Supplementary Materials: Three New Polyynes from *Codonopsis pilosula* and Their Activities on Lipid Metabolism

Xiao-Yu Hu, Fu-Ying Qin, Xi-Feng Lu, Lan-Sheng Zhang, and Yong-Xian Cheng

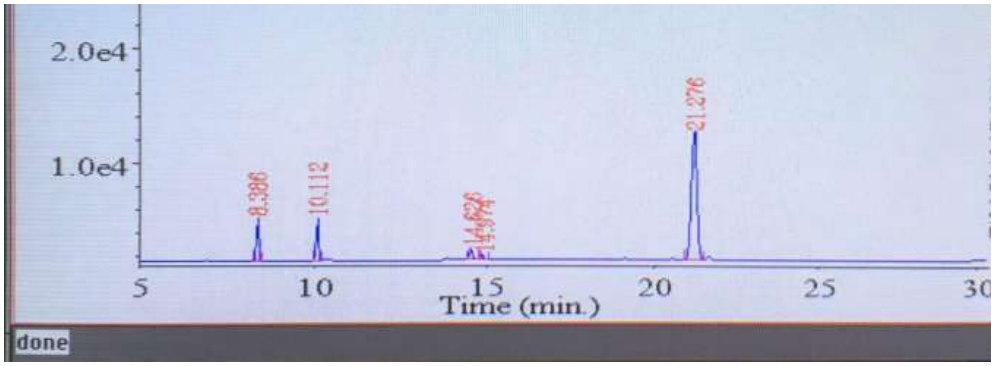


Figure S1. GC analysis of the derivative of D-glucose

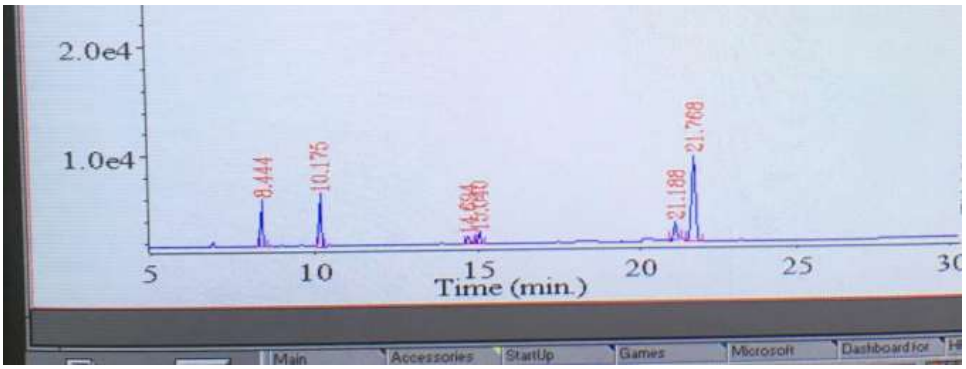


Figure S2. GC analysis of the derivative of L-glucose

Figure S3. GC analysis of the derivative of compound **1** after hydrolysis

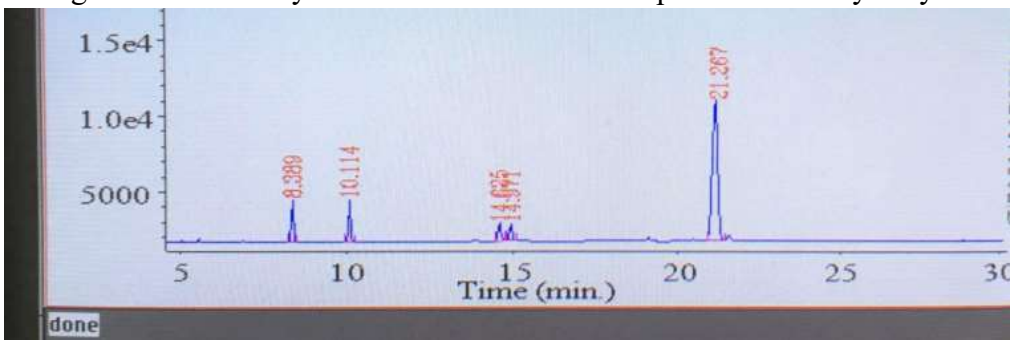


Figure S4. GC analysis of the derivative of compound **2** after hydrolysis

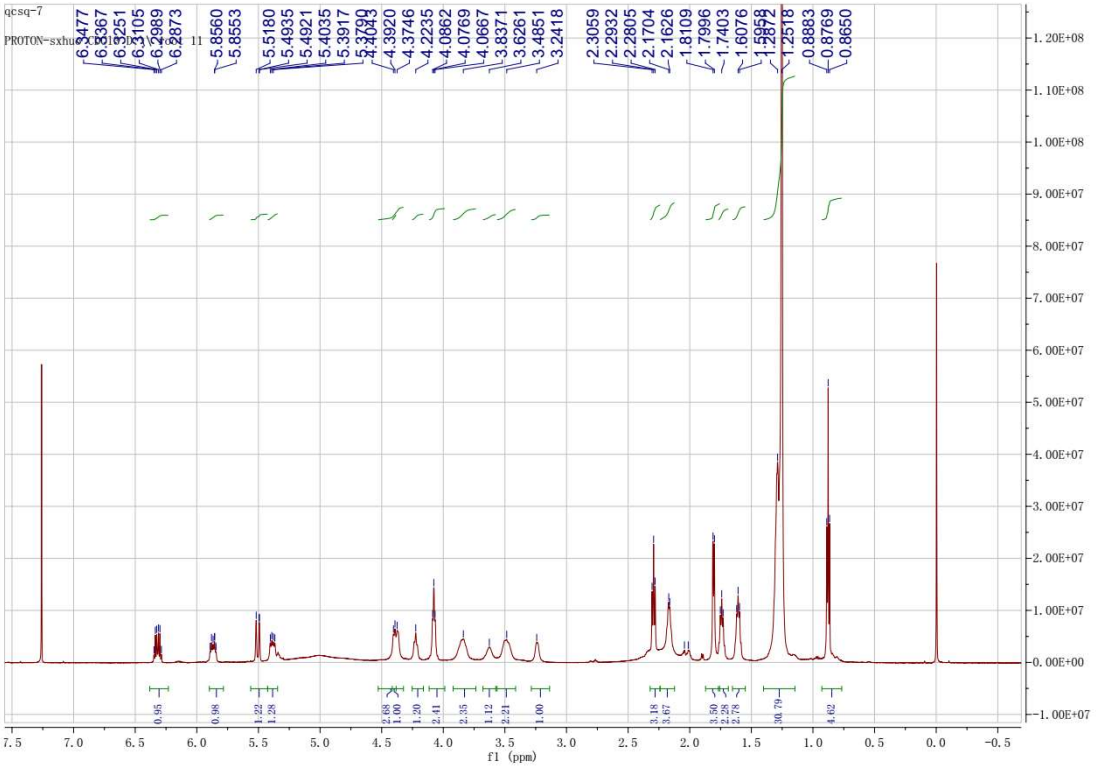


Figure S5.[1]H NMR spectrum of **1** in $CDCl_3$

