Supporting Information

Induction of diverse secondary metabolites in *Aspergillus fumigatus* by microbial co-culture

Mostafa E. Rateb[1,2], Irene Hallyburton[3], Wael E. Houssen[1,4], Alan T. Bull[5], Michael Goodfellow[6], Rakesh Santhanam[6], Marcel Jaspars[1], and Rainer Ebel[1]*

[1]*Marine Biodiscovery Centre, Department of Chemistry, University of Aberdeen, Meston Walk, AB24 3UE, Scotland, U.K.*

[2]*Pharmacognosy Department, Faculty of Pharmacy, Beni-Suef University, Salah Salem St., 62111, Beni-Suef, Egypt.*

[3]*Drug Discovery Unit, Division of Biological Chemistry and Drug Discovery, College of Life Sciences, University of Dundee, Sir James Black Centre, Dundee, DD1 5EH, U.K.*

[4]*Institute of Medical Sciences, University of Aberdeen, Ashgrove Road West, Aberdeen AB25 2ZD, Scotland, UK*

[5]*School of Biosciences, University of Kent, Canterbury, Kent CT2 7NJ, UK*

[6]*School of Biology, University of Newcastle, Newcastle upon Tyne NE1 7RU, UK*

---

* To whom correspondence should be addressed. Tel.: +44 (0)1224 272930. Fax: +44 (0)1224 272921. Email: r.ebel@abdn.ac.uk

Table of content

Table S1. NMR spectroscopic data for **9** and **10** ($CDCl_3$, 400 MHz at 298 K):

Atom	9			10				^{13}C NMR of related compounds	
	δ_H, mult. (*J* in Hz)	δ_C, mult	δ_C, mult[a]	δ_H, mult. (*J* in Hz)	δ_C, mult	δ_H, mult[b] (*J* in Hz)	δ_C, mult[b]	δ_C, mult[c]	δ_C, mult[d]
2		186.6, C	187.3, C*		184.4, C		186.8, C	186.8, C	187.6, C
3		113.4, C	113.6, C		113.3, C		111.4, C	111.6, C	111.3, C
4		197.7, C	198.0, C		198.1, C		199.8, C	196.7, C	200.0, C
5		91.8, C	92.3, C		88.5, C		88.2, C	92.4, C	88.2, C
6		166.1, C	167.2, C*		167.9, C		167.5, C	166.6, C	167.7, C
8		90.0, C	92.0, C		95.4, C		97.0, C	91.1, C	97.1, C
9	4.63, s	74.1, CH	75.0, CH	4.78, s	76.5, CH	4.62 (d, 6.2)	75.6, CH	75.0, CH	75.7, CH
10	4.69 (d, 5.7)	70.5, CH	69.7, CH	4.56 (d, 6.4)	70.3, CH	4.48 (t, 5.4)	70.4, CH	72.0, CH	72.8, CH
11	4.32 (dd, 5.2, 9.2)	77.6, CH	77.3, CH	4.28 (dd, 6.5, 9.1)	77.6, CH	4.17 (dd, 5.5, 9.3)	77.1, CH	68.3, CH	68.3, CH
12	5.33 (ddt, 10.9, 9.5, 1.3)	124.1, CH	125.1, CH	5.27 (t, 10.7)	124.7, CH	5.31 (t, 10.9)	125.6, CH	128.4, CH	129.0, CH
13	5.83, m	140.1, CH	138.4, CH	5.82, m	140.3, CH	5.62, m	136.9, CH	134.0, CH	133.8, CH
14	2.11, m	21.4, CH_2	20.8, CH_2	2.10, m	21.4, CH_2	20.4, m 1.97, m	20.7, CH_2	20.6, CH_2	20.7, CH_2
15	0.96 (t, 7.5)	14.3, CH_3	13.1, CH_3	0.98 (t, 7.5)	14.3, CH_3	0.87 (t, 7.6)	14.1, CH_3	14.1, CH_3	14.2, CH_3
16	1.75, s	5.8, CH_3	4.3, CH_3	1.77, s	5.8, CH_3	1.64, s	5.6, CH_3	5.6, CH_3	5.7, CH_3
17		194.6, C	195.8, C		193.3, C		194.7, C	196.4, C	194.8, C
18		132.5, C	133.5, C		134.0, C		134.8, C	133.6, C	134.7, C
19/23	8.29(dd, 1.2, 8.5)	130.7, CH	130.2, CH	8.21 (d, 7.9)	129.9, CH	8.11 (d, 7.7)	129.6, CH	130.2, CH	129.7, CH
20/22	7.49 (t, 8.0)	128.9, CH	128.1, CH	7.47 (t, 7.8)	128.7, CH	7.52 (t, 7.8)	128.3, CH	128.4, CH	128.4, CH
21	7.46 (t, 7.6)	134.8, CH	133.7, CH	7.60 (t, 7.2)	134.0, CH	7.63 (t, 7.6)	133.1, CH	133.6, CH	133.2, CH
8-OMe	3.38, s	51.9, CH_3	51.0, CH_3	3.29, s	51.6, CH_3	3.12, s	51.4, CH_3	51.7, CH_3	51.5, CH_3
11-OMe	3.31, s	56.8, CH_3	55.4, CH_3	3.25, s	56.7, CH_3	3.15, s	55.7, CH_3	---	---
9-OH						6.09 (d, 6.2)			
10-OH						5.75 (d, 5.8)			
NH-7	7.67, br s			7.40, br s		9.89, s			

[a] Reported ^{13}C NMR data of 11-*O*-methylpseurotin A (**9**) in CD_3OD.[44] [b] NMR data of **7.10** in DMSO-d_6. [c]Reported ^{13}C NMR data of pseurotin A in acetone-d_6.[45] [d]Reported ^{13}C NMR data of pseurotin A_2 in DMSO-d_6.[46] *The ^{13}C shifts were interchanged as they were wrongly reported.

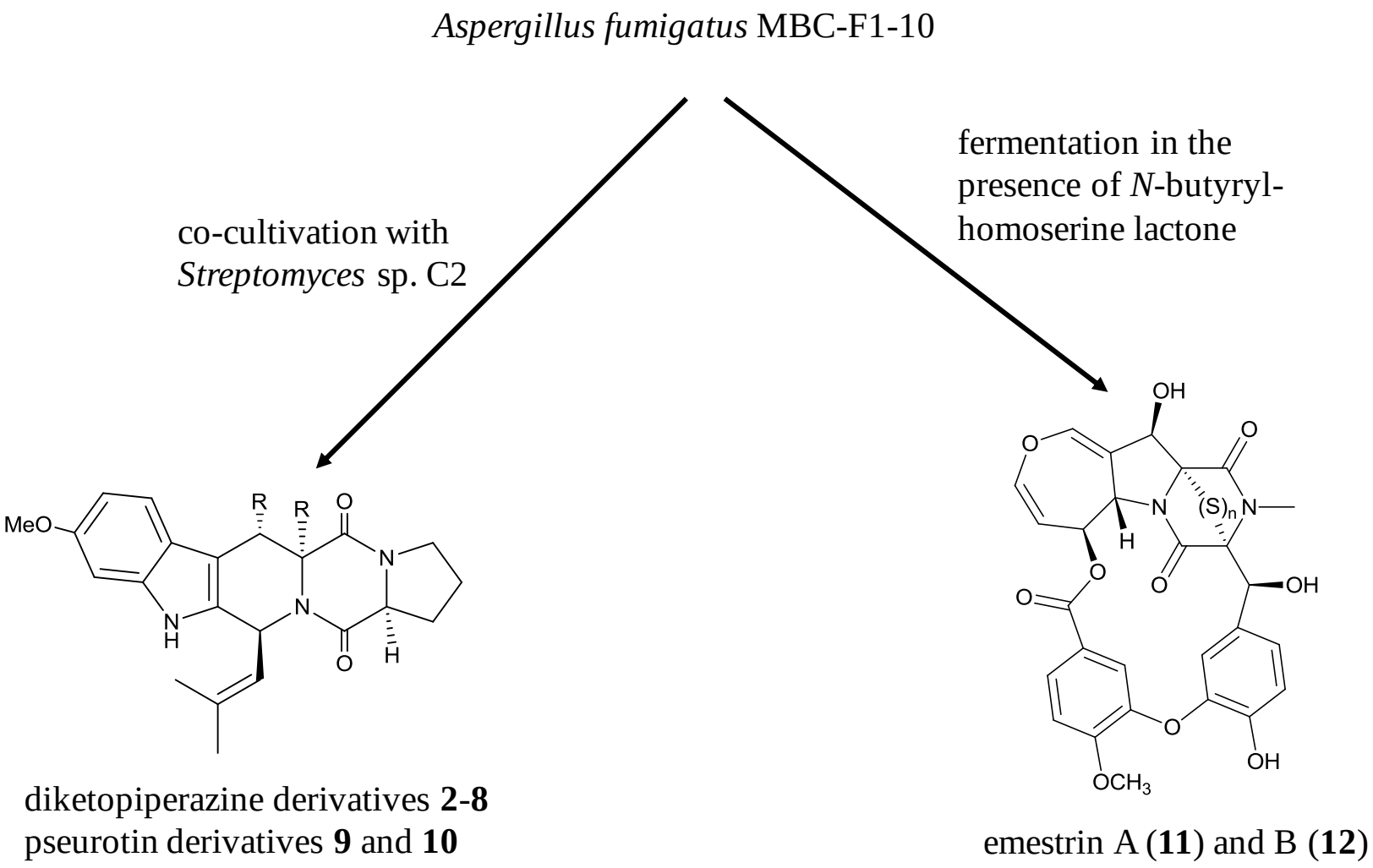

Fig. S1. Induction of cryptic biogenetic pathways in *Aspergillus fumigatus* MBC-F1-10 by different strategies

