

Supplementary data
for

Novel carbohydrate modified berberine derivatives: Synthesis and *in vitro* anti-diabetic investigation

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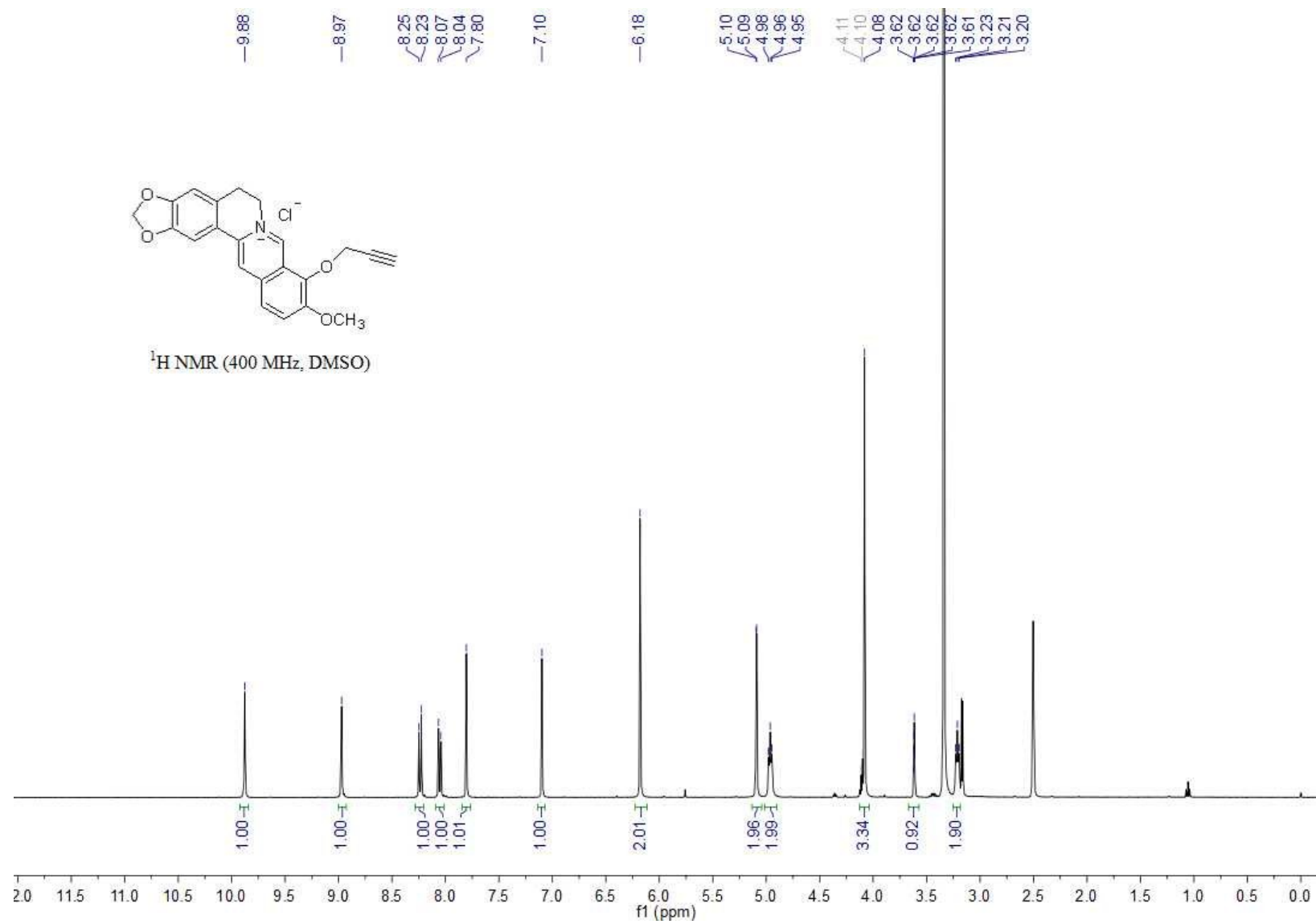
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[§] *These authors contributed equally to this paper*

