

SUPPORTING INFORMATION

Identification of Elaiophylin Skeletal Variants from the Indonesian *Streptomyces* sp. ICBB9297

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Table S1. Conserved active site residues in AT domains with different substrate specificity

Domain name	Specificity	11	63	90	91	92	93	94	117	200	201	231	250	255
ery_01	Methylmalonate	Q	Q	G	H	S	Q	G	R	S	H	T	N	V
asc_06	Methylmalonate	Q	Q	G	H	S	Q	G	R	S	H	T	N	V
amp_02	Methylmalonate	Q	Q	G	H	S	Q	G	R	S	H	T	N	V
spi_03	Methylmalonate	Q	Q	G	H	S	Q	G	R	S	H	T	N	V
spi_LD	Methylmalonate	Q	Q	G	H	S	Q	G	R	S	H	T	N	V
ave_01	Methylmalonate	Q	Q	G	H	S	Q	G	R	S	H	T	N	V
ave_06	Methylmalonate	Q	Q	G	H	S	Q	G	R	S	H	T	N	V
rif_07	Methylmalonate	Q	Q	G	H	S	Q	G	R	S	H	T	N	V
rif_06	Methylmalonate	Q	Q	G	H	S	Q	G	R	S	H	T	N	V
ela_03	Methylmalonate	Q	Q	G	H	S	Q	G	R	S	H	H	A	V
ela_04	Methylmalonate	Q	Q	G	H	S	Q	G	R	S	H	T	N	V
ela_05	Methylmalonate	Q	Q	G	H	S	Q	G	R	S	H	T	N	V
ave_02	Malonate	Q	Q	G	H	S	L	G	R	F	H	A	Q	V
ave_05	Malonate	Q	Q	G	H	S	L	G	R	F	H	A	Q	V
ave_04	Malonate	Q	Q	G	H	S	L	G	R	F	H	A	Q	V
myx_04	Malonate	Q	Q	G	H	S	L	G	R	F	H	N	H	V
myxl_06	Malonate	Q	Q	G	H	S	V	G	R	F	H	N	H	V
rap_11	Malonate	Q	Q	G	H	S	V	G	R	F	H	-	Q	V
asc_03	Malonate	Q	Q	G	H	S	I	G	R	F	H	-	Q	V
nid_03	Malonate	Q	Q	G	H	S	V	G	R	F	H	N	H	V
asc_10	Malonate	Q	Q	G	H	S	V	G	R	F	H	T	H	V
rap_14	Malonate	Q	Q	G	H	S	I	G	R	F	H	T	Q	V
spi_01	Malonate	Q	Q	G	H	S	V	G	R	F	H	T	Q	V
ela_LD	Malonate	Q	Q	G	H	S	V	G	R	F	H	N	H	V
ela_02	Malonate	Q	Q	G	H	S	V	G	R	F	H	N	H	V
ela_06	Malonate	Q	Q	G	H	S	V	G	R	F	H	N	H	V
asc_04	Ethylmalonate	Q	H	G	H	S	Q	G	R	T	H	T	N	V
nid_05	Ethylmalonate	Q	Q	G	H	S	Q	G	R	G	H	T	N	V
ela_01	Ethylmalonate	Q	Q	G	H	S	Q	G	R	G	H	T	N	V
ery_LD	Propionate	Q	Q	G	H	S	I	G	W	A	H	S	S	V
meg_LD	Propionate	Q	Q	G	H	S	I	G	W	A	H	G	S	V
ela_07	flexible	Q	Q	G	H	S	V	G	R	A	H	N	H	V

Abbreviations: ery, erythromycin; asc, ascomycin; amp, amphotericin; spi, spinosad; ave, avermectin; rif, rifamycin; myx, myxothiazol; myxl, myxalamid; rap, rapamycin; nid, niddamycin; meg, megalomicin; ela, elaiophylin.

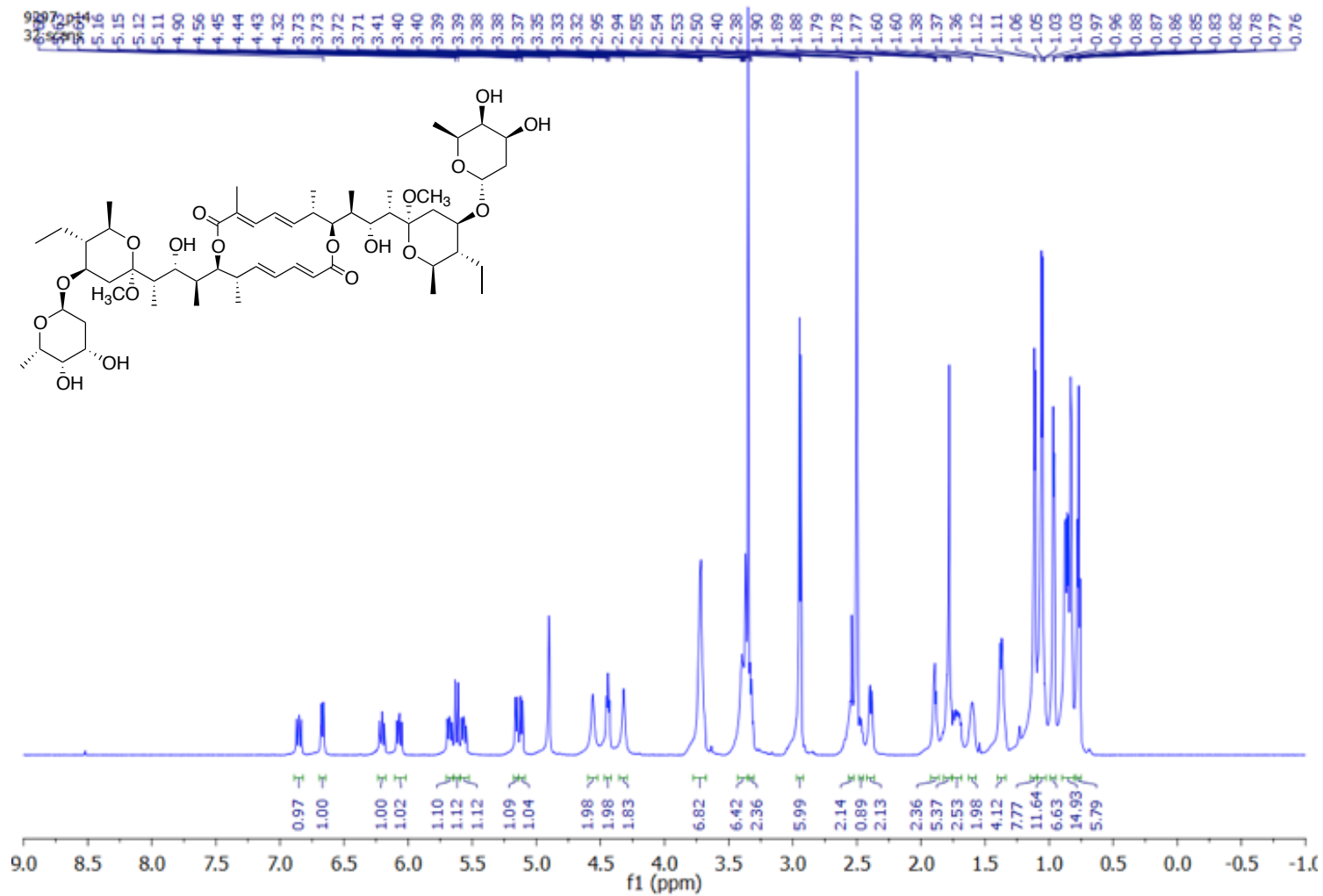


Figure S1. ^1H NMR spectrum of compound **1** in $\text{DMSO}-d_6$ (700 MHz).

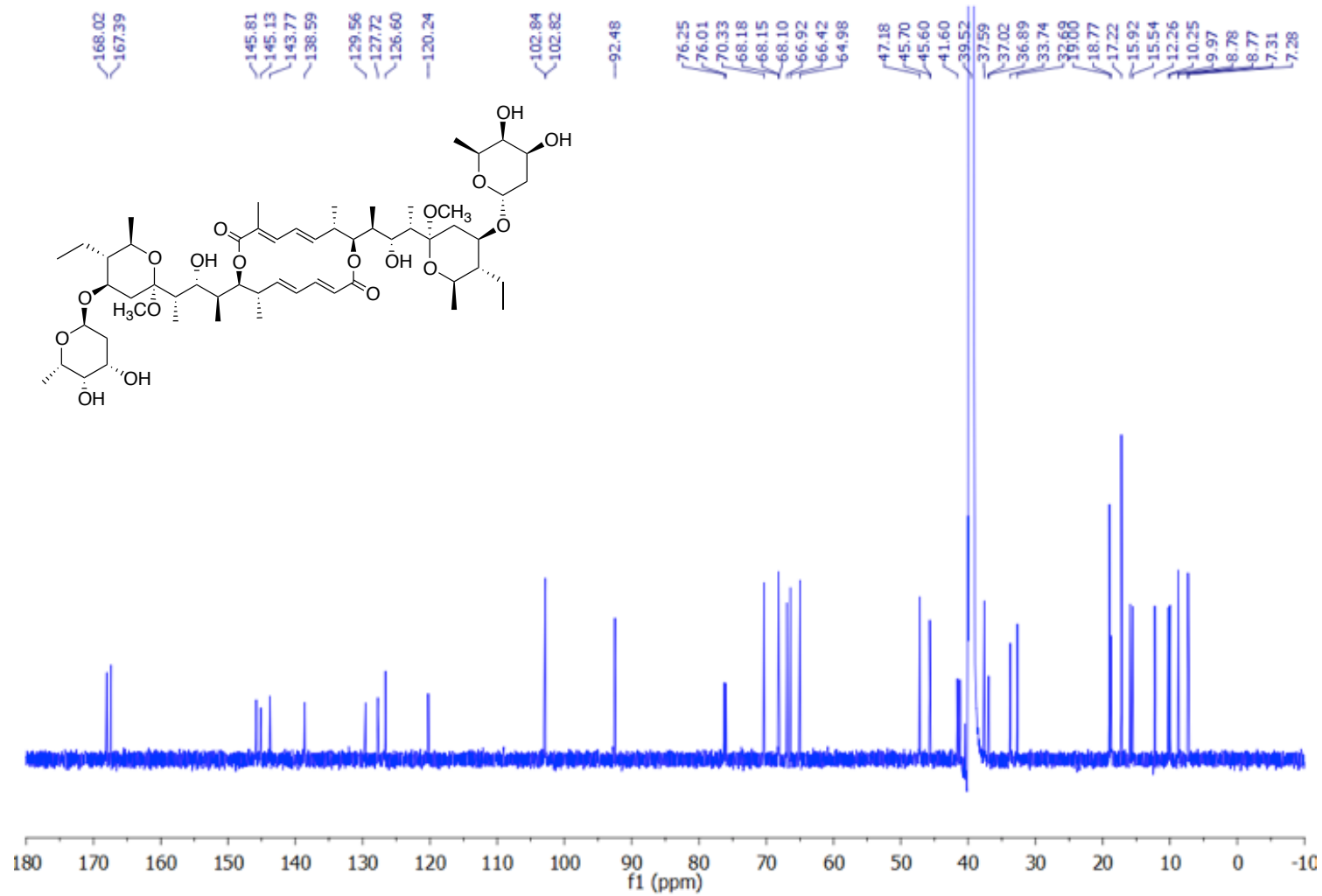


Figure S2. ^{13}C NMR spectrum of compound **1** in $\text{DMSO}-d_6$ (175 MHz).

