

Nine New Compounds from the Root Bark of

Lycium chinense and the α -glucosidase

Inhibitory Activity

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Supporting information

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1. Oral sucrose tolerance test (OSTT)

Blood samples of the ICR mice were collected from the tail vein after a fast of 12 h. Blood glucose levels were measured and defined as zero time. Then, the ICR mice were divided into five experimental groups: Control: normal rats administrated with purified water and sucrose (4 g/kg); acar1: normal rats administrated with sucrose (4 g/kg) and acarbose (10 mg/kg); C.L.: normal rats administrated with sucrose (4 g/kg) and *Lycium chinense* extract (1 g/kg); Fr. 1: normal rats administrated with sucrose (4 g/kg) and Fr. 1 (1 g/kg); Fr. 2: normal rats administrated with sucrose (4 g/kg) and Fr. 2 (1 g/kg). Blood glucose levels were measured at 30, 60, 120 min later. The areas under the curve (AUC) values were determined (Figure S1).

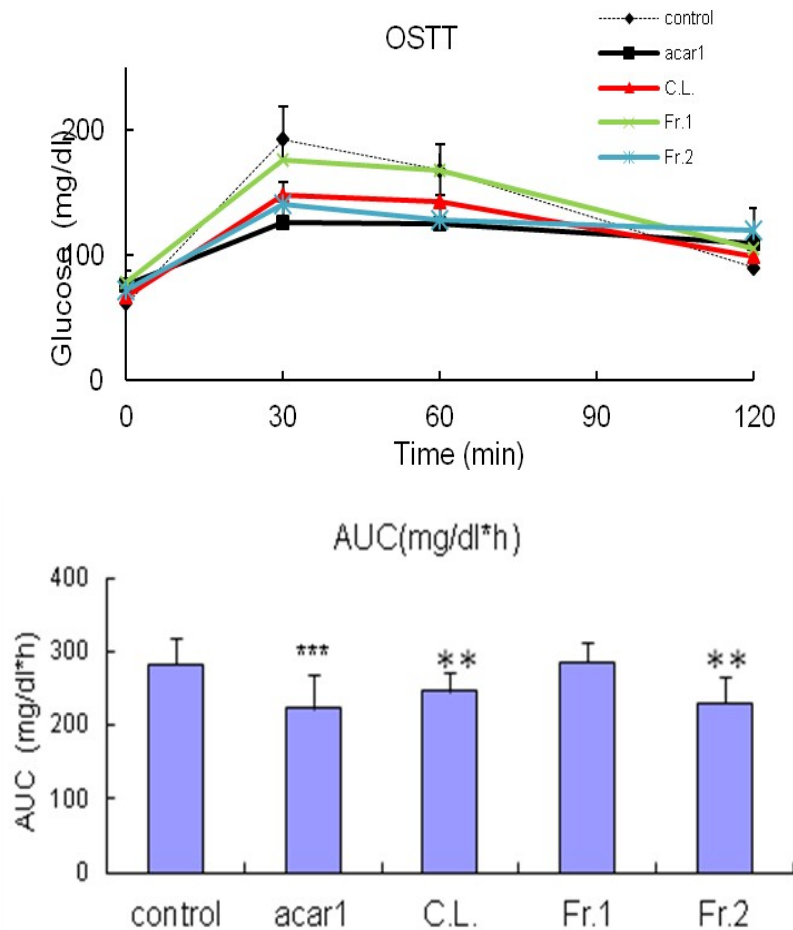


Figure S1. Effect of the extract of *Lycium chinense* on oral sucrose tolerance ($n = 6$).

* $P < 0.05$ compared with sucrose control group, ** $P < 0.01$ compared with sucrose control group.

