

Lignans from Heilaohu: Chemical Characterization and Evaluation of their Cytotoxicity and Antioxidant Activities

Yongbei Liu^{1,†}, Yupei Yang^{1,†}, Shumaila Tasneem¹, Nusrat Hussain^{1,4}, Muhammad Daniyal¹, Hanwen Yuan¹, Qingling Xie¹, Bin Liu², Jing Sun³, Yuqing Jian¹, Bin Li¹, Shenghuang Chen¹ and Wei Wang^{1,3,4,*}

- ¹ TCM and Ethnomedicine Innovation & Development International Laboratory, Innovative Drug Research Institute, School of Pharmacy, Hunan University of Chinese Medicine, Changsha, 410208, China; ybliu2018@163.com (Y.L.); yangyupei24@163.com (Y.Y.); tasneemshum@gmail.com (S.T.); nusrat_hussain42@yahoo.com (N.H.); daniyaldani151@yahoo.com (M.D.); hanwyuan@hotmail.com (H. Y.); XieQL1992@163.com (Q. X.); cpujiyq2010@163.com (Y. J.); libin_hucm@hotmail.com (B.L.); cshtyh@163.com (S.C.)
- ² College of Biology, Hunan Province Key Laboratory of Plant Functional Genomics and Developmental Regulation, Hunan University, Changsha 410082, China; binliu2001@hotmail.com
- ³ Shaanxi Key Laboratory of Basic and New herbal Medicament Research, Shaanxi Collaborative Innovation Center of Chinese Medicinal Resource Industrialization, Shaanxi University of Chinese Medicine; ph.175@163.com
- ⁴ H.E.J. Research Institute of Chemistry, International Center for Chemical and Biological Sciences, University of Karachi, Karachi-75270, Pakistan
- * Correspondence: wangwei402@hotmail.com; Tel.: +86-136-5743-8606,
- [†] These authors contributed equally to this work.

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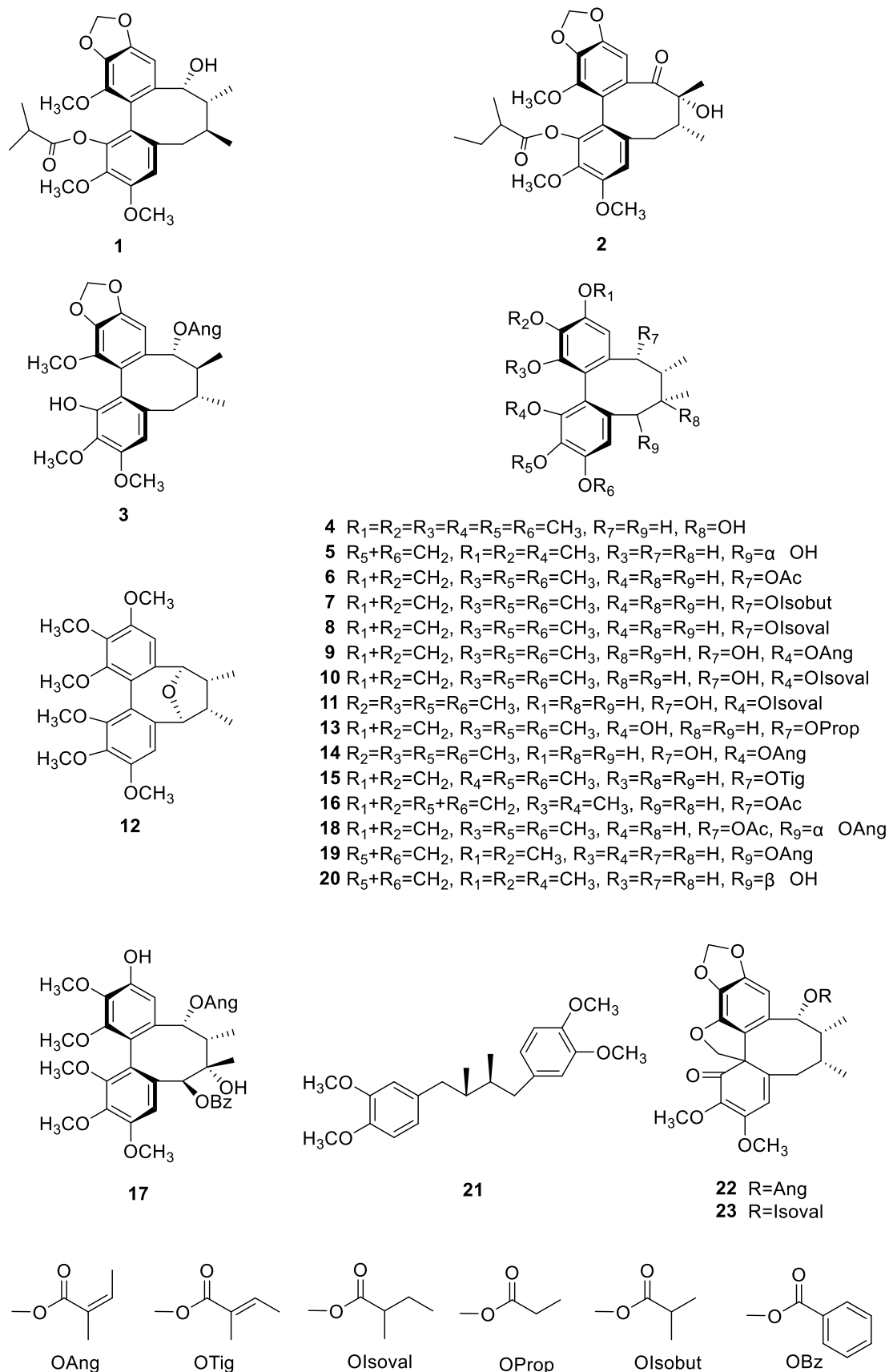


Figure S1. Structures of compounds 1-23 isolated from Heilaohu.

Figure S2. ^1H NMR (600 MHz, CDCl_3) spectrum of heilaohulignan A (**1**)

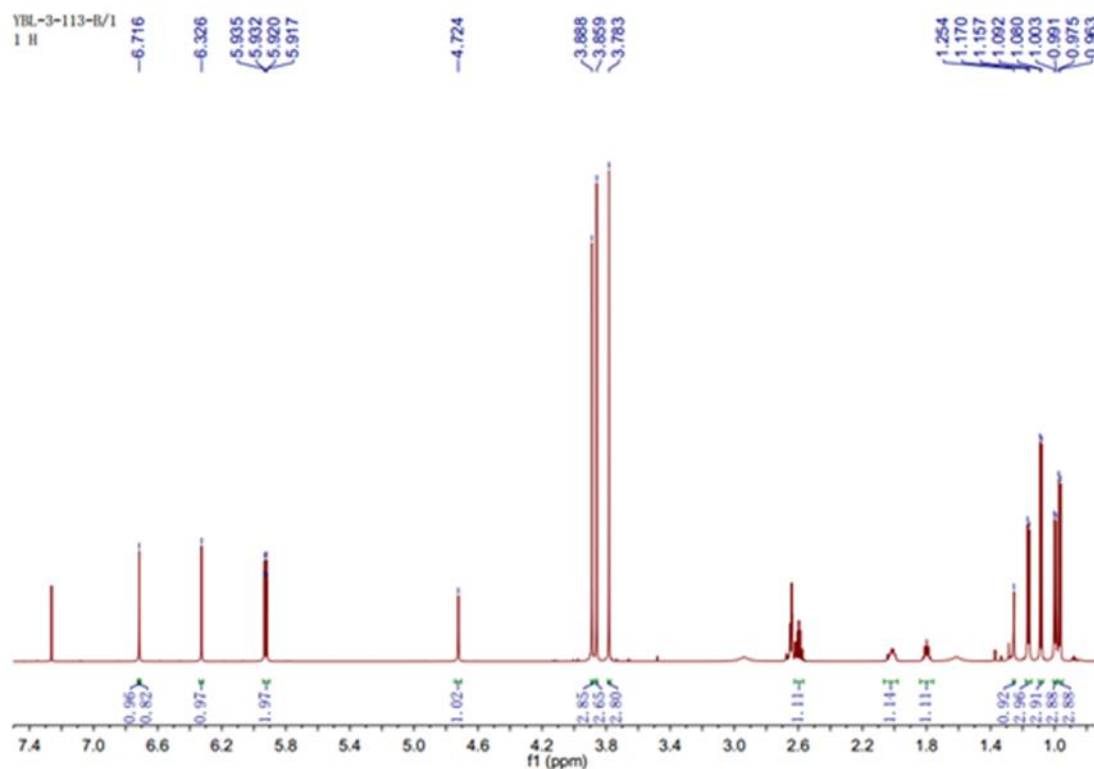


Figure S3. ^{13}C NMR (150 MHz, CDCl_3) spectrum of heilaohulignan A (**1**)

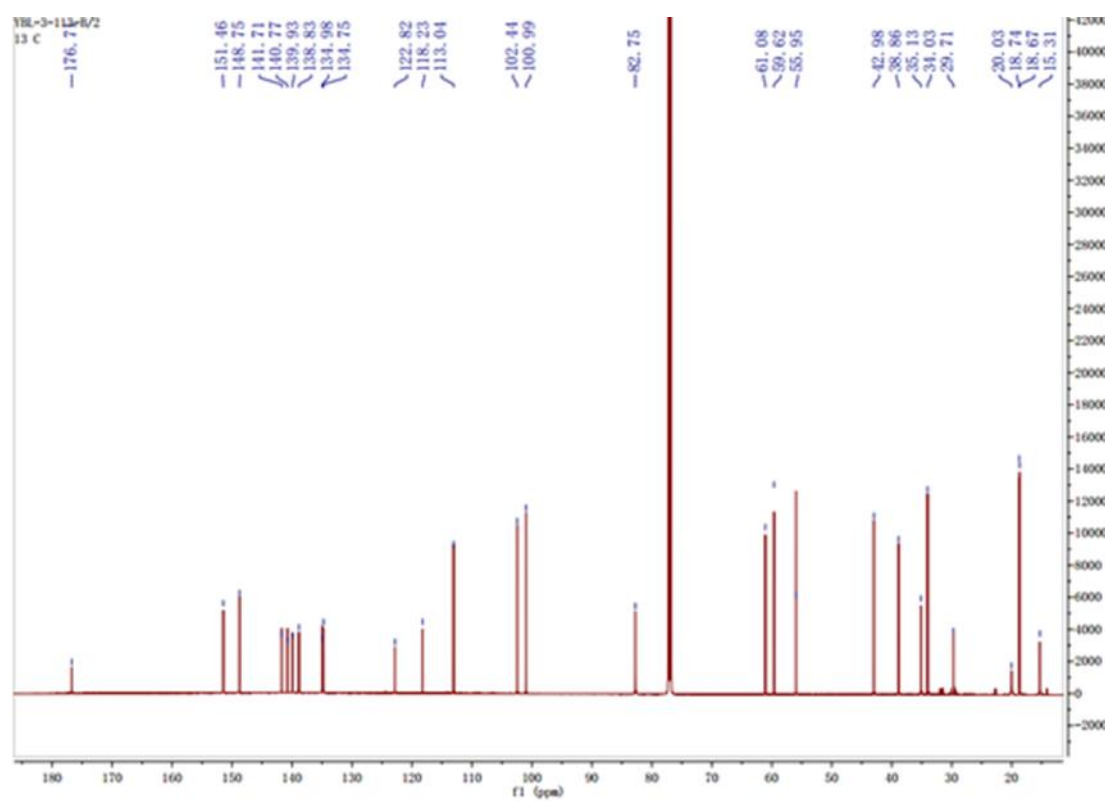


Figure S4. ^1H - ^1H COSY NMR (600 MHz, CDCl_3) spectrum of heilaohulignan A (**1**)

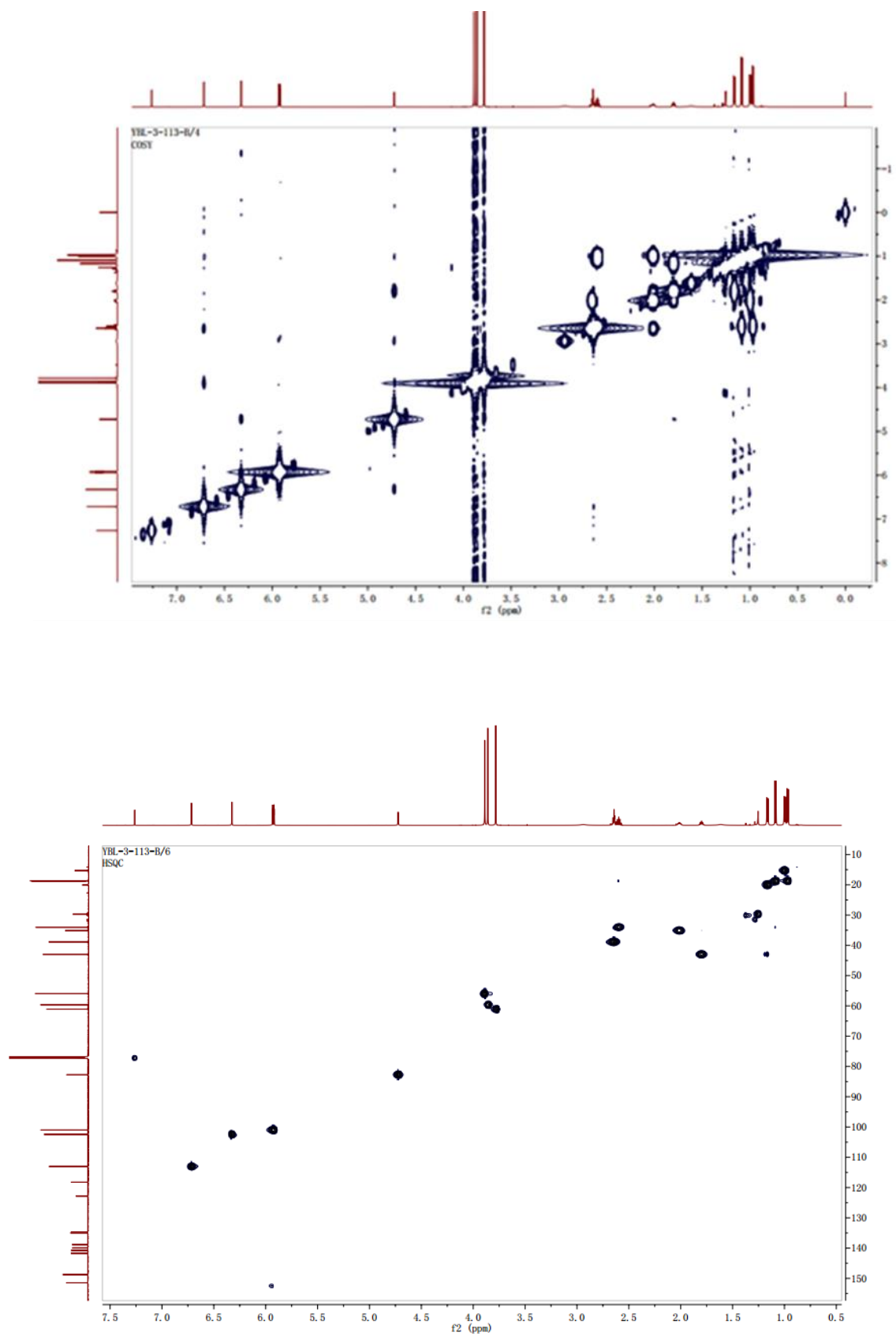


Figure S5. HSQC NMR (600 MHz, CDCl₃) spectrum of heilaohulignan A (1)

Figure S6. HMBC NMR (600 MHz, CDCl₃) spectrum of heilaohulignan A (1)

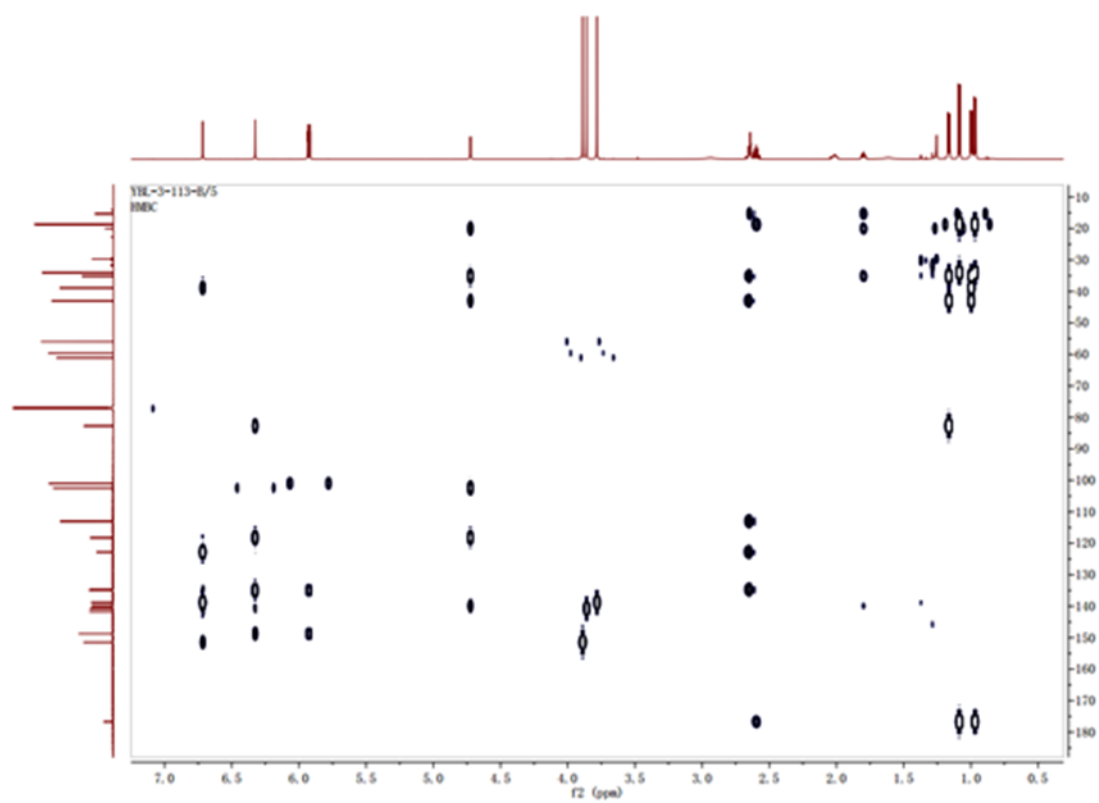


Figure S7. NOESY NMR (600 MHz, CDCl₃) spectrum of heilaohulignan A (1)

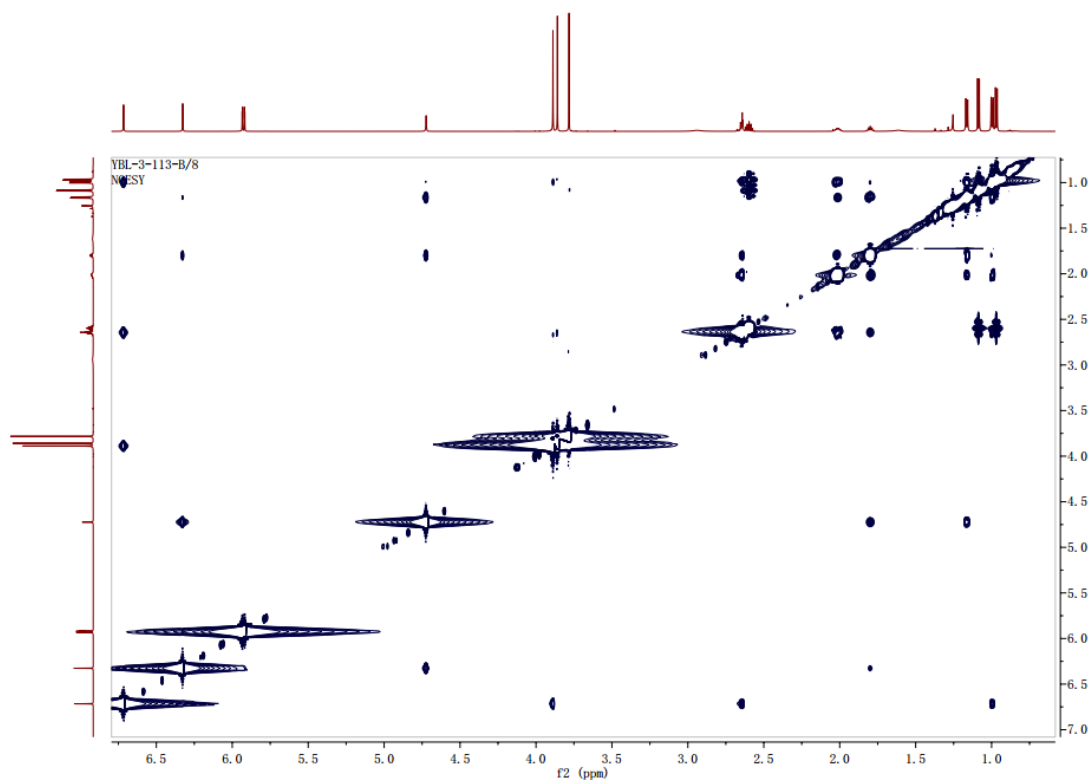


Figure S8. ¹H NMR (600 MHz, CDCl₃) spectrum of heilaohulignan B (2)

