

Supporting Information

Aldgamycins J–O, 16-Membered Macrolides with a Branched Octose Unit from *Streptomyces* sp. and Their Antibacterial Activities

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1. NMR assignments of 1–6

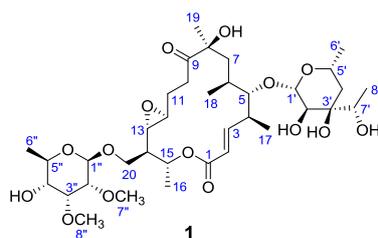


Table S1. NMR (400 MHz, CDCl₃) assignments for 1.

Position	δ_C , mult.	δ_H (J in Hz)*	¹ H, ¹ H-COSY	HMBC	ROESY
aglycone					
1	165.5, C	-			
2	121.2, CH	5.86 d (15.5)	3	1, 4	4
3	151.3, CH	6.74 dd (15.5, 10.6)	2, 4	1	5, 6, 17
4	41.8, CH	2.71	3, 5, 17	5	2, 6, 7a, 7b
5	86.7, CH	3.32 br. d (9.7)	4, 6	4, 7, 18, 1'	3, 6, 17, 18, 1'
6	34.2, CH	1.35	5, 7, 18	7, 8	3, 4, 5, 7a, 10a
7	37.0, CH ₂	1.89, Ha 1.86, Hb	6 6	8, 9 8, 9	4, 6, 10a, 19 4, 18, 19
8	79.6, C	-			
9	212.5, C	-			
10	32.6, CH ₂	2.70, Ha 2.16, Hb	10b, 11a, 11b 10a, 11a, 11b	11	6, 7a
11	27.2, CH ₂	2.00, Ha 1.55, Hb	10a, 10b, 11b, 12 10a, 10b, 11a, 12	10, 13 12	13
12	59.3, CH	2.73	11a, 11b, 13	11	14, 15
13	58.0, CH	2.82 dd (8.9, 2.0)	12, 14	14	11b, 20a, 15
14	48.6, CH	1.37	13, 15, 20a, 20b	13, 15, 16	12
15	69.9, CH	5.32 dq. (10.2, 6.3)	14, 16	1	12, 13, 20b
16	18.6, CH ₃	1.35 d (6.3)	15	14, 15	20a
17	20.7, CH ₃	1.20 d (6.6)	4	3, 4, 5	3, 5, 1'
18	18.7, CH ₃	0.99 d (6.8)	6	5, 6, 7	5, 7b
19	28.2, CH ₃	1.38 s		7, 8, 9	7a, 7b
20	67.2, CH ₂	4.15 dd (10.1, 3.5), Ha 3.63 dd (10.1, 3.5), Hb	14, 20b 14, 20a	15 13, 15	13, 16, 1'' 15
<i>β-D-decarboxylated aldarose</i>					
1'	101.3, CH	4.63 d (7.6)	2'	5	5, 17, 5'
2'	72.6, CH	3.62 m ^c	1'	1'	4'b, 8'
3'	73.9, C	-			
4'	39.5, CH ₂	1.50 br.d (13.7), Ha 1.35, Hb	4'b, 5' 4'a, 5'	2', 3', 7' 3', 5', 6', 7'	7' 2'
5'	66.8, CH	3.93	6', 4'a, 4'b		1'
6'	20.8, CH ₃	1.16 d (6.3)	5'	4', 5'	
7'	73.9, CH	3.66 q (6.6)	8'	3'	4'a
8'	18.2, CH ₃	1.29 d (6.6)	7'	3', 7'	2'
<i>β-D-mycinoose</i>					
1''	100.9, CH	4.57 d (7.7)	2''	20	20a, 5'', 7''
2''	81.9, CH	3.08 dd (7.7, 2.8)	1'', 3''	1'', 7''	4'', 7''
3''	79.6, CH	3.77 t (2.8)	2'', 4''	1'', 4'', 5'', 8''	
4''	72.7, CH	3.20 dd (9.0, 2.8)	3'', 5''		2'', 6''
5''	70.8, CH	3.54	4'', 6''	3''	1''
6''	17.8, CH ₃	1.26 d (6.2)	5''	4'', 5''	4''
7''	59.6, CH ₃	3.56 s		2''	1'', 2''
8''	61.7, CH ₃	3.62 s		3''	

* Indiscernible signals owing to overlapping or having complex multiplicity are reported without designating multiplicity.

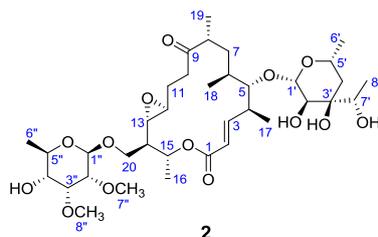


Table S2. NMR (400 MHz, CDCl₃) assignments for **2**.

Position	δ_C , mult.	δ_H (J in Hz)*	¹ H, ¹ H-COSY	HMBC	ROESY
aglycone					
1	165.6, C	-			
2	121.2, CH	5.86 d (15.5)	3	1, 4	4
3	151.1, CH	6.75 dd (15.5, 10.5)	2, 4	1	5, 6, 17
4	41.3, CH	2.74	3, 5, 17		2, 6, 7a
5	85.5, CH	3.42 br d (10.0)	4, 6	7, 17, 18, 1'	3, 6, 7b, 8, 17, 18, 1'
6	34.8, CH	1.41	5, 7a, 7b, 18	18	3, 4, 5, 7a, 8, 10b
7	32.5, CH ₂	1.71 ddd (13.8, 9.7, 3.2), Ha 1.38, Hb	6, 7b, 8 6, 7a, 8		4, 6, 10a, 19 5, 18
8	45.5, CH	2.52	7a, 7b, 19		5, 6, 18, 19
9	213.3, C	-			
10	33.4, CH ₂	2.54, Ha 2.06, Hb	10b, 11a, 11b 10a, 11a, 11b		7a, 12 6
11	26.8, CH ₂	2.02, Ha 1.43, Hb	10a, 10b, 11b, 12 10a, 10b, 11a, 12		13
12	59.5, CH	2.83 dd (8.2, 2.5)	11a, 11b, 13	11	10a, 14
13	58.0, CH	2.73 dd (8.2, 2.2)	12, 14	14	15, 20a, 11b
14	48.5, CH	1.36	13, 15, 20a, 20b	15, 16	12
15	69.8, CH	5.32 dq. (9.6, 6.3)	14, 16		13, 20b
16	18.5, CH ₃	1.35 d (6.3)	15	14, 15	20a, 20b
17	18.2, CH ₃	1.21 d (6.6)	4	3, 4, 5	3, 5, 1'
18	17.0, CH ₃	0.98 d (6.4)	6	5, 6, 7	5, 7b, 8
19	17.8, CH ₃	1.11 d (6.9)	8	7, 8, 9	7a, 8
20	67.3, CH ₂	4.12 dd (10.2, 3.6), Ha 3.62, Hb	14, 20b 14, 20a	15 13	13, 16, 1'' 15, 16
<i>β</i> -D-decarboxylated alldgarose					
1'	101.7, CH	4.66 d (7.7)	2'	5	5, 17, 5'
2'	72.7, CH	3.61	1'	1'	4'b, 8'
3'	73.9, C	-			
4'	39.4, CH ₂	1.51, Ha 1.38, Hb	4'b, 5' 4'a, 5'	2', 3', 7'	7' 2'
5'	67.0, CH	3.96	6', 4'a, 4'b		1'
6'	20.8, CH ₃	1.18 d (6.1)	5'	4', 5'	
7'	73.9, CH	3.66 q (6.6)	8'		4'a
8'	18.3, CH ₃	1.29 d (6.6)	7'	3', 7'	2'
<i>β</i> -D-mycinose					
1''	100.8, CH	4.56 d (7.7)	2''	20	20a, 5'', 7''
2''	81.9, CH	3.08 dd (7.7, 3.0)	1'', 3''	1'', 7''	7'',
3''	79.6, CH	3.76 t (3.0)	2'', 4''	1'', 4'', 5'', 8''	
4''	72.7, CH	3.19 dd (9.1, 3.0)	3'', 5''		6''
5''	70.8, CH	3.52	4'', 6''	3''	1''
6''	17.8, CH ₃	1.25 d (6.2)	5''	4'', 5''	4''
7''	59.6, CH ₃	3.55 s		2''	1'', 2''
8''	61.6, CH ₃	3.61 s		3''	

* Indiscernible signals owing to overlapping or having complex multiplicity are reported without designating multiplicity.

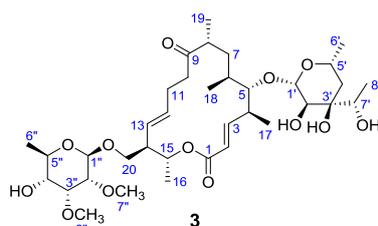


Table S3. NMR (400 MHz, CDCl₃) assignments for **3**.

Position	δ_C , mult.	δ_H (J in Hz)*	¹ H, ¹ H-COSY	HMBC	ROESY
aglycone					
1	165.6, C	-			
2	121.7, CH	5.80 d (15.5)	3	1, 4	4, 17
3	150.3, CH	6.71 dd (15.5, 9.9)	2, 4	1	5, 6, 17
4	40.7, CH	2.72	3, 5, 17	2, 3, 5	2, 6, 7a
5	86.2, CH	3.39 br. d (9.6)	4, 6	4, 7, 17, 18, 1'	3, 6, 8, 17, 18, 1'
6	34.7, CH	1.54	5, 7a, 7b, 18		3, 4, 5, 8
7	33.0, CH ₂	1.68 ddd (13.6, 9.4, 3.5), Ha 1.33, Hb	6, 8, 7b 6, 7a	6, 18	4, 10a, 19 18
8	44.8, CH	2.54	7a, 19	9	5, 6, 18, 19
9	213.6, C	-			
10	38.9, CH ₂	2.51, Ha 2.21, Hb	10b, 11a, 11b 10a, 11a, 11b	9, 11 9, 11	7a, 12, 13
11	26.1, CH ₂	2.19, Ha 2.16, Hb	10a, 10b, 12 10a, 10b, 12	9, 10, 12	13 13
12	132.7, CH	5.52 ddd (15.3, 9.4, 3.5)	11a, 11b, 13	11	10a, 14
13	128.6, CH	5.30 dd (15.3, 9.2)	12, 14	11, 12, 15	10a, 11a, 11b, 14, 15, 20b
14	50.2, CH	2.36	13, 15, 20a, 20b	15	12, 13, 16
15	69.9, CH	5.07 dq. (9.0, 6.0)	14, 16	1, 13	13, 20a, 20b
16	18.2, CH ₃	1.29 d (6.0)	15	14, 15	14, 20a, 20b
17	18.8, CH ₃	1.19 d (6.6)	4	3, 4, 5	2, 3, 5, 1'
18	17.1, CH ₃	0.98 d (6.7)	6	5, 6, 7	5, 7b, 8
19	18.6, CH ₃	1.10 d (6.9)	8	7, 8, 9	7a, 8
20	70.0, CH ₂	3.93 dd (9.6, 5.0), Ha 3.45 dd (9.6, 5.0), Hb	14, 20b 14, 20a	15 13, 14, 15	15, 16, 1'' 13, 15, 16
<i>β</i> -D-decarboxylated aldgarose					
1'	101.7, CH	4.66 d (7.6)	2'	5	5, 17, 5'
2'	72.6, CH	3.63	1'	1'	4'b, 8'
3'	73.9, C	-			
4'	39.4, CH ₂	1.53 br. d (13.6), Ha 1.40, Hb	4'b, 5' 4'a, 5'	2', 3', 7'	7' 2'
5'	67.0, CH	3.97	6', 4'a, 4'b		1'
6'	20.8, CH ₃	1.18 d (6.1)	5'	4', 5'	
7'	73.7, CH	3.66 q (6.1)	8'	3'	4'a
8'	18.2, CH ₃	1.28 d (6.1)	7'	3', 7'	2'
<i>β</i> -D-mycinose					
1''	101.0, CH	4.56 d (7.7)	2''	20	20a, 5'', 7''
2''	81.9, CH	3.04 dd (7.7, 2.8)	1'', 3''	1'', 7''	4'', 7''
3''	79.9, CH	3.74 t (2.8)	2'', 4''	1'', 2'', 4'', 5'', 8''	
4''	72.7, CH	3.19 dd (9.4, 2.8)	3'', 5''		2'', 6''
5''	70.7, CH	3.51	4'', 6''	3''	1''
6''	17.8, CH ₃	1.25 d (6.2)	5''	4'', 5''	4''
7''	59.8, CH ₃	3.53 s		2''	1'', 2''
8''	61.7, CH ₃	3.61 s		3''	

* Indiscernible signals owing to overlapping or having complex multiplicity are reported without designating multiplicity.

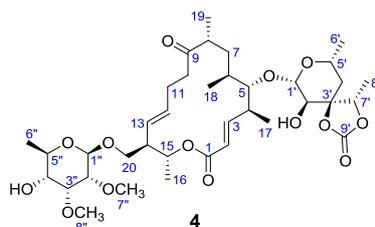


Table S4. NMR (400 MHz, CDCl₃) assignments for **4**.

Position	δ_C , mult.	δ_H (<i>J</i> in Hz)*	¹ H, ¹ H-COSY	HMBC	ROESY
aglycone					
1	165.4, C	-			
2	121.9, CH	5.80 d (15.5)	3	1, 4	4, 17
3	149.7, CH	6.69 dd (15.5, 9.6)	2, 4	1	5, 17
4	40.6, CH	2.72	3, 5, 17	2, 3, 5, 17	2, 7a
5	86.3, CH	3.41 br. d (10.1)	4, 6	4, 7, 17, 18, 1'	3, 17, 18, 1'
6	34.5, CH	1.52	5, 7a, 7b, 18		
7	32.9, CH ₂	1.68 ddd (14.1, 10.0, 4.2), Ha 1.29, Hb	6, 8, 7b 6, 7a	6, 18	4
8	44.7, CH	2.53	7a, 19	9	18
9	213.4, C	-			
10	39.0, CH ₂	2.53, Ha 2.20, Hb	10b, 11a, 11b 10a, 11a, 11b	9, 11 9, 11	11b, 12
11	26.1, CH ₂	2.19, Ha 2.15, Hb	10a, 10b, 12 10a, 10b, 12	9, 12, 13 9, 10, 12, 13	10a, 12, 13
12	132.6, CH	5.51 ddd (14.9, 9.4, 4.6)	11a, 11b, 13	10, 11, 14	10a, 11b, 14
13	128.7, CH	5.30 dd (14.9, 9.1)	12, 14	11, 12, 14, 15	11b, 20b
14	50.2, CH	2.35	13, 15, 20a, 20b	12, 13, 15	12, 16
15	69.9, CH	5.07 dq. (9.1, 6.1)	14, 16	1, 13, 14	20a, 20b
16	18.8, CH ₃	1.30 d (6.1)	15	14, 15	14
17	18.8, CH ₃	1.17 d (6.7)	4	3, 4, 5	1', 2, 3, 5
18	17.1, CH ₃	0.97 d (6.7)	6	5, 6, 7	5, 8
19	18.5, CH ₃	1.10 d (7.0)	8	7, 8, 9	
20	69.9, CH ₂	3.93 dd (9.8, 4.7), Ha 3.45 dd (9.8, 4.7), Hb	14, 20b 14, 20a	13, 14, 15, 1' 13, 14, 15, 1'	15, 1" 13, 15
<i>β</i> -D-aldgarose					
1'	101.2, CH	4.65 d (7.6)	2'	5, 5'	5, 5', 17
2'	71.7, CH	3.48	1'	1'	4'b, 8'
3'	84.6, C	-			
4'	41.2, CH ₂	1.85 br. d (13.7), Ha 1.55, Hb	4'b, 5' 4'a, 5'	2', 3', 7' 5', 6'	7' 2', 7'
5'	67.1, CH	3.90	6', 4'a, 4'b	1'	1'
6'	20.5, CH ₃	1.23 d (6.4)	5'	4', 5'	
7'	81.3, CH	4.38 q (6.4)	8'	2', 3', 4'	4'a, 4'b
8'	13.6, CH ₃	1.58 d (6.4)	7'	3', 7'	2'
9'	153.8, C	-			
<i>β</i> -D-mycinose					
1''	101.0, CH	4.55 d (7.9)	2''	20, 3''	20a, 5'', 7''
2''	81.9, CH	3.04 dd (7.9, 2.6)	1'', 3''	1'', 7''	4'', 7''
3''	79.9, CH	3.74 t (2.6)	2'', 4''	1'', 2'', 4'', 5'', 8''	
4''	72.7, CH	3.19 dd (9.0, 2.6)	3'', 5''		2'', 6''
5''	70.6, CH	3.51	4'', 6''	3''	1''
6''	17.8, CH ₃	1.25 d (6.1)	5''	4'', 5''	4''
7''	59.8, CH ₃	3.53 s		2''	1'', 2''
8''	61.7, CH ₃	3.61 s		3''	

* Indiscernible signals owing to overlapping or having complex multiplicity are reported without designating multiplicity.

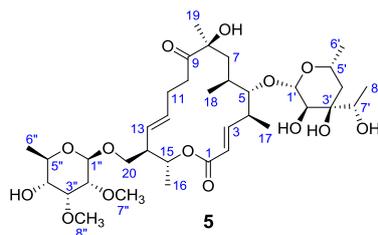


Table S5. NMR (400 MHz, CDCl₃) assignments for **5**.

Position	δ_C , mult.	δ_H (J in Hz)*	¹ H, ¹ H-COSY	HMBC
aglycone				
1	165.5, C	-		
2	121.5, CH	5.80 d (15.5)	3	4
3	150.7, CH	6.72 dd (15.5, 9.9)	2, 4	1
4	40.8, CH	2.61	3, 5, 17	
5	86.9, CH	3.38 br. d (9.0)	4, 6	18, 1'
6	34.1, CH	1.35	5, 7, 18	7, 8
7	38.0, CH ₂	1.78	6	
8	79.1, C	-		
9	212.7, C	-		
10	36.5, CH ₂	2.69, Ha 2.22, Hb	10b, 11a, 11b 10a, 11a, 11b	
11	26.0, CH ₂	2.27, Ha 2.19, Hb	10a, 10b, 11b, 12 10a, 10b, 11a	
12	132.0, CH	5.41 ddd (15.2, 9.3, 3.0)	11a, 13, 14	
13	129.3, CH	5.36 dd (15.2, 9.3)	12, 14	11
14	51.0, CH	2.32	12, 13, 15, 20a, 20b	
15	69.8, CH	5.10 dq. (9.0, 6.5)	14, 16	
16	18.8, CH ₃	1.29 d (6.5)	15	14, 15
17	20.6, CH ₃	1.18 d (6.4)	4	3, 4, 5
18	18.7, CH ₃	1.02 d (6.7)	6	5, 6
19	28.3, CH ₃	1.33 s		7, 8, 9
20	69.9, CH ₂	3.94 dd (9.4, 5.0), Ha 3.46 dd (9.4, 5.0), Hb	14, 20b 14, 20a	14
β -D-decarboxylated aldgarose				
1'	101.4, CH	4.64 d (7.6)	2'	5
2'	72.7, CH	3.62	1'	1'
3'	73.9, C	-		
4'	39.5, CH ₂	1.50 br. d (13.0), Ha 1.36, Hb	4'b, 5' 4'a, 5'	2', 3', 7' 5'
5'	66.9, CH	3.95	6', 4'a, 4'b	
6'	20.6, CH ₃	1.18 d (6.4)	5'	4', 5'
7'	73.8, CH	3.65	8'	
8'	18.2, CH ₃	1.26 d (6.2)	7'	3', 7'
β -D-mycinose				
1''	101.0, CH	4.56 d (7.9)	2''	20
2''	82.0, CH	3.04 dd (7.9, 2.9)	1'', 3''	1'', 7''
3''	79.9, CH	3.75 t (2.9)	2'', 4''	1'', 4'', 5'',
4''	72.6, CH	3.18 dd (9.2, 2.9)	3'', 5''	5''
5''	70.7, CH	3.50	4'', 6''	3''
6''	17.8, CH ₃	1.25 d (6.2)	5''	4'', 5''
7''	59.8, CH ₃	3.53 s		2''
8''	61.7, CH ₃	3.62 s		3''

* Indiscernible signals owing to overlapping or having complex multiplicity are reported without designating multiplicity.

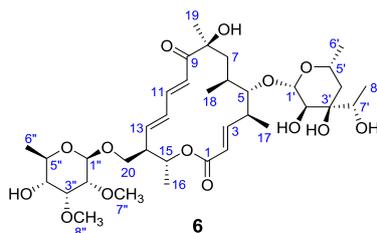


Table S6. NMR (400 MHz, CDCl₃) assignments for **6**.