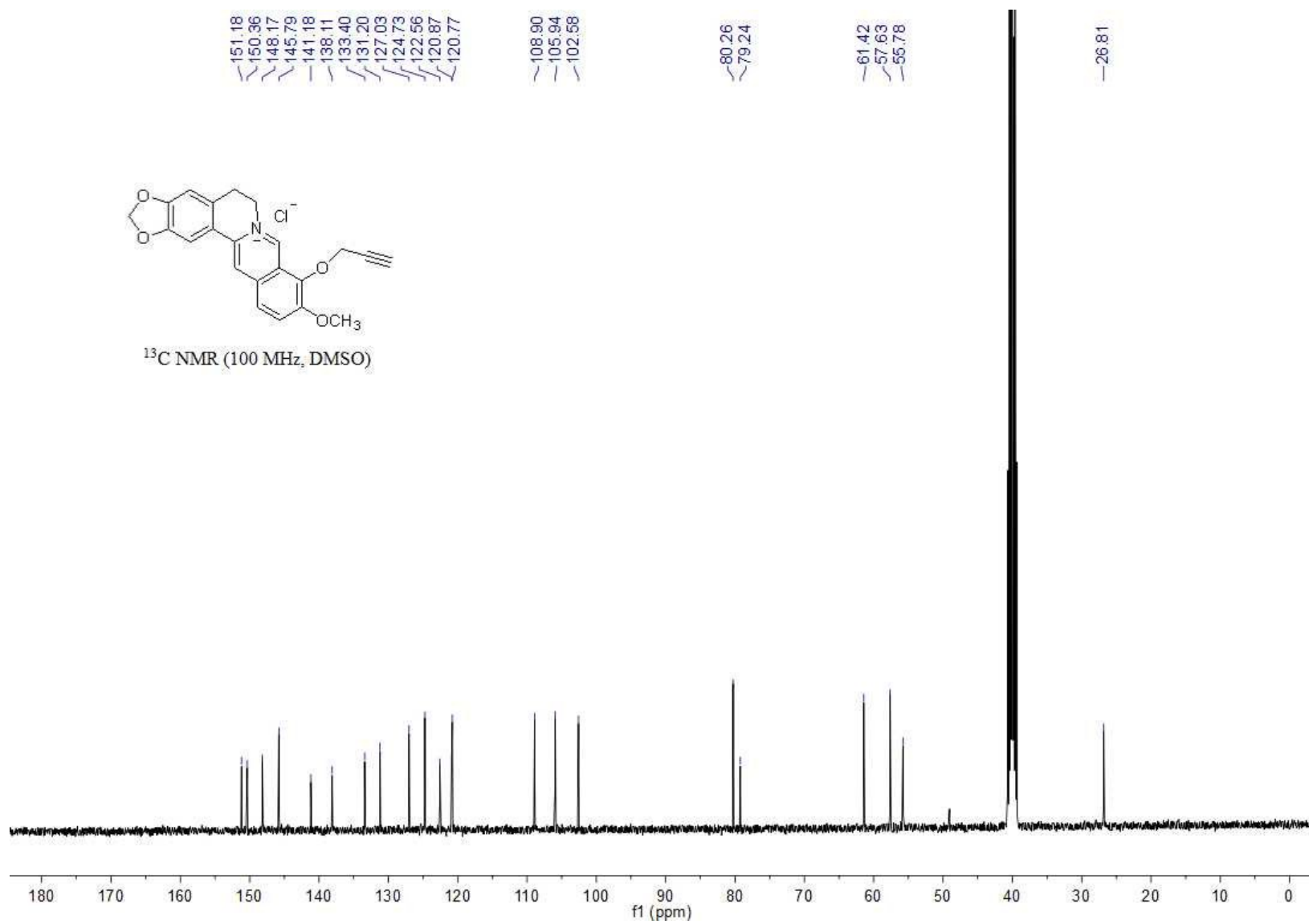
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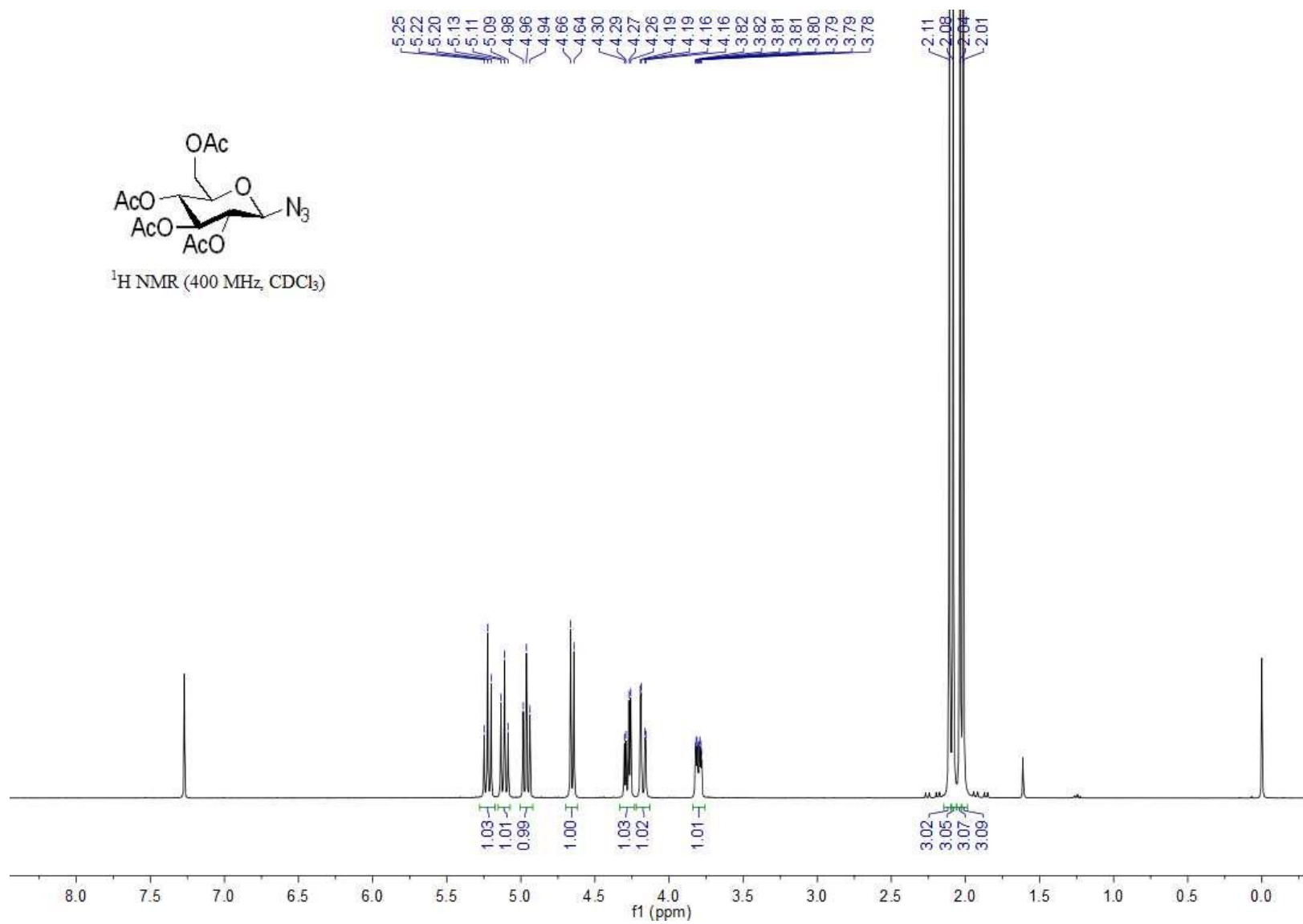
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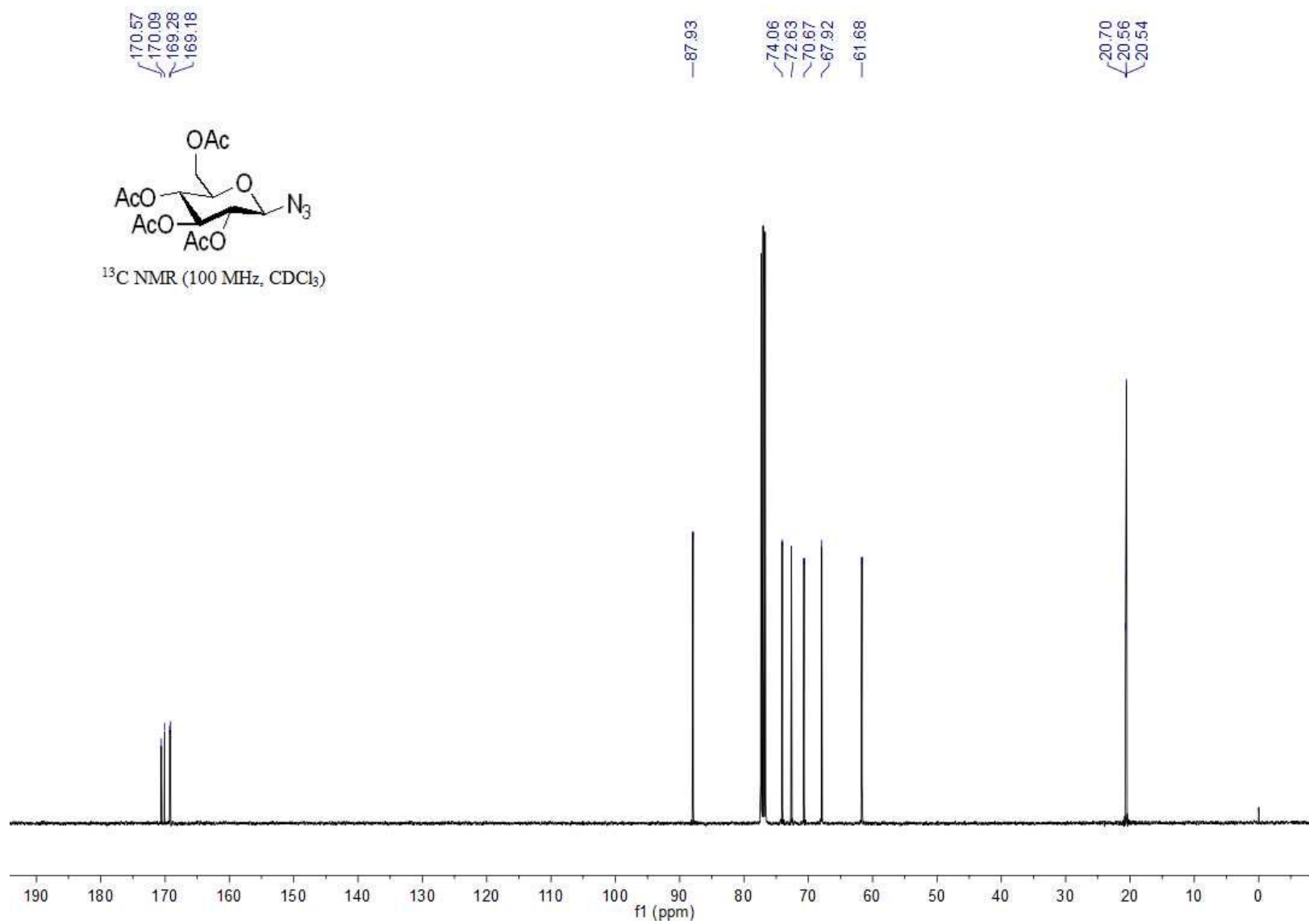
¹H NMR spectrum of compound 8



