

Supplementary Materials

New Cannabinoids and Chlorin-Type Metabolites From the Flowers of *Cannabis sativa* L.: A study on Their Neuroblastoma Activity

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1. Spectroscopic data for compound 1

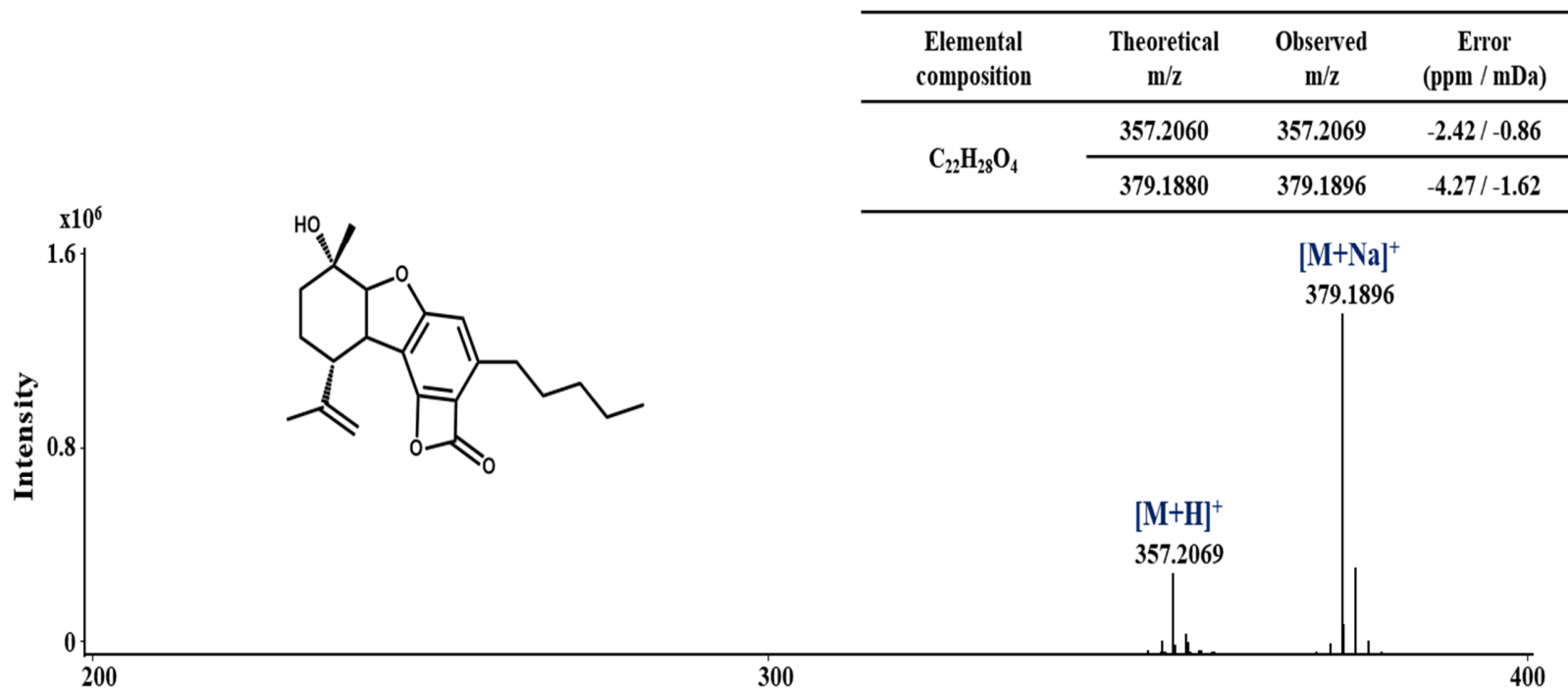


Figure S1. MS spectrum of **1**

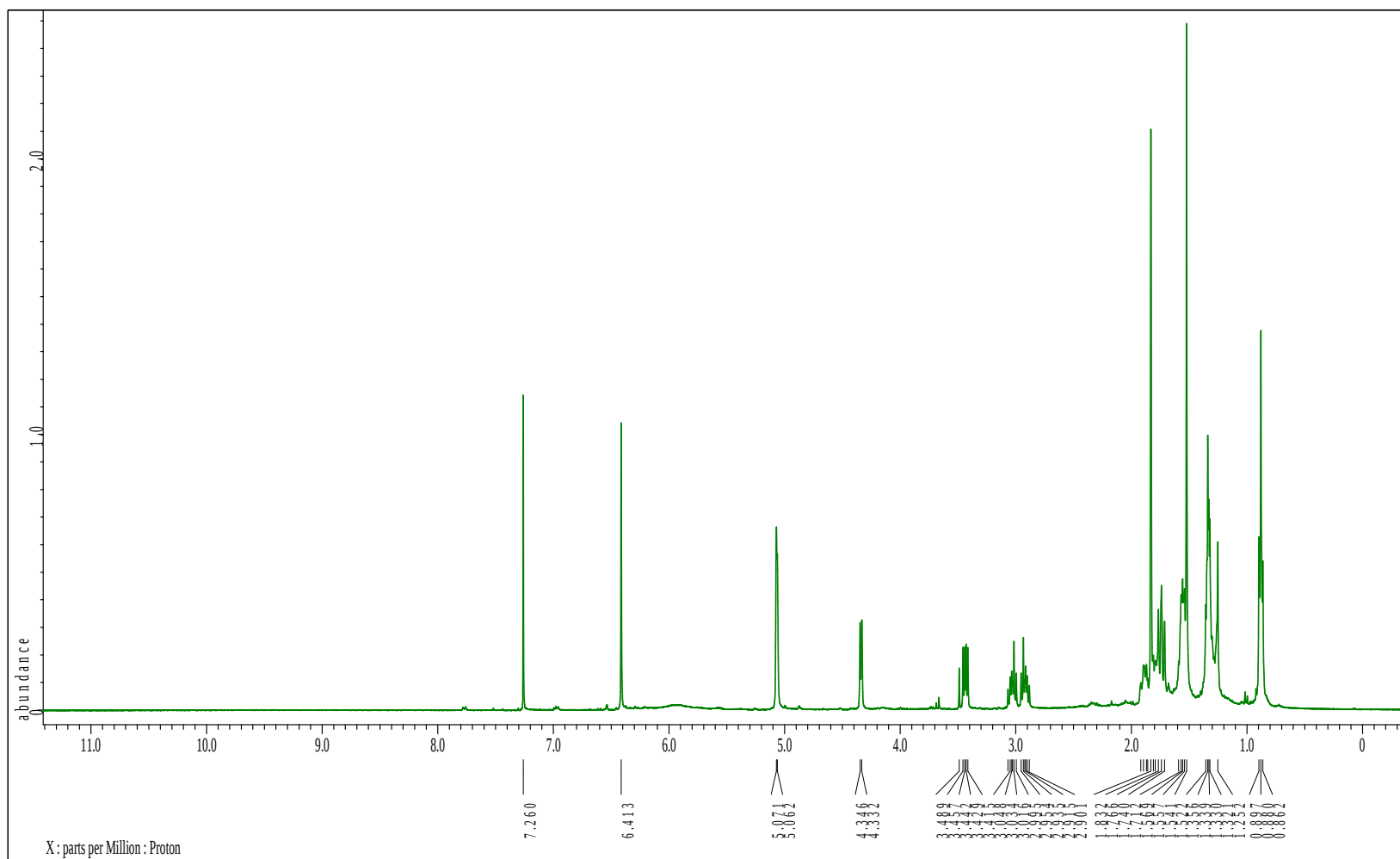


Figure S2. ¹H NMR spectrum of **1** (Recorded in CDCl₃)

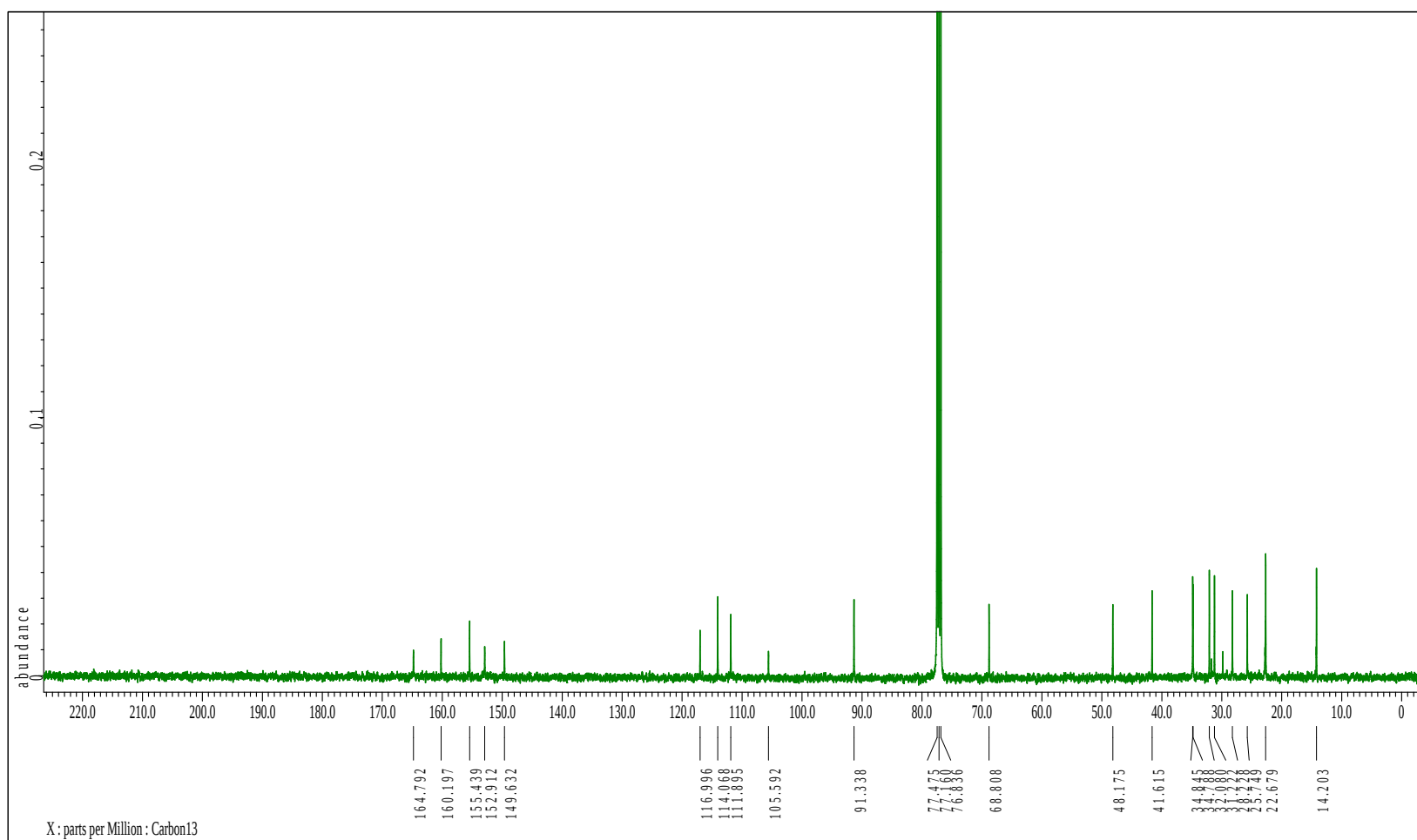


Figure S3. ^{13}C NMR spectrum of **1** (Recorded in CDCl_3)

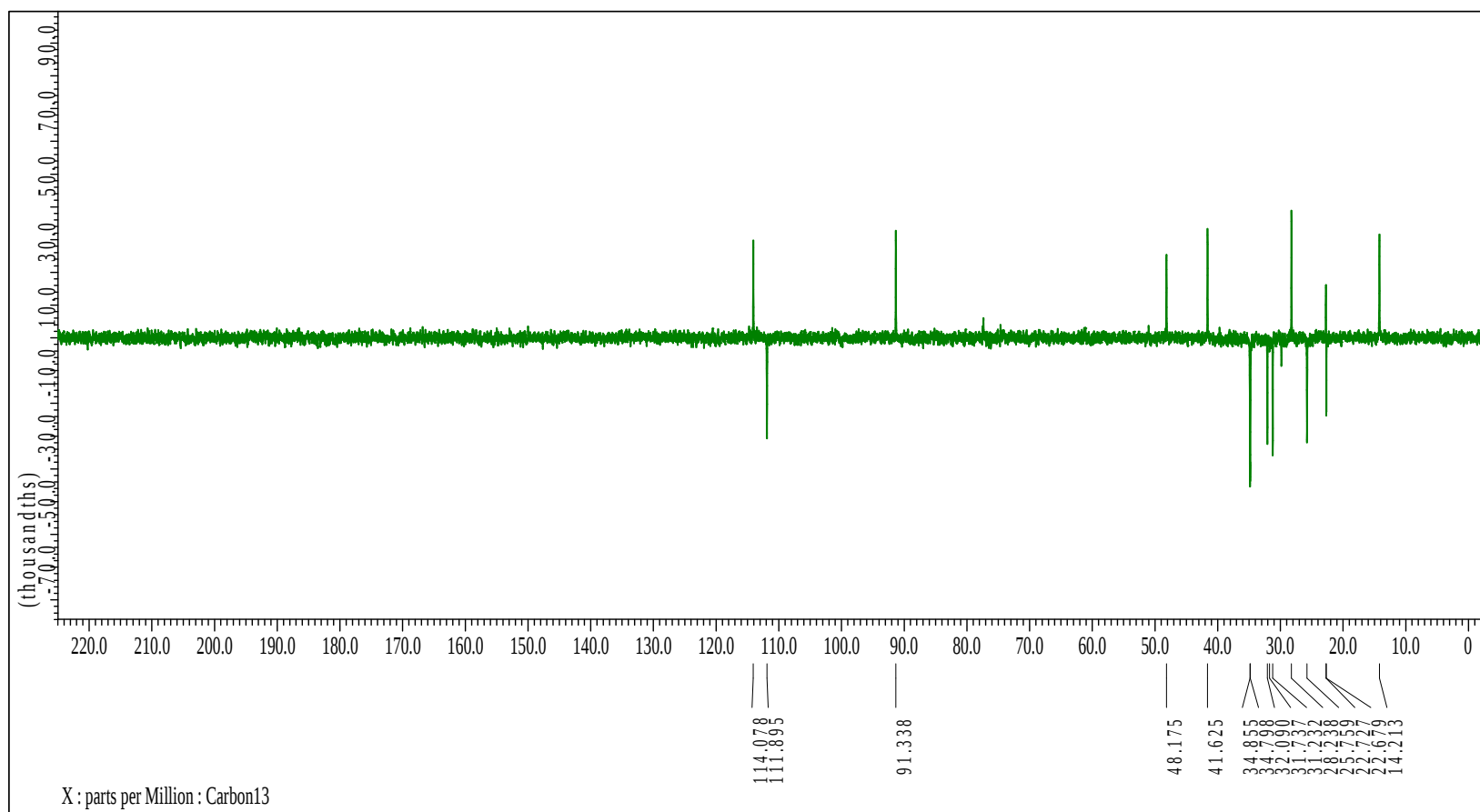


Figure S4. DEPT spectrum of **1** (Recorded in CDCl₃)

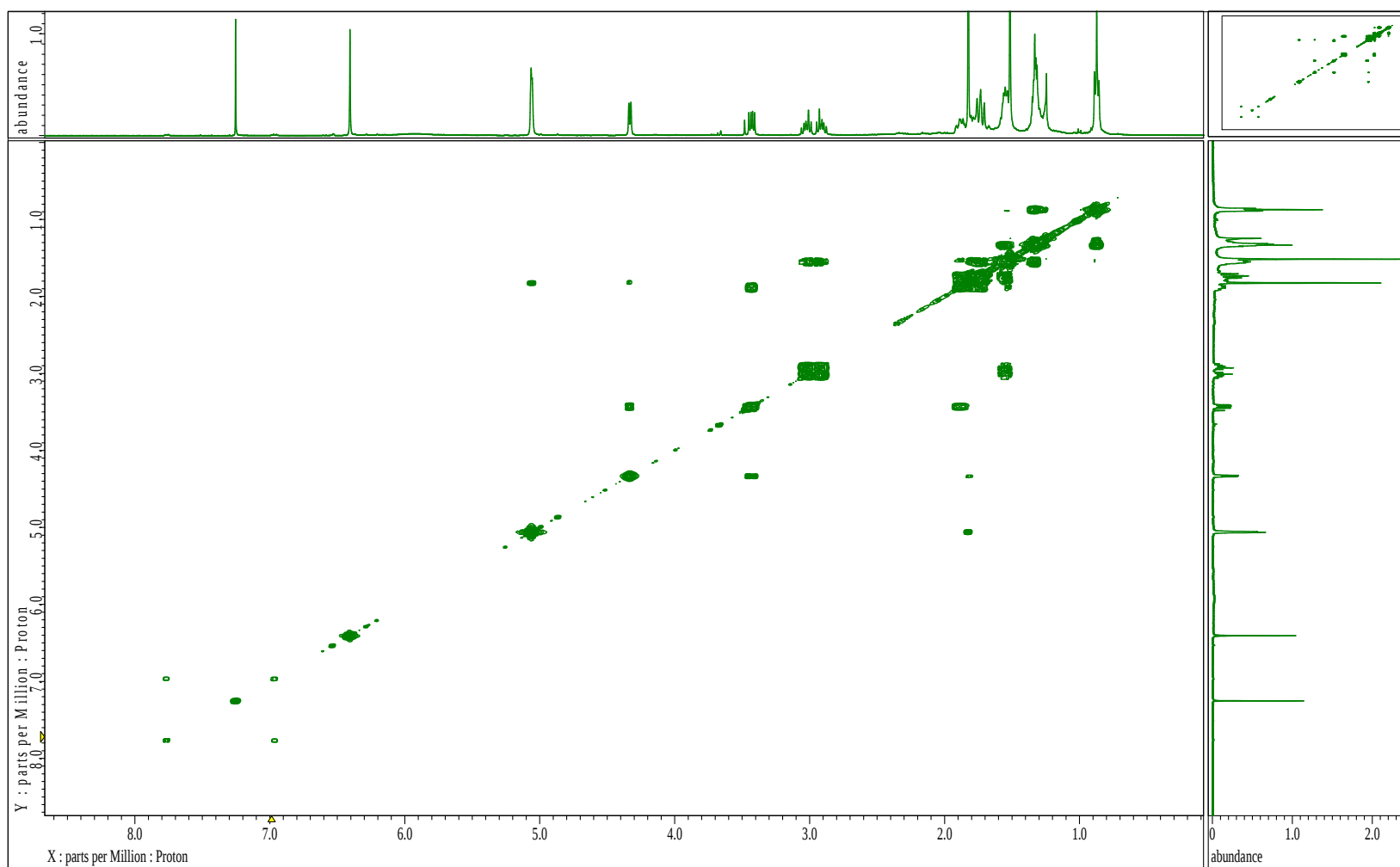


Figure S5. COSY spectrum of **1** (Recorded in CDCl_3)

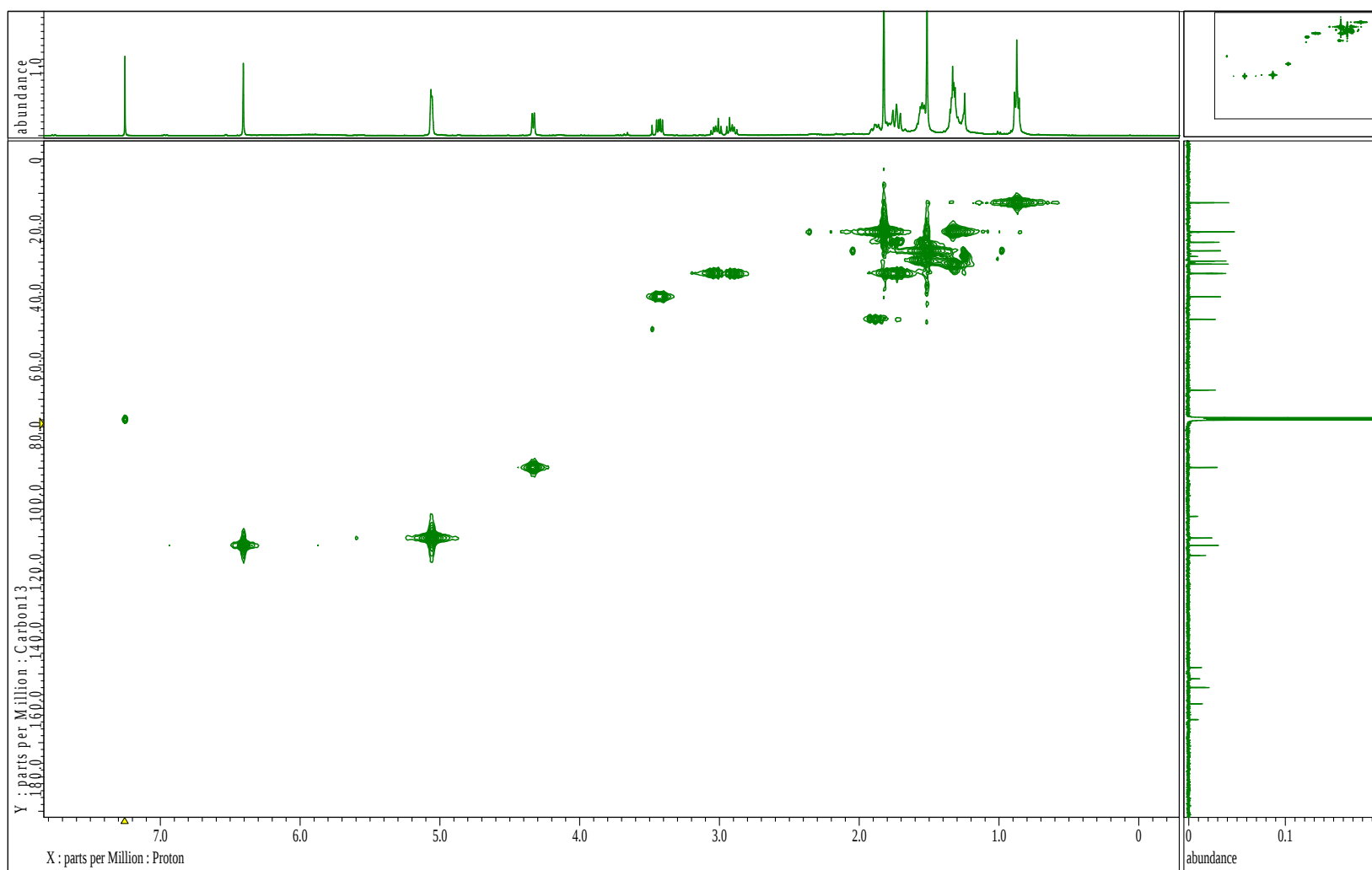


Figure S6. HSQC spectrum of **1** (Recorded in CDCl₃)

