Supplementary Information

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The 16S rRNA Gene Sequences Data of *Streptomyces* sp. FXJ7.328

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The Physicochemical Data of the Known Compounds 7–10

Compound 7: White solid; ^{1}H NMR (600 MHz, C_5H_5N-d_5): δ 11.33 (1H, s, H-1), 10.97 (1H, s, H-4), 6.32 (1H, d, *J* = 10.4 Hz, H-7), 3.21 (1H, m, H-8), 1.09 (6H, d, *J* = 6.6 Hz, CH_3-9/10), 7.32 (1H, s, H-11), 7.65 (2H, d, *J* = 7.6 Hz, H-13/17), 7.33 (2H, t, *J* = 7.6 Hz, H-14/16), 7.24 (1H, t, *J* = 7.3 Hz, H-15). ^{13}C NMR (150 MHz, C_5H_5N-d_5): δ 156.9 (C_q, C-2), 126.5 (C_q, C-3), 157.1 (C_q, C-5), 125.1 (C_q, C-6), 124.0 (C_q, C-7), 23.8 (CH, C-8), 20.7 ×2 (CH_3, C-9/10), 113.1 (CH, C-11), 133.0 (C_q, C-12), 127.6 ×2 (CH, C-13/17), 127.9 ×2 (CH, C-14/16), 126.6 (CH, C-15). ESIMS *m*/*z* 257 $[M + H]^+$.

Compound 8: Yellow solid; ^{1}H NMR (600 MHz, $CDCl_3$): δ 3.29 (3H, s, NCH_3-1), 8.02 (1H, s, H-4), 5.49 (1H, d, *J* = 9.66 Hz, H-7), 3.76 (1H, m, H-8), 1.08 (6H, d, *J* = 6.6 Hz, CH_3-9/10), 6.98 (1H, s, H-11), 7.38 (2H, d, *J* = 7.5 Hz, H-13/17), 7.41 (2H, t, *J* = 7.4 Hz, H-14/16), 7.32 (1H, t, *J* = 7.4 Hz, H-15). ^{13}C NMR (150 MHz, $CDCl_3$): δ 31.1 (CH_3, NCH_3-1), 157.8 (C_q, C-2), 125.8 (C_q, C-3), 157.6 (C_q, C-5), 128.1 (C_q, C-6), 134.8(C_q, C-7), 26.8 (CH, C-8), 24.4 × 2 (CH_3, C-9/10), 115.8(CH, C-11), 133.4 (C_q, C-12), 128.5 ×2 (CH, C-13/17), 129.5 ×2 (CH, C-14/16), 128.6 (CH, C-15). ESIMS *m*/*z* 271 $[M + H]^+$.

Compound 9: White solid; $[\alpha]^{25}_D$ −88 (*c* 0.03, DMSO-d_6), ^{1}H NMR (600 MHz, DMSO-d_6): δ 8.50 (1H, s, NH-1), 9.96 (1H, s, NH-4), 3.78 (1H, t, *J* = 3.8 Hz, H-6), 2.07 (1H, m, H-7), 0.93 (3H, d, *J* = 6.8 Hz, CH_3-8), 0.87 (3H, d, *J* = 6.6 Hz, CH_3-9), 6.66 (1H, s, H-10), 7.45 (2H, d, *J* = 7.6 Hz, H-12/16), 7.39 (2H, t, *J* = 7.6 Hz, H-13/15), 7.29 (1H, t, *J* = 7.4 Hz, H-14). ^{13}C NMR (150 MHz, DMSO-d_6): δ 161.2 (C_q, C-2), 127.1 (C_q, C-3), 167.2 (C_q, C-5), 61.1 (CH, C-6), 34.1 (CH, C-7), 18.7 (CH_3, C-8), 17.5 (CH_3, C-9), 114.9 (CH, C-10), 133.8 (C_q, C-11), 129.6 ×2 (CH, C-12/16), 129.3 ×2 (CH, C-13/15), 128.6 (CH, C-14). ESIMS *m*/*z* 245 $[M + H]^+$.

Compound 10: Yellow solid; ^{1}H NMR (600 MHz, $CDCl_3$): δ 3.21 (3H, s, NCH_3-1), 9.67 (1H, s, H-4), 5.47 (1H, d, *J* = 10.4 Hz, H-7), 3.81 (1H, m, H-8), 1.10 (6H, d, *J* = 6.7 Hz, CH_3-9/10), 6.46 (1H, s, H-11), 7.52 (2H, d, *J* = 7.6 Hz, H-13/17), 7.33 (2H, t, *J* = 7.6 Hz, H-14/16), 7.27 (1H, t, *J* = 7.4 Hz, H-15). ^{13}C NMR (150 MHz, $CDCl_3$): δ 31.1 (CH_3, NCH_3-1), 156.9 (C_q, C-2), 125.4 (C_q, C-3), 159.9 (C_q, C-5), 128.1 (C_q, C-6), 134.5 (CH, C-7), 26.8 (CH, C-8), 23.4 ×2 (CH_3, C-9/10), 122.4 (CH, C-11), 134.1 (C_q, C-12), 127.9 ×2 (CH, C-13/17), 130.1 ×2 (CH, C-14/16), 128.4 (CH, C-15). ESIMS *m*/*z* 271 $[M + H]^+$.

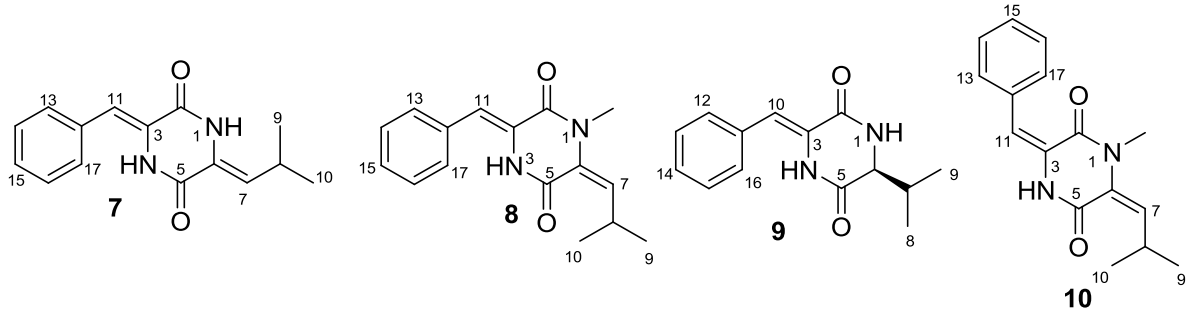


Figure S1. The ^{1}H NMR (600 MHz, DMSO-d_6) spectrum of compounds **1** and **2**.

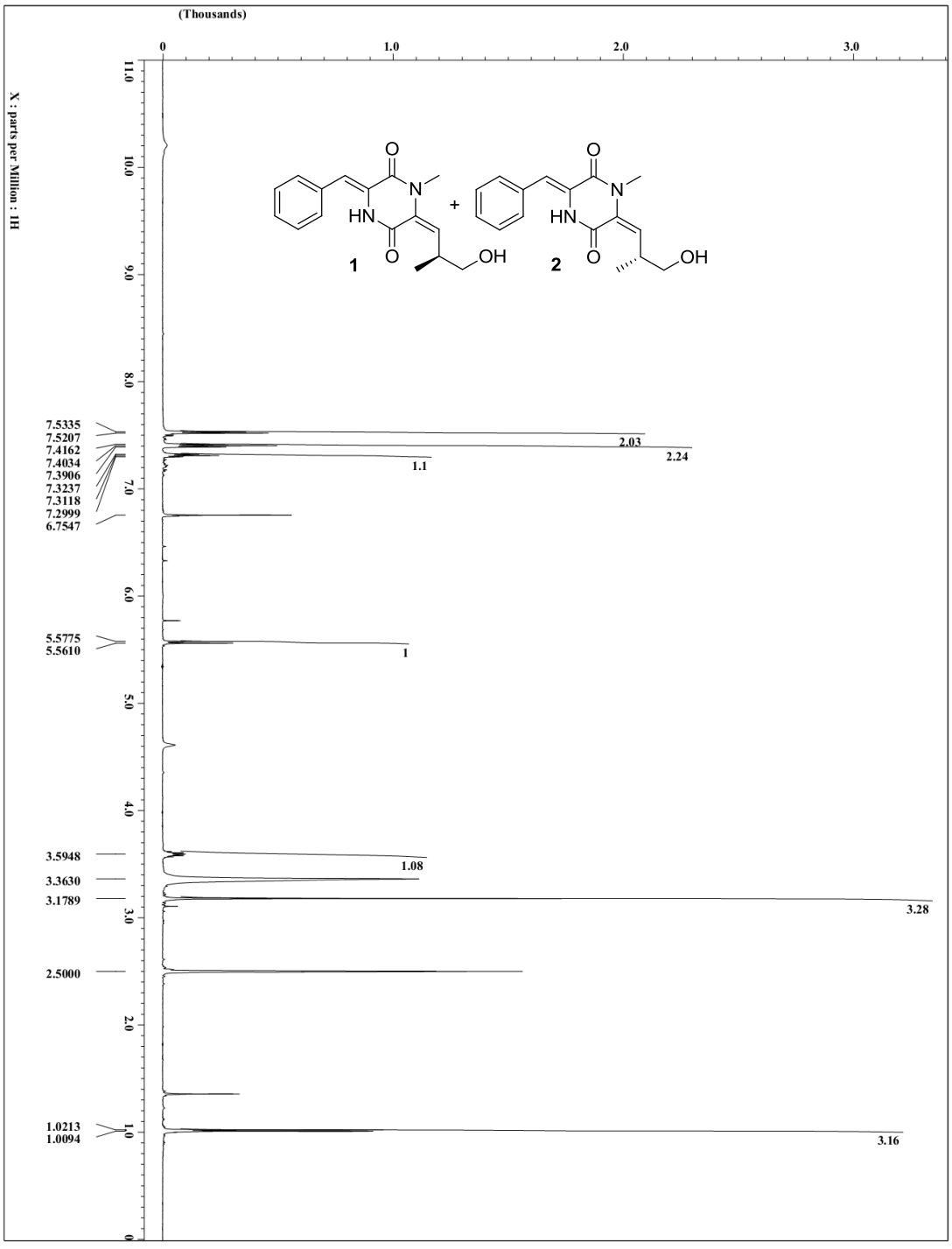


Figure S2. The ^{13}C NMR (150 MHz, DMSO-d_6) spectrum of compounds **1** and **2**.

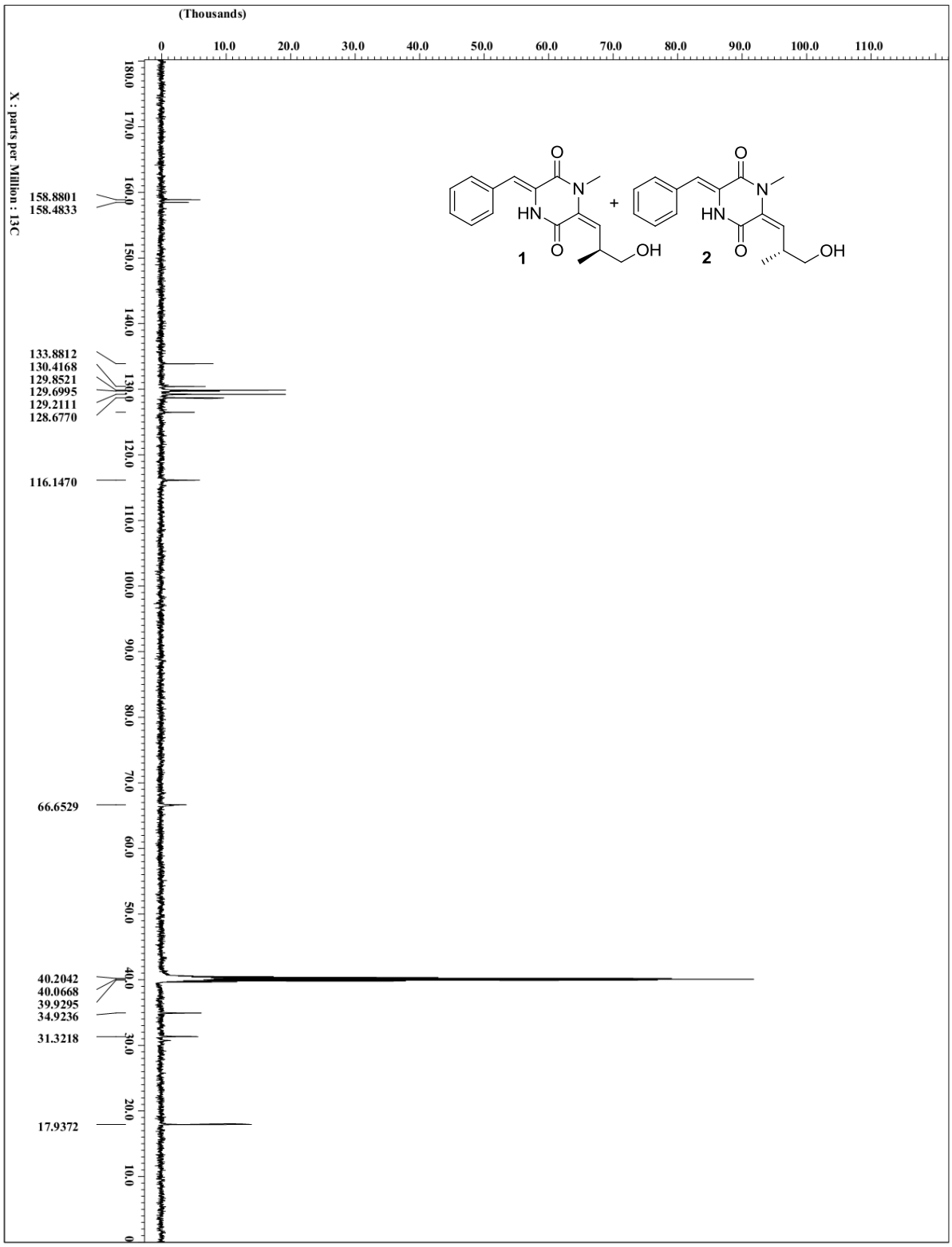


Figure S3. The DEPT (150 MHz, DMSO-d_6) spectrum of compounds **1** and **2**.

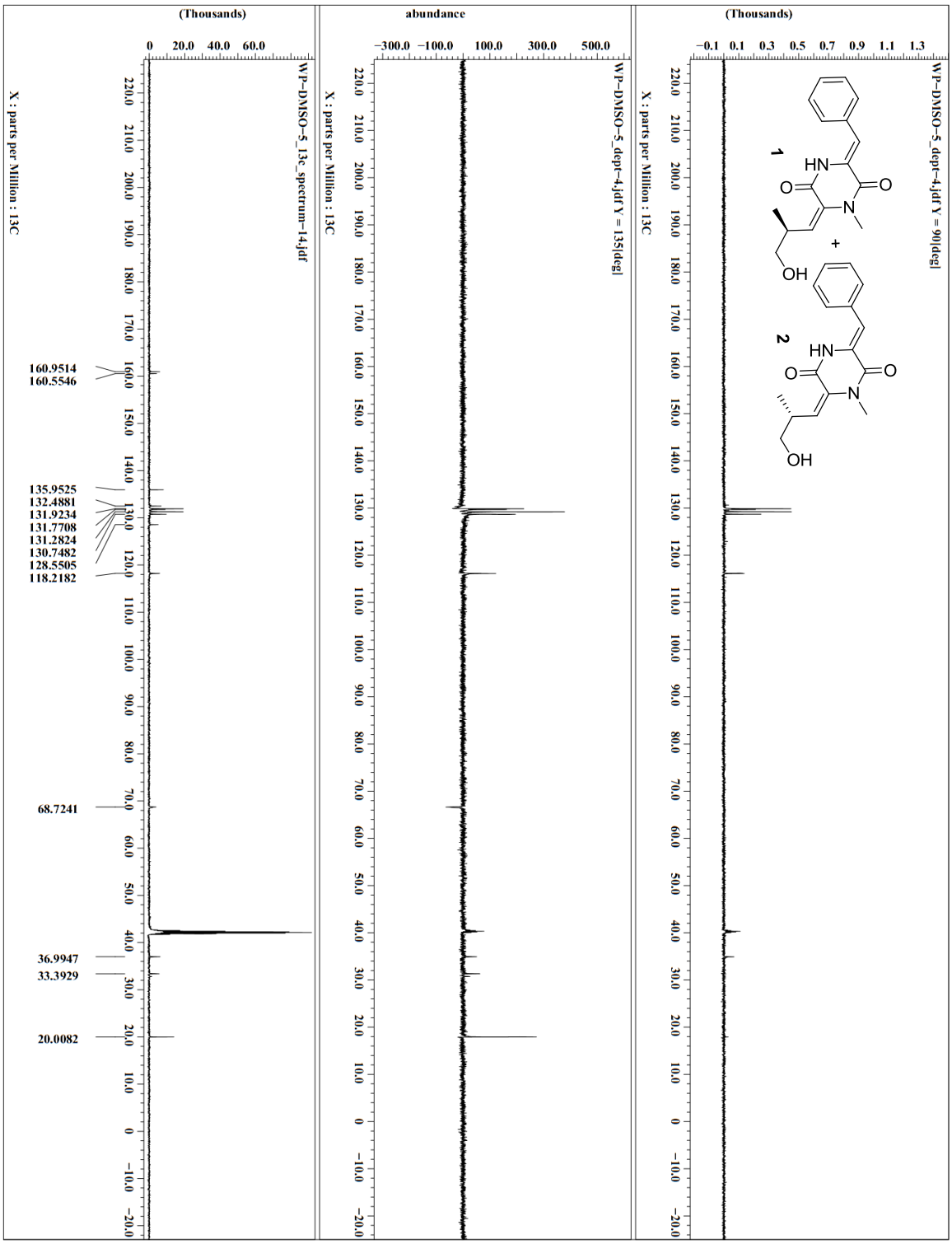


Figure S4. The ^{1}H-^{1}H COSY (600 MHz, DMSO-d_6) spectrum of compounds **1** and **2**.

