

# New Cladiellin-type Diterpenoids from the South China Sea Soft Coral *Cladiella krempfi*: Structures and Molecular Docking analysis in EGFRs

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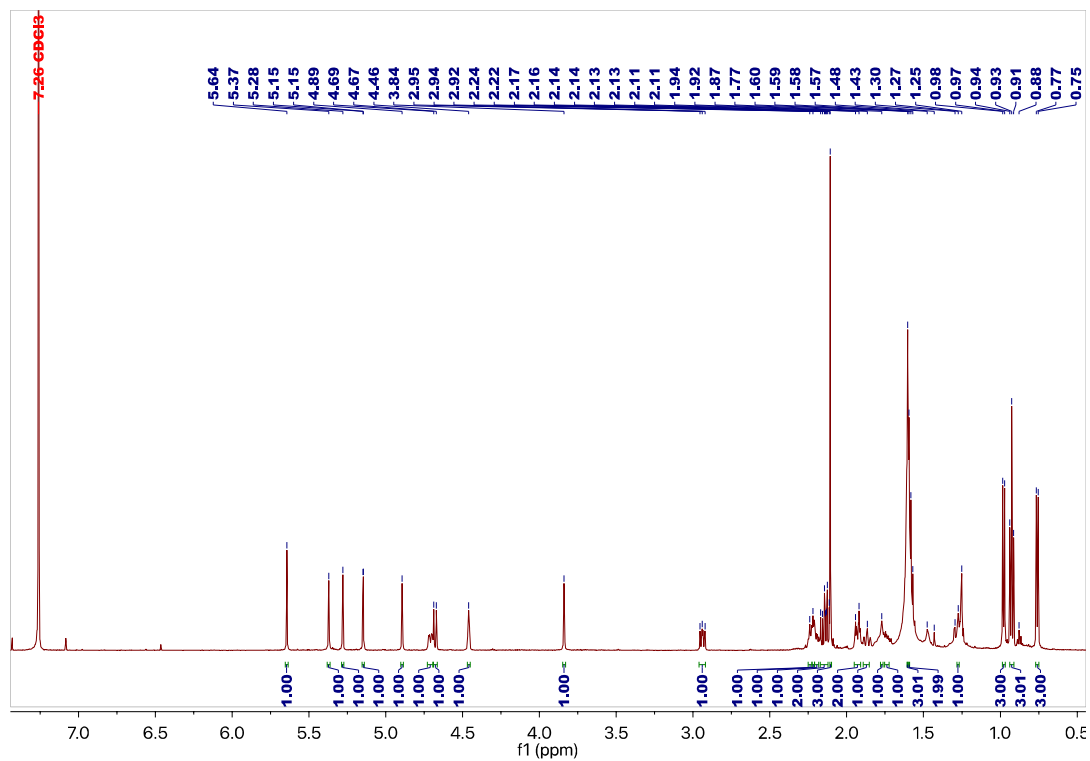
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**Table S1.** EGFR inhibitory data of compounds **1–6** and the positive control staurosporine.

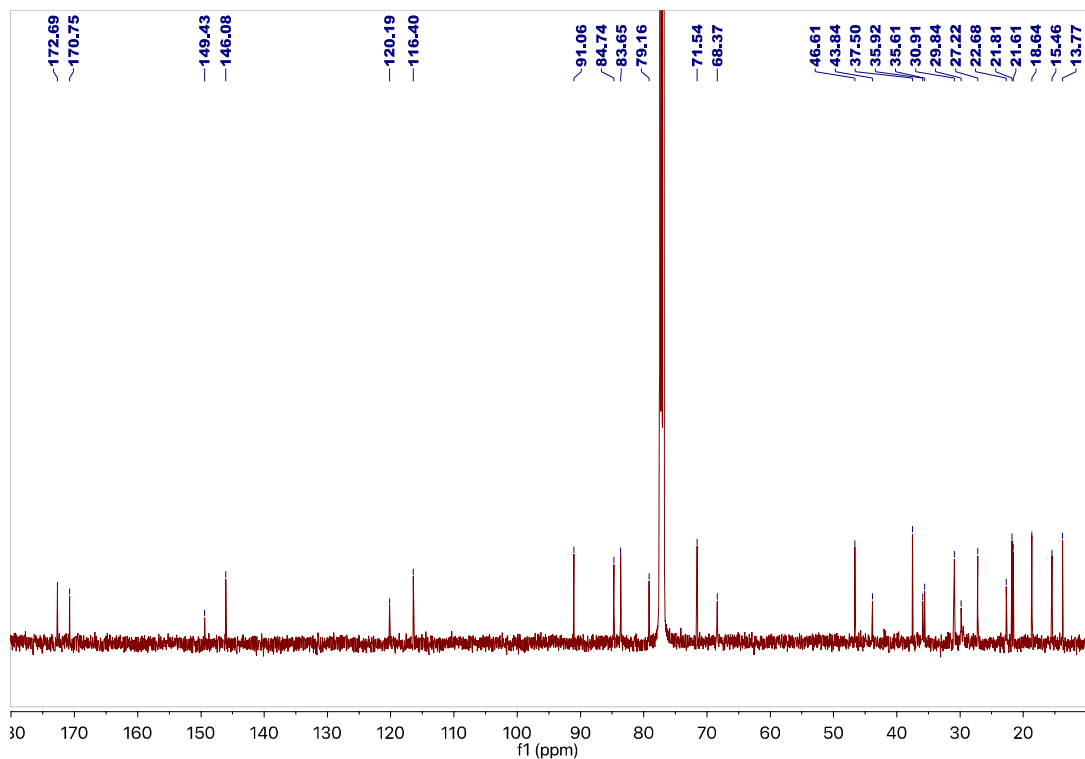
Compound ID	Concentration (nM)	Mean	SD
<b>1</b>	20000	-9.9	4.5
<b>2</b>	20000	-12.5	4.2
<b>3</b>	20000	-3.8	5.3
<b>4</b>	20000	-3.4	5.8
<b>5</b>	20000	-7.5	3.1
<b>6</b>	20000	-4.9	3.7
Staurosporine		IC <sub>50</sub> = 82.3 nM	

**Table S2.** In silico docking parameters between compounds **2-6** and the ligand of 7XO site of 5X2A

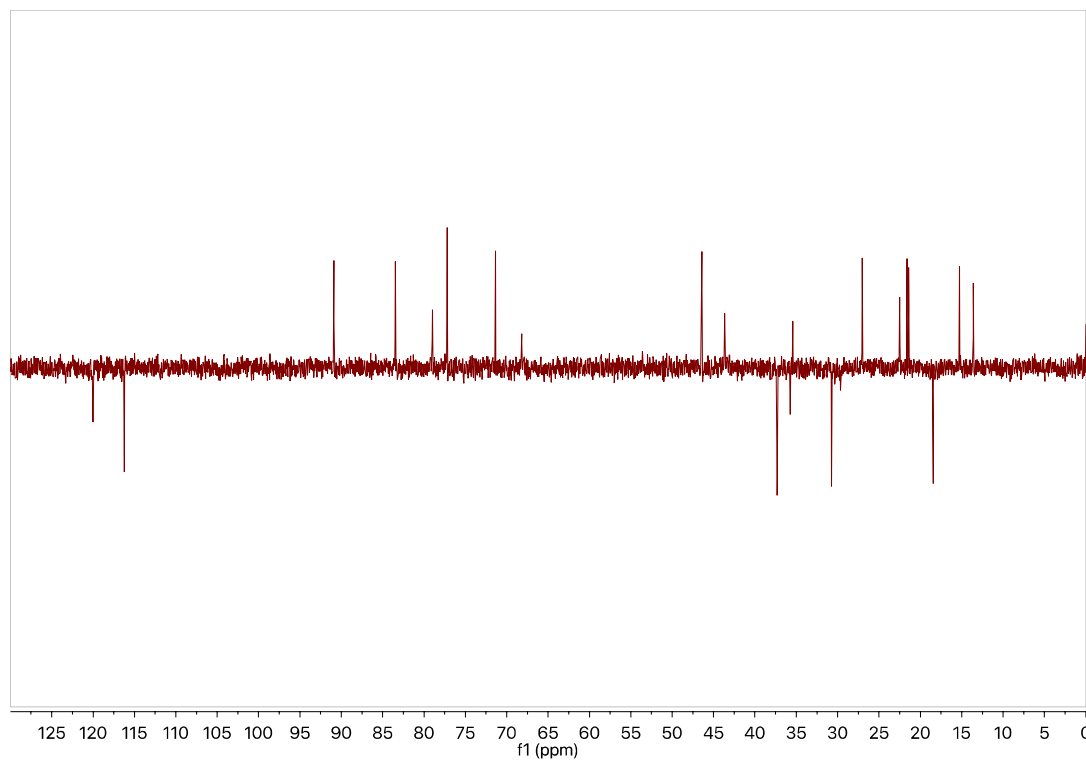
EGFR crystal structure	Compound ID	Number of hydrogen bonds	Binding Energy (kcal mol <sup>-1</sup> )	Van der Waals Energy (kcal mol <sup>-1</sup> )	-CDOCKER ENERGY (kcal mol <sup>-1</sup> )	-CDOCKER INTERACTION ENERGY (kcal mol <sup>-1</sup> )
5X2A	<b>2</b>	3	3.57	-19.62	-21.53	56.27
	<b>3</b>	1	1.83	-13.54	-28.67	47.16
	<b>4</b>	3	0.13	-14.00	-24.37	55.77
	<b>5</b>	1	8.52	-15.53	-25.47	54.58
	<b>6</b>	2	3.72	-14.21	-30.33	49.82



