Supporting Information

Novel Canthin-6-one Derivatives: Design, Synthesis, and their Antiproliferative Activities via Inducing Apoptosis, DNA Damage, and Ferroptosis

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1. The ^{1}H NMR spectra for 8a-l

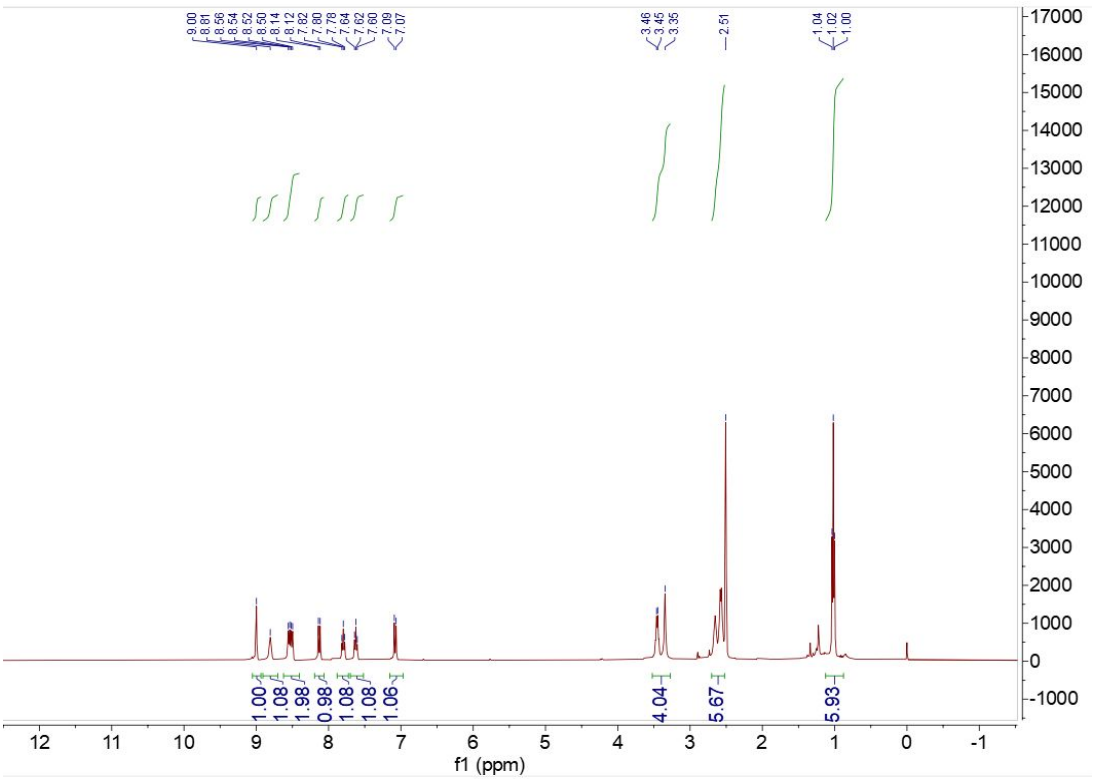

Figure S1. ^{1}H NMR spectrum (400 MHz, DMSO-d_6) of **8a**.

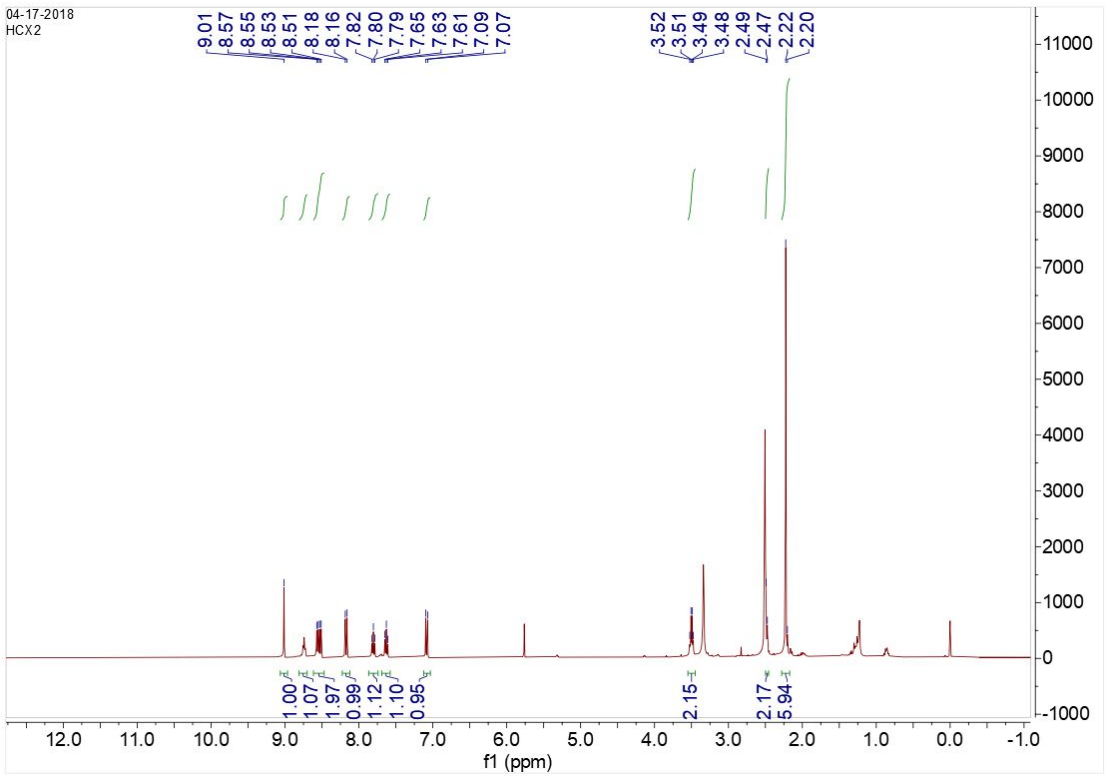

Figure S2. ^{1}H NMR spectrum (400 MHz, DMSO-d_6) of **8b.**

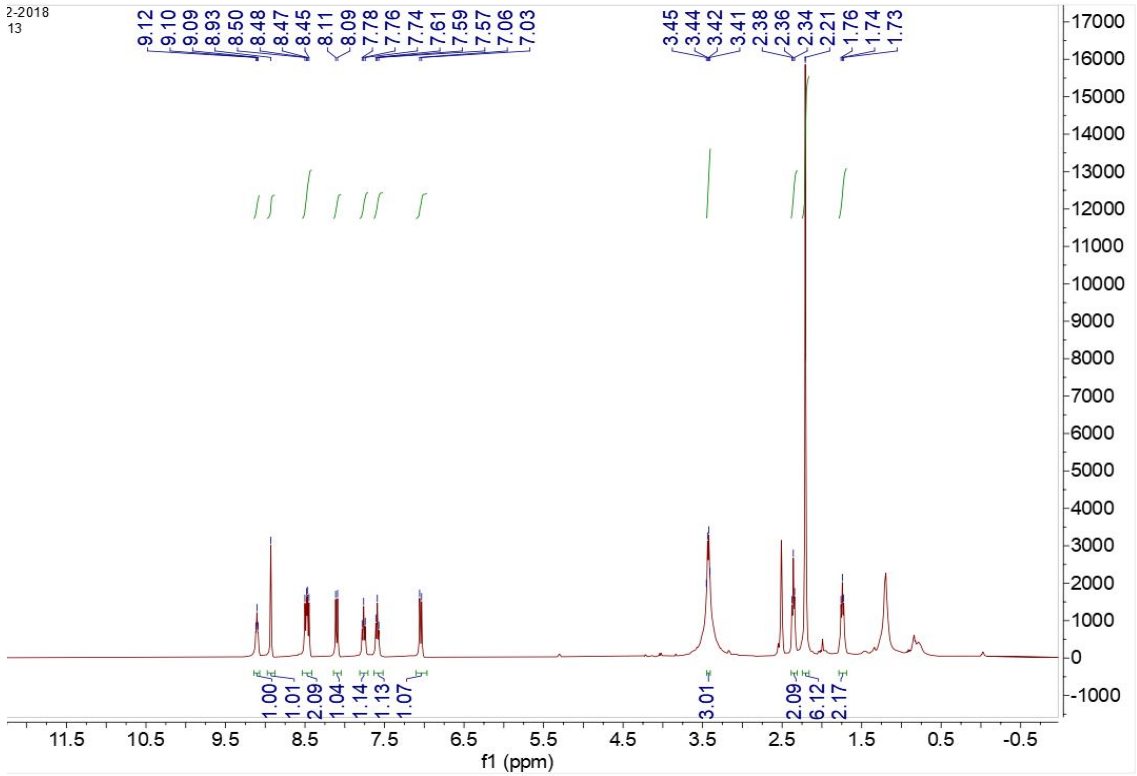

Figure S3. ^{1}H NMR spectrum (400 MHz, DMSO-d_6) of **8c**.

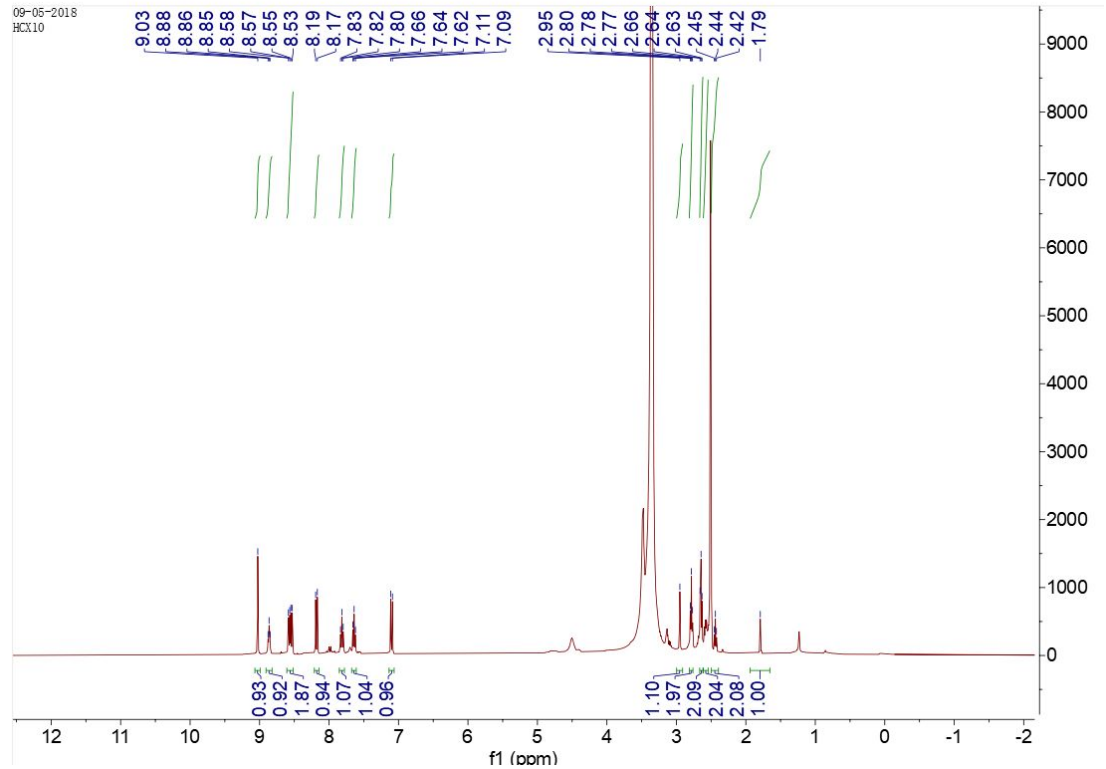

Figure S4. [1]H NMR spectrum (400 MHz, DMSO-d_6) of **8d**.