Position	δ_C , mult.	δ_H (J in Hz)*	¹ H, ¹ H-COSY	HMBC
aglycone				
1	165.6, C	-		
2	121.5, CH	5.74 d (15.9)	3	1, 4
3	151.6, CH	6.62 dd (15.9, 10.0)	2, 4	1
4	40.9, CH	2.61	3, 5, 17	
5	87.5, CH	3.24 br. d (9.0)	4, 6	18, 1'
6	33.9, CH	1.34	5, 7, 18	7, 8
7	37.6, CH ₂	1.87, Ha 1.79, Hb	6	8, 9 6, 18
8	78.2, C	-		
9	201.8, C	-		
10	122.0, CH	6.19 d (15.0)	11	9, 12
11	144.1, CH	7.31 dd (15.0, 10.3)	10, 12	12, 13
12	133.0, CH	6.16 dd (14.0, 10.3)	11, 13	10, 11, 14
13	143.3, CH	6.15 dd (14.0, 9.0)	12, 14	11, 12, 14
14	51.3, CH	2.48	13, 15, 20a, 20b	
15	69.2, CH	5.06 dq. (10.1, 6.4)	14, 16	1
16	18.6, CH ₃	1.37 d (6.4)	15	14, 15
17	20.7, CH ₃	1.15 d (6.9)	4	3, 4, 5
18	19.3, CH ₃	1.00 d (6.9)	6	5, 6, 7
19	28.0, CH ₃	1.39 s		7, 8, 9
20	68.4, CH ₂	4.04 dd (9.5, 3.6), Ha 3.57 dd (9.5, 3.6), Hb	14, 20b 14, 20a	13, 15 13, 14, 15
β -D-decarboxylated aldgarose				
1'	101.1, CH	4.58 d (7.8)	2'	5
2'	72.7, CH	3.61	1'	1'
3'	73.9, C	-		
4'	39.6, CH ₂	1.50 dd (13.5, 2.1), Ha 1.34, Hb	4'b, 5' 4'a, 5'	2', 3', 7' 5'
5'	66.8, CH	3.93	6', 4'a, 4'b	
6'	20.7, CH ₃	1.17 d (6.2)	5'	4', 5'
7'	73.9, CH	3.64	8'	3'
8'	18.2, CH ₃	1.28 d (6.5)	7'	3', 7'
β -D-mycinose				
1''	101.1, CH	4.56 d (7.8)	2''	20
2''	82.0, CH	3.04 dd (7.8, 2.8)	1'', 3''	1'', 7''
3''	79.9, CH	3.76 t (2.8)	2'', 4''	1'', 4'', 5'', 8''
4''	72.6, CH	3.18 dd (9.2, 2.8)	3'', 5''	
5''	70.7, CH	3.51	4'', 6''	1''
6''	17.8, CH ₃	1.27 d (6.6)	5''	4'', 5''
7''	59.8, CH ₃	3.52 s		2''
8''	61.7, CH ₃	3.62 s		3''

* Indiscernible signals owing to overlapping or having complex multiplicity are reported without designating multiplicity.

2. Acid hydrolysis of aldgamycin J (1)

A solution of **1** (7 mg) in CH₃OH (1 ml) was added to 0.5 M H₂SO₄ (2 ml), and the solution was kept at 80 °C for 2 hours (Figure S1). Then the solution was neutralized with Ba(OH)₂ saturated with H₂O and the precipitate was filtered off. The filtrate was partitioned with EtOAc (3 × 3 ml). The aqueous layer was concentrated and then dissolved in H₂O. The solution was analyzed using HPLC (Shimadzu Co. Ltd., Kyoto, Japan; Phenomenex 5μ-NH₂, 4.6 × 250 mm, CH₃CN:H₂O = 85:15, 1 ml/min) with a ELSD detector (Grace Co. Ltd., Columbia, USA; tube temp: 80 °C, Gas: 1.2 ml/min) (Figure S2). Then the solution was prepared using HPLC (Shimadzu Co. Ltd., Kyoto, Japan; Phenomenex 5μ-NH₂, 4.6 × 250 mm, CH₃CN:H₂O = 85:15, 1 ml/min) with RI detector (Shimadzu Co. Ltd., Kyoto, Japan) to yield **1a** and **1b**. Compounds **1a** and **1b** were identified as decarboxylated aldgrose and mycinose respectively on the basis of HR-MS and ¹H NMR data. The optical rotations of **1a** and **1b** were [α]_D³⁰ -20.3 (c 0.3, H₂O) and [α]_D³⁰ -26.0 (c 0.2, H₂O), respectively.

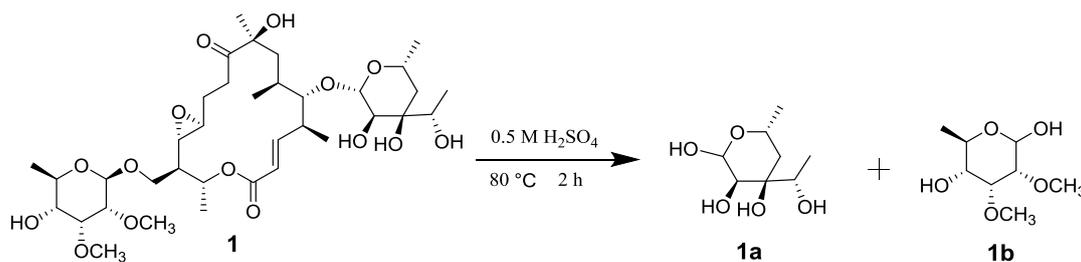


Figure S1. The process of acid hydrolysis of aldgamycin J (**1**)

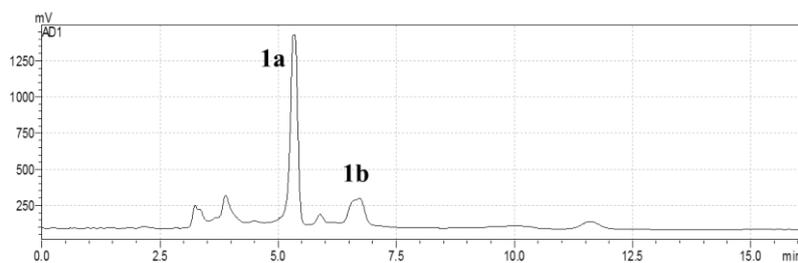


Figure S2. The aqueous layer of acid hydrolysis product of **1** was analyzed by HPLC with ELSD detector

3. The 1D and 2D NMR spectra of 1–8

The 1D and 2D NMR spectra of aldgamycin J (**1**)

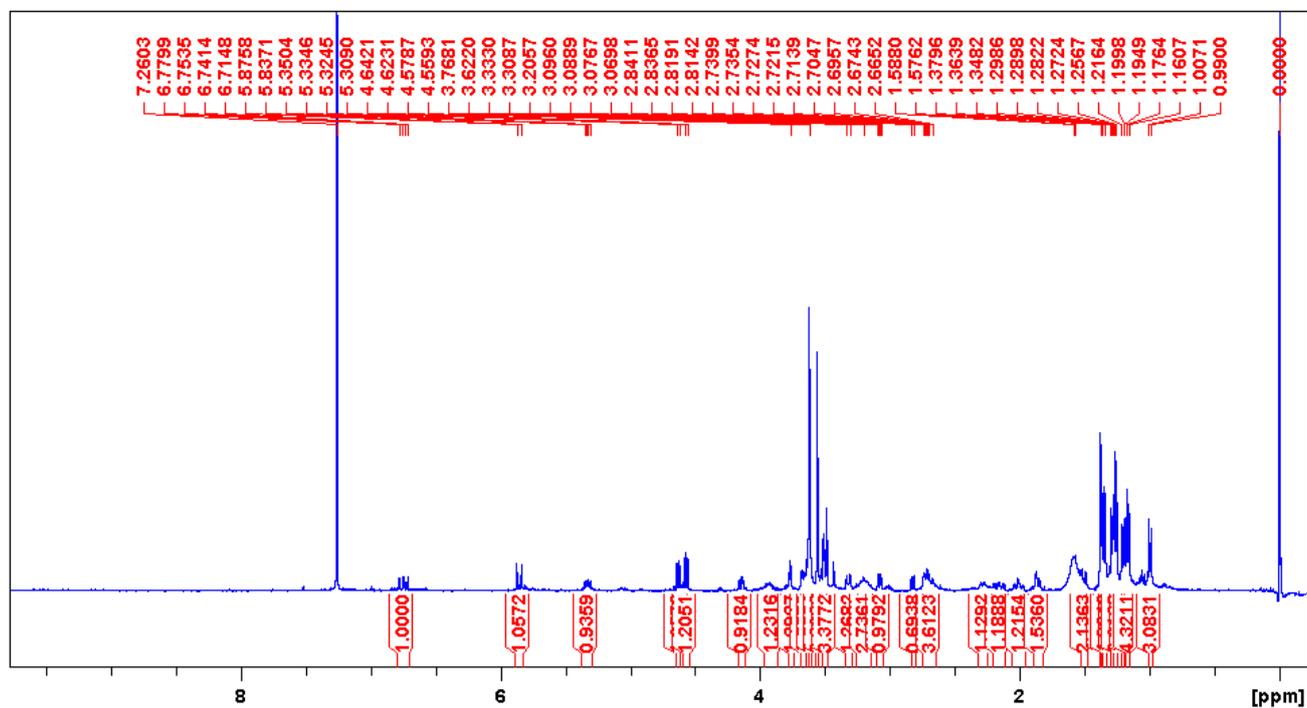


Figure S3. ¹H NMR (400 MHz, CDCl₃) spectrum for aldgamycin J (**1**)

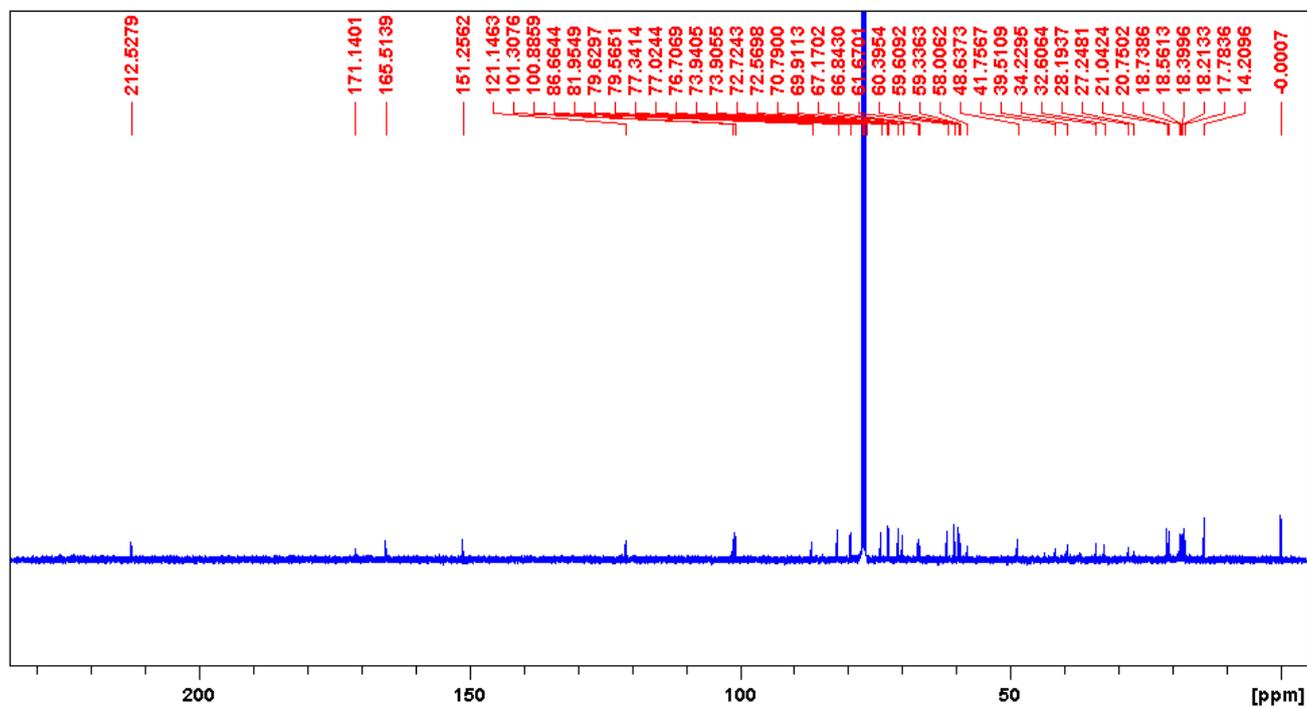


Figure S4. ¹³C NMR (100 MHz, CDCl₃) spectrum for aldgamycin J (**1**)

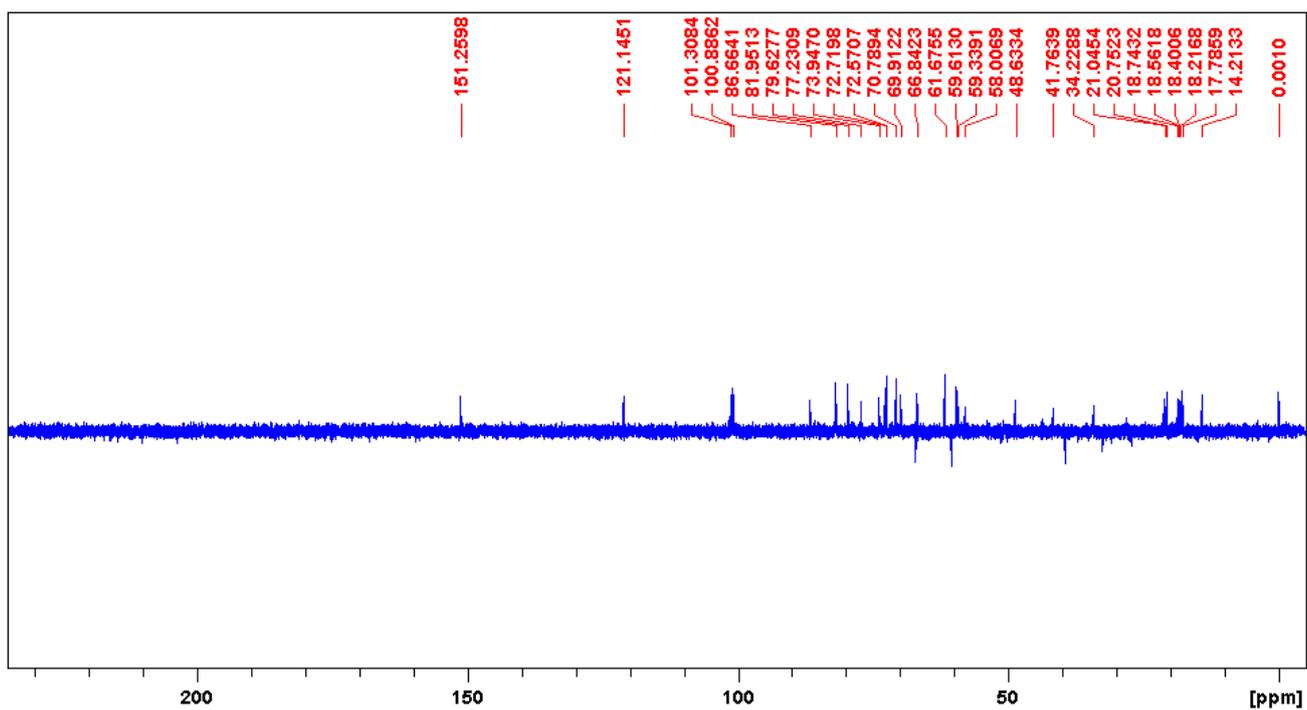


Figure S5. DEPT135 (100 MHz, CDCl₃) spectrum for aldgamycin J (1)

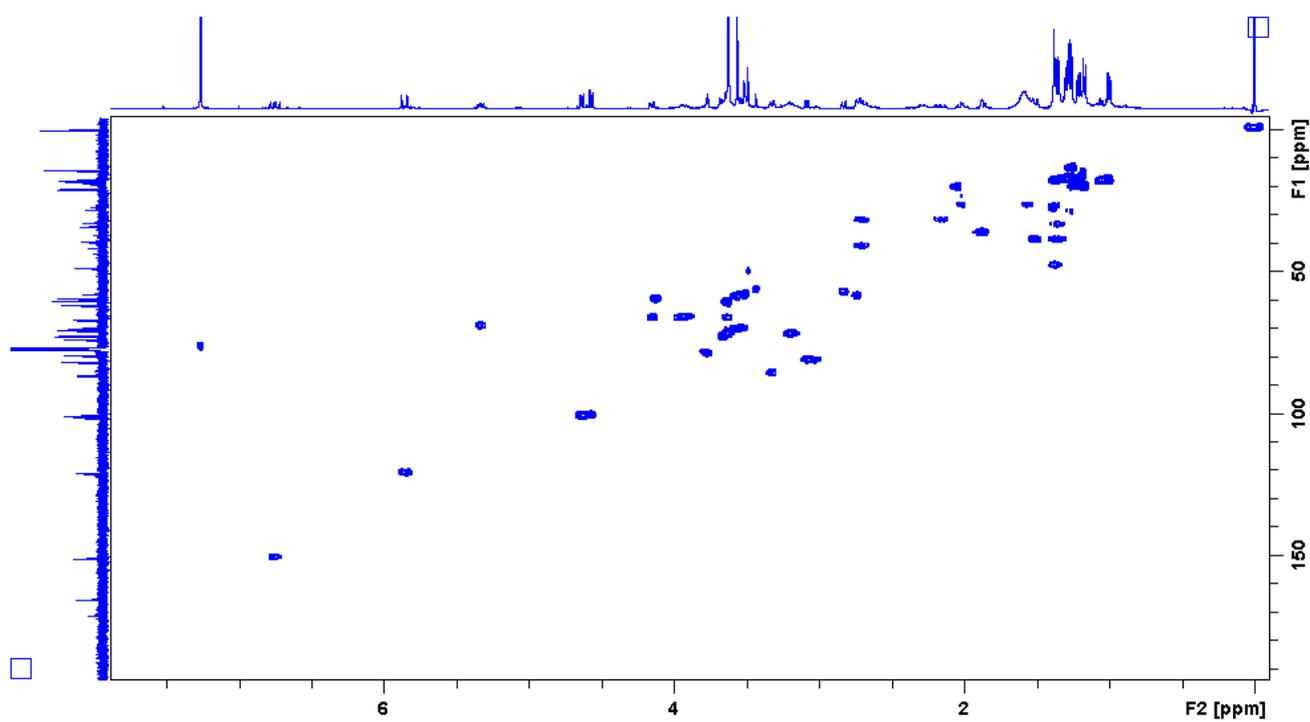


Figure S6. HSQC (CDCl₃) spectrum for aldgamycin J (1)

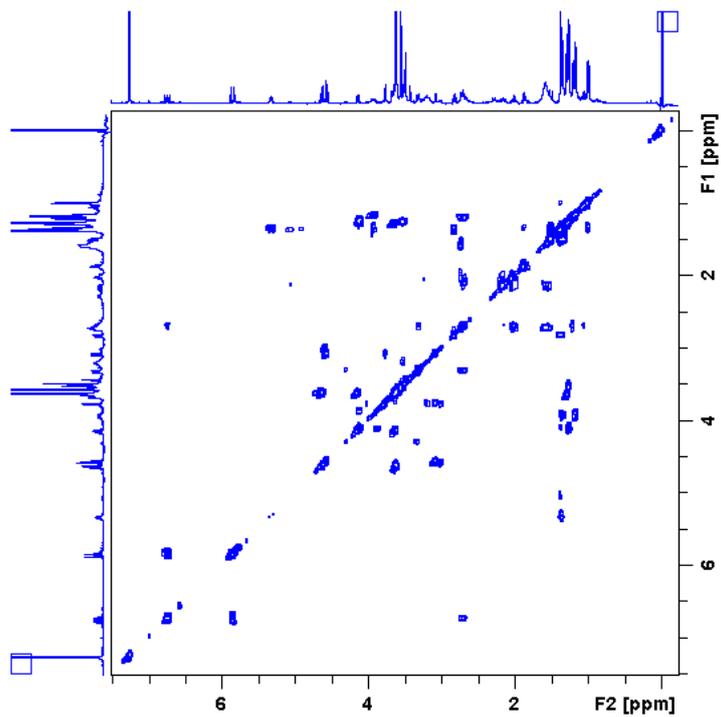


Figure S7. ^1H - ^1H COSY (CDCl_3) spectrum for aldgamycin J (**1**)

