Electronic Supplementary Material (ESI) for Organic & Biomolecular Chemistry.

Supporting Information

Asymmetric Synthesis and Absolute Stereochemistry of A Labdane-type Diterpenoid Isolated from the Rhizomes of *Isodan yuennanensis*

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Table S1. Comparison of ^{1}H NMR data for natural 2 with those of synthetic 2[1]

Position	Natural (400 MHz, CDCl3)	Synthetic (400 MHz, CDCl3)	Δδ(ppm)
1a	1.95 (overlap)	1.95 (m)	0.00
1b	1.21 (dd,13.4, 4.2 Hz)	1.21 (dd, 13.5, 4.3 Hz)	0.00
2a	2.10 (qt, 13.7, 3.3 Hz)	2.10 (m)	0.00
2b	1.51	1.50 (m)	-0.01
3a	1.47	1.46 (m)	-0.01
3b	1.13 (dd, 12.9, 3.3 Hz)	1.13 (dd,13.1,3.1 Hz)	0.00
4	--	--	--
5	1.38 (dd,12.7, 4.6 Hz)	1.38 (m)	0.00
6	1.62 (overlap)	1.63 (m)	0.01
7	1.92 (overlap)	1.90 (m)	-0.02
8	--	--	--
9	1.77 (dd, 7.5, 4.9 Hz)	1.76 (dd, 7.6, 4.9 Hz)	-0.01
10	--	--	--
11	2.27 (m)	2.27 (m)	0.00
12	5.41 (t, 6.8 Hz)	5.41 (t, 6.7 Hz)	0.00
13	--	--	--
14	6.33 (dd, 17.3, 10.7 Hz)	6.33 (dd, 17.4, 10.7 Hz)	0.00
15a	5.09 (d, 17.3Hz)	5.09 (d, 17.4 Hz)	0.00
15b	4.94 (d, 10.7Hz)	4.94 (d, 10.7 Hz)	0.00
16	1.72 (s)	1.71 (s)	-0.01
17	--	--	--
18	0.9 (s)	0.9 (s)	0.00
19	0.9 (s)	0.9 (s)	0.00

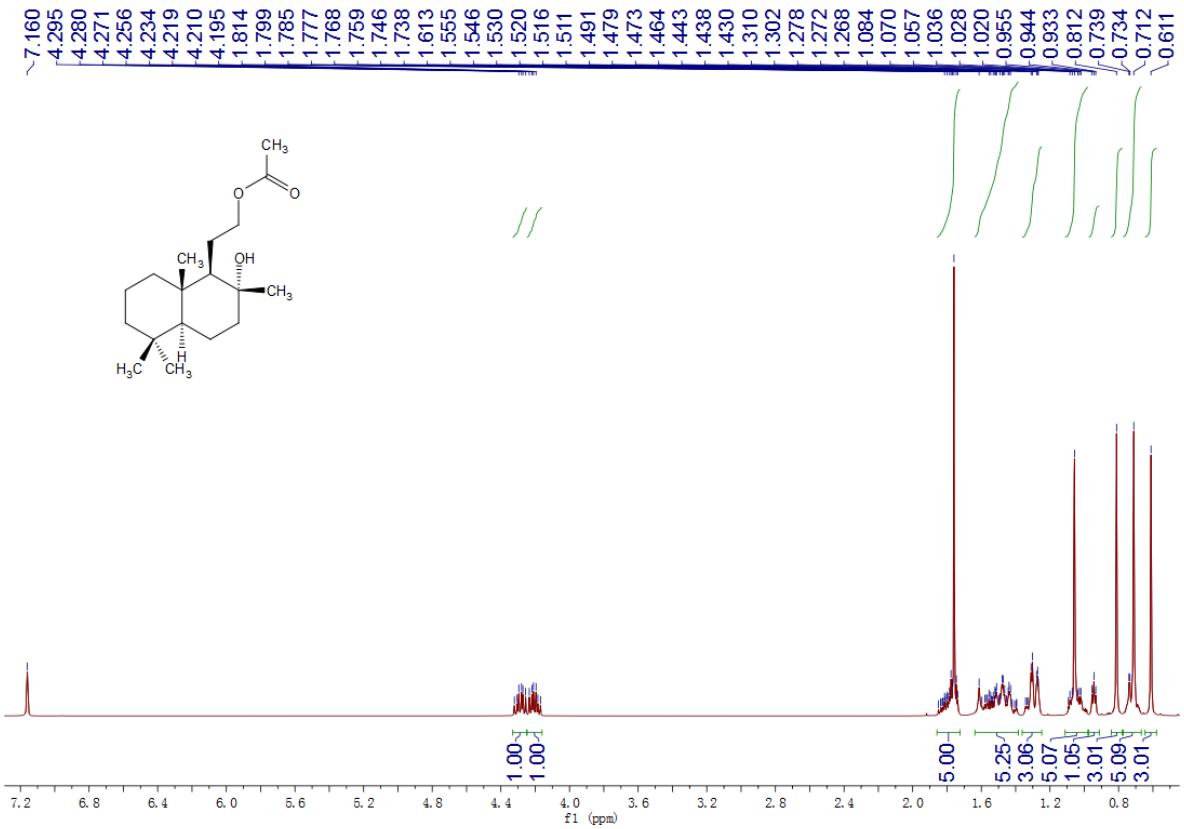
Table S2. Comparison of ^{13}C NMR data of natural 2 with those of synthetic 2[1]

