Supporting information

Oxirapentyns F-K Produced by a Marine Sediment-Derived Fungus *Isaria felina* KMM 4639

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Figure S1. ^{1}H NMR (700 MHz, $CDCl_3$) spectrum of oxirapentyn F (**2**)

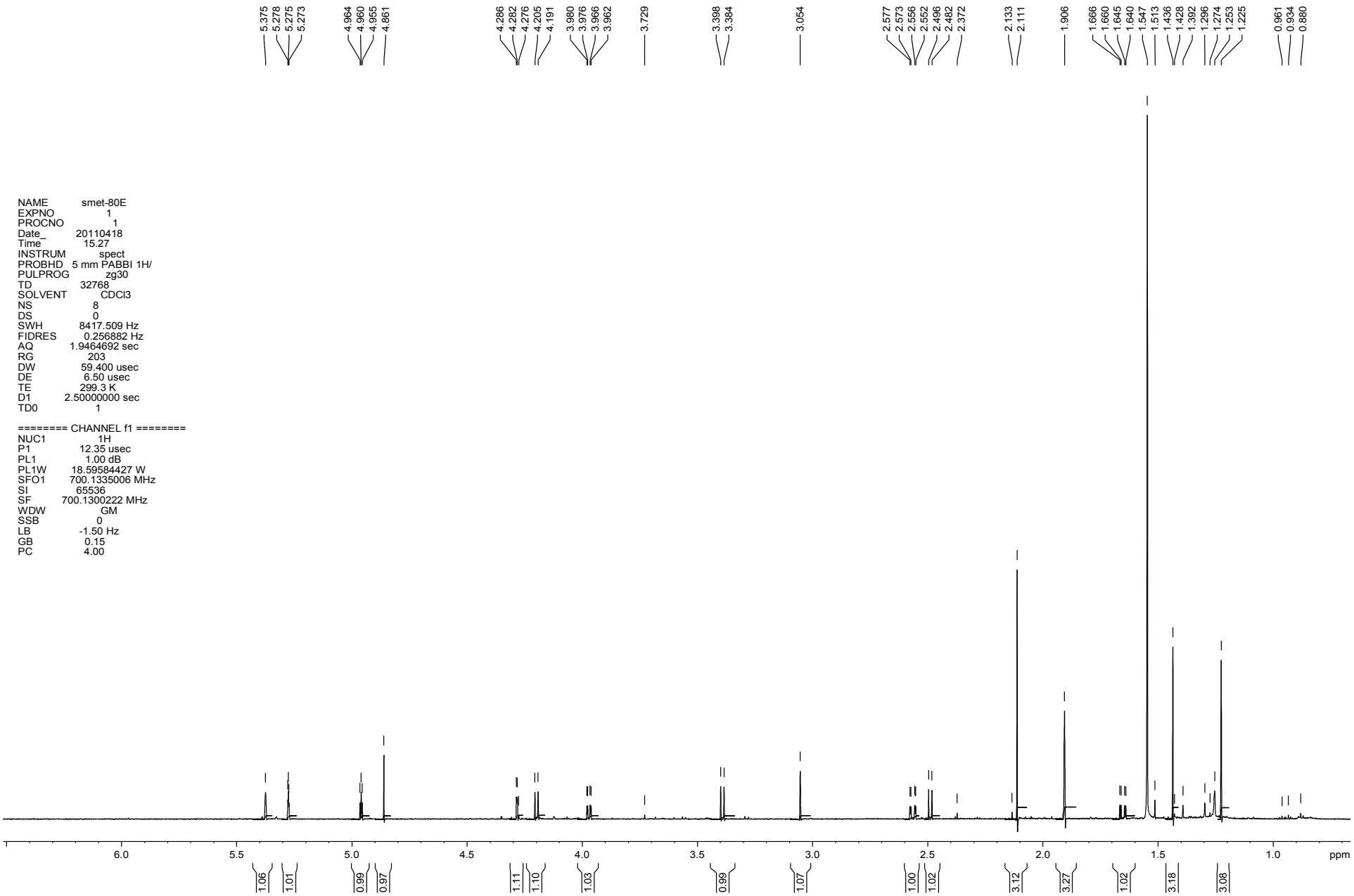


Figure S2. ^{13}C NMR (176 MHz, $CDCl_3$) spectrum of oxirapentyn F (**2**)

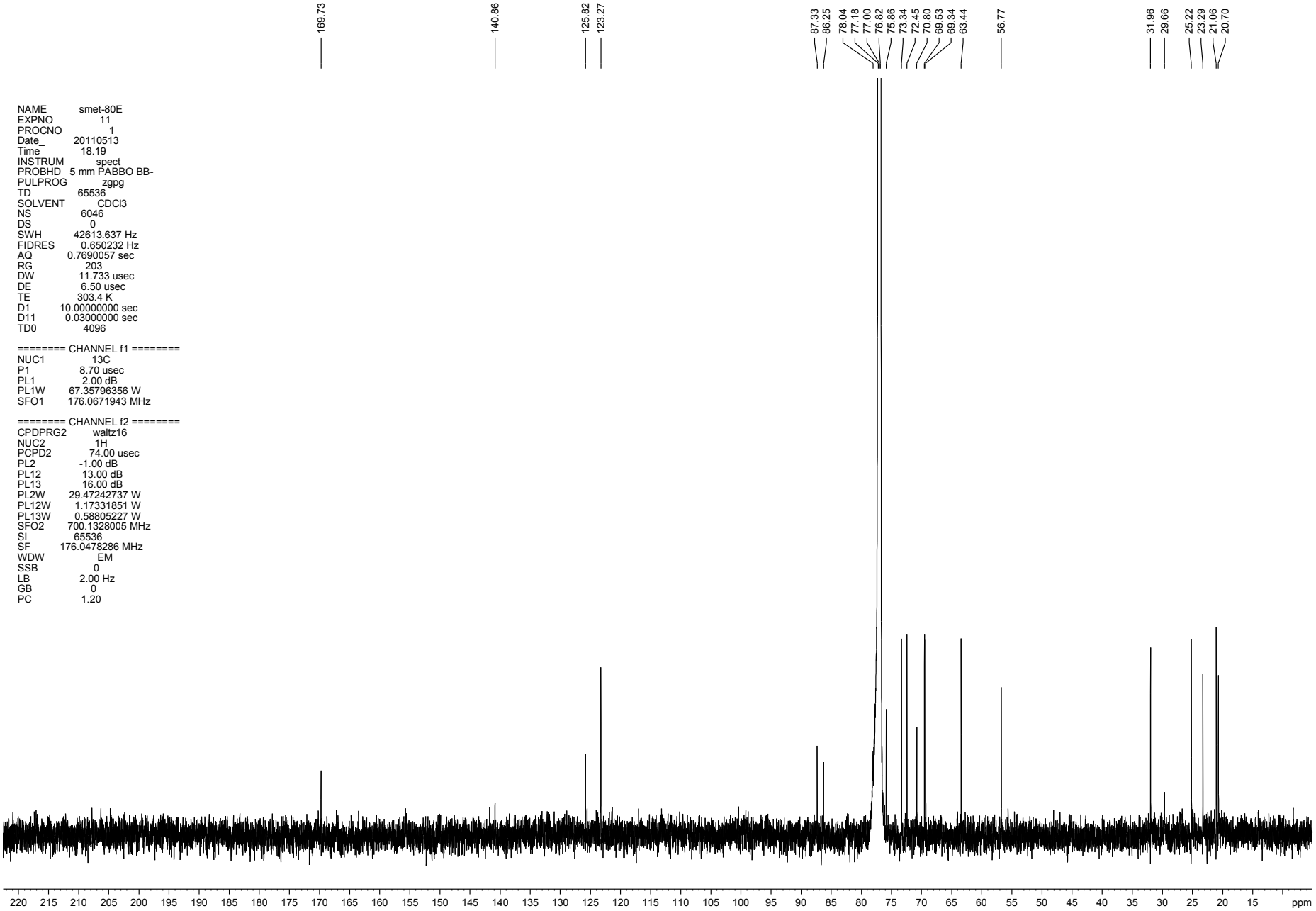


Figure S3. DEPT-135 (176 MHz, $CDCl_3$) spectrum of oxirapentyn F (**2**)

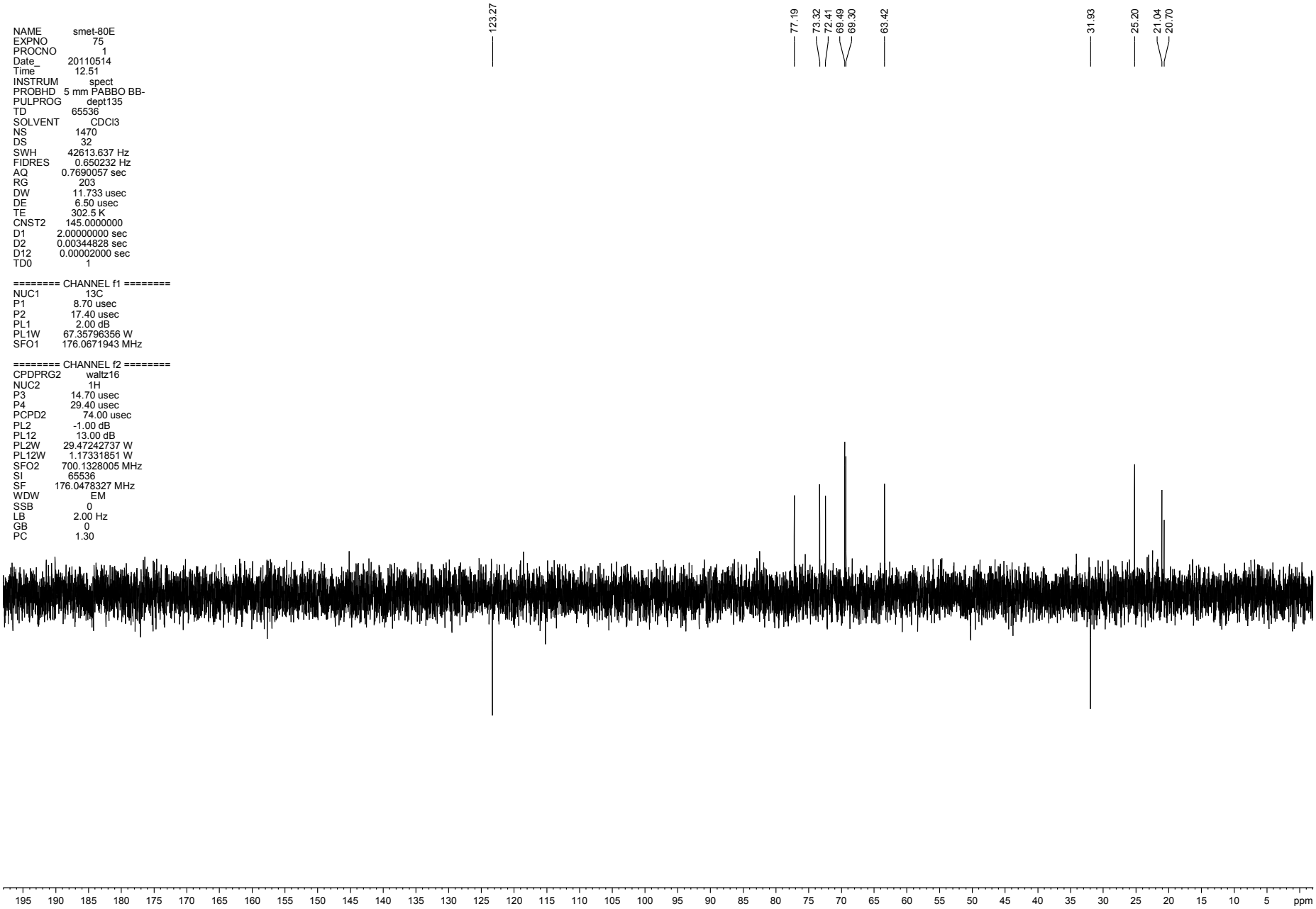


Figure S4. ^{1}H-^{1}H COSY (700 MHz, $CDCl_3$) spectrum of oxirapentyn F (**2**)

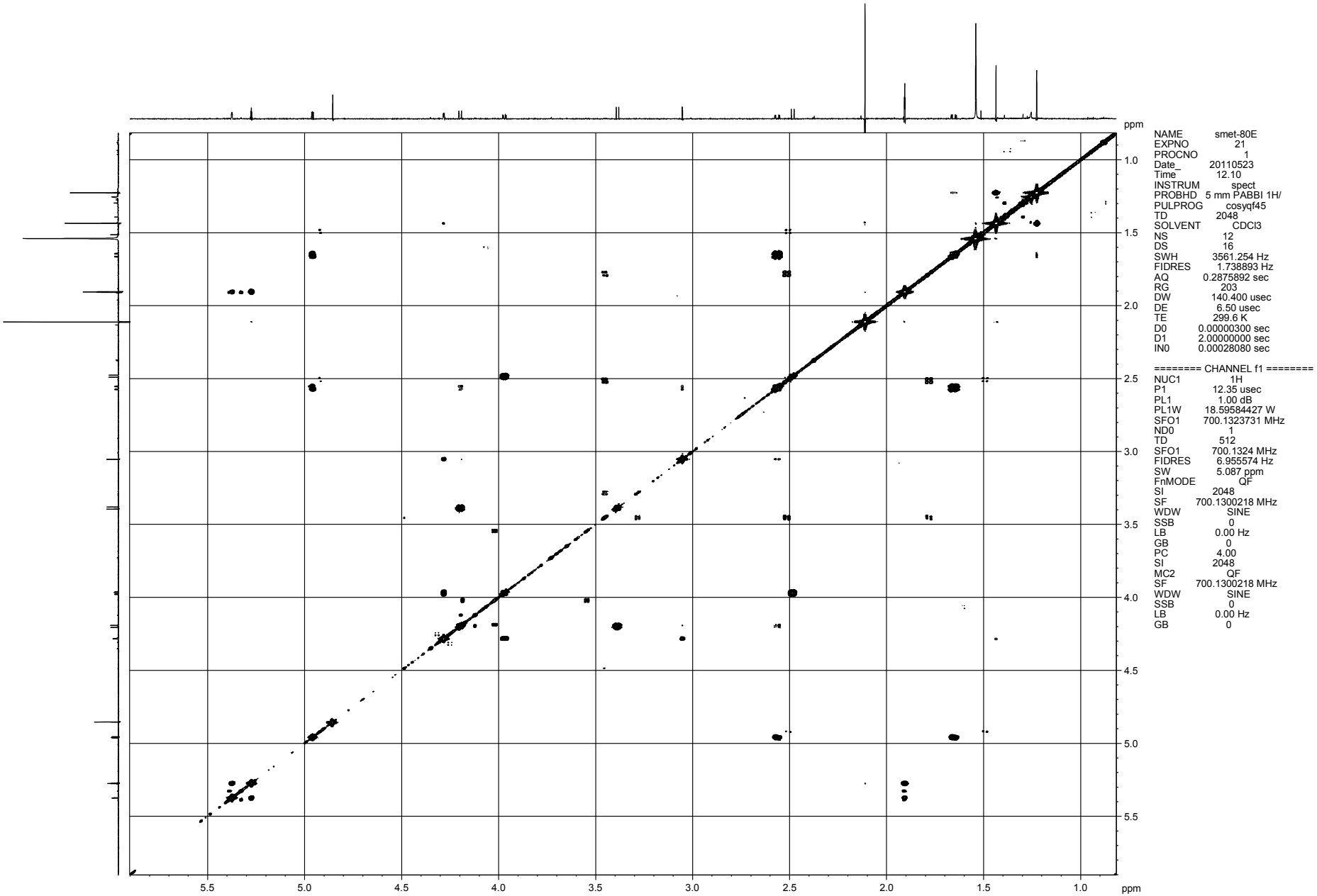


Figure S5. HSQC (700 MHz, $CDCl_3$) spectrum of oxirapentyn F (**2**)

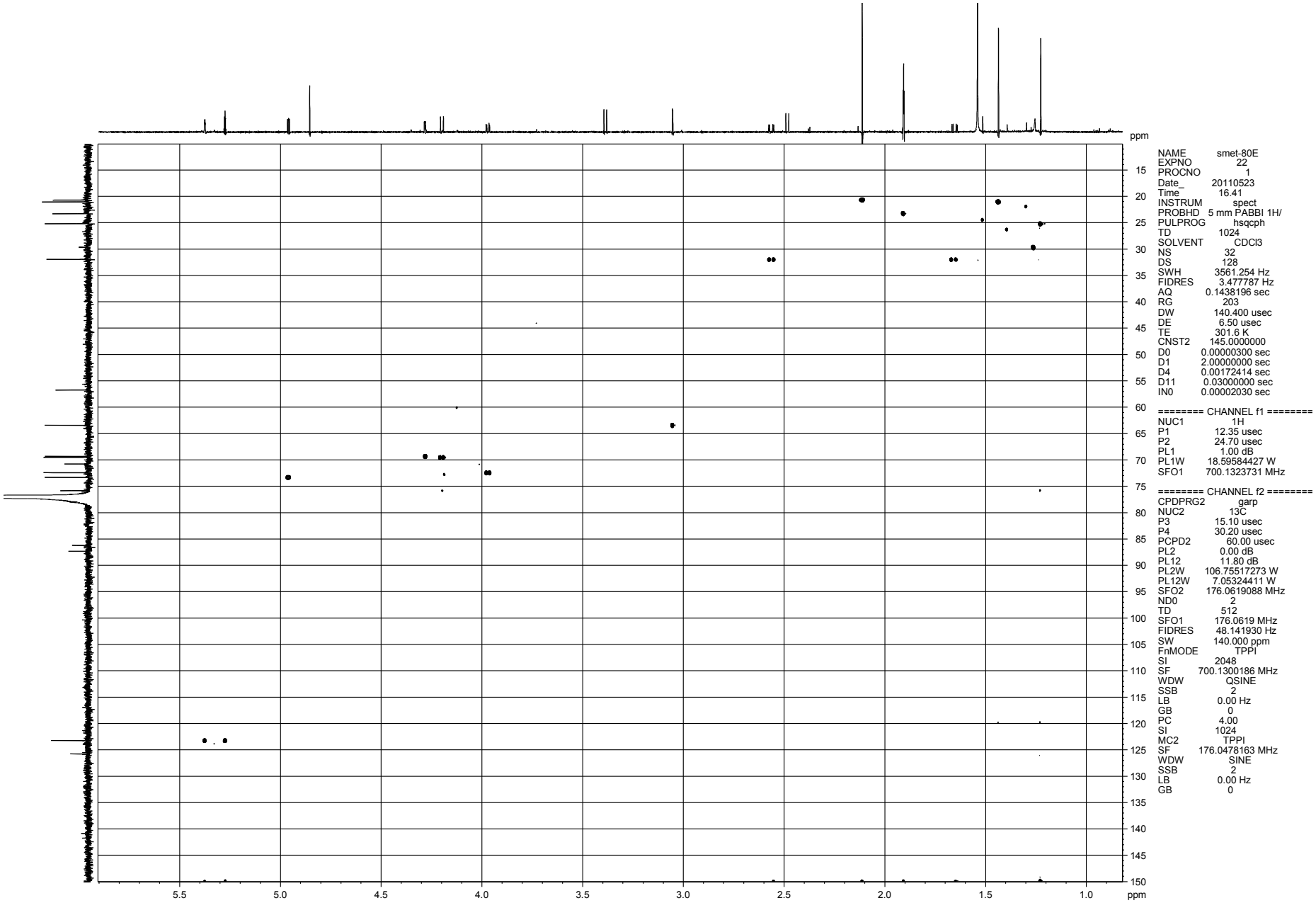


Figure S6. HMBC (700 MHz, $CDCl_3$) spectrum of oxirapentyn F (**2**)

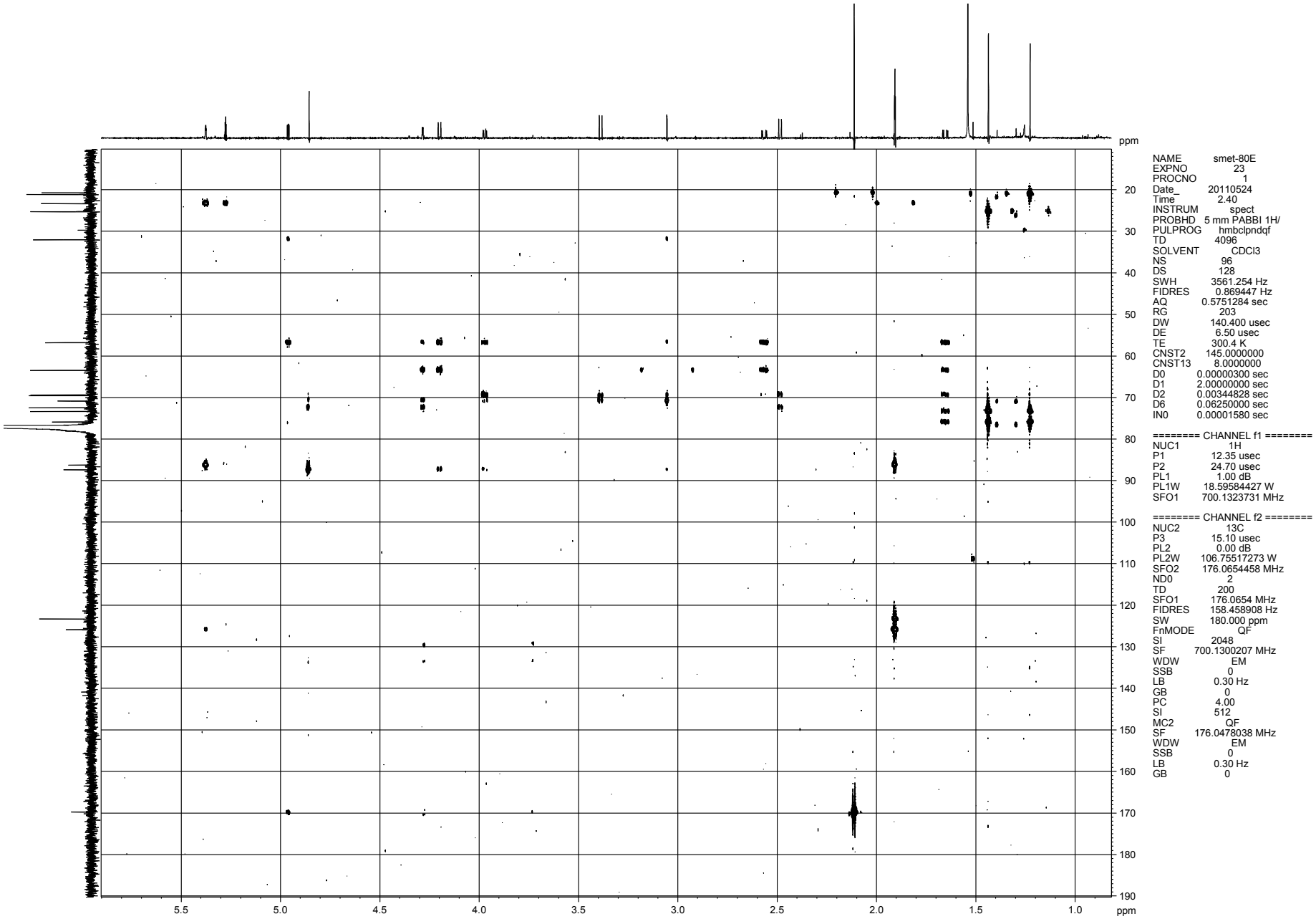


Figure S7. ^{1}H NMR (700 MHz, DMSO-d6) spectrum of oxirapentyn G (**3**)

