SUPPORTING INFORMATION

Quassinoids from Twigs of *Harrisonia Perforata* (Blanco) Merr and Their Anti-Parkinson's Disease Effect

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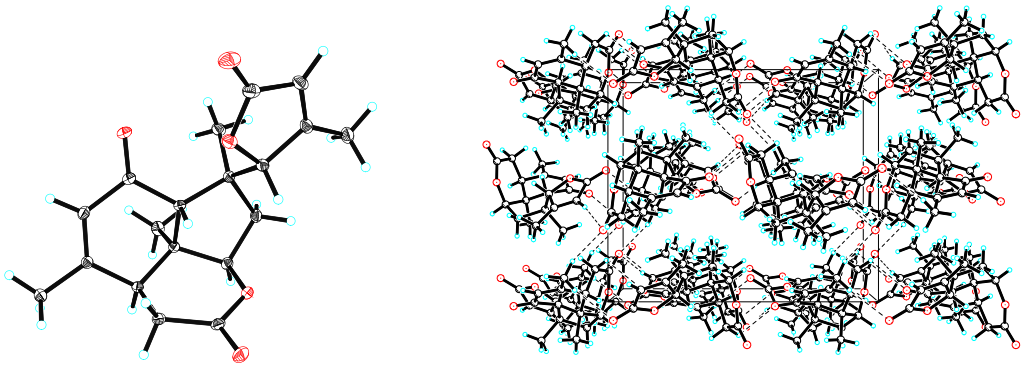
[†] These authors contributed equally to this work.

Table of content

X-ray crystallographic data of Perforalactone L (7)

Single-crystals of compound **7** was obtained from CH3OH/H2O (10:1) at room temperature.

Crystal data for compound 7: $C_{19}H_{22}O_5$, M = 330.36, a = 9.5789(4) Å, b = 12.0883(5) Å, c = 14.0568(6) Å, α = 90°, β = 90°, γ = 90°, V = 1627.67(12) Å3, T = 150.(2) K, space group P212121, Z = 4, μ(Cu Kα) = 0.797 mm-1, 13248 reflections measured, 3082 independent reflections (Rint = 0.0639). The final R1 values were 0.0298 (I > 2σ(I)). The final wR(F2) values were 0.0751 (I > 2σ(I)). The final R1 values were 0.0322 (all data). The final wR(F2) values were 0.0763 (all data). The goodness of fit on F2 was 1.036. Flack parameter = 0.04(8).



Single-crystal X-ray structure of **7**

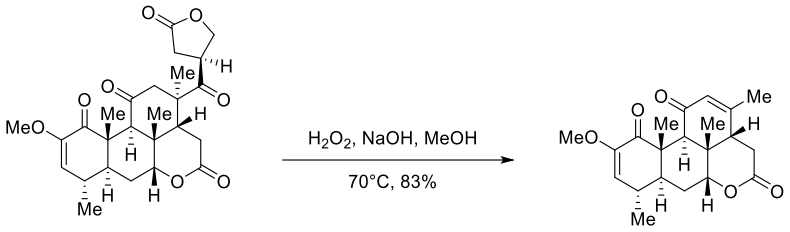
Table S1. Crystal data and structure refinement for 7.

Identification code	global
Empirical formula	$C_{19}H_{22}O_5$
Formula weight	330.36
Temperature	150(2) K
Wavelength	1.54178 Å
Crystal system	Orthorhombic
Space group	$P2_12_12_1$

Unit cell dimensions	a = 9.5789(4) Å	a = 90°.
	b = 12.0883(5) Å	b = 90°.
	c = 14.0568(6) Å	g = 90°.
Volume	1627.67(12) Å3	
Z	4	
Density (calculated)	1.348 Mg/m^3	
Absorption coefficient	0.797 mm^{-1}	
F(000)	704	
Crystal size	0.630 x 0.400 x 0.020 mm^3	
Theta range for data collection	4.83 to 70.22°.	
Index ranges	-11<=h<=11, -14<=k<=14, -17<=l<=15	
Reflections collected	13248	
Independent reflections	3082 [R(int) = 0.0639]	
Completeness to theta = 70.22°	99.7 %	
Absorption correction	Semi-empirical from equivalents	
Max. and min. transmission	0.98 and 0.70	
Refinement method	Full-matrix least-squares on F^2	
Data / restraints / parameters	3082 / 0 / 221	
Goodness-of-fit on F^2	1.036	
Final R indices [I>2sigma(I)]	R1 = 0.0298, wR2 = 0.0751	
R indices (all data)	R1 = 0.0322, wR2 = 0.0763	
Absolute structure parameter	0.04(8)	
Largest diff. peak and hole	0.209 and -0.158 $e.Å^{-3}$	

Chemical transformation.

Compound **8** was obtained by oxidative conversion of natural product Perforalactone B via Bayer-Weilig.



Perforalactone B　　Perforalactone C (8)

Yield 83%. To a solution of Perforalactone B (1) (20 mg, 42.32 μmol) in Chromatographic methanol was (20 ml) added H_2O_2(30%, 10 mml, 95.65 μmol) at that temperature, After being warmed to 60℃, NaOH(aq) (2.50 mol/L, 136 μml, 36.40 μmol) was added. After stirring for 30 min at 70 ℃, the reaction mixture was quenched with sat. $Na_2S_2O_4$, and extracted with EtOAc. The organic phase was washed with brine, dried over Na_2SO_4 filtered, and evaporated to dryness *in vacuo*. The crude product was purified by silica gel column chromatography to afford Compound **8**.

Of course, a number of reaction conditions were screened in order to successfully realize this chemical transformation.

Table S2. reaction condition of Chemical transformation.

Entry	reagent/equiv	temp	yield
1	K_2CO_3/1 equiv	r.t.	no rxn
2	K_2CO_3/over equiv	r.t.	no rxn
3	K_2CO_3/1 equiv	50℃	no rxn
4	K_2CO_3, O_2/1 equiv	r.t.	no rxn
5	NaOH/1 equiv	r.t.	no rxn
6	K_2CO_3/1 equiv+3-Chlorobenzoic acid/1equiv	r.t.	no rxn
7	NaOH/0.86 equiv+H_2O_2/2.5	70 ℃	no rxn

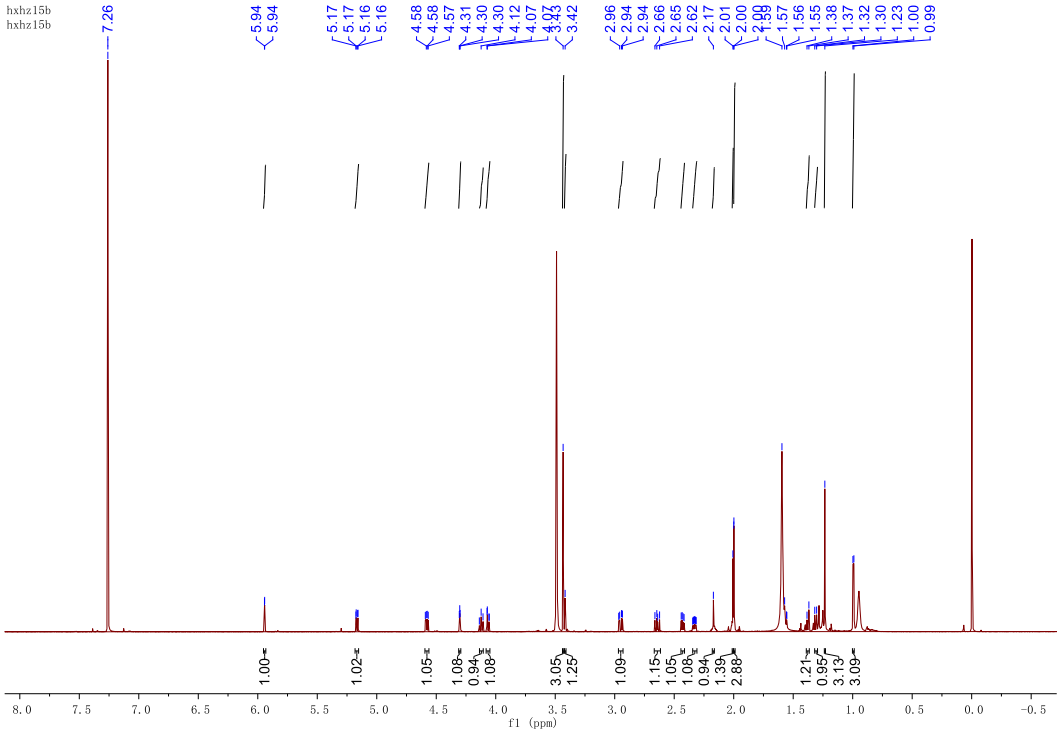


Figure S1. ^{1}H NMR spectrum of Perforalactone F (1) in $CDCl_3$.

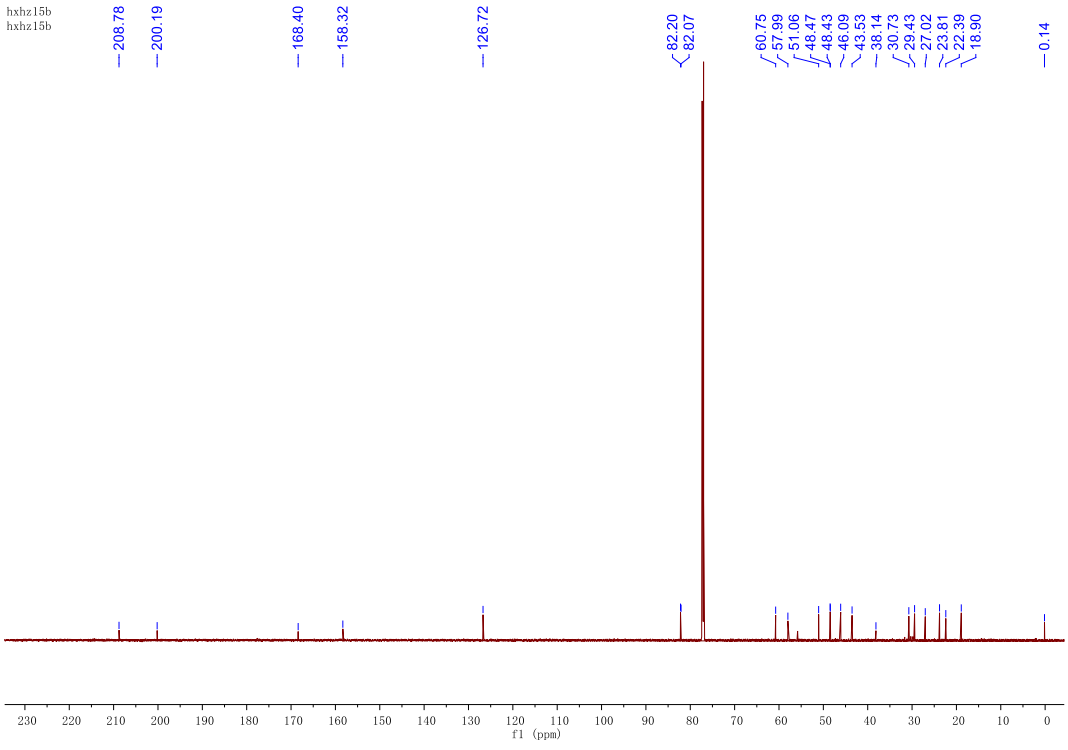


Figure S2. ^{13}C NMR spectrum of Perforalactone F (1) in $CDCl_3$.

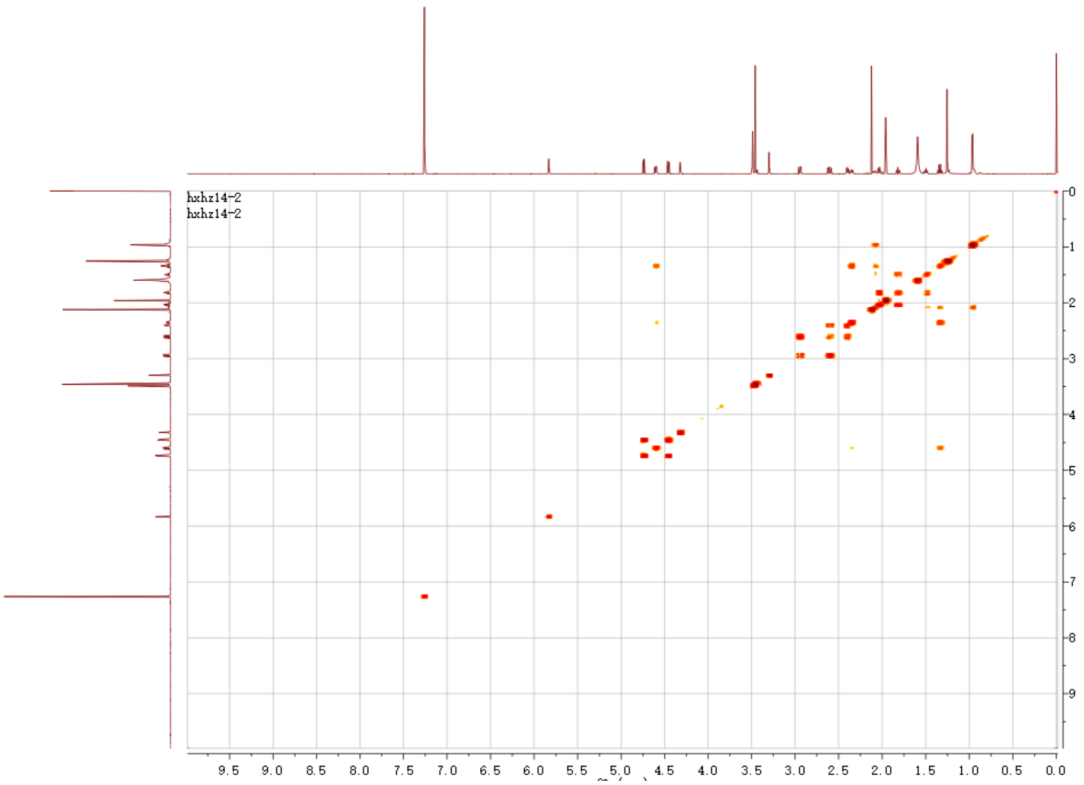


Figure S3. ^{1}H-^{1}H COSY spectrum of Perforalactone F (1) in $CDCl_3$

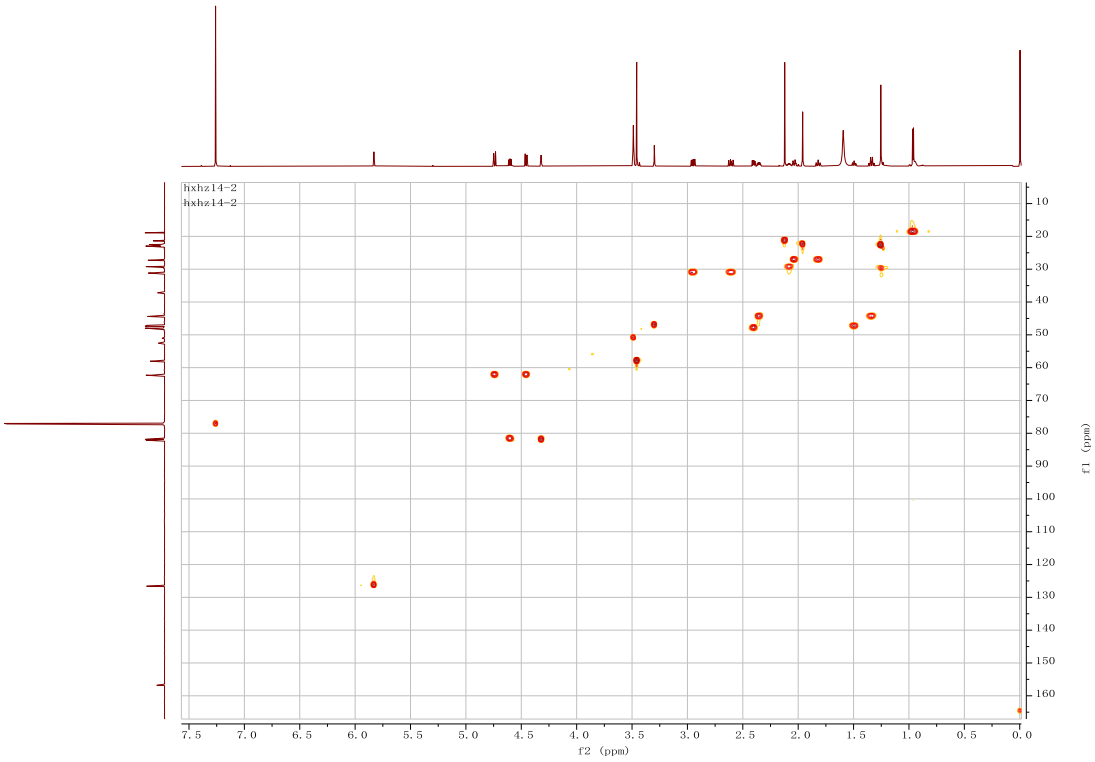


Figure S4. HSQC spectrum of Perforalactone F (1) in $CDCl_3$.

