

Supporting Information for

Acyl quinic acids derivatives screened out from *Carissa spinarum* by SOD-affinity ultrafiltration LC-MS and their antioxidative and hepatoprotective activities

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Figure S1. (+)-HR-ESI-MS spectrum of **1**

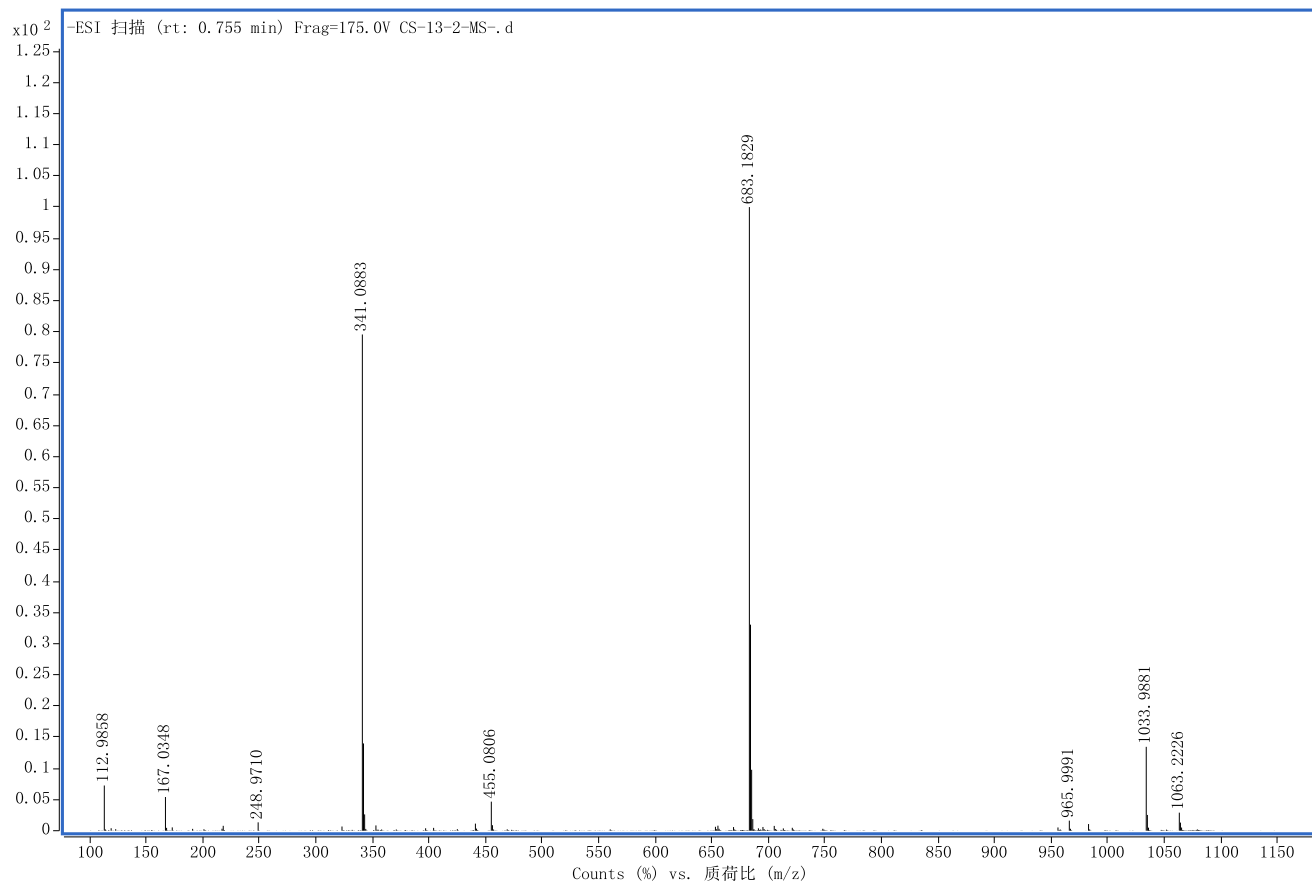


Figure S2. ^1H NMR (600 MHz, CD_3OD) spectrum of **1**