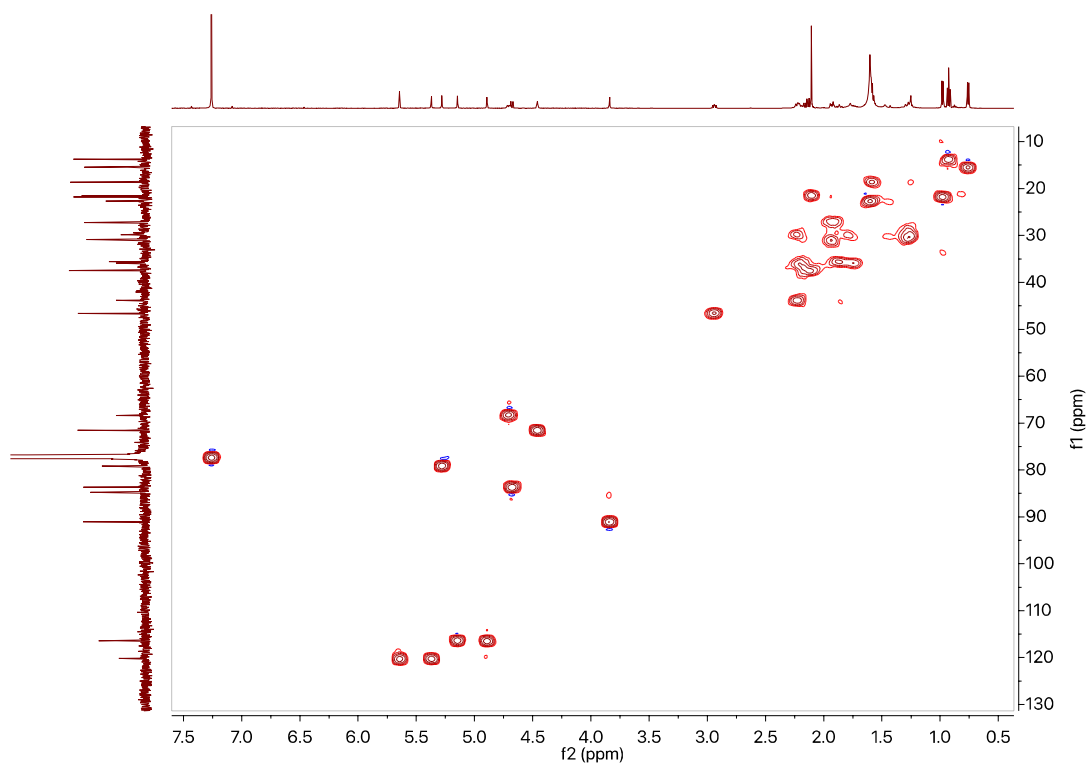
**Figure S1.** <sup>1</sup>H NMR spectrum of compound **1** in CDCl<sub>3</sub>



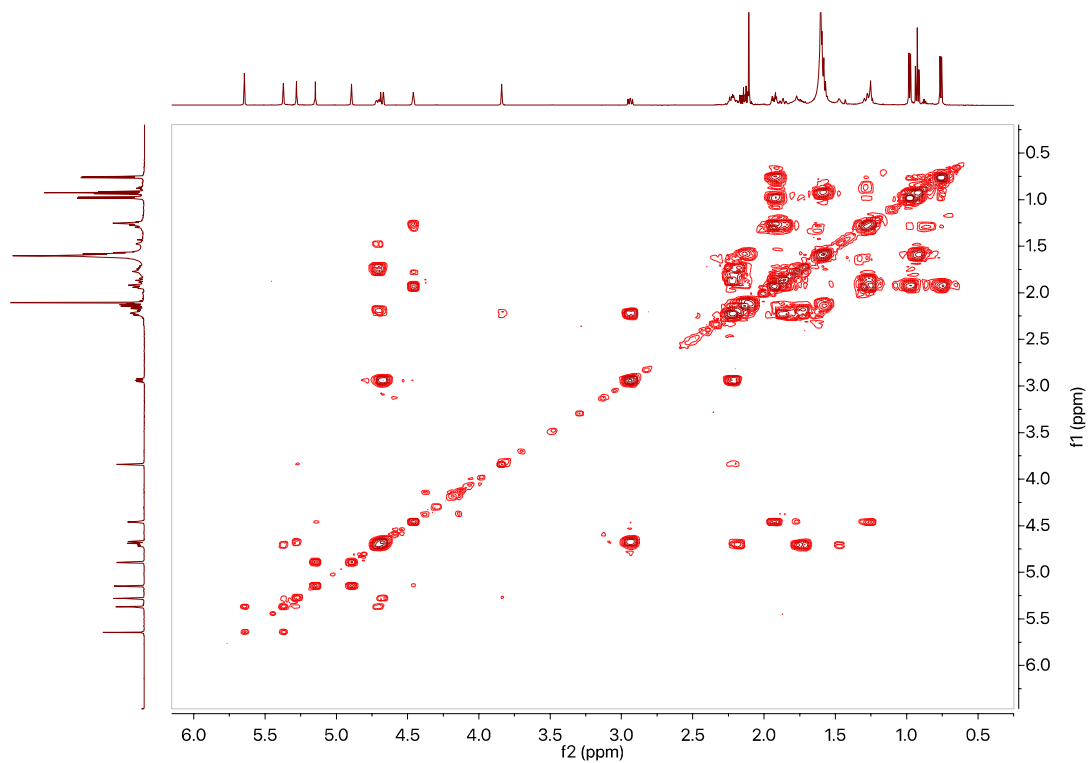
**Figure S2.** <sup>13</sup>C NMR spectrum of compound **1** in CDCl<sub>3</sub>



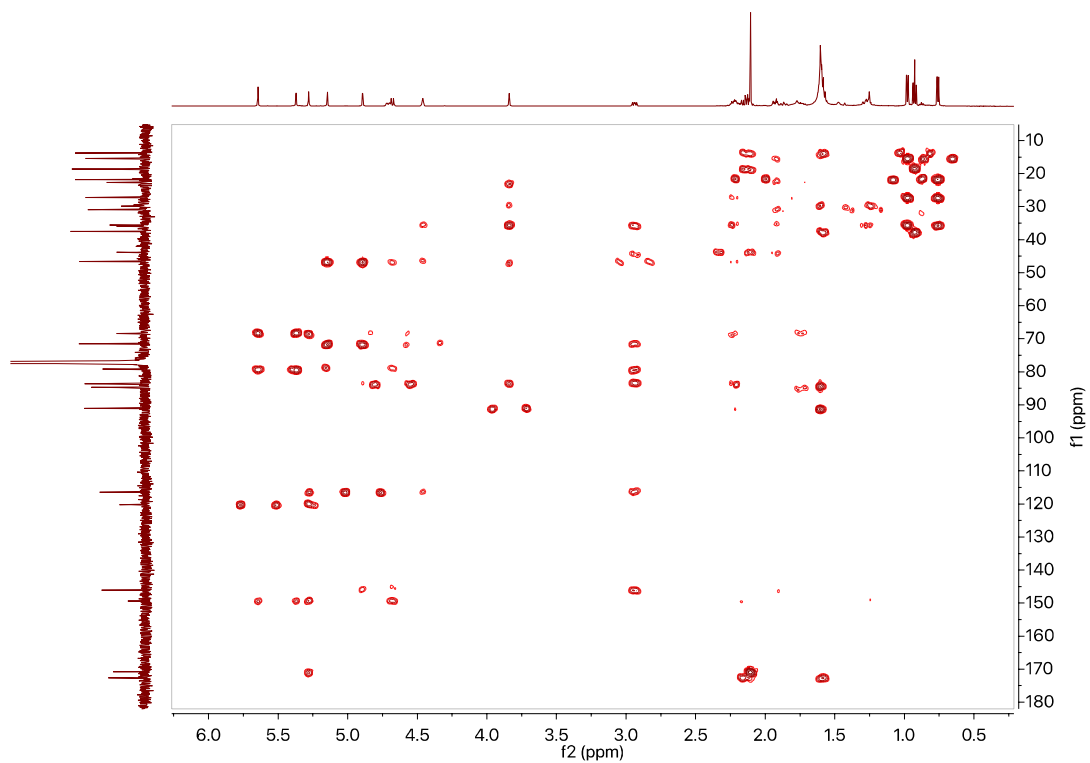
**Figure S3.** DEPT135 spectrum of compound **1** in  $\text{CDCl}_3$



**Figure S4.** HSQC spectrum of compound **1** in  $\text{CDCl}_3$



**Figure S5.**  $^1\text{H}$ - $^1\text{H}$  COSY spectrum of compound **1** in  $\text{CDCl}_3$



**Figure S6.** HMBC spectrum of compound **1** in  $\text{CDCl}_3$

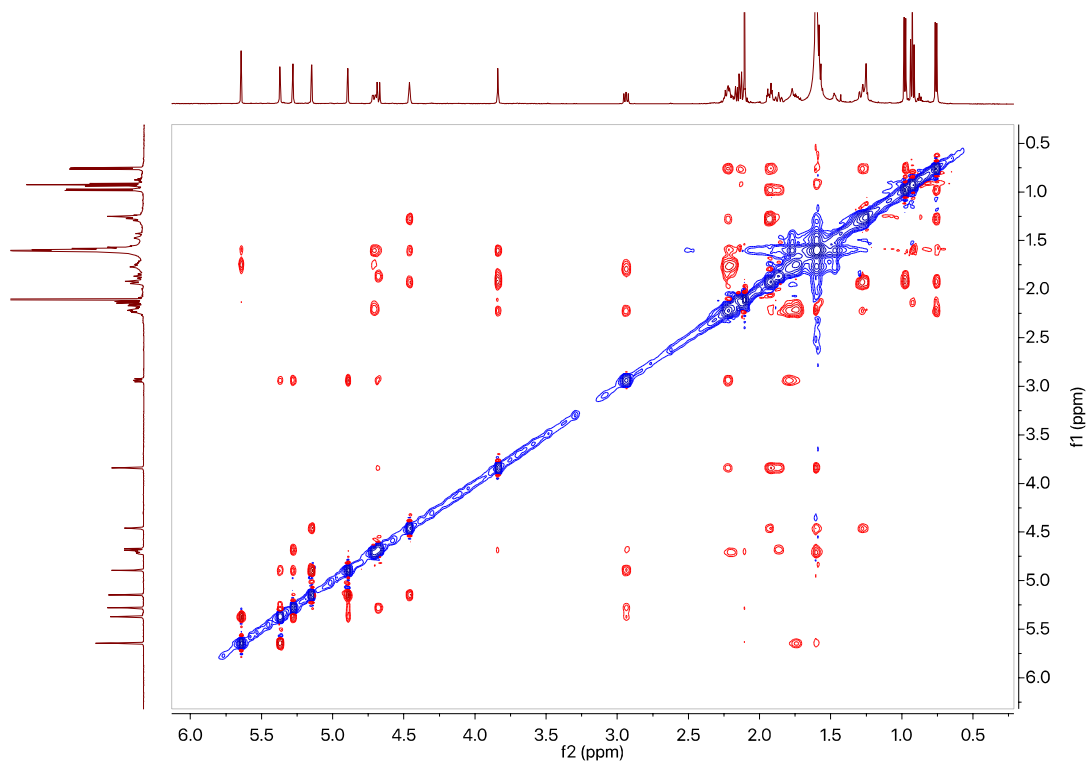
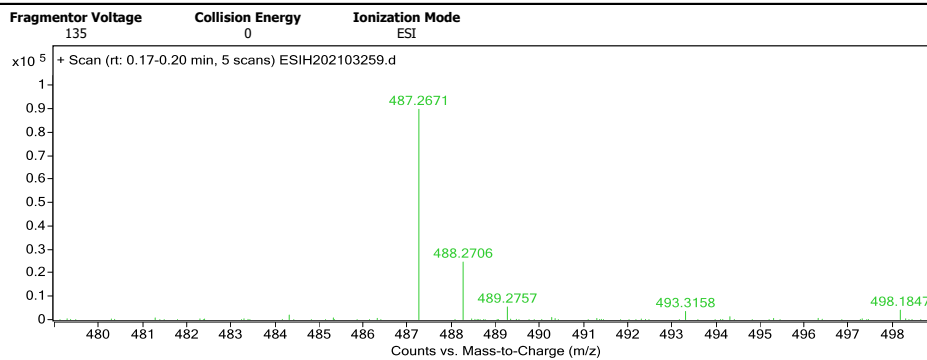


