

Supporting information for

Ansavaricins A–E: five new streptovaricin derivatives from *Streptomyces* sp. S012

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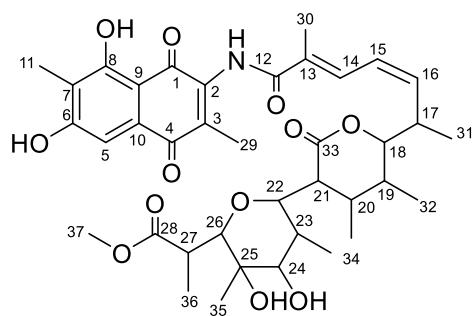
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Table S1. NMR spectroscopy data (pyridine-*d*5) for compound 1.

Pos.	δ_{H} (mult., <i>J</i> Hz)	δ_{C}	^1H - ^1H COSY	HMBC
1		185.4s		
2		140.8s		
3		138.2s		
4		185.1s		
5	7.53 (s)	108.8d		C-1/C-4, C-6, C-7, C-9
6		163.1s		
7		118.3s		
8		164.7s		
9		108.4s		
10		132.8s		
11	2.41 (s)	9.0q		C-6, C-7, C-8
12		168.4s		
13		132.2s		
14	7.93 (d, 11.7)	130.8d	H-15	C-12, C-16, C-30
15	6.70 (t, 11.3)	125.7d	H-14, H-16	C-14, C-17
16	6.20 (t, 10.6)	139.0d	H-15, H-17	C-14, C-18
17	3.25 (m)	34.9d	H-16, H-18, H-31	
18	4.80 (dd, 1.7, 10.5)	83.7d	H-17, H-19	C-16, C-19, C-20, C-31
19	2.62 (m)	36.0d	H-18, H-20, H-32	C-18
20	4.34 (t, 2.3)	74.0d	H-19, H-21	C-18, C-32, C-33
21	3.38 (t, 2.2)	51.6d	H-20, H-22	C-19, C-20, C-22, C-33
22	3.73 (d, 1.7)	85.5d	H-21, H-23	C-20, C-33
23	3.03 (m)	39.4d	H-22, H-24, H-34	C-22, C-24, C-34
24	3.65 (d, 10.6)	82.3d	H-23	C-23, C-25
25		74.4s		
26	3.81 (d, 8.4)	85.3d	H-27	C-22, C-24, C-25, C-27, C-36
27	3.28 (m)	40.8d	H-26, H-36	C-26, C-28, C-36
28		176.1s		
29	2.30 (s)	14.1q		C-2, C-3, C-1/C-4
30	2.31 (s)	13.9q		C-12, C-13, C-14
31	1.20 (d, 6.9)	19.1q	H-17	C-16, C-17, C-18
32	1.29 (d, 6.9)	13.8q	H-19	C-18, C-19, C-20
33		170.8s		
34	1.31 (d, 6.4)	14.5q	H-23	C-22, C-23, C-24
35	1.75 (s)	15.6q		C-24, C-25, C-26
36	1.57 (d, 6.8)	16.5q	H-27	C-26, C-27, C-28
37	3.74 (s)	52.1q		C-28
NH	10.11 (s)			



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Table S2. NMR spectroscopy data (pyridine-*d*5) for compound 2.

Pos.	δ_H (mult., J Hz)	δ_C	1H - 1H COSY	HMBC
1		185.4s		
2		140.7s		
3		138.3s		
4		185.1s		
5	7.52 (s)	108.8d		C-1/C-4, C-7
6		163.1s		
7		118.3s		
8		164.7s		
9		108.4s		
10		132.2s		
11	2.41 (s)	9.0q		C-6, C-7, C-8
12		168.3s		
13		133.0s		
14	7.76 (d, 11.7)	130.5d	H-15	C-12, C-30
15	6.55 (t, 11.4)	125.7d	H-14, H-16	C-14, C-17
16	5.90 (t, 10.7)	138.6d	H-15, H-17	C-14
17	3.15 (m)	34.5d	H-16, H-31	
18	3.95 (dd, 2.2, 10.7)	87.0d	H-19	C-16, C-31,
19	2.52 (m)	32.5d	H-18, H-32	C-20
20	6.92 (br s)	148.2d		C-18, C-19, C-22, C-32, C-33
21		134.2s		
22	5.0 (br s)	75.0d	H-23	C-20, C-21, C-23, C-24, C-33
23	3.15 (m)	38.4d	H-22, H-34	C-22, C-34
24	4.65 (s)	76.8d		C-22, C-23, C-26, C-34, C-35
25		77.0s		
26	7.71 (s)	147.9d		C-25, C-28, C-36
27		128.1s		
28		170.1s		
29	2.31 (s)	14.5q		C-2, C-3, C-1/C-4
30	2.26 (s)	13.8q		C-12, C-13, C-14
31	1.09 (d, 6.7)	18.4q	H-17	C-16, C-17, C-18
32	0.96 (d, 7.0)	16.6q	H-19	C-18, C-19, C-20
33		165.4s		
34	1.54 (d, 6.9)	13.6q	H-23	C-22, C-23, C-24
35	1.76 (s)	27.2q		C-24, C-25, C-26
36	2.52 (m)	14.2q		C-26, C-27, C-28
37	3.67 (s)	52.2q		C-28
NH	10.03 (s)			C-2, C-12

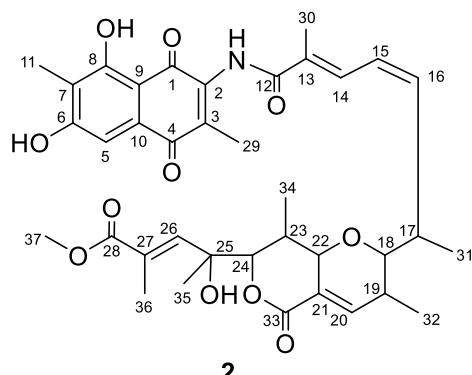


Table S3. NMR spectroscopy data for compound 3.

Pos.	δ_H (mult., J Hz, pyridine- d_5)	δ_H (mult., J Hz, acetone- d_6)	δ_C	1H - 1H COSY (pyridine- d_5)	HMBC (pyridine- d_5)
1			153.7s		
2			128.4s		
3			128.2s		
4			146.4s		
5			107.5s		
6			193.9s		
7			86.0s		
8			200.7s		
9			110.3s		
10			127.5s		
11	1.59 (s)	1.45 (s)	27.9q		C-6, C-7, C-8
12			175.0s		
13			131.4s		
14	6.91 (d, 11.0)	6.40 (t, 11.0)	128.8d	H-15, H-30	C-12, C-16, C-30
15	6.40 (t, 10.9)	6.10 (t, 10.9)	124.1d	H-14, H-16	C-13, C-17
16	5.85 (t, 10.3)	5.38 (t, 10.6)	147.1d	H-15, H-17	C-14, C-18
17	3.37 (m)	2.78 (m)	40.7d	H-16, H-18, H-31	C-18, C-31
18	3.55 (d, 9.3)	3.15 (m)	82.5d	H-17, H-19	C-16, C-17, C-19, C-20, C-32
19	2.08 (m)	1.74 (m)	36.7d	H-18, H-20, H-32	C-20, C-32
20	4.83 (d, 10.4)	4.21 (dd, 10.4, 5.3)	72.9d	H-19, H-21	C-19, C-21, C-22, C-32, C-33
21	3.17 (s)	2.85 (s)	48.3d	H-20	C-19, C-20, C-22, C-23, C-33
22	3.85 (d, 10.5)	3.44 (d, 10.5)	80.9d	H-23	C-20, C-21, C-23, C-24, C-26, C-33, C-35
23	2.63 (m)	2.08 (m)	39.7d	H-22, H-24, H-35	C-22
24	3.74 (m)	3.15 (m)	82.2d		C-23, C-25, C-35, C-36
25			74.5s		
26	3.91 (s)	4.09 (d, 6.2)	88.3d		C-22, C-24, C-25, C-27, C-28, C-36, C-37
27	4.99 (m)	4.36 (q, 7.1)	34.5d	H-37	C-26, C-28, C-37
28			170.9s		
29	2.65 (s)	2.74 (s)	12.7q		C-1 (w), C-2, C-3, C-4
30	2.34 (s)	1.95 (s)	14.4q	H-14	C-12, C-13, C-14
31	0.50 (d, 6.7)	0.26 (d, 6.7)	19.1q	H-17	C-16, C-17, C-18
32	1.15 (d, 6.8)	0.86 (d, 6.8)	17.6q	H-19	C-18, C-19, C-20
33			174.0s		
34	3.88 (s)	3.84 (s)	52.1q		C-33
35	1.34 (d, 6.5)	1.01 (d, 6.5)	14.7q	H-23	C-22, C-23, C-24
36	1.82 (s)	1.34 (s)	17.8q		C-24, C-25, C-26
37	1.65 (d, 7.0)	1.50 (d, 6.9)	12.2q	H-27	C-26, C-27, C-28
NH	9.89 (s)				
HO-20	3.73 (br s)		H-20		C-19, C-20, C-21

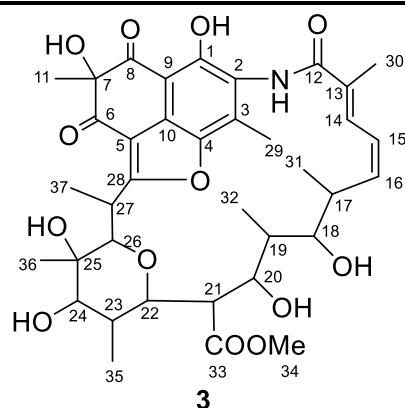
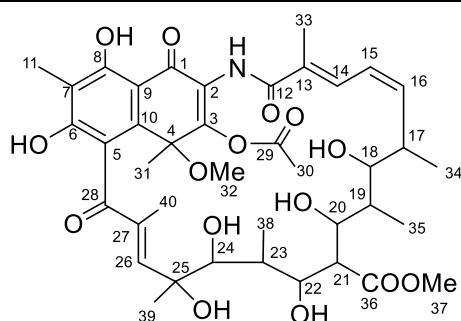


Table S4. NMR spectroscopy data (pyridine-*d*5) for compound 4.

Pos.	δ_H (mult., <i>J</i> Hz)	δ_C	1H - 1H COSY	HMBC
1		199.5s		
2		132.3s		
3		144.6s		
4		85.9s		
5		120.4s		
6		163.1s		
7		113.5s		
8		164.0s		
9		109.3s		
10		127.5s		
11	2.19 (s)	9.5q		C-6, C-7, C-8
12		171.8s		
13		131.1s		
14	7.47 (d, 10.9)	130.3d	H-15	C-12, C-16, C-33
15	6.50 (t, 11.0)	125.6d	H-14, H-16	C-13, C-17
16	5.91 (t, 10.4)	142.1d	H-15, H-17	C-14, C-34
17	3.10 (m)	36.9d	H-16, H-34	
18	3.73 (dd, 1.8, 7.7)	83.7d	H-19	C-16, C-19, C-34, C-35
19	2.22 (m)	37.5d	H-18, H-20, H-35	C-17, C-18, C-20, C-35
20	4.736-4.76 (m)	76.7d	H-19, H-21	C-18, C-19, C-21, C-22, C-36
21	3.44 (m)	49.4d	H-20	C-19, C-20, C-22, C-36
22	4.45 (d, 10.6)	71.7d	H-23	C-20, C-23, C-24, C-36, C-38
23	3.57 (m)	37.5d	H-22, H-24, H-38	C-22, C-38
24	4.74-4.76 (m)	79.1d	H-23	C-25, C-26, C-38, C-39
25		77.6s		
26	7.51 (br s)	151.0d		C-25, C-27, C-28, C-40
27		137.9s		
28		200.0s		
29		168.8s		
30	2.36 (s)	21.2q		C-29
31	2.01 (s)	11.6q		C-3, C-4, C-10
32	3.51 (s)	51.8q		C-4
33	1.97 (s)	14.0q		C-12, C-13, C-14
34	1.26 (d, 6.5)	19.4q	H-17	C-16, C-17, C-18
35	1.06 (d, 6.6)	16.7q	H-19	C-18, C-20, C-23
36		174.0s		
37	3.50 (s)	51.6q		C-36
38	1.44 (d, 7.0)	11.7q	H-23	C-22, C-23, C-24
39	1.80 (s)	30.5q		C-24, C-25, C-26
40	2.80 (s)	12.7q		C-26, C-27, C-28
NH	10.61 (s)			C-12
HO-8	13.91 (s)			C-7, C-8, C-9



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Table S5. NMR spectroscopy data (pyridine-*d*₅) for compound 5.

Pos.	δ_{H} (mult., J Hz)	δ_{C}	^1H - ^1H COSY	HMBC
1		193.5s		
2	6.00 (d, 6.9)	59.7d		C-1, C-3, C-29
3		76.8s		
4		81.4s		
5		112.7s		
6		164.7s		
7		129.6s		
8	7.86 (s)	133.4d		C-1, C-6, C-10, C-11
9		121.0s		
10		147.5s		
11	2.26 (s)	15.6q		C-6, C-7, C-8
12		172.4s		
13		132.6s		
14	7.70 (d, 10.6)	129.9d	H-15	C-12, C-16, C-30
15	6.58 (t, 11.2)	125.3d	H-14, H-16	C-13, C-17
16	5.76 (t, 10.0)	140.8d	H-15, H-17	C-14, C-31
17	2.75 (t, 7.9)	40.0d	H-16, H-31	C-15, C-16, C-19
18	3.73 (d, 5.3)	83.9d	H-19	C-16, C-19, C-31, C-32
19	2.50 (m)	43.7d	H-18, H-20, H-32	C-17, C-18, C-20, C-32
20	3.95 (d, 9.2)	80.1d	H-19	C-18, C-21, C-22, C-33
21	2.00 (m)	35.1d	H-33	C-20, C-33
22	4.70 (d, 9.3)	70.1d	H-23	C-23, C-24, C-20, C-33
23	2.17 (m)	38.3d	H-22, H-34	C-22, C-34
24	4.24 (d, 10.3)	71.2d	H-25	C-3, C-22, C-23, C-26, C-34
25	2.87 (m)	29.8d	H-24, H-35	C-24, C-26, C-27
26	2.93 (d, 9.2)	64.0d		C-4, C-10, C-25, C-28, C-35
27		88.9s		
28		202.2s		
29	1.59 (s)	17.4q		C-2, C-3, C-4
30	2.21 (s)	14.4q		C-12, C-13, C-14
31	1.19 (d, 6.8)	22.4q	H-17	C-16, C-17, C-18
32	1.07 (d, 6.7)	16.9q	H-19	C-19, C-20, C-18
33	1.30 (d, 7.0)	11.3q	H-21	C-20, C-21, C-22
34	1.17 (d, 7.0)	9.5q	H-23	C-22, C-23, C-24
35	0.85 (d, 6.6)	16.1q	H-25	C-24, C-25, C-26
36	1.65 (s)	14.3q		C-26, C-27, C-28
NH	8.69 (d, 6.5)		H-2	

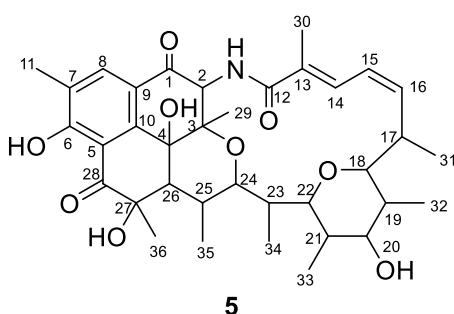


Table S6. NMR spectroscopy data (pyridine-*d*5) for compound 6.

Pos.	δ_H (mult., <i>J</i> Hz)	δ_C	$^1H\text{-}^1H$ COSY	HMBC
1		156.0s		
2		136.7s		
3		125.3s		
4		125.1s		
5		137.7s		
6		160.5s		
7		107.3s		
8		189.3s		
9		101.8s		
10		114.6s		
11	1.95 (s)	8.3q		C-6, C-7, C-8
12		171.9s		
13		134.0s		
14	8.03 (d, 11.5)	130.8d	H-15	C-12, C-16, C-33
15	6.56 (t, 11.2)	124.5d	H-14, H-16	C-13, C-14, C-17
16	5.79 (t, 9.6)	144.1d	H-15, H-17	C-14, C-17, C-18, C-34 C-18, C-34
17	3.70 (m)	39.9d	H-34	
18	3.70 (m)	82.8d		C-16, C-17, C-19, C-20, C-34, C-35
19	2.36 (m)	35.4d	H-35	C-17, C-20, C-35
20	4.79 (dd, 11.2, 20.6)	75.8d	H-21	C-18, C-19, C-21, C-22, C-35 C-22, C-36
21	3.70 (m)	54.8d	H-20, H-22	
22	4.79 (dd, 11.2, 20.6)	72.1d	H-21, H-23	C-20, C-23, C-24, C-36
23	2.73 (m)	38.9d	H-22, H-24, H-38	C-22, C-38
24	4.70 (br s)	78.0d		C-22, C-23, C-25, C-26, C-38, C-39
25		76.9s		
26	6.66 (s)	147.0d		C-25, C-27, C-28, C-40
27		131.6s		
28		170.8s		
29	2.68 (s)	14.6q		C-2, C-3, C-4
30		169.8s		
31	2.34 (s)	21.6q		C-30
32	5.28 (d, 4.6) 6.01 (d, 4.6)	90.5t		C-6, C-28
33	2.15 (s)	13.7q		C-12, C-13, C-14
34	1.05 (d, 5.4)	18.9q	H-17	C-16, C-17, C-18
35	1.46 (d, 7.1)	22.3q	H-19	C-18, C-19, C-20
36		174.3s		
37	3.63 (s)	51.9q		C-36
38	0.98 (d, 6.7)	12.1q	H-23	C-22, C-23, C-24
39	1.75 (s)	29.8q		C-25, C-26
40	2.75 (s)	15.6q		C-26, C-27, C-28
OH-1	14.80 (s)			
NH	10.85 (s)			C-12

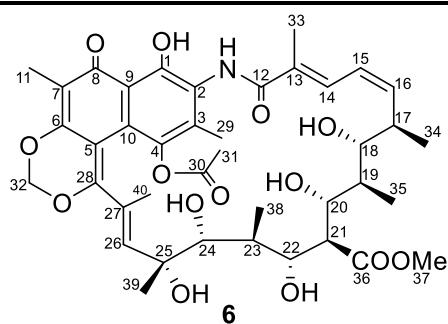


Table S7. NMR spectroscopy data (pyridine-*d*5) for compound 7.

Pos.	δ_H (mult., J Hz)	δ_C	1H - 1H COSY	HMBC
1		186.1s		
2		141.4s		
3		136.0s		
4		185.5s		
5		131.2s		
6		162.8s		
7		119.1s		
8		162.8s		
9		107.8s		
10		125.9s		
11	2.24 (s)	9.6q		C-6, C-7, C-8
12		171.1s		
13		133.4s		
14	7.86 (d, 11.2)	132.9d	H-15	C-12, C-16, C-30
15	6.46 (t, 11.1)	124.0d	H-14, H-16	C-13, C-17
16	5.76 (t, 10.1)	145.2d	H-15, H-17	C-14, C-18, C-31
17	3.48 (m)	40.2d	H-31	C-18, C-31
18	3.61 (m)	82.4d		C-16, C-32
19	2.28 (m)	35.5d		
20	4.83 (m)	75.6d	H-21	C-18, C-19, C-22, C-32, C-33
21	3.61 (m)	55.0d	H-20, H-22	C-19, C-20, C-33
22	4.83 (m)	72.0d	H-21	C-21, C-23, C-35
23	2.76 (m)	39.2d	H-24, H-35	C-22, C-25, C-35
24	4.83 (m)	77.7d	H-23	C-25, C-26, C-36
25		76.2s		
26	7.46 (s)	145.7d		C-25, C-28, C-37
27		138.9s		
28		199.5s		
29	2.35 (s)	14.7q		C-2, C-3, C-4
30	2.10 (s)	13.33q		C-12, C-13
31	0.97 (d, 6.4)	18.4q	H-17	C-16, C-17, C-18
32	1.43 (d, 7.0)	22.5q		C-18, C-19, C-20
33		174.2s		
34	3.42 (s)	51.5q		C-33
35	1.28 (d, 6.7)	12.4q	H-23	C-22, C-23, C-24
36	1.63 (s)	29.6q		C-24, C-25, C-26
37	2.71 (s)	13.35q		C-26, C-27, C-28
NH	10.97 (s)			C-3

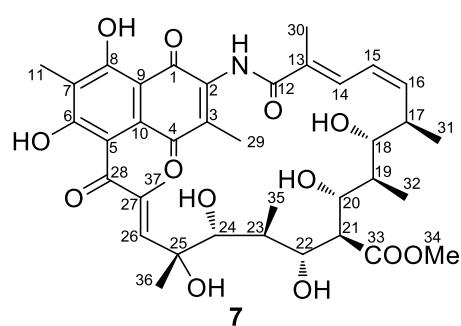


Table S8. NMR spectroscopy data (pyridine-d₅) for compound 8.

Pos.	δ_{H} (mult., J Hz)	δ_{C}	$^{\text{1}}\text{H}$ - $^{\text{1}}\text{H}$ COSY	HMBC
1		186.4s		
2		139.1s		
3		137.1s		
4		181.6s		
5		126.5s		
6		160.4s		
7		133.3s		
8	8.06 (s)	130.3d		C-1, C-4, C-6, C-11
9		125.3s		
10		136.0s		
11	2.43 (s)	17.7q		C-6, C-7, C-8
12		167.8s		
13		129.1s		
14	8.03 (d, 11.5)	136.0d	H-15	C-12, C-13, C-16, C-30
15	6.59 (t, 11.4)	124.7d	H-14, H-16	C-13, C-14, C-17
16	5.99 (t, 9.6)	144.9d	H-15, H-17	C-14, C-31
17	3.28 (m)	37.9d	H-31	C-16
18	3.72 (d, 7.5)	84.1d	H-19	C-16, C-19, C-31, C-32
19	2.62 (m)	41.2d	H-18, H-20, H-32	C-18, C-20, C-32
20	3.96 (d, 8.4)	82.5d		C-18, C-22, C-33
21	2.15 (m)	35.5d	H-33	
22	4.55 (d, 9.8)	71.0d	H-23	C-20, C-23, C-24, C-33
23	1.92 (m)	39.3d	H-22, H-34	C-22
24	4.22 (d, 8.6)	74.5d	H-25	C-22, C-25, C-26, C-34, C-35
25	2.88 (m)	37.8d	H-24, H-26, H-35	C-24, C-26, C-27, C-35
26	6.49 (d, 9.3)	150.3d		C-24, C-28, C-36
27		139.4s		
28		198.4s		
29	2.28 (s)	15.5q		C-2, C-3, C-4
30	2.12 (s)	13.1q		C-12, C-13, C-14
31	1.25 (d, 5.4)	22.0q	H-17	C-16, C-17, C-18
32	1.05 (m)	15.2q	H-19	C18, C-19, C-20
33	1.25 (d, 5.4)	11.4q	H-21	C-20, C-21, C-22
34	1.05 (m)	9.5q	H-23	C-22,C-23, C-24
35	0.73 (d, 6.9)	16.3q	H-25	C-24, C-25, C-26
36	2.08 (s)	12.6q		C-26, C-27, C-28

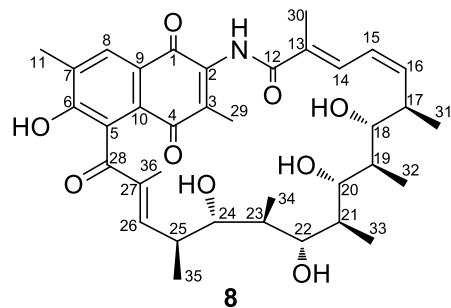


Figure S1. Key ^1H - ^1H COSY, HMBC and ROESY correlations for 1.

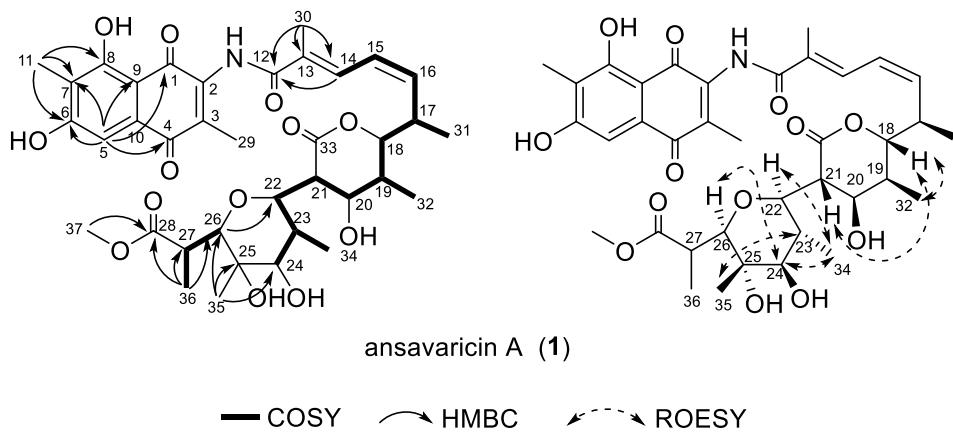


Figure S2. Key ^1H - ^1H COSY, HMBC and ROESY correlations for 2.

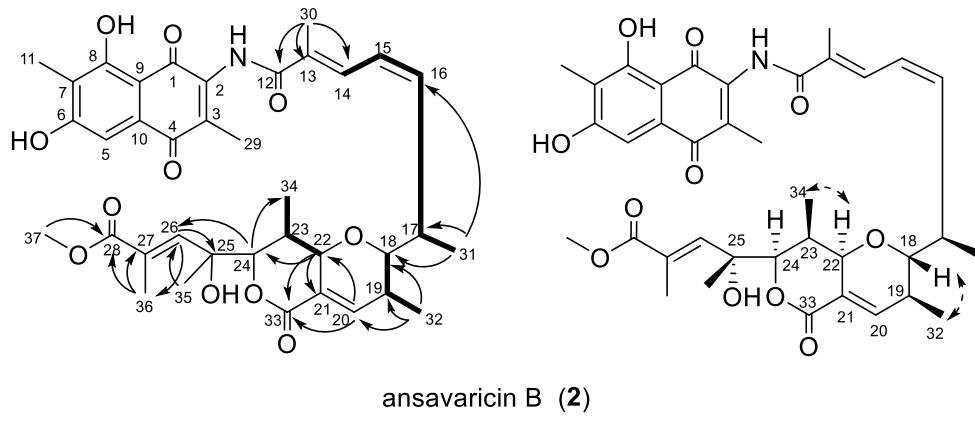


Figure S3. Key ^1H - ^1H COSY, HMBC and ROESY correlations for 3.

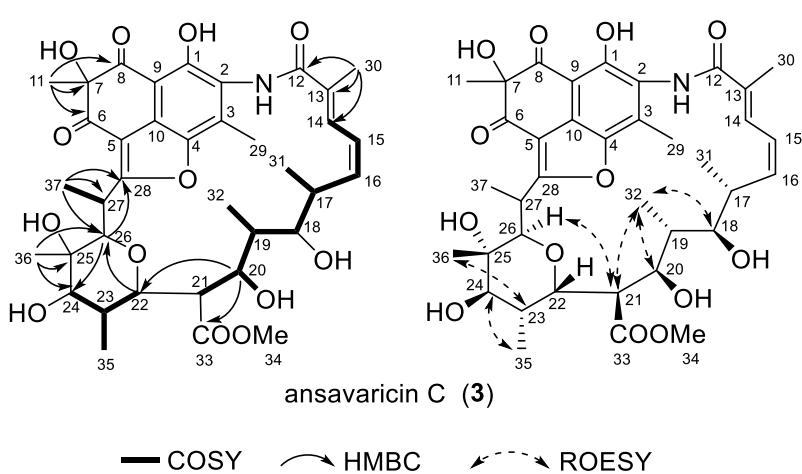


Figure S4. Key ^1H - ^1H COSY, HMBC and ROESY correlations for 4.