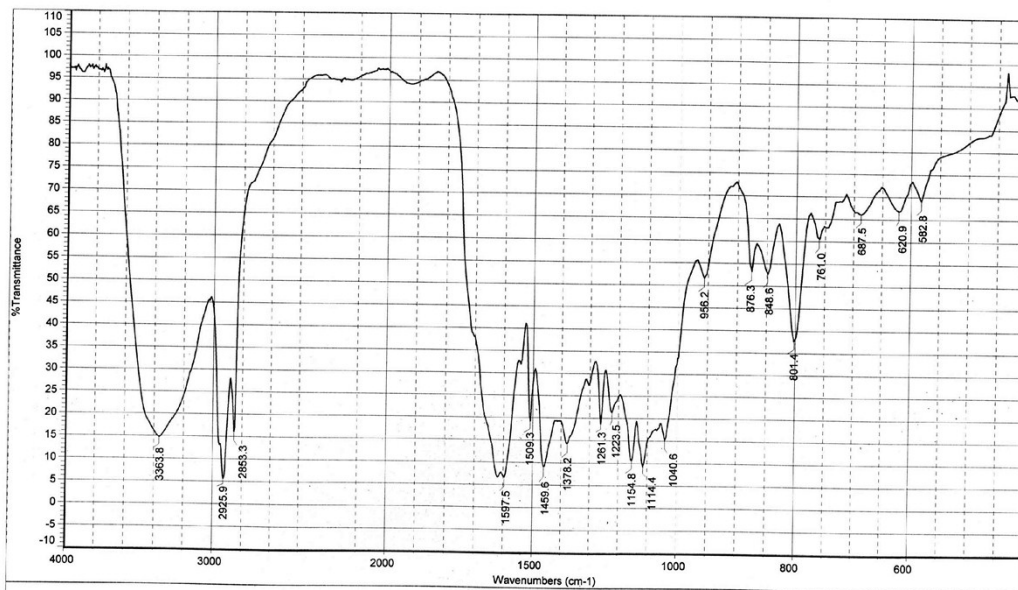


Figure S2. The IR spectrum of compound **1***

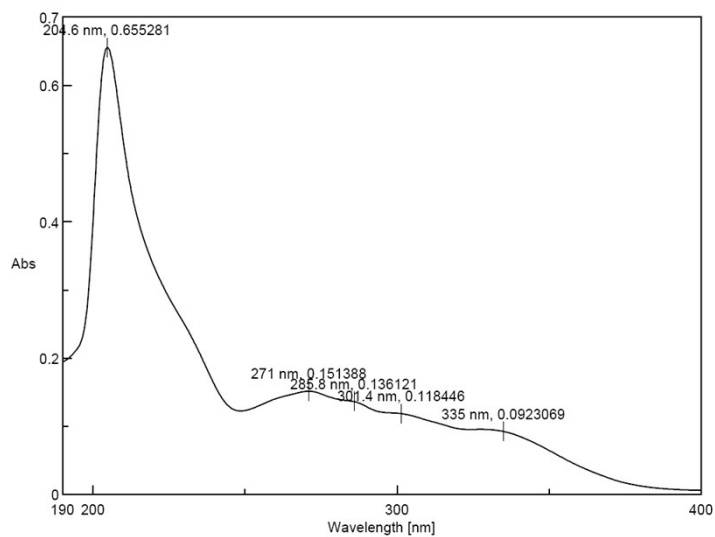


Figure S3. The UV spectrum of compound **1***

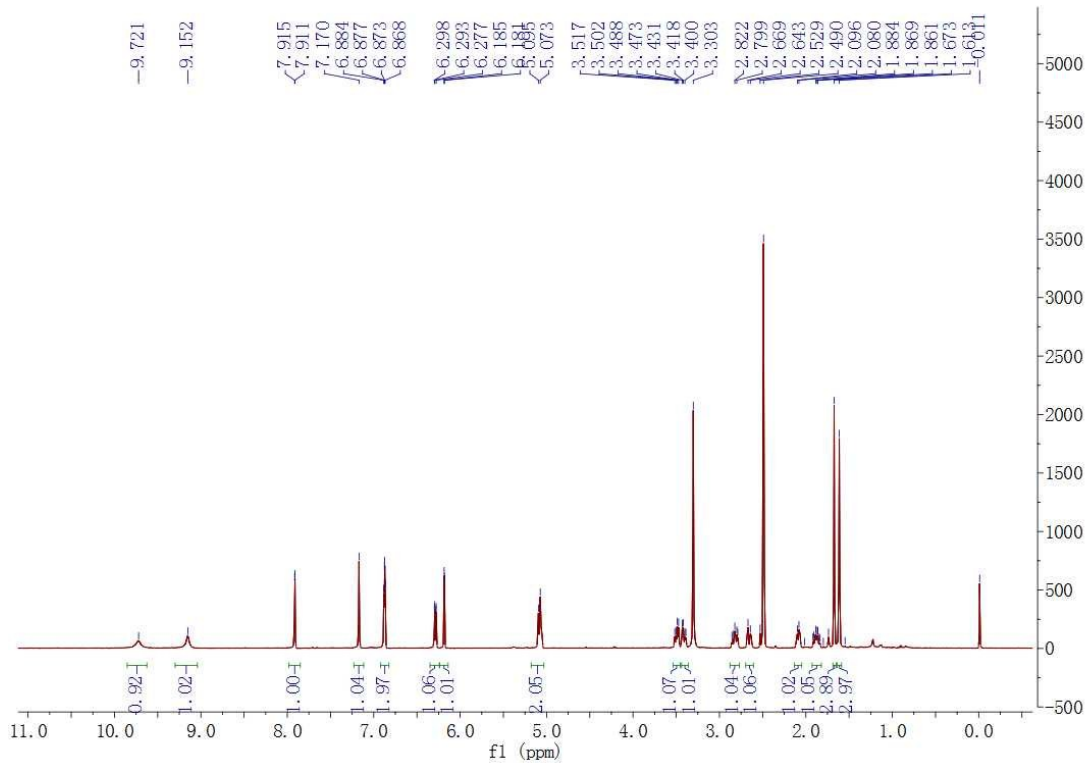


Figure S4. The ^1H NMR spectrum of compound **1*** in $\text{DMSO-}d_6$

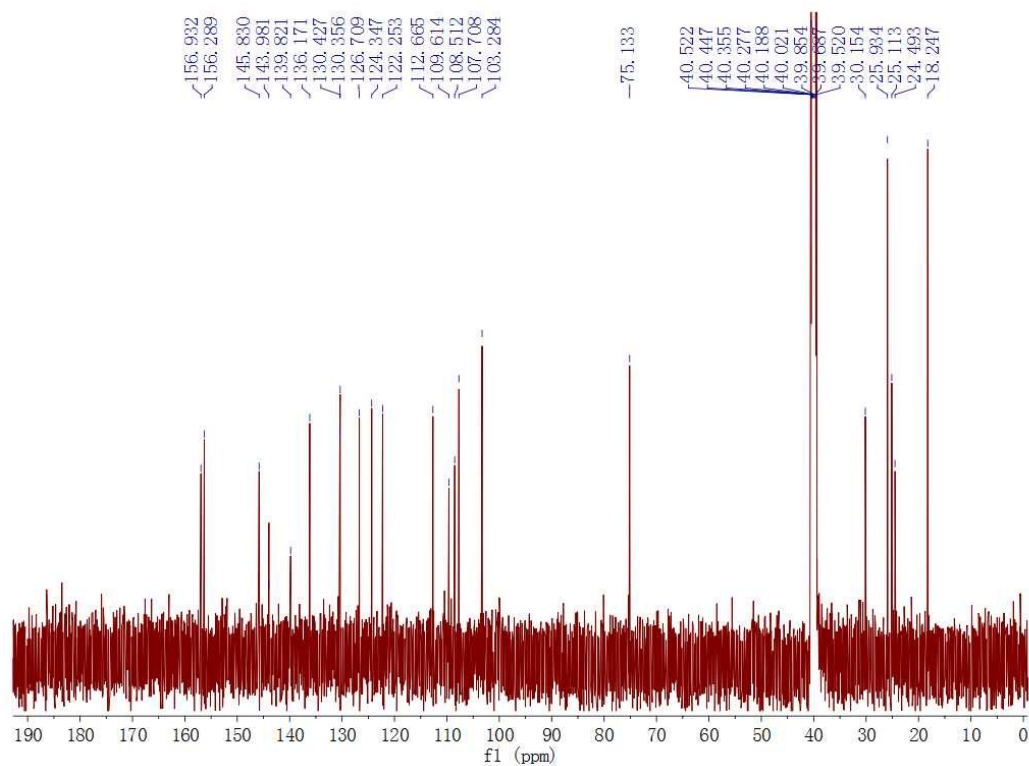


Figure S5. The ^{13}C NMR spectrum of compound **1*** in $\text{DMSO-}d_6$

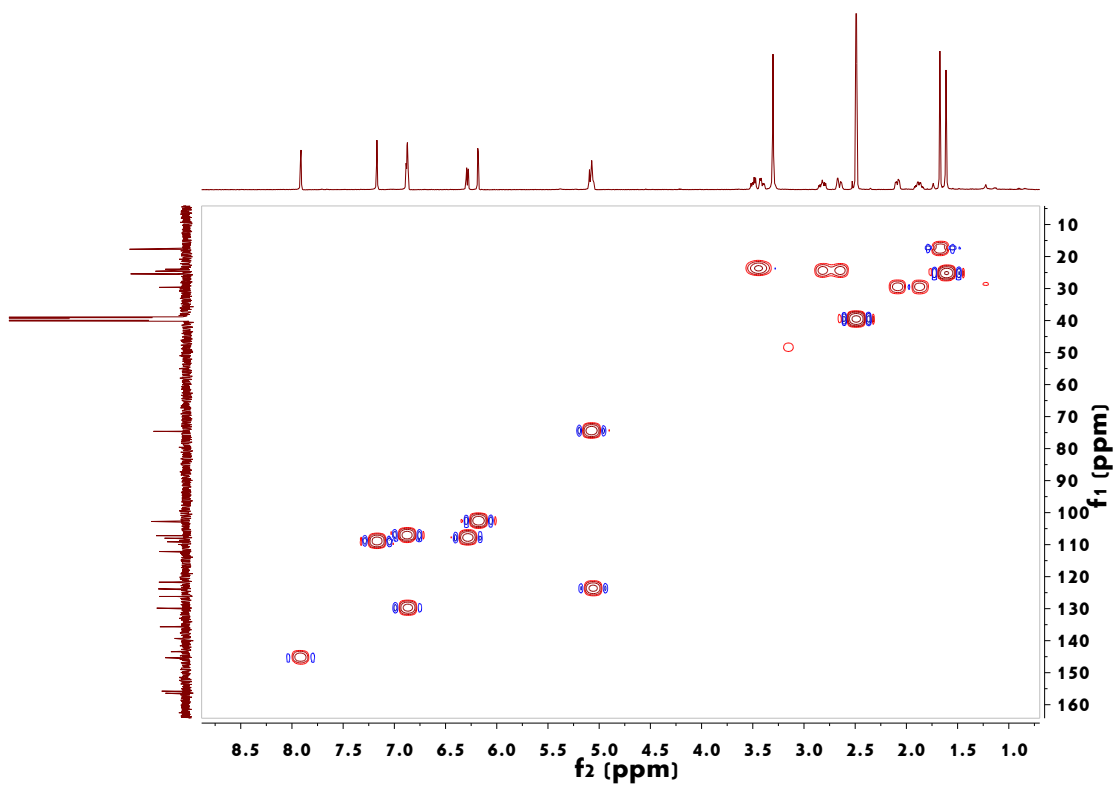


Figure S6. The HSQC spectrum of compound **1*** in DMSO- d_6

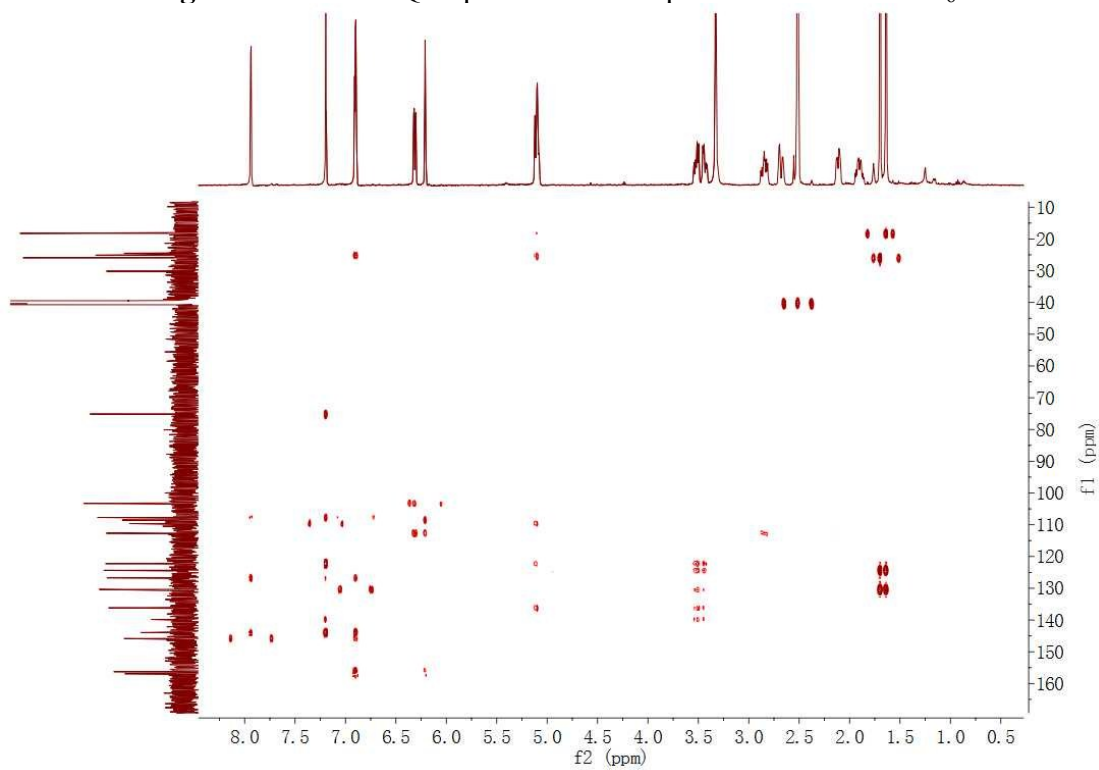


Figure S7. The HMBC spectrum of compound **1*** in DMSO- d_6

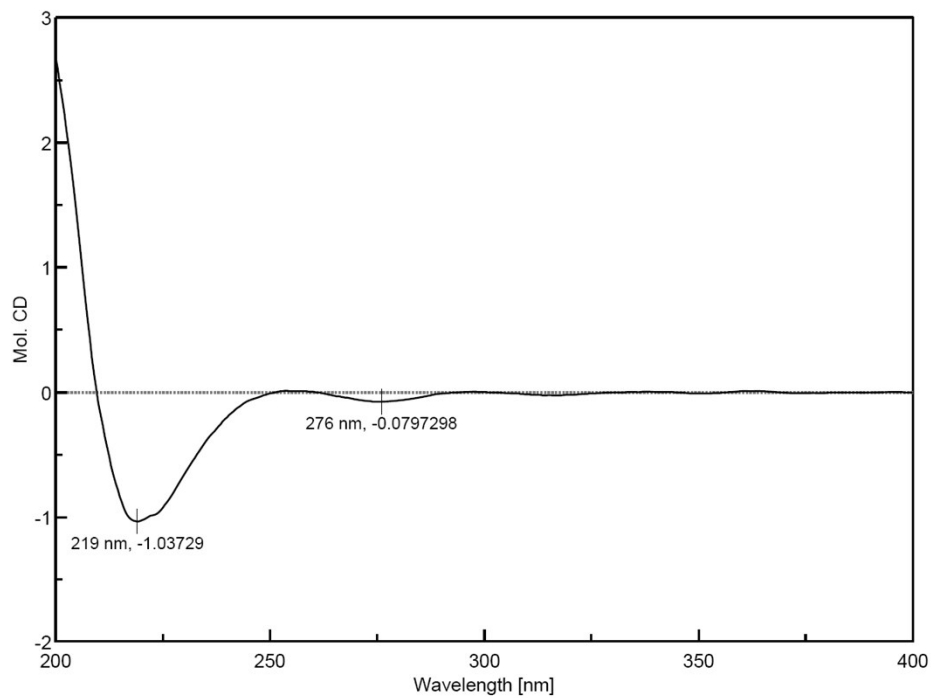


Figure S8. The CD spectrum of 1* in MeOH

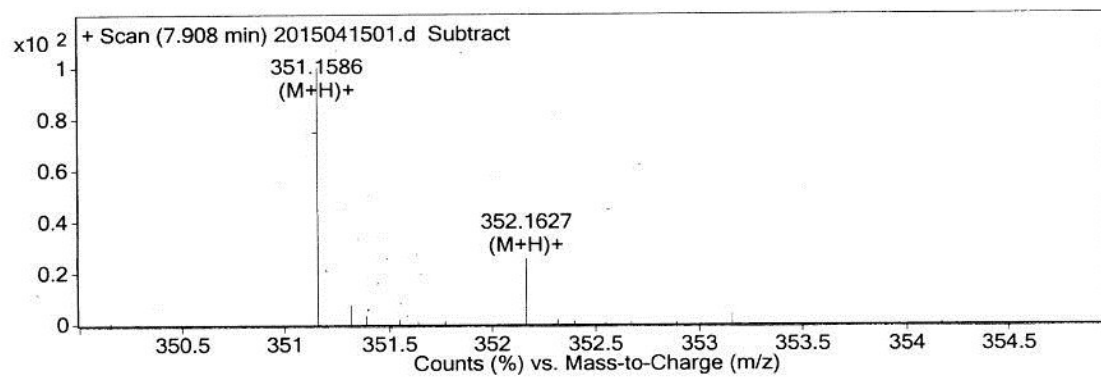


Figure S9. The HRESIMS of compound 1*

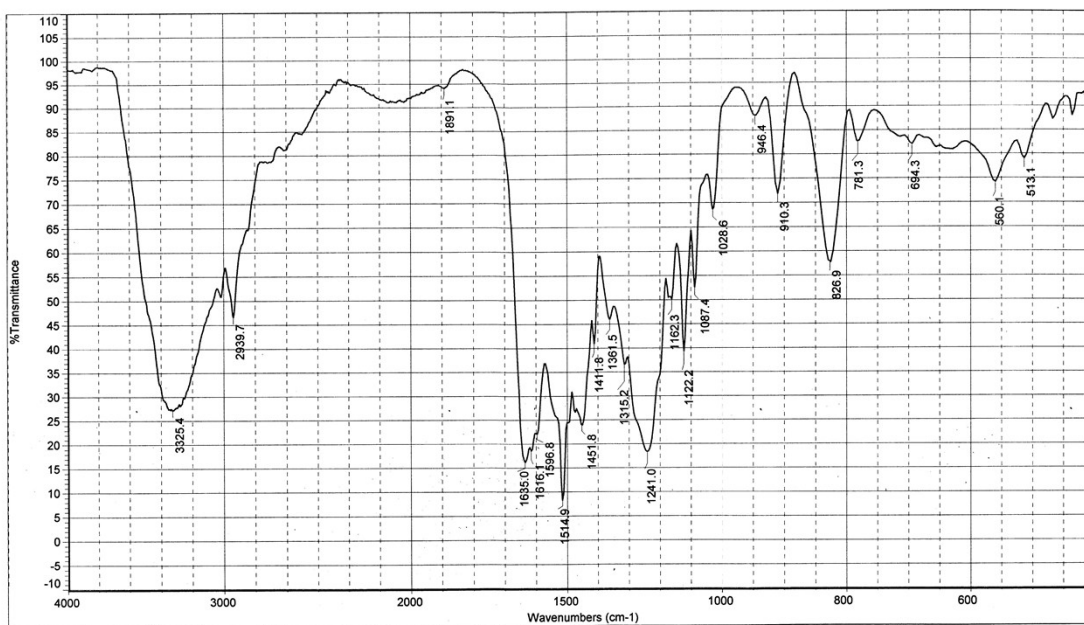


Figure S10. The IR spectrum of compound 2*

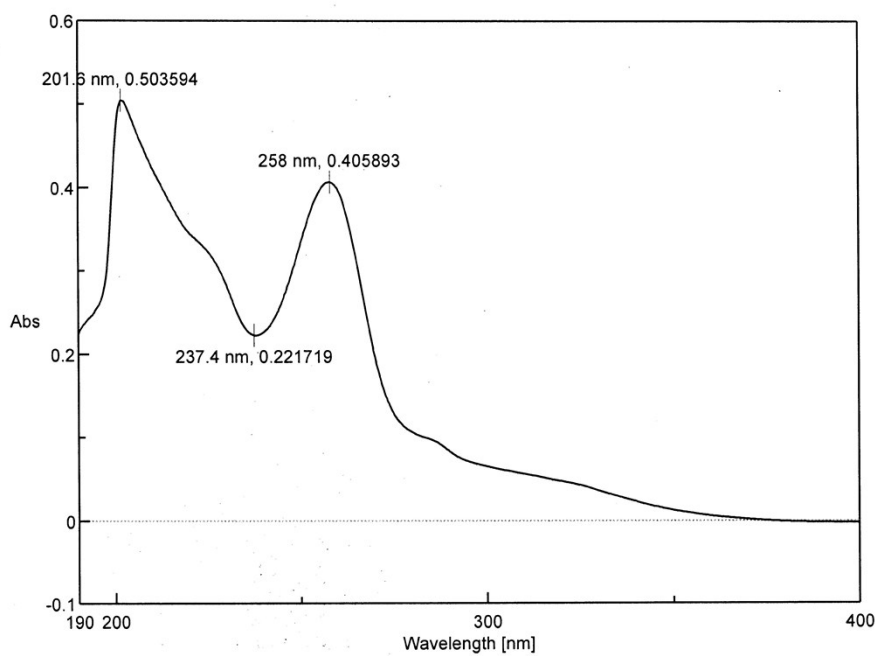


Figure S11. The UV spectrum of compound 2*

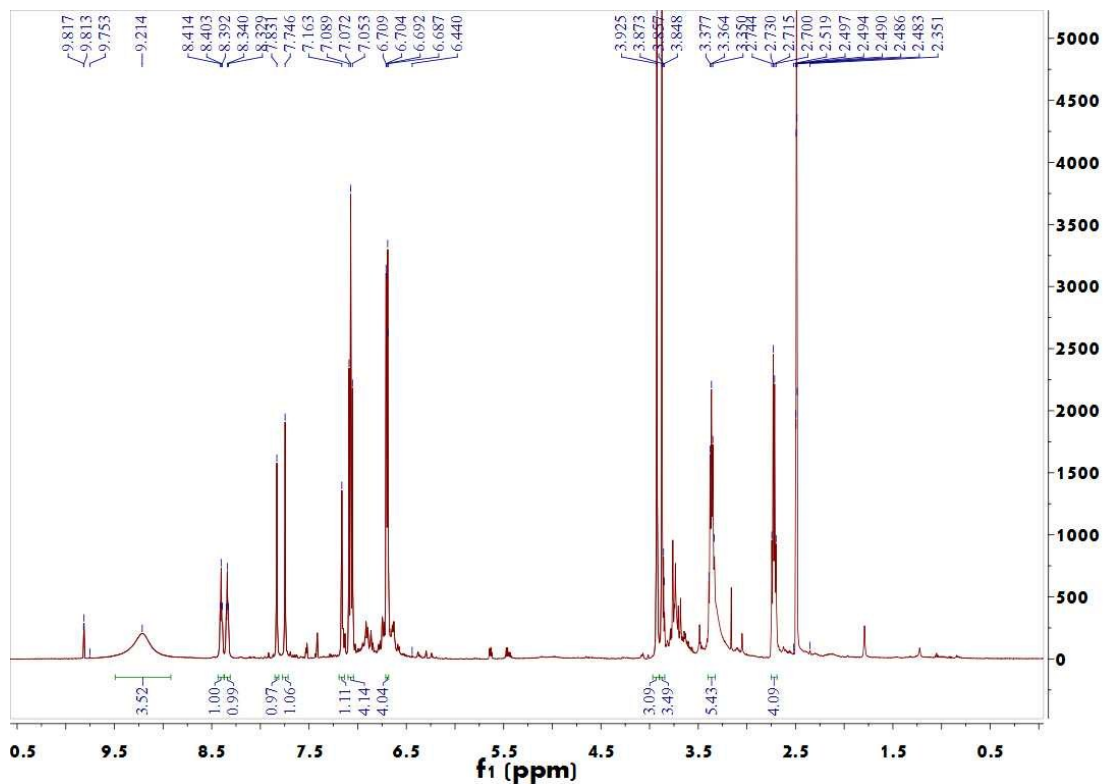