Figure S7. NOESY spectrum of compound **1** in  $\text{CDCl}_3$

#### Qualitative Analysis Report

<b>Data Filename</b>	ESIH202103259.d	<b>Sample Name</b>	A8-A8-E3B
<b>Sample ID</b>		<b>Position</b>	P1-E3
<b>Instrument Name</b>	Agilent G6520 Q-TOF	<b>Acq Method</b>	20160322_MS_ESIH_POS_1min.m
<b>Acquired Time</b>	7/1/2021 19:56:48	<b>IRM Calibration Status</b>	Success
<b>DA Method</b>	small molecular data analysis method.m	<b>Comment</b>	ESIH by zhuzhenyun

#### User Spectra



#### Formula Calculator Results

m/z	Calc m/z	Diff (mDa)	Diff (ppm)	Ion Formula	Ion
487.2671	487.2666	-0.47	-0.97	C <sub>26</sub> H <sub>40</sub> NaO <sub>7</sub>	(M+Na) <sup>+</sup>

--- End Of Report ---

Figure S8. HR-ESI-MS spectrum of compound **1**



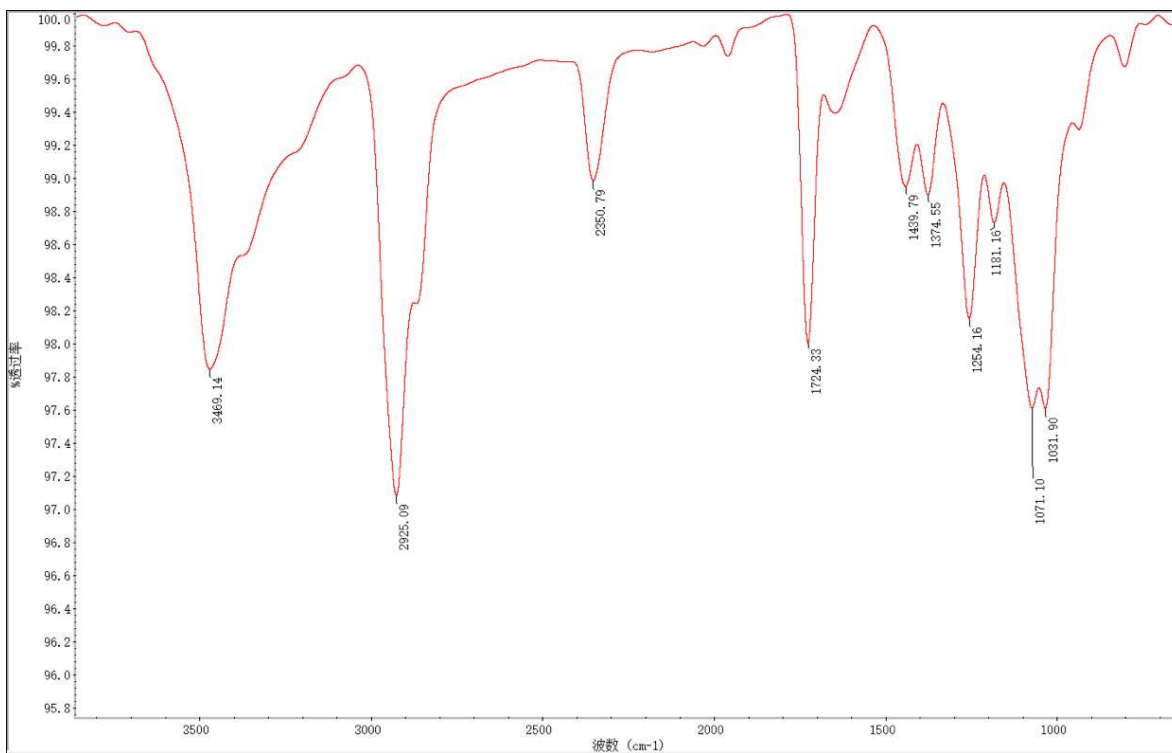


Figure S9. IR spectrum of compound 1

day, 06/28/2021

sample was measured on an Autopol VI, serial number 901

manufactured by Rudolph Research Analytical, Hackettstown, NJ

) : E3B-2

Temperature : OFF

p Corr : OFF

Average

24.881

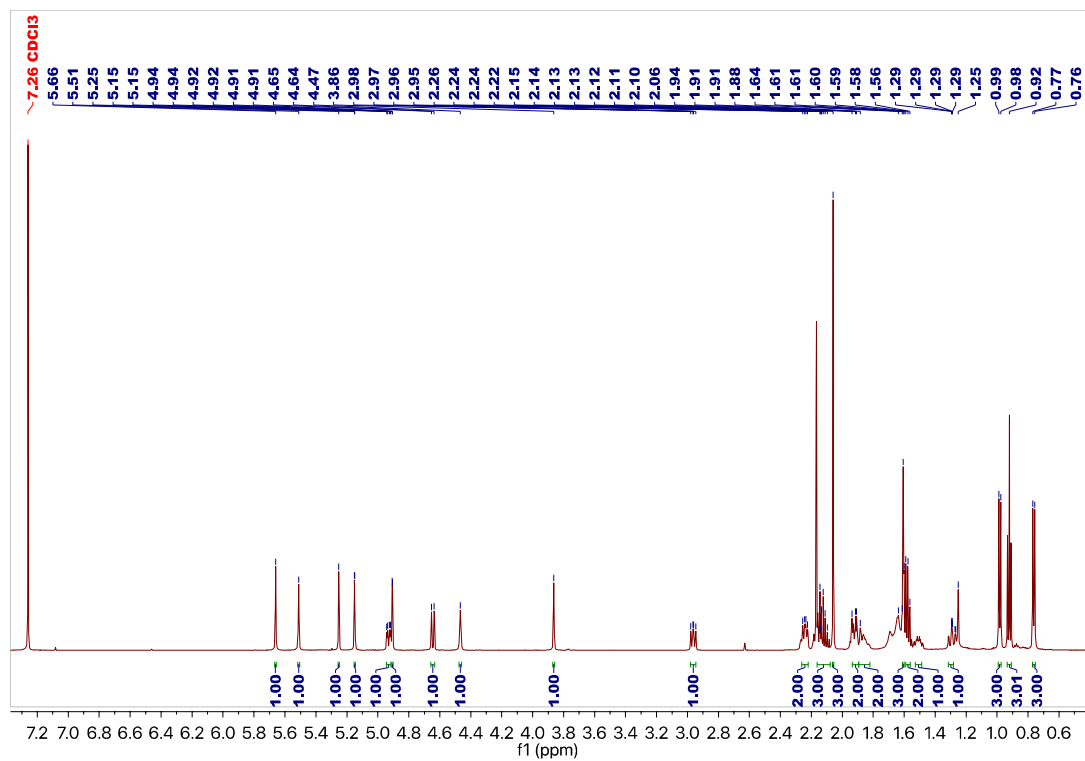
Std.Dev.

2.9282

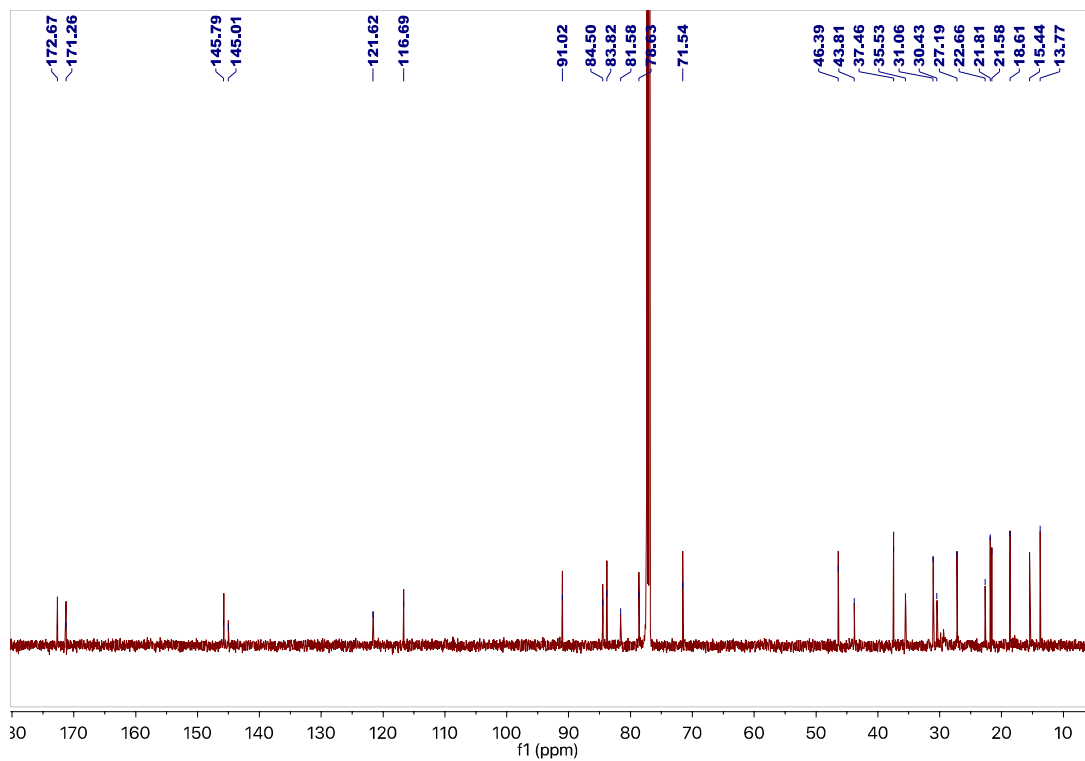
Sample ID	Time	Result
E3B-2	06:56:36 PM	23.571
E3B-2	06:56:59 PM	28.571
E3B-2	06:57:10 PM	23.571
E3B-2	06:57:20 PM	22.143
E3B-2	06:57:27 PM	22.143
E3B-2	06:57:41 PM	29.286

