

Supplementary Materials: Anti-Neuroinflammatory *ent*-Kaurane Diterpenoids from *Pteris multifida* Roots

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Table S1. ¹H-NMR data of compounds **1–3**, **5–9** and **11** (δ in ppm, *J* values in parentheses).

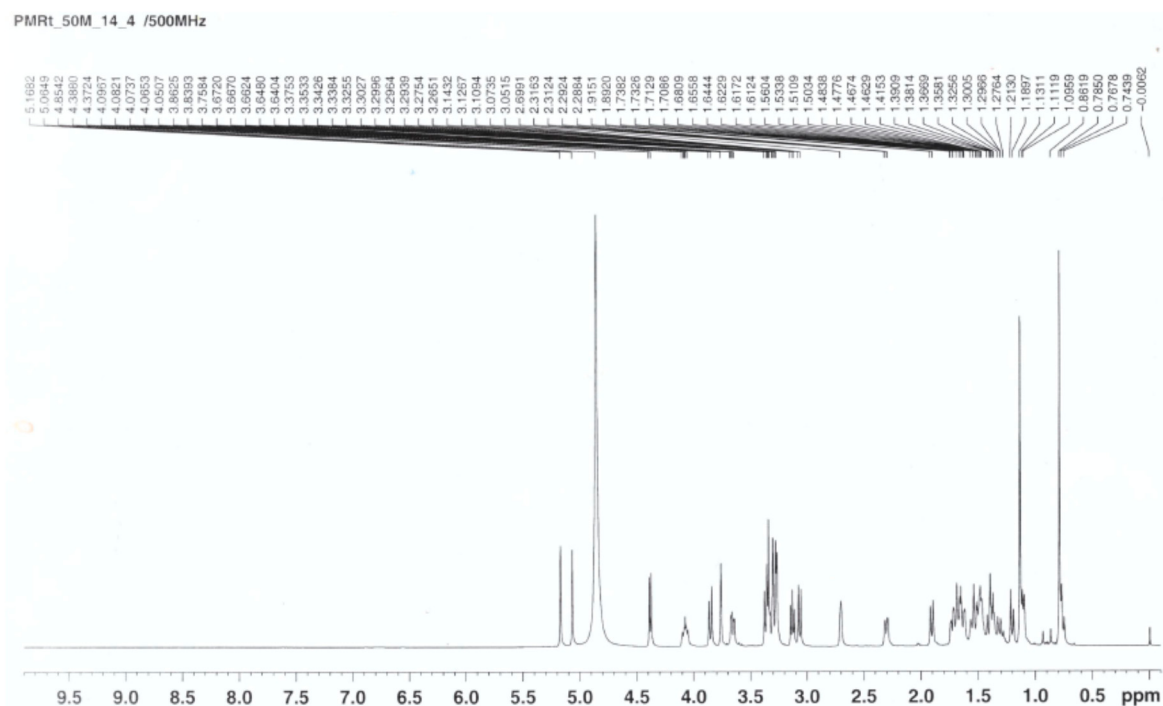
Position	1 ^a	2 ^b	3 ^b	5 ^c	6 ^b	7 ^b	8 ^b	9 ^b	11 ^b
	δ_H (<i>J</i> in Hz)								
1a, 1b	2.16, m, 0.65, t (11.9)	2.30, m, 0.77, t (11.8)	2.16, m, 0.65, t (11.6)	2.31, m, 0.81, t (11.9)	2.11, m, 0.67, t (11.7)	2.13, m, 0.66, t (11.6)	2.26, m, 0.79, t (11.8)	2.14, m, 0.64, t (11.6)	2.14, d (9.75), 0.64, t (11.6)
2	3.85, m	4.01, m	3.91, m	3.99, m	3.83, m	3.83, m	3.99, m	3.85, m	3.92, m
3a, 3b	1.73, m, 1.08, m	1.89, m, 1.14, m	1.58, m, 1.37, m	2.28, m, 0.89, t (11.8)	1.64, m, 1.12, m	1.72, m, 1.08, m	1.88, m, 1.15, m	1.71, m, 1.05, m	1.55, m, 1.36, m
5	0.81, m	0.85, m	1.17, m	0.98, d (11.9)	0.94, d (10.1)	0.87, m	0.91, m	0.80, m	1.17, m
6	1.62, m	1.62, m	1.56, m, 1.32, m	1.56, m, 1.32, m	3.91, td (10.1, 3.7)	1.66, m, 1.41, m	1.66, m, 1.38, m	1.58, m, 1.35, m	1.48, m, 1.33, m
7, 7b	1.66, m, 1.46, m	1.66, m, 1.47, m	1.62, m, 1.51, m	1.63, m, 1.52, m	1.86, m, 1.62, m	2.33, m, 1.21, m	2.34, m, 1.20, m	1.60, m, 1.47, m	1.55, m
9	1.06, m	1.06, m	1.10, m	1.08, m	1.02, m	1.27, d (8.5)	1.27, m	1.03, m	1.07, m
11, 11b	1.60, m, 1.20, m	1.67, m, 1.47, m	1.65, m, 1.50, m	1.63, m, 1.52, m	1.62, m	1.57, m, 1.38, m	1.59, m, 1.40, m	1.60, m, 1.40, m	1.61, m
12, 12b	1.68, m, 1.49, m	1.67, m, 1.47, m	1.68, m, 1.48, m	1.69, m, 1.48, m	1.71, m, 1.48, m	1.81, m, 1.60, m	1.80, m, 1.59, m	1.80, m, 1.59, m	1.59, m
13	2.70, br s	2.70, br s	2.70, br s	2.70, br s	2.69, br s	2.75, br s	2.75, br s	1.82, br s	1.82, br s
14, 14b	1.90, m, 1.38, m	1.90, m, 1.37, m	1.91, d (11.8), 1.38, d (12.0)	1.87, d (11.5), 1.37, m	1.82, m, 1.50, m	4.13, s	4.13, s	1.89, m, 1.60, m	1.91, d (11.6), 1.60, m
15	3.75, s	3.75, s	3.76, br s	3.74, br s	3.80, br s	3.74, s	3.74, s	1.53, m	1.54, s
17, 17b	5.17 s, 5.07 s	5.17, s, 5.06, s	5.17, s, 5.06, s	5.17, s, 5.06, s	5.19, s, 5.10, s	5.32, s, 5.17, s	5.32, s, 5.16, s	1.33, s	1.33, s
18, 18b	0.94, s	0.95, s	3.35, d (11.3), 3.05, d (11.0)	3.64, m, 3.31, m	1.20, s	0.96, s	0.97, s	0.92, s	3.35, d (10.9), 3.02, d (11.0)
19	0.88, s	0.88, s	0.78, s	1.01, s	1.08, s	0.89, s	0.89, s	0.89, s	0.76, s
20	1.10, s	1.10, s	1.13, s	1.09, s	1.10, s	1.04, s	1.04, s	1.09, s	1.12, s
Glucose									
1'				4.42, d (7.8)			4.36, d (7.8)		
2'				3.11, m			3.12, t		
3'				3.27, m			3.26, m		
4'				3.26, m			3.27, m		
5'				3.34, m			3.35, m		
6'				3.85, m, 3.66, m			3.84, m, 3.65, dd		

