

Supporting Information

Cytotoxic isovaleryl sucrose esters from *Ainsliaea yunnanensis*: reduction of MMP and increment of ROS levels in A549 cells

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Figure S84. Viability of A549 cells after exposure to 0.1% DMSO or various concentrations of compound **2** for 24, 48, and 72 h.

Figure S1. HRESIMS spectrum of compound **1**

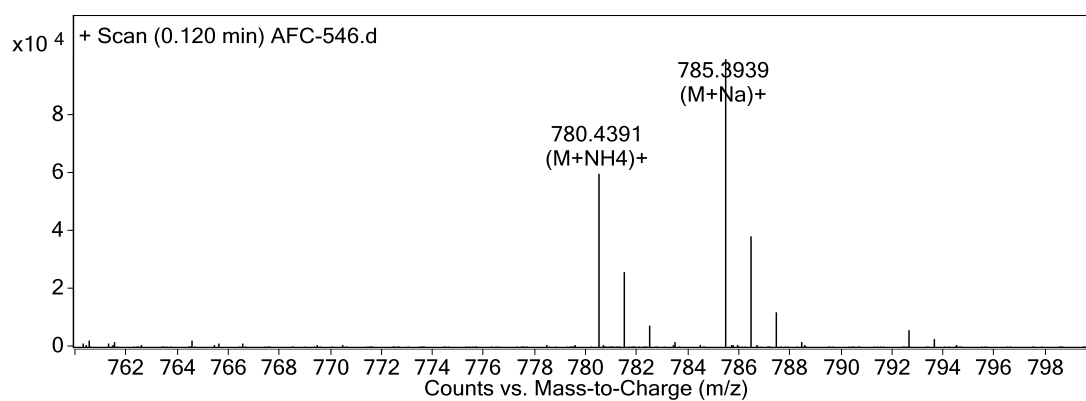


Figure S2. IR spectrum of compound **1**

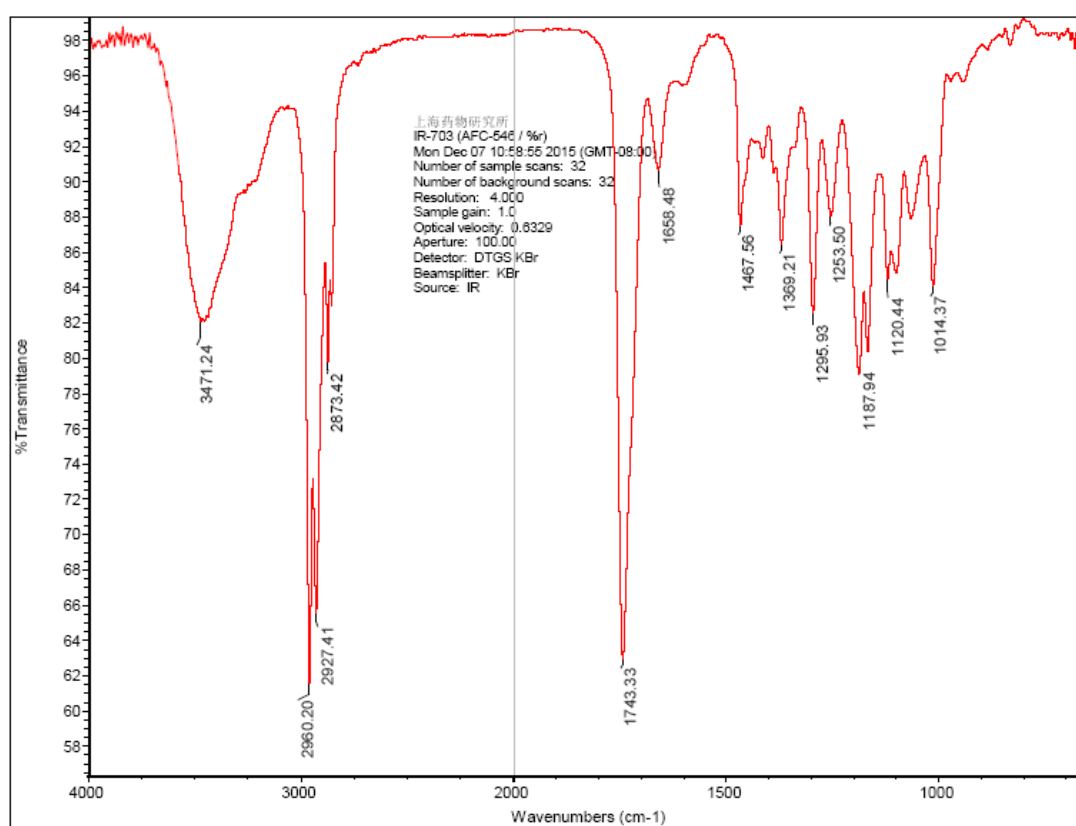


Figure S3. ¹H NMR spectrum of compound **1** (500 MHz, CDCl₃)

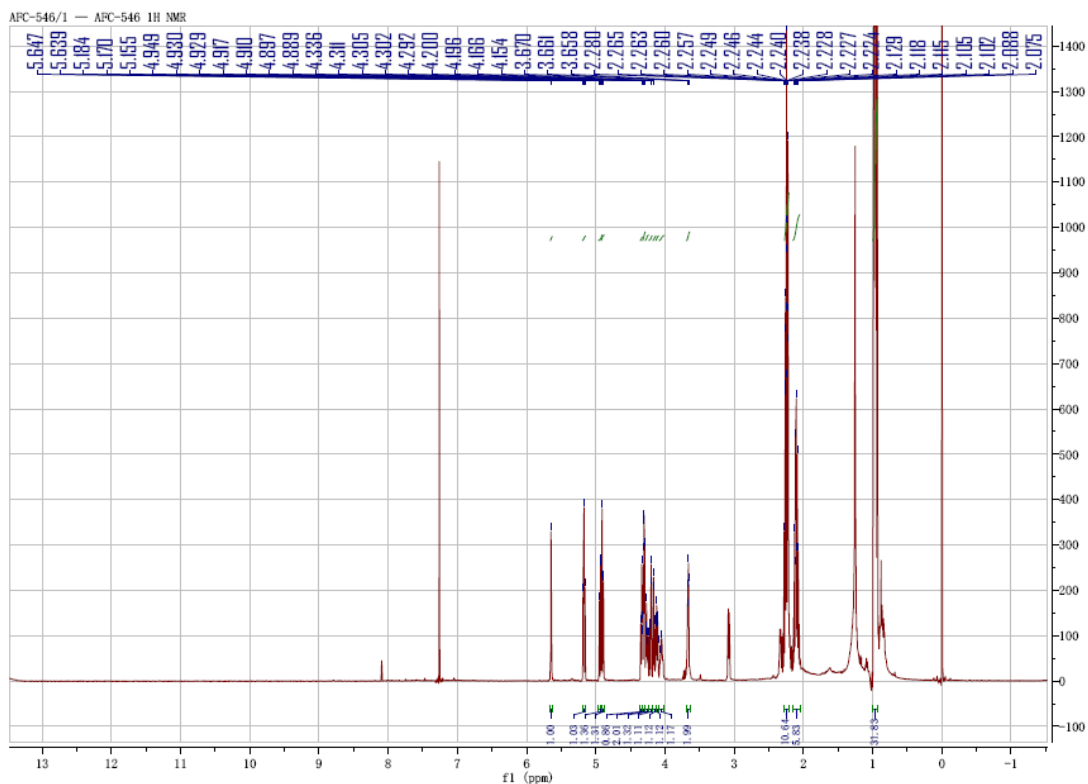


Figure S4. ^{13}C NMR spectrum of compound **1** (125 MHz, CDCl_3)

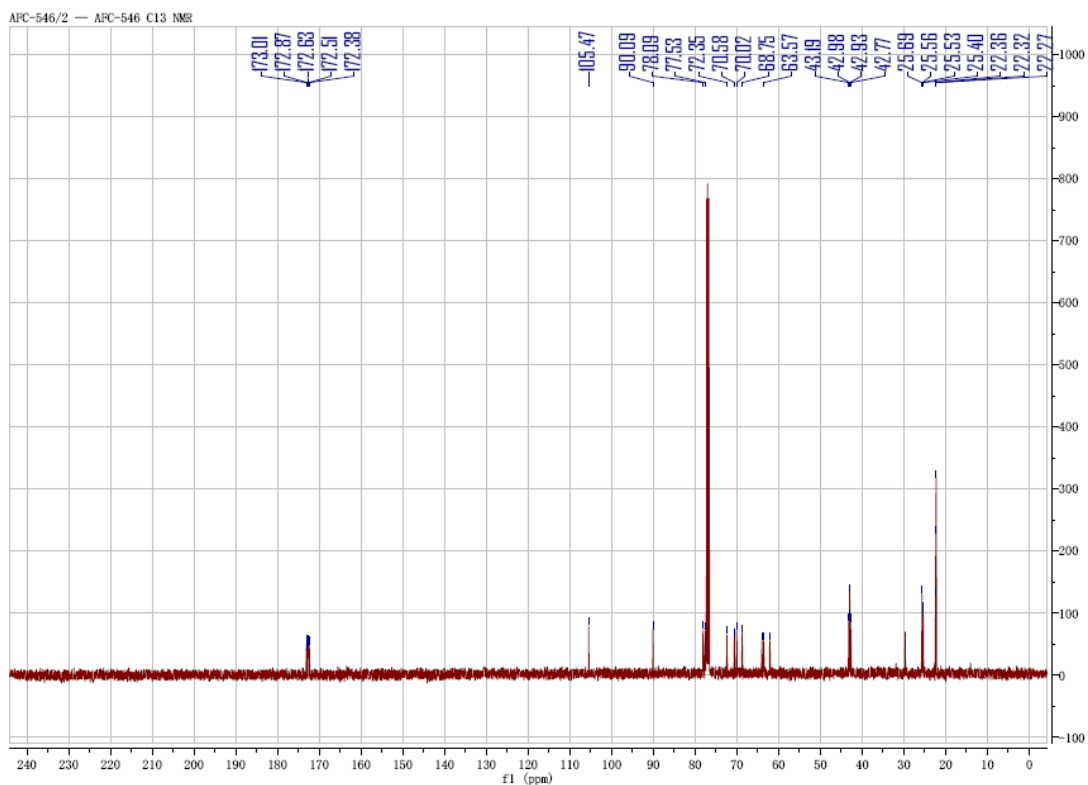


Figure S5. DEPT NMR spectrum of compound **1** (125 MHz, CDCl_3)

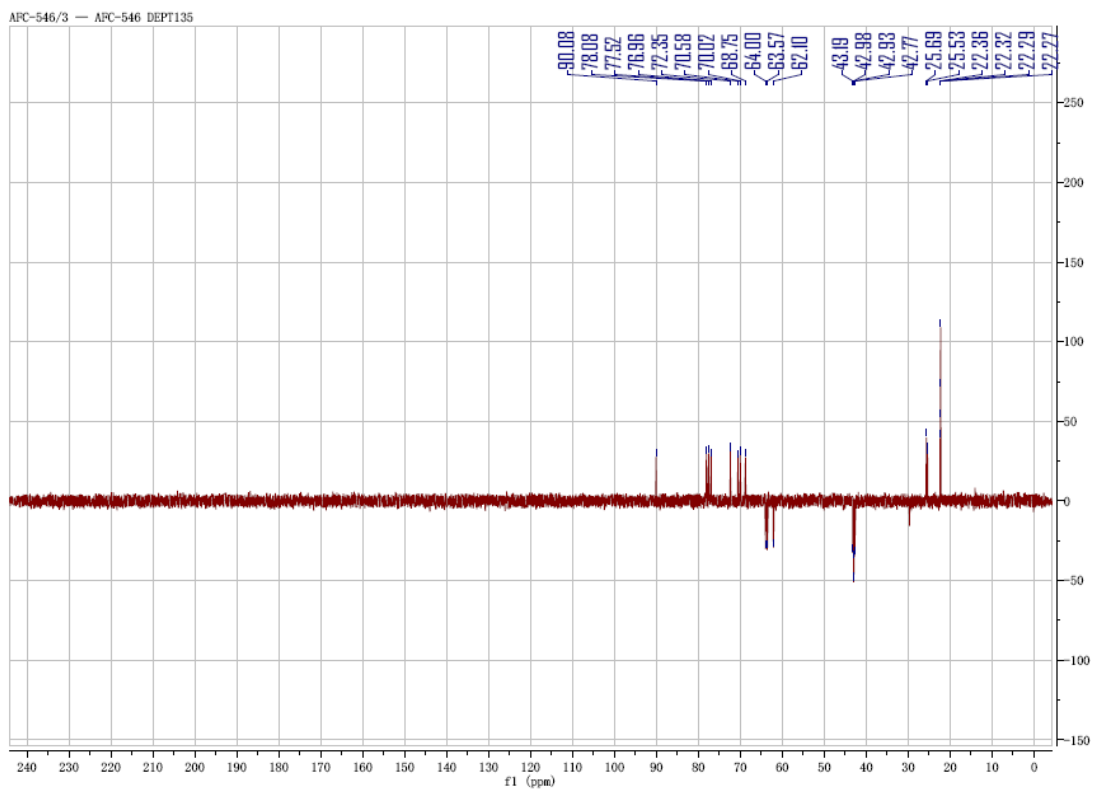


Figure S6. ^1H - ^1H COSY NMR spectrum of compound **1** (500 MHz, CDCl_3)

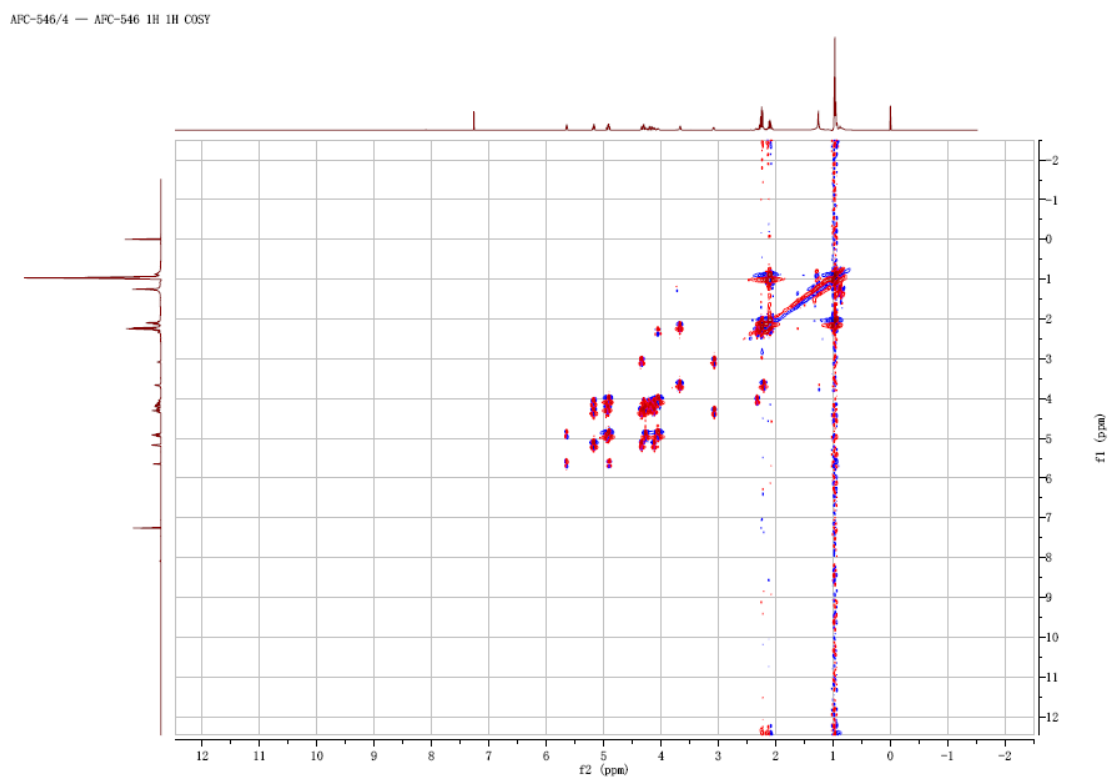


Figure S7. HSQC NMR spectrum of compound **1** (500 MHz, CDCl_3)

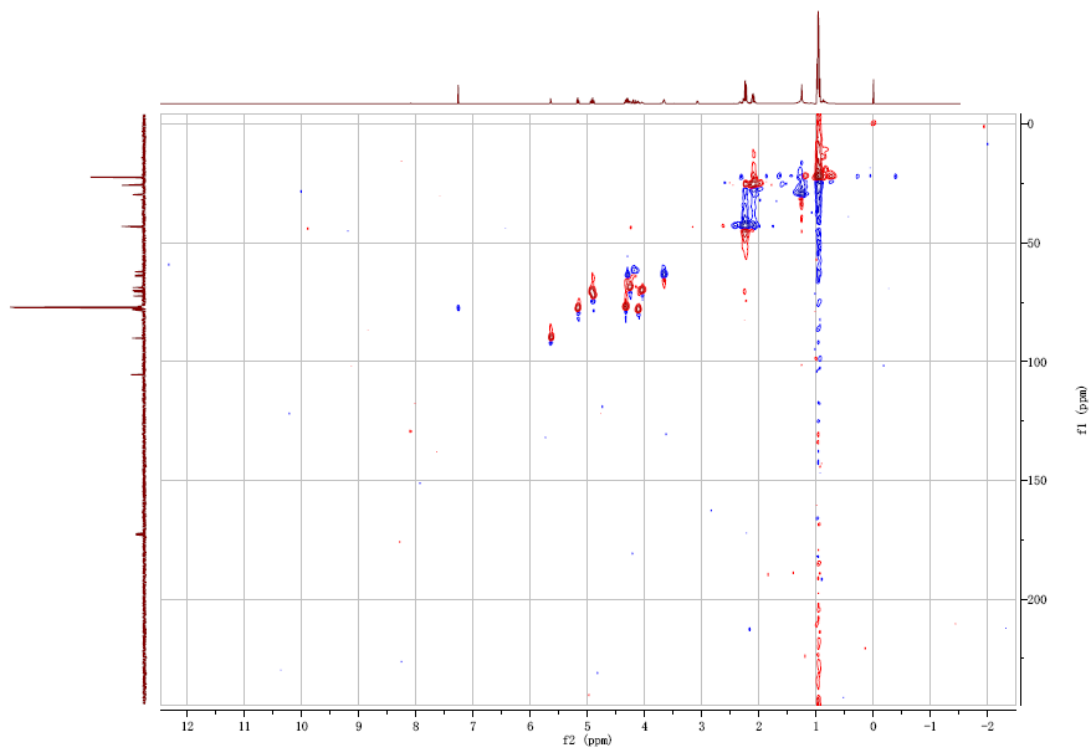


Figure S8. HMBC NMR spectrum of compound **1** (500 MHz, CDCl₃)

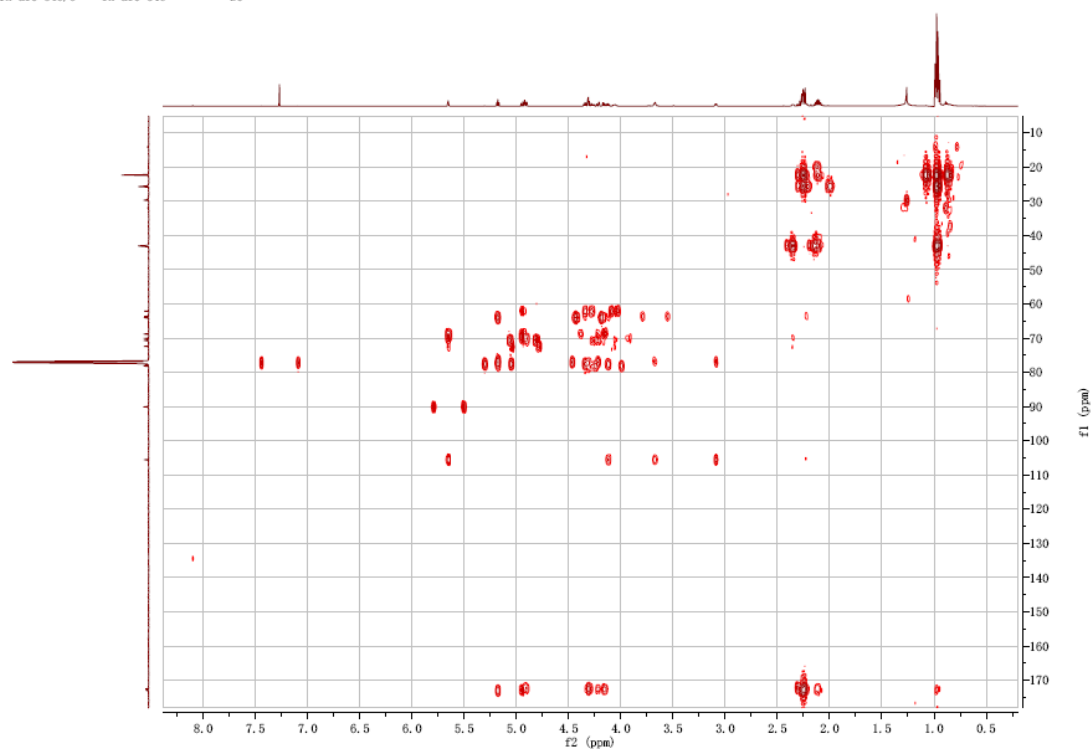


Figure S9. The magnified HMBC NMR spectrum of compound **1** (500 MHz, CDCl₃)

fx-afc-546/6 — fx-afc-546 — — BC

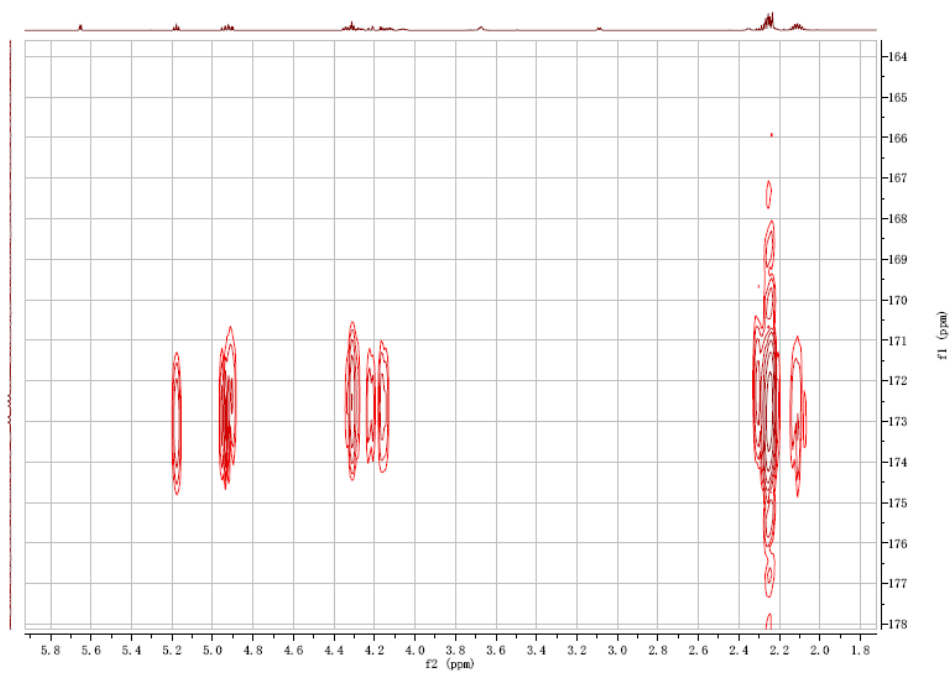


Figure S10. NOESY NMR spectrum of compound **1** (500 MHz, CDCl_3)

