SUPPORTING INFORMATION:

Lignans, Amides, and Saponins from *Haplophyllum tuberculatum* and their Antiprotozoal Activity

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Table S 1. ^{1}H and ^{13}C NMR Spectroscopic Data for Compound **1** and **2** (DMSO-*d6*; 500.13 MHz for ^{1}H and 125.77 for ^{13}C NMR; δ in ppm)

	1		**2**	
Position	δ_C[a]	δ_H (mult *J* in Hz)	δ_C[a]	δ_H (mult *J* in Hz)
2	81.9, CH	4.98, d (6.4)	86.5, CH	4.34, d (5.8)
3	40.7, CH	2.62, m	43.8, CH	2.20, m
4	40.7, CH	2.62, m	43.8, CH	2.20, m
5	81.9, CH	4.98, d (6.4)	86.5, CH	4.34, d (5.8)
1', 1"	131.4, C		133.1, C	
2', 2"	110.7, CH	6.94, s	110.8, CH	6.95, s
3', 3"	147.2, C		147.5, C	
4', 4"	145.3, C		146.1, C	
5', 5"	115.1, CH	6.79[b]	115.3, CH	6.78[b]
6', 6"	118.7, CH	6.79[b]	118.8, CH	6.81[b]
3-Me	11.5, CH_3	0.51, d (6.4)	12.6, CH_3	0.94, d (6.1)
4-Me	11.5, CH_3	0.51, d (6.4)	12.6, CH_3	0.94, d (6.1)
3'-OMe, 3"-OMe	55.6, CH_3	3.76, s	55.6, CH_3	3.75, s

[a] ^{13}C NMR data extracted from HSQC and HMBC spectra, [b] Overlapping signals.

Table S2. ^{1}H and ^{13}C NMR Spectroscopic Data for Compounds **5-8** (DMSO-*d6*; 500.13 MHz for ^{1}H and 125.77 for ^{13}C NMR; δ in ppm)

	5		**6**		**7**		**8**	
Position	δ_C [a]	δ_H (mult *J* in Hz)	δ_C [a]	δ_H (mult *J* in Hz)	δ_C [a]	δ_H (mult *J* in Hz)	δ_C [a]	δ_H (mult *J* in Hz)
1	132.2, C		126.8, C		[c]		[c]	
2	112.7, CH	6.76, d (1.5)	111.3, CH	7.14, br s	112.0, CH	7.01, d (1.5)	111.0, CH	7.11, br s
3	147.4, C		148.1, C		[c]		[c]	
4	144.8, C		148.6, C		[c]		[c]	
5	115.2, CH	6.70 [b]	116.1, CH	6.87, d (8.2)	114.8, CH	6.76, d (8.2)	115.9, CH	6.82, d (8.2)
6	120.3, CH	6.59, dd (7.8, 1.4)	121.9, CH	7.03 [b]	124.5, CH	7.14, dd (8.2, 1.5)	121.5, CH	6.98, br d (8.2)
7	30.8, CH_2	2.72, t (7.6)	139.6, CH	7.46, d (15.6)	[c]		138.8, CH	7.32, d (15.9)
8	37.4, CH_2	2.34, t (7.8)	119.3, CH	6.56, d (15.6)	[c]		119.3, CH	6.46, d (15.9)
9	171.6, C		166.2, C		16.9, CH_3	2.03, s	[c]	
10							38.3, CH_2	3.20 [b]
11							26.9, CH_2	1.50, m
1'	132.2, C		129.8, C		[c]		[c]	
2'	129.3, CH	6.95, d (8.4)	129.7, CH	7.05 [b]	112.0, CH	7.01, d (1.5)	111.0, CH	7.11, br s
3'	115.2, CH	6.70 [b]	115.5, CH	6.76, d (8.2)	[c]		[c]	
4'	155.7, C		155.9, C		[c]		[c]	
5'	115.2, CH	6.70 [b]	115.5, CH	6.76, d (8.2)	114.8, CH	6.76, d (8.2)	115.9, CH	6.82, d (8.2)
6'	129.3, CH	6.95, d (8.4)	129.7, CH	7.05 [b]	124.5, CH	7.14, dd (8.2, 1.5)	121.5, CH	6.98, br d (8.2)
7'	34.4, CH_2	2.58, t (7.3)	34.7, CH_2	2.73, t (7.0)	[c]		138.8, CH	7.32, d (15.9)
8'	40.5, CH_2	3.22, dt (5.2, 6.7)	40.9, CH_2	3.45, dt (5.5, 5.5)	[c]		119.3, CH	6.46, d (15.9)
9'					16.9, CH_3	2.03, s	[c]	
10'							38.3, CH_2	3.20 [b]
11'							26.9, CH_2	1.50, m
3-OMe	55.7, CH_3	3.75, s	55.9, CH_3	3.81, s				
3'-OMe					55.5, CH_3	3.70, s	55.5, CH_3	3.81, s
NH		7.77, t (5.2)		7.97, t (5.5)				7.93, t (4.9)

[a] ^{13}C NMR data extracted from HSQC and HMBC spectra, [b] Overlapping signals, [c] Signal not visible due to low amount of compound.