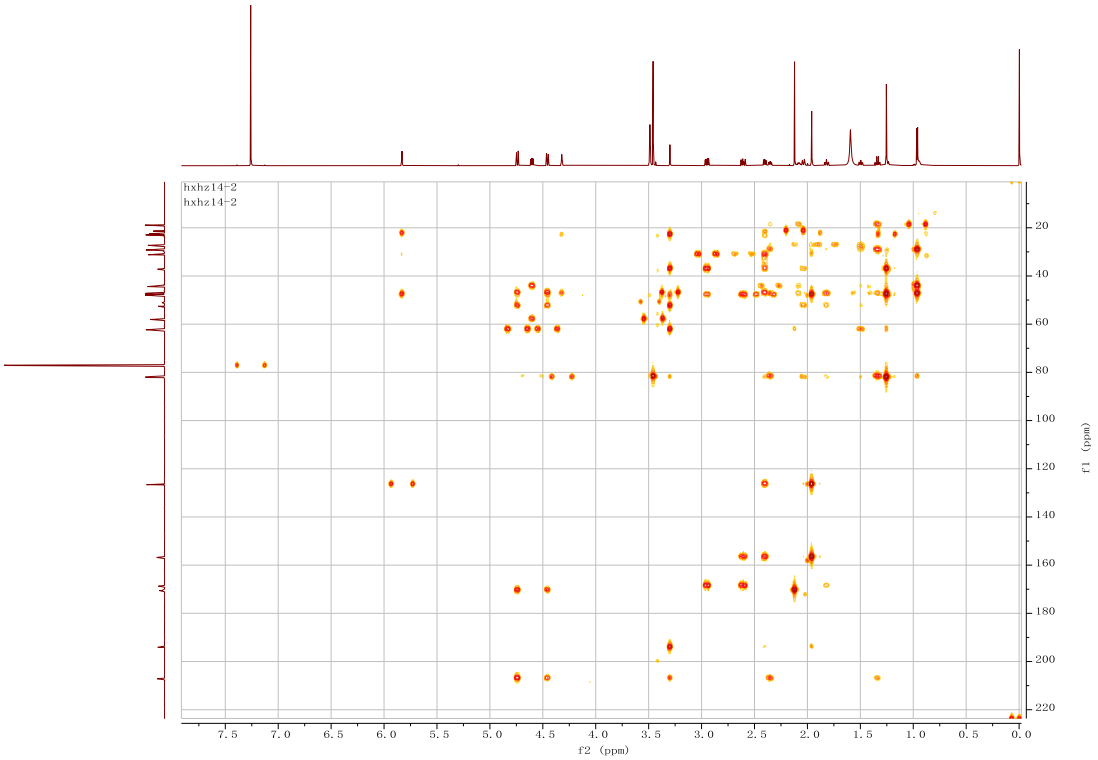


Figure S5. HMBC spectrum of Perforalactone F (1) in $CDCl_3$.

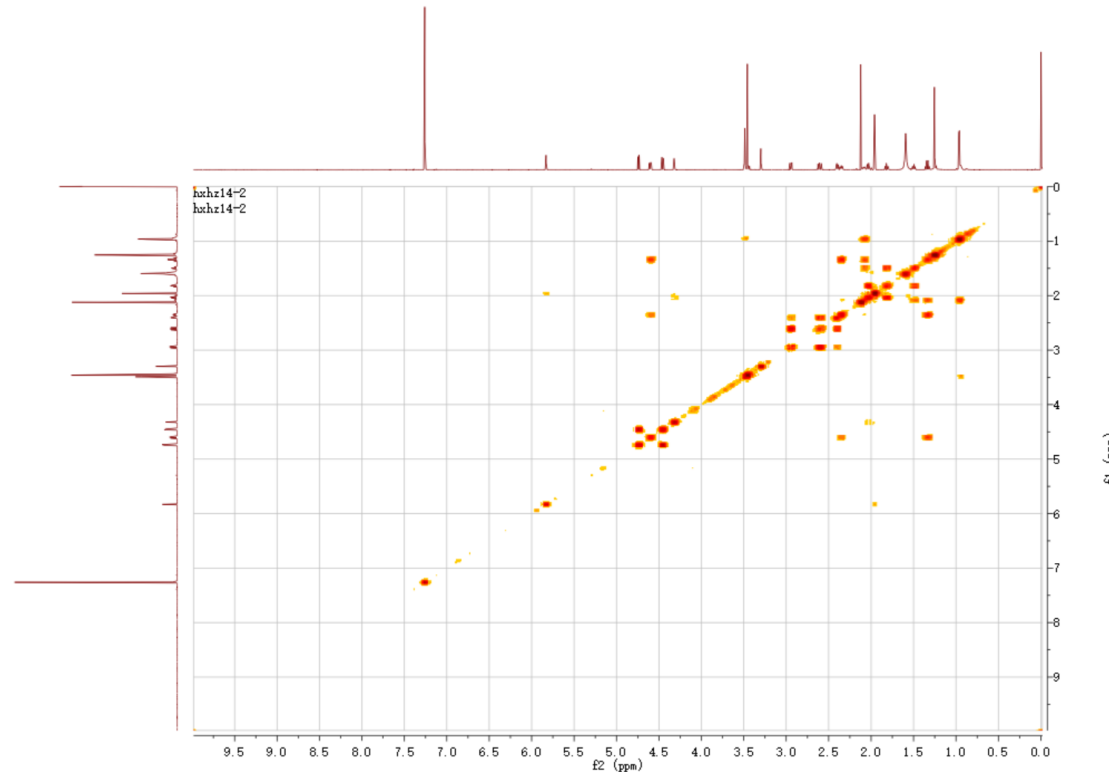


Figure S6. ROESY spectrum of Perforalactone F (1) in $CDCl_3$.

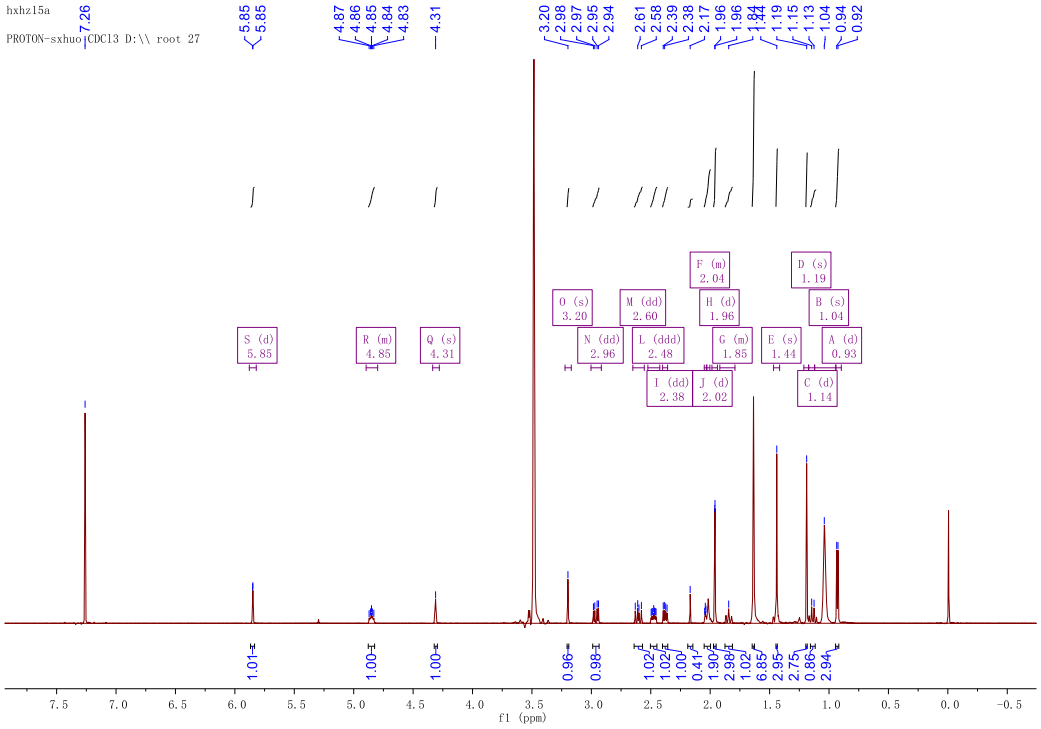


Figure S7. ^{1}H NMR spectrum of Perforalactone G (2) in $CDCl_3$.

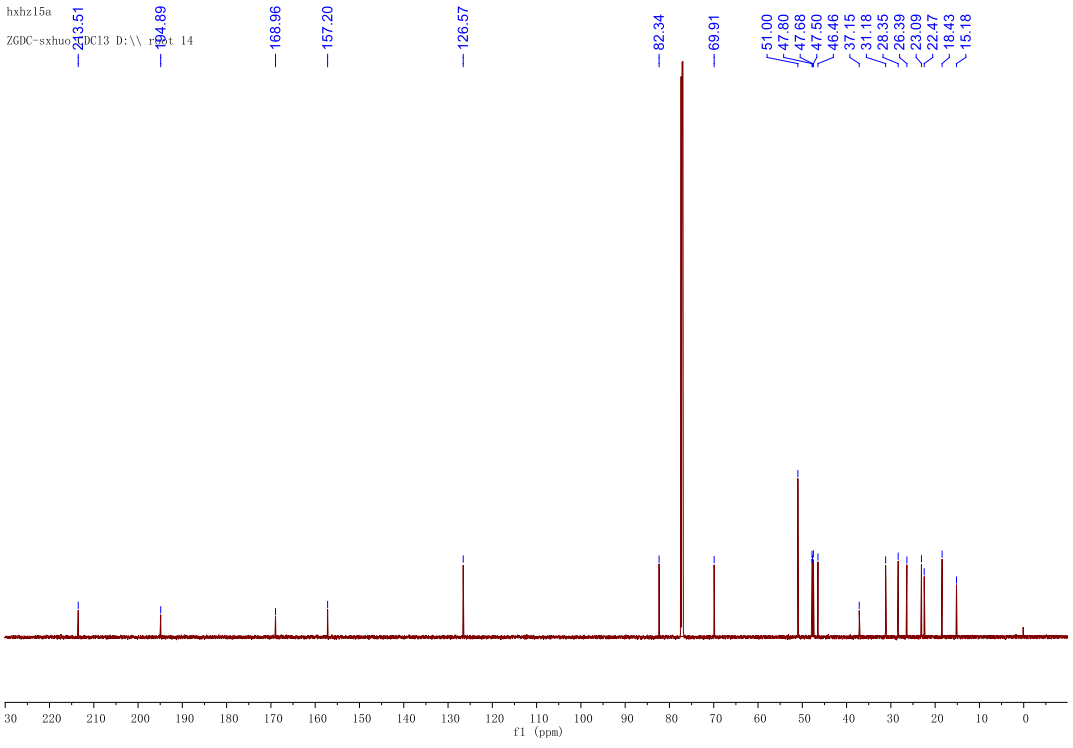


Figure S8. ^{13}C NMR spectrum of Perforalactone G (2) in $CDCl_3$.

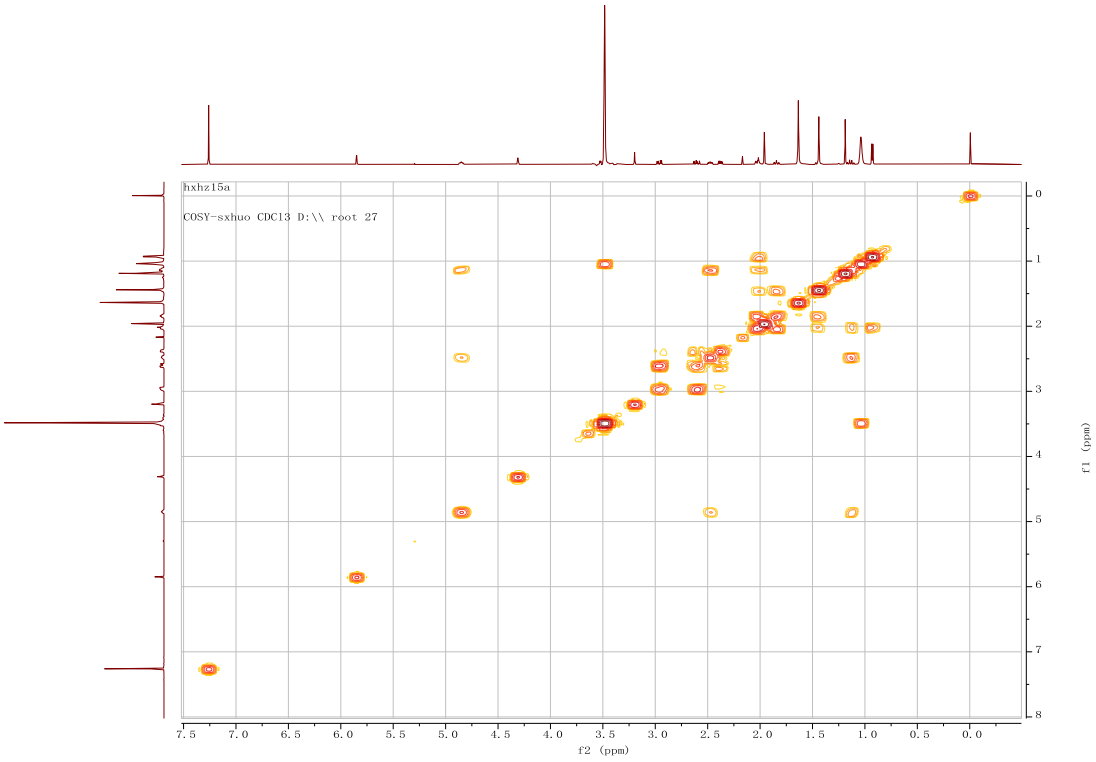


Figure S9. ^{1}H-^{1}H COSY spectrum of Perforalactone G (2) in $CDCl_3$.

