Electronic Supplementary Material (ESI) for Organic & Biomolecular Chemistry.

Selective trihydroxylated azepane inhibitor of NagZ, a glycosidase involved in *Pseudomonas aeruginosa* resistance to β-lactam antibiotics

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[e] *Department of Hospital Pharmacy, University of Toyama, 2630 Sugitani, Toyama 930-0194, Japan.*

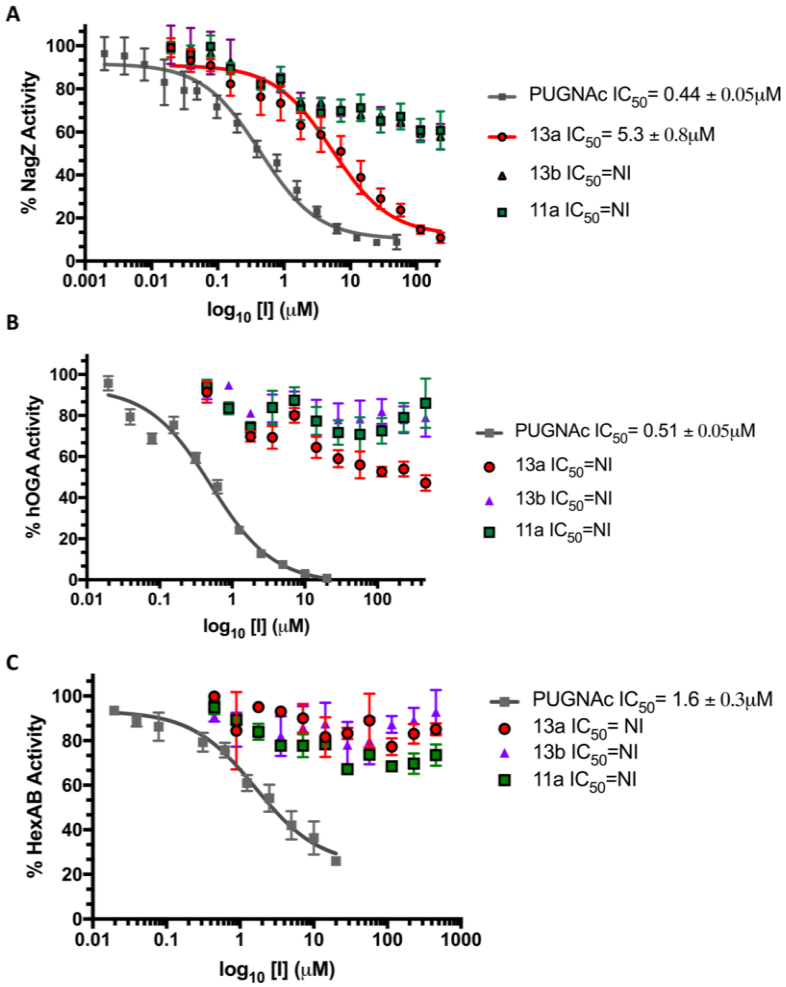


Figure S1. IC_{50} experiments to assess the ability of various azepanes to inhibit NagZ, hOGA, and HexAB. IC_{50} values represent the concentration of unlabeled compound required to reduce *p*NP-GlcNAc hydrolysis by 50%. NI indicates no inhibition up to 0.46 mM. Error bars represent standard deviation from four separate technical replicates. See materials and methods section for further details.

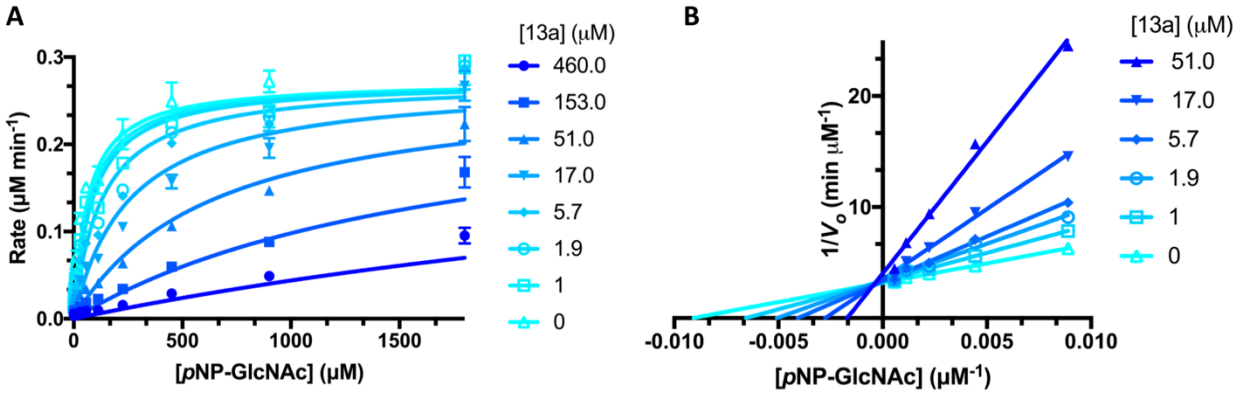
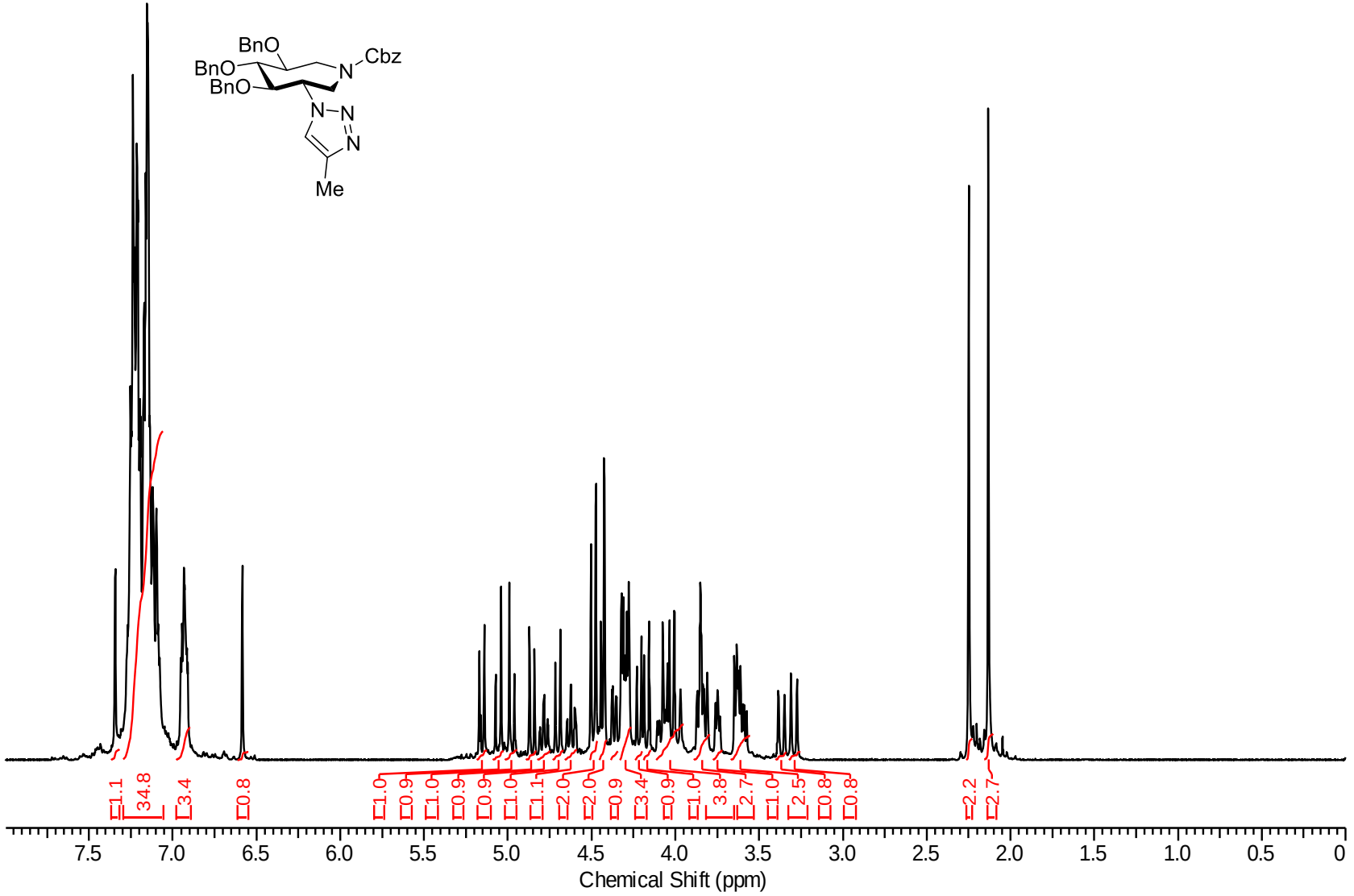
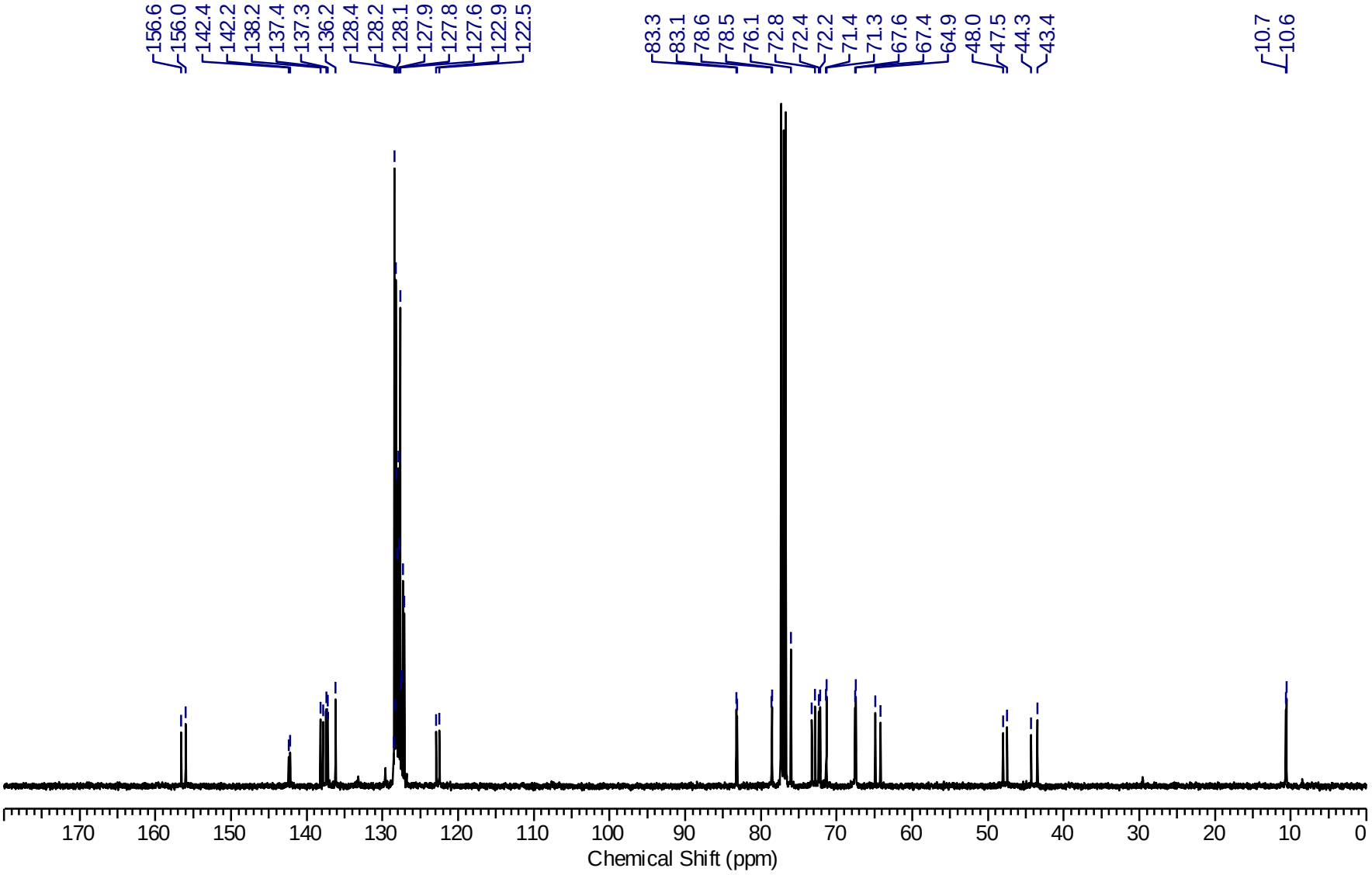


Figure S2. Inhibition of NagZ by compound 13a. A) K_i determination for **13a** mediated NagZ inhibition. Error bars represent standard deviation from quadruplicate technical replicates. The data were fit globally to a competitive inhibition model to attain (K_i=5.7 $\pm$ 0.5 μM) using GraphPad Prism. **B)** Lineweaver-Burke plot for NagZ by compound **13a**. Inhibitor concentrations are indicated in the legend and the [NagZ] used was 100 nM.

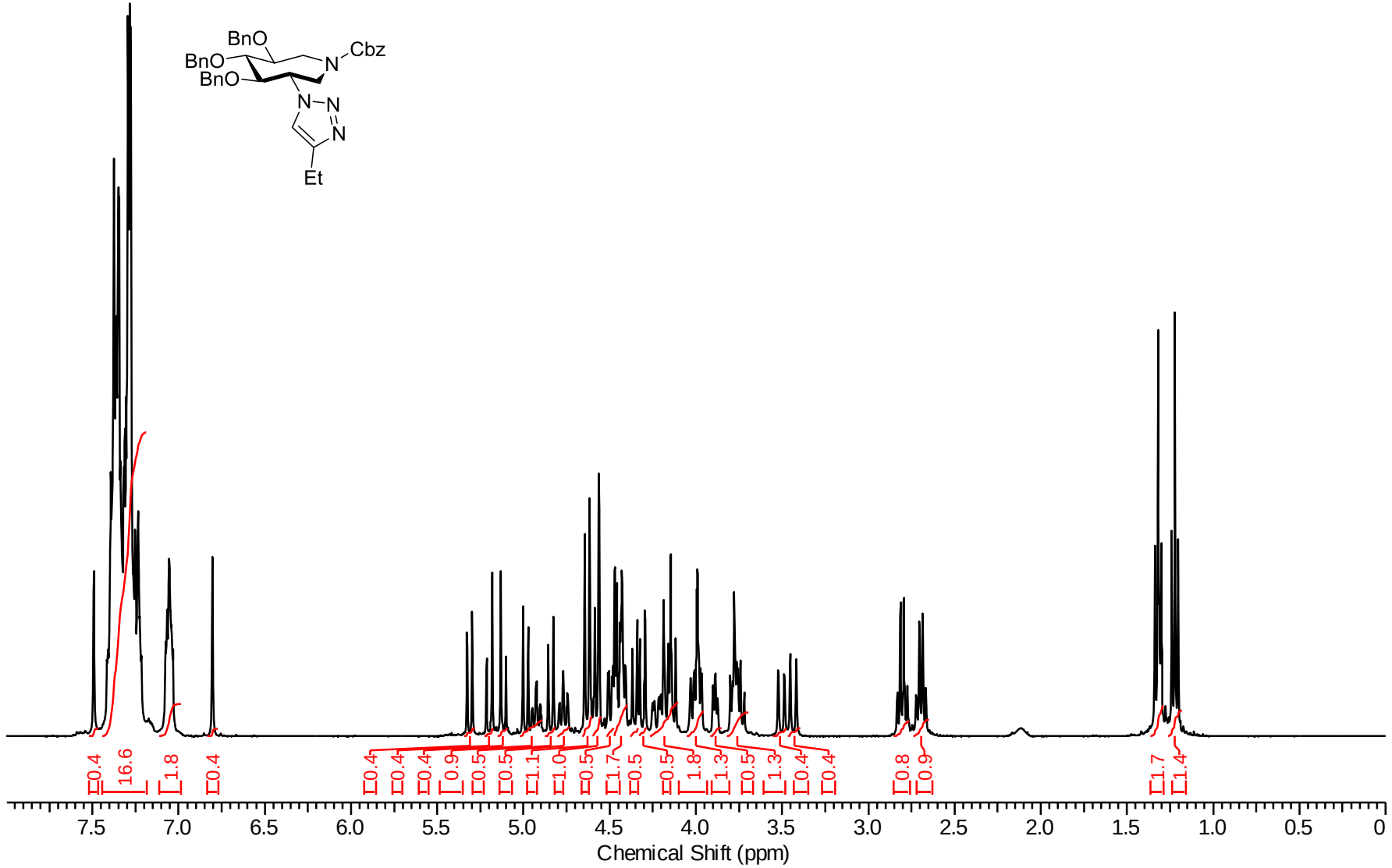
Compound **8a** (^{1}H NMR, 400 MHz, $CDCl_3$)



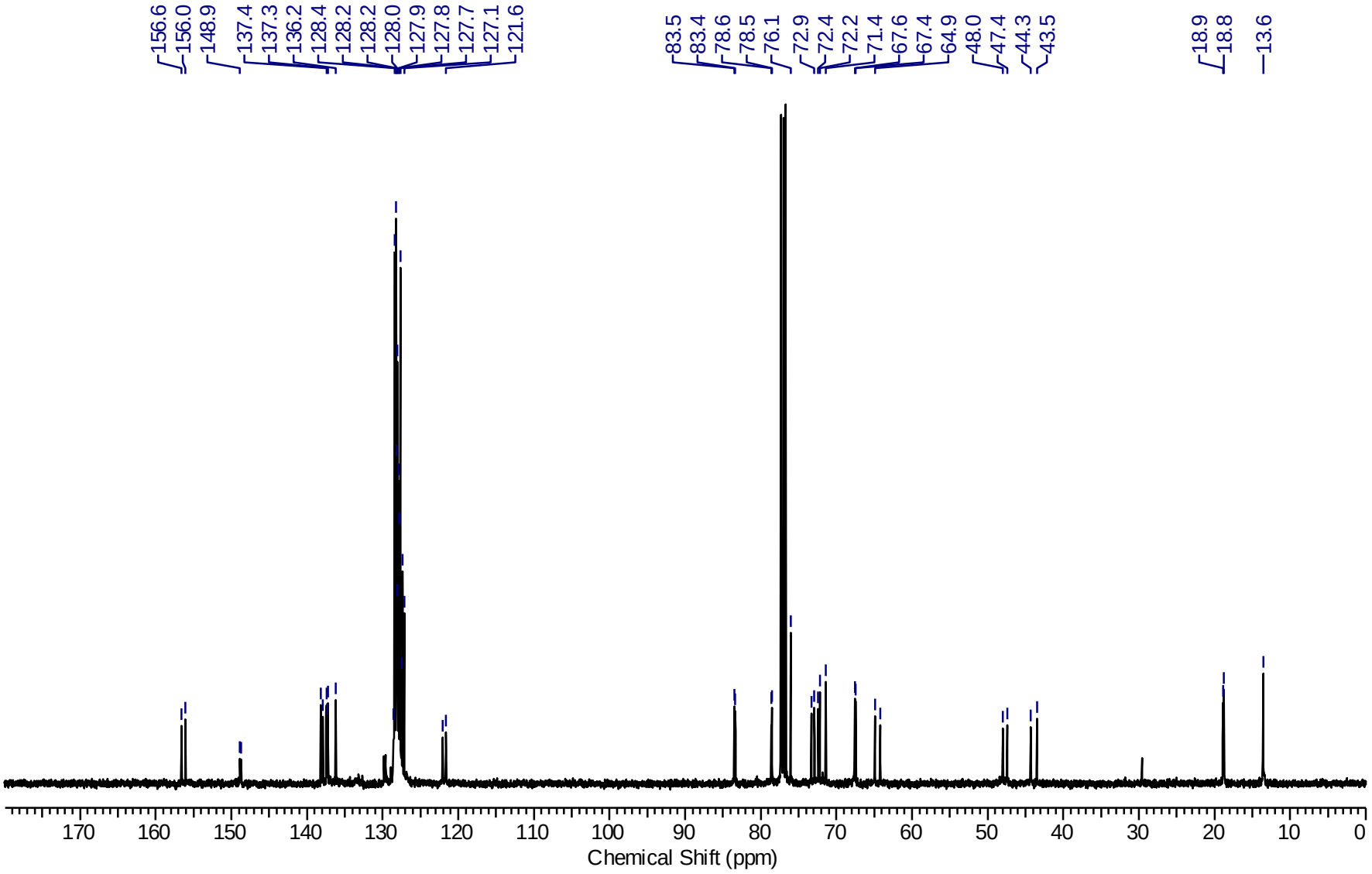
Compound **8a** (^{13}C NMR, 100 MHz, $CDCl_3$)