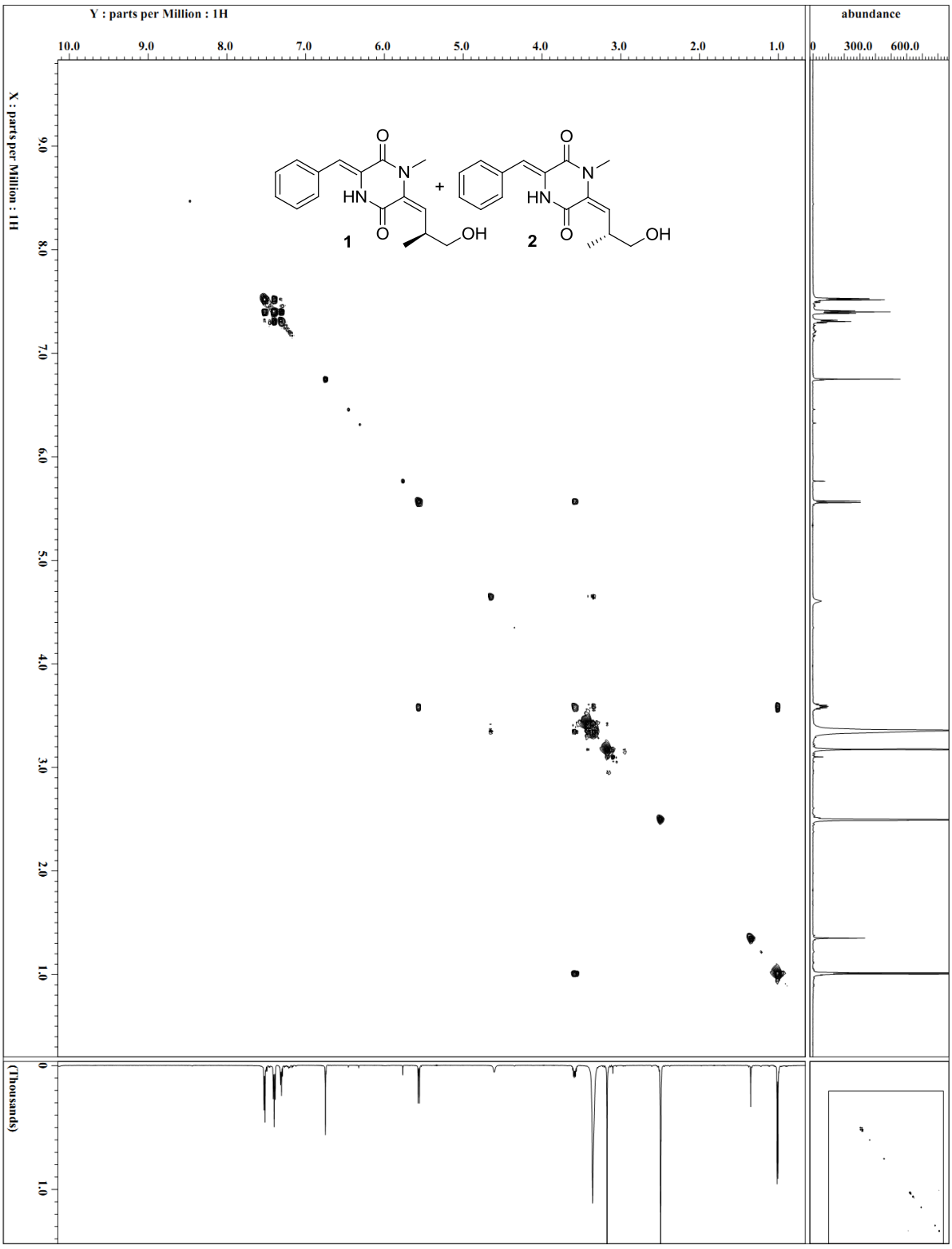


Figure S5. The HMQC (600 MHz, DMSO-d_6) spectrum of compounds **1** and **2**.

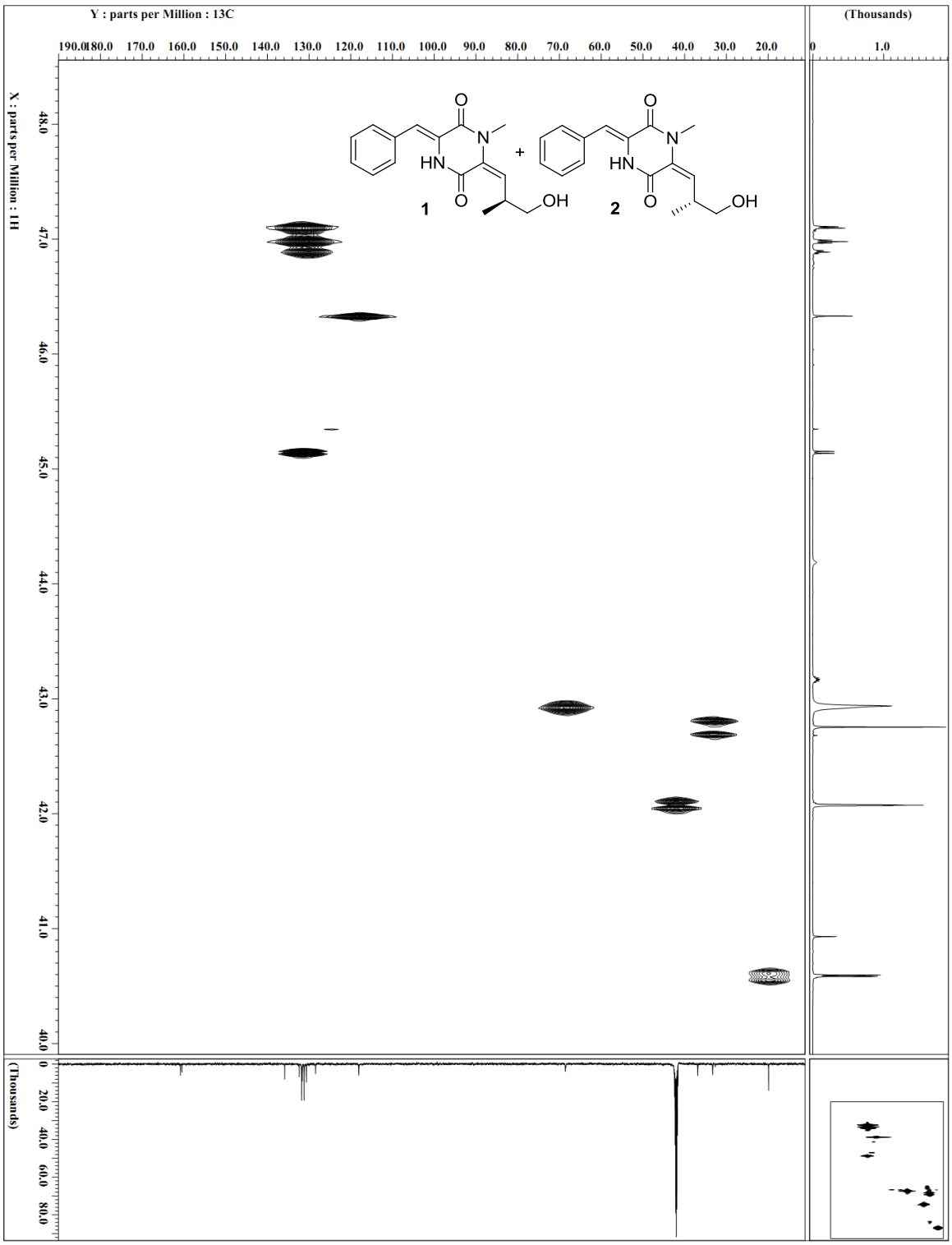


Figure S6. The HMBC (600 MHz, DMSO-d_6) spectrum of compounds **1** and **2**.

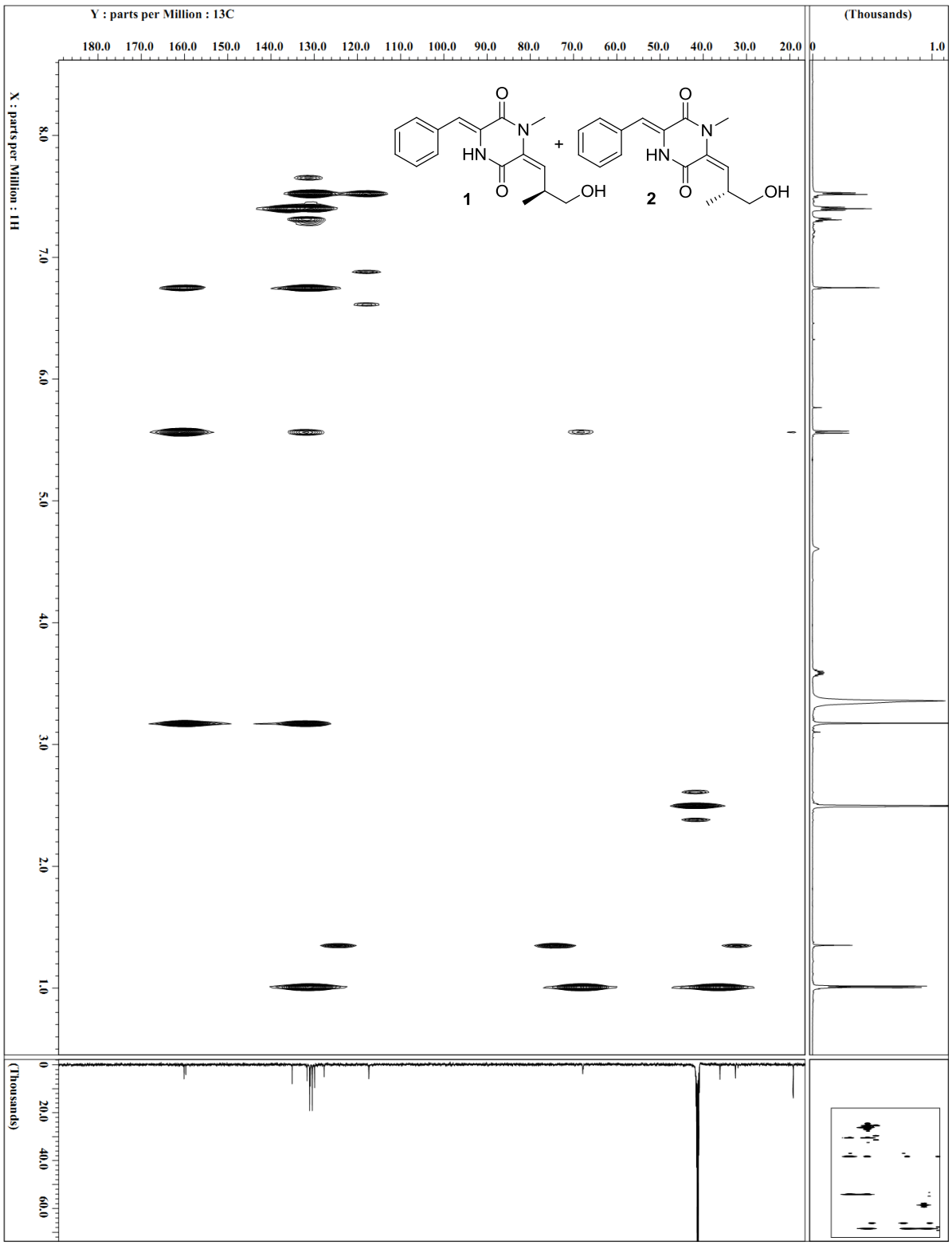


Figure S7. The NOESY (600 MHz, DMSO-d_6) spectrum of compounds **1** and **2**.

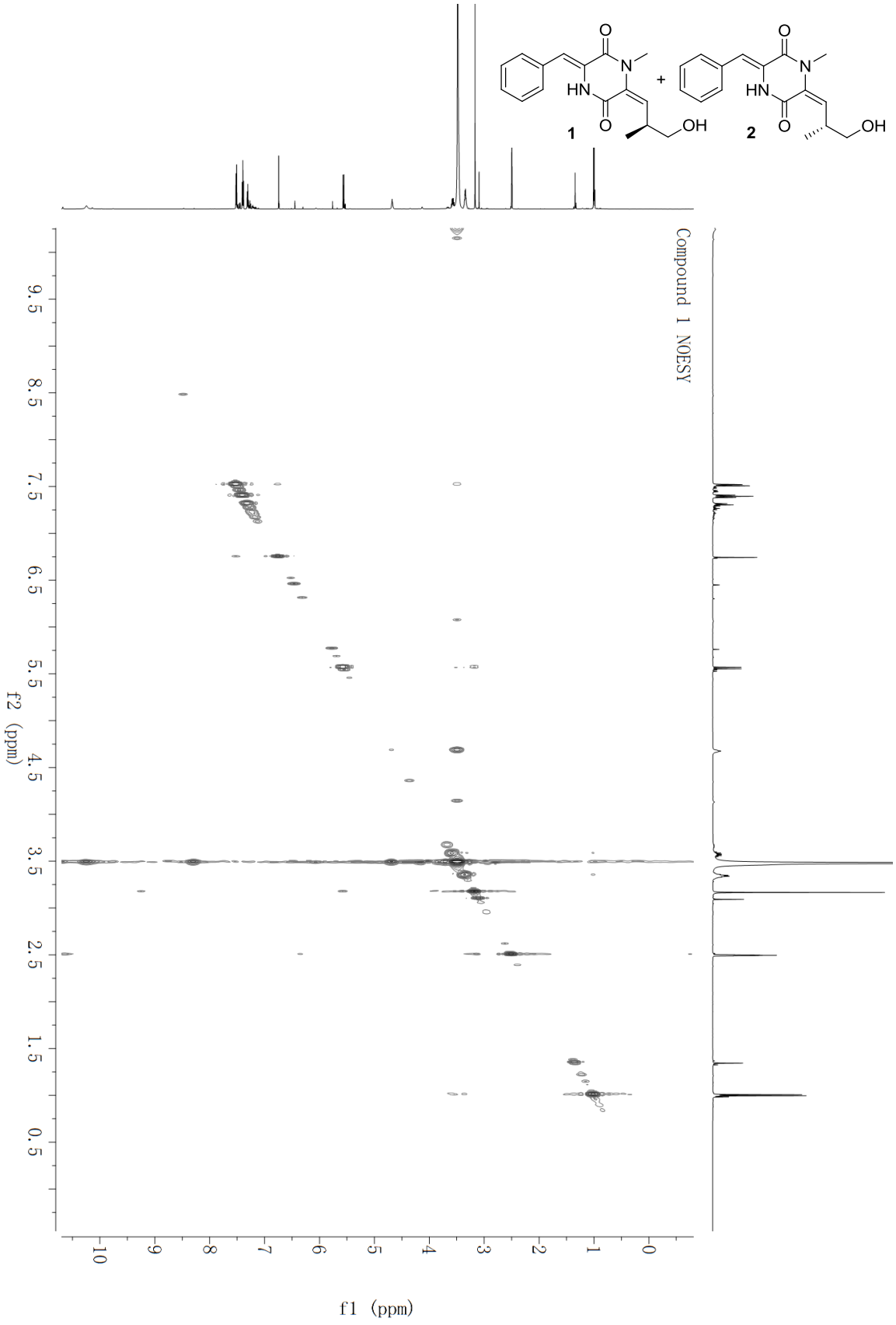


Figure S8. The ^{1}H NMR (600 MHz, DMSO-d_6) spectrum of compound **3**.

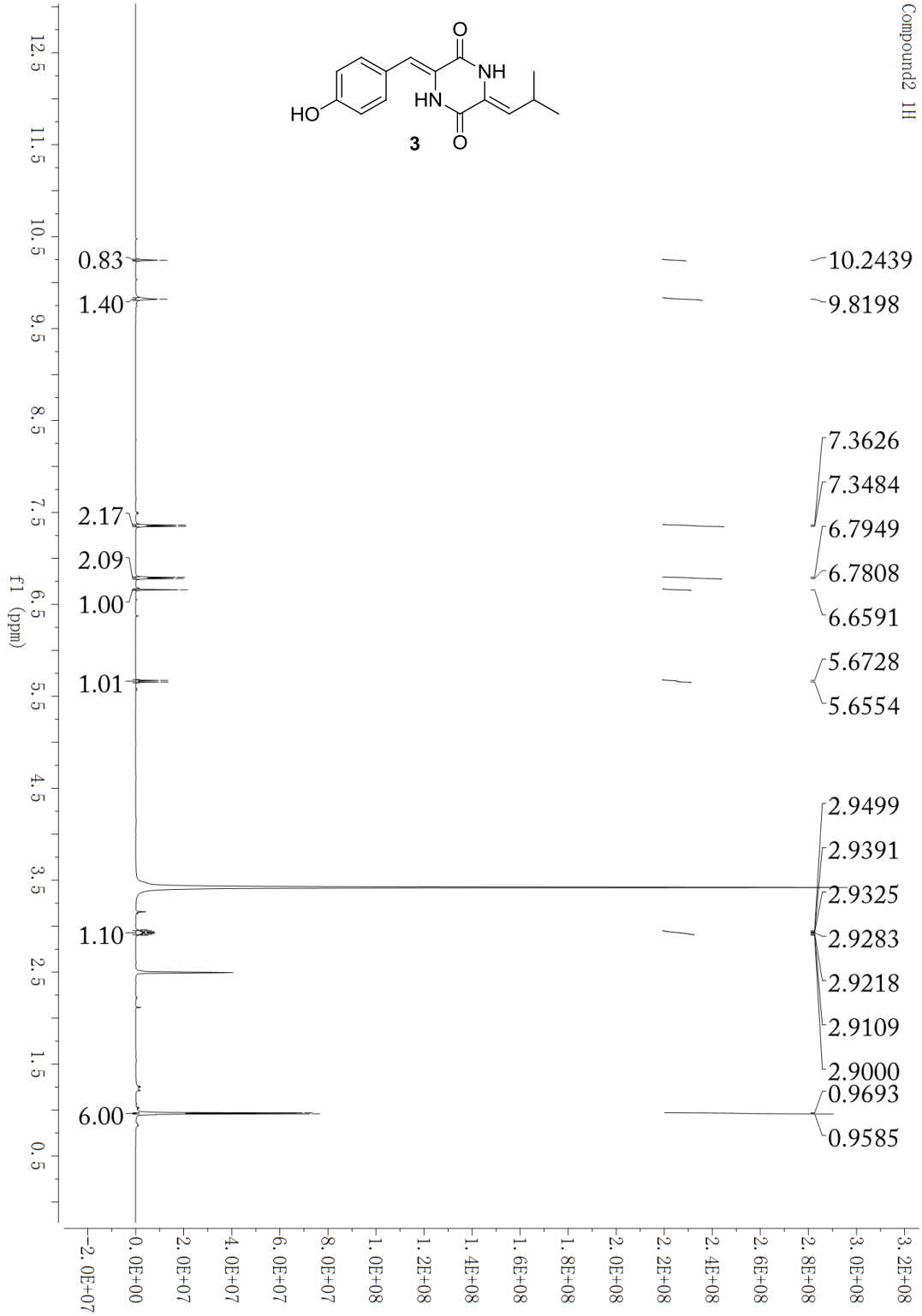


Figure S9. The ^{13}C NMR (150 MHz, DMSO-d_6) spectrum of compound **3**.