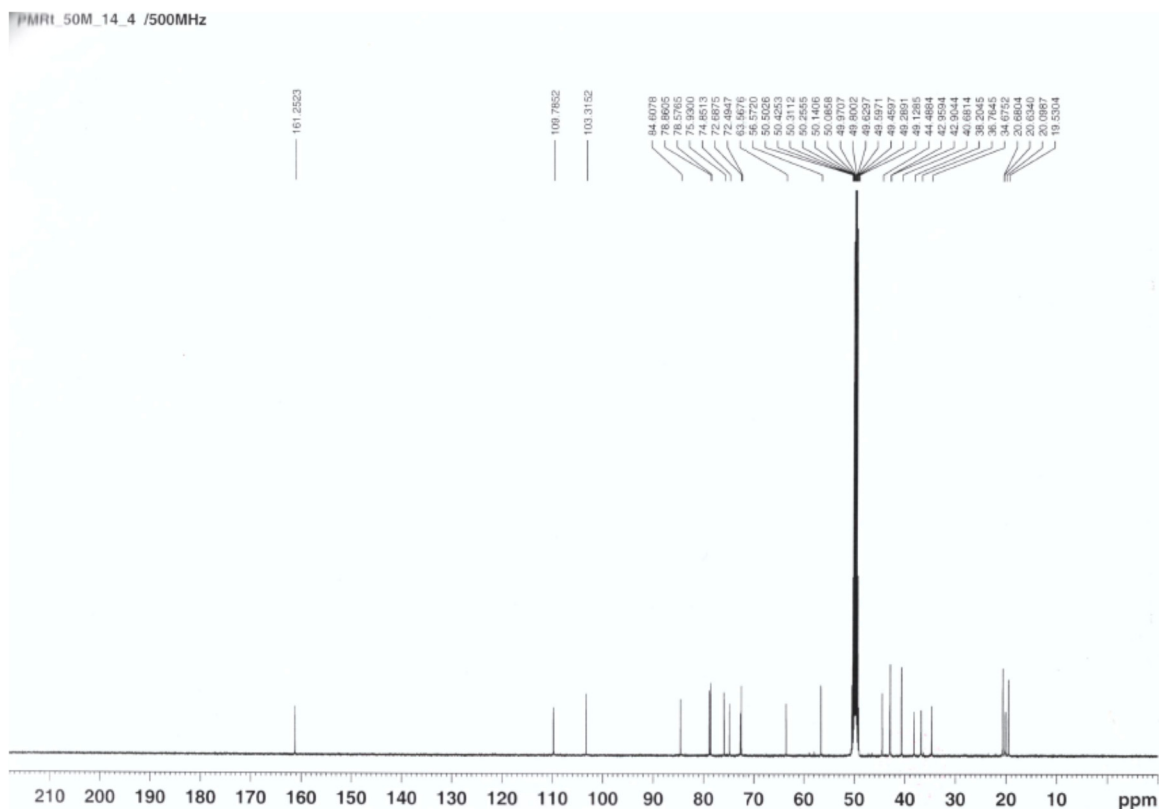
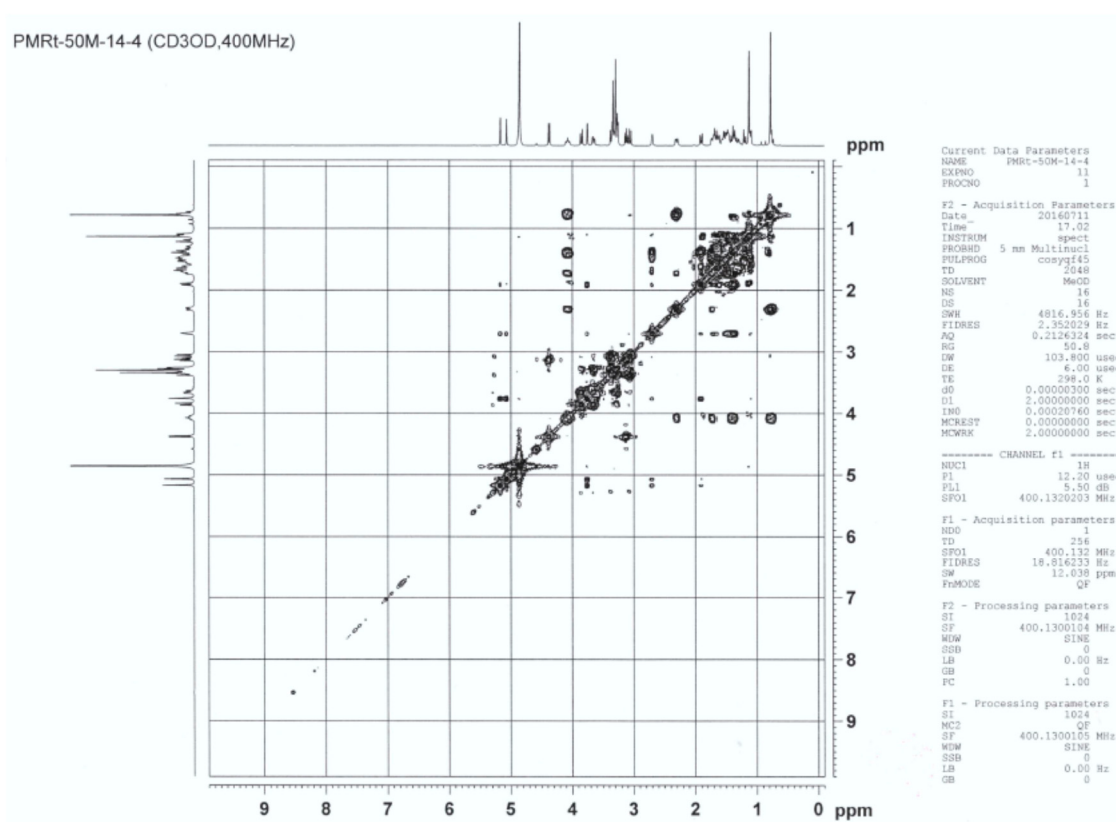
¹H-NMR data were measured at ^a 300, ^b 500, and ^c 600 MHz in CD₃OD, respectively.

Table S2. ^{13}C -NMR data of compounds **1–3**, **5–9** and **11** (δ in ppm, J values in parentheses).

Position	1 ^a	2 ^b	3 ^b	5 ^c	6 ^b	7 ^b	8 ^b	9 ^b	11 ^b
1	51.2	49.5	50.9	49.6	51.5	51.1	49.4	51.2	50.8
2	66.3	74.9	66.3	74.1	66.0	66.3	74.9	66.3	66.3
3	52.6	49.3	46.2	42.8	54.6	52.5	49.2	52.7	46.3
4	36.4	36.3	40.8	42.2	37.3	36.4	36.3	36.5	40.9
5	57.8	58.0	50.4	58.6	62.3	57.8	57.9	57.9	50.3
6	20.2	20.0	20.7	21.1	70.1	20.7	20.6	22.0	21.6
7	37.3	37.3	36.8	37.8	46.4	29.7	29.7	43.9	43.4
8	49.7	49.9	49.7	50.0	50.0	54.4	54.4	47.1	47.1
9	56.7	56.7	56.6	56.9	56.1	58.8	58.8	59.1	59.0
10	43.2	43.2	42.9	43.0	44.6	43.1	43.1	42.9	42.7
11	21.1	21.1	20.1	20.1	19.7	19.6	19.6	20.0	20.5
12	34.7	34.7	34.7	34.6	34.6	34.5	34.5	28.7	28.7
13	44.5	44.5	44.5	44.5	43.8	52.4	52.5	50.4	50.4
14	38.2	38.2	38.3	38.1	38.3	78.1	78.1	39.4	39.4
15	84.6	84.6	84.7	84.6	84.6	84.8	84.8	59.5	59.5
16	161.2	161.3	161.3	161.2	161.2	159.9	159.9	80.6	80.6
17	109.8	109.8	109.8	109.8	110.4	112.5	112.5	25.2	25.3
18	35.1	35.1	72.7	29.0	38.1	35.1	35.2	35.0	72.6
19	23.7	23.7	19.6	66.4	24.1	23.7	23.7	23.6	19.5
20	20.1	20.1	20.6	20.7	20.9	20.3	20.2	20.2	20.7
glucose									
1'		103.4		103.2			103.4		
2'		75.9		76.0			75.9		
3'		78.6		78.6			78.6		
4'		72.5		72.6			72.5		
5'		78.9		78.9			78.8		
6'		63.6		63.6			63.6		

^{13}C -NMR data were measured at ^a 75, ^b 125, and ^c 150 MHz in CD_3OD , respectively.

**Figure S1.** The ^1H -NMR spectrum of **4**.

Figure S2. The ^{13}C -NMR spectrum of 4.Figure S3. The ^1H - ^1H COSY spectrum of 4.