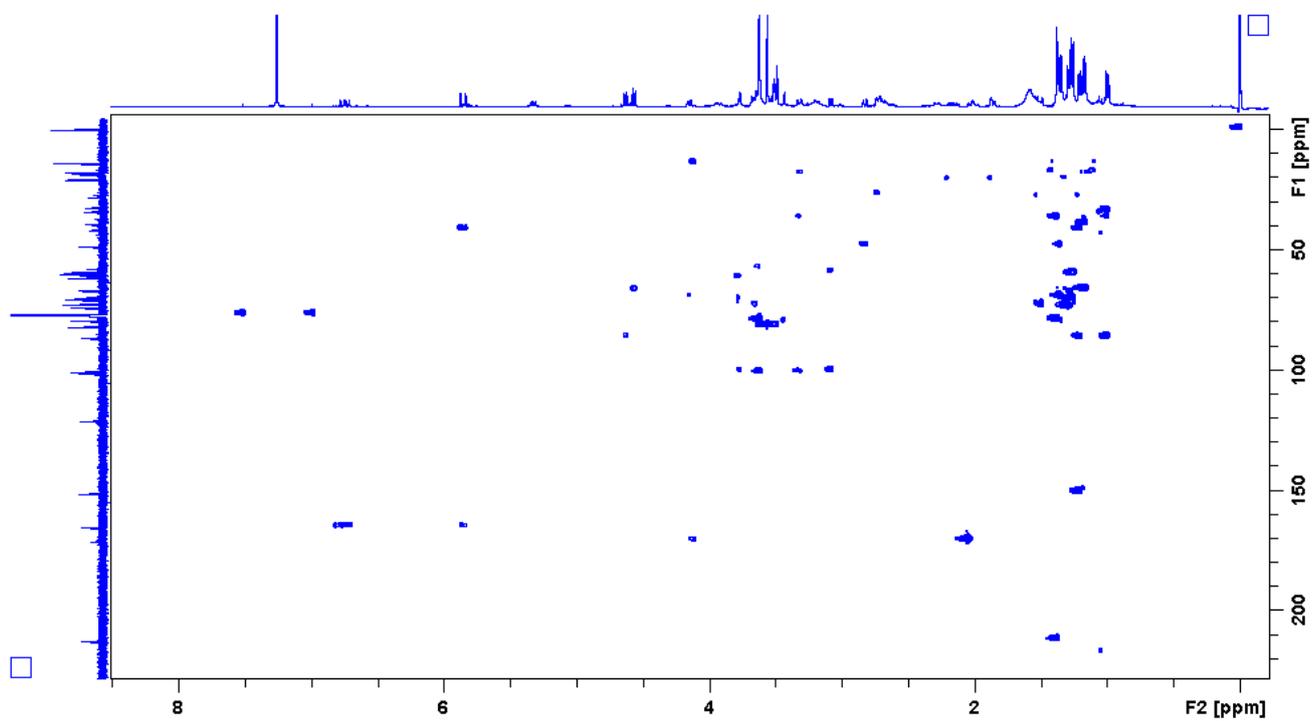


Figure S8. HMBC (CDCl_3) spectrum for aldgamycin J (**1**)

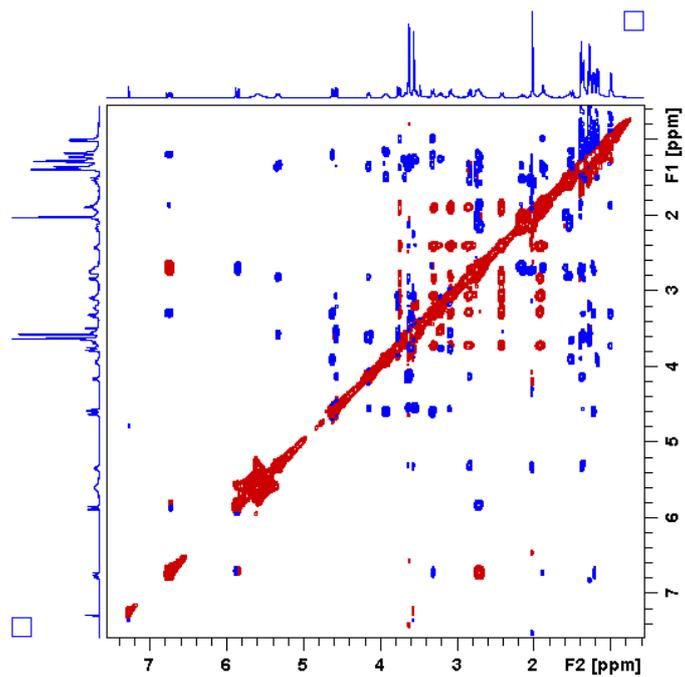


Figure S9. ROESY (CDCl₃) spectrum for aldgamycin J (1)

The 1D and 2D NMR spectra of aldgamycin K (2)

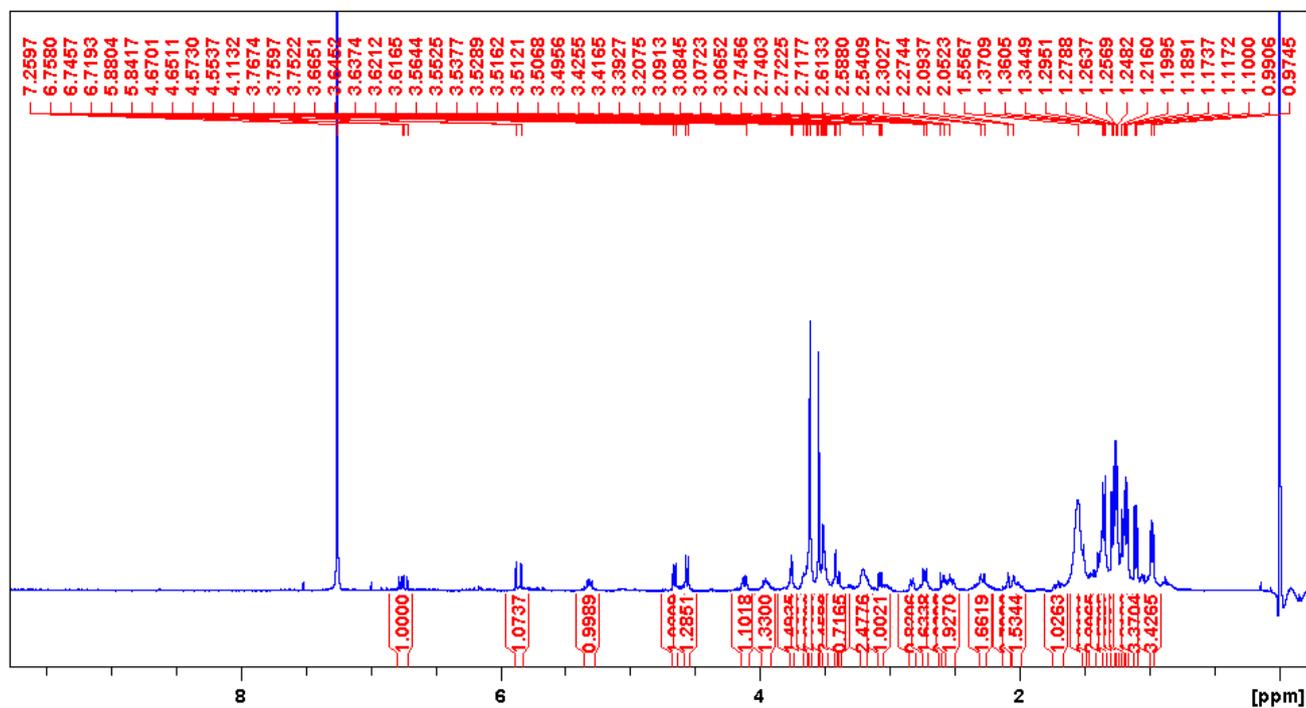


Figure S10. ¹H NMR (400 MHz, CDCl₃) spectrum for aldgamycin K (2)

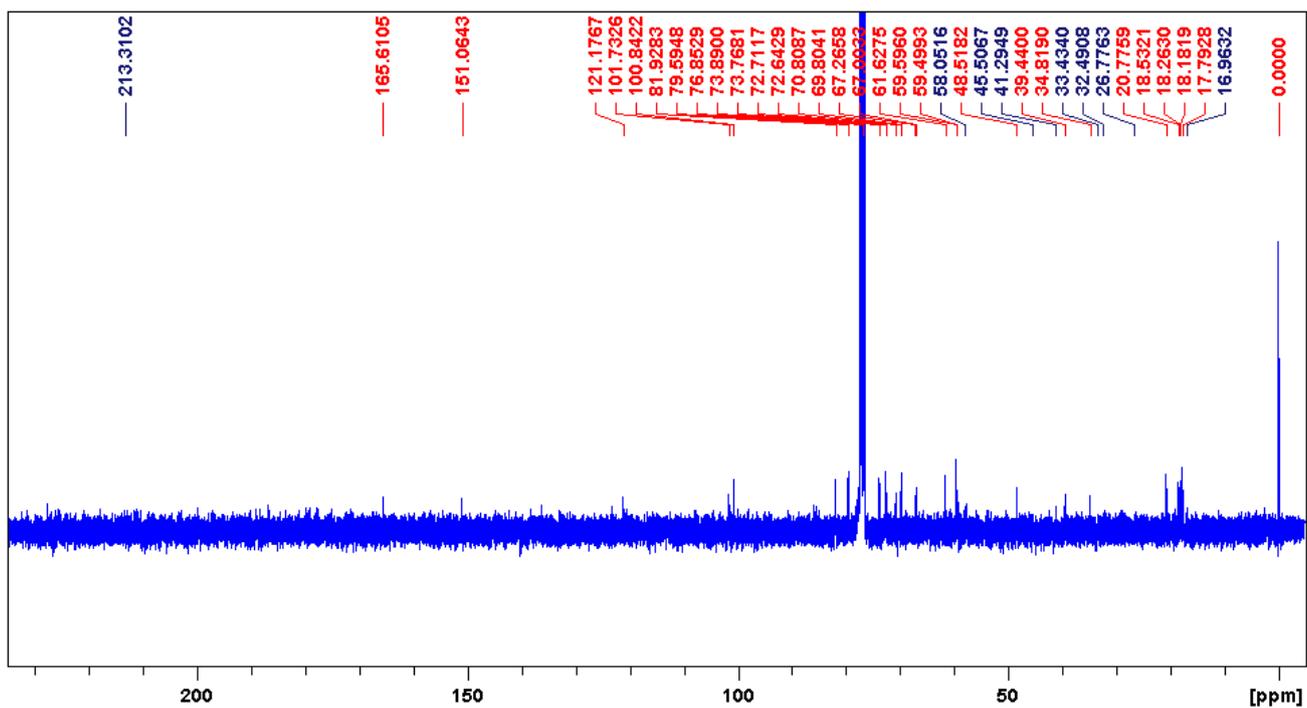


Figure S11. ^{13}C NMR (100 MHz, CDCl_3) spectrum for aldgamycin K (2)

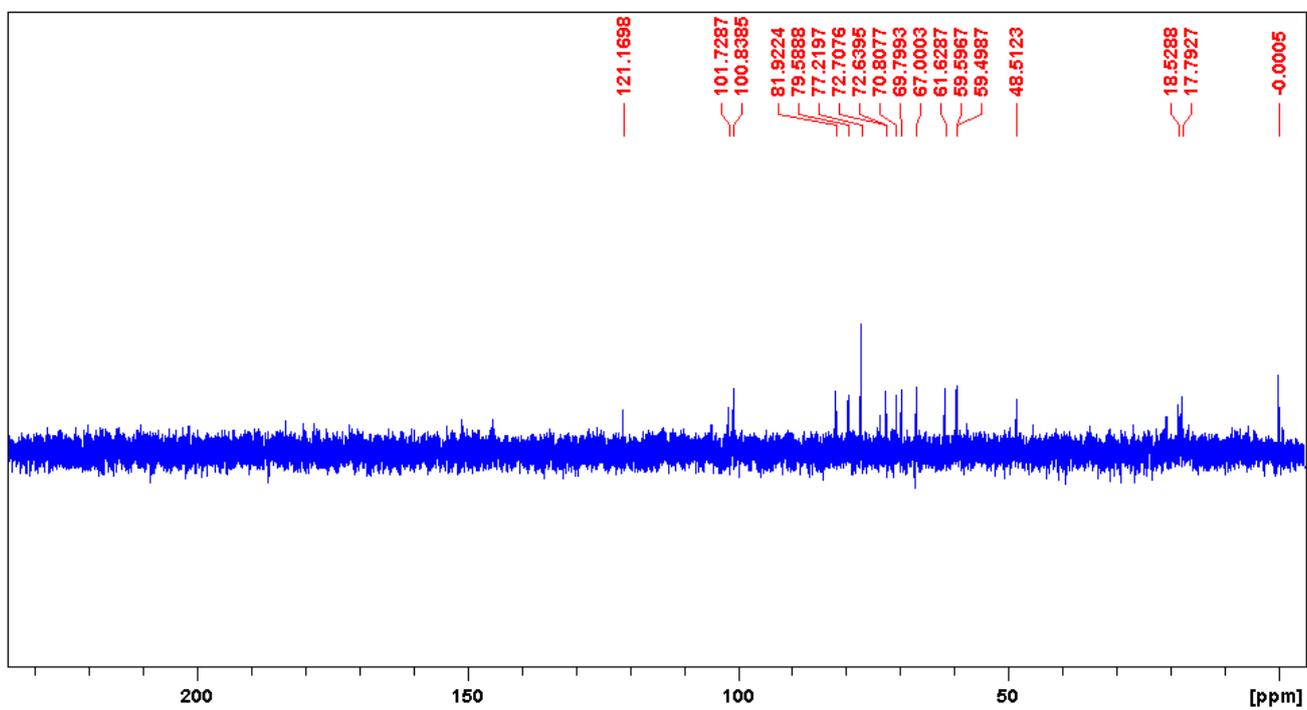


Figure S12. DEPT135 (100 MHz, CDCl_3) spectrum for aldgamycin K (2)

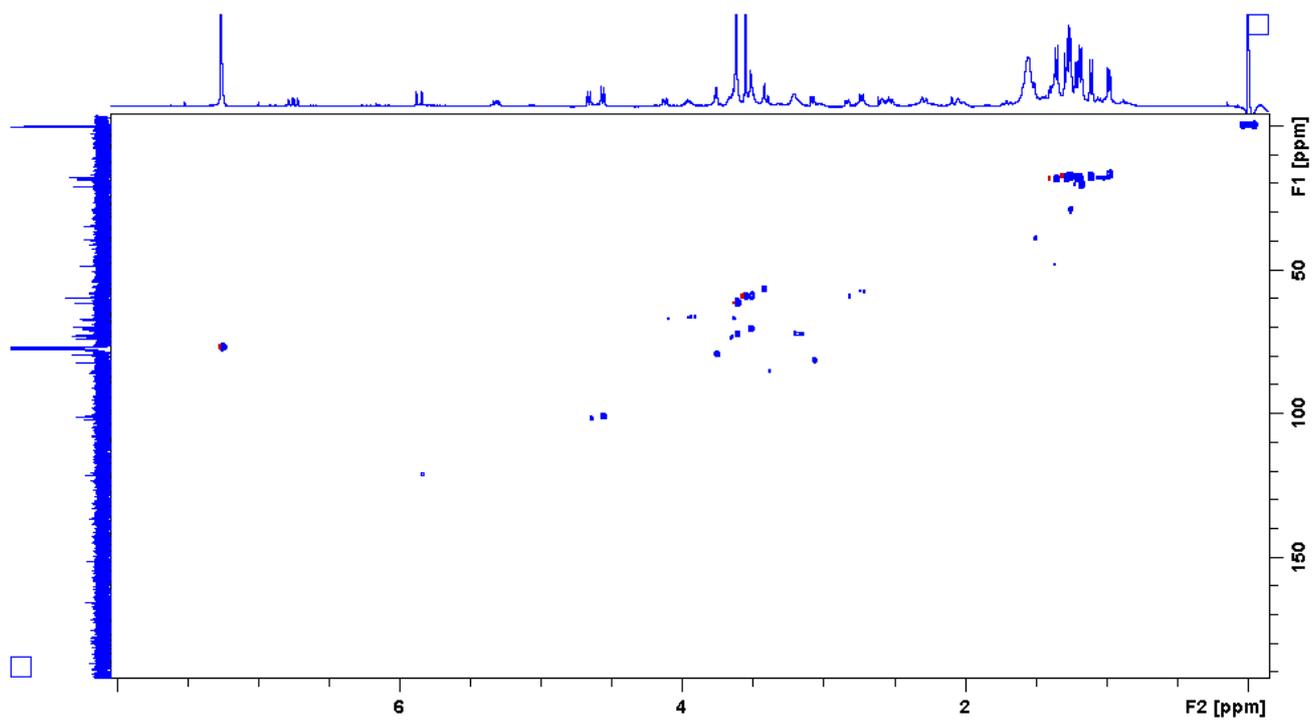


Figure S13. HSQC (CDCl₃) spectrum for aldgamycin K (2)

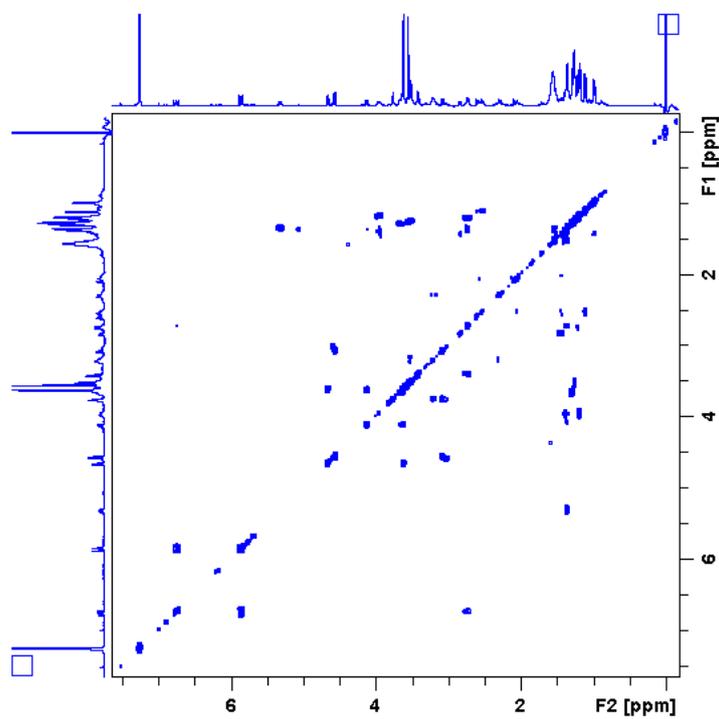


Figure S14. ¹H-¹H COSY (CDCl₃) spectrum for aldgamycin K (2)

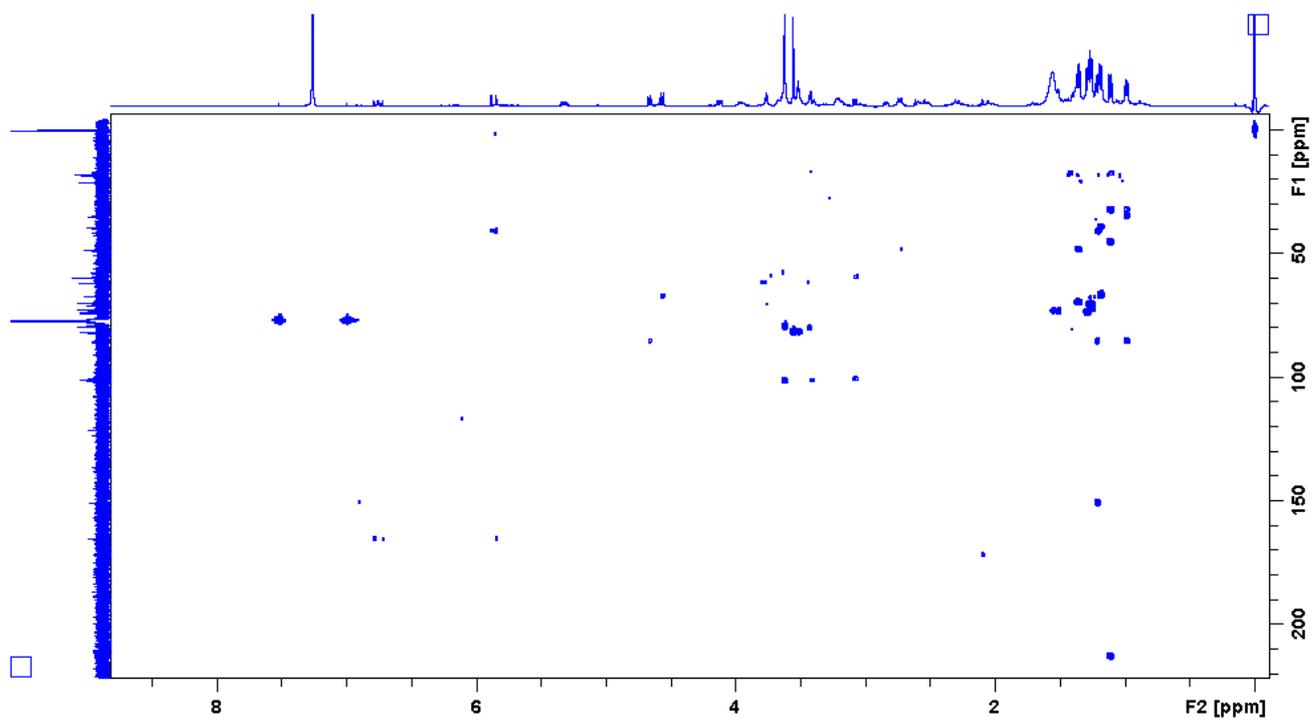


Figure S15. HMBC (CDCl₃) spectrum for aldamycin K (2)