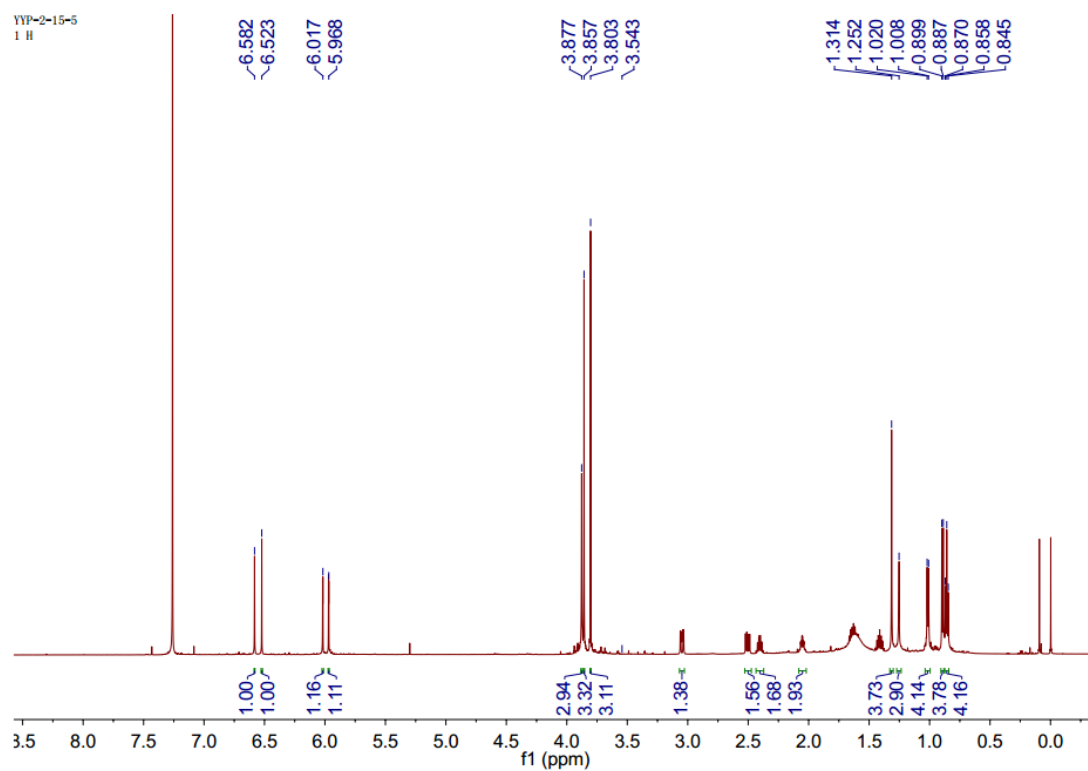


Figure S9. ^{13}C NMR (150 MHz, CDCl_3) spectrum of heilaohulignan B (2)

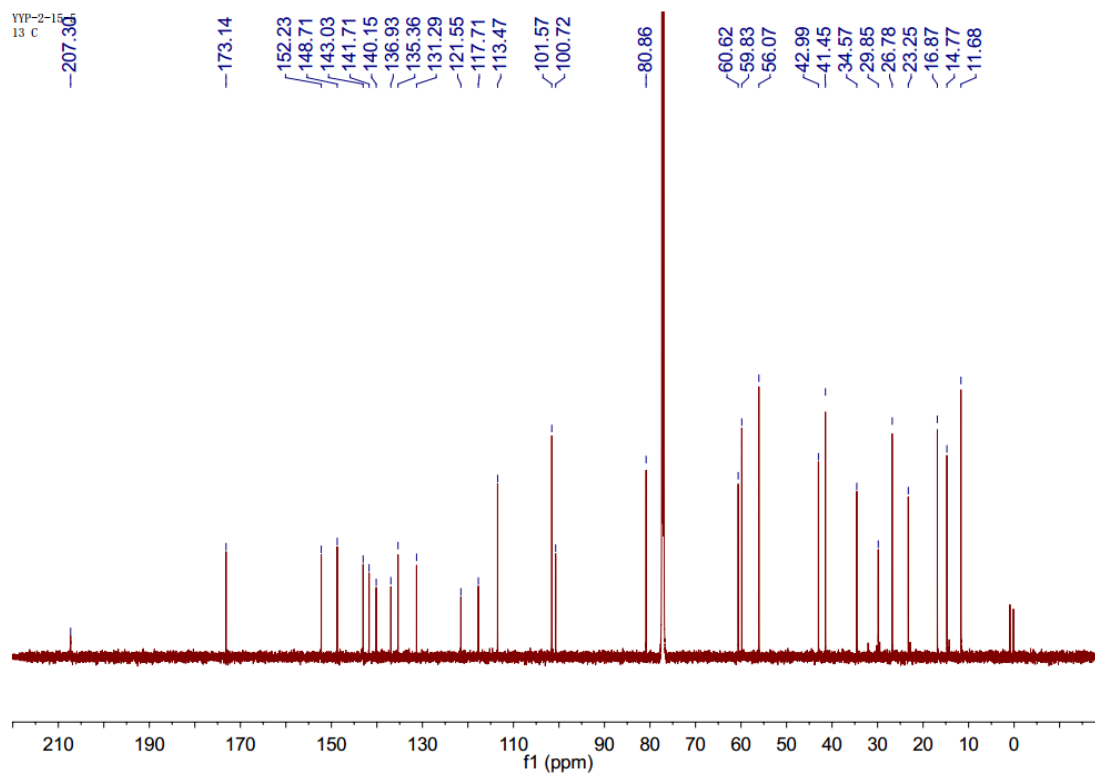


Figure S10. ^1H - ^1H COSY NMR (600 MHz, CDCl_3) spectrum of heilaohulignan B (2)

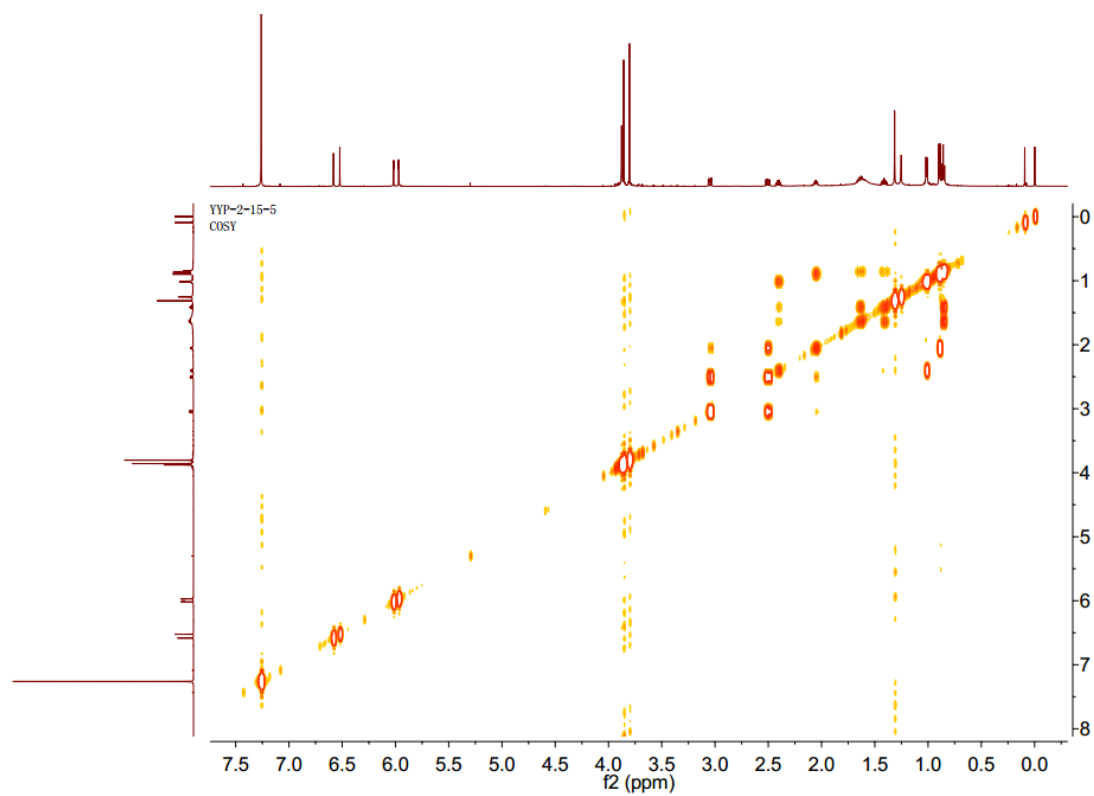


Figure S11. HSQC NMR (600 MHz, CDCl_3) spectrum of heilaohulignan B (2)

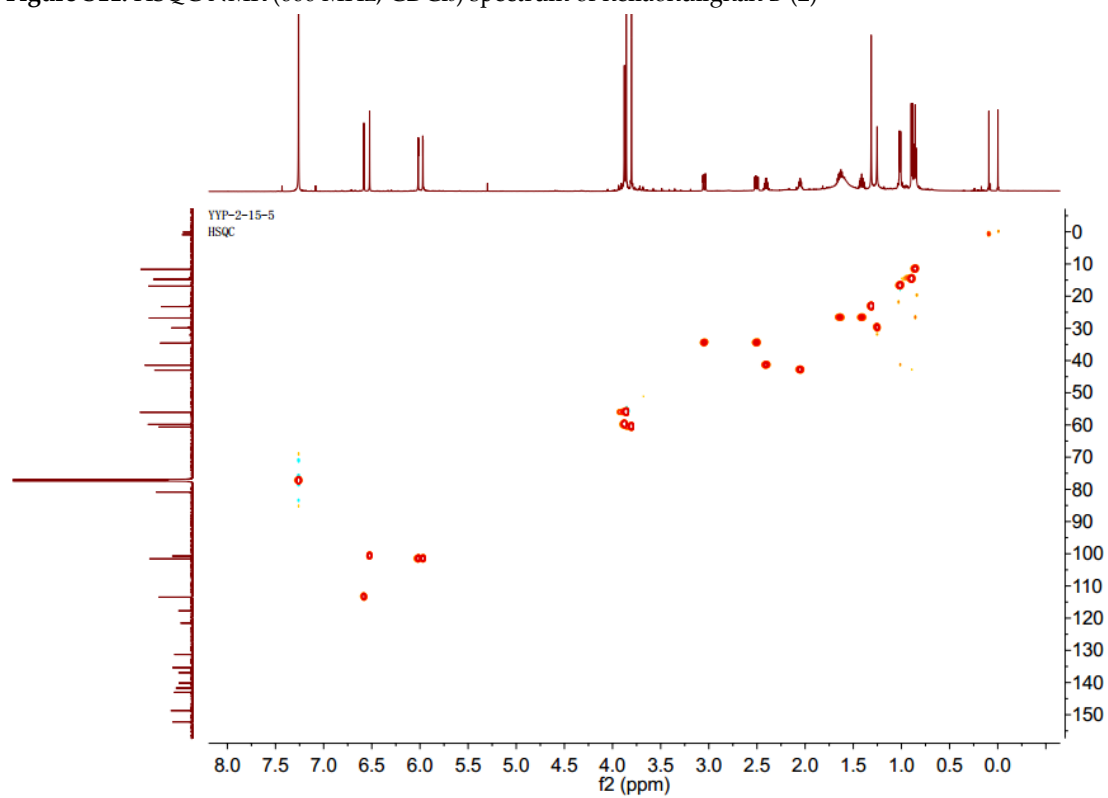


Figure S12. HMBC NMR (600 MHz, CDCl_3) spectrum of heilaohulignan B (2)

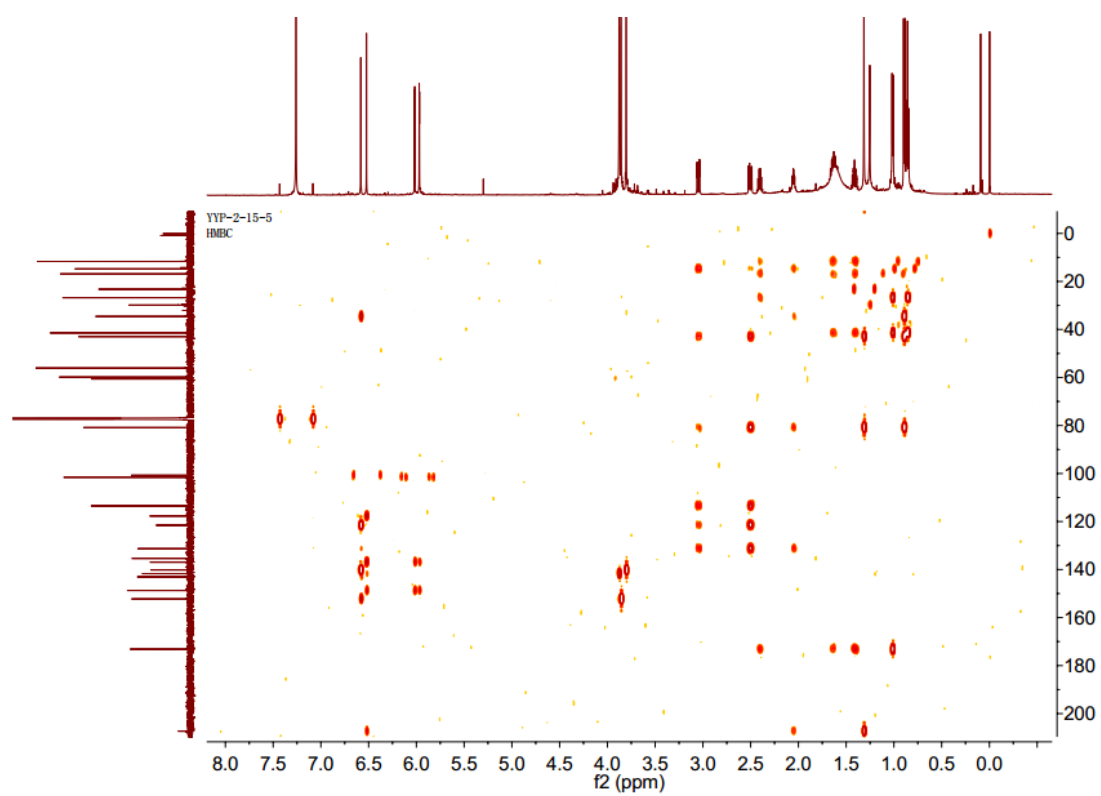


Figure S13. ROESY NMR (600 MHz, CDCl_3) spectrum of heilaohulignan B (2)

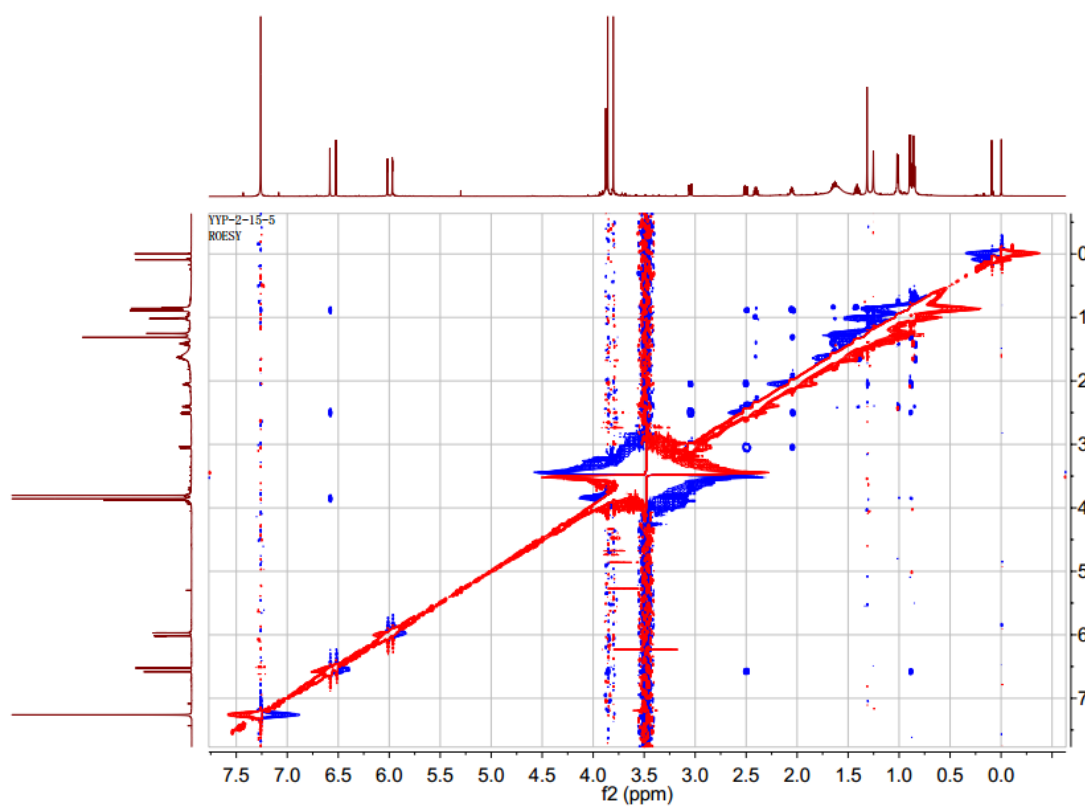


Figure S14. ^1H NMR (600 MHz, CDCl_3) spectrum of heilaohulignan C (3)

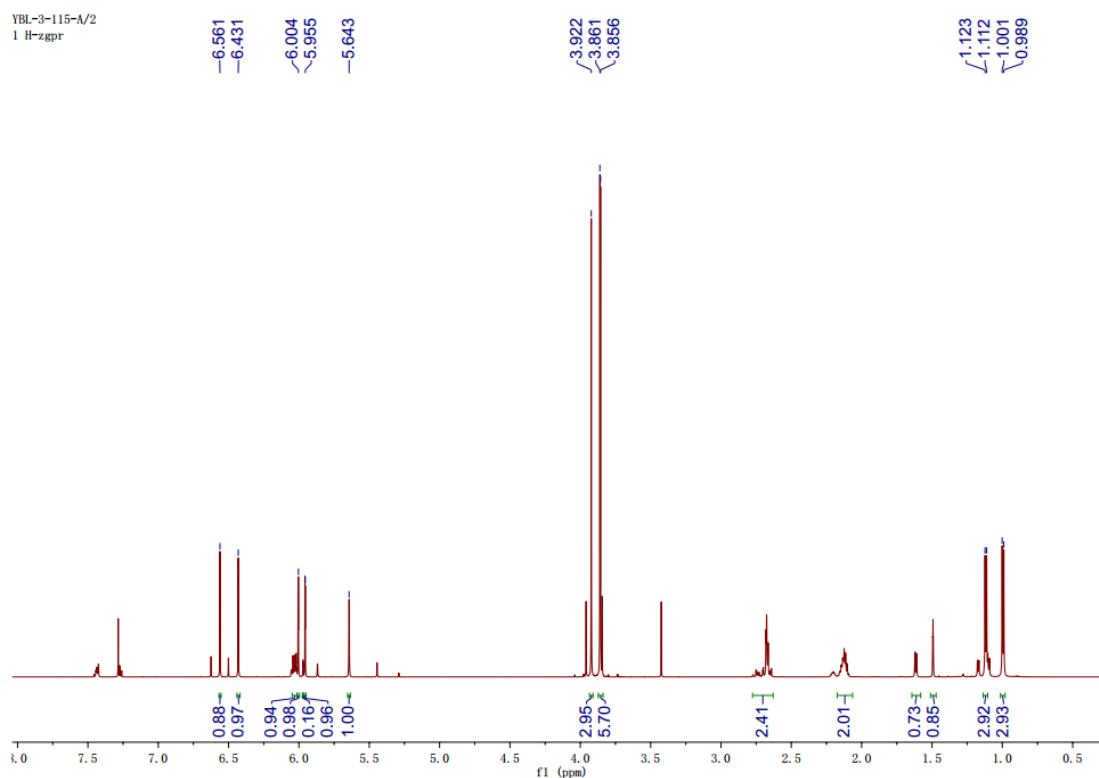


Figure S15. ^{13}C NMR (150 MHz, CDCl_3) spectrum of heilaohulignan C (**3**)

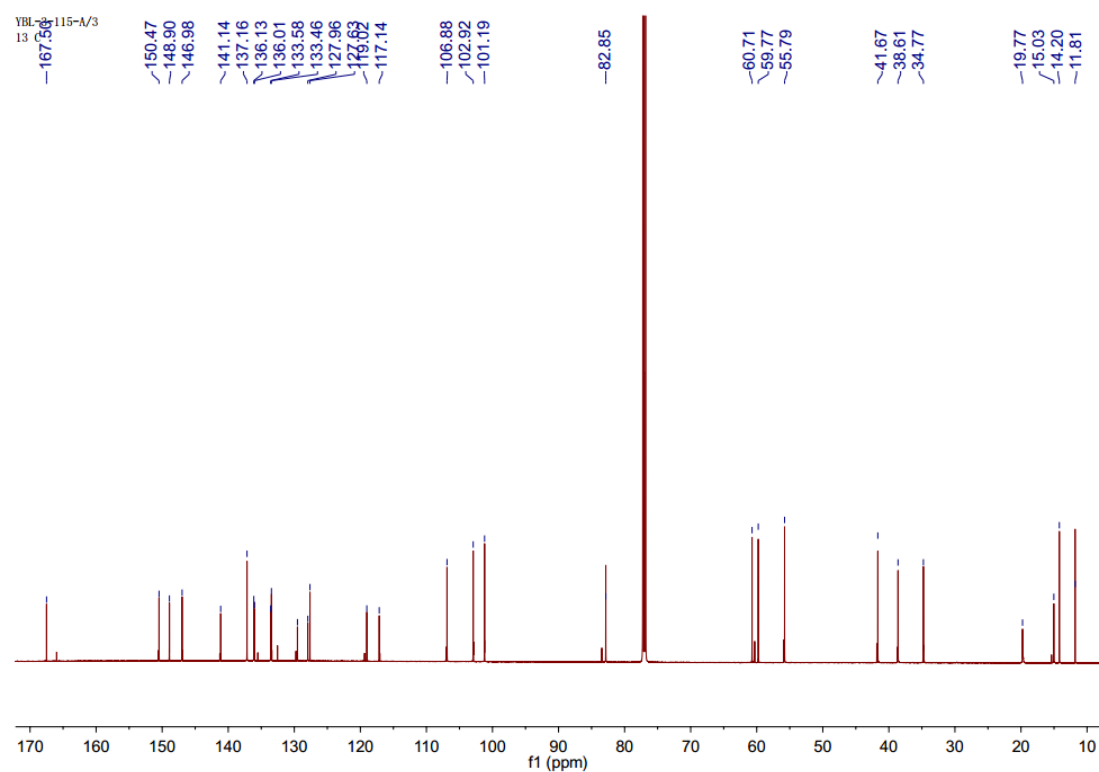


Figure S16. ^1H - ^1H COSY NMR (600 MHz, CDCl_3) spectrum of heilaohulignan C (**3**)