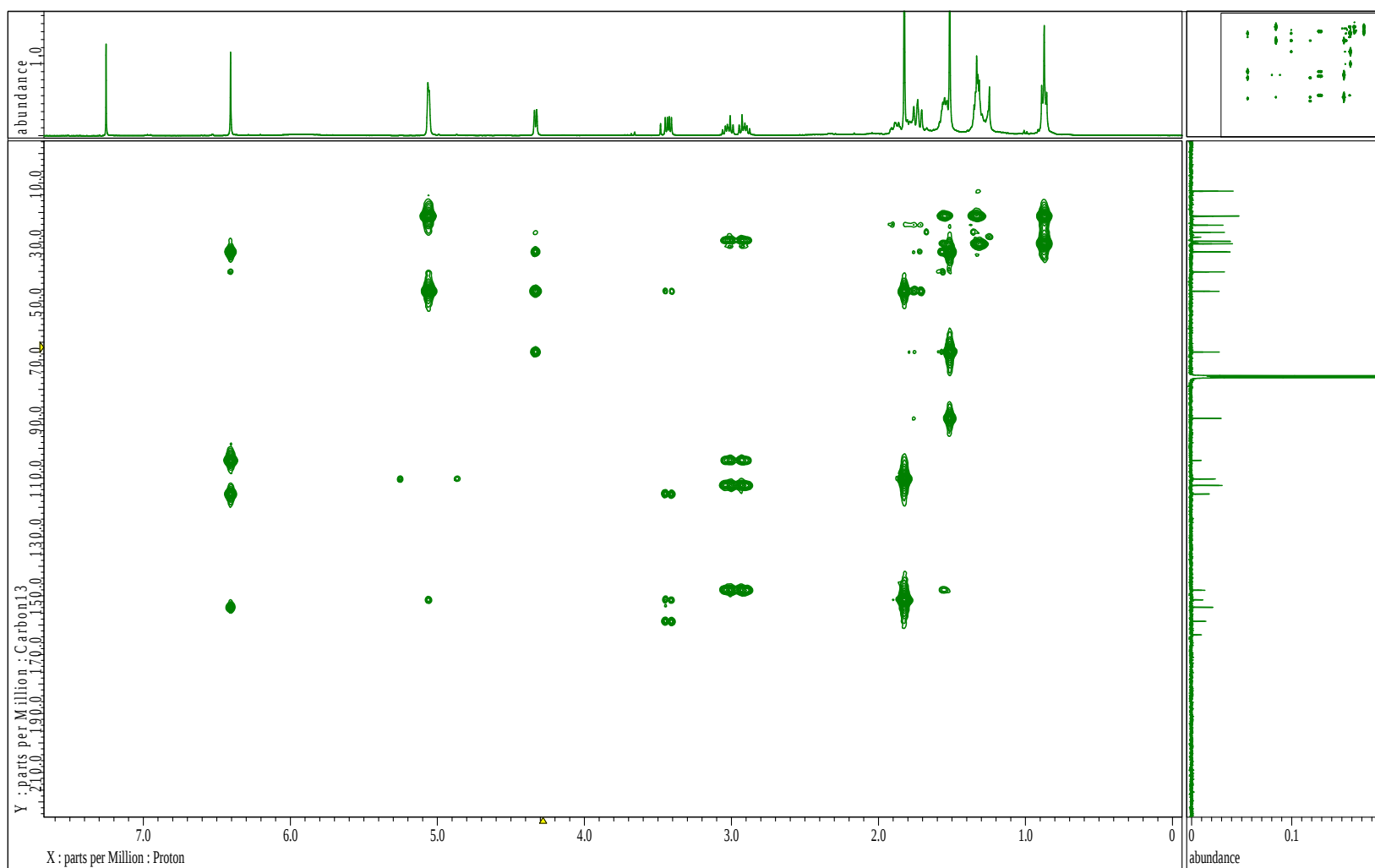


Figure S7. HMBC spectrum of **1** (Recorded in CDCl₃)

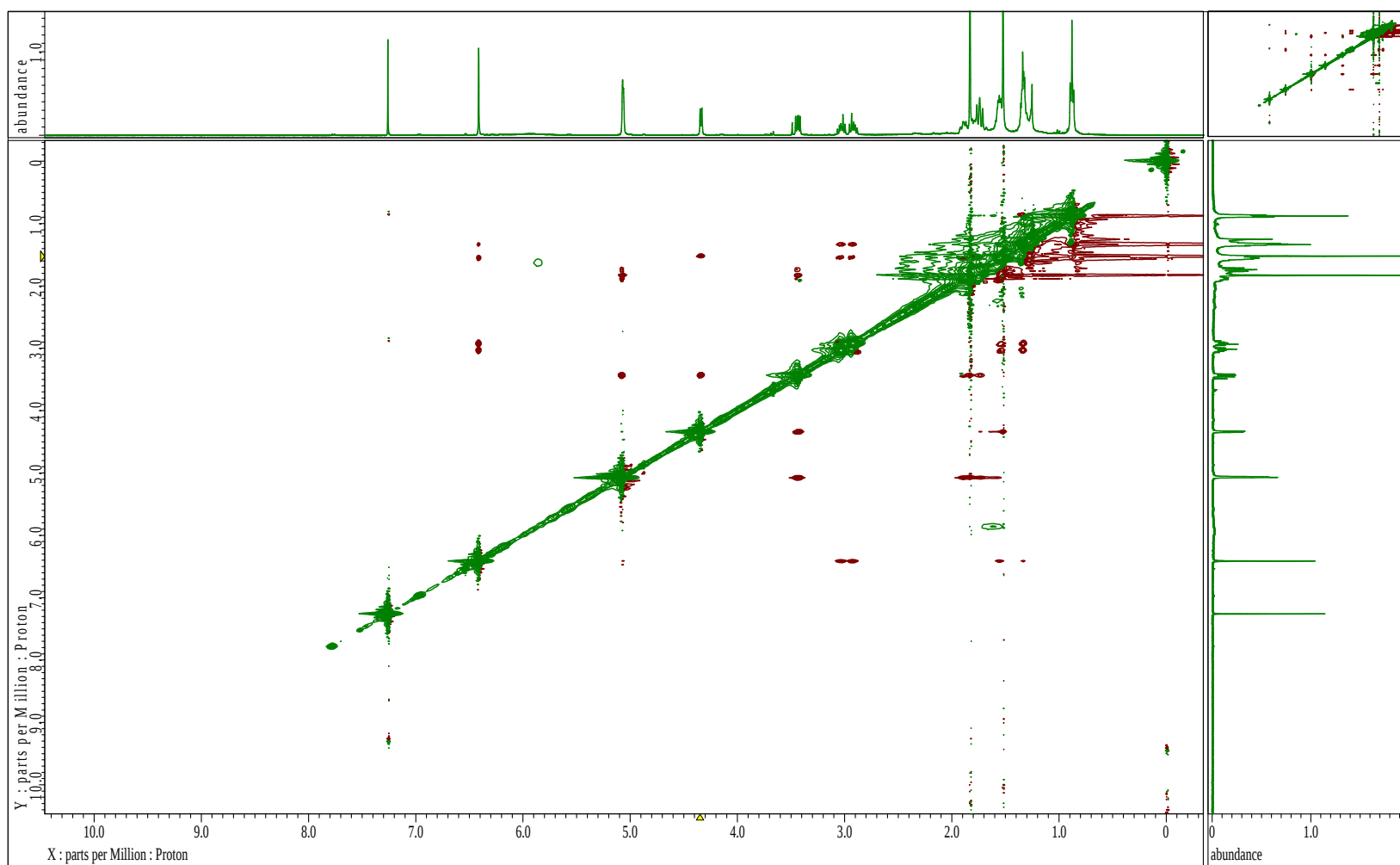


Figure S8. NOESY spectrum of **1** (Recorded in CDCl_3)

2. Spectroscopic data for compound 2

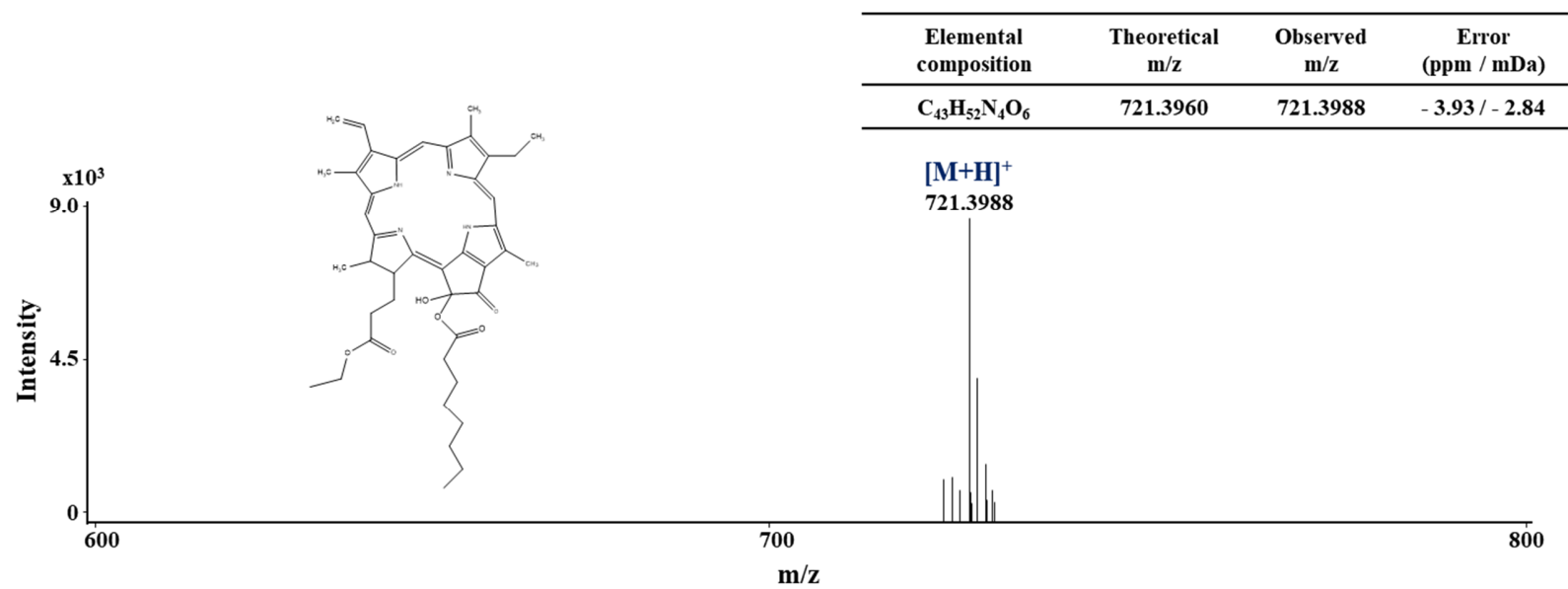
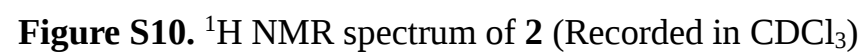


Figure S9. MS spectrum of 2



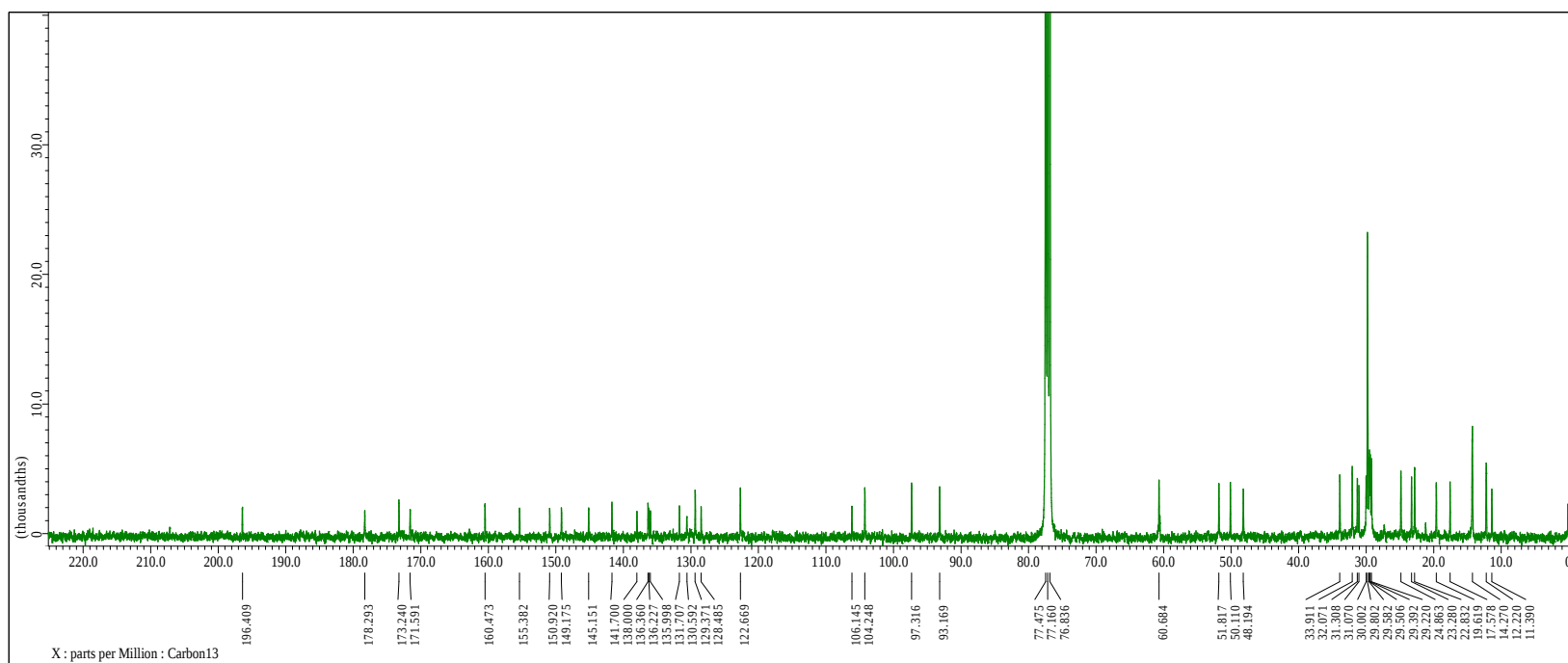


Figure S11. ¹³C NMR spectrum of **2** (Recorded in CDCl₃)

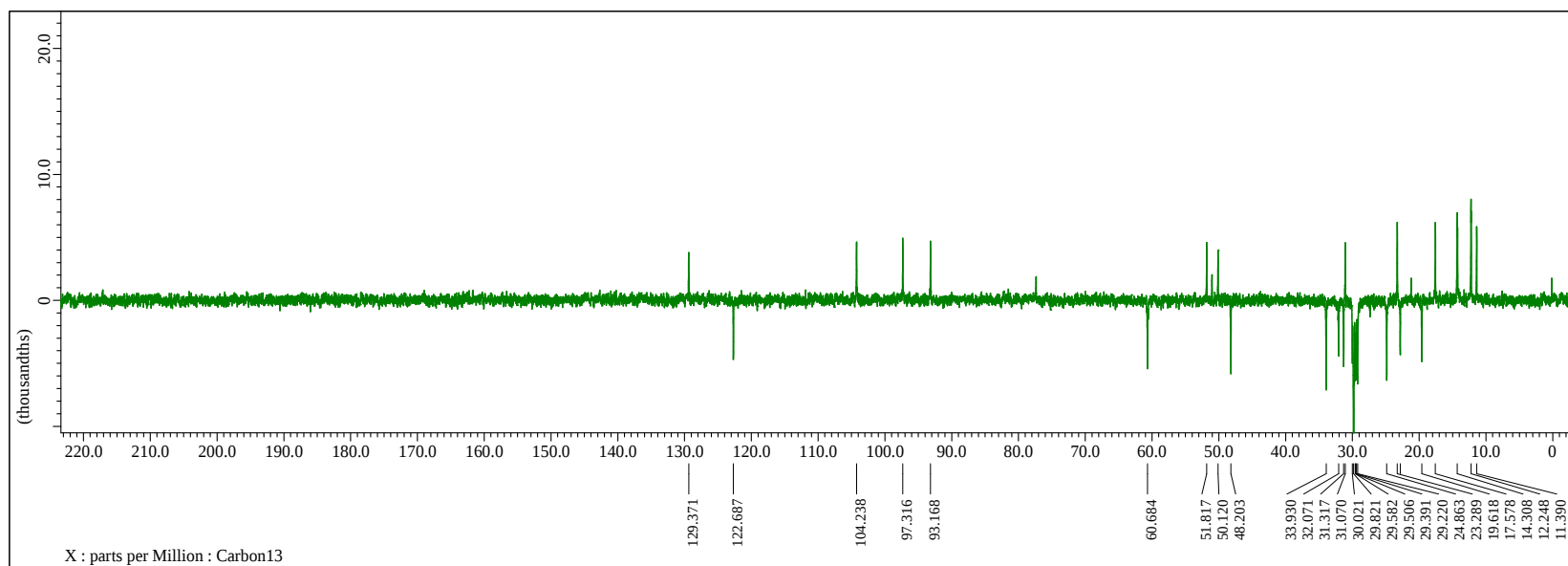


Figure S12. DEPT spectrum of **2** (Recorded in CDCl_3)

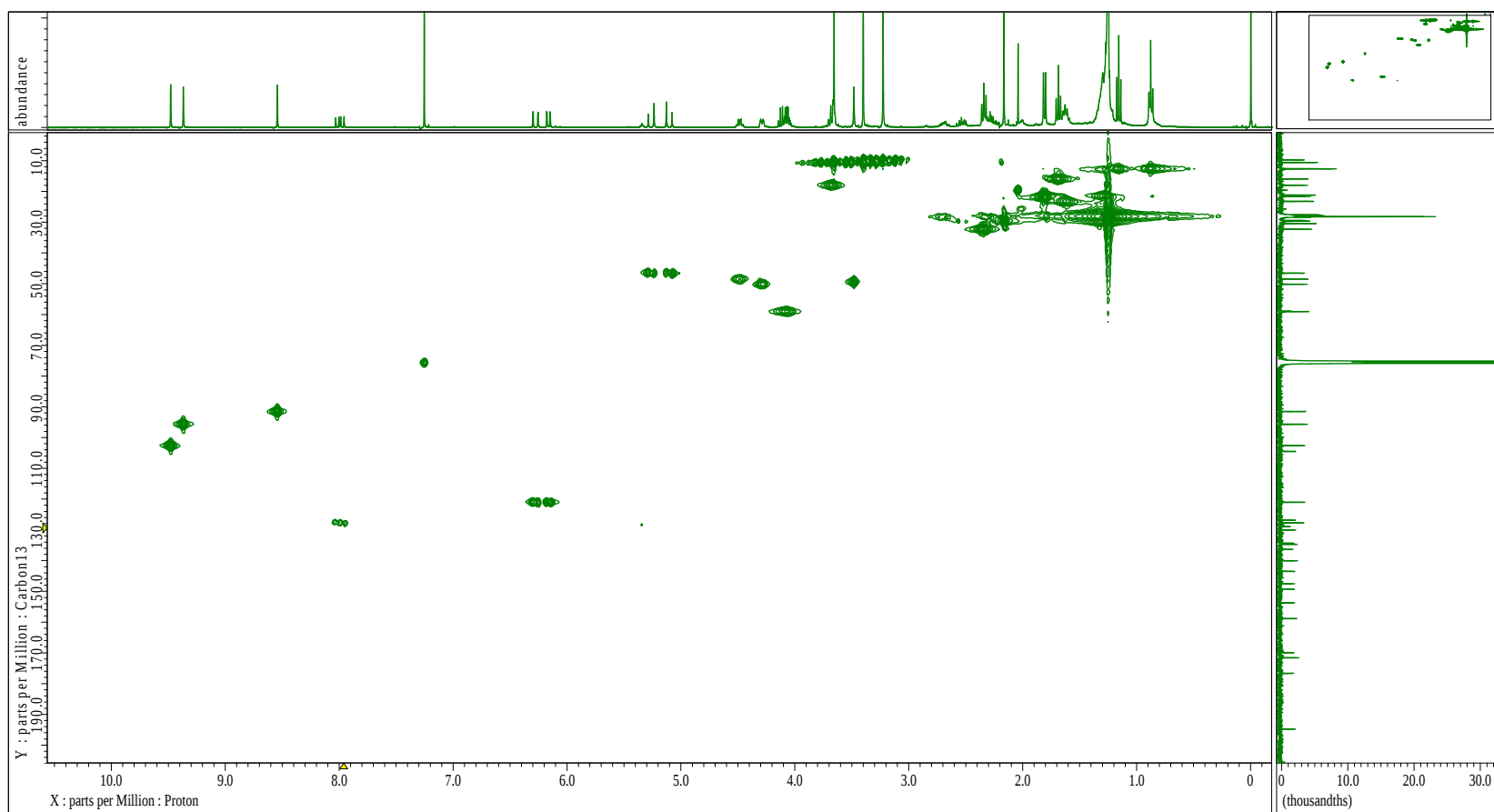


Figure S13. HMQC spectrum of **2** (Recorded in CDCl_3)

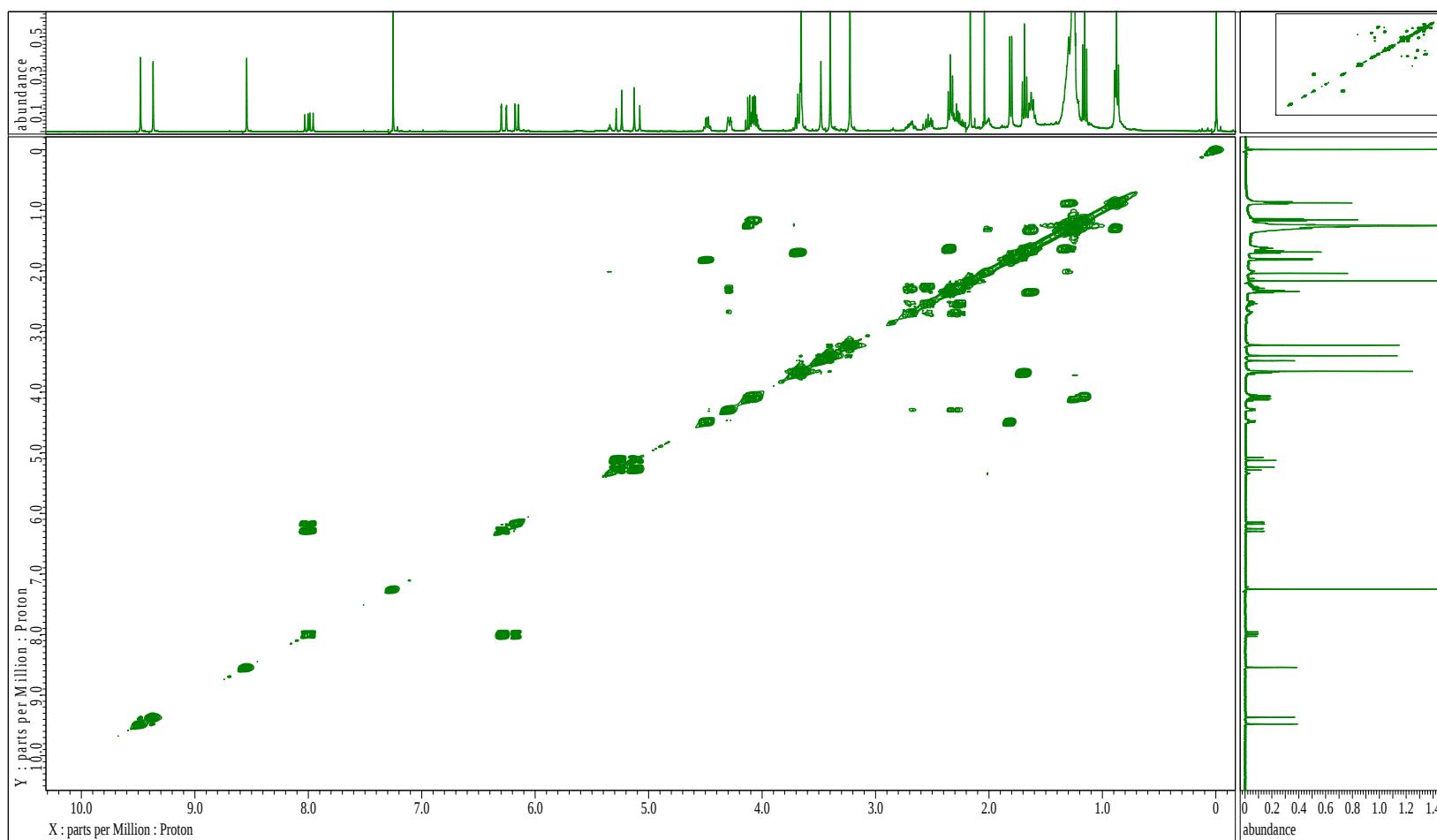


Figure S14. COSY spectrum of **2** (Recorded in CDCl₃)