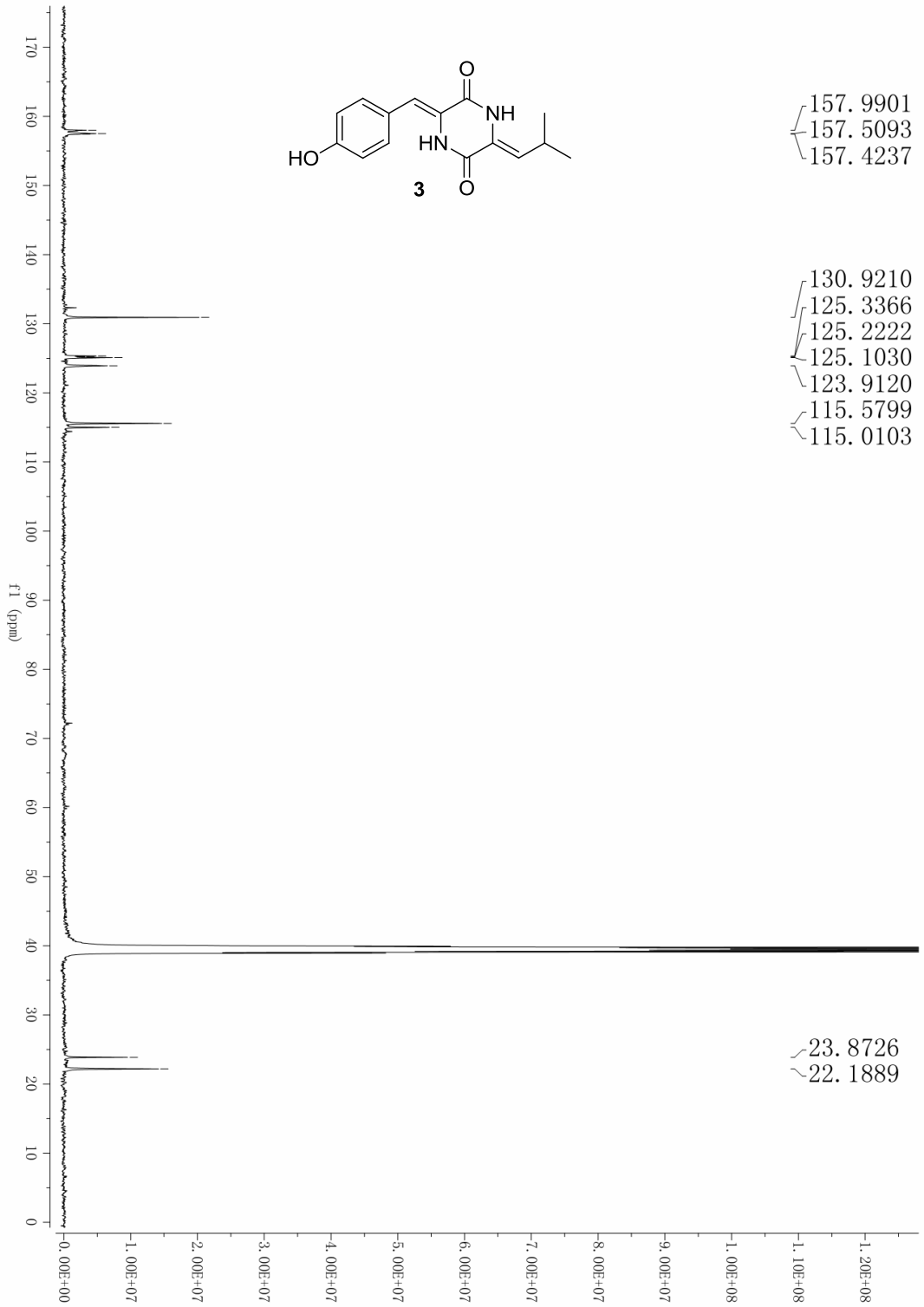


Figure S10. The DEPT (150 MHz, DMSO-d_6) spectrum of compound **3**.

Figure S11. The HMQC (6000 MHz, DMSO-d_6) spectrum of compound **3**.

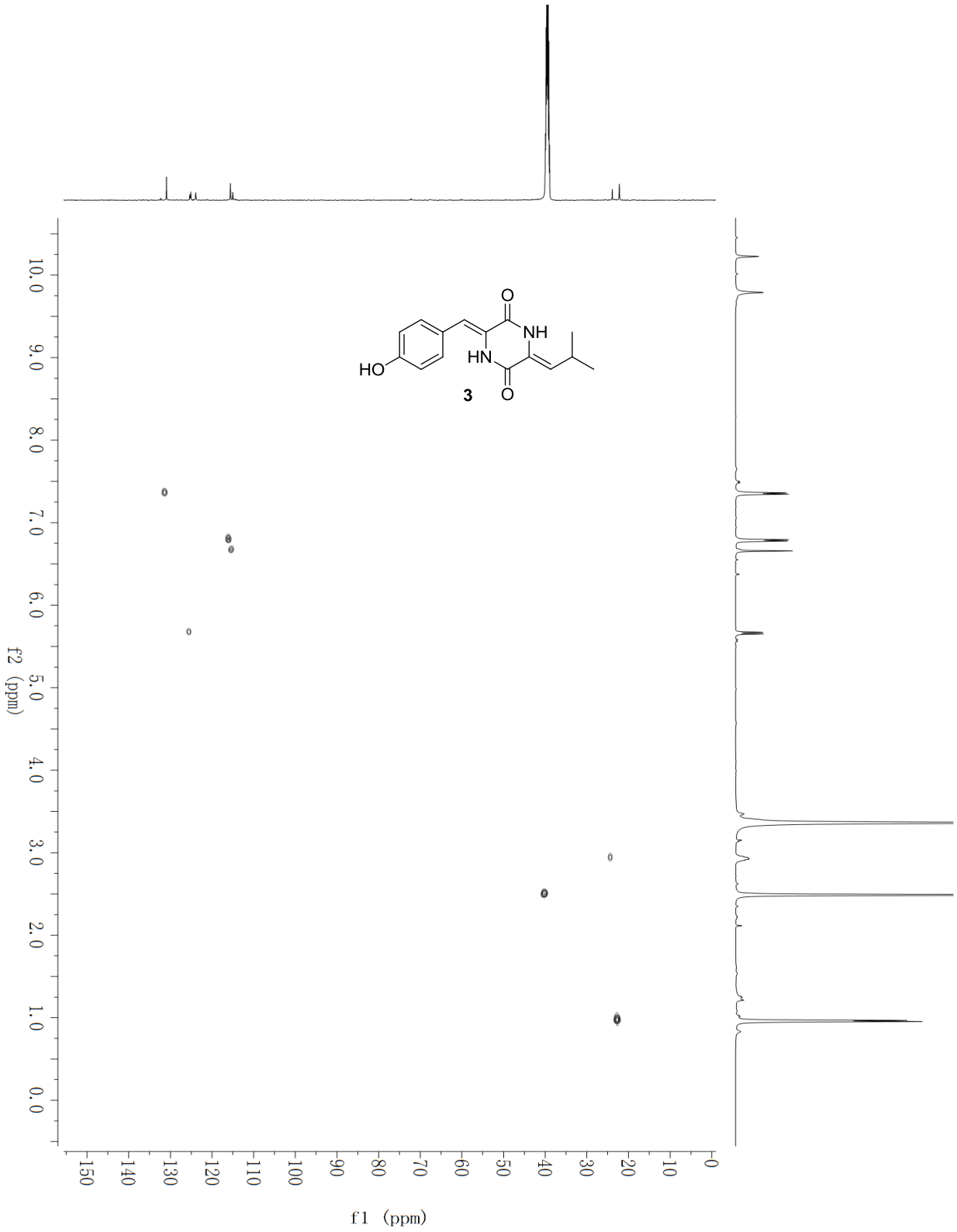


Figure S12. The ^{1}H-^{1}H COSY (600 MHz, DMSO-d_6) spectrum of compound **3**.

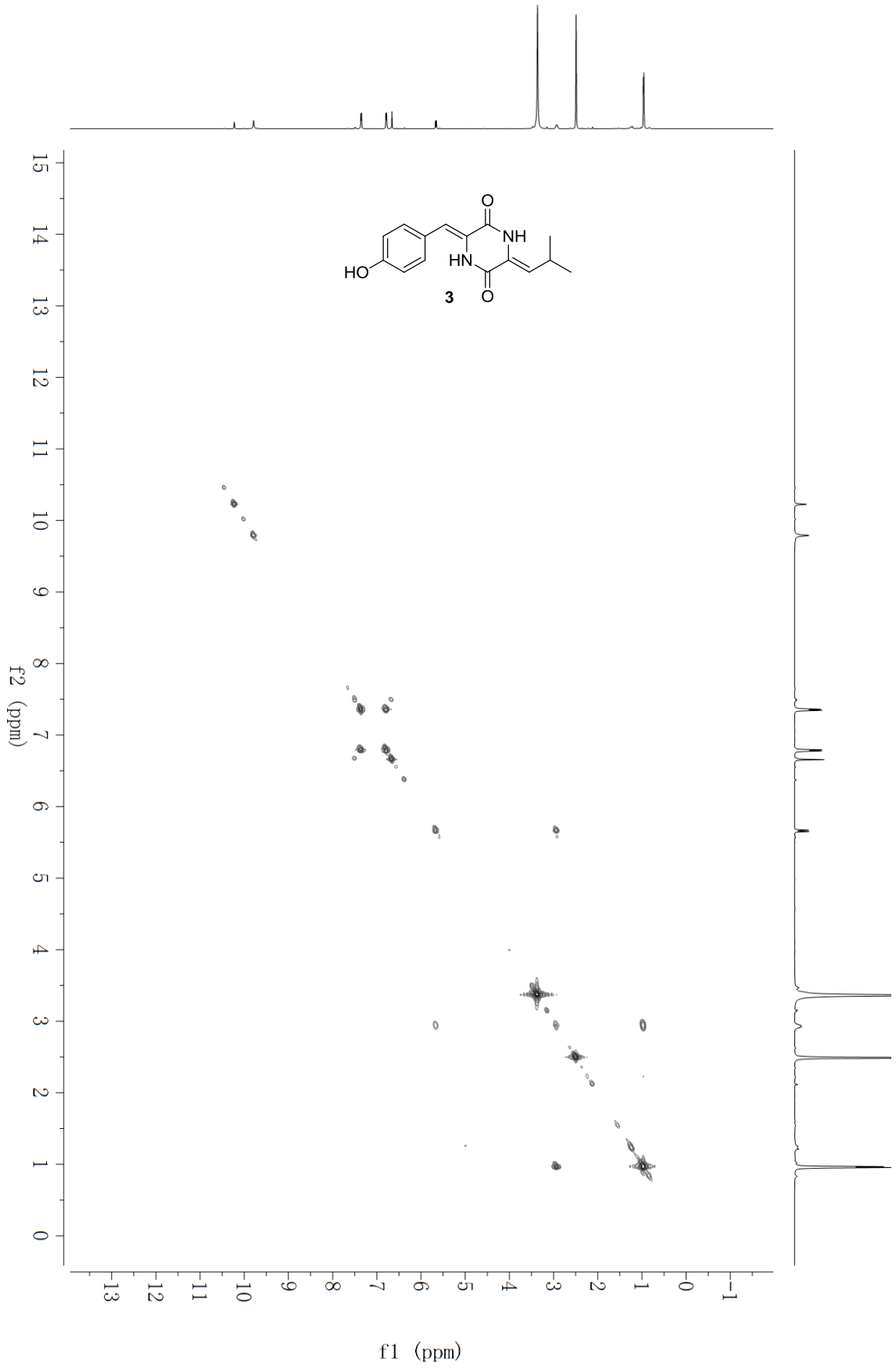


Figure S13. The HMBC (600 MHz, DMSO-d_6) spectrum of compound **3**.

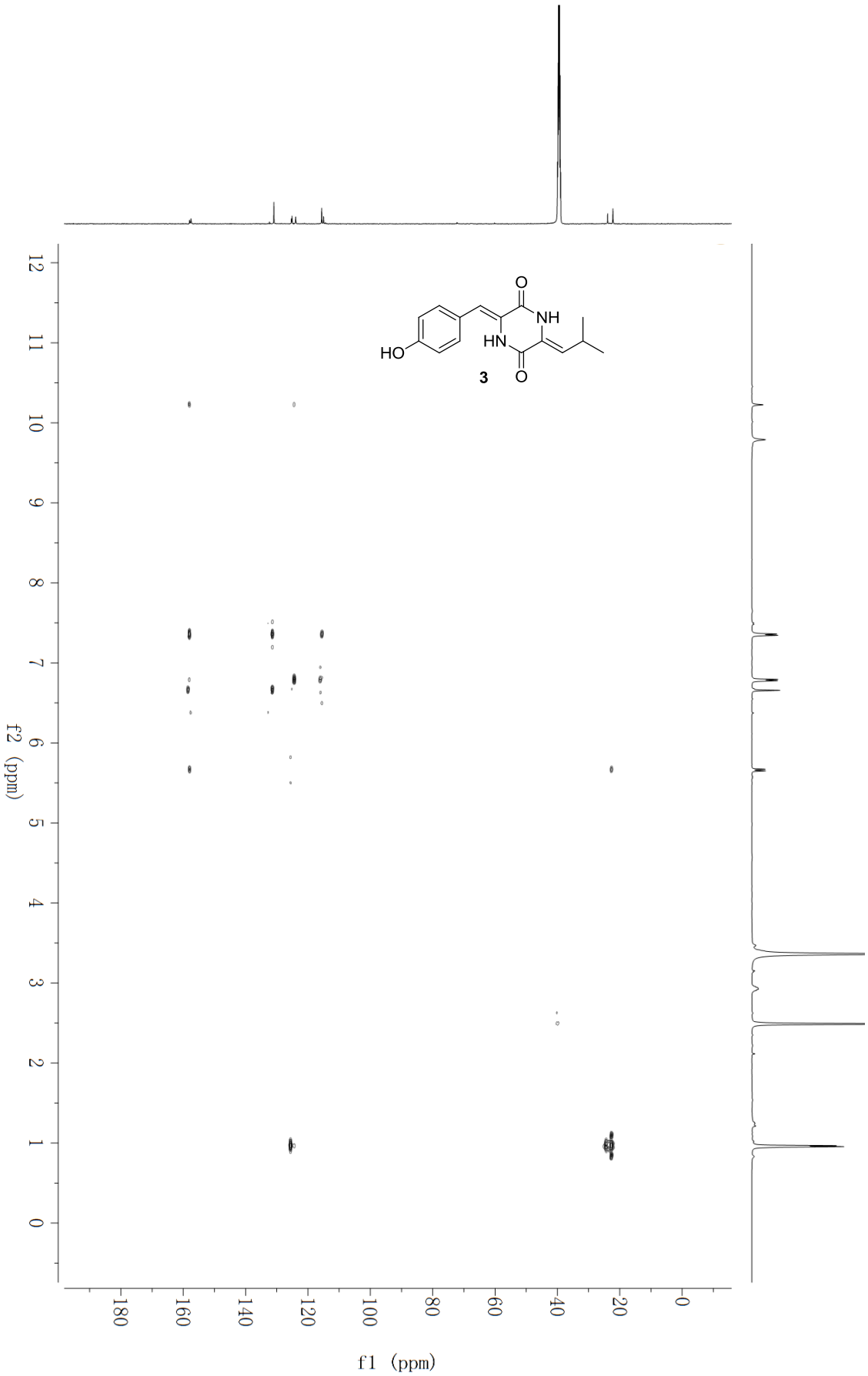


Figure S14. The NOESY (600 MHz, DMSO-d_6) spectrum of compound **3**.

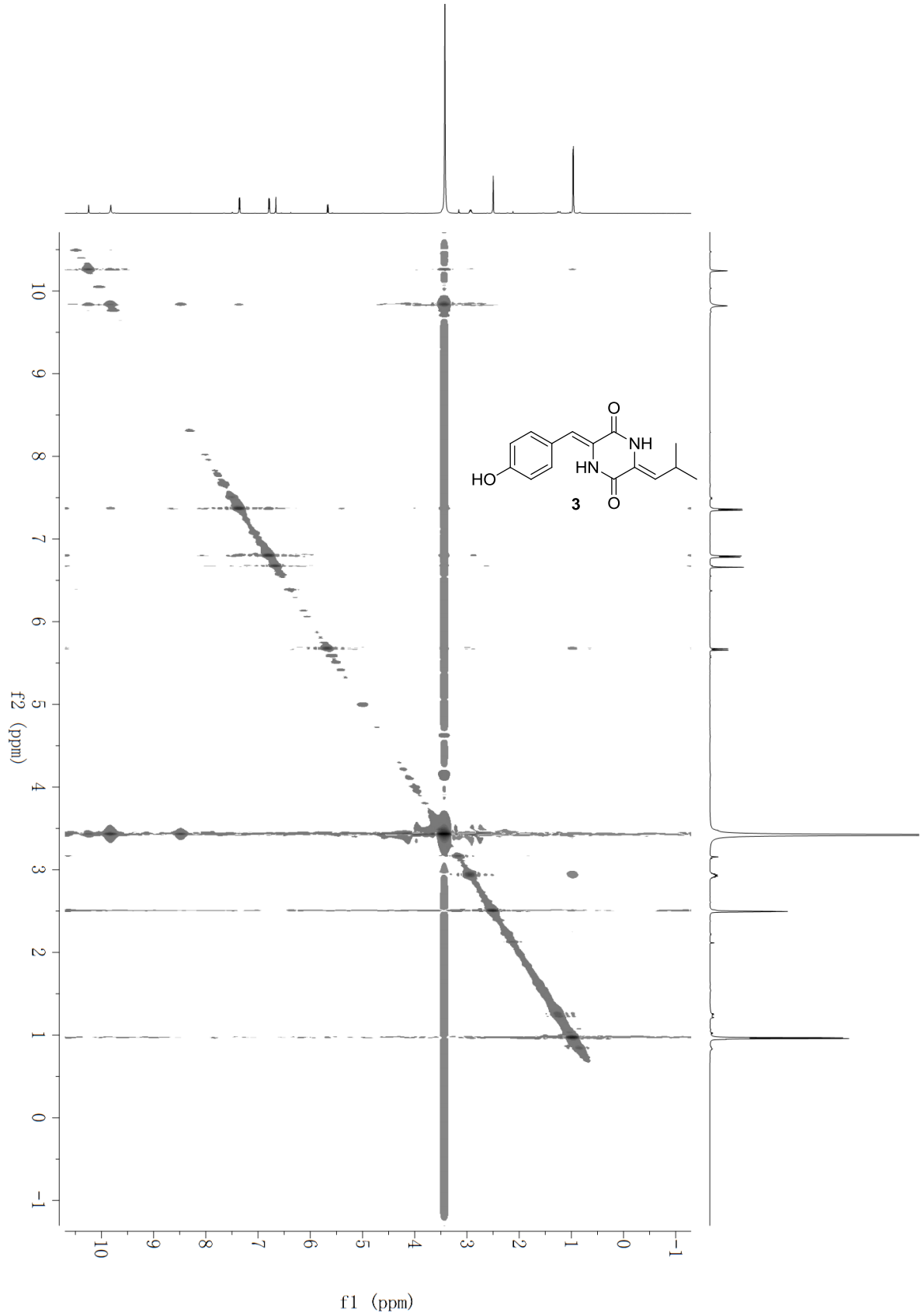


Figure S15. The ^{1}H NMR (600 MHz, DMSO-d_6) spectrum of compound **4**.