APC-546/7 — APC-546 NOE

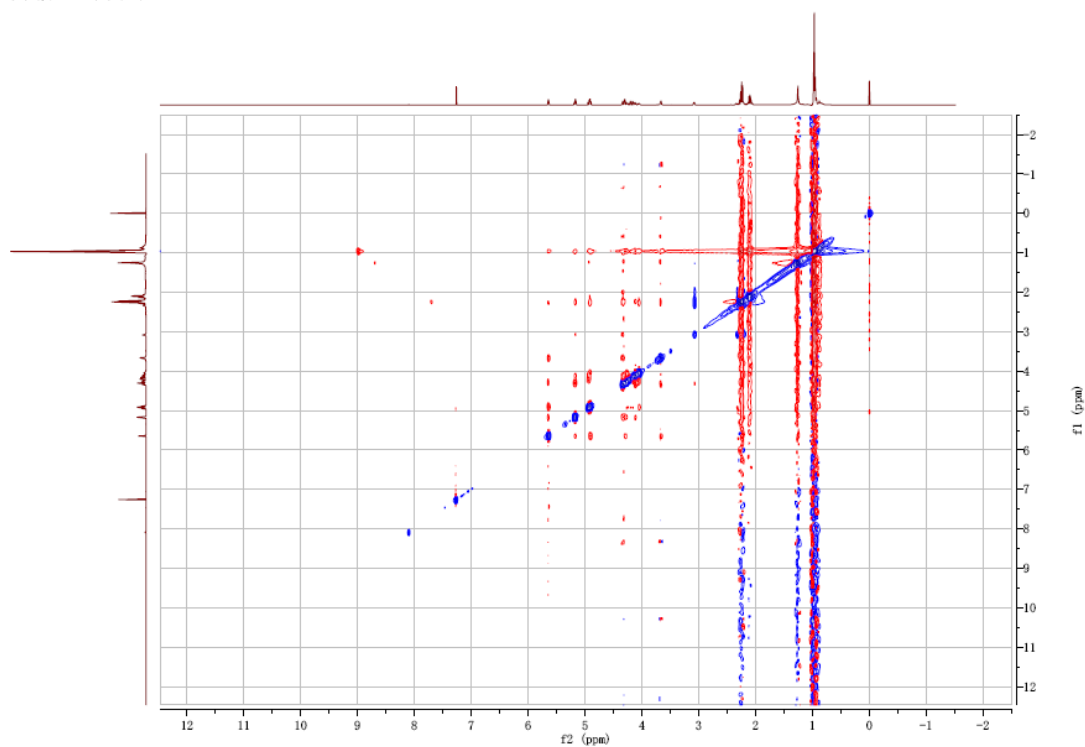


Figure S11. HRESIMS spectrum of compound **2**

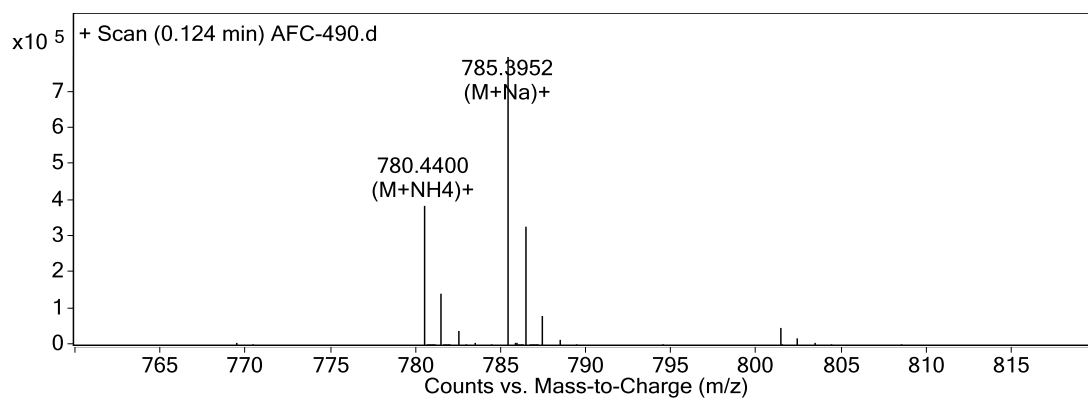


Figure S12. IR spectrum of compound **2**

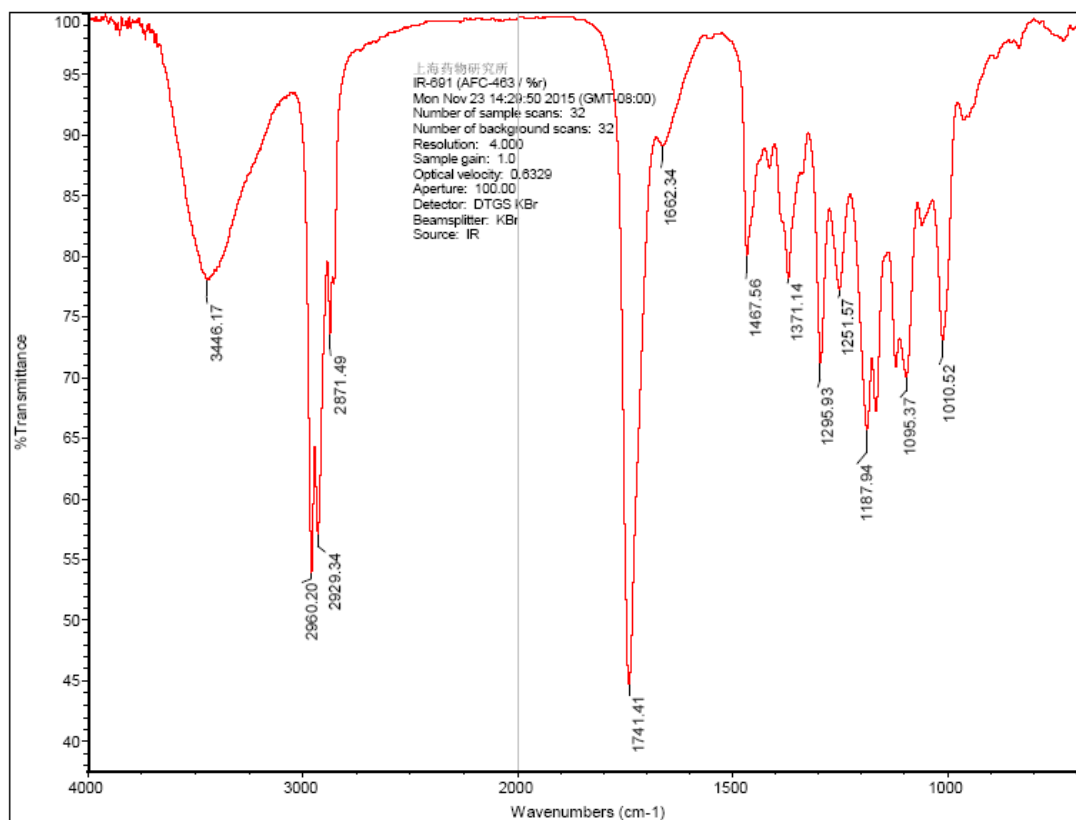


Figure S13. ¹H NMR spectrum of compound **2** (500 MHz, CDCl₃)

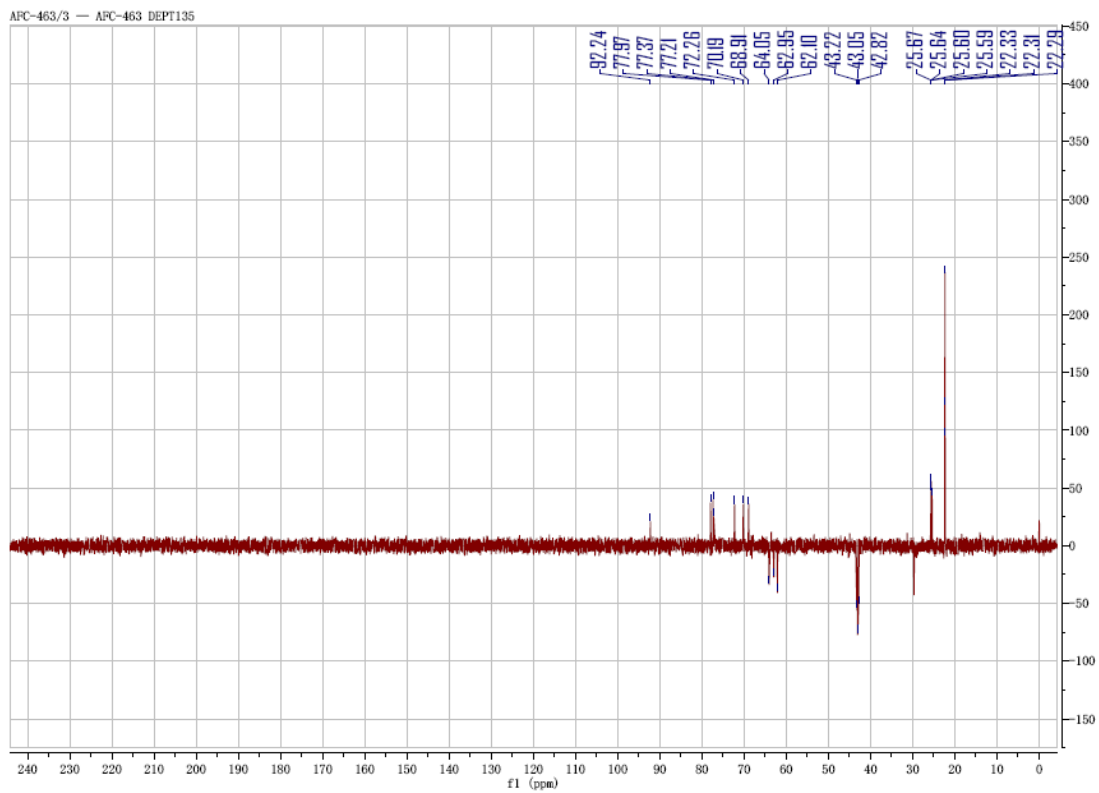


Figure S16. ^1H - ^1H COSY NMR spectrum of compound **2** (500 MHz, CDCl_3)

AFC-463/4 — AFC-463 1H 1H COSY

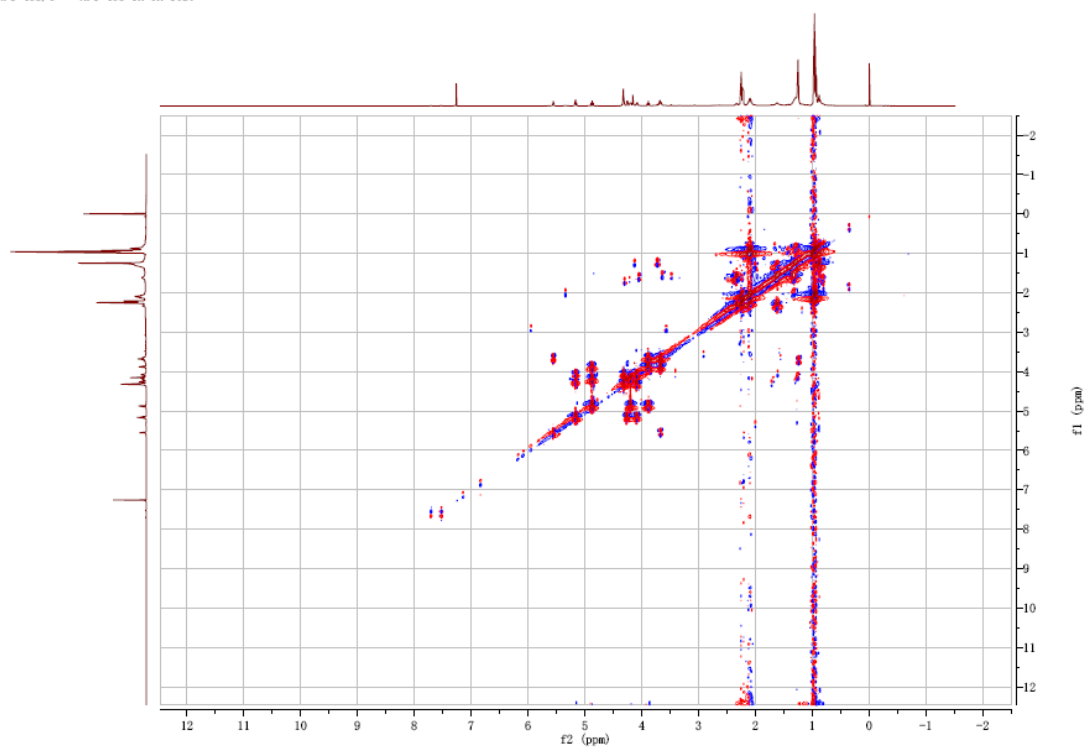


Figure S17. HSQC NMR spectrum of compound **2** (500 MHz, CDCl_3)

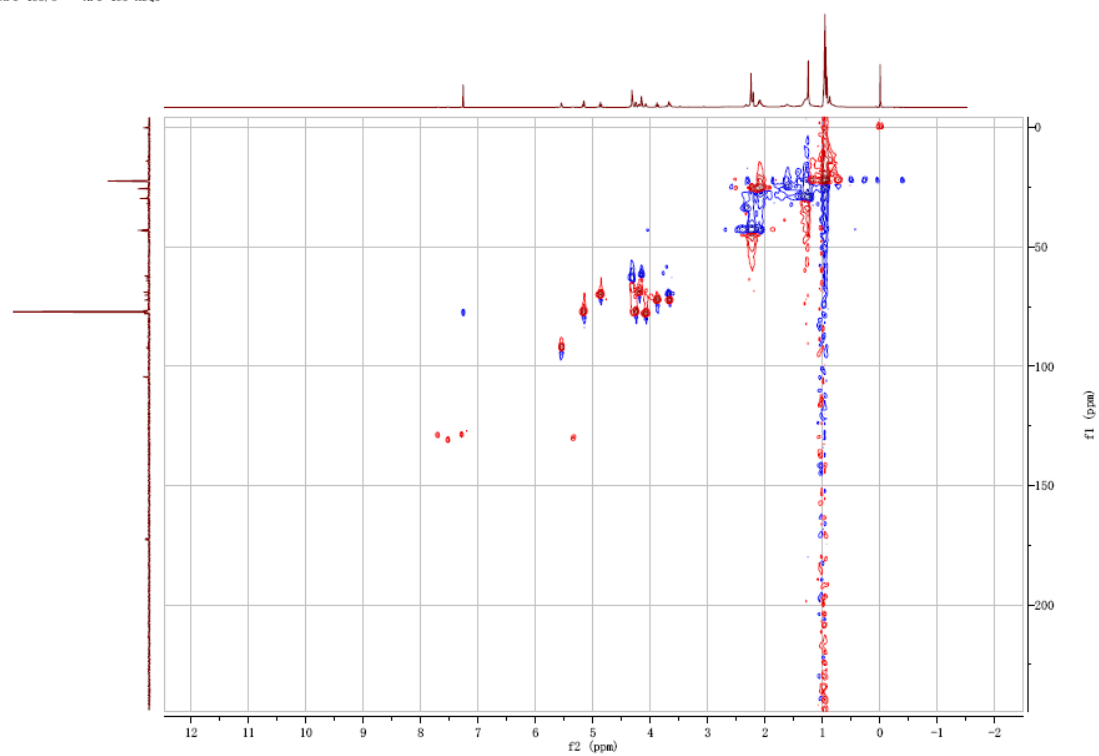


Figure S18. HMBC NMR spectrum of compound **2** (500 MHz, CDCl₃)

afc-463/6 — afc-463 — — BC

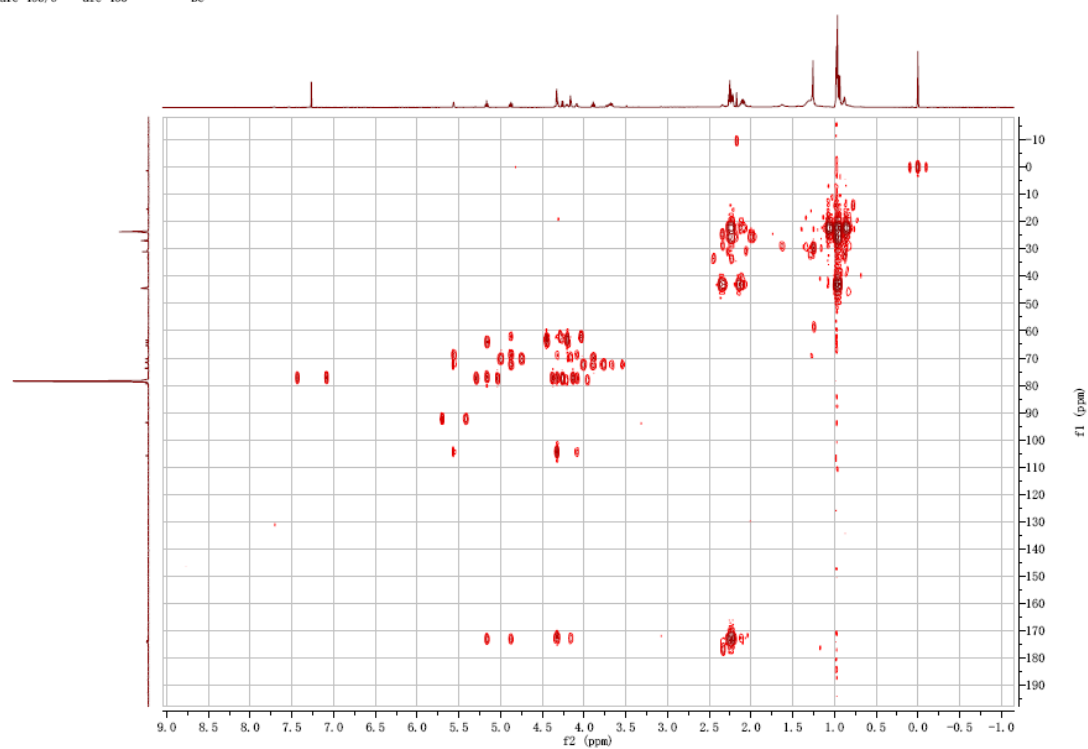


Figure S19. The magnified HMBC NMR spectrum of compound **2** (500 MHz, CDCl₃)

afc-463/6 — afc-463 — — BC

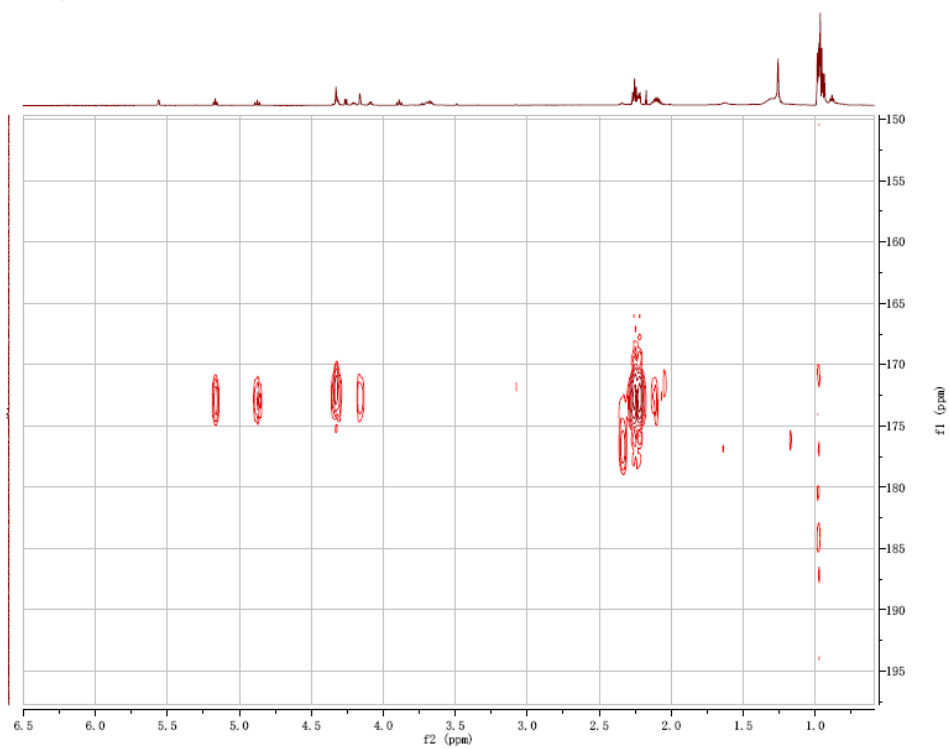


Figure S20. NOESY NMR spectrum of compound **2** (500 MHz, CDCl_3)

APC-463/7 — APC-463 NOESY

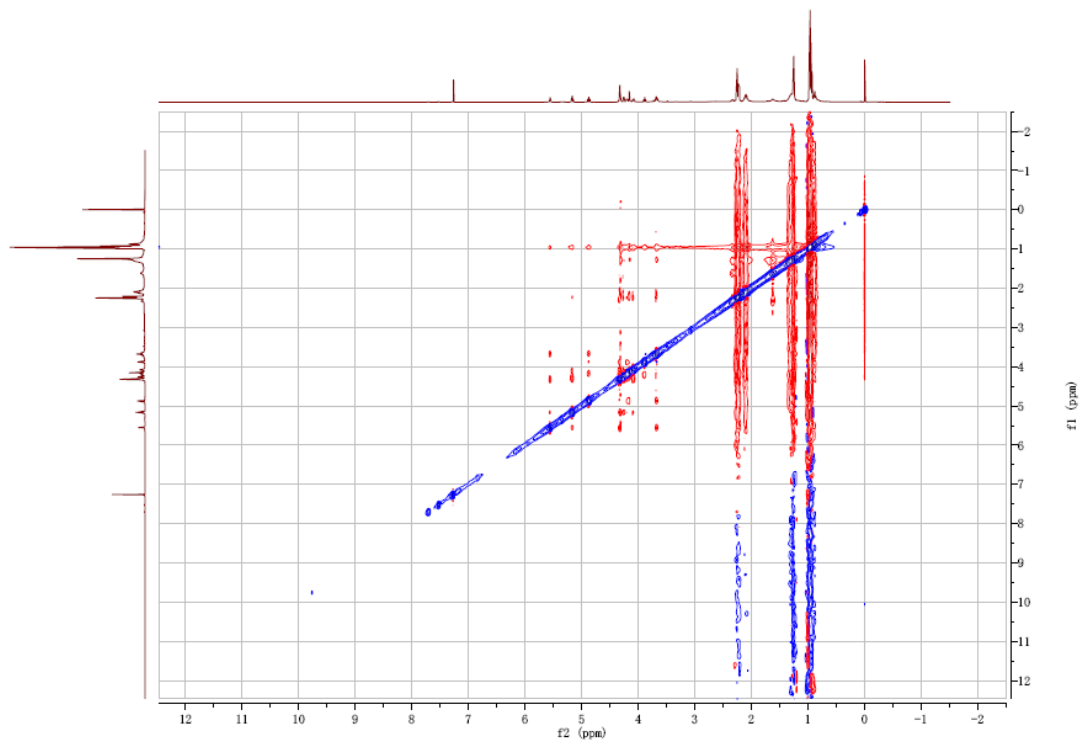


Figure S21. HRESIMS spectrum of compound **3**

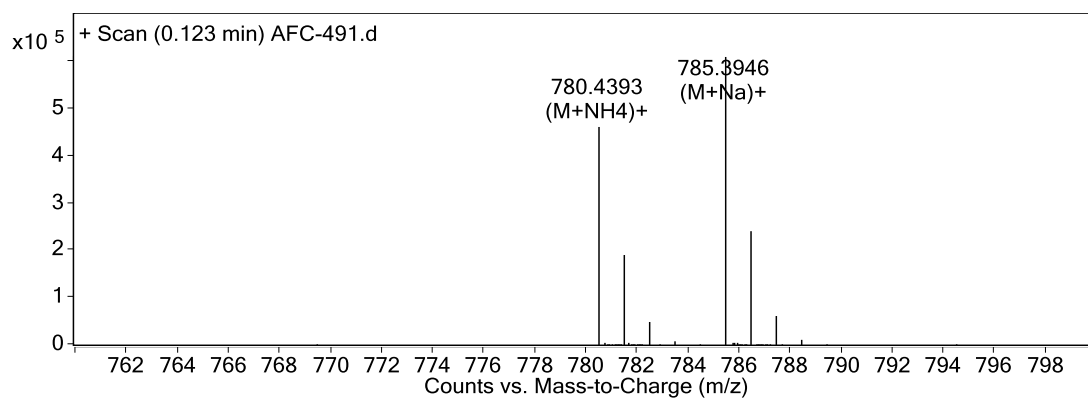


Figure S22. IR spectrum of compound **3**

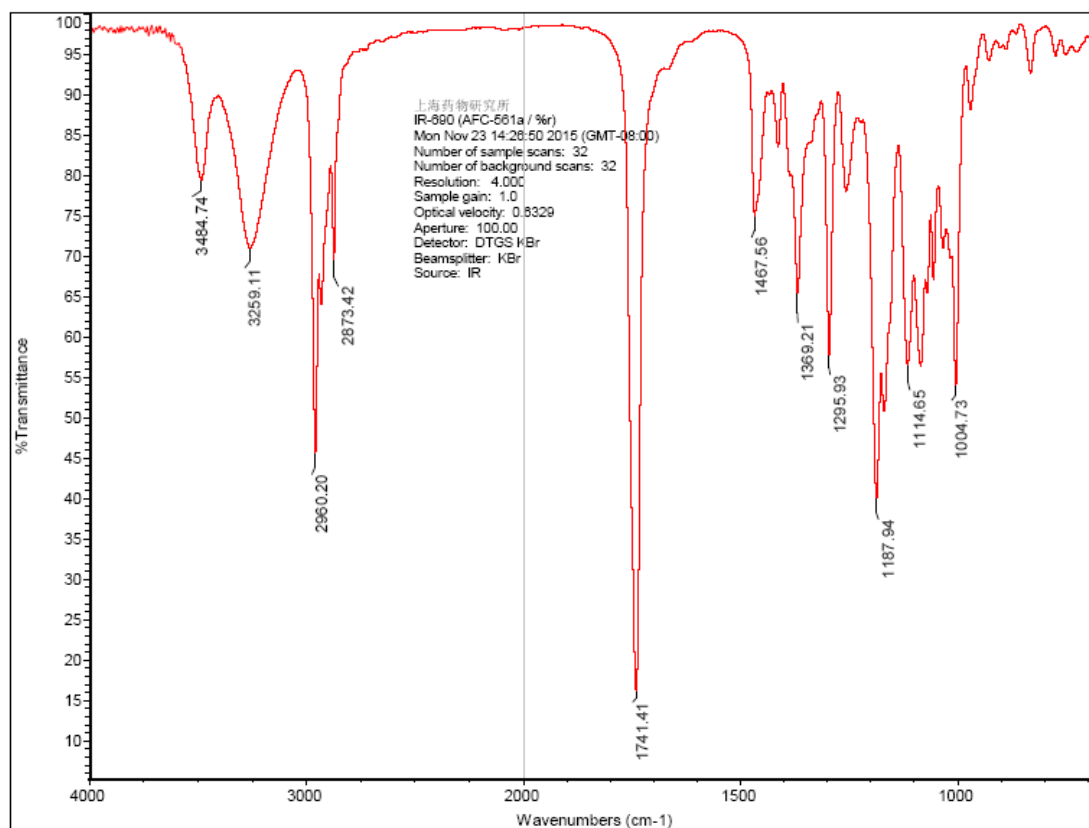


Figure S23. ¹H NMR spectrum of compound **3** (500 MHz, CDCl₃)