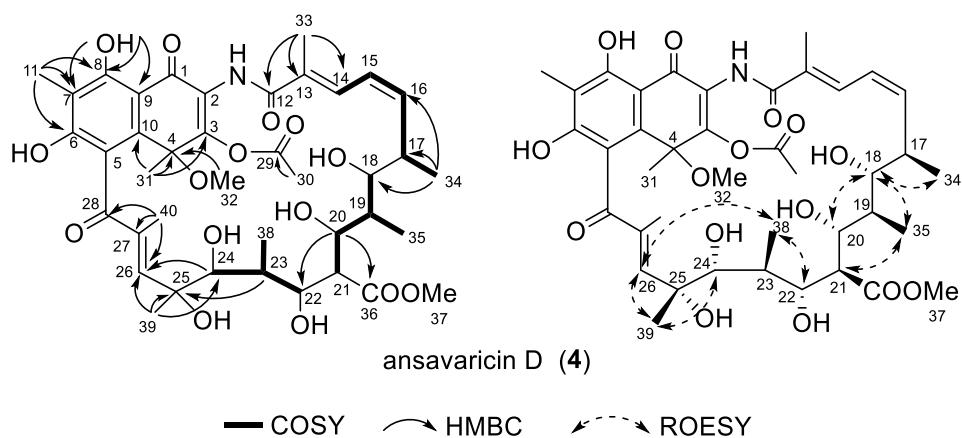


Figure S5. Key ^1H - ^1H COSY, HMBC and ROESY correlations for 5.

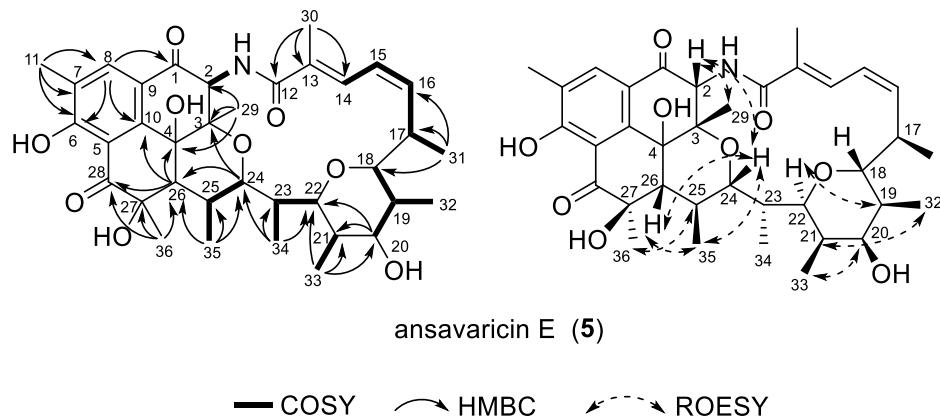


Figure S6. Key ^1H - ^1H COSY and HMBC correlations for 6.

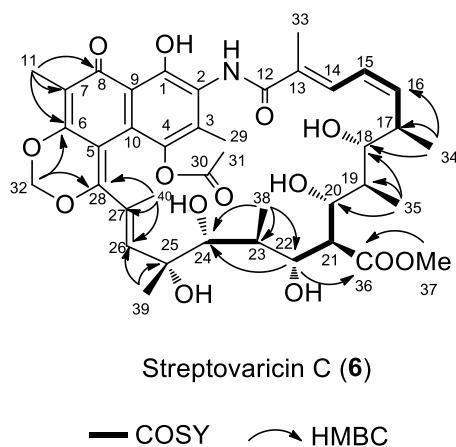


Figure S7. Key ^1H - ^1H COSY and HMBC correlations for 7.

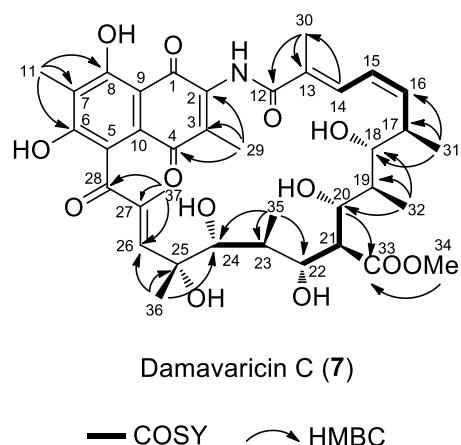


Figure S8. Key ^1H - ^1H COSY and HMBC correlations for **8**.

