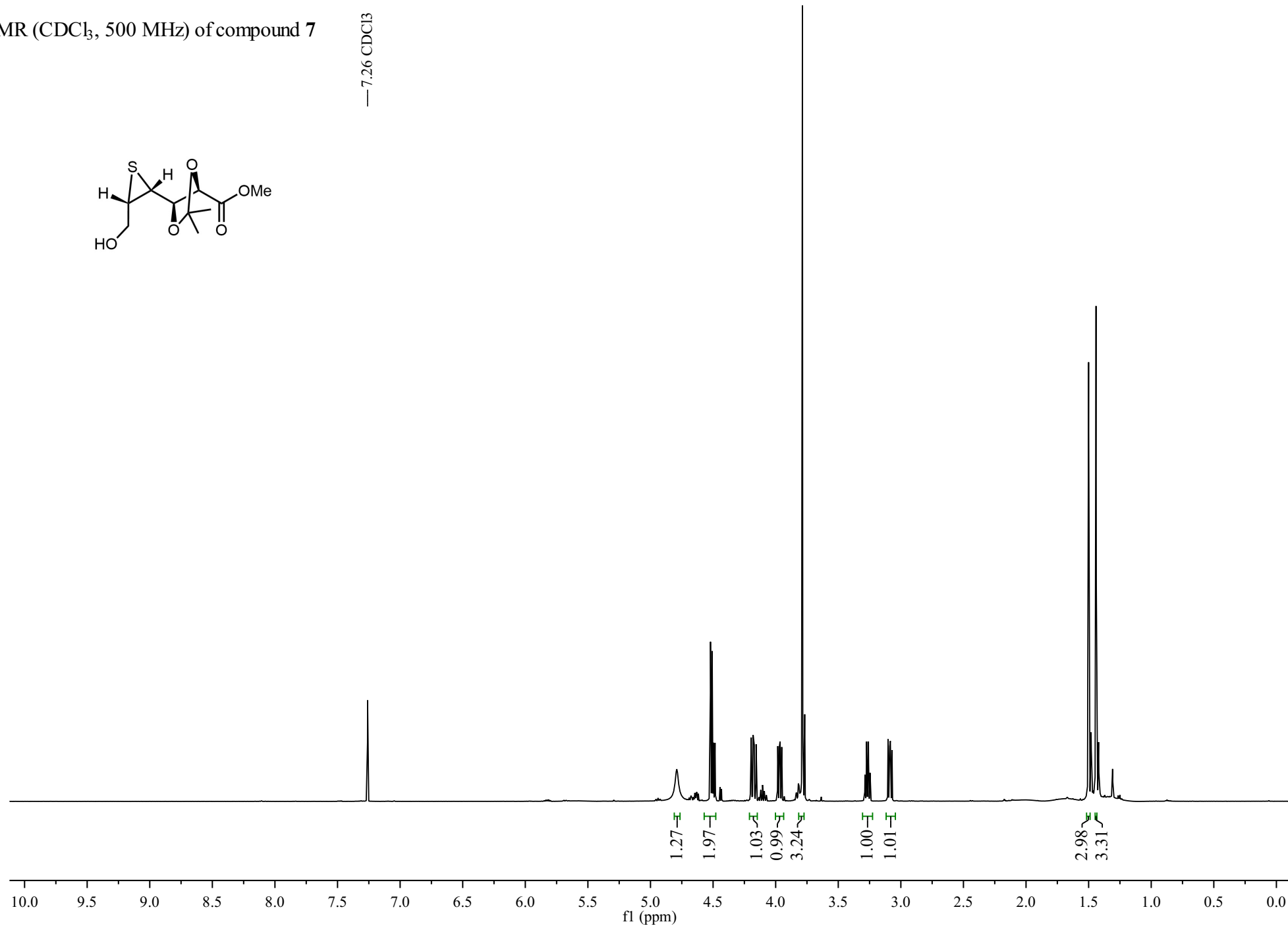
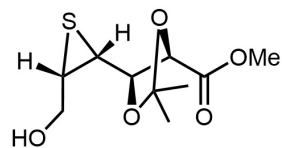


^{13}C NMR (CDCl_3 , 125 MHz) of compound **6**

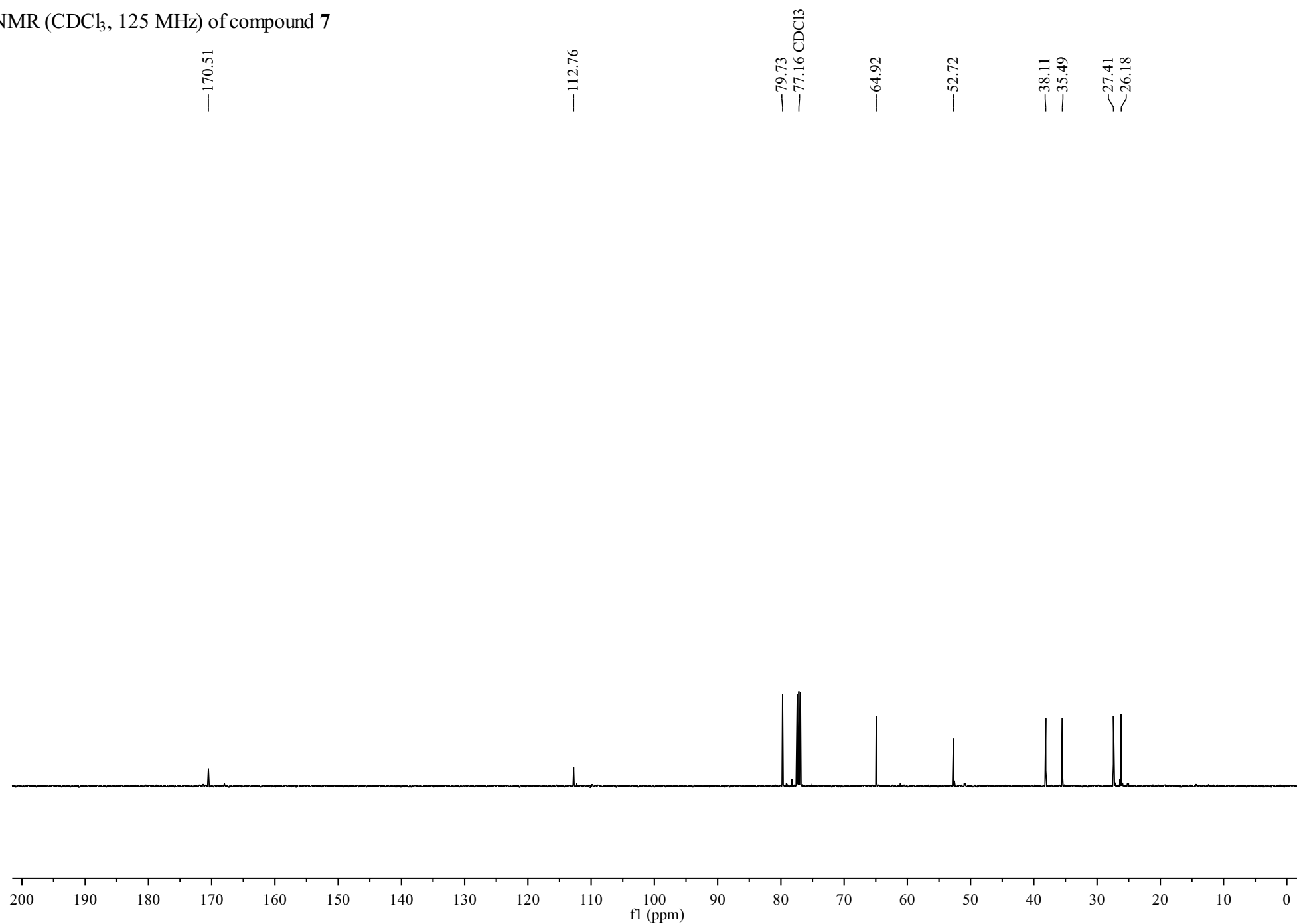


^1H NMR (CDCl_3 , 500 MHz) of compound **7**

—7.26 CDCl_3

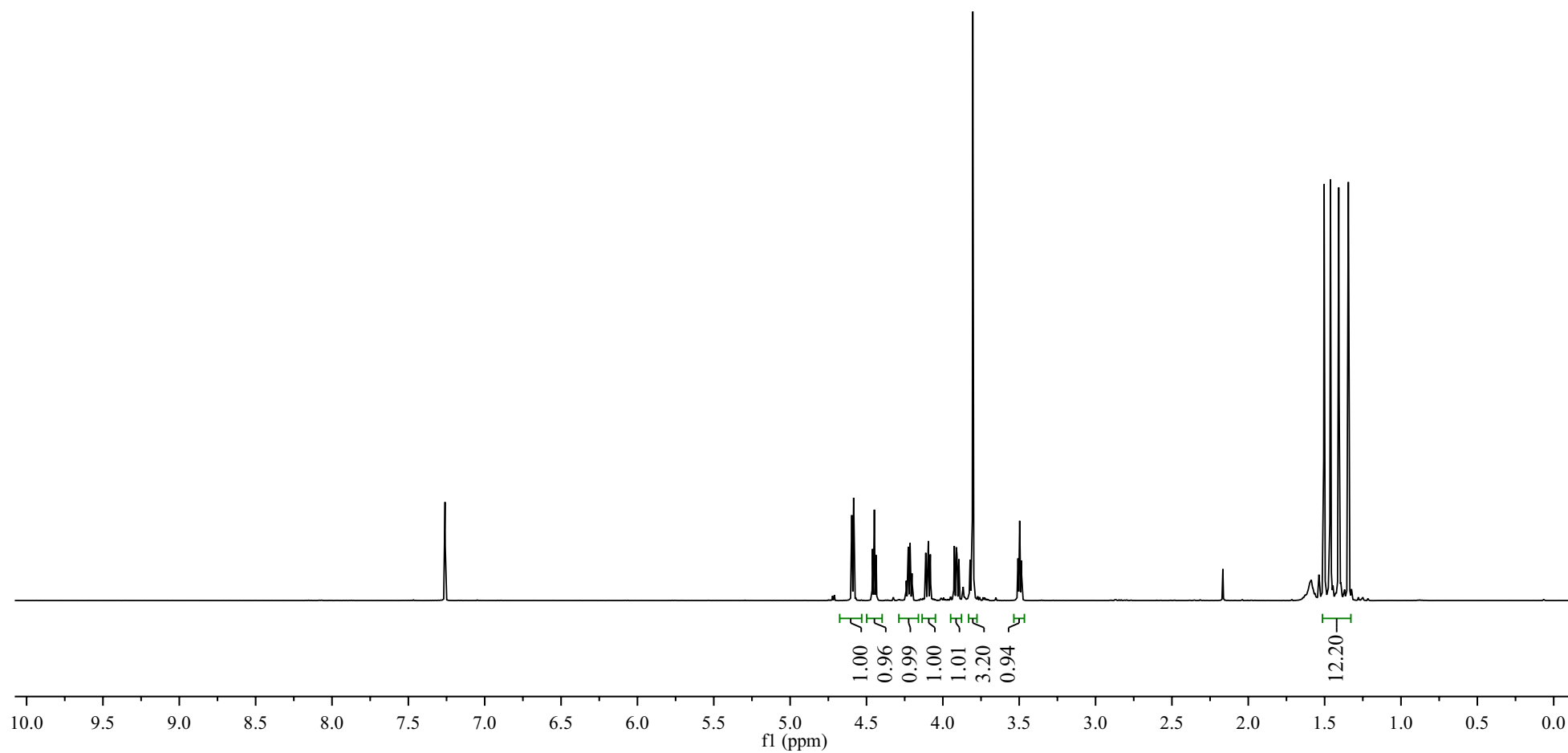
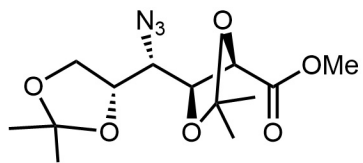


^{13}C NMR (CDCl_3 , 125 MHz) of compound **7**

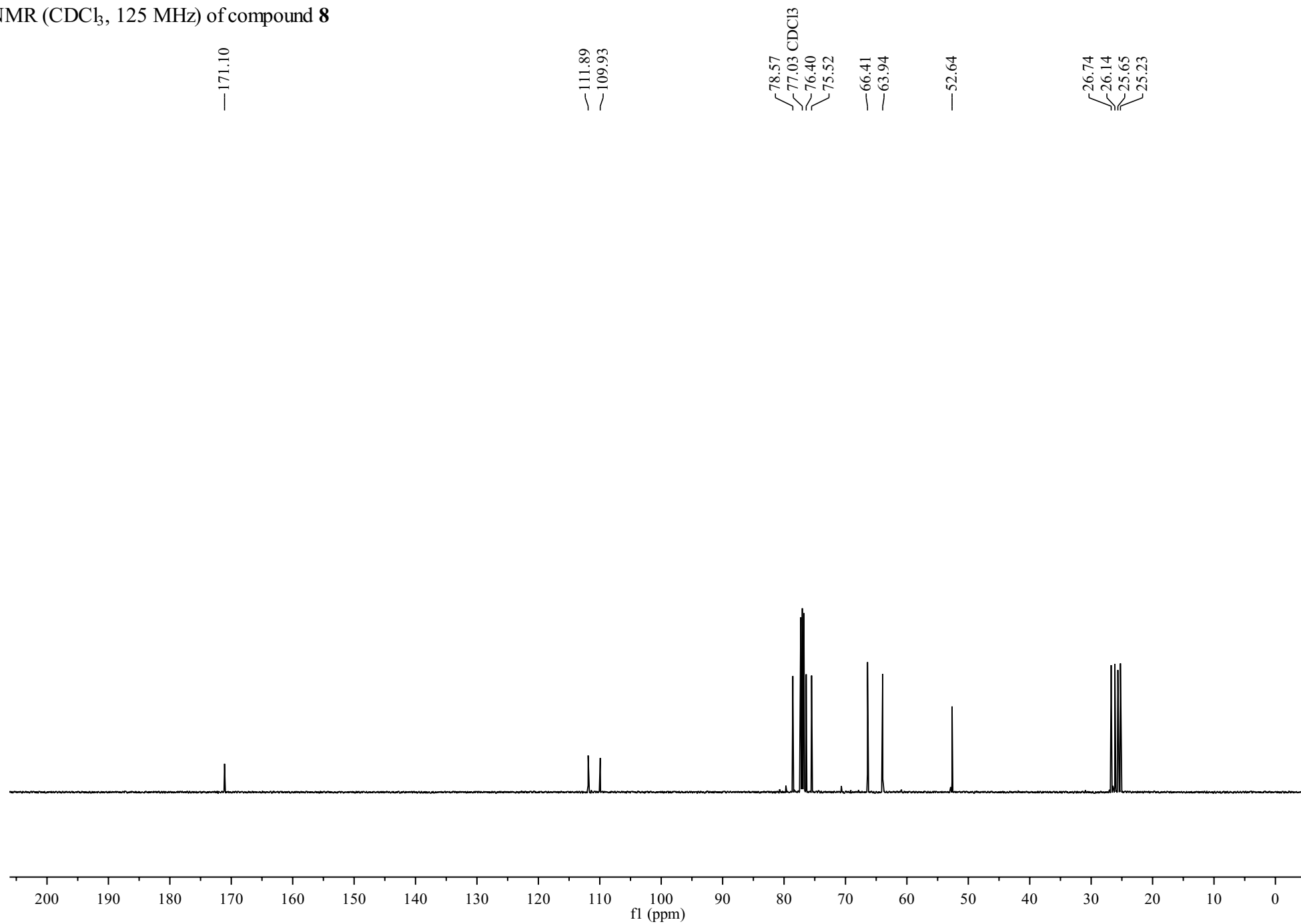


^1H NMR (CDCl_3 , 500 MHz) of compound **8**

—7.26 CDCl_3

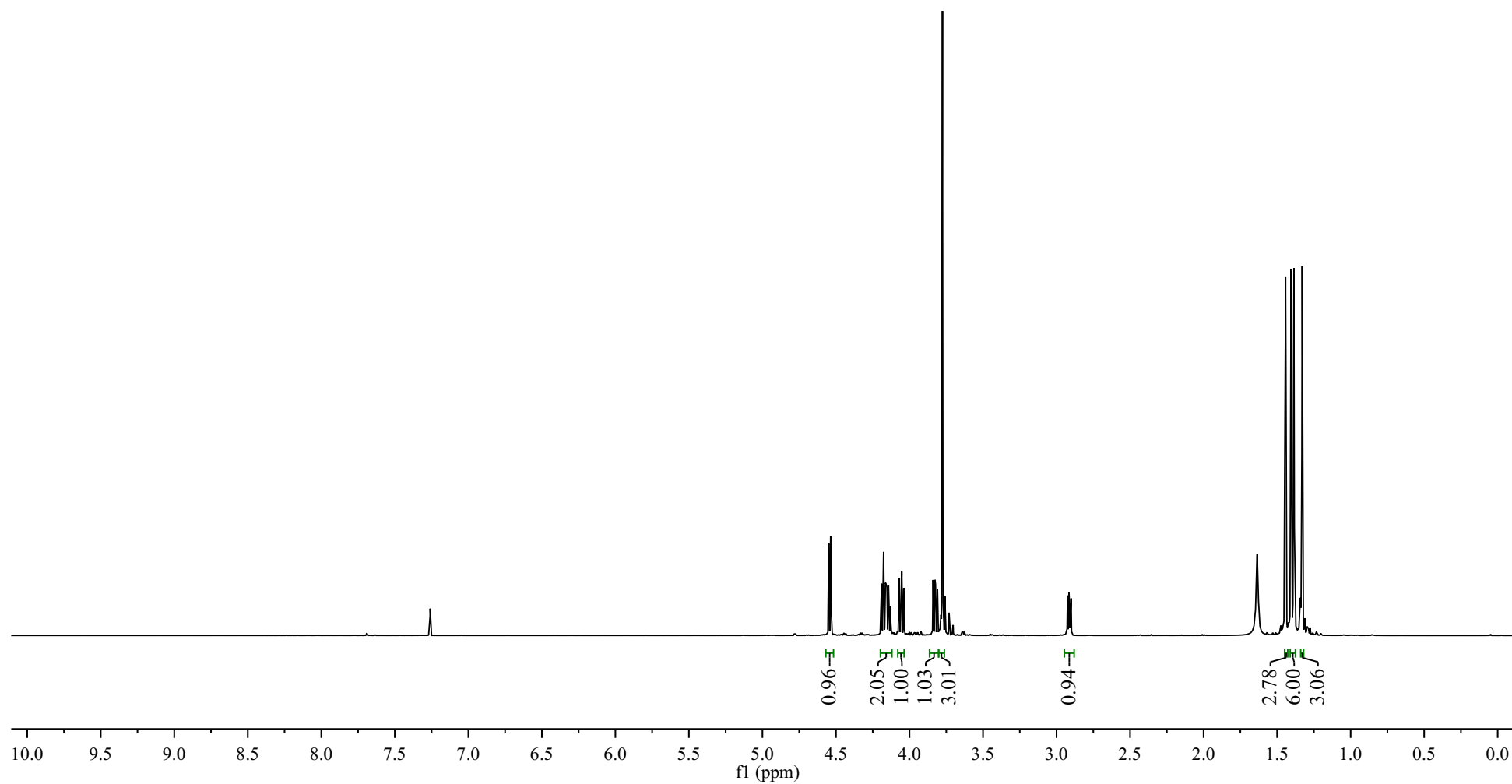
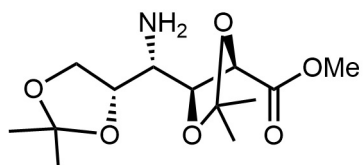


^{13}C NMR (CDCl_3 , 125 MHz) of compound **8**

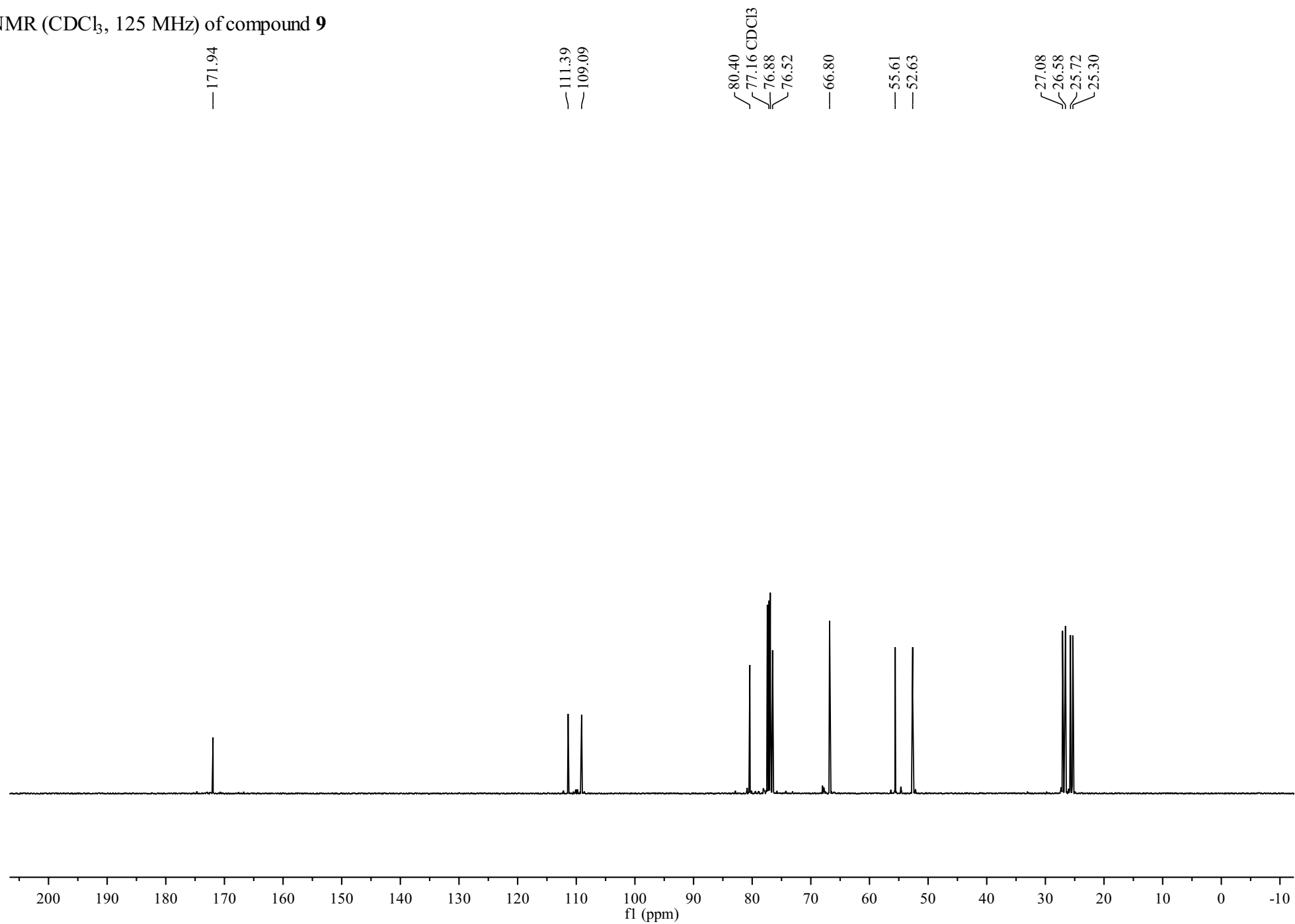


^1H NMR (CDCl_3 , 500 MHz) of compound **9**

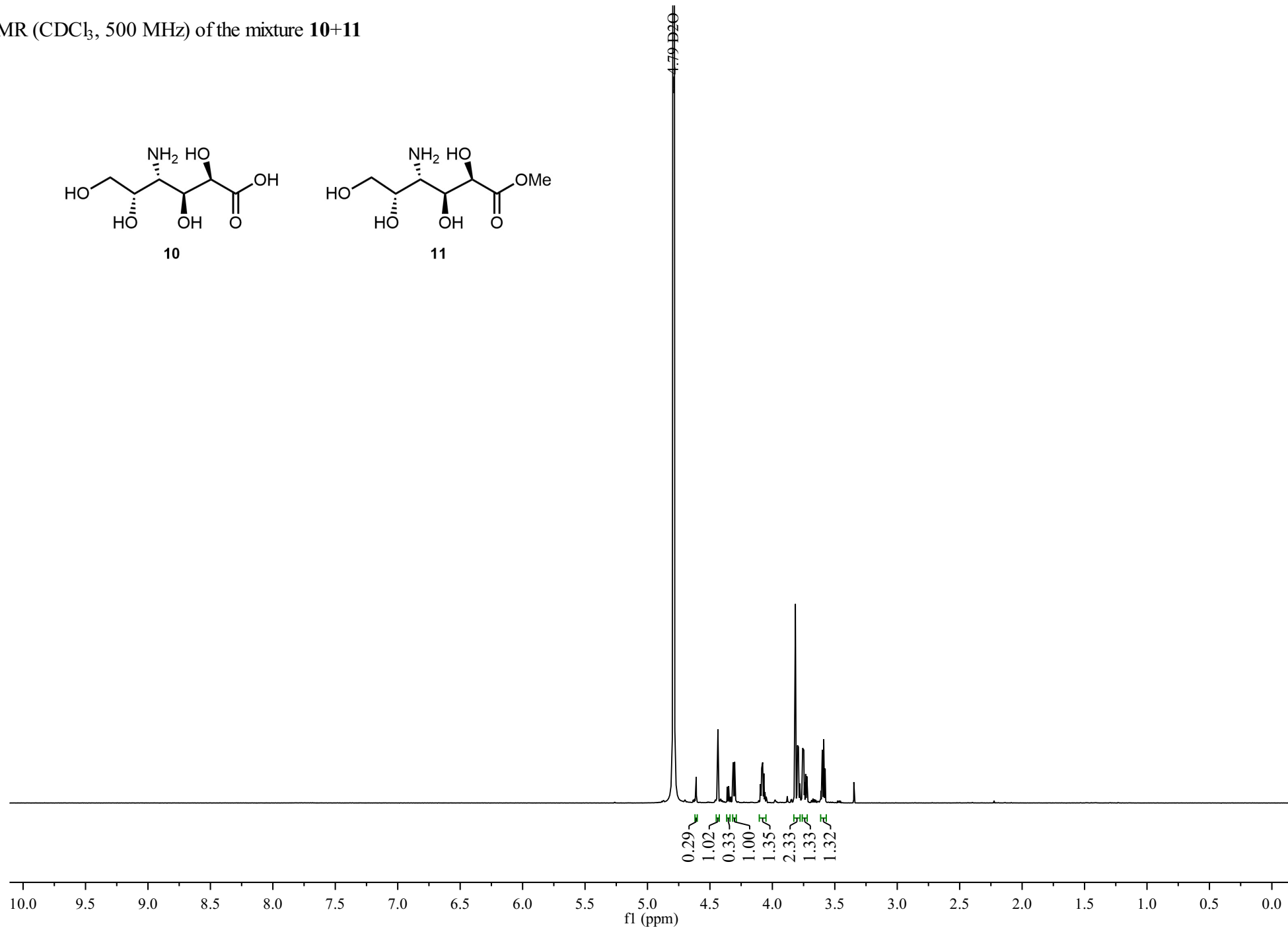
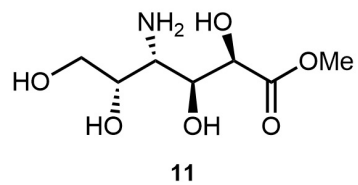
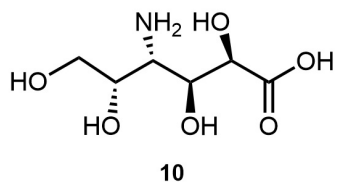
— 7.26 CDCl_3



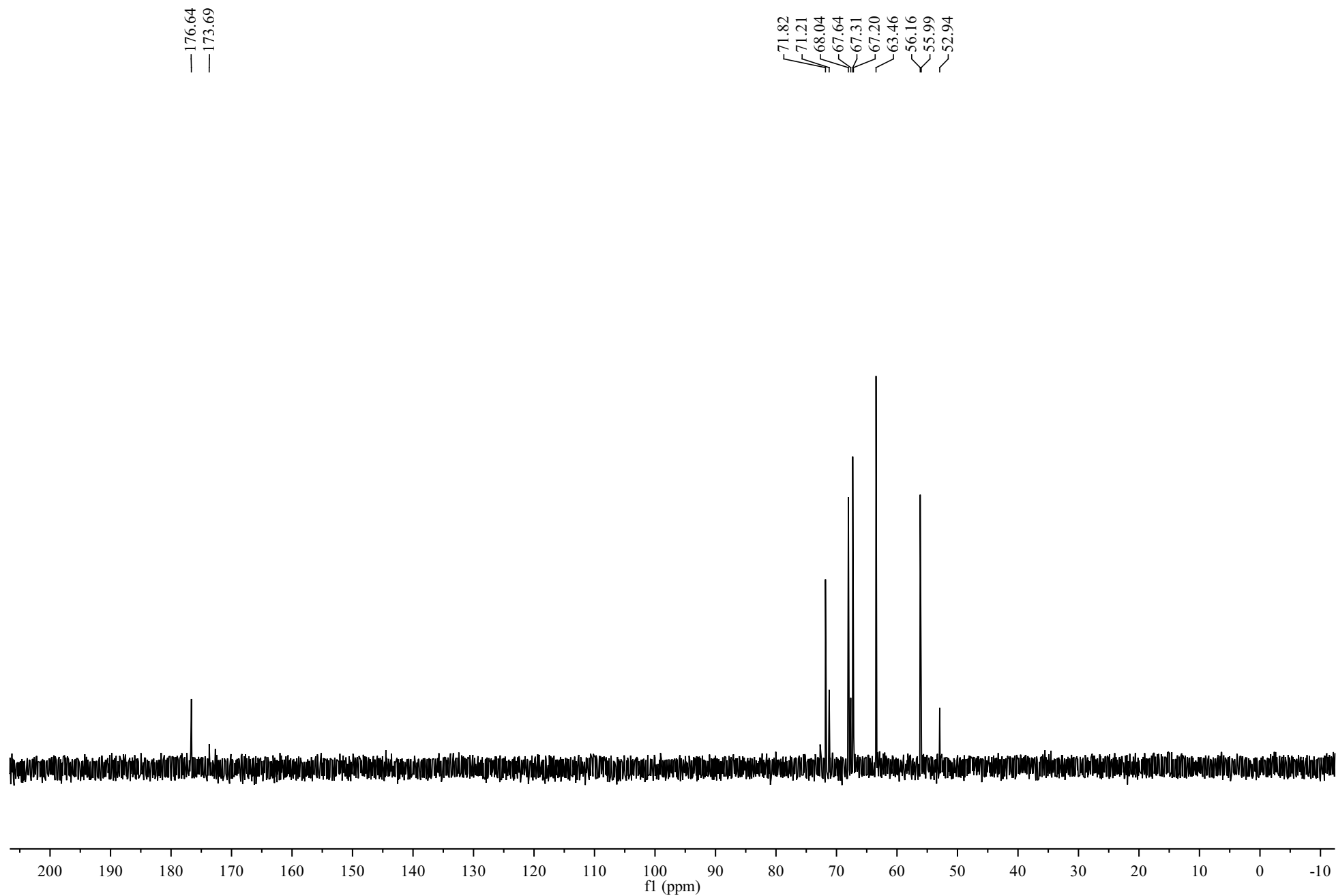
^{13}C NMR (CDCl_3 , 125 MHz) of compound **9**



^1H NMR (CDCl_3 , 500 MHz) of the mixture **10**+**11**

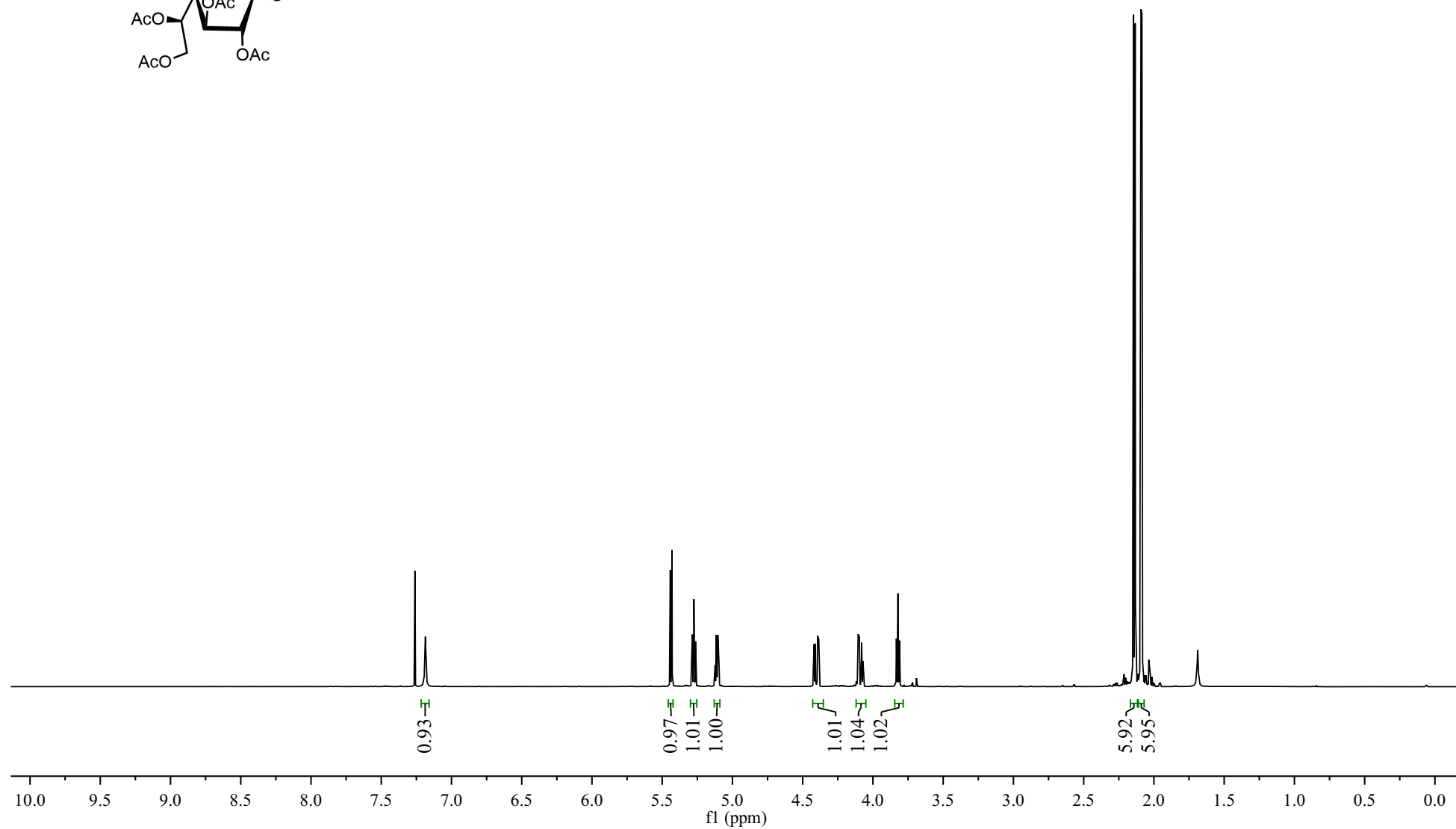
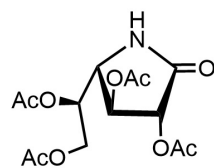


^{13}C NMR (CDCl_3 , 125 MHz) of the mixture **10+11**

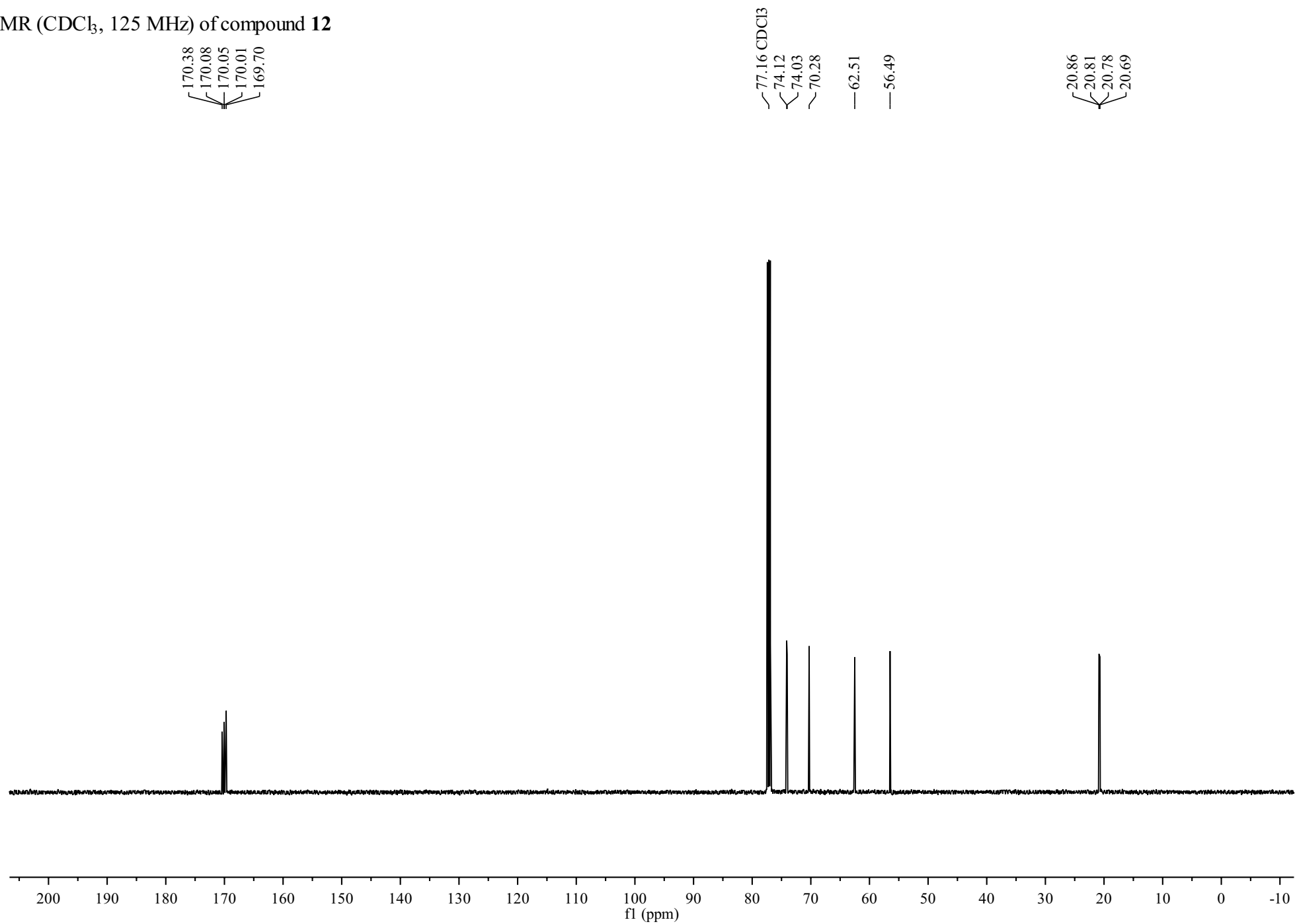


^1H NMR (CDCl_3 , 500 MHz) of compound **12**

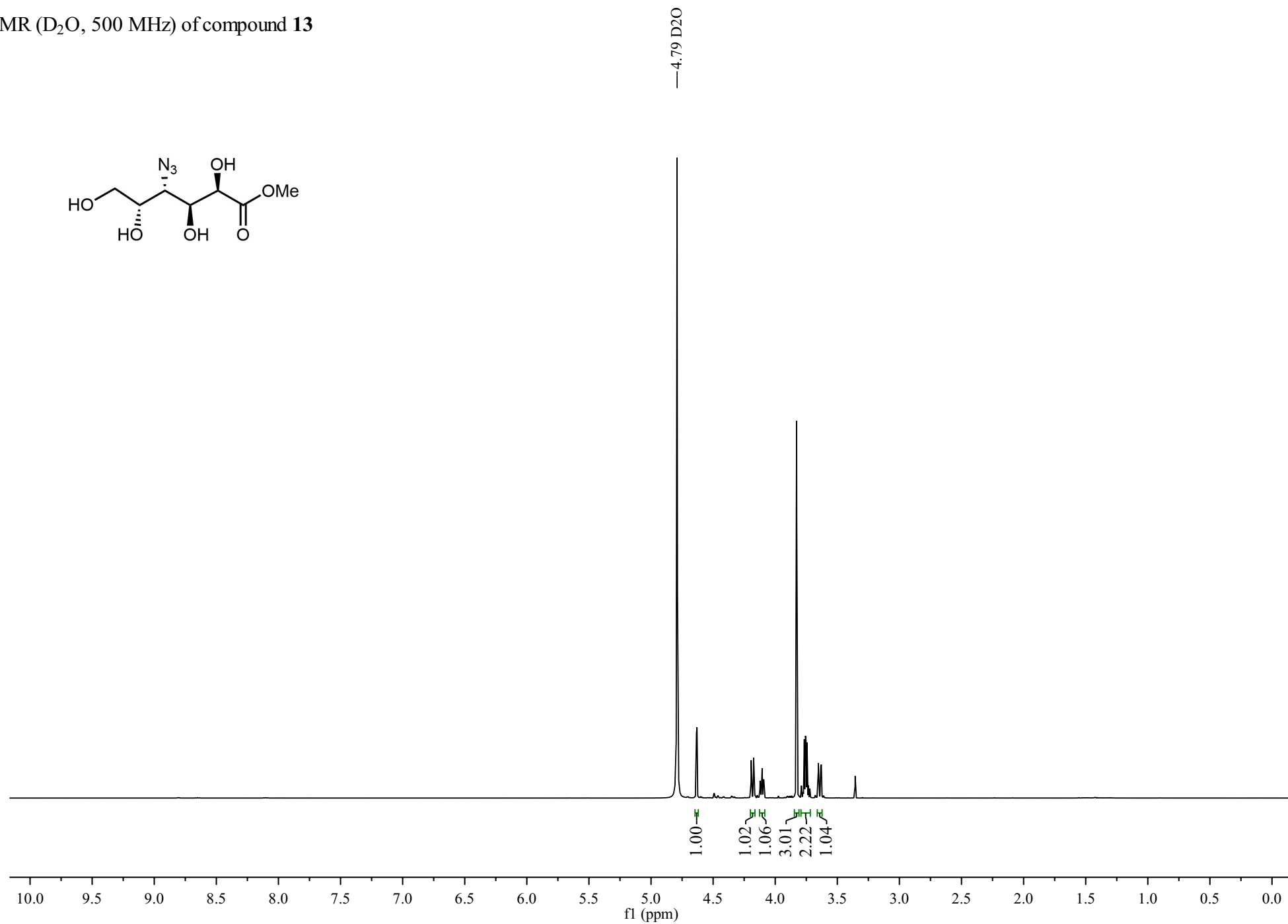
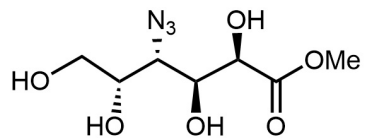
—7.26 CDCl_3