Table S3. ^{1}H and ^{13}C NMR Spectroscopic Data for Compounds **9-10** (DMSO-*d6*; 500.13 MHz for ^{1}H and 125.77 for ^{13}C NMR; δ in ppm)

	9		**10**	
Position	δ_C[a]	δ_H (mult *J* in Hz)	δ_C[a]	δ_H (mult *J* in Hz)
1	126.3, C		132.3, C	
2	111.1, CH	7.11 [b]	113.1, CH	6.68 [b]
3	147.8, C		147.2, C	
4	147.6, C		144.2, C	
5	115.7, CH	6.82, d (7.9)	115.0, CH	6.70 [b]
6	121.7, CH	6.97, dd (7.9, 1.5)	121.0, CH	6.57, dt (7.8, 2.5)
7	139.1, CH	7.31, d (15.6)	32.0, CH_2	2.56, dd (13.7, 5.5) 2.32 [b]
8	119.0, CH	6.52, d (15.9)	45.7, CH	1.67, m
9	165.5, C		61.0, CH_2	3.34, dd (12.5, 7.0)
1'	130.5, C		132.3, C	
2'	127.7, CH	7.11 [b]	113.1, CH	6.68 [b]
3'	115.1, CH	6.77, d (8.2)	147.2, C	
4'	157.2, C		144.2, C	
5'	115.1, CH	6.77, d (8.2)	115.0, CH	6.70 [b]
6'	127.7, CH	7.11 [b]	121.0, CH	6.57, dt (7.8, 2.5, 2.5)
7'	79.5, CH	4.28, dd (7.5, 5.0)	39.1, CH_2	2.64, dd (13.7, 6.4) 2.32 [b]
8'	45.3, CH_2	3.34, d	33.6, CH	2.04, m
9'			15.1, CH_3	0.82, d (6.7)
1"	63.3, CH_2	3.31, q (7.0)		
2"	15.1, CH_3	1.10, t (6.9)		
3-OMe	55.7, CH_3	3.81, s	55.4, CH_3	3.73, s
3'-OMe			55.4, CH_3	3.73, s
NH		7.86, t (5.5)		

[a] ^{13}C NMR data extracted from HSQC and HMBC spectra, [b] Overlapping signals.

Table S4. ^{1}H and ^{13}C NMR Spectroscopic Data for Compounds **11-13** (DMSO-*d6*; 600.18 Hz for ^{1}H and 150.92 for ^{13}C NMR; δ in ppm)