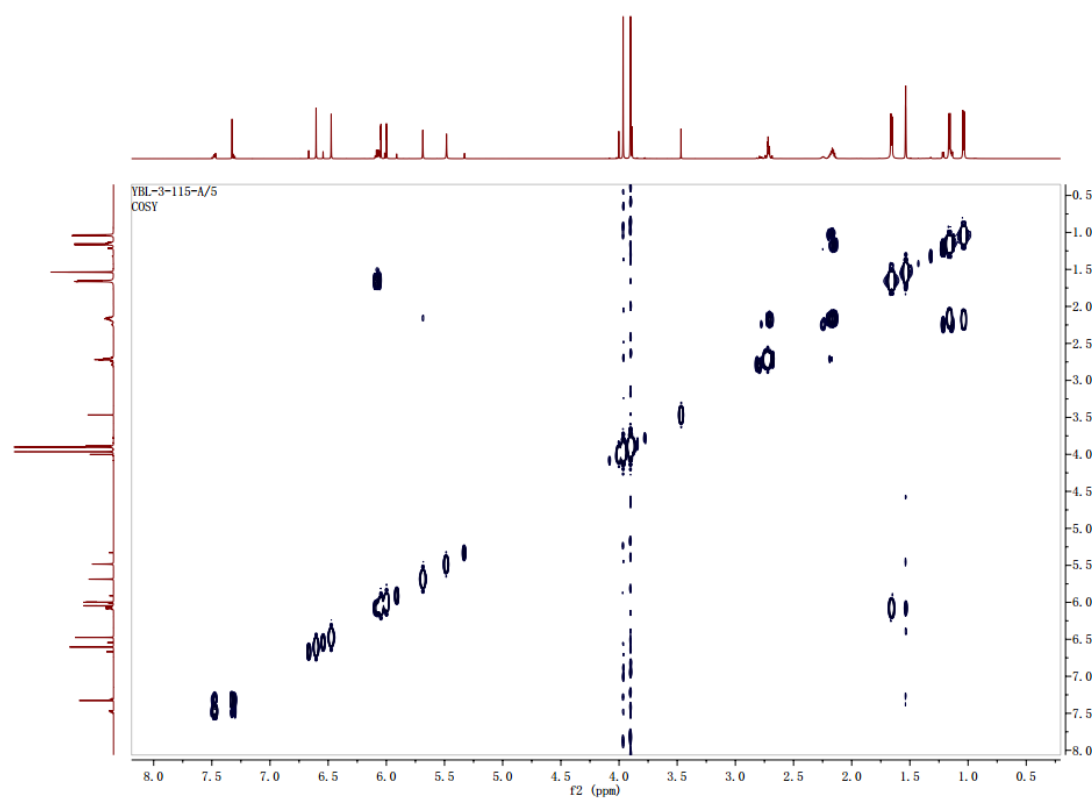


Figure S17. HSQC NMR (600 MHz, CDCl₃) spectrum of heilaohulignan C (3)

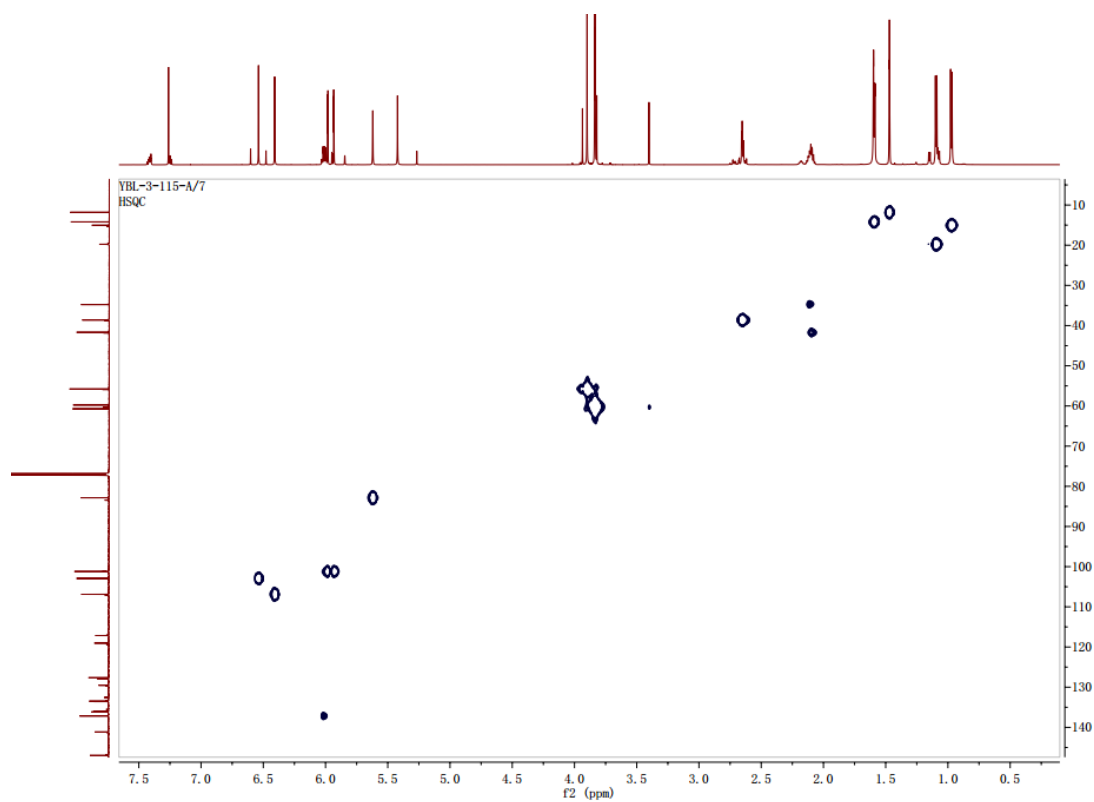


Figure S18. HMBC NMR (600 MHz, CDCl₃) spectrum of heilaohulignan C (3)

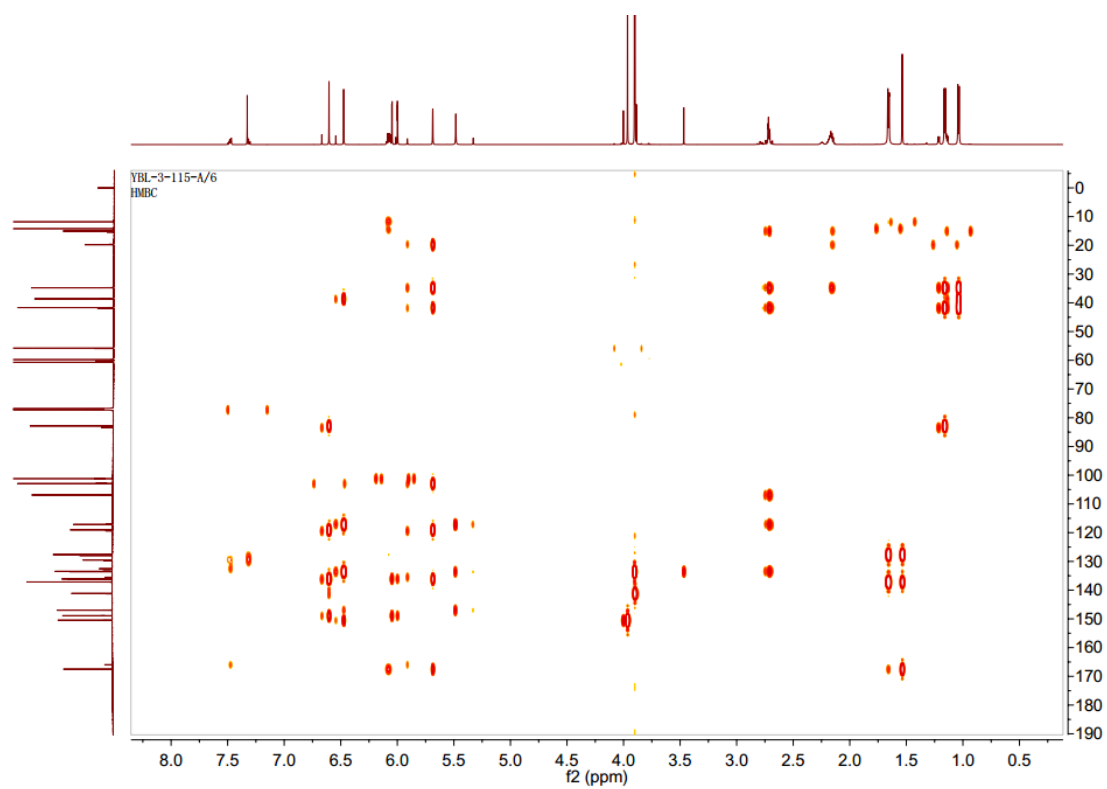


Figure S19. ROESY NMR (600 MHz, CDCl₃) spectrum of heilaohulignan C (**3**)

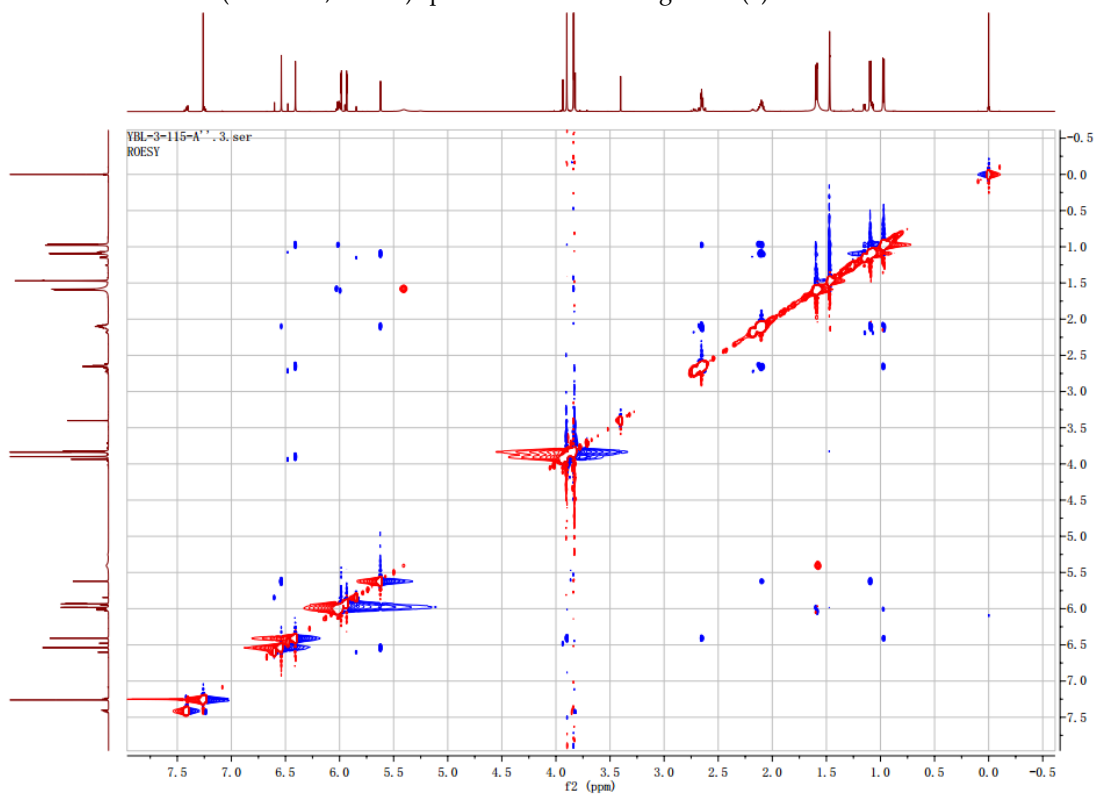


Figure S20. ^1H NMR (600 MHz, CDCl_3) spectrum of schizandrin (**4**)

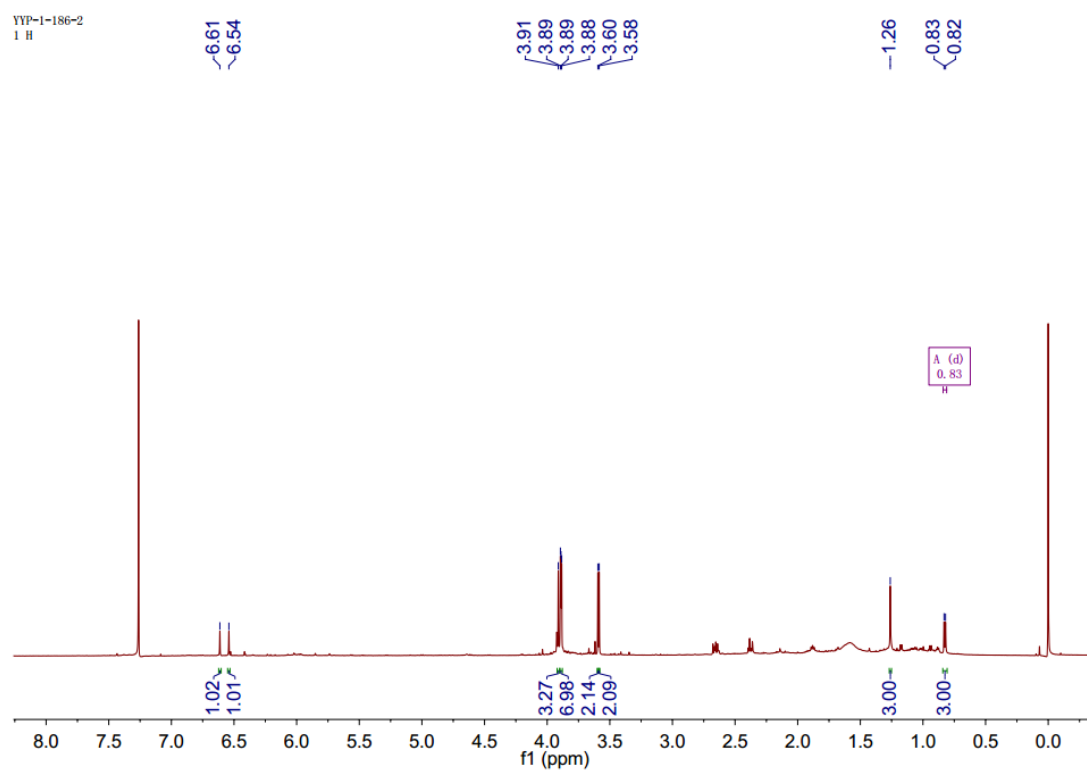


Figure S21. ^{13}C NMR (150 MHz, CDCl_3) spectrum of schizandrin (**4**)

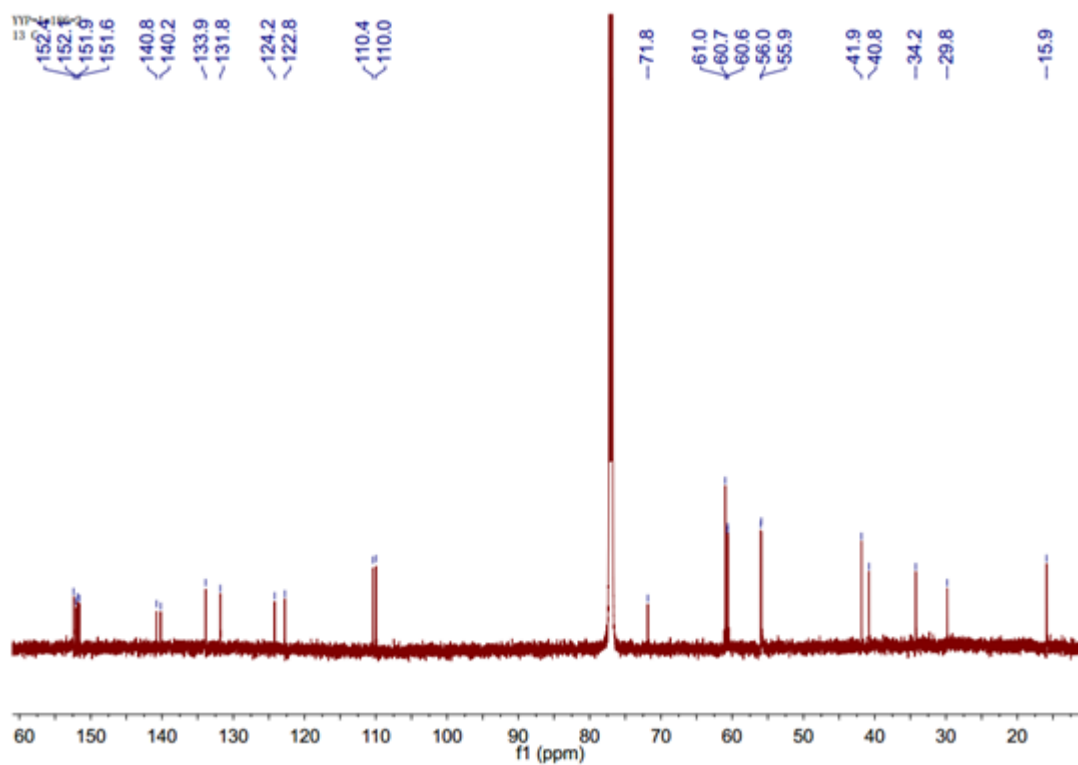


Figure S22. ^1H NMR (600 MHz, CDCl_3) spectrum of binankadsurin A (**5**)

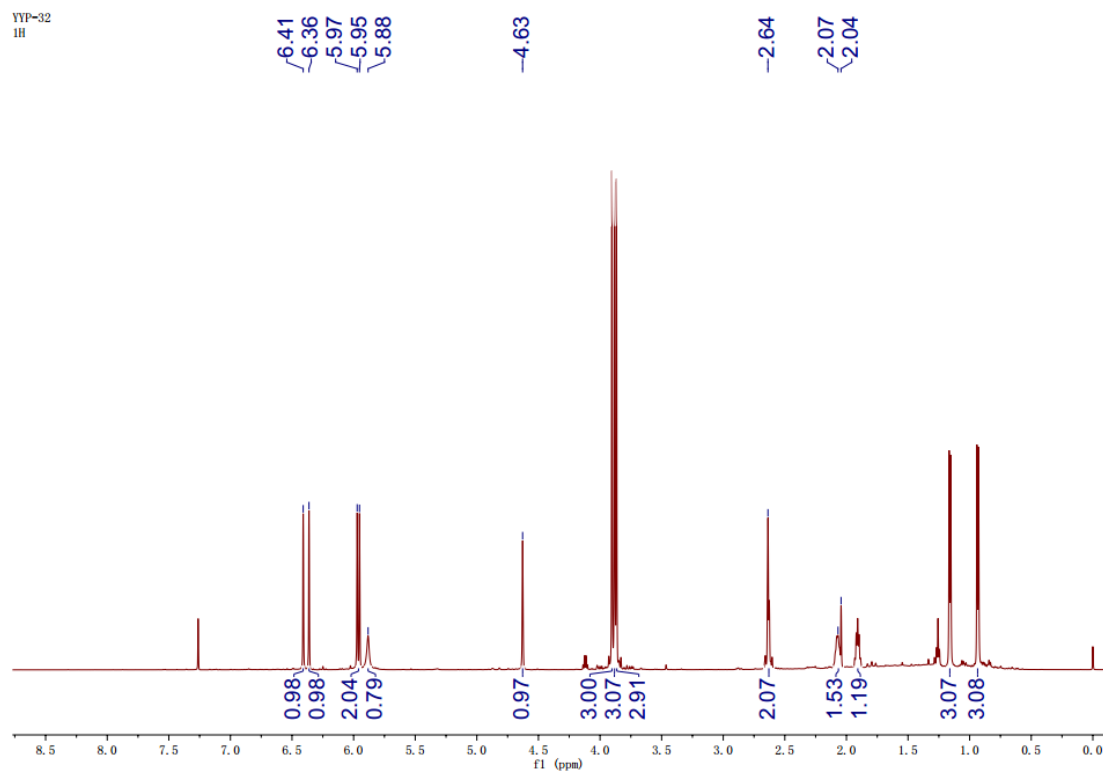


Figure S23. ^{13}C NMR (150 MHz, CDCl_3) spectrum of binankadsurin A (5)

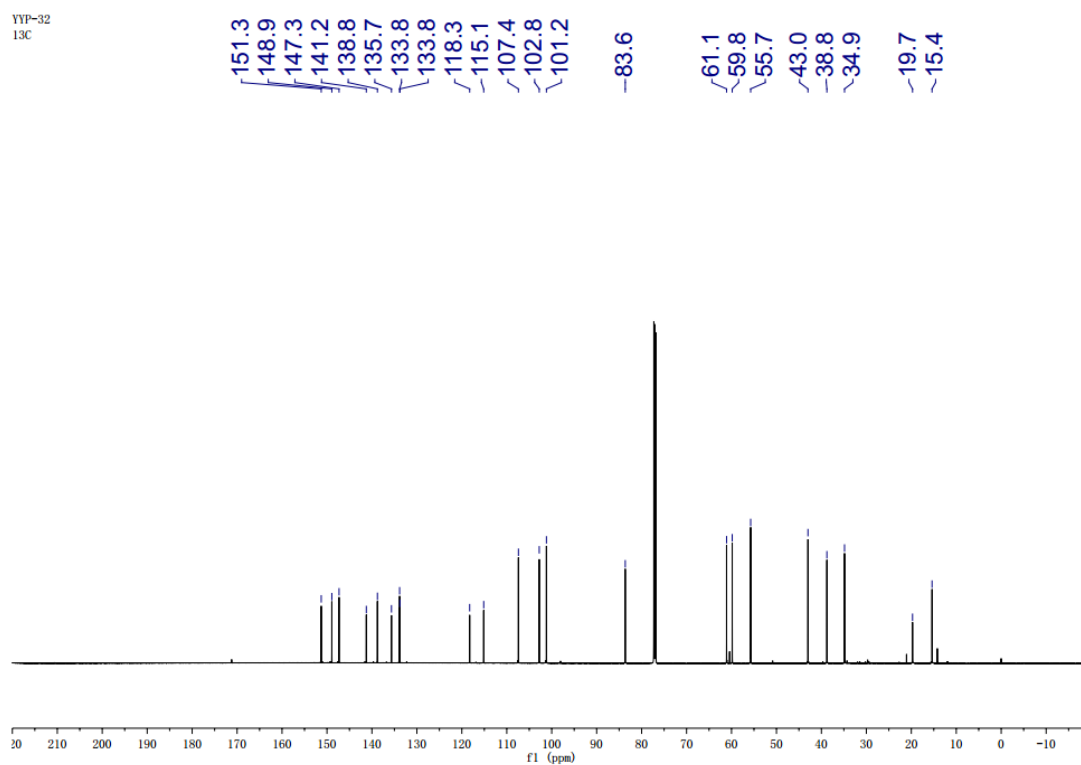


Figure S24. ^1H NMR (600 MHz, CDCl_3) spectrum of acetylbinankadsurin A (6)