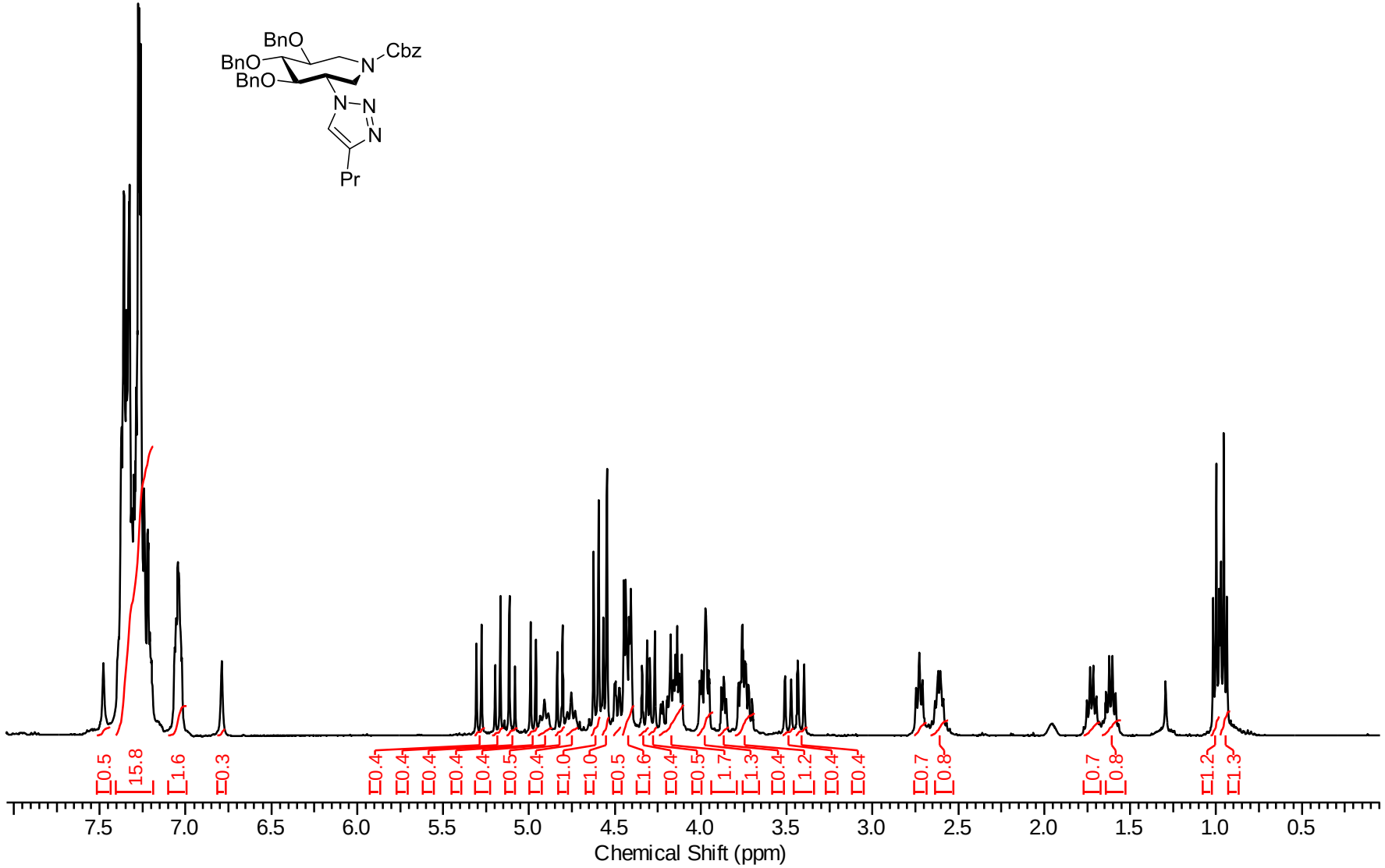
Compound **8b** (^{1}H NMR, 400 MHz, $CDCl_3$)



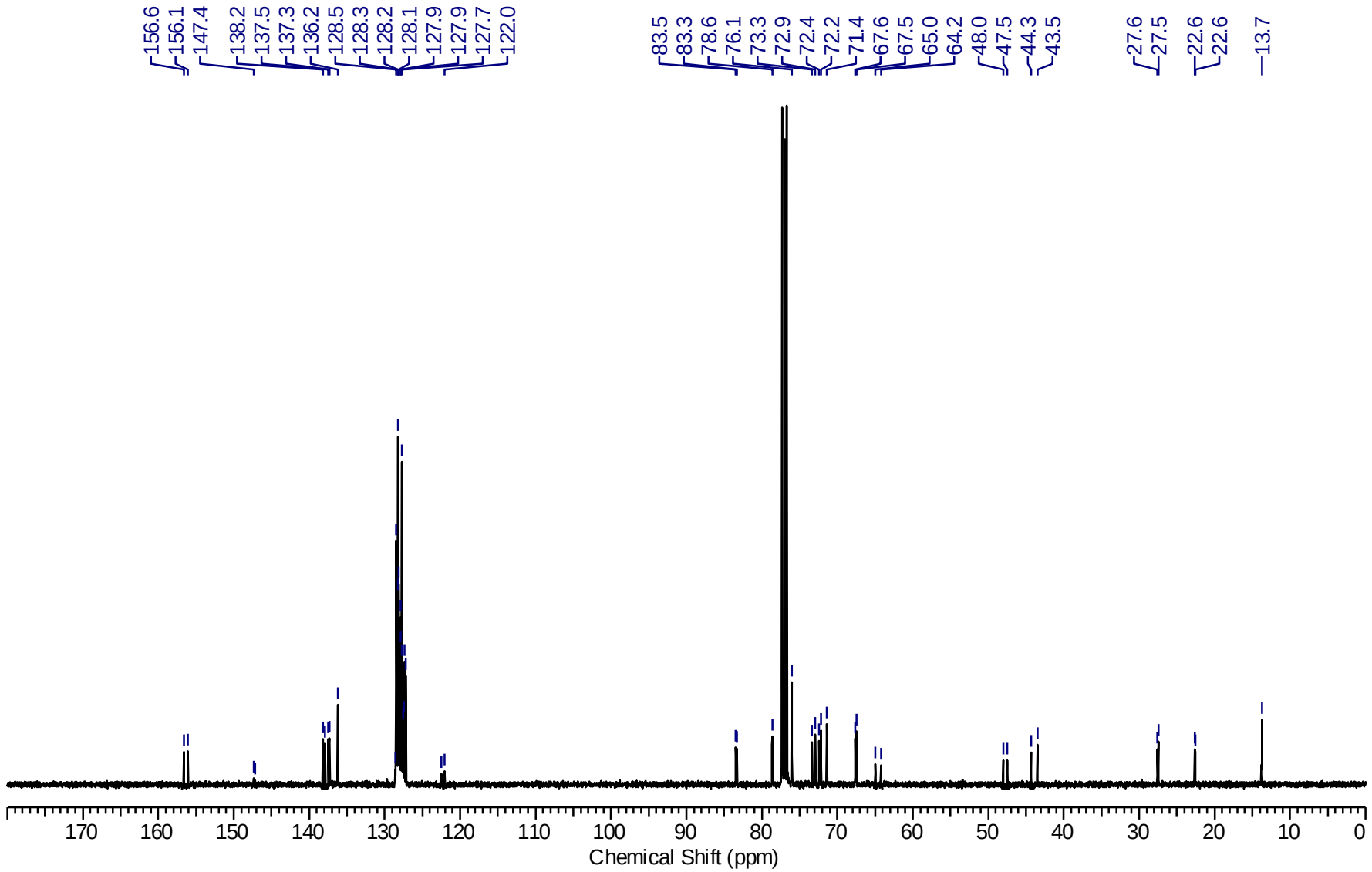
Compound **8b** (^{13}C NMR, 100 MHz, $CDCl_3$)



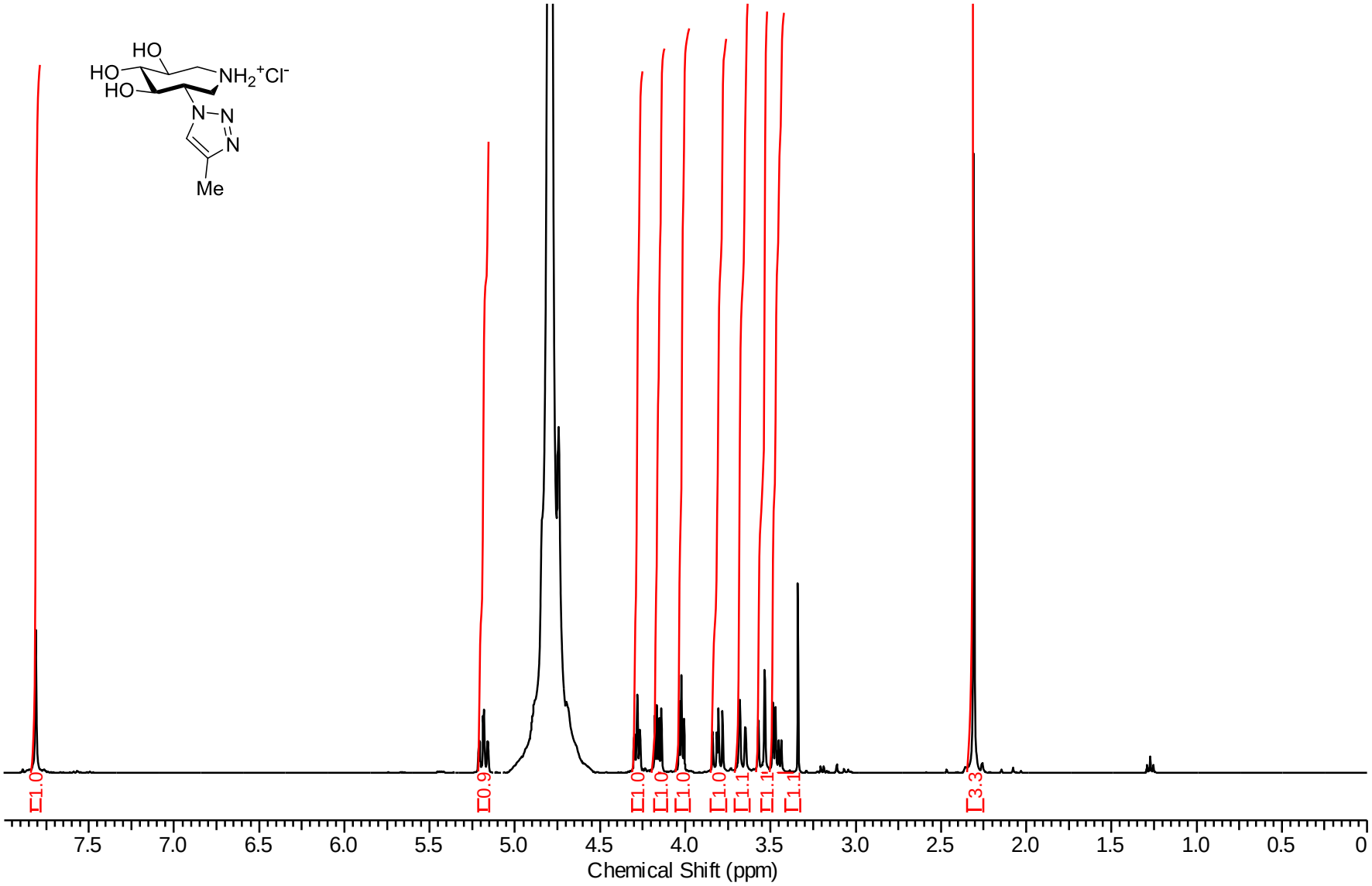
Compound **8c** (^{1}H NMR, 400 MHz, $CDCl_3$)



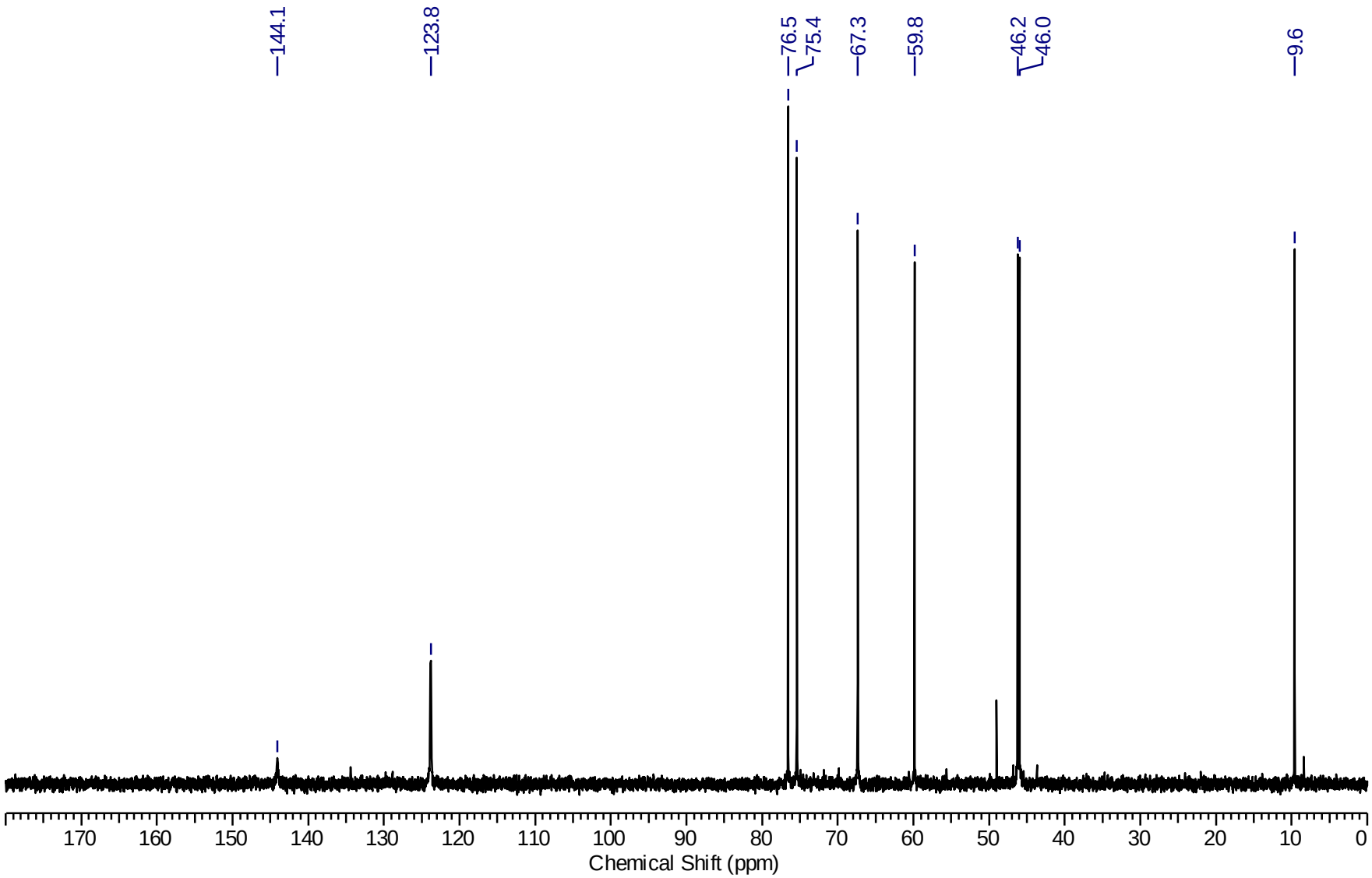
Compound **8c** (^{13}C NMR, 100 MHz, $CDCl_3$)



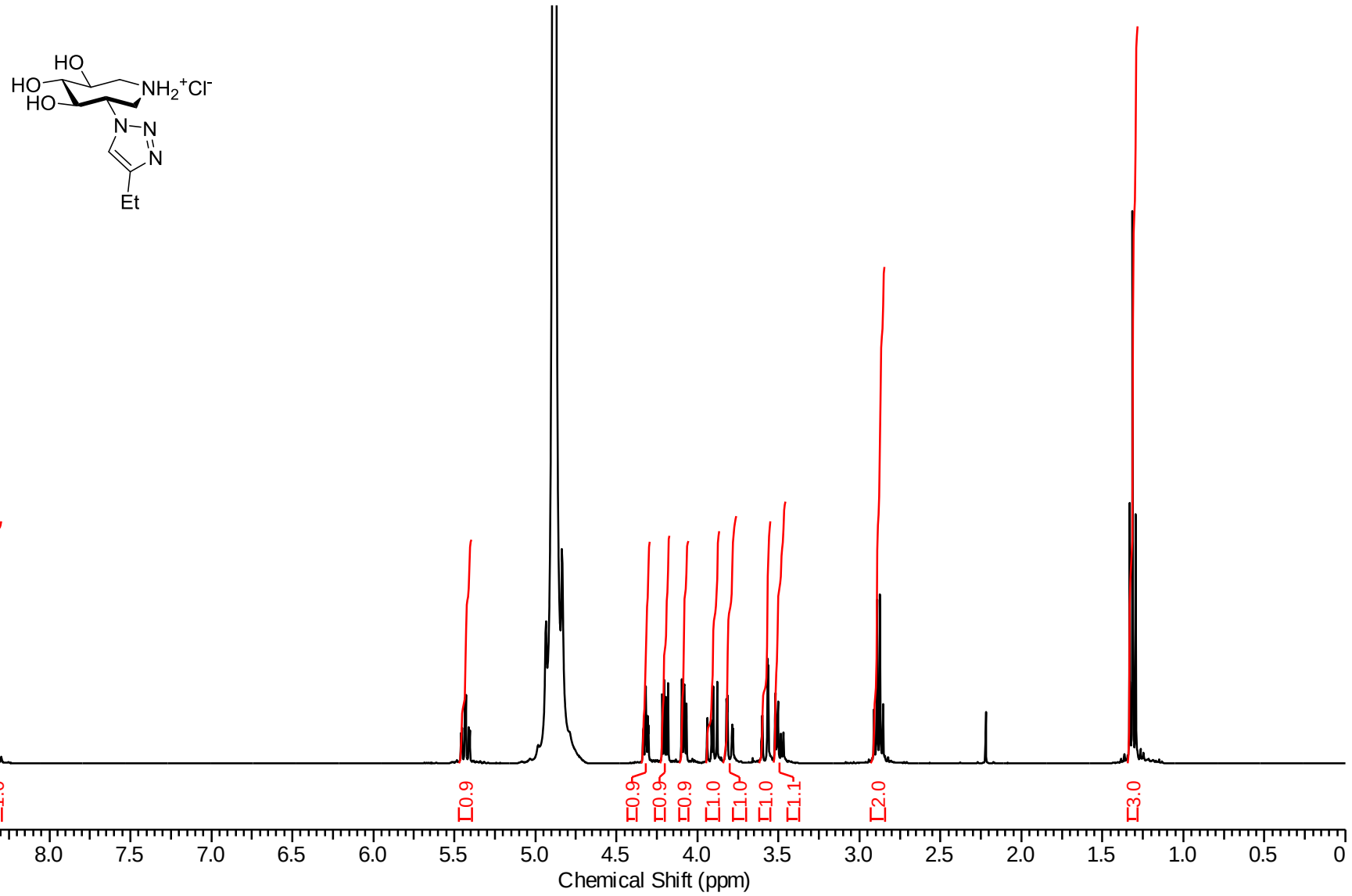
Compound **9a** (^{1}H NMR, 400 MHz, D_2O)



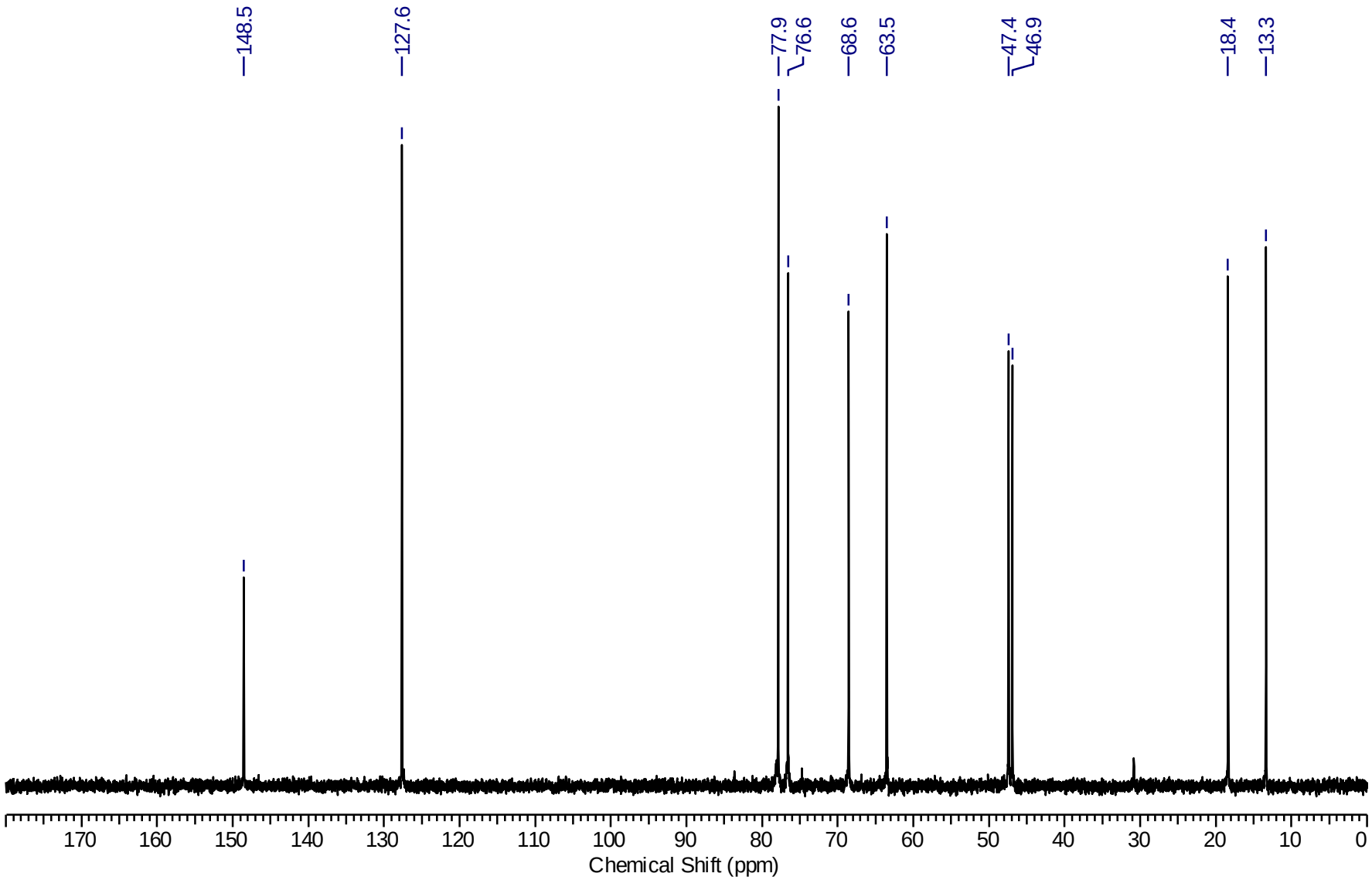
Compound **9a** (^{13}C NMR, 100 MHz, D_2O)