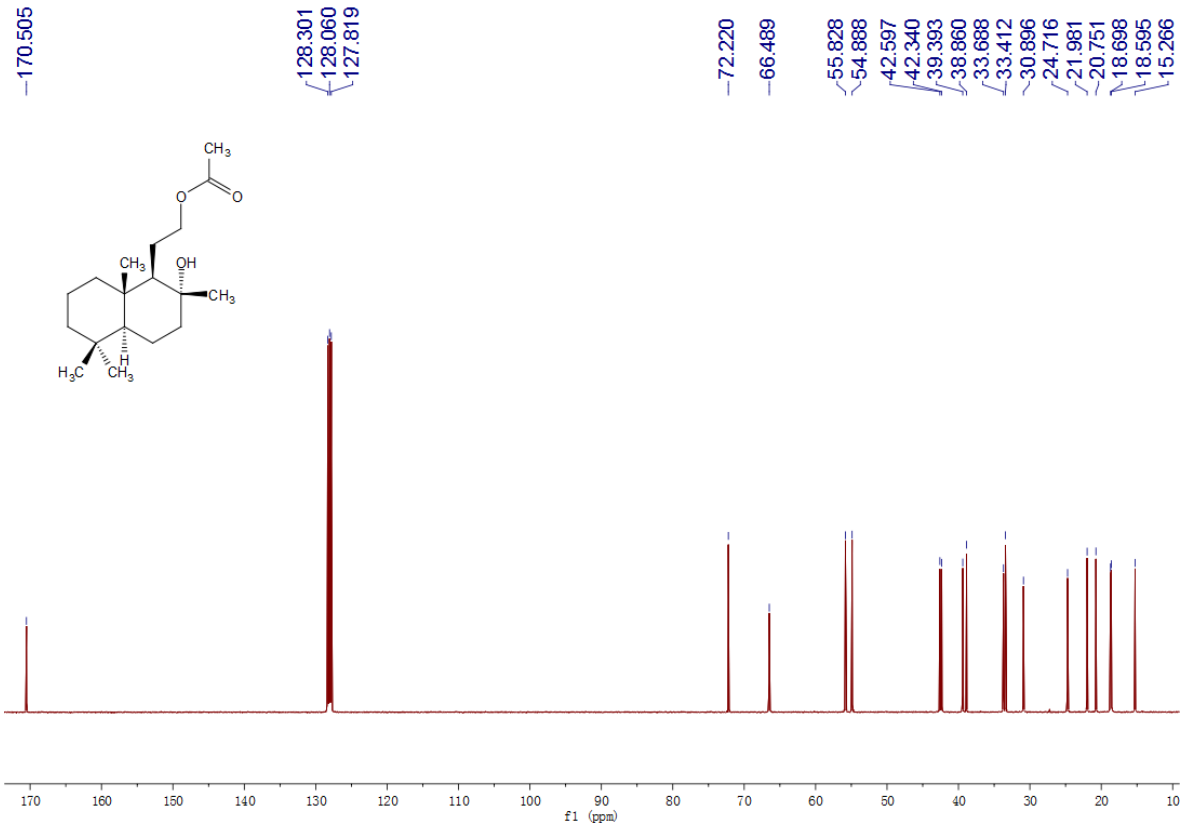
Position	Natural (100 MHz, CDCl3)	Synthetic (100 MHz, CDCl3)	Δδ(ppm)
1	29.5	29.6	0.1
2	18.6	18.6	0.0
3	41.5	41.6	0.1
4	34.1	34.1	0.0
5	50.8	50.9	0.1
6	21.4	21.4	0.0
7	37.0	37.1	0.1
8	84.0	84.0	0.0
9	59.5	59.5	0.0
10	50.1	50.2	0.1
11	24.4	24.5	0.1
12	131.3	131.3	0.0
13	134.6	134.6	0.0
14	141.0	141.1	0.1
15	111.1	111.1	0.0
16	11.9	12.0	0.1
17	22.6	22.7	0.1
18	32.2	32.2	0.0
19	20.2	20.2	0.0
20	179.9	179.9	0.0

References:

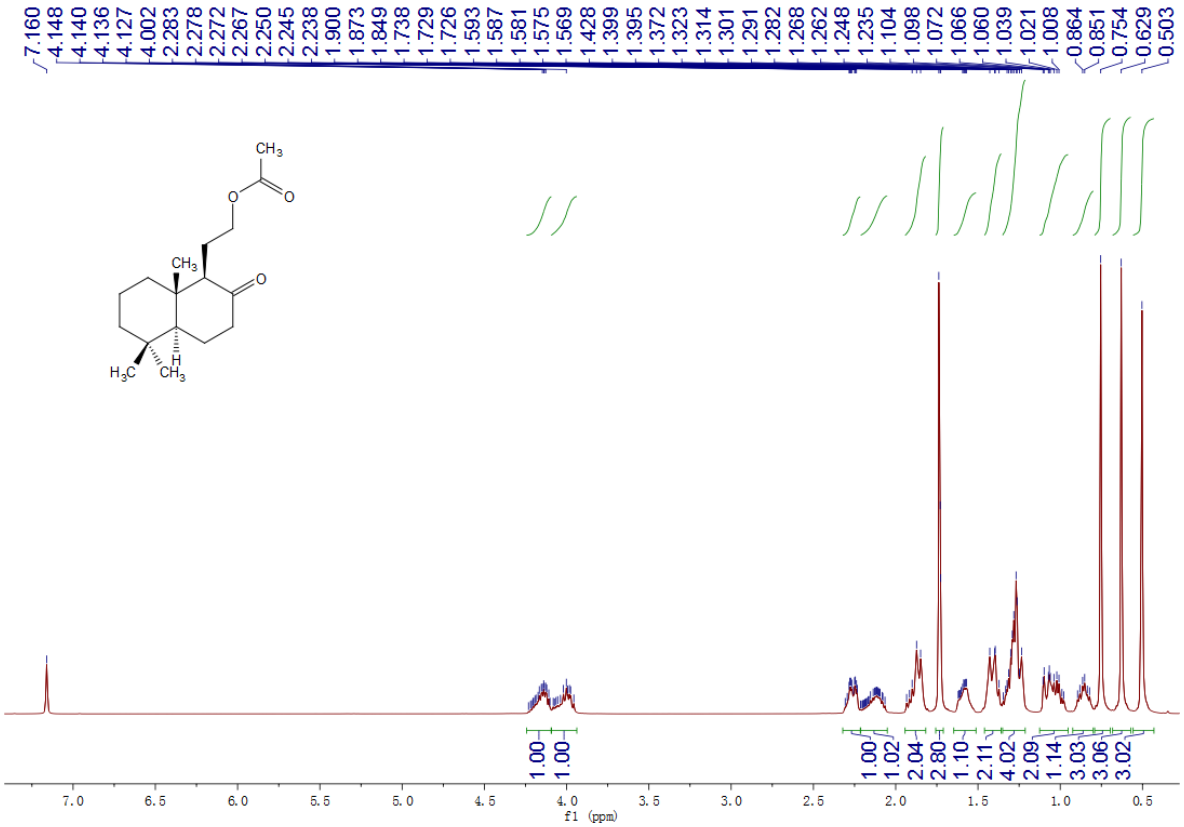
1. Zhen-Yuan Huang, Bo Huang, Chao-Jiang Xiao, Xiang Dong & Bei Jiang. *Natural Product Research, 2015, Vol. 29, No. 7, 628–63.,*

