



Journal Name

Supporting Information

## Antimicrobial alkaloids produced by the mangrove endophyte *Penicillium brocae* MA-231 using the OSMAC approach

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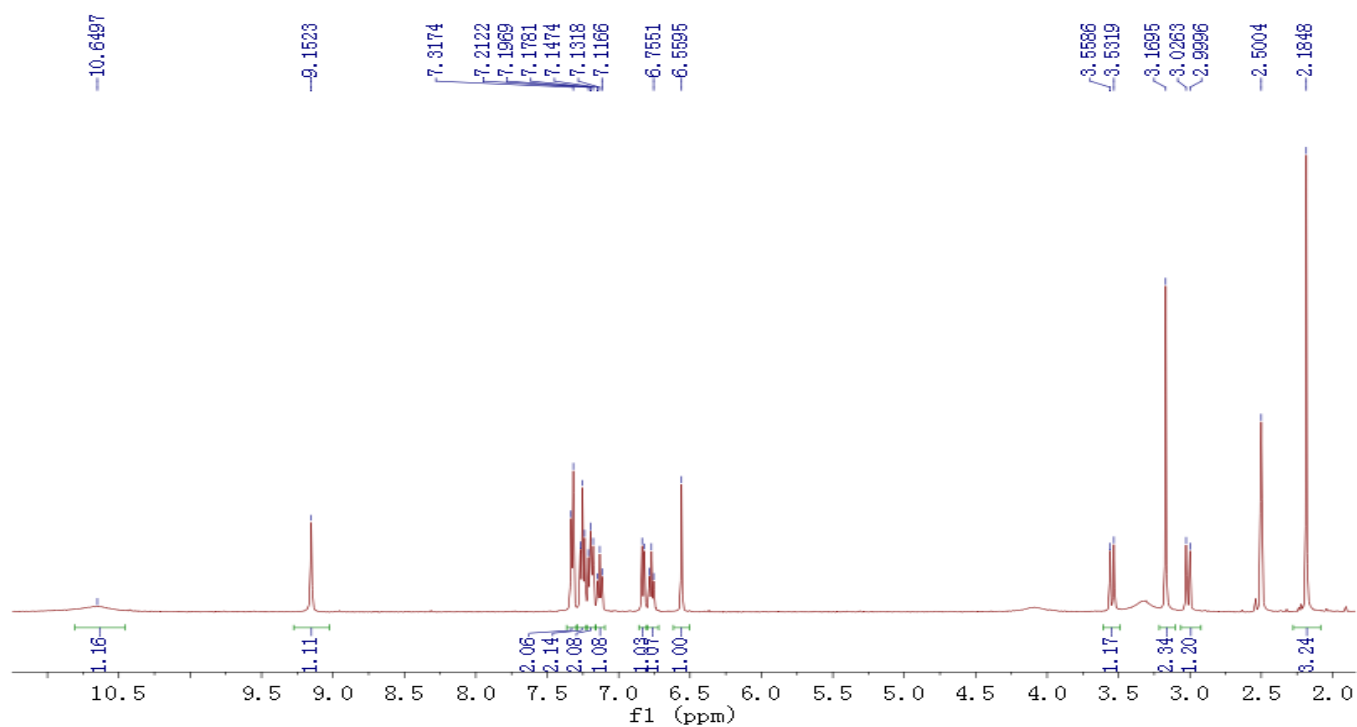
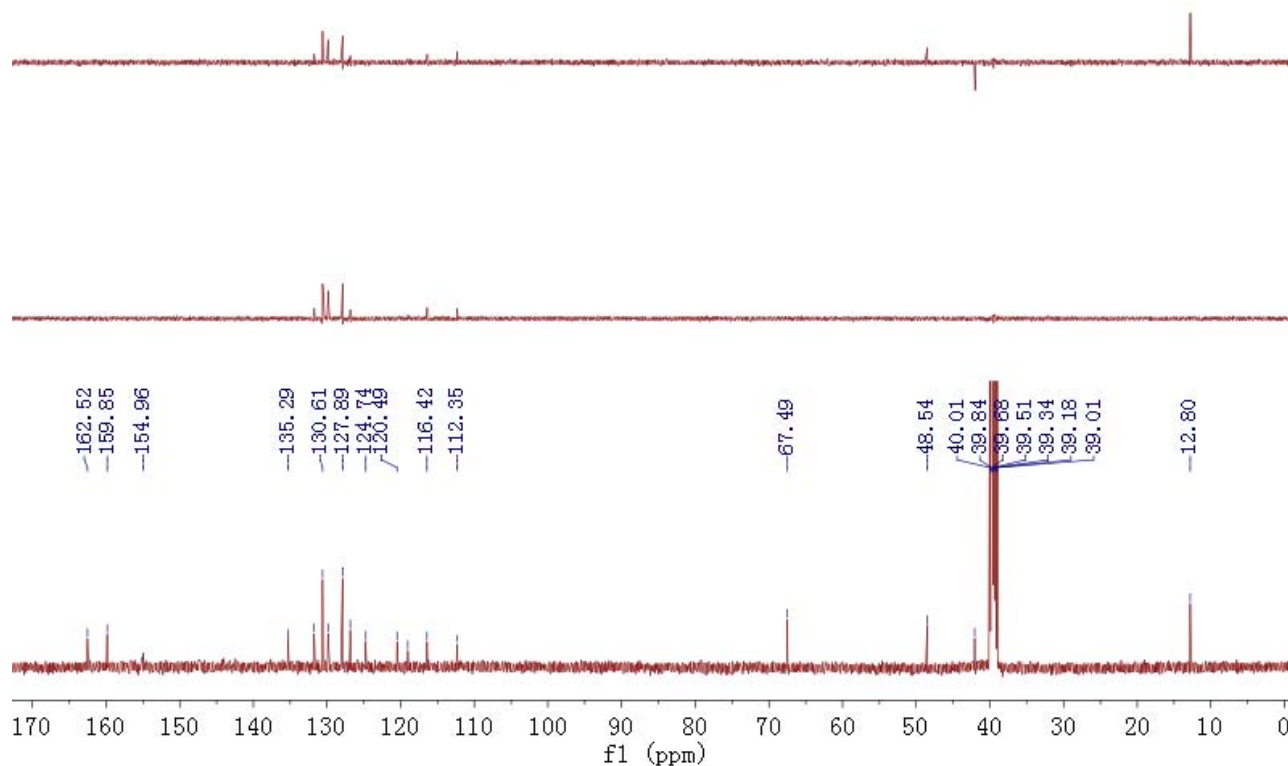
Fig S1.  $^1\text{H}$  NMR (500 MHz,  $\text{DMSO-}d_6$ ) spectrum of compound **1**.Fig S2.  $^{13}\text{C}$  NMR (125 MHz,  $\text{DMSO-}d_6$ ) and DEPT spectra of compound **1**.

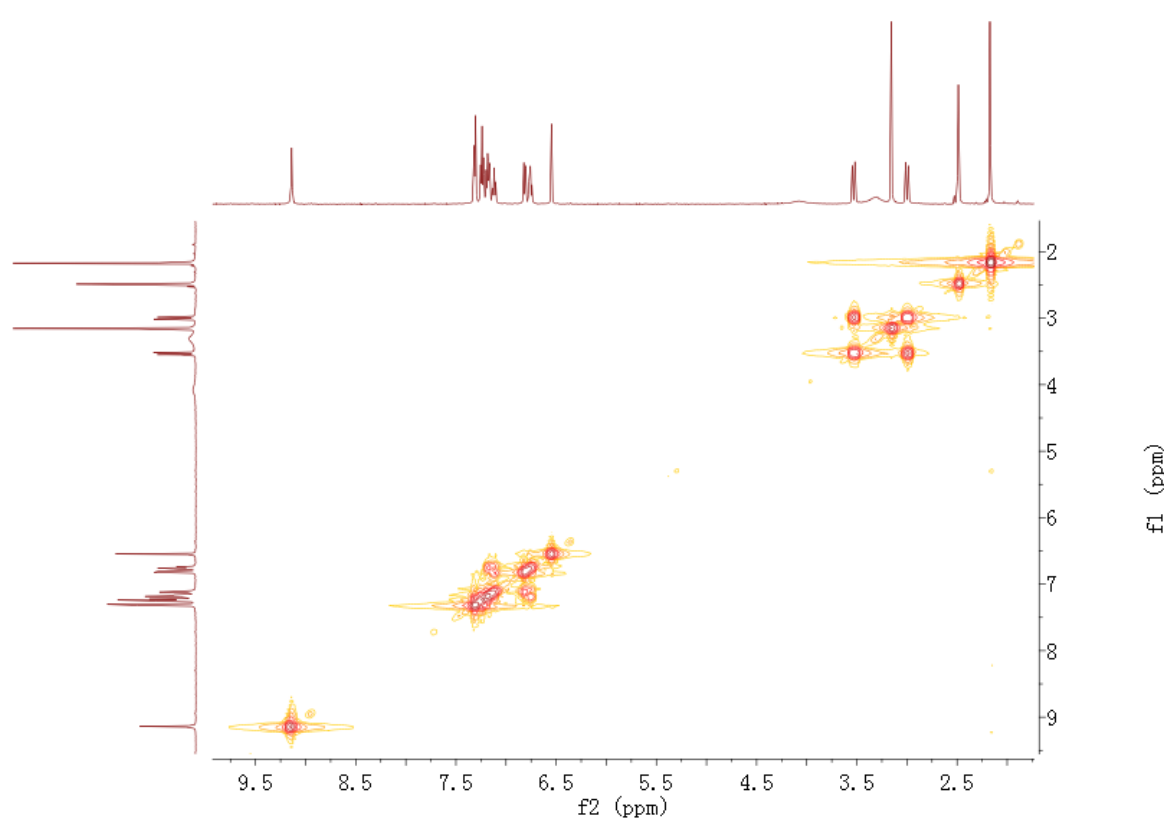
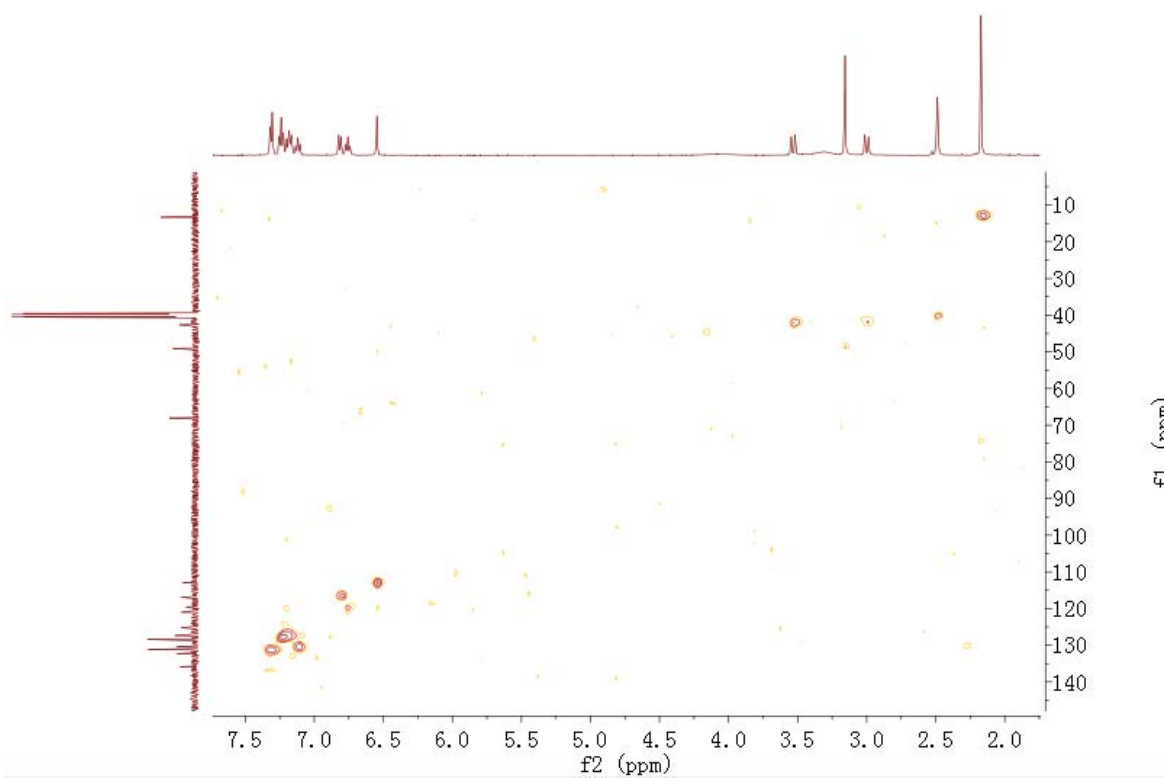
Fig S3. COSY spectrum of compound **1**.Fig S4. HSQC spectrum of compound **1**.