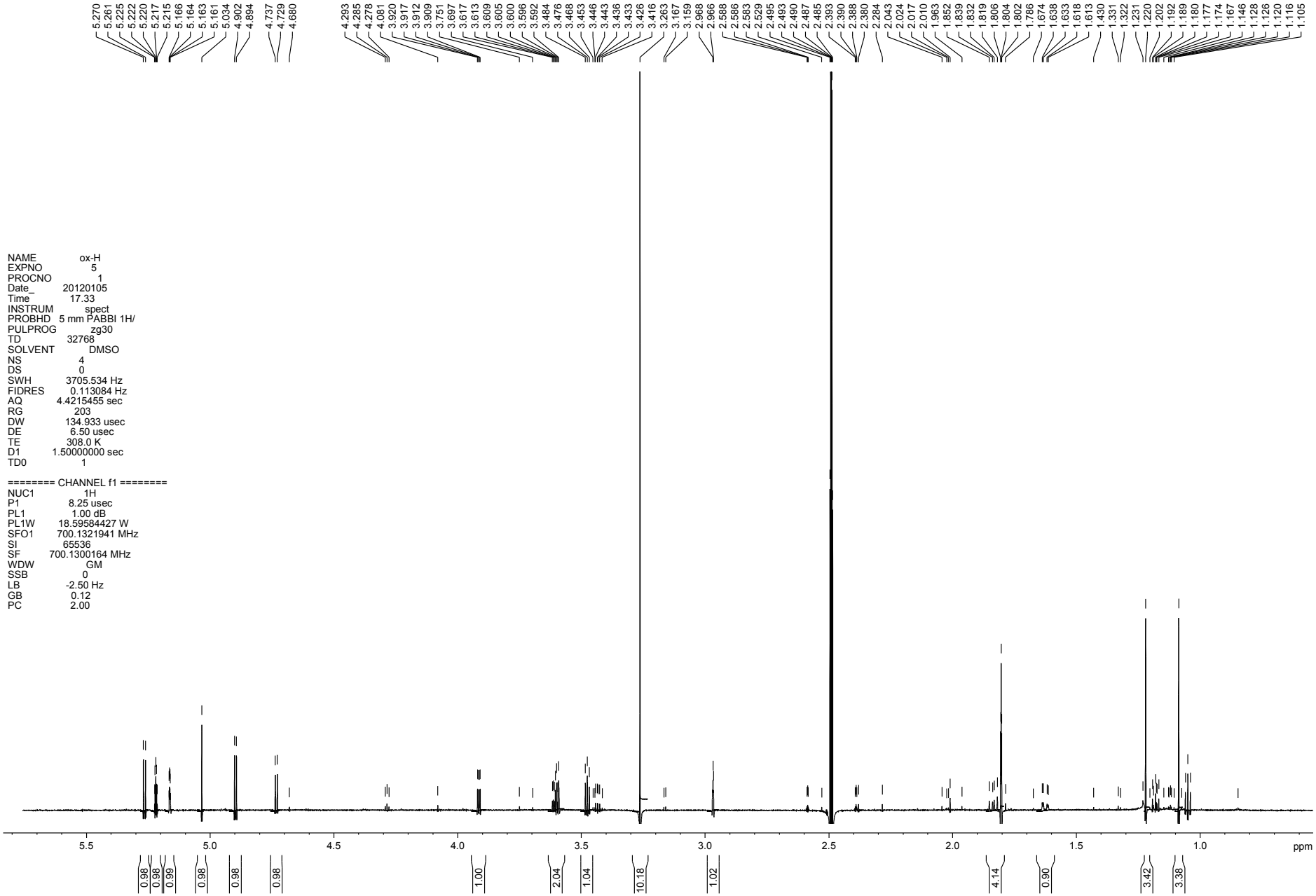


Figure S8. ^{13}C NMR (176 MHz, DMSO-d6) spectra of oxirapentyn G (**3**)

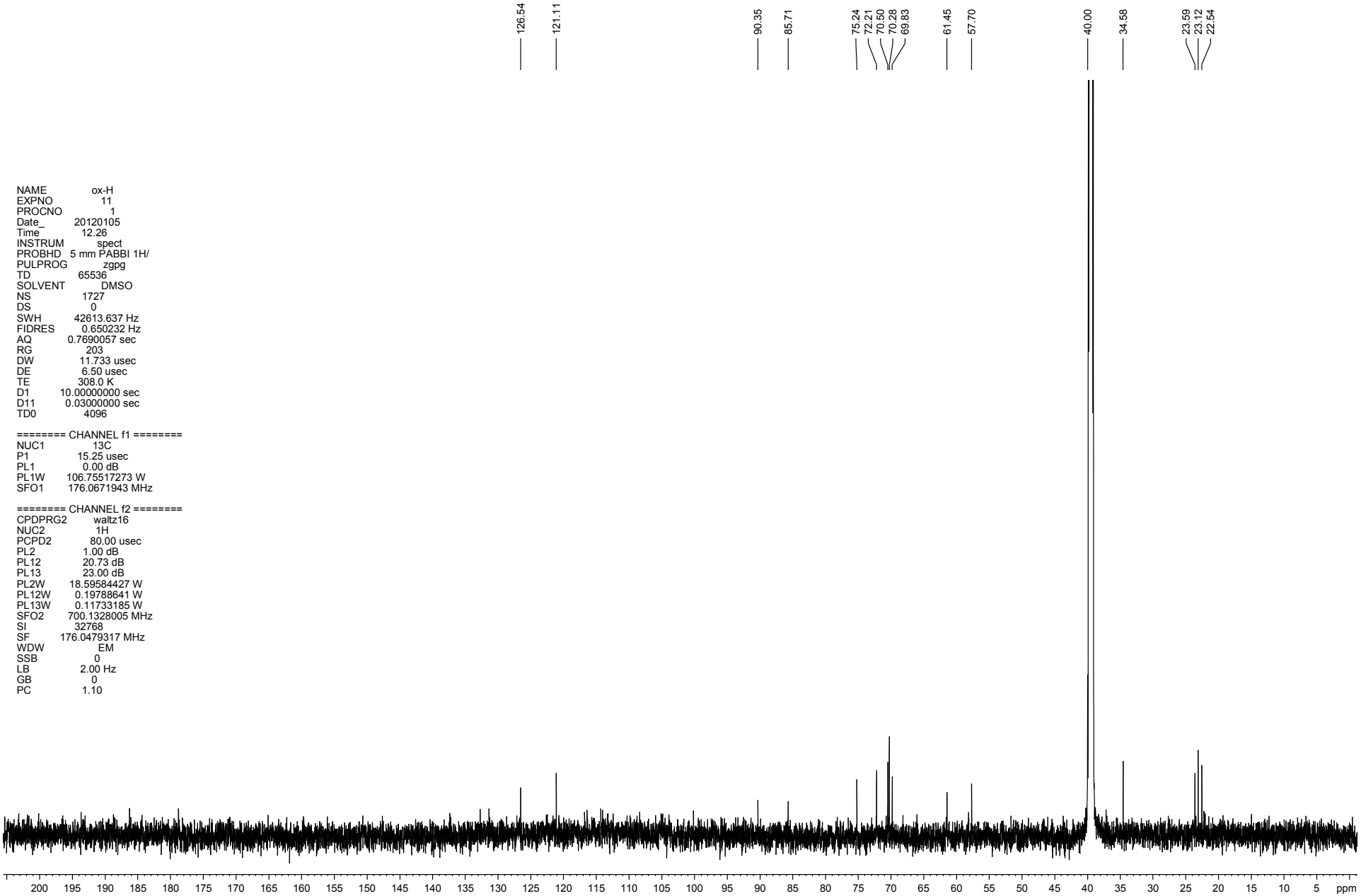


Figure S9. ^{1}H-^{1}H COSY (700 MHz, DMSO-d6) spectrum of oxirapentyn G (**3**)

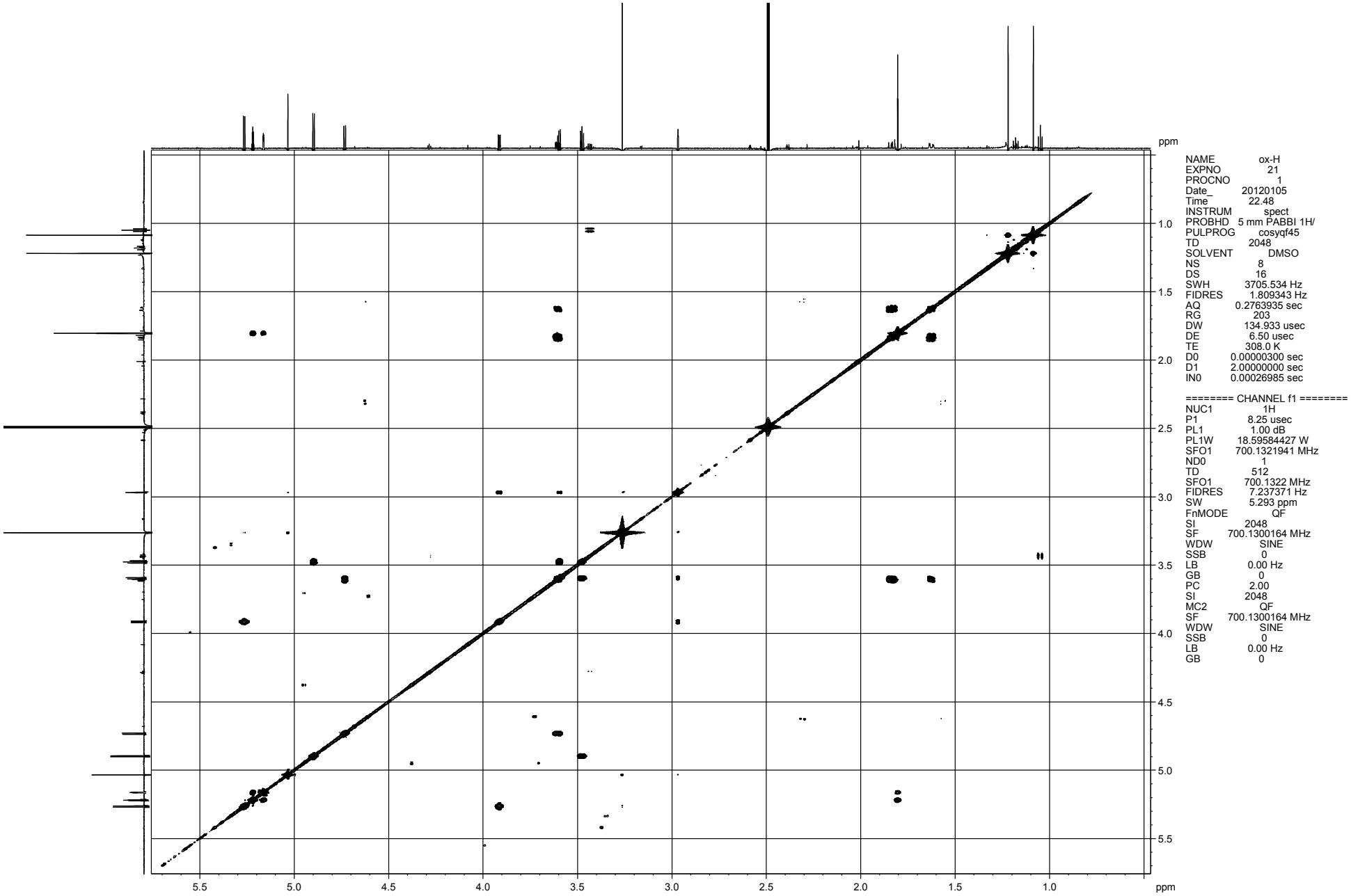
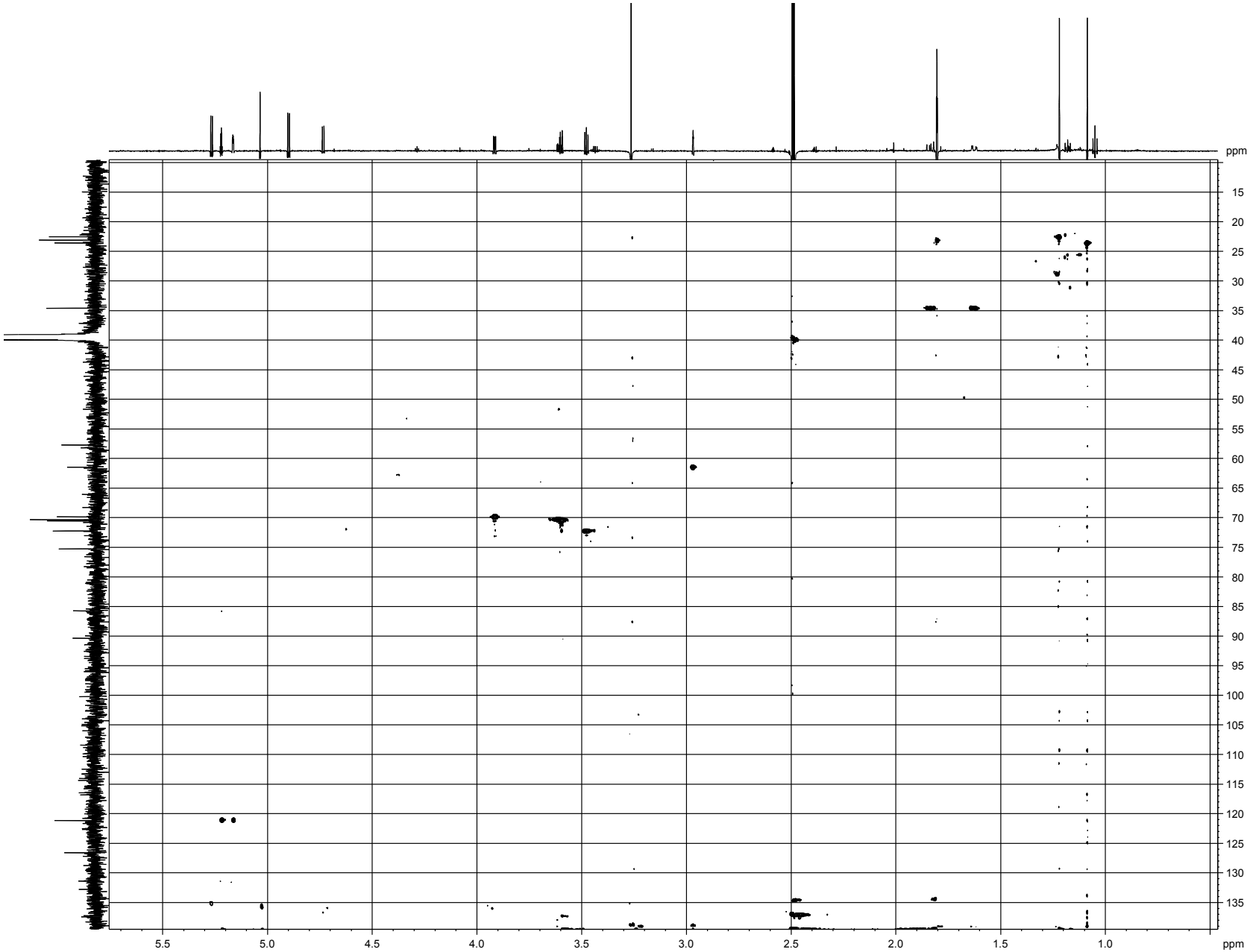


Figure S10. HSQC (700 MHz, DMSO-d6) spectrum of oxirapentyn G (**3**)

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PROCNO           1
Date_       20120106
Time            1.32
INSTRUM         spect
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PULPROG        hsqcph
TD             1024
SOLVENT         DMSO
NS               20
DS              128
SWH         3705.534 Hz
FIDRES       3.618685 Hz
AQ         0.1382217 sec
RG             203
DW          134.933 usec
DE            6.50 usec
TE            308.4 K
CNST2      145.0000000
D0         0.00000300 sec
D1         1.50000000 sec
D4         0.00172414 sec
D11         0.03000000 sec
IN0        0.00002185 sec

======== CHANNEL f1 ========
NUC1            1H
P1            8.25 usec
P2           16.50 usec
PL1           1.00 dB
PL1W      18.59584427 W
SFO1      700.1321941 MHz

======== CHANNEL f2 ========
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NUC2            13C
P3           14.60 usec
P4           29.20 usec
PCPD2         60.00 usec
PL2           0.00 dB
PL12          12.28 dB
PL2W      106.75517273 W
PL12W      6.31522703 W
SFO2      176.0610459 MHz
ND0              2
TD             512
SFO1        176.061 MHz
FIDRES      44.702999 Hz
SW          130.000 ppm
FnMODE          TPPI
SI             2048
SF      700.1300164 MHz
WDW            QSINE
SSB              2
LB            0.00 Hz
GB               0
PC            2.00
SI            1024
MC2            TPPI
SF      176.0479231 MHz
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SSB              2
LB            0.00 Hz
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Figure S11. HMBC (700 MHz, DMSO-d6) spectrum of oxirapentyn G (**3**)

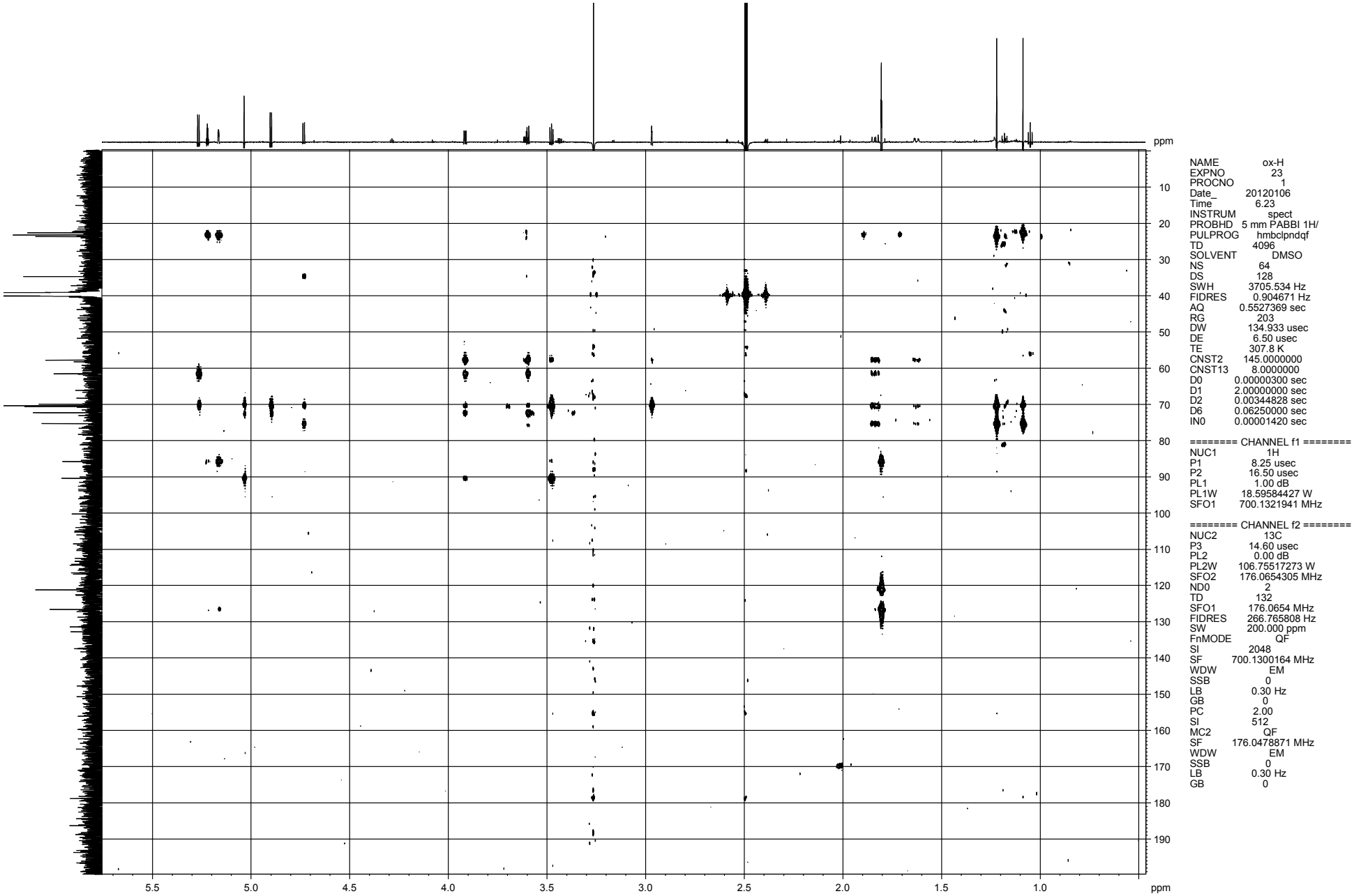

Figure S12. ^{1}H NMR (700 MHz, DMSO-d6) spectrum of oxirapentyn H (**4**)

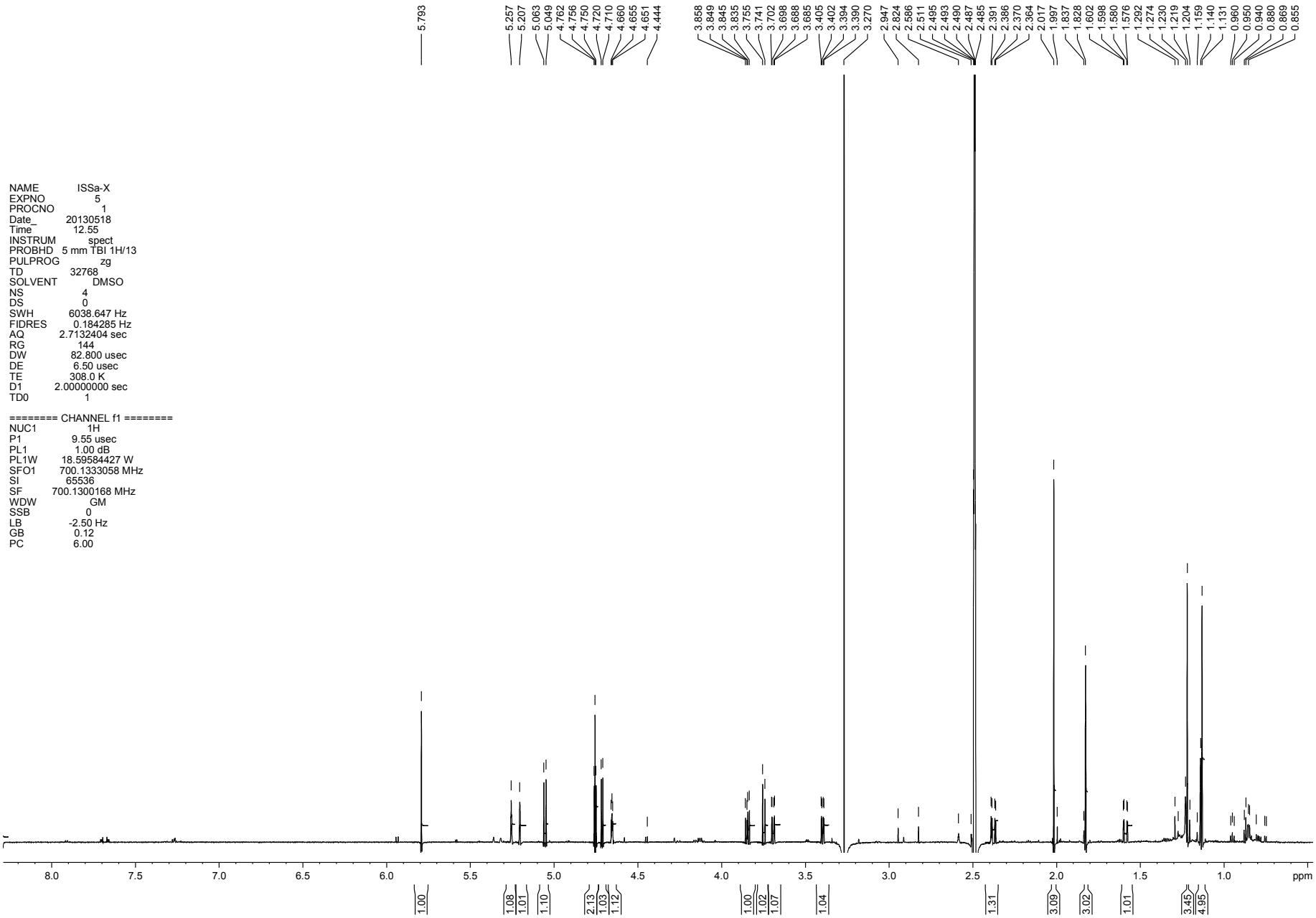

Figure S13. ^{13}C NMR (176 MHz, DMSO-d6) spectra of oxirapentyn H (**4**)