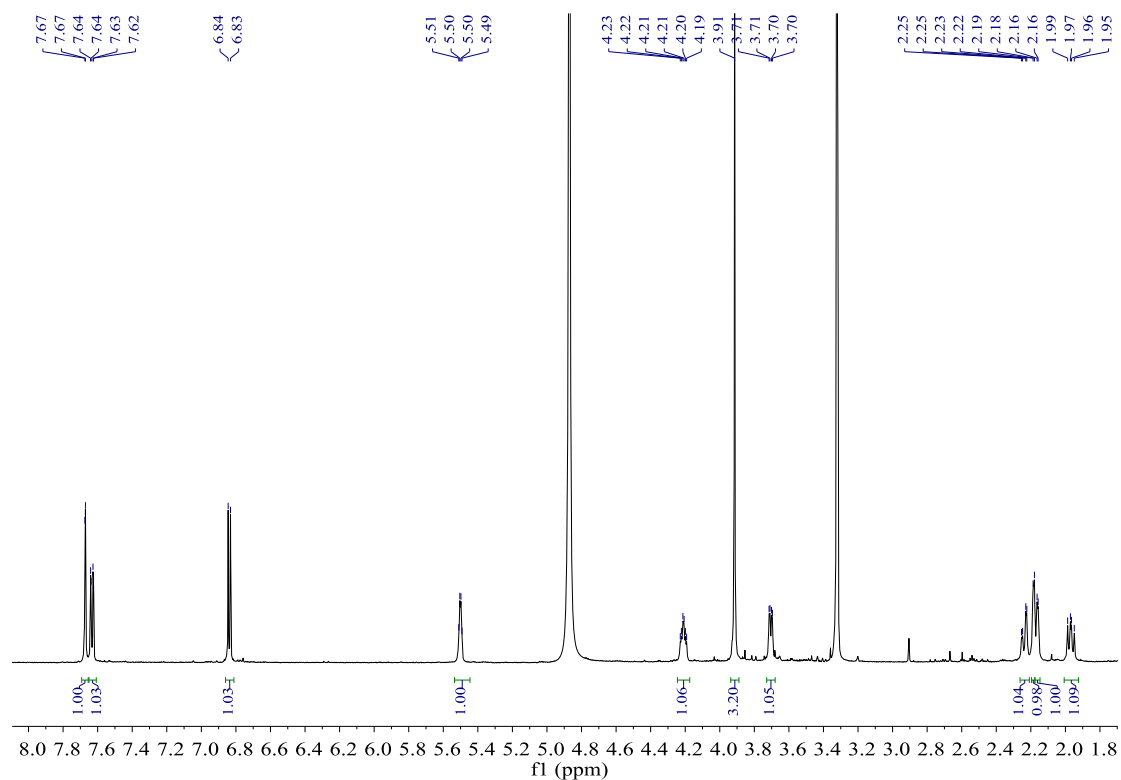


Figure S3. ^{13}C NMR (150 MHz, CD_3OD) spectrum of **1**

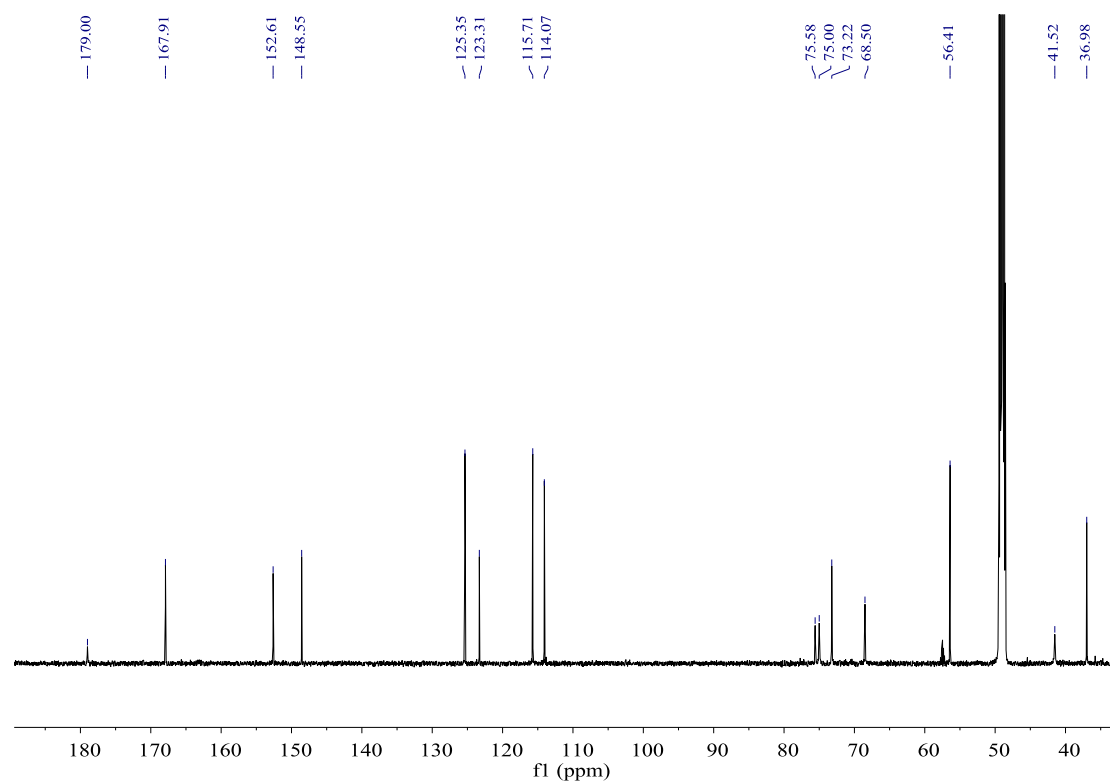


Figure S4. DEPT 135 (150 MHz, CD_3OD) spectrum of **1**

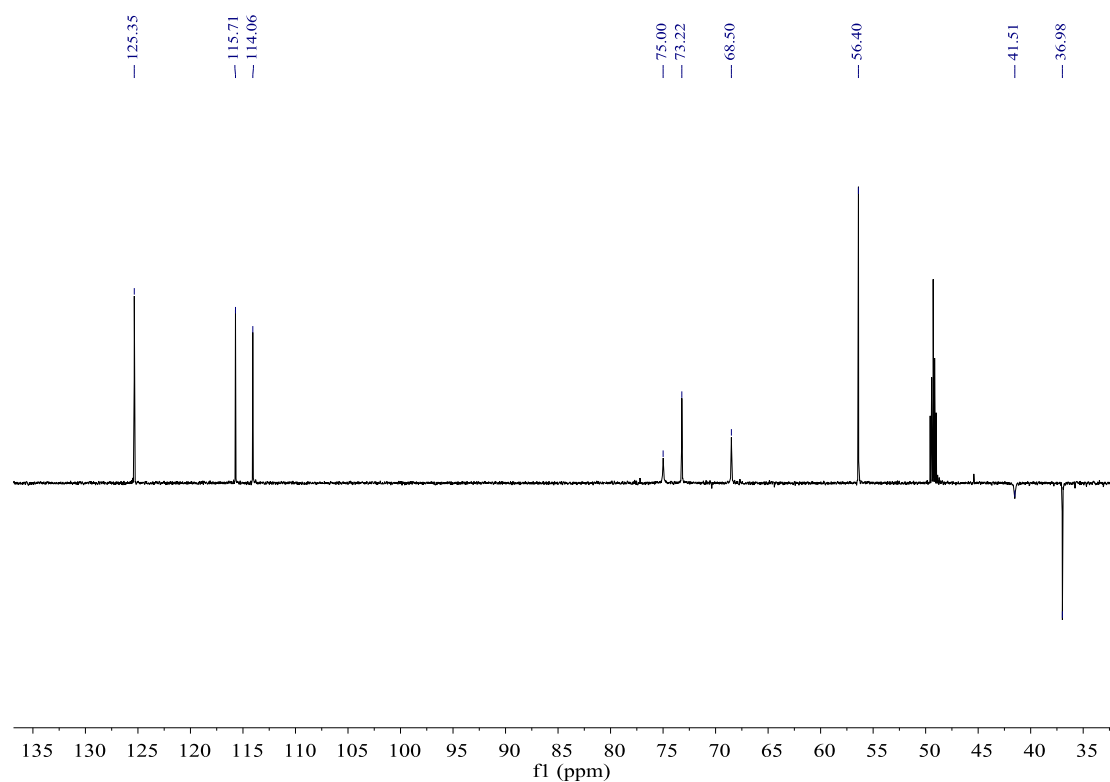


Figure S5. HSQC spectrum of **1** in CD₃OD

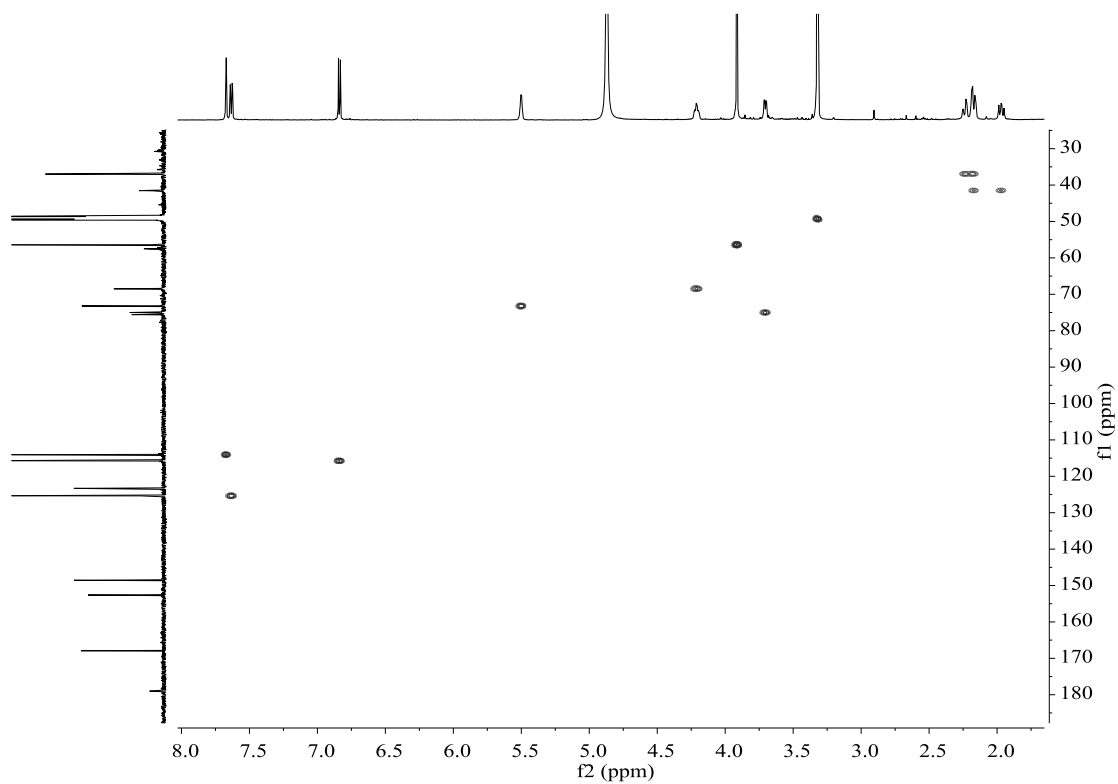


Figure S6. ¹H-¹H COSY spectrum of **1** in CD₃OD