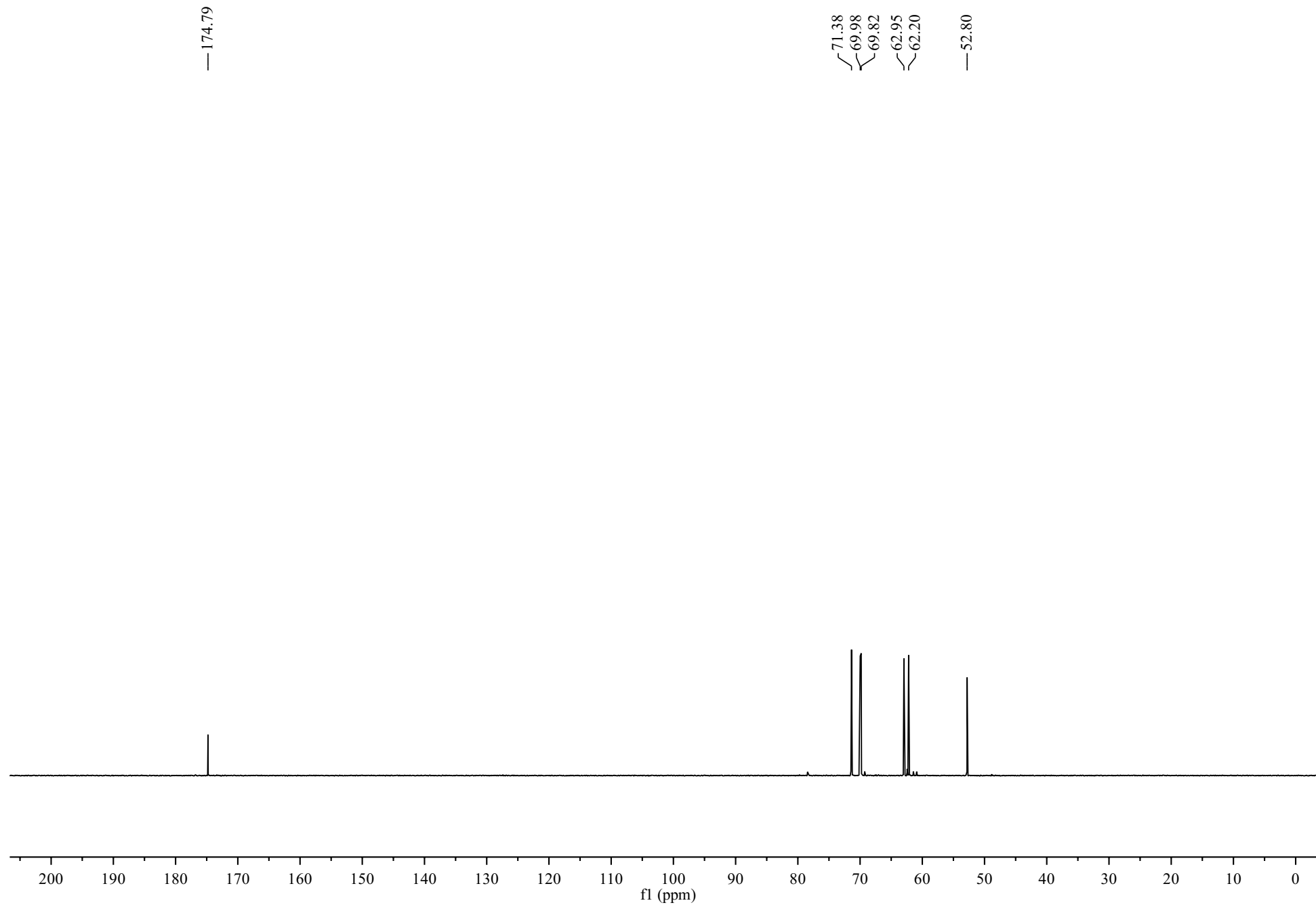
^{13}C NMR (CDCl_3 , 125 MHz) of compound **12**



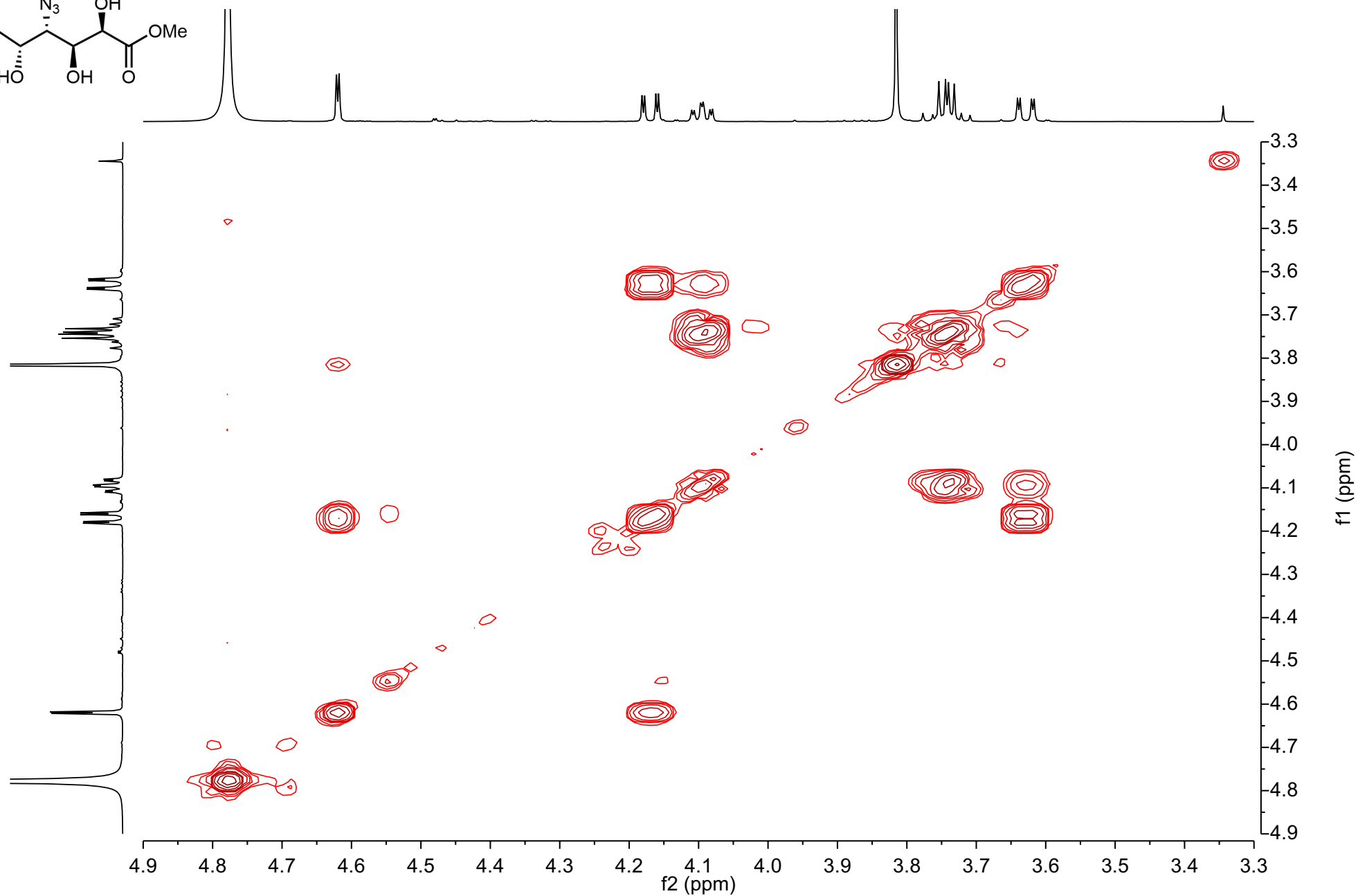
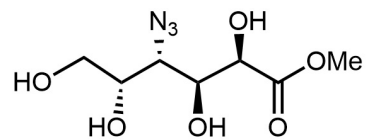
^1H NMR (D_2O , 500 MHz) of compound **13**



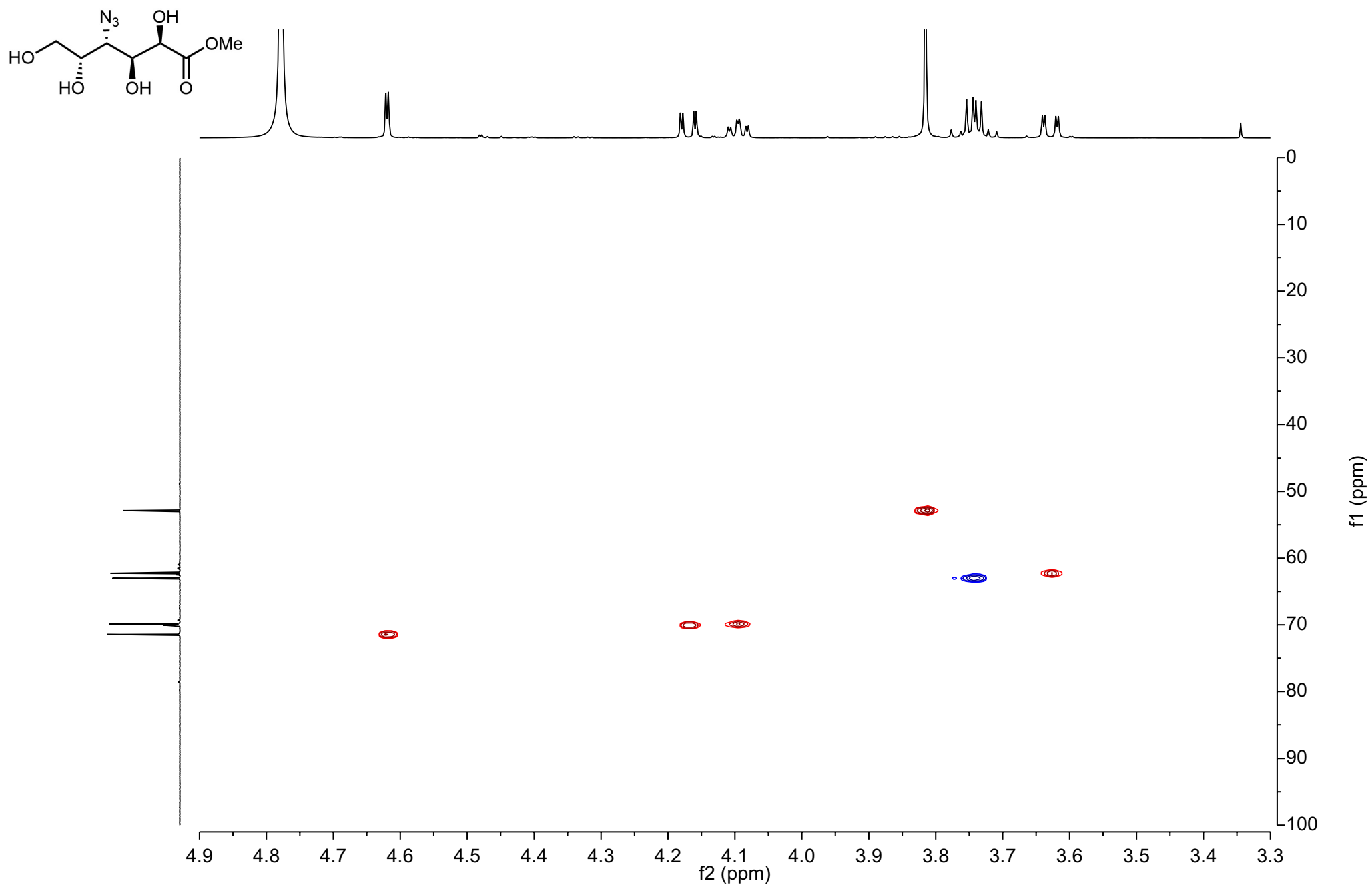
^{13}C NMR (D_2O , 125 MHz) of compound **13**



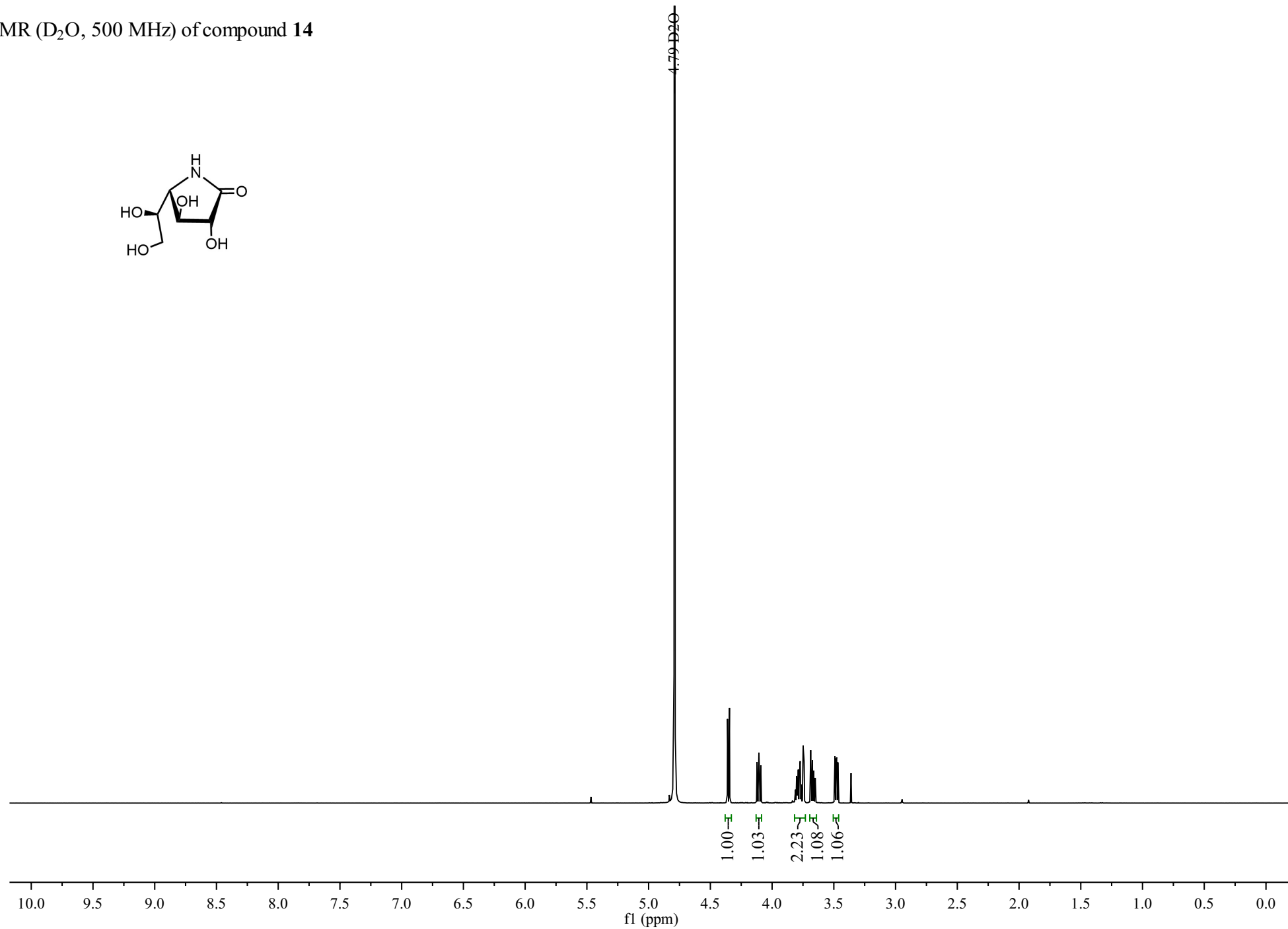
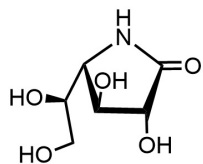
COSY (D₂O) of compound **13**



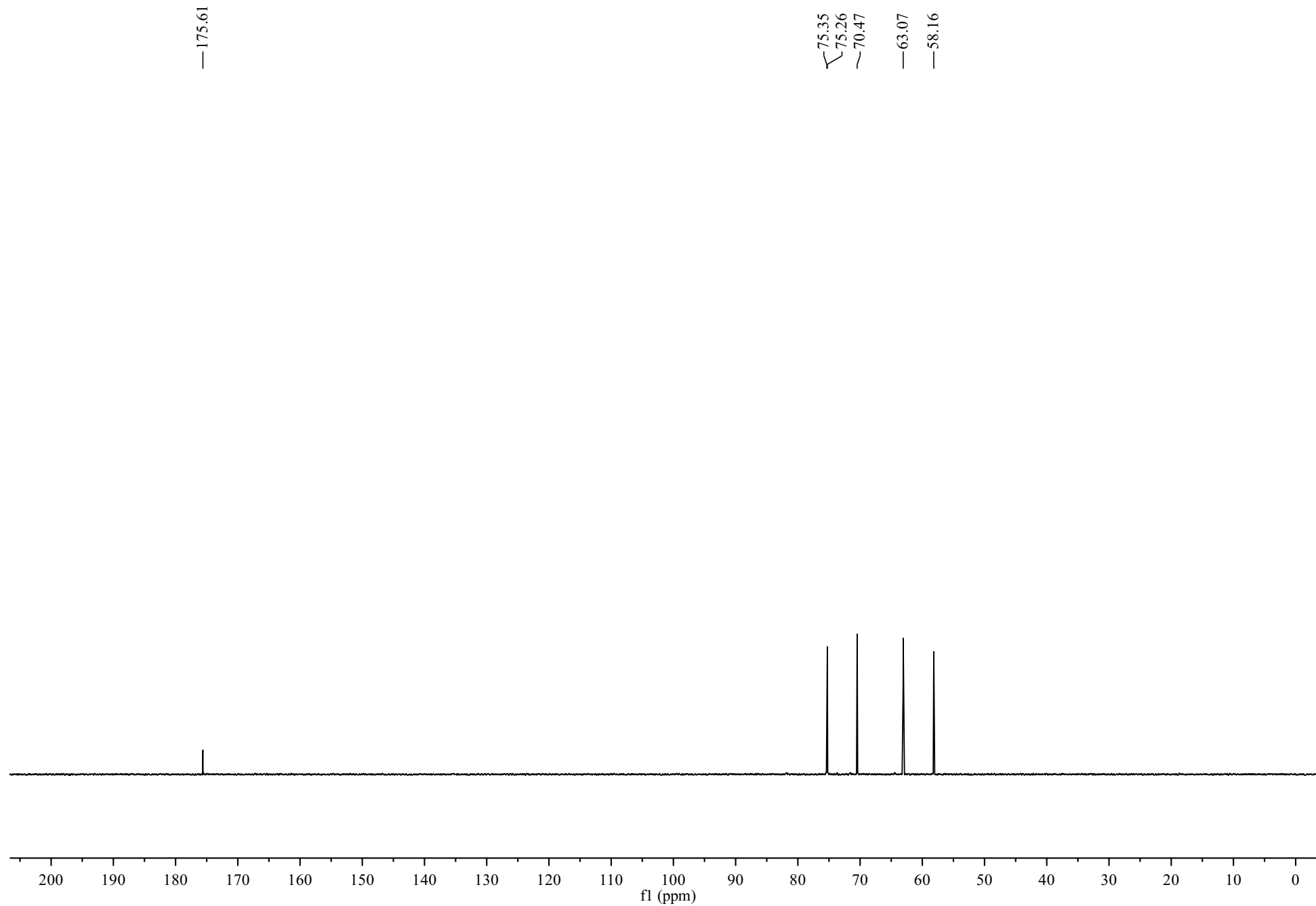
HSQC (D₂O) of compound **13**



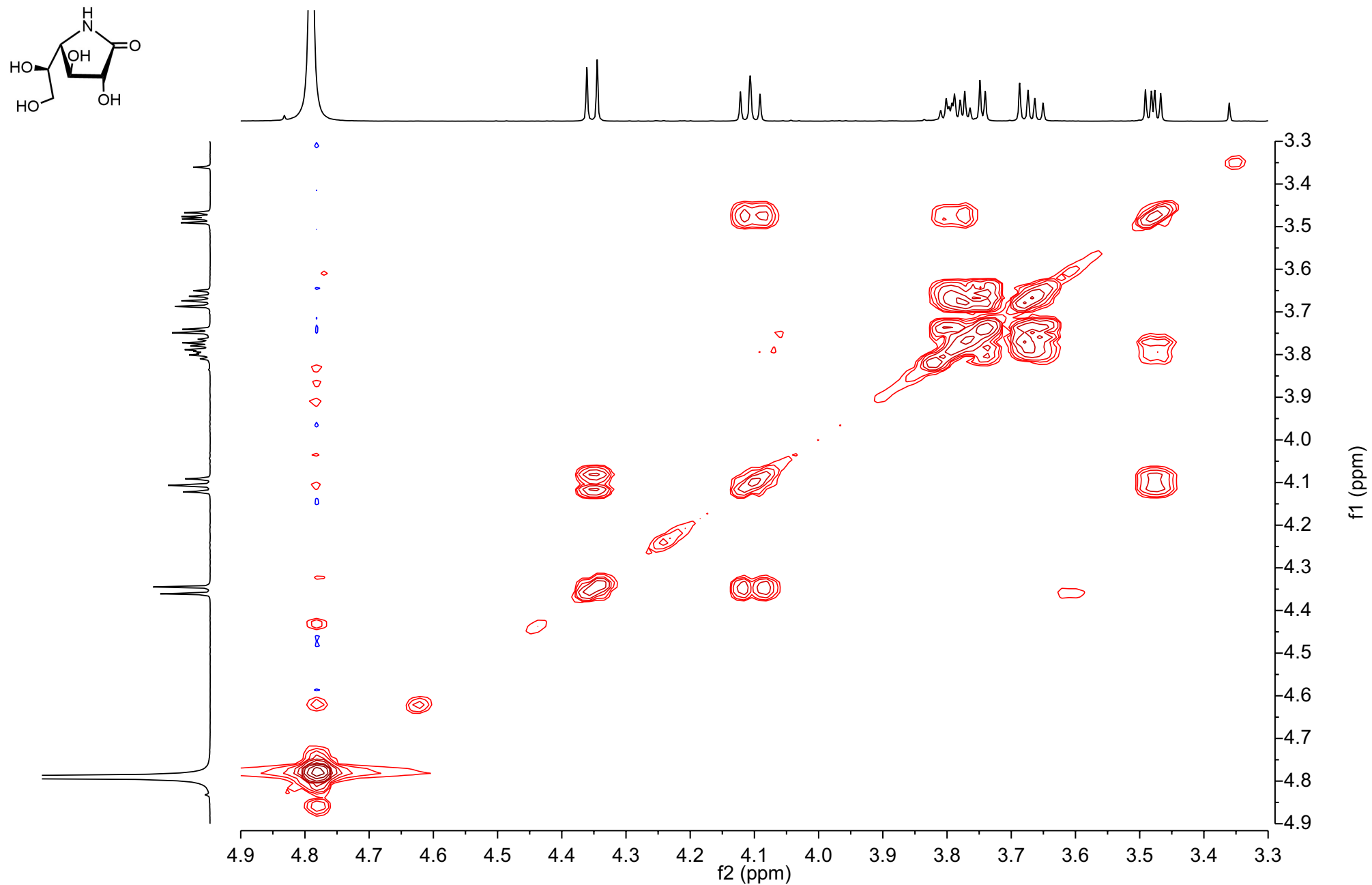
^1H NMR (D_2O , 500 MHz) of compound **14**



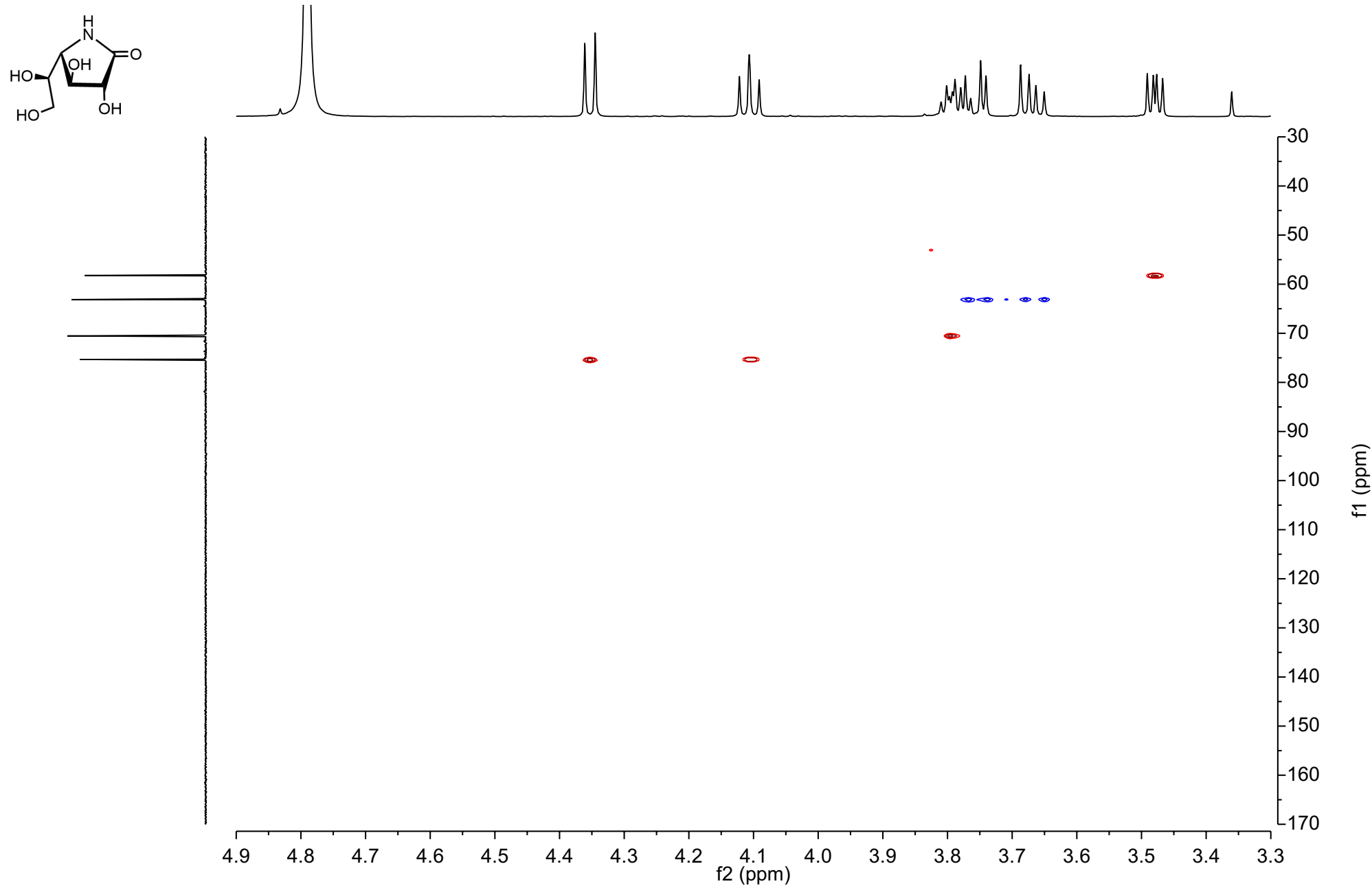
^{13}C NMR (D_2O , 125 MHz) of compound **14**



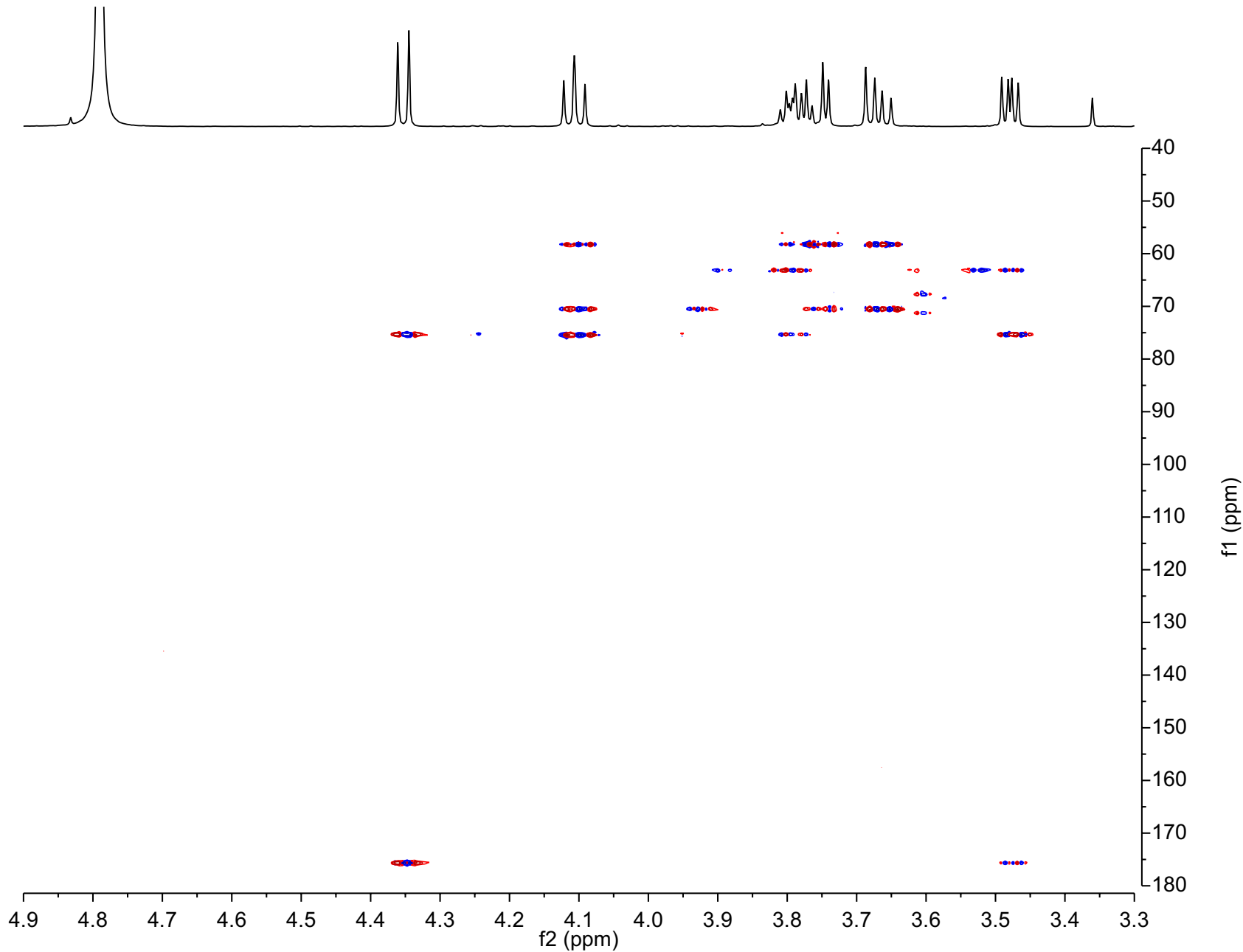
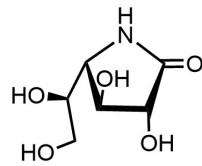
COSY (D₂O) of compound **14**



HSQC (D₂O) of compound **14**

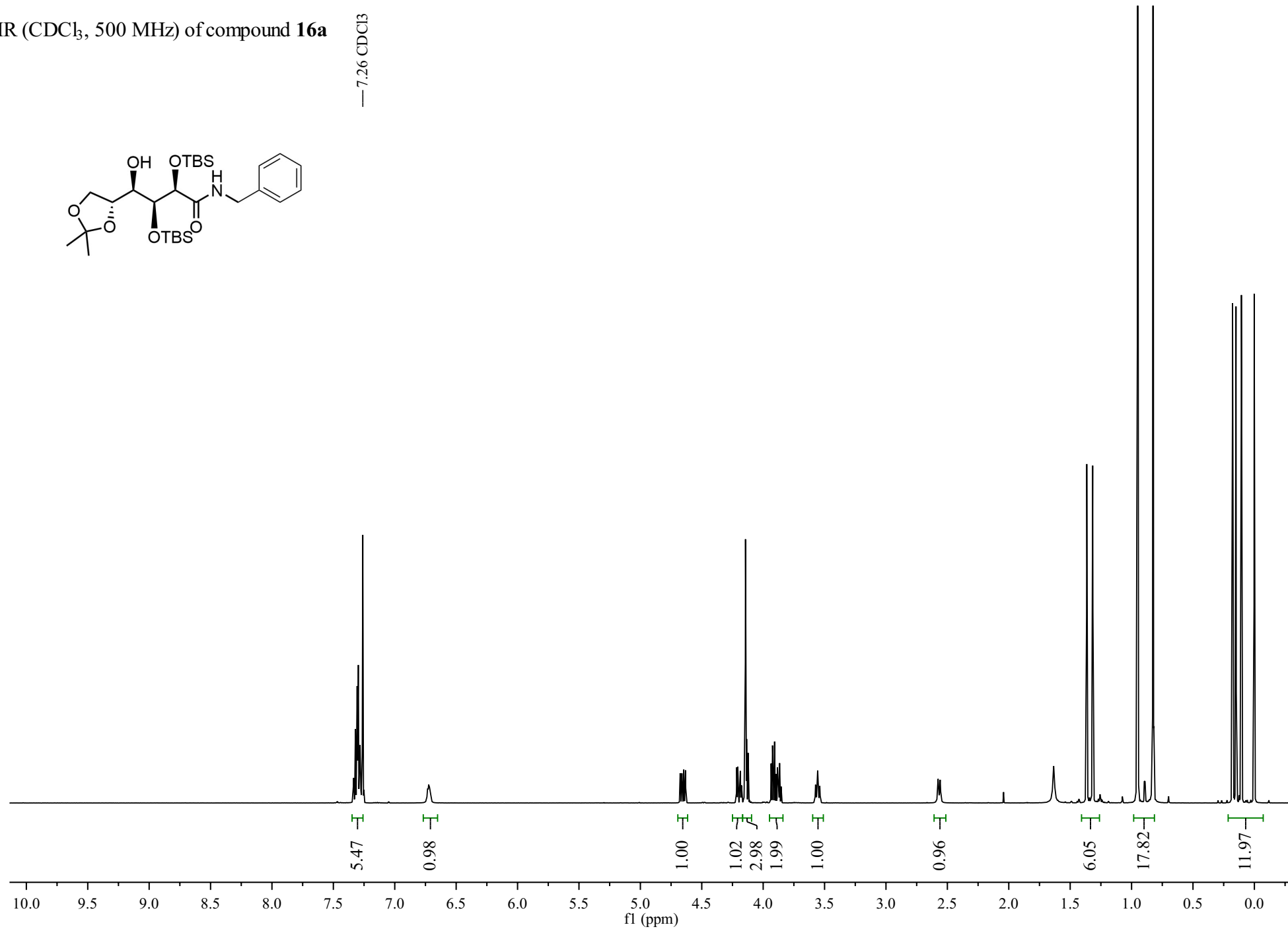
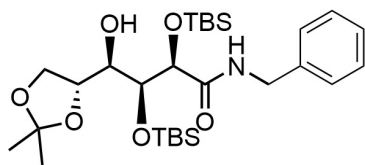