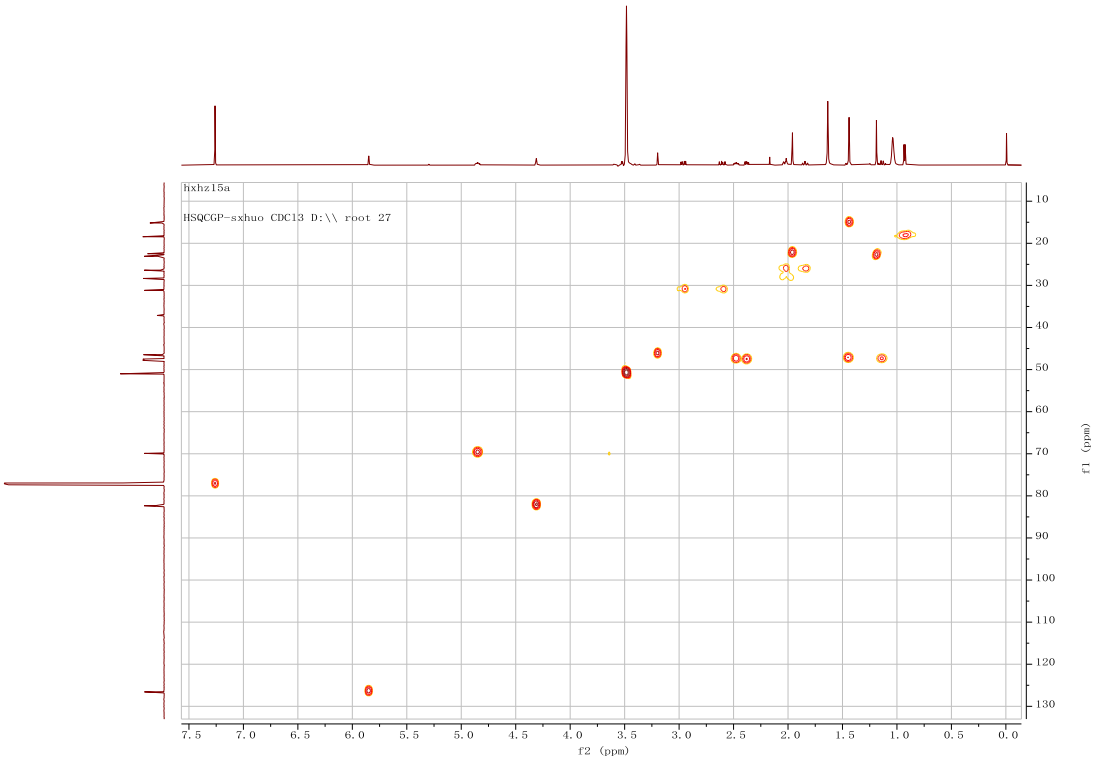


Figure S10. HSQC spectrum of Perforalactone G (2) in $CDCl_3$.

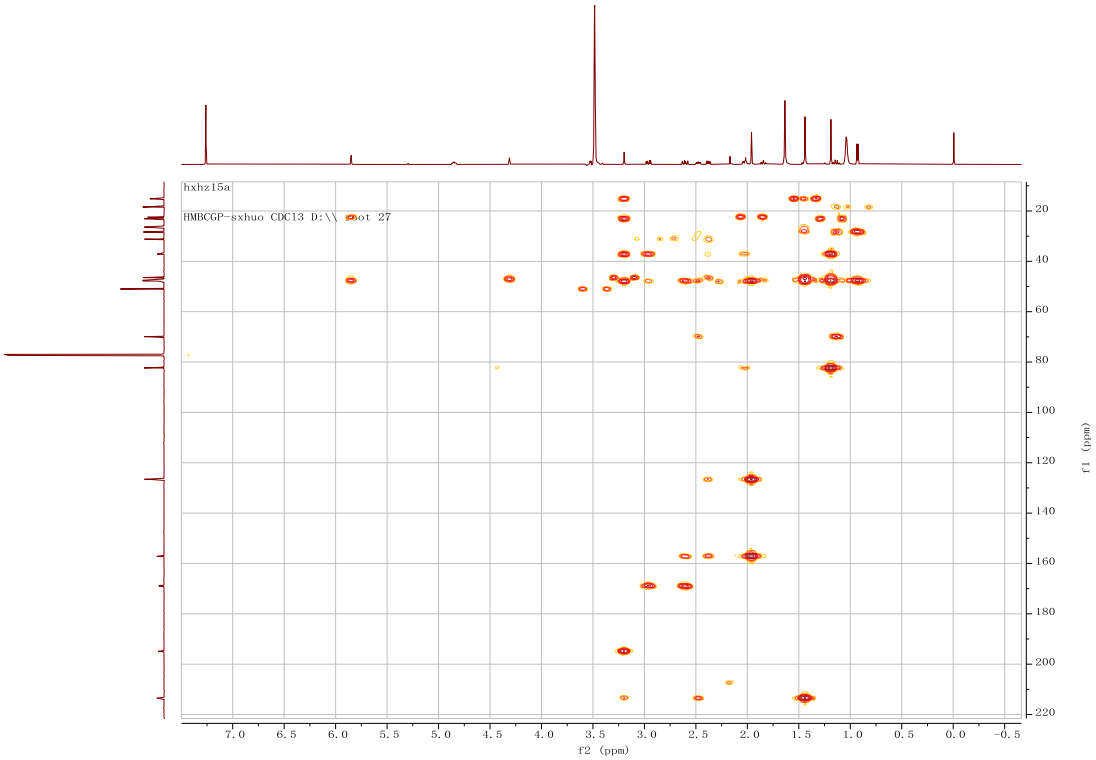


Figure S11. HMBC spectrum of Perforalactone G (2) in $CDCl_3$.

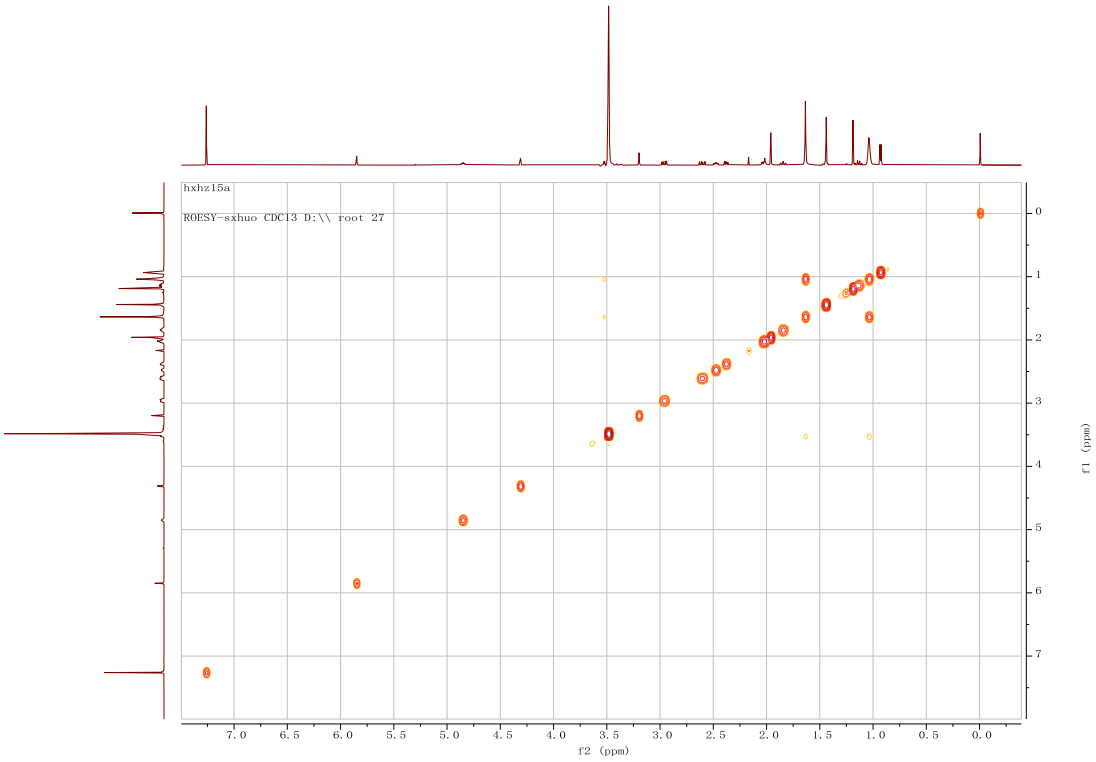


Figure S12. ROESY spectrum of Perforalactone G (2) in $CDCl_3$.

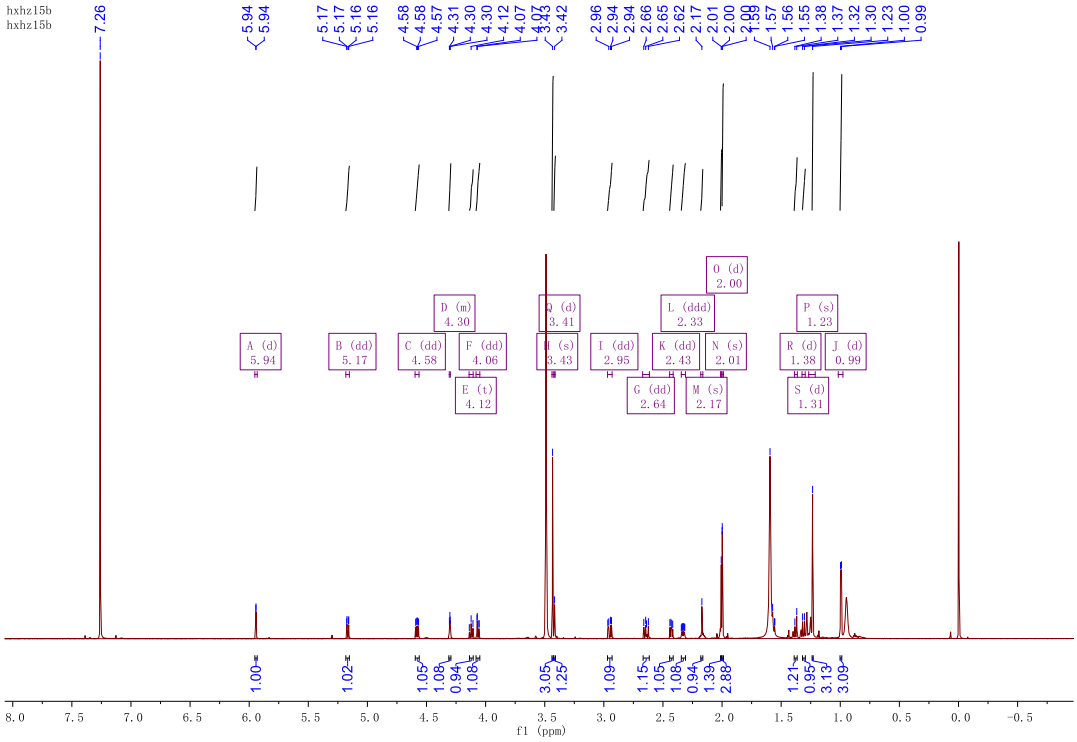


Figure S13. ^{1}H NMR spectrum of Perforalactone H (3) in $CDCl_3$.

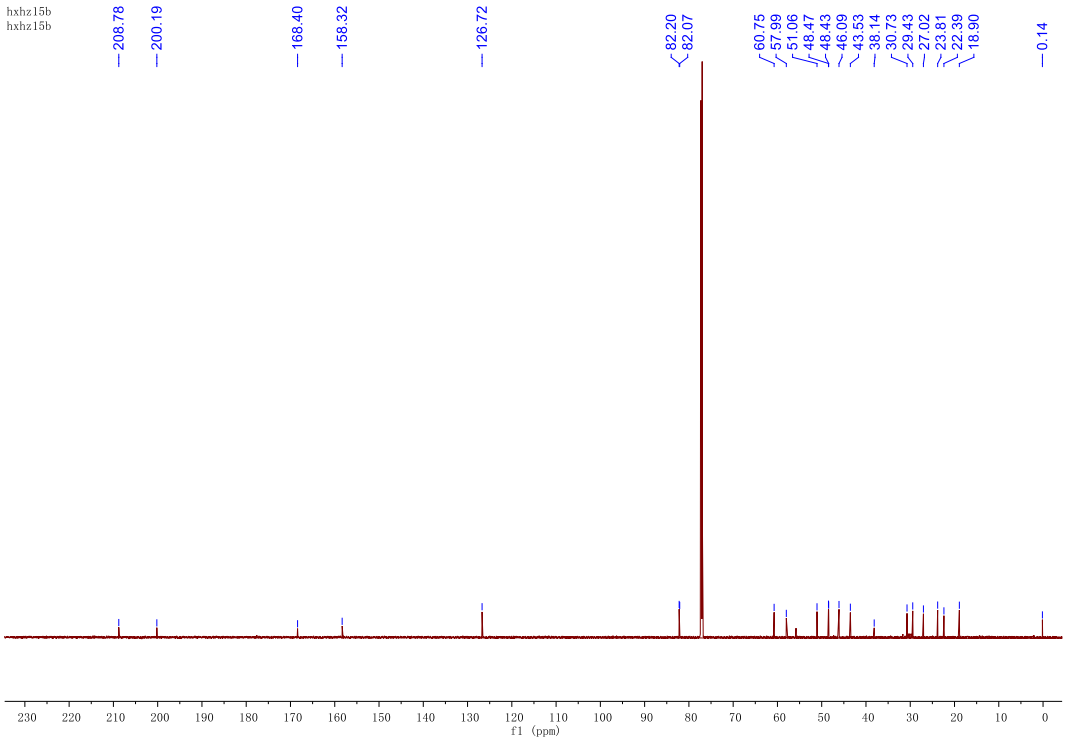


Figure S14. ^{13}C NMR spectrum of Perforalactone H (3) in $CDCl_3$.