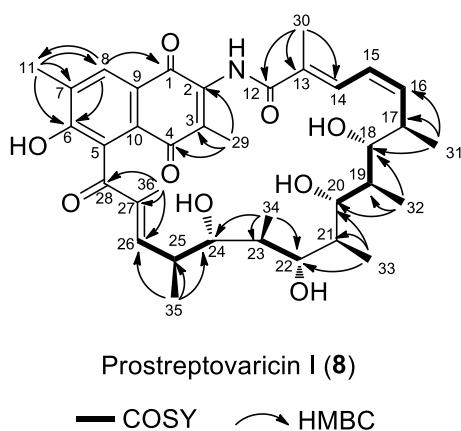


Figure S9. ^1H NMR (600 MHz, pyridine-*d*5) spectrum for compound 1

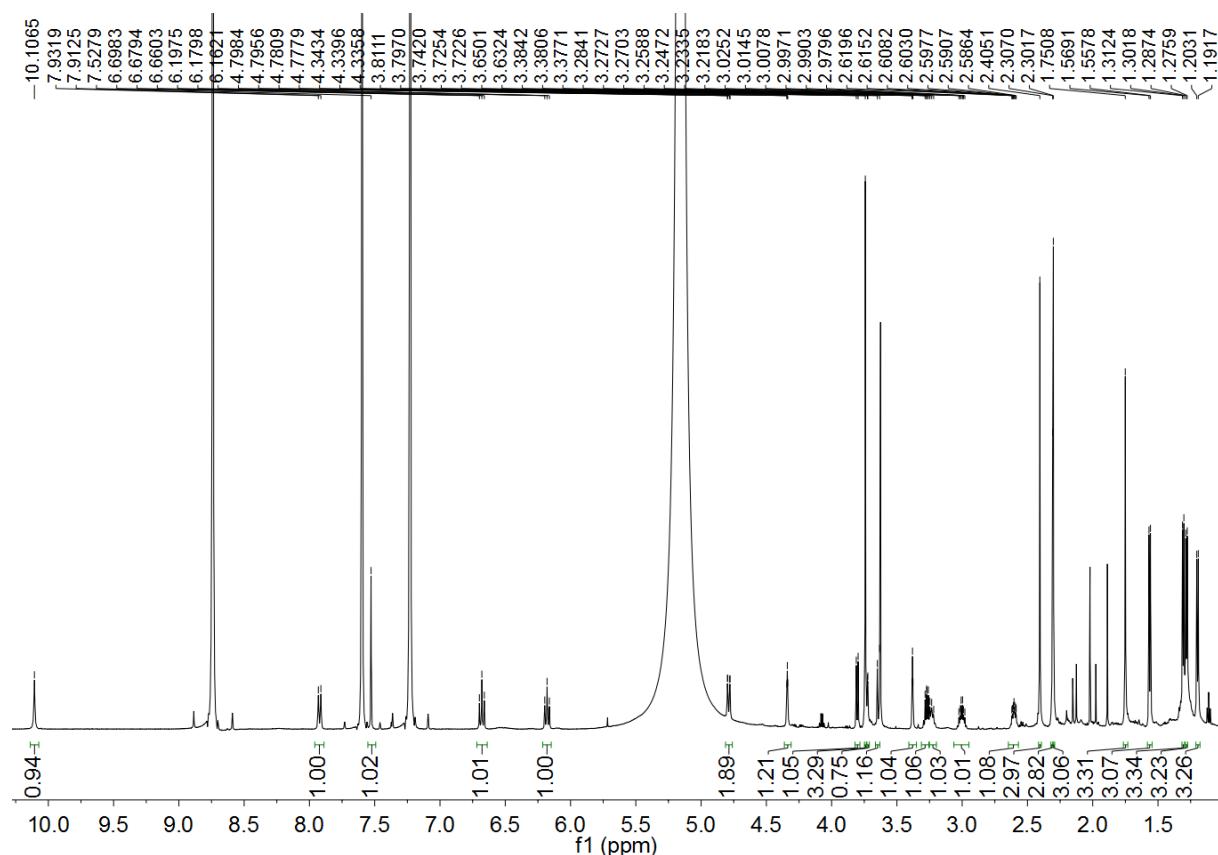


Figure S10. ^{13}C NMR (151 MHz, pyridine-*d*5) spectrum for compound 1

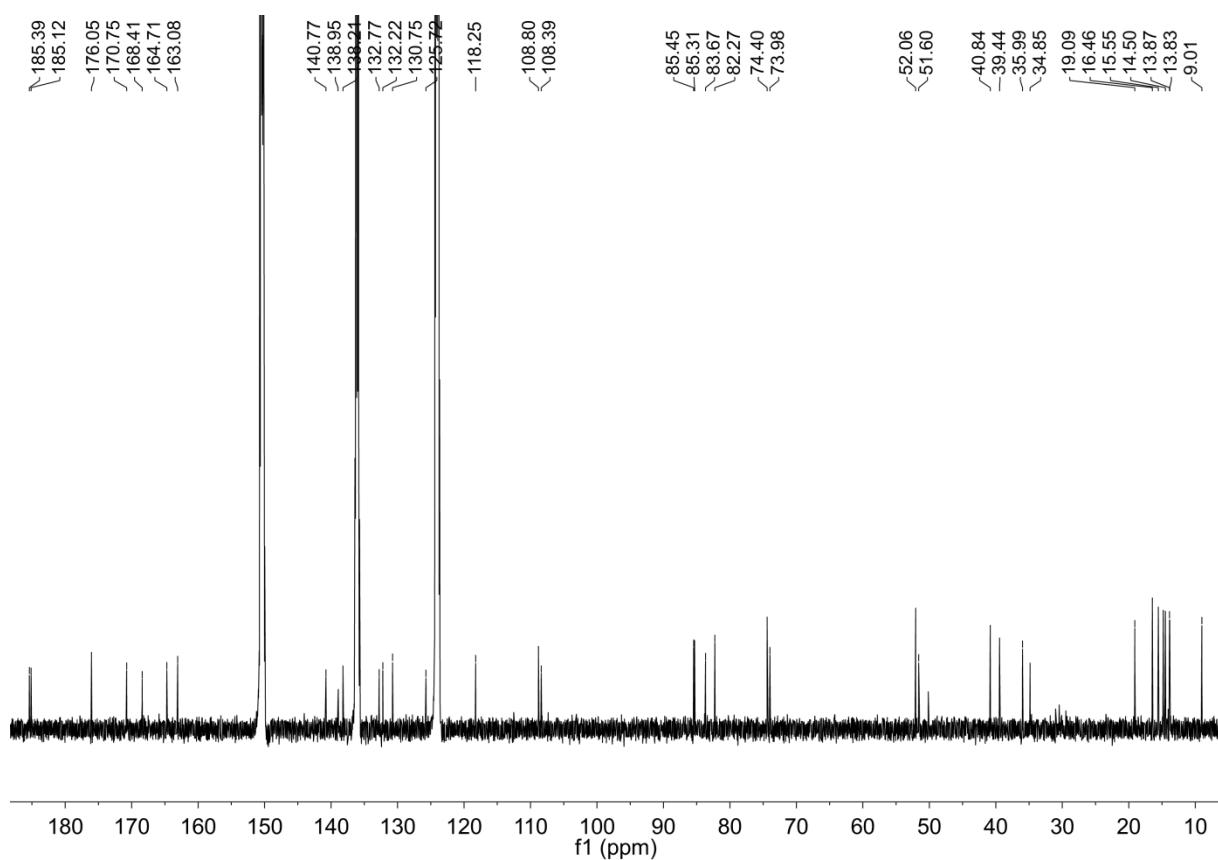


Figure S11. ^1H - ^1H COSY spectrum for compound 1

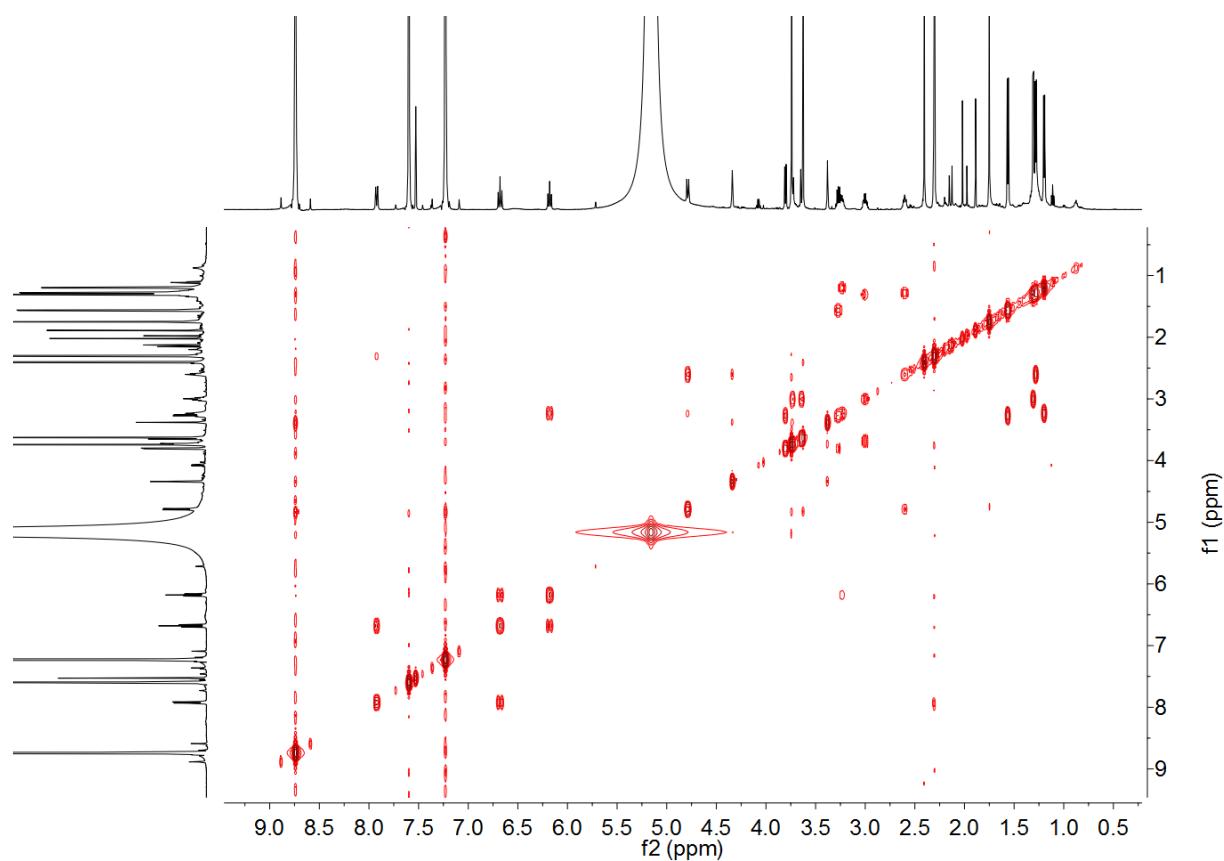


Figure S12. HSQC spectrum for compound 1

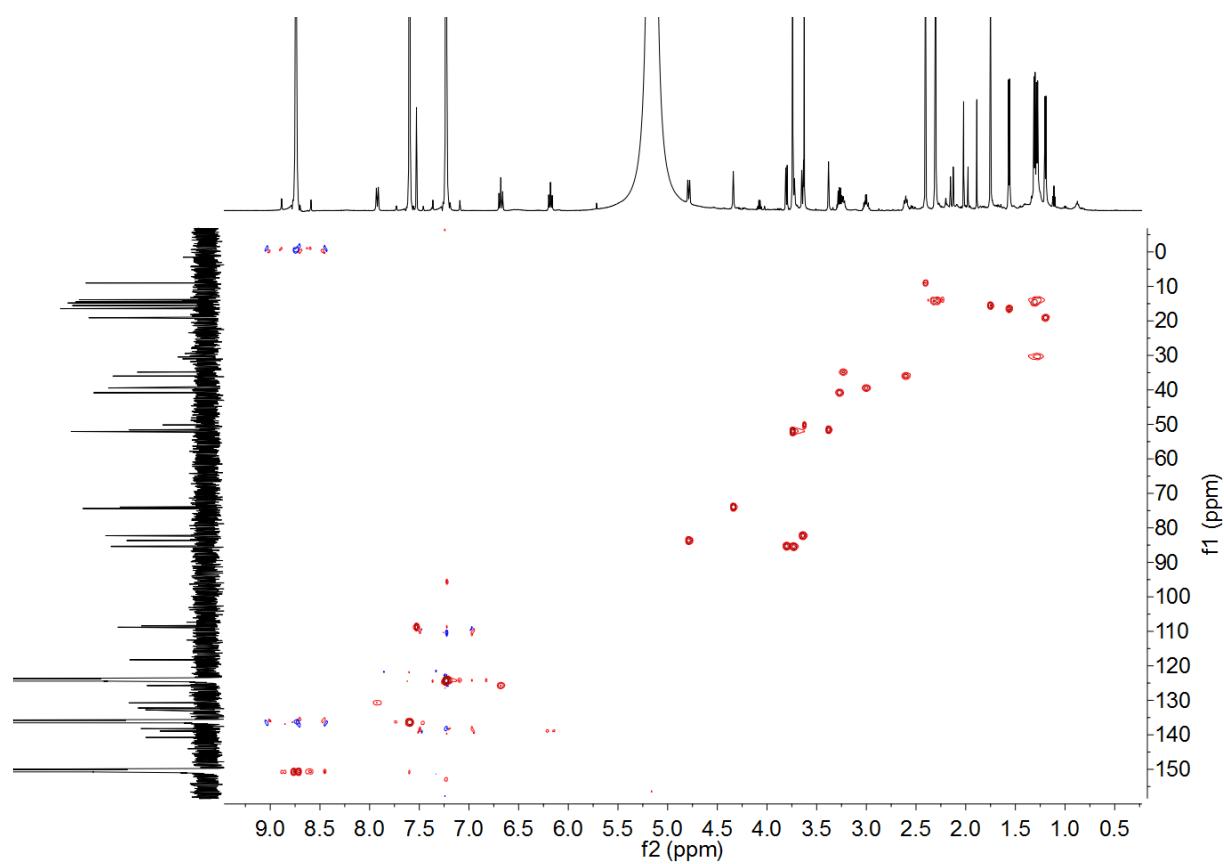


Figure S13. HMBC spectrum for compound 1

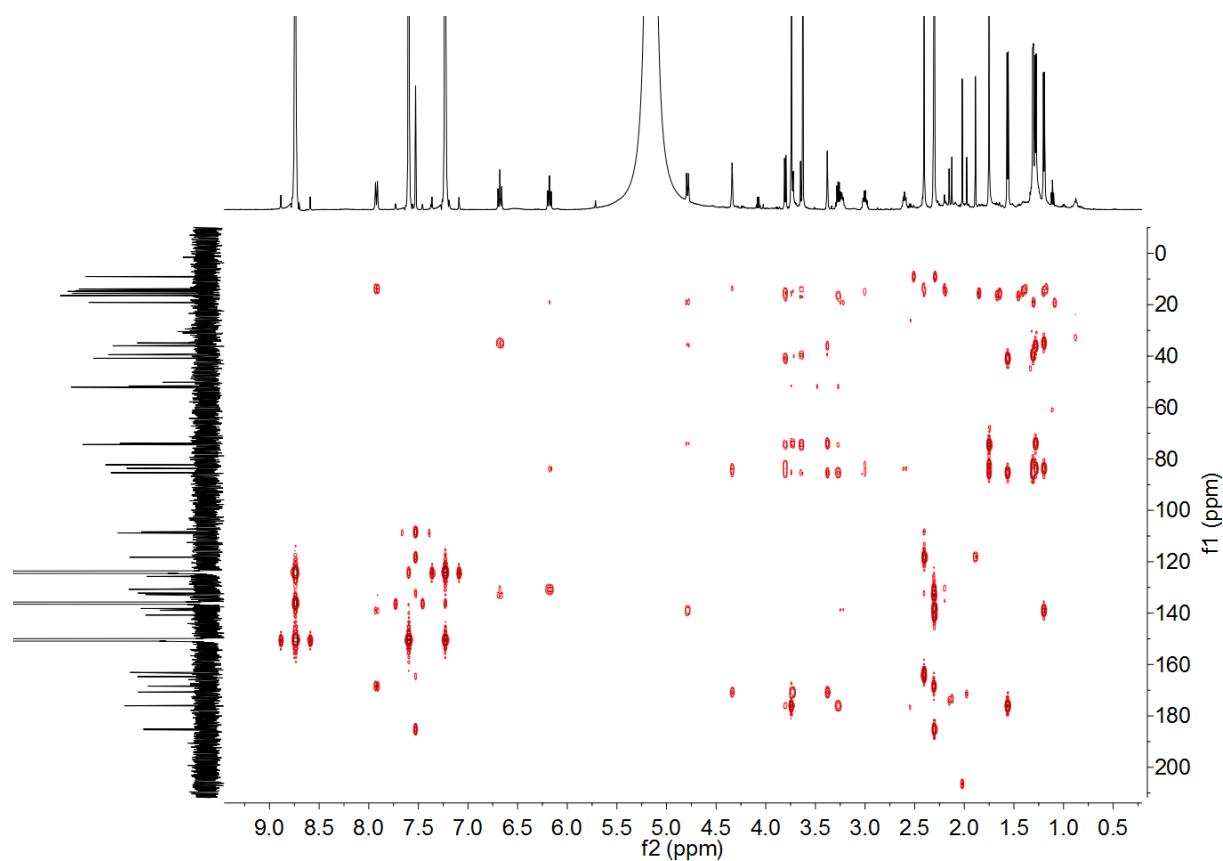


Figure S14. ROESY spectrum for compound 1

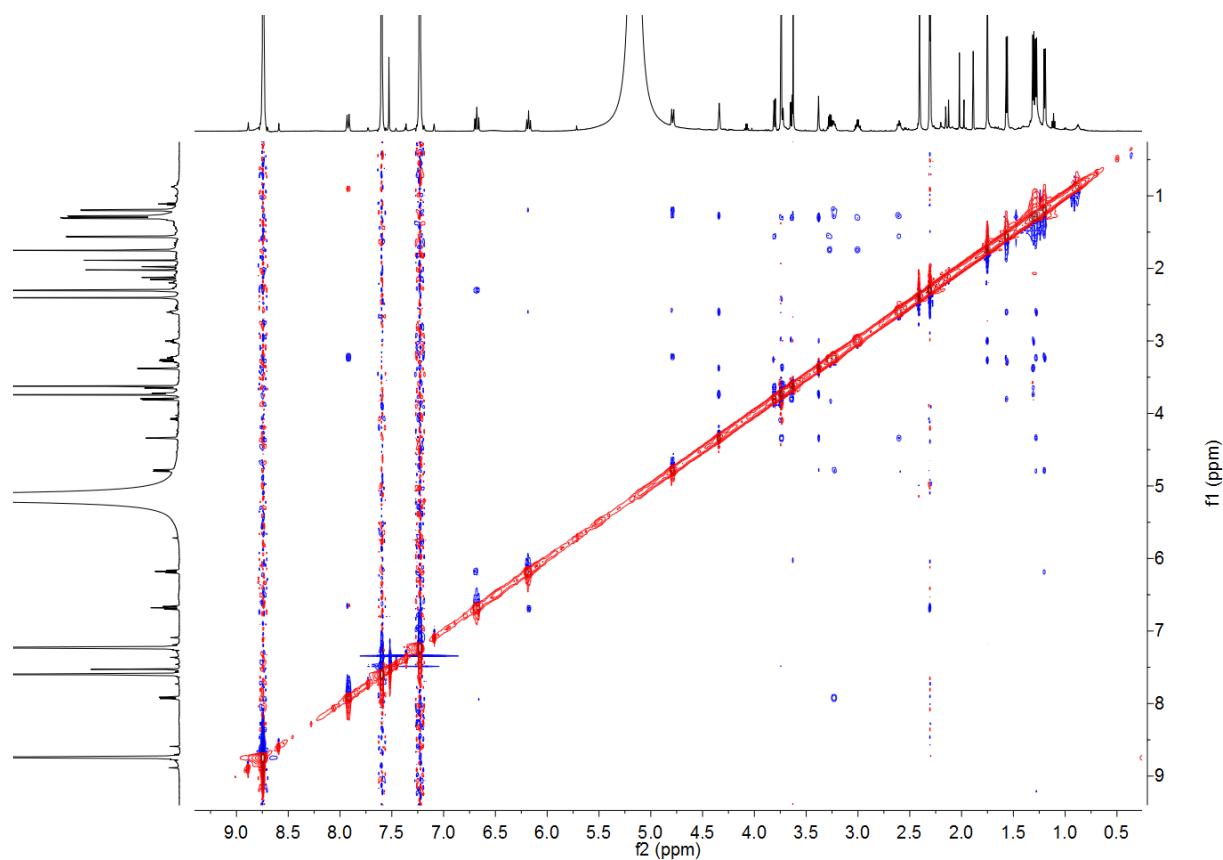


Figure S15. ^1H NMR (600 MHz, pyridine-*d*5) spectrum for compound 2

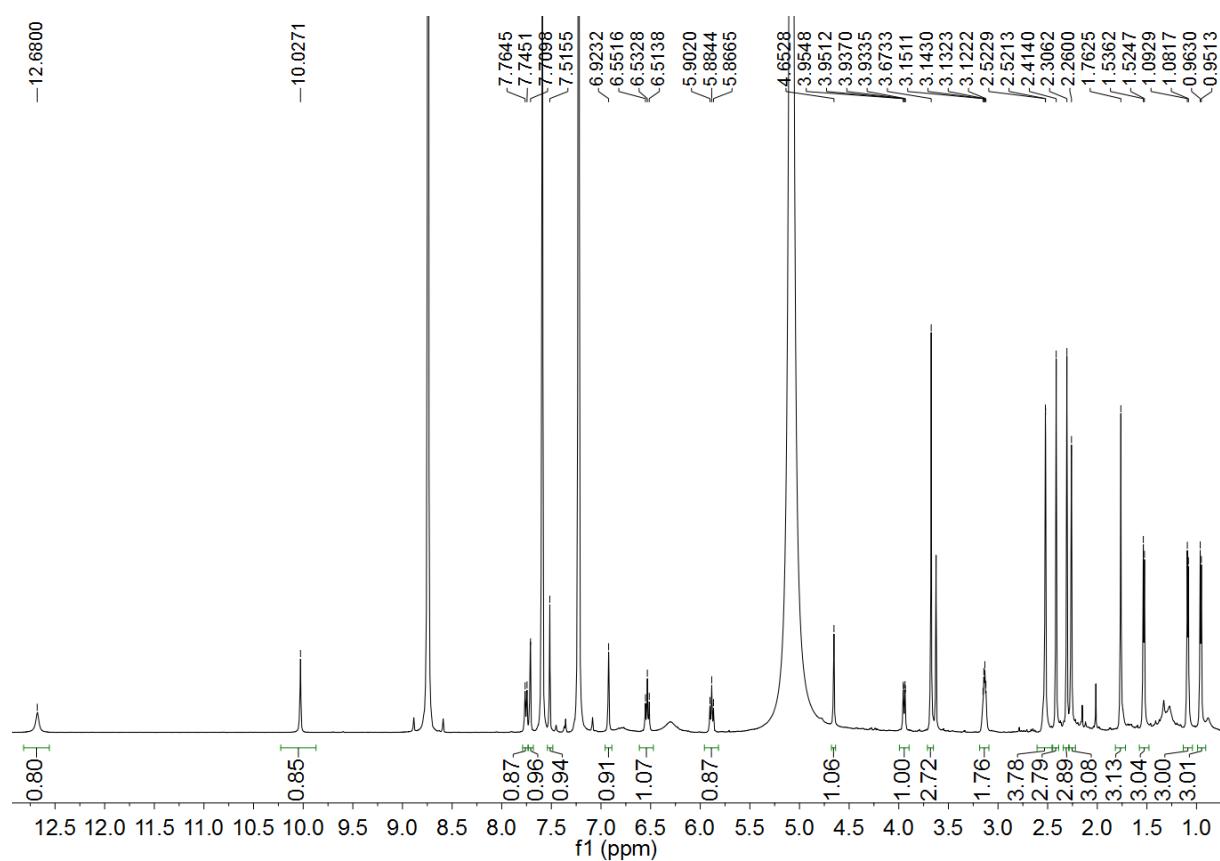


Figure S16. ^{13}C NMR (151 MHz, pyridine-*d*5) spectrum for compound 2

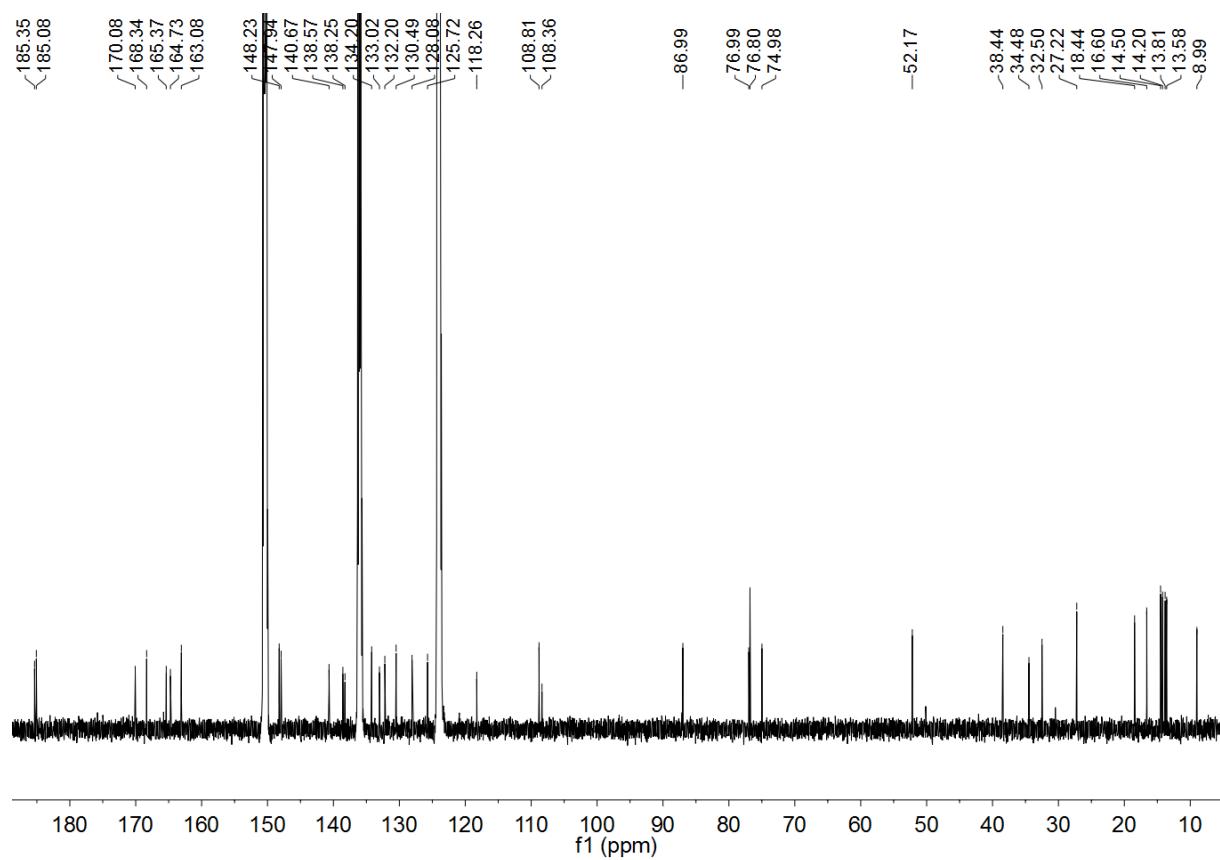


Figure S17. ^1H - ^1H COSY spectrum for compound 2

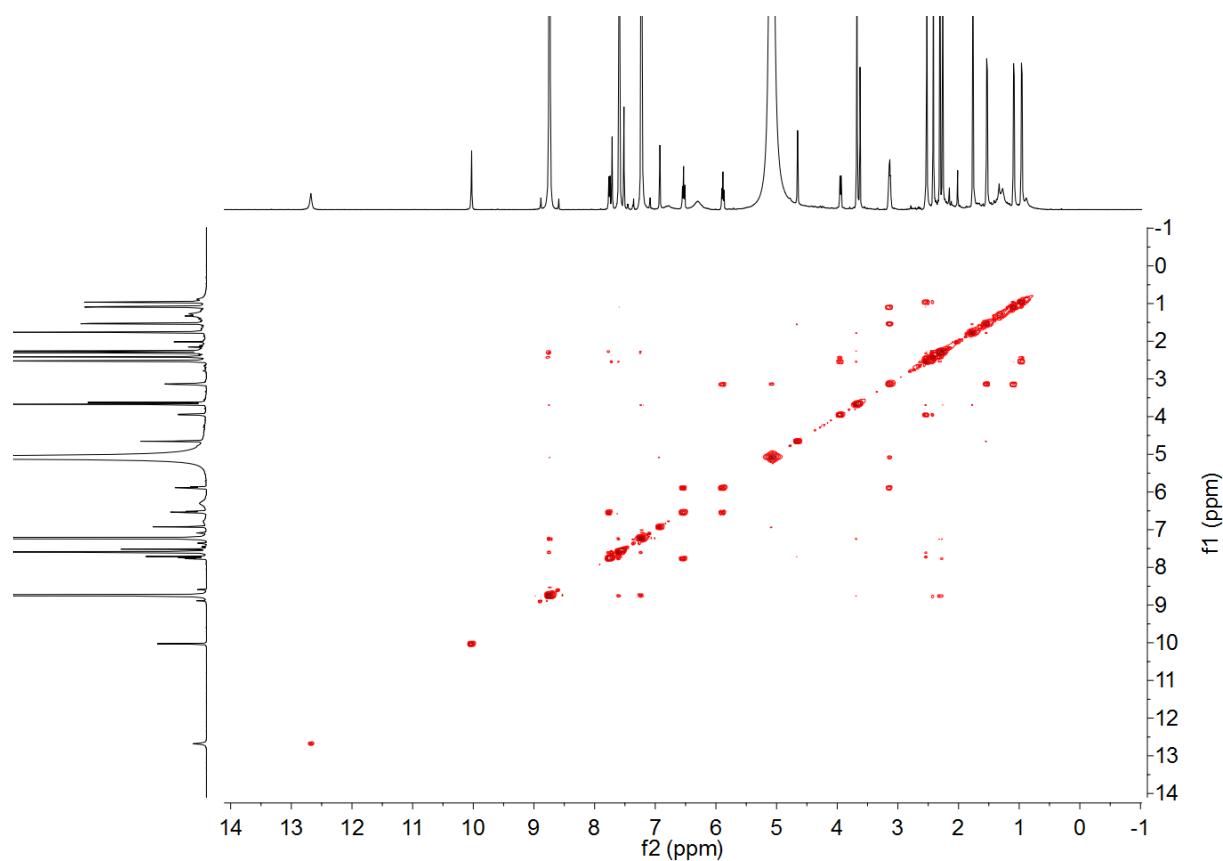


Figure S18. HSQC spectrum for compound 2