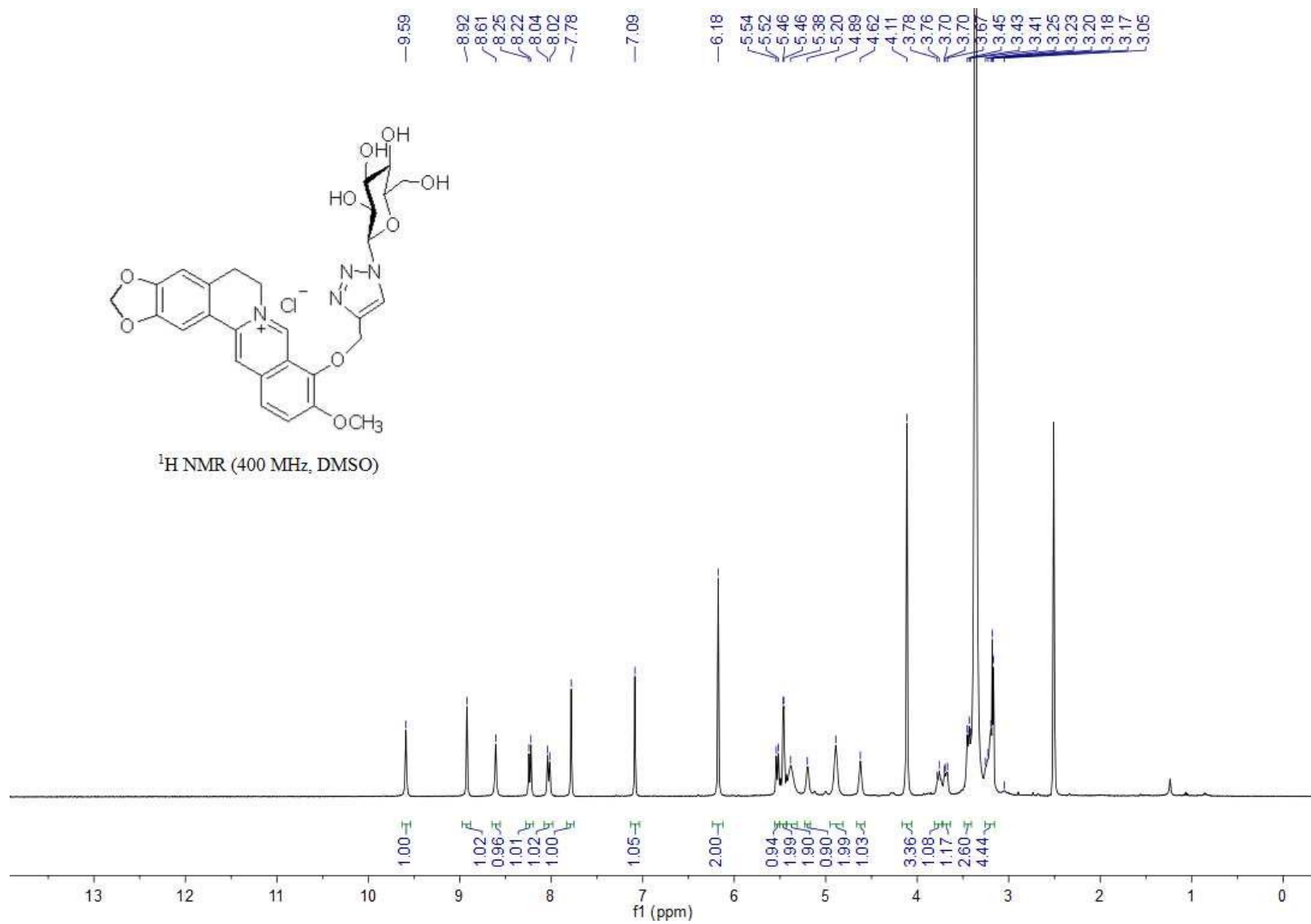
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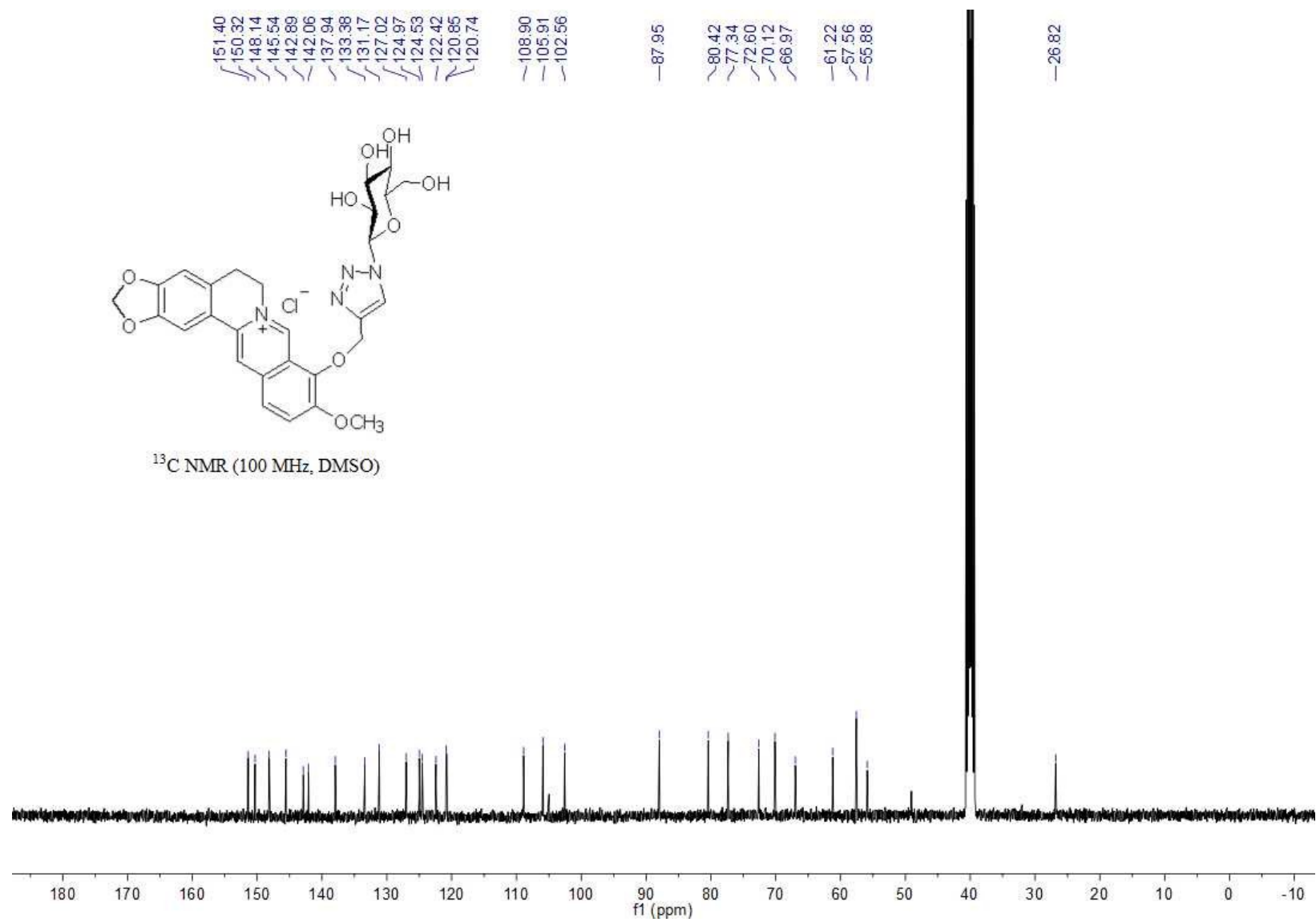
¹H NMR spectrum of compound 13