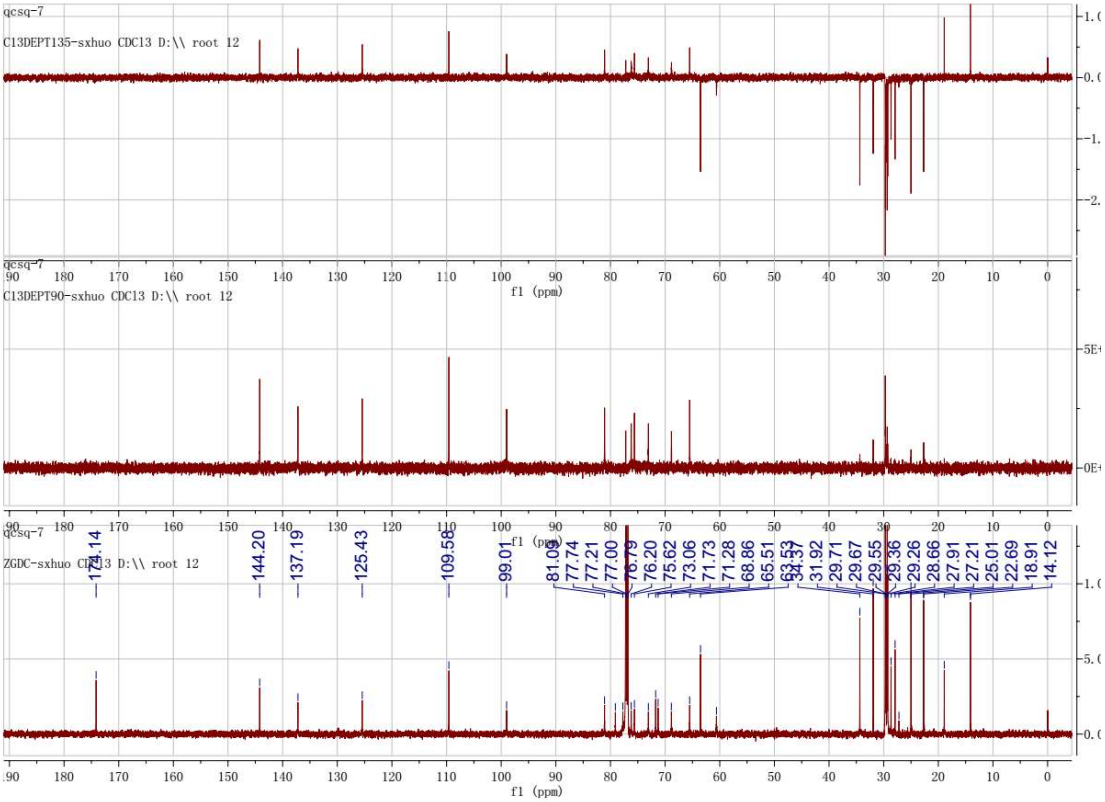


Figure S6. [13]C NMR and DEPT spectra of **1** in $CDCl_3$

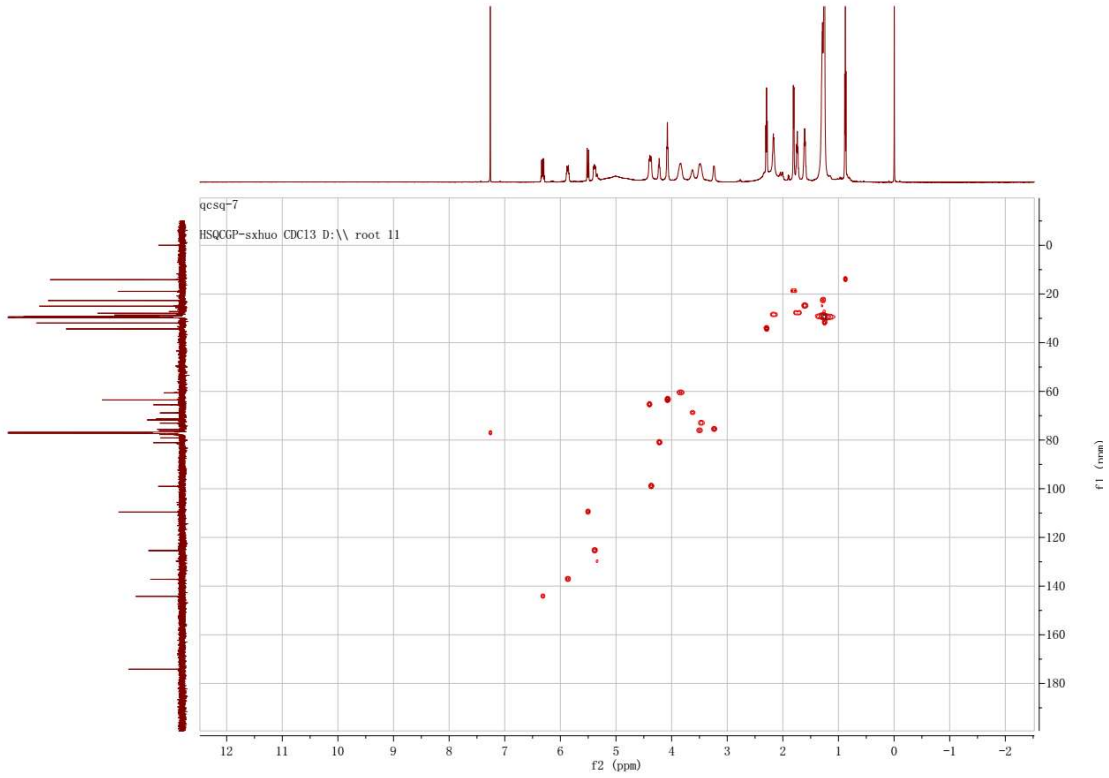


Figure S7. HSQC spectrum of **1** in $CDCl_3$

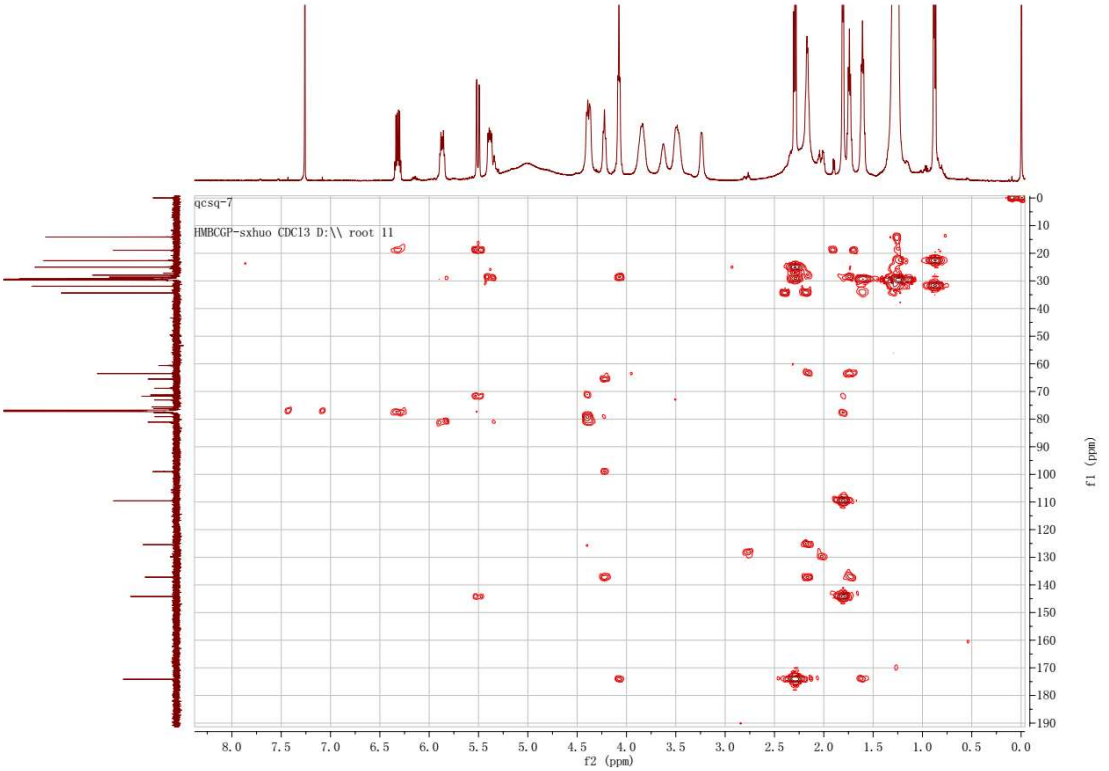


Figure S8. HMBC spectrum of **1** in $CDCl_3$

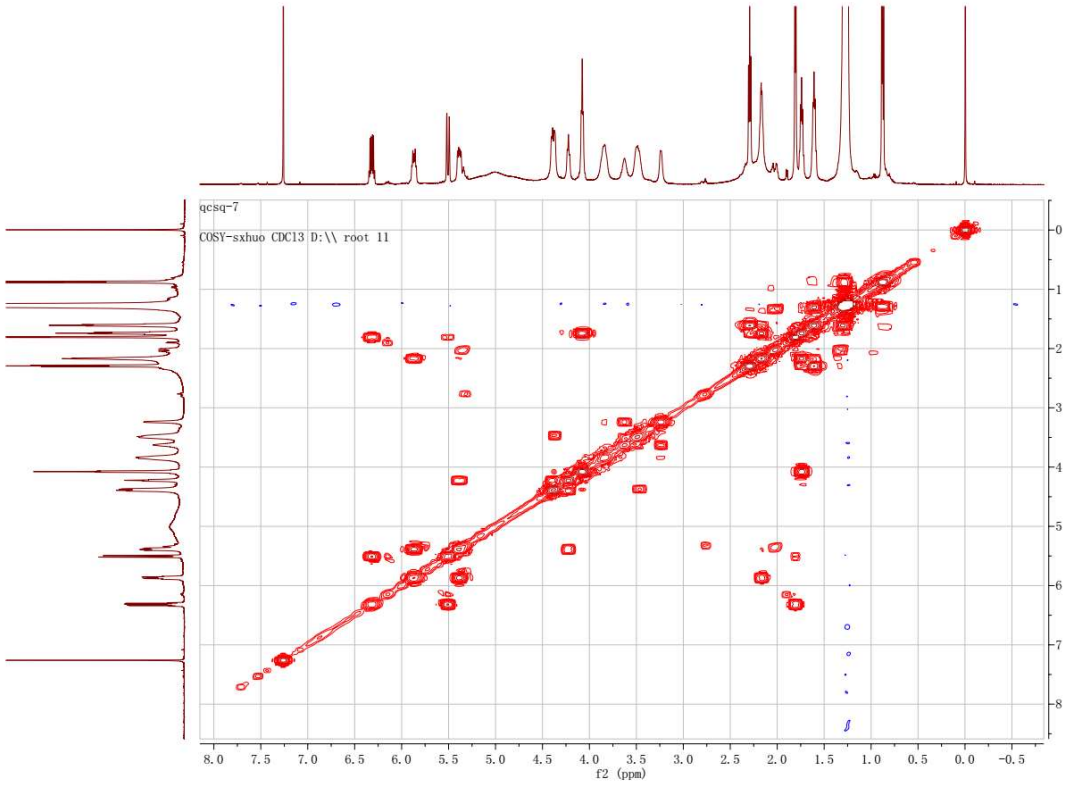


Figure S9. ^{1}H-^{1}H COSY spectrum of **1** in $CDCl_3$

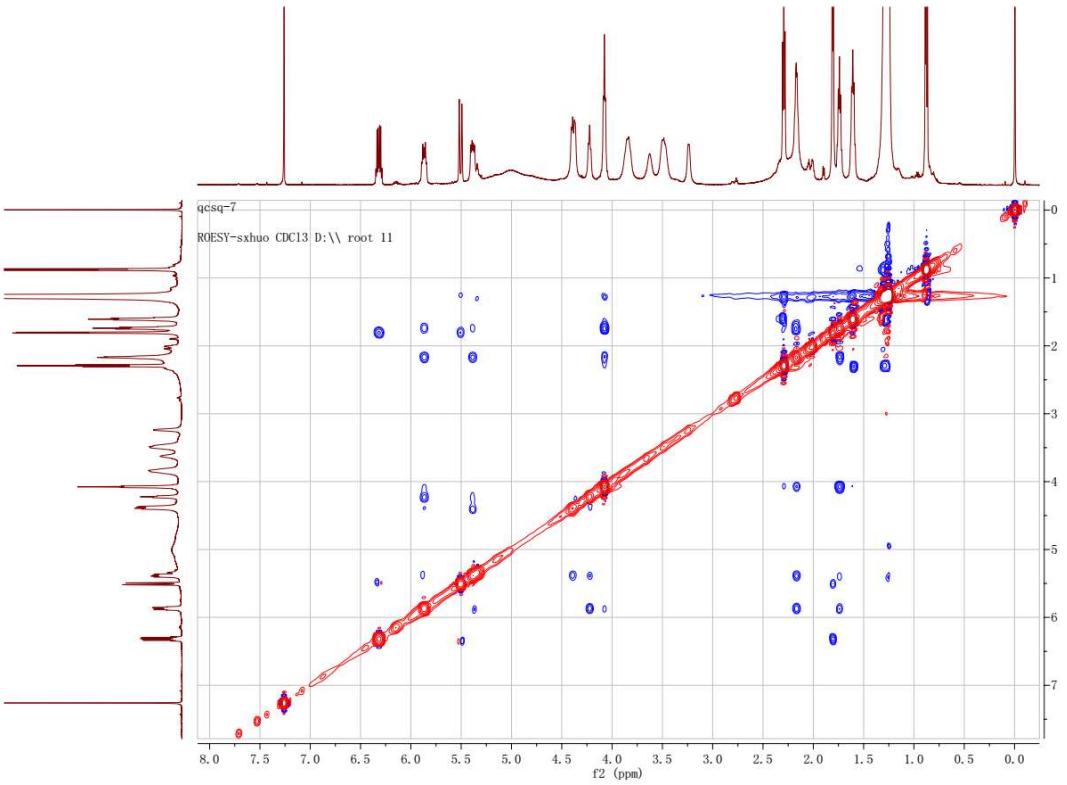


Figure S10. ROESY spectrum of **1** in $CDCl_3$

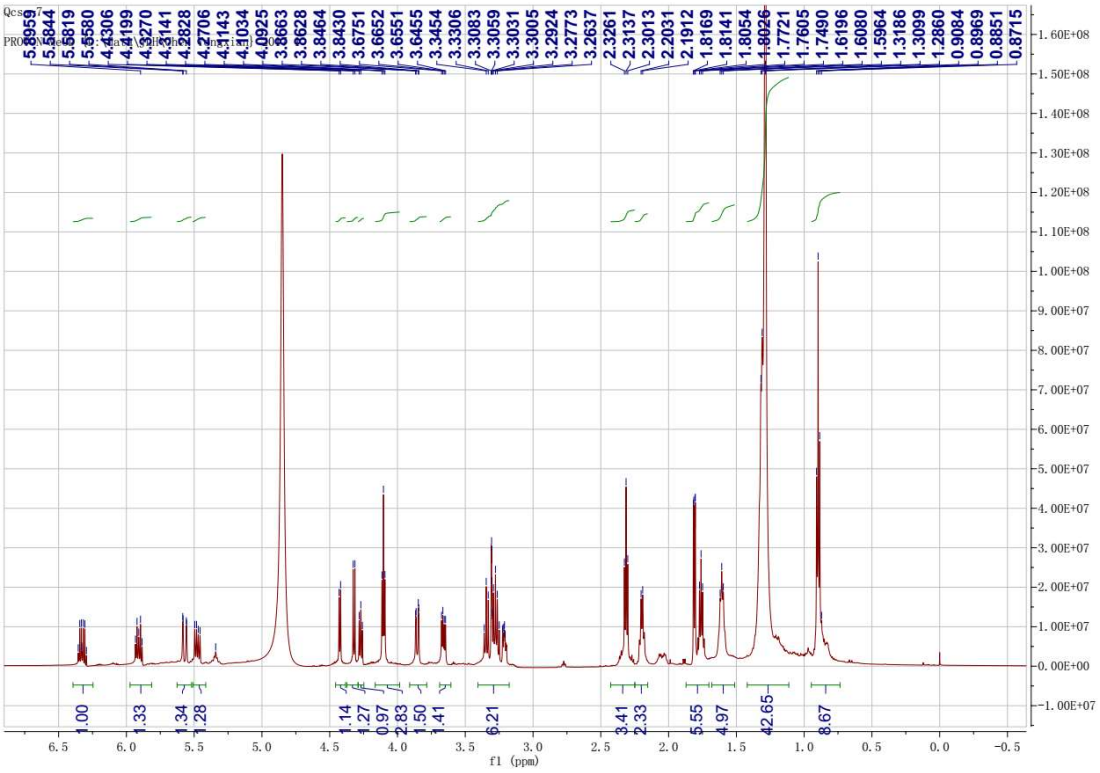


Figure S11.[1]H NMR spectrum of **1** in Methanol-d_4

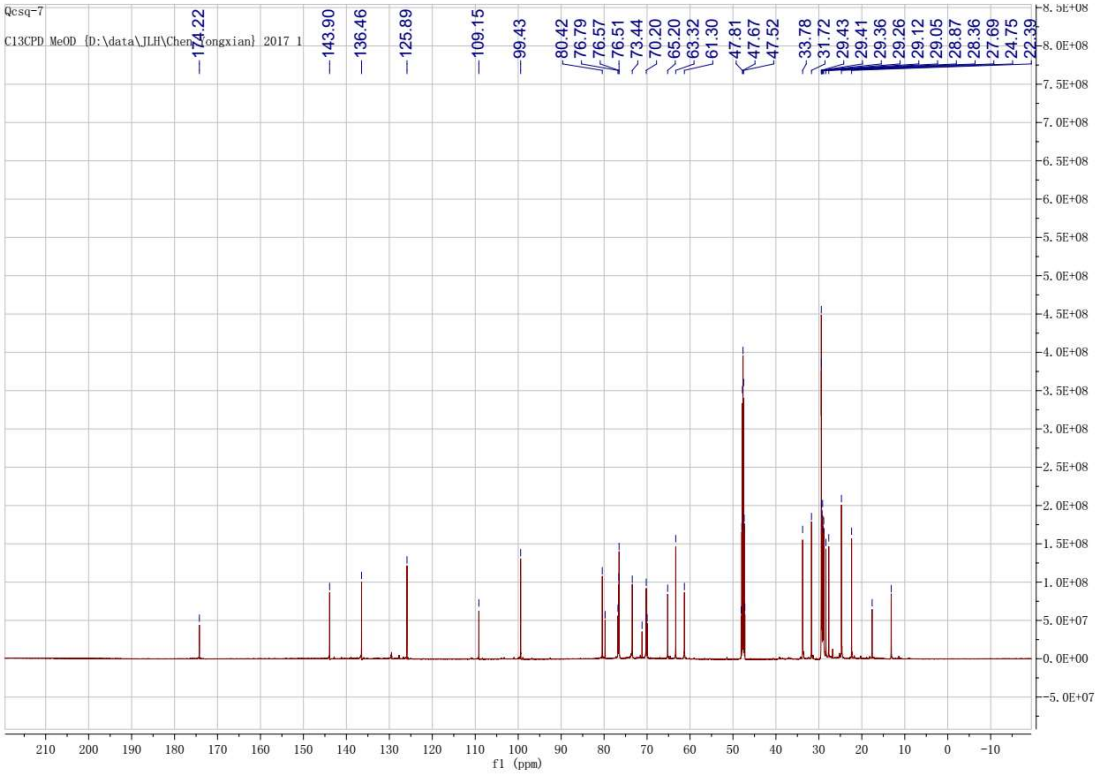