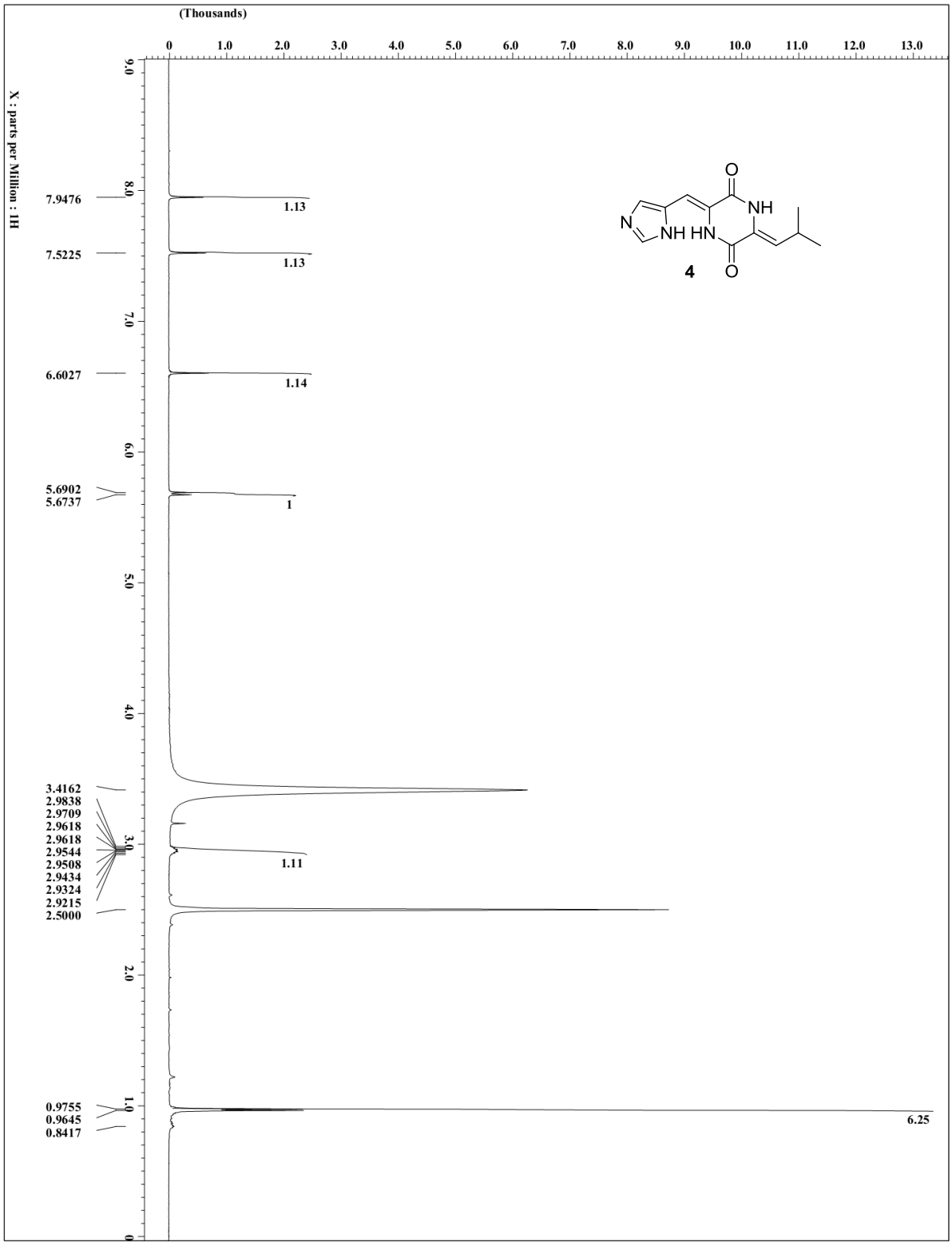


Figure S16. The ^{13}C NMR (150 MHz, DMSO-d_6) spectrum of compound **4**.

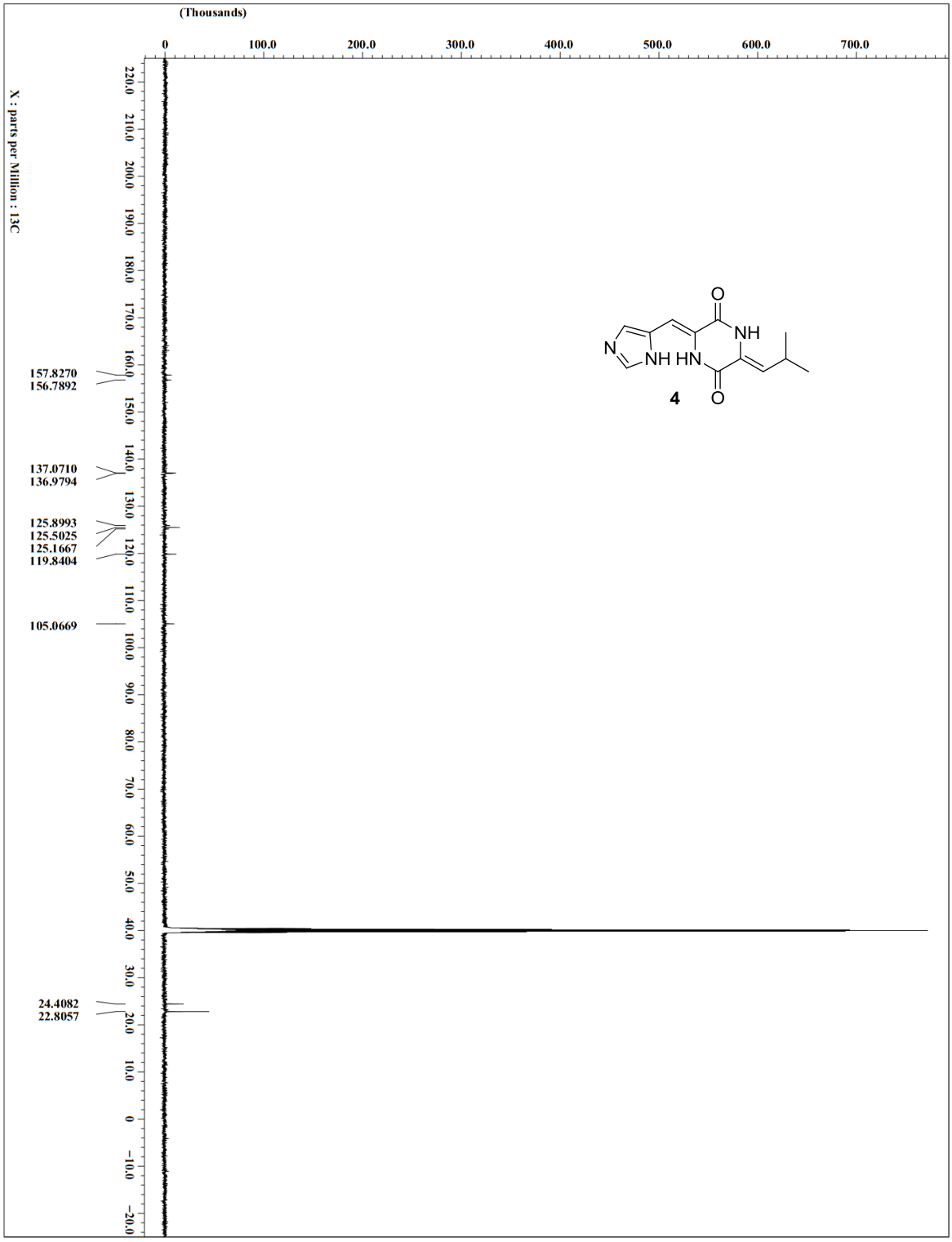


Figure S17. The DEPT (150 MHz, DMSO-d_6) spectrum of compound **4**.

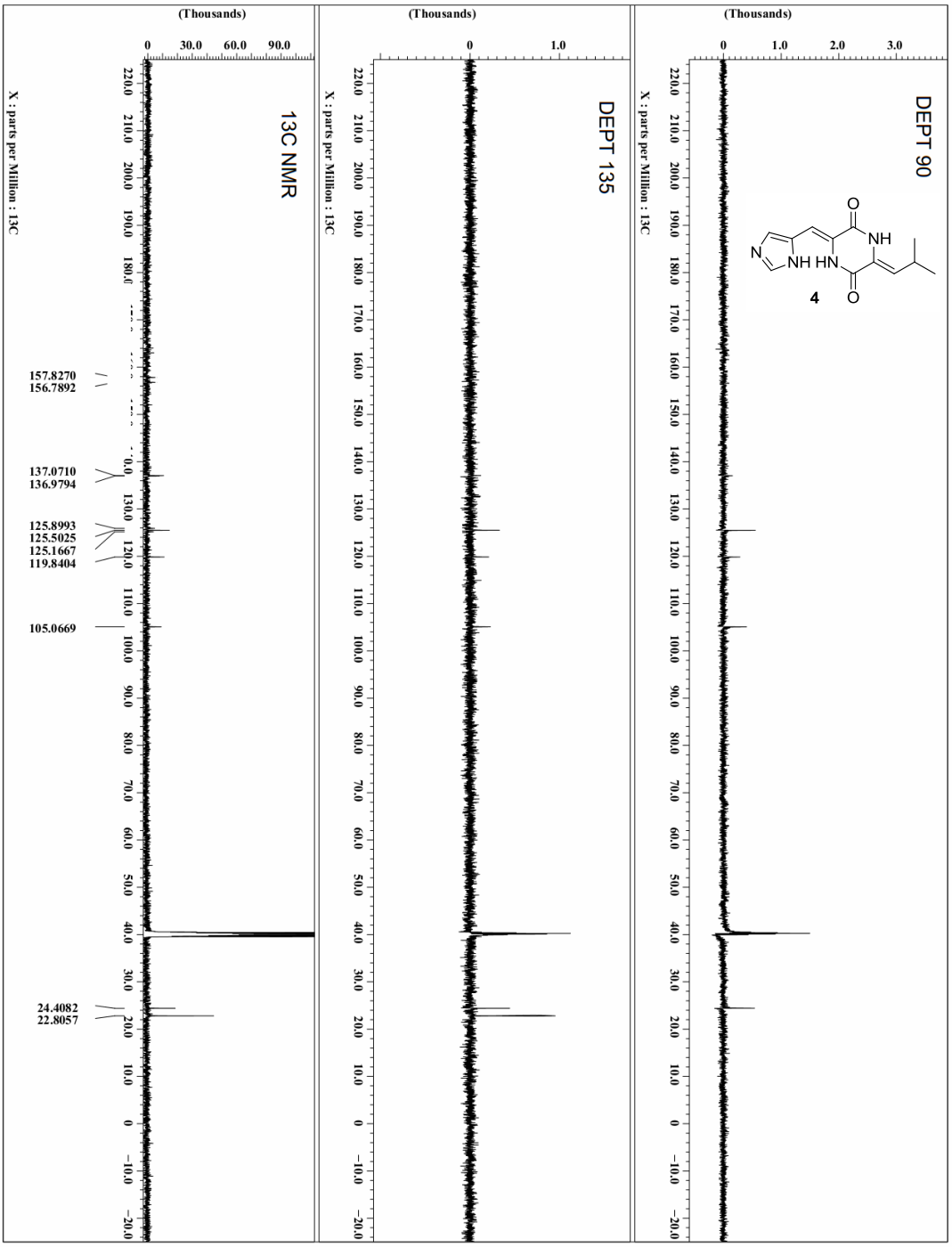


Figure S18. The ^{1}H-^{1}H COSY (600 MHz, DMSO-d_6) spectrum of compound **4**.

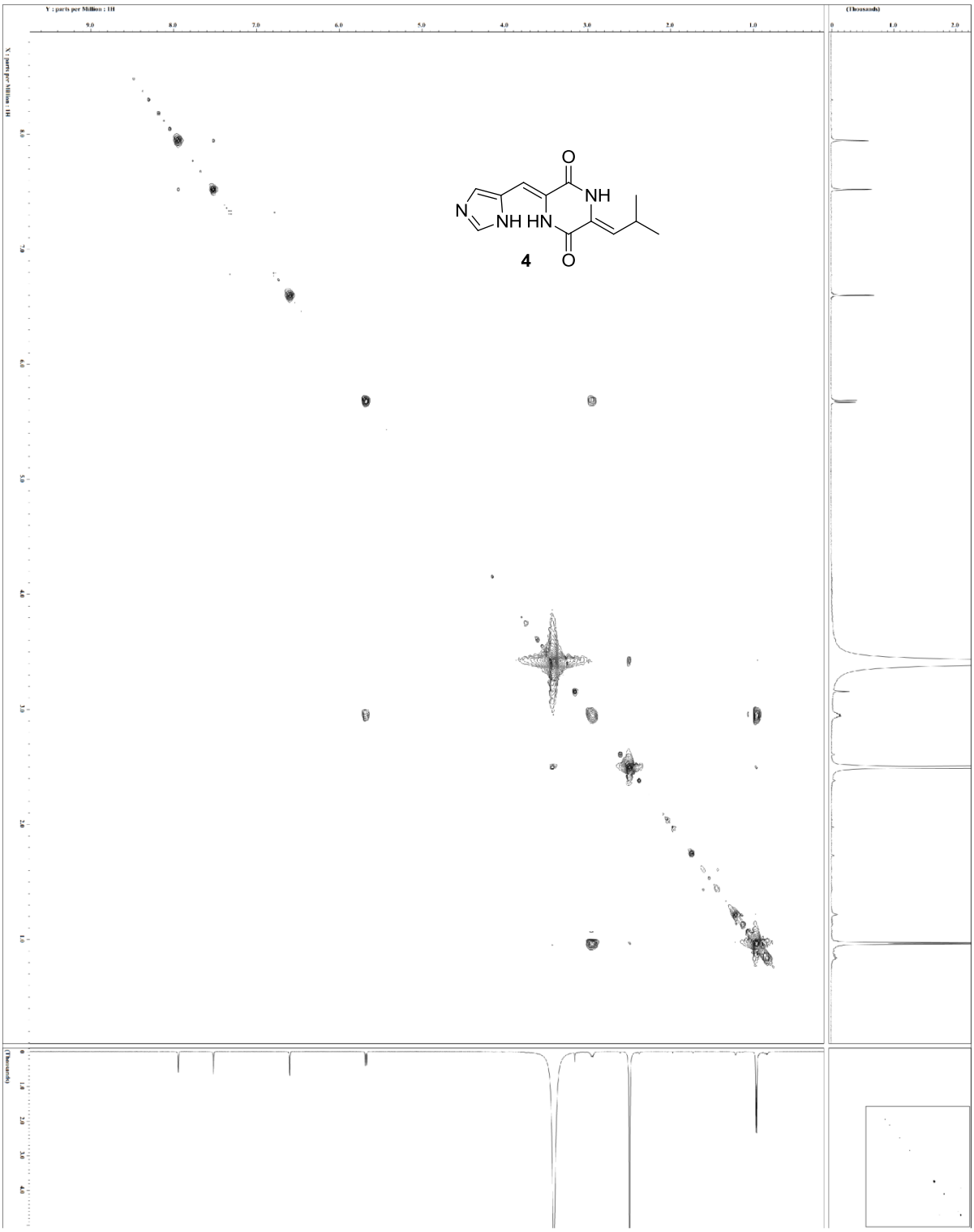


Figure S19. The HMQC (600 MHz, DMSO-d_6) spectrum of compound **4**.

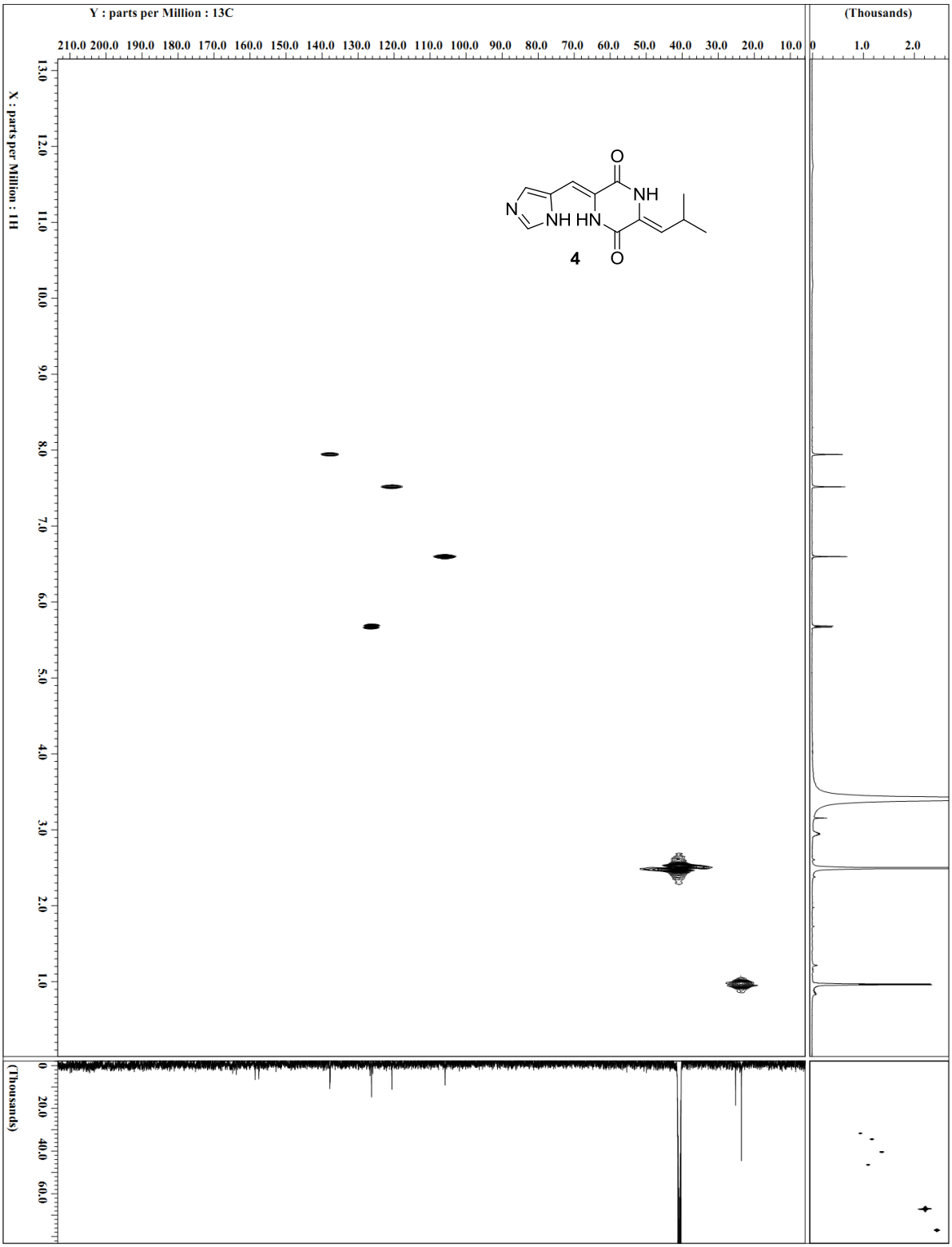


Figure S20. The HMBC (600 MHz, DMSO-d_6) spectrum of compound **4**.

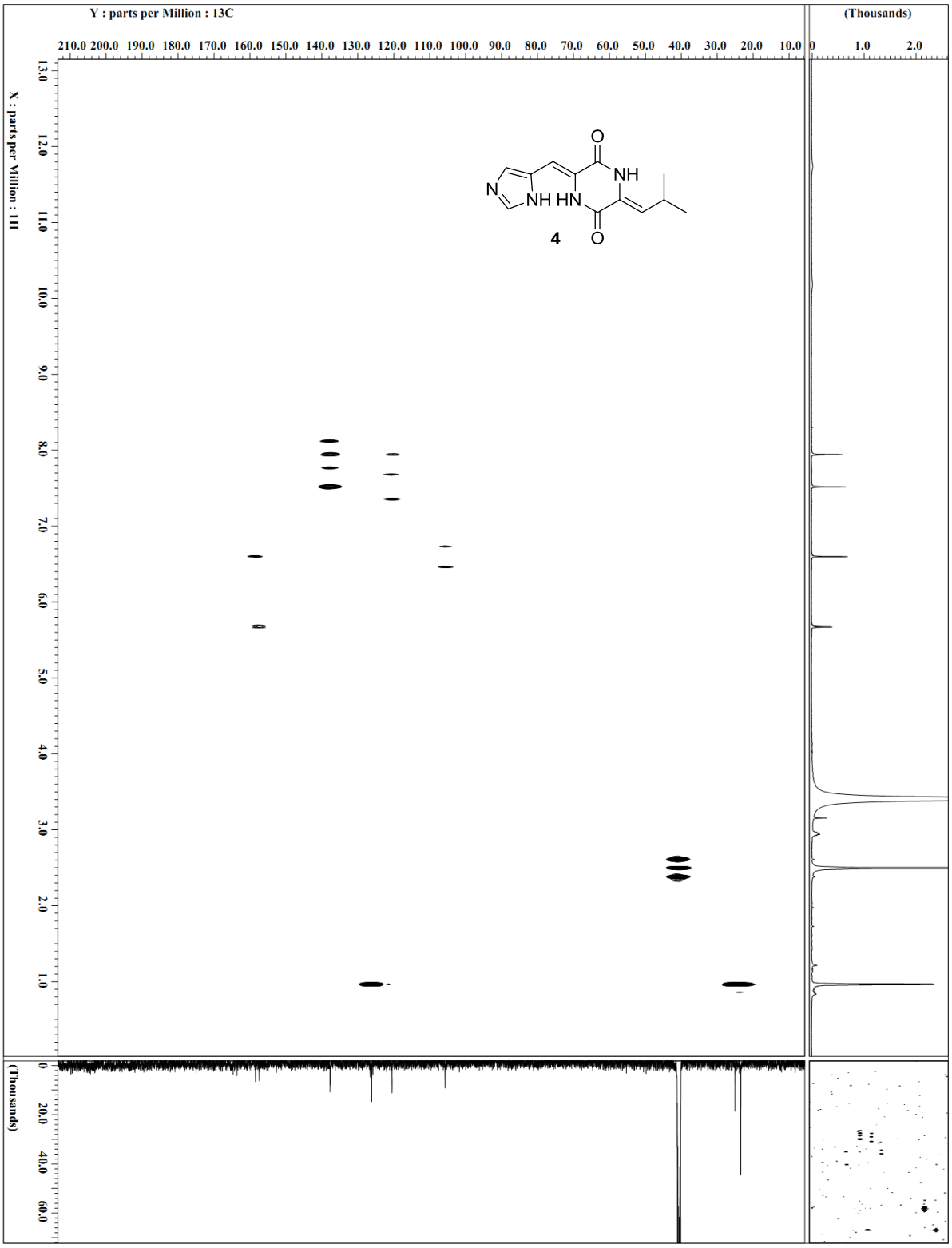


Figure S21. The ^{1}H NMR (600 MHz, DMSO-d_6) spectrum of compound **5**.