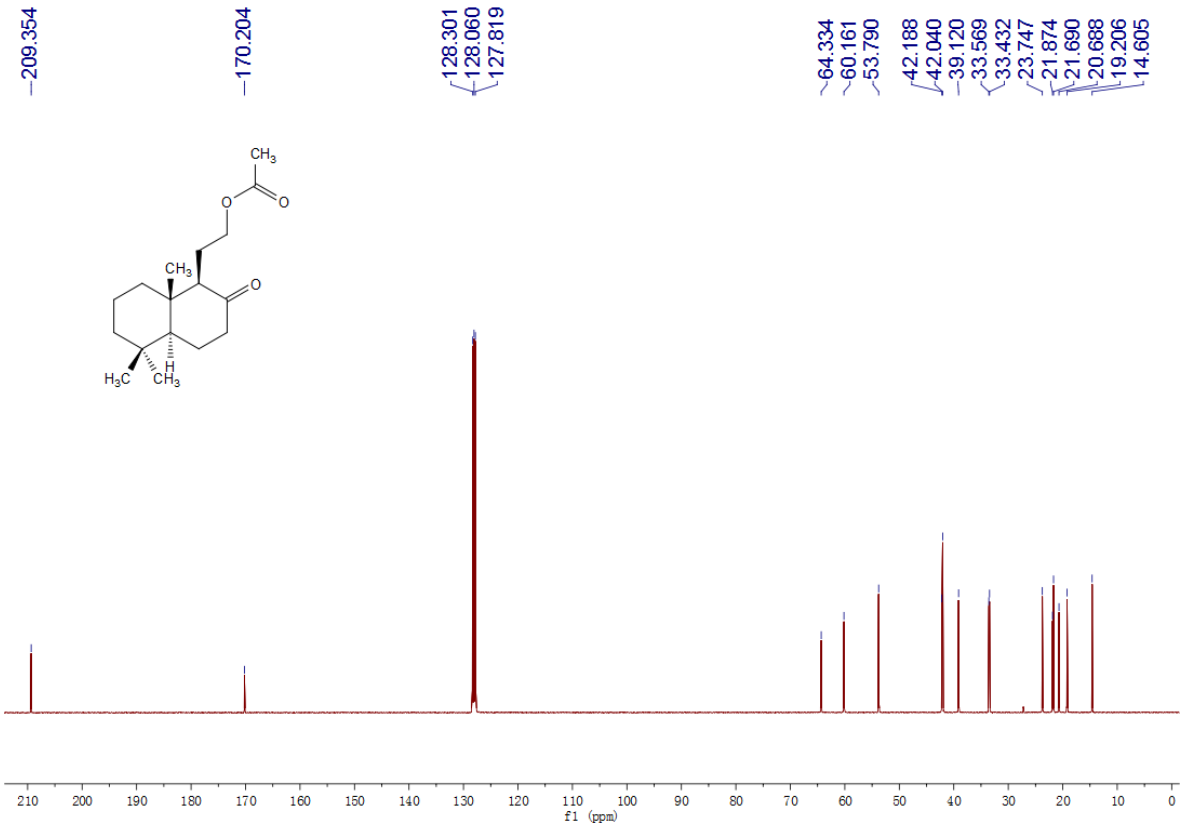
^{1}H and ^{13}C NMR spectra of compound 4