Figure S12. The ^1H NMR spectrum of compound **2*** in $\text{DMSO-}d_6$

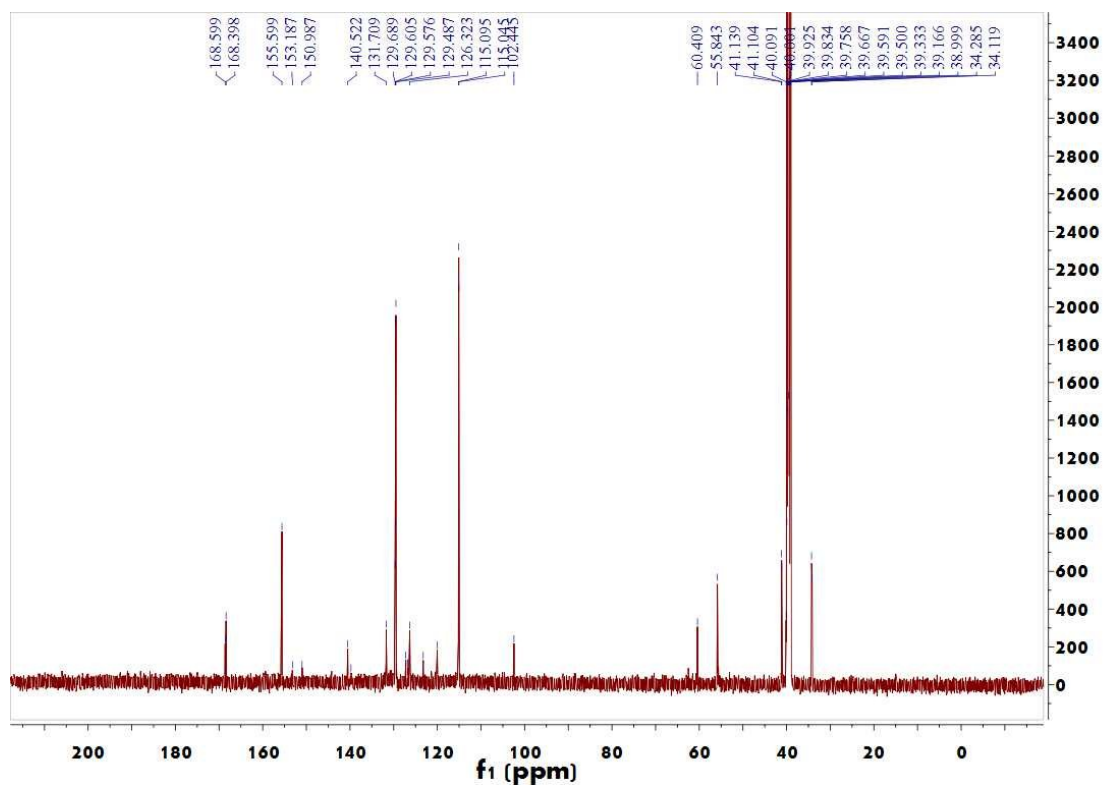


Figure S13. The ^{13}C NMR spectrum of compound **2*** in $\text{DMSO-}d_6$

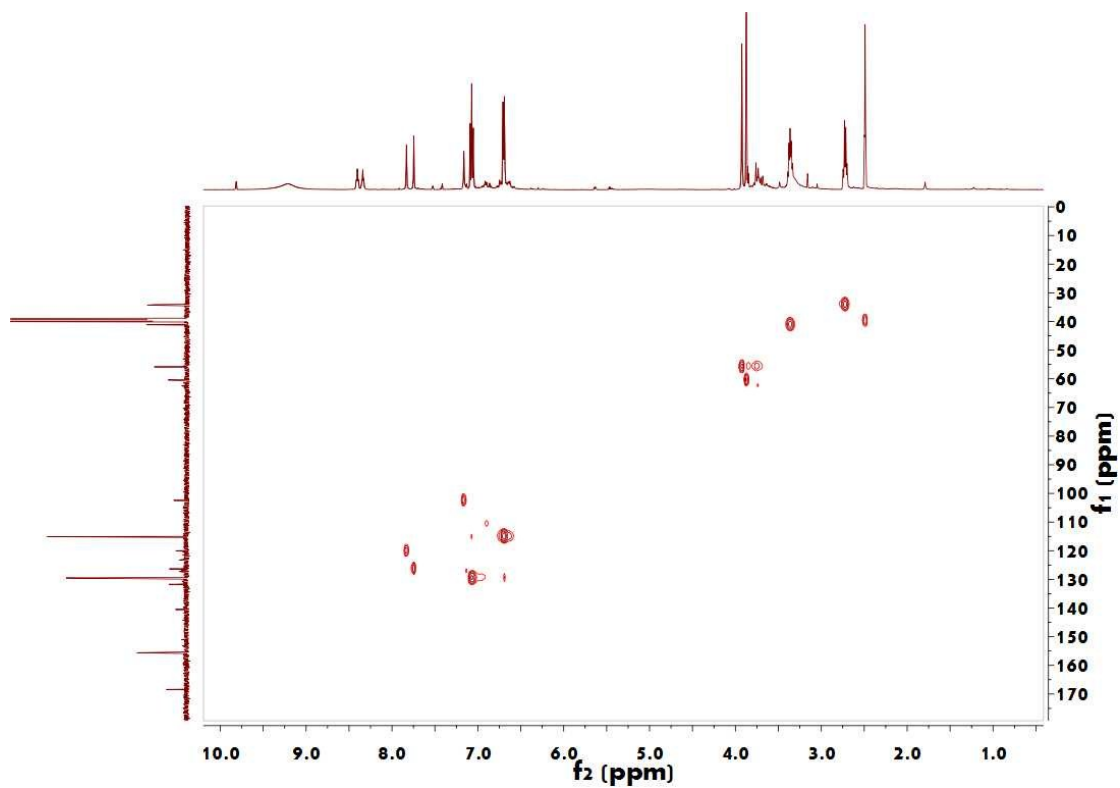


Figure S14. The HSQC spectrum of compound **2*** in DMSO- d_6

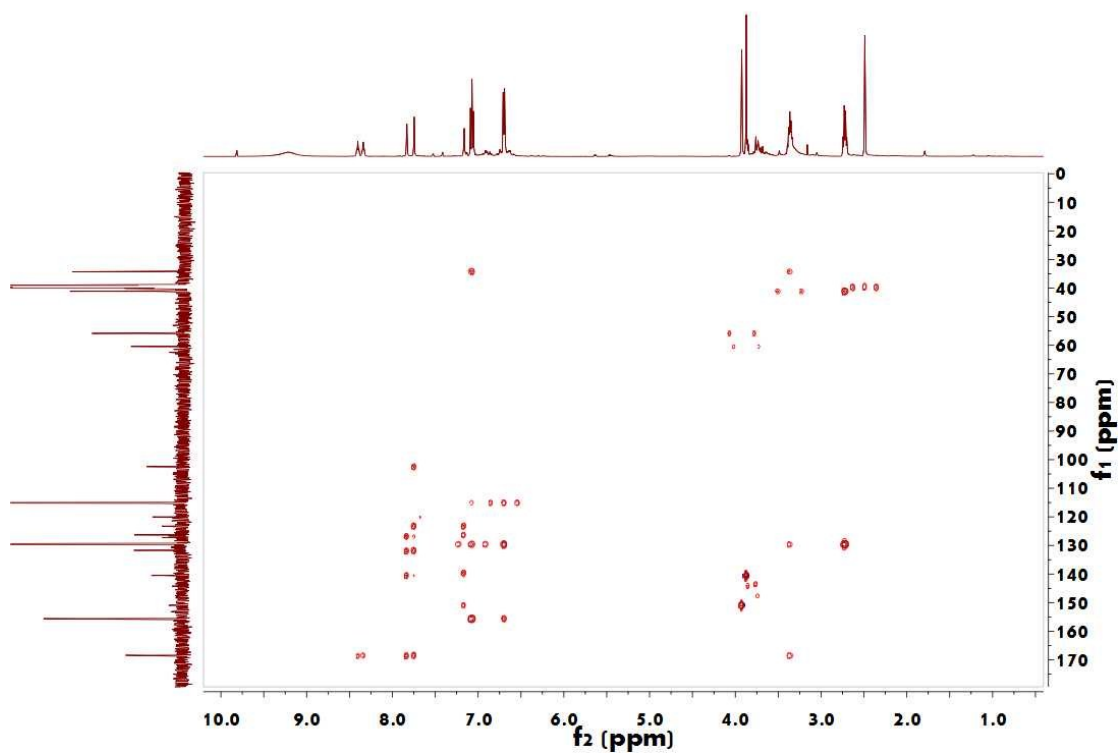


Figure S15. The HMBC spectrum of compound **2*** in DMSO- d_6

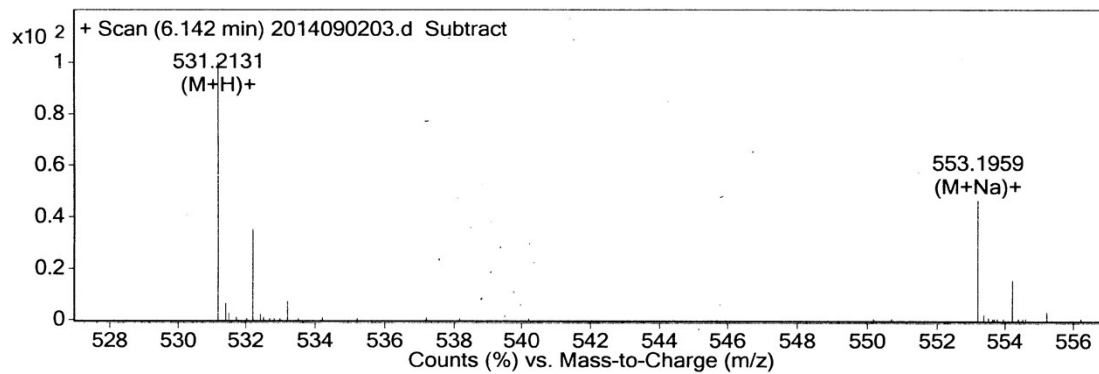


Figure S16. The HRESIMS of compound 2*

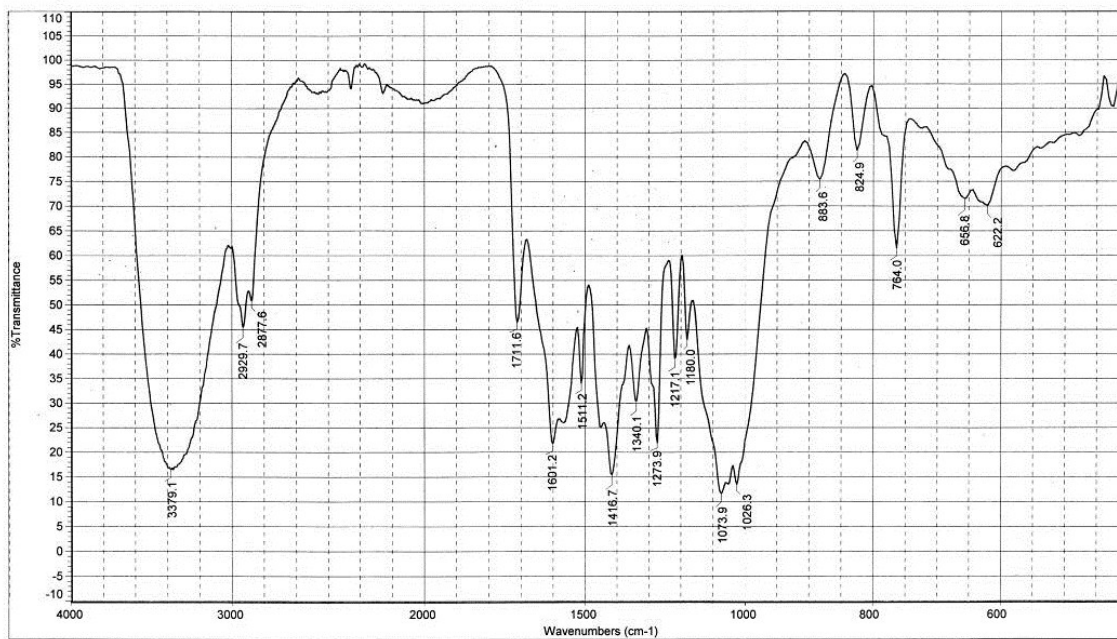


Figure S17. The IR spectrum of compound 3*

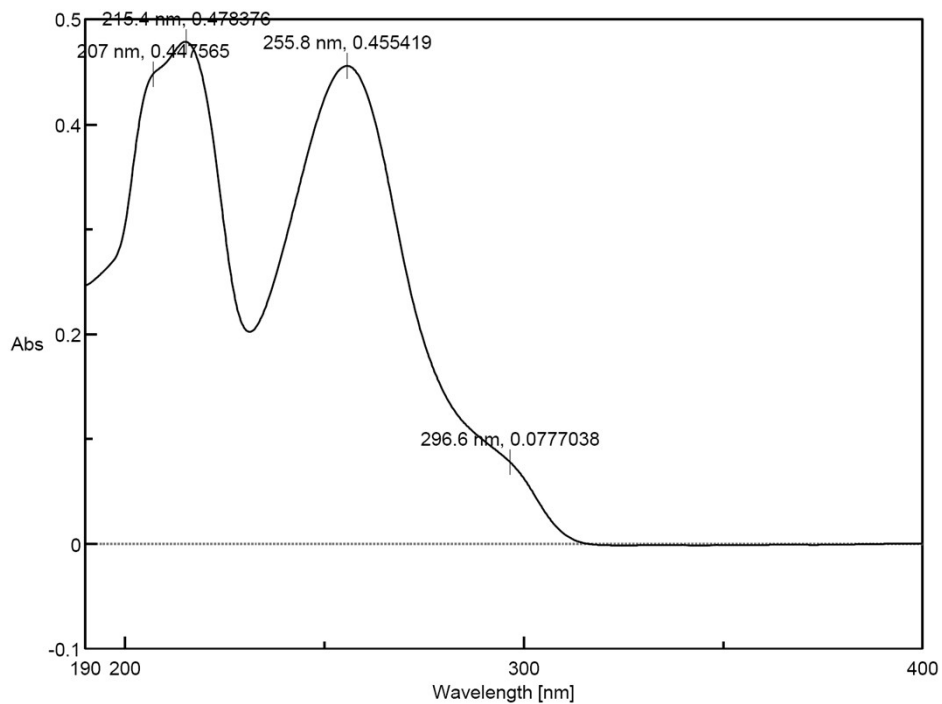


Figure S18. The UV spectrum of compound **3***

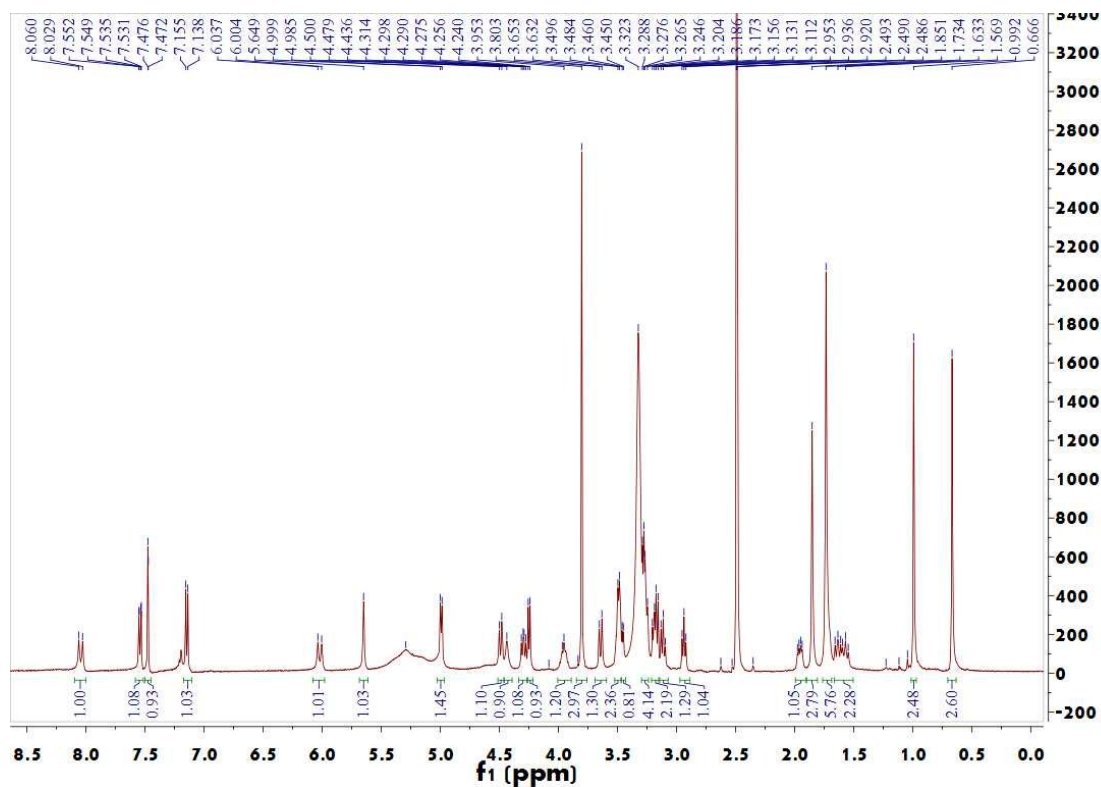


Figure S19. The ^1H NMR spectrum of compound **3*** in $\text{DMSO-}d_6$

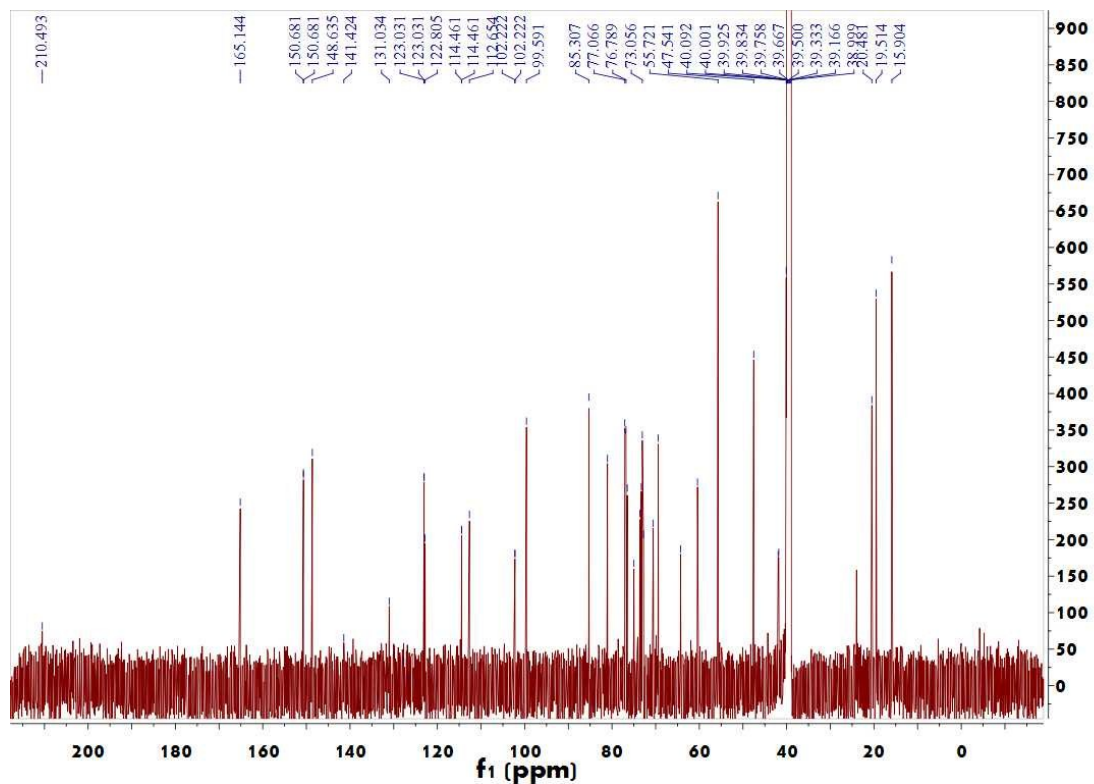


Figure S20. The ^{13}C NMR spectrum of compound **3*** in $\text{DMSO-}d_6$

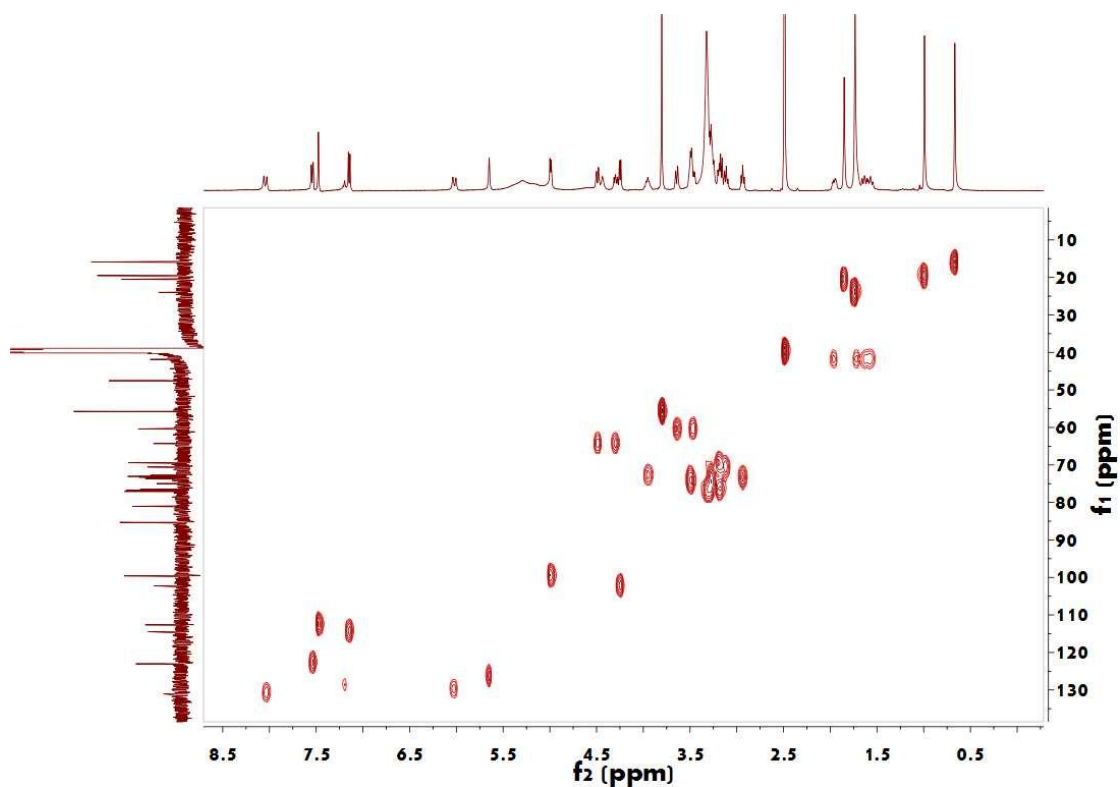


Figure S21. The HSQC spectrum of compound **3*** in $\text{DMSO-}d_6$

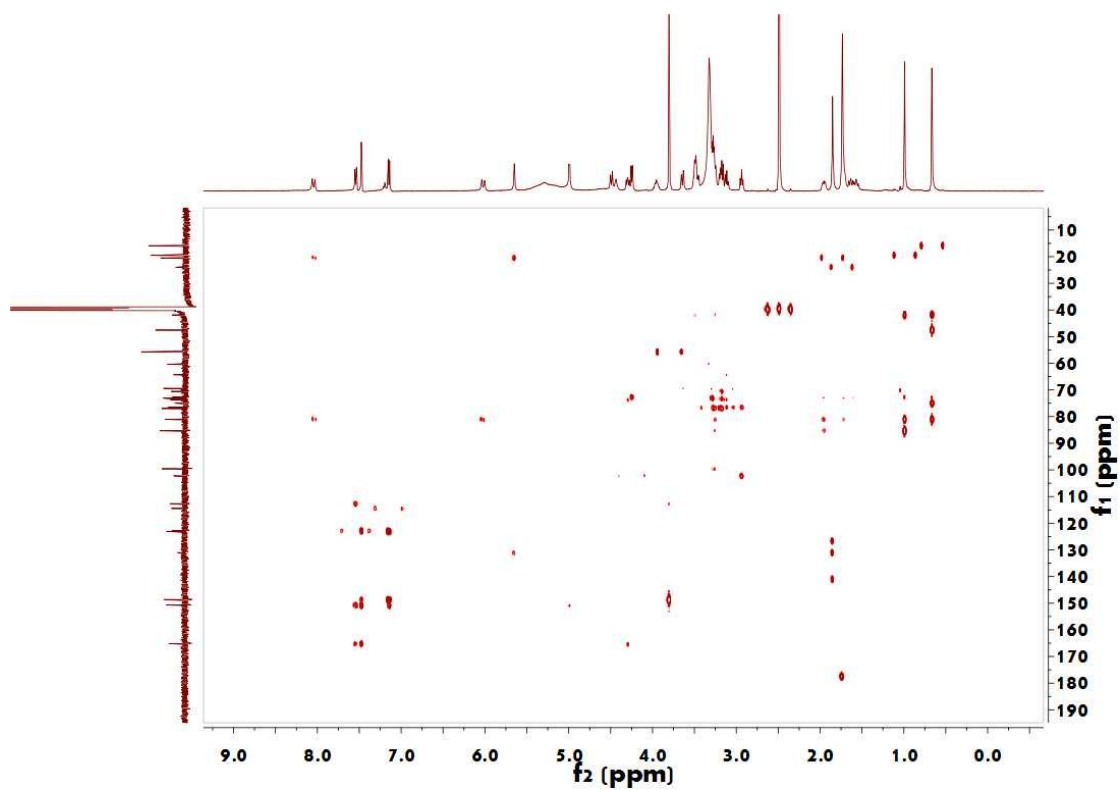