Figure S12.[13]C NMR spectrum of **1** in Methanol-d_4

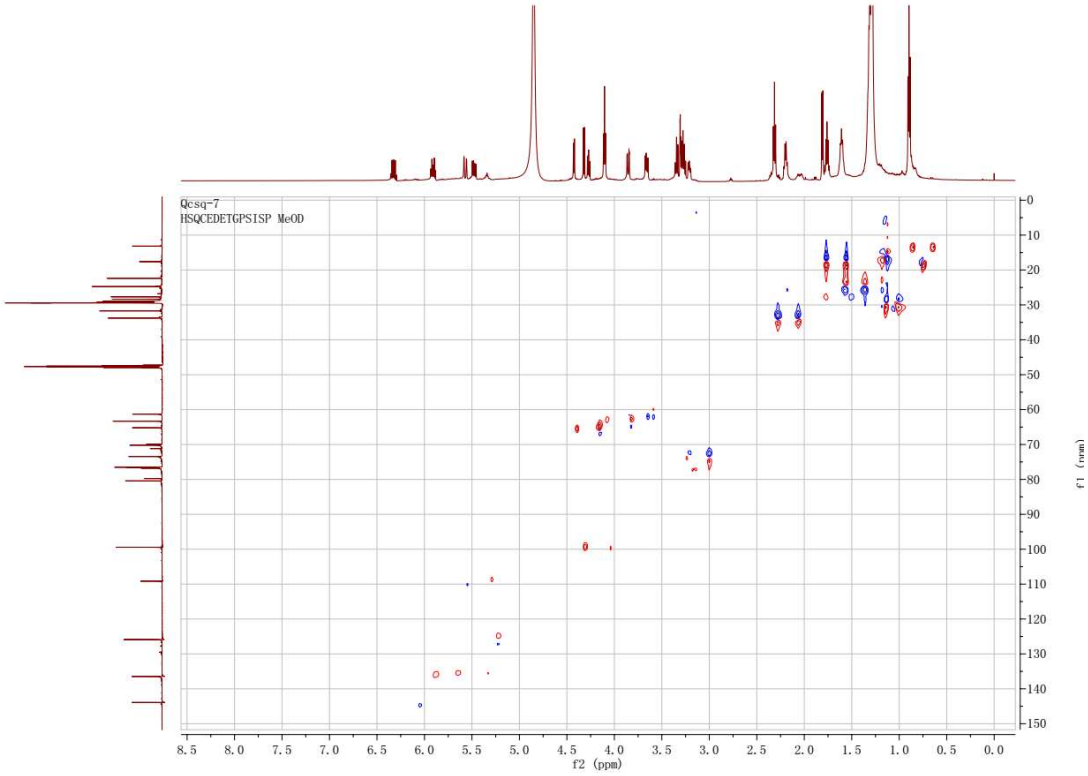


Figure S13. HSQC spectrum of **1** in Methanol-d_4

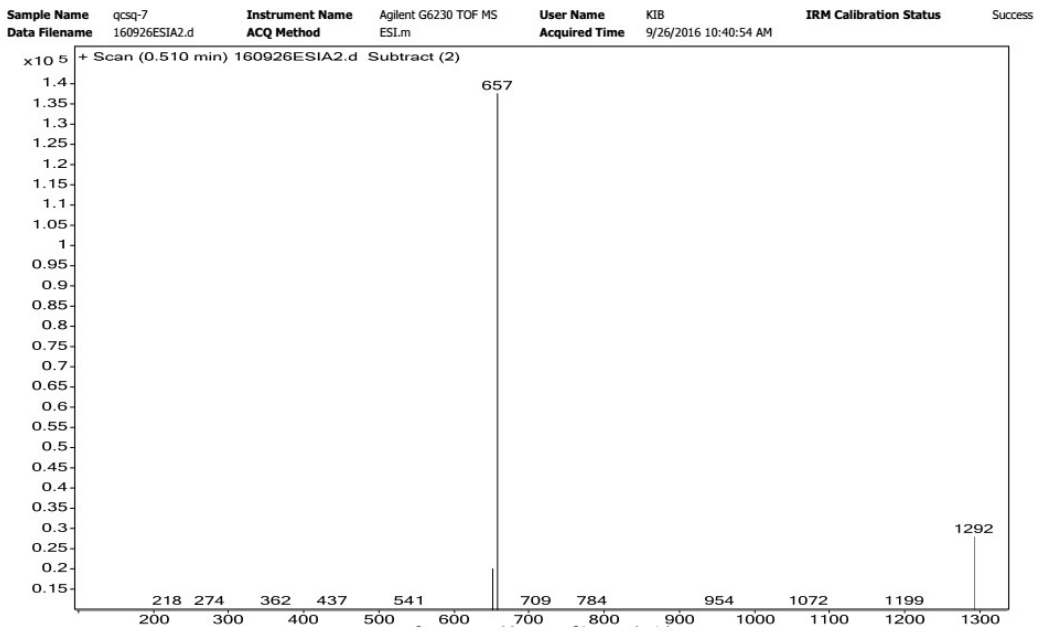


Figure S14. ESIMS of **1**

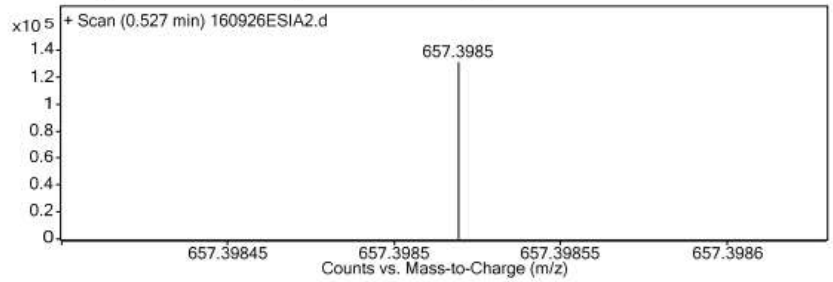
Qualitative Analysis Report

Data Filename	160926ESIA2.d	**Sample Name**	qcsq-7
Sample Type	Sample	**Position**	
Instrument Name	Agilent G6230 TOF MS	**User Name**	KIB
Acq Method	ESI.m	**Acquired Time**	9/26/2016 10:40:54 AM
IRM Calibration Status	Success	**DA Method**	Default.m
Comment			

Sample Group	**Info.**
Acquisition SW Version	6200 series TOF/6500 series Q-TOF B.05.01 (B5125.2)

User Spectra

Fragmentor Voltage	Collision Energy	Ionization Mode
200	0	ESI



Peak List

m/z	z	Abund	Formula	Ion
361.1688	1	73661.73		
362.1697	1	19172.02		
563.2517	1	144029.48		
564.2528	1	60021.64		
565.2505	1	30172.1		
652.4424	1	21541.73		
657.3985	1	130671.76	C36 H58 Na O9	M+
658.4017	1	41275.9	C36 H58 Na O9	M+
1291.805	1	28297.47		
1292.8084	1	21611.54		

Formula Calculator Element Limits

Element	Min	Max
C	0	200
H	0	400
O	0	12
Na	1	1

Formula Calculator Results

Formula	CalculatedMass	Mz	Diff.(mDa)	Diff. (ppm)	DBE
C36 H58 Na O9	657.3979	657.3985	-0.7	1.0	7.5

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Figure S15. HRESIMS of **1**