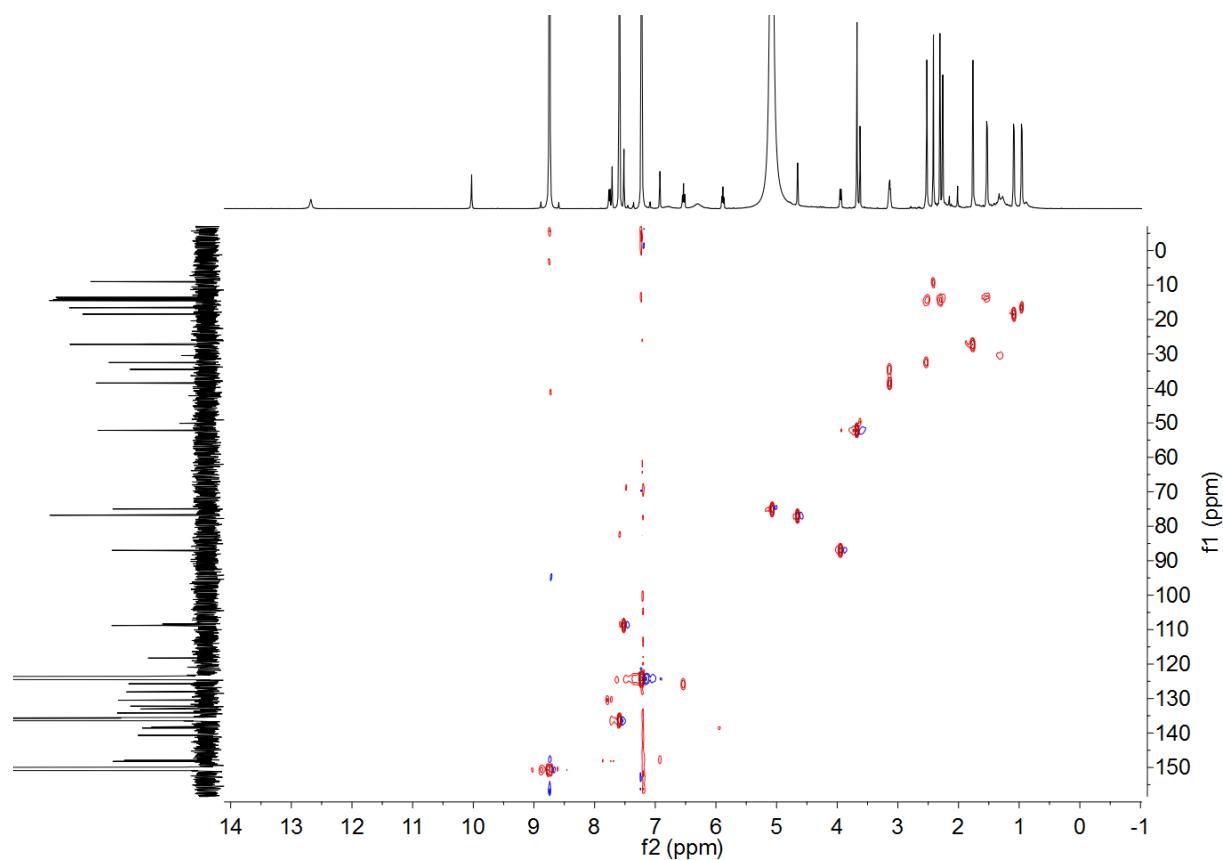


Figure S19. HMBC spectrum for compound 2

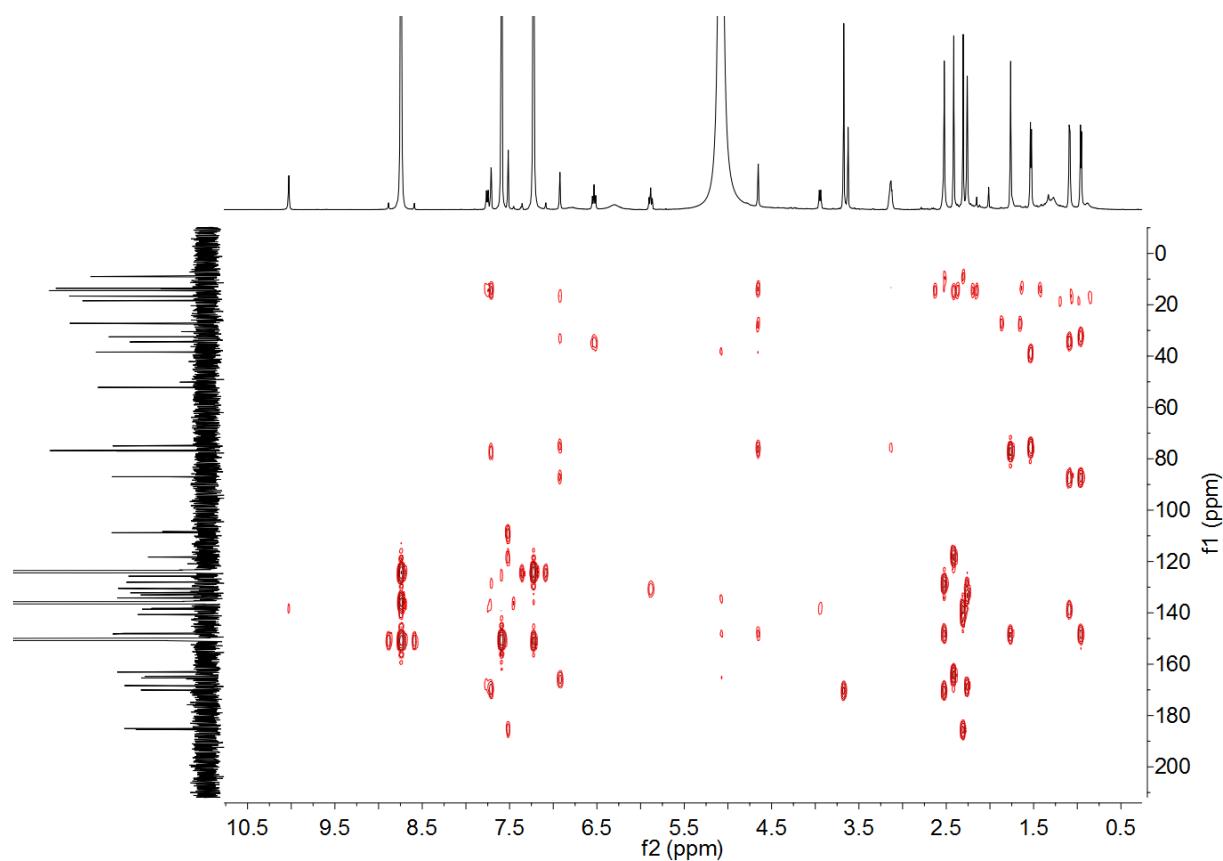


Figure S20. ROESY spectrum for compound 2

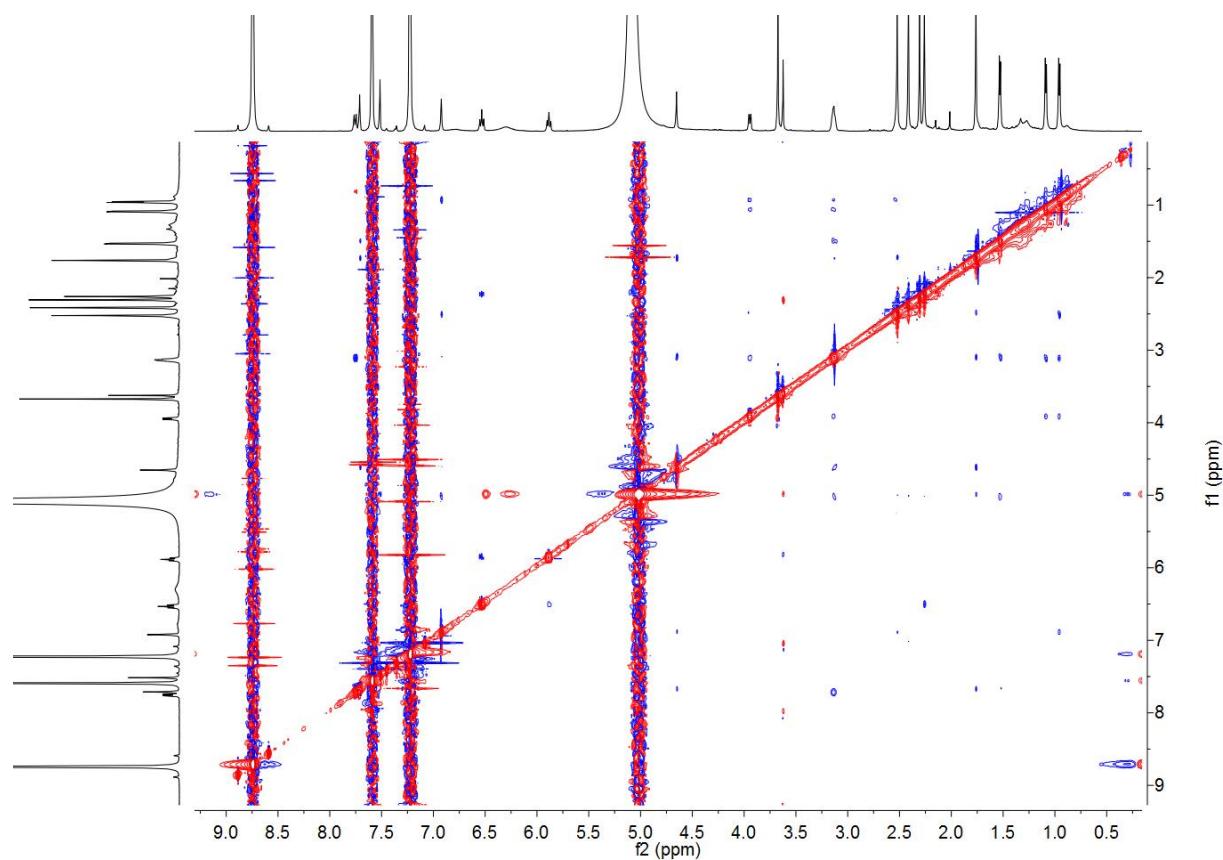


Figure S21. ^1H NMR (600 MHz, pyridine-*d*5) spectrum for compound 3

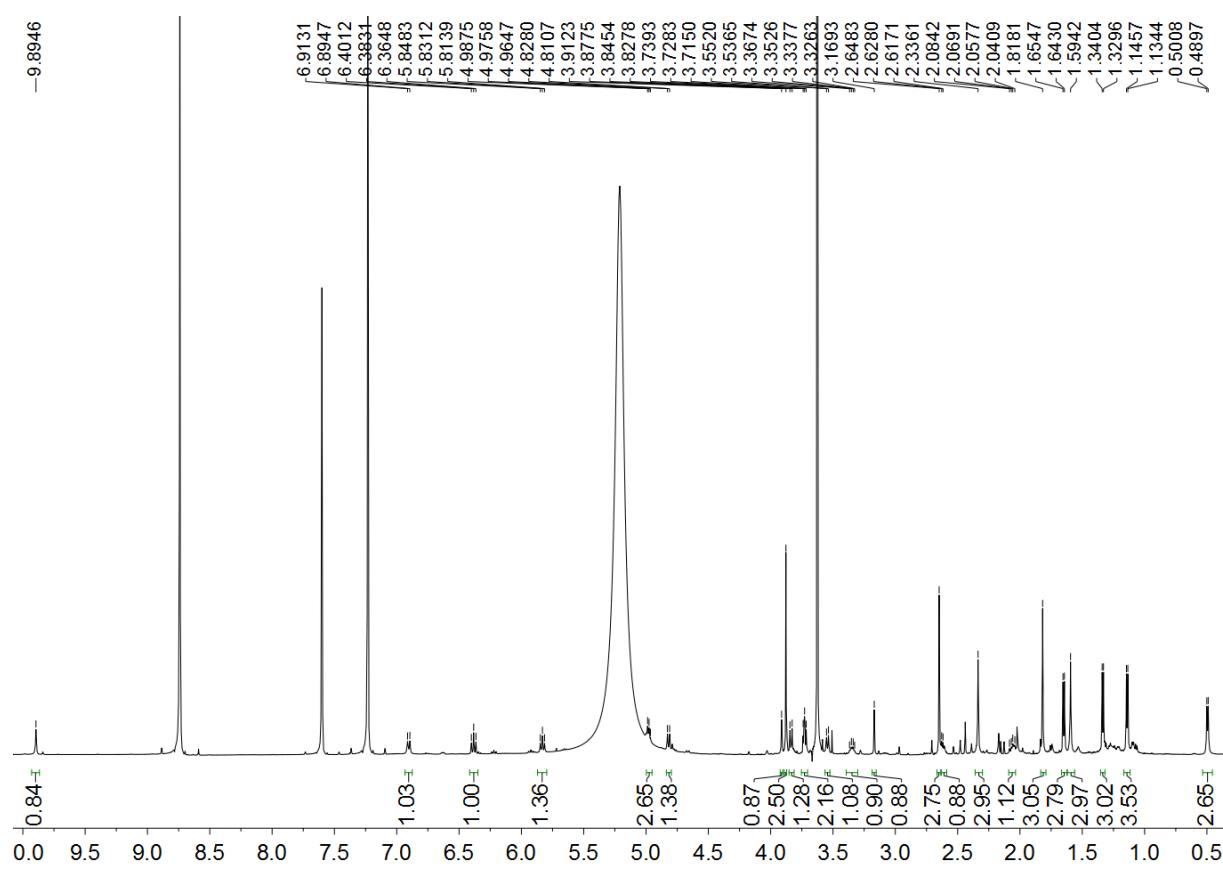


Figure S22. ^{13}C NMR (151 MHz, pyridine-*d*5) spectrum for compound 3

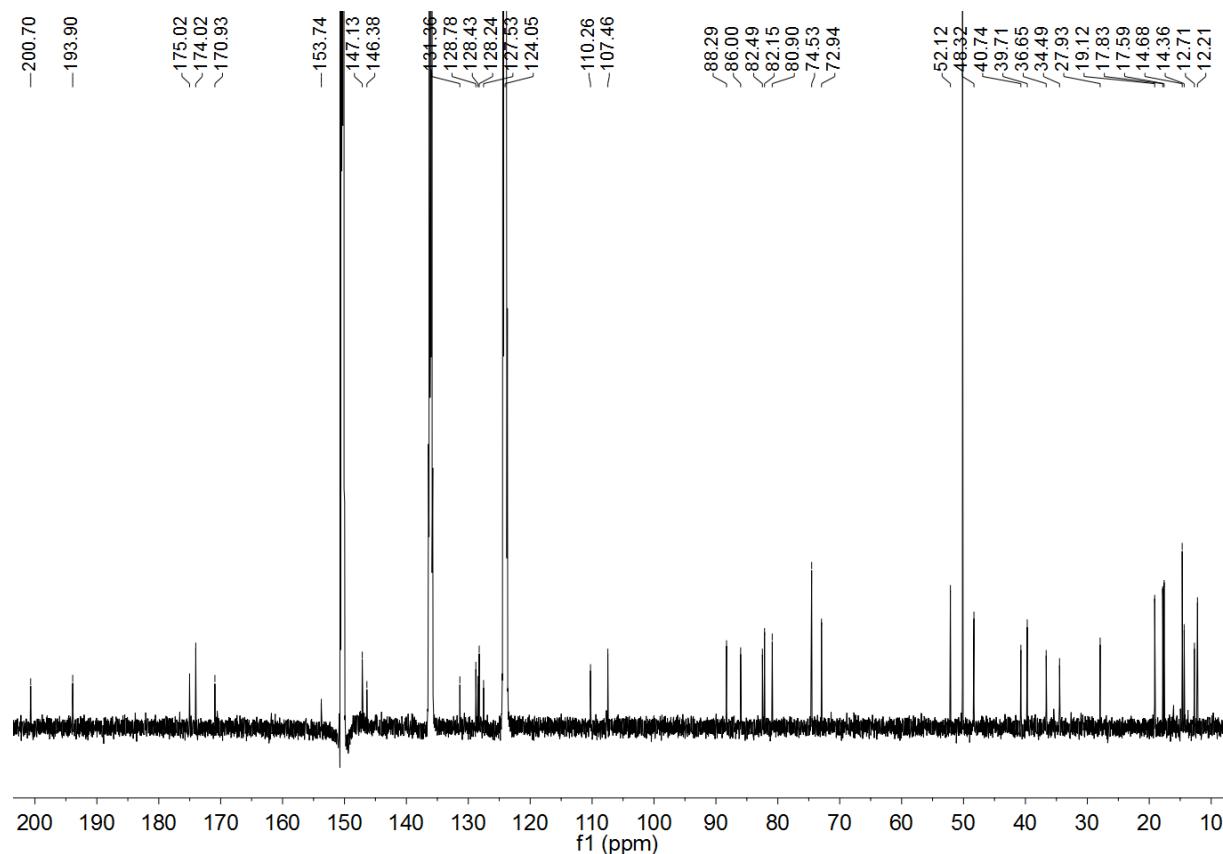


Figure S23. ^1H - ^1H COSY spectrum for compound 3

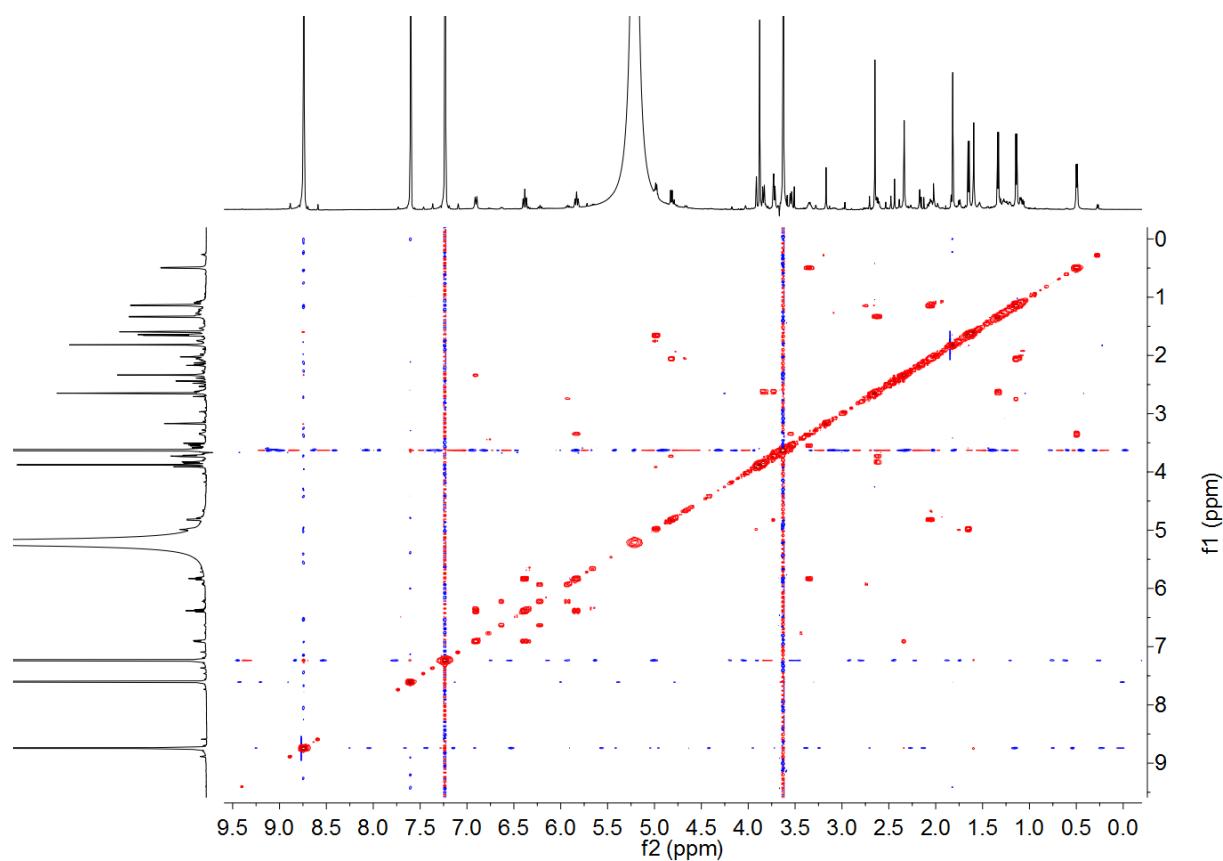


Figure S24. HSQC spectrum for compound 3

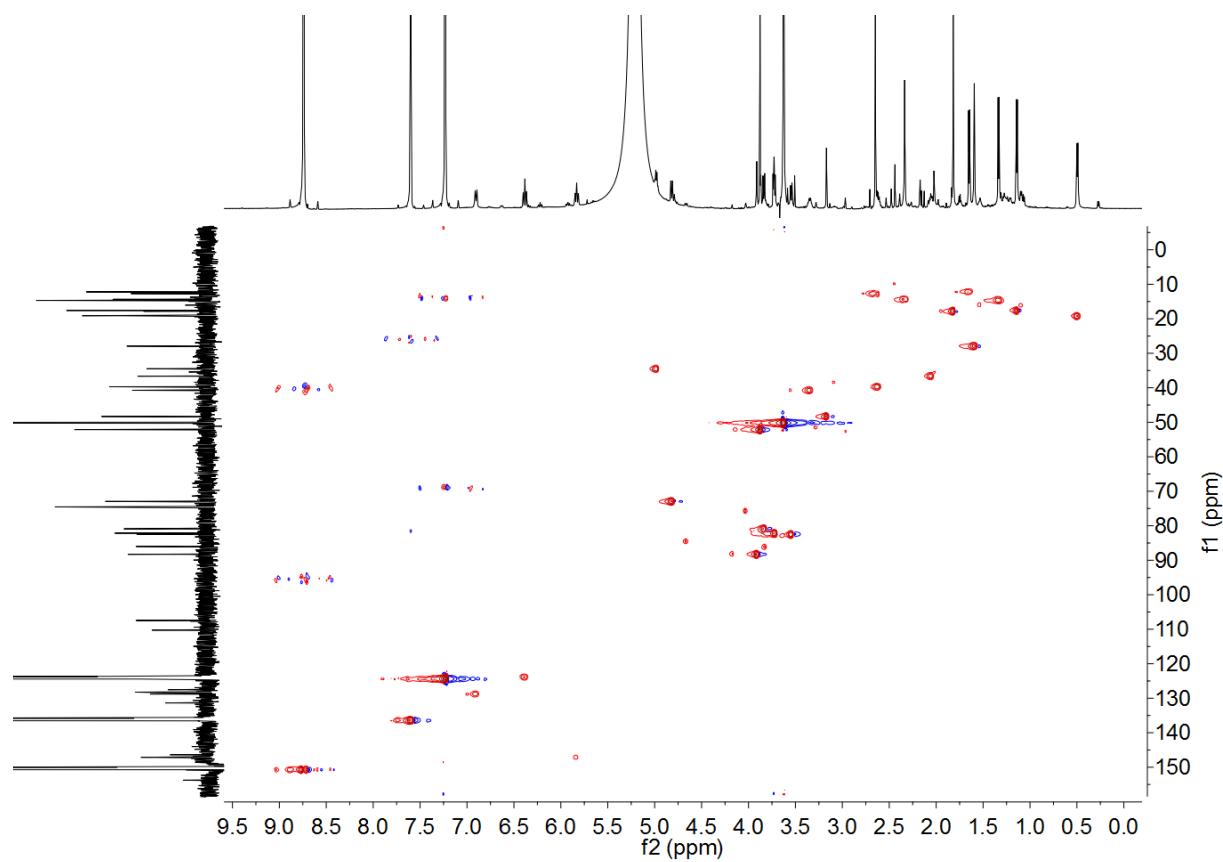


Figure S25. HMBC spectrum for compound 3

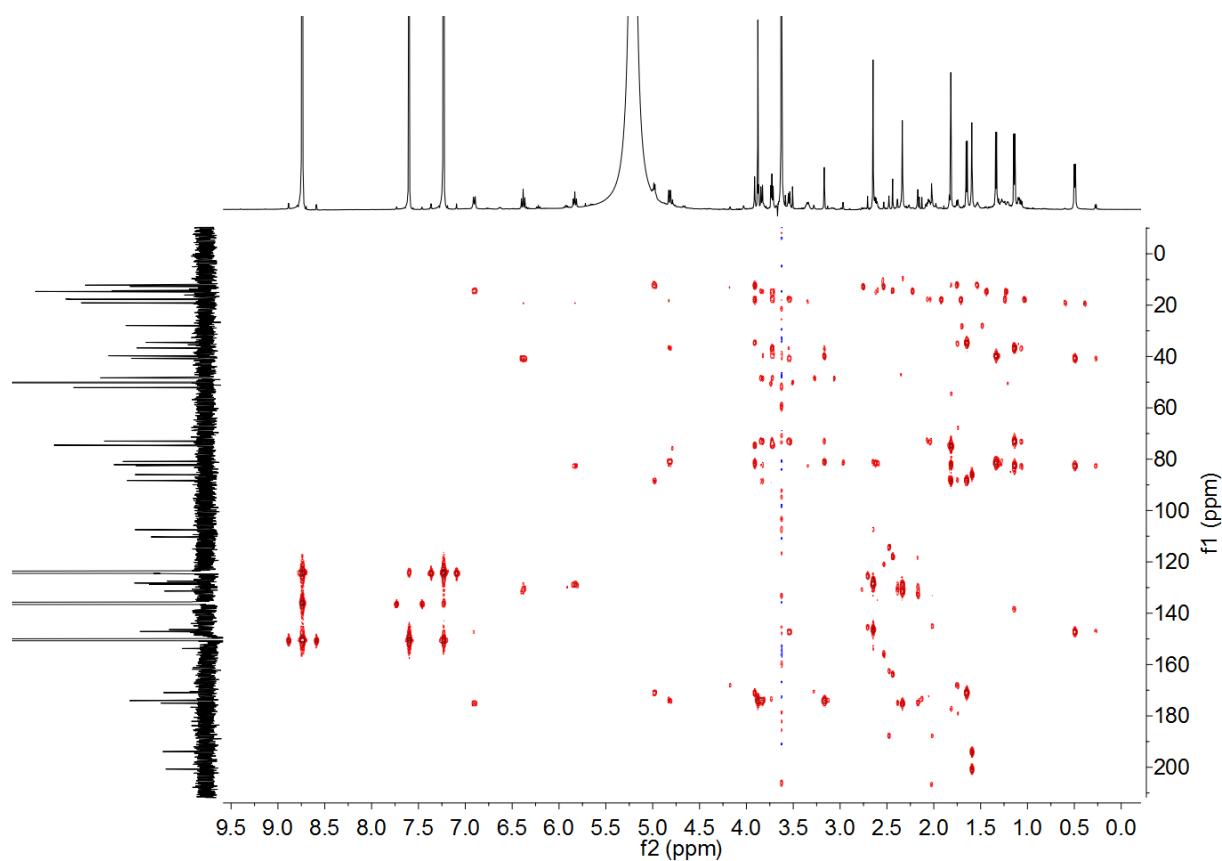


Figure S26. ROESY (acetone-*d*₆) spectrum for compound 3

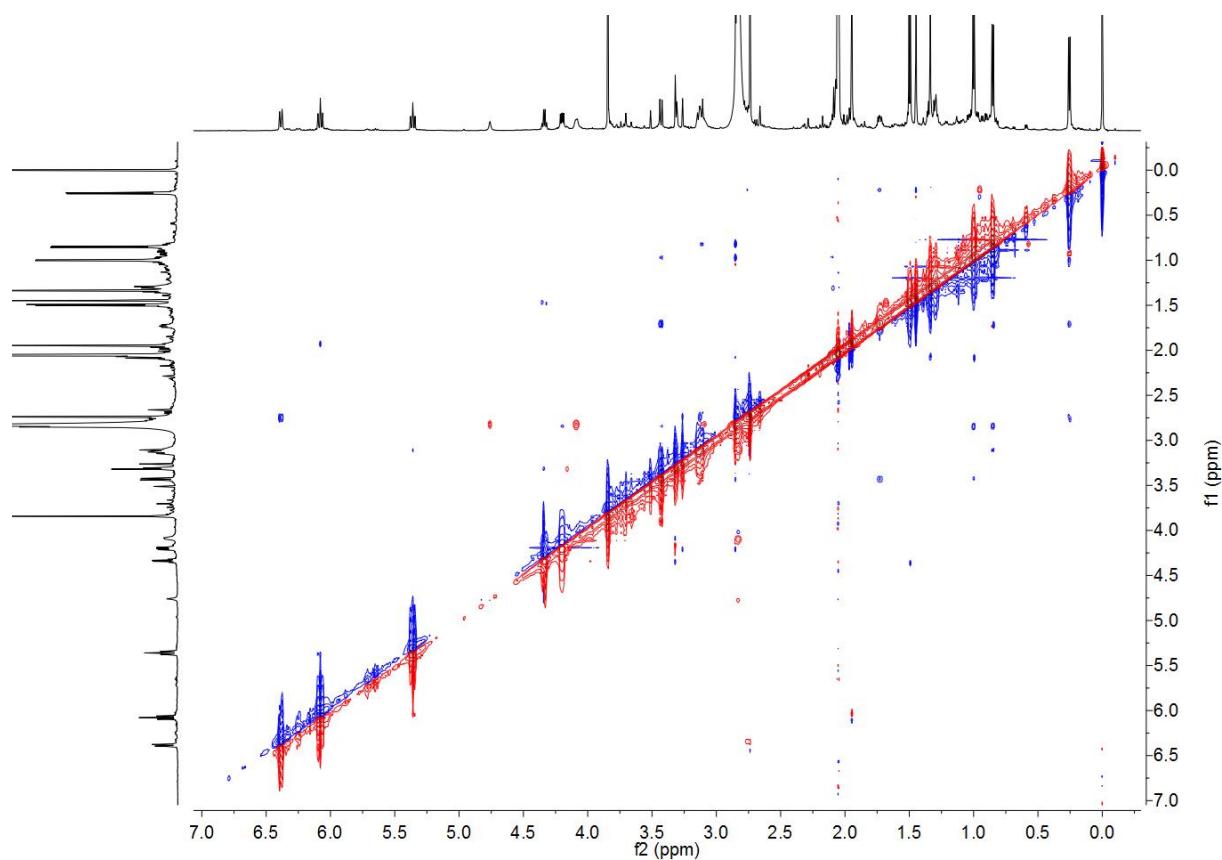


Figure S27. ^1H NMR (400 MHz, pyridine-*d*5) spectrum for compound 4

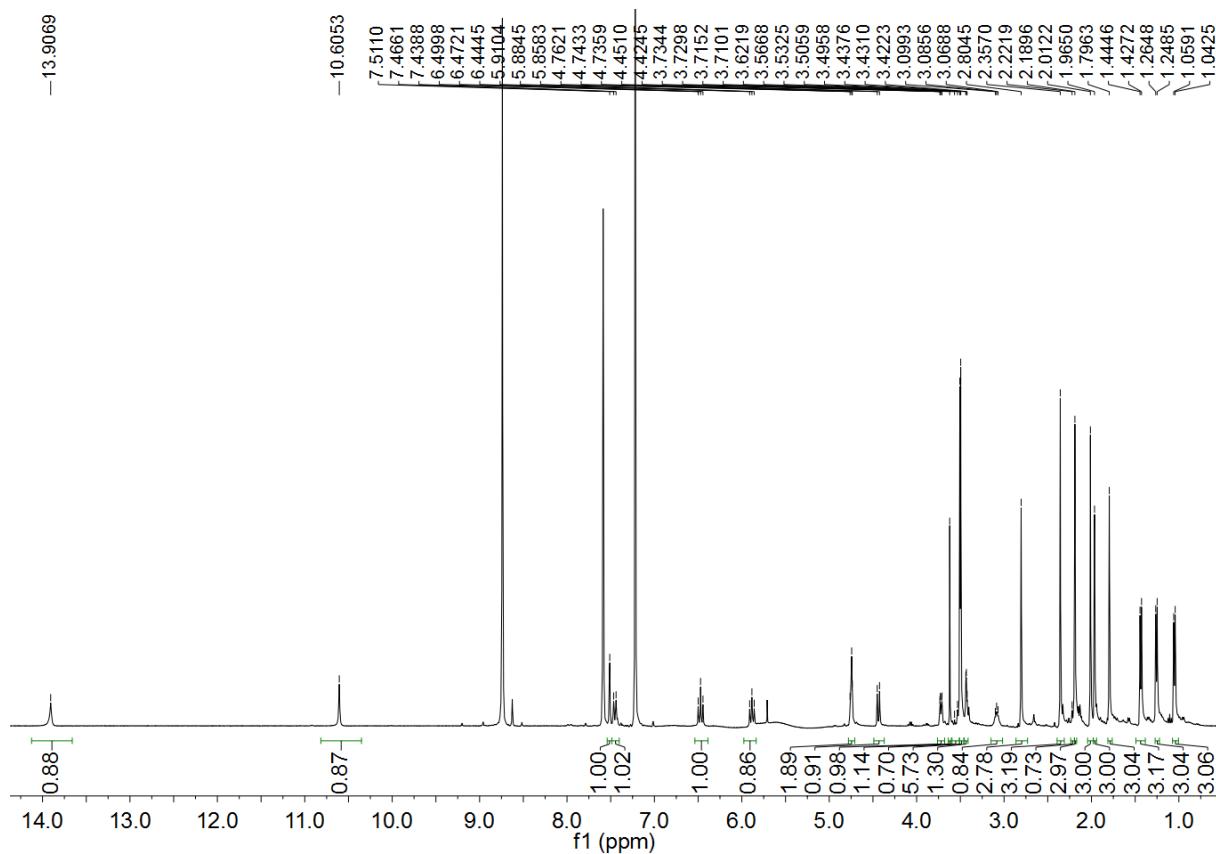


