Garynthone A-I, PPAPs with diverse skeletons isolated from *Garcinia yunnanensis* and its immunosuppressive activity

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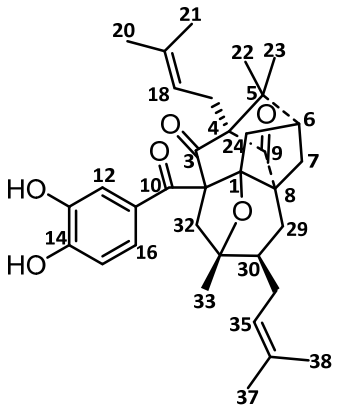
Contents

Table S1. The ^{1}H (600 MHz) and ^{13}C (150 MHz) NMR data of **1** in pyridine-d_5 and MeOH-d_4 (δ in ppm, J in Hz)

No.

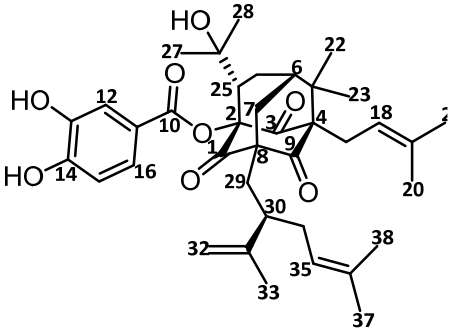
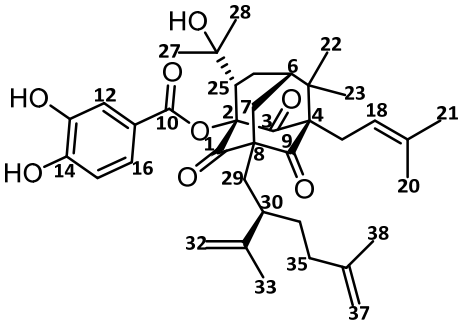


	1[a]		**1**[b]	
	^{1}H	^{13}C	^{1}H	^{13}C
1	-	92.3, C	-	93.1, C
2	-	70.9, C	-	71.9, C
3	-	206.9, C	-	207.35, C
4	-	72.8, C	-	73.7, C
5	-	48.7, C	-	49.7, C
6	1.73, overlap	48.0, CH	1.92, overlap	49.6 CH
7	2.15, overlap 1.86, d (11.2)	47.1, CH_2	2.15, overlap 1.83, overlap	48.1, CH_2
8	-	60.3, C	-	61.2, C
9	-	210.6, C	-	212.0, C
10	-	197.9, C	-	199.2, C
11	-	130.5, C	-	130.8, C
12	7.91, s	119.0, CH	7.15, d (2.2)	118.5, CH
13	-	146.6, C		145.9, C
14	-	151.8, C		151.0, C
15	7.28, brd (8.5)	115.5, CH	6.73, d (8.5)	114.9, CH
16	7.50, brd (8.5)	124.2, CH	6.91, dd (8.5, 2.2)	125.0, CH
17	2.61, d (11.7) 2.51, d (14.9)	26.6, CH_2	2.42, dd (13.5, 9.4) 2.25, overlap	27.0, CH_2
18	5.50, s	121.3, CH	5.06, m	121.3, CH
19	-	134.6, C	-	135.9, C
20	1.88, s	26.3, CH_3	1.73, s	26.4, CH_3
21	1.80, s	18.4, CH_3	1.67, s	18.3, CH_3
22	0.84, s	25.1, CH_3	0.90, s	25.4, CH_3
23	0.93, s	23.3, CH_3	0.92, s	23.2, CH_3
24	3.69, d (14.7) 2.45, d (14.5)	36.1, CH_2	3.26, dd (14.7, 3.2) 2.25, overlap	36.7, CH_2
29	3.16, t (11.5) 1.12, overlap	31.1, CH_2	2.86, dd (14.0, 8.7) 0.88, d (8.9)	31.6, CH_2

30	1.66, overlap	43.2, CH	1.58, dd, (9.3, 4.2)	44.0, CH
31	-	83.8, C	-	85.3, C
32	3.00, d (14.4) 2.13, overlap	49.5, CH_2	2.67, d (14.5) 1.90, d (14.5)	50.0, CH_2
33	1.08, s	23.4, CH_3	0.91, s	23.5, CH_3
34	2.22, d (15.3) 1.94, m	31.8, CH_2	2.17, dd (12.3, 3.3) 1.85, overlap	32.4, CH_2
35	5.23, s	123.1, CH	5.13, m	123.4, CH
36	-	132.4, C	-	133.5, C
37	1.70, s	25.9, CH_3	1.71, s	26.0, CH_3
38	1.57, s	17.9, CH_3	1.61, s	18.0, CH_3

[a] recorded in pyridine-d_5; [b] recorded in MeOH-d_4

Table S2. The ^{1}H (600 MHz) and ^{13}C (150 MHz) NMR data of **2** and **3** in pyridine-d_5 (δ in ppm, J in Hz)

No.				
	2		**3**	
	^{1}H	^{13}C	^{1}H	^{13}C
1	-	201.8, C	-	201.8, C
2	-	89.8, C	-	89.8, C
3	-	202.3, C	-	202.4, C
4	-	73.3, C	-	73.4, C
5	-	47.1, C	-	47.1, C
6	2.12, t (7.7)	42.1, CH	2.12, t (7.7)	42.1, CH
7	2.59, dd (14.6, 6.4) 2.41, overlap	37.0, CH_2	2.55, dd (14.6, 6.5) 2.38, d (15.4)	37.2, CH_2
8	-	66.5, C	-	66.5, C
9	-	204.8, C	-	204.8, C
10	-	167.0, C	-	167.0, C
11	-	120.2, C	-	120.2, C
12	8.06, d (2.1)	118.1, CH	8.06, d (2.1)	118.1, CH
13		147.8, C	-	147.8, C
14		154.1, C	-	154.2, C
15	7.21, d (8.3)	116.8, CH	7.21, d (8.3)	116.8, CH
16	7.95, dd (8.3, 2.1)	124.2, CH	7.96, dd (8.3, 2.1)	124.2, CH
17	2.89, dd (14.6, 7.2)	26.6, CH_2	2.86, dd (14.6, 7.2)	26.6, CH_2

	2.77, dd (14.6, 5.6)		2.76, dd (14.5, 5.6)	
18	5.56, m	122.4, CH	5.55, m	122.4, CH
19	-	131.3, C	-	131.3, C
20	1.62, s	26.5, CH_3	1.62, s	26.6, CH_3
21	1.73, s	18.4, CH_3	1.70, s	18.3, CH_3
22	1.14, s	25.6, CH_3	1.13, s	25.6, CH_3
23	1.10, s	23.6, CH_3	1.07, s	23.6, CH_3
24	2.38, overlap 2.19, dd (15.5, 11.9)	27.1, CH_2	2.36, overlap 2.19, dd (15.2, 11.2)	27.2, CH_2
25	2.65, dd (11.6, 7.7)	46.8, CH	2.64, overlap	46.8, CH
26	-	74.6, C	-	74.7, C
27	1.84, s	31.0, CH_3	1.83, s	31.2, CH_3
28	1.72, s	29.2, CH_3	1.71, s	29.2, CH_3
29	2.36, overlap 2.30, dd (14.9, 3.5)	34.6, CH_2	2.34, overlap 2.22, dd (14.9, 3.6)	34.9, CH_2
30	2.71, m	43.8, CH	2.66, overlap	43.3, CH
31	-	150.4, C	-	149.6, C
32	4.85, s 4.83, s	112.2, CH_2	4.84, s 4.83, s	112.8, CH_2
33	1.75, s	19.6, CH_3	1.70, s	18.9, CH_3
34	2.48, overlap 2.24, m	35.0, CH_2	1.87, m 1.60, overlap	34.1, CH_2
35	5.25, m	124.2, CH	1.98, m 1.95, m	36.3, CH_2
36	-	132.0, C	-	146.6, C
37	1.62, s	26.2, CH_3	4.82, s 4.78, s	110.5, CH_2
38	1.63, s	18.3, CH_3	1.70, s	23.1, CH_3

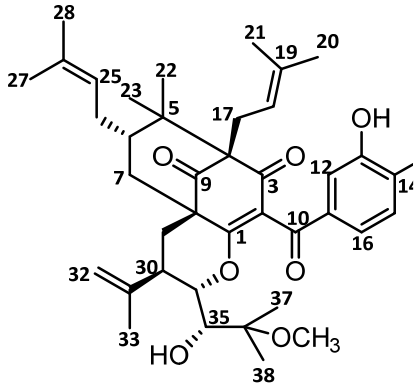
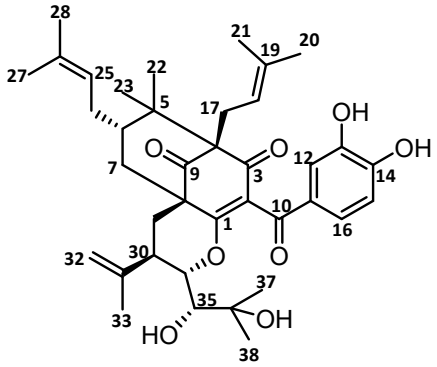
Table S3. The ^1H (600 MHz) and ^{13}C (150 MHz) NMR data of **4** and **5** in MeOH-d_4 (δ in ppm, J in Hz)

No.				
	4		**5**	
	^1H	^{13}C	^1H	^{13}C
1	-	196.6, C	-	196.6, C

2	-	120.7, C	-	120.6, C
3	-	176.2, C	-	176.2, C
4	-	68.9, C	-	68.9, C
5	-	50.0, C	-	50.0, C
6	1.64, overlap	46.9, CH	1.64, overlap	46.9, CH
7	2.17, d (13.9) 2.06, overlap	43.4, CH_2	2.17, d (13.9) 2.06, overlap	43.4, CH2
8	-	61.8, C	-	61.8, C
9	-	208.0, C	-	208.0, C
10	-	191.2, C	-	191.2, C
11	-	130.4, C	-	130.3, C
12	7.25, d (2.1)	116.7, CH	7.25, d (2.1)	116.7, CH
13	-	146.5, C	-	146.4, C
14	-	153.1, C	-	152.7, C
15	6.75, d (8.2)	115.6, CH	6.76, d (8.2)	115.5, CH
16	7.11, dd (8.2, 2.1)	124.9, CH	7.11, dd (8.2, 2.1)	124.7, CH
17	2.82, dd (13.3, 8.4) 2.21, dd (13.4, 9.4)	25.1, CH_2	2.82, dd (13.3, 8.4) 2.21, dd (13.4, 9.4)	25.1, CH_2
18	3.94, t (8.9)	92.3, CH	3.92, t (8.9)	92.3, CH
19	-	71.2, C	-	71.2, C
20	1.07, s	26.7, CH_3	1.07, s	26.6, CH_3
21	1.15, s	25.9, CH_3	1.15, s	26.0, CH_3
22	1.02, s	27.4, CH_3	1.02, s	27.4, CH_3
23	1.21, s	25.0, CH_3	1.21, s	25.0, CH_3
24	2.51, overlap 2.44, overlap	30.8, CH_2	2.51, m 2.44, m	30.8, CH_2
25	4.90, m	126.2, CH	4.90, m	126.2, CH
26	-	133.9, C	-	133.2, C
27	1.60, s	26.0, CH_3	1.60, s	26.0, CH_3
28	1.67, s	18.4, CH_3	1.67, s	18.4, CH3
29	2.00, overlap 1.75, dd (14.1, 4.6)	37.8, CH_2	2.03, m 1.74, dd (14.7, 4.1)	38.2, CH_2
30	2.47, overlap	45.3, CH	2.42, m	44.8, CH
31	-	149.3, C	-	148.7, C
32	4.45, s 4.38, s	113.4, CH_2	4.67, s 4.63, s	114.1, CH_2
33	1.45, s	18.0, CH_3	1.47, s	17.6, CH_3
34	2.01, overlap 1.97, overlap	34.1, CH_2	1.44, m 1.40, m	33.2, CH_2
35	4.98, m	124.3, CH	1.85, m 1.78, m	36.6, CH_2
36	-	132.5, C	-	147.2, C
37	1.59, s	25.9, CH_3	4.47, s 4.42, s	110.1, CH_2

38	1.65, s	18.1, CH_3	1.70, s	22.8, CH_3

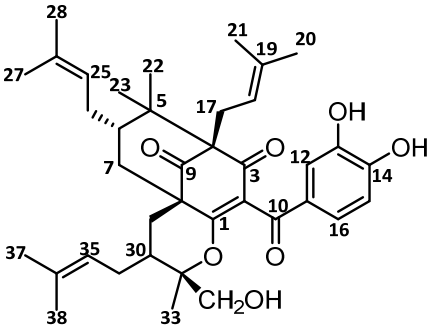
Table S4. The ^1H (600 MHz) and ^{13}C (150 MHz) NMR data of **6** and **7** in MeOH-d_4 (δ in ppm, J in Hz)

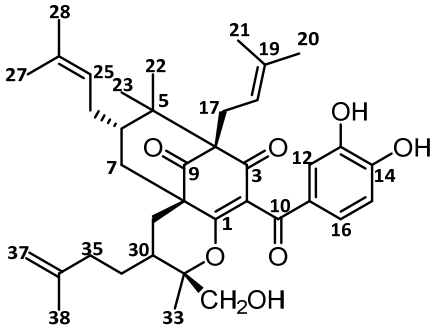
No.				
	6		**7**	
	^1H	^{13}C	^1H	^{13}C
1	-	173.0, C	-	173.0, C
2	-	124.0, C	-	125.2, C
3	-	196.5, C	-	196.6, C
4	-	70.3, C	-	70.3, C
5	-	47.8, C	-	47.8, C
6	1.60, m	47.8, CH	1.60, m	47.9, CH
7	2.74, d (14.1) 1.98, dd (14.3, 7.2)	39.6, CH_2	2.76, d (14.0) 2.01, dd (14.0, 7.2)	39.7, CH_2
8	-	49.0, C	-	49.4, C
9	-	209.6, C	-	209.5, C
10	-	194.4, C	-	194.7, C
11	-	130.7, C	-	130.4, C
12	7.29, d (2.1)	116.4, CH	7.31, d (2.1)	116.2, CH
13	-	146.7, C	-	146.8, C
14	-	153.2, C	-	153.6, C
15	6.74, d (8.1)	115.8, CH	6.73, d (8.1)	115.8, CH
16	7.12, dd (8.1, 2.1)	124.9, CH	7.11, dd (8.1, 2.1)	124.3, CH
17	2.61, dd (13.5, 8.2) 2.45, m	26.5, CH_2	2.63, dd (13.5, 8.2) 2.46, dd (14.3, 6.2)	26.3, CH_2
18	4.89, m	121.2, CH	4.94, m	121.2, CH
19	-	135.4, C	-	135.5, C
20	1.58, s	26.3, CH_3	1.60, s	26.5, CH_3
21	1.58, s	18.2, CH_3	1.62, s	18.3, CH_3
22	0.99, s	27.0, CH_3	1.01, s	27.0, CH_3
23	1.14, s	22.7, CH_3	1.14, s	22.7, CH_3
24	2.50, m 2.32, m	31.3, CH_2	2.47, m 2.31, m	31.3, CH_2
25	5.07, m	126.7, CH	5.09, m	126.8, CH
26	-	133.4, C	-	133.4, C

27	1.68, s	26.0, CH_3	1.69, s	26.0, CH_3
28	1.69, s	18.4, CH_3	1.71, s	18.5, CH_3
29	2.26, t (14.0) 1.71, m	33.6, CH_2	2.27, t (14.0) 1.74, dd (14.0, 3.2)	33.4, CH_2
30	2.96, overlap	40.0, CH	2.99, ddd (14.0, 11.0, 3.1)	39.8, CH
31	-	146.0, C	-	145.8, C
32	4.94, s 4.94, s	115.1, CH_2	4.97, s 4.96, s	115.2, CH_2
33	1.74, s	19.8, CH_3	1.76, s	20.0, CH_3
34	4.11, d (11.0)	82.6, CH	4.14, d (11.0)	83.1, CH
35	3.38, overlap	74.8, CH	3.34, overlap	76.5, CH
36	-	78.1, C	-	73.4, C
37	0.99, s	22.6, CH_3	0.78, s	26.8, CH_3
38	0.67, s	20.3, CH_3	1.00, s	25.5, CH_3
-OCH_3	2.94, s	49.2, CH_3	-	-

Table S5. The ^1H (600 MHz) and ^{13}C (150 MHz) NMR data of **8** and **9** in MeOH-d_4 (δ in ppm, J in Hz)

No.

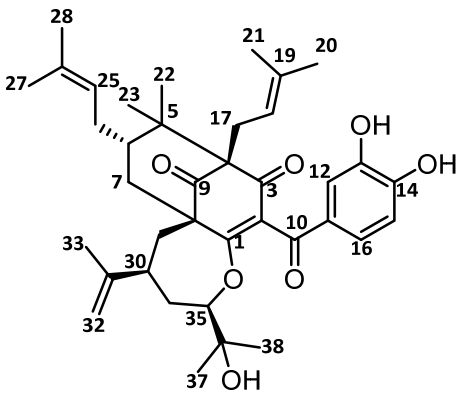




	8		**9**	
	^1H	^{13}C	^1H	^{13}C
1	-	173.8, C	-	173.8, C
2	-	126.7, C	-	127.0, C
3	-	196.6, C	-	196.6, C
4	-	69.4, C	-	69.4, C
5	-	47.1, C	-	47.2, C
6	1.50, m	47.5, CH	1.51, m	47.5, CH
7	2.31, d (14.6) 2.05, dd (14.8, 7.4)	40.5, CH2	2.31, d (14.7) 2.07, dd (14.7, 7.6)	40.3, CH_2
8	-	52.4, C	-	52.6, C
9	-	207.8, C	-	207.8, C
10	-	194.4, C	-	194.3, C
11	-	130.8, C	-	130.8, C
12	7.28, d (2.1)	116.1, CH	7.30, d (2.1)	116.0, CH
13	-	146.7, C	-	146.8, C
14	-	152.8, C	-	152.8, C
15	6.73, d (8.2)	115.8, CH	6.71, d (8.2)	115.6, CH

16	7.05, dd (8.2, 2.1)	124.6, CH	7.00, dd (8.2, 2.1)	124.8, CH
17	2.62, m 2.44, dd (13.5, 5.5)	26.5, CH_2	2.62, dd (13.5, 8.4) 2.46, m	26.6, CH_2
18	4.91, m	121.1, CH	4.91, m	121.1, CH
19	-	135.4, C	-	135.5, C
20	1.57, s	26.6, CH_3	1.58, s	26.6, CH_3
21	1.60, s	18.1, CH_3	1.60, s	18.3, CH_3
22	0.98, s	27.0, CH_3	1.00, s	27.0, CH_3
23	1.14, s	22.8, CH_3	1.14, s	22.8, CH_3
24	2.64, m 2.13, overlap	30.6, CH_2	2.67, m 2.12, m	30.6, CH_2
25	4.92, m	126.4, CH	4.94, m	126.4, CH
26	-	134.0, C	-	134.0, C
27	1.68, s	26.1, CH_3	1.68, s	26.1, CH_3
28	1.69, s	18.6, CH_3	1.69, s	18.6, CH_3
29	3.06, dd (14.2, 3.9) 1.08, t (13.6)	26.6, CH_2	3.14, m 1.10, t (13.6)	28.3, CH_2
30	1.68, m	38.7, CH	1.61, m	37.9, CH
31	-	89.9, C	-	90.1, C
32	3.22, d (11.9) 3.16, d (11.9)	69.0, CH_2	3.17, d (11.9) 3.11, d (11.9)	69.1, CH_2
33	1.23, s	17.3, CH_3	1.23, s	17.2, CH_3
34	2.13, overlap 1.82, m	30.1, CH_2	1.66, m 1.16, m	29.2, CH_2
35	5.20, m	122.9, CH	2.26, m 2.12, m	36.2, CH_2
36	-	134.6, C	-	146.3, C
37	1.63, s	26.0, CH_3	4.77, s 4.75, s	111.4, CH_2
38	1.78, s	18.2, CH_3	1.73, s	22.4, CH_3

Table S6. The ^{1}H (600 MHz) and ^{13}C (150 MHz) NMR data of **10** in MeOH-d_4 and $CHCl_3$-d (δ in ppm, J in Hz)

No.		
	10[a]	**10**[b]

	^{1}H	^{13}C	^{1}H	^{13}C
1	-	175.8, C	-	175.4, C
2	-	127.6, C	-	126.7, C
3	-	197.0, C	-	195.2, C
4	-	69.2, C	-	68.2, C
5	-	48.5, C	-	47.9, C
6	1.70, m	47.8, CH	1.64, overlap	46.7, CH
7	2.78, d (13.9) 2.05, dd (14.8, 6.8)	37.3, CH_2	2.74, d (14.5) 1.99, dd (14.6, 6.7)	36.7, CH_2
8	-	55.2, C	-	54.2, C
9	-	208.4, C	-	207.4, C
10	-	195.1, C	-	195.0, C
11	-	130.9, C	-	130.4, C
12	7.29, d (2.1)	116.1, CH	7.61, d (2.1)	115.0, CH
13	-	146.7, C	-	144.2, C
14	-	153.0, C	-	150.5, C
15	6.74, d (8.2)	115.8, CH	6.79, d (8.3)	114.2, CH
16	7.04, dd (8.2, 2.1)	124.8, CH	7.06, dd (8.3, 2.0)	125.2, CH
17	2.60, dd (13.5, 8.3) 2.45, m	26.8, CH_2	2.62, overlap 2.49, overlap	25.9 CH_2
18	4.90, m	121.0, CH	4.96, brt, (7.0)	119.8, CH
19	-	135.7, C	-	135.2, C
20	1.57, s	26.4, CH_3	1.70, s	26.5, CH_3
21	1.59, s	18.3, CH_3	1.61, s	18.4, CH_3
22	1.00, s	27.0, CH_3	1.00, s	26.9, CH_3
23	1.15, s	22.9, CH_3	1.15, s	22.5, CH_3
24	2.39, m 2.35, m	31.6, CH_2	2.34, overlap	30.0, CH_2
25	5.13, m	126.0, CH	5.09, brt (6.8)	124.0, CH
26	-	134.1, C	-	134.1, C
27	1.68, s	25.9, CH_3	1.70, s	26.0, CH_3
28	1.71, s	18.7, CH_3	1.60, s	18.3, CH_3
29	2.26, d (15.3) 1.81, dd (15.3, 13.0)	39.1, CH_2	2.34, overlap 1.91, overlap	37.2, CH_2
30	2.51, t (12.3)	41.0, CH	2.49, overlap	40.4, CH
31	-	150.9, C	-	149.0, C
32	4.84, s 4.80, s	110.6, CH_2	4.83, s 4.80, s	110.7, CH_2
33	1.80, s	20.8, CH_3	1.78, s	20.5, CH_3
34	2.13, d (16.5) 1.50, overlap	36.7, CH_2	1.91, overlap 1.55, m	36.2, CH_2
35	4.07, d (10.6)	91.0, CH	4.16, d (10.8)	90.6, CH
36	-	73.6, C	-	73.6, C
37	0.91, s	26.5, CH_3	1.16, s	26.2, CH_3

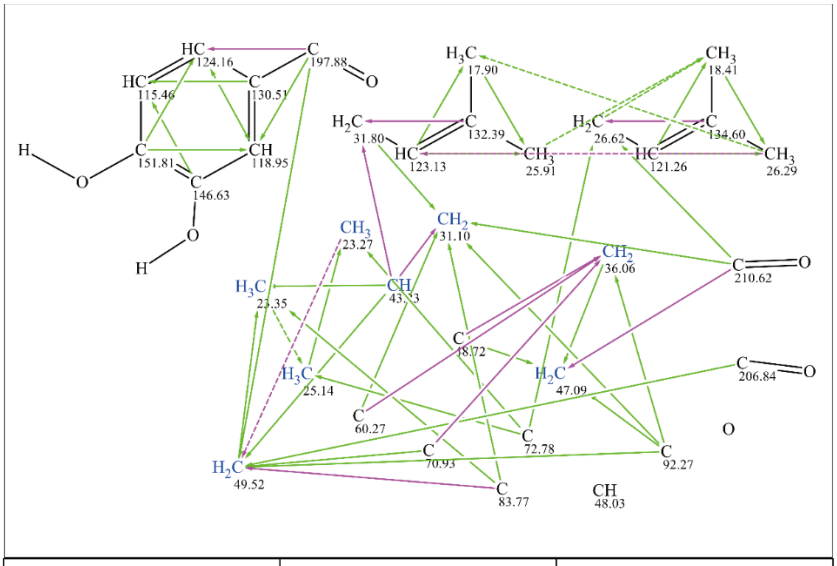
38	1.05, s	23.8, CH_3	1.02, s	22.7, CH_3

[a] recorded in MeOH-d_4, [b] recorded in $CHCl_3$-d

Table S7. Immunosuppressive Activities of Compounds **1**-**17**

Comp.	ConA-induced T-cell proliferation (μM)	Lps-induced B-cell proliferation (μM)
(+)-**1**	33.52 ± 4.85	> 40
(−)-**1**	35.62 ± 2.78	> 40
(+)-**2**	10.15 ± 2.13	16.41 ± 1.35
(−)-**2**	33.21 ± 6.48	> 40
3	5.96 ± 1.87	36.35 ± 4.96
(+)-**4**	18.39 ± 3.27	31.34 ± 2.84
(−)-**4**	36.13 ± 5.24	> 40
5	3.88 ± 2.57	35.42 ± 2.48
(+)-**6**	10.02 ± 1.47	20.54 ± 2.64
(−)-**6**	16.07 ± 4.25	32.86 ± 6.42
(+)-**7**	17.15 ± 1.17	19.67 ± 4.52
(−)-**7**	20.41 ± 5.25	20.58 ± 1.94
(+)-**8**	> 40	> 40
(−)-**8**	> 40	> 40
9	11.07 ± 2.71	35.10 ± 3.84
(+)-**10**	34.52 ± 4.21	37.41 ± 7.85
(−)-**10**	31.62 ± 1.26	> 40
(+)-**11**	28.12 ± 6.24	23.87 ± 3.57
(−)-**11**	32.04 ± 5.74	31.84 ± 1.70
12	15.81 ± 2.81	18.22 ± 4.25
(+)-**13**	> 40	> 40
(−)-**13**	> 40	> 40
14	> 40	13.13 ± 3.54
(+)-**15**	23.05 ± 1.01	> 40
(−)-**15**	25.52 ± 3.77	> 40
16	10.23 ± 1.84	15.25 ± 2.11
17	2.02 ± 1.02	16.18 ± 0.84
CsA	0.04 ± 0.008	0.2 ± 0.1

Data are expressed as Mean ± SD, three independent experiments were performed with similar results.



1 (ID=14) The Best Structure	2 (ID=12)	3 (ID=34)
Formula: $C_{34}H_{42}O_6$	Formula: $C_{34}H_{42}O_6$	Formula: $C_{34}H_{42}O_6$
FW: 546.6937	FW: 546.6937	FW: 546.6937
$d_A(^{13}C)$: 2.299 (v.14.51)	$d_A(^{13}C)$: 3.152 (v.14.51)	$d_A(^{13}C)$: 3.255 (v.14.51)
$d_N(^{13}C)$: 2.279	$d_N(^{13}C)$: 2.467	$d_N(^{13}C)$: 2.910
$d_T(^{13}C)$: 2.330	$d_T(^{13}C)$: 2.533	$d_T(^{13}C)$: 3.465
$DP4_A(^{13}C)$: 100.00	$DP4_A(^{13}C)$: 0.00	$DP4_A(^{13}C)$: 0.00
$DP4_N(^{13}C)$: 95.42	$DP4_N(^{13}C)$: 4.58	$DP4_N(^{13}C)$: 0.00

Figure S1. Edited molecular connectivity diagram (MCD) and top 3 ranked structures for **1**

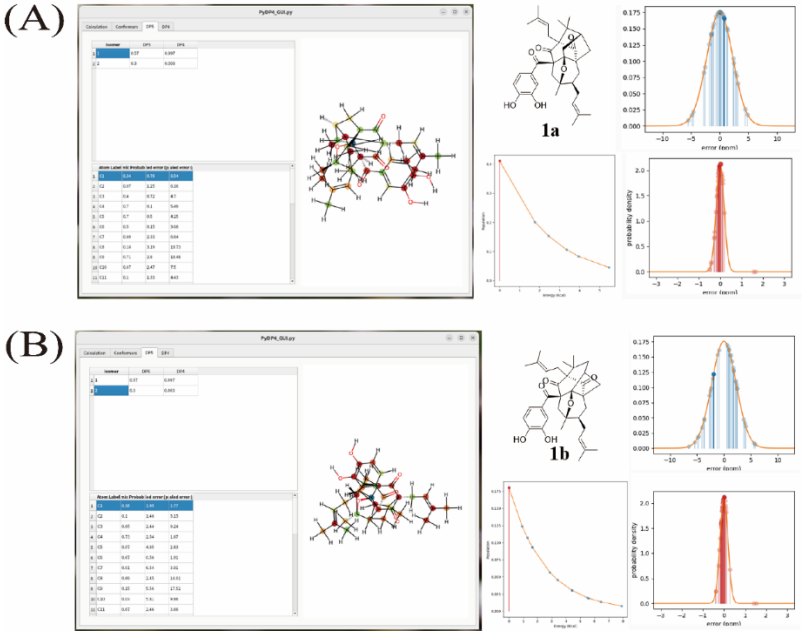


Figure S2. The DP5 GUI, conformer energy distributions, and DP4 statistics of **1a** (A) and **1b** (B)

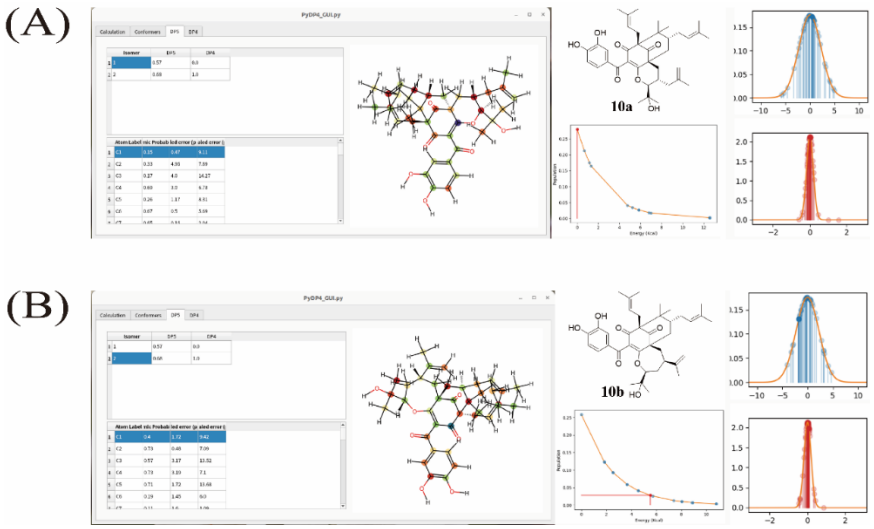


Figure S3. The DP5 GUI, conformer energy distributions, and DP4 statistics of **10a** (A) and **10b** (B)

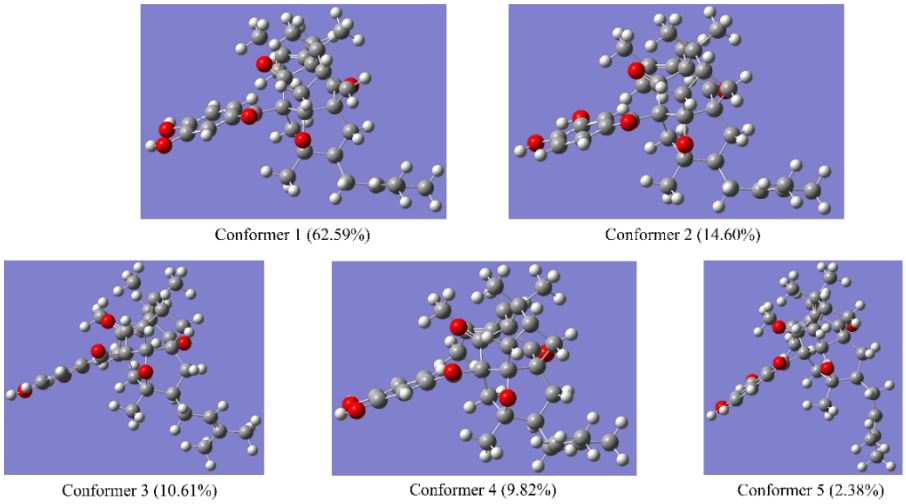


Figure S4. The low-energy conformers and equilibrium populations of compound **1**

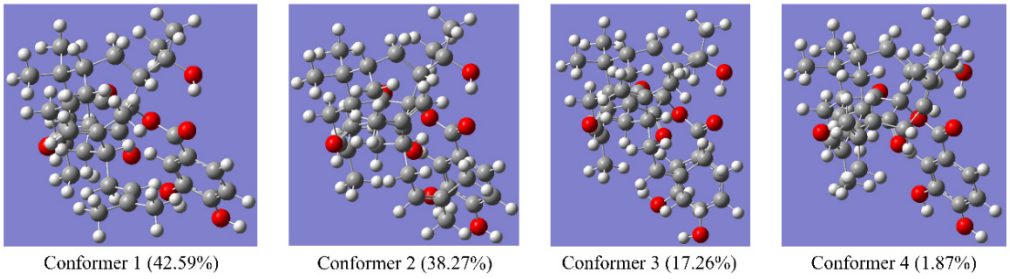


Figure S5. The low-energy conformers and equilibrium populations of compound **2**

