Electronic Supplementary Material (ESI) for RSC Advances.

Four new phenylethanoid and flavonoid glycoside dimers from the fruits of *Forsythia suspensa* and their neuroprotective activities

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Supporting information

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Experimental section

Neuroprotective effects of compounds 1-4. Compounds 1-4 were tested for neuroprotective effects against rotenone-induced injury in PC12 cells using an MTT assay. The PC12 cells were cultured in Dulbecco's modified Eagle's medium supplemented with 5% horse serum, 5% fetal bovine serum. Then, 100 μl cells with an initial density of 5×10^4 cells/ml were seeded in each well of a poly-L-lysine coated 96-well culture plates and precultured for 24h at 37 °C under a 5% CO_2 atmosphere. Afterwards, the medium were placed by different fresh medium including the control (complete medium), the model (complete medium with 4 μM rotenone) and the sample (complete medium with 4 μM rotenone and 1 μM test samples), and the cells were cultured for 48 h. Then, 10 μl MTT (0.5 mg/ml) was added to each well. After incubation for 4 h, the medium was removed and 100 μl DMSO was added to dissolve formazan crystals. The optical density (OD) of the PC12 cells was measured on a microplate reader at 550 nm. The cell viability (%) of each sample was calculated by the following formula: Cell viability (%) = $OD_{(model\ or\ sample)}/OD_{control}\times100$

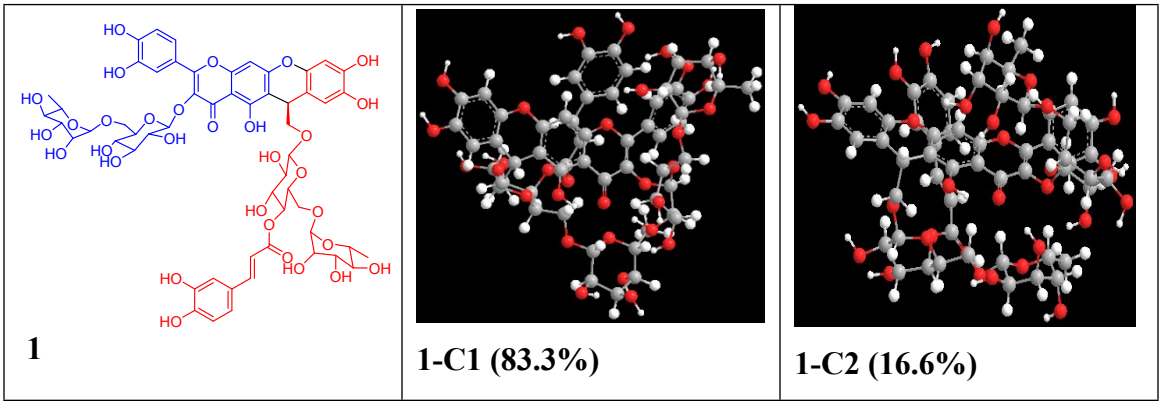

Figure S1 Two Optimized Conformations of **1** with the Population (%)