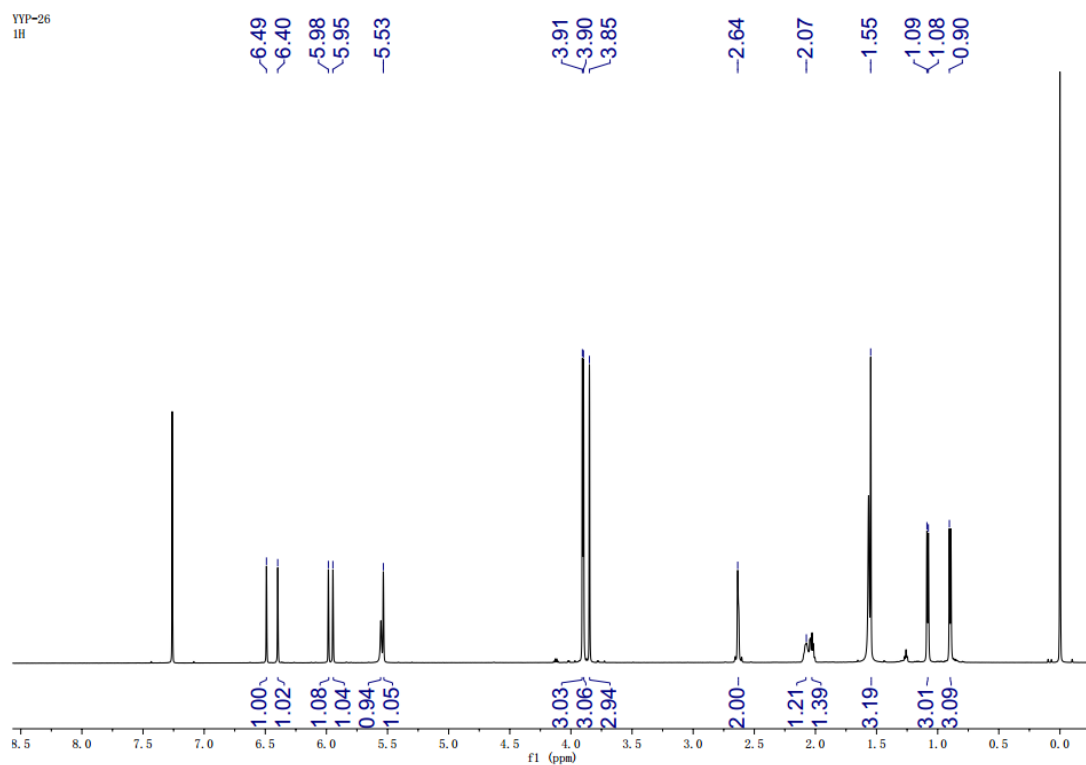


Figure S25. ^{13}C NMR (150 MHz, CDCl_3) spectrum of acetylbinankadsurin A (6)

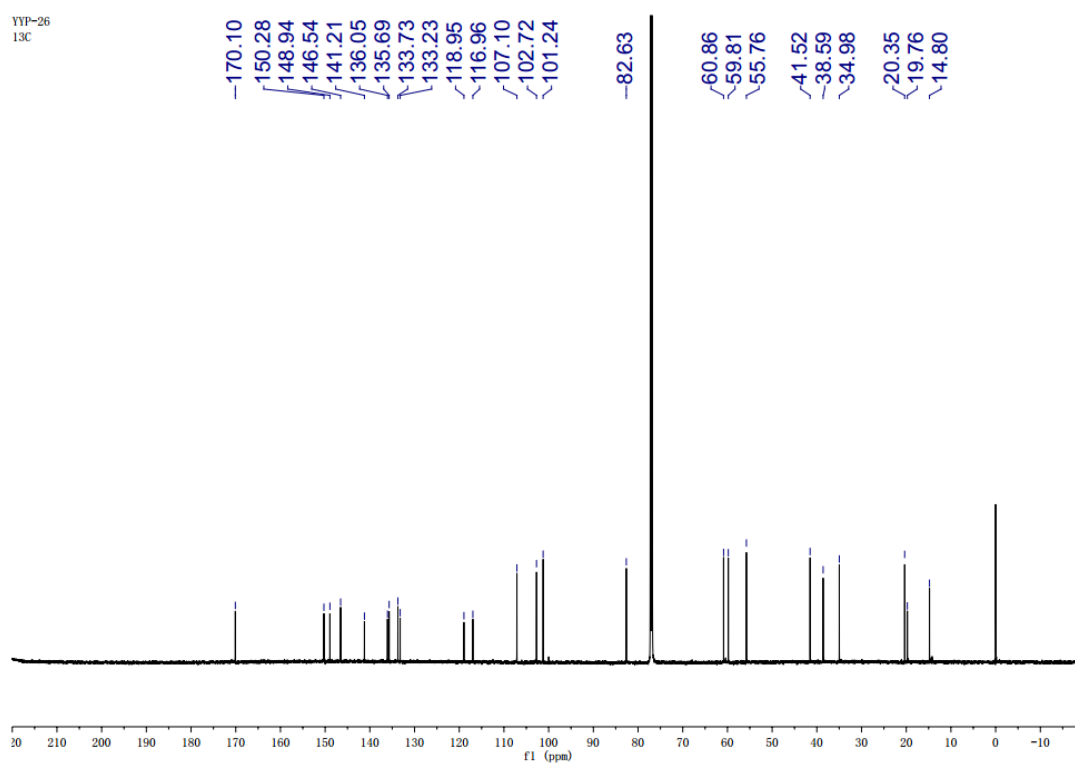


Figure S26. ^1H NMR (600 MHz, MeOD) spectrum of isobutyroylbinankadsurin A (7)

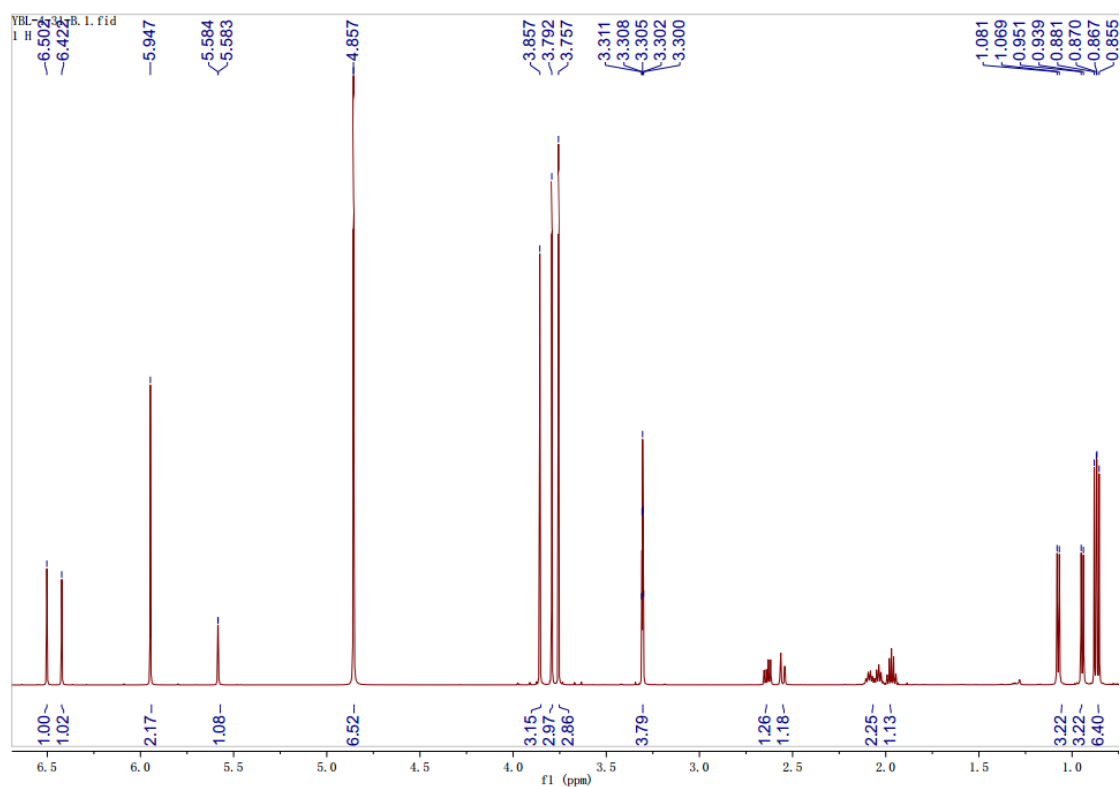


Figure S27. ¹³C NMR (150 MHz, MeOD) spectrum of isobutyroylbinankadsurin A (7)

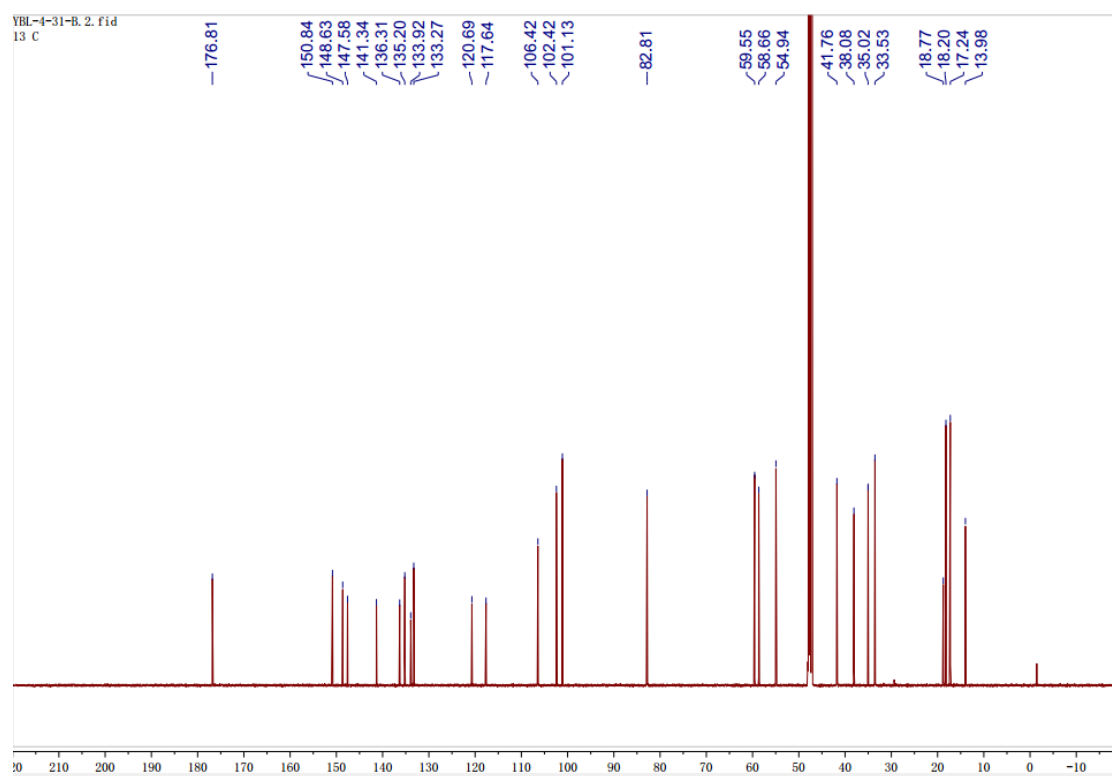


Figure S28. ¹H NMR (600 MHz, CDCl₃) spectrum of isovaleroylbinankadsurin A (8)

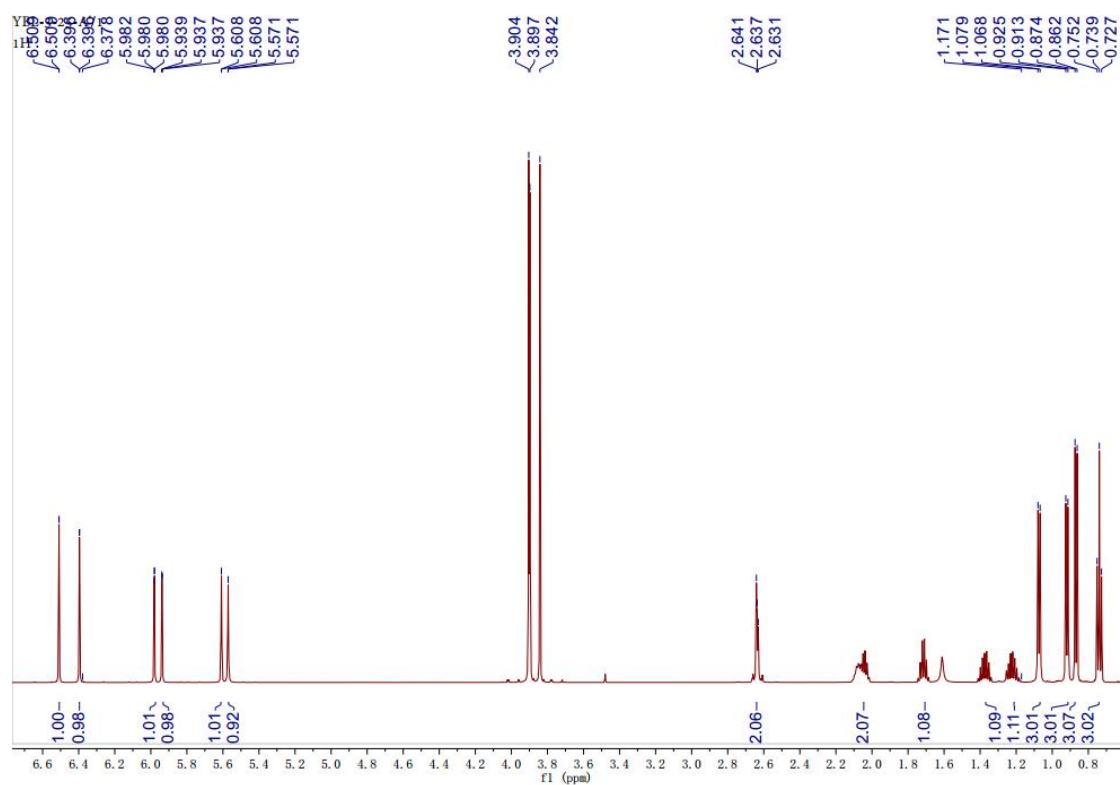


Figure S29. ¹³C NMR (150 MHz, CDCl₃) spectrum of isovaleroylbinankadsurin A (8)

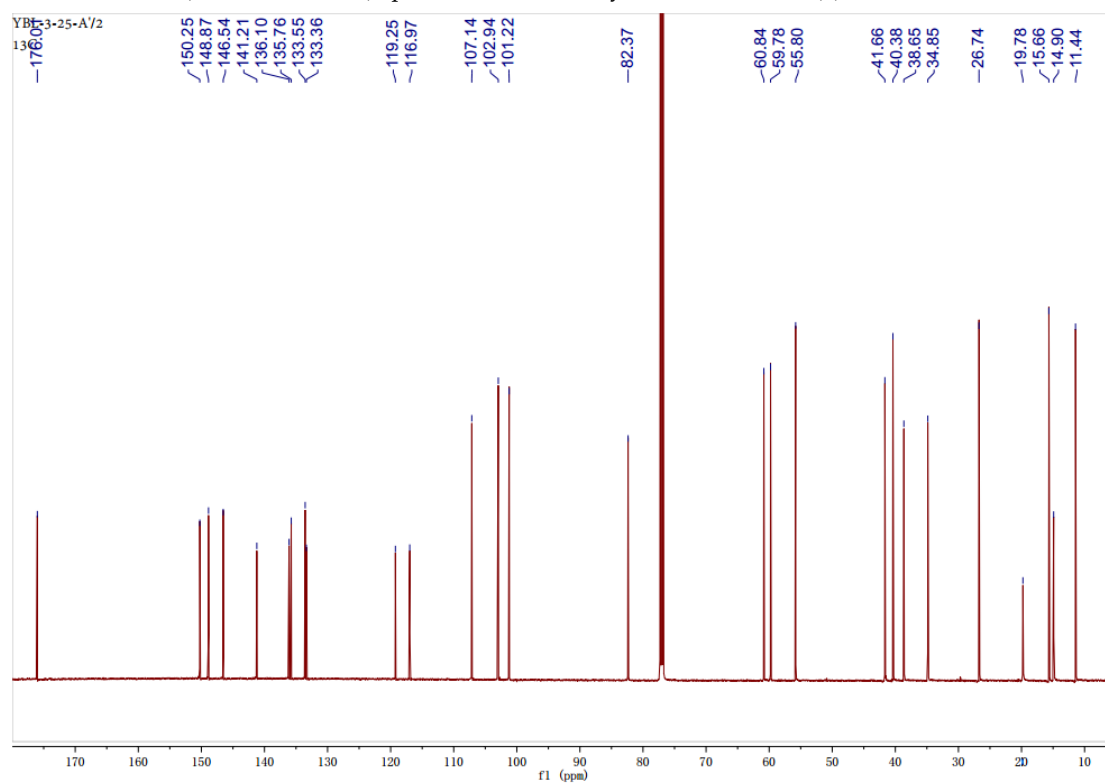


Figure S30. ¹³C NMR (150 MHz, CDCl₃) spectrum of kadsuralignan I (9)

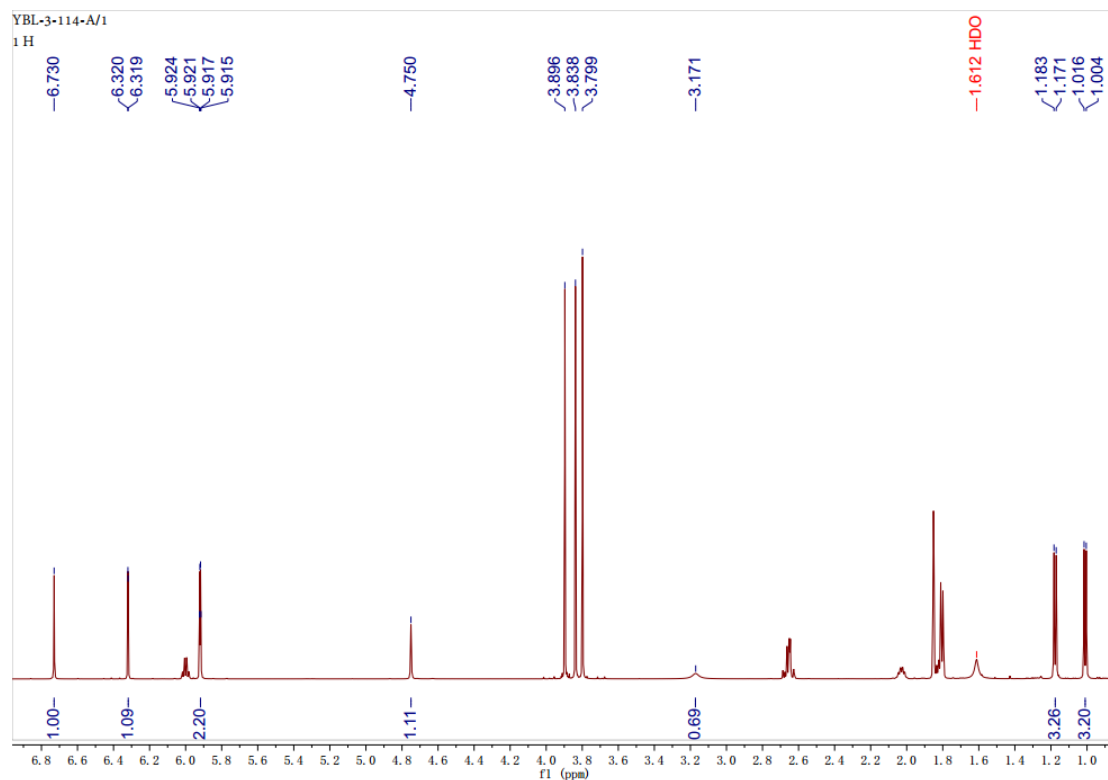


Figure S31. ¹³C NMR (150 MHz, CDCl₃) spectrum of kadsuralignan I (9)