HMBC (D₂O) of compound **14**

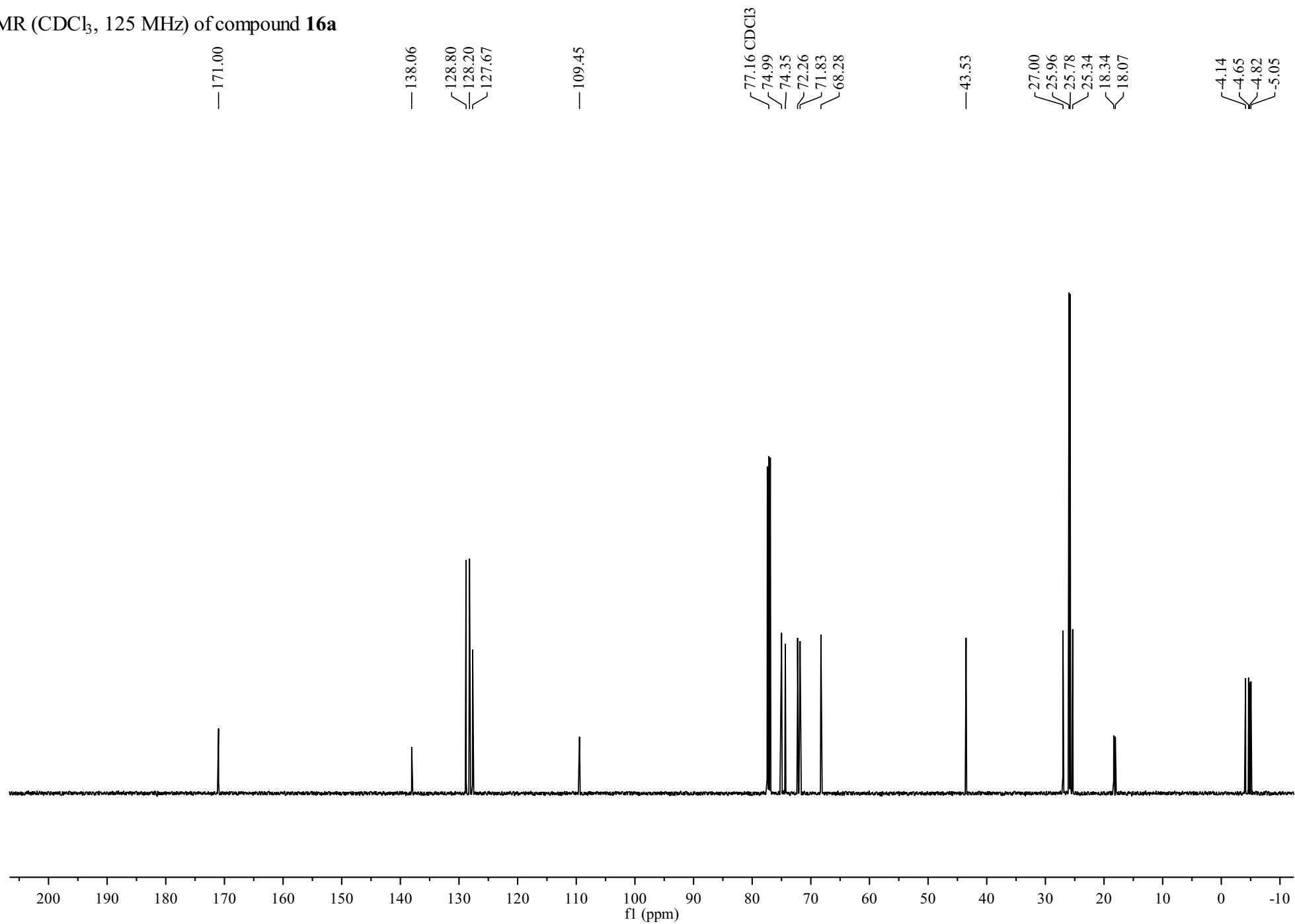


^1H NMR (CDCl_3 , 500 MHz) of compound **16a**

—7.26 CDCl_3

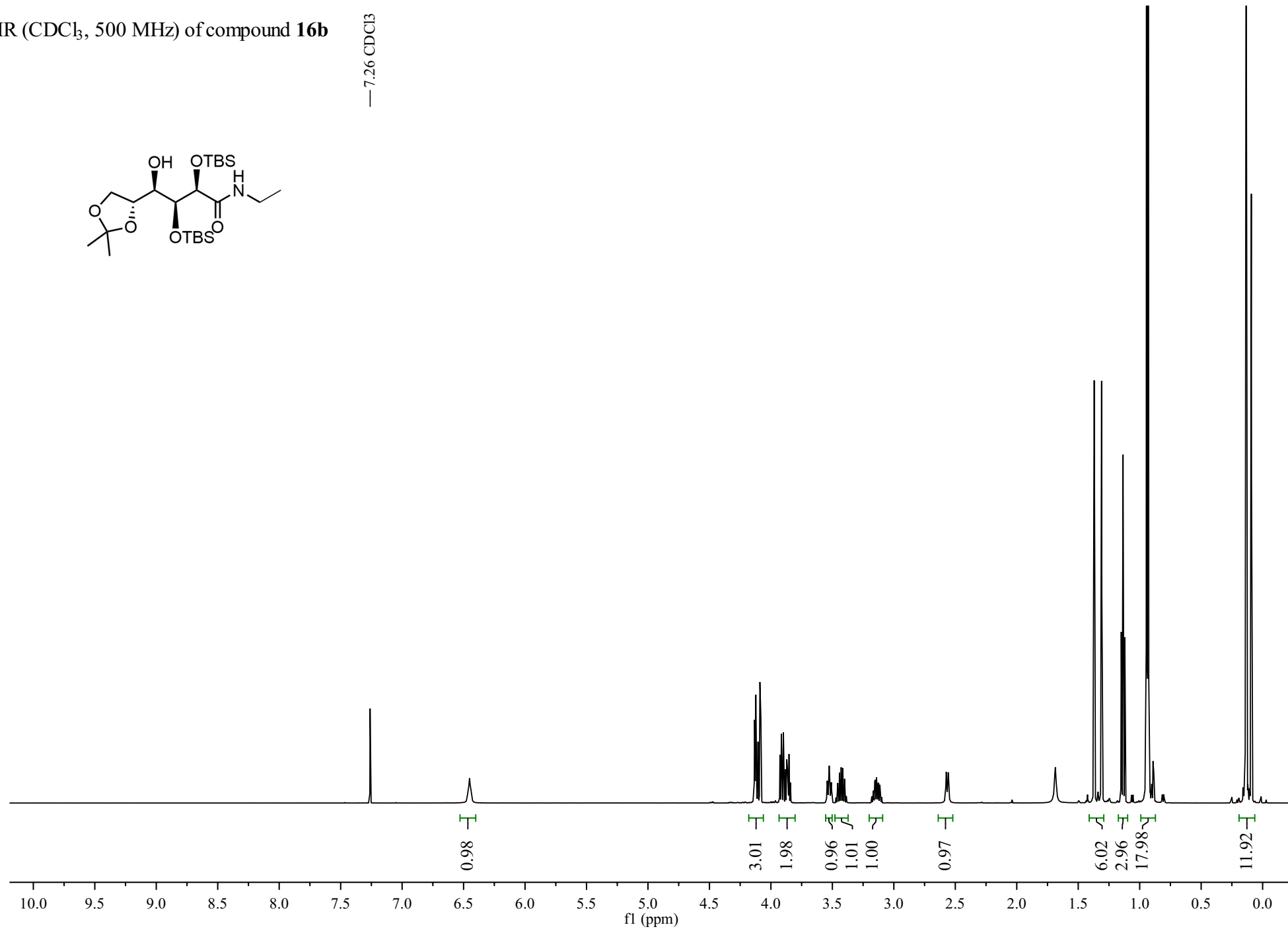
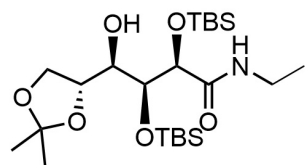


^{13}C NMR (CDCl_3 , 125 MHz) of compound **16a**

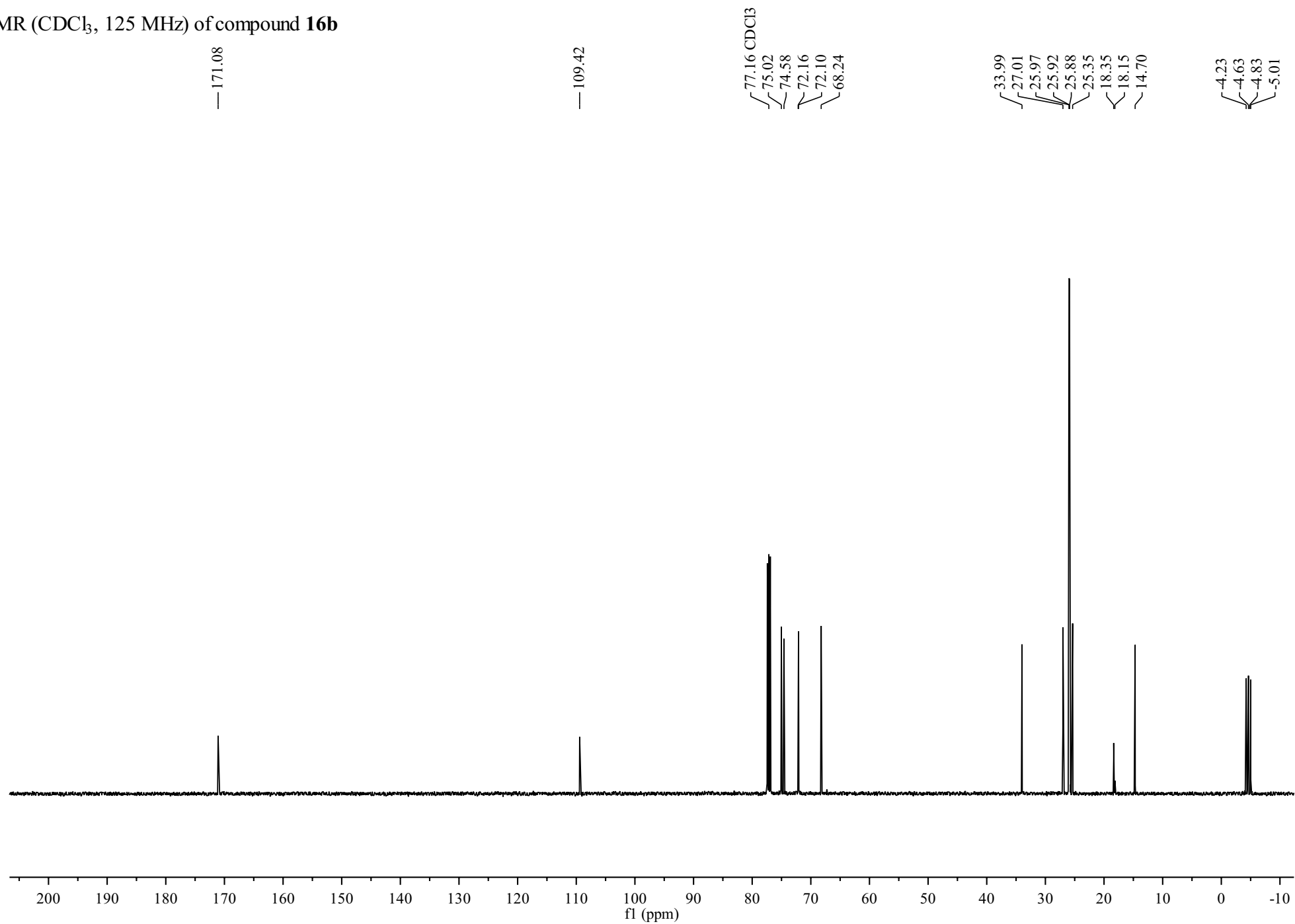


^1H NMR (CDCl_3 , 500 MHz) of compound **16b**

—7.26 CDCl_3

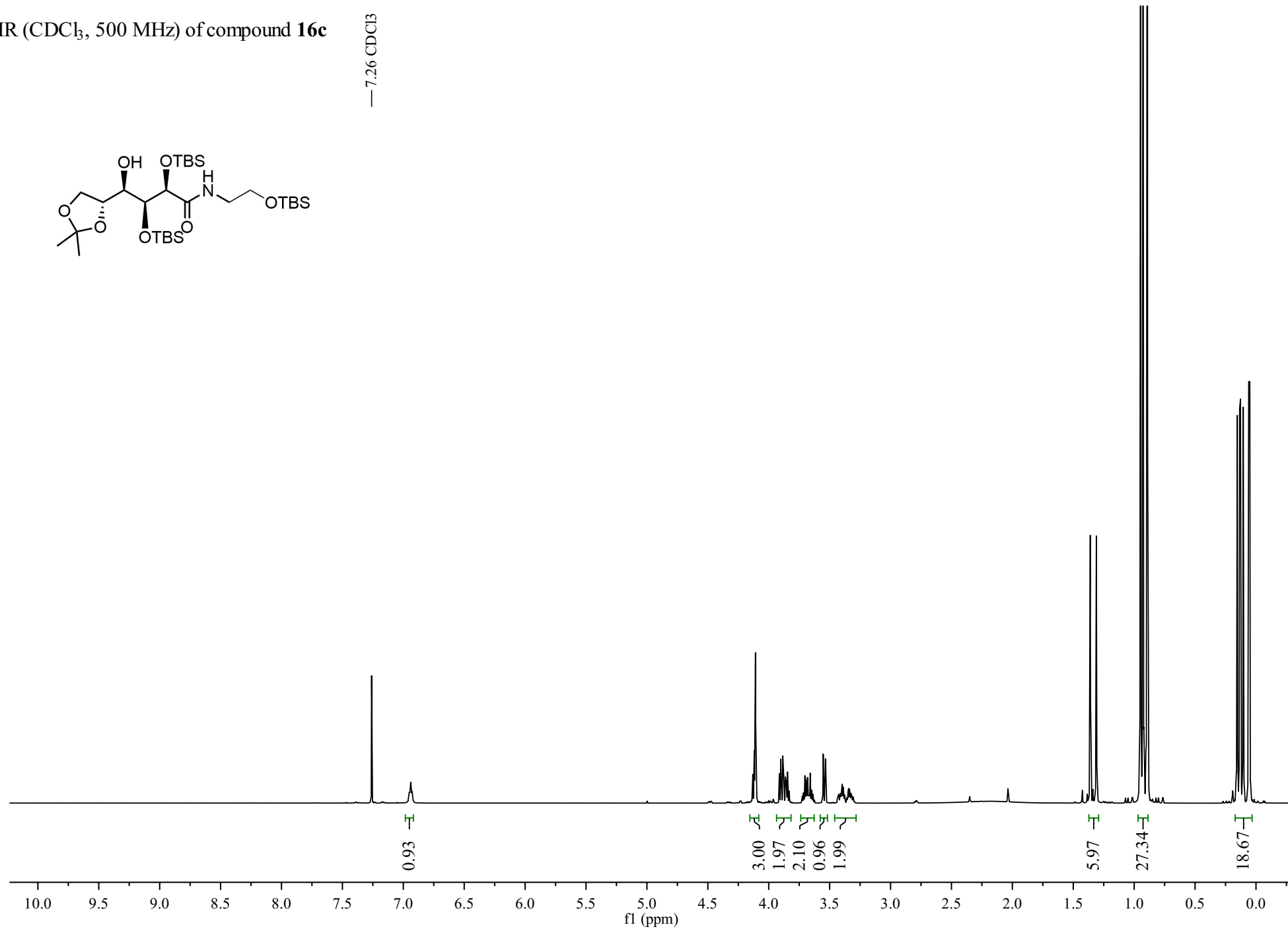
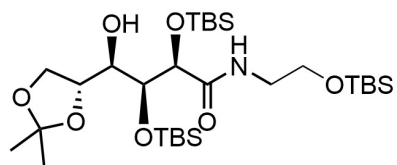


^{13}C NMR (CDCl_3 , 125 MHz) of compound **16b**

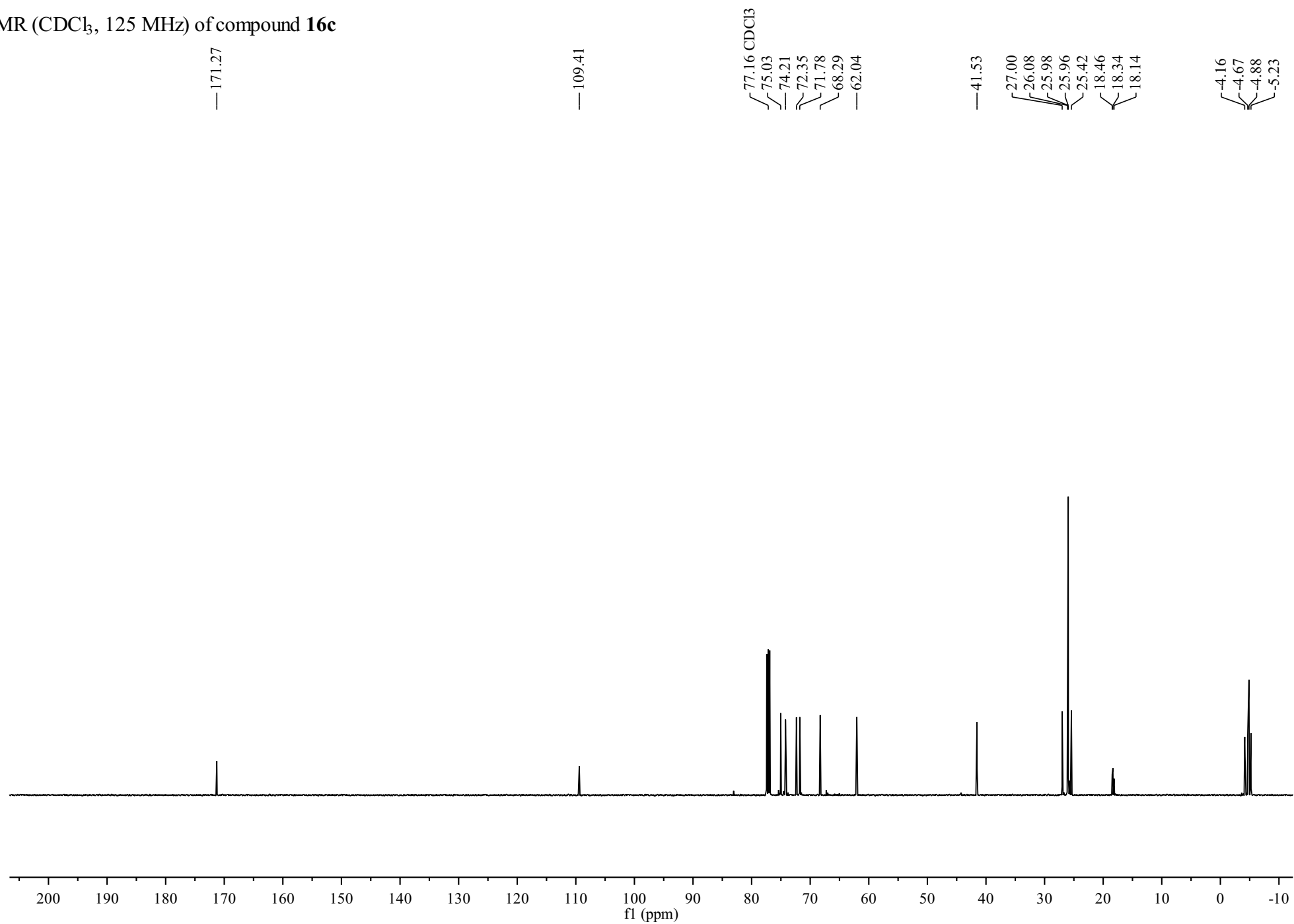


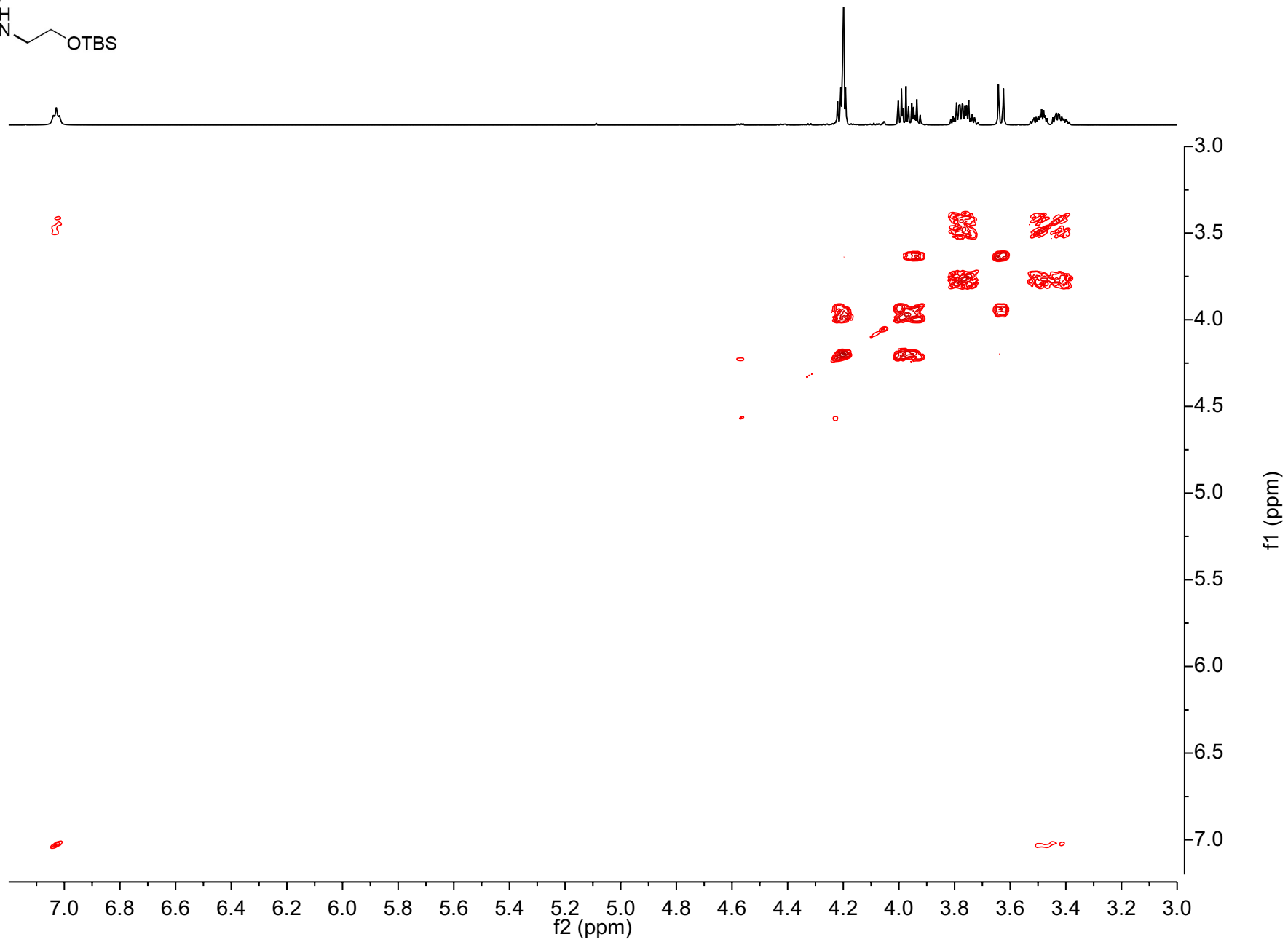
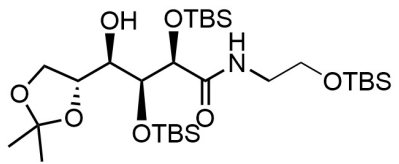
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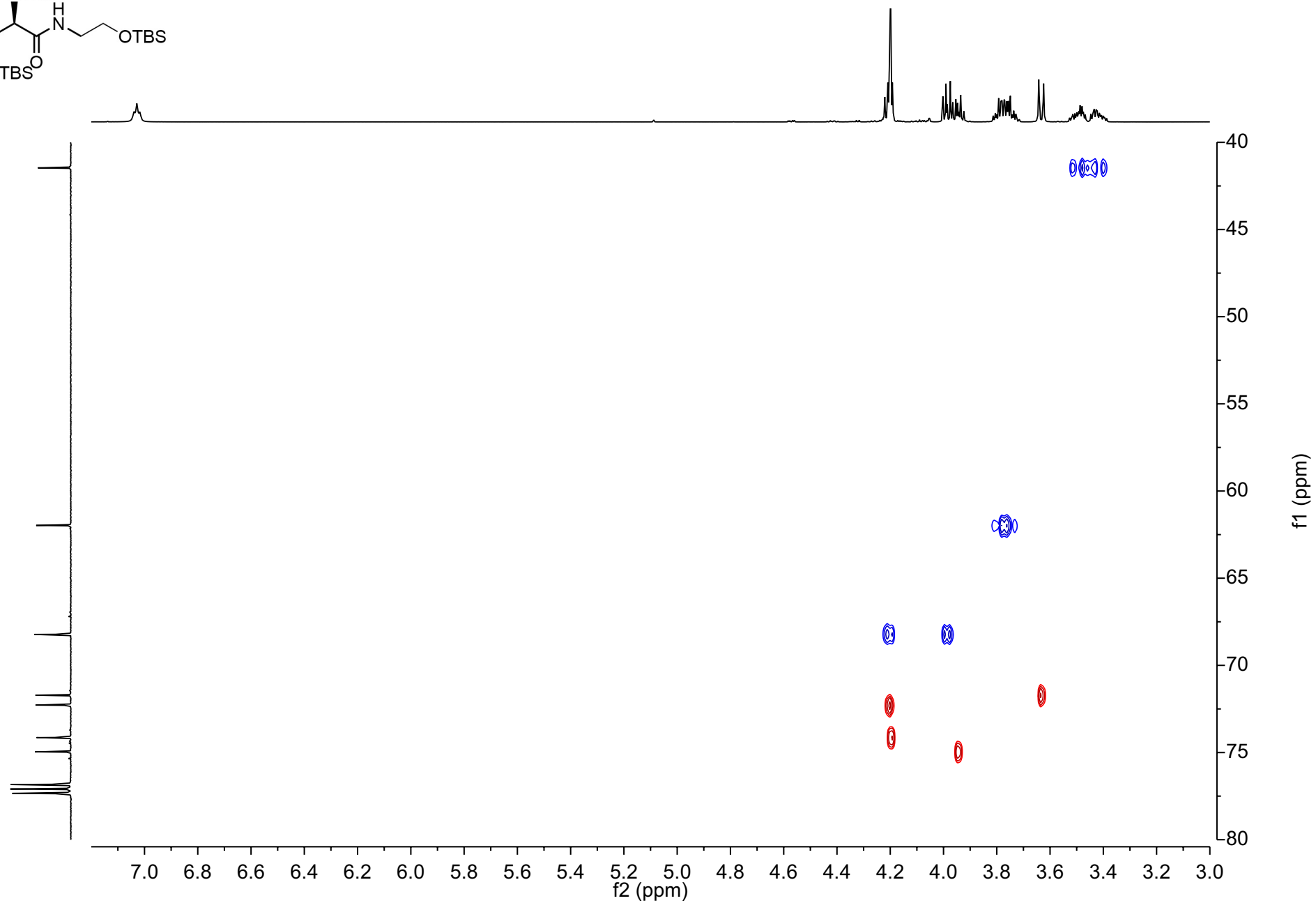
—7.26 CDCl_3



^{13}C NMR (CDCl_3 , 125 MHz) of compound **16c**

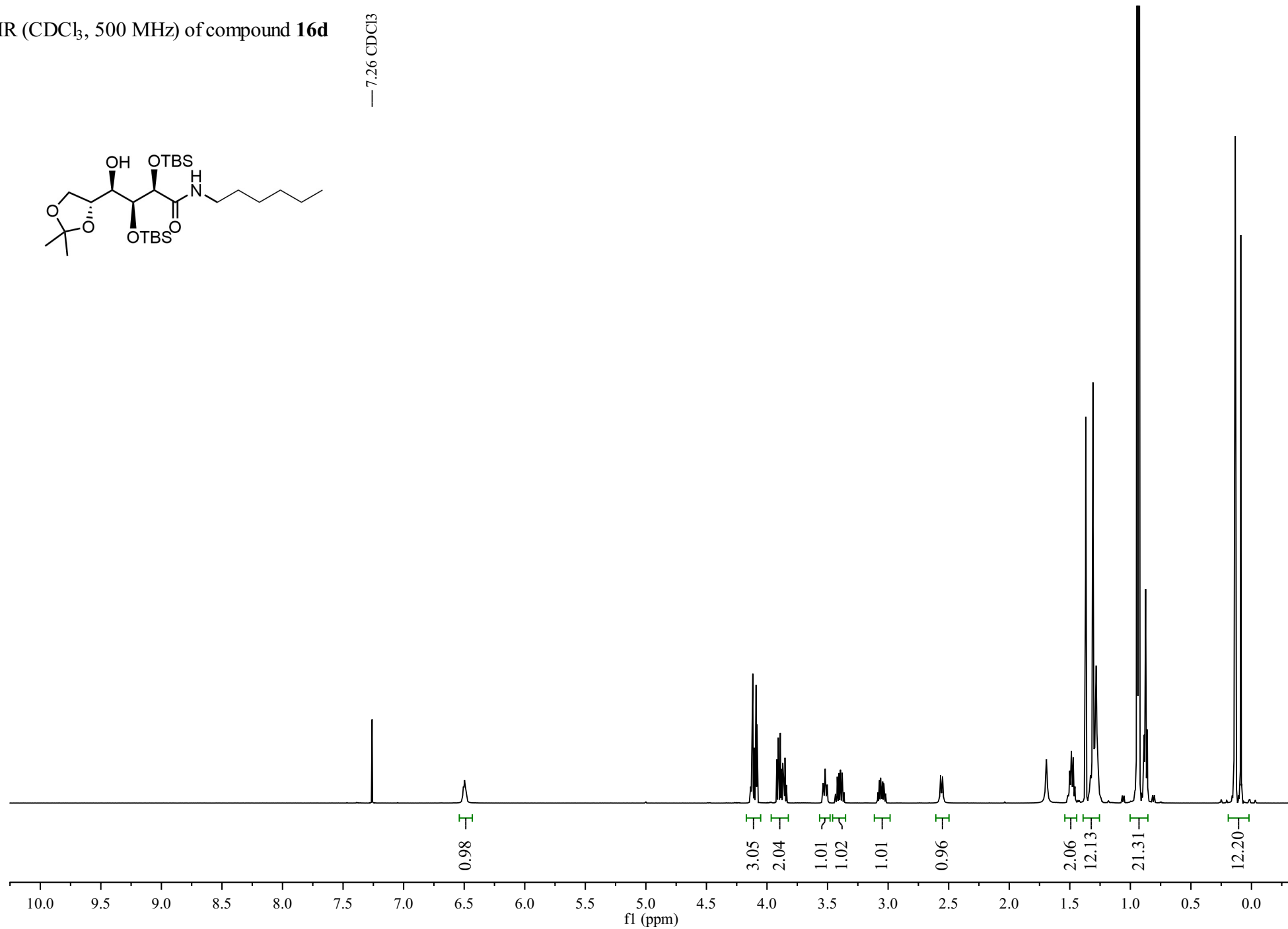
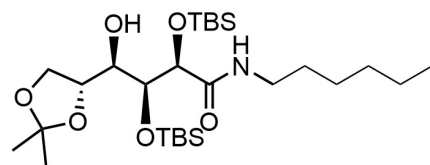




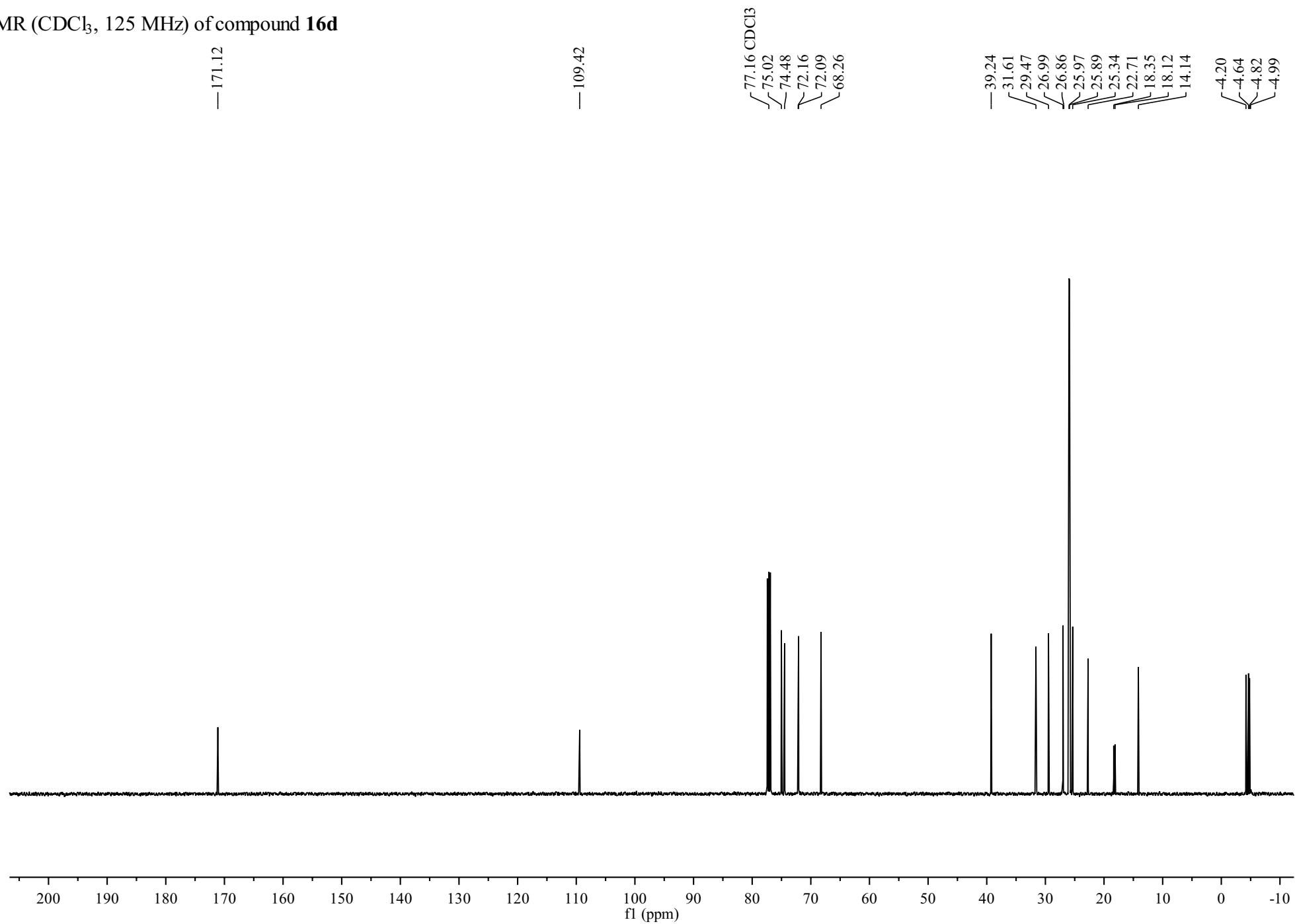
C[Si](C)(C)OC(=O)[C@H](OSi(C)(C)C)[C@@H](O)[C@H](OSi(C)(C)C)CO[C@]1(C)OC(C)(C)O1

^1H NMR (CDCl_3 , 500 MHz) of compound **16d**

— 7.26 CDCl_3

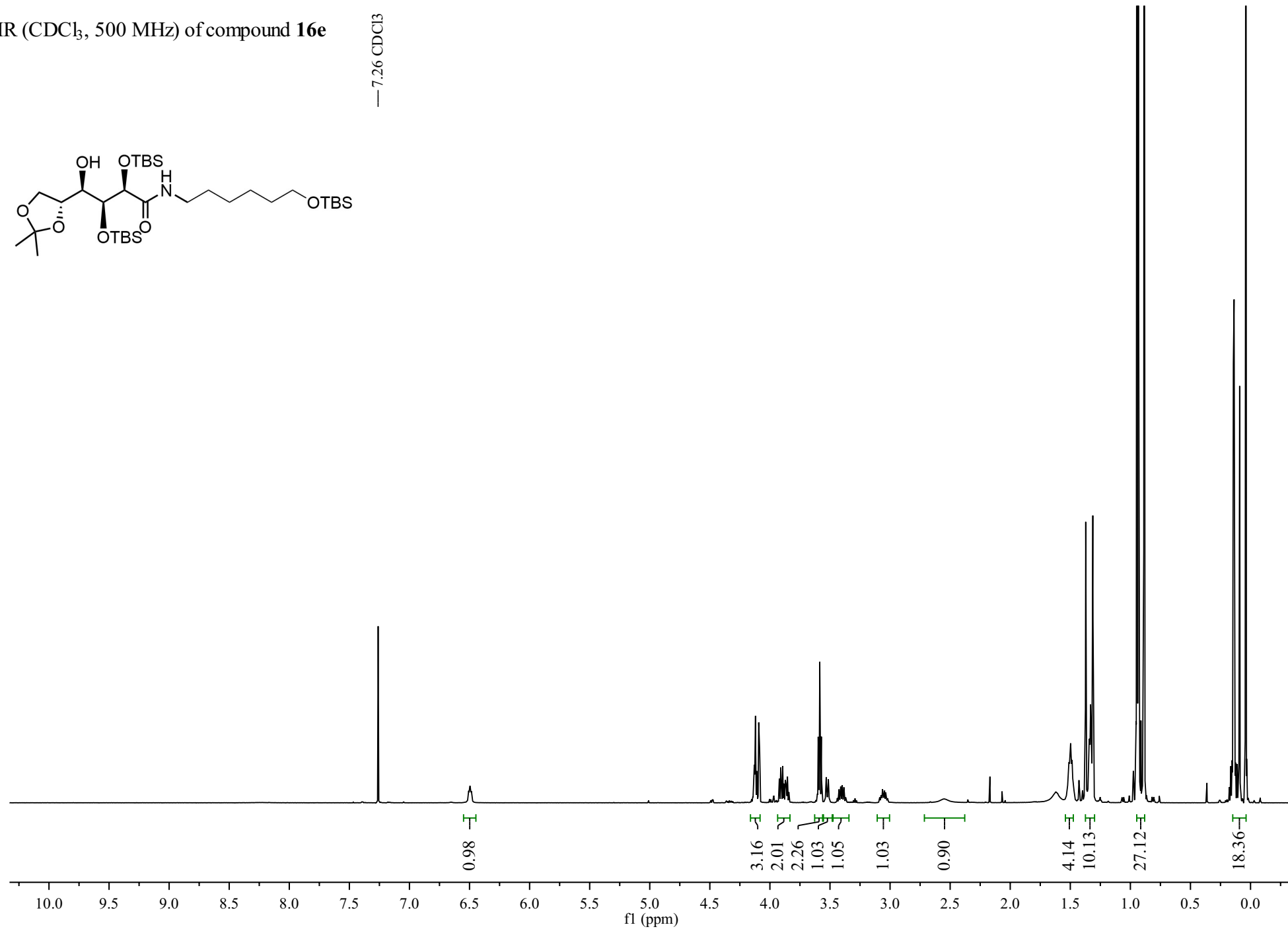
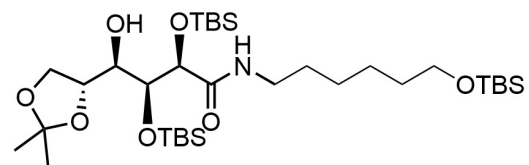


^{13}C NMR (CDCl_3 , 125 MHz) of compound **16d**

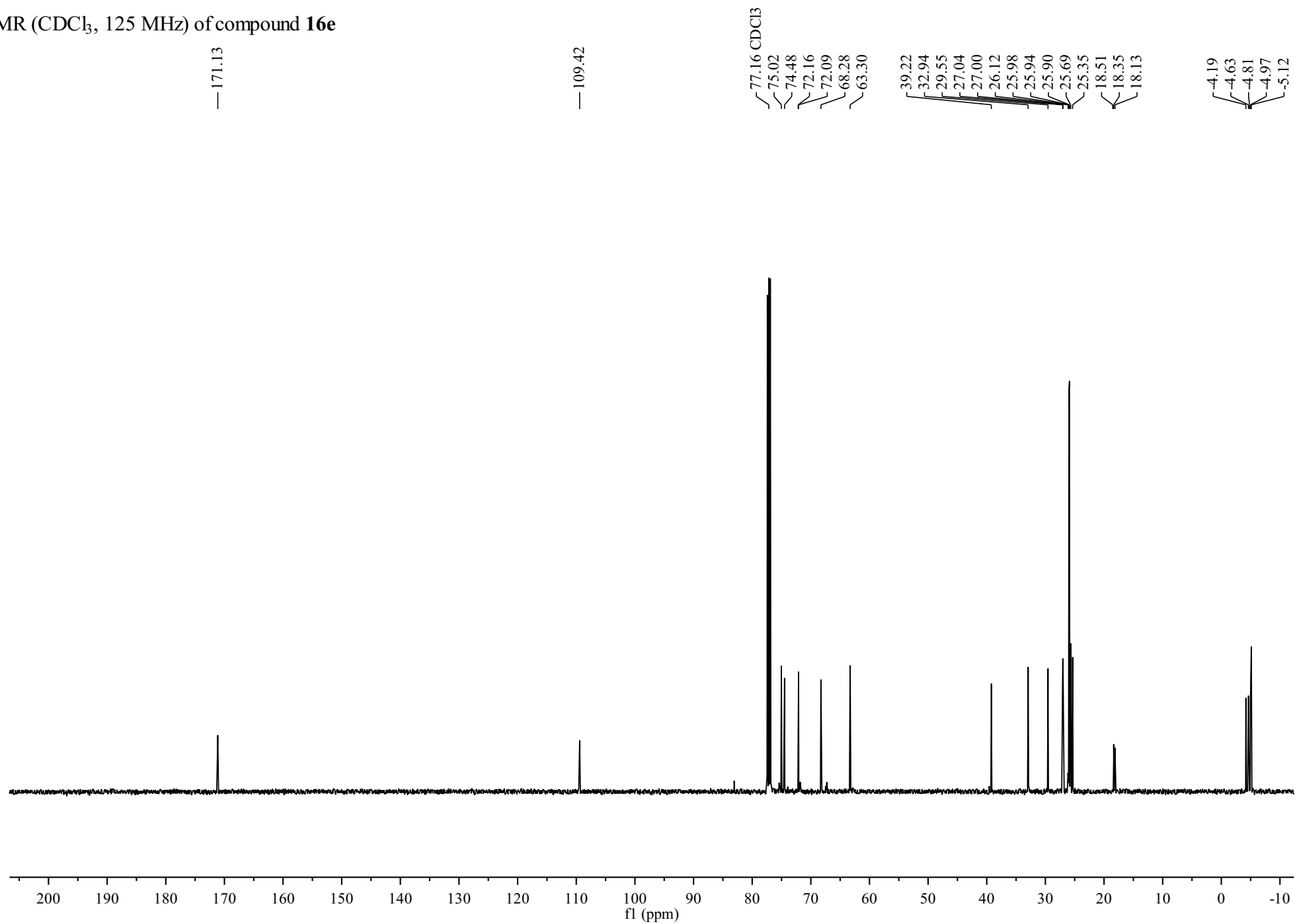


^1H NMR (CDCl_3 , 500 MHz) of compound **16e**

—7.26 CDCl_3

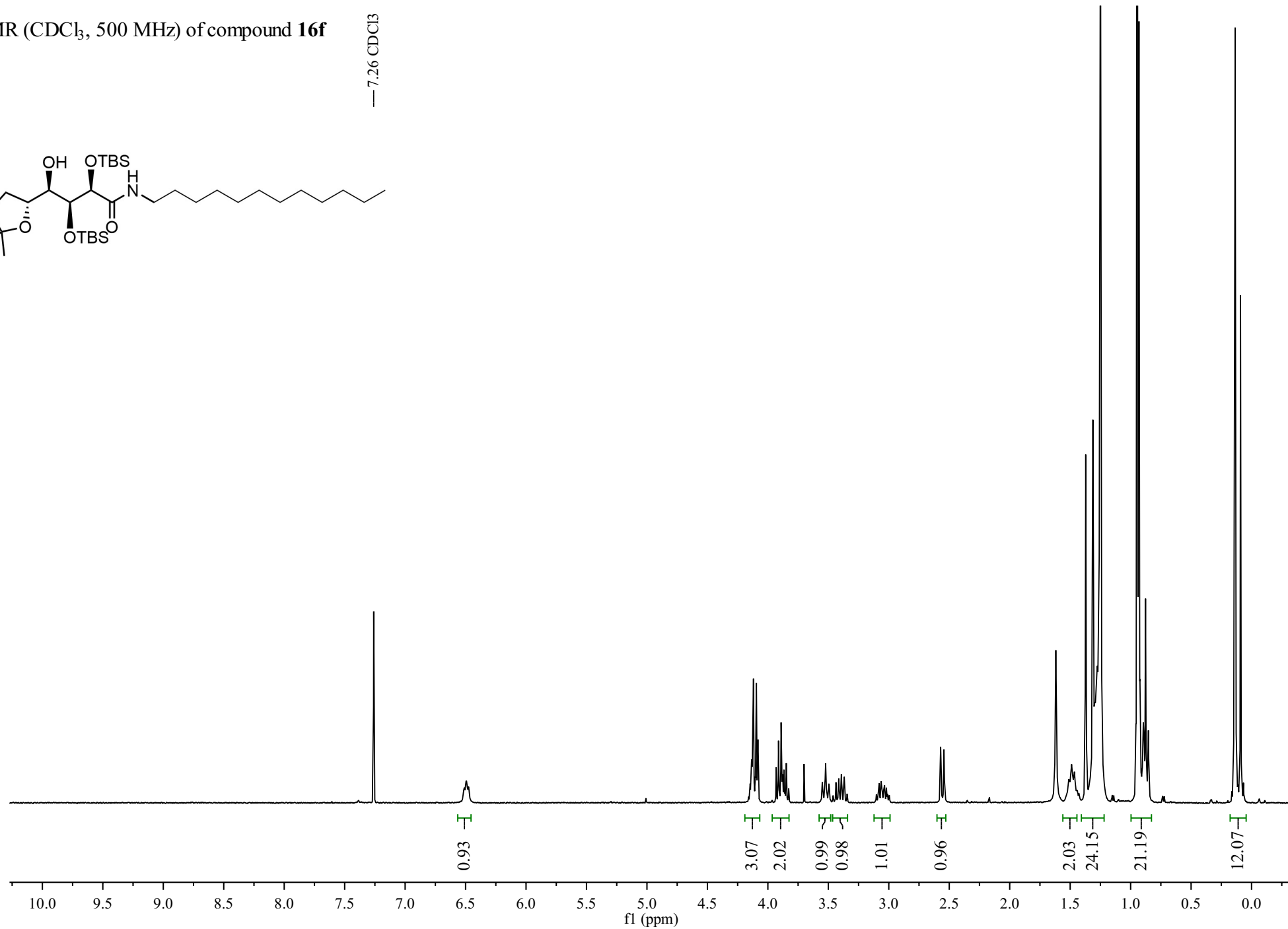
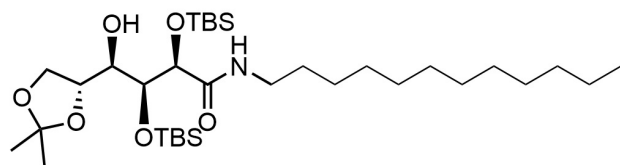