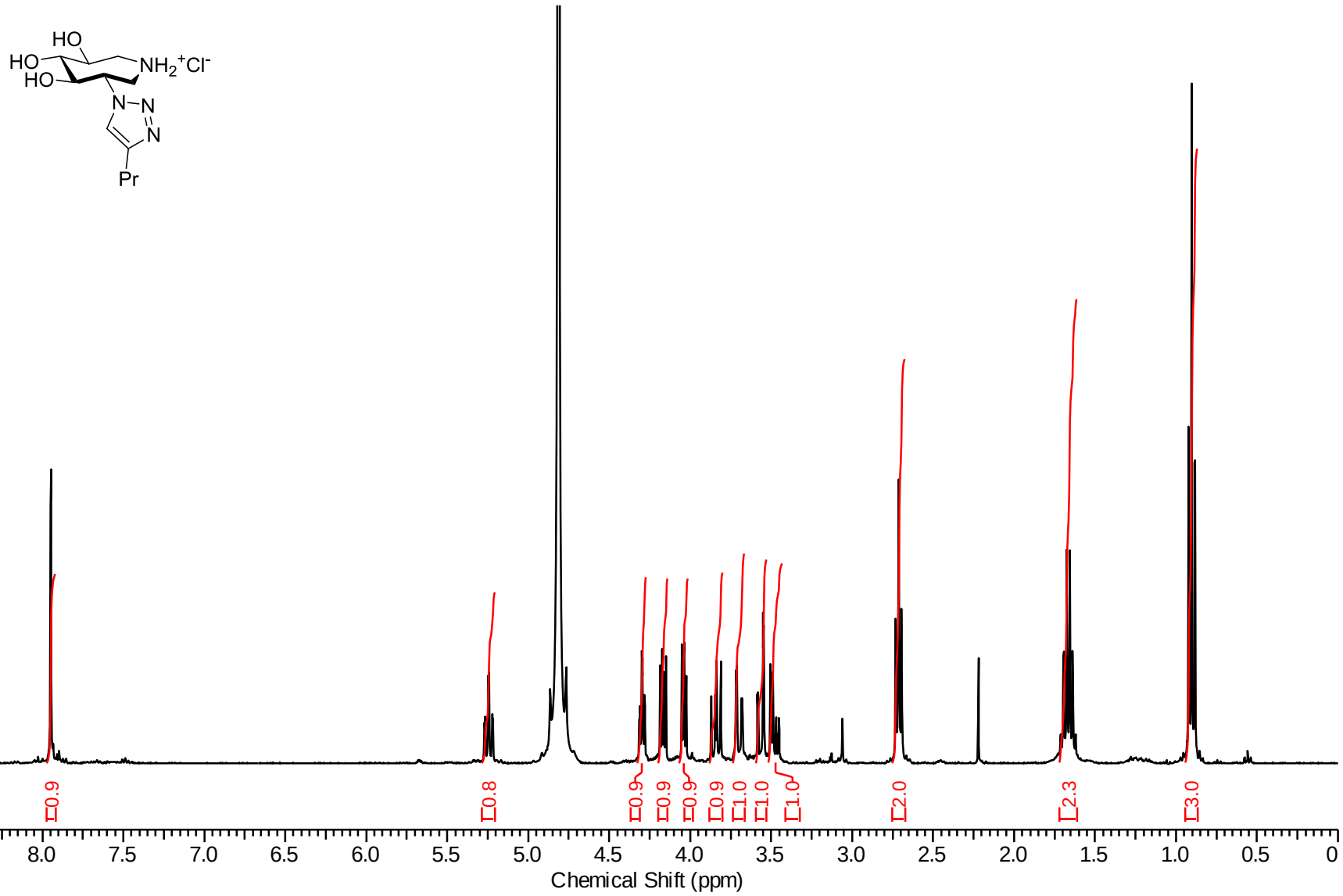
Compound **9b** (^{1}H NMR, 400 MHz, D_2O)



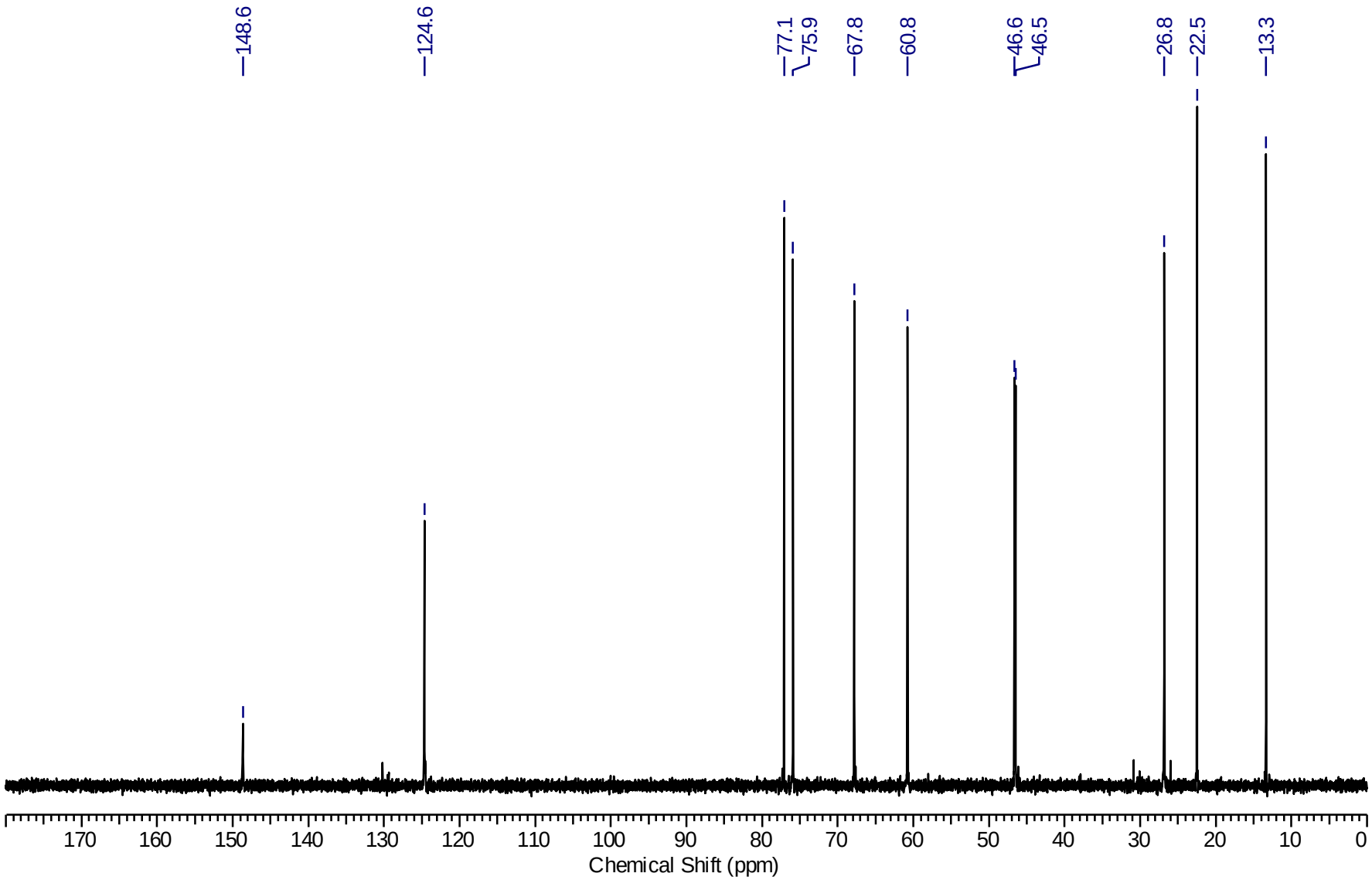
Compound **9b** (^{13}C NMR, 100 MHz, D_2O)



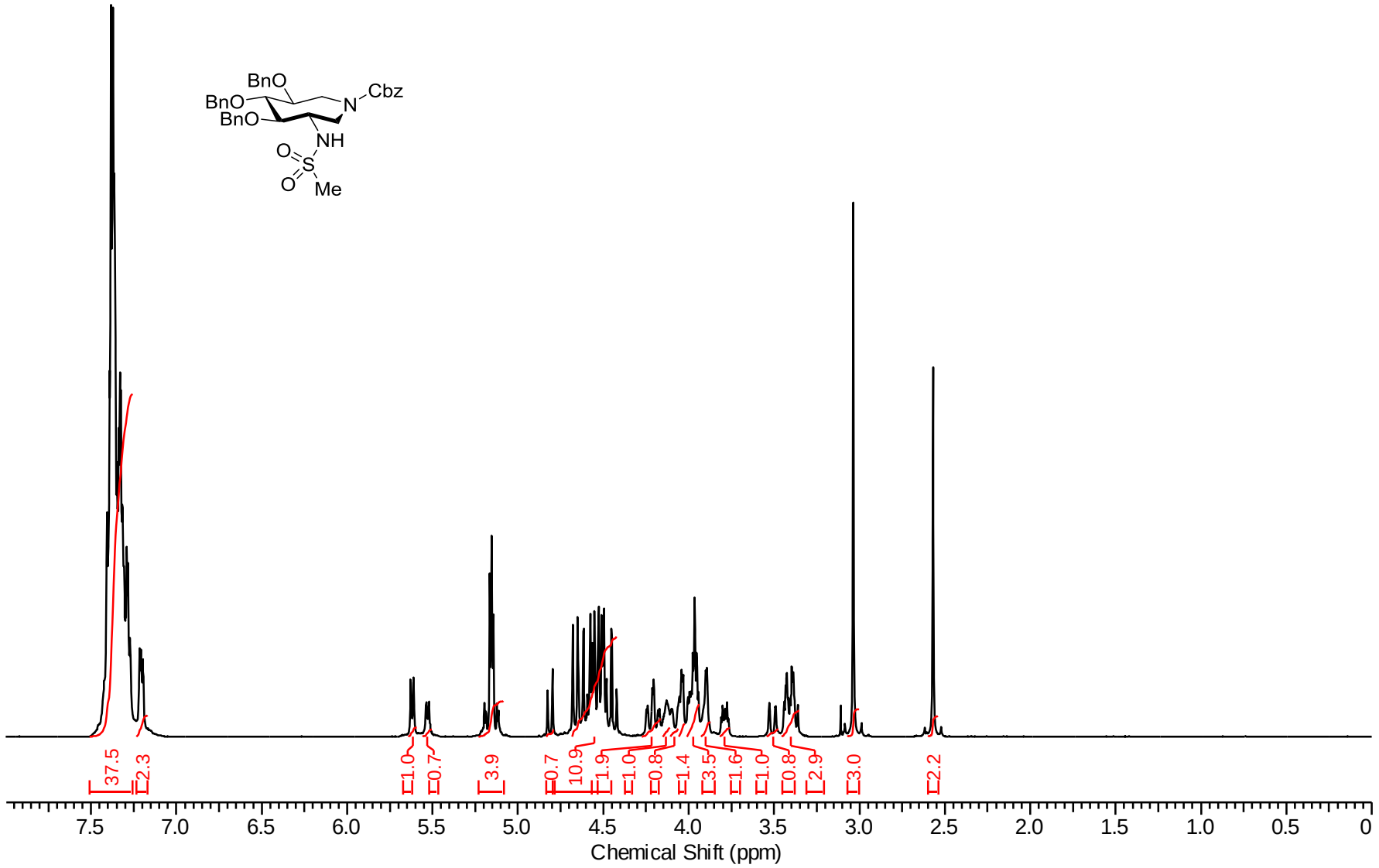
Compound **9c** (^{1}H NMR, 400 MHz, D_2O)



Compound **9c** (^{13}C NMR, 100 MHz, D_2O)



Compound **10a** (^{1}H NMR, 400 MHz, $CDCl_3$)



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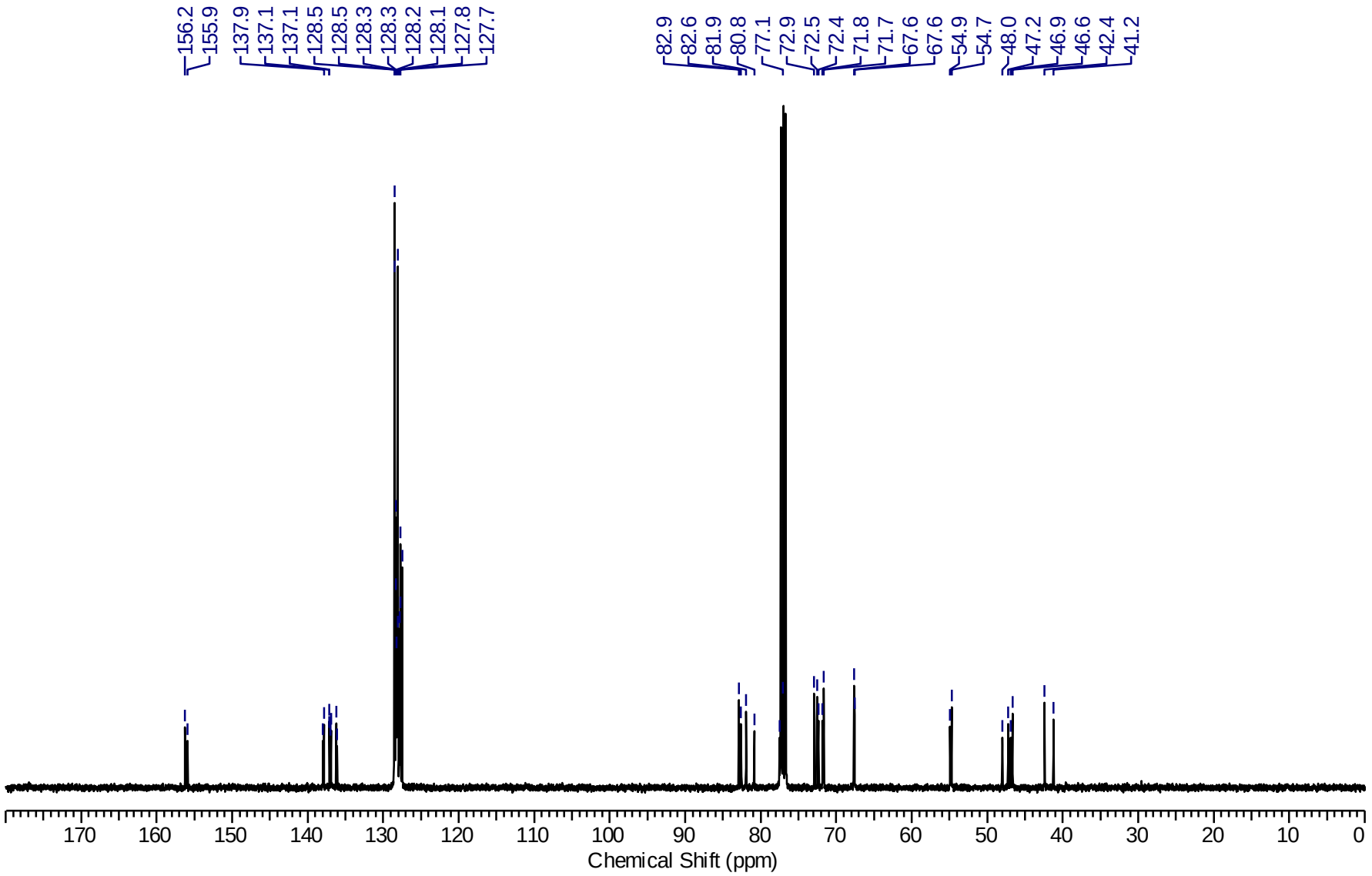

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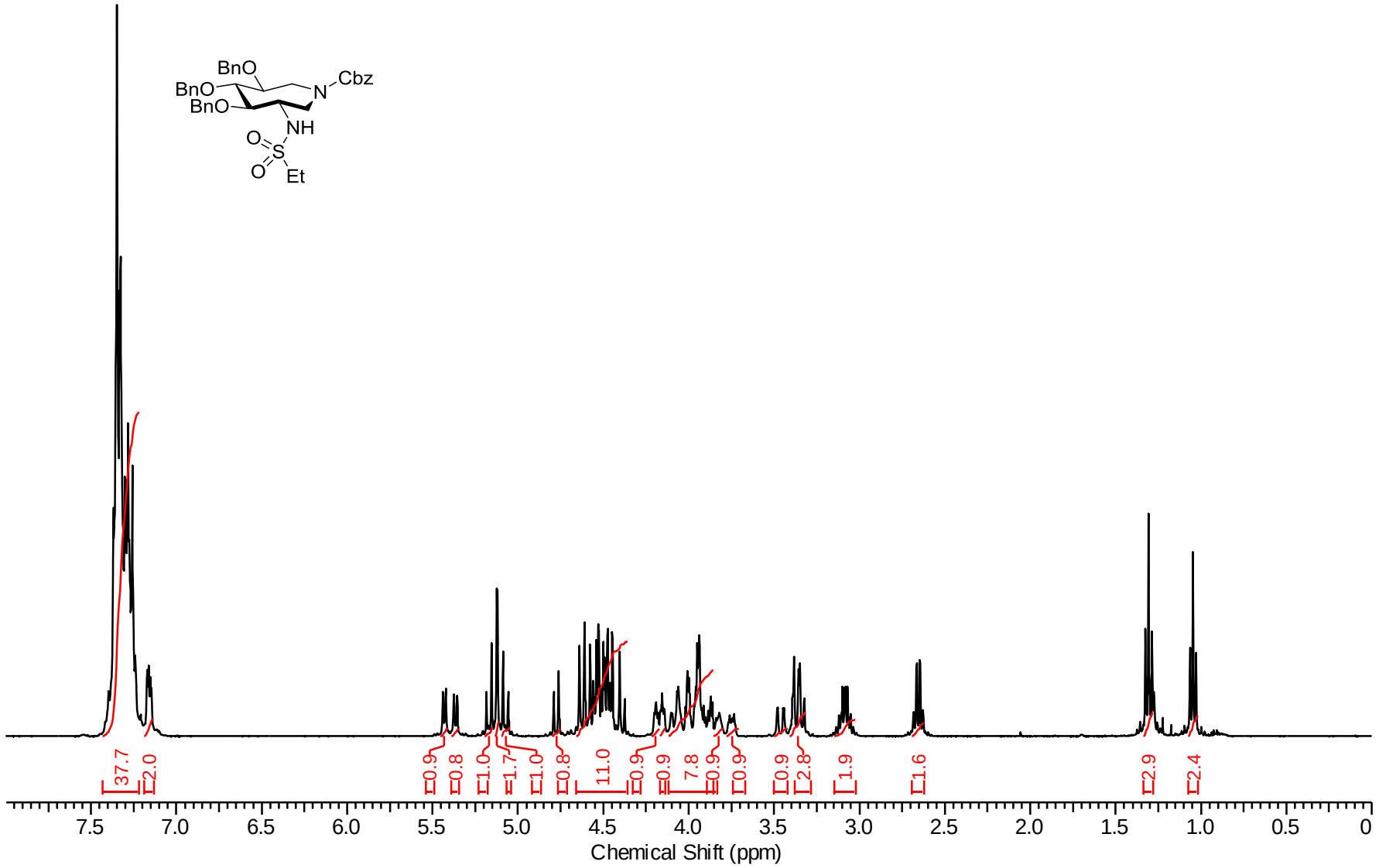

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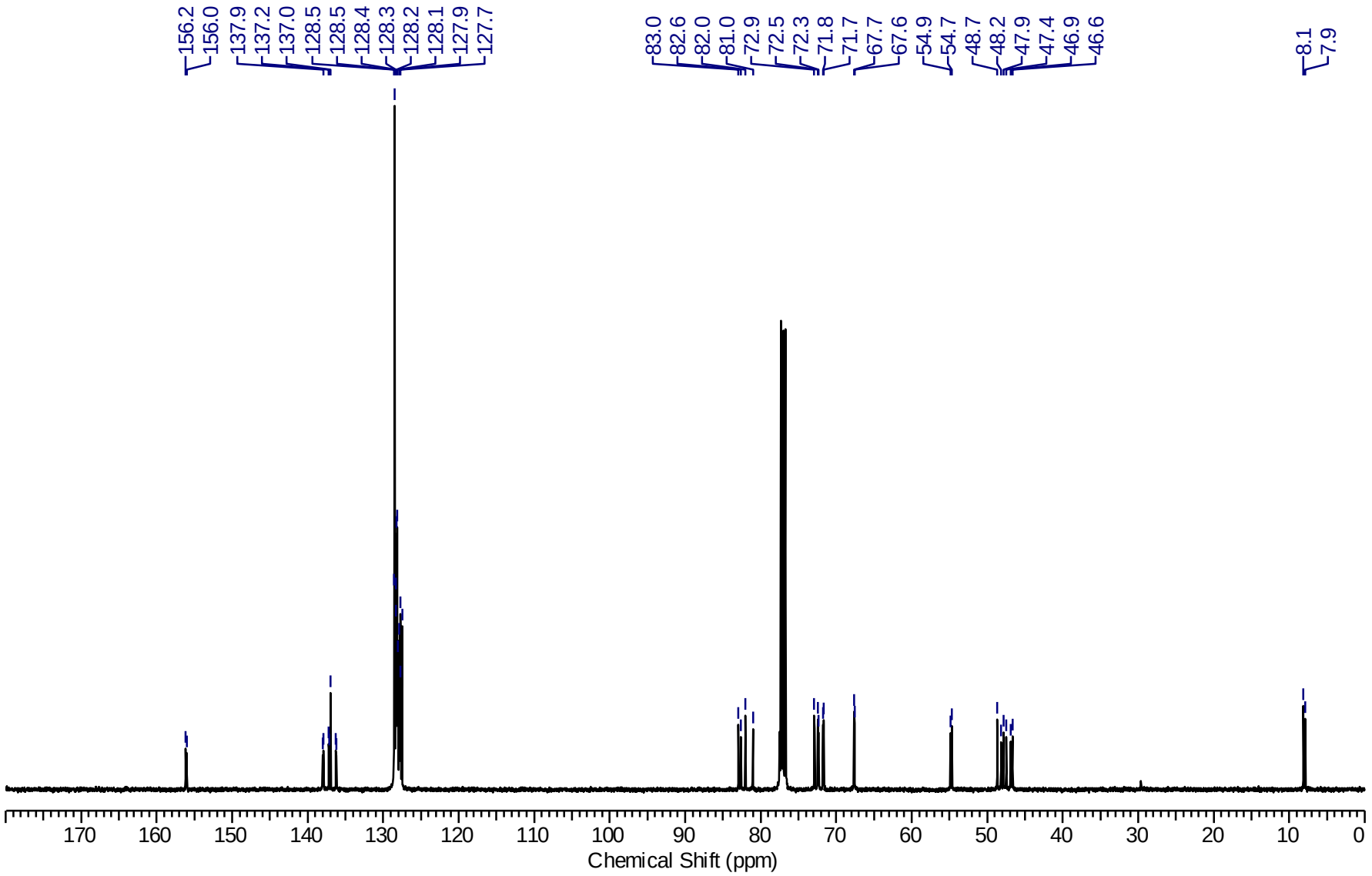