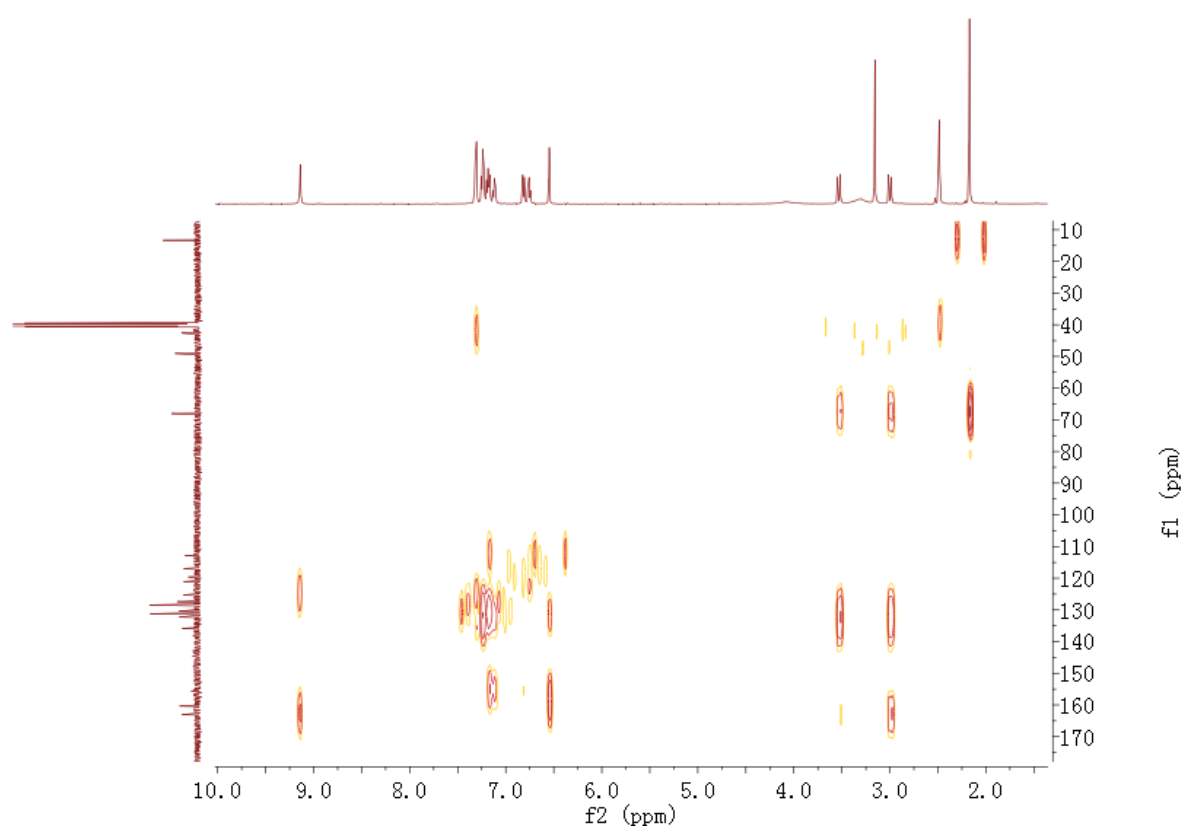
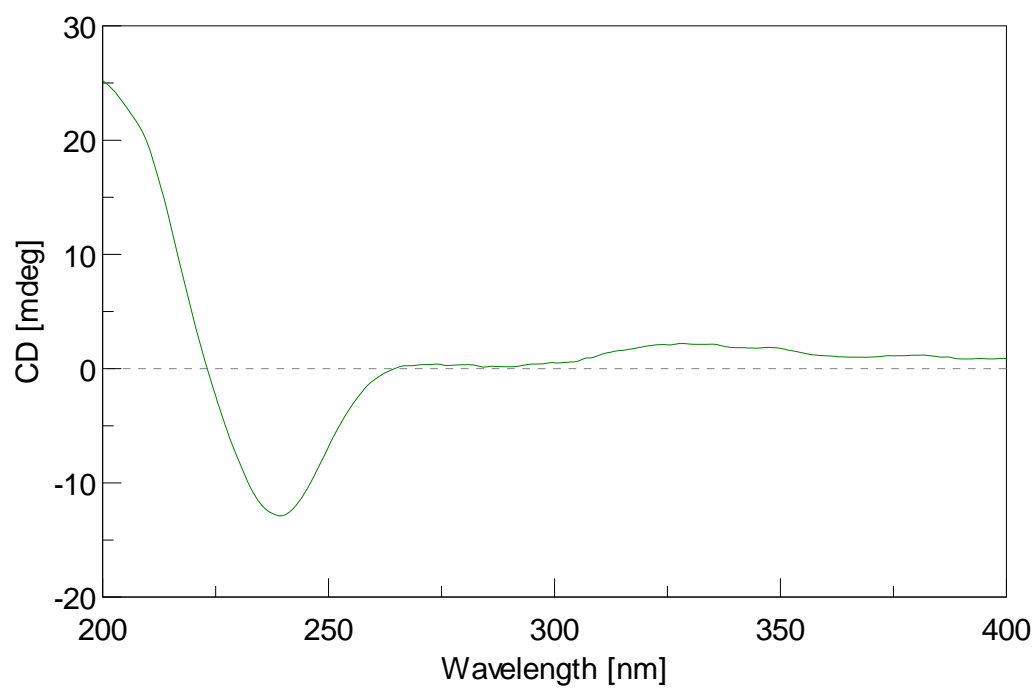
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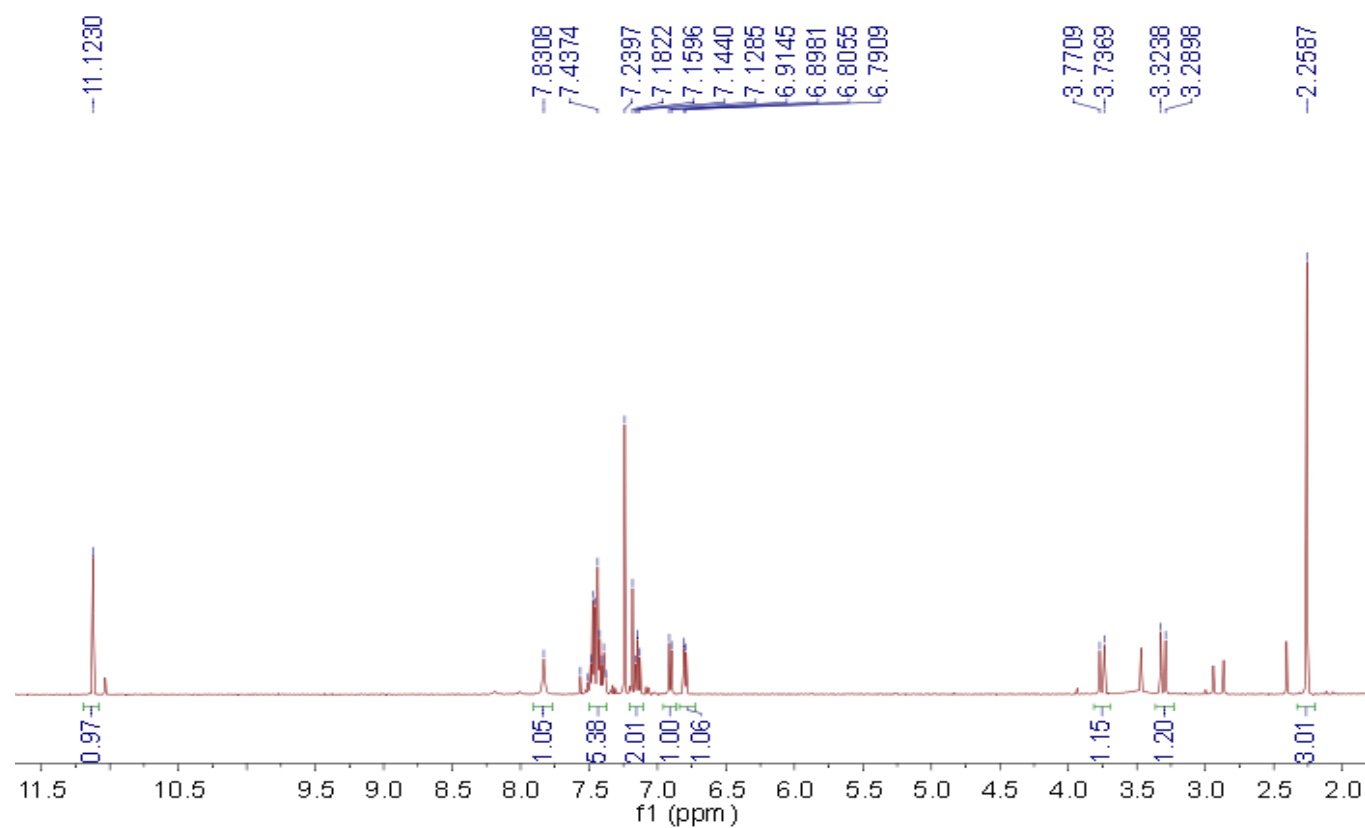
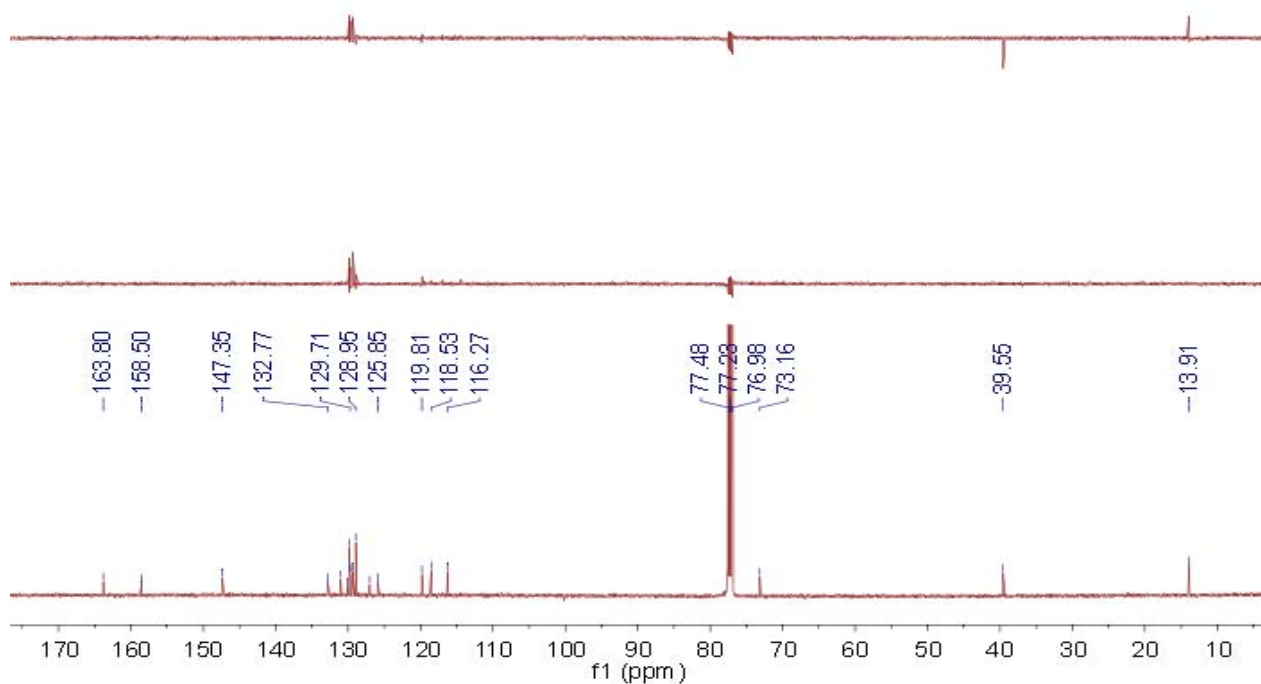
Fig S7.  $^1\text{H}$  NMR (500 MHz,  $\text{CDCl}_3$ ) spectrum of compound **2**.Fig S8.  $^{13}\text{C}$  NMR (125 MHz,  $\text{CDCl}_3$ ) and DEPT spectra of compound **2**.

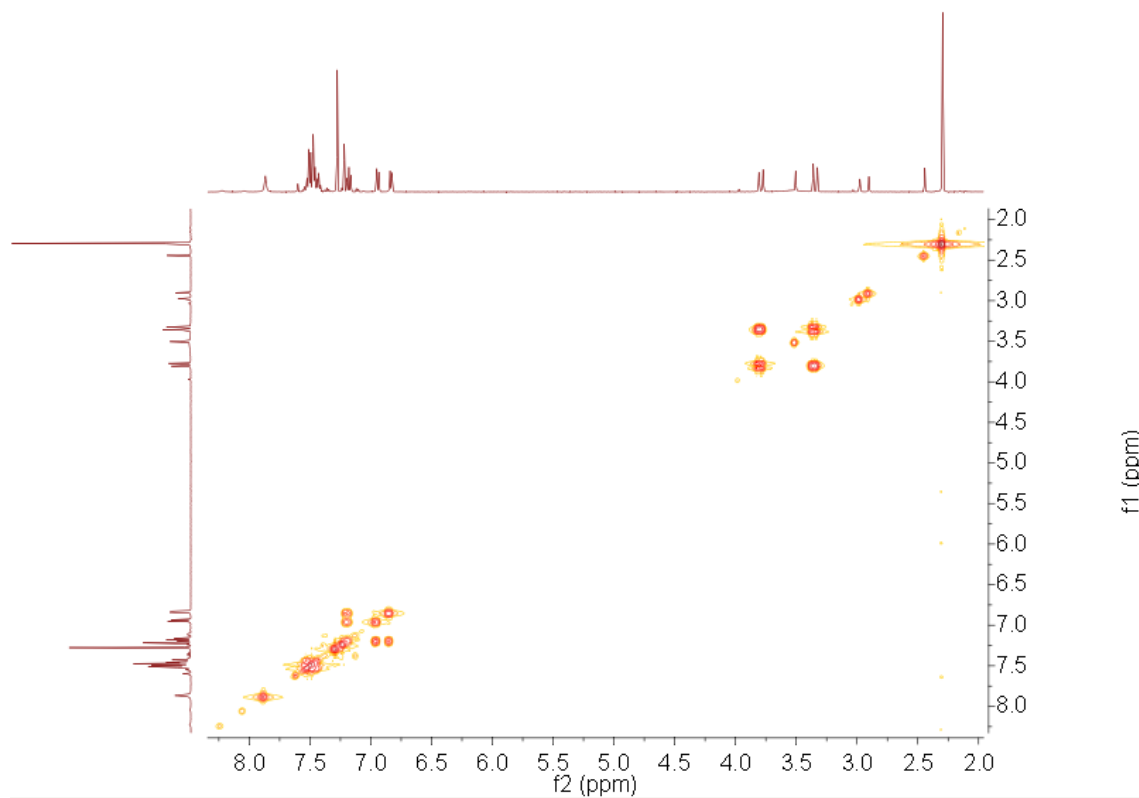
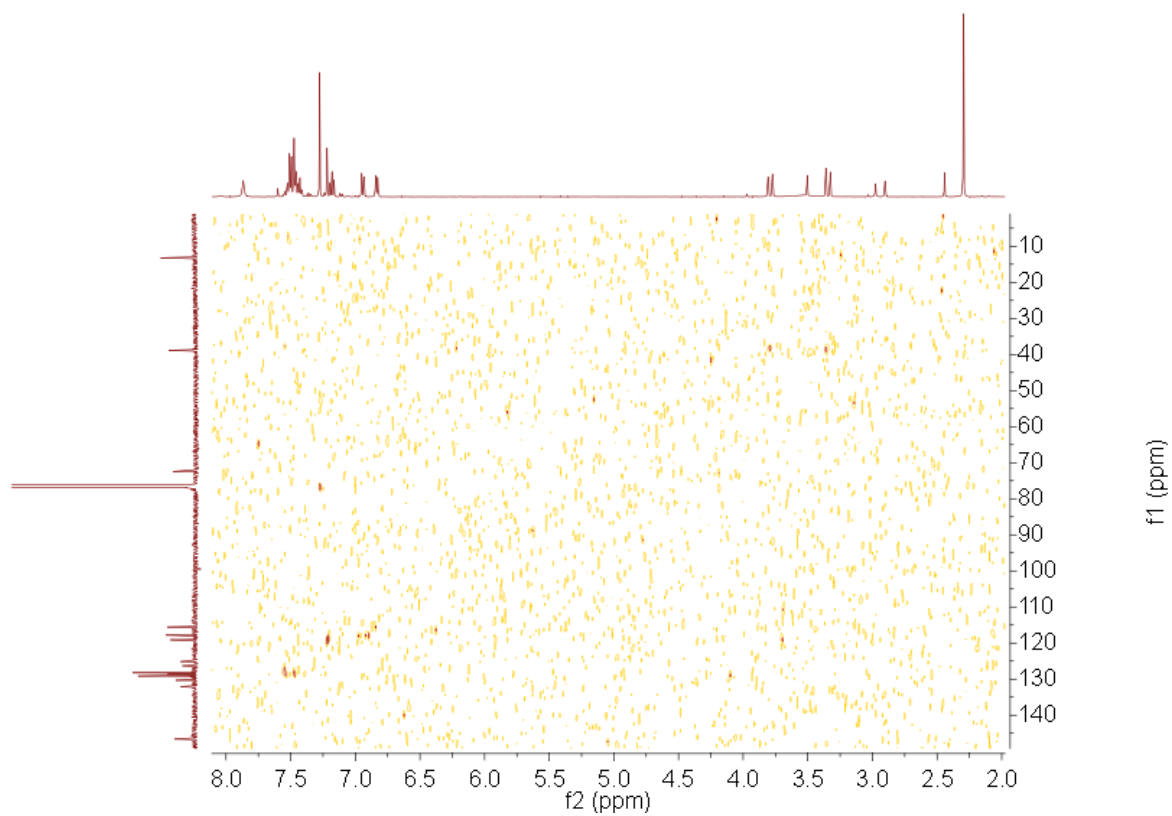
Fig S9. COSY spectrum of compound **2**.Fig S10. HSQC spectrum of compound **2**.

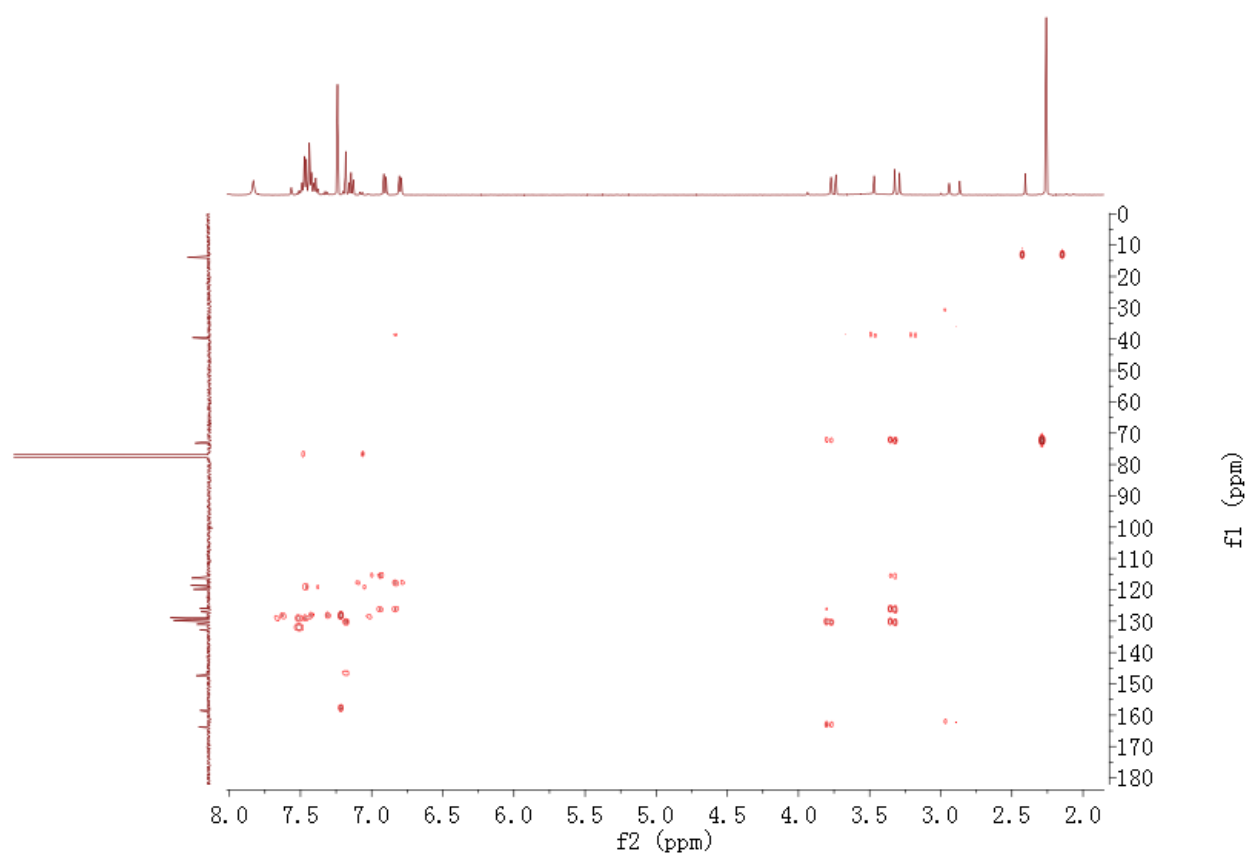
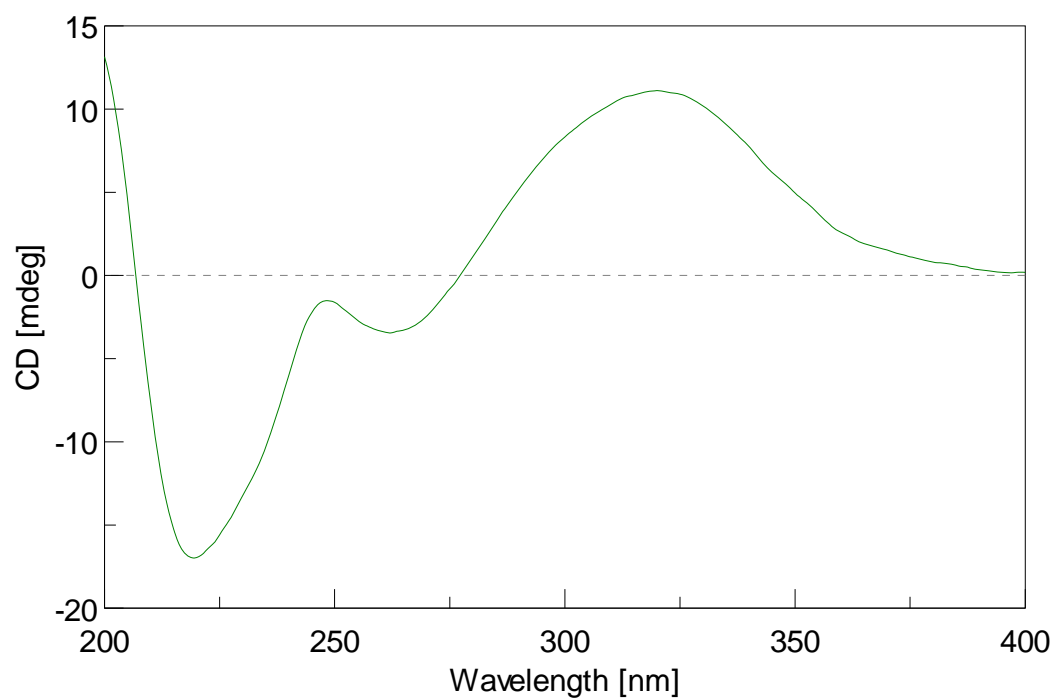
Fig S11. HMBC spectrum of compound **2**.Fig S12. CD spectrum of compound **2**.