Figure S28. ^{13}C NMR (101 MHz, pyridine-*d*5) spectrum for compound 4

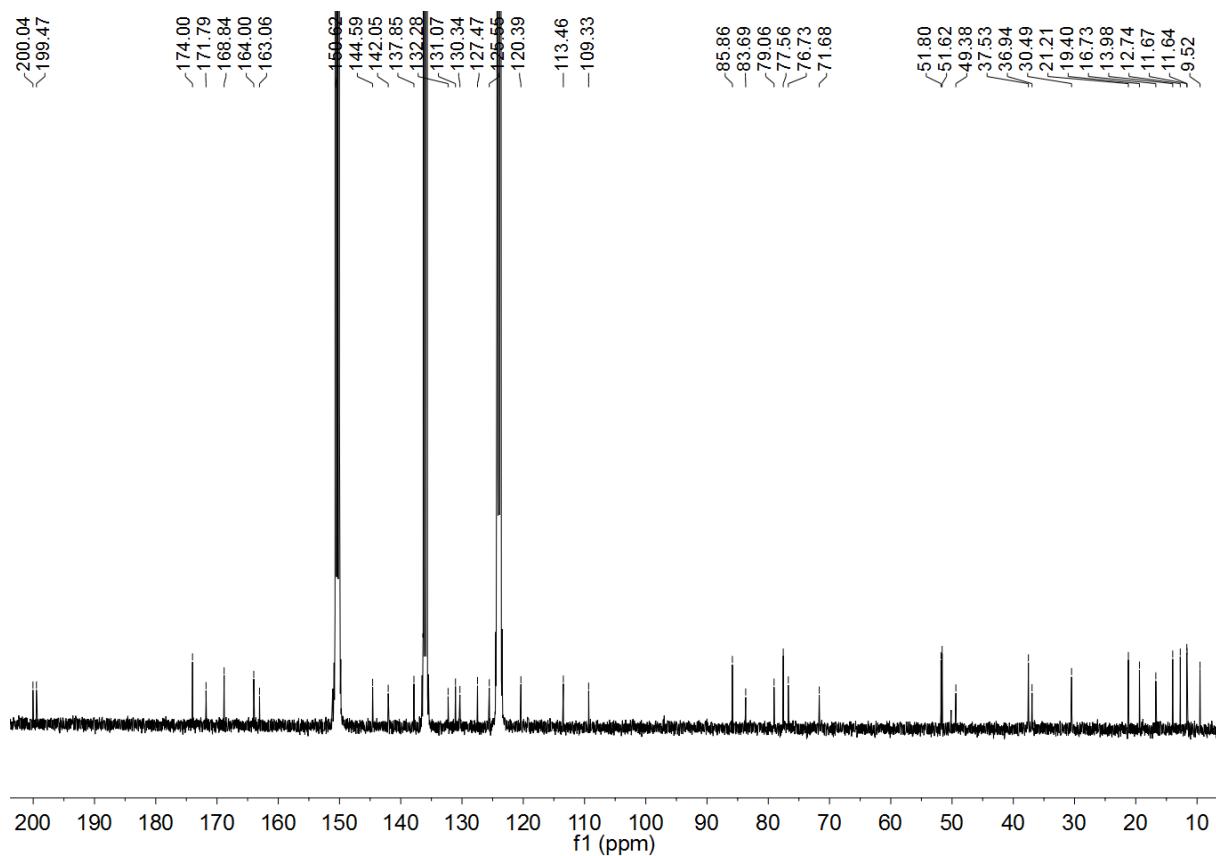


Figure S29. ^1H - ^1H COSY spectrum for compound 4

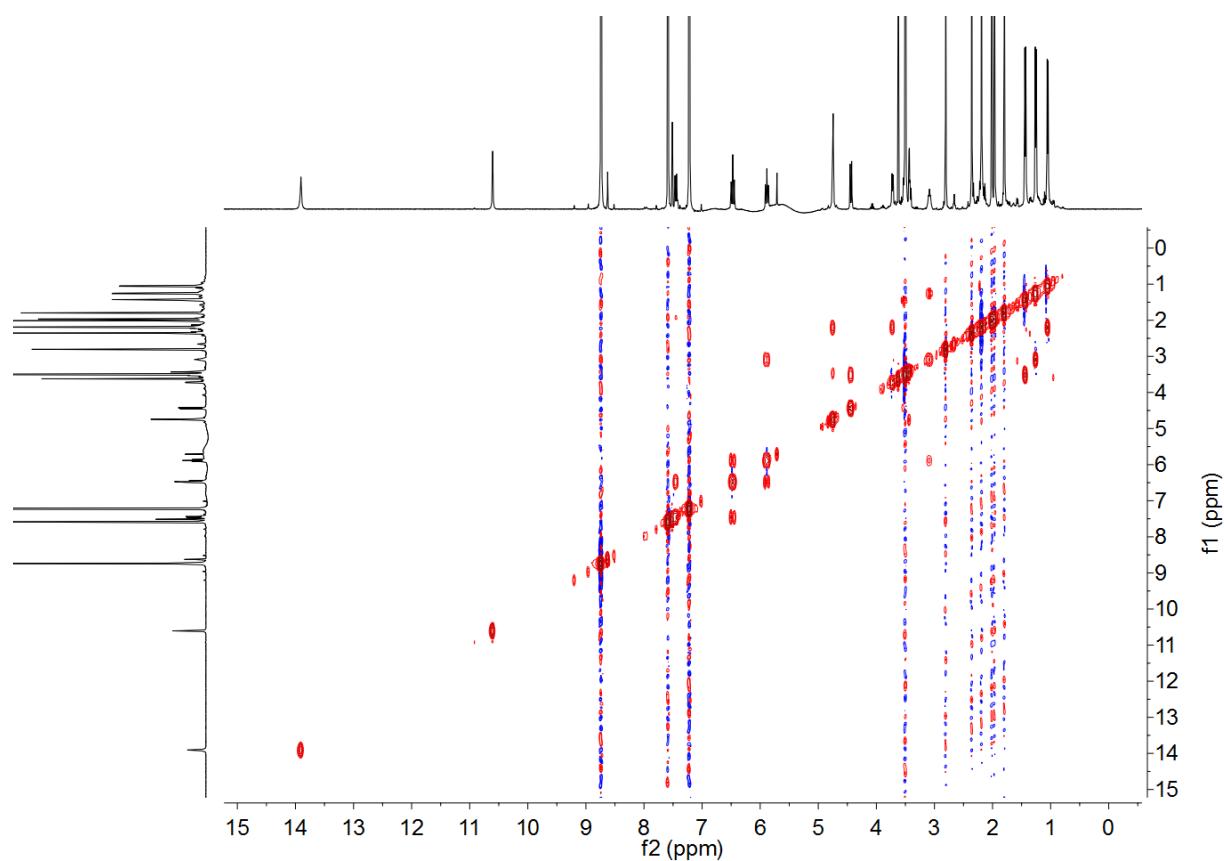


Figure S30. HSQC spectrum for compound 4

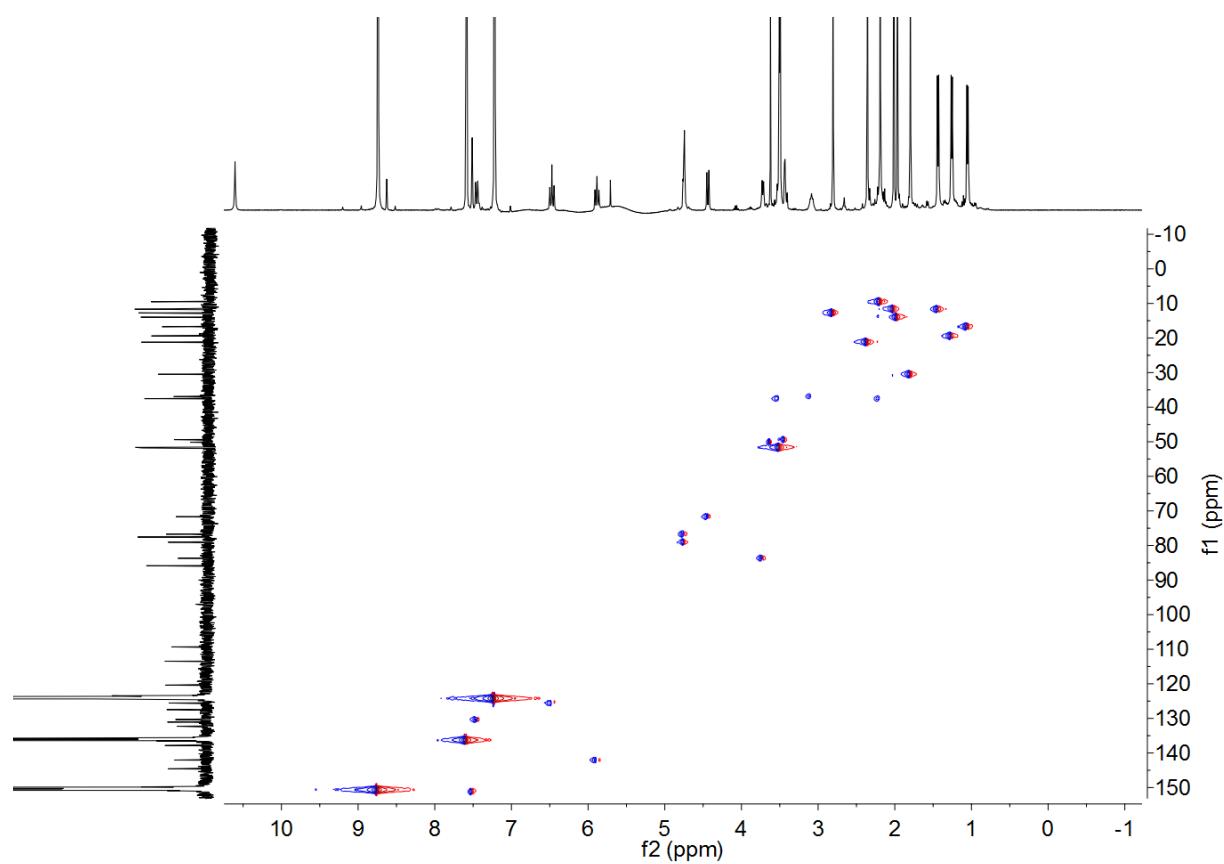


Figure S31. HMBC spectrum for compound 4

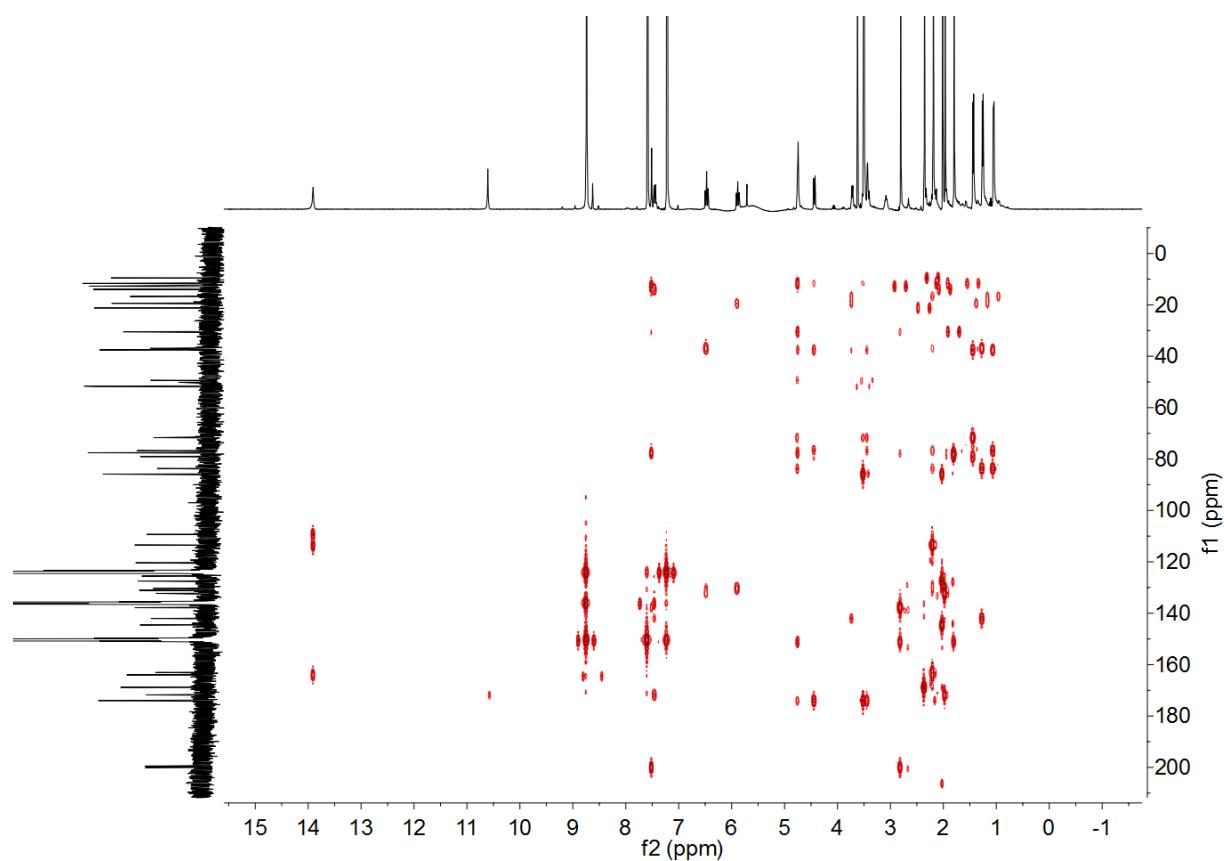


Figure S32. ROESY spectrum for compound 4

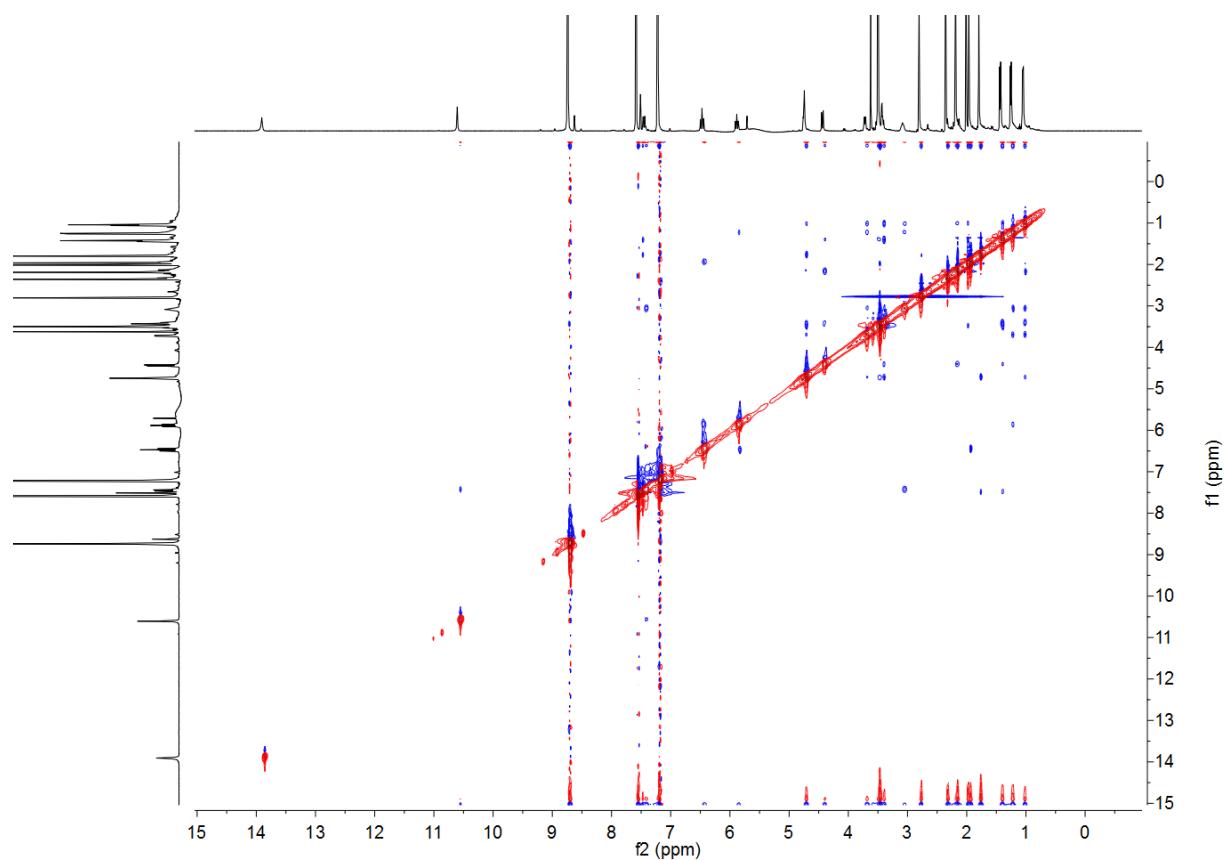


Figure S33. ^1H NMR (600 MHz, pyridine-*d*5) spectrum for compound 5

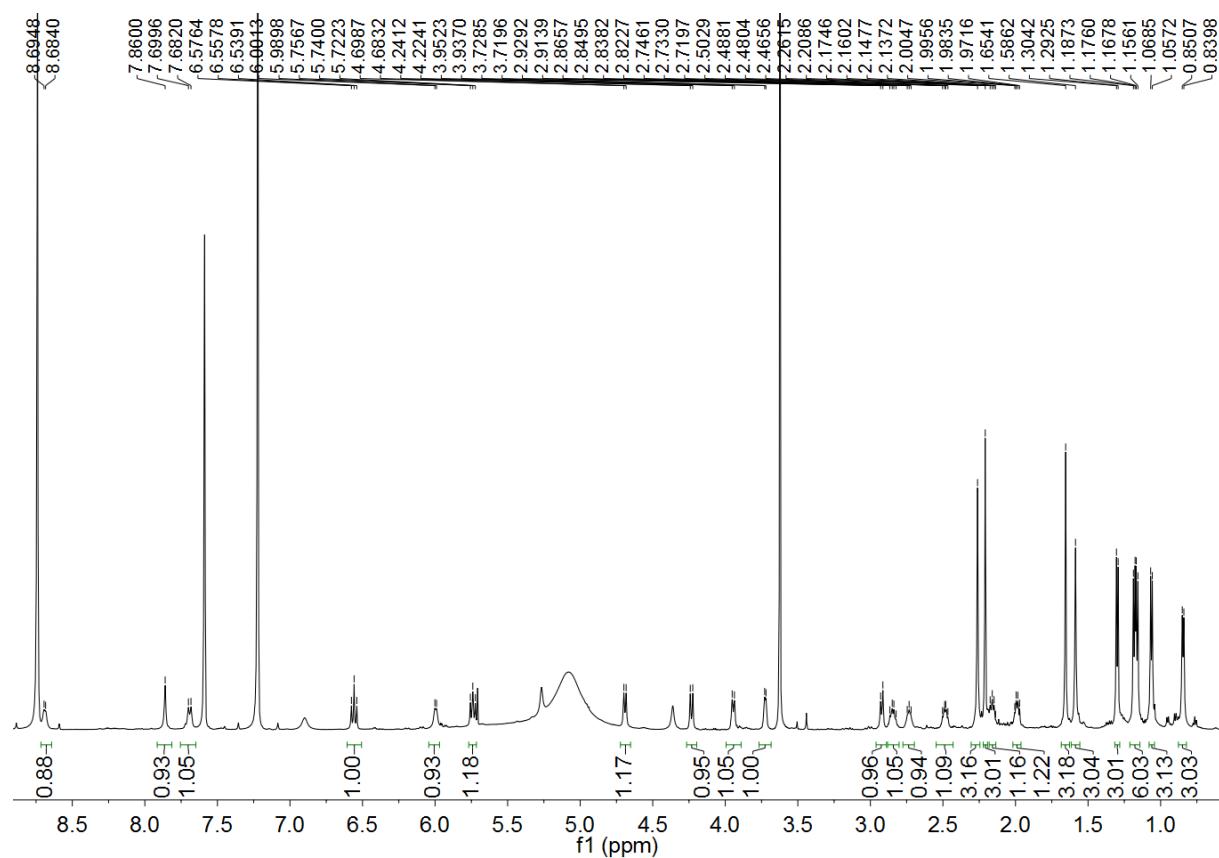


Figure S34. ^{13}C NMR (151 MHz, pyridine-*d*5) spectrum for compound 5

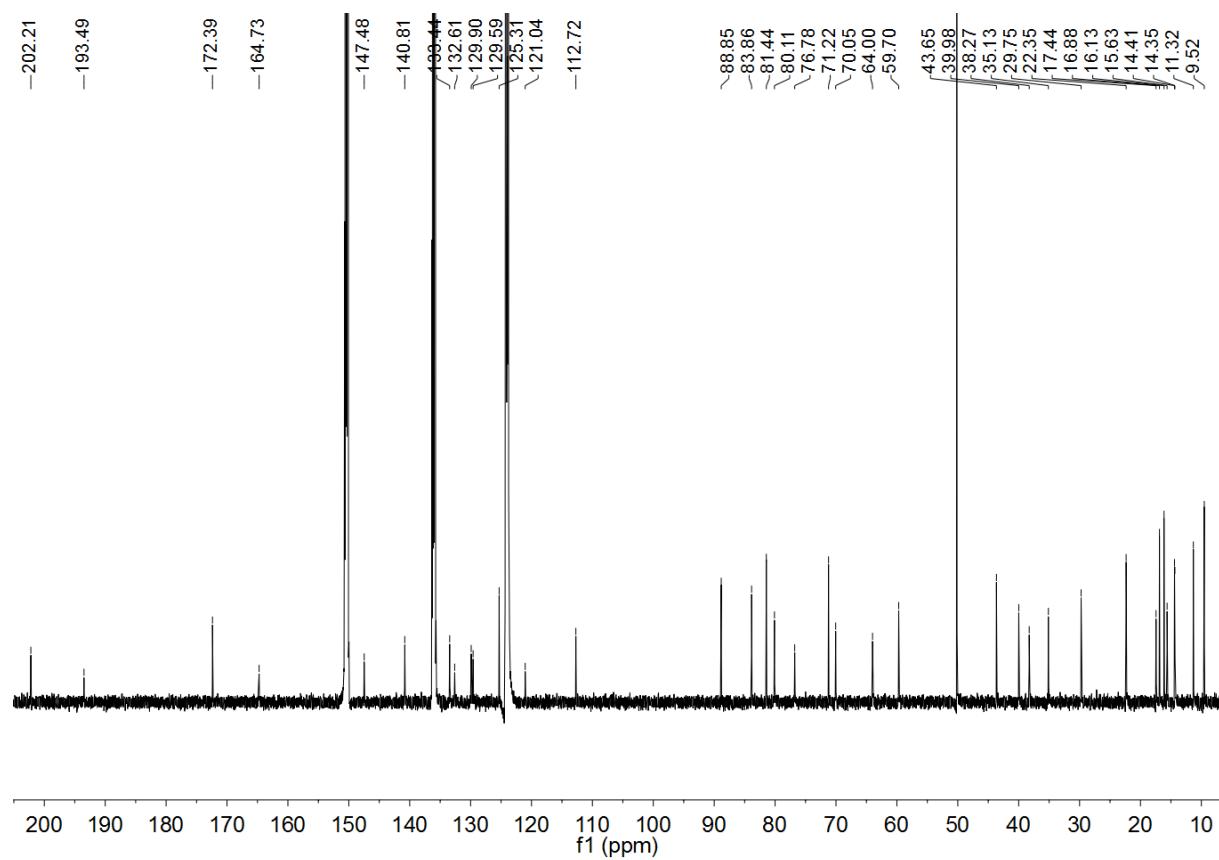


Figure S35. ^1H - ^1H COSY spectrum for compound 5

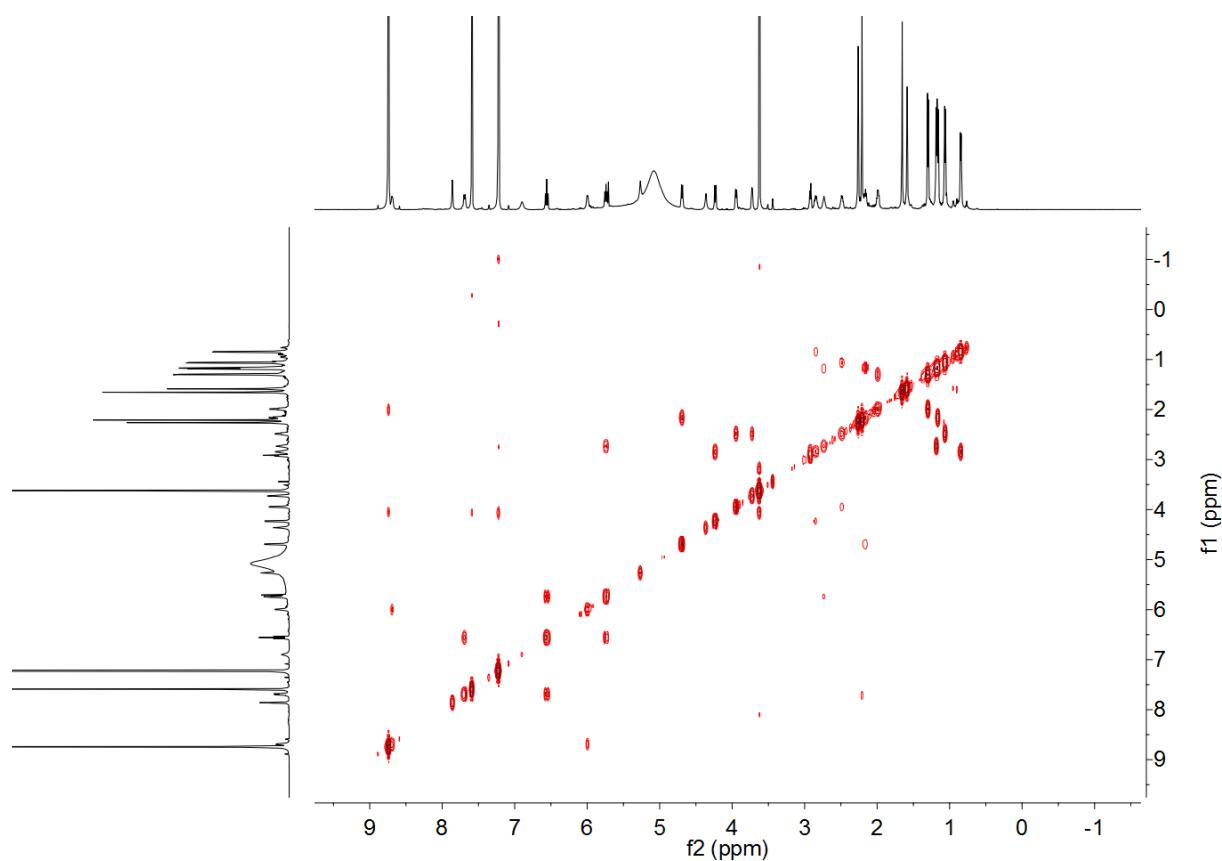


Figure S36. HSQC spectrum for compound 5

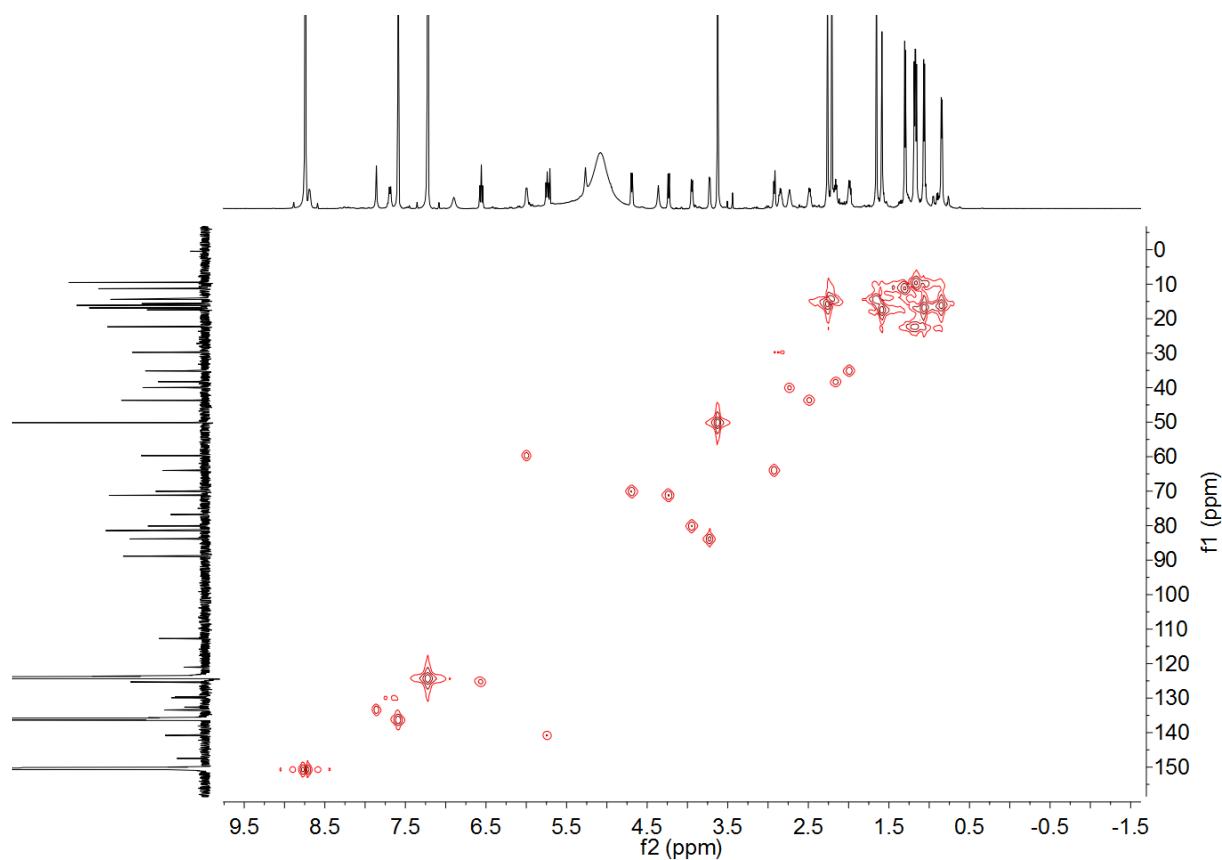


Figure S37. HMBC spectrum for compound 5

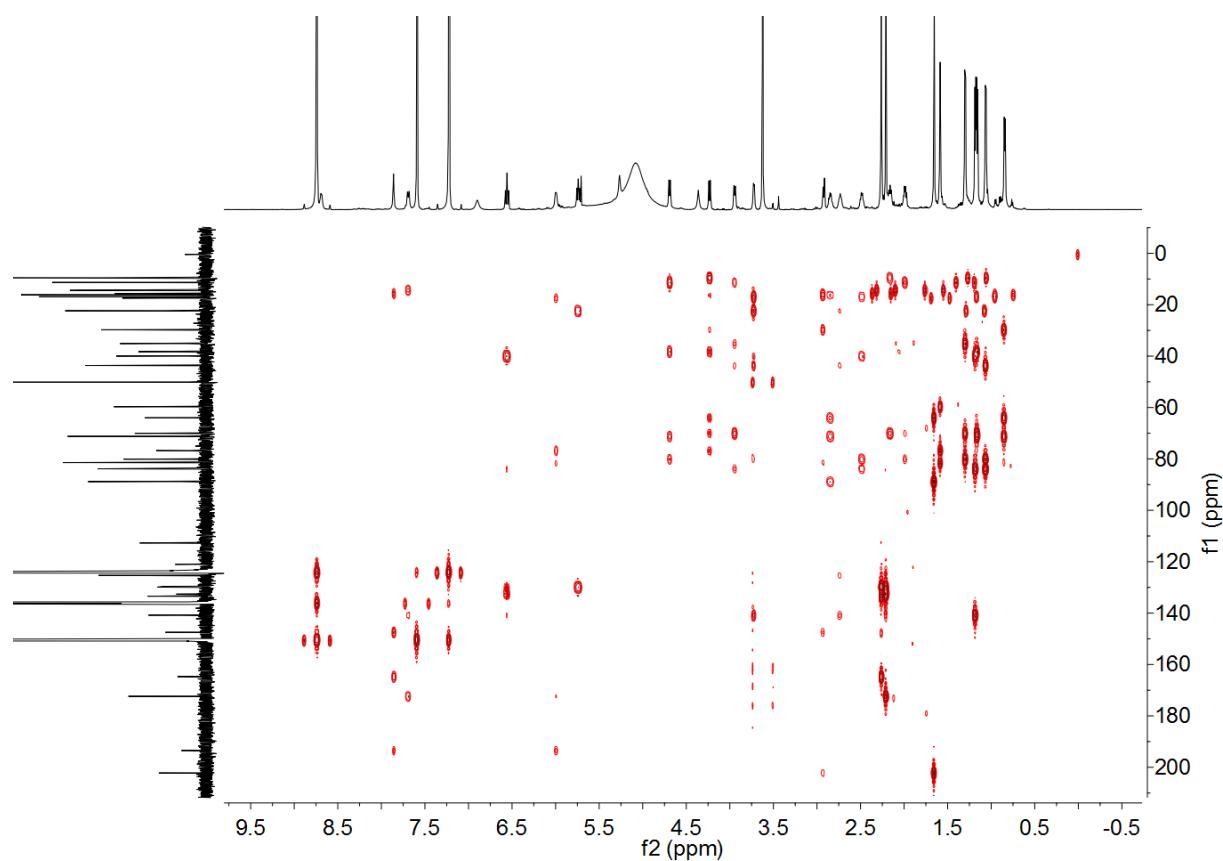


Figure S38. ROESY spectrum for compound 5