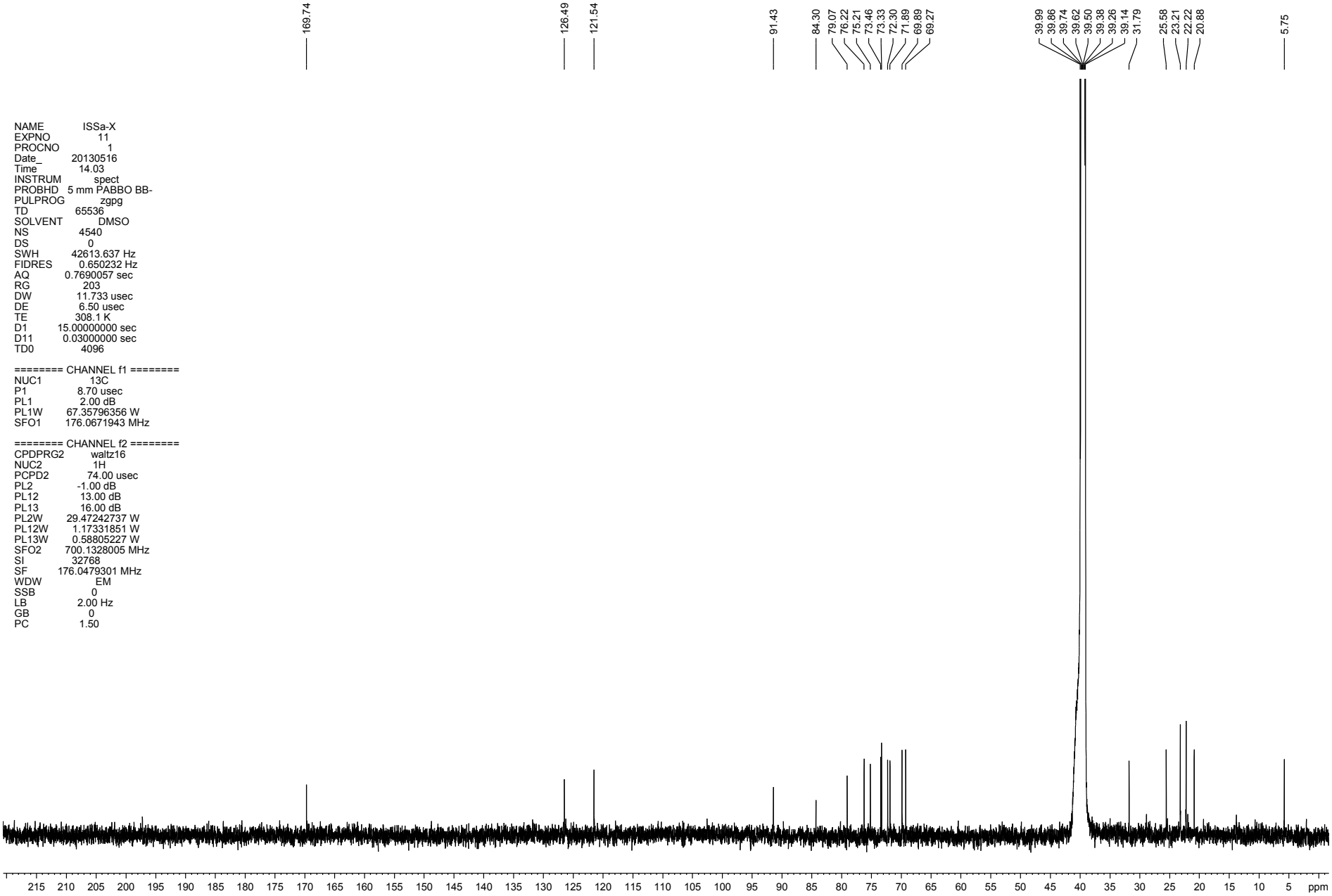

Figure S14. ^{1}H-^{1}H COSY (700 MHz, DMSO-d6) spectrum of oxirapentyn H (**4**)

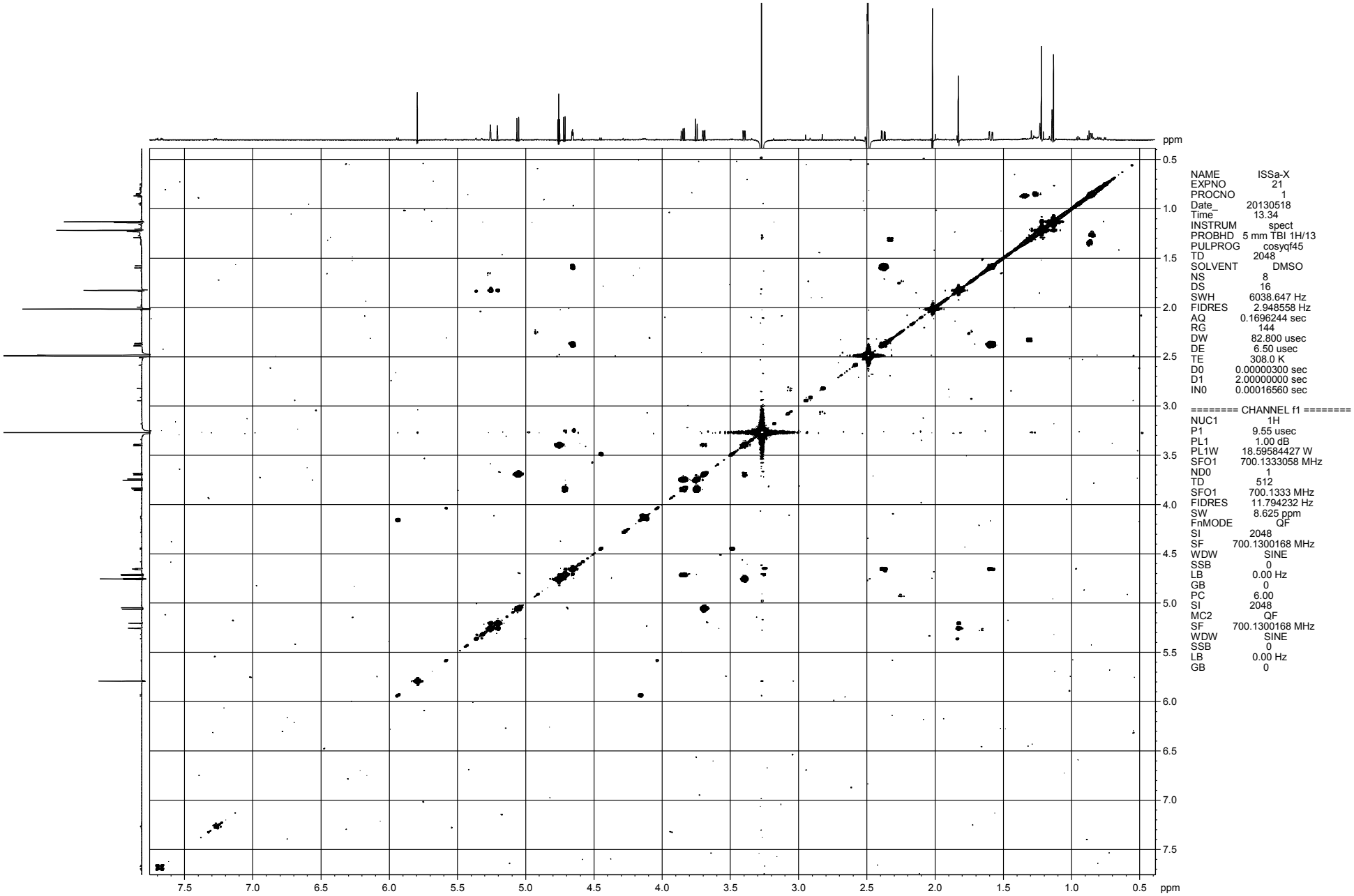

Figure S15. HSQC (700 MHz, DMSO-d6) spectrum of oxirapentyn H (**4**)

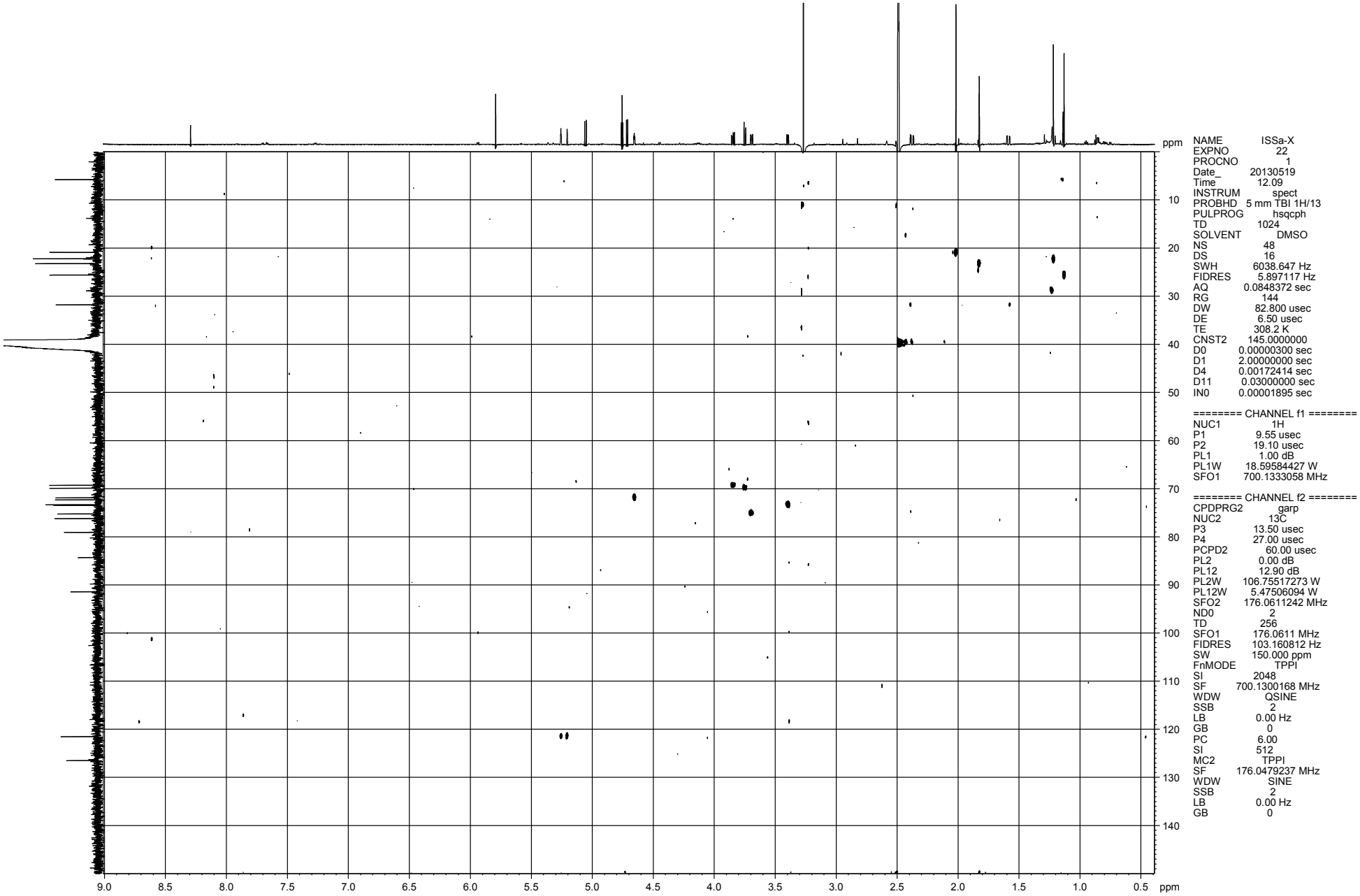

Figure S16. HMBC (500 MHz, DMSO-d6) spectrum of oxirapentyn H (**4**)

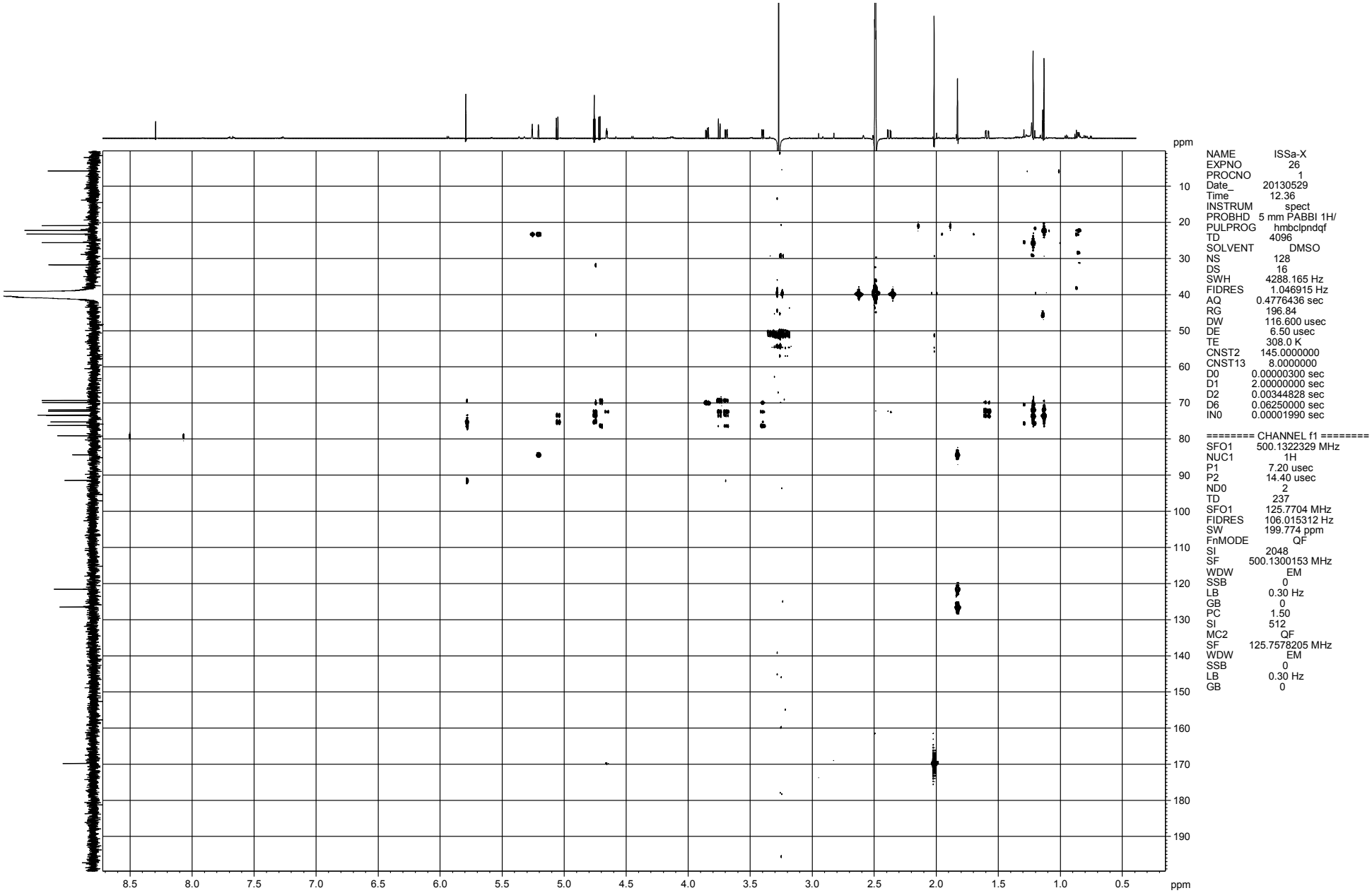

Figure S17. ^{1}H NMR (700 MHz, DMSO-d6) spectrum of oxirapentyn I (**5**)

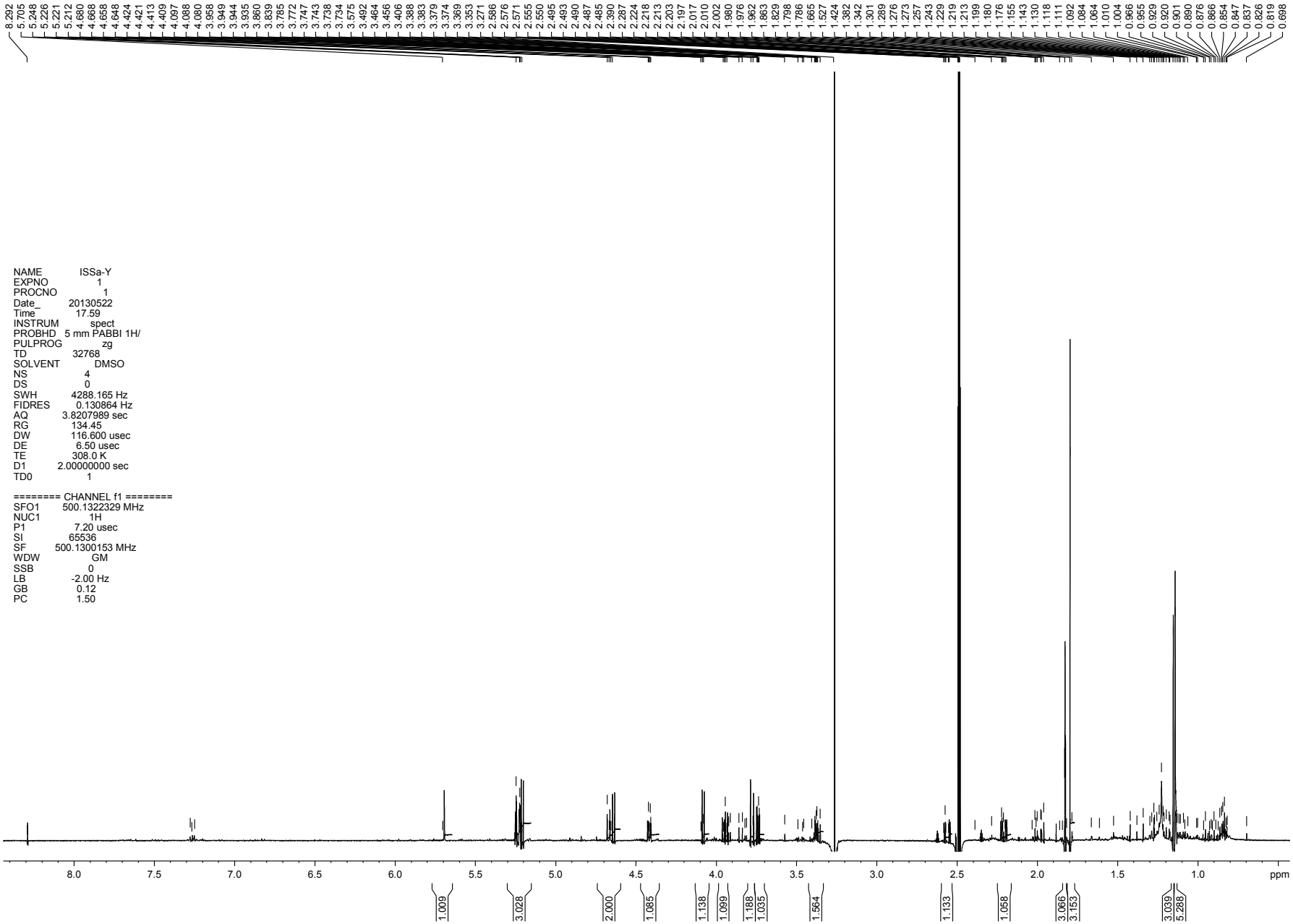

Figure S18. ^{13}C NMR (176 MHz, DMSO-d6) spectra of oxirapentyn I (**5**)

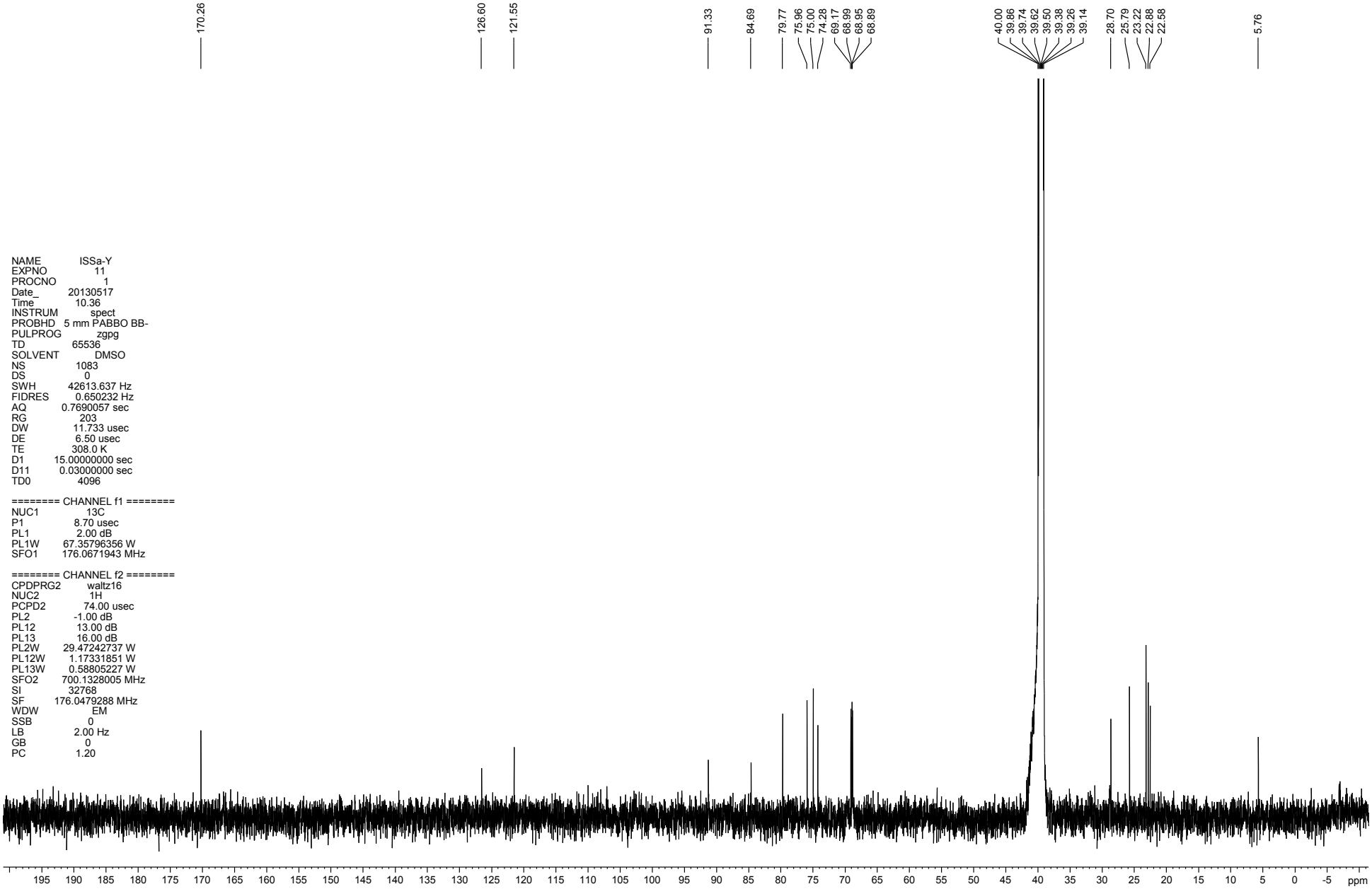

Figure S19. ^{1}H-^{1}H COSY (700 MHz, DMSO-d6) spectrum of oxirapentyn I (**5**)