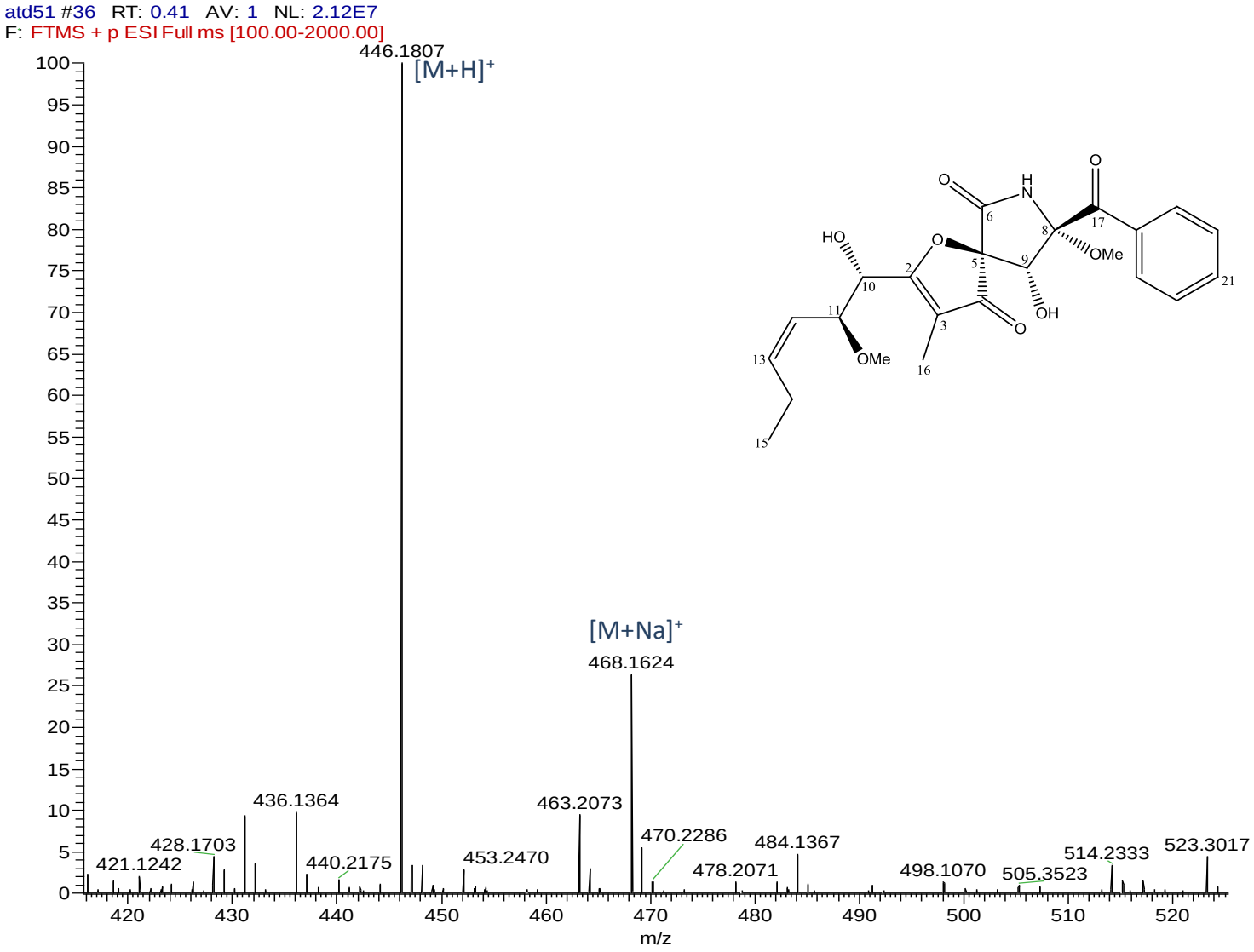

Fig. S2. HRESIMS spectrum of **9**

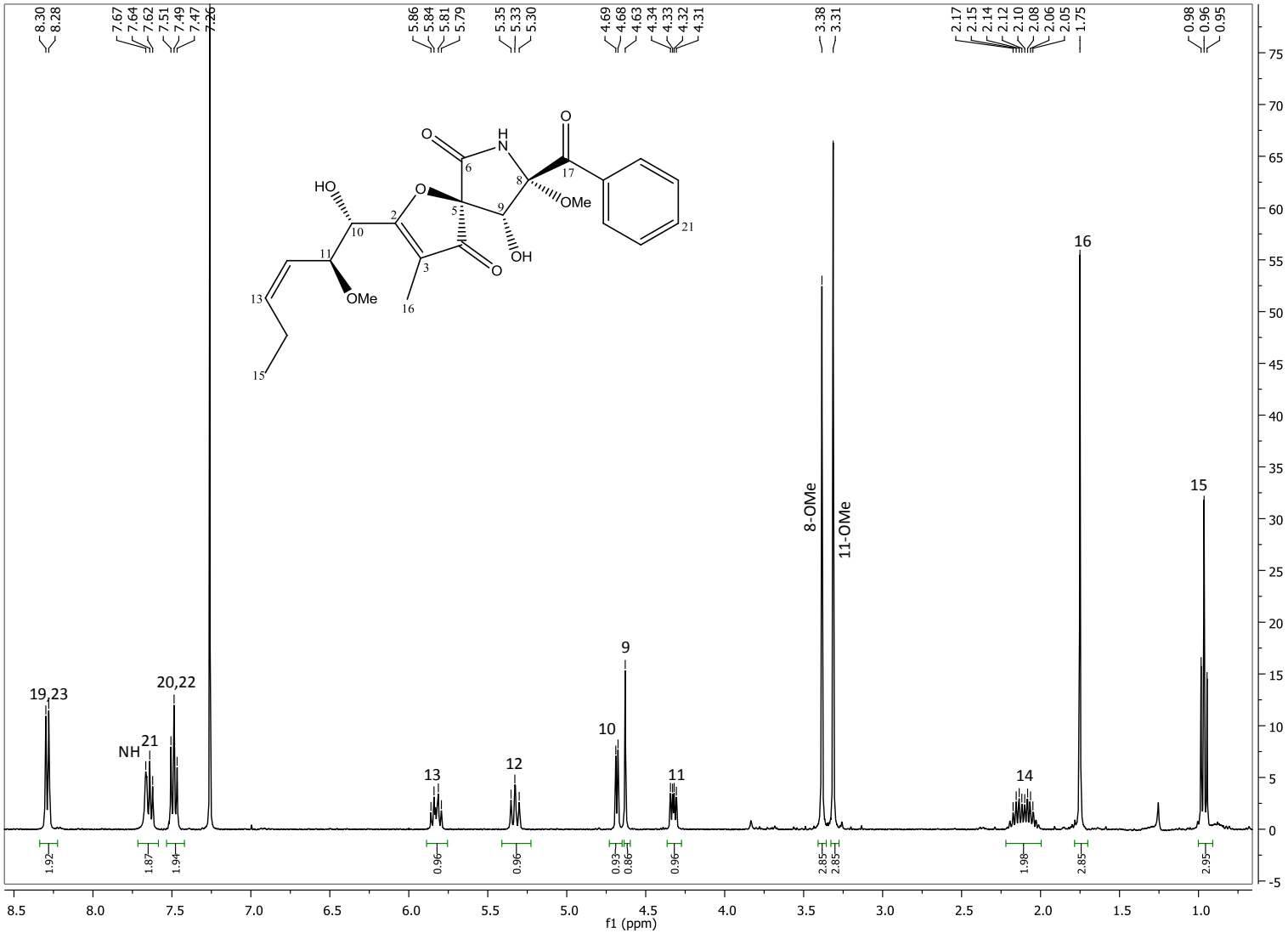

Fig. S3. ^{1}H NMR spectrum of **9**

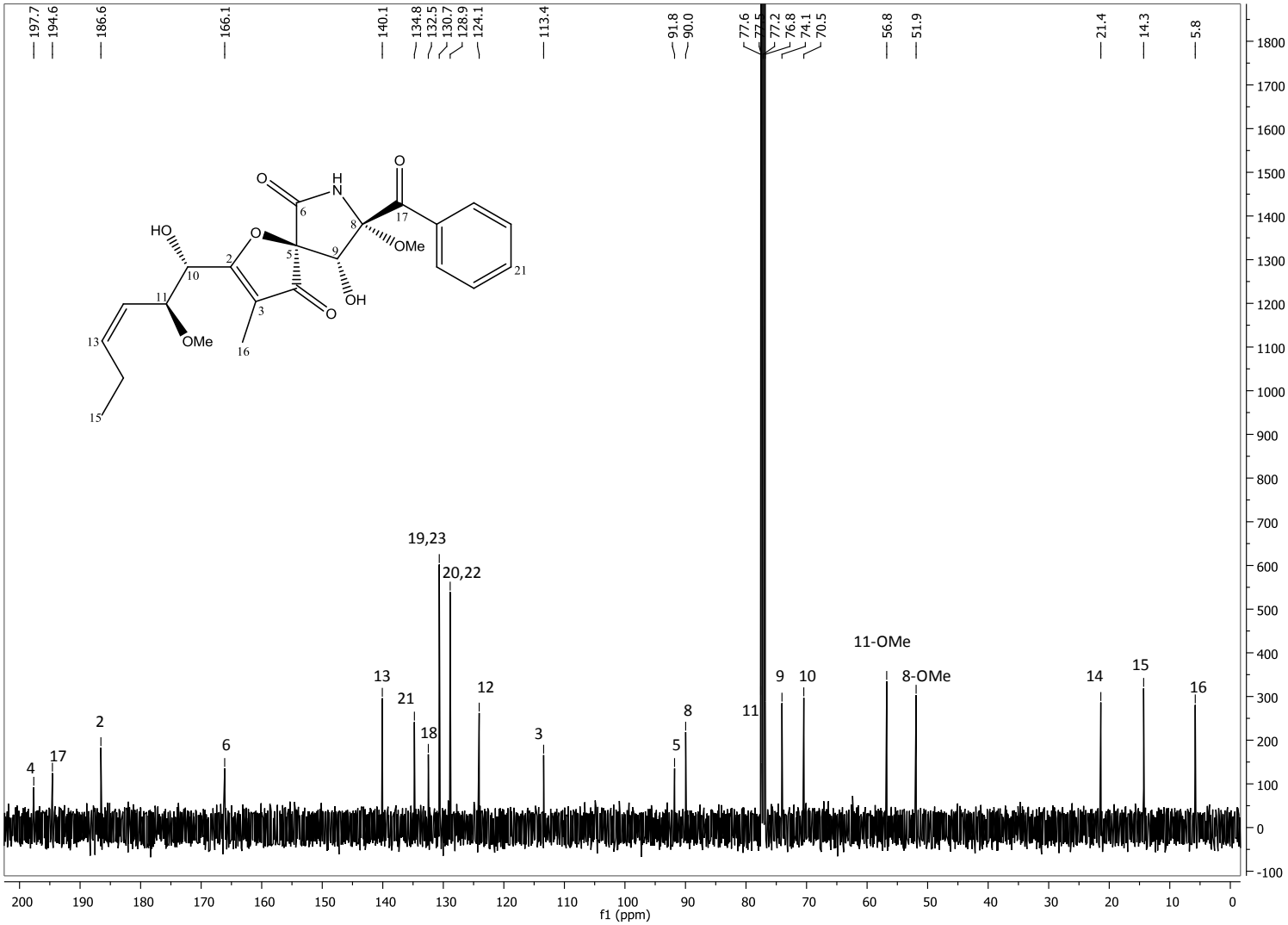