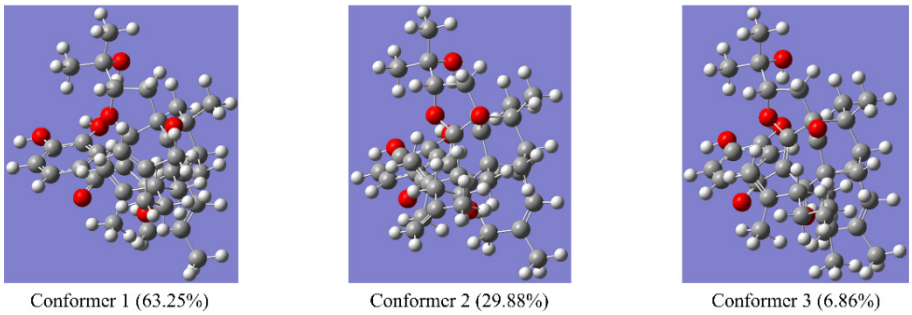


Figure S6. The low-energy conformers and equilibrium populations of compound **4**

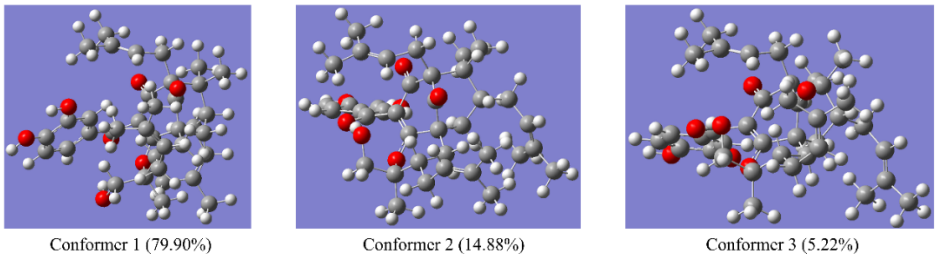


Figure S7. The low-energy conformers and equilibrium populations of compound **8**

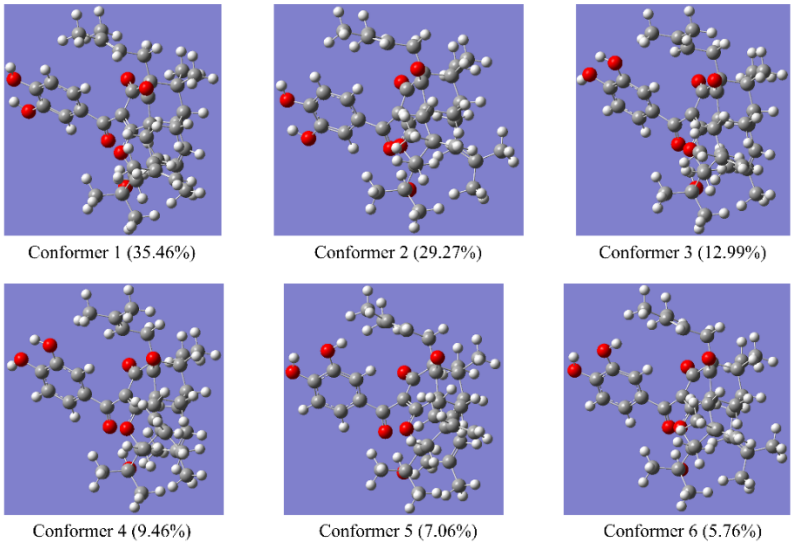
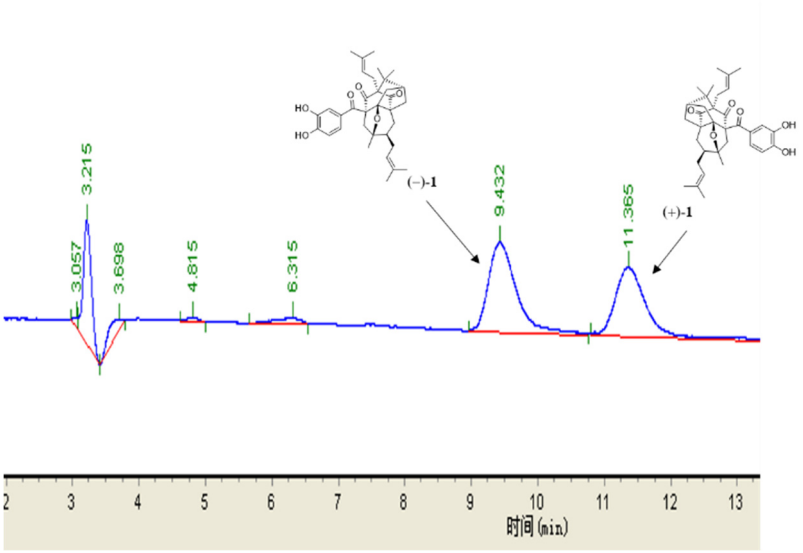
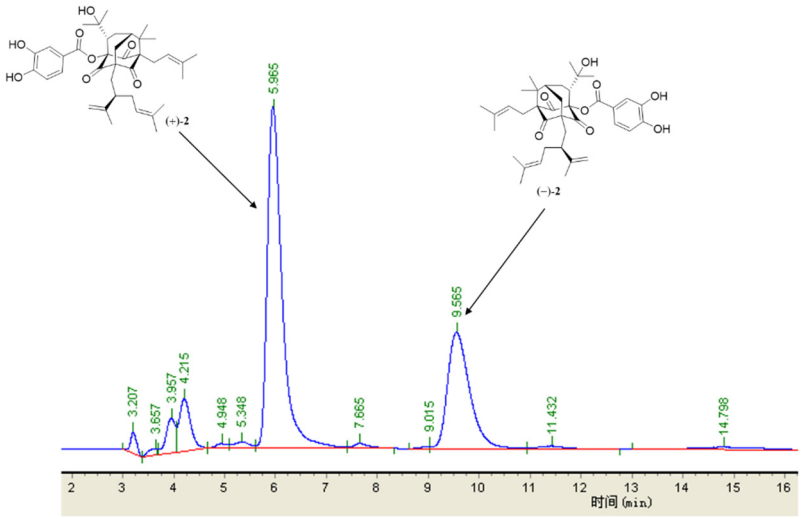
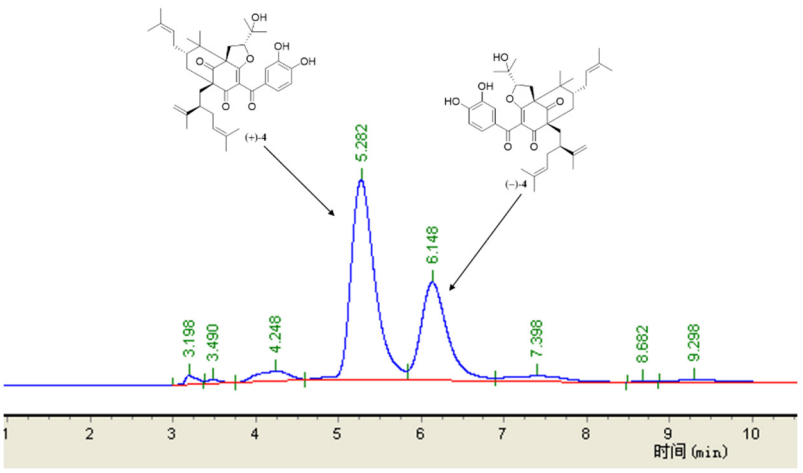
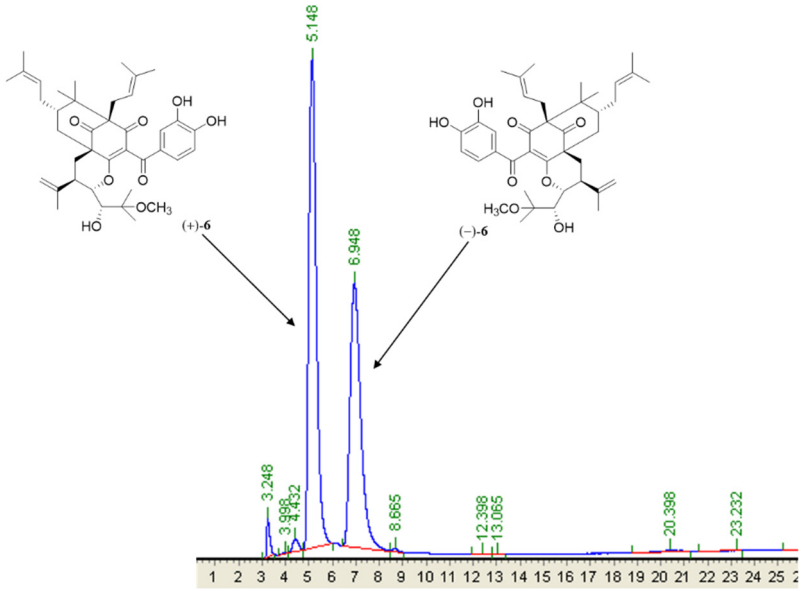


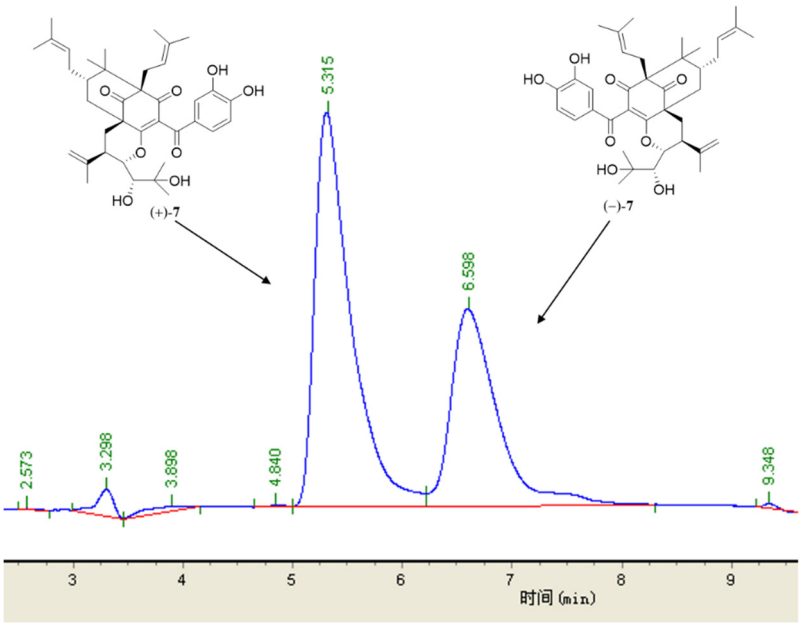
Figure S8. The low-energy conformers and equilibrium populations of compound **10**

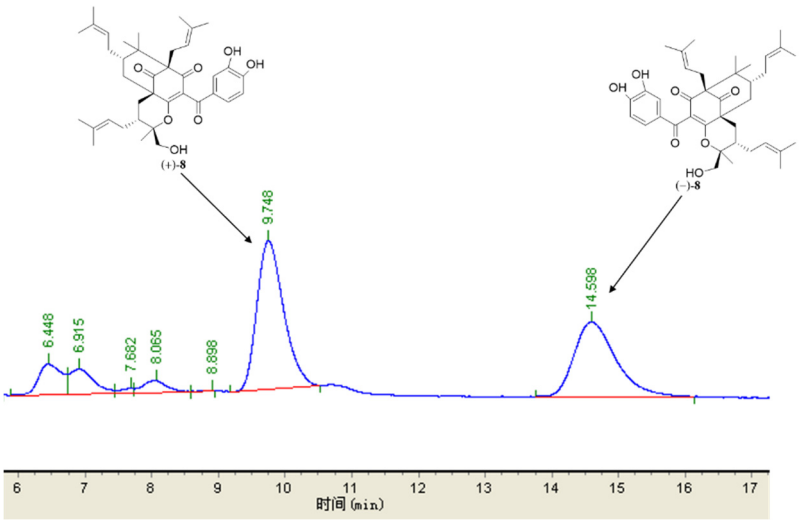

3.215
3.057
3.698
4.815
6.315
9.432
11.365
(−)-1
(+)-1
时间 (min)

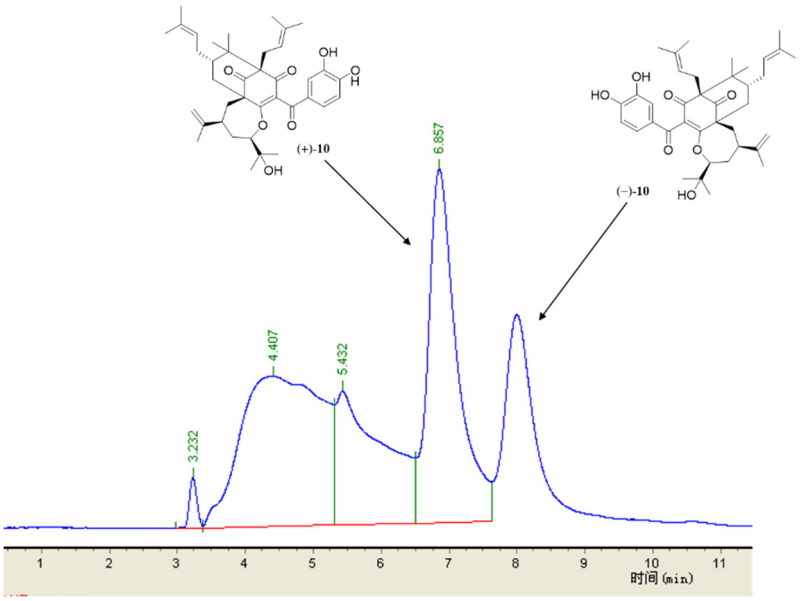

(+)-2
(−)-2
5.965
9.565
3.207
3.657
3.957
4.215
4.948
5.348
7.665
9.015
11.432
14.798
时间 (min)

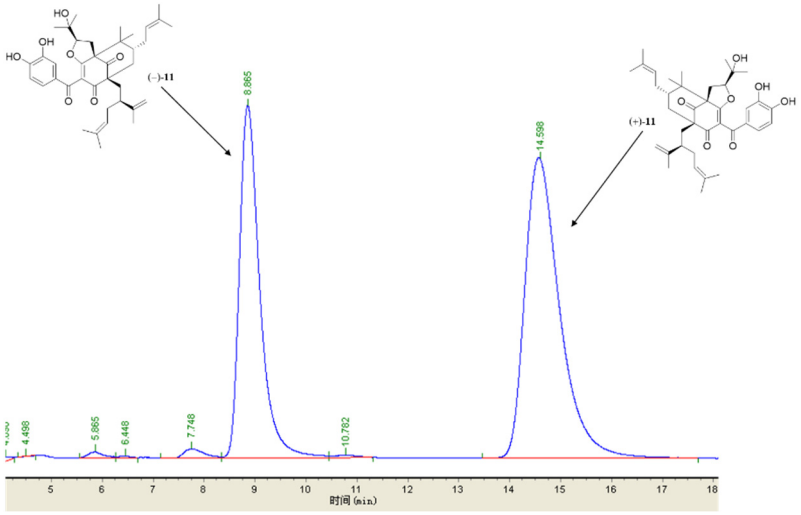

(+)-4
(−)-4
5.282
6.148
3.196
3.490
4.248
7.398
8.682
9.298
时间 (min)

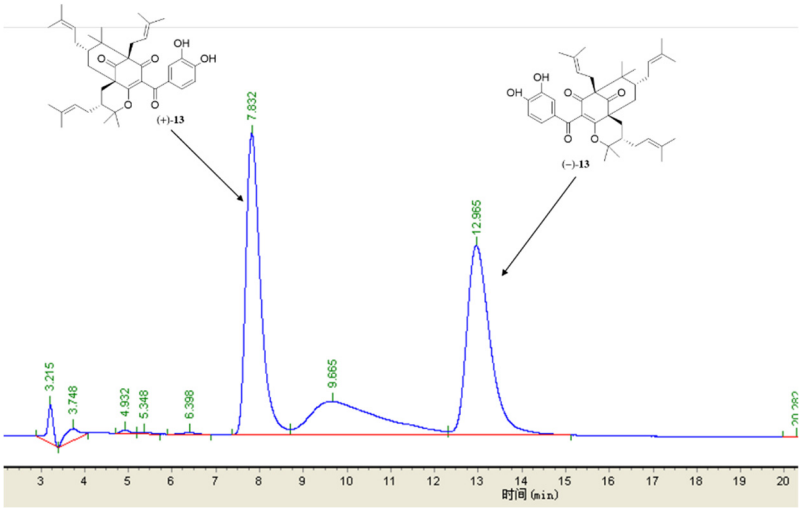

(+)-6
(−)-6
5.148
6.948
3.248
3.998
4.432
8.665
12.398
13.065
20.398
23.232


(+)-7
(−)-7
5.315
6.598
2.573
3.298
3.898
4.840
9.348
时间 (min)


(+)-8
(−)-8
9.748
14.598
6.448
6.915
7.682
8.065
8.898
时间 (min)


(+)-10
(−)-10
6.857
4.407
5.432
3.232
时间 (min)


(−)-11
(+)-11
8.865
14.598
4.498
5.865
6.448
7.748
10.782
时间 (min)


(+)-13
(−)-13
7.832
12.965
3.215
3.748
4.932
5.348
6.398
9.665
时间 (min)

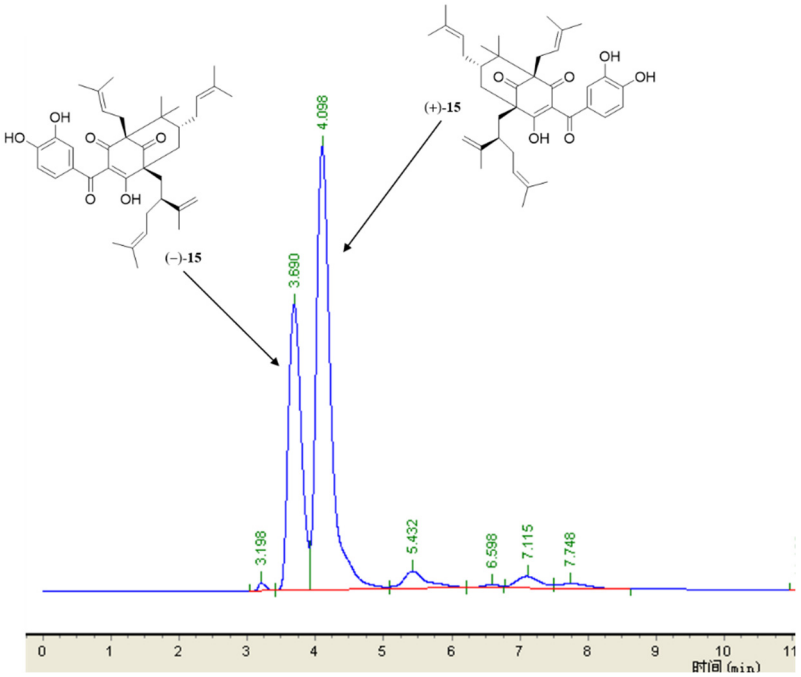


Figure S9. HPLC chromatograms of Chiral separation using *n*-hexane-2-propanol (10:1) for **1**, **2**, **4**, **6**, **7**, **8**, **10**, **11**, **13**, **15**

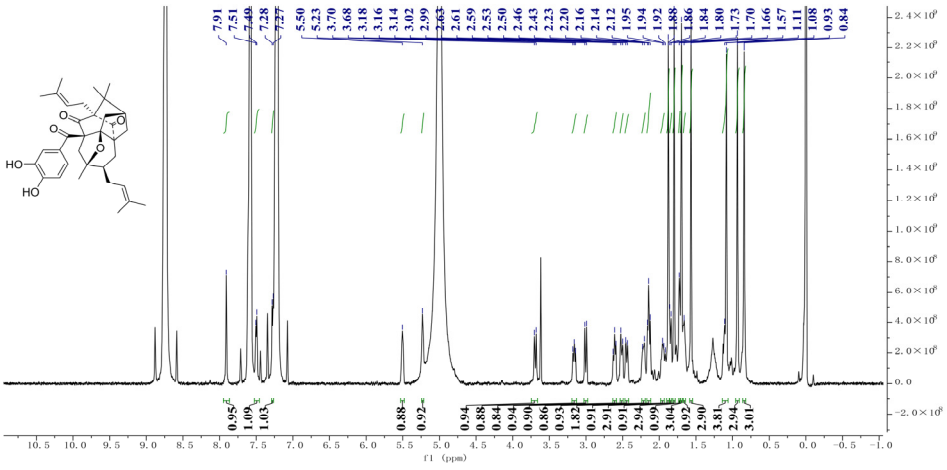


Figure S10. ^{1}H NMR spectrum of compound **1** (recorded in Pyridine-d_5)

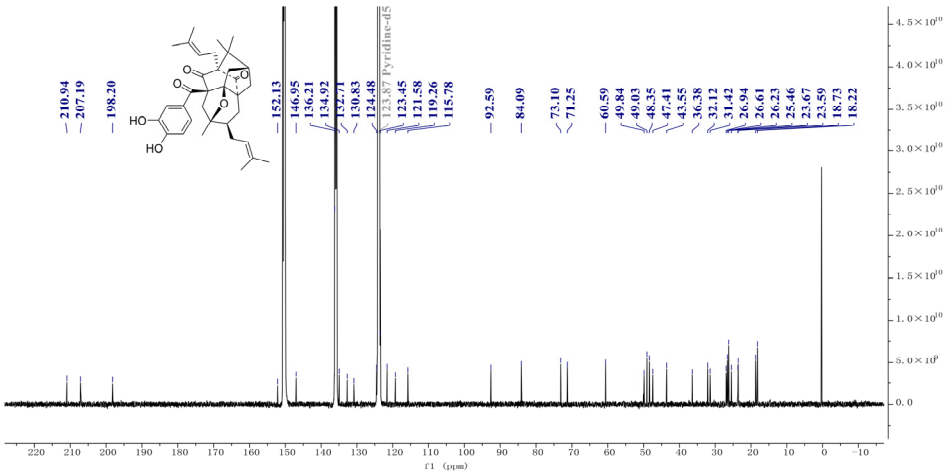


Figure S11. ^{13}C NMR spectrum of compound **1** (recorded in Pyridine-d_5)

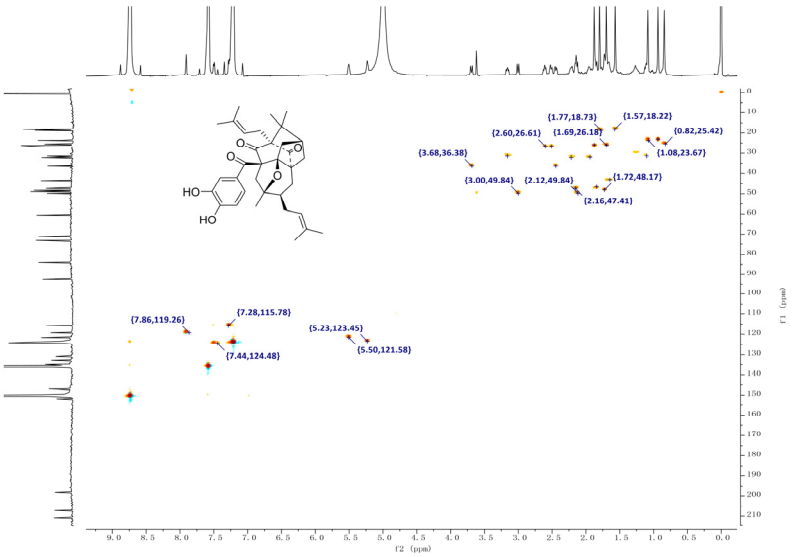


Figure S12. HSQC spectrum of compound **1** (recorded in Pyridine-d_5)

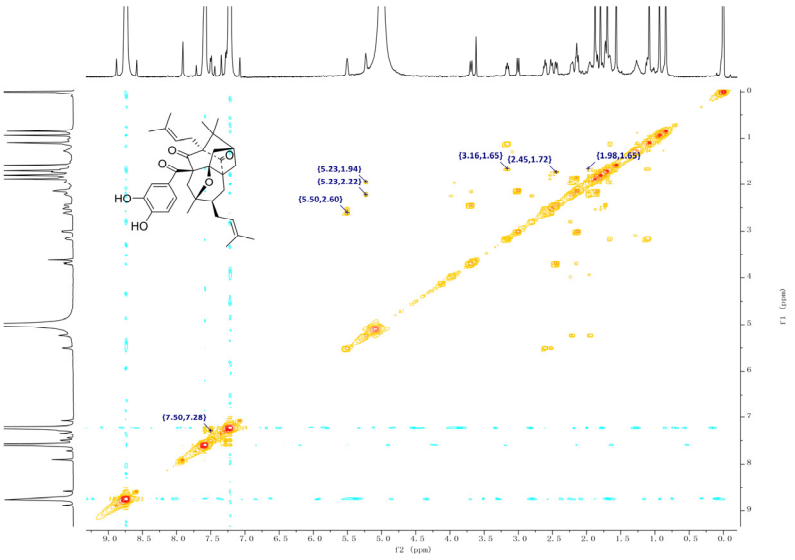


Figure S13. ^{1}H-^{1}H COSY spectrum of compound **1** (recorded in Pyridine-d_5)

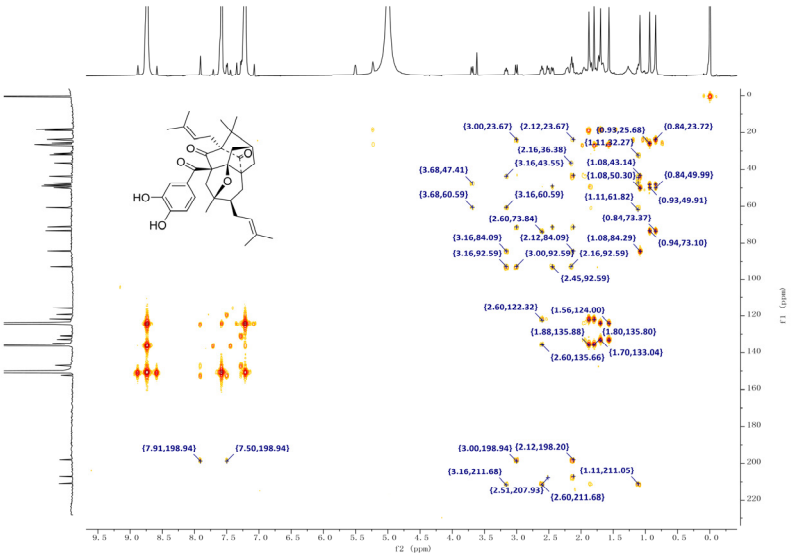


Figure S14. HMBC spectrum of compound **1** (recorded in pyridine-d_5)

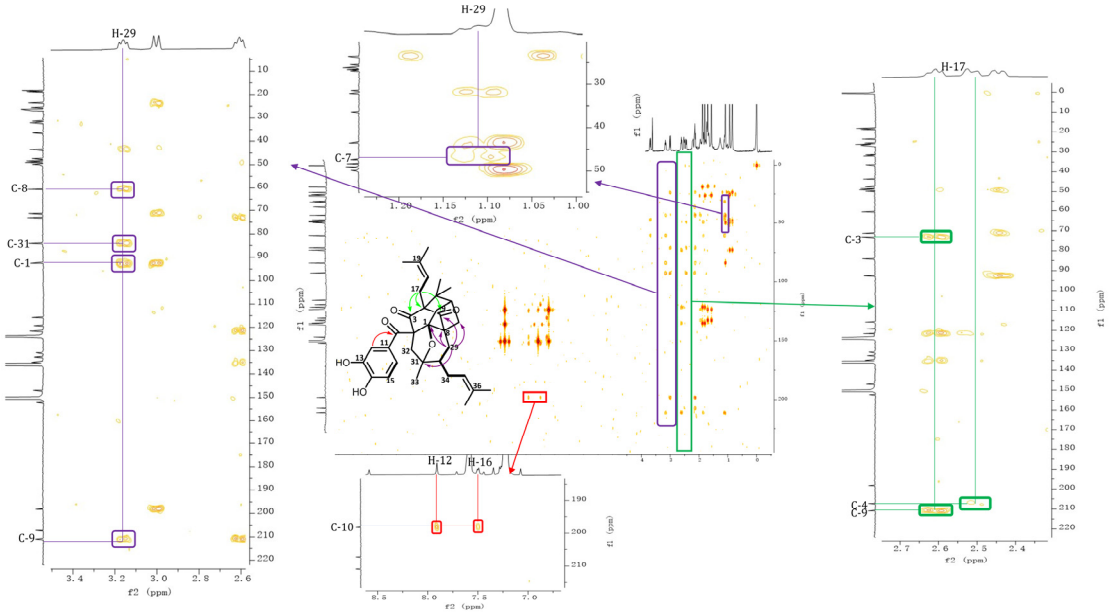


Figure S15. Detailed HMBC spectrum of compound **1** (recorded in pyridine-d_5)

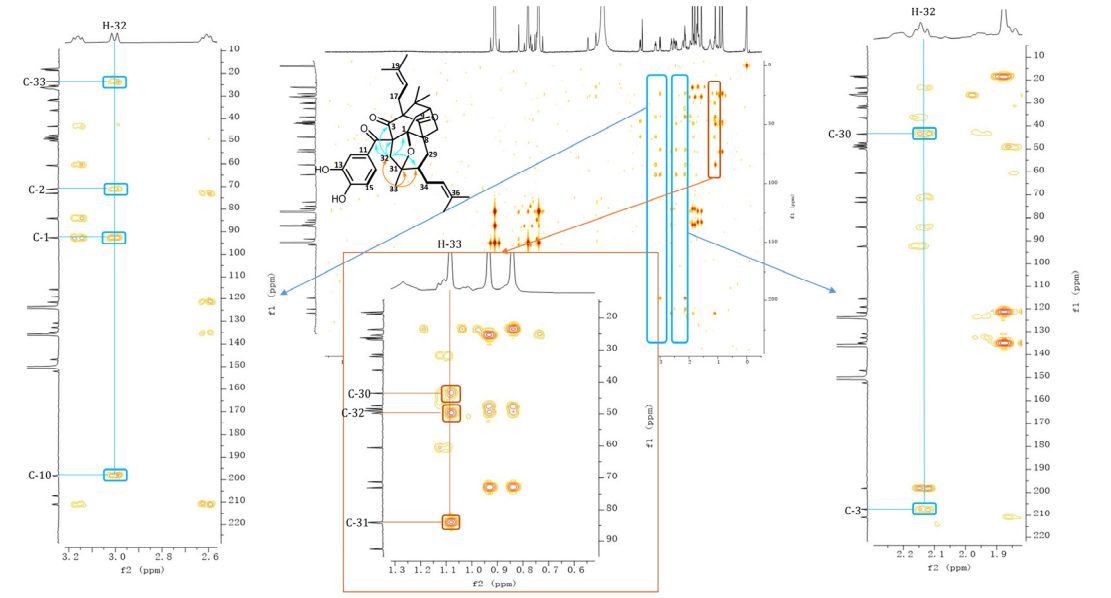


Figure S16. Detailed HMBC spectrum of compound **1** (recorded in pyridine-d_5)

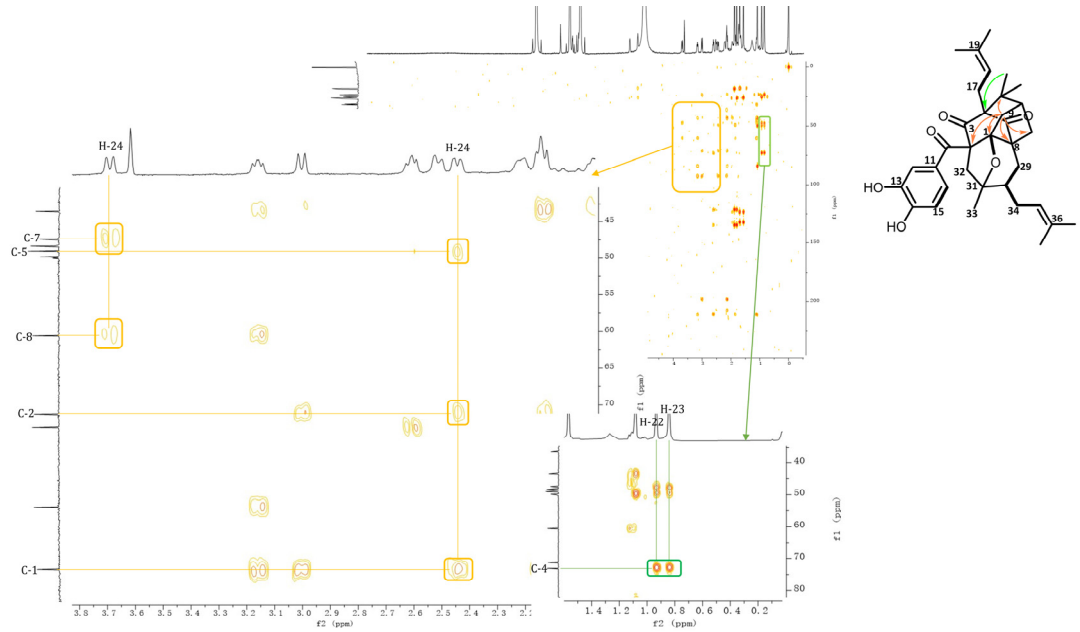


Figure S17. Detailed HMBC spectrum of compound **1** (recorded in pyridine-d_5)