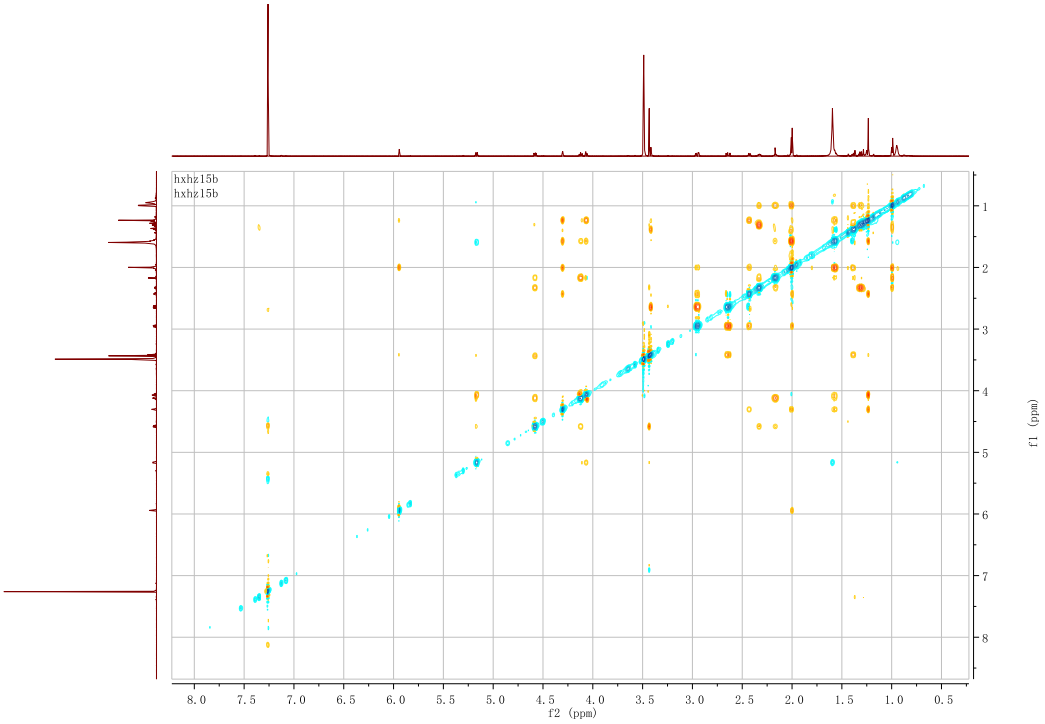


Figure S15. ^{1}H-^{1}H COSY spectrum of Perforalactone H (3) in $CDCl_3$.

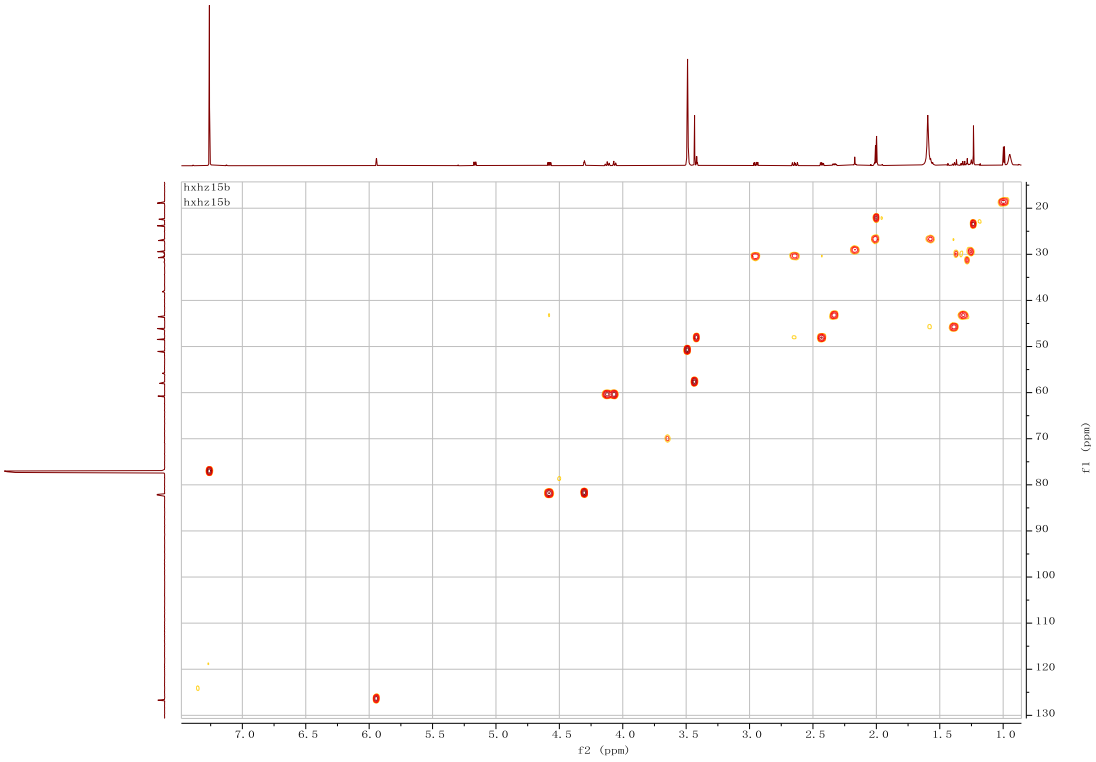


Figure S16. HSQC spectrum of Perforalactone H (3) in $CDCl_3$.

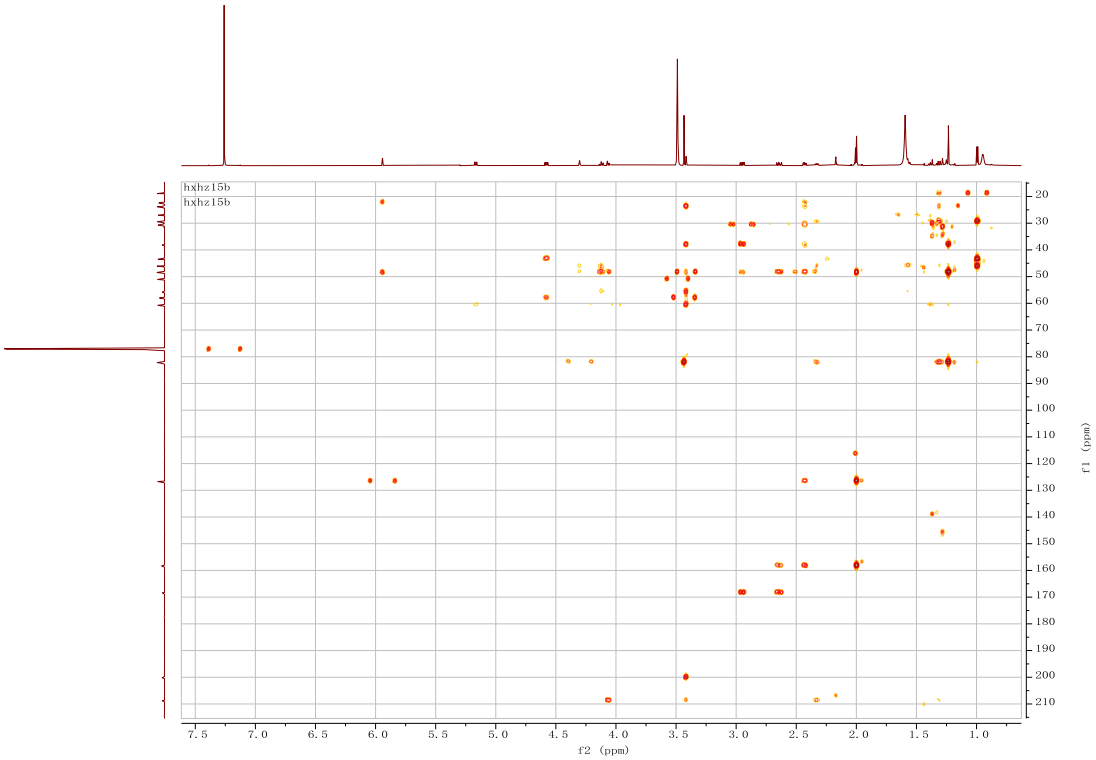


Figure S17. HMBC spectrum of Perforalactone H (3) in $CDCl_3$.

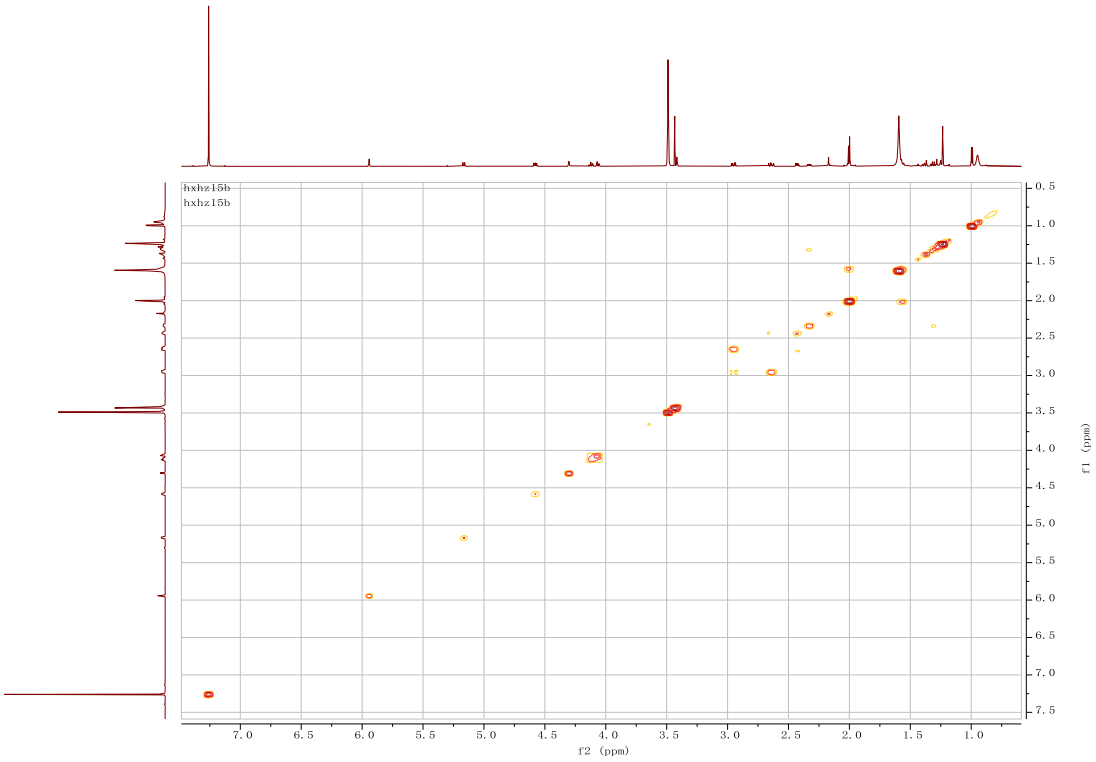


Figure S18. ROESY spectrum of Perforalactone H (3) in $CDCl_3$.

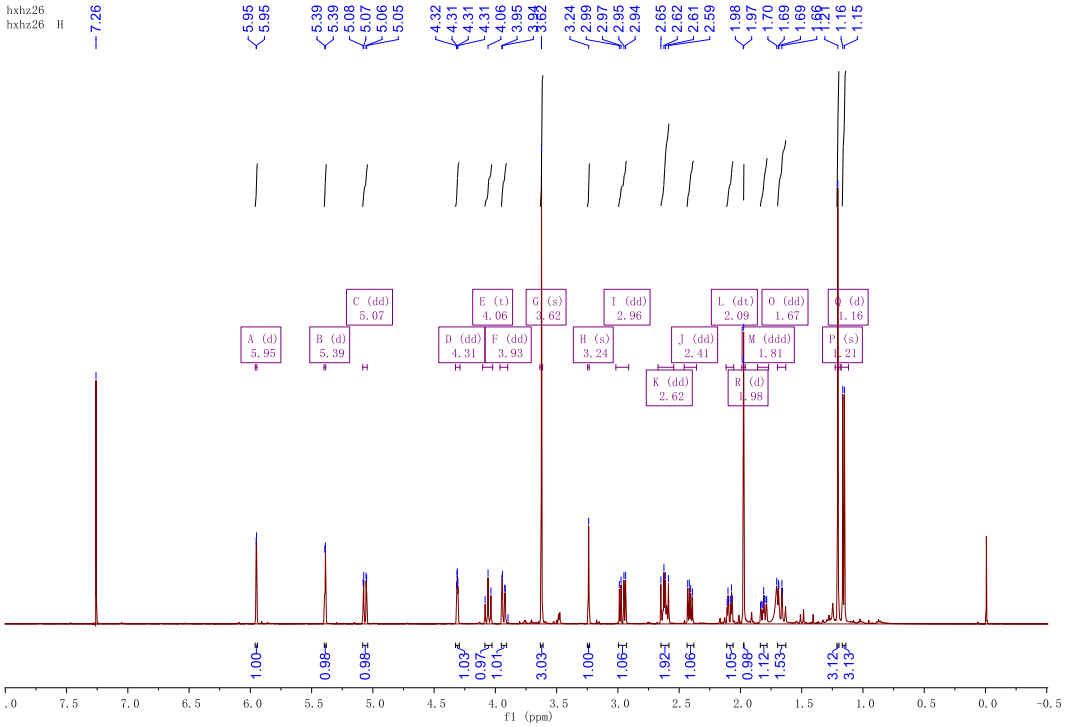


Figure S19. ^{1}H NMR spectrum of Perforalactone I (4) in $CDCl_3$.

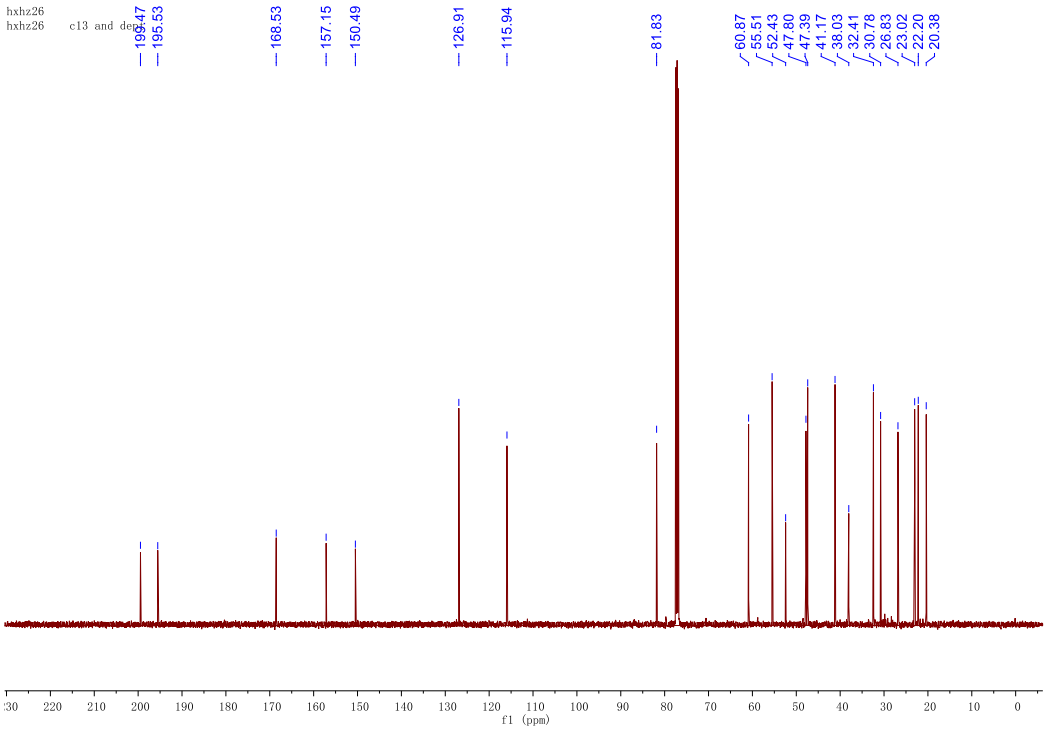


Figure S20. ^{13}C NMR spectrum of Perforalactone I (4) in $CDCl_3$.