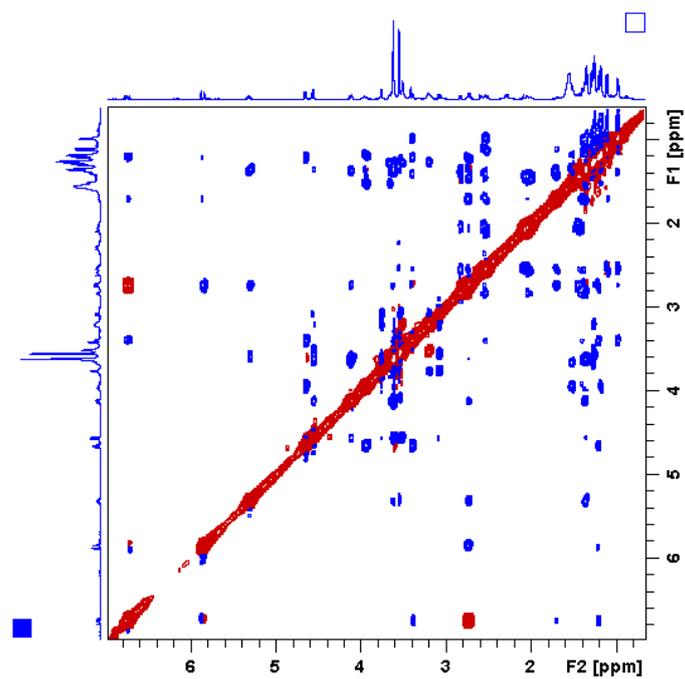


Figure S16. ROESY (CDCl₃) spectrum for aldamycin K (2)

The 1D and 2D NMR spectra of aldgamycin L (3)

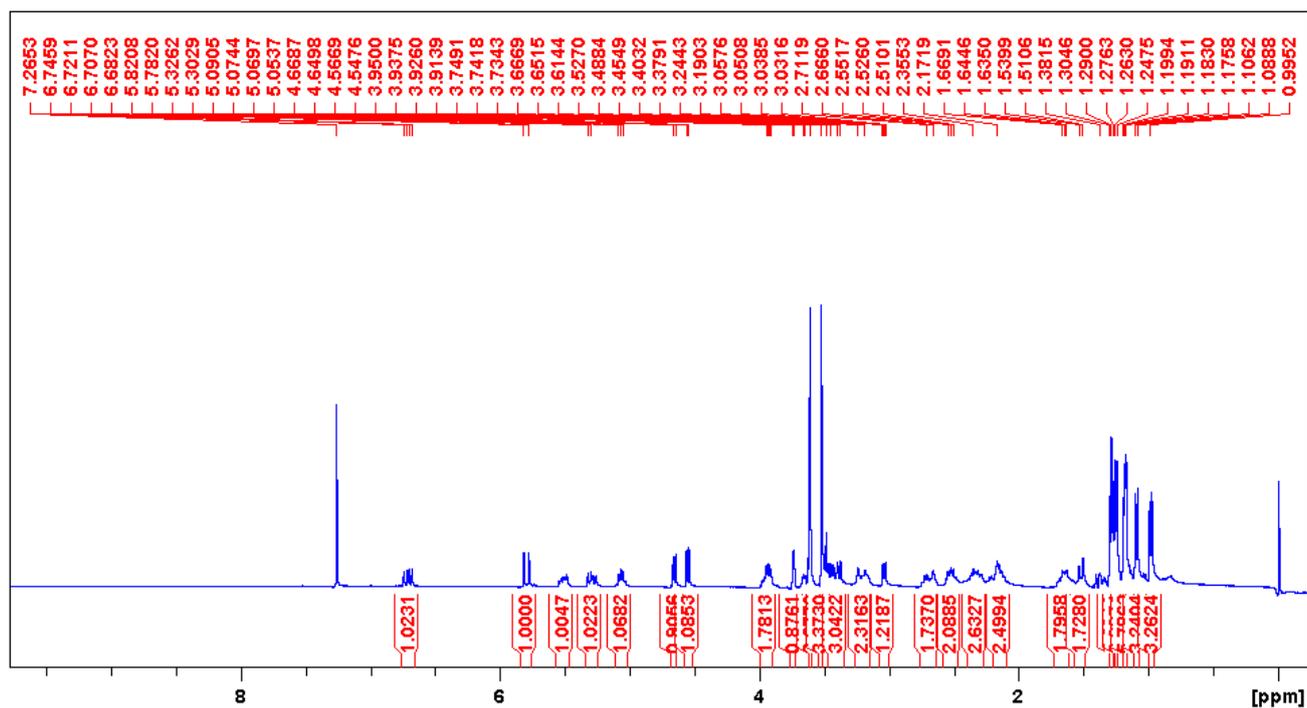


Figure S17. ¹H NMR (400 MHz, CDCl₃) spectrum for aldgamycin L (3)

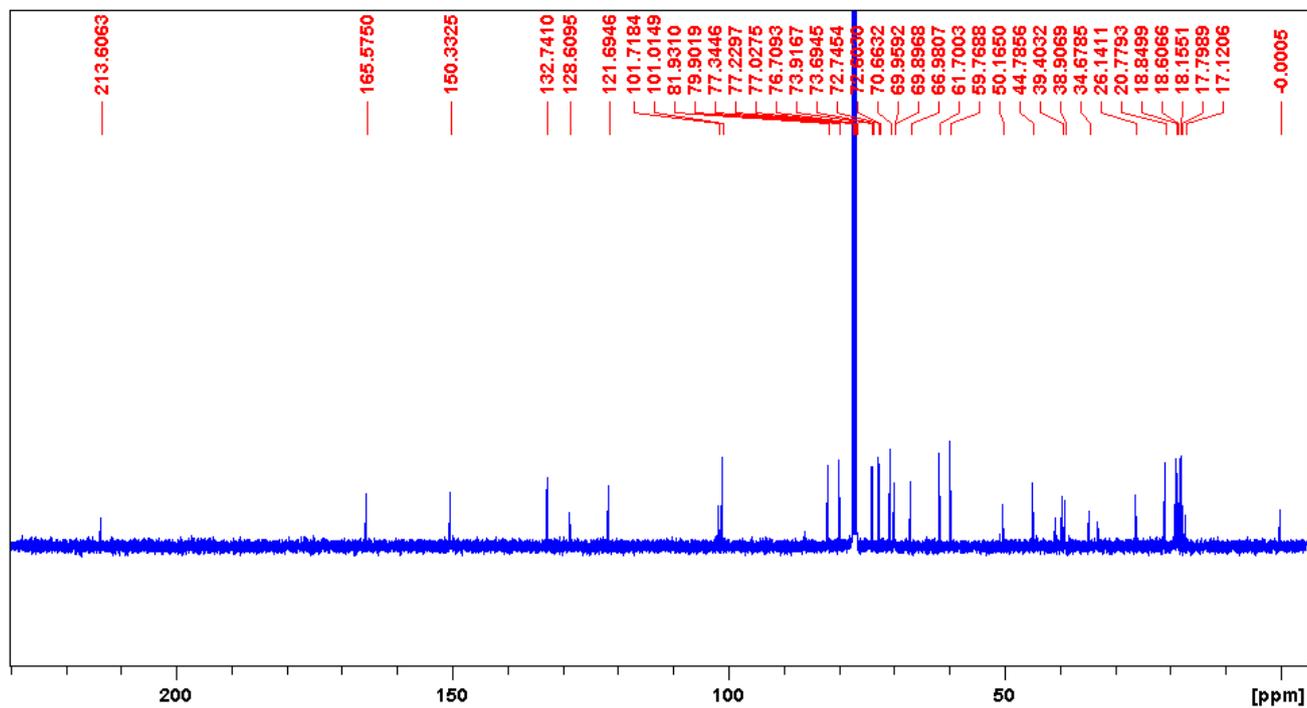


Figure S18. ¹³C NMR (100 MHz, CDCl₃) spectrum for aldgamycin L (3)

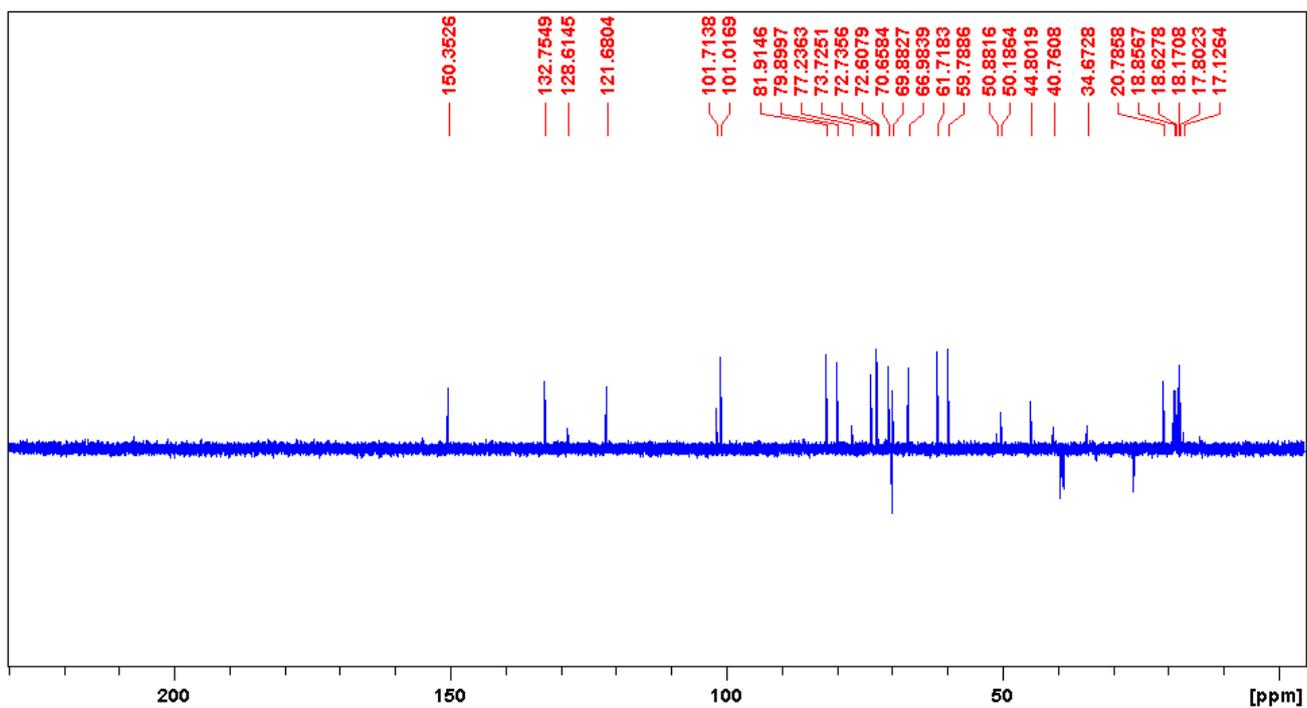


Figure S19 DEPT135 (100 MHz, CDCl_3) spectrum for aldgamycin L (3)

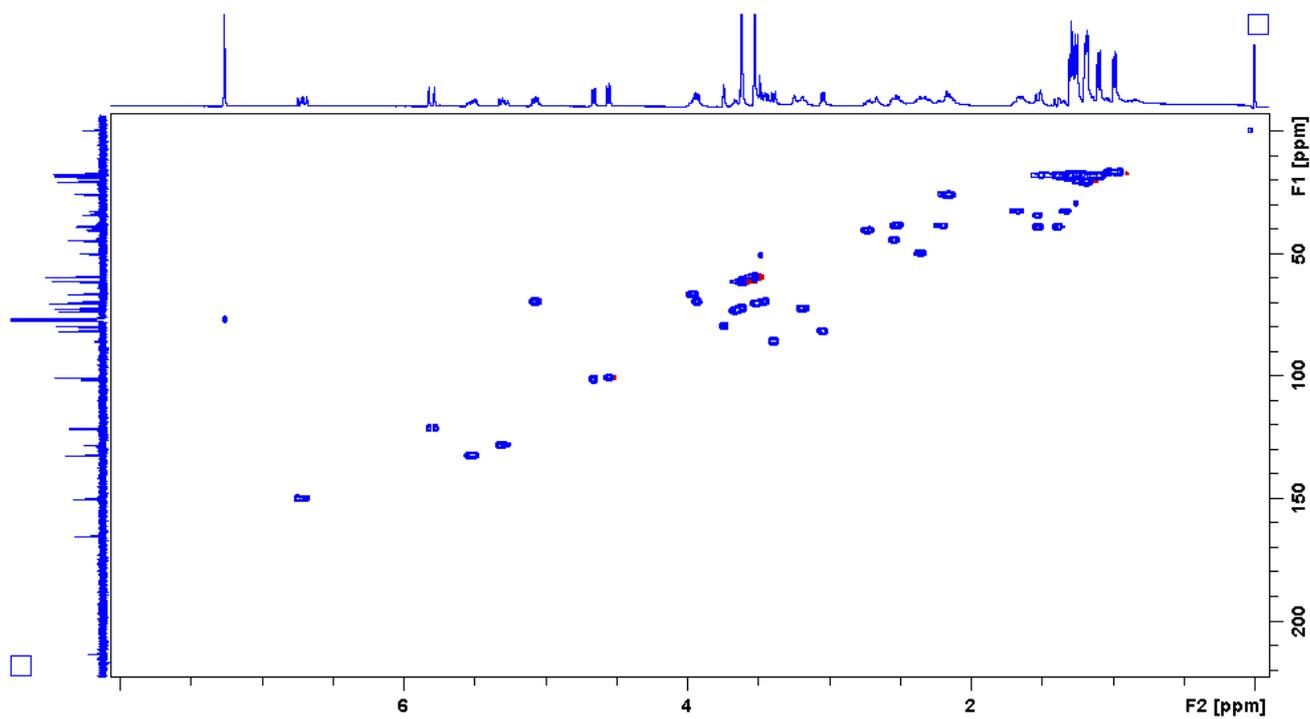


Figure S20. HSQC (CDCl_3) spectrum for aldgamycin L (3)

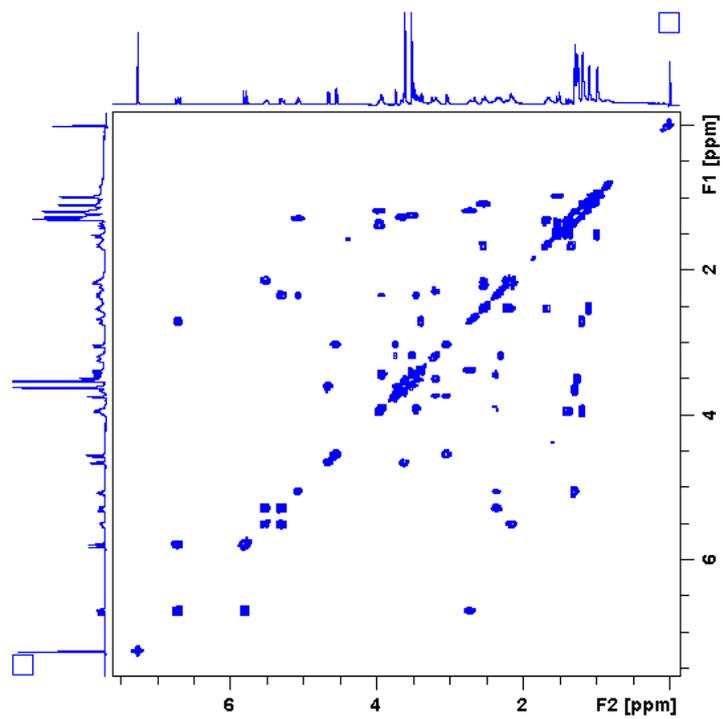


Figure S21. ^1H - ^1H COSY (CDCl_3) spectrum for aldgamycin L (**3**)

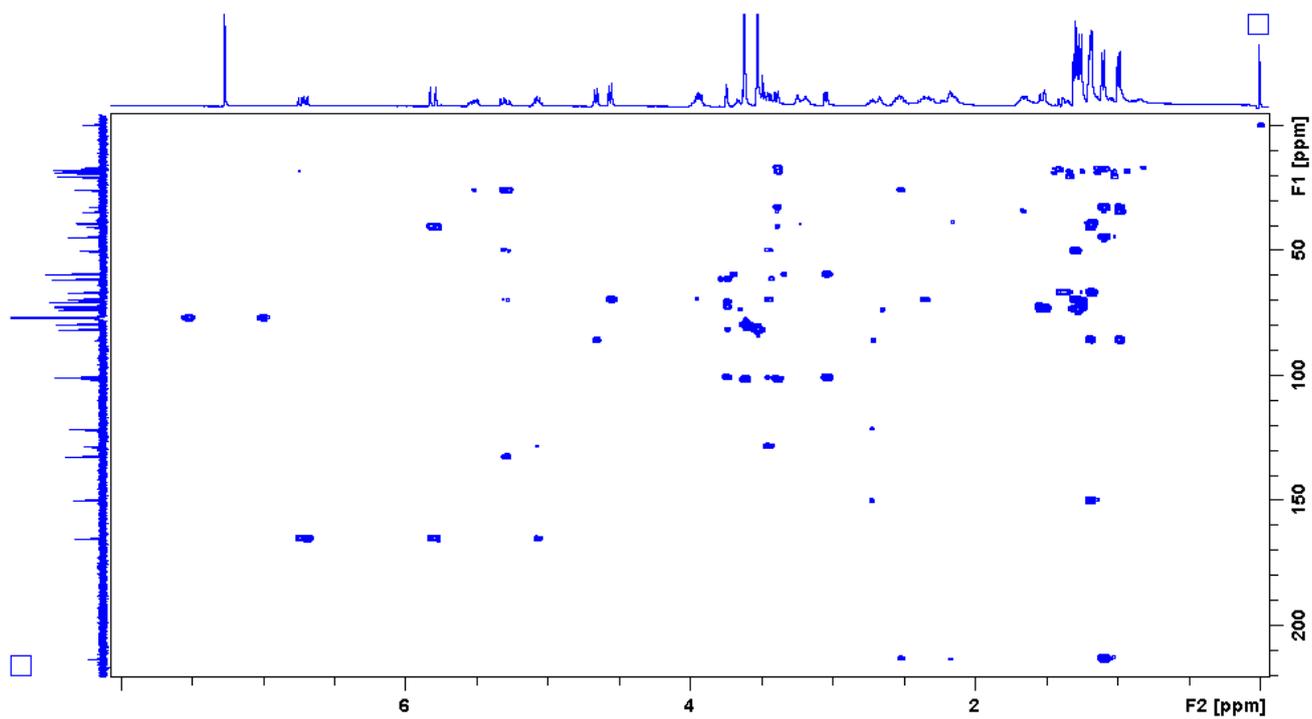


Figure S22. HMBC (CDCl_3) spectrum for aldgamycin L (**3**)

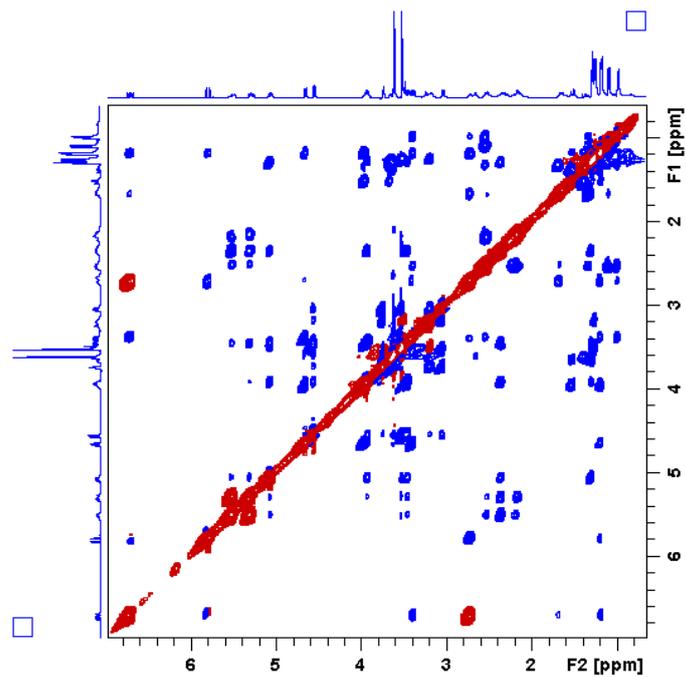


Figure S23. ROESY (CDCl₃) spectrum for aldgamycin L (3)