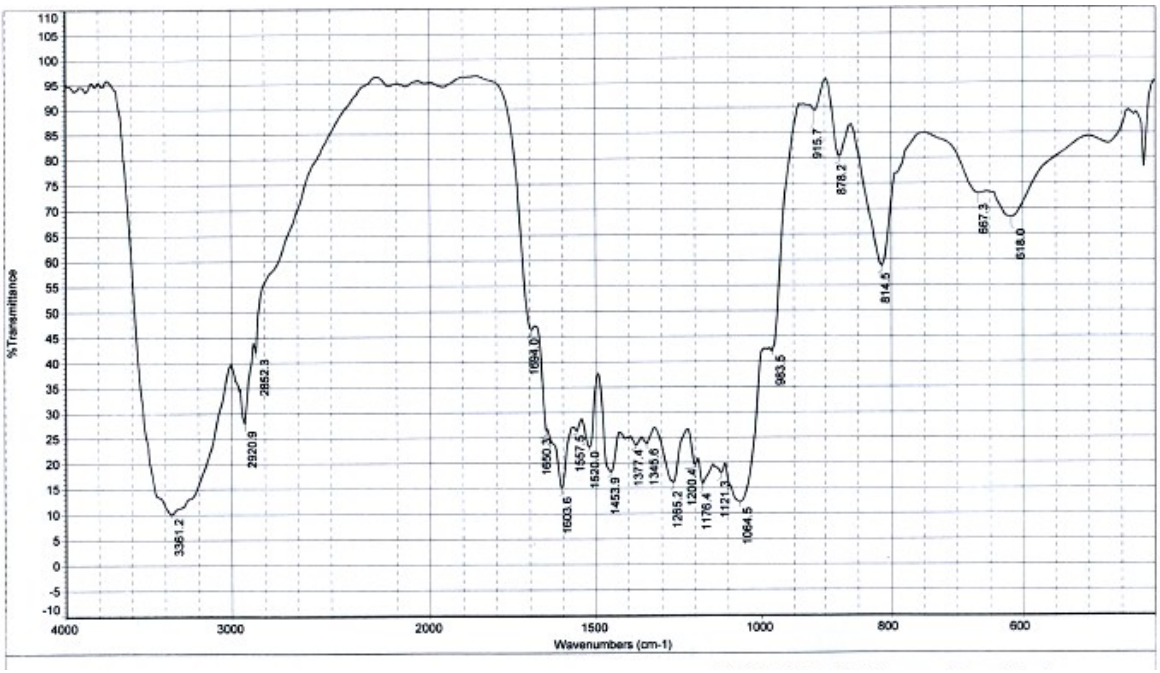

Figure S2. The IR spectrum of compound **1***

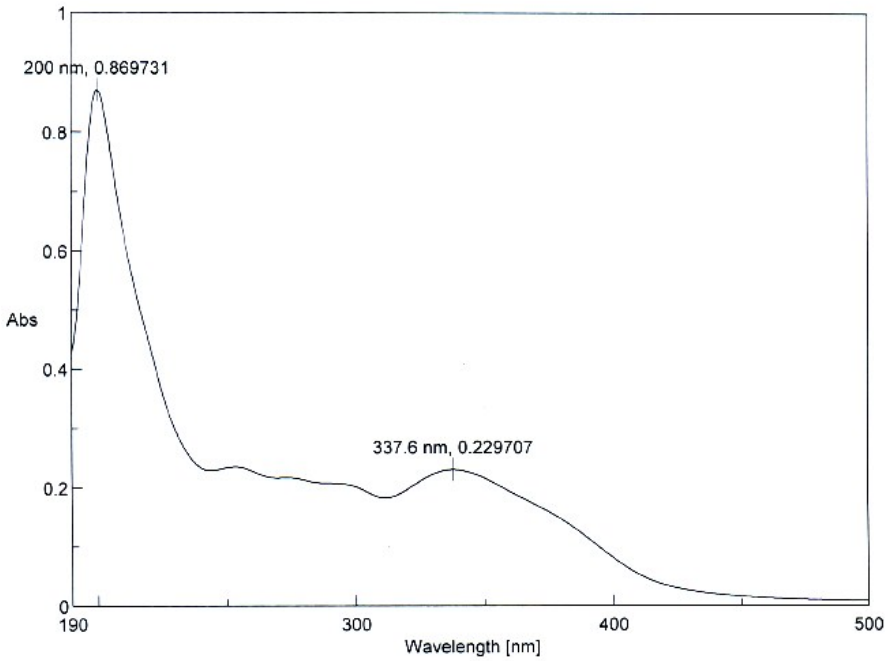

Figure S3. The UV spectrum of compound **1***

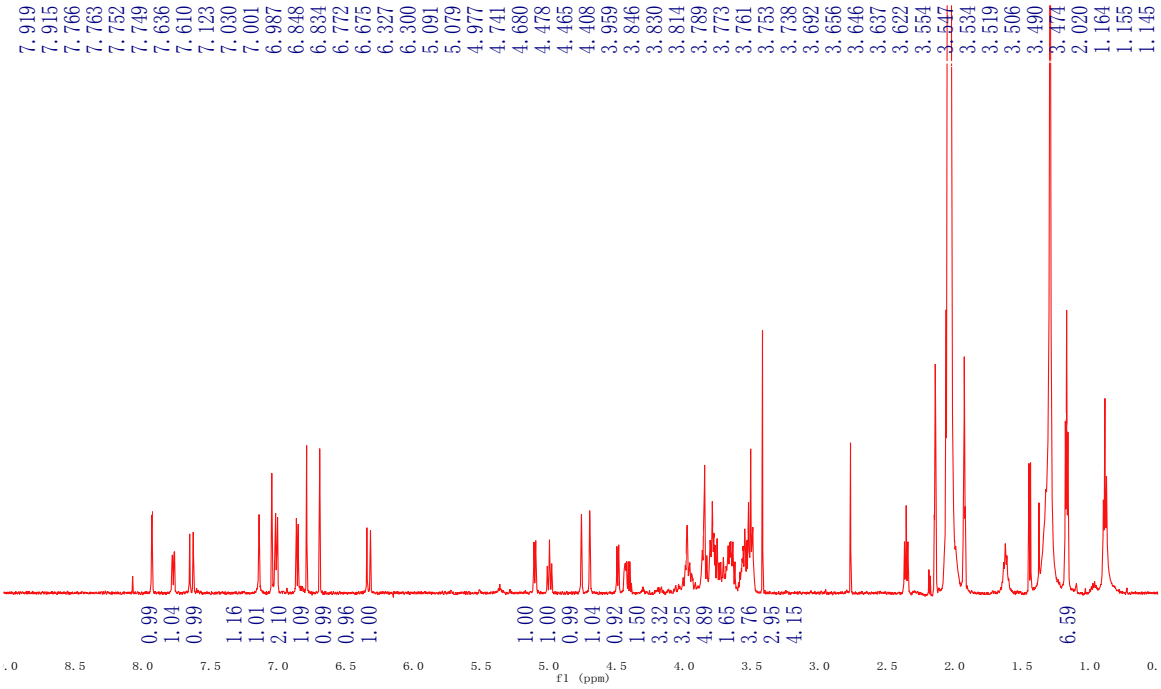

Figure S4. The ^{1}H NMR spectrum of compound **1*** in acetic acid-d_4

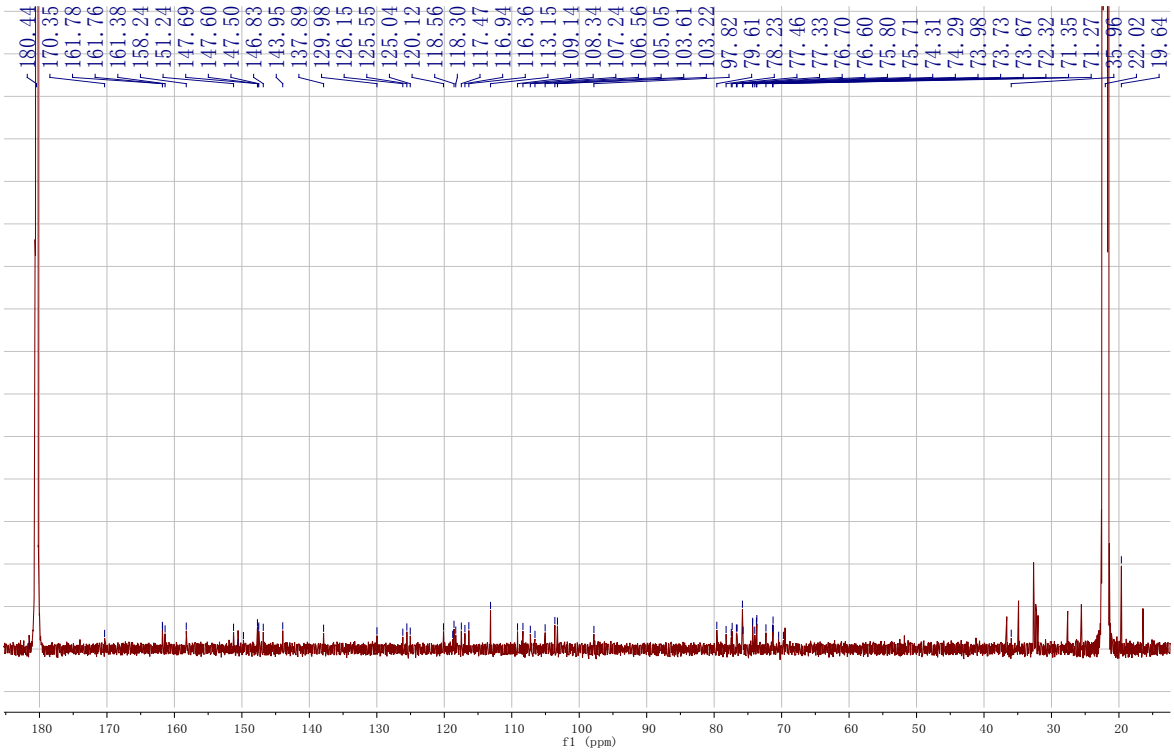

Figure S5. The ^{13}C NMR spectrum of compound **1*** in acetic acid-d_4

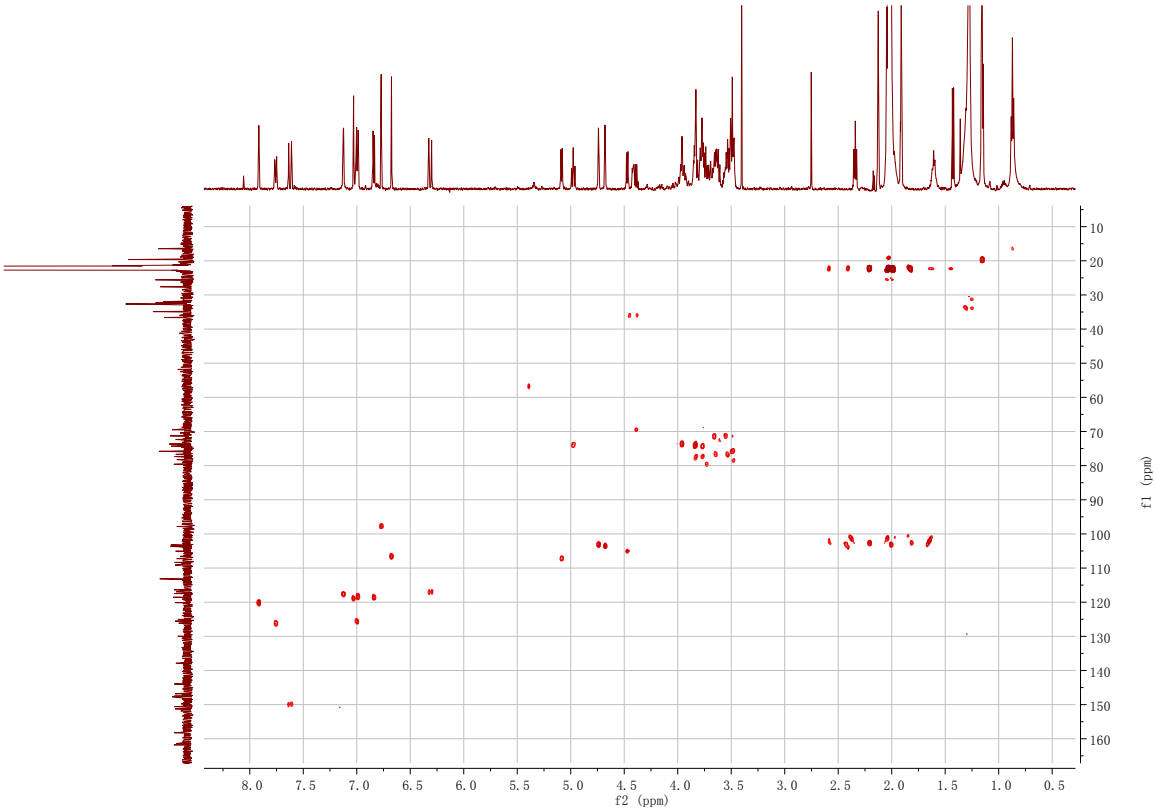

Figure S6. The HSQC spectrum of compound **1*** in acetic acid-d_4

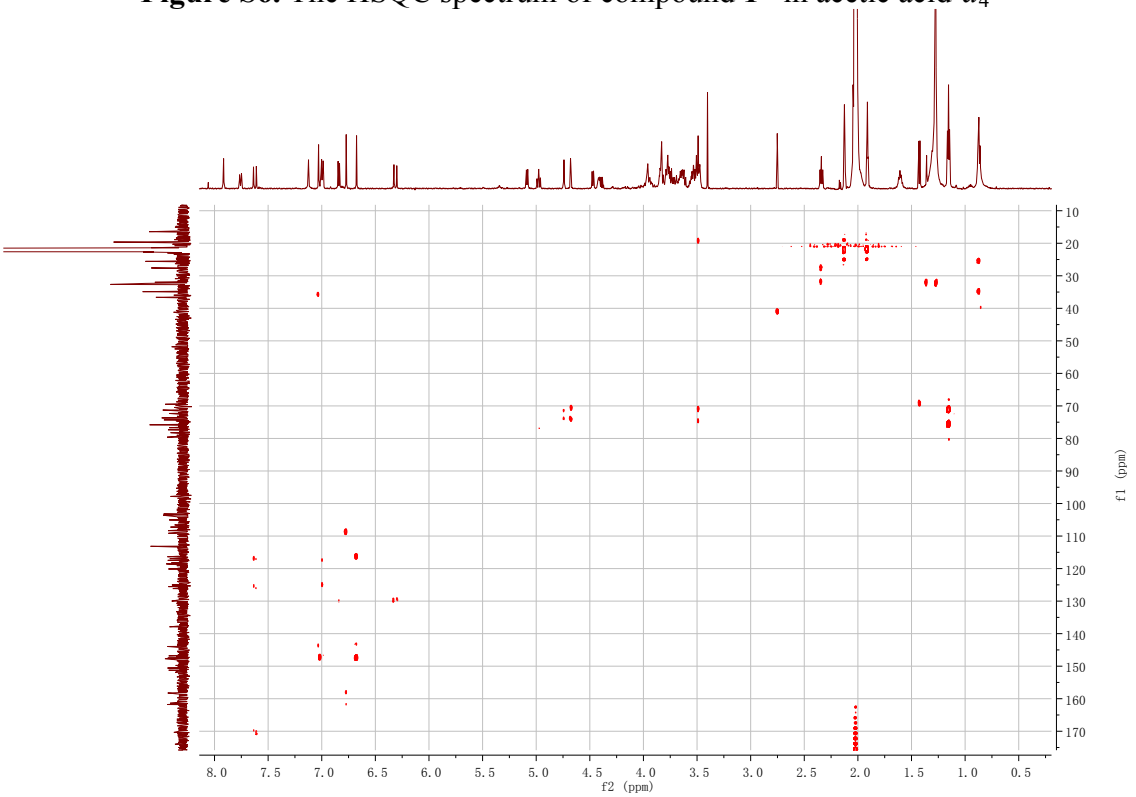

Figure S7. The HMBC spectrum of compound **1*** in acetic acid-d_4