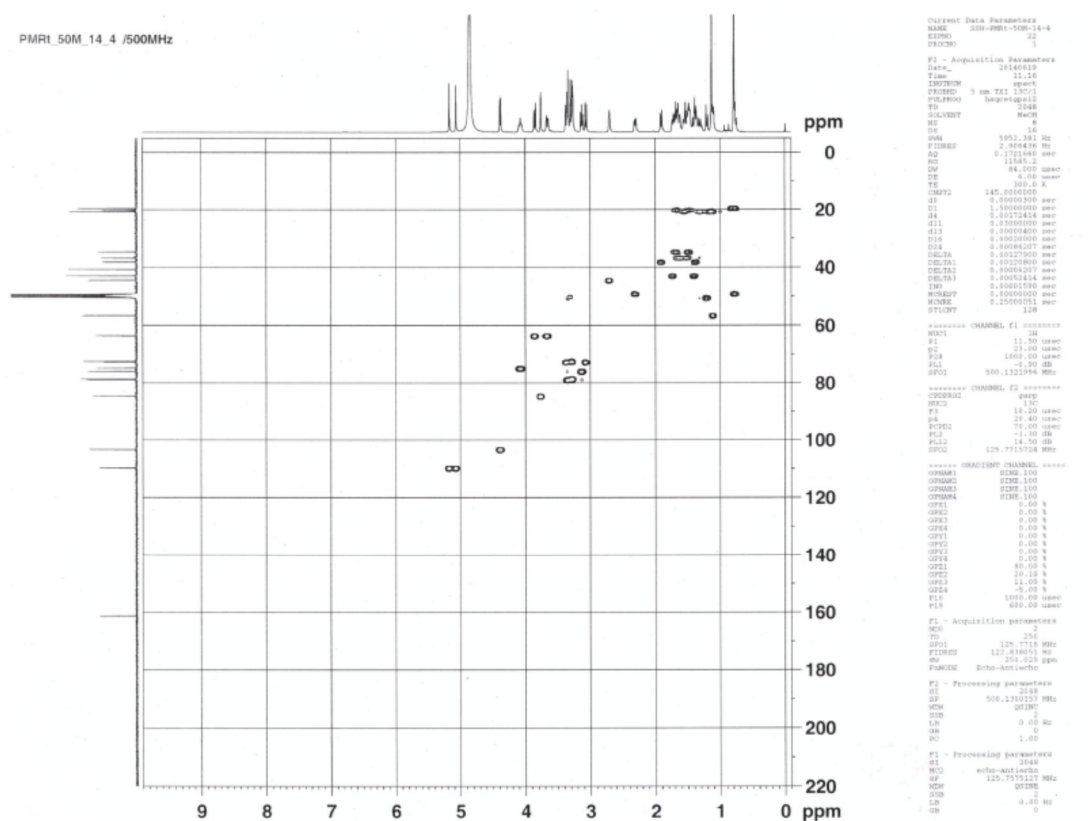


Figure S4. The HMQC spectrum of 4.

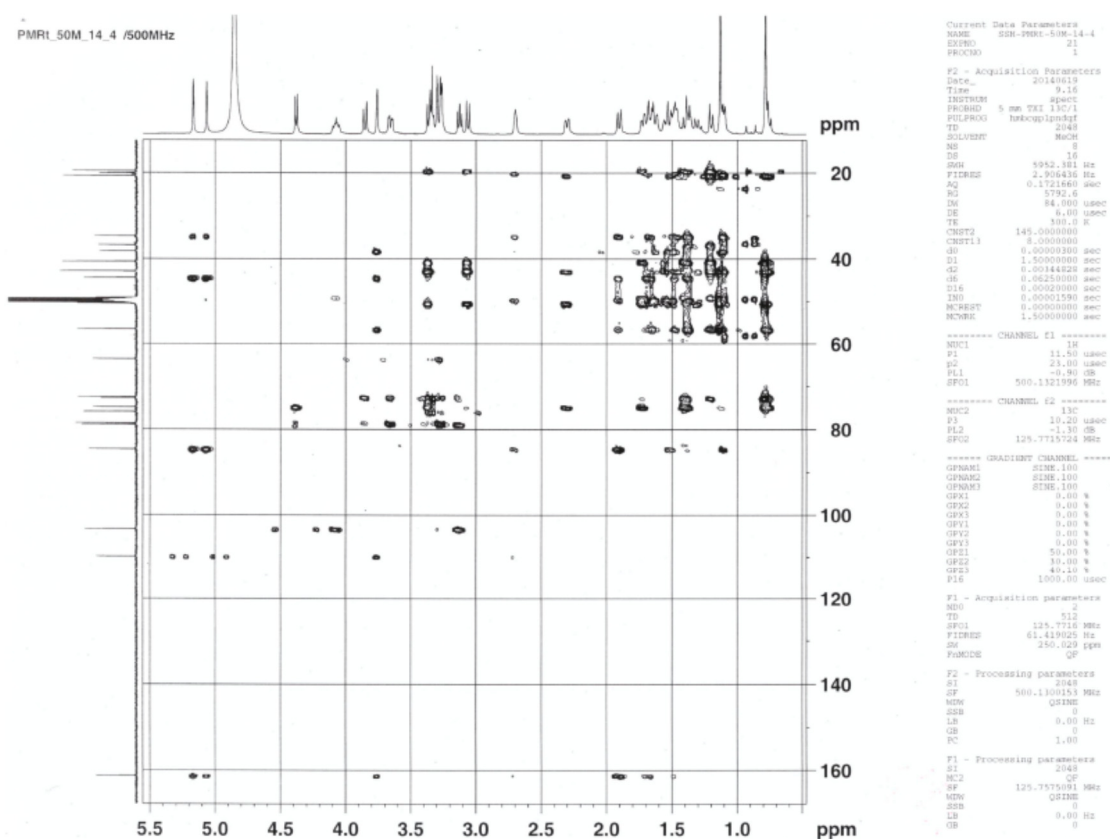


Figure S5. The HMBC spectrum of 4.

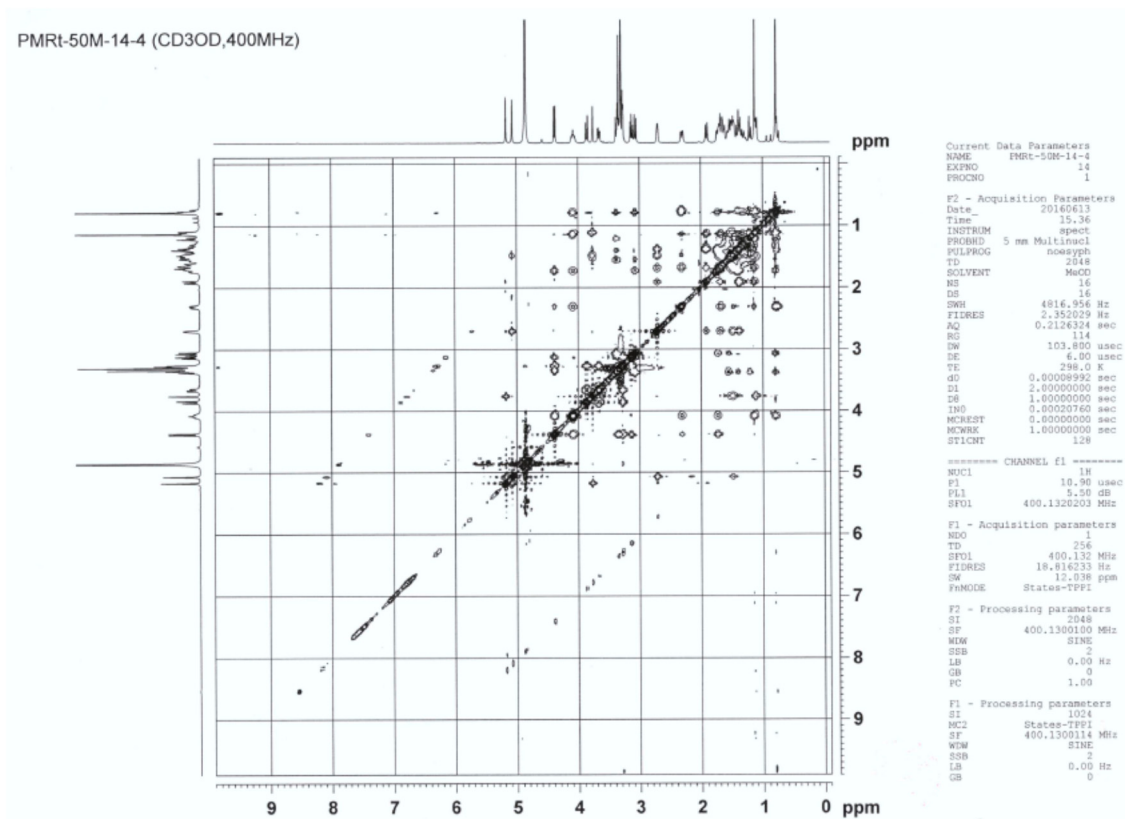


Figure S6. The NOESY spectrum of 4.