The 1D and 2D NMR spectra of aldgamycin M (4)

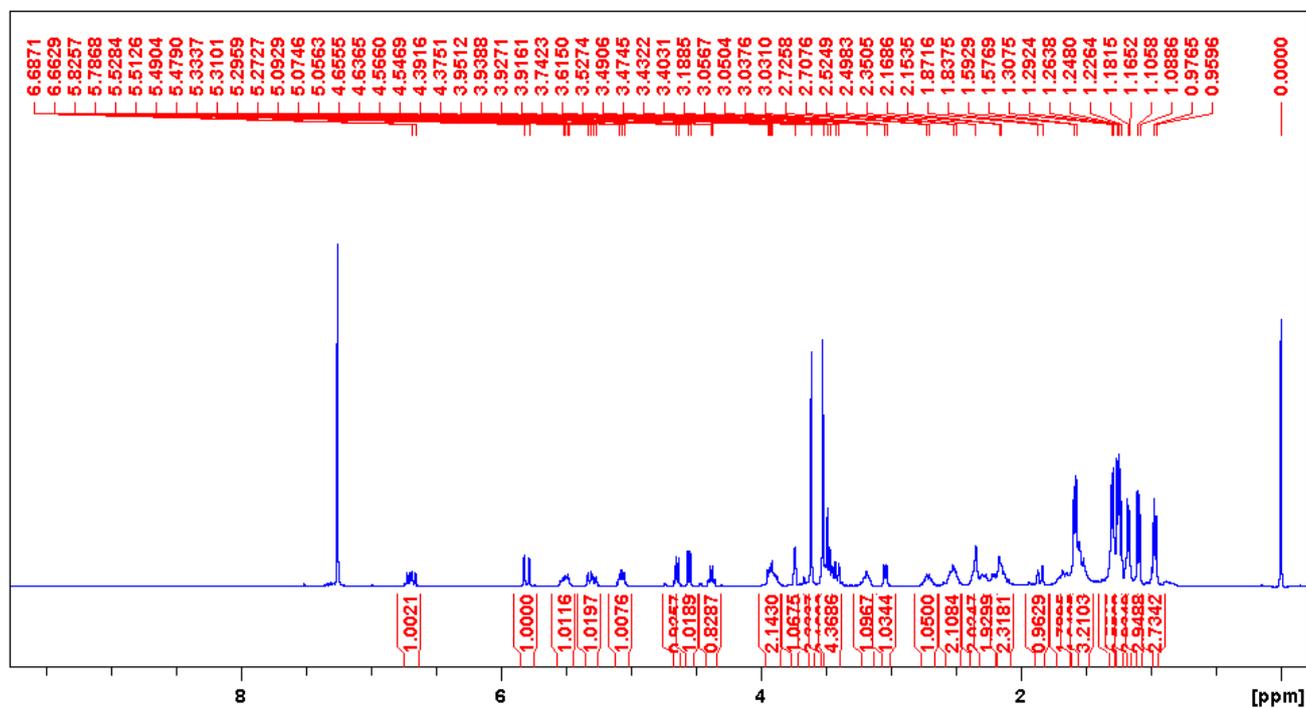


Figure S24. ¹H NMR (400 MHz, CDCl₃) spectrum for aldgamycin M (4)

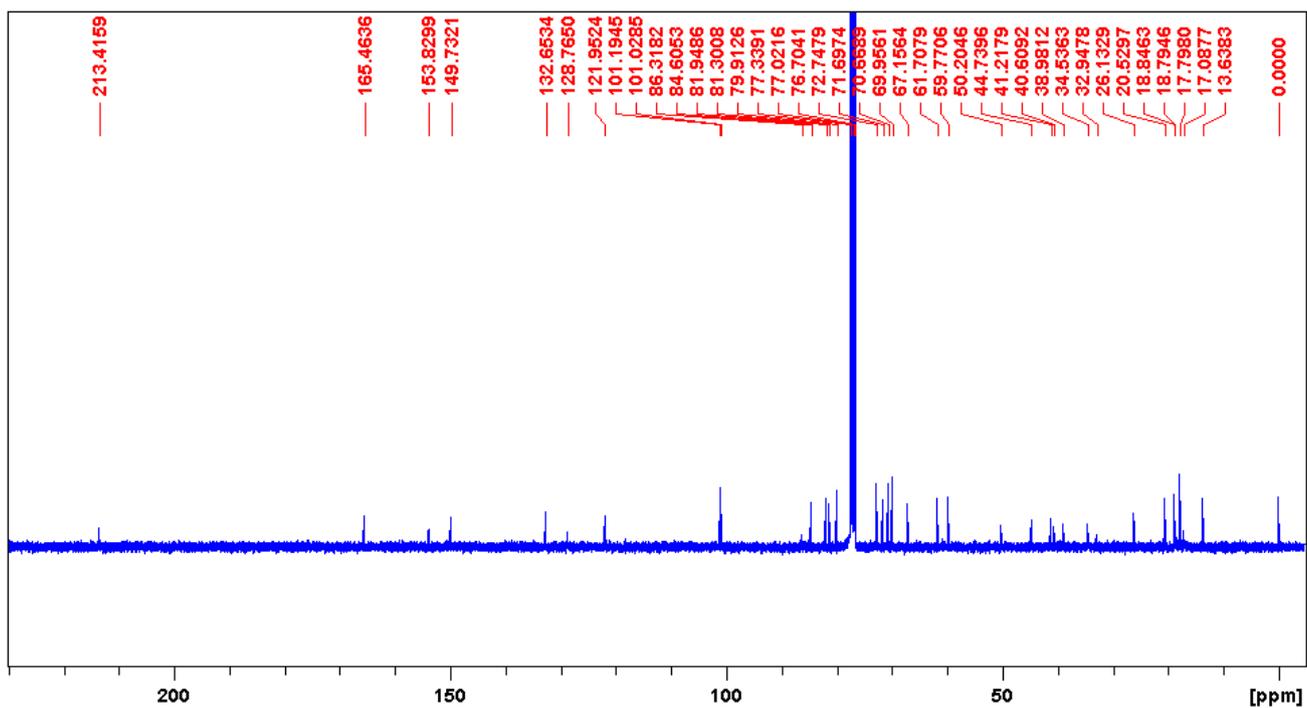


Figure S25. ^{13}C NMR (100 MHz, CDCl_3) spectrum for aldamycin M (4)

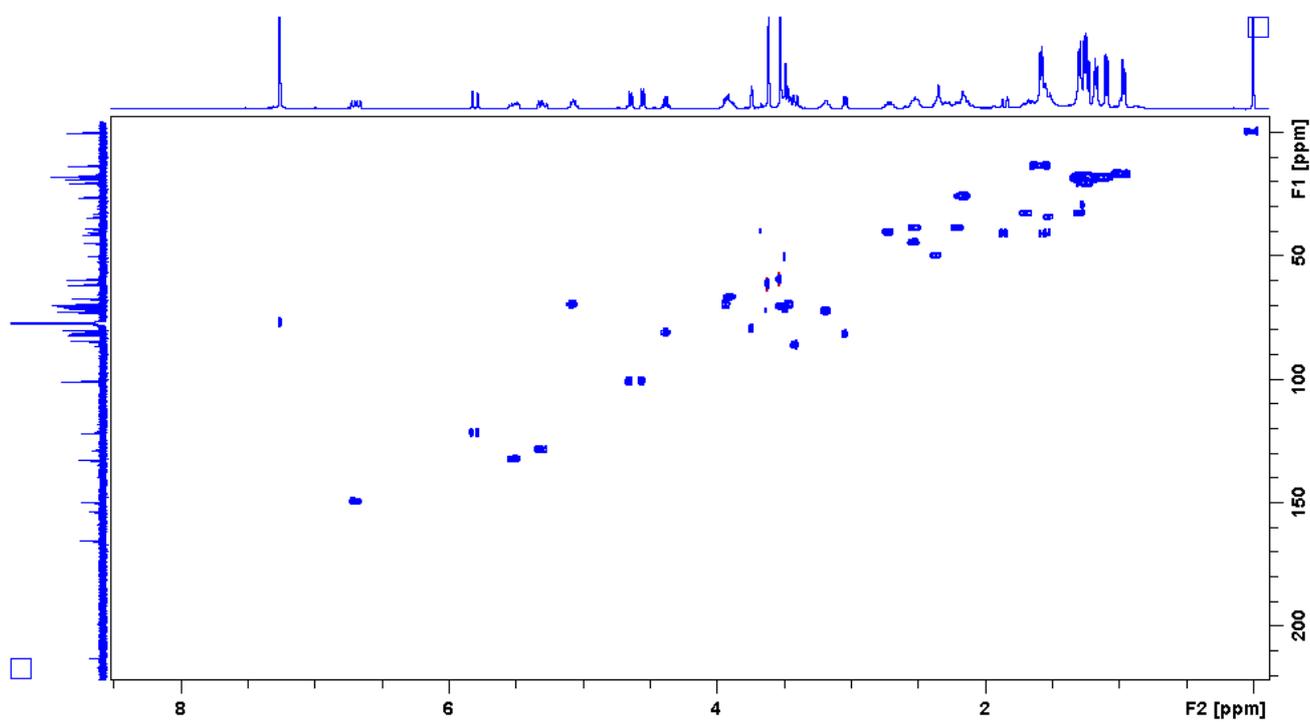


Figure S26. HSQC (CDCl_3) spectrum for aldamycin M (4)

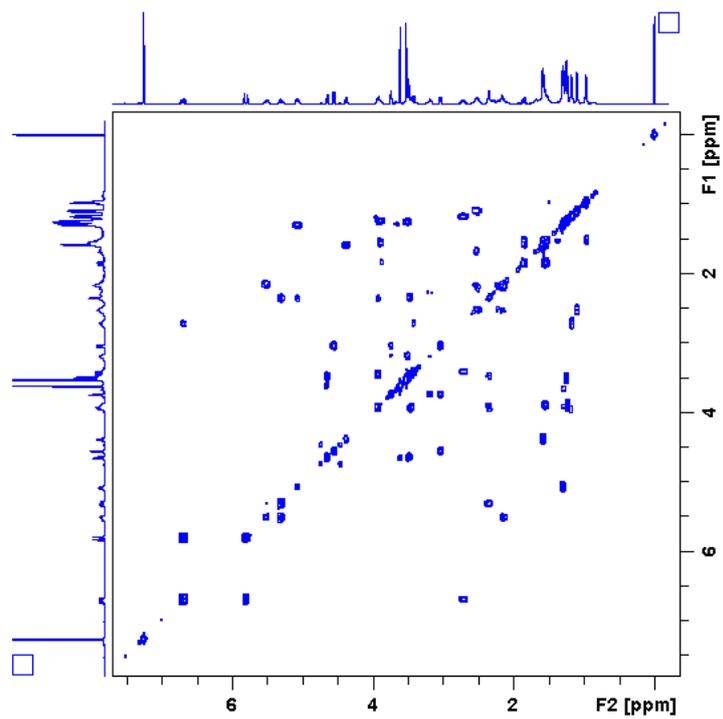


Figure S27. ^1H - ^1H COSY (CDCl_3) spectrum for aldgamycin M (4)

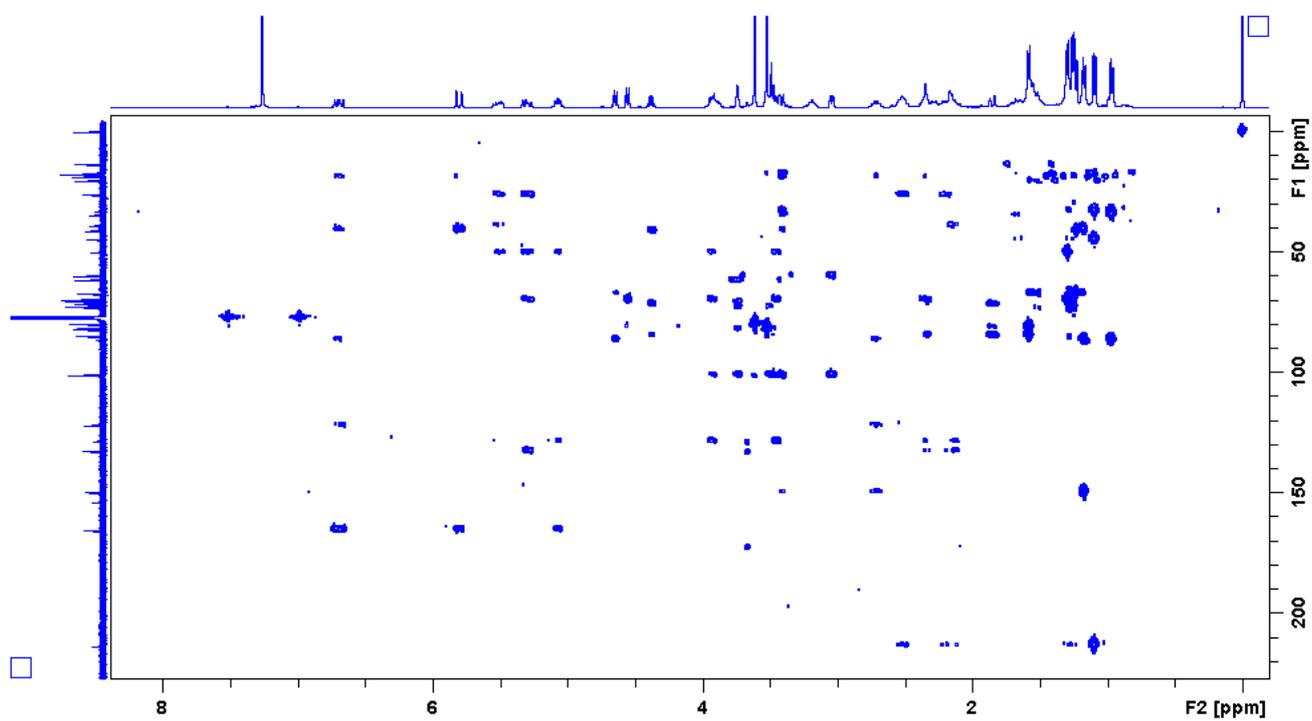


Figure S28. HMBC (CDCl_3) spectrum for aldgamycin M (4)

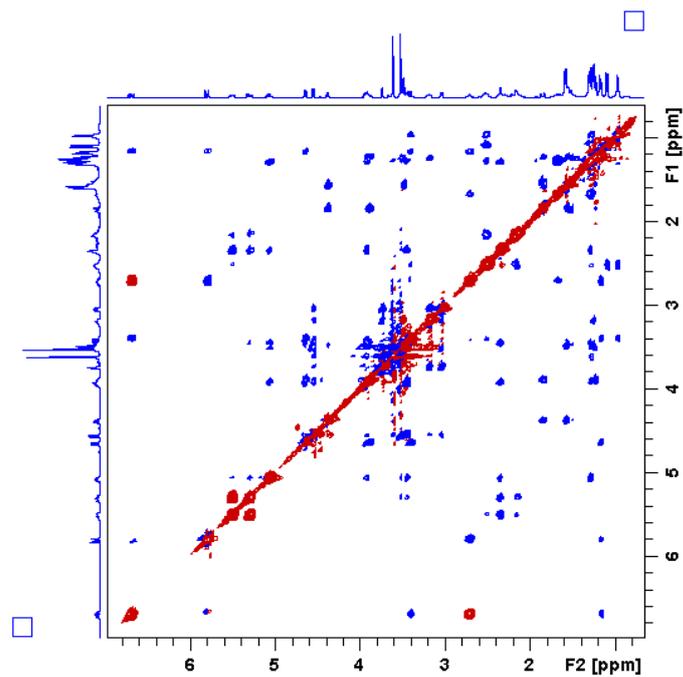


Figure S29. ROESY (CDCl₃) spectrum for aldgamycin M (4)

The 1D and 2D NMR spectra of aldgamycin N (5)

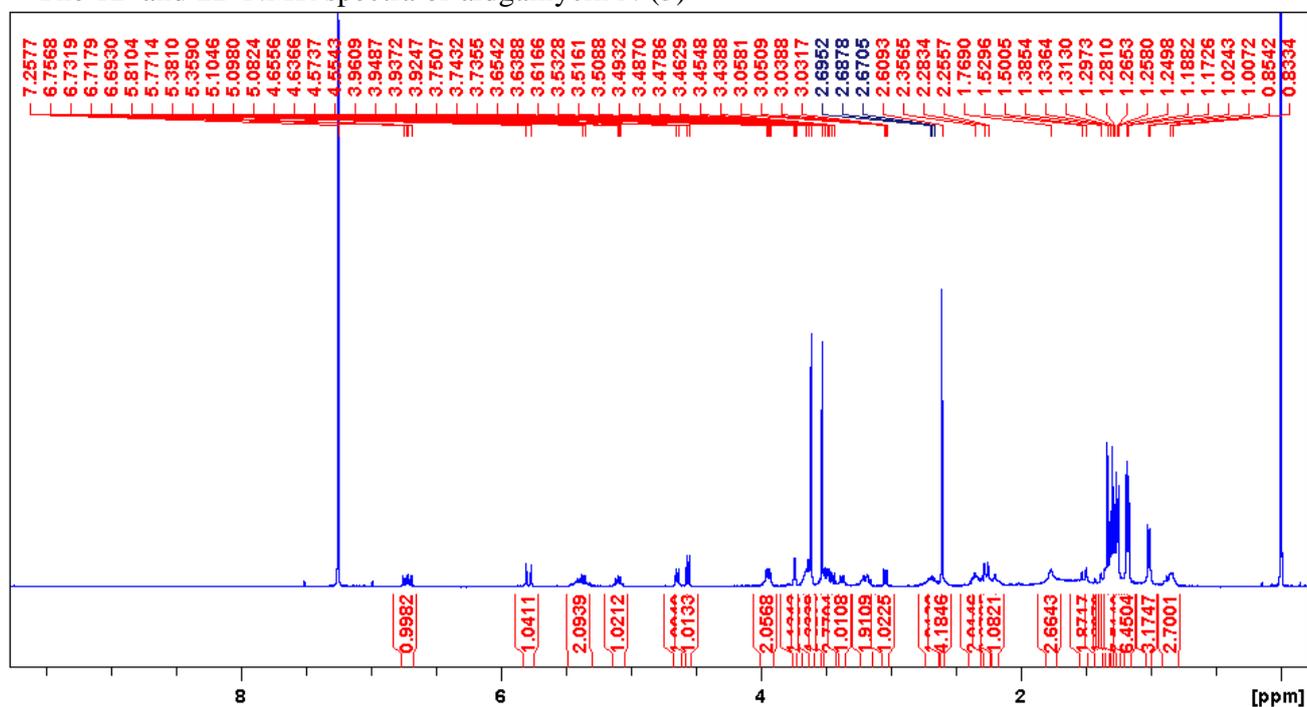


Figure S30. ¹H NMR (400 MHz, CDCl₃) spectrum for aldgamycin N (5)

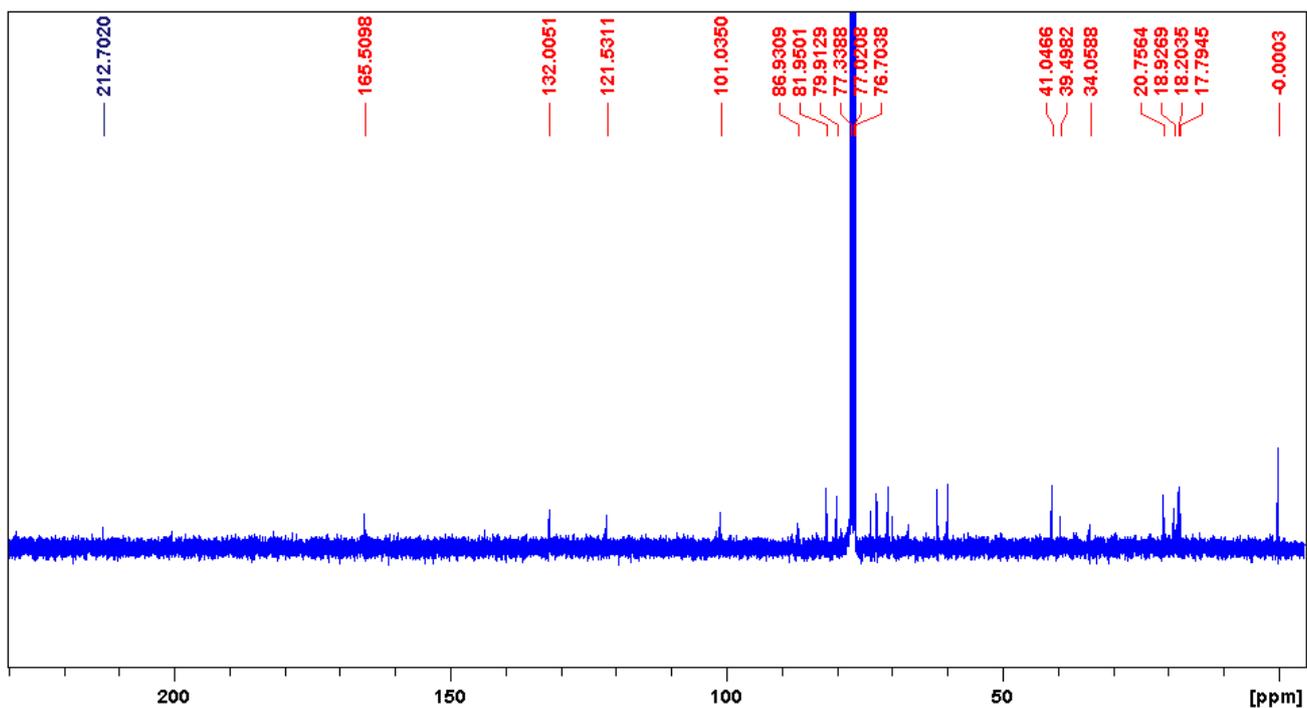


Figure S31. ^{13}C NMR (100 MHz, CDCl_3) spectrum for aldgamycin N (5)