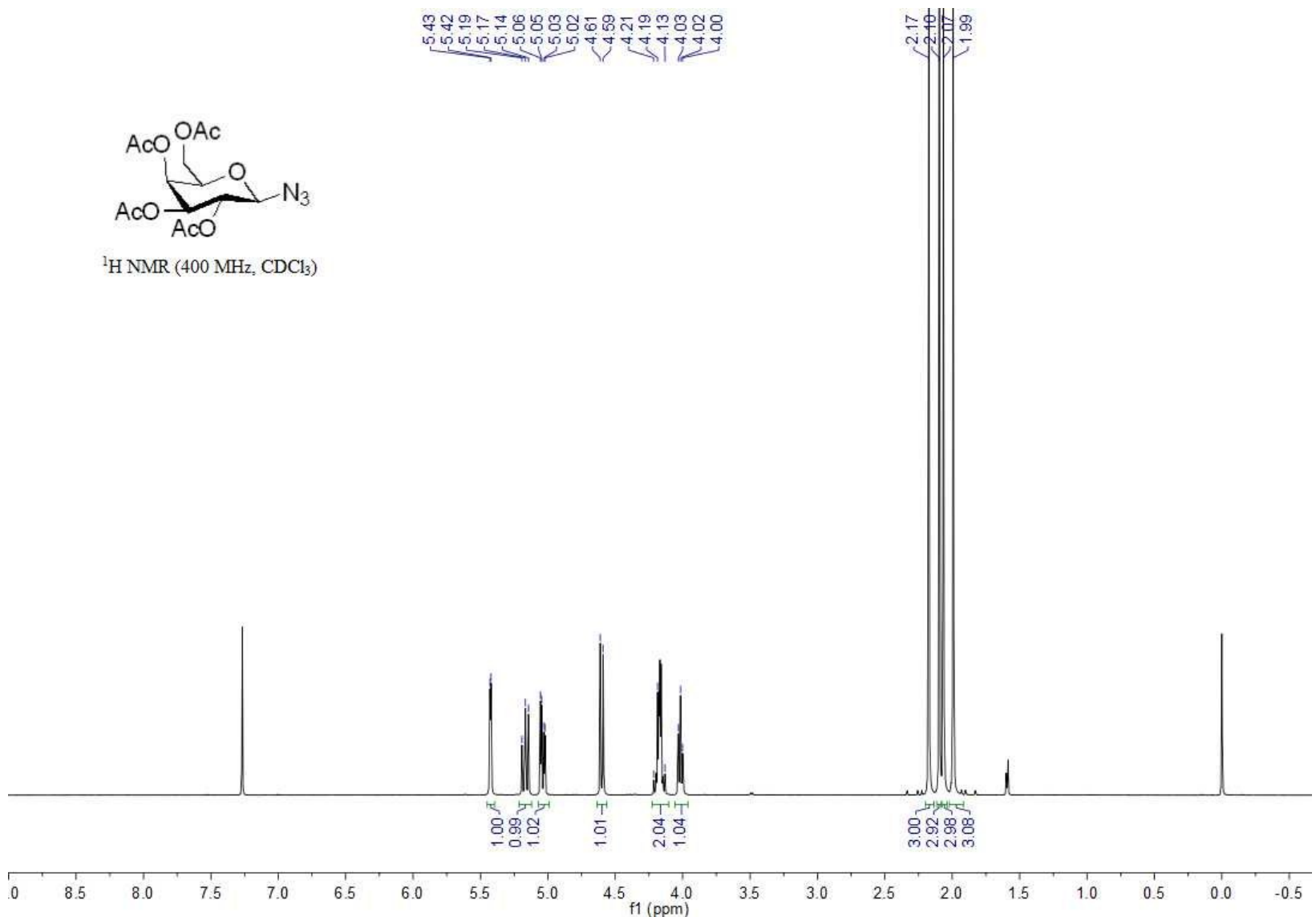
^{13}C NMR spectrum of compound 13



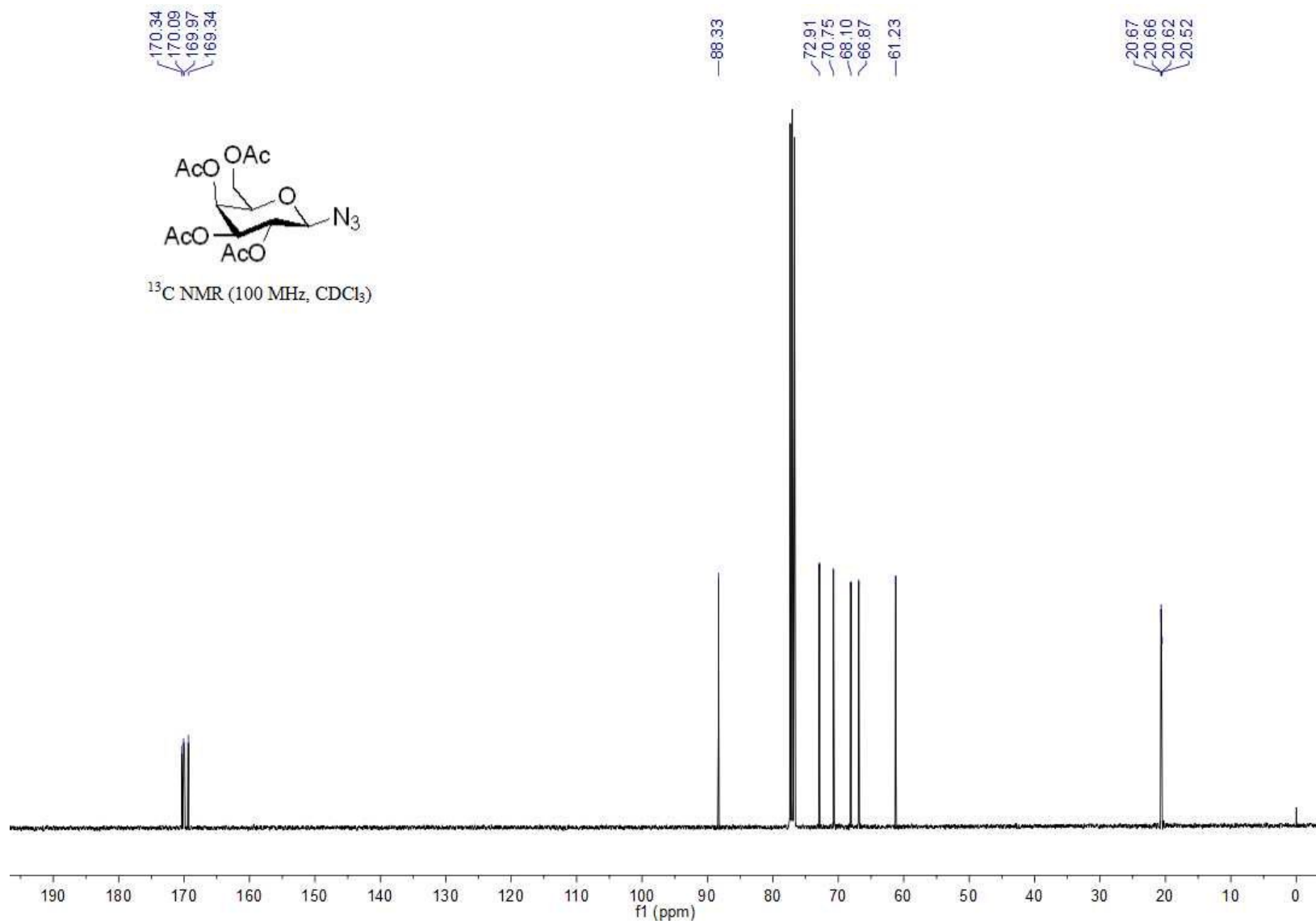
¹H NMR spectrum of compound 1



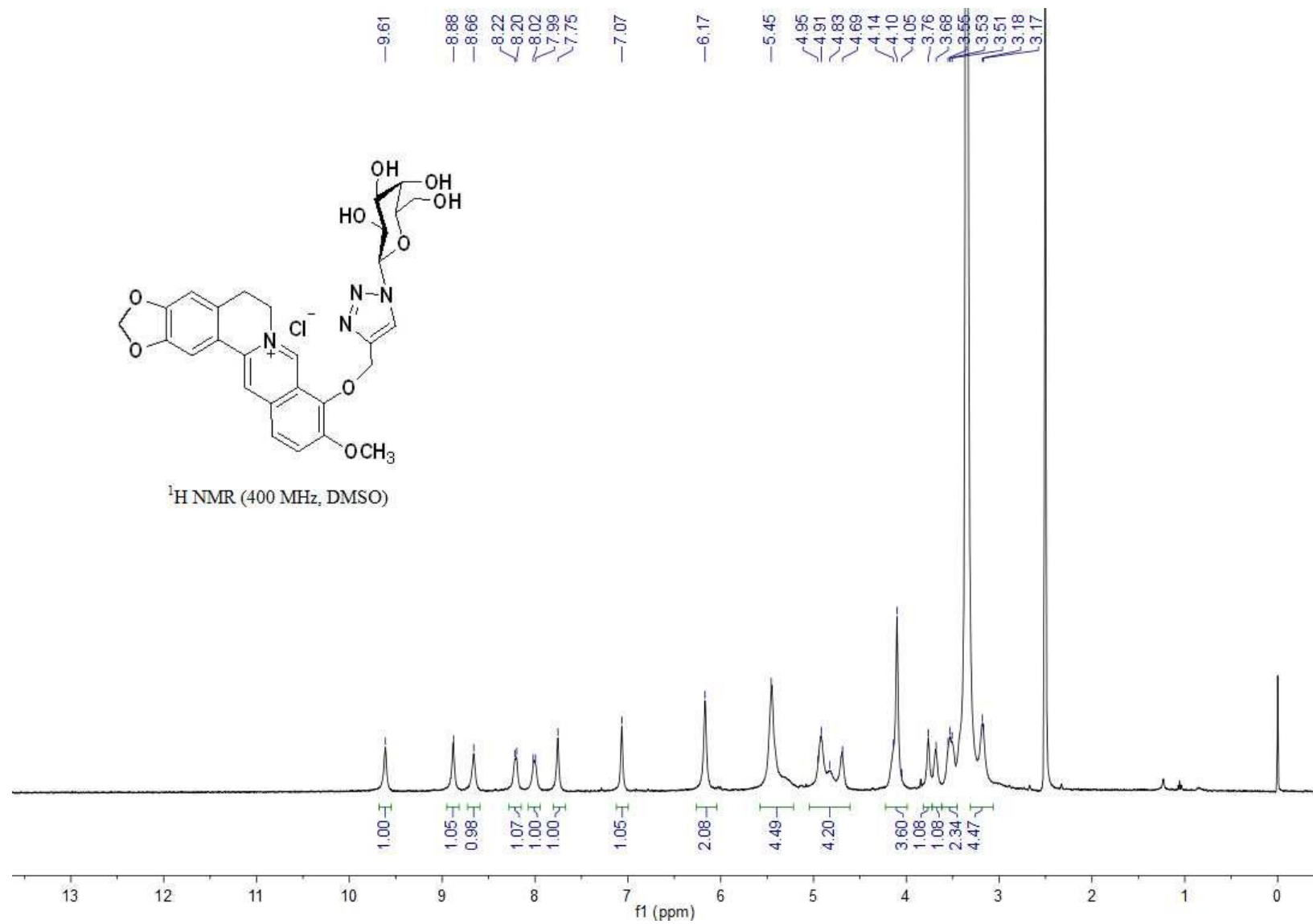
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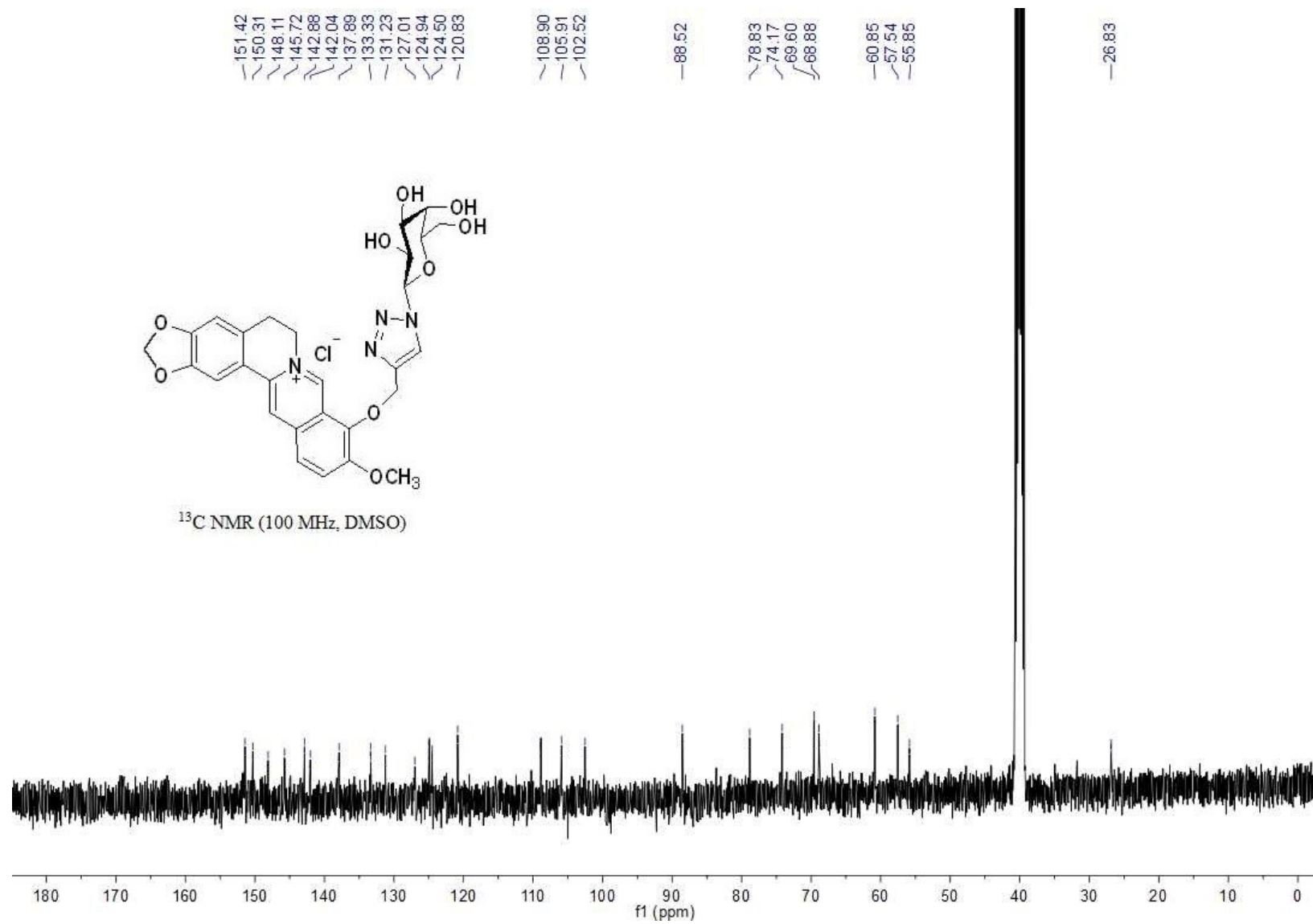
¹H NMR spectrum of compound 14