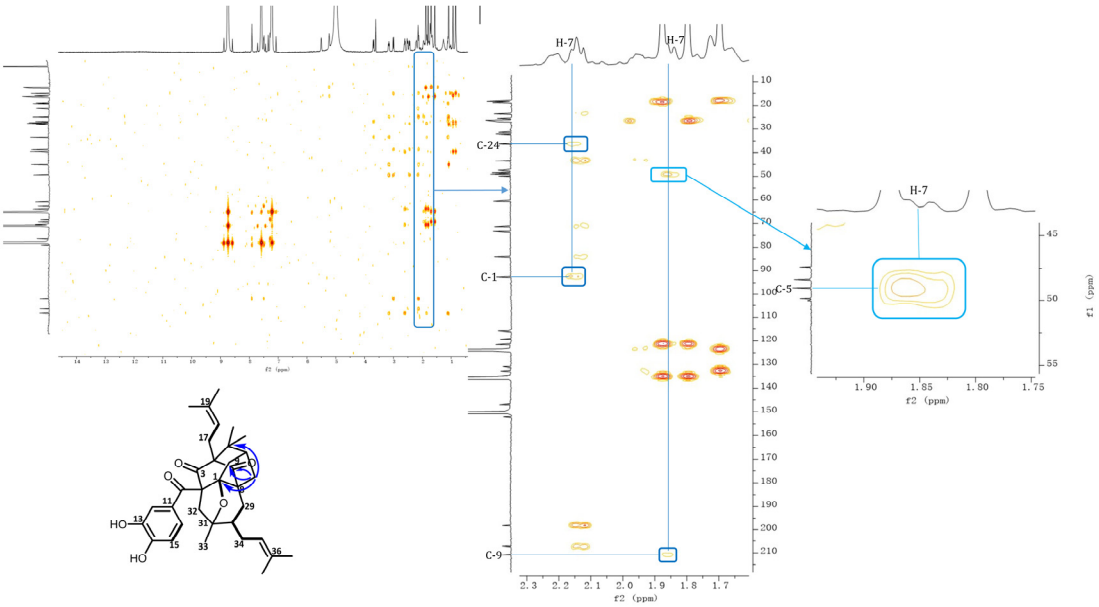


Figure S18. Detailed HMBC spectrum of compound **1** (recorded in pyridine-d_5)

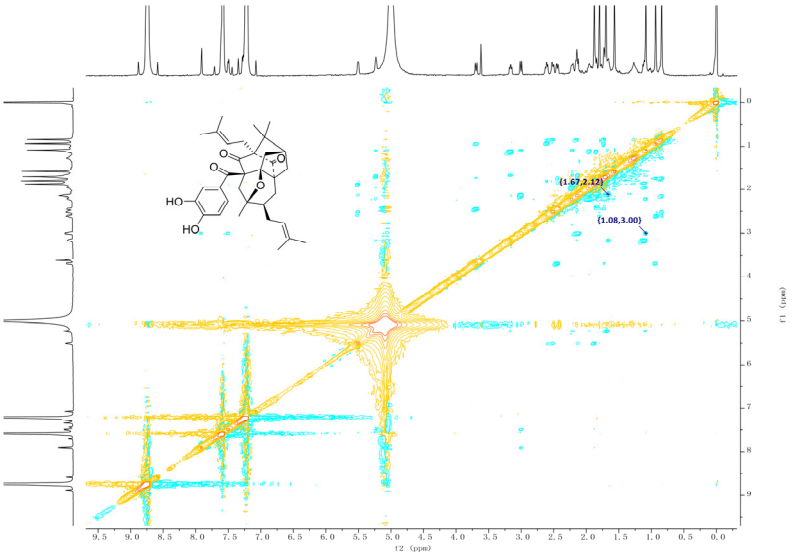


Figure S19. NOESY spectrum of compound **1** (recorded in Pyridine-d_5)

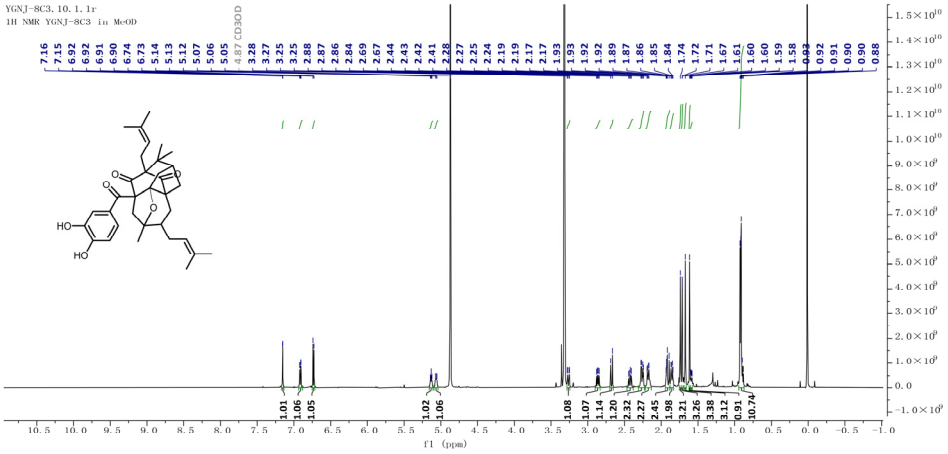


Figure S20. ^{1}H NMR spectrum of compound **1** (recorded in MeOH-d_4)

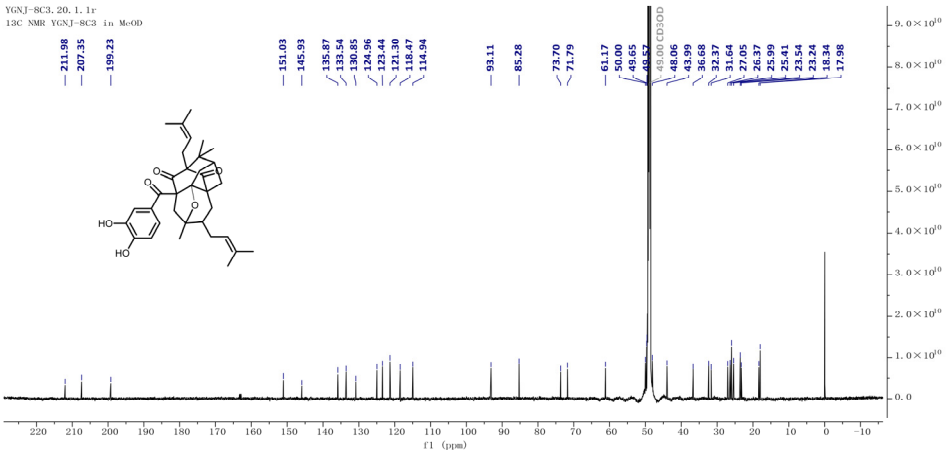


Figure S21. ^{13}C NMR spectrum of compound **1** (recorded in MeOH-d_4)

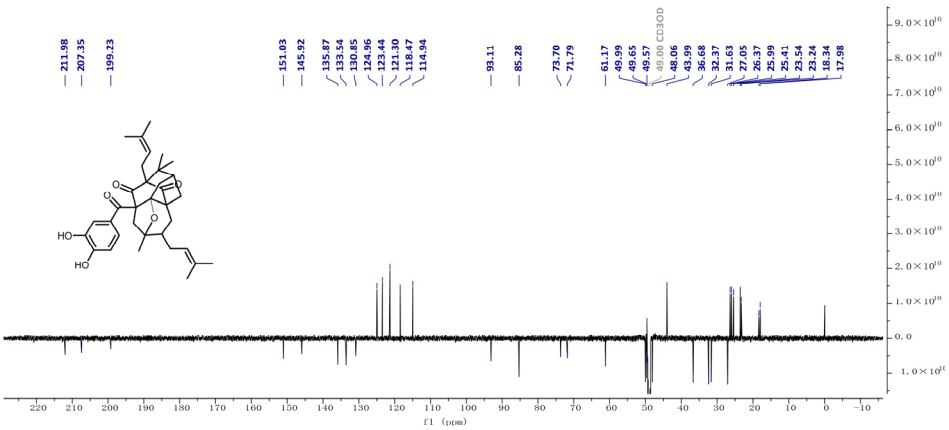


Figure S22. APT spectrum of compound **1** (recorded in MeOH-d_4)

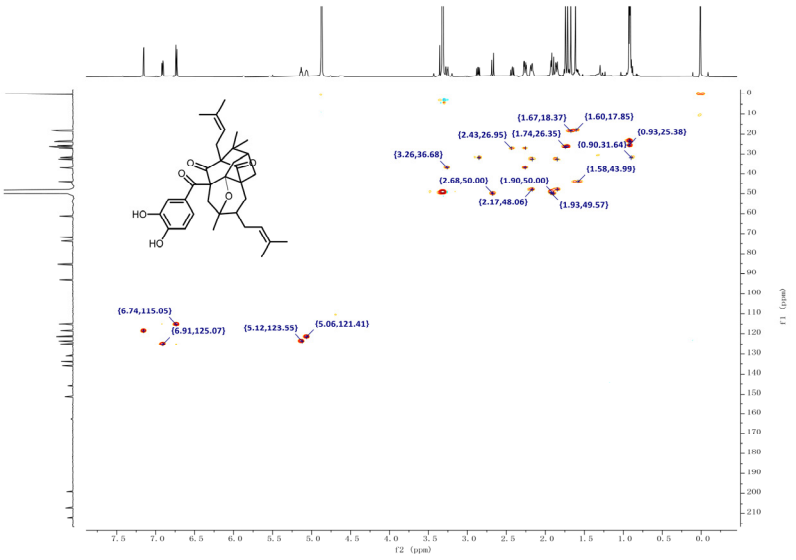


Figure S23. HSQC spectrum of compound **1** (recorded in MeOH-d_4)

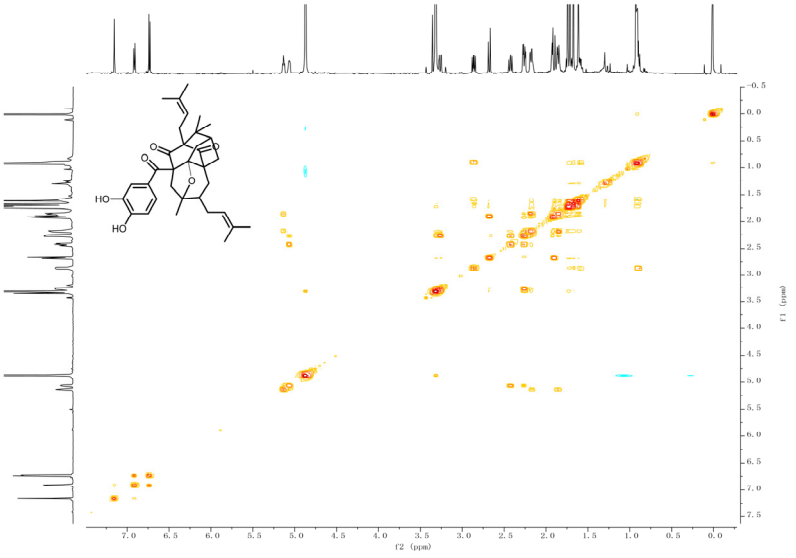


Figure S24. ^{1}H-^{1}H COSY spectrum of compound **1** (recorded in MeOH-d_4)

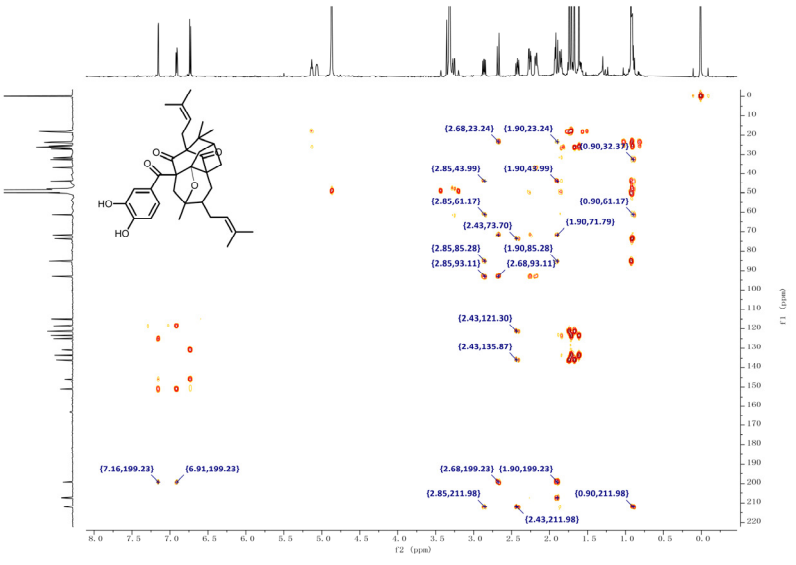


Figure S25. HMBC spectrum of compound **1** (recorded in MeOH-d_4)

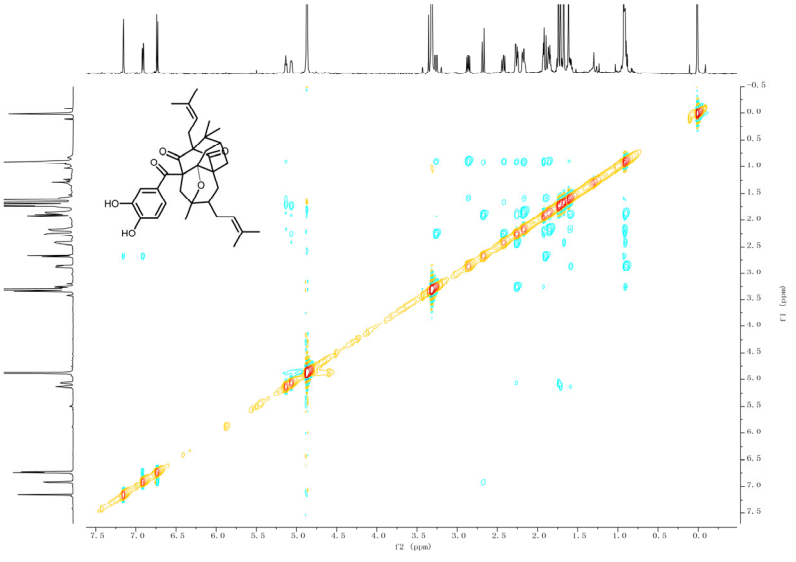


Figure S26. NOESY spectrum of compound **1** (recorded in MeOH-d_4)

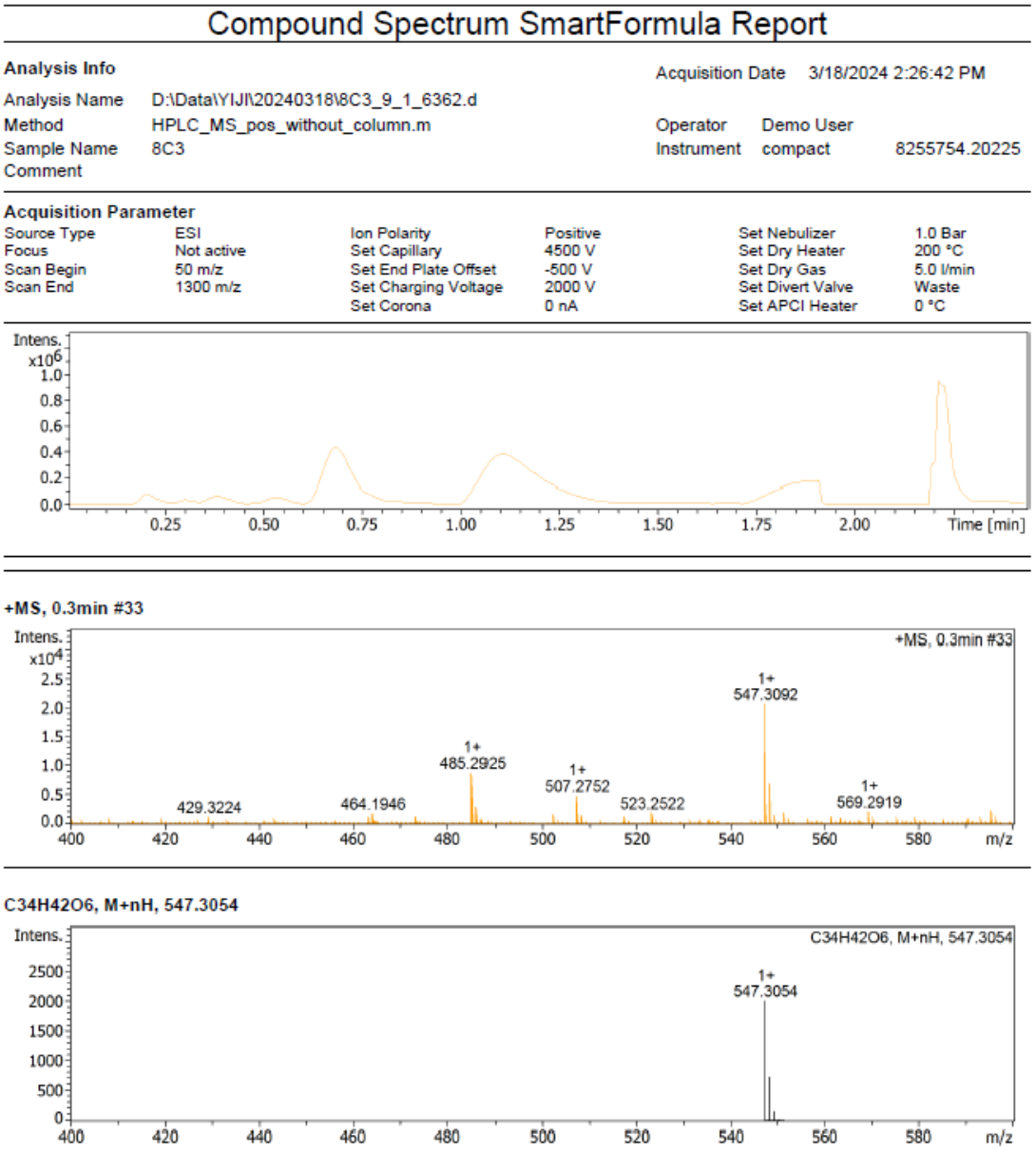


Figure S27. HRESIMS spectrum of compound **1**

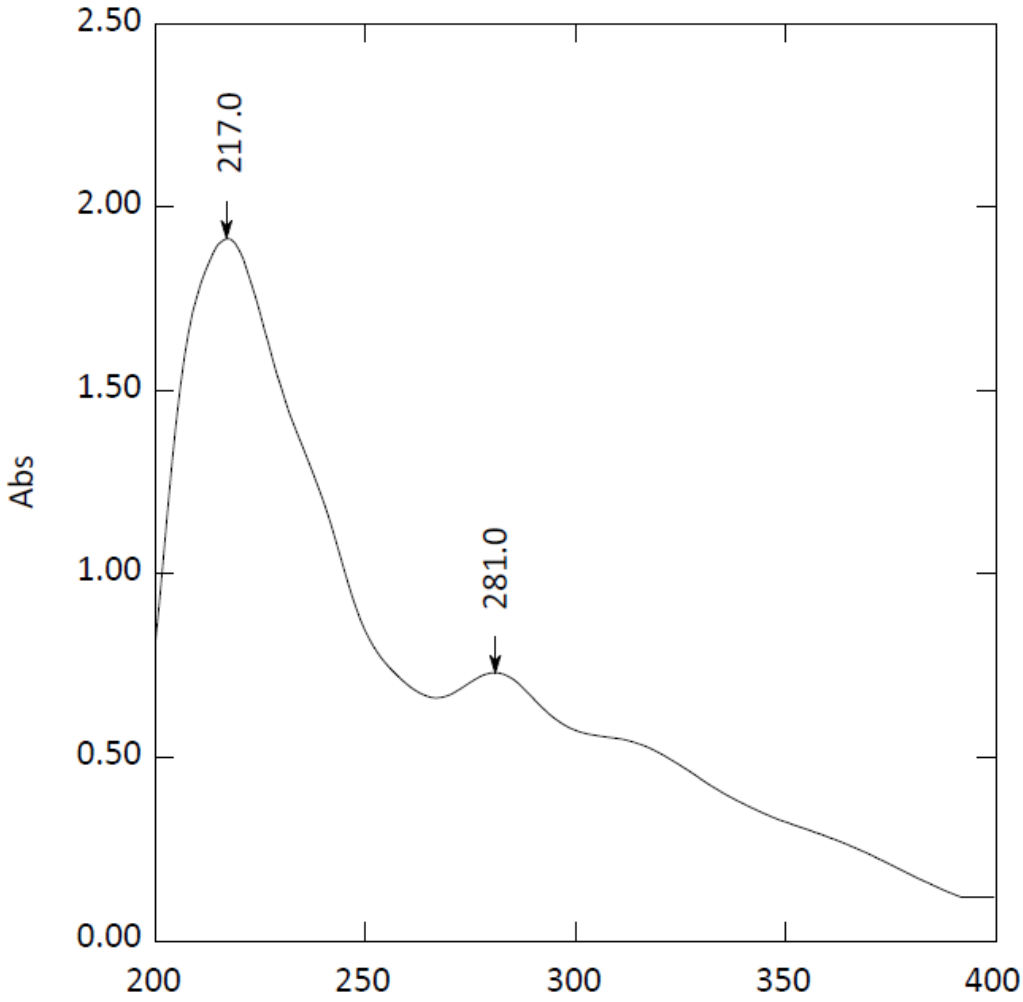


Figure S28. UV spectrum of compound **1**

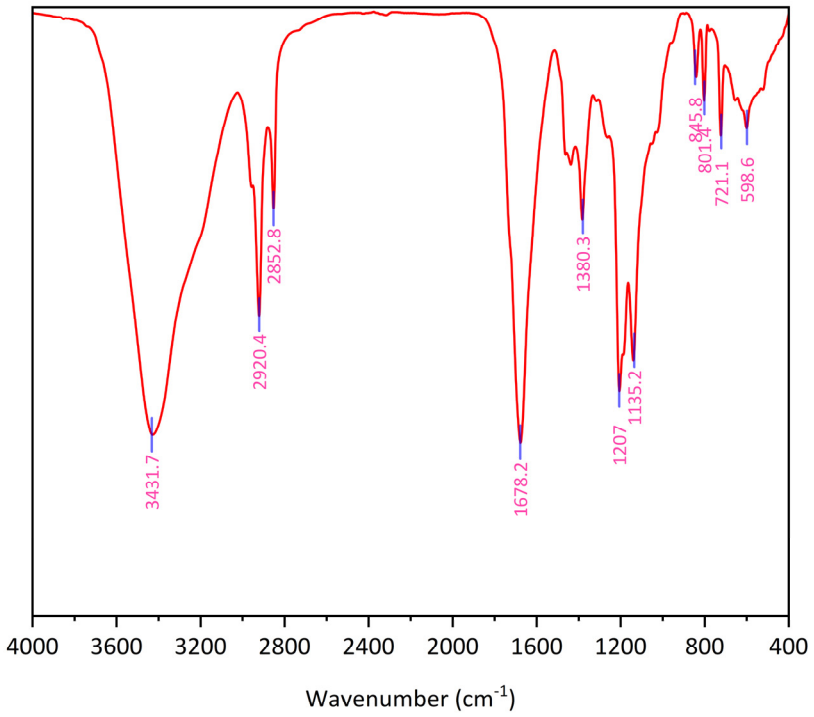


Figure S29. IR spectrum of compound **1**

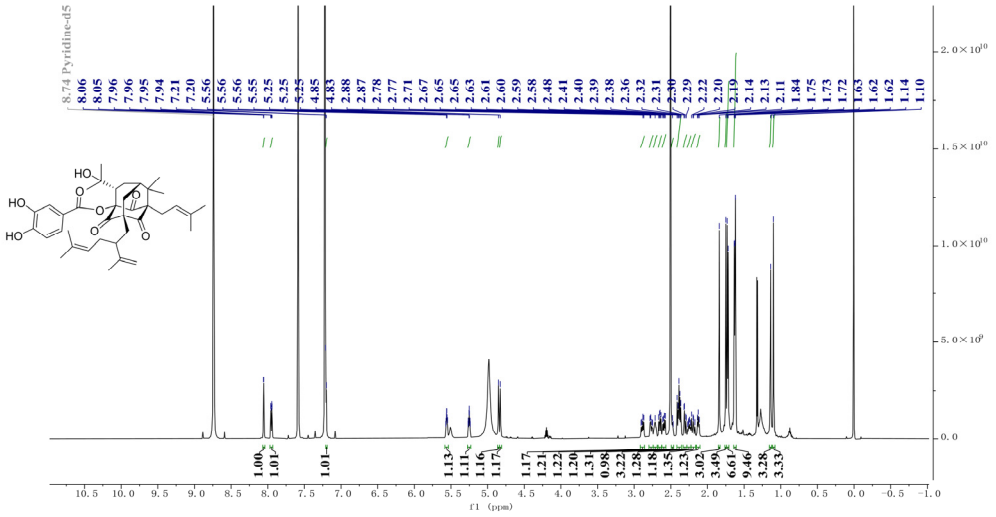


Figure S30. ^{1}H NMR spectrum of compound **2** (recorded in Pyridine-d_5)

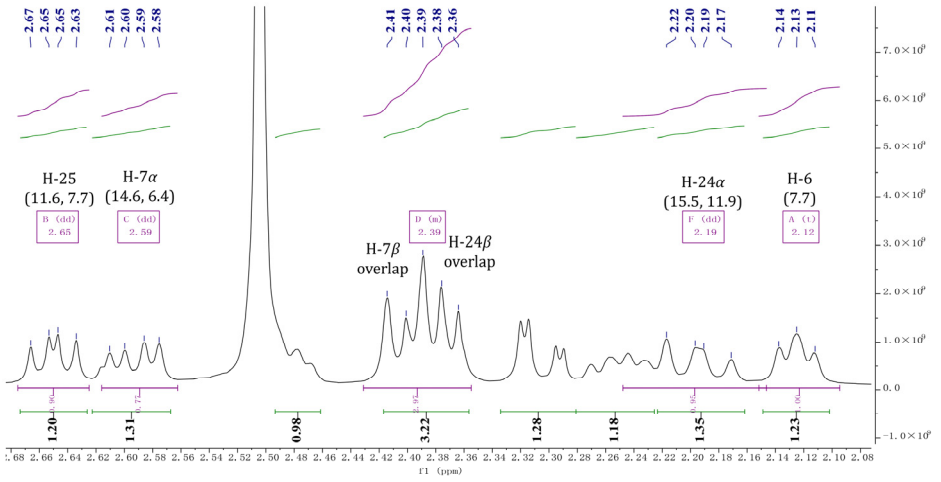


Figure S31. Zoomed-in ^{1}H NMR spectrum (δ 2.10-2.70 ppm) of compound **2**

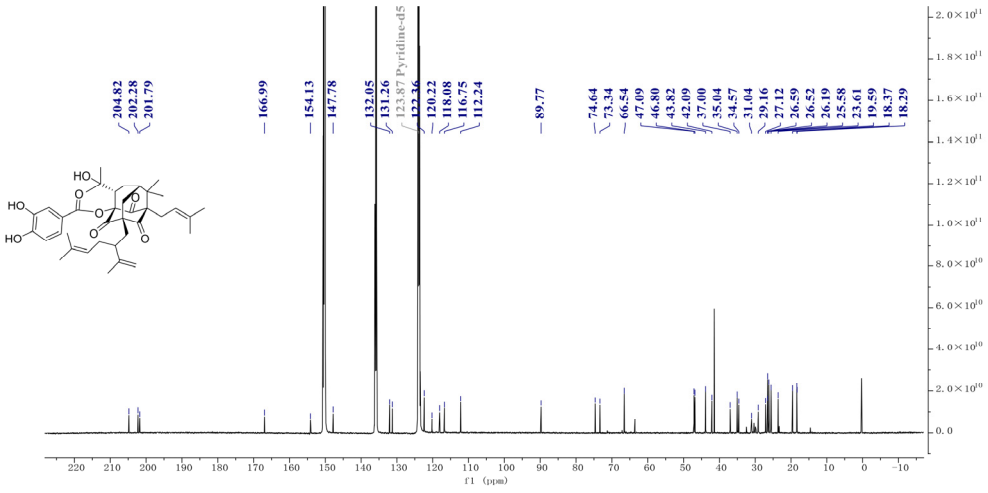


Figure S32. ^{13}C NMR spectrum of compound **2** (recorded in Pyridine-d_5)

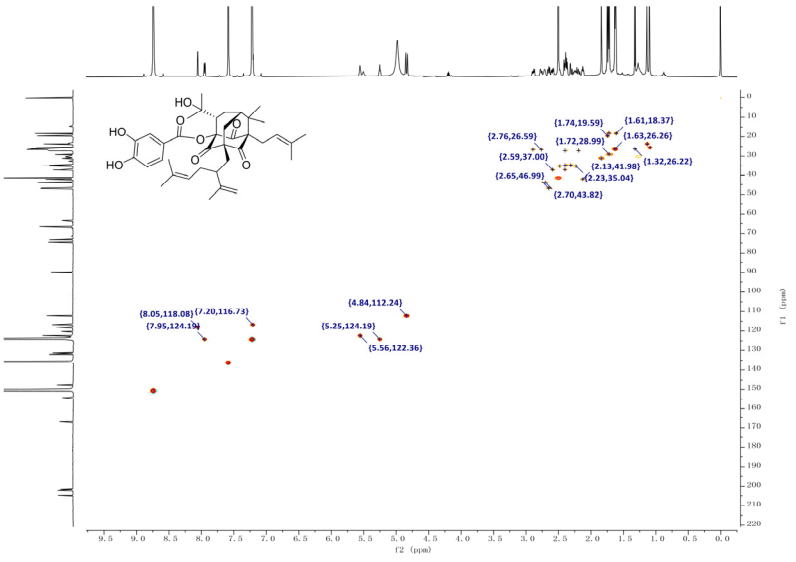


Figure S33. HSQC spectrum of compound **2** (recorded in Pyridine-d_5)

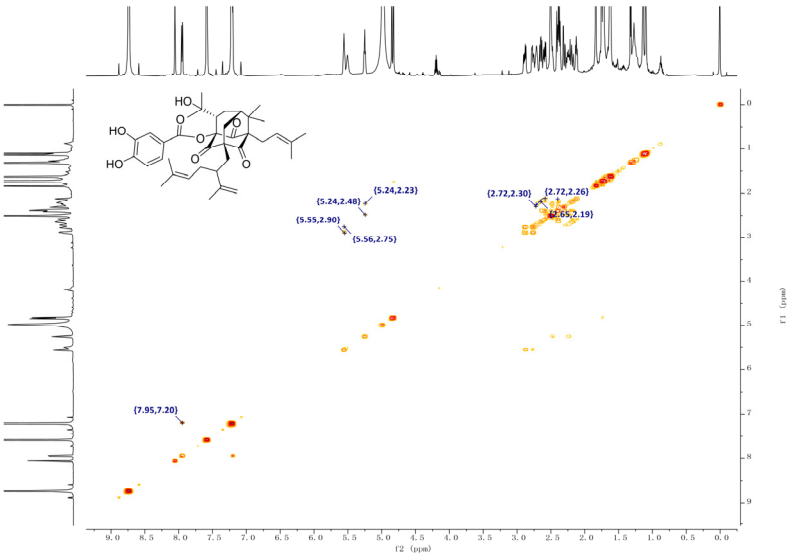


Figure S34. ^{1}H-^{1}H COSY spectrum of compound **2** (recorded in Pyridine-d_5)

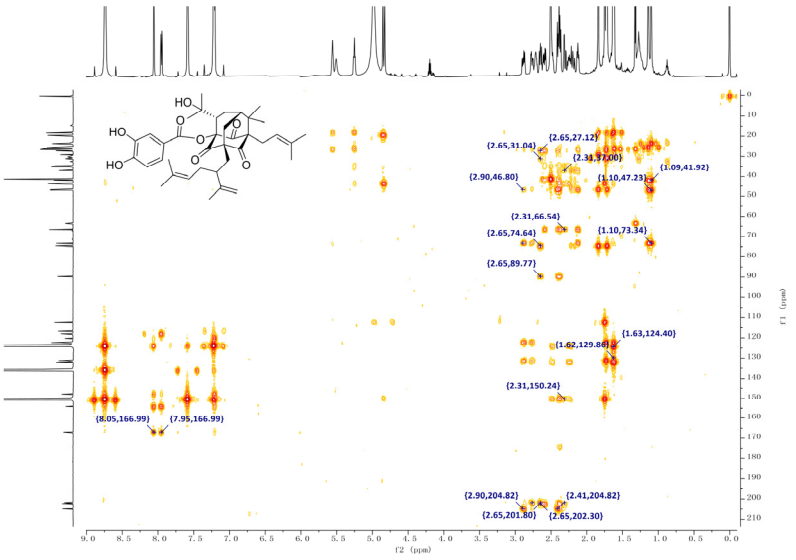


Figure S35. HMBC spectrum of compound **2** (recorded in Pyridine-d_5)

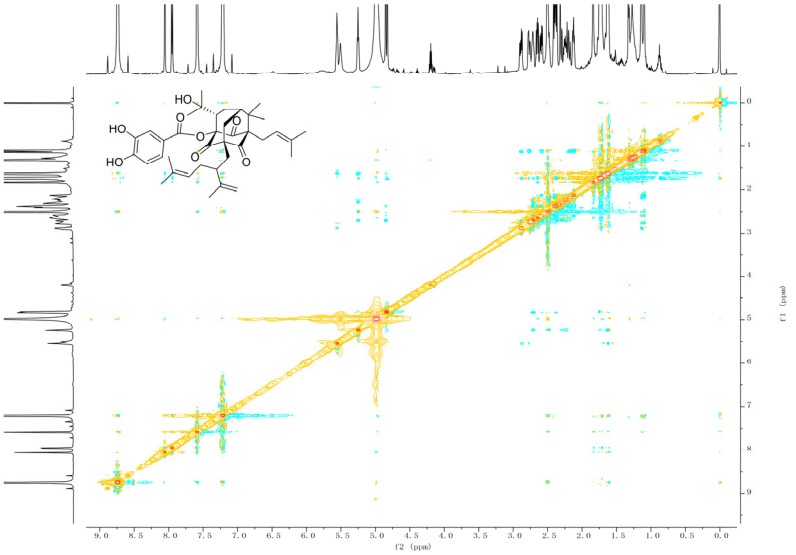


Figure S36. NOESY spectrum of compound **2** (recorded in Pyridine-d_5)