ature

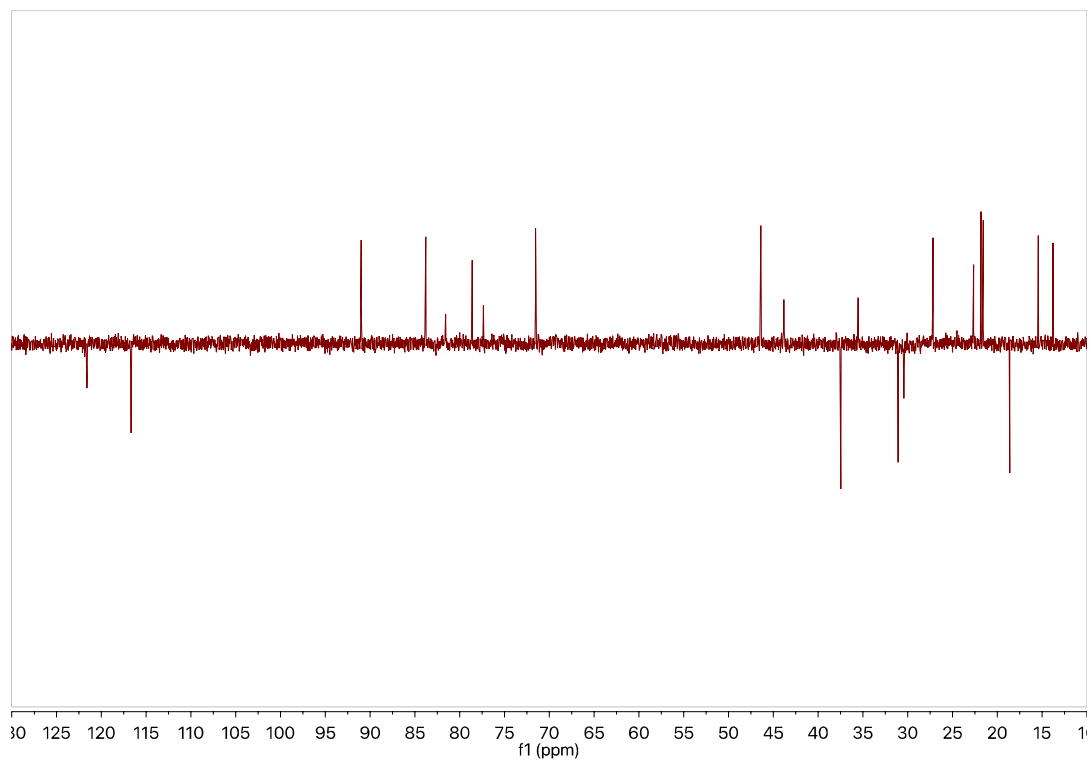
Figure S10. ORD spectrum of compound 1



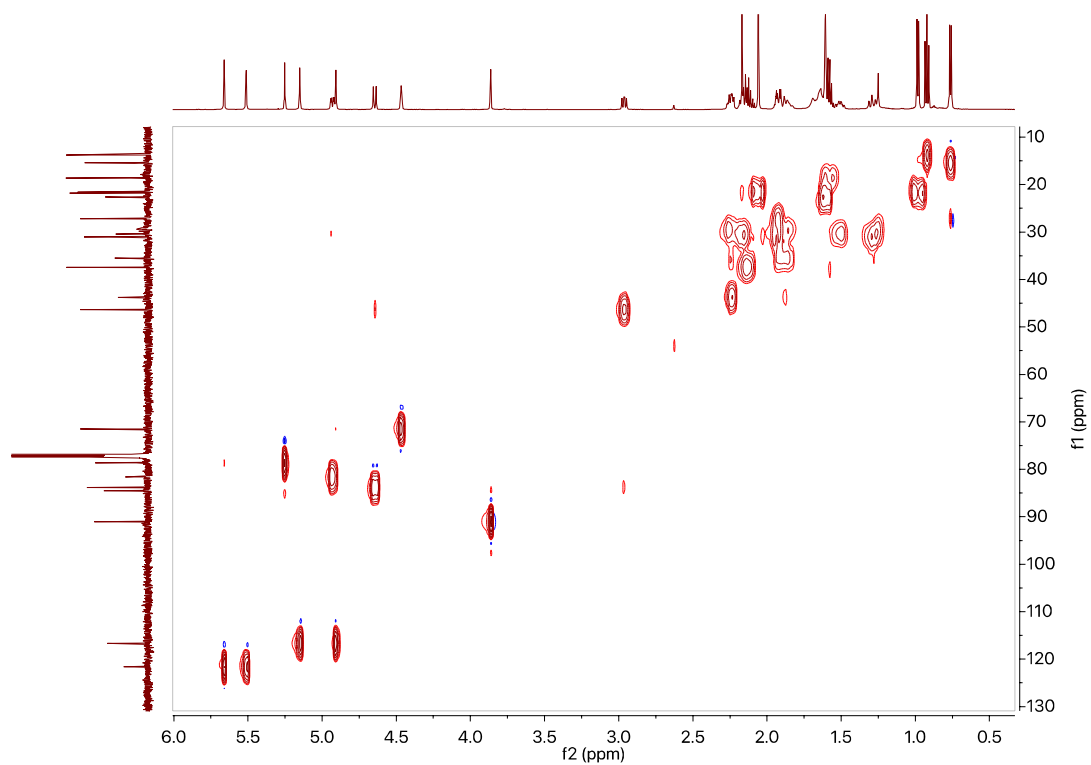
**Figure S11.**  $^1\text{H}$  NMR spectrum of compound **2** in  $\text{CDCl}_3$



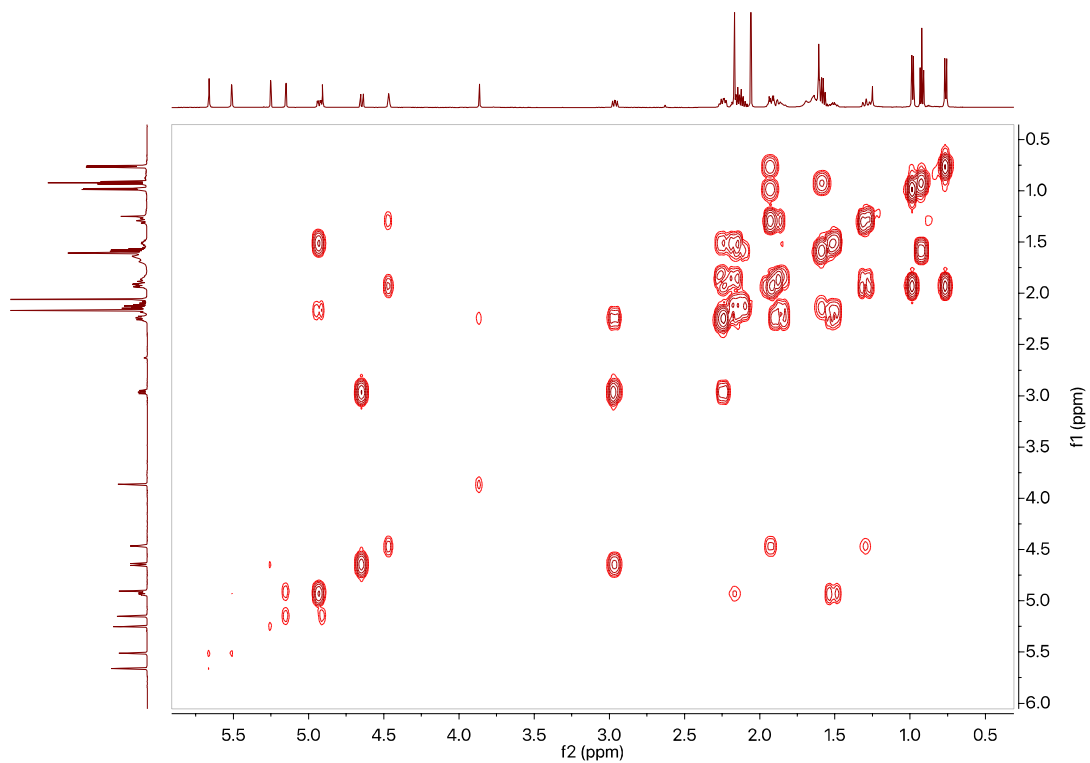
**Figure S12.**  $^{13}\text{C}$  NMR spectrum of compound **2** in  $\text{CDCl}_3$