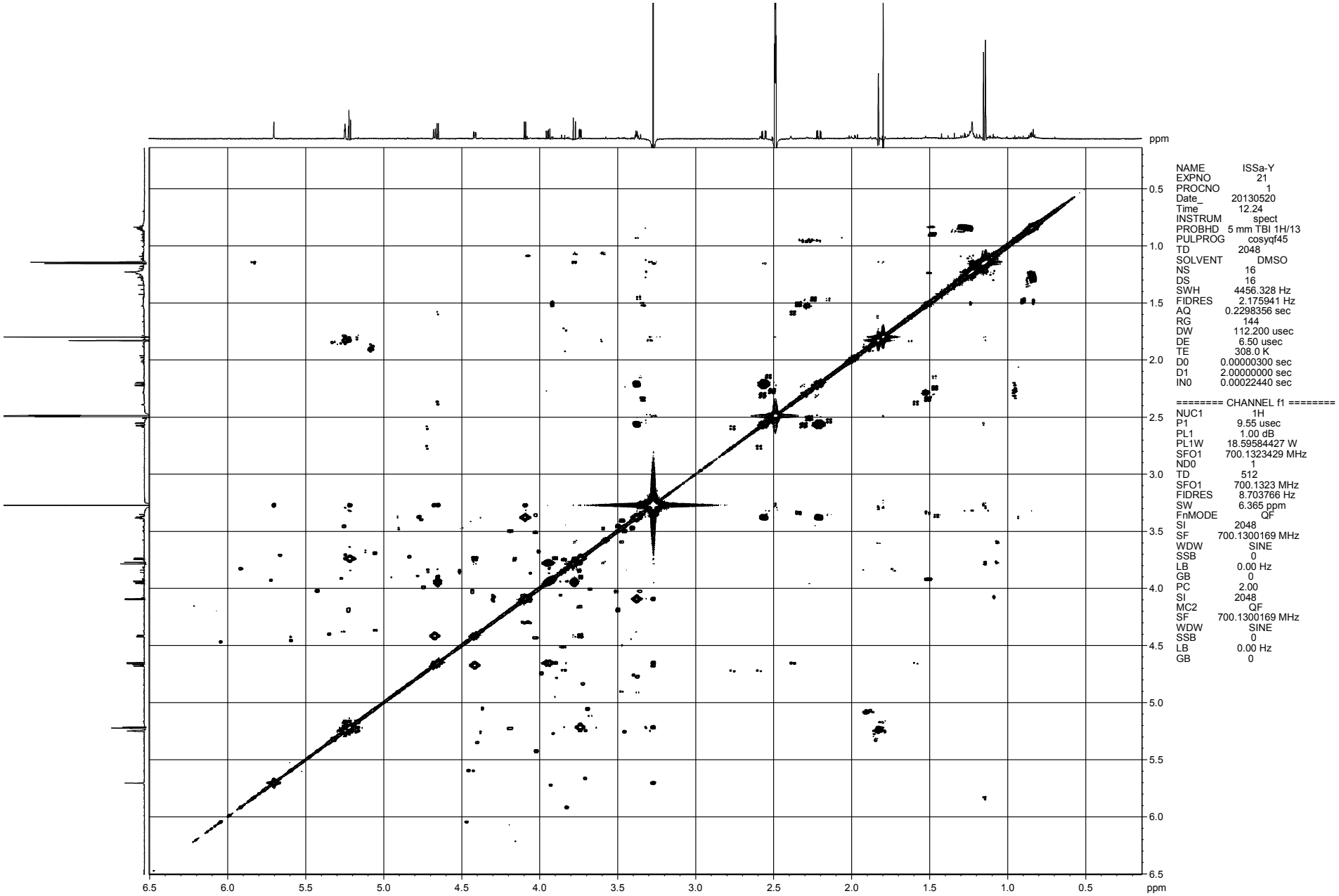

Figure S20. HSQC (700 MHz, DMSO-d6) spectrum of oxirapentyn I (**5**)

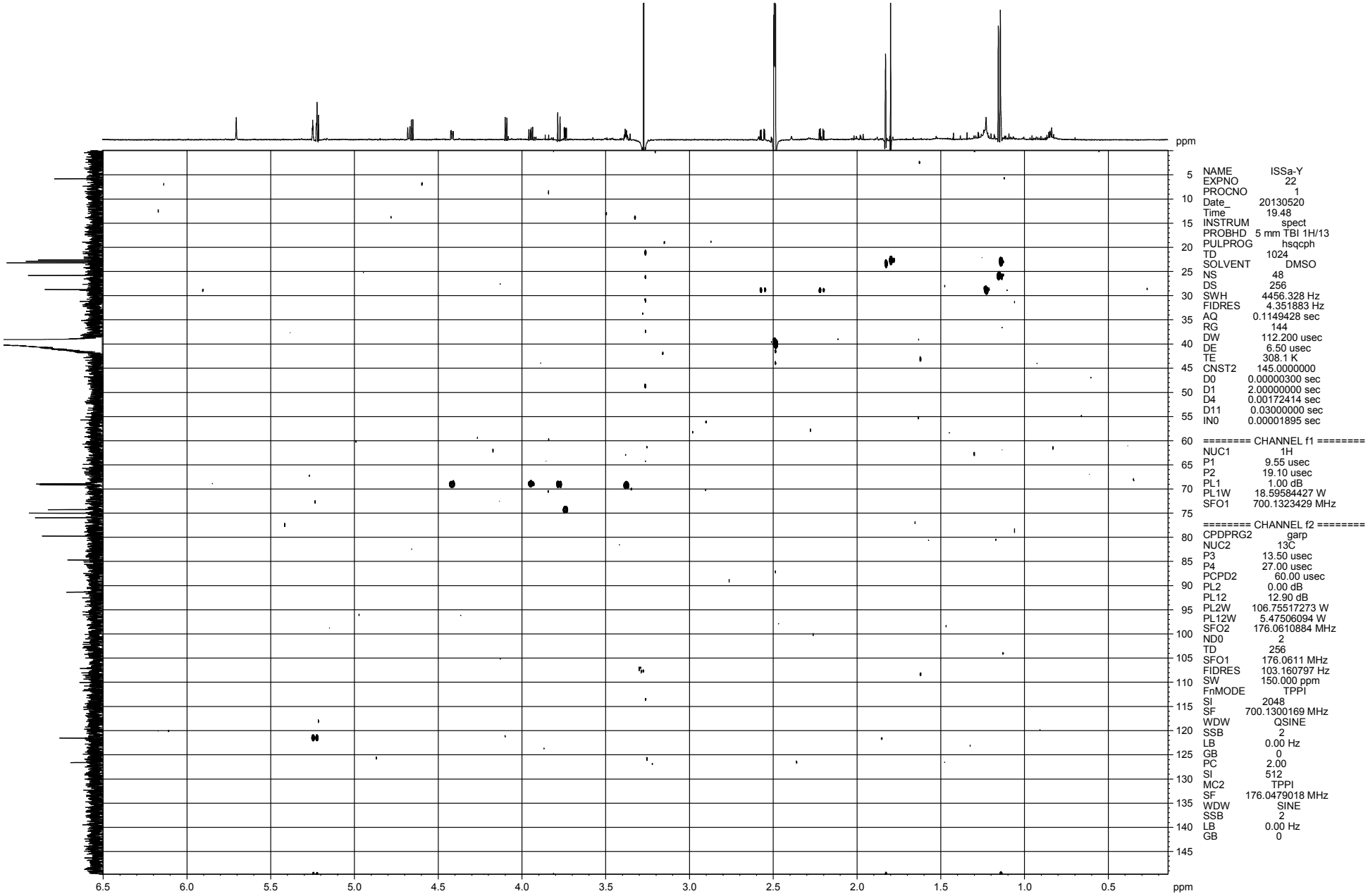

Figure S21. HMBC (500 MHz, DMSO-d6) spectrum of oxirapentyn I (**5**)

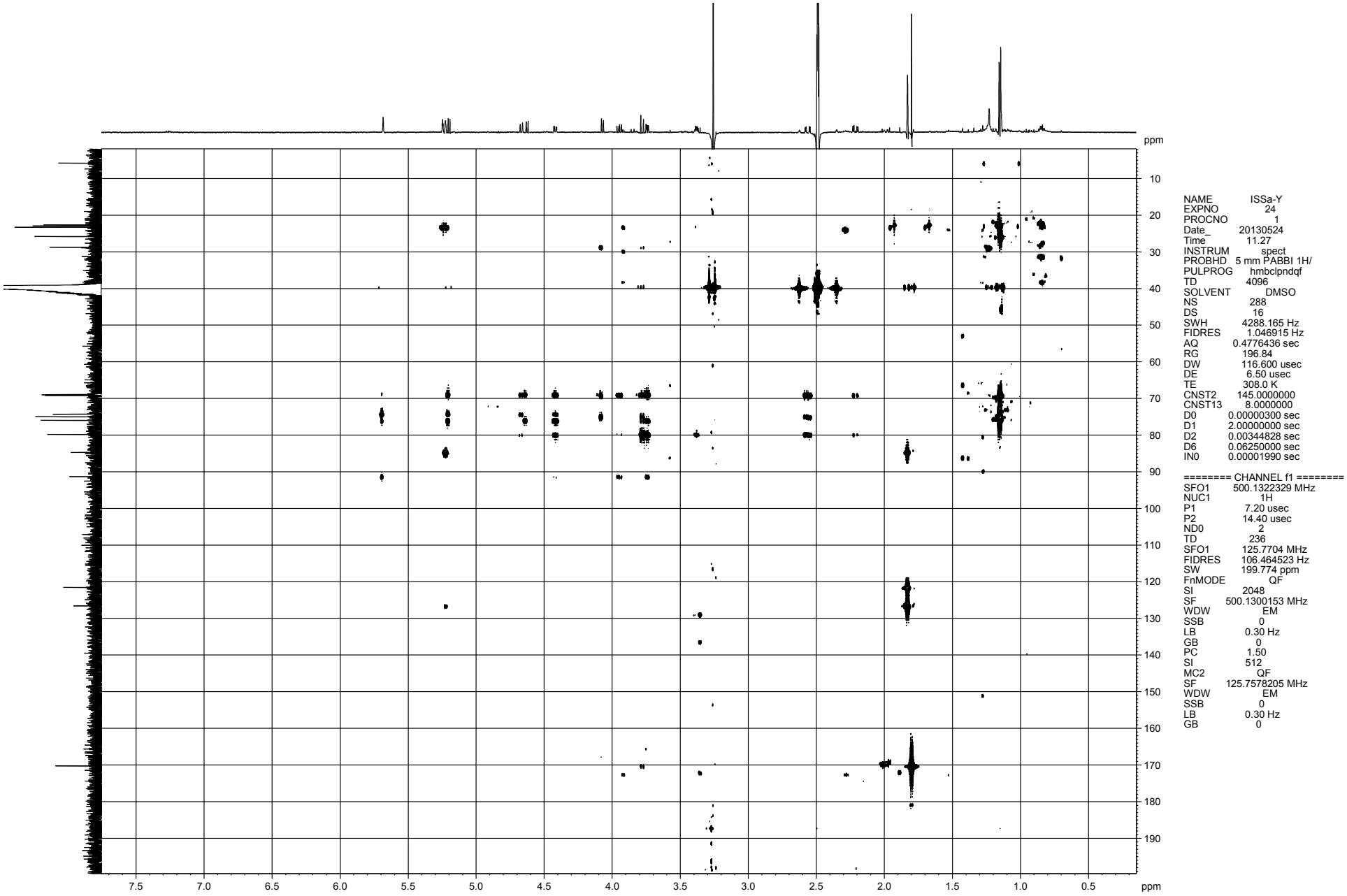

Figure S22. NOESY (700 MHz, DMSO-d6) spectrum of oxirapentyn I (**5**)

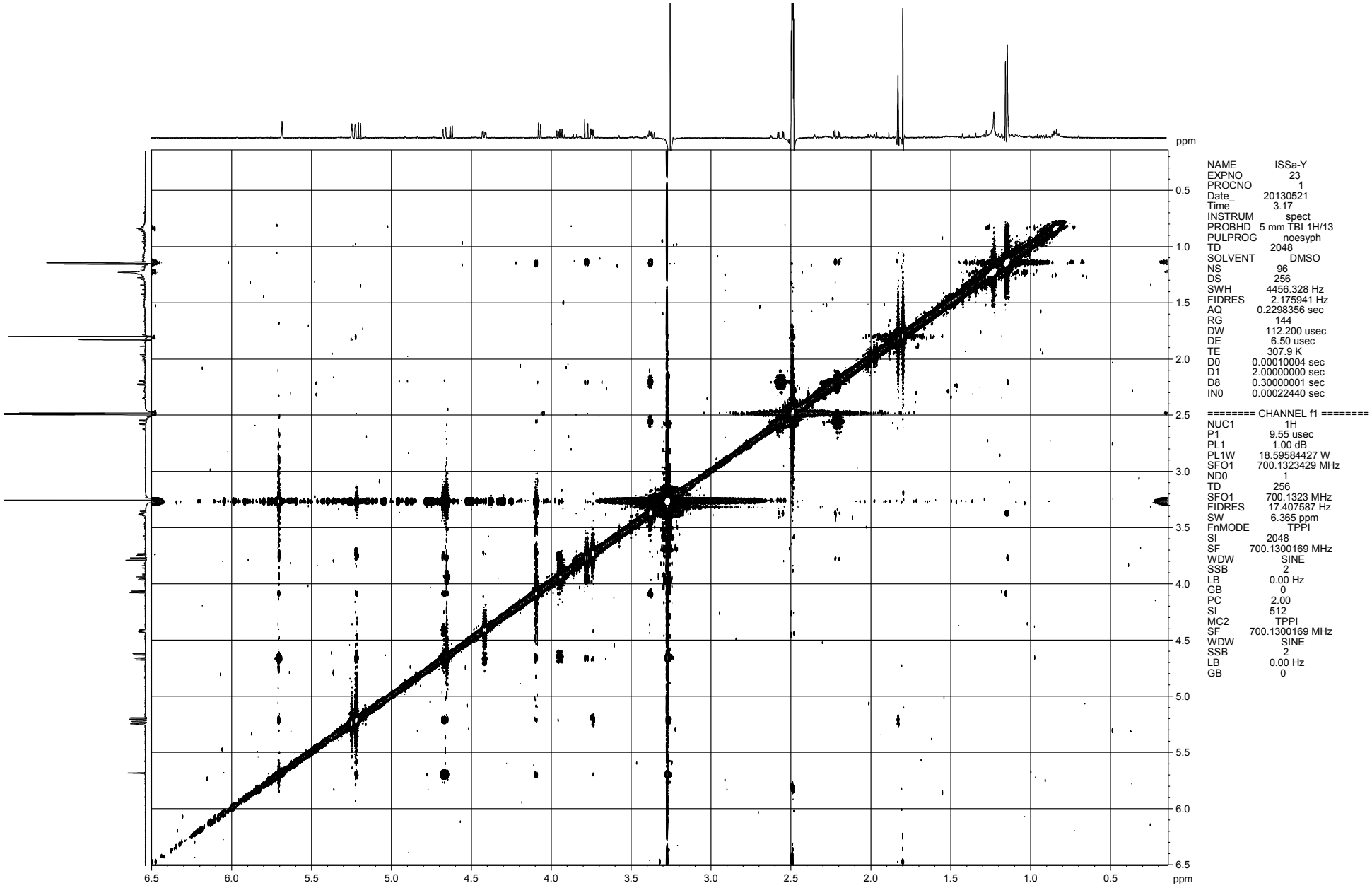

Figure S23. ^{1}H NMR (700 MHz, $CDCl_3$) spectrum of oxirapentyn J (**6**)

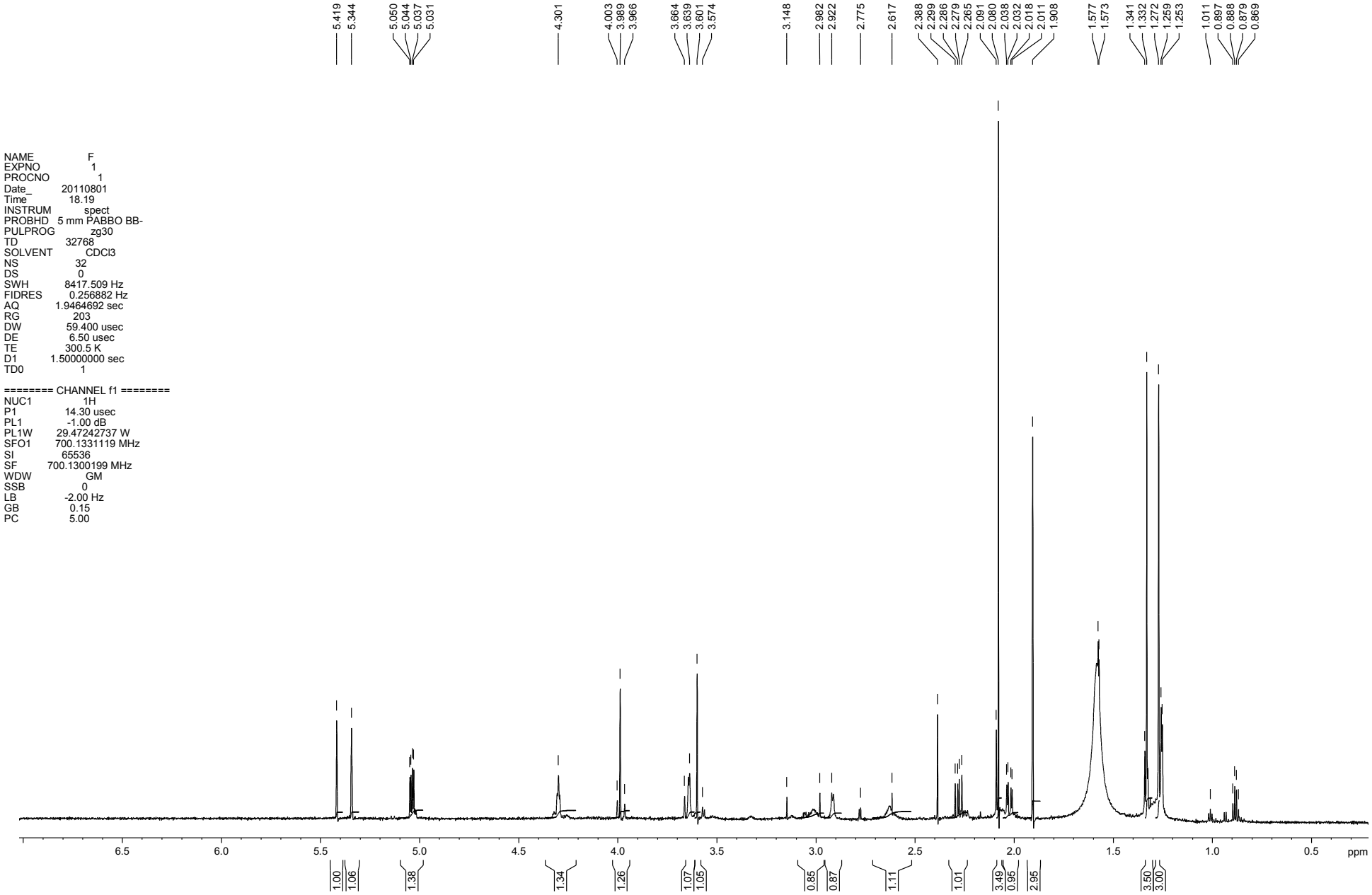

Figure S24. ^{13}C NMR (176 MHz, $CDCl_3$) spectra of oxirapentyn J (**6**)

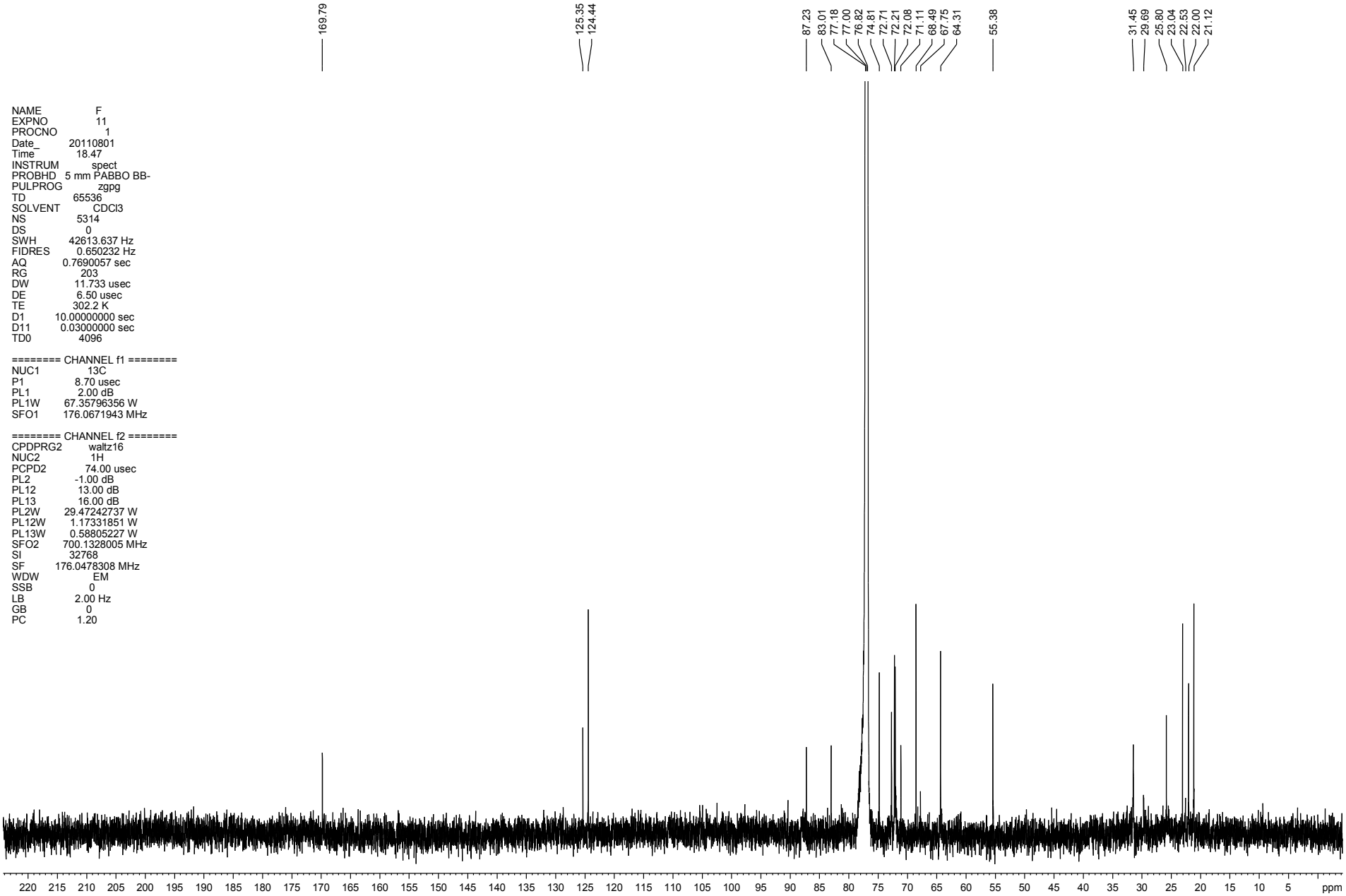

Figure S25. DEPT-135 (176 MHz, $CDCl_3$) spectra of oxirapentyn J (**6**)