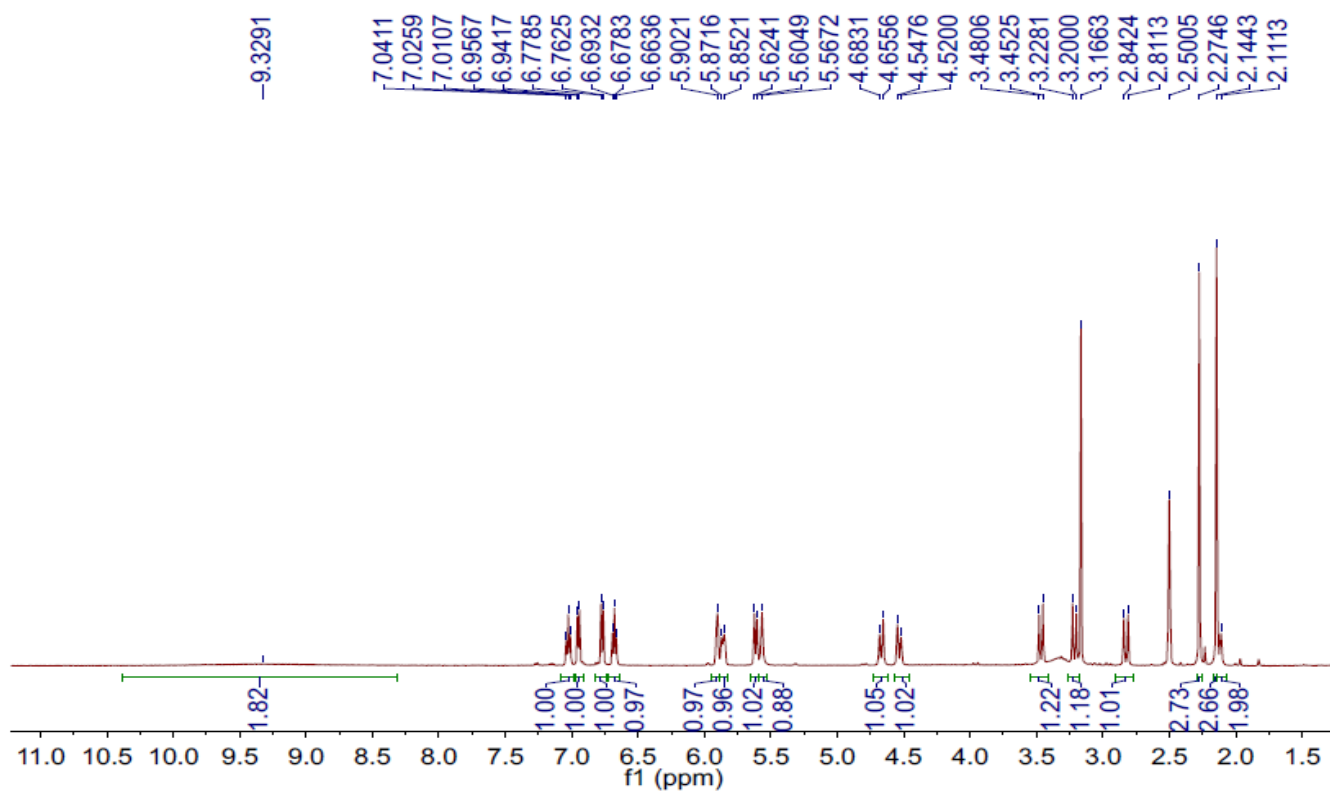
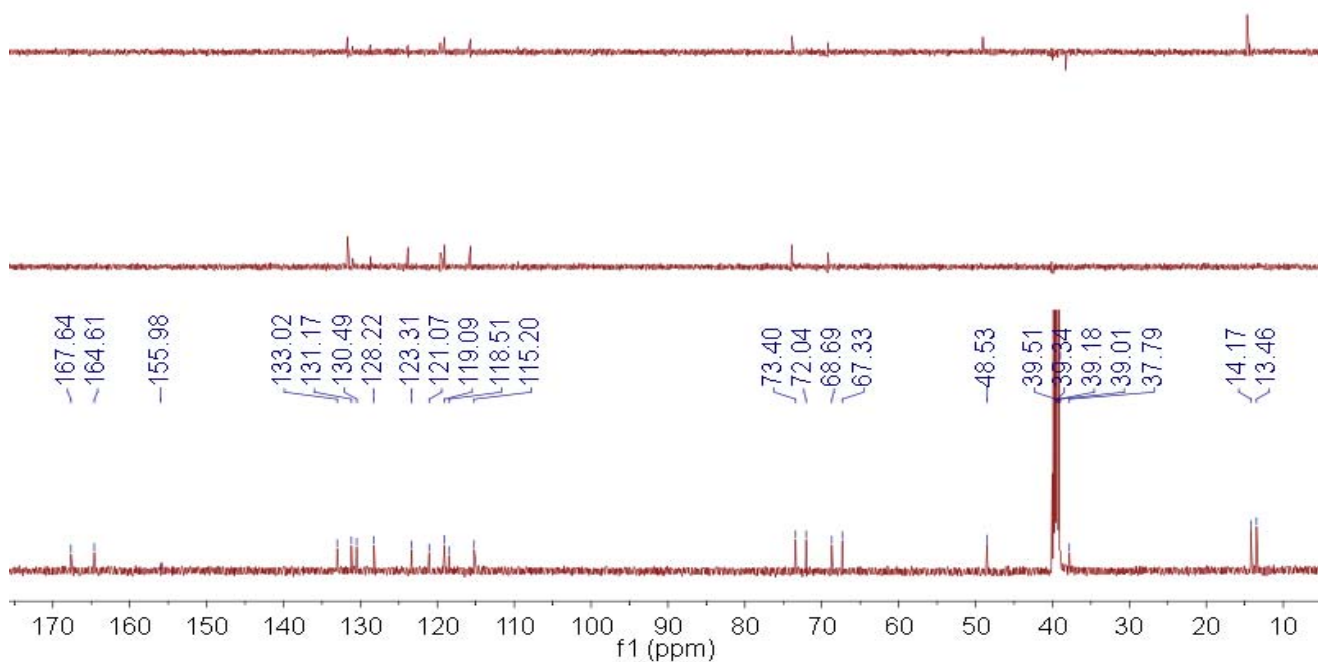
Fig S13.  $^1\text{H}$  NMR (500 MHz,  $\text{DMSO-}d_6$ ) spectrum of compound **3**.Fig S14.  $^{13}\text{C}$  NMR (125 MHz,  $\text{DMSO-}d_6$ ) and DEPT spectra of compound **3**.

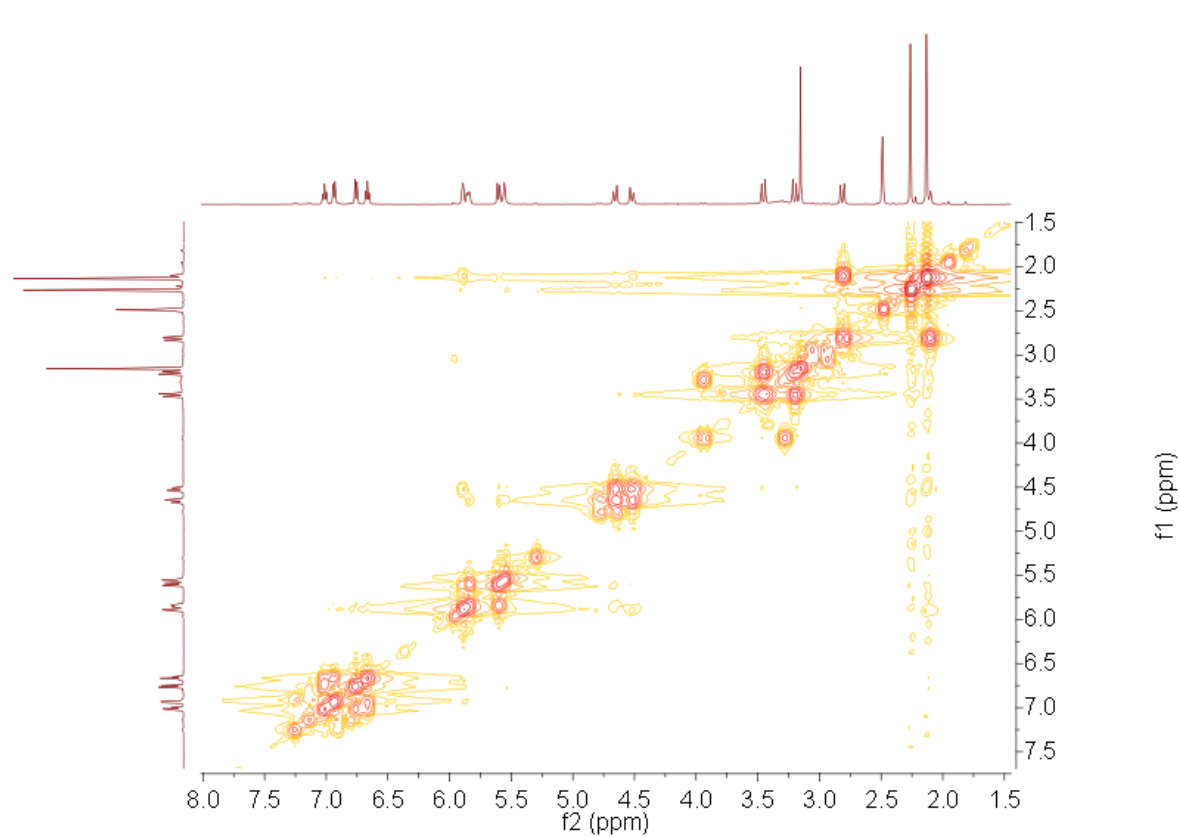
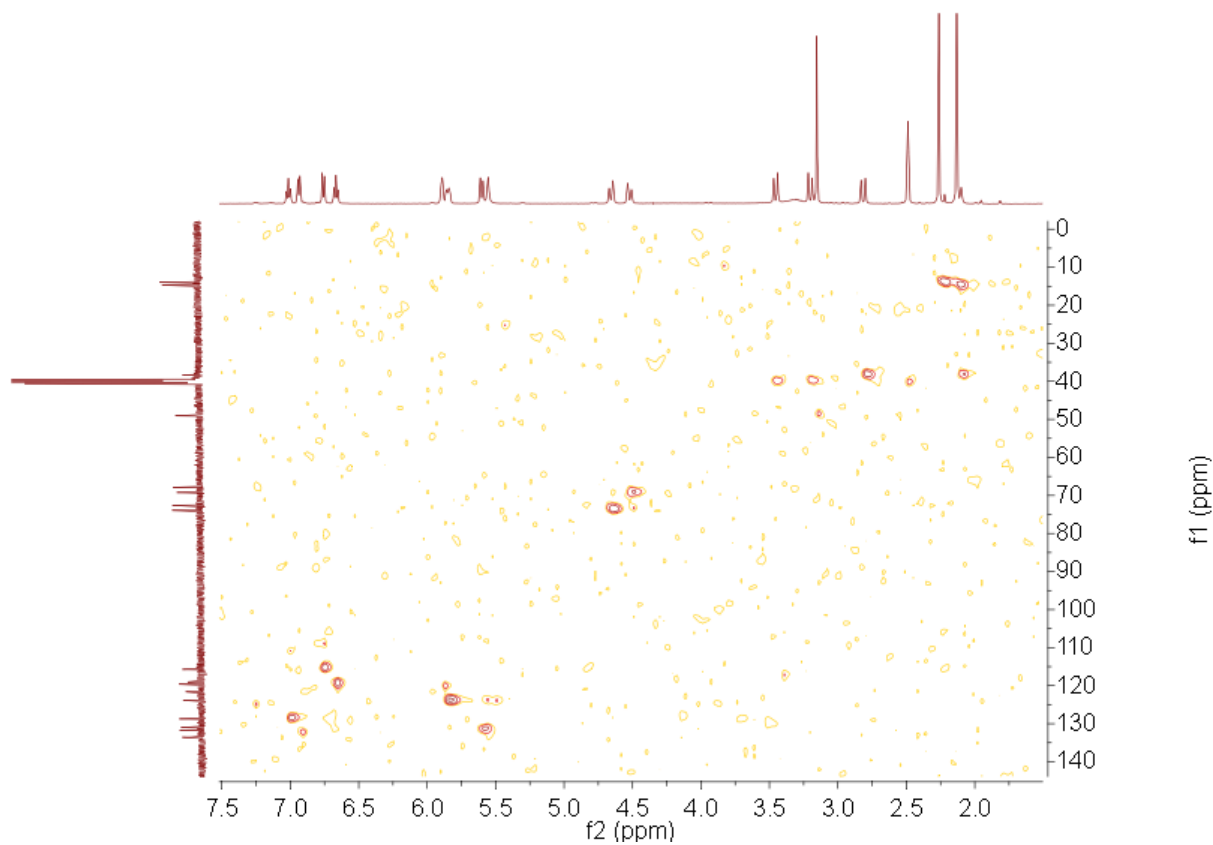
Fig S15. COSY spectrum of compound **3**.Fig S16. HSQC spectrum of compound **3**.

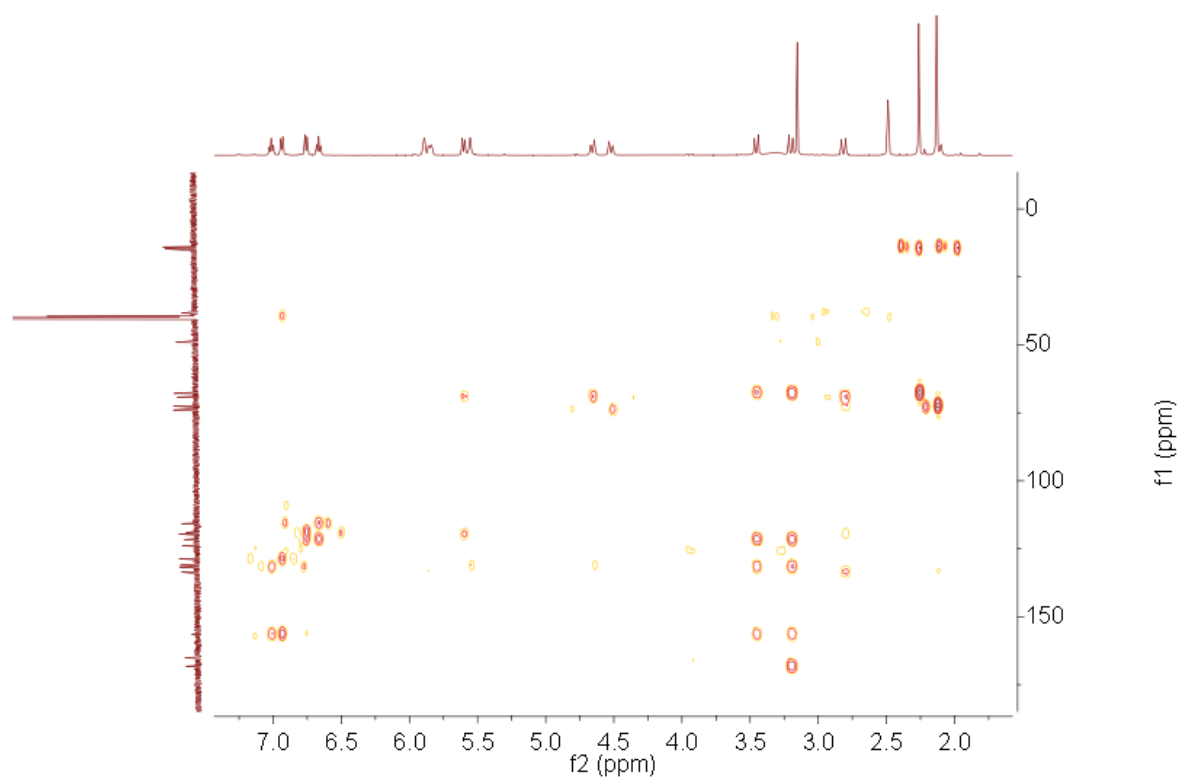
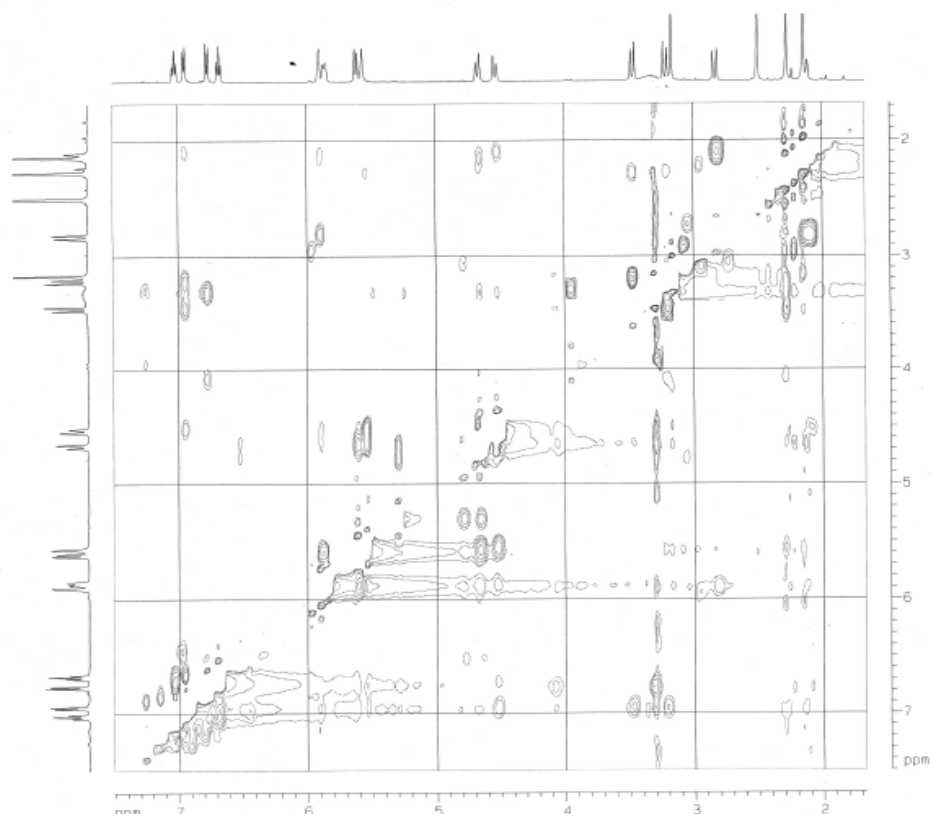
Fig S17. HMBC spectrum of compound **3**.Fig S18. NOESY spectrum of compound **3**.