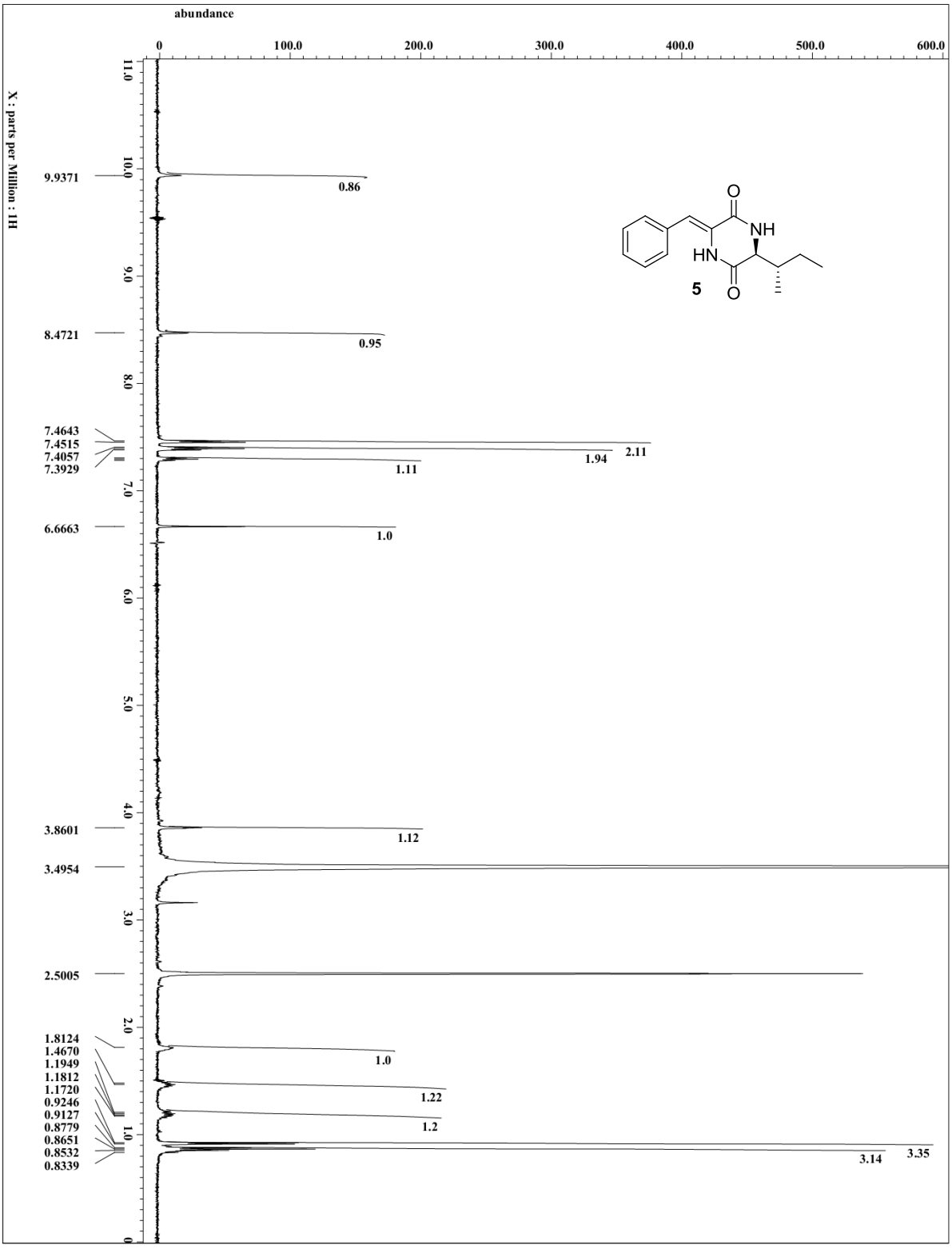


Figure S22. The ^{13}C NMR (150 MHz, DMSO-d_6) spectrum of compound **5**.

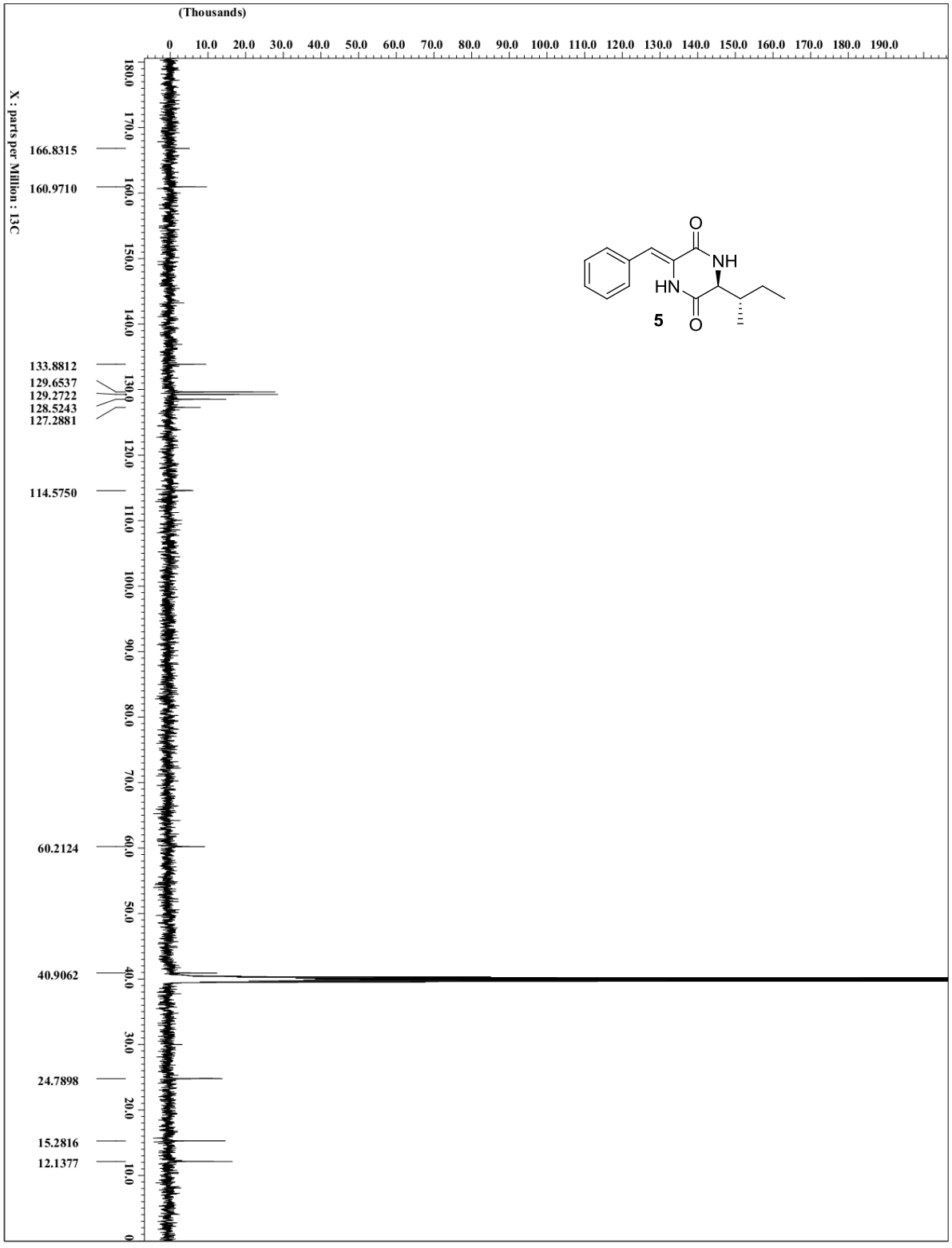


Figure S23. The DEPT (150 MHz, DMSO-d_6) spectrum of compound **5**.

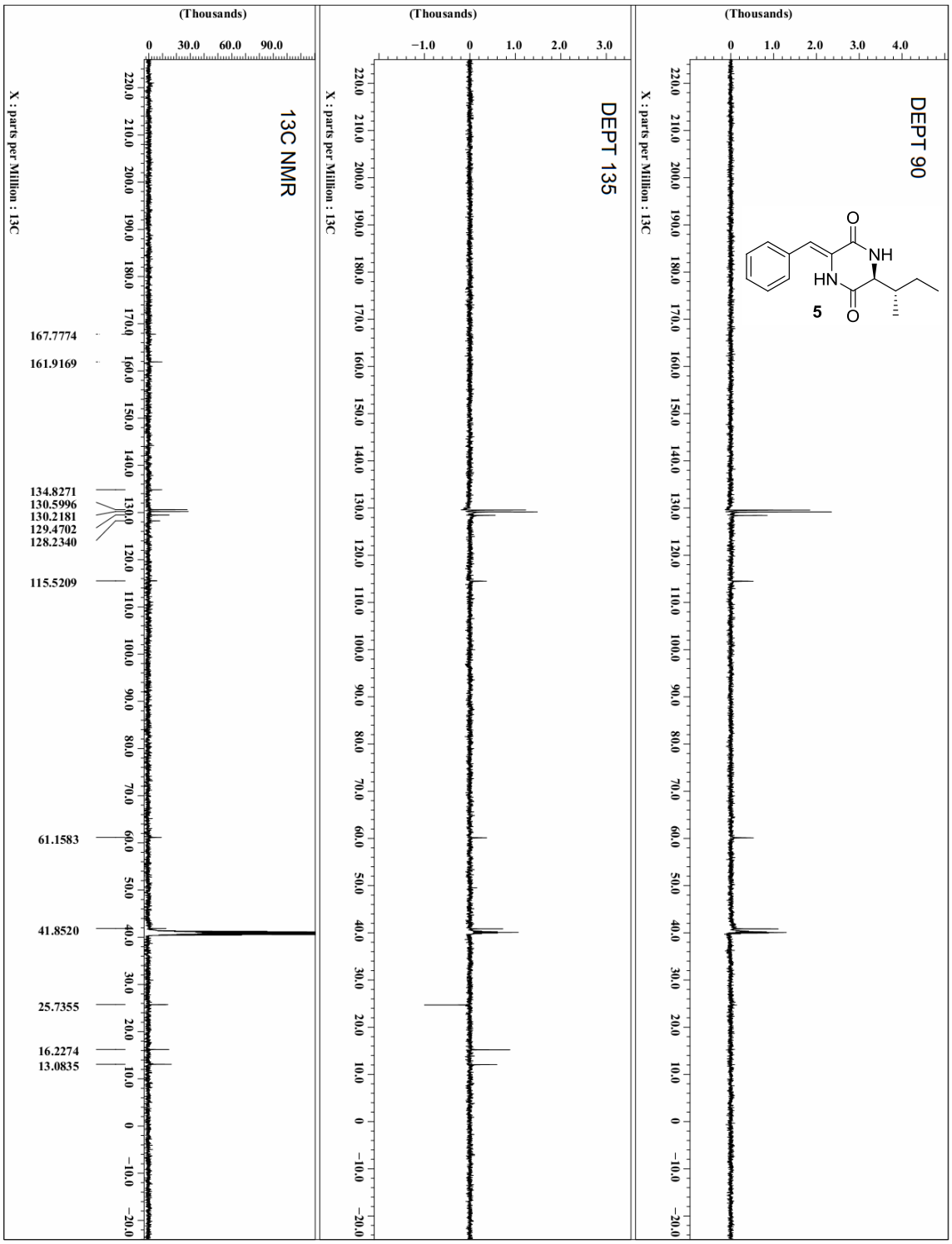


Figure S24. The ^{1}H-^{1}H COSY (600 MHz, DMSO-d_6) spectrum of compound **5**.

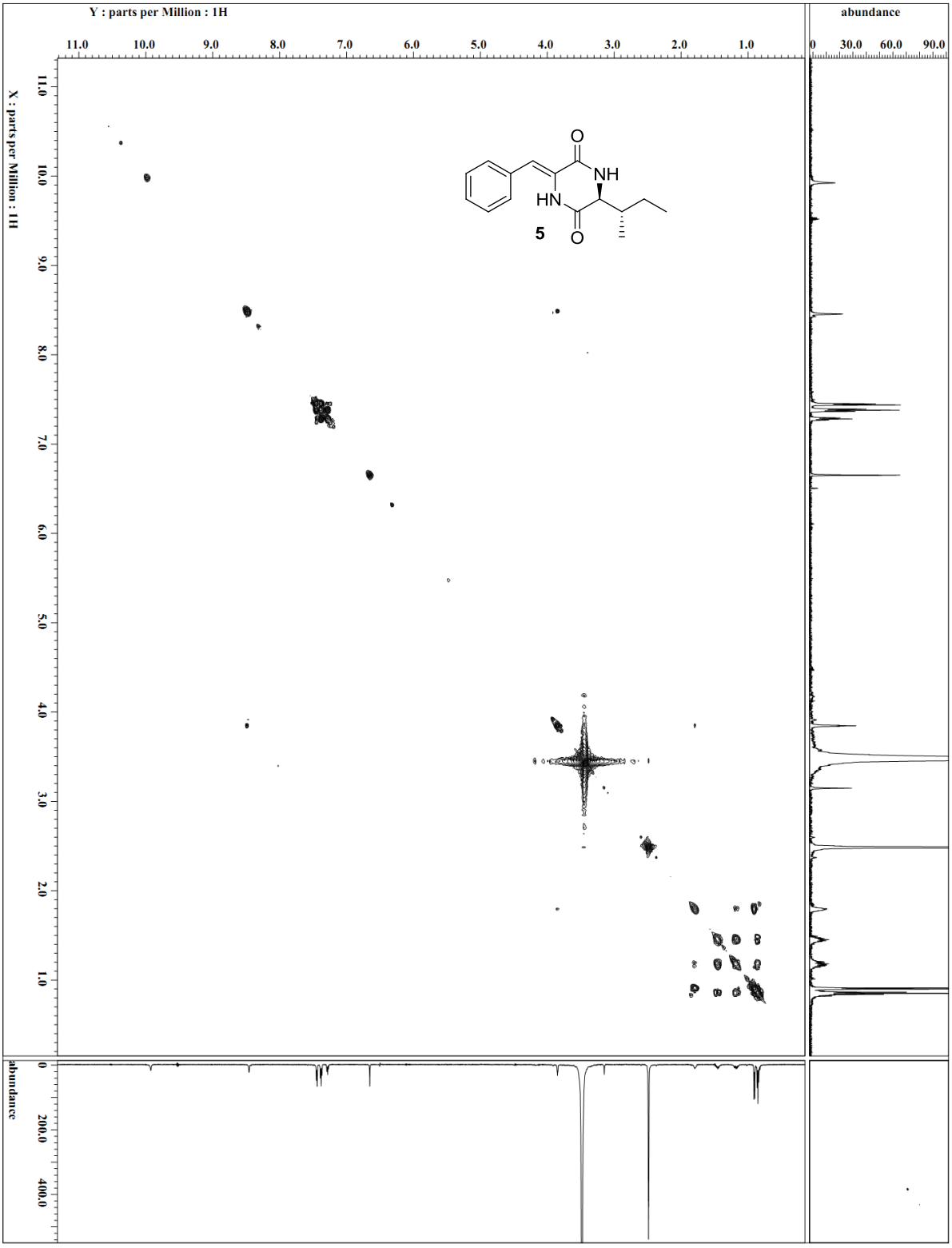


Figure S25. The HMQC (600 MHz, DMSO-d_6) spectrum of compound **5**.

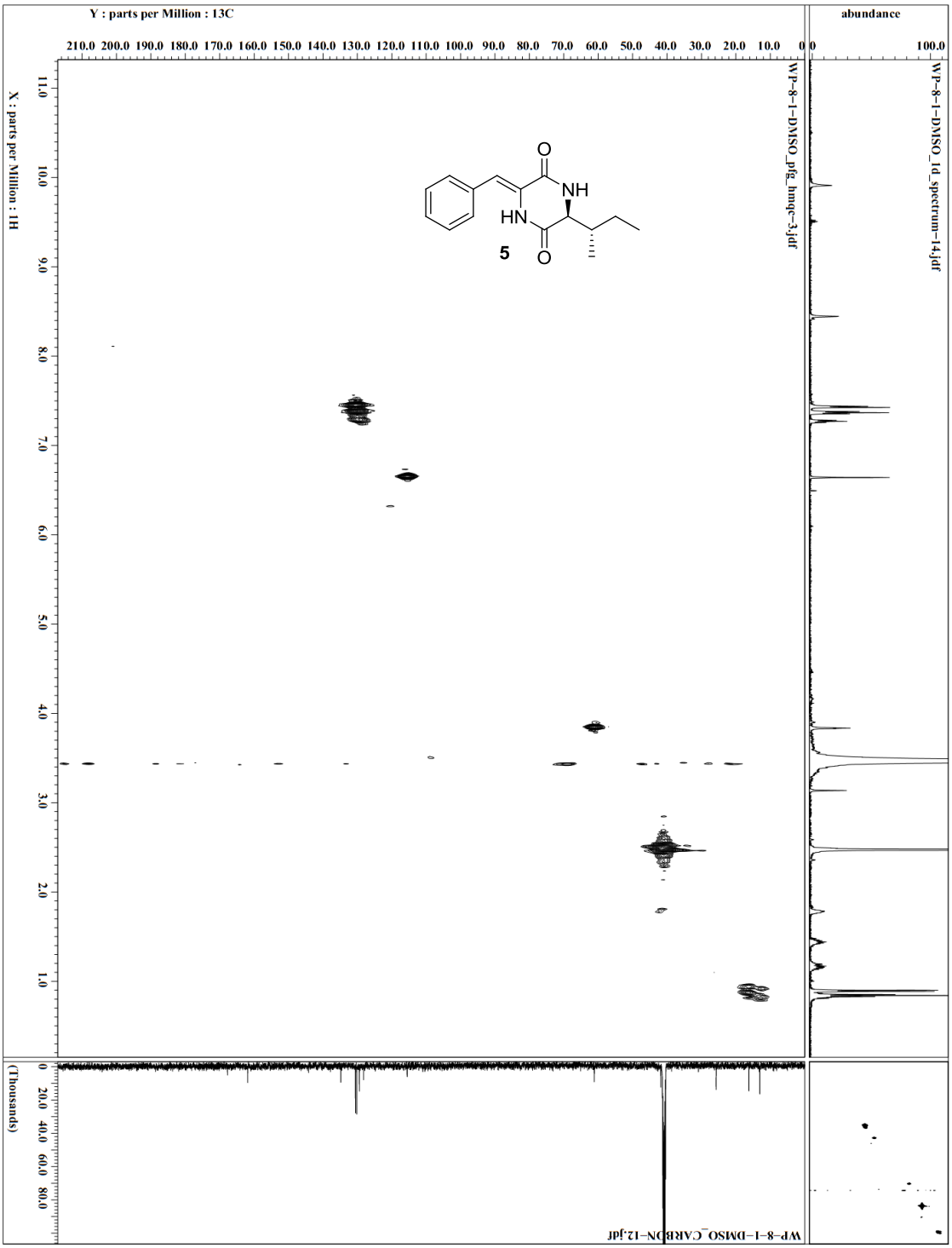


Figure S26. The HMBC (600 MHz, DMSO-d_6) spectrum of compound **5**.