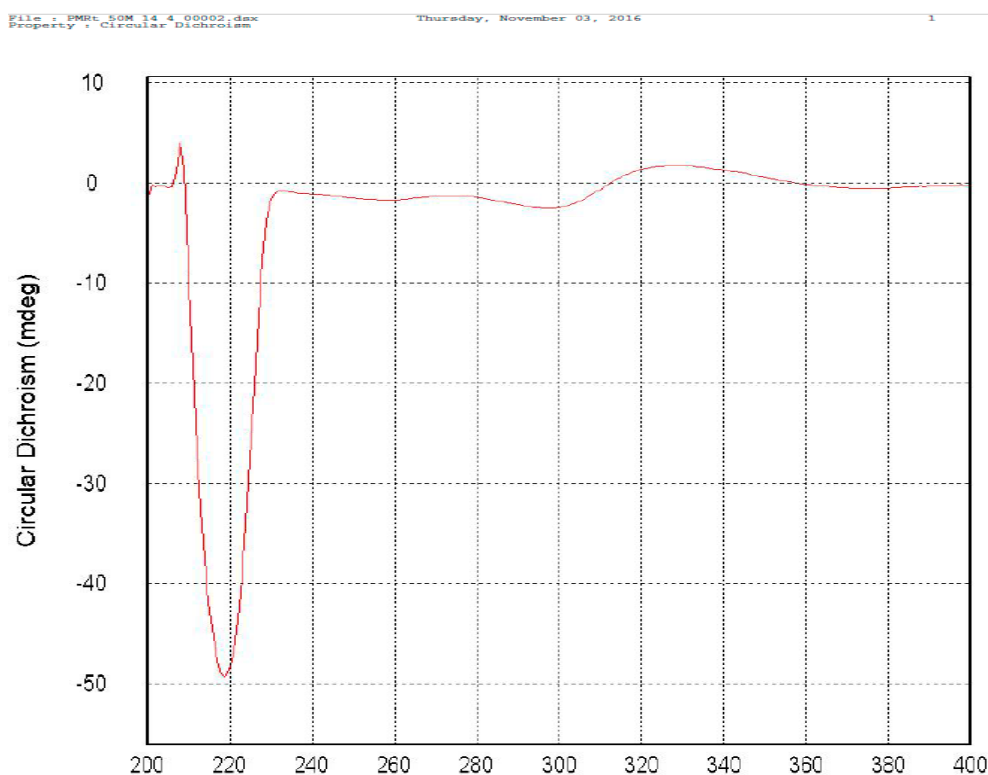
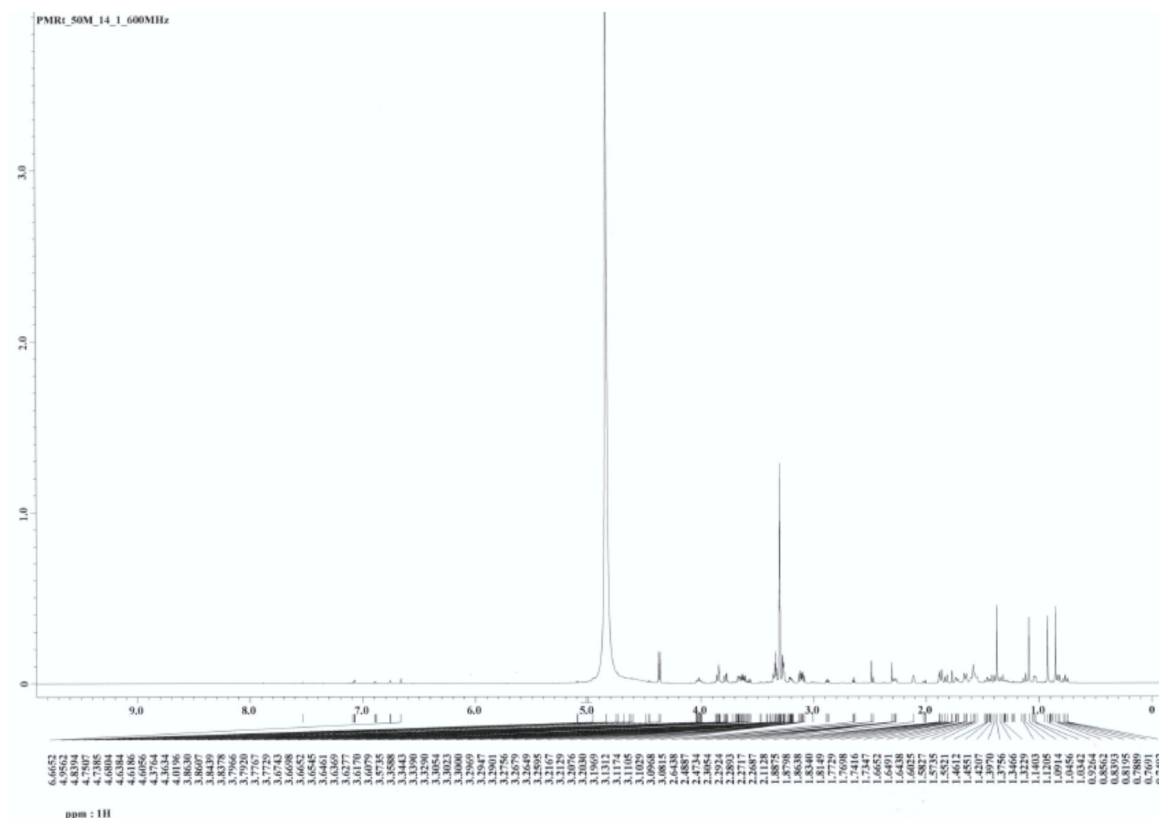
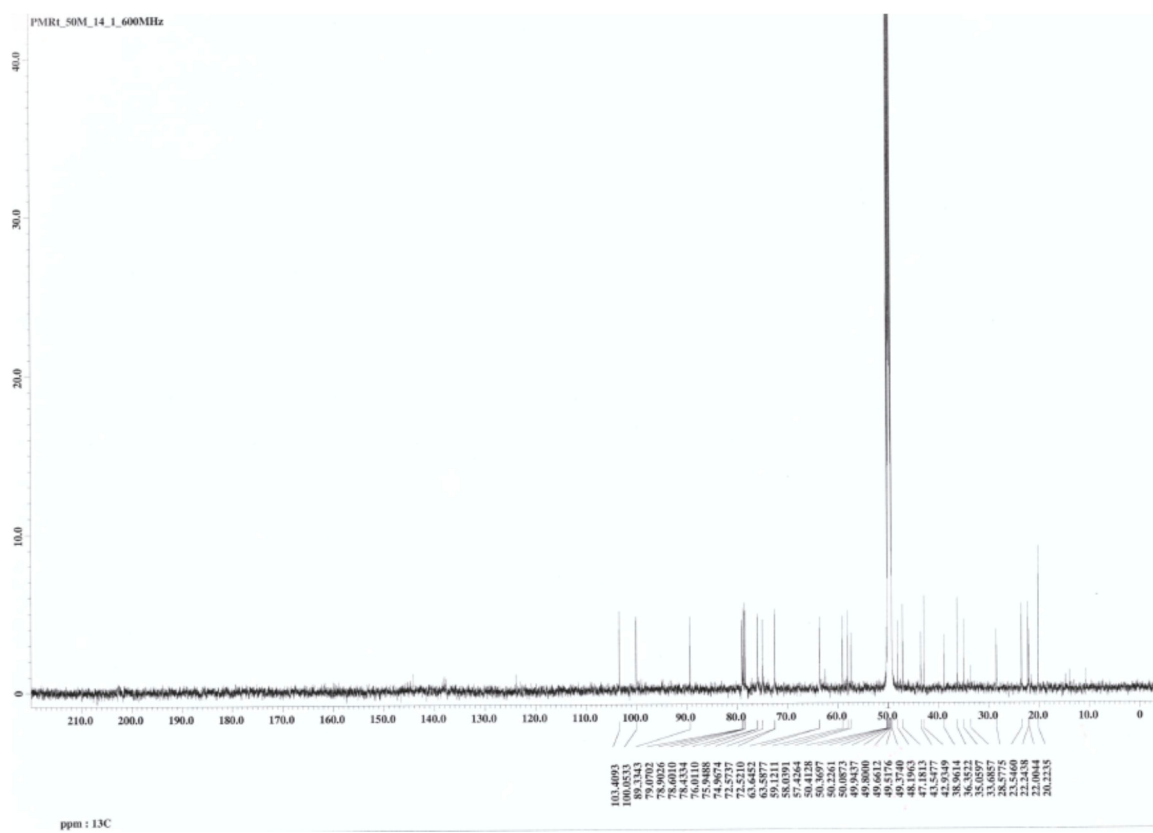


Figure S7. The CD spectrum of 4.

Figure S8. The ^1H -NMR spectrum of 10.Figure S9. The ^{13}C -NMR spectrum of 10.