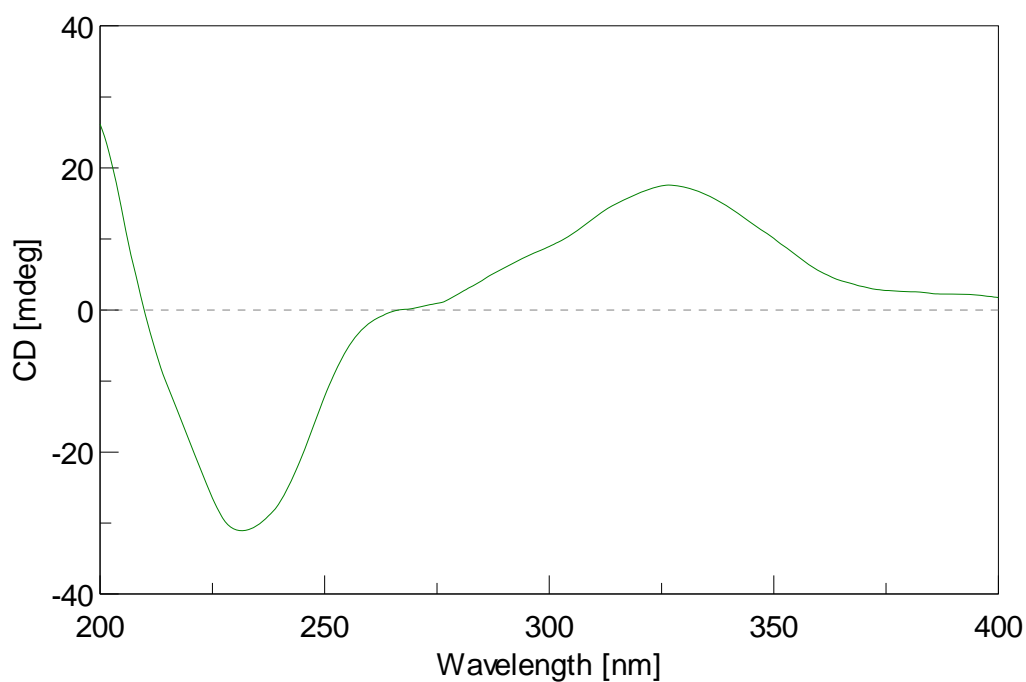
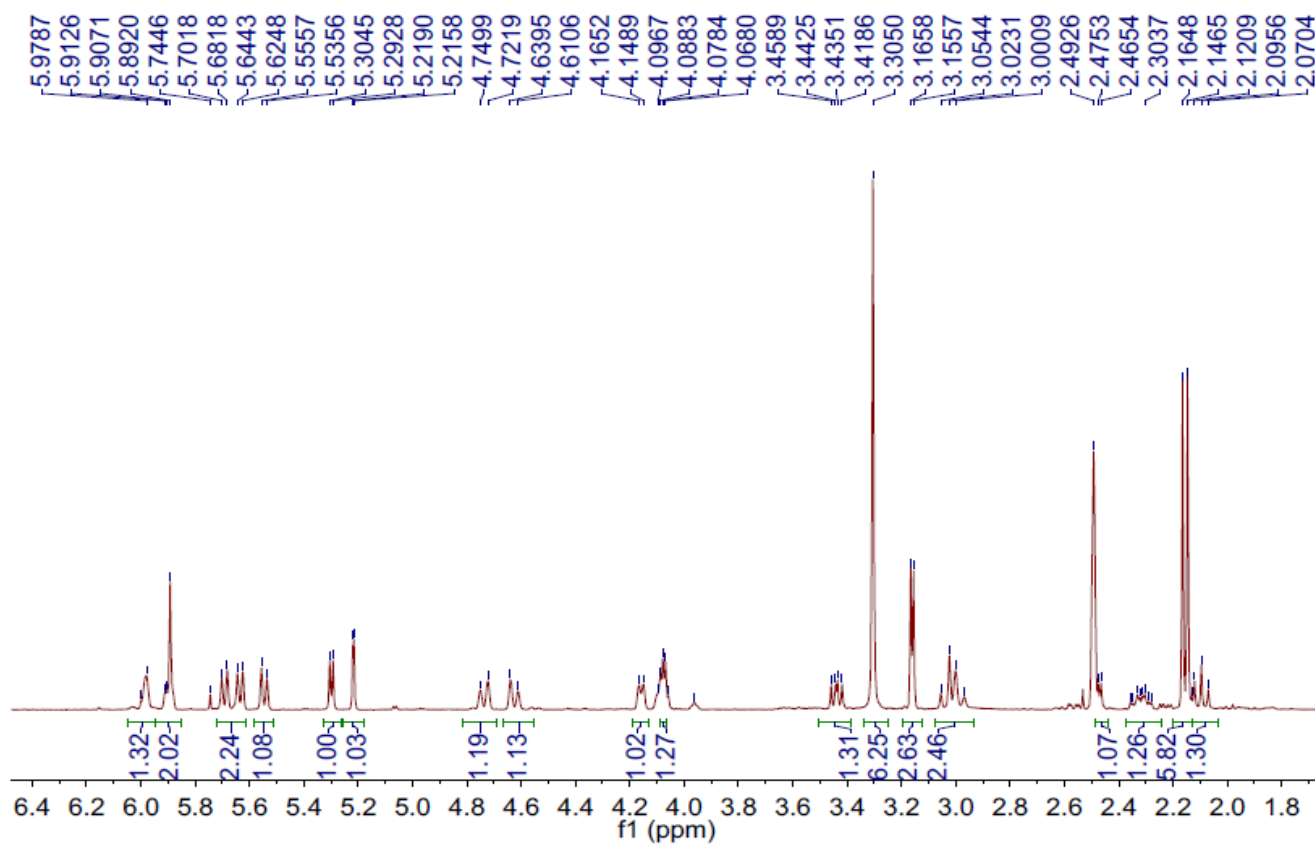
Fig S19. CD spectrum of compound **3**.Fig S20.  $^1\text{H}$  NMR (500 MHz,  $\text{DMSO-}d_6$ ) spectrum of compound **4**.

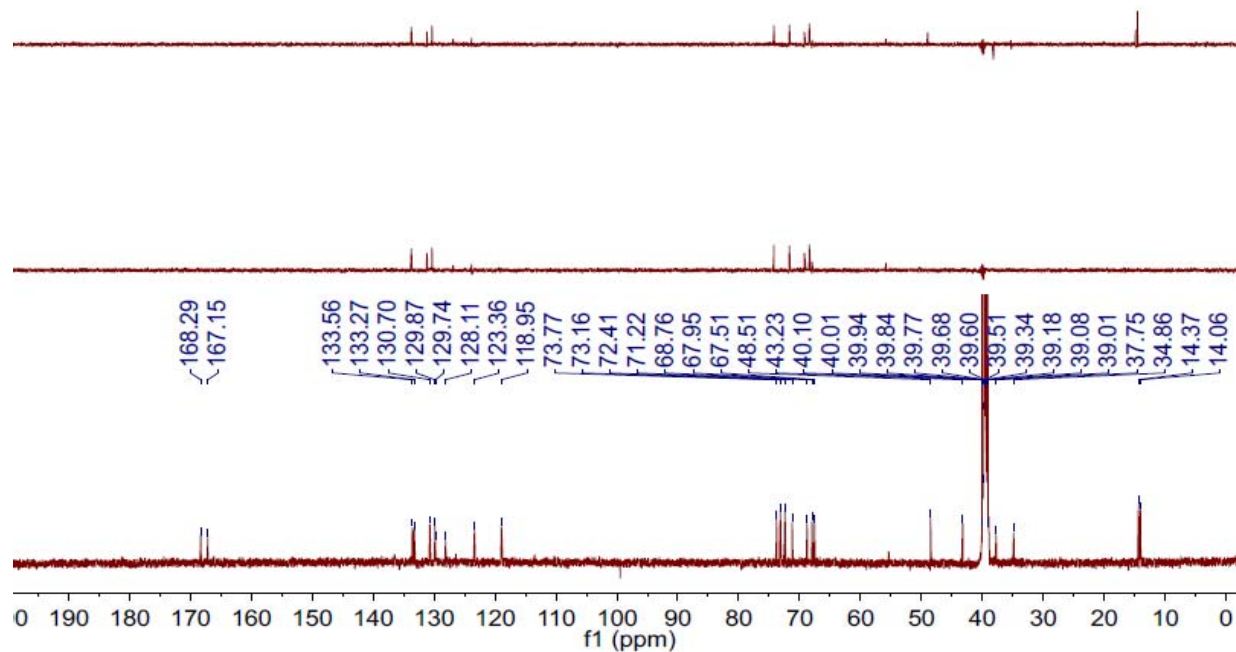
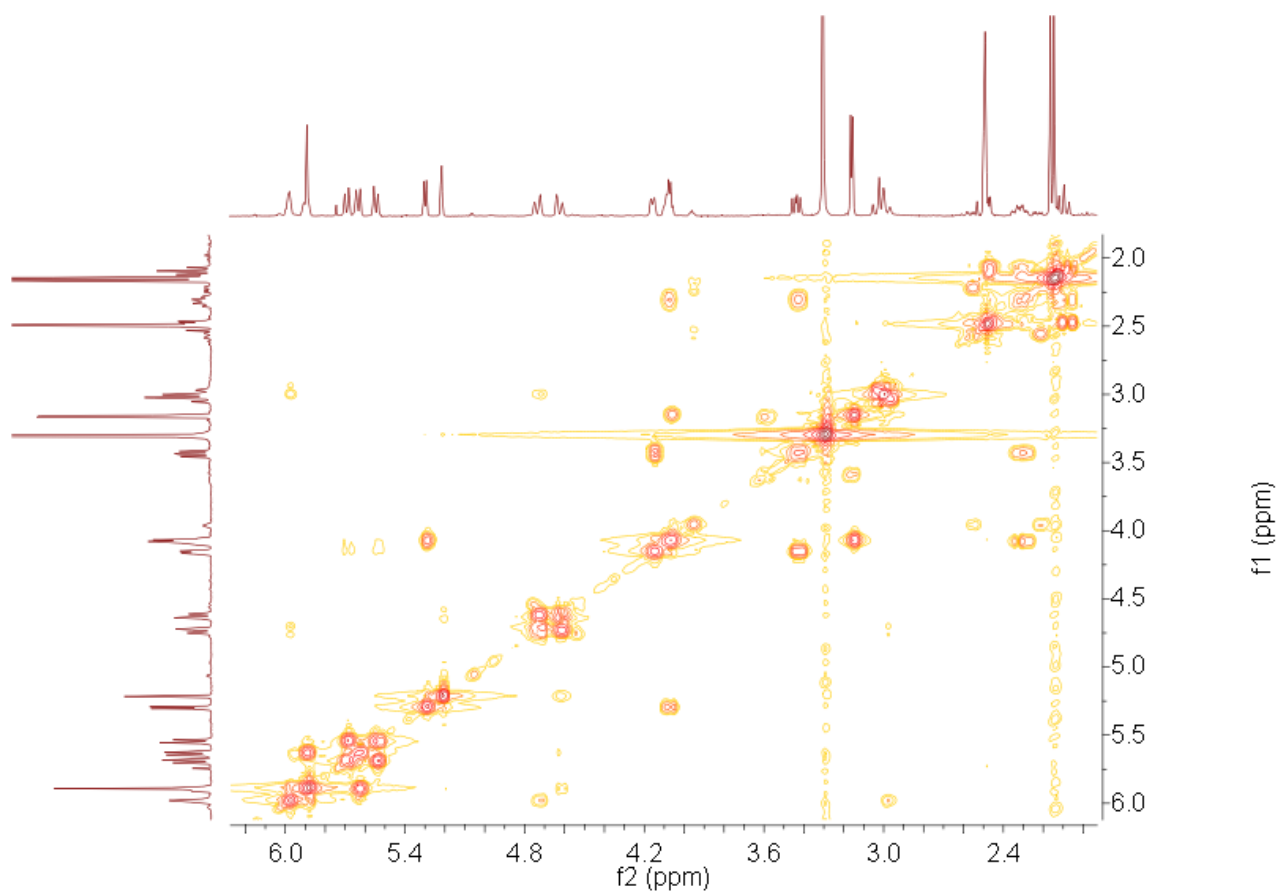
Fig S21.  $^{13}\text{C}$  NMR (125 MHz,  $\text{DMSO-}d_6$ ) and DEPT spectra of compound **4**.Fig S22. COSY spectrum of compound **4**.