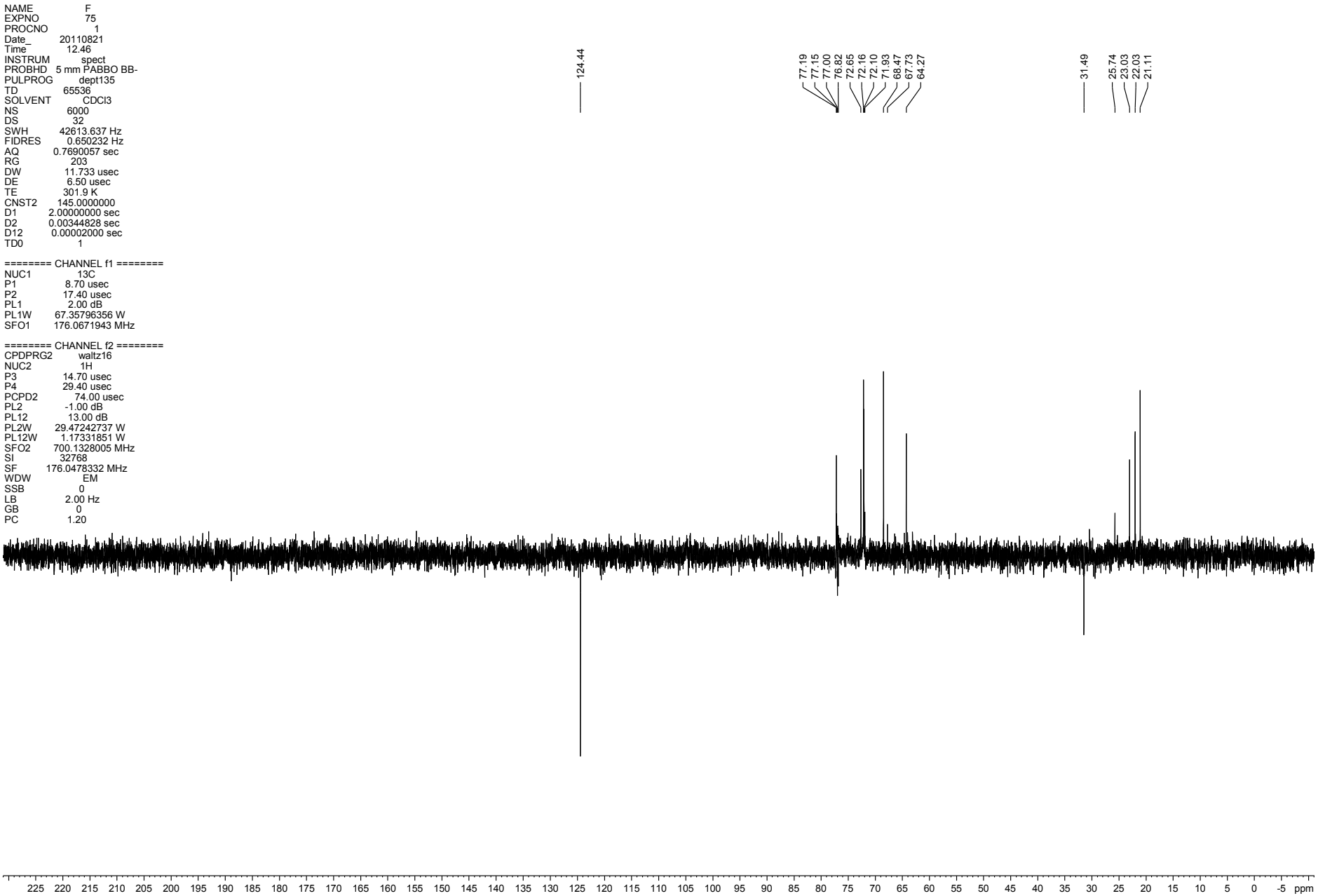

Figure S26. ^{1}H-^{1}H COSY (700 MHz, $CDCl_3$) spectrum of oxirapentyn J (**6**)

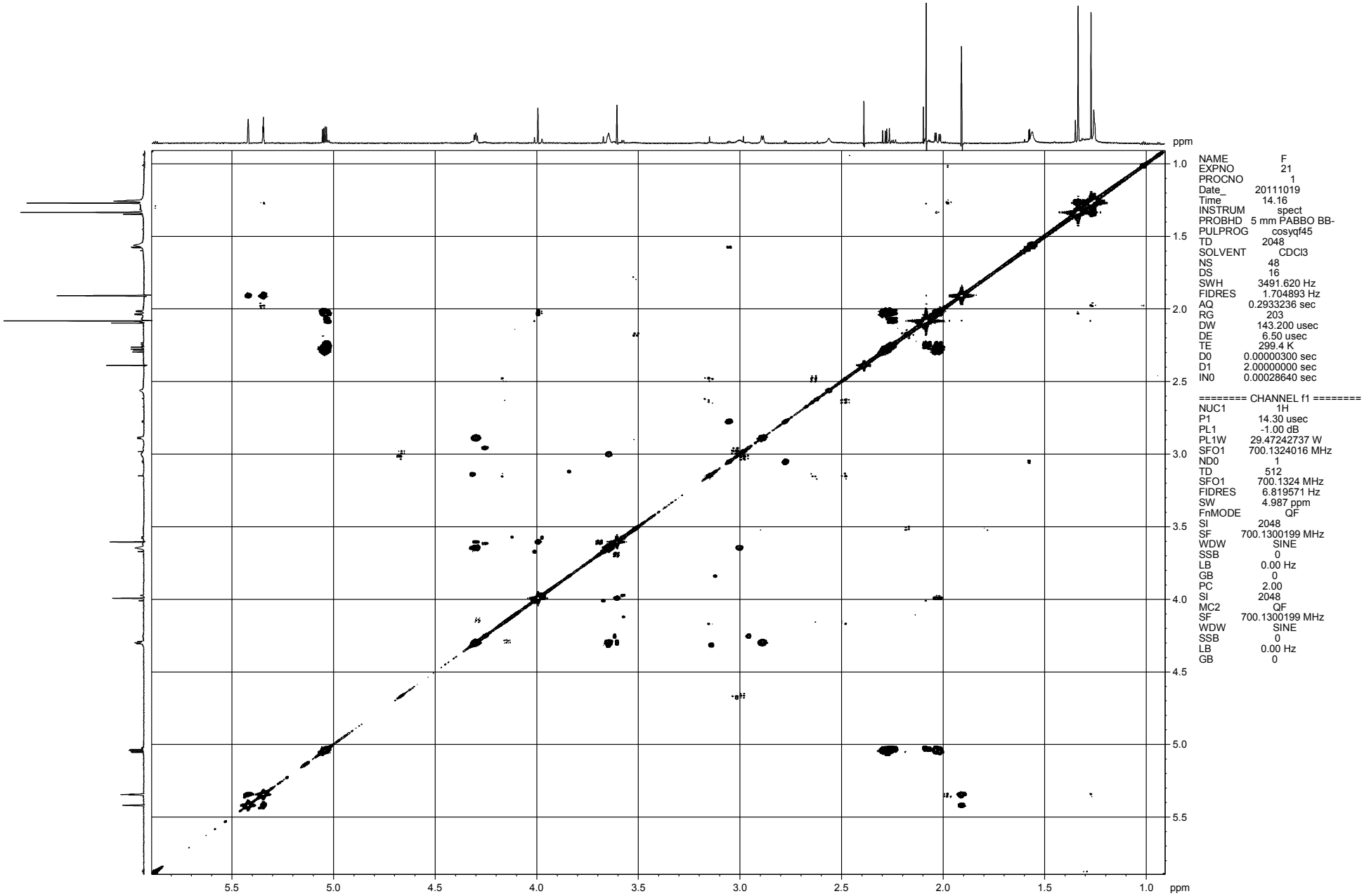

Figure S27. HSQC (700 MHz, $CDCl_3$) spectrum of oxirapentyn J (**6**)

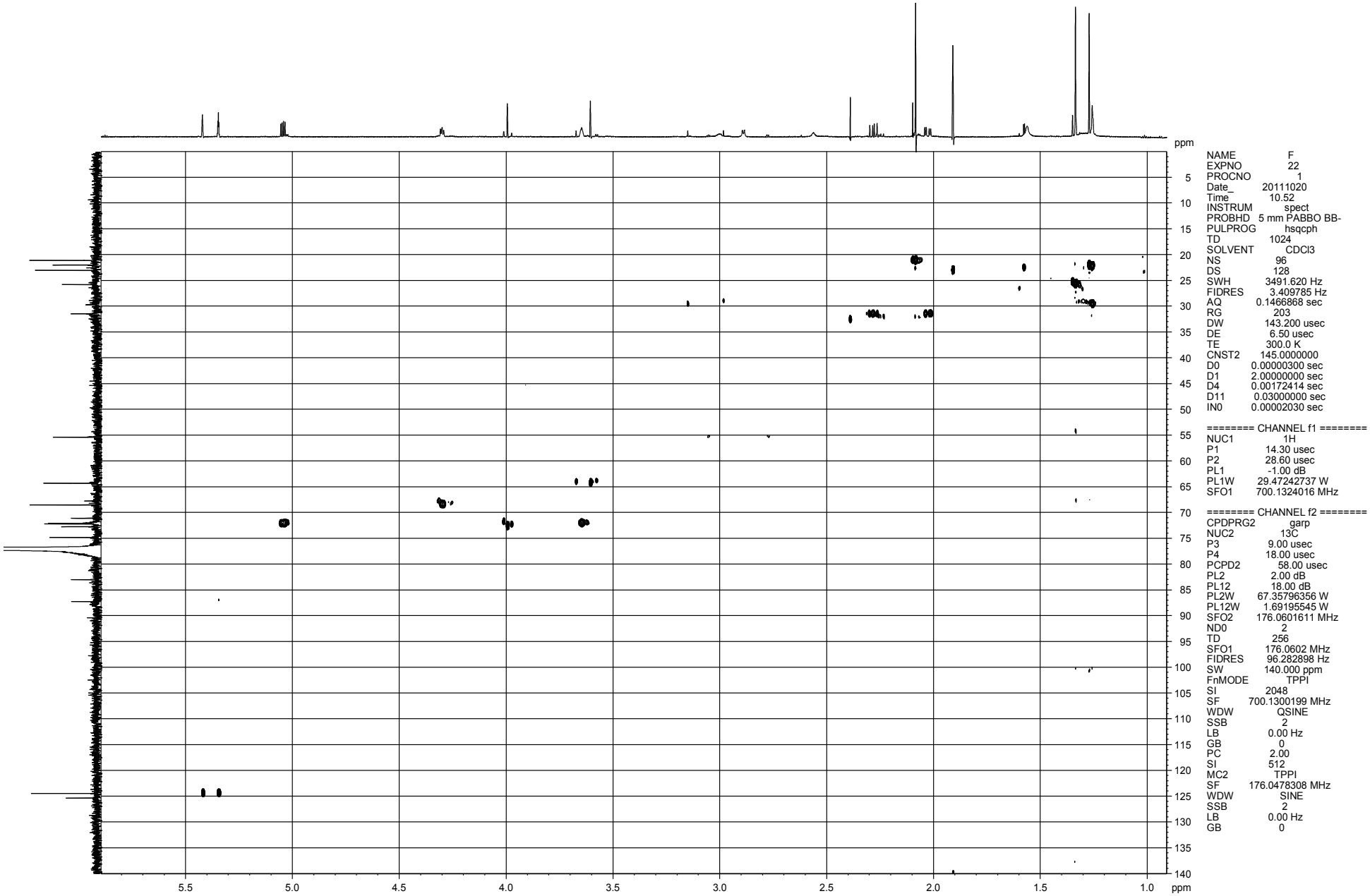

Figure S28. HMBC (700 MHz, $CDCl_3$) spectrum of oxirapentyn J (**6**)

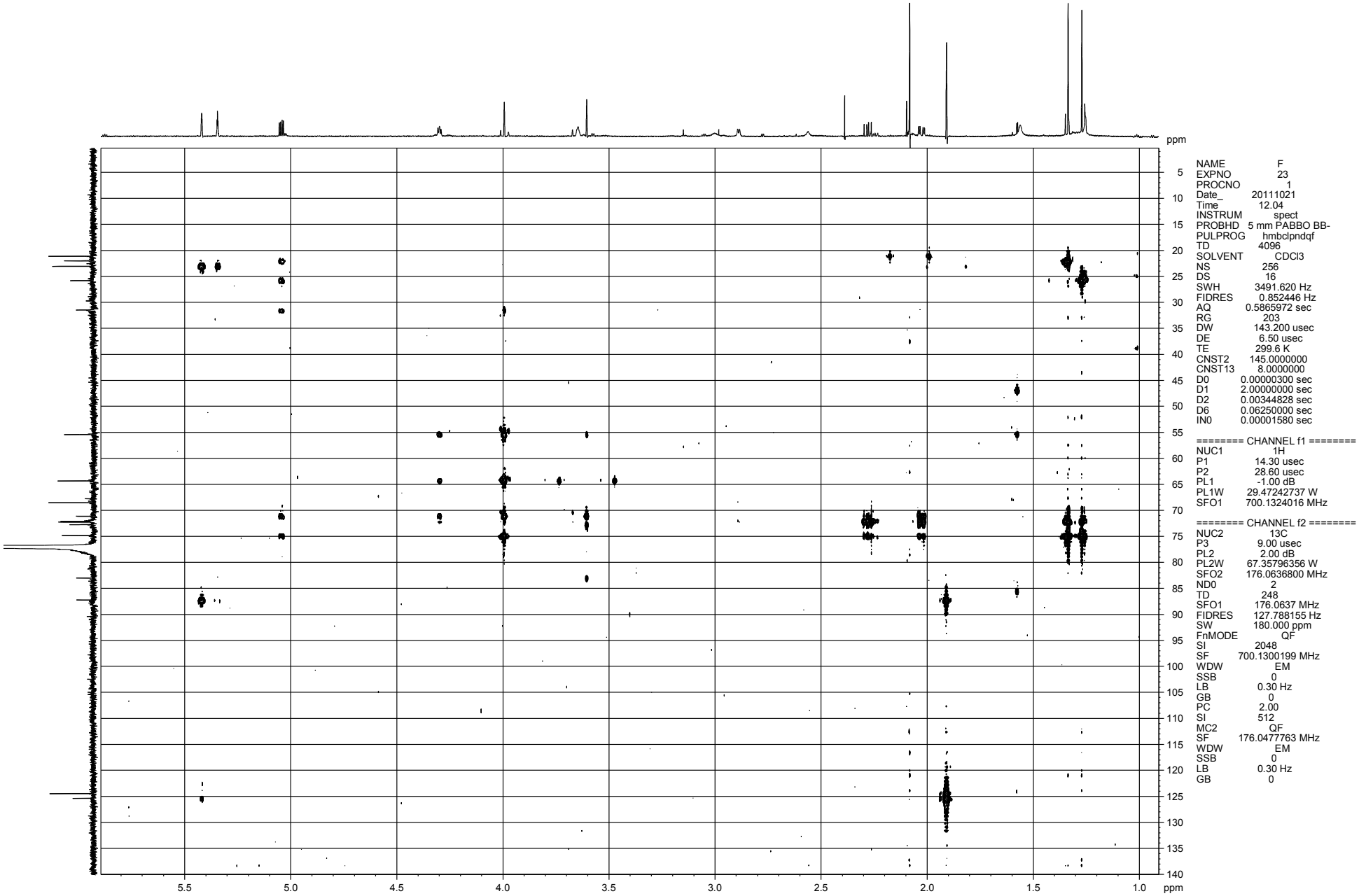

Figure S29. ^{1}H NMR (500 MHz, $CDCl_3$) spectrum of oxirapentyn K (**7**)

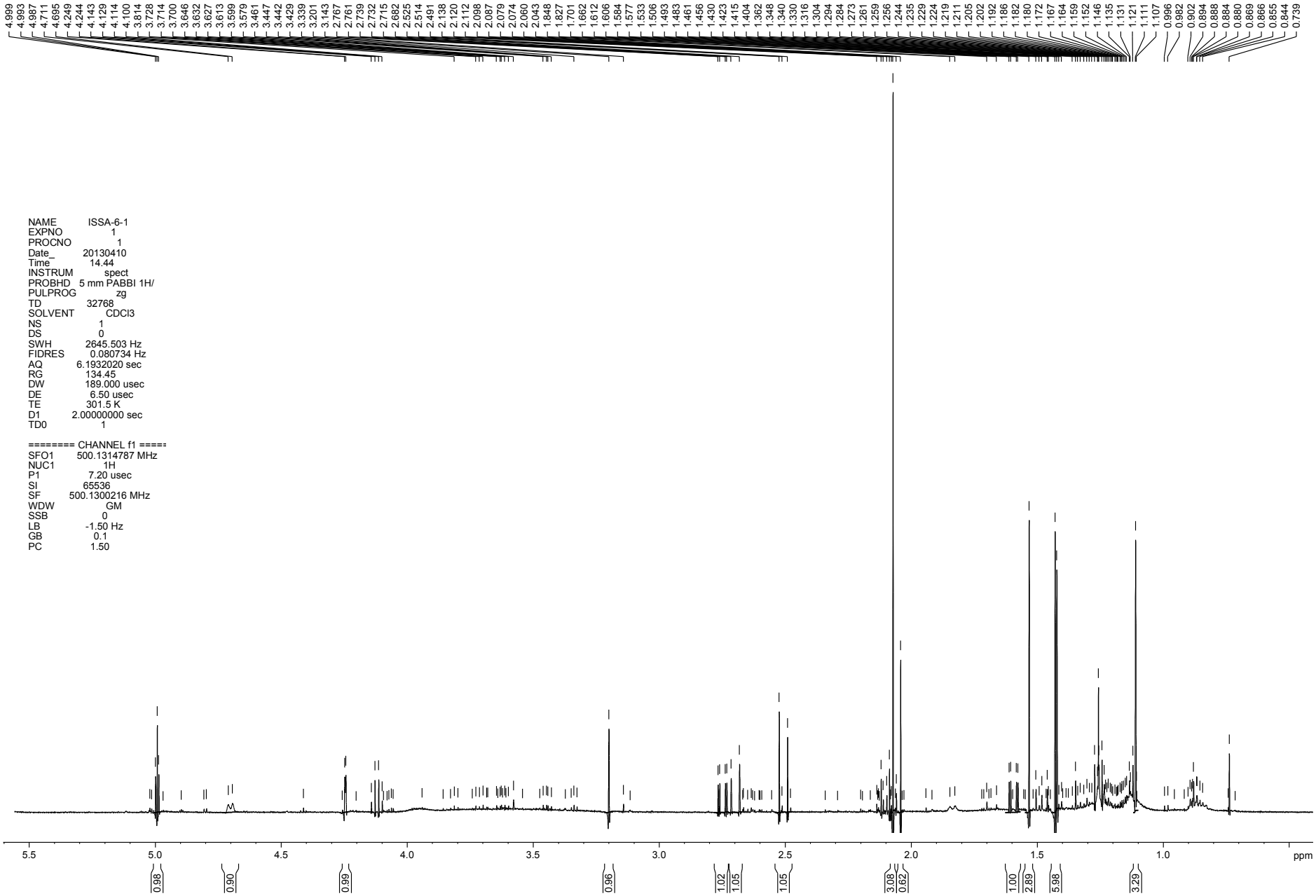

Figure S30. ^{13}C NMR (176 MHz, $CDCl_3$) spectra of oxirapentyn K (**7**)

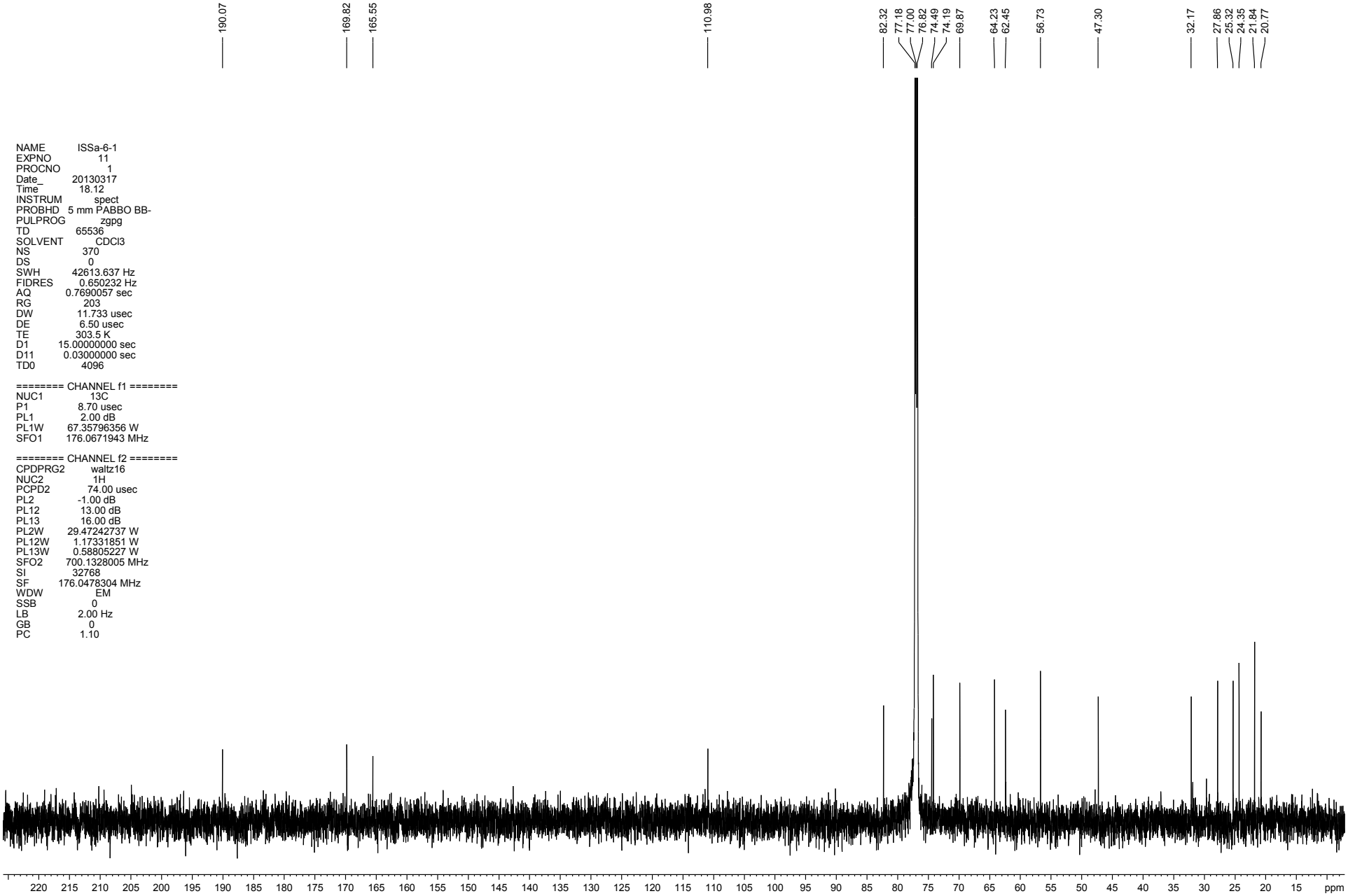

Figure S31. DEPT-135 (176 MHz, $CDCl_3$) spectra of oxirapentyn K (**7**)