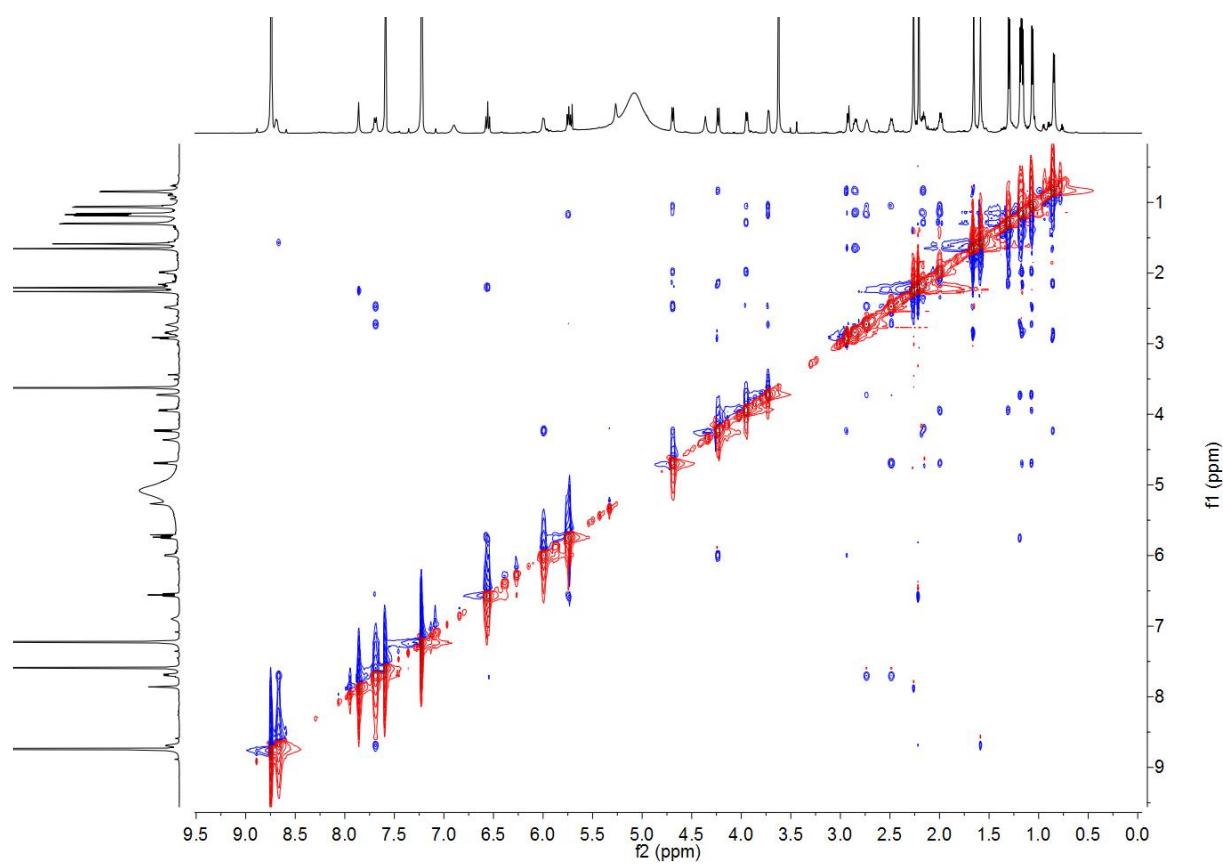


Figure S39. ^1H NMR (600 MHz, pyridine-*d*5) spectrum for compound 6

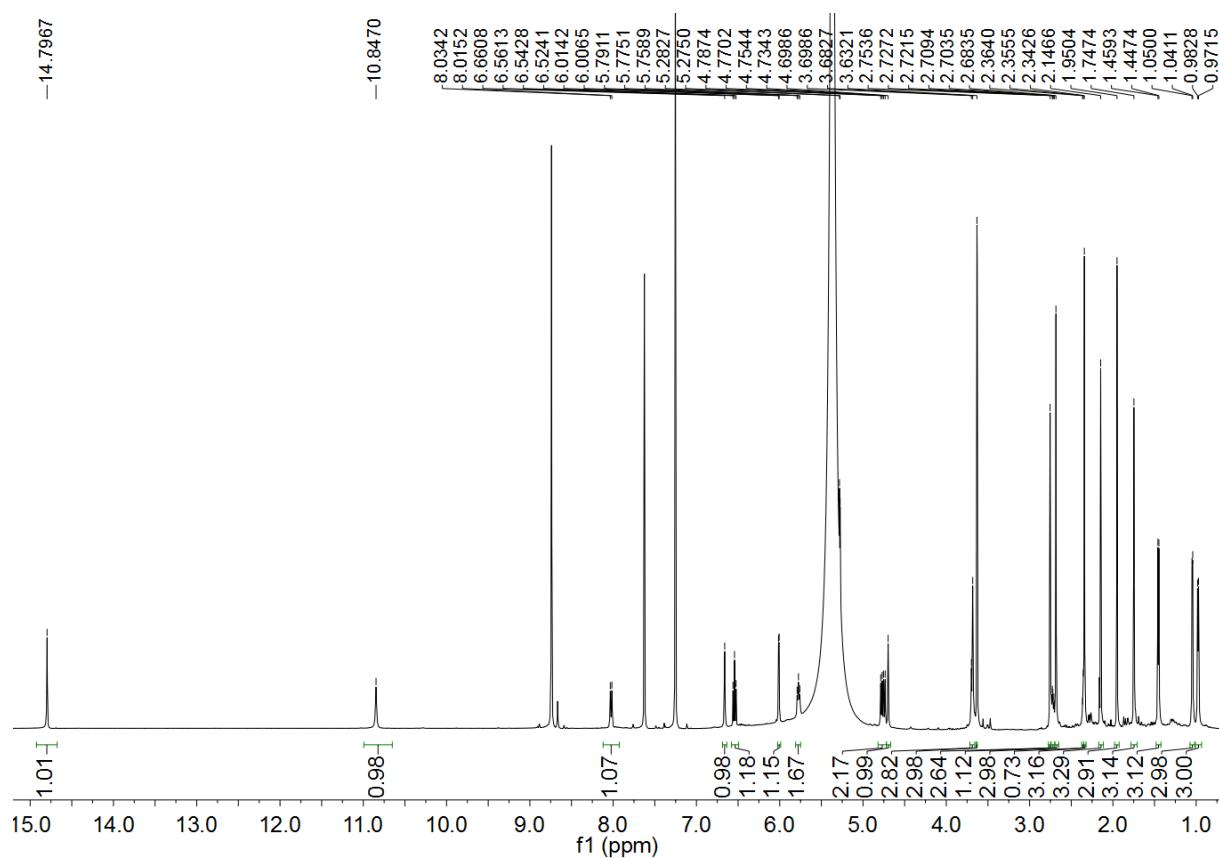


Figure S40. ^{13}C NMR (151 MHz, pyridine-*d*5) spectrum for compound 6

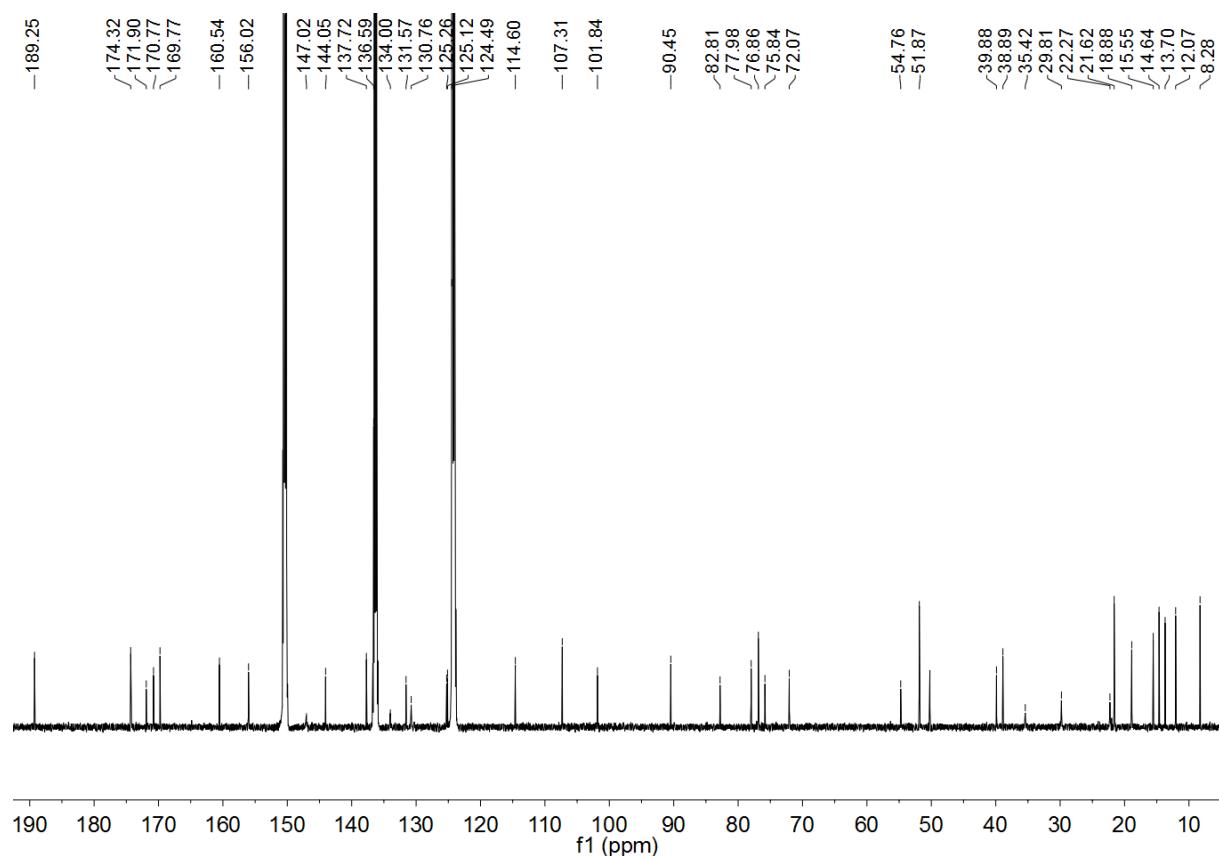


Figure S41. ^1H - ^1H COSY spectrum for compound 6

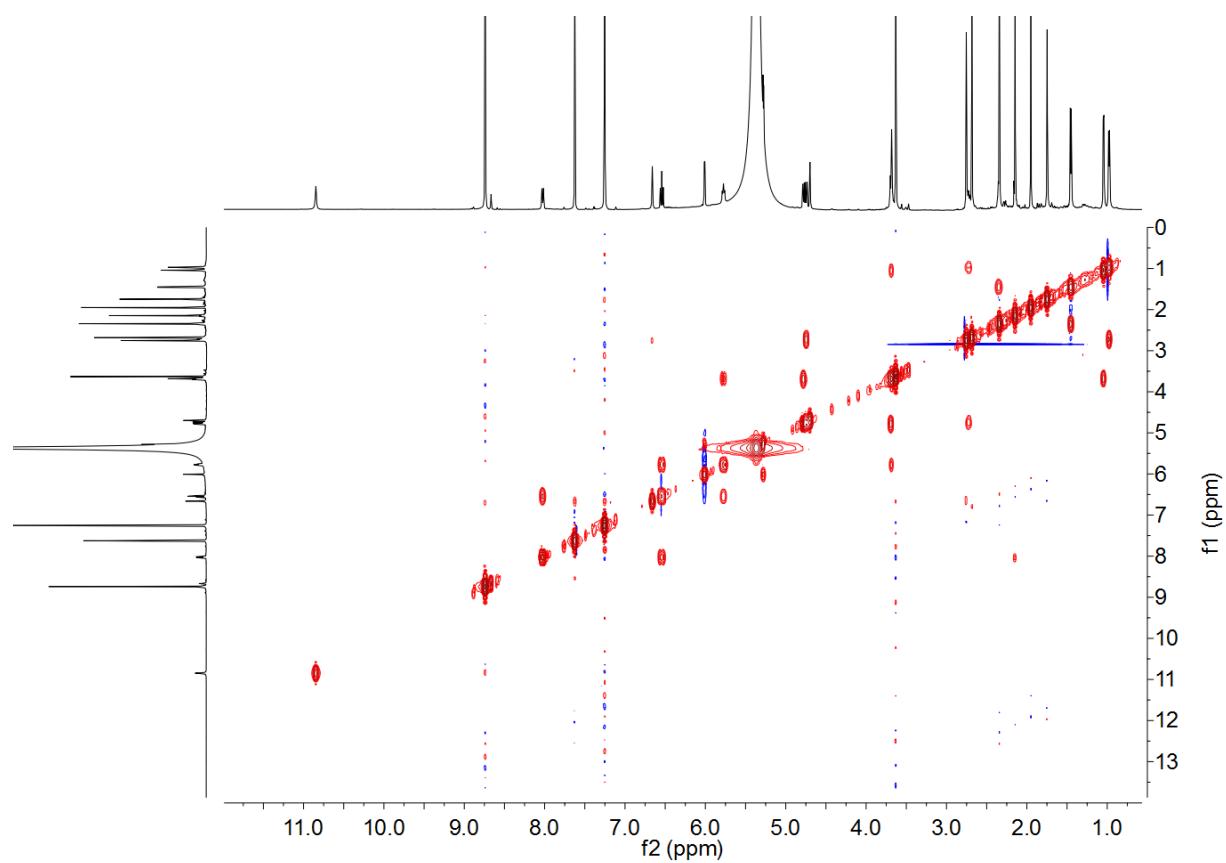


Figure S42. HSQC spectrum for compound 6

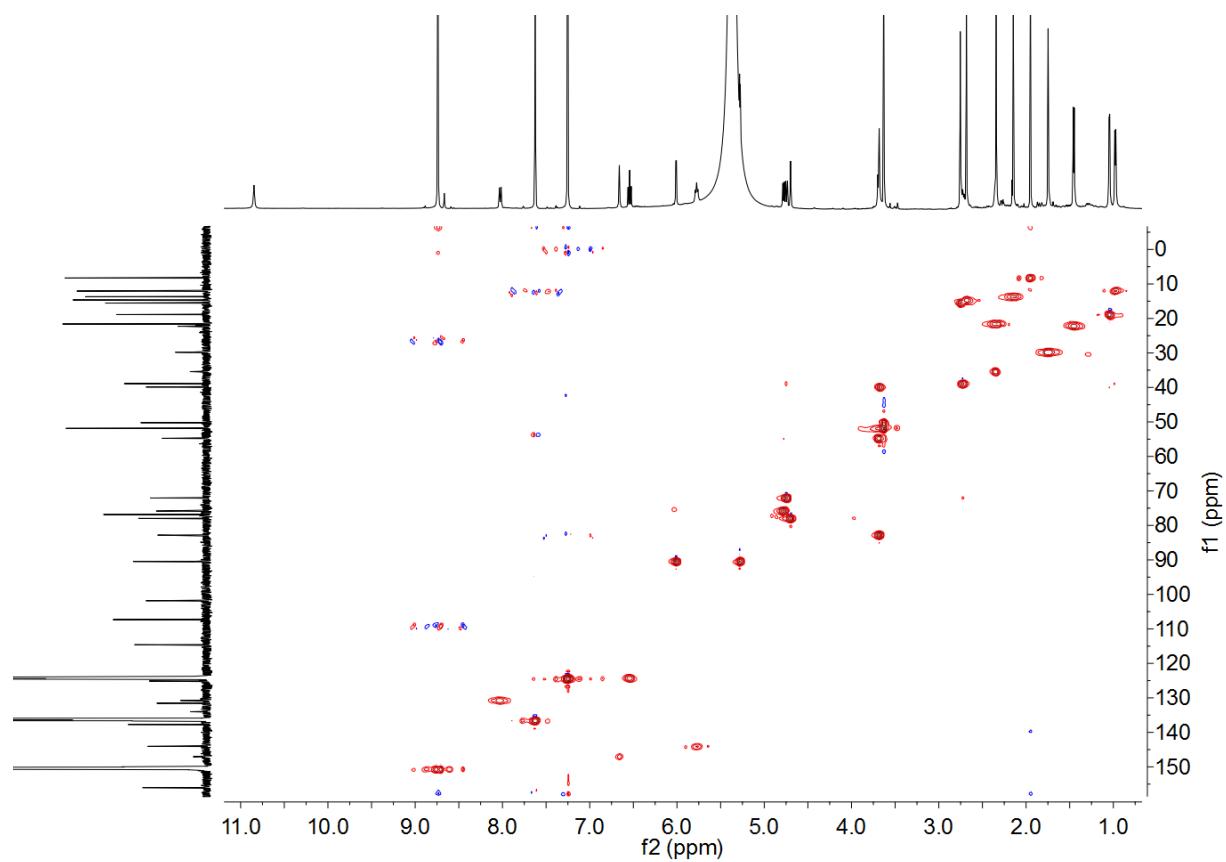


Figure S43. HMBC spectrum for compound 6

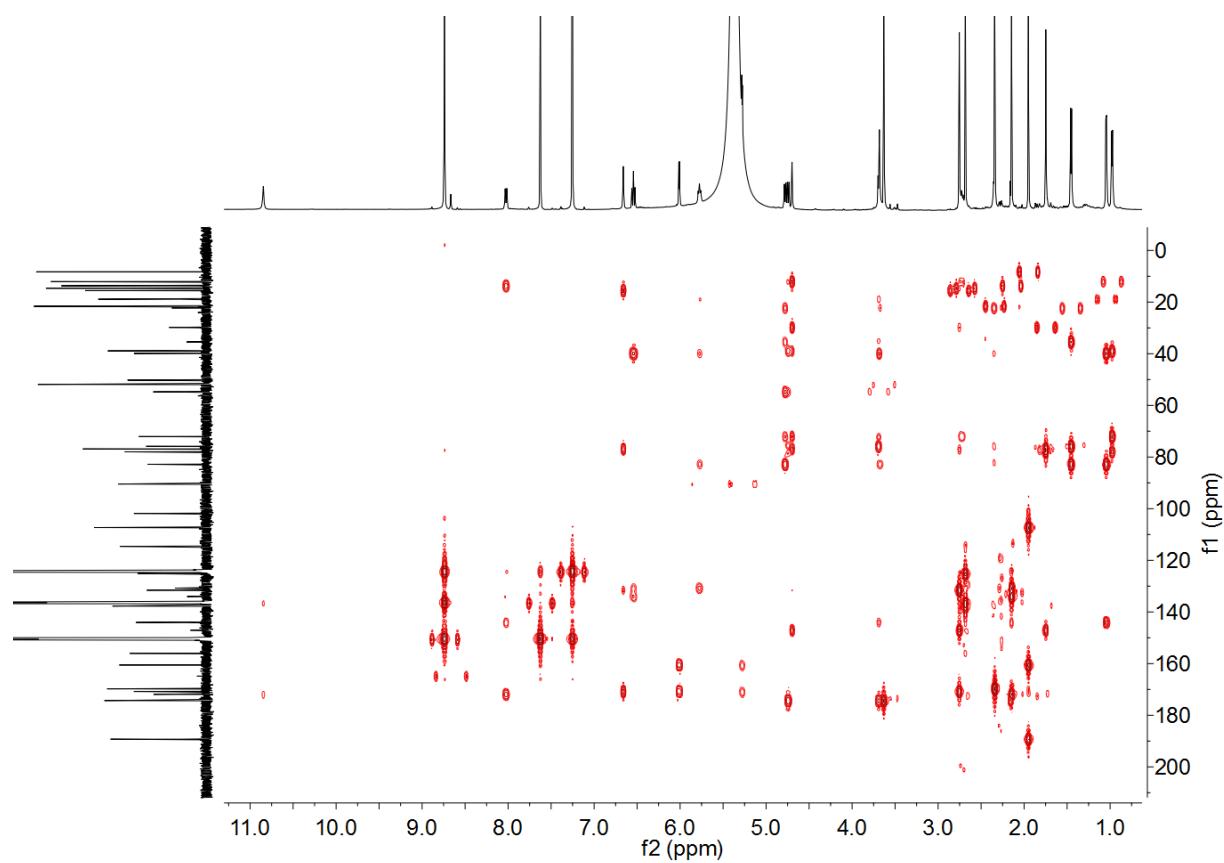


Figure S44. ROESY spectrum for compound 6

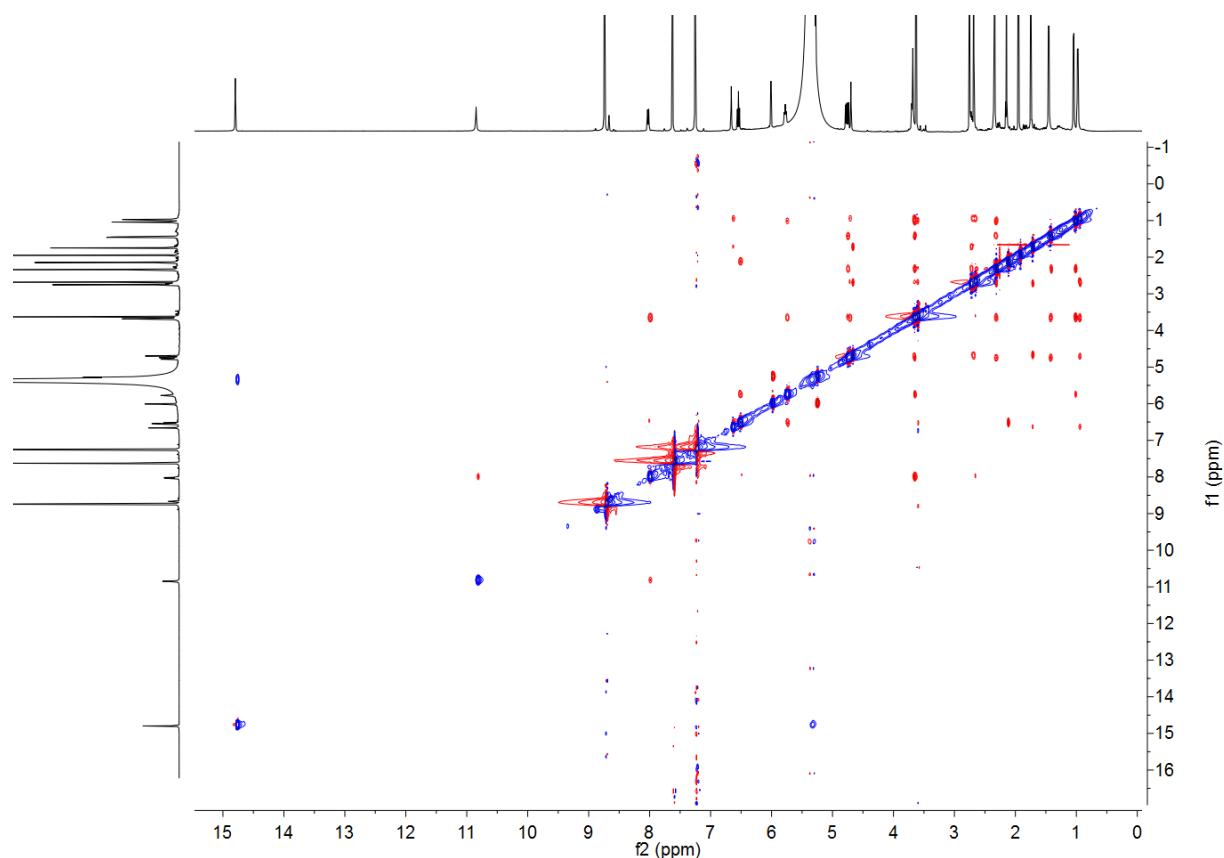


Figure S45. ^1H NMR (600 MHz, pyridine-*d*5) spectrum for compound 7

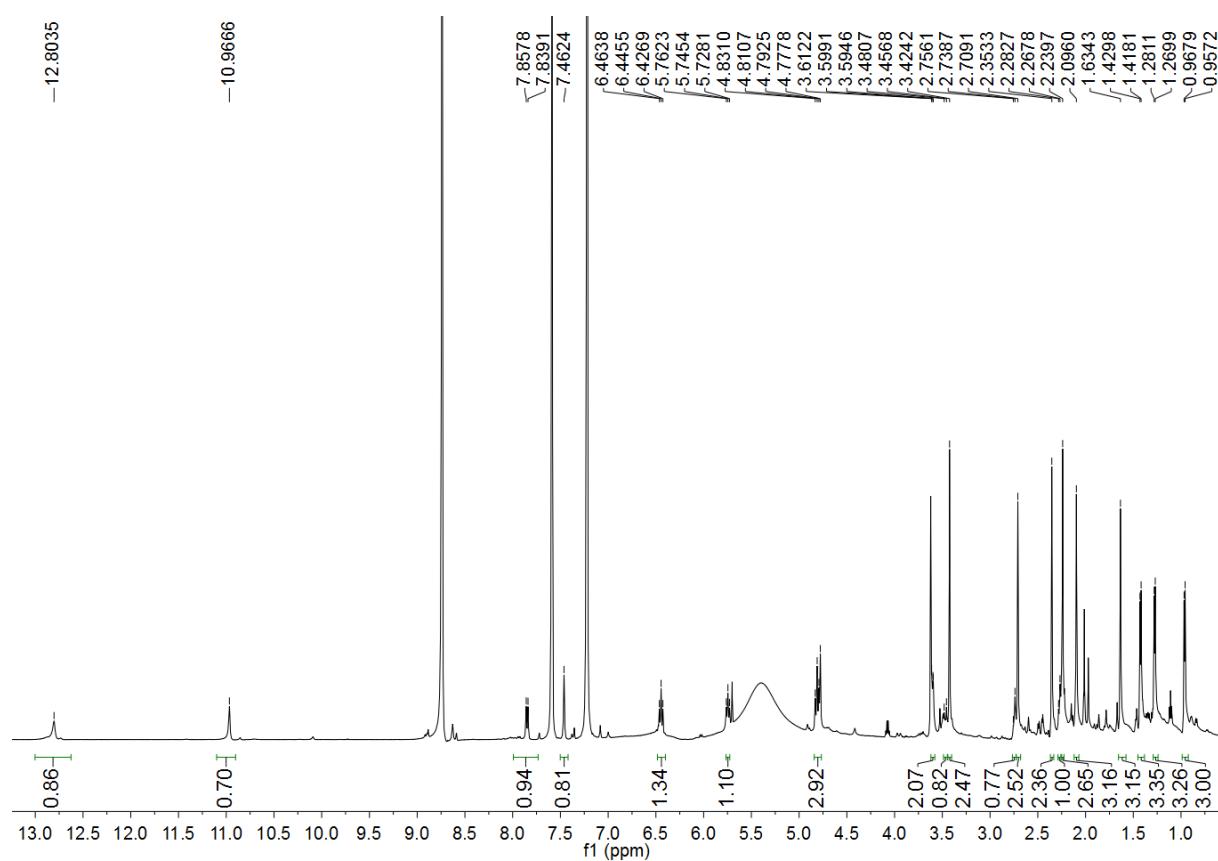


Figure S46. ^{13}C NMR (151 MHz, pyridine-*d*5) spectrum for compound 7

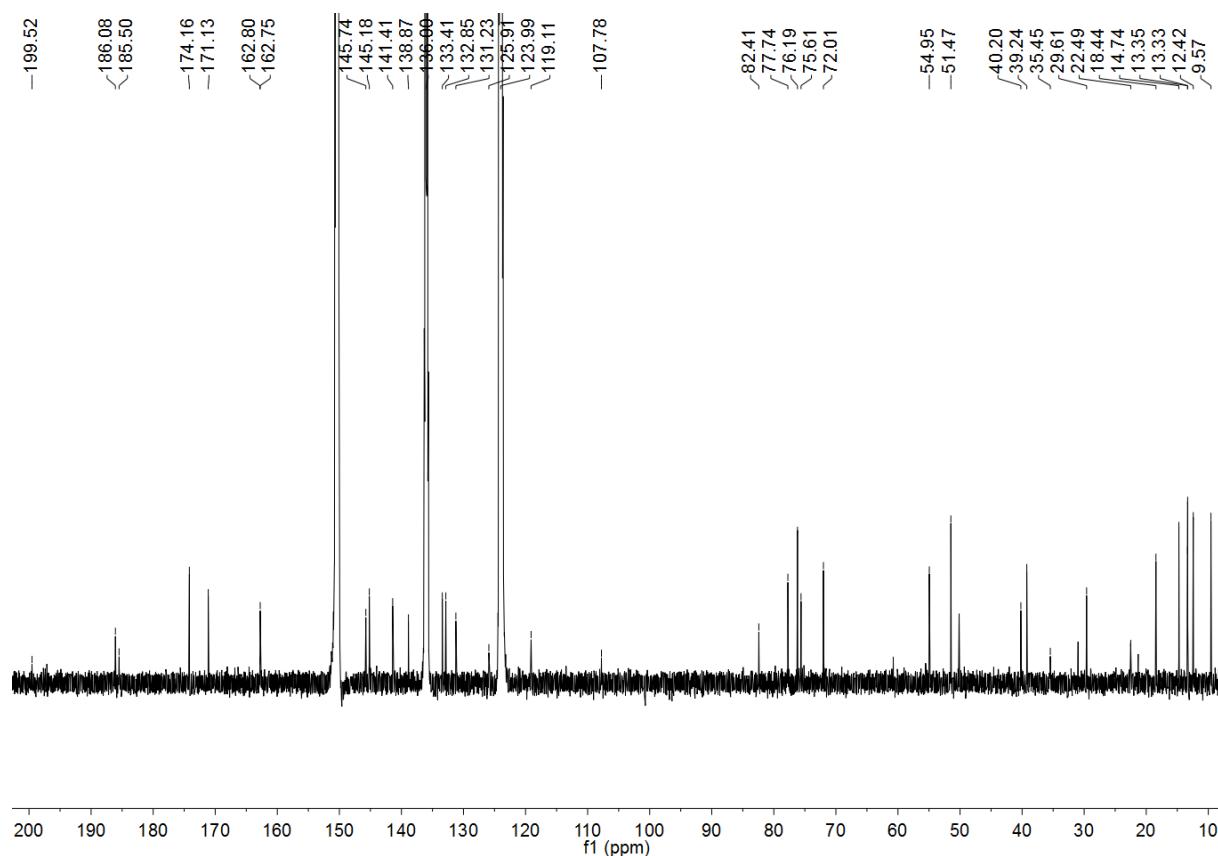


Figure S47. ^1H - ^1H COSY spectrum for compound 7

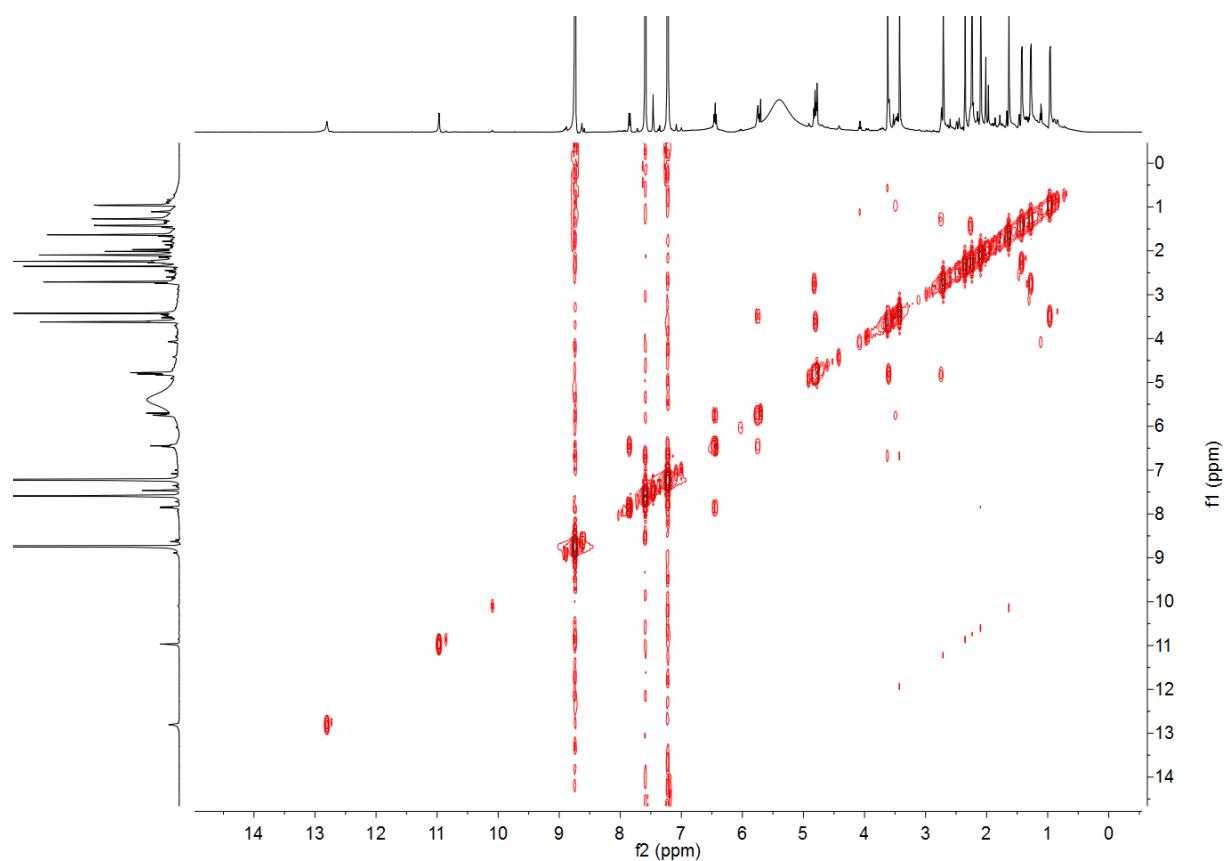