	11		**12**		**13**	
Position	δC^{a}	δH (mult *J* in Hz)	δC^{a}	δH (mult *J* in Hz)	δC^{a}	δH (mult *J* in Hz)
1	37.2, CH_2	1.78 [b] 0.96 [b]	37.2, CH_2	1.78 [b] 0.96 [b]	37.1, CH_2	1.76 [b] 0.96 [b]
2	29.4, CH_2	1.77 [b] 1.44 [b]	29.4, CH_2	1.77 [b] 1.44 [b]	29.4, CH_2	1.78 [b] 1.43 [b]
3	76.9, CH	3.46 [b]	76.9, CH	3.46 [b]	76.9, CH	3.46 [b]
4	38.1, CH_2	2.39, br d (11.4) 2.15, dd (11.4, 11.4)	38.1, CH_2	2.39, br d (11.4) 2.15, dd (11.4, 11.4)	38.0, CH_2	2.38 [c] 2.15 [c]
5	140.7, C		140.7, C		140.6, C	
6	121.8, CH	5.33, m	121.8, CH	5.33, m	121.5, CH	5.30 [c]
7	31.9, CH_2	1.91 [b] 1.49 [b]	31.9, CH_2	1.91 [b] 1.49 [b]	31.8, CH_2	1.92 [b] 1.47 [b]
8	31.4, CH	1.54 [b]	31.4, CH	1.54 [b]	31.3, CH	1.53 [b]
9	50.0, CH	0.88 [b]	50.0, CH	0.88 [b]	50.0, CH	0.87 [b]
10	36.8, C		36.8, C		36.8, C	
11	20.8, CH_2	1.47 [b] 1.38 [b]	20.8, CH_2	1.47 [b] 1.38 [b]	20.7, CH_2	1.46 [b] 1.37 [b]
12	39.5, CH_2	1.67 [b] 1.12 [b]	39.5, CH_2	1.67 [b] 1.12 [b]	39.5, CH_2	1.67 [b] 1.11 [b]
13	40.2, C		40.2, C		39.8, C	
14	56.2, CH	1.07 [b]	56.2, CH	1.07 [b]	56.2, CH	1.05 [b]
15	31.8, CH_2	1.88 [b] 1.17 [b]	31.8, CH_2	1.88 [b] 1.17 [b]	31.4, CH_2	1.86 [b] 1.17 [b]
16	80.7, CH	4.27 [b]	80.7, CH	4.27 [b]	80.5, CH	4.26 [b]
17	62.0, CH	1.65 [b]	62.0, CH	1.65 [b]	61.8, CH	1.64 [b]
18	16.4, CH_3	0.72, s	16.4, CH_3	0.72, s	16.3, CH_3	0.71 [b]
19	19.4, CH_3	0.94, s	19.4, CH_3	0.94, s	19.2, CH_3	0.93, s
20	42.0, CH	1.75 [b]	42.0, CH	1.75 [b]	41.4, CH	1.78 [b]
21	14.9, CH_3	0.92, d (5.6)	14.9, CH_3	0.92, d (5.6)	14.6, CH_3	0.88 [c]
22	109.4, C		109.4, C		108.5, C	
23	25.9, CH_2	1.80 [b] 1.26 [b]	25.9, CH_2	1.80 [b] 1.26 [b]	30.9, CH_2	1.60 [b] 1.45 [b]
24	25.8, CH_2	1.87 [b] 1.33 [b]	25.8, CH_2	1.87 [b] 1.33 [b]	28.5, CH_2	1.54 [b] 1.29 [b]
25	26.8, CH	1.63 [b]	26.8, CH	1.63 [b]	30.1, CH	1.50 [b]
26	64.7, CH_2	3.78, br d (10.0) 3.21 [b]	64.7, CH_2	3.78, br d (10.0) 3.21 [b]	65.9, CH_2	3.38 [b] 3.17 [b]
27	16.3, CH_3	0.99, d (6.0)	16.3, CH_3	0.99, d (6.0)	17.4, CH_3	0.71 [b]
1- Glc1	98.4, CH	4.43, d (7.5)	98.4, CH	4.43, d (7.5)	98.4, CH	4.41 [b]
2- Glc1	76.4, CH	3.22 [b]	76.4, CH	3.22 [b]	76.0, CH	3.23 [b]
3- Glc1	76.4, CH	3.50 [b]	76.4, CH	3.50 [b]	76.3, CH	3.51 [b]
4- Glc1	81.1, CH	3.32 [b]	81.1, CH	3.32 [b]	81.0, CH	3.34 [b]
5- Glc1	74.9, CH	3.28 [b]	74.9, CH	3.28 [b]	74.7, CH	3.27 [b]
6- Glc1	60.5, CH_2	3.69 [b] 3.58 [b]	60.5, CH_2	3.69 [b] 3.58 [b]	60.5, CH_2	3.70 [b] 3.59 [b]

[a] ^{13}C NMR data extracted from HSQC and HMBC spectra, [b] Overlapping signals, [c] broad signal due to concentrated sample.

(continued next page)

Table S4. (continued)

	11		**12**		**13**	
Position	δ_C[a]	δ_H (mult *J* in Hz)	δ_C[a]	δ_H (mult *J* in Hz)	δ_C[a]	δ_H (mult *J* in Hz)
1- Rha1	100.4, CH	5.04, br s	100.4, CH	5.04, br s		
2- Rha1	70.8, CH	3.63 [b]	70.8, CH	3.63 [b]	70.7, CH	3.64 [b]
3- Rha1	71.0, CH	3.40 [b]	71.0, CH	3.40 [b]	70.9, CH	3.40 [b]
4- Rha1	72.3, CH	3.18 [b]	72.3, CH	3.18 [b]	72.2, CH	3.19 [b]
5- Rha1	68.3, CH	3.97, m	68.3, CH	3.97, m	68.2, CH	3.97 [c]
6- Rha1	18.2, CH_3	1.07 [b]	18.2, CH_3	1.07 [b]	18.0, CH_3	1.08 [b]
1- Glc2	103.0, CH	4.34, d (7.5)	103.2, CH	4.28 [b]	102.9, CH	4.34 [b]
2- Glc2	73.1, CH	3.18 [b]	74.4, CH	3.09 [b]	72.9, CH	3.20 [b]
3- Glc2	86.4, CH	3.40 [b]	81.3, CH	3.38 [b]	86.2, CH	3.41 [b]
4- Glc2	68.4, CH	3.16 [b]	68.7, CH	3.11 [b]	68.3, CH	3.16 [b]
5- Glc2	76.9, CH	3.24 [b]	77.0, CH	3.24 [b]	76.4, CH	3.26 [b]
6- Glc2	61.1, CH_2	3.66 [b] 3.42 [b]	61.1, CH_2	3.66 [b] 3.42 [b]	60.9, CH_2	3.68 [b] 3.41 [b]
1- Xyl	105.0, CH	4.38, d (7.1)	-	-	104.7, CH	4.38 [b]
2- Xyl	74.1, CH	3.05 [b]	-	-	73.9, CH	3.06 [b]
3- Xyl	76.6, CH	3.13 [b]	-	-	76.1, CH	3.14 [b]
4- Xyl	69.8, CH	3.29 [b]	-	-	69.6, CH	3.30 [b]
5- Xyl	66.2, CH_2	3.72 [b] 3.06 [b]	-	-	66.0, CH_2	3.73 [b] 3.08 [b]
1- Rha2	-	-	101.0, CH	5.01, br s		
2- Rha2	-	-	70.9, CH	3.69 [b]		
3- Rha2	-	-	70.9, CH	3.47 [b]		
4- Rha2	-	-	72.4, CH	3.17 [b]		
5- Rha2	-	-	68.5, CH	3.87, m		
6- Rha2	-	-	18.2, CH_3	1.07 [b]		

[a] ^{13}C NMR data extracted from HSQC and HMBC spectra, [b] Overlapping signals, [c] broad signal due to concentrated sample.