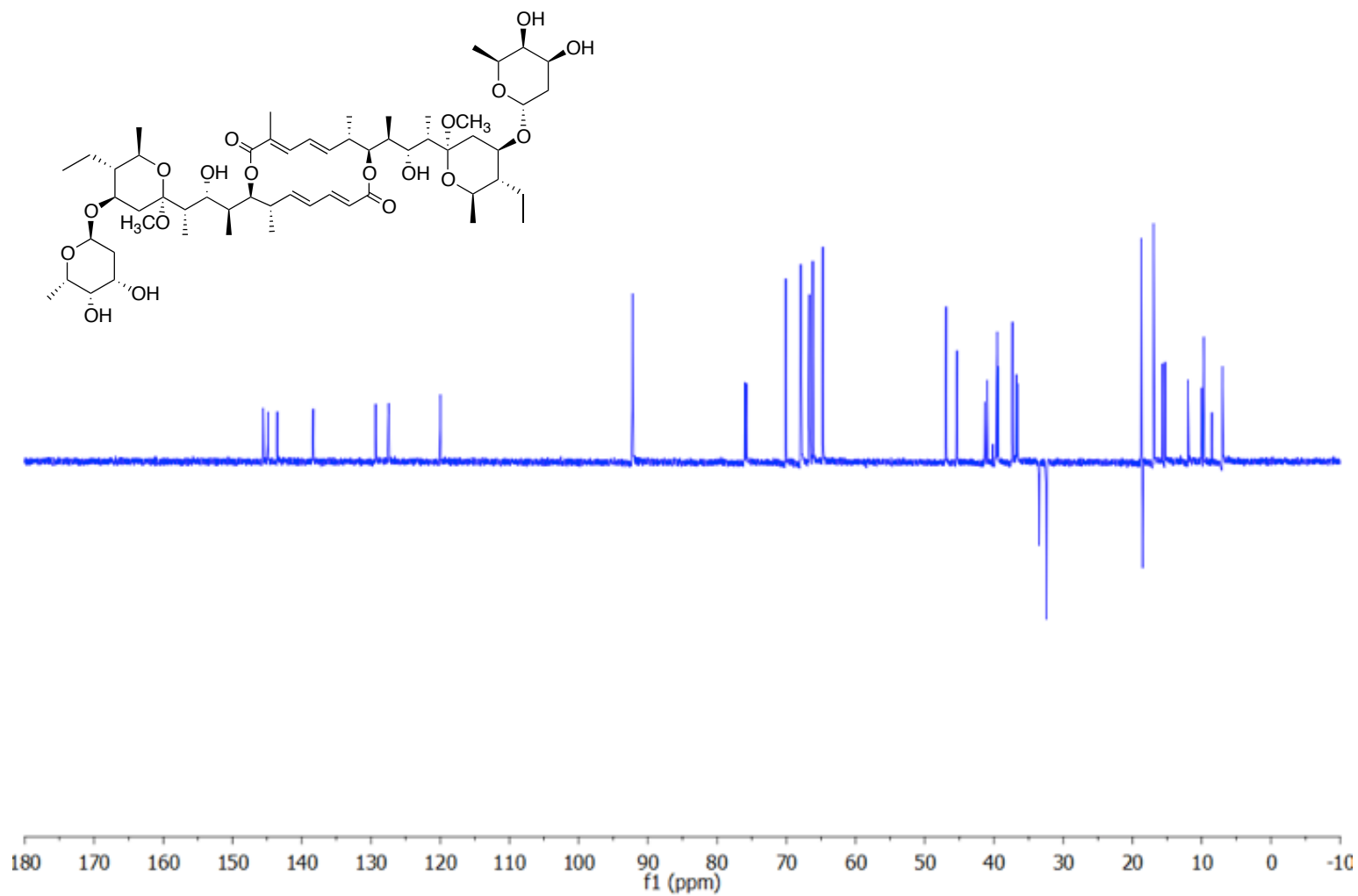


Figure S3. DEPT-135 spectrum of compound **1** in DMSO-*d*₆ (700 MHz).

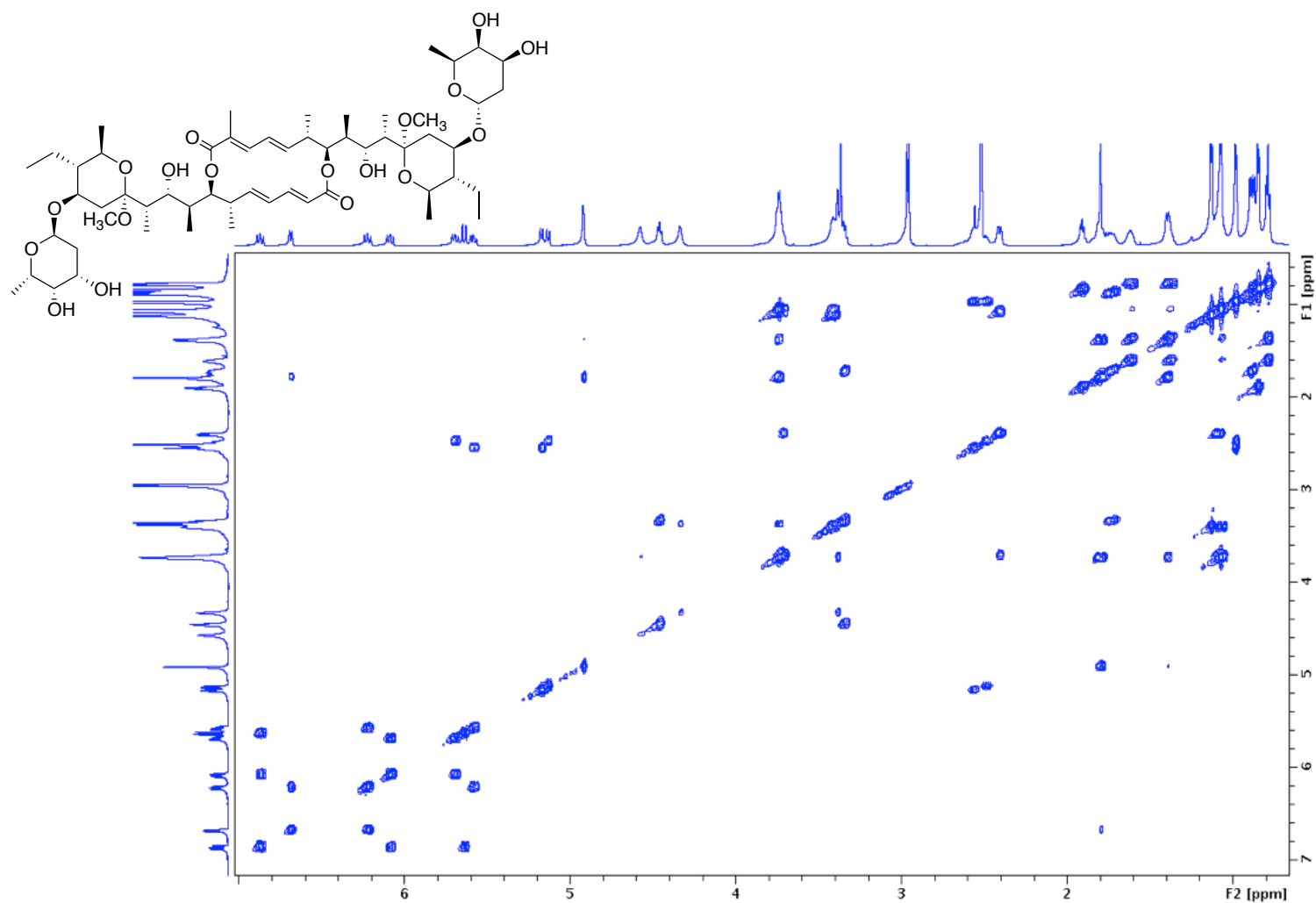


Figure S4. COSY spectrum of compound **1** in DMSO-*d*₆ (700 MHz).

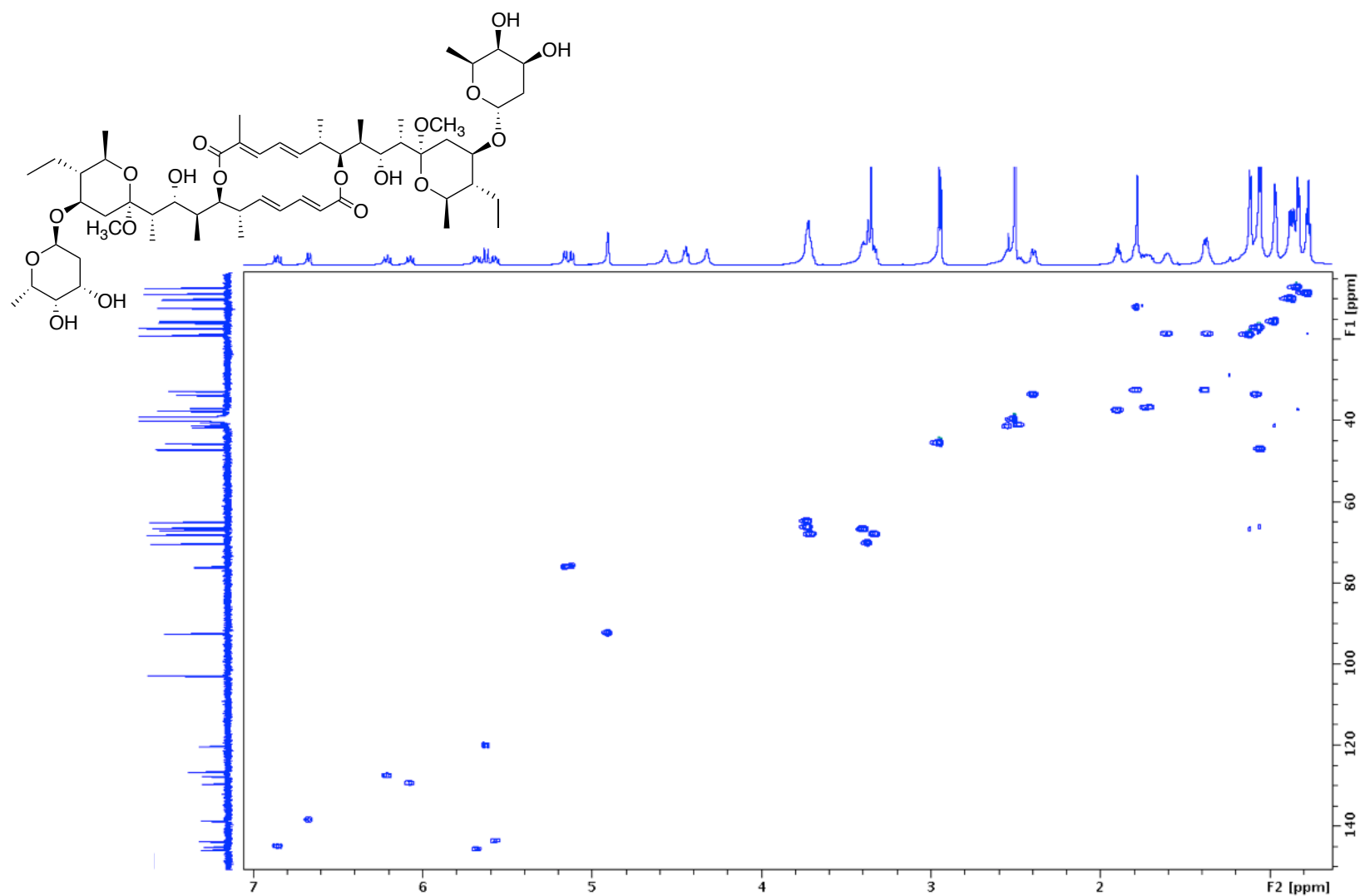


Figure S5. HSQC spectrum of compound **1** in DMSO-*d*₆ (700 MHz).