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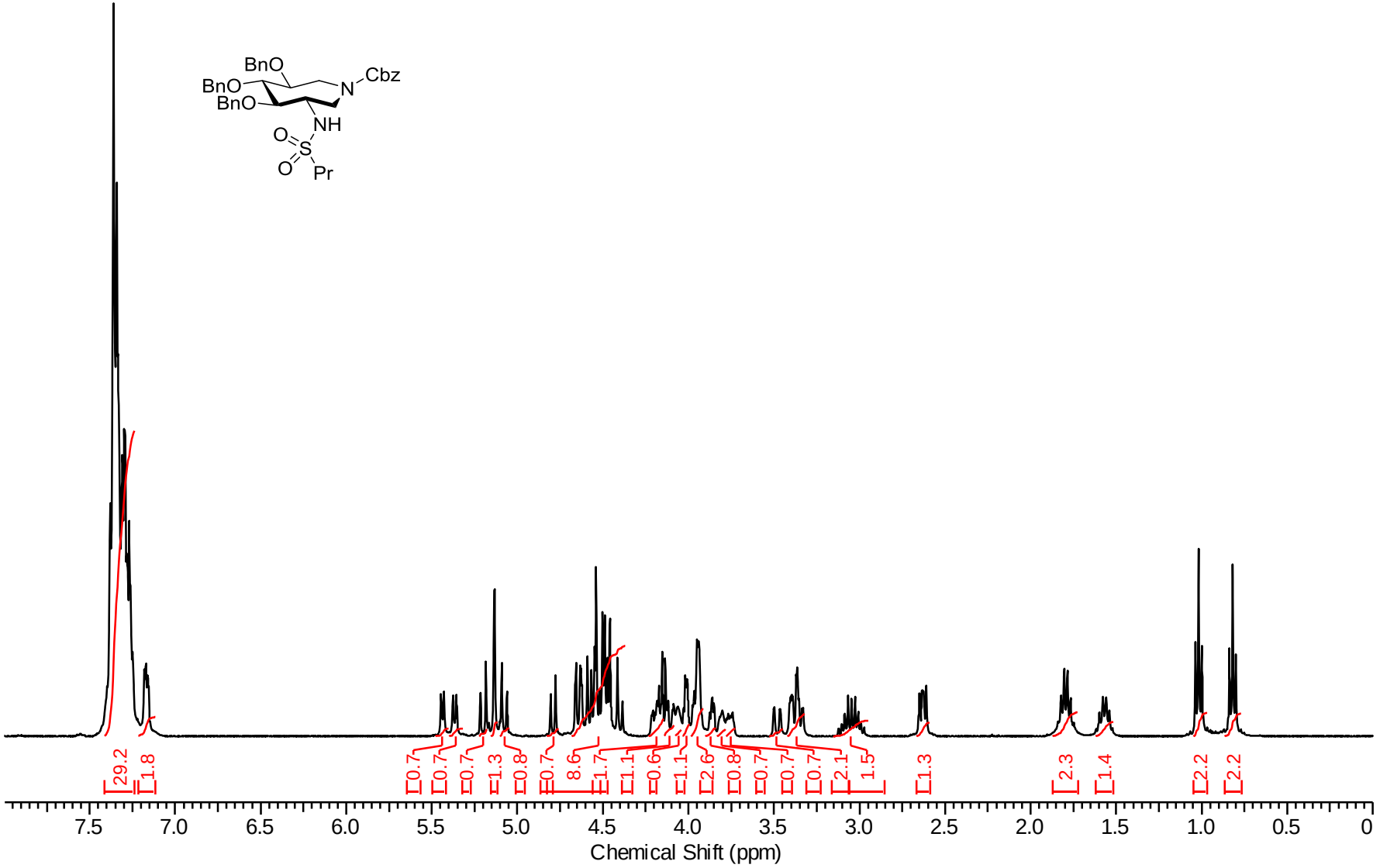

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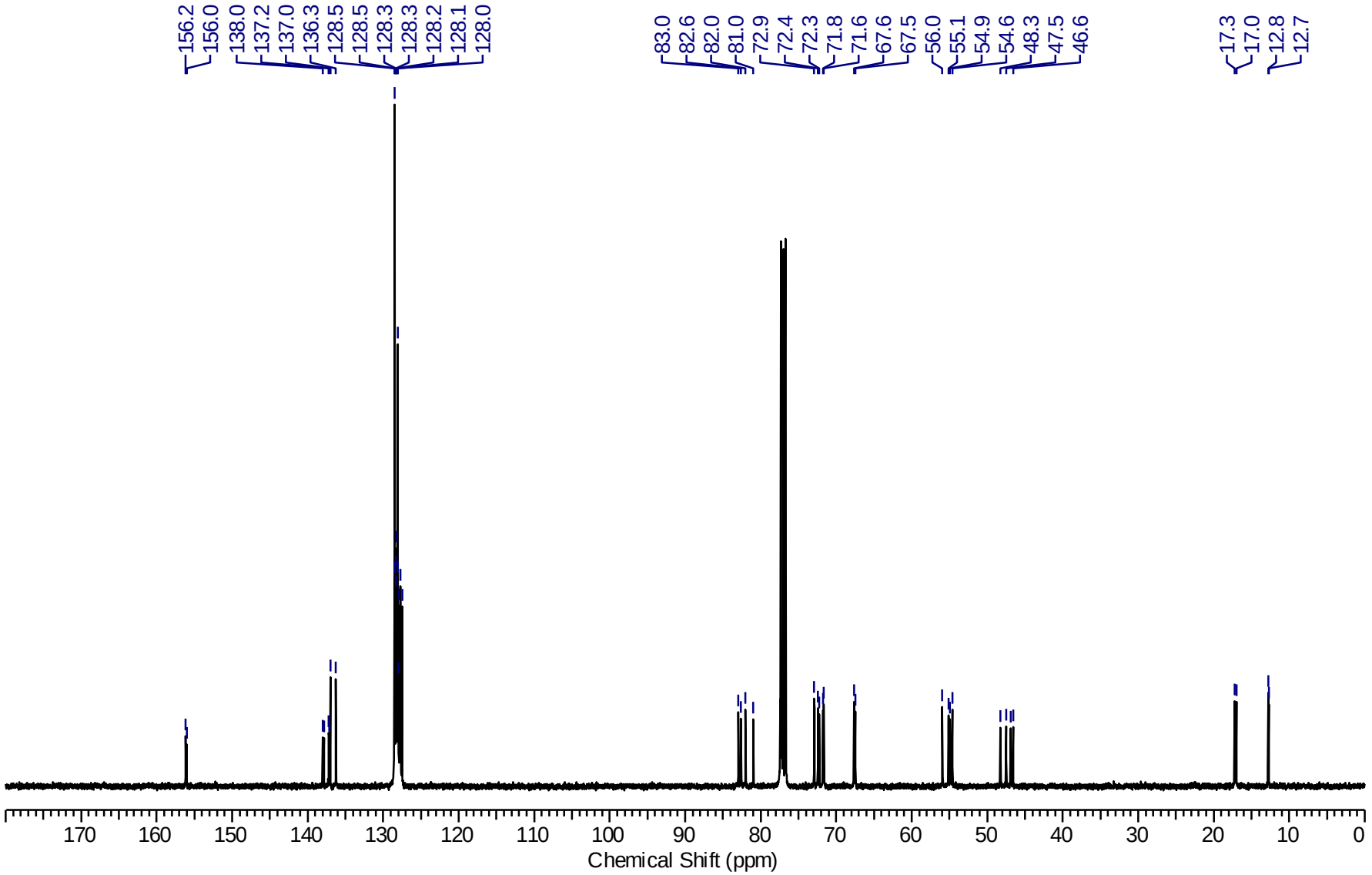
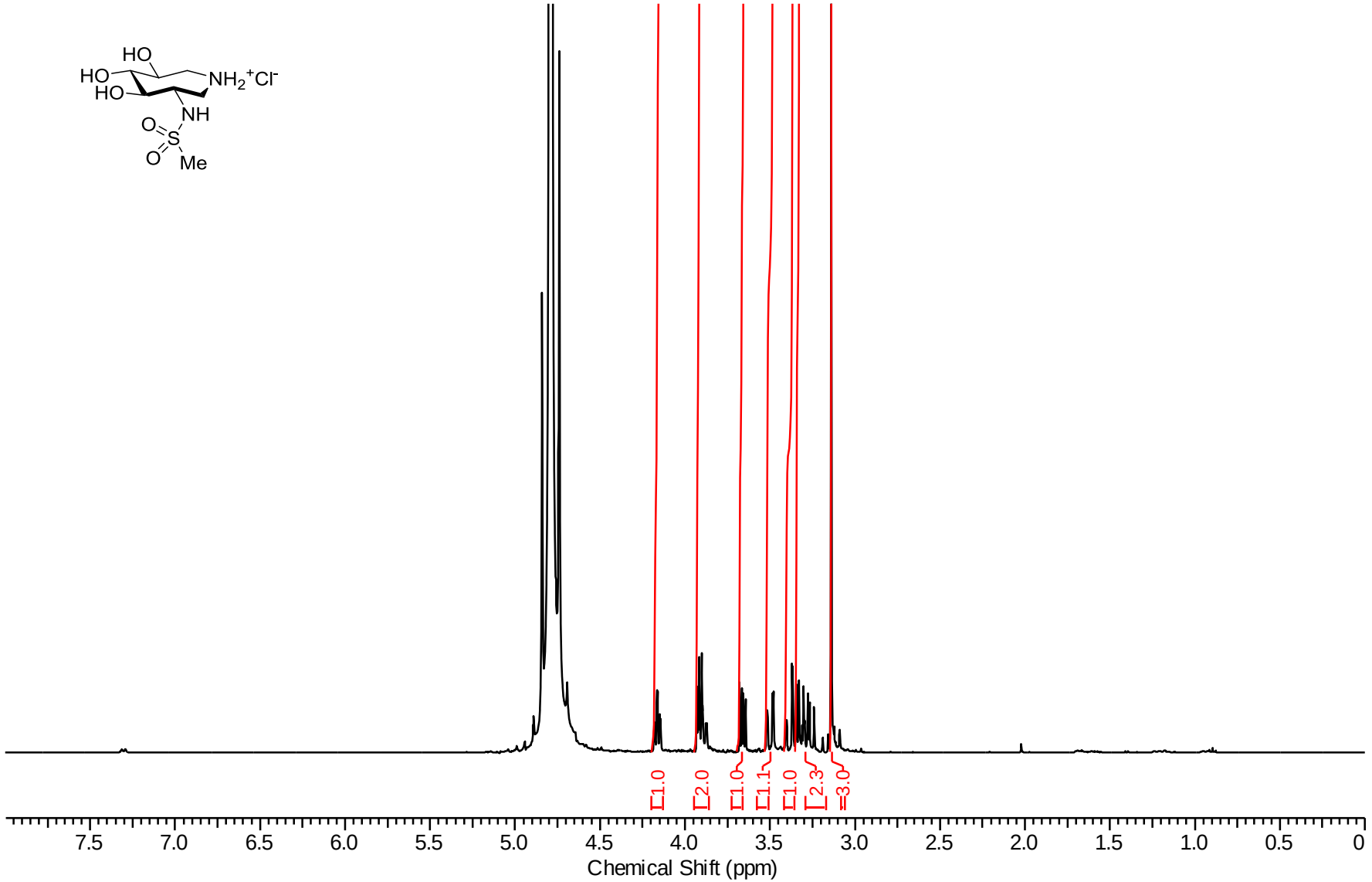


Compound **11a** (^{1}H NMR, 400 MHz, D_2O)



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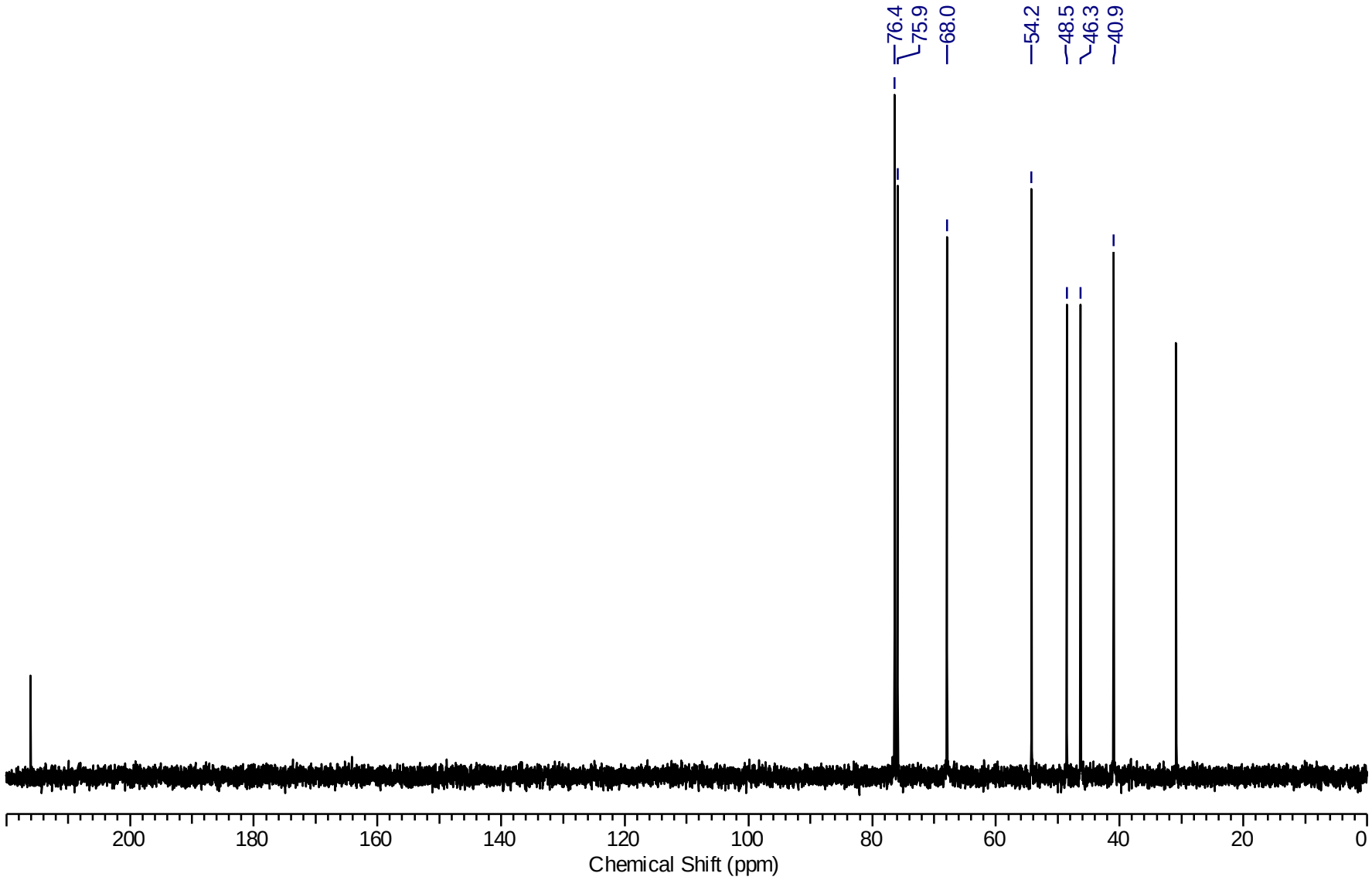

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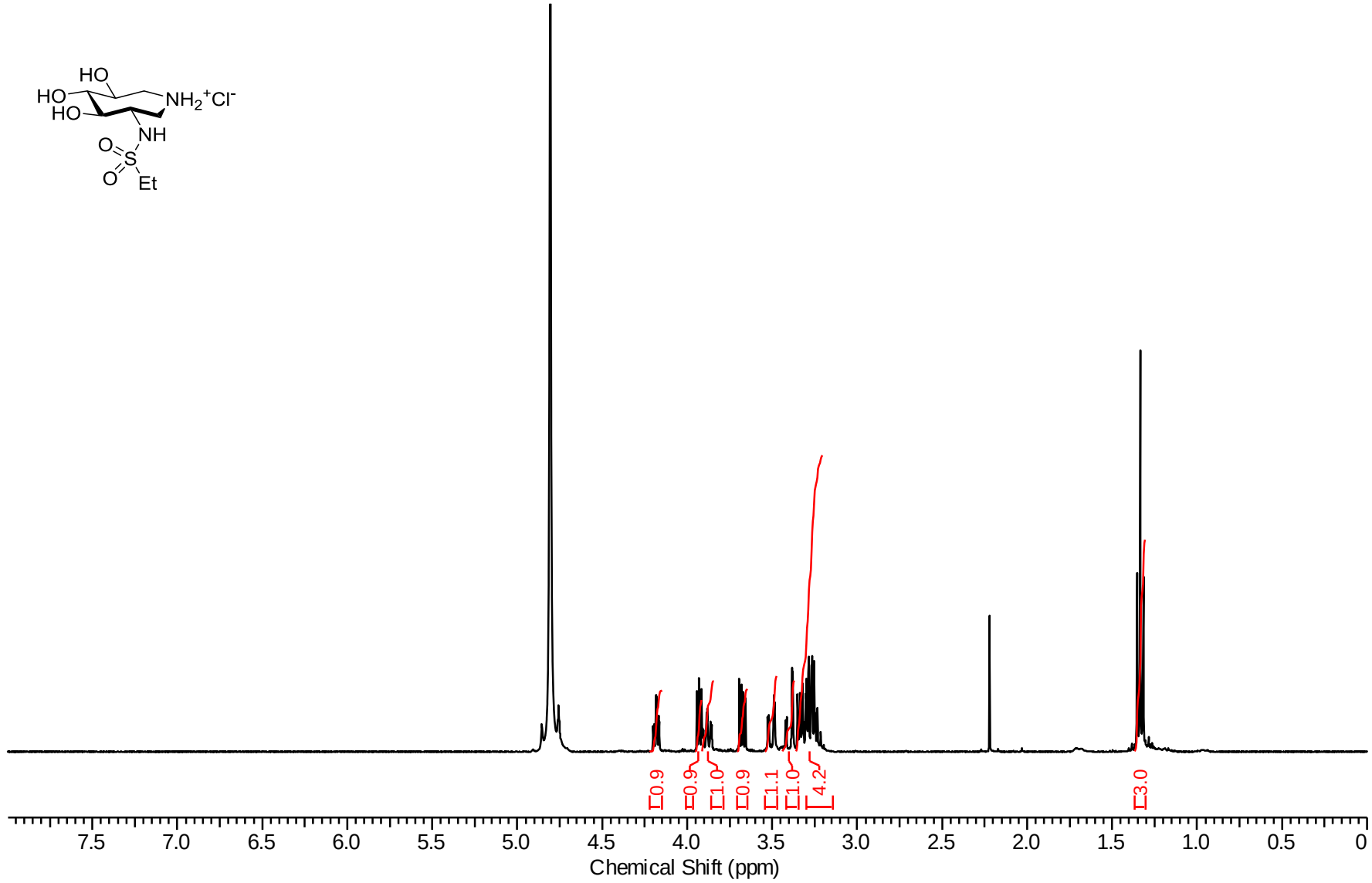