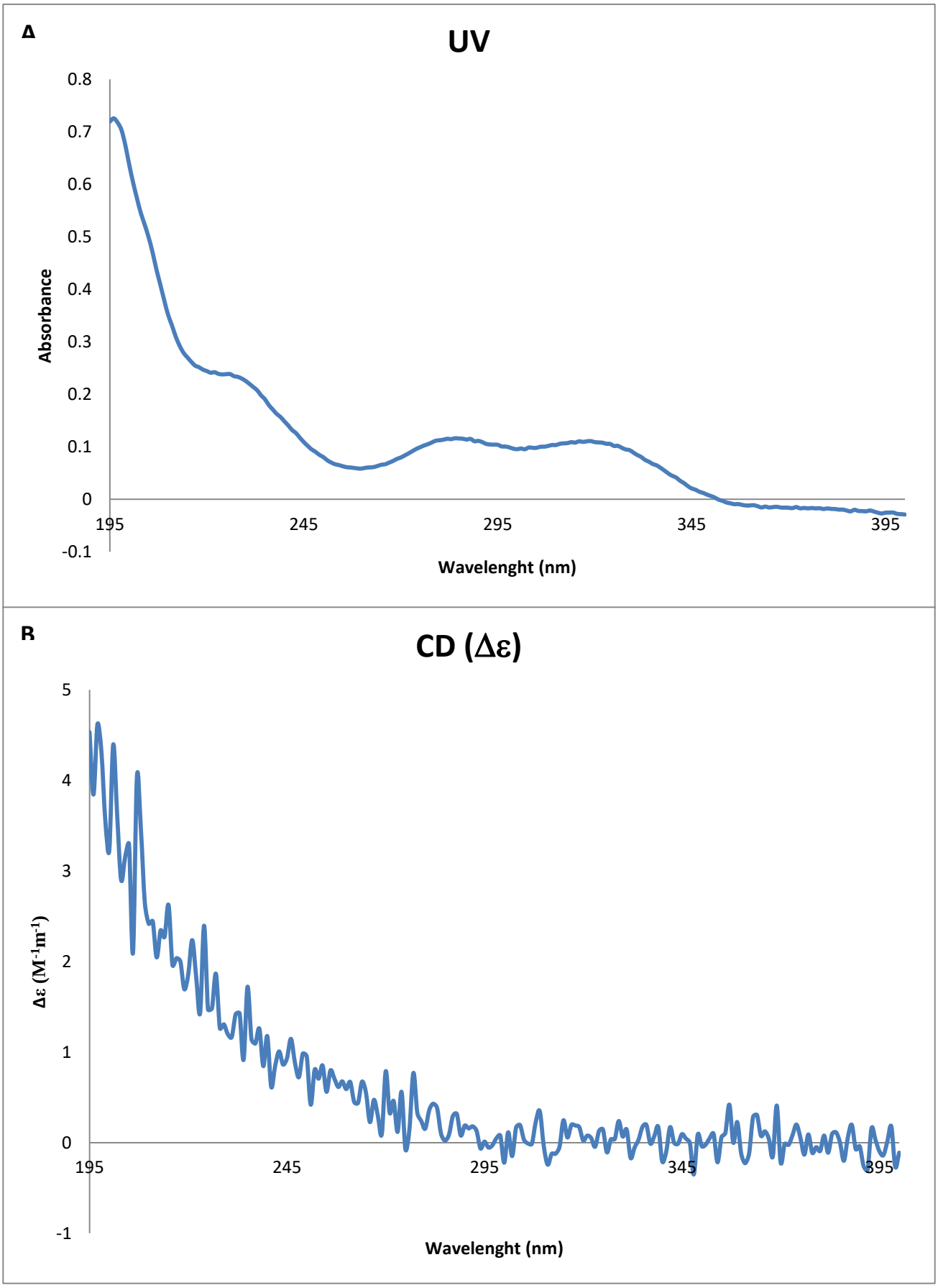

Figure S2. UV (**A**) and ECD (**B**) spectra for compound **9** in MeOH (0.07 mg/mL).