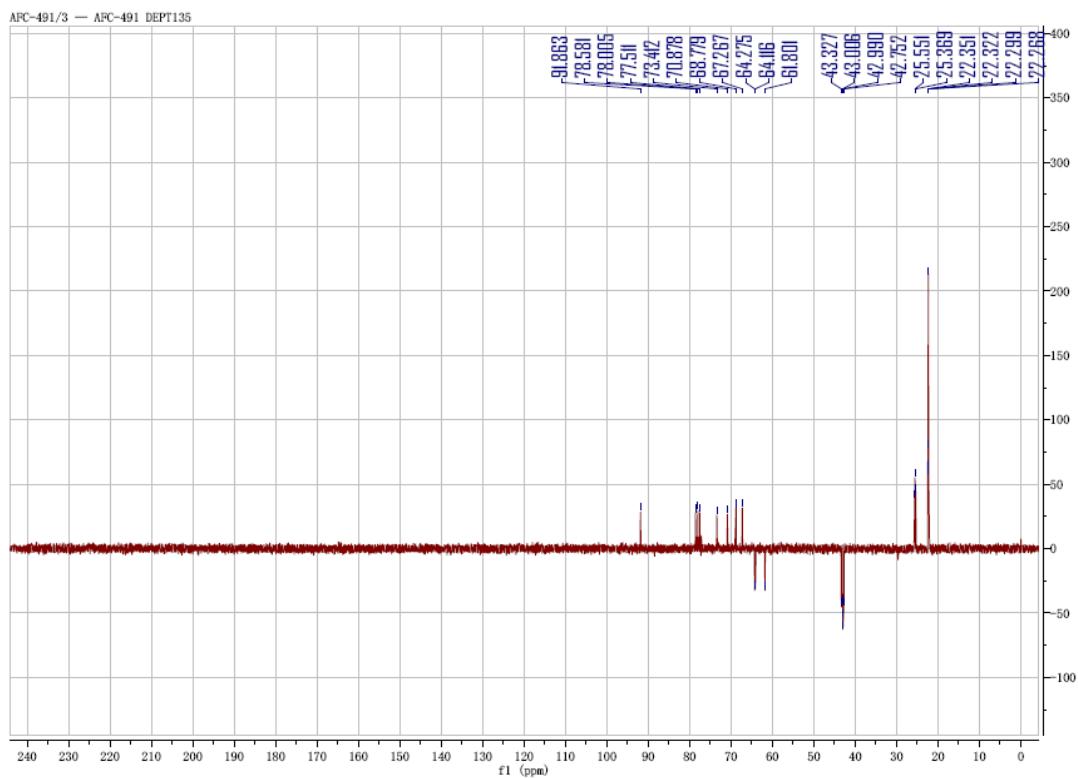


Figure S26. ^1H - ^1H COSY NMR spectrum of compound **3** (500 MHz, CDCl_3)

APC-491/4 — APC-491 1H 1H COSY

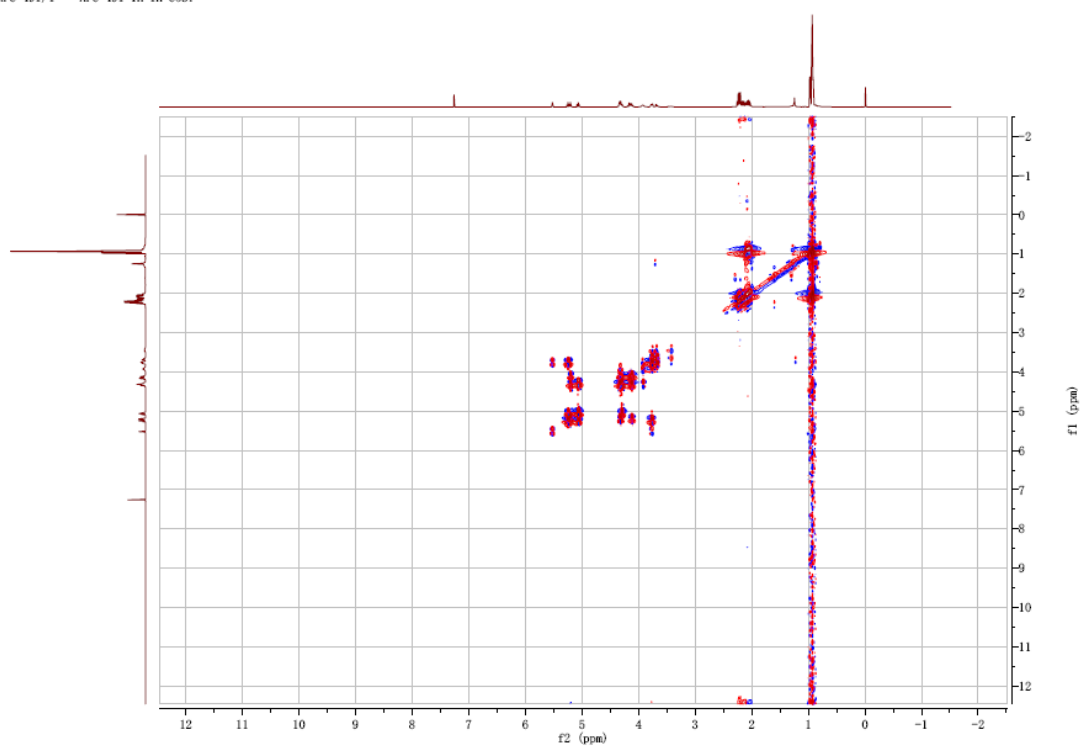


Figure S27. HSQC NMR spectrum of compound **3** (500 MHz, CDCl_3)

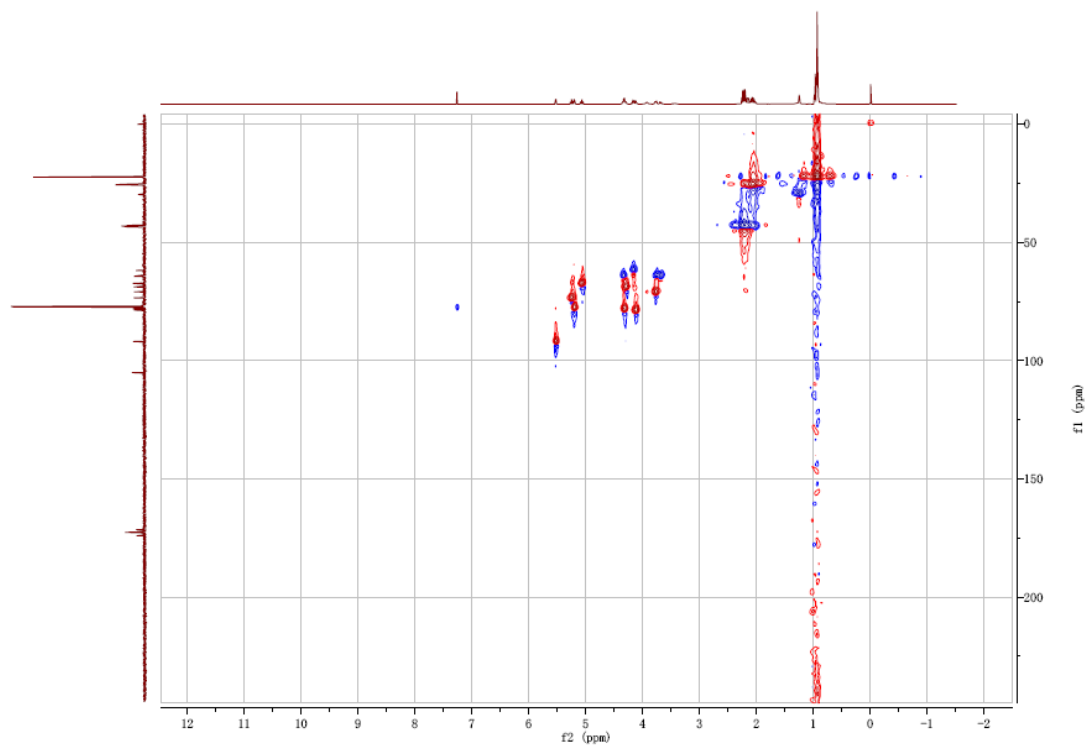


Figure S28. HMBC NMR spectrum of compound **3** (500 MHz, CDCl₃)

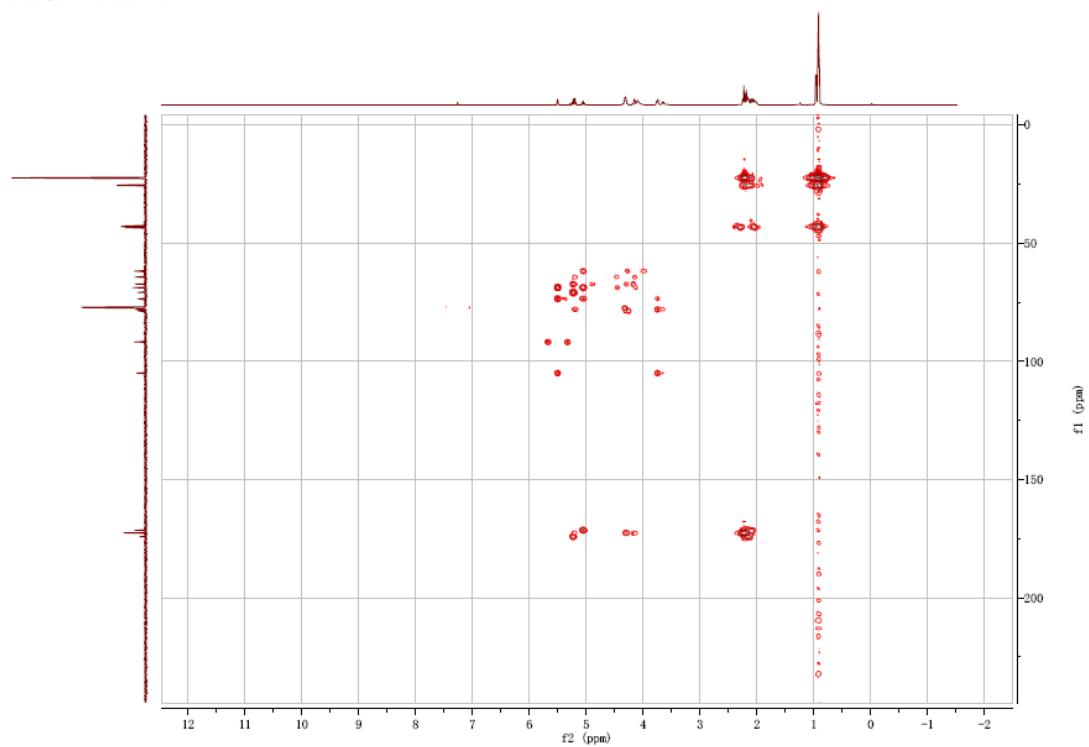


Figure S29. The magnified HMBC NMR spectrum of compound **3** (500 MHz, CDCl₃)

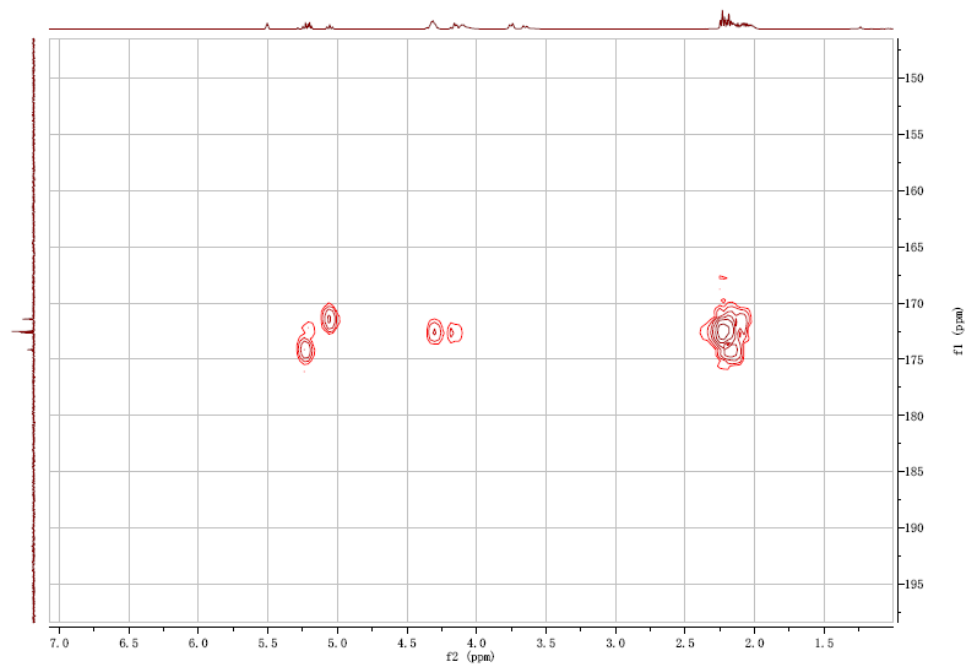


Figure S30. NOESY NMR spectrum of compound **3** (500 MHz, CDCl₃)

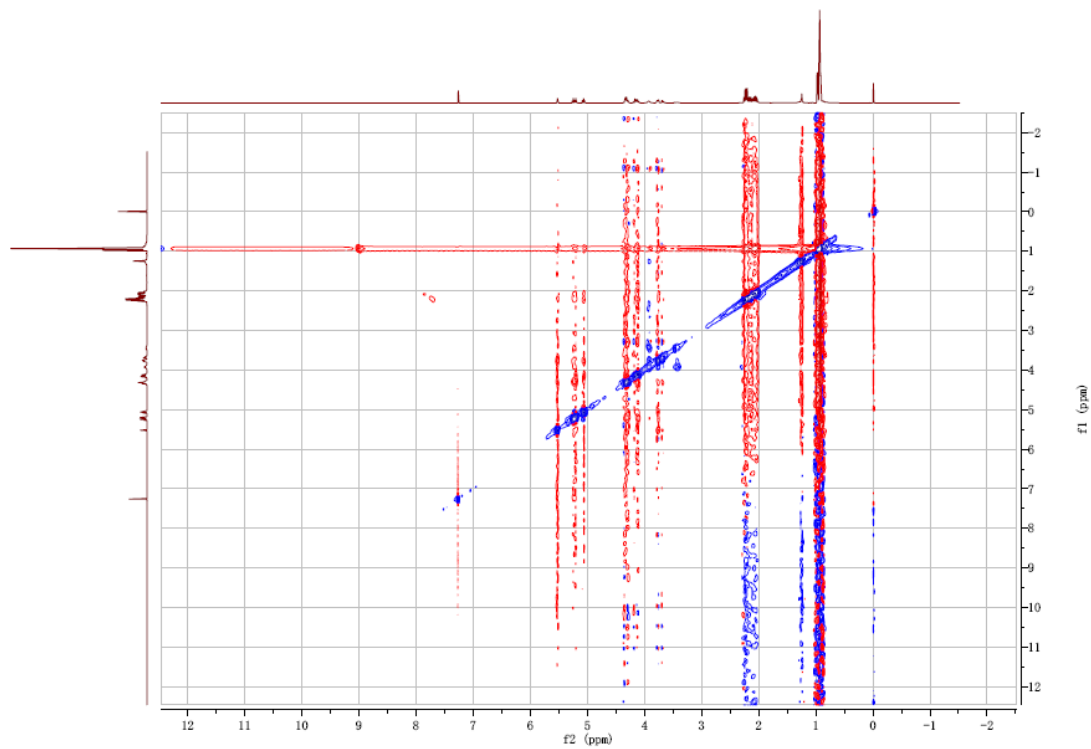


Figure S31. HRESIMS spectrum of compound **4**

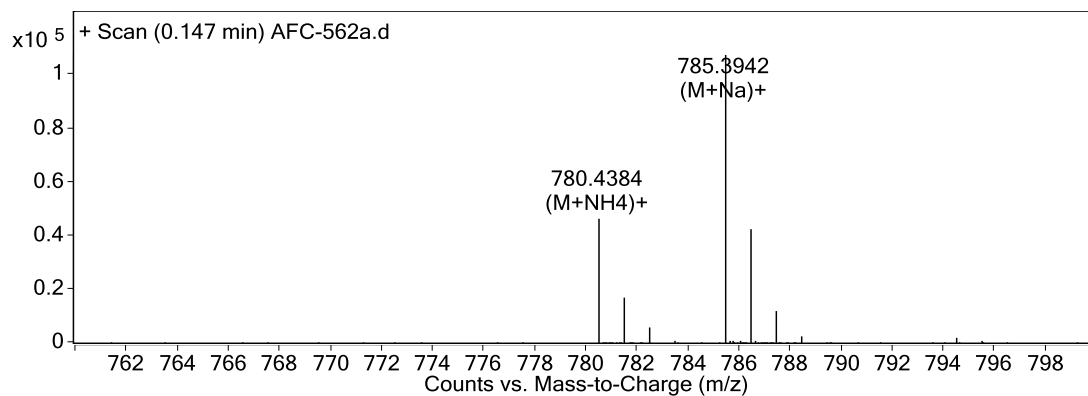


Figure S32. IR spectrum of compound **4**

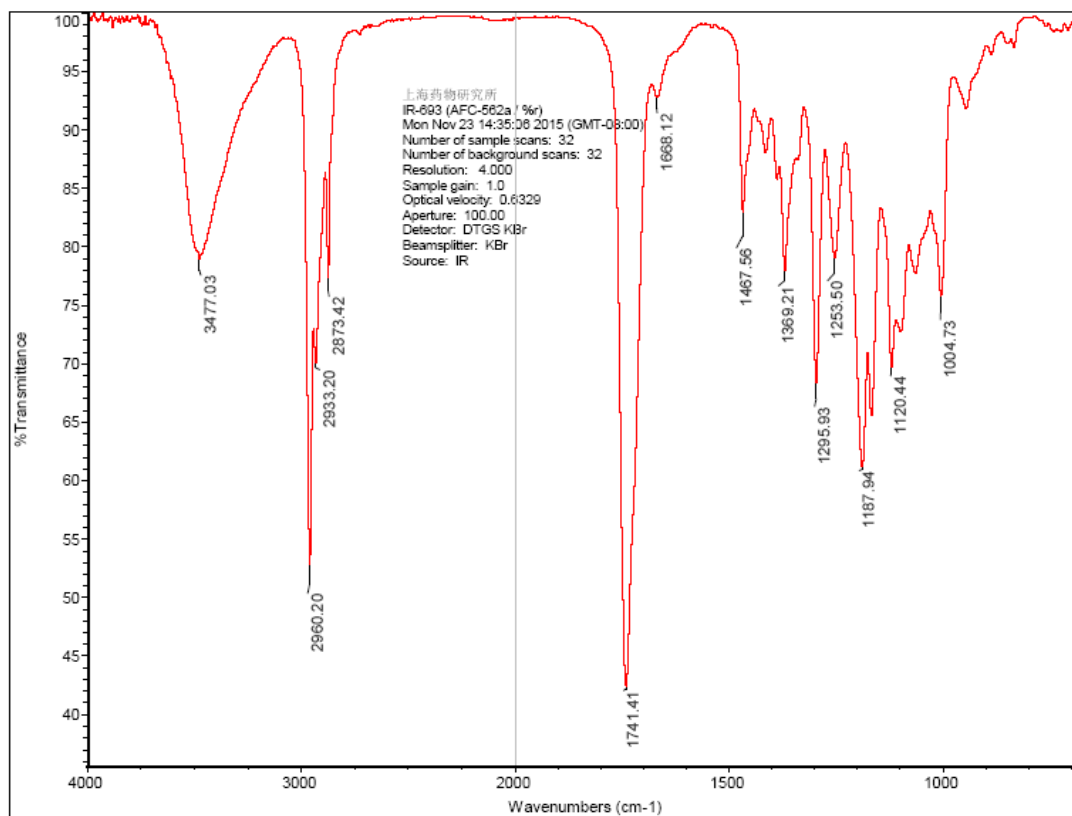


Figure S33. ¹H NMR spectrum of compound **4** (500 MHz, CDCl₃)

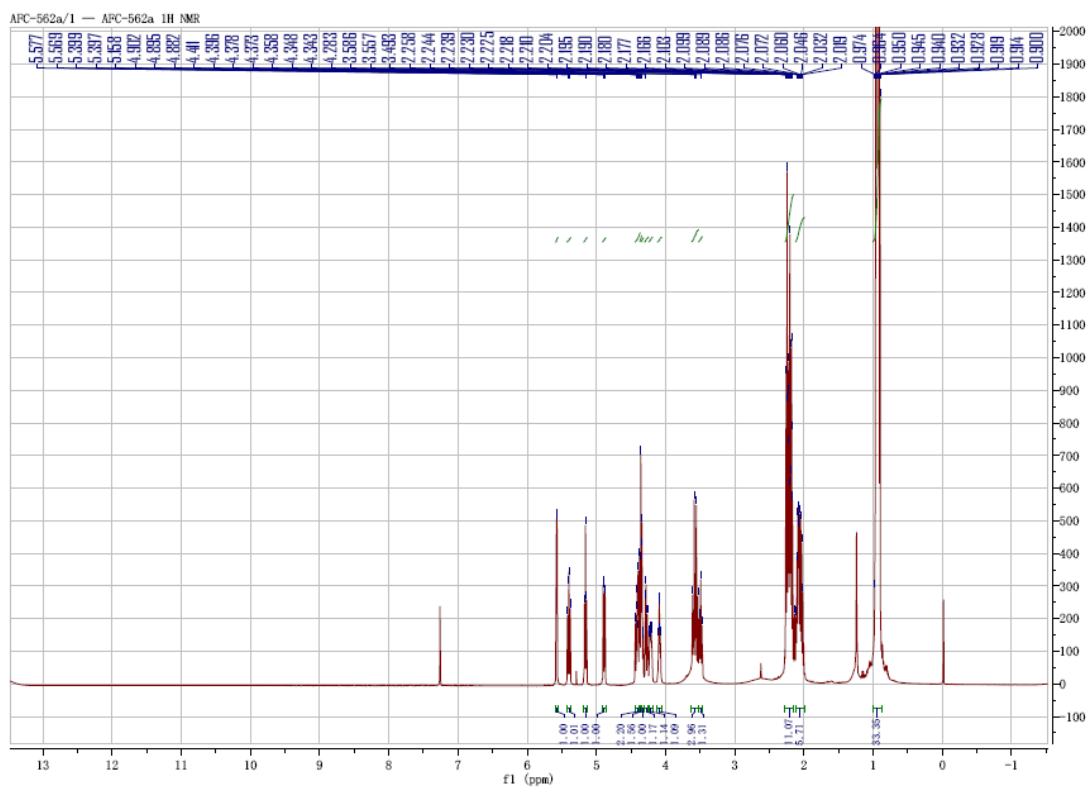


Figure S34. ¹³C NMR spectrum of compound **4** (125 MHz, CDCl₃)

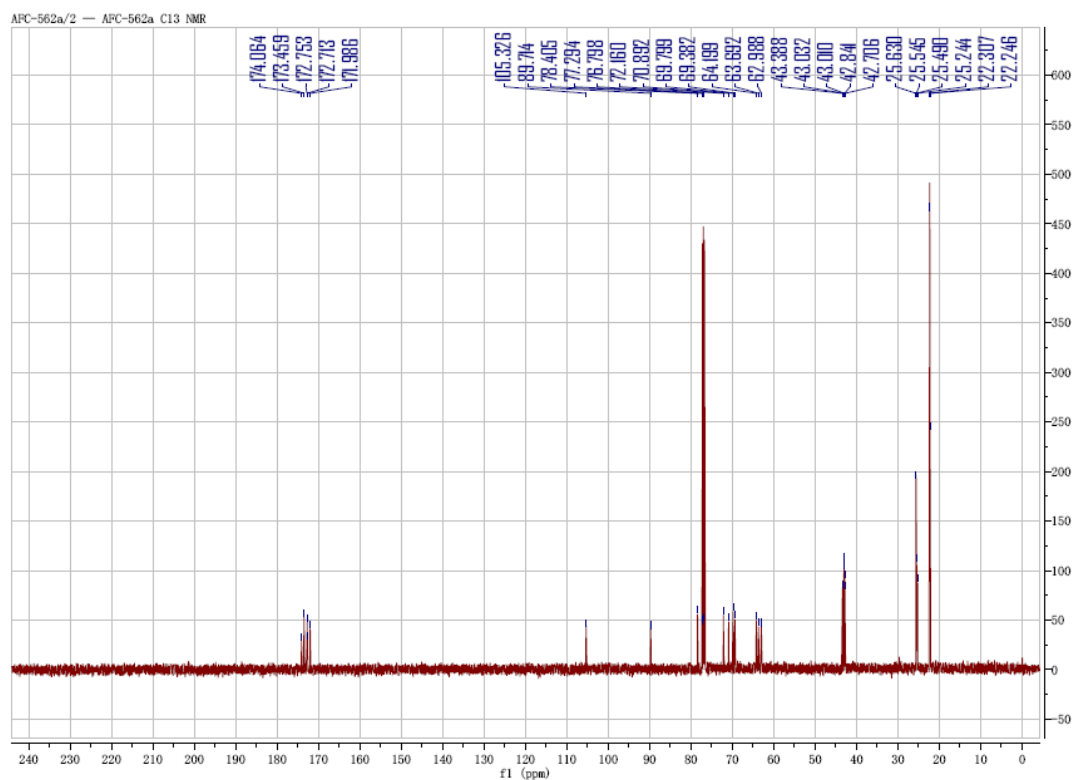


Figure S35. DEPT NMR spectrum of compound **4** (125 MHz, CDCl₃)