Figure S22. The HMBC spectrum of compound **3*** in DMSO- d_6

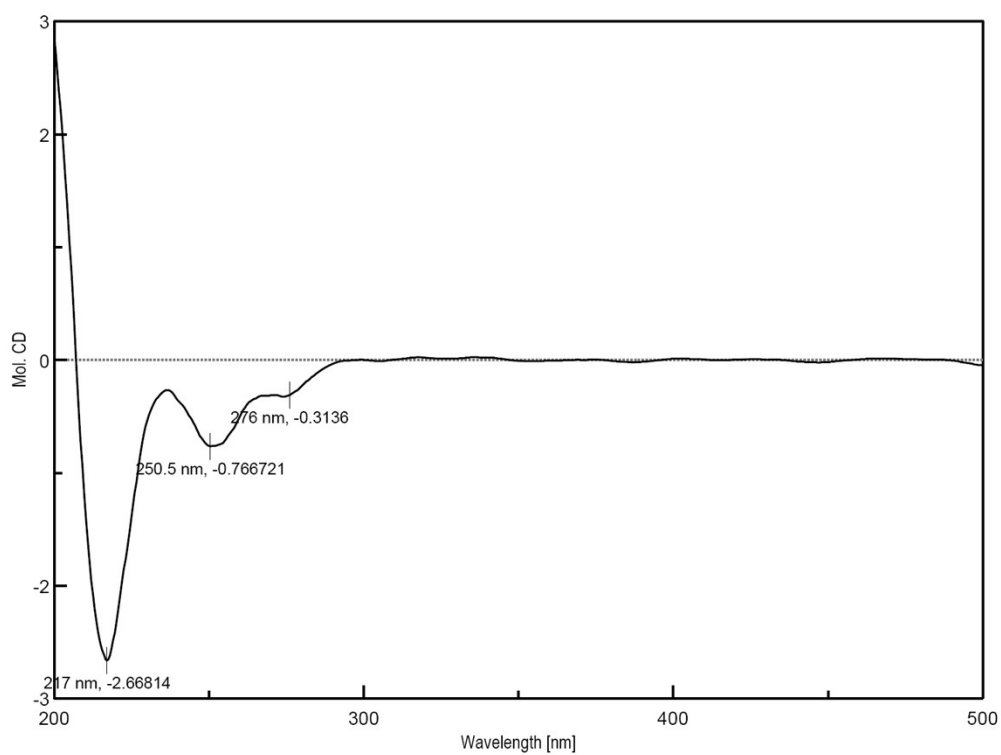


Figure S23. The CD spectrum of **3*** in MeOH

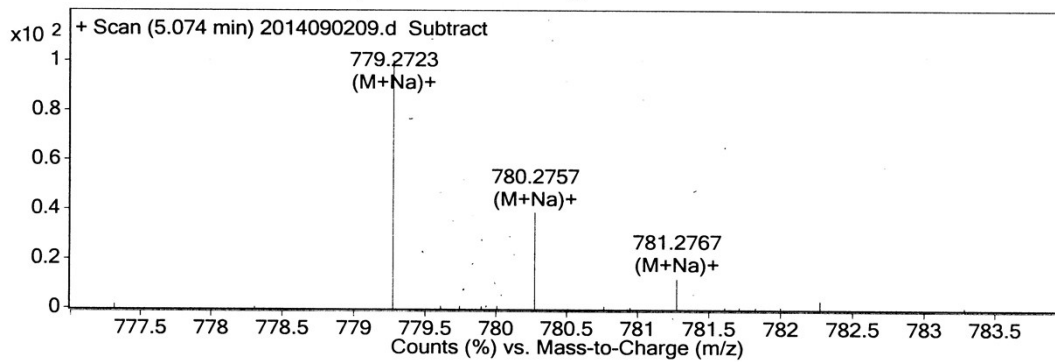


Figure S24. The HRESIMS of compound 3*

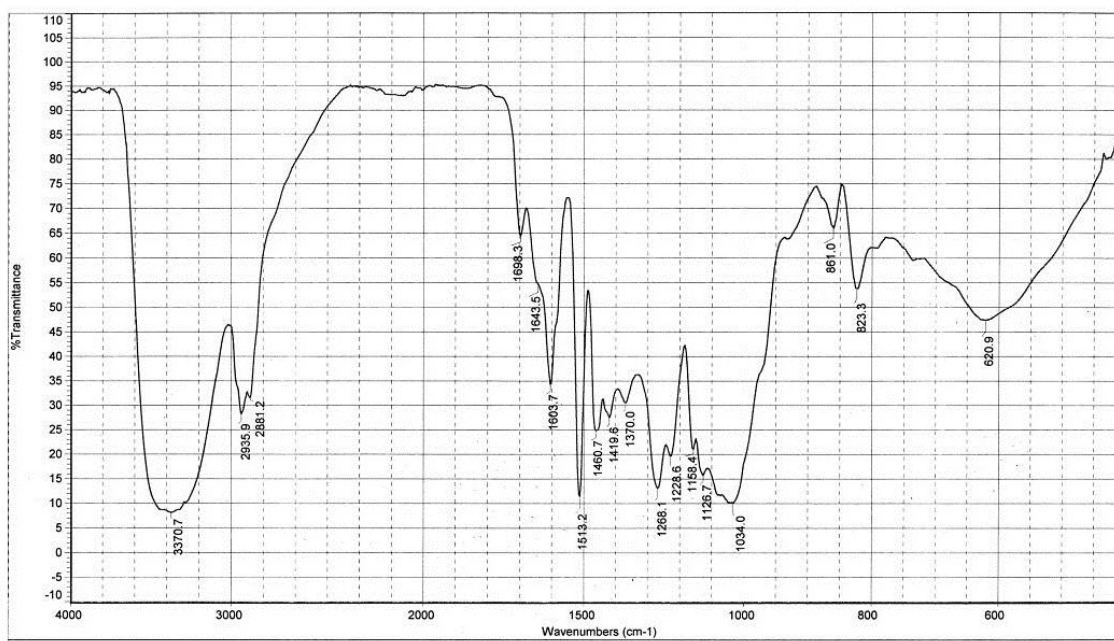


Figure S25. The IR spectrum of compound 4*

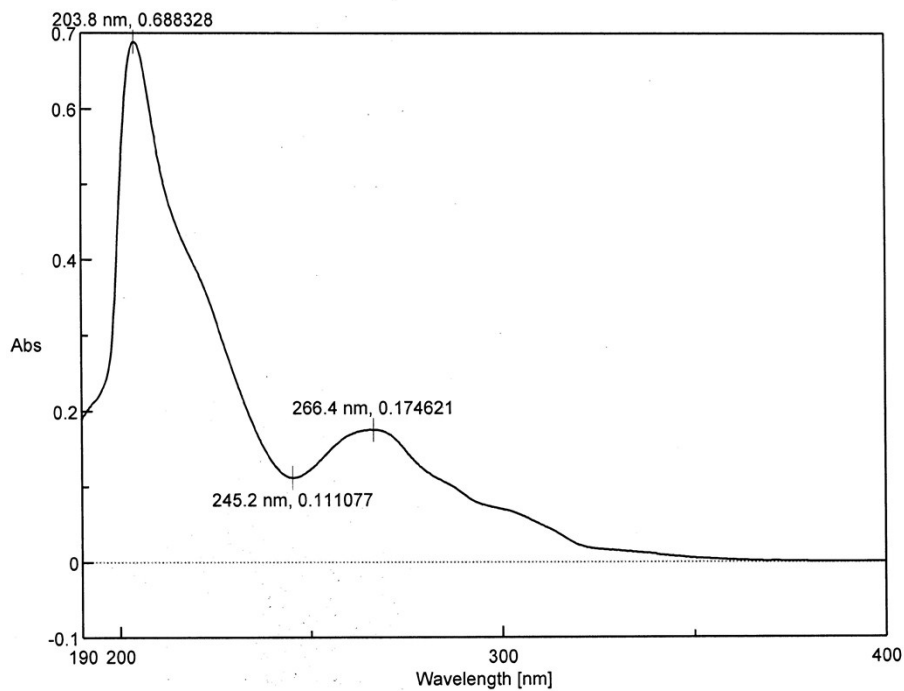


Figure S26. The UV spectrum of compound 4*

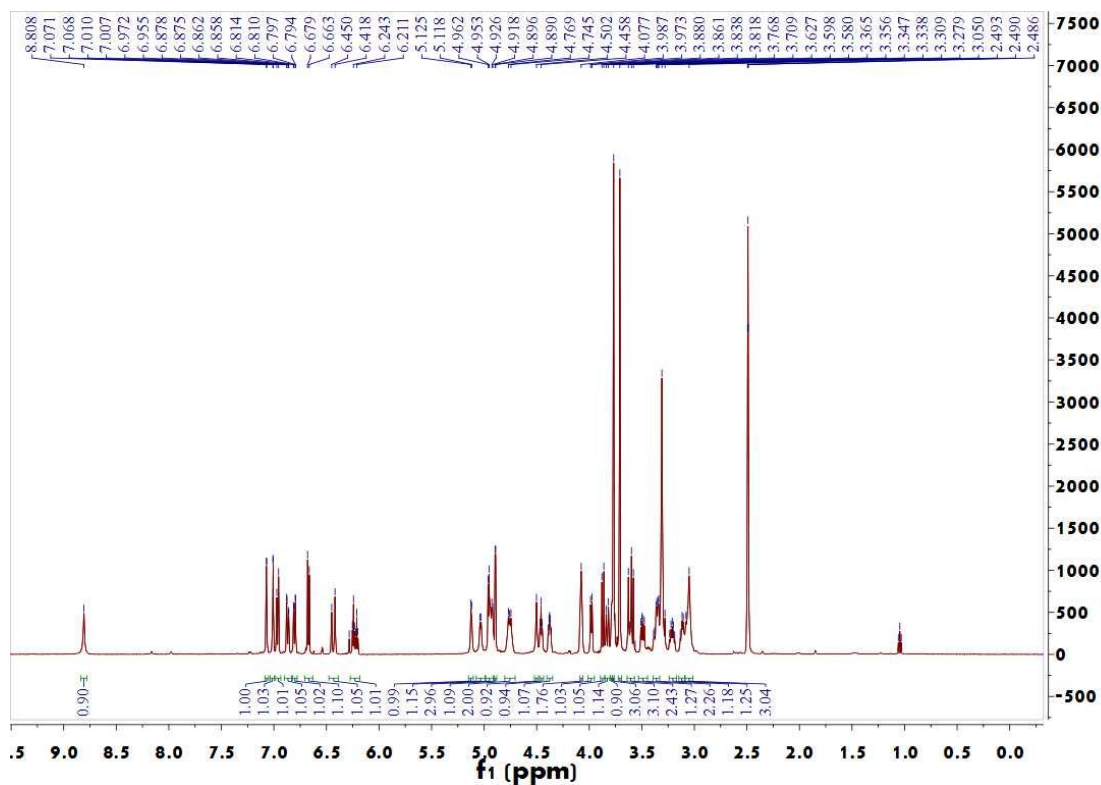


Figure S27. The ¹H NMR spectrum of compound 4* in DMSO-*d*₆

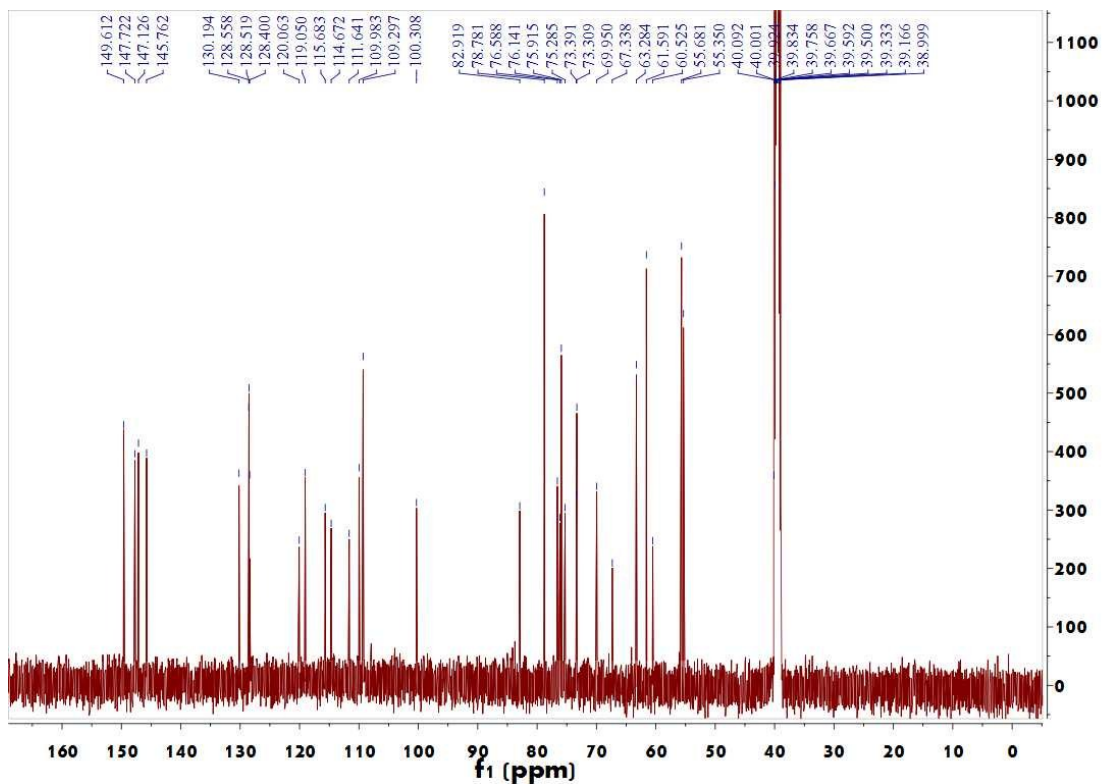


Figure S28. The ^{13}C NMR spectrum of compound **4*** in $\text{DMSO-}d_6$

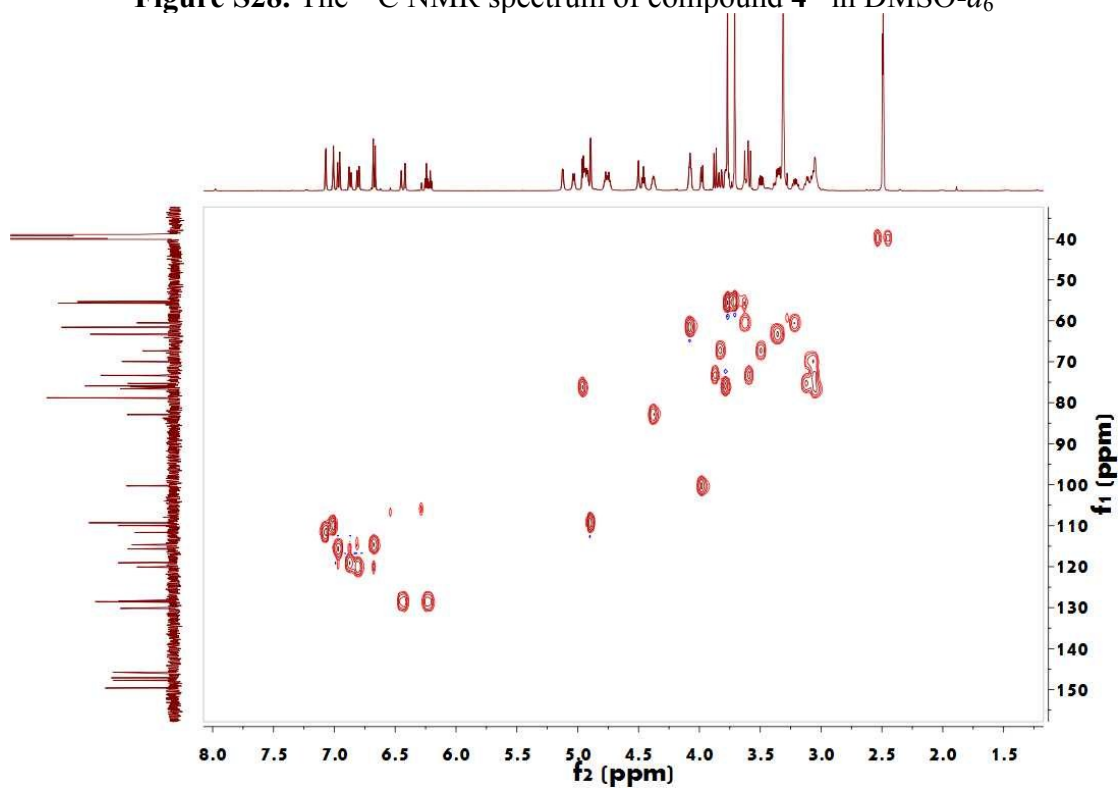


Figure S29. The HSQC spectrum of compound **4*** in $\text{DMSO-}d_6$

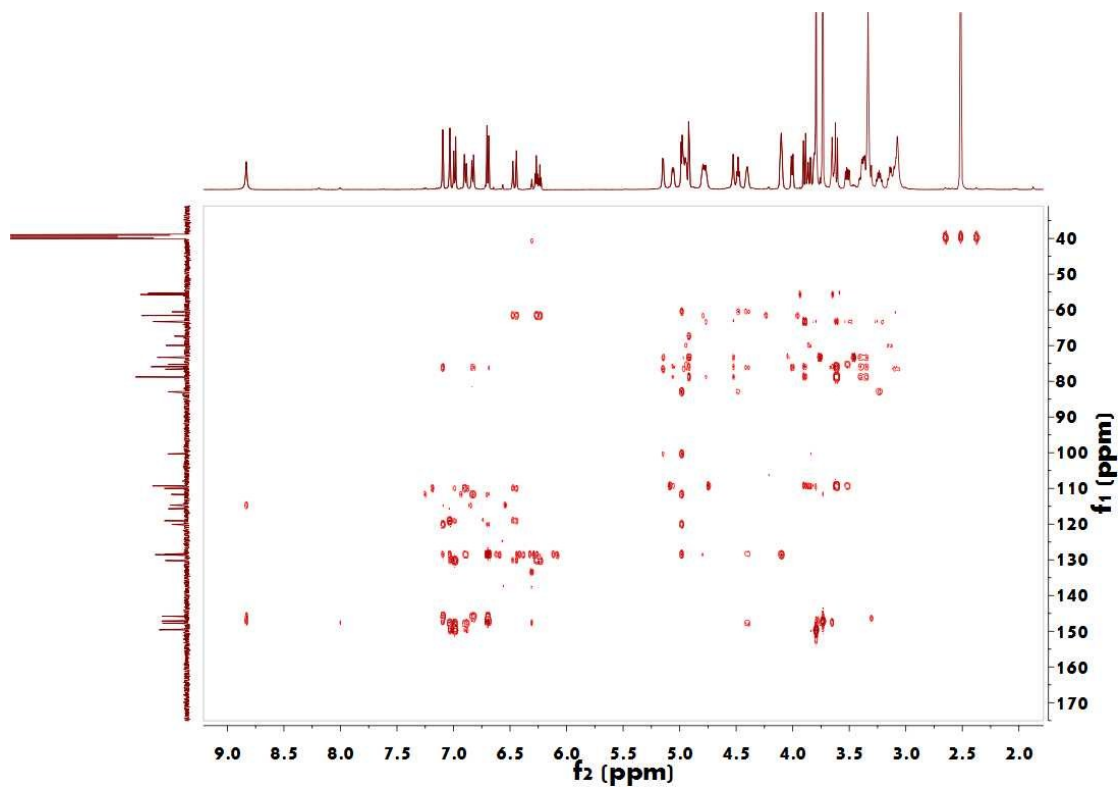


Figure S30. The HMBC spectrum of compound **4*** in DMSO- d_6

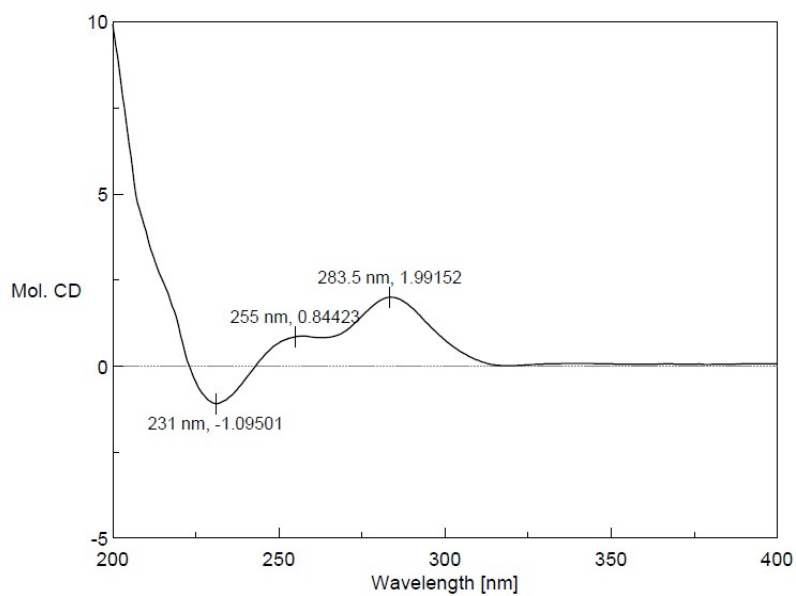


Figure S31. The CD spectrum of **4*** in MeOH

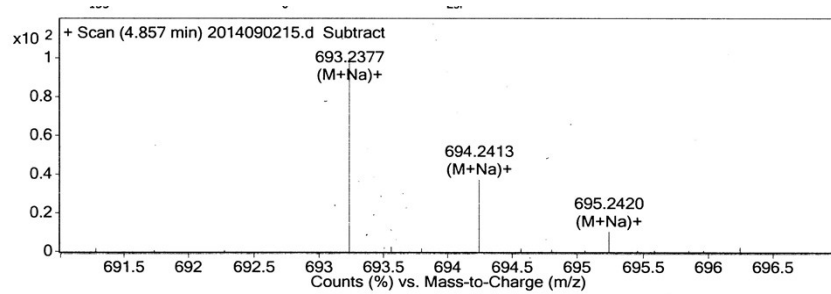


Figure S32. The HRESIMS of compound 4*