Fig. S4. ^{13}C NMR spectrum of **9**

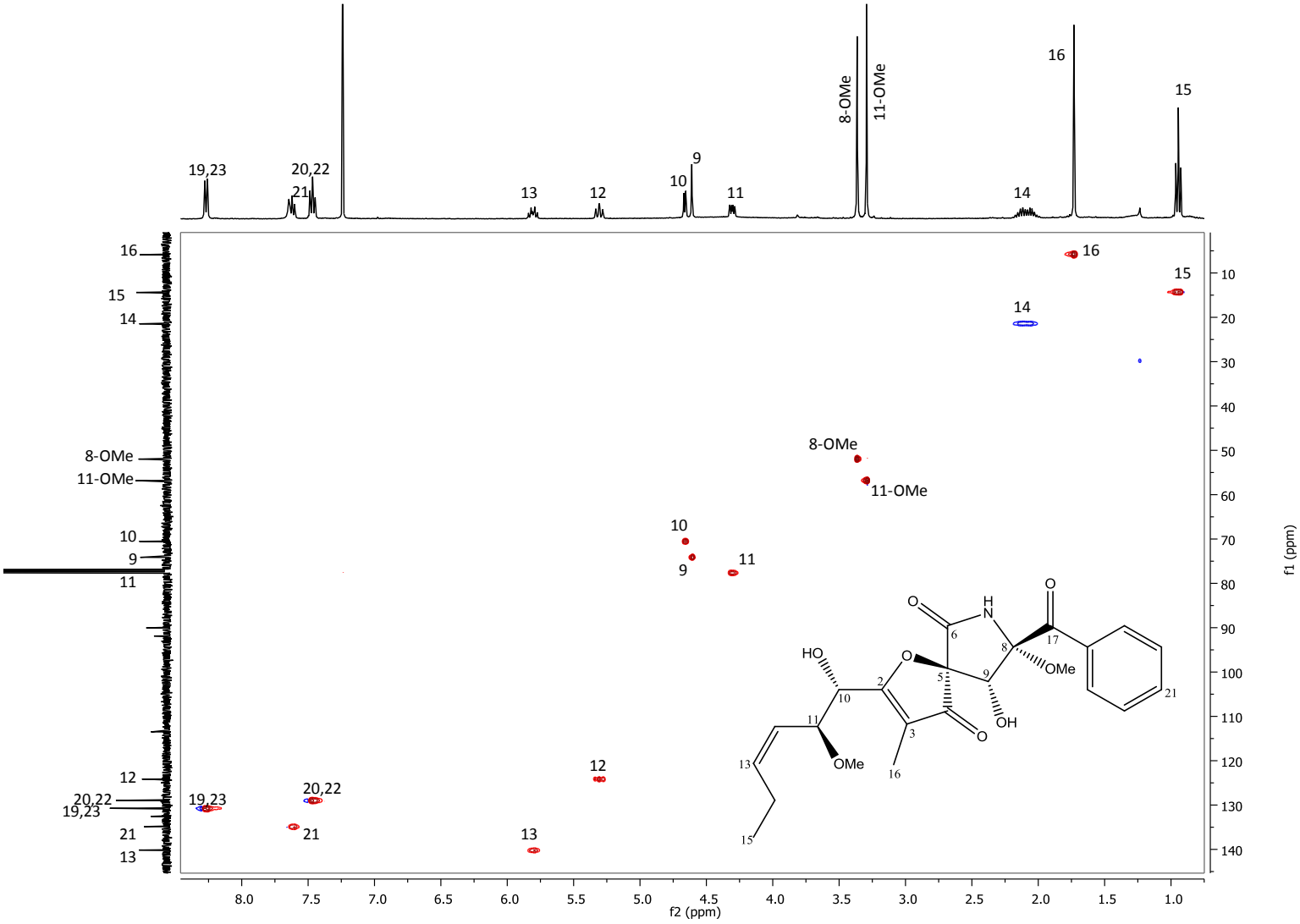

Fig. S5. HSQC spectrum of **9**

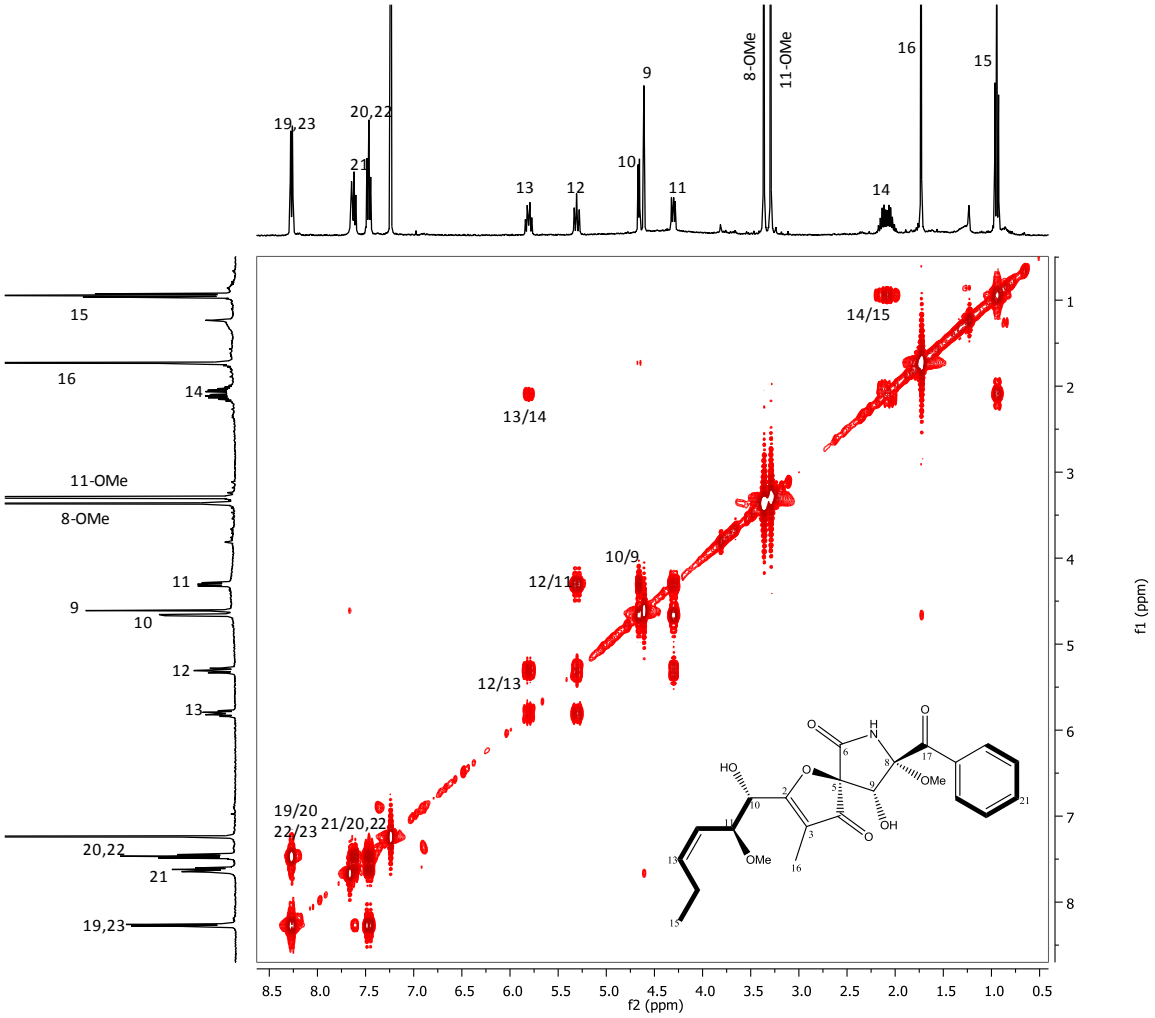