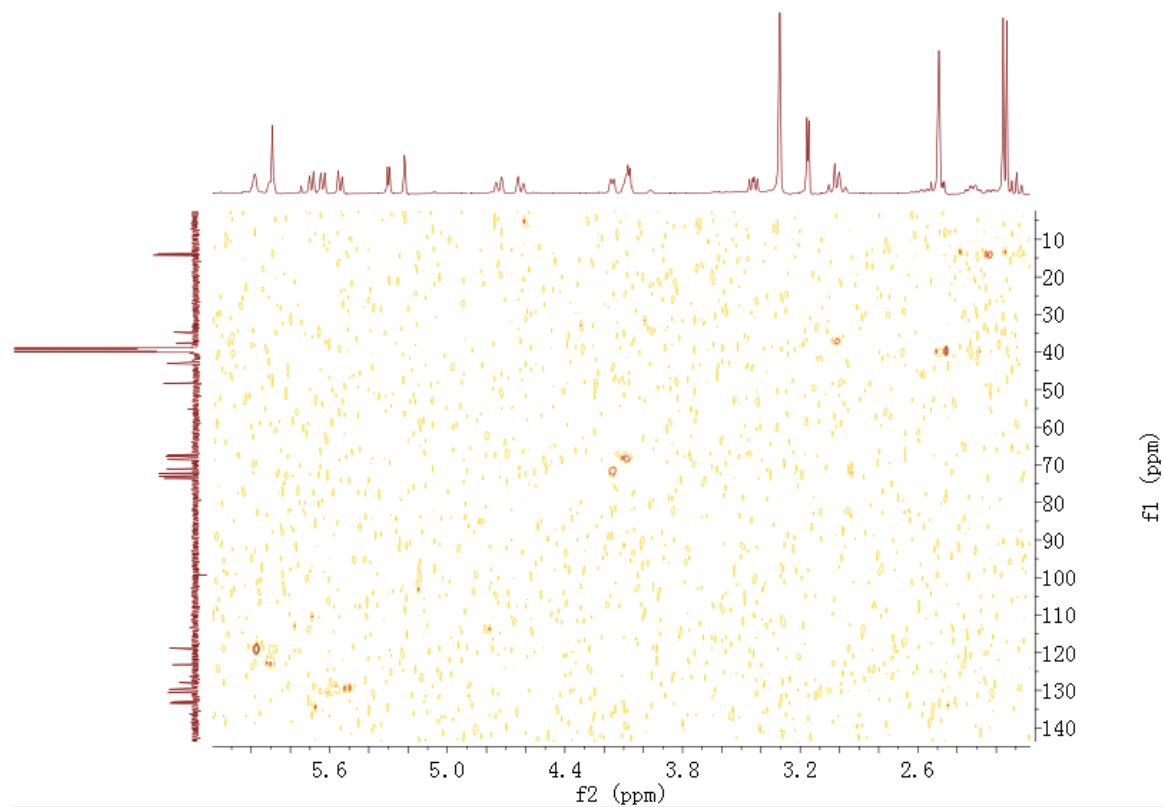
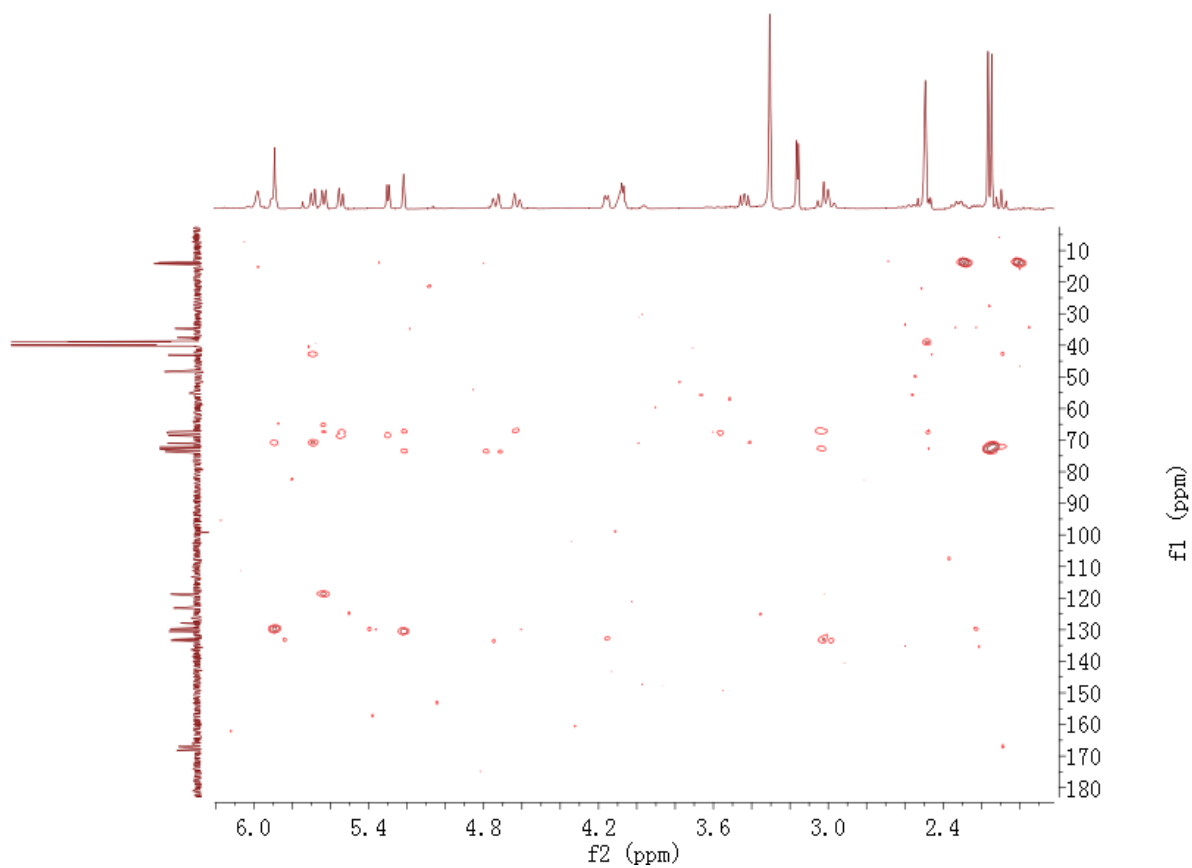
Fig S23. HSQC spectrum of compound **4**.Fig S24. HMBC spectrum of compound **4**.

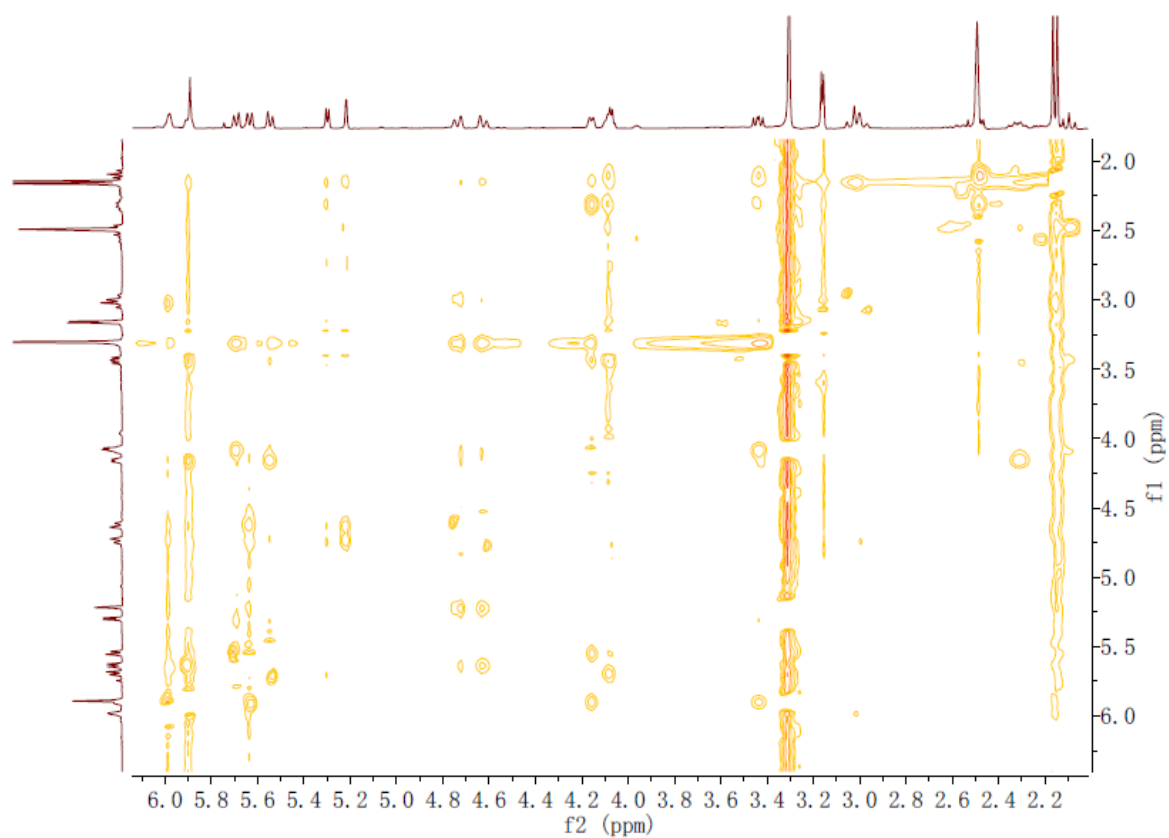
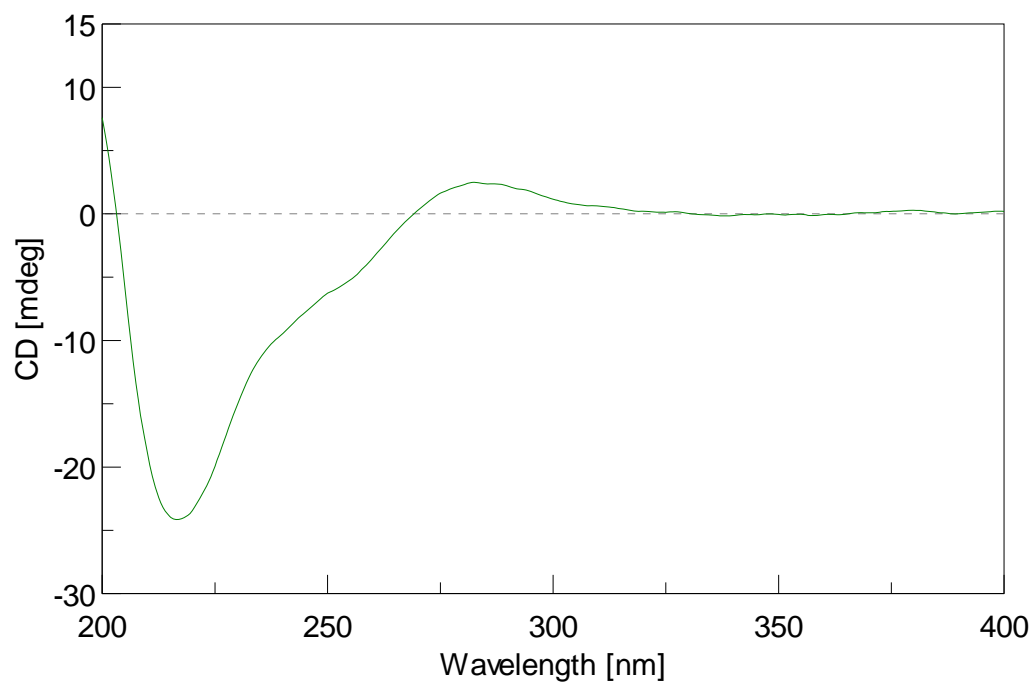
Fig S25. NOESY spectrum of compound **4**.Fig S26. CD spectrum of compound **4**.

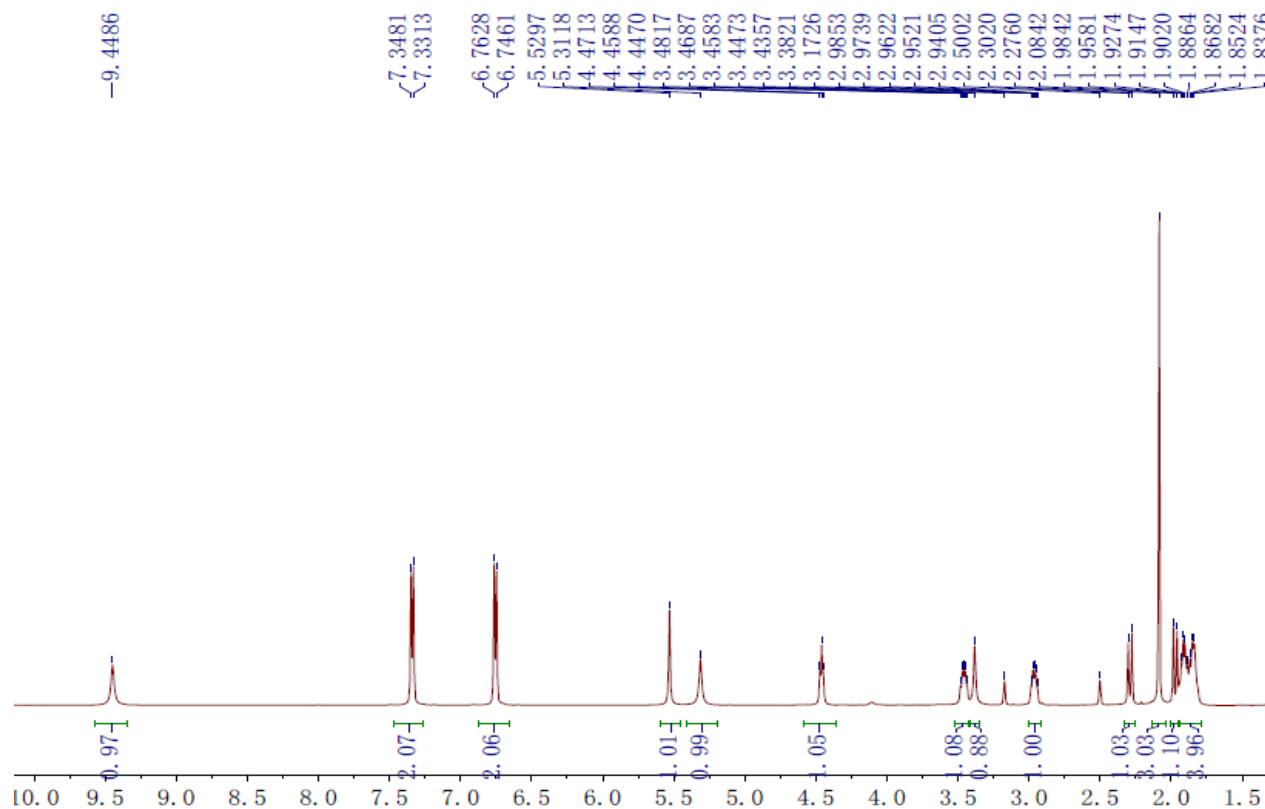
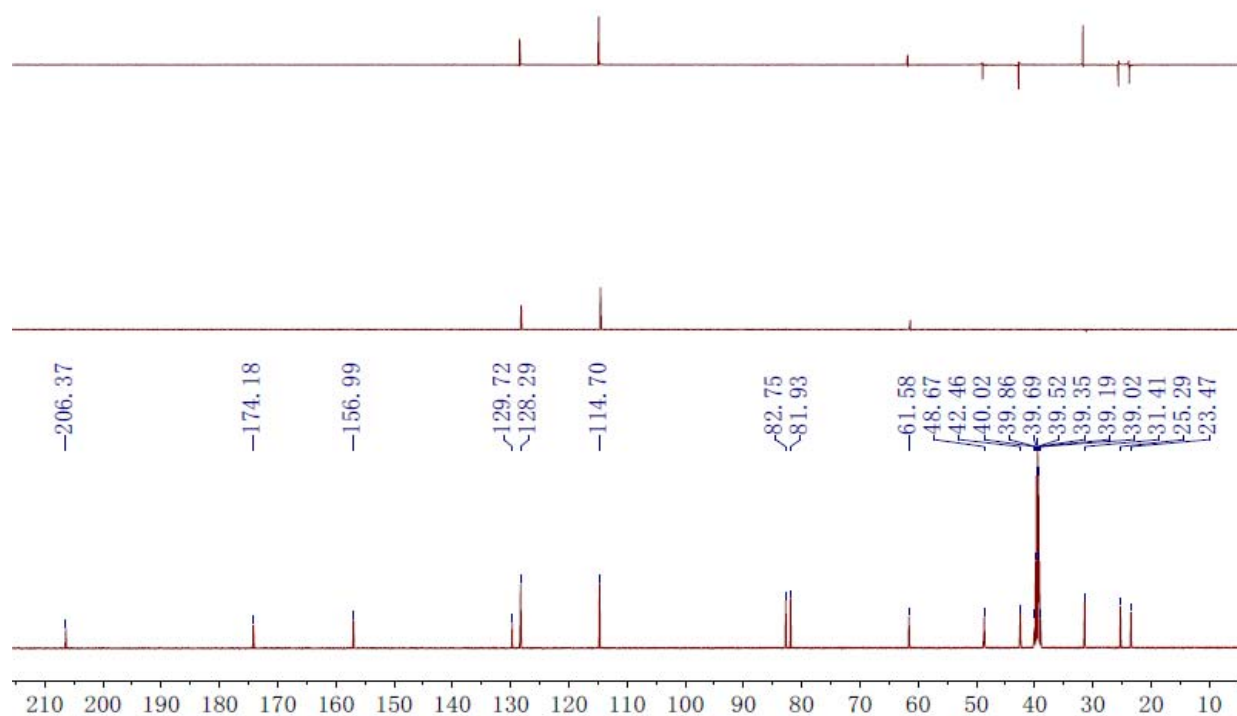
Fig S27.  $^1\text{H}$  NMR (500 MHz,  $\text{DMSO-}d_6$ ) spectrum of compound **7**.Fig S28.  $^{13}\text{C}$  NMR (125 MHz,  $\text{DMSO-}d_6$ ) and DEPT spectra of compound **7**.