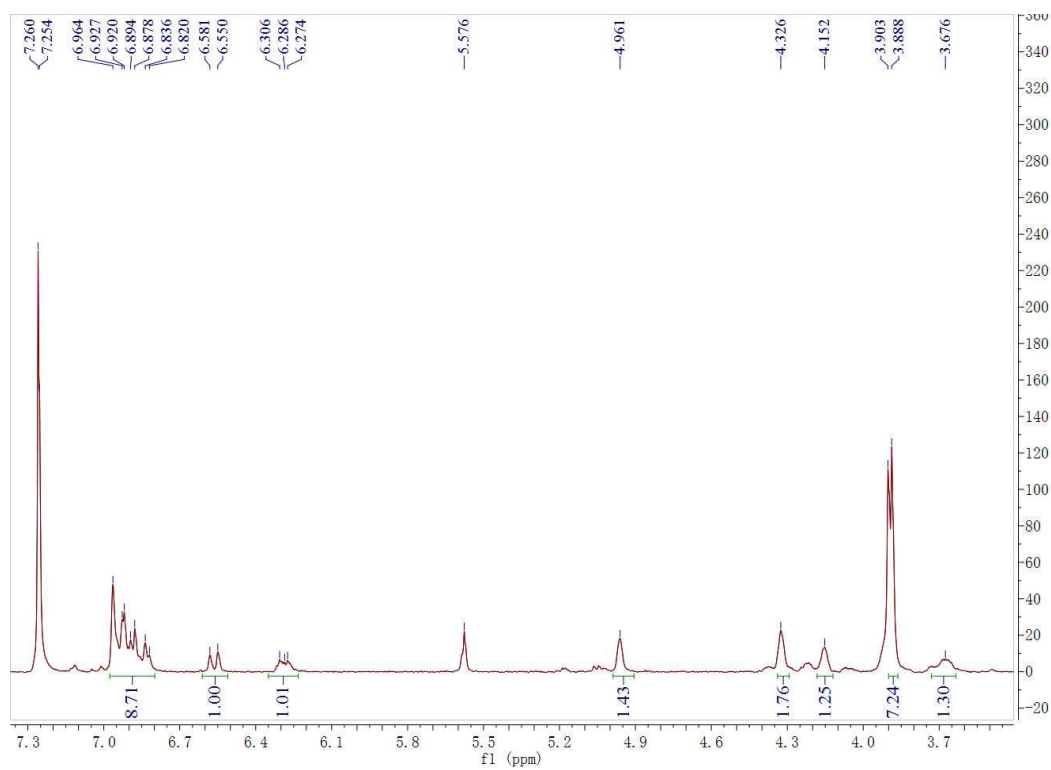


Figure S33. The ¹H NMR spectrum of compound 4a in CDCl₃

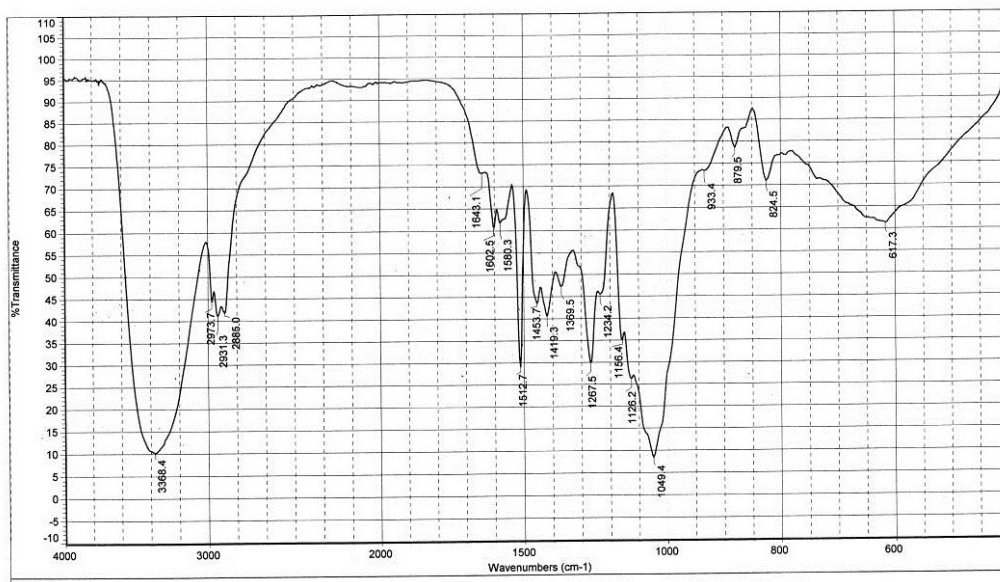


Figure S34. The IR spectrum of compound 5*

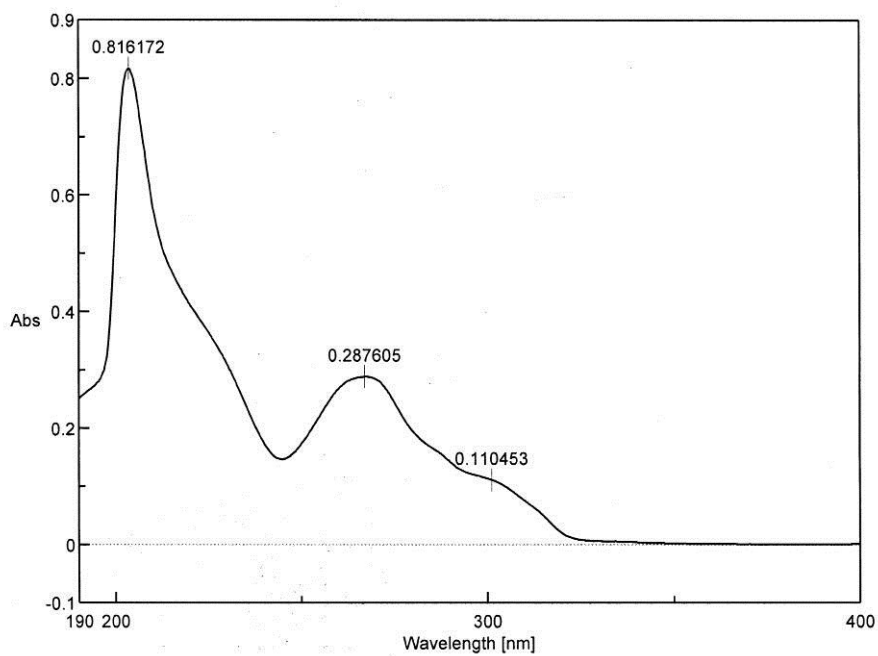


Figure S35. The UV spectrum of compound 5*

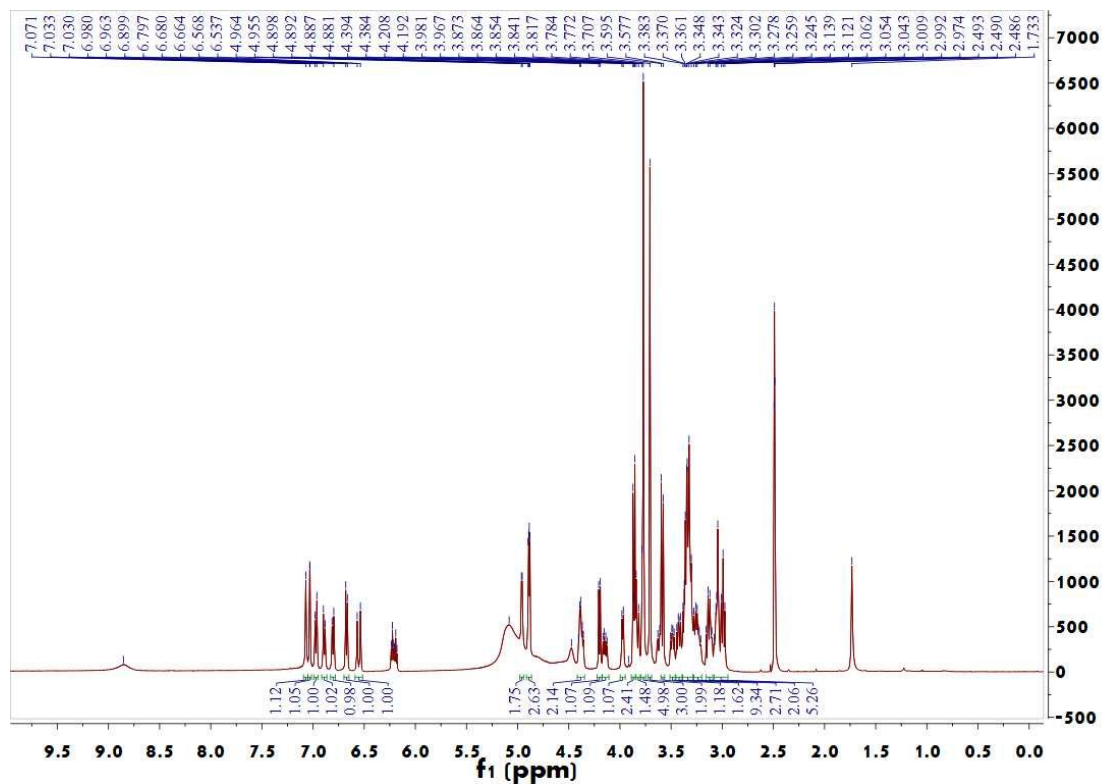


Figure S36. The ^1H NMR spectrum of compound **5*** in $\text{DMSO-}d_6$

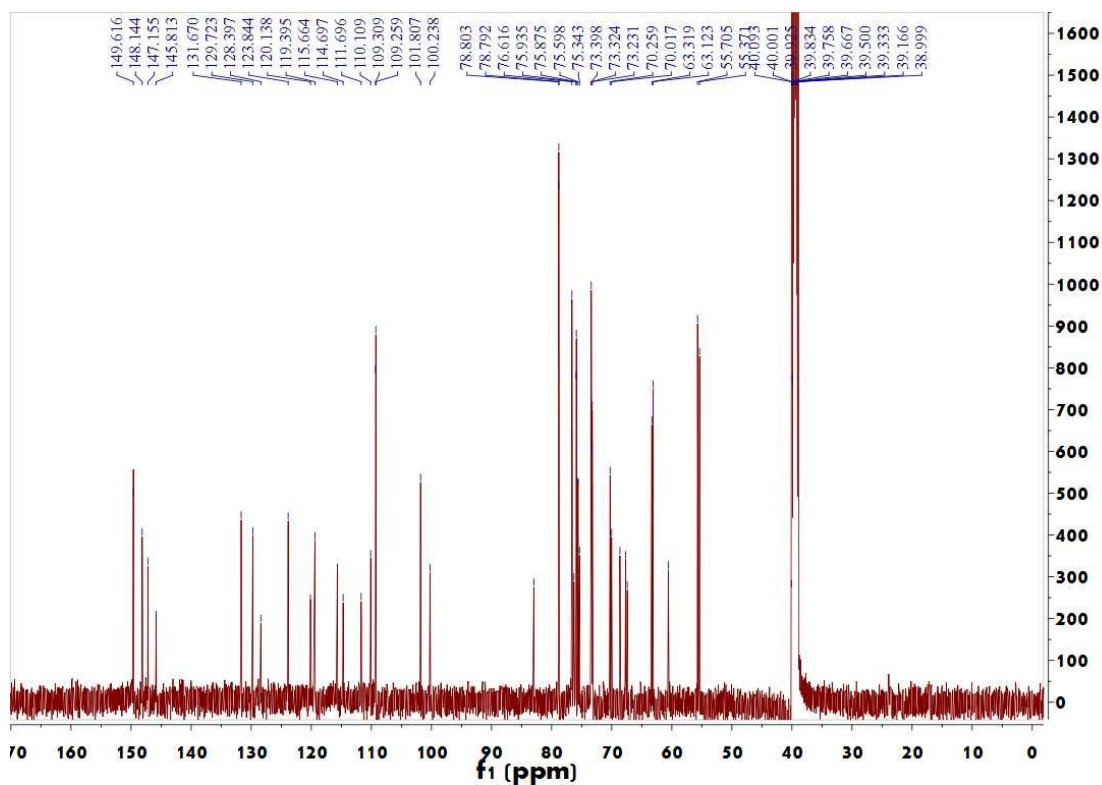


Figure S37. The ^{13}C NMR spectrum of compound **5*** in $\text{DMSO-}d_6$

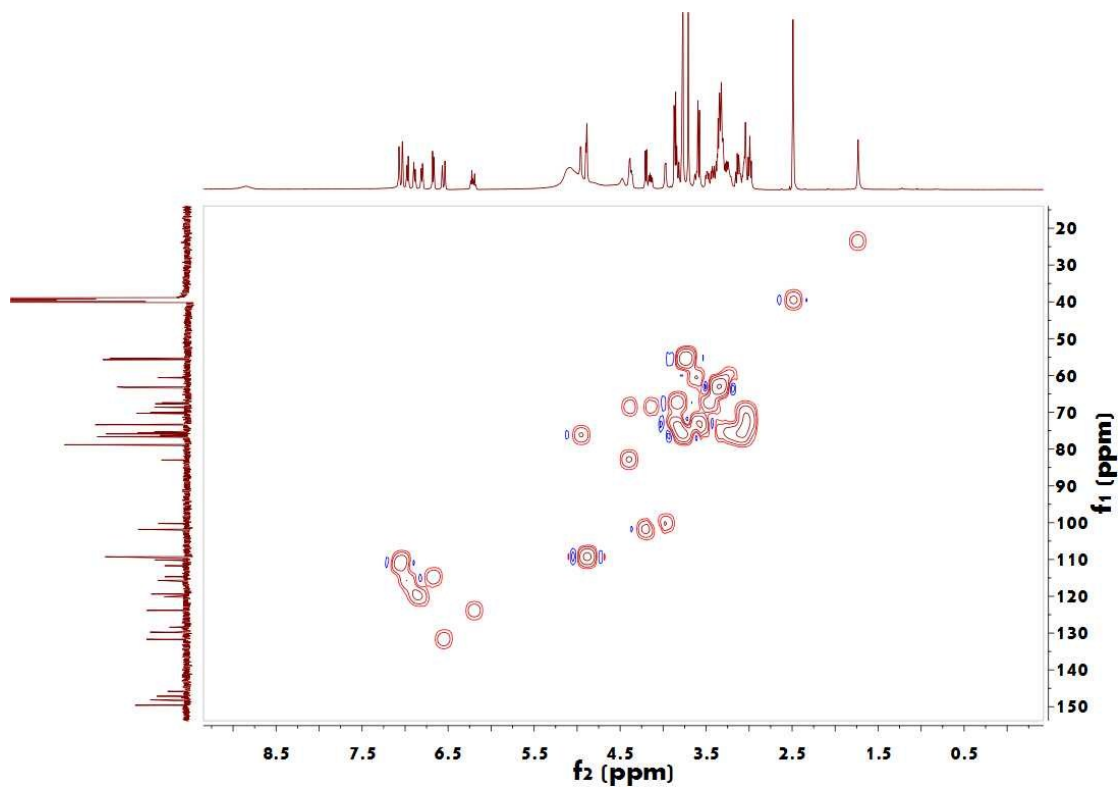


Figure S38. The HSQC spectrum of compound **5*** in DMSO-*d*₆

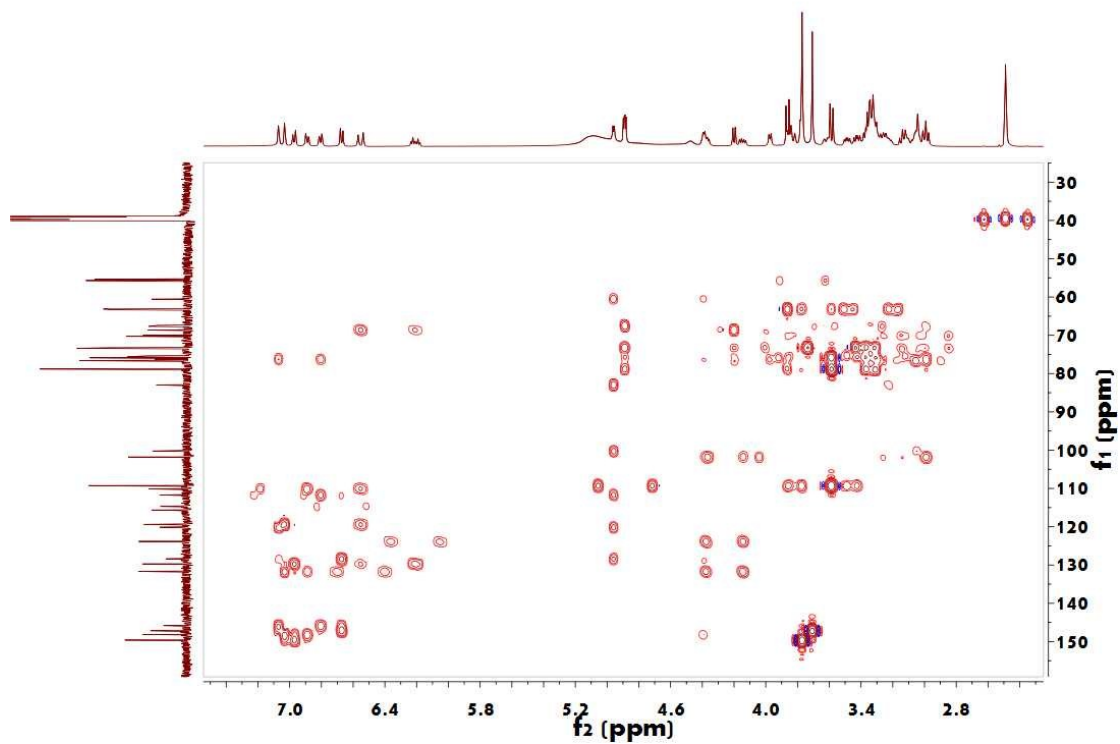


Figure S39. The HMBC spectrum of compound **5*** in DMSO-*d*₆

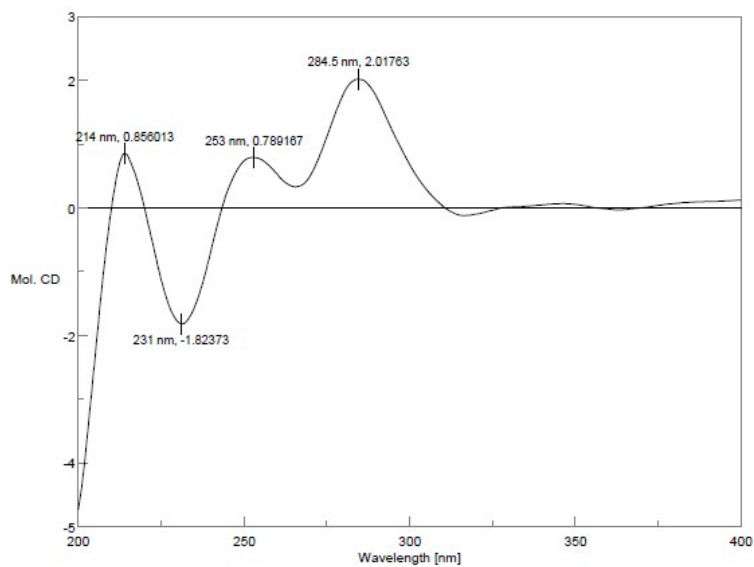


Figure S40. The CD spectrum of **5*** in MeOH

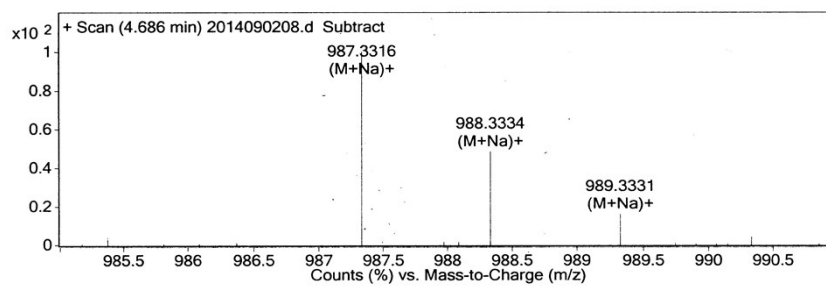


Figure S41. The HRESIMS of compound **5***

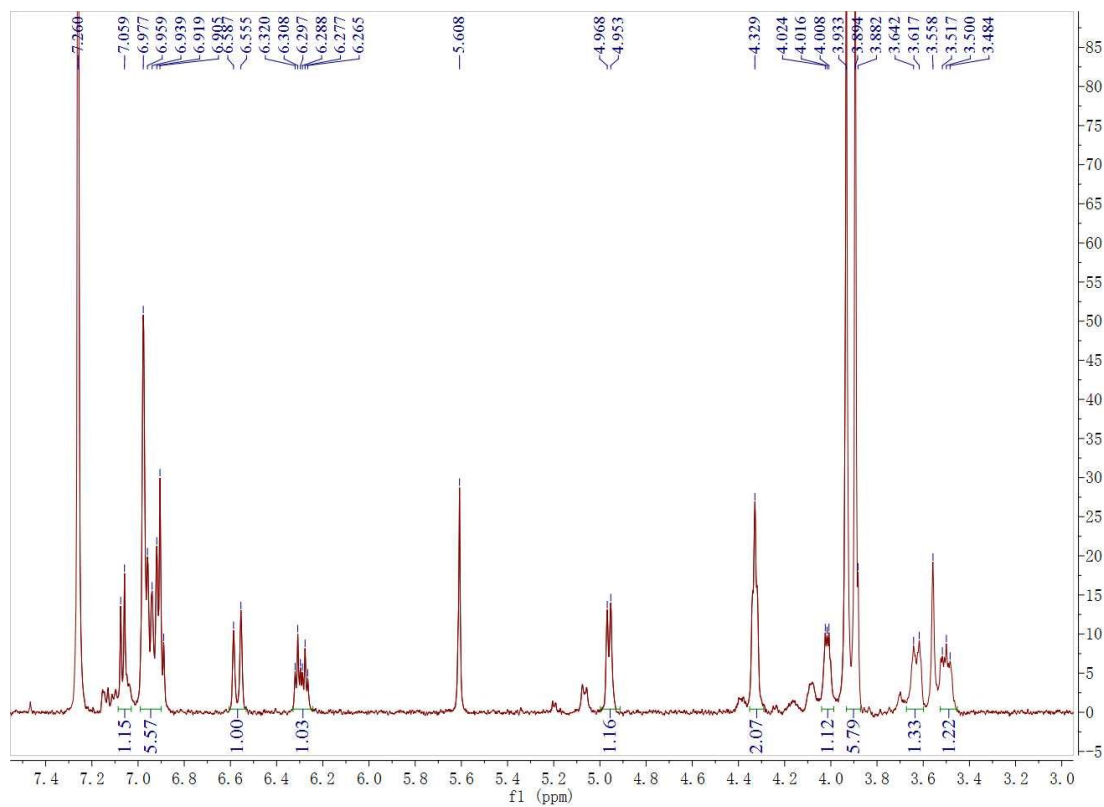


Figure S42. The ^1H NMR spectrum of compound **5a** in CDCl_3

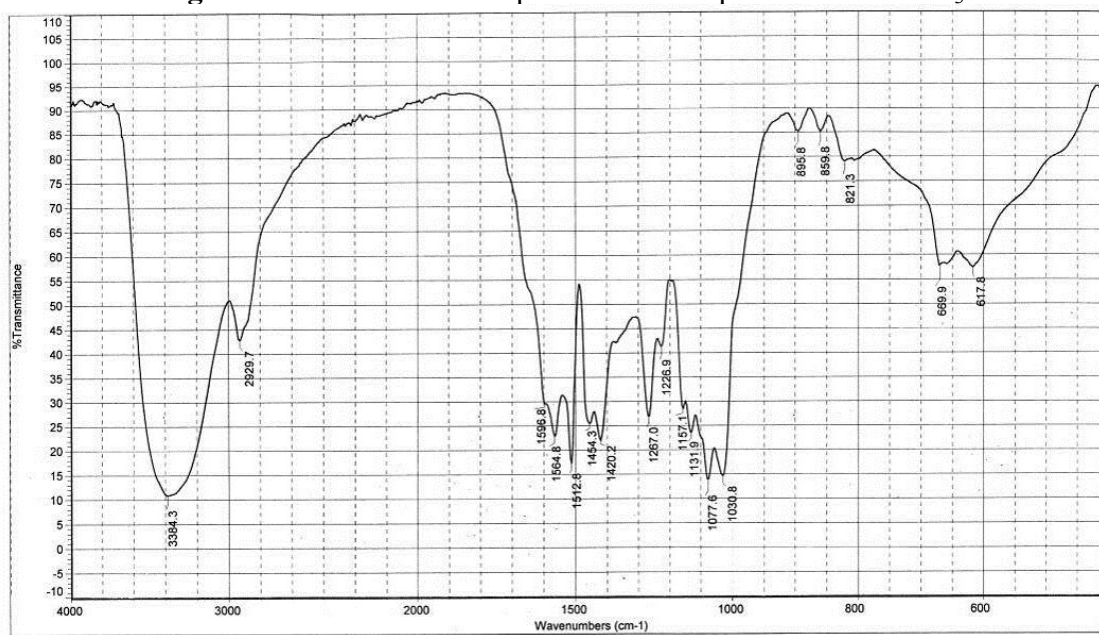