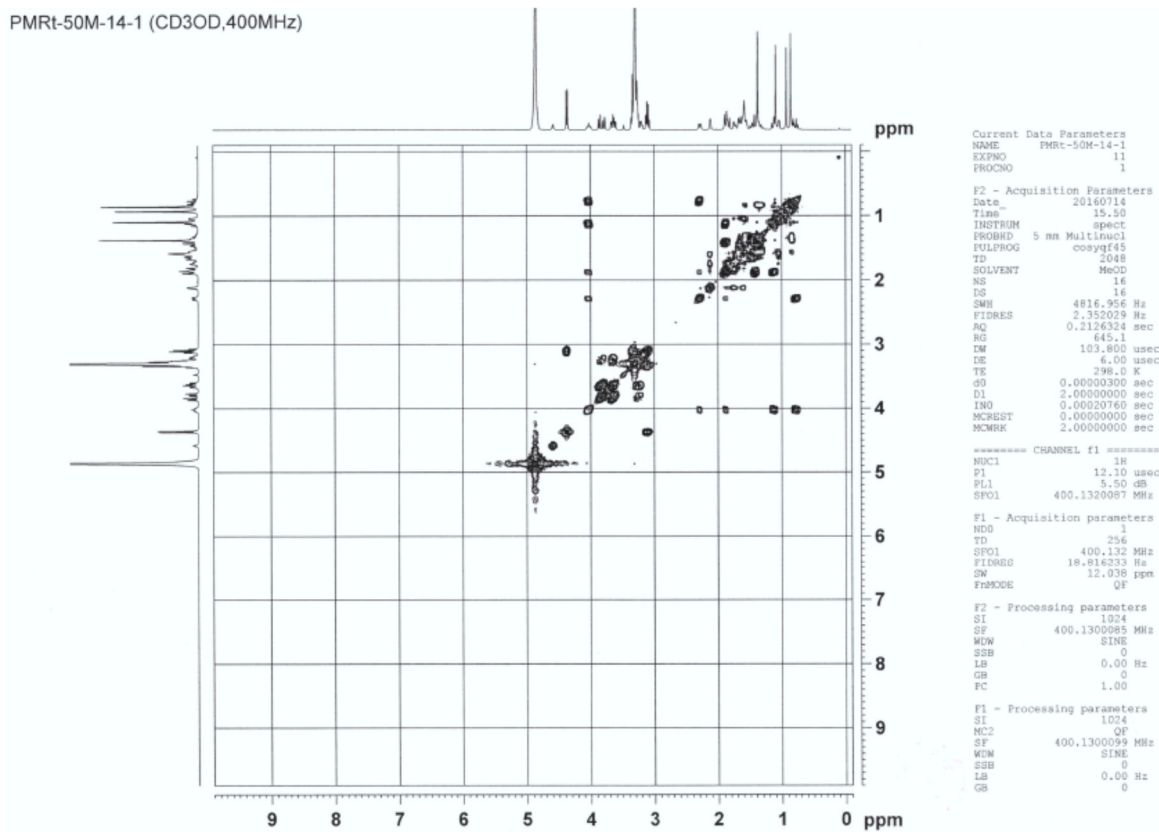
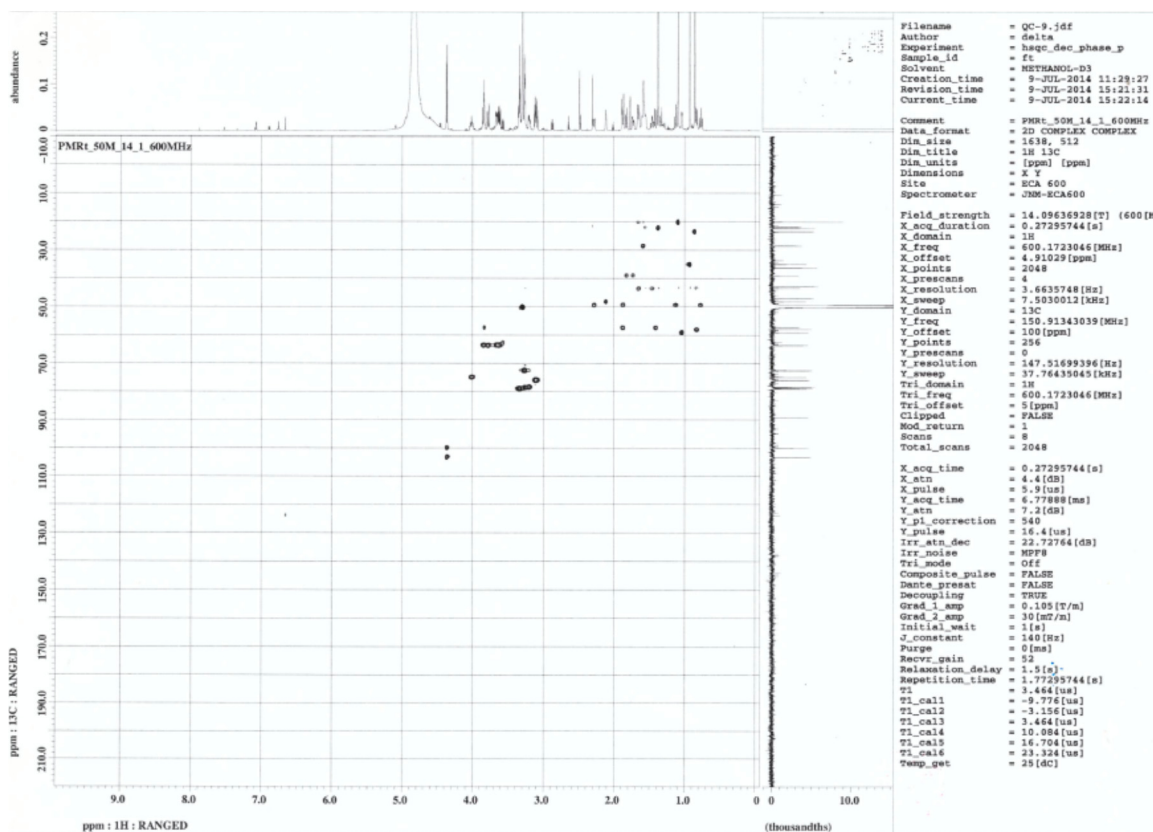
Figure S10. The ^1H - ^1H COSY spectrum of 10.

Figure S11. The HMQC spectrum of 10.

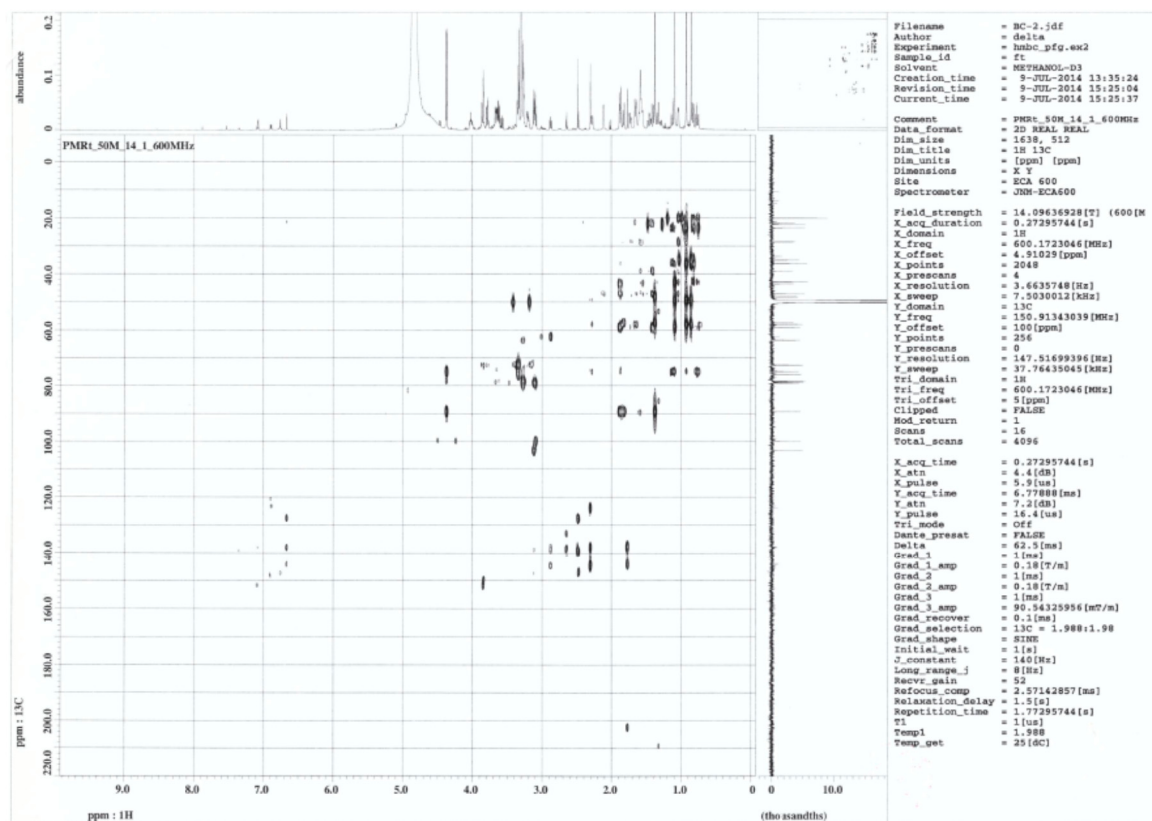


Figure S12. The HMBC spectrum of 10.