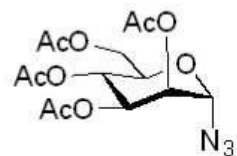
¹³C NMR spectrum of compound 14



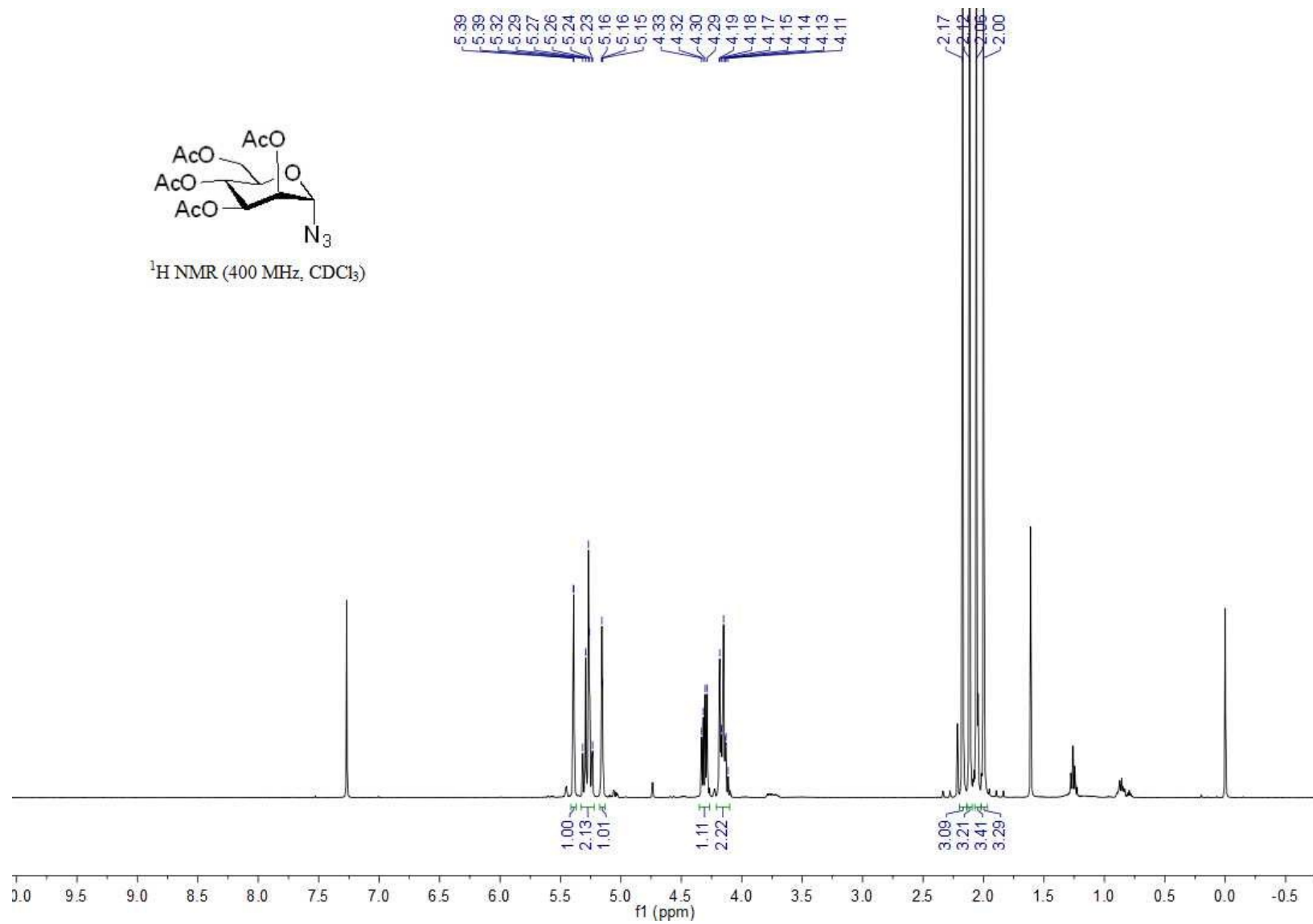
¹H NMR spectrum of compound 2



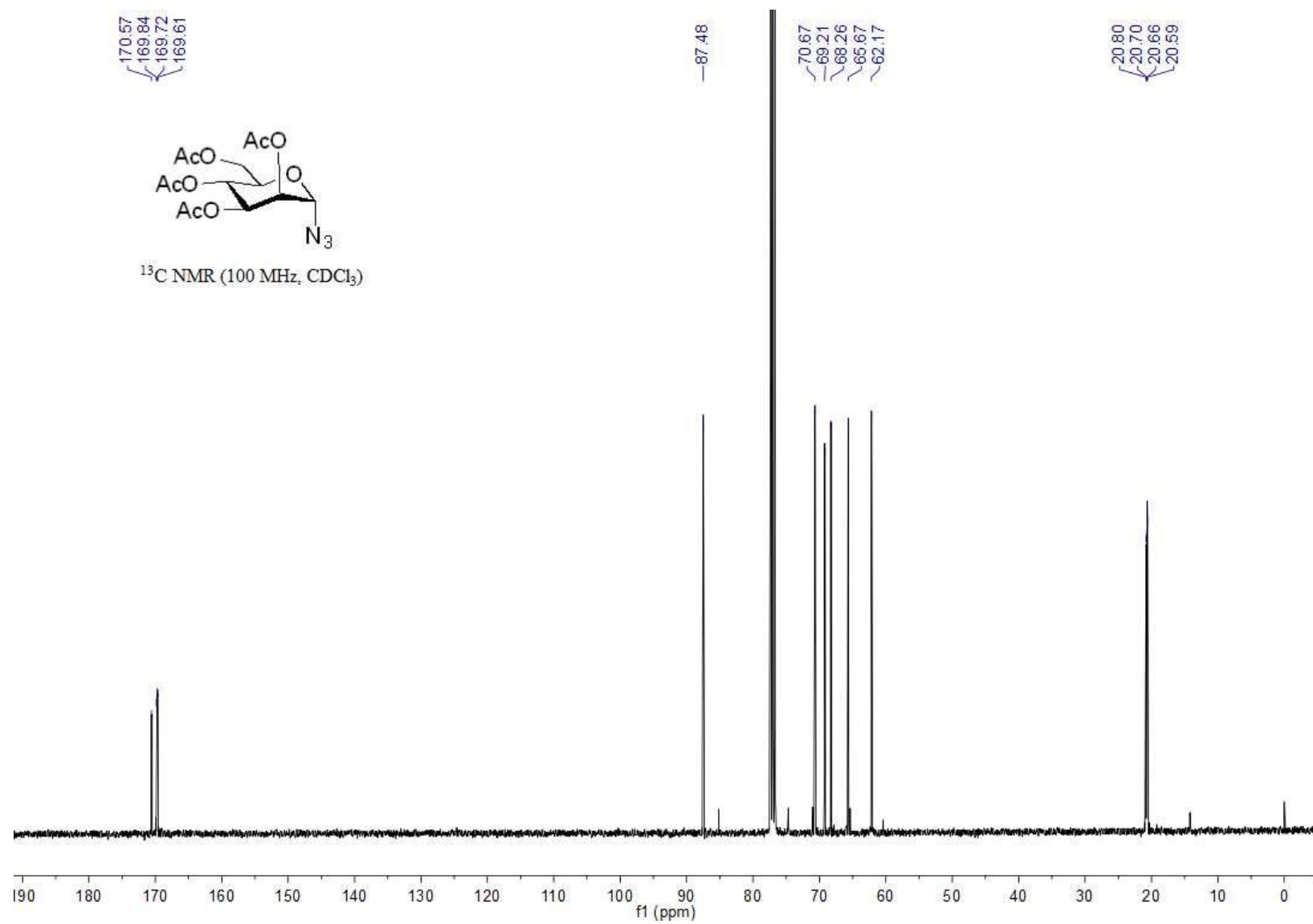
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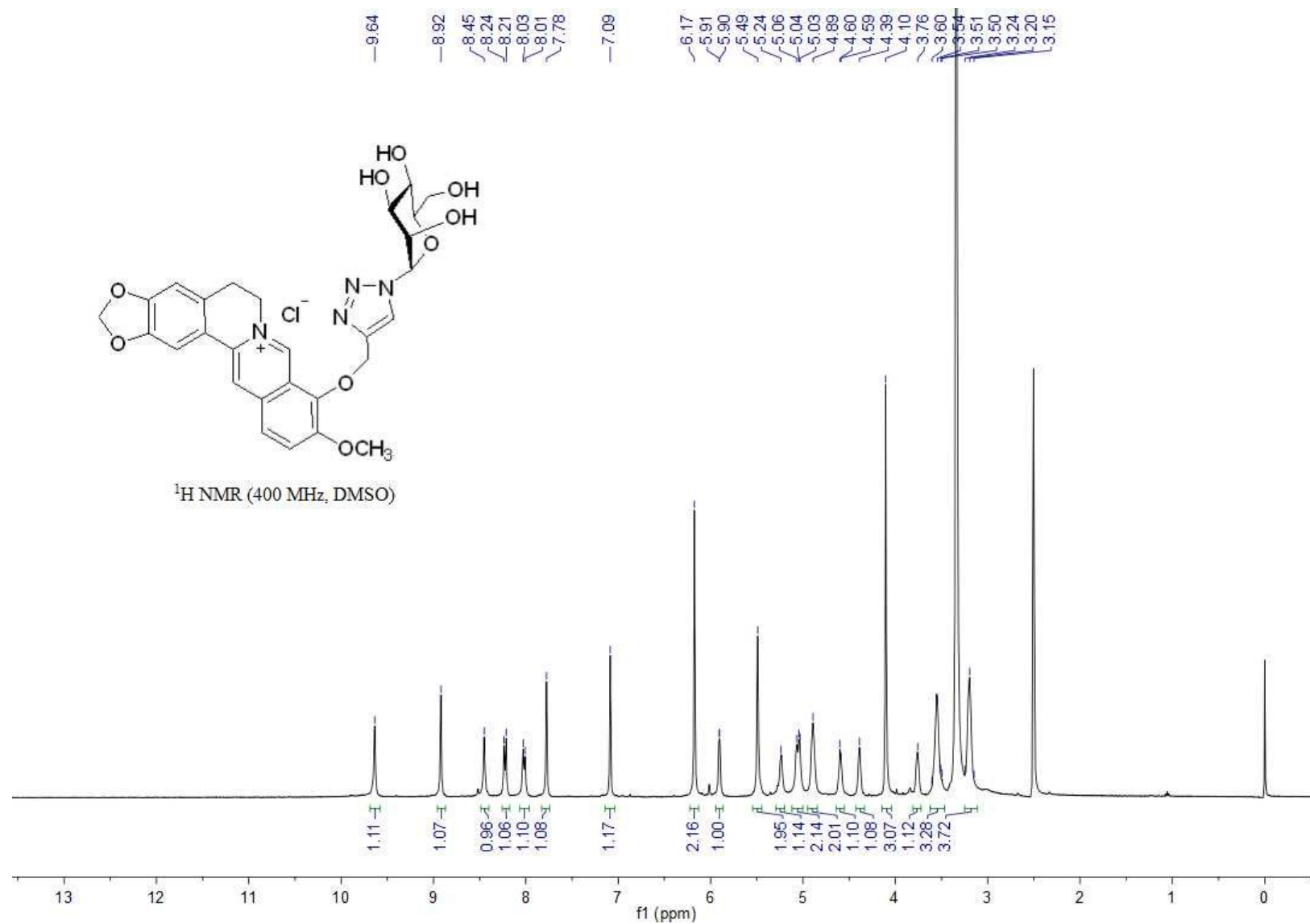
¹H NMR (400 MHz, CDCl₃)