Figure S43. The IR spectrum of compound **6***

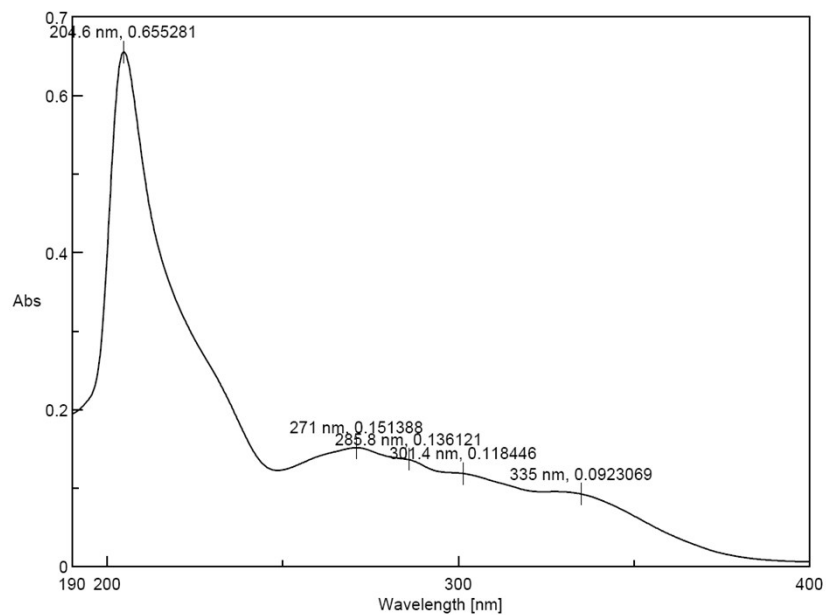


Figure S44. The UV spectrum of compound 6*

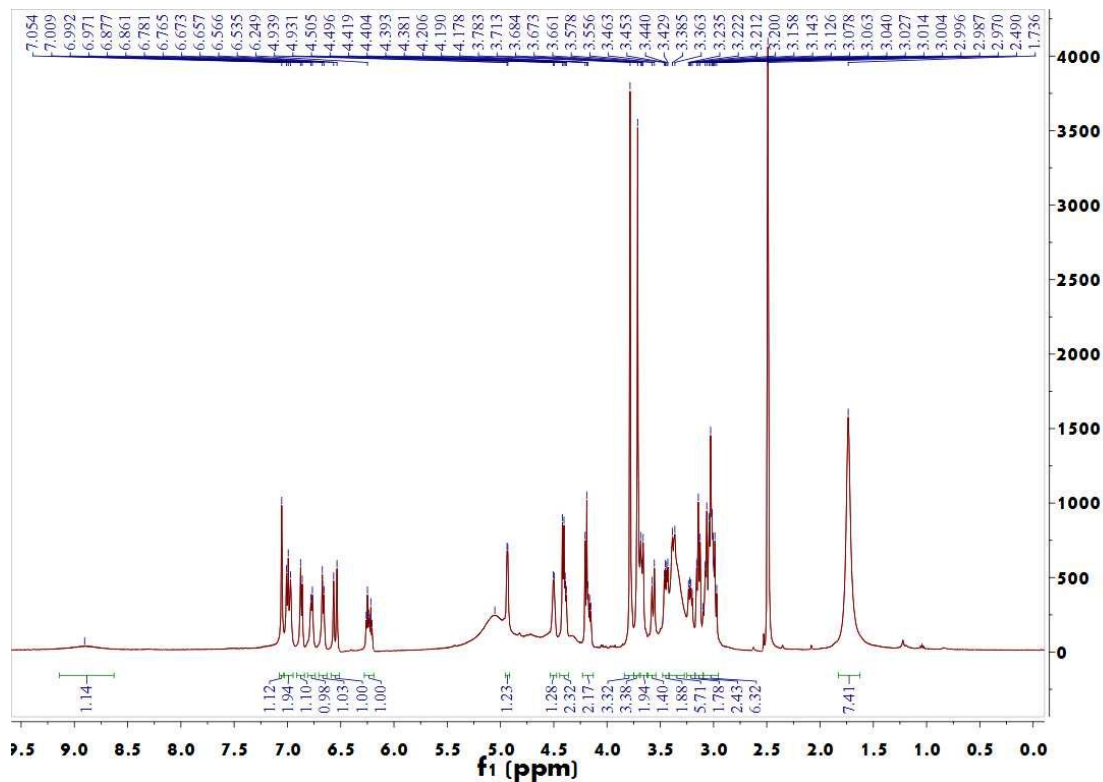


Figure S45. The ¹H NMR spectrum of compound 6* in DMSO-*d*₆

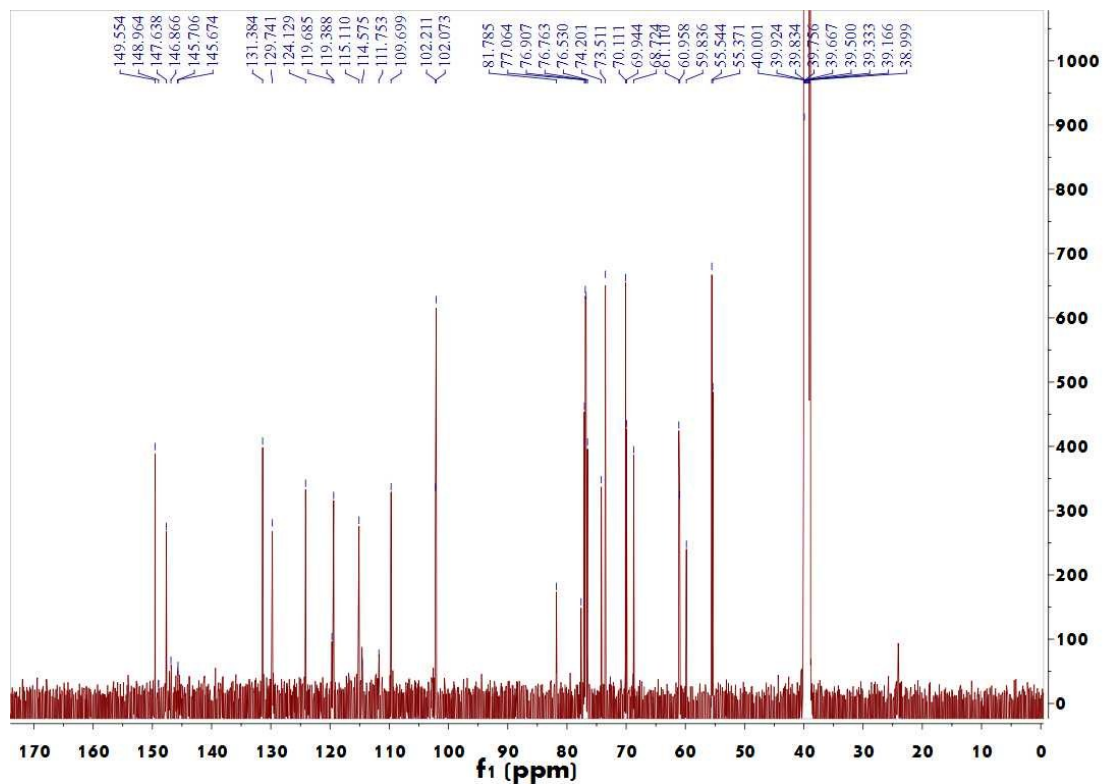


Figure S46. The ^{13}C NMR spectrum of compound **6*** in $\text{DMSO-}d_6$

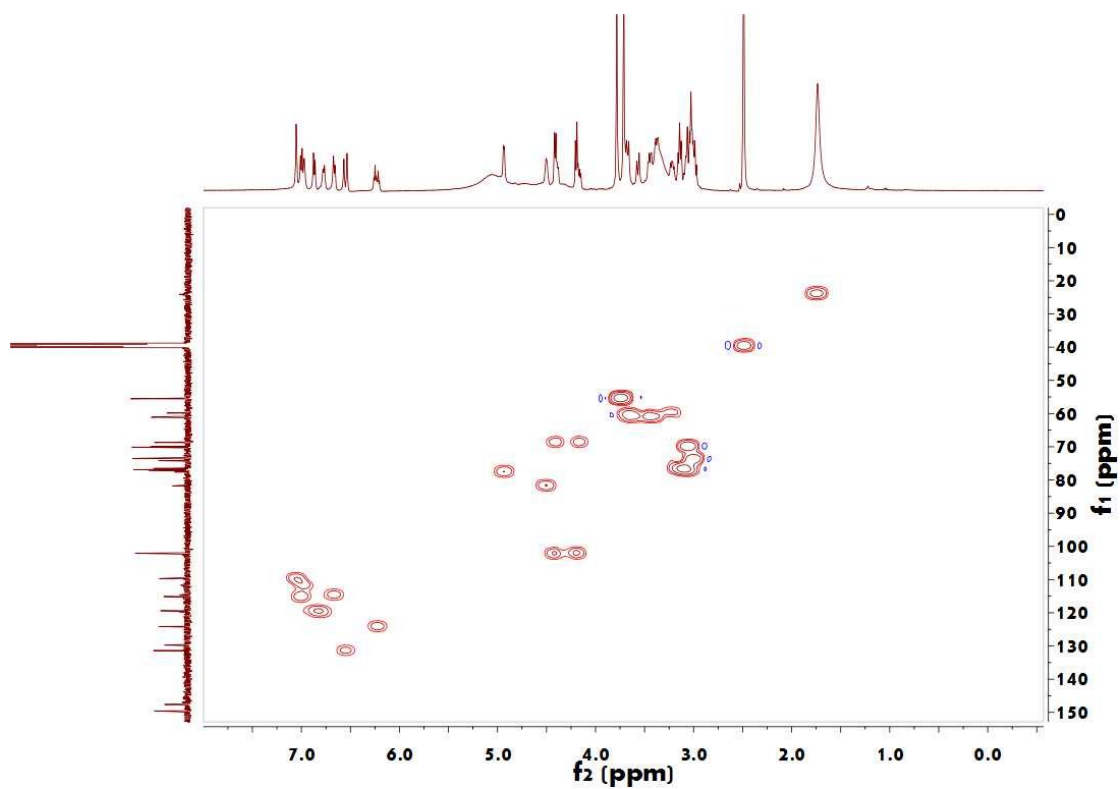


Figure S47. The HSQC spectrum of compound **6*** in $\text{DMSO-}d_6$

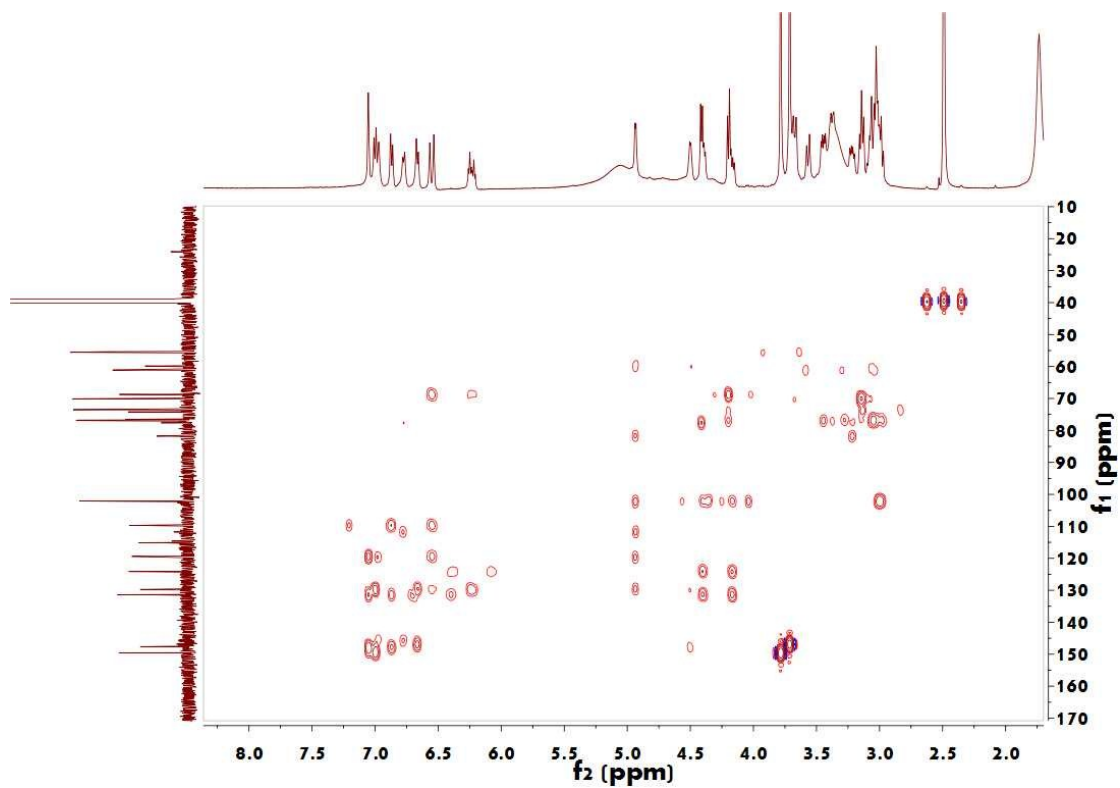


Figure S48. The HMBC spectrum of compound **6*** in DMSO- d_6

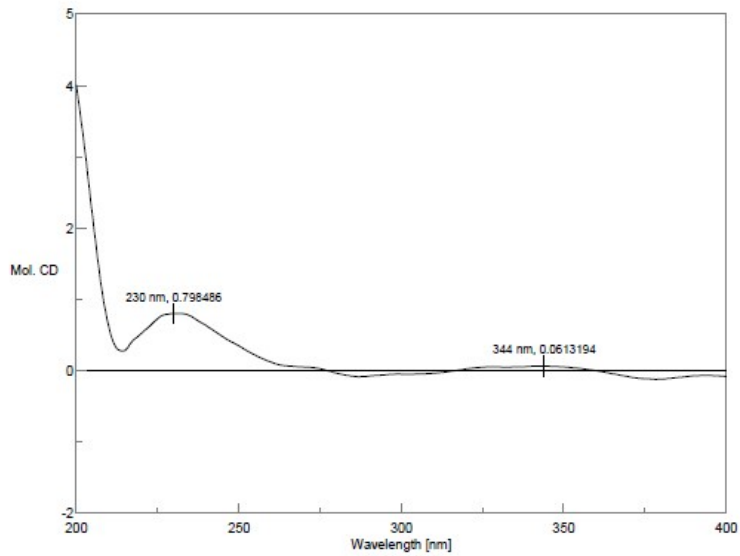


Figure S49. The CD spectrum of **6*** in MeOH

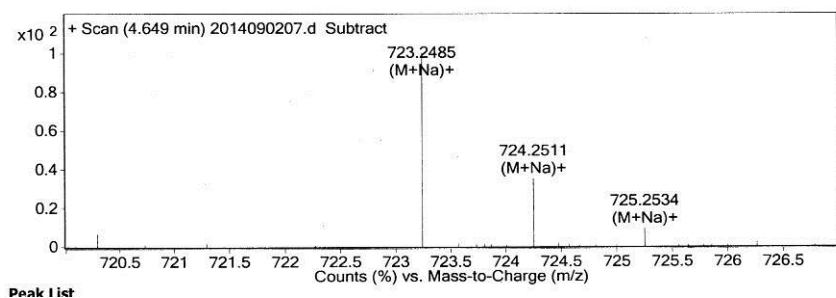


Figure S50. The HRESIMS of compound **6***

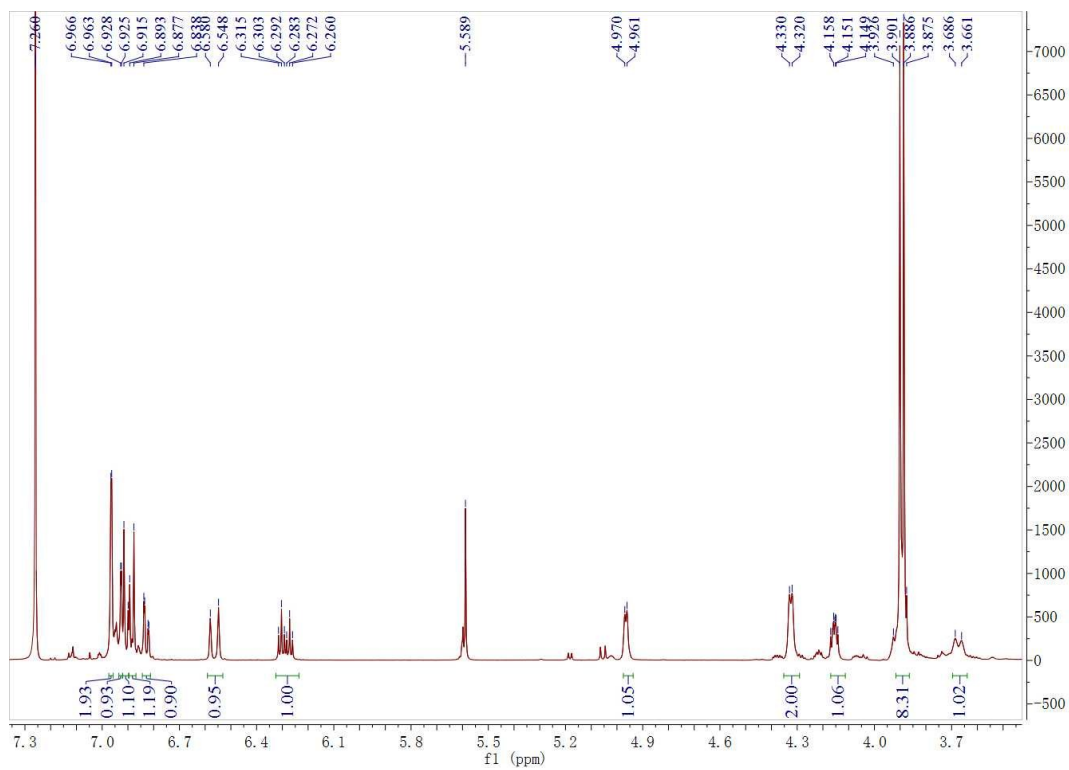


Figure S51. The ¹H NMR spectrum of compound **6a** in CDCl₃

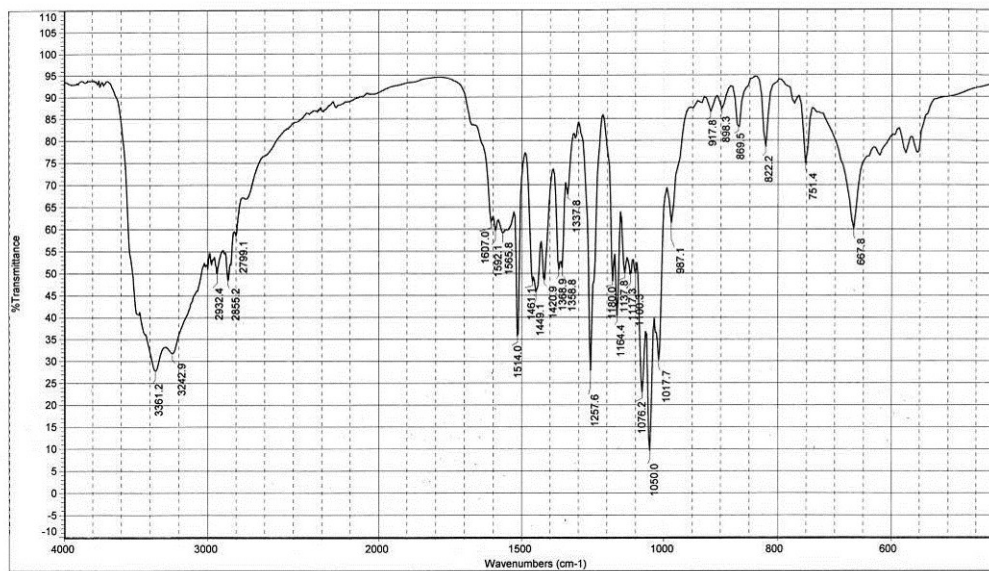


Figure S52. The IR spectrum of compound 7*

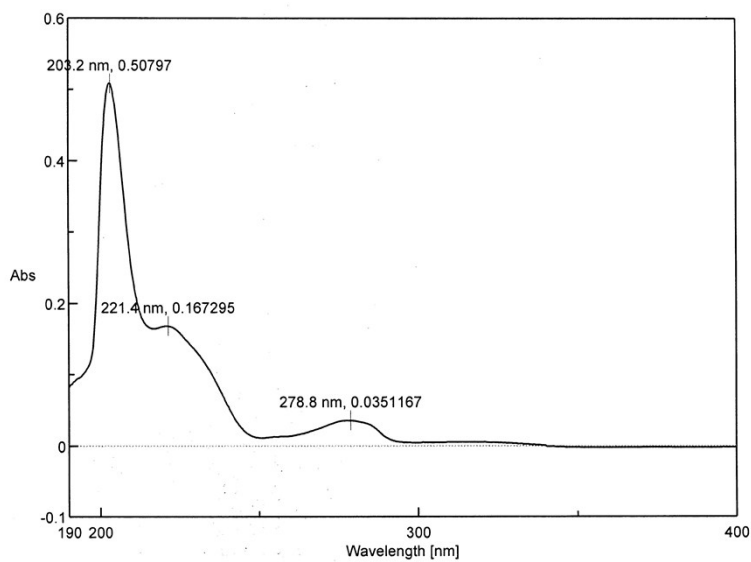


Figure S53. The UV spectrum of compound 7*