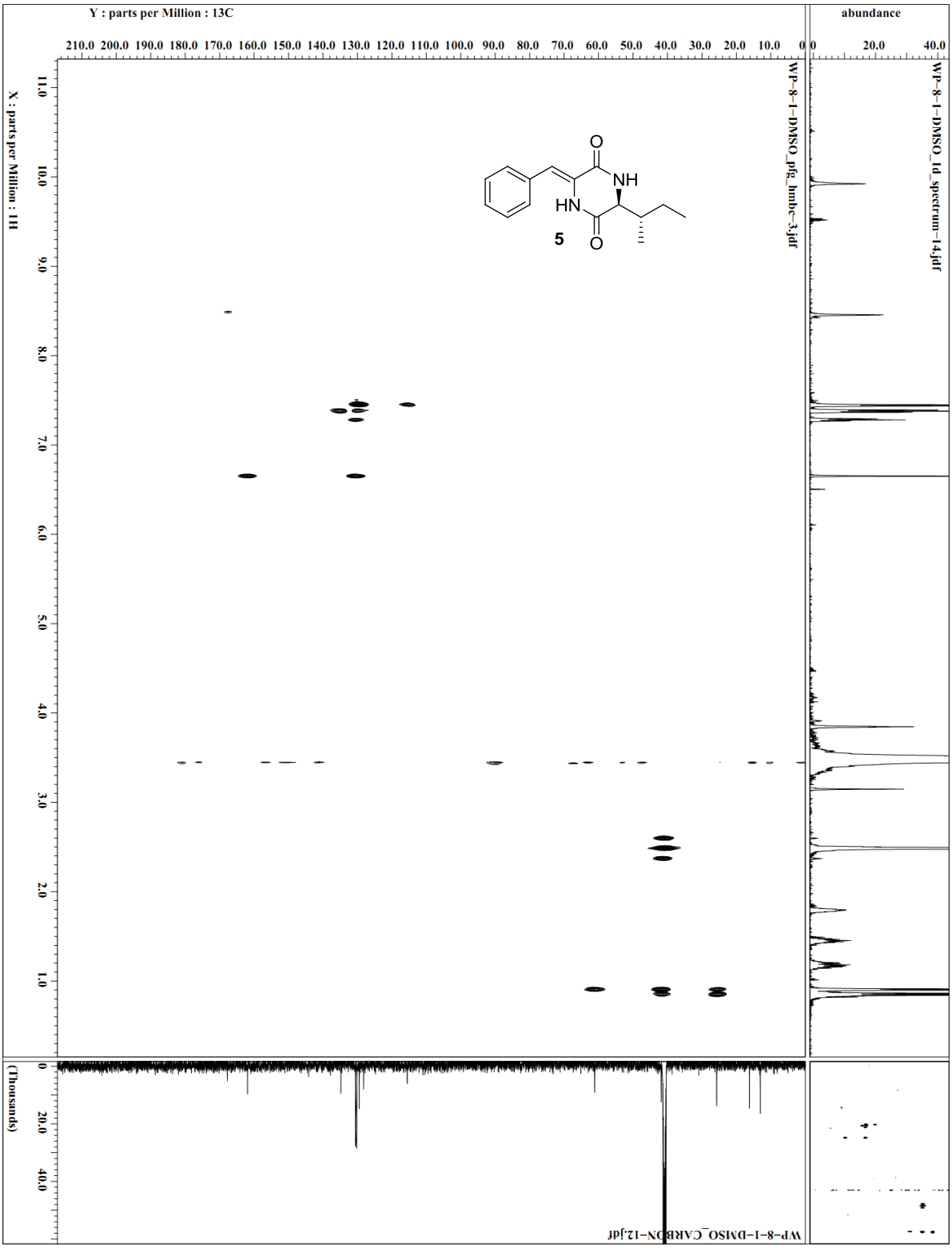


Figure S27. The NOESY (600 MHz, DMSO-d_6) spectrum of compound **5**.

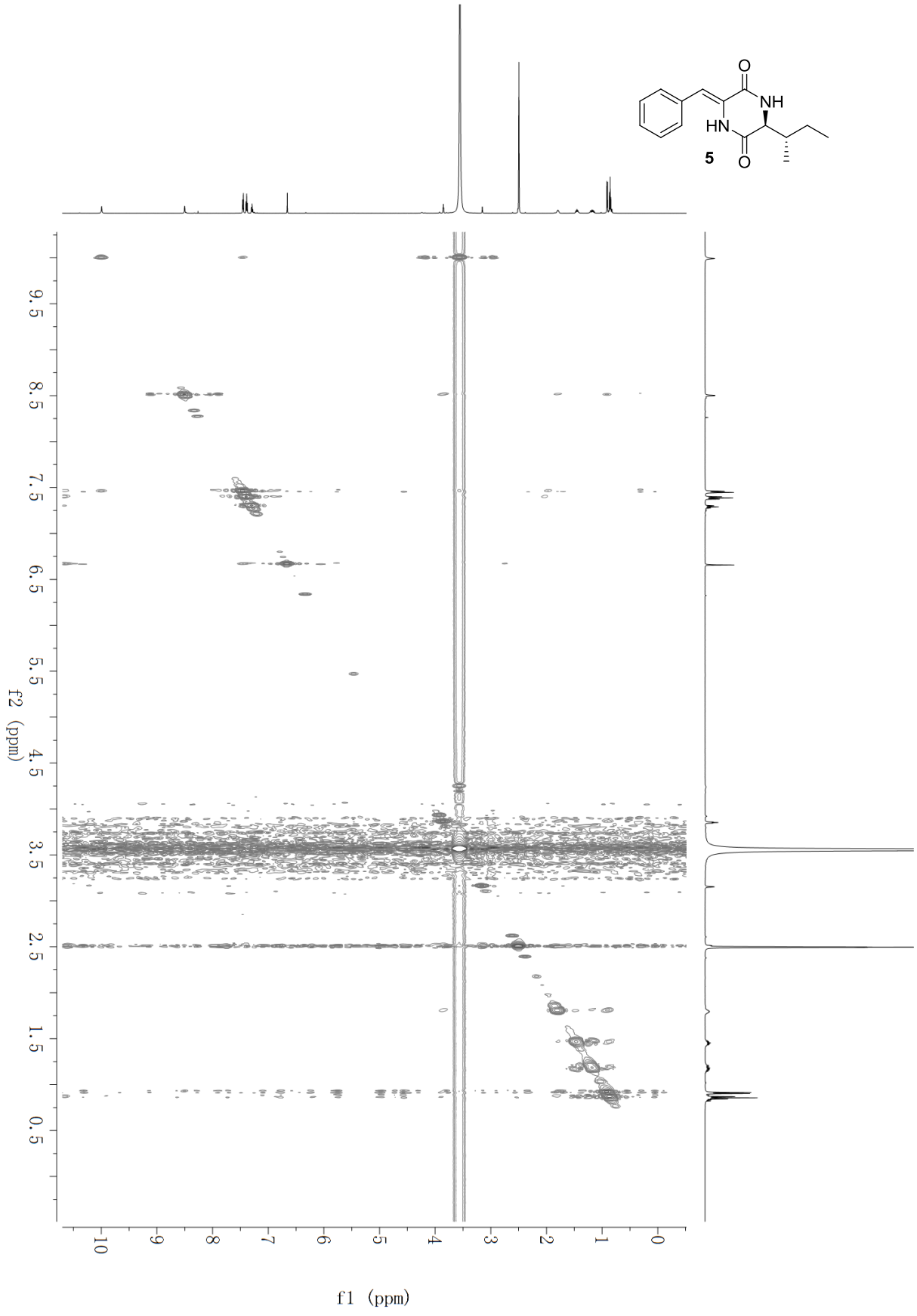


Figure S28. The ^{1}H NMR (600 MHz, DMSO-d_6) spectrum of compound **6**.

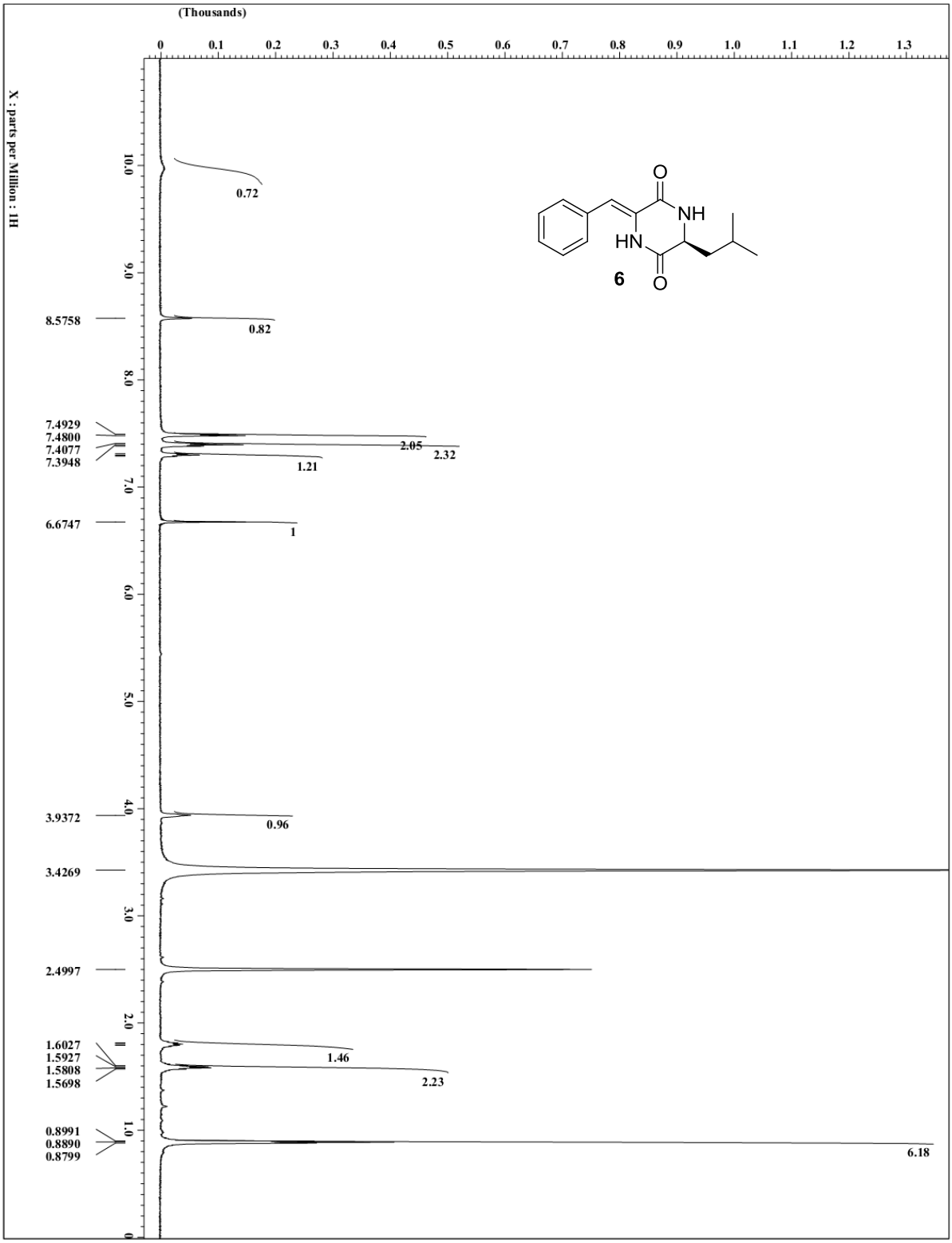


Figure S29. The ^{13}C NMR (150 MHz, DMSO-d_6) spectrum of compound **6** in DMSO-d_6.

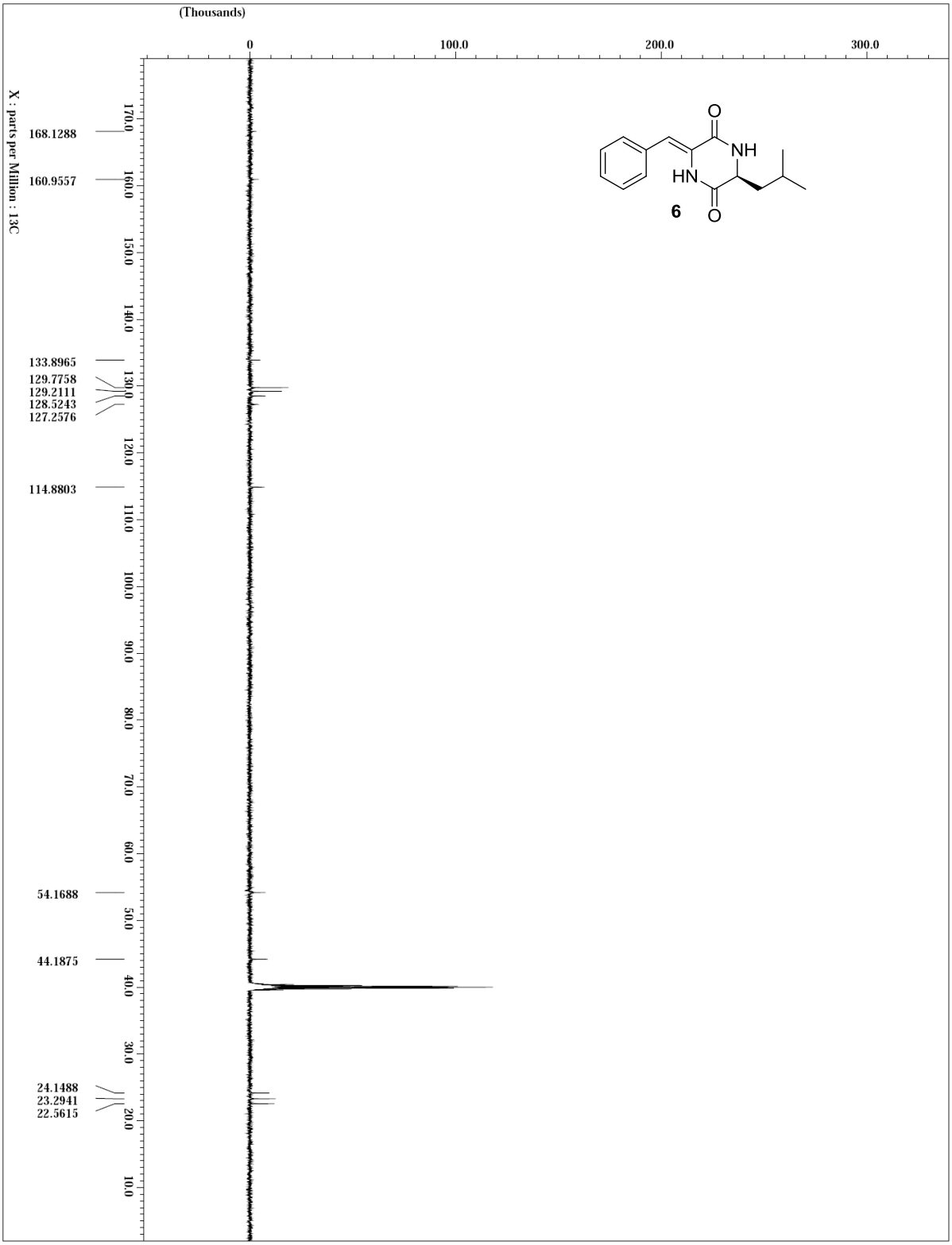


Figure S30. The DEPT (150 MHz, DMSO-d_6) spectrum of compound **6**.

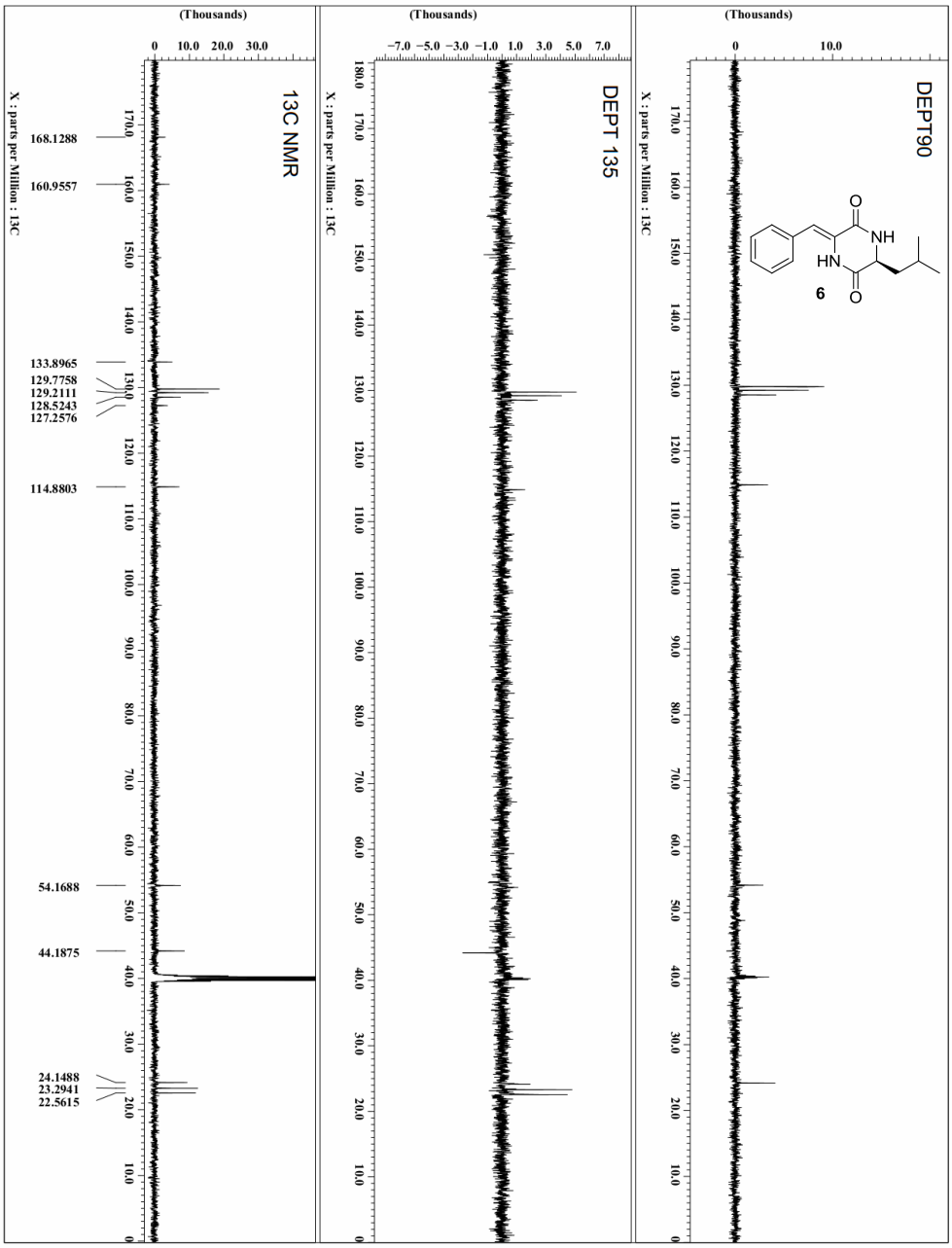


Figure S31. The ^{1}H NMR (600 MHz, DMSO-d_6) spectrum of (*S*)-**1** MTPA ester (**1a**).