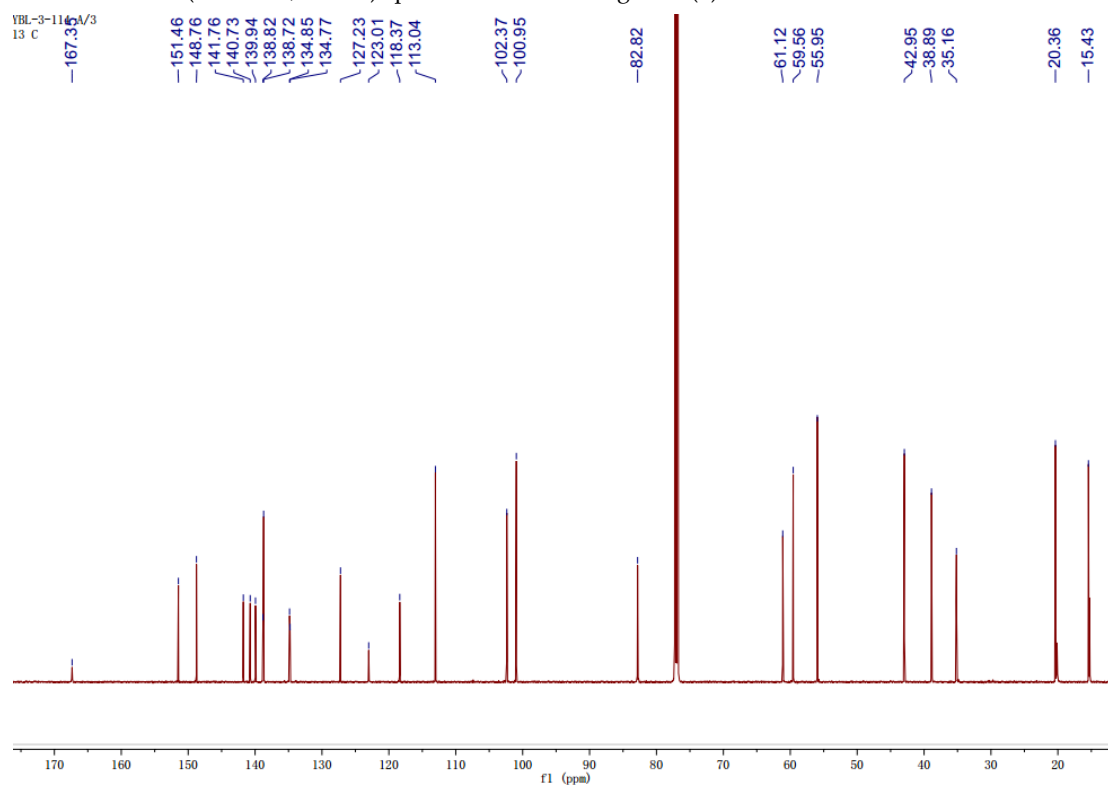


Figure S32. ¹H NMR (600 MHz, CDCl₃) spectrum of kadsuralignan J (10)

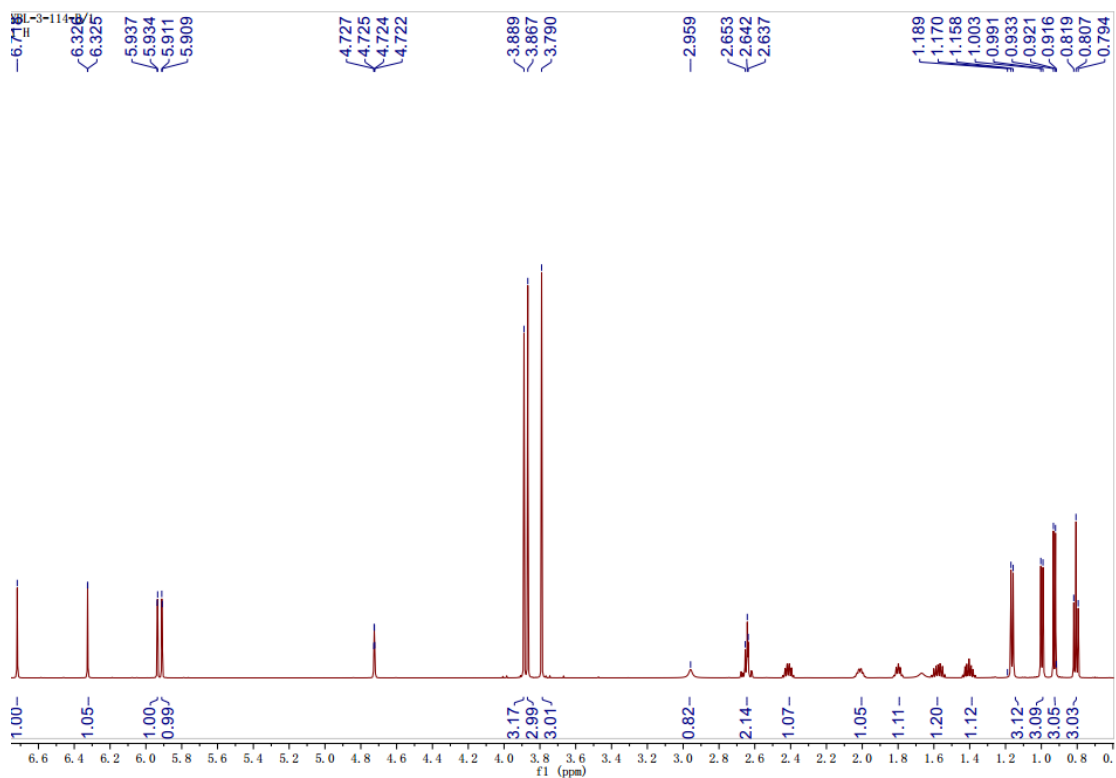


Figure S33. ¹³C NMR (150 MHz, CDCl₃) spectrum of kadsuralignan J (10)

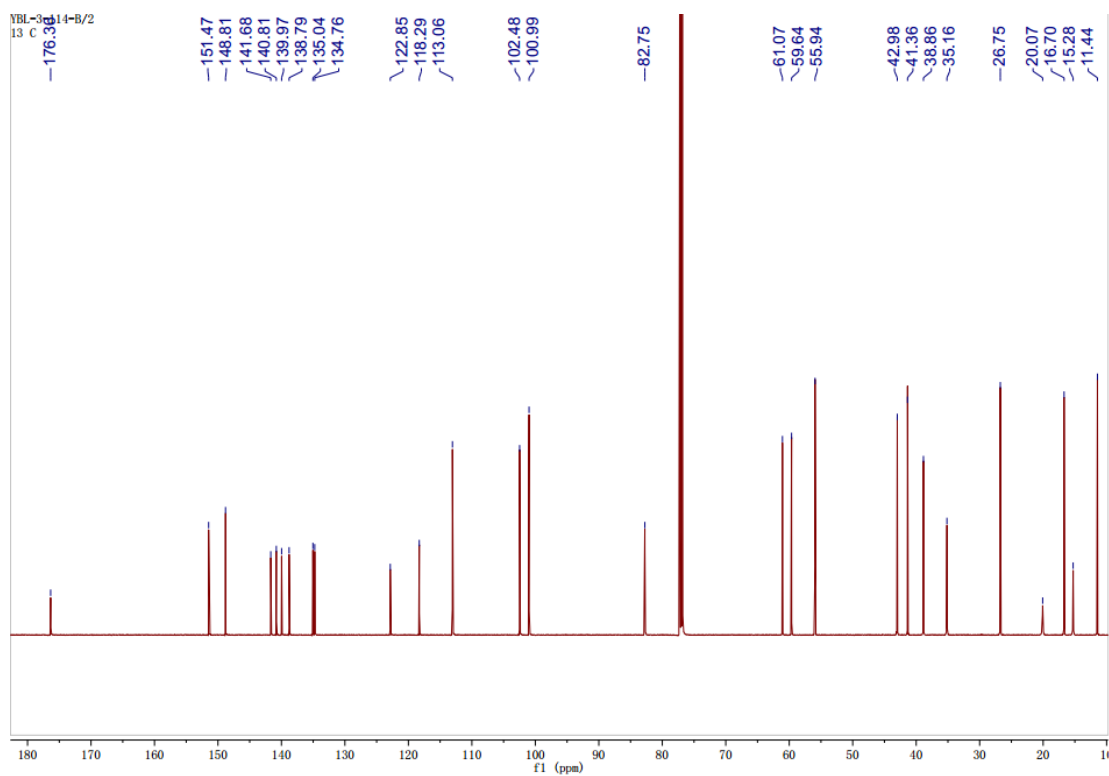


Figure S34. ¹³C NMR (150 MHz, CDCl₃) spectrum of kadsuralignan L (11)

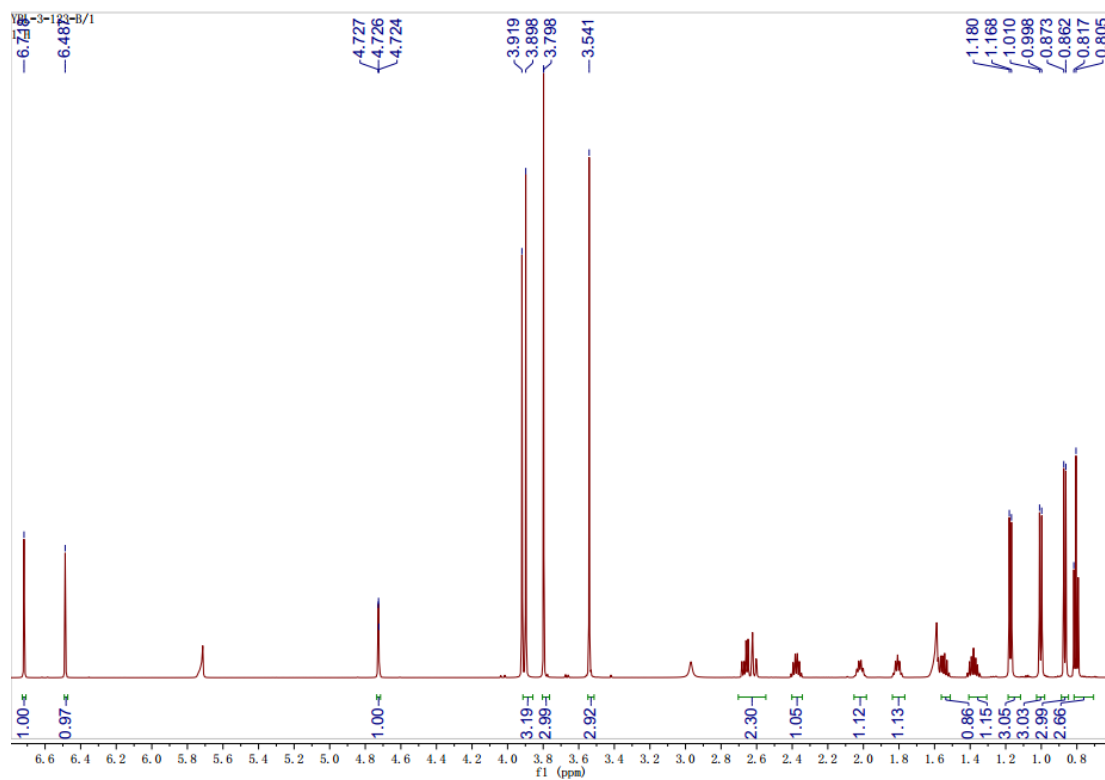


Figure S35. ¹³C NMR (150 MHz, CDCl₃) spectrum of kadsuralignan L (11)

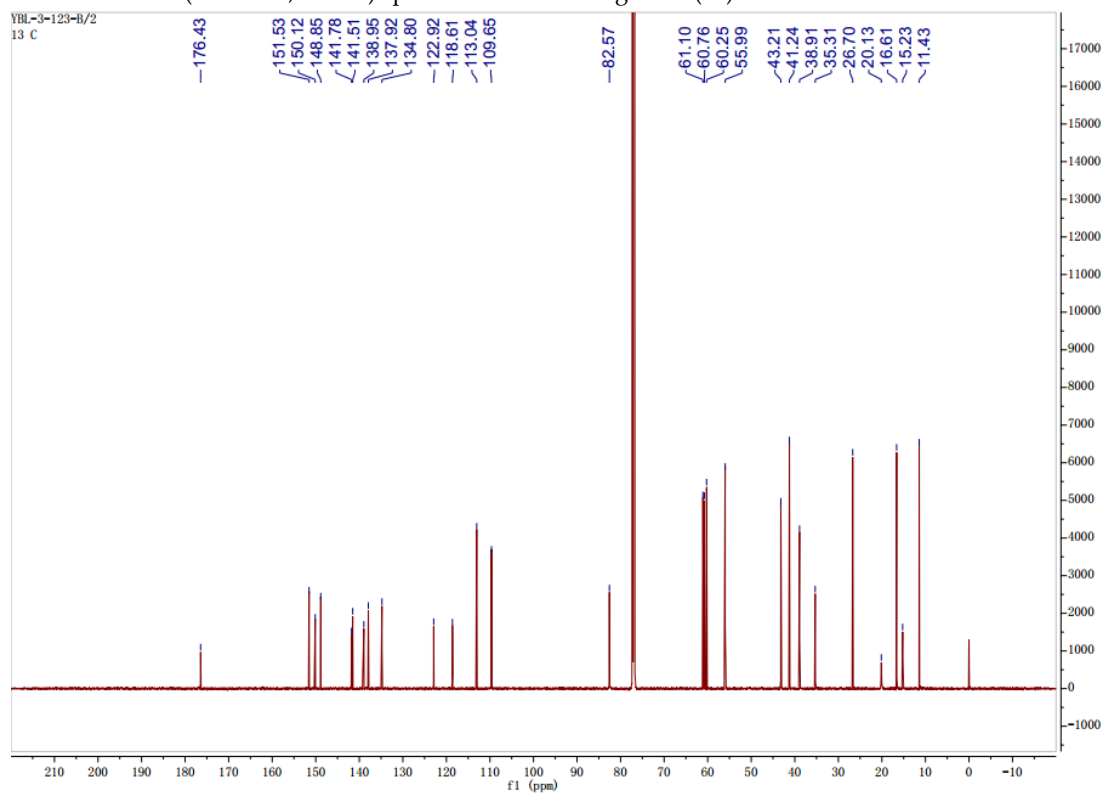


Figure S36. ¹H NMR (600 MHz, CDCl₃) spectrum of kadsulignan N (12)

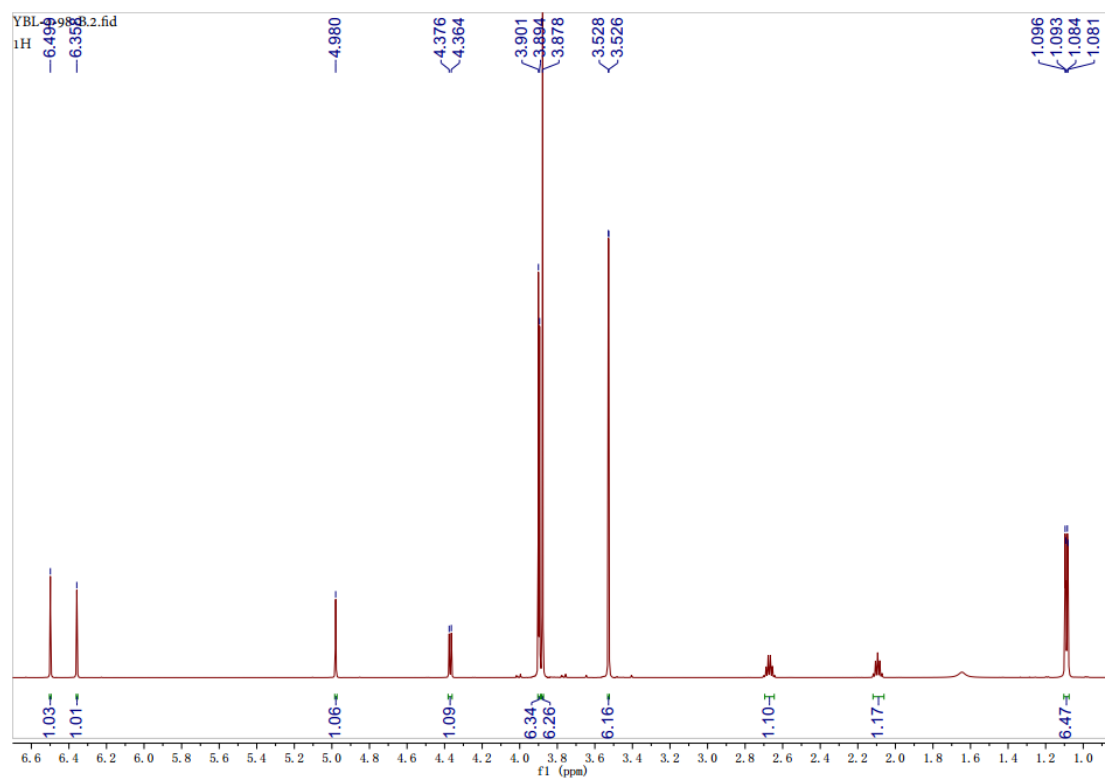


Figure S37. ¹³C NMR (150 MHz, CDCl₃) spectrum of kadsulignan N (12)

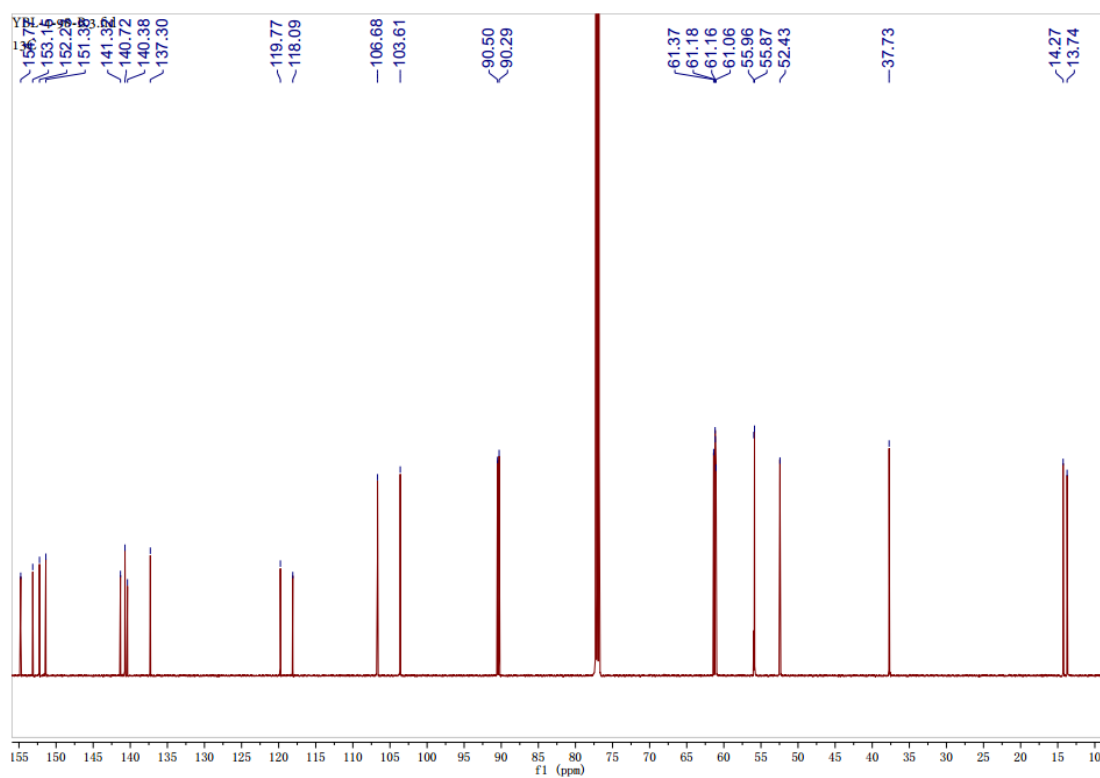


Figure S38. ¹H NMR (600 MHz, CDCl₃) spectrum of longipedunin B (13)

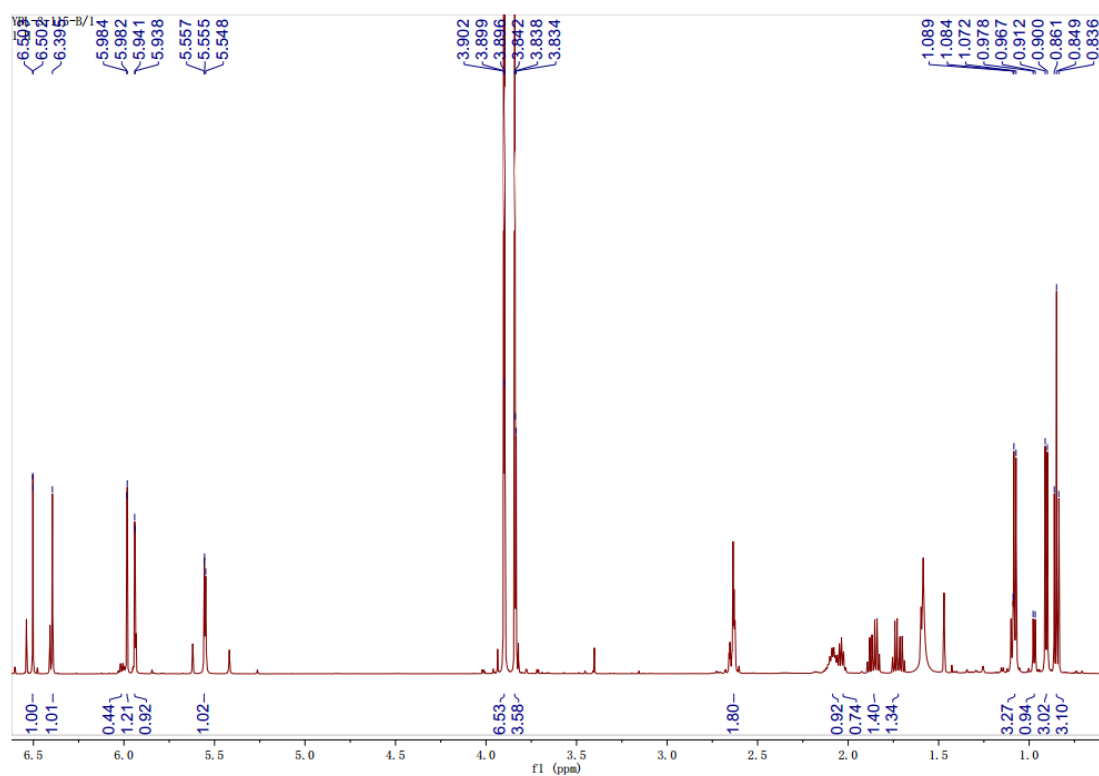


Figure S39. ¹³C NMR (150 MHz, CDCl₃) spectrum of longipedunin B (13)