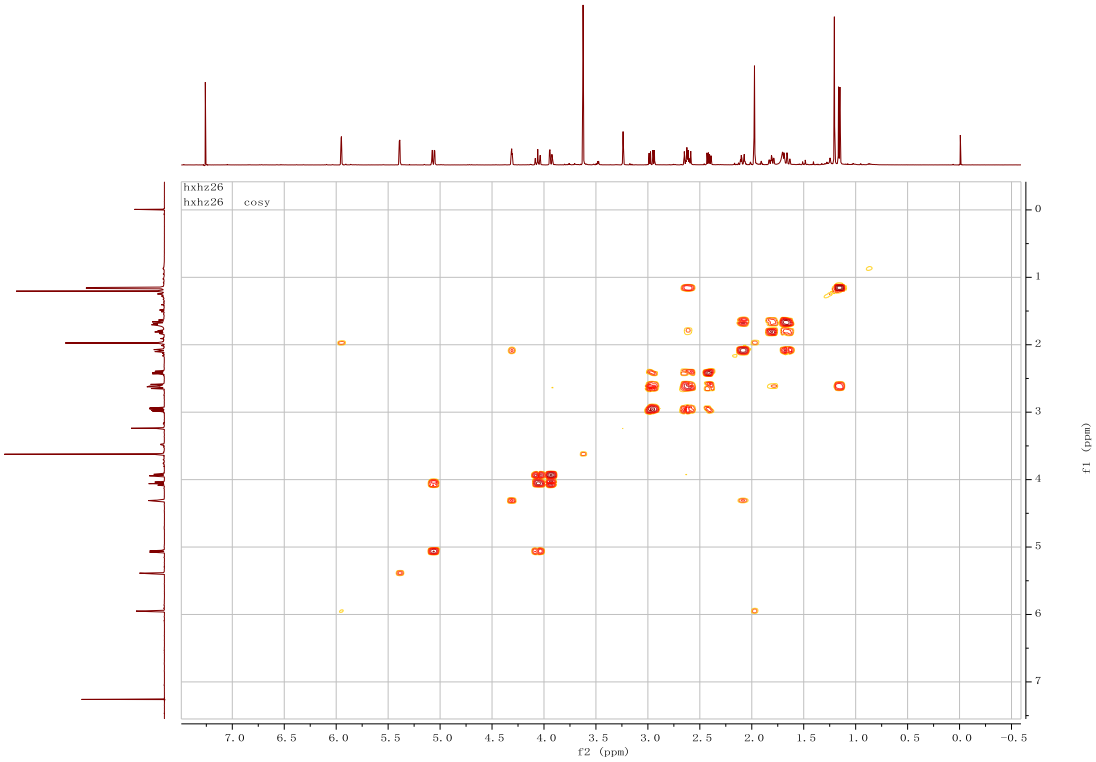


Figure S21. ^{1}H-^{1}H COSY spectrum of Perforalactone I (4) in $CDCl_3$.

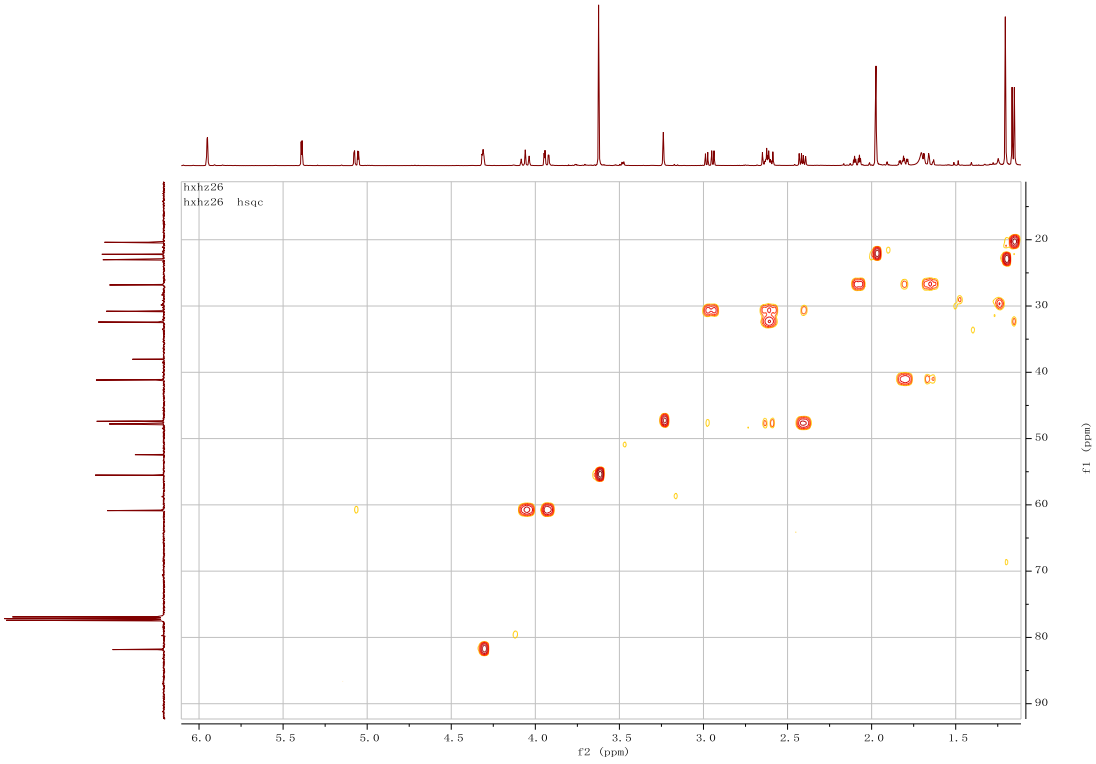


Figure S22. HSQC spectrum of Perforalactone I (4) in $CDCl_3$.

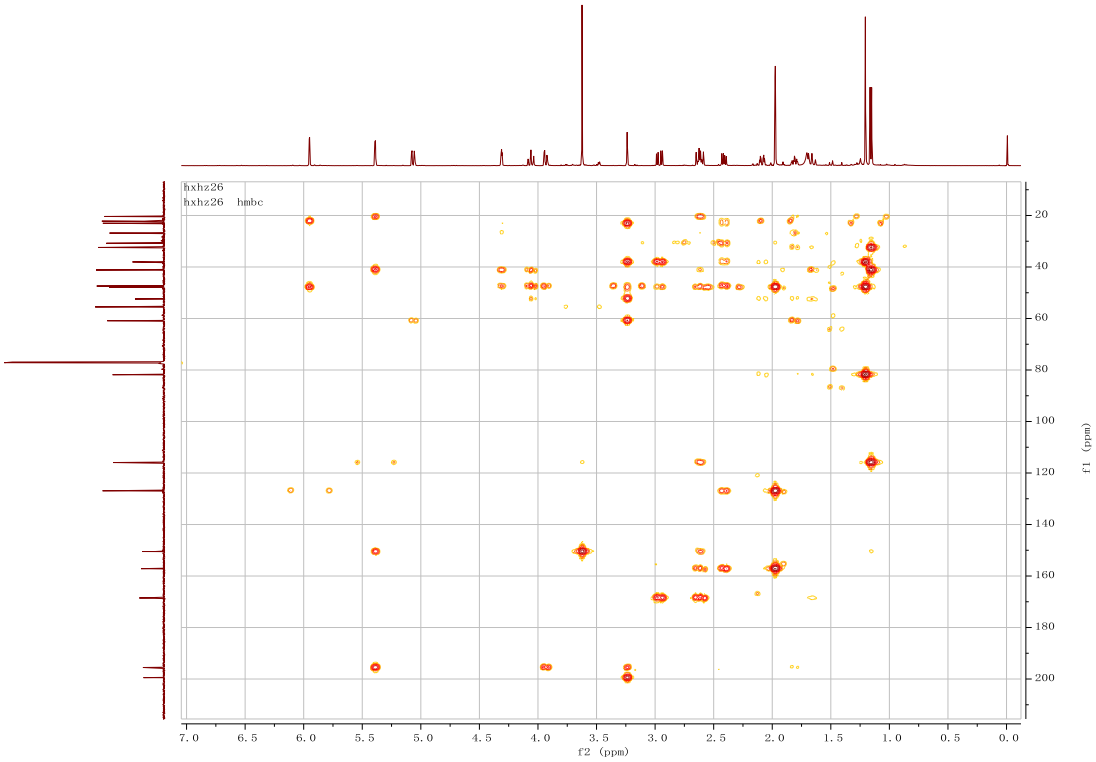


Figure S23. HMBC spectrum of Perforalactone I (4) in $CDCl_3$.

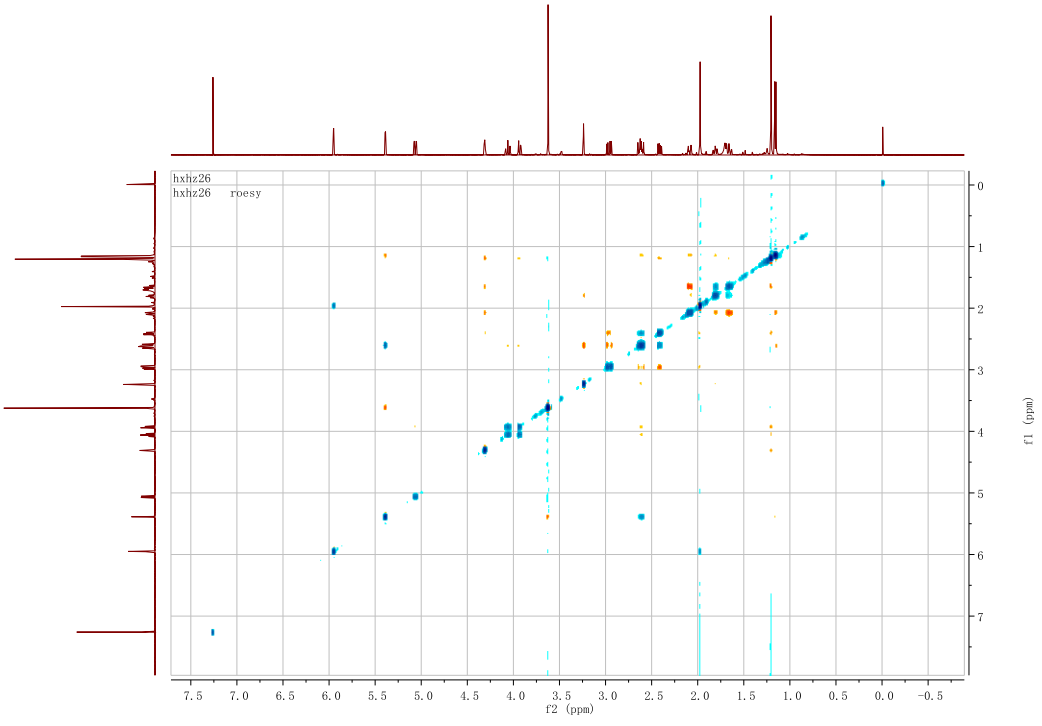


Figure S24. ROESY spectrum of Perforalactone I (4) in $CDCl_3$.

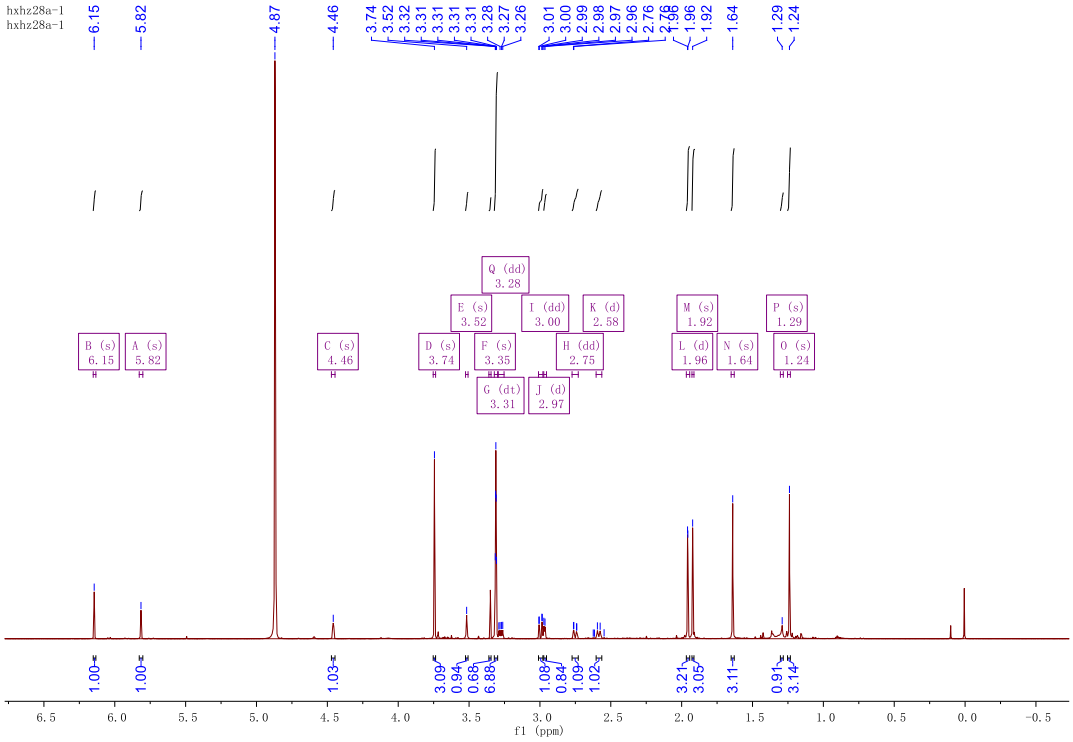


Figure S25. ^{1}H NMR spectrum of Perforalactone J (5) in CD_3OD.