^{13}C NMR (CDCl_3 , 125 MHz) of compound **16e**

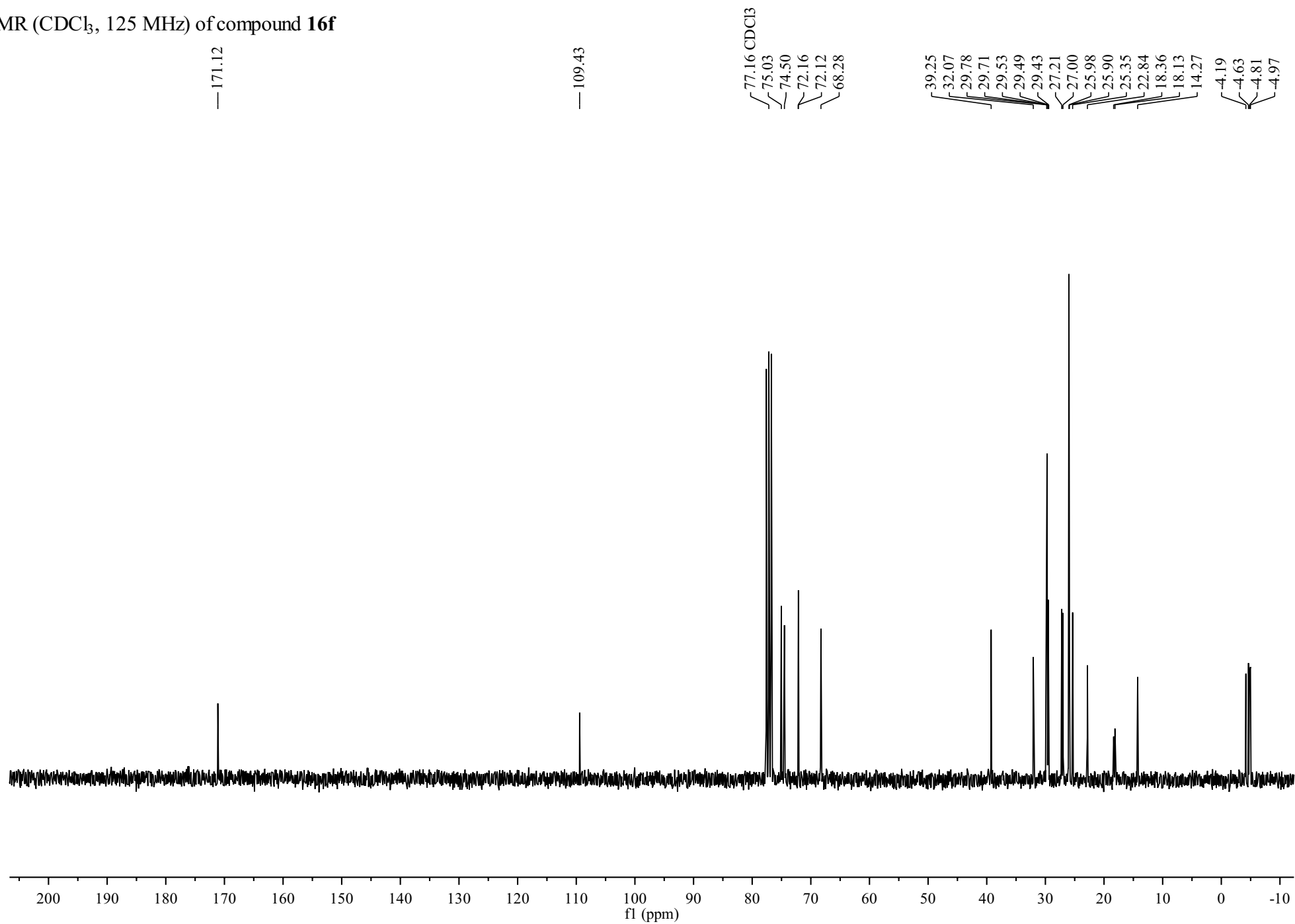


^1H NMR (CDCl_3 , 500 MHz) of compound **16f**

—7.26 CDCl_3

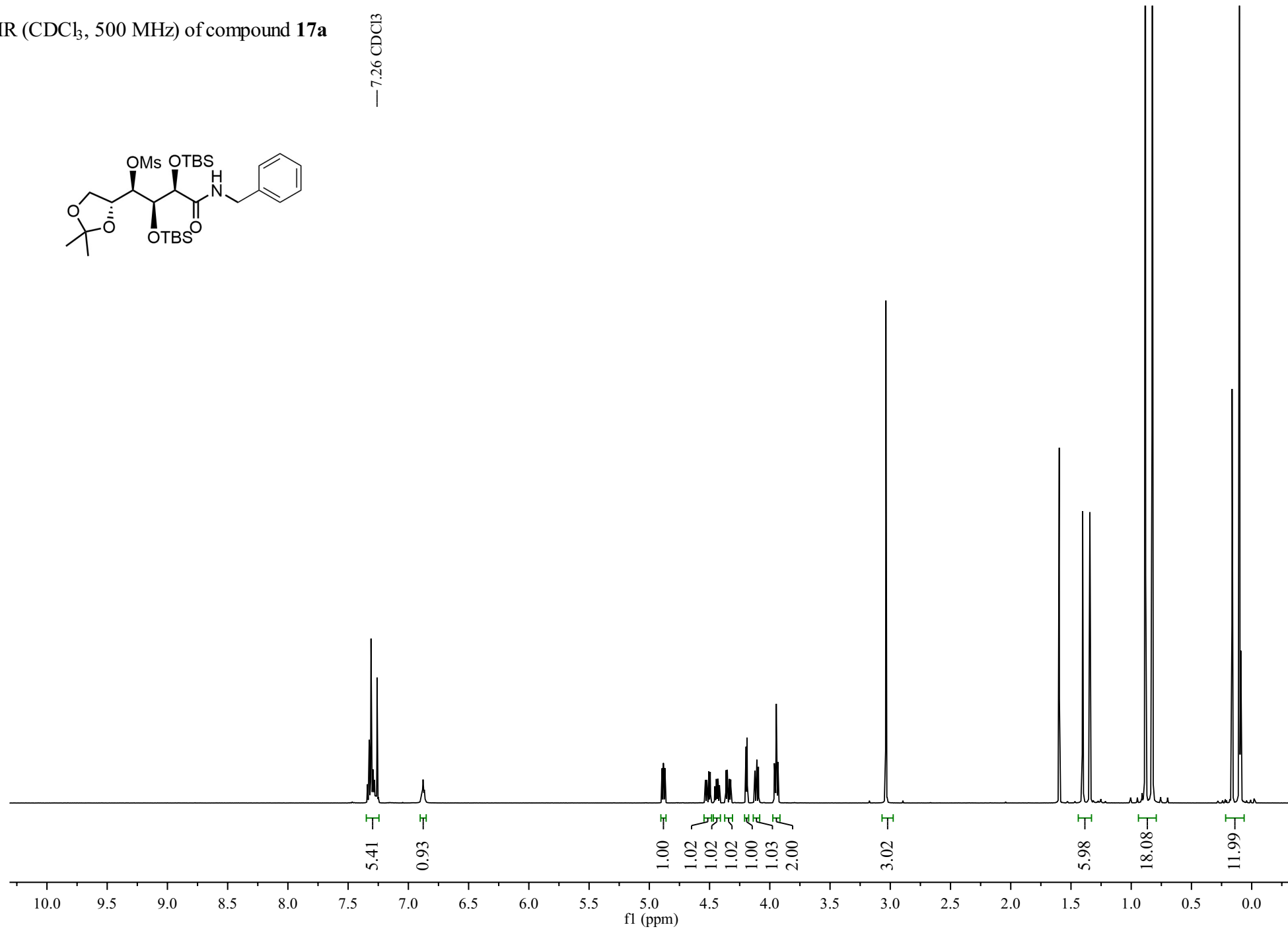
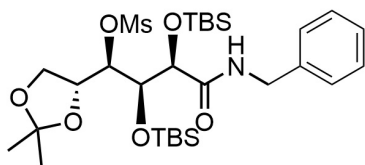


^{13}C NMR (CDCl_3 , 125 MHz) of compound **16f**

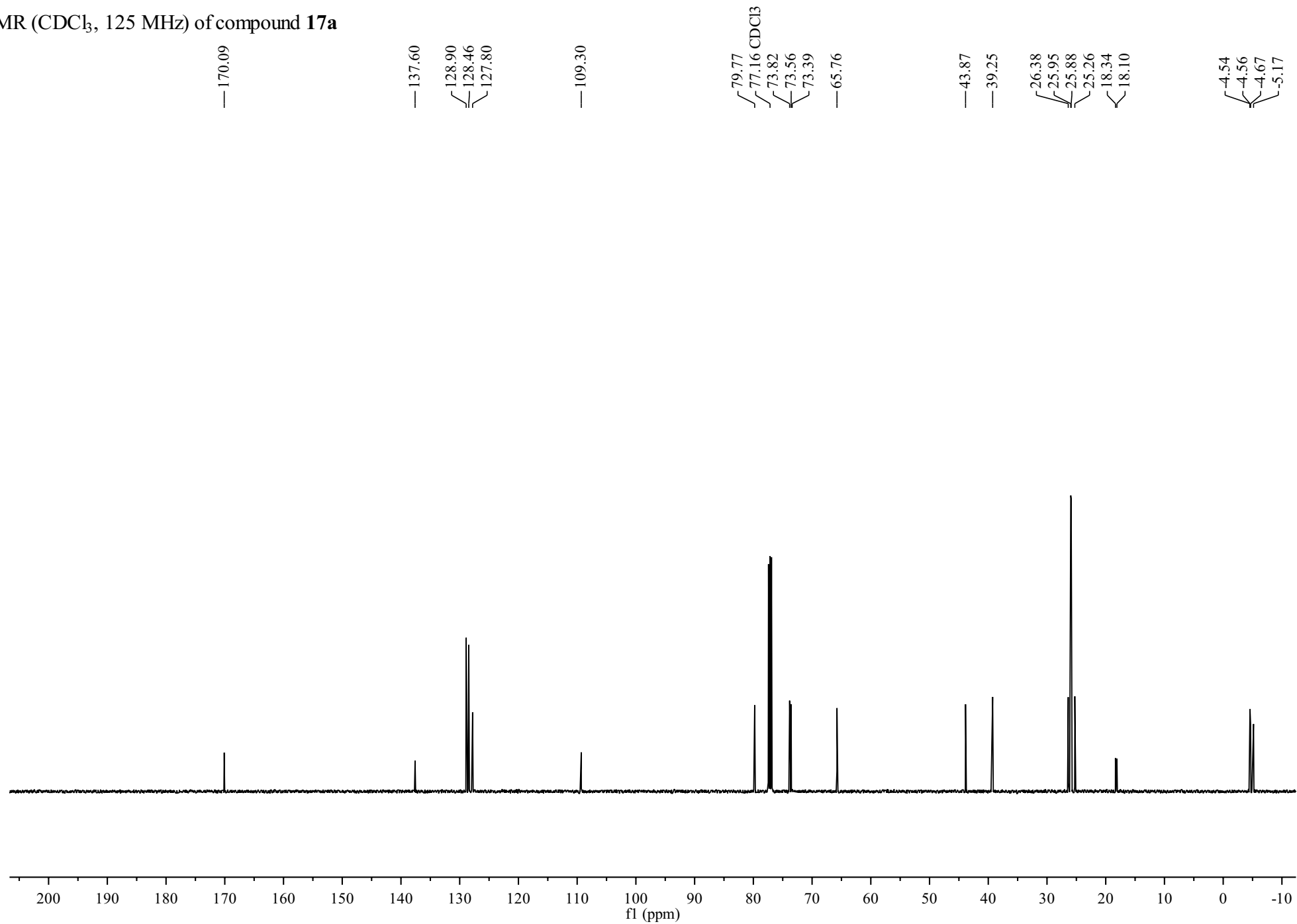


^1H NMR (CDCl_3 , 500 MHz) of compound **17a**

—7.26 CDCl_3

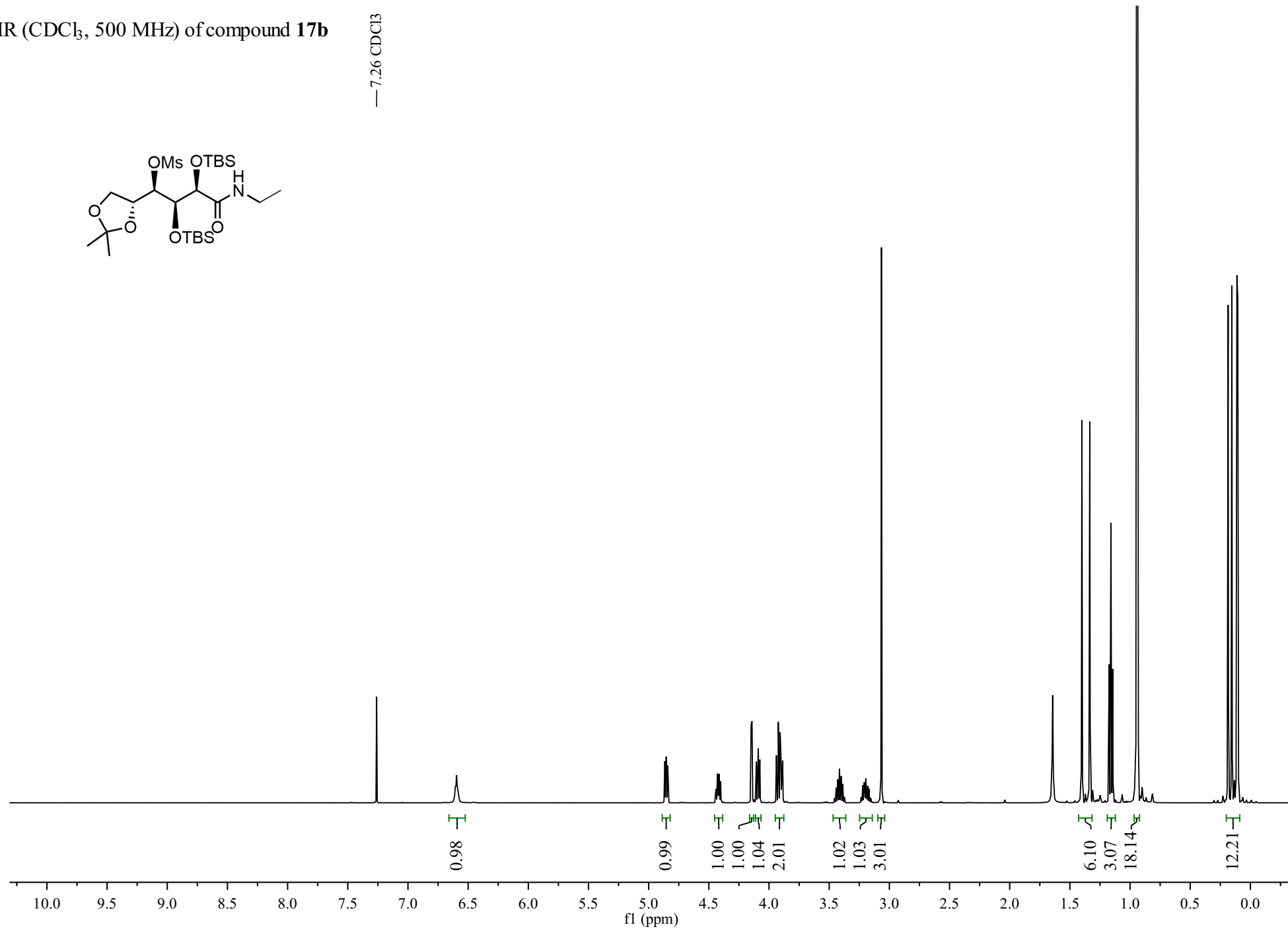
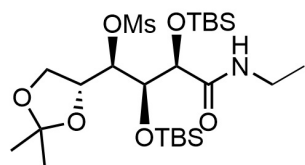


^{13}C NMR (CDCl_3 , 125 MHz) of compound **17a**

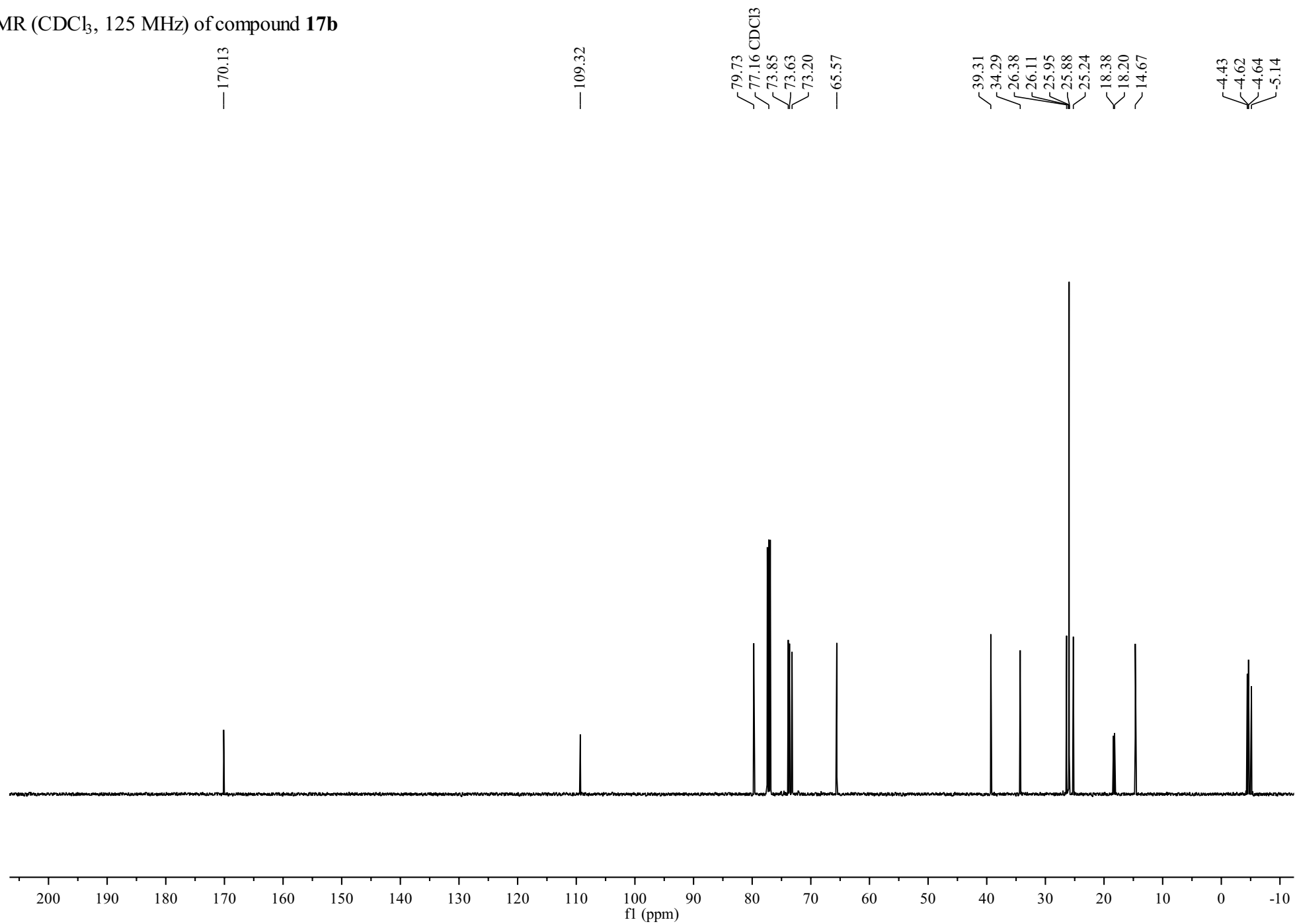


^1H NMR (CDCl_3 , 500 MHz) of compound **17b**

—7.26 CDCl_3

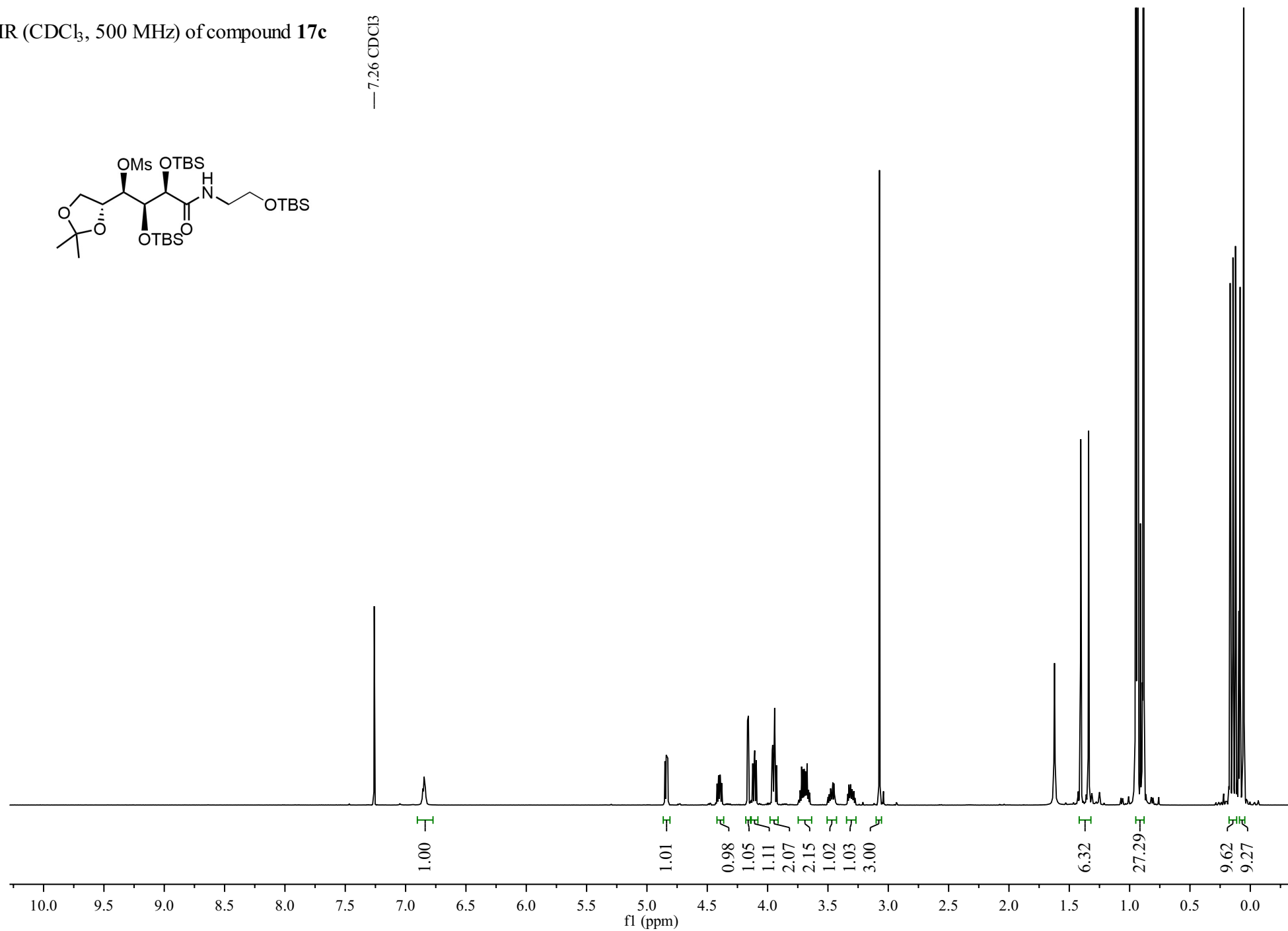
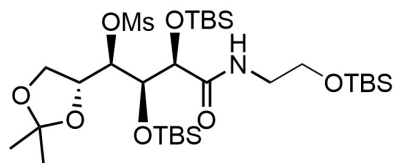


^{13}C NMR (CDCl_3 , 125 MHz) of compound **17b**

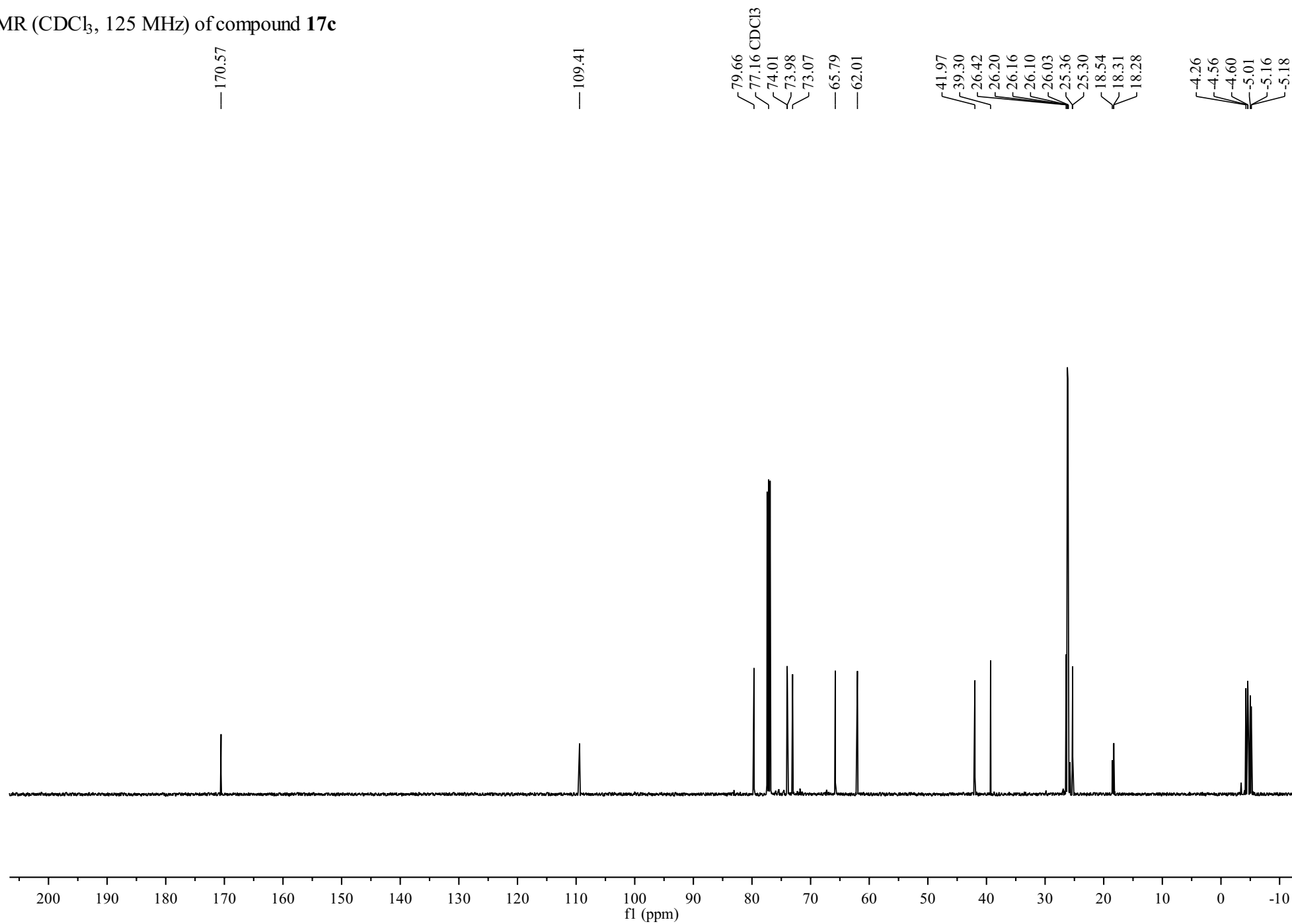


^1H NMR (CDCl_3 , 500 MHz) of compound **17c**

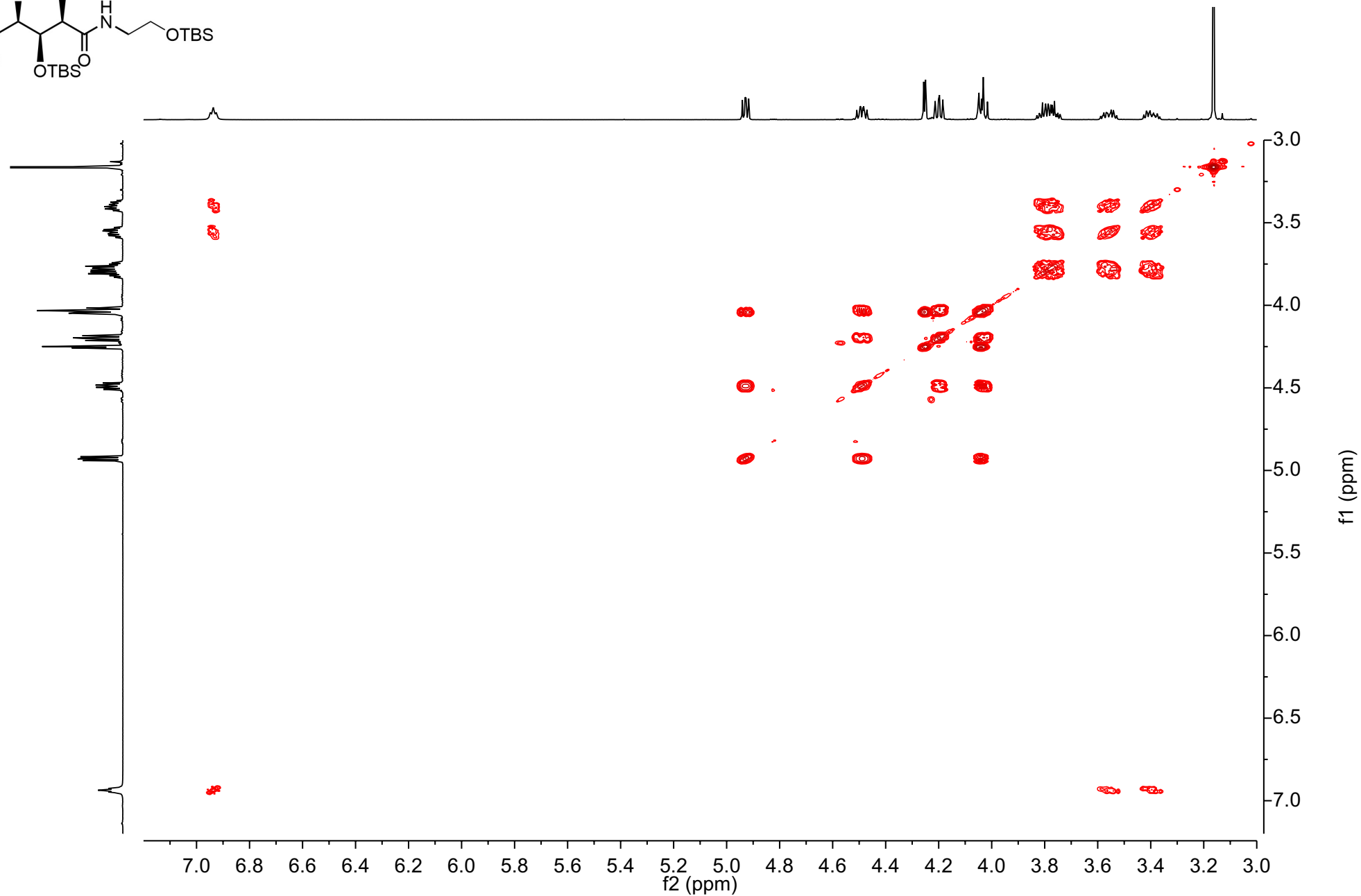
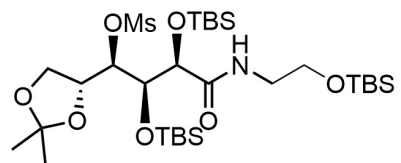
—7.26 CDCl_3

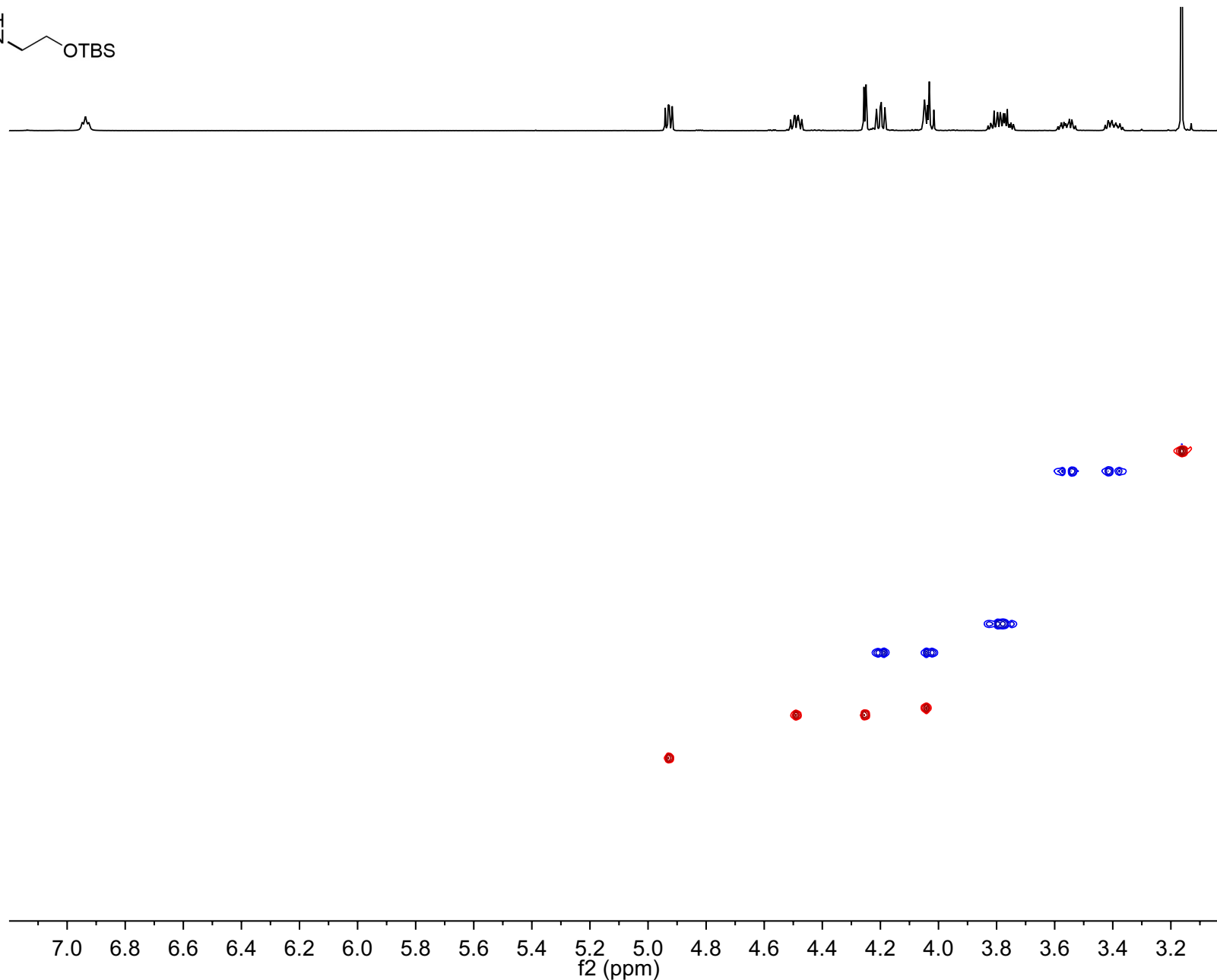


^{13}C NMR (CDCl_3 , 125 MHz) of compound **17c**



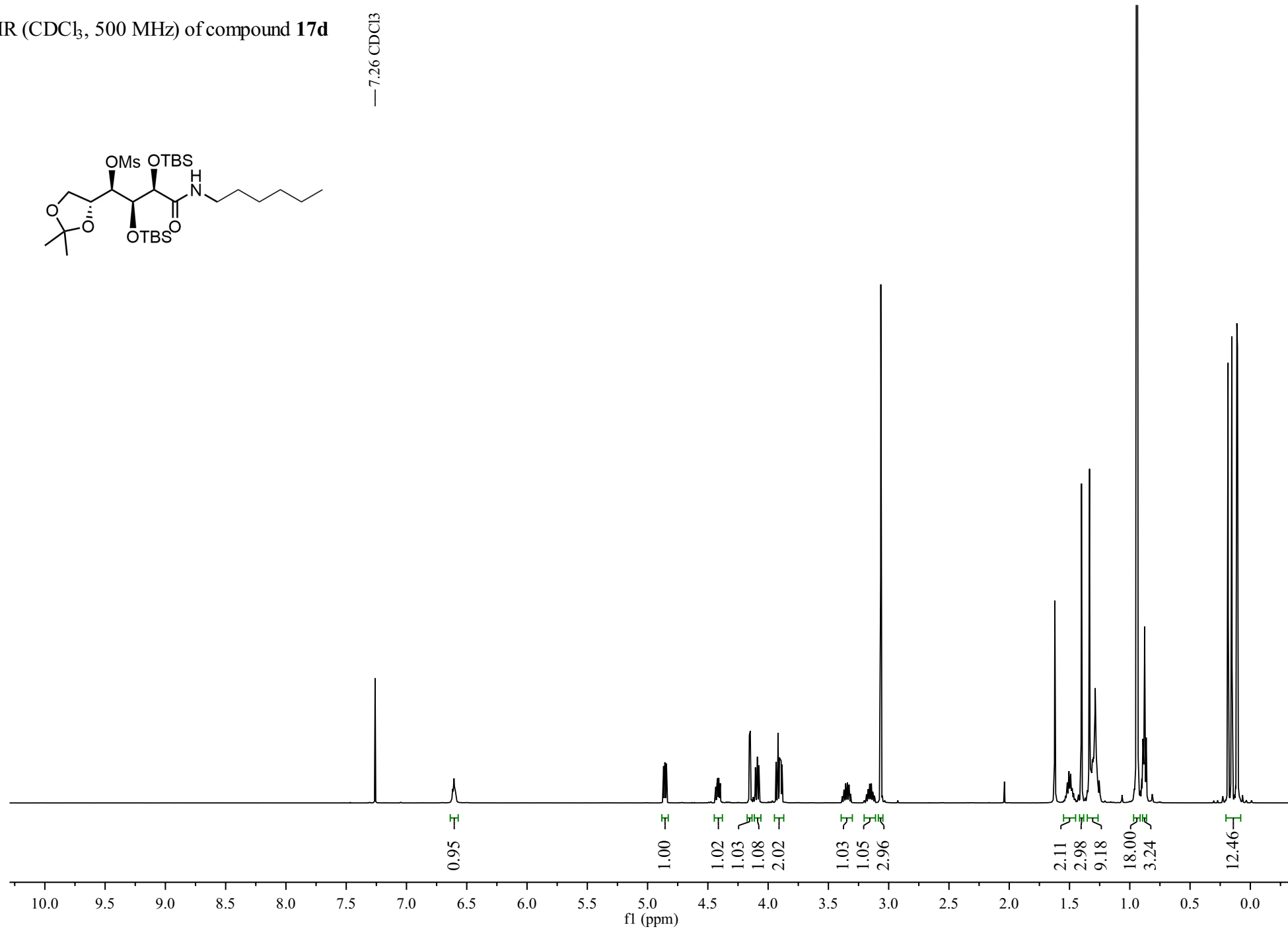
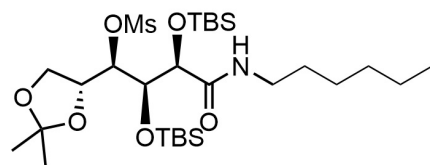
COSY (CDCl₃) of compound **17c**