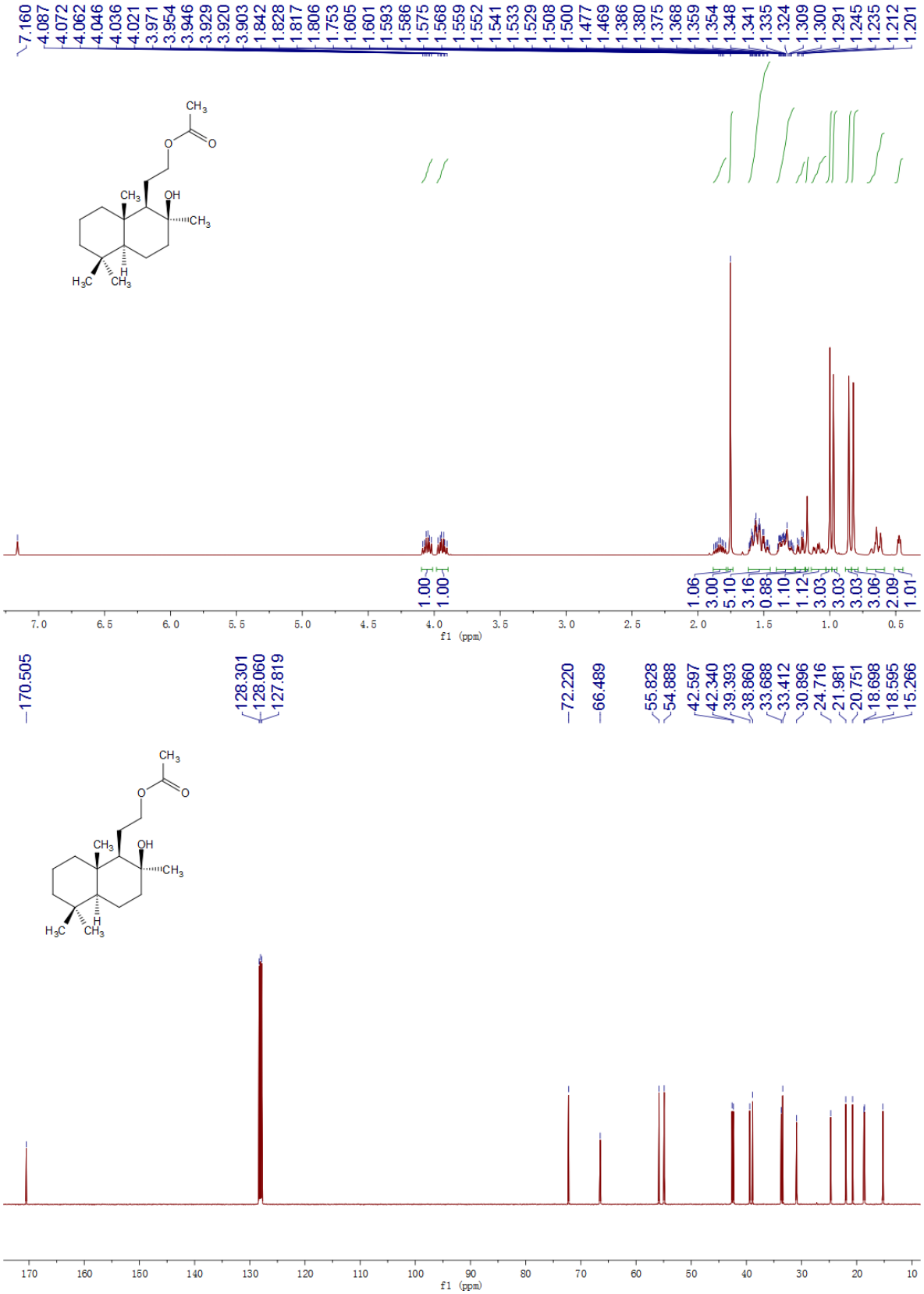


^{1}H and ^{13}C NMR spectra of compound 6

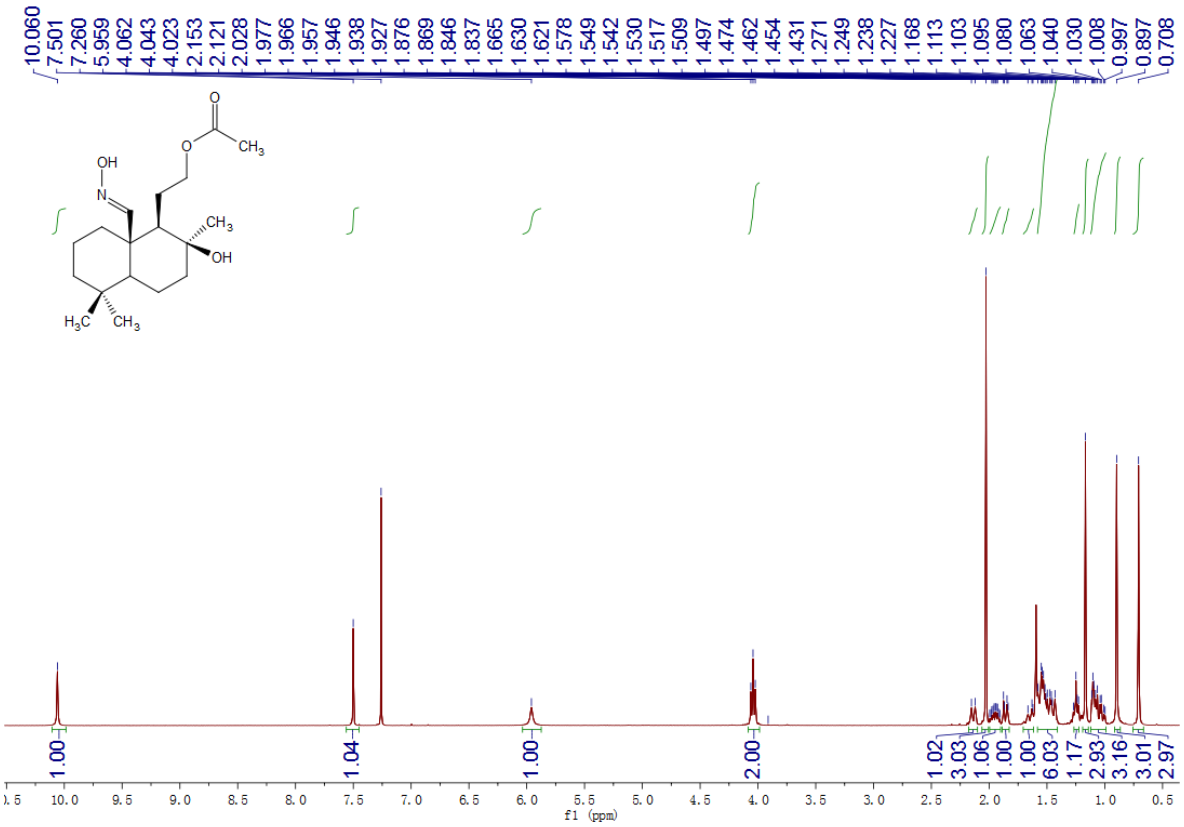


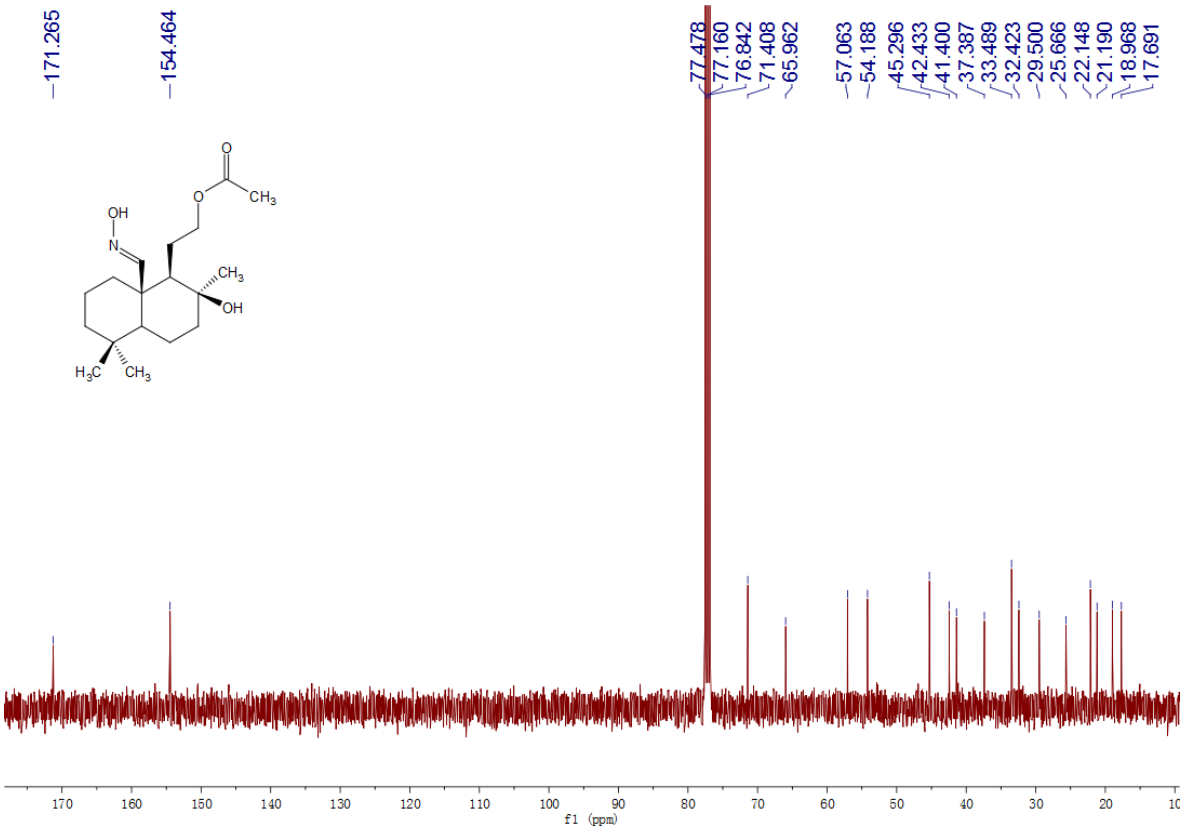