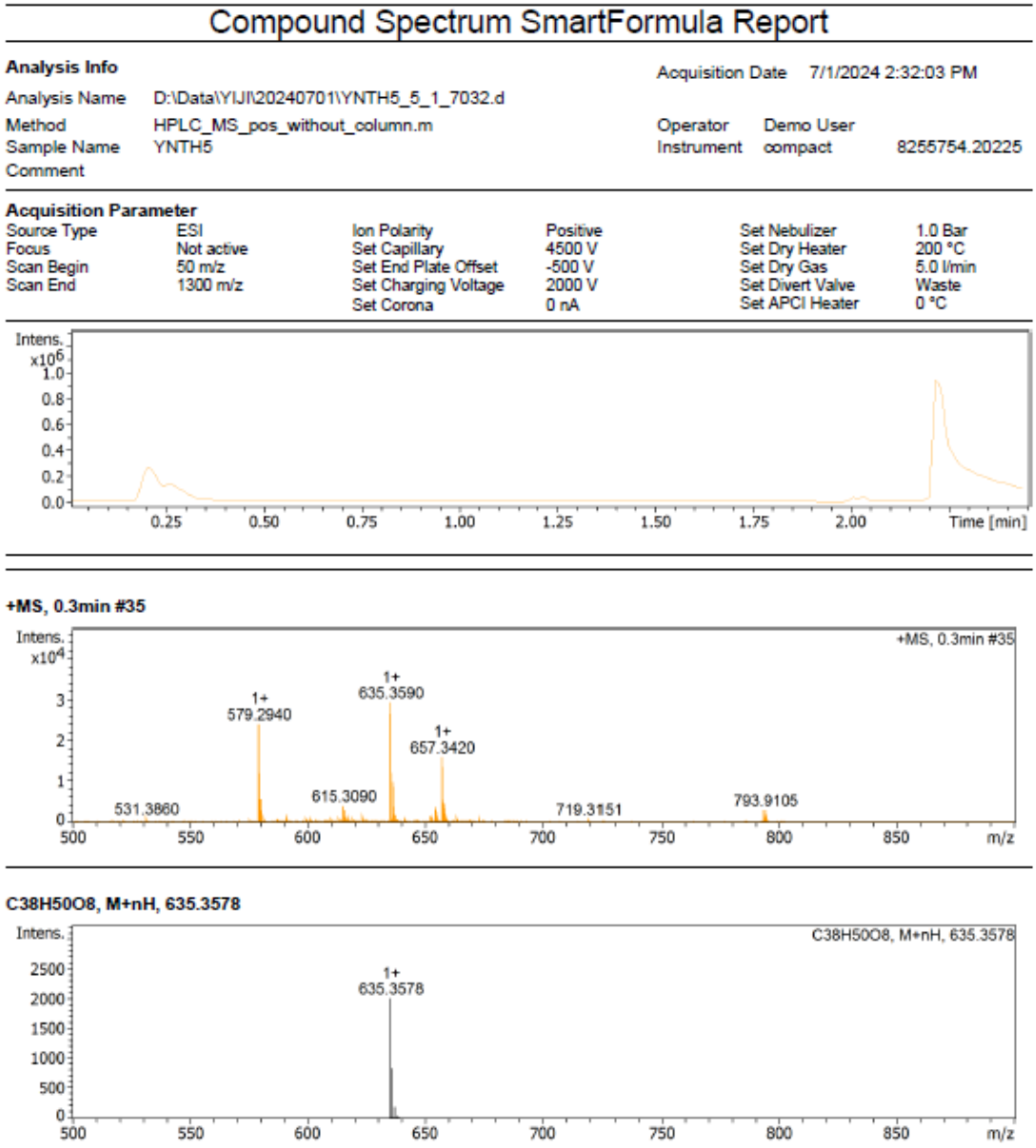


Figure S37. HRESIMS spectrum of compound **2**

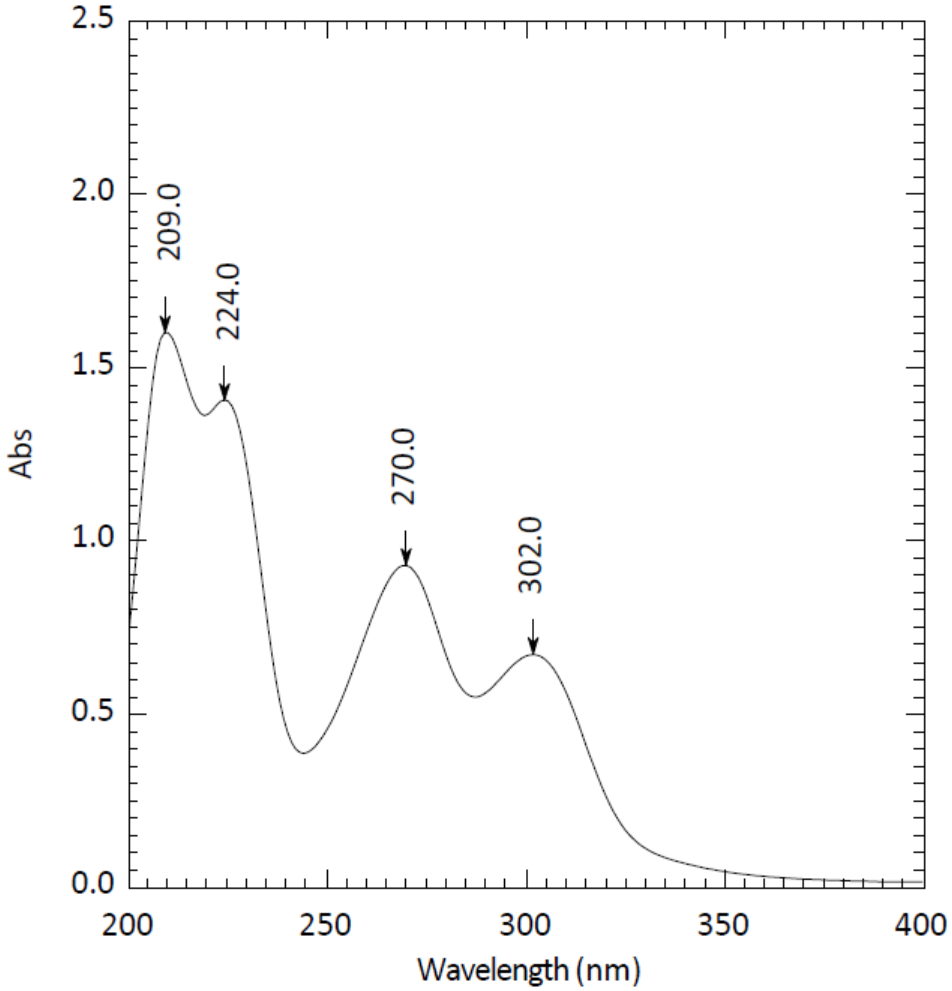


Figure S38. UV spectrum of compound **2**

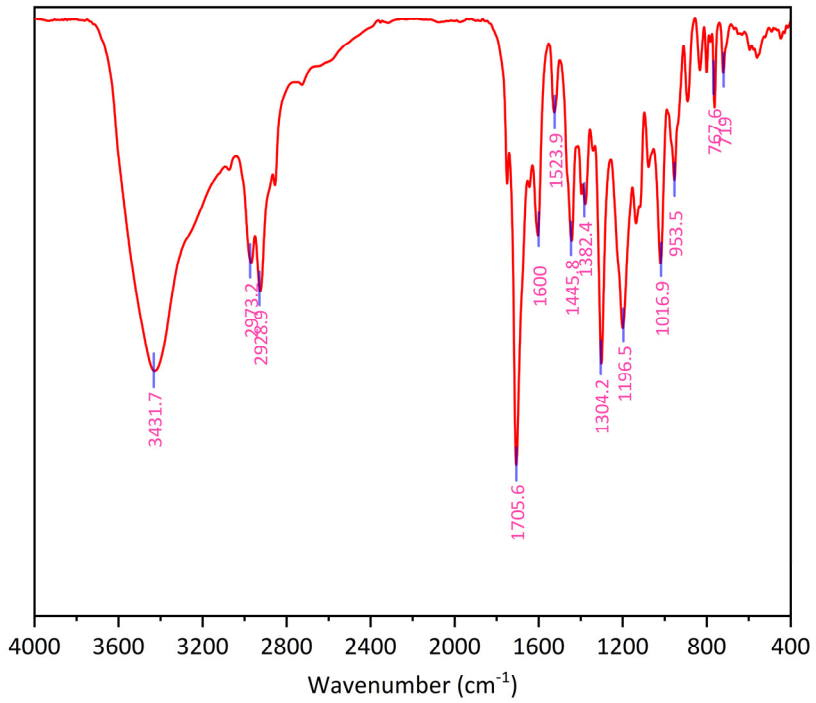


Figure S39. IR spectrum of compound **2**

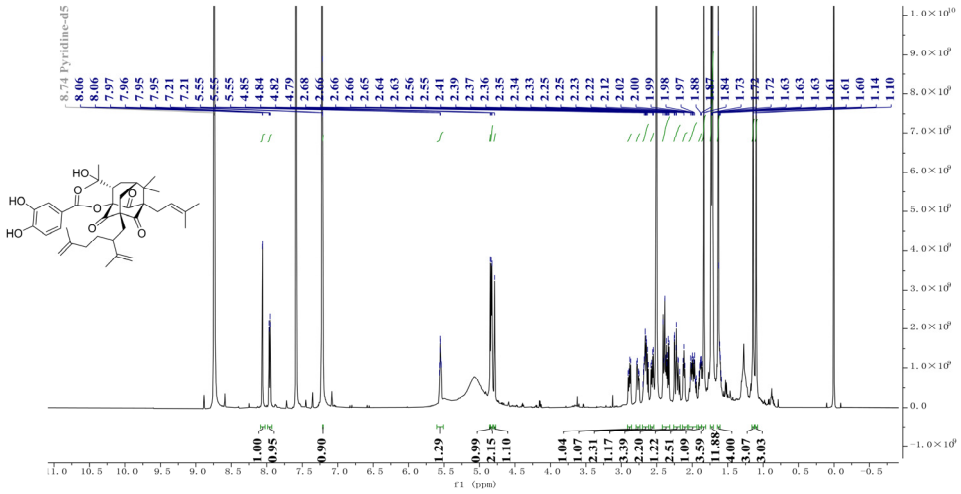


Figure S40. ^{1}H NMR spectrum of compound **3** (recorded in Pyridine-d_5)

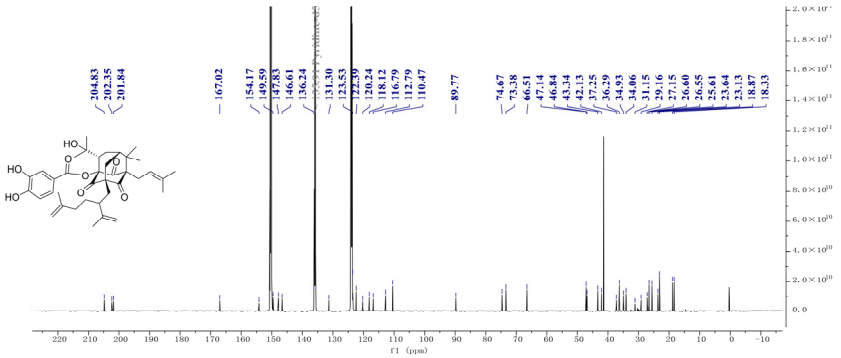


Figure S41. ^{13}C NMR spectrum of compound **3** (recorded in Pyridine-d_5)

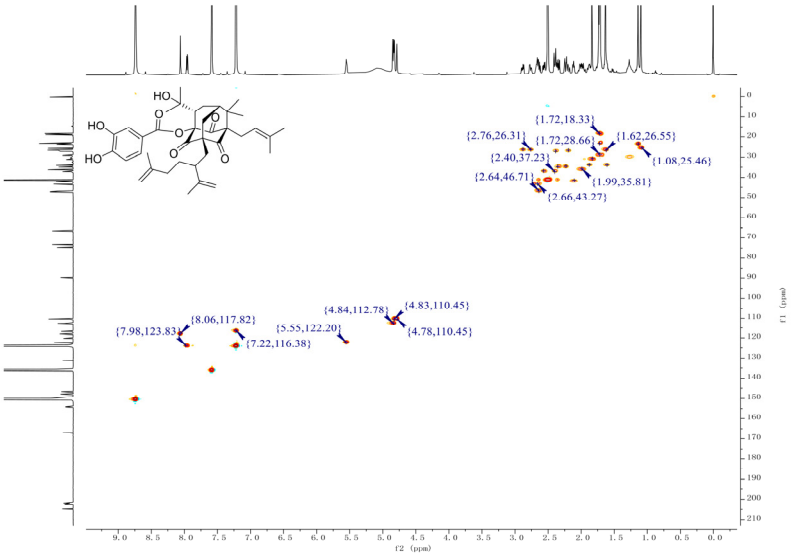


Figure S42. HSQC spectrum of compound **3** (recorded in Pyridine-d_5)

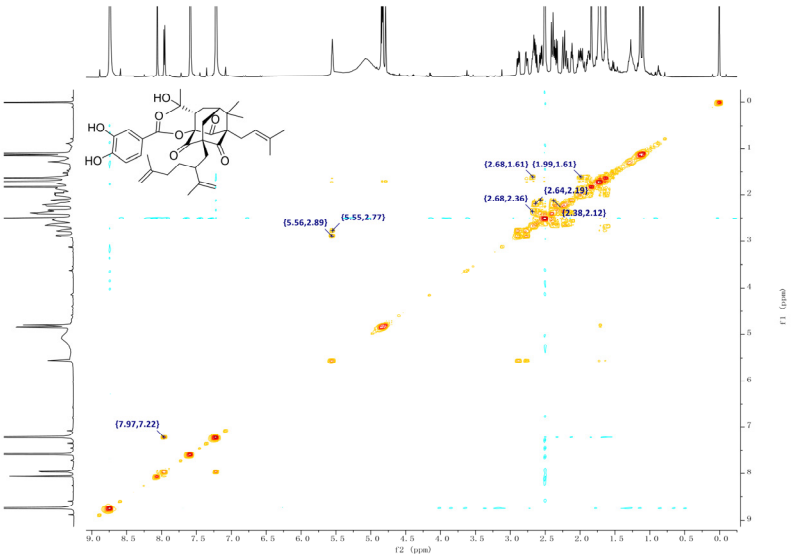


Figure S43. ^{1}H-^{1}H COSY spectrum of compound **3** (recorded in Pyridine-d_5)

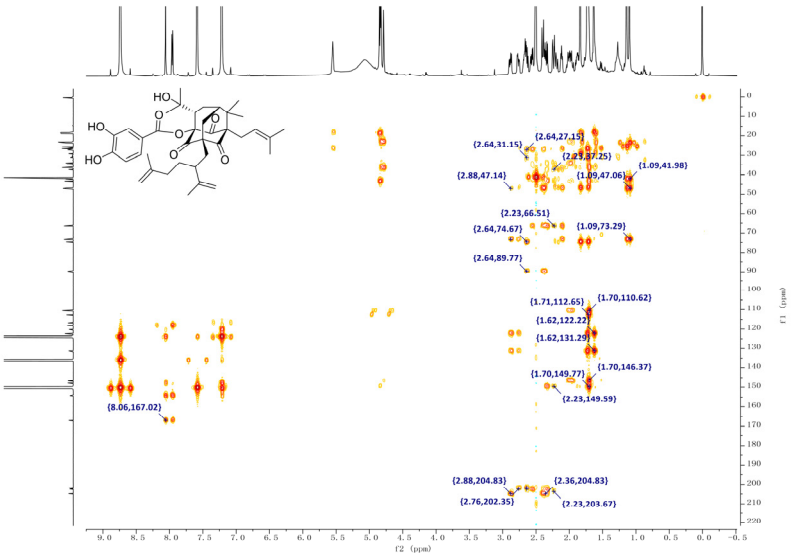


Figure S44. HMBC spectrum of compound **3** (recorded in Pyridine-d_5)

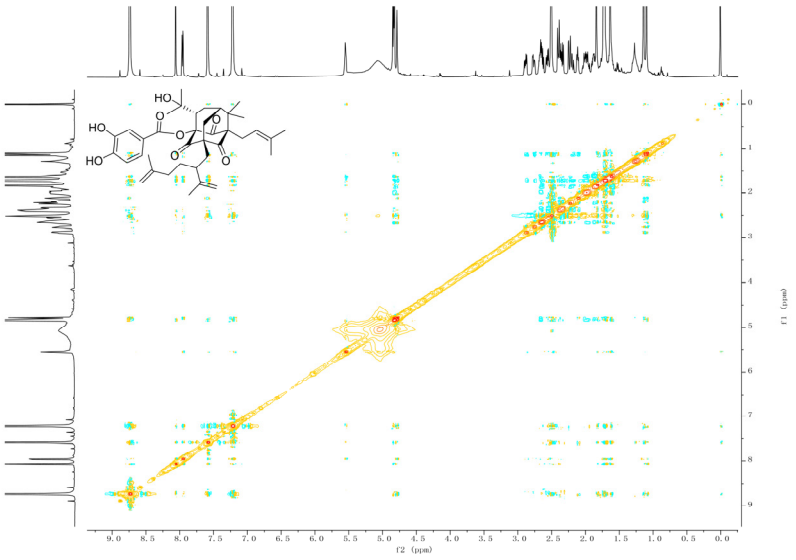


Figure S45. NOESY spectrum of compound **3** (recorded in Pyridine-d_5)

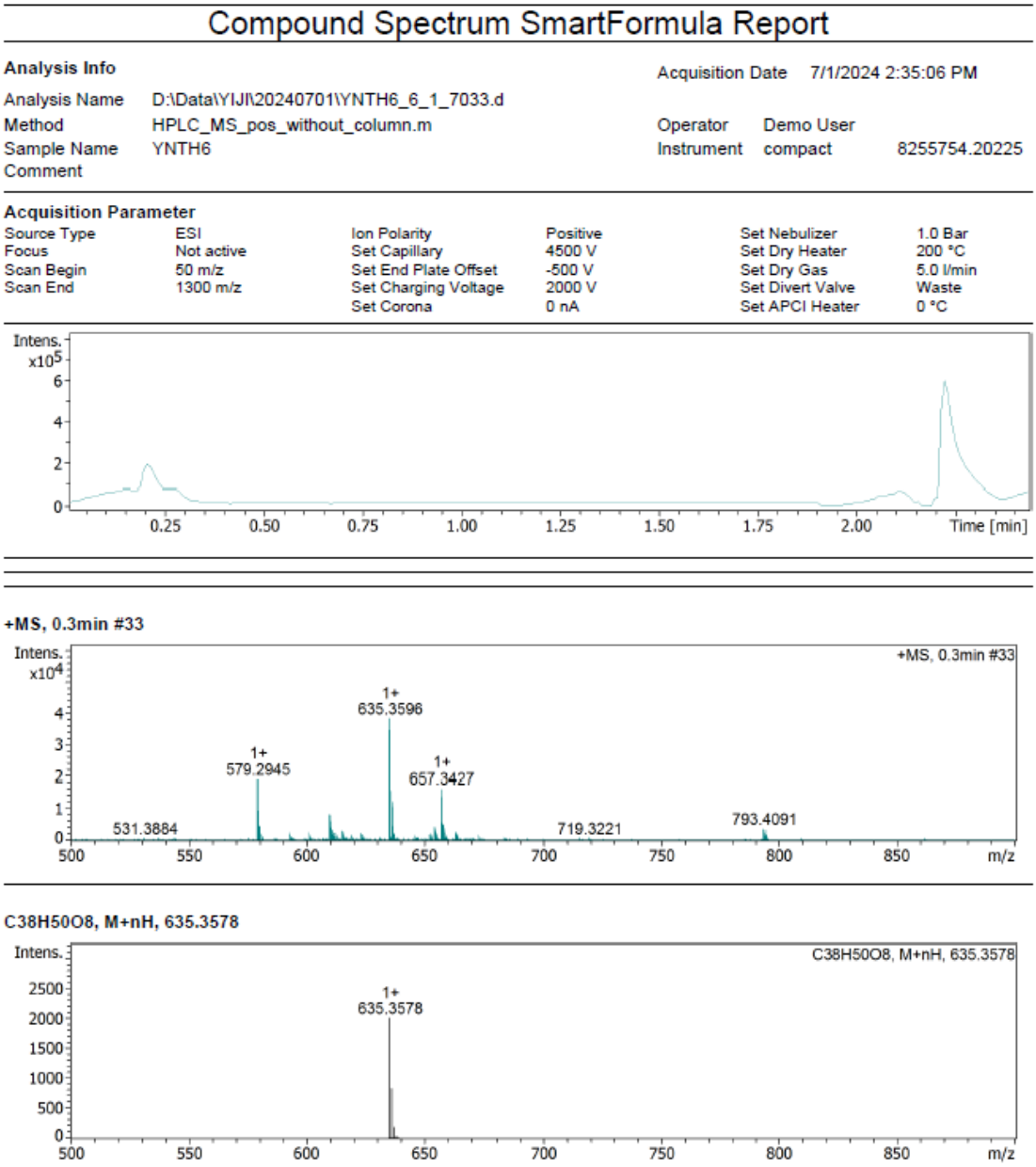


Figure S46. HRESIMS spectrum of compound **3**

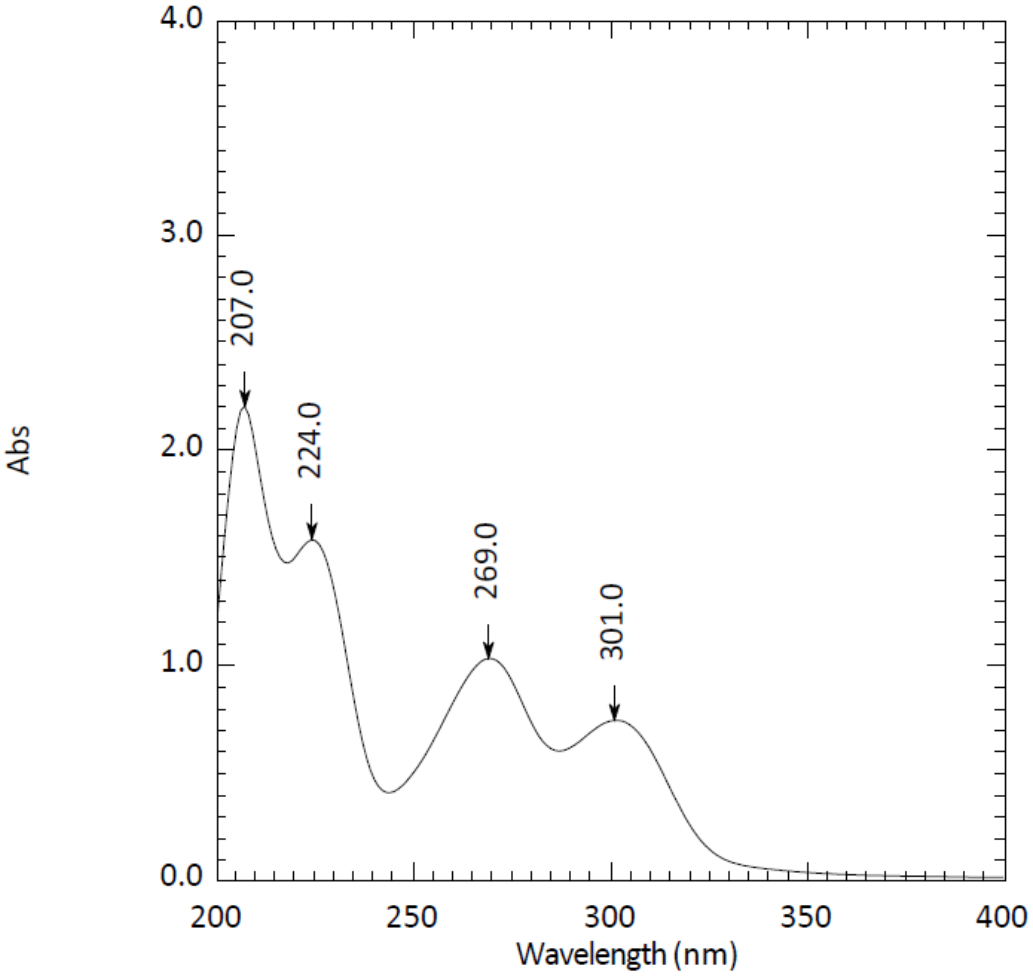


Figure S47. UV spectrum of compound **3**

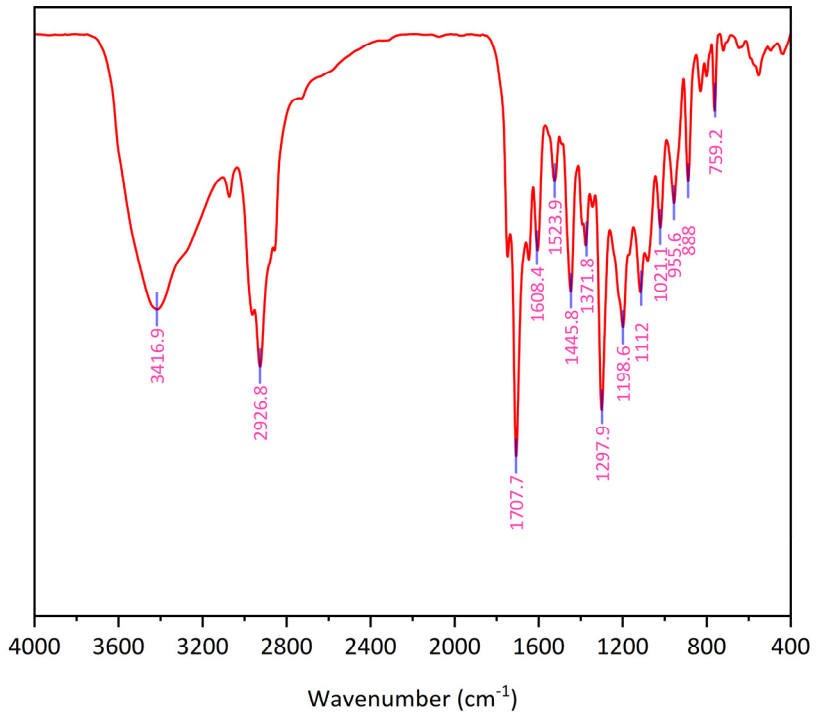


Figure S48. IR spectrum of compound **3**

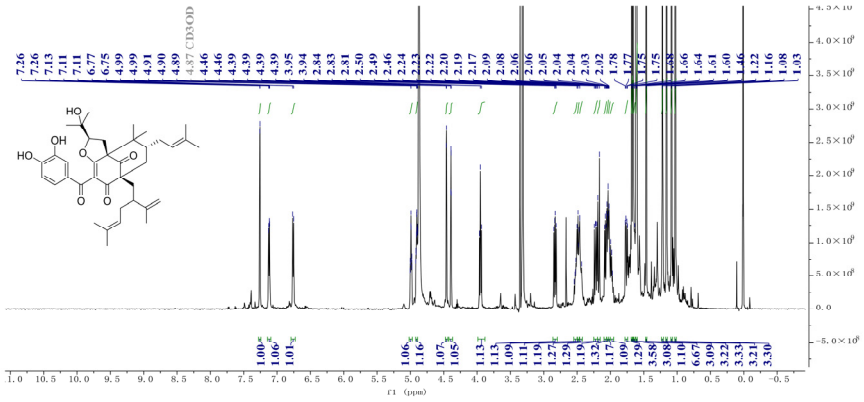


Figure S49. ^{1}H NMR spectrum of compound **4** (recorded in MeOH-d_4)

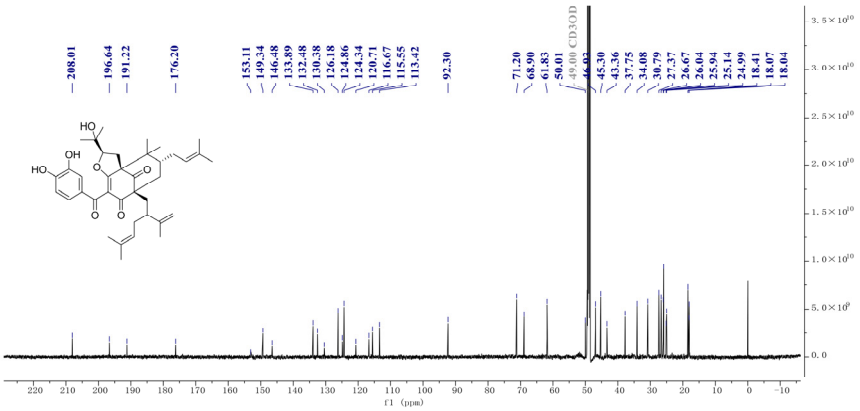


Figure S50. ^{13}C NMR spectrum of compound **4** (recorded in MeOH-d_4)

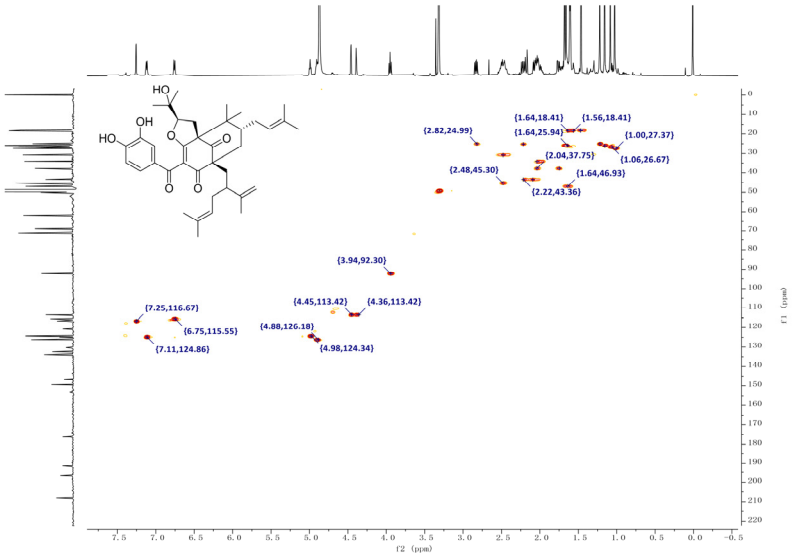


Figure S51. HSQC spectrum of compound **4** (recorded in MeOH-d_4)

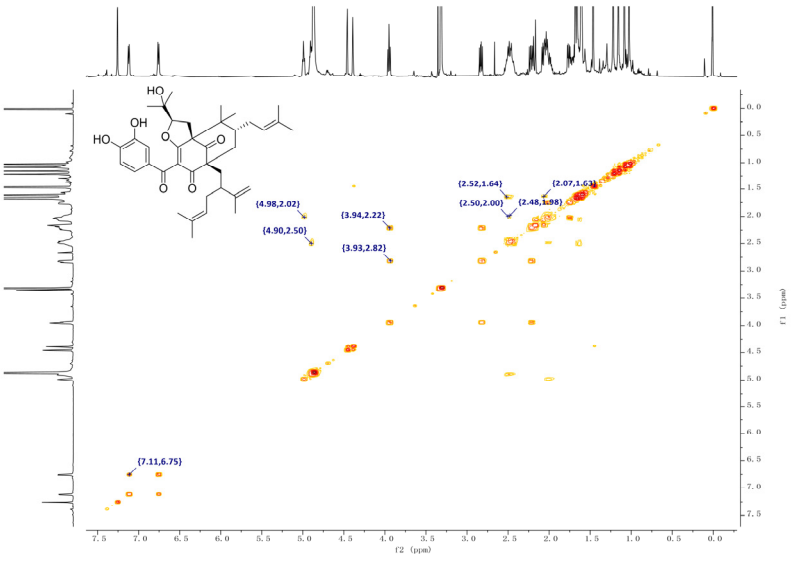


Figure S52. ^{1}H-^{1}H COSY spectrum of compound **4** (recorded in MeOH-d_4)

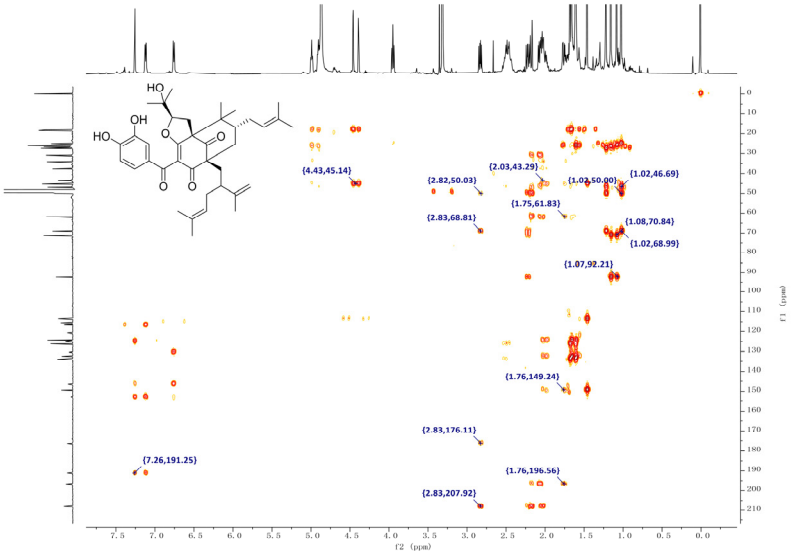


Figure S53. HMBC spectrum of compound **4** (recorded in MeOH-d_4)