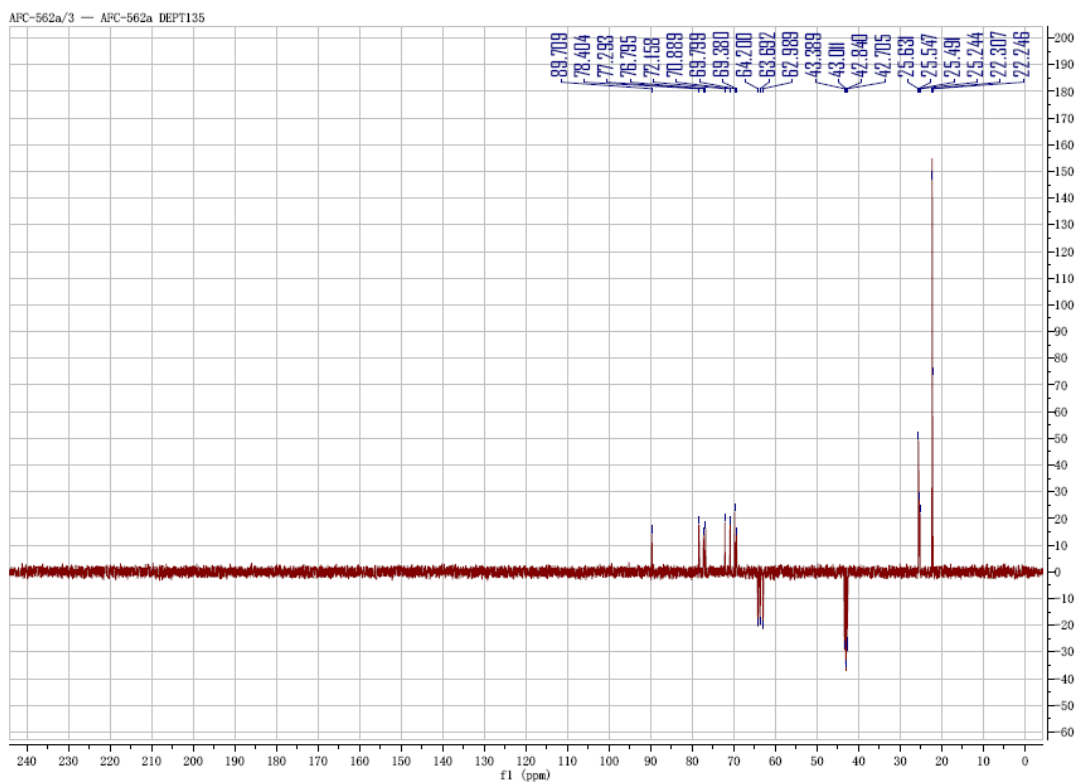


Figure S36. ^1H - ^1H COSY NMR spectrum of compound **4** (500 MHz, CDCl_3)

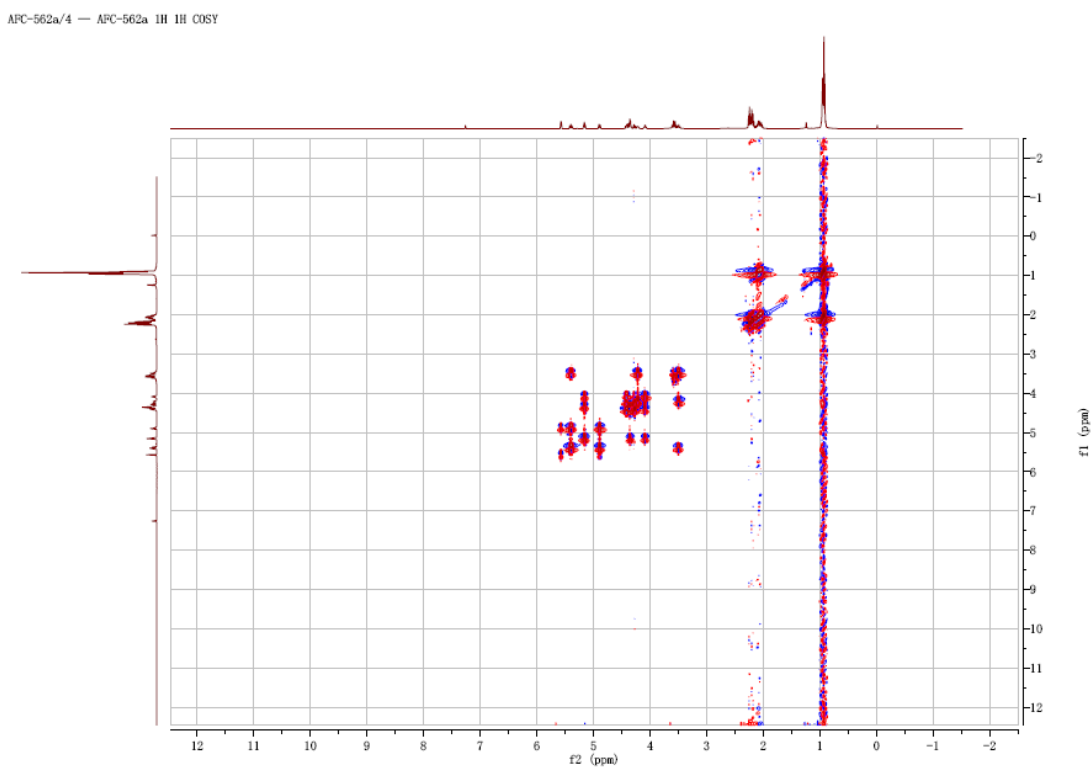


Figure S37. HSQC NMR spectrum of compound **4** (500 MHz, CDCl_3)

APC-562a/5 — APC-562a HSQC

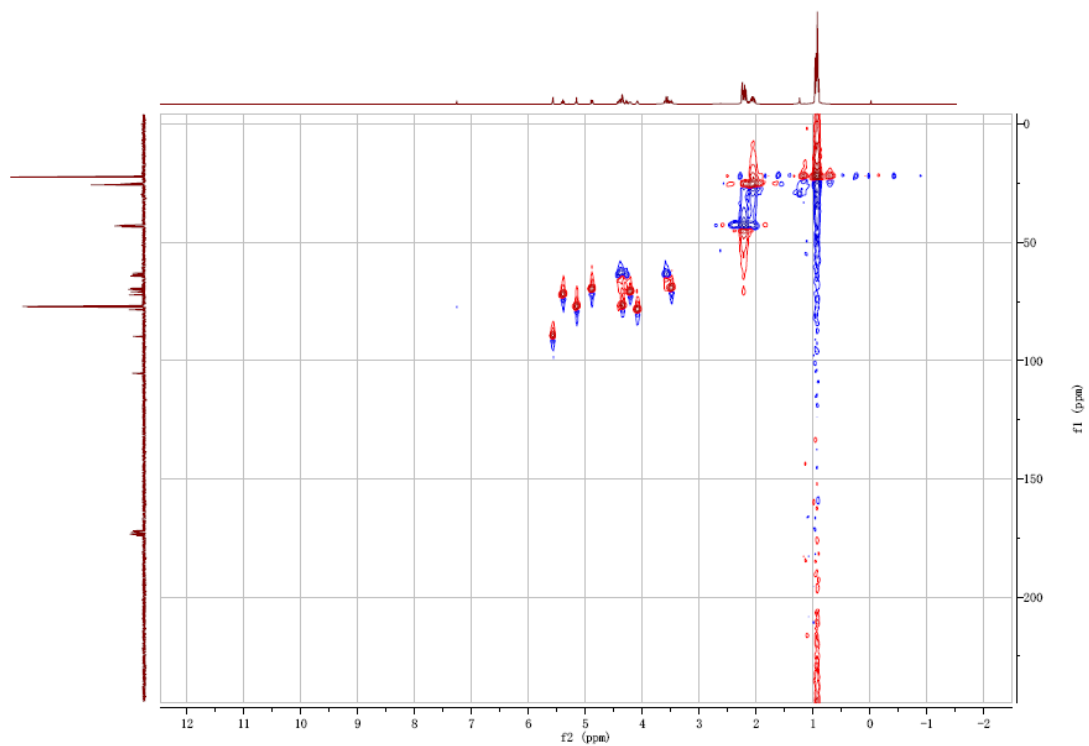


Figure S38. HMBC NMR spectrum of compound **4** (500 MHz, CDCl₃)

APC-562a/6 — APC-562a HMBC

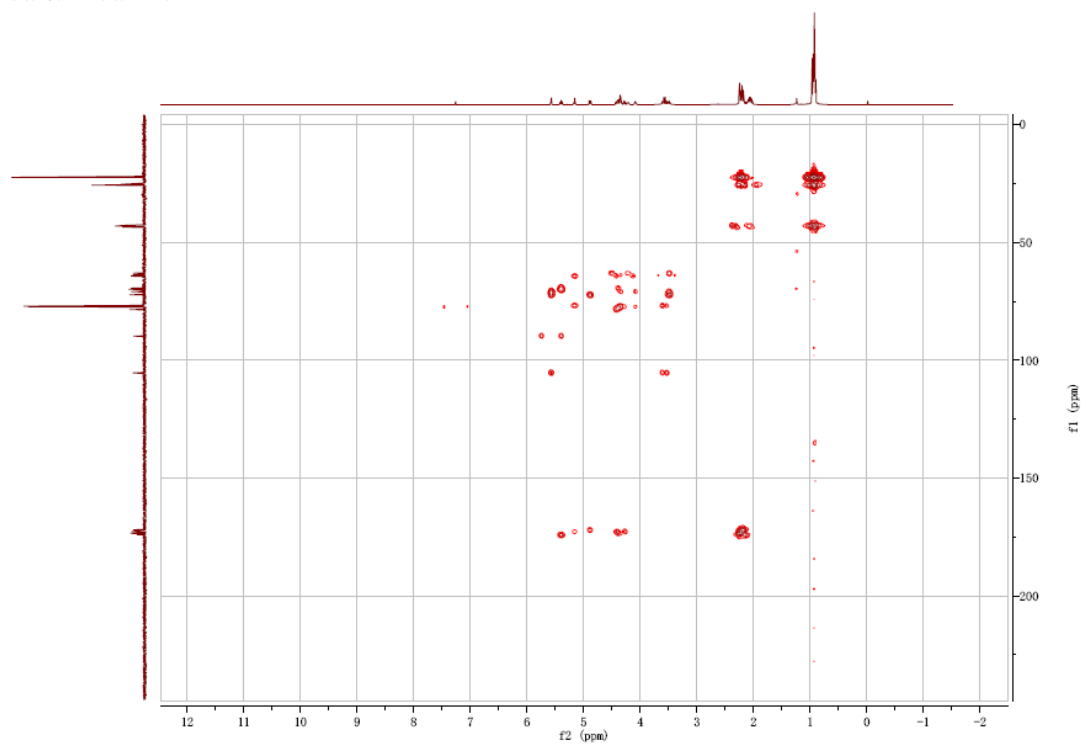


Figure S39. The magnified HMBC NMR spectrum of compound **4** (500 MHz, CDCl₃)

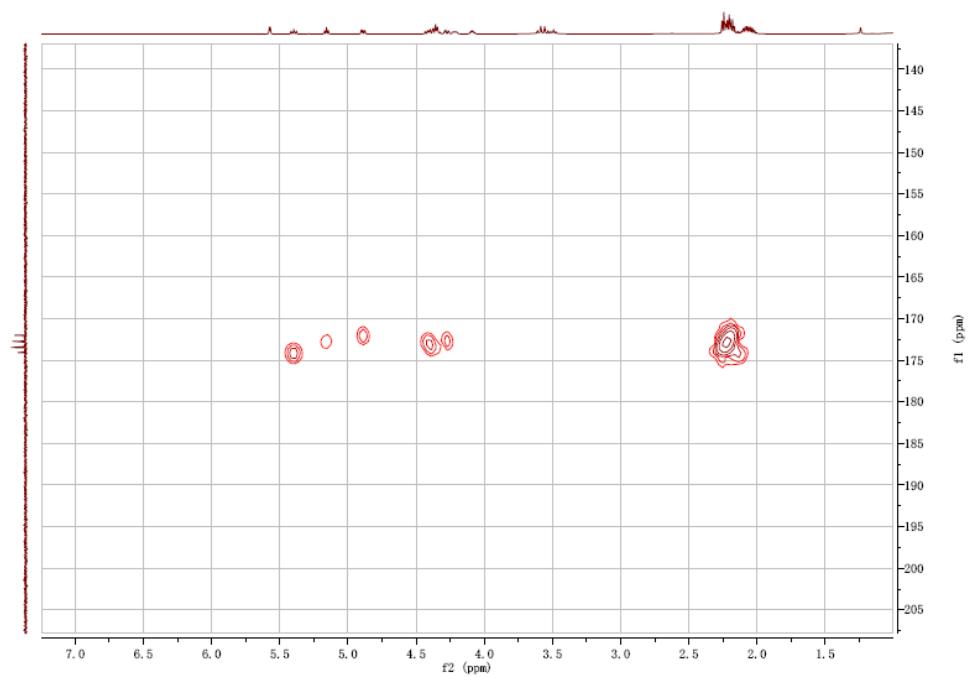


Figure S40. NOESY NMR spectrum of compound **4** (500 MHz, CDCl_3)

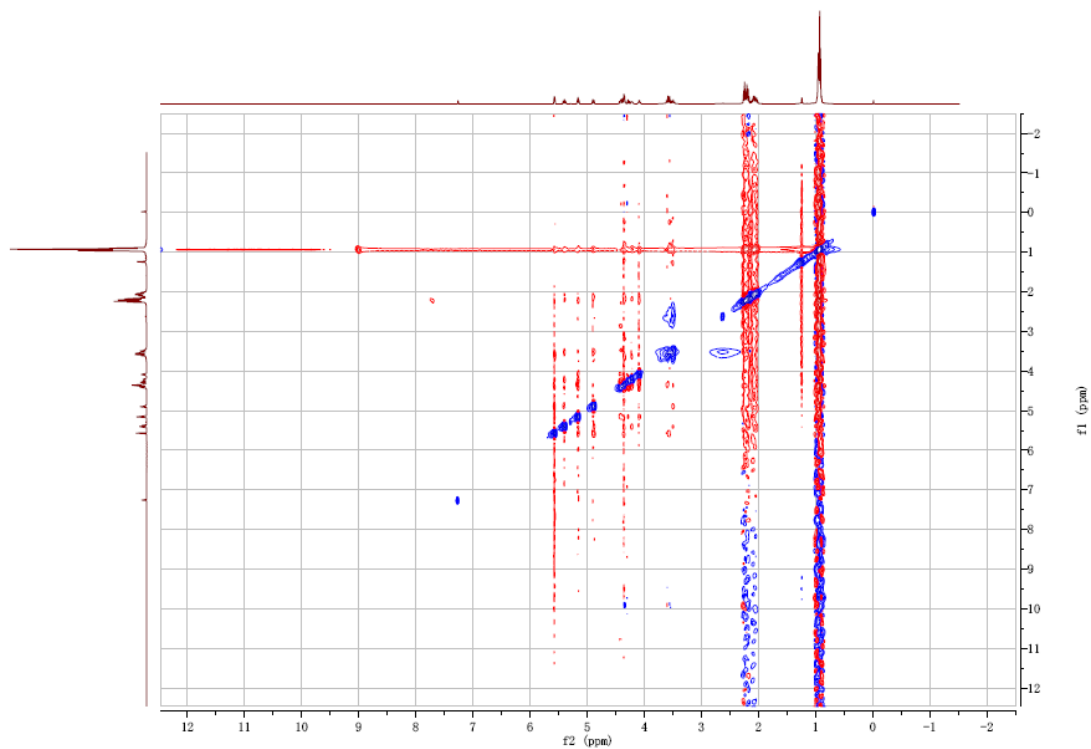


Figure S41. HRESIMS spectrum of compound **5**

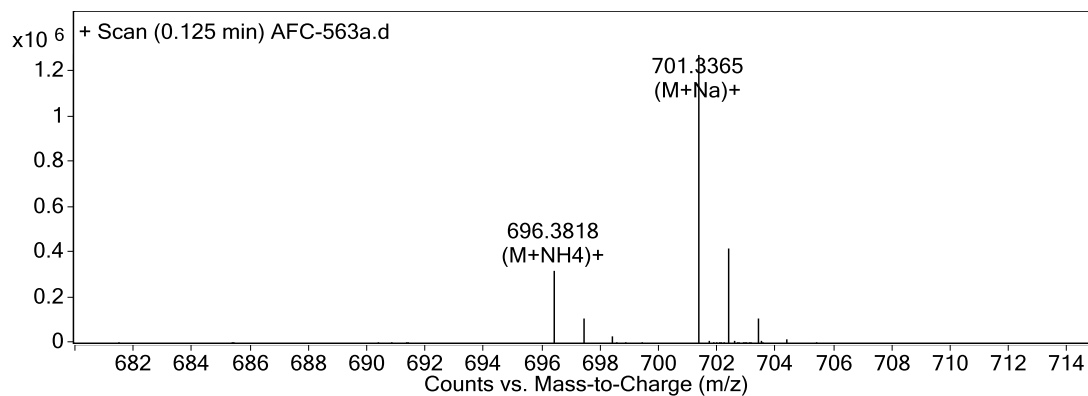


Figure S42. IR spectrum of compound 5

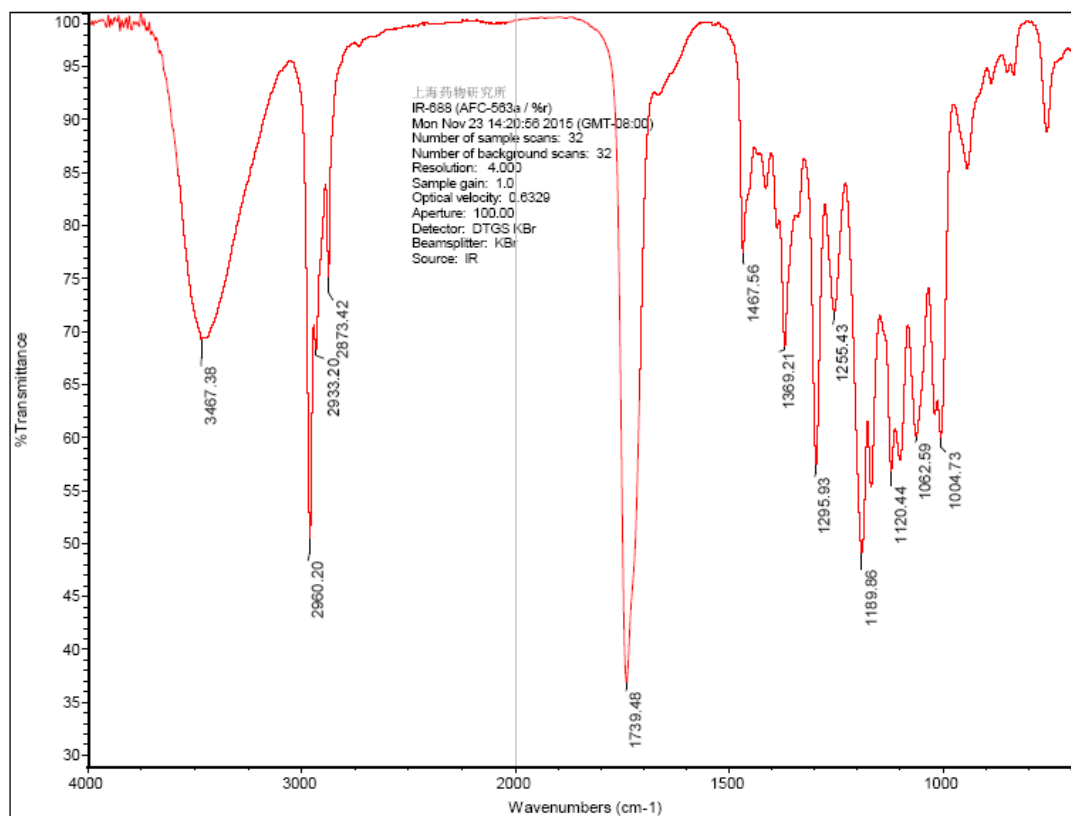


Figure S43. ¹H NMR spectrum of compound 5 (500 MHz, CDCl₃)

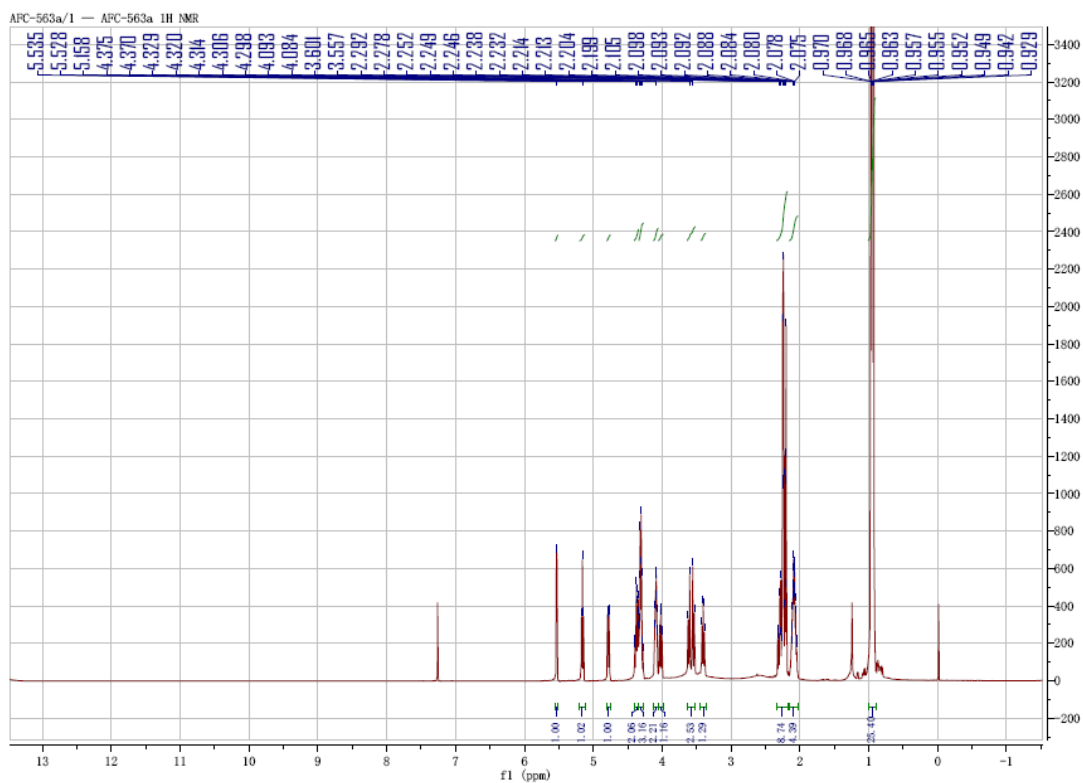


Figure S44. ^{13}C NMR spectrum of compound **5** (125 MHz, CDCl_3)

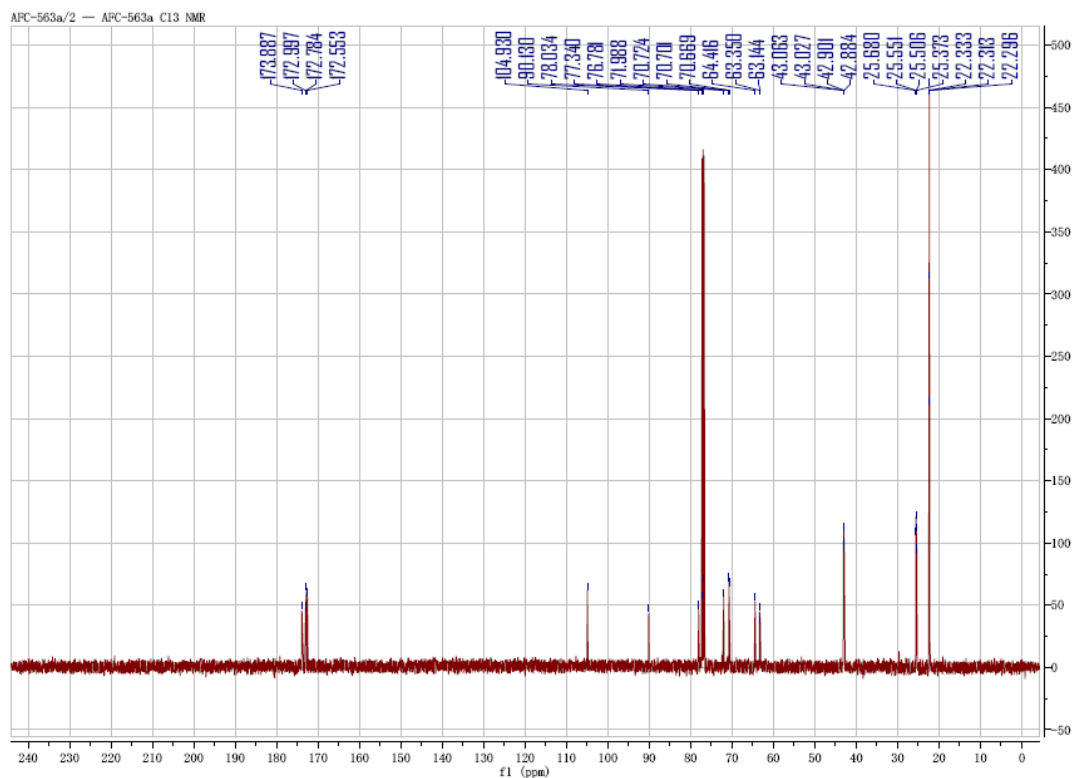


Figure S45. DEPT NMR spectrum of compound **5** (125 MHz, CDCl_3)