^{1}H and ^{13}C NMR spectra of compound 7

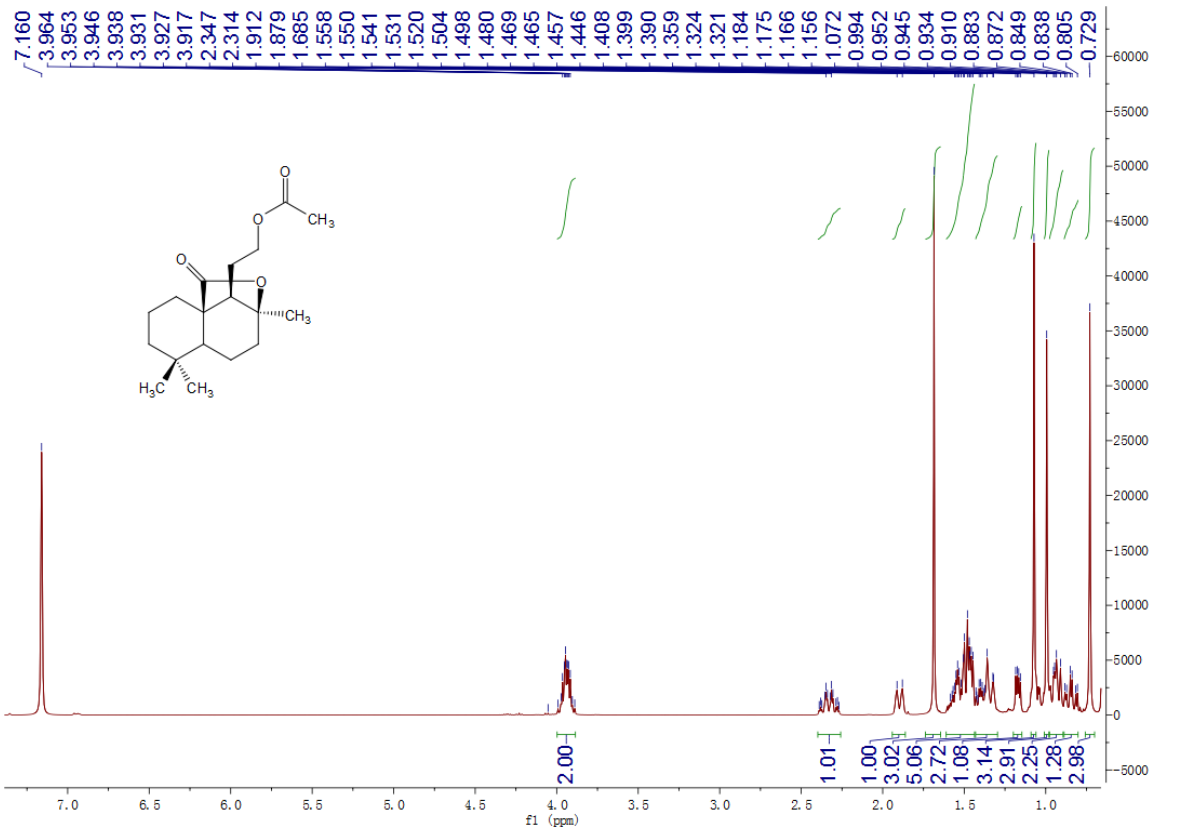


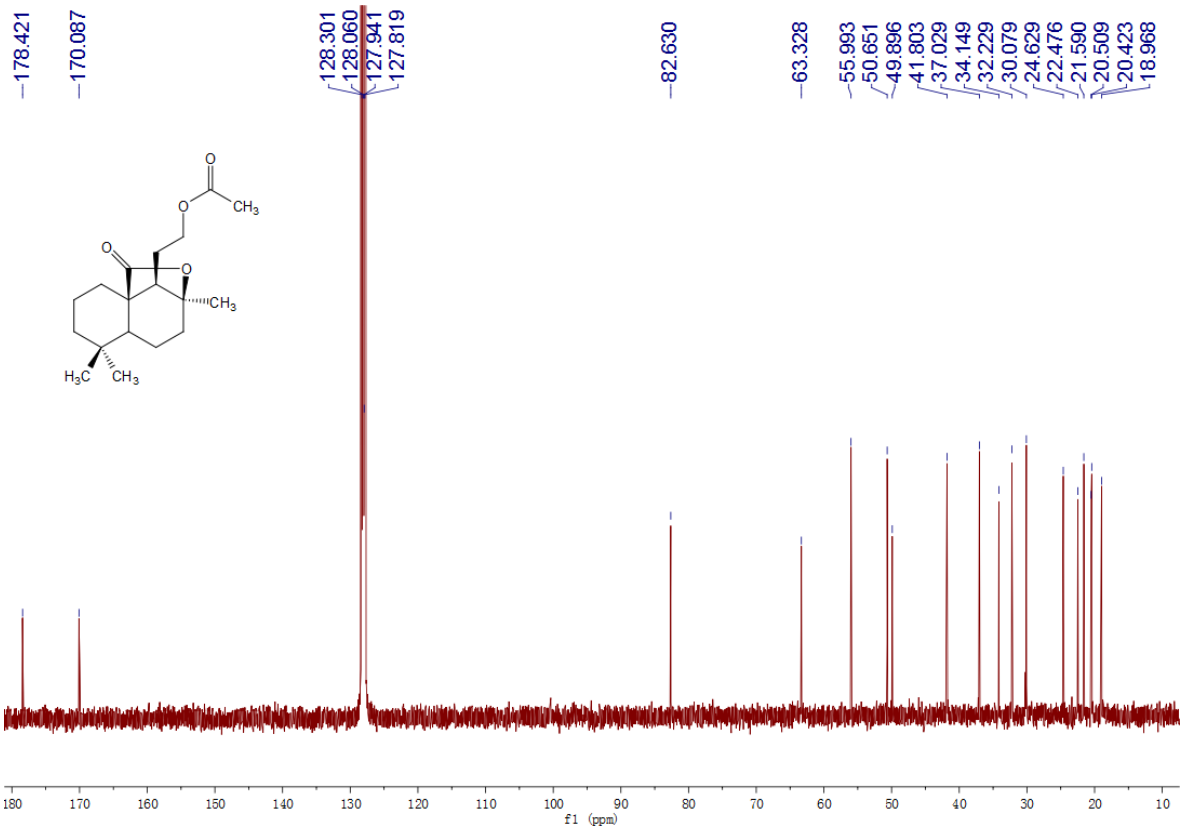
^{1}H and ^{13}C NMR spectra of compound **9**