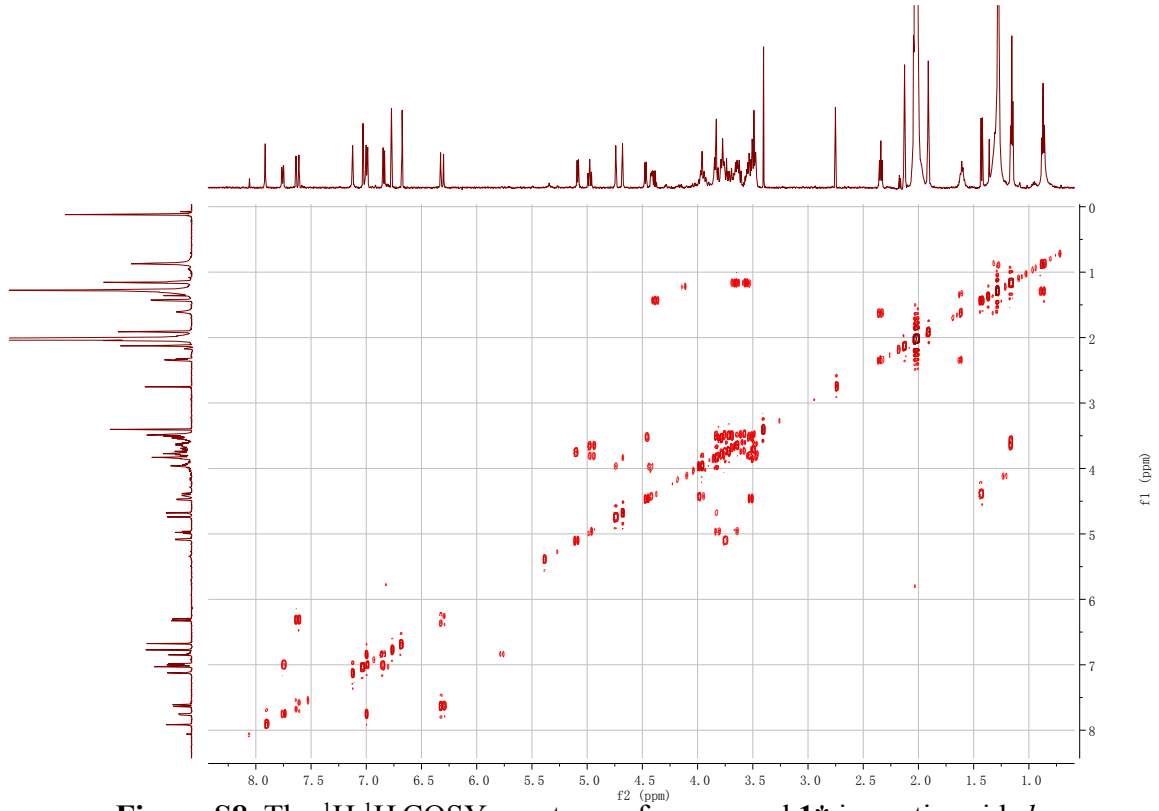

Figure S8. The ^{1}H-^{1}H COSY spectrum of compound **1*** in acetic acid-d_4

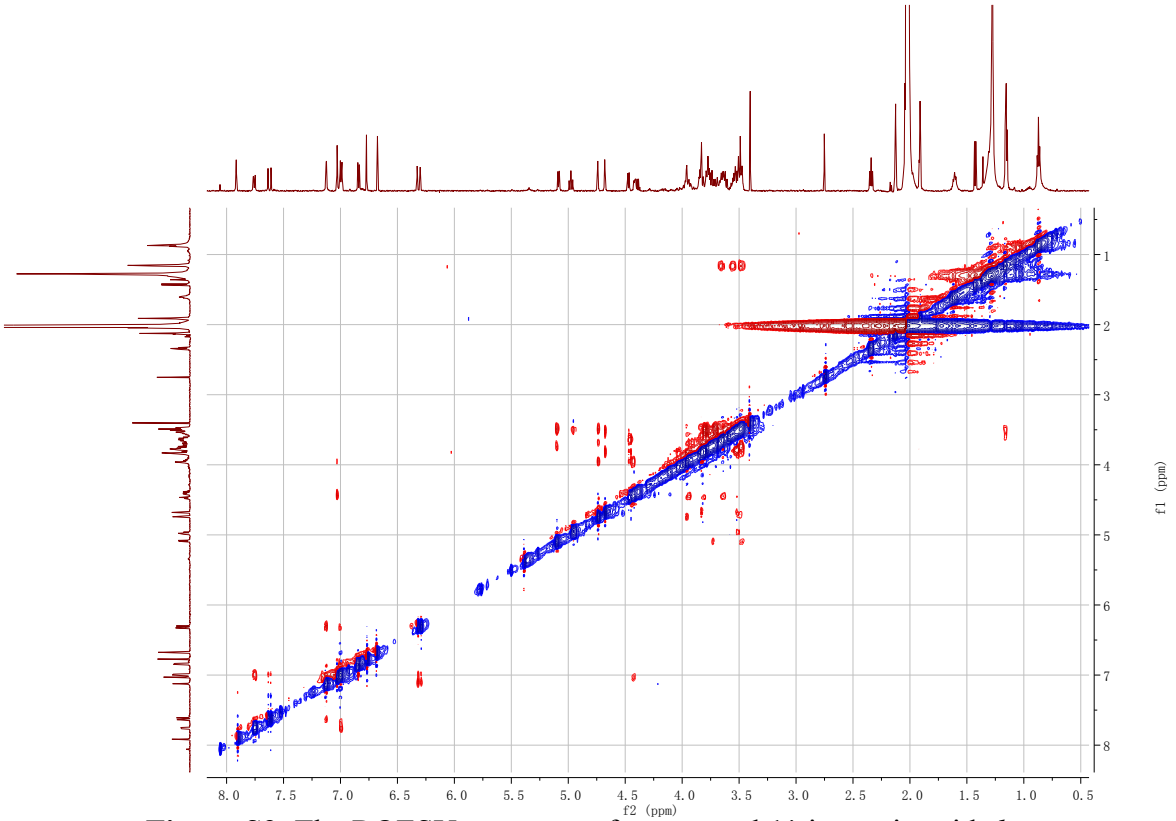

Figure S9. The ROESY spectrum of compound **1*** in acetic acid-d_4

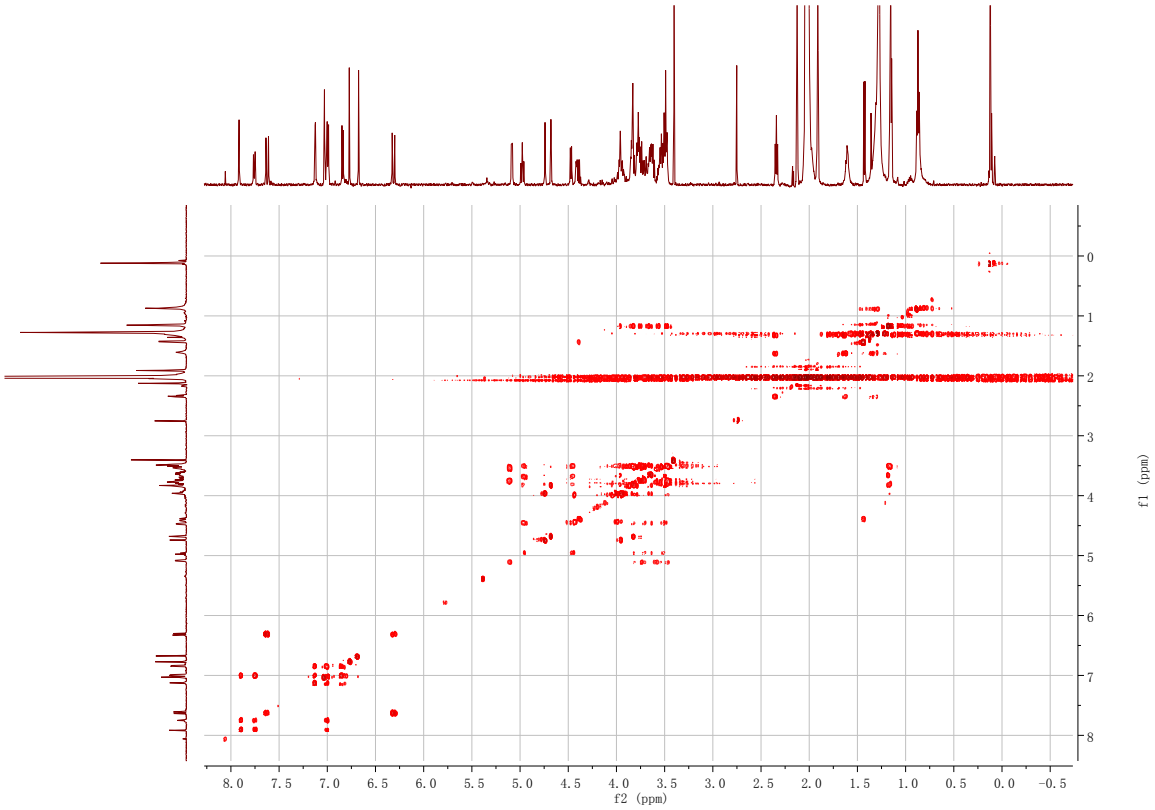

Figure S10. The TOCSY spectrum of compound **1*** in acetic acid-d_4

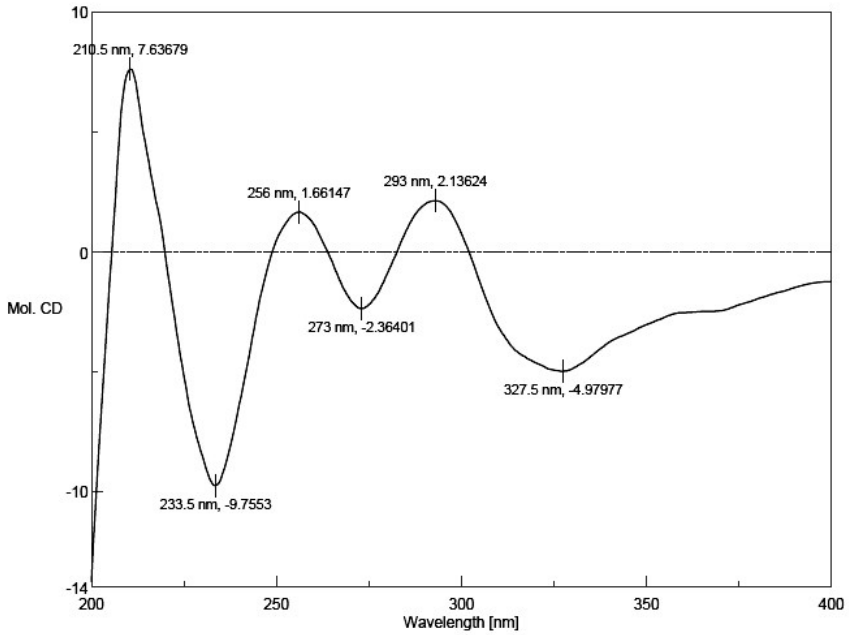

Figure S11. The CD spectrum of **1*** in MeOH

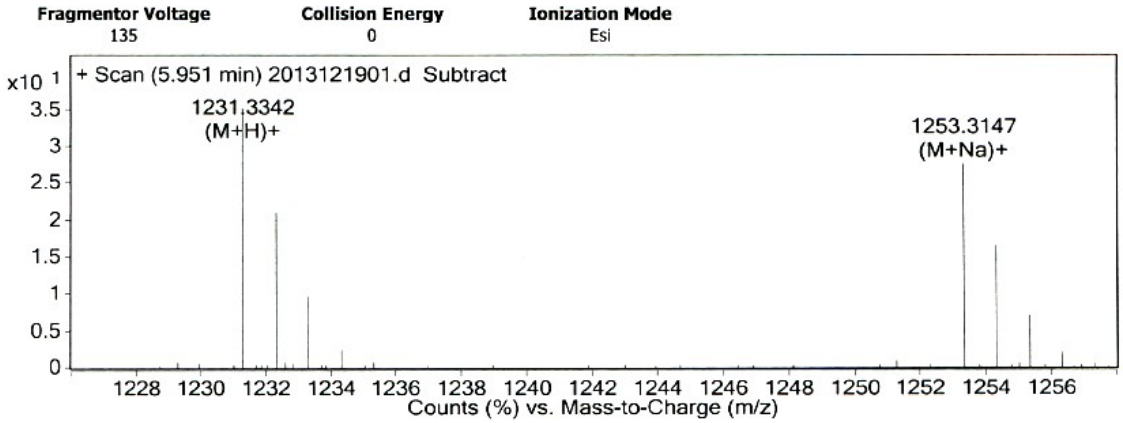

Figure S12. The HRESIMS of compound **1***

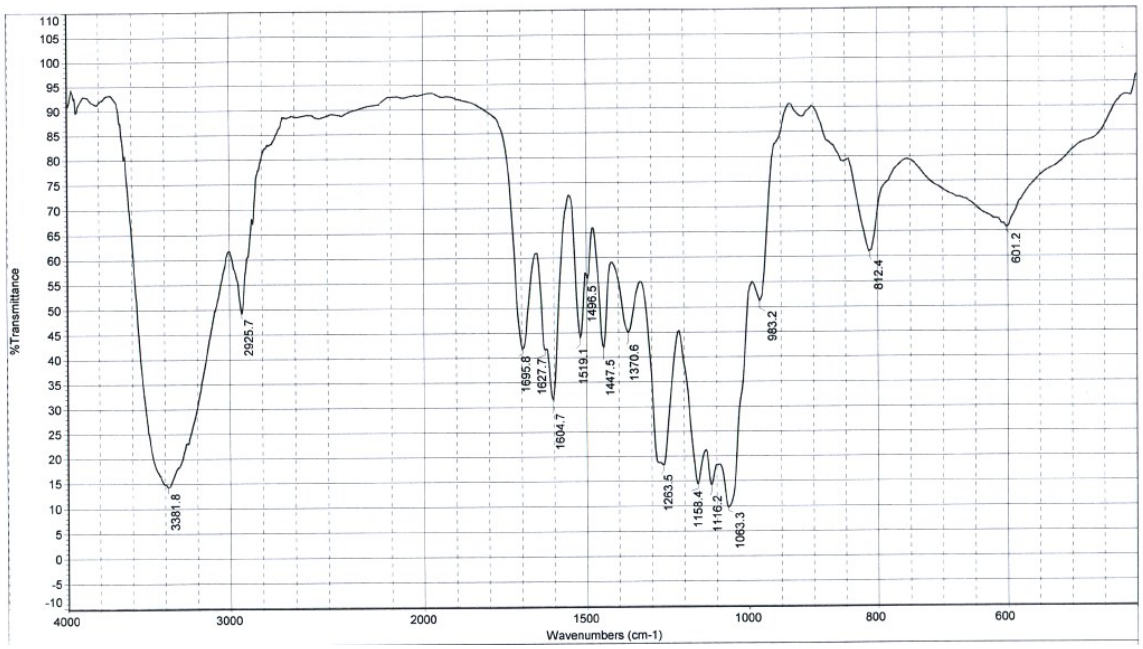

Figure S13. The IR spectrum of compound **2***