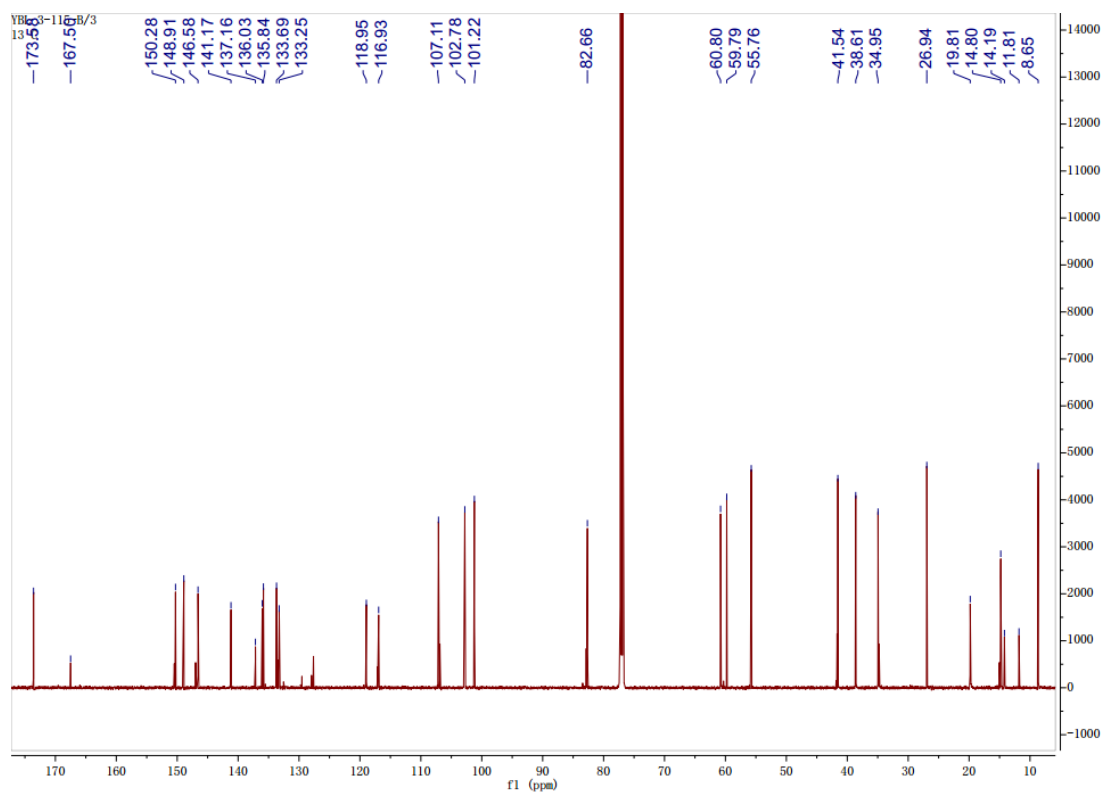


Figure S40. ¹H NMR (600 MHz, CDCl₃) spectrum of schisantherin F (14)

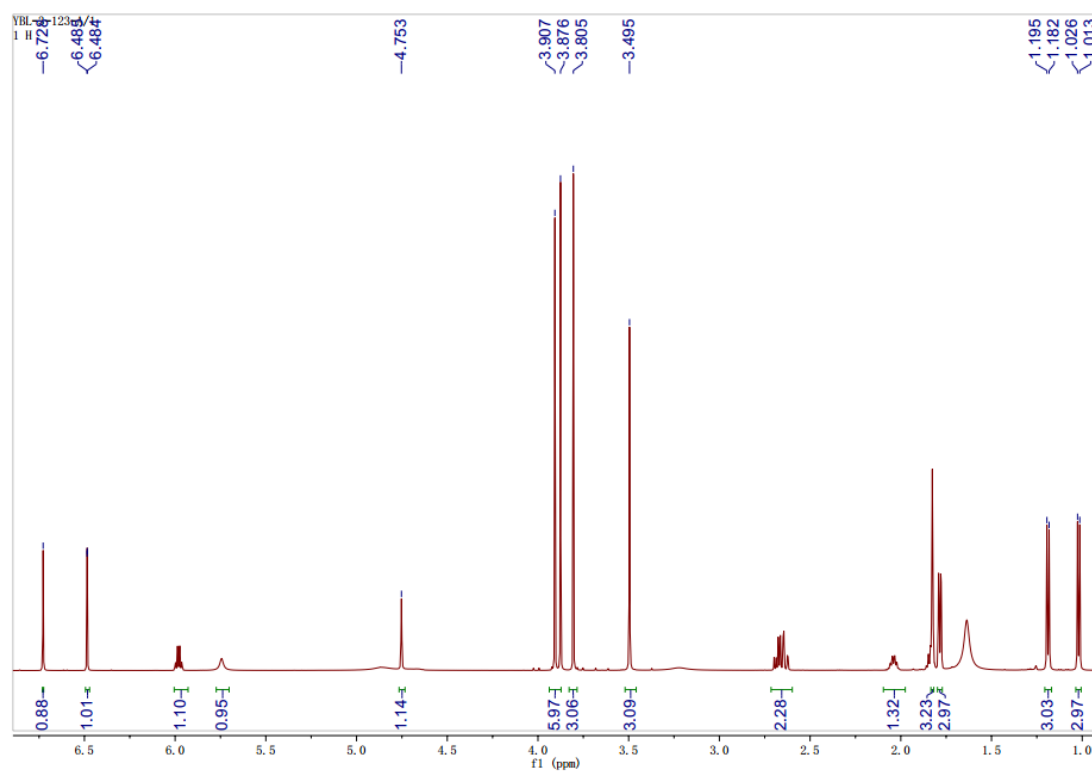


Figure S41. ¹³C NMR (150 MHz, CDCl₃) spectrum of schisantherin F (**14**)

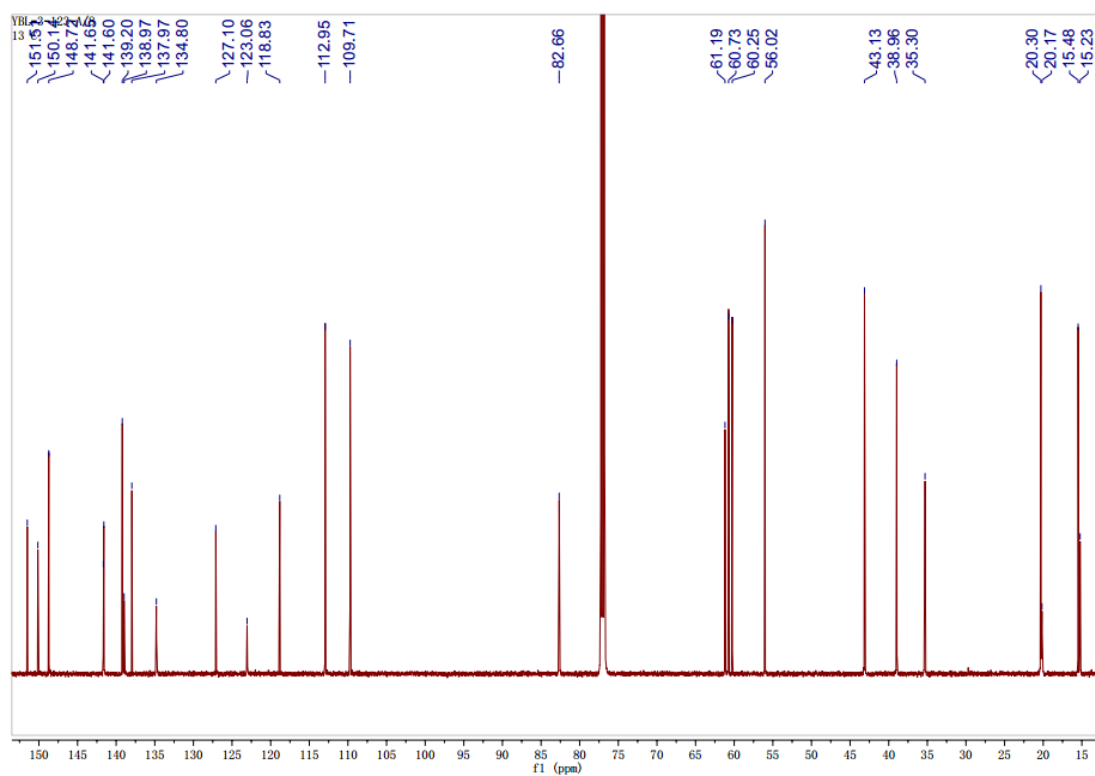


Figure S42. ¹H NMR (600 MHz, MeOD) spectrum of schizanrin D (**15**)

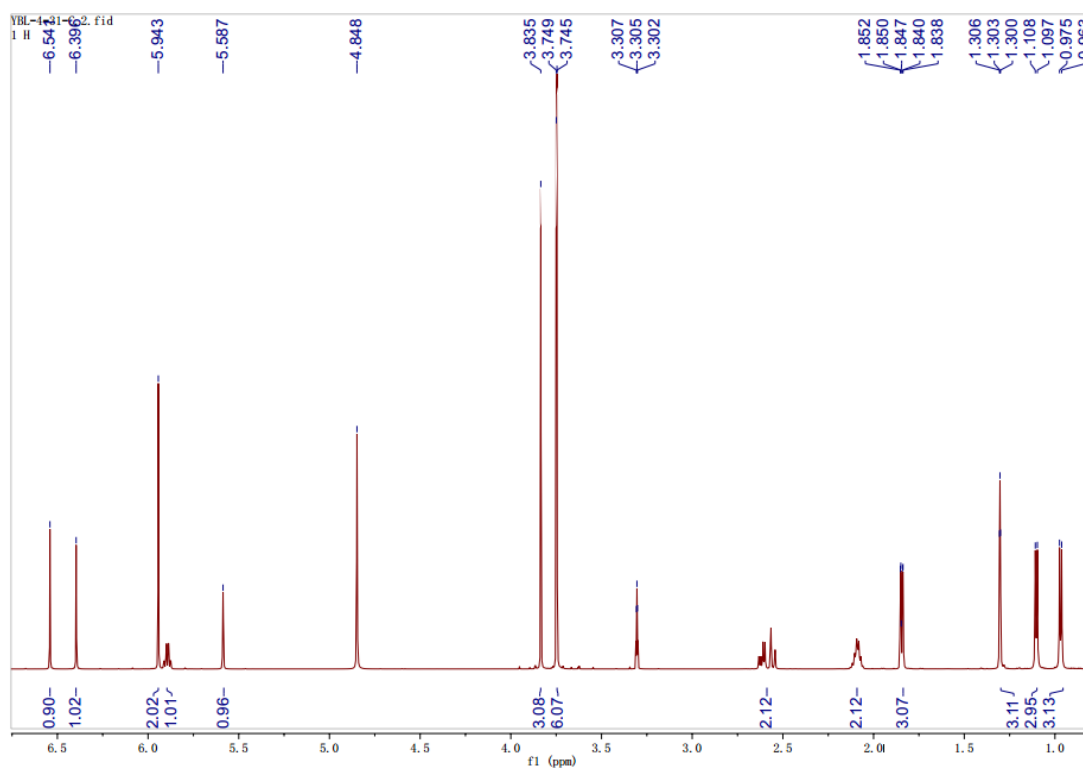


Figure S43. ^{13}C NMR (150 MHz, MeOD) spectrum of schizanrin D (15)

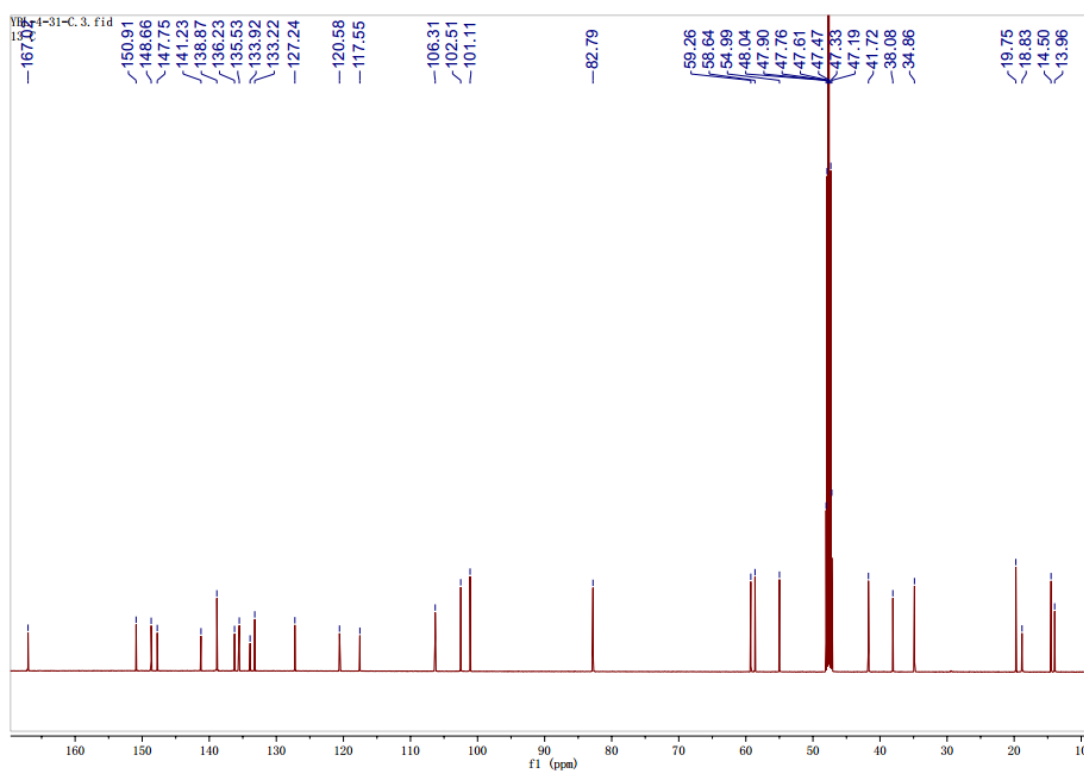


Figure S44. ^1H NMR (600 MHz, MeOD) spectrum of acetylgomisin R (16)

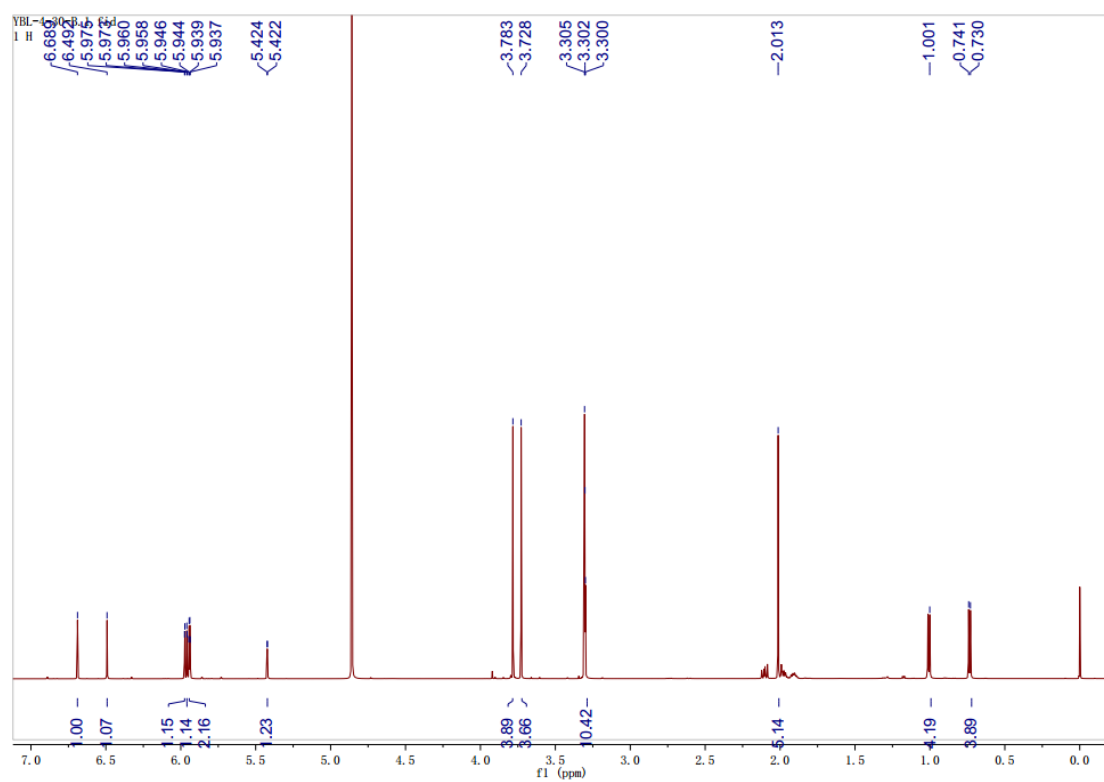


Figure S45. ¹³C NMR (150 MHz, MeOD) spectrum of acetylgomisin R (**16**)

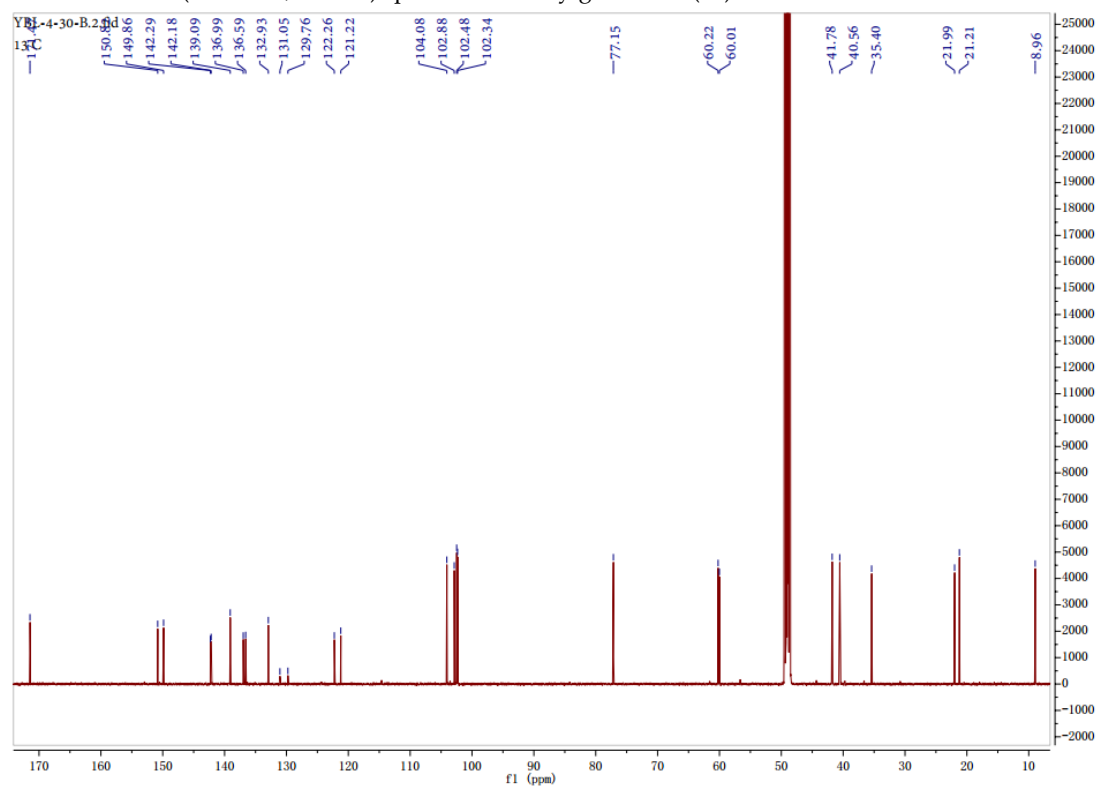


Figure S46. ¹H NMR (600 MHz, CDCl₃) spectrum of intermedin A (**17**)

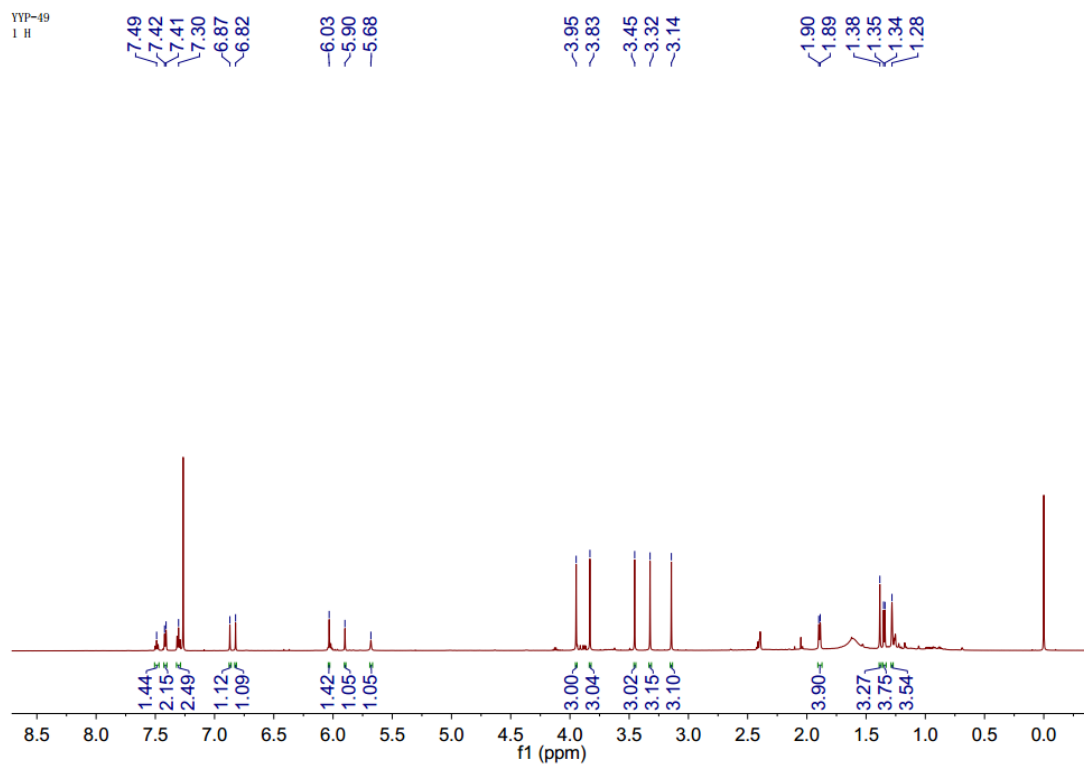


Figure S47. ^{13}C NMR (150 MHz, CDCl_3) spectrum of intermedin A (17)