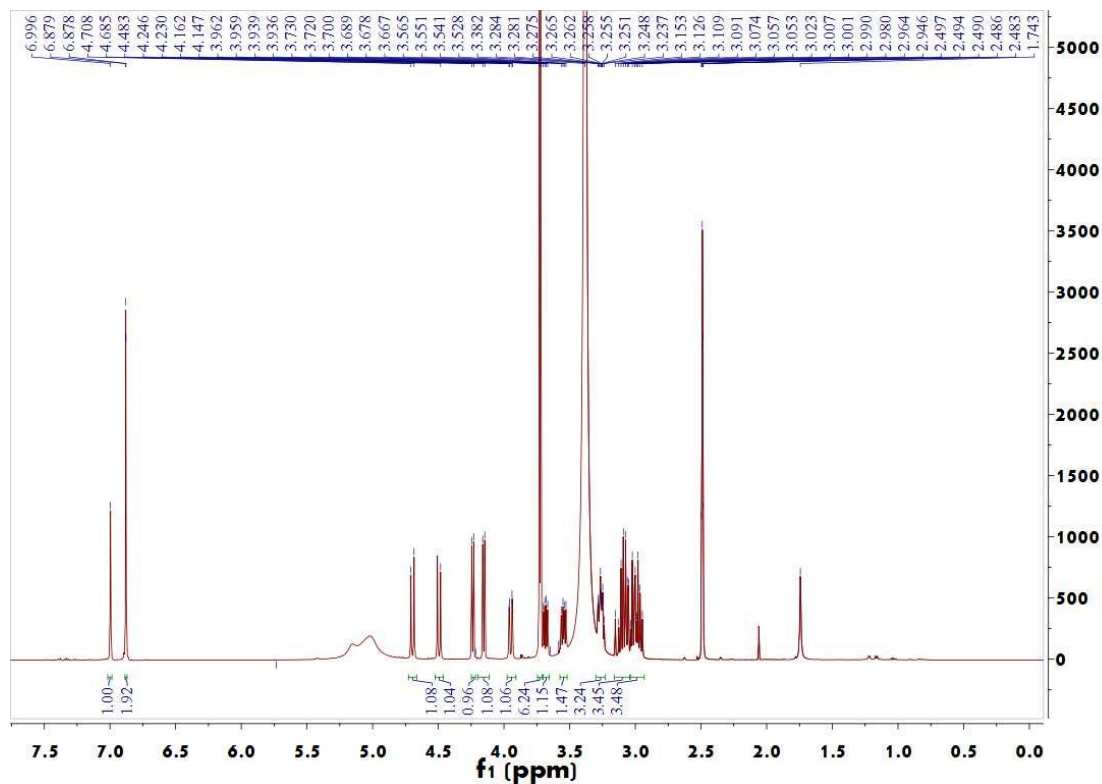


Figure S54. The ^1H NMR spectrum of compound **7*** in $\text{DMSO-}d_6$

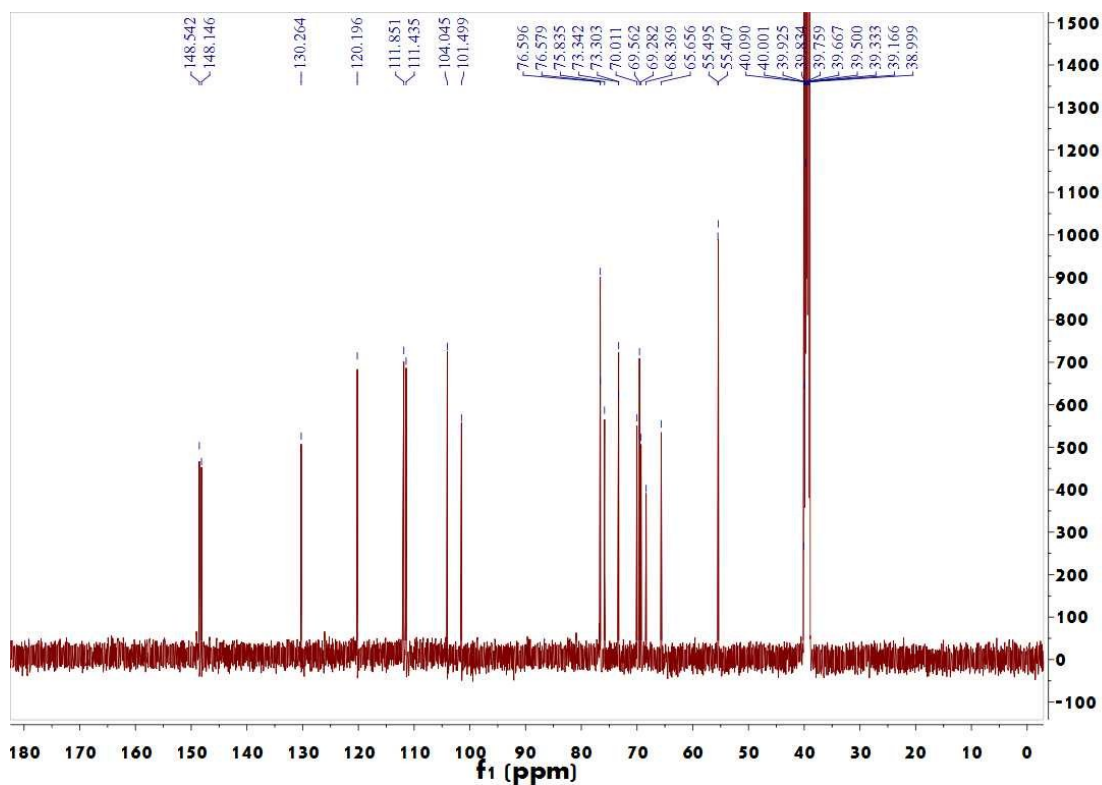


Figure S55. The ^{13}C NMR spectrum of compound **7*** in $\text{DMSO-}d_6$

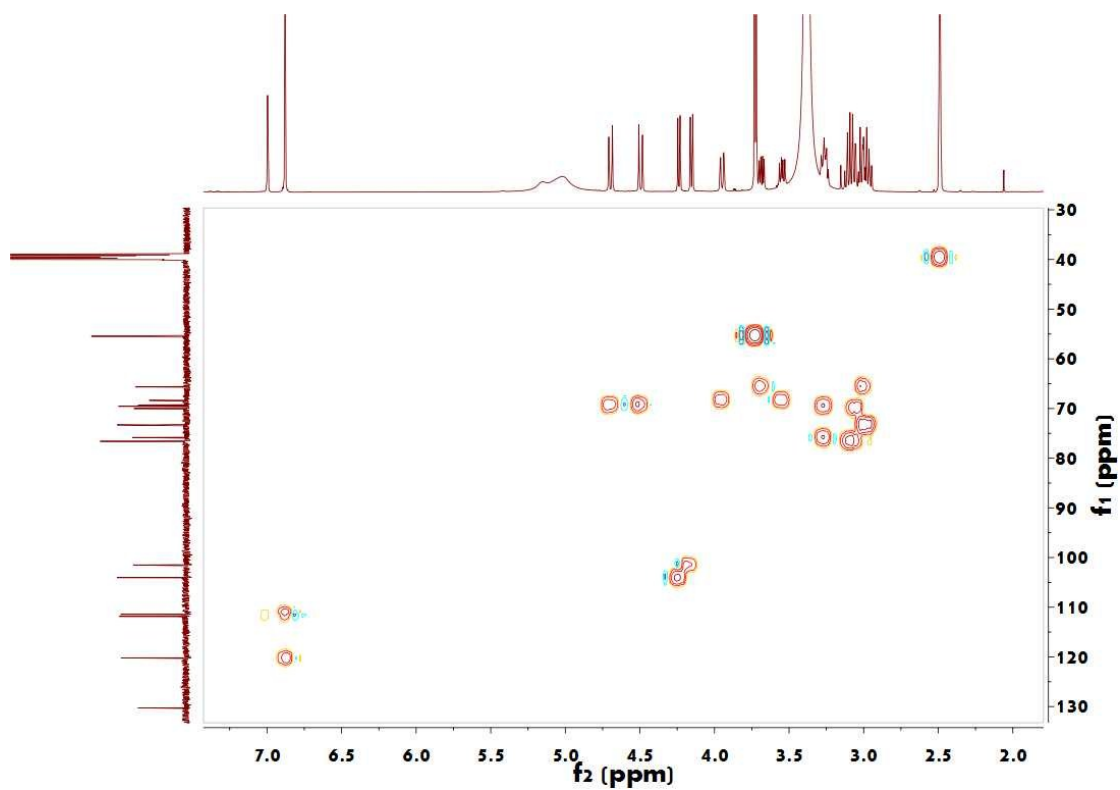


Figure S56. The HSQC spectrum of compound 7* in DMSO- d_6

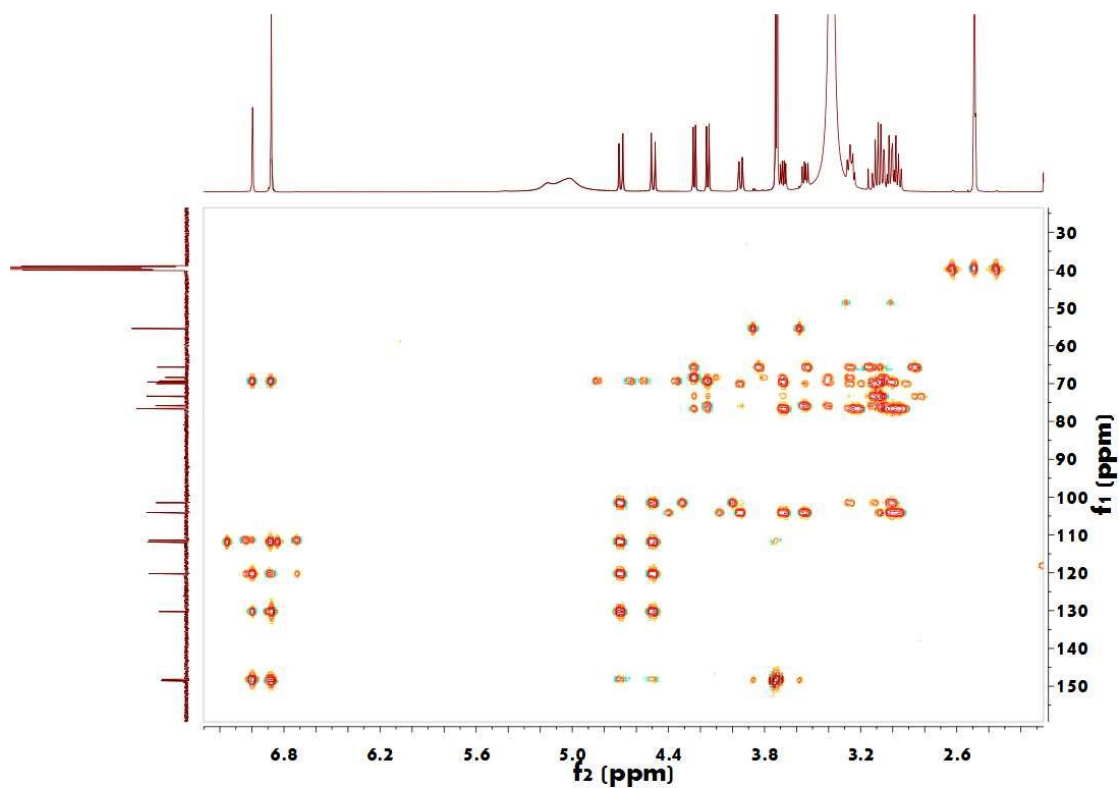


Figure S57. The HMBC spectrum of compound 7* in DMSO- d_6

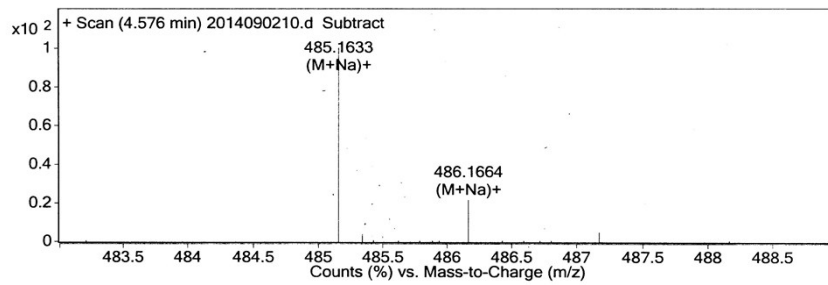


Figure S58. The HRESIMS of compound 14*

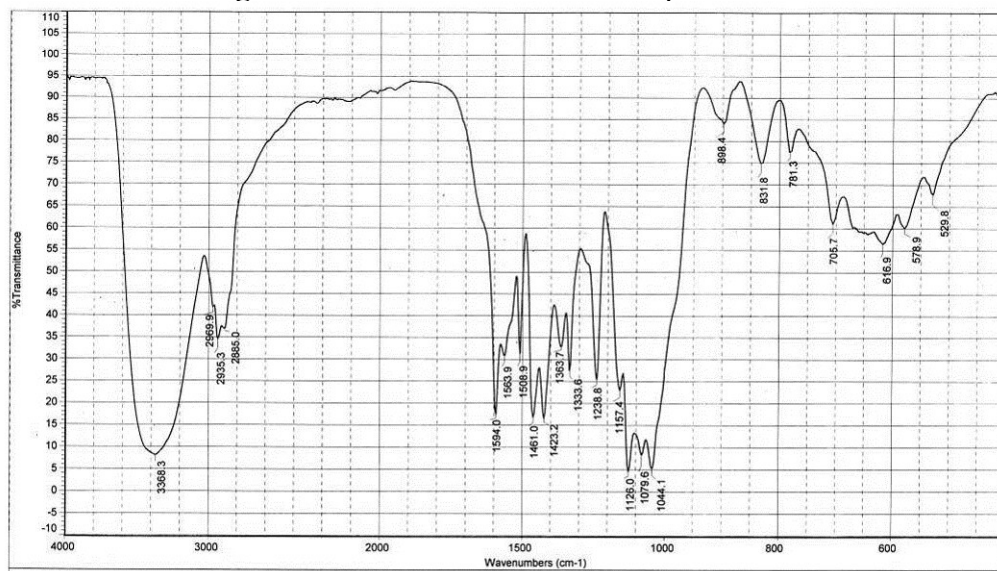


Figure S59. The IR spectrum of compound 8*

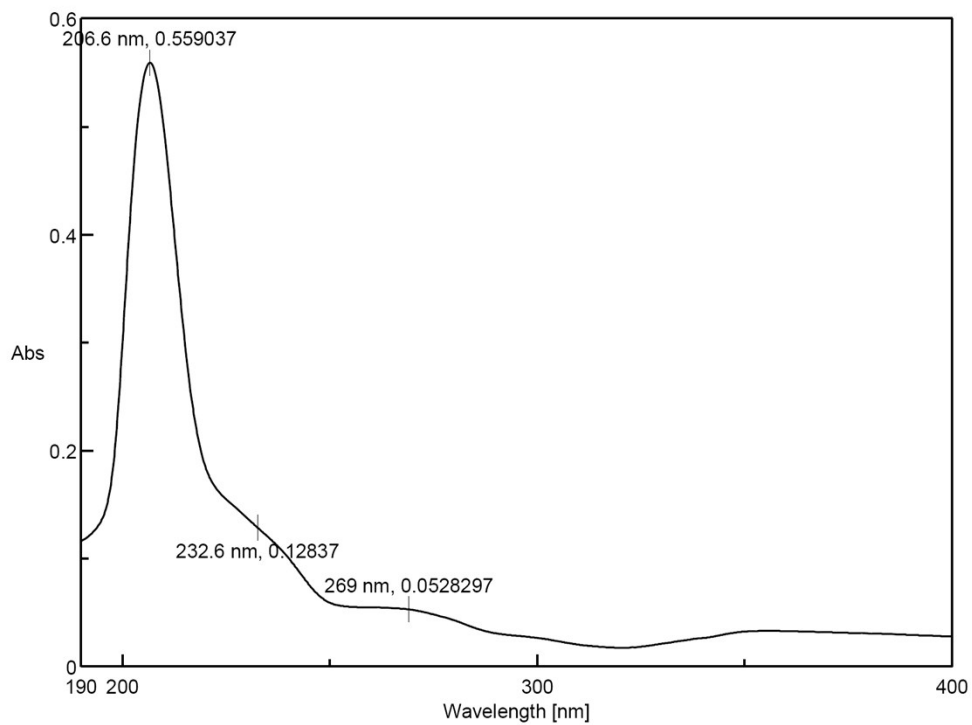


Figure S60. The UV spectrum of compound **8***

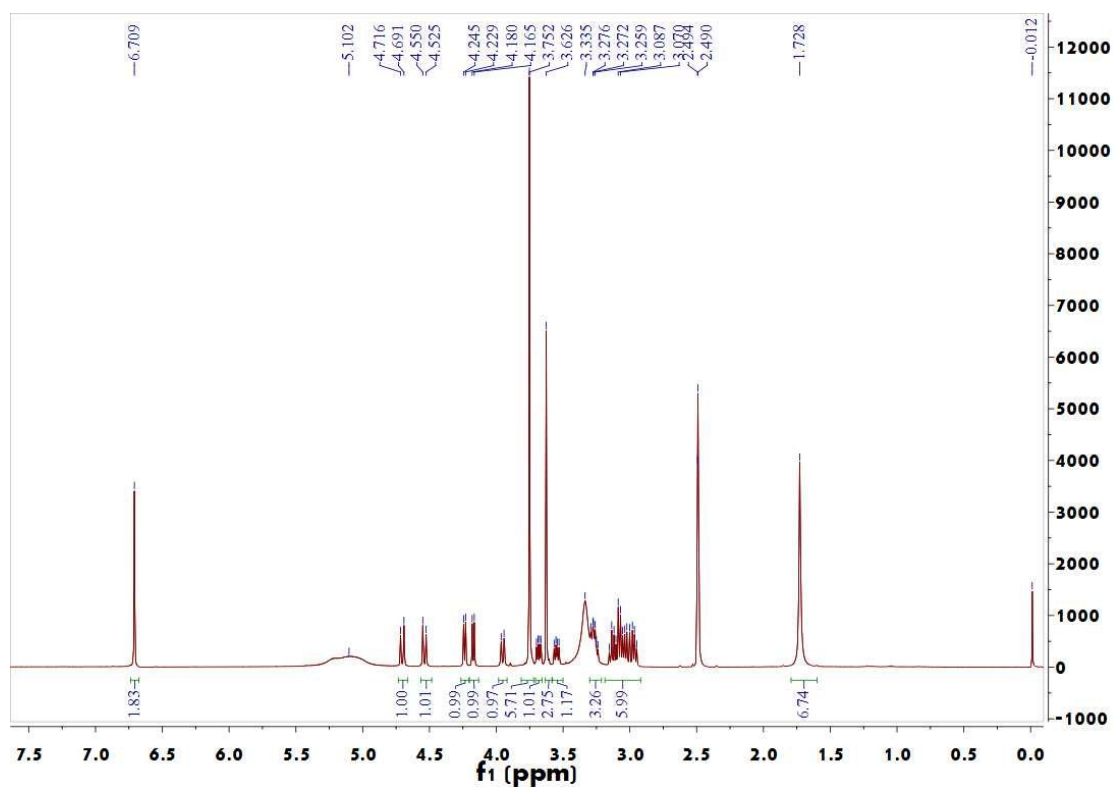


Figure S61. The ^1H NMR spectrum of compound **8*** in $\text{DMSO-}d_6$.

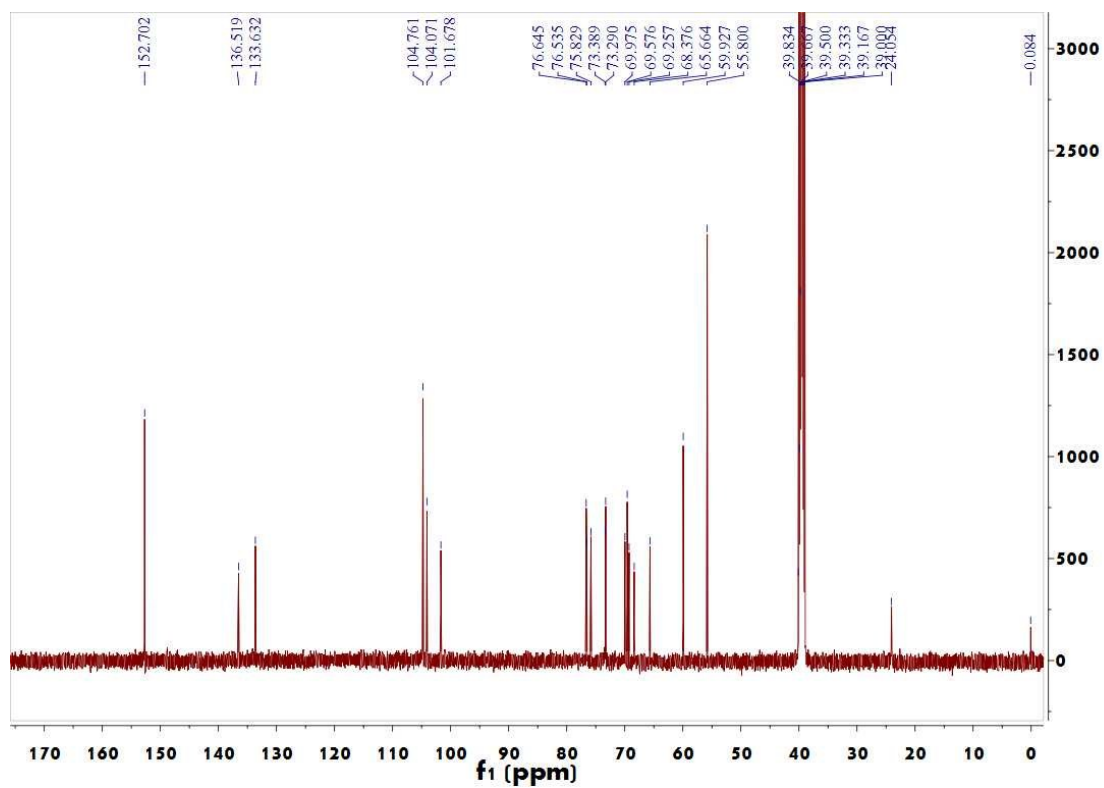


Figure S62. The ^{13}C NMR spectrum of compound **8*** in $\text{DMSO-}d_6$.

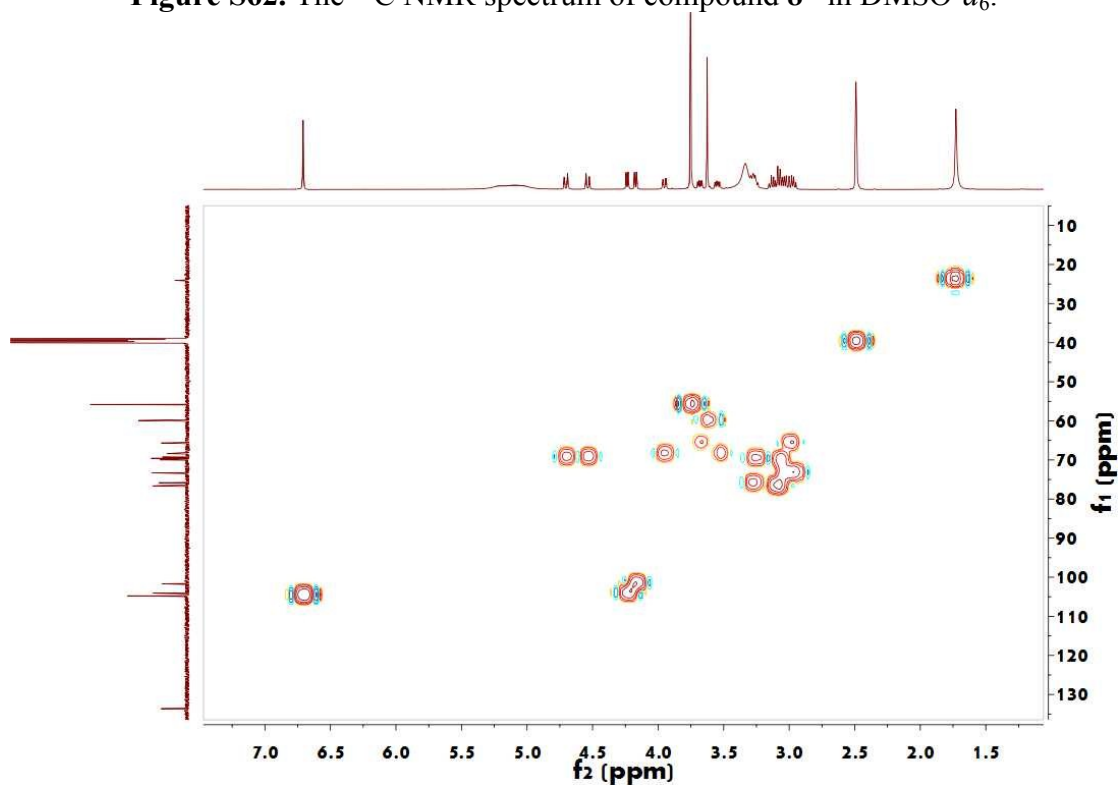


Figure S63. The HSQC spectrum of compound **8*** in $\text{DMSO-}d_6$.