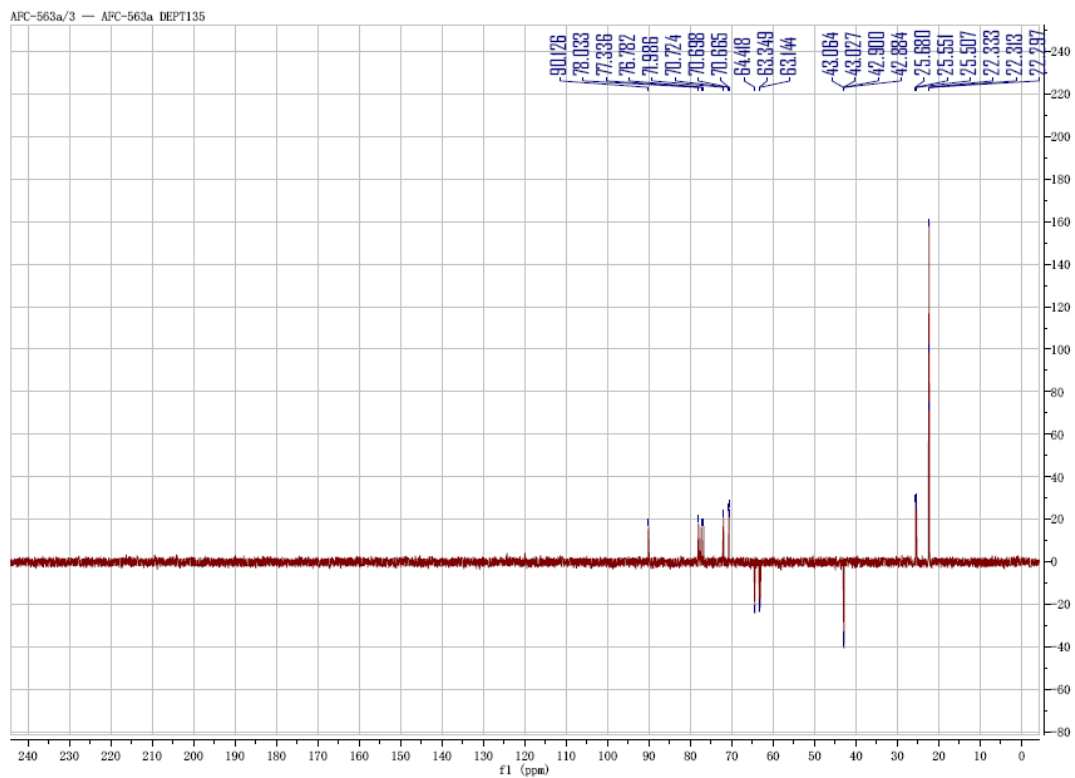


Figure S46. ^1H - ^1H COSY NMR spectrum of compound **5** (500 MHz, CDCl_3)

AFC-563a/4 — AFC-563a 1H 1H COSY

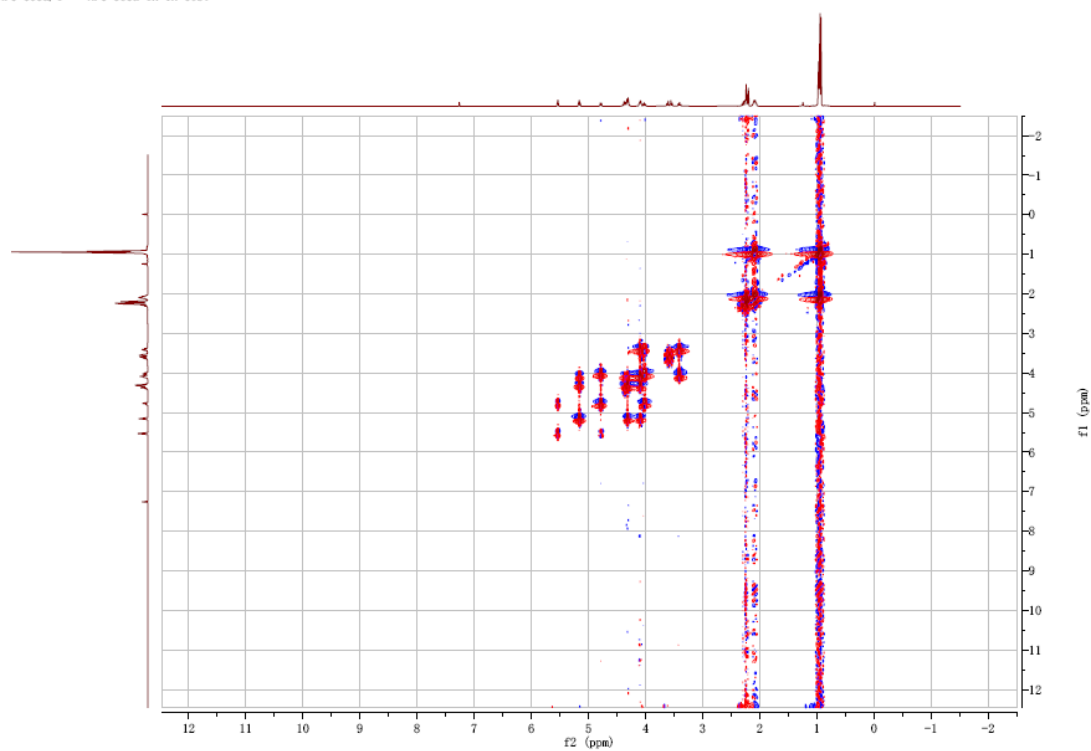


Figure S47. HSQC NMR spectrum of compound **5** (500 MHz, CDCl_3)

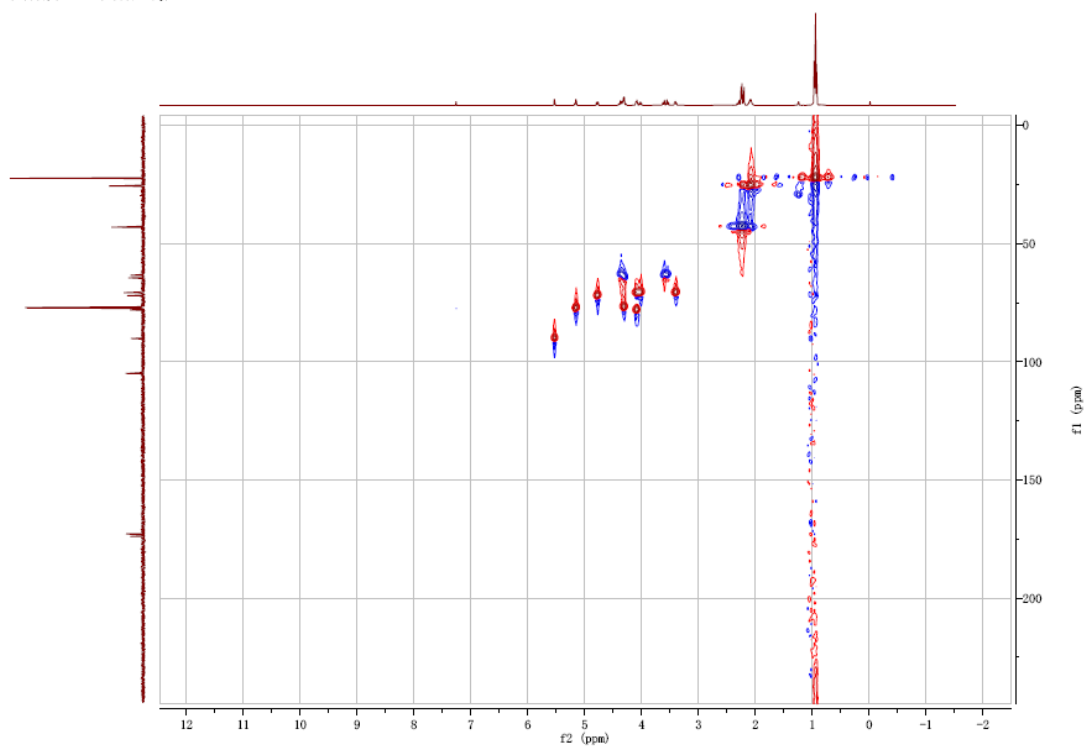


Figure S48. HMBC NMR spectrum of compound **5** (500 MHz, CDCl₃)

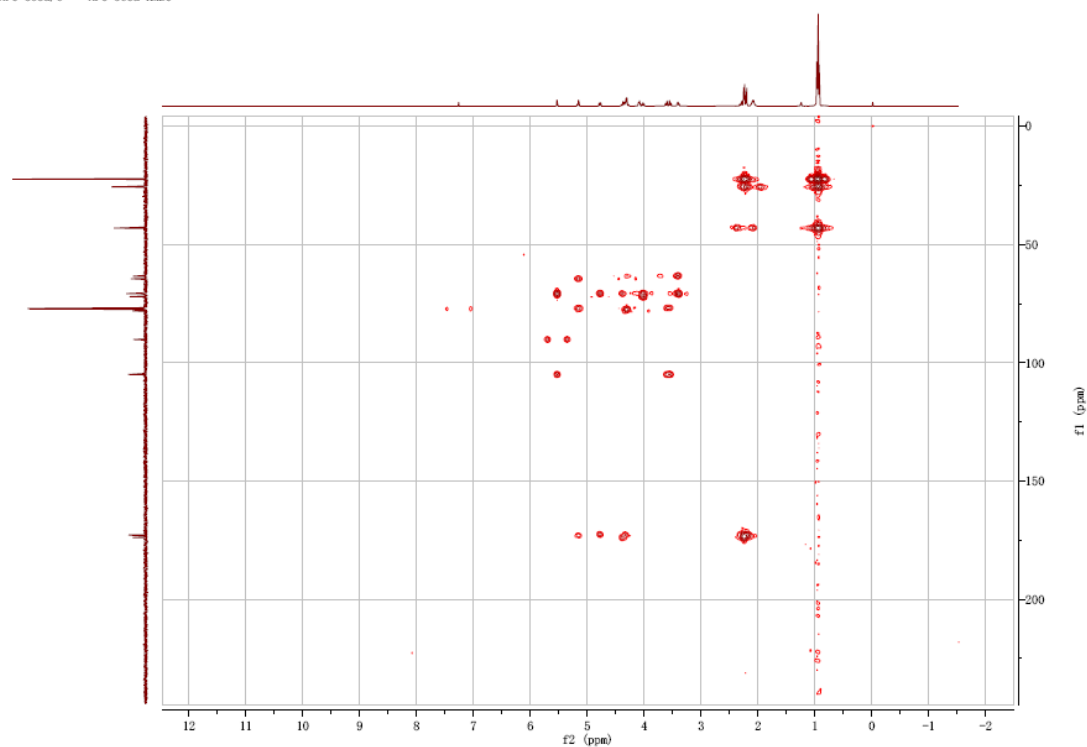


Figure S49. The magnified HMBC NMR spectrum of compound **5** (500 MHz, CDCl₃)

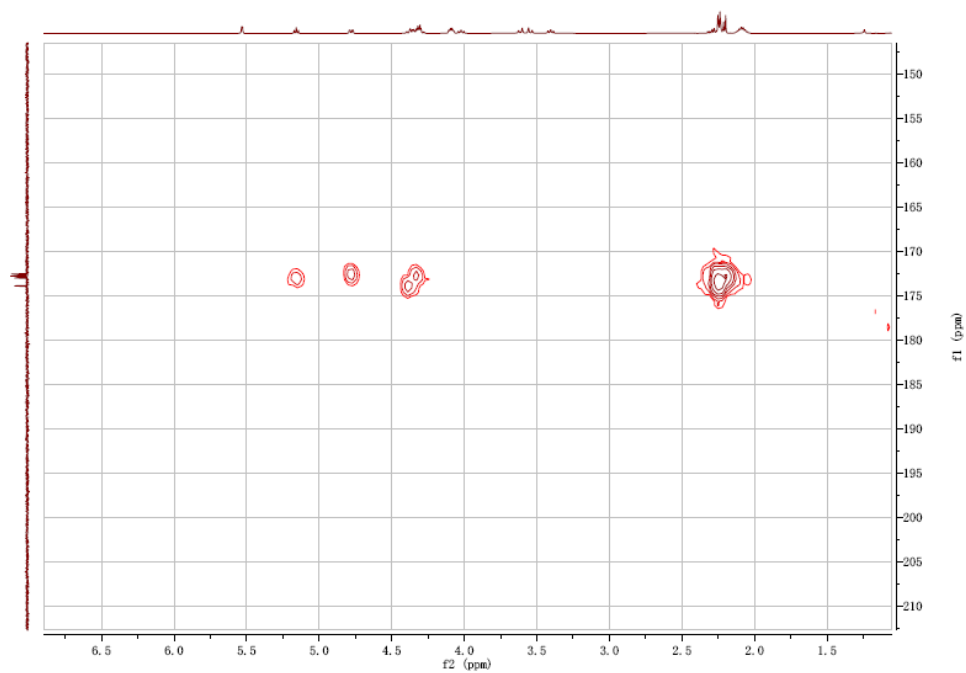


Figure S50. NOESY NMR spectrum of compound **5** (500 MHz, CDCl₃)

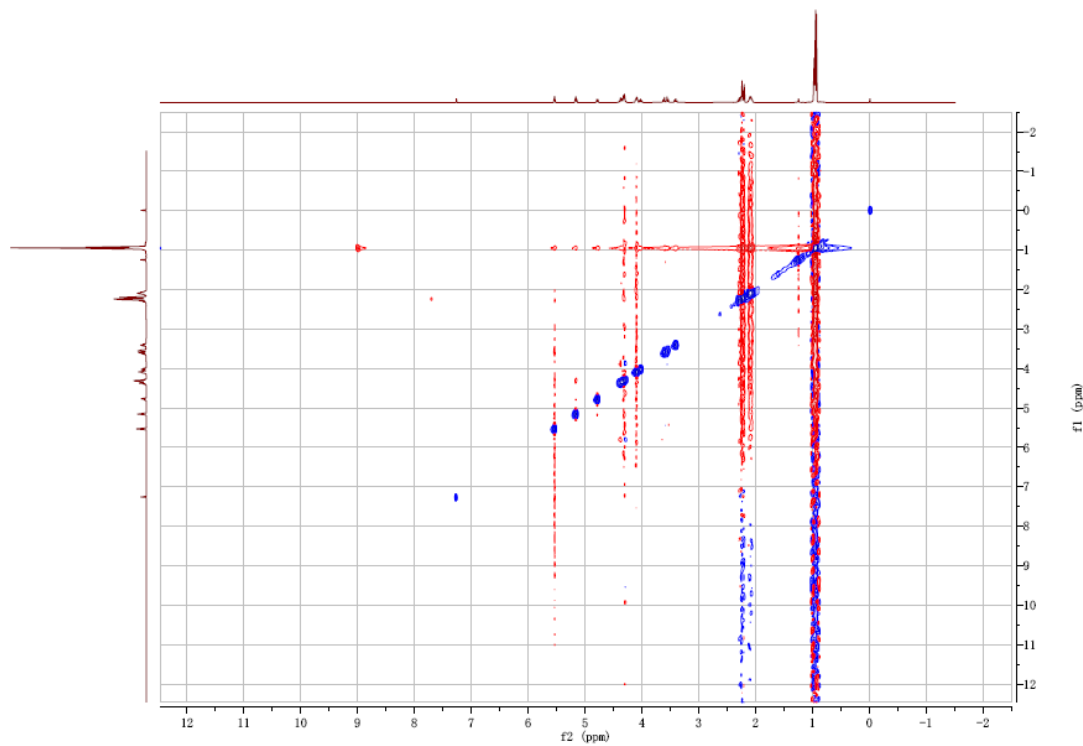


Figure S51. HRESIMS spectrum of compound **6**

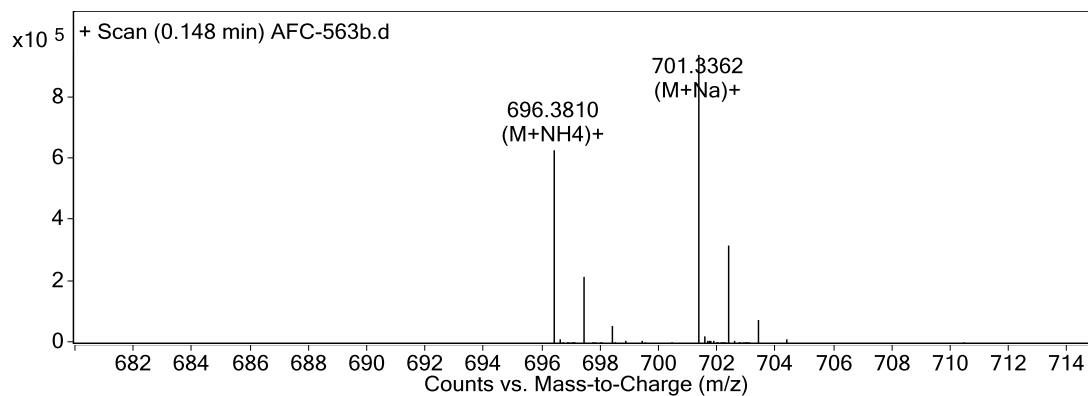


Figure S52. IR spectrum of compound **6**

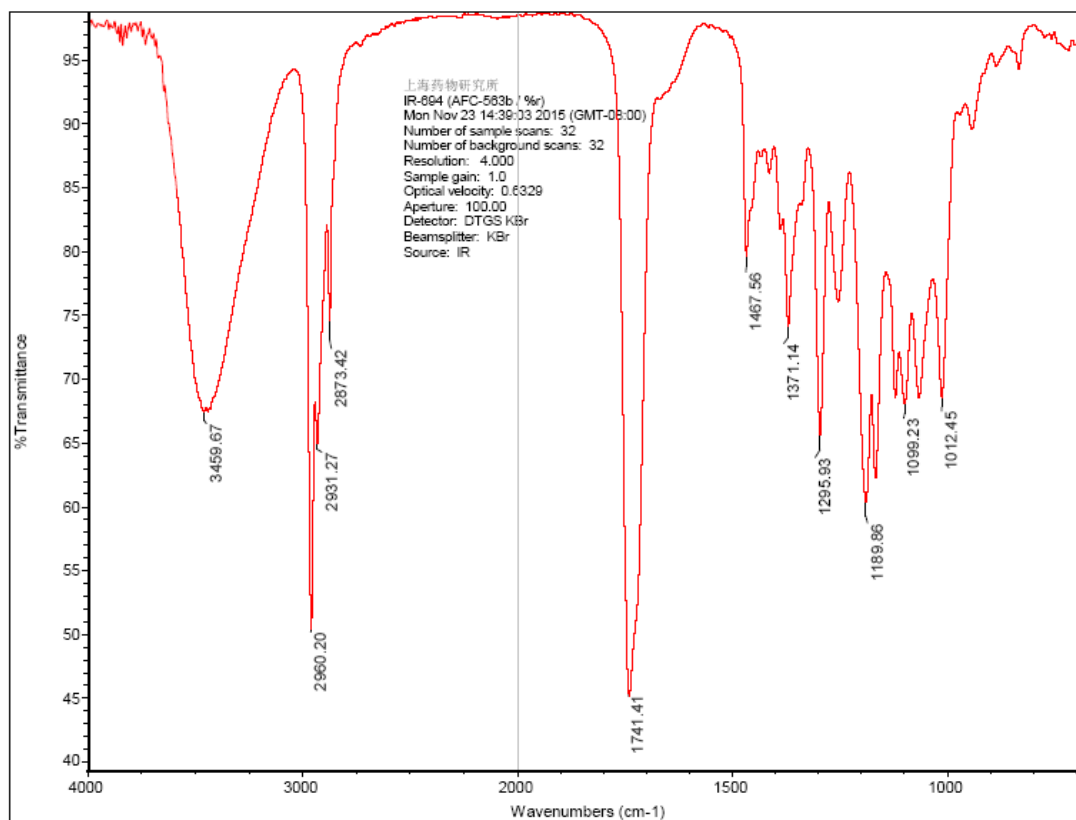


Figure S53. ¹H NMR spectrum of compound **6** (500 MHz, CDCl₃)

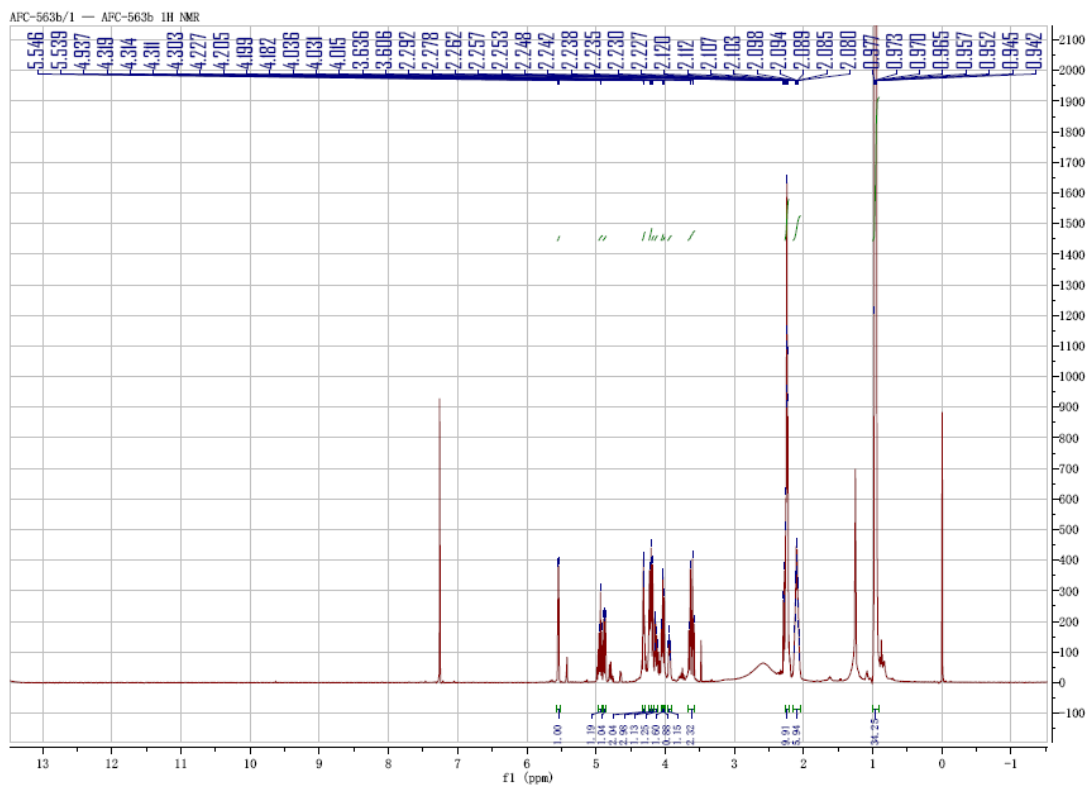


Figure S54. ^{13}C NMR spectrum of compound **6** (125 MHz, CDCl_3)

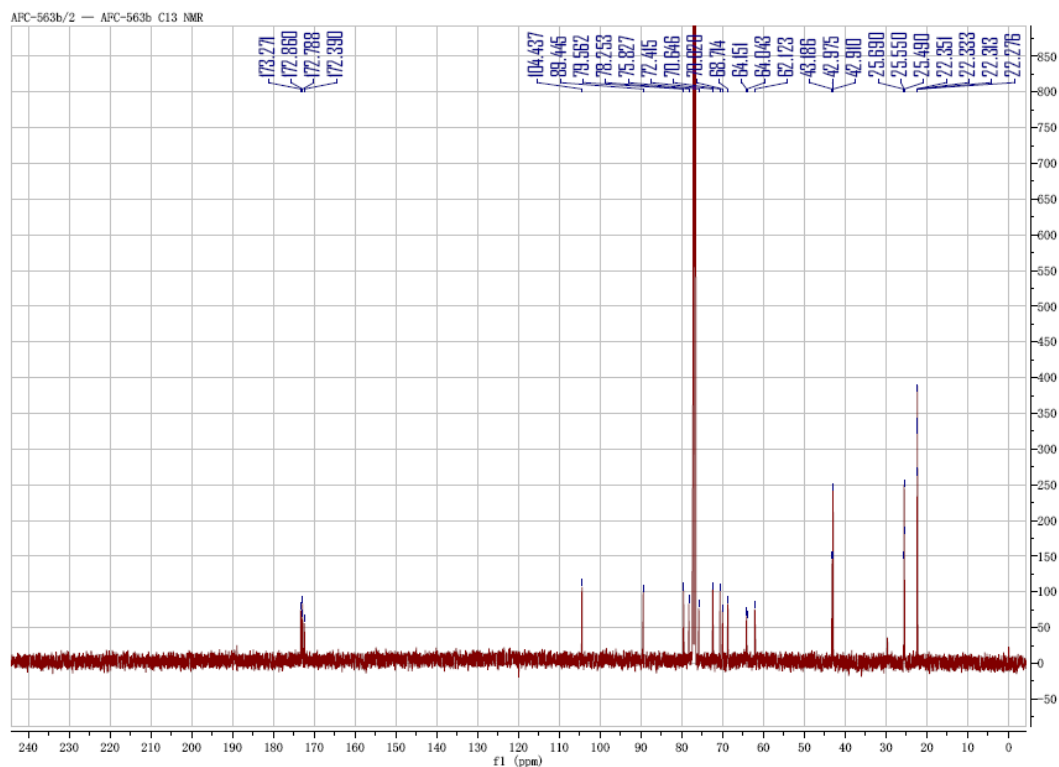


Figure S55. DEPT NMR spectrum of compound **6** (125 MHz, CDCl_3)