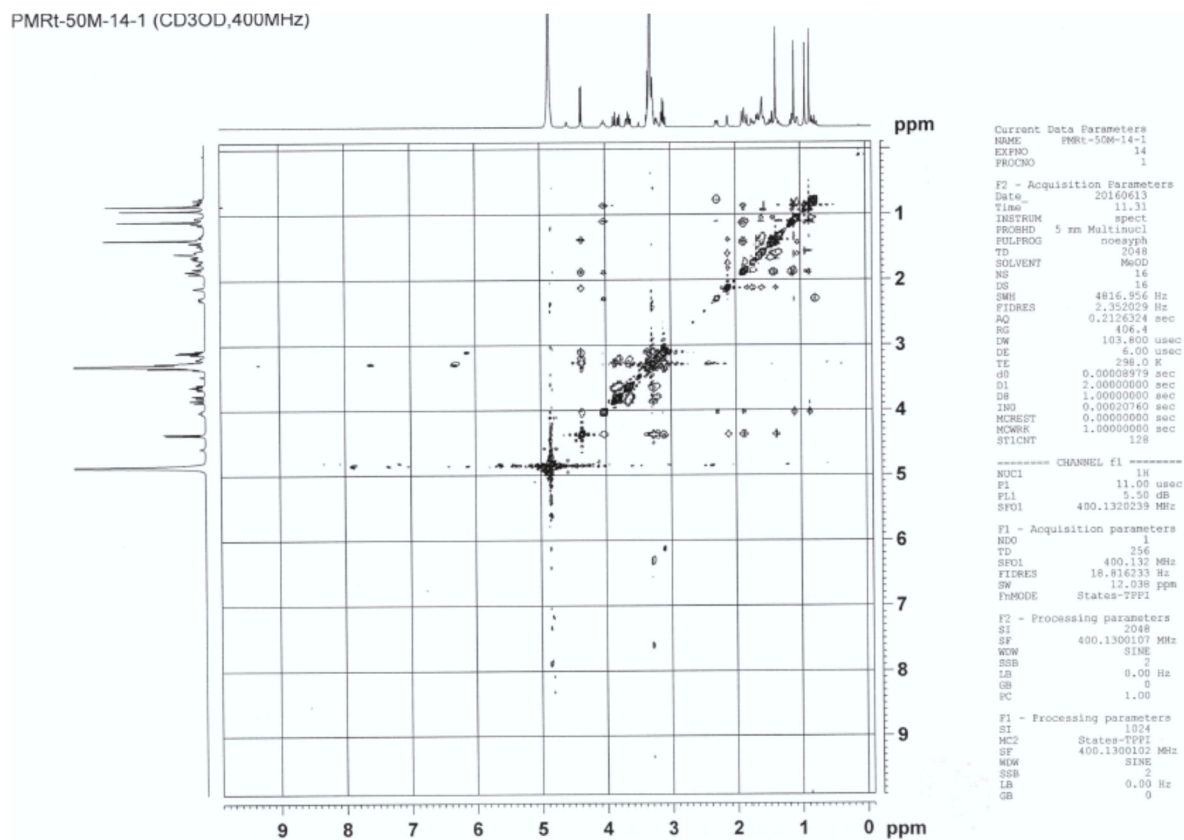
PMRt-50M-14-1 (CD₃OD,400MHz)

Figure S13. The NOESY spectrum of 10.