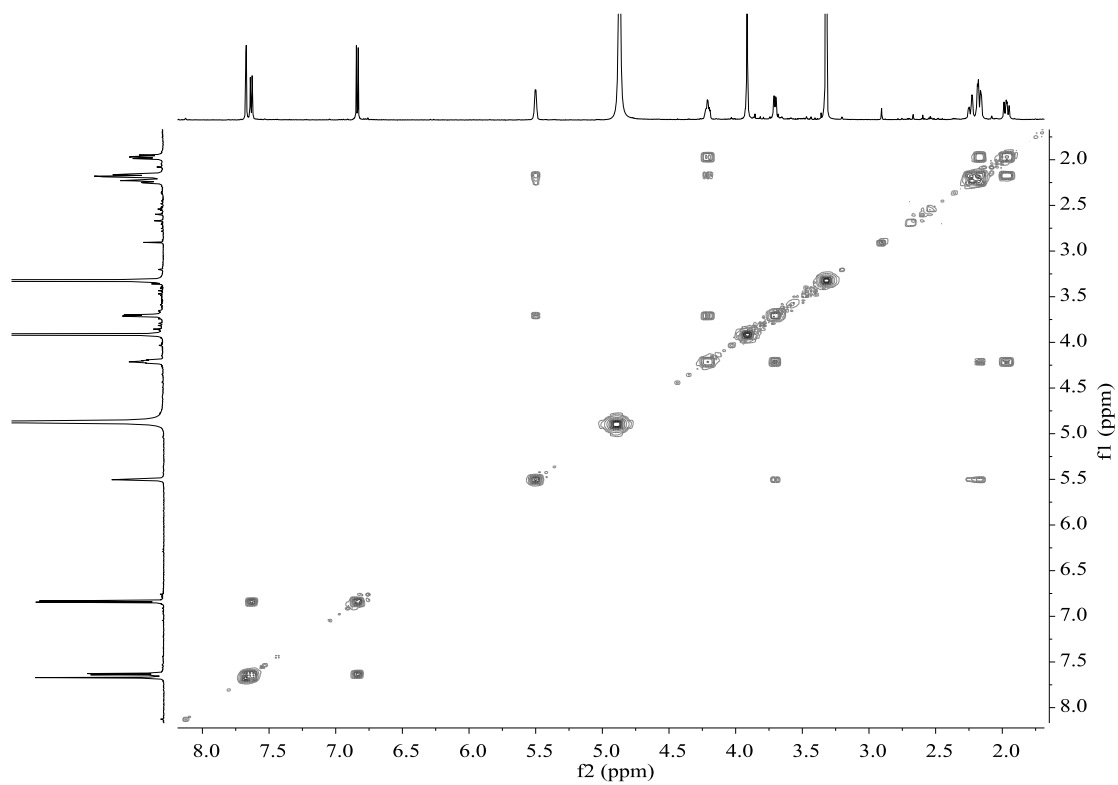


Figure S7. HMBC spectrum of **1** in CD₃OD

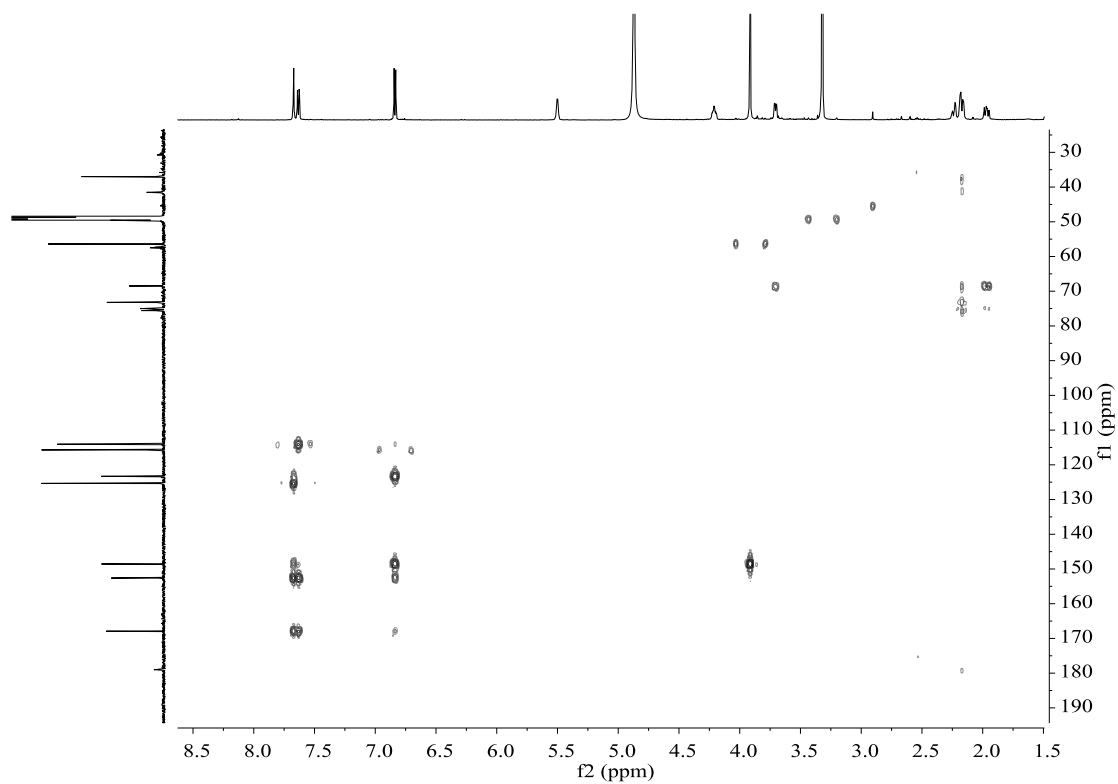


Figure S8. NOESY spectrum of **1** in CD₃OD

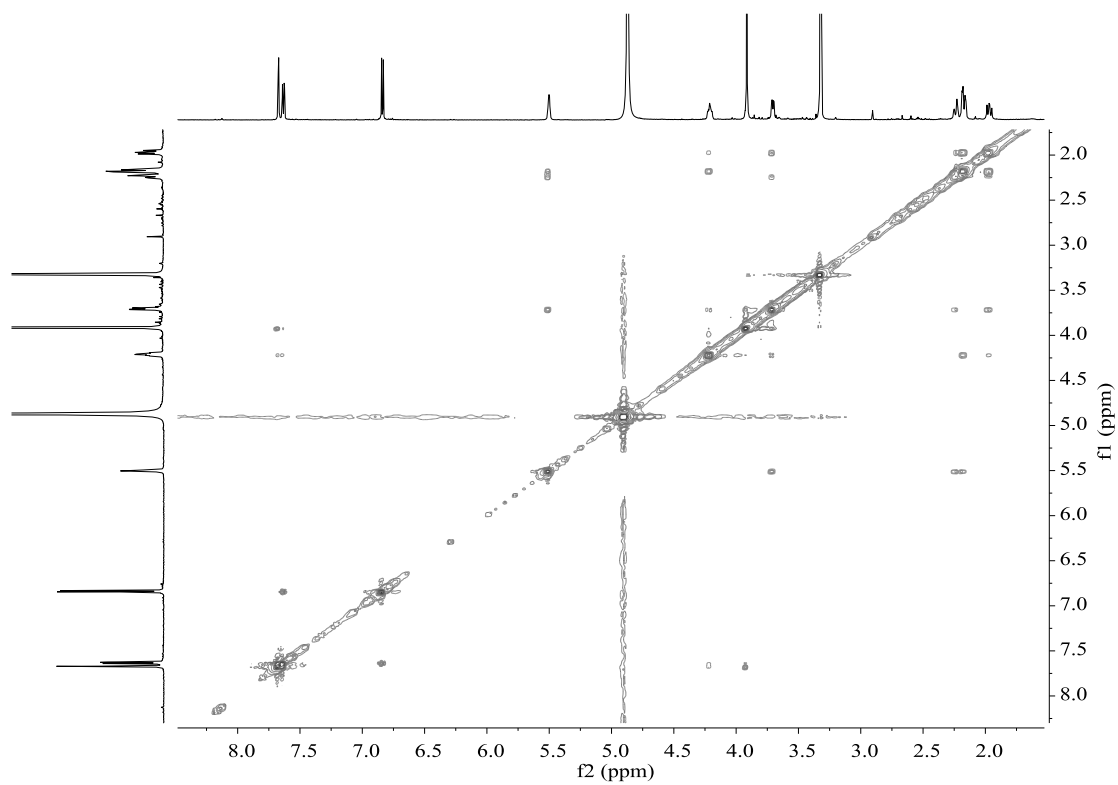


Figure S9. UV spectrum of **1** in CD₃OD

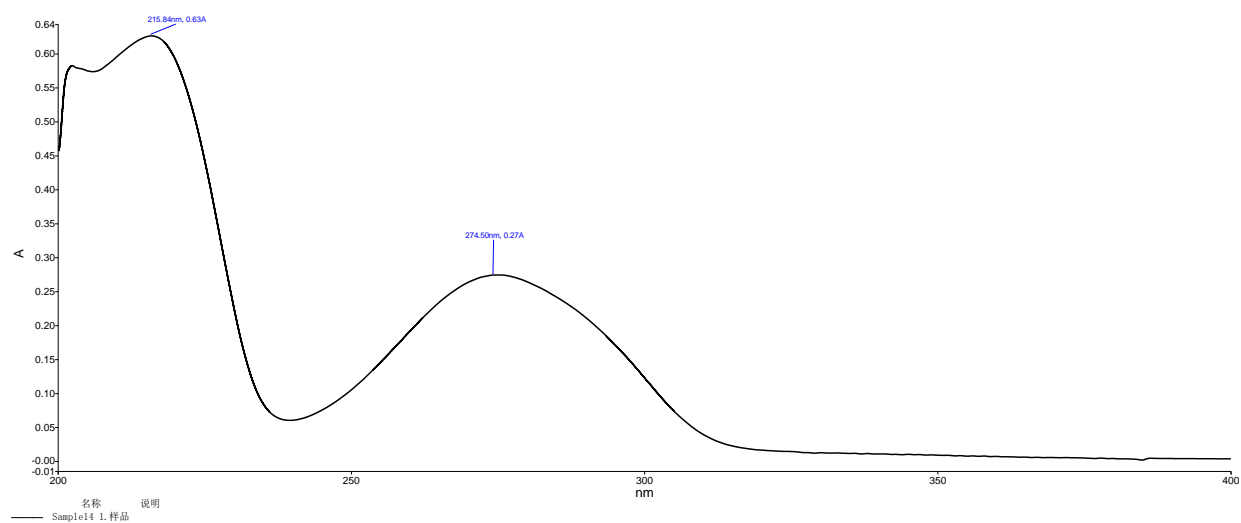


Figure S10. (+)-HR-ESI-MS spectrum of **2**

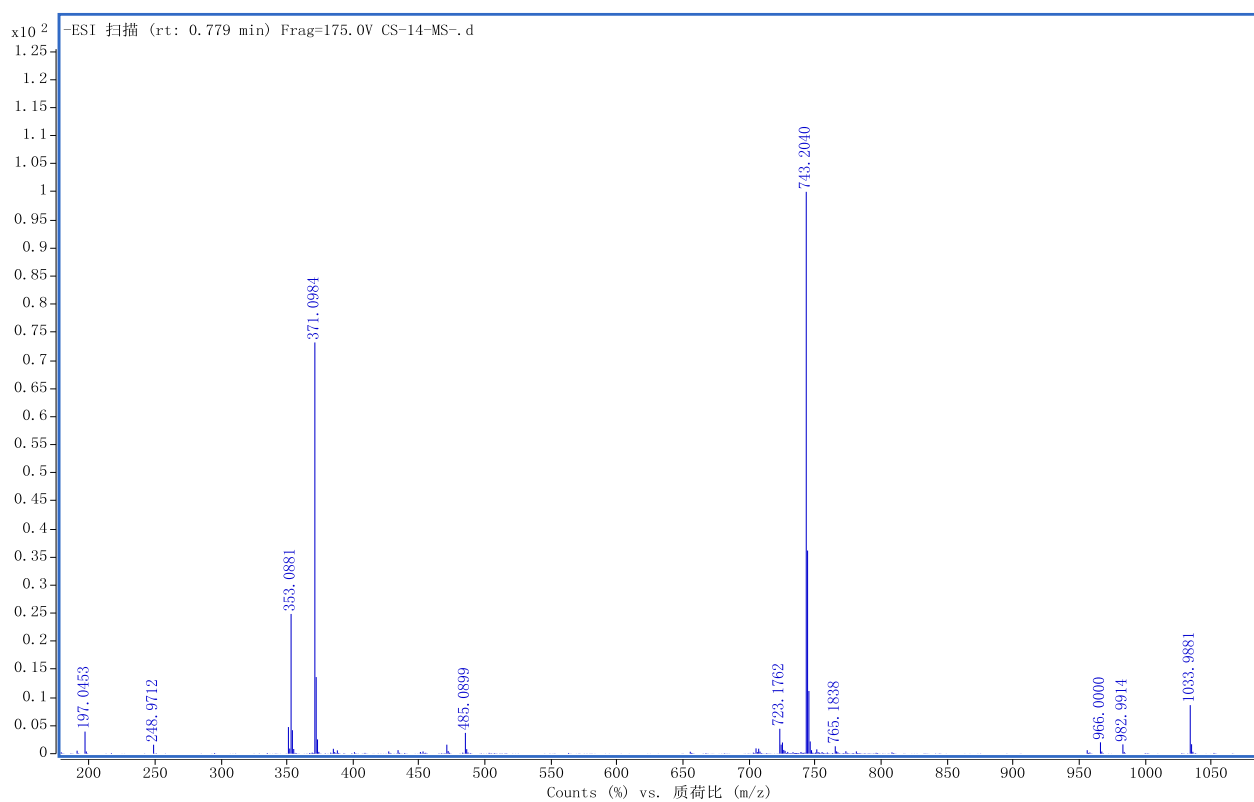