Figure S48. HSQC spectrum for compound 7

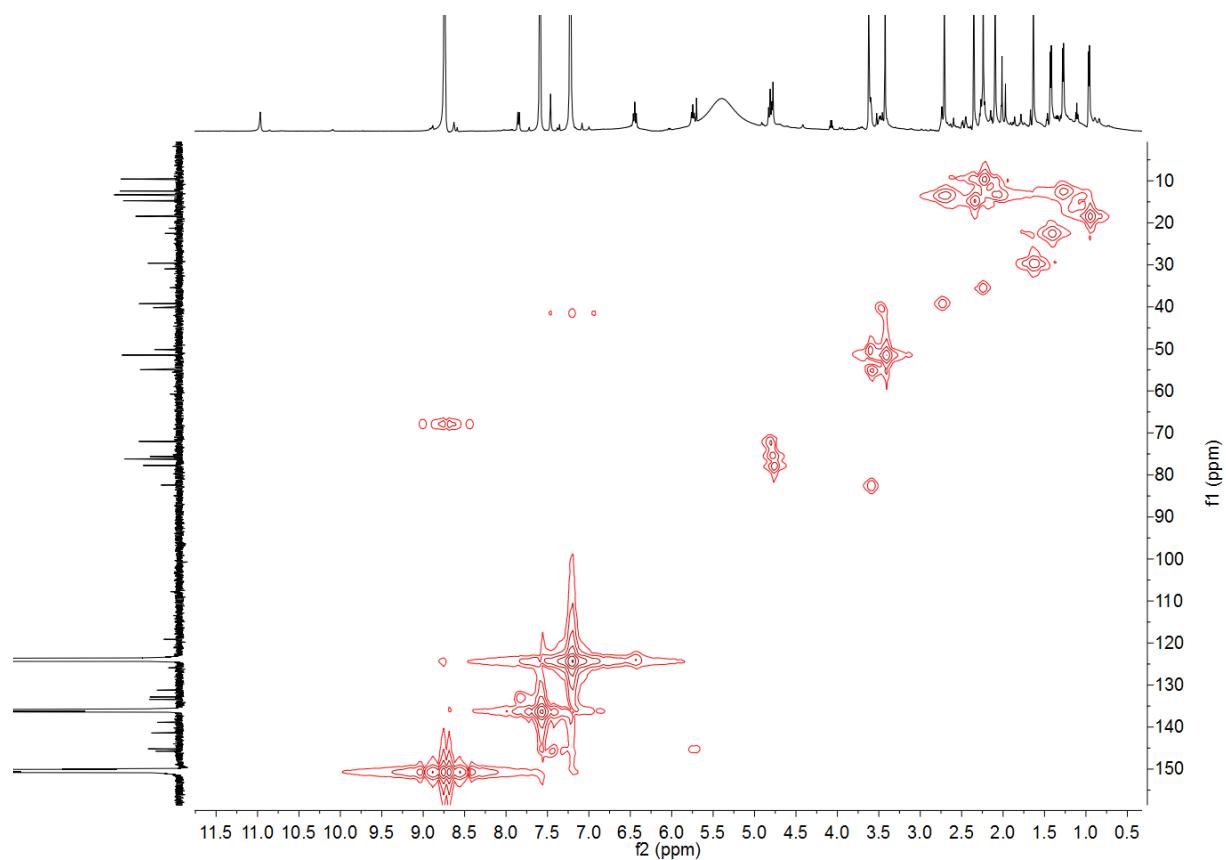


Figure S49. HMBC spectrum for compound 7

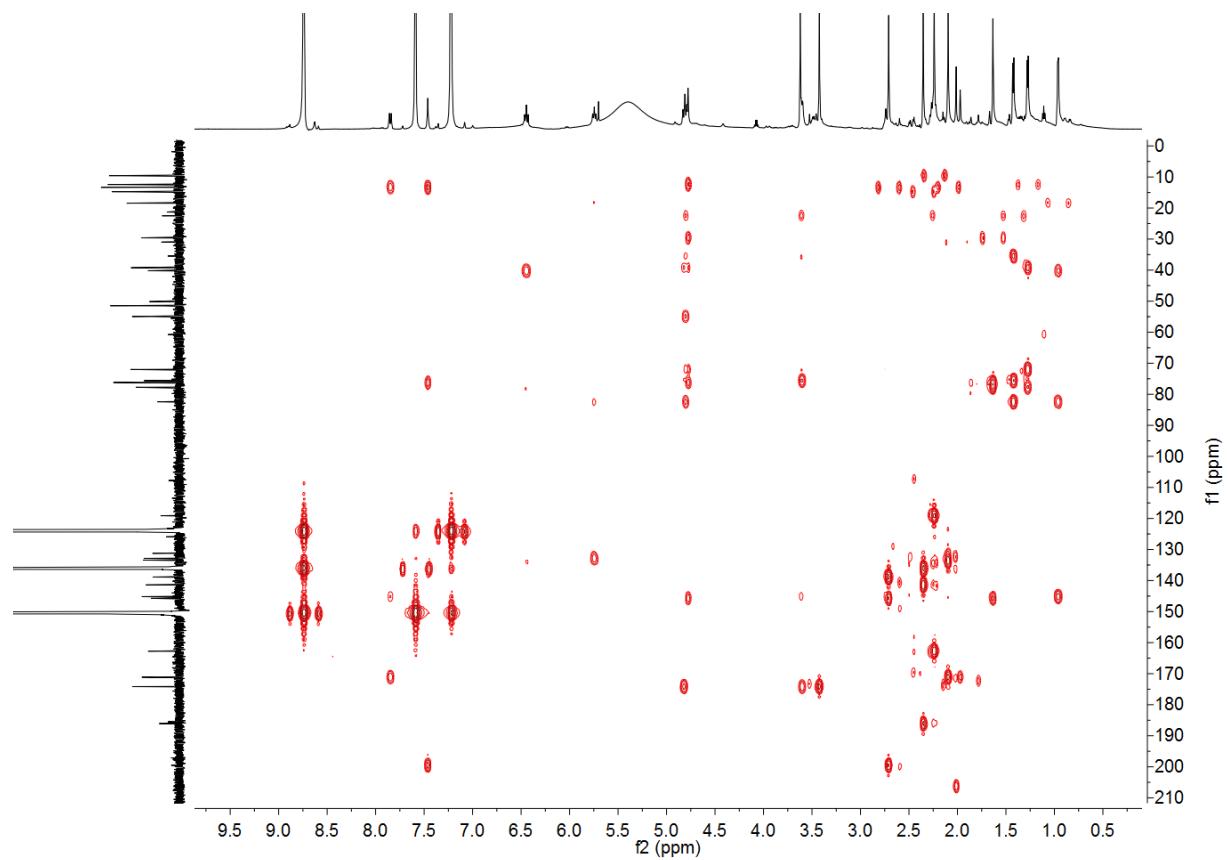


Figure S50. ROESY spectrum for compound 7

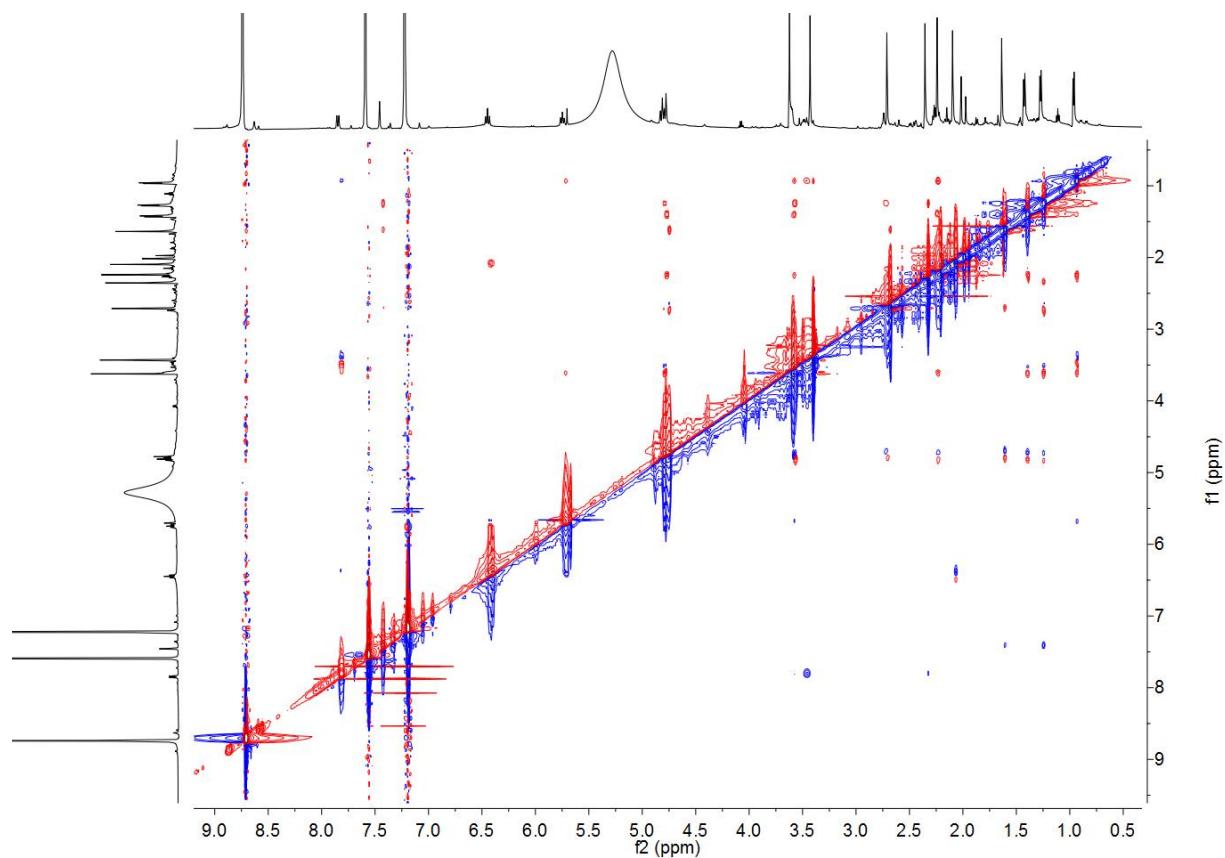


Figure S51. ^1H NMR (400 MHz, pyridine-*d*5) spectrum for compound 8

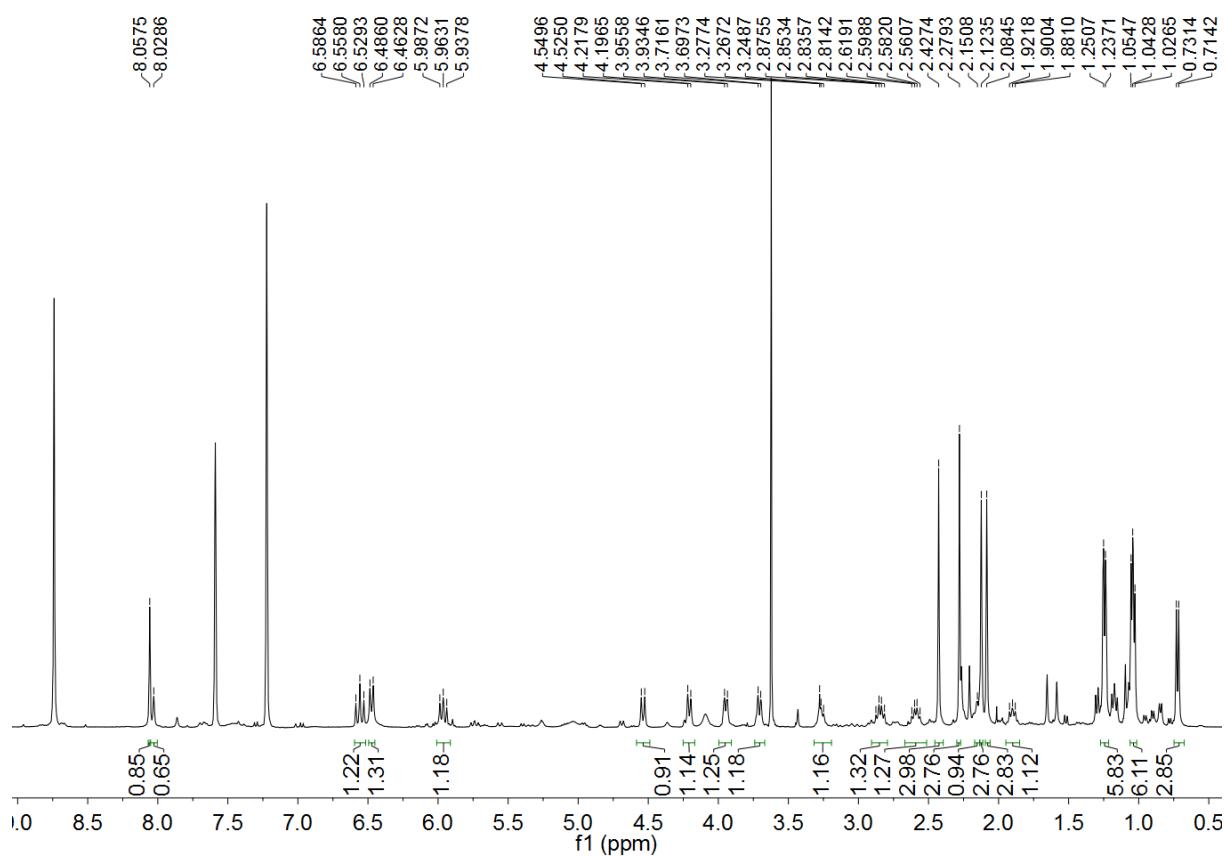


Figure S52. ^{13}C NMR (101 MHz, pyridine-*d*5) spectrum for compound 8

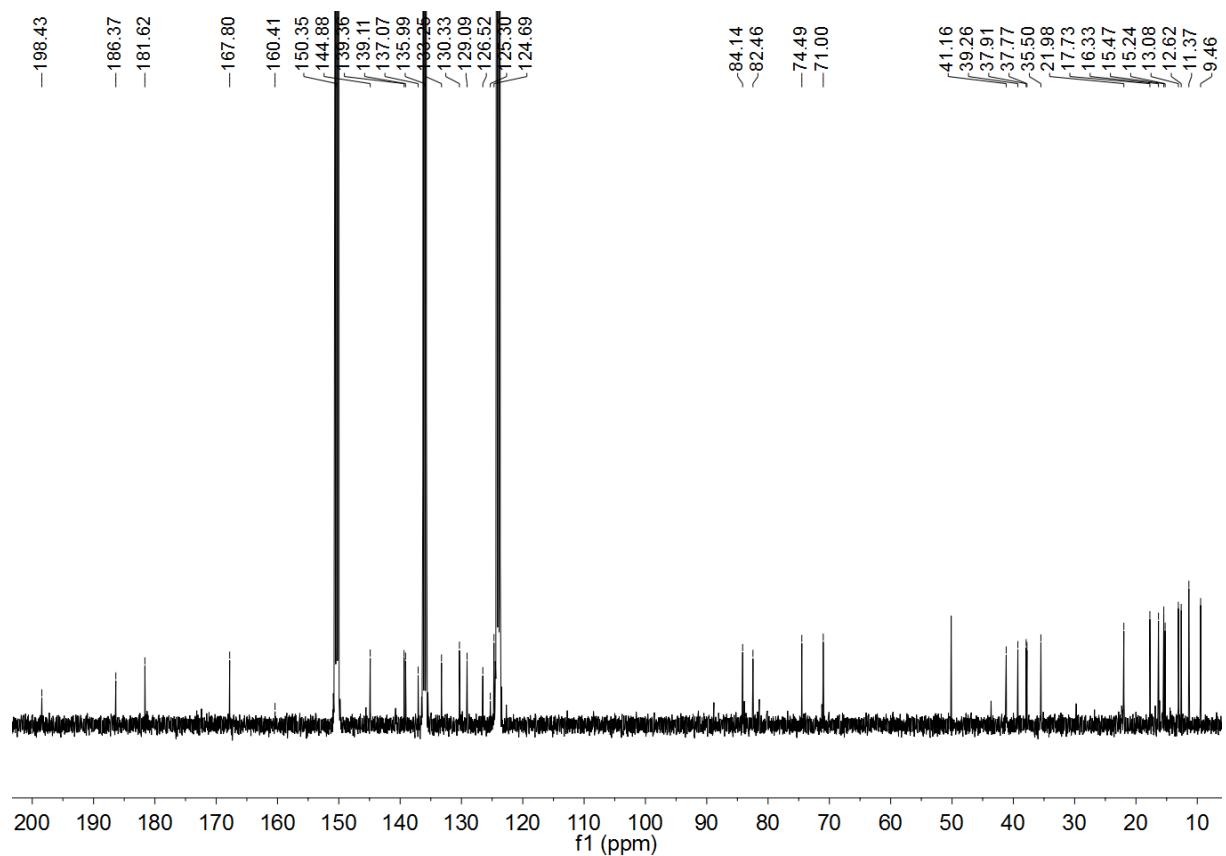


Figure S53. ^1H - ^1H COSY spectrum for compound 8

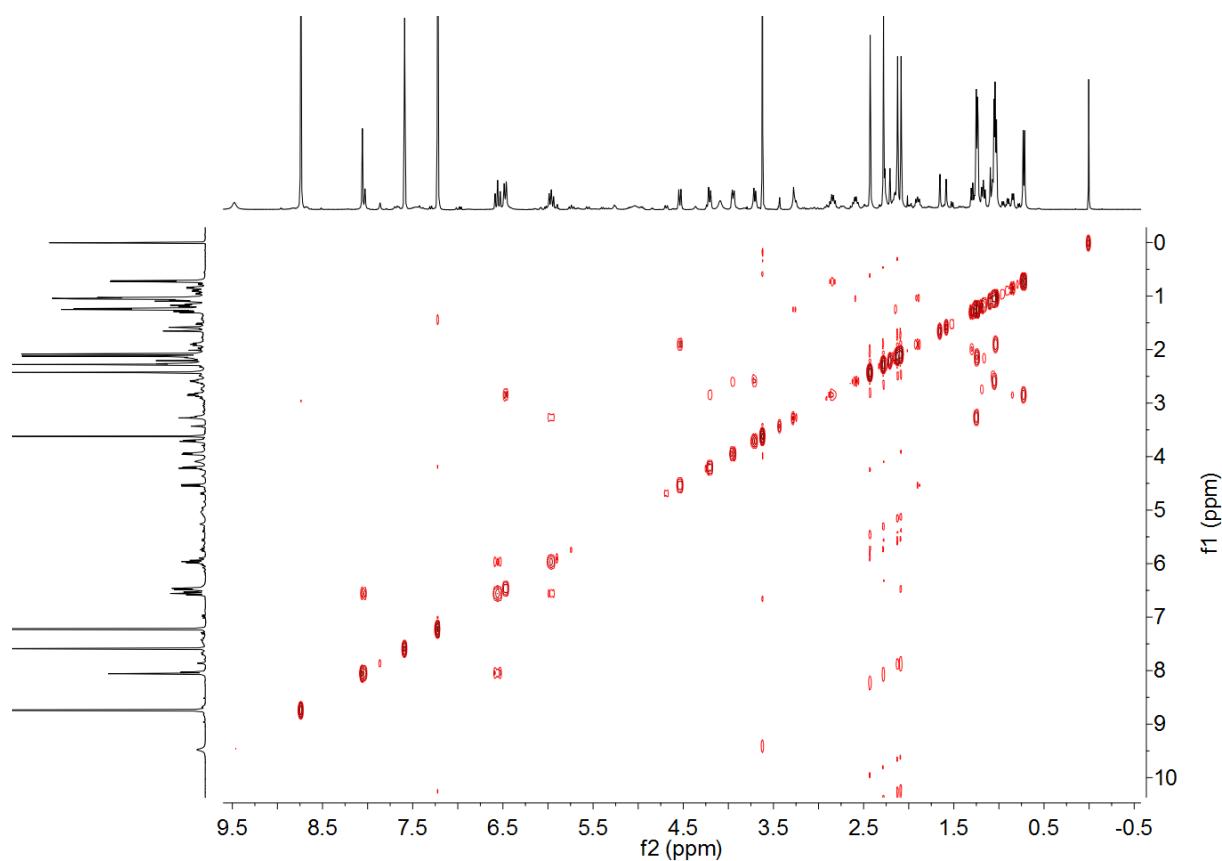


Figure S54. HSQC spectrum for compound 8

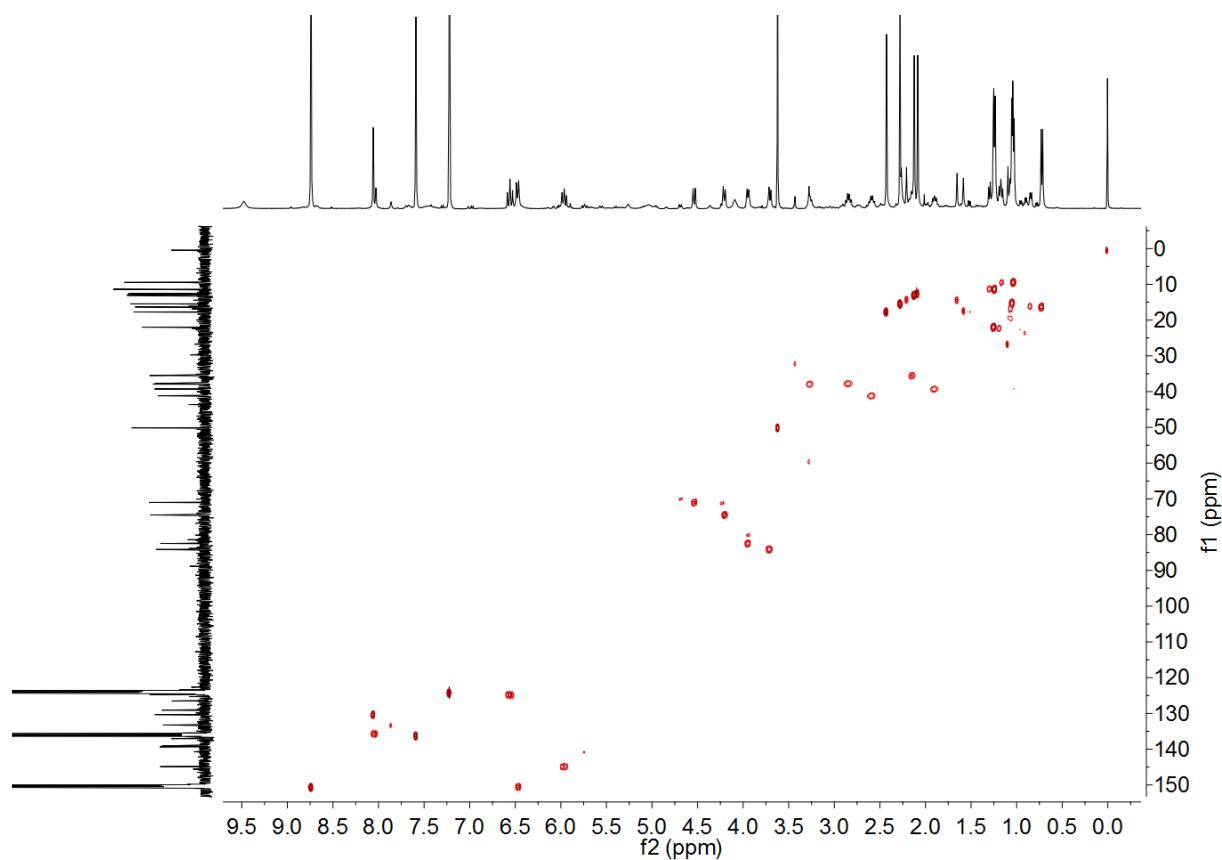


Figure S55. HMBC spectrum for compound 8

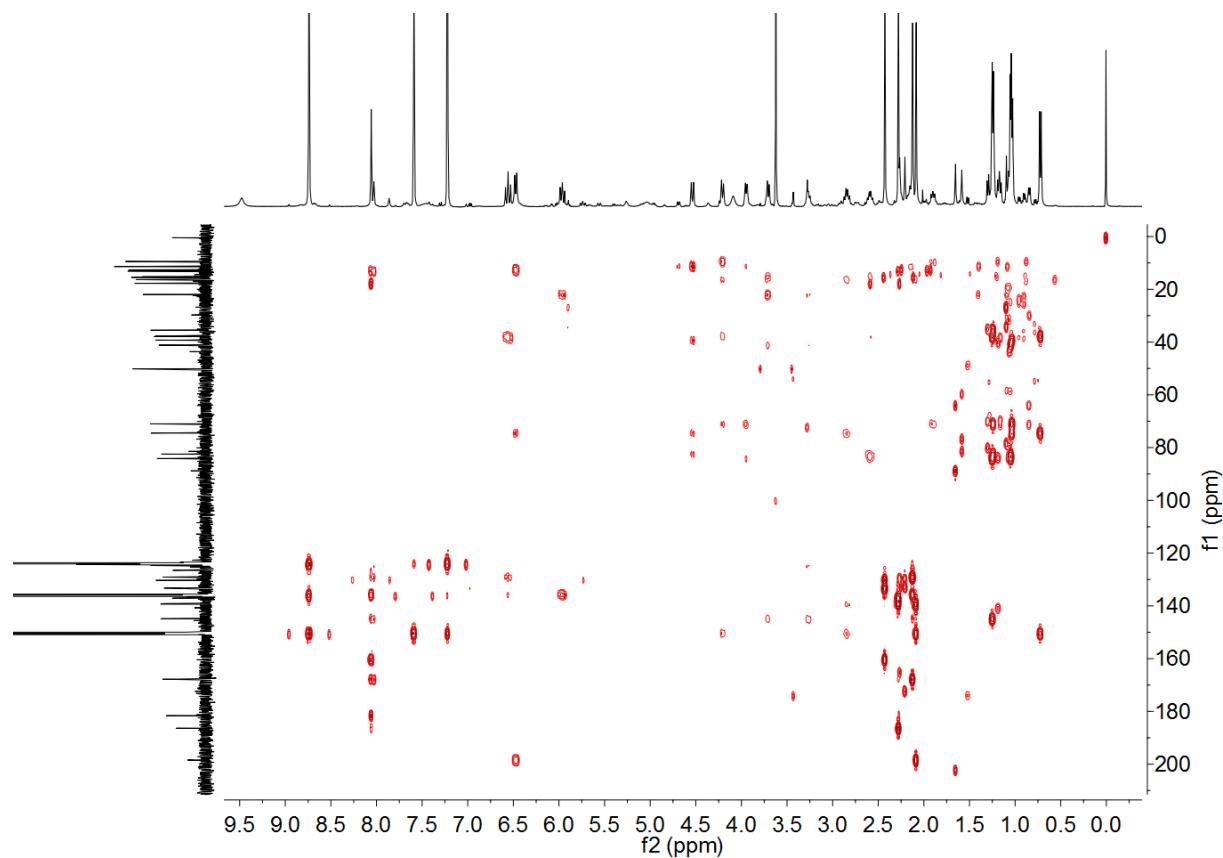


Figure S56. ROESY spectrum for compound 8

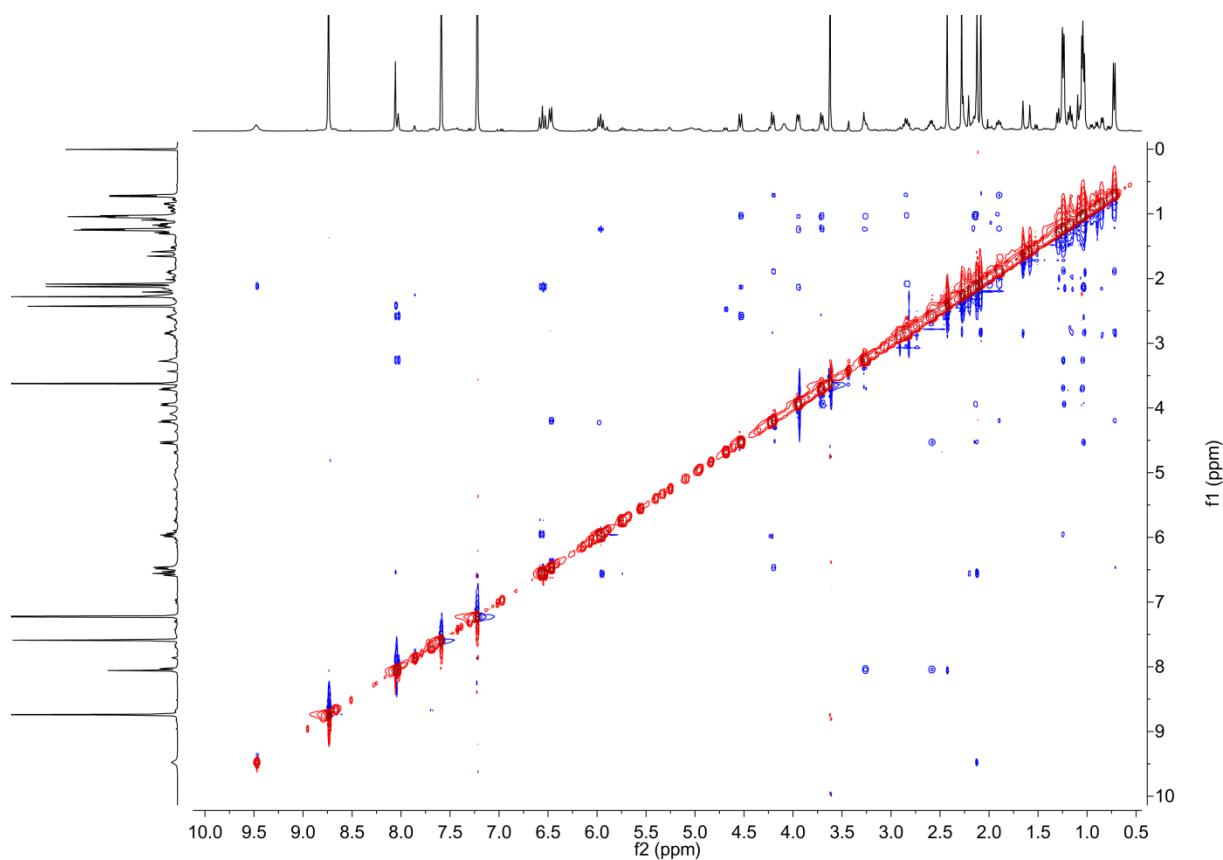


Figure S57. High-resolution ESIMS spectrum for compound 1

20160923_zzq_S12Q #5 RT: 0.13 AV: 1 NL: 5.12E5
T: FTMS + p ESI Full ms [200.00-1000.00]