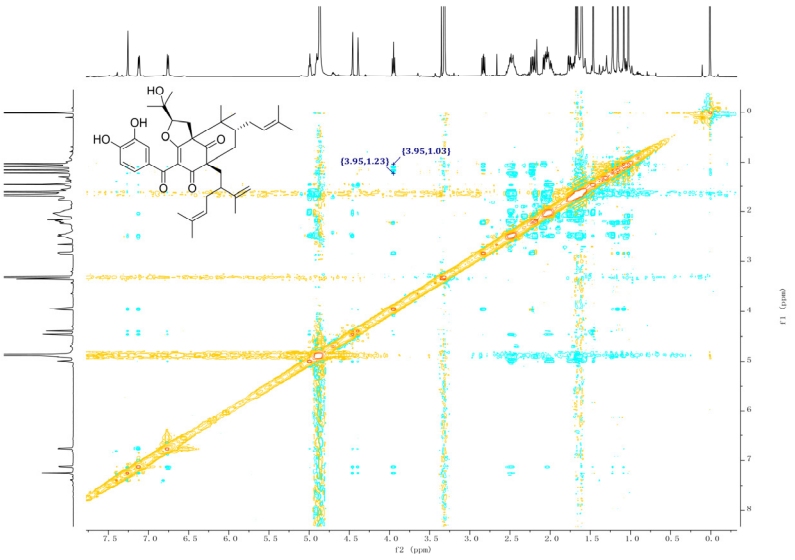


Figure S54. NOESY spectrum of compound **4** (recorded in MeOH-d_4)

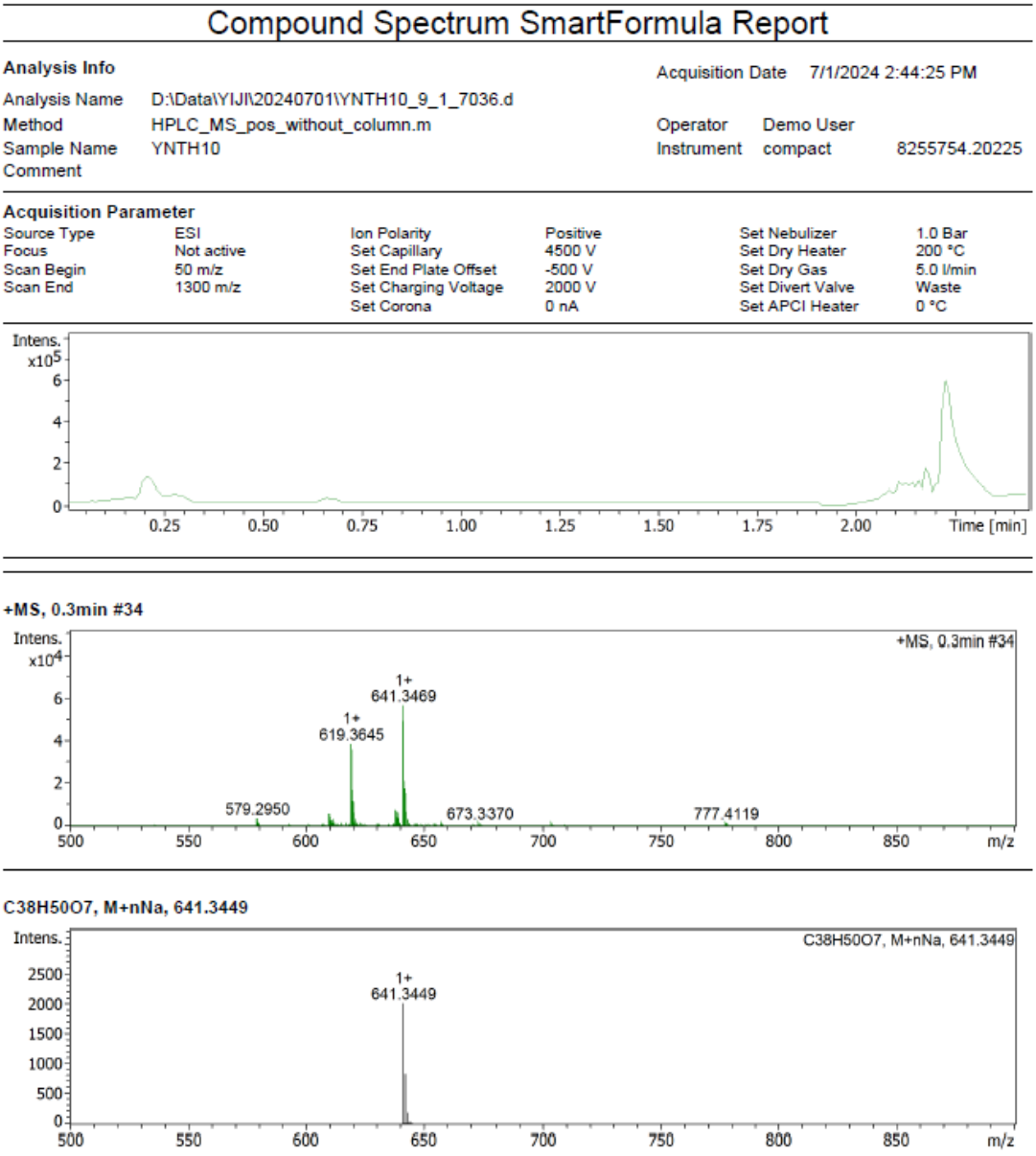


Figure S55. HRESIMS spectrum of compound **4**

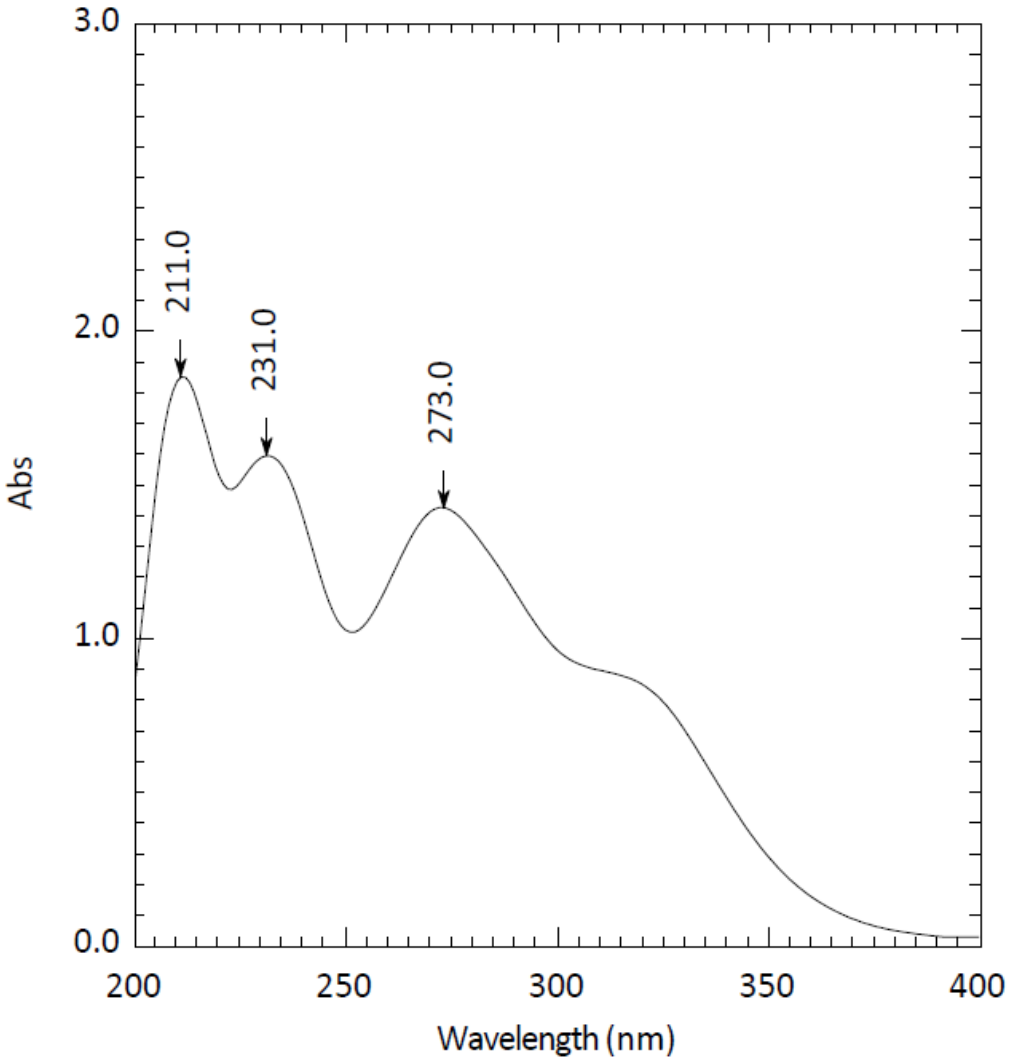


Figure S56. UV spectrum of compound **4**

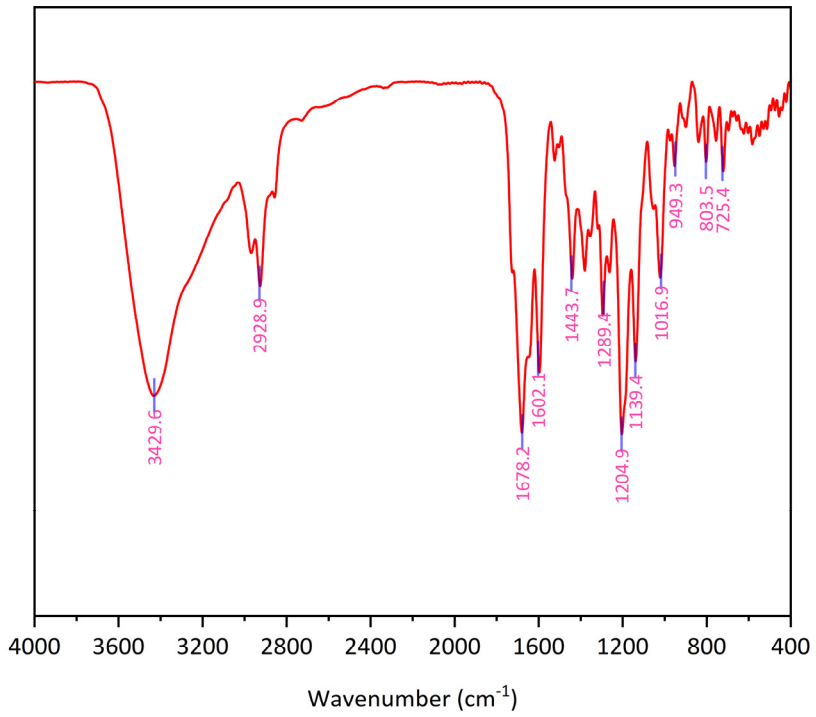


Figure S57. IR spectrum of compound **4**

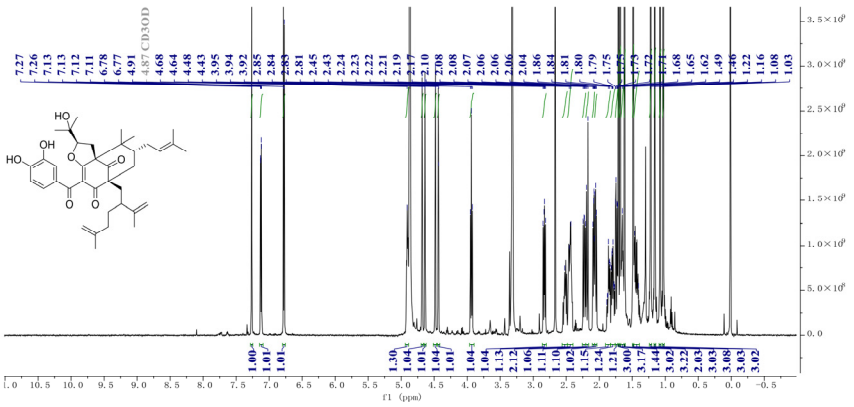


Figure S58. ^{1}H NMR spectrum of compound **5** (recorded in MeOH-d_4)

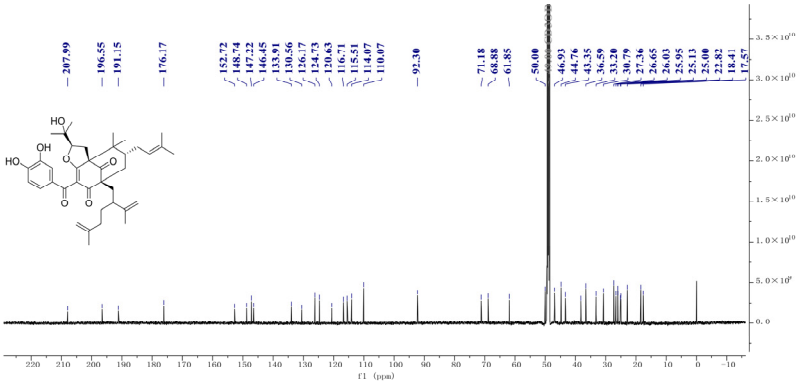


Figure S59. ^{13}C NMR spectrum of compound **5** (recorded in MeOH-d_4)

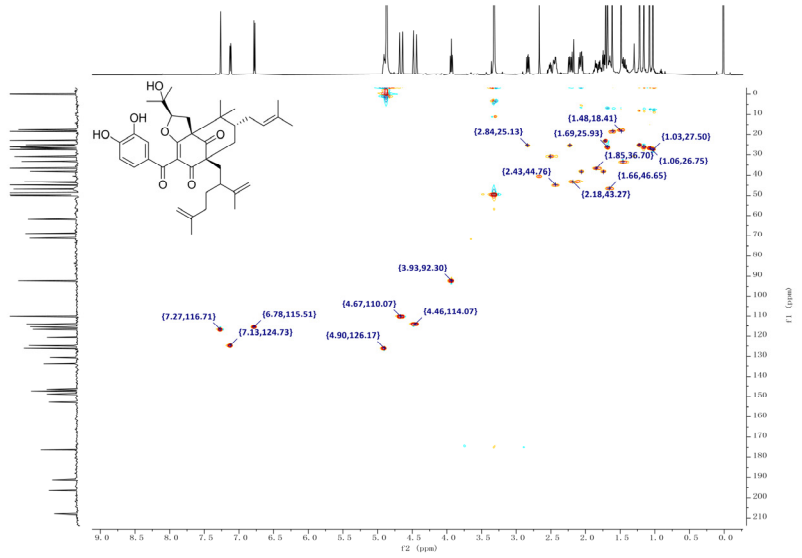


Figure S60. HSQC spectrum of compound **5** (recorded in MeOH-d_4)

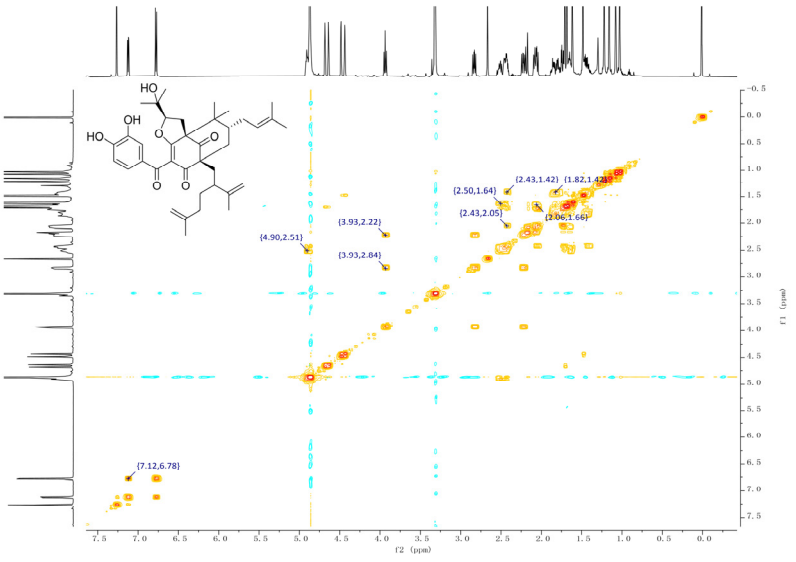


Figure S61. ^{1}H-^{1}H COSY spectrum of compound **5** (recorded in MeOH-d_4)

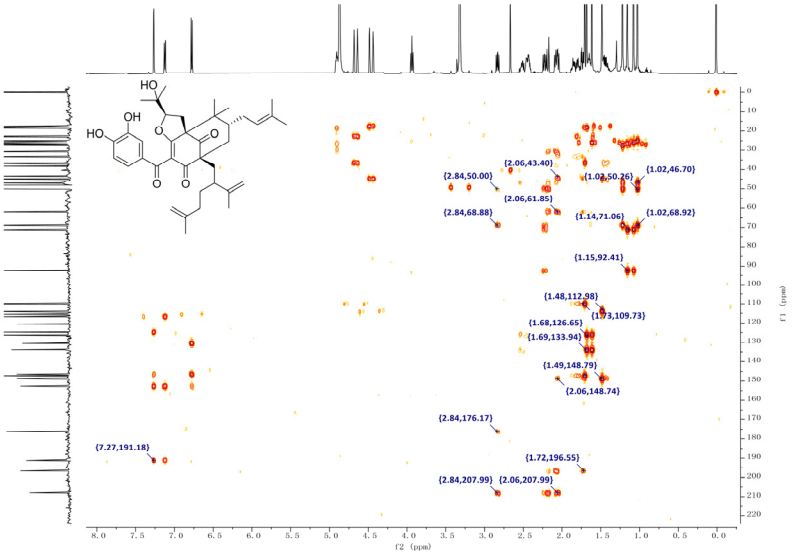


Figure S62. HMBC spectrum of compound **5** (recorded in MeOH-d_4)

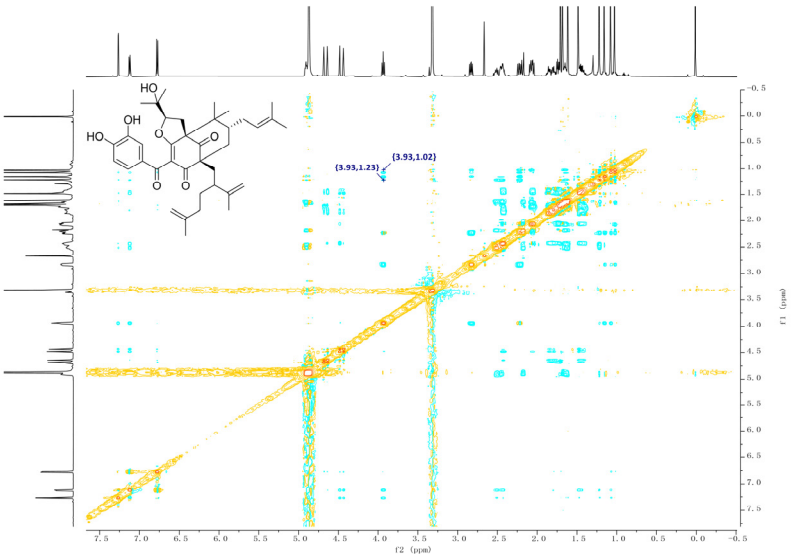


Figure S63. NOESY spectrum of compound **5** (recorded in MeOH-d_4)

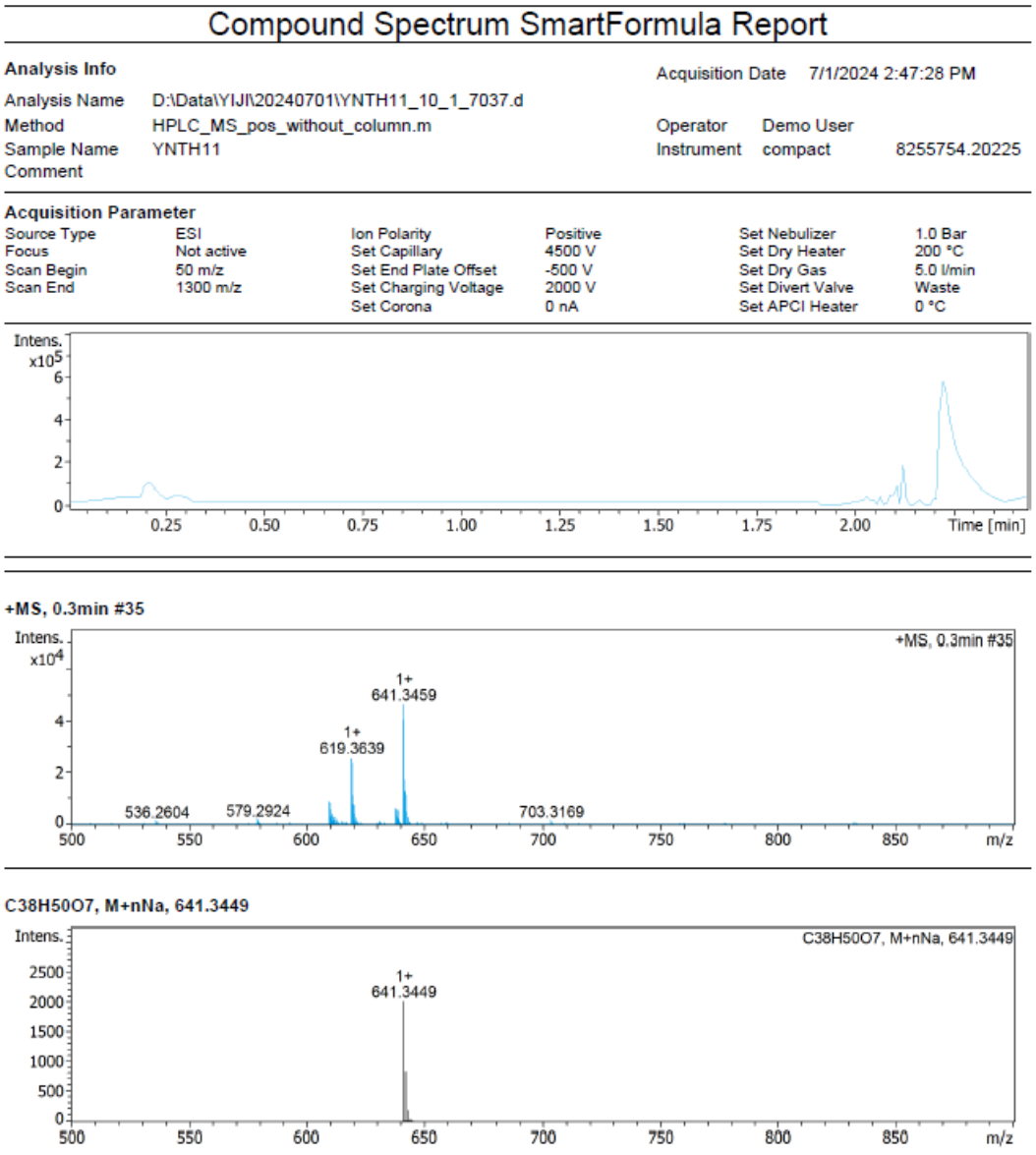


Figure S64. HRESIMS spectrum of compound **5**

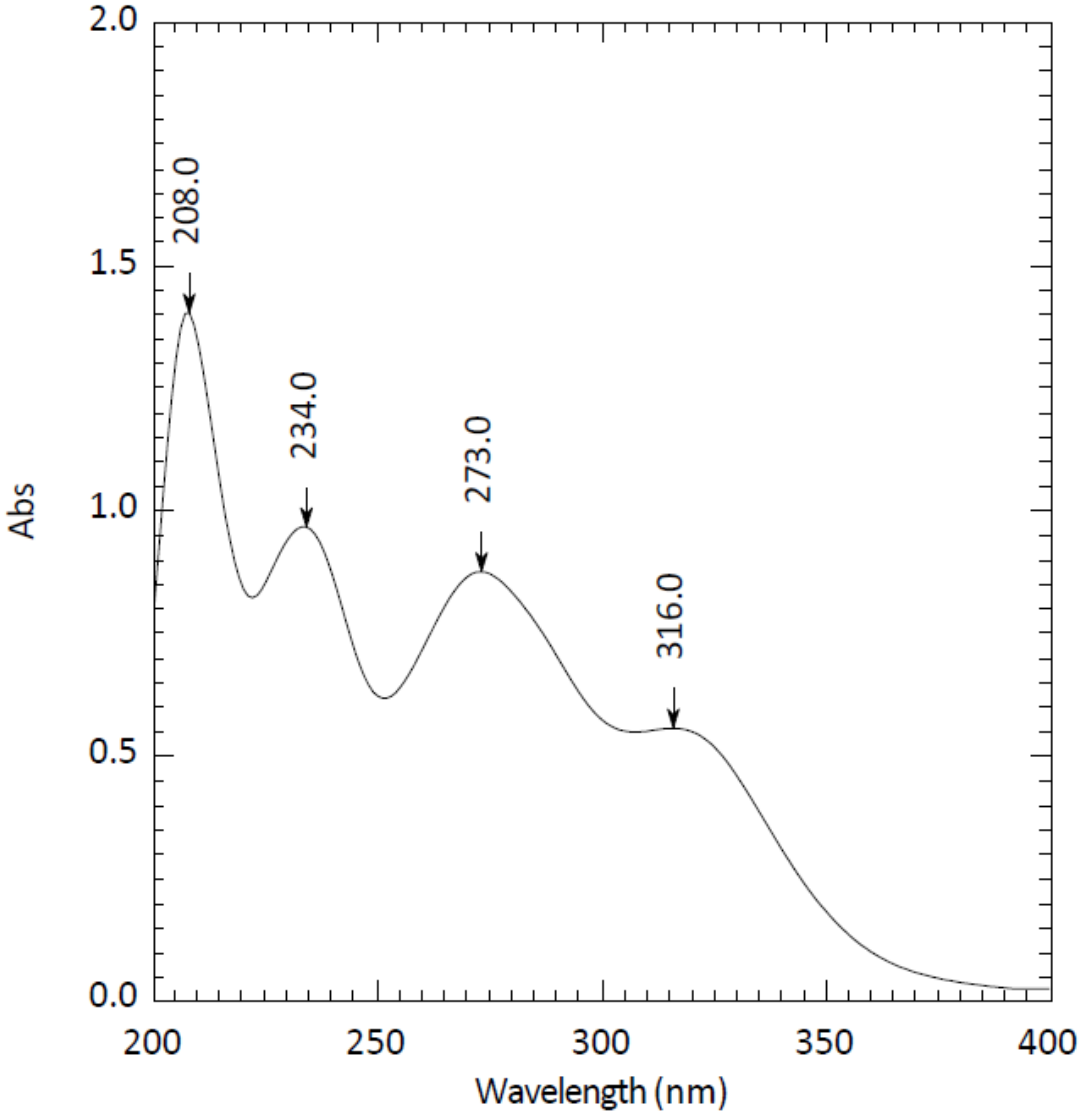


Figure S65. UV spectrum of compound **5**

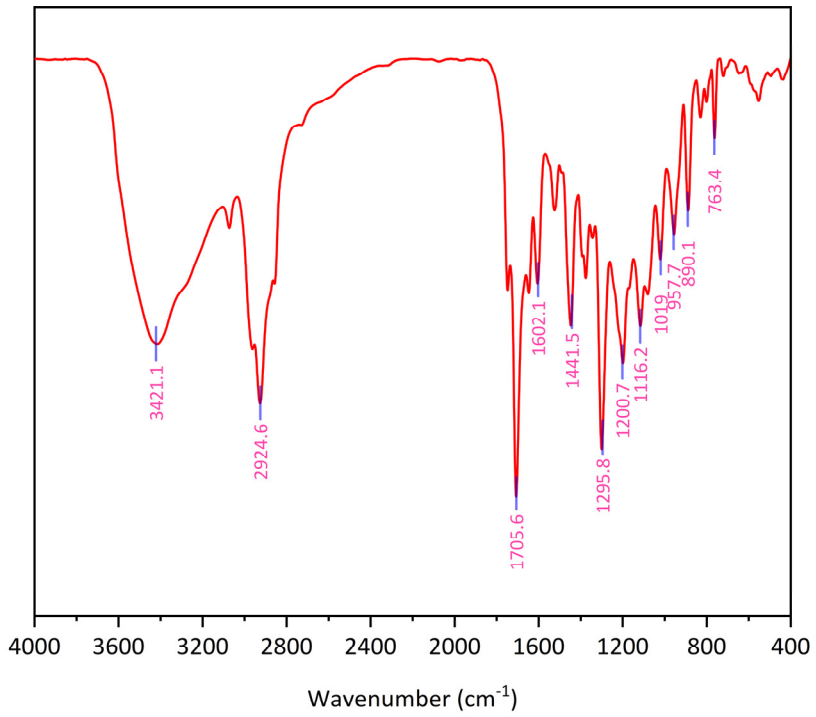


Figure S66. IR spectrum of compound **5**

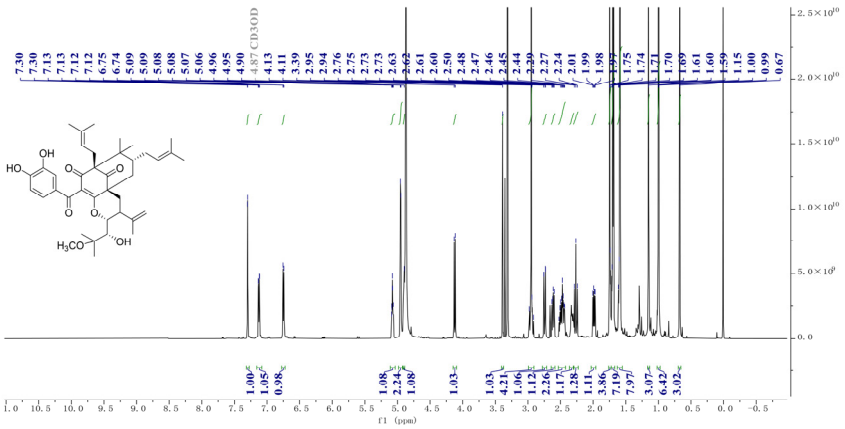


Figure S67. ^{1}H NMR spectrum of compound **6** (recorded in MeOH-d_4)

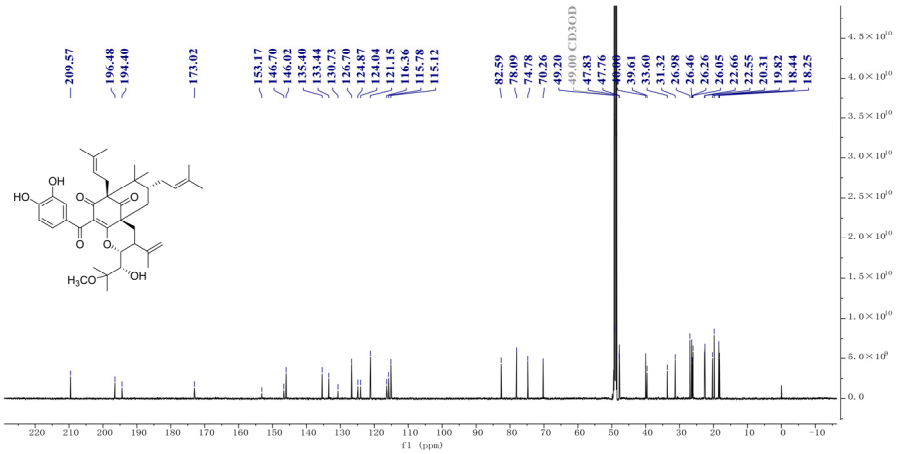


Figure S68. ^{13}C NMR spectrum of compound **6** (recorded in MeOH-d_4)

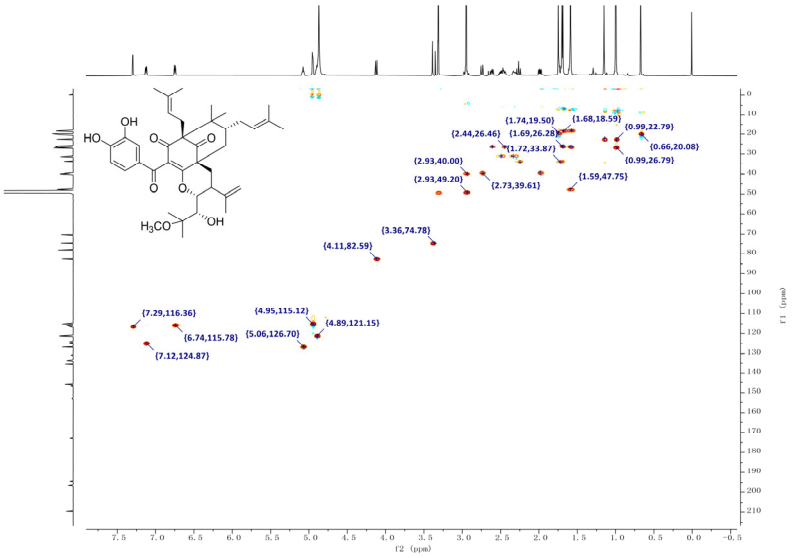


Figure S69. HSQC spectrum of compound **6** (recorded in MeOH-d_4)