Figure S11. ^1H NMR (600 MHz, CD_3OD) spectrum of **2**

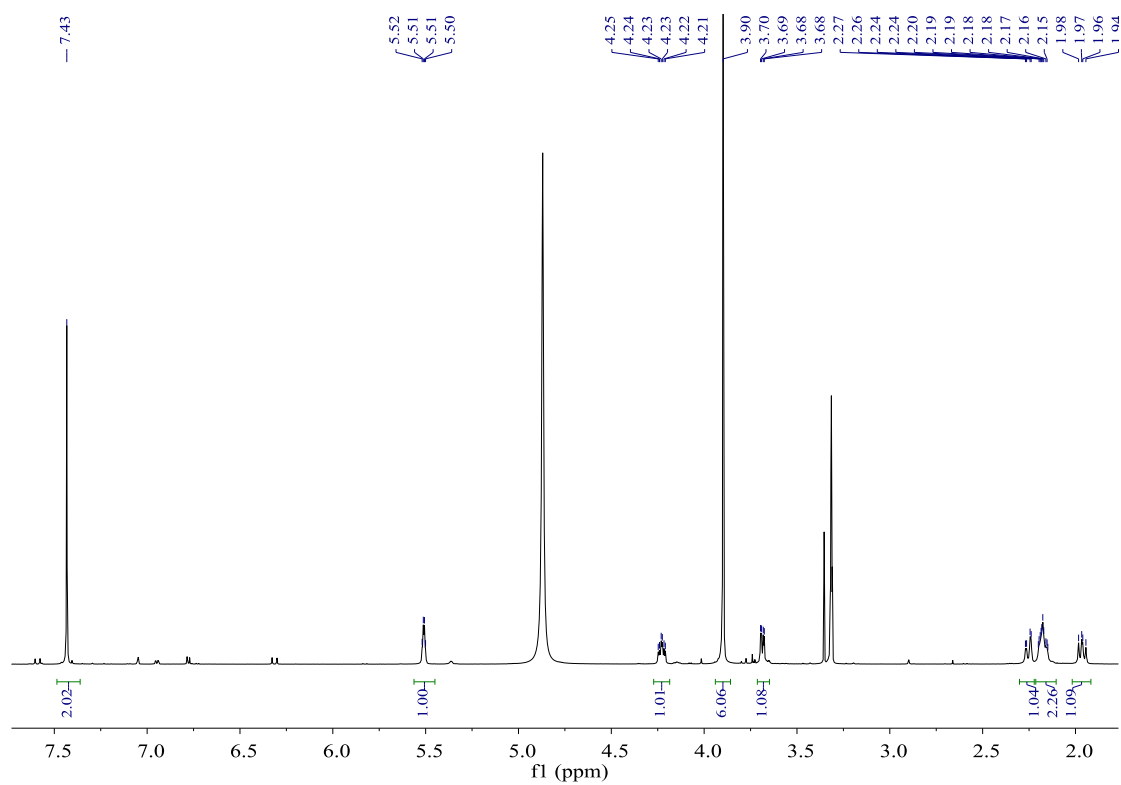


Figure S12. ^{13}C NMR (150 MHz, CD_3OD) spectrum of **2**

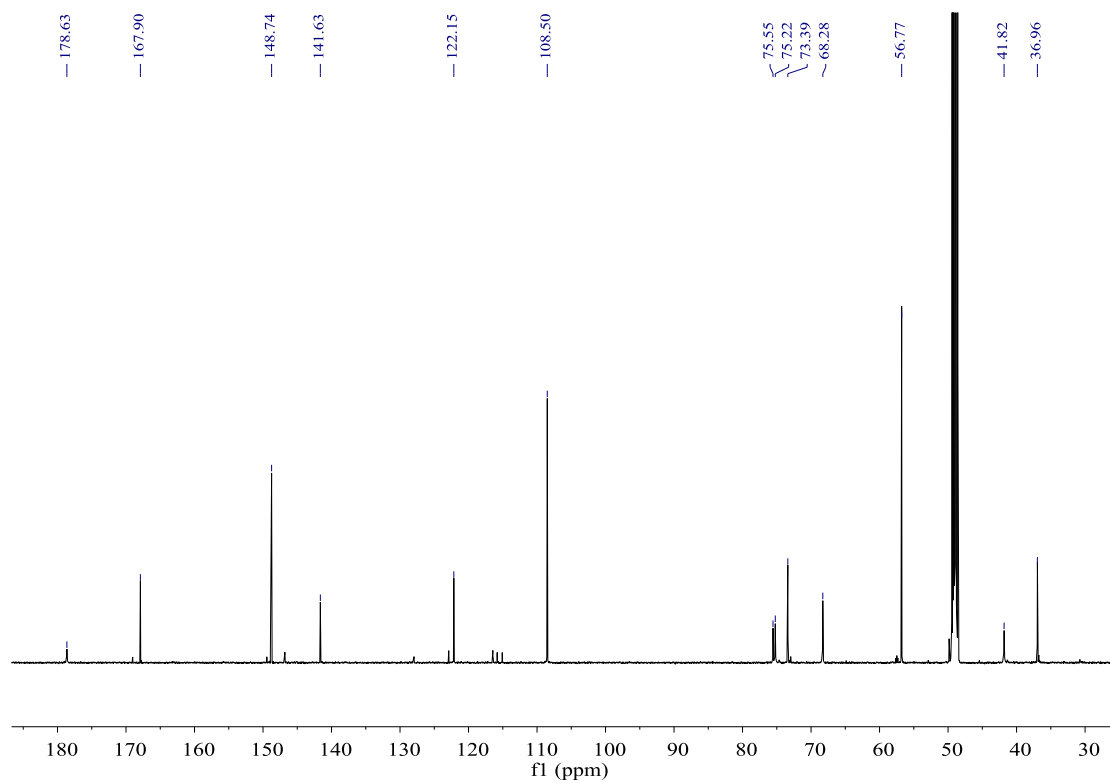


Figure S13. DEPT 135 (150 MHz, CD₃OD) spectrum of **2**

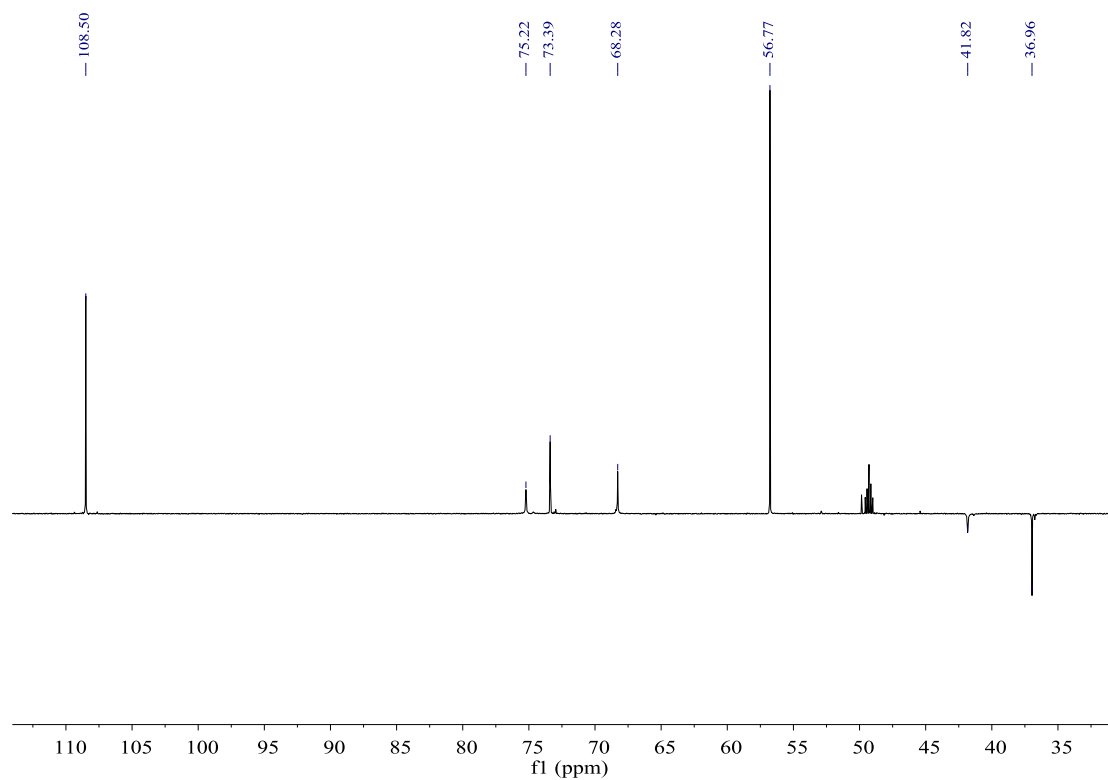


Figure S14. HSQC spectrum of **2** in CD₃OD