Fig. S6. COSY spectrum of **9**

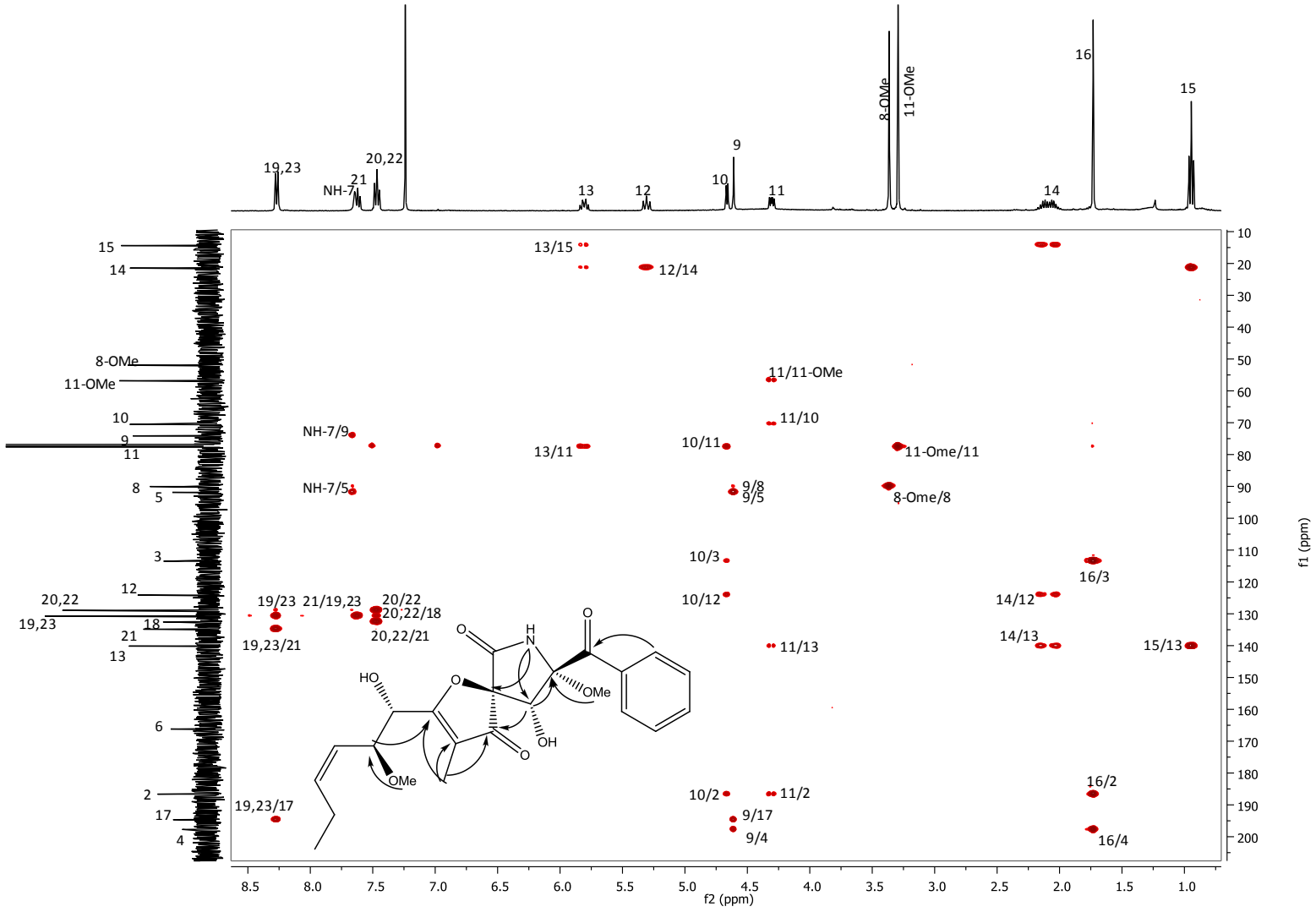

Fig. S7. HMBC spectrum of **9**

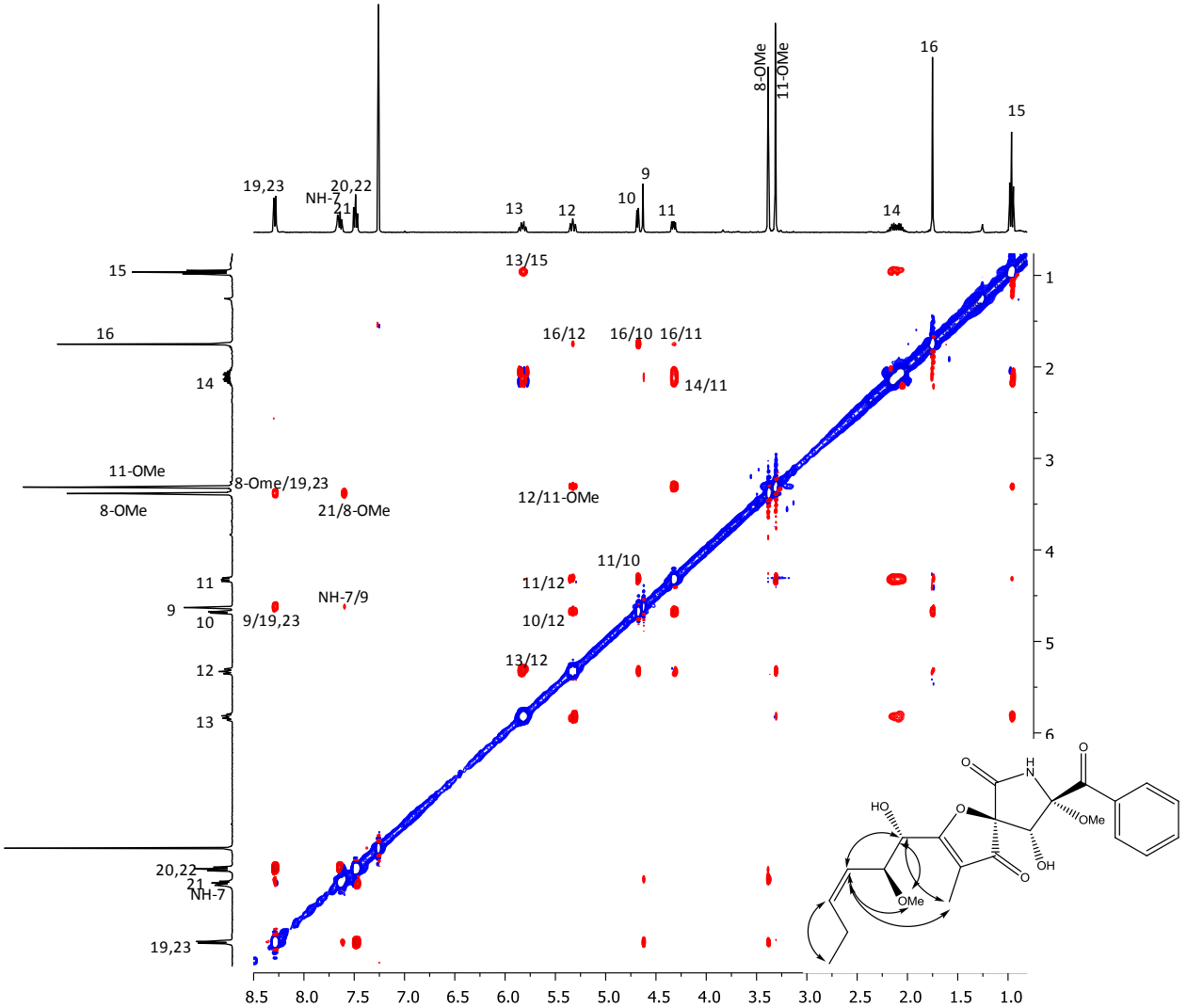

Fig. S8. NOESY spectrum of **9**