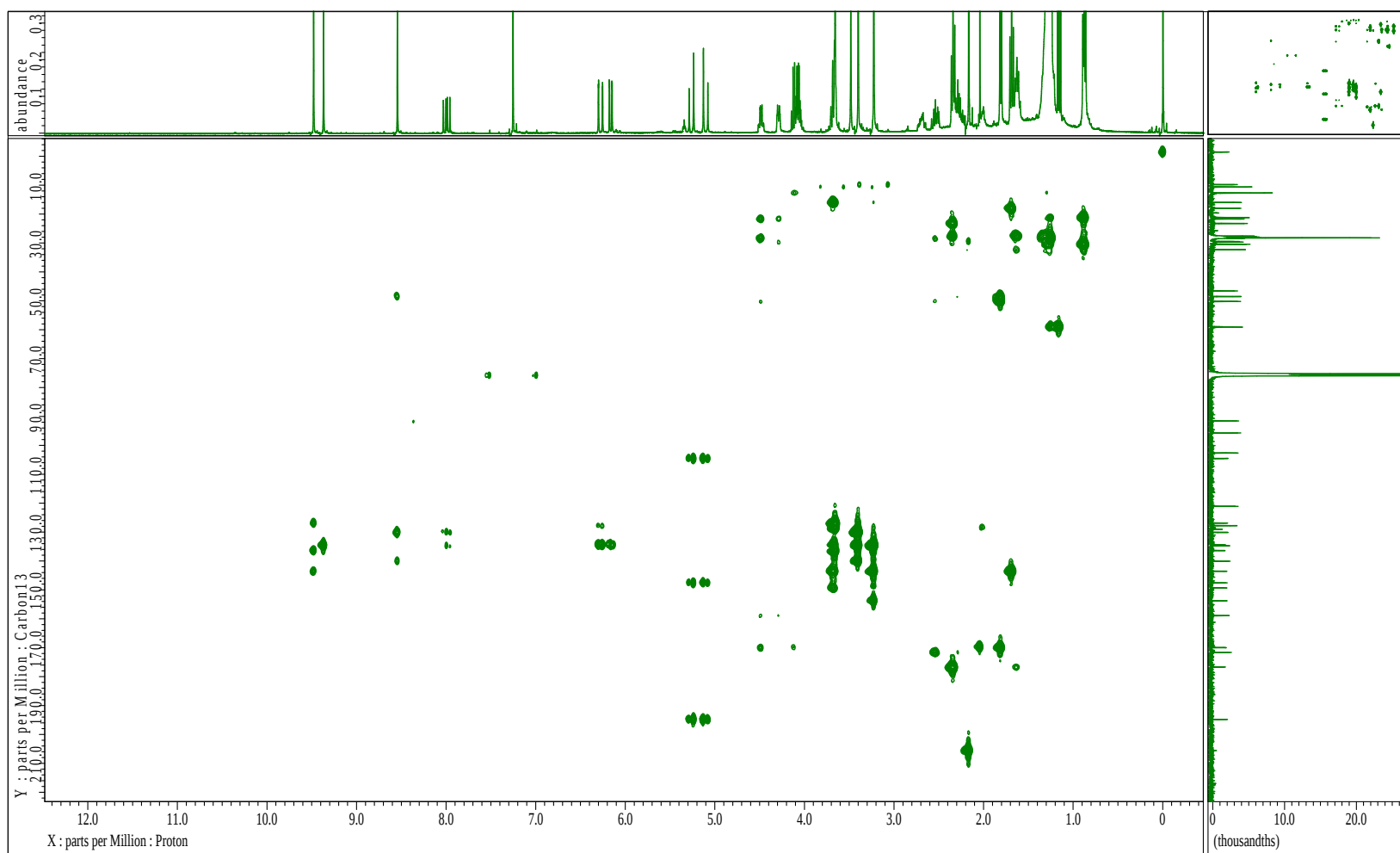


Figure S15. HMBC spectrum of **2** (Recorded in CDCl₃)

3. Spectroscopic data for compound 3

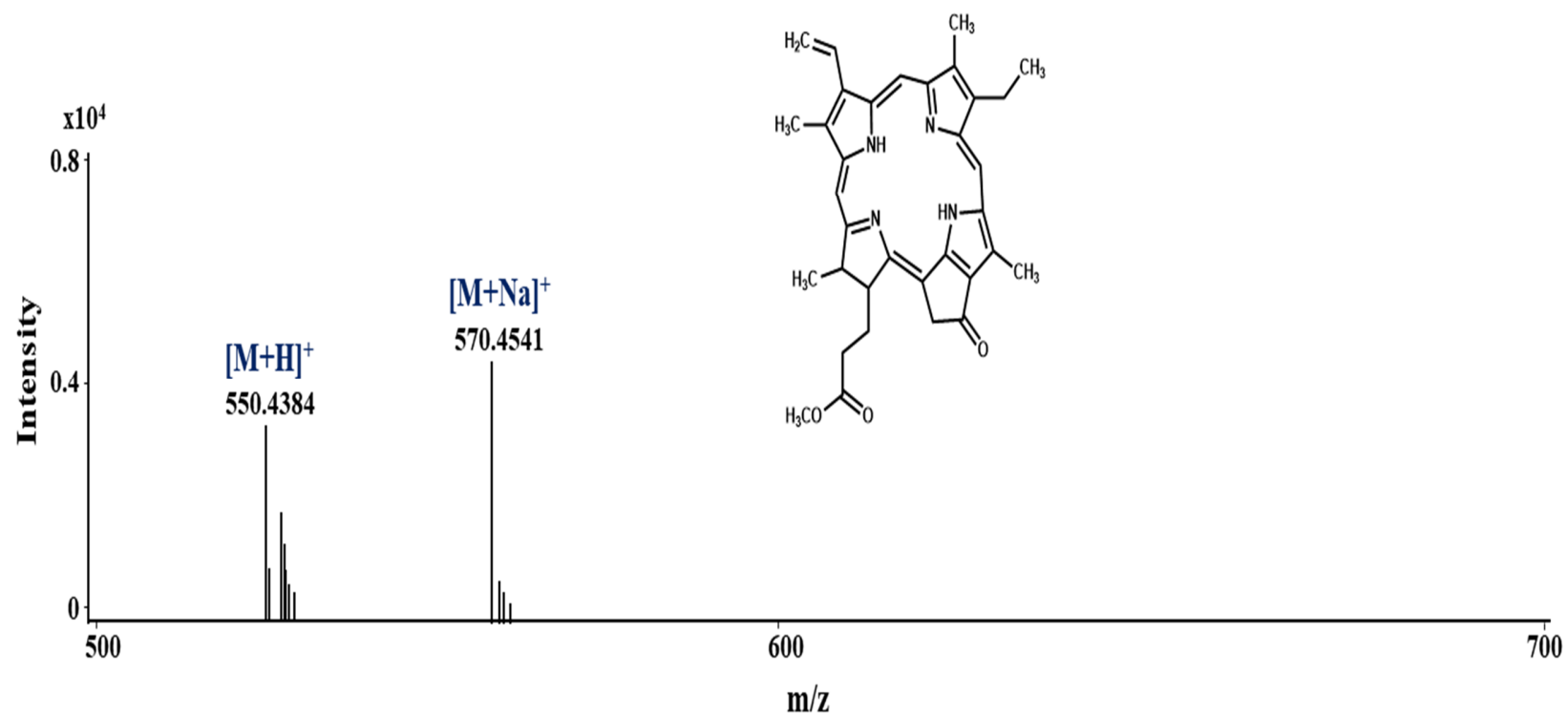


Figure S16. MS spectrum of **3**

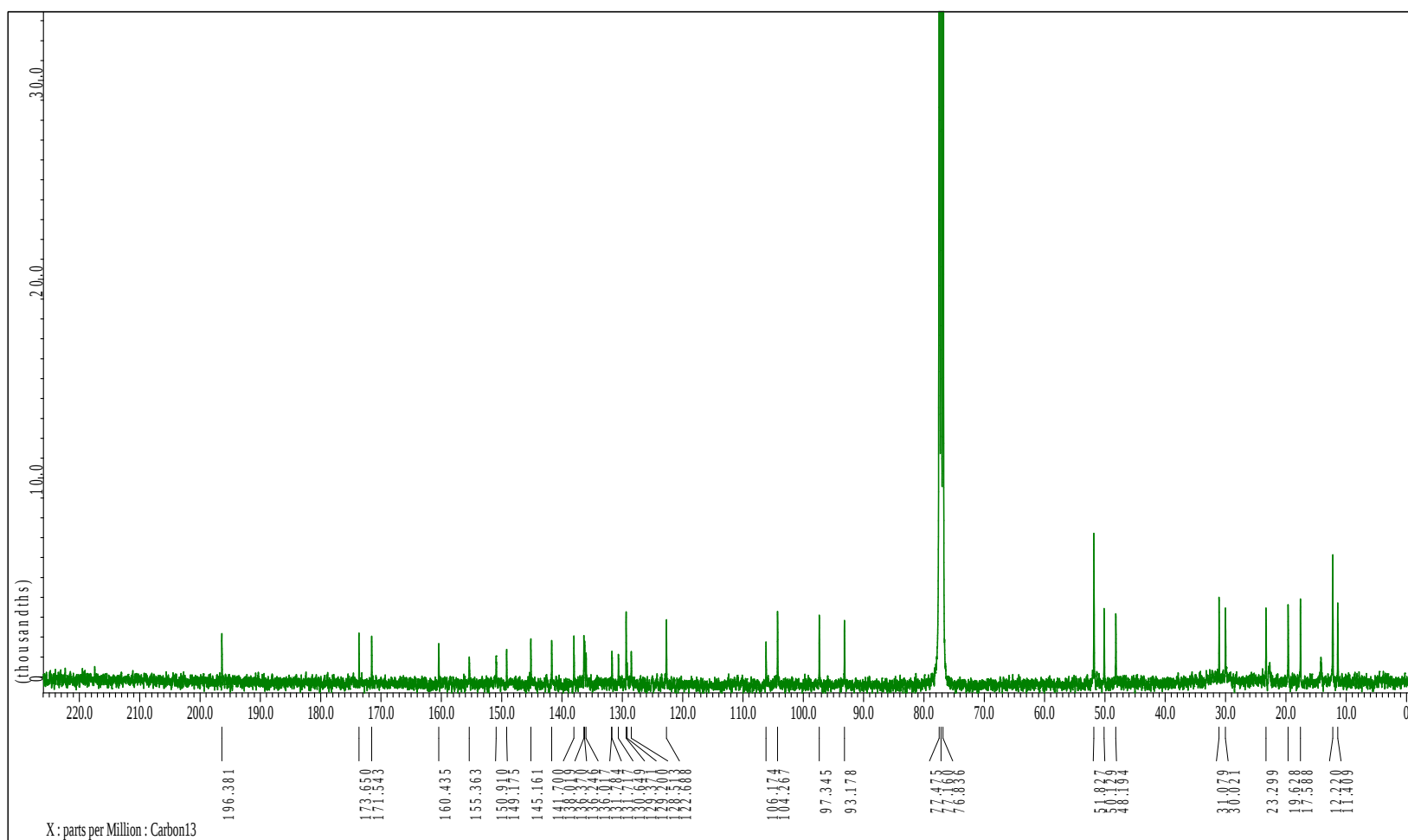


Figure S18. ^{13}C NMR spectrum of **3** (Recorded in CDCl_3)

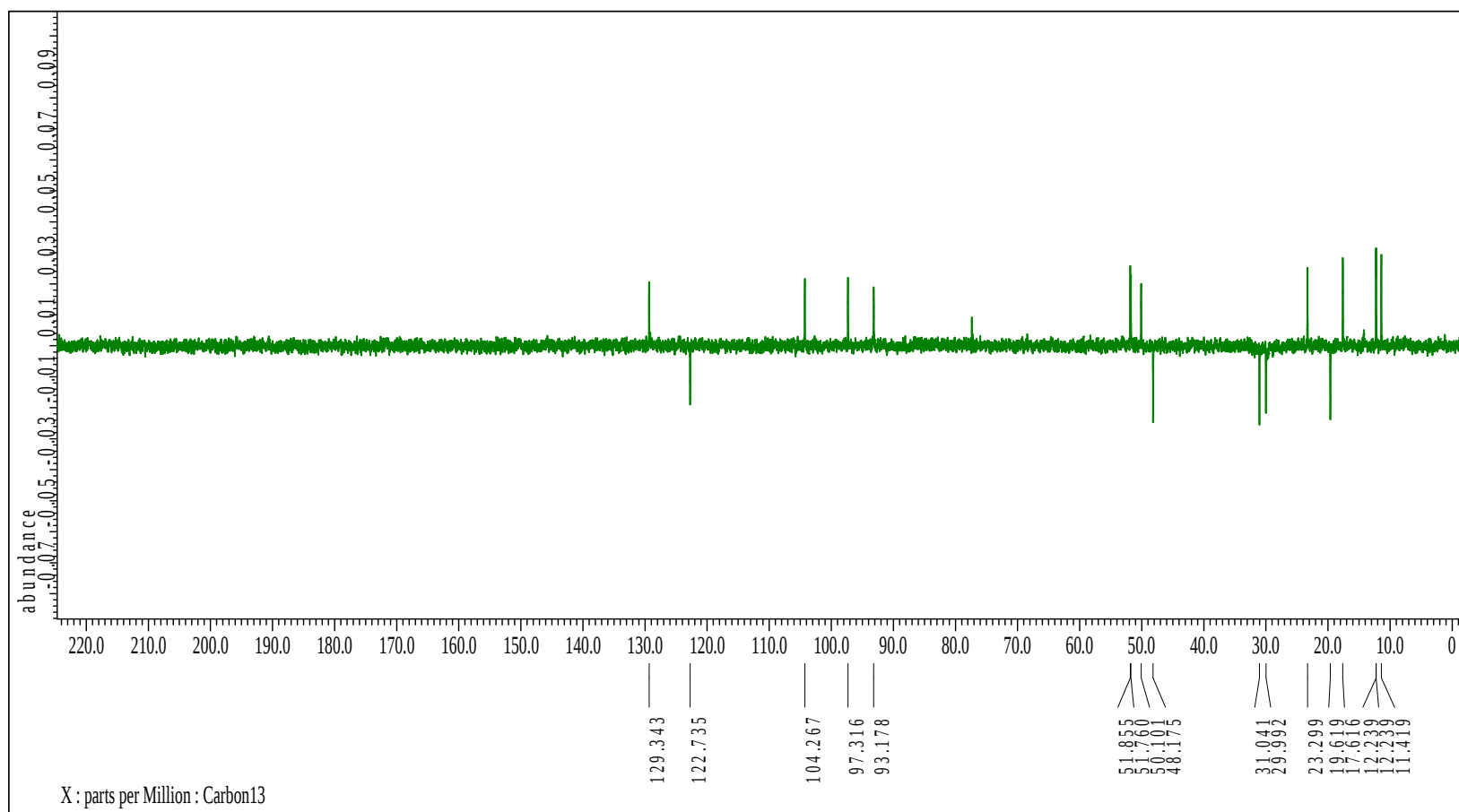


Figure S19. DEPT spectrum of **3** (Recorded in CDCl_3)

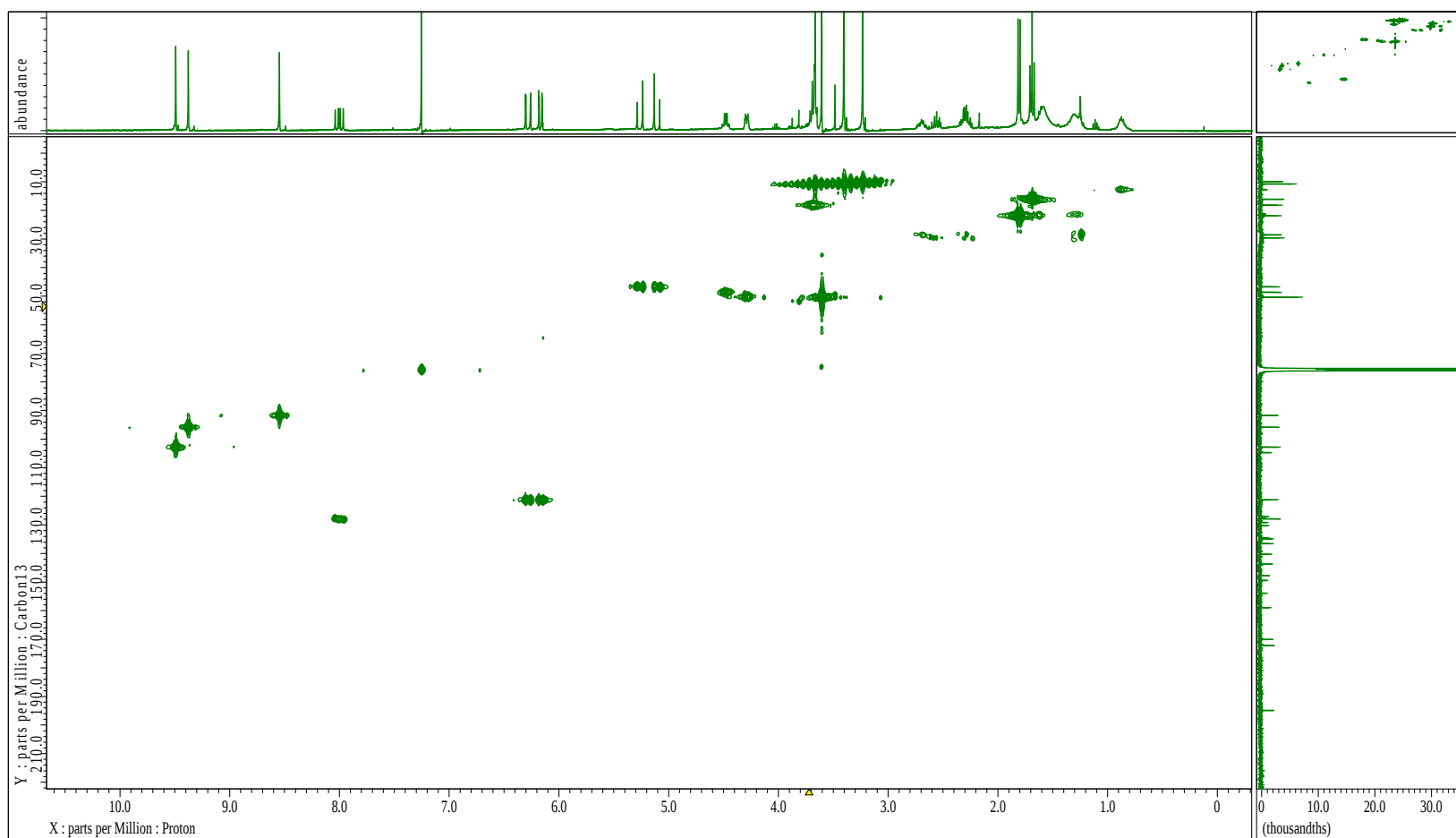


Figure S20. HMQC spectrum of **3** (Recorded in CDCl_3)

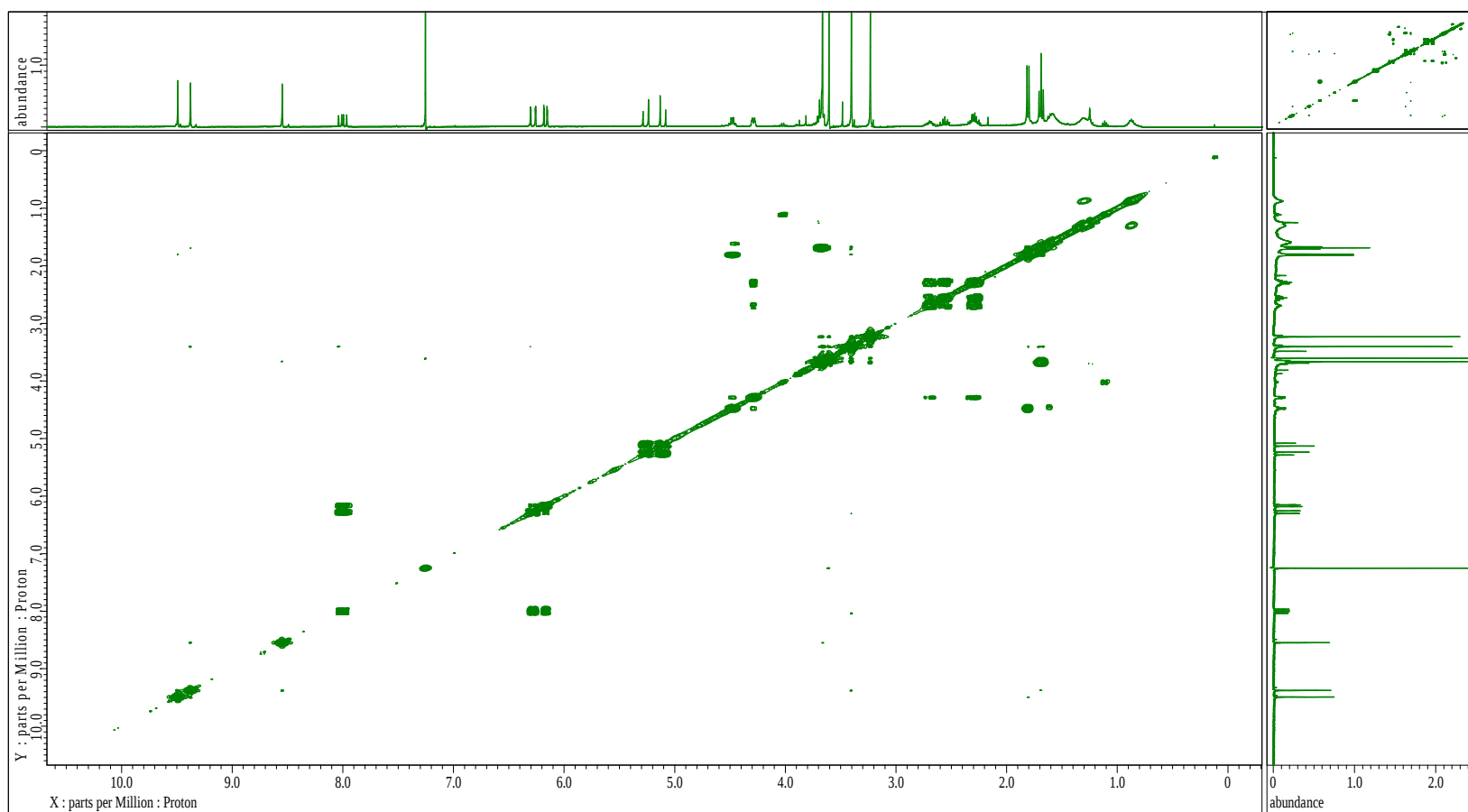


Figure S21. COSY spectrum of **3** (Recorded in CDCl₃)