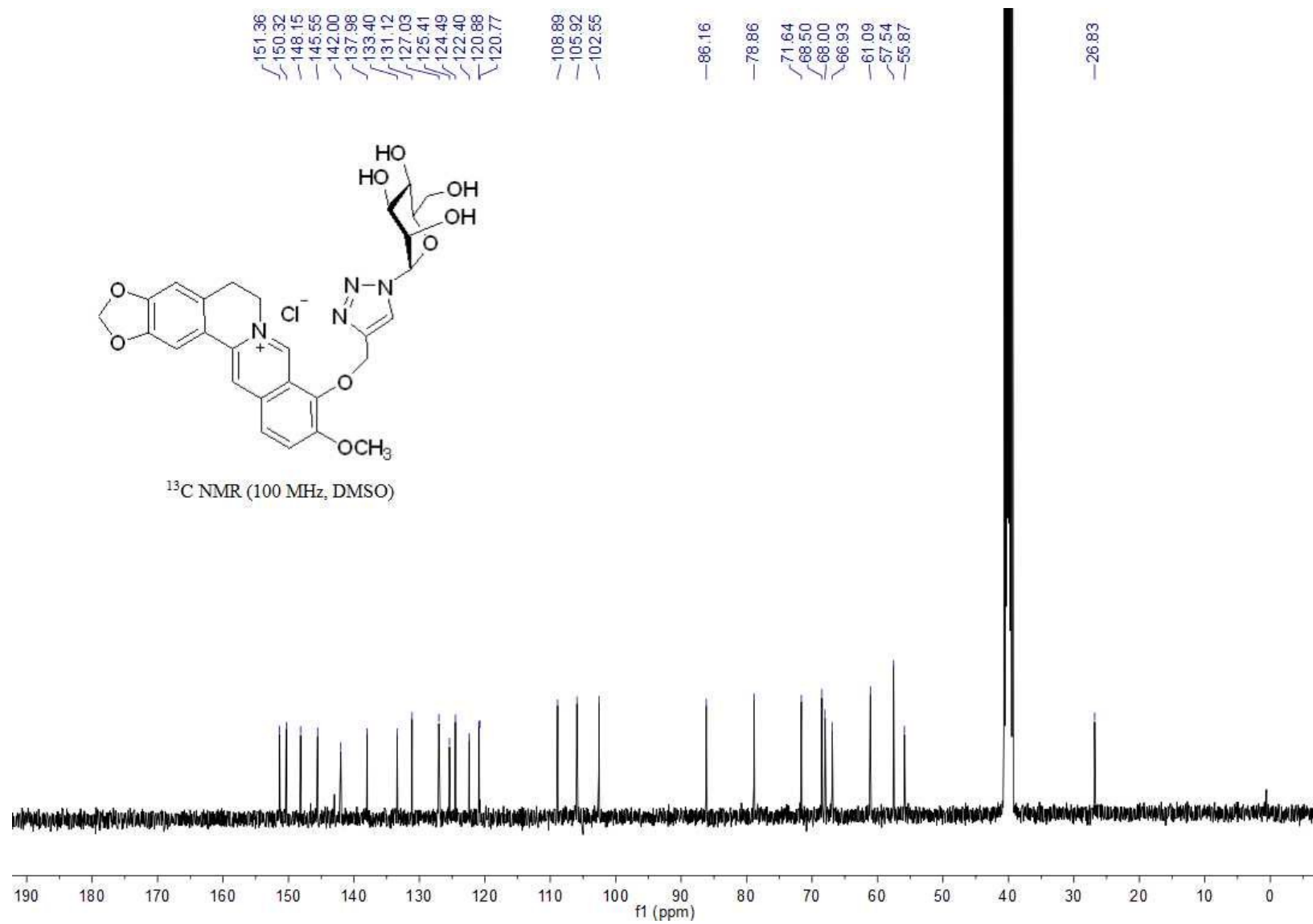
¹H NMR spectrum of compound **19a**



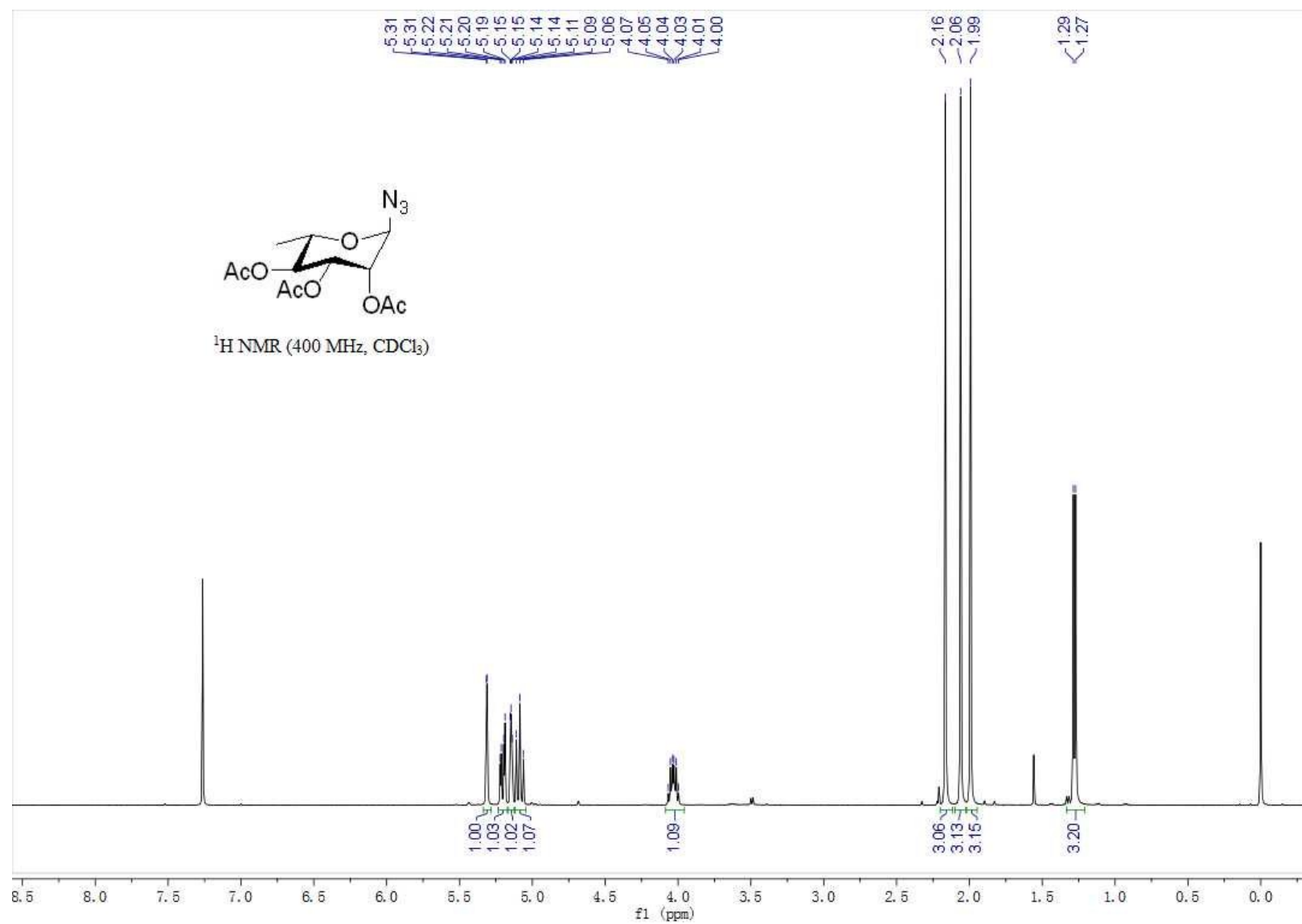
^{13}C NMR spectrum of compound **19a**



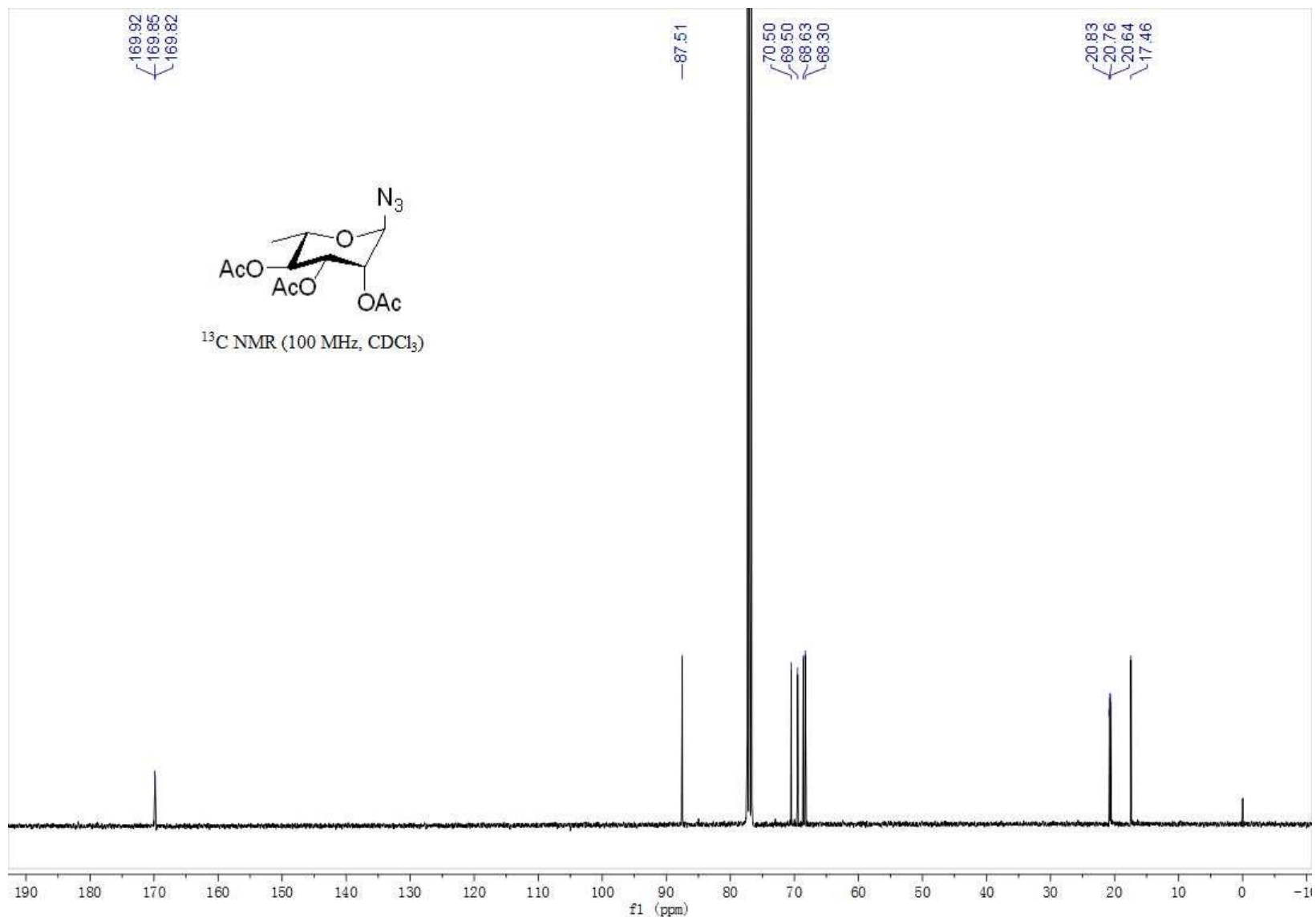
¹H NMR spectrum of compound **3**



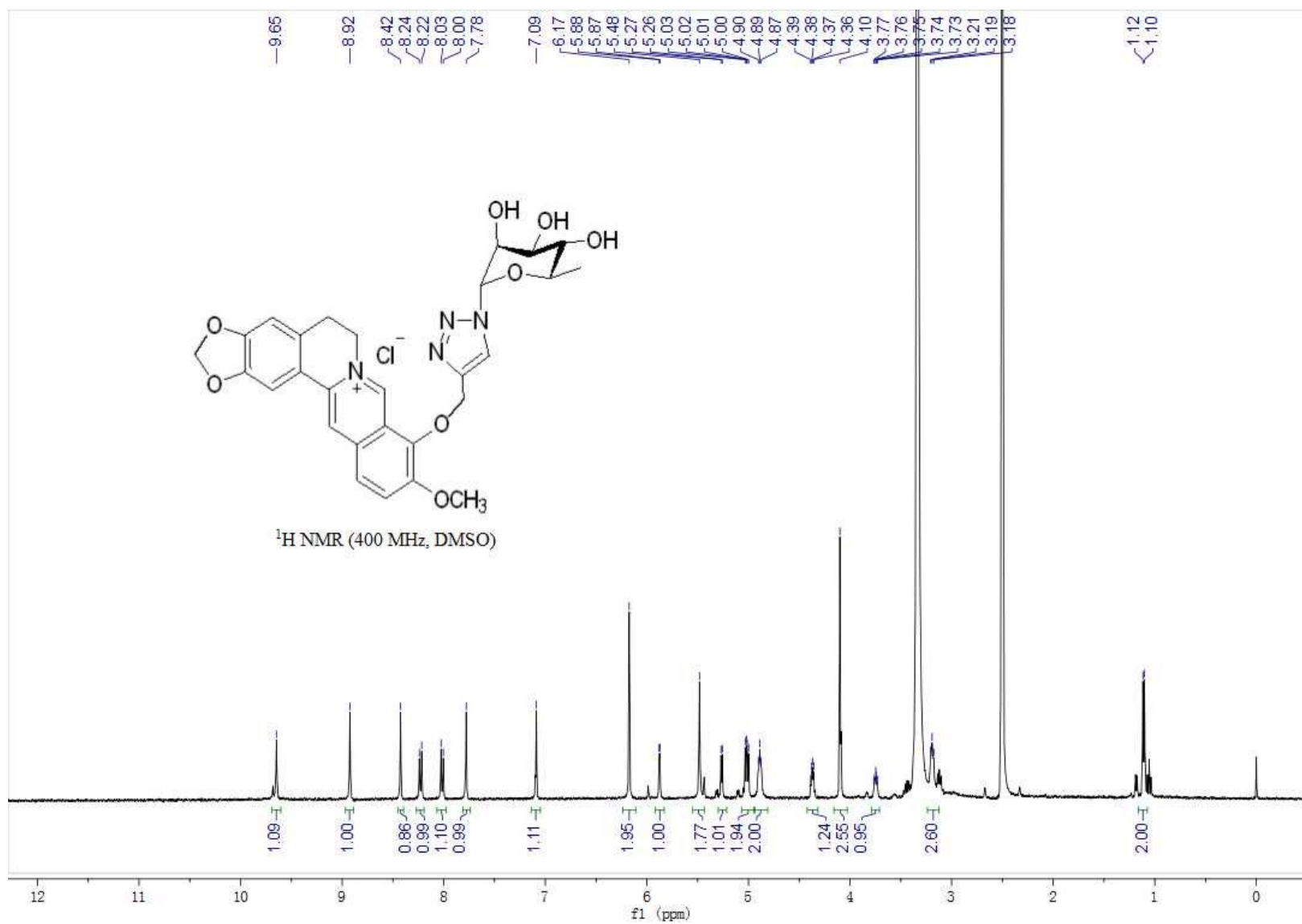