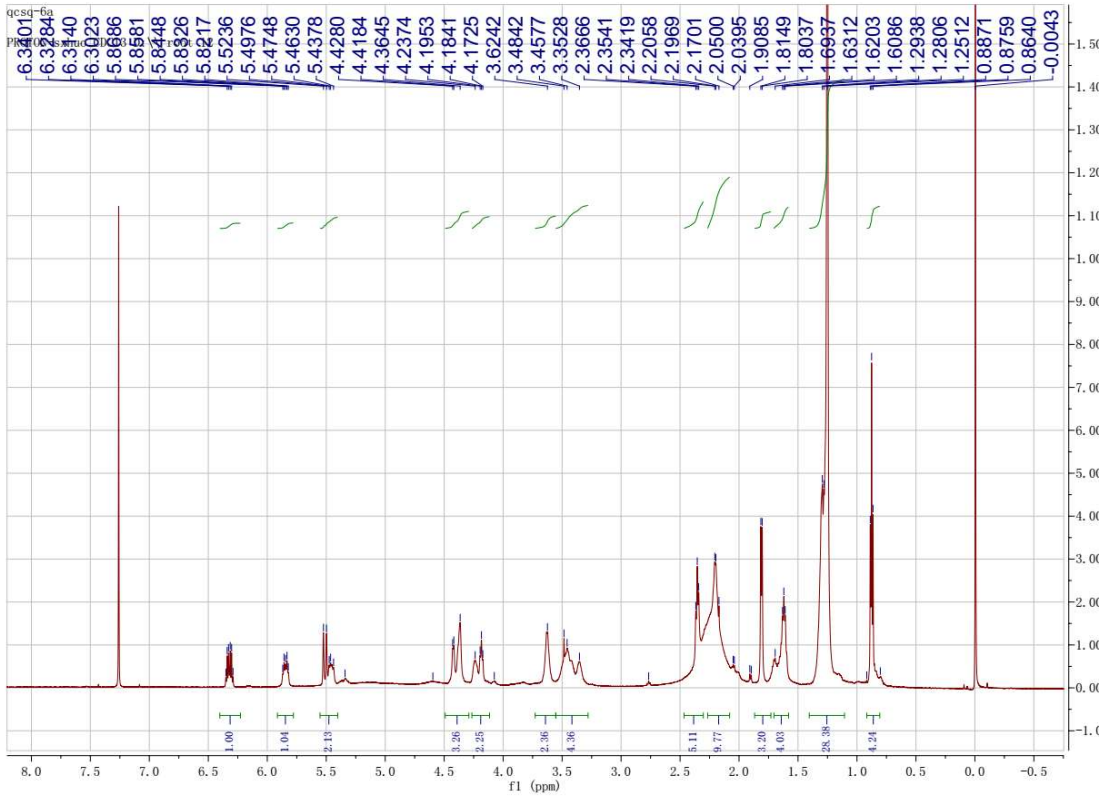


Figure S16. ^{1}H NMR spectrum of **2** in $CDCl_3$

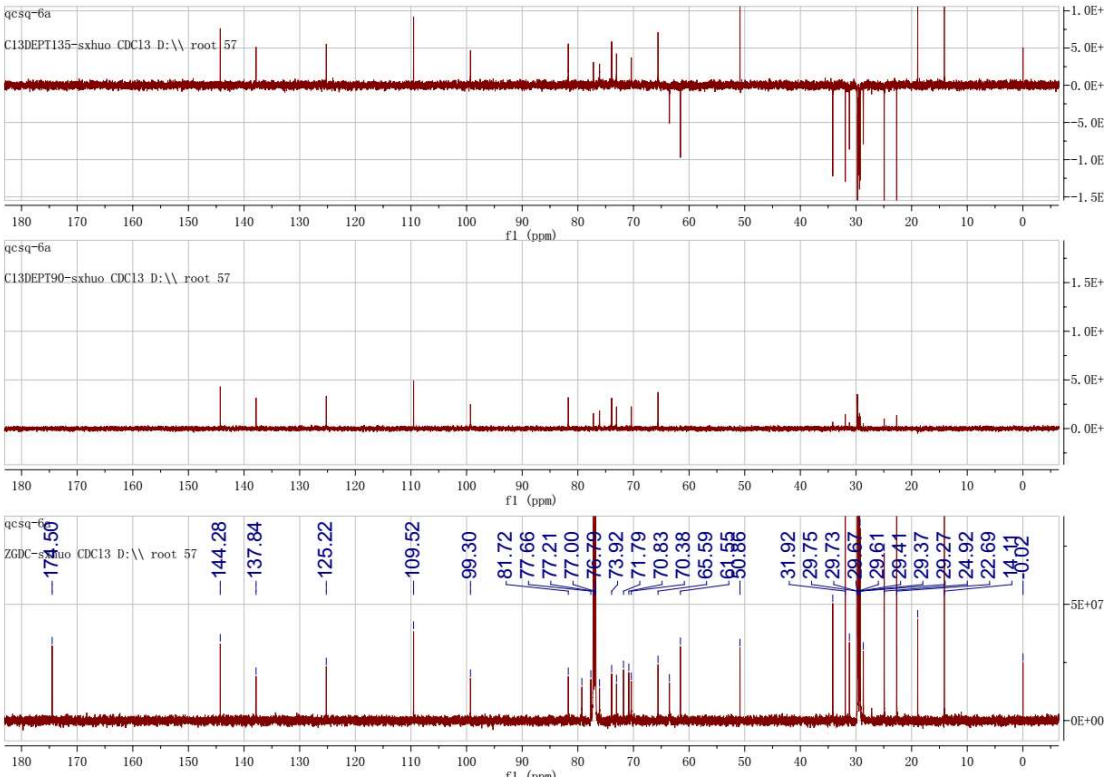


Figure S17. ^{13}C NMR and DEPT spectra of **2** in $CDCl_3$

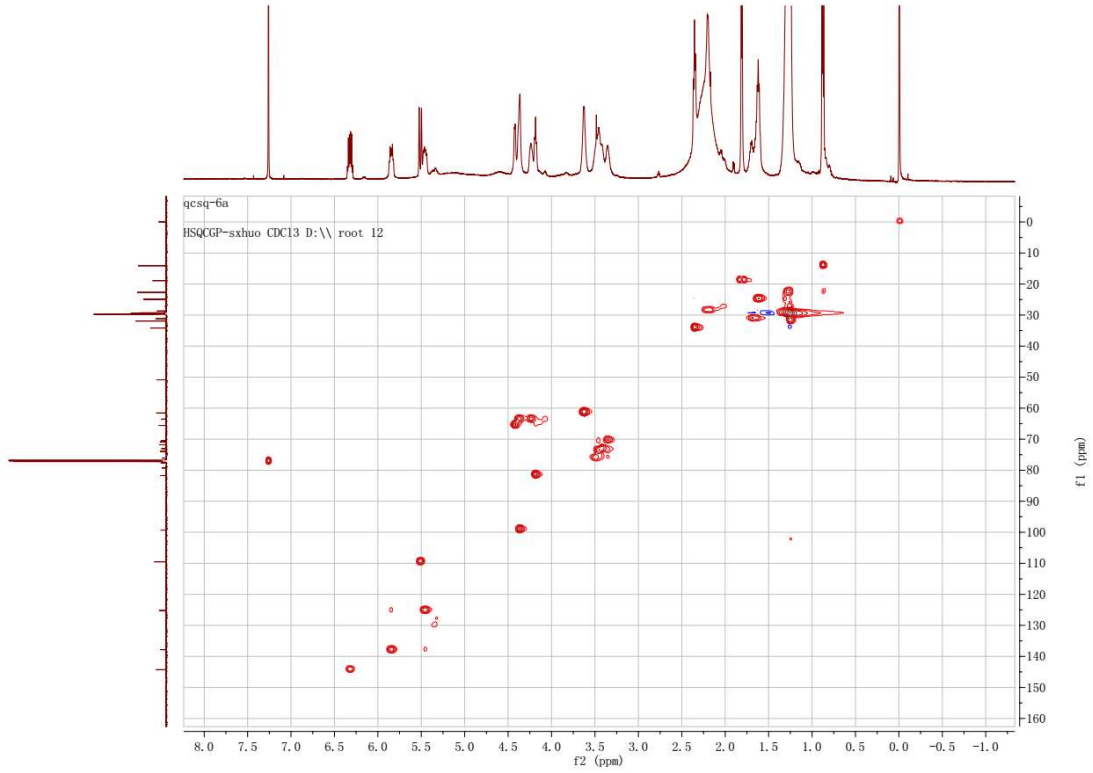


Figure S18. HSQC spectrum of **2** in $CDCl_3$

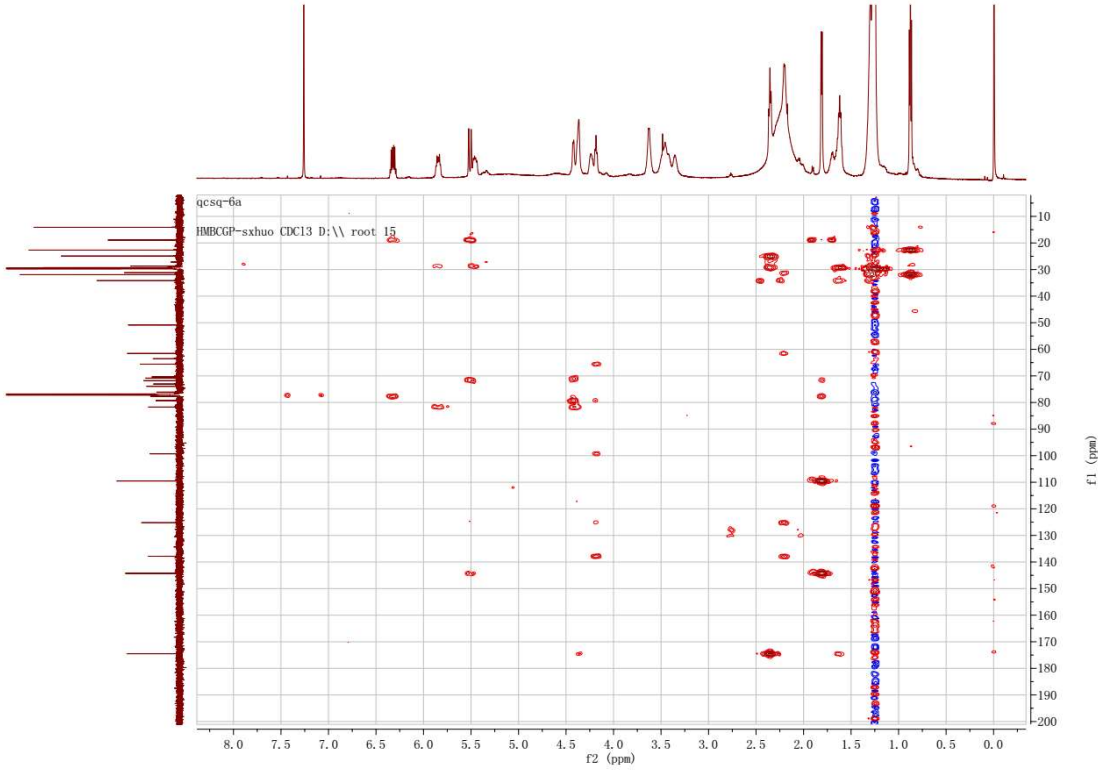


Figure S19. HMBC spectrum of **2** in $CDCl_3$

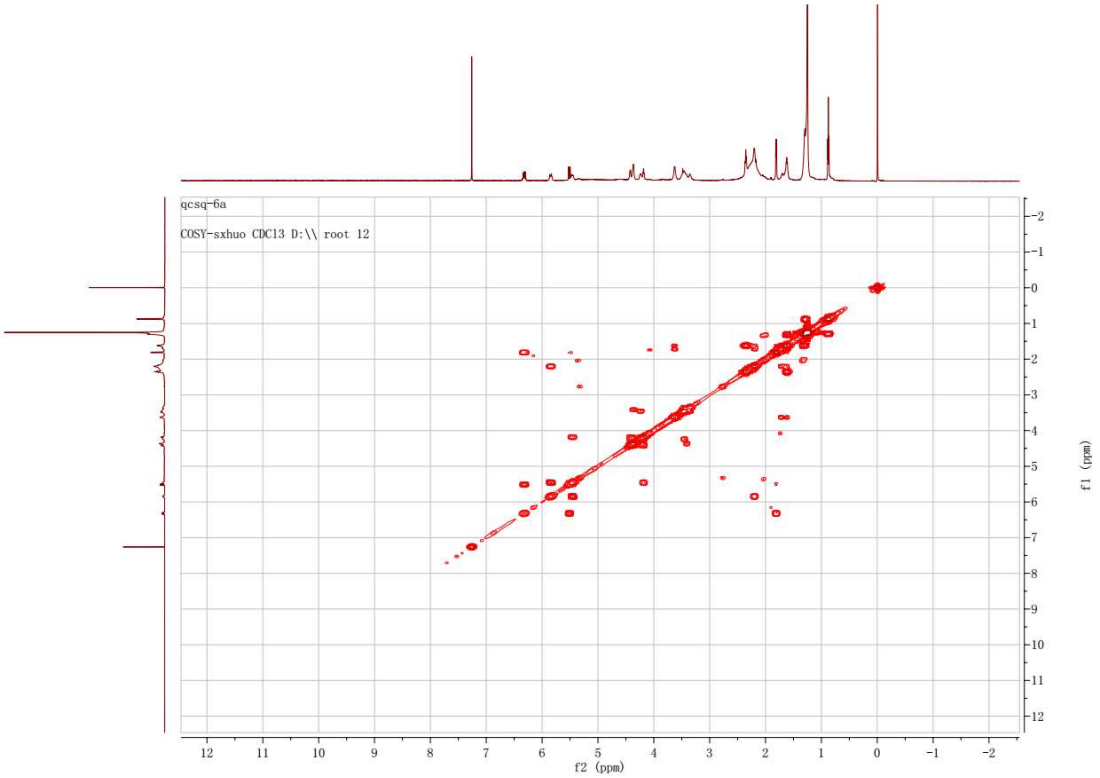


Figure S20. ^{1}H-^{1}H COSY spectrum of **2** in $CDCl_3$

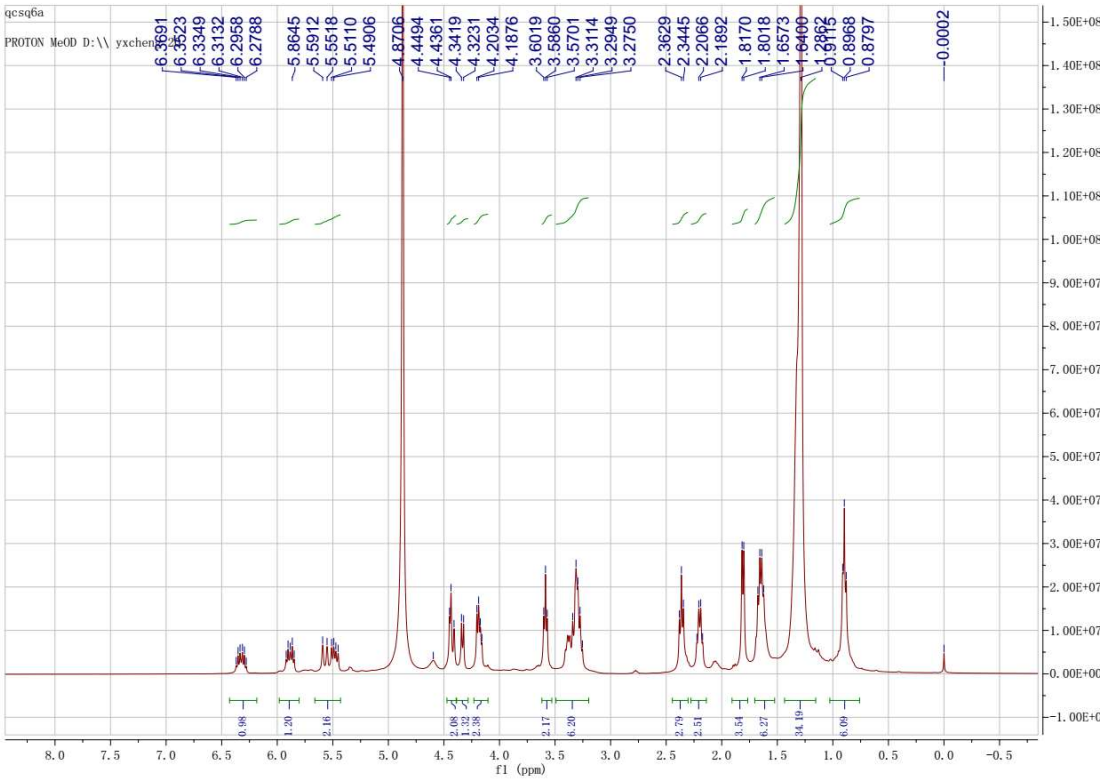


Figure S21. ^{1}H NMR spectrum of **2** in Methanol-d_4

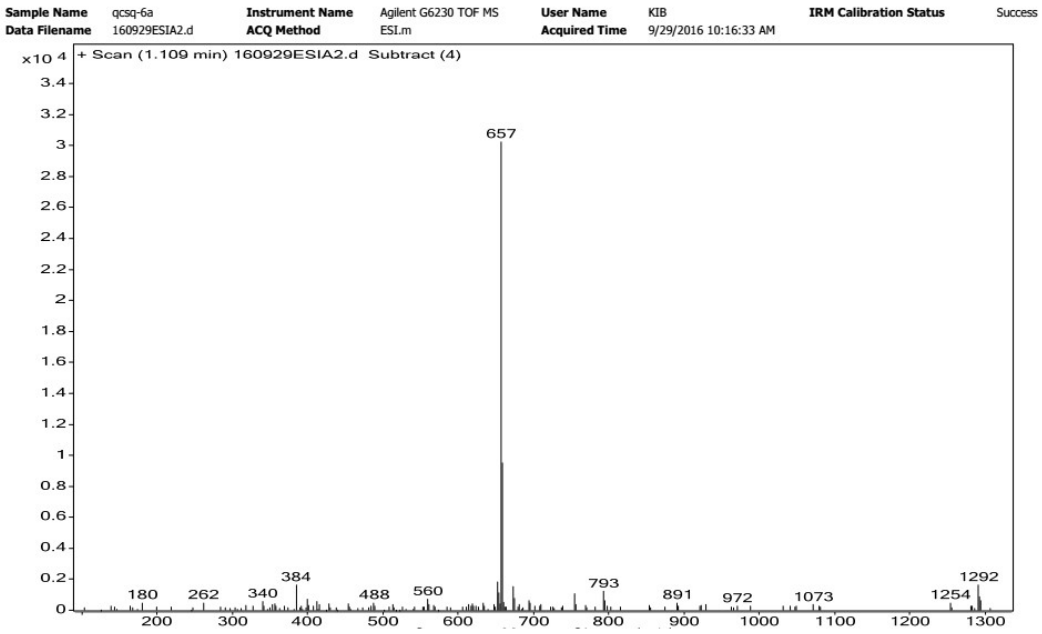


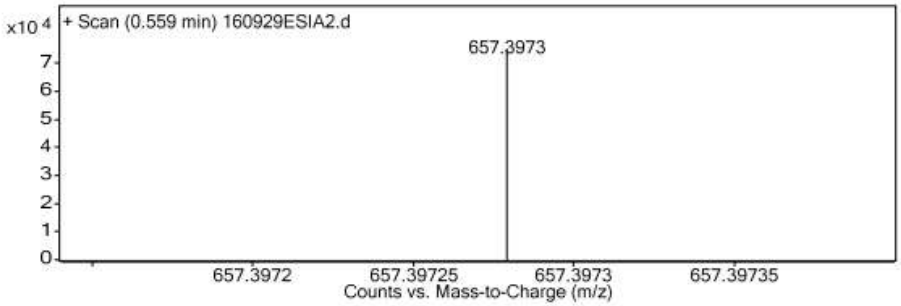
Figure S22. ESIMS of **2**

Data Filename	160929ESIA2.d	**Sample Name**	qcsq-6a
Sample Type	Sample	**Position**	
Instrument Name	Agilent G6230 TOF MS	**User Name**	KIB
Acq Method	ESI.m	**Acquired Time**	9/29/2016 10:16:33 AM
IRM Calibration Status	Success	**DA Method**	ESI.m
Comment			

Sample Group	**Info.**
Acquisition SW Version	6200 series TOF/6500 series Q-TOF B.05.01 (B5125.2)

User Spectra

Fragmentor Voltage	Collision Energy	Ionization Mode
200	0	ESI



Peak List

m/z	z	Abund	Formula	Ion
105.0429		5809.14		
121.0509	1	68802.3		
274.2736	1	11898.93		
318.2999	1	9733.59		
657.3973	1	74909.94	C36 H58 Na O9	M+
658.3999	1	22984.5	C36 H58 Na O9	M+
922.0098	1	71542.01		
923.0106	1	9845.04		
1291.8023	1	12512.37		
1292.8052	1	9070.89		

Formula Calculator Element Limits

Element	Min	Max
C	0	200
H	0	400
O	5	12
Na	1	1

Formula Calculator Results

Formula	CalculatedMass	Mz	Diff.(mDa)	Diff. (ppm)	DBE
C36 H58 Na O9	657.3979	657.3973	0.5	0.8	7.5