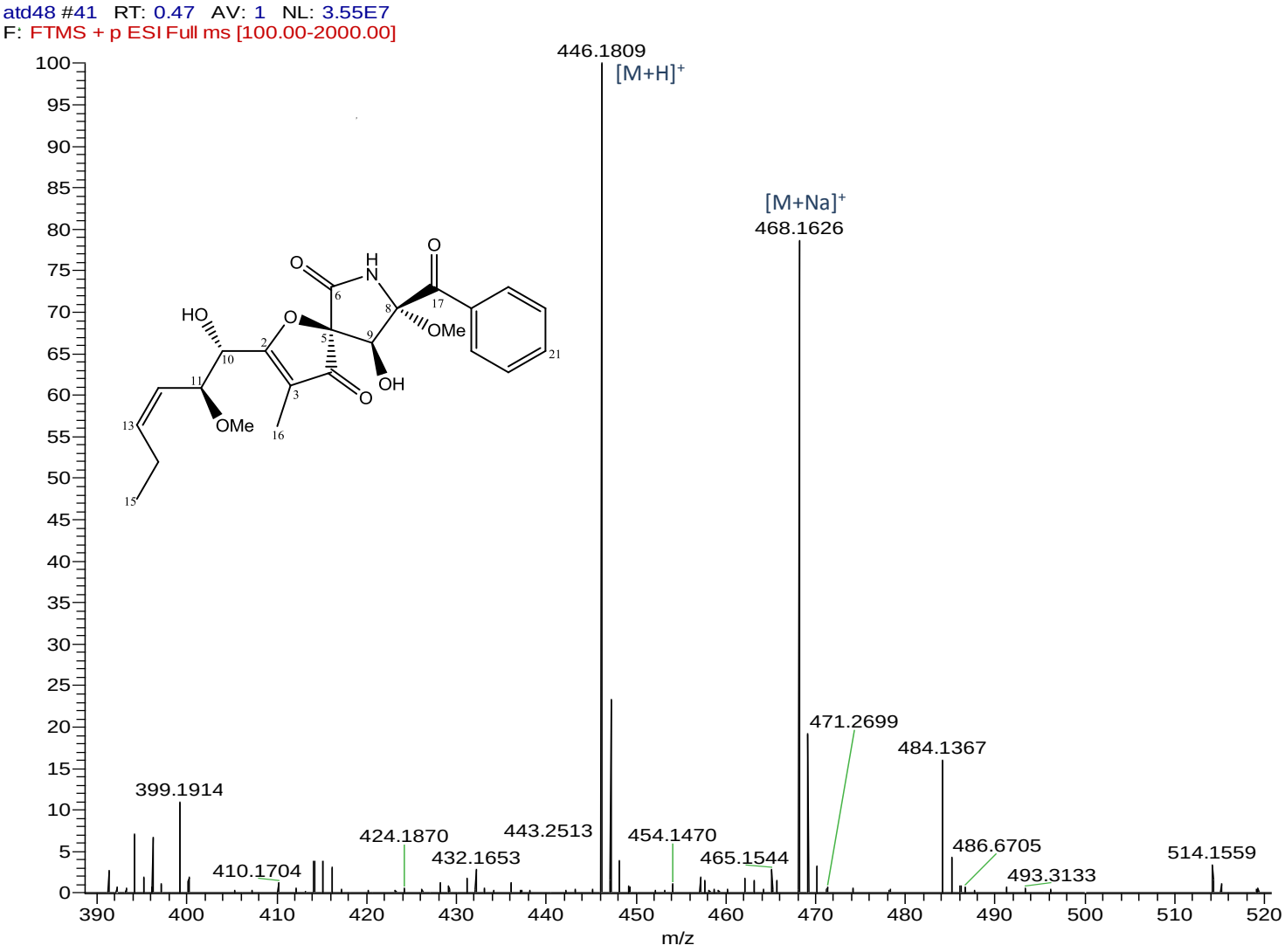

Fig. S9. HRESIMS spectrum of **10**

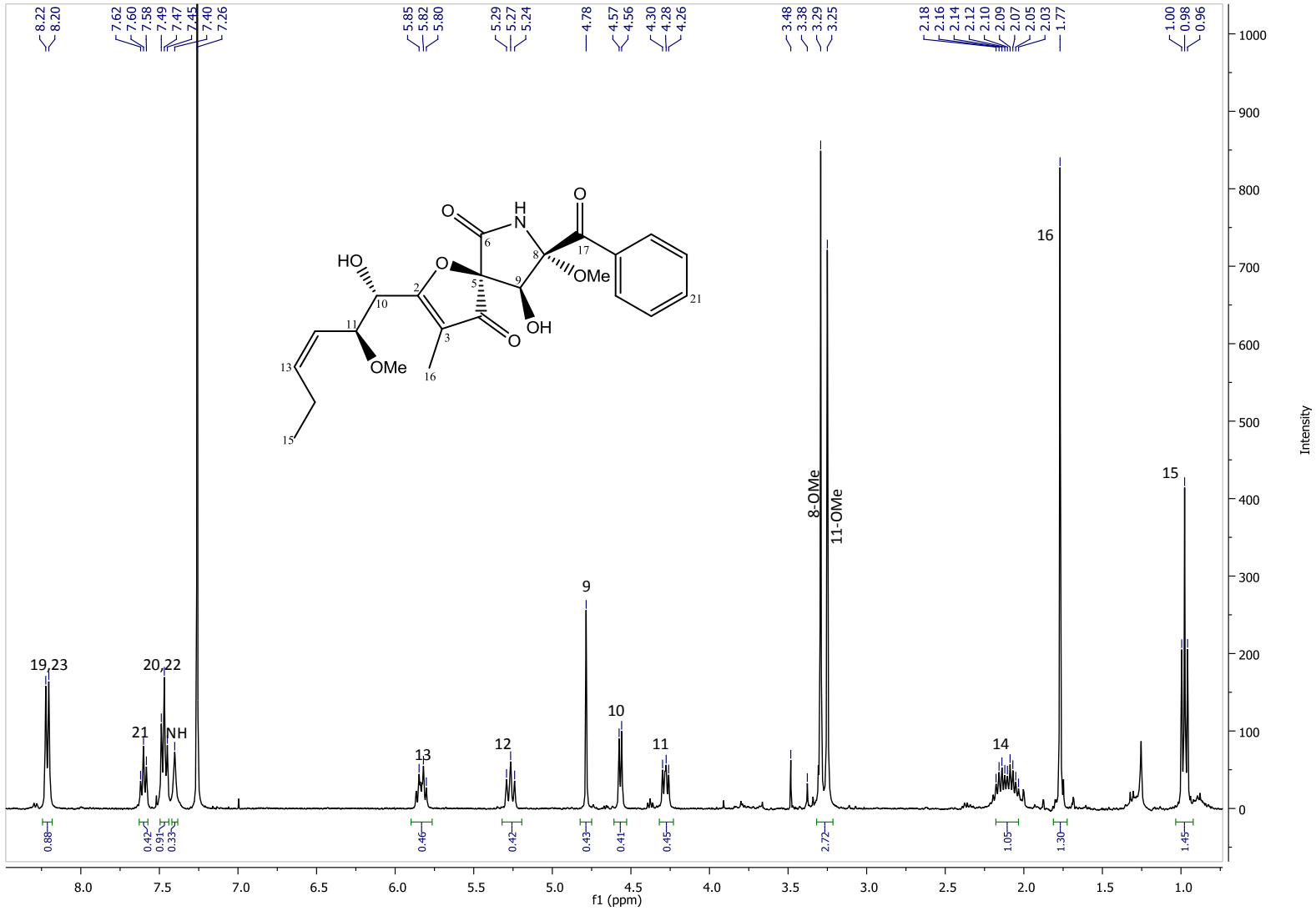

Fig. S10. ^{1}H NMR spectrum of **10**

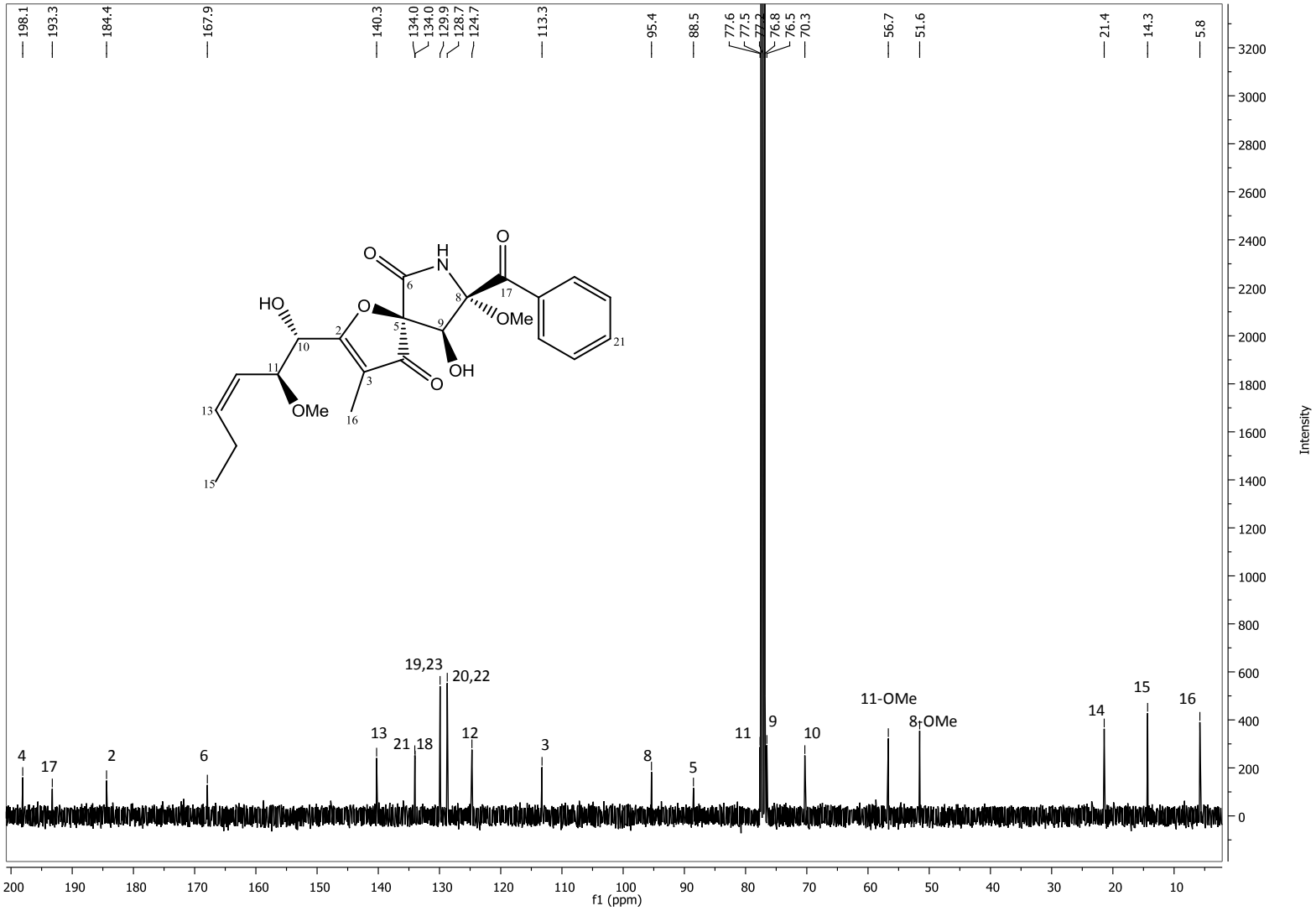