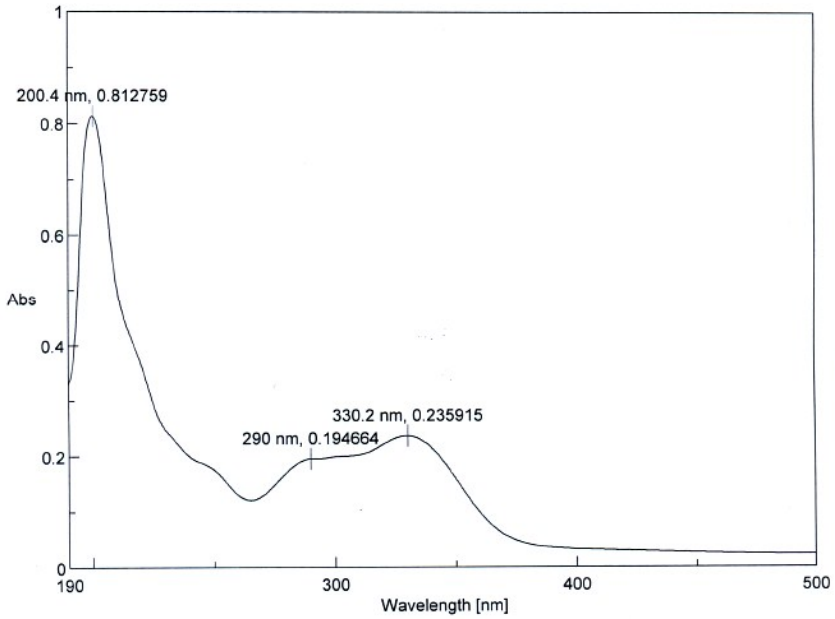

Figure S14. The UV spectrum of compound **2***

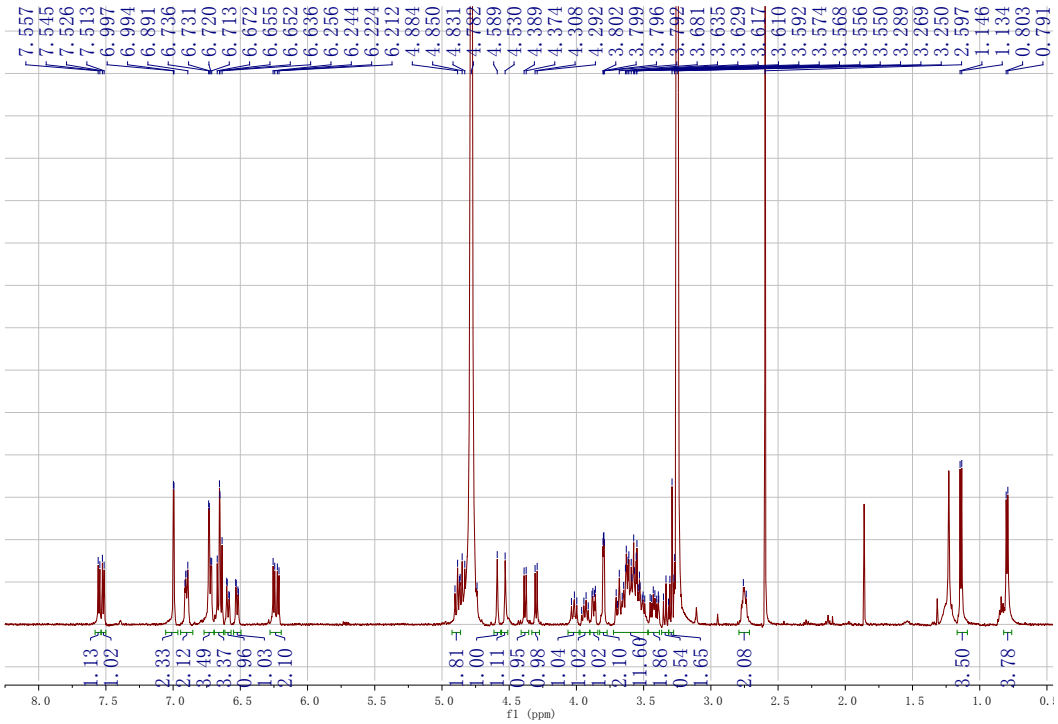

Figure S15. The ^{1}H NMR spectrum of compound **2*** in methanol-d_4

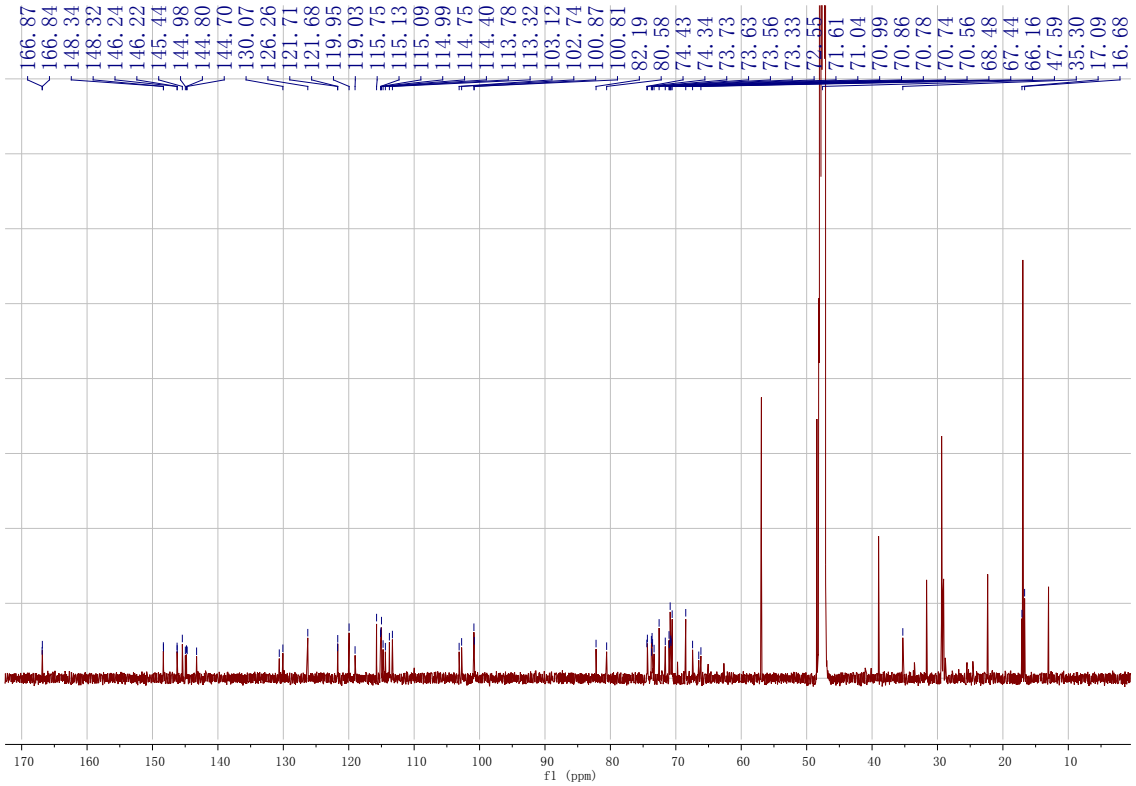

Figure S16. The ^{13}C NMR spectrum of compound **2*** in methanol-d_4

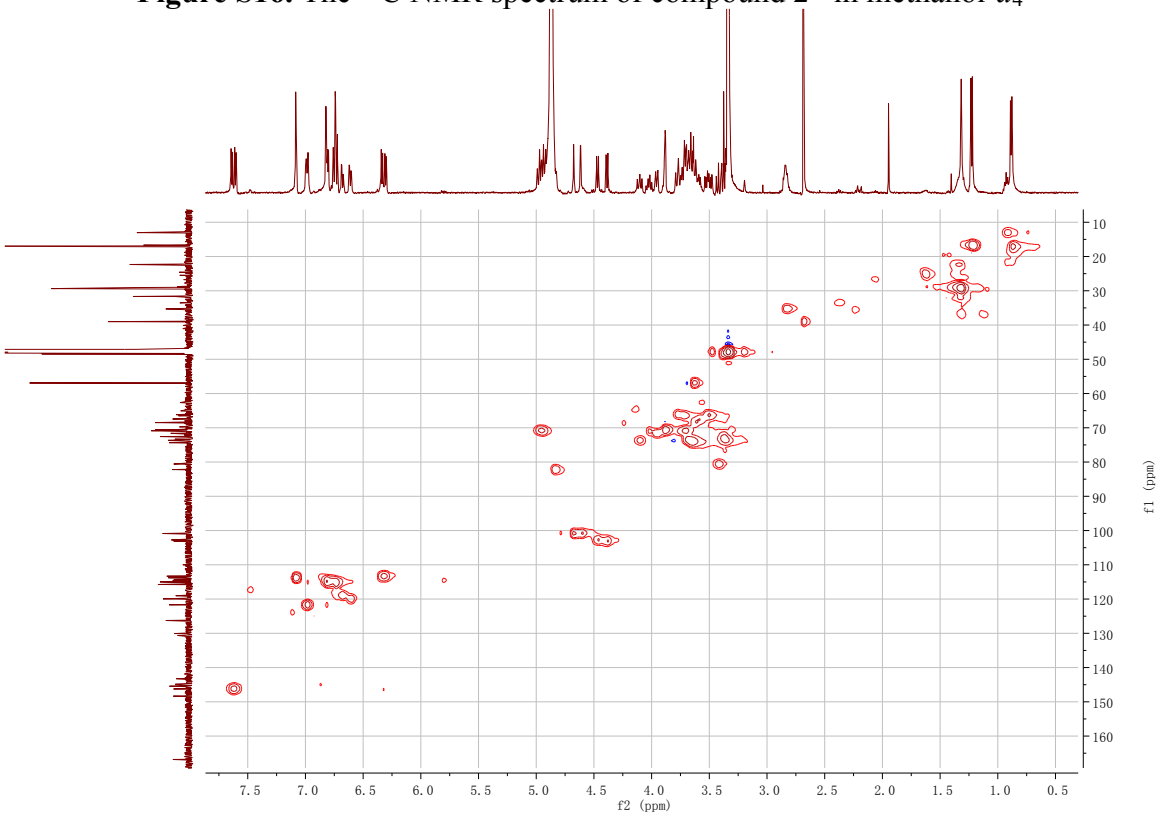

Figure S17. The HSQC spectrum of compound **2*** in methanol-d_4

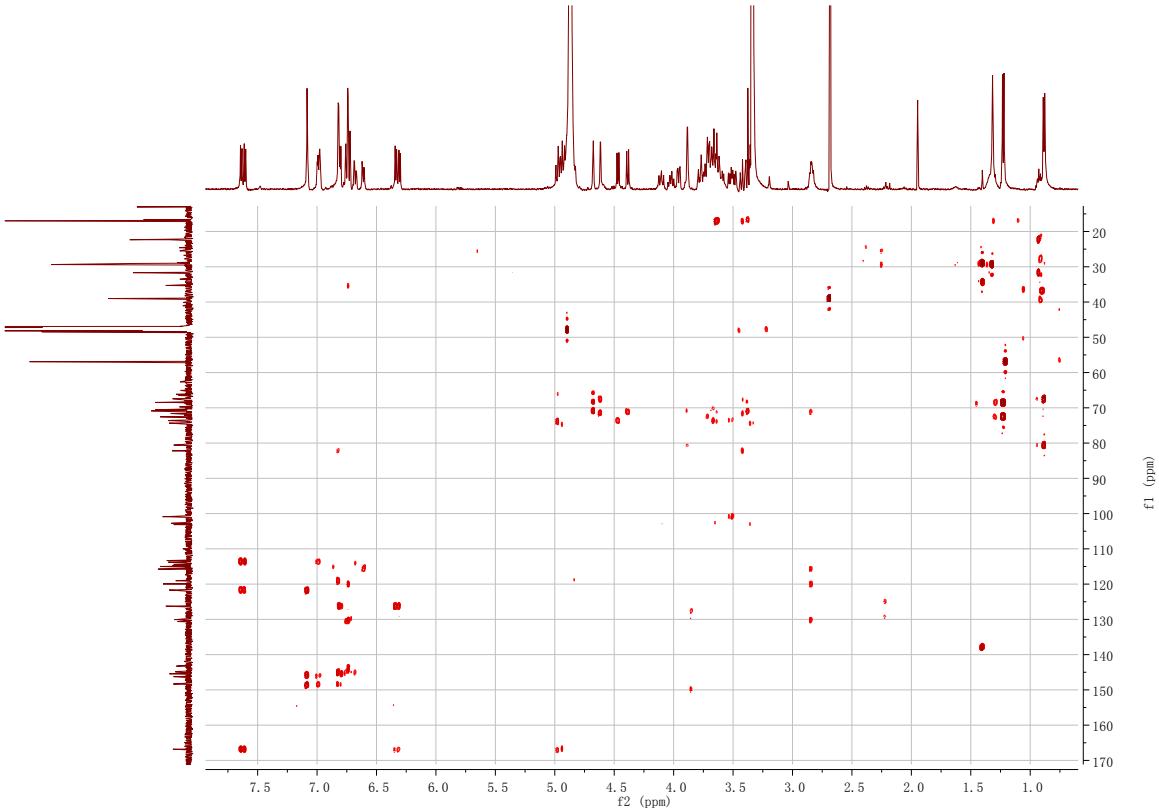

Figure S18. The HMBC spectrum of compound **2*** in methanol-d_4

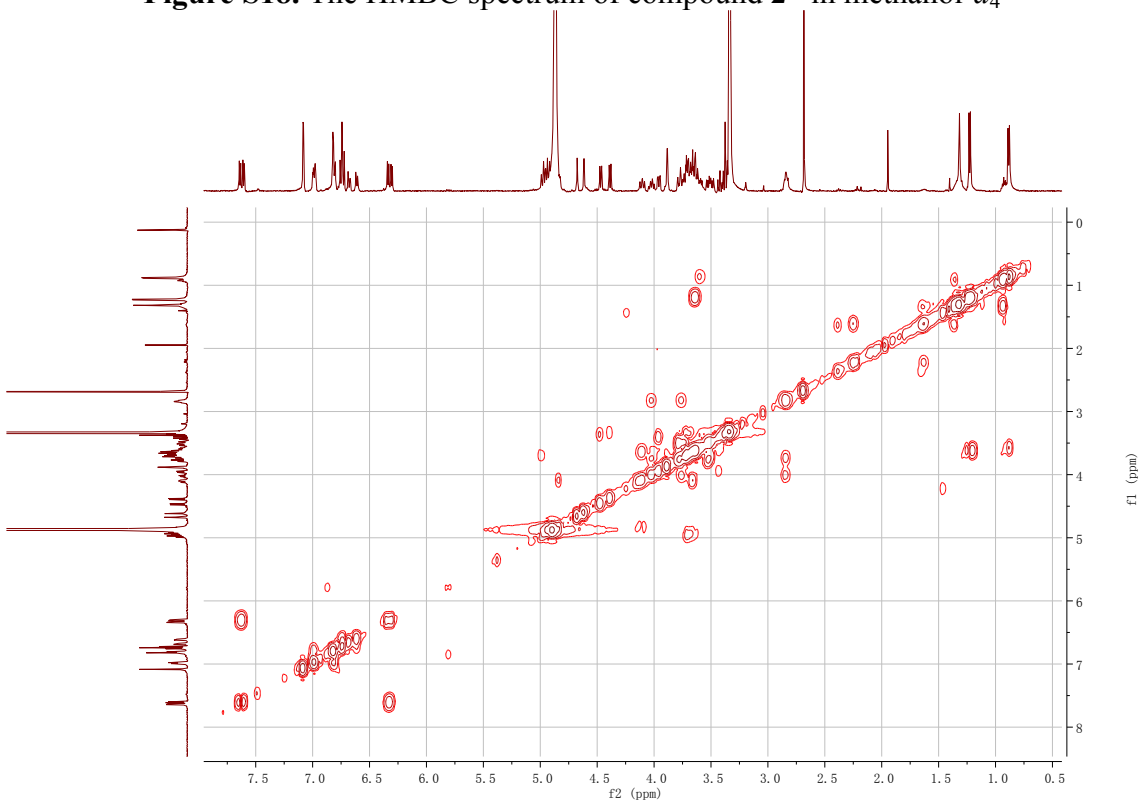