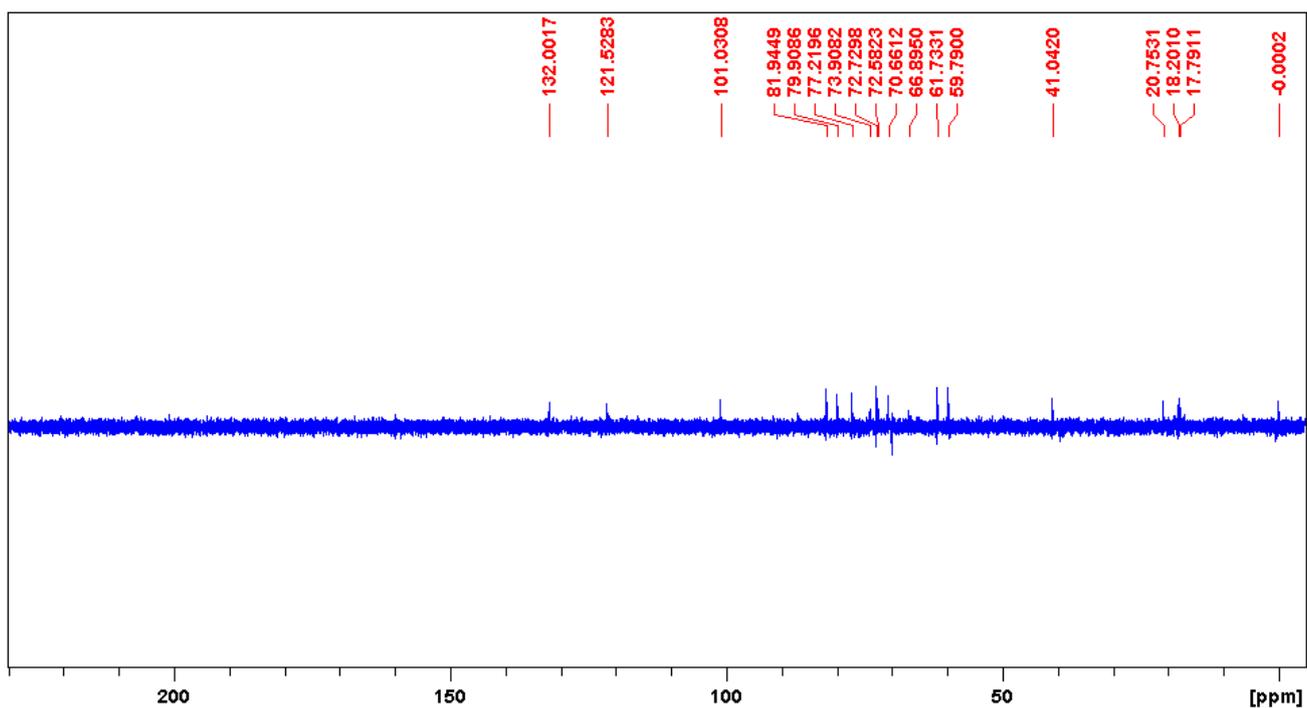


Figure S32. DEPT135 (100 MHz, CDCl_3) spectrum for aldgamycin N (5)

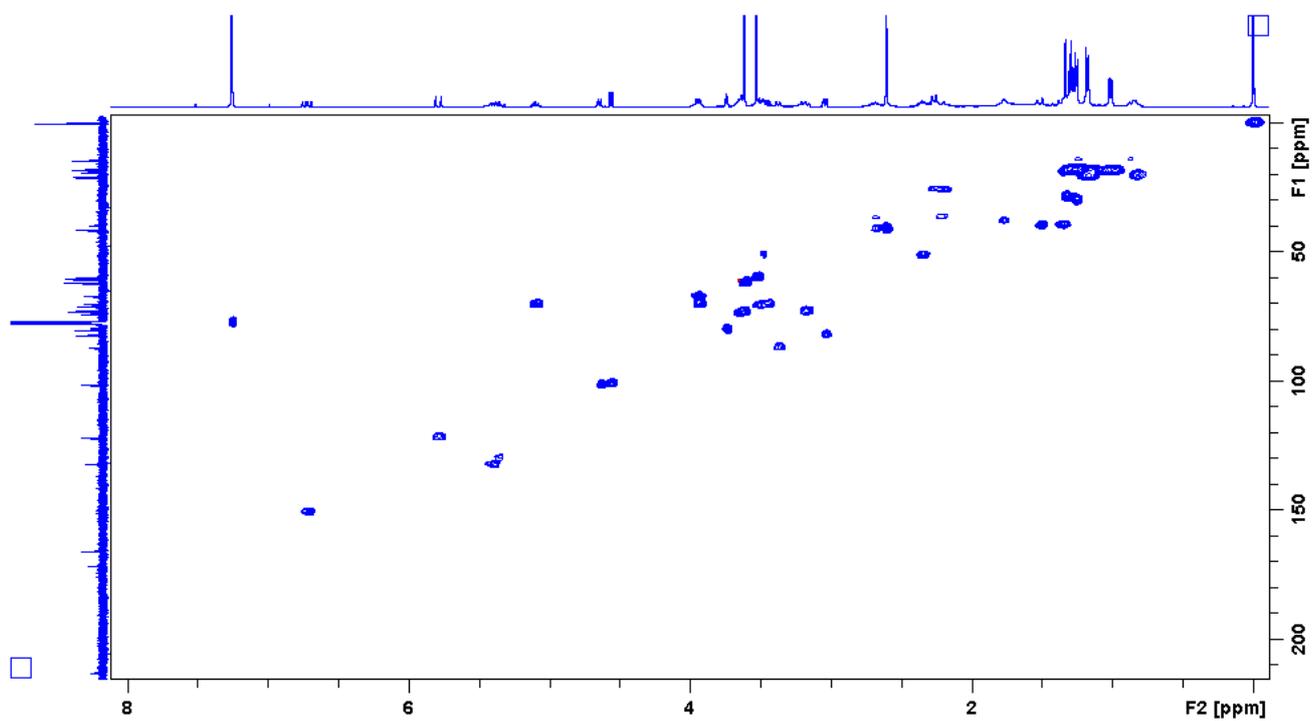


Figure S33. HSQC (CDCl_3) spectrum for aldgamycin N (5)

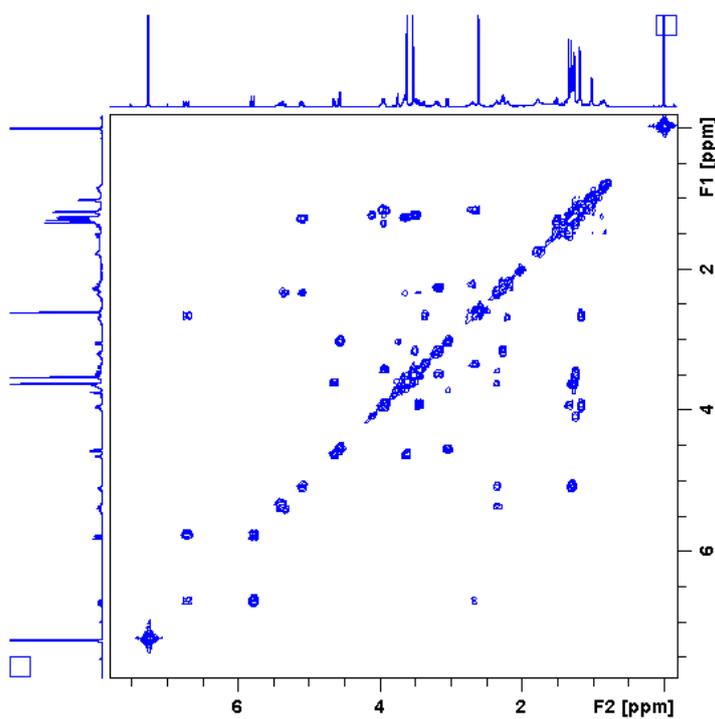


Figure S34. ^1H - ^1H COSY (CDCl_3) spectrum for aldgamycin N (5)

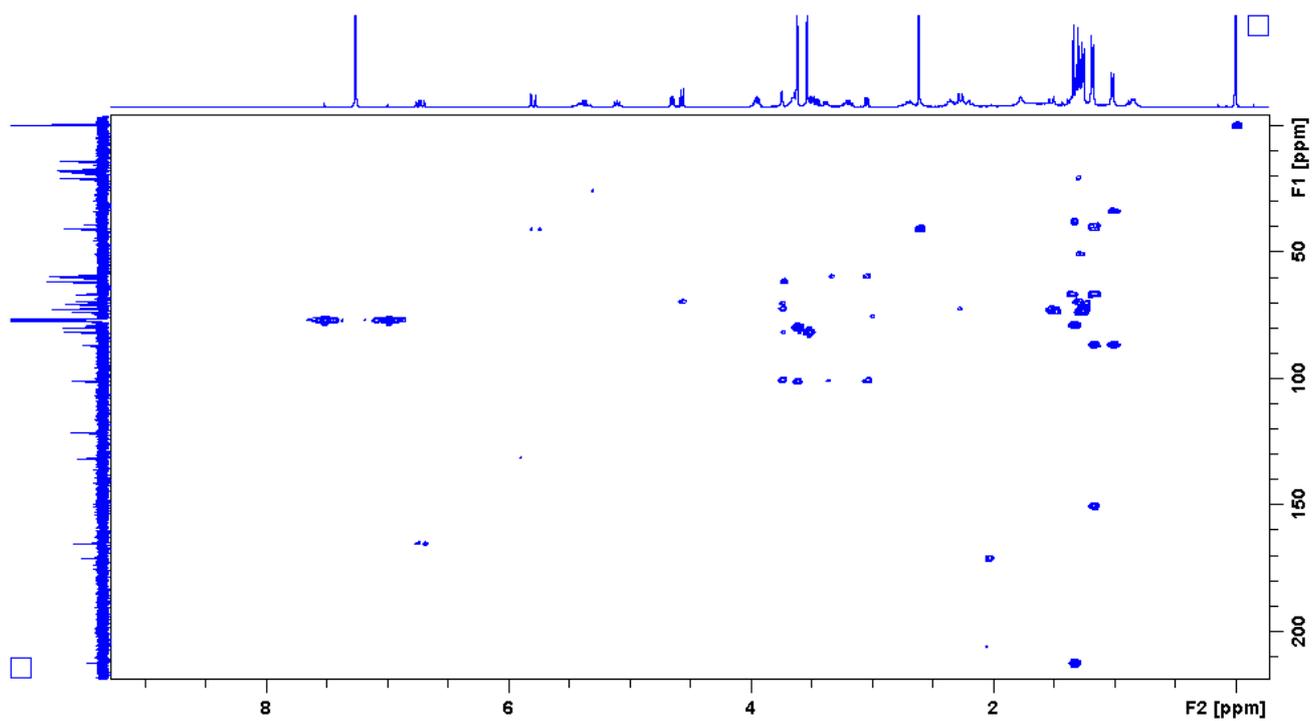


Figure S35. HMBC (CDCl₃) spectrum for aldgamycin N (5)

The 1D and 2D NMR spectra of aldgamycin O (6)

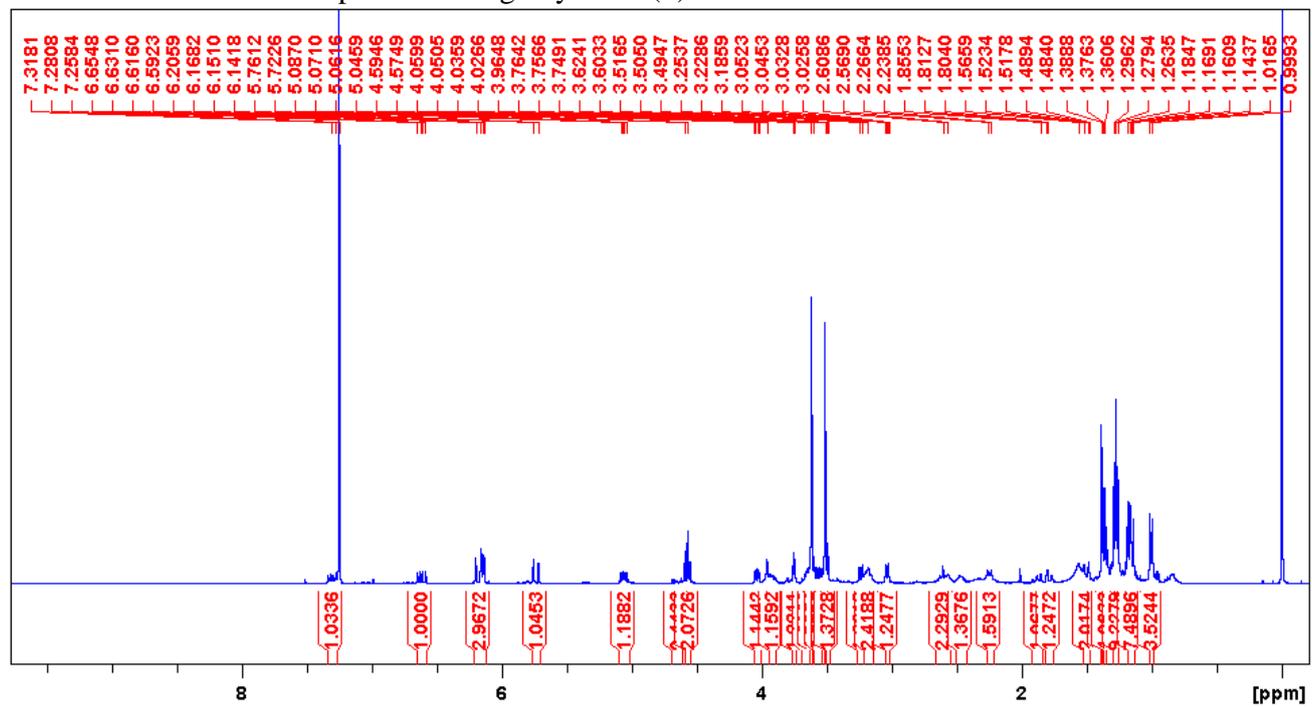


Figure S36. ¹H NMR (400 MHz, CDCl₃) spectrum for aldgamycin O (6)

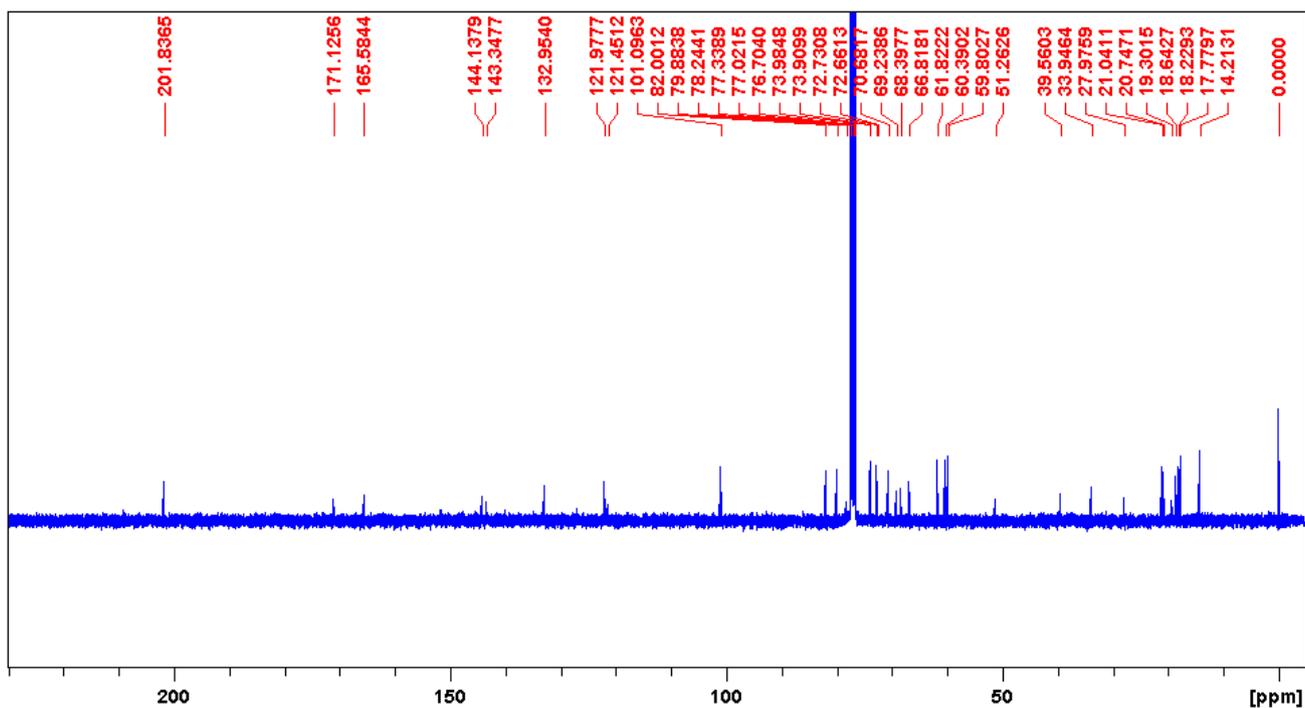


Figure S37. ^{13}C NMR (100 MHz, CDCl_3) spectrum for aldgamycin O (**6**)

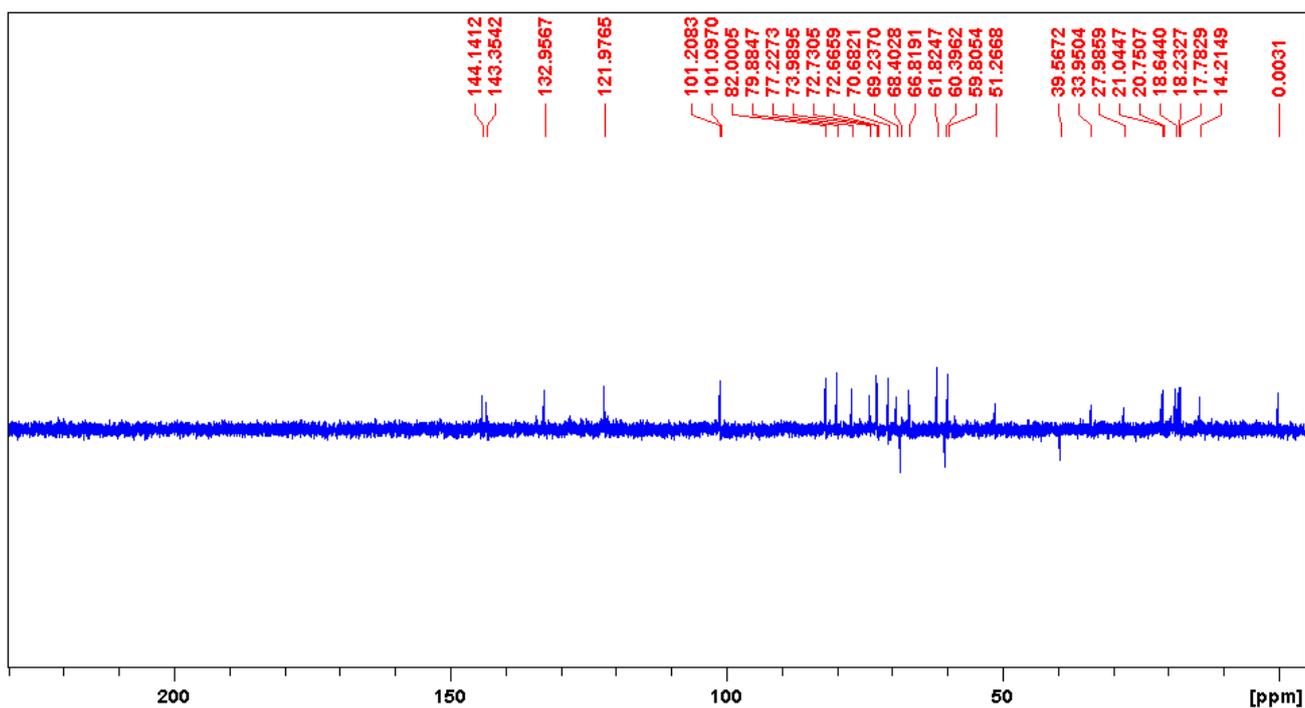


Figure S38. DEPT135 (100 MHz, CDCl_3) spectrum for aldgamycin O (**6**)