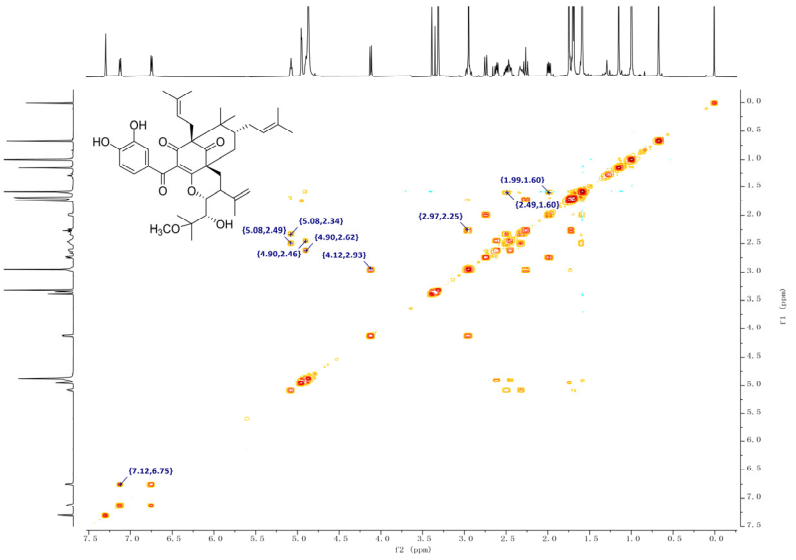


Figure S70. ^{1}H-^{1}H COSY spectrum of compound **6** (recorded in MeOH-d_4)

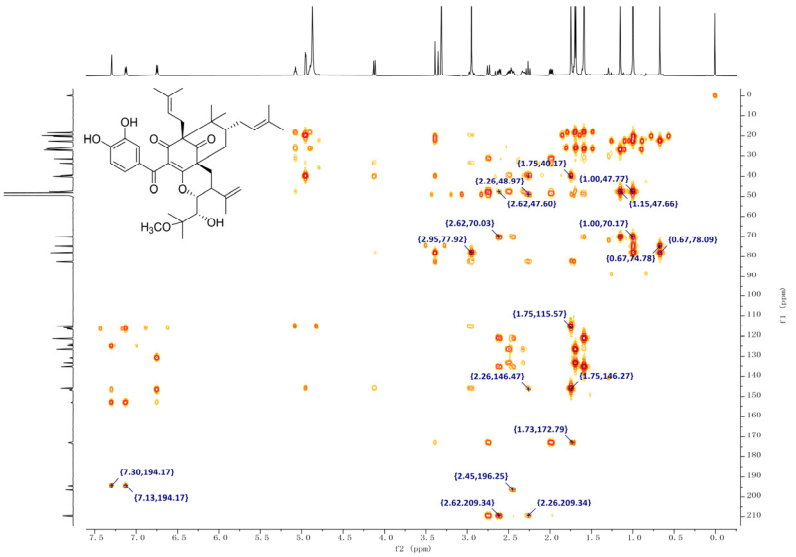


Figure S71. HMBC spectrum of compound **6** (recorded in MeOH-d_4)

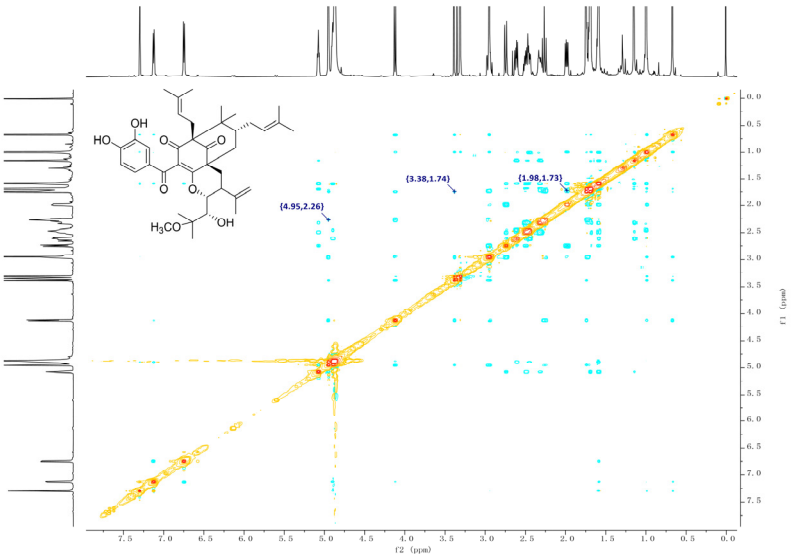


Figure S72. NOESY spectrum of compound **6** (recorded in MeOH-d_4)

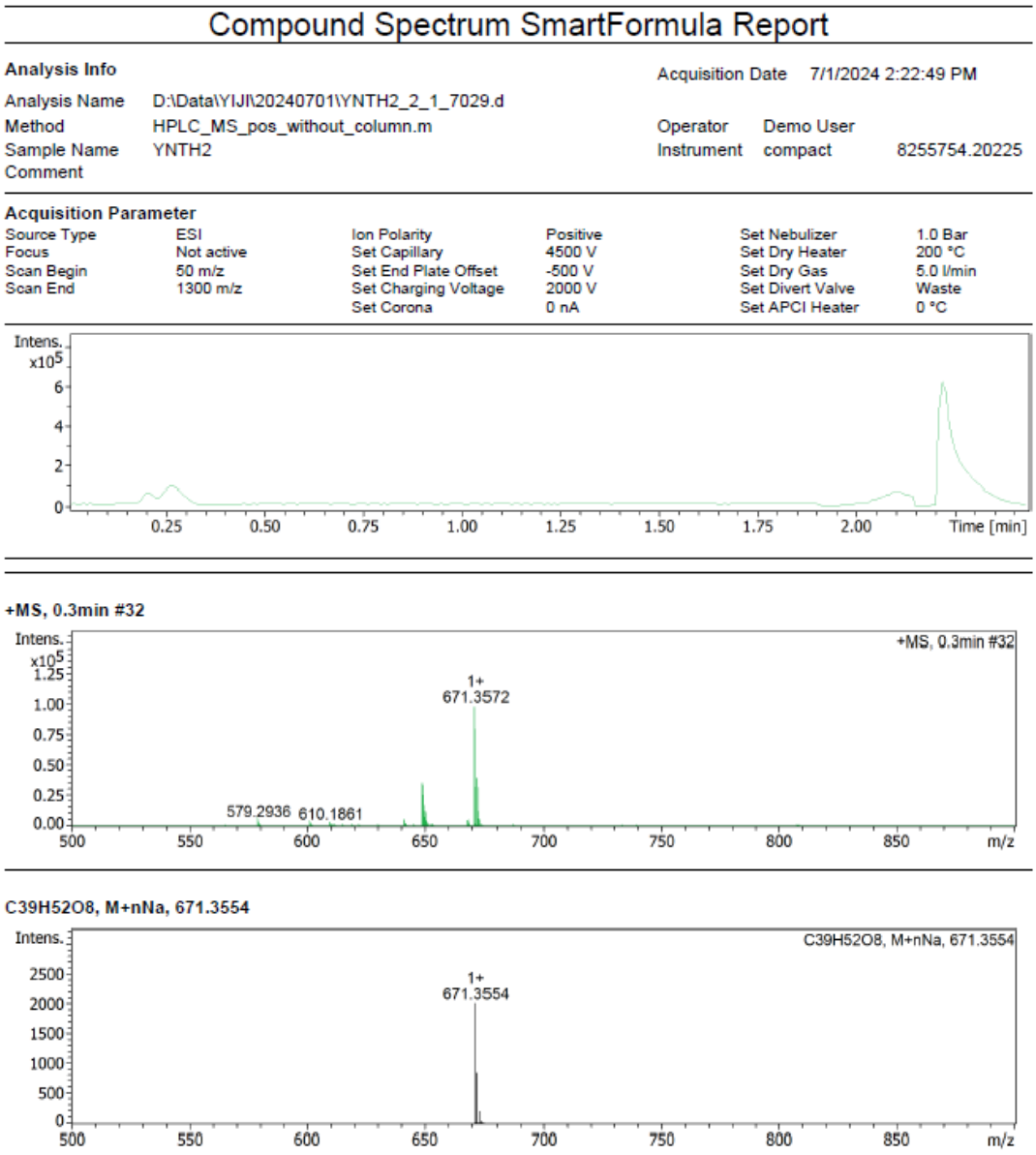


Figure S73. HRESIMS spectrum of compound **6**

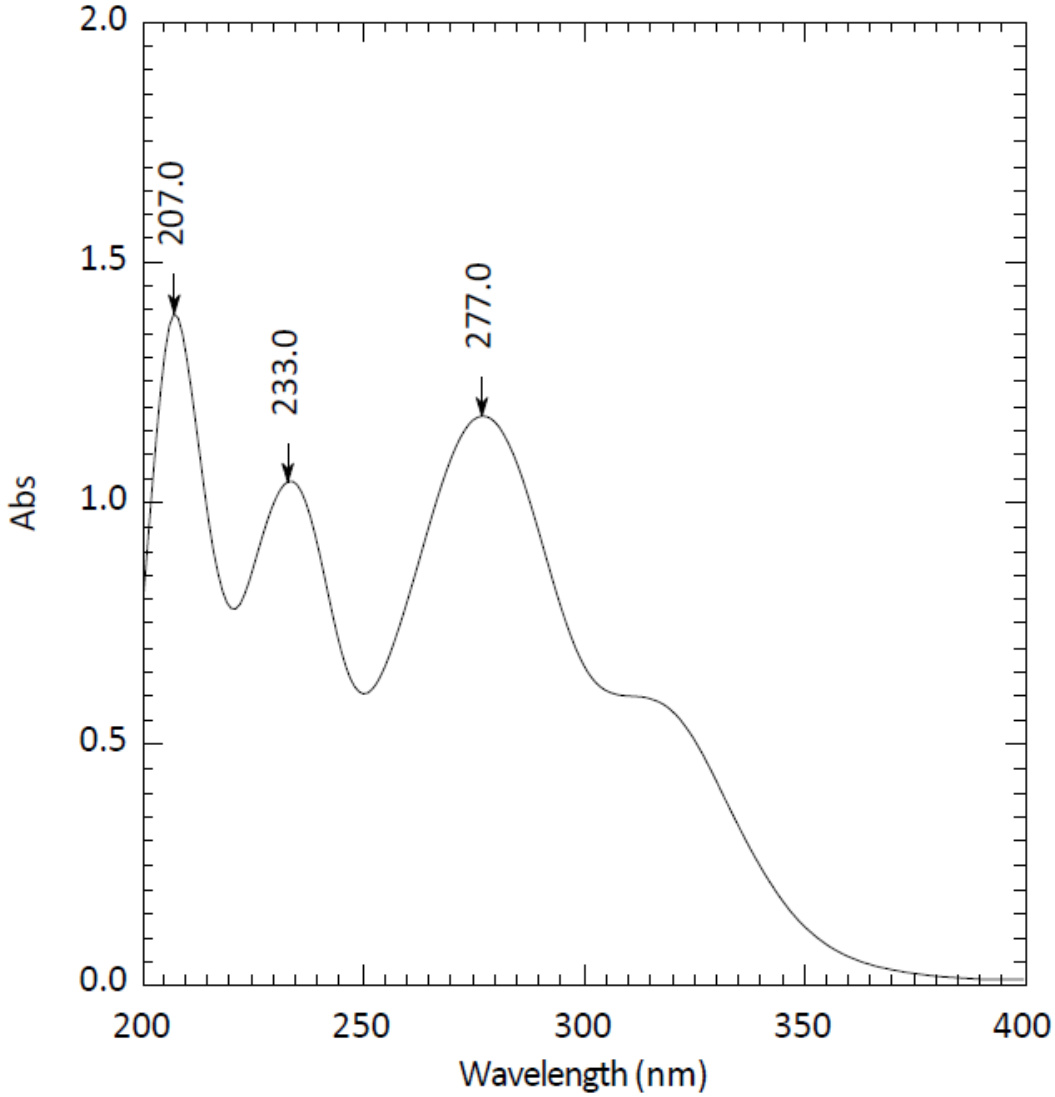


Figure S74. UV spectrum of compound **6**

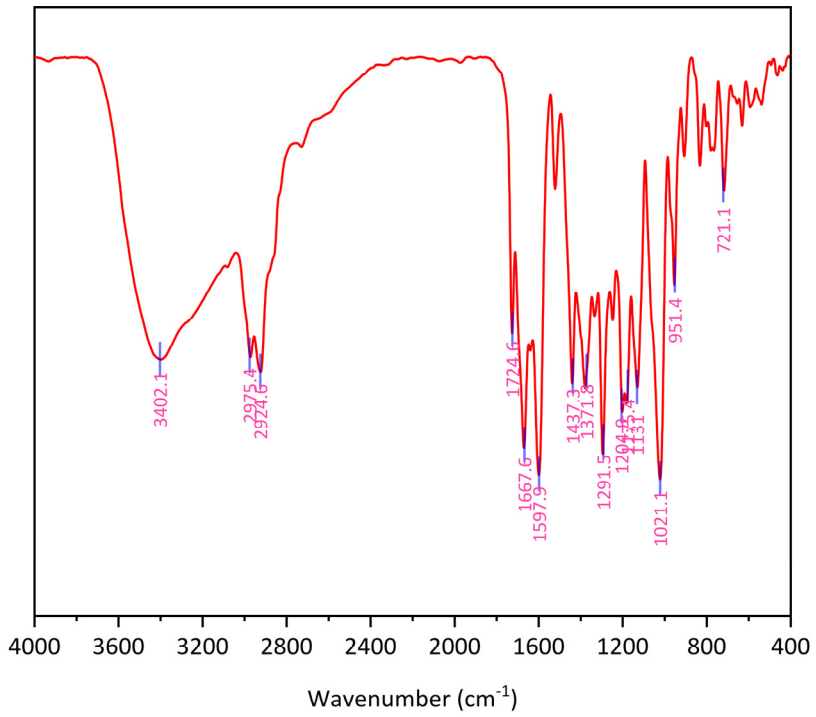


Figure S75. IR spectrum of compound **6**

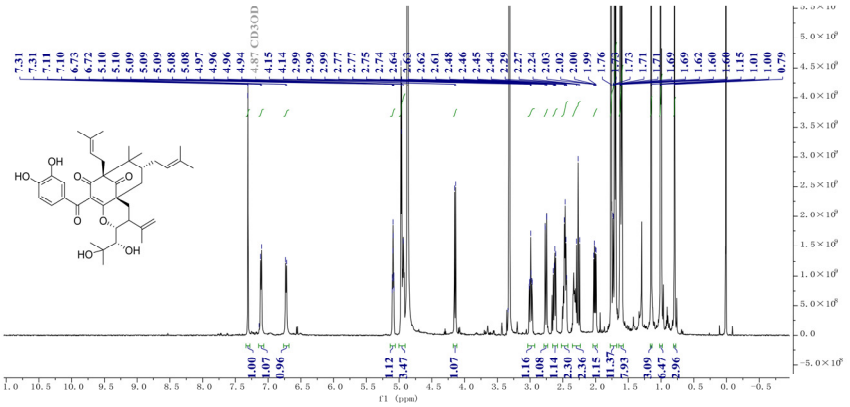


Figure S76. ^{1}H NMR spectrum of compound **7** (recorded in MeOH-d_4)

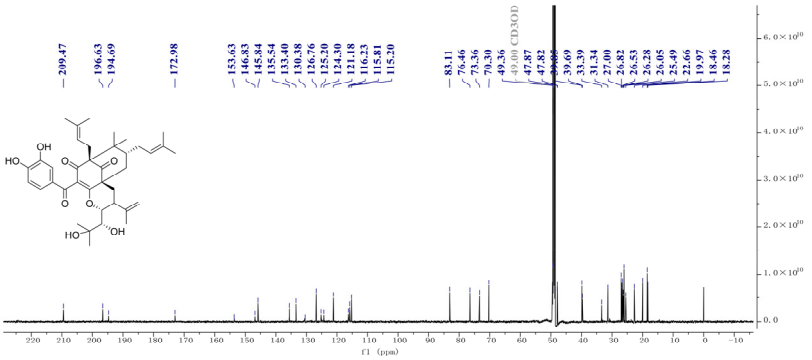


Figure S77. ^{13}C NMR spectrum of compound **7** (recorded in MeOH-d_4)

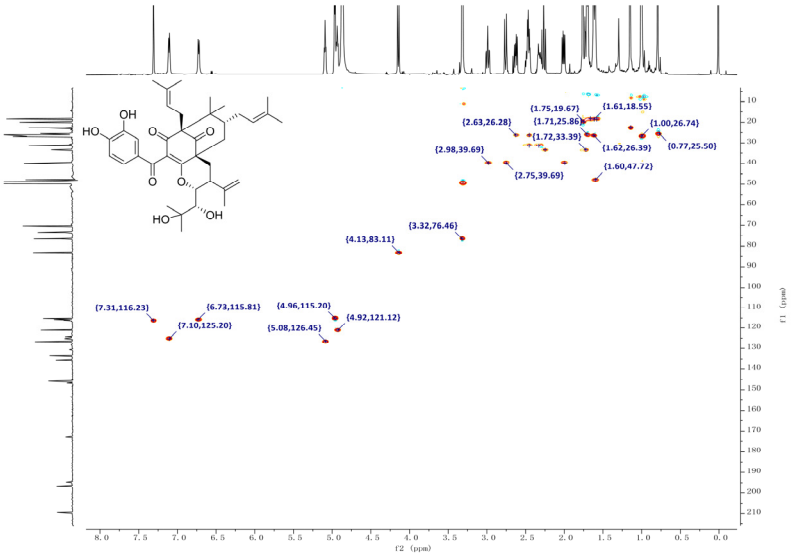


Figure S78. ^{1}HSQC spectrum of compound **7** (recorded in MeOH-d_4)

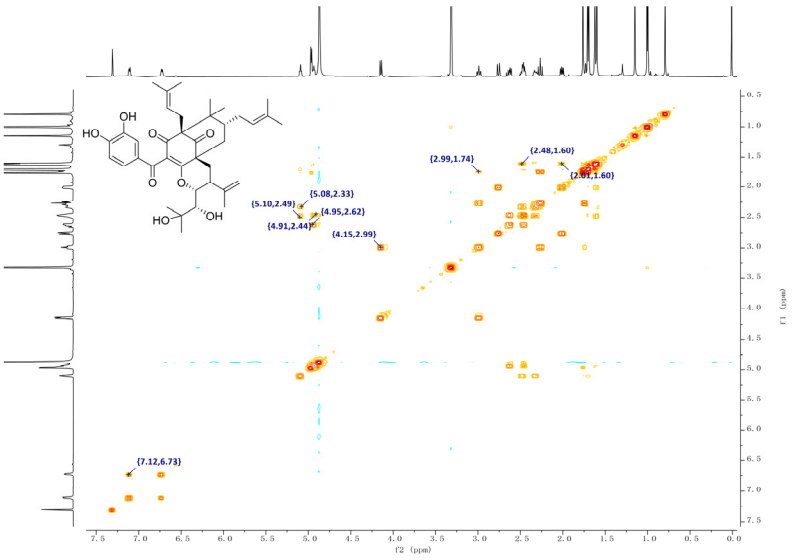


Figure S79. ^{1}H-^{1}H COSY spectrum of compound **7** (recorded in MeOH-d_4)

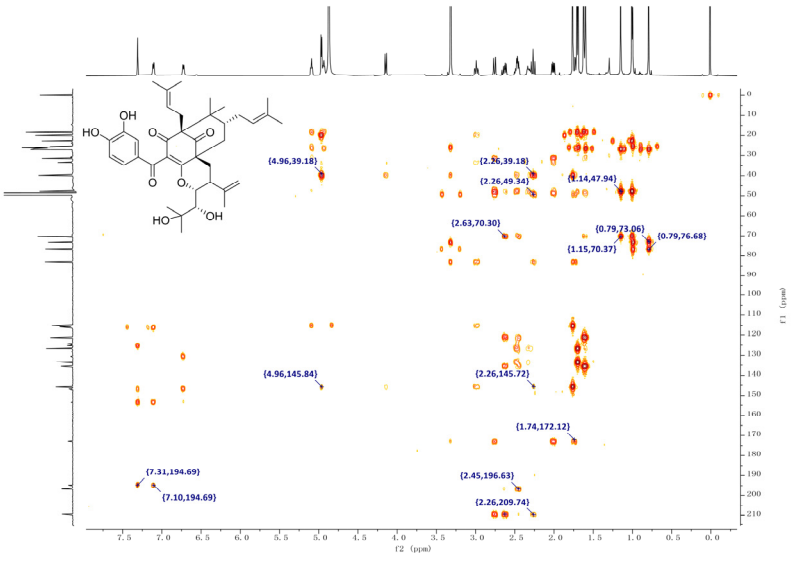


Figure S80. HMBC spectrum of compound **7** (recorded in MeOH-d_4)

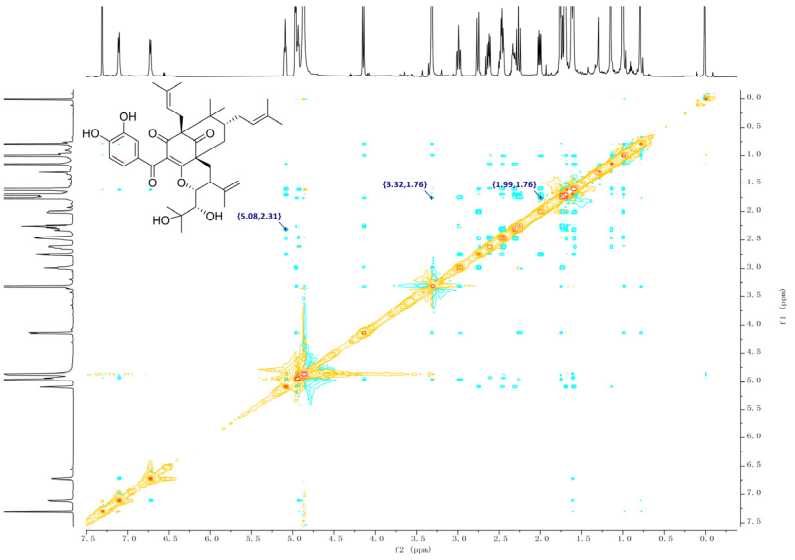


Figure S81. NOESY spectrum of compound **7** (recorded in MeOH-d_4)

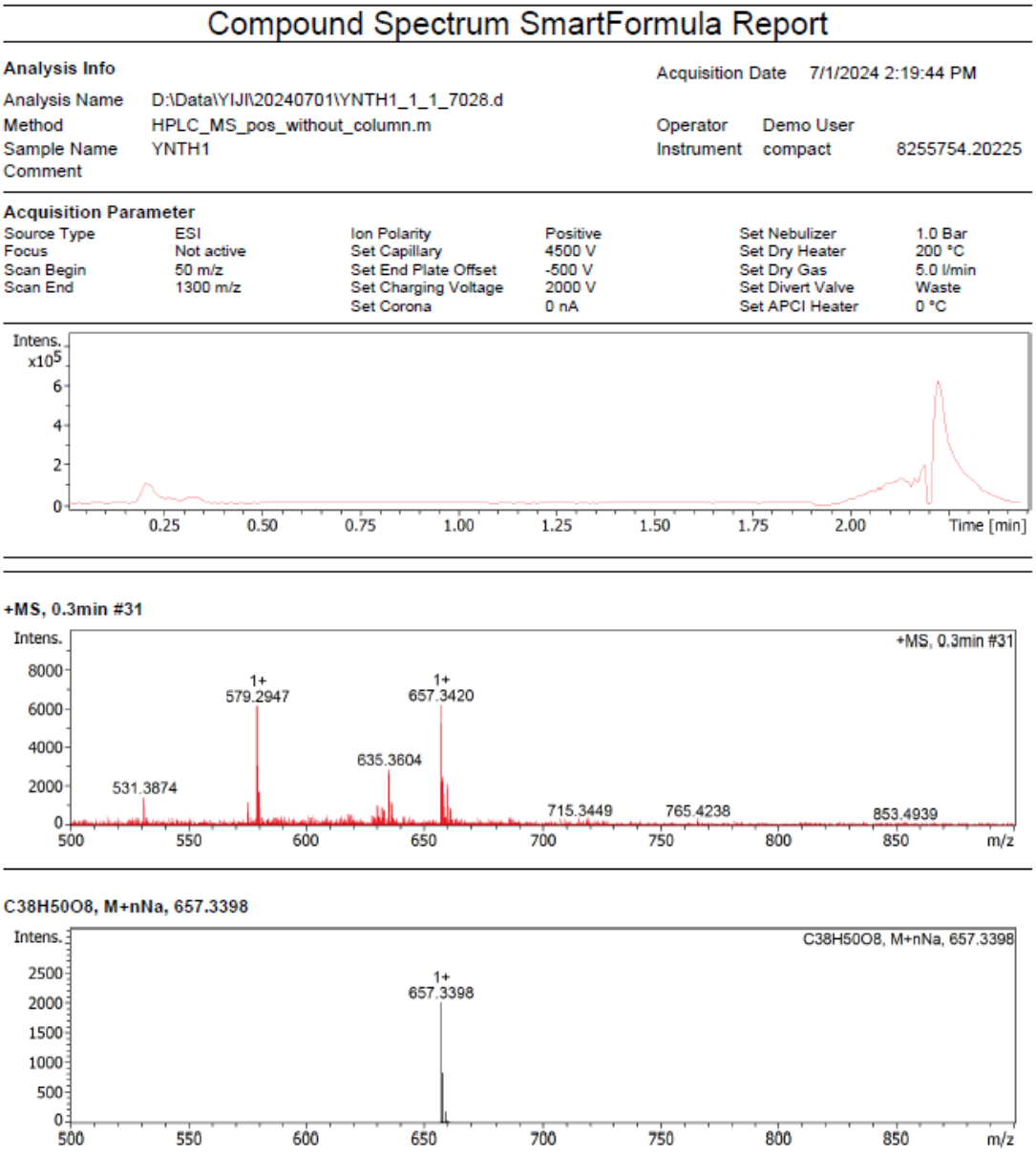


Figure S82. HRESIMS spectrum of compound **7**

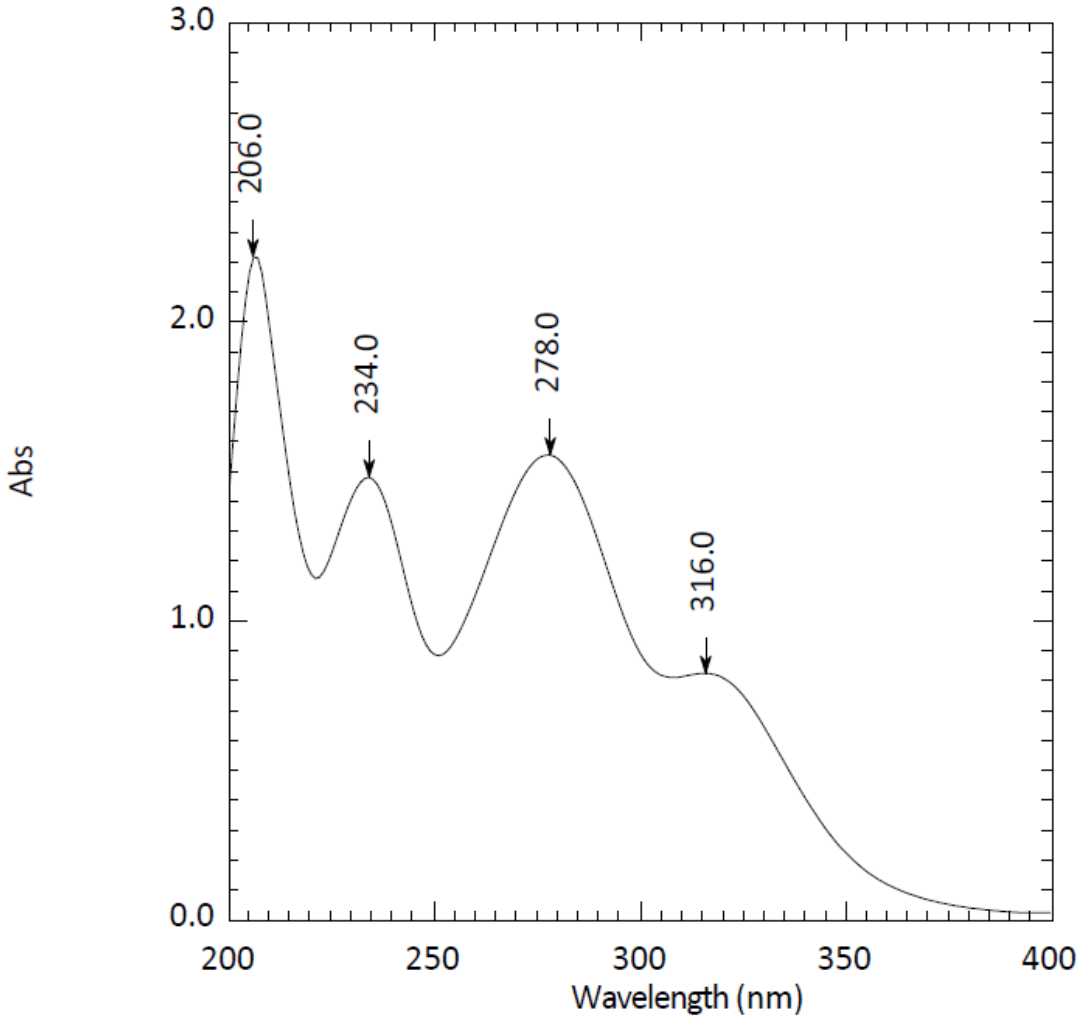


Figure S83. UV spectrum of compound **7**

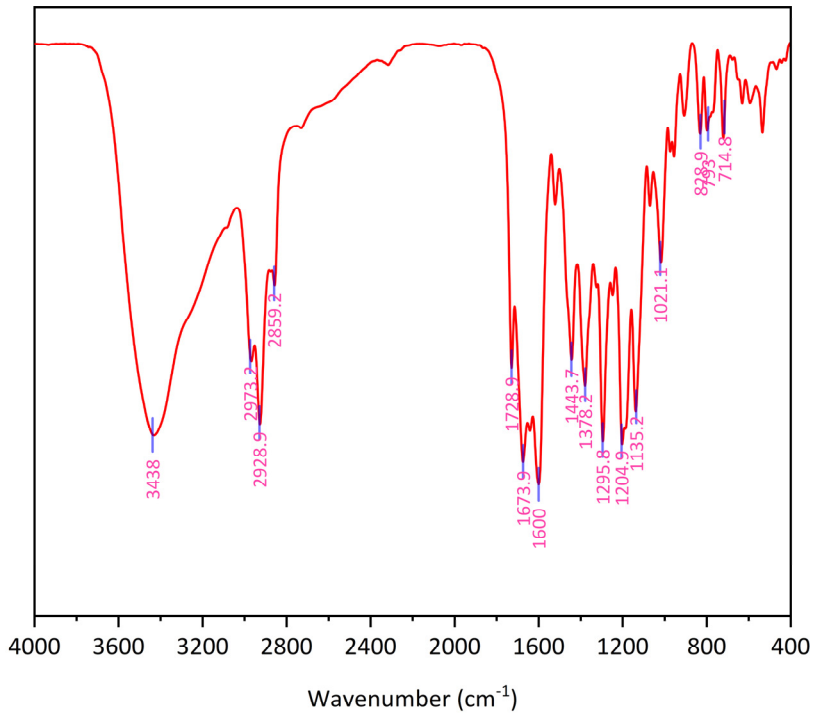


Figure S84. IR spectrum of compound **7**

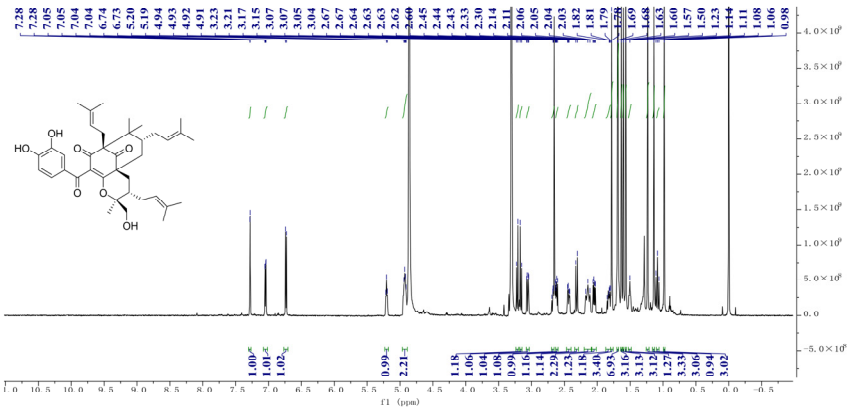


Figure S85. ^{1}H NMR spectrum of compound **8** (recorded in MeOH-d_4)

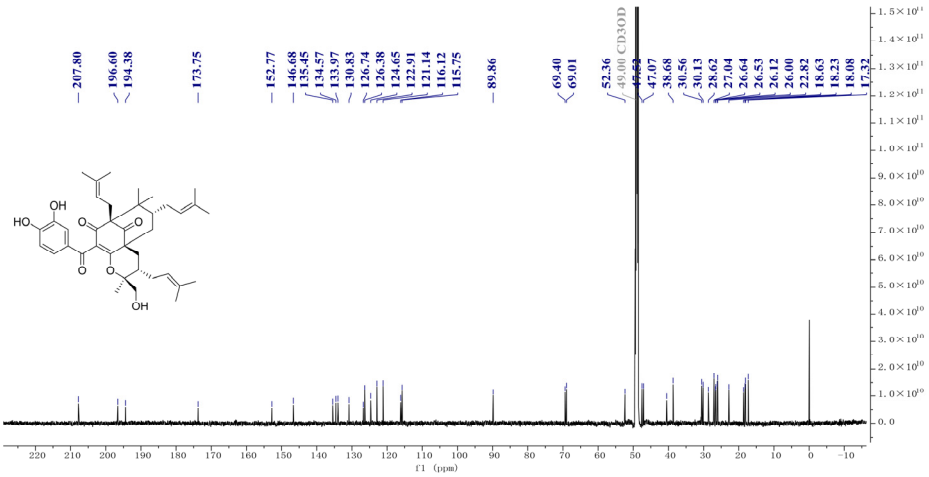


Figure S86. ^{13}C NMR spectrum of compound **8** (recorded in MeOH-d_4)