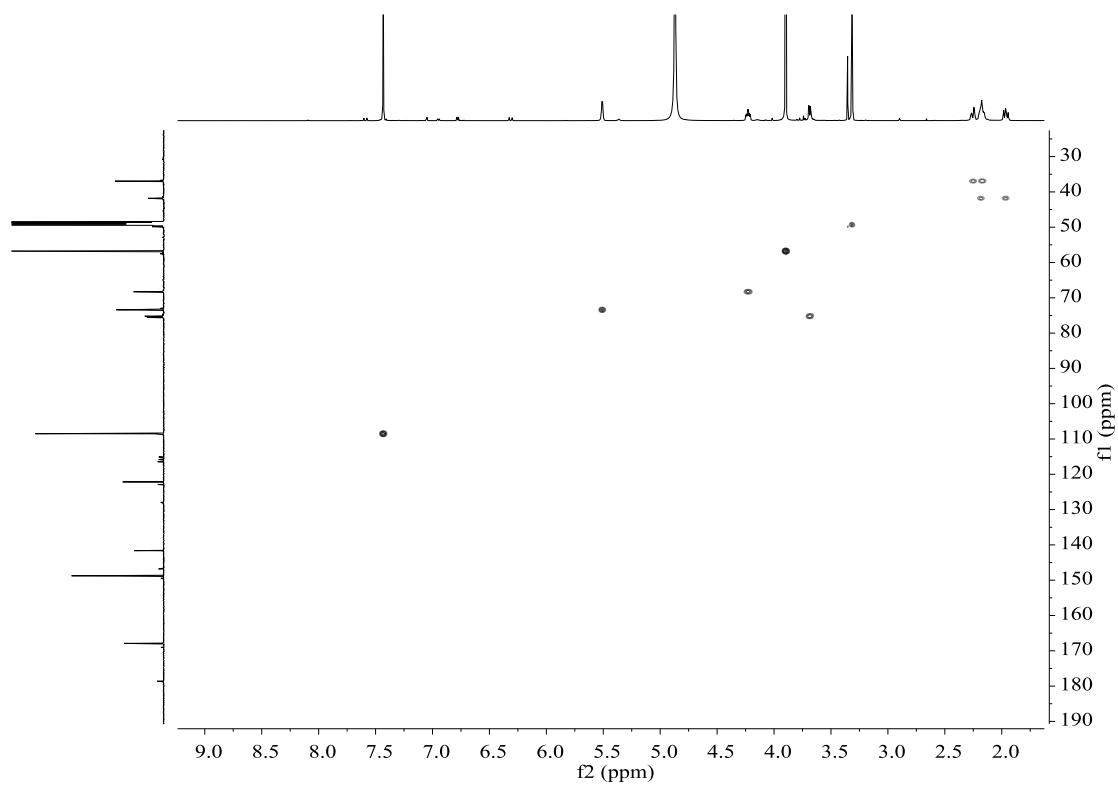


Figure S15. ^1H - ^1H COSY spectrum of **2** in CD_3OD

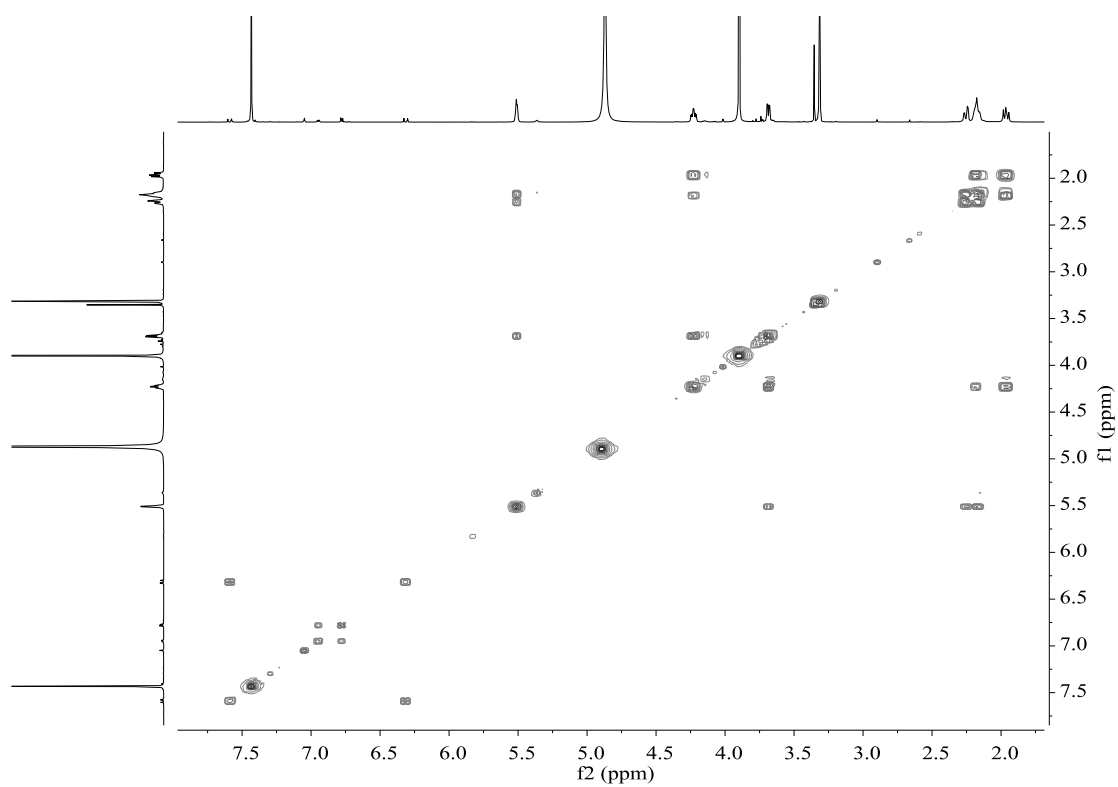


Figure S16. HMBC spectrum of **2** in CD_3OD

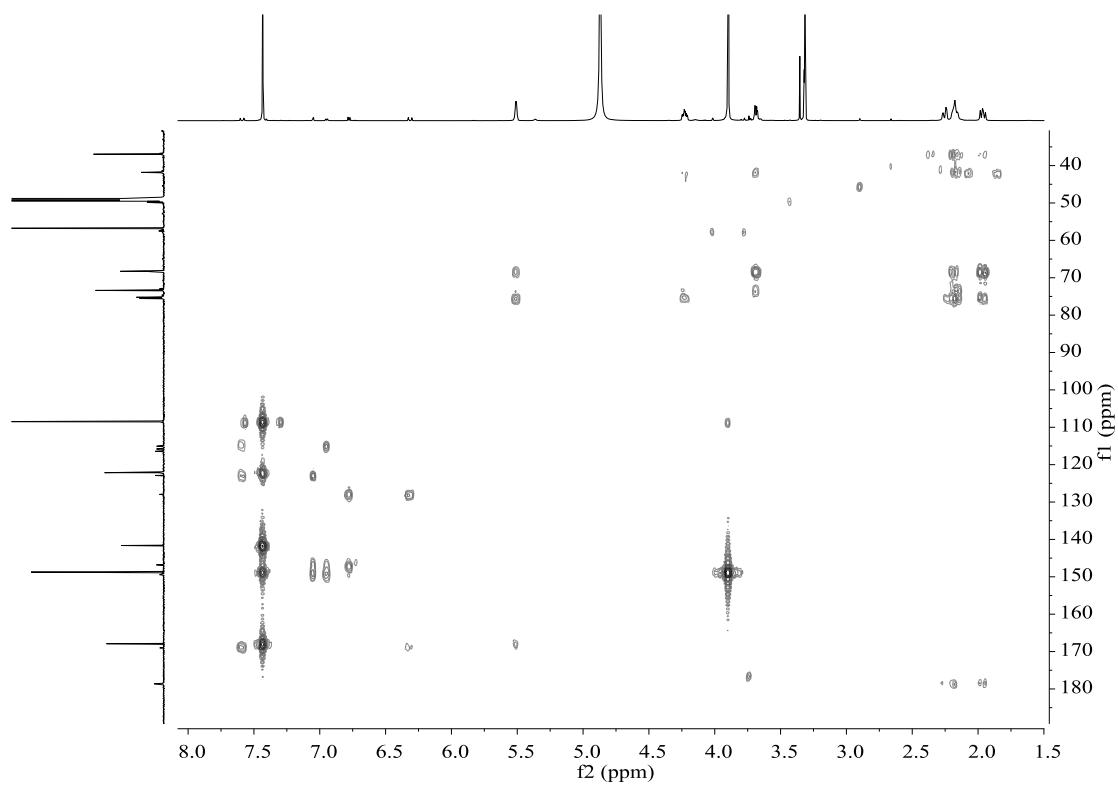


Figure S17. NOESY spectrum of **2** in CD₃OD

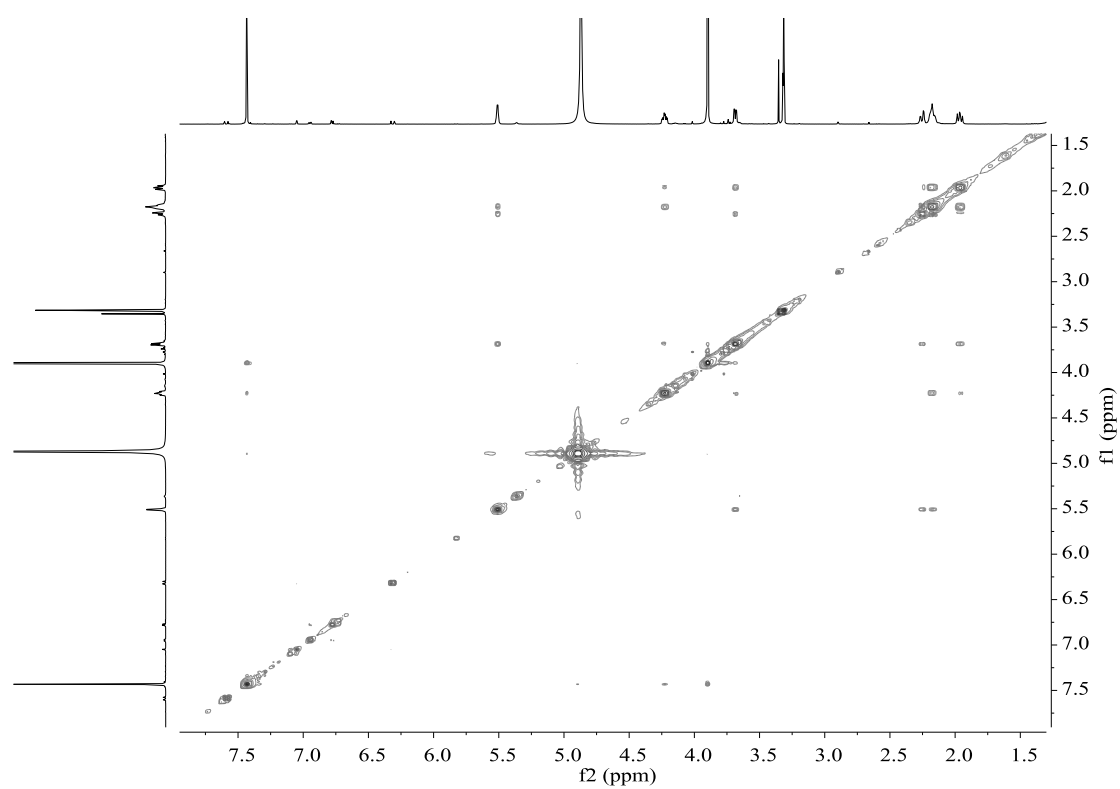


Figure S18. UV spectrum of **2** in CD₃OD

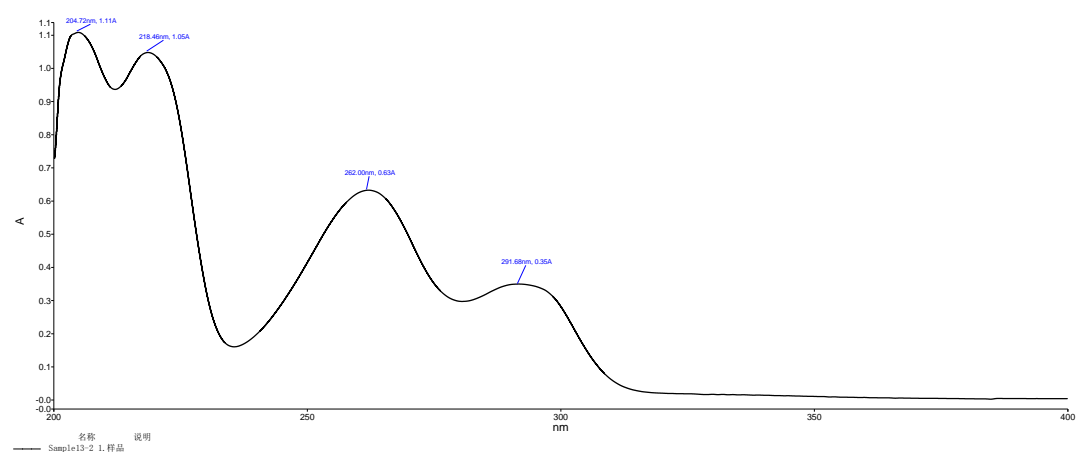