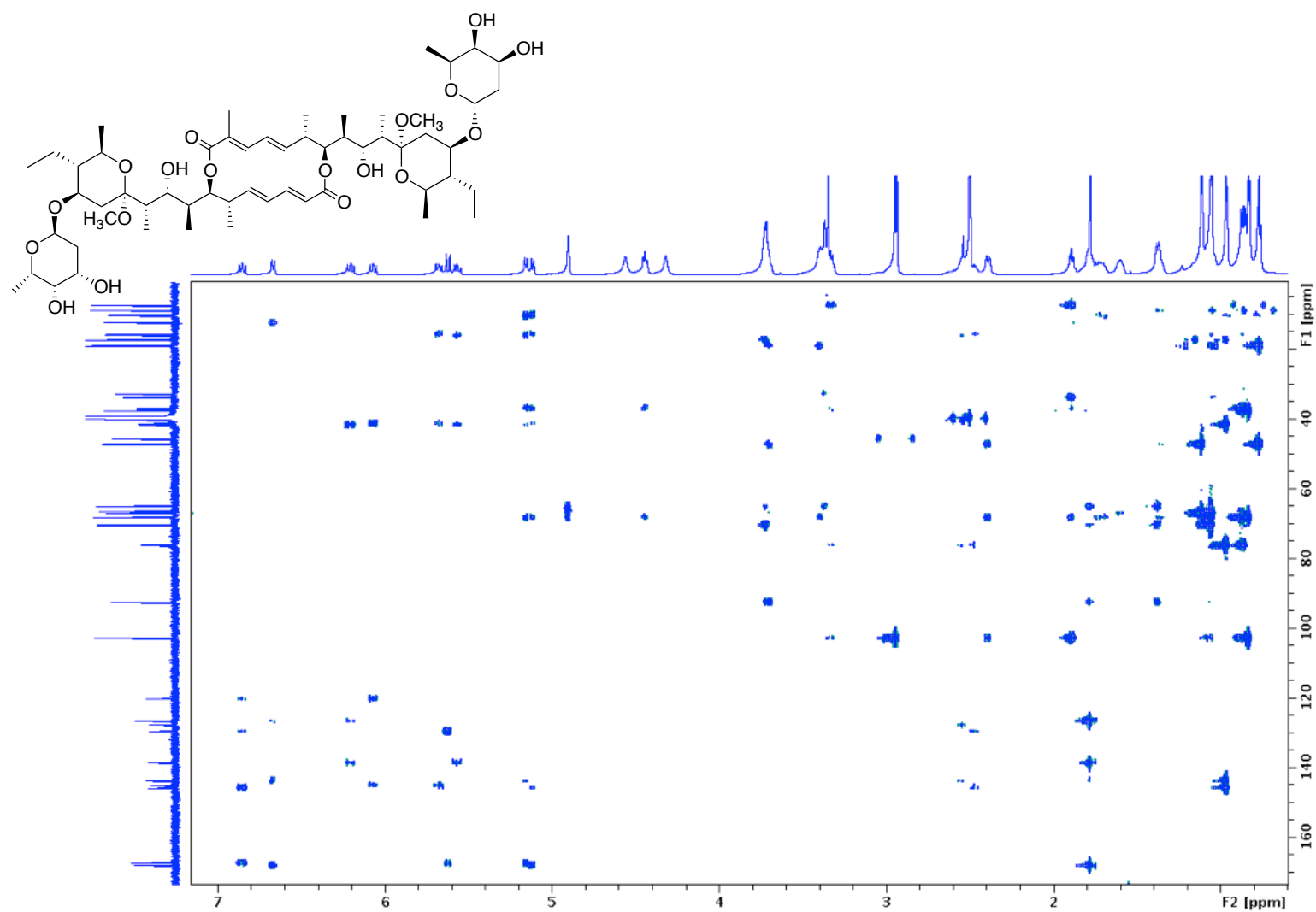


Figure S6. HMBC spectrum of compound **1** in $\text{DMSO}-d_6$ (700 MHz).

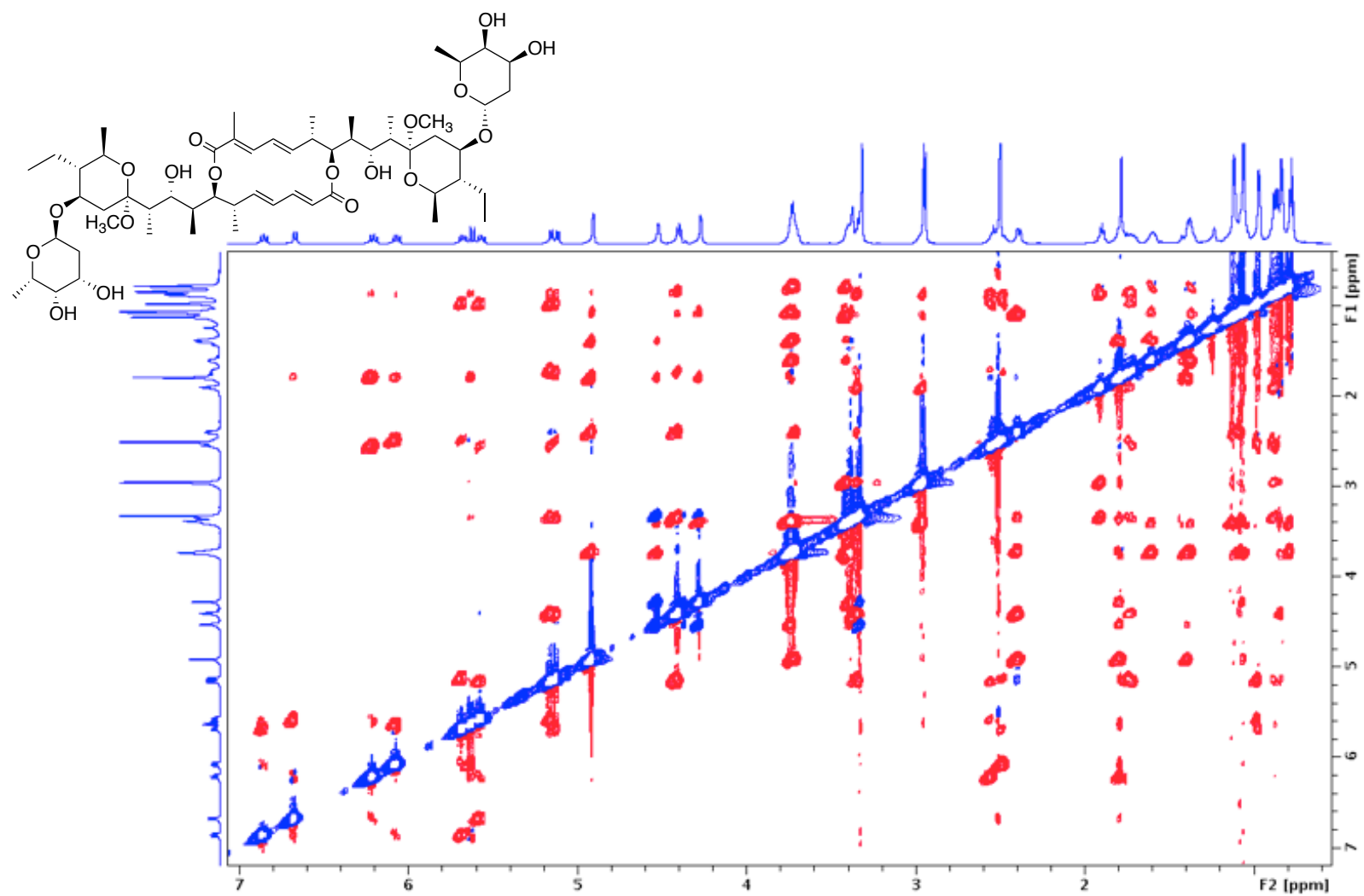


Figure S7. ROESY spectrum of compound **1** in DMSO-*d*₆ (700 MHz).

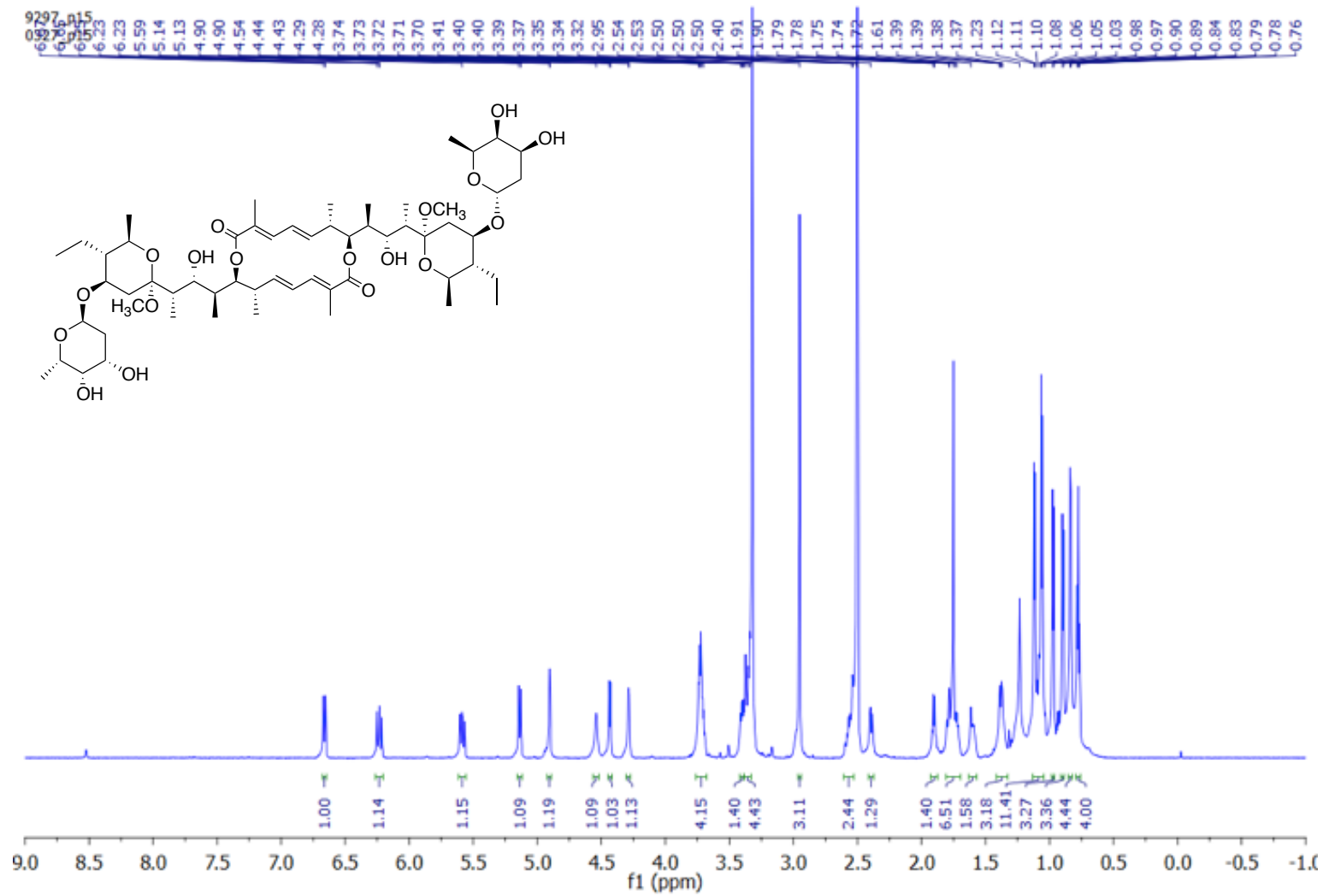


Figure S8. ^1H NMR spectrum of compound **2** in $\text{DMSO}-d_6$ (700 MHz).