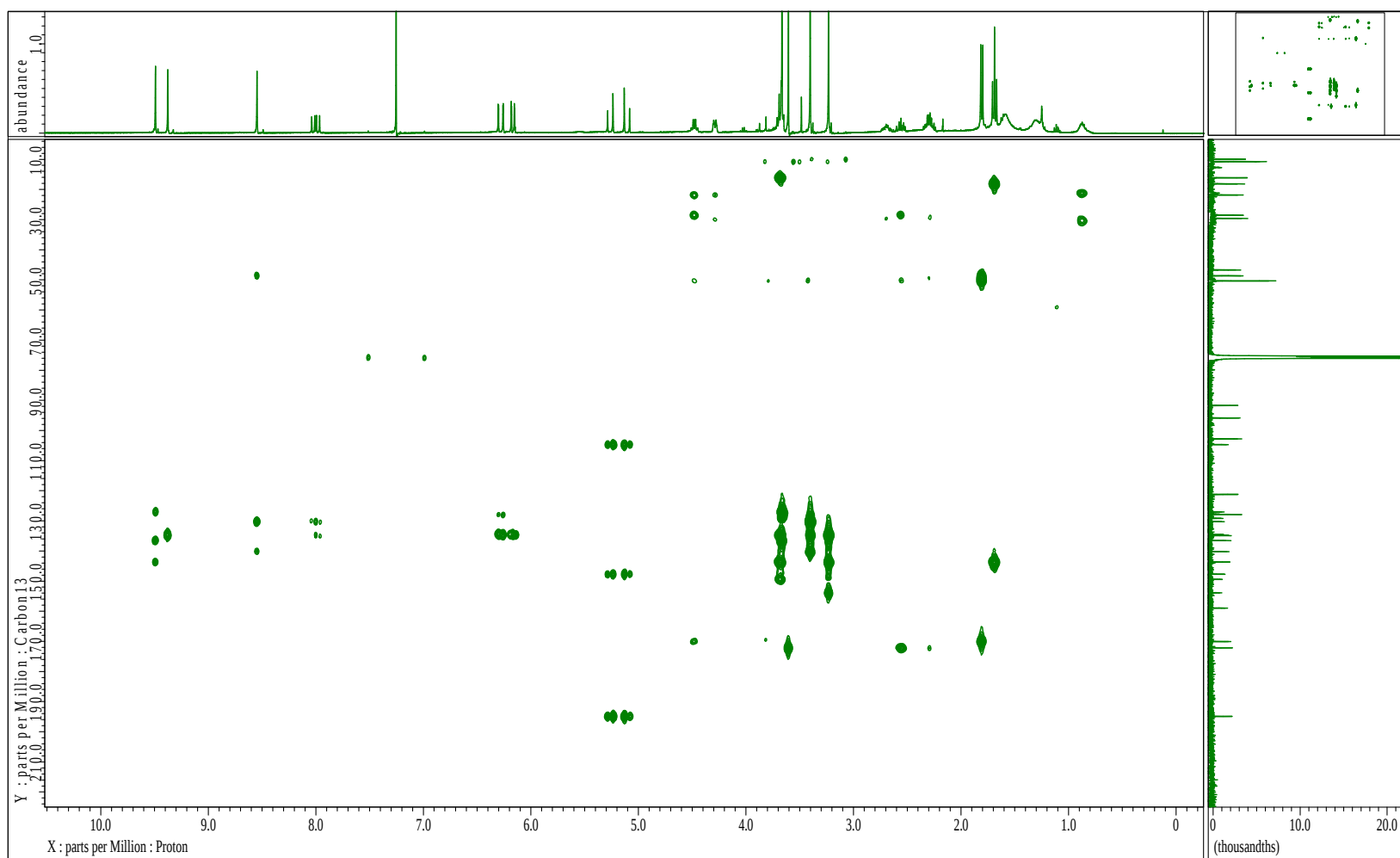


Figure S22. HMBC spectrum of **3** (Recorded in CDCl₃)

4. Spectroscopic data for compound 4

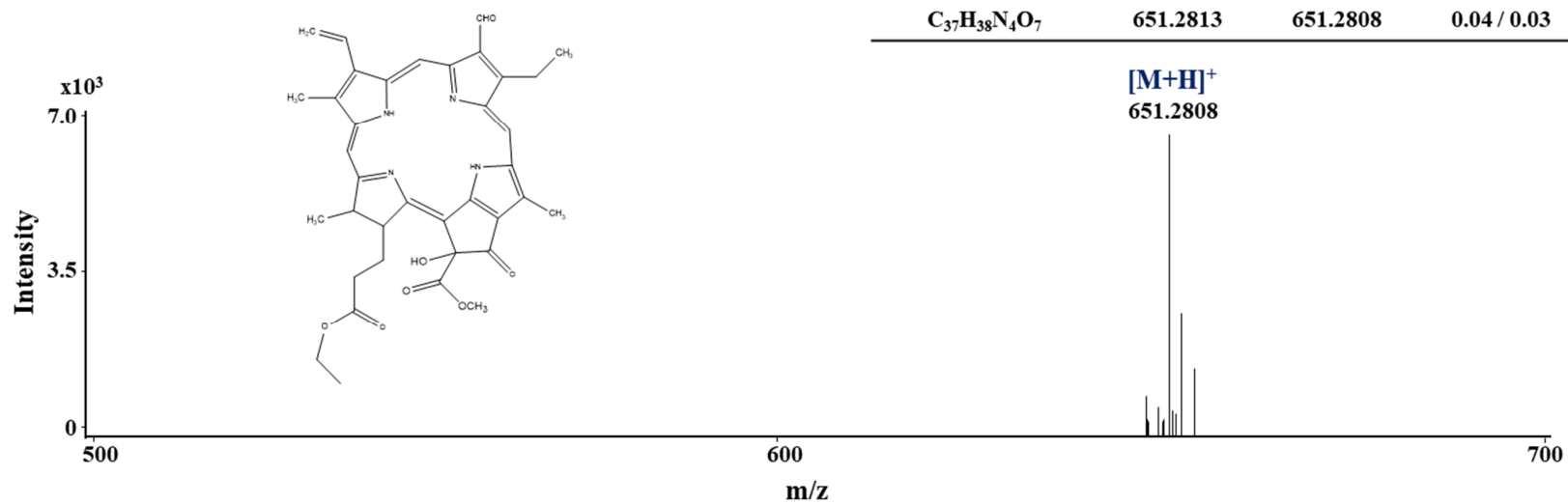


Figure S23. MS spectrum of 4

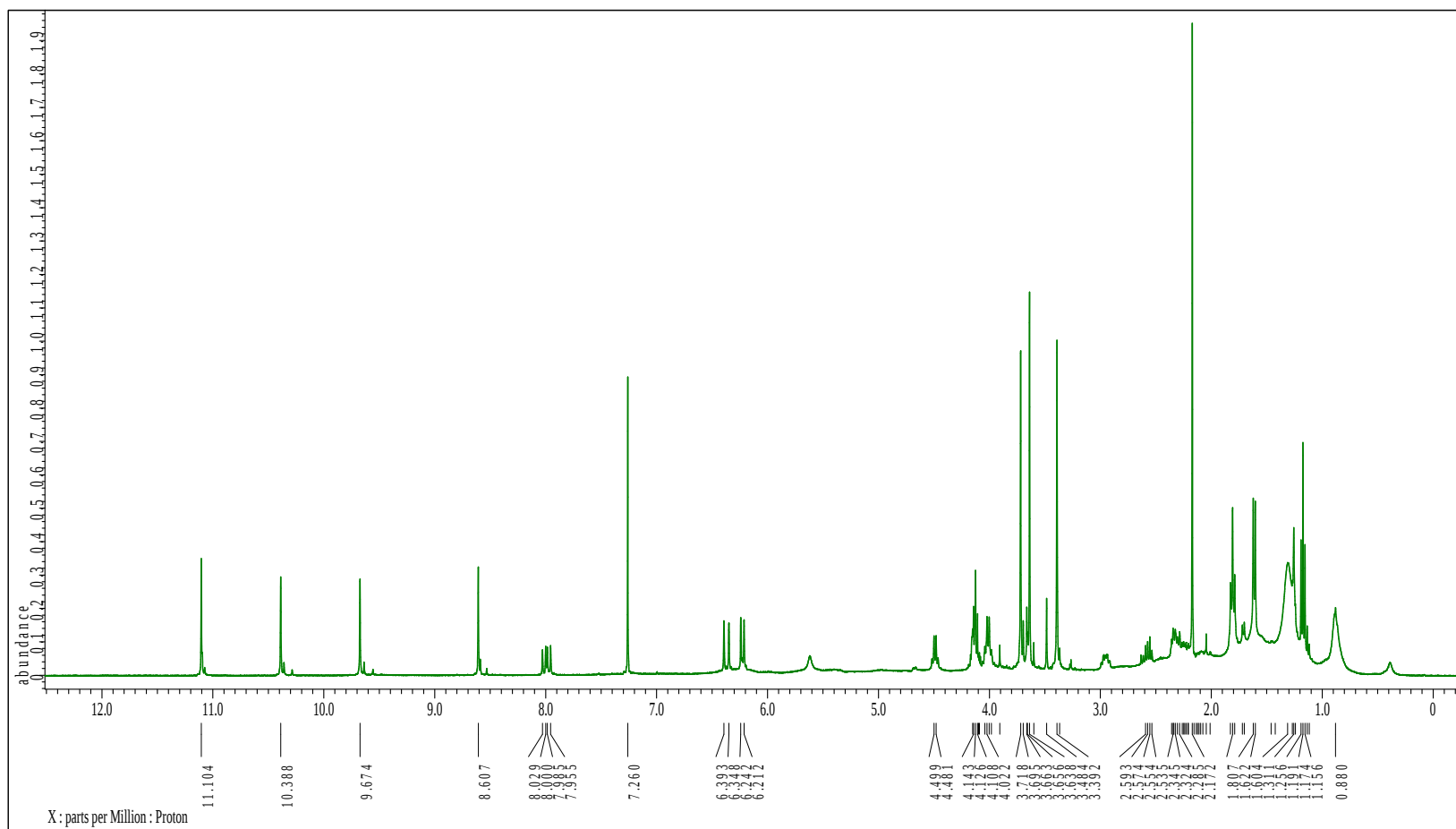


Figure S24. ^1H NMR spectrum of **4** (Recorded in CDCl_3)

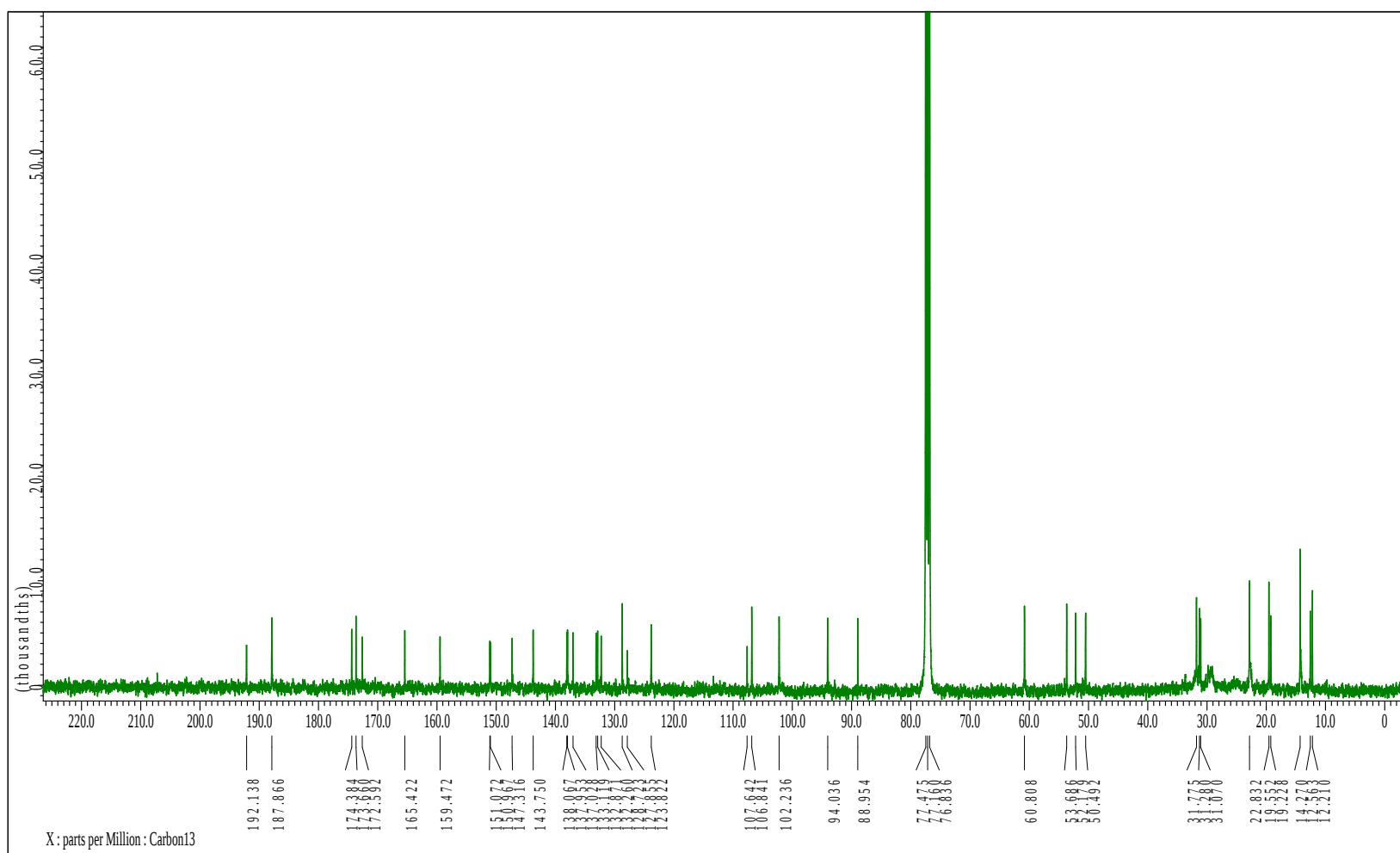


Figure S25. ¹³C NMR spectrum of **4** (Recorded in CDCl₃)

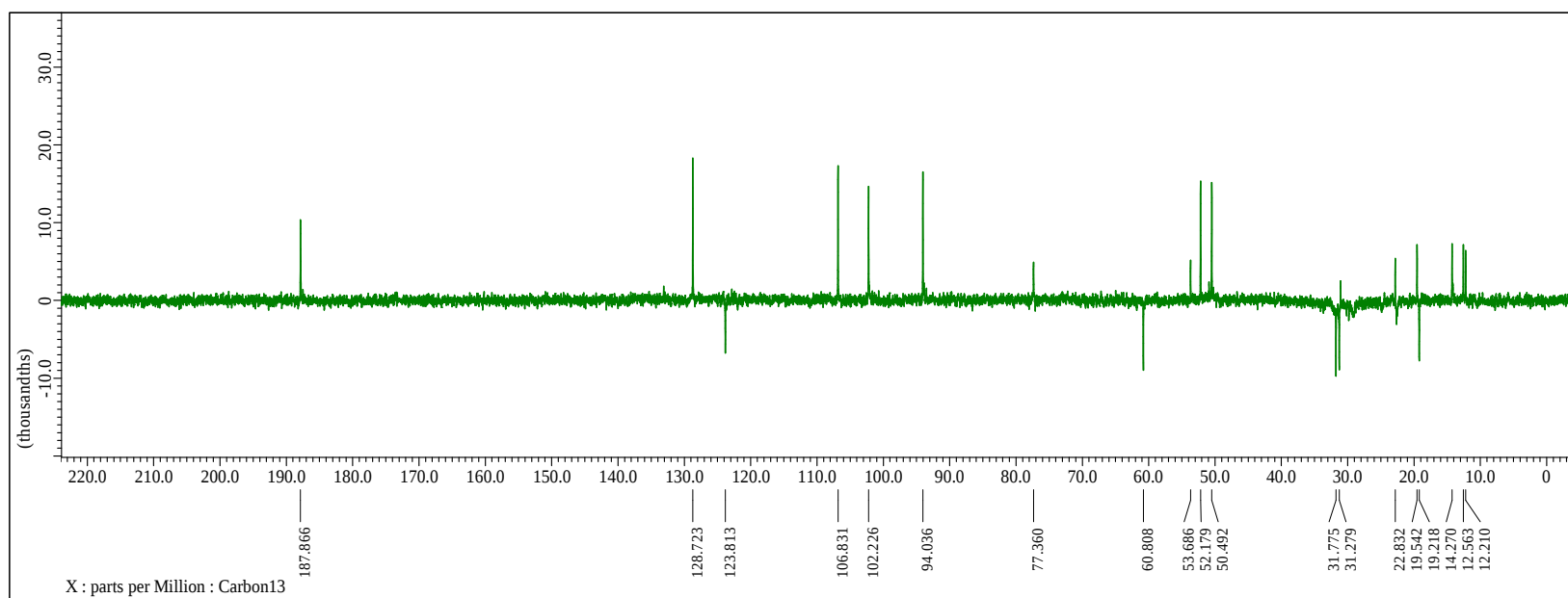


Figure S26. DEPT spectrum of **4** (Recorded in CDCl₃)

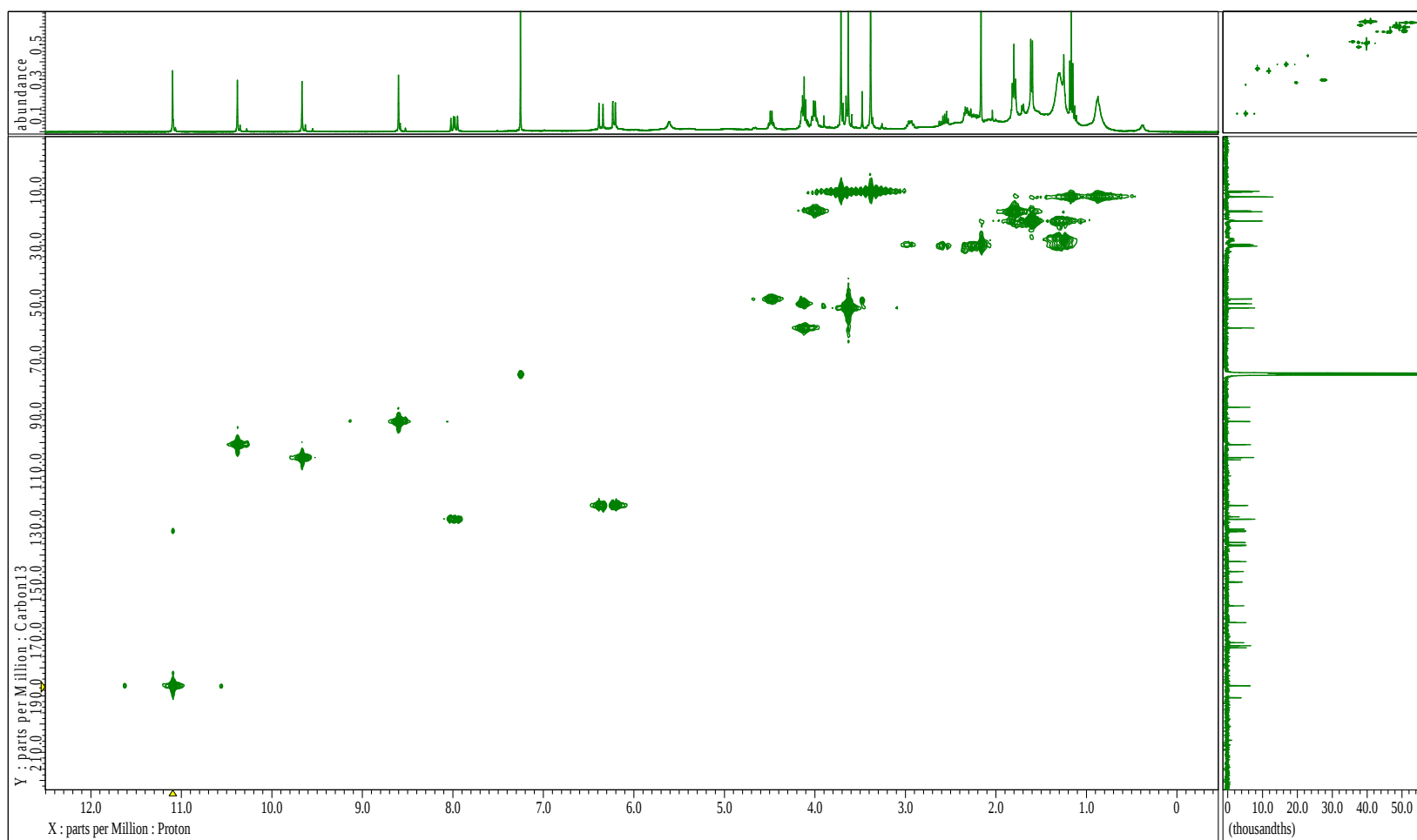


Figure S27. HMQC spectrum of **4** (Recorded in CDCl₃)