Figure S19. (+)-HR-ESI-MS spectrum of **3**

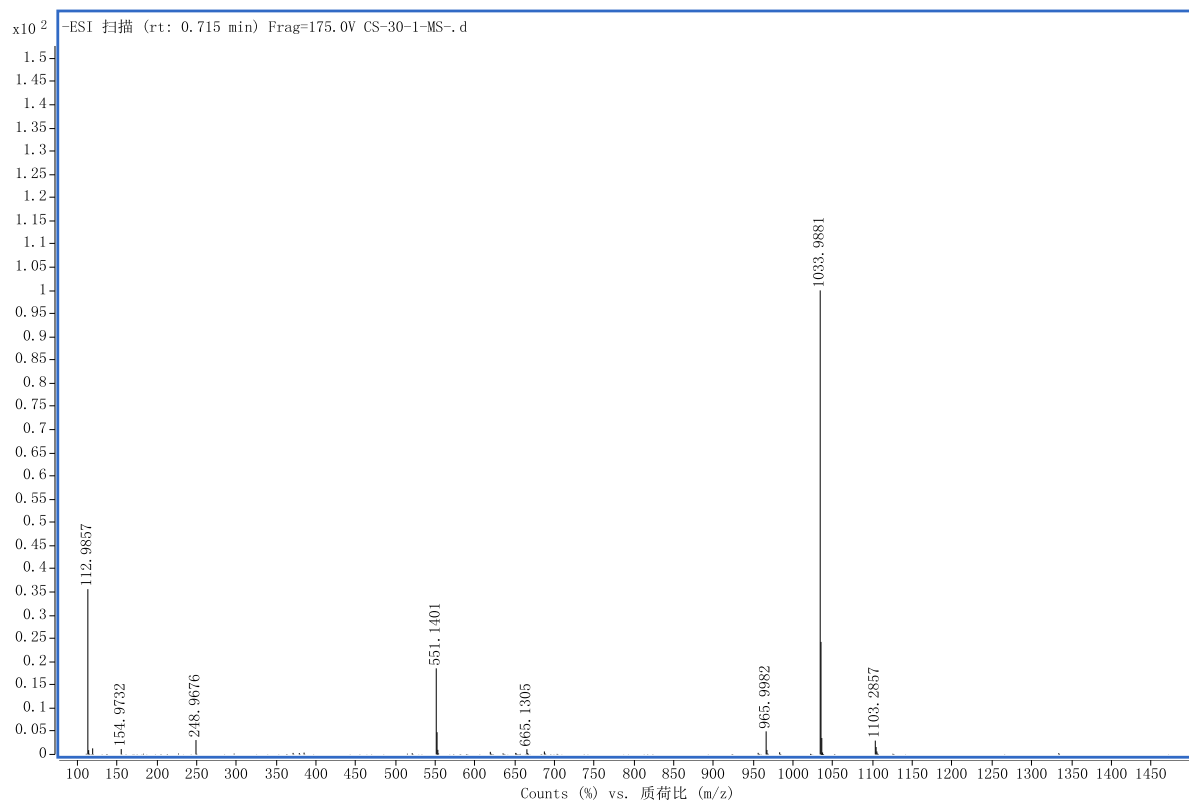


Figure S20. ^1H NMR (600 MHz, CD_3OD) spectrum of **3**

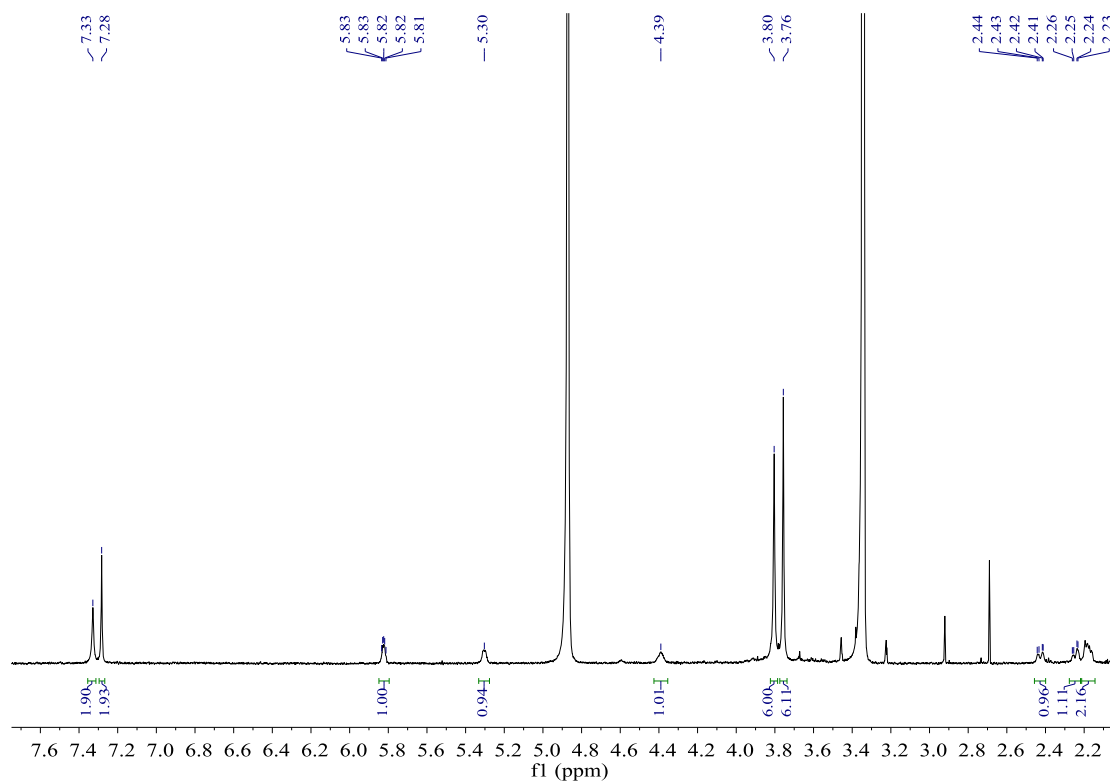


Figure S21. ^{13}C NMR (150 MHz, CD_3OD) spectrum of **3**

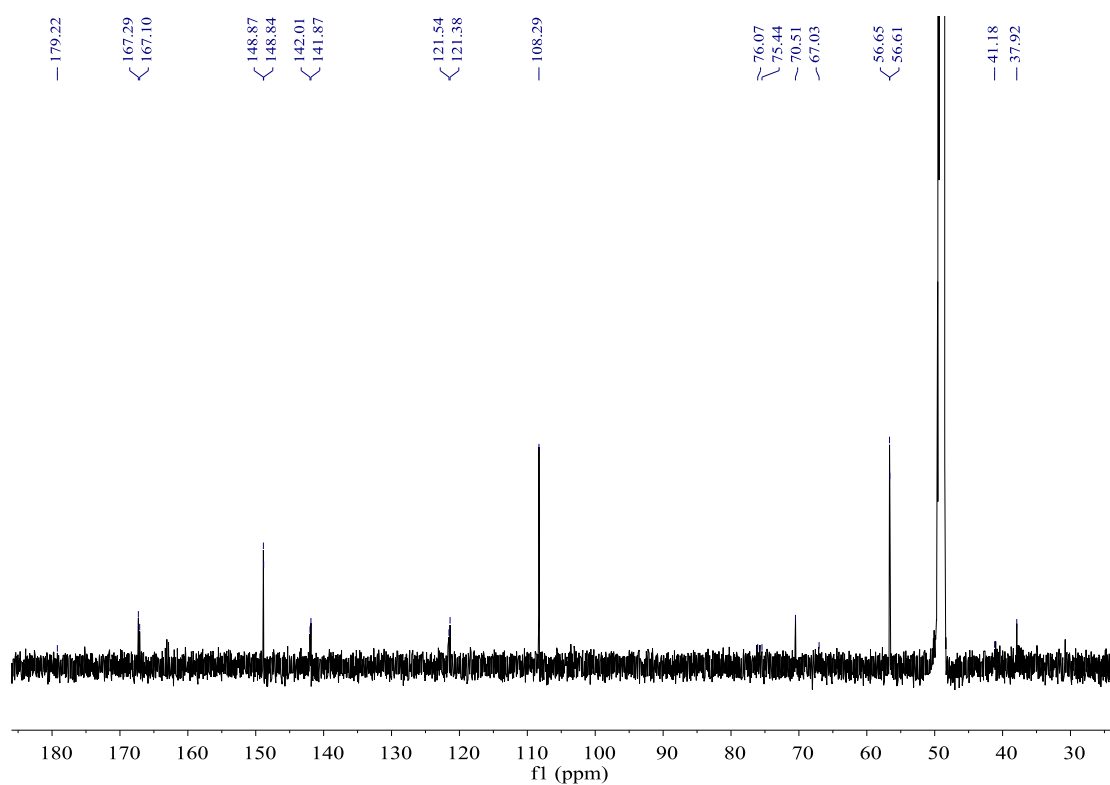


Figure S22. DEPT 135 (150 MHz, CD_3OD) spectrum of **3**

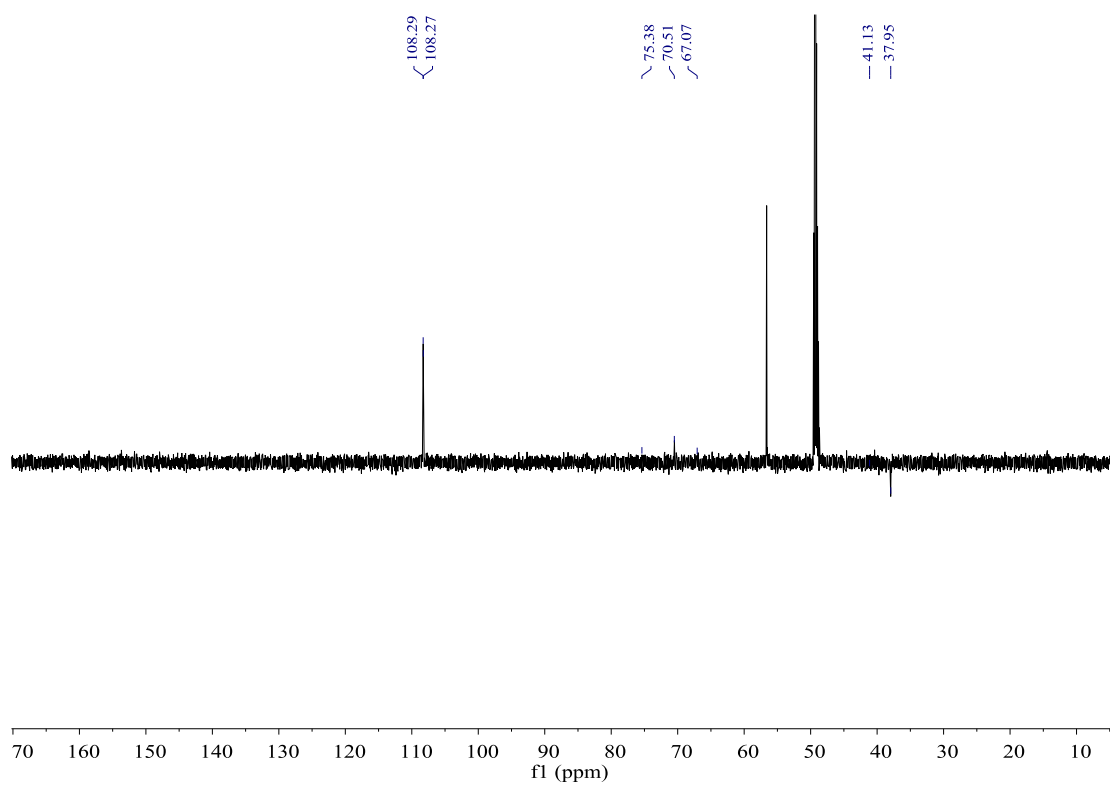