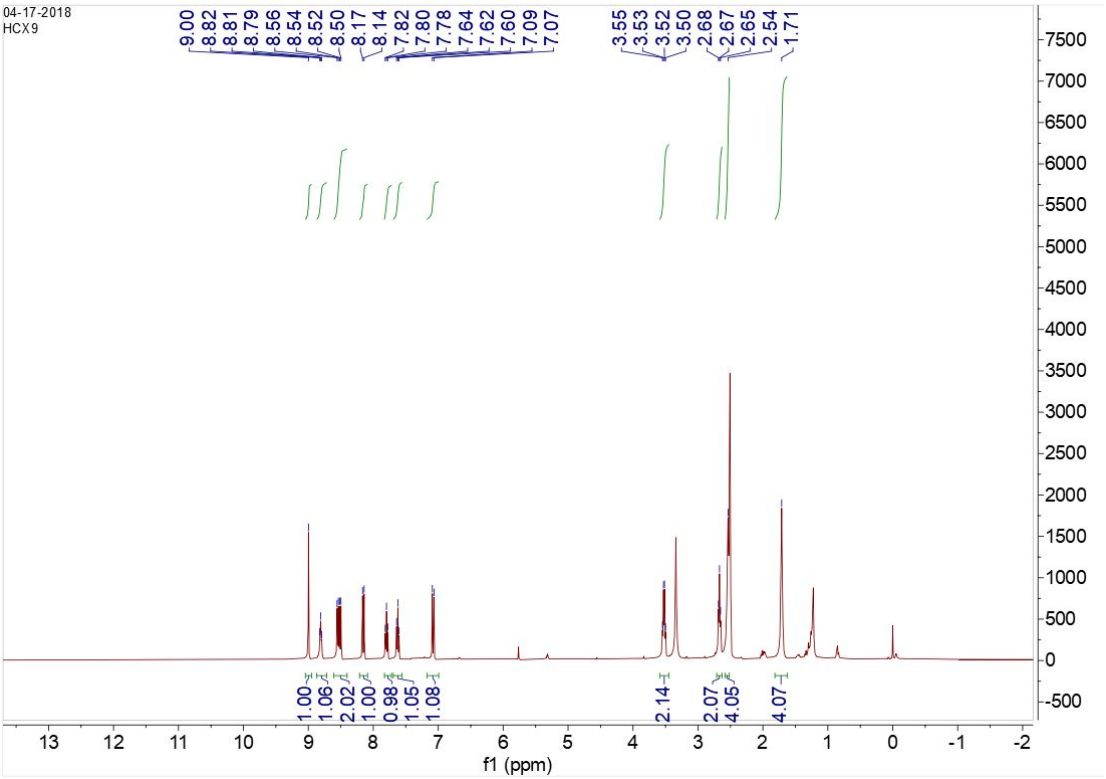

Figure S5. [1]H NMR spectrum (400 MHz, DMSO-d_6) of **8e**.

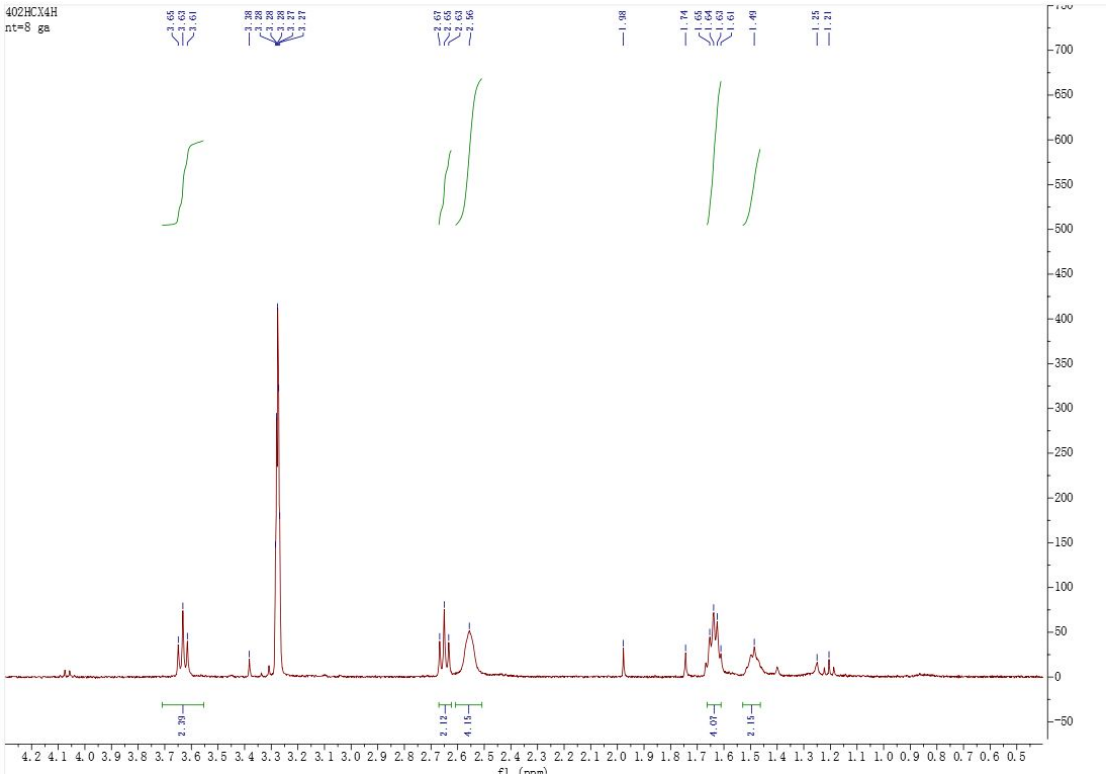

Figure S6. ^{1}H NMR spectrum (400 MHz, DMSO-d_6) of **8f**.

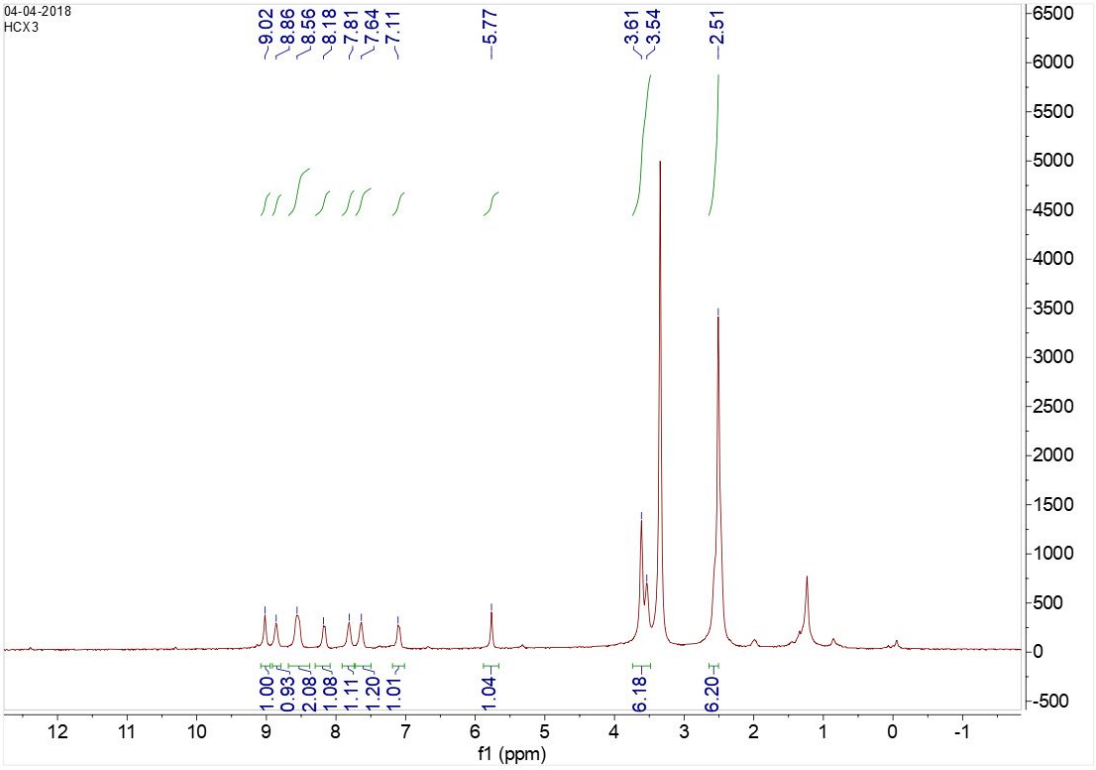

Figure S7. ^{1}H NMR spectrum (400 MHz, DMSO-d_6) of **8g**.

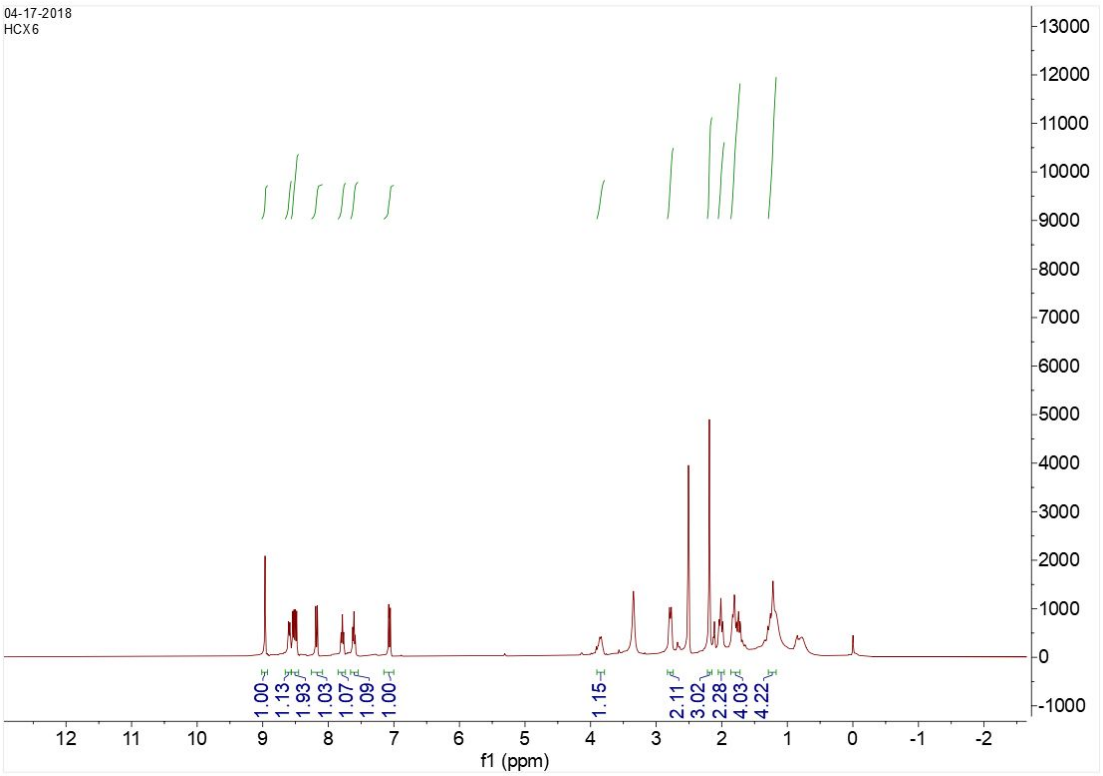

Figure S8. ^{1}H NMR spectrum (400 MHz, DMSO-d_6) of **8h**.