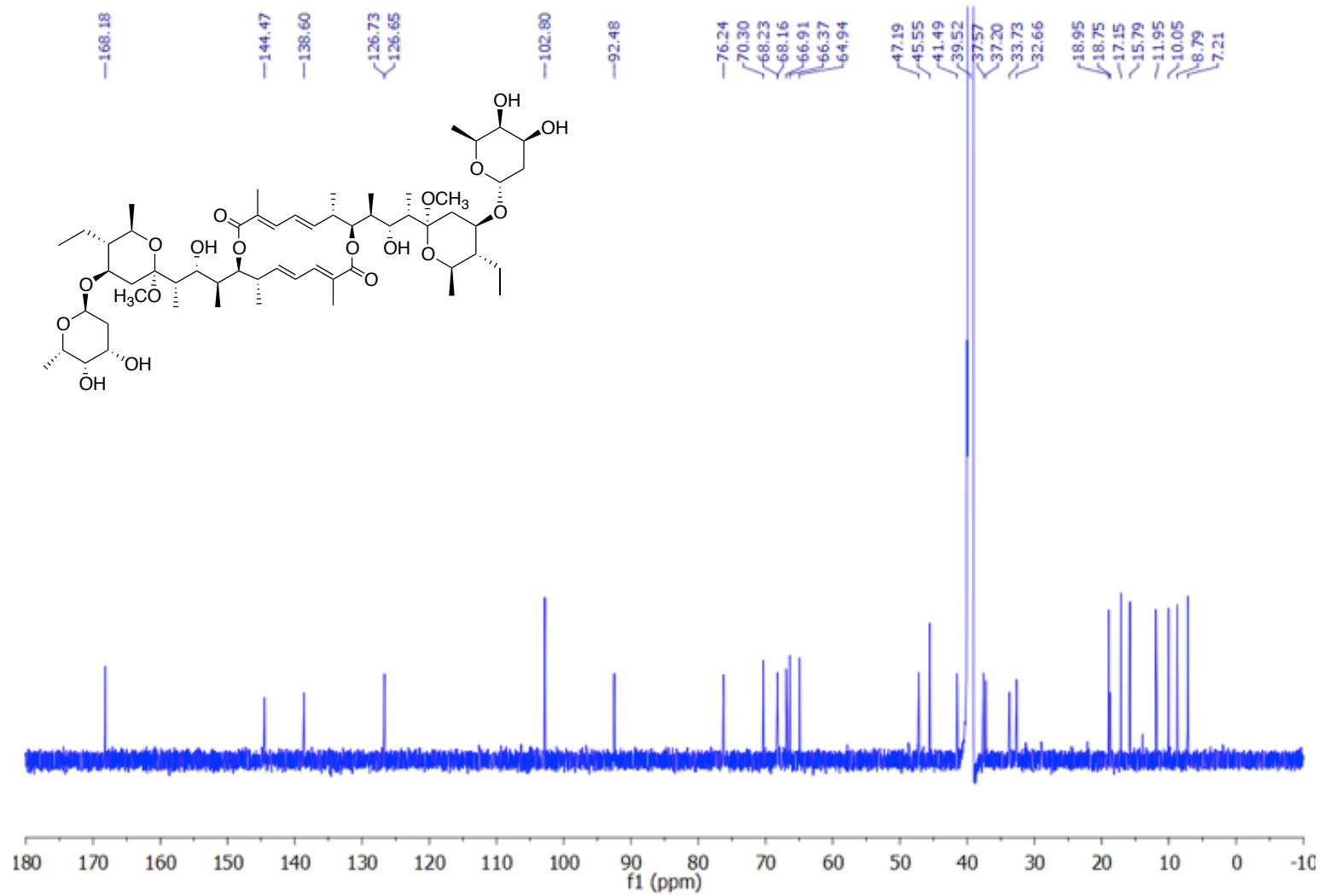


Figure S9. ¹³C NMR spectrum of compound 2 in DMSO-*d*₆ (175 MHz).

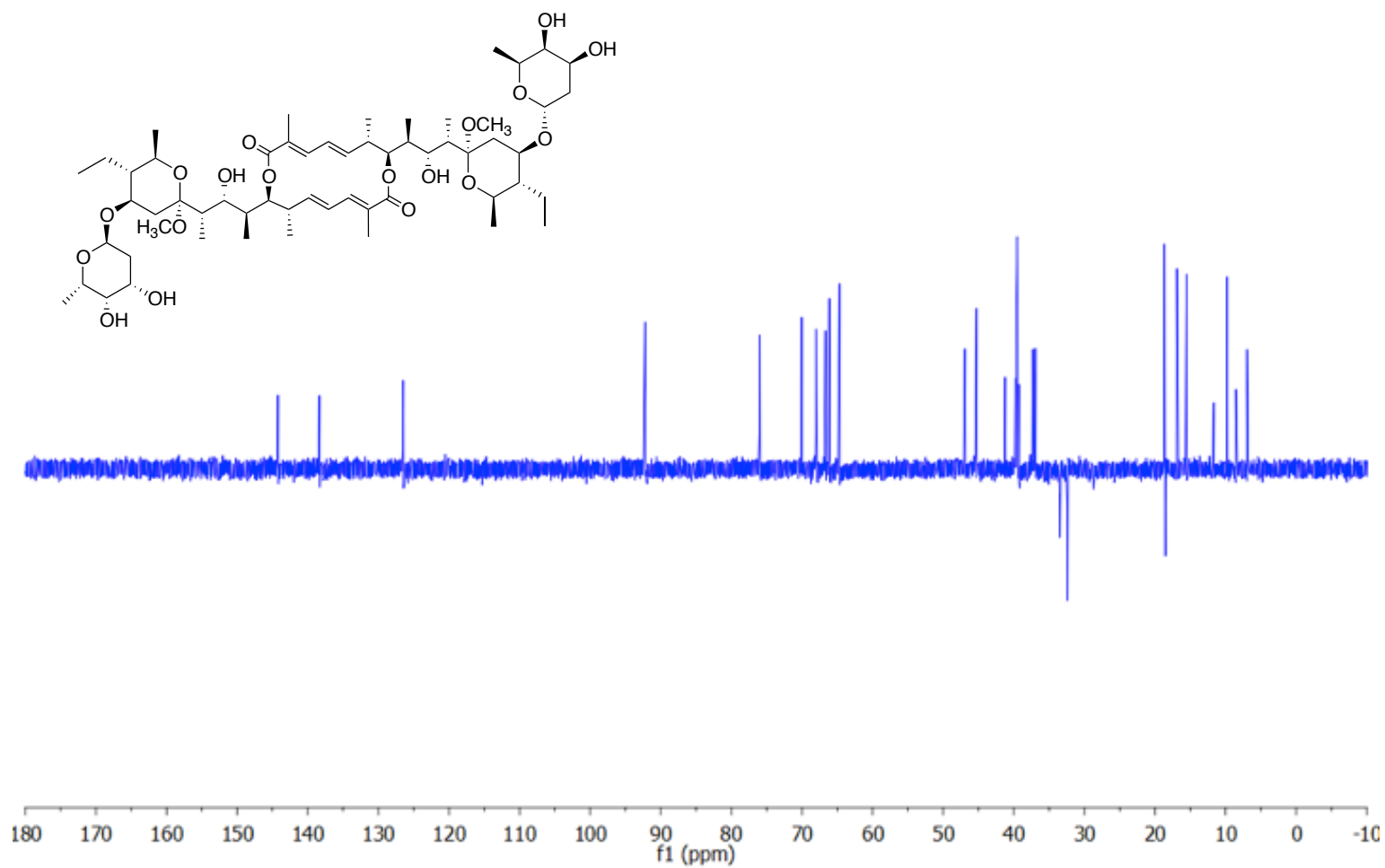


Figure S10. DEPT-135 spectrum of compound **2** in DMSO- d_6 (700 MHz).

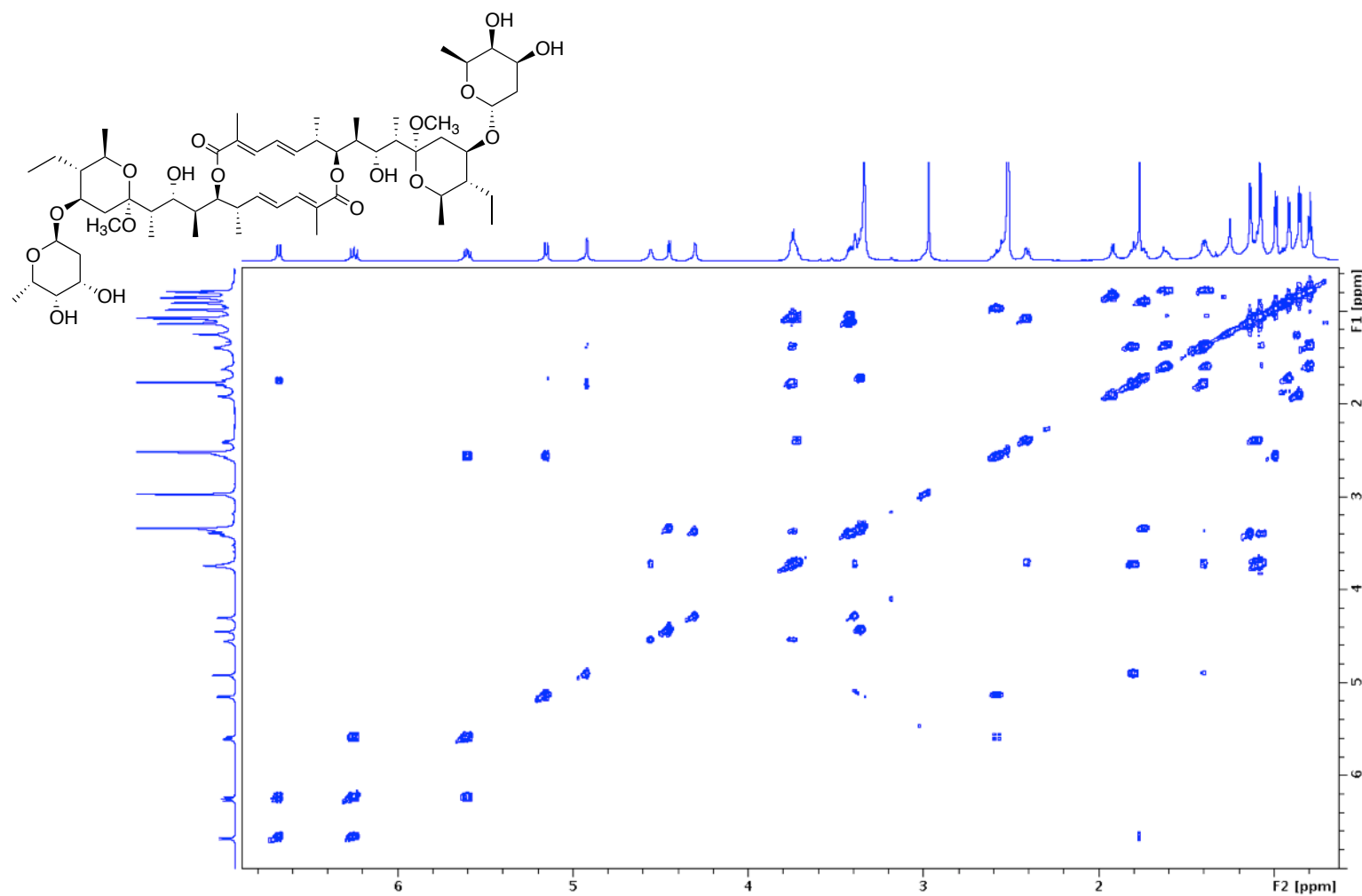


Figure S11. COSY spectrum of compound **2** in DMSO-*d*₆ (700 MHz).