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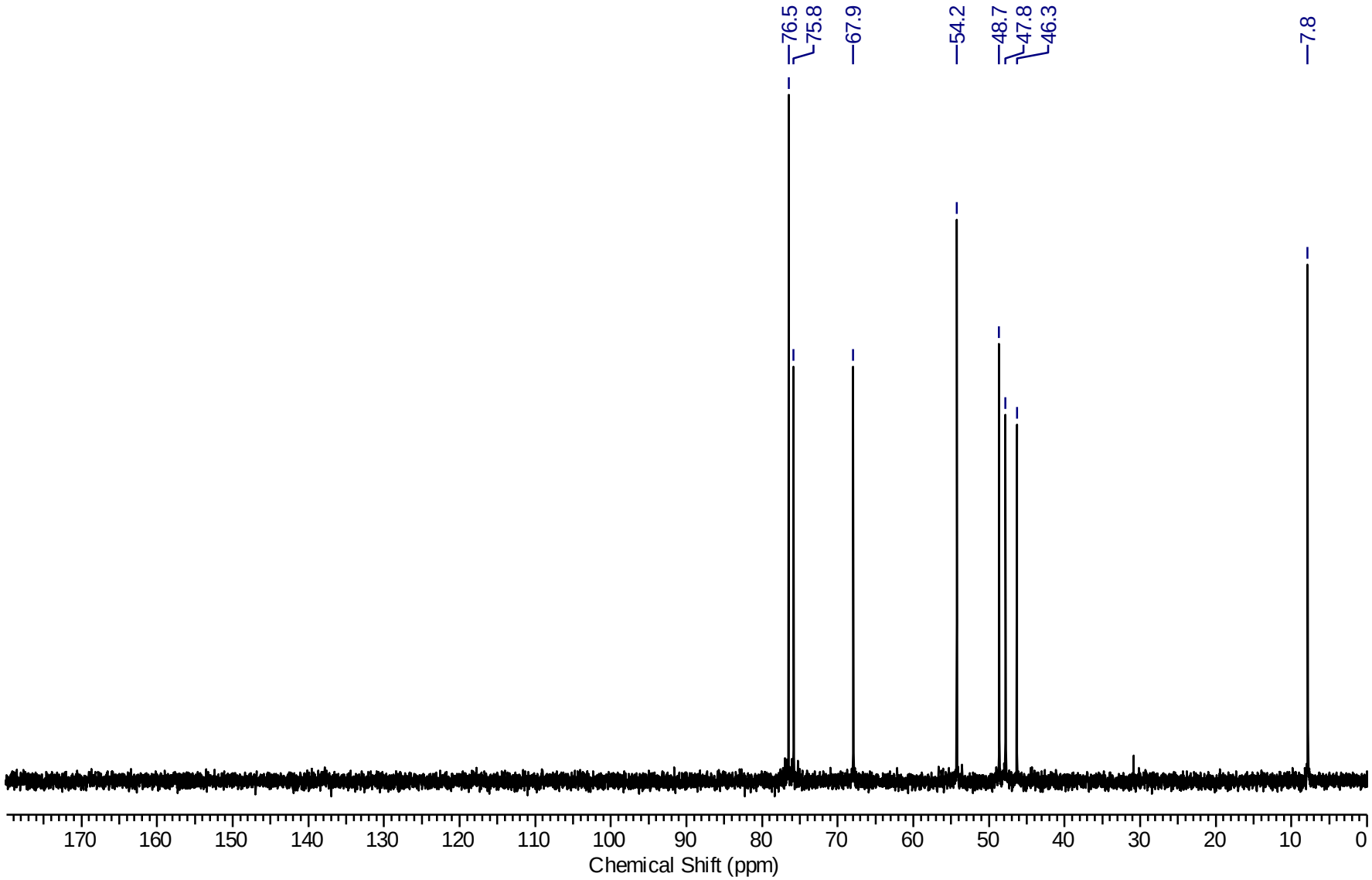

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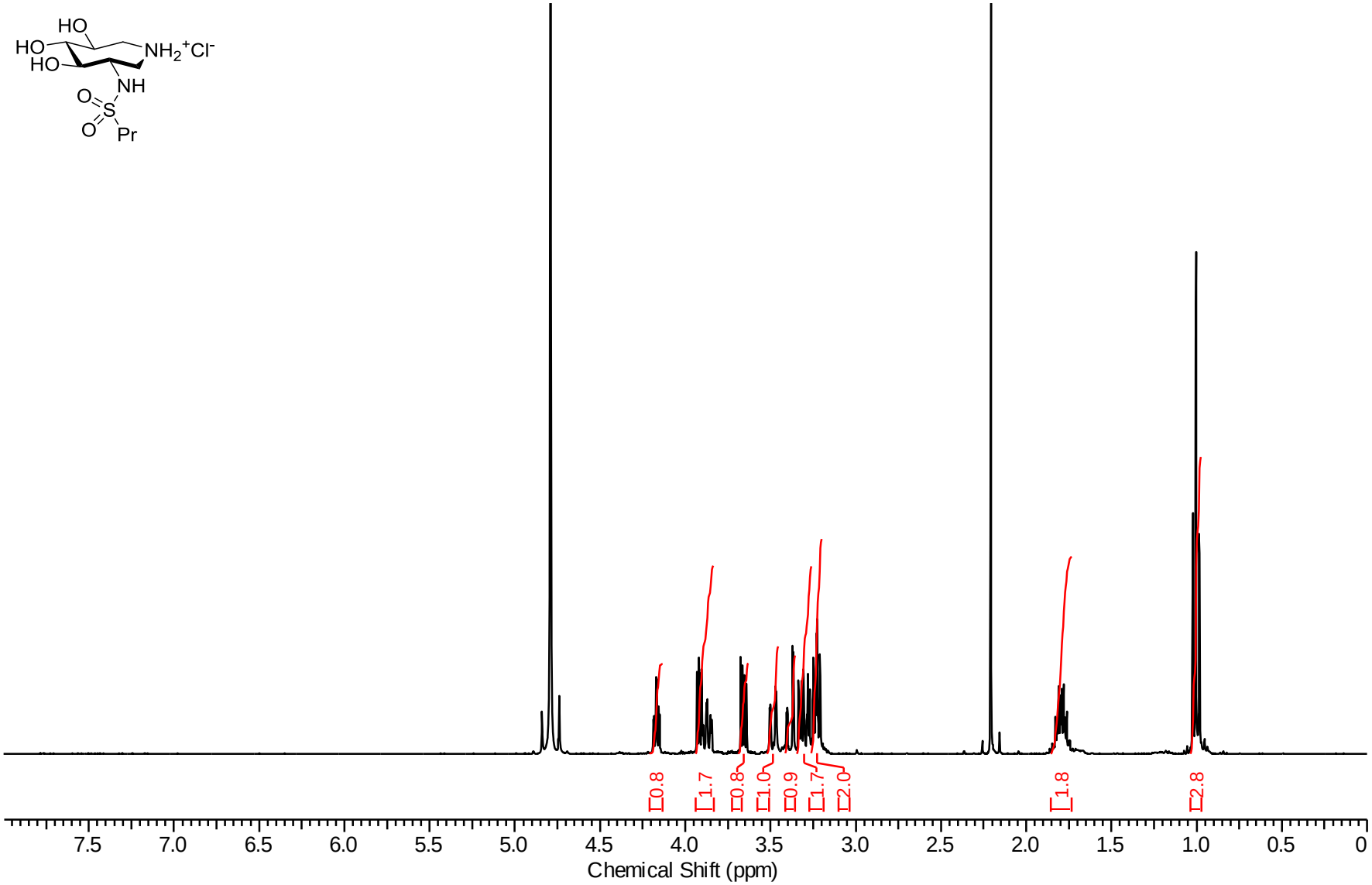

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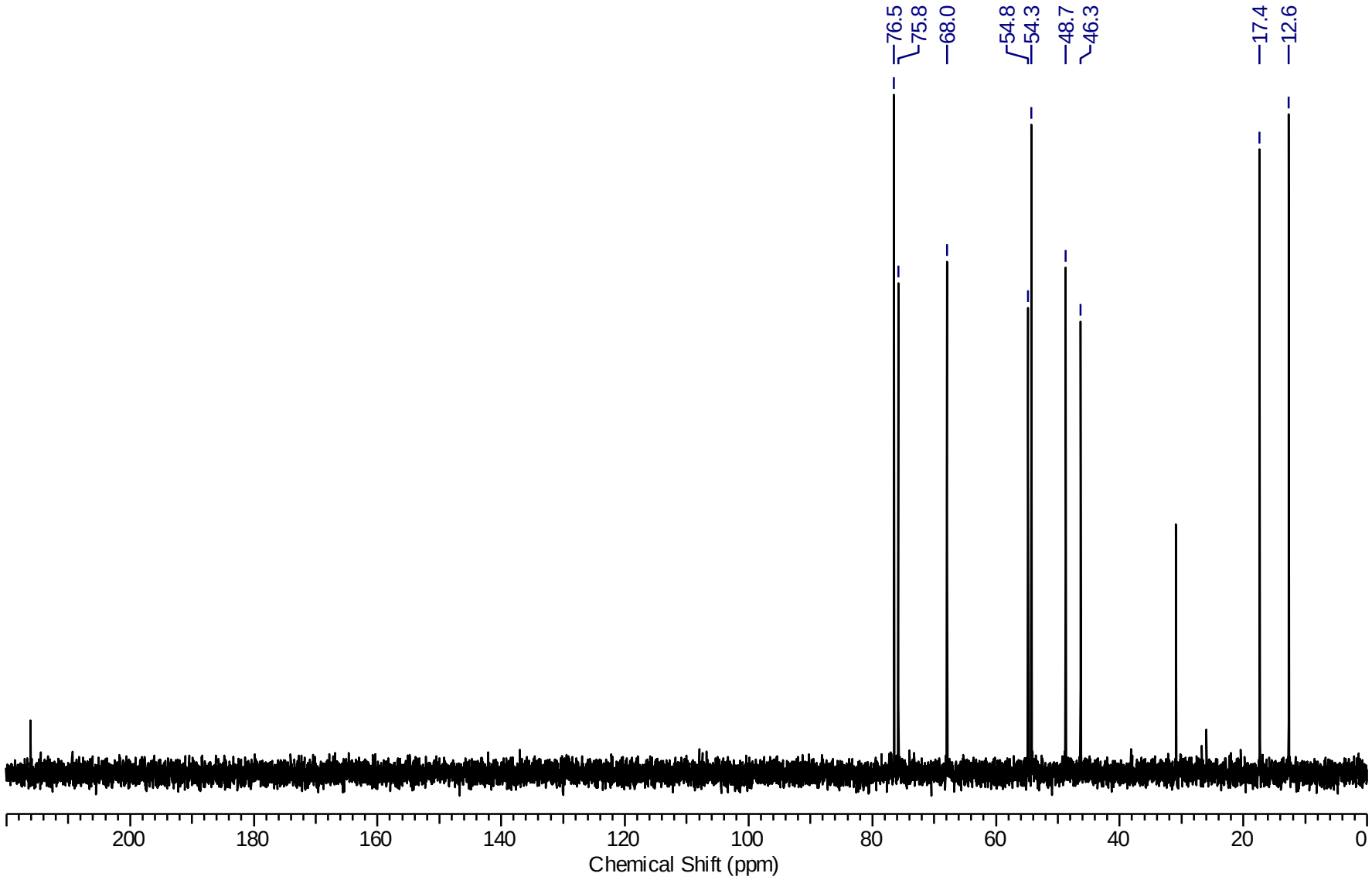
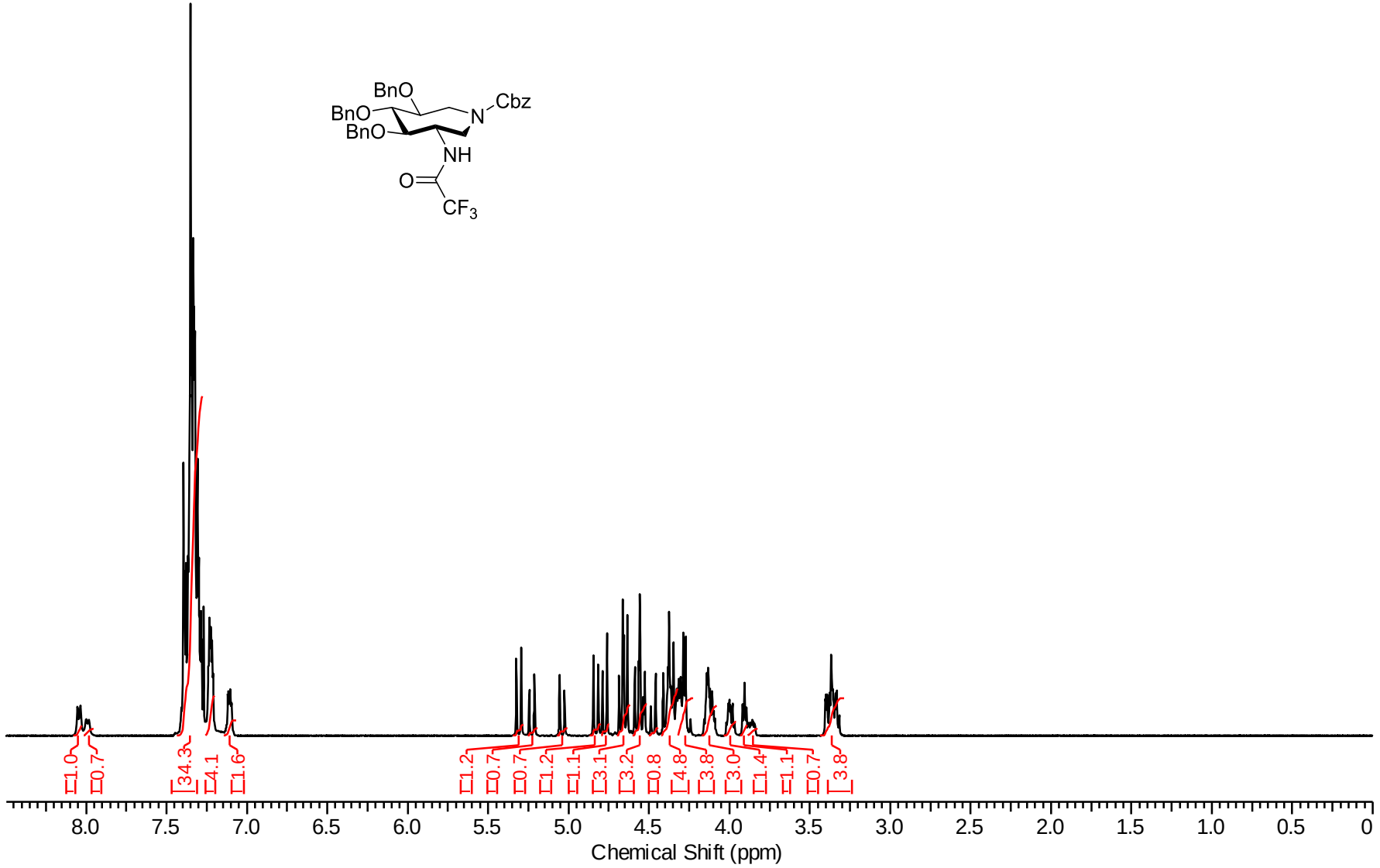
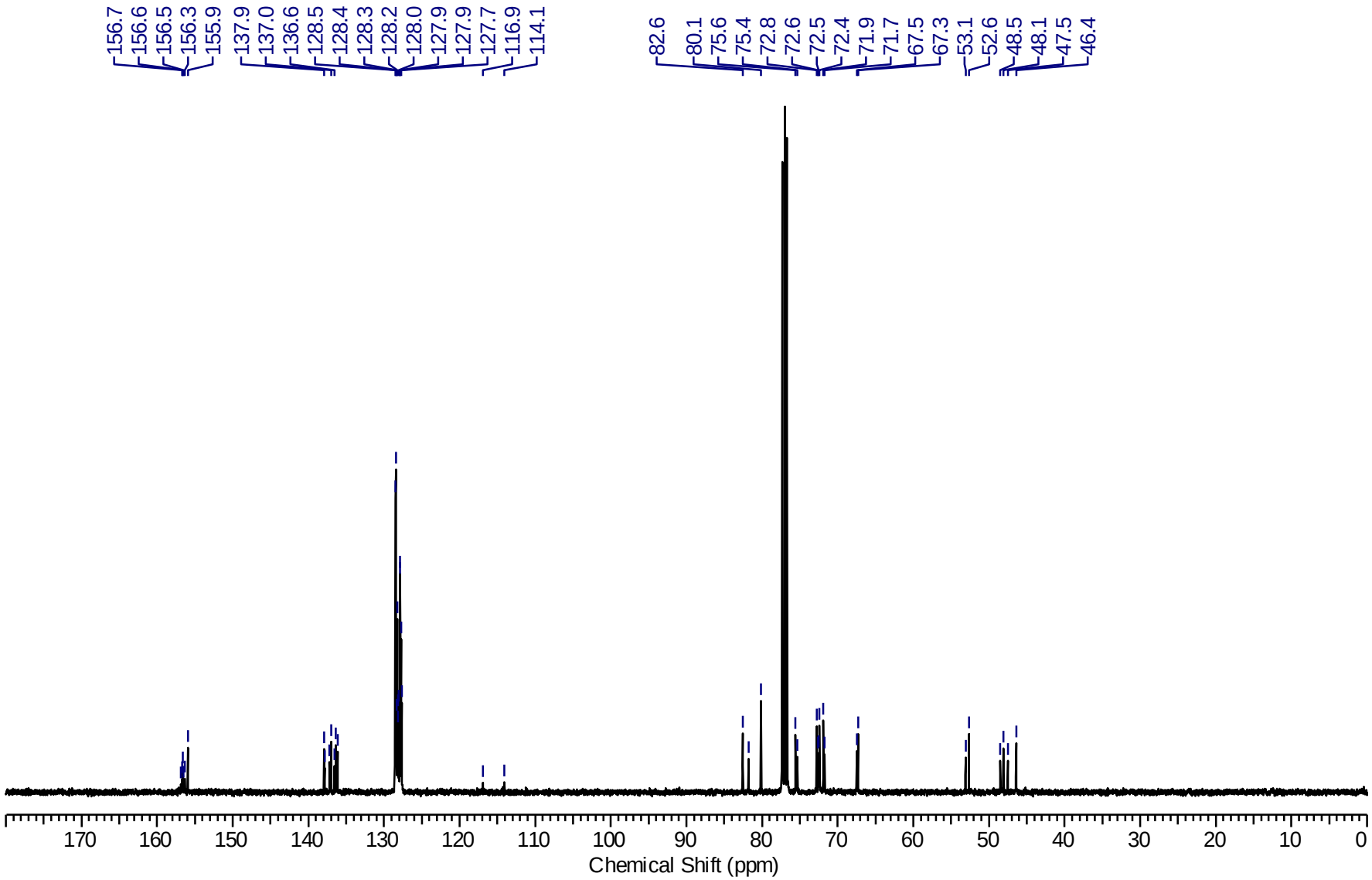


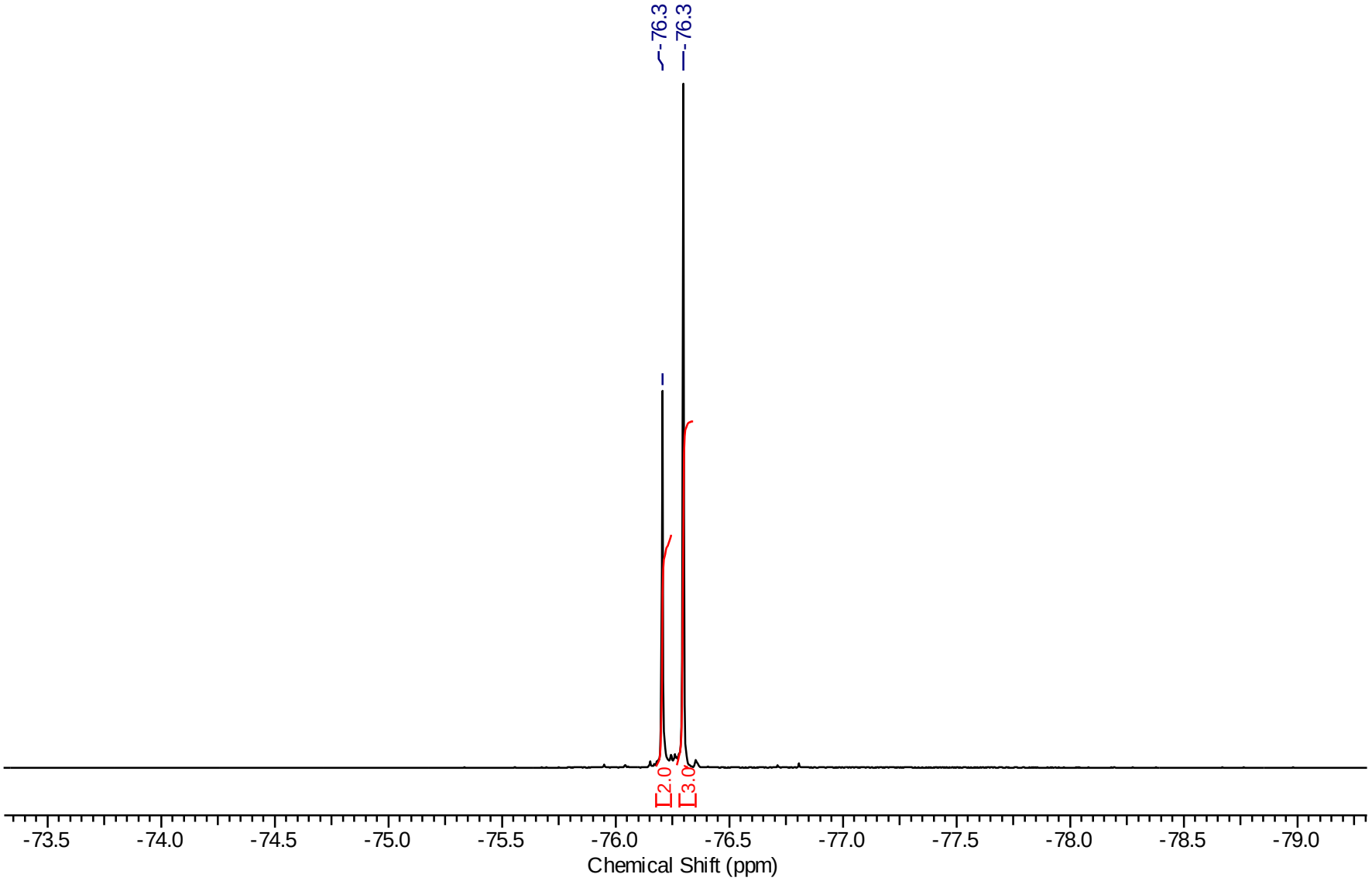
Compound **12a** (^{1}H NMR, 400 MHz, $CDCl_3$)