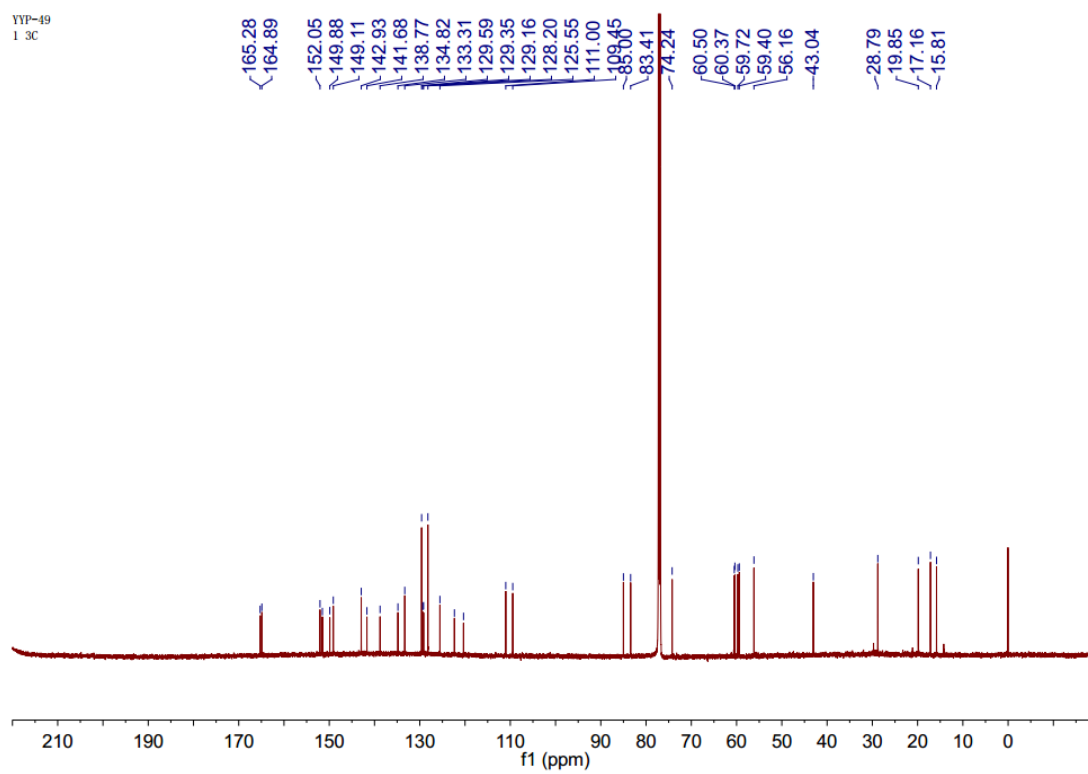


Figure S48. ^1H NMR (600 MHz, CDCl_3) spectrum of kadsurarin (18)

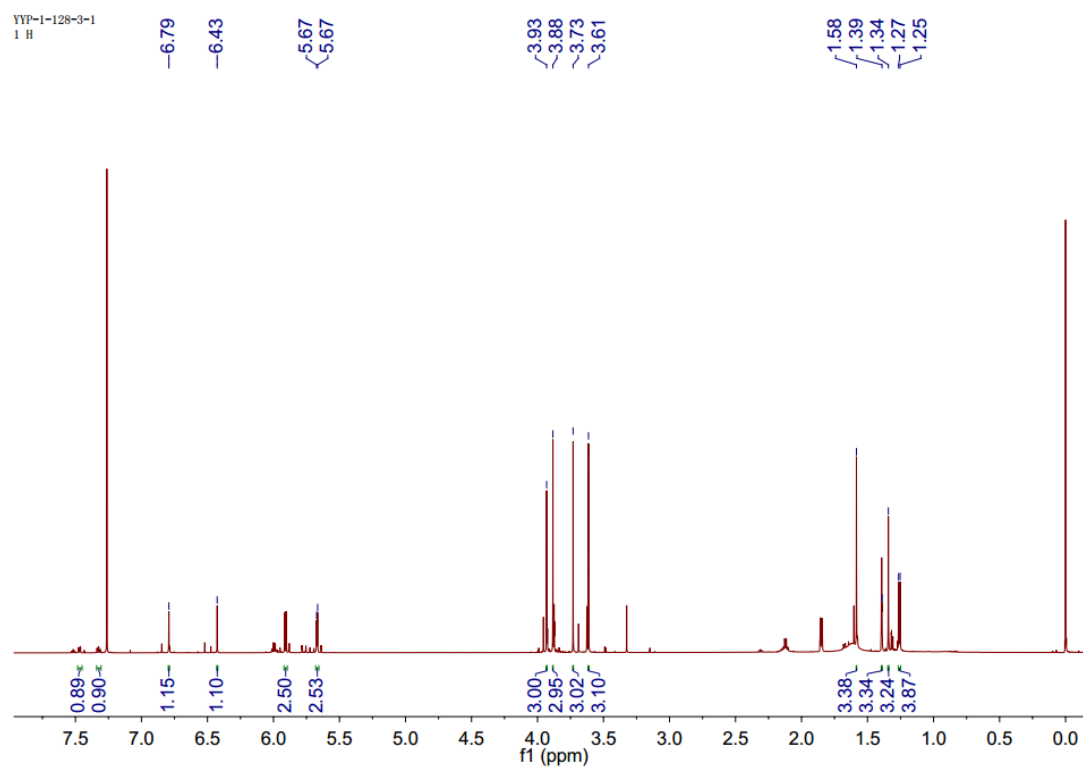


Figure S49. ^{13}C NMR (150 MHz, CDCl_3) spectrum of kadsurarin (**18**)

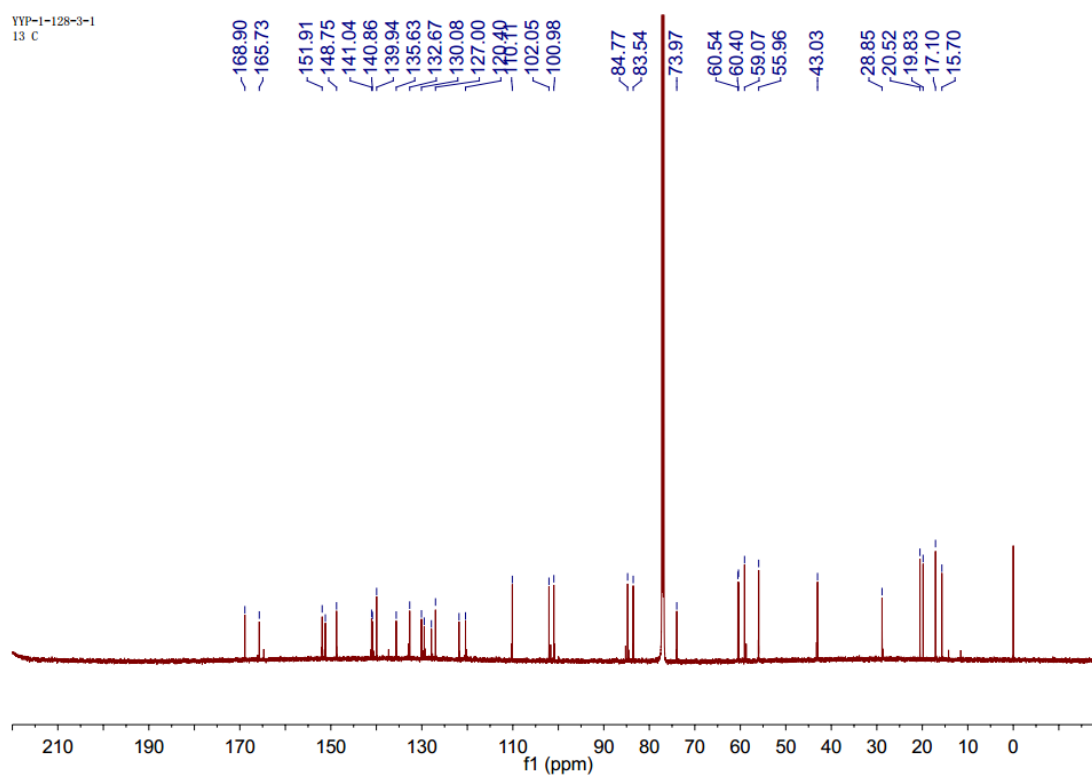


Figure S50. ^1H NMR (600 MHz, CDCl_3) spectrum of kadsutherin A (**19**)

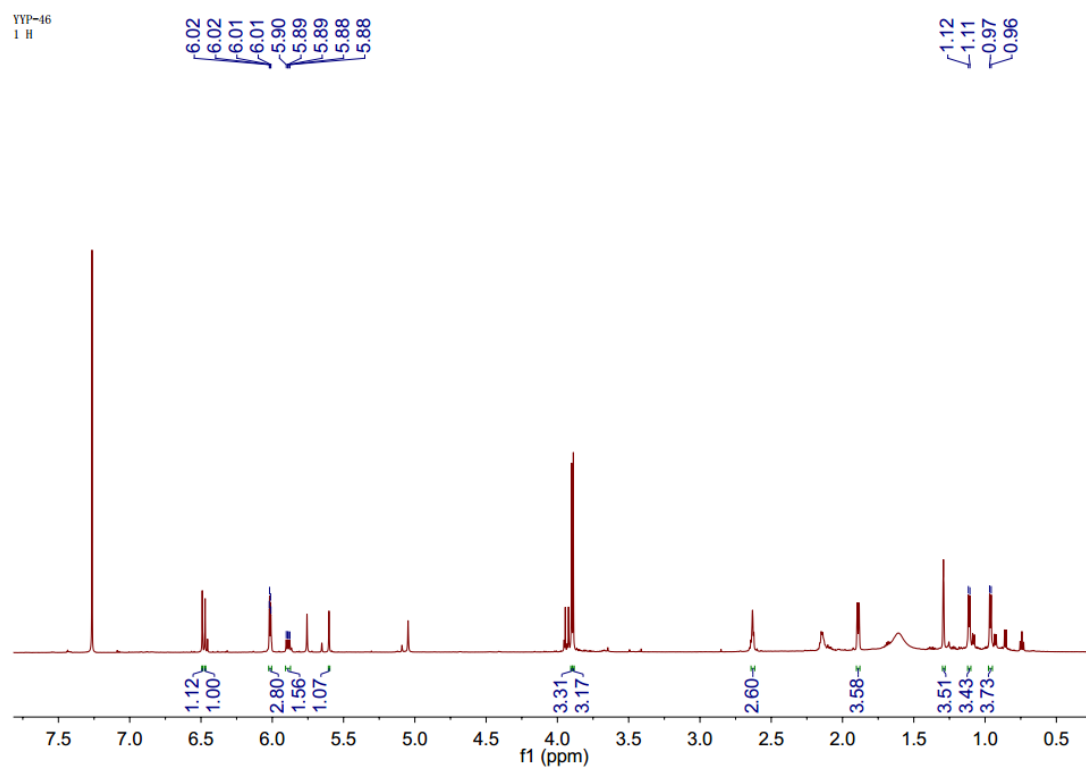


Figure S51. ^{13}C NMR (150 MHz, CDCl_3) spectrum of kadsutherin A (**19**)

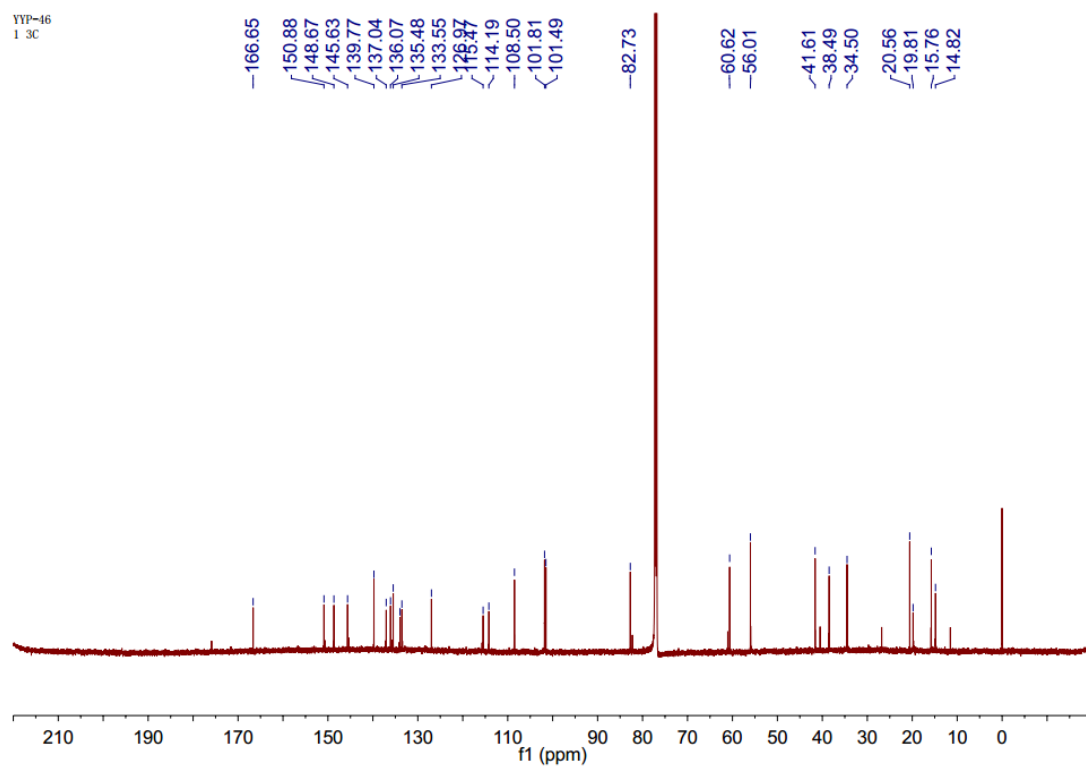


Figure S52. ^1H NMR (600 MHz, CDCl_3) spectrum of kadsuphilol A (**20**)

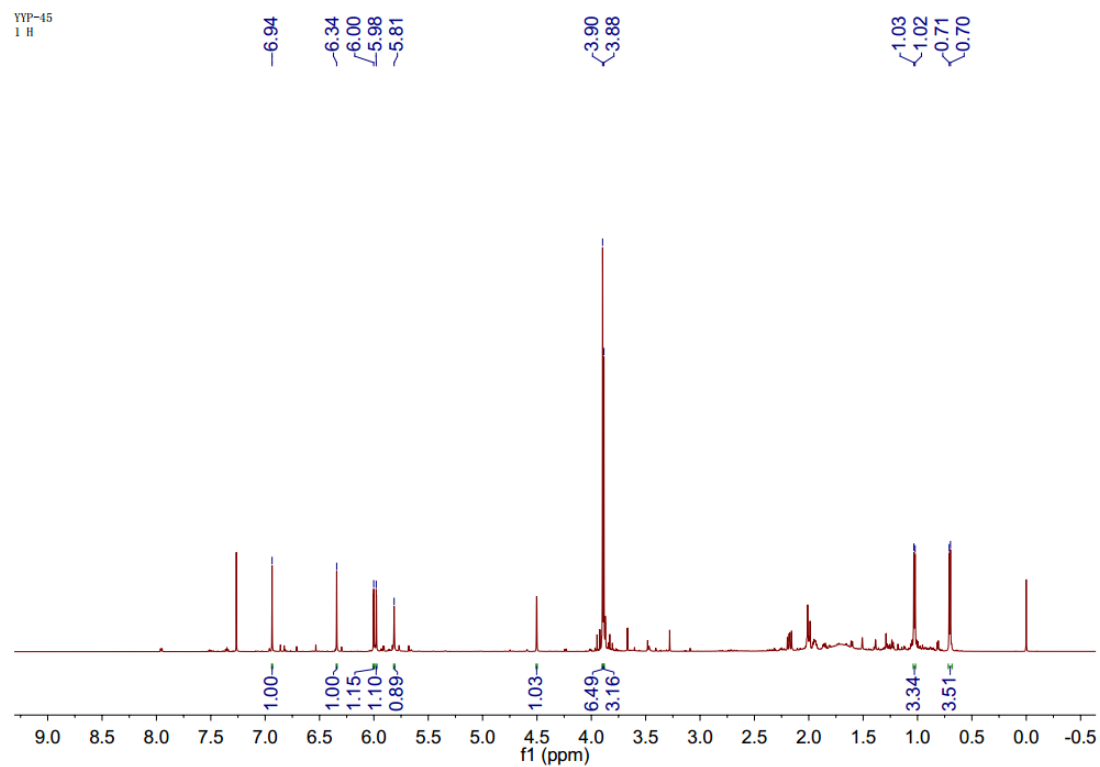


Figure S53. ¹³C NMR (150 MHz, CDCl₃) spectrum of kadsuphilol A (20)

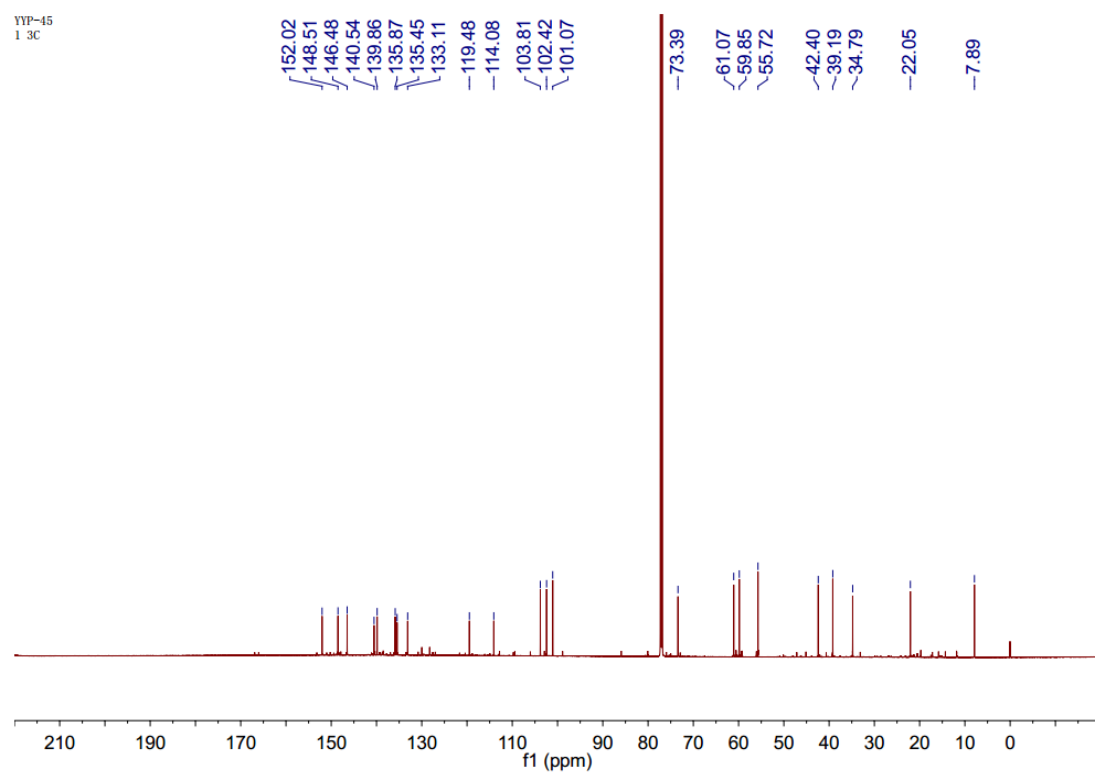


Figure S54. ¹H NMR (600 MHz, CDCl₃) spectrum of meso-dihydroguaiaretic acid dimethyl (21)

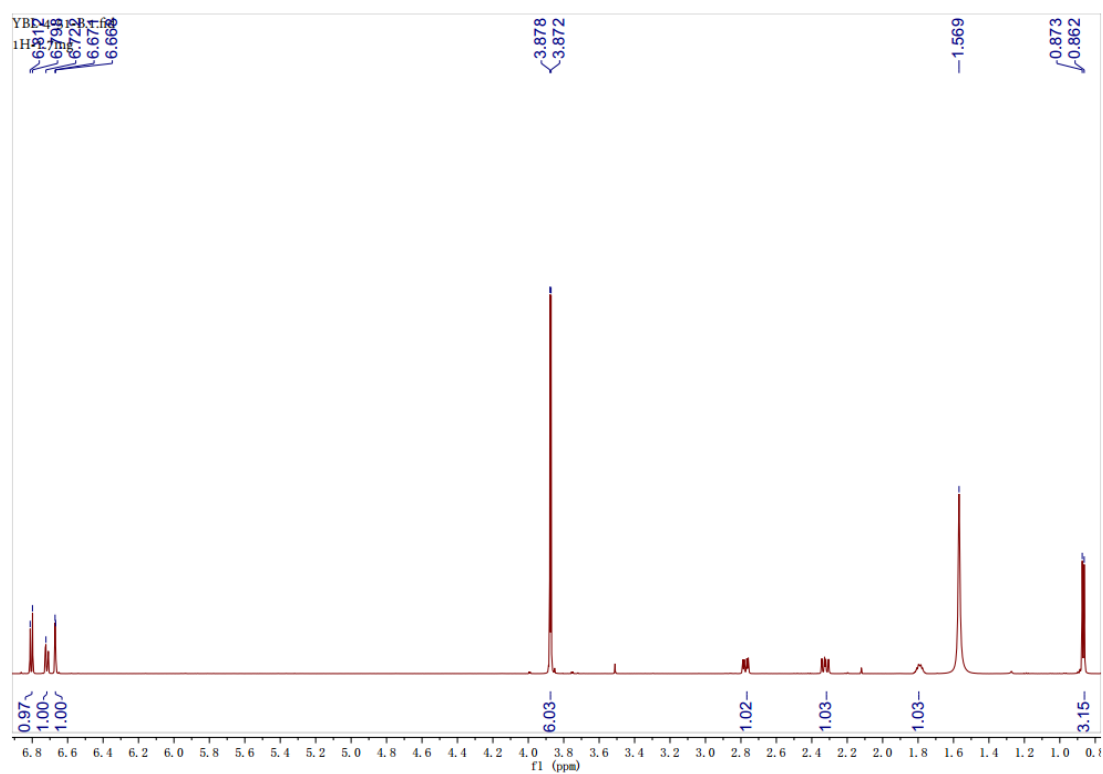


Figure S55. ¹³C NMR (150 MHz, CDCl₃) spectrum of meso-dihydroguaiaretic acid dimethyl (21)