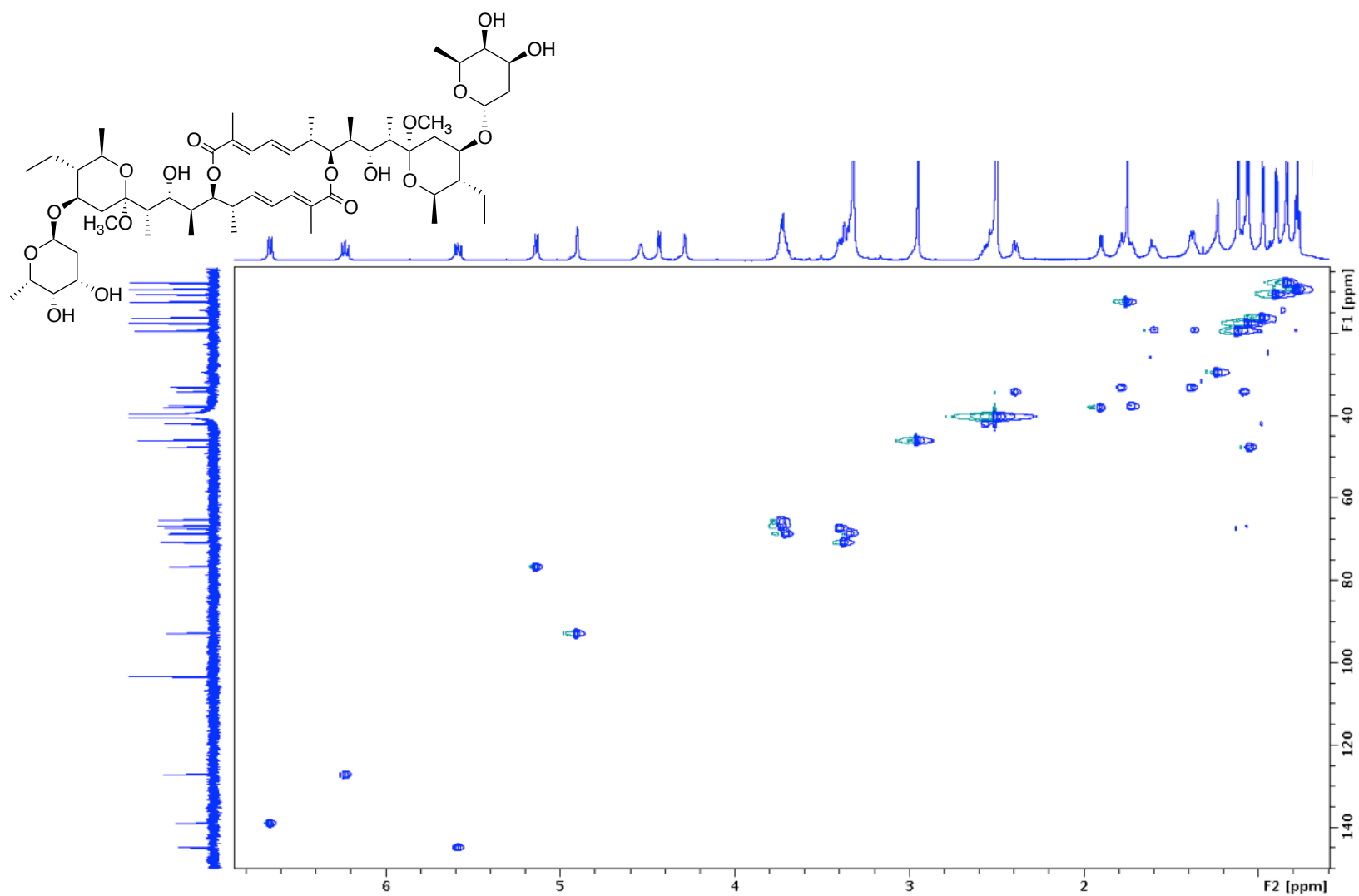


Figure S12. HSQC spectrum of compound **2** in DMSO-*d*₆ (700 MHz).

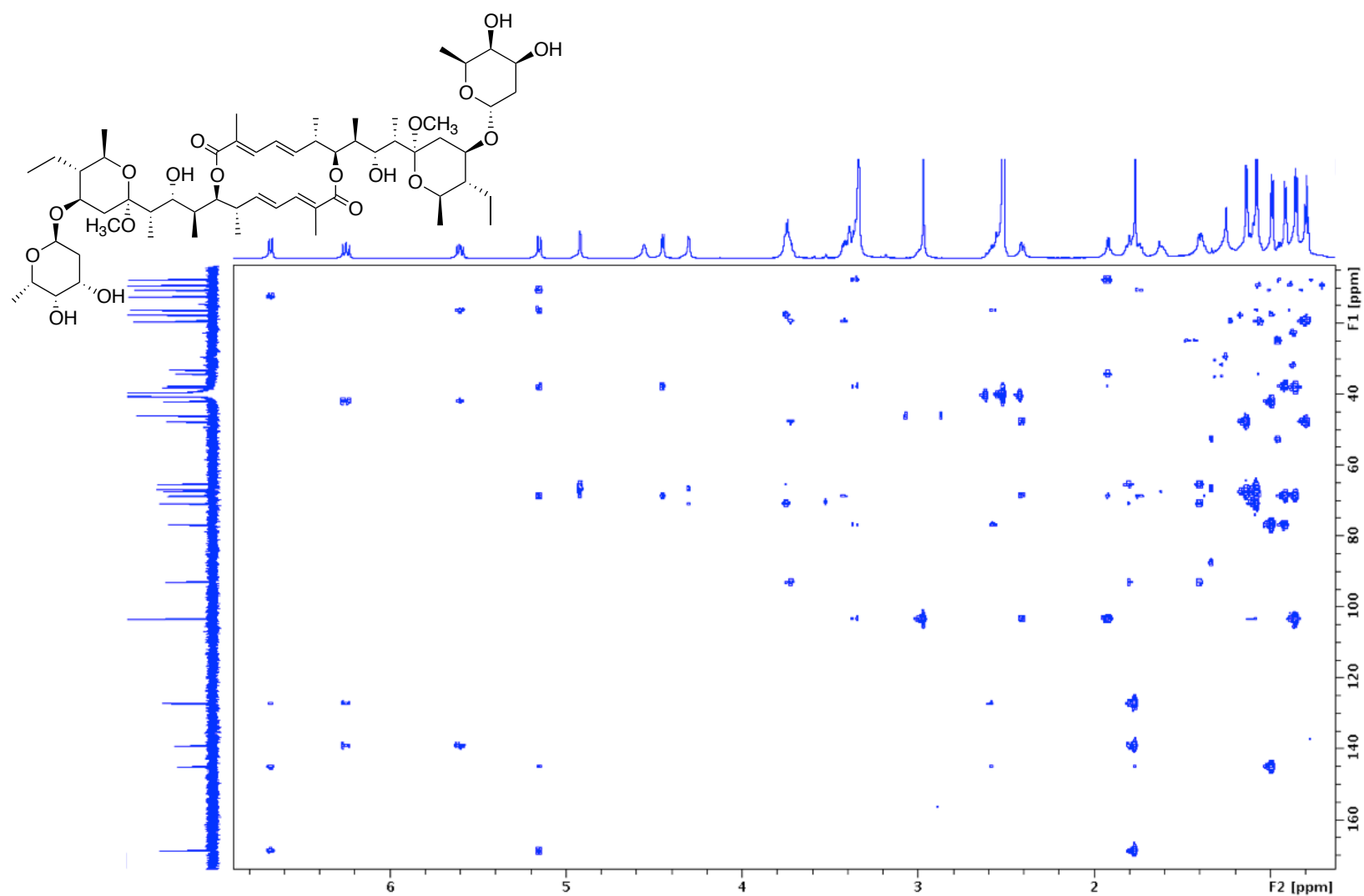


Figure S13. HMBC spectrum of compound **2** in DMSO-*d*₆ (700 MHz).

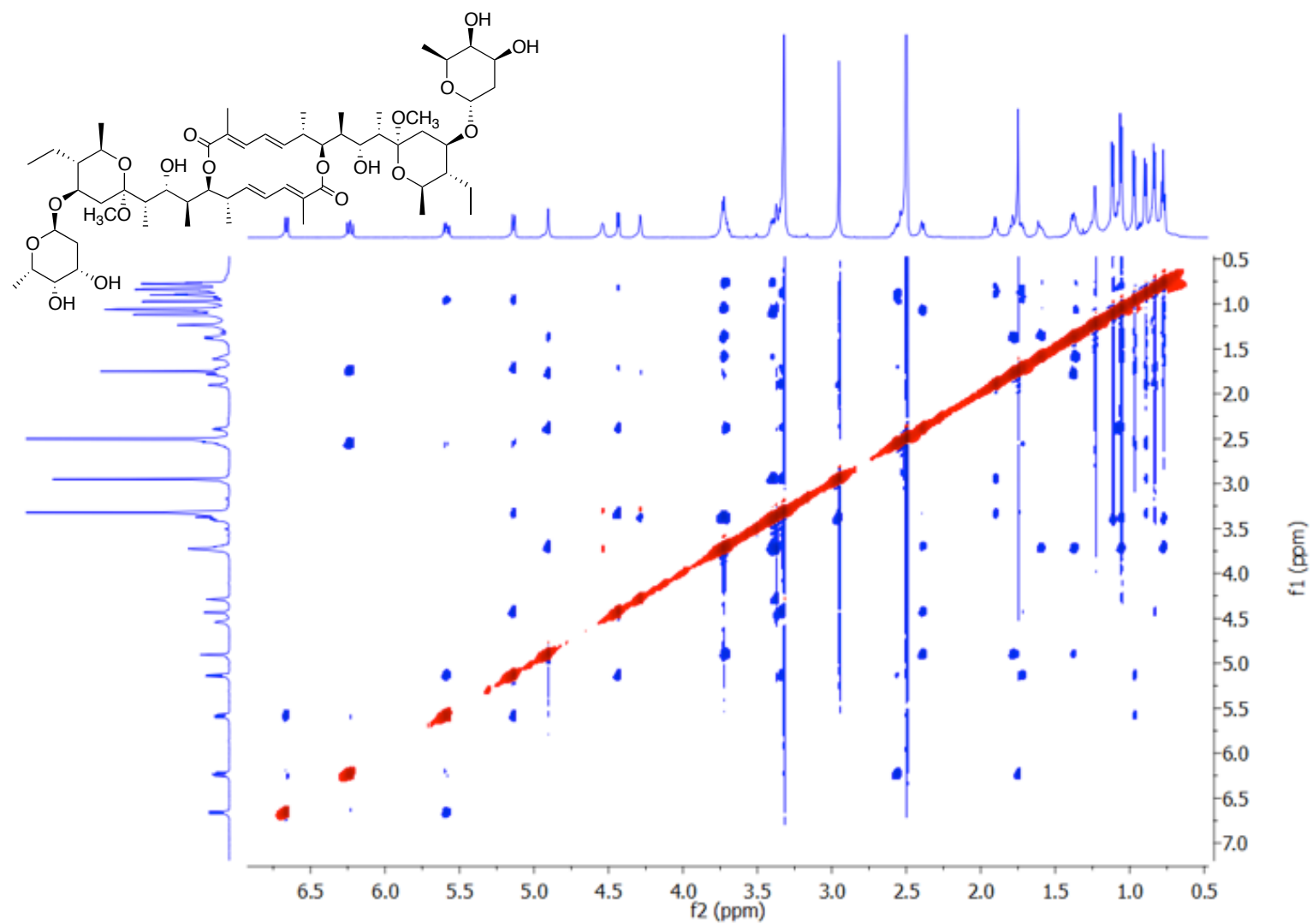


Figure S14. ROESY spectrum of compound **2** in DMSO-*d*₆ (700 MHz).