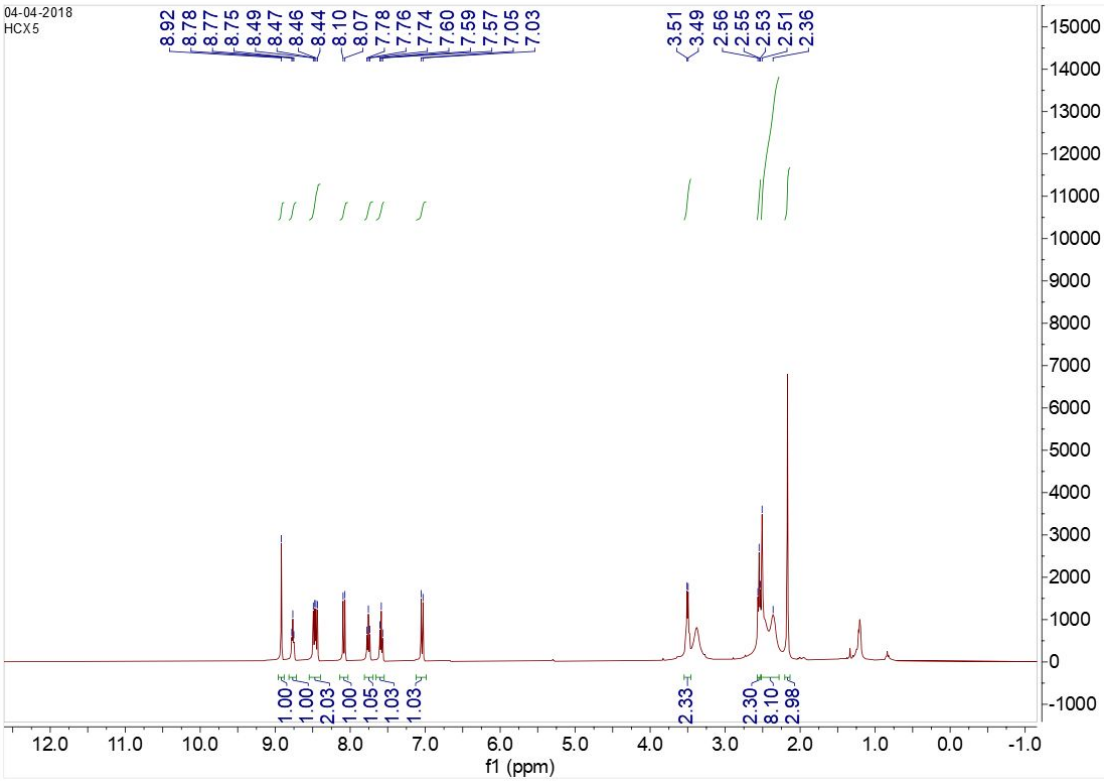

Figure S9. ^{1}H NMR spectrum (400 MHz, DMSO-d_6) of **8i**.

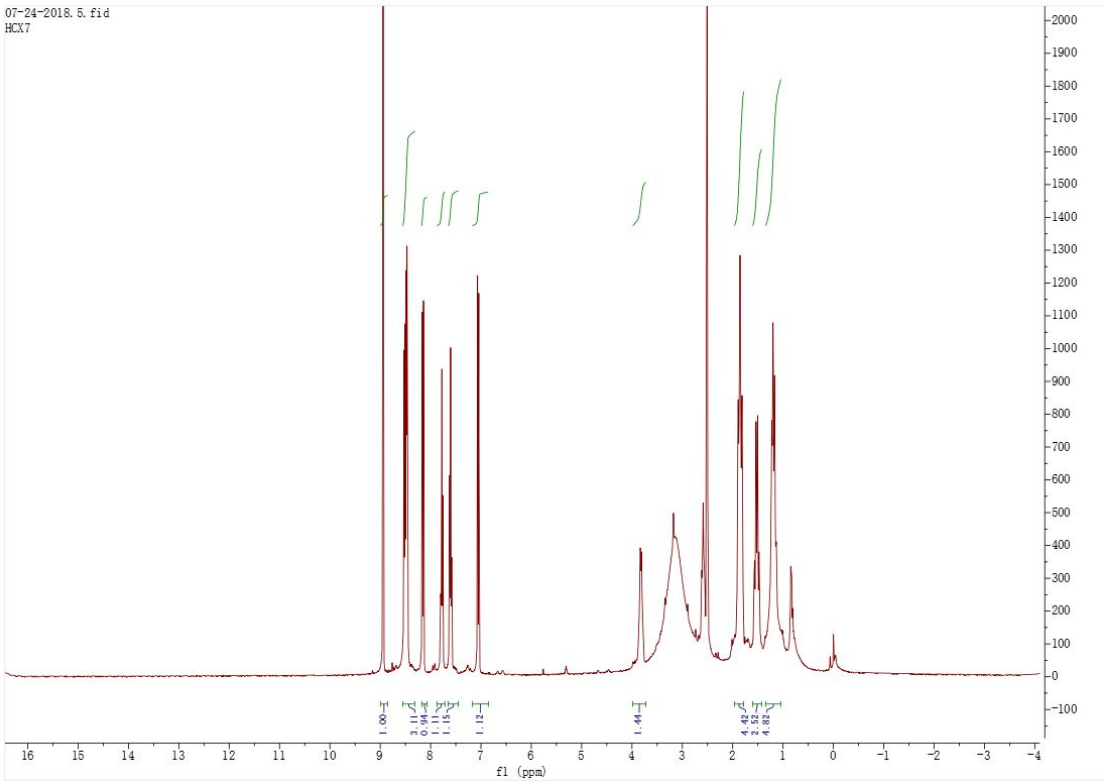

Figure S10. ^{1}H NMR spectrum (400 MHz, DMSO-d_6) of **8j**.

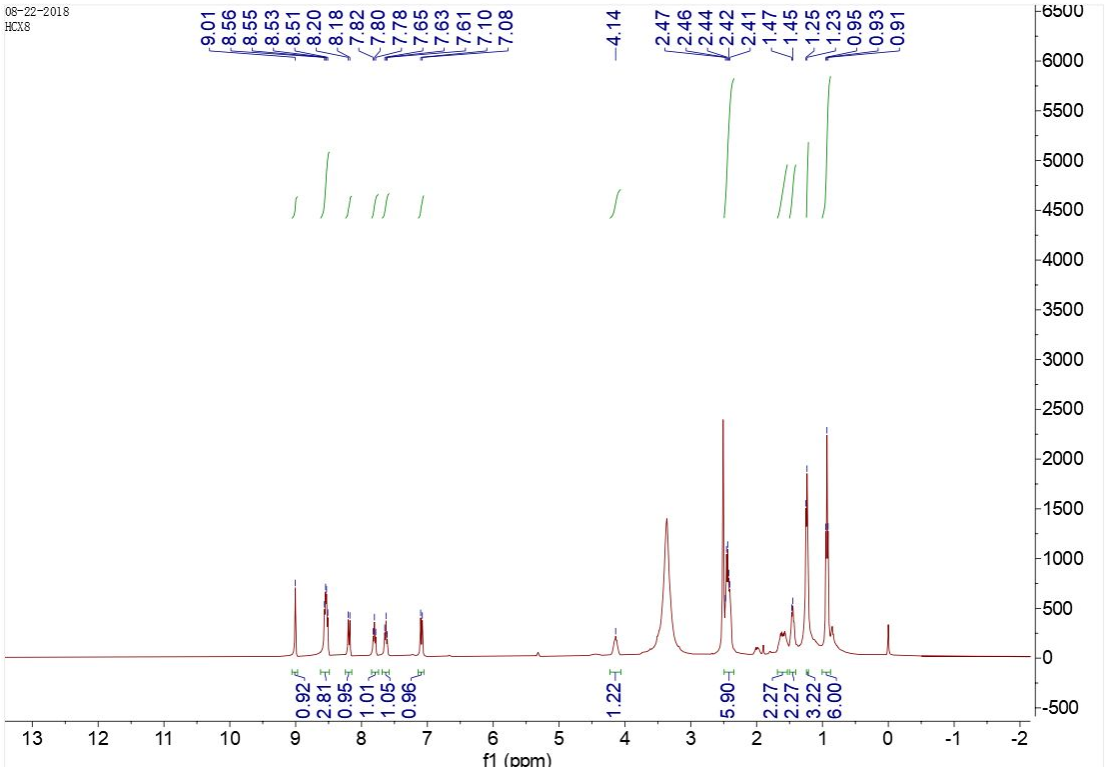

Figure S11. ^{1}H NMR spectrum (400 MHz, DMSO-d_6) of **8k**.

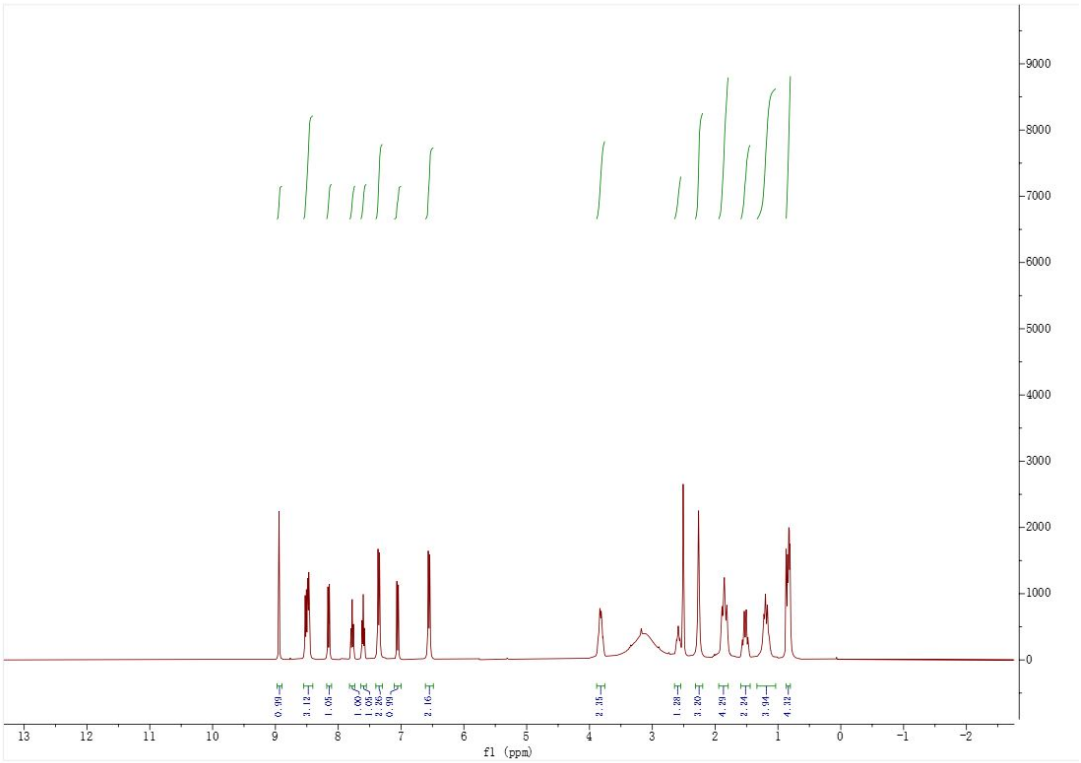

Figure S12. ^{1}H NMR spectrum (400 MHz, DMSO-d_6) of **8l**.

2. The ^{13}C NMR spectra for 8a-l

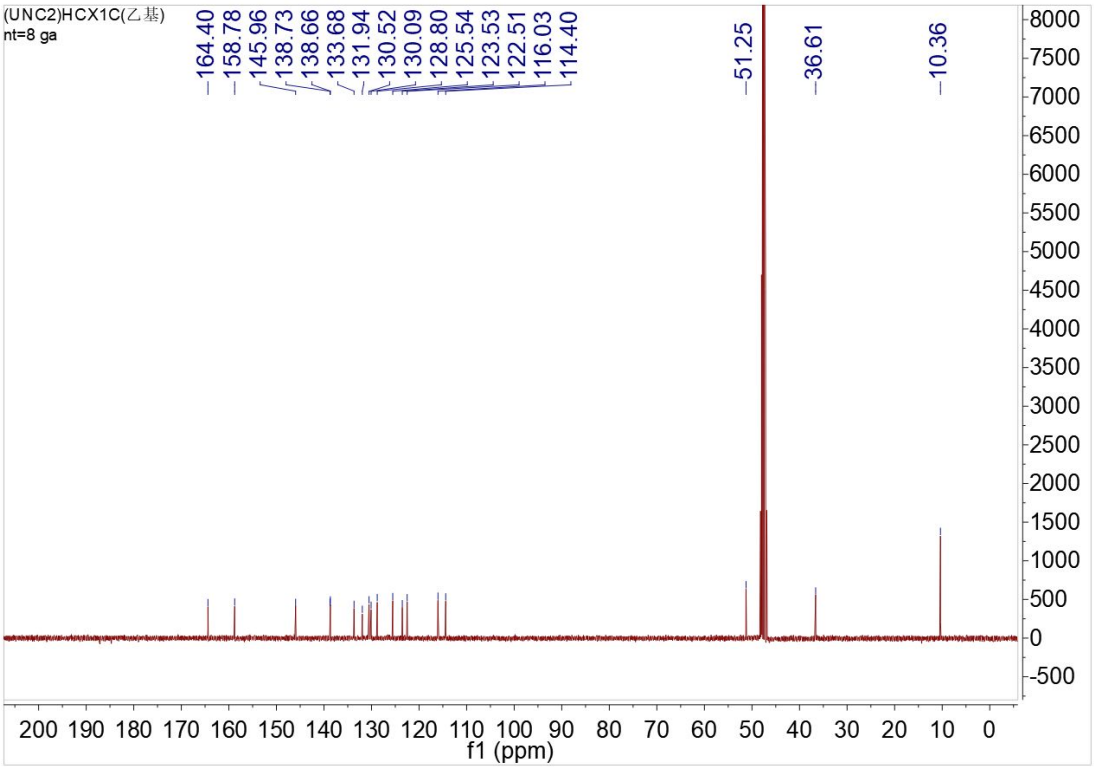

Figure S13. ^{13}C NMR spectrum (101 MHz, DMSO-d_6) of **8a**.

