

# *Electronic Supplementary Information*

## **Light-enabled alkenylation of iodocarboranes with unactivated alkenes**

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**Table S1.** Crystal Data and Summary of Data Collection and Refinement for **3Aa**, **3An**, **3Ap** and **3Fa**.

Compound	<b>3Aa</b>	<b>3An</b>	<b>3Ap</b>	<b>3Fa</b>
formula	C <sub>11</sub> H <sub>20</sub> B <sub>10</sub>	C <sub>12</sub> H <sub>22</sub> B <sub>10</sub>	C <sub>17</sub> H <sub>24</sub> B <sub>10</sub>	C <sub>13</sub> H <sub>26</sub> B <sub>10</sub> Si
Cryst size(mm <sup>3</sup> )	0.40 x 0.30 x 0.20	0.50 x 0.40 x 0.30	0.40 x 0.30 x 0.20	0.50 x 0.40 x 0.30
Fw	260.37	274.39	336.46	318.53
Cryst syst	orthorhombic	orthorhombic	orthorhombic	monoclinic
Space group	Pna2 <sub>1</sub>	P2 <sub>1</sub> 2 <sub>1</sub> 2 <sub>1</sub>	Pca2 <sub>1</sub>	P2 <sub>1</sub> /c
<i>a</i> , Å	20.057(11)	11.7028(5)	21.065(8)	17.950(15)
<i>b</i> , Å	7.8629(4)	11.9322(6)	8.0636(4)	7.2031(6)
<i>c</i> , Å	19.9257(12)	12.0721(6)	11.902(6)	17.2814(14)
$\alpha$ , deg	90.00	90.00	90.00	90.00
$\beta$ , deg	90.00	90.00	90.00	116.825(4)
$\gamma$ , deg	90.00	90.00	90.00	90.00
<i>V</i> , Å <sup>3</sup>	3142.4(3)	1685.75(14)	2021.69(16)	1994.0(3)
<i>Z</i>	8	4	4	4
<i>D</i> <sub>calc</sub> , Mg/m <sup>3</sup>	1.101	1.081	1.105	1.061
Radiation ( $\lambda$ ), Å	1.54178	0.71073	0.71073	0.71073
2 $\theta$ range, deg	8.82 to 137.42	4.82 to 50.50	5.05 to 50.49	2.54 to 50.50
$\mu$ , mm <sup>-1</sup>	0.361	0.052	0.055	0.109
<i>F</i> (000)	1088	576	704	672
no. of obsd reflns	5743	3039	3650	3611
no. of params refnd	379	208	245	217
Goodness of fit	1.043	1.054	1.066	1.054
R1	0.0737	0.0782	0.0570	0.0443
wR2	0.1893	0.2140	0.1419	0.1234

## Setup of the photoreaction

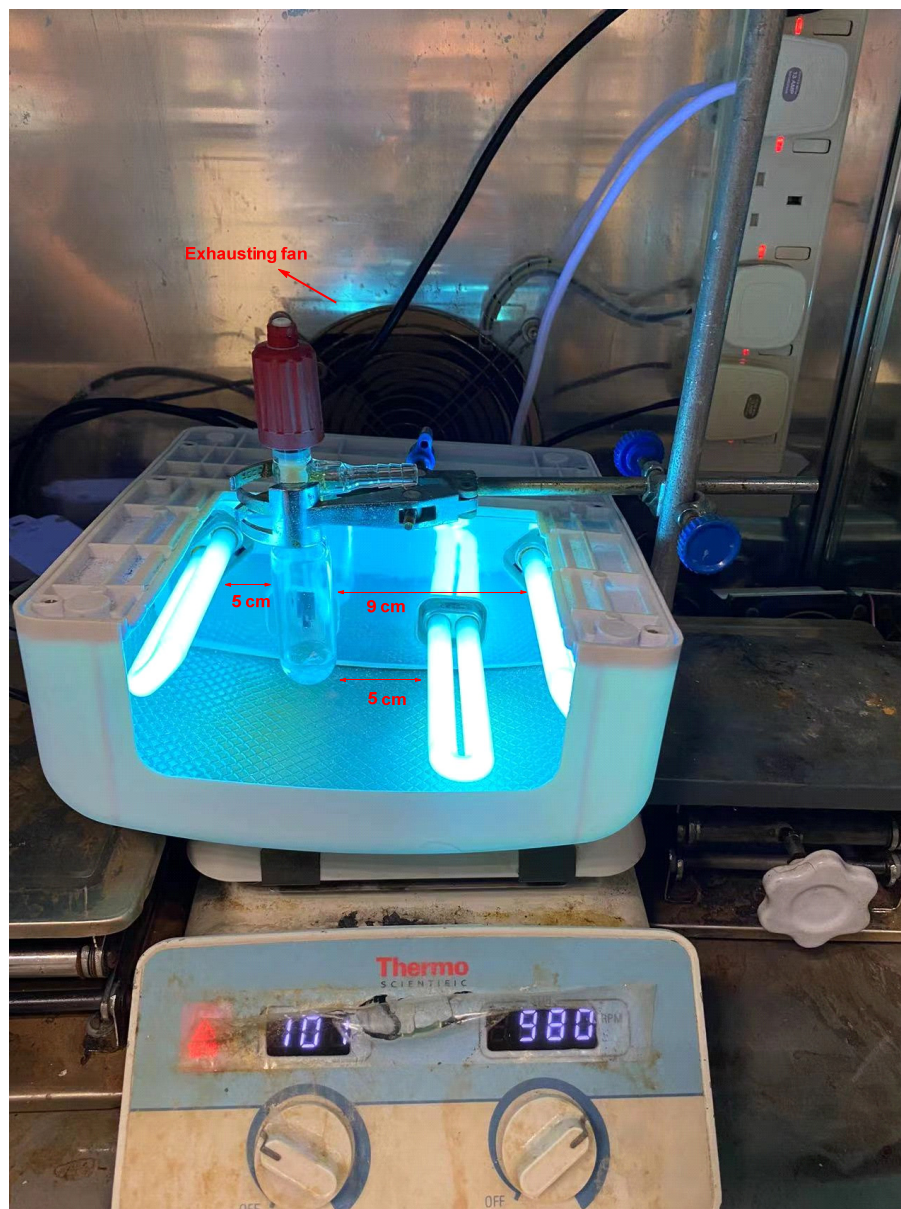
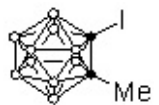
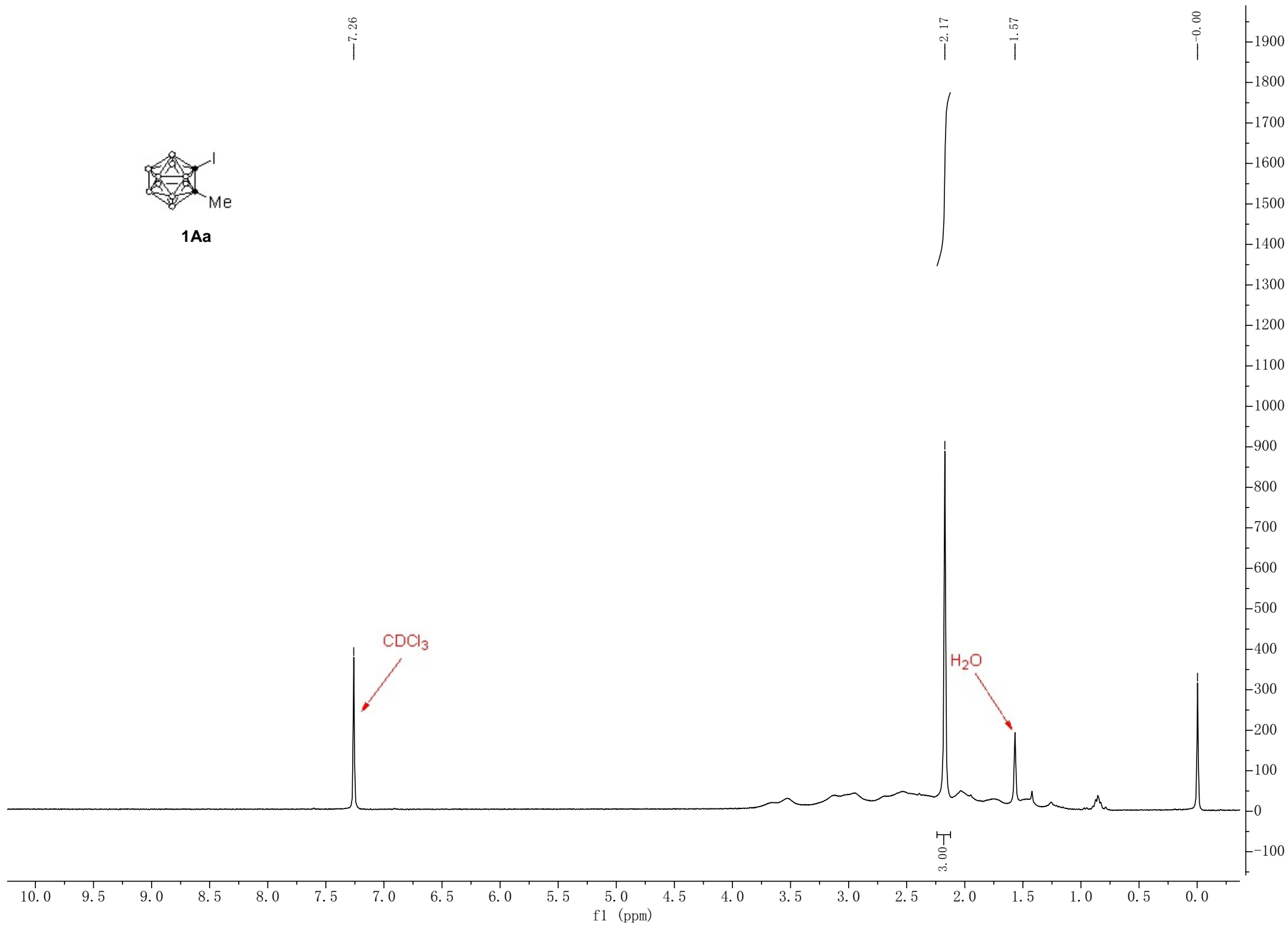
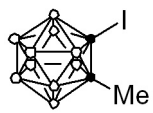


Figure S1. Standard setup of the photoreaction [3 x 9 W UV (365 nm) lamp]



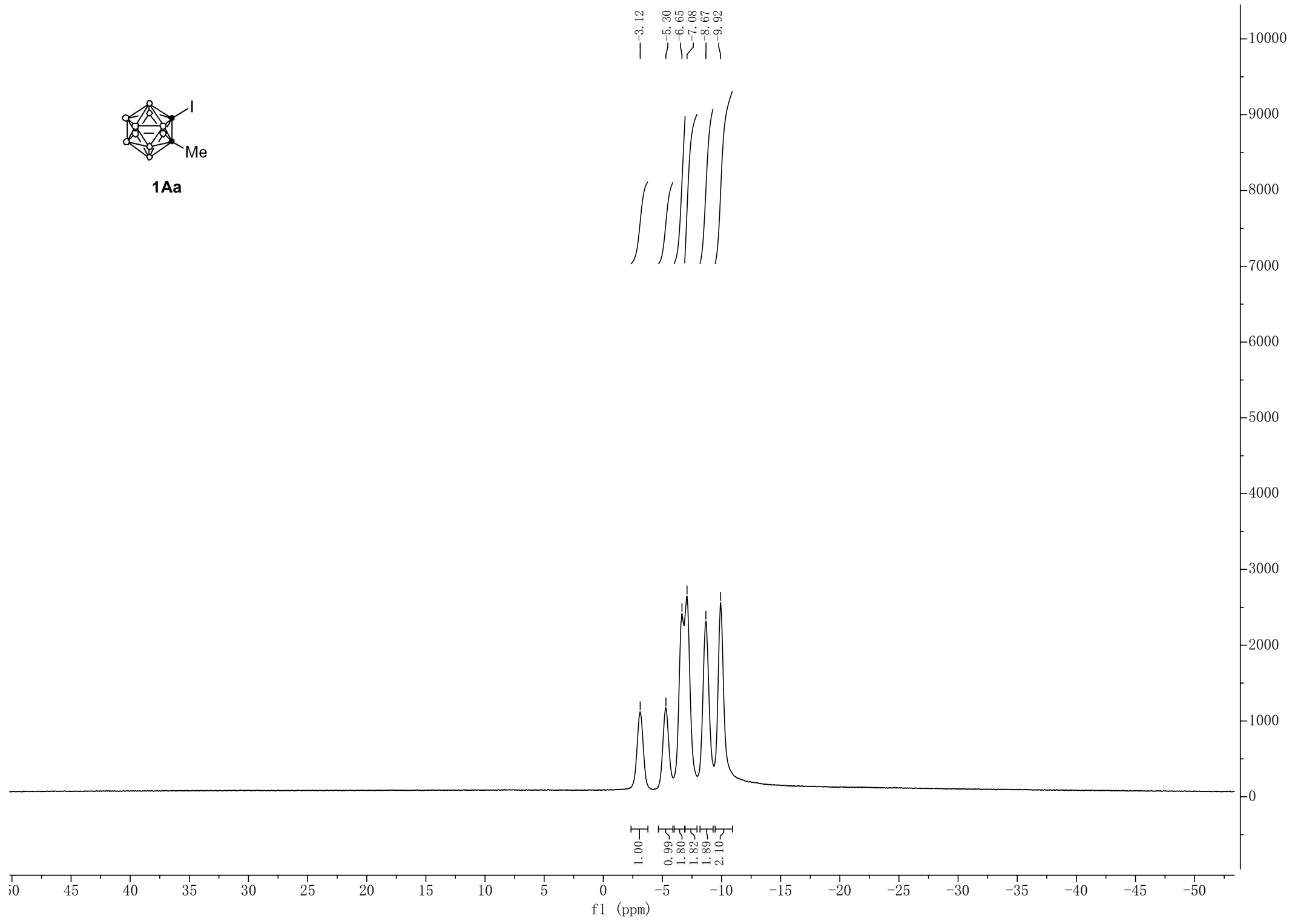
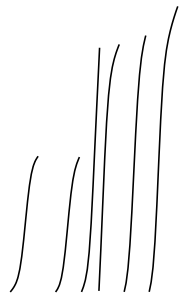
**1Aa**

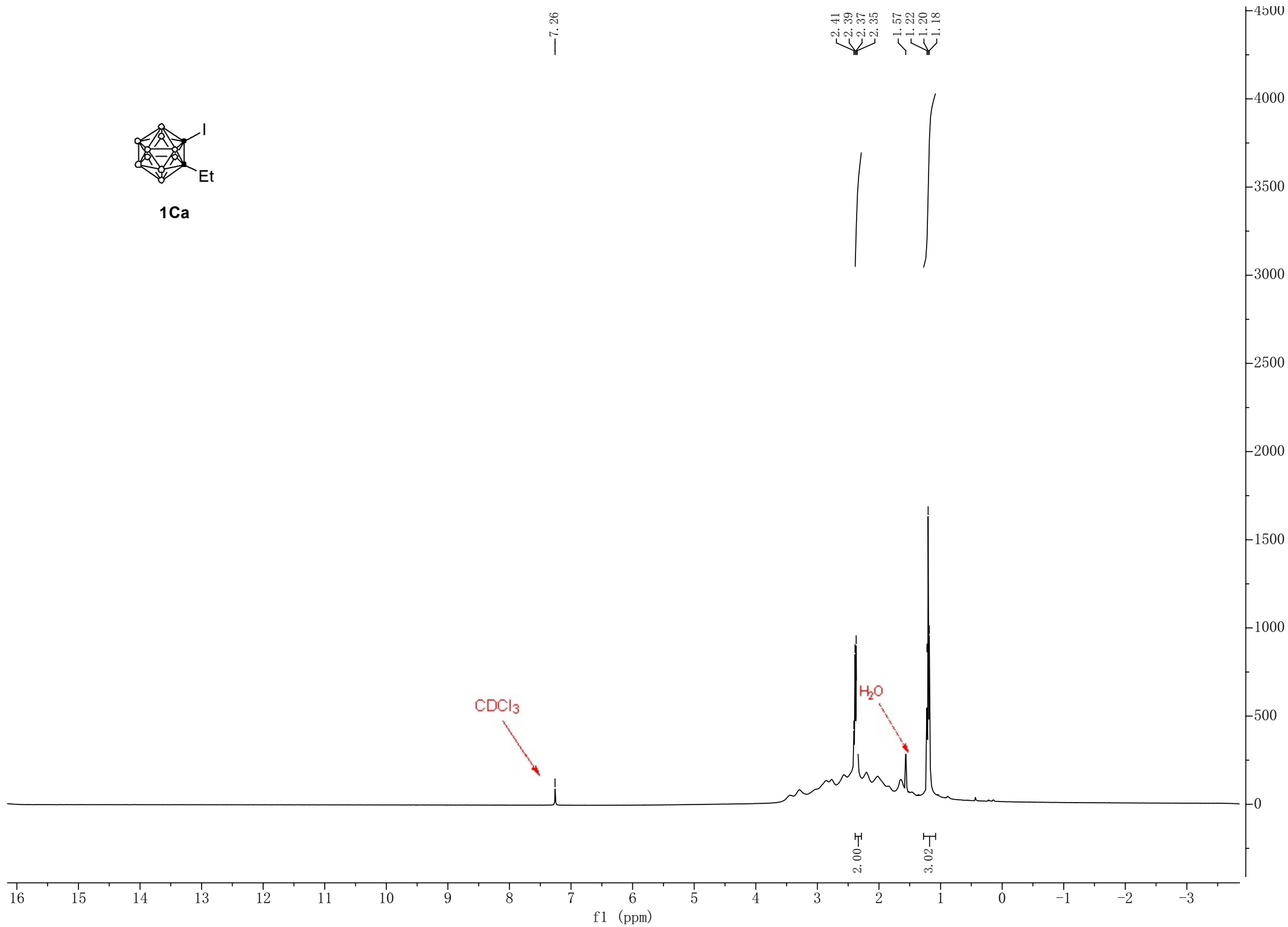
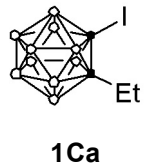


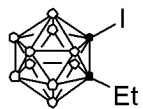


1Aa

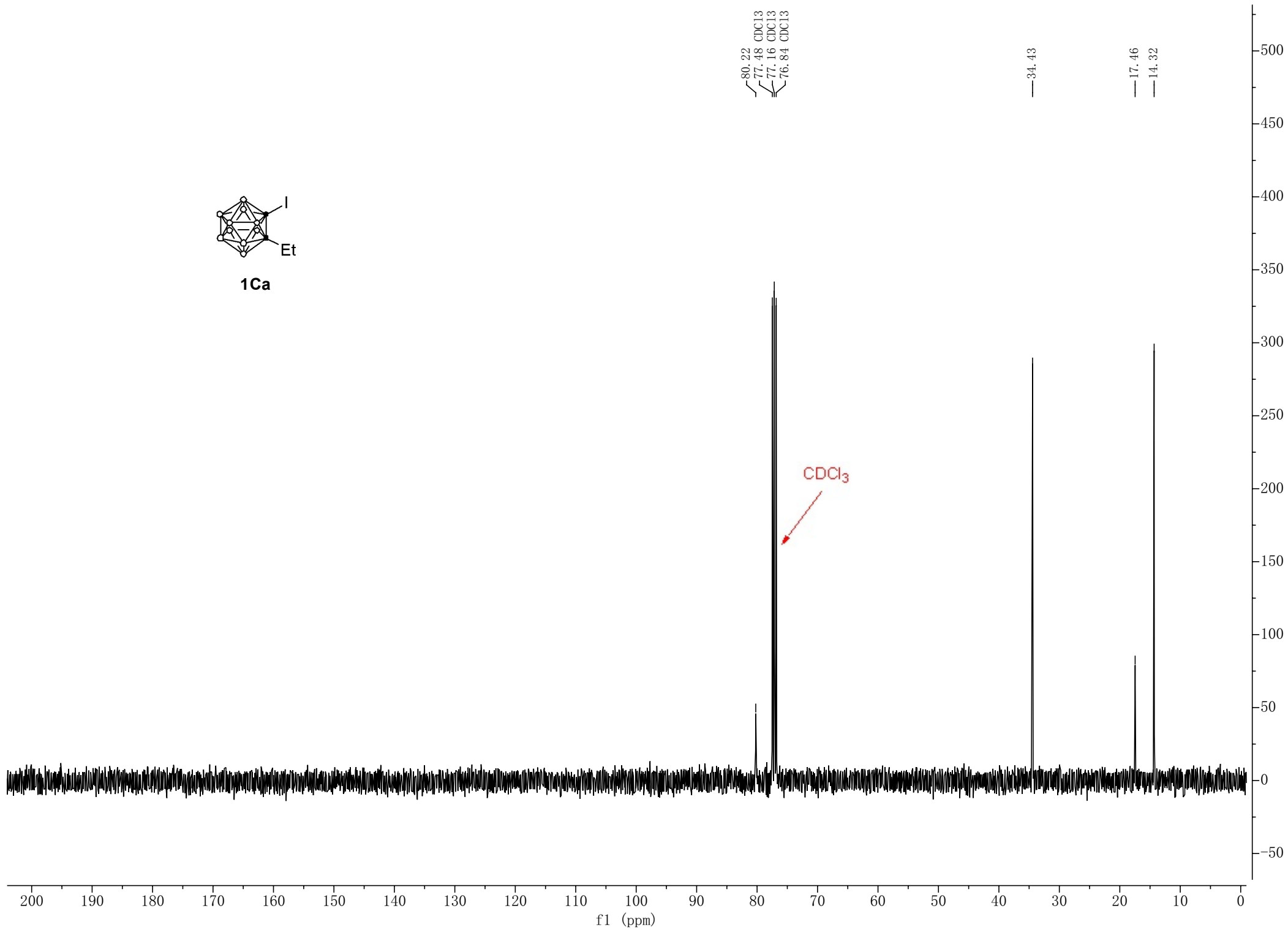
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— -5.30  
— -6.65  
— -7.08  
— -8.67  
— -9.92

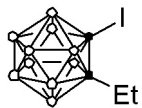




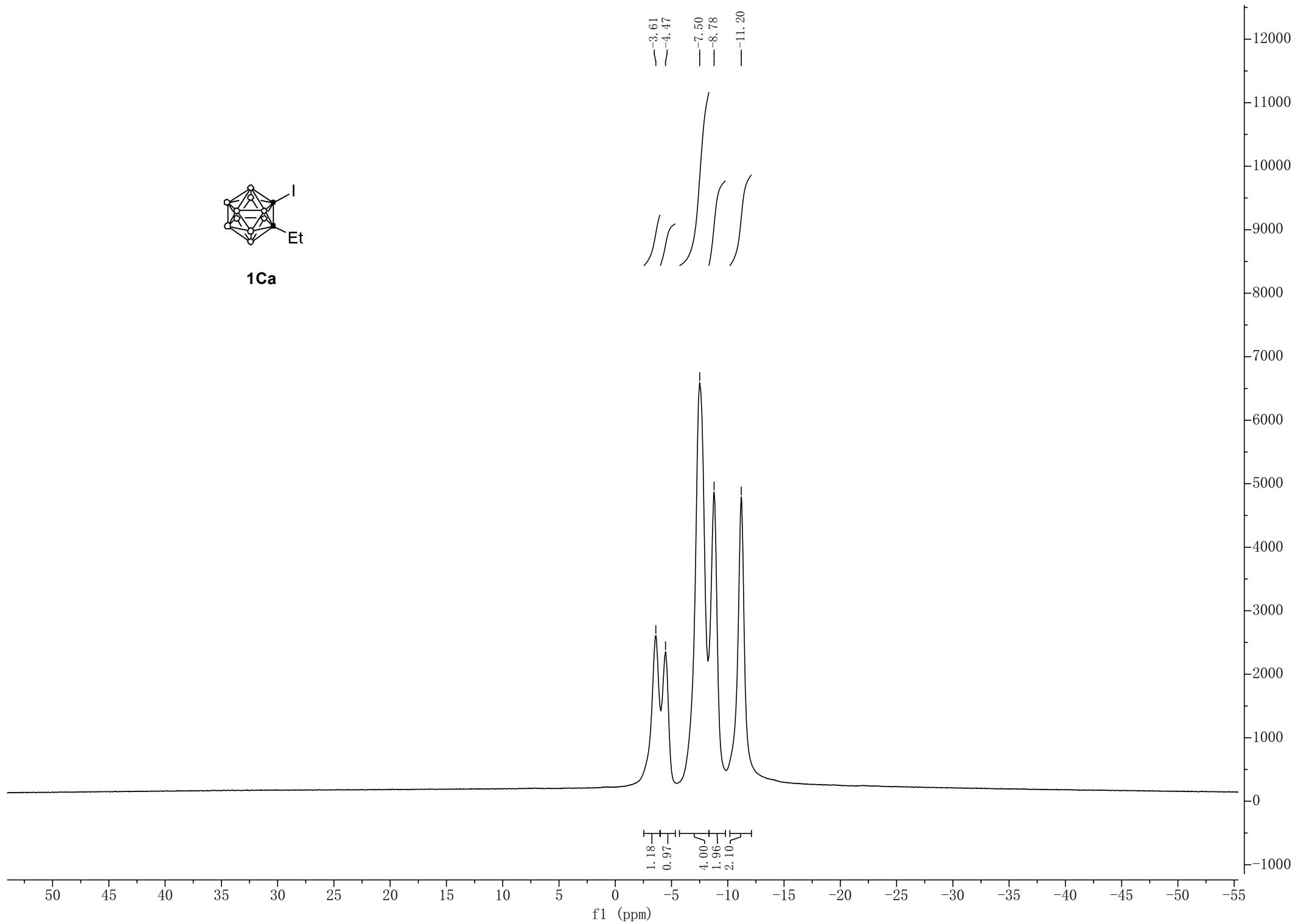


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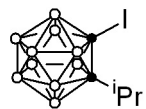




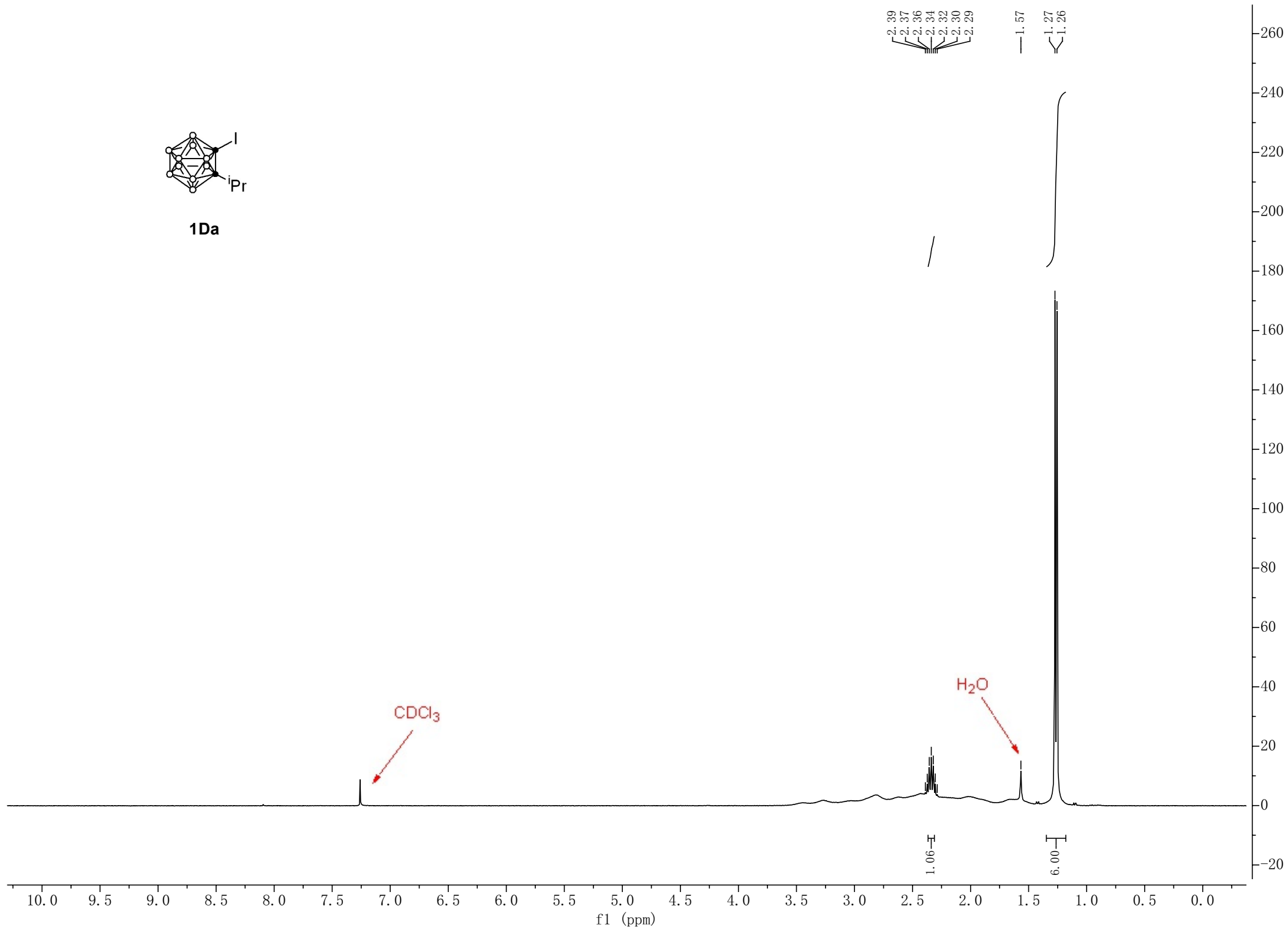
**1Ca**





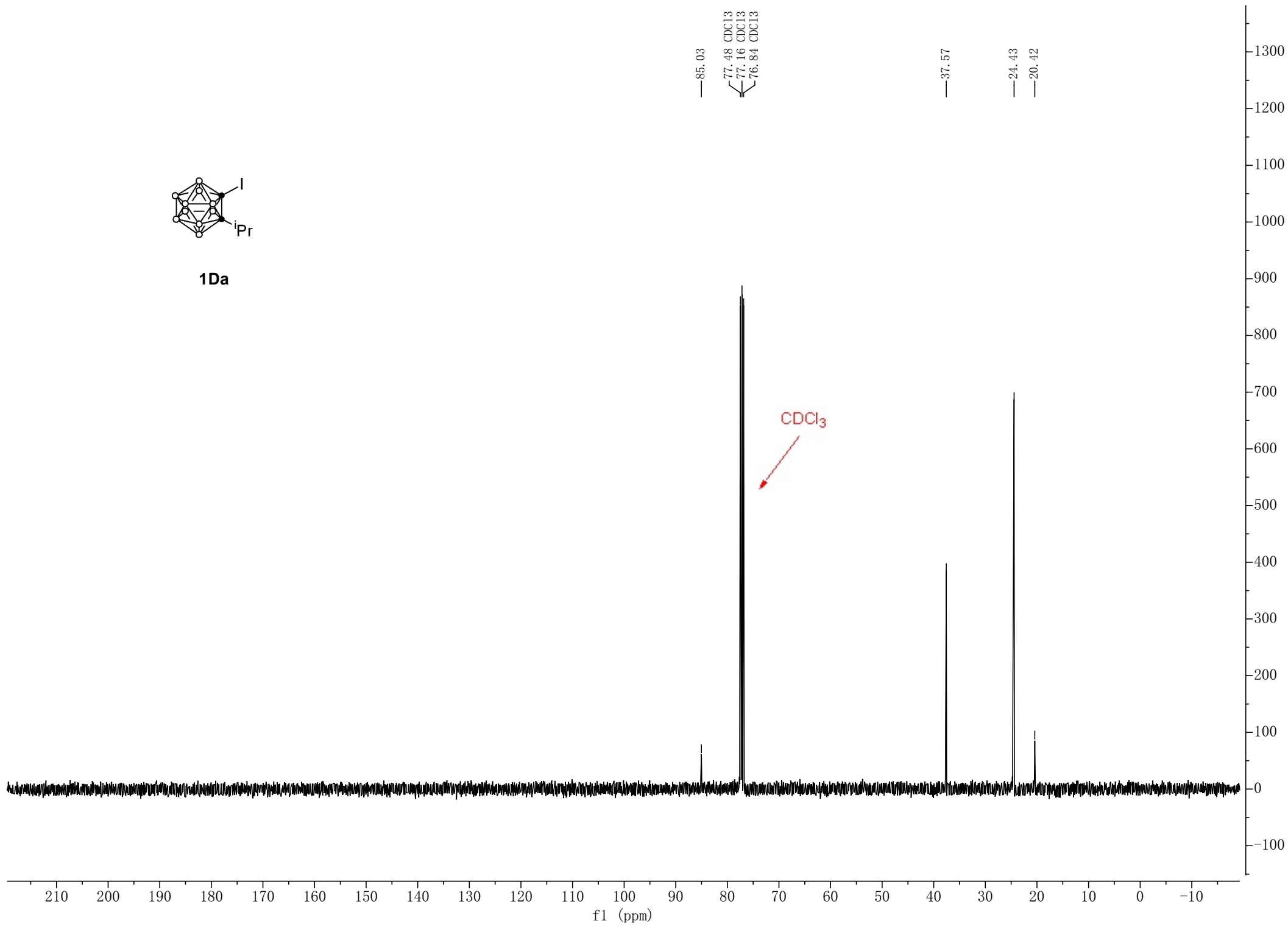


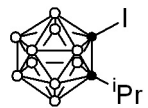
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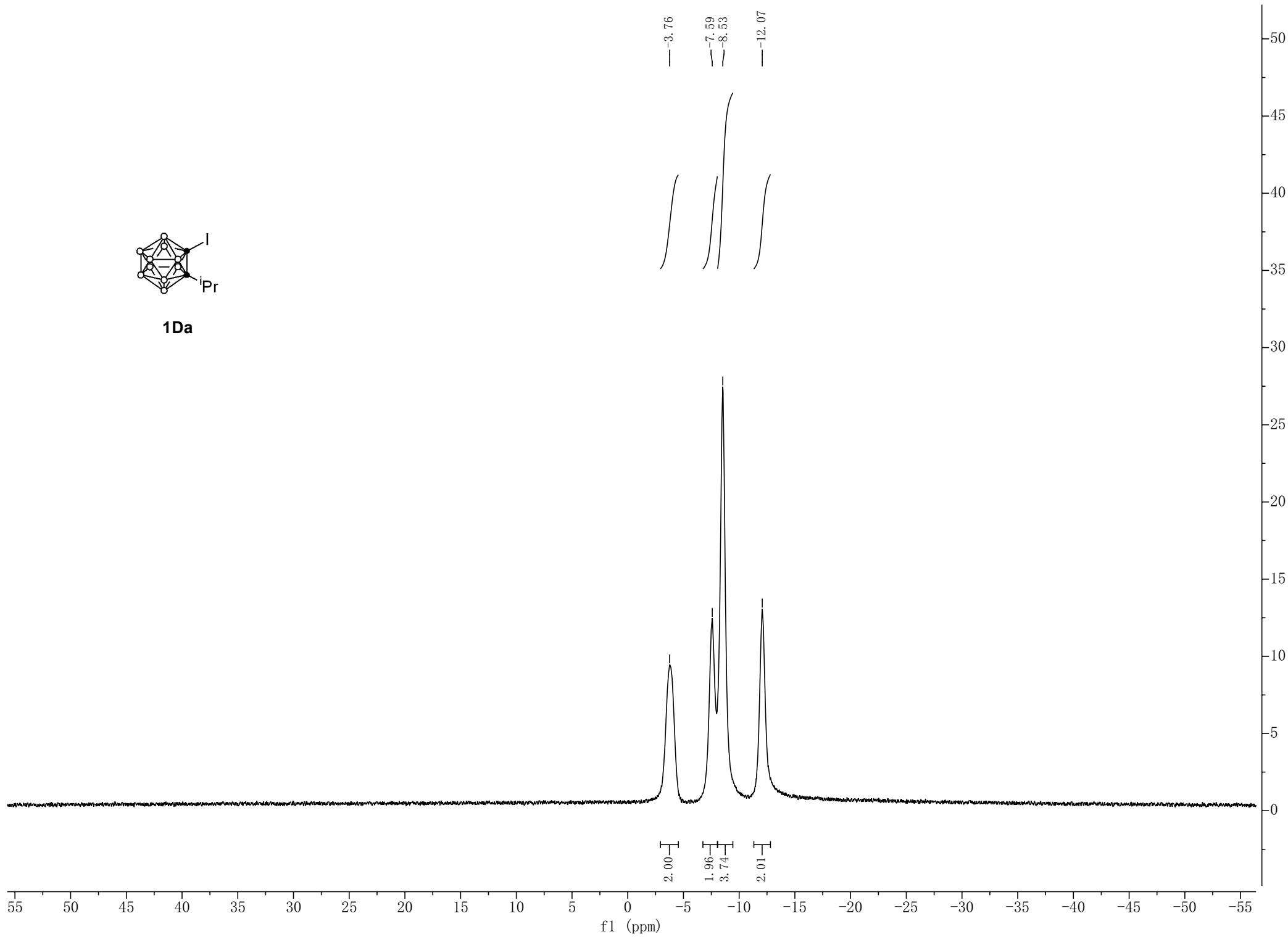


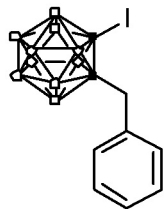
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**1Da**



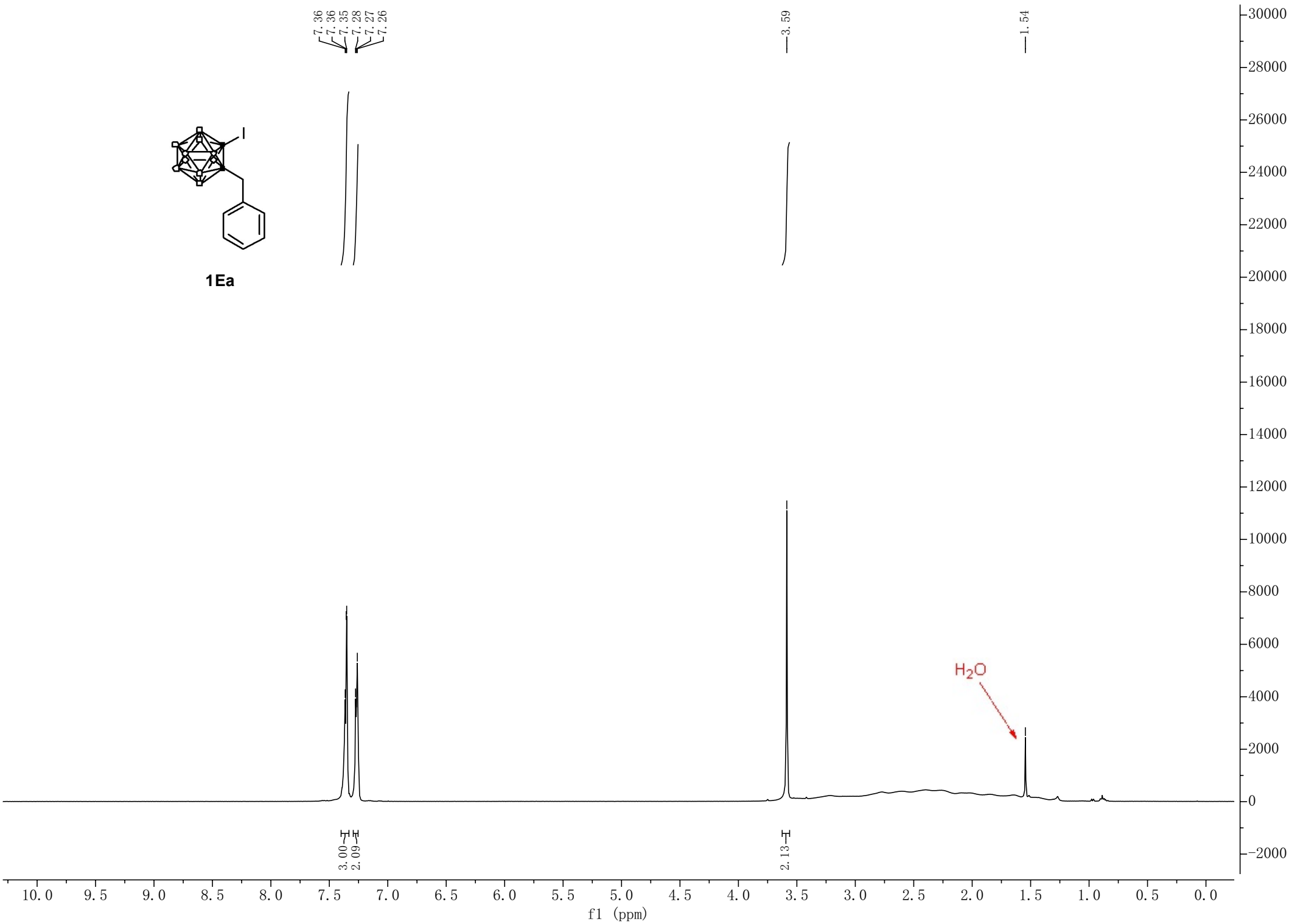


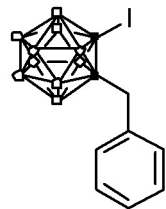
1Ea

7.36  
7.36  
7.35  
7.28  
7.27  
7.26

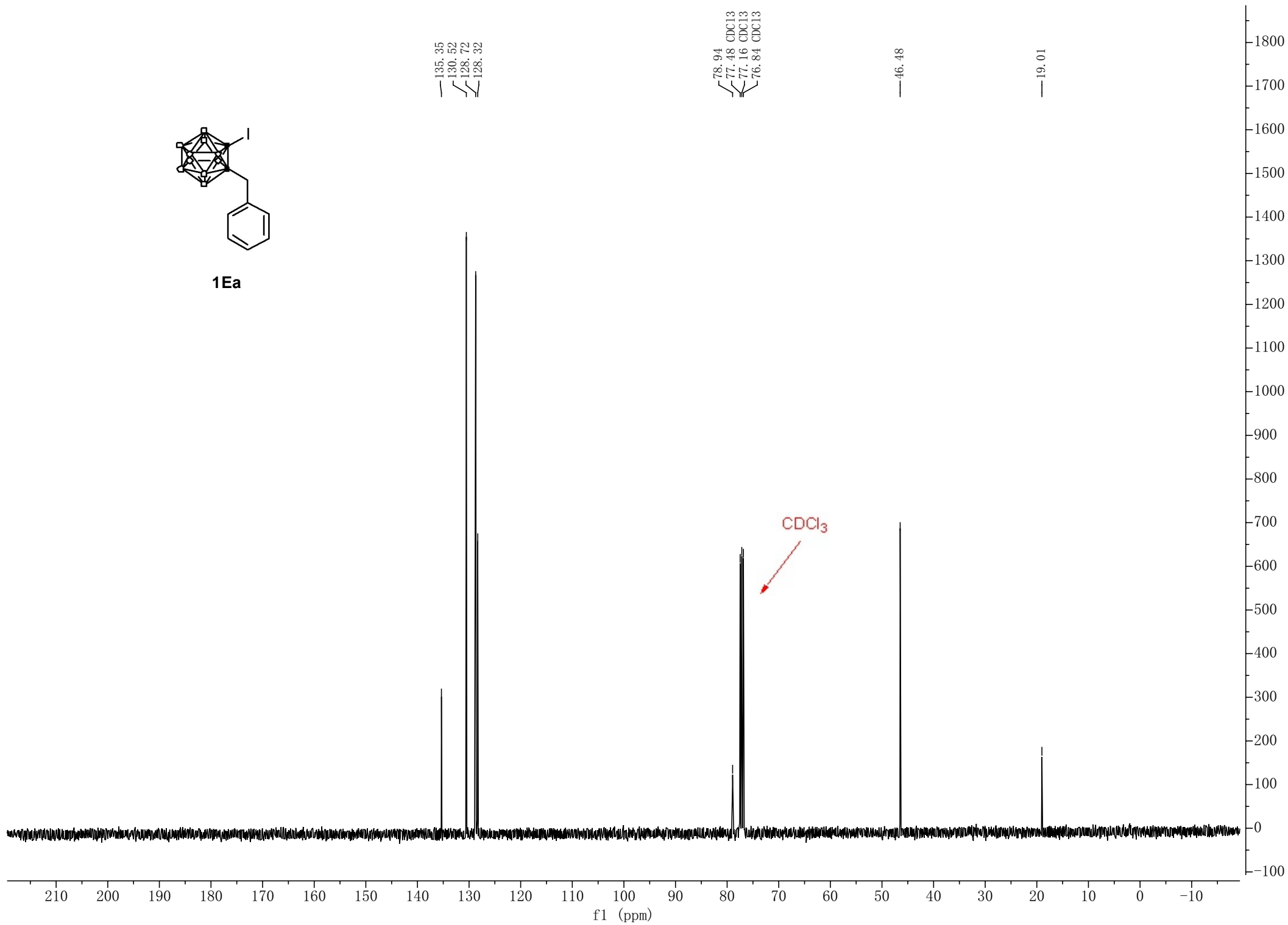
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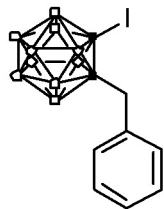
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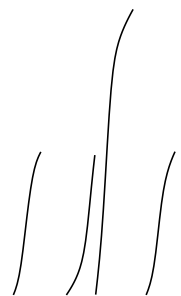
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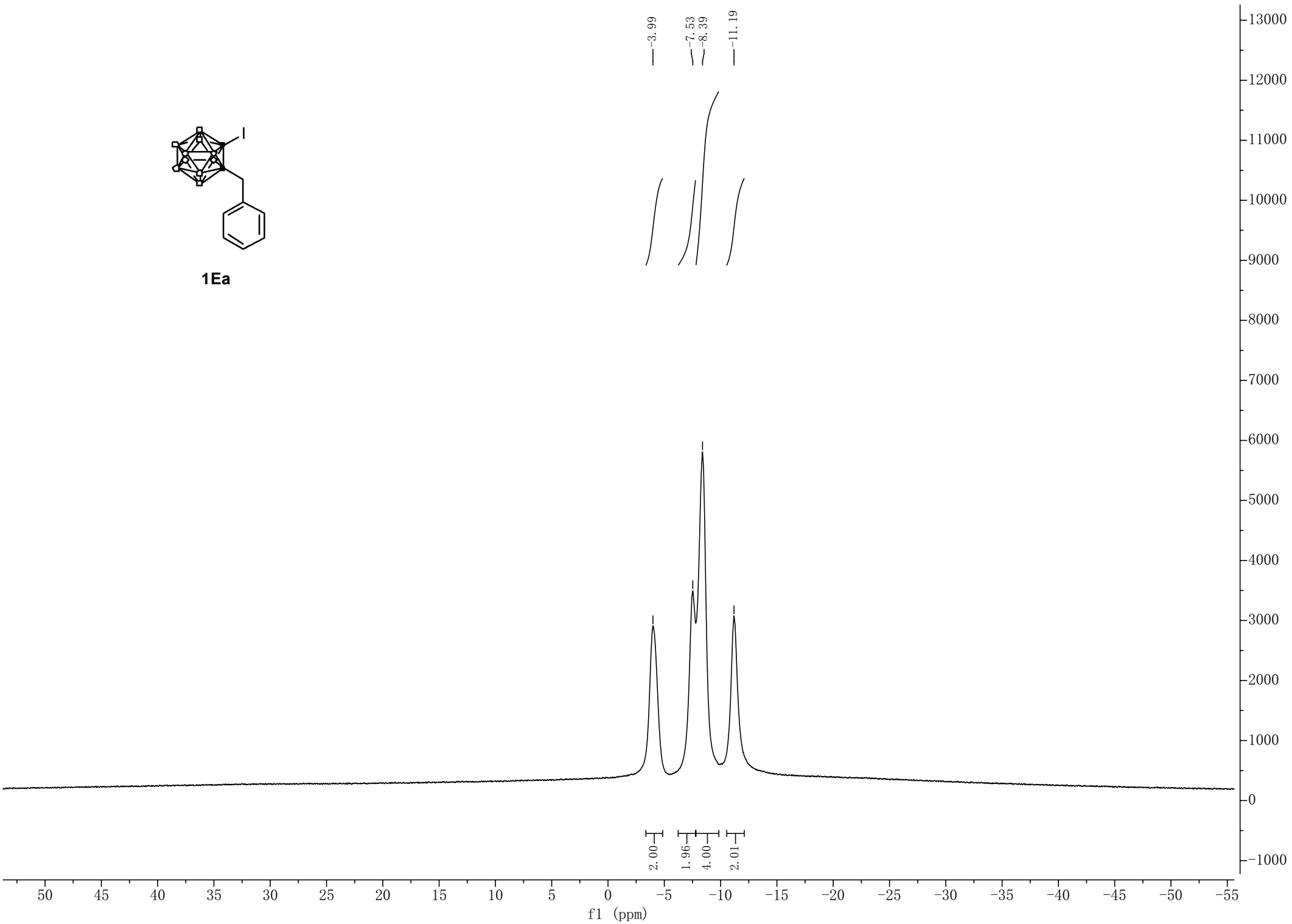


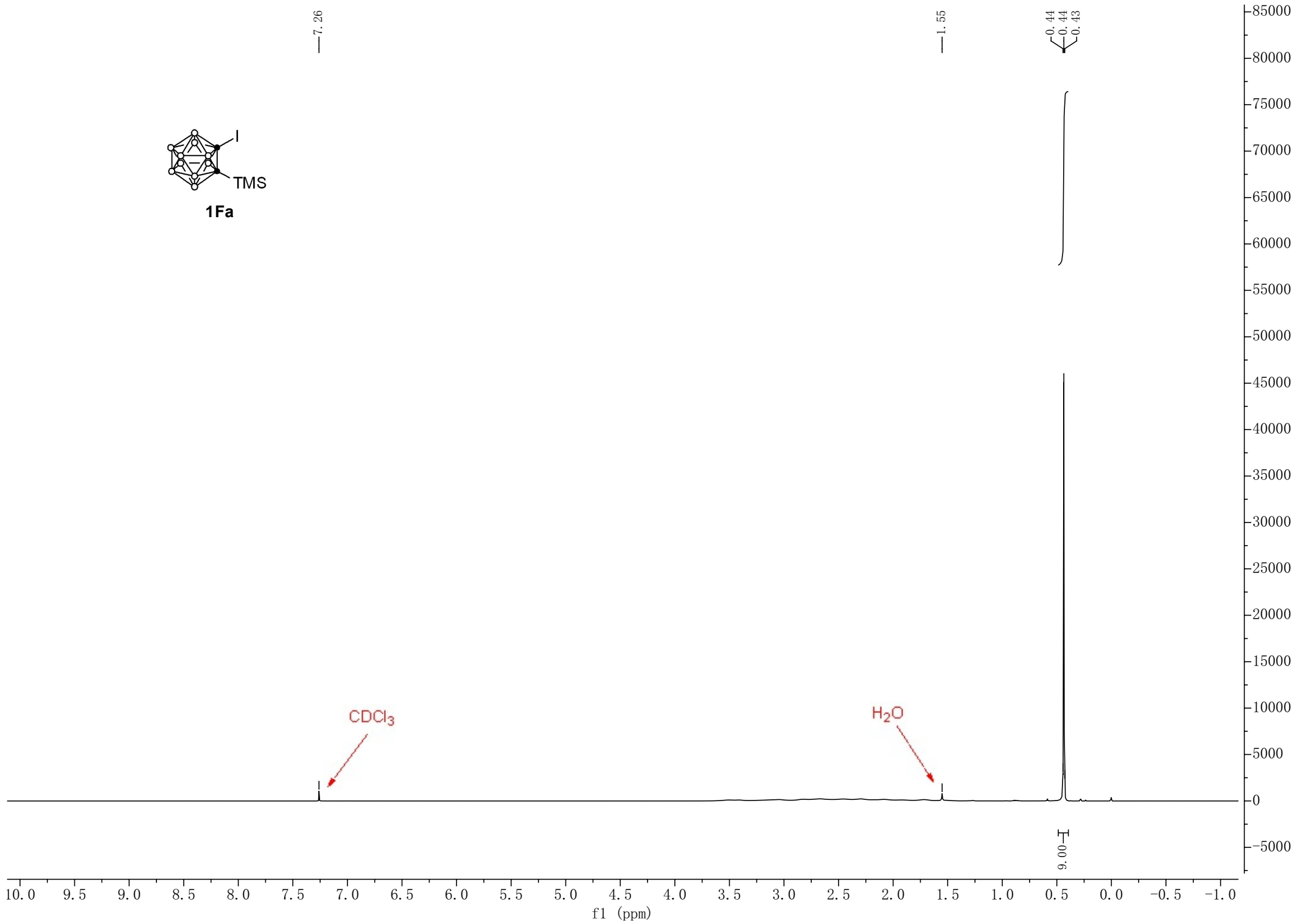
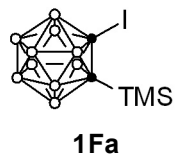
1Ea

3.99  
7.53  
8.39  
11.19



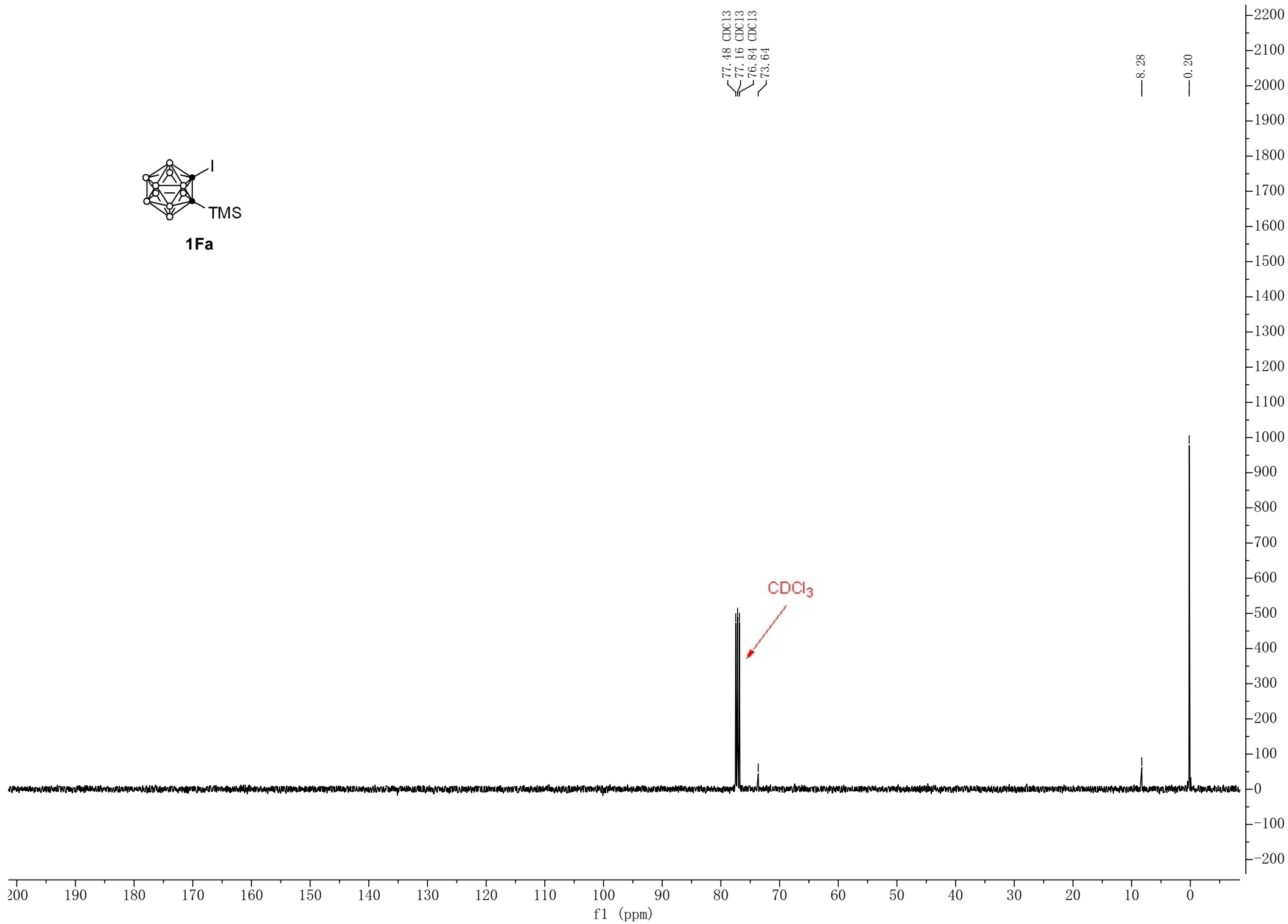
2.00  
1.96  
4.00  
2.01



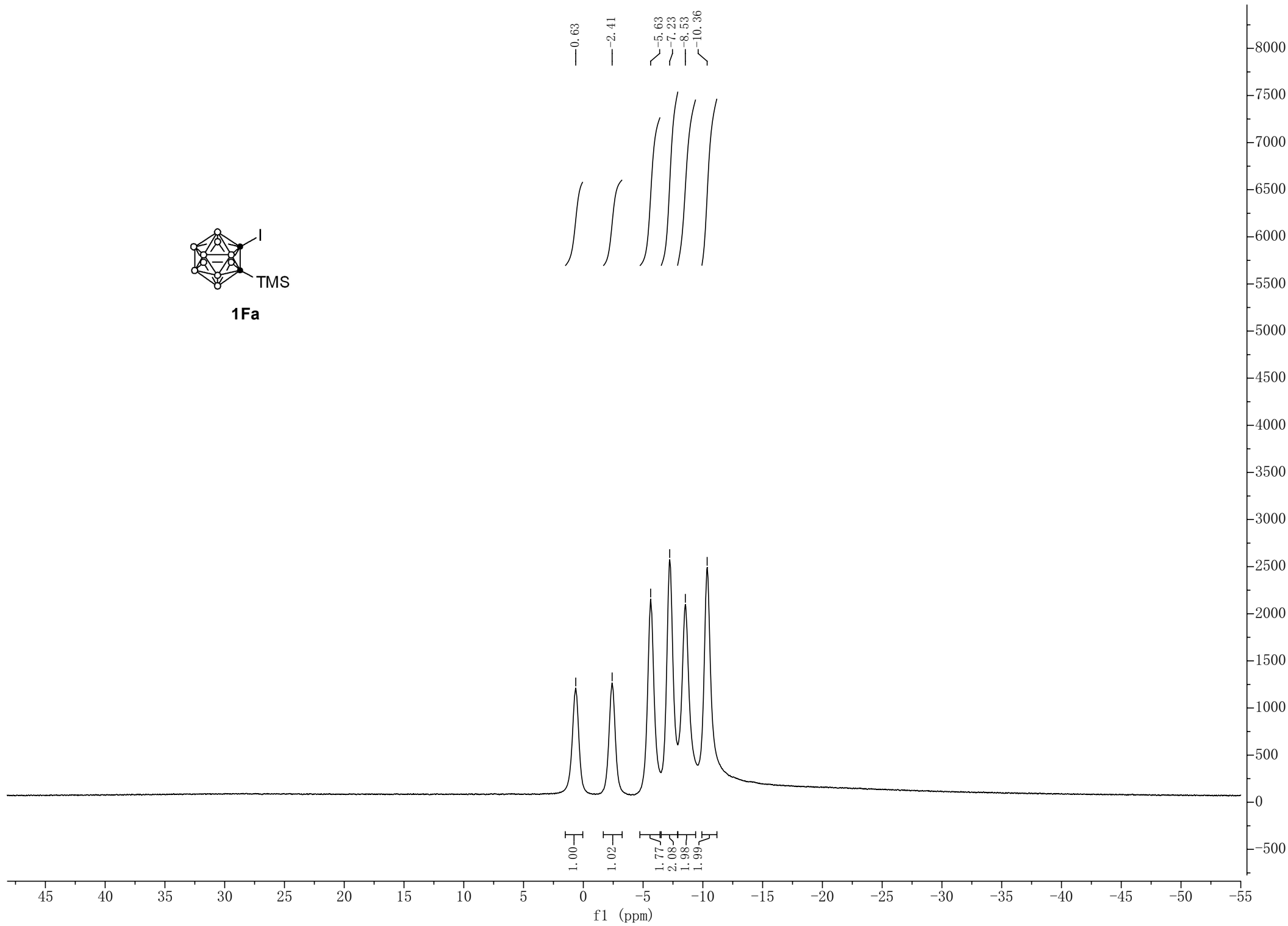
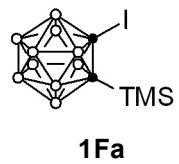


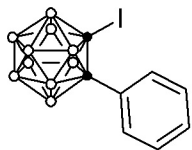


1Fa









1Ga

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7.64  
7.54  
7.52  
7.50  
7.45  
7.44  
7.42  
7.26

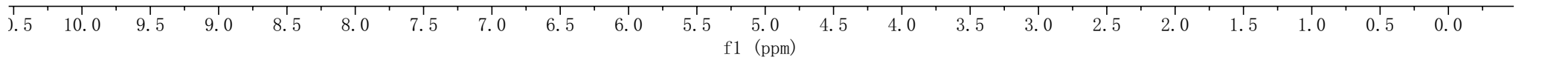


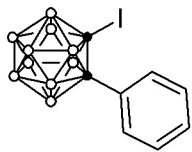
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H<sub>2</sub>O

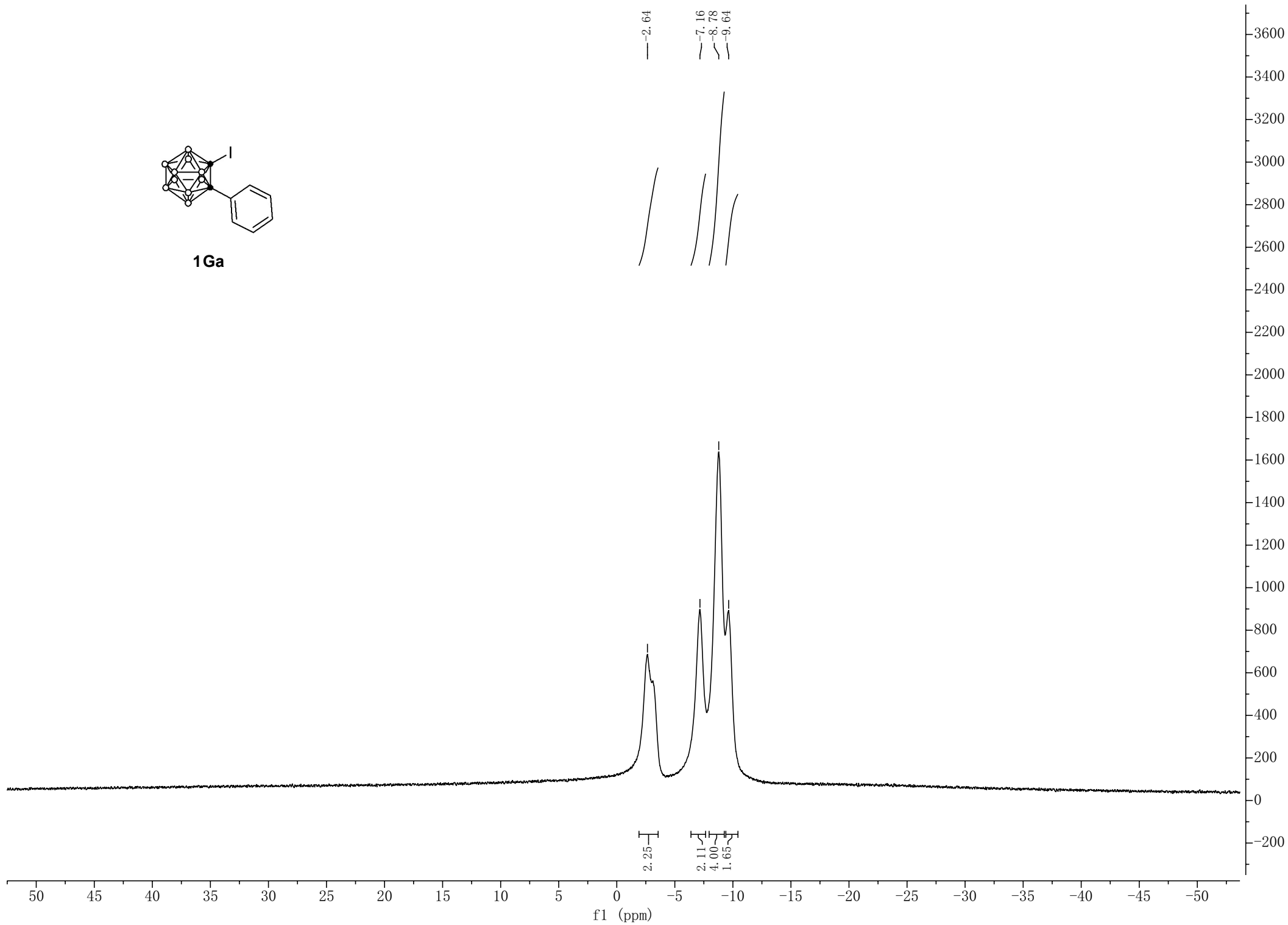
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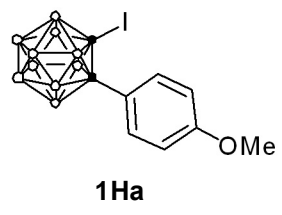
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1.00  
1.89





1Ga

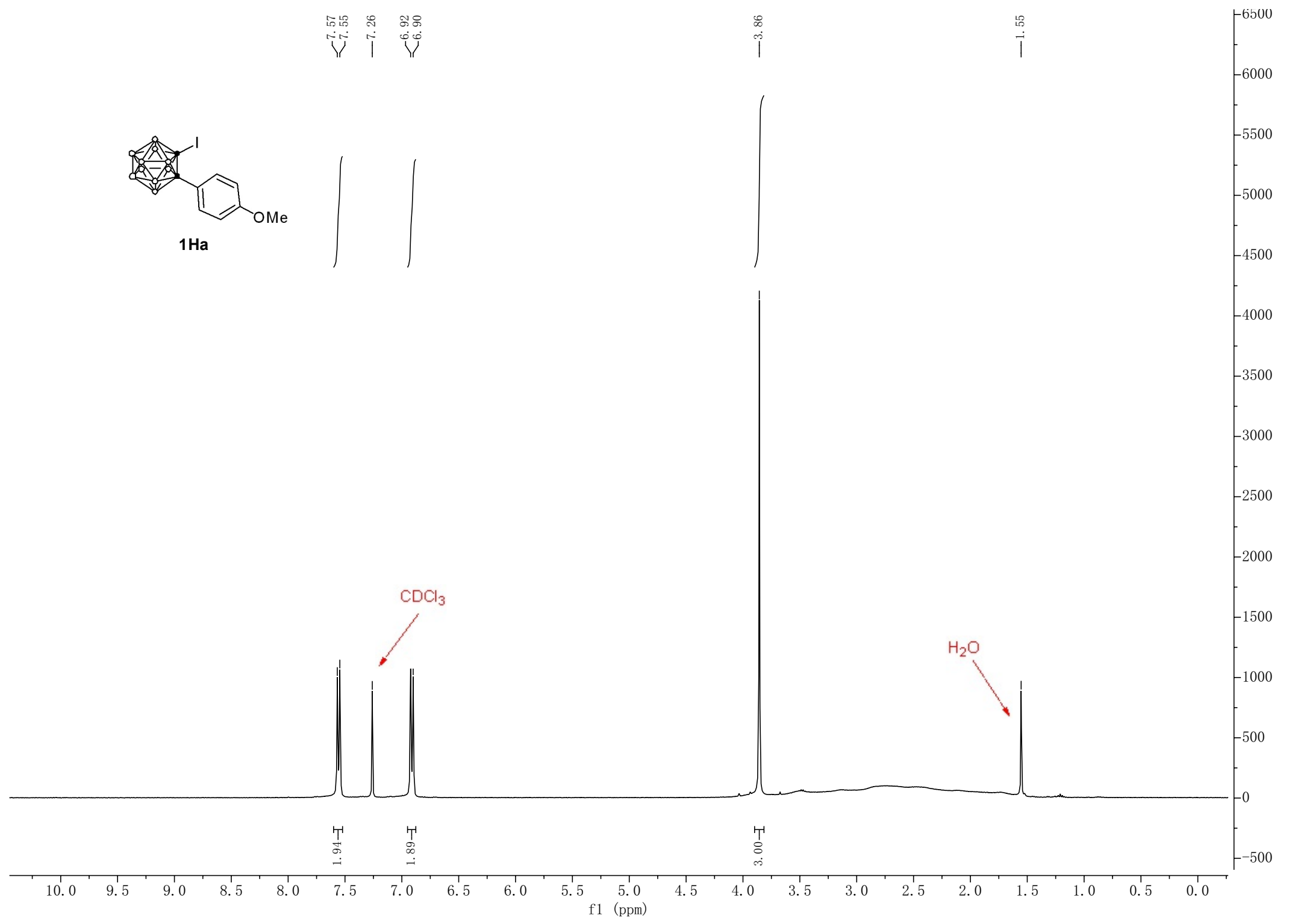


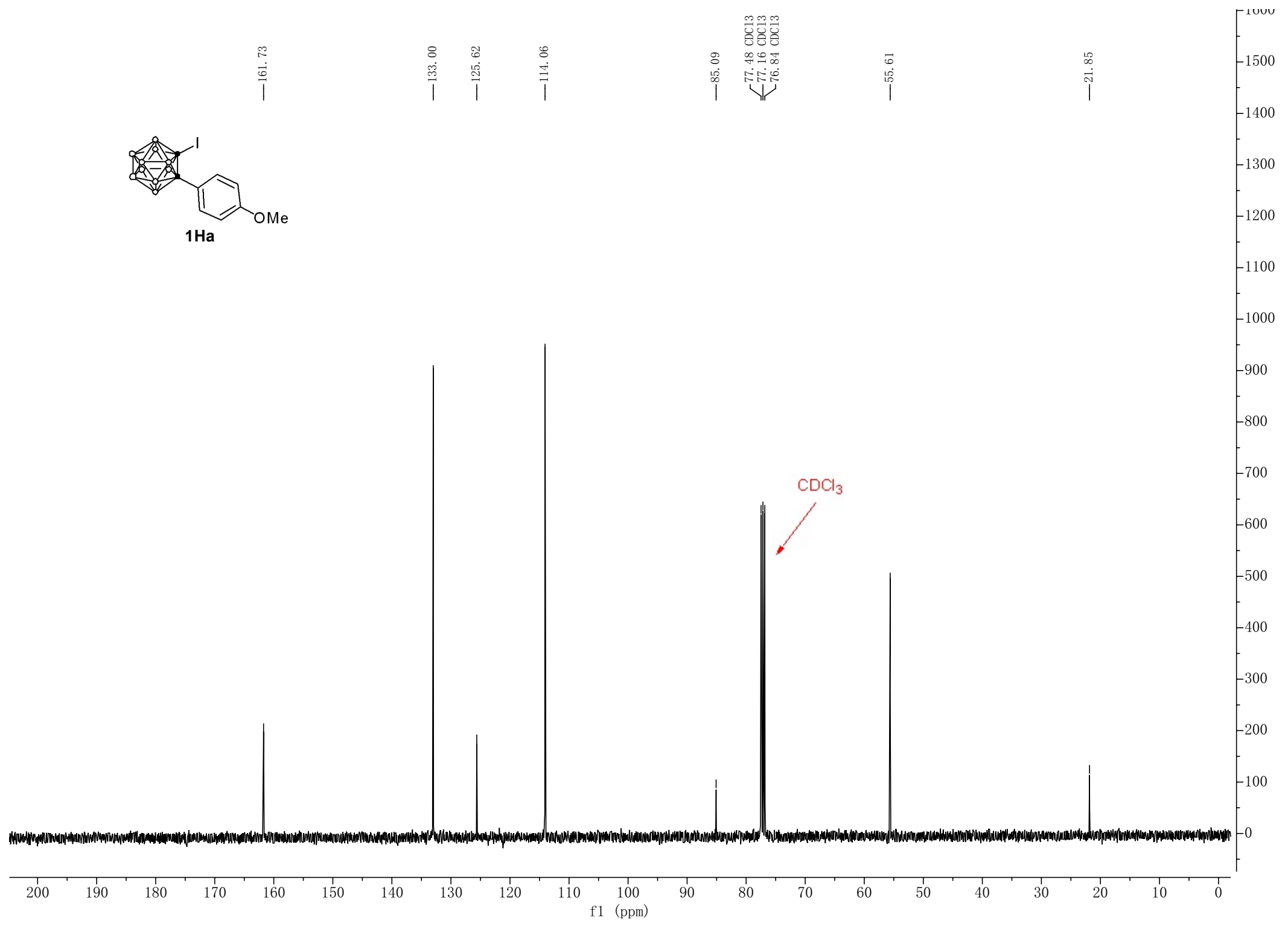
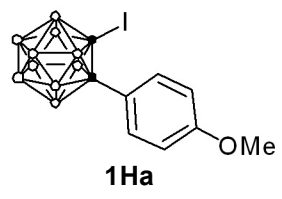


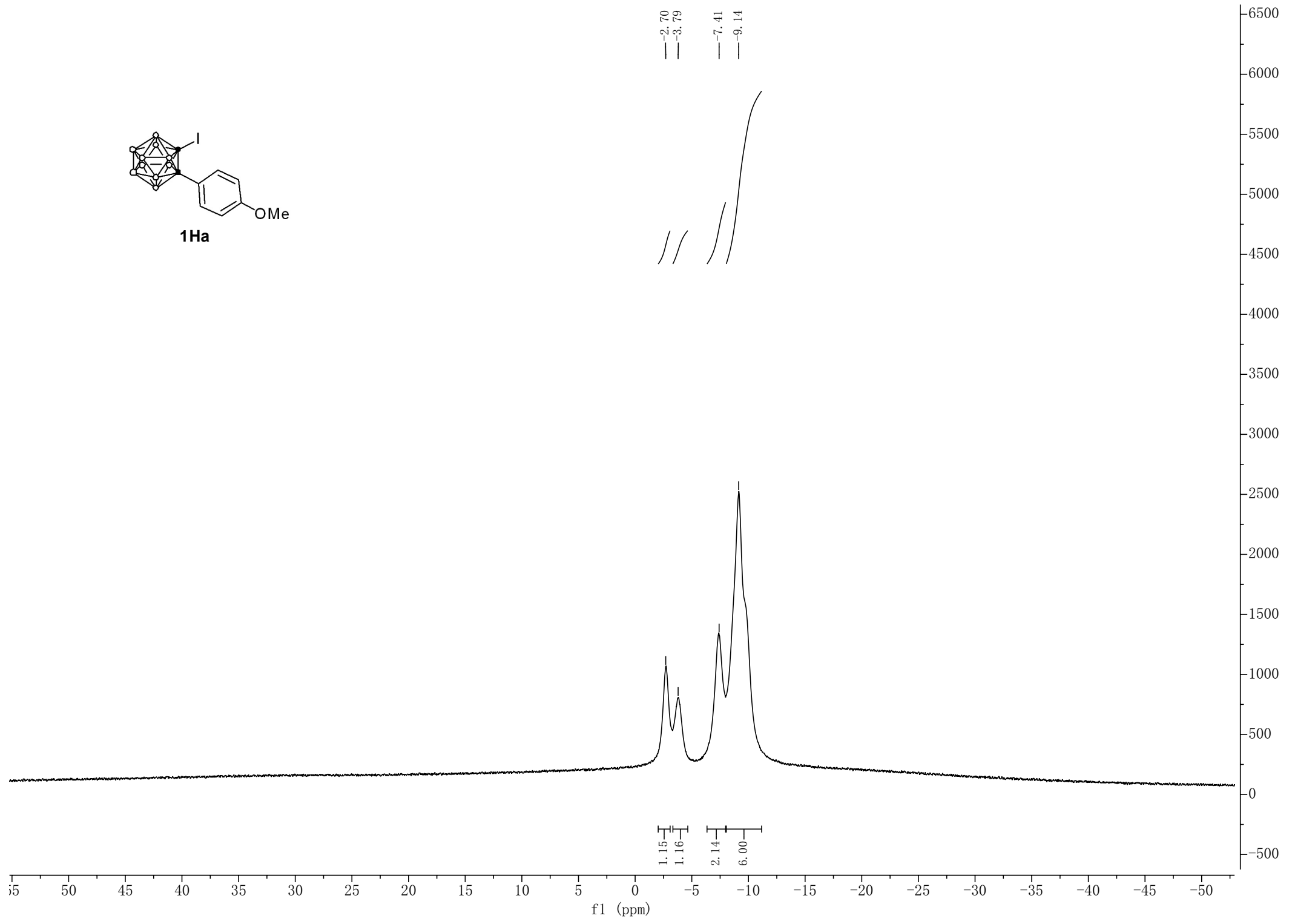
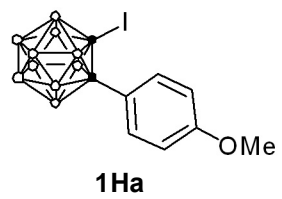
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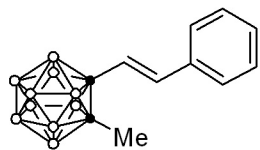
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1.55









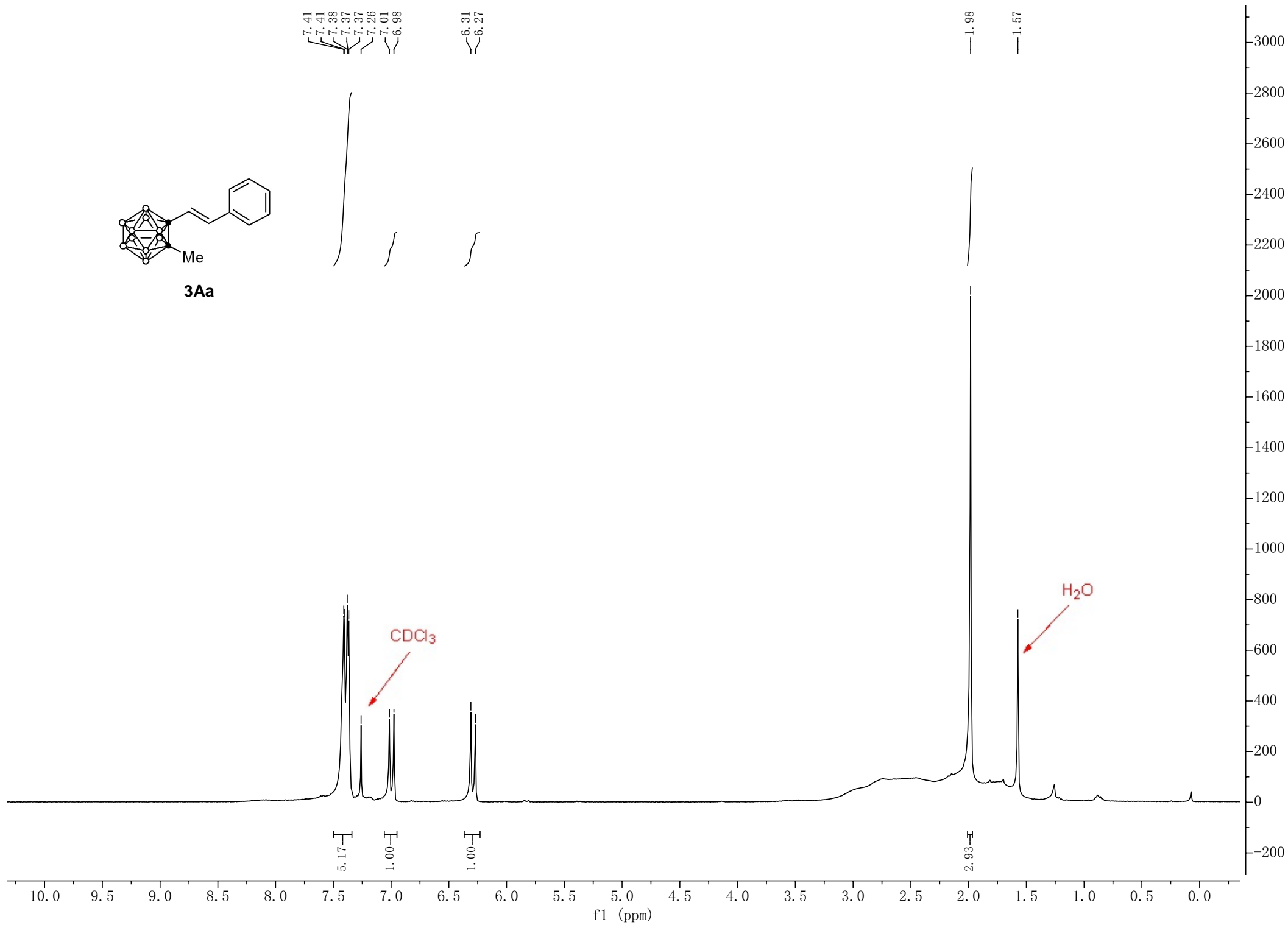
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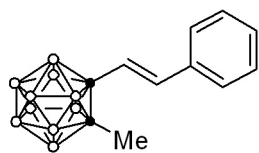
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6.31  
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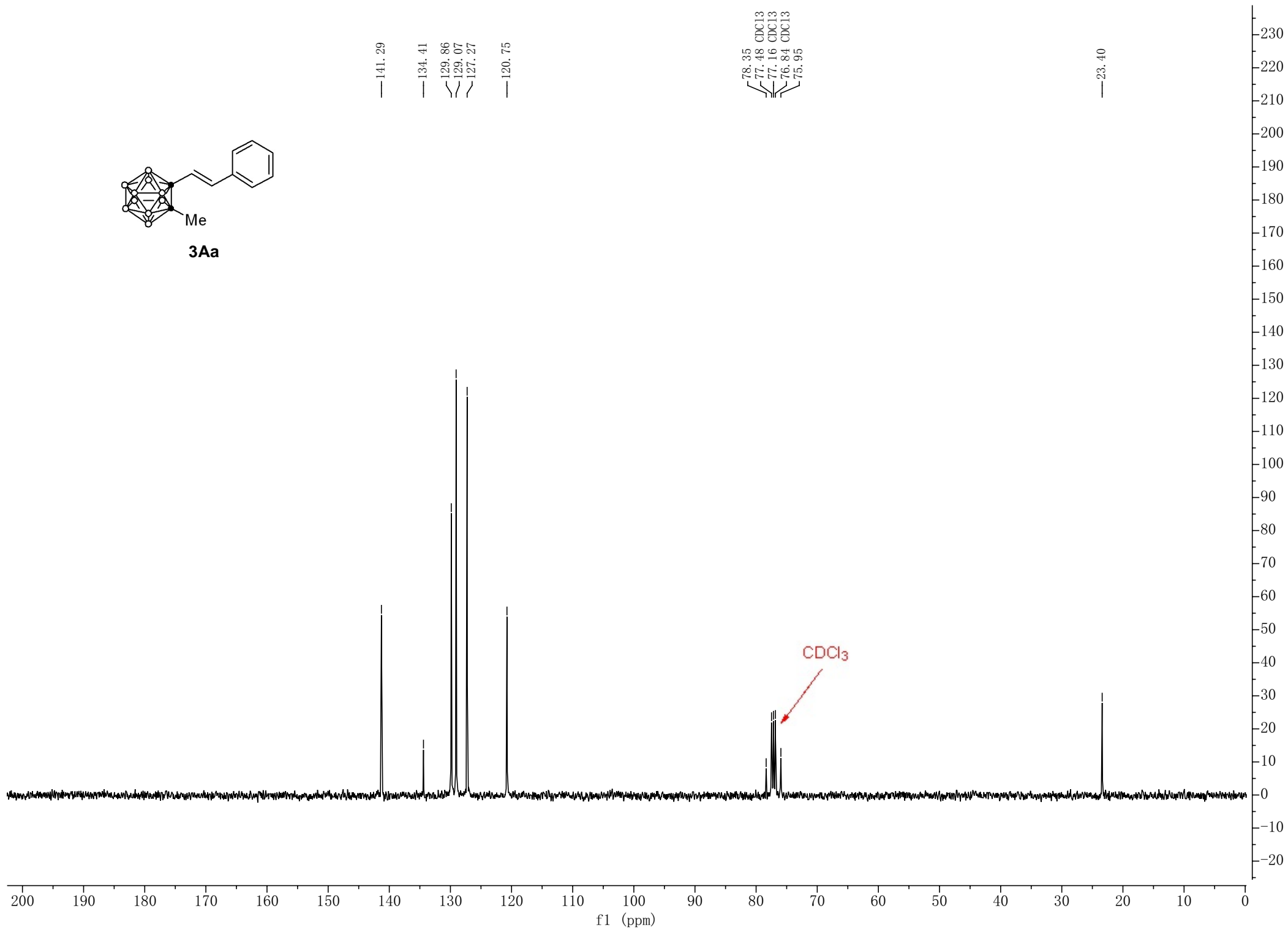
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1.57

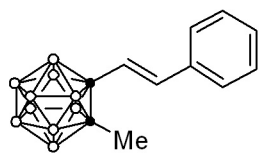




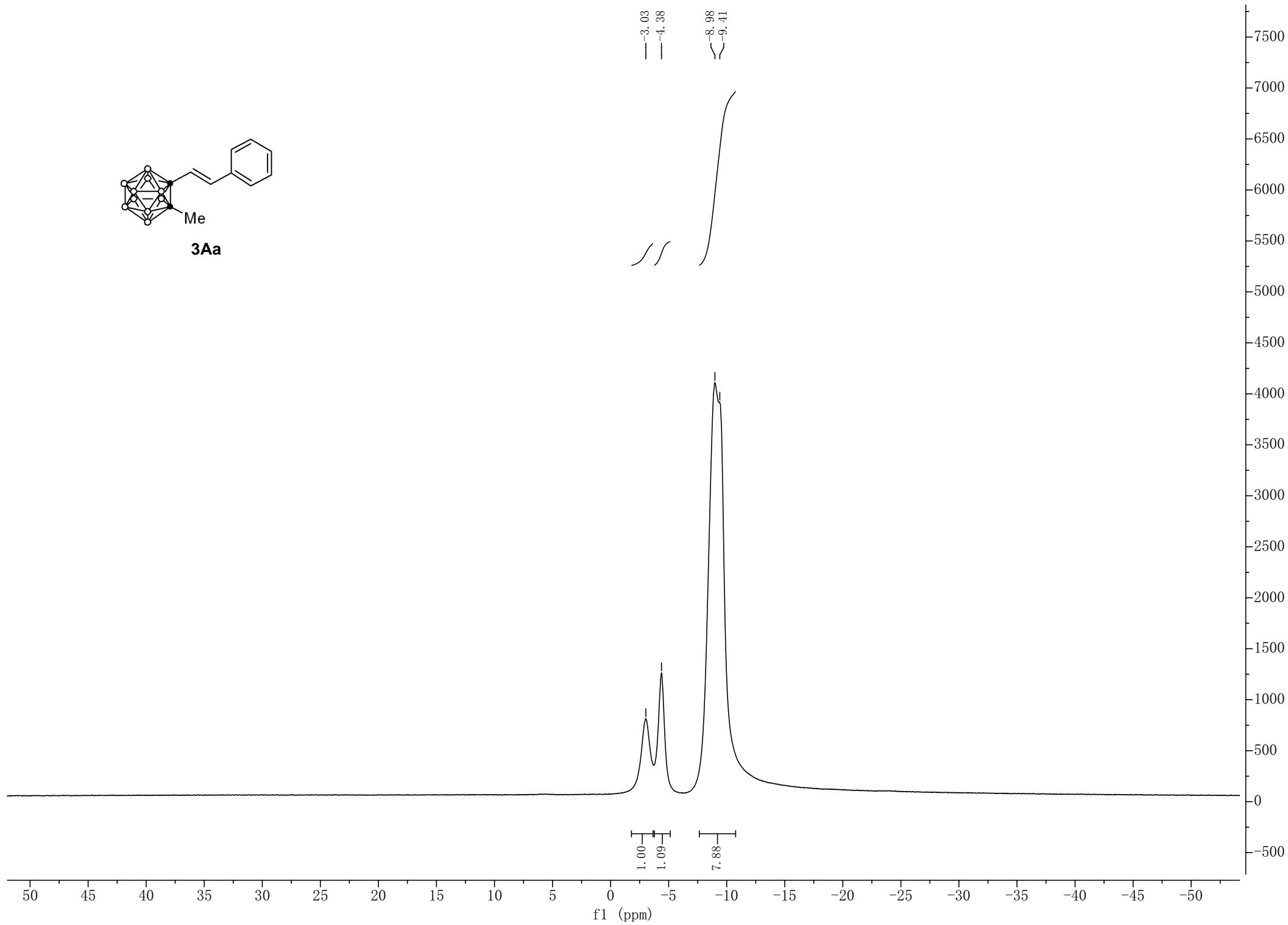
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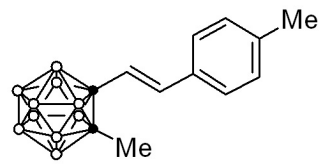




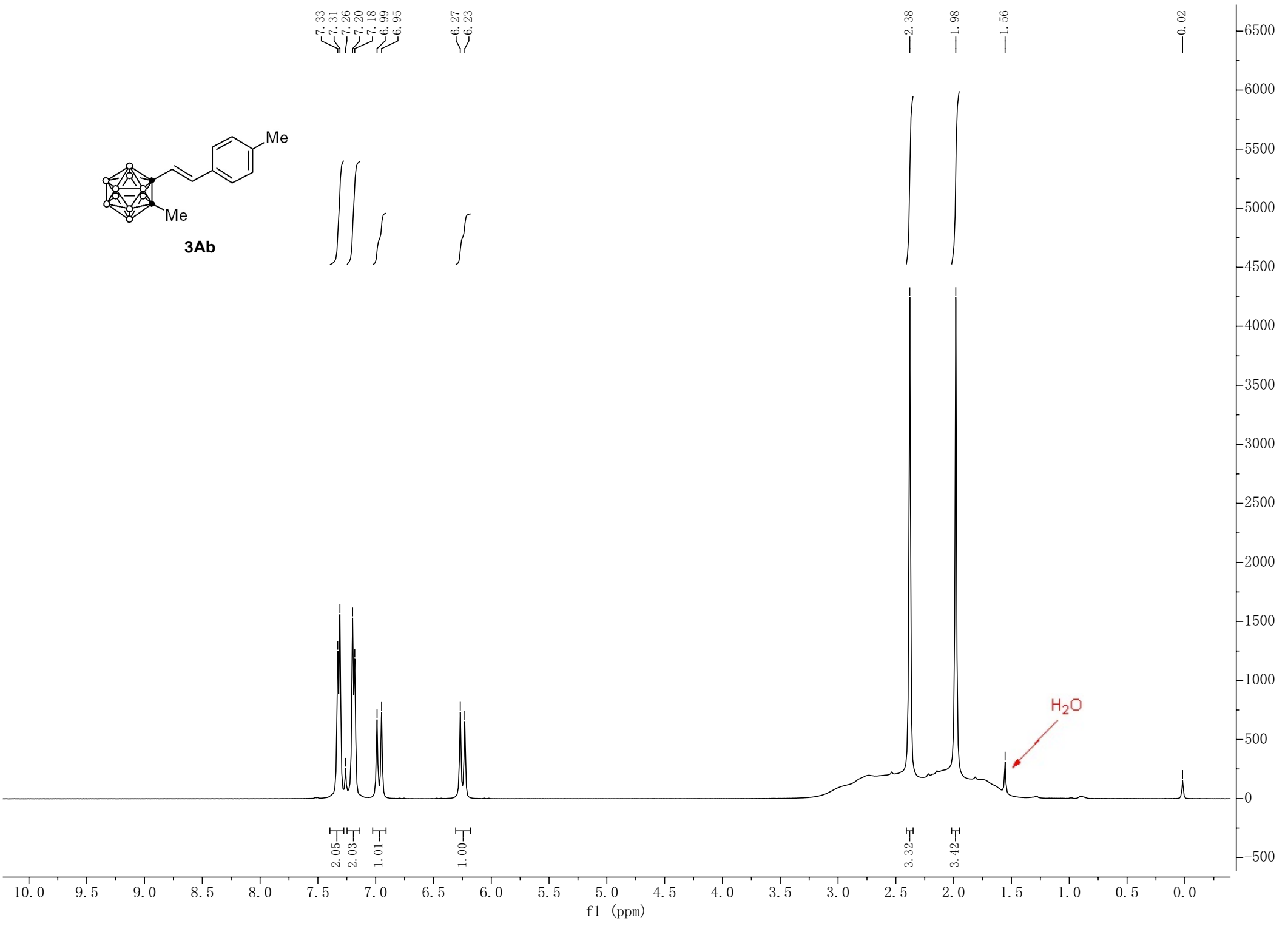


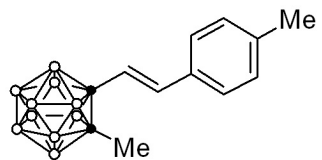
**3Aa**



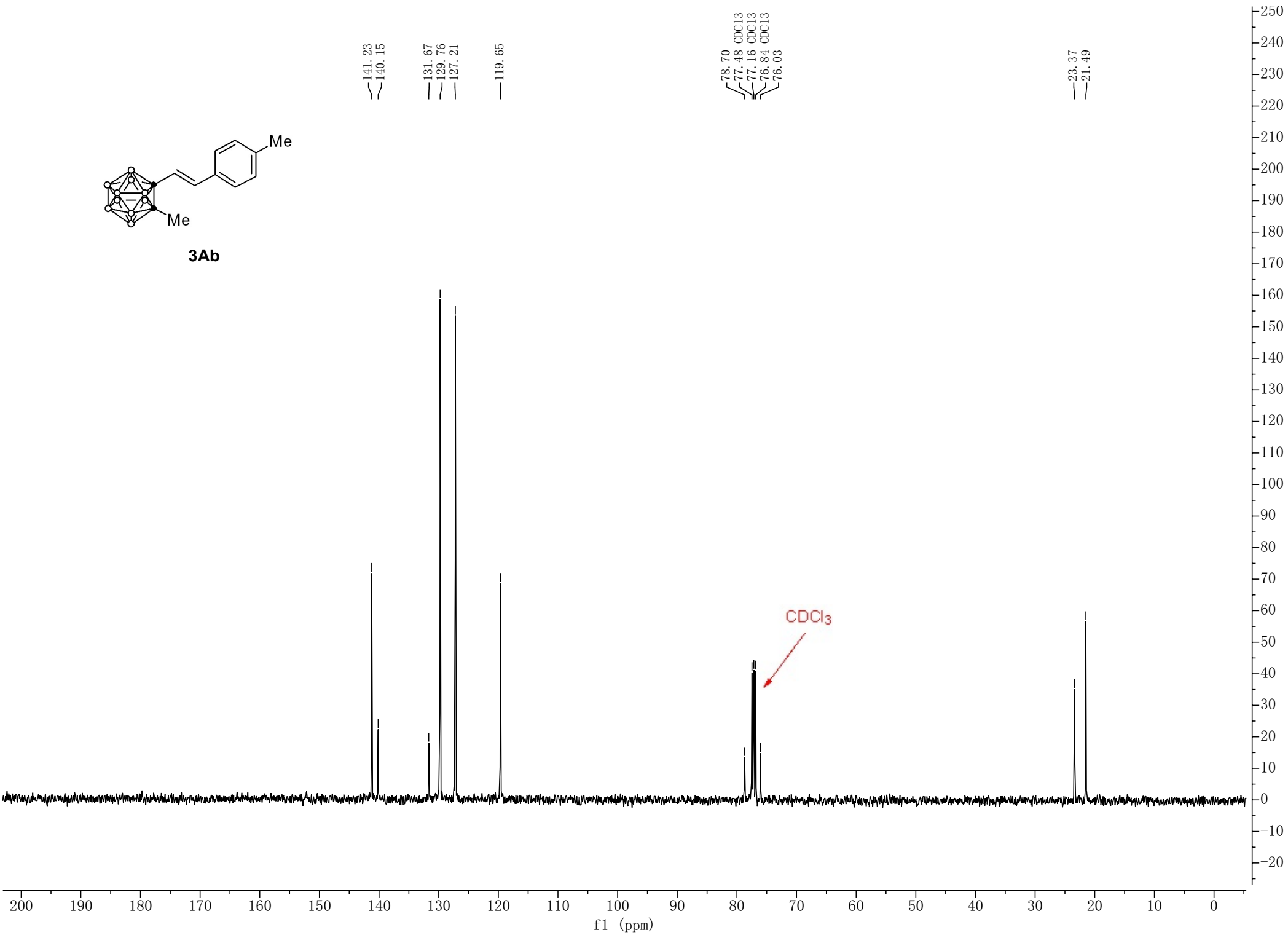


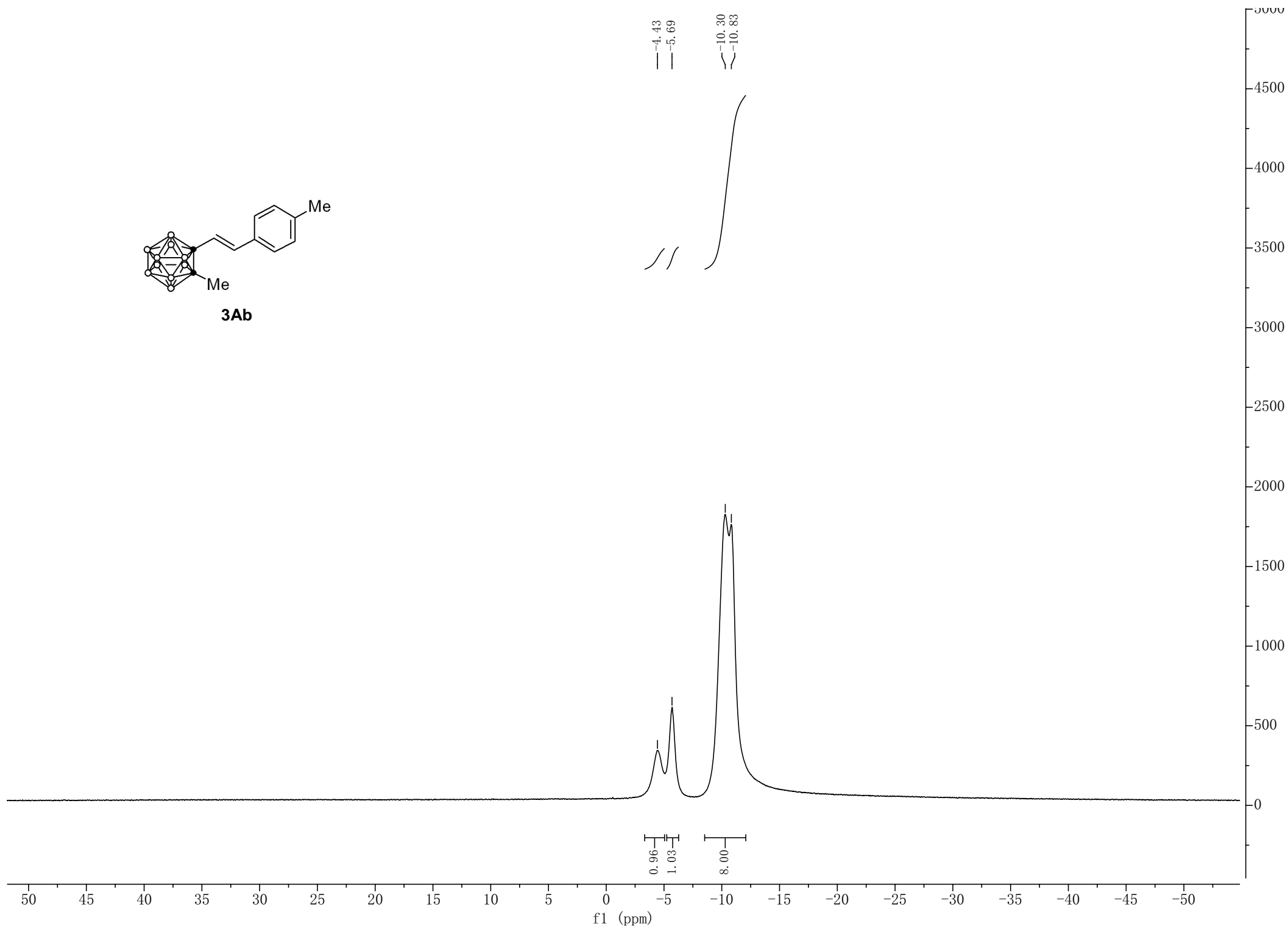
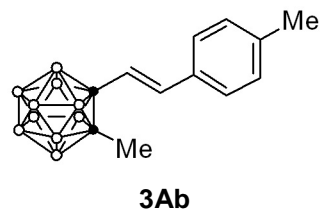
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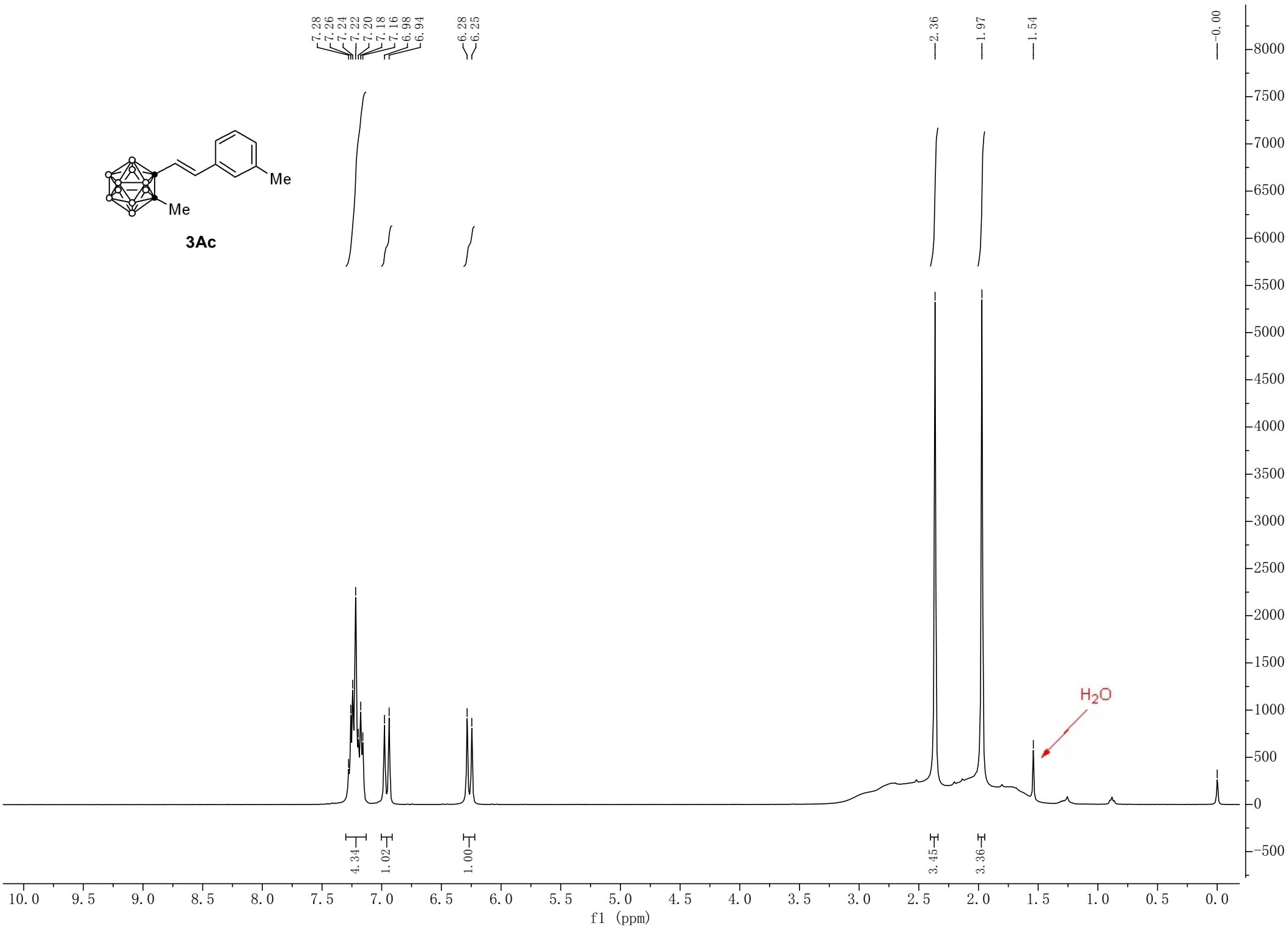
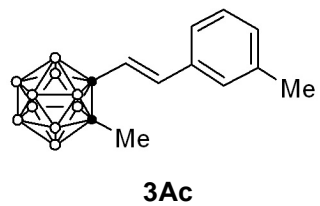