Fig. S11. ^{13}C NMR spectrum of **10**

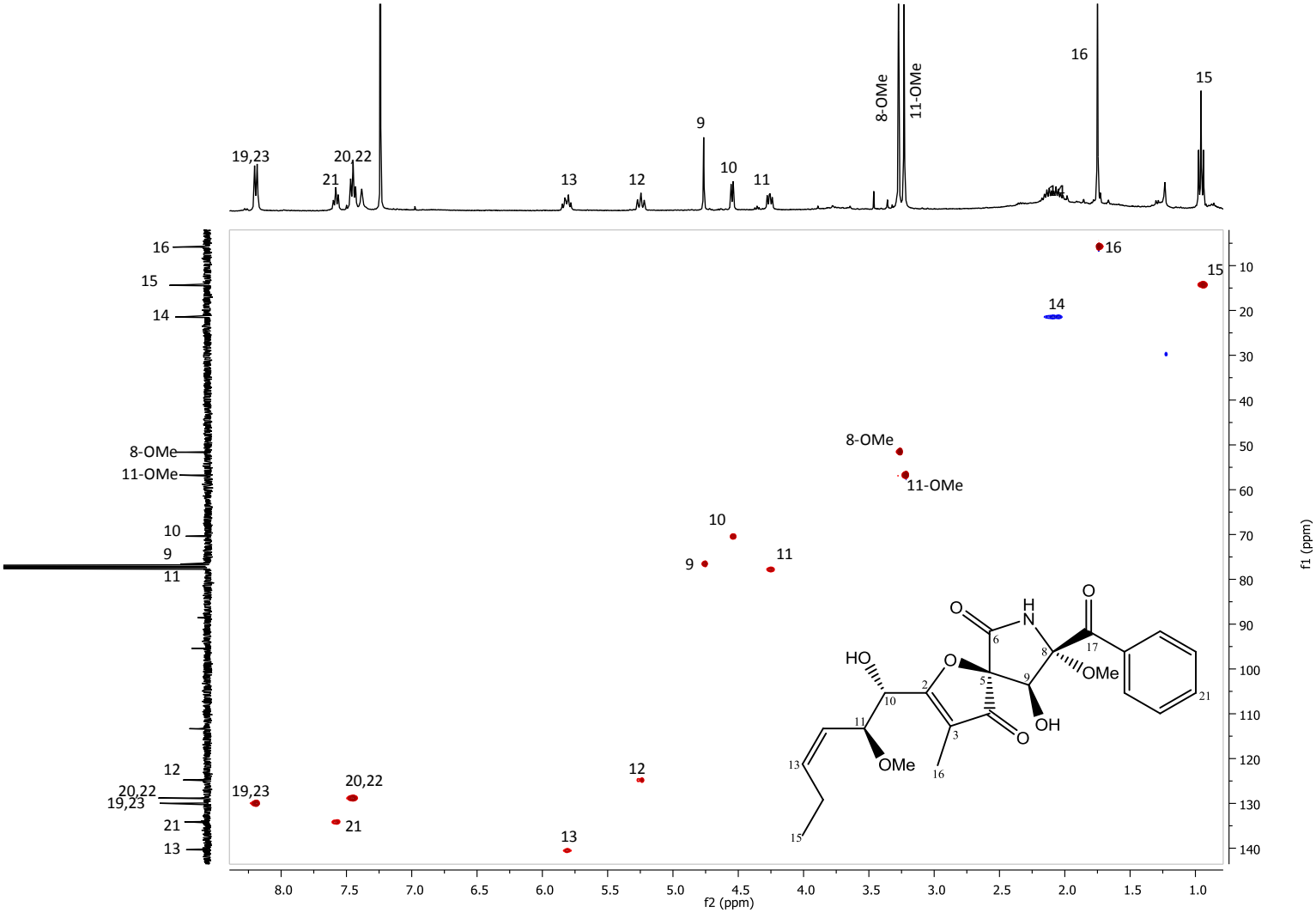

Fig. S12. HSQC spectrum of **10**

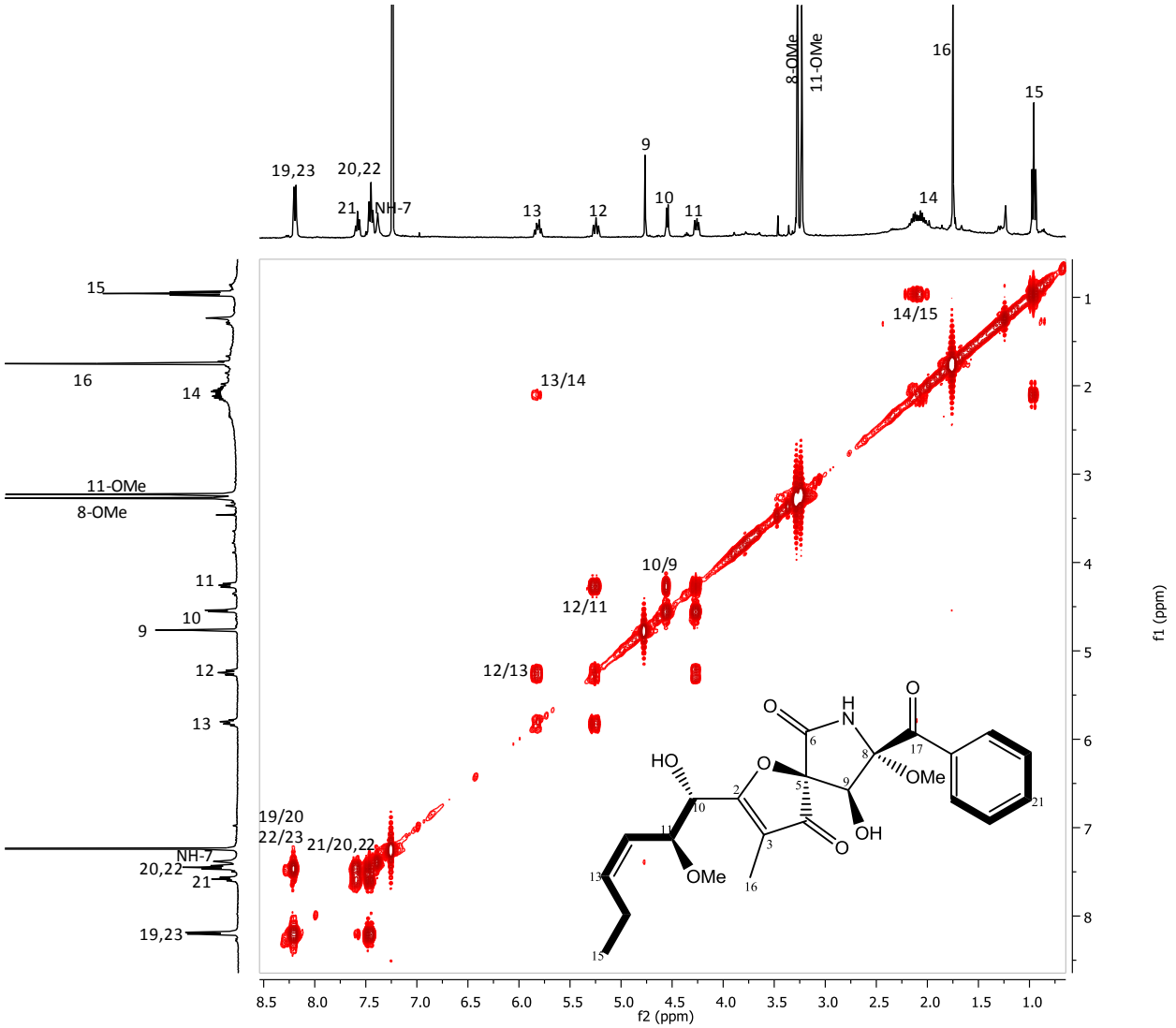