¹³C NMR spectrum of compound 3



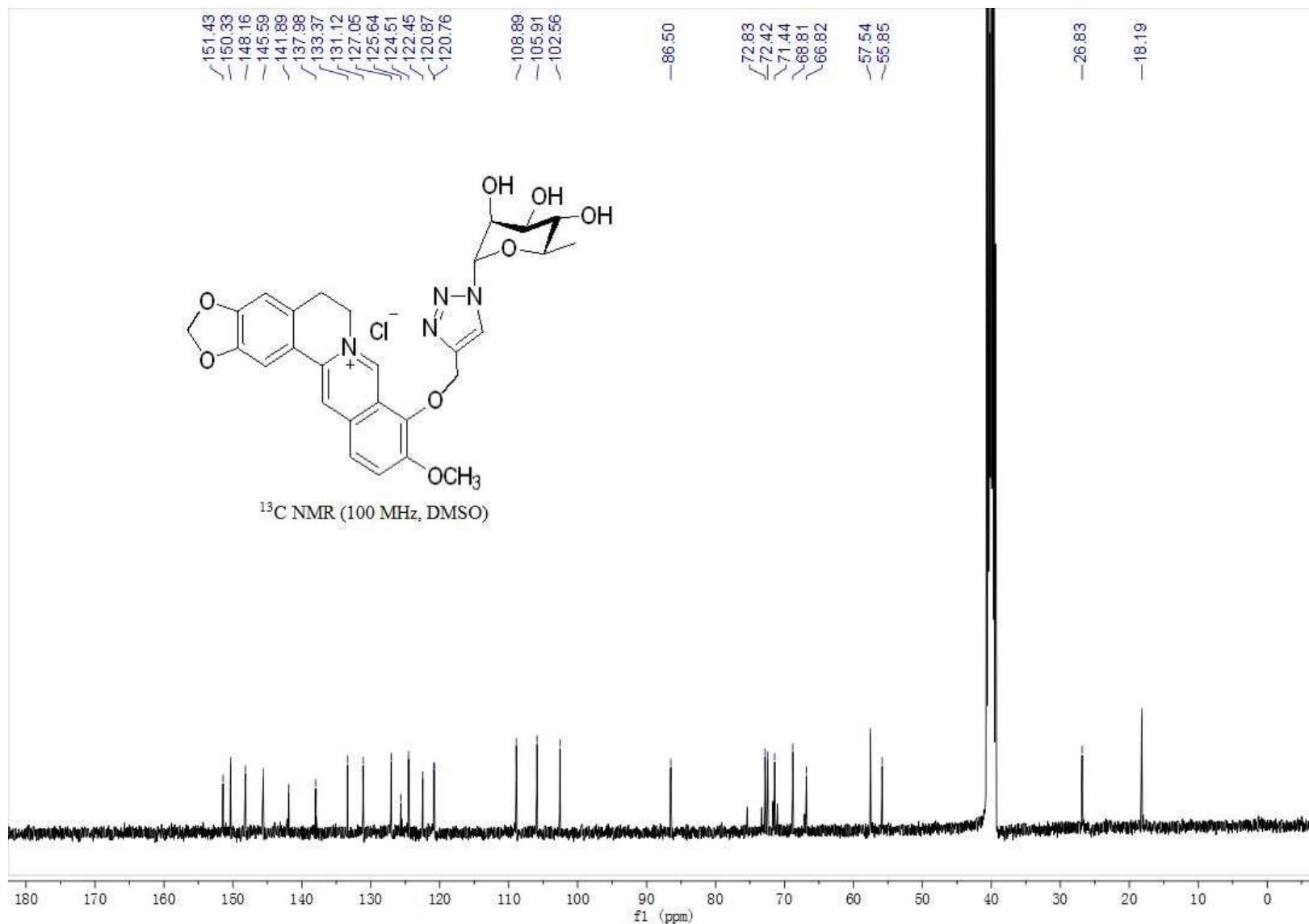
¹H NMR spectrum of compound 22



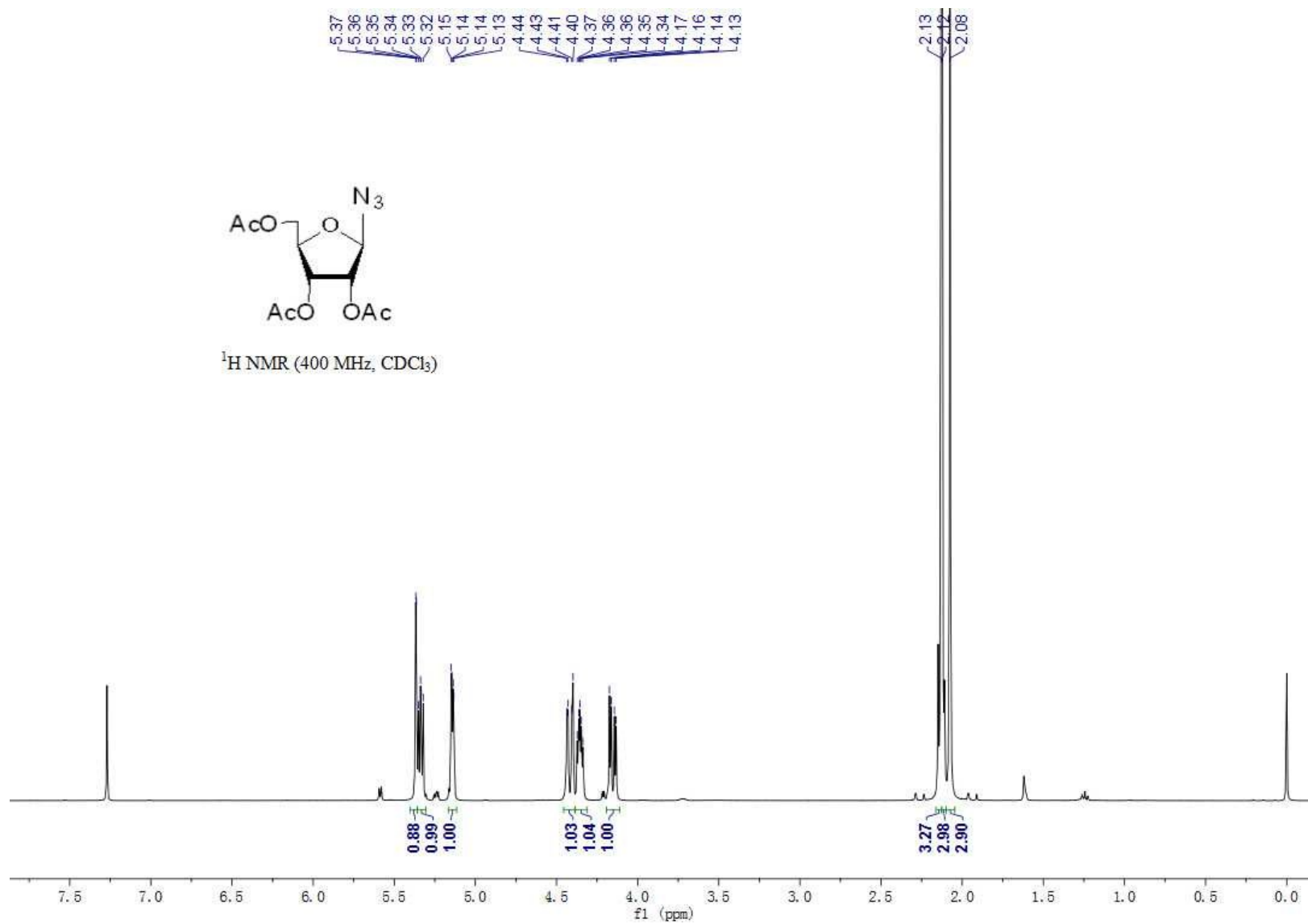
¹³C NMR spectrum of compound **22**



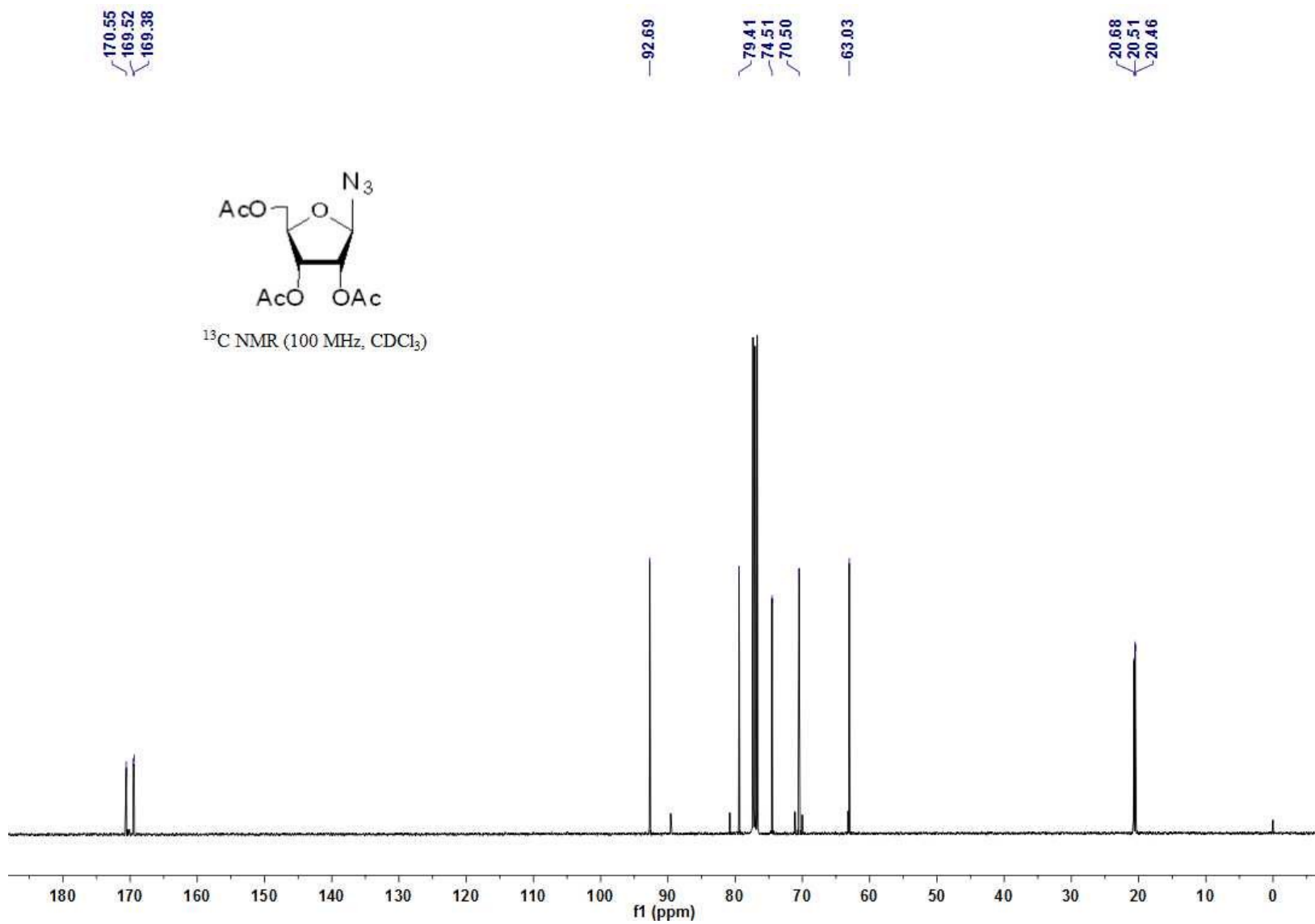