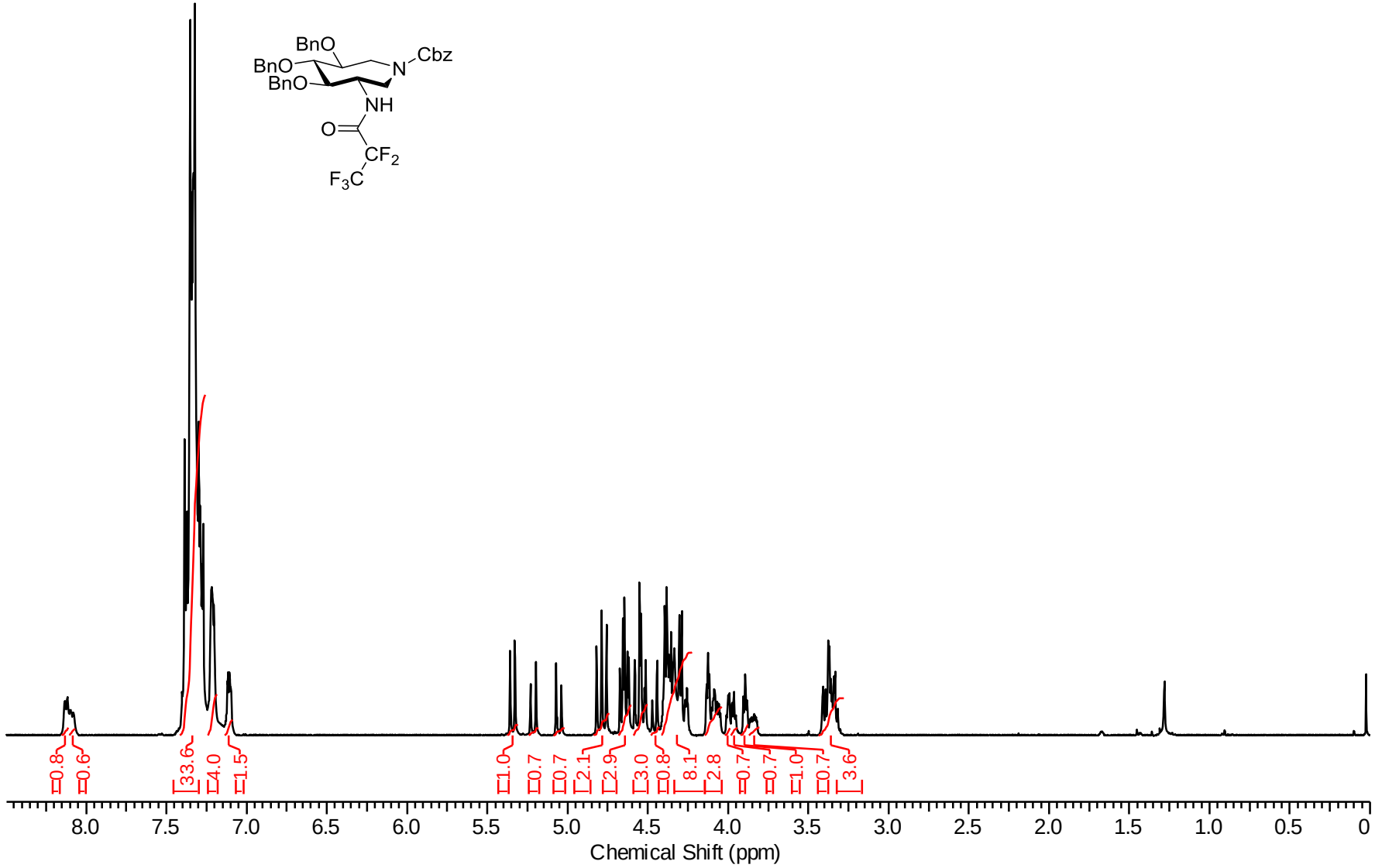
Compound **12a** (^{13}C NMR, 100 MHz, $CDCl_3$)



Compound **12a** (^{19}F NMR, 376 MHz, $CDCl_3$)



Compound **12b** (^{1}H NMR, 400 MHz, $CDCl_3$)



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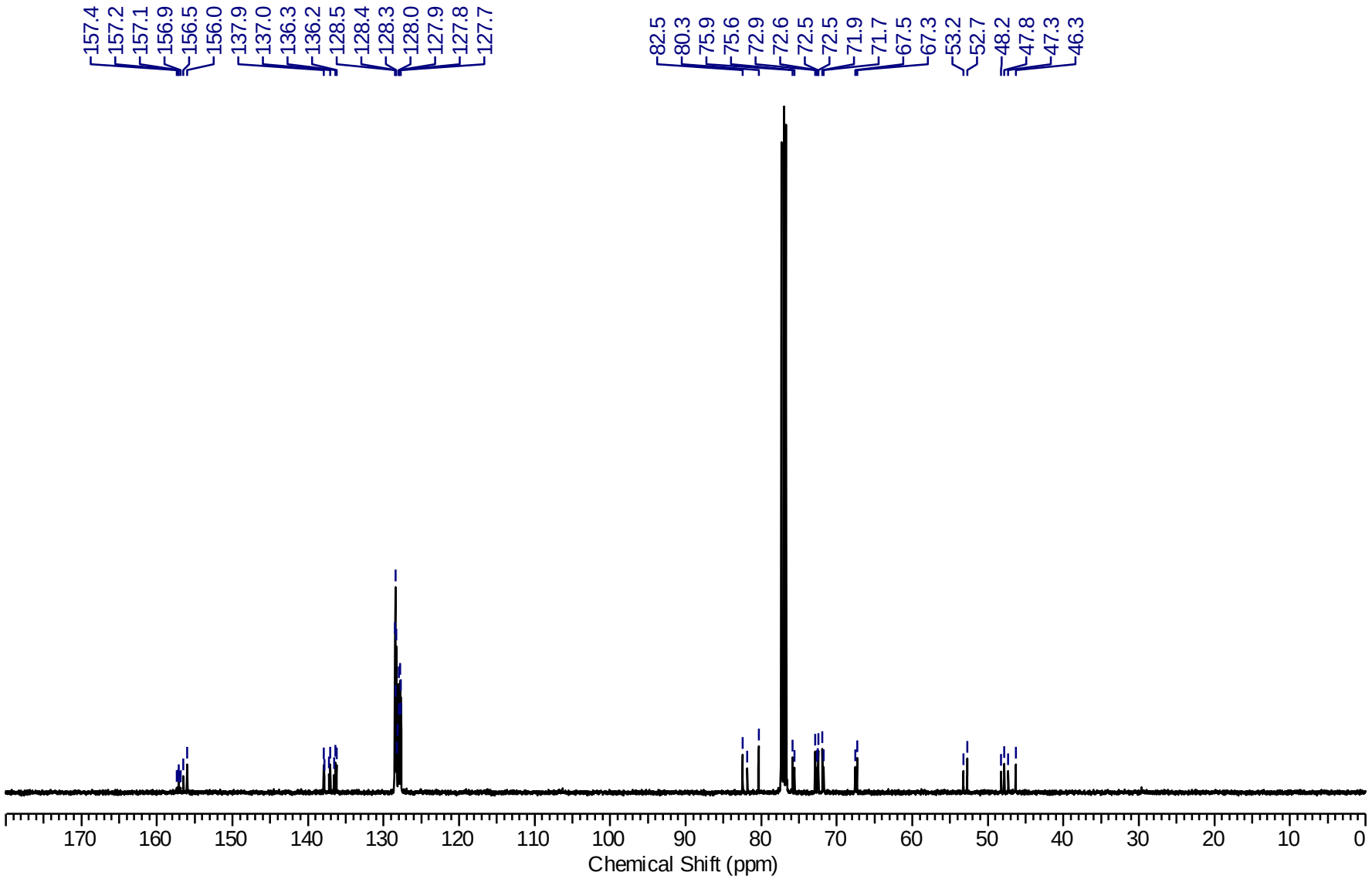
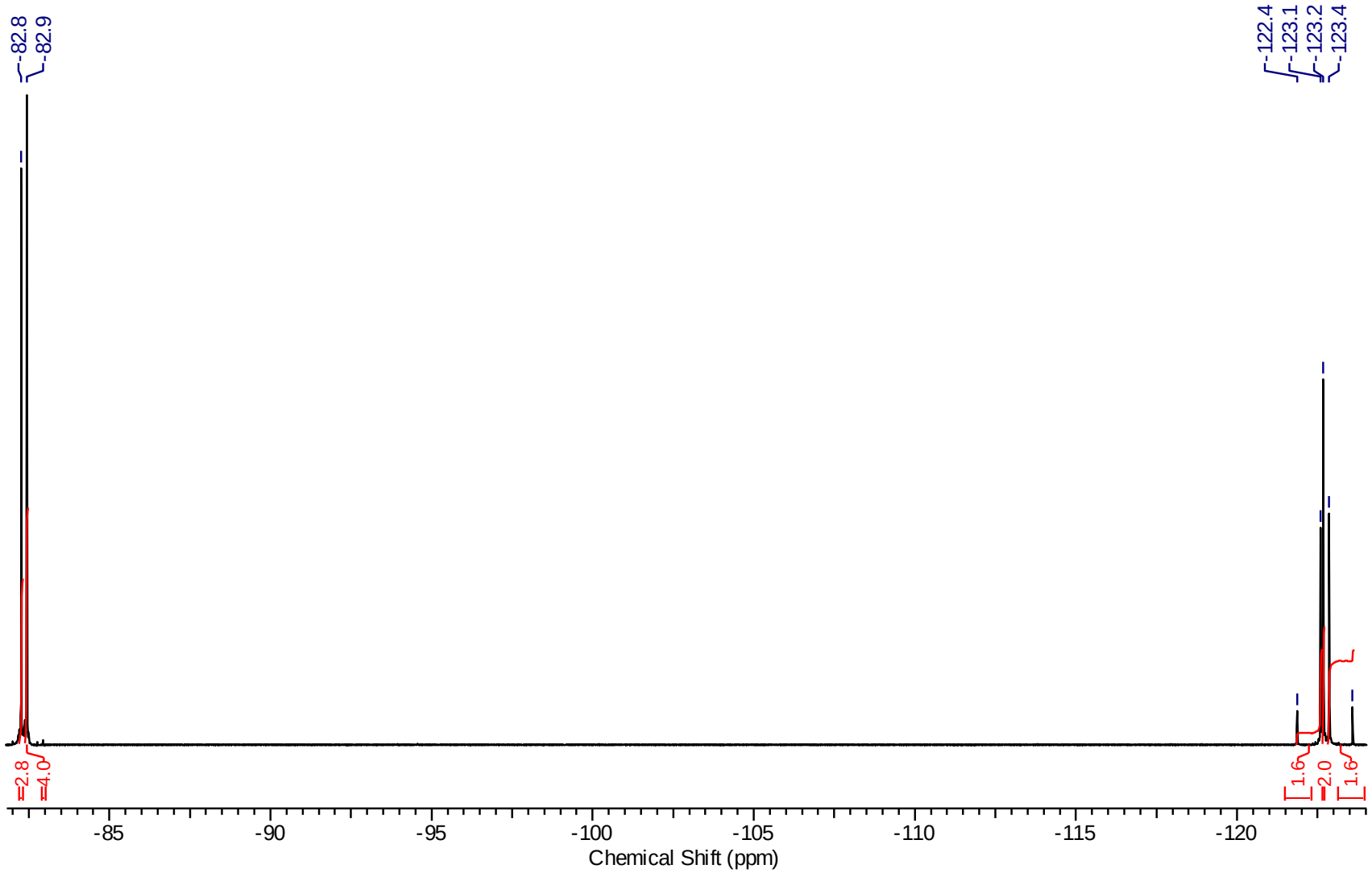
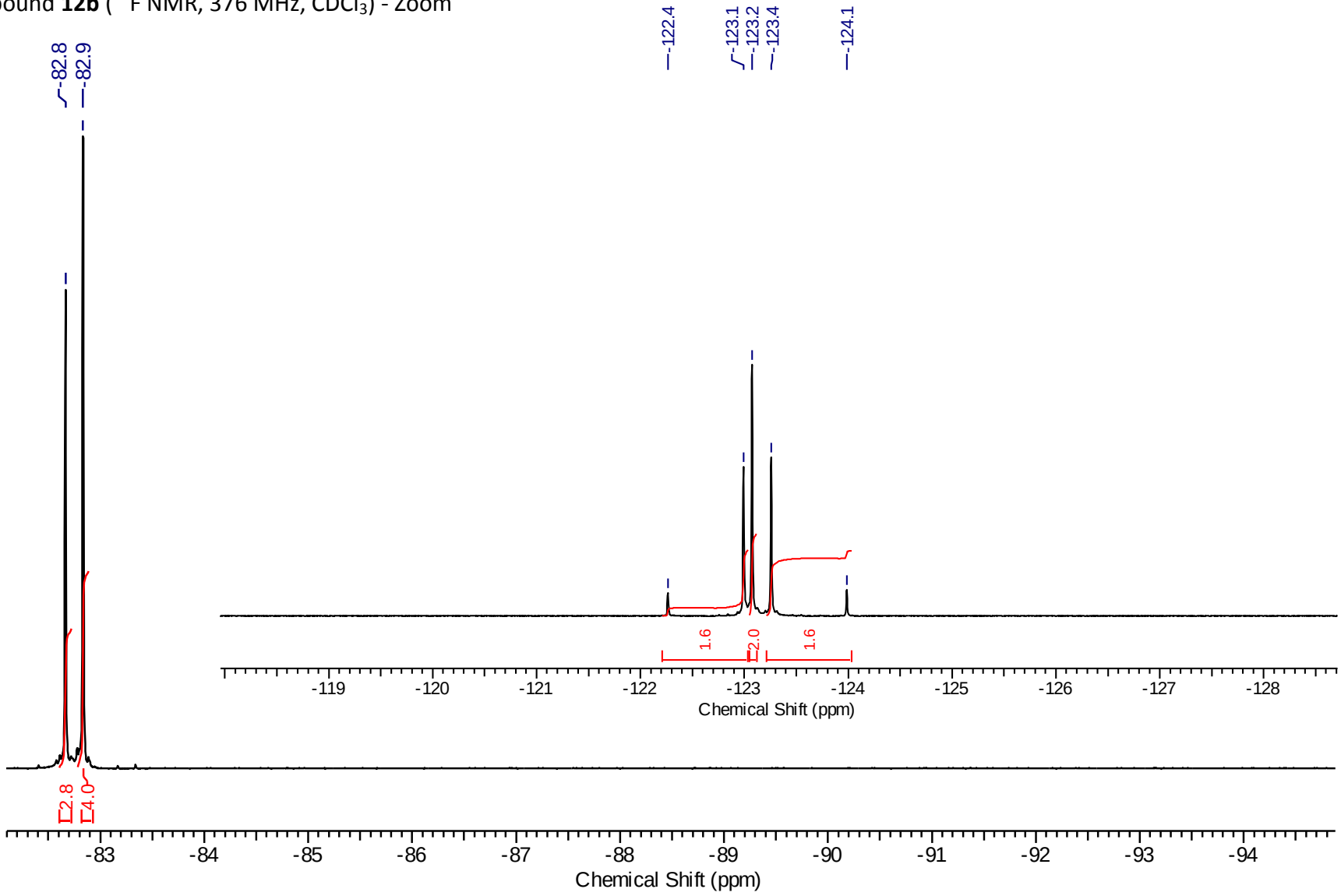


Compound **12b** (^{19}F NMR, 376 MHz, $CDCl_3$)



Compound **12b** (^{19}F NMR, 376 MHz, $CDCl_3$) - Zoom



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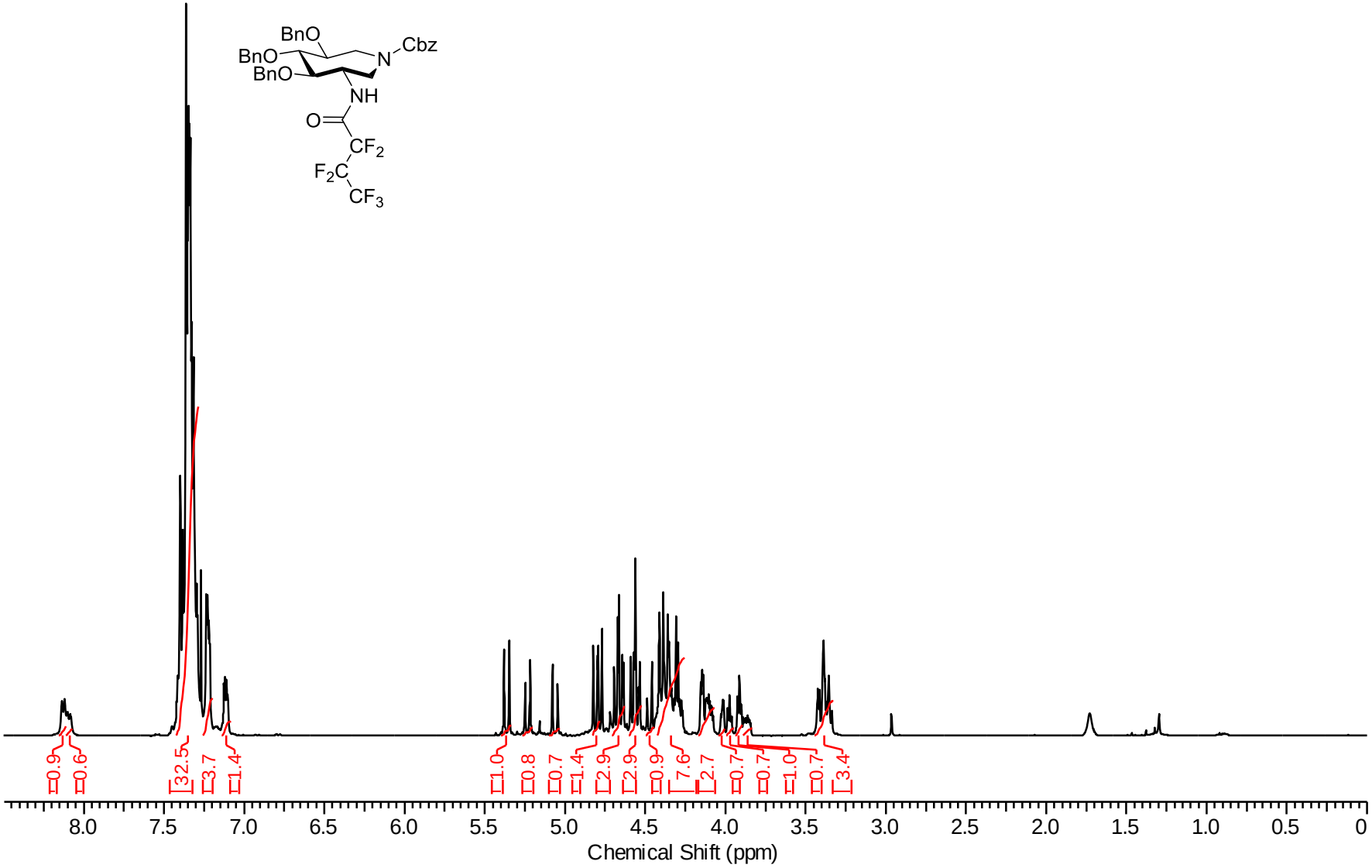