Figure S19. The ^{1}H-^{1}H COSY spectrum of compound **2*** in methanol-d_4

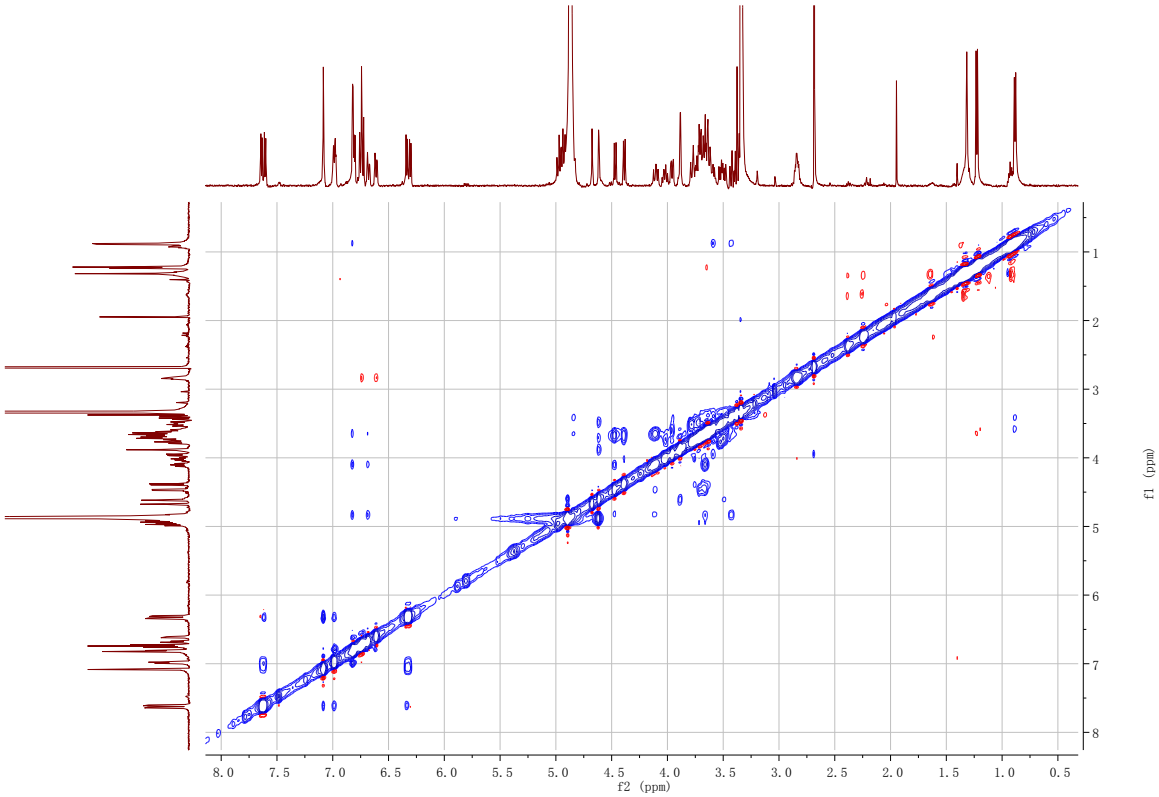

Figure S20. The ROESY spectrum of compound **2*** in methanol-d_4

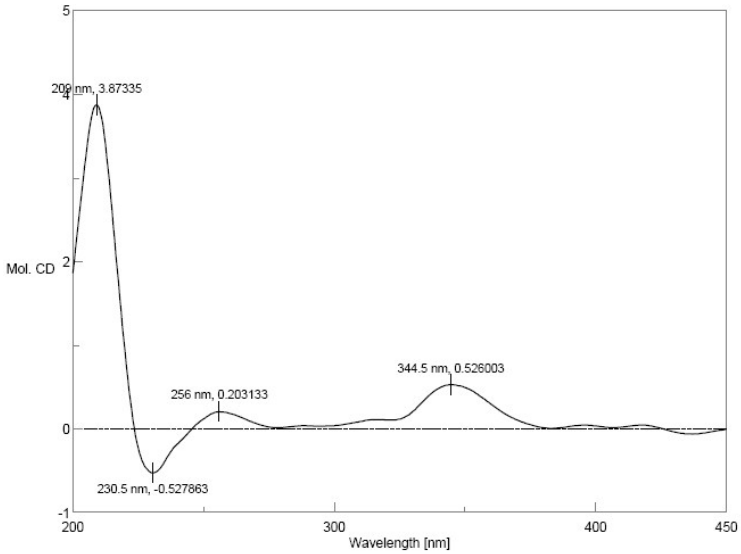

Figure S21. The CD spectrum of **2*** in MeOH : H_2O 1:1

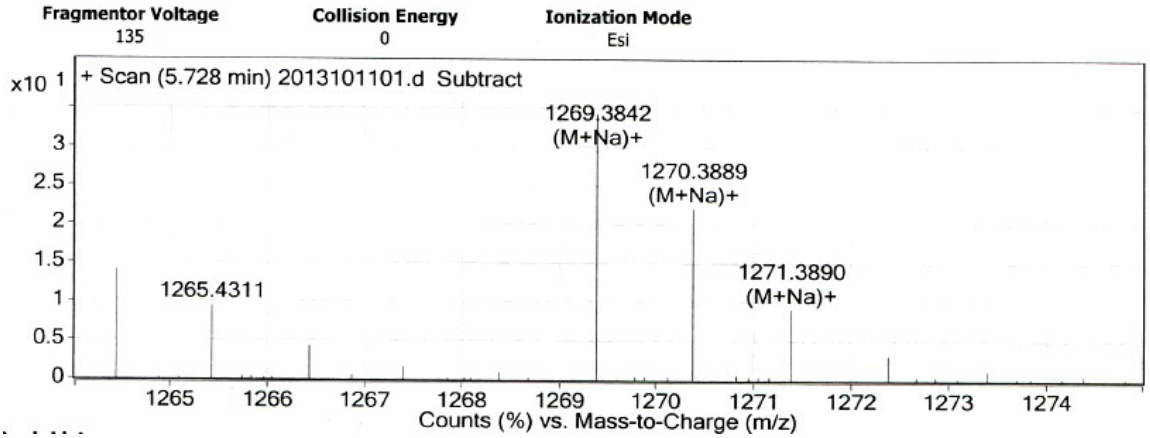

Figure S22. The HRESIMS of compound **2***

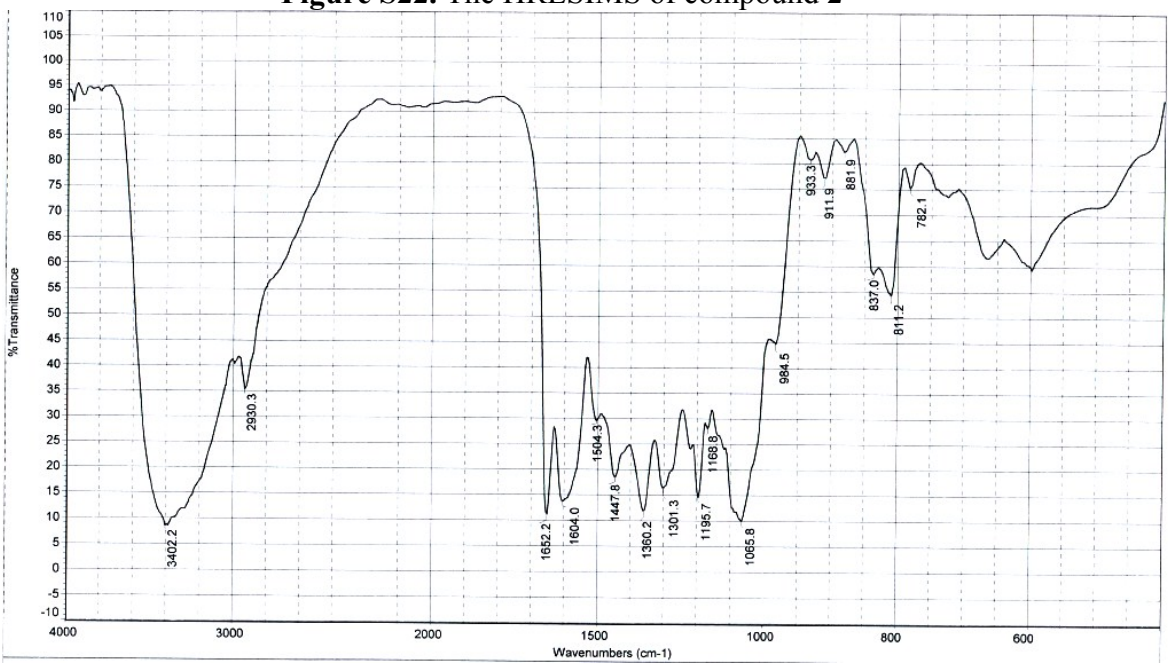

Figure S23. The IR spectrum of compound 3*

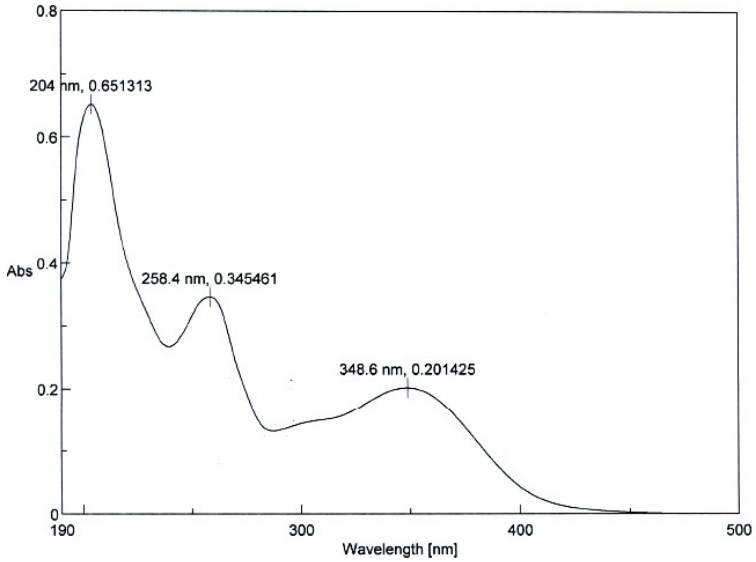

Figure S24. The UV spectrum of compound 3*

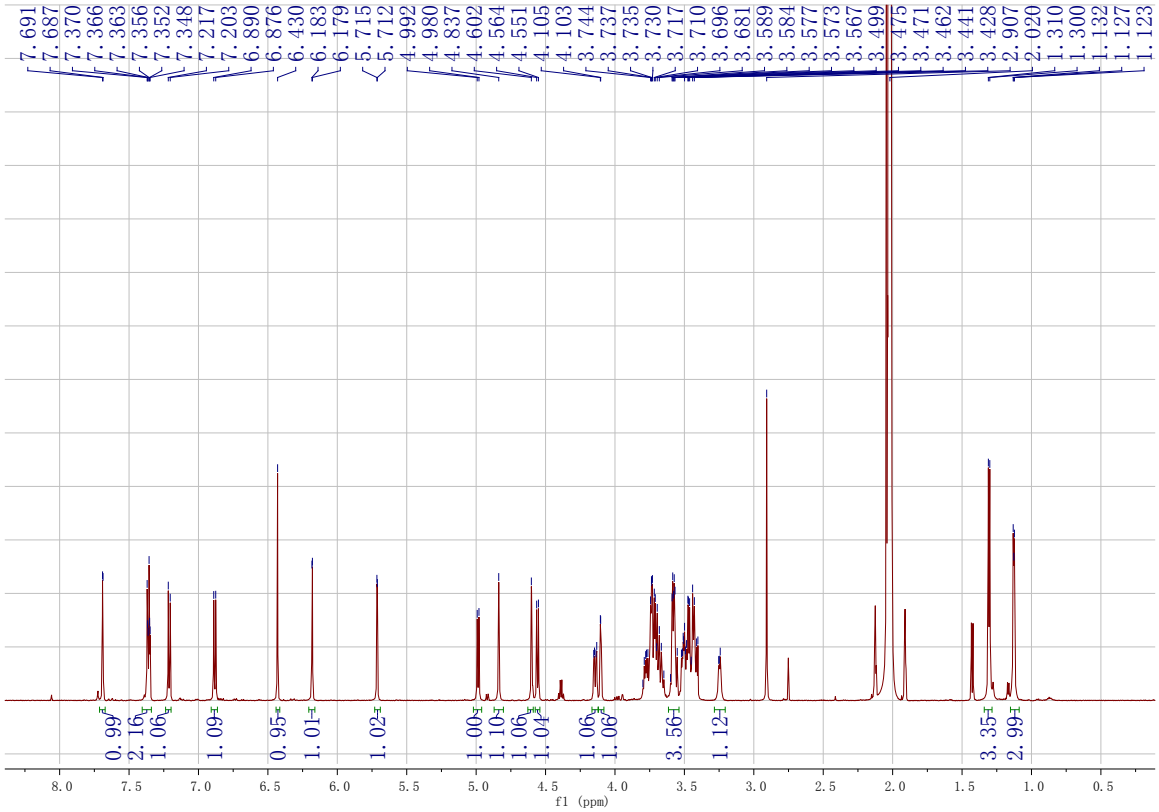

Figure S25. The ^{1}H NMR spectrum of compound 3* in acetic acid-d_4