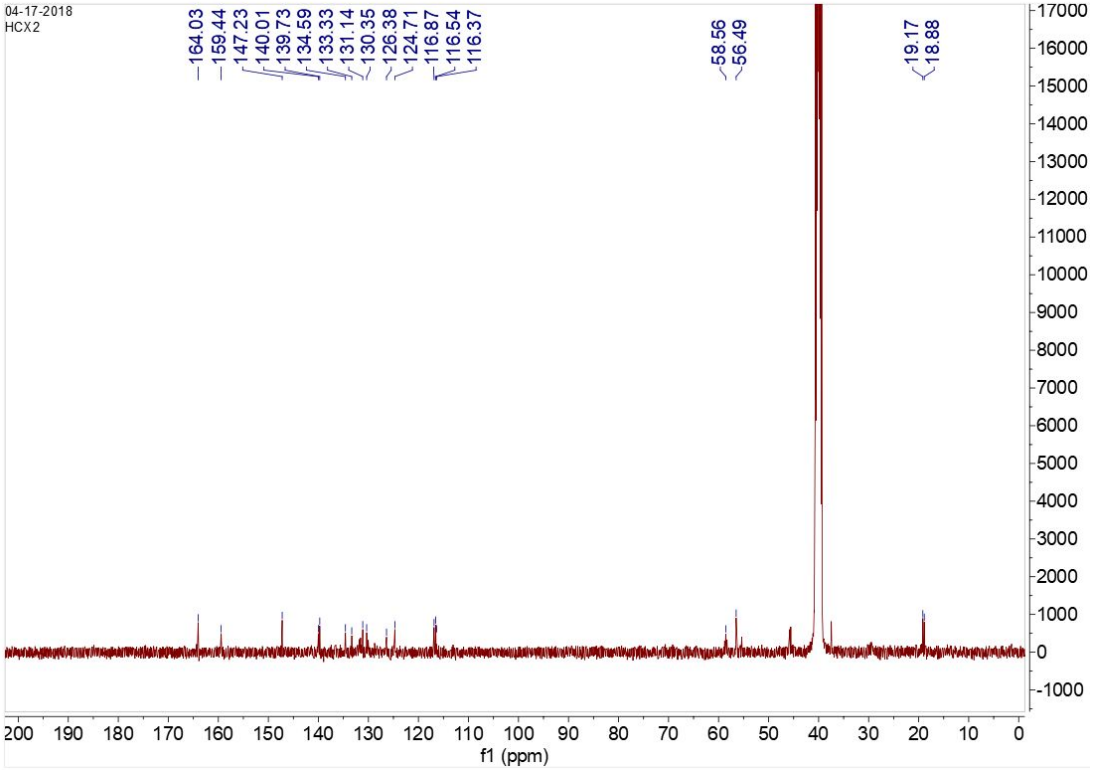

Figure S14. ^{13}C NMR spectrum (101 MHz, DMSO-d_6) of **8b**.

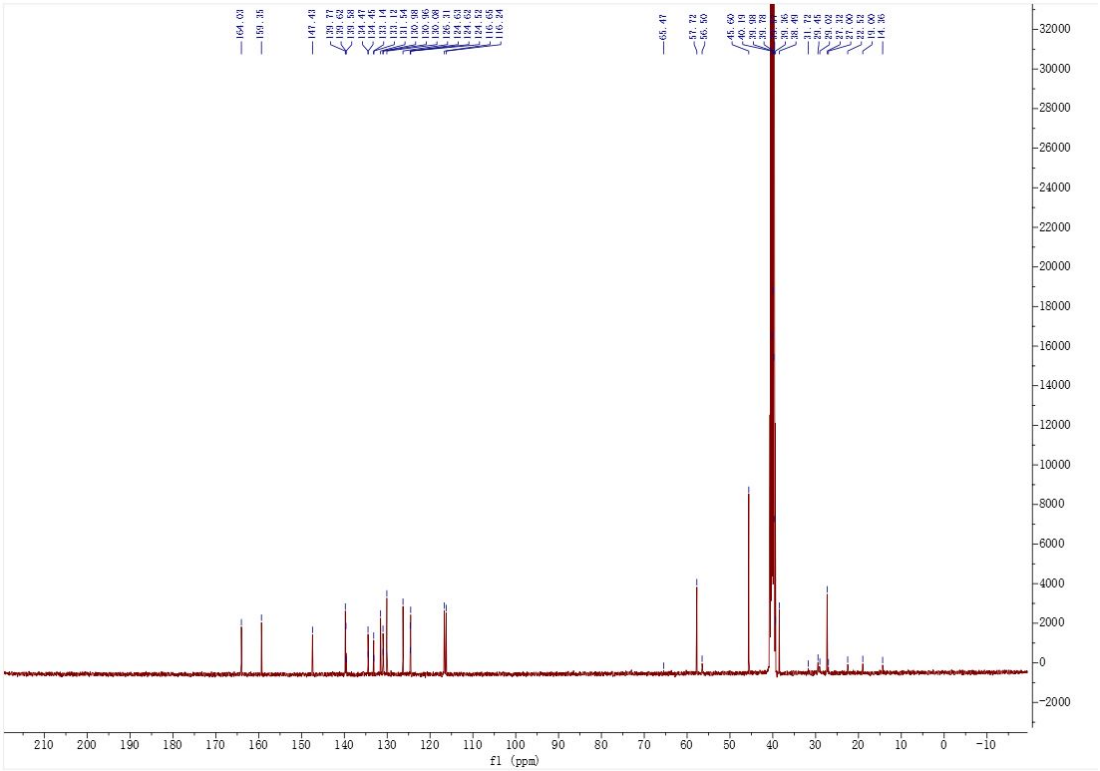

Figure S15. ^{13}C NMR spectrum (101 MHz, DMSO-d_6) of **8c**.

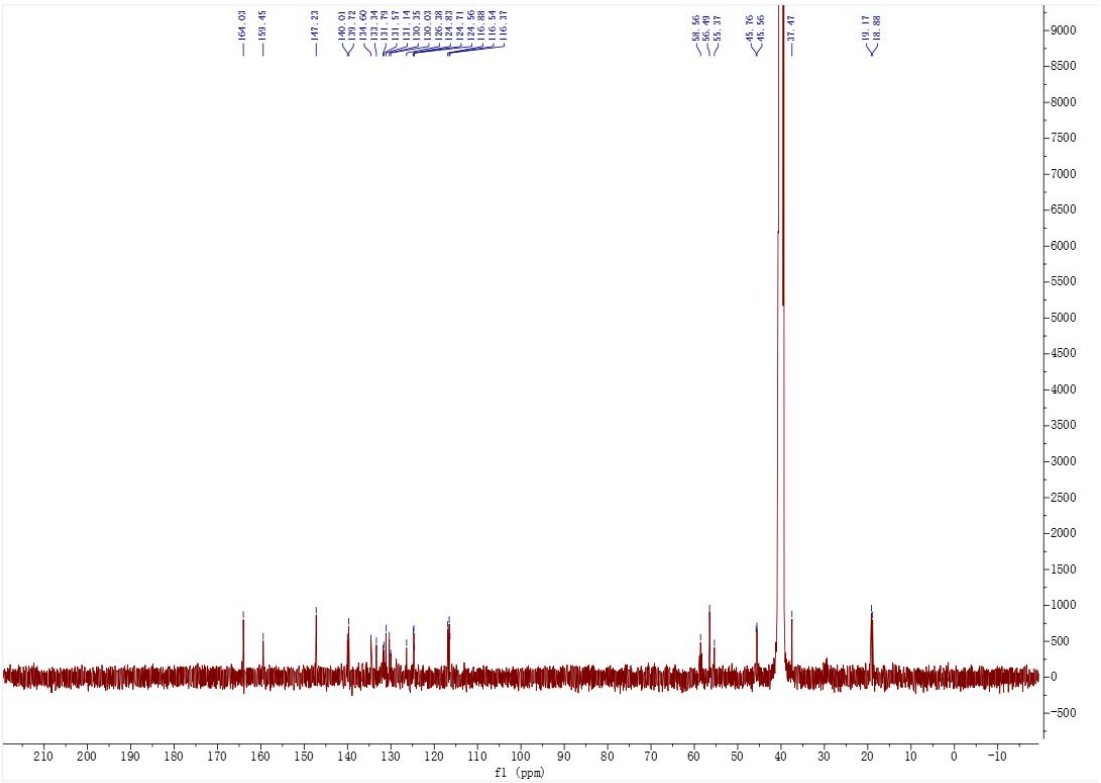

Figure S16. ^{13}C NMR spectrum (101 MHz, DMSO-d_6) of **8d**.

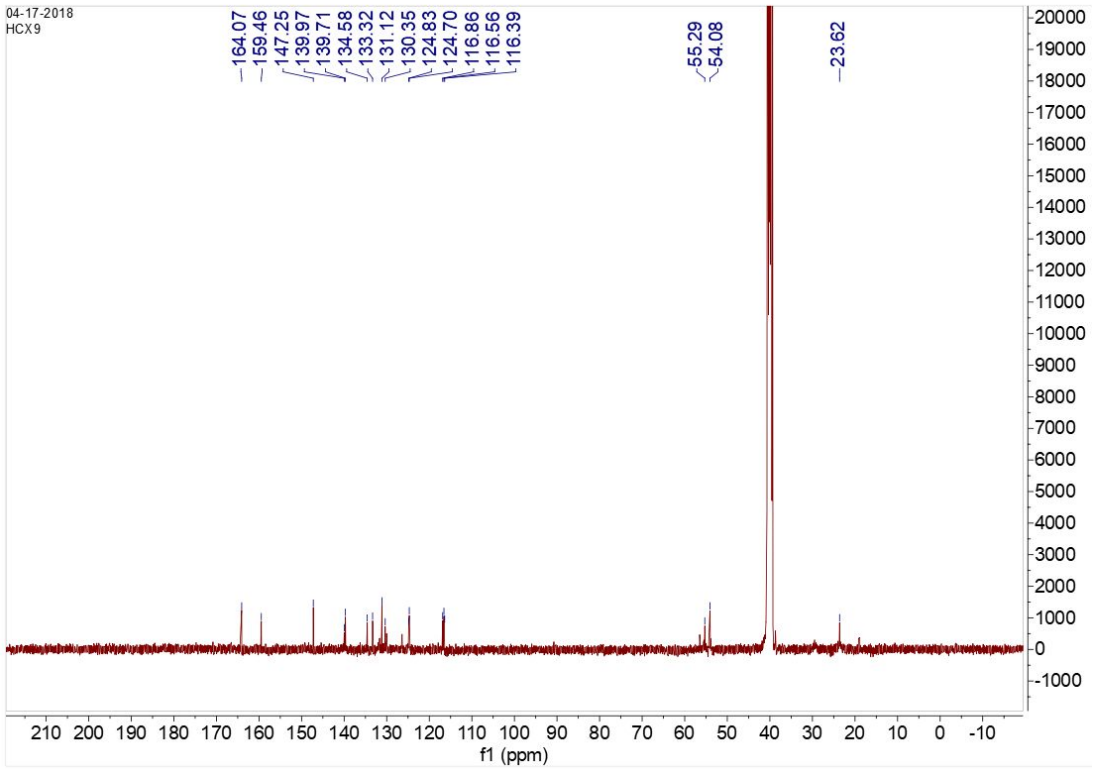

Figure S17. ^{13}C NMR spectrum (101 MHz, DMSO-d_6) of **8e**.