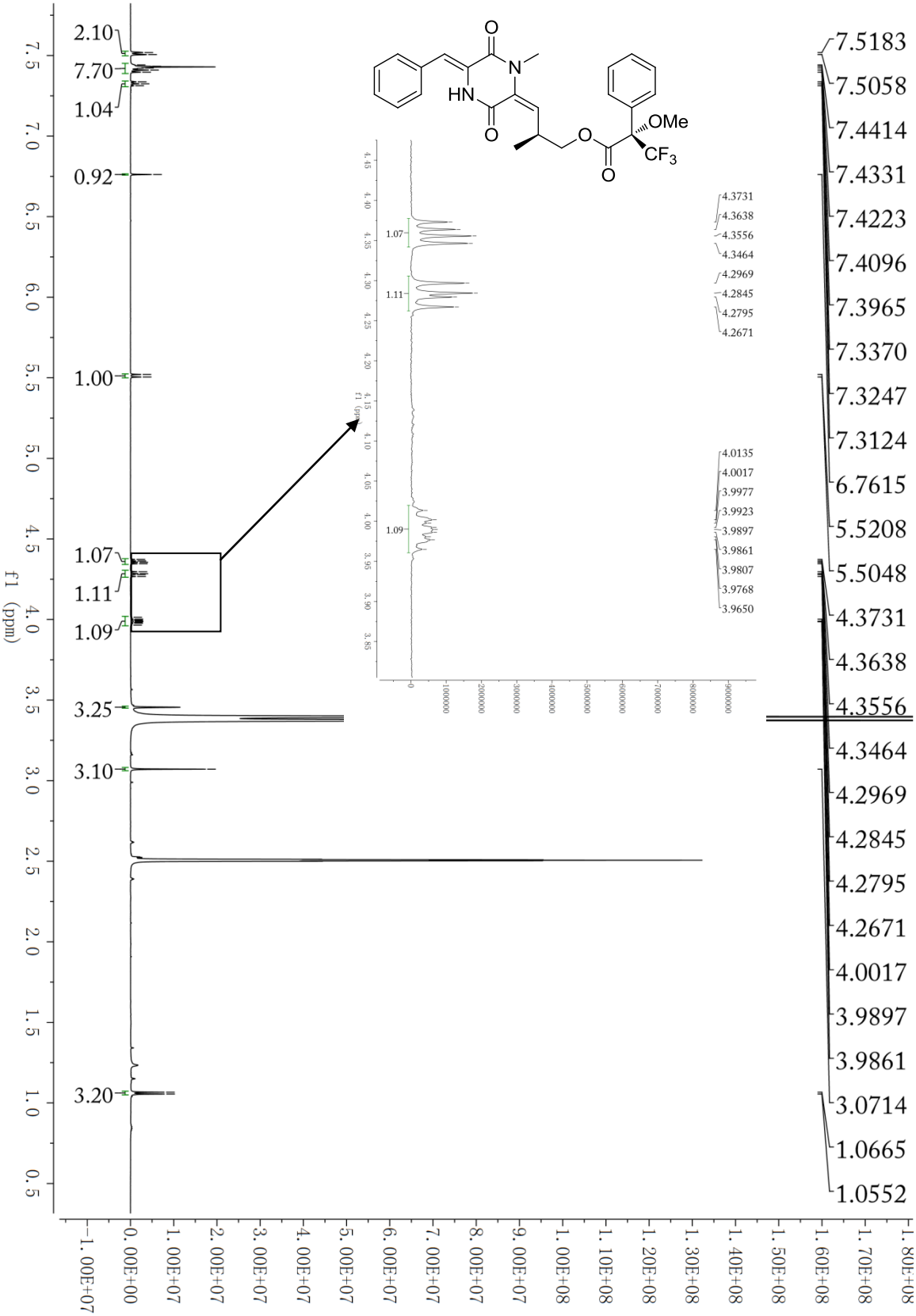


Figure S32. The ^{1}H NMR (600 MHz, DMSO-d_6) spectrum of (*R*)-**1** MTPA ester (**1b**) in DMSO-d_6.

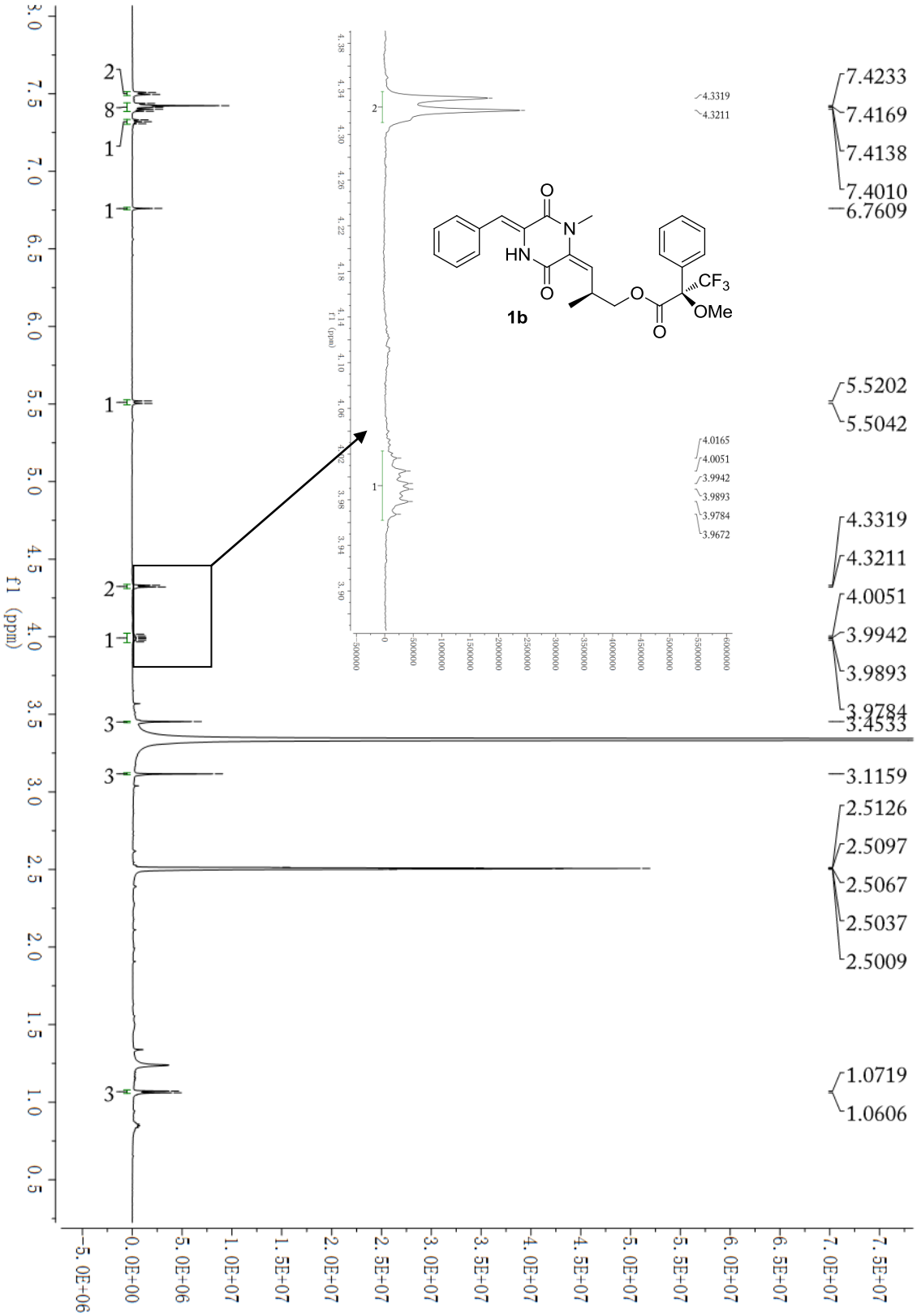


Figure S33. The ^{1}H NMR (600 MHz, DMSO-d_6) spectrum of (*S*)-**2** MTPA ester (**2a**).

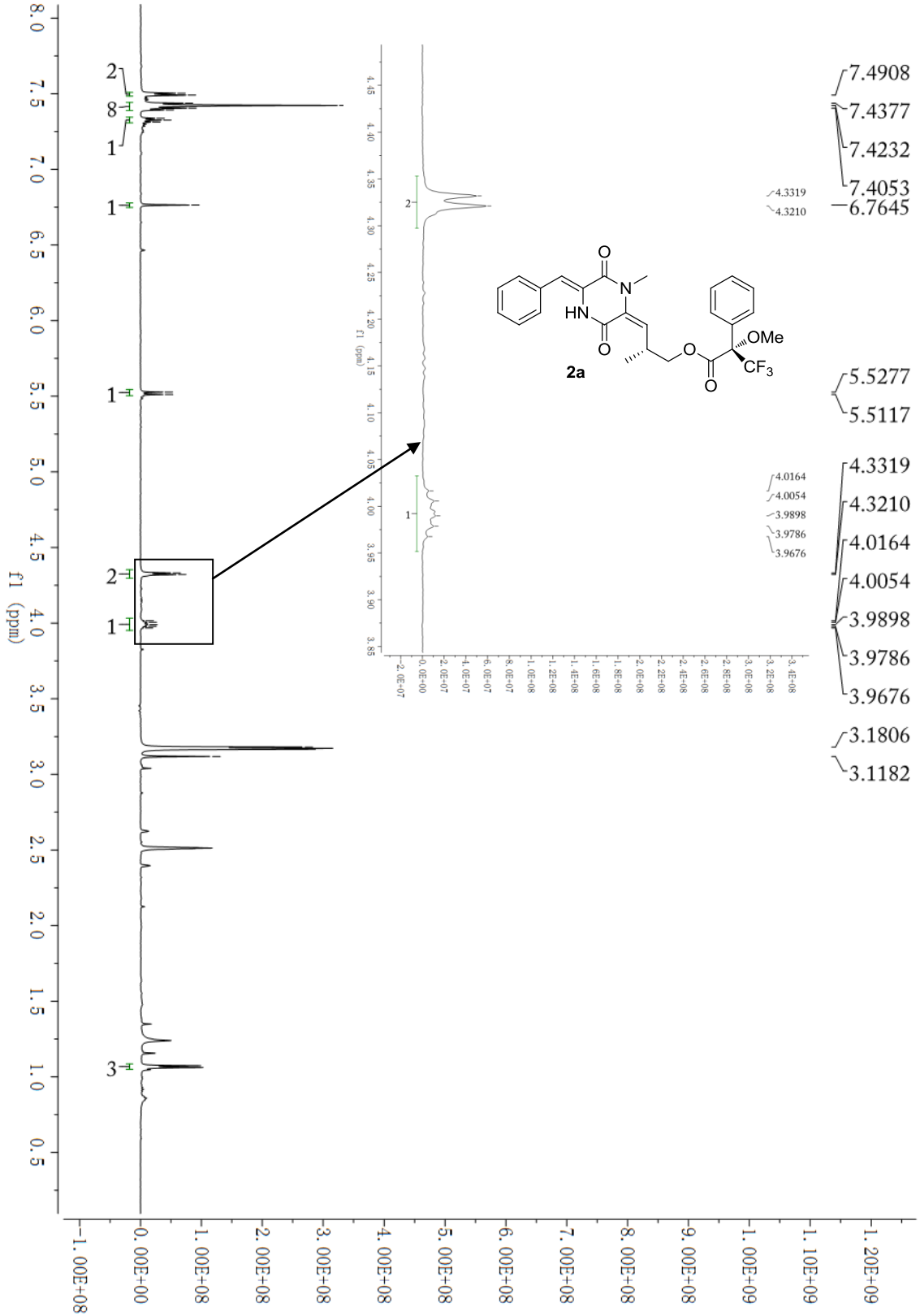


Figure S34. The ^{1}H NMR (600 MHz, DMSO-d_6) spectrum of (*R*)-**2** MTPA ester (**2b**) in DMSO-d_6.

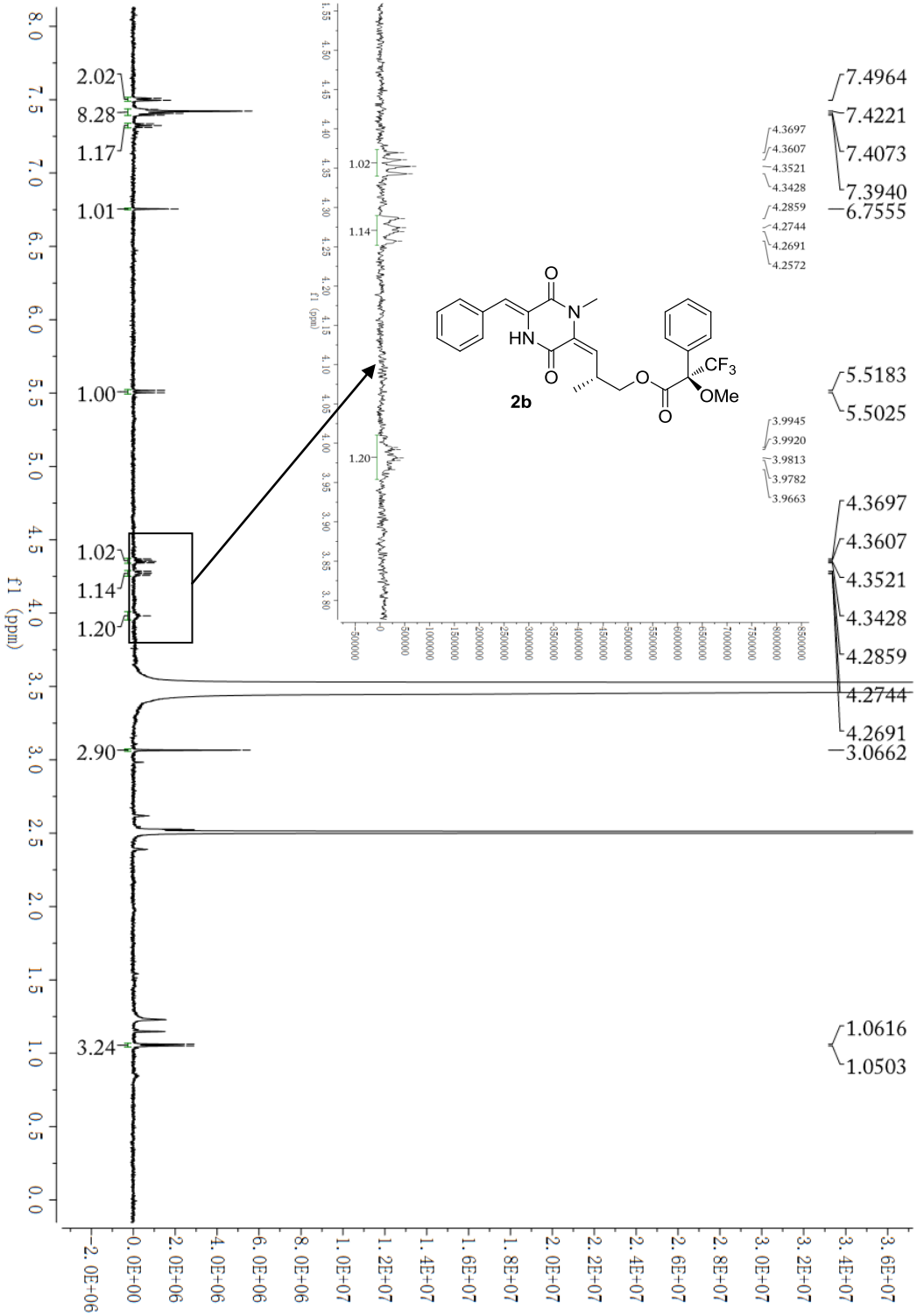


Figure S35. The ^{1}H NMR (600 MHz, DMSO-d_6) spectrum of *p*-bromobenzoate (**1c**).

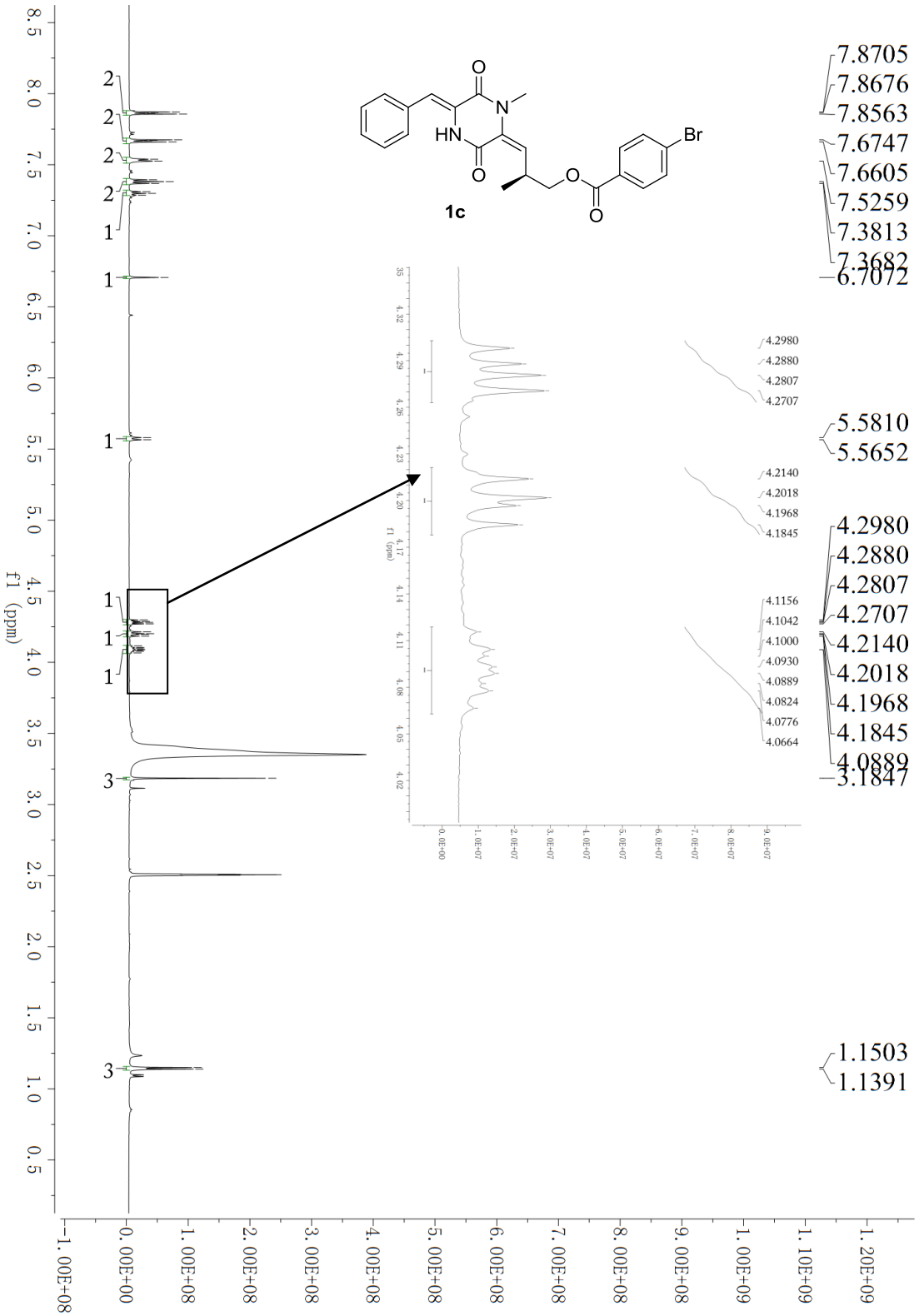


Figure S36. The DEPTQ (150 MHz, DMSO-d_6) spectrum of *p*-bromobenzoate (**1c**).