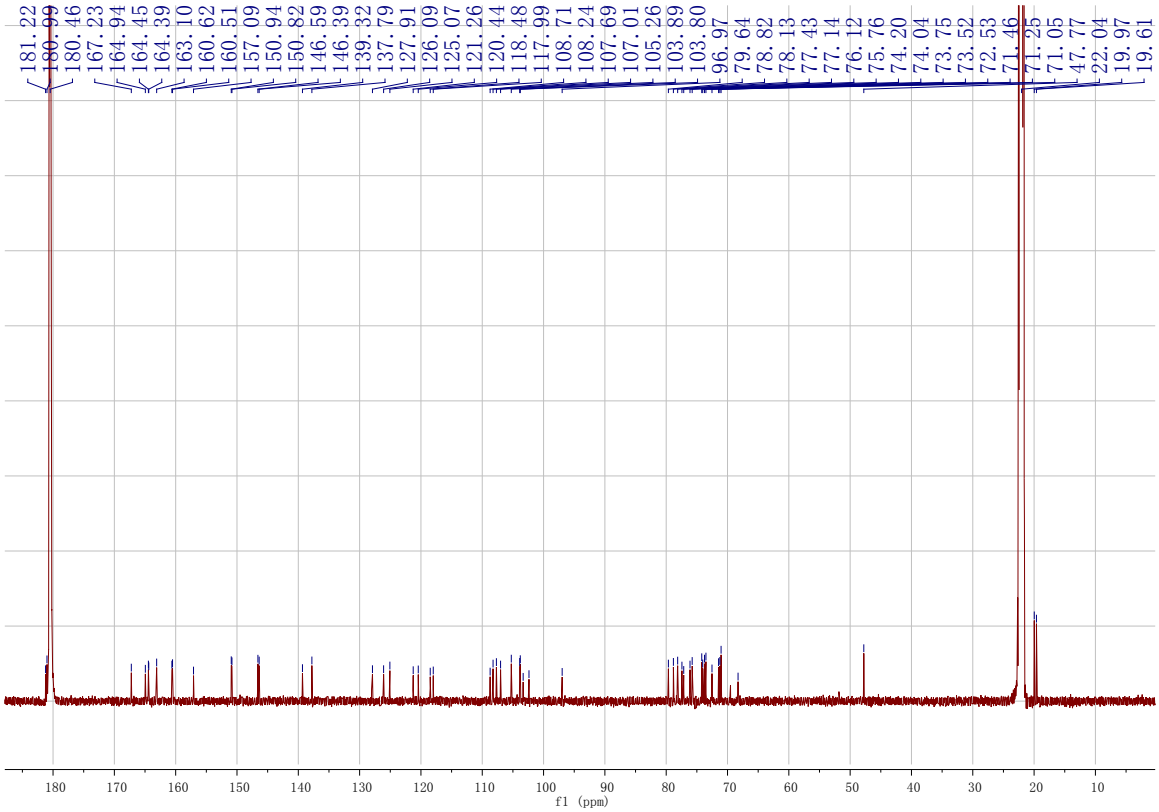

Figure S26. The ^{13}C NMR spectrum of compound 3* in acetic acid-d_4

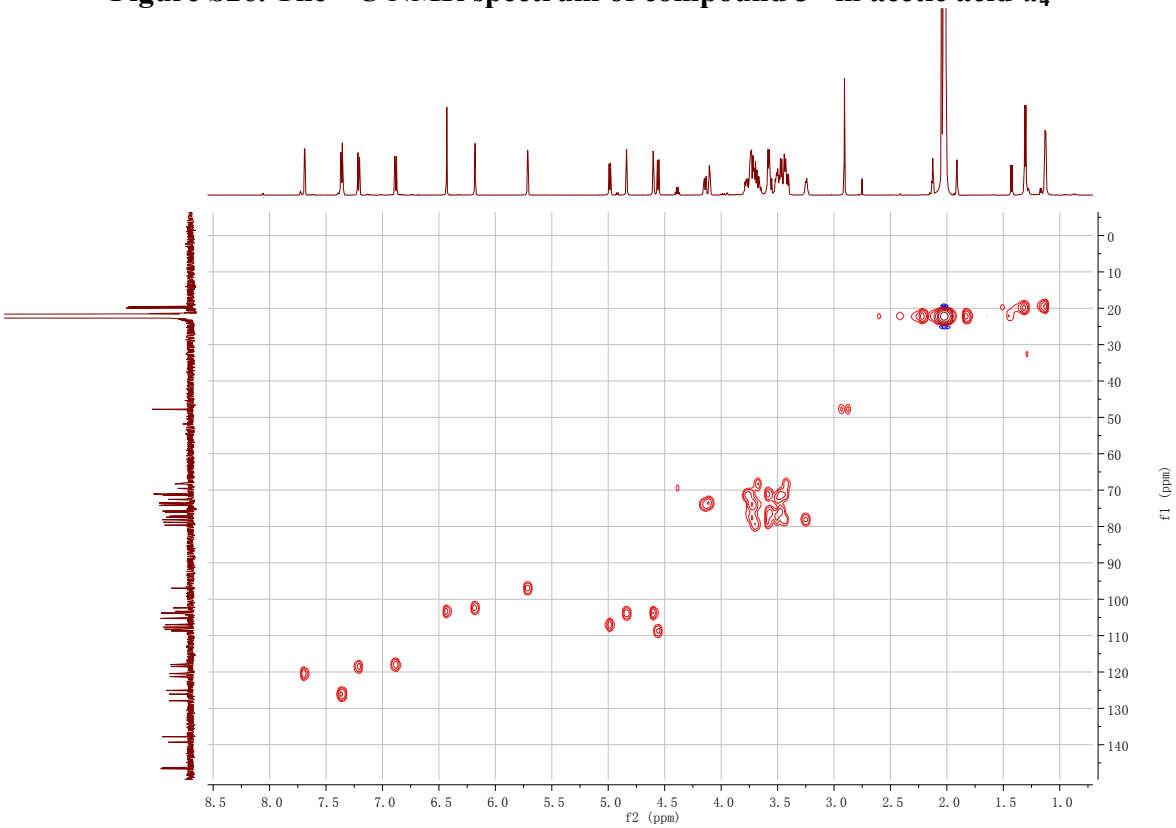

Figure S27. The HSQC spectrum of compound 3* in acetic acid-d_4

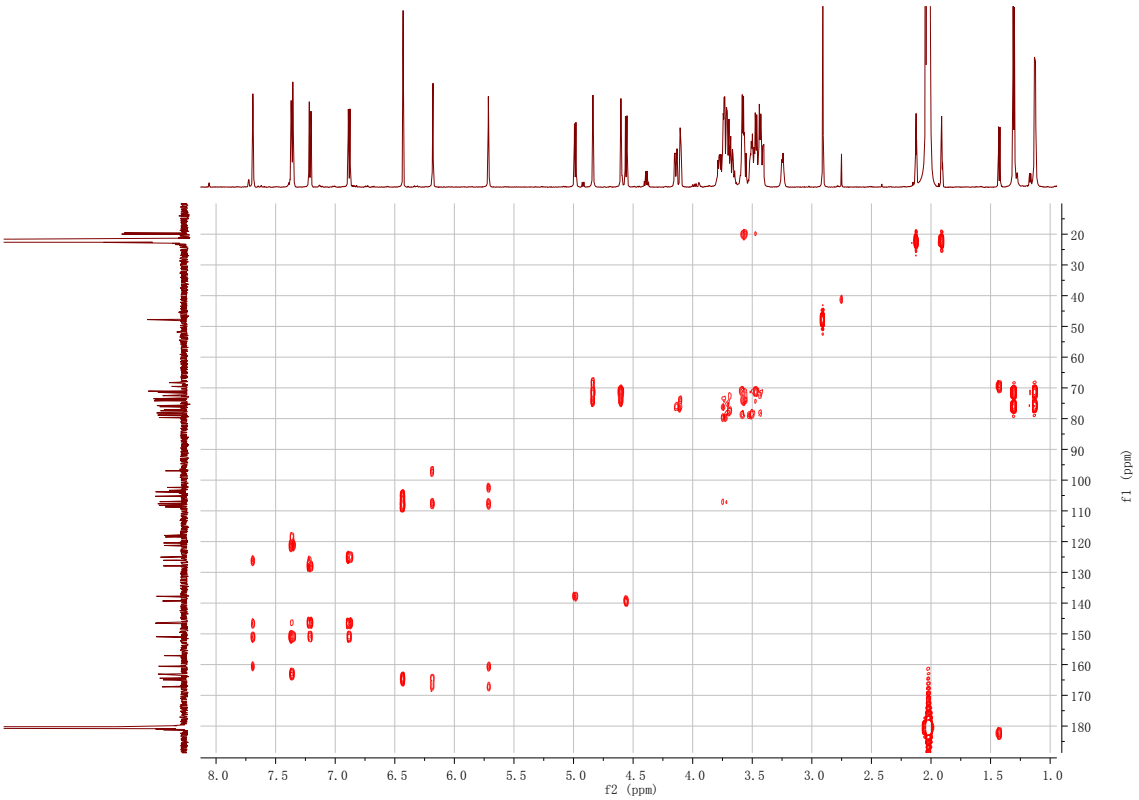

Figure S28. The HMBC spectrum of compound 3* in acetic acid-d_4

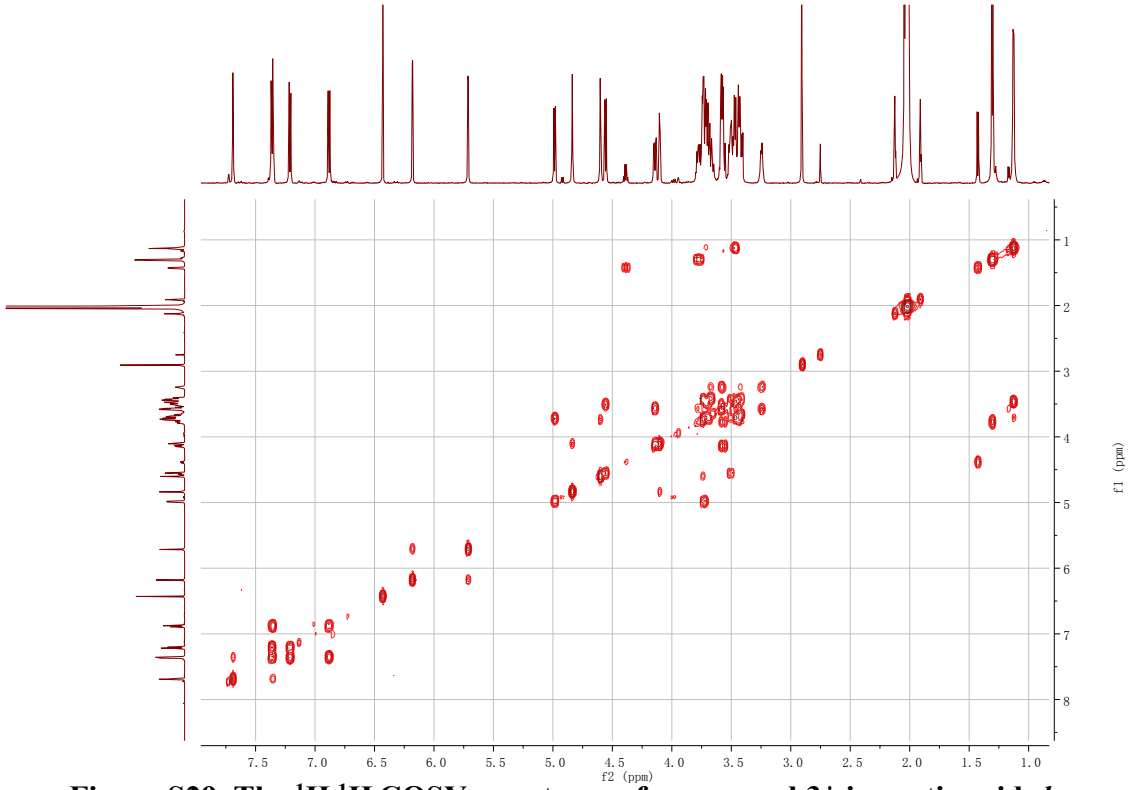

Figure S29. The ^{1}H-^{1}H COSY spectrum of compound 3* in acetic acid-d_4

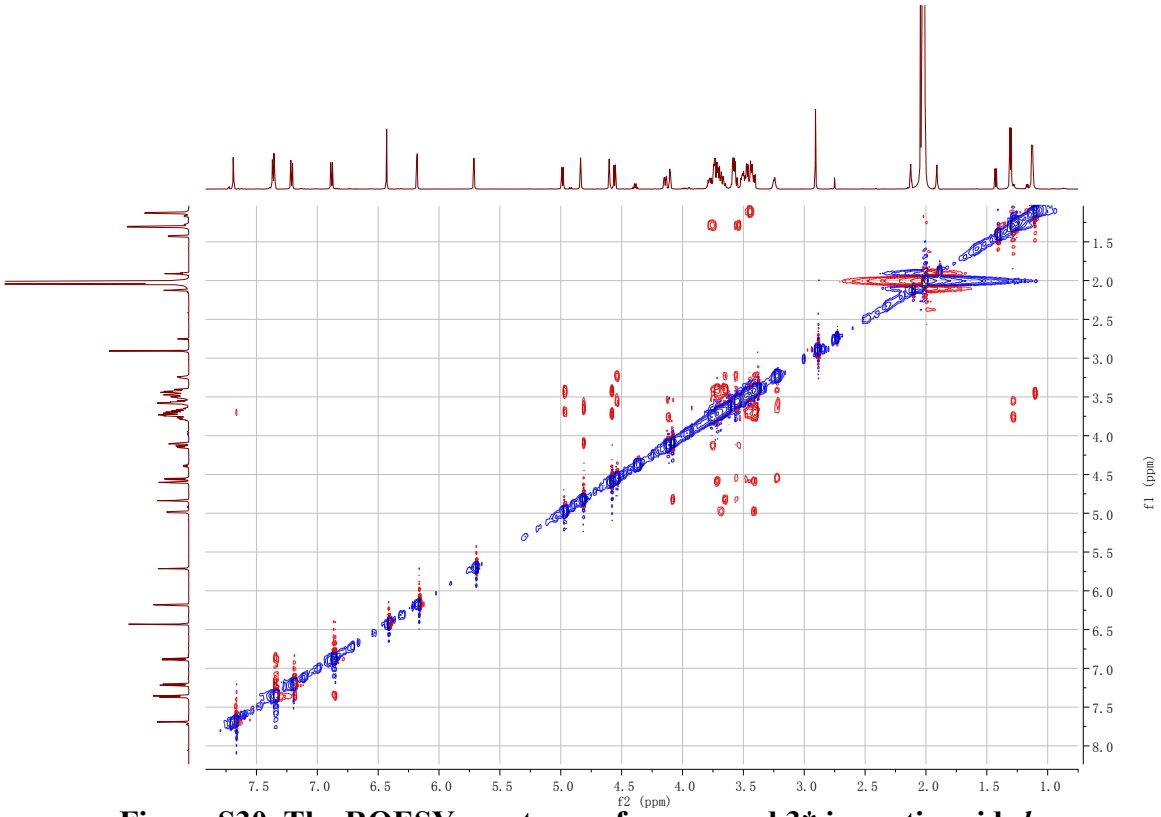

Figure S30. The ROESY spectrum of compound 3* in acetic acid-d_4

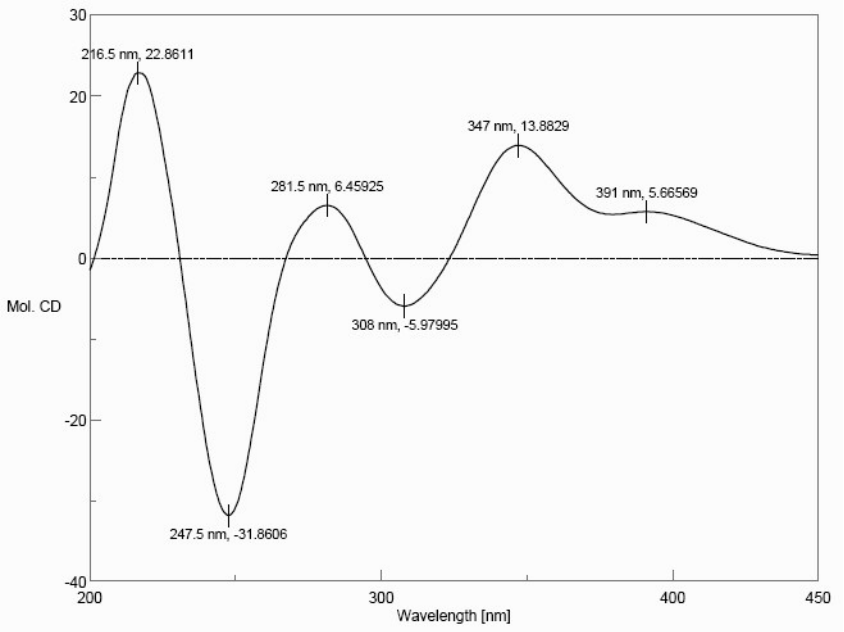