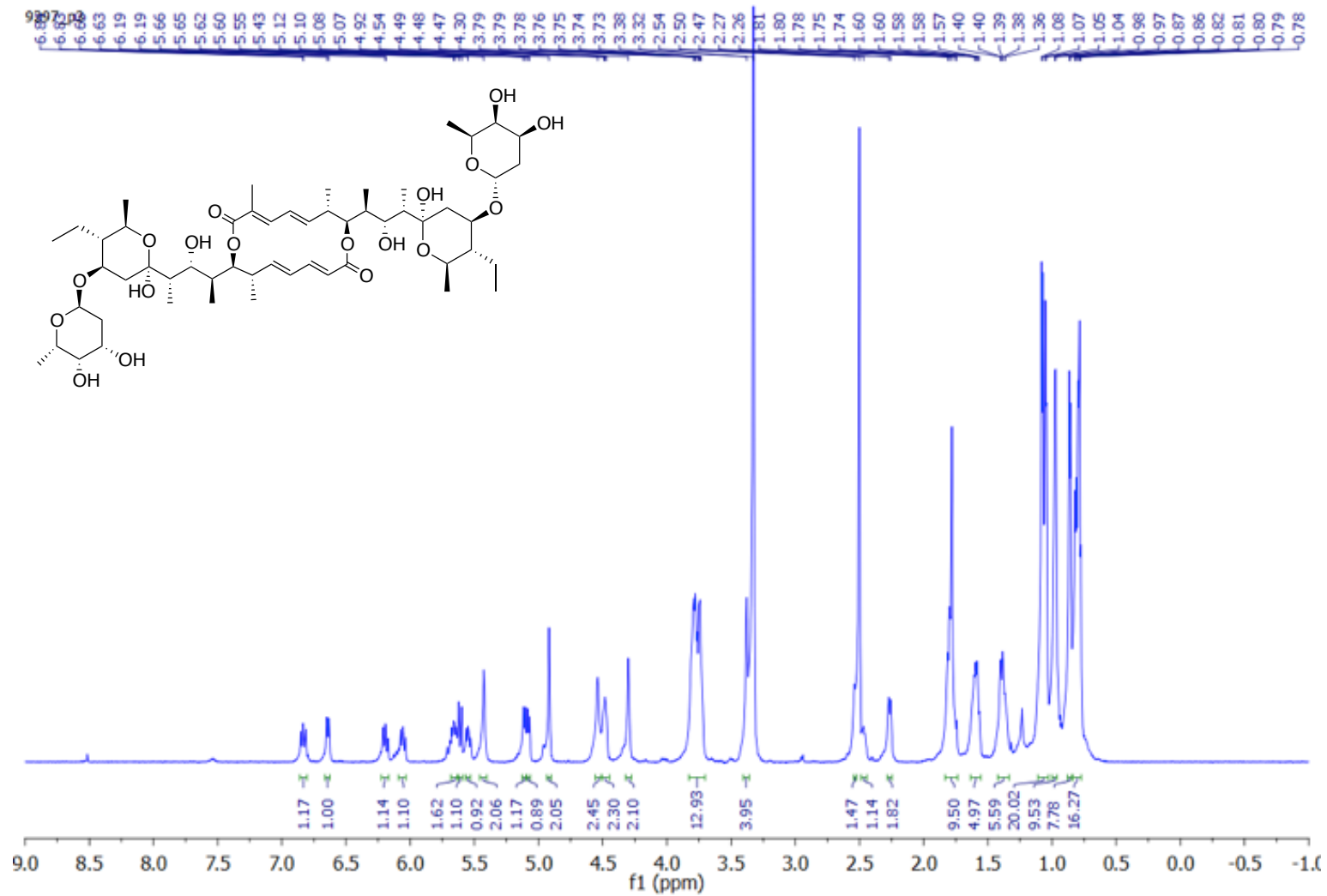


Figure S15. ^1H NMR spectrum for compound **3** in $\text{DMSO}-d_6$ (700 MHz).

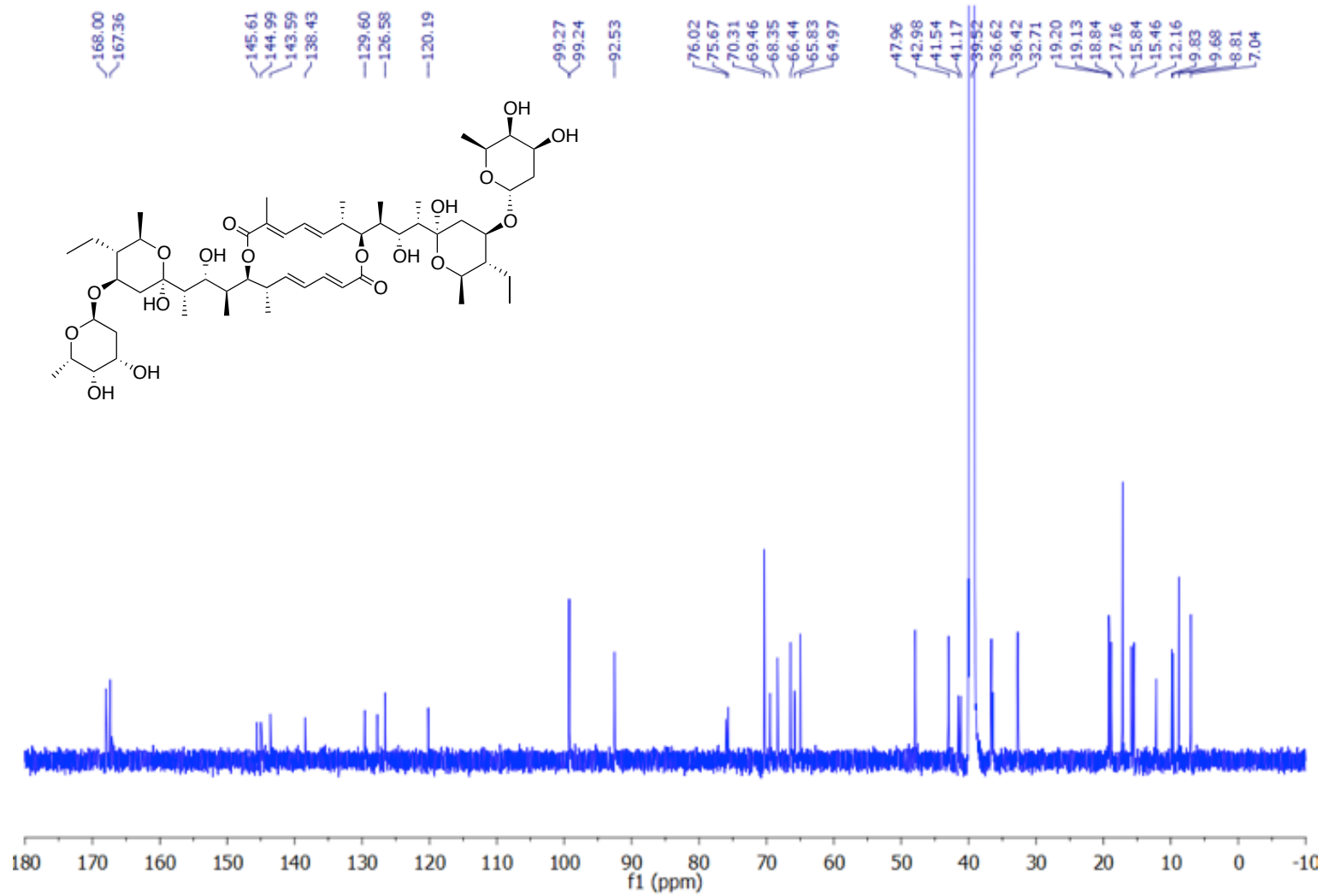


Figure S16. ^{13}C NMR spectrum of compound **3** in $\text{DMSO}-d_6$ (175 MHz).

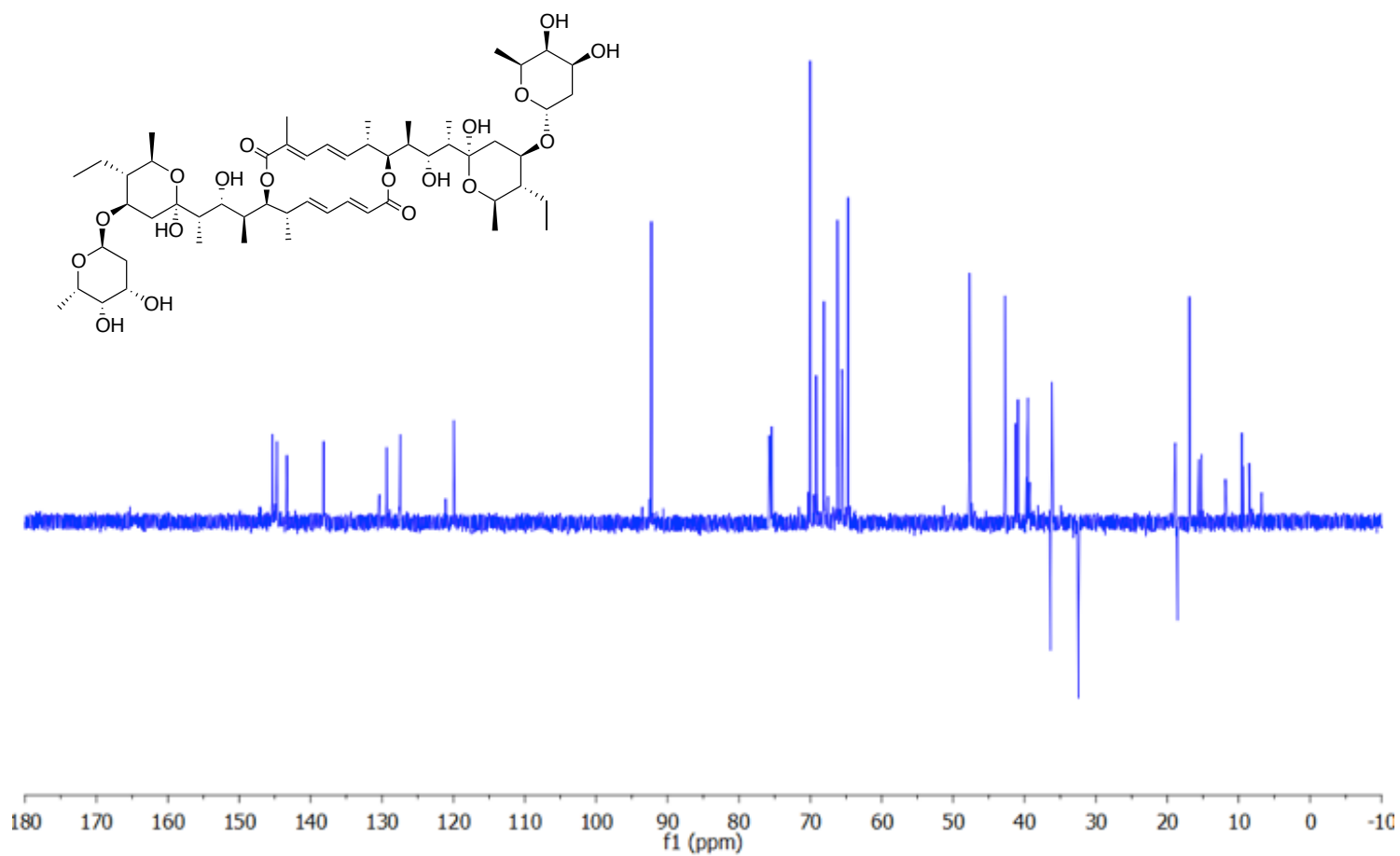


Figure S17. DEPT-135 spectrum of compound **3** in DMSO- d_6 (700 MHz).