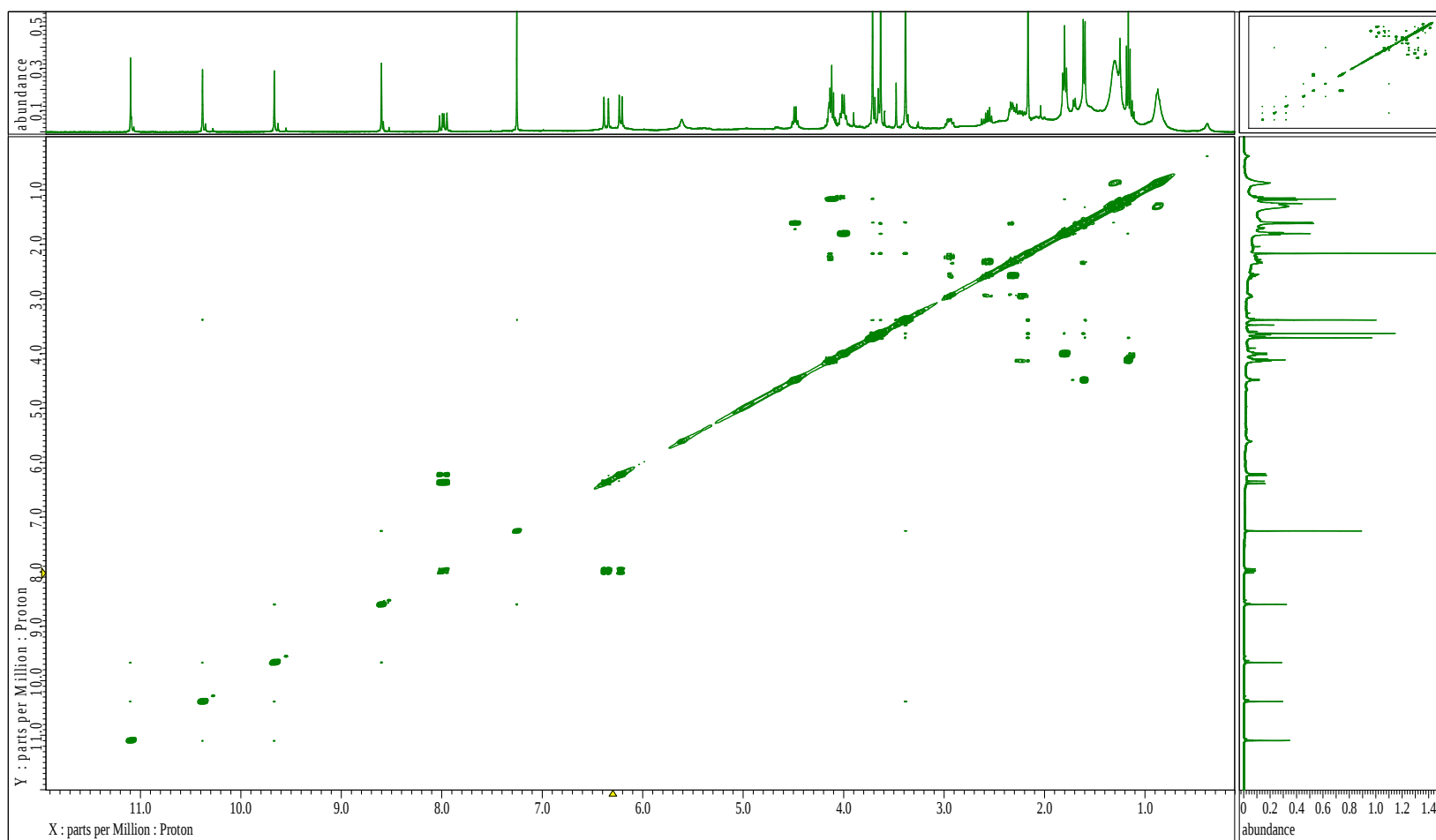


Figure S28. COSY spectrum of **4** (Recorded in CDCl_3)

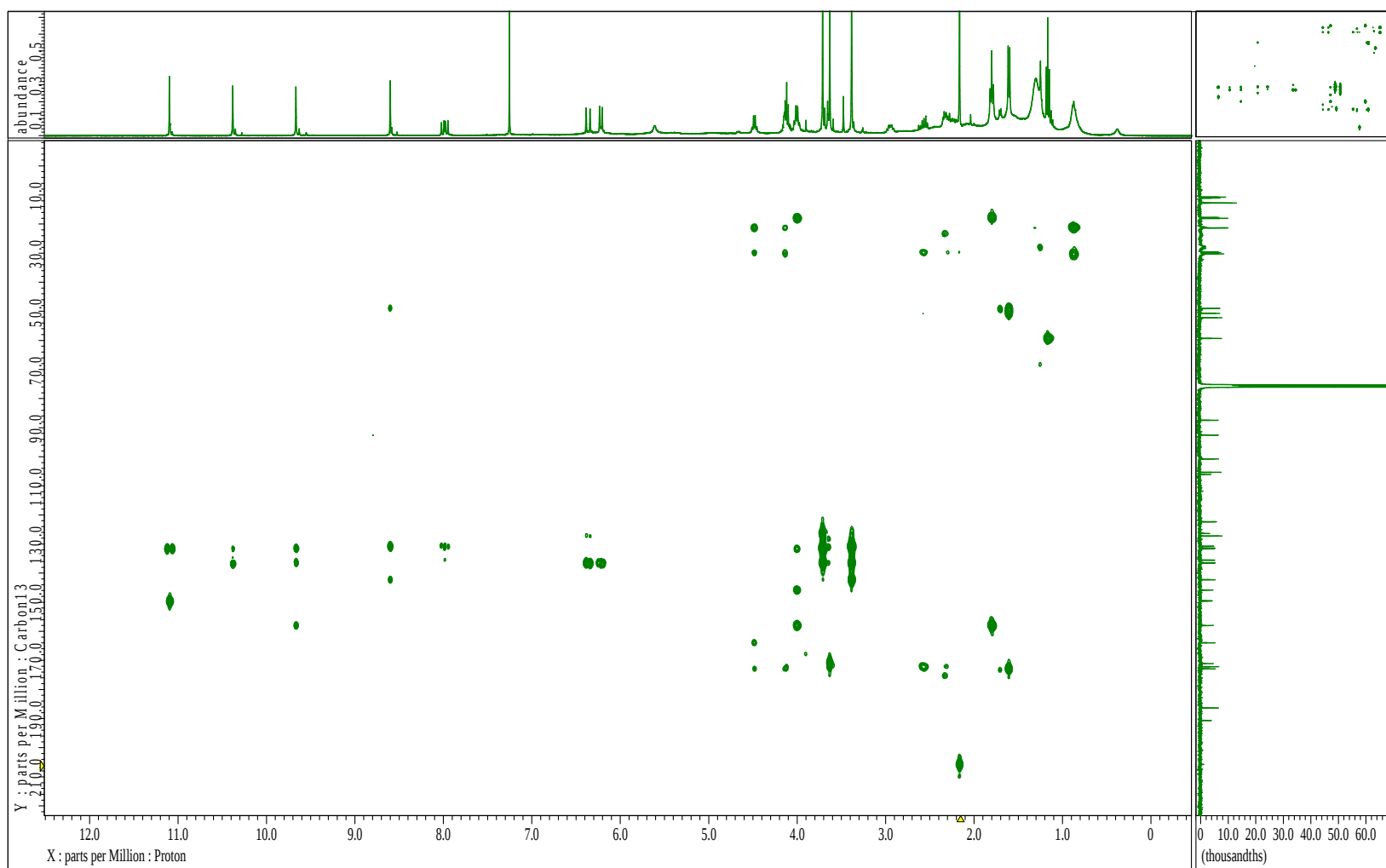


Figure S29. HMBC spectrum of **4** (Recorded in CDCl₃)

5. Spectroscopic data for compound 5

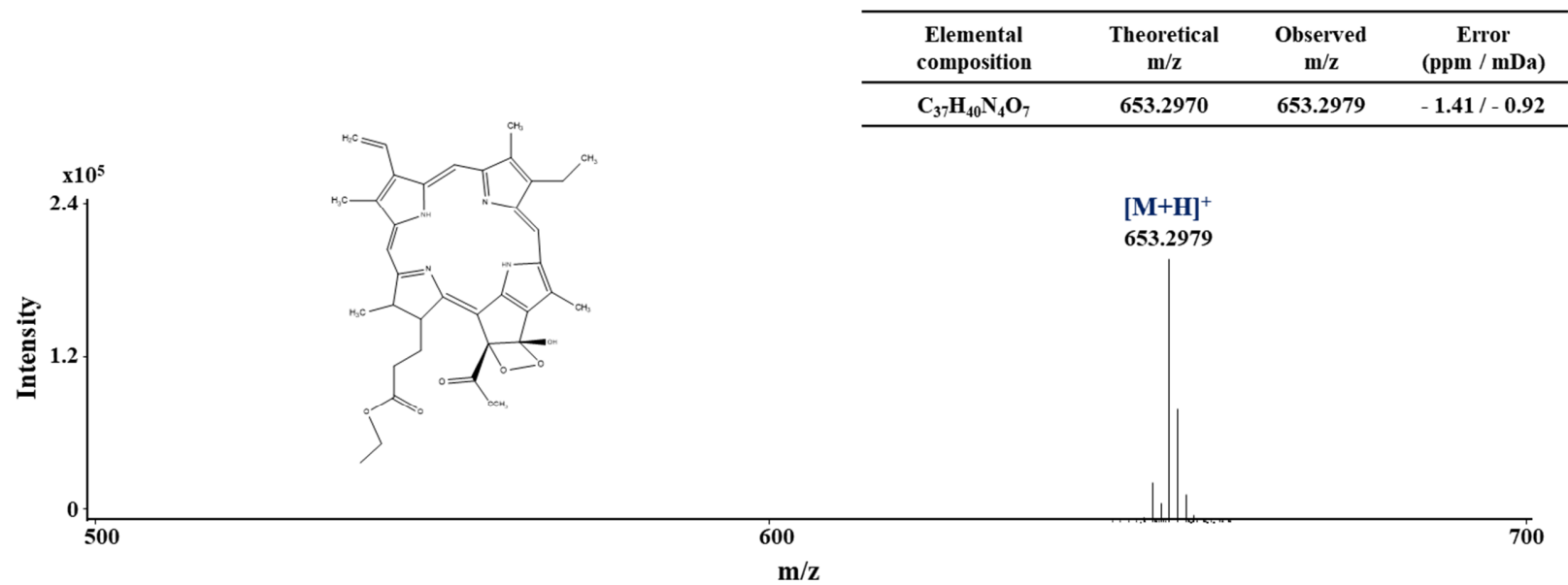


Figure S30. MS spectrum of 5

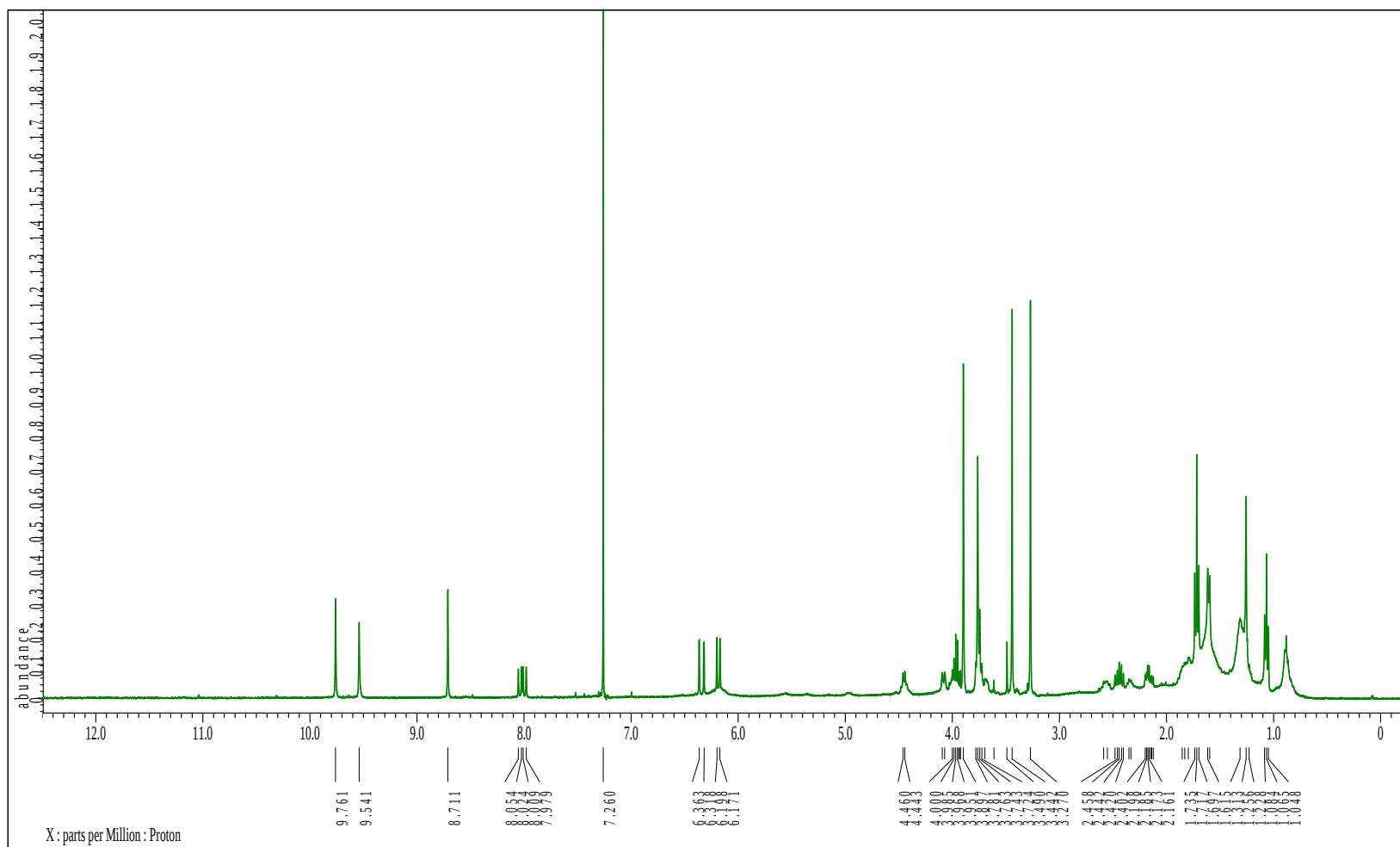


Figure S31. ^1H NMR spectrum of **5** (Recorded in CDCl_3)

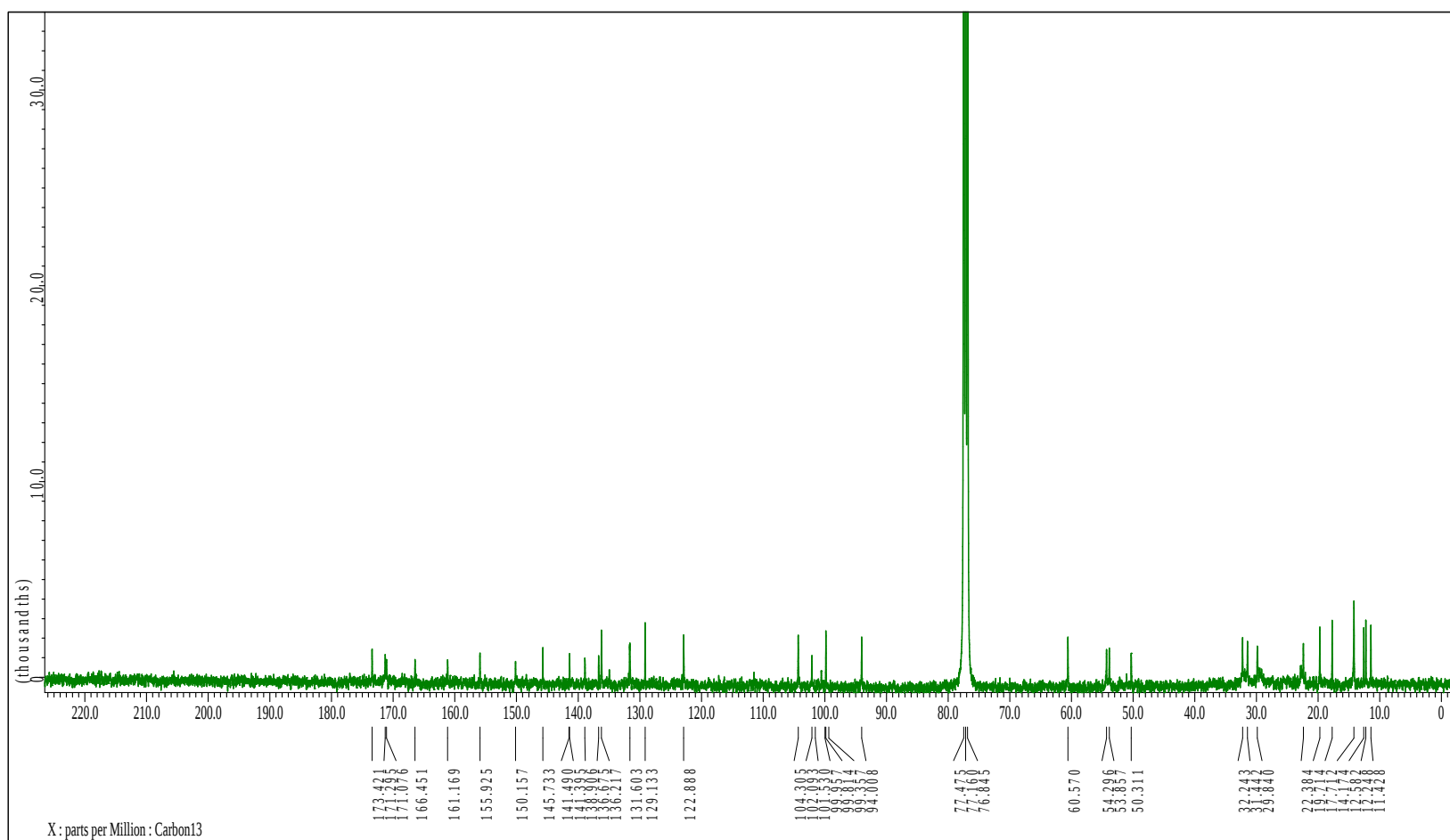


Figure S32. ^{13}C NMR spectrum of **5** (Recorded in CDCl_3)

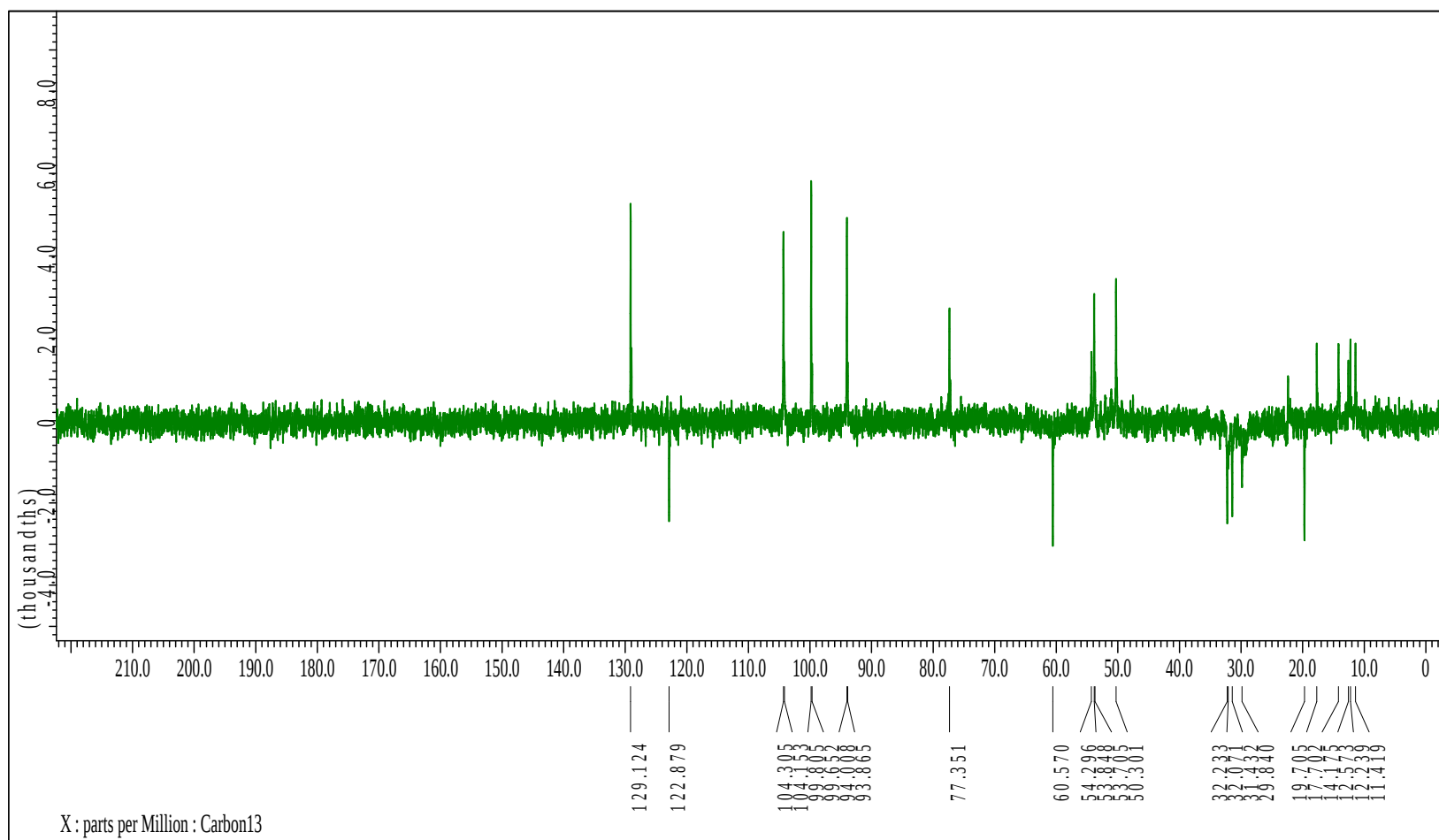


Figure S33. DEPT spectrum of 5 (Recorded in CDCl₃)

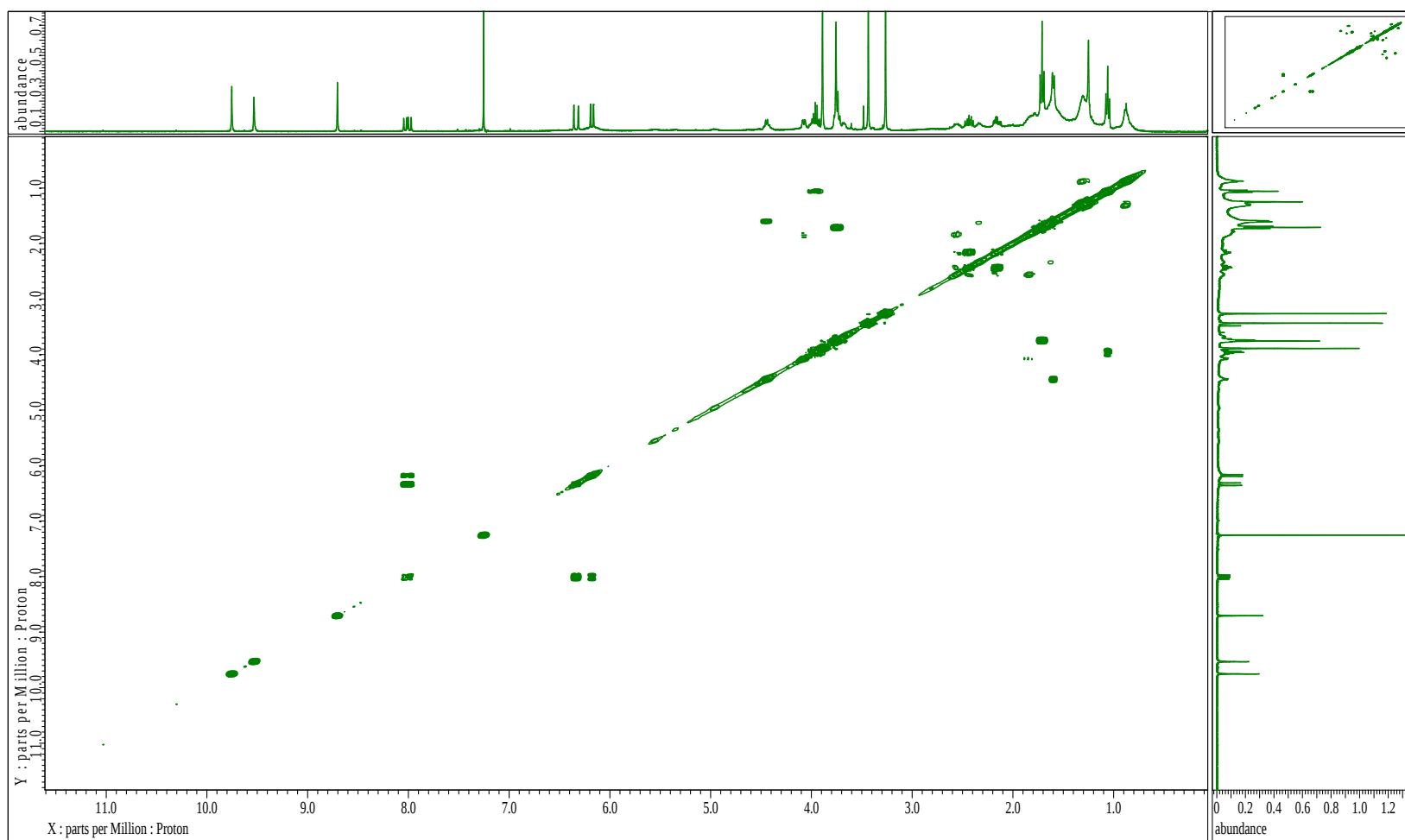


Figure S34. COSY spectrum of 5 (Recorded in CDCl₃)