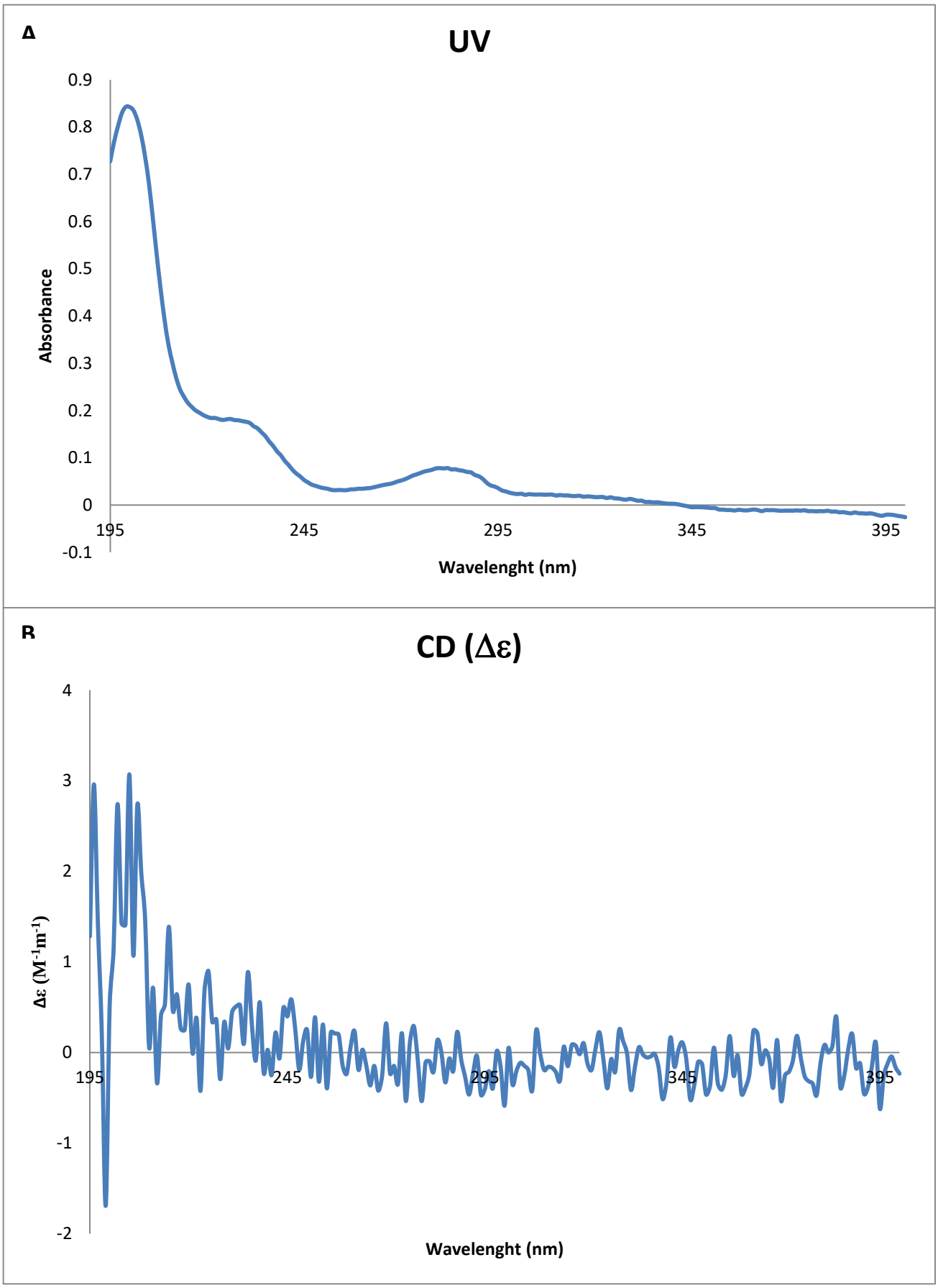

Figure S2. UV (**A**) and ECD (**B**) spectra for compound **10** in MeOH (0.05 mg/mL).