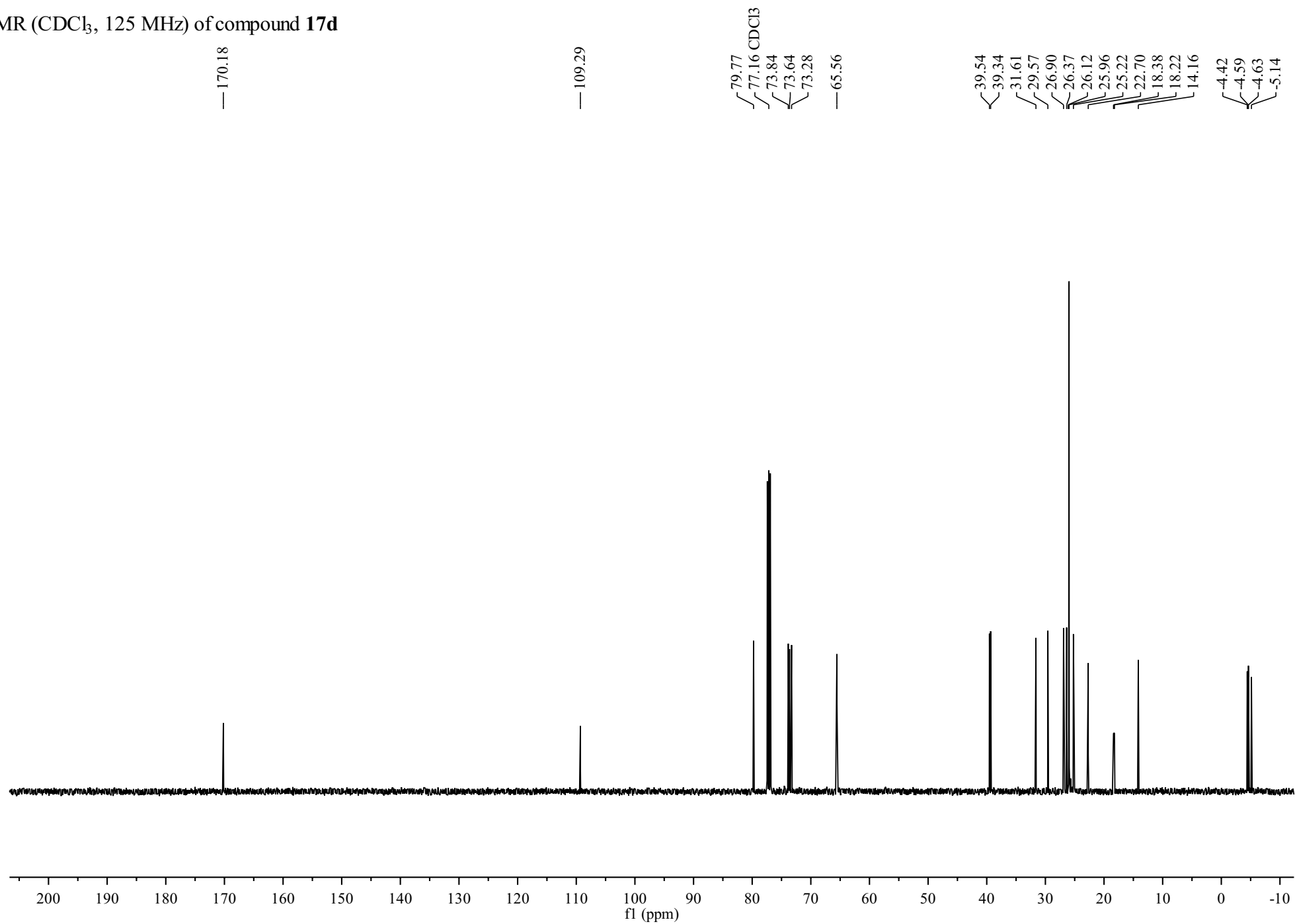


^1H NMR (CDCl_3 , 500 MHz) of compound **17d**

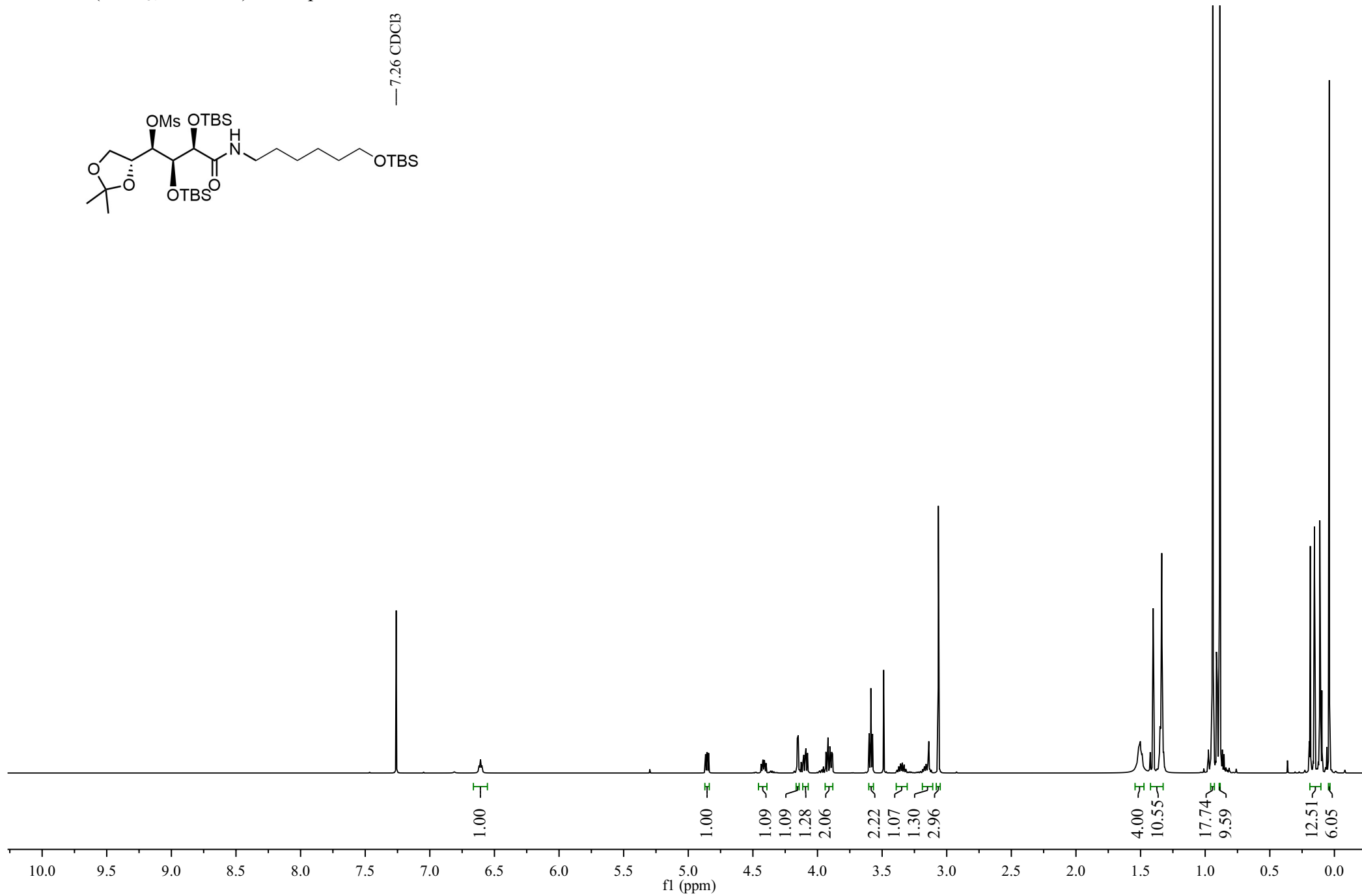
— 7.26 CDCl_3



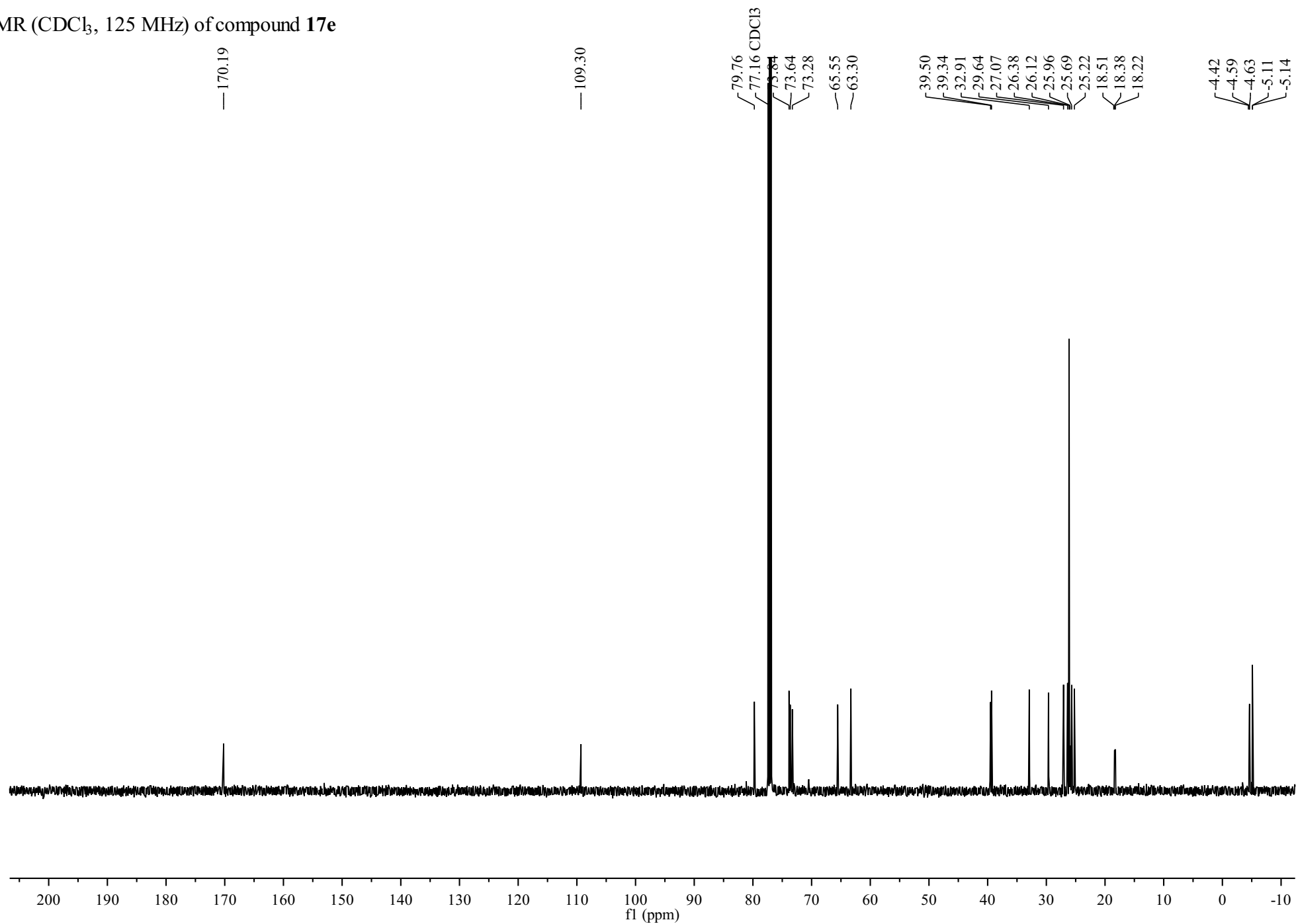
^{13}C NMR (CDCl_3 , 125 MHz) of compound **17d**



^1H NMR (CDCl_3 , 500 MHz) of compound **17e**

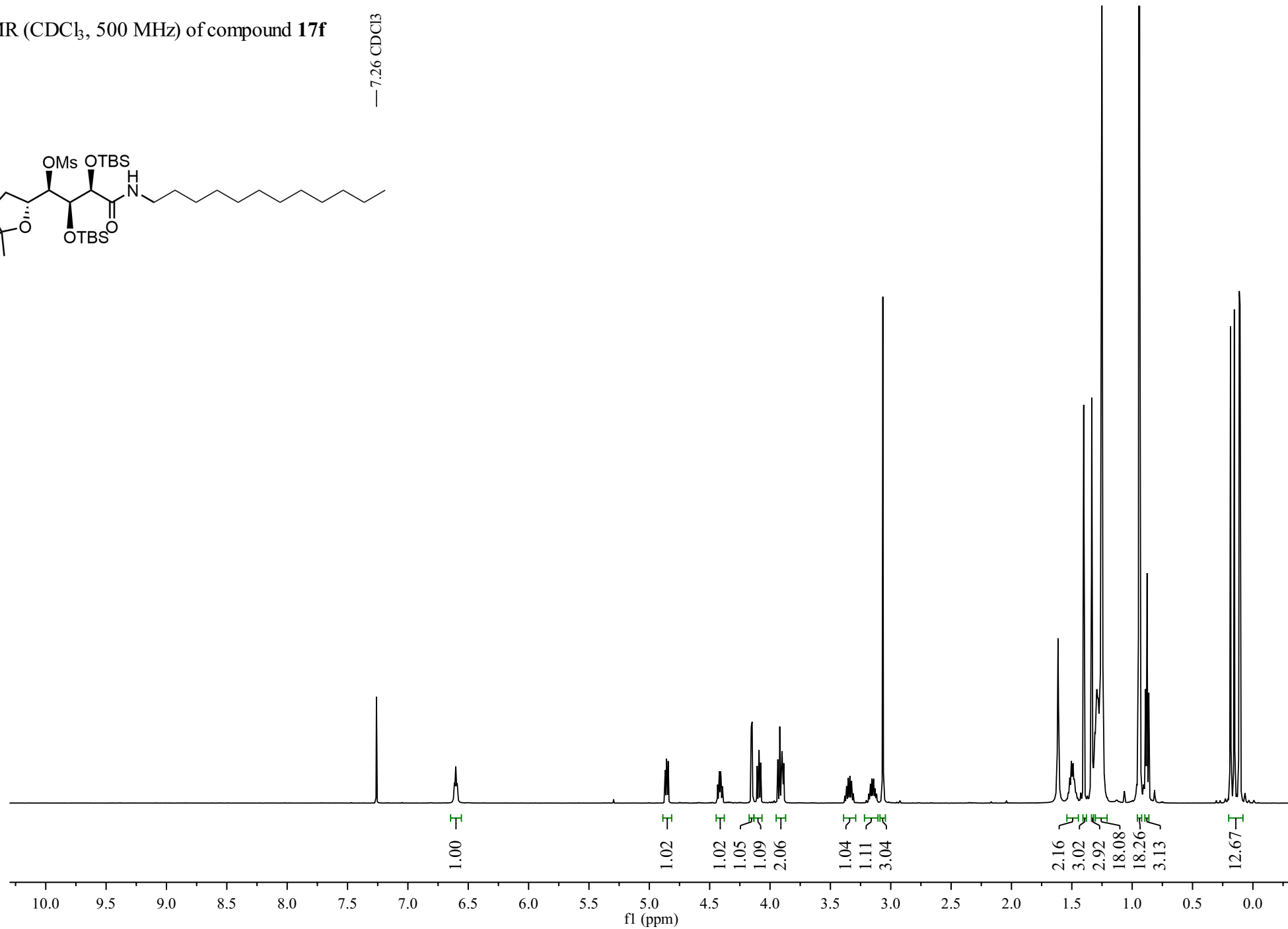
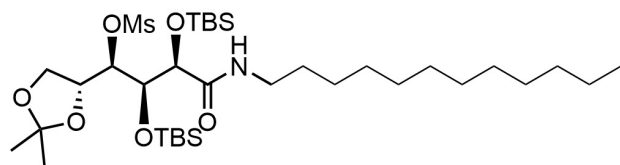


^{13}C NMR (CDCl_3 , 125 MHz) of compound **17e**

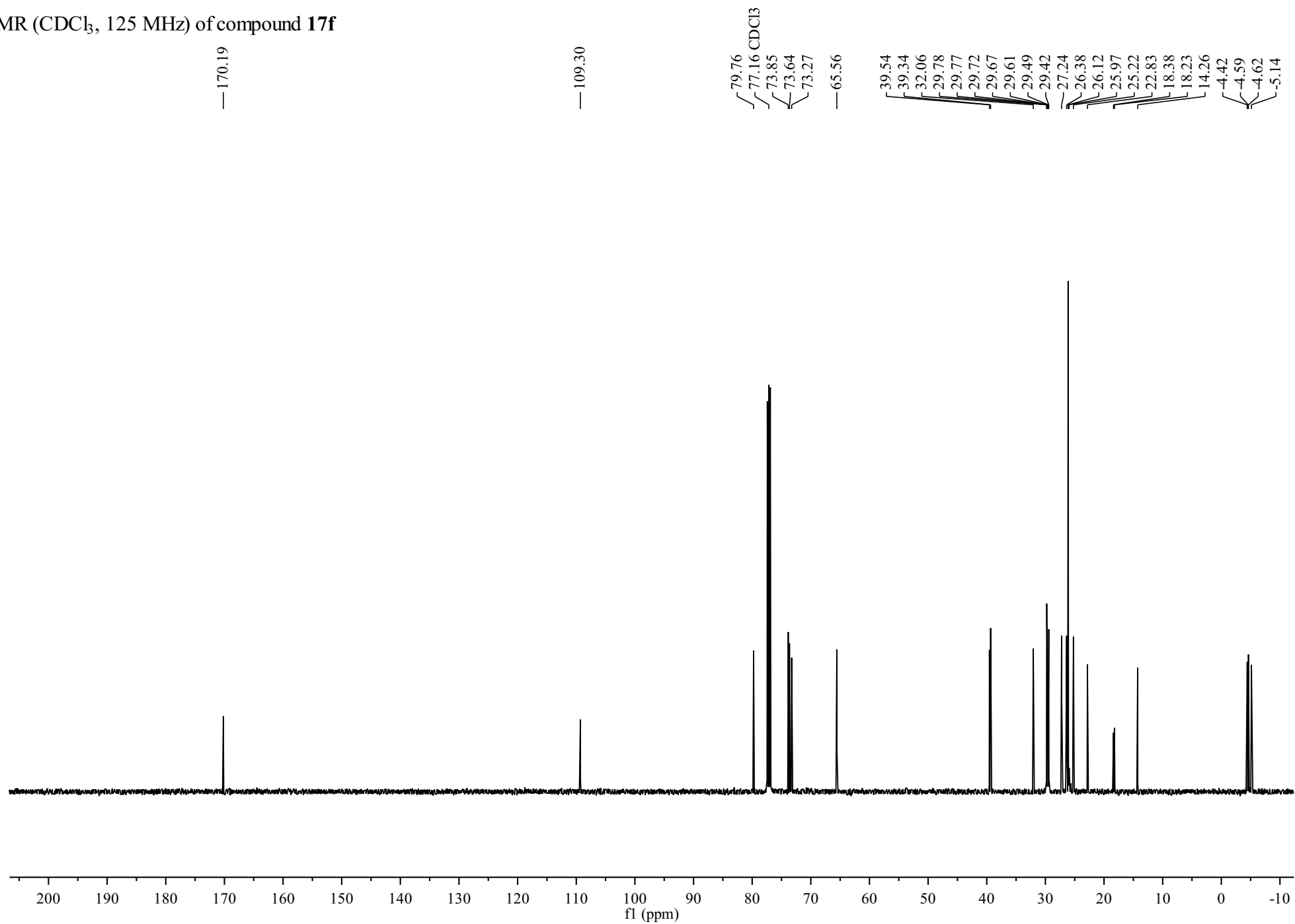


^1H NMR (CDCl_3 , 500 MHz) of compound **17f**

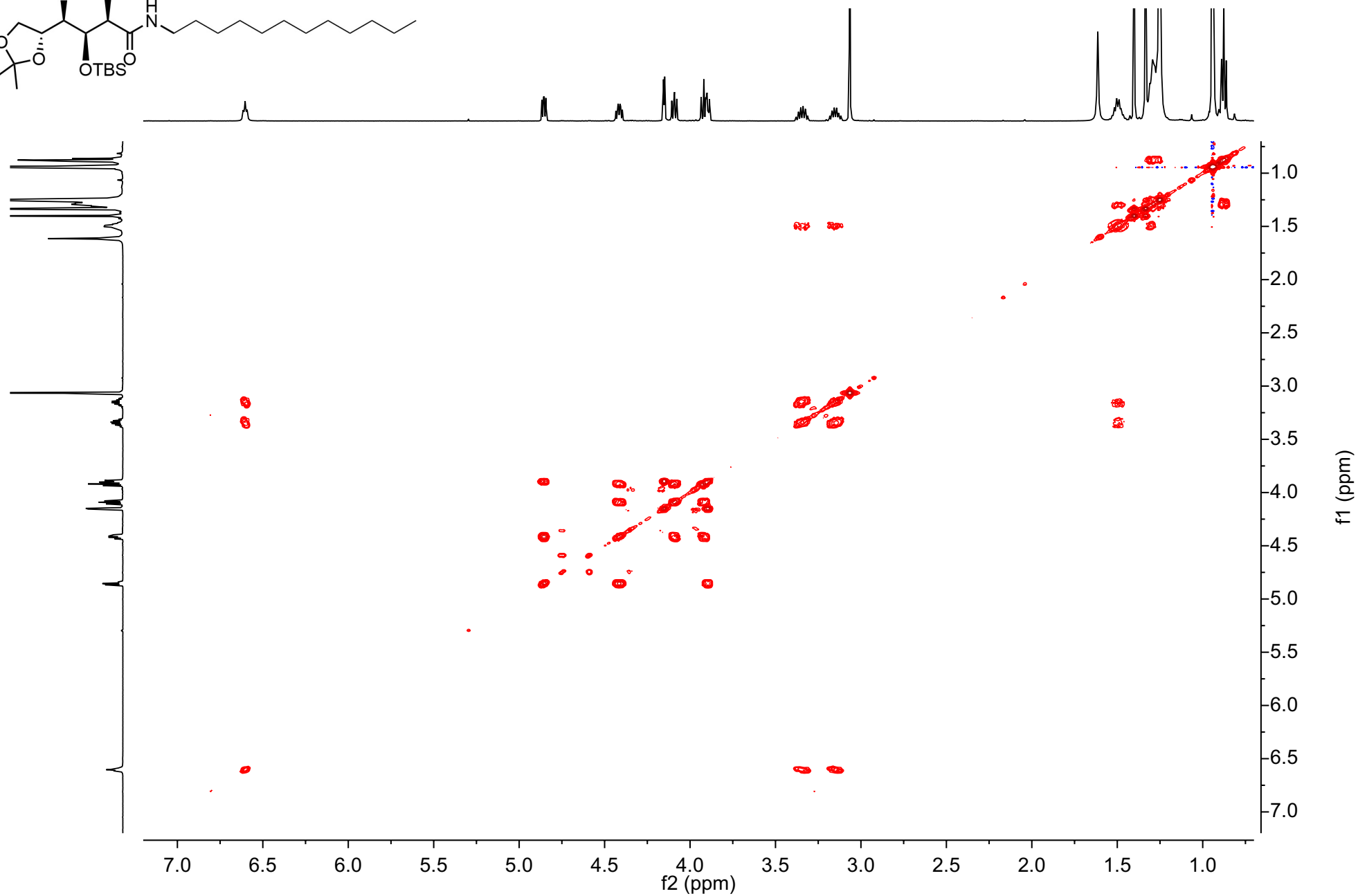
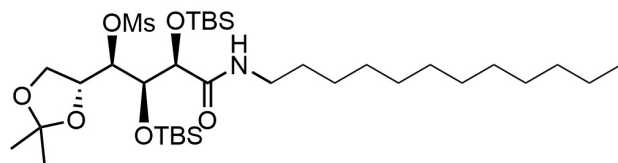
—7.26 CDCl_3



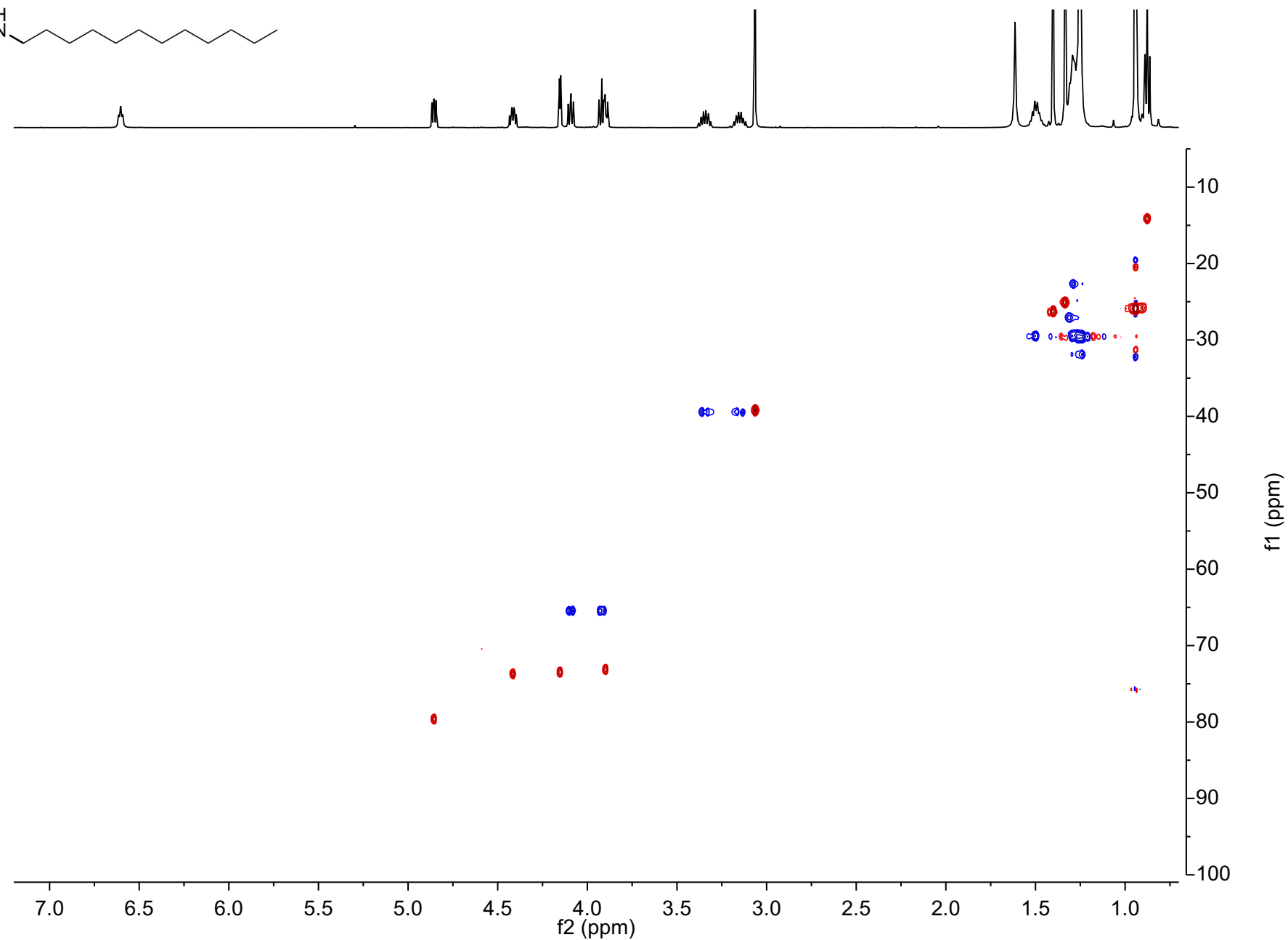
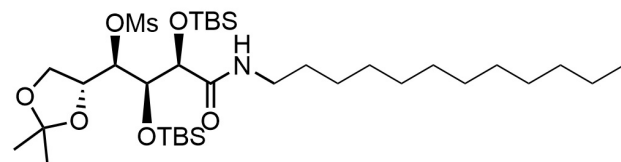
^{13}C NMR (CDCl_3 , 125 MHz) of compound **17f**



COSY (CDCl₃) of compound **17f**

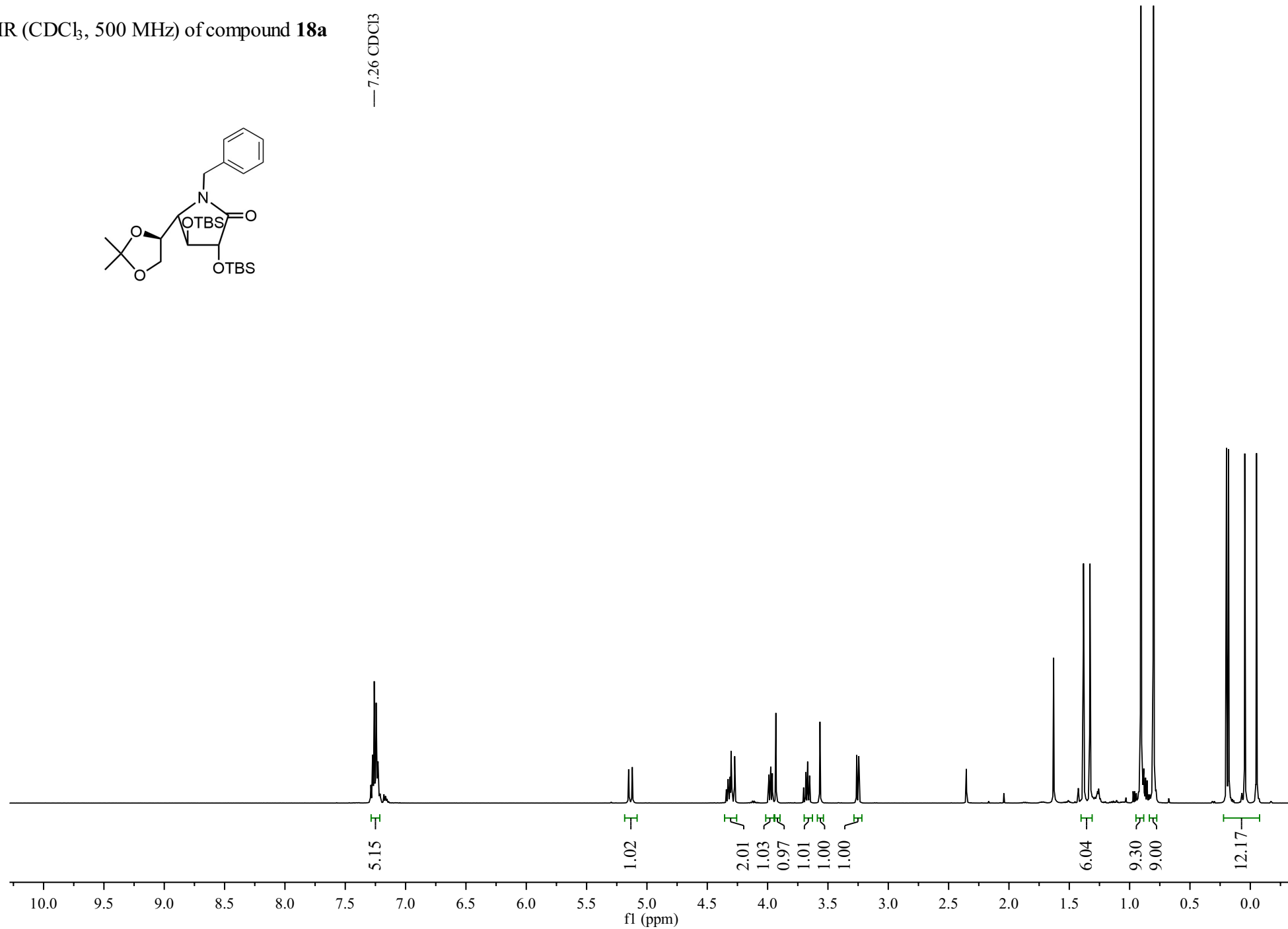
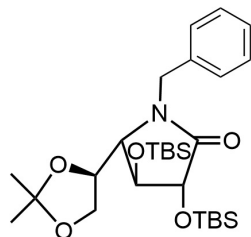


HSQC (CDCl₃) of compound **17f**

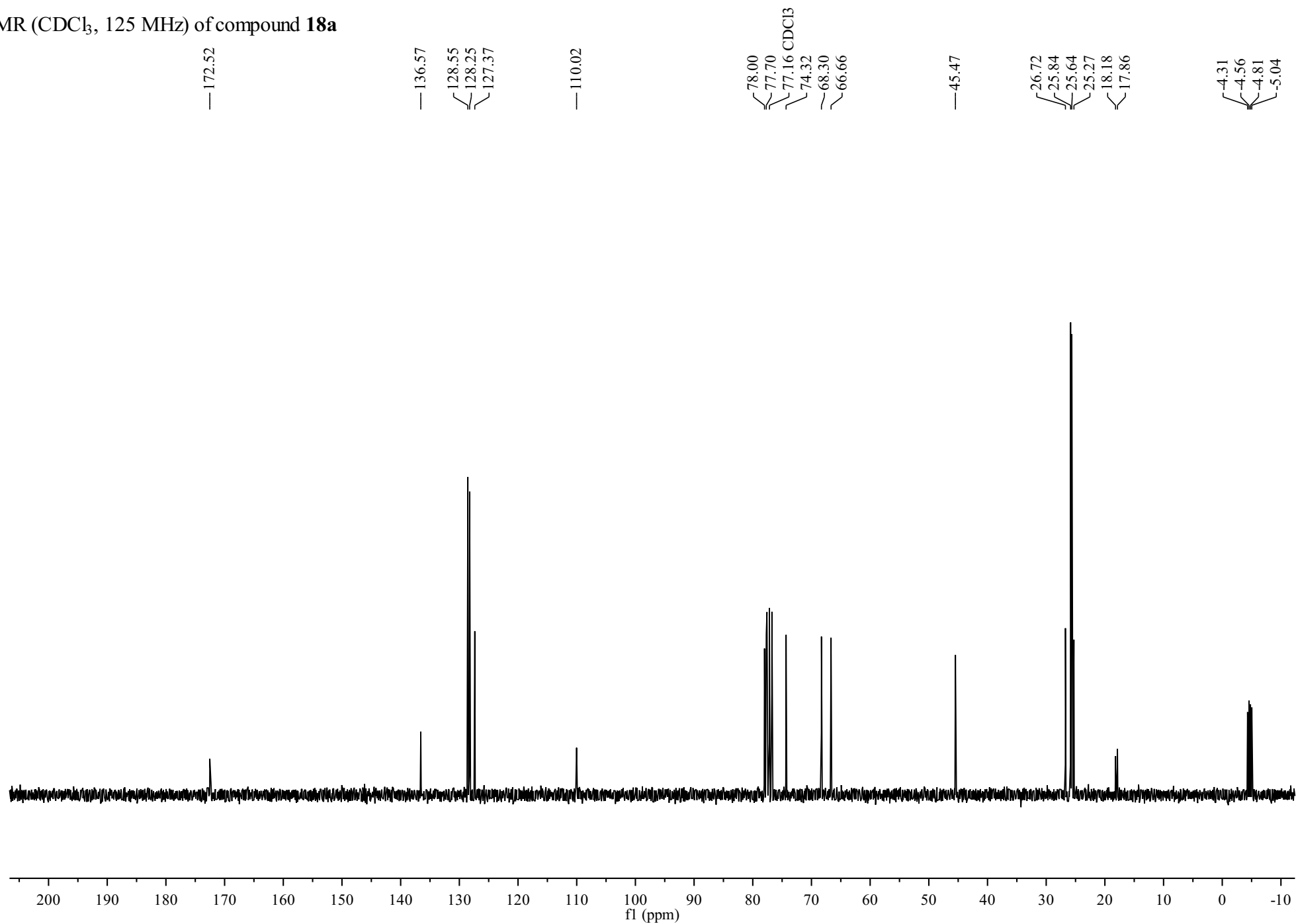


^1H NMR (CDCl_3 , 500 MHz) of compound **18a**

—7.26 CDCl_3

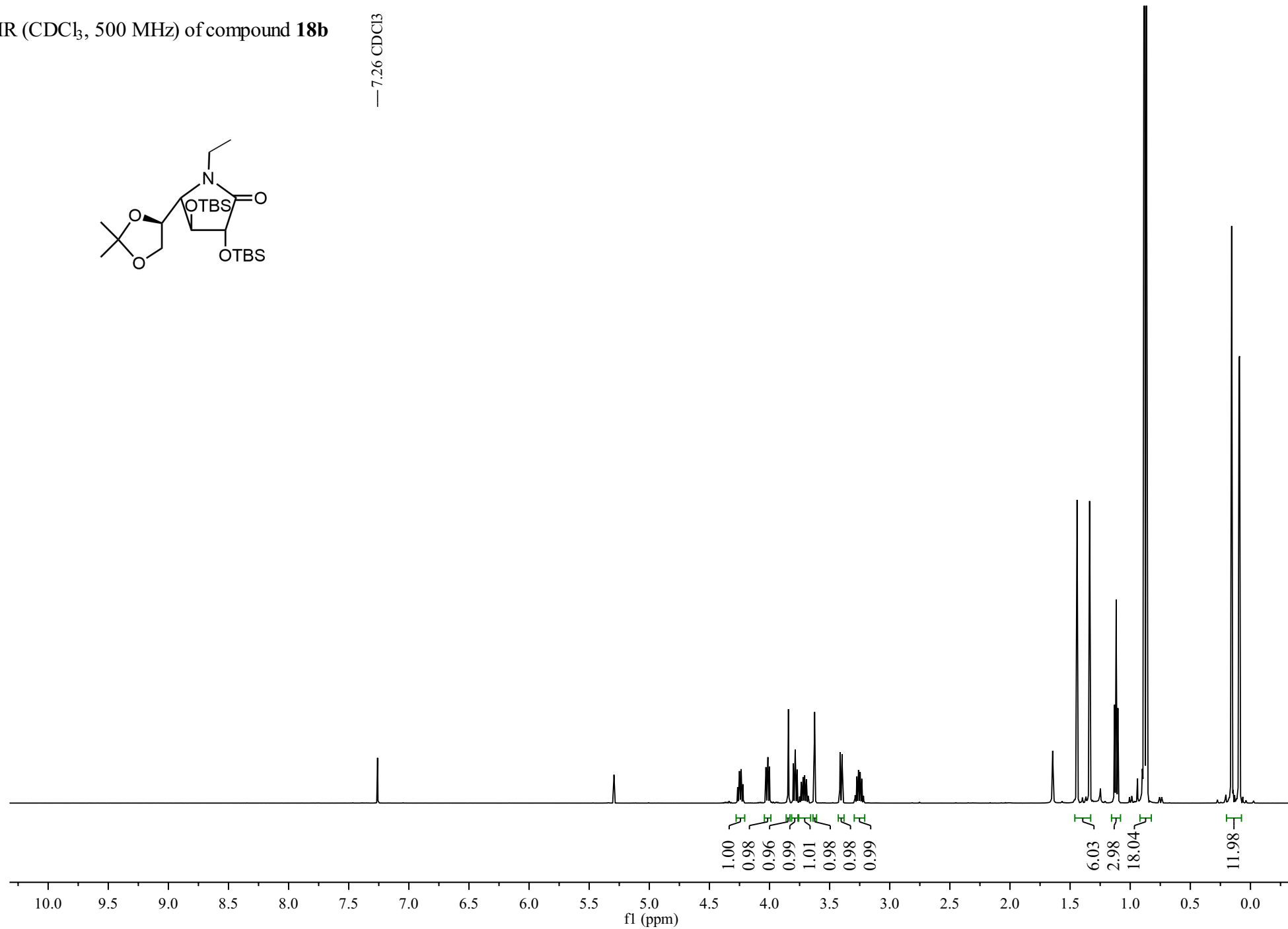
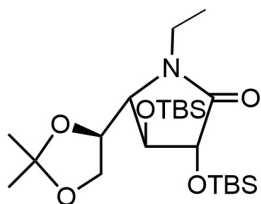