Fig. S13. COSY spectrum of **10**

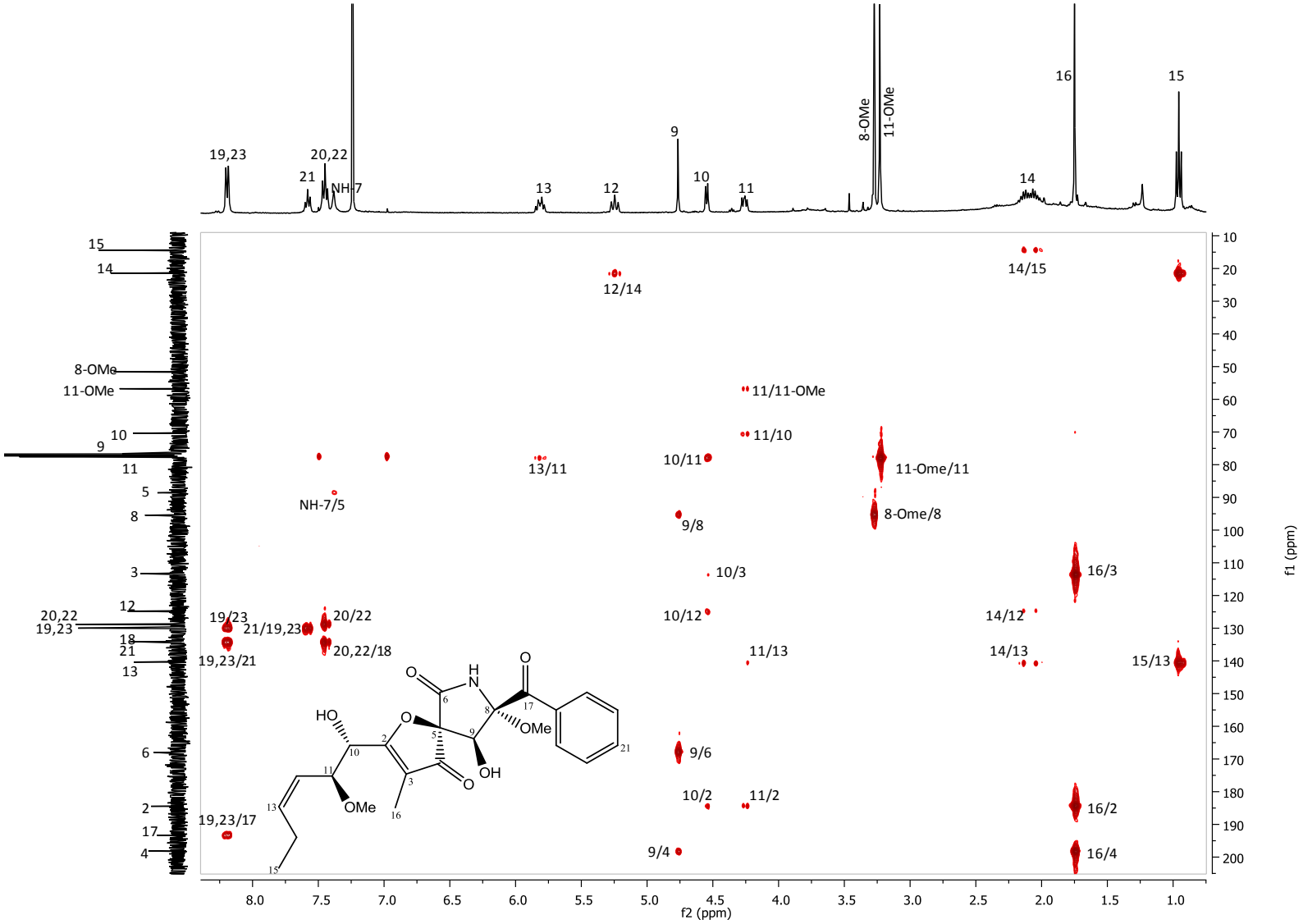

Fig. 14. HMBC spectrum of **10**

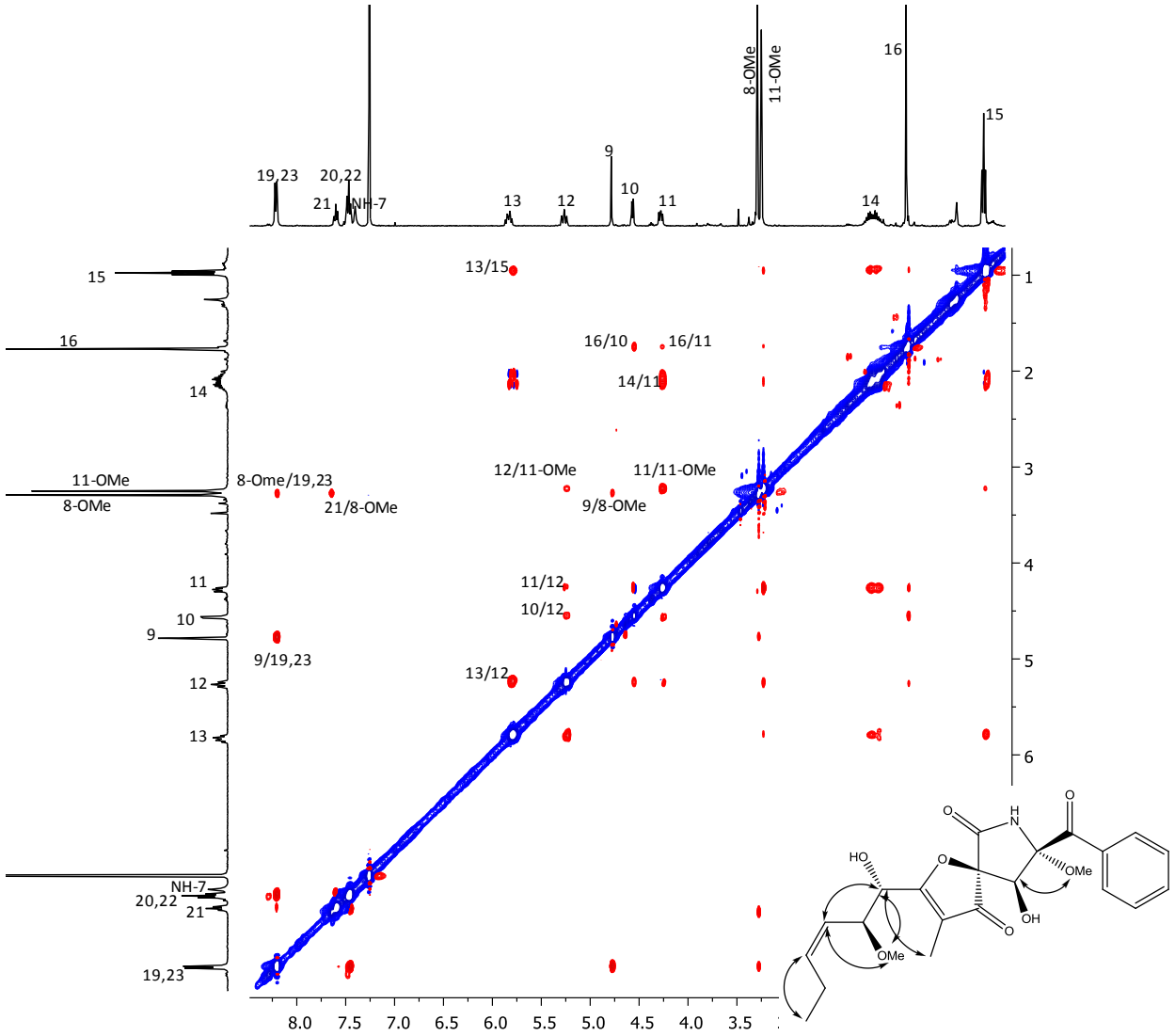

Fig. S15. NOESY spectrum of **10**