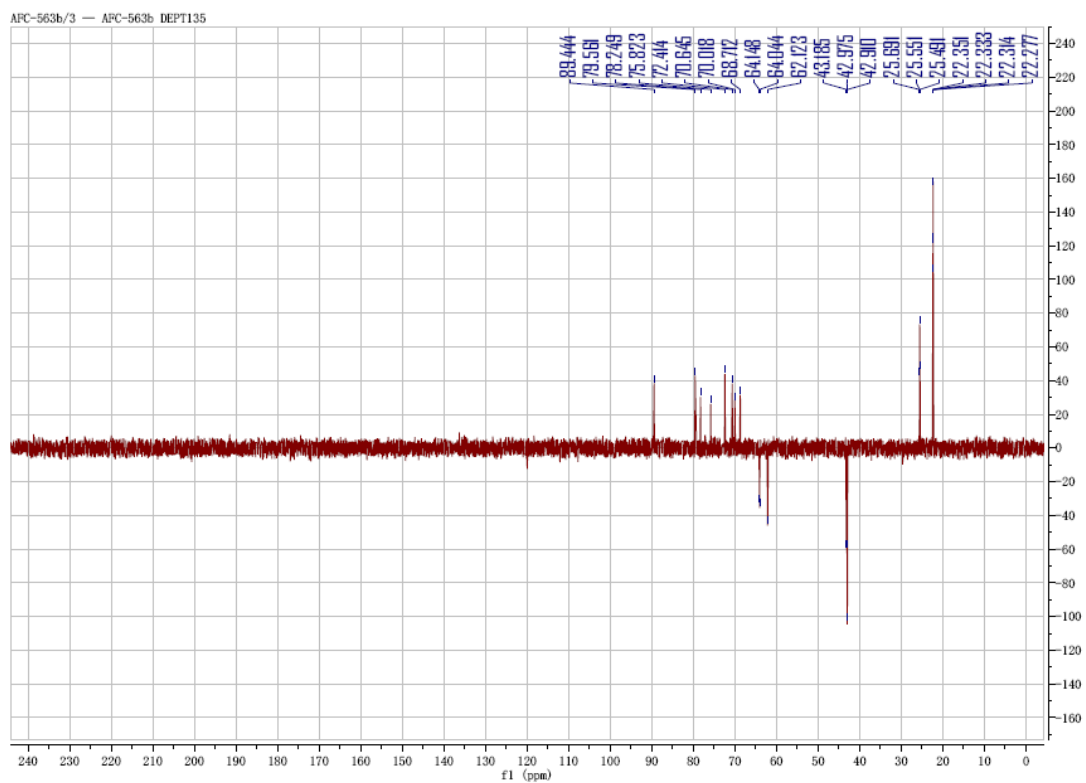


Figure S56. ^1H - ^1H COSY NMR spectrum of compound **6** (500 MHz, CDCl_3)

APC-563b/4 — APC-563b 1H 1H COSY

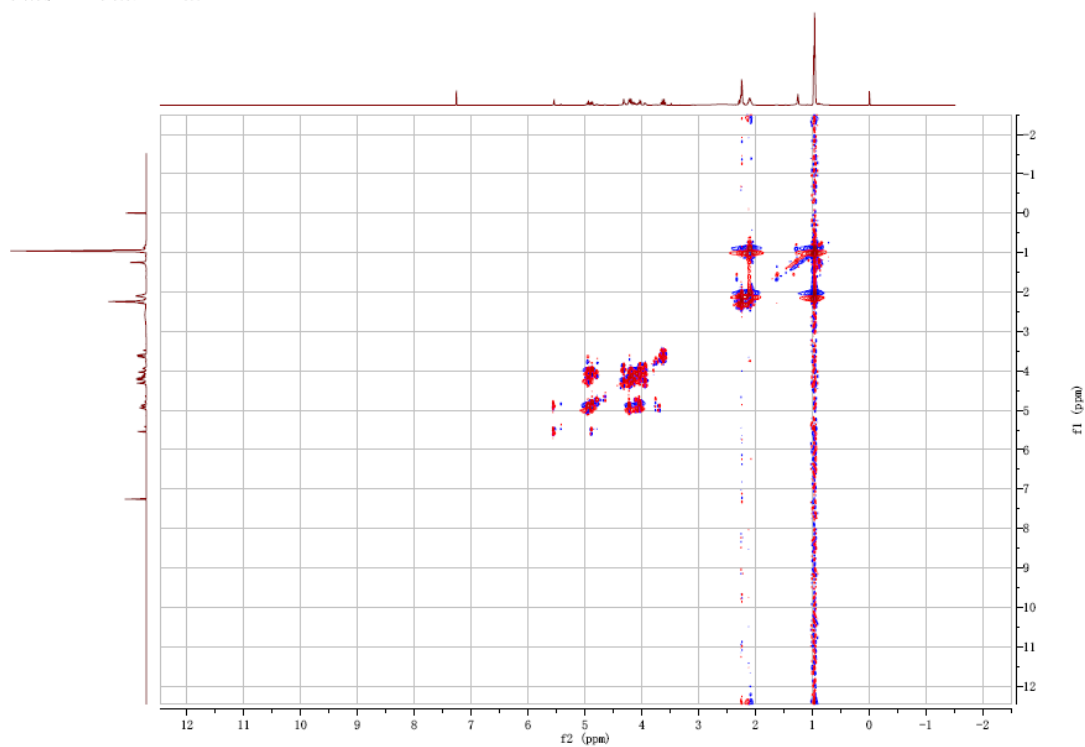


Figure S57. HSQC NMR spectrum of compound **6** (500 MHz, CDCl_3)

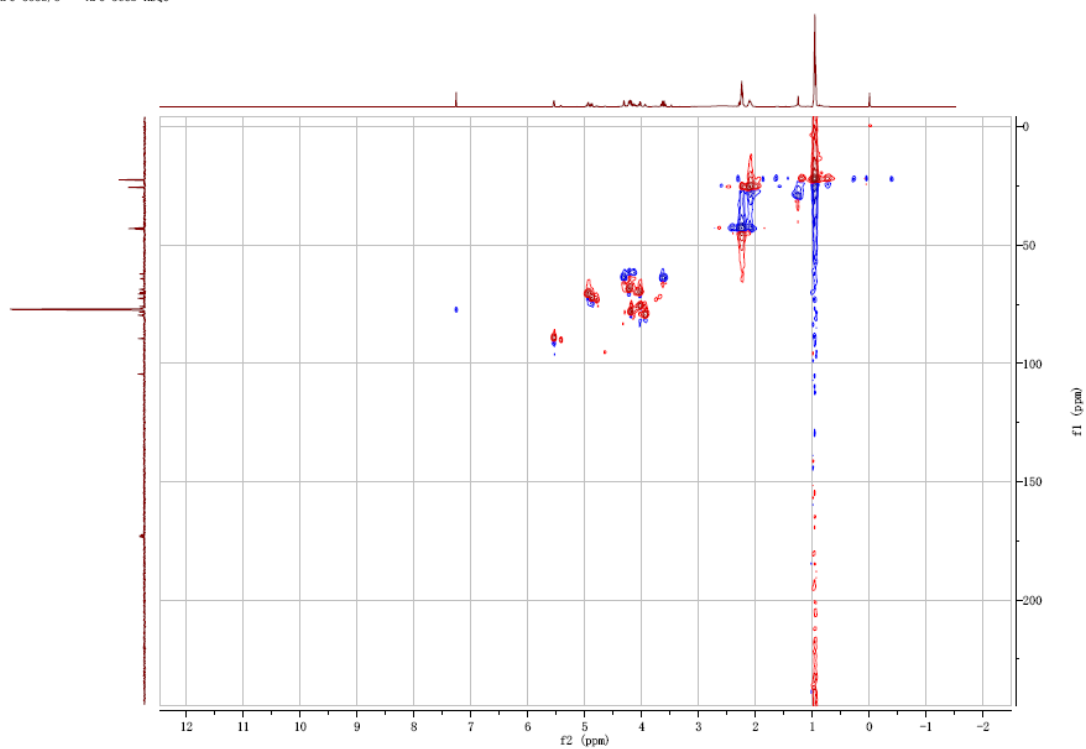


Figure S58. HMBC NMR spectrum of compound **6** (500 MHz, CDCl₃)

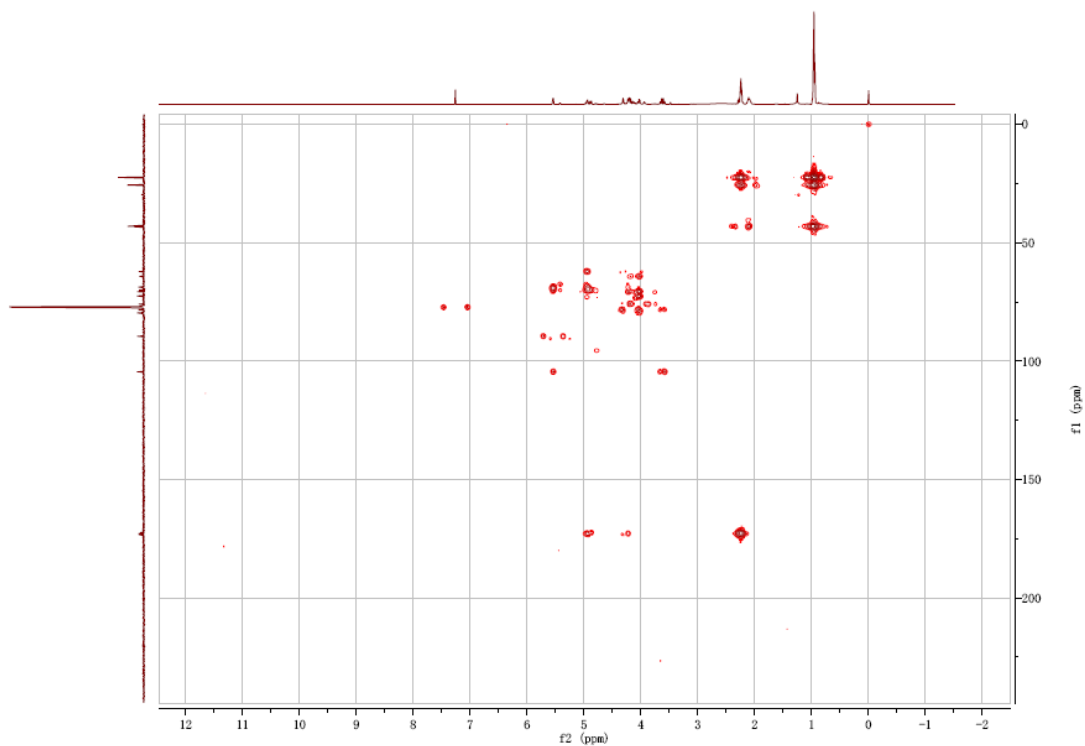


Figure S59. The magnified HMBC NMR spectrum of compound **6** (500 MHz, CDCl₃)

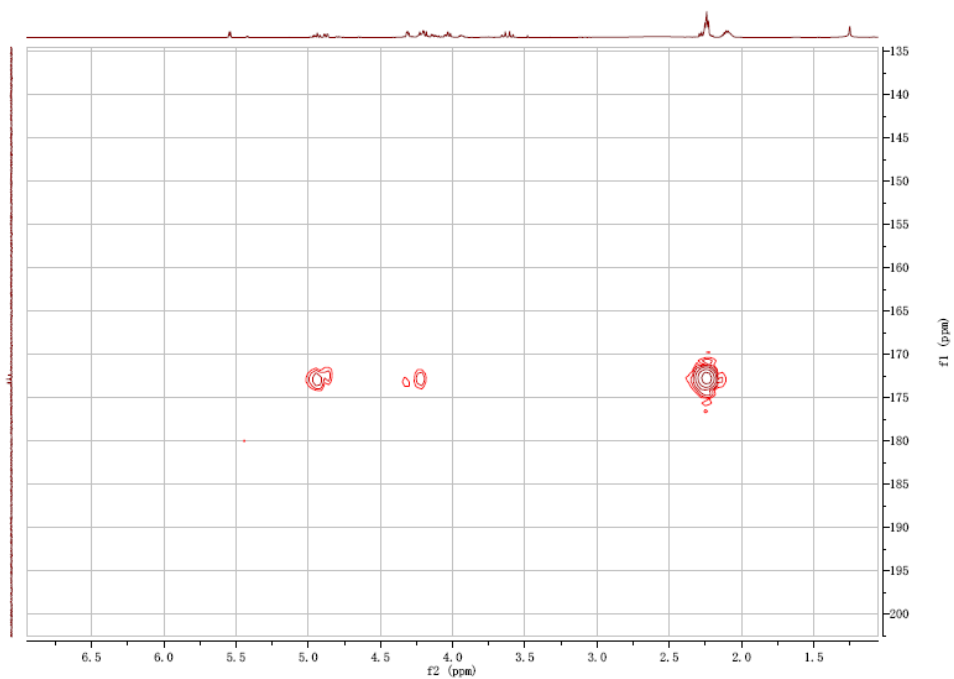


Figure S60. NOESY NMR spectrum of compound **6** (500 MHz, CDCl₃)

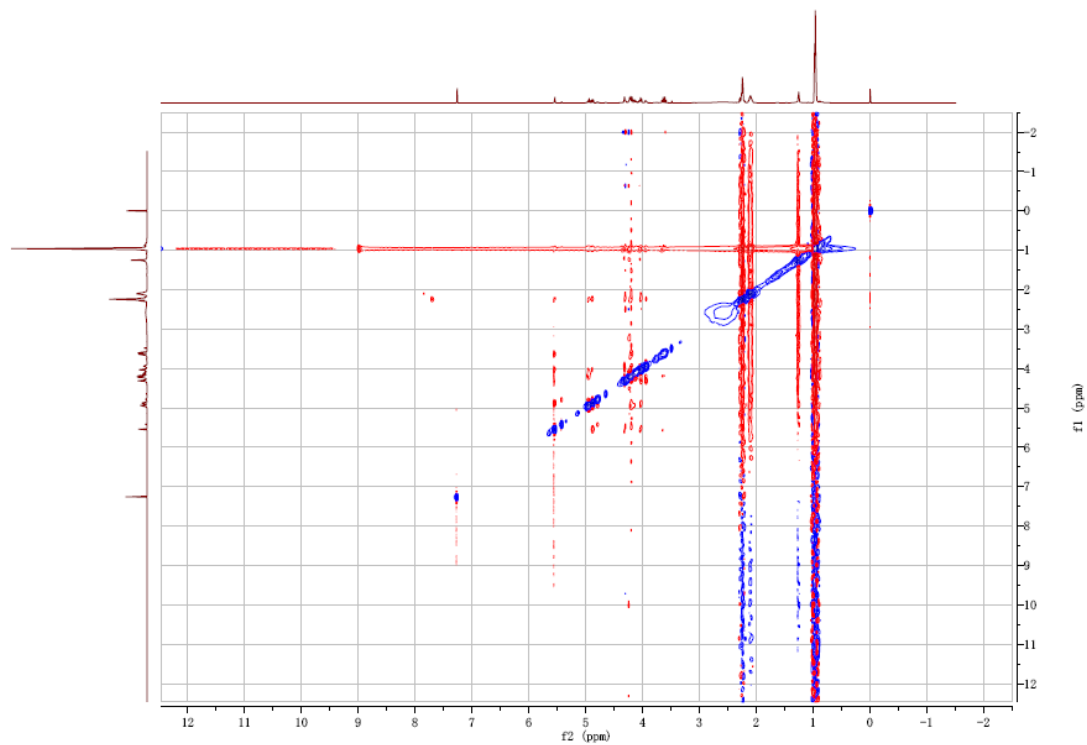


Figure S61. HRESIMS spectrum of compound **7**

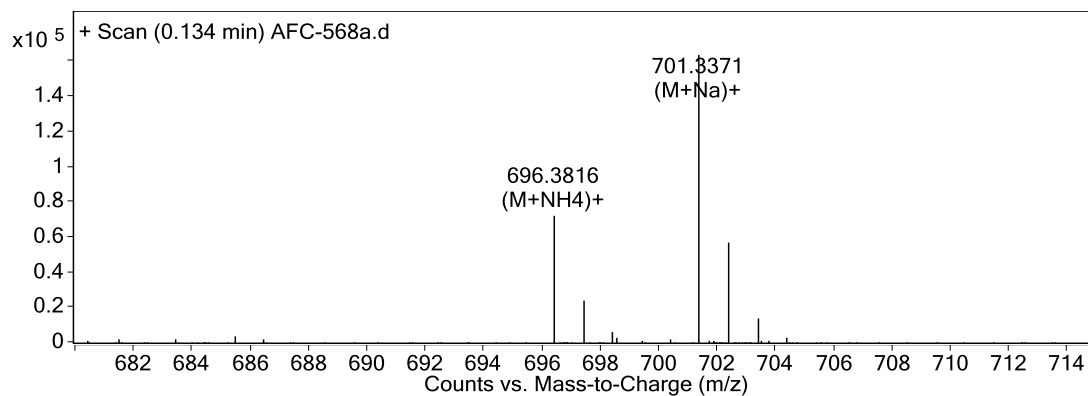


Figure S62. IR spectrum of compound 7

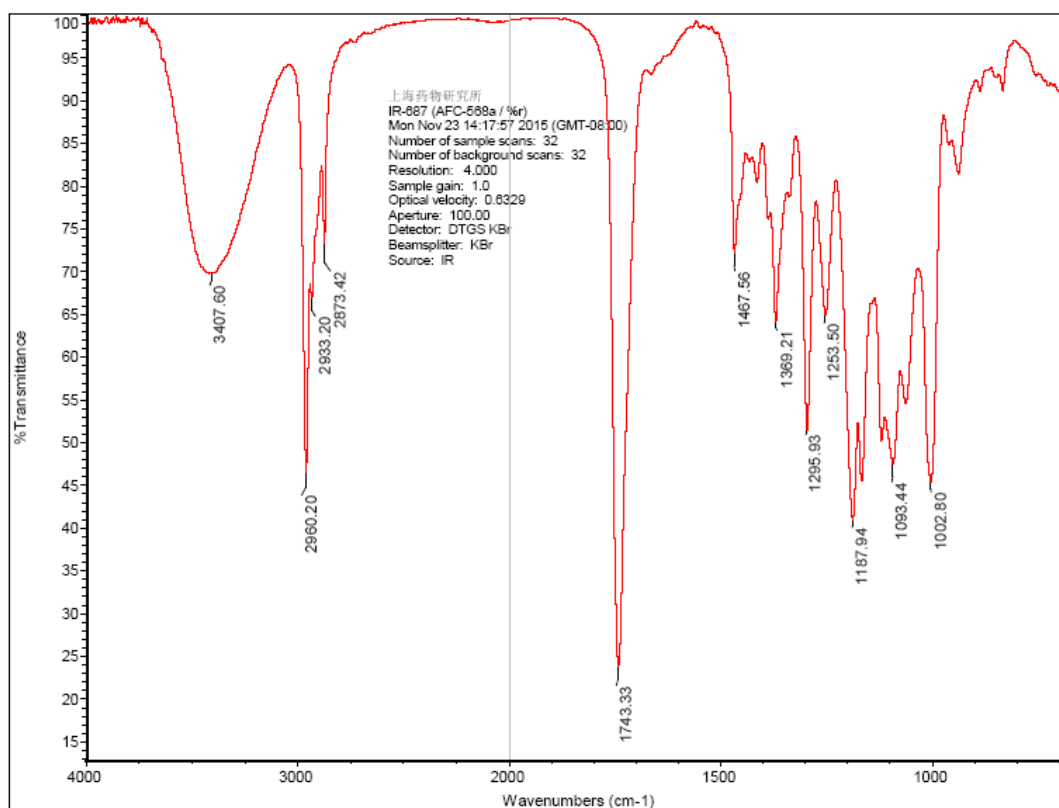


Figure S63. ¹H NMR spectrum of compound 7 (500 MHz, CDCl₃)

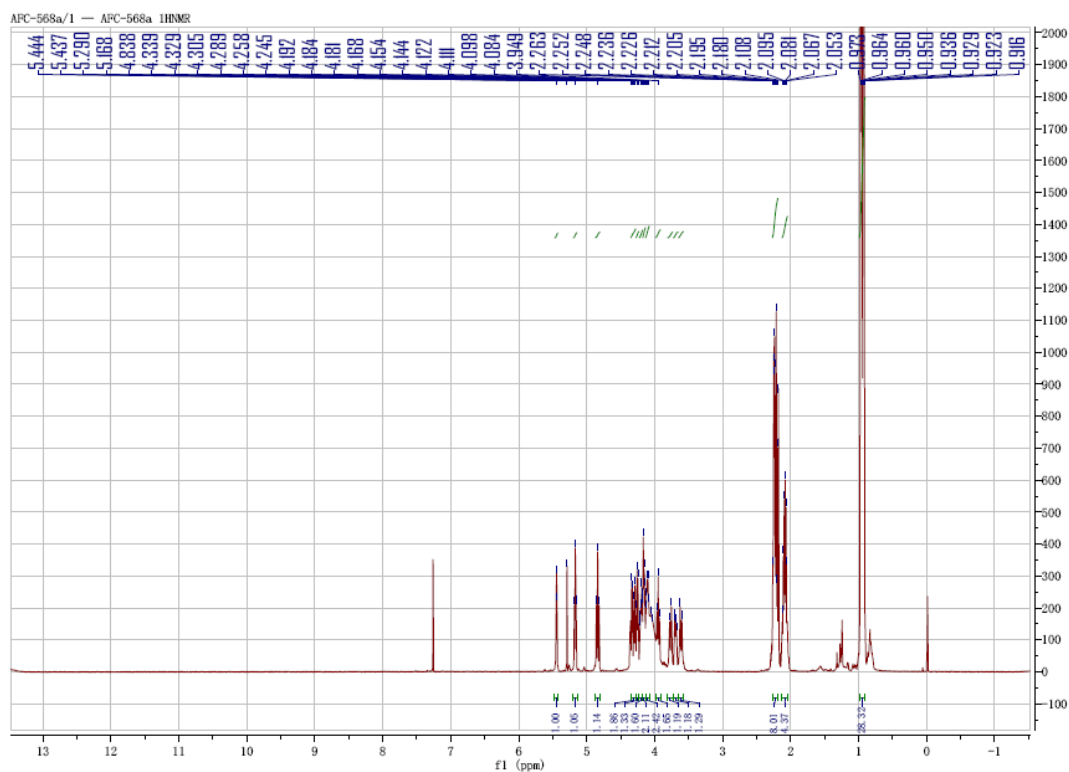


Figure S64. ^{13}C NMR spectrum of compound **7** (125 MHz, CDCl_3)

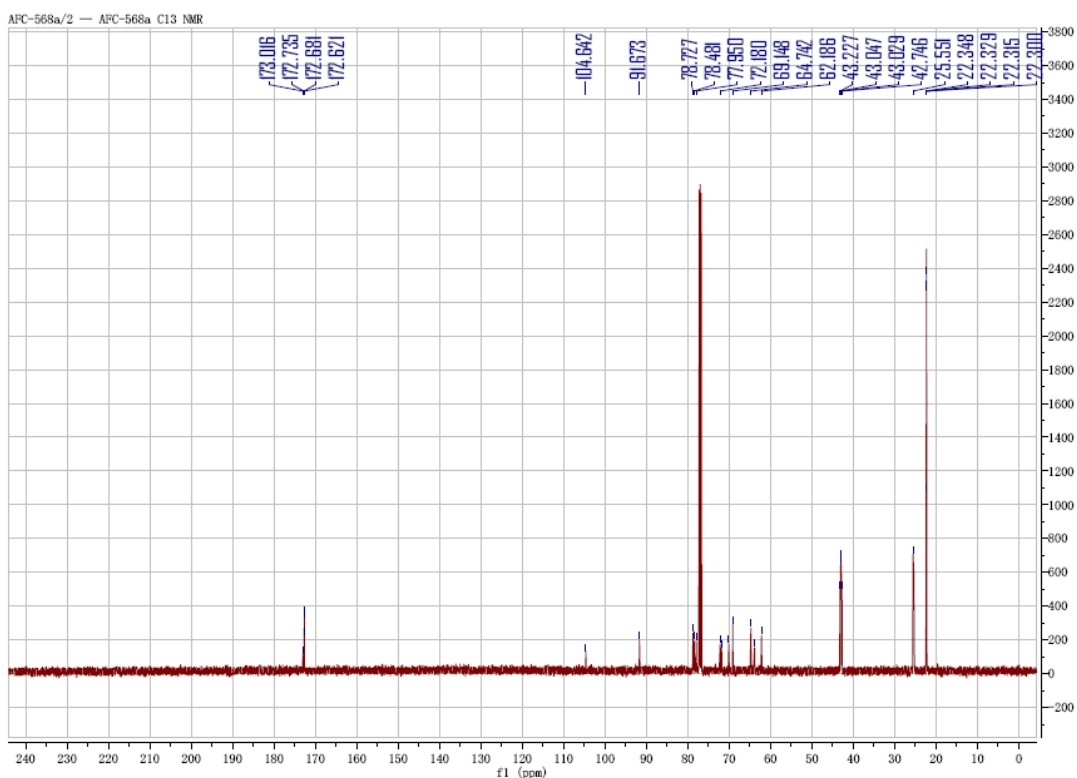


Figure S65. DEPT NMR spectrum of compound **7** (125 MHz, CDCl_3)