^{13}C NMR (CDCl_3 , 125 MHz) of compound **18a**

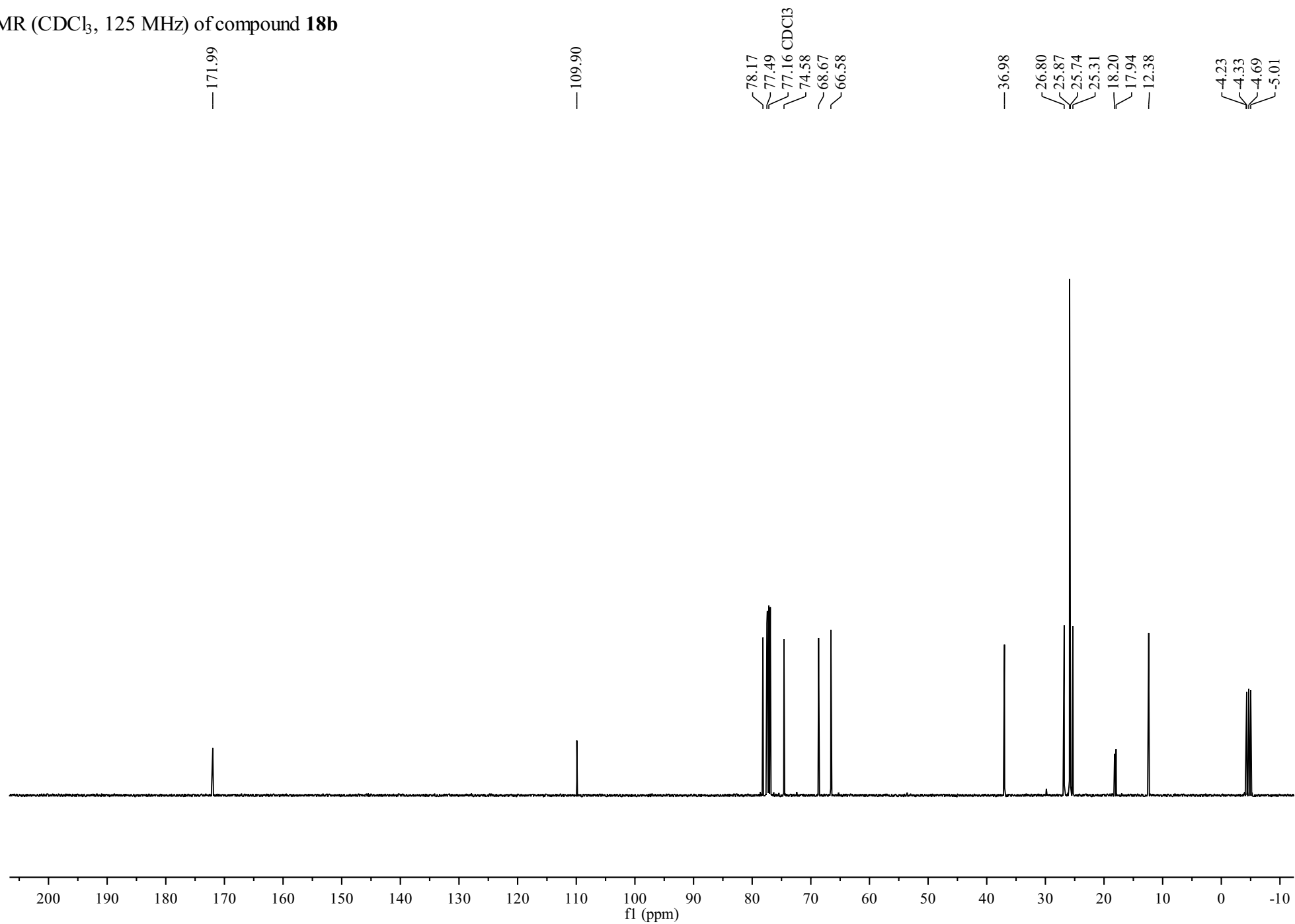


^1H NMR (CDCl_3 , 500 MHz) of compound **18b**

—7.26 CDCl_3

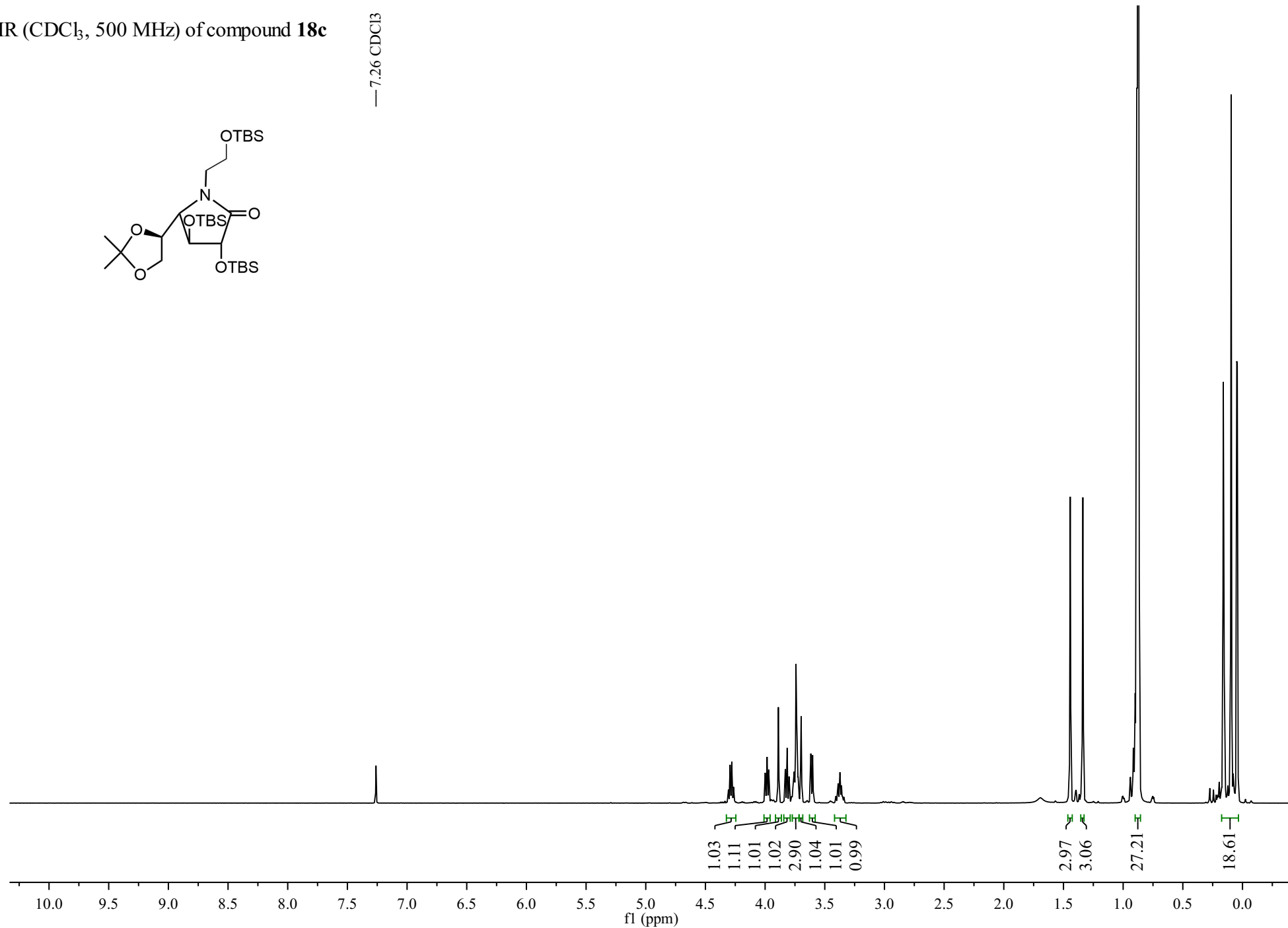
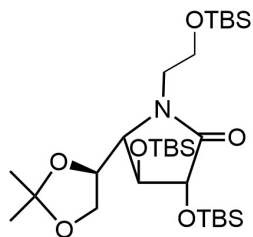


^{13}C NMR (CDCl_3 , 125 MHz) of compound **18b**

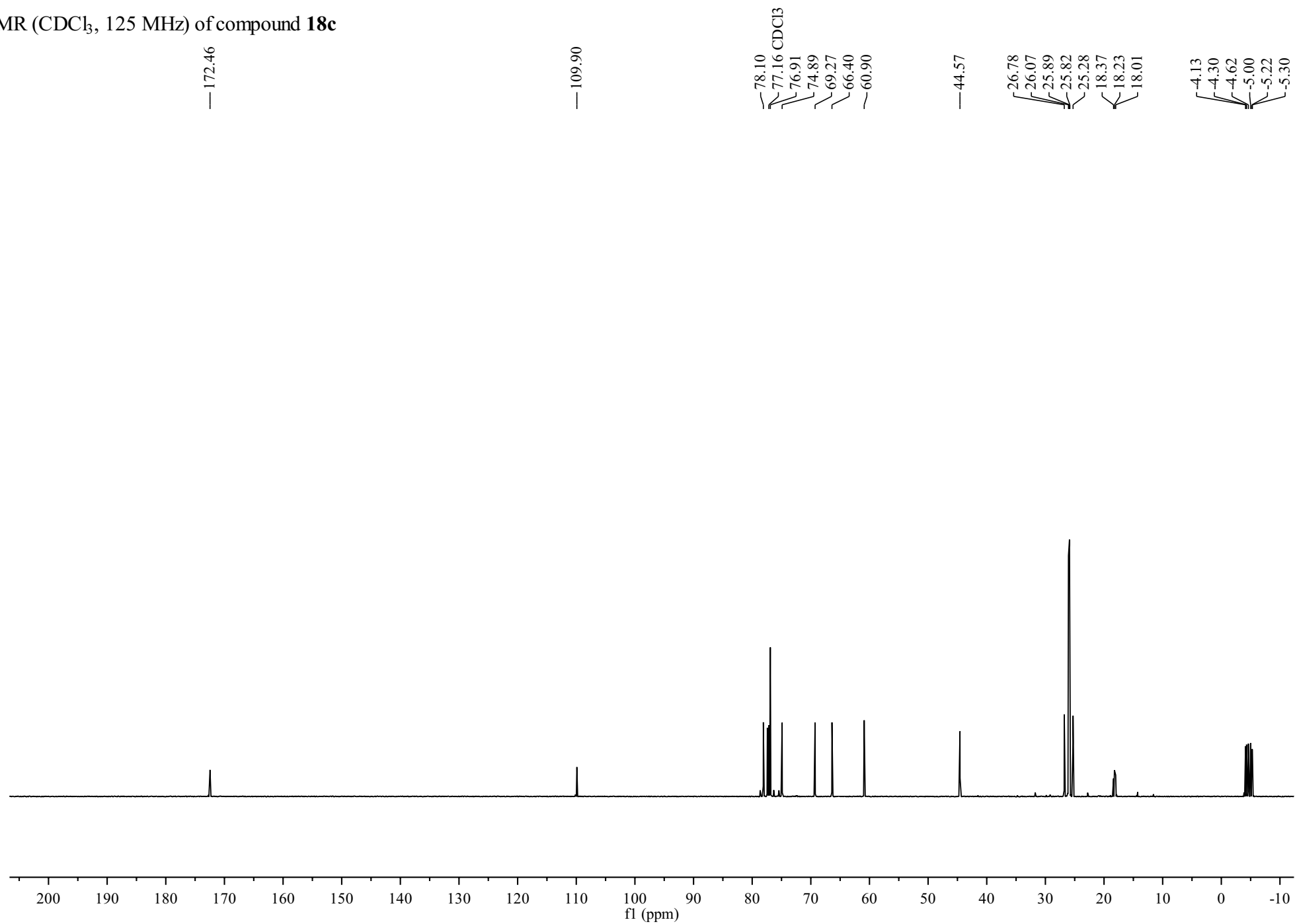


^1H NMR (CDCl_3 , 500 MHz) of compound **18c**

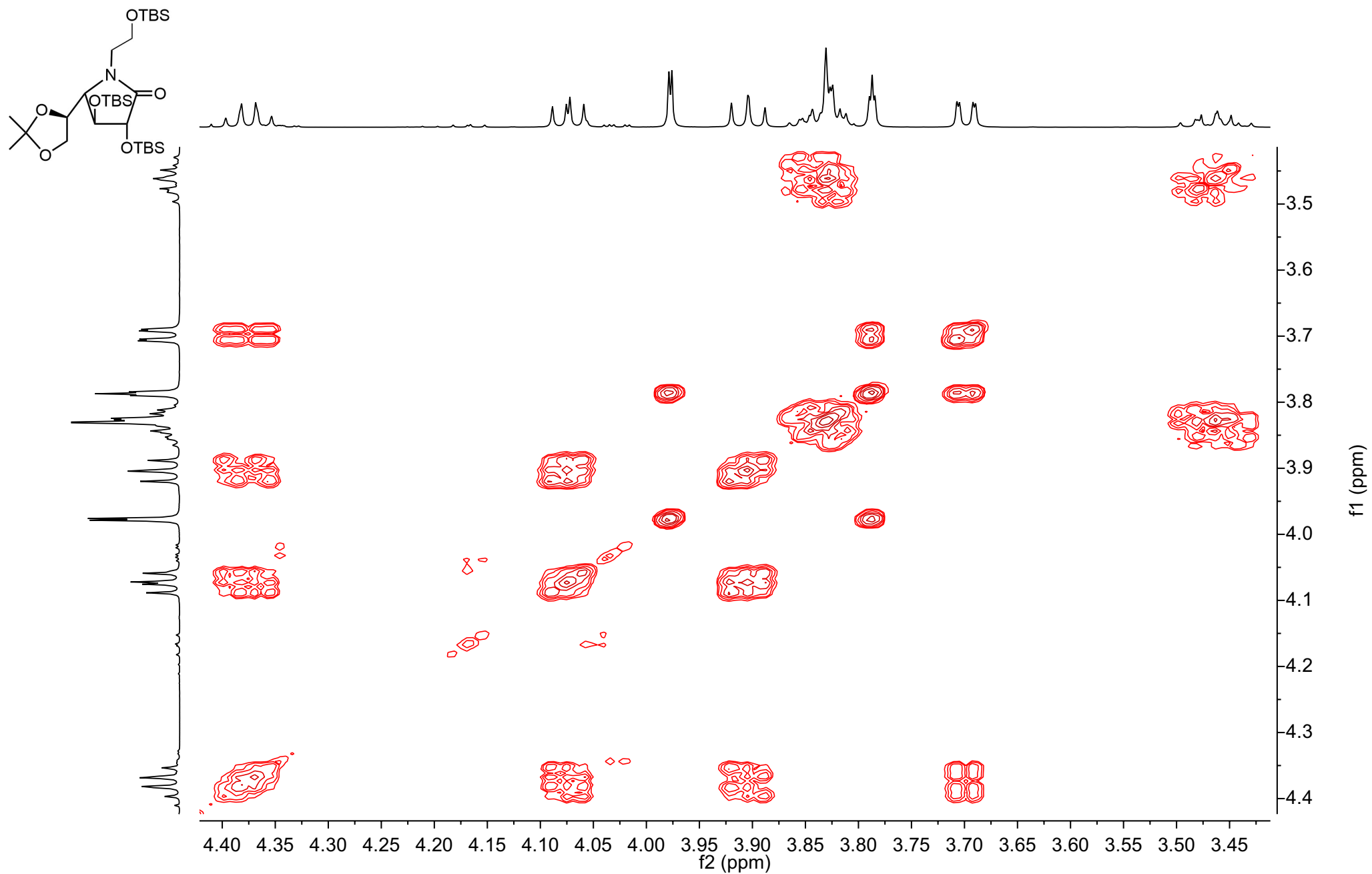
—7.26 CDCl_3



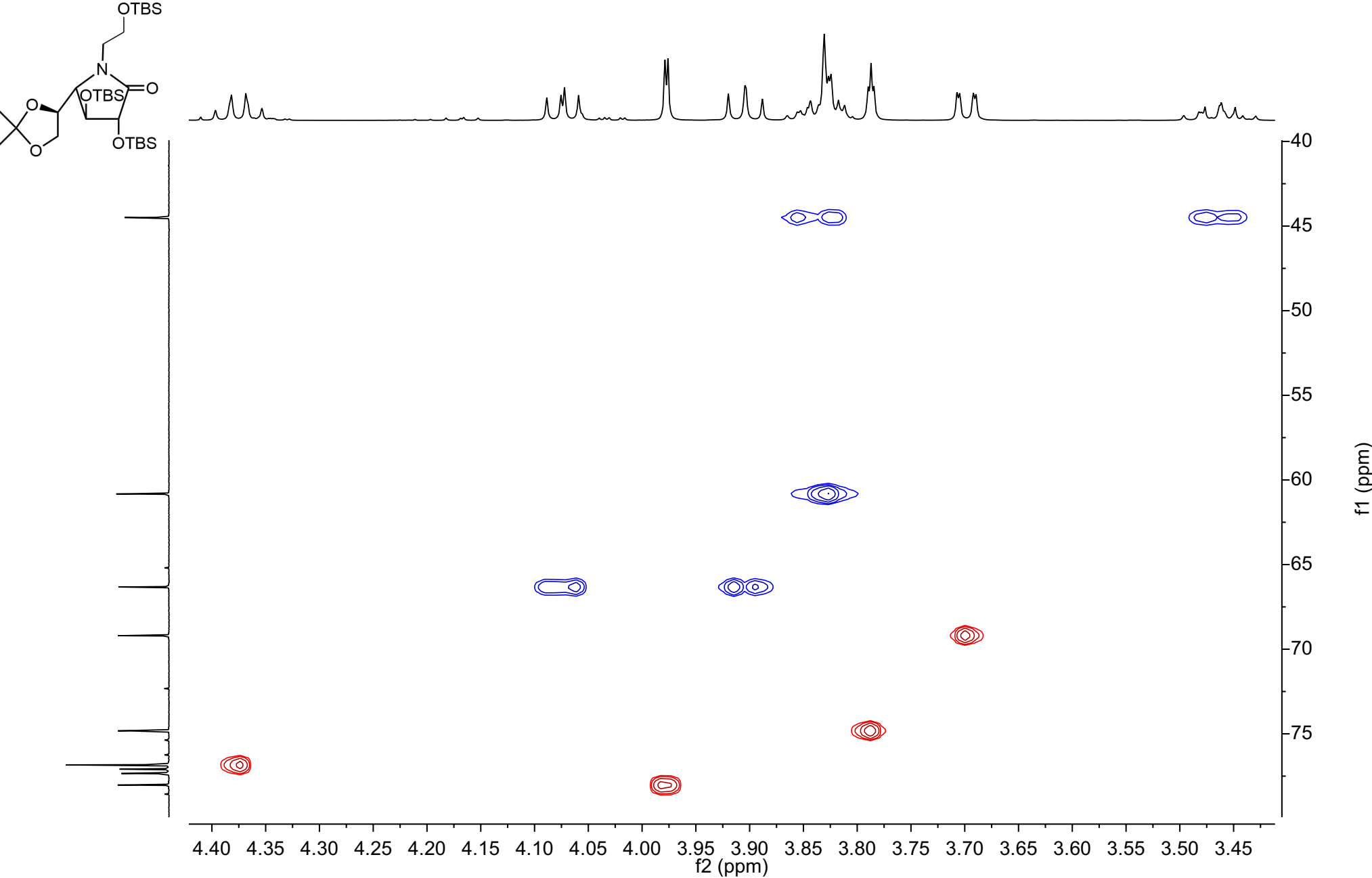
^{13}C NMR (CDCl_3 , 125 MHz) of compound **18c**



COSY (CDCl₃) of compound **18c**

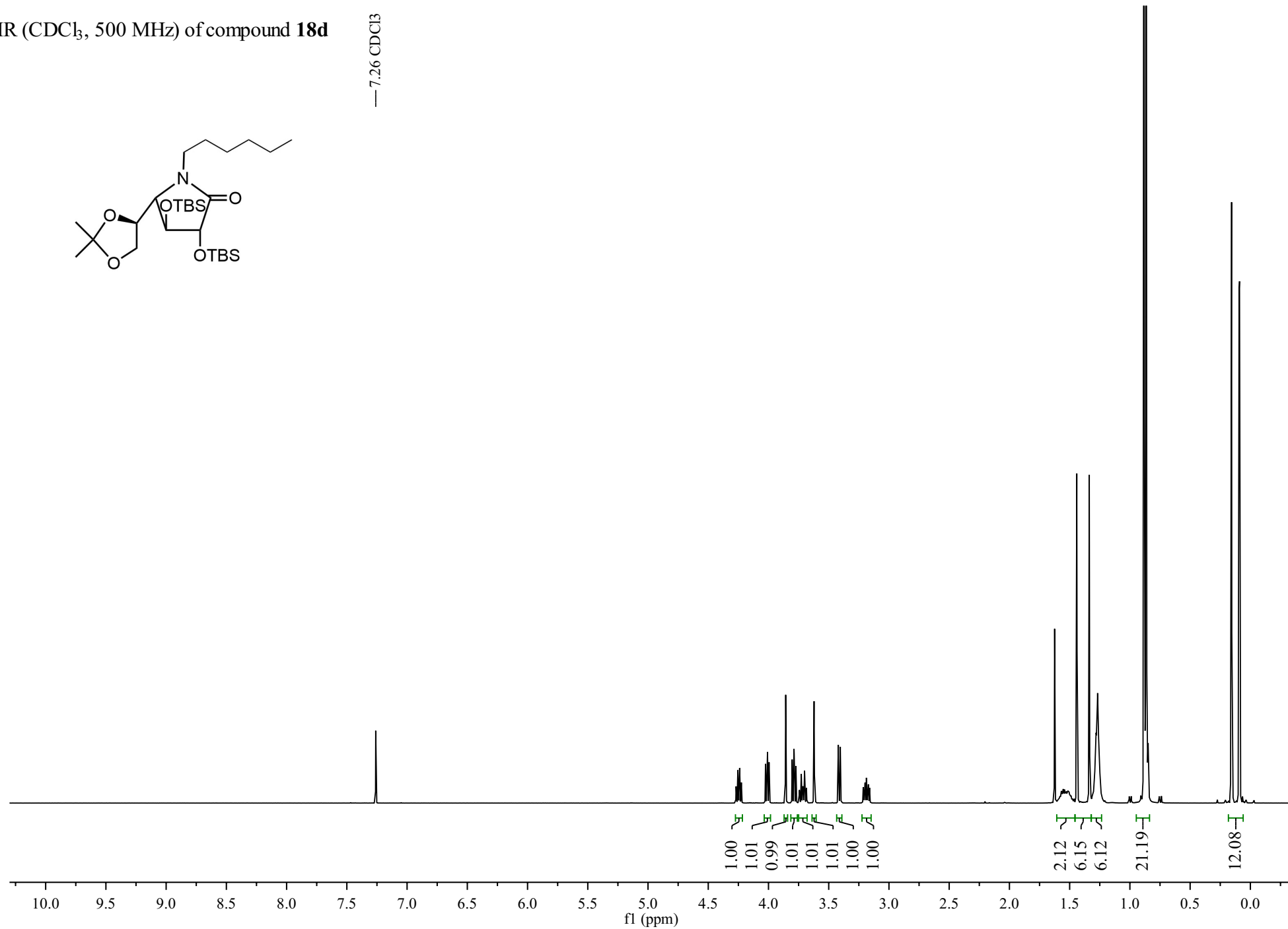
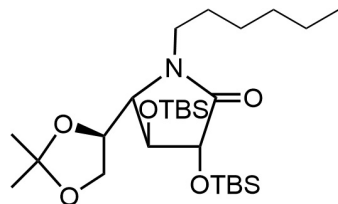


HSQC (CDCl₃) of compound **18c**

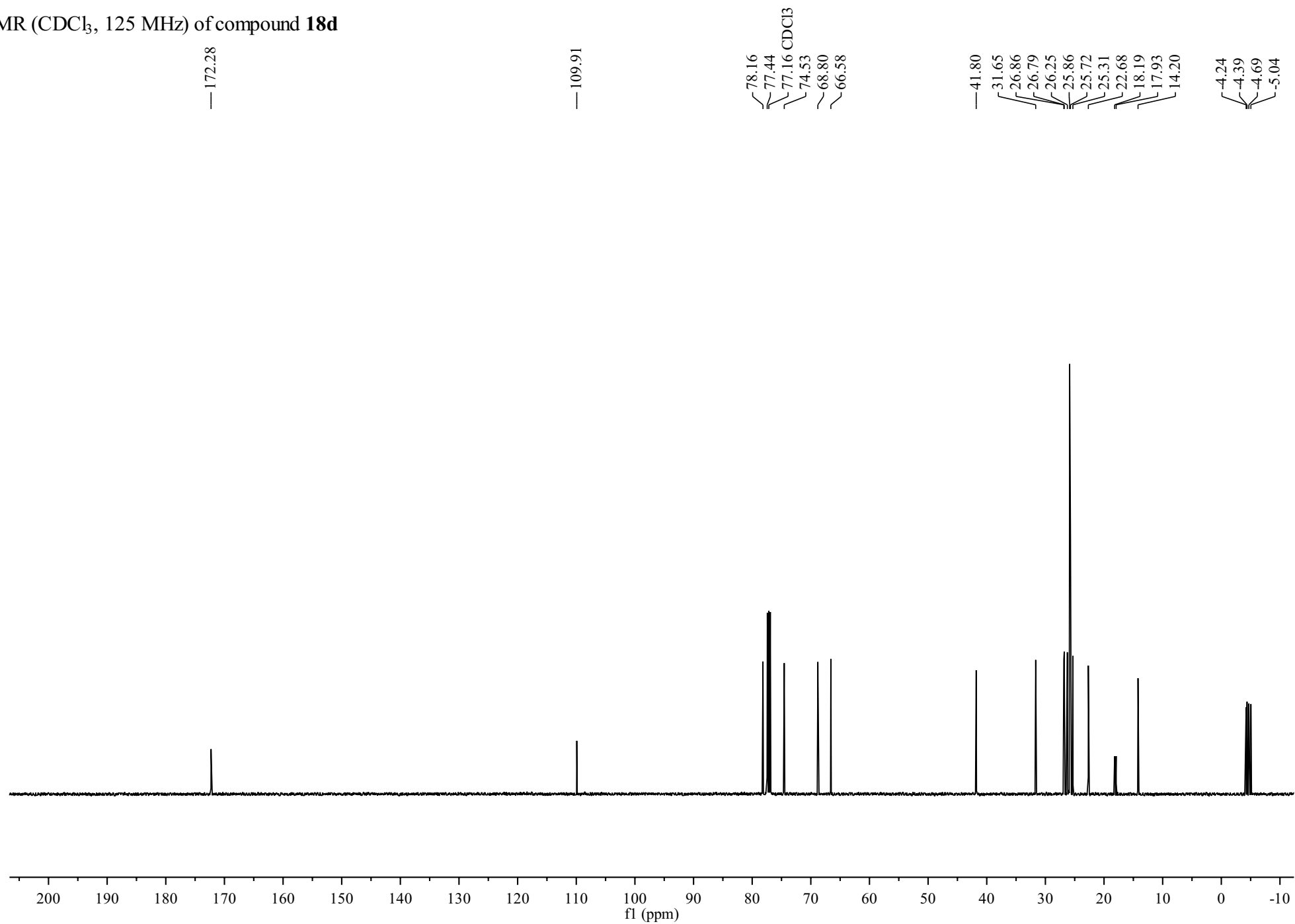


^1H NMR (CDCl_3 , 500 MHz) of compound **18d**

— 7.26 CDCl_3

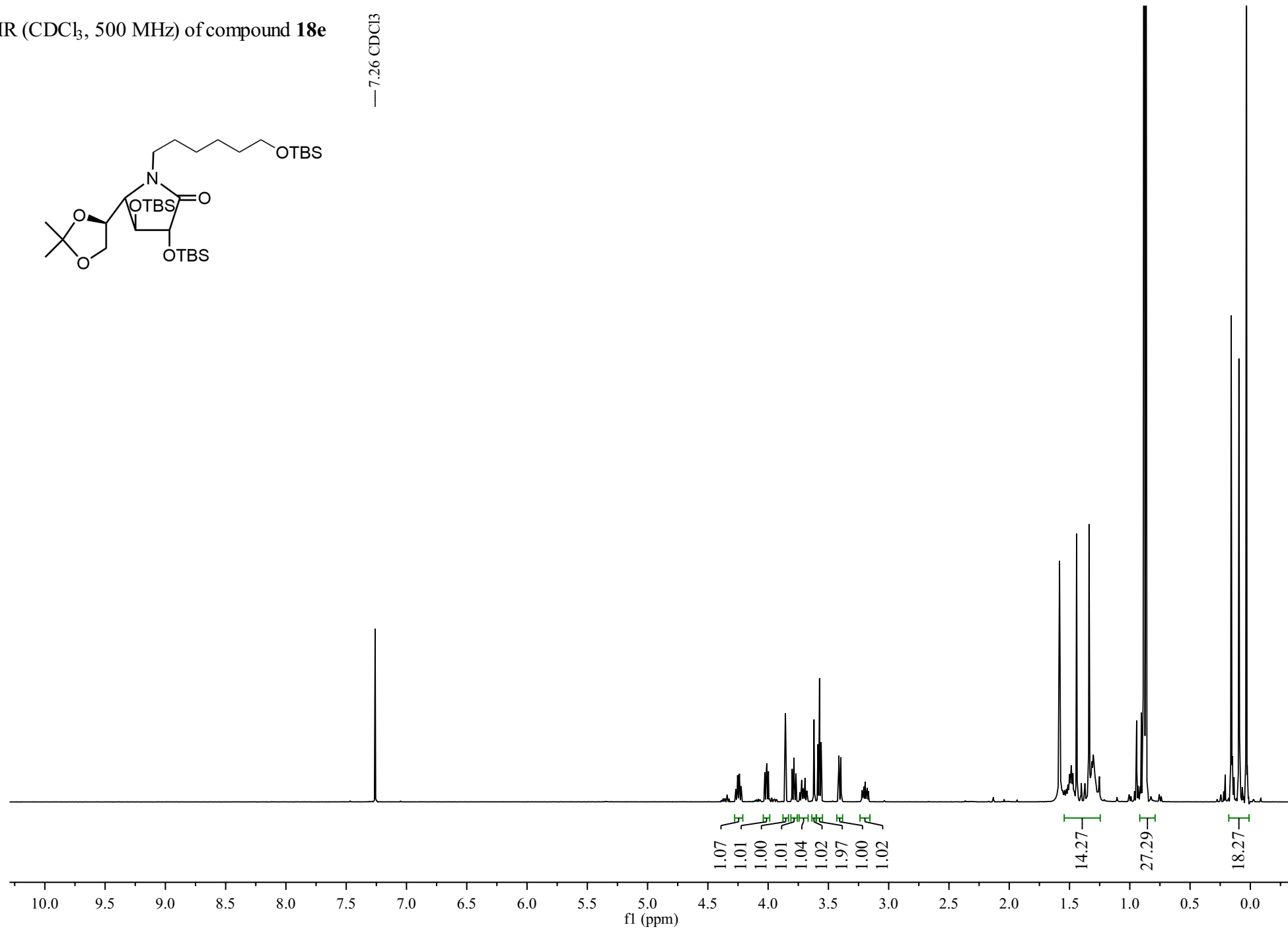
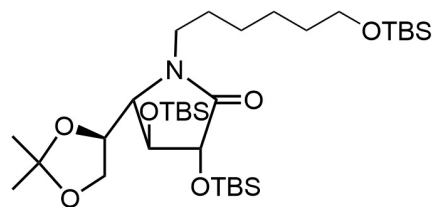


^{13}C NMR (CDCl_3 , 125 MHz) of compound **18d**

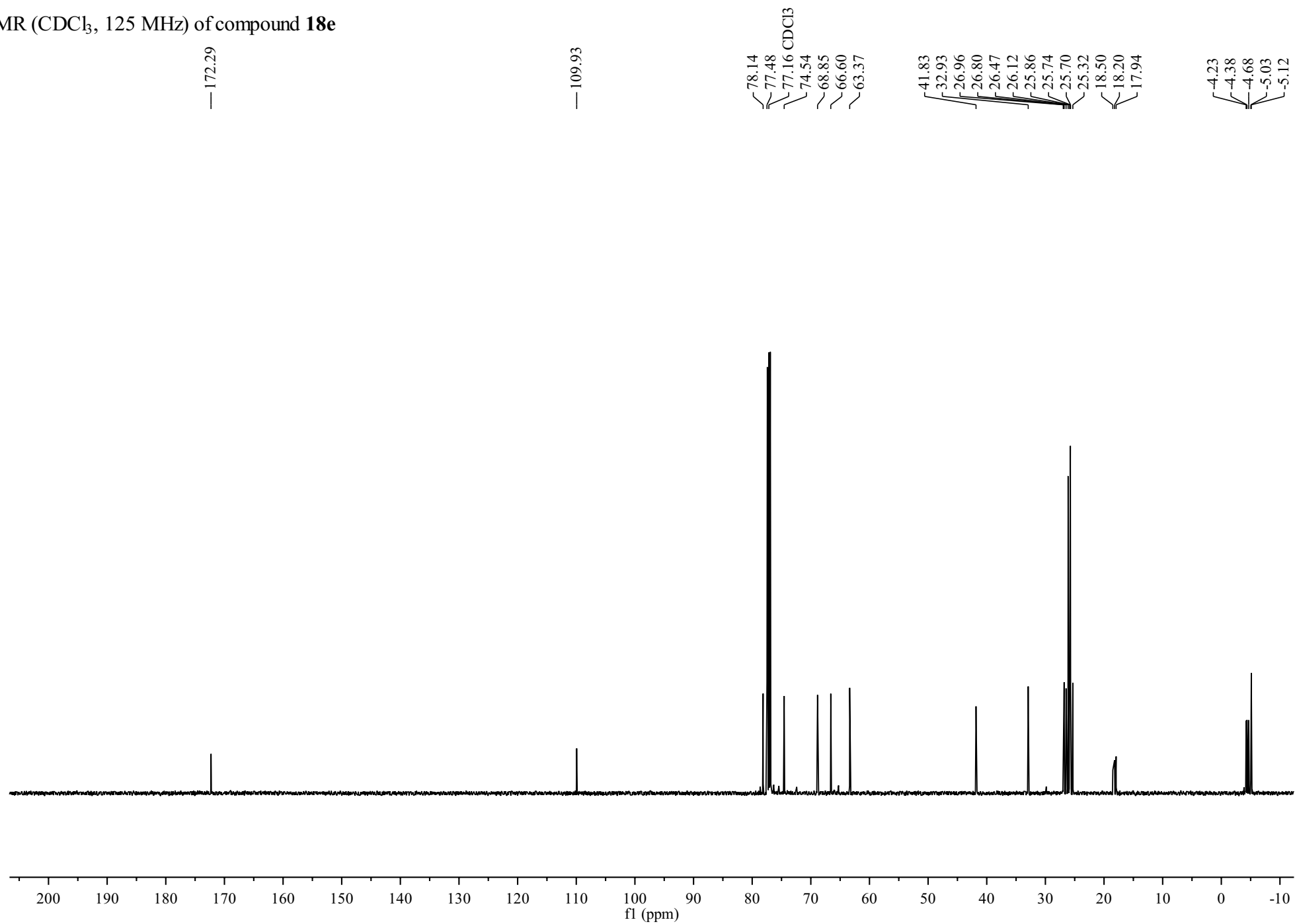


^1H NMR (CDCl_3 , 500 MHz) of compound **18e**

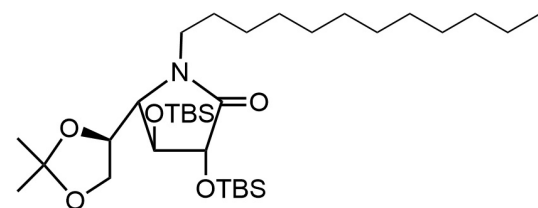
— 7.26 CDCl_3



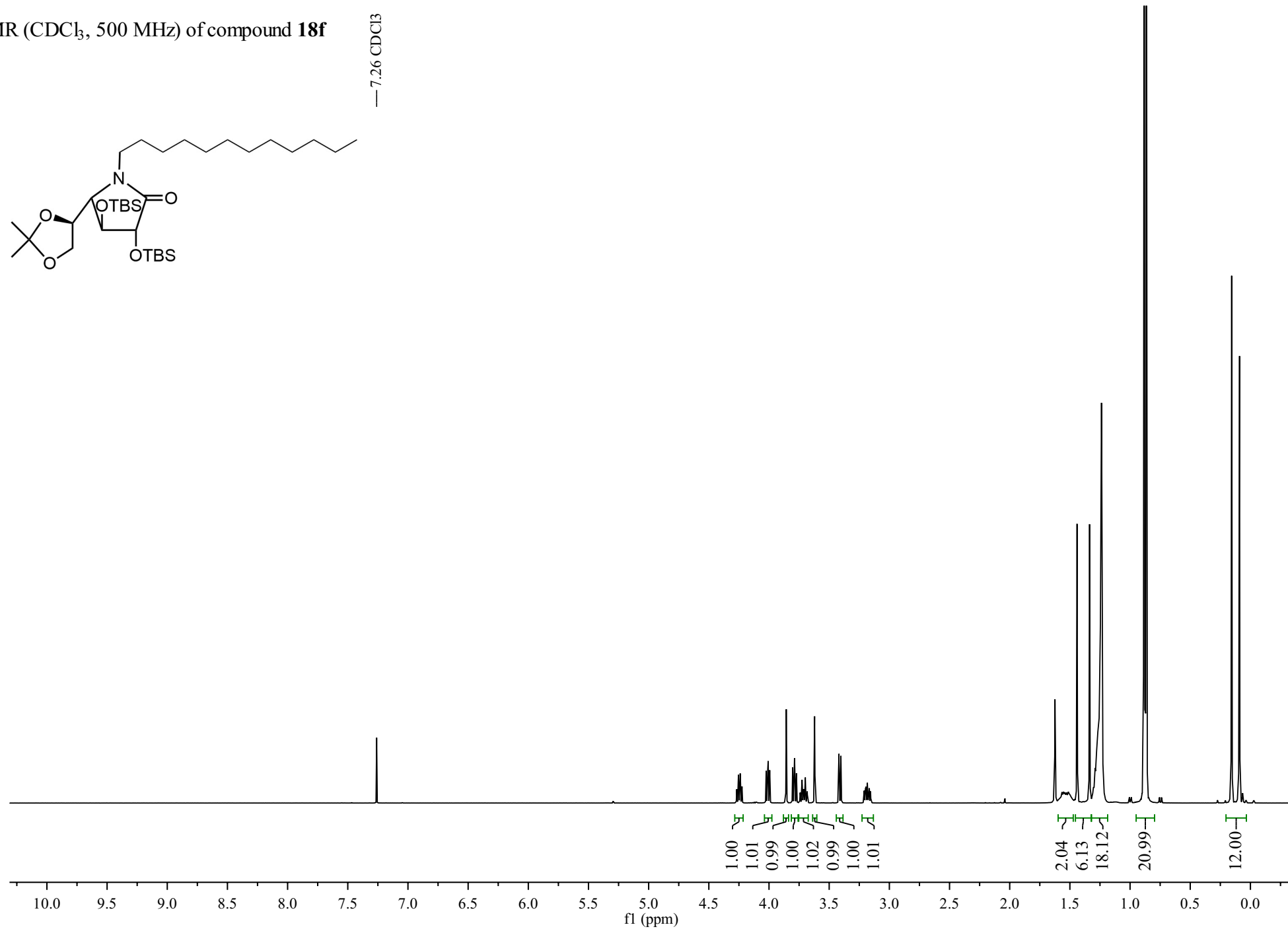
^{13}C NMR (CDCl_3 , 125 MHz) of compound **18e**