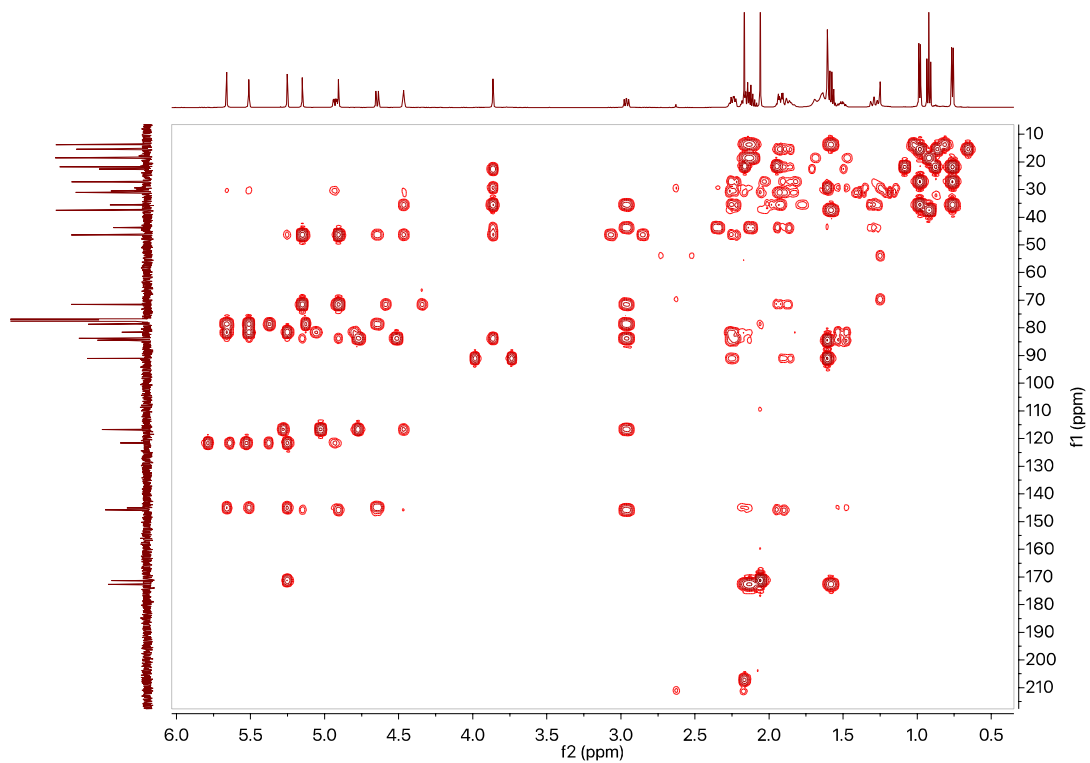
**Figure S13.** DEPT135 spectrum of compound **2** in  $\text{CDCl}_3$



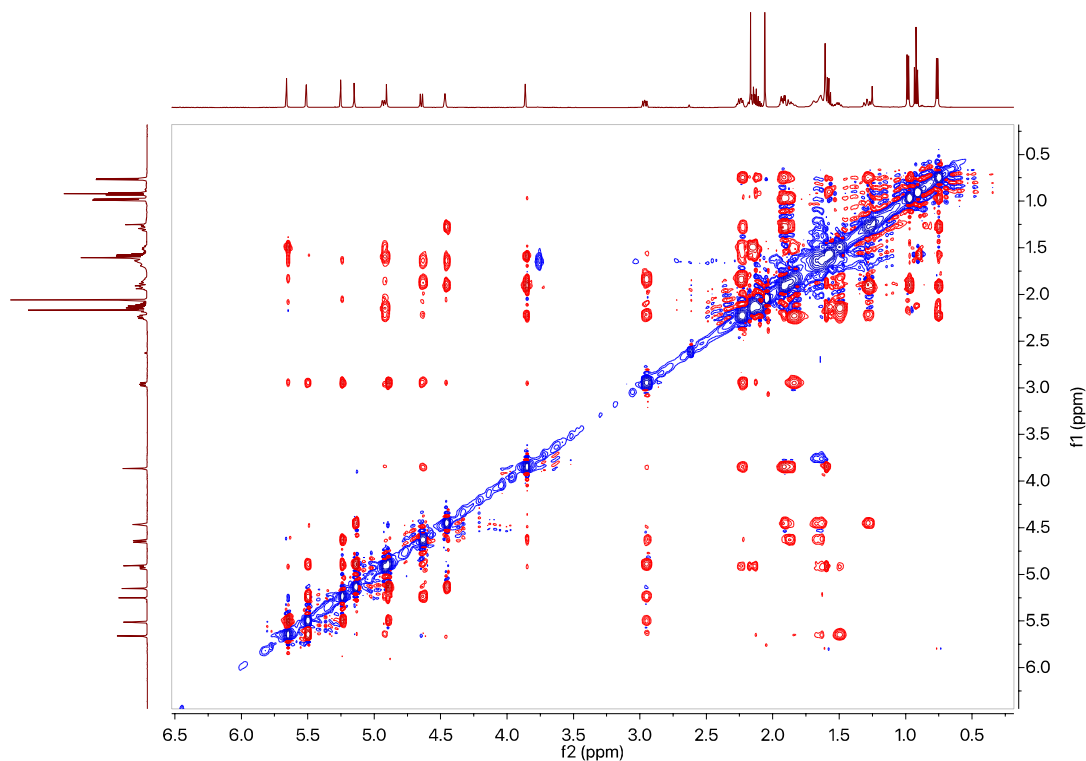
**Figure S14.** HSQC spectrum of compound **2** in  $\text{CDCl}_3$



**Figure S15.**  $^1\text{H}$ - $^1\text{H}$  COSY spectrum of compound **2** in  $\text{CDCl}_3$



**Figure S16.** HMBC spectrum of compound **2** in  $\text{CDCl}_3$

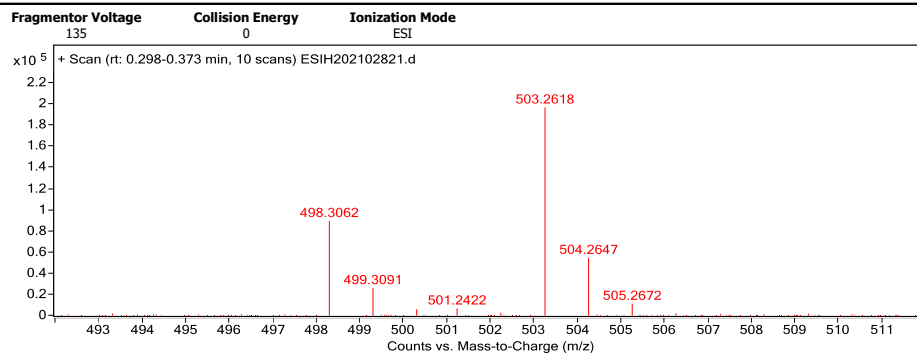


**Figure S17.** NOESY spectrum of compound **2** in  $\text{CDCl}_3$

### Qualitative Analysis Report

<b>Data Filename</b>	ESI202102821.d	<b>Sample Name</b>	A8-A8-E4A
<b>Sample ID</b>		<b>Position</b>	P2-D2
<b>Instrument Name</b>	Agilent G6520 Q-TOF	<b>Acq Method</b>	20160322_MS_ESIH_POS_1min.m
<b>Acquired Time</b>	5/24/2021 17:23:13	<b>IRM Calibration Status</b>	Success
<b>DA Method</b>	small molecular data analysis method.m	<b>Comment</b>	ESI202102821.d

#### User Spectra



#### Formula Calculator Results

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503.2618	503.2615	-0.31	-0.62	C <sub>26</sub> H <sub>40</sub> NaO <sub>8</sub>	(M+Na) <sup>+</sup>
498.3062	498.3061	-0.03	-0.05	C <sub>26</sub> H <sub>44</sub> N <sub>2</sub> O <sub>8</sub>	(M+NH <sub>4</sub> ) <sup>+</sup>

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**Figure S18.** HR-ESI-MS spectrum of compound **2**

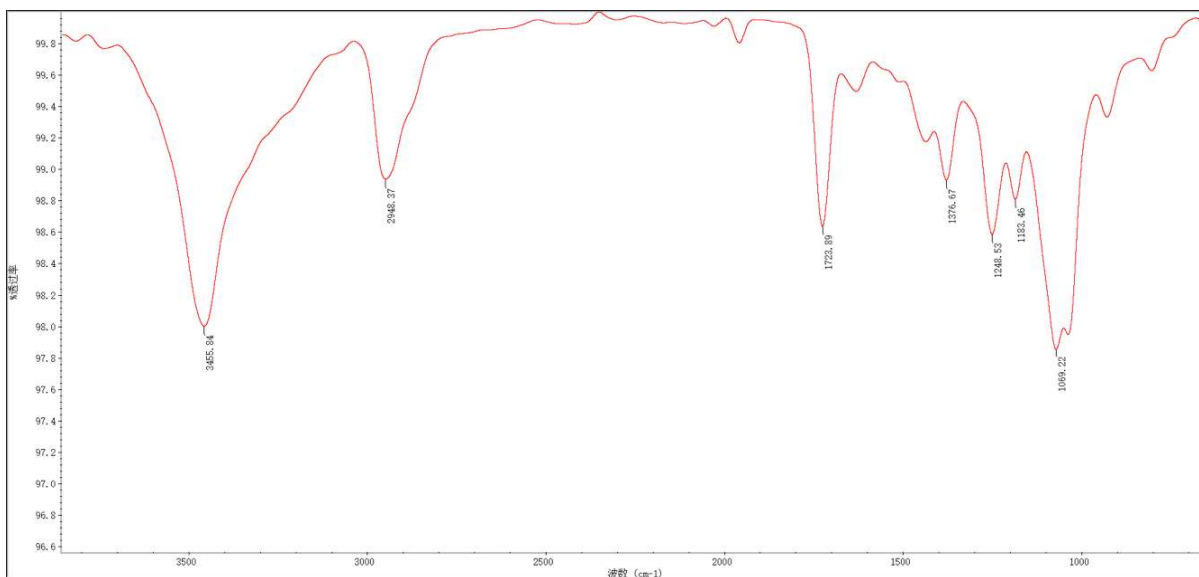
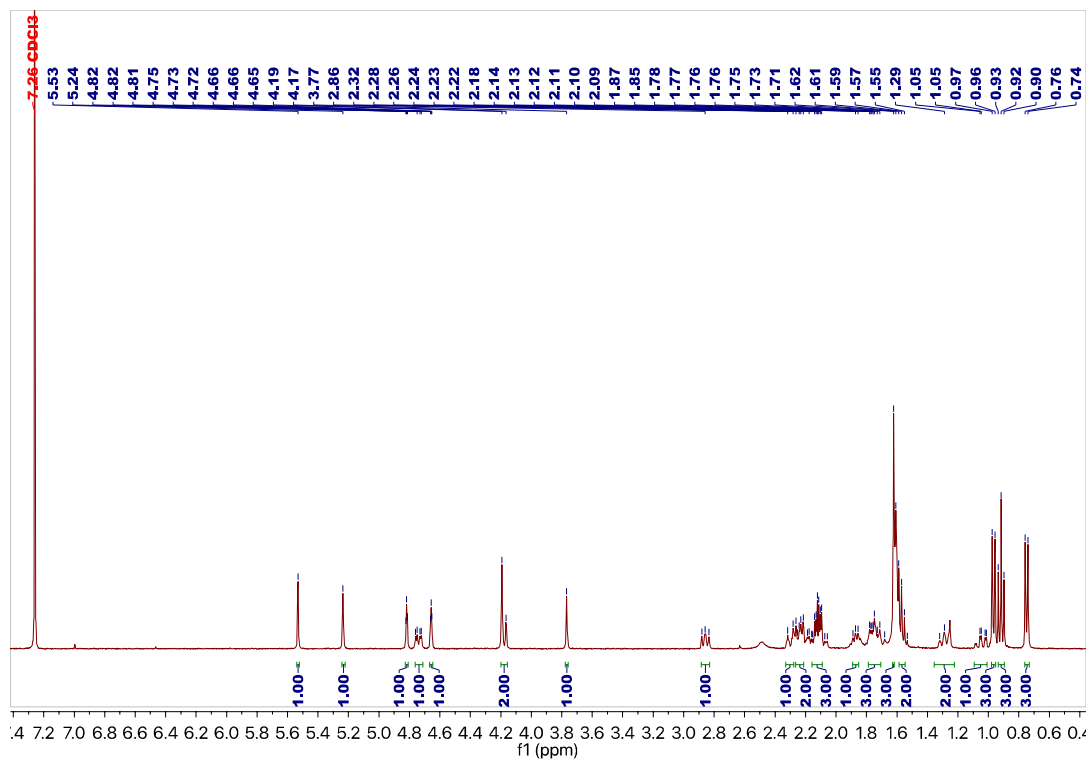