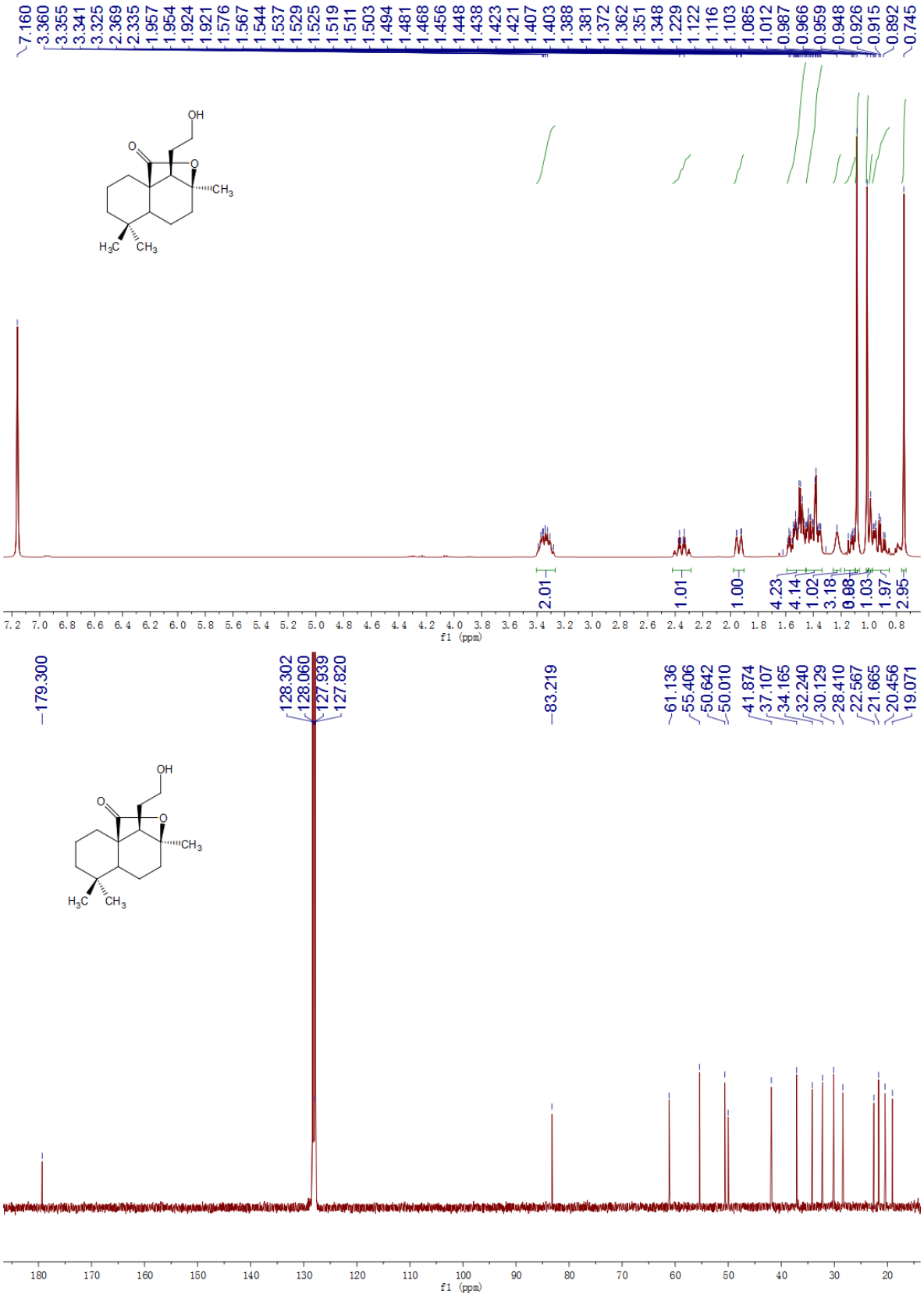


^{1}H and ^{13}C NMR spectra of compound **10**

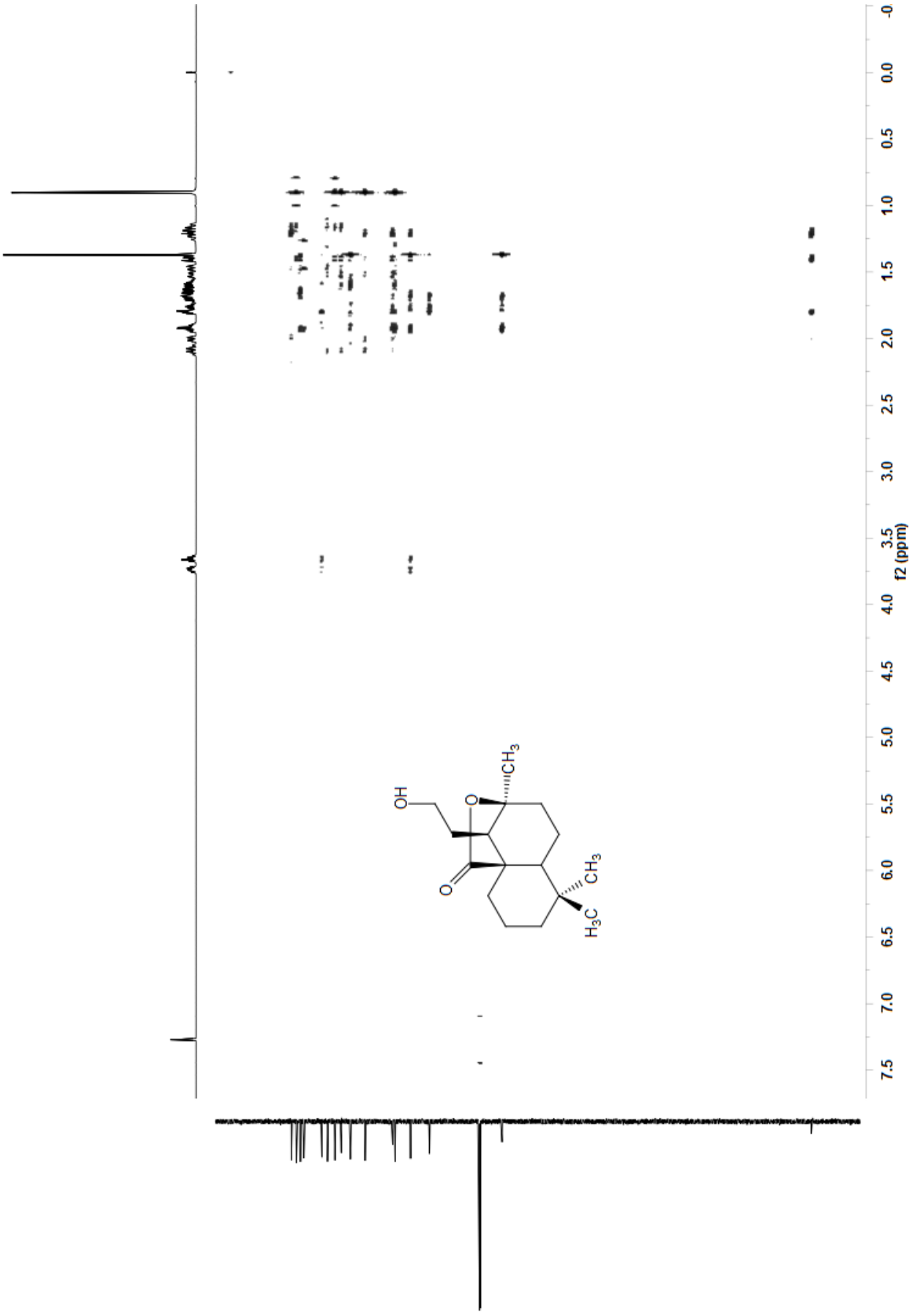




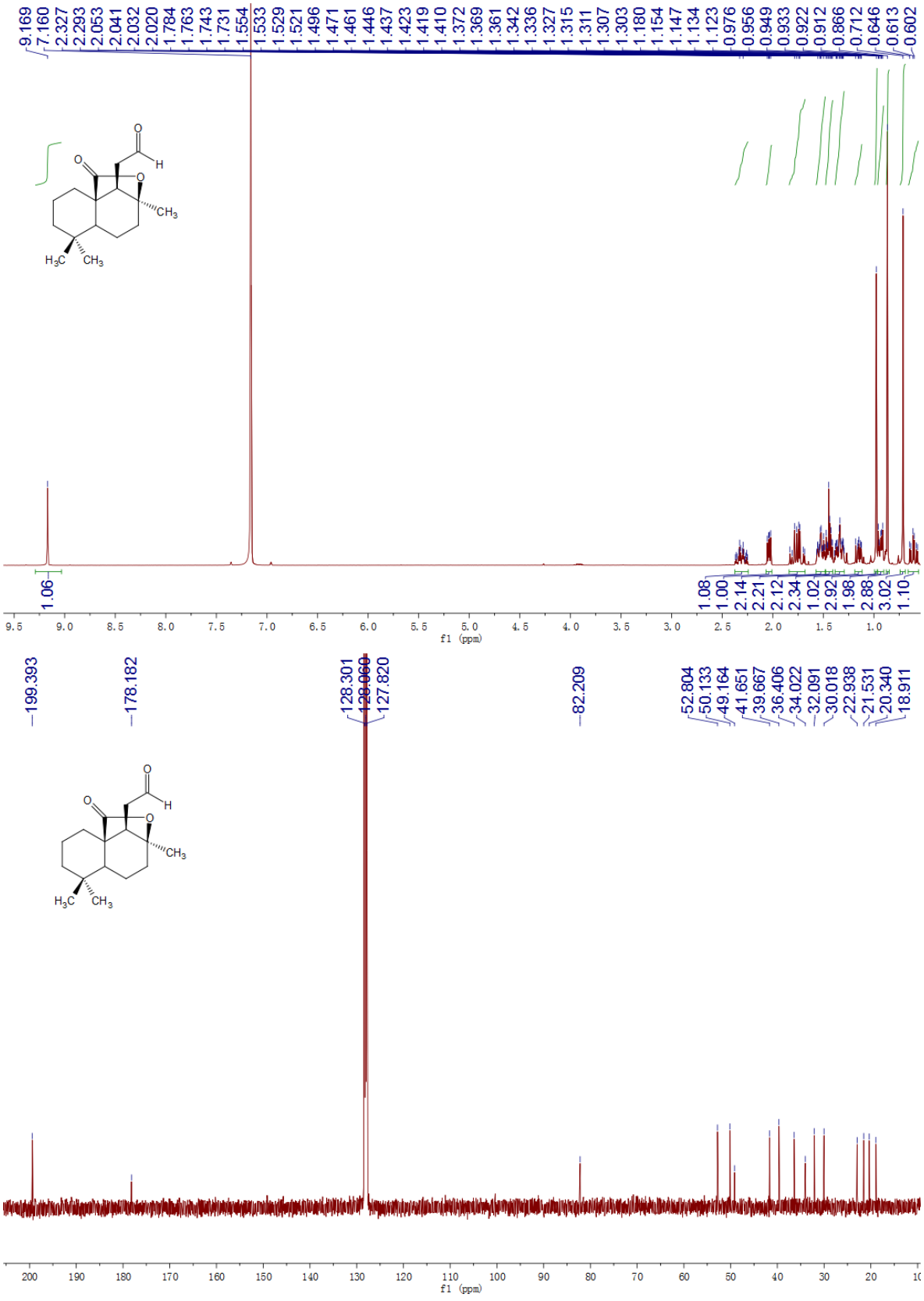
^{1}H and ^{13}C NMR spectra of compound 11