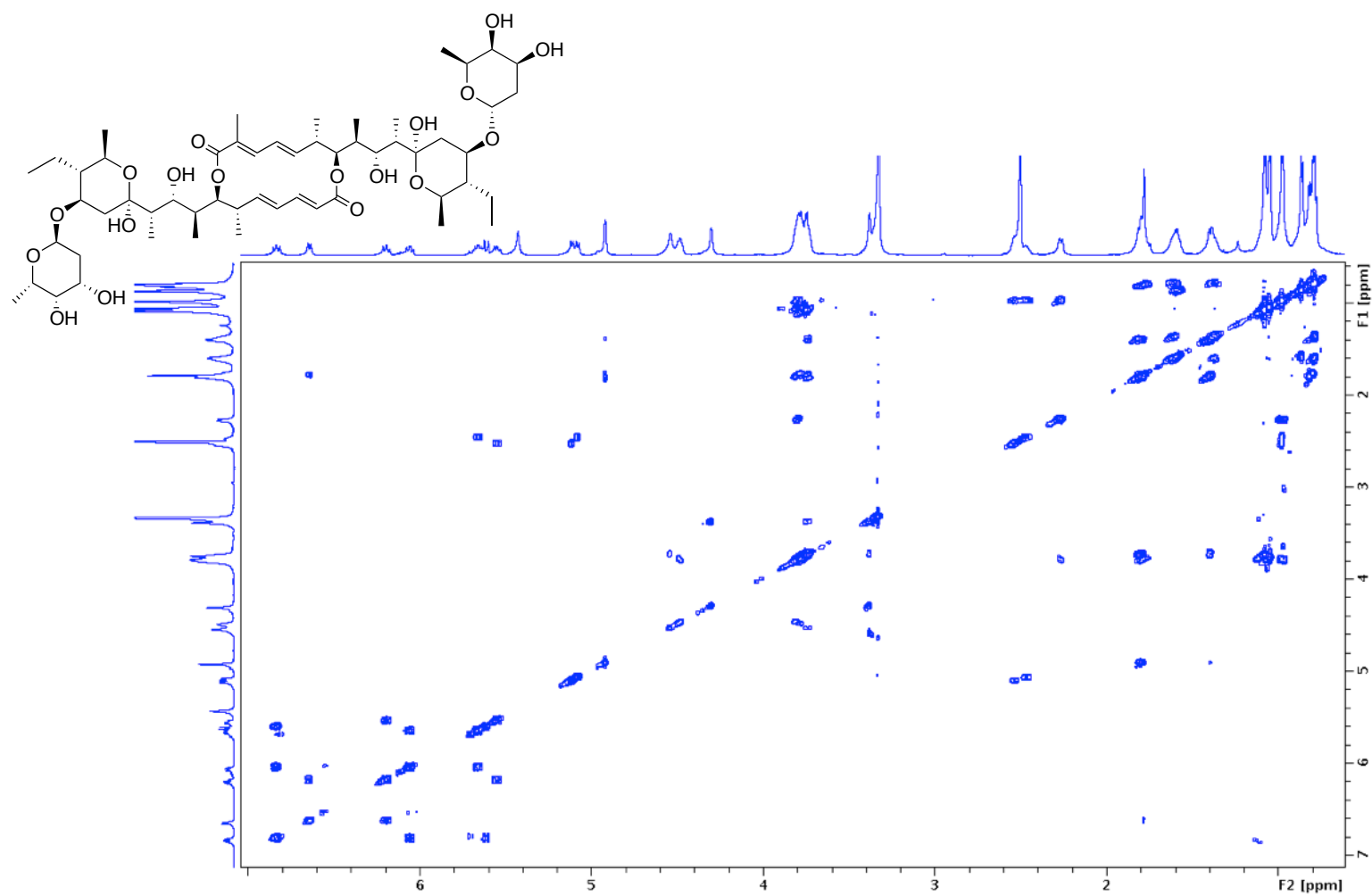


Figure S18. COSY spectrum of compound **3** in DMSO-*d*₆ (700 MHz).

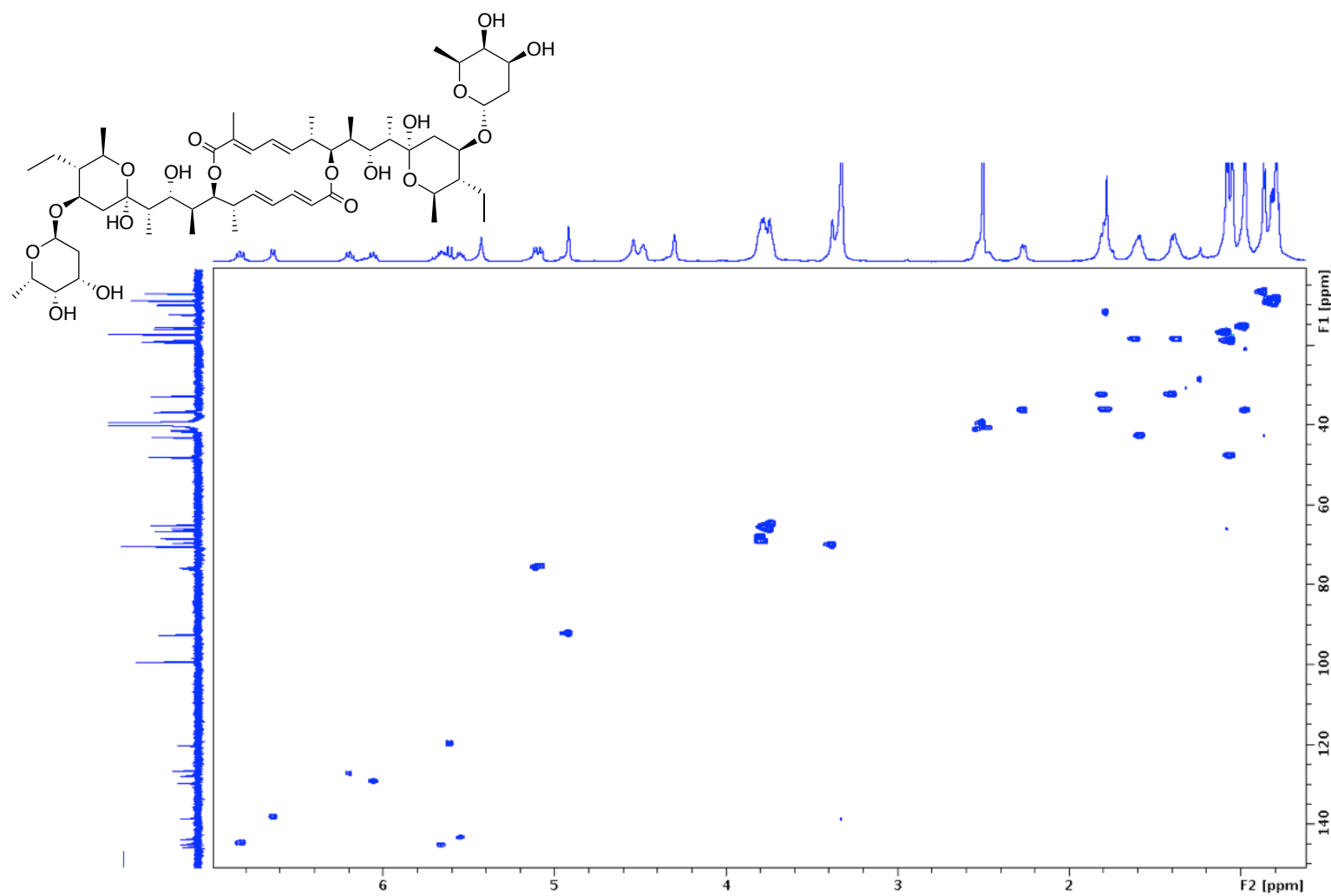


Figure S19. HSQC spectrum of compound **3** in DMSO-*d*₆ (700 MHz).

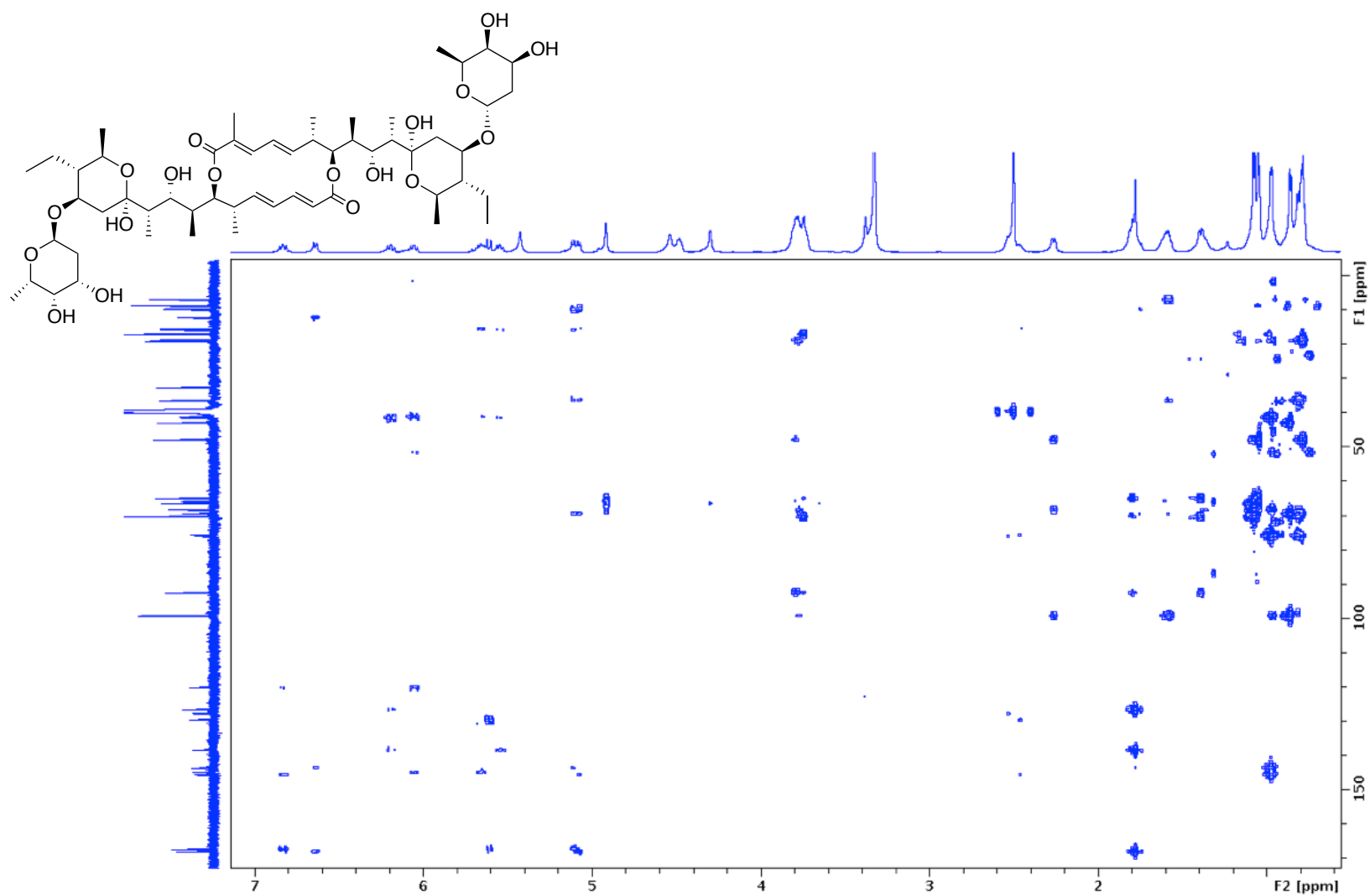


Figure S20. HMBC spectrum of compound **3** in DMSO-*d*₆ (700 MHz).