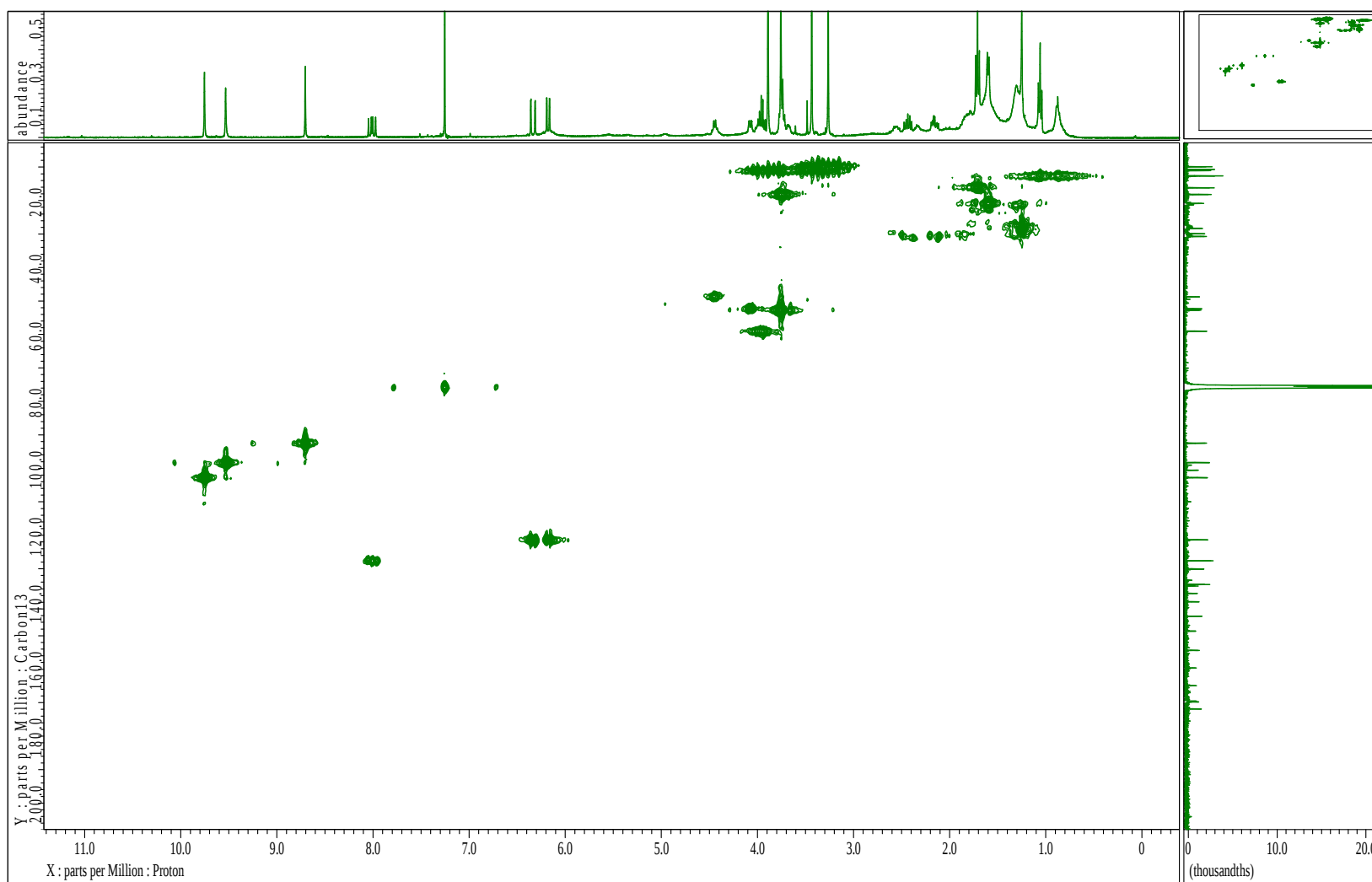


Figure S35. HMQC spectrum of **5** (Recorded in CDCl_3)

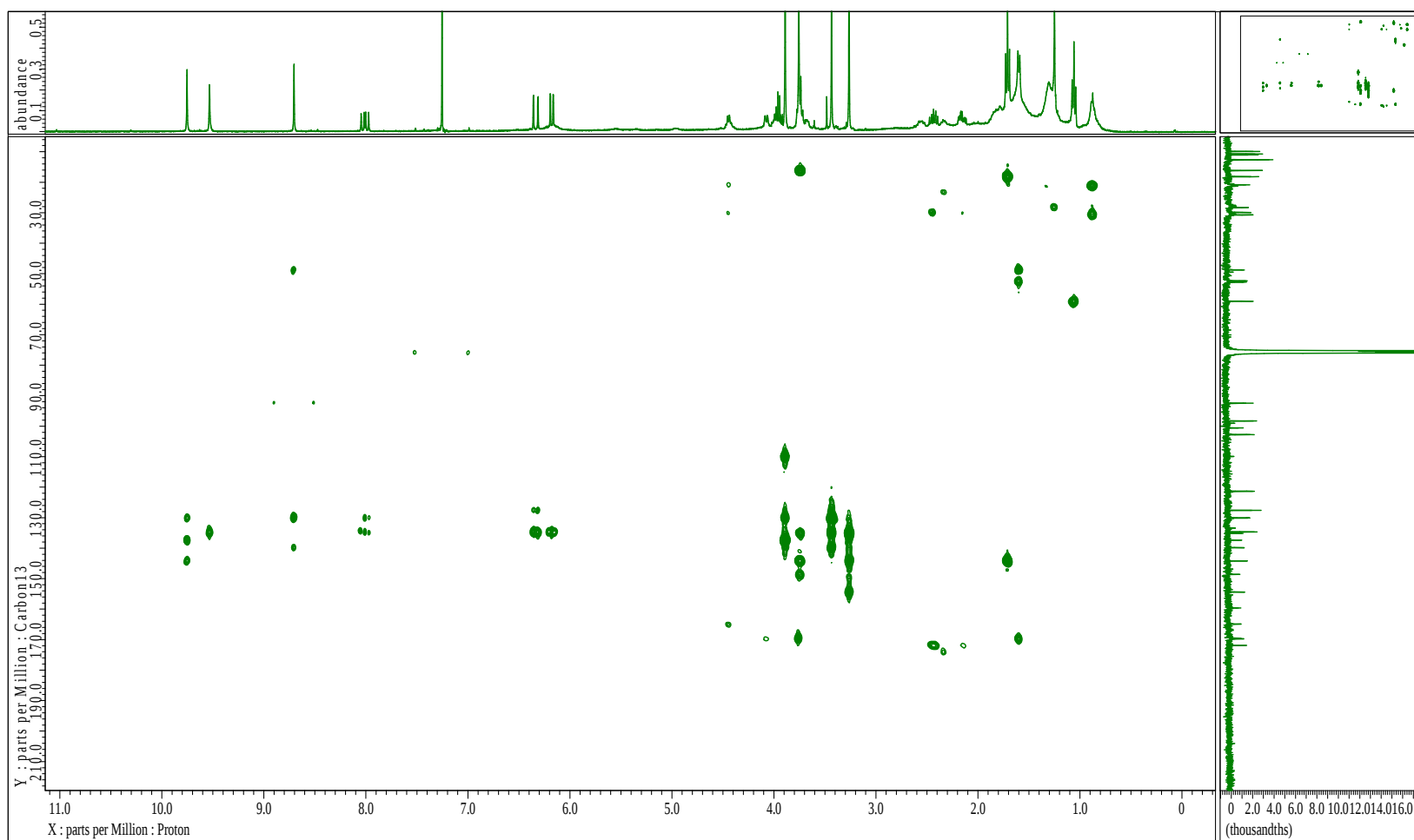


Figure S36. HMBC spectrum of **5** (Recorded in CDCl_3)

6. Spectroscopic data for compound 6

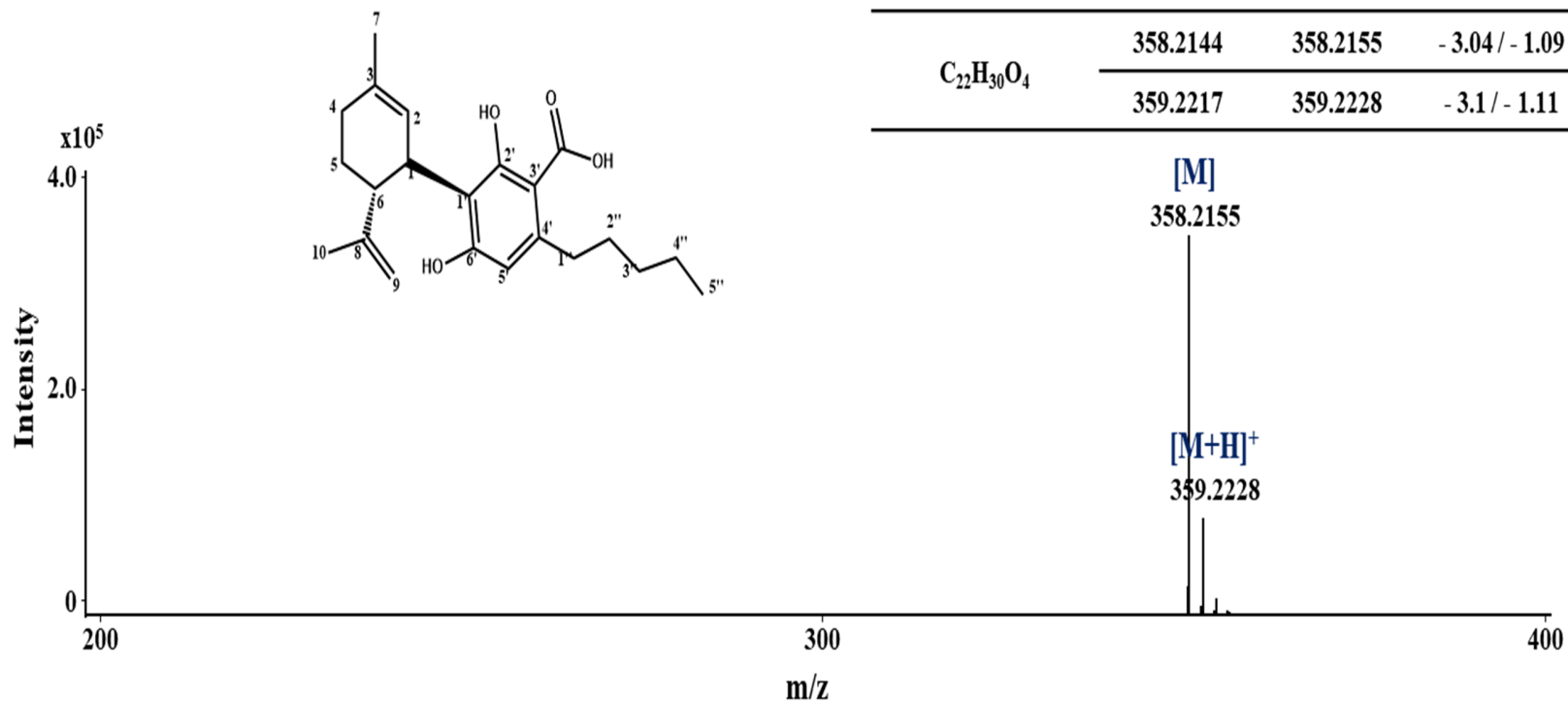


Figure S37. MS spectrum of 6

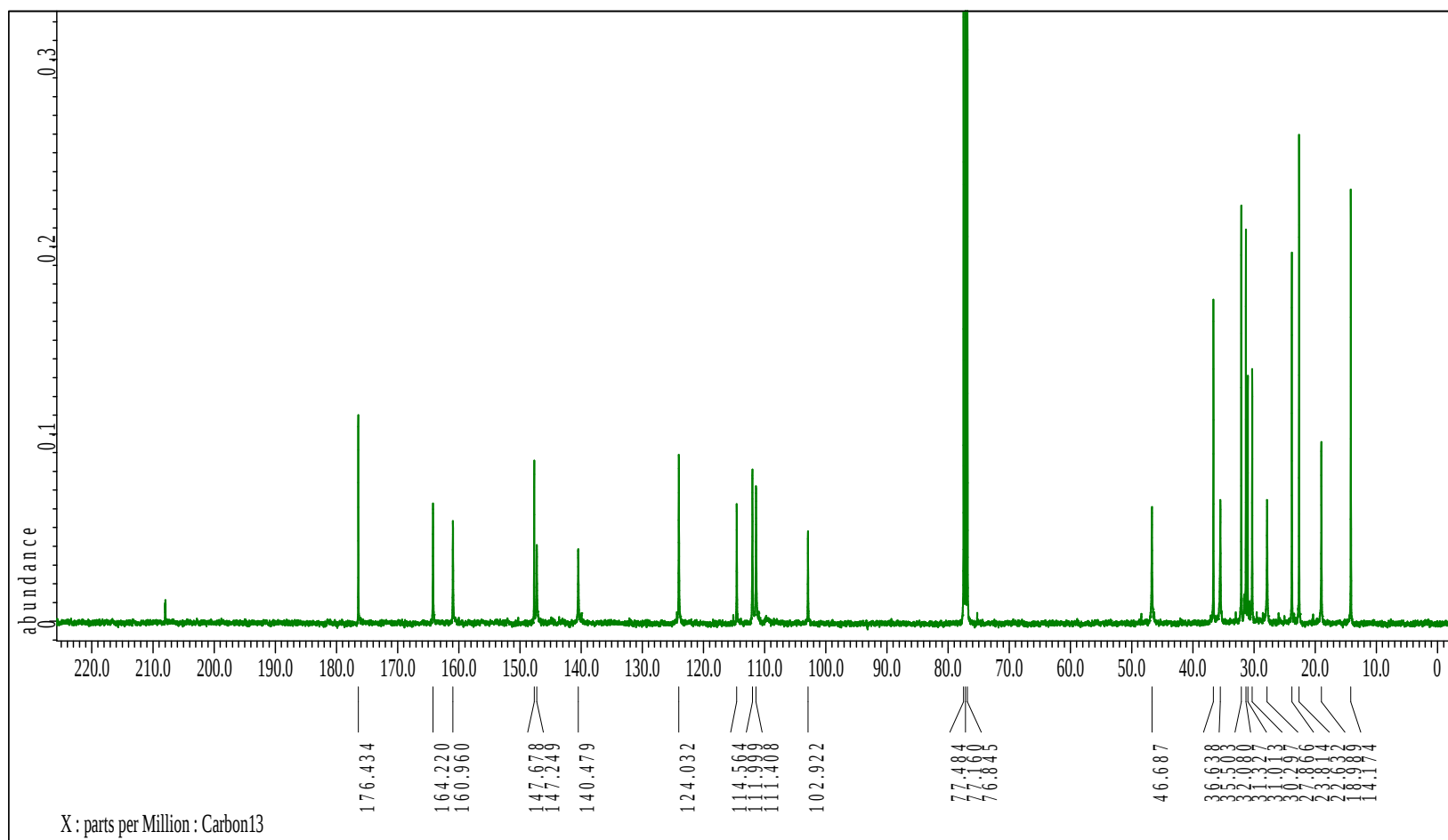


Figure S39. ^{13}C NMR spectrum of **6** (Recorded in CDCl_3)

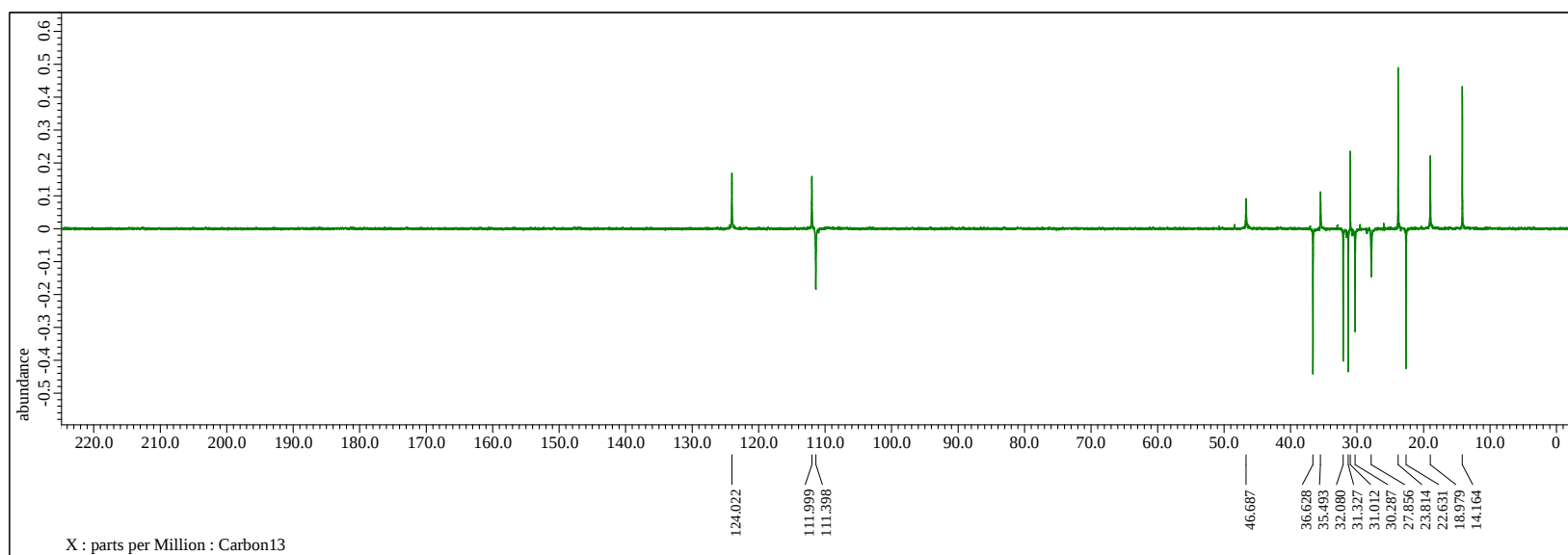


Figure S40. DEPT spectrum of **6** (Recorded in CDCl_3)

7. Spectroscopic data for compound 7

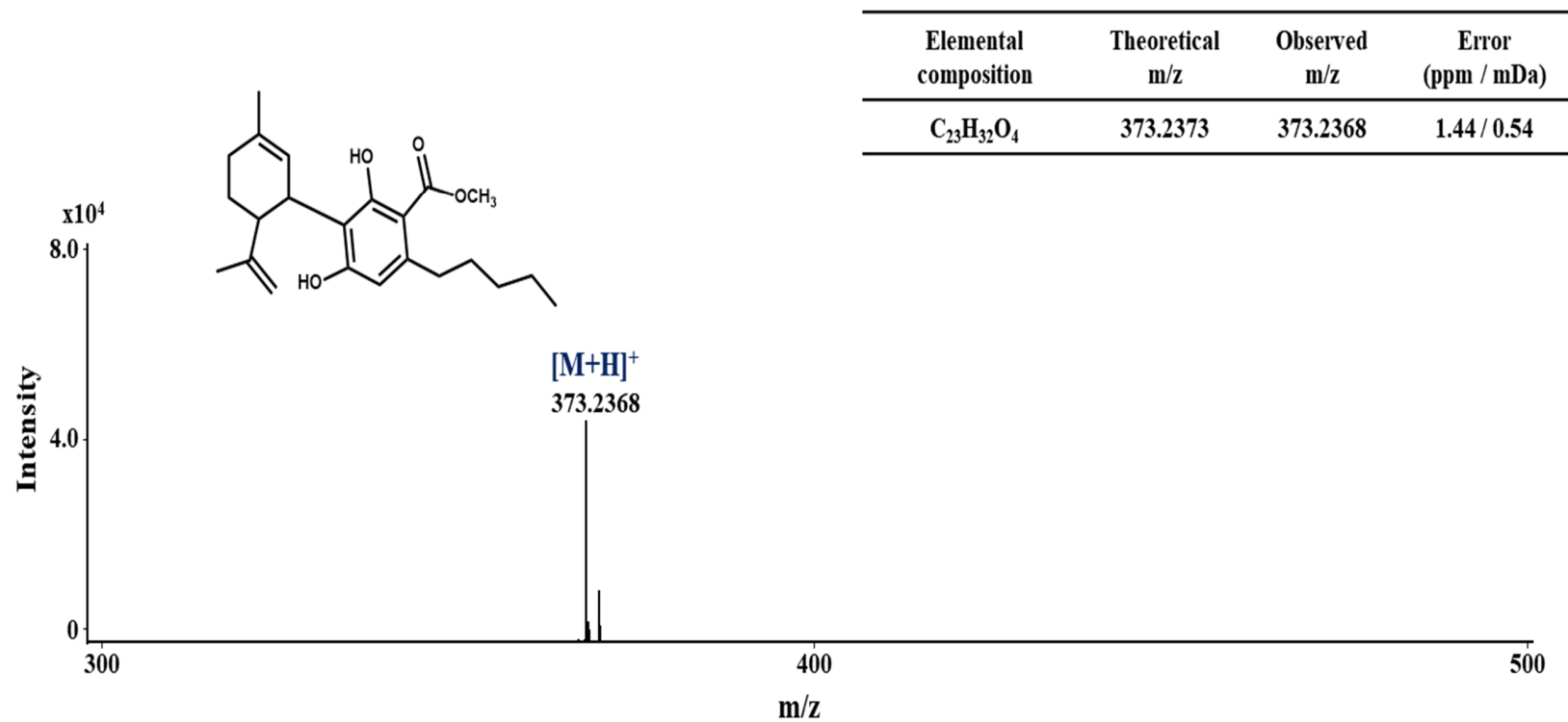


Figure S41. MS spectrum of 7

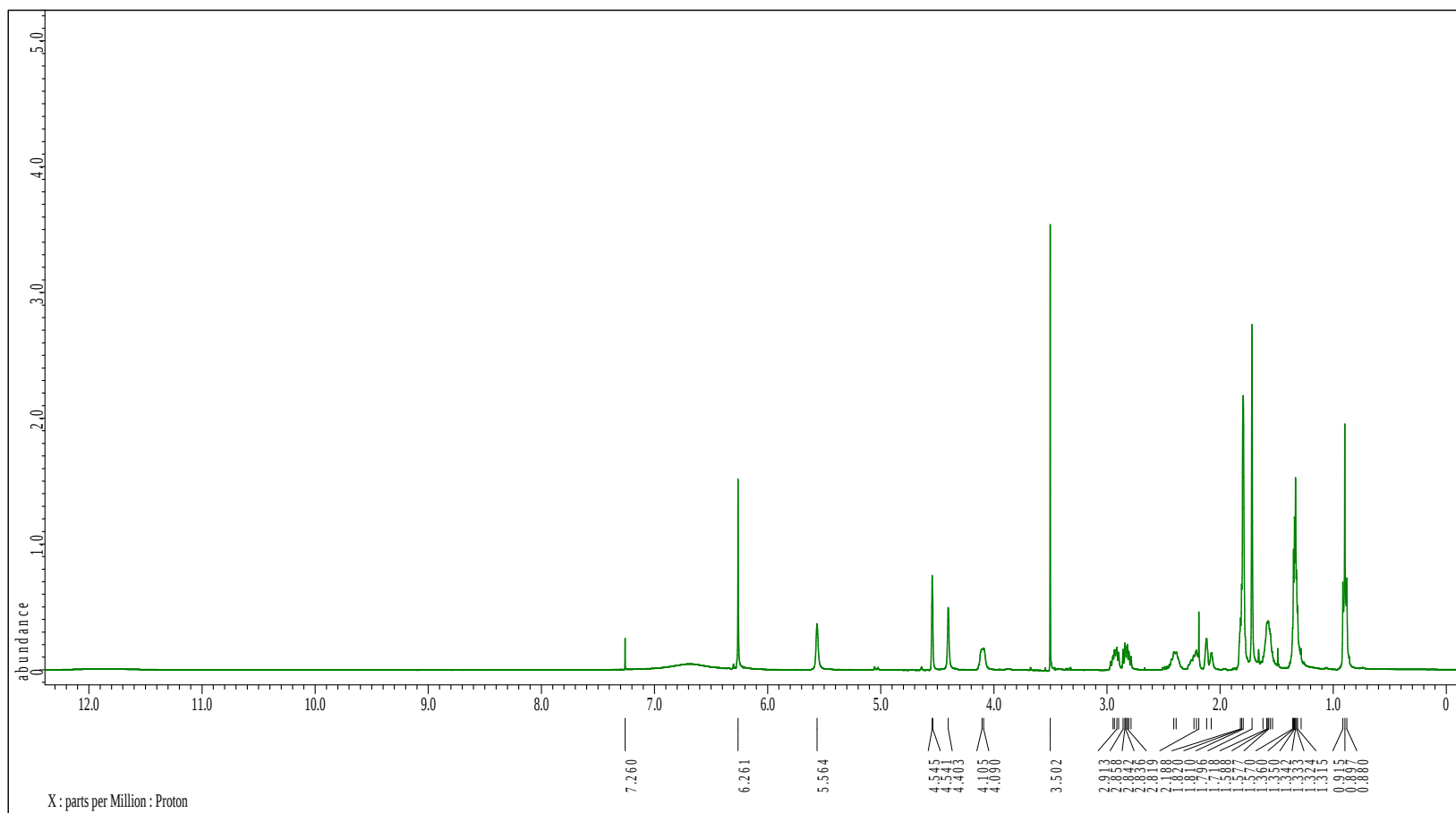


Figure S42. ^1H NMR spectrum of **7** (Recorded in CDCl_3)