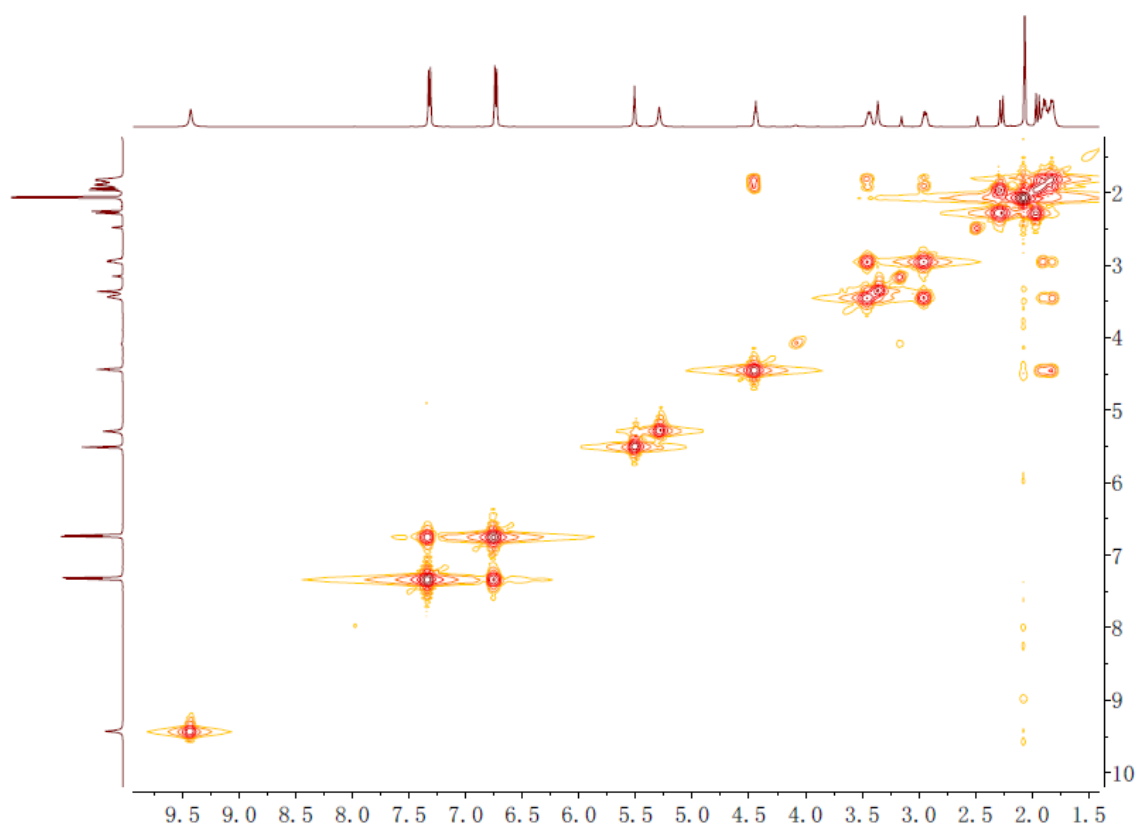
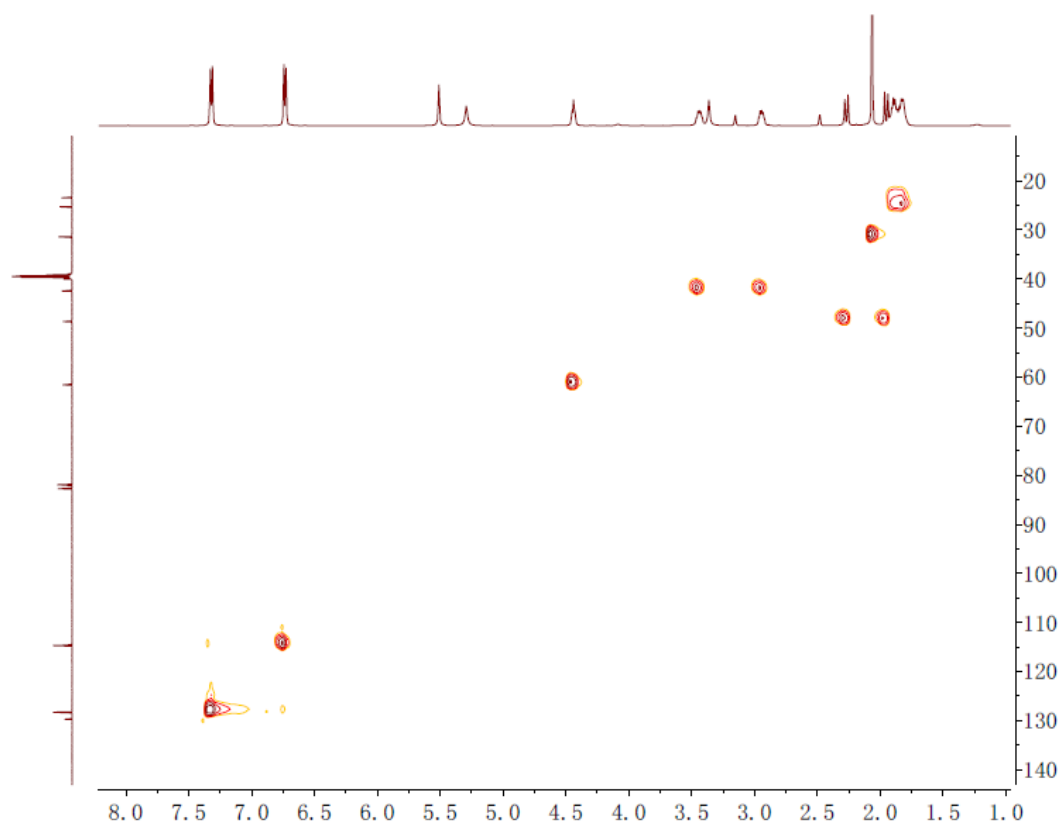
Fig S29. COSY spectrum of compound **7**.Fig S30. HSQC spectrum of compound **7**.

Fig S31. HMBC spectrum of compound 7.

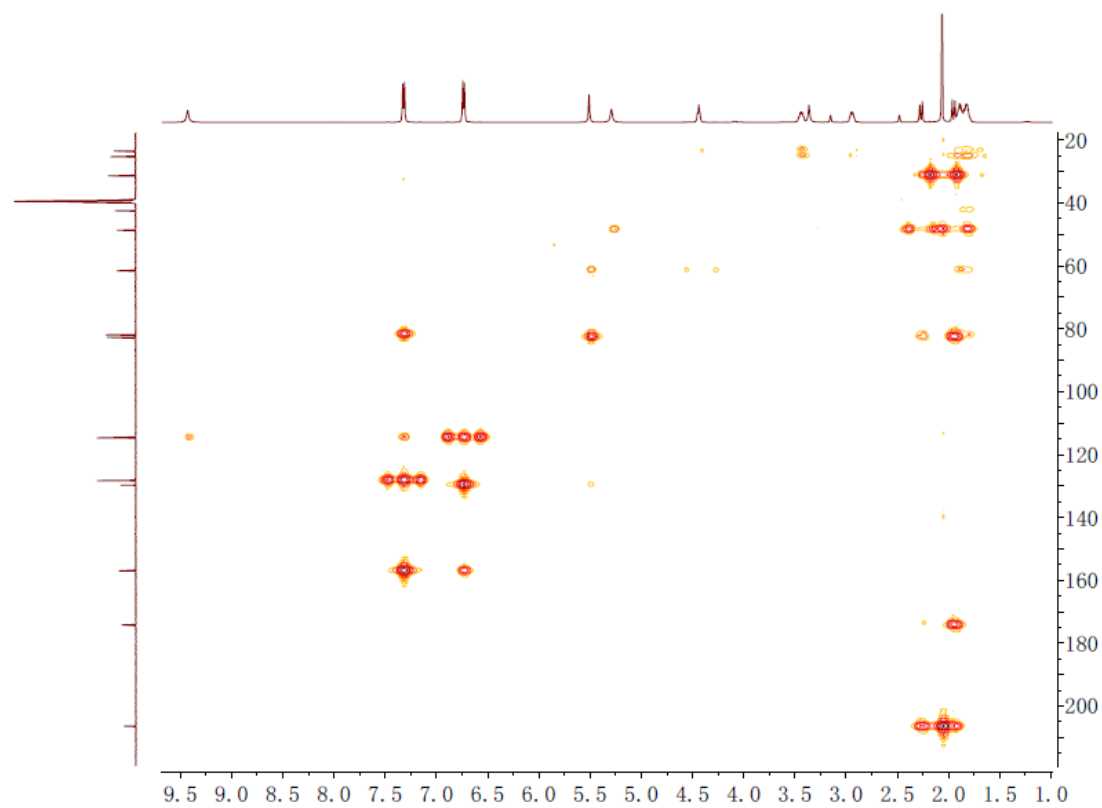


Fig S32. NOESY spectrum of compound 7.

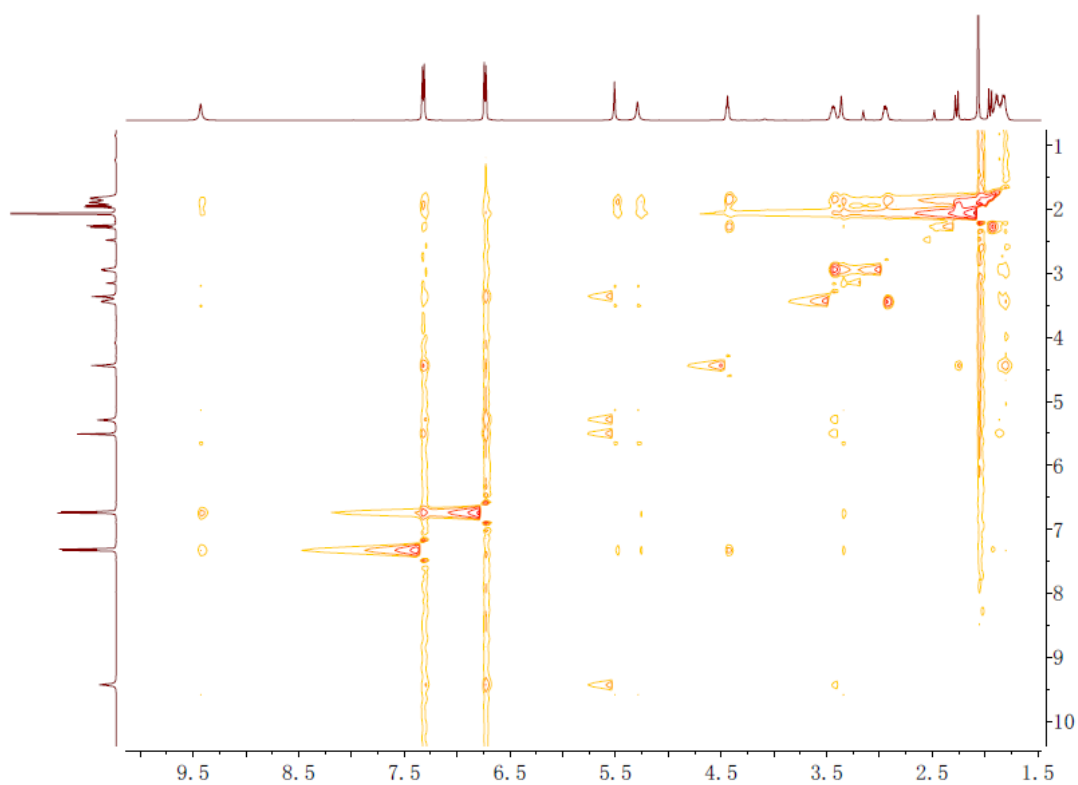


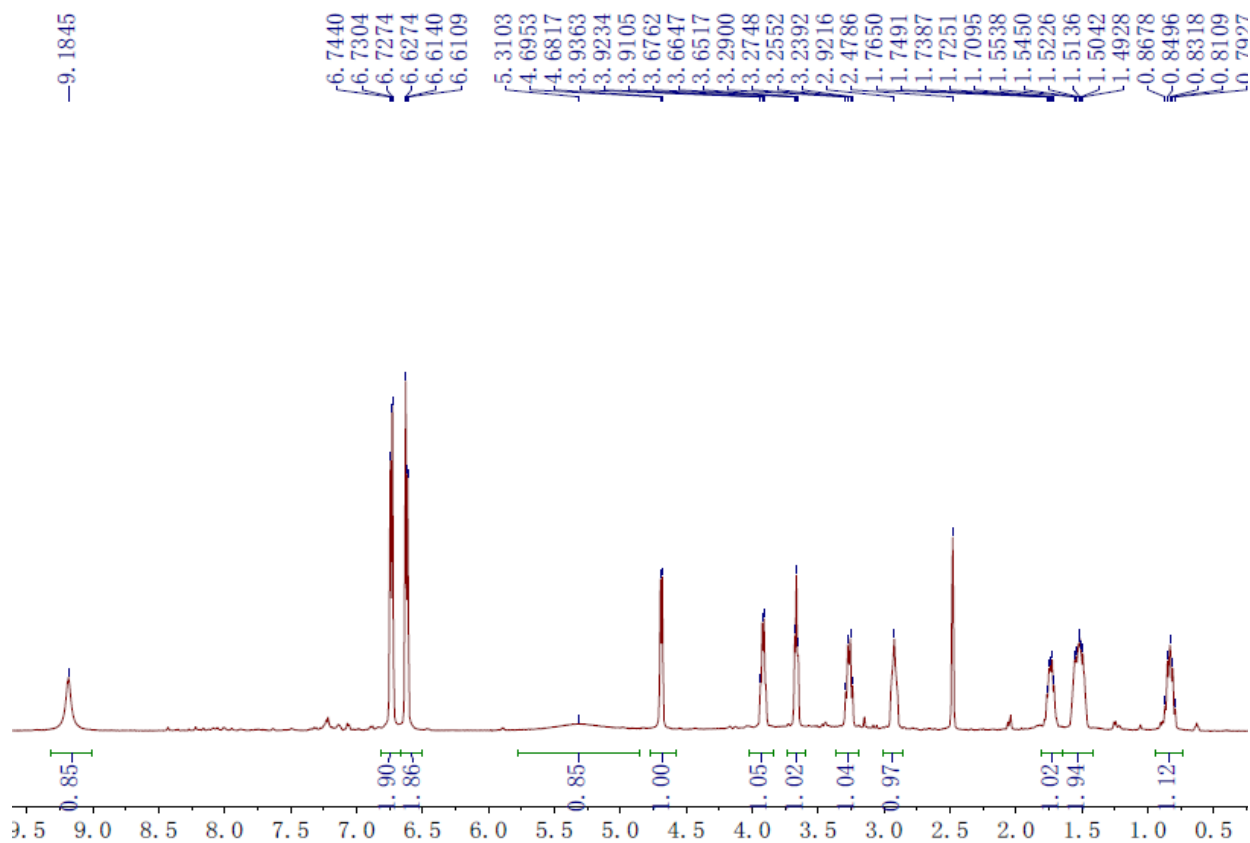
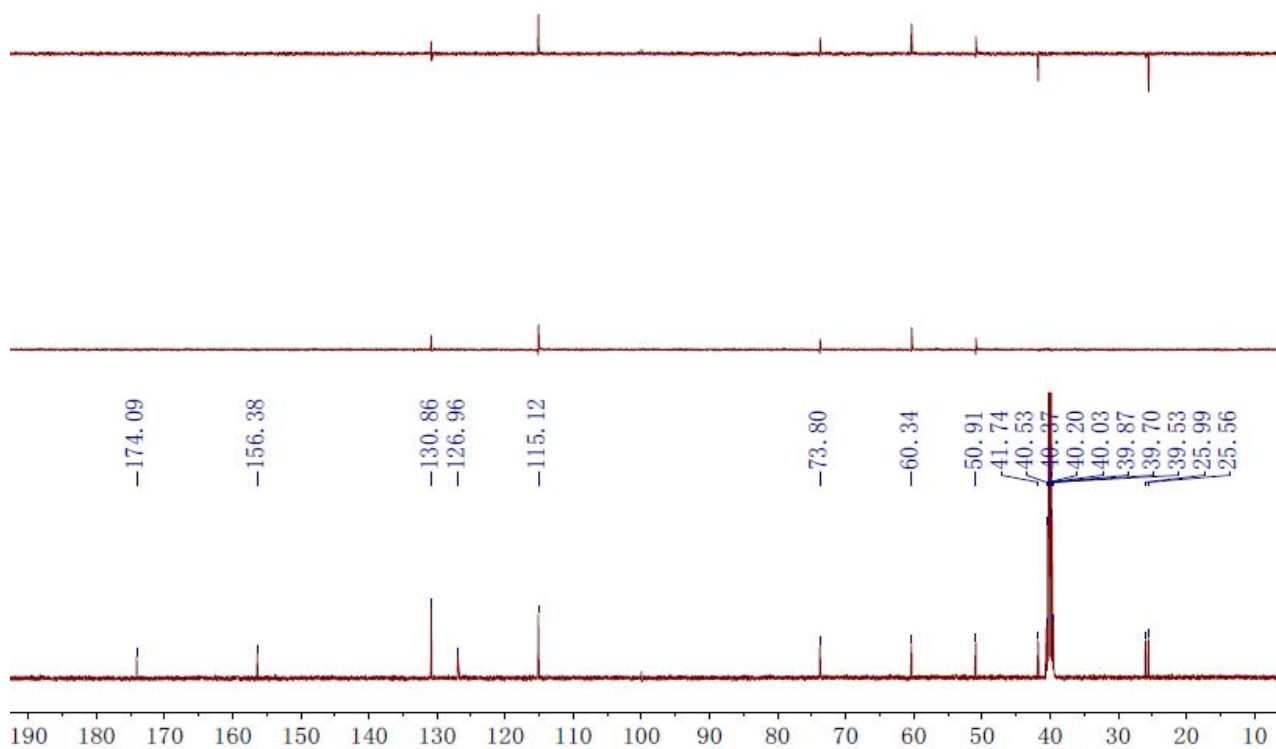
Fig S33.  $^1\text{H}$  NMR (500 MHz,  $\text{DMSO-}d_6$ ) spectrum of compound **8**.Fig S34.  $^{13}\text{C}$  NMR (125 MHz,  $\text{DMSO-}d_6$ ) and DEPT spectra of compound **8**.