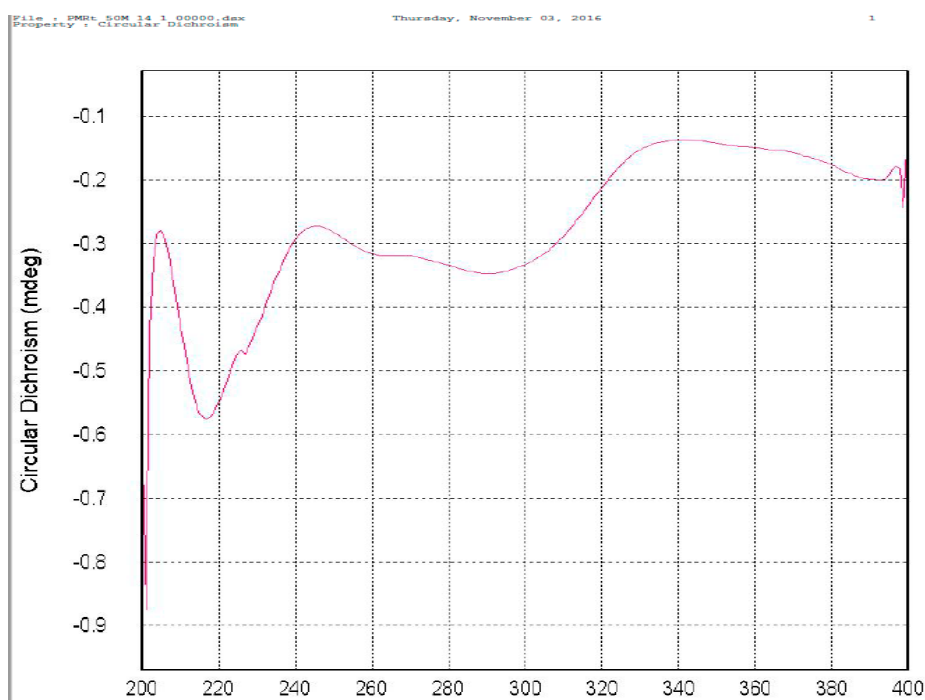
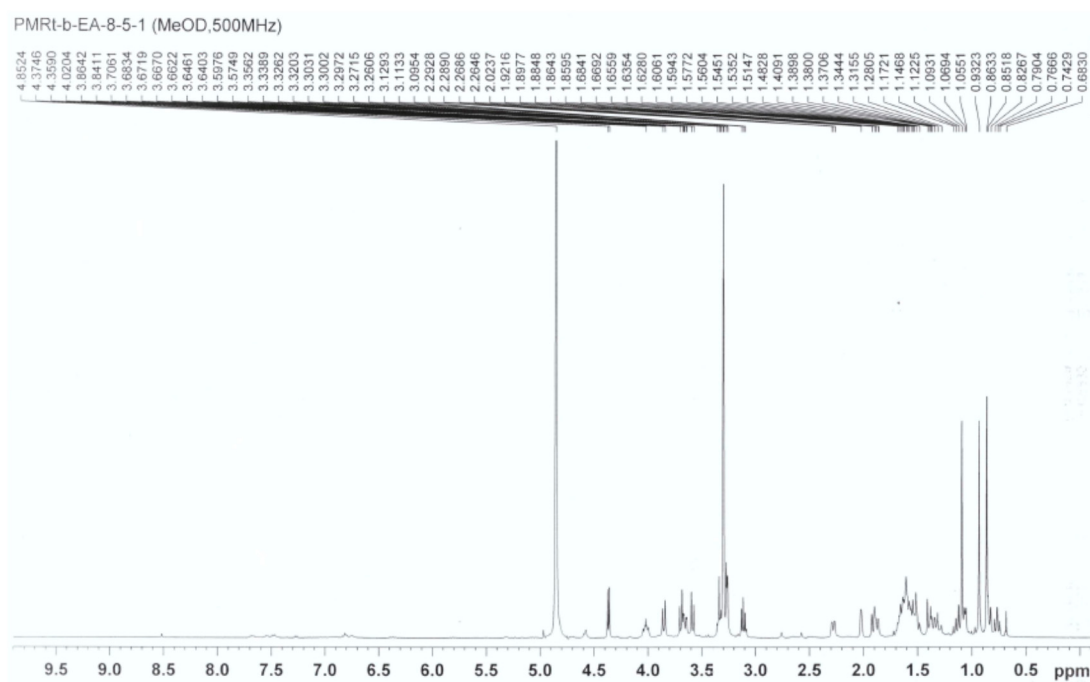
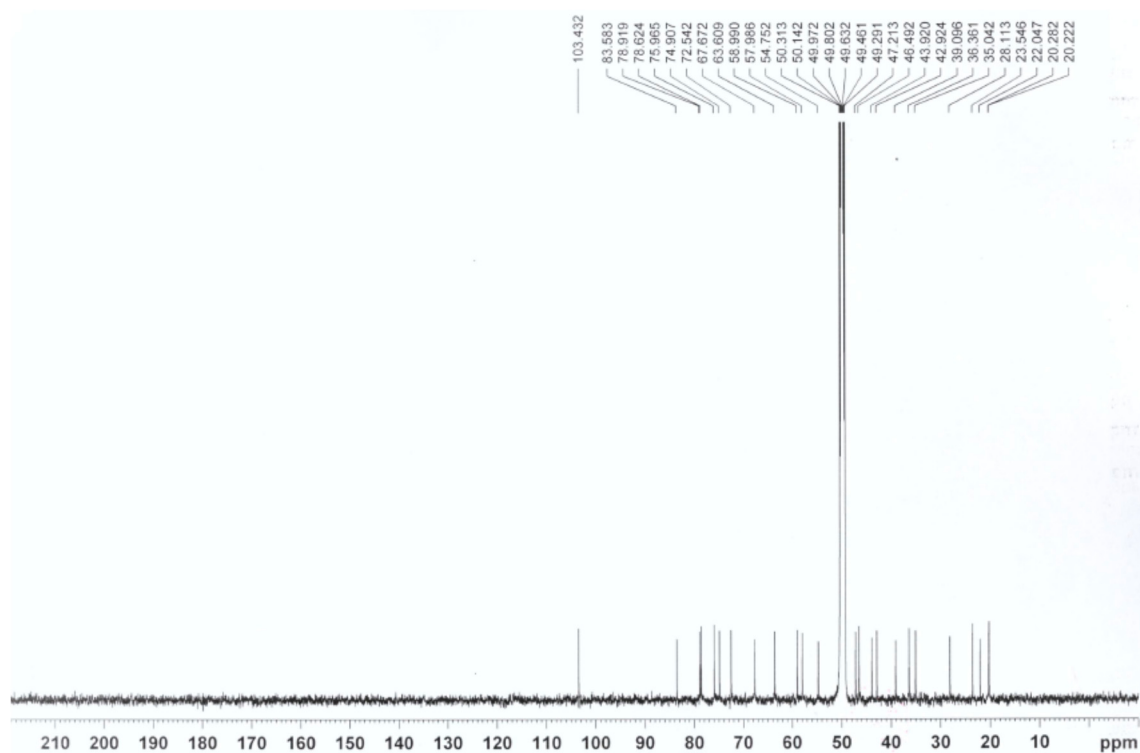
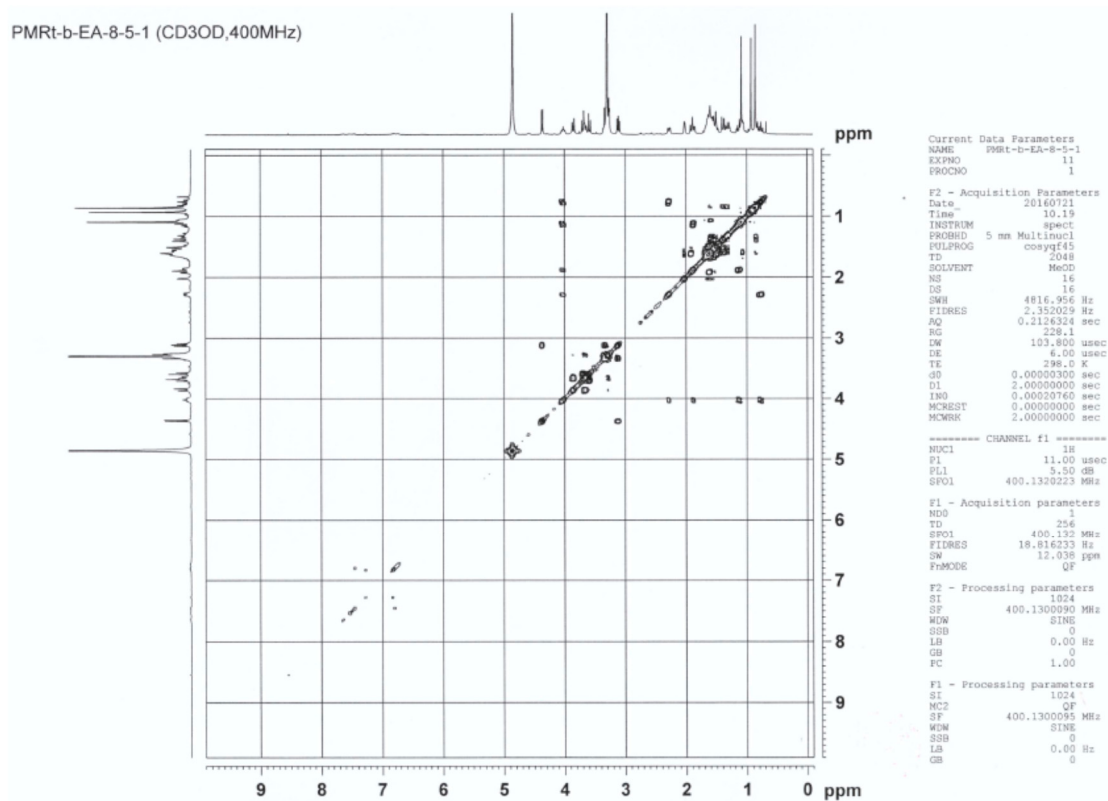


Figure S14. The CD spectrum of compound 10.

Figure S15. The ^1H -NMR spectrum of 12.

Figure S16. The ^{13}C -NMR spectrum of 12.Figure S17. The ^1H - ^1H COSY spectrum of 12.

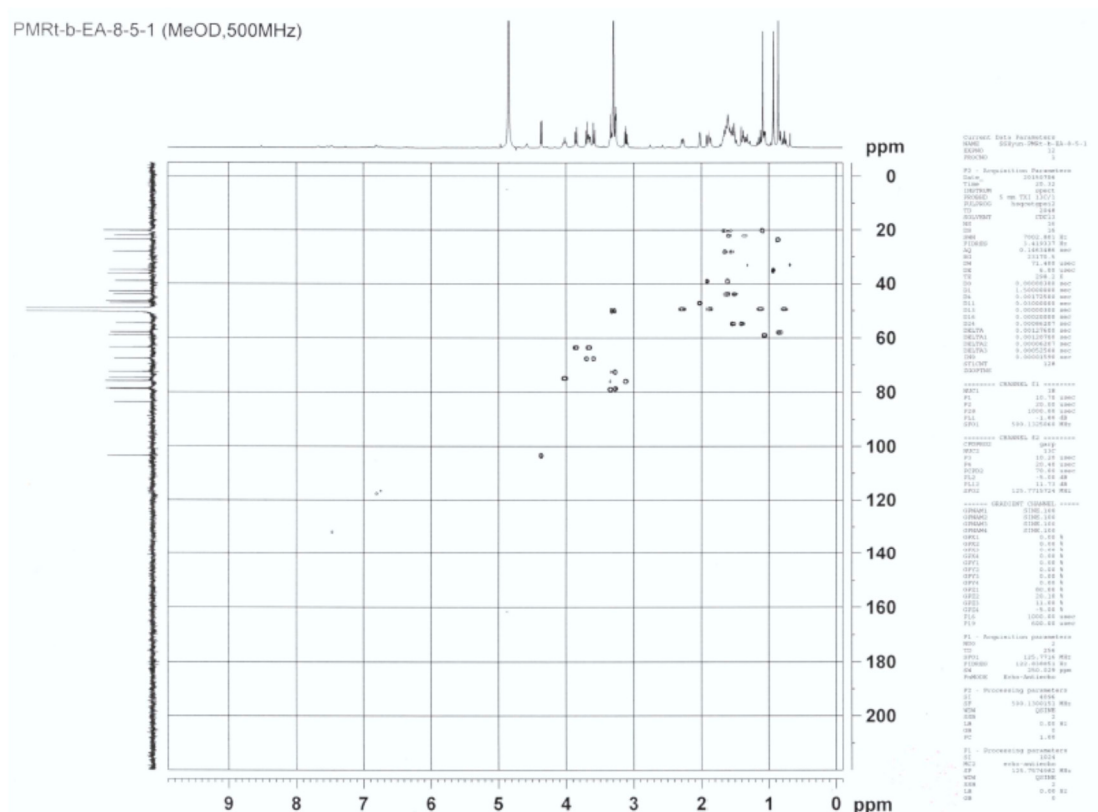


Figure S18. The HMQC spectrum of 12.