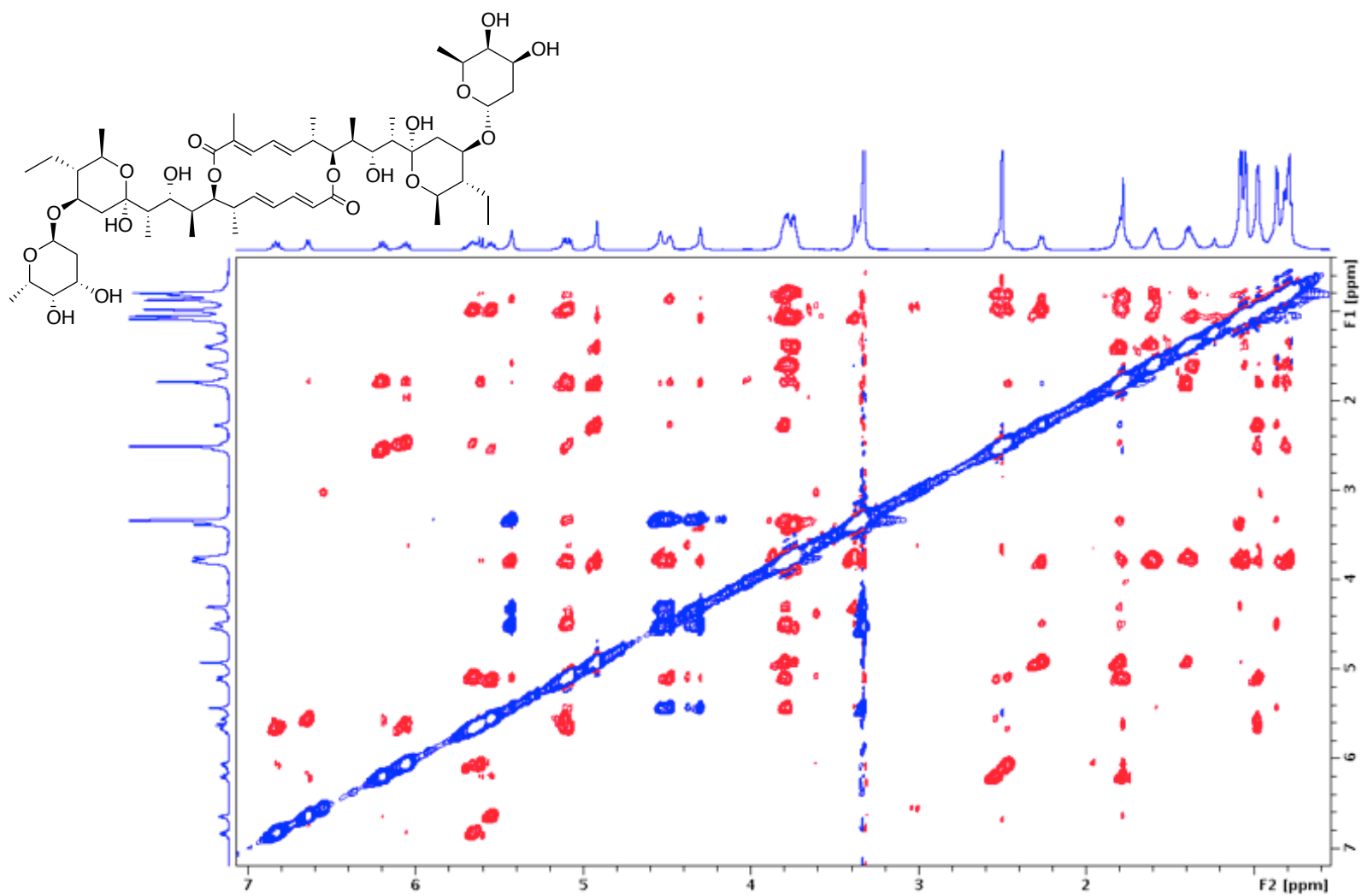


Figure S21. ROESY spectrum of compound **3** in DMSO-*d*₆ (700 MHz).

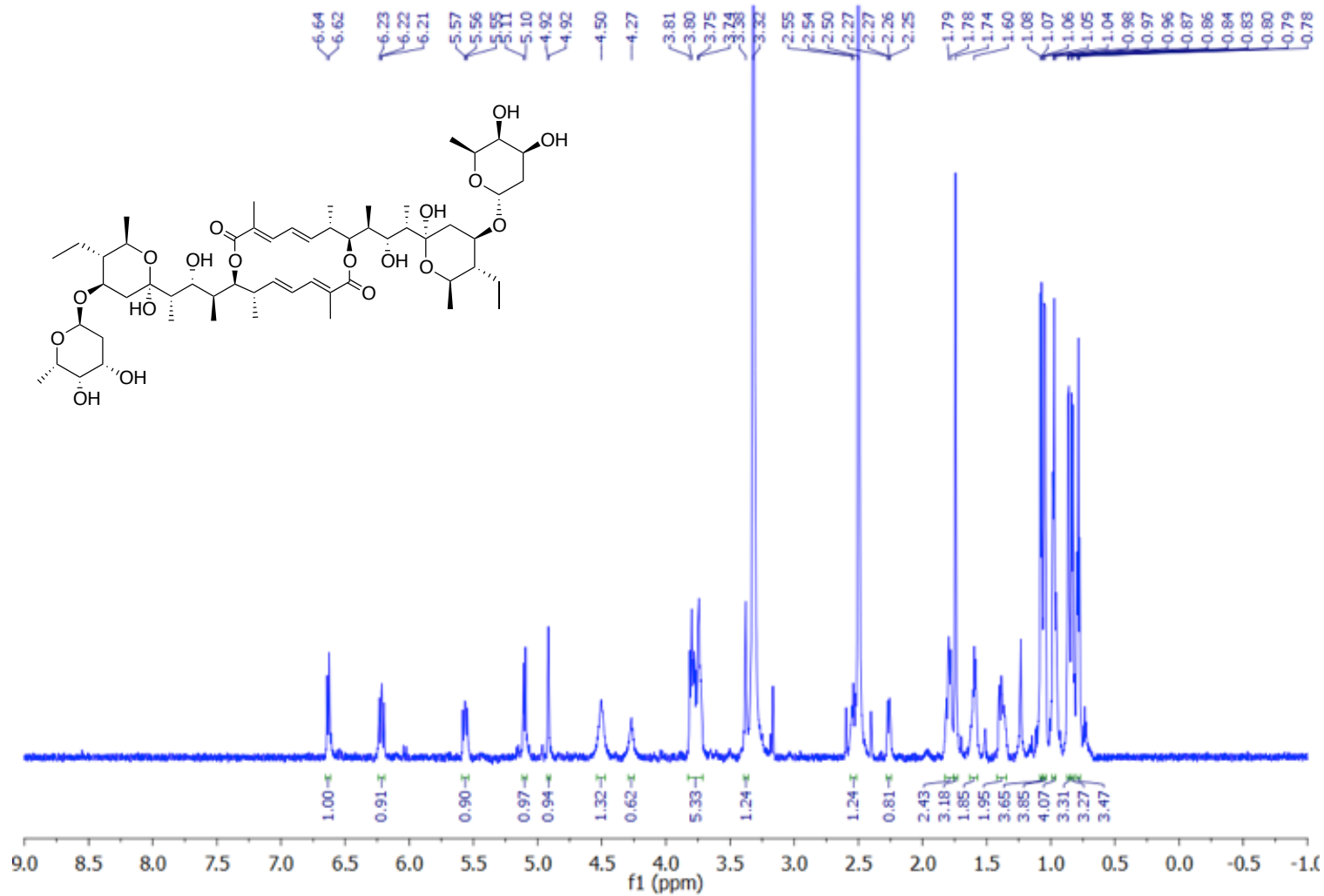


Figure S22. ^1H NMR spectrum of compound **4** in $\text{DMSO}-d_6$ (700 MHz).

S. albiflaviniger ICBB 9297 -----ARSRLDDR
S. sp NRRL 30748 LFTGQGAQRLGMGRALHTAFPVFAAFAVCAELDRHLDGHVGHAVRDVVFGADAEPLDR
 63 90 94 117
S. albiflaviniger ICBB 9297 TLYTQAGLFATEVALYRLVESWGVTAFLVGHVGEELAAAHVAGVFSLEDACALVAARGR
S. sp NRRL 30748 TLYTQTGLFAVEVALYRLLESWGVTAFLVGHVGEELAAAHVAGVFSLEDACALVAARGR

S. albiflaviniger ICBB 9297 LMDALPAGGAMVSLQTGEAEVLPHLAGEEGQVSLGALNGPAATVISGEEKAVLRIADAVG
S. sp NRRL 30748 LMDALPAGGAMVSLQTGEAEVLPHLAGEEGQVSLGAVNGPAATVISGEEKAVLRIADAVG

S. albiflaviniger ICBB 9297 VKSKRLRIGIAAHSPMLDPMLEEFKAVAGELTYHTPRIAVVSNVTGEAAVEELRSPEYWV
S. sp NRRL 30748 VKSKRLRIGIAAHSPMLDPMLEEFKAVAGELTYATPRIAVVSNVTGEAAVEELCSPDYWV

S. albiflaviniger ICBB 9297 RHYRQPVRFQDGVRFLEDQGVTRYVXGGPVRCAVRAGAVRRRH-----
S. sp NRRL 30748 RHYRQPVRFQDGVRFLEDQGVTRYVEVGPVSGVLSVMGQECVADPDAAAFVPLLRKD

Figure S23. Amino acid alignment of AT7 domains of elaiophylin PKS from *Streptomyces* sp. ICBB 9297 and *Streptomyces* sp. NRRL 30748. Conserved active site residues and motifs are indicated by yellow and red colors.

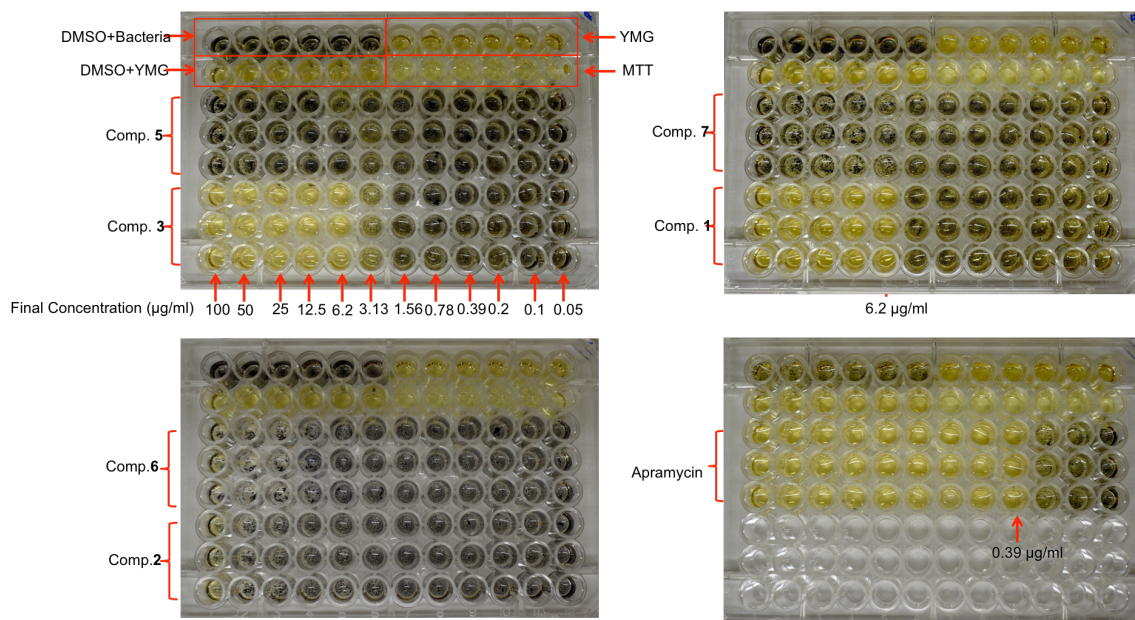


Figure S24. Microdilution assay for *Mycobacterium smegmatis*.