--- End Of Report ---

Figure S23. HRESIMS of **2**

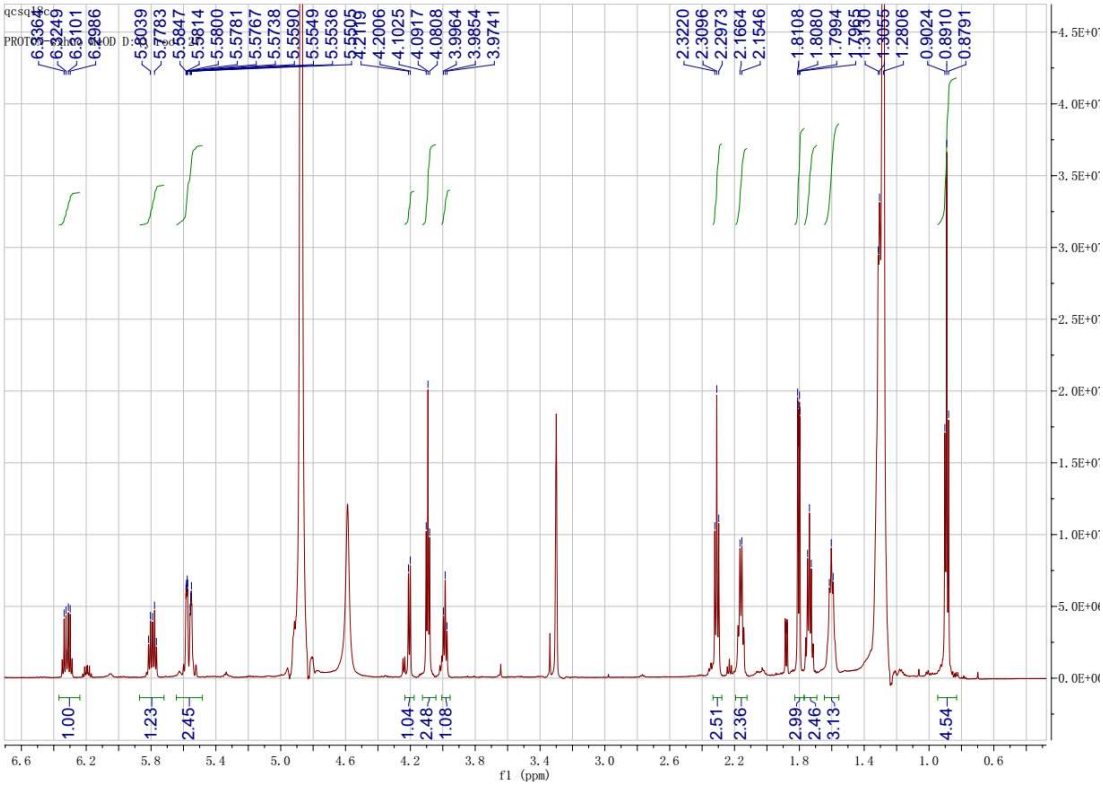


Figure S24.[1]H NMR spectrum of **3** in Methanol-d_4

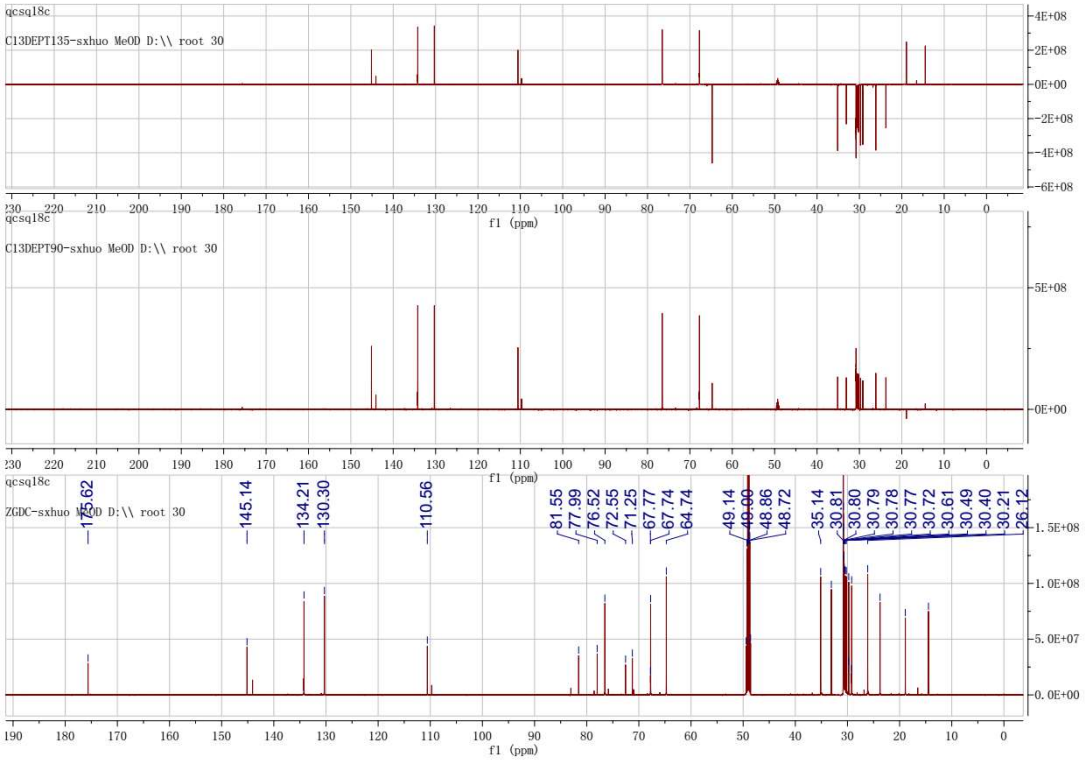


Figure S25. [13]C NMR and DEPT spectra **3** in Methanol-d_4

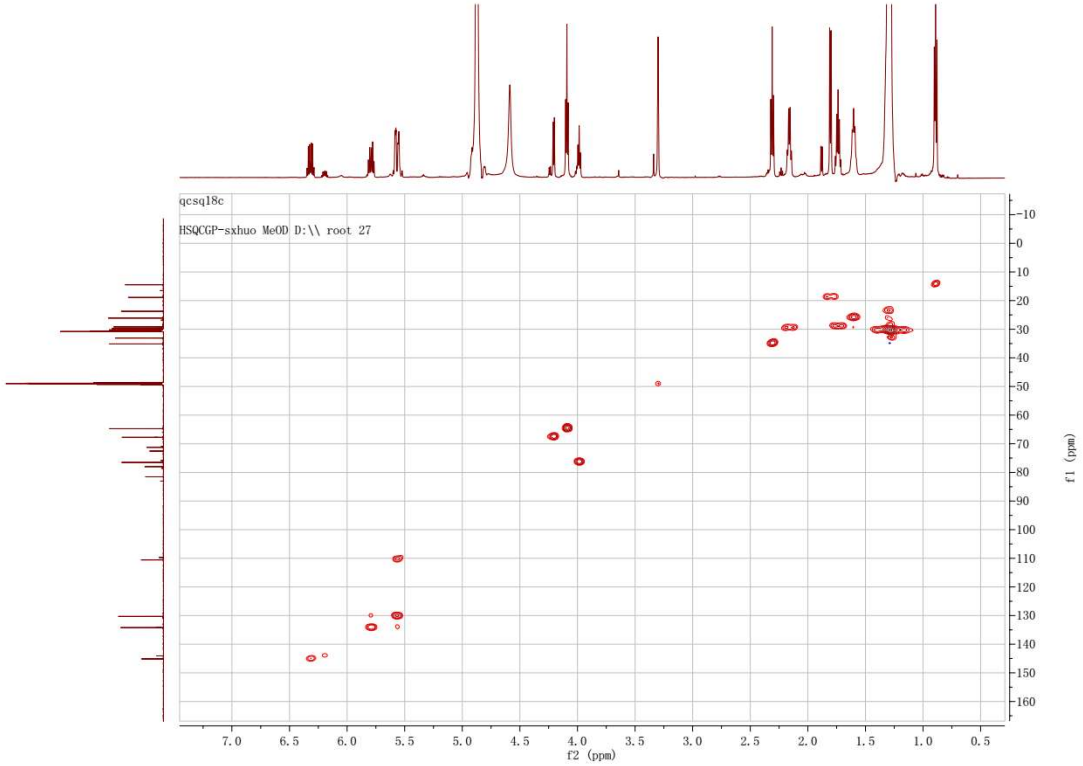


Figure S26. HSQC spectrum of **3** in Methanol-d_4

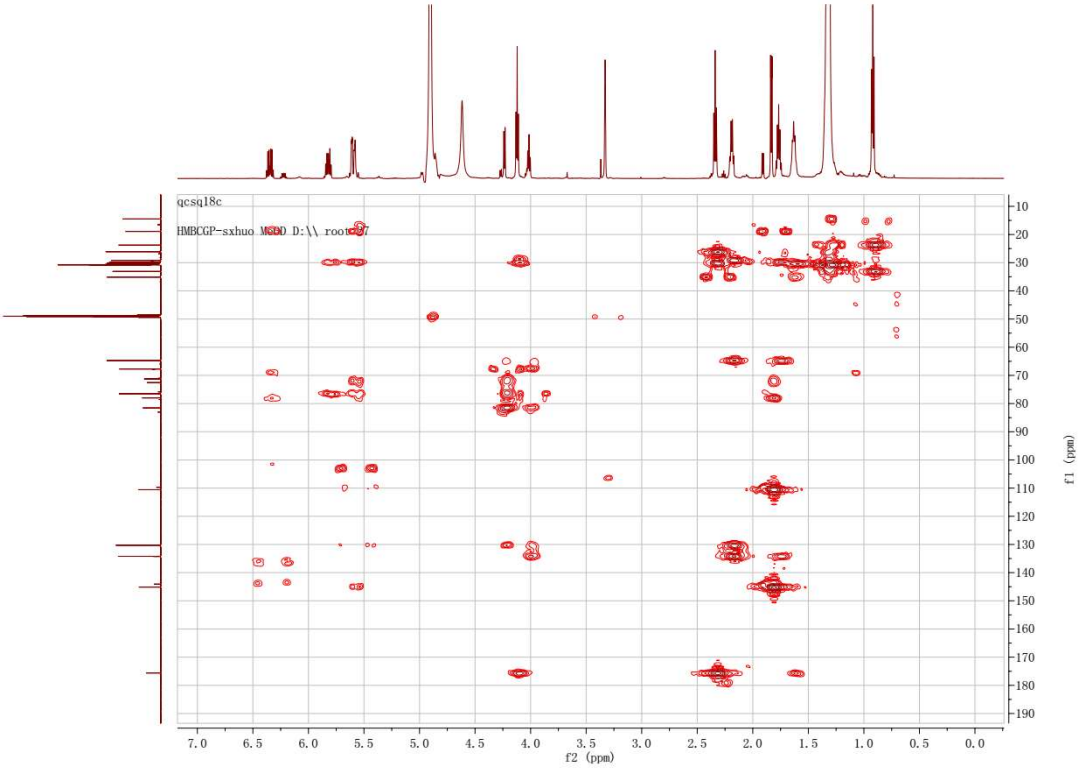


Figure S27. HMBC spectrum of **3** in Methanol-d_4

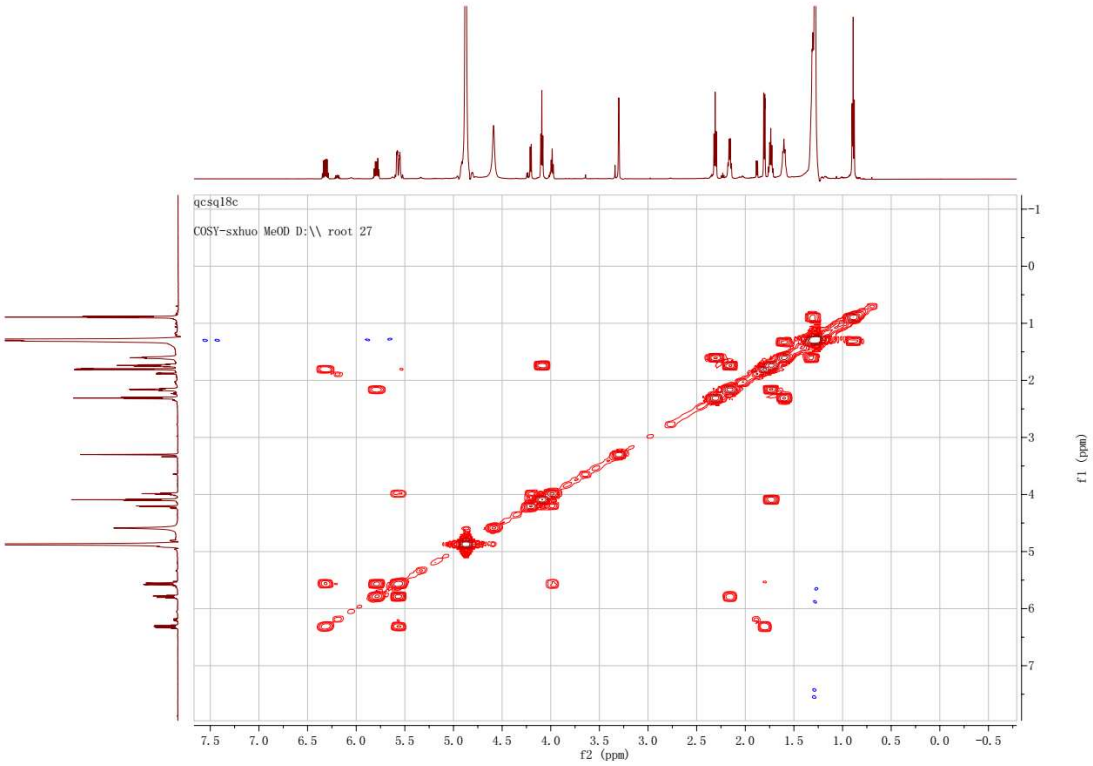


Figure S28. ^{1}H-^{1}H COSY spectrum of **3** in Methanol-d_4

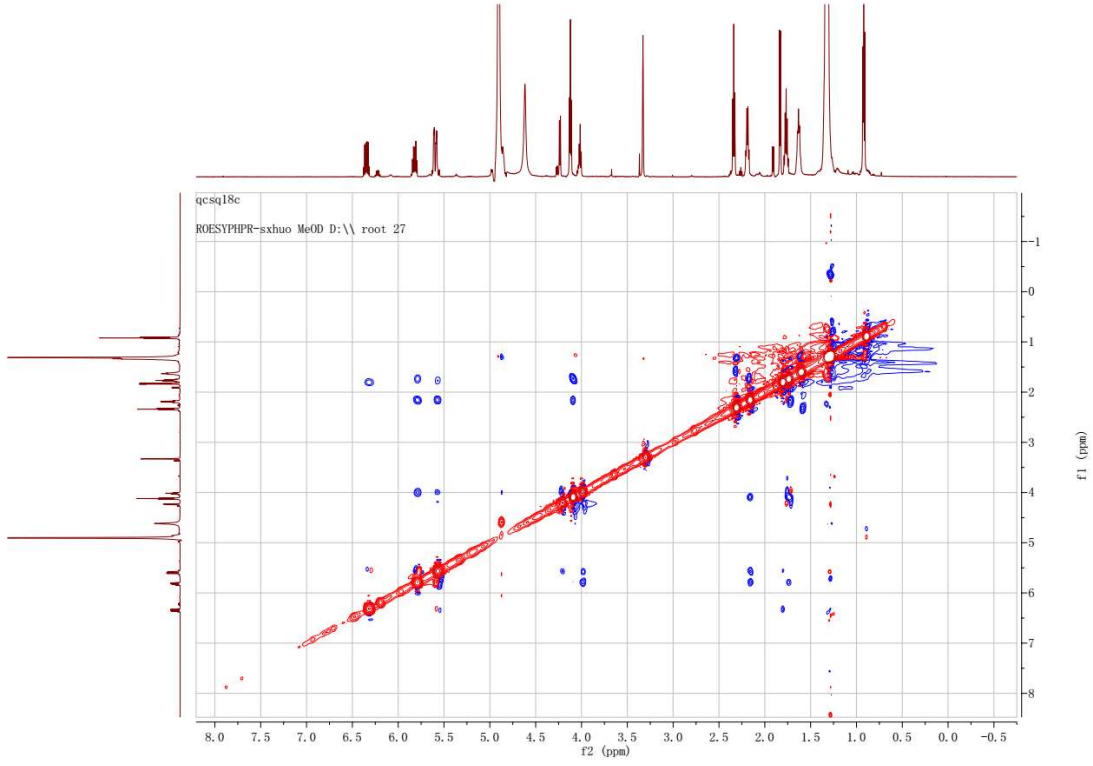


Figure S29. ROESY spectrum of **3** in Methanol-d_4

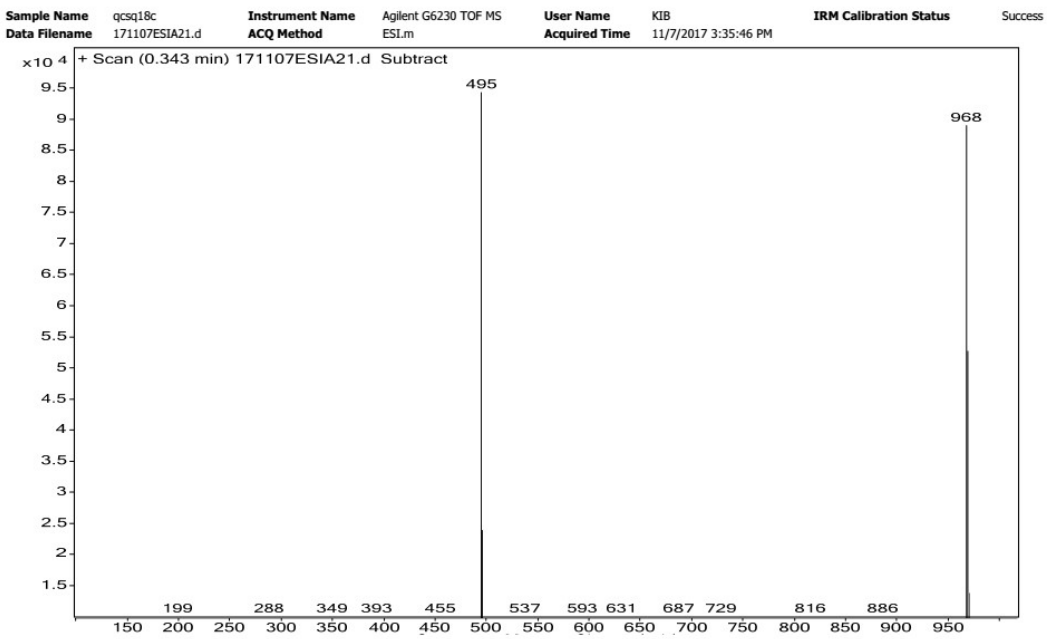


Figure S30. ESIMS of **3**

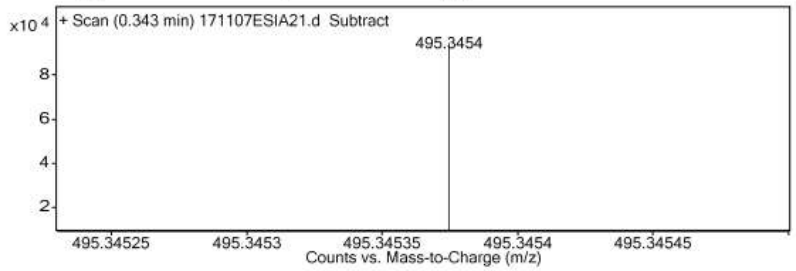
Qualitative Analysis Report

Data Filename	171107ESIA21.d	**Sample Name**	qcsq18c
Sample Type	Sample	**Position**	