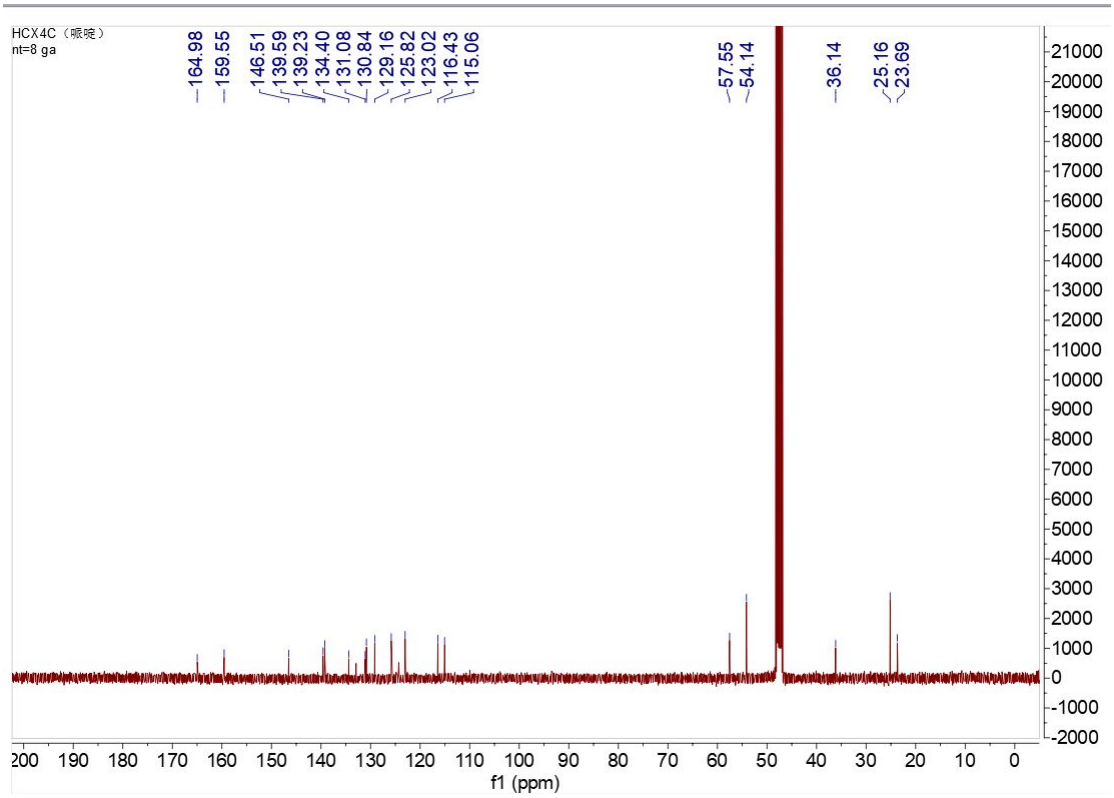

Figure S18. ^{13}C NMR spectrum (101 MHz, DMSO-d_6) of **8f**.

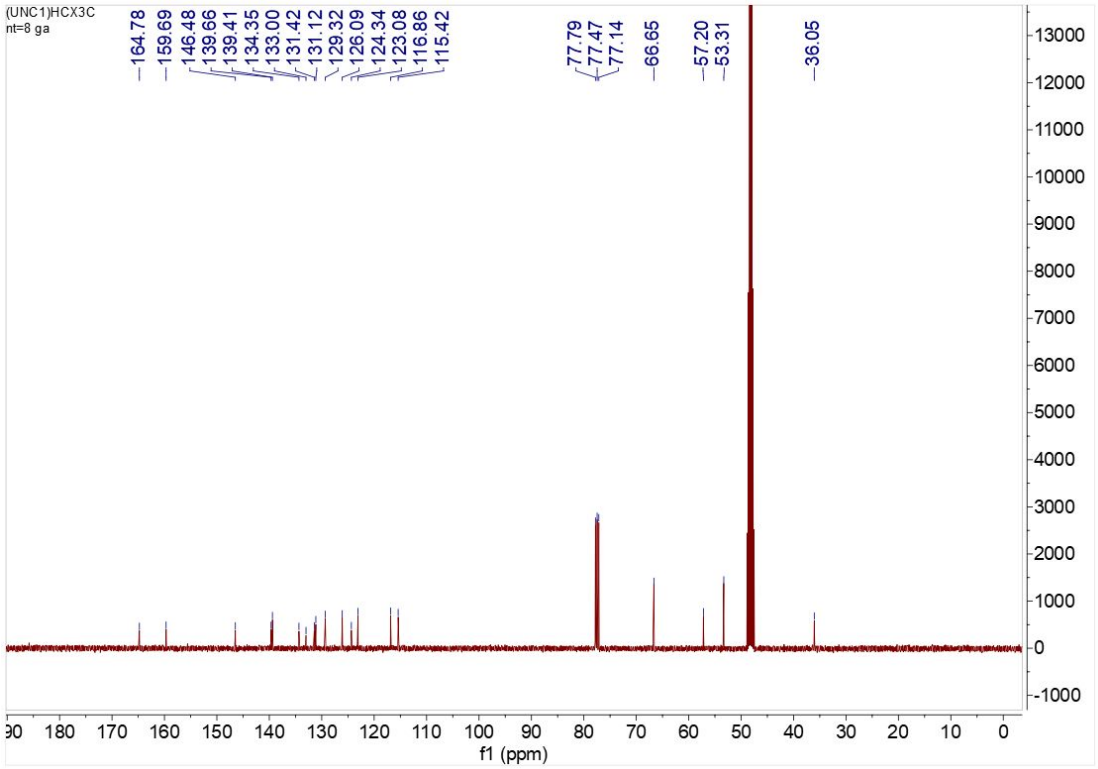

Figure S19. ^{13}C NMR spectrum (101 MHz, DMSO-d_6) of **8g**.

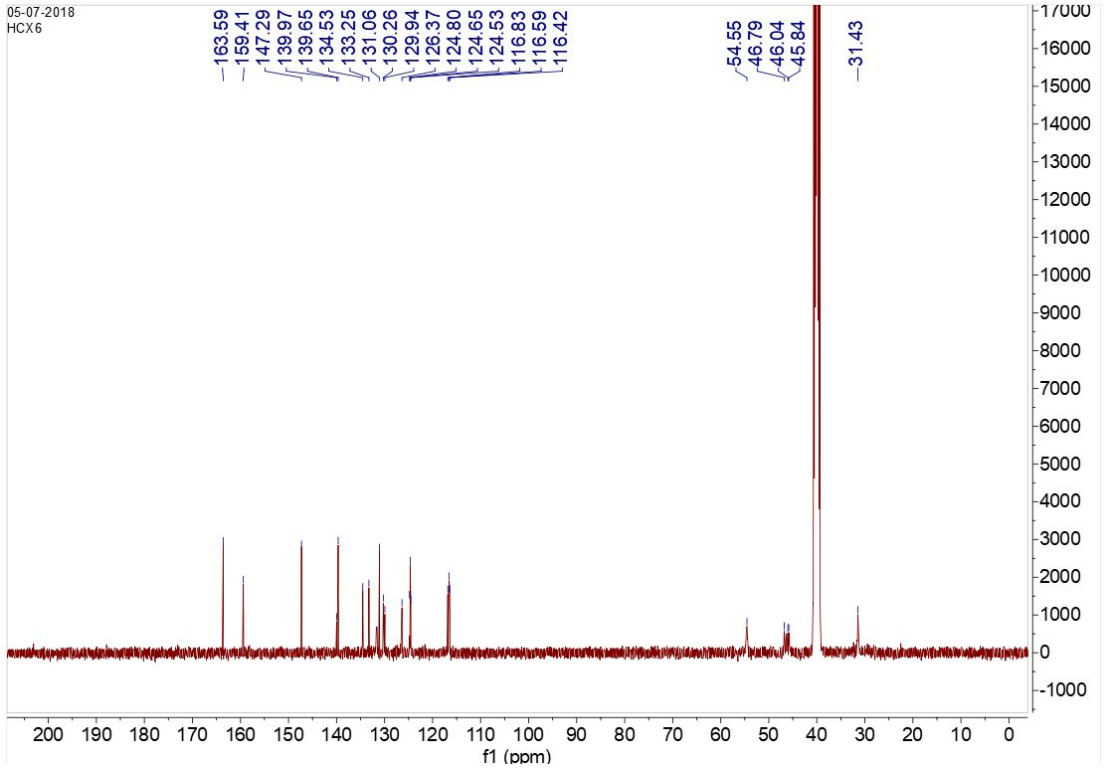

Figure S20. ^{13}C NMR spectrum (101 MHz, DMSO-d_6) of **8h**.

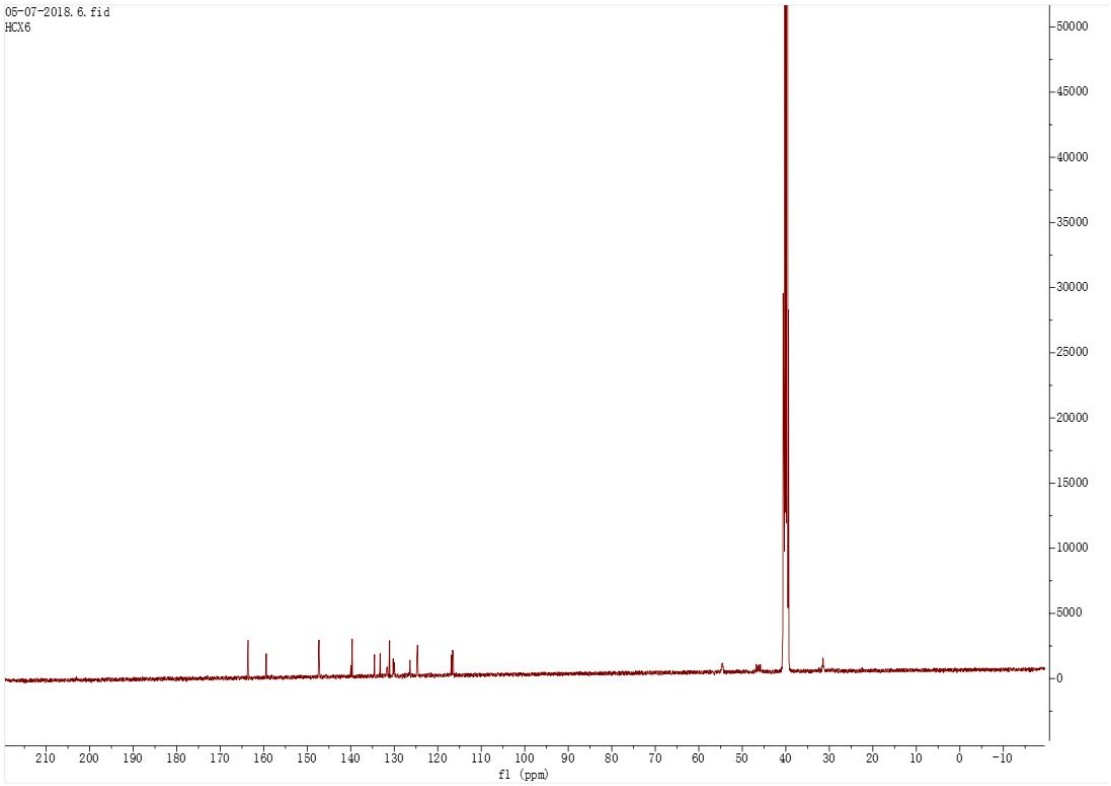

Figure S21. ^{13}C NMR spectrum (101 MHz, DMSO-d_6) of **8i**.