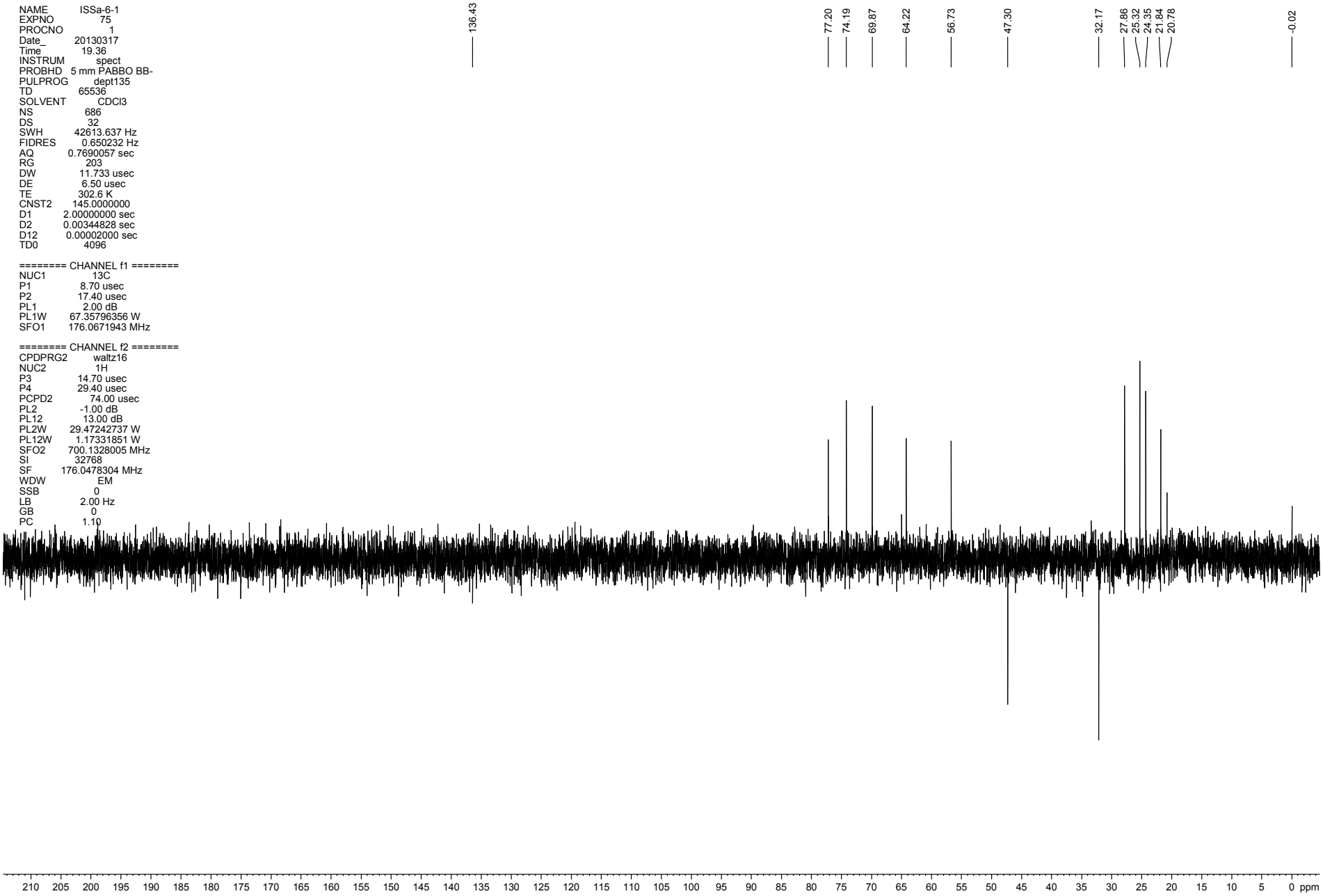

Figure S32. ^{1}H-^{1}H COSY (500 MHz, $CDCl_3$) spectrum of oxirapentyn K (**7**)

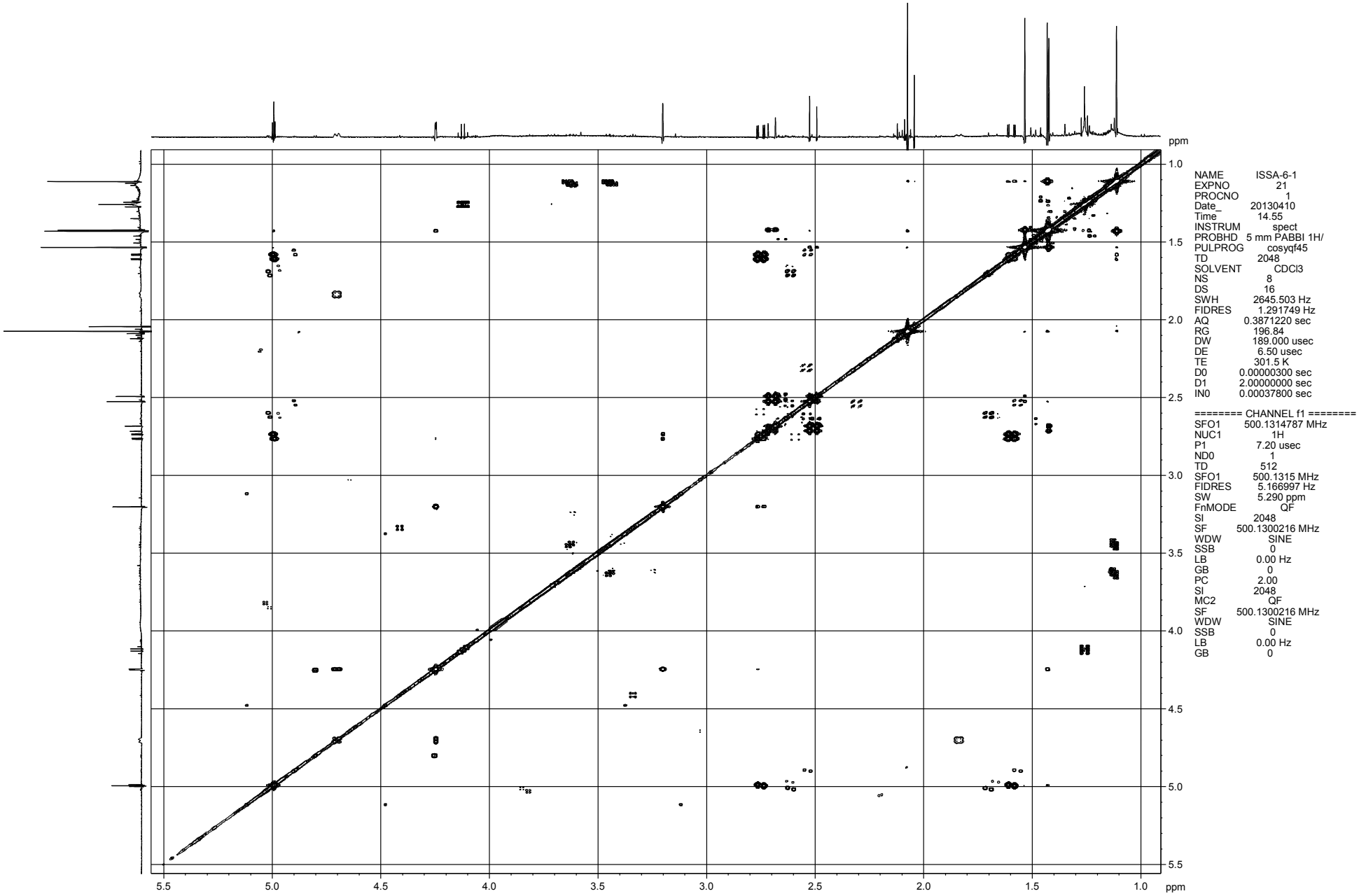

Figure S33. HSQC (500 MHz, $CDCl_3$) spectrum of oxirapentyn K (**7**)

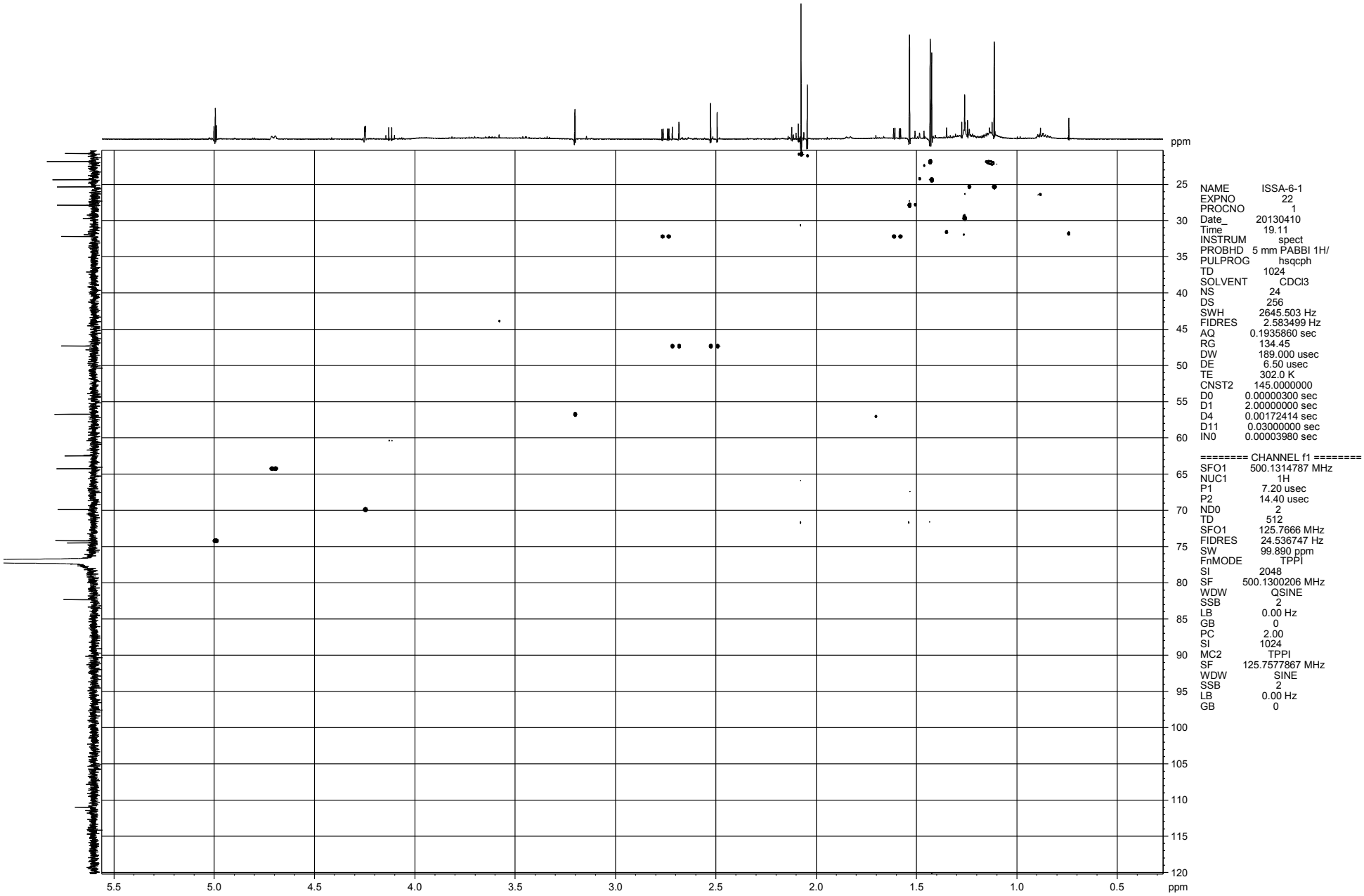

Figure S34. HMBC (500 MHz, $CDCl_3$) spectrum of oxirapentyn K (**7**)

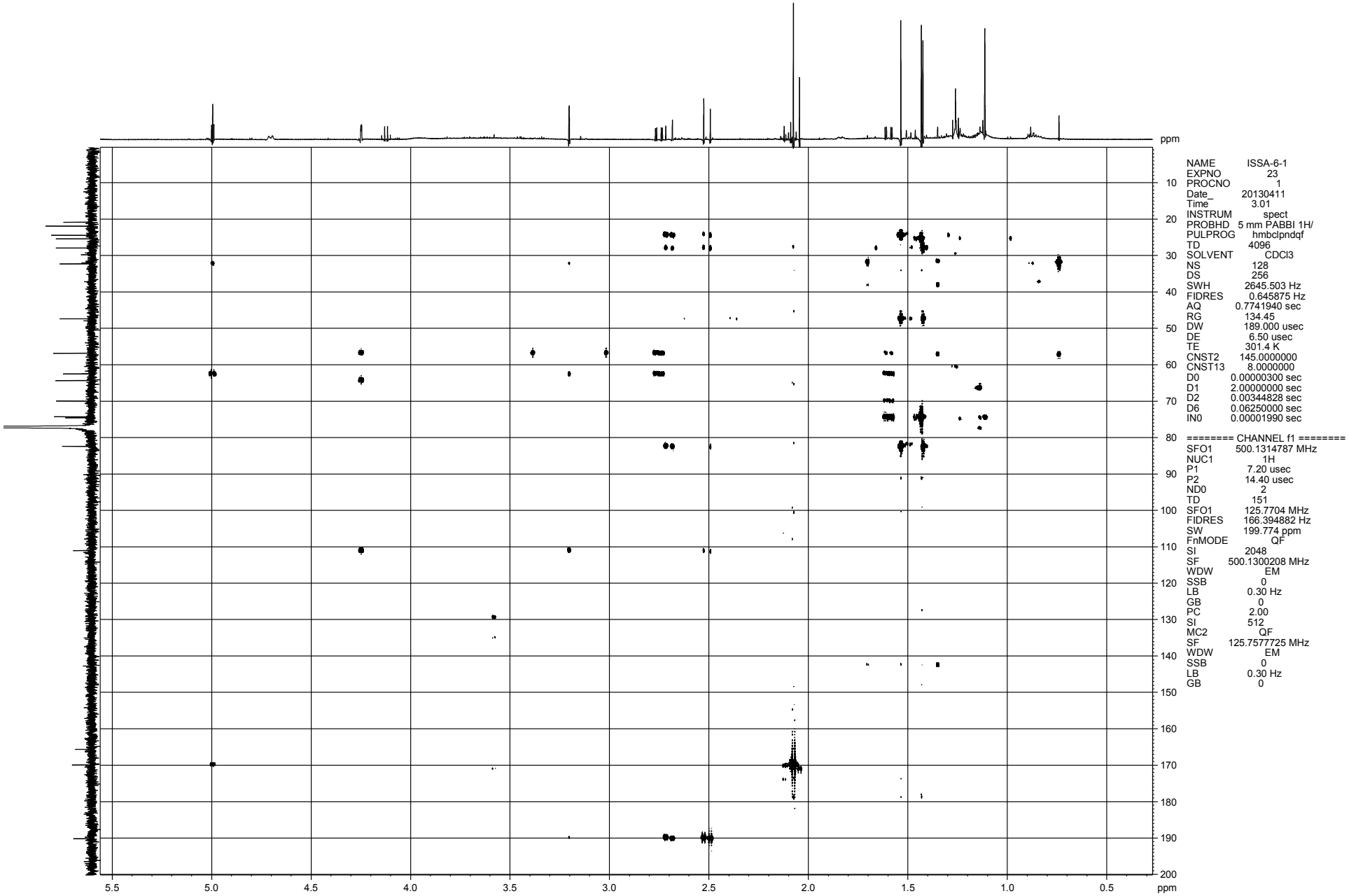

Figure S35. NOESY (500 MHz, $CDCl_3$) spectrum of oxirapentyn K (**7**)

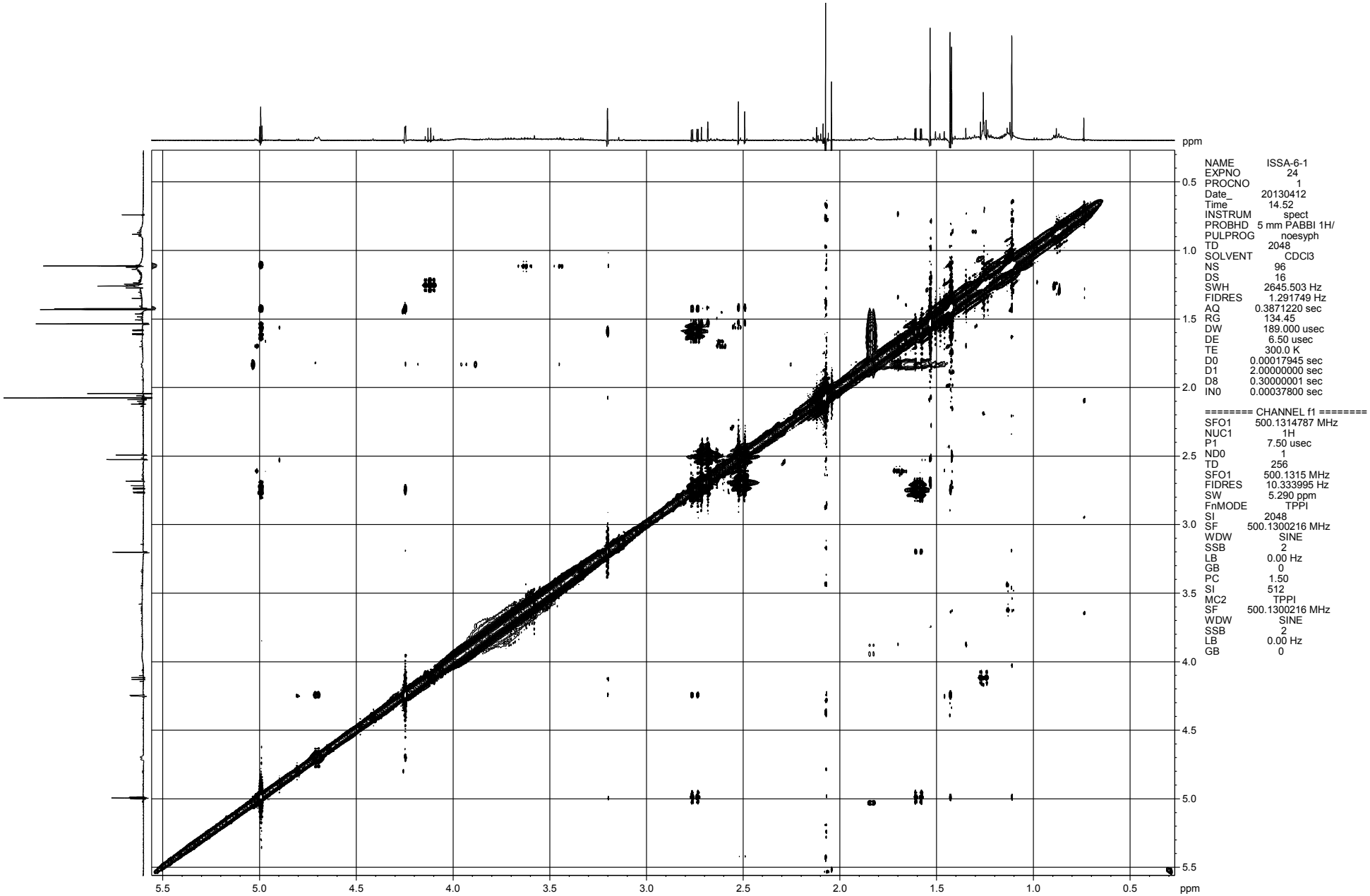

Figure S36. ^{1}H NMR (500 MHz, CD_3OD) spectrum of isariketide (**8**)

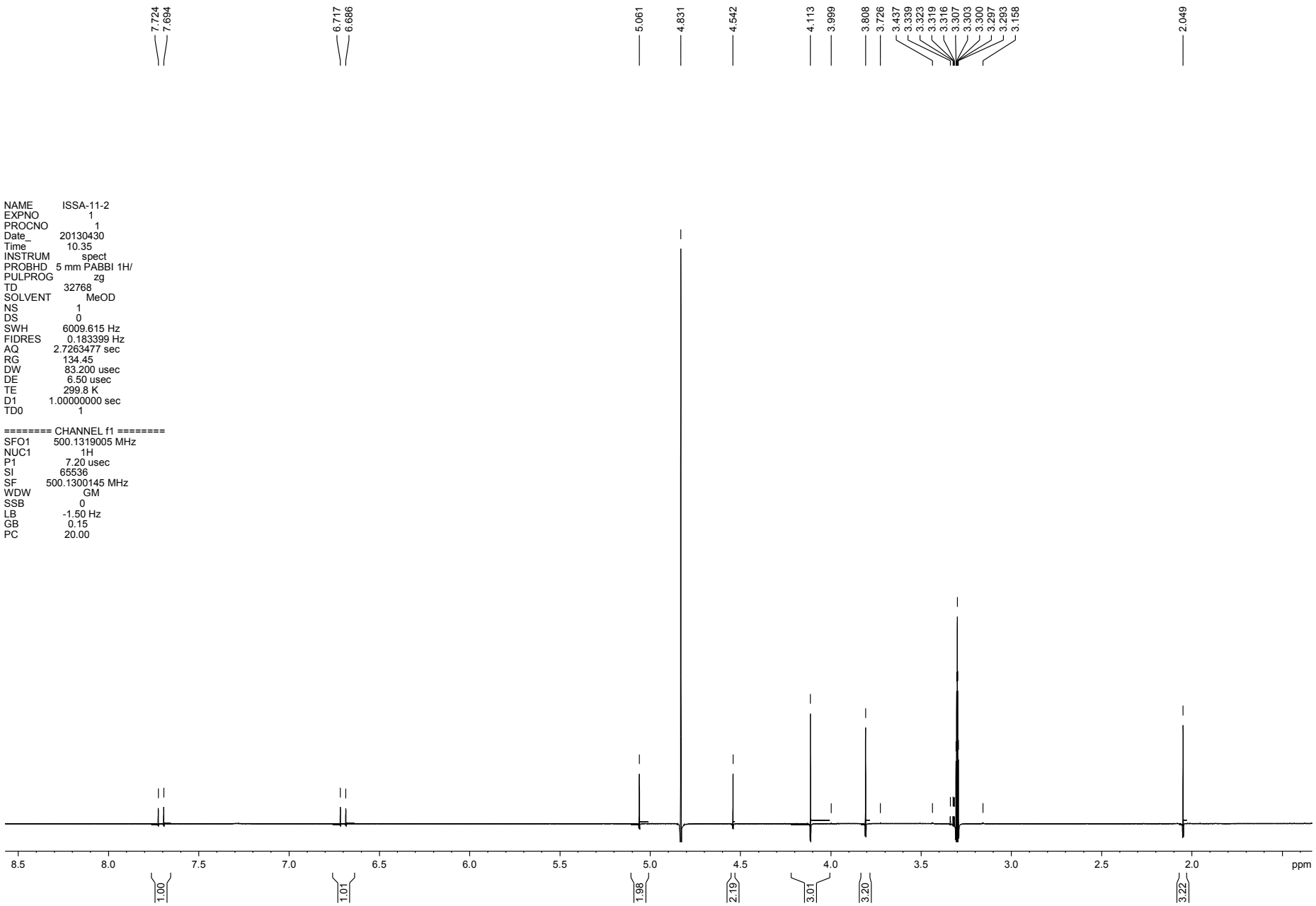

Figure S37. ^{13}C NMR (125 MHz, CD_3OD) spectra of isariketide (**8**)