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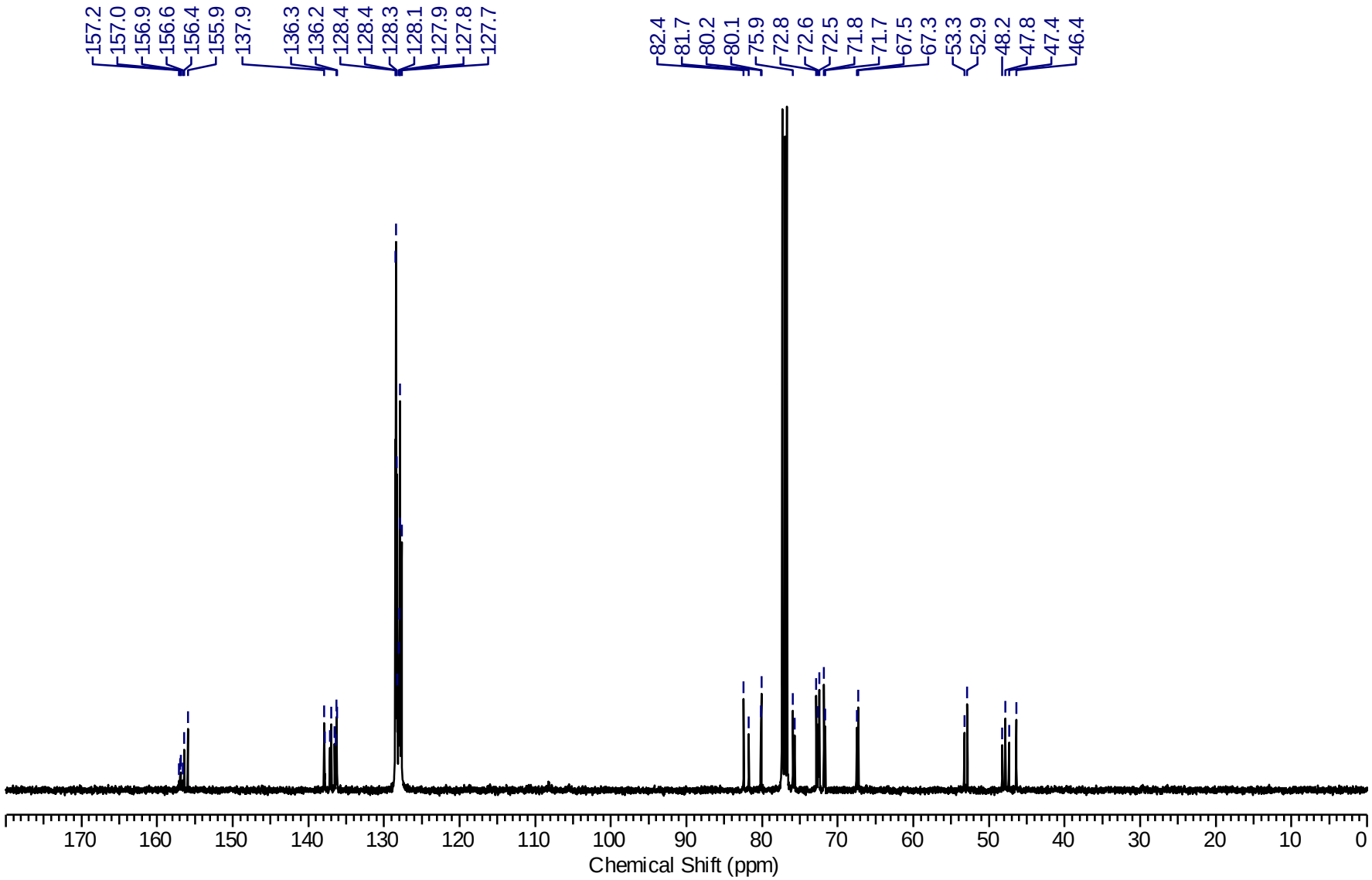
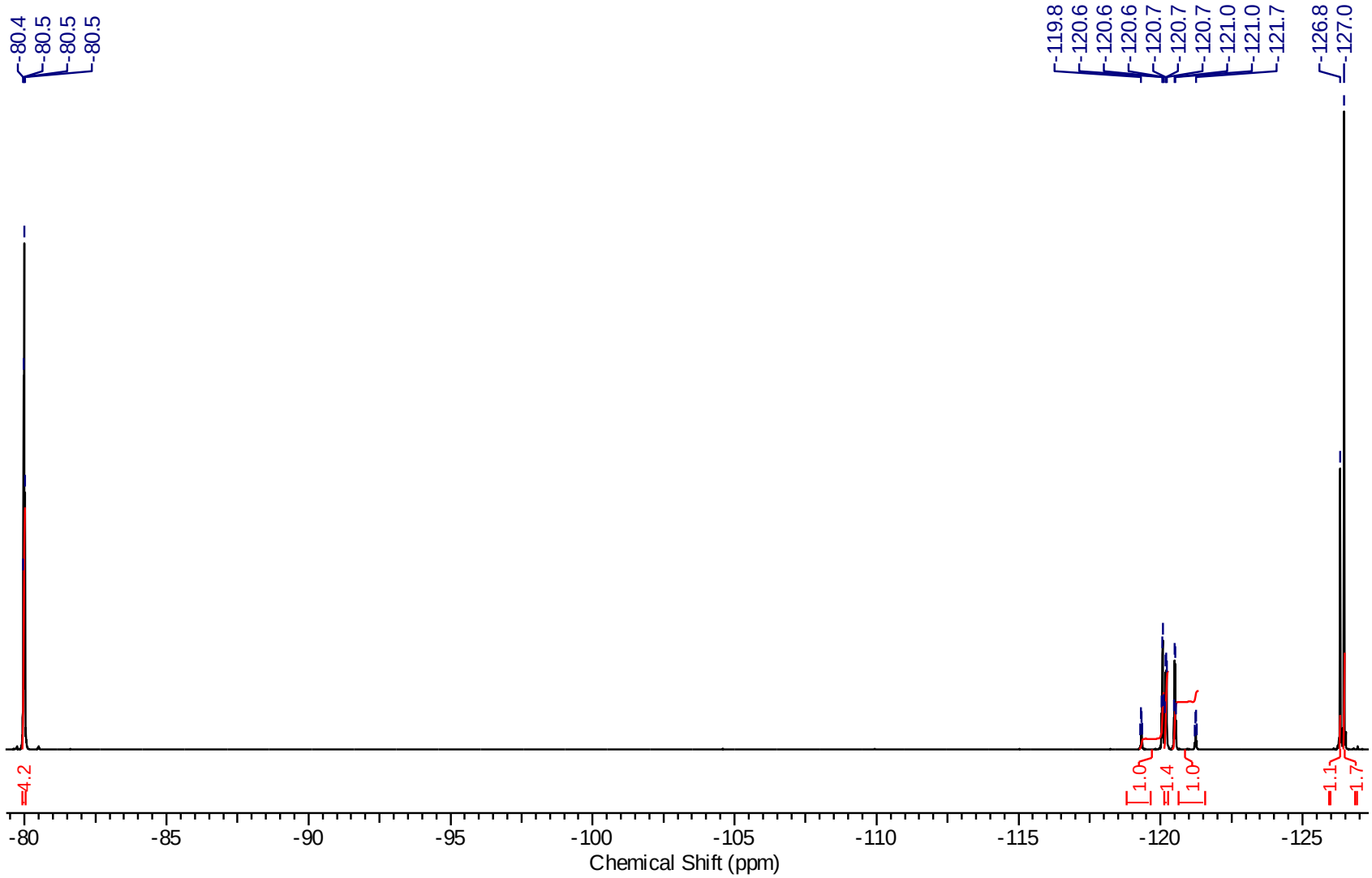
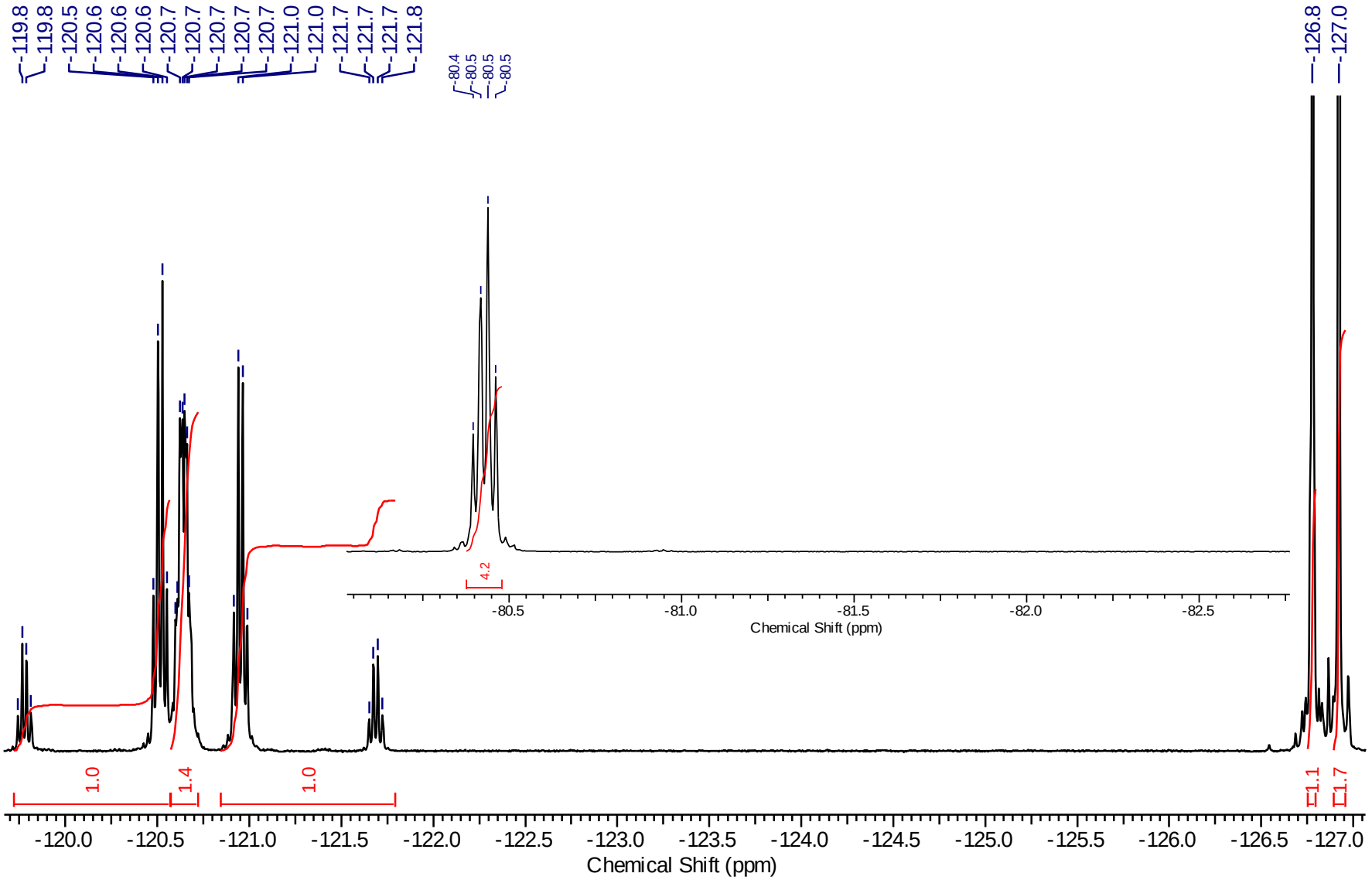


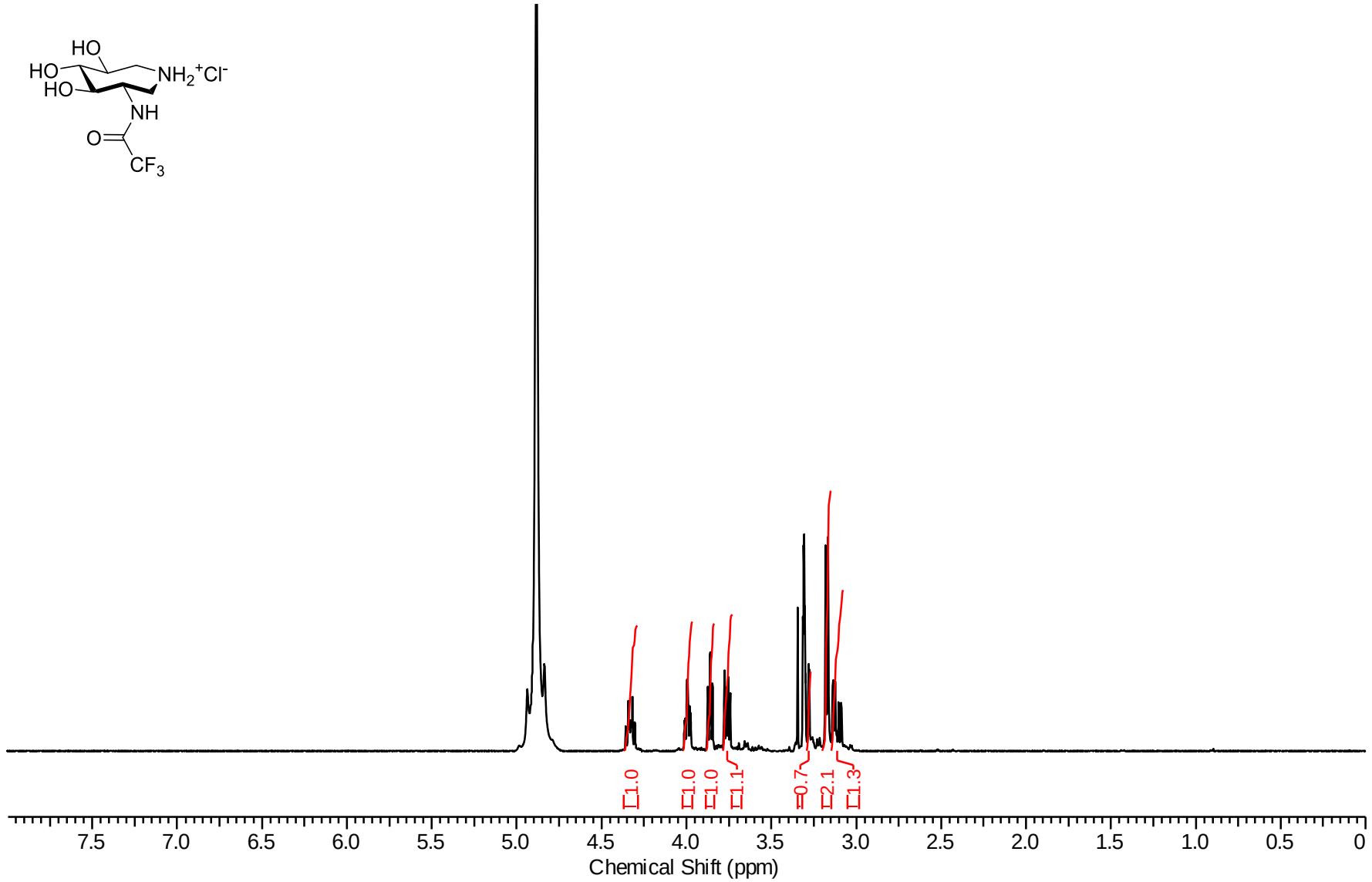
Compound **12c** (^{19}F NMR, 376 MHz, $CDCl_3$)



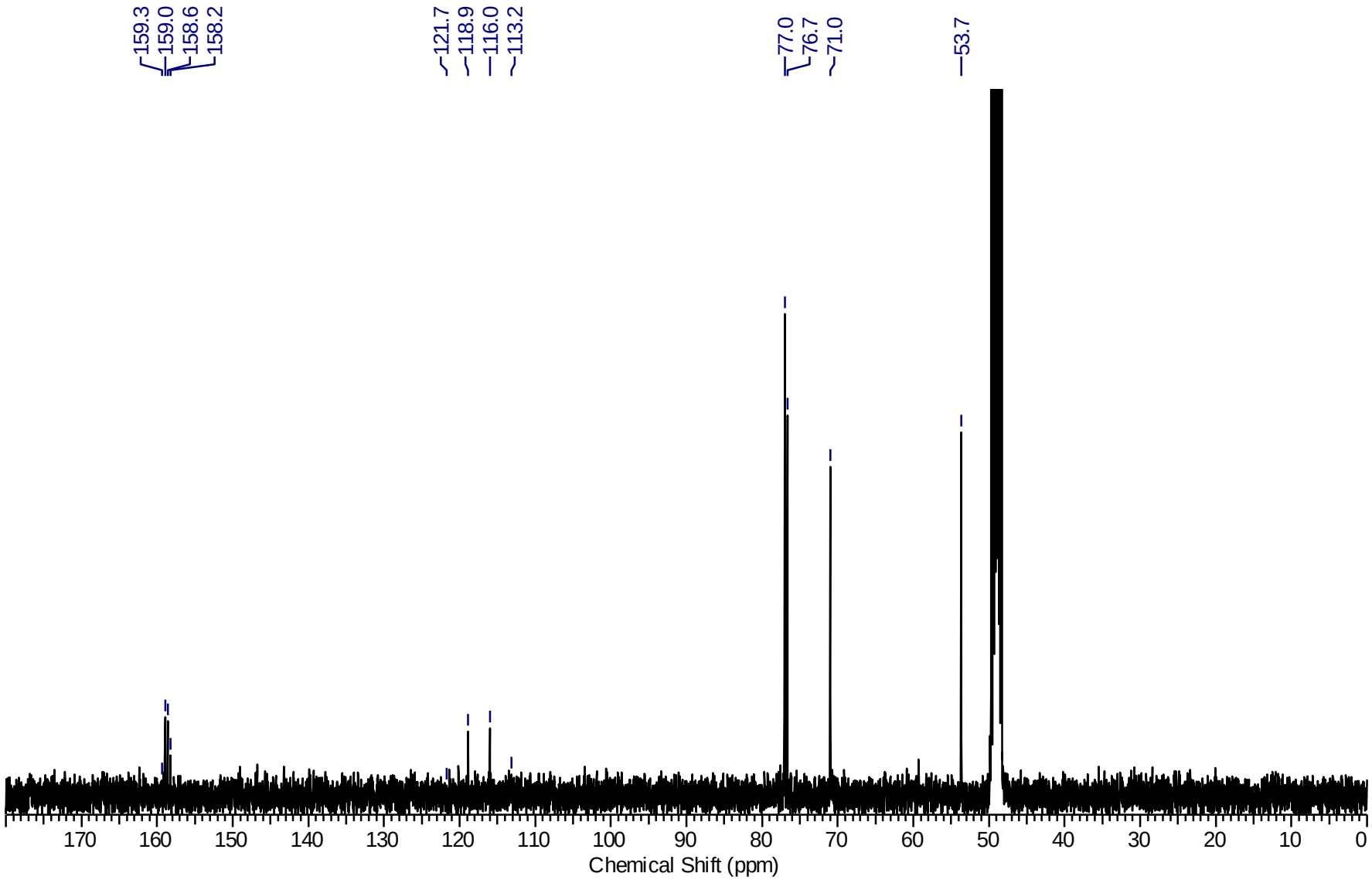
Compound **12c** (^{19}F NMR, 376 MHz, $CDCl_3$) - Zoom



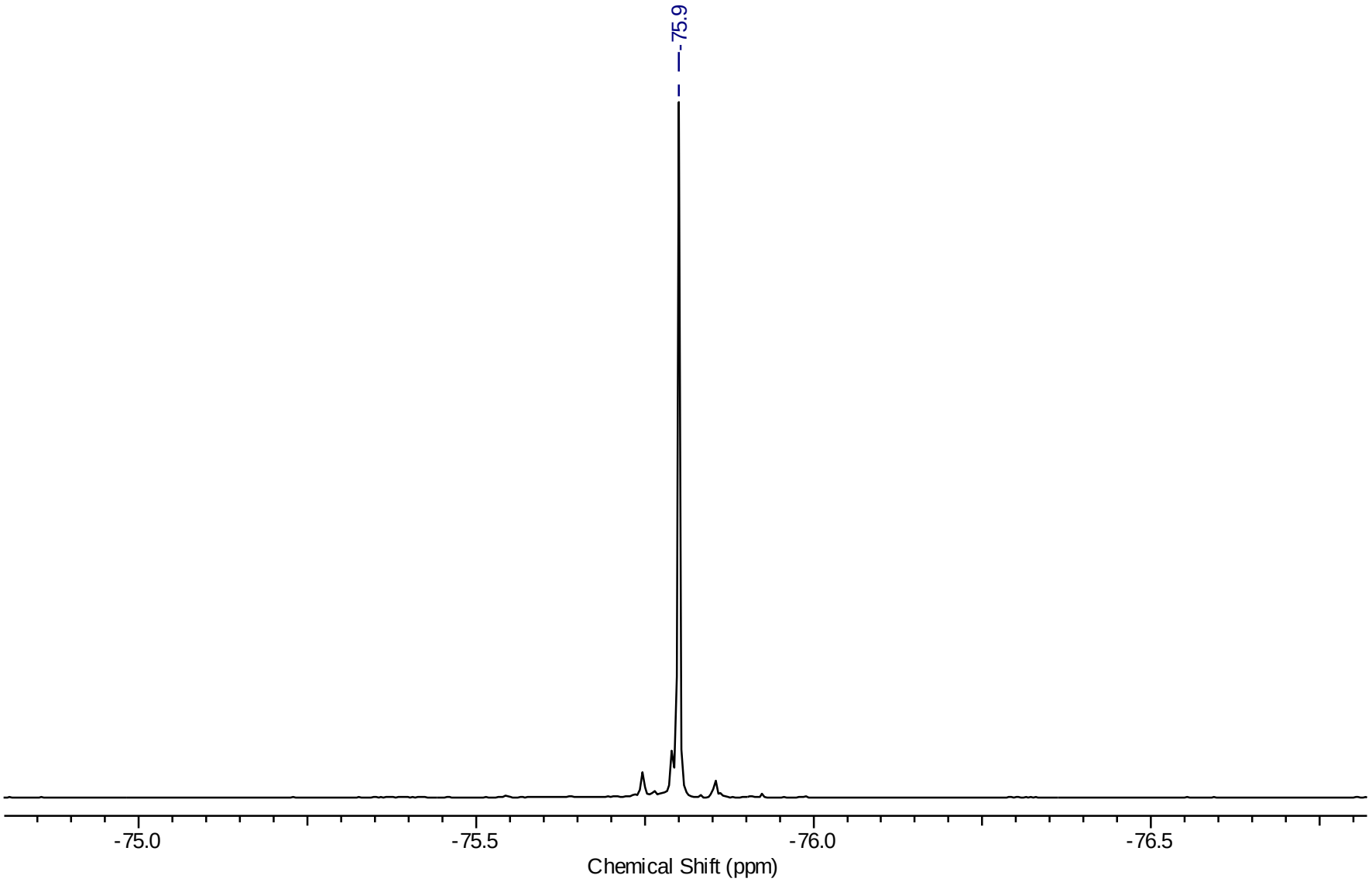
Compound **13a** (^{1}H NMR, 400 MHz, CD_3OD)



Compound **13a** (^{13}C NMR, 100 MHz, CD_3OD)



Compound **13a** (^{19}F NMR, 376 MHz, CD_3OD)