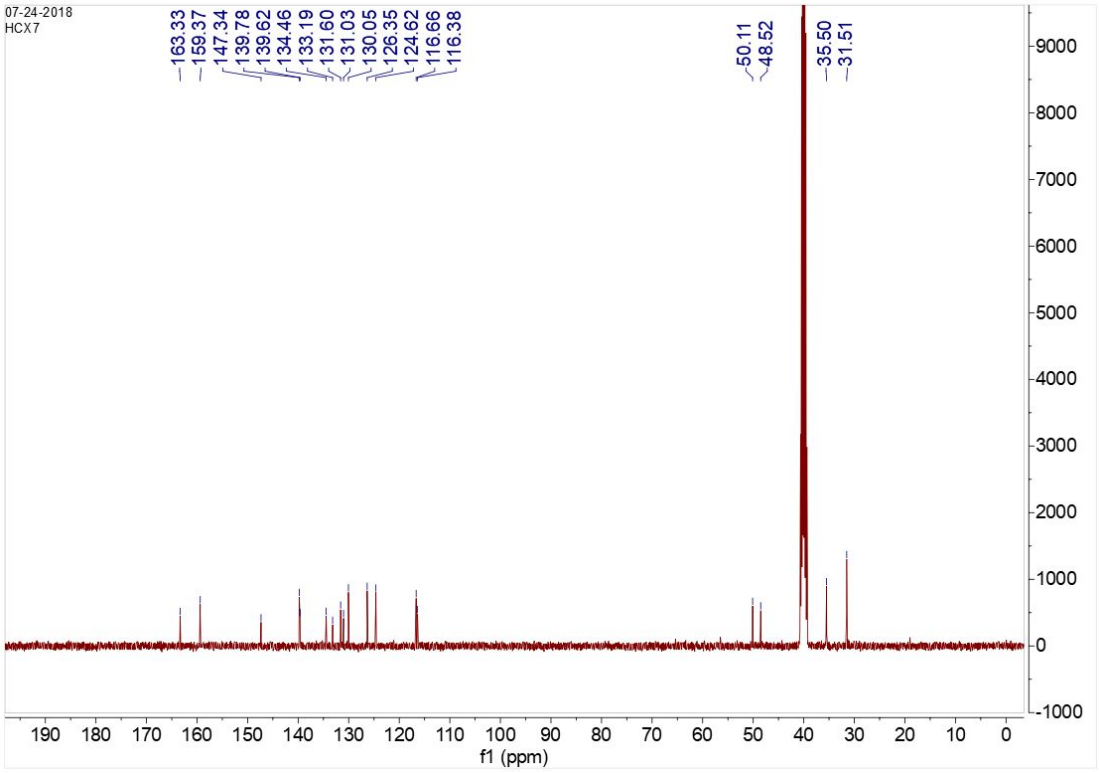

Figure S22. ^{13}C NMR spectrum (101 MHz, DMSO-d_6) of **8j**.

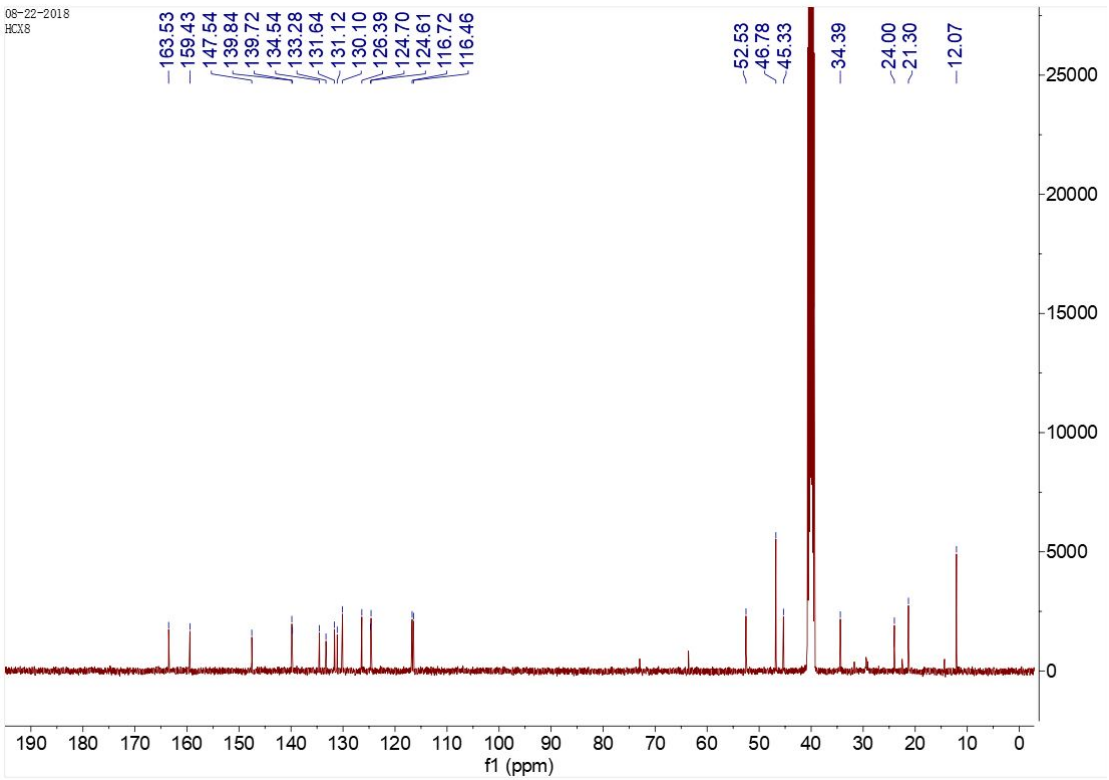

Figure S23. ^{13}C NMR spectrum (101 MHz, DMSO-d_6) of **8k**.

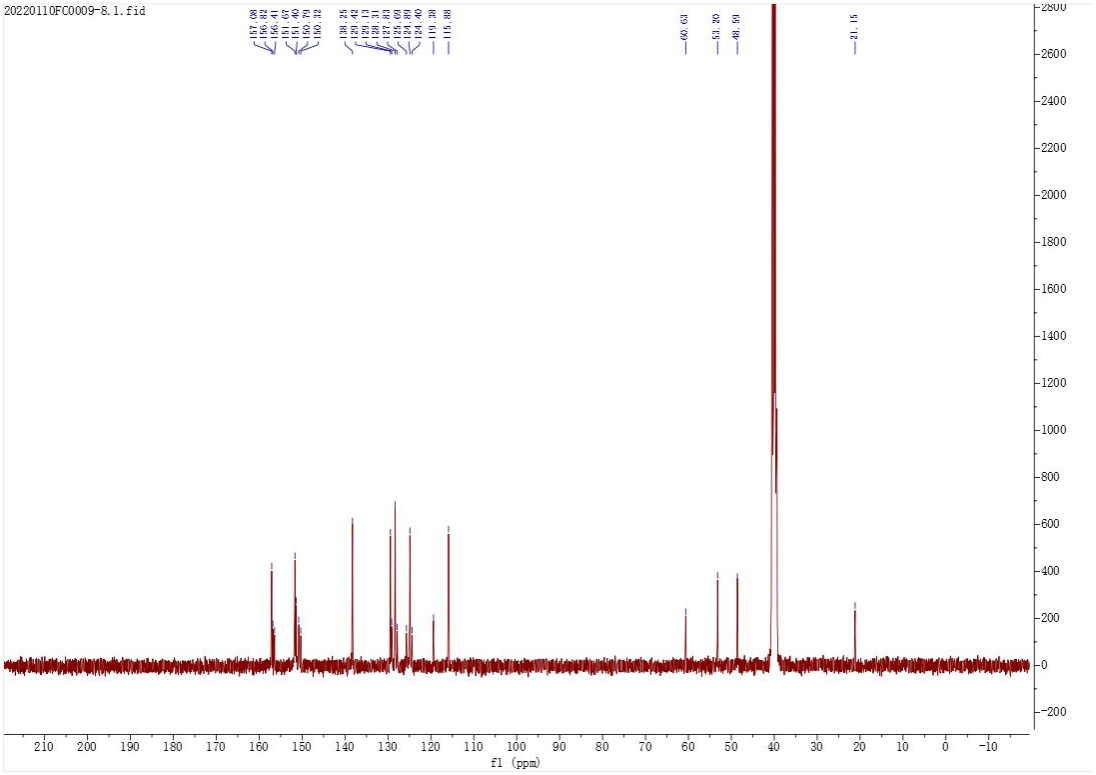

Figure S24. ^{13}C NMR spectrum (101 MHz, DMSO-d_6) of **8l**.

3. The HRMS spectra for 8a-l

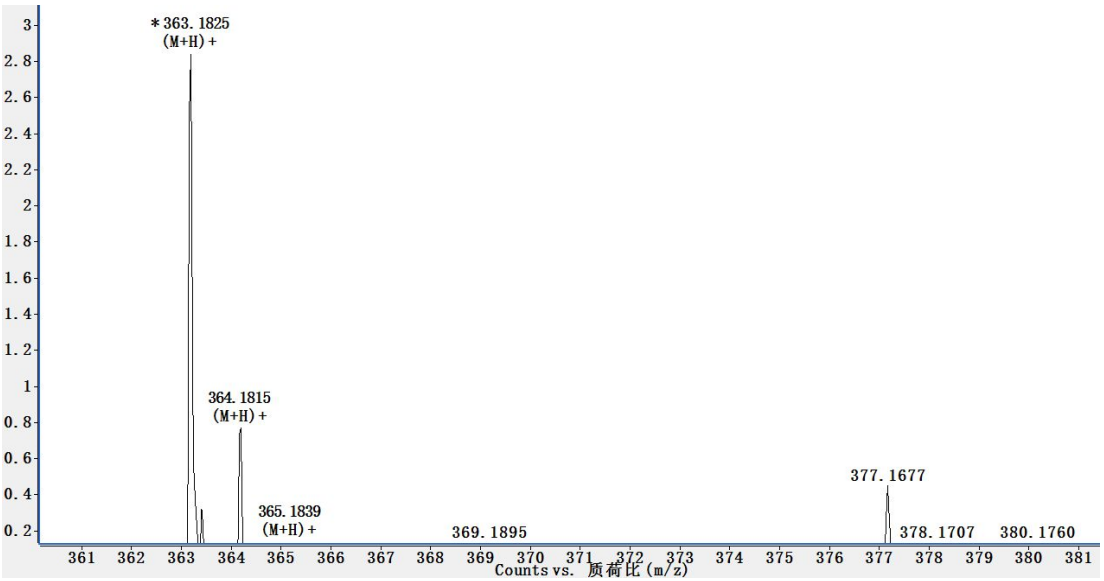

Figure S25. HRMS of **8a.**

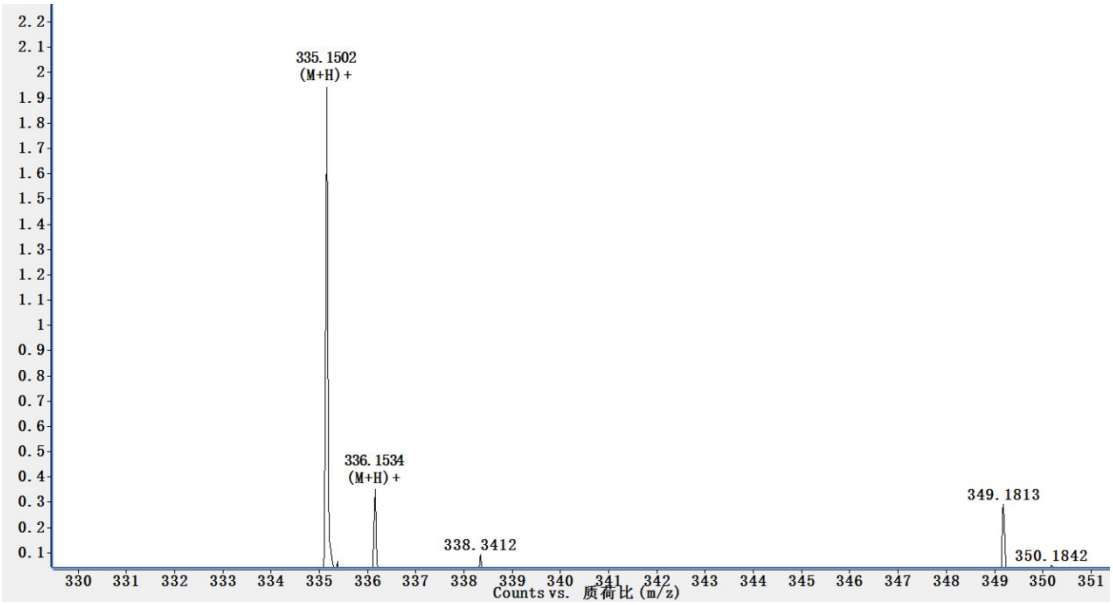

Figure S26. HRMS of **8b**.