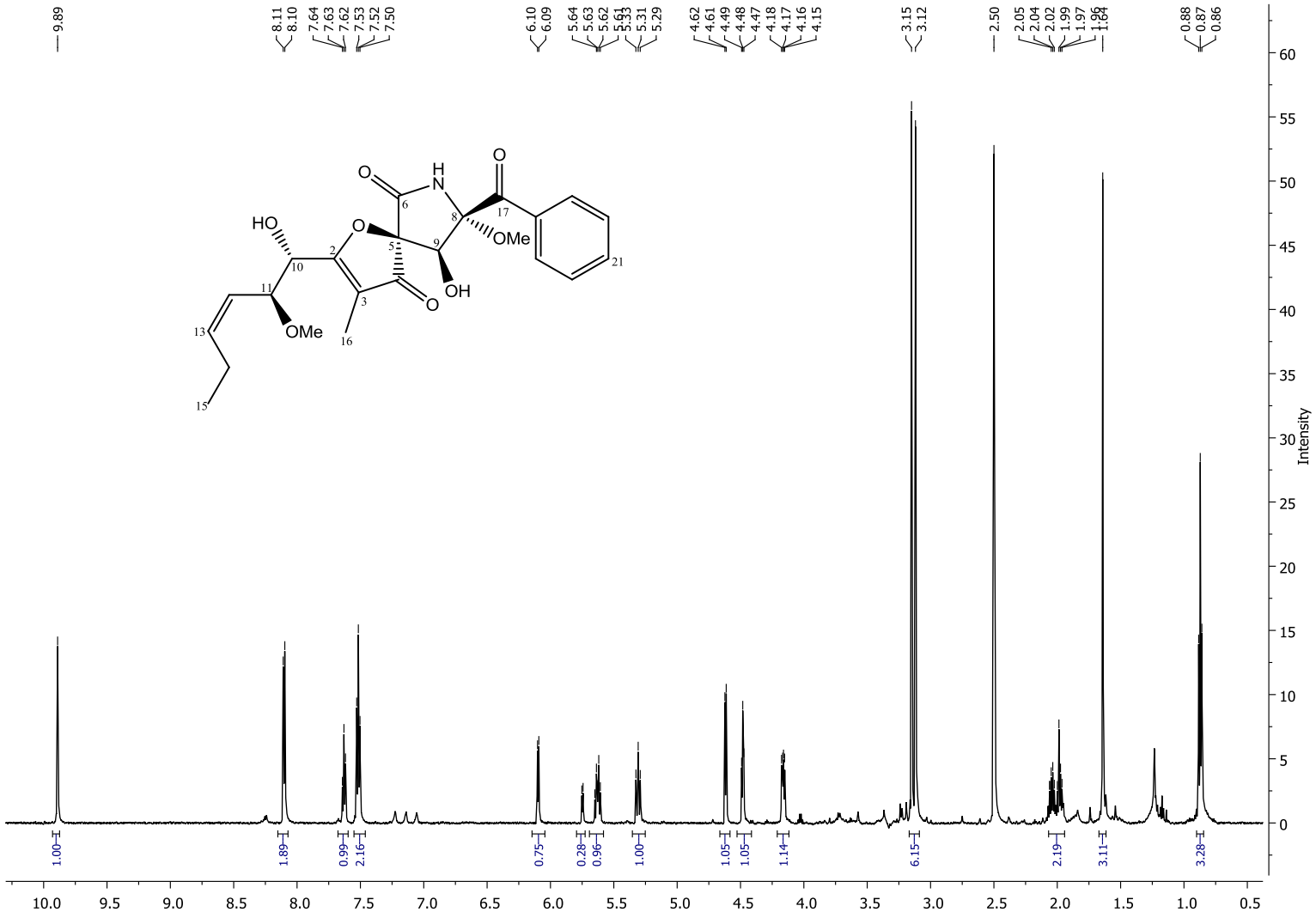

Fig. S16. ^{1}H NMR spectrum of **10** in DMSO-d_6

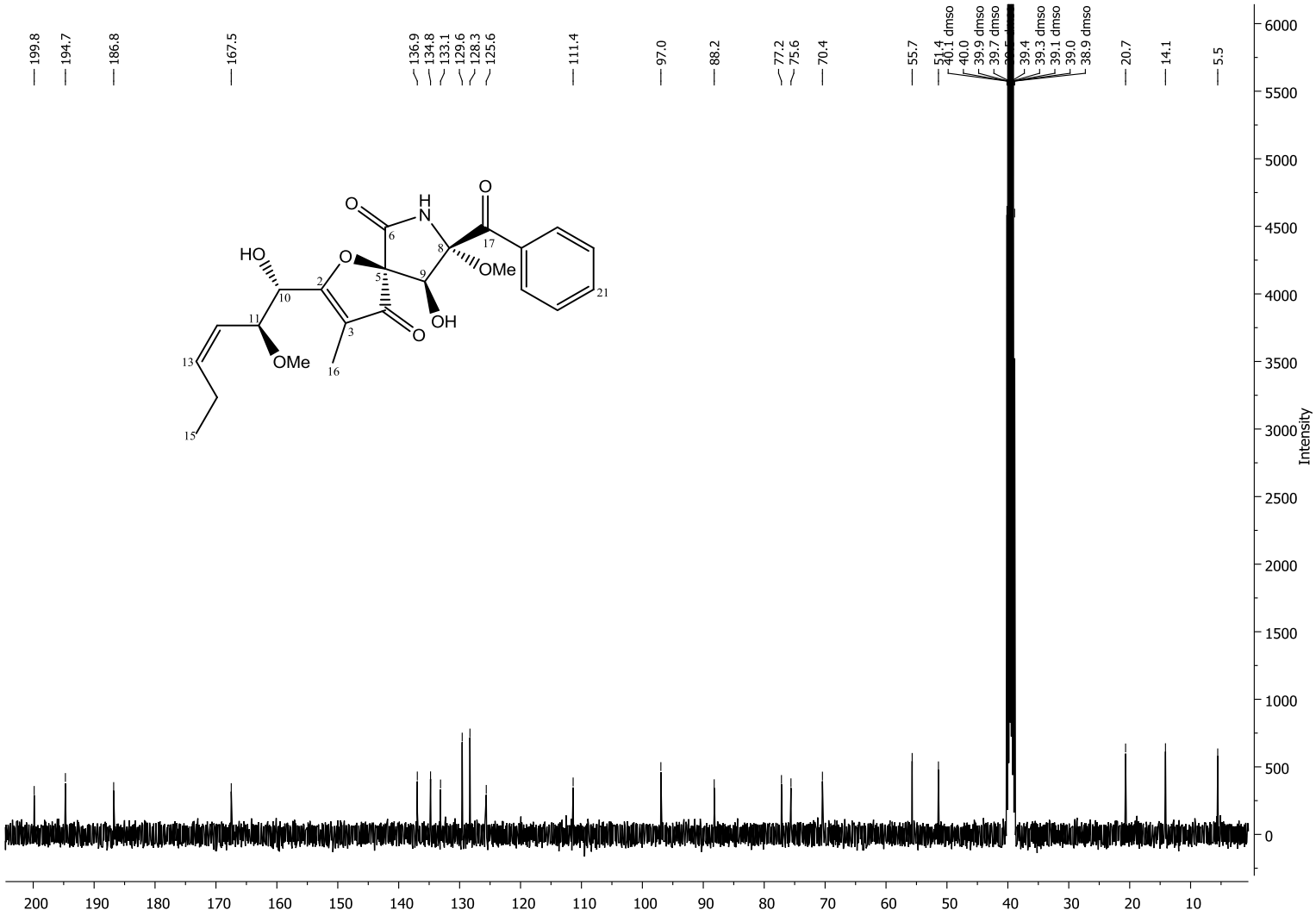

Fig. S17. ^{13}C NMR spectrum of **10** in DMSO-d_6