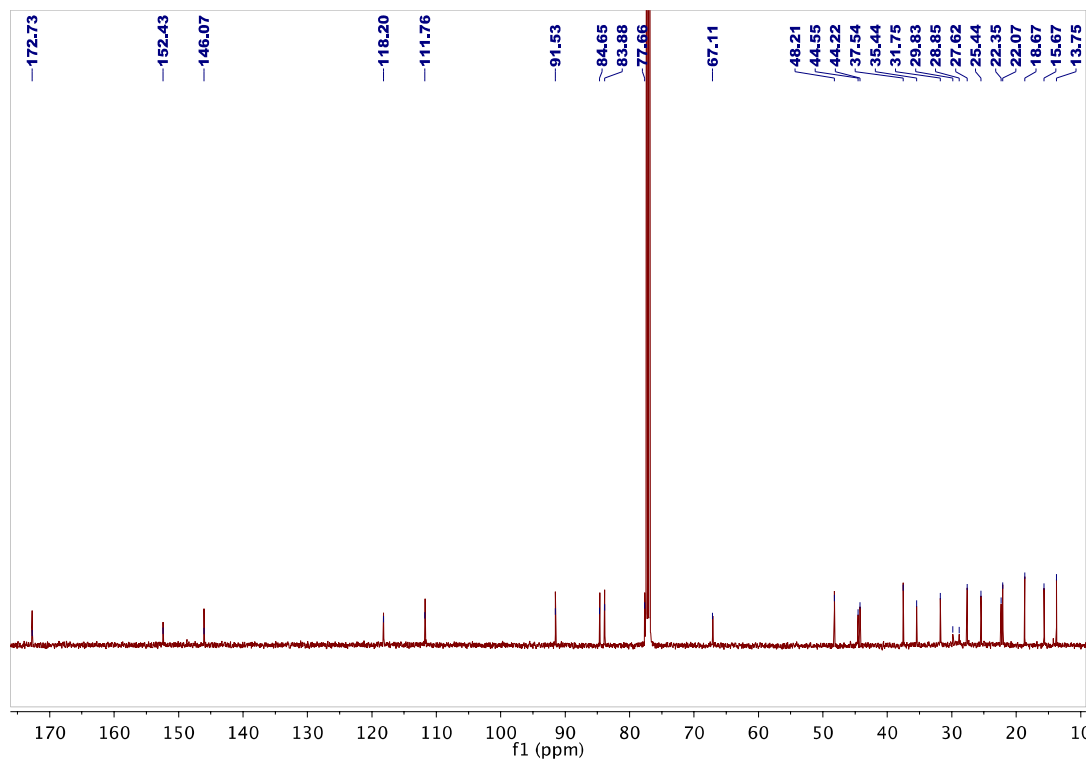
Figure S19. IR spectrum of compound 2

Aulopu Research Analytical			
Tuesday, 06/24/2021			
This sample was measured on an Aulopu VI, serial number 900			
manufactured by Rudolph Research Analytical Hackettstown, NJ.			
ID : E4A			
Temperature : OFF			
mp Corr : OFF			
Average		StdDev.	
15.790		2.0434	
No	Sample ID	Time	Result
E4A		07:49:52 PM	17.719
E4A		07:50:06 PM	12.281
E4A		07:50:13 PM	13.684
E4A		07:50:26 PM	17.193
E4A		07:50:34 PM	16.842
E4A		07:50:40 PM	17.018
nature			

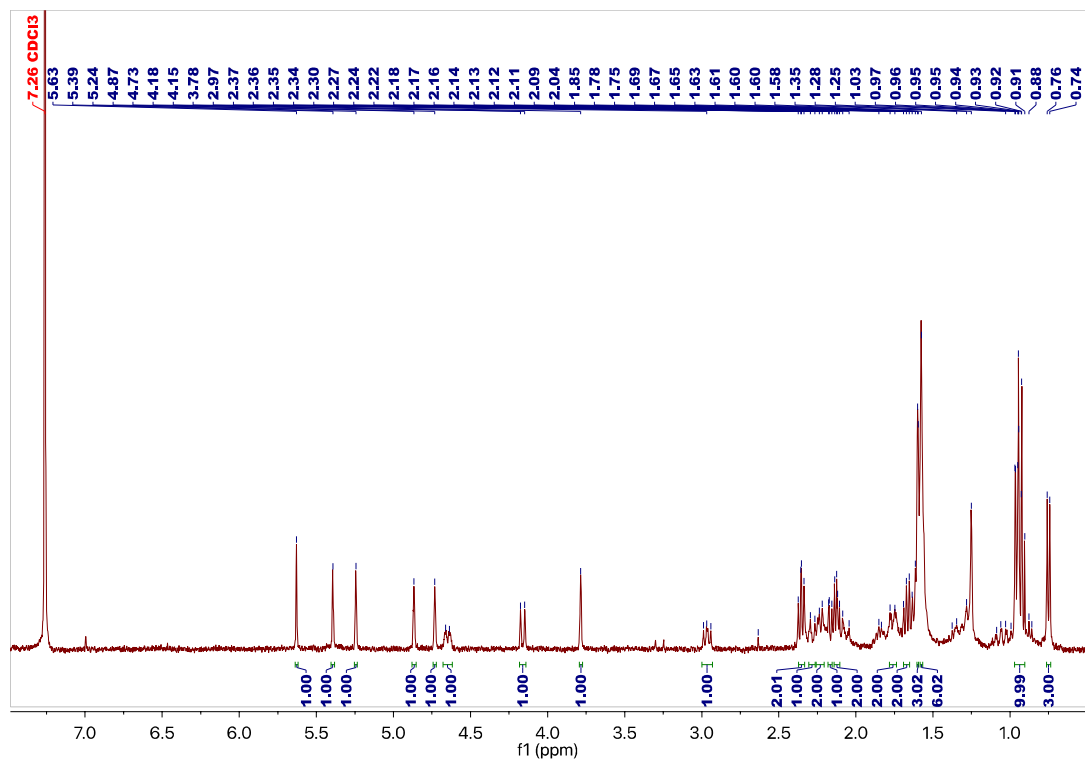
Figure S20. ORD spectrum of compound 2



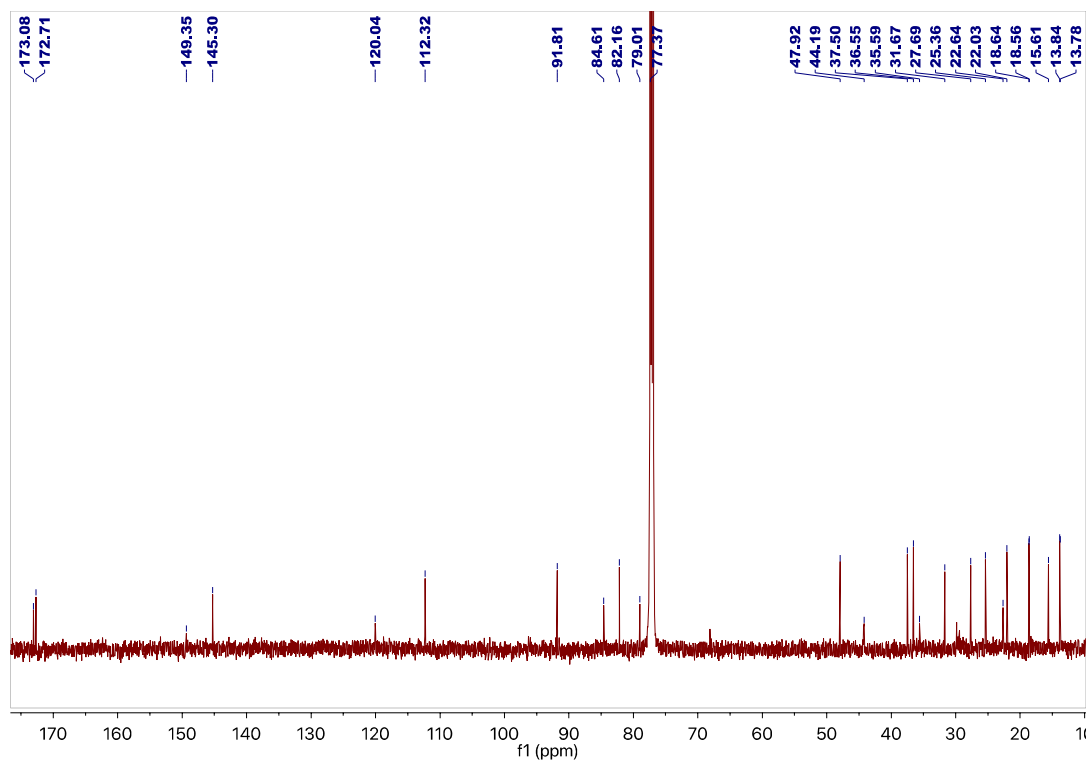
**Figure S21.** <sup>1</sup>H NMR spectrum of compound **3** in CDCl<sub>3</sub>