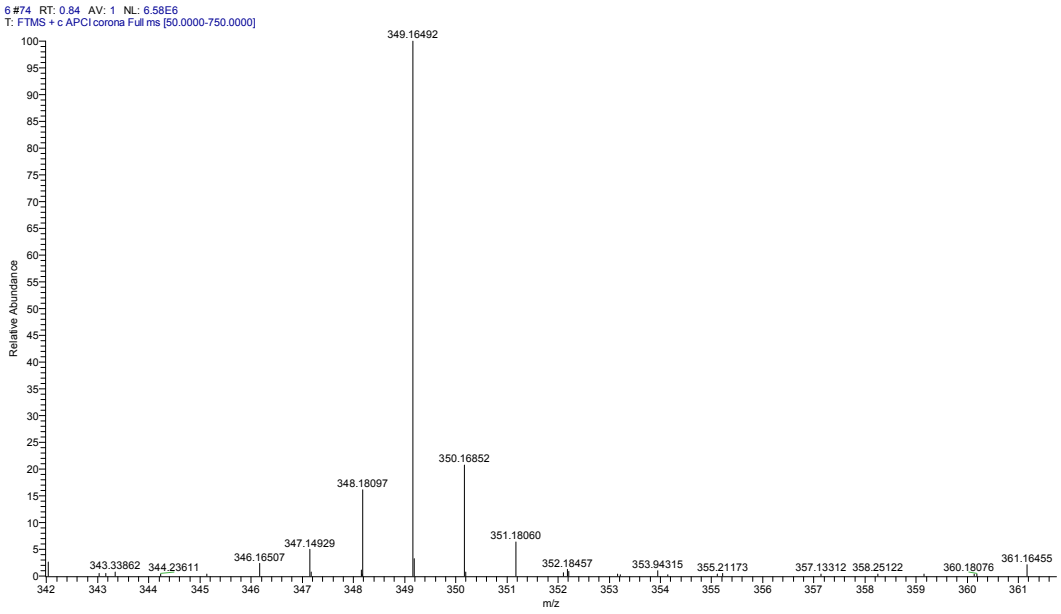

Figure S27. HRMS of **8c**.

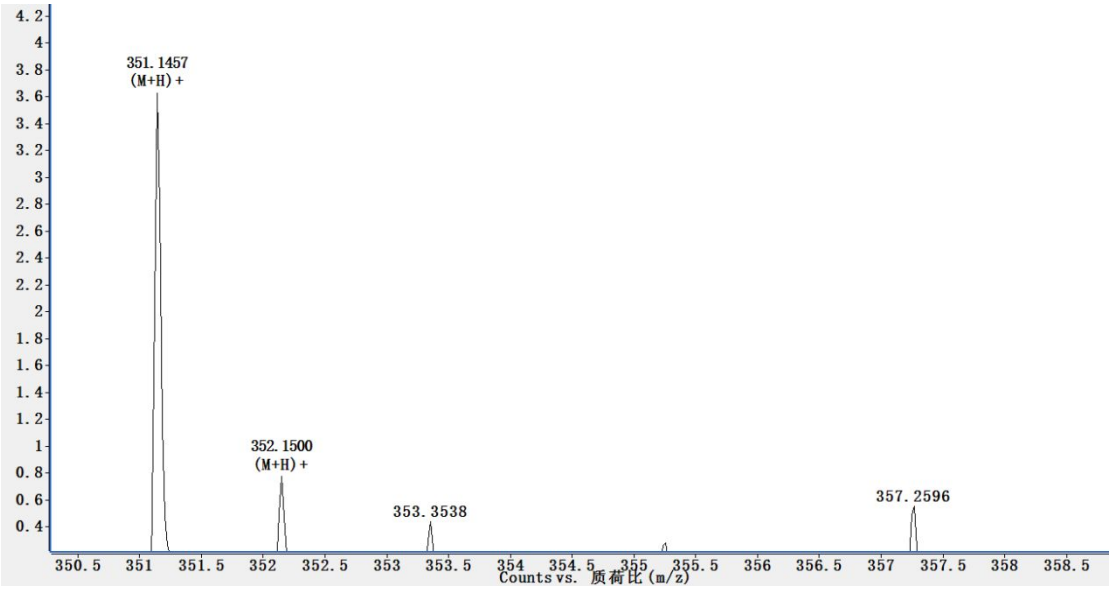

Figure S28. HRMS of **8d**.

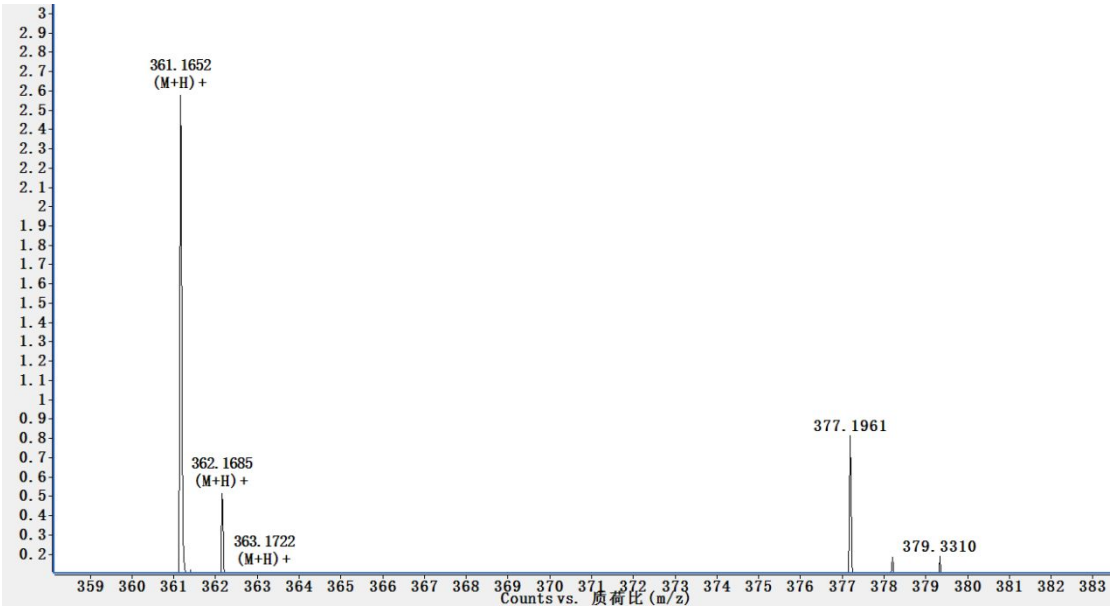

Figure S29. HRMS of **8e**.

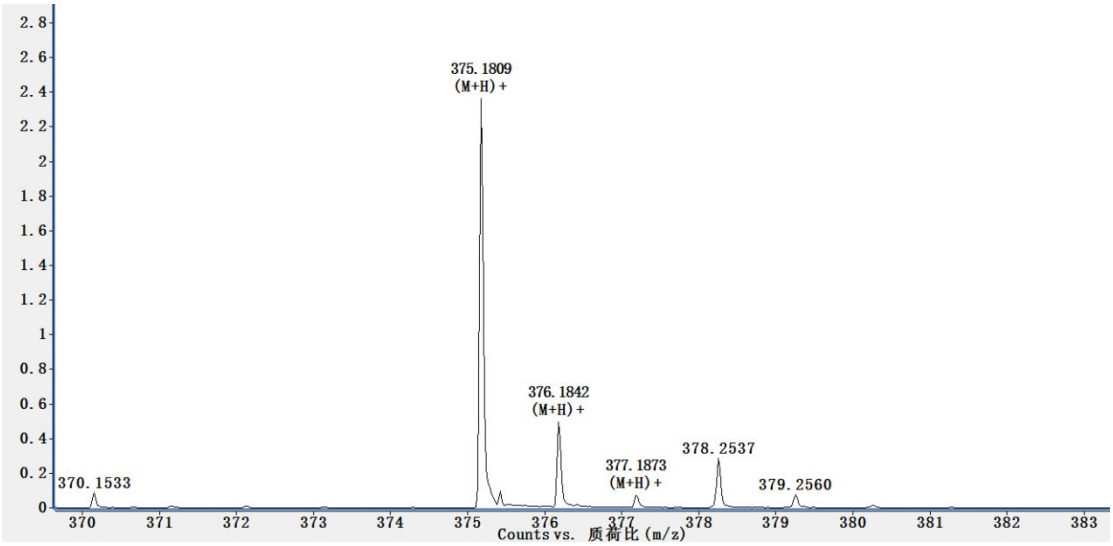

Figure S30. HRMS of **8f**.

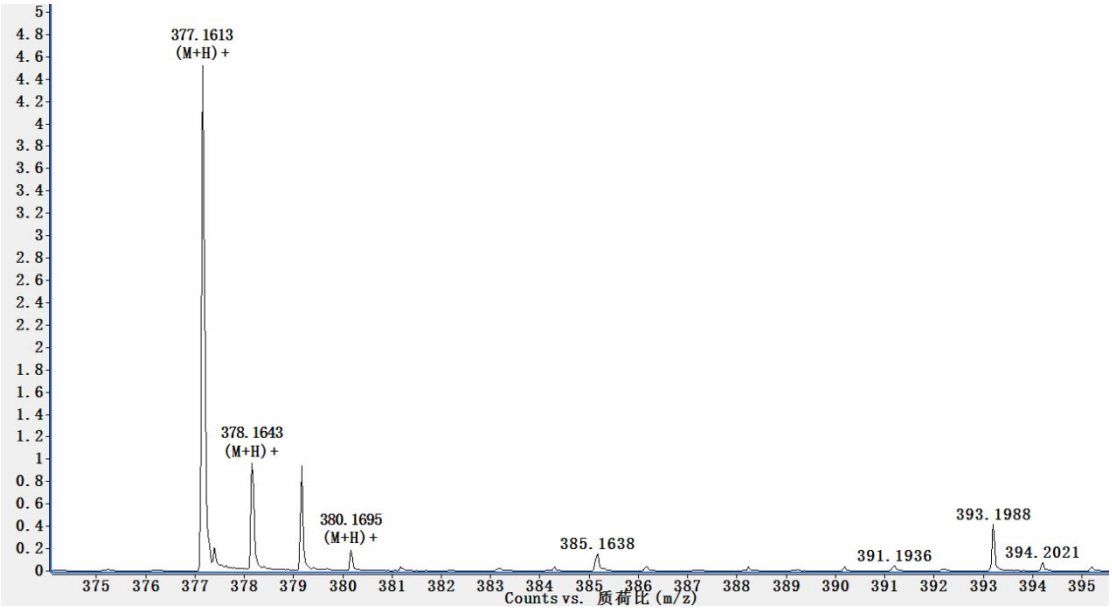

Figure S31. HRMS of **8g**.

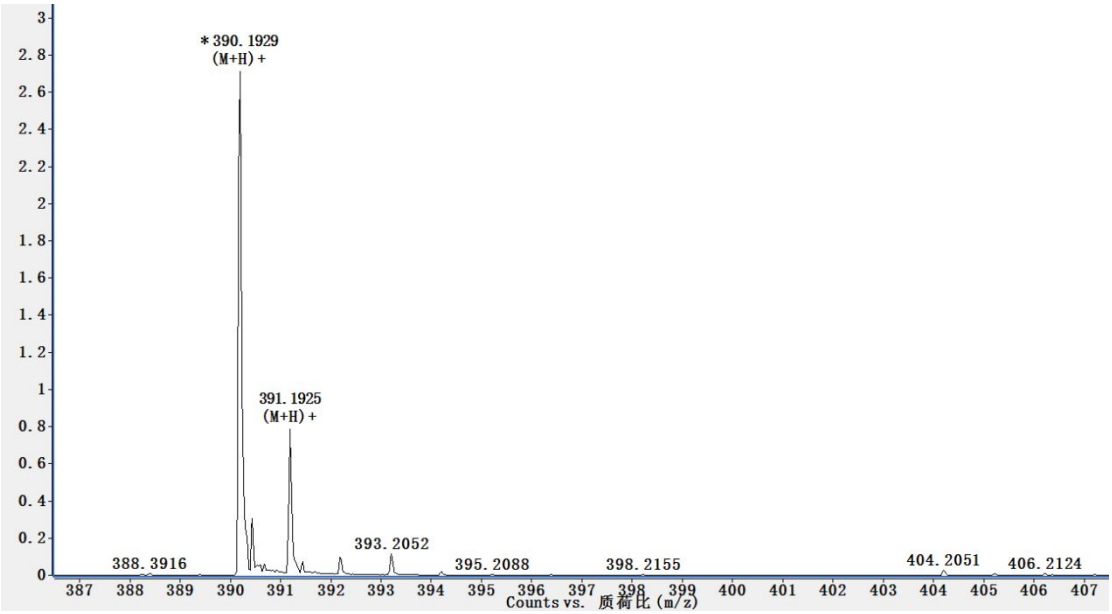

Figure S32. HRMS of **8h**.