Figure S31. The CD spectrum of 3* in MeOH : H_2O 1:1

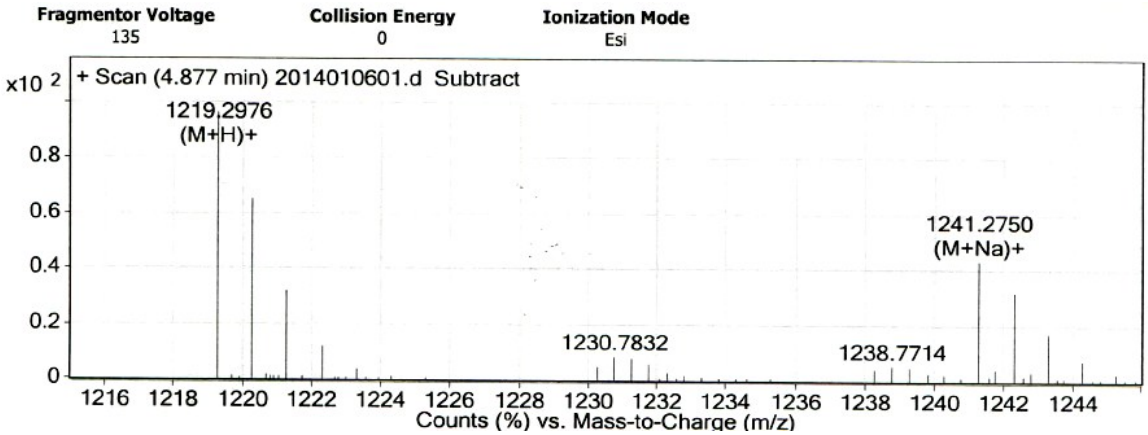

Figure S32. The HRESIMS of compound 3*

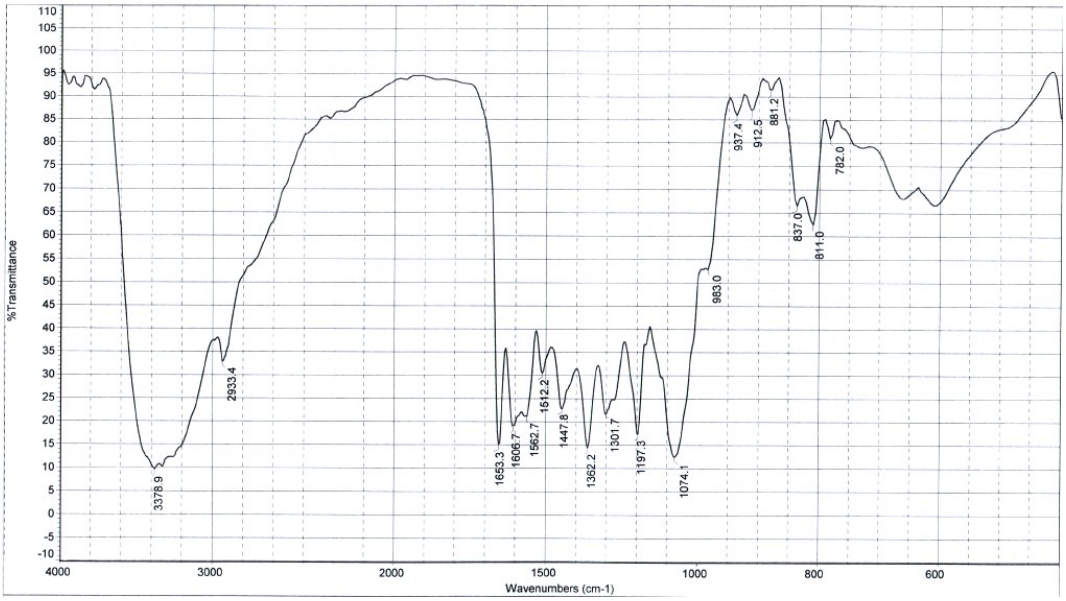

Figure S33. The IR spectrum of compound 4*

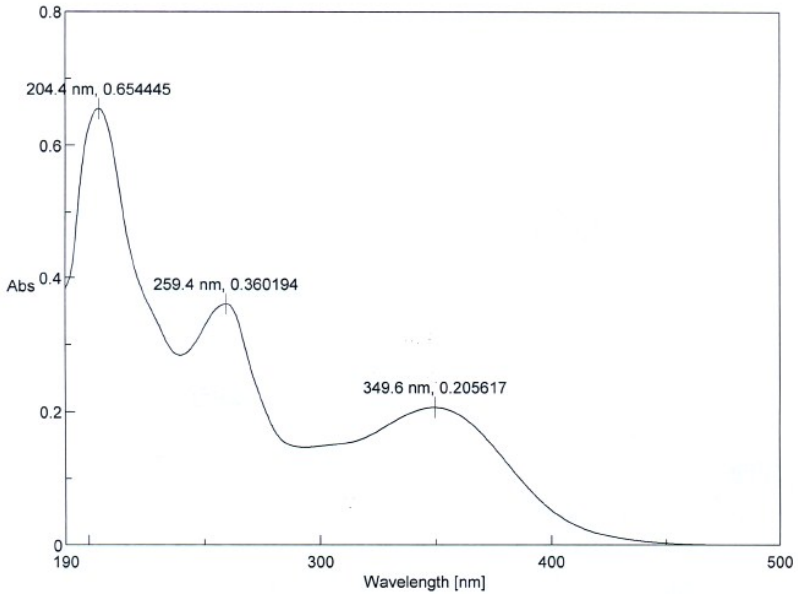

Figure S34. The UV spectrum of compound 4*

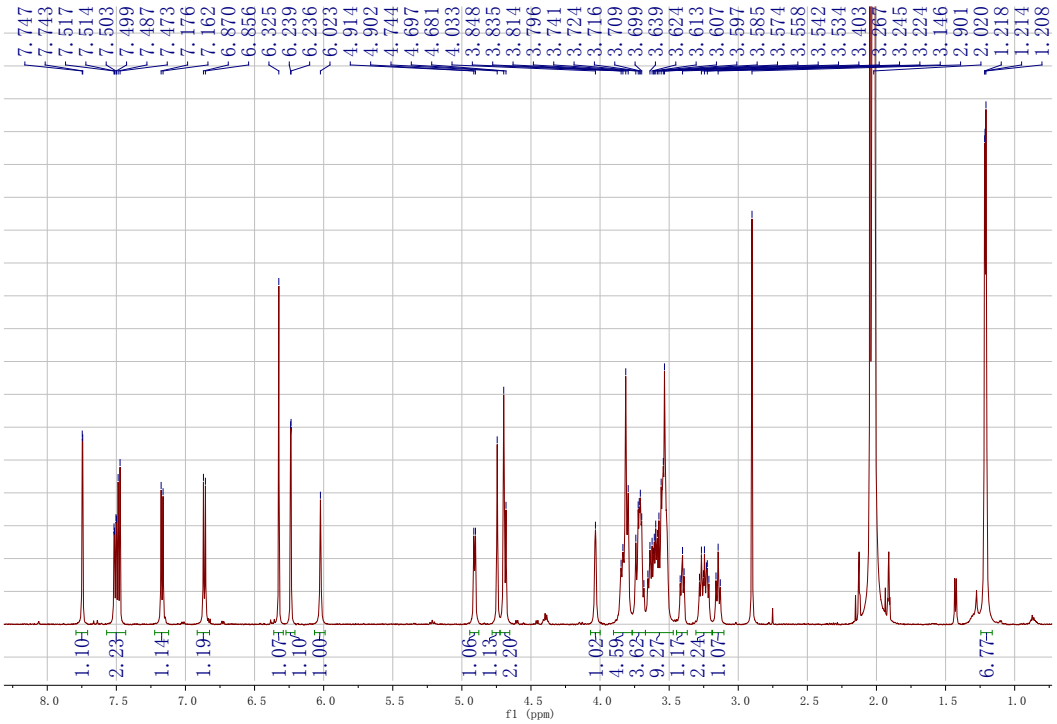

Figure S35. The ^{1}H NMR spectrum of compound 4* in acetic acid-d_4

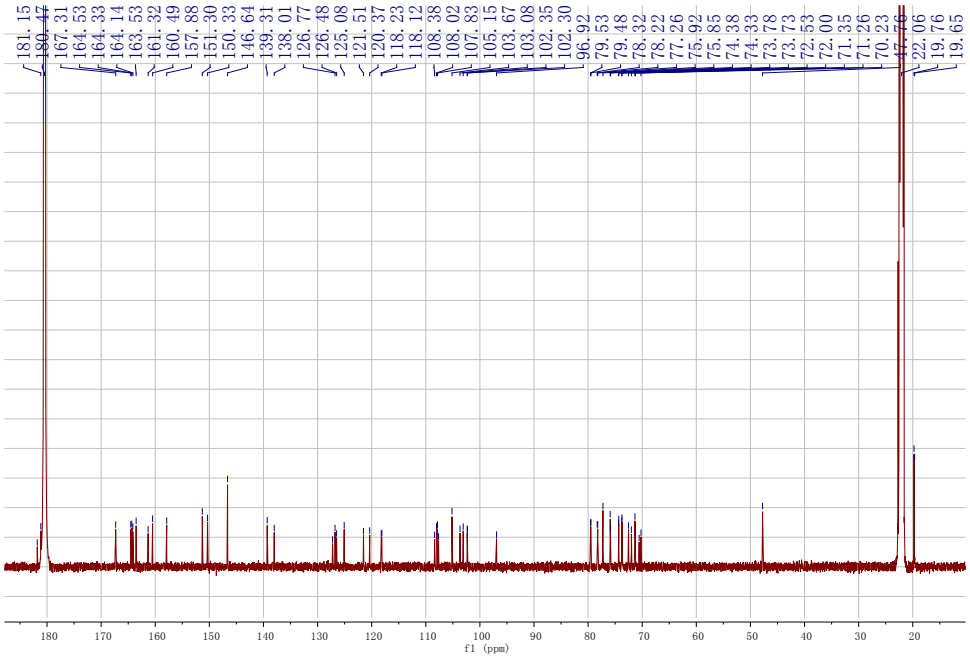

Figure S36. The ^{13}C NMR spectrum of compound 4* in acetic acid-d_4

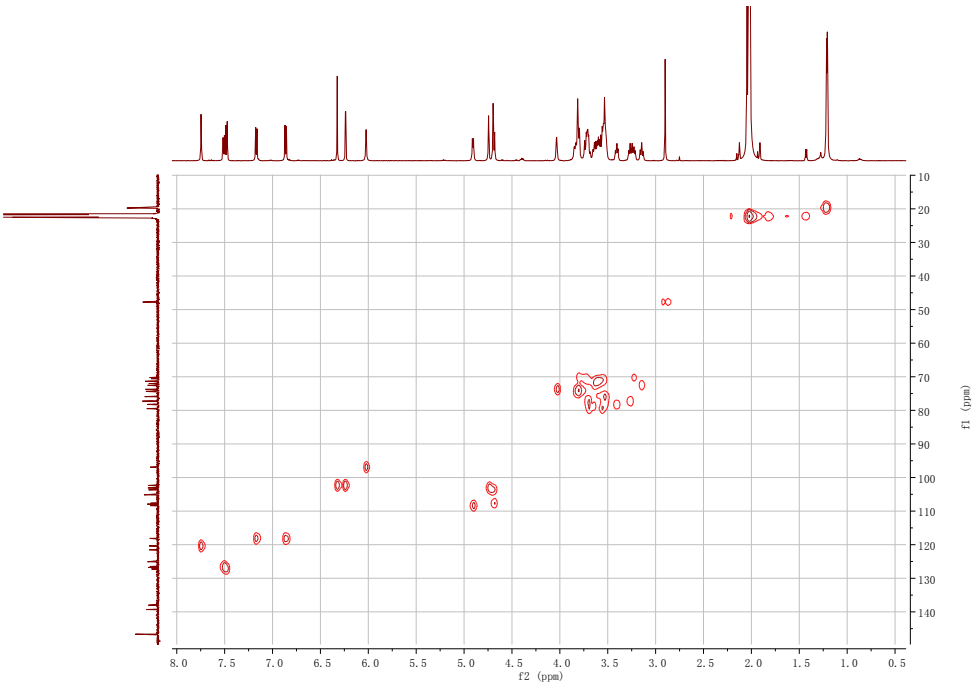

Figure S37. The HSQC spectrum of compound 4* in acetic acid-d_4