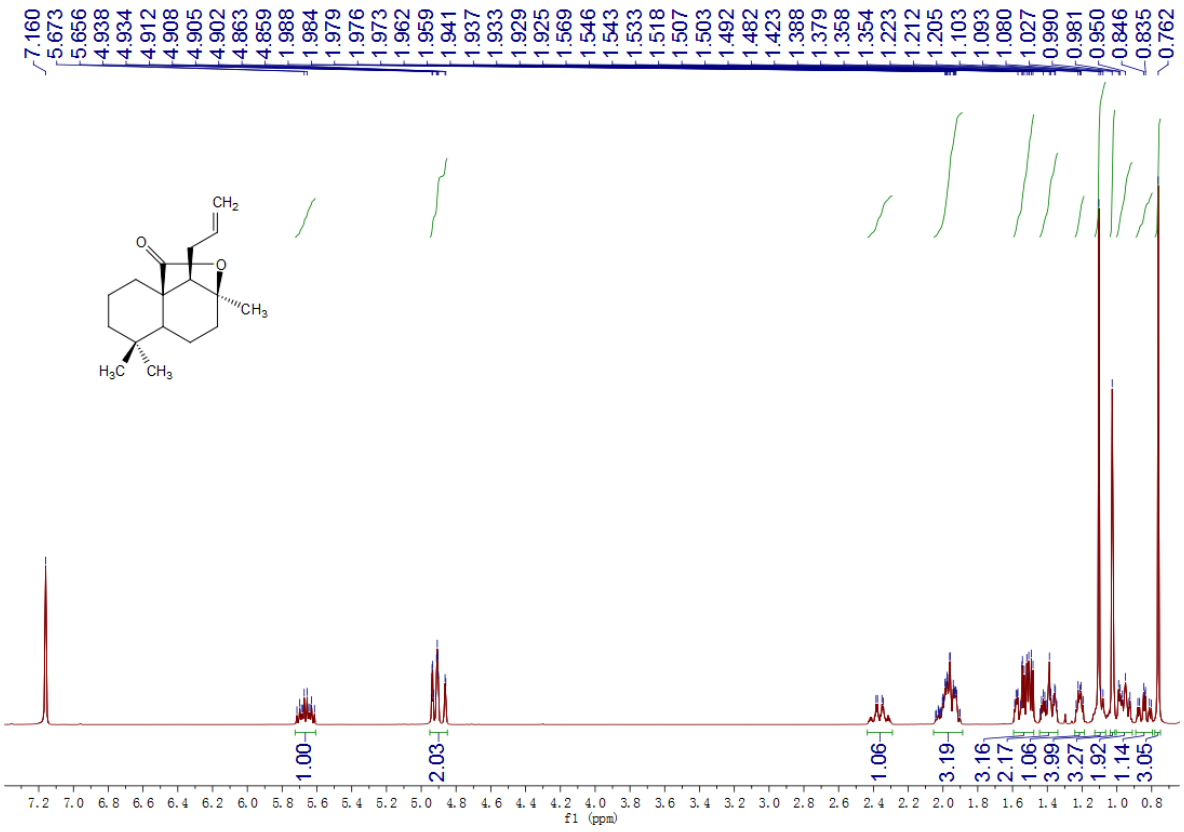
HMBC for compound **11** in $CDCl_3$

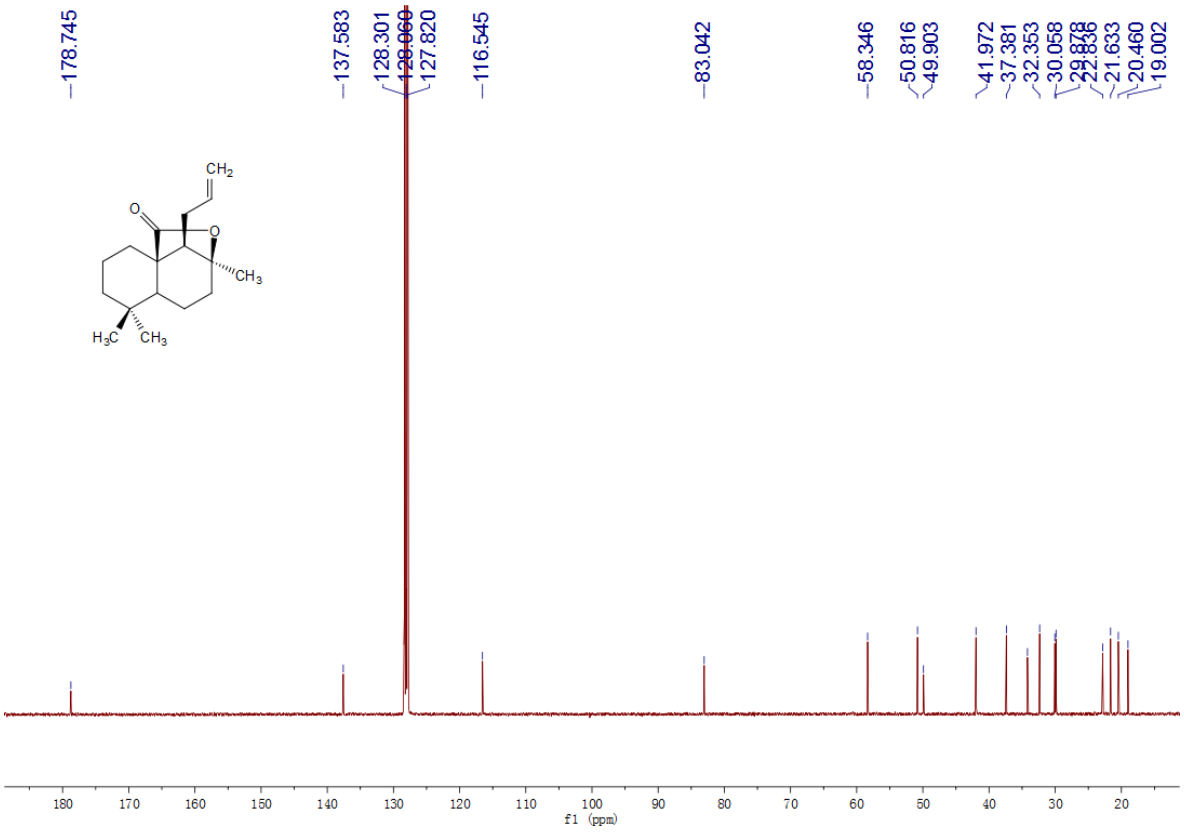


^{1}H and ^{13}C NMR spectra of compound 12

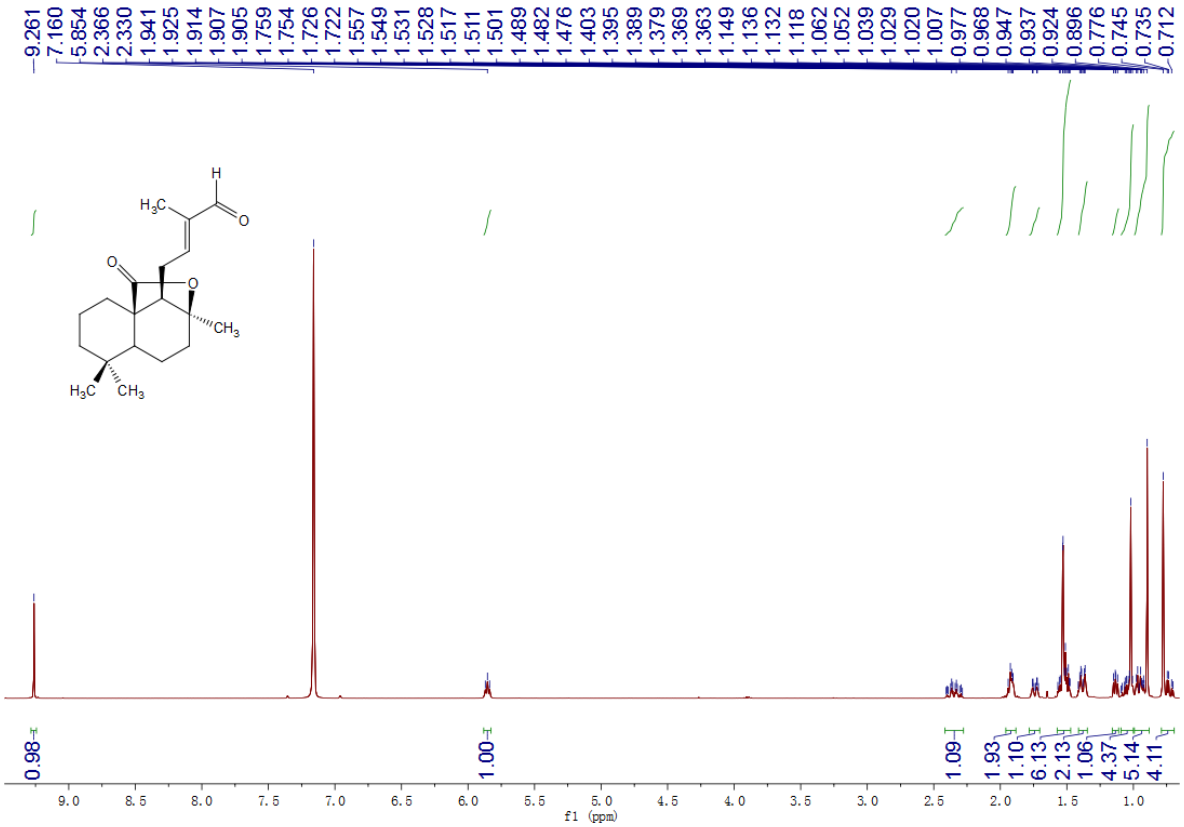