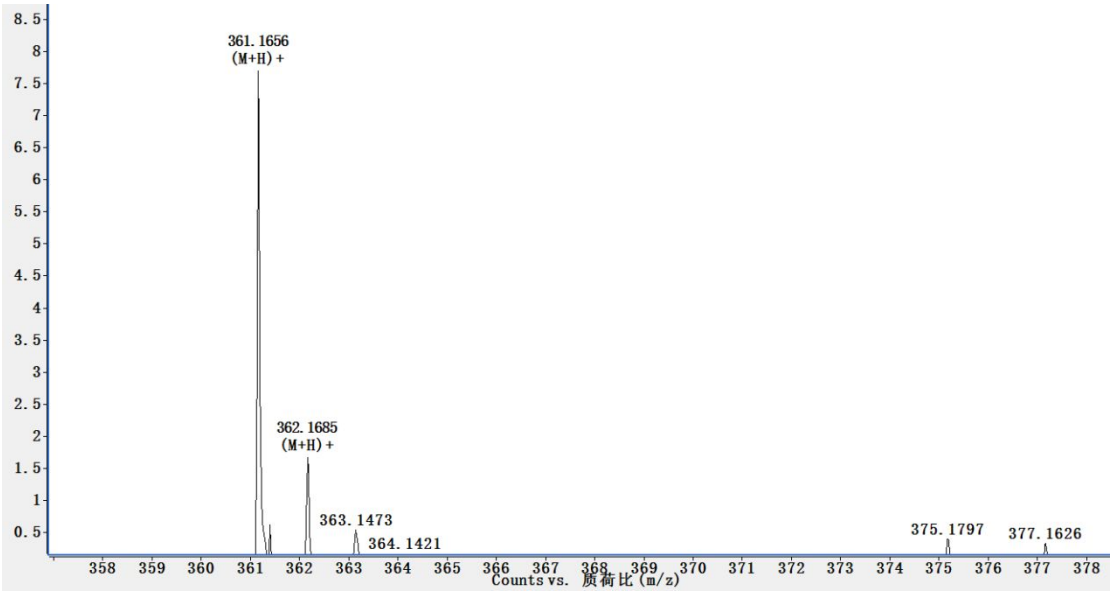

Figure S33. HRMS of **8i**.

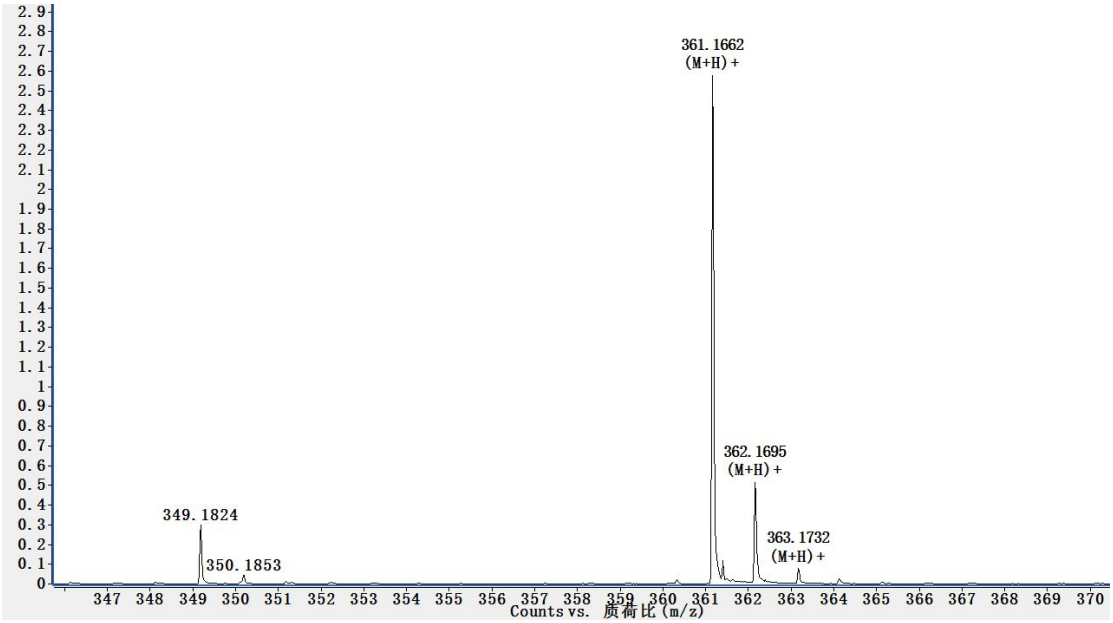

Figure S34. HRMS of **8j**.

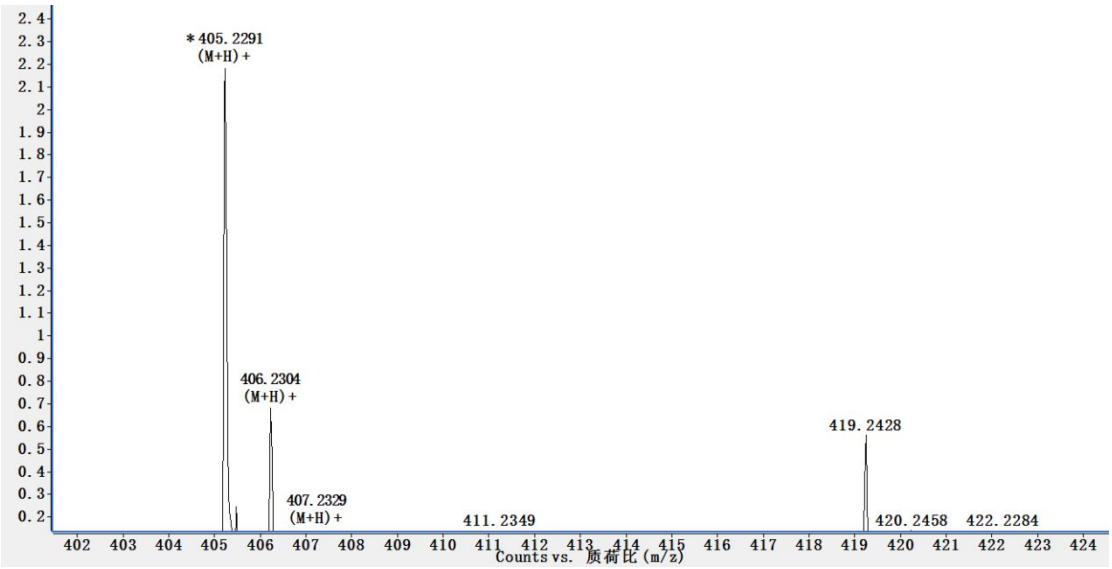

Figure S35. HRMS of **8k**.

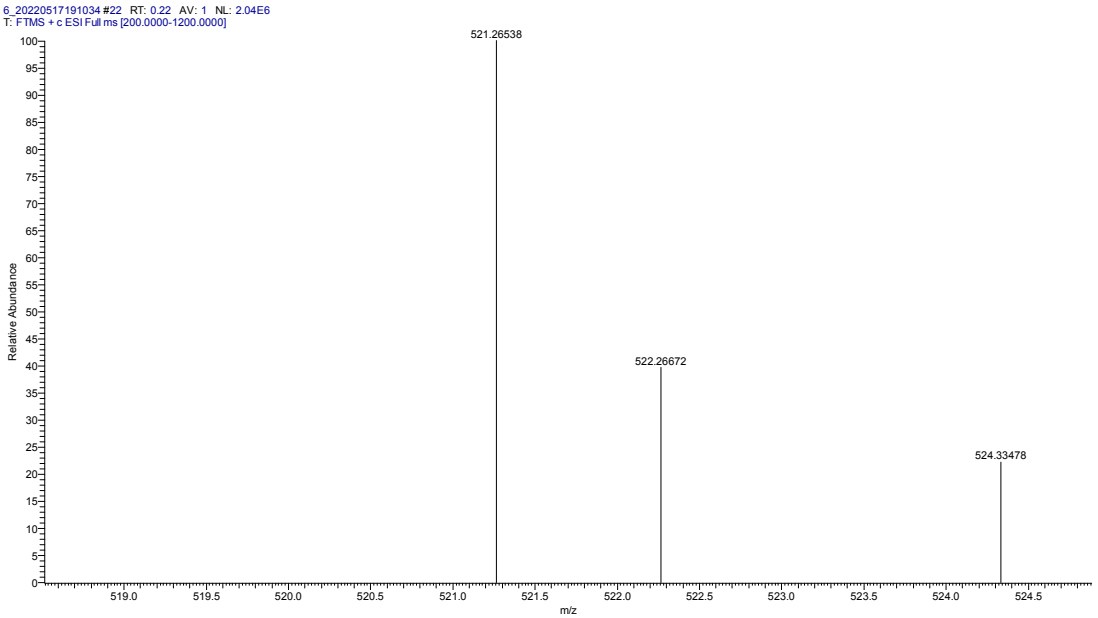

Figure S36. HRMS of **8l**.

5. The HPLC spectra for 8h

High-performance liquid chromatography (HPLC) analysis methods: column: Agilent C18 (150 mm×4.6 mm×5 μm); mobile phase: methanol (0.1% triethylamine): water = 85:15; wavelength: 254 nm; flow rate: 1 mL/min.

Purity: 98.2%

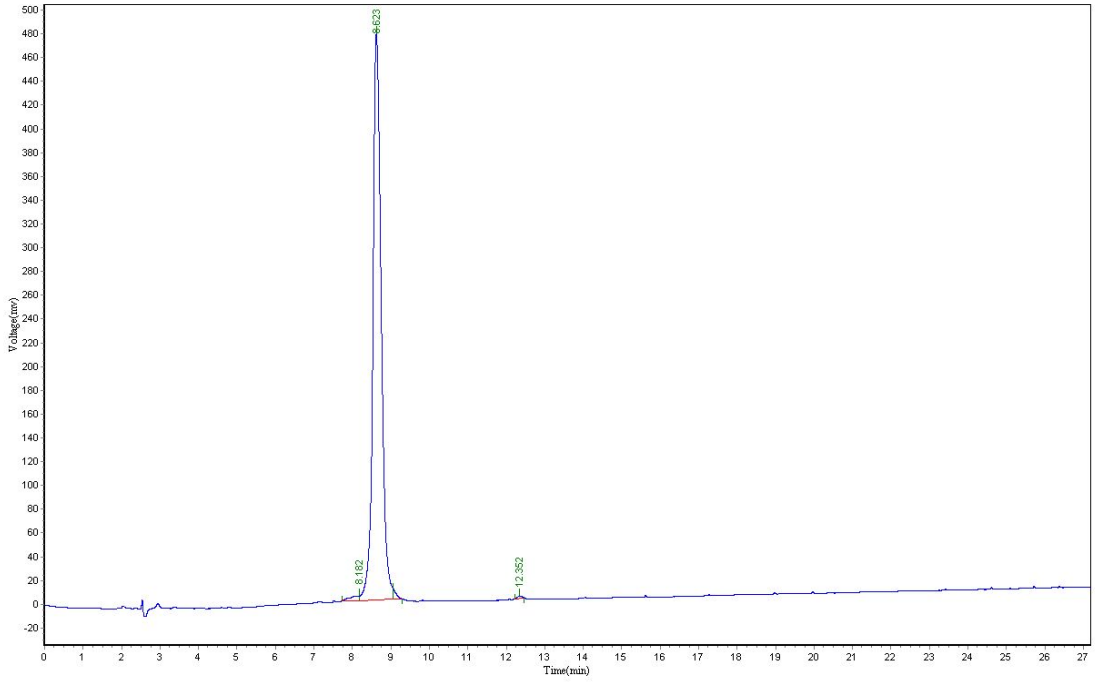

Figure S37. HPLC of **8h**.