Figure S23. HSQC spectrum of **3** in CD₃OD

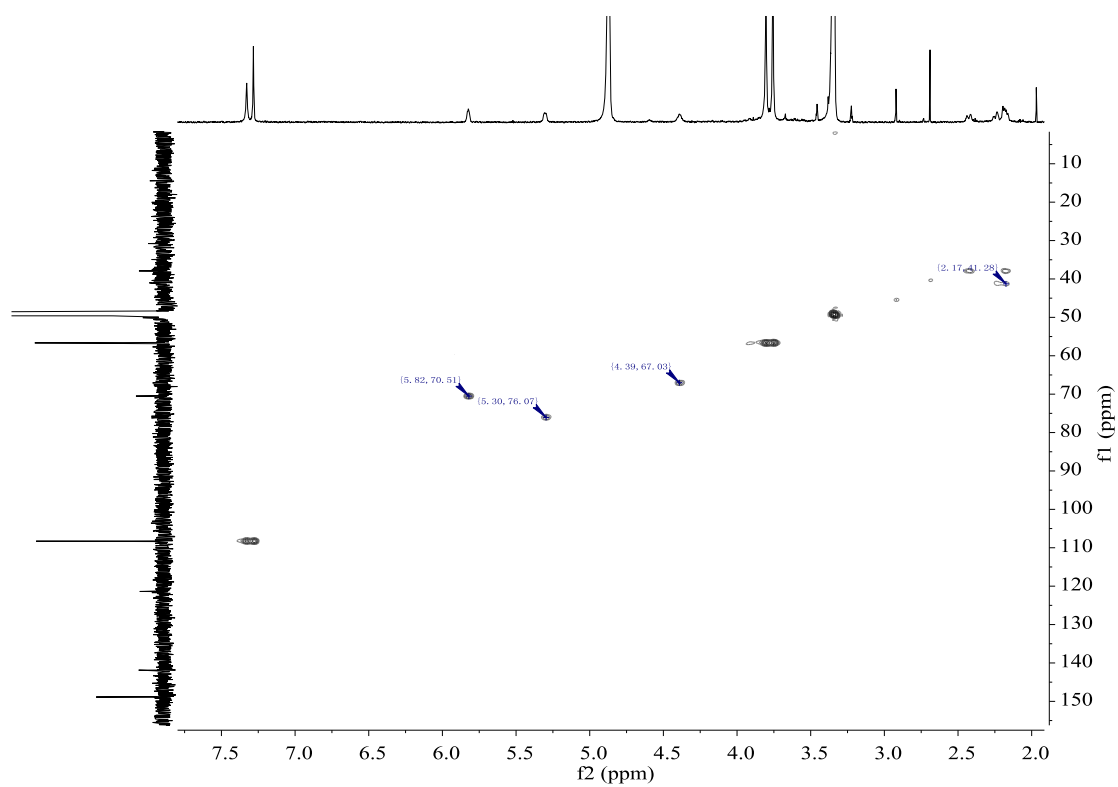


Figure S24. ¹H-¹H COSY spectrum of **30** in CD₃OD

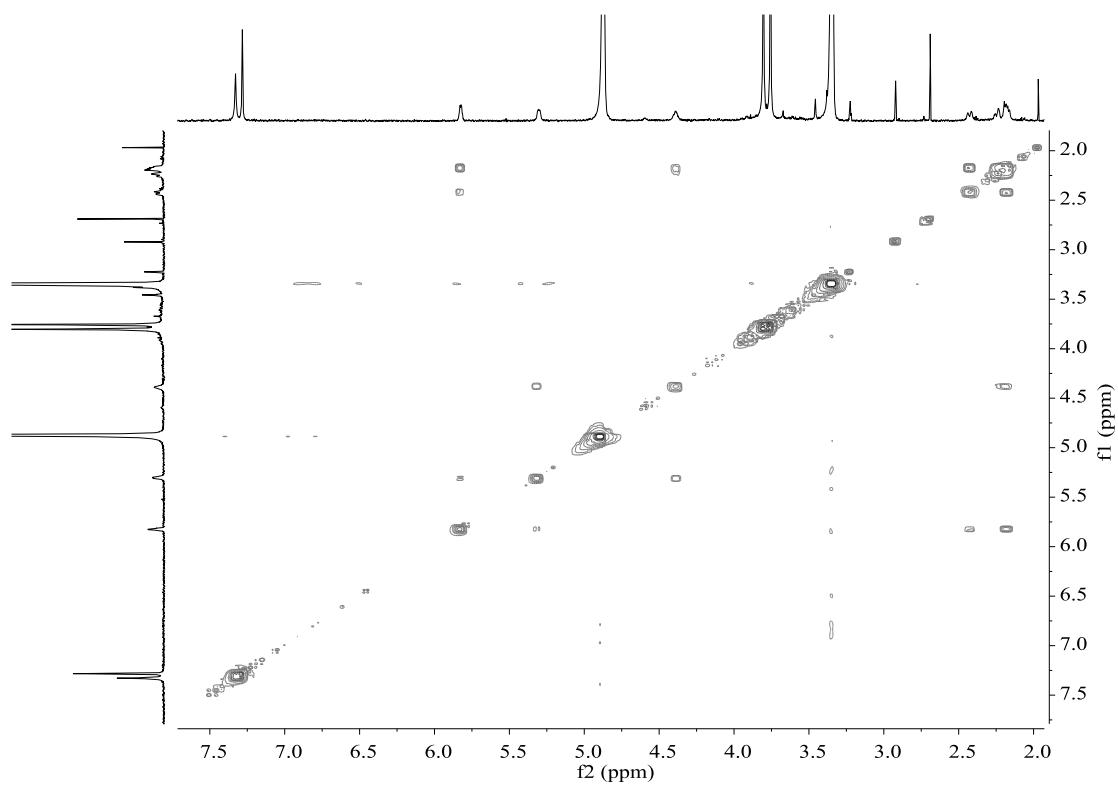


Figure S25. HMBC spectrum of **3** in CD₃OD

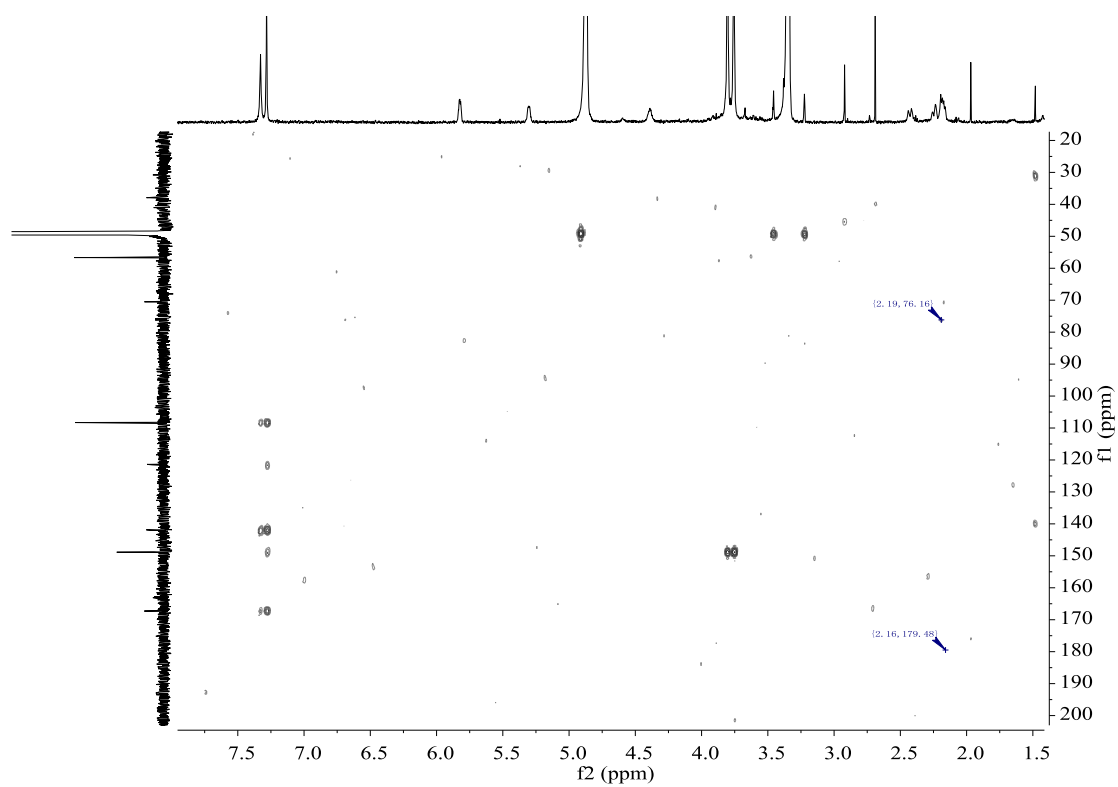


Figure S26. NOESY spectrum of **3** in CD₃OD

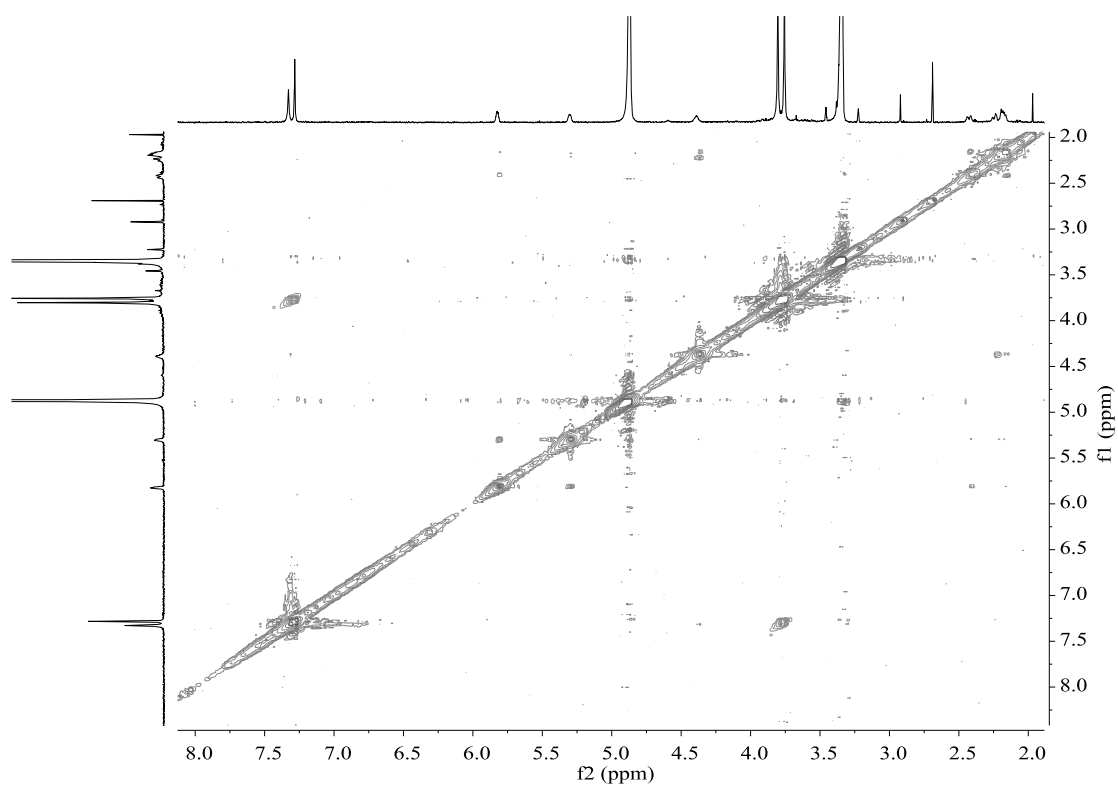