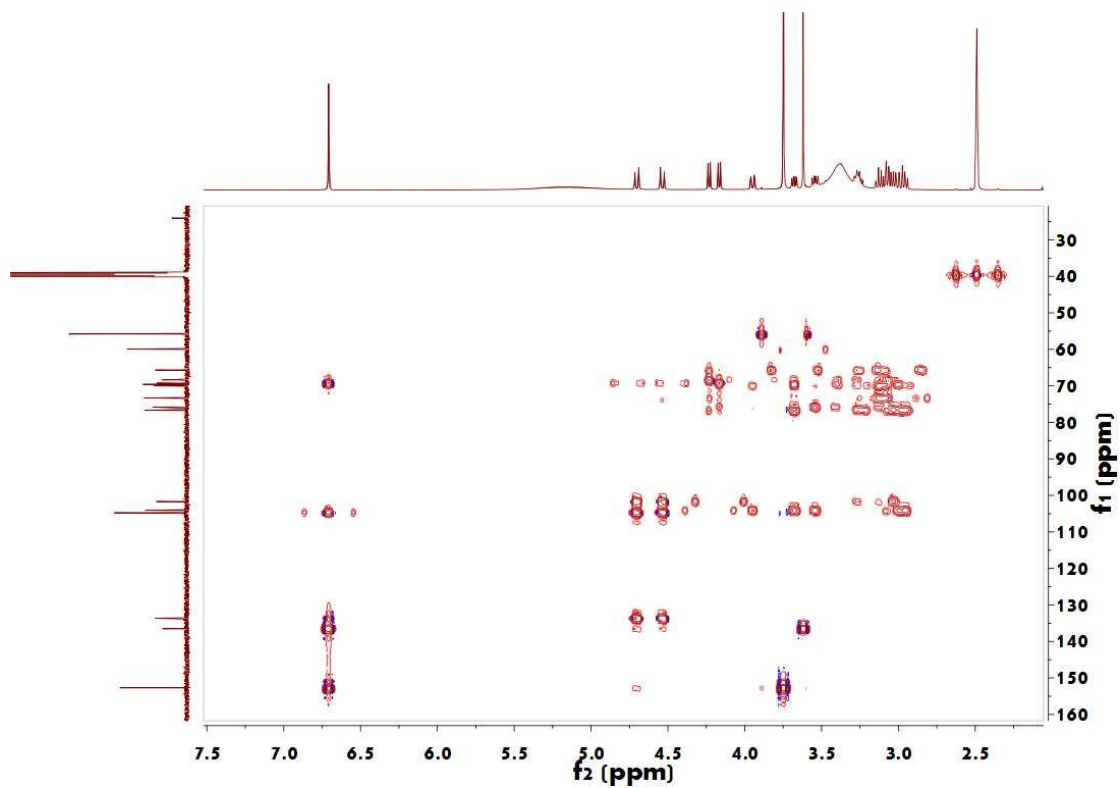


Figure S64. The HMBC spectrum of compound **8*** in DMSO- d_6 .

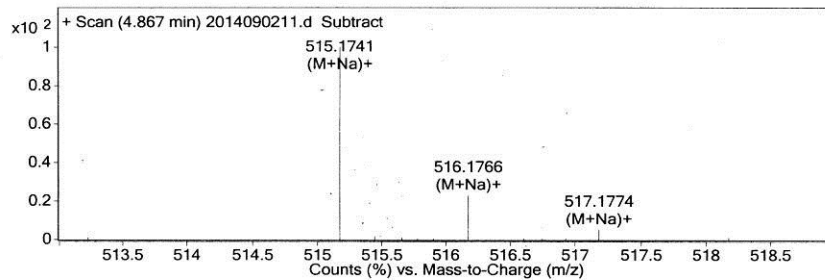


Figure S65. The HRESIMS of compound **8***

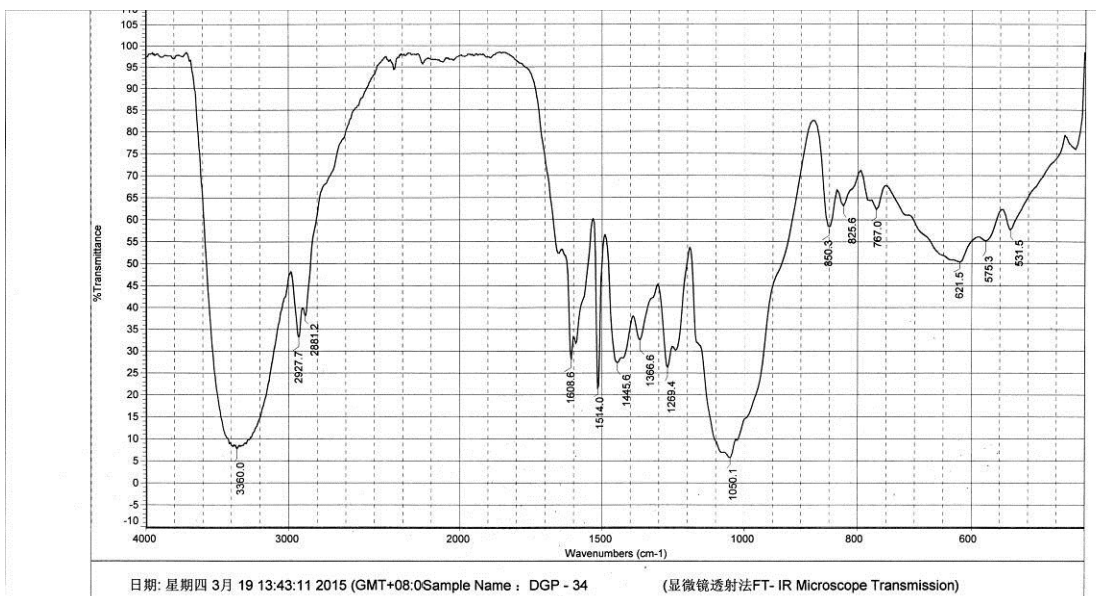


Figure S66. The IR spectrum of compound **9***.

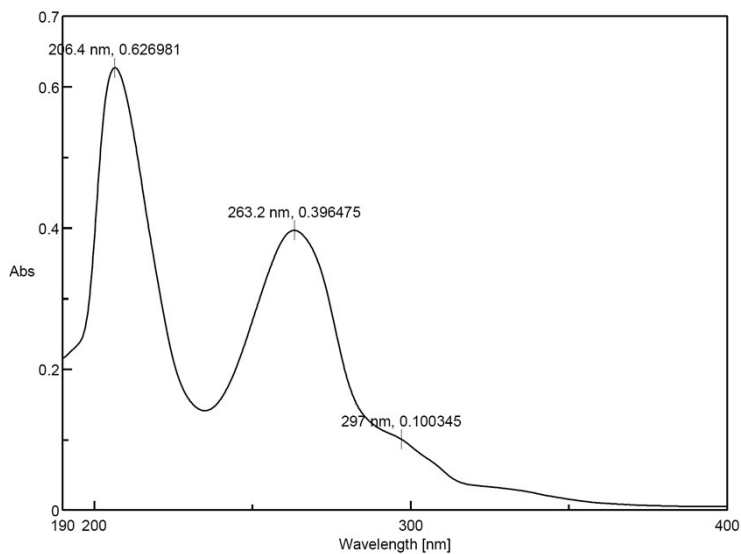


Figure S67. The UV spectrum of compound **9***

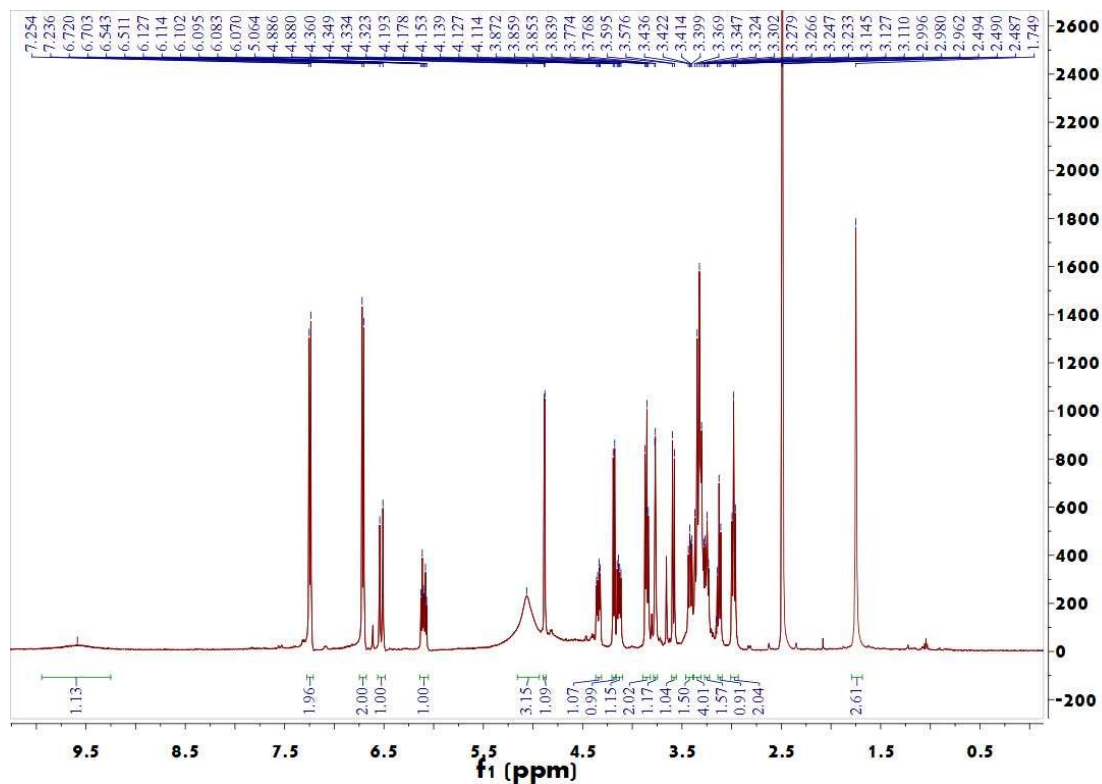


Figure S68. The ^1H NMR spectrum of compound **9*** in $\text{DMSO-}d_6$.

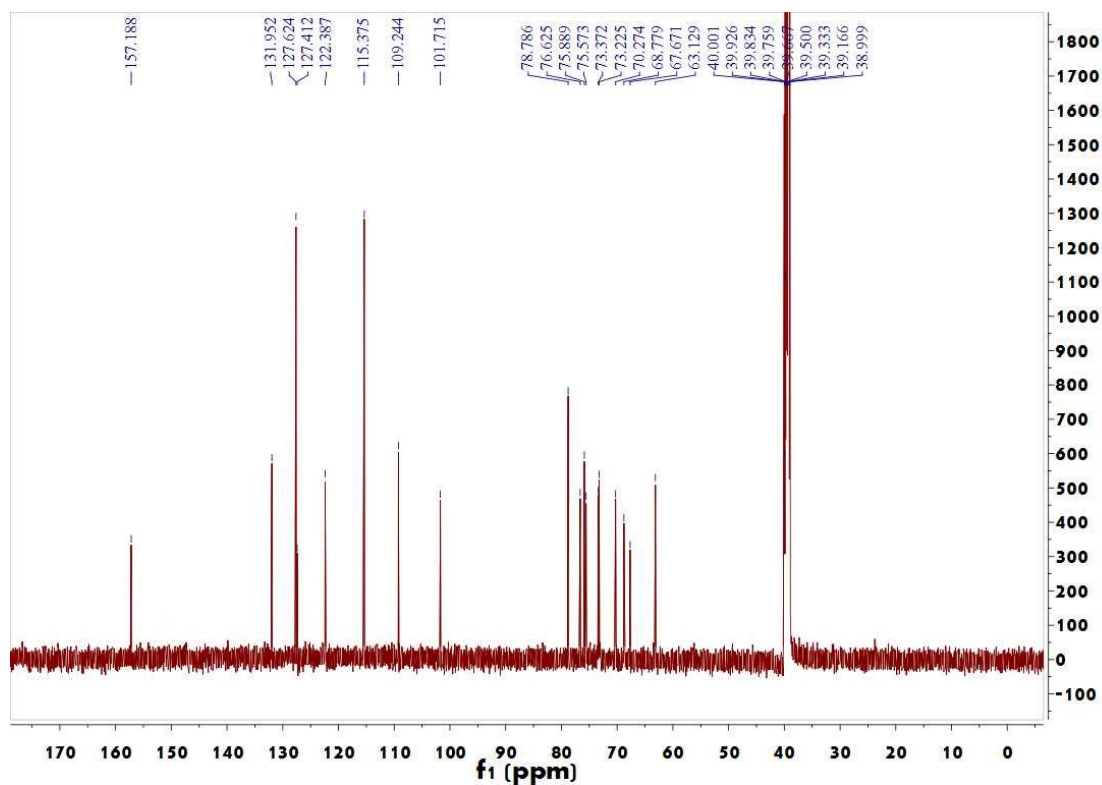


Figure S69. The ^{13}C NMR spectrum of compound **9*** in $\text{DMSO-}d_6$.

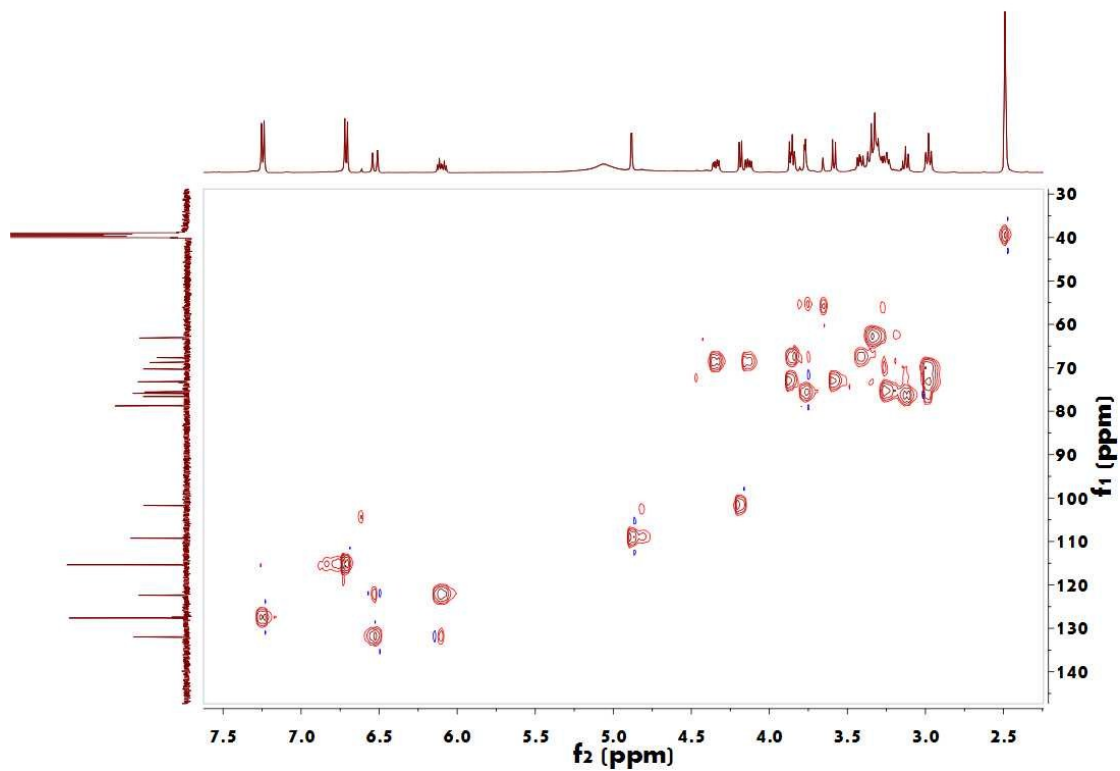


Figure S70. The HSQC spectrum of compound **9*** in DMSO- d_6

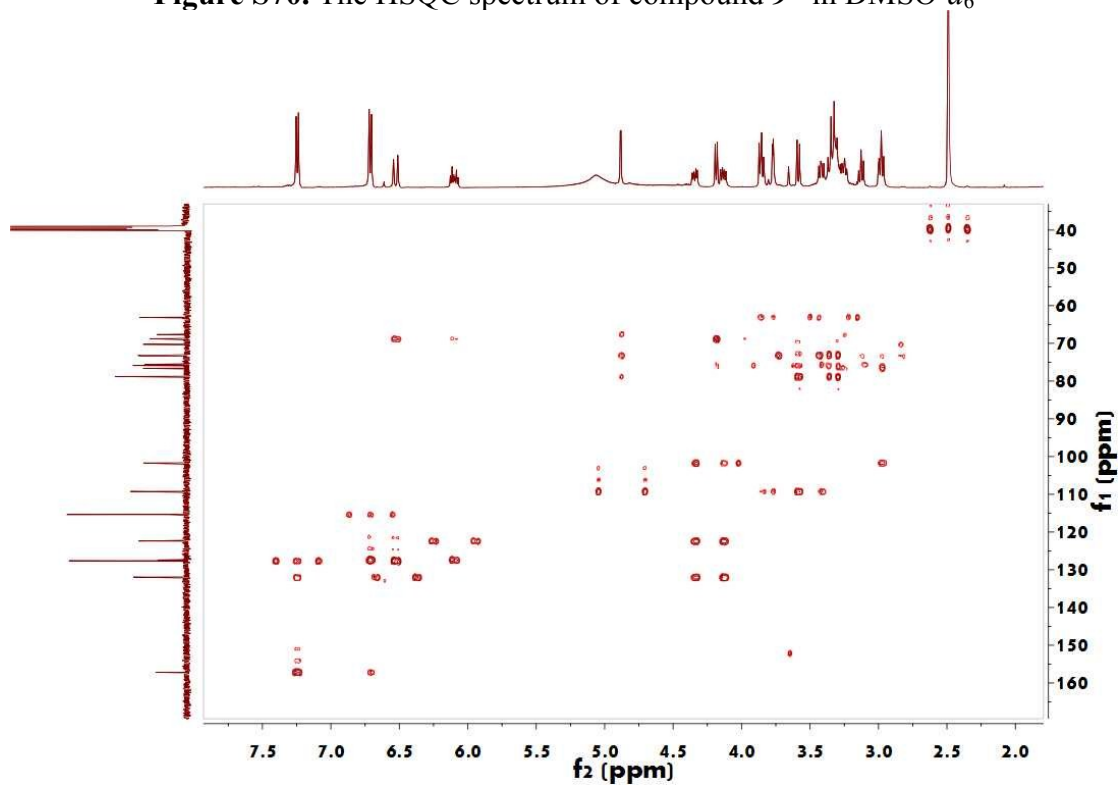


Figure S71. The HMBC spectrum of compound **9*** in DMSO- d_6 .

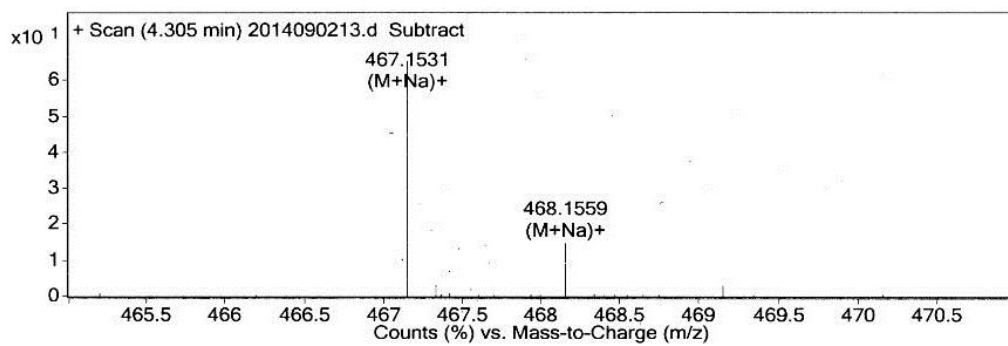


Figure S72. The HRESIMS of compound **9***