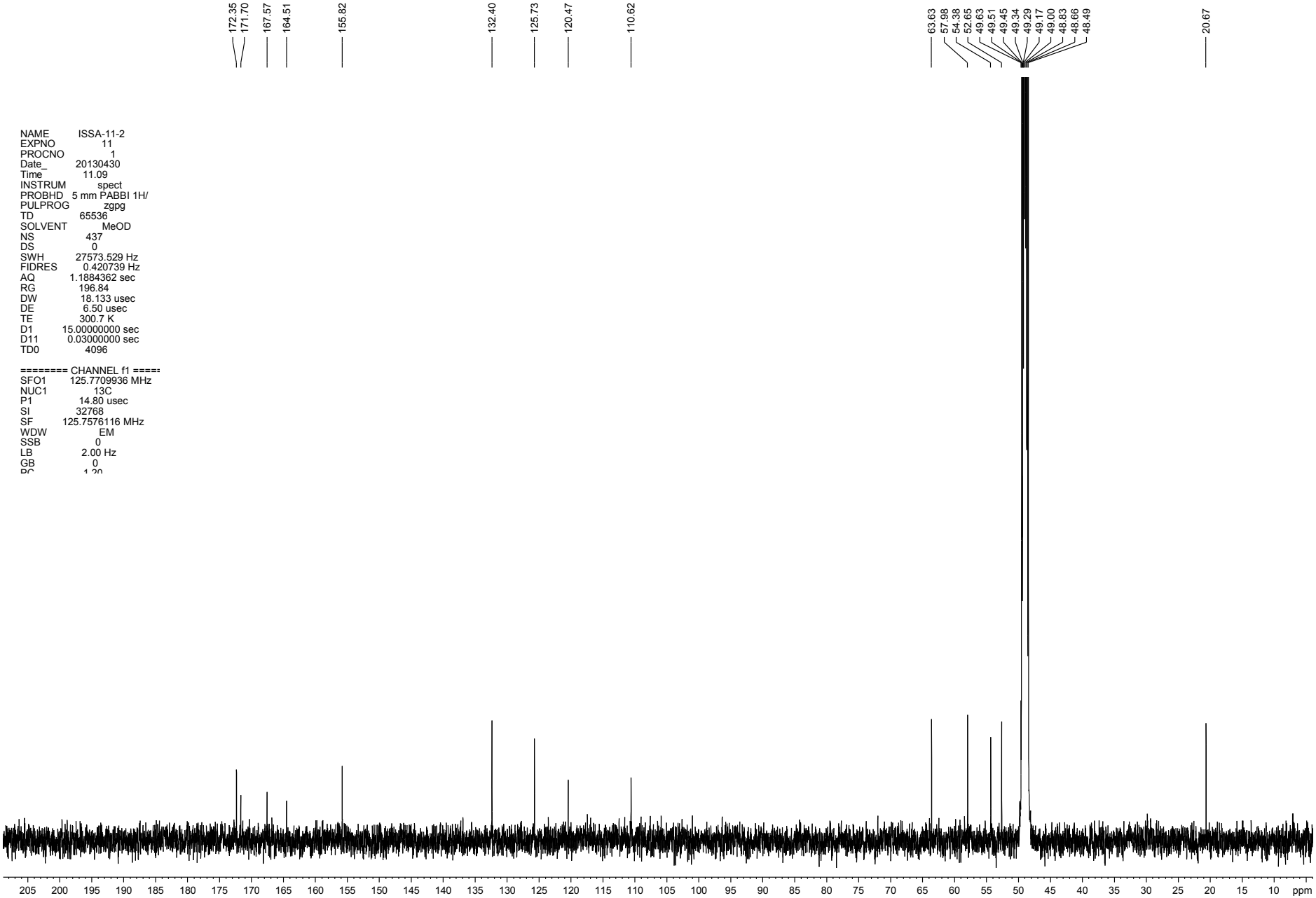

Figure S38. DEPT-135 (125 MHz, CD_3OD) spectra of isariketide (**8**)

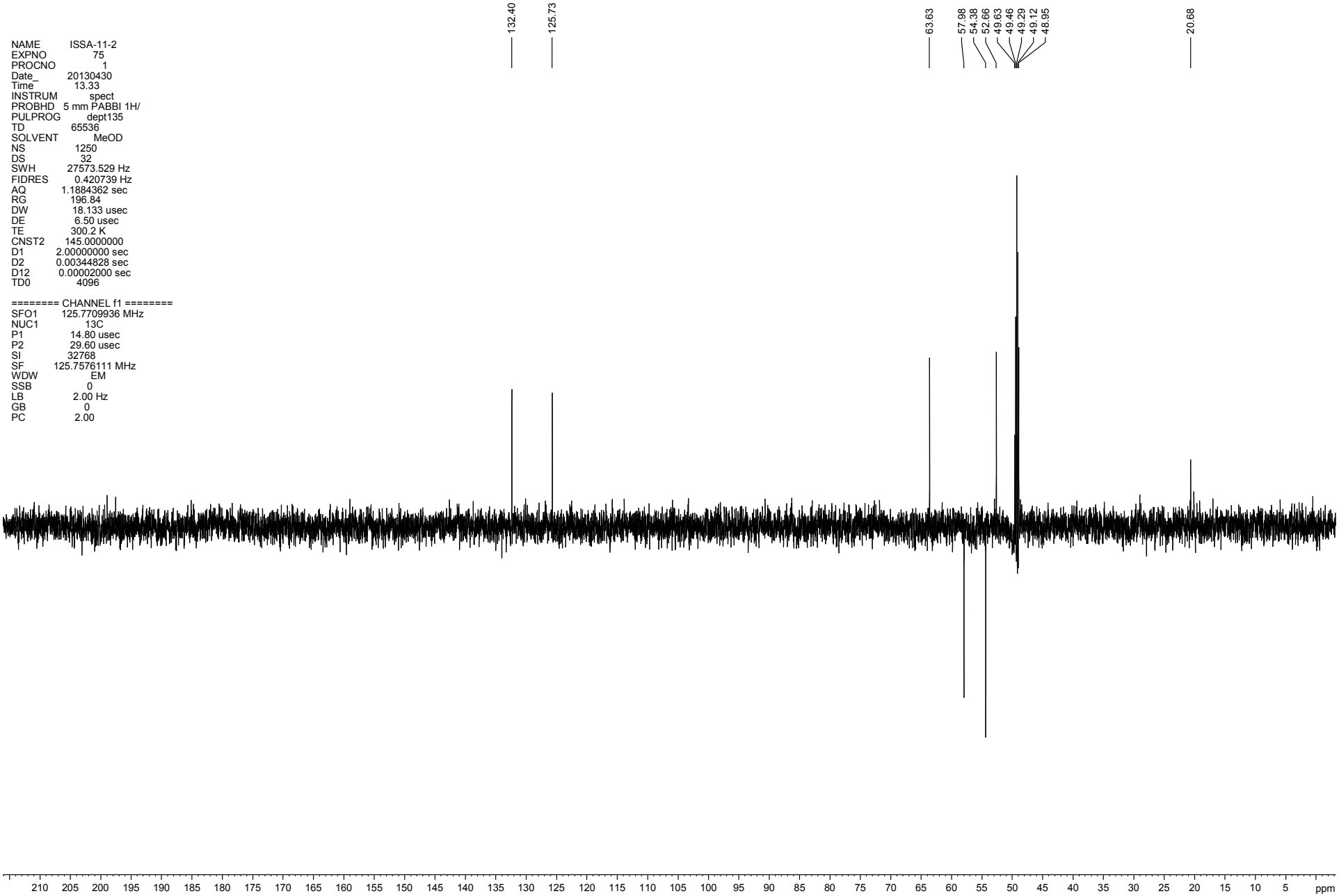

Figure S39. ^{1}H-^{1}H COSY (500 MHz, CD_3OD) spectrum of isariketide (**8**)

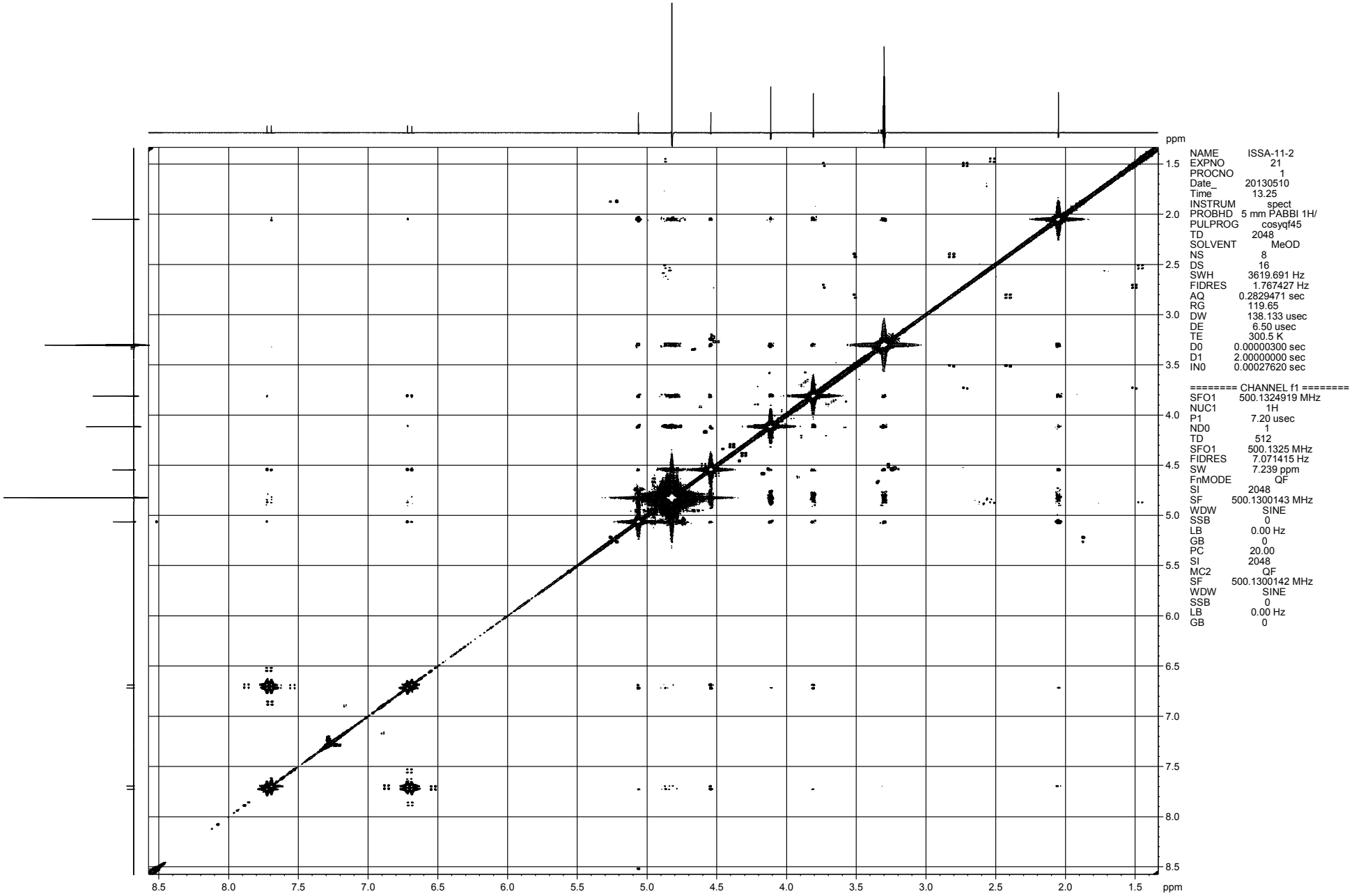

Figure S40. HSQC (500 MHz, CD_3OD) spectrum of isariketide (**8**)

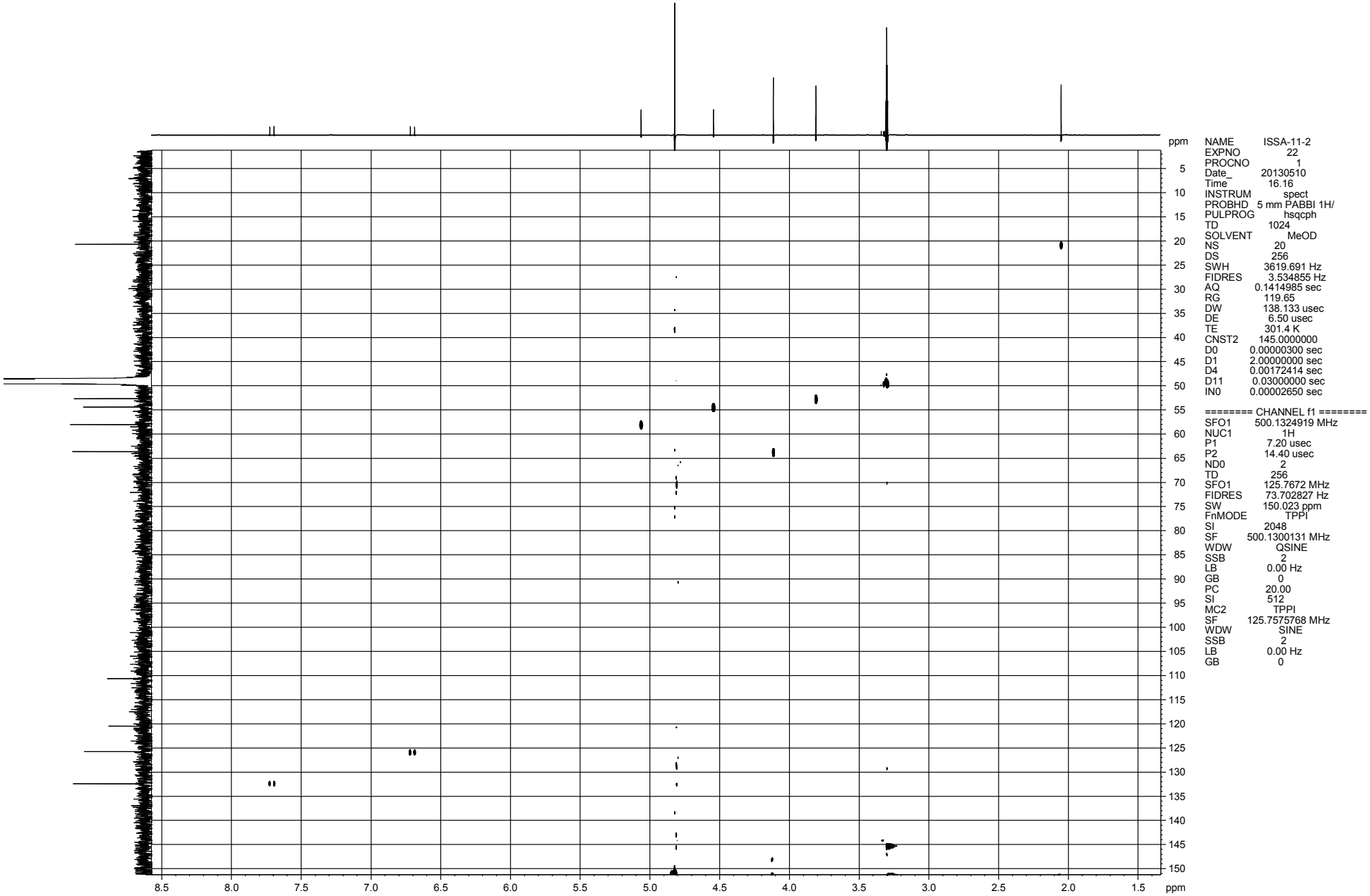

Figure S41. HMBC (500 MHz, CD_3OD) spectrum of isariketide (**8**)

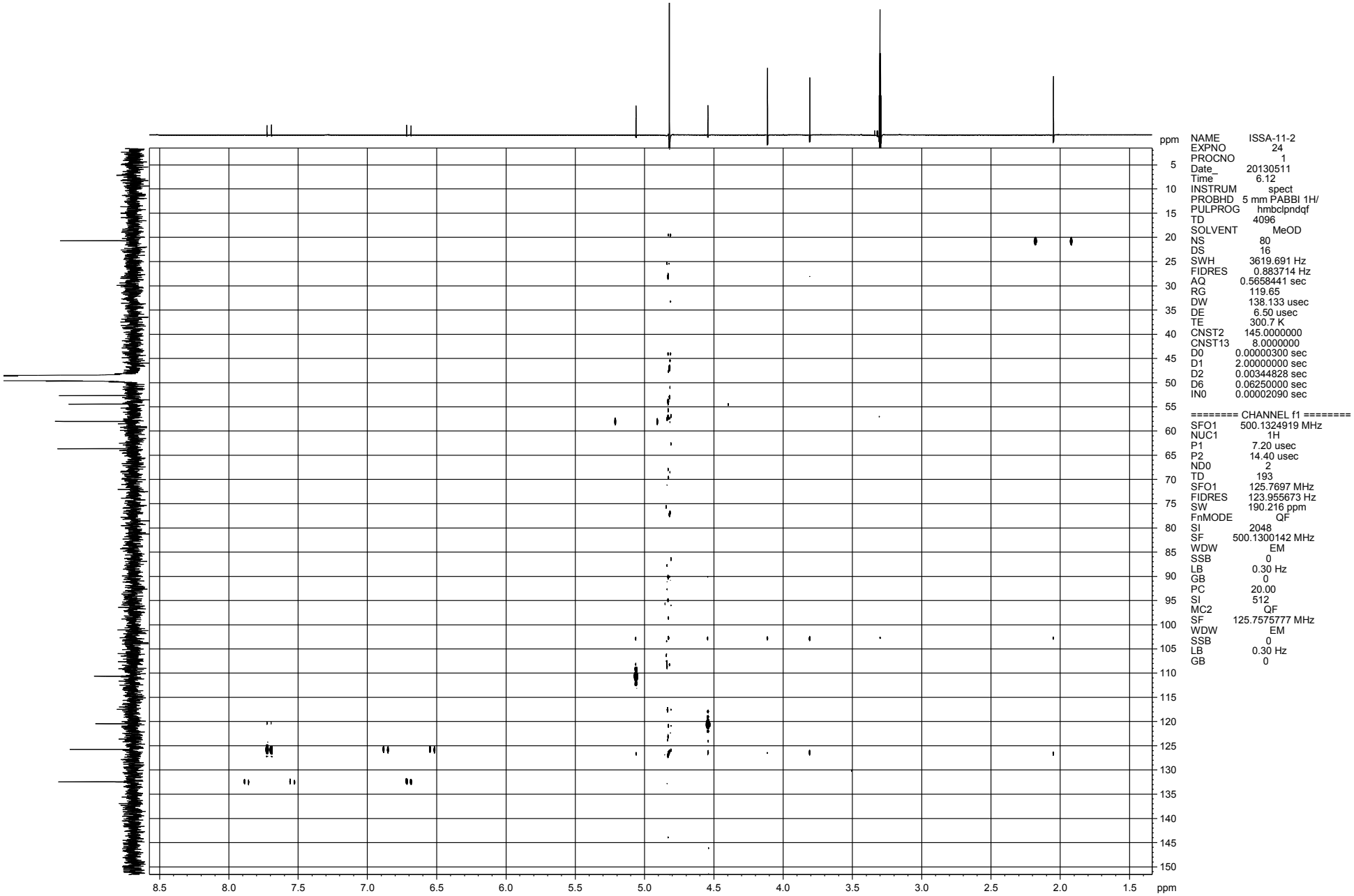

Figure S42. ^{1}H NMR (700 MHz, $CDCl_3$) spectrum of acremin S (**9**)

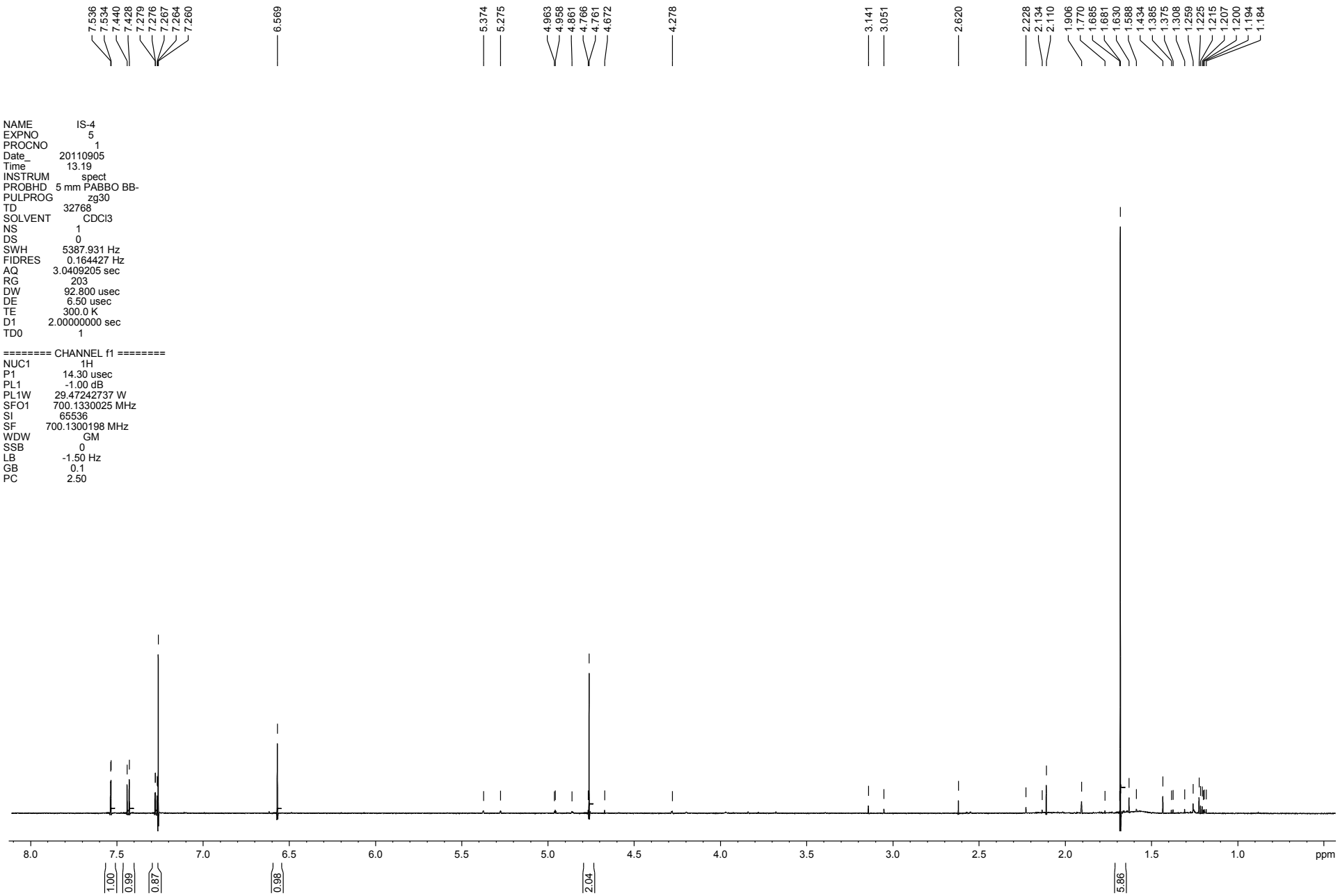

Figure S43. ^{13}C NMR (176 MHz, $CDCl_3$) spectra of acremin S (**9**)