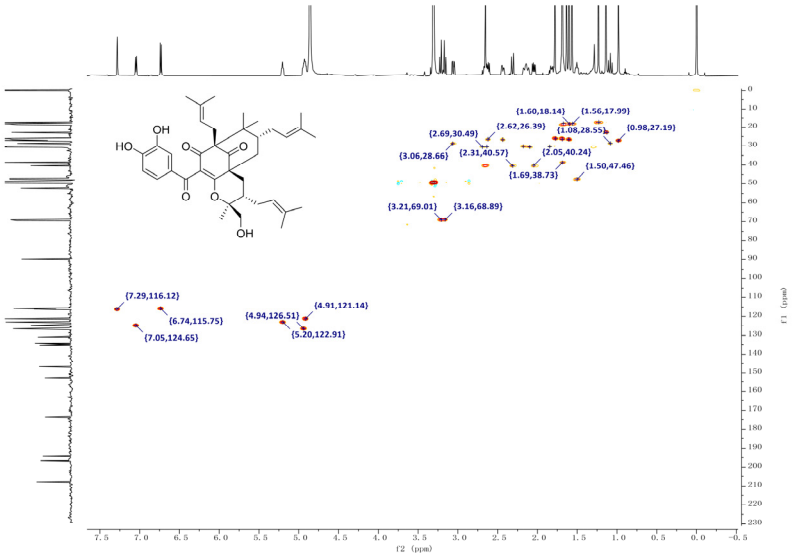


Figure S87. HSQC spectrum of compound **8** (recorded in MeOH-d_4)

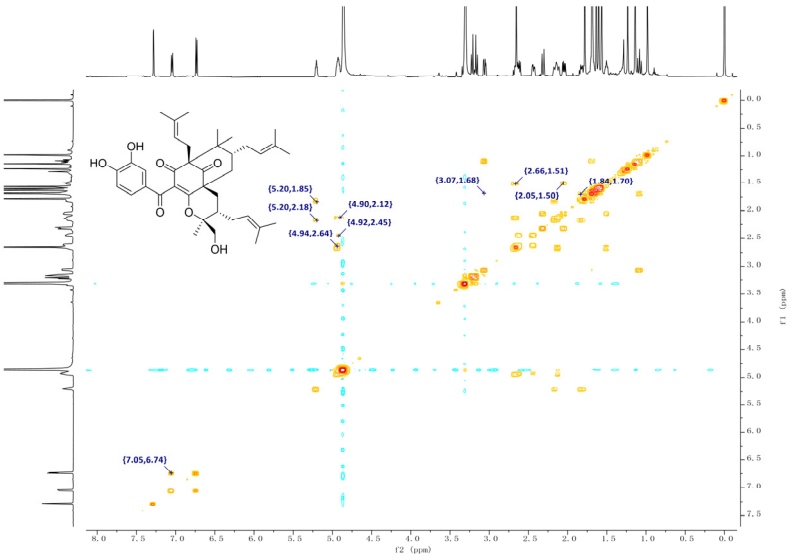


Figure S88. ^{1}H-^{1}H COSY spectrum of compound **8** (recorded in MeOH-d_4)

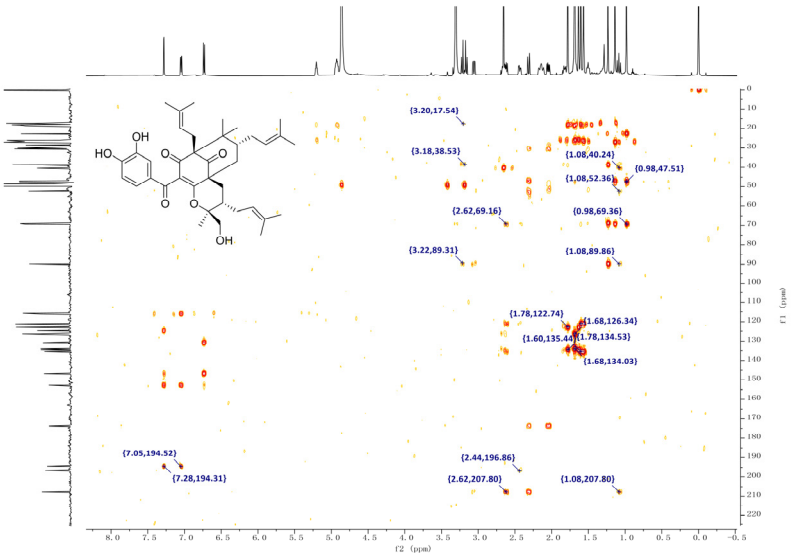


Figure S89. HMBC spectrum of compound **8** (recorded in MeOH-d_4)

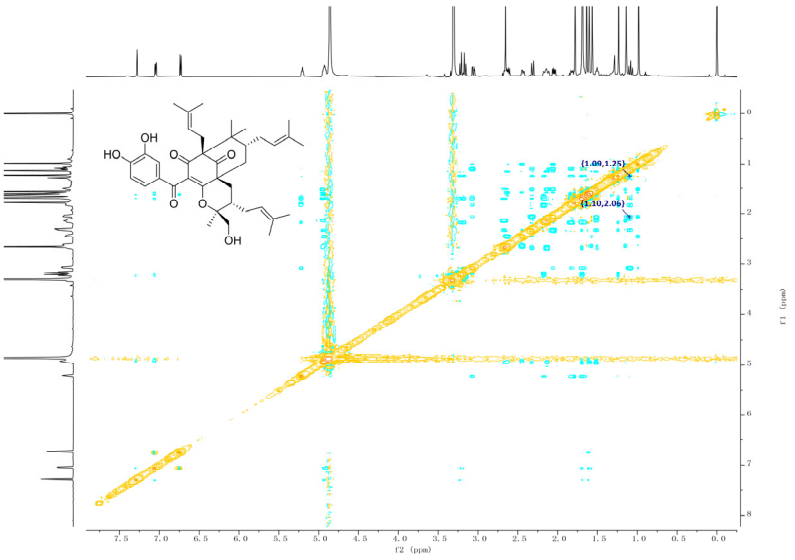


Figure S90. NOESY spectrum of compound **8** (recorded in MeOH-d_4)

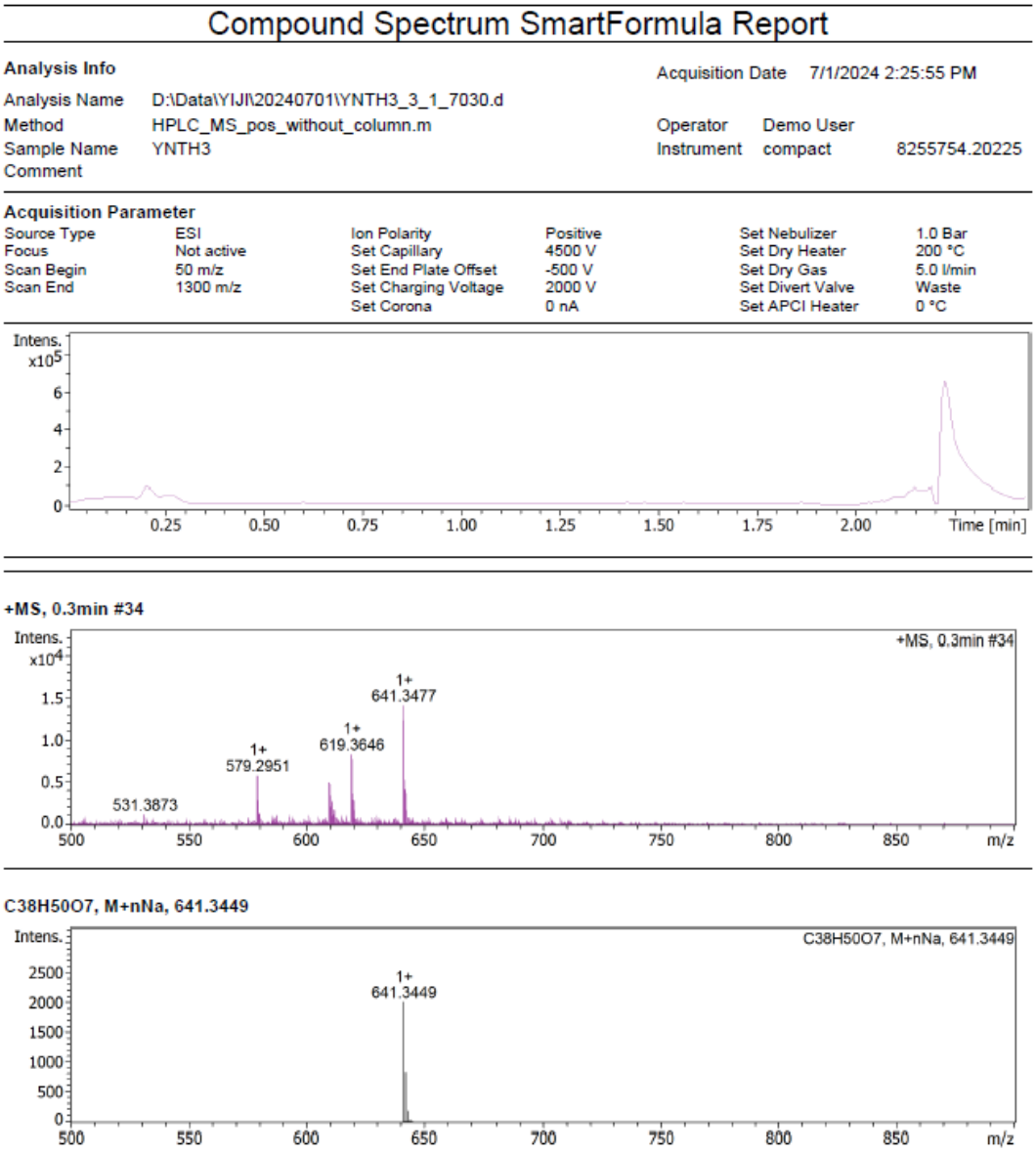


Figure S91. HRESIMS spectrum of compound **8**

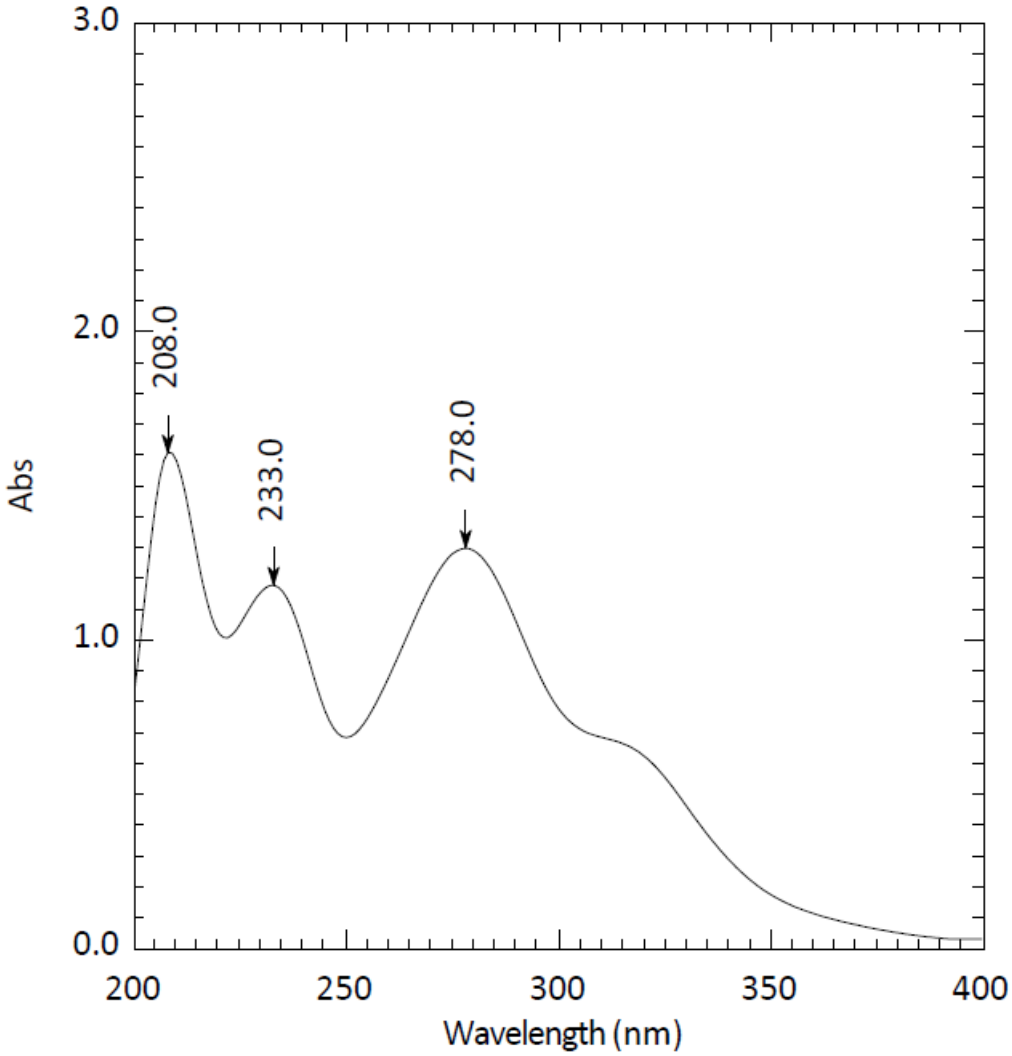


Figure S92. UV spectrum of compound **8**

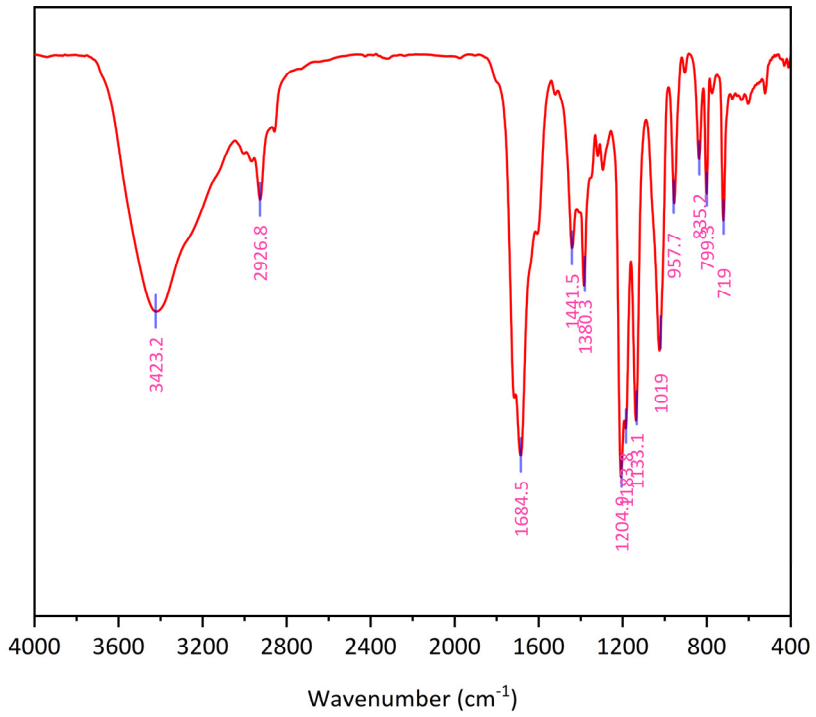


Figure S93. IR spectrum of compound **8**

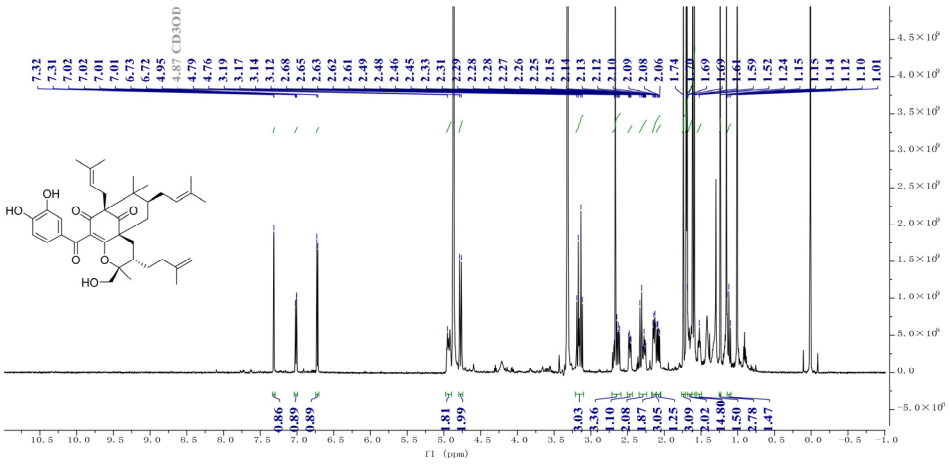


Figure S94. ^{1}H NMR spectrum of compound **9** (recorded in MeOH-d_4)

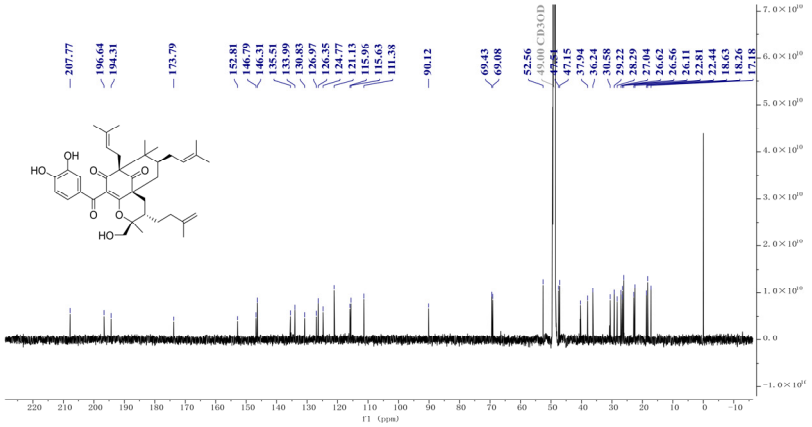


Figure S95. ^{13}C NMR spectrum of compound **9** (recorded in MeOH-d_4)

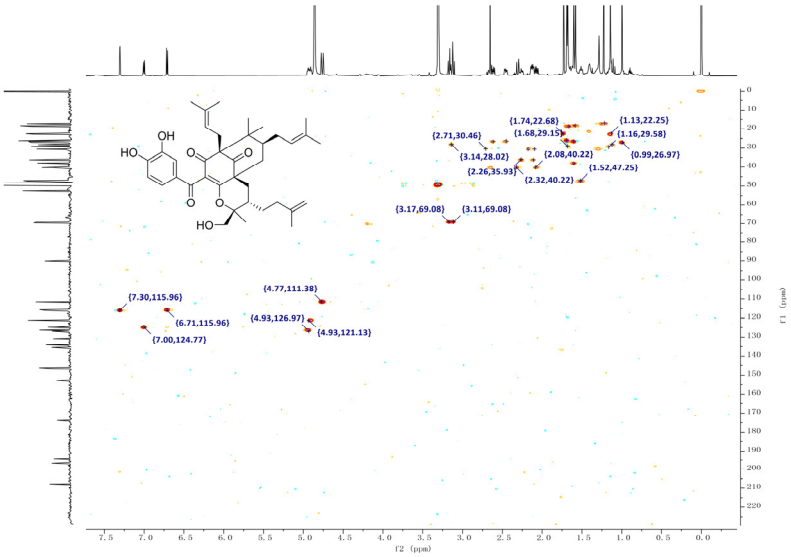


Figure S96. HSQC spectrum of compound **9** (recorded in MeOH-d_4)

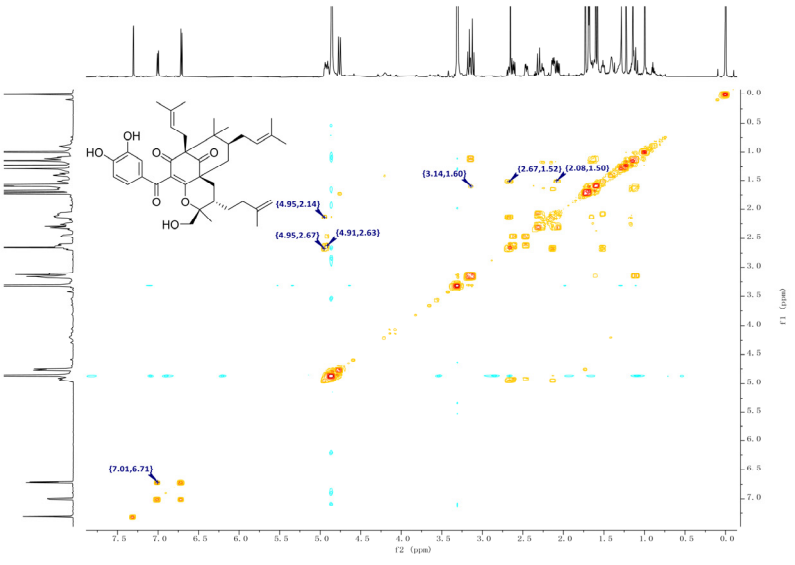


Figure S97. ^{1}H-^{1}H COSY spectrum of compound **9** (recorded in MeOH-d_4)

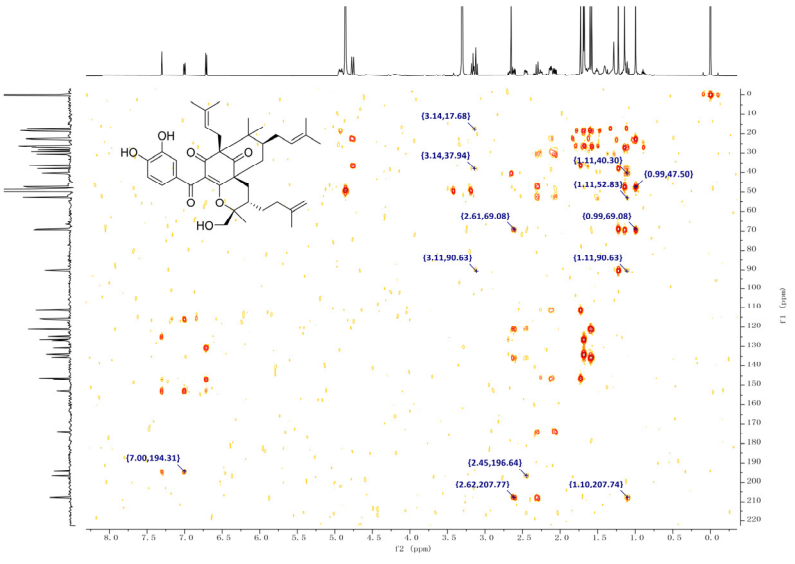


Figure S98. HMBC spectrum of compound **9** (recorded in MeOH-d_4)

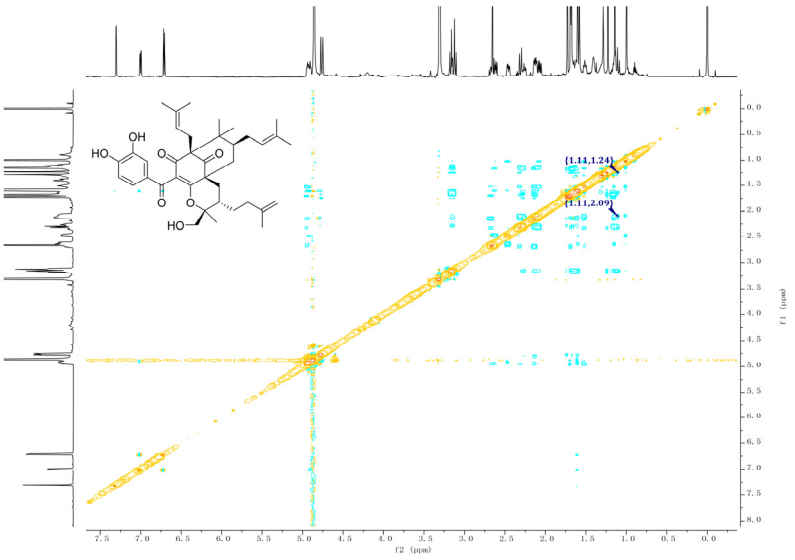


Figure S99. NOESY spectrum of compound **9** (recorded in MeOH-d_4)

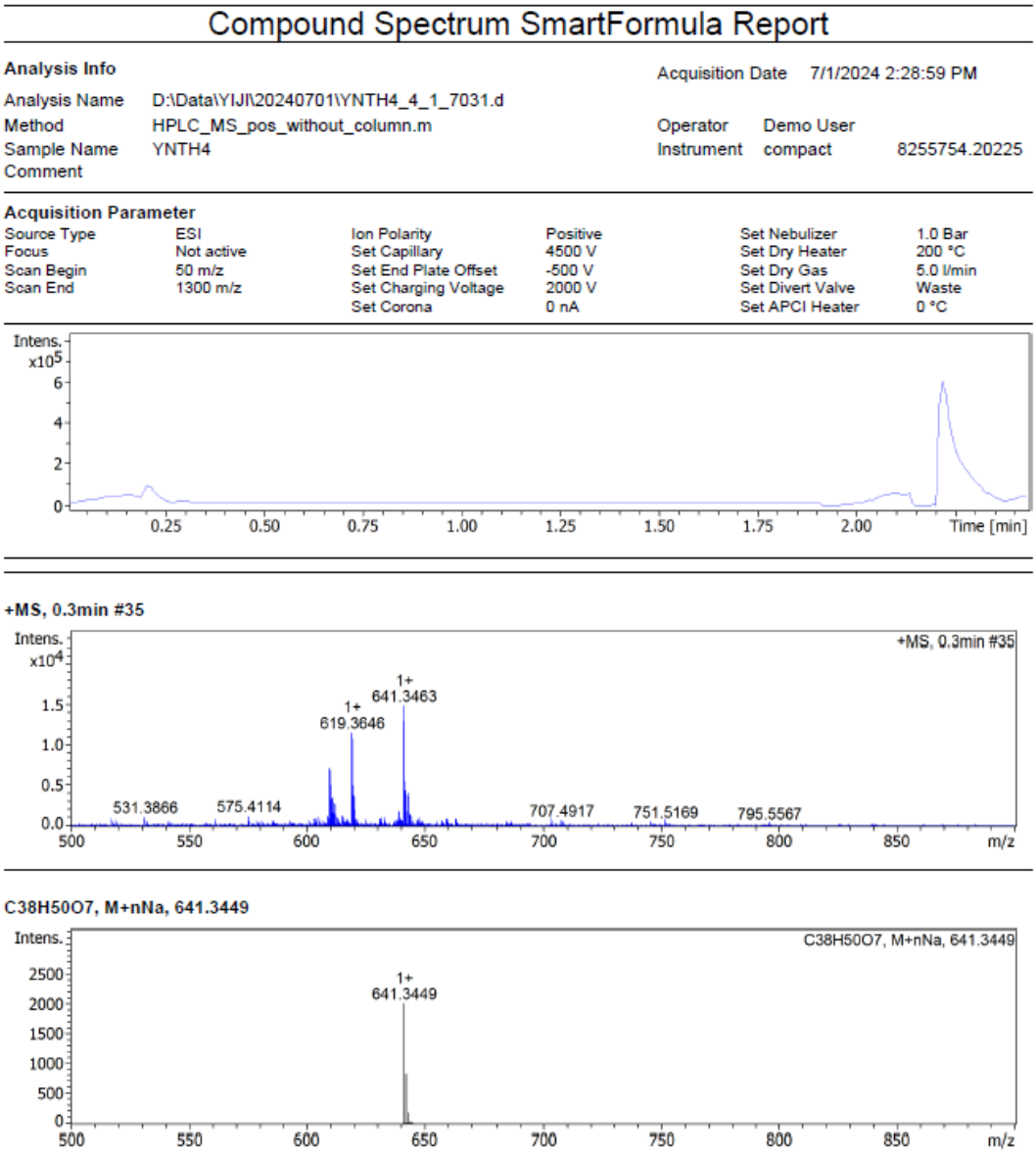


Figure S100. HRESIMS spectrum of compound **9**

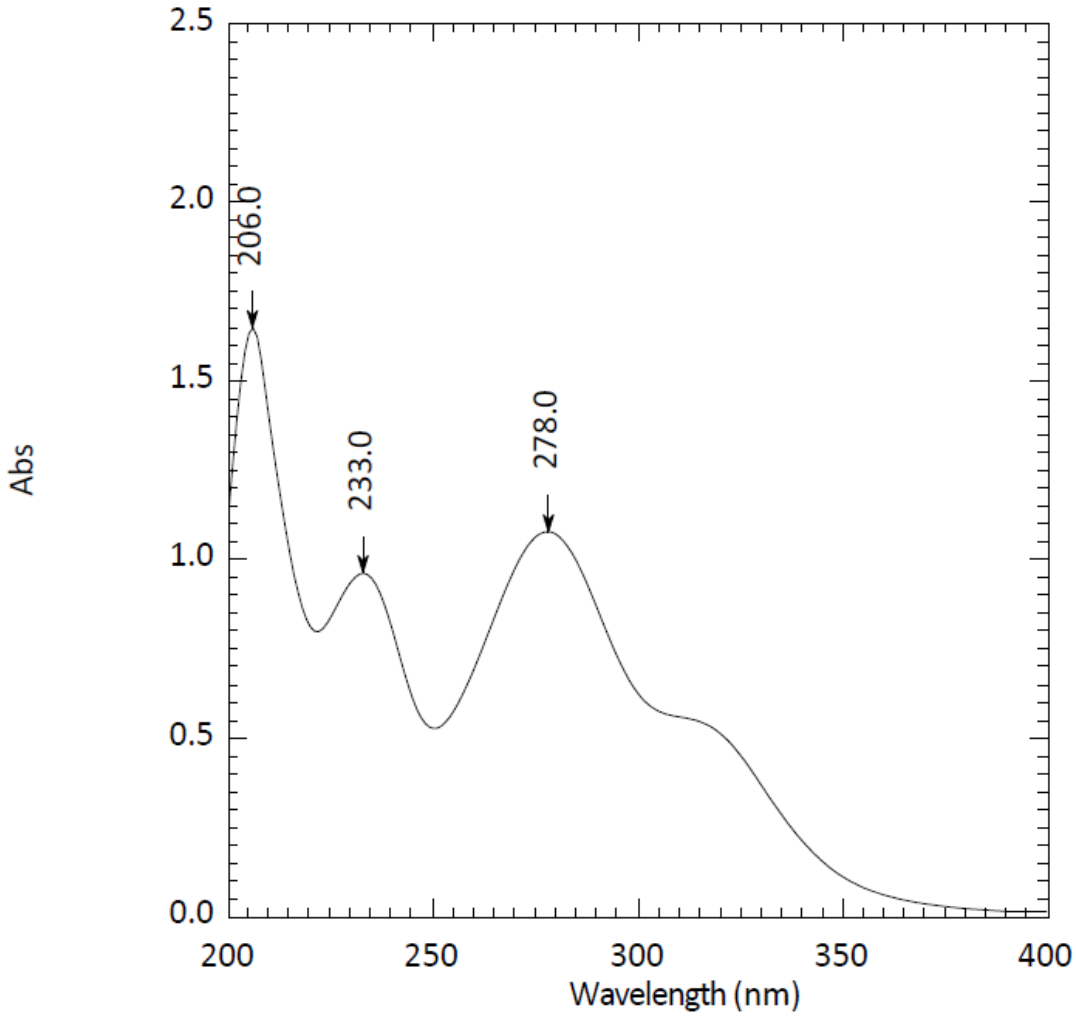


Figure S101. UV spectrum of compound **9**

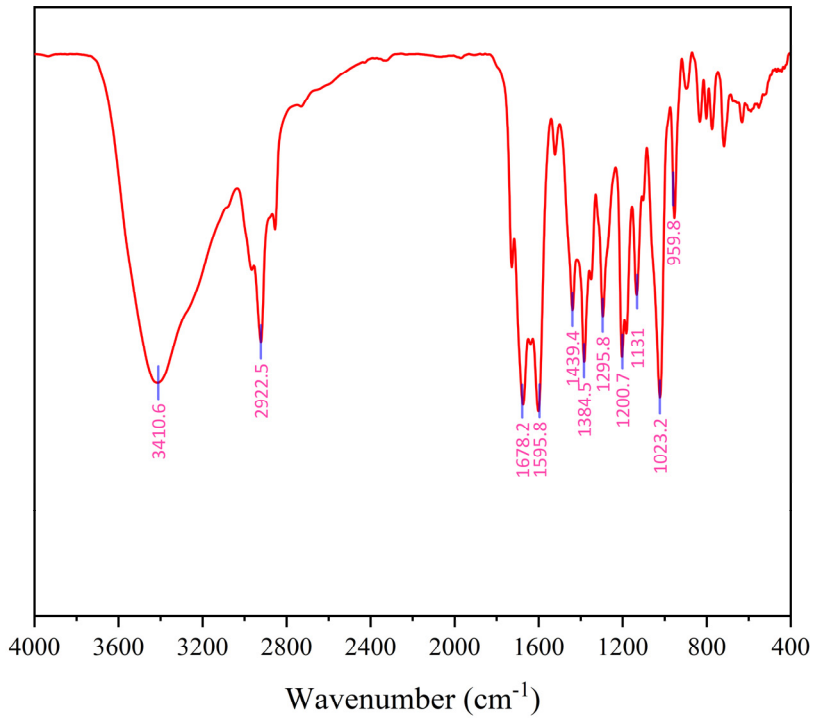


Figure S102. IR spectrum of compound **9**

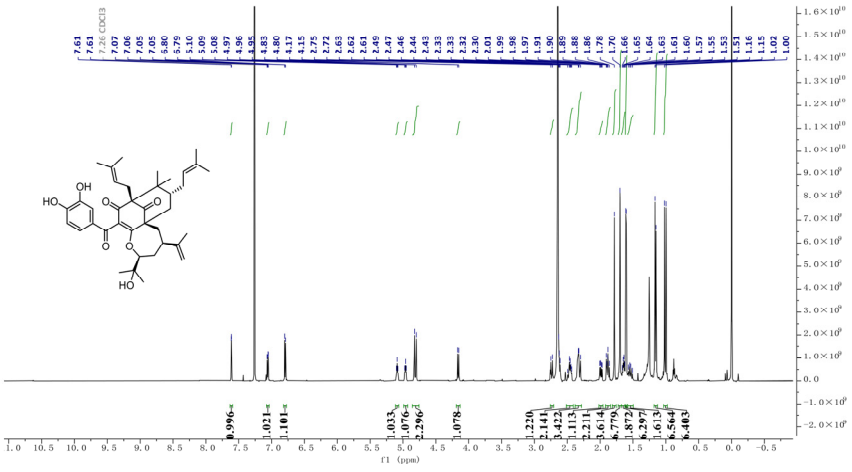


Figure S103. ^{1}H NMR spectrum of compound **10** (recorded in $CDCl_3$)