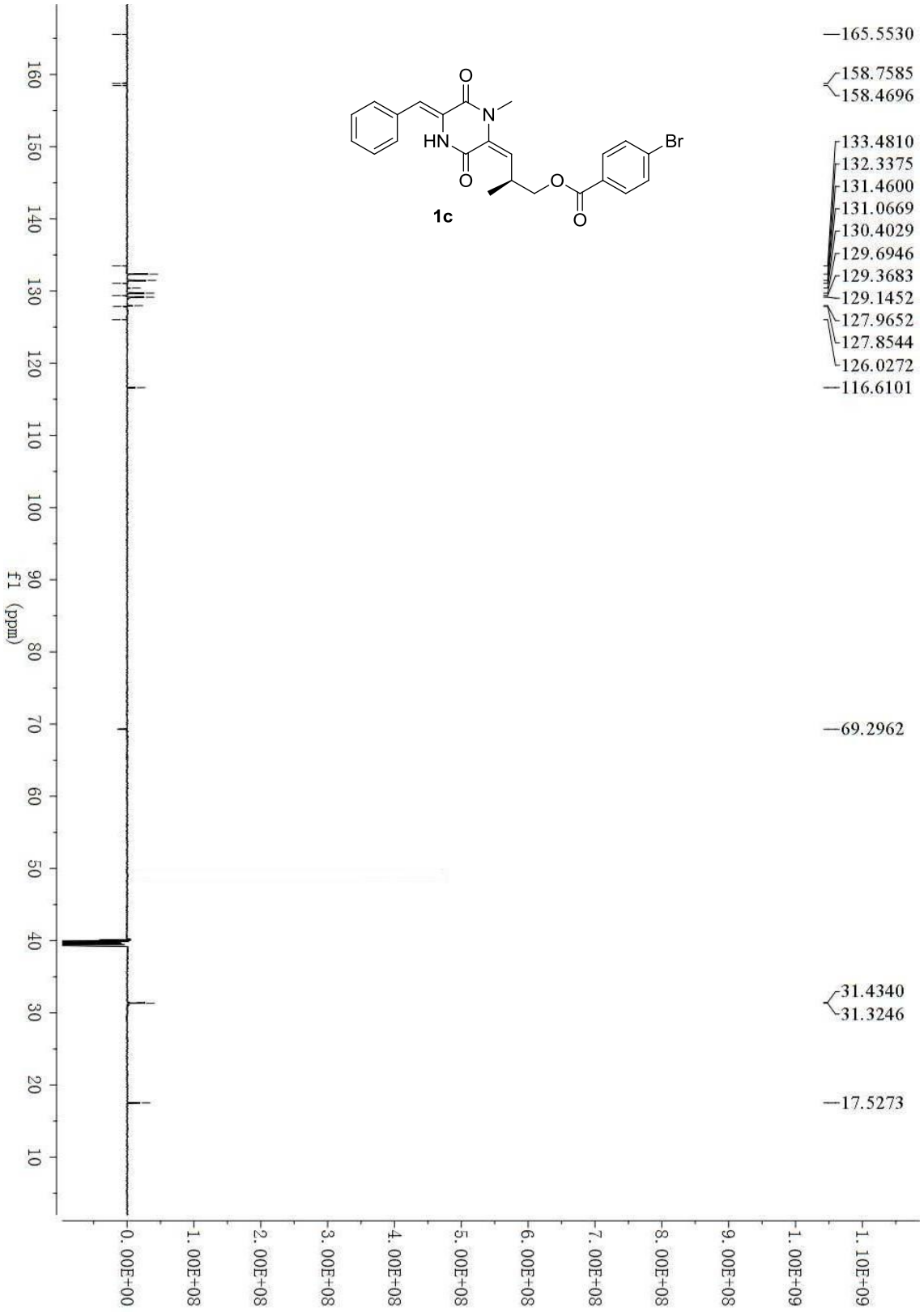


Figure S37. The resolution of the racemic mixture of **1**/**2** by chiral column (CHIRALPAK AY, 4.6 × 150 mm, 0.5 mL/min).

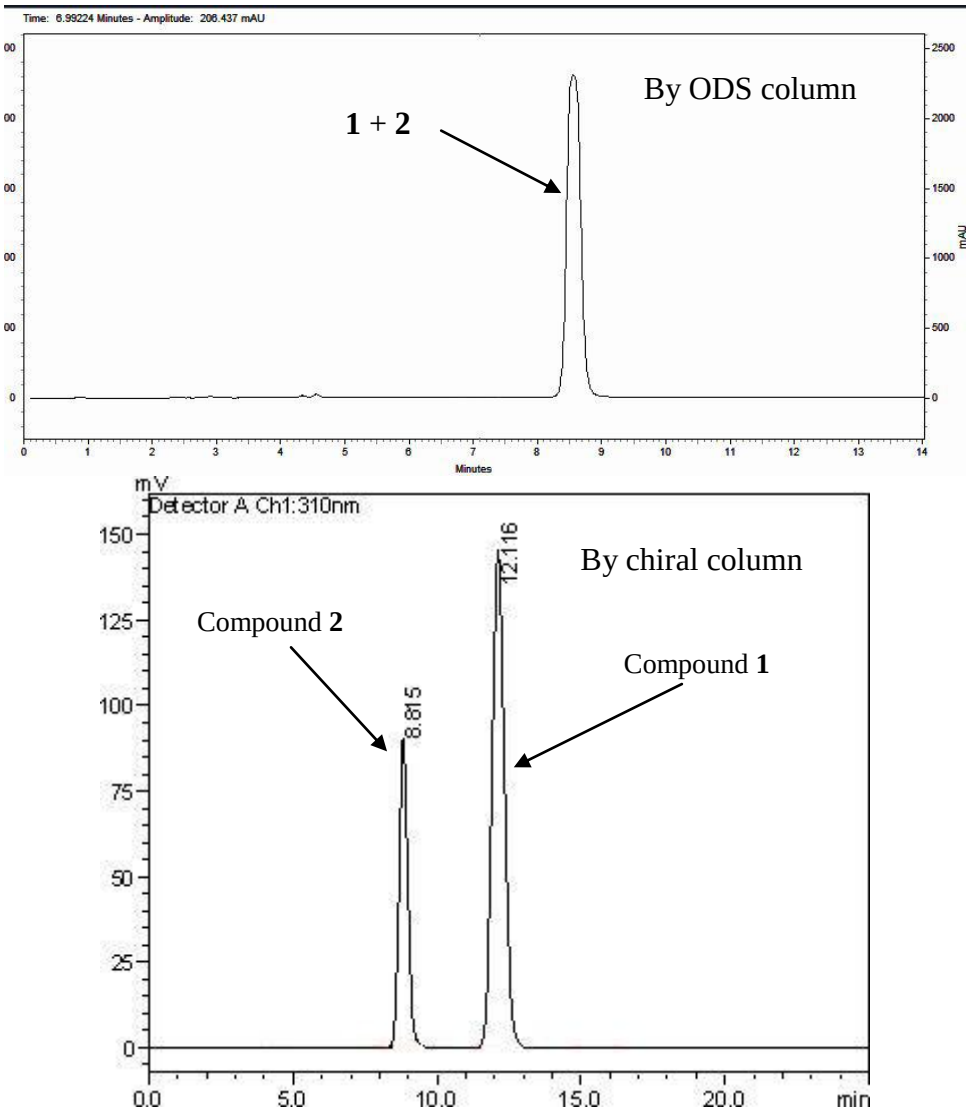
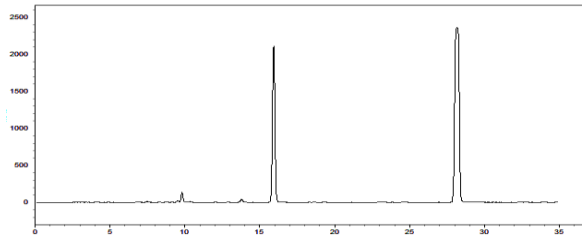
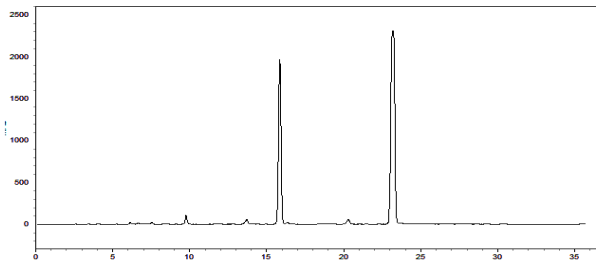


Figure S38. Marfey's method applying for compound **5** (ODS column; Solvents: (A) water + 0.2% TFA, (B) MeCN; linear gradient: 0 min, 75% A + 25% B; 40 min, 40% A + 60% B; 45 min, 100% B; temperature, 30 ℃; flow rate, 1 mL/min; UV detection at λ_{max} 340 nm; FDAA, 16.0 min).

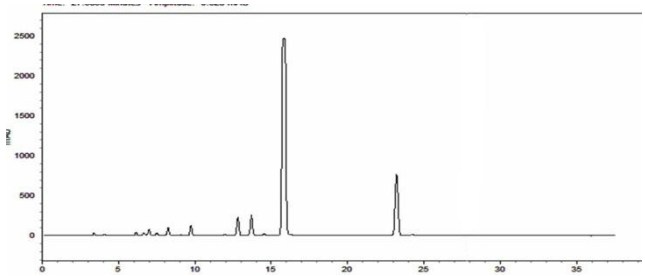
Co-injection of FDAA derivatives of standard D-Ile with standard D-*allo*-Ile by ODS column



Co-injection of FDAA derivatives of standard L-Ile with standard L-*allo*-Ile by ODS column



FDAA derivatives of the acid hydrolysate of **5** by ODS column



Co-injection of FDAA derivatives of the acid hydrolysates of **5** with standard L-Ile and L-*allo*-Ile by ODS column

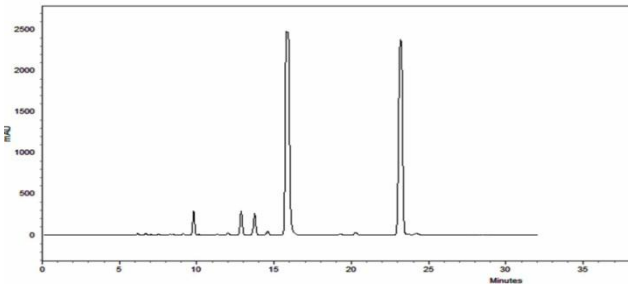
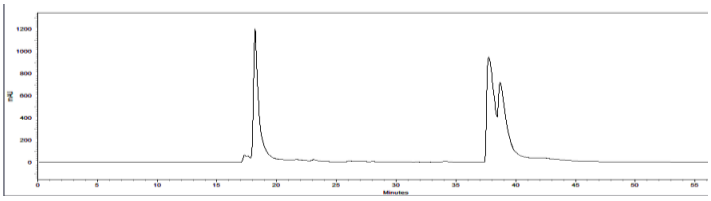
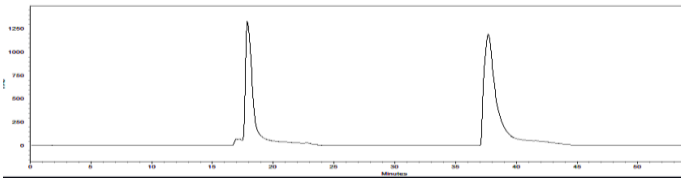


Figure S39. C_3 Marfey's method applying for compound **5** (C_3 column; The column was developed with a linear gradient of 15%–60% MeOH/water (+isocratic 5% of a 1% formic acid solutionin MeCN, over 55 min; temperature, 50 ℃; flow rate, 1 mL/min; UV detection at λ_{max} 340 nm; FDAA, 17.95 min).

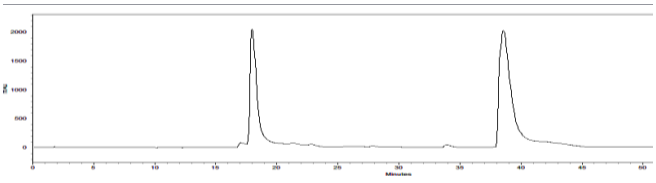
Co-injection of FDAA derivatives of standard L-Ile with standard L-*allo*-Ile by C_3 column



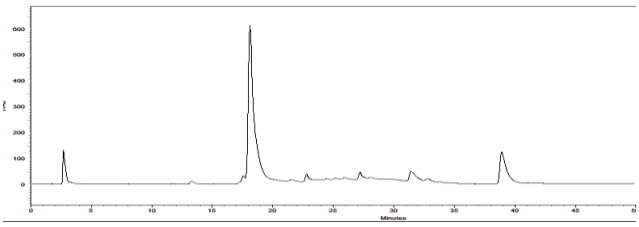
FDAA derivatives of standard L-*allo*-Ile by C_3 column



FDAA derivatives of standard L-Ile by C_3 column



FDAA derivatives of the acid hydrolysate of **5** by C_3 column



Co-injection of FDAA derivatives of the acid hydrolysates of **5** with standard L-Ile by C_3 column

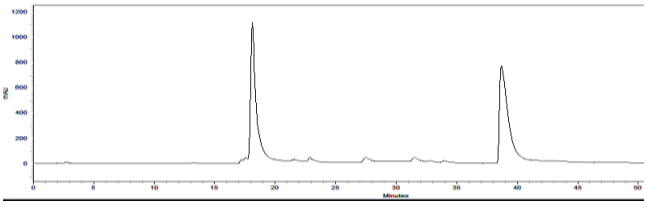


Figure S40. Dose-response histograms of antivirus activity for compound **3** and ribavirin ($p > 0.05$).

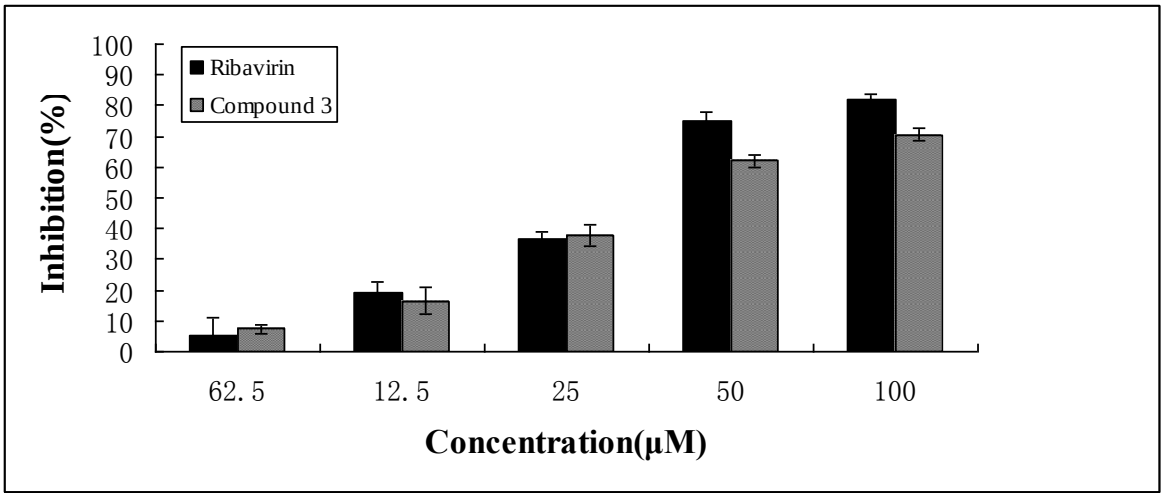


Table S1. Cytotoxic, anti-virus, anti-microbial and anti-inflammatory activities of **1**–**10**.

Compounds	MIC (μg/mL)						IC$_{50}$ (μM)			IC$_{50}$ (μM)	IC$_{50}$ (μM)
	E. coli	*E. aerogenes*	*P. aeruginosa*	*B. subtilis*	*S. aureus*	*C. albicans*	HL-60	K562	A549	H1N1	RAW 264.7
1	>100	>100	>100	>100	>100	>100	>100	>100	>100	75.5 ±2.2	>10
2	>100	>100	>100	>100	>100	>100	>100	>100	>100	>50	>10
3	>100	>100	>100	>100	>100	>100	>100	>100	>100	41.1 ±4.5	>10
4	>100	>100	>100	>100	>100	>100	>100	>100	>100	62.6 ±3.9	>10
5	>100	>100	>100	>100	>100	>100	>100	>100	>100	106.5 ±4.2	>10
6	>100	>100	>100	>100	>100	>100	ND [a]	ND [a]	ND [a]	28.9 ±2.2	ND [a]
7	>100	>100	>100	>100	>100	>100	ND [a]	ND [a]	ND [a]	6.8 ±1.5	ND [a]
8	>100	>100	>100	>100	>100	>100	ND [a]	ND [a]	ND [a]	94.5 ±3.0	ND [a]
9	>100	>100	>100	>100	>100	>100	ND [a]	ND [a]	ND [a]	113.8 ±4.9	ND [a]
10	>100	>100	>100	>100	>100	>100	ND [a]	ND [a]	ND [a]	156.6 ±4.0	ND [a]
Ciprofloxacin	0.05	0.19	0.1	0.39	3.12	ND [a]	ND [a]	ND [a]	ND [a]	ND [a]	ND [a]
Ketoconazole	ND [a]	ND [a]	ND [a]	ND [a]	ND [a]	0.024	ND [a]	ND [a]	ND [a]	ND [a]	ND [a]
PDTC	ND [a]	ND [a]	ND [a]	ND [a]	ND [a]	ND [a]	ND [a]	ND [a]	ND [a]	ND [a]	<0.1
Adriamycin	ND [a]	ND [a]	ND [a]	ND [a]	ND [a]	ND [a]	0.652	0.645	0.080	ND [a]	ND [a]
Ribavirin	ND [a]	ND [a]	ND [a]	ND [a]	ND [a]	ND [a]	ND [a]	ND [a]	ND [a]	38.8 ±1.5	ND [a]

[a] Not detected.

Table S2. The HMBC correlations (H → C) for compounds **1**–**5**.

Proton (position)	Carbon (position)			
	1 and 2	**3**	**4**	**5**
1	2, 6	3, 5		5
2				
3				
4		2, 6		
5				
6				
7	5, 6, 9, 10	5, 6, 9, 10	5, 8	
8	7, 9, 10			
9	7, 10	7, 8	7, 8	7, 8
10	7, 8, 9	7, 8	7, 8	6, 7, 8
11	2, 13	2, 13/17	2, 12, 13	2, 13
12				
13/17	11, 15	11, 15	12, 15	11, 15
14/16	12, 15	12, 15		12, 15
15	13/17		12, 13	13