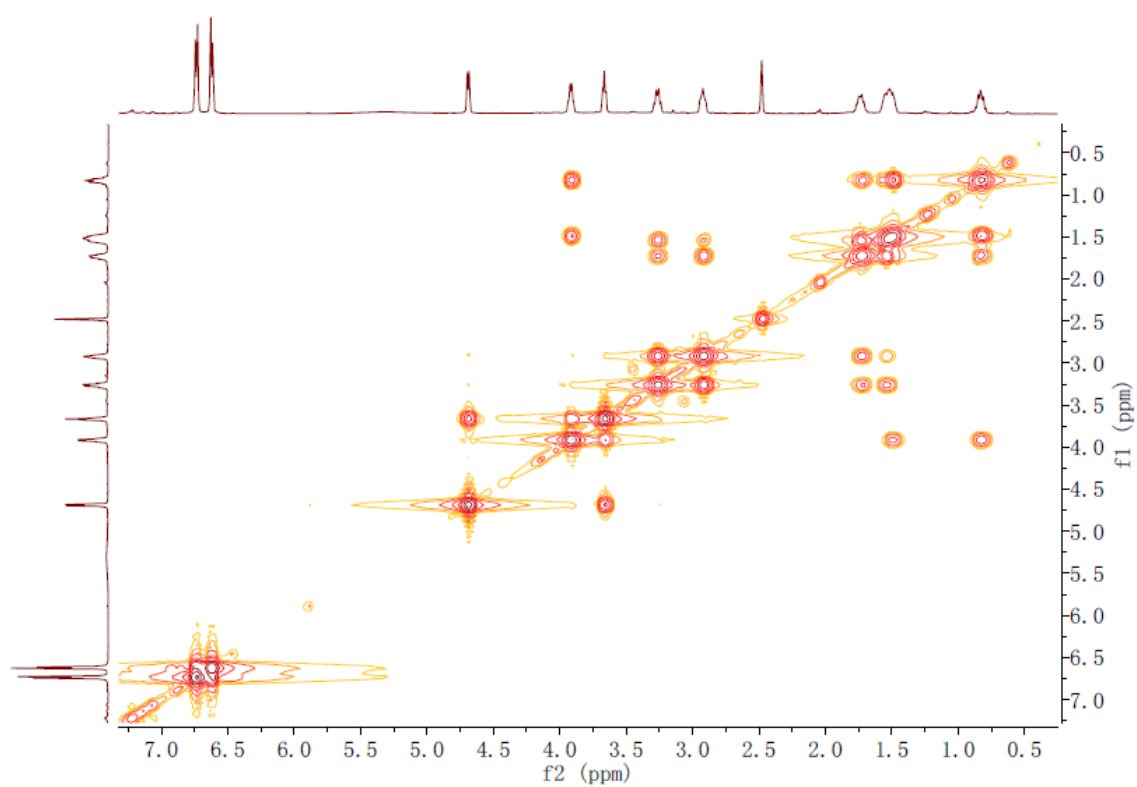
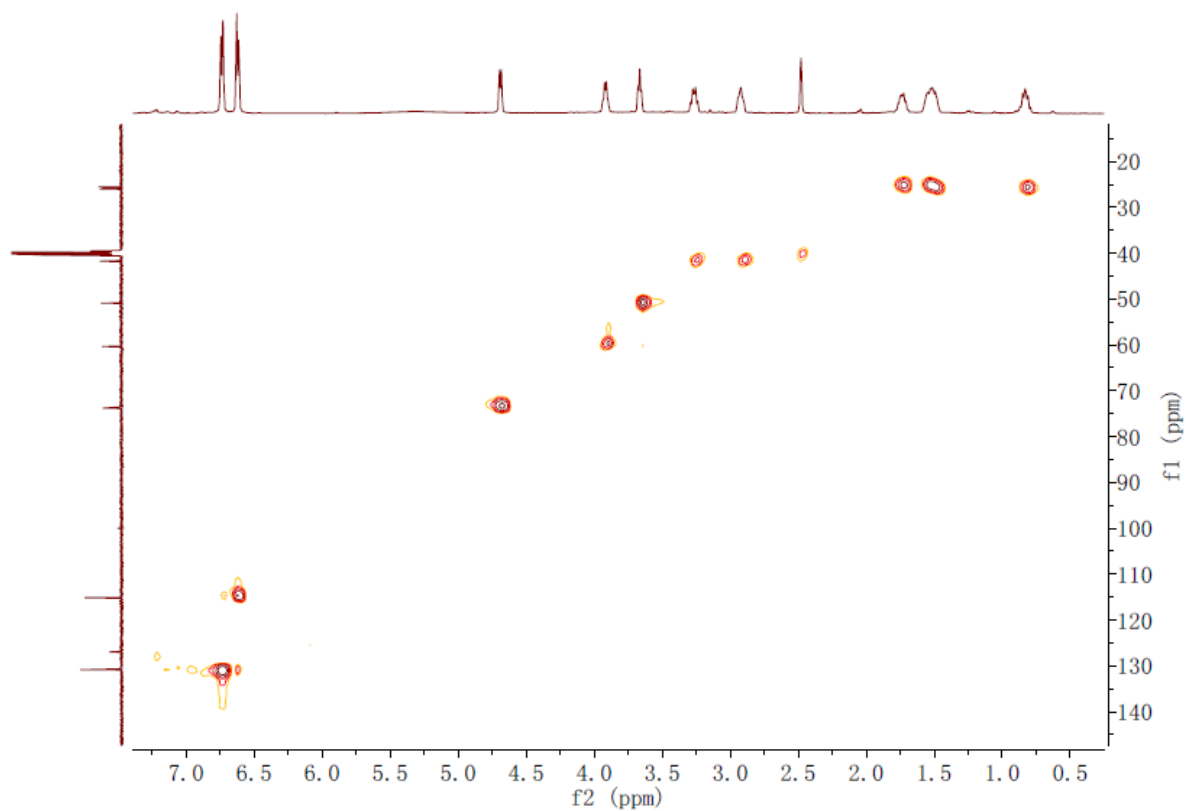
Fig S35. COSY spectrum of compound **8**.Fig S36. HSQC spectrum of compound **8**.

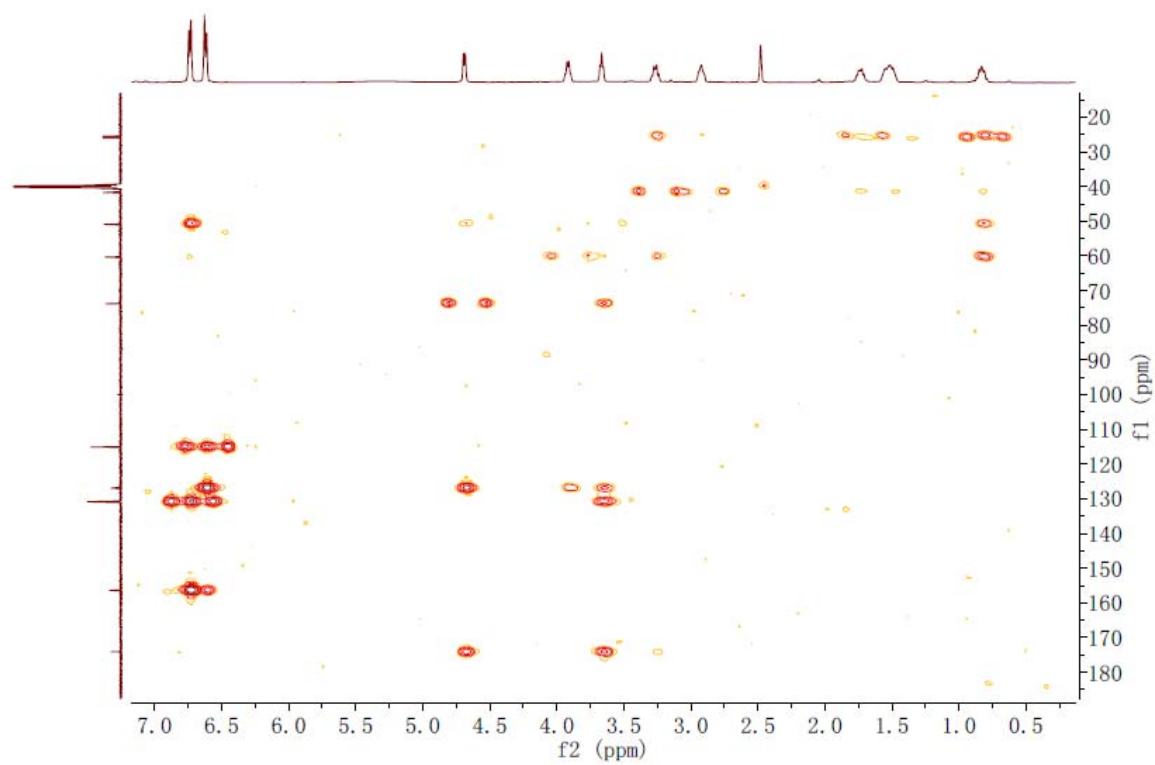
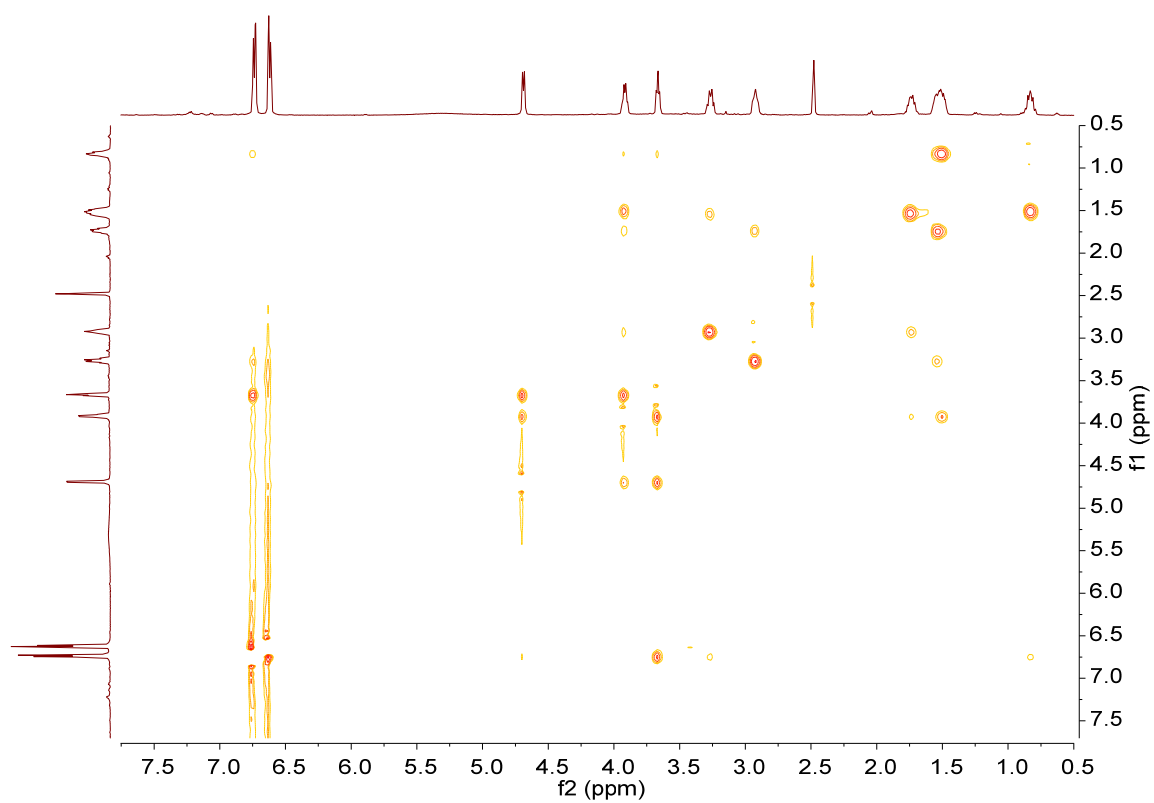
Fig S37. HMBC spectrum of compound **8**.Fig S38. NOESY spectrum of compound **8**.

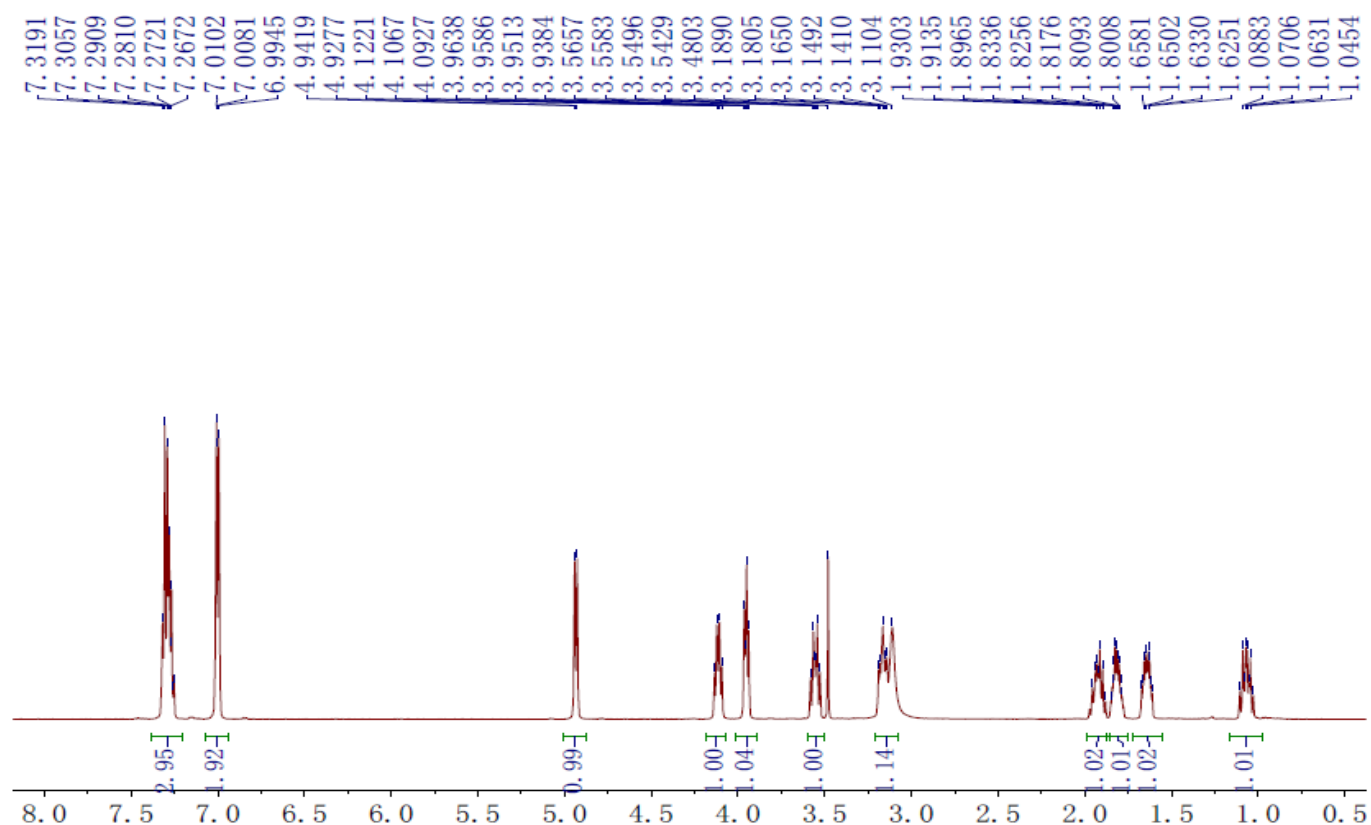
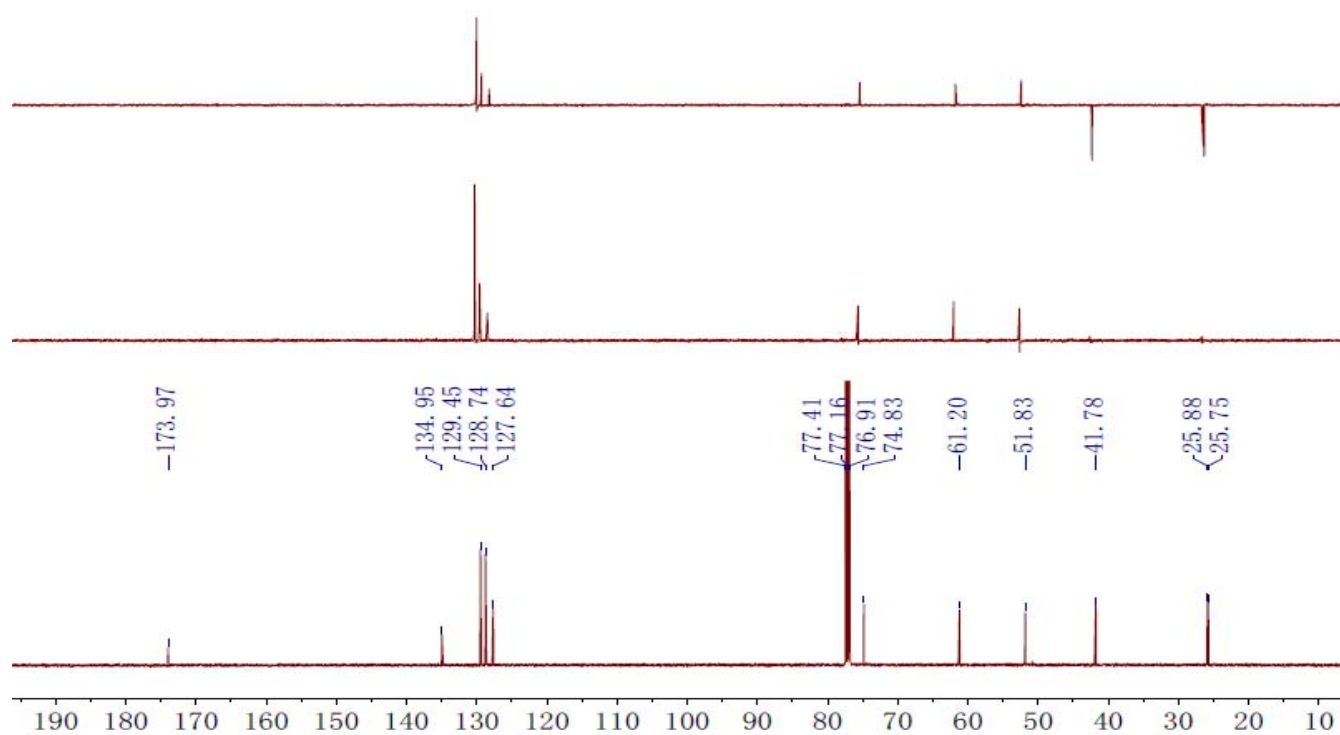
Fig S39.  $^1\text{H}$  NMR (500 MHz,  $\text{DMSO-}d_6$ ) spectrum of compound **10**.Fig S40.  $^{13}\text{C}$  NMR (125 MHz,  $\text{DMSO-}d_6$ ) and DEPT spectra of compound **10**.