**Figure S22.** <sup>13</sup>C NMR spectrum of compound **3** in CDCl<sub>3</sub>

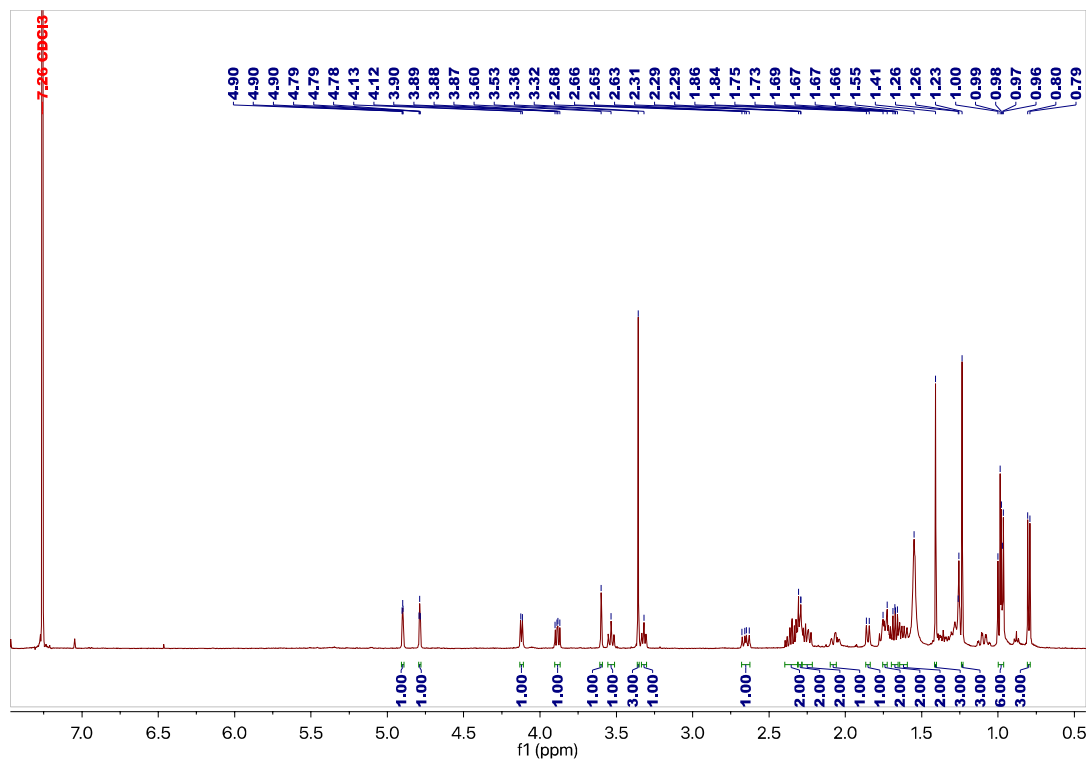


**Figure S23.** <sup>1</sup>H NMR spectrum of compound **4** in CDCl<sub>3</sub>

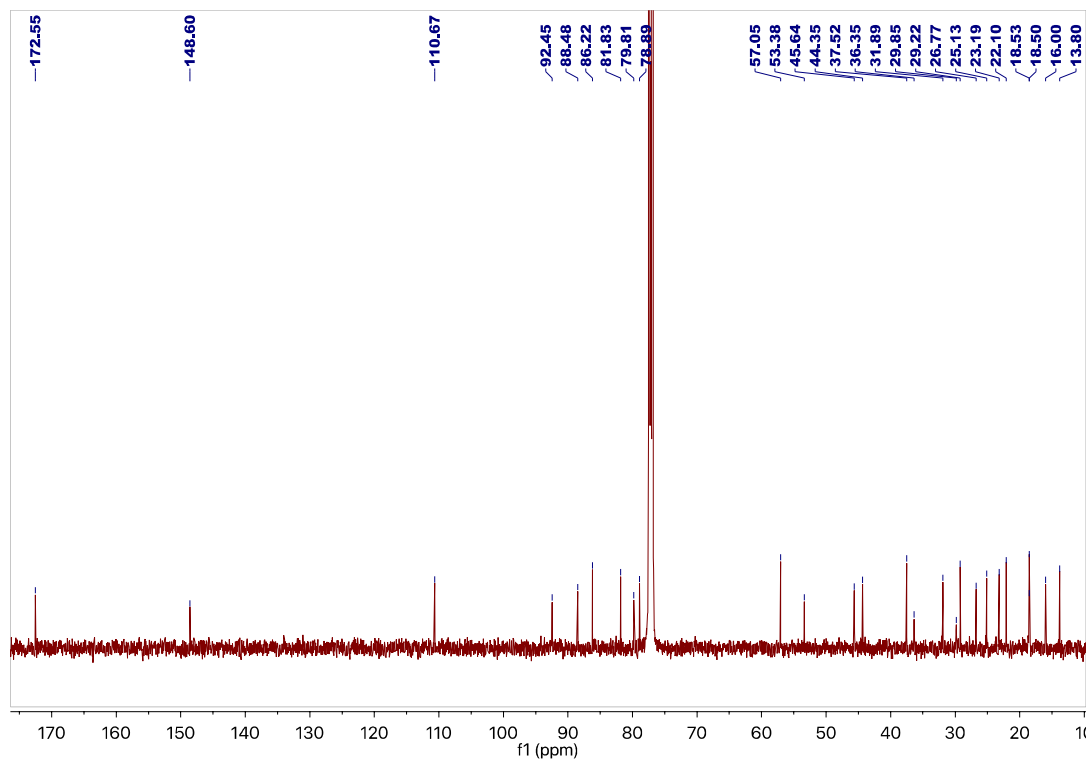


**Figure S24.** <sup>13</sup>C NMR spectrum of compound **4** in CDCl<sub>3</sub>

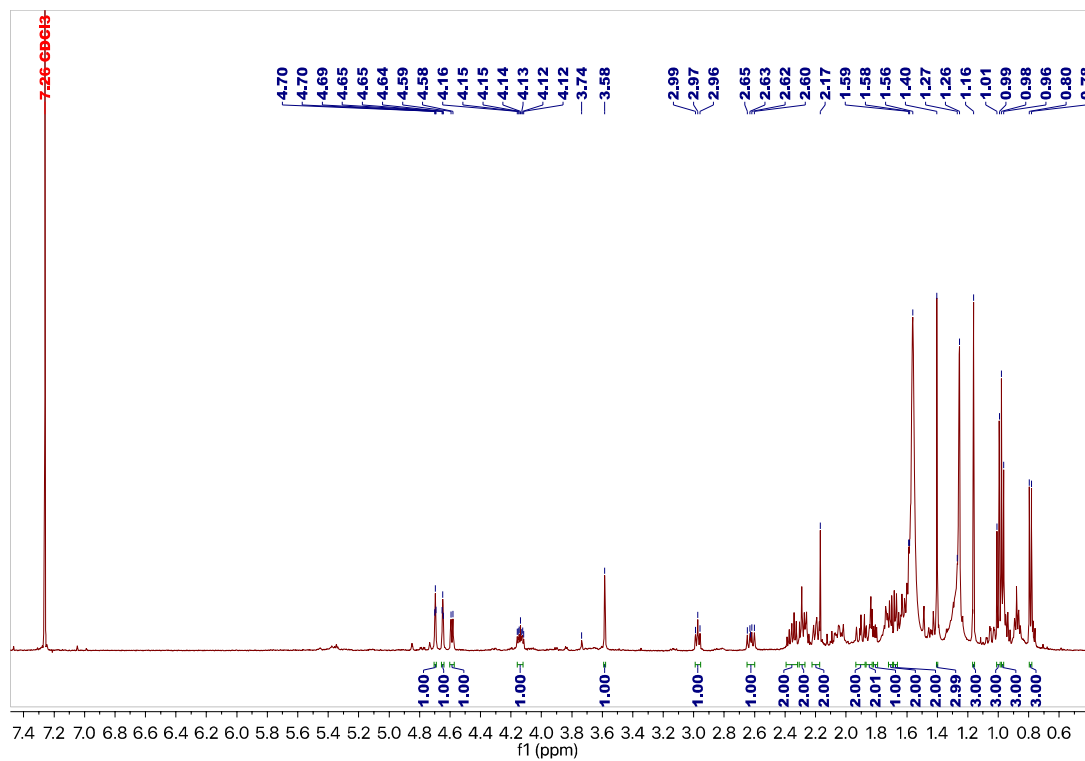




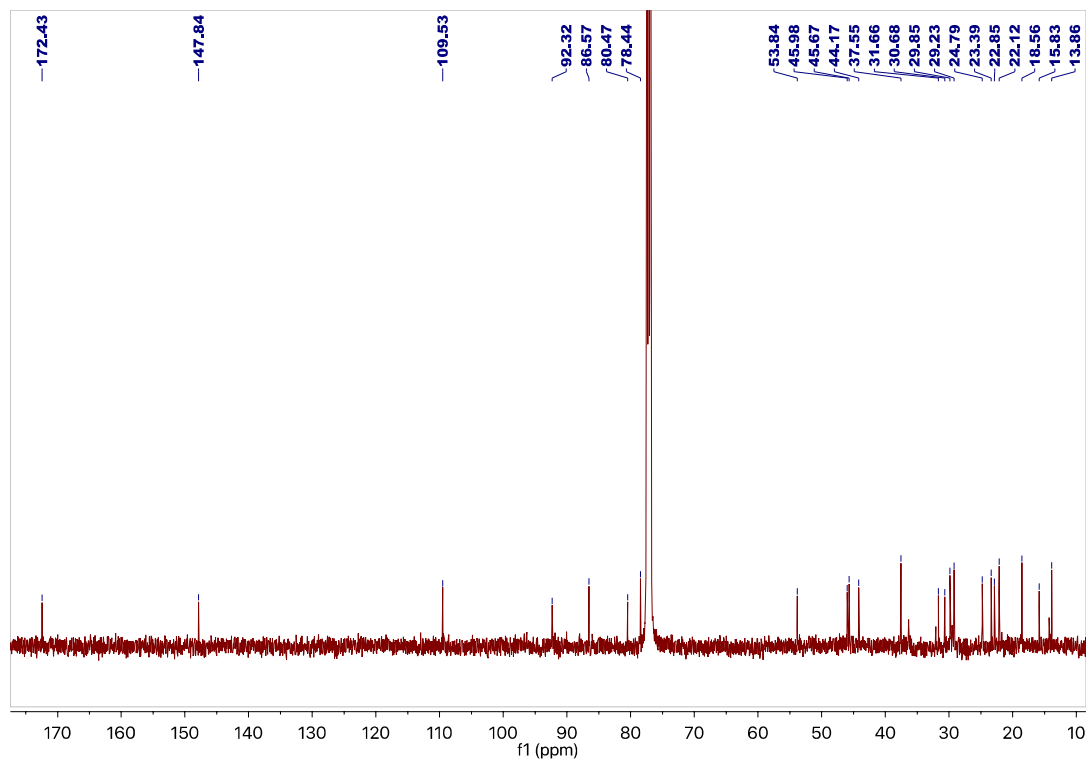
**Figure S25.** <sup>1</sup>H NMR spectrum of compound **5** in CDCl<sub>3</sub>



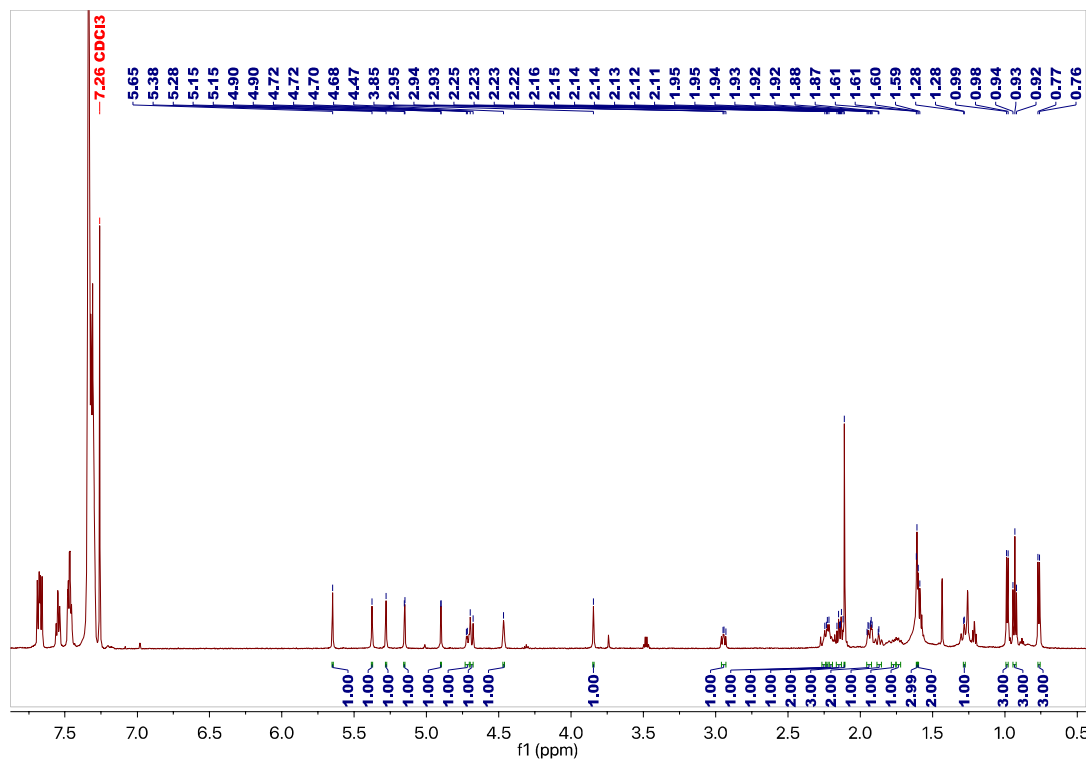
**Figure S26.** <sup>13</sup>C NMR spectrum of compound **5** in CDCl<sub>3</sub>



**Figure S27.** <sup>1</sup>H NMR spectrum of compound **6** in CDCl<sub>3</sub>

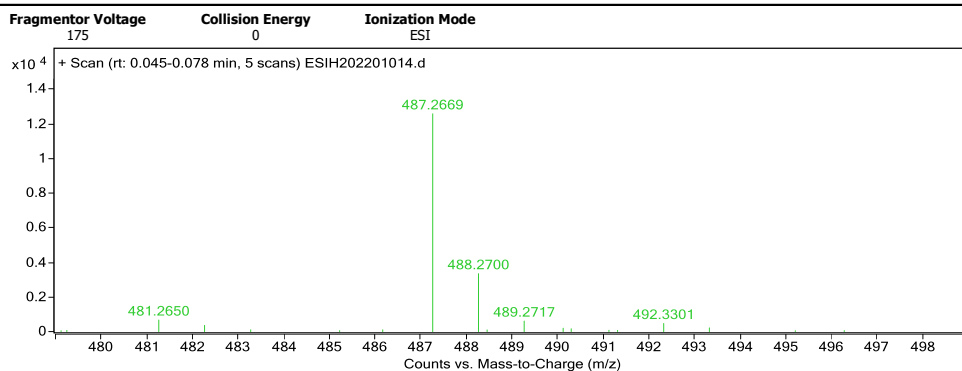