Instrument Name	Agilent G6230 TOF MS	**User Name**	KIB
Acq Method	ESI.m	**Acquired Time**	11/7/2017 3:35:46 PM
IRM Calibration Status	Success	**DA Method**	ESI.m
Comment			

Sample Group	**Info.**
Acquisition SW Version	6200 series TOF/6500 series Q-TOF B.05.01 (B5125.2)

User Spectra

Fragmentor Voltage	Collision Energy	Ionization Mode
200	0	ESI



Peak List

m/z	z	Abund	Formula	Ion
490.3881	1	2102.16		
495.3454	1	94289.97	C30 H48 Na O4	M+
496.3482	1	23804.53	C30 H48 Na O4	M+
497.3512	1	3631.07	C30 H48 Na O4	M+
511.3185	1	3265.76		
967.702	1	88980.99		
968.7046	1	52654.56		
969.7065	1	13719.56		
970.7078	1	2324.96		
983.675	1	2921		

Formula Calculator Element Limits

Element	Min	Max
C	0	200
H	0	400
O	0	10
Na	1	1

Formula Calculator Results

Formula	CalculatedMass	Mz	Diff.(mDa)	Diff. (ppm)	DBE
C30 H48 Na O4	495.3450	495.3454	-0.4	0.7	6.5

--- End Of Report ---

Figure S31. HRESIMS of **3**