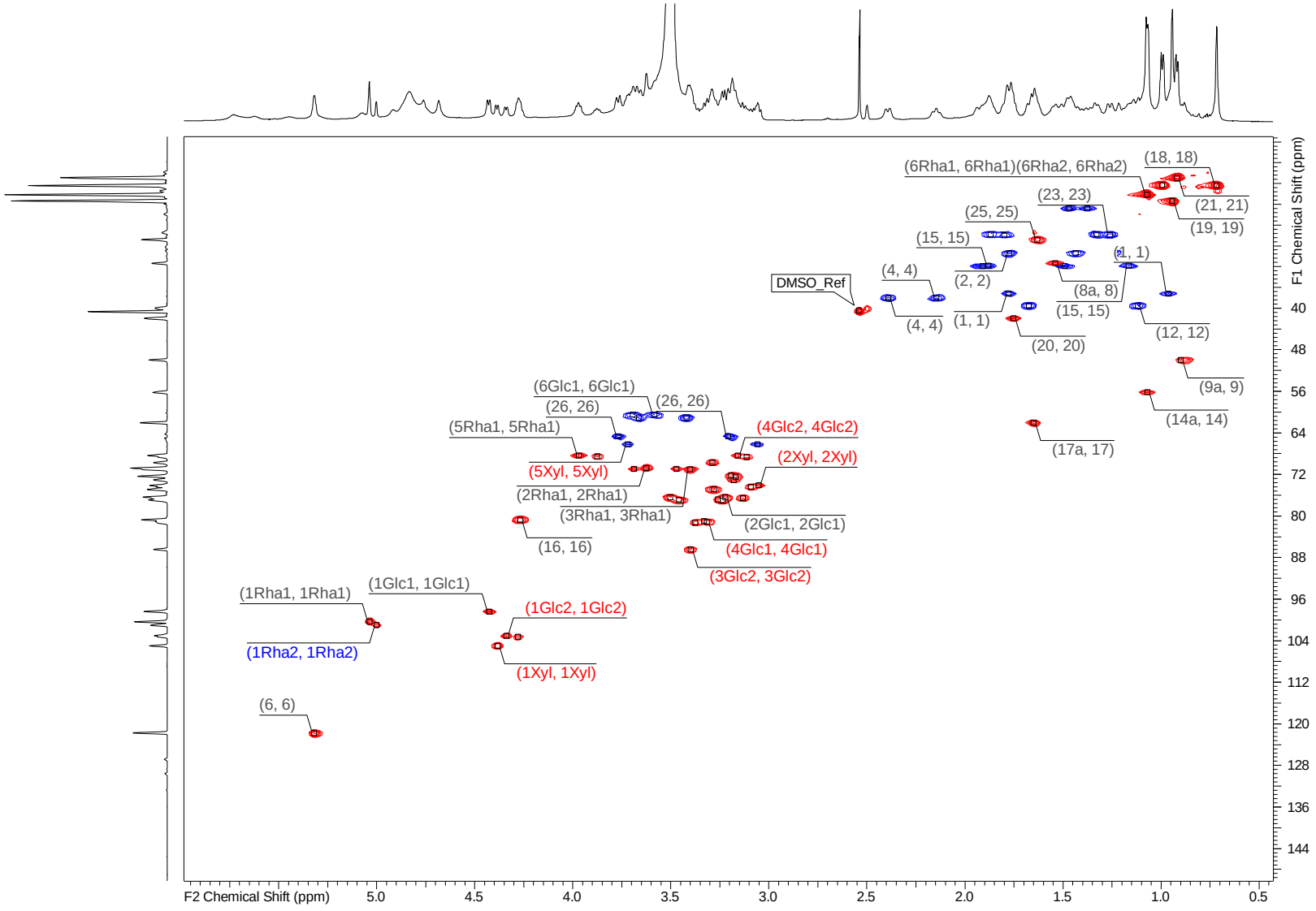

Figure S3. HSQC-DEPT spectrum of the mixture of compounds **11** (in red and black) and **12** (in blue and black) (500 MHz, DMSO)