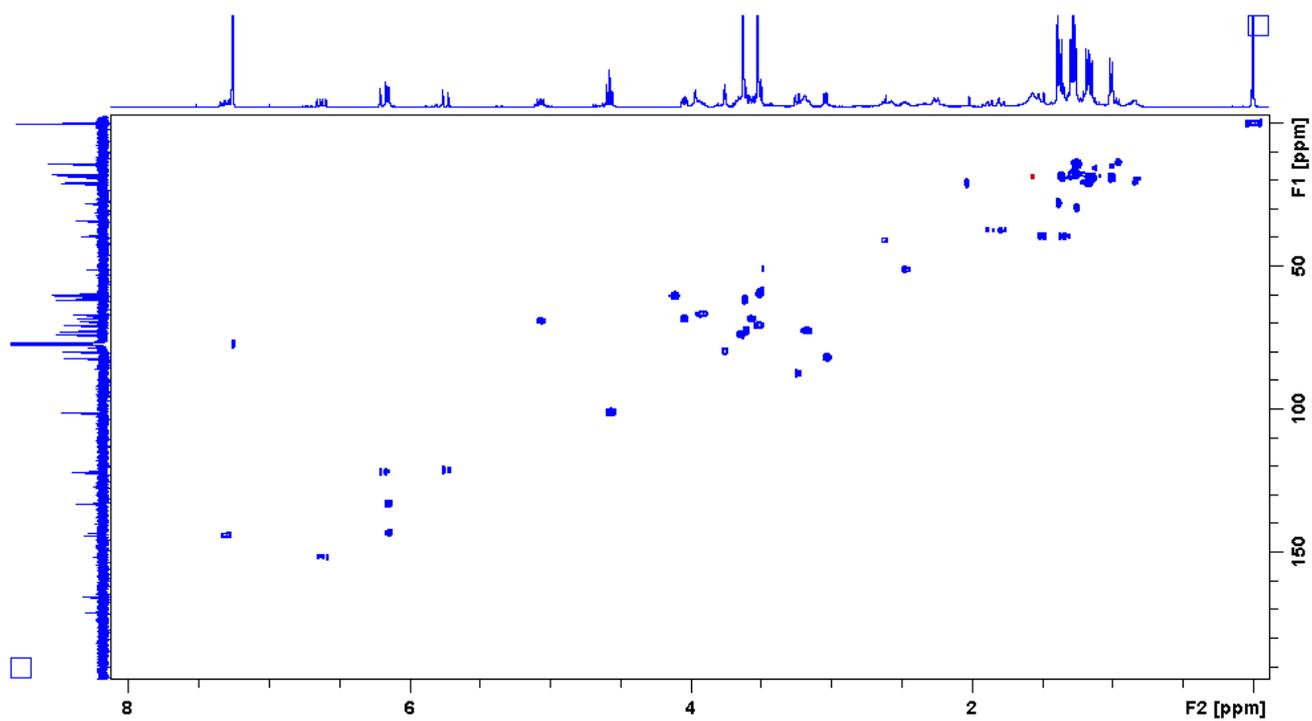


Figure S39. HSQC (CDCl₃) spectrum for aldgamycin O (**6**)

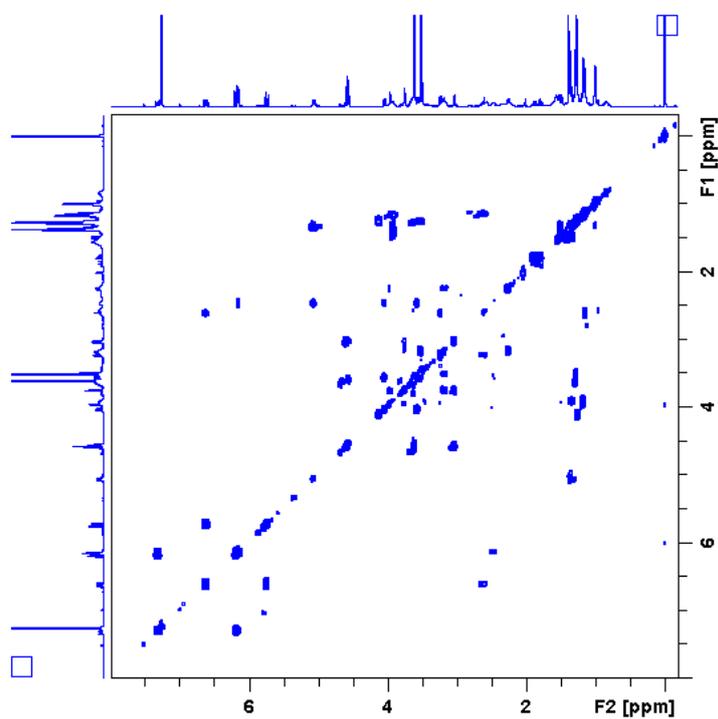


Figure S40. ¹H-¹H COSY (CDCl₃) spectrum for aldgamycin O (**6**)

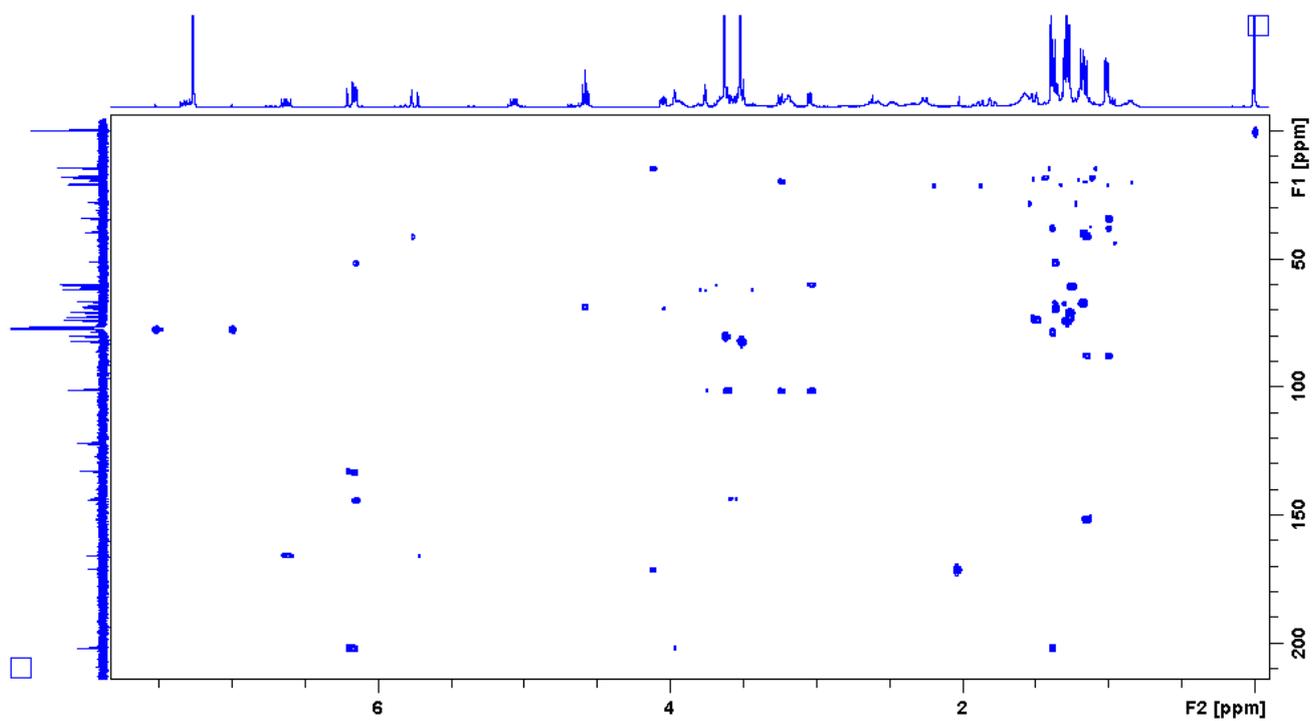


Figure S41. HMBC (CDCl₃) spectrum for aldgamycin O (**6**)

The 1D and 2D NMR spectra of swalpamycin B (**7**)

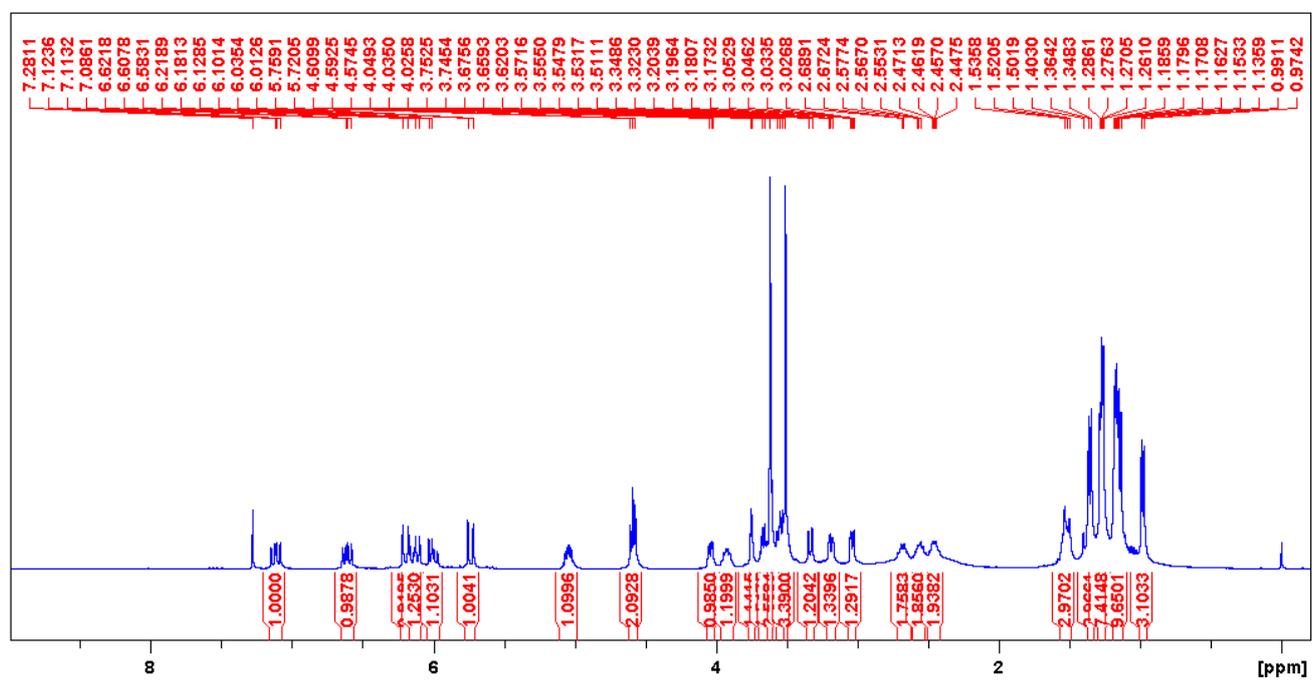


Figure S42. ¹H NMR (400 MHz, CDCl₃) spectrum for swalpamycin B (**7**)

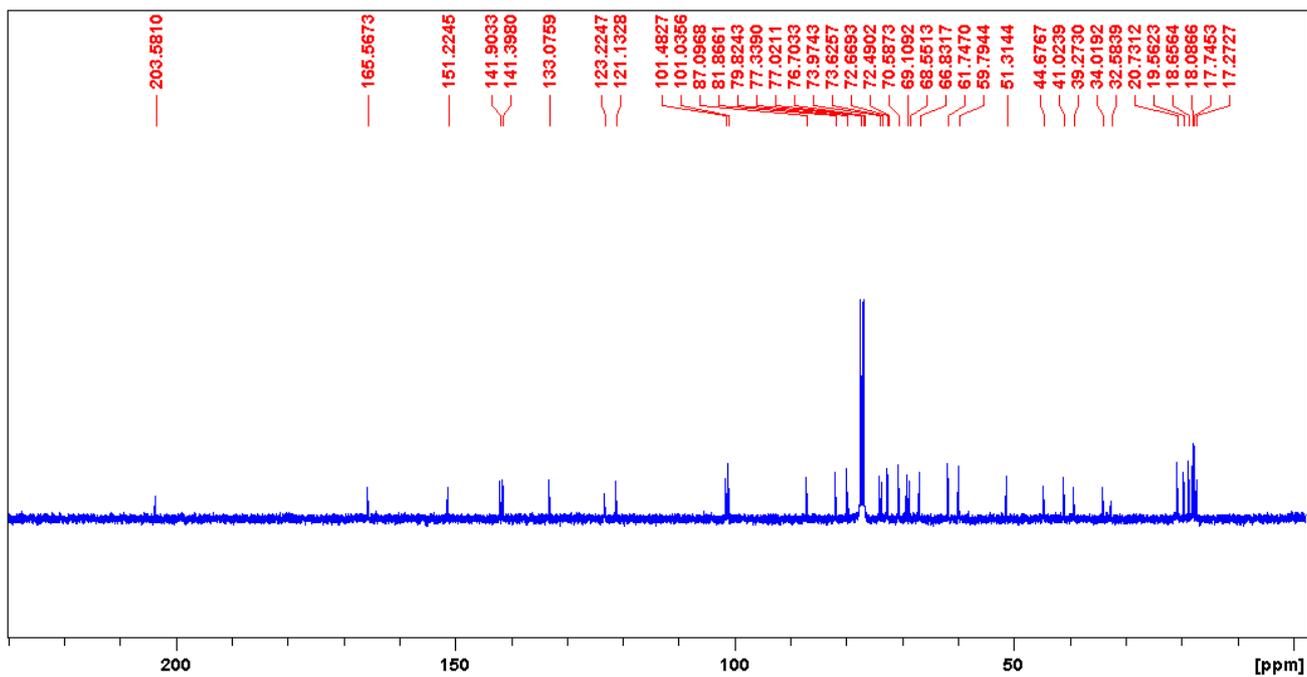


Figure S43. ^{13}C NMR (100 MHz, CDCl_3) spectrum for swalpamycin B (7)

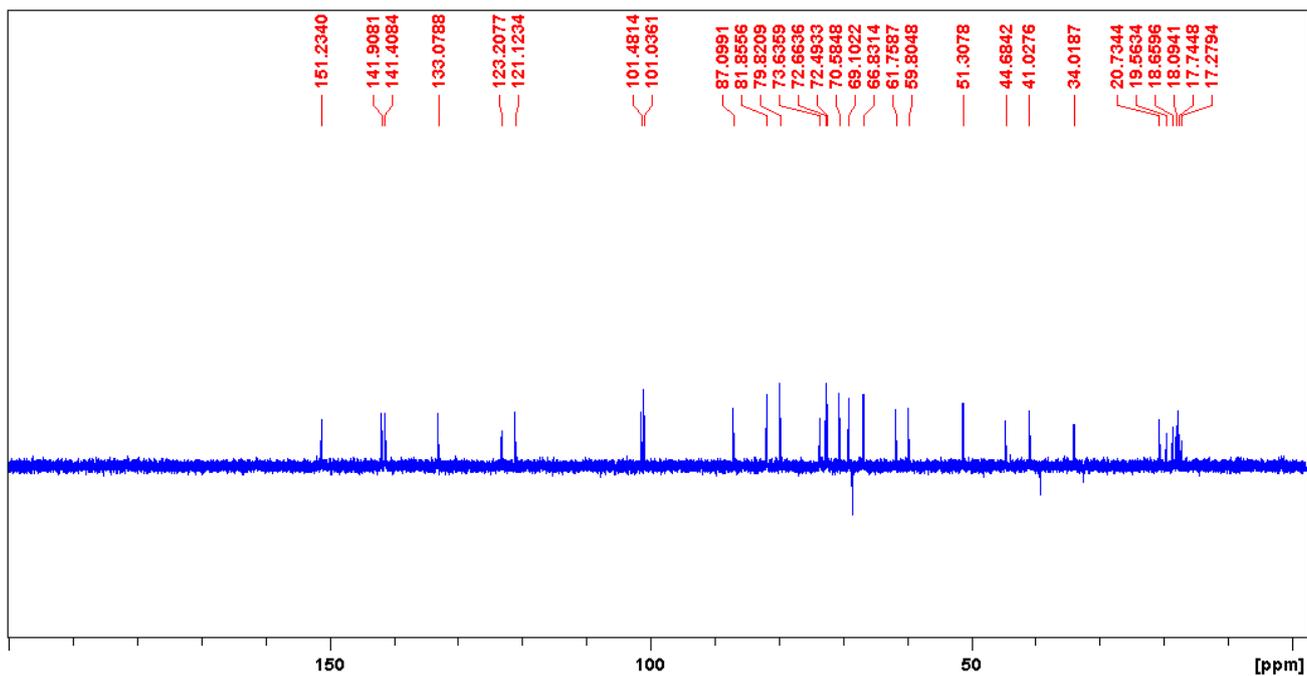


Figure S44. DEPT135 (100 MHz, CDCl_3) spectrum for swalpamycin B (7)

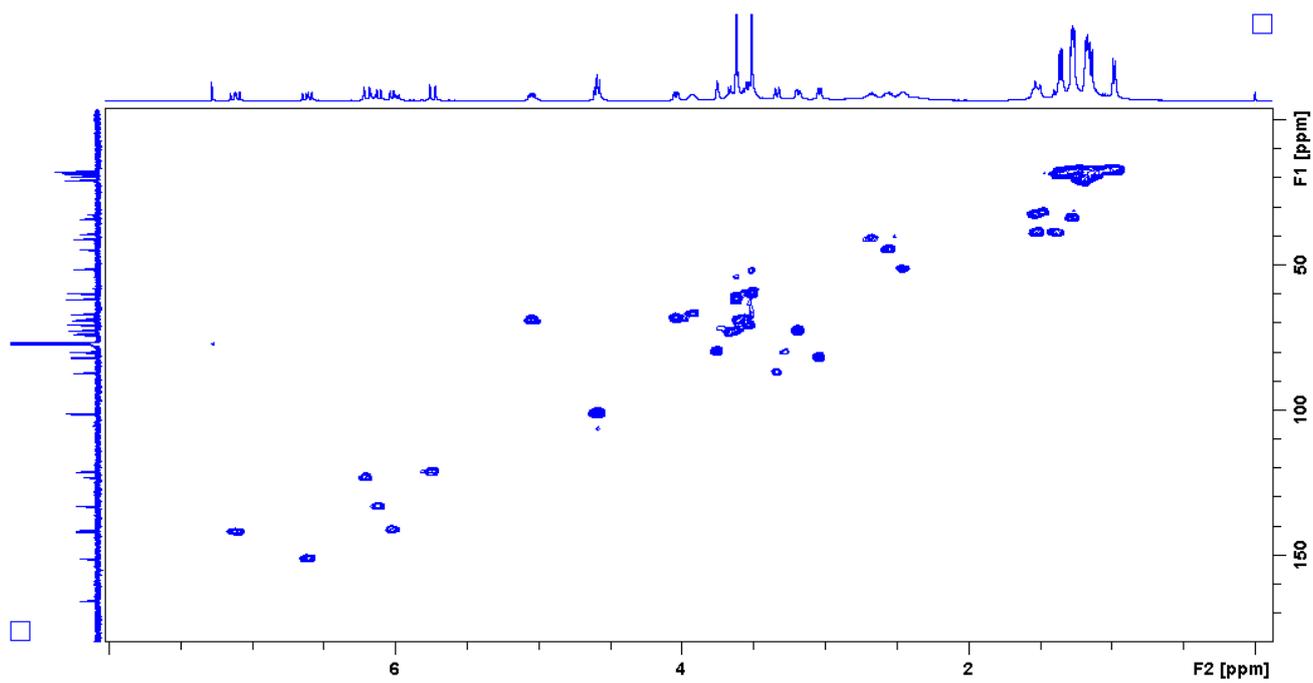


Figure S45. HSQC (CDCl₃) spectrum for swalpamycin B (7)