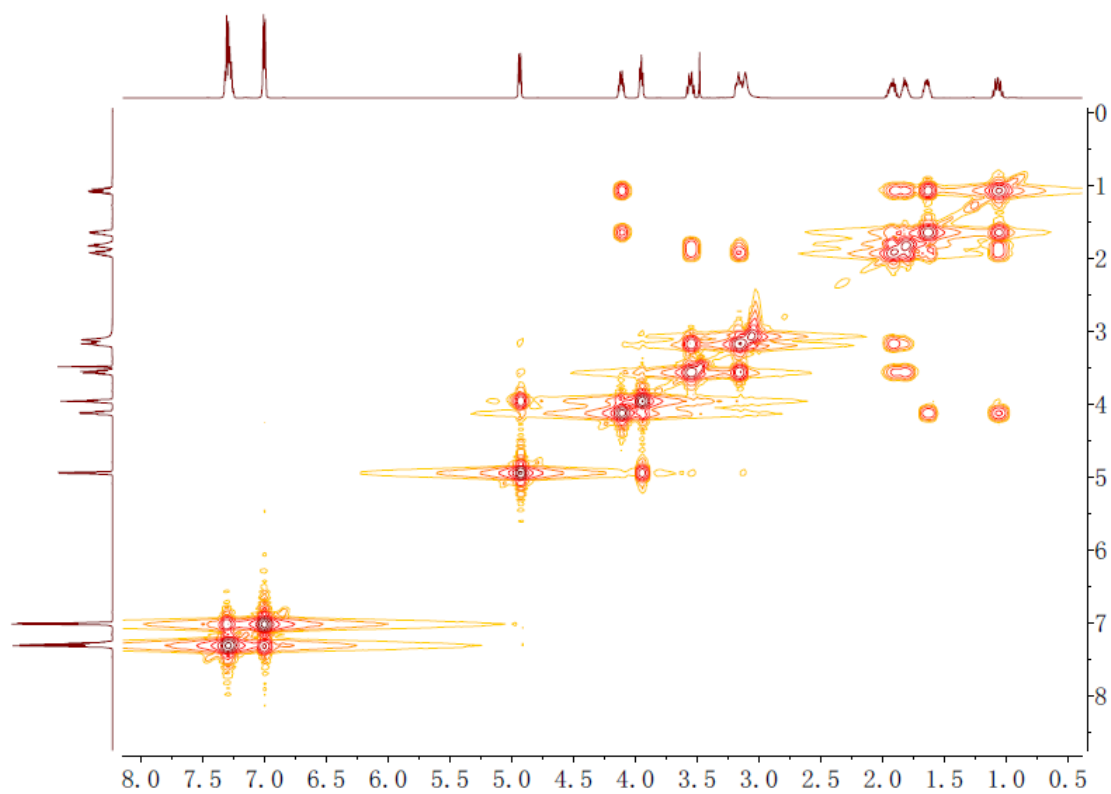
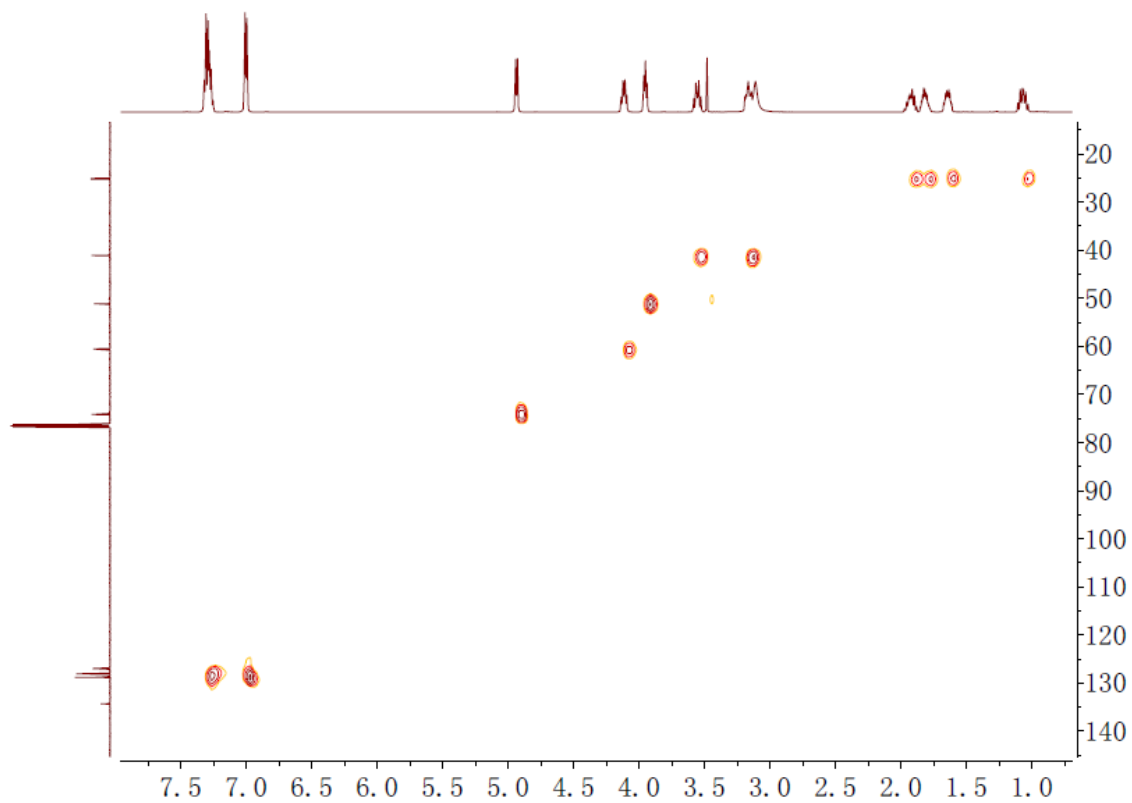
Fig S41. COSY spectrum of compound **10**.Fig S42. HSQC spectrum of compound **10**.

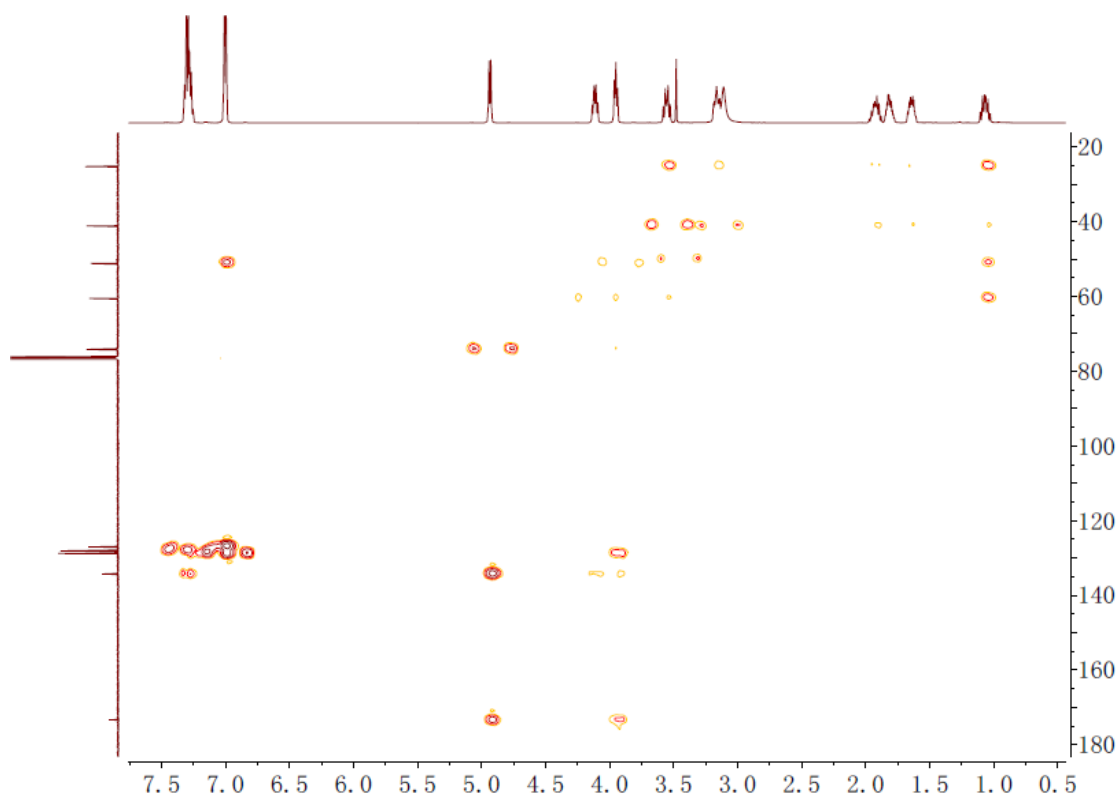
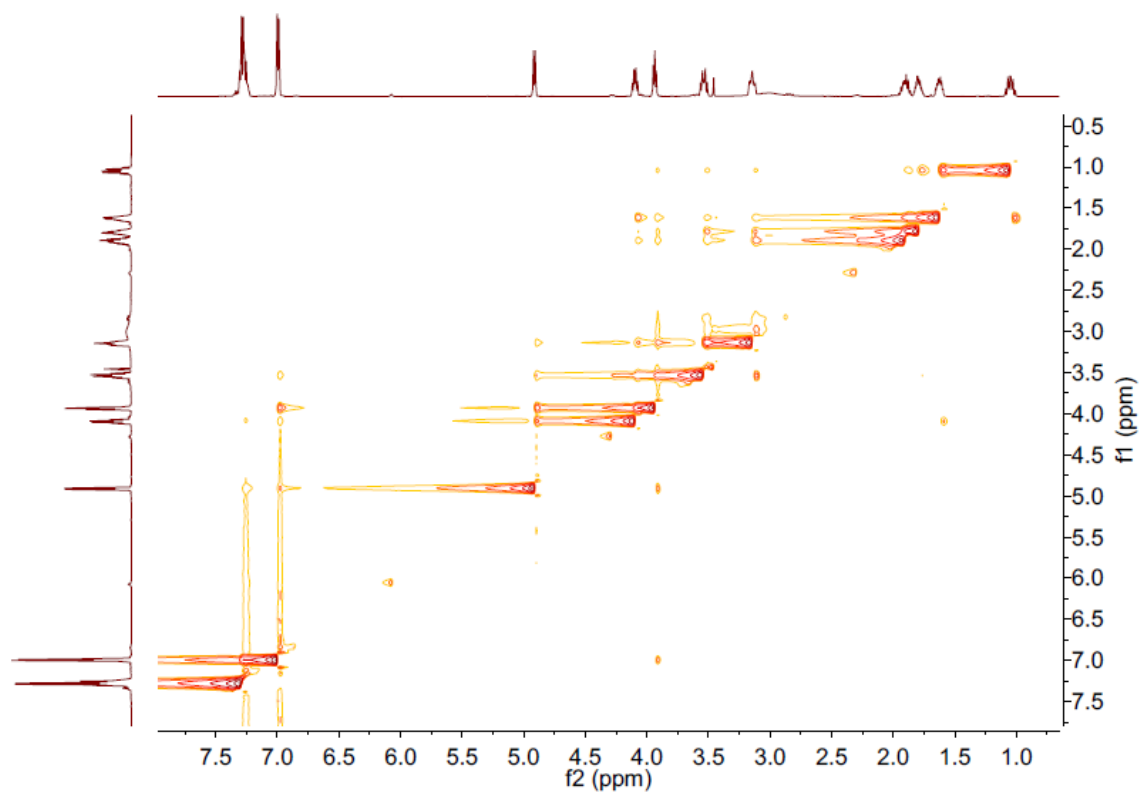
Fig S43. HMBC spectrum of compound **10**.Fig S44. NOESY spectrum of compound **10**.



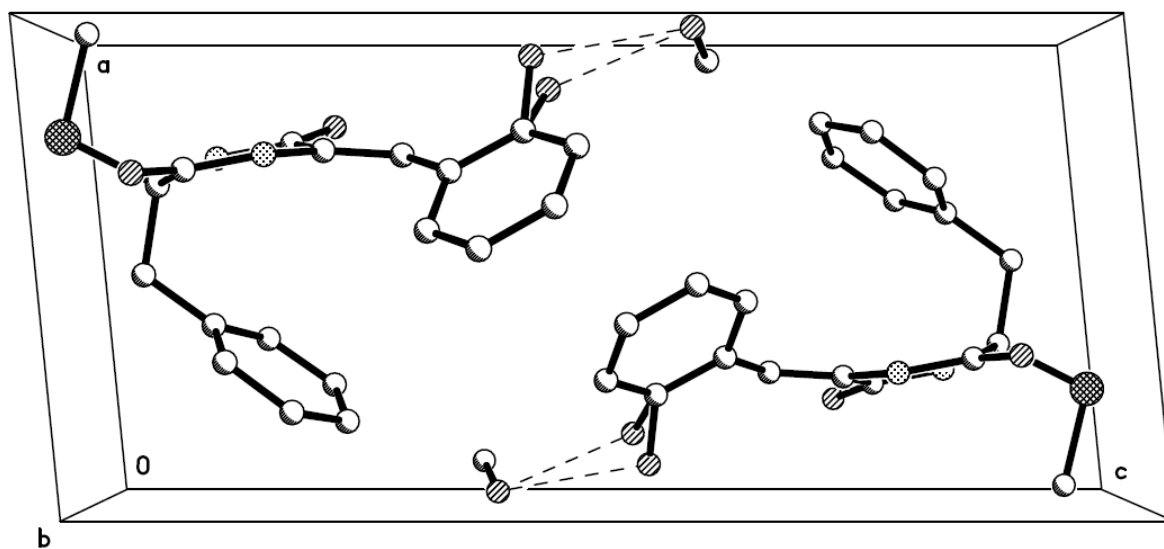
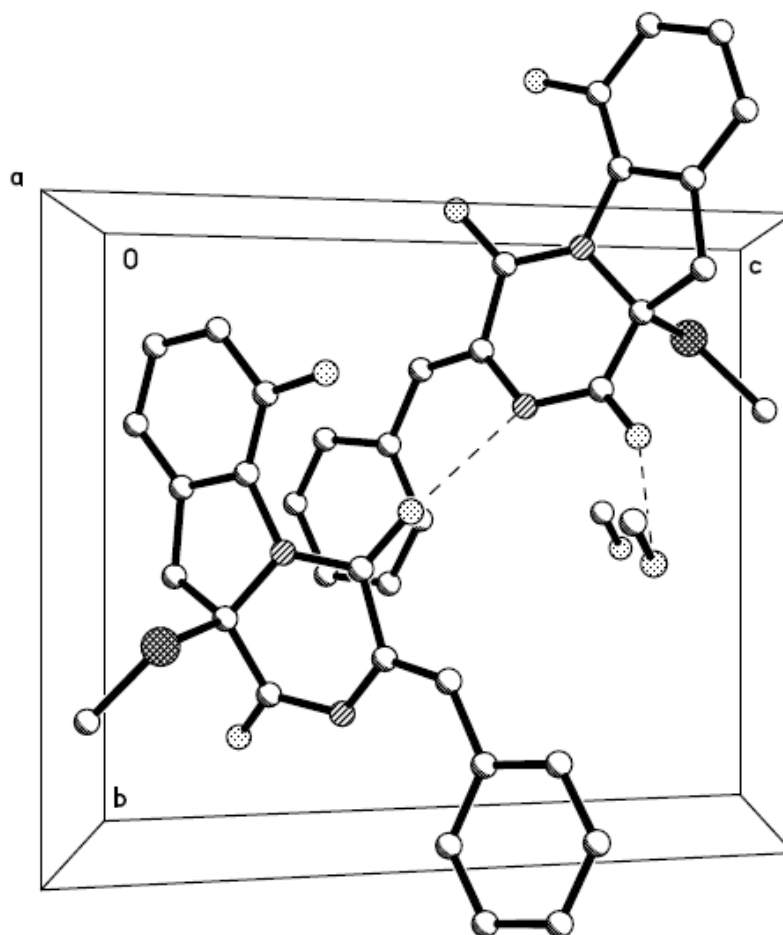
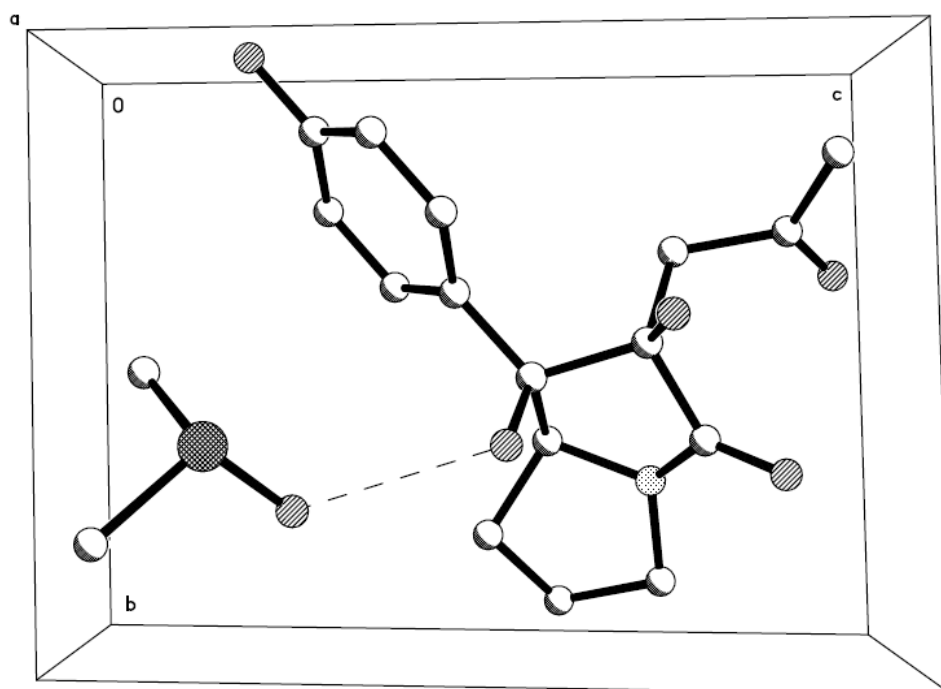
Fig S45. Crystal packing of compound **1** at 293(2) K.Fig S46. Crystal packing of compound **2** at 293(2) K.

Fig S47. Crystal packing of compound **7** at 293(2) K.Fig S48. Crystal packing of compound **8** at 293(2) K.