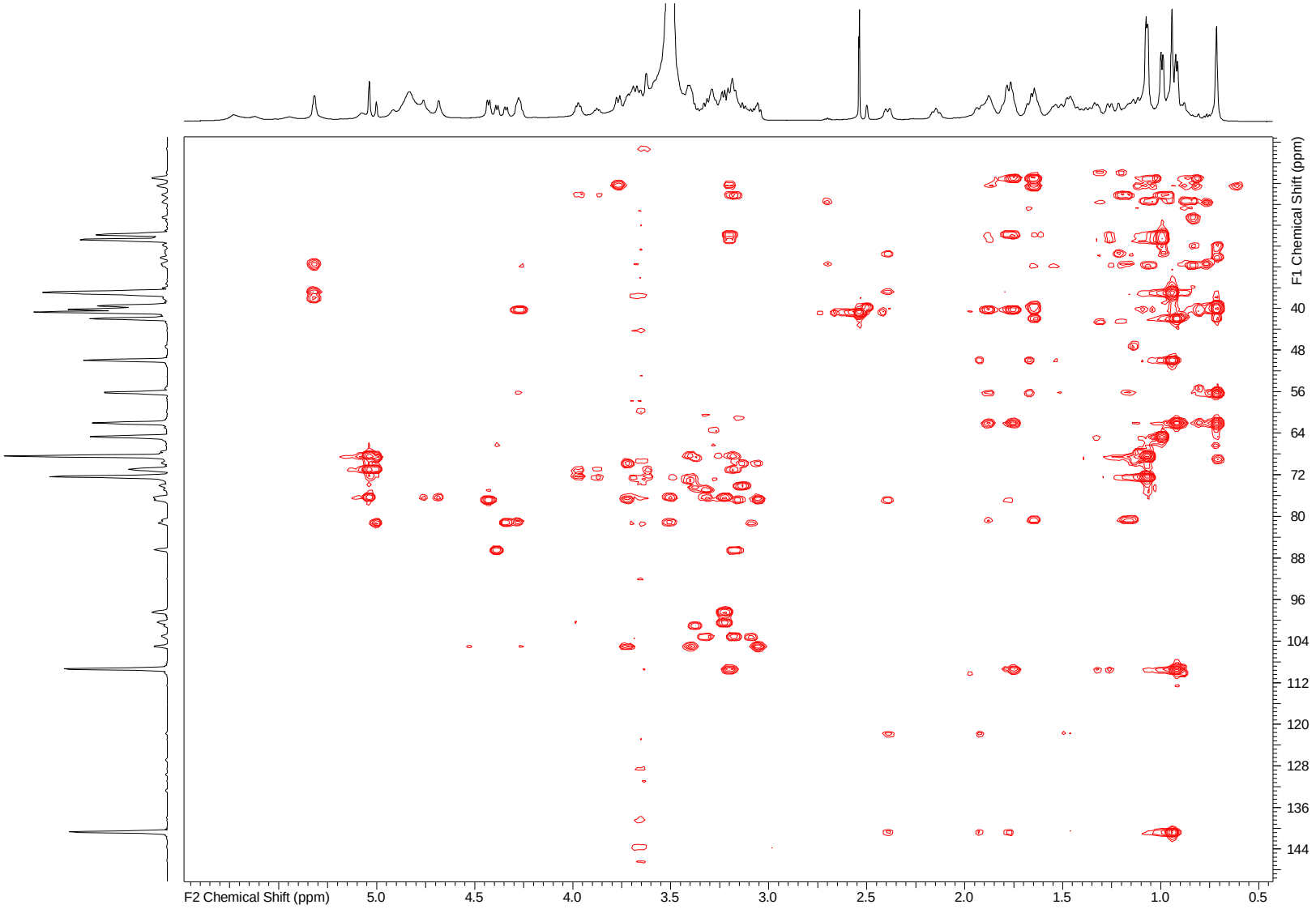

Figure S4. HMBC spectrum of the mixture of compounds **11** and **12** (500 MHz, DMSO)