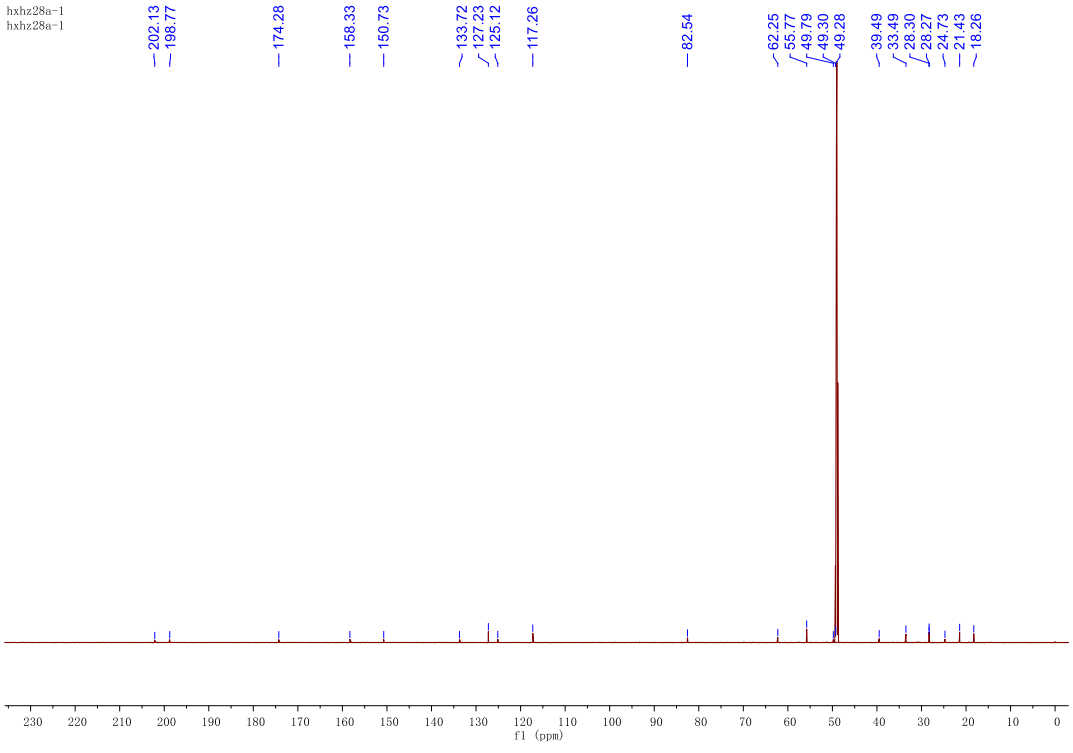


Figure S26. ^{13}C NMR spectrum of Perforalactone J (5) in CD_3OD.

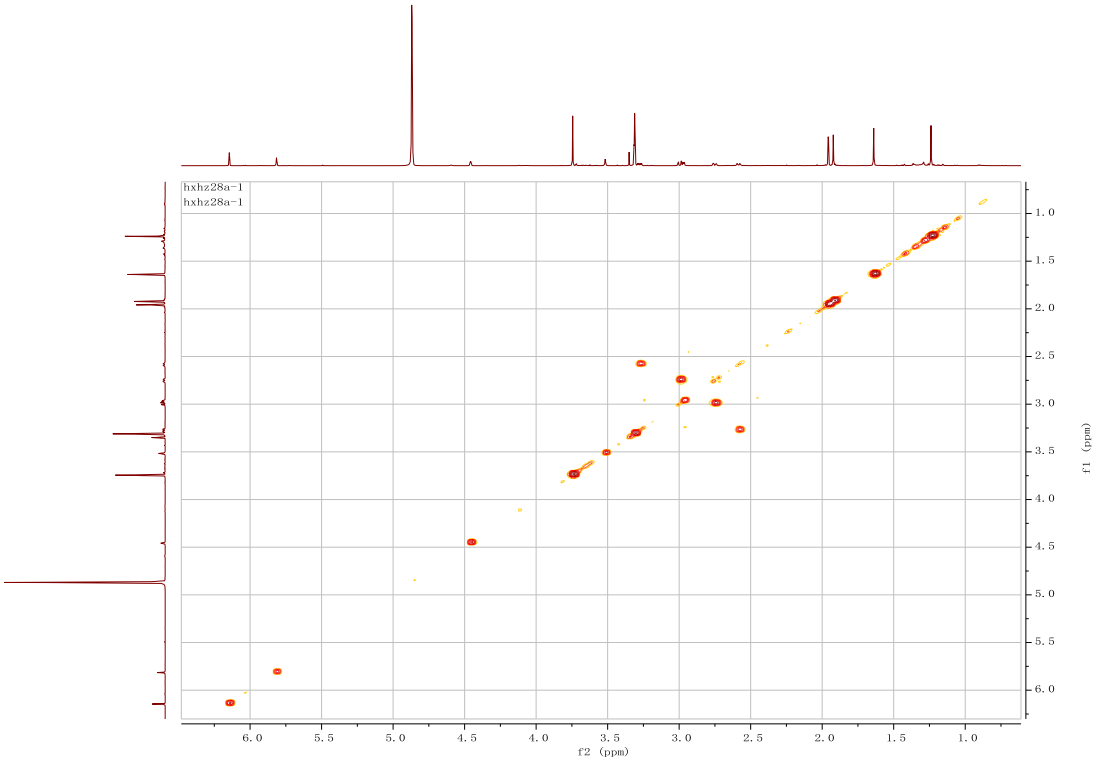


Figure S27. ^{1}H-^{1}H COSY spectrum of Perforalactone J (5) in CD_3OD.

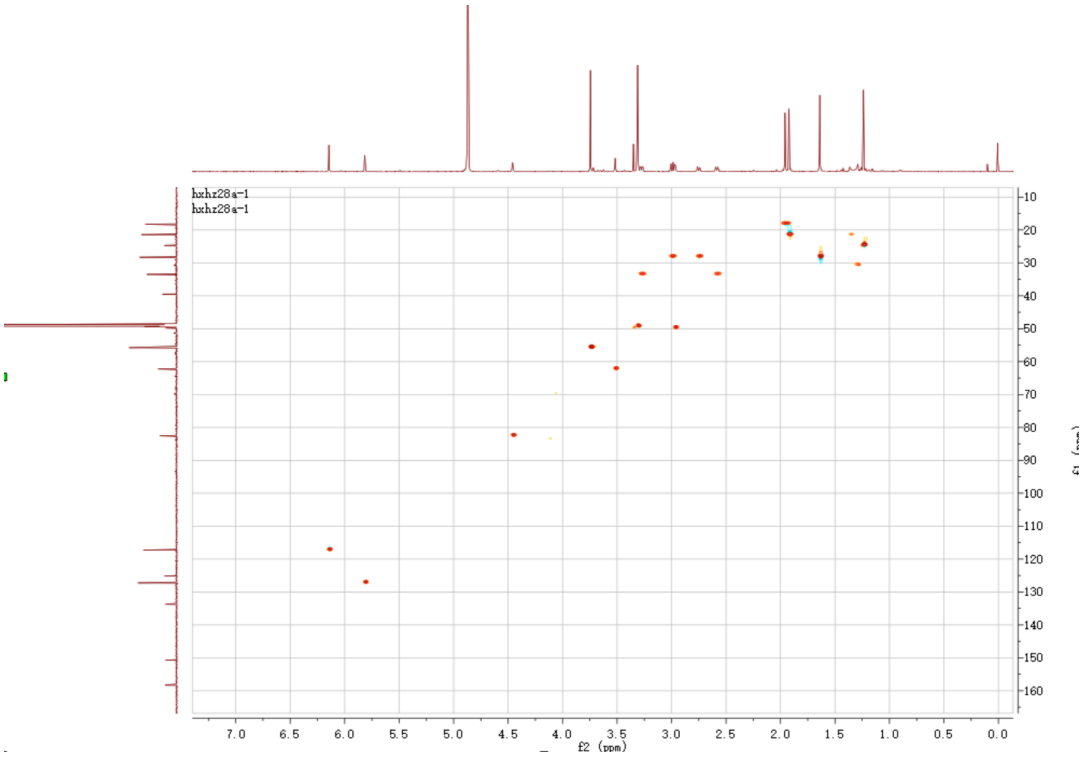


Figure S28. HSQC spectrum of Perforalactone J (5) in CD_3OD.

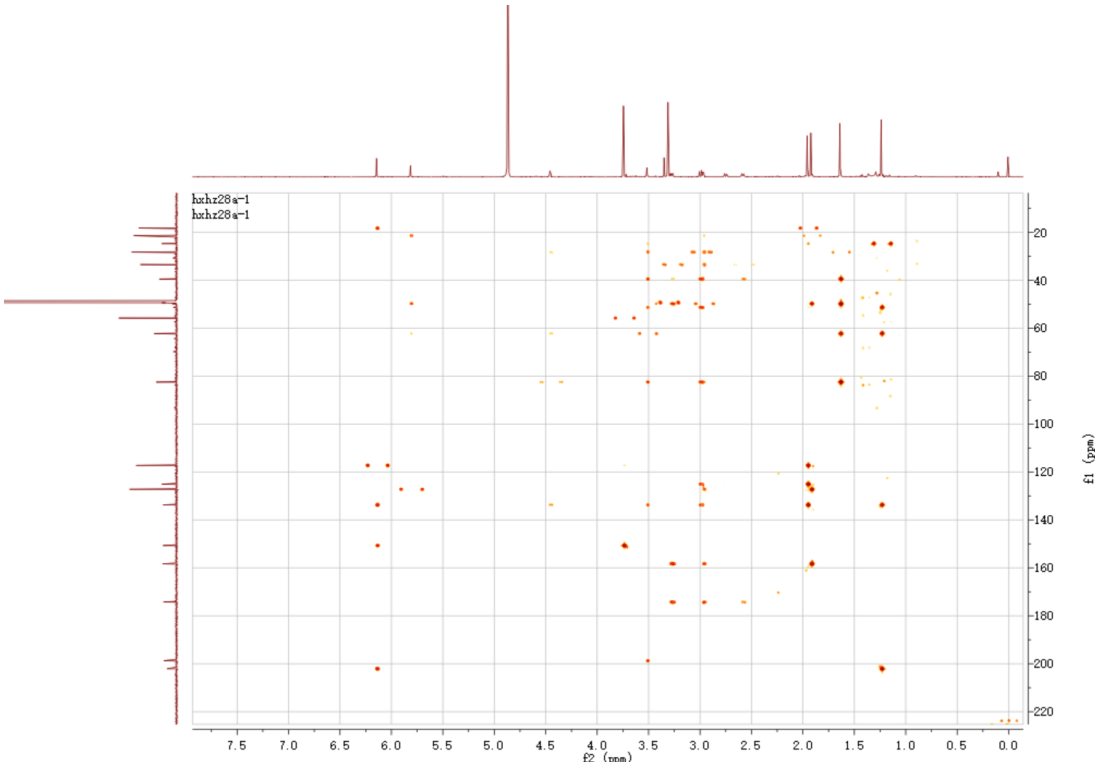


Figure S29. HMBC spectrum of Perforalactone J (5) in CD_3OD.

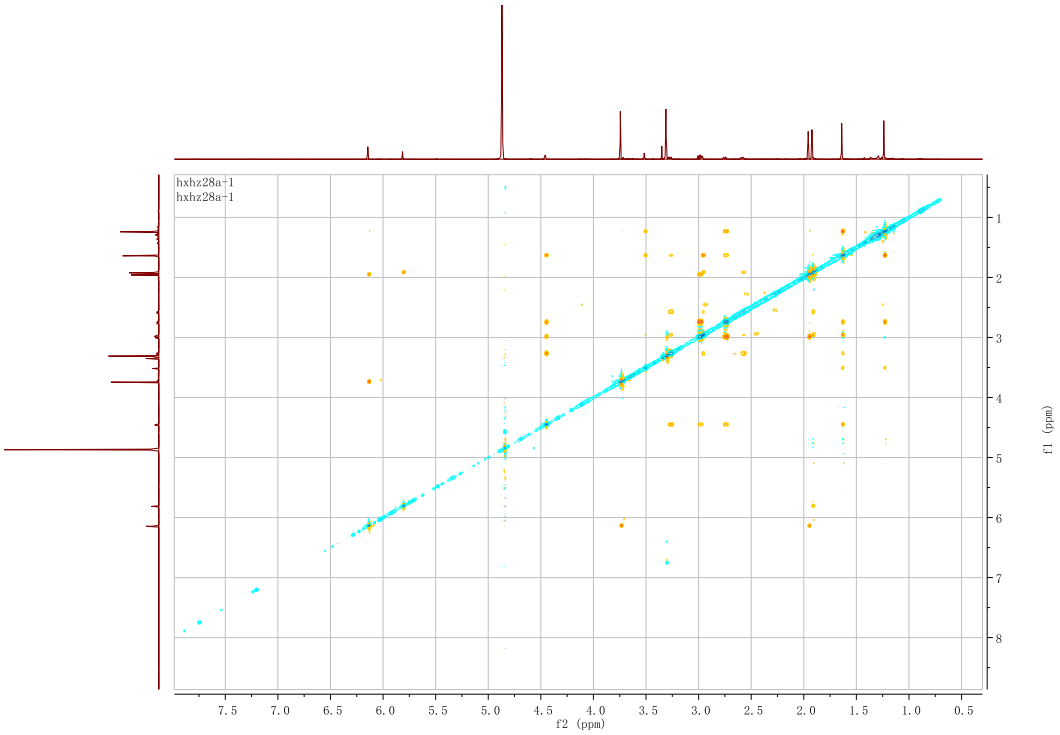


Figure S30. ROESY spectrum of Perforalactone J (5) in CD_3OD.

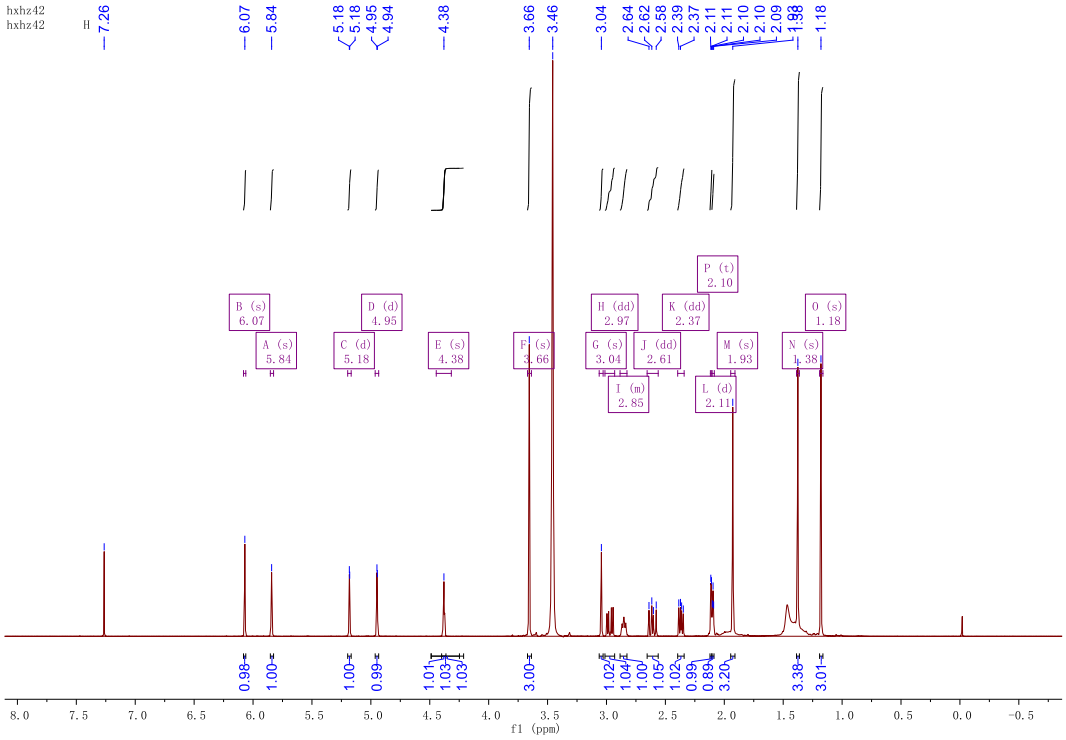


Figure S31. ^{1}H NMR spectrum of Perforalactone K (6) in $CDCl_3$.