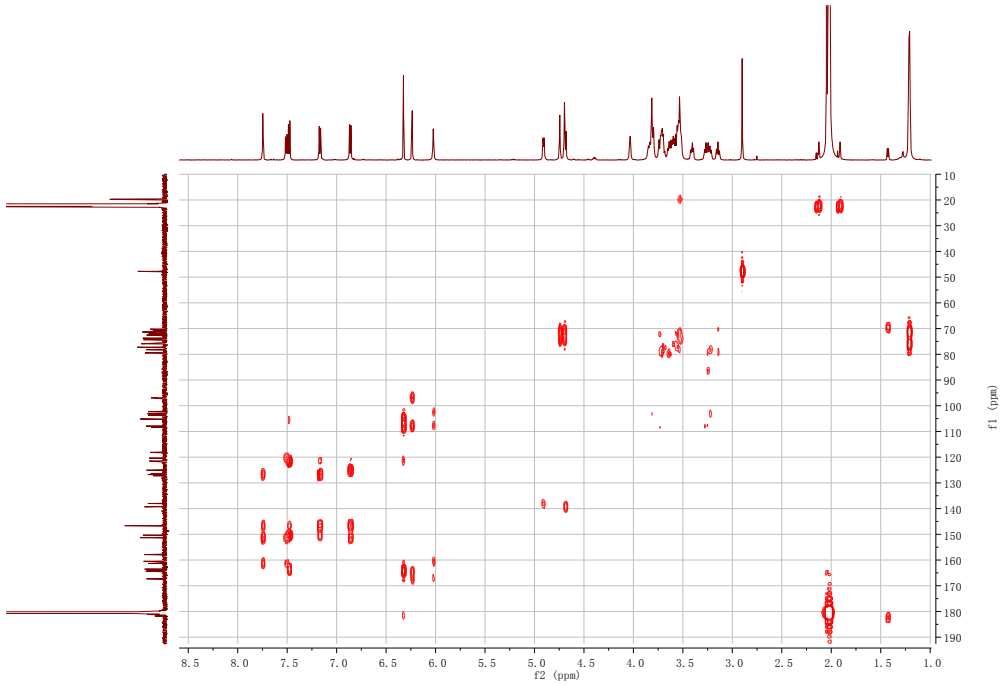

Figure S38. The HMBC spectrum of compound 4* in acetic acid-d_4

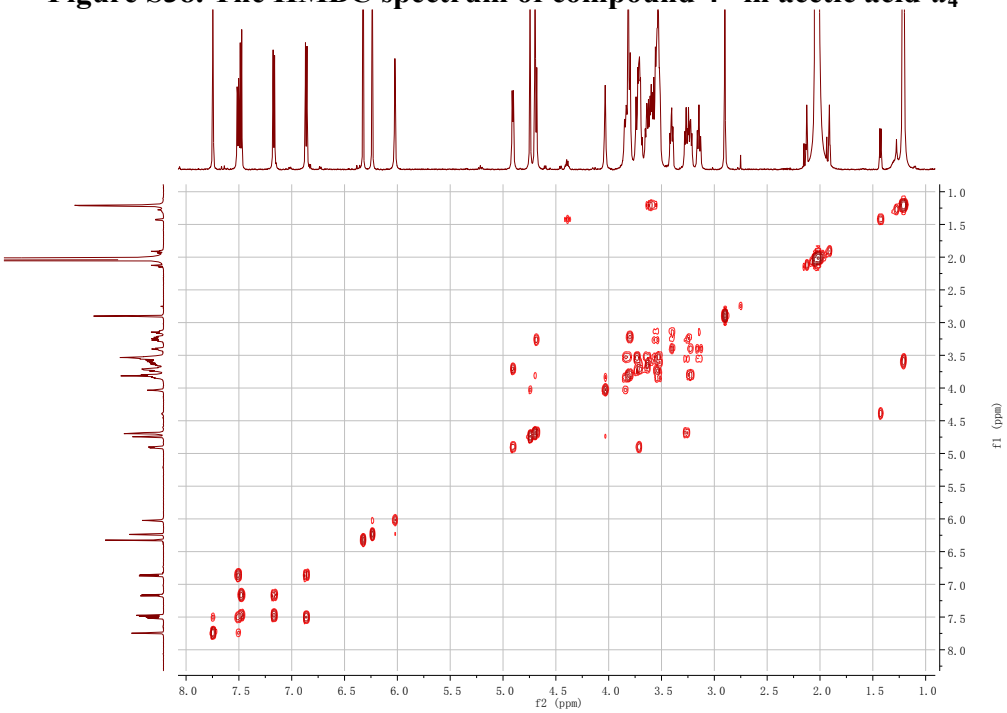

Figure S39. The ^{1}H-^{1}H COSY spectrum of compound 4* in acetic acid-d_4

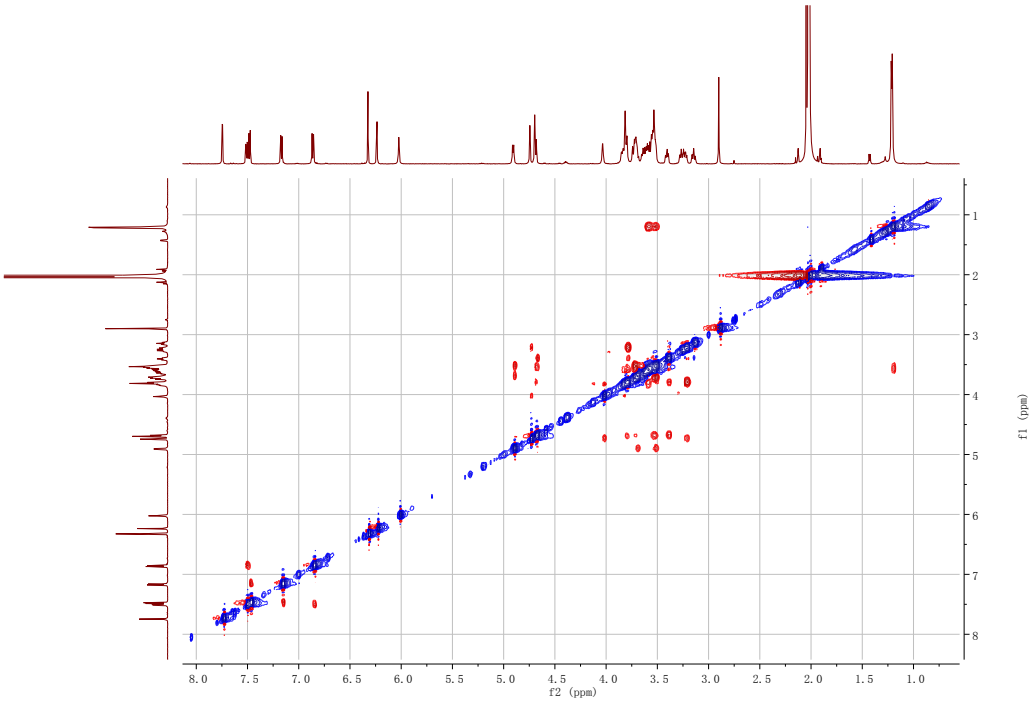

Figure S40. The ROESY spectrum of compound 4* in acetic acid-d_4

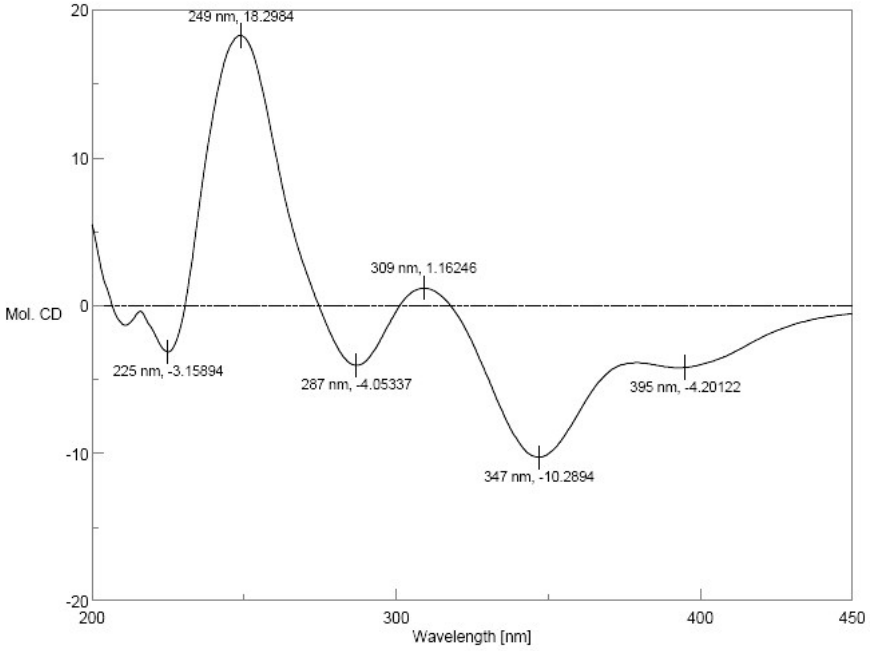

Figure S41. The CD spectrum of 4* in MeOH : H_2O 1:1

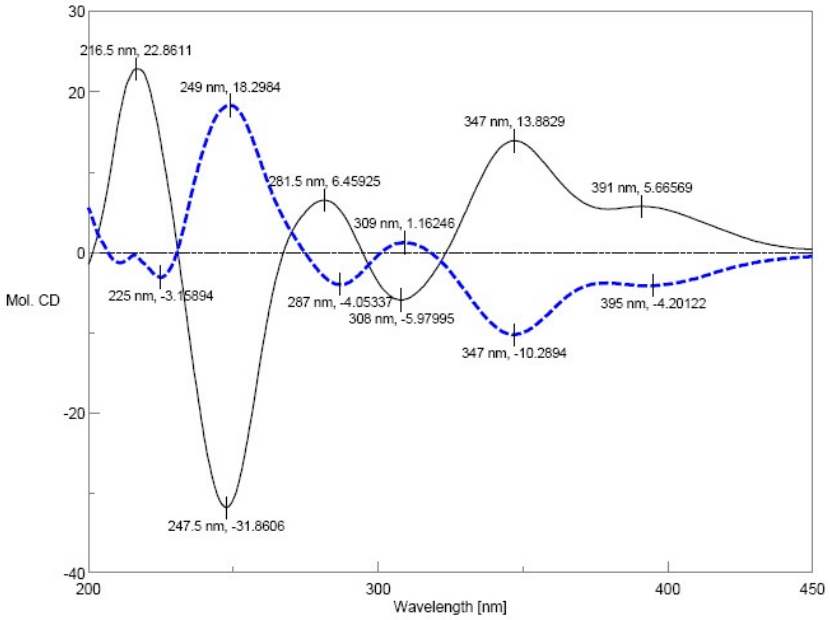

Figure S42. The overlay CD spectrum of 3* and 4*

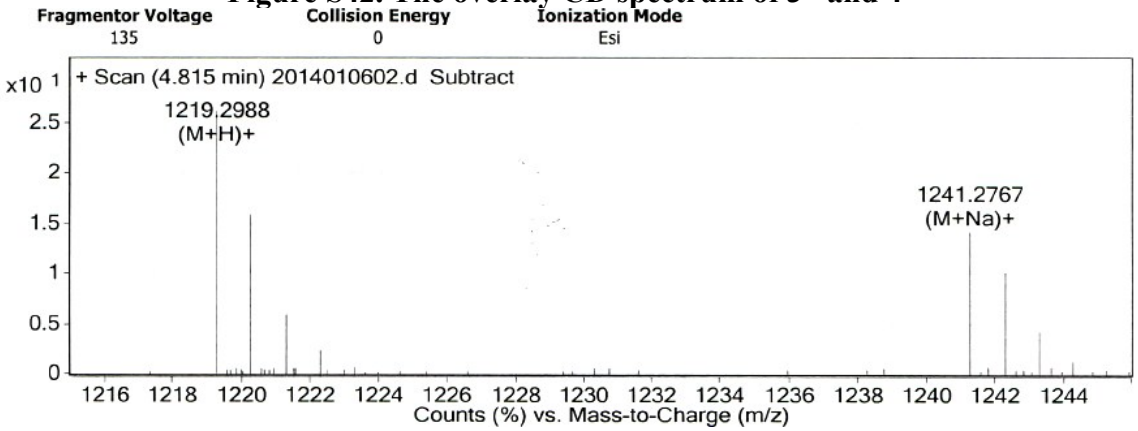

Figure S43. The HRESIMS of compound 4*