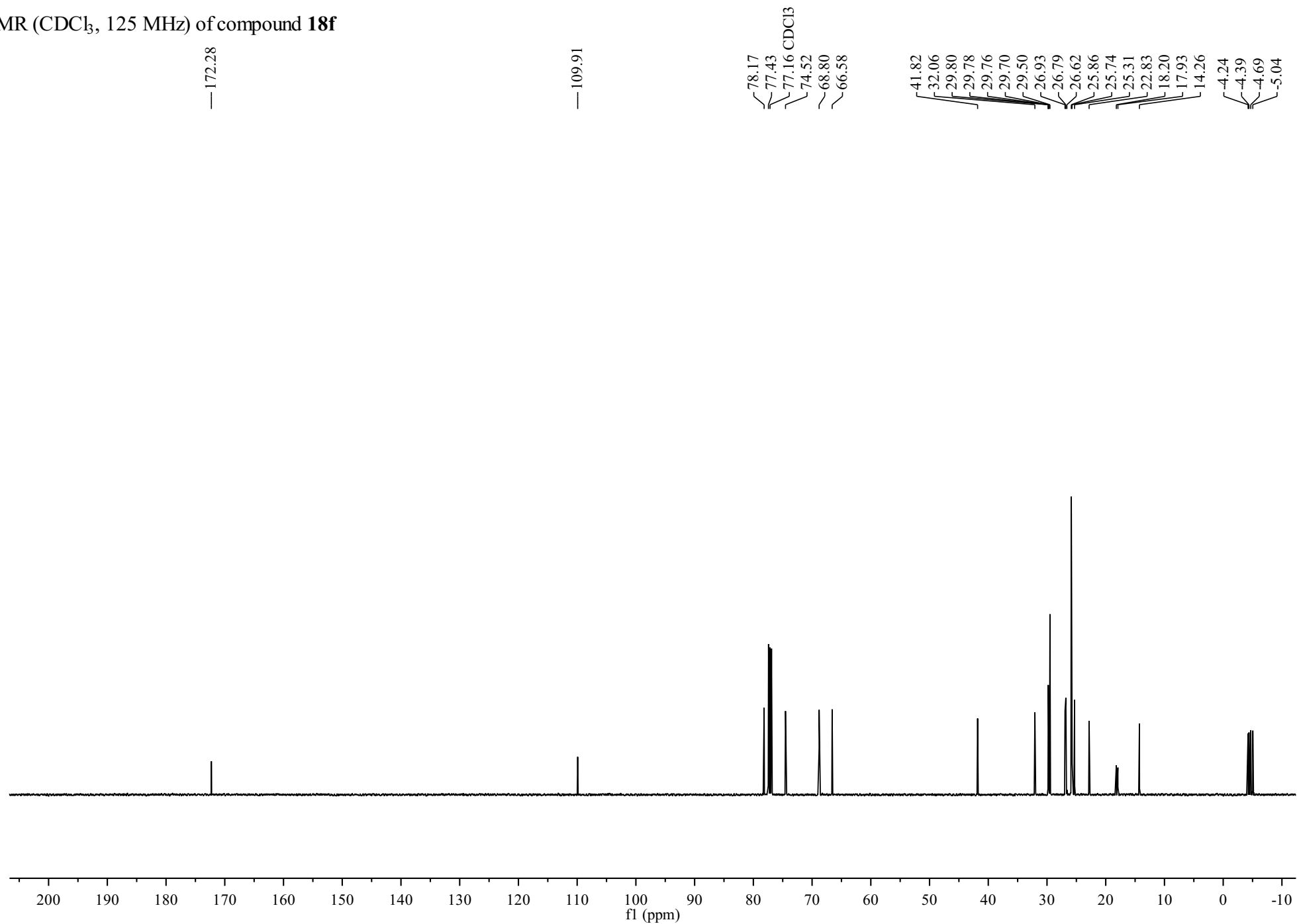
^1H NMR (CDCl_3 , 500 MHz) of compound **18f**



—7.26 CDCl_3

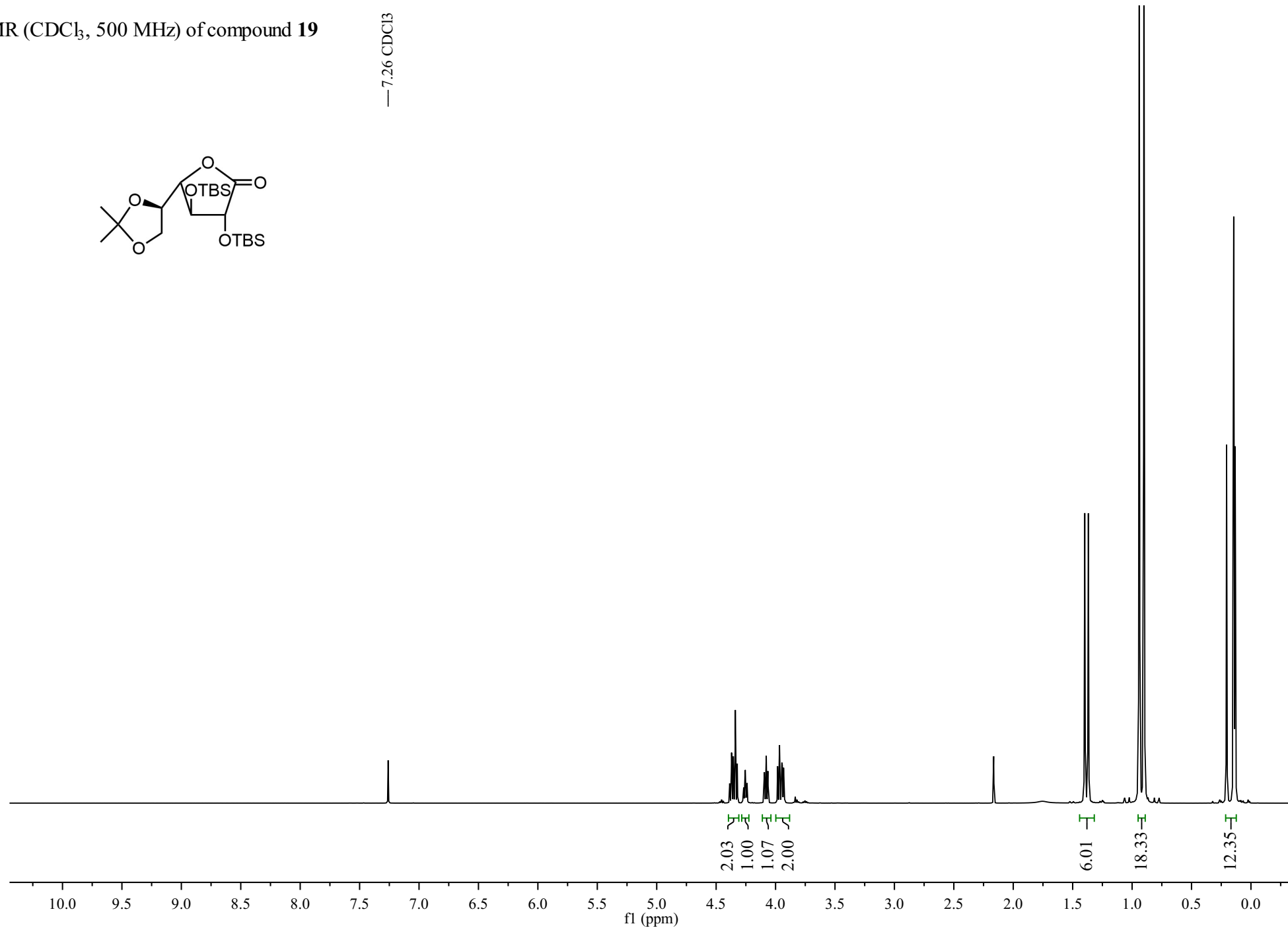
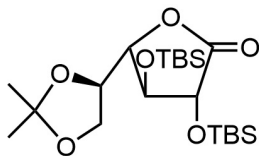


^{13}C NMR (CDCl_3 , 125 MHz) of compound **18f**

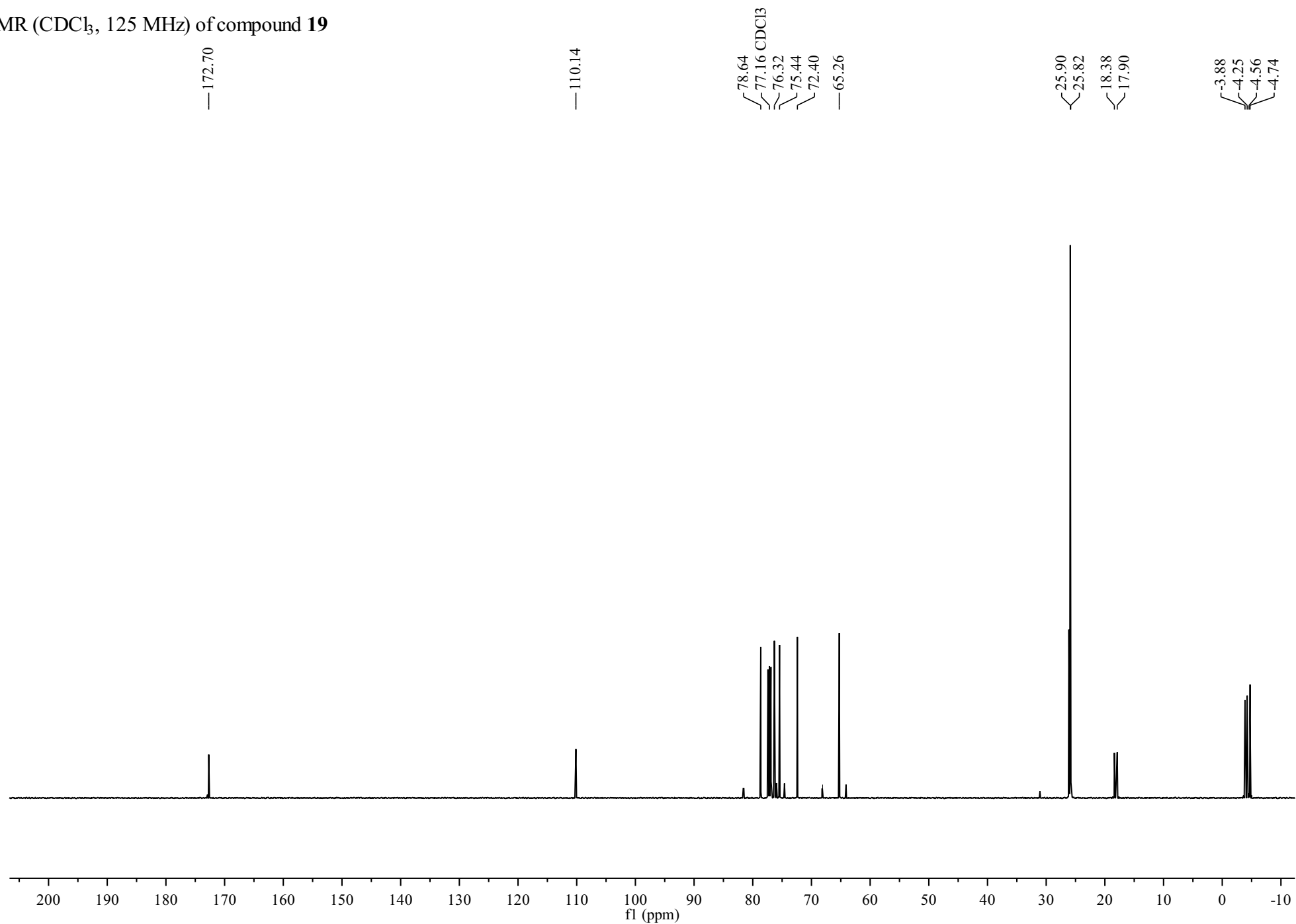


^1H NMR (CDCl_3 , 500 MHz) of compound **19**

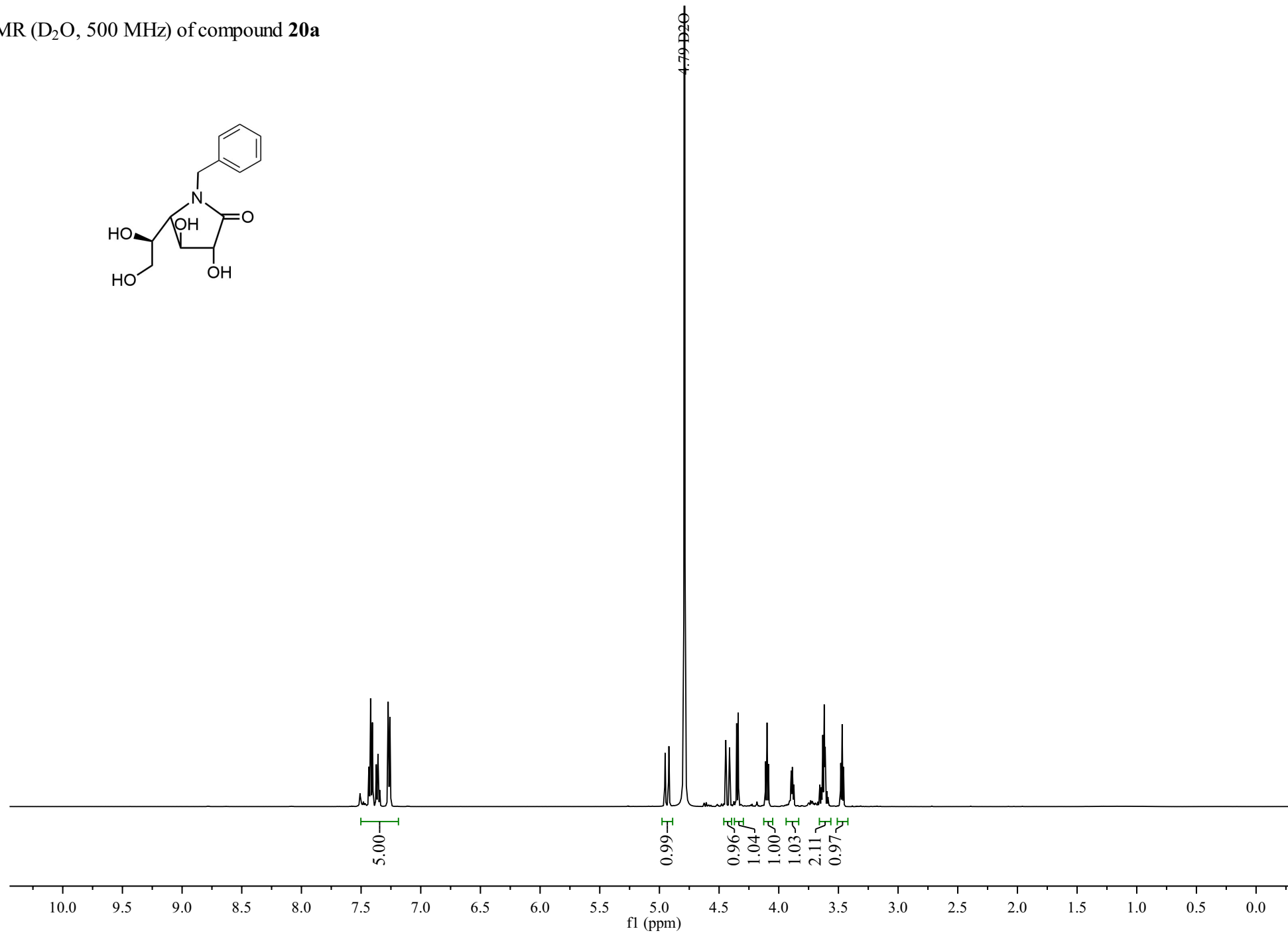
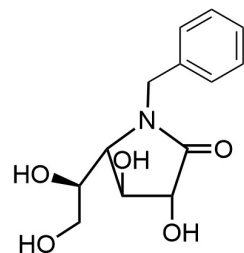
—7.26 CDCl_3



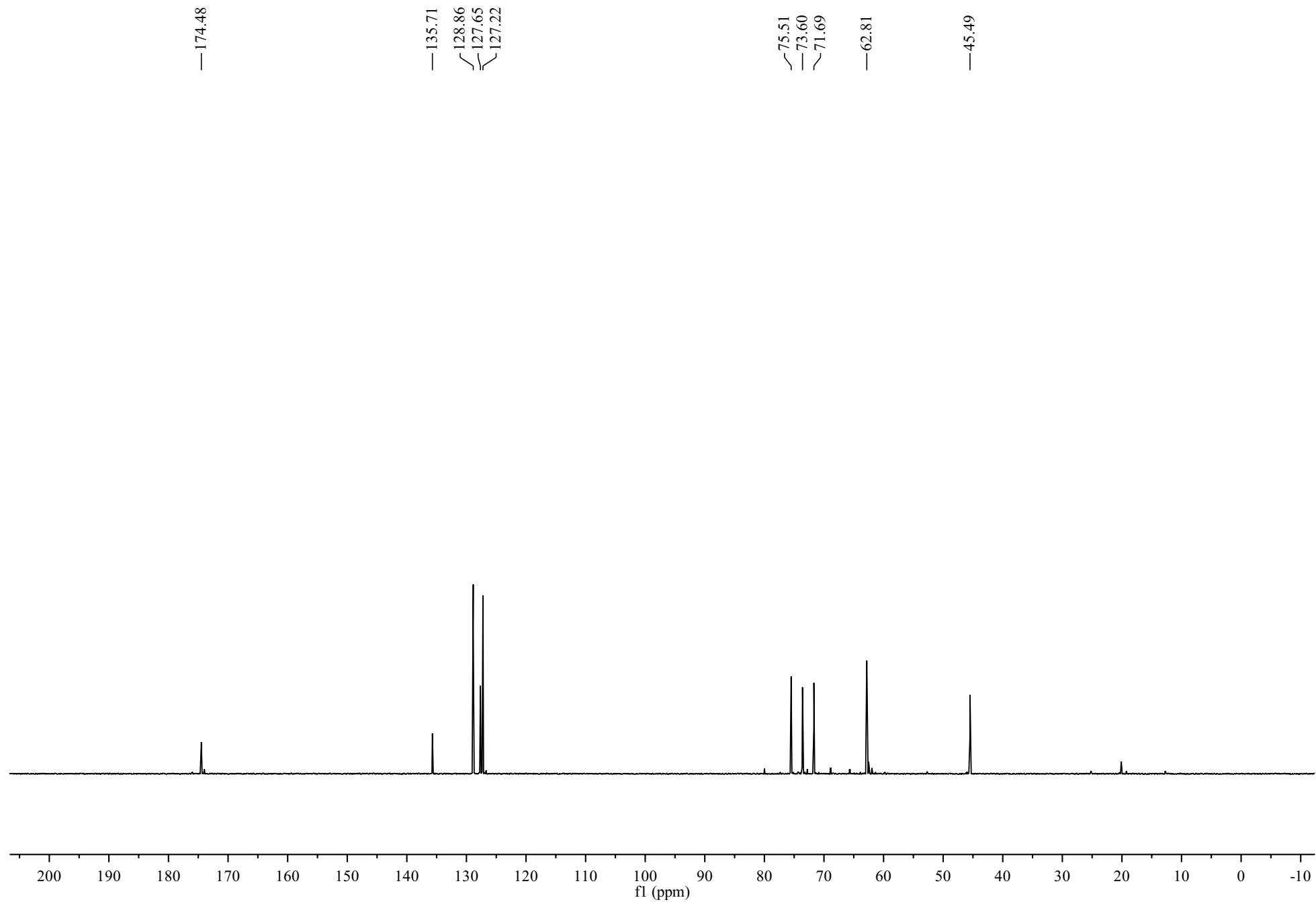
^{13}C NMR (CDCl_3 , 125 MHz) of compound **19**



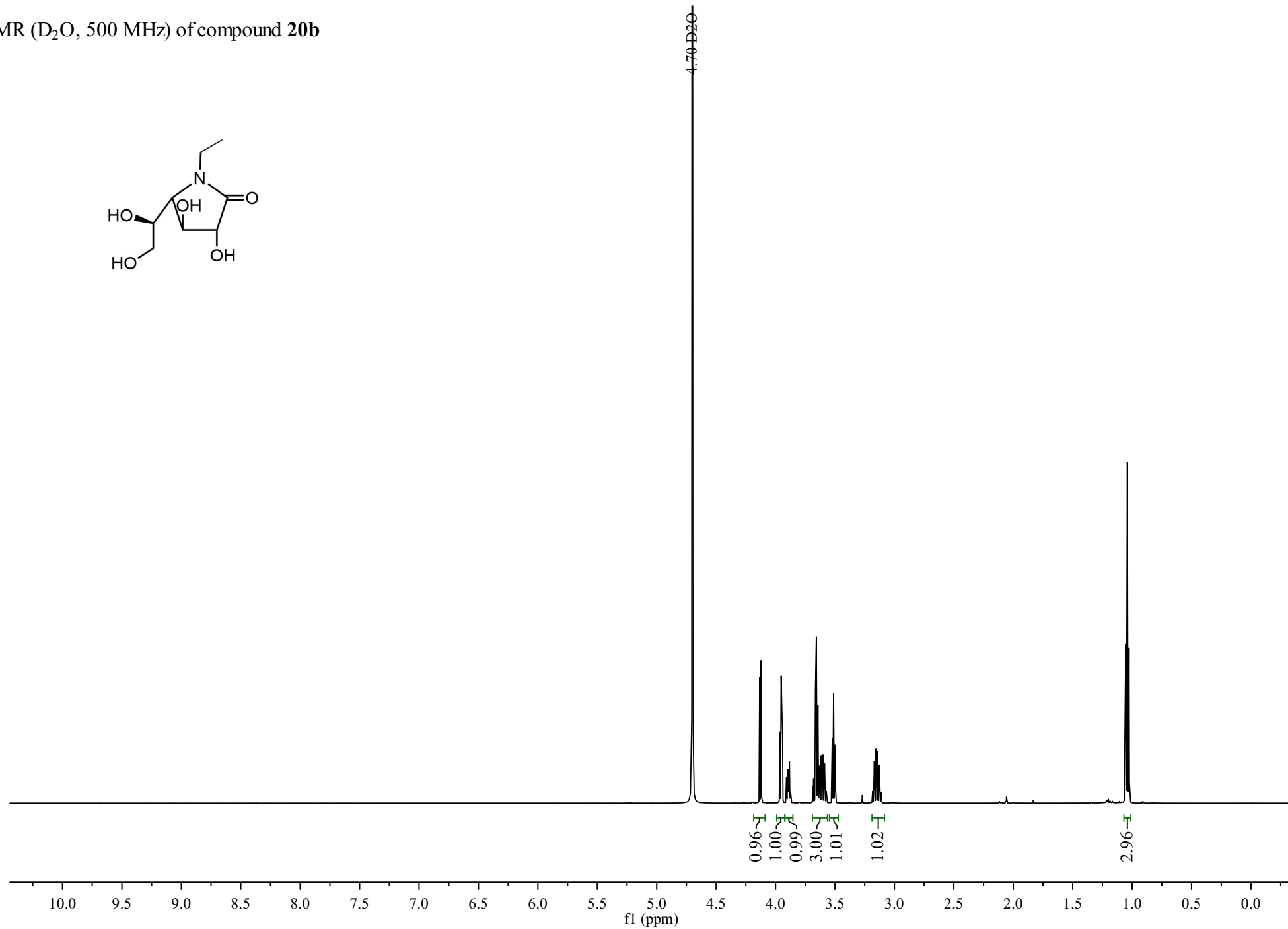
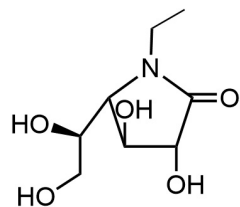
^1H NMR (D_2O , 500 MHz) of compound **20a**



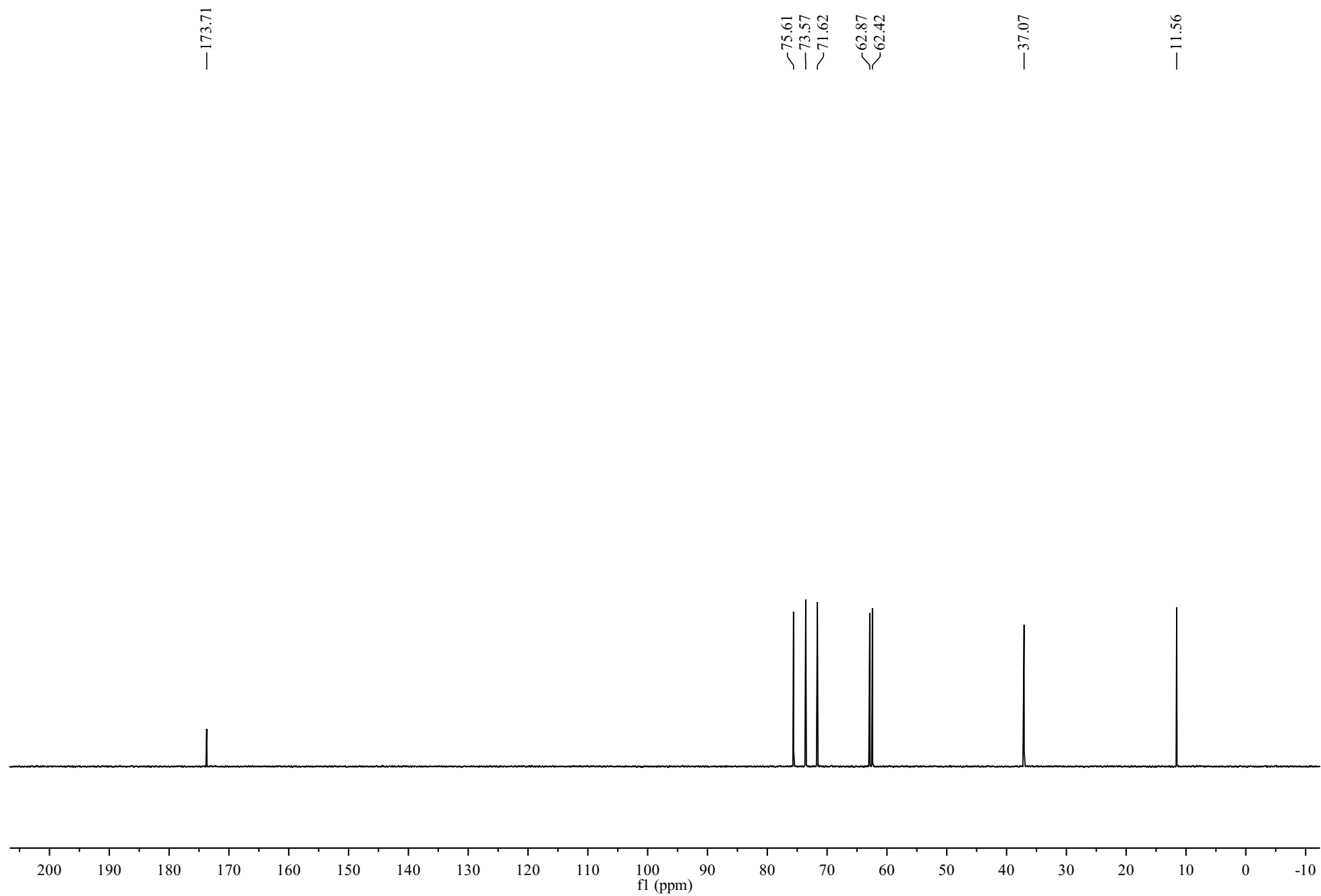
^{13}C NMR (D_2O , 125 MHz) of compound **20a**



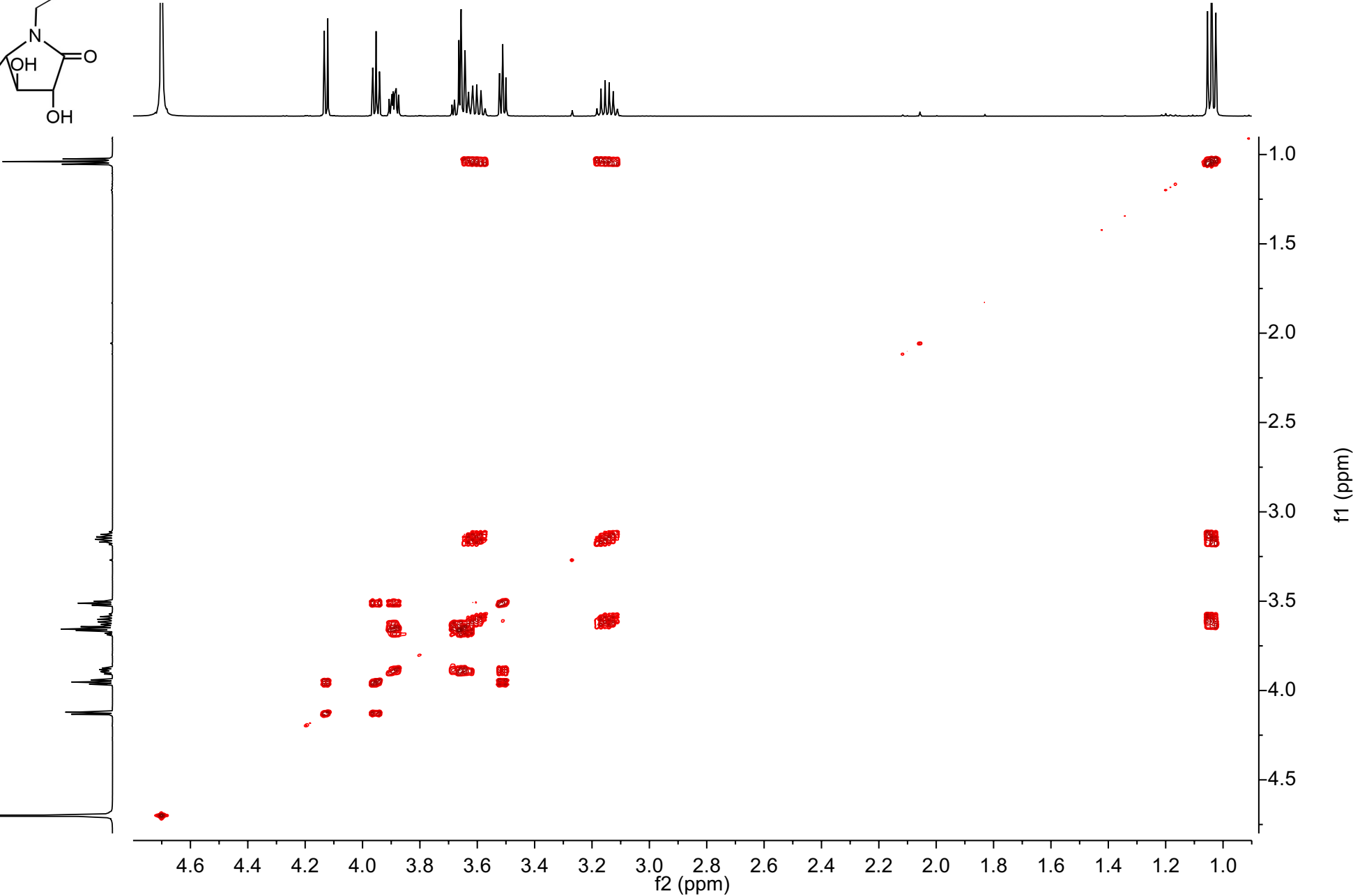
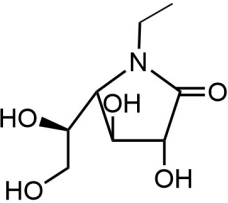
^1H NMR (D_2O , 500 MHz) of compound **20b**



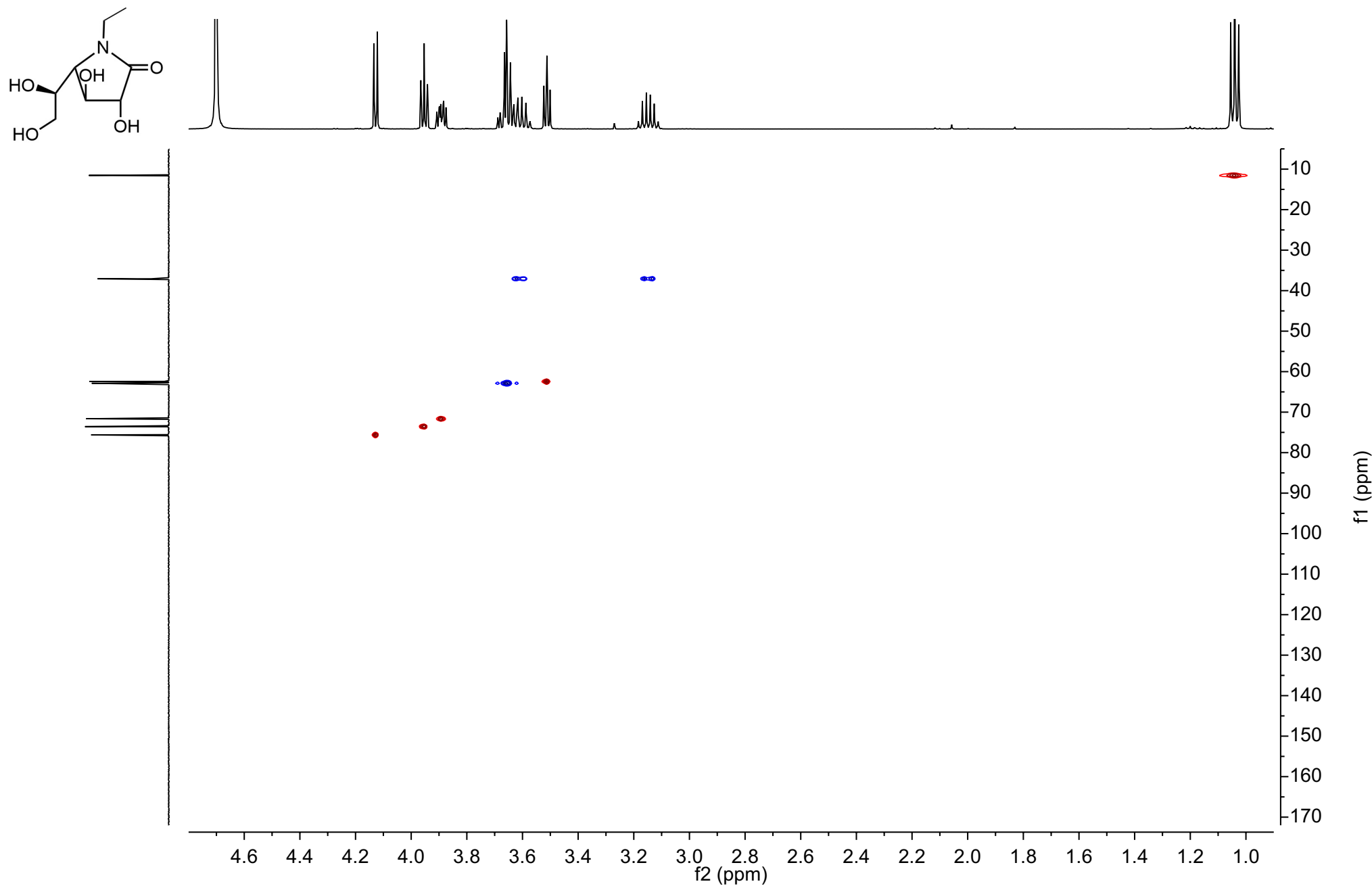
^{13}C NMR (D_2O , 125 MHz) of compound **20b**



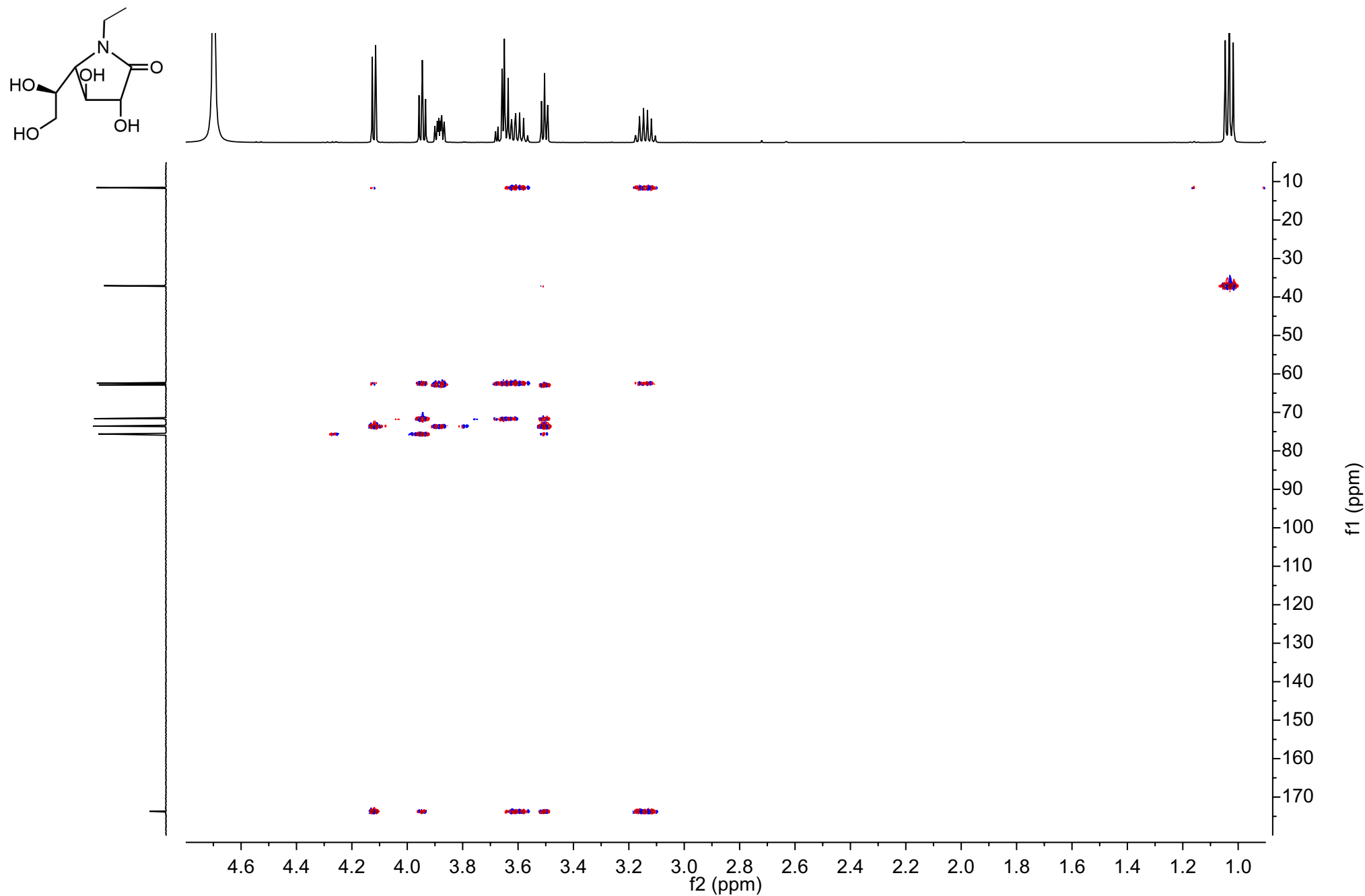
COSY (D₂O) of compound **20b**



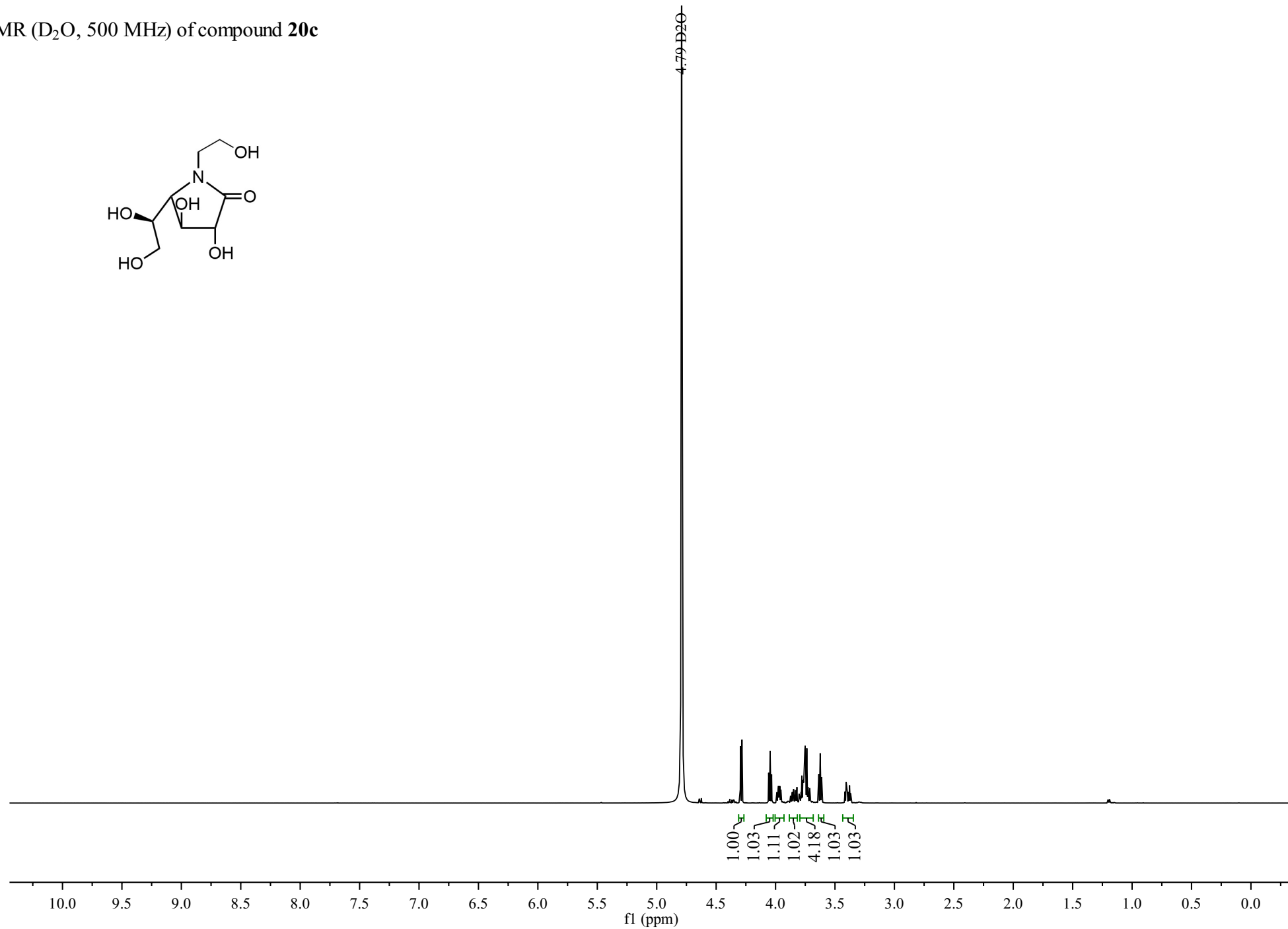
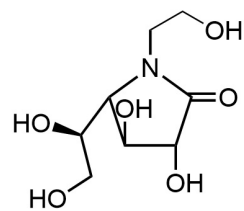
HSQC (D₂O) of compound **20b**