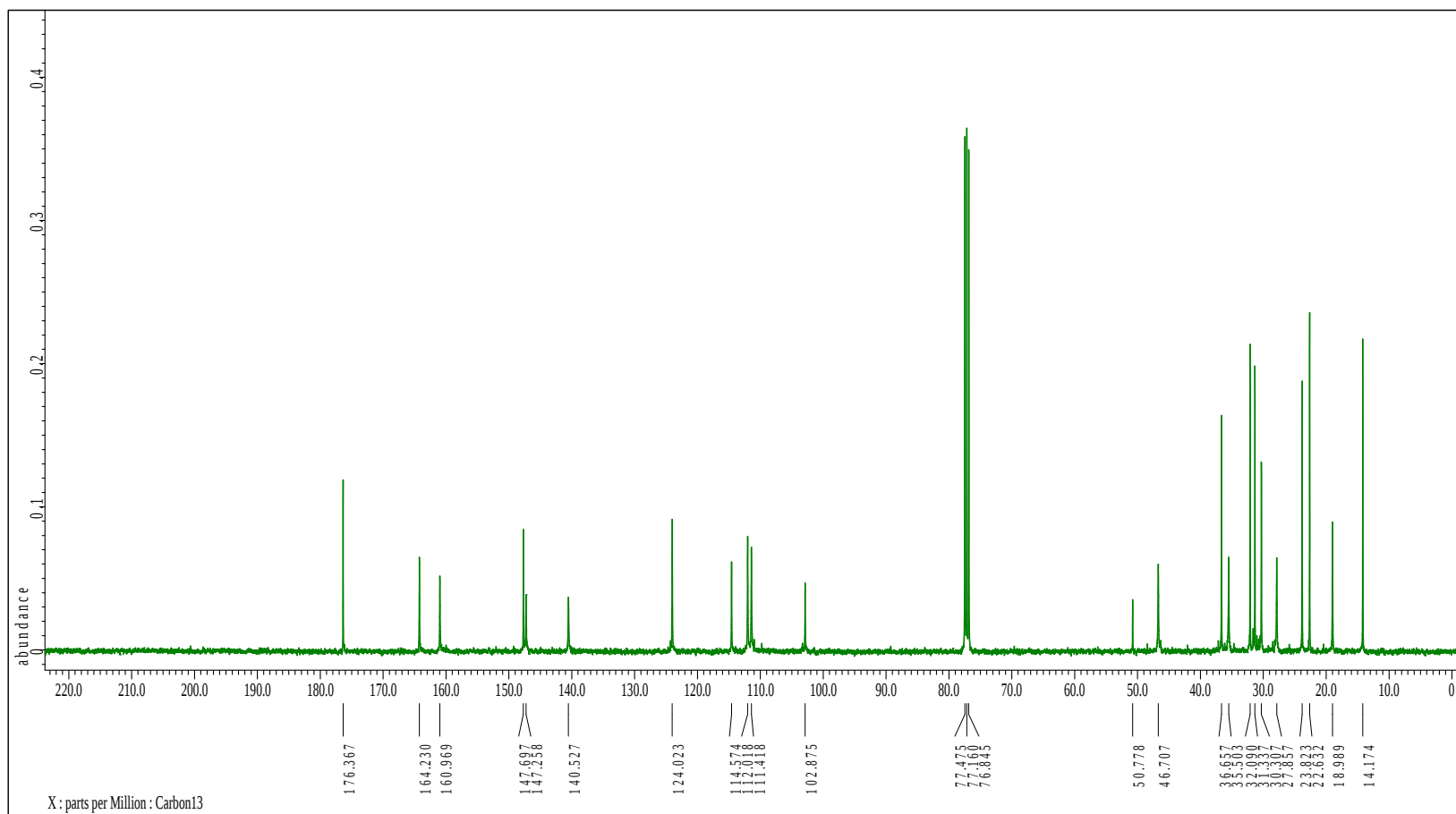


Figure S43. ¹³C NMR spectrum of **7** (Recorded in CDCl₃)

8. Spectroscopic data for compound 8

Elemental composition	Theoretical m/z	Observed m/z	Error (ppm / mDa)
C ₂₁ H ₃₀ O ₂	315.2319	315.2326	-2.36 / -0.74

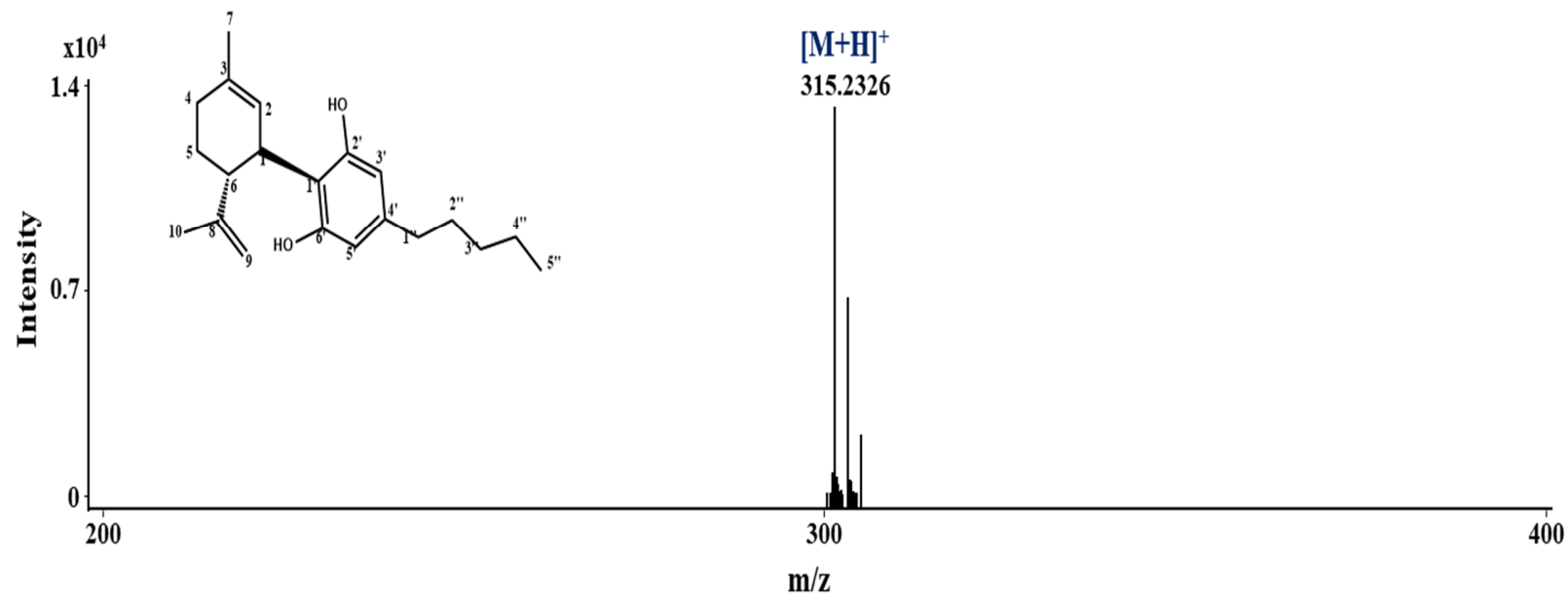
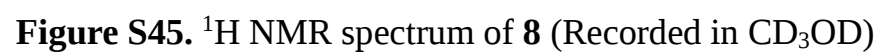


Figure S44. MS spectrum of 8



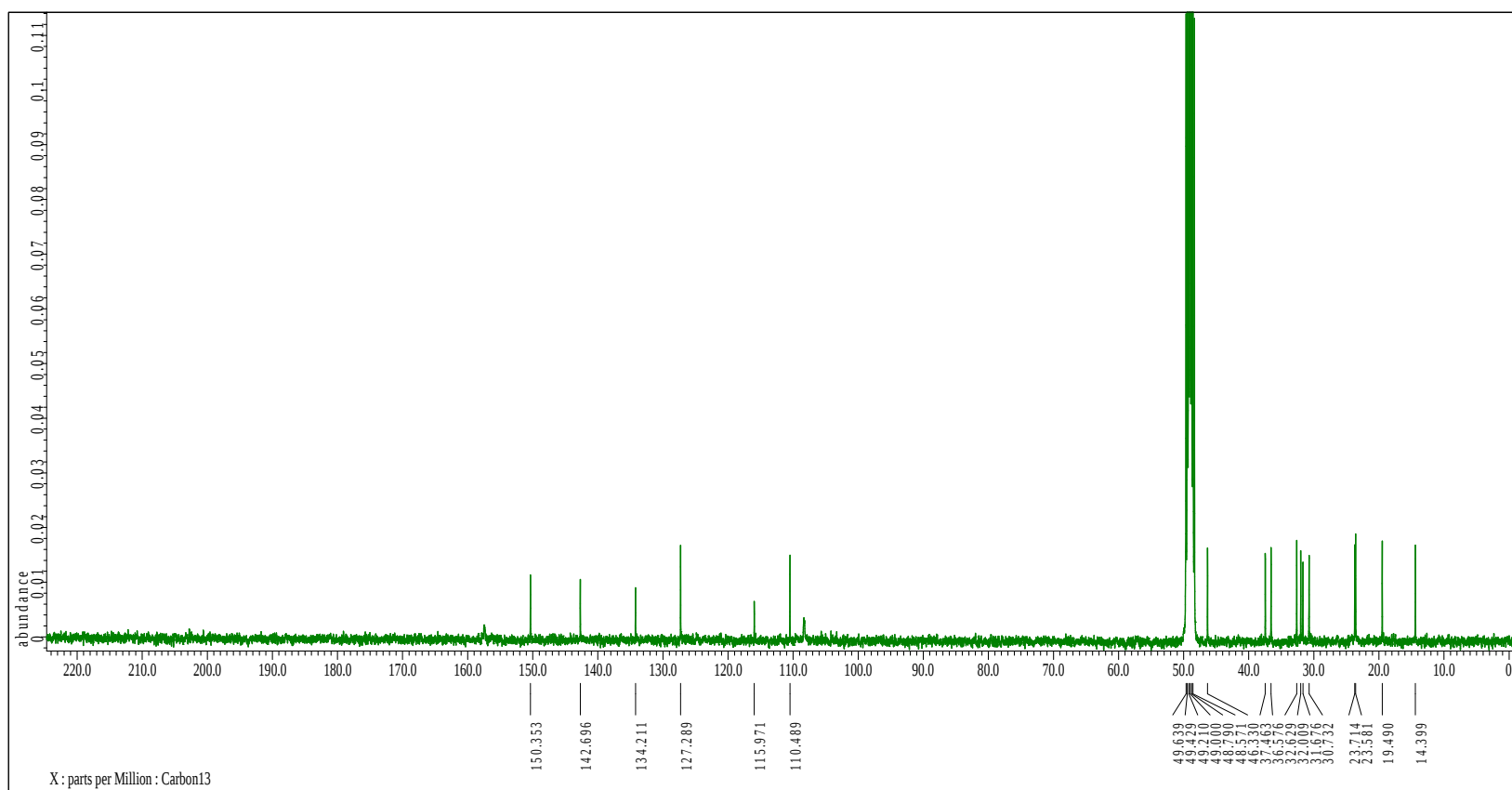


Figure S46. ¹³C NMR spectrum of **8** (Recorded in CD₃OD)

9. Spectroscopic data for compound 9

Elemental composition	Theoretical m/z	Observed m/z	Error (ppm / mDa)
C ₂₁ H ₃₀ O ₂	315.2319	315.2233	- 4.58 / - 1.44

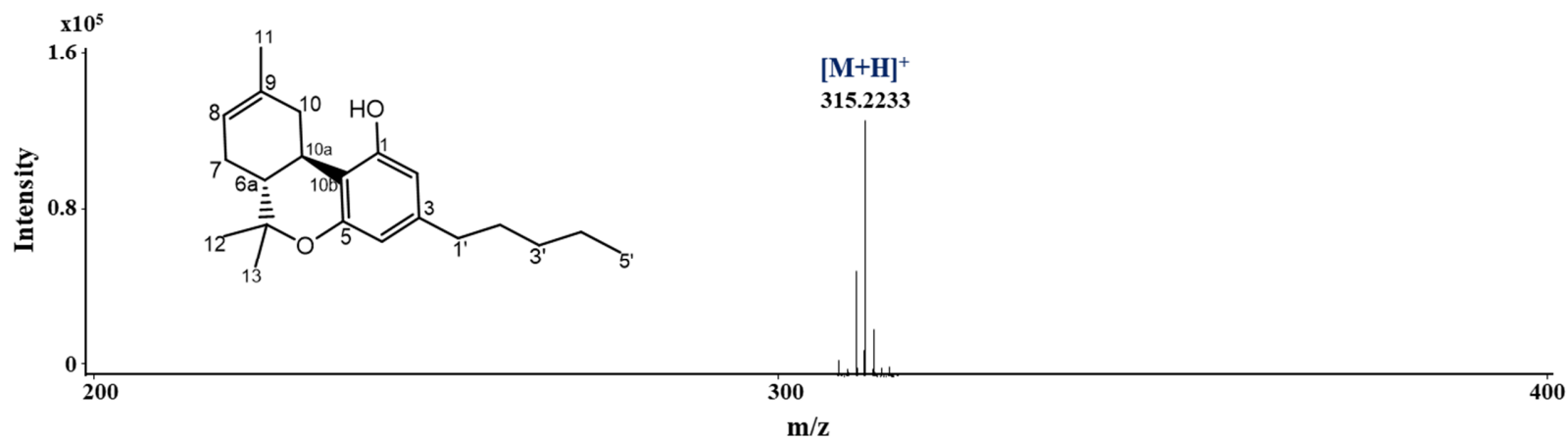


Figure S47. MS spectrum of 9



Figure S48. ^1H NMR spectrum of **9** (Recorded in CDCl_3)

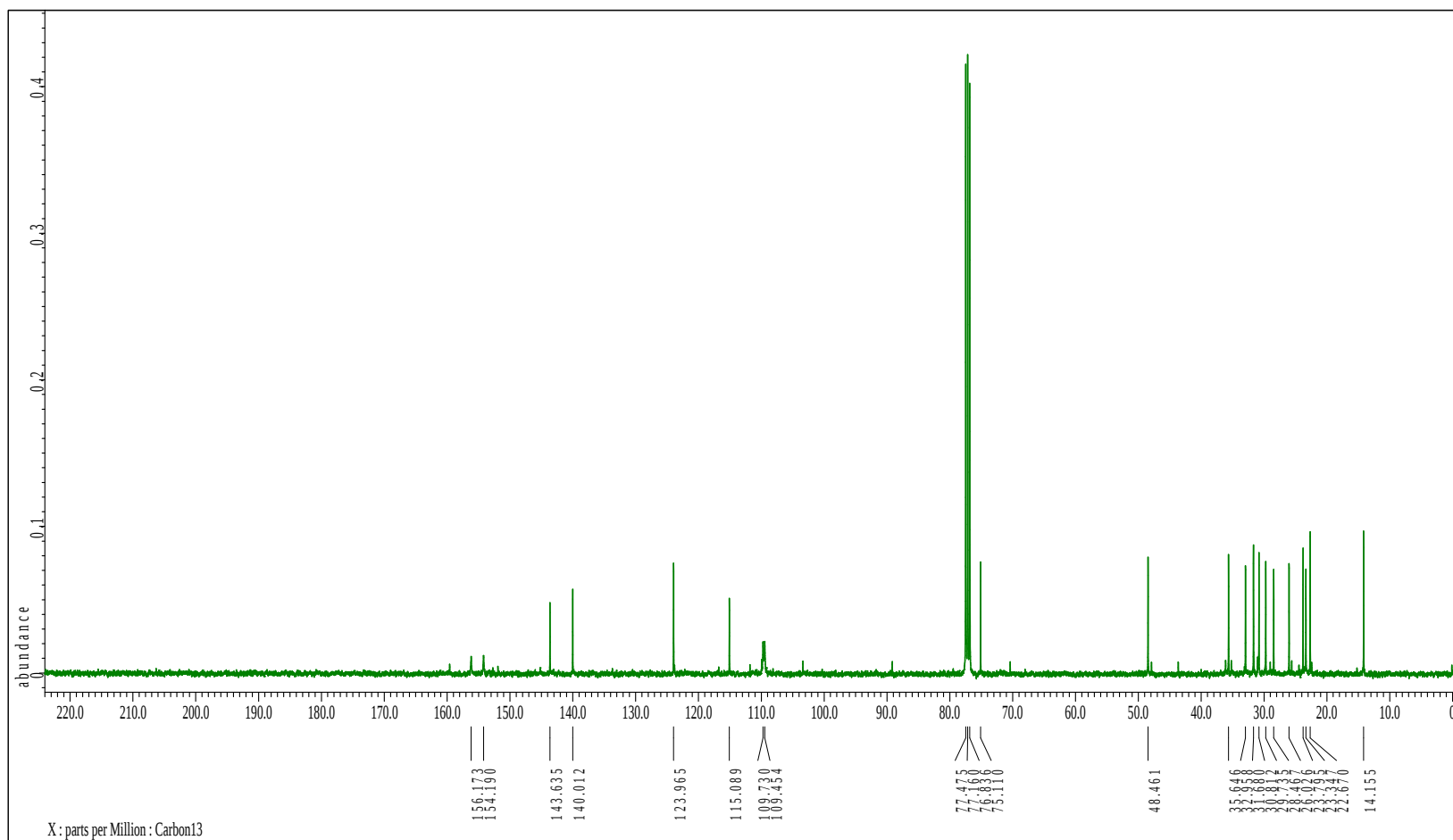


Figure S49. ¹³C NMR spectrum of **9** (Recorded in CDCl₃)

10. Spectroscopic data for compound 10

Elemental composition	Theoretical m/z	Observed m/z	Error (ppm / mDa)
C ₂₁ H ₃₀ O ₂	315.2319	315.2305	- 0.14 / - 0.04