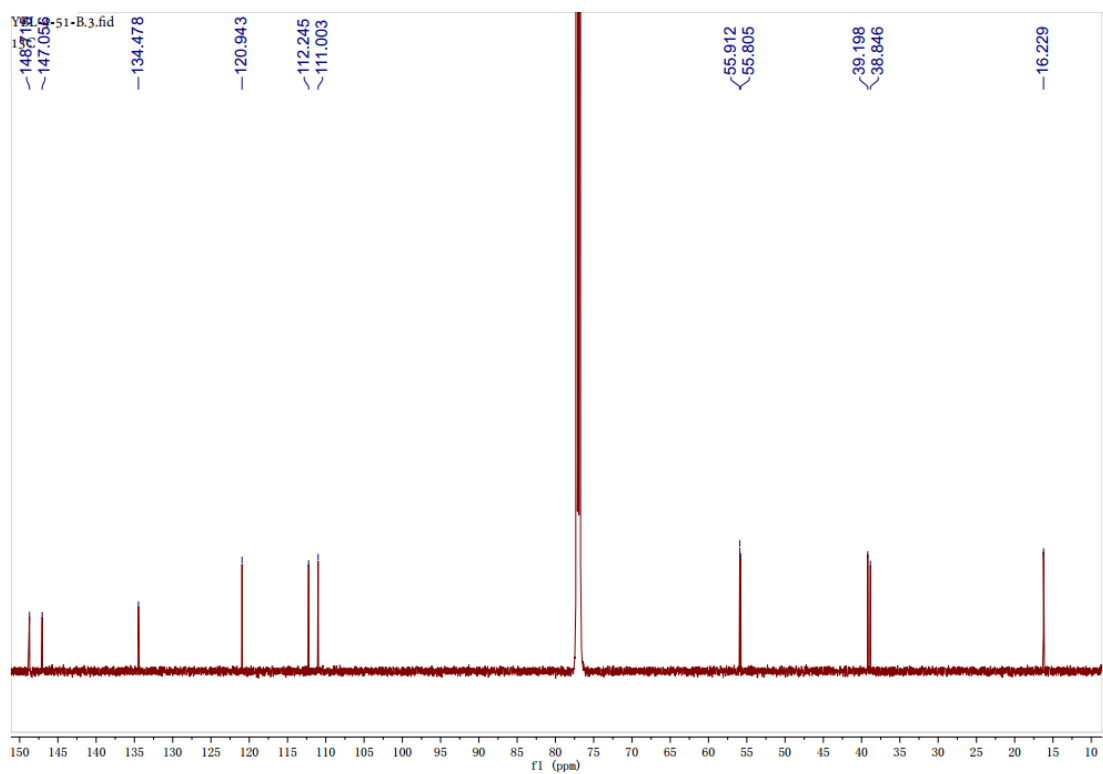


Figure S56. ¹H NMR (600 MHz, CDCl₃) spectrum of schiarianrin E (22)

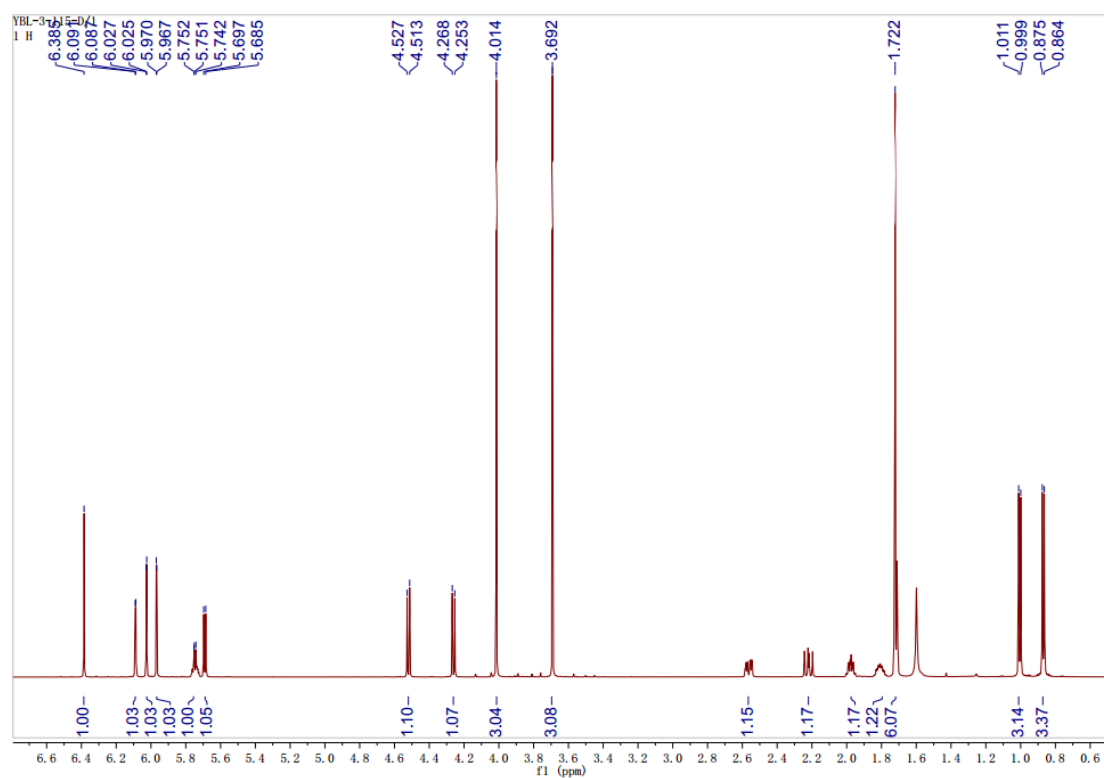


Figure S57. ¹³C NMR (150 MHz, CDCl₃) spectrum of schiarianrin E (22)

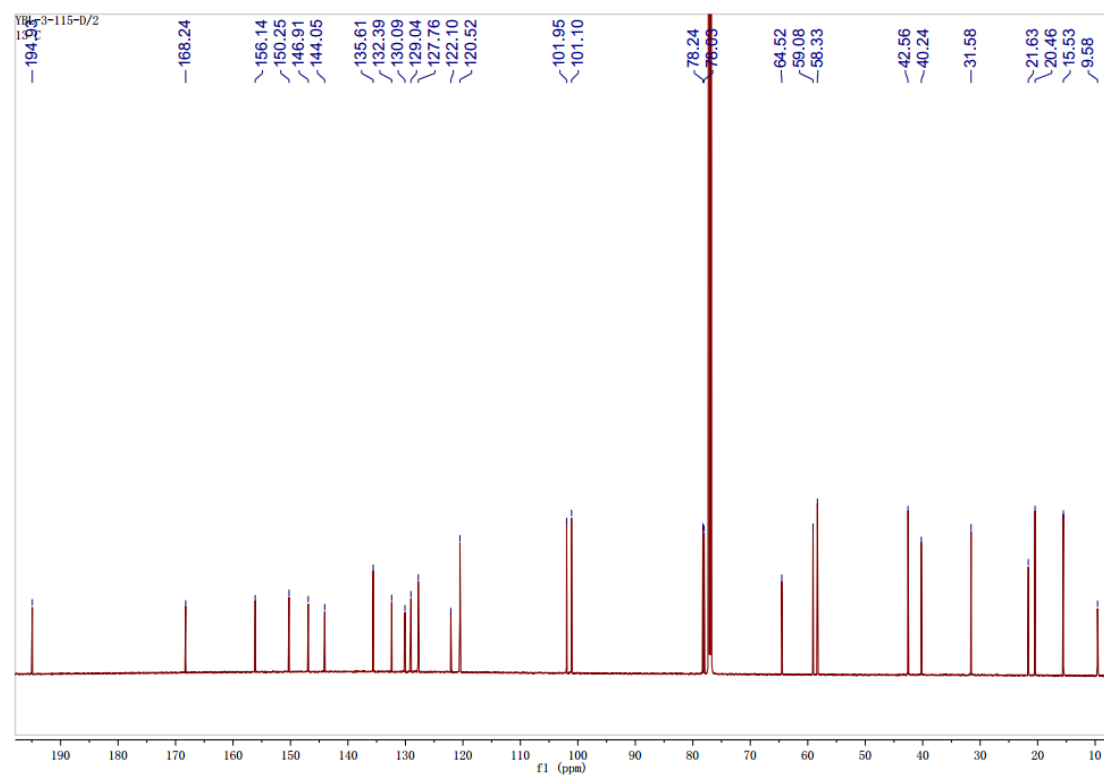


Figure S58. ¹H NMR (600 MHz, CDCl₃) spectrum of schiarianrin A (23)

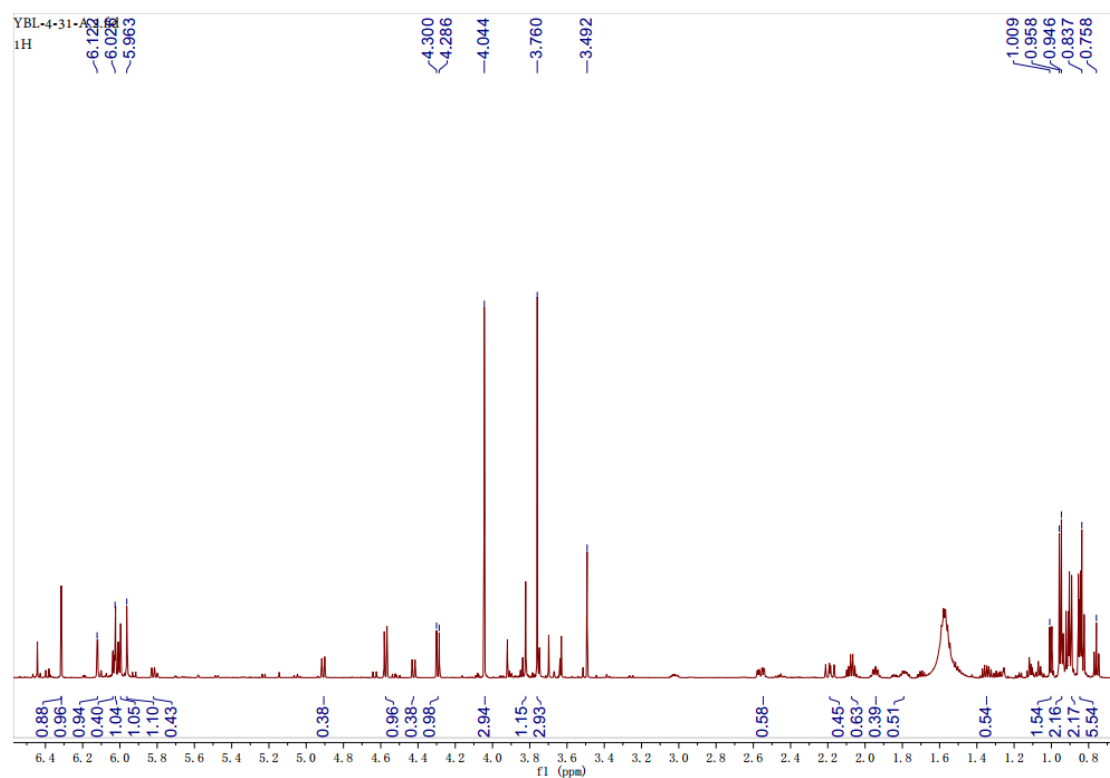


Figure S59. ^{13}C NMR (150 MHz, CDCl_3) spectrum of schiarisanrin A (**23**)

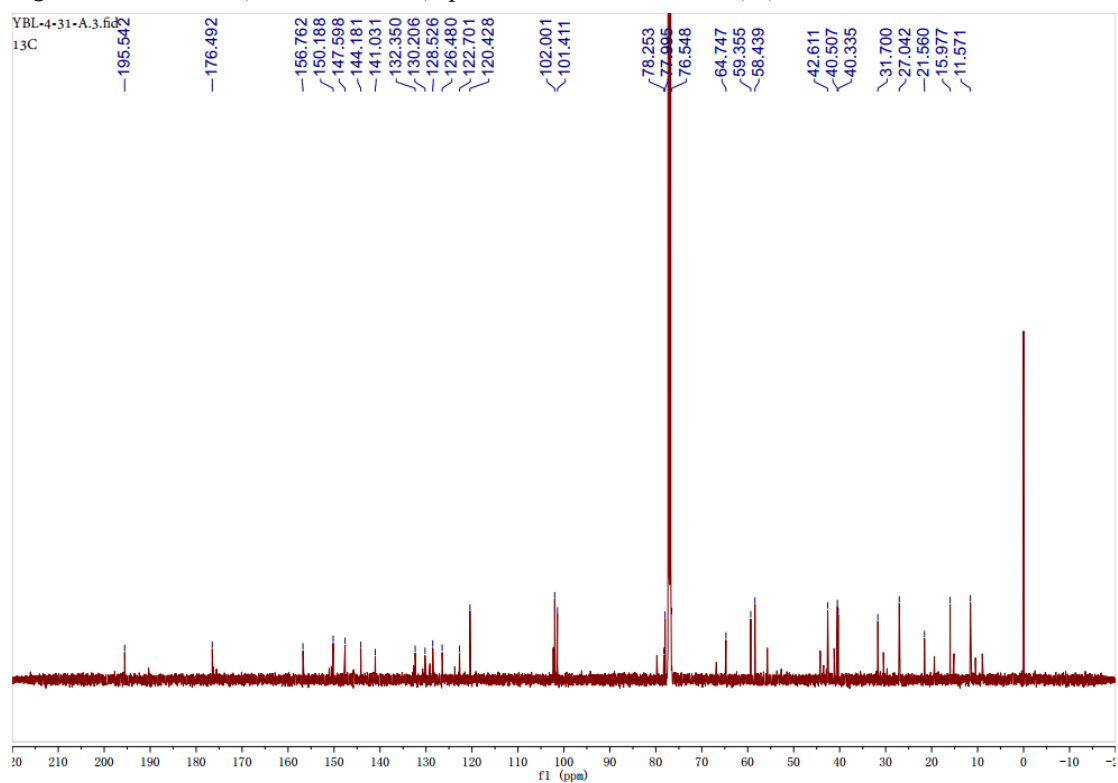


Figure S60. HRESIMS spectrum of heilaohulignan A (**1**)

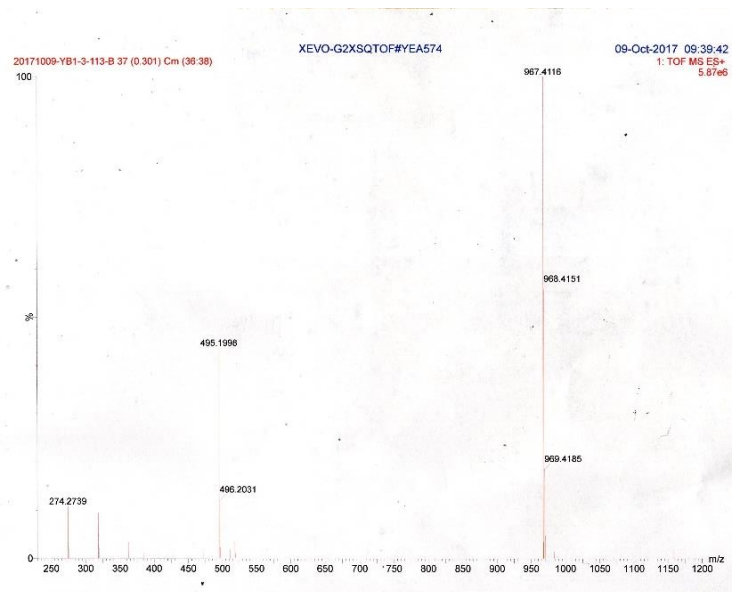


Figure S61. HRESIMS spectrum of heilaohulignan B (2)

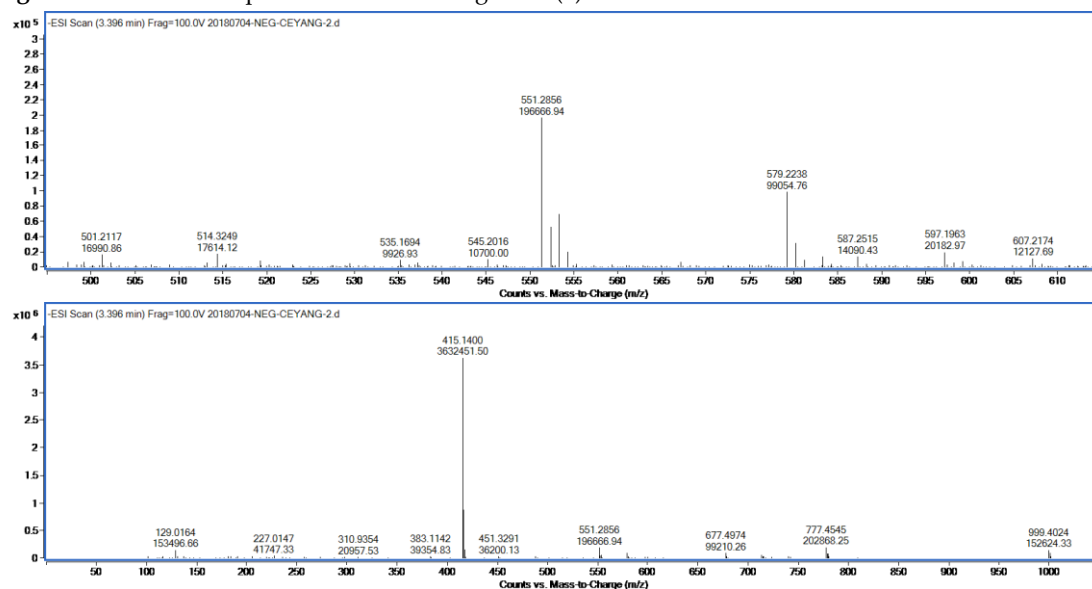


Figure S62. HRESIMS spectrum of heilaohulignan C (3)

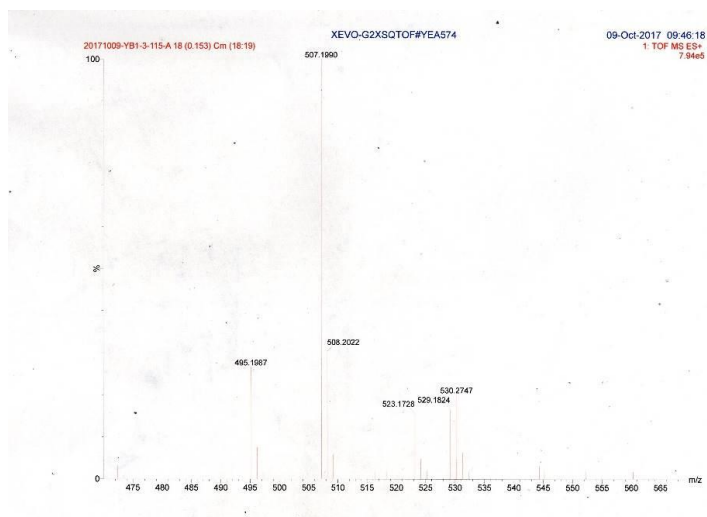


Figure S63. CD spectrum of heilaohulignan A (1)

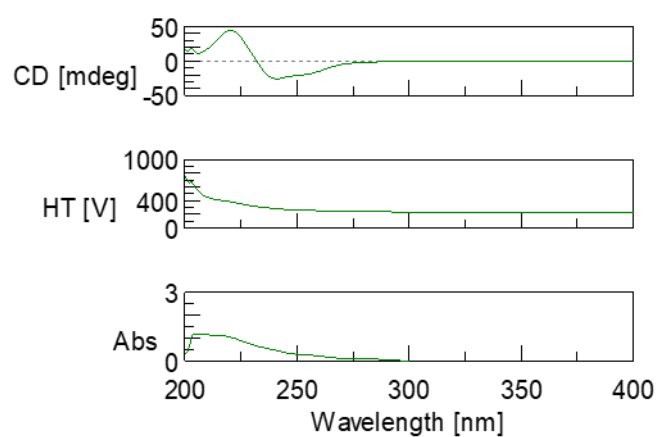


Figure S64. CD spectrum of heilaohulignan B (2)

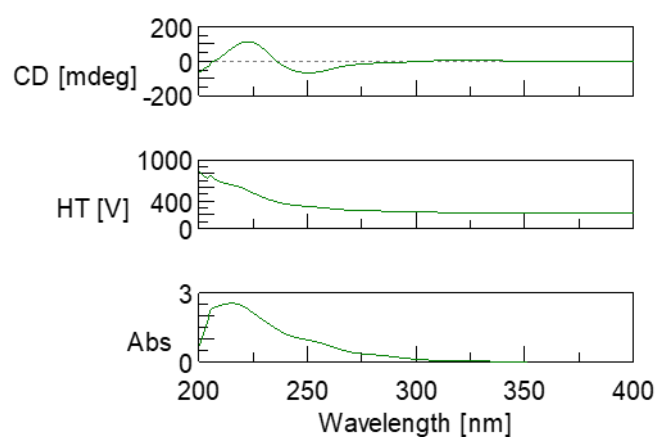


Figure S65. CD spectrum of heilaohulignan C (3)