**Figure S28.** <sup>13</sup>C NMR spectrum of compound **6** in CDCl<sub>3</sub>



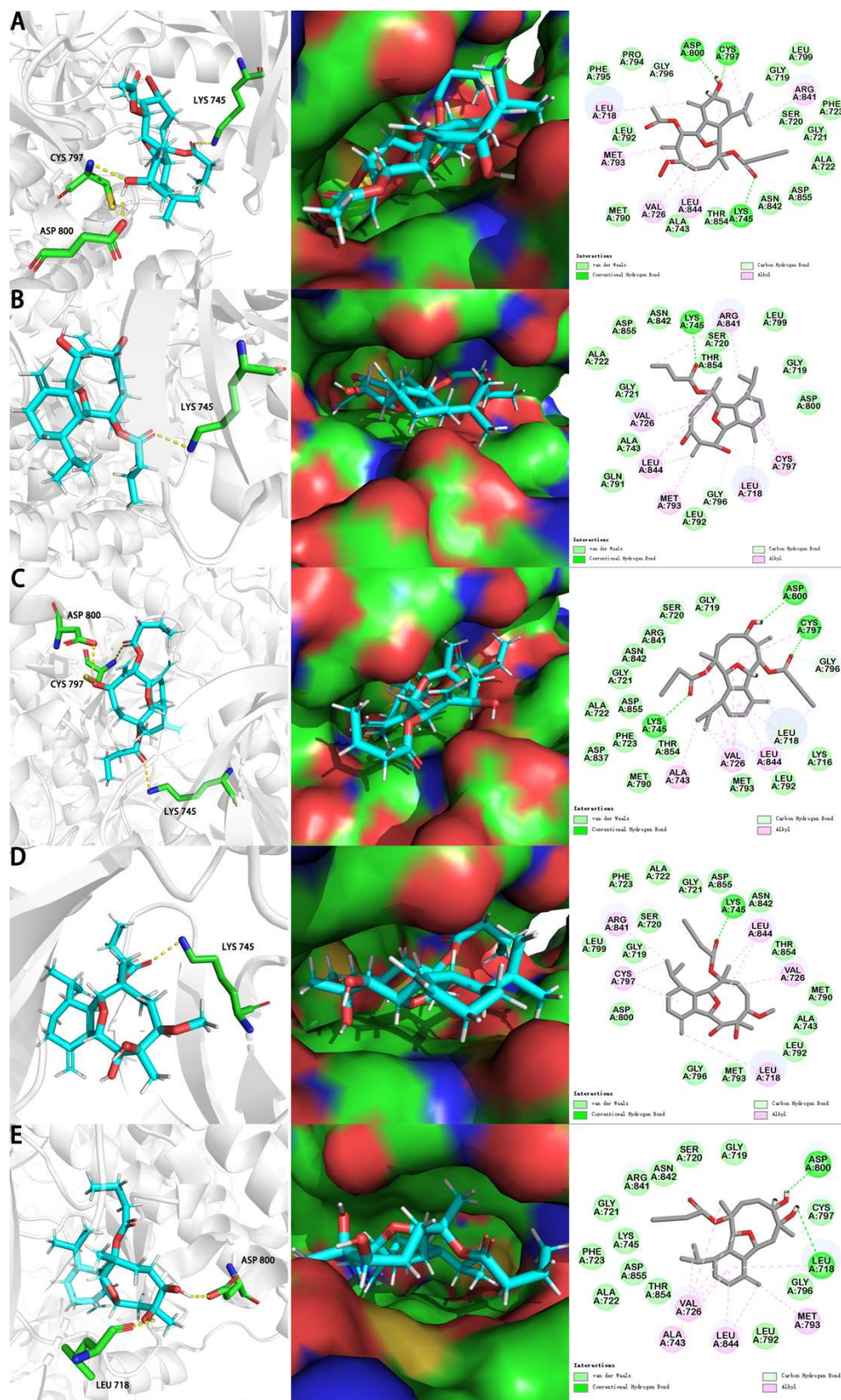
## Qualitative Analysis Report

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<b>Sample ID</b>		<b>Position</b>	P1-B2
<b>Instrument Name</b>	Agilent G6520 Q-TOF	<b>Acq Method</b>	20160322_MS_ESIH_POS_1min.m
<b>Acquired Time</b>	3/2/2022 13:53:10	<b>IRM Calibration Status</b>	Success
<b>DA Method</b>	small molecular data analysis method.m	<b>Comment</b>	ESIH by fanasu



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**Figure S30.** HR-ESI-MS spectrum of mixture



**Figure S31.** In silico binding mode of compounds **2–6** at EGFR kinase crystal structure 5X2A.