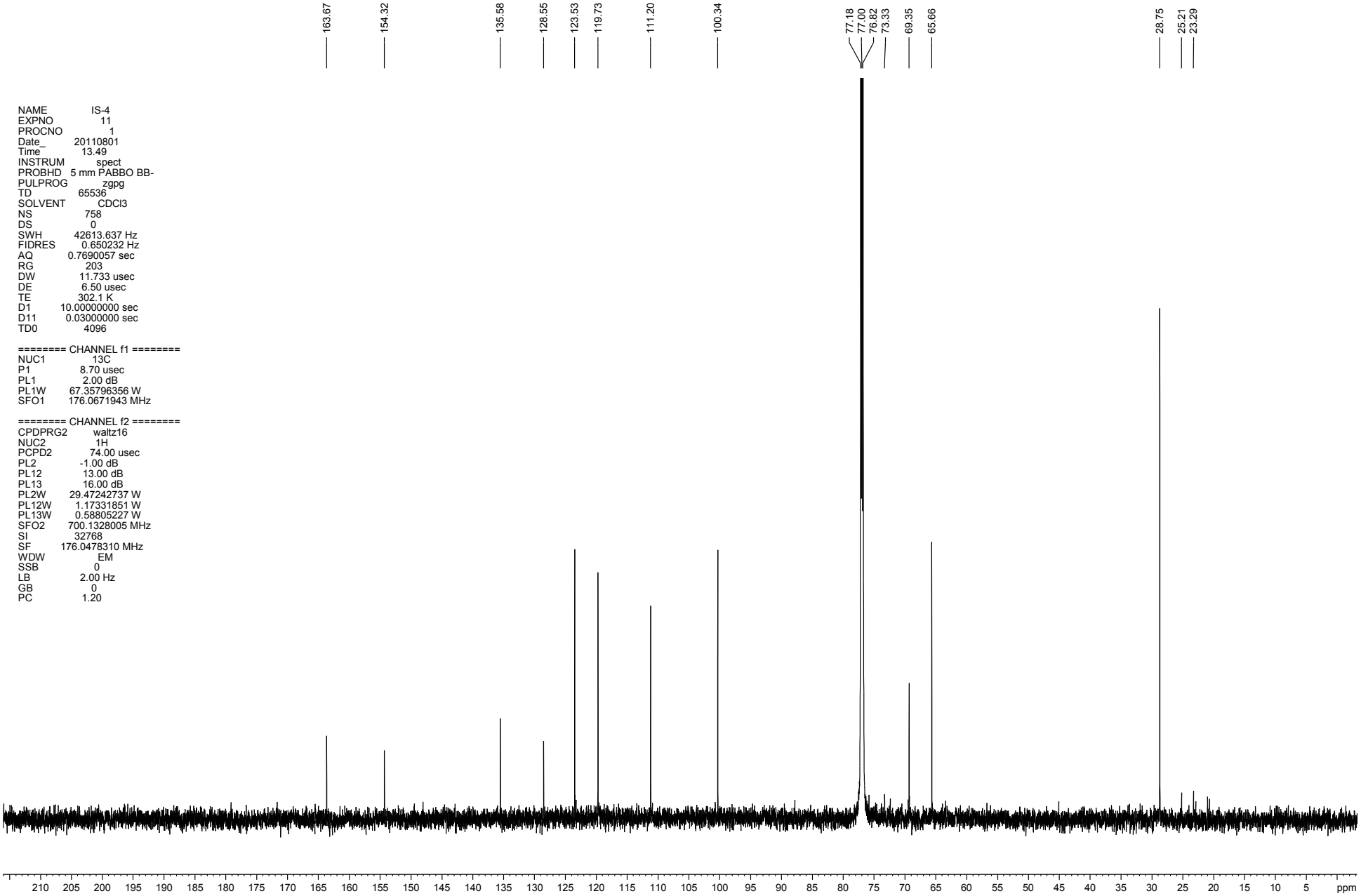

Figure S44. DEPT-135 (176 MHz, $CDCl_3$) spectra of acremin S (**9**)

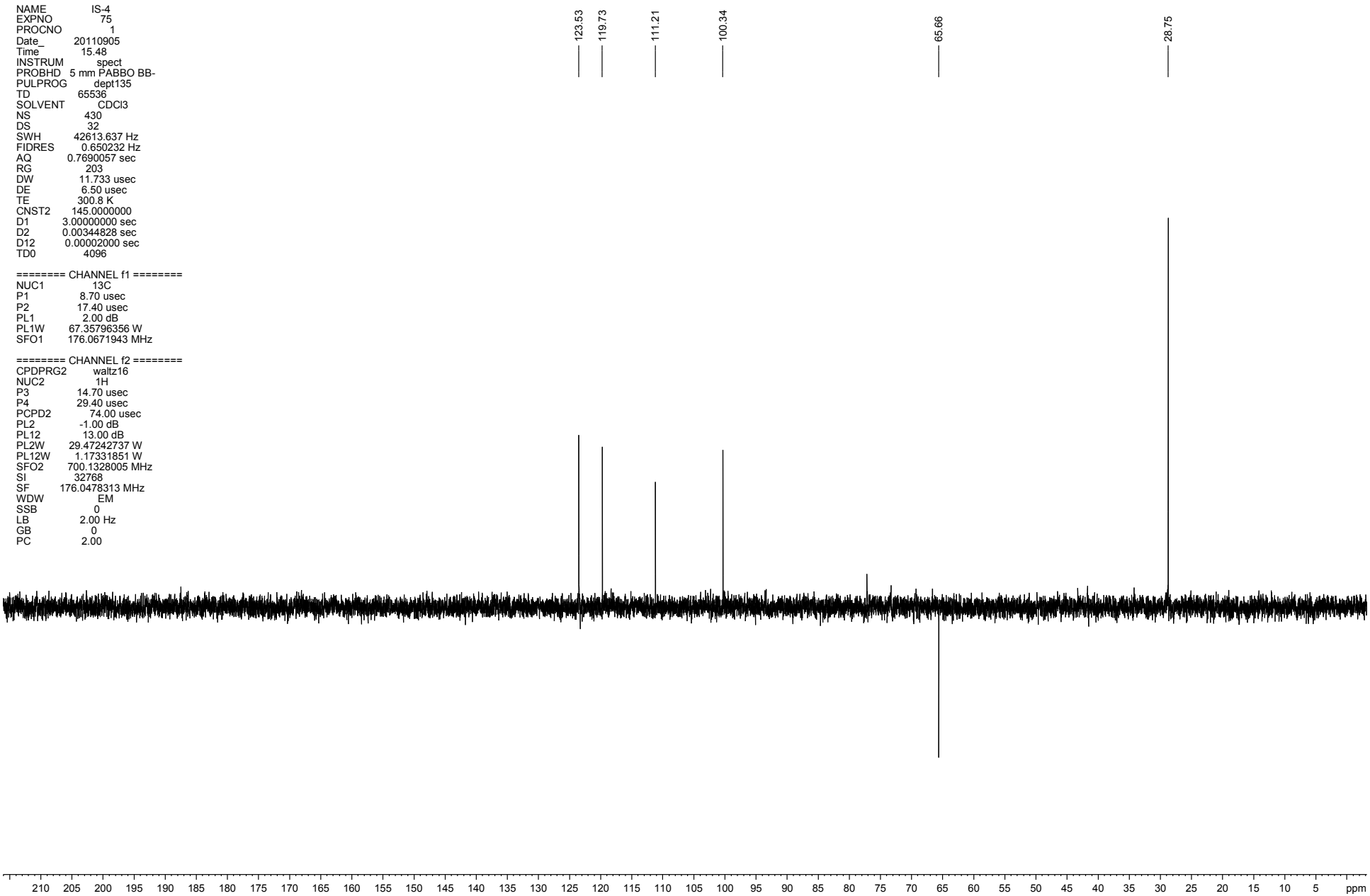

Figure S45. ^{1}H-^{1}H COSY (700 MHz, $CDCl_3$) spectrum of acremin S (**9**)

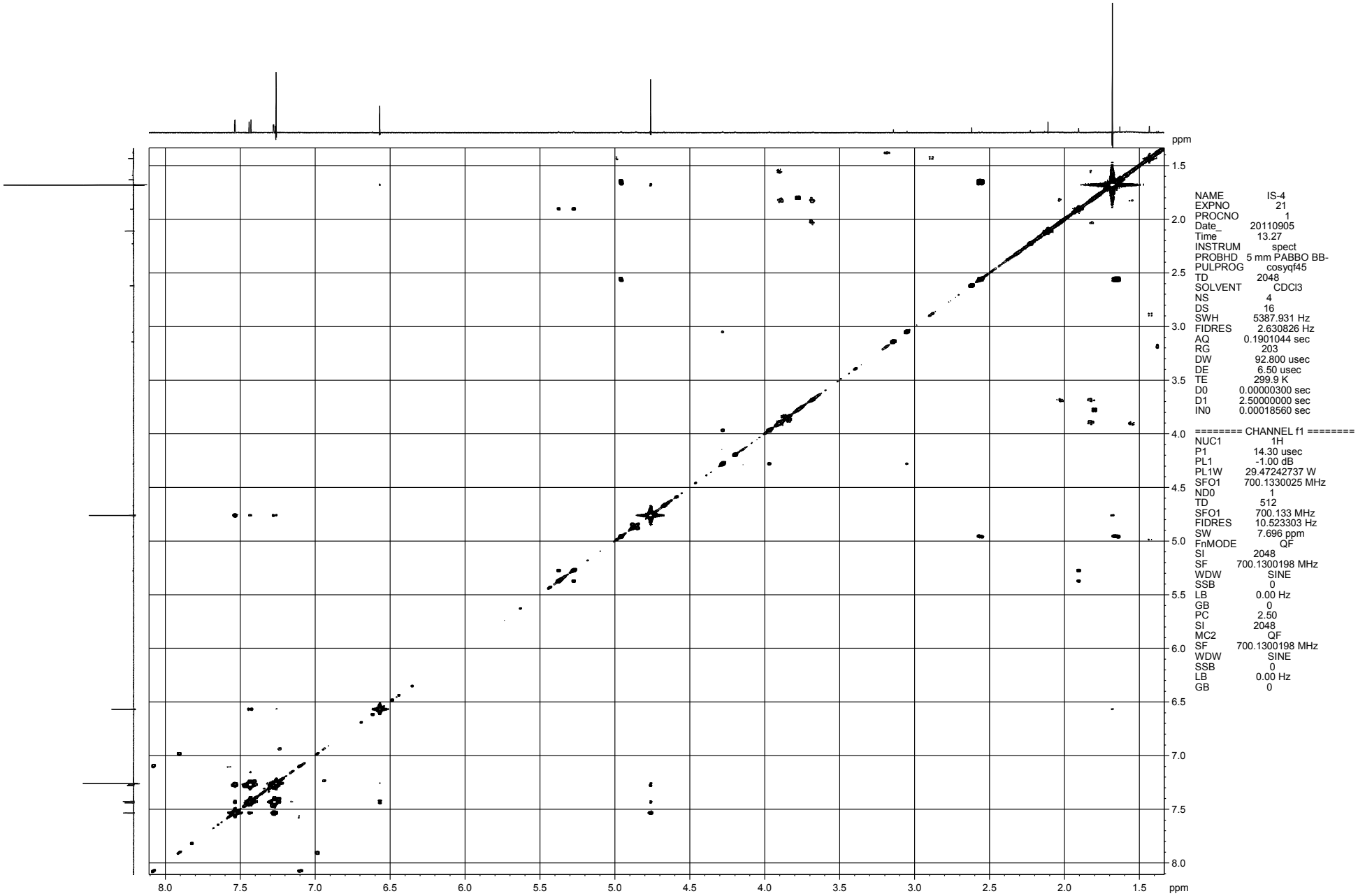

Figure S46. HSQC (700 MHz, $CDCl_3$) spectrum of acremin S (**9**)

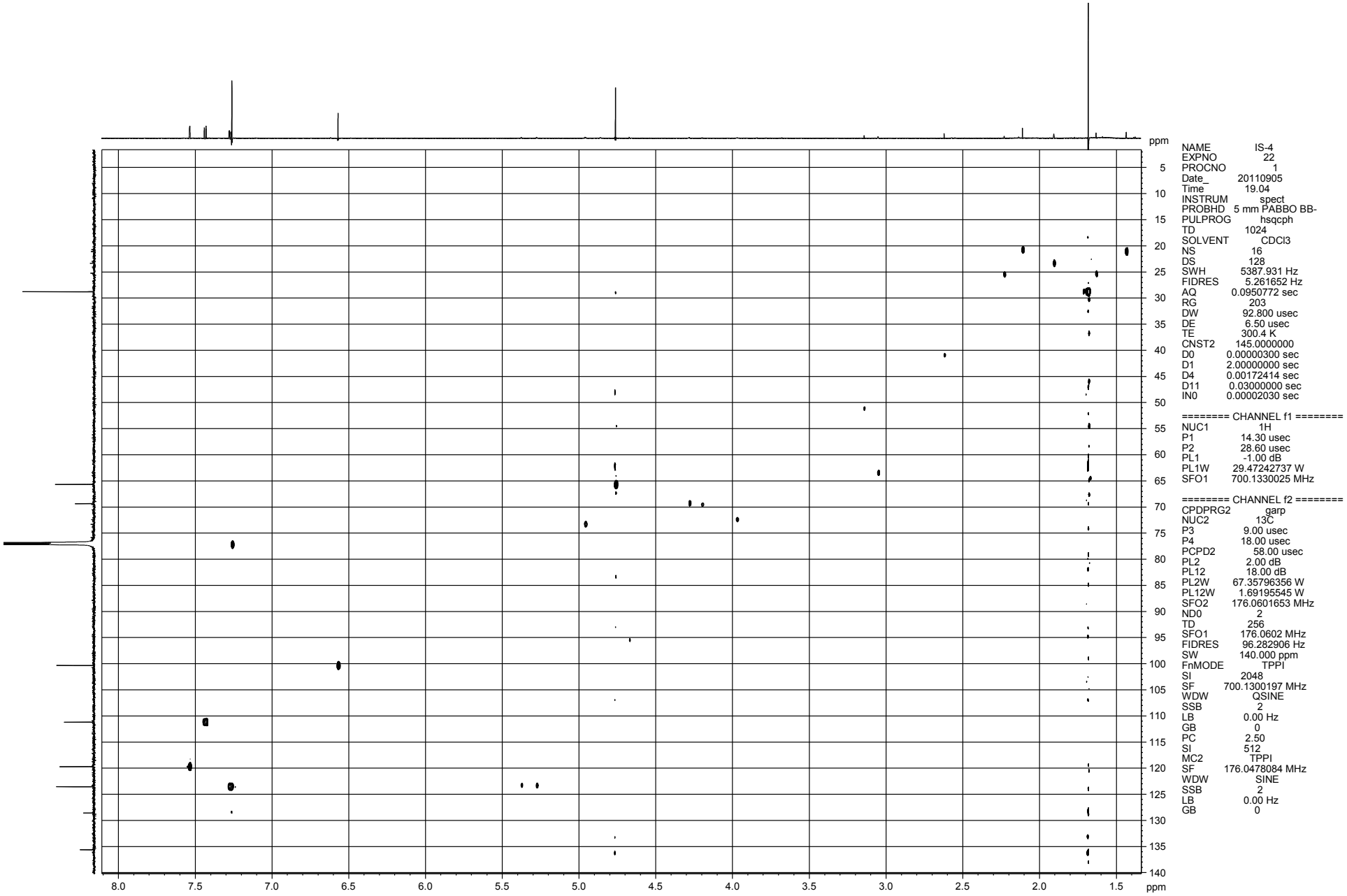

Figure S47. HMBC (700 MHz, $CDCl_3$) spectrum of acremin S (**9**)

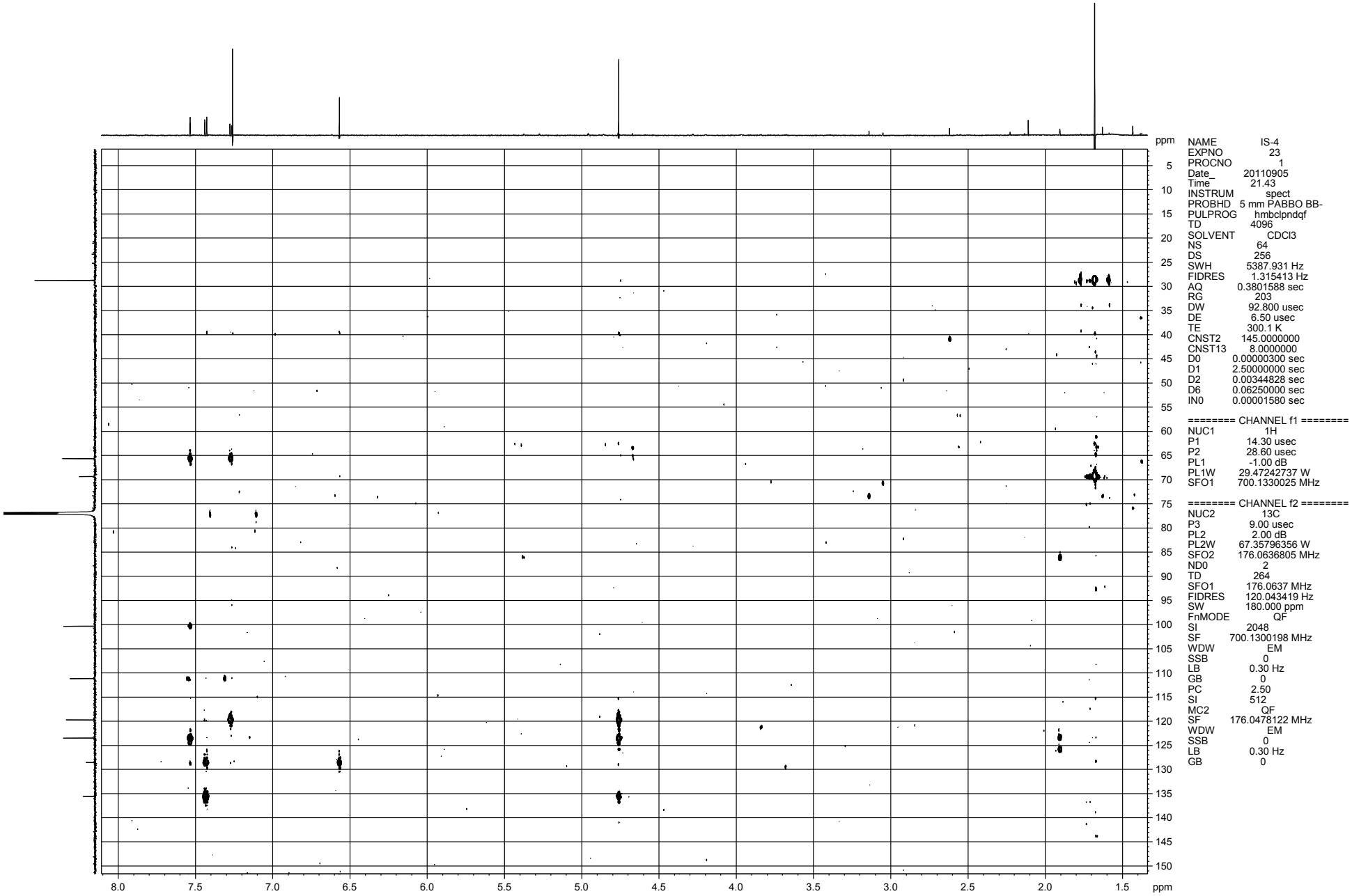

Figure S48. X-ray crystal diffraction data of Oxirapentyn H (**4**)

Table 1. Crystal data and structure refinement for I.

Empirical formula	$C_{18}H_{26}O_8$	
Formula weight	370.39	
Temperature	140(2) K	
Wavelength	0.71073 Å	
Crystal system	Monoclinic	
Space group	P 21	
Unit cell dimensions	a = 9.9116(2) Å	α = 90°.
	b = 7.0940(1) Å	β = 94.539(1)°.
	c = 26.0972(5) Å	γ = 90°.
Volume	1829.21(6) $Å^3$	
Z	4	
Density (calculated)	1.345 Mg/m^3	
Absorption coefficient	0.106 mm^{-1}	
F(000)	792	
Crystal size	0.36 x 0.29 x 0.18 mm^3	
Theta range for data collection	2.06 to 32.14°.	
Index ranges	$-14 \leq h \leq 14$, $-10 \leq k \leq 10$, $-38 \leq l \leq 38$	
Reflections collected	41996	
Independent reflections	6809 [R(int) = 0.0213]	
Completeness to theta = 32.14°	99.0 %	
Absorption correction	Semi-empirical from equivalents	
Max. and min. transmission	0.9810 and 0.9625	
Refinement method	Full-matrix least-squares on F^2	
Data / restraints / parameters	6809 / 1 / 487	
Goodness-of-fit on F^2	1.064	
Final R indices [I>2sigma(I)]	R1 = 0.0317, wR2 = 0.0871	
R indices (all data)	R1 = 0.0362, wR2 = 0.0906	
Largest diff. peak and hole	0.436 and -0.177 $eÅ^{-3}$	
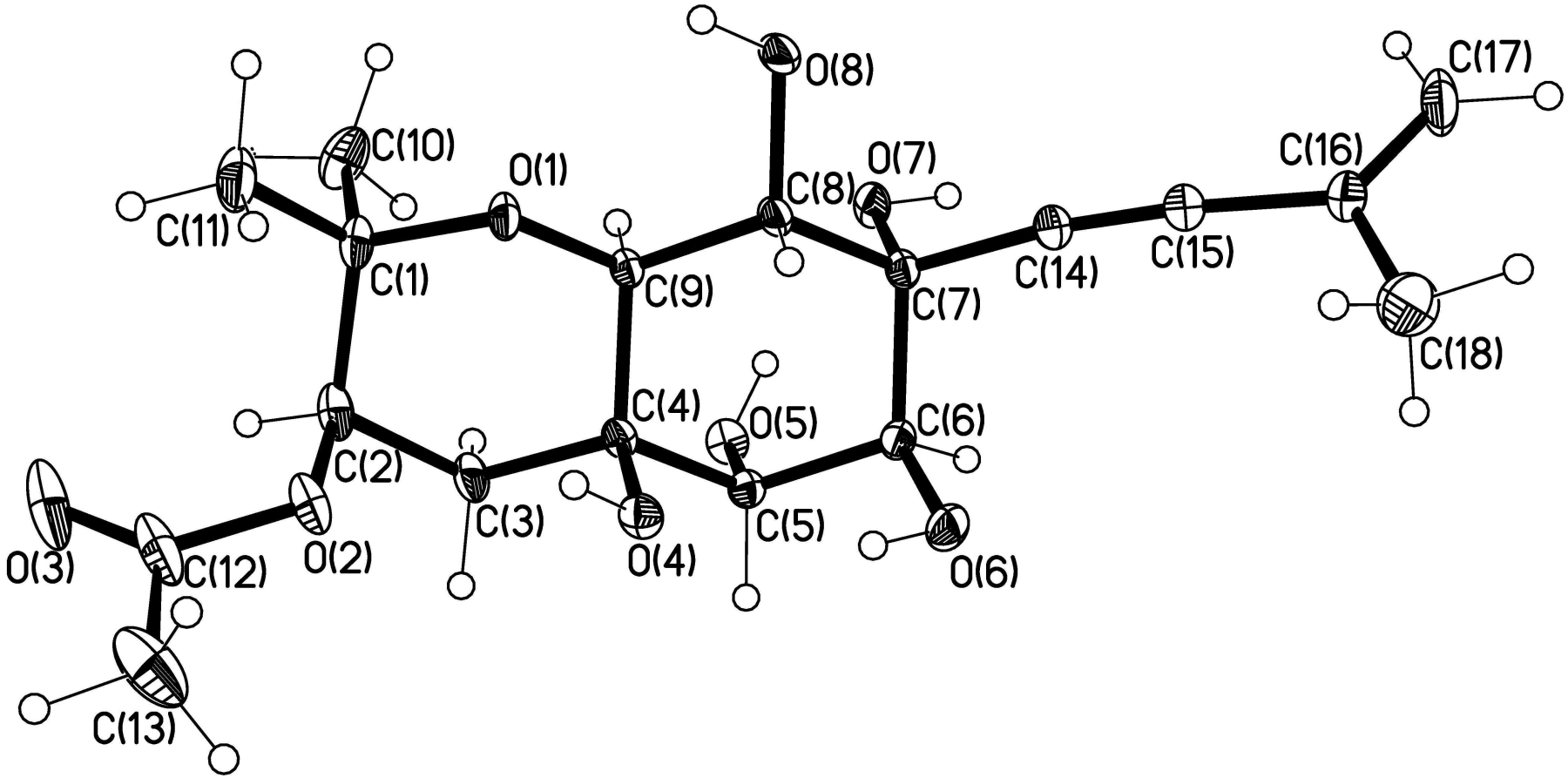
Figure S49. X-ray crystal structure for Oxirapentyn H (**4**)