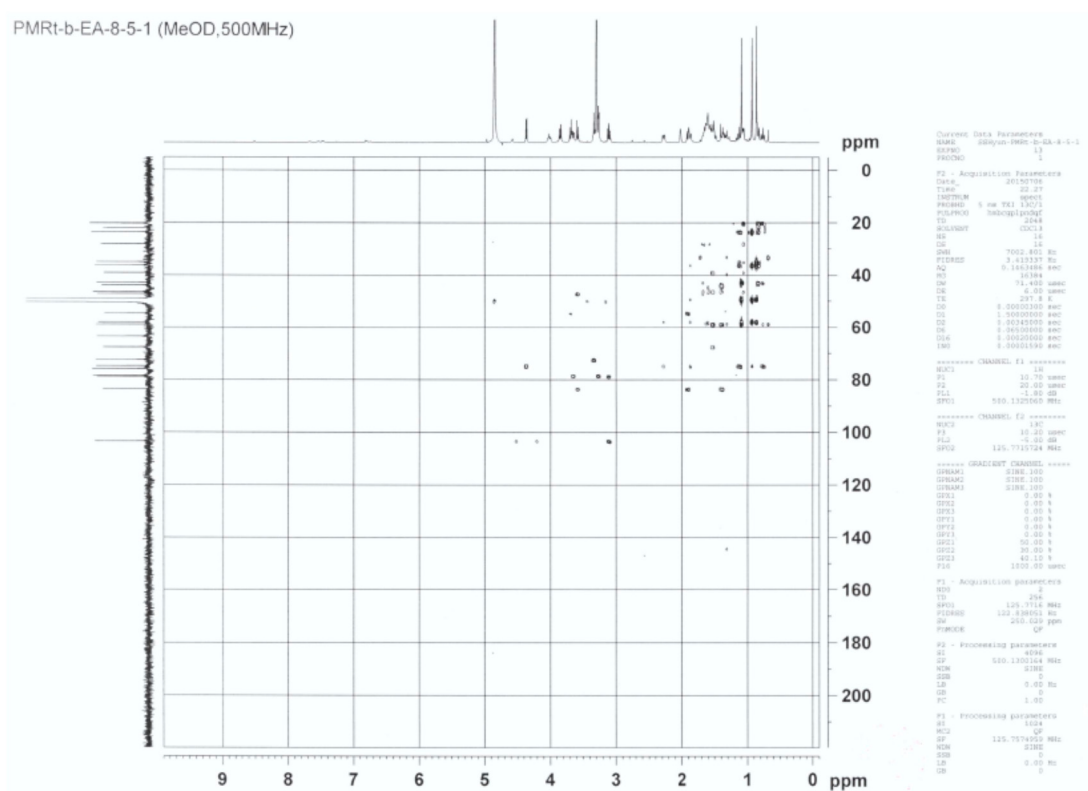


Figure S19. The HMBC spectrum of 12.

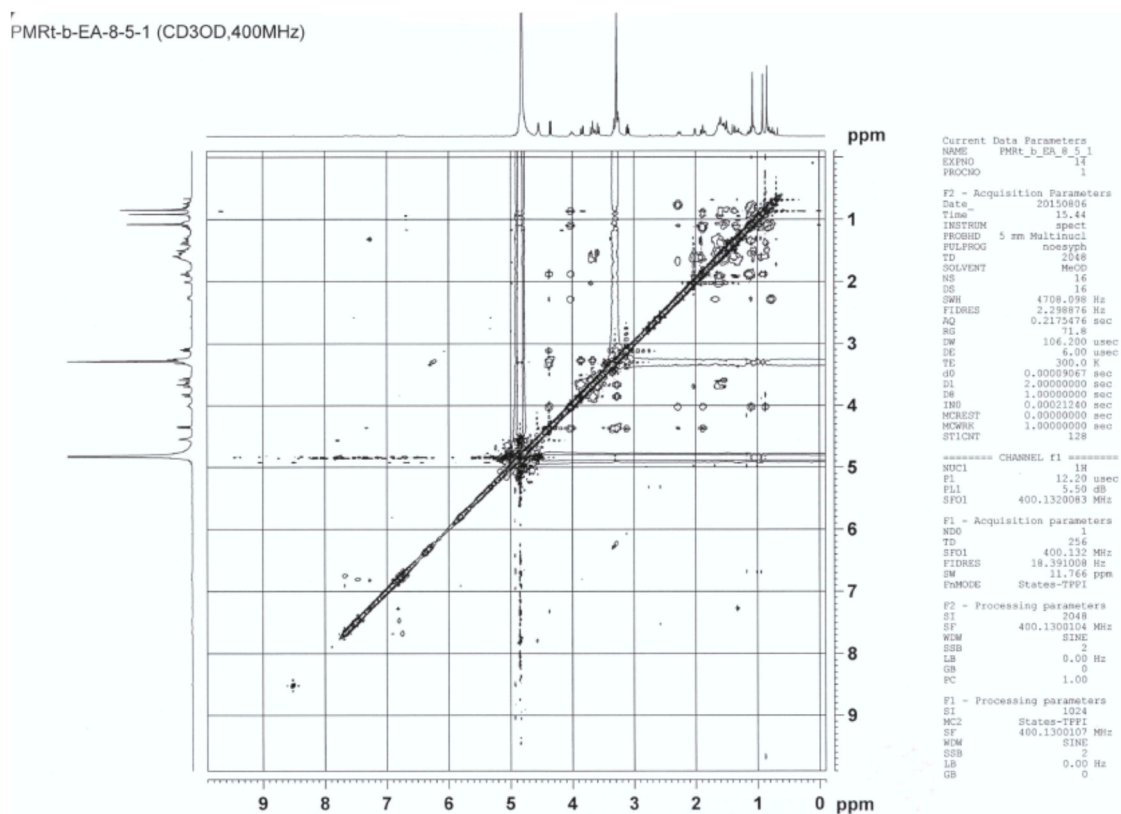


Figure S20. The NOESY spectrum of 12.

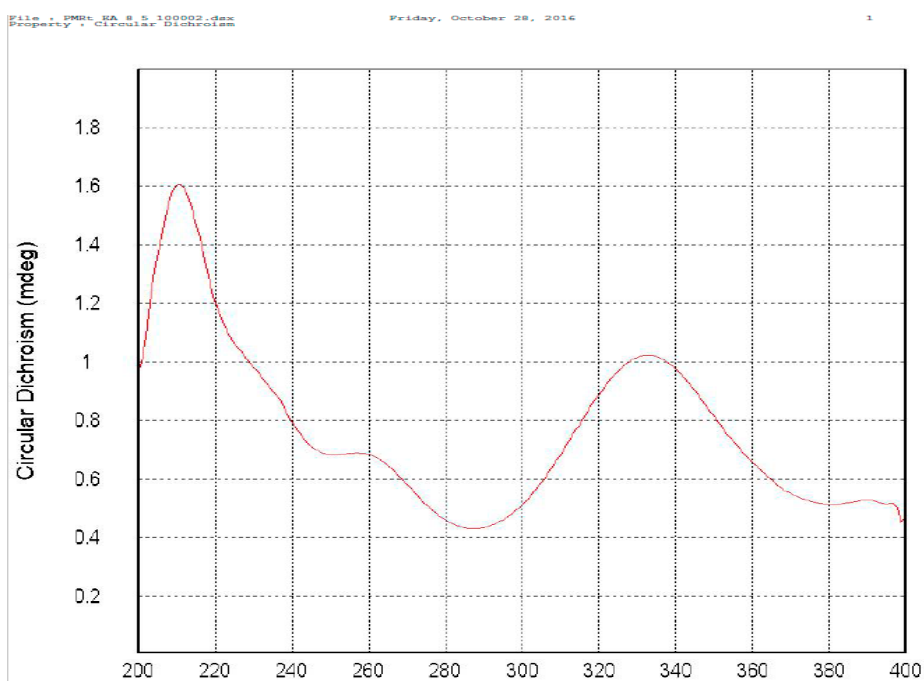


Figure S21. The CD spectrum of 12.