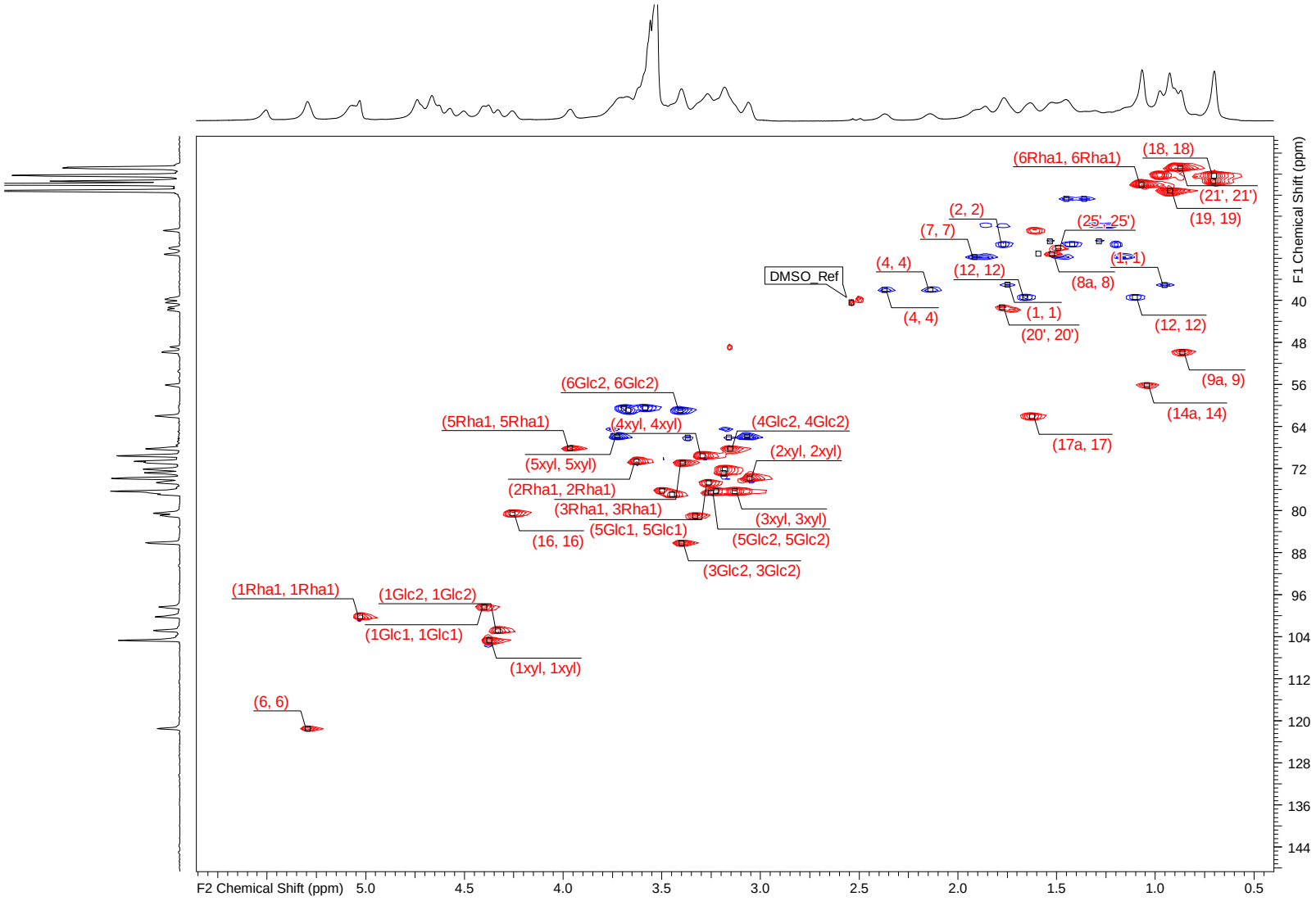

Figure S5. HSQC-DEPT spectrum of the mixture of compounds **11** and **13** (labelled in red, a prime was added for signals differing from **11**) (500 MHz, DMSO)

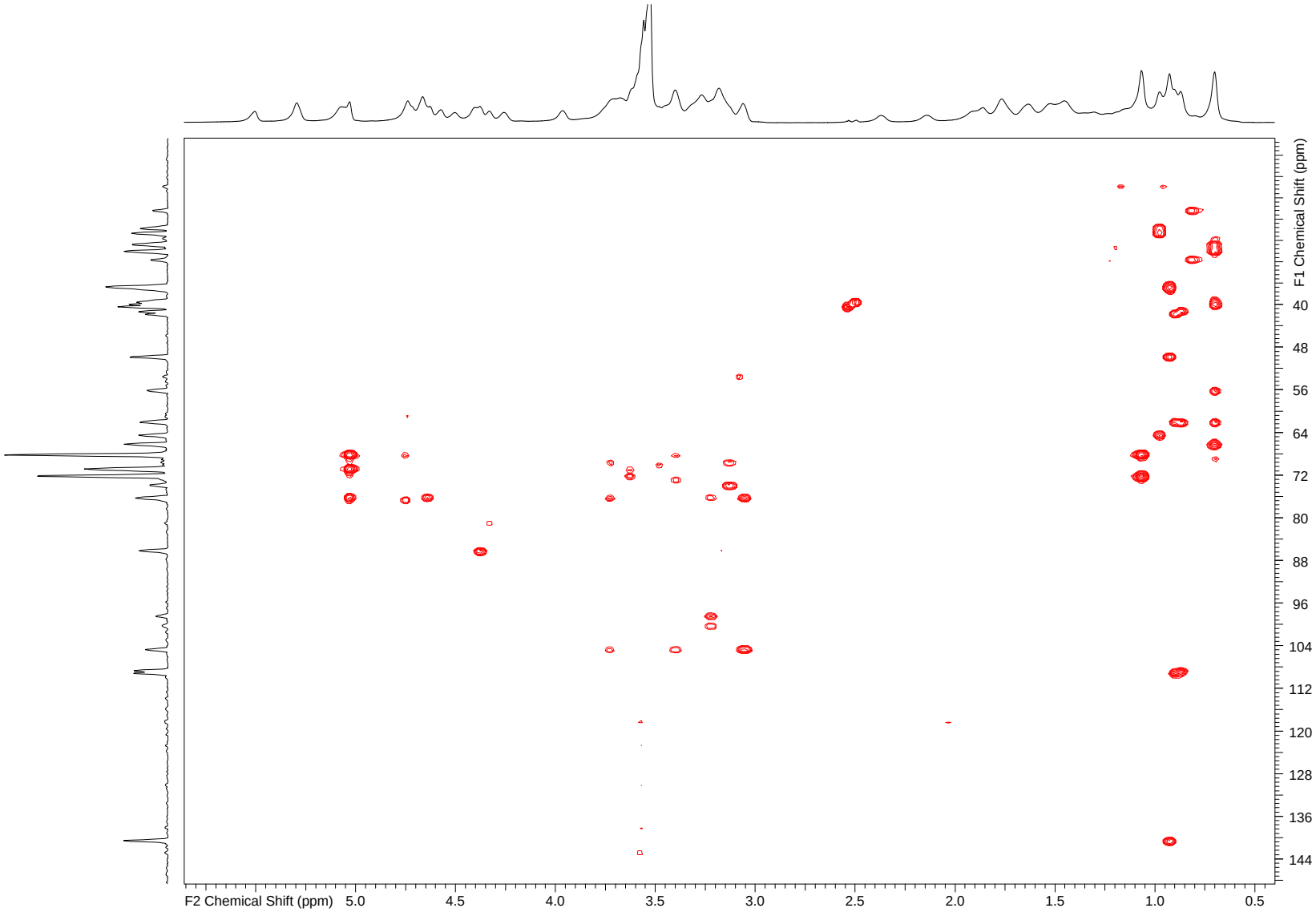

Figure S6. HMBC spectrum of the mixture of compounds **11** and **13** (500 MHz, DMSO)