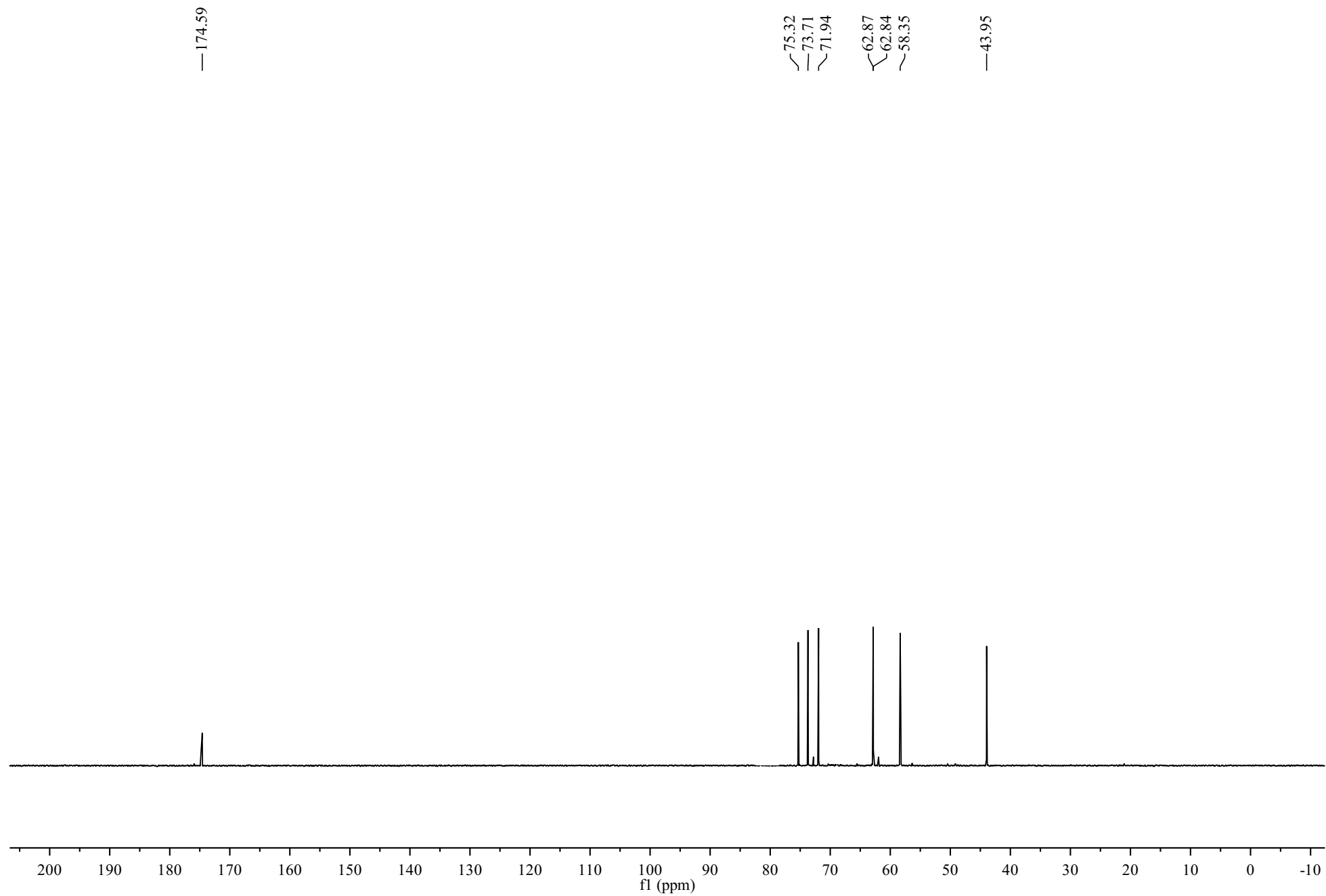
HMBC (D₂O) of compound **20b**



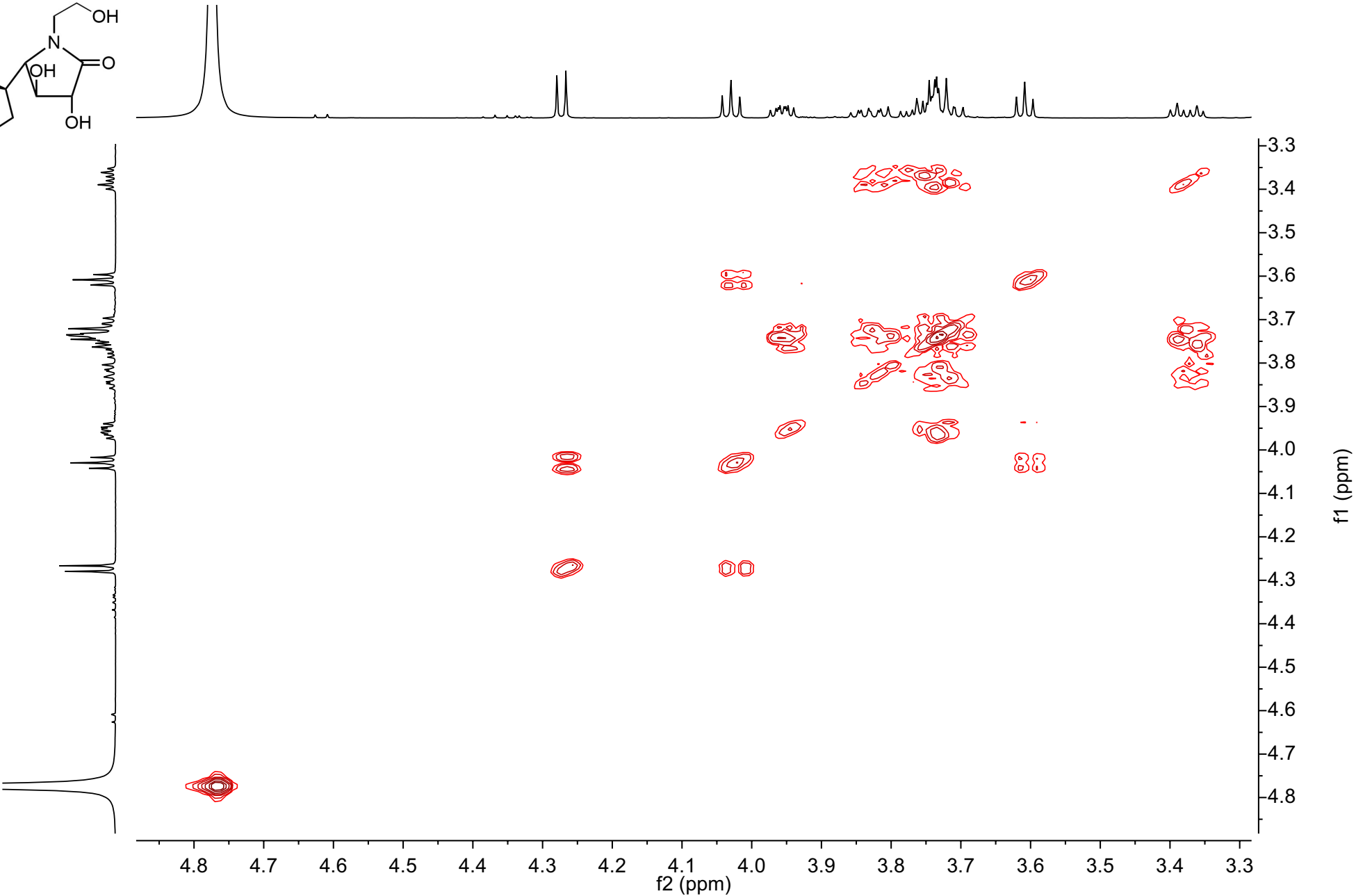
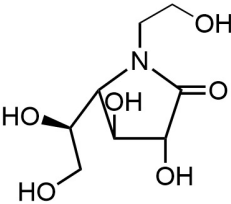
^1H NMR (D_2O , 500 MHz) of compound **20c**



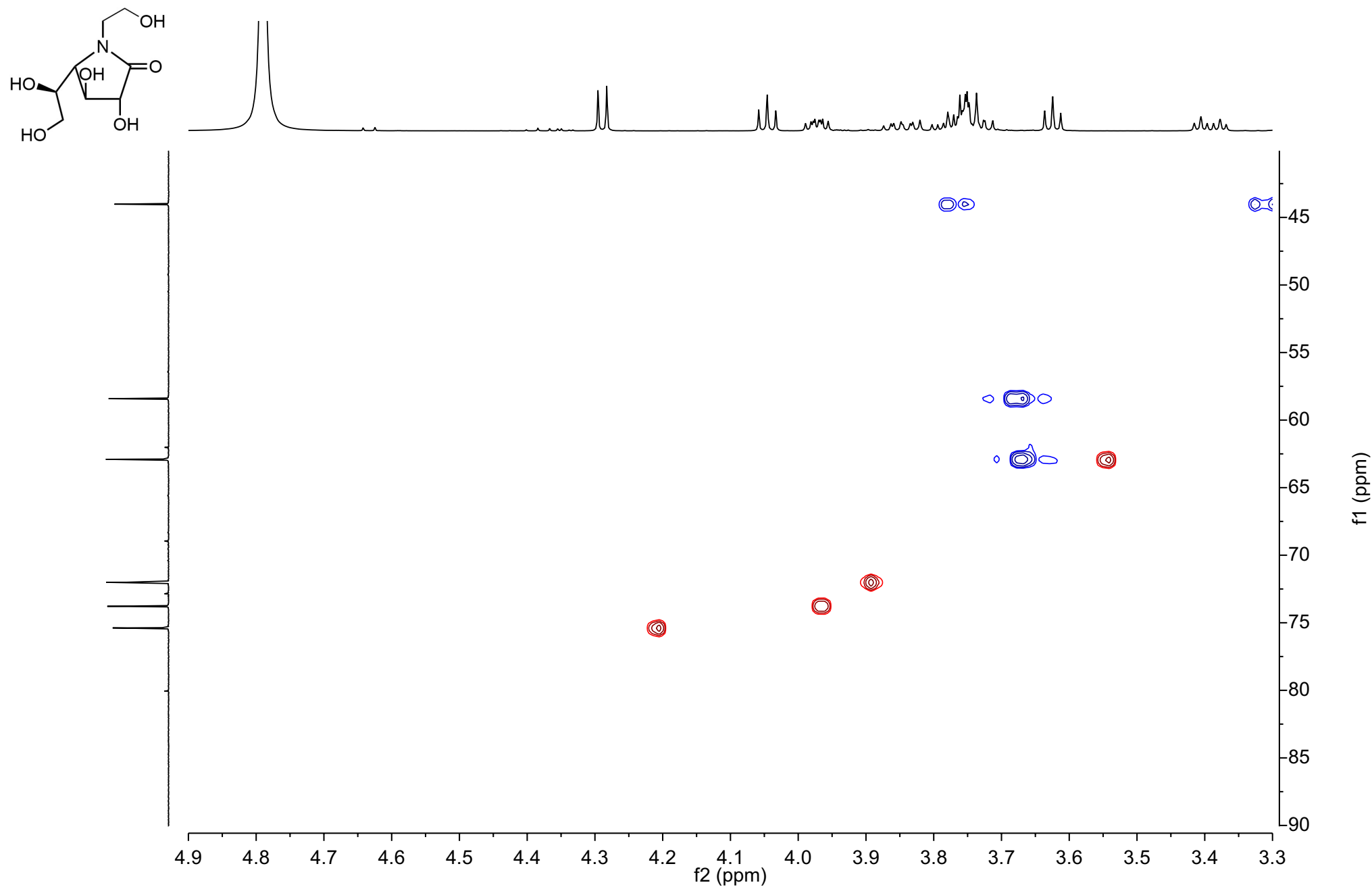
^{13}C NMR (D_2O , 125 MHz) of compound **20c**

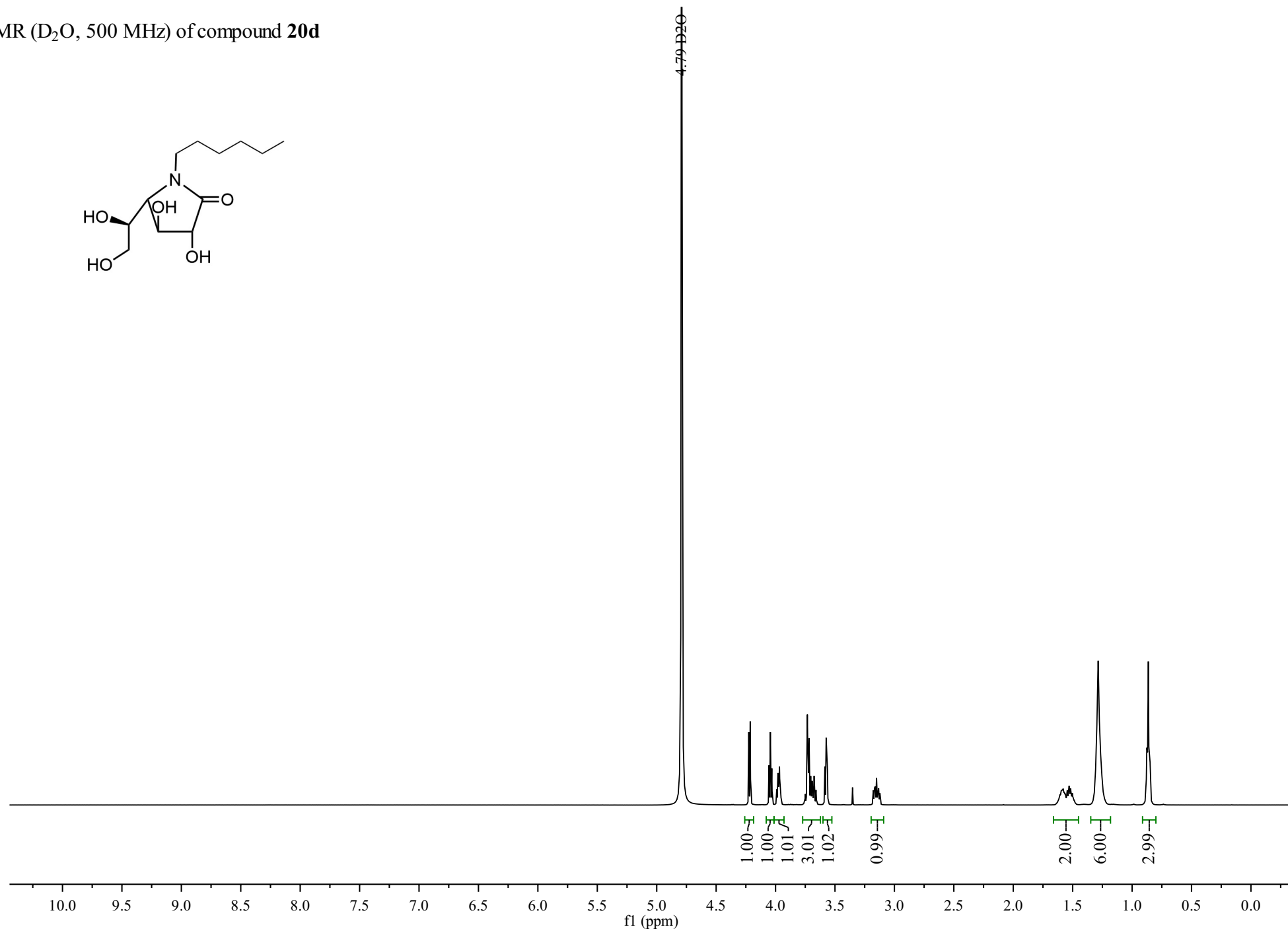
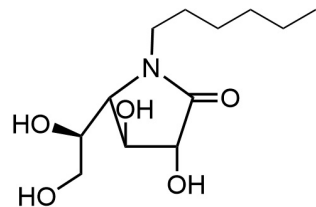


COSY (D₂O) of compound **20c**

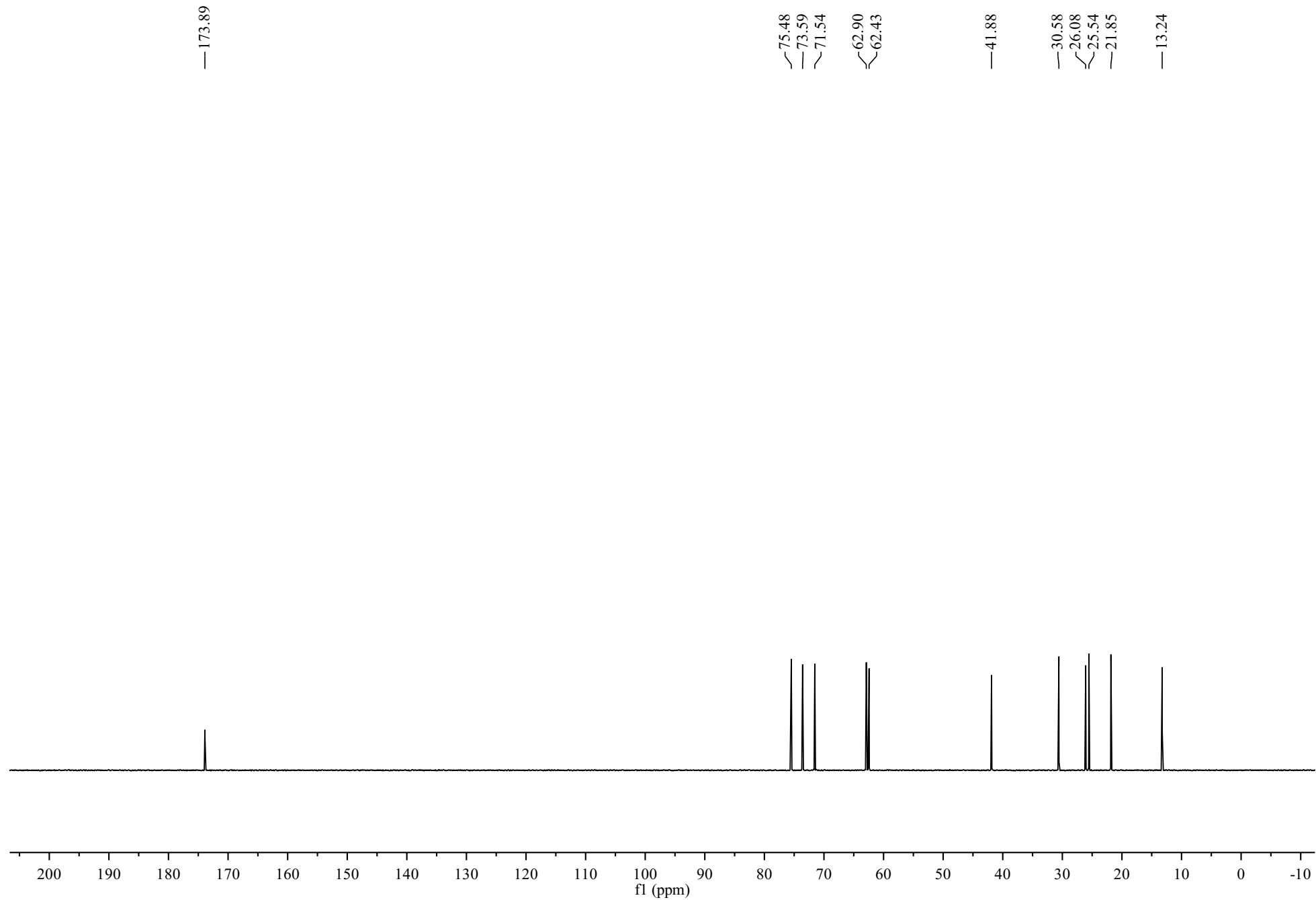


HSQC (D₂O) of compound **20c**

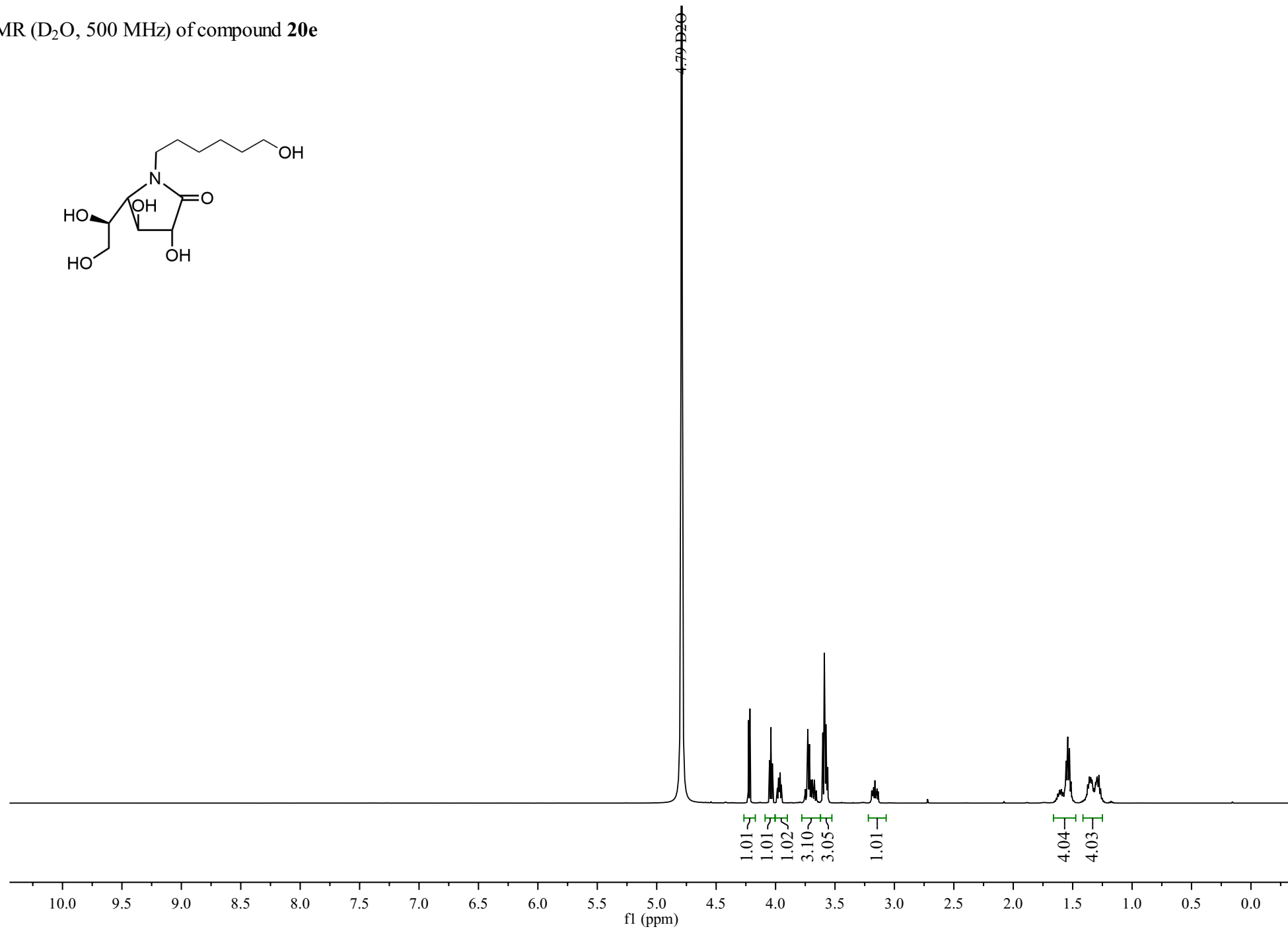
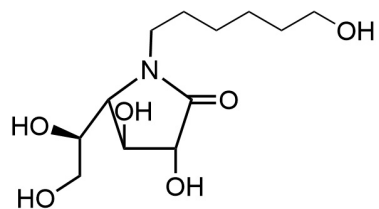


¹H NMR (D₂O, 500 MHz) of compound **20d**

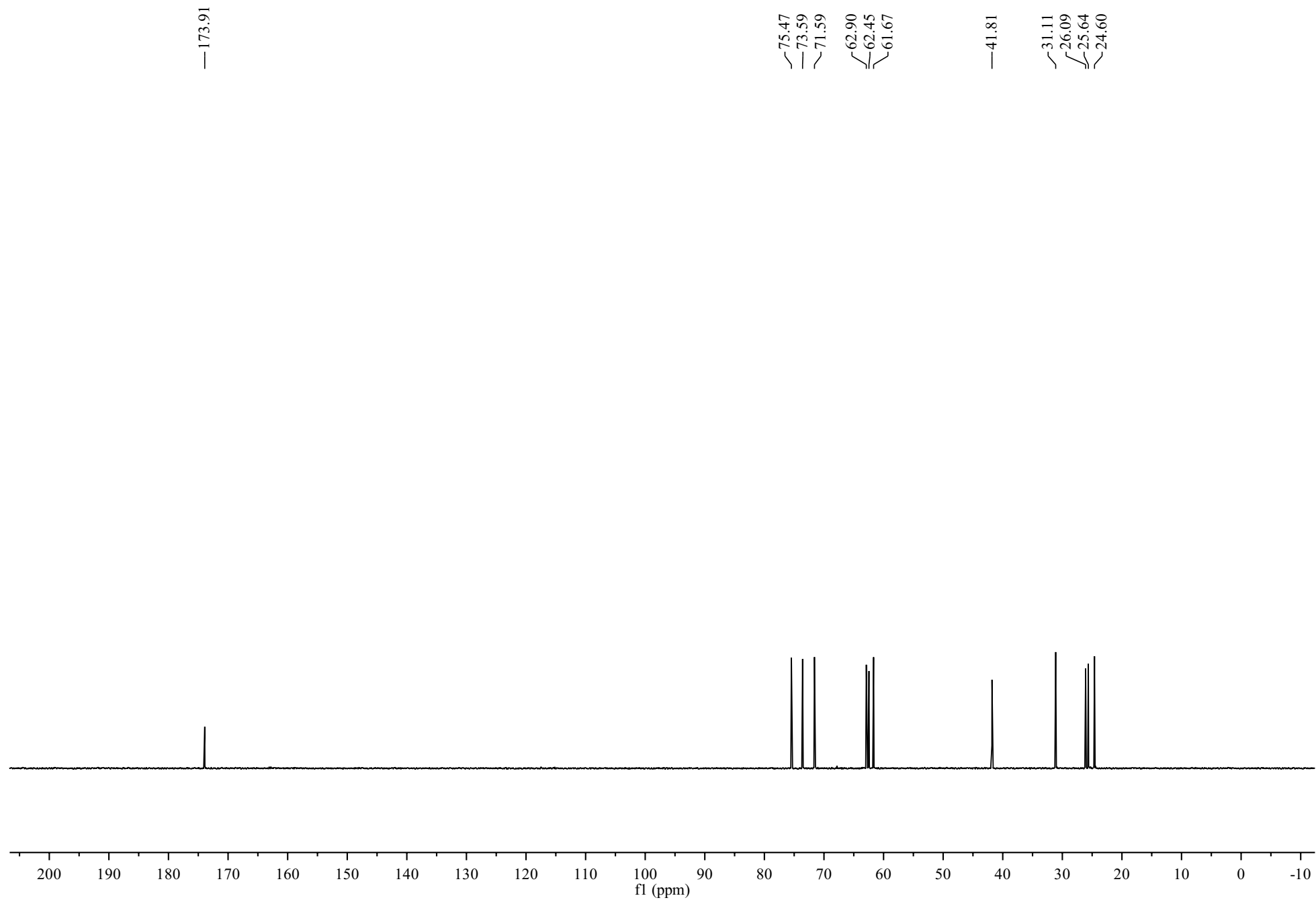
^{13}C NMR (D_2O , 125 MHz) of compound **20d**



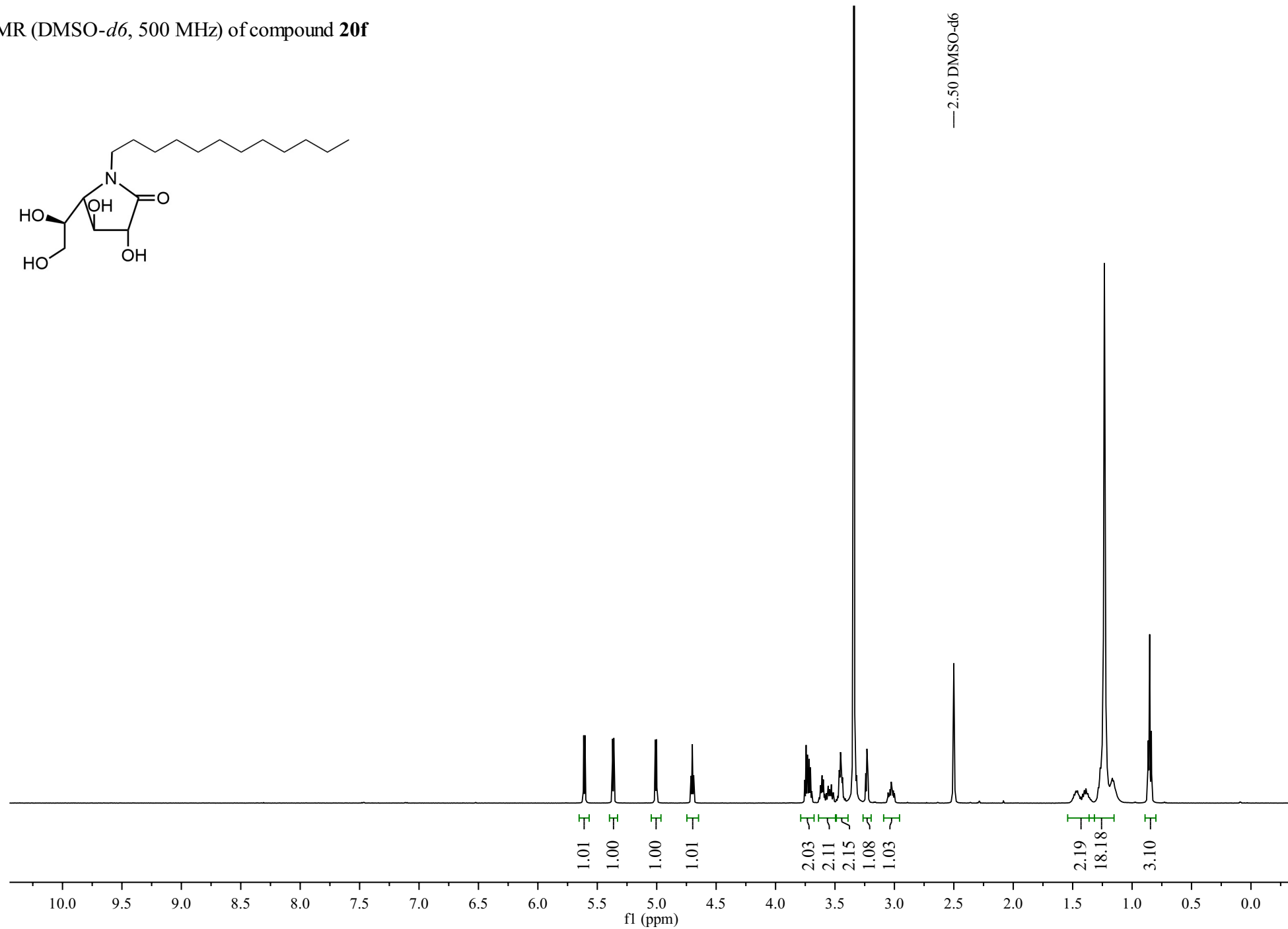
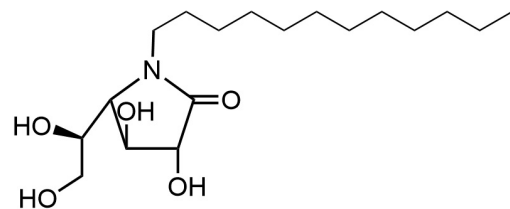
^1H NMR (D_2O , 500 MHz) of compound **20e**



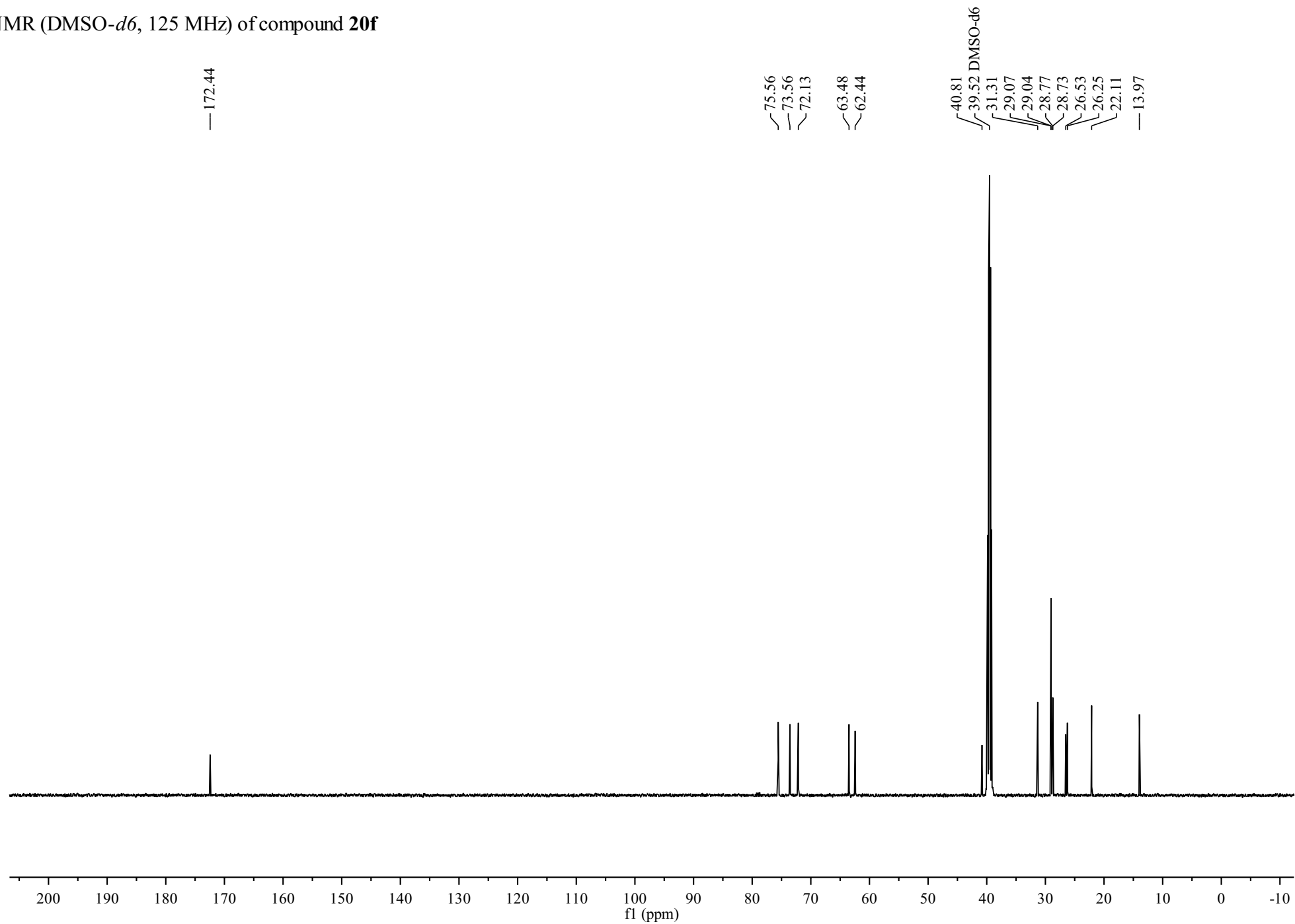
^{13}C NMR (D_2O , 125 MHz) of compound **20e**



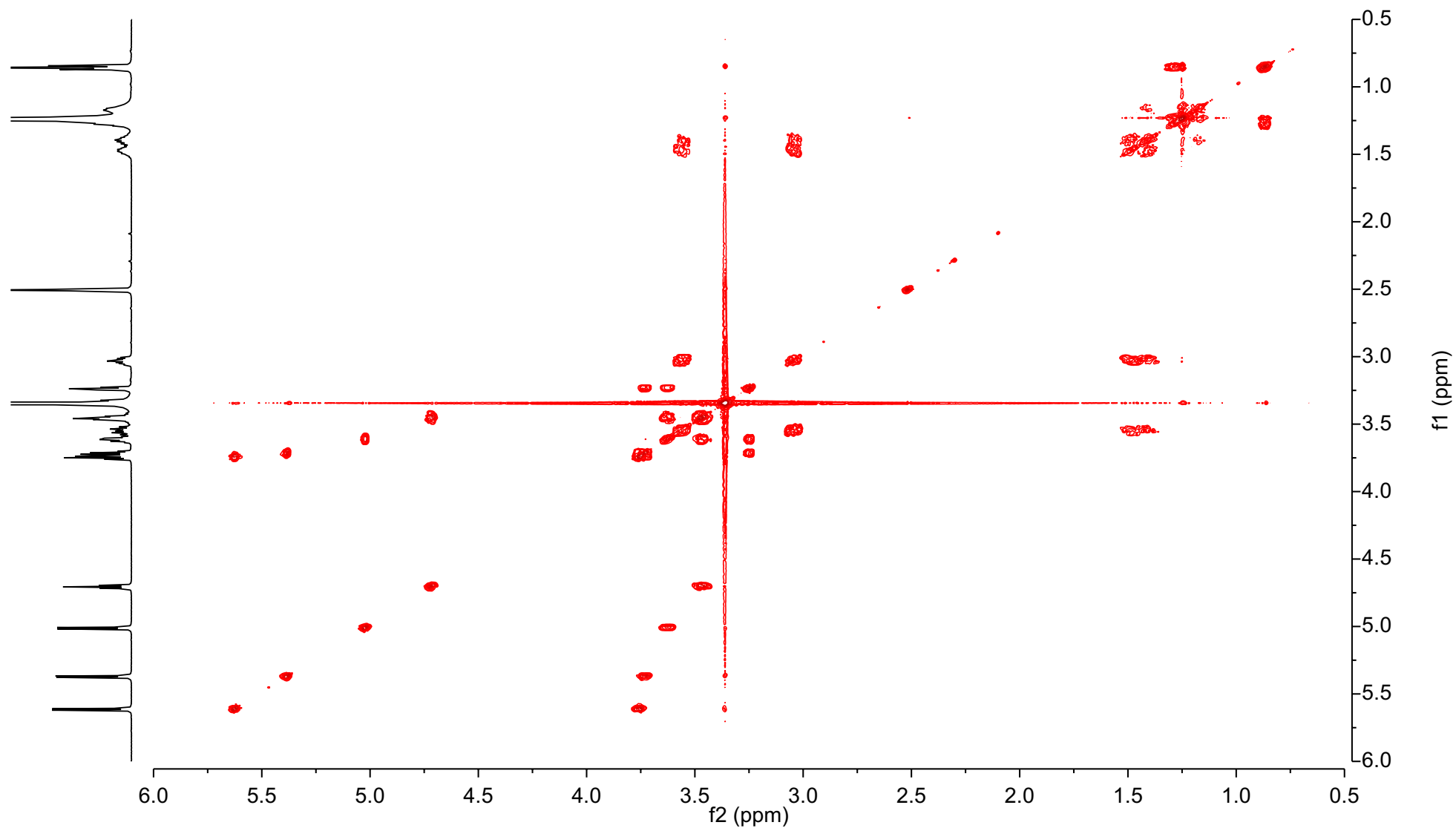
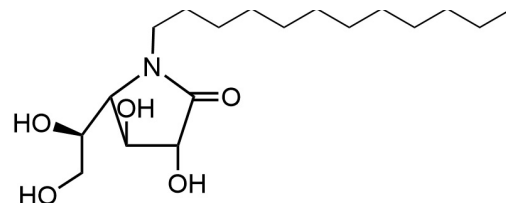
^1H NMR (DMSO- d_6 , 500 MHz) of compound **20f**



^{13}C NMR (DMSO- d_6 , 125 MHz) of compound **20f**



COSY (DMSO-*d*₆) of compound **20f**



HSQC (DMSO-*d*₆) of compound **20f**