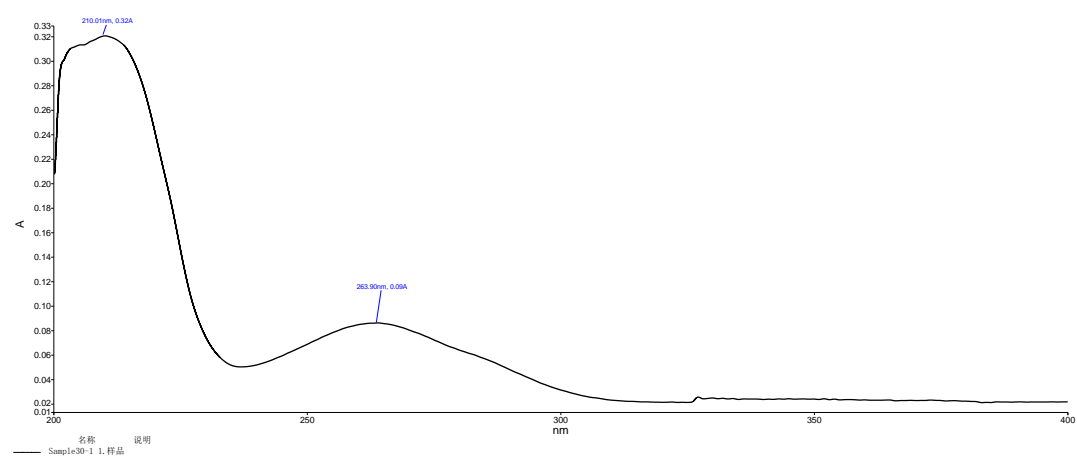


Figure S27. UV spectrum of **3** in CD₃OD



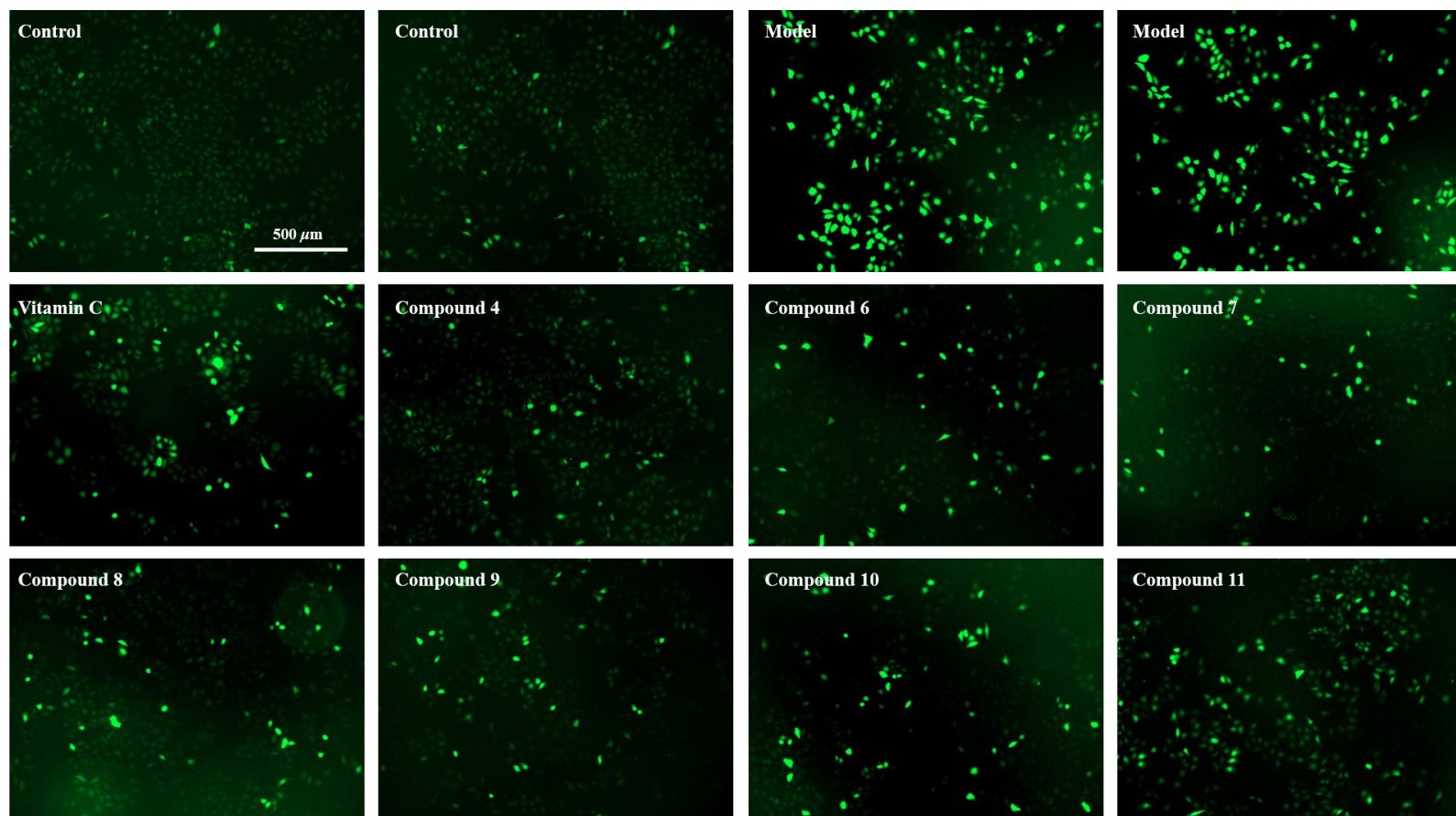


Figure S28. ROS production of compounds **4**, **6–11** and positive control vitamin C at 5 μM in H_2O_2 -induced L02 cell injury model shown in fluorescence images photographed by cell imaging multi-mode reader (Cytation 1, BioTek; scale bar: 500 μm , 4 \times)