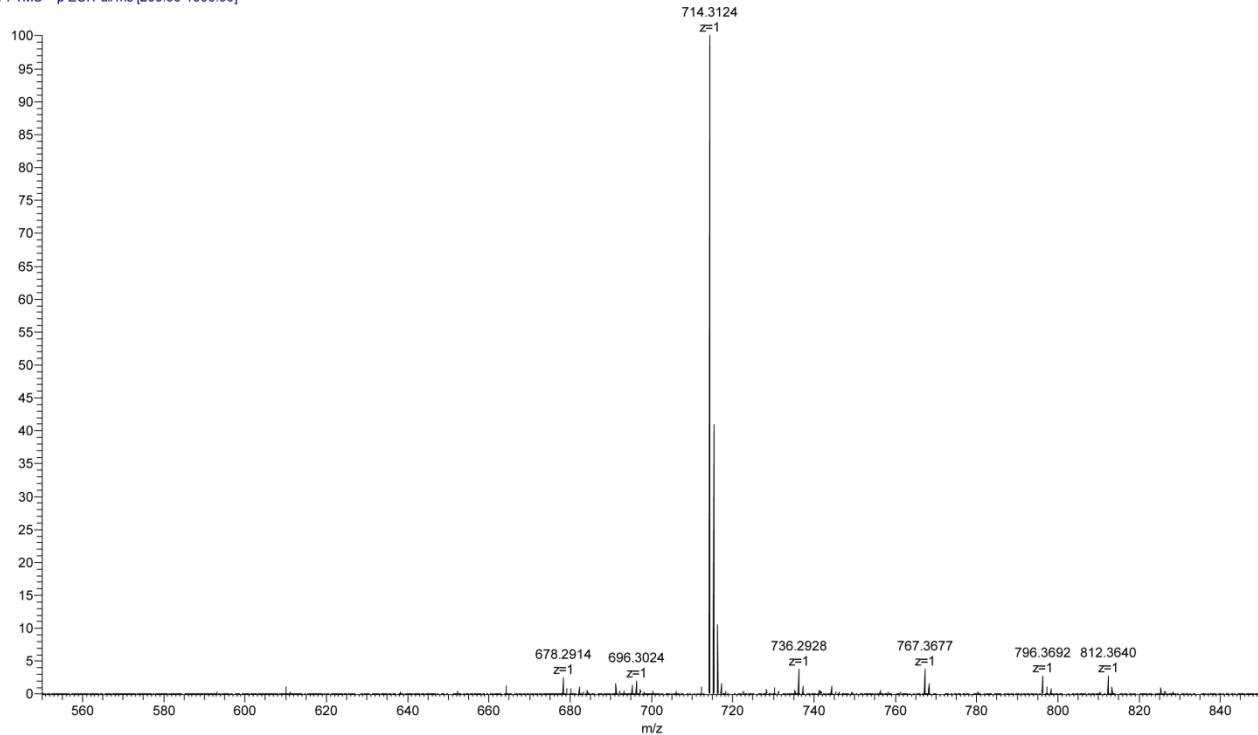


Figure S58. High-resolution ESIMS spectrum for compound 2

20160923_zzq_S12H #5 RT: 0.13 AV: 1 NL: 4.60E4
T: FTMS + p ESI Full ms [200.00-1000.00]

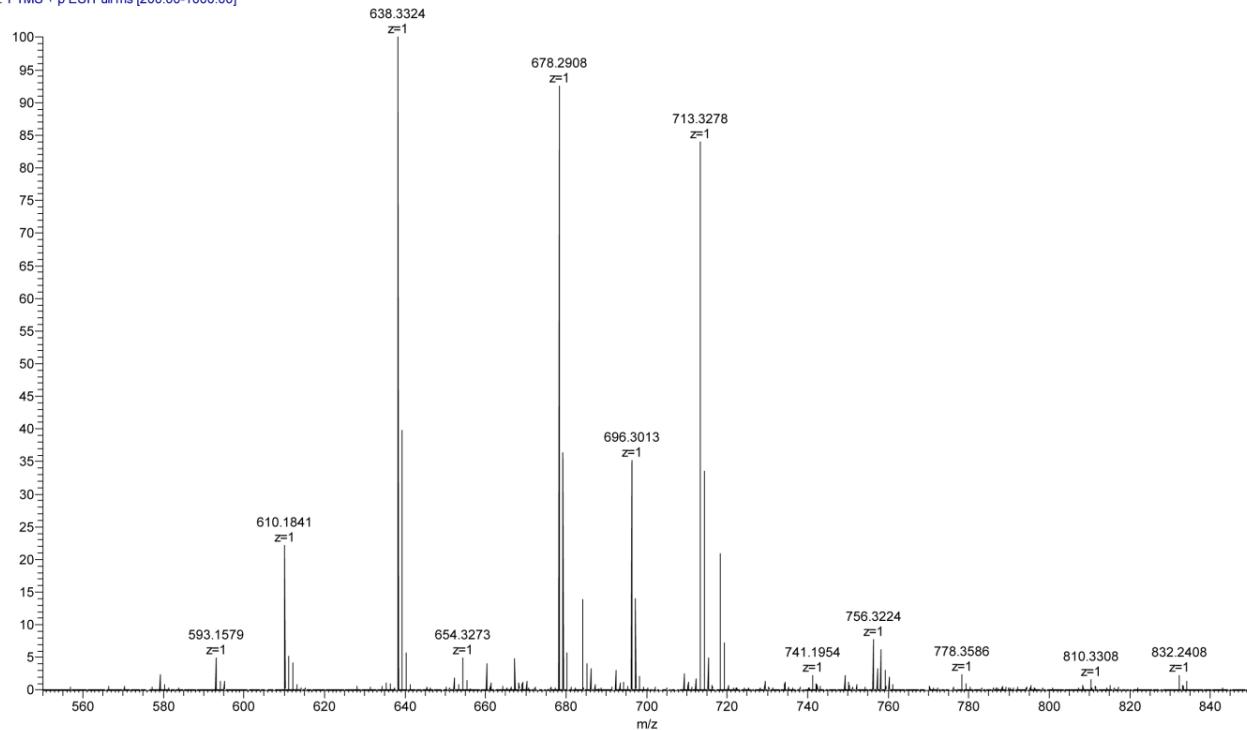


Figure S59. High-resolution ESIMS spectrum for compound 3

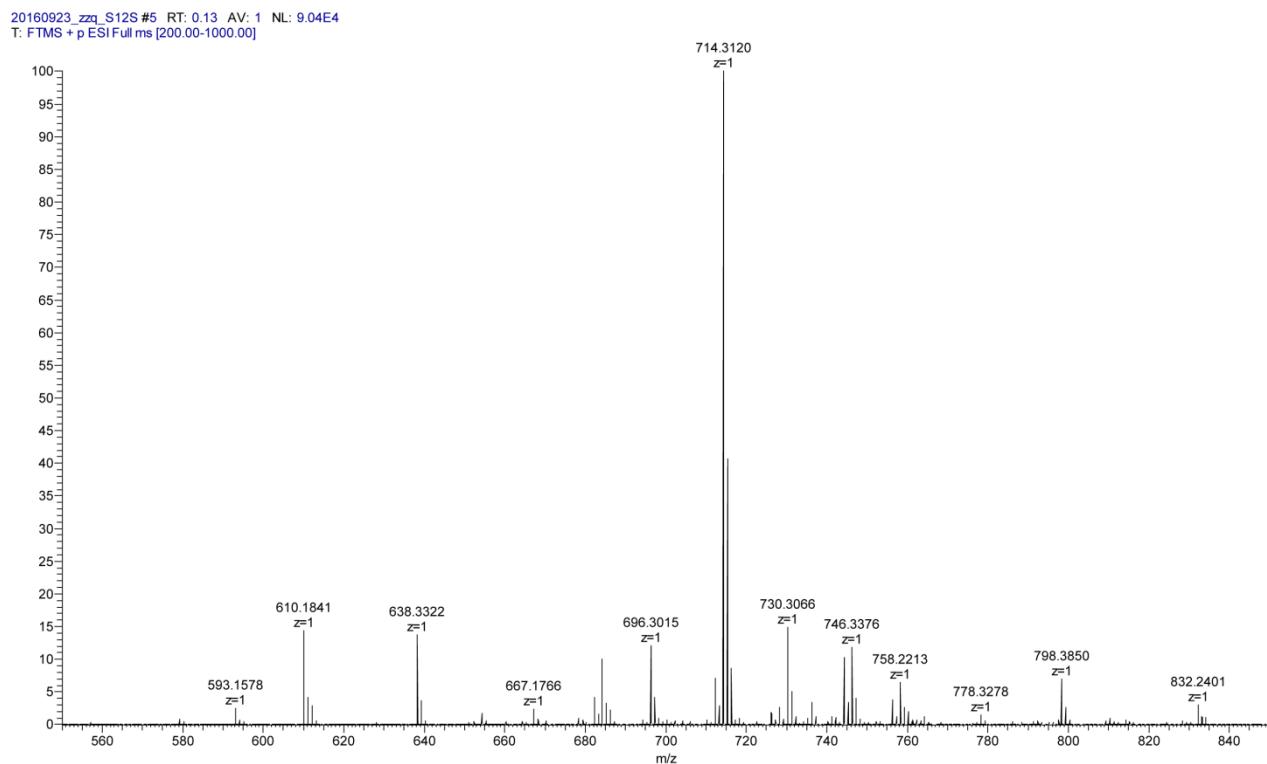


Figure S60. High-resolution ESIMS spectrum for compound 4

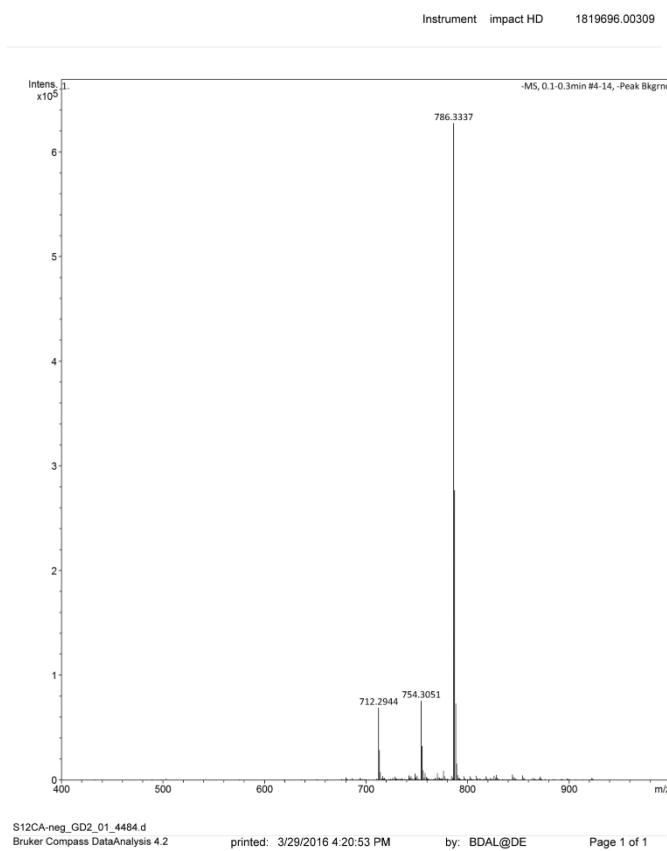


Figure S61. High-resolution ESIMS spectrum for compound 5

20170104_zzq_S12A0 #19 RT: 0.51 AV: 1 NL: 5.99E4
T: FTMS + p ESI Full ms [200.00-1000.00]

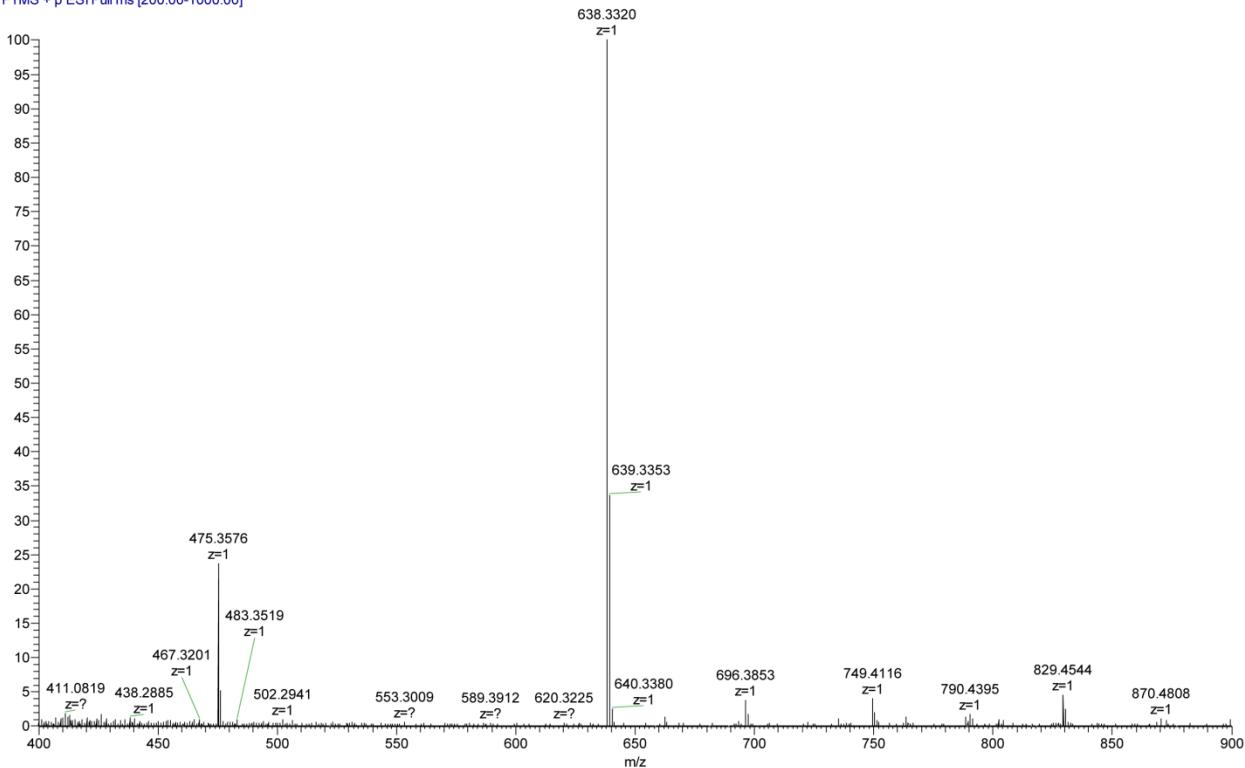


Figure S62. High-resolution ESIMS spectrum for compound 6

20160923_zzq_S12BX #11-14 RT: 0.31-0.39 AV: 4 NL: 9.93E6
T: FTMS + p ESI Full ms [200.00-1000.00]

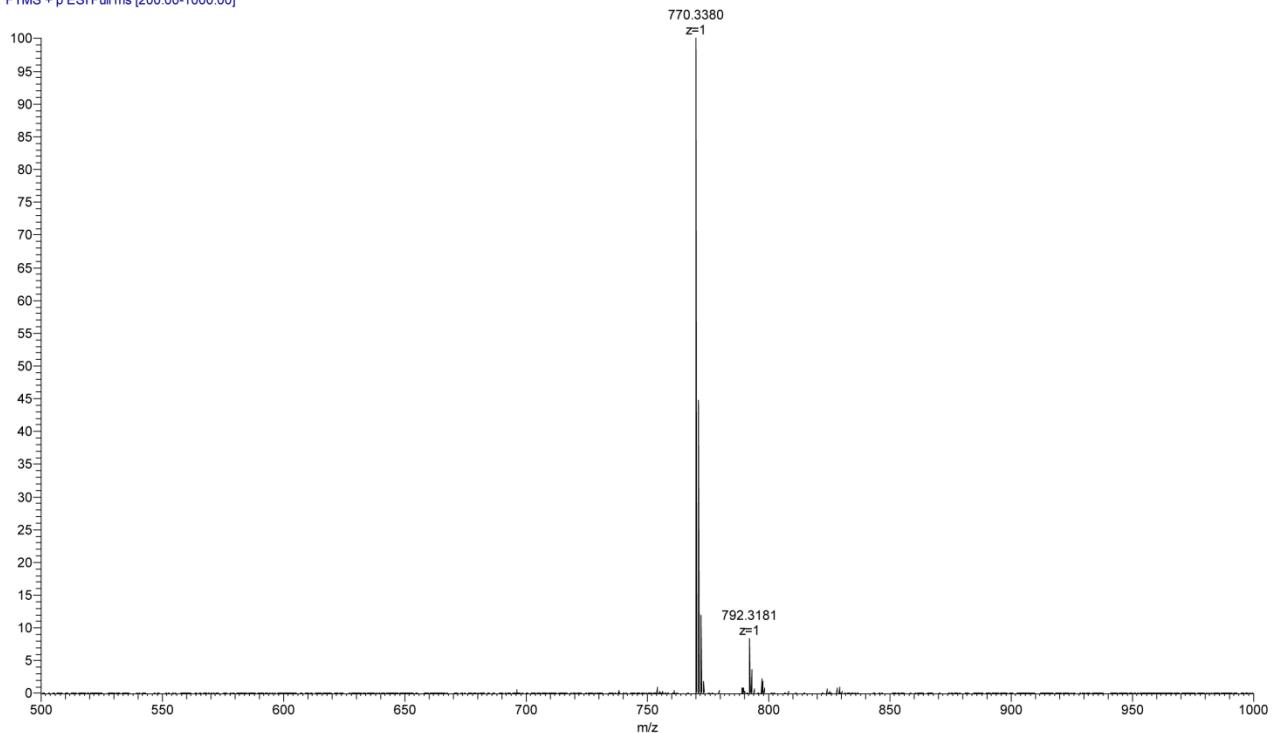


Figure S63. High-resolution ESIMS spectrum for compound 7

20160923_zzq_S12BW #13-15 RT: 0.36-0.42 AV: 3 NL: 8.19E5
T: FTMS + p ESI Full ms [200.00-1000.00]

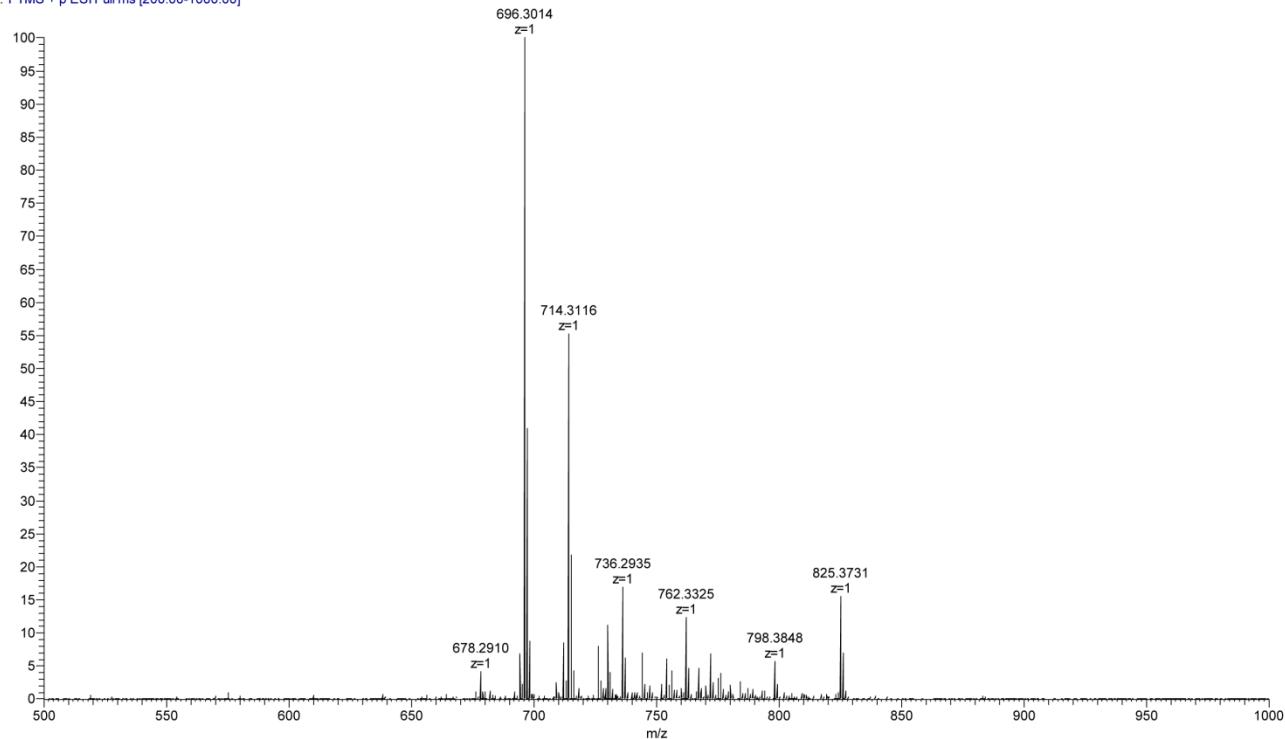


Figure S64. High-resolution ESIMS spectrum for compound 8

20160923_zzq_S12AY #13-15 RT: 0.36-0.42 AV: 3 NL: 1.30E5
T: FTMS + p ESI Full ms [200.00-1000.00]

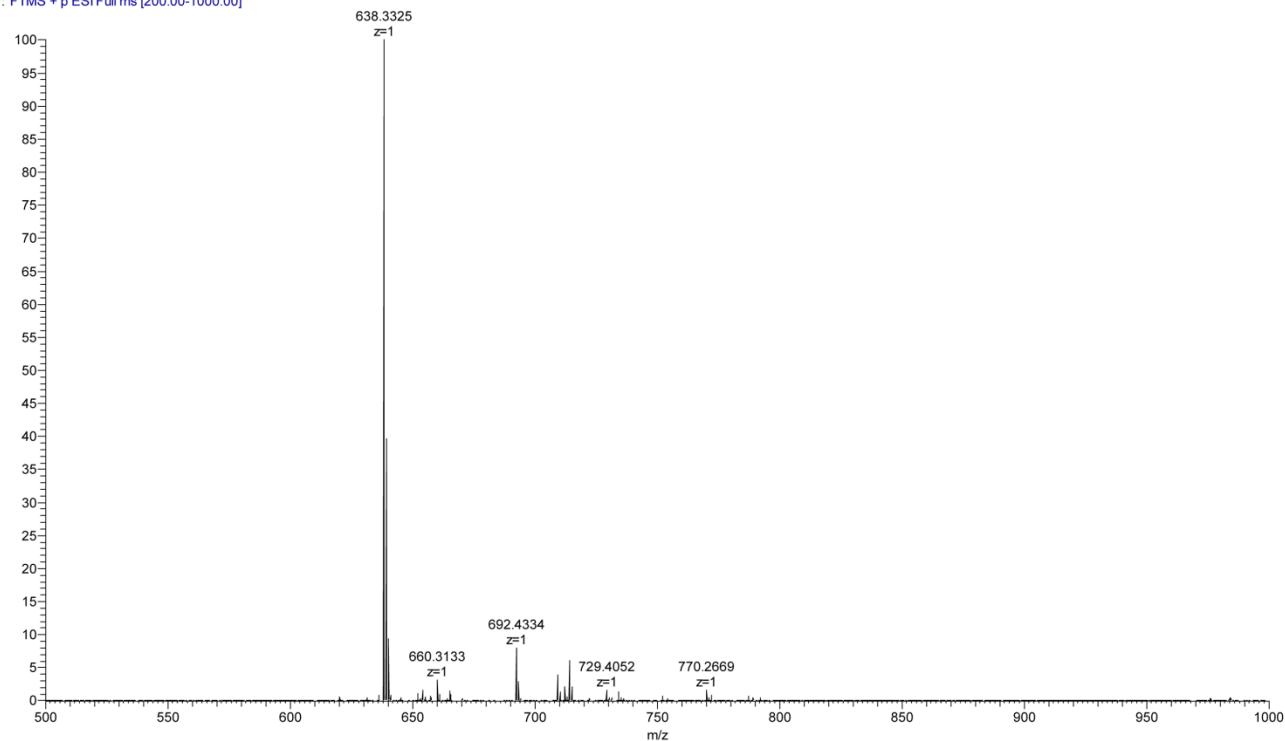


Figure S65. The proposed streptovaricin biosynthetic logic