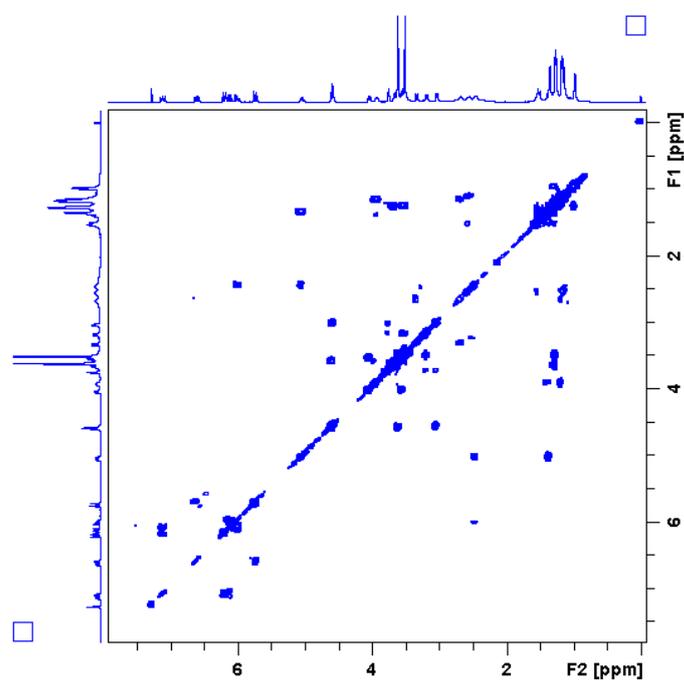


Figure S46. ¹H-¹H COSY (CDCl₃) spectrum for swalpamycin B (7)

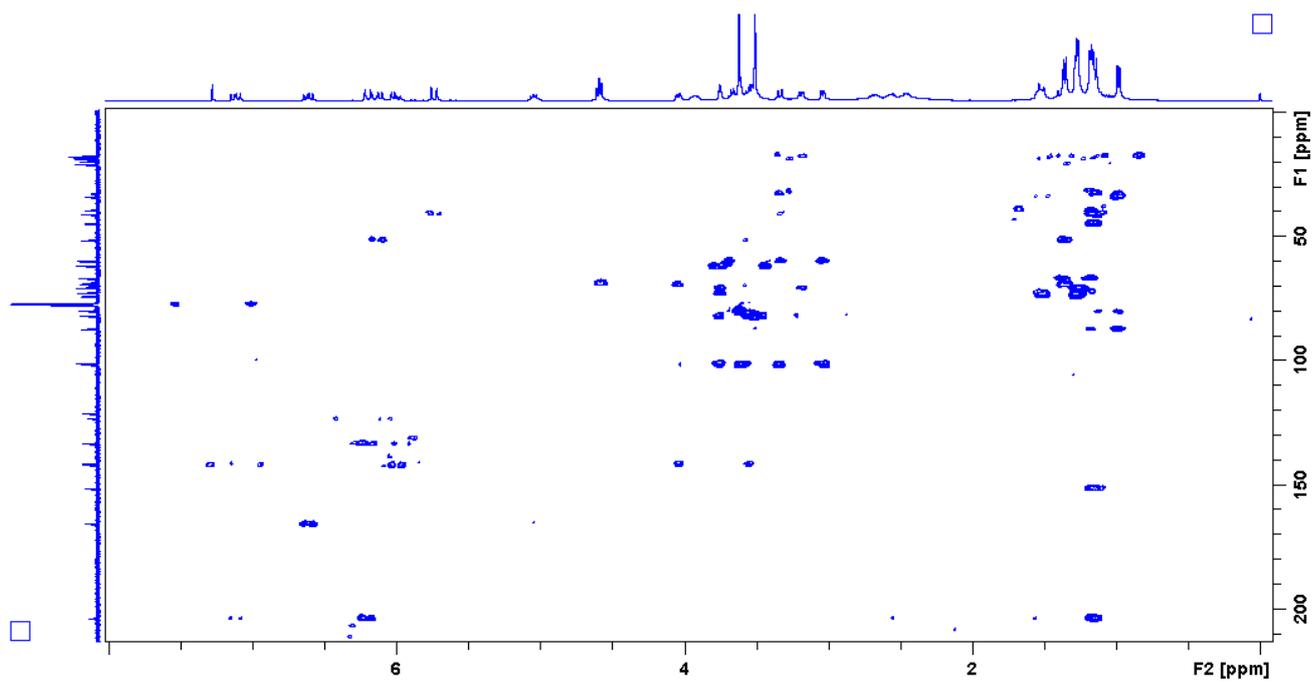


Figure S47. HMBC (CDCl₃) spectrum for swal pamycin B (7)

The 1D and 2D NMR spectra of chalcomycin (8)

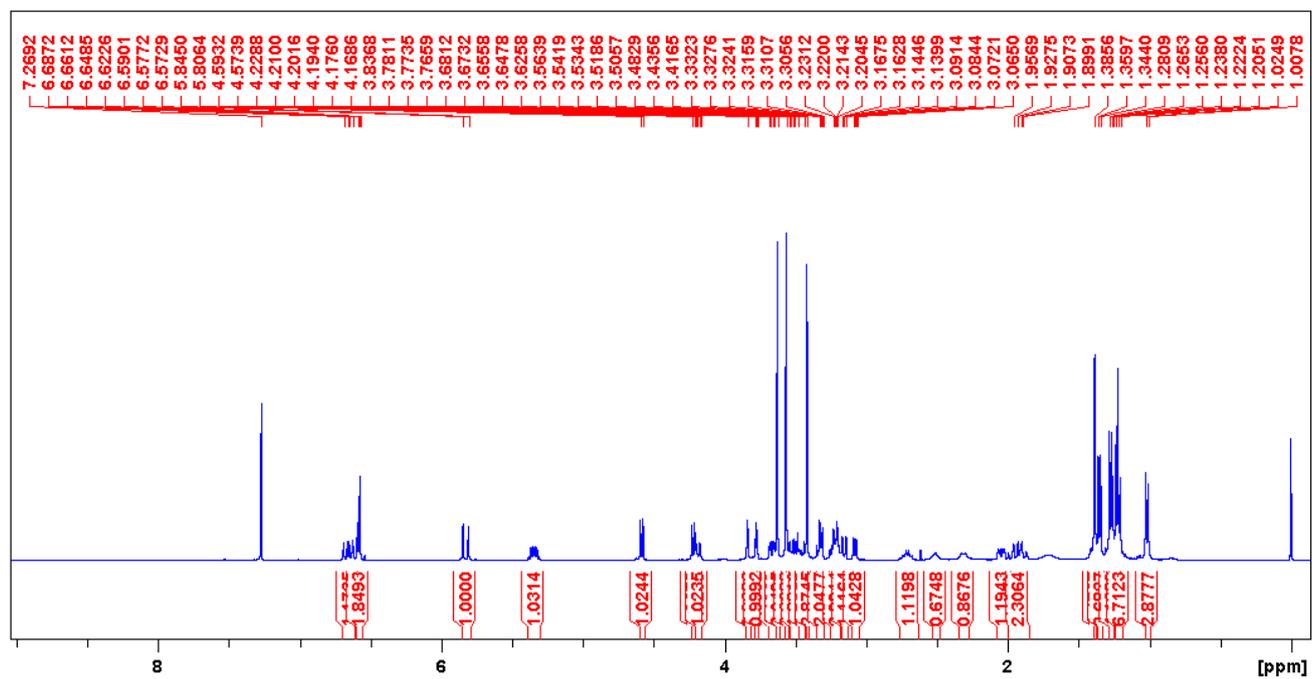


Figure S48. ¹H NMR (400 MHz, CDCl₃) spectrum for chalcomycin (8)

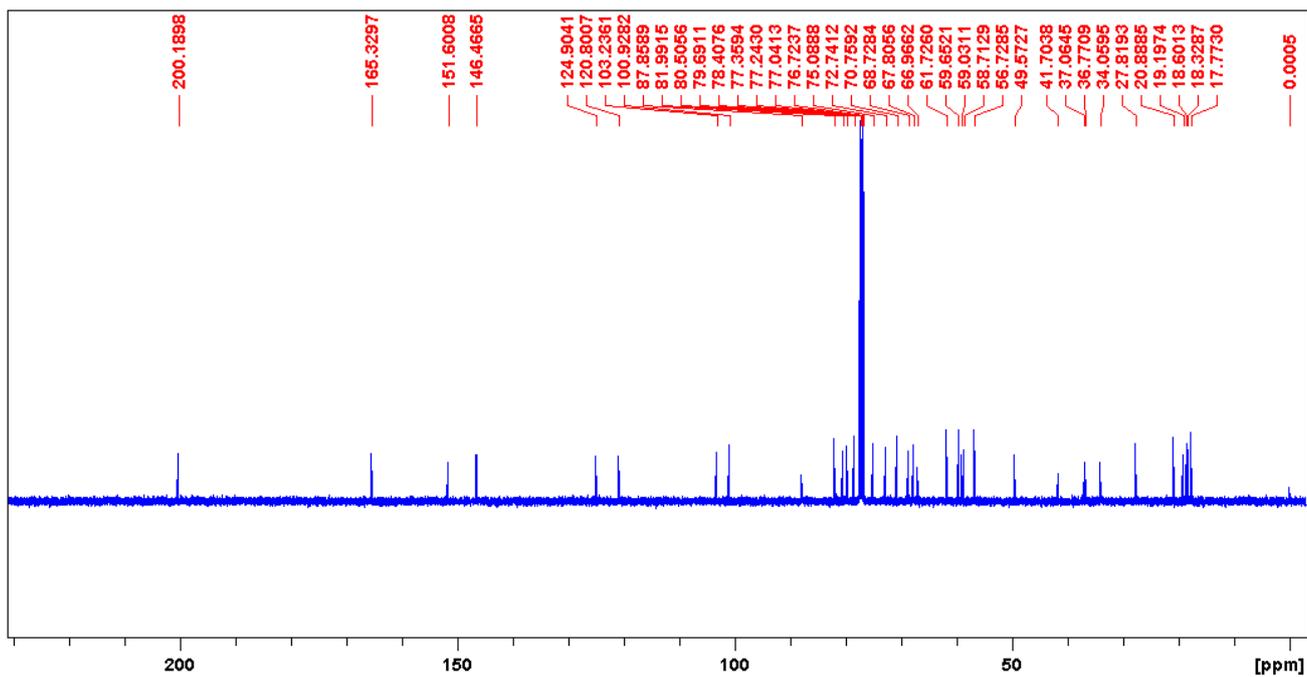


Figure S49. ^{13}C NMR (100 MHz, CDCl_3) spectrum for chalconmycin (**8**)

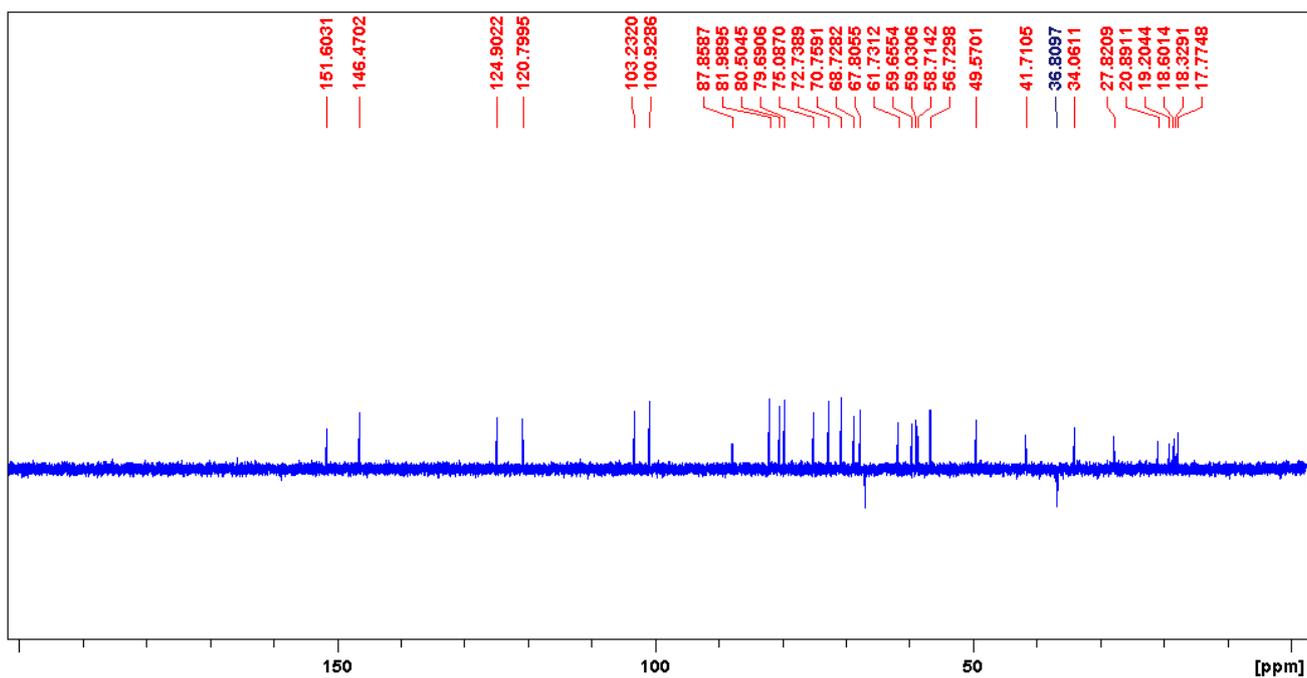


Figure S50. DEPT135 (100 MHz, CDCl_3) spectrum for chalconmycin (**8**)

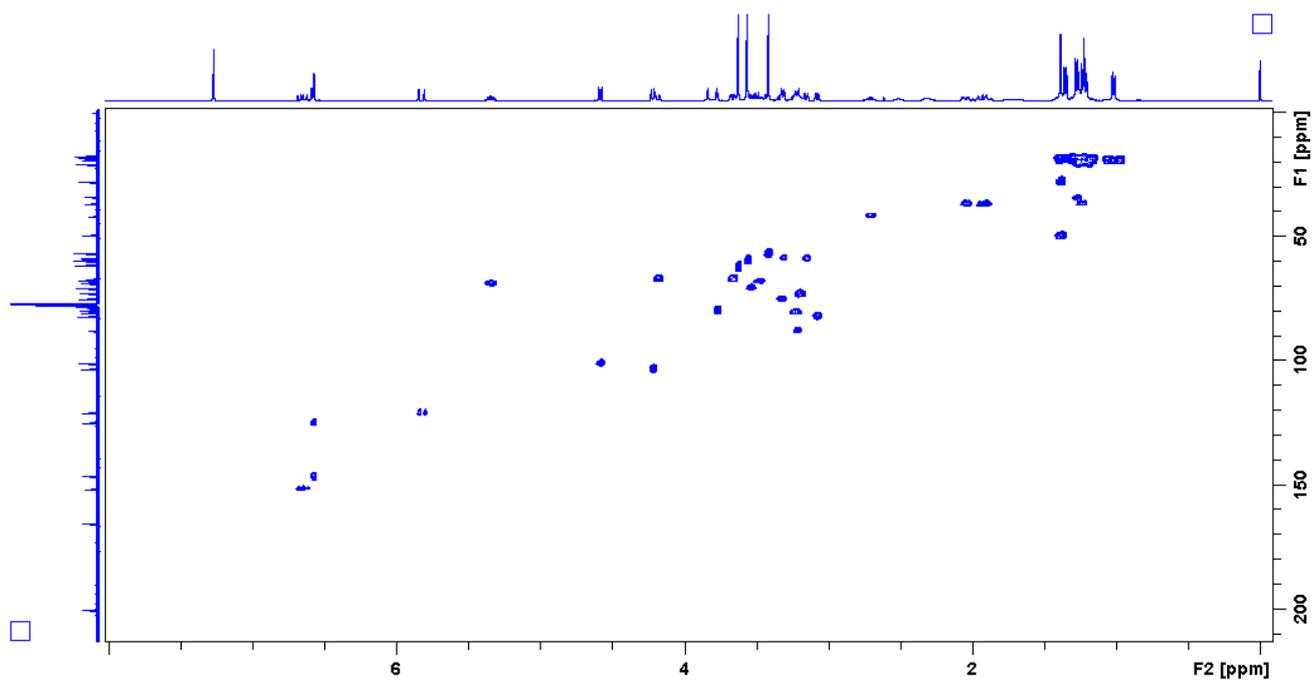


Figure S51. HSQC (CDCl₃) spectrum for chalconmycin (**8**)

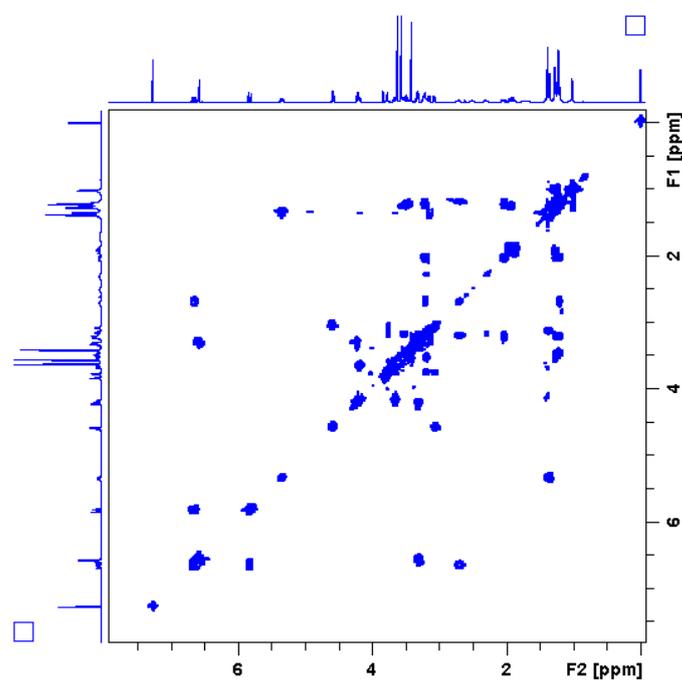


Figure S52. ¹H-¹H COSY (CDCl₃) spectrum for chalconmycin (**8**)

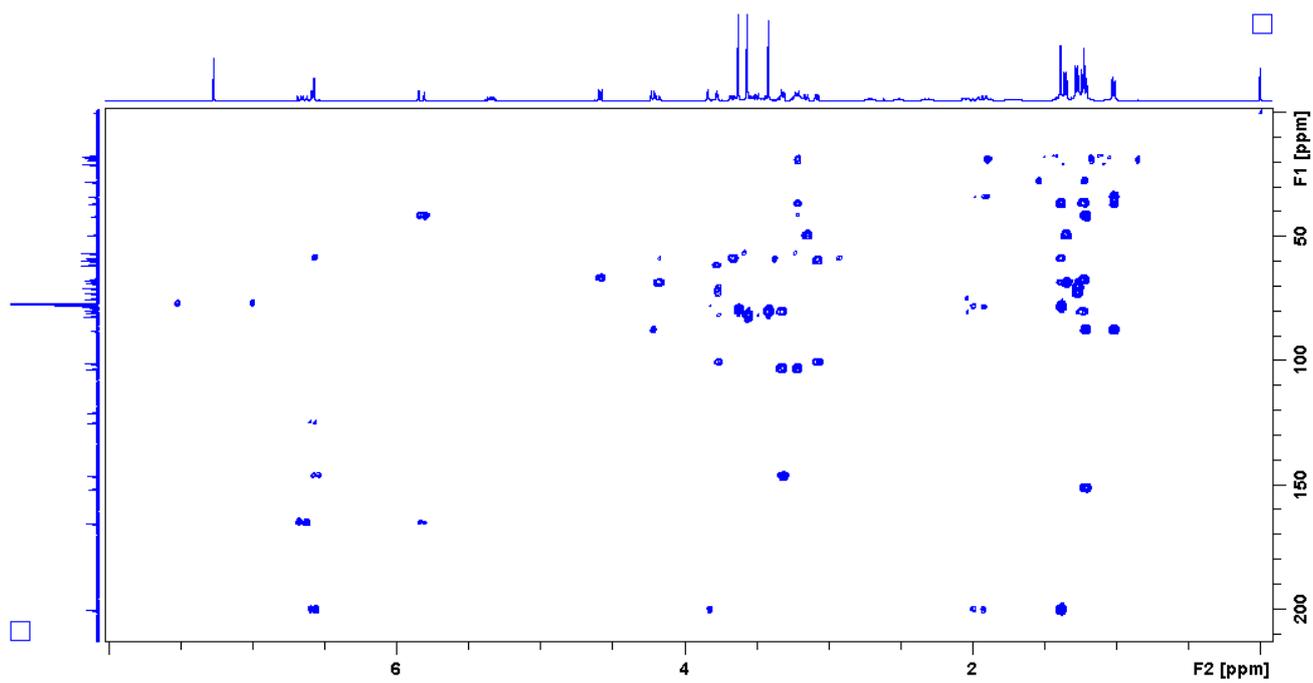


Figure S53. HMBC (CDCl₃) spectrum for chalconmycin (**8**)