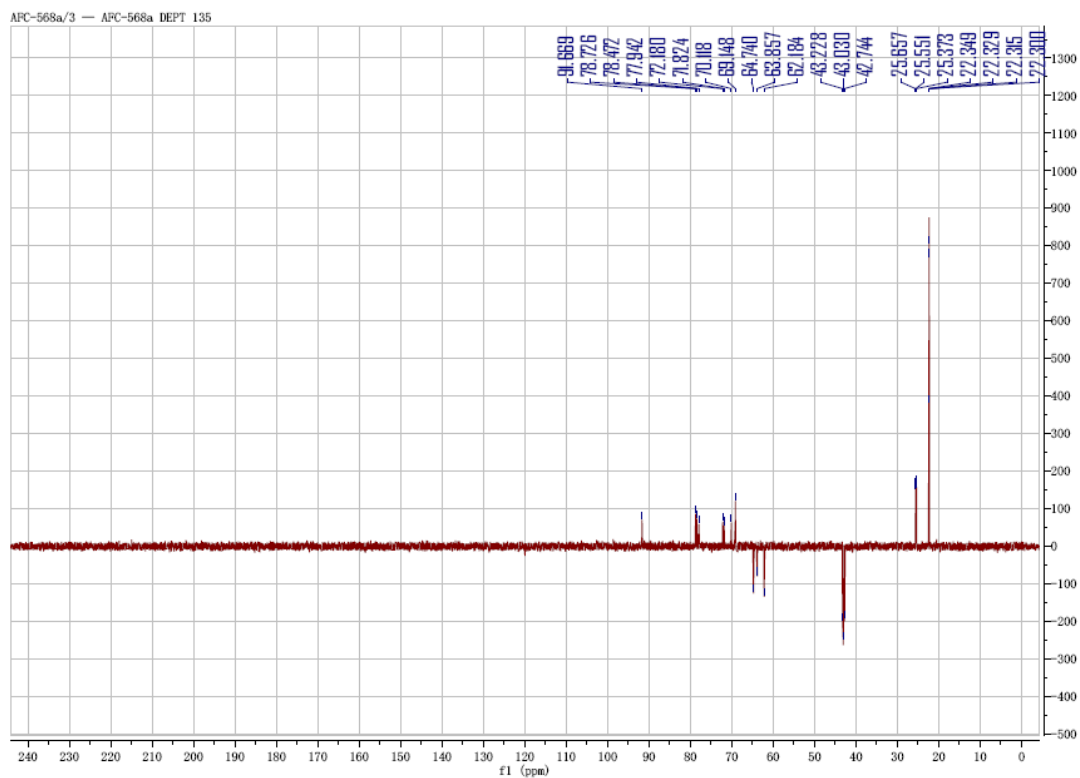


Figure S66. ^1H - ^1H COSY NMR spectrum of compound **7** (500 MHz, CDCl_3)

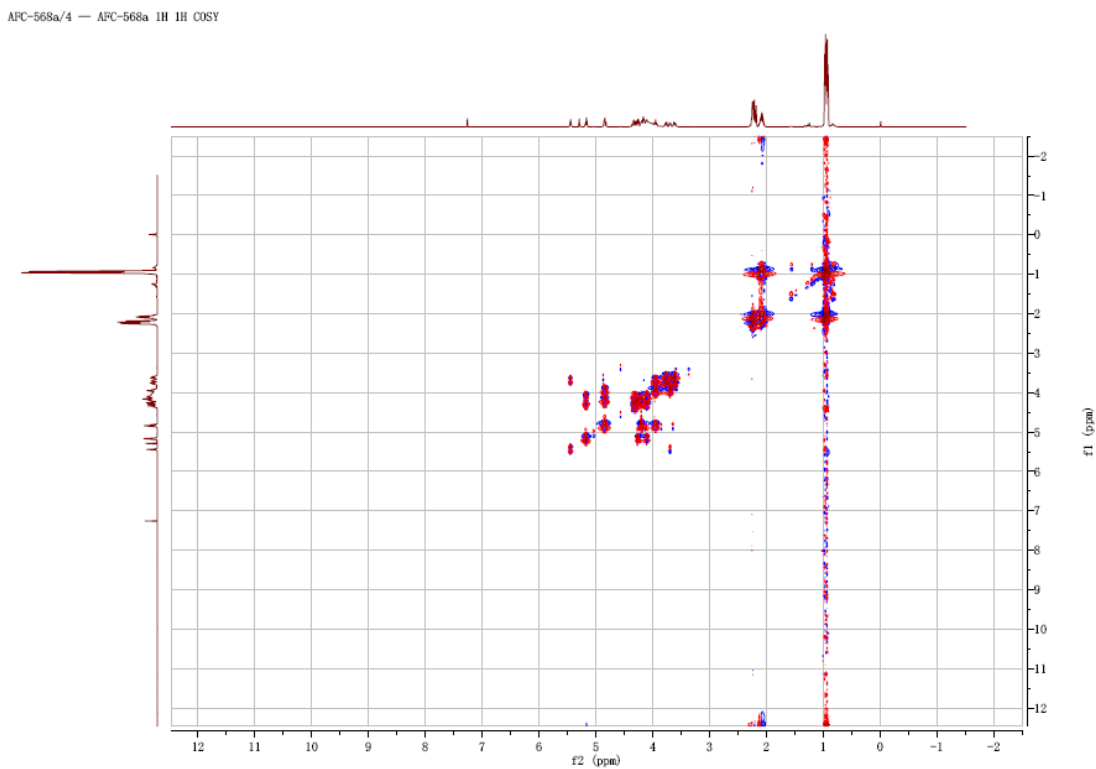


Figure S67. HSQC NMR spectrum of compound **7** (500 MHz, CDCl_3)

APC-568a/5 — APC-568a HSQC

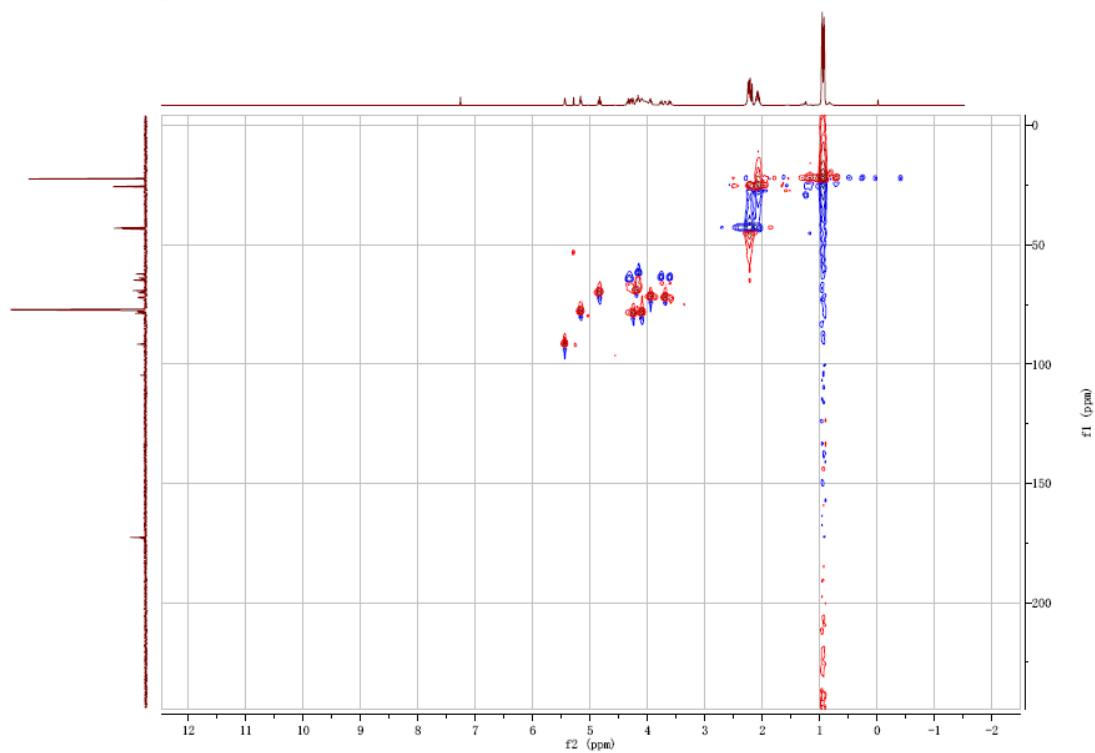


Figure S68. HMBC NMR spectrum of compound **7** (500 MHz, CDCl₃)

APC-568a/6 — APC-568a HMBC

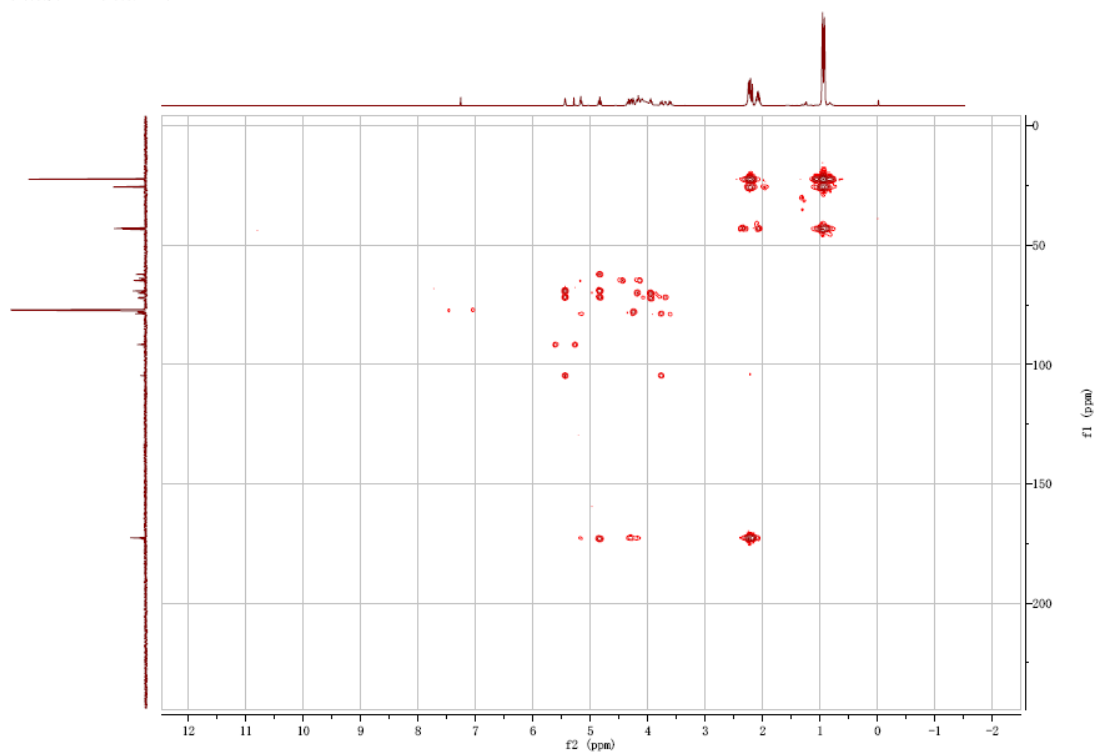


Figure S69. The magnified HMBC NMR spectrum of compound **7** (500 MHz, CDCl₃)

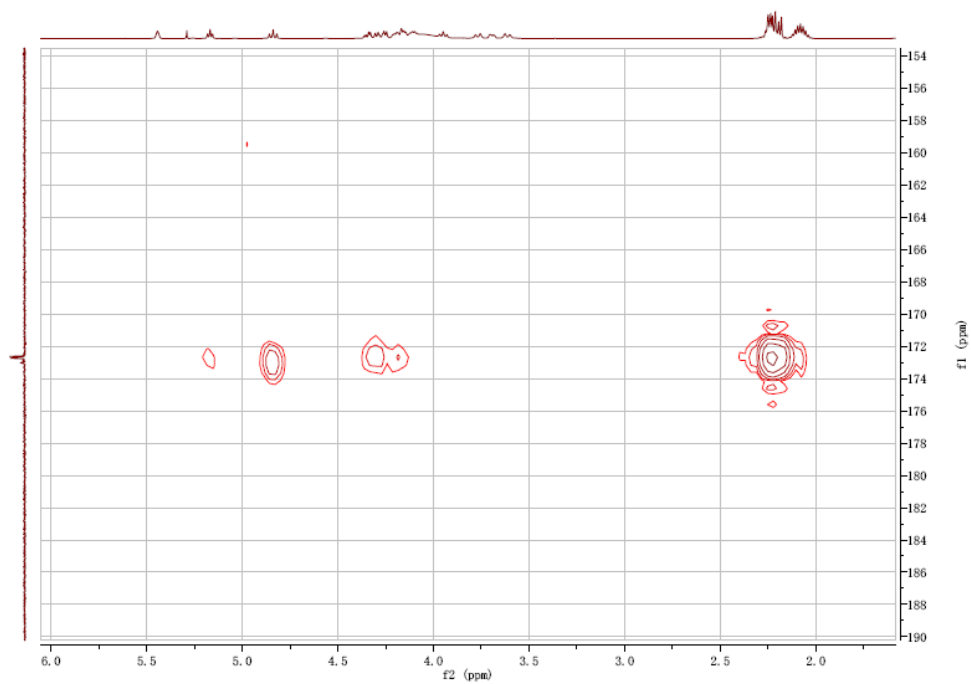


Figure S70. NOESY NMR spectrum of compound **7** (500 MHz, CDCl₃)

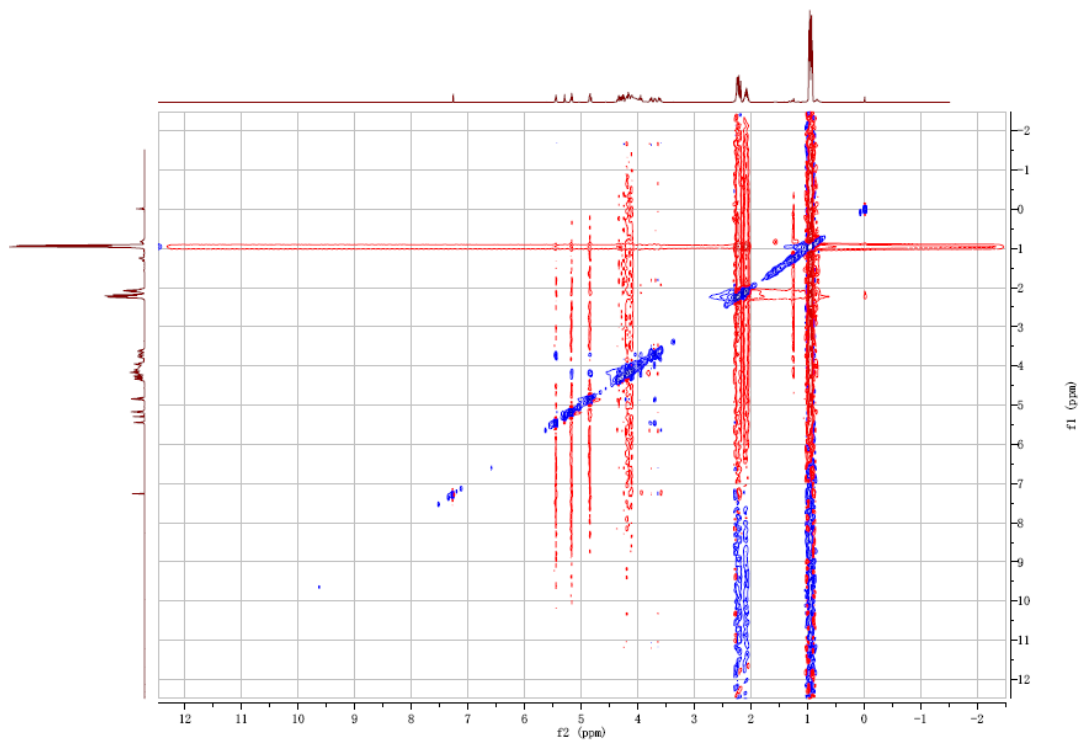


Figure S71. HRESIMS spectrum of compound **8**

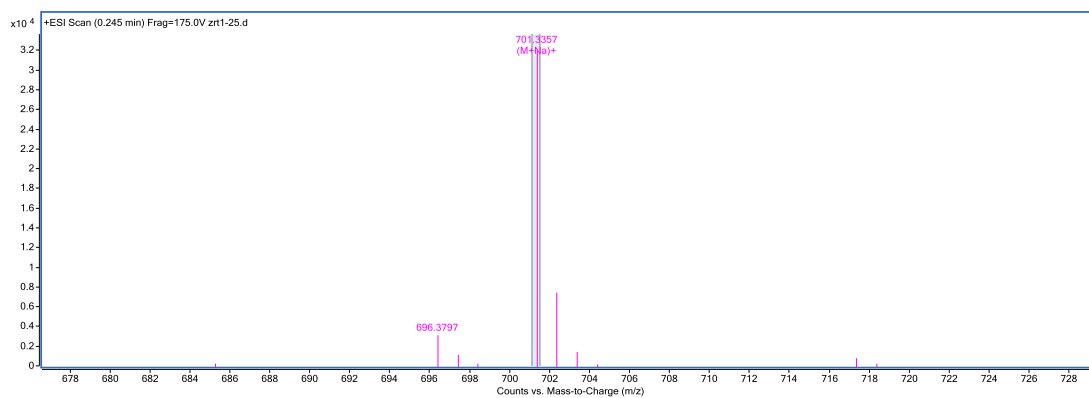


Figure S72. IR spectrum of compound **8**

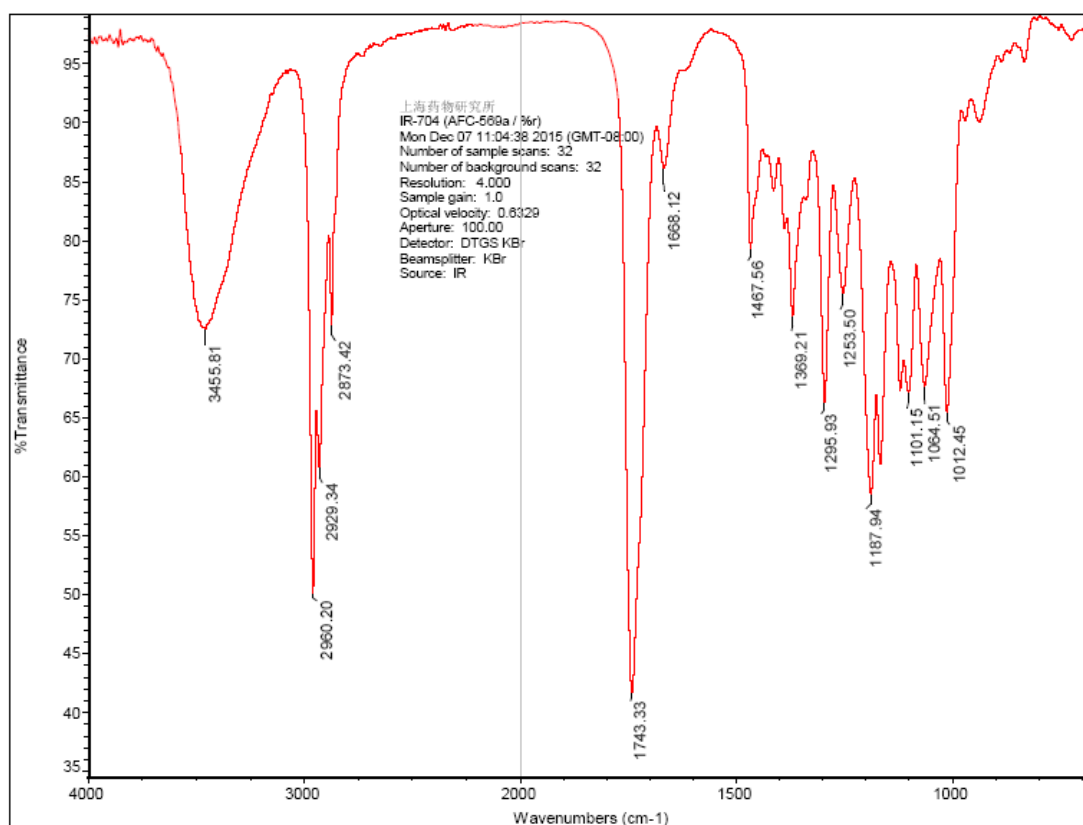


Figure S73. ¹H NMR spectrum of compound **8** (500 MHz, CDCl₃)

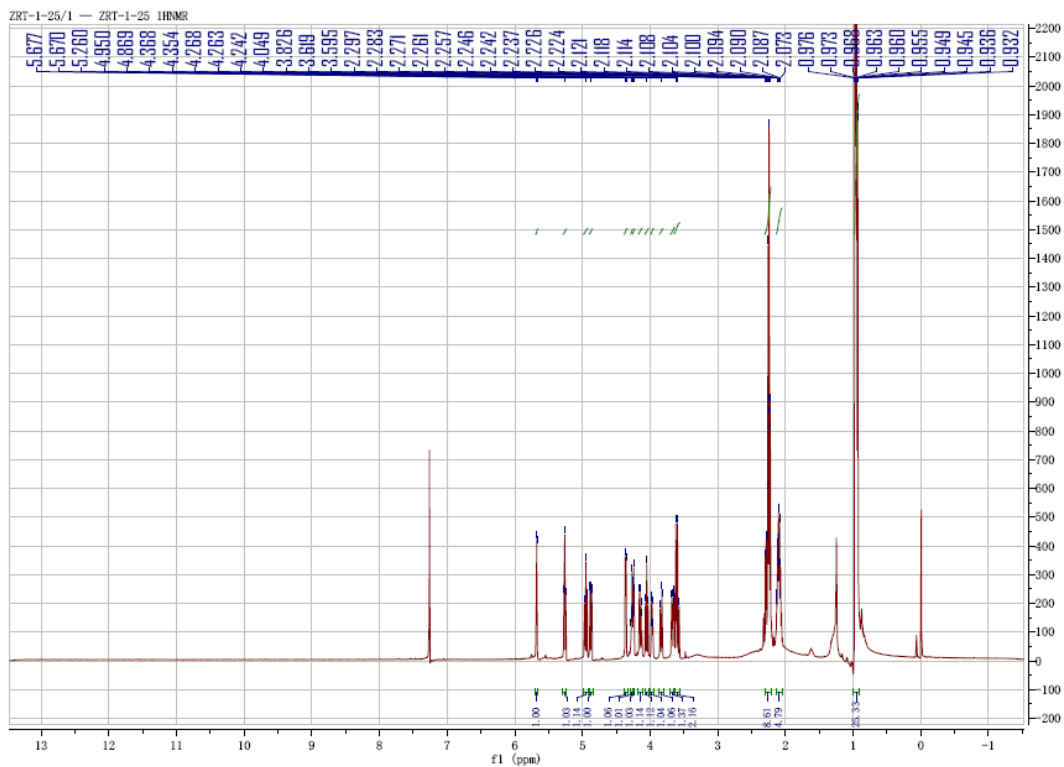


Figure S74. ^{13}C NMR spectrum of compound **8** (125 MHz, CDCl_3)

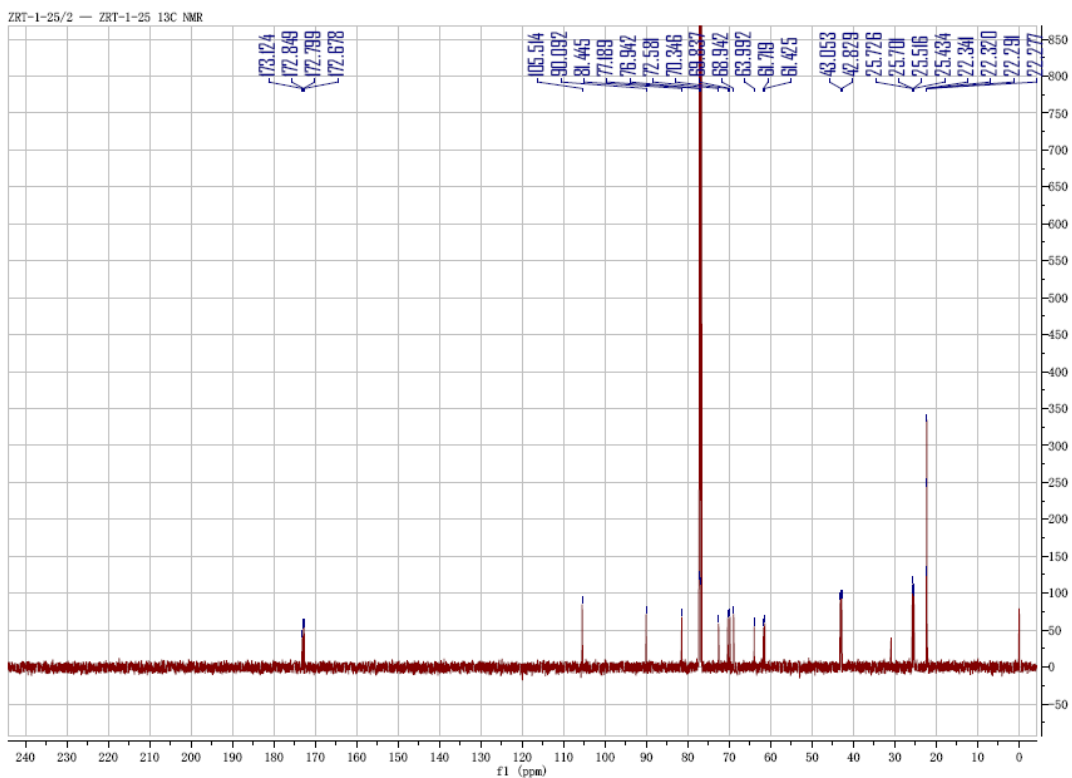


Figure S75. DEPT NMR spectrum of compound **8** (125 MHz, CDCl_3)