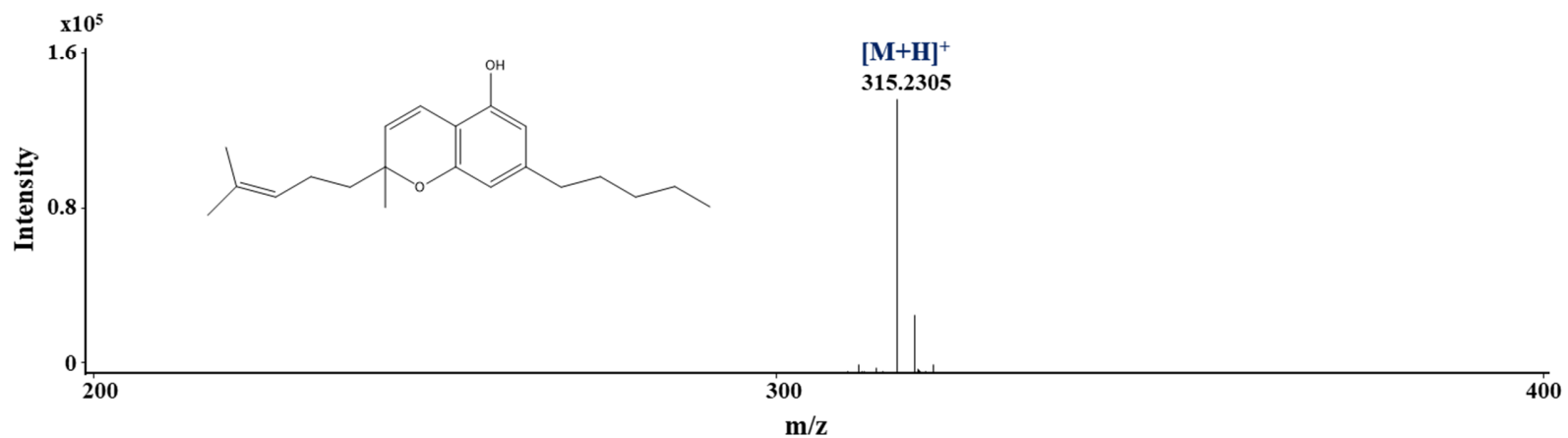


Figure S50. MS spectrum of 10

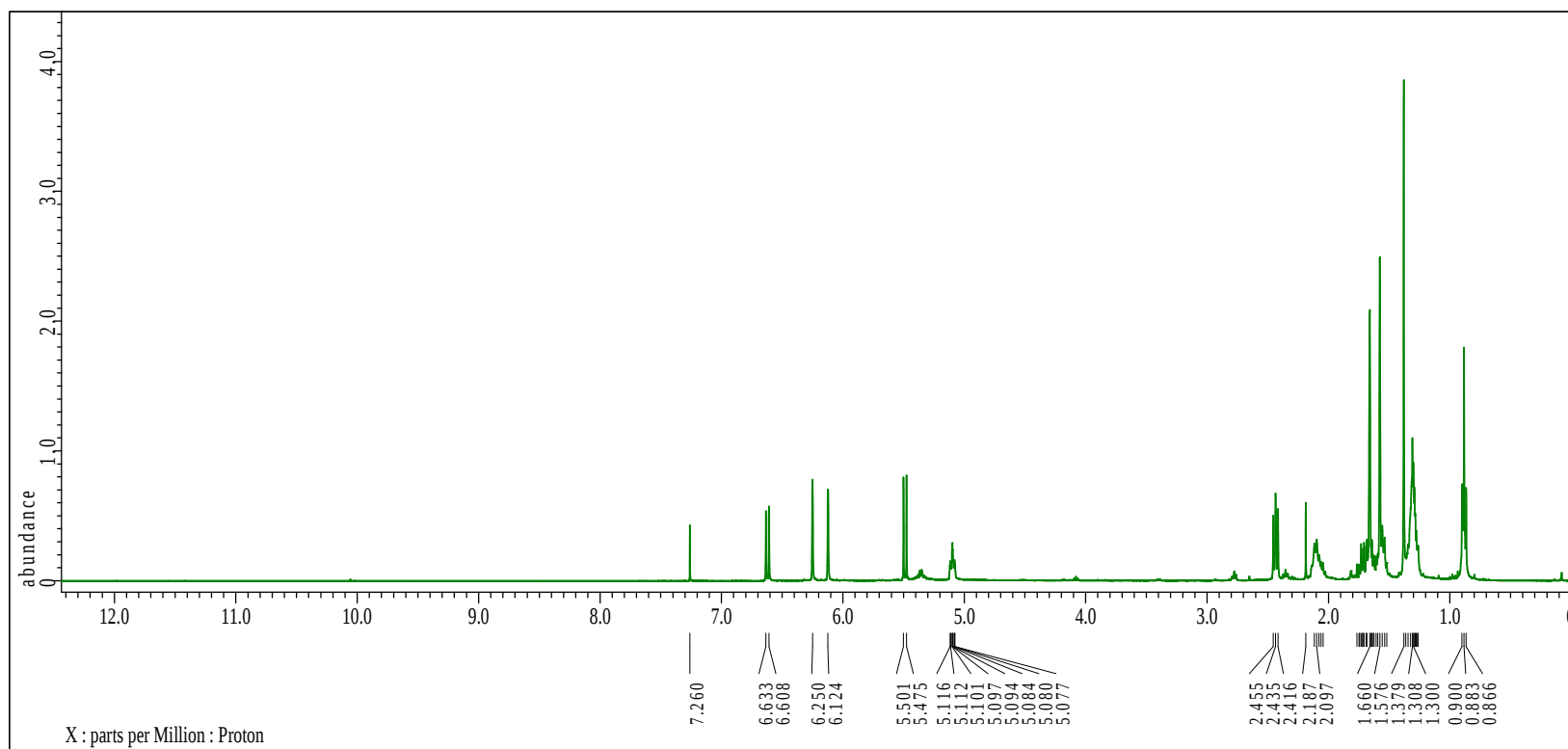


Figure S51. ^1H NMR spectrum of **10** (Recorded in CDCl_3)

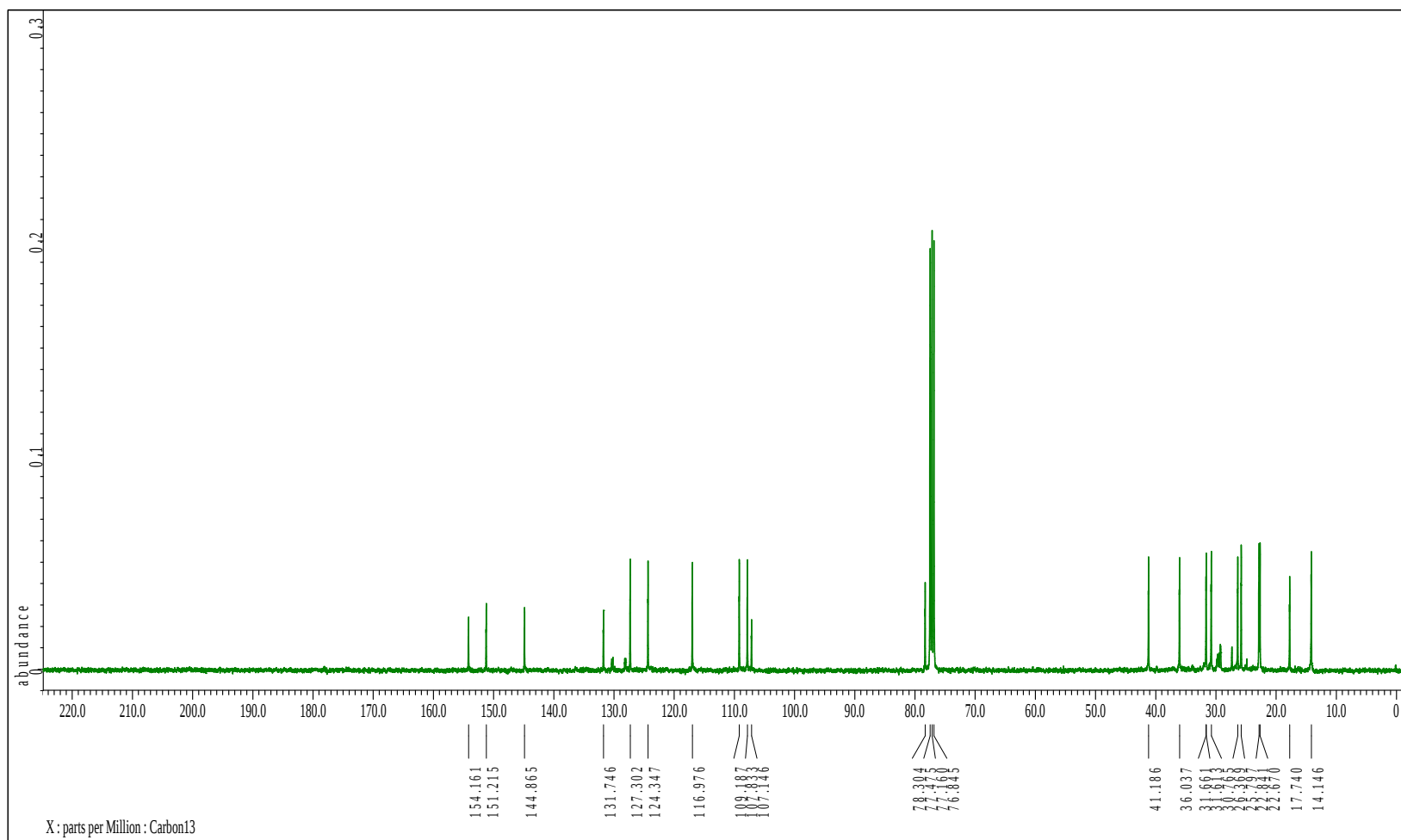


Figure S52. ¹³C NMR spectrum of **10** (Recorded in CDCl₃)

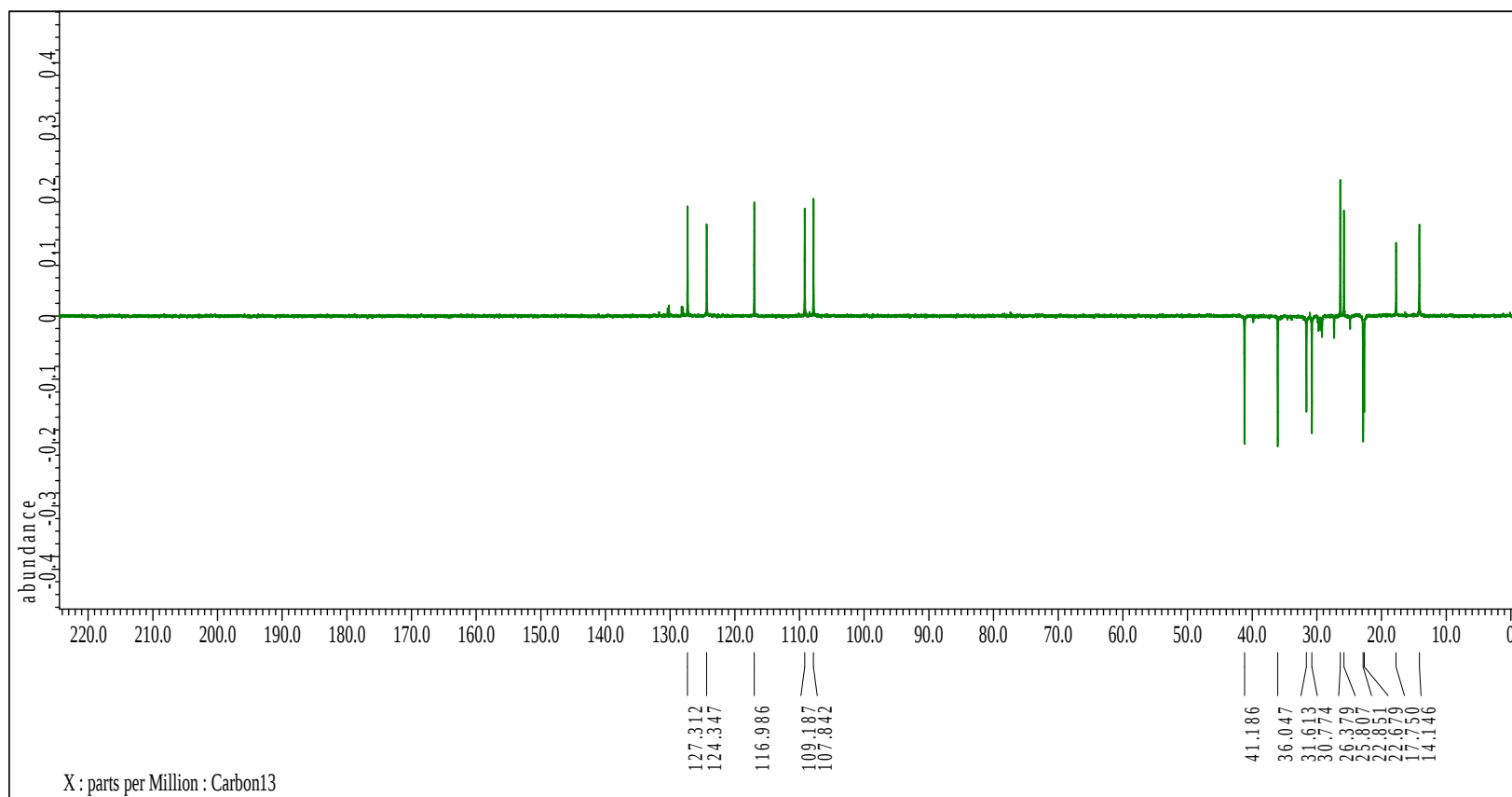


Figure S53. DEPT spectrum of **10** (Recorded in CDCl₃)

11. Spectroscopic data for compound 11

Elemental composition	Theoretical m/z	Observed m/z	Error (ppm / mDa)
C ₂₁ H ₃₂ O ₄	349.2373	349.2370	0.96 / 0.34

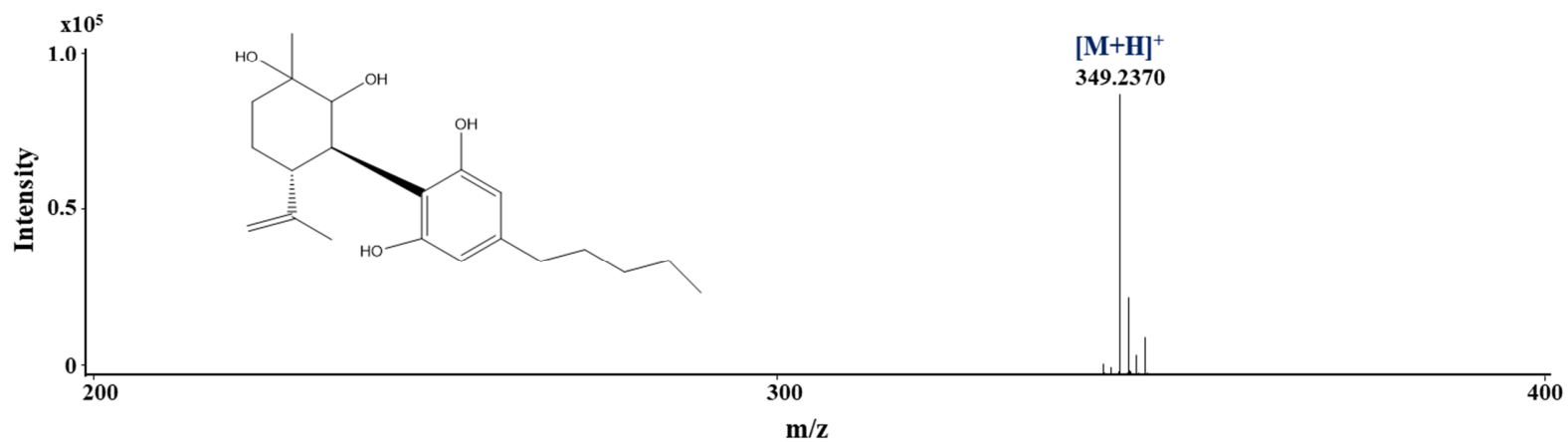


Figure S54. MS spectrum of 11

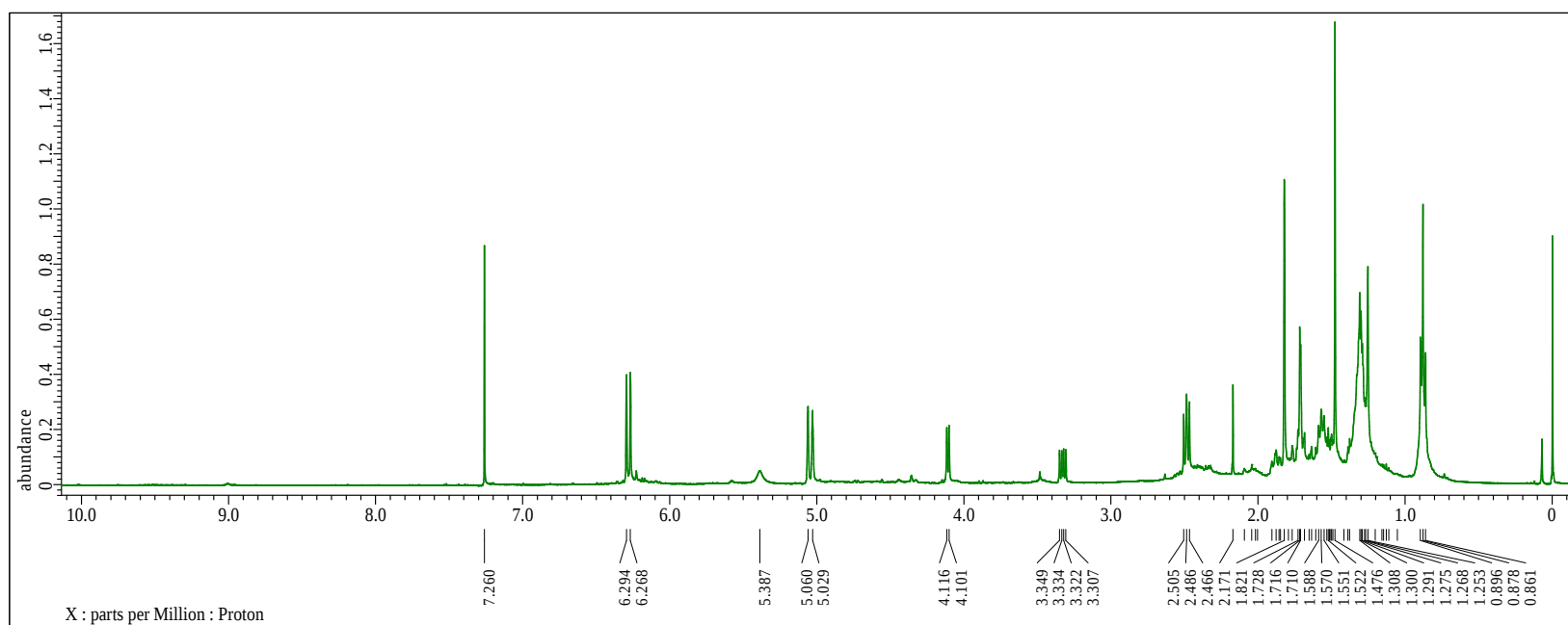


Figure S55. ^1H NMR spectrum of **11** (Recorded in CDCl_3)

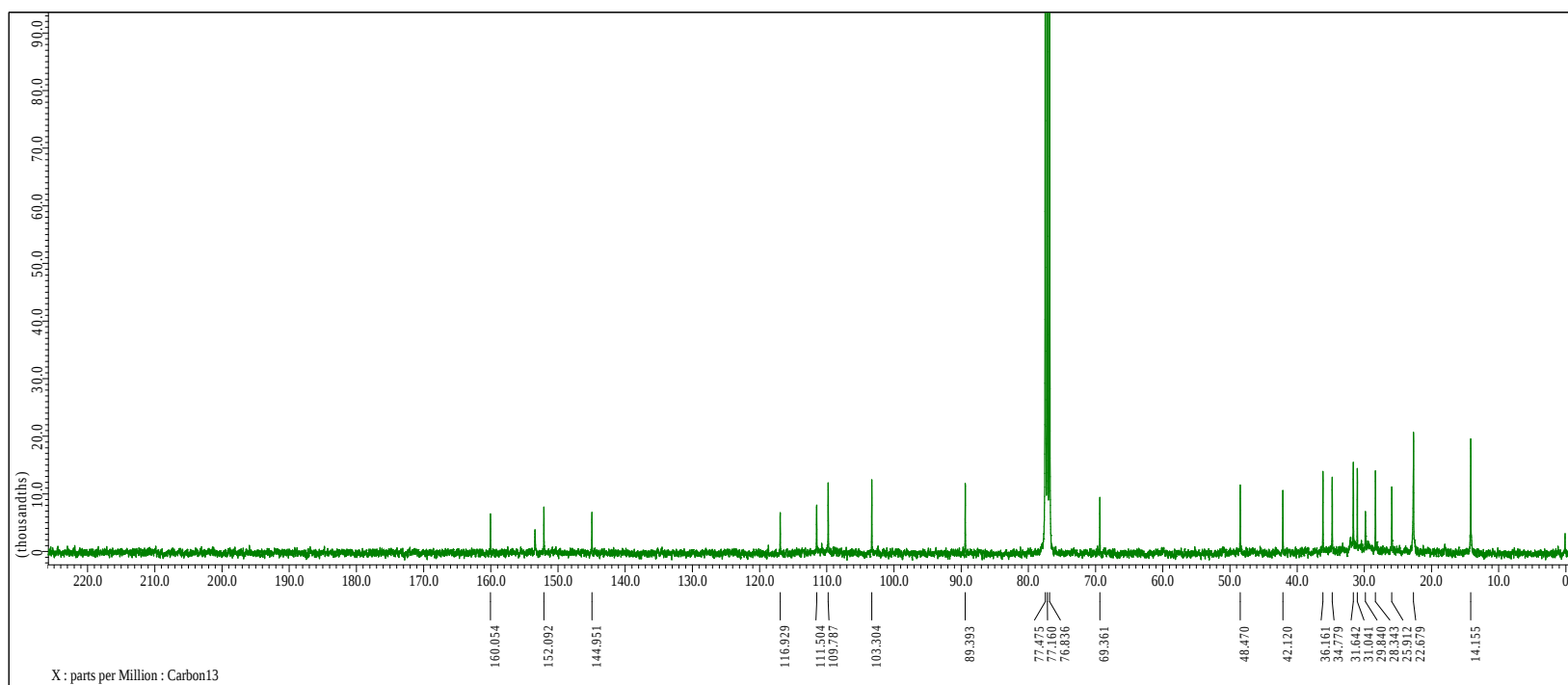


Figure S56. ¹³C NMR spectrum of **11** (Recorded in CDCl₃)

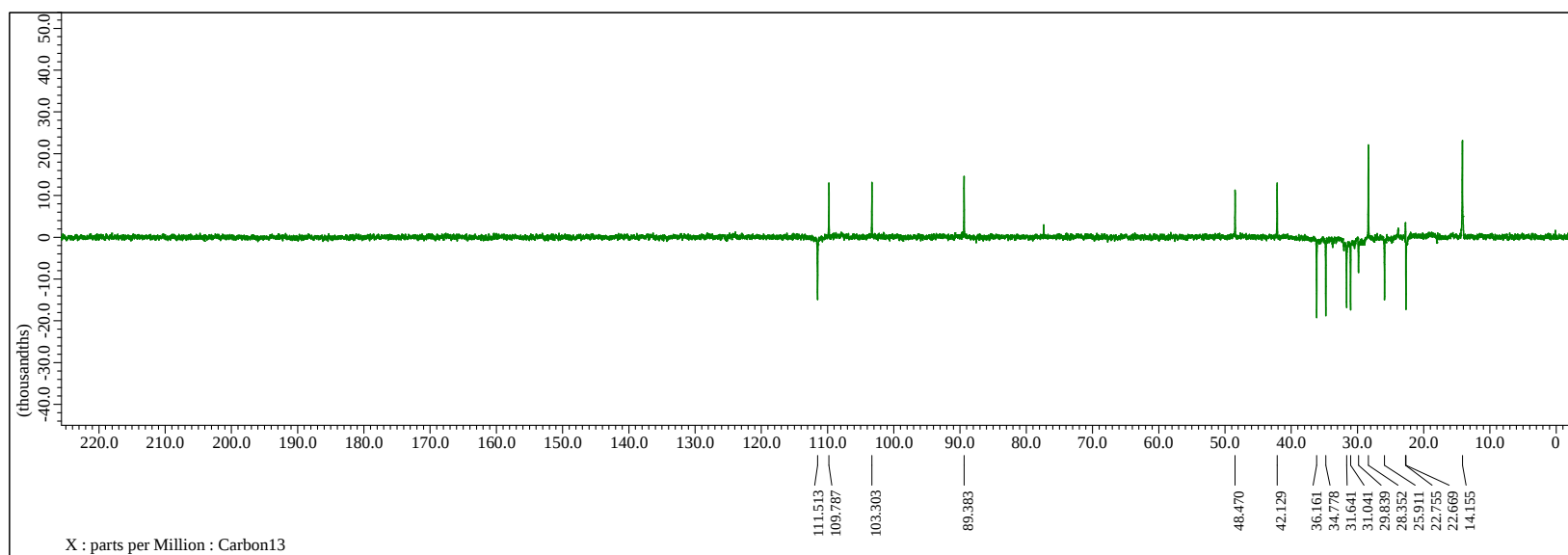


Figure S57. DEPT spectrum of **11** (Recorded in CDCl₃)