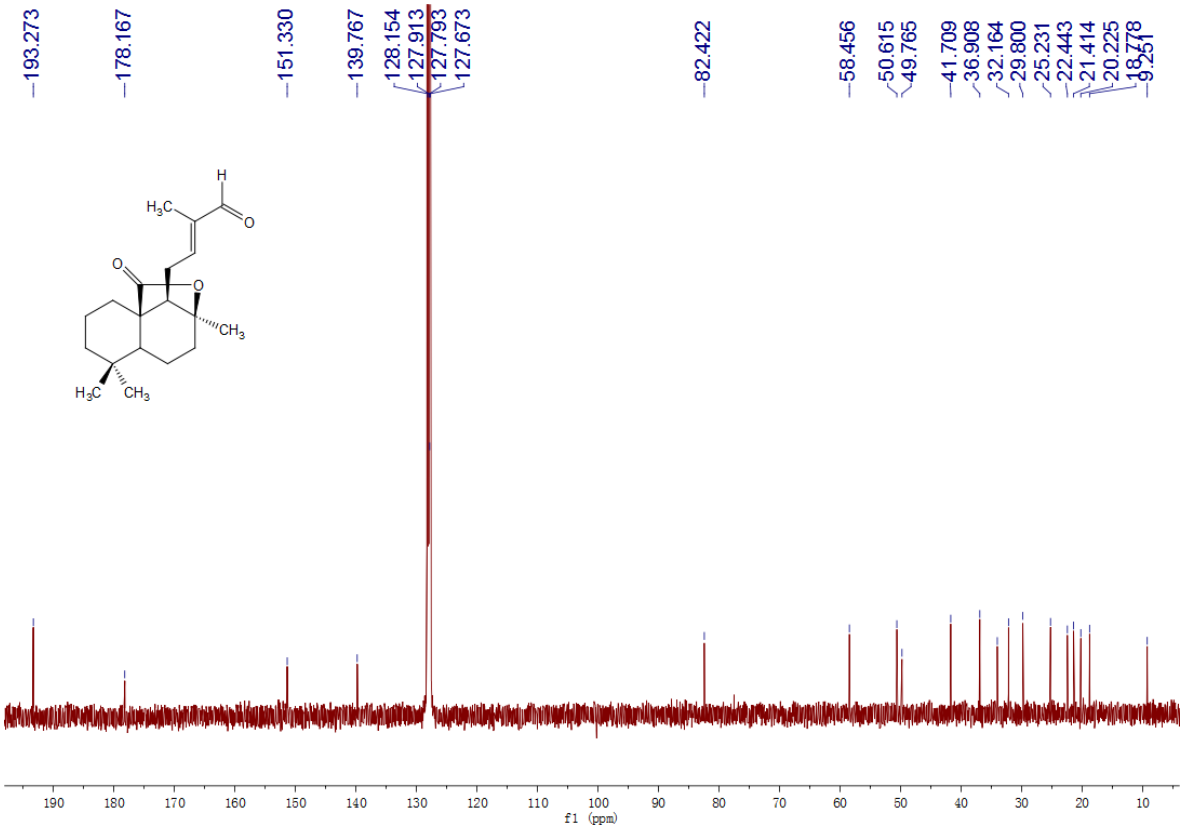
^{1}H and ^{13}C NMR spectra of compound **13**





^{1}H and ^{13}C NMR spectra of compound **14**





^{1}H and ^{13}C NMR spectra of compound **2**