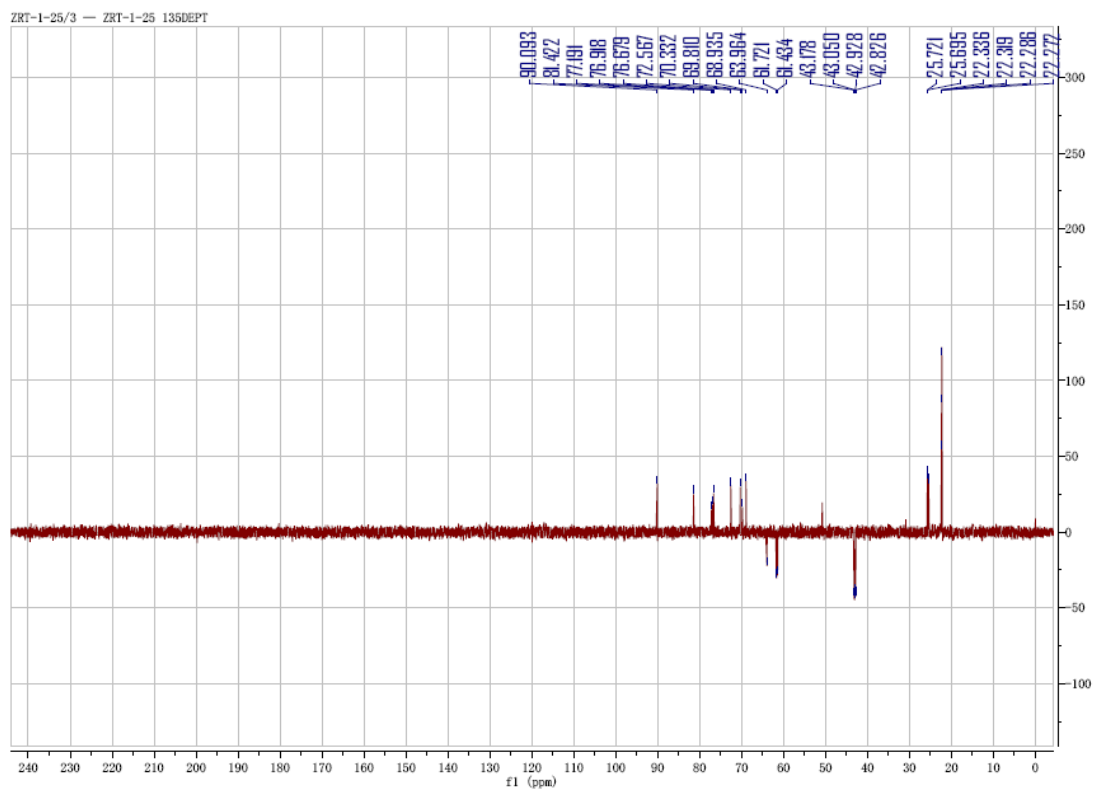


Figure S76. ^1H - ^1H COSY NMR spectrum of compound **8** (500 MHz, CDCl_3)

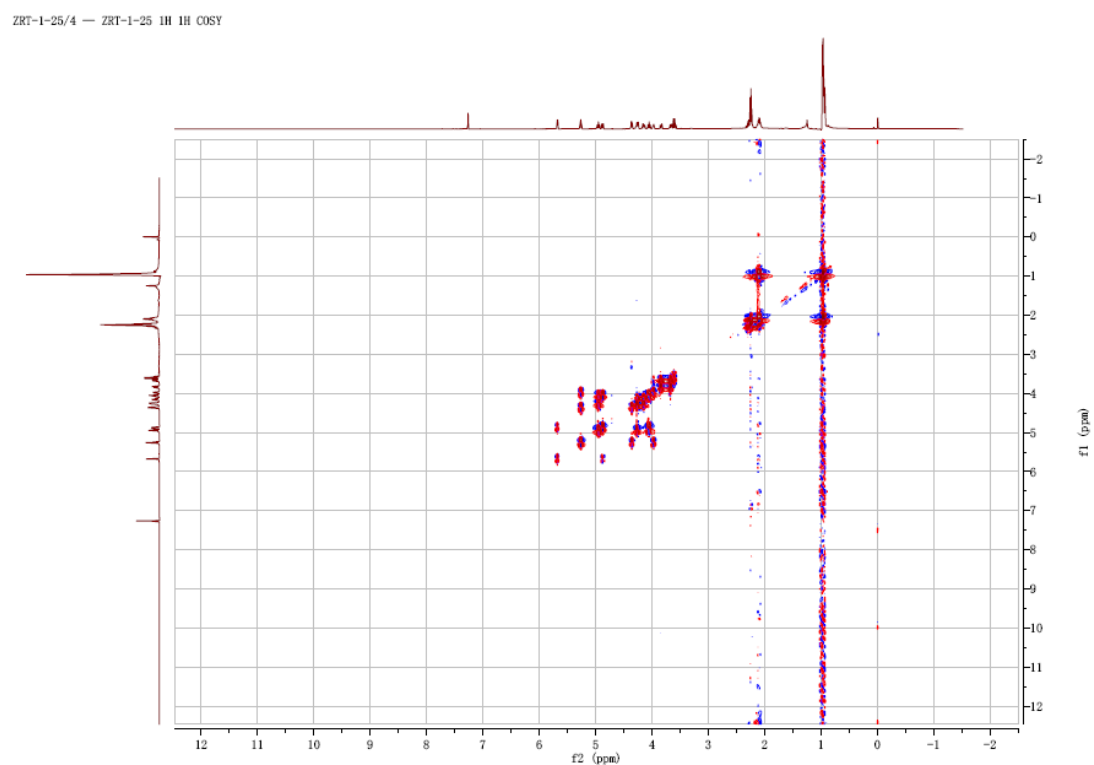


Figure S77. HSQC NMR spectrum of compound **8** (500 MHz, CDCl_3)

ZRT-1-25/5 — ZRT-1-25 HSQC

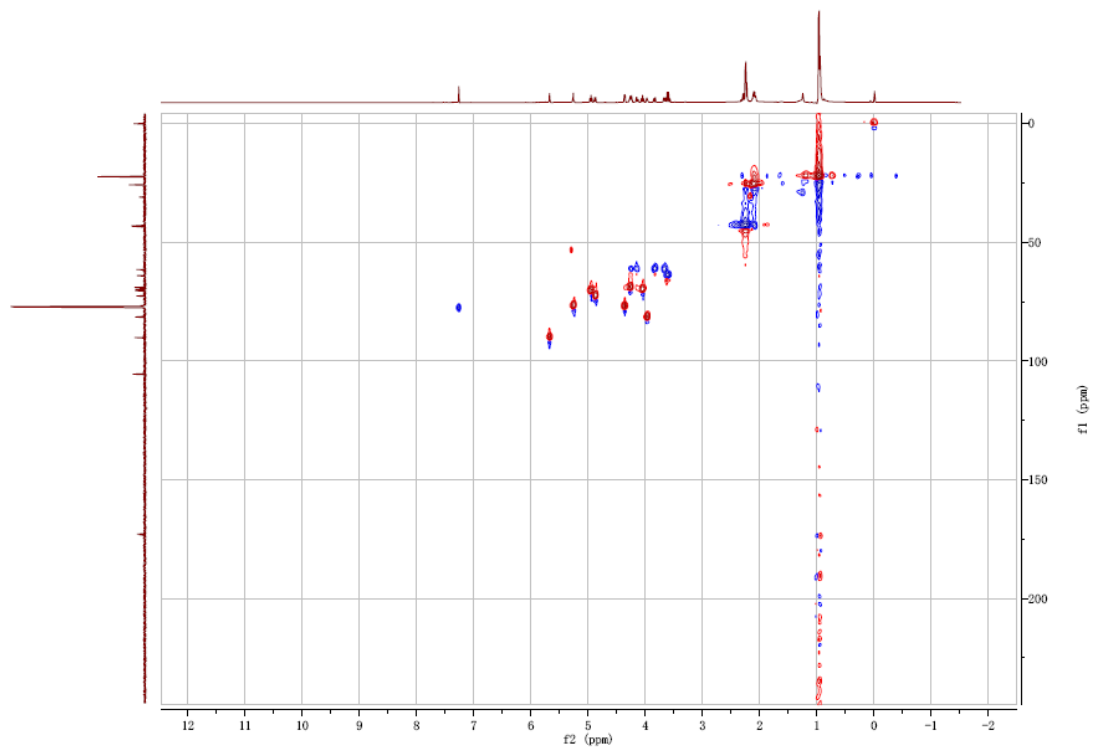


Figure S78. HMBC NMR spectrum of compound **8** (500 MHz, CDCl₃)

ZRT-1-25/6 — ZRT-1-25 HMBC

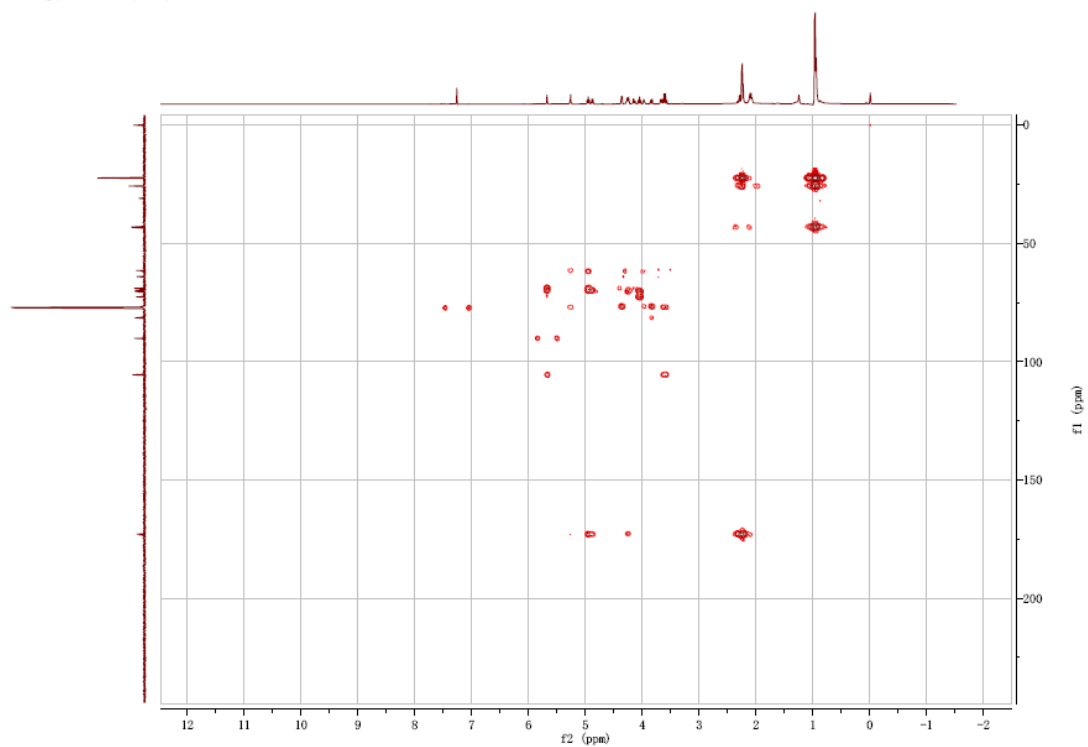


Figure S79. The magnified HMBC NMR spectrum of compound **8** (500 MHz, CDCl₃)

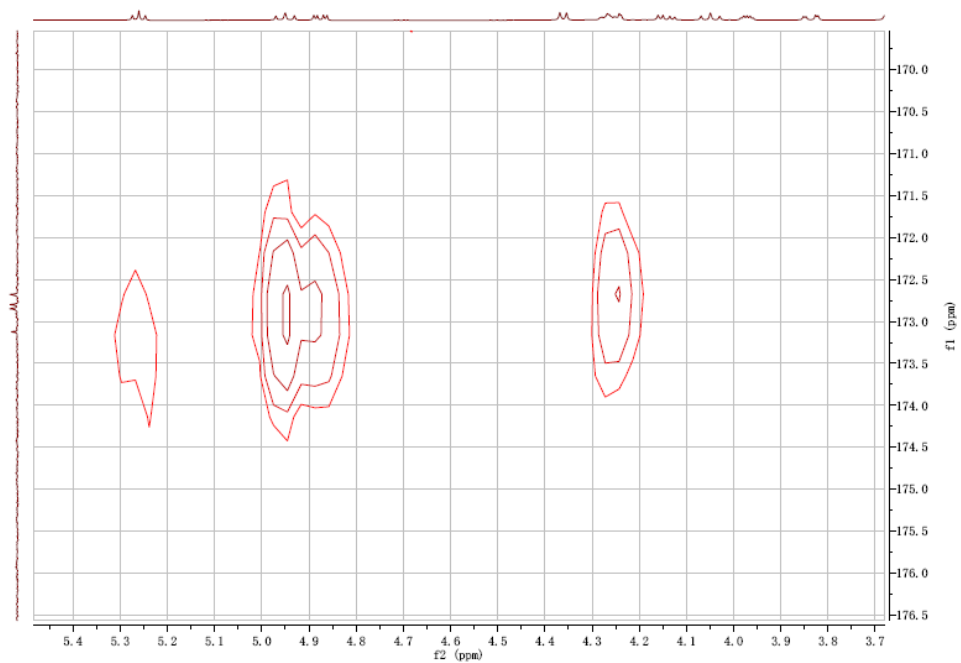


Figure S80. NOESY NMR spectrum of compound **8** (500 MHz, CDCl_3)

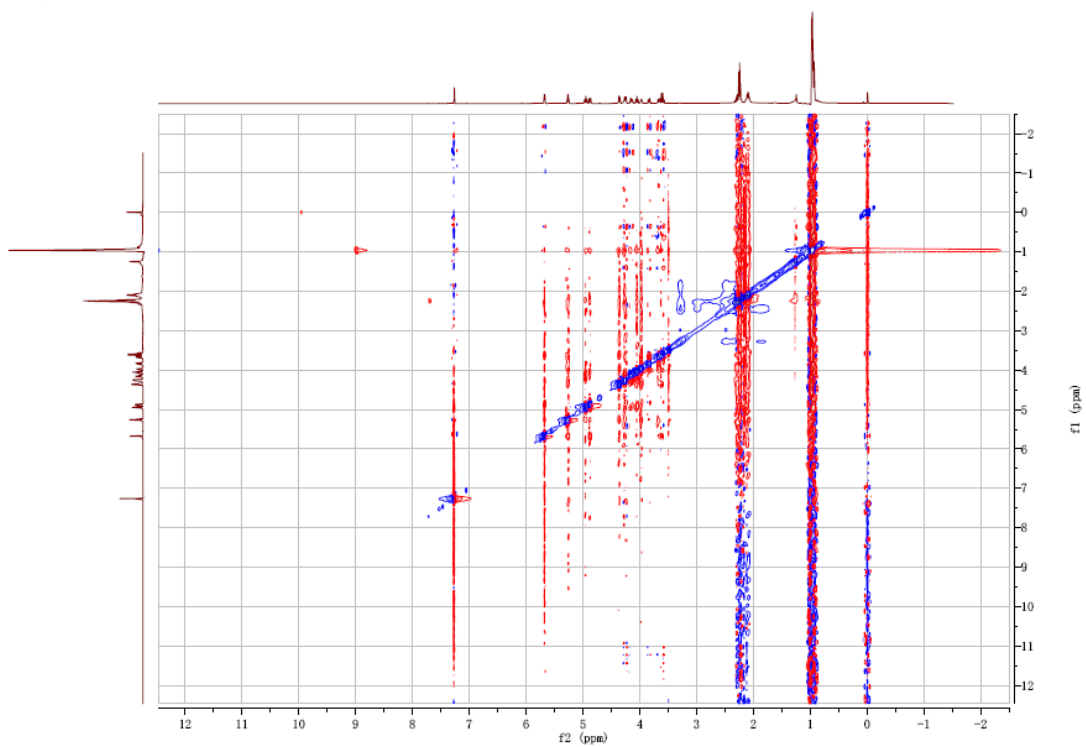


Figure S81. ^1H NMR spectrum of Isovaleric acid (500 MHz, CDCl_3)

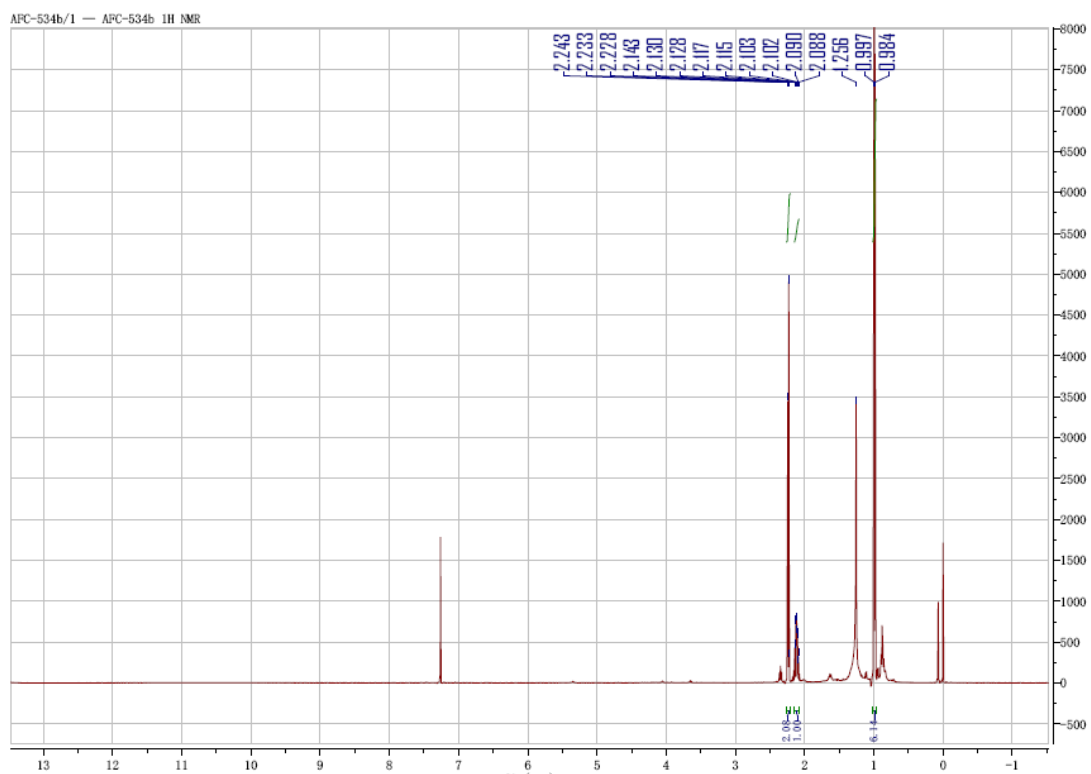


Figure S82. ^1H NMR spectrum of Isovaleric acid (125 MHz, CDCl_3)

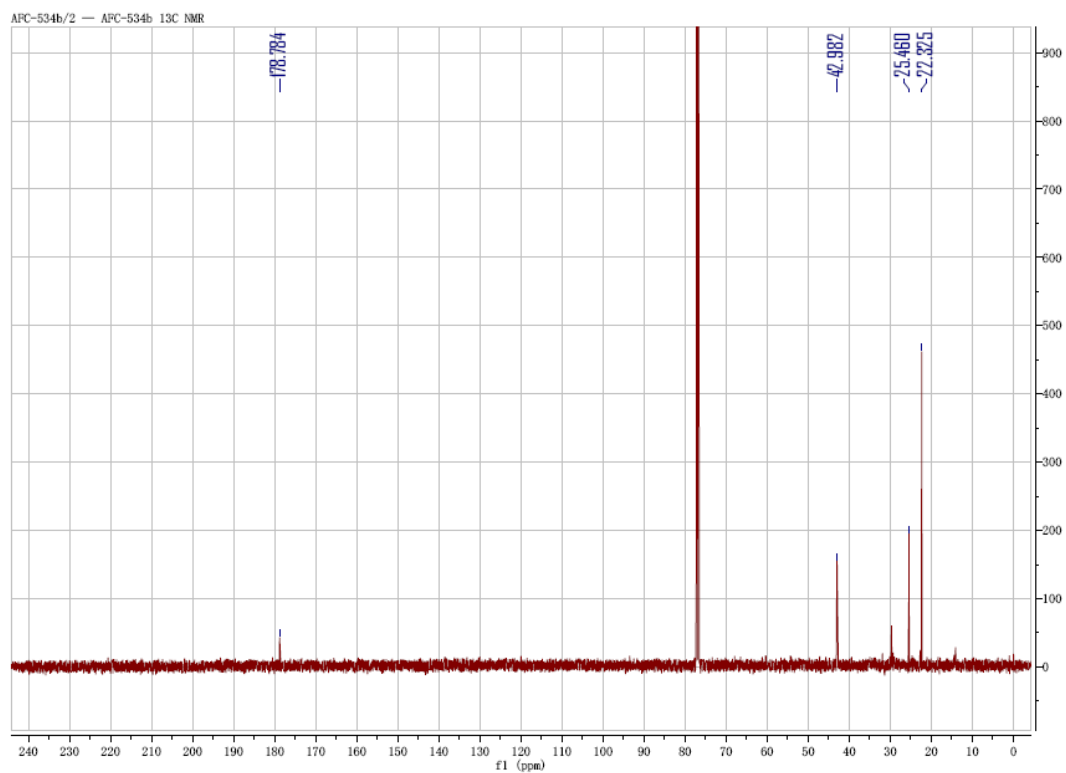


Figure S83. DEPT NMR spectrum of Isovaleric acid (125 MHz, CDCl_3)

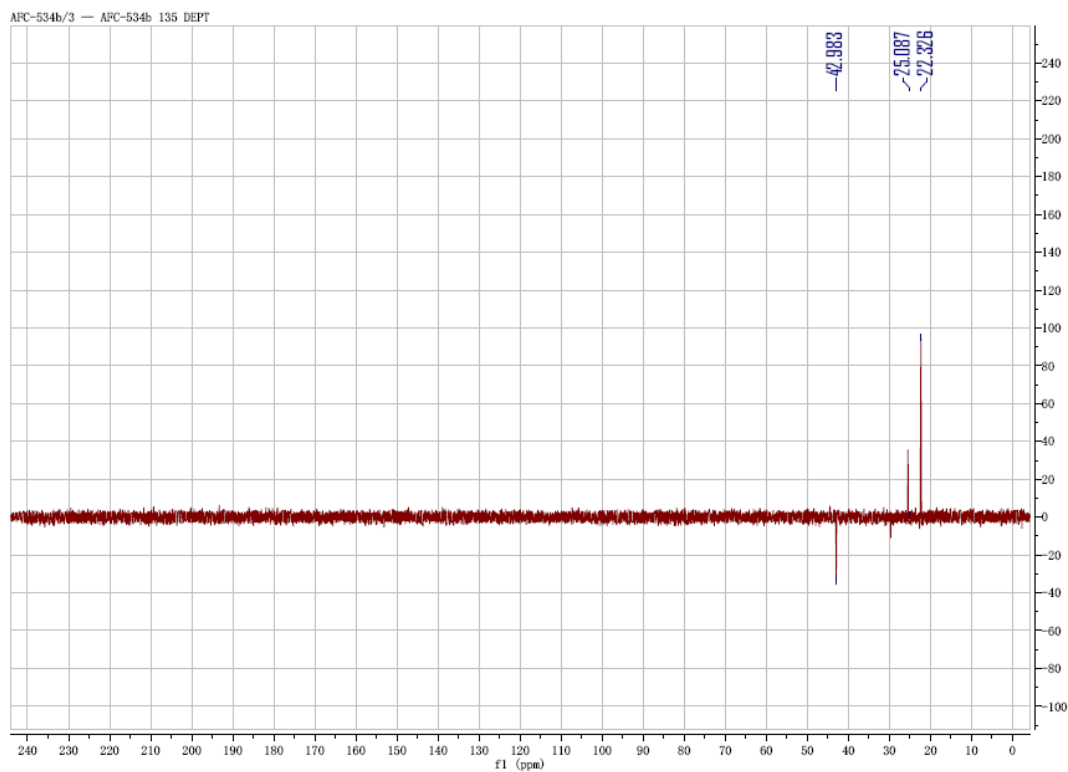
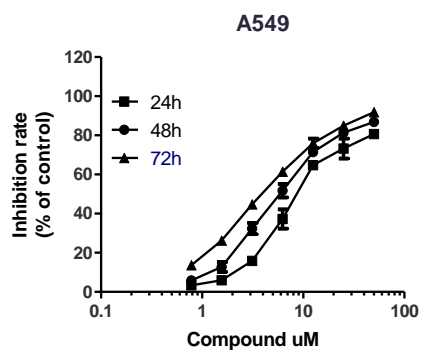


Figure S84. Viability of A549 cells after exposure to 0.1% DMSO or various concentrations of compound 2 for 24, 48, and 72 h.



The data are expressed as the means \pm SEM of three independent experiments.