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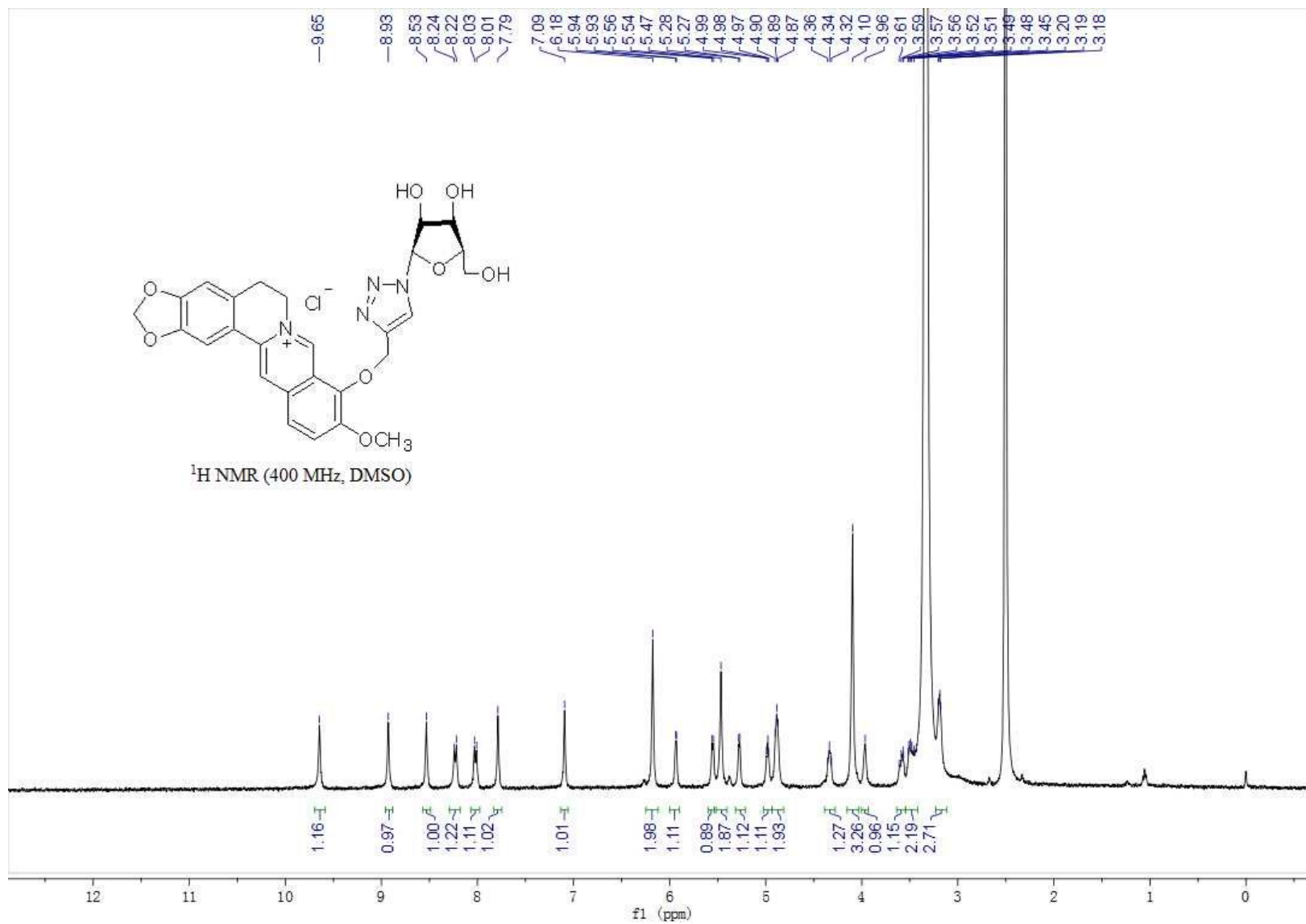
¹³C NMR spectrum of compound 4



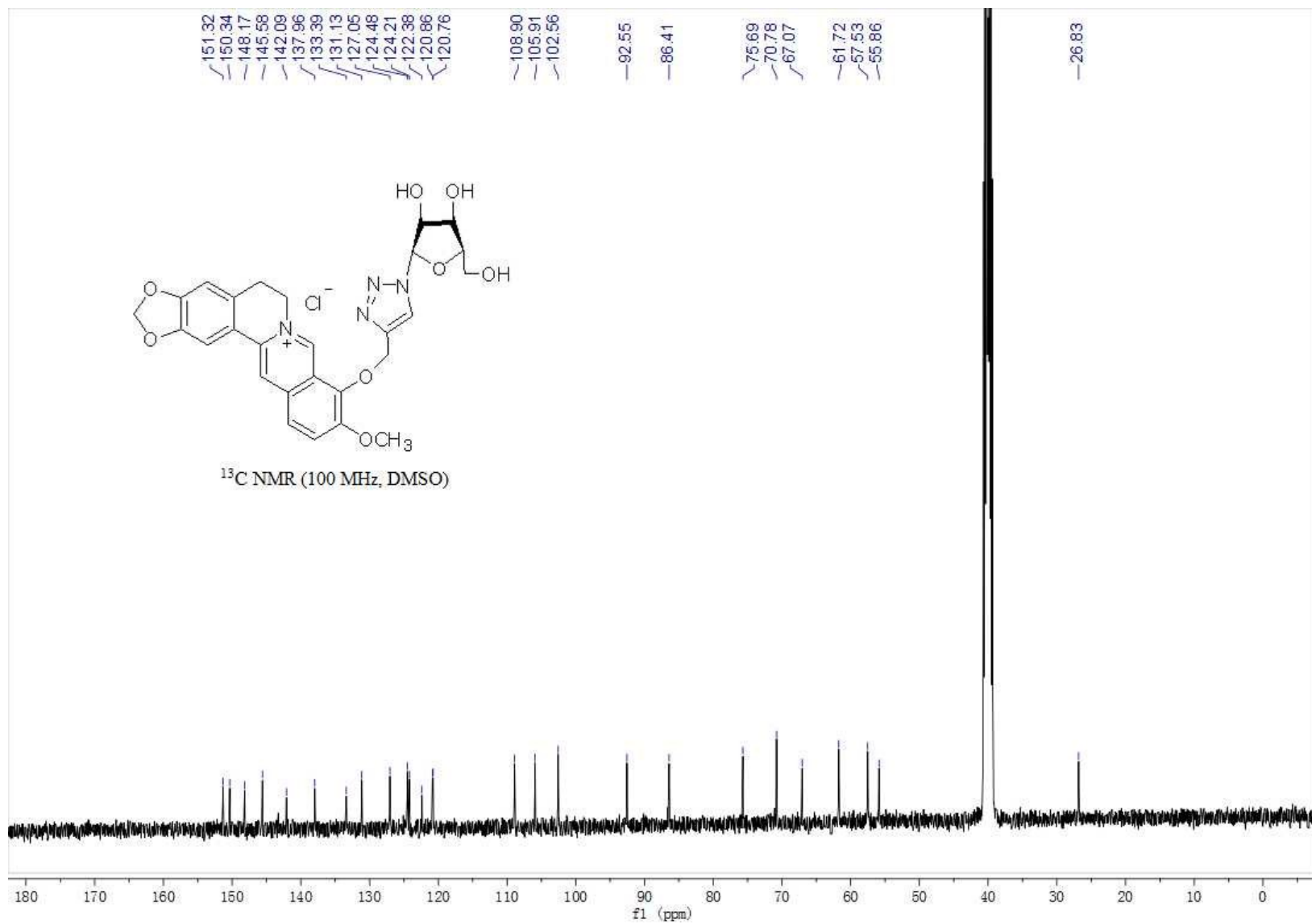
¹H NMR spectrum of compound 25



^{13}C NMR spectrum of compound **25**



¹H NMR spectrum of compound 5



¹³C NMR spectrum of compound 5