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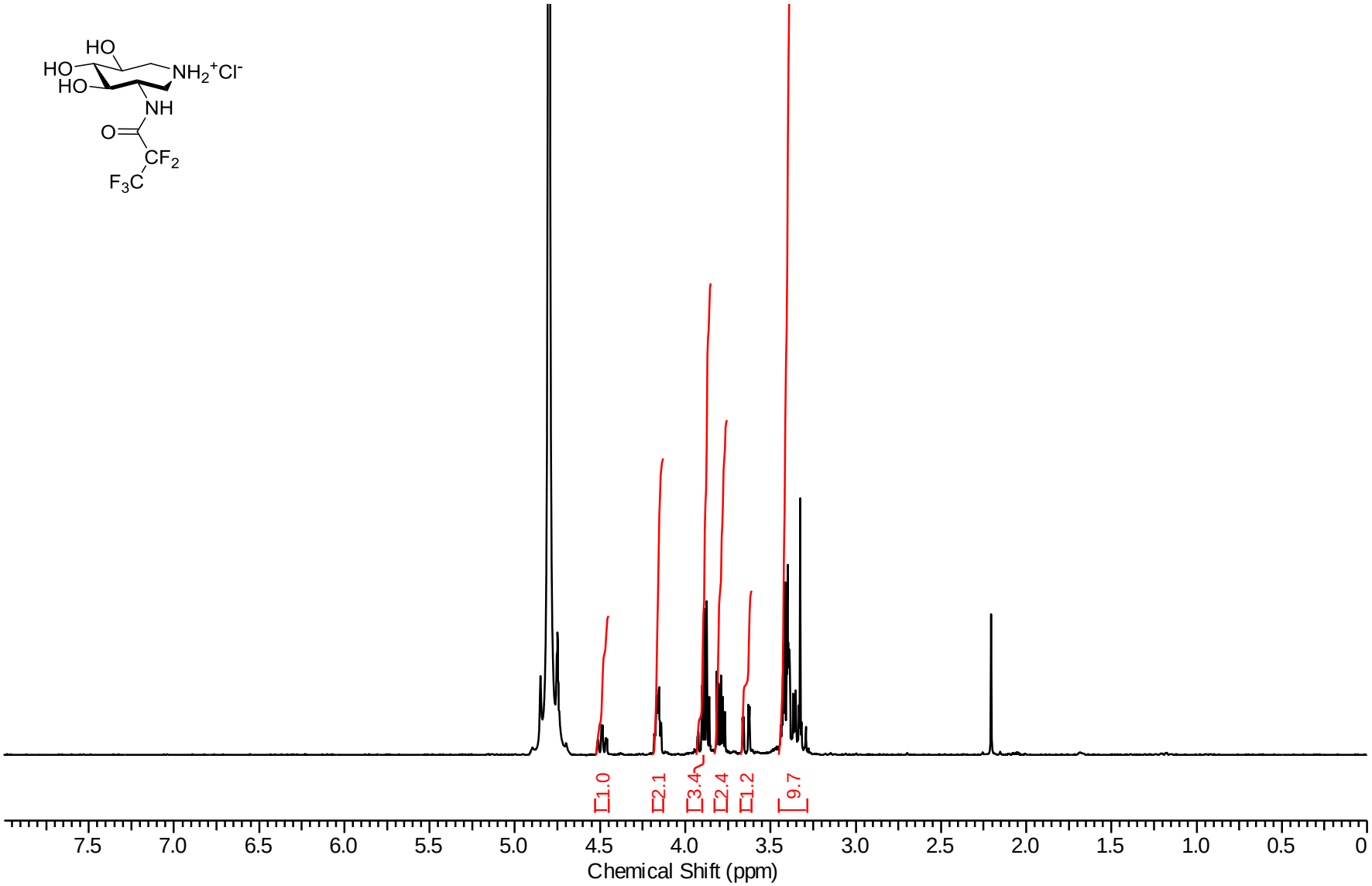
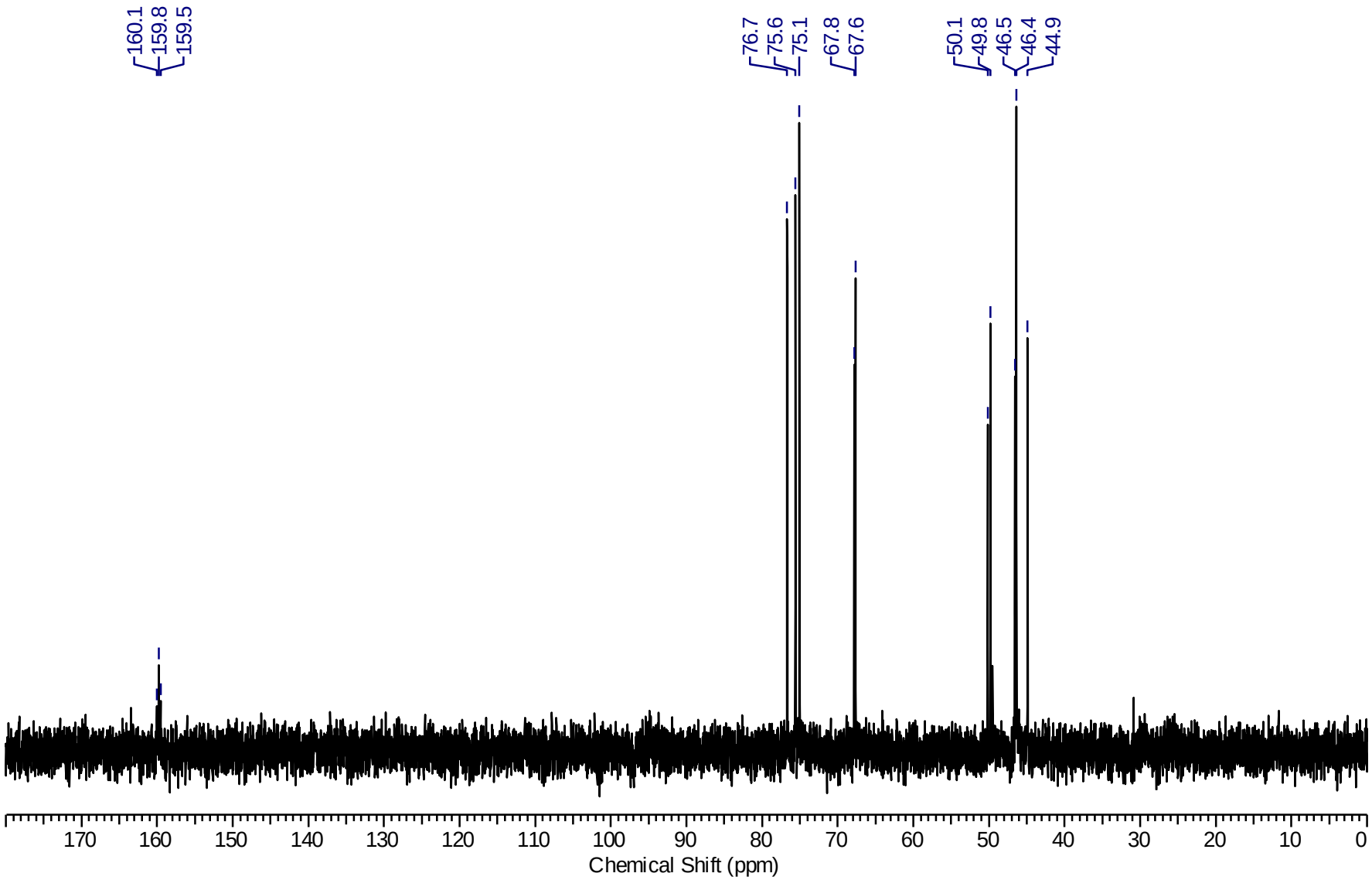
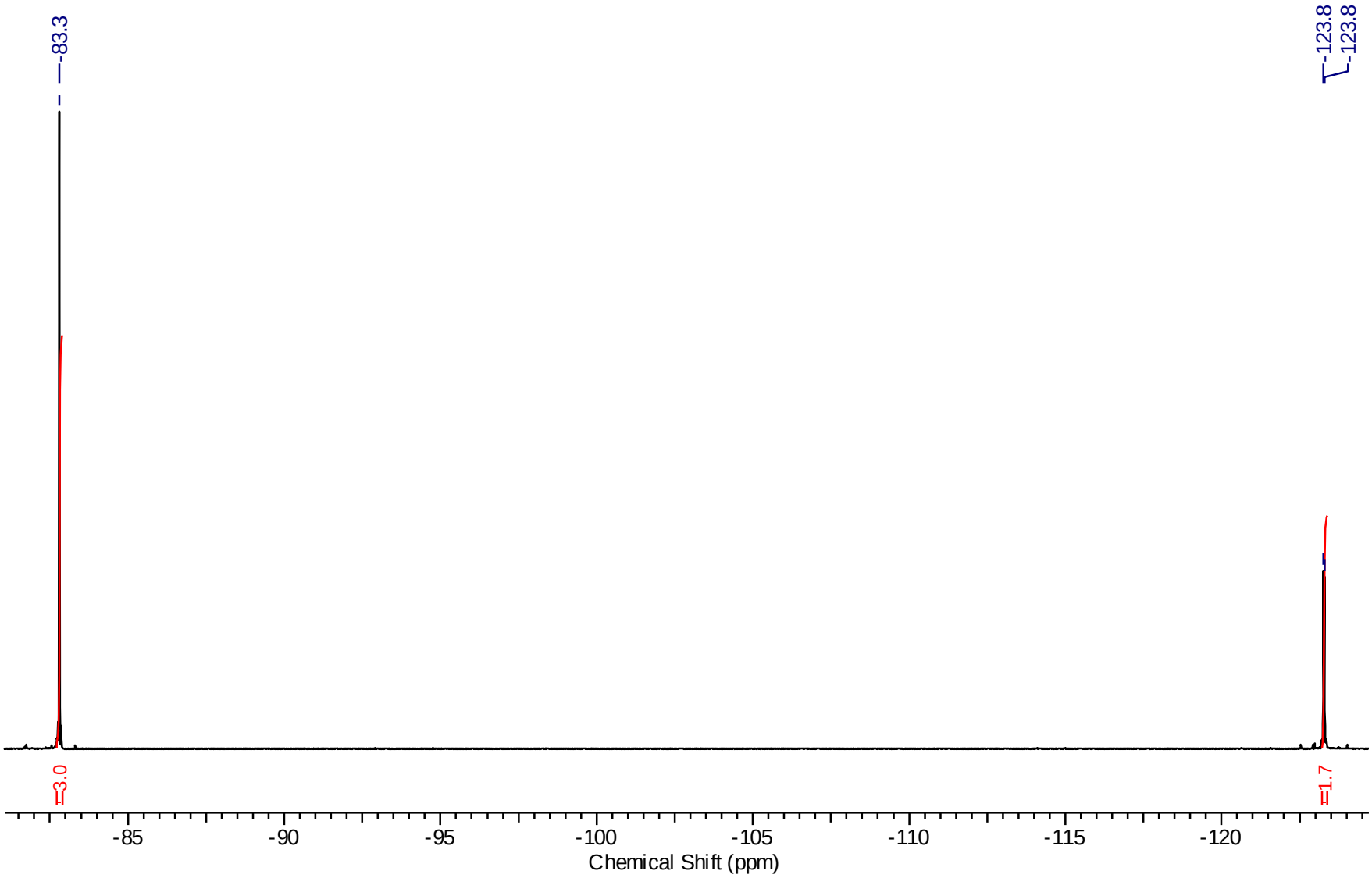


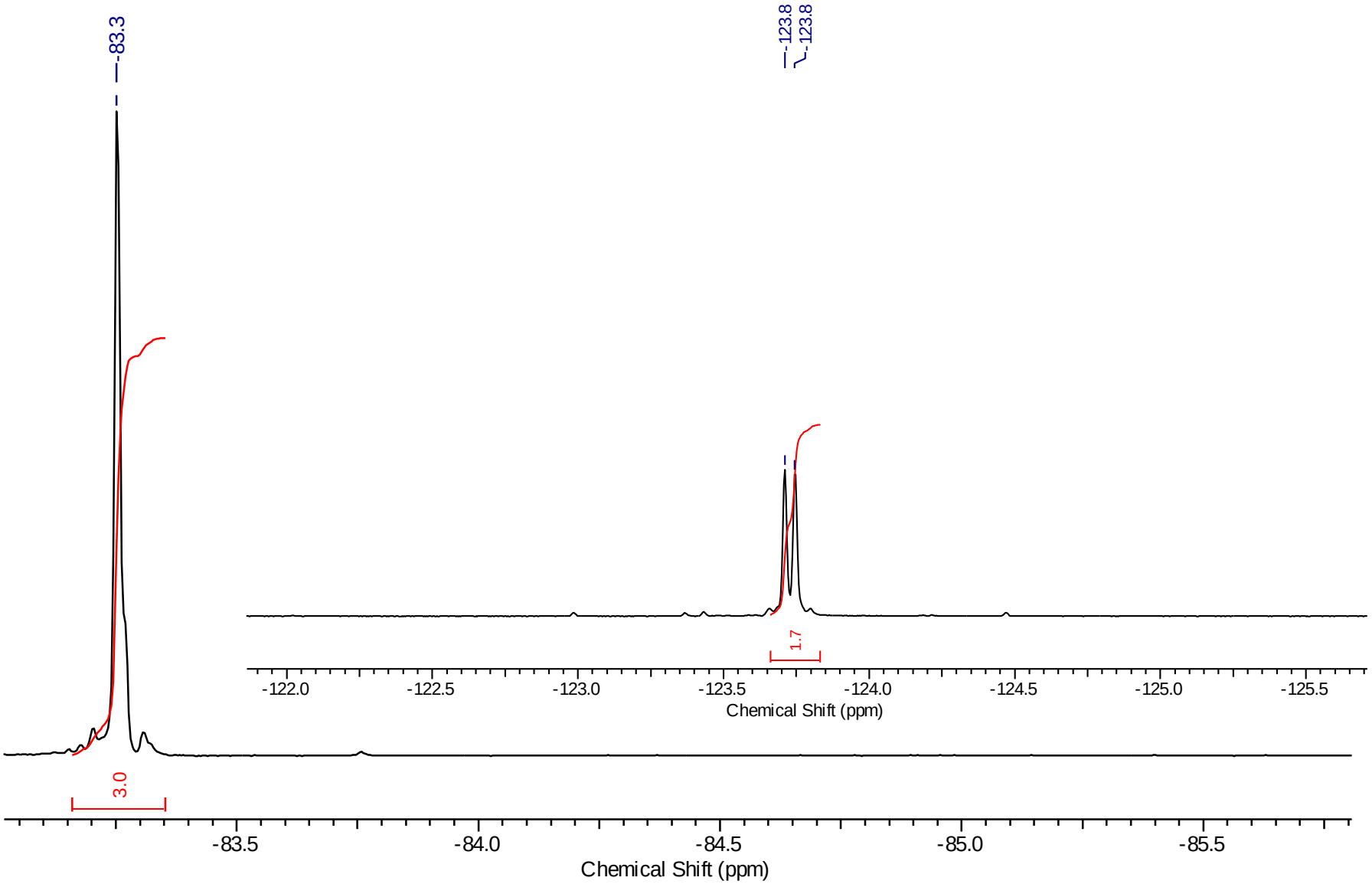
Compound **13b** (^{13}C NMR, 100 MHz, D_2O)



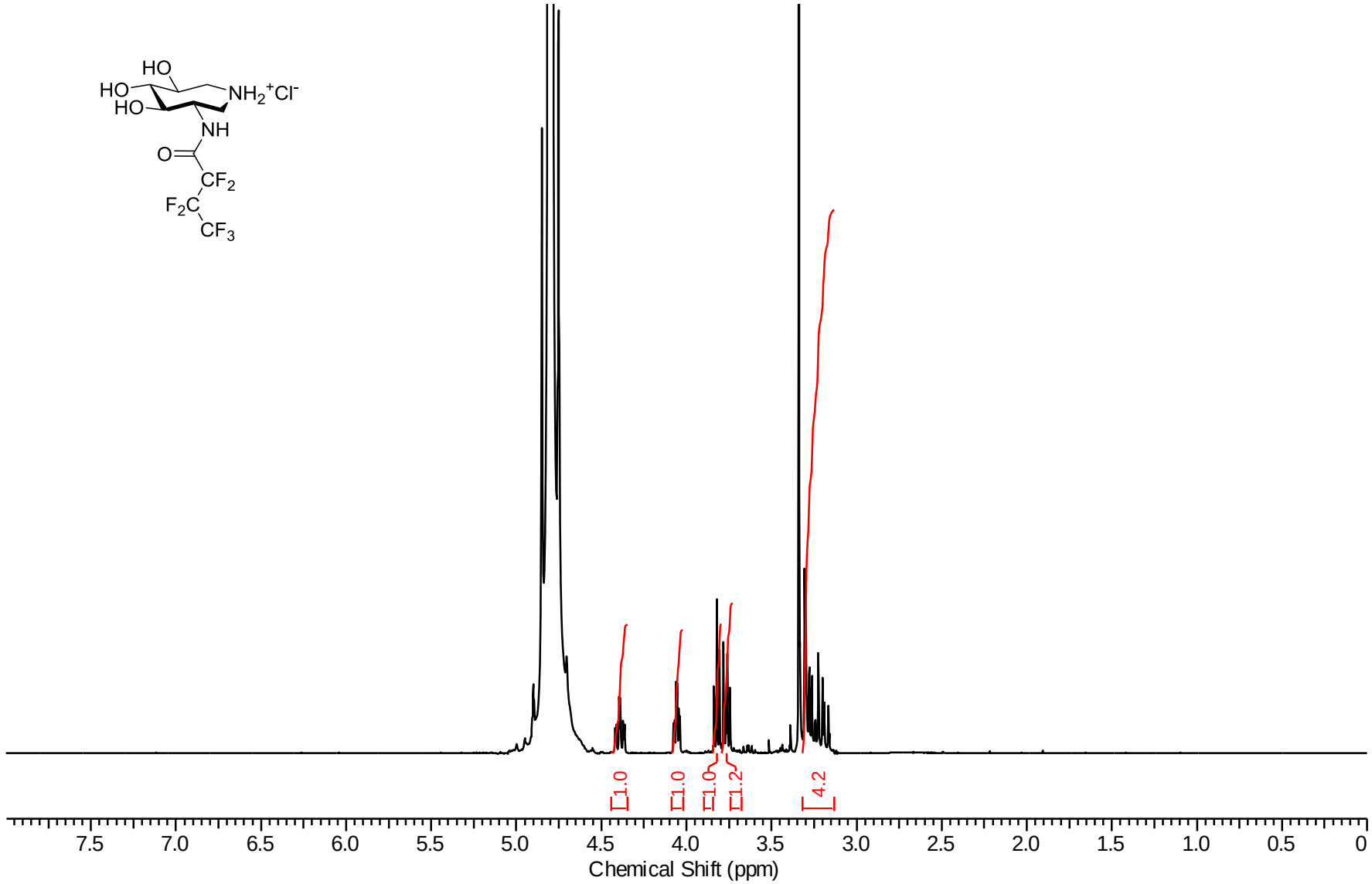
Compound **13b** (^{19}F NMR, 376 MHz, D_2O)



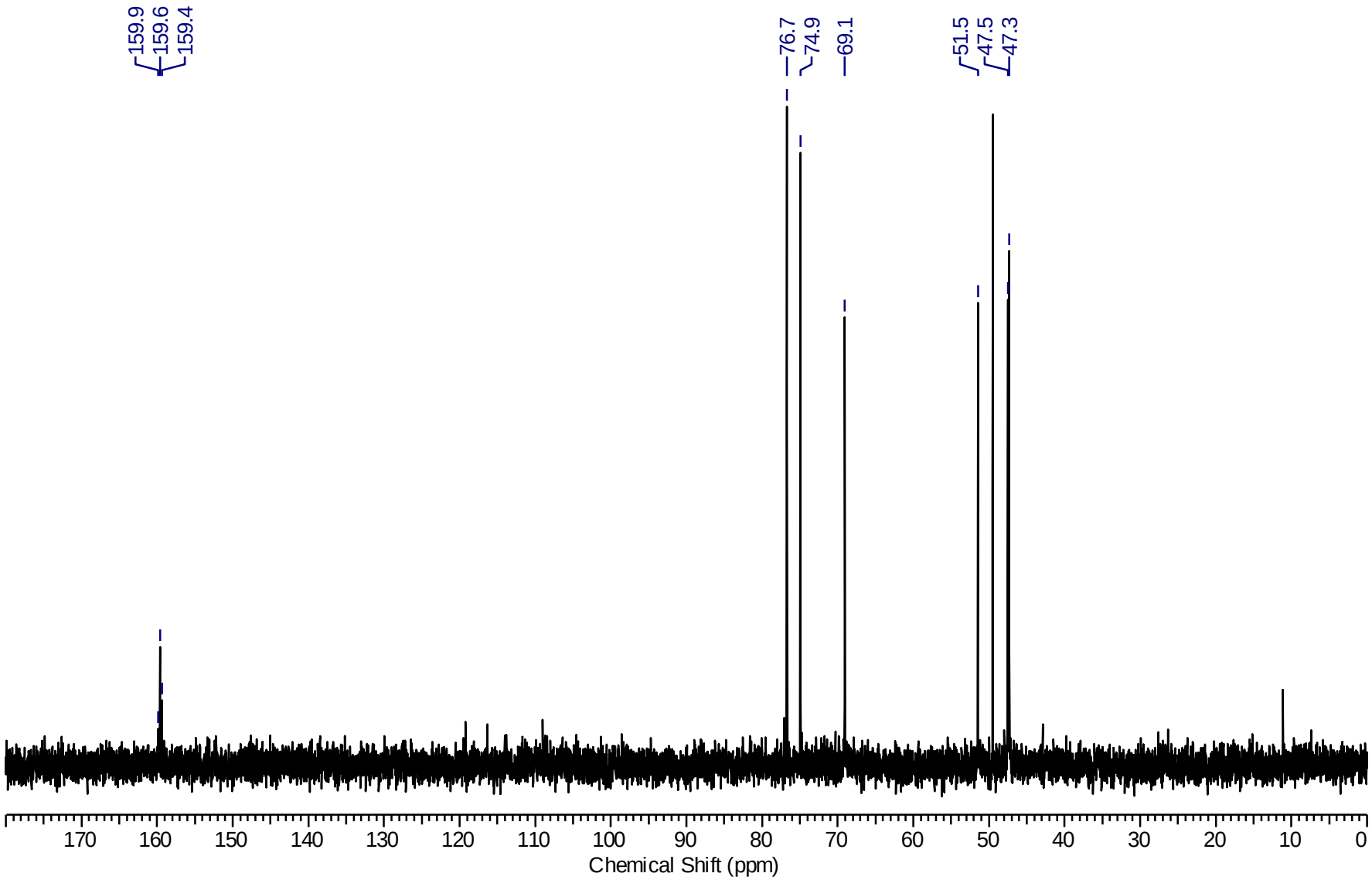
Compound **13b** (^{19}F NMR, 376 MHz, D_2O) - Zoom



Compound **13c** (^{1}H NMR, 400 MHz, D_2O)



Compound **13c** (^{13}C NMR, 100 MHz, D_2O)



Compound **13c** (^{19}F NMR, 376 MHz, D_2O)