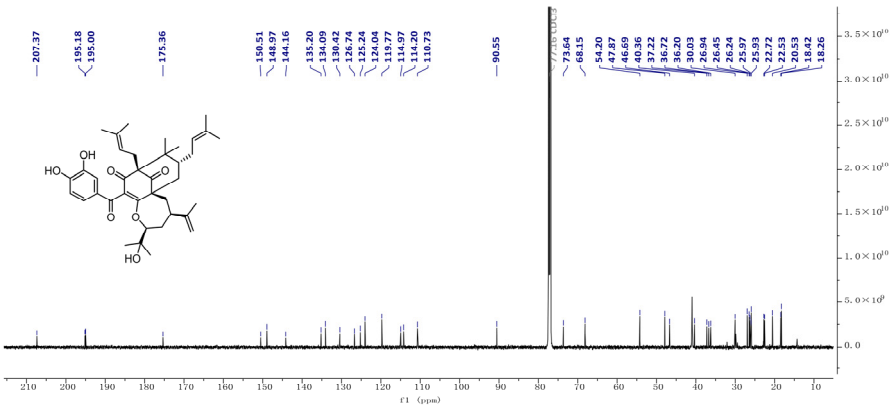


Figure S104. ^{13}C NMR spectrum of compound **10** (recorded in $CDCl_3$)

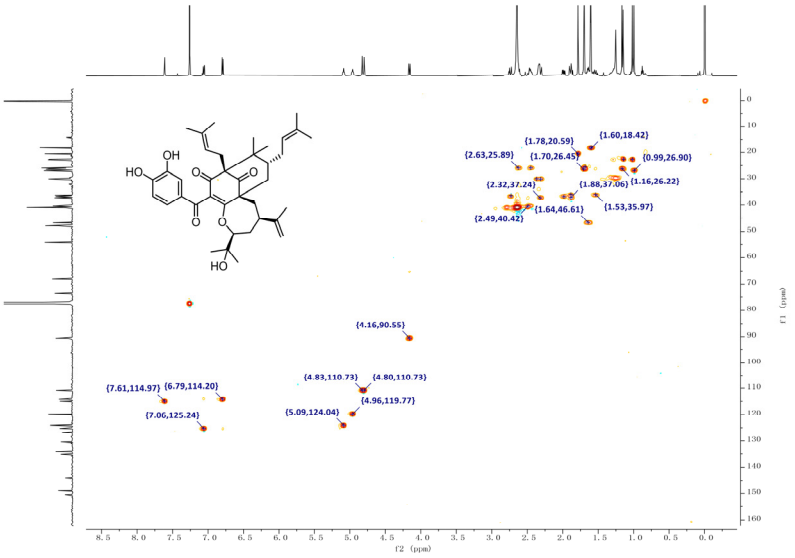


Figure S105. HSQC spectrum of compound **10** (recorded in $CDCl_3$)

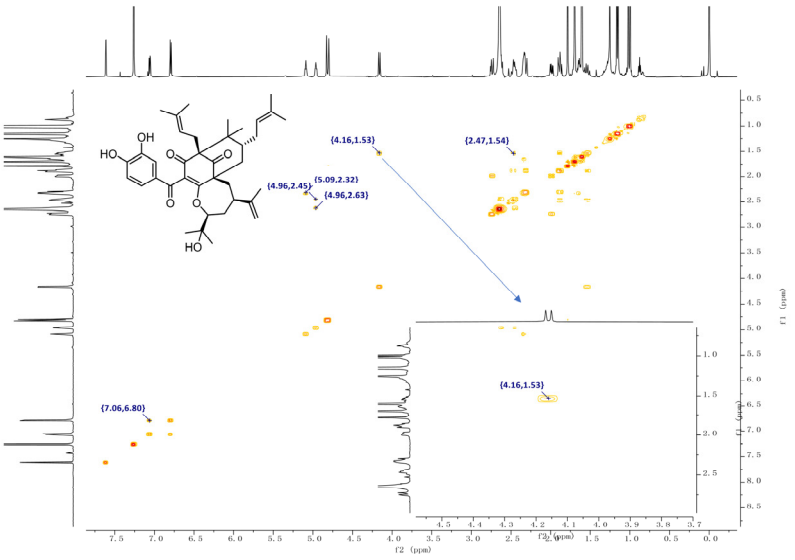


Figure S106. ^{1}H-^{1}H COSY spectrum of compound **10** (recorded in $CDCl_3$)

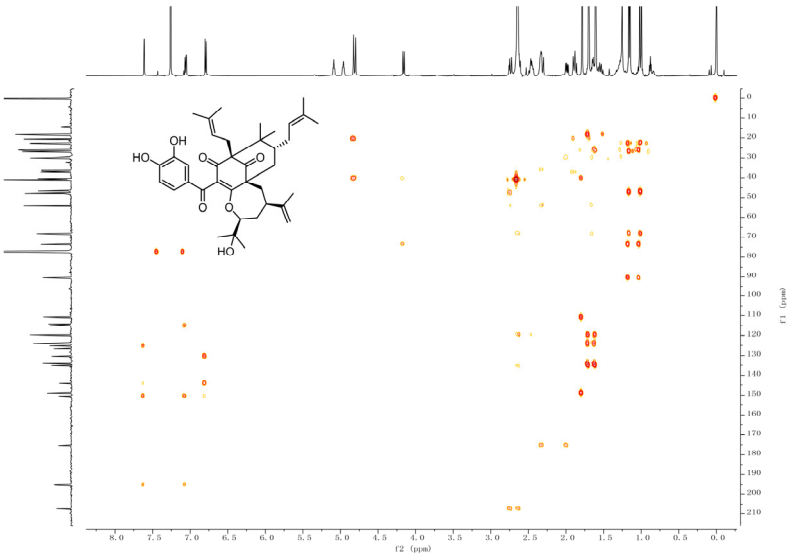


Figure S107. HMBC spectrum of compound **10** (recorded in $CDCl_3$)

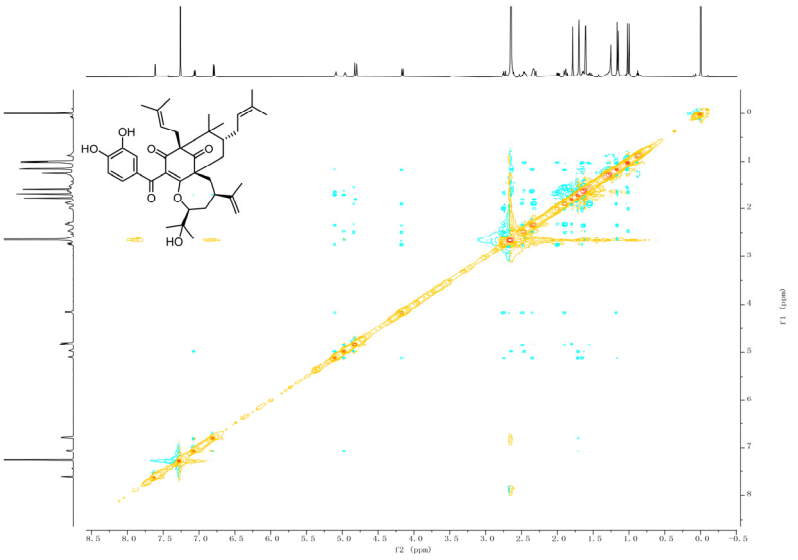


Figure S108. NOESY spectrum of compound **10** (recorded in $CDCl_3$)

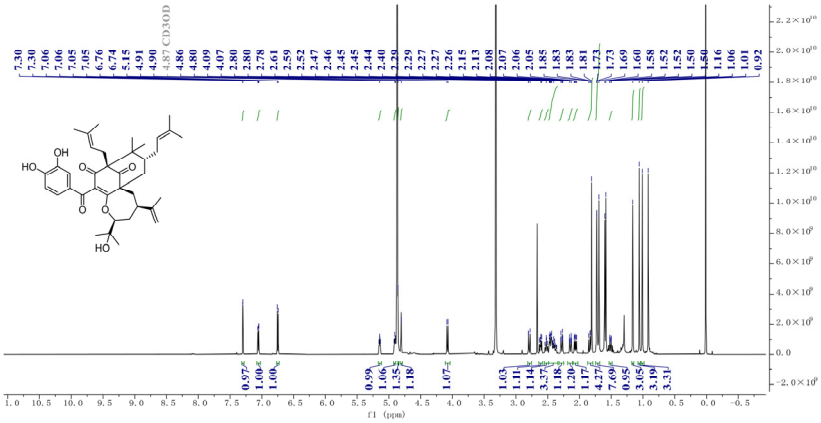


Figure S109. ^{1}H NMR spectrum of compound **10** (recorded in MeOH-d_4)

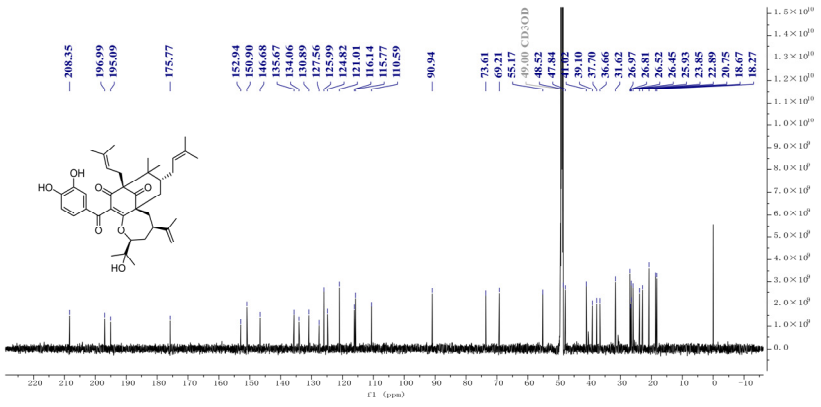


Figure S110. ^{13}C NMR spectrum of compound **10** (recorded in MeOH-d_4)

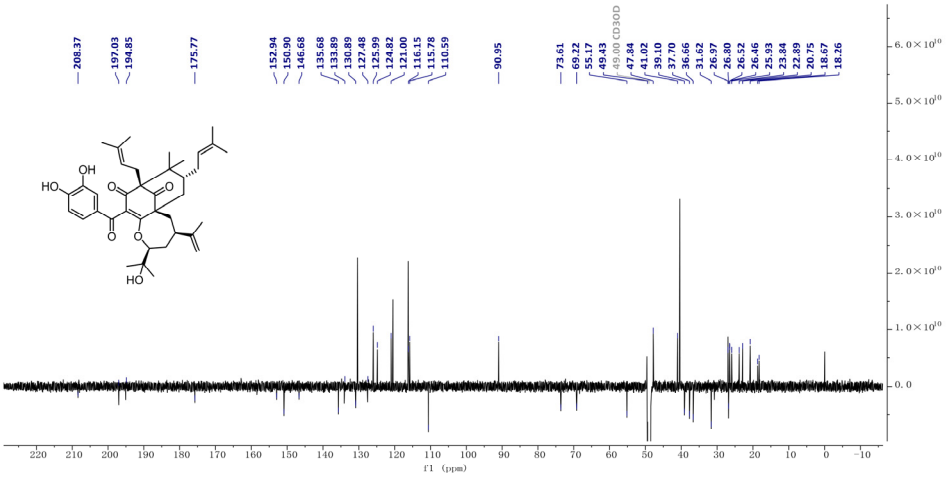


Figure S111. APT spectrum of compound **10** (recorded in MeOH-d_4)

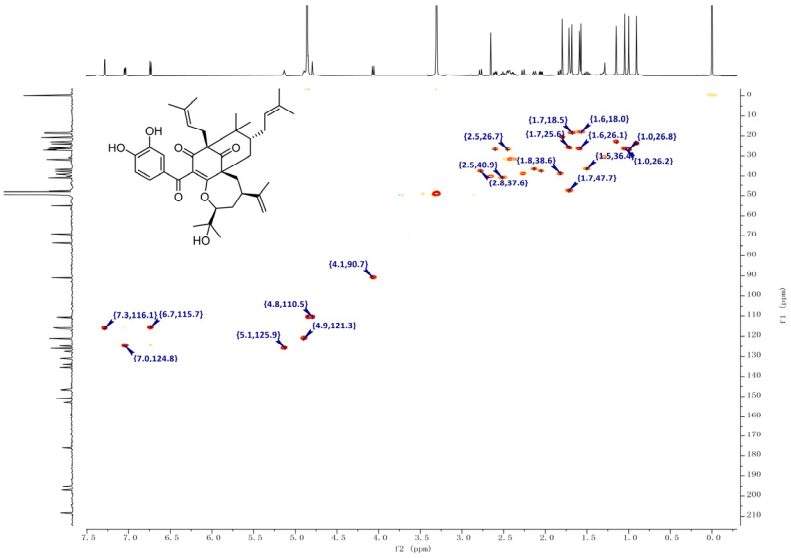


Figure S112. HSQC spectrum of compound **10** (recorded in MeOH-d_4)

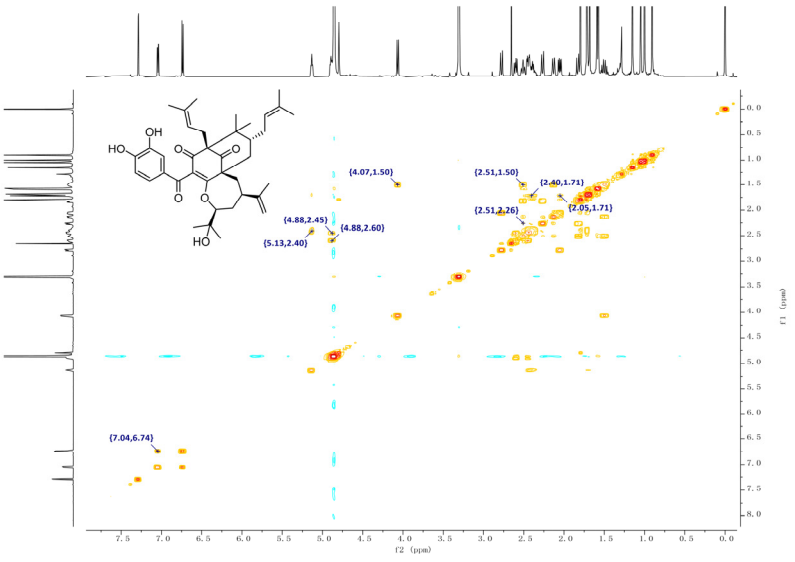


Figure S113. ^{1}H-^{1}H COSY spectrum of compound **10** (recorded in MeOH-d_4)

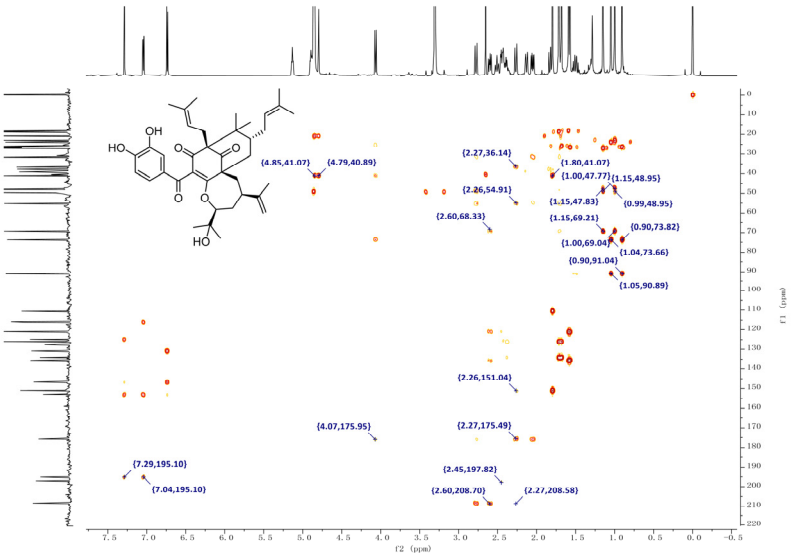


Figure S114. HMBC spectrum of compound **10** (recorded in MeOH-d_4)

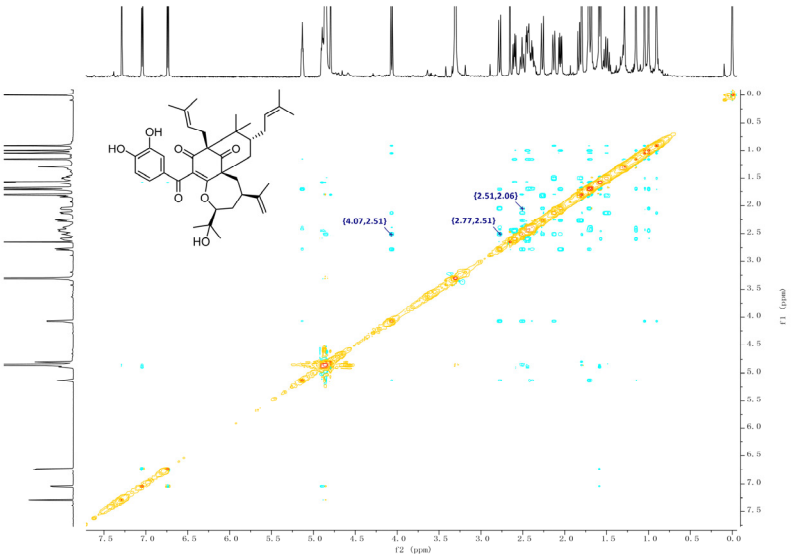


Figure S115. NOESY spectrum of compound **10** (recorded in MeOH-d_4)

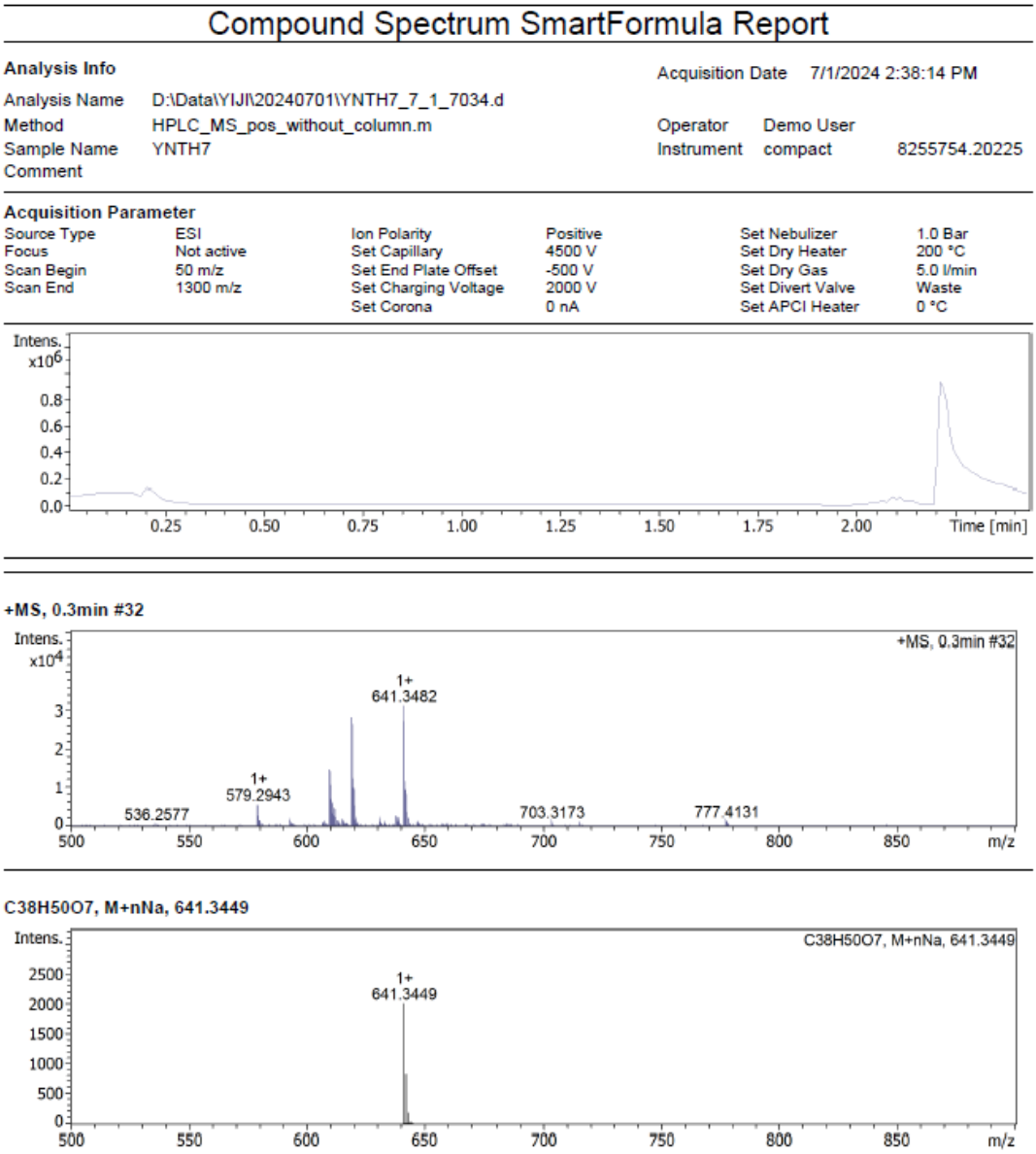


Figure S116. HRESIMS spectrum of compound **10**

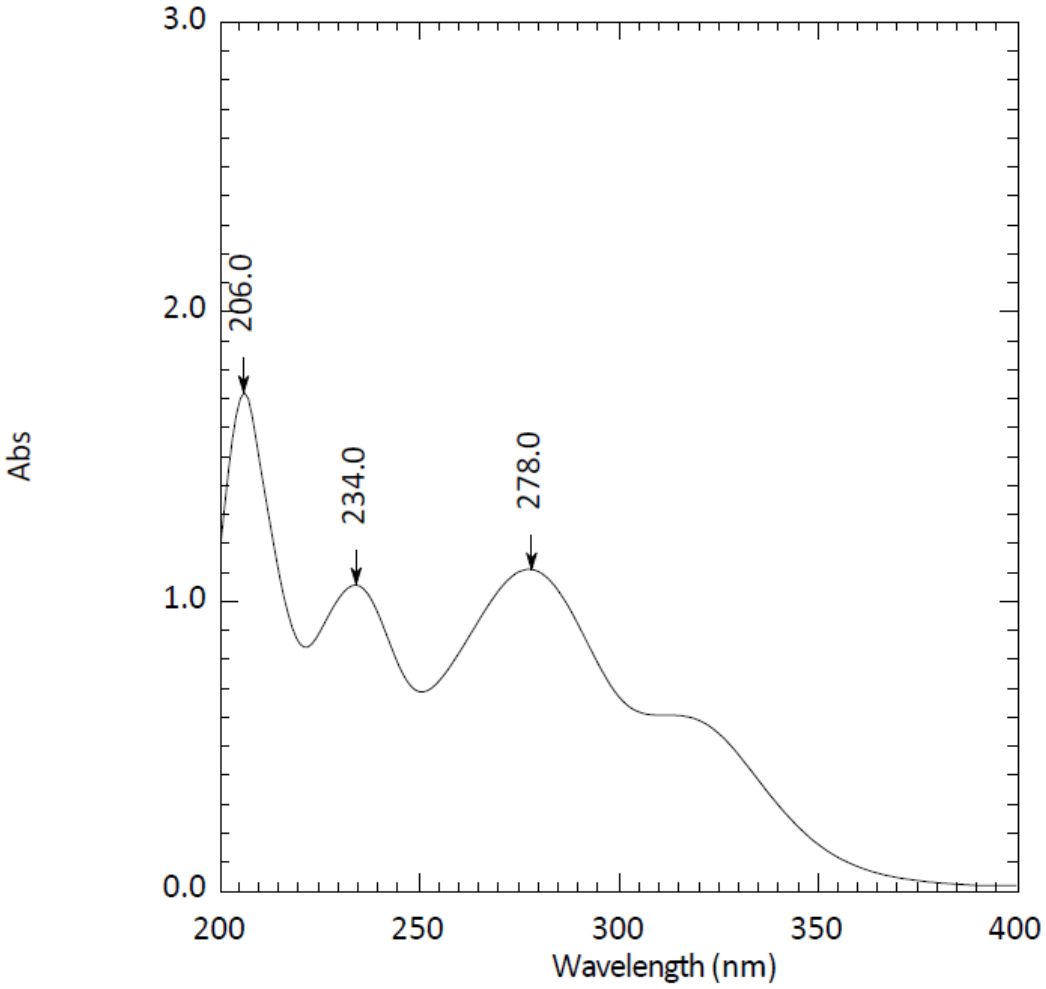


Figure S117. UV spectrum of compound **10**

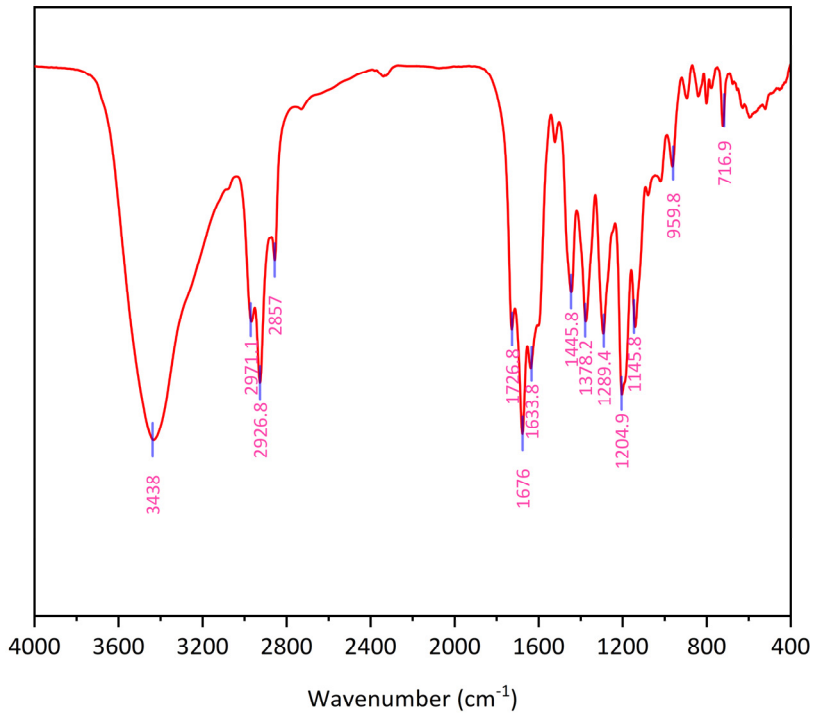


Figure S118. IR spectrum of compound **10**

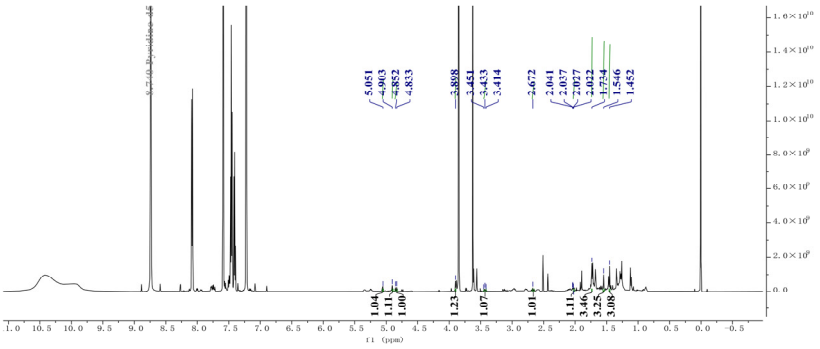


Figure S119. ^{1}H NMR spectrum of (+)-**7**-*S*-MTPA ester (recorded in Pyridine-d_5)

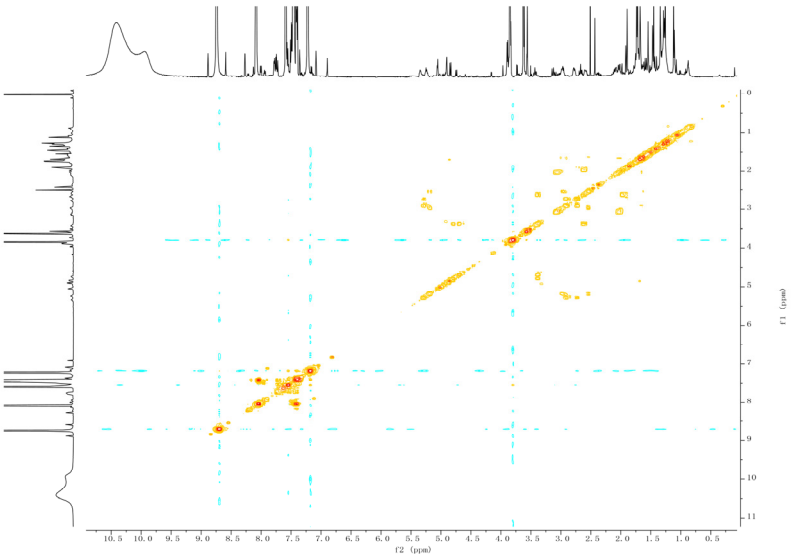


Figure S120. ^{1}H-^{1}H COSY spectrum of (+)-**7**-*S*-MTPA ester (recorded in Pyridine-d_5)

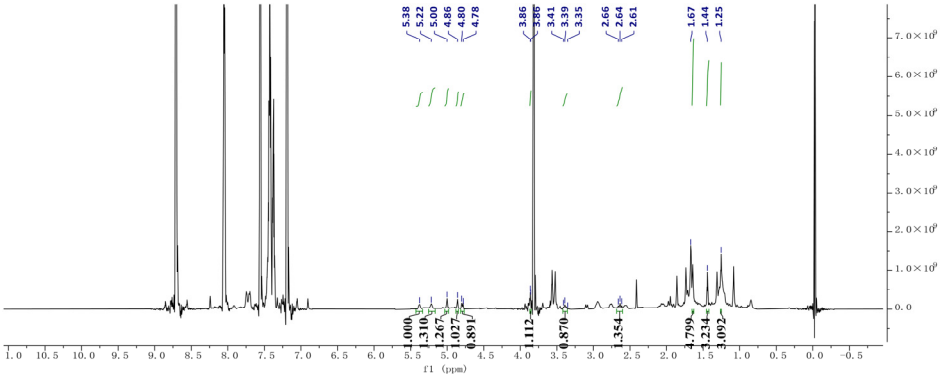


Figure S121. ^{1}H NMR spectrum of (+)-**7**-*R*-MTPA ester (recorded in Pyridine-d_5)

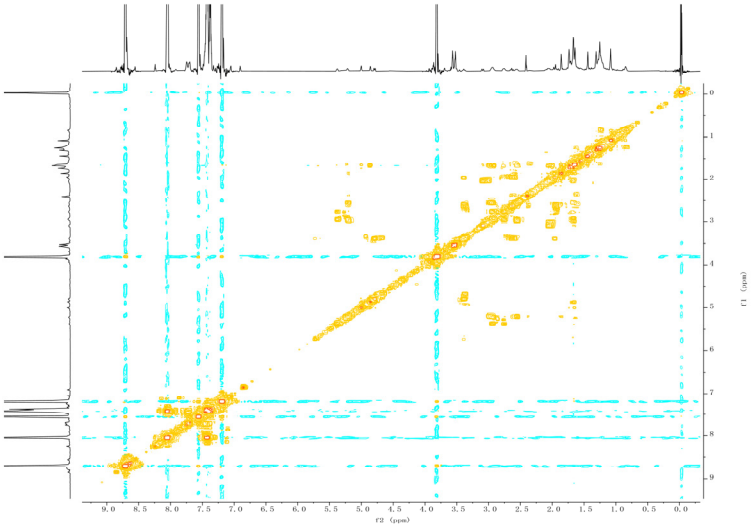


Figure S122. ^{1}H-^{1}H COSY spectrum of (+)-**7**-*R*-MTPA ester (recorded in Pyridine-d_5)