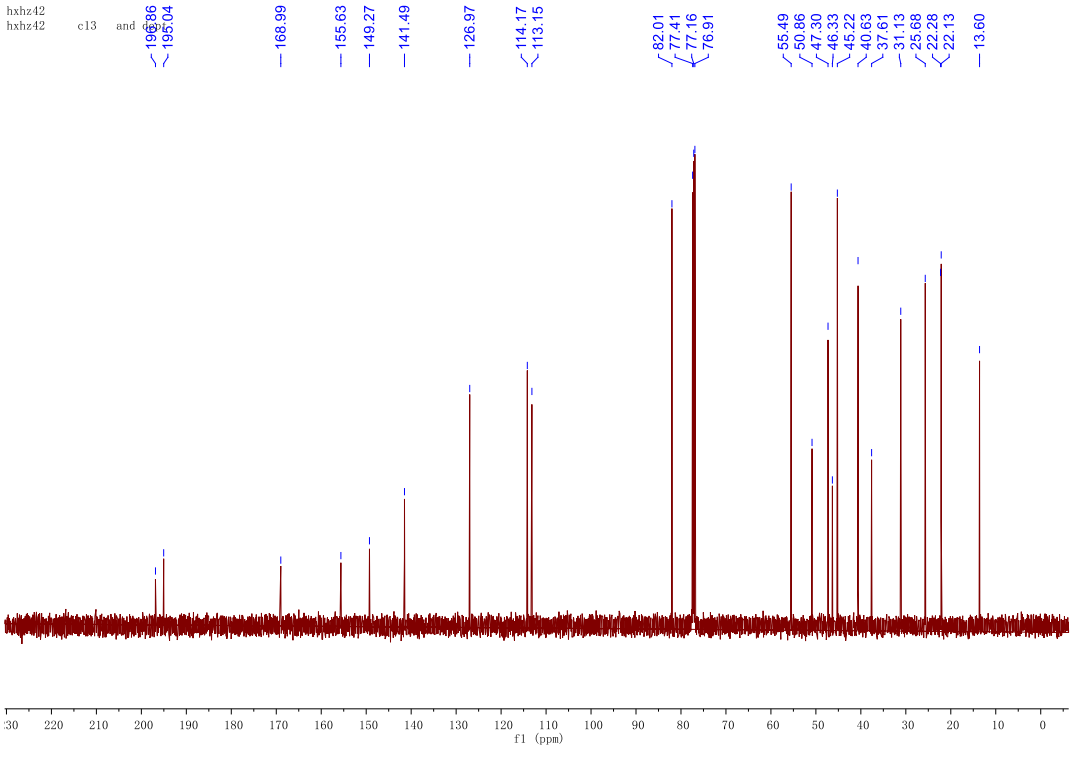


Figure S32. ^{13}C NMR spectrum of Perforalactone K (6) in $CDCl_3$.

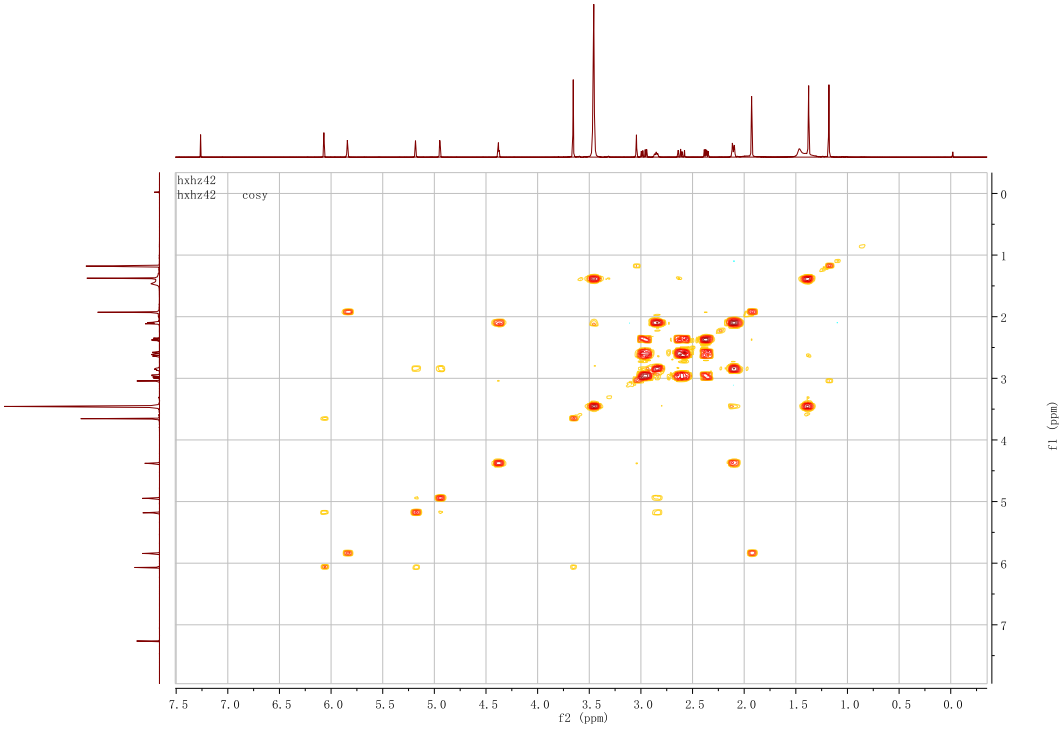


Figure S33. ^{1}H-^{1}H COSY spectrum of Perforalactone K (6) in $CDCl_3$.

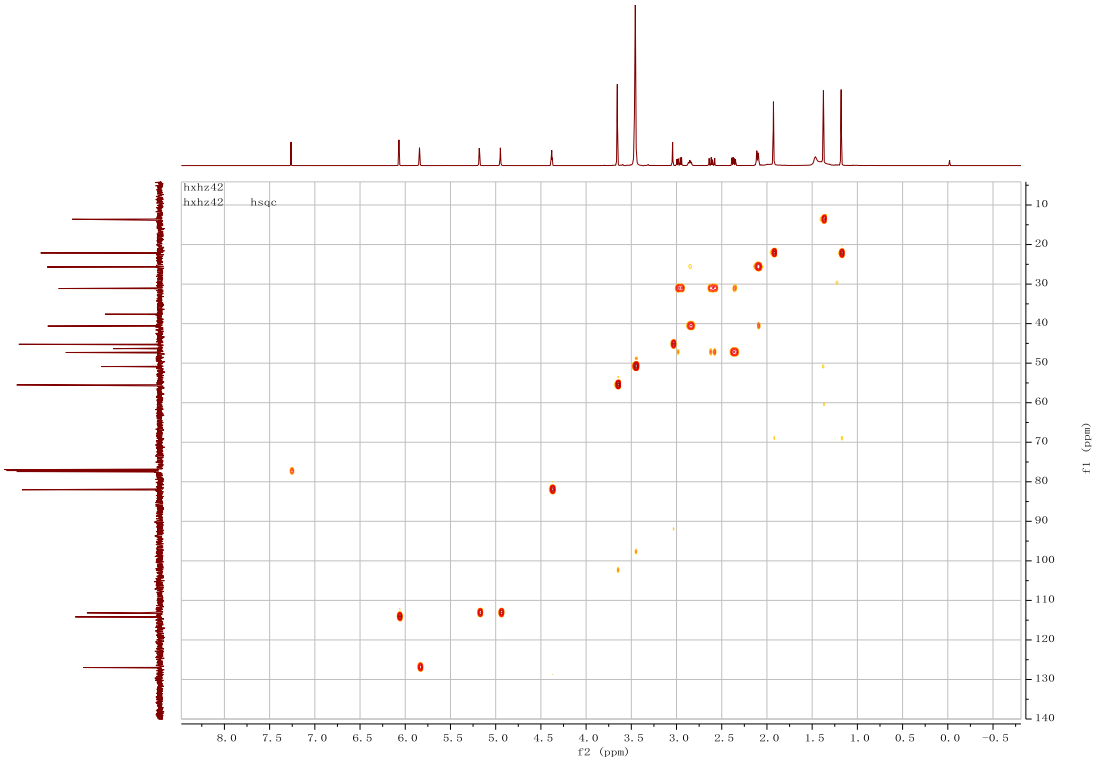


Figure S34. HSQC spectrum of Perforalactone K (6) in $CDCl_3$.

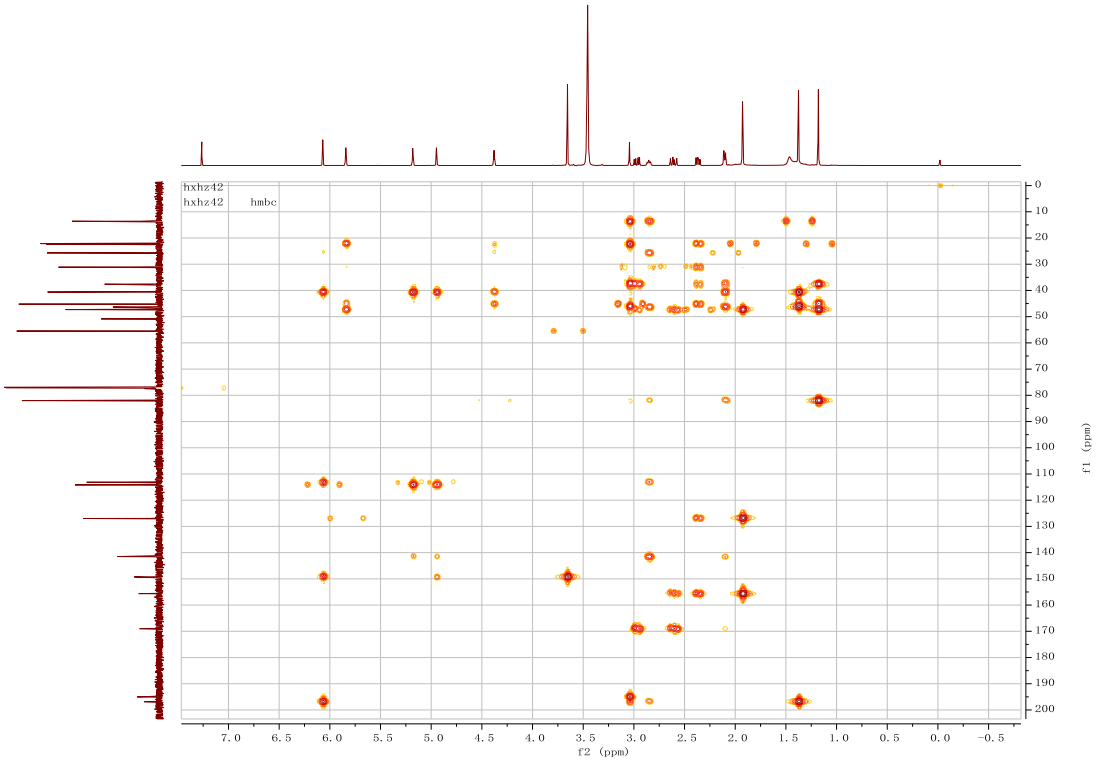


Figure S35. HMBC spectrum of Perforalactone K (6) in $CDCl_3$.

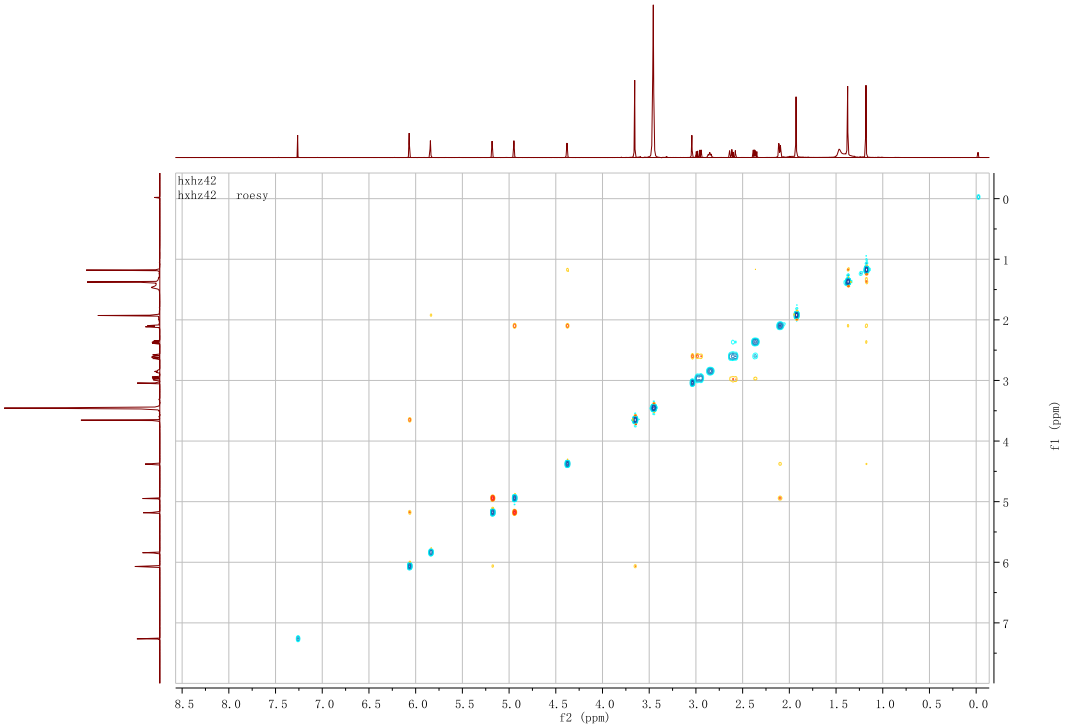


Figure S36. ROESY spectrum of Perforalactone K (6) in $CDCl_3$.

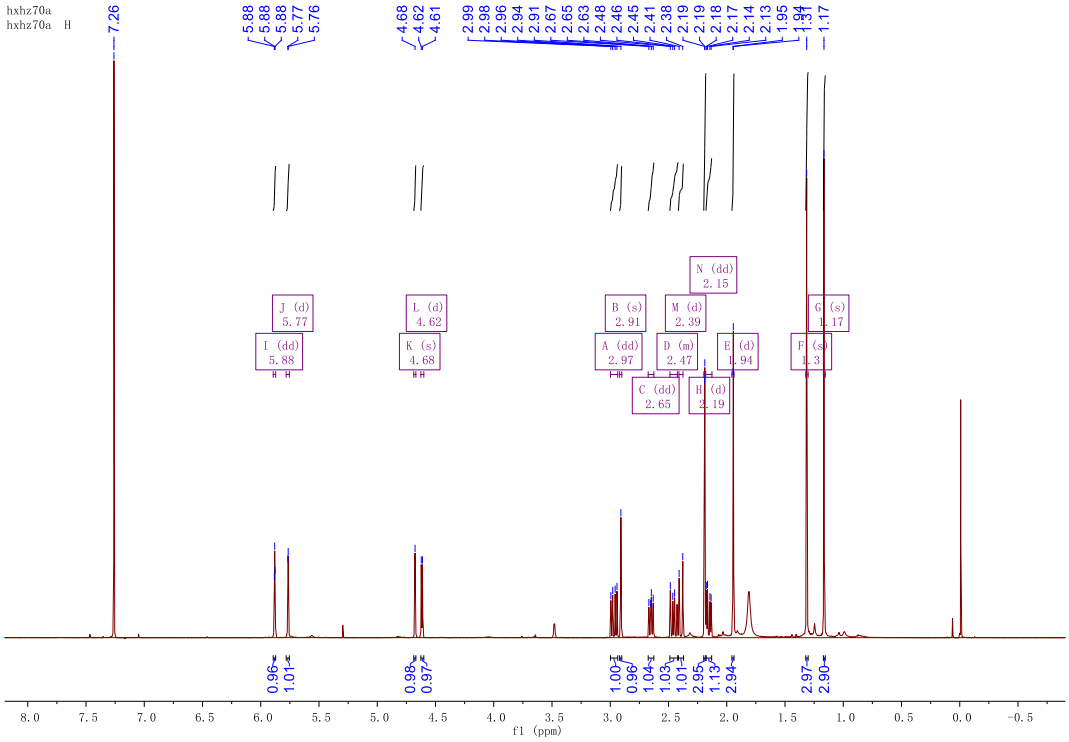


Figure S37. ^{1}H NMR spectrum of Perforalactone L (7) in $CDCl_3$.

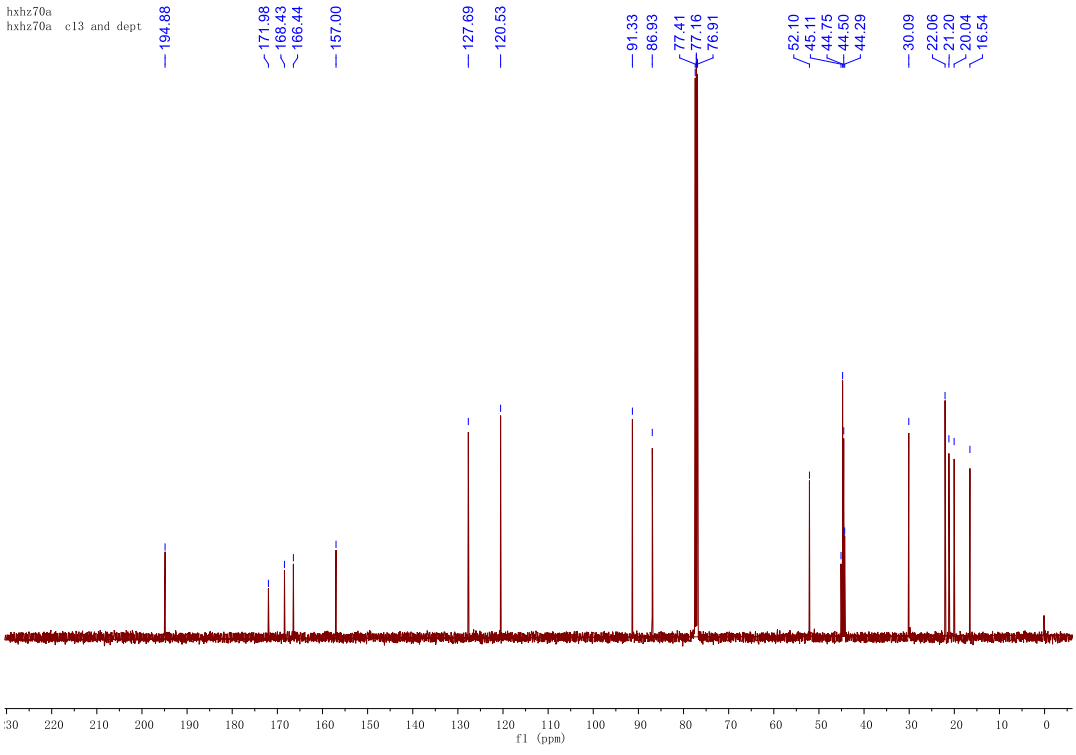


Figure S38. ^{13}C NMR spectrum of Perforalactone L (7) in $CDCl_3$.

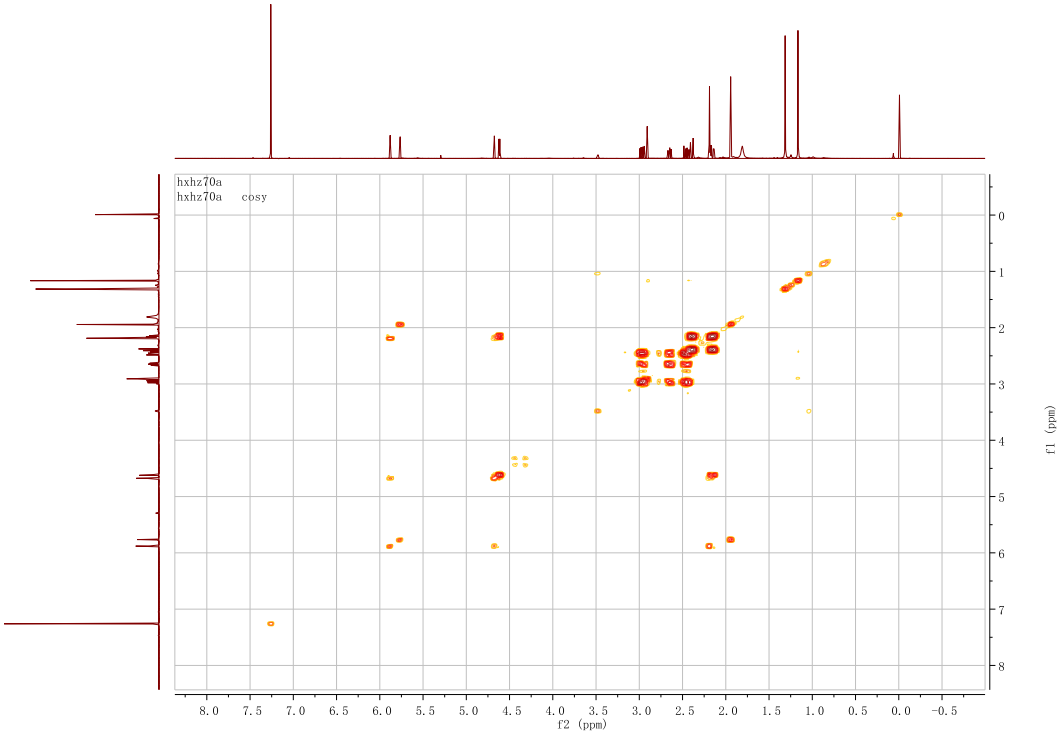


Figure S39. ^{1}H-^{1}H COSY spectrum of Perforalactone L (7) in $CDCl_3$.

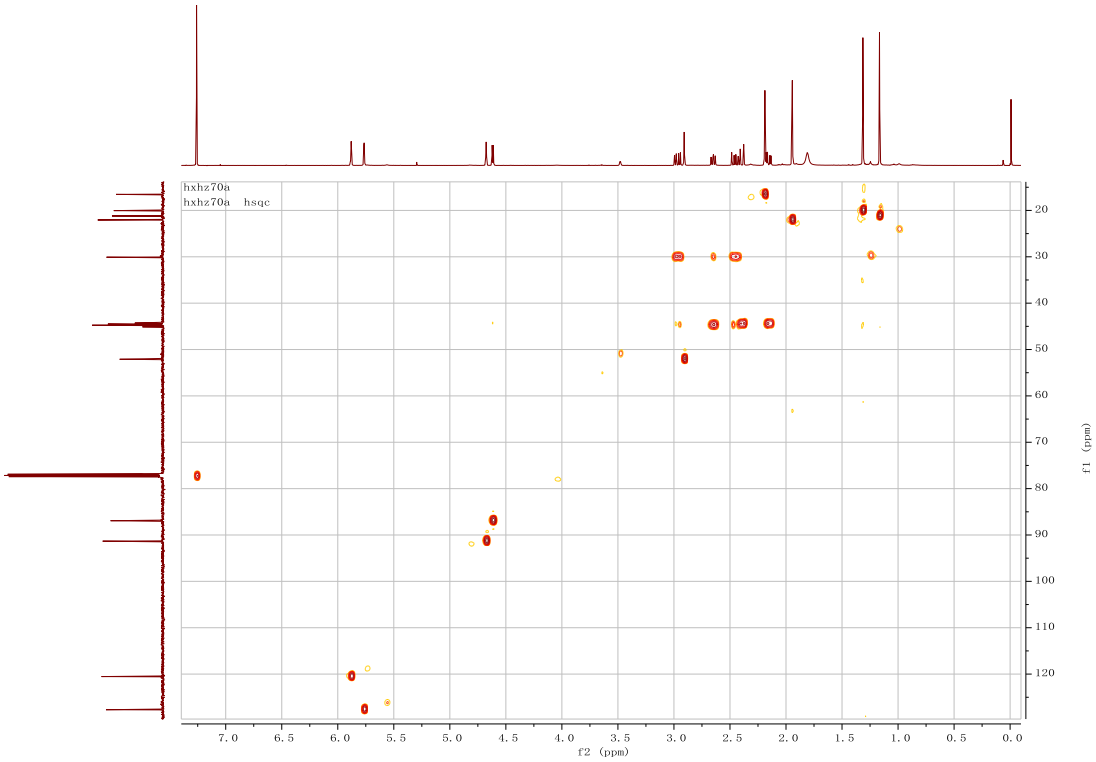


Figure S40. HSQC spectrum of Perforalactone L (7) in $CDCl_3$.

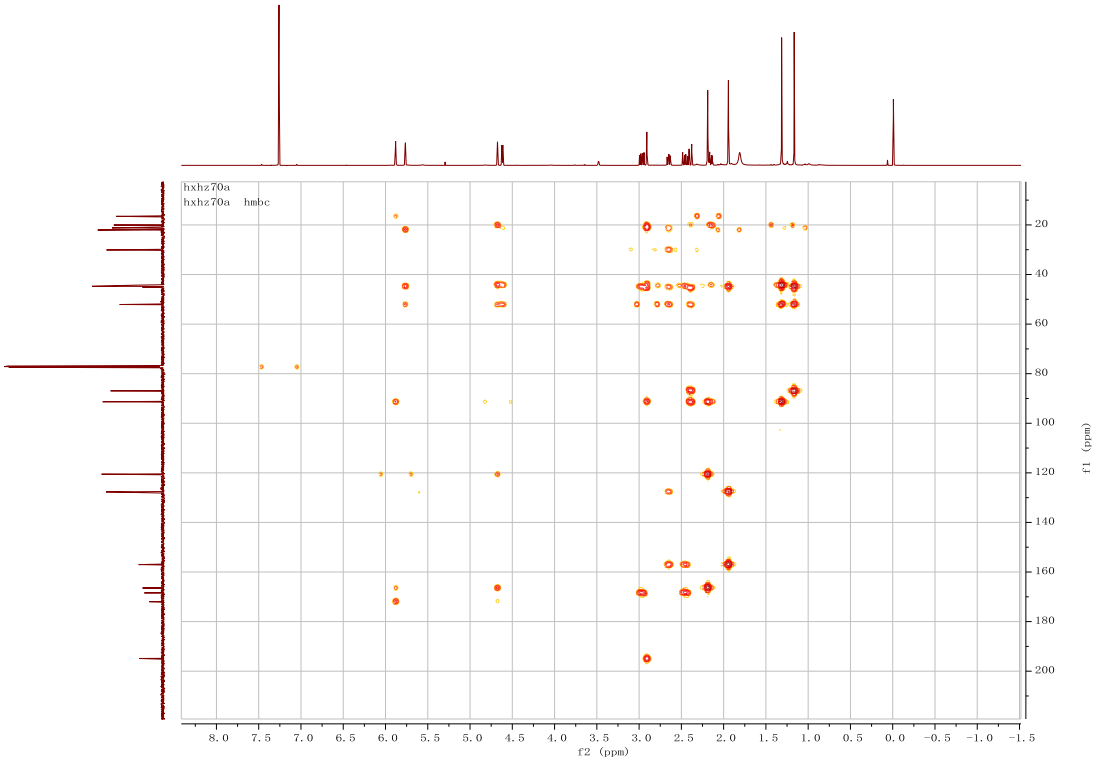


Figure S41. HMBC spectrum of Perforalactone L (7) in $CDCl_3$.

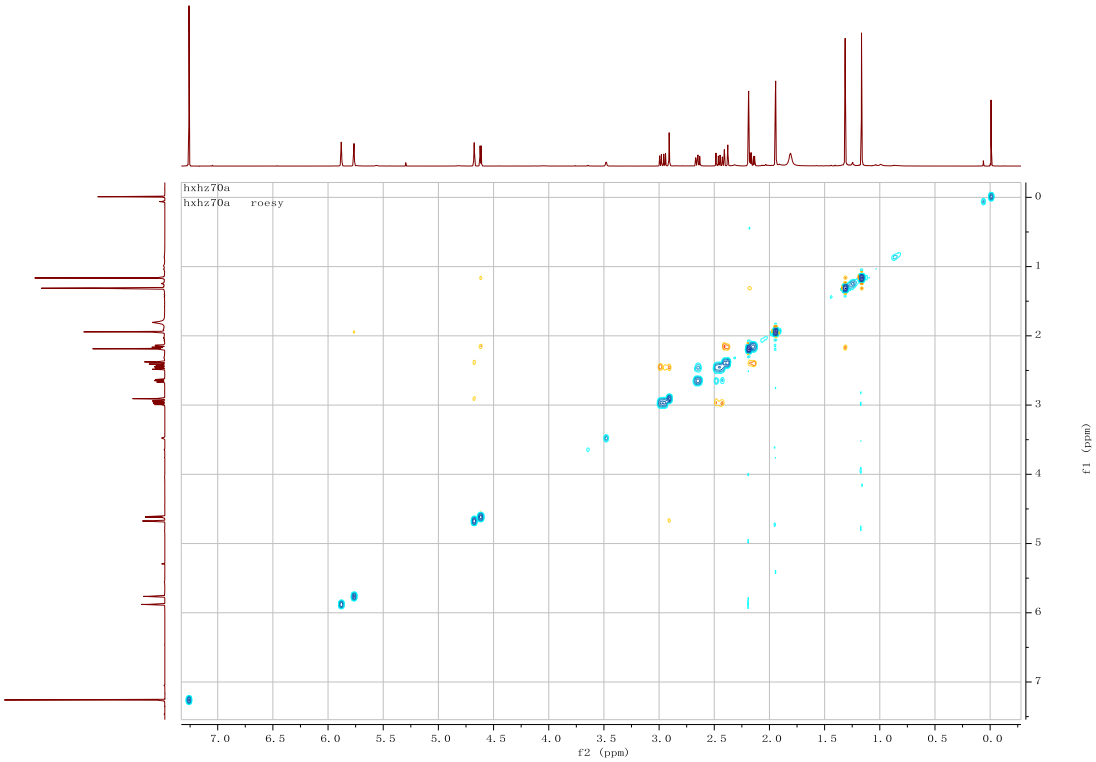


Figure S42. ROESY spectrum of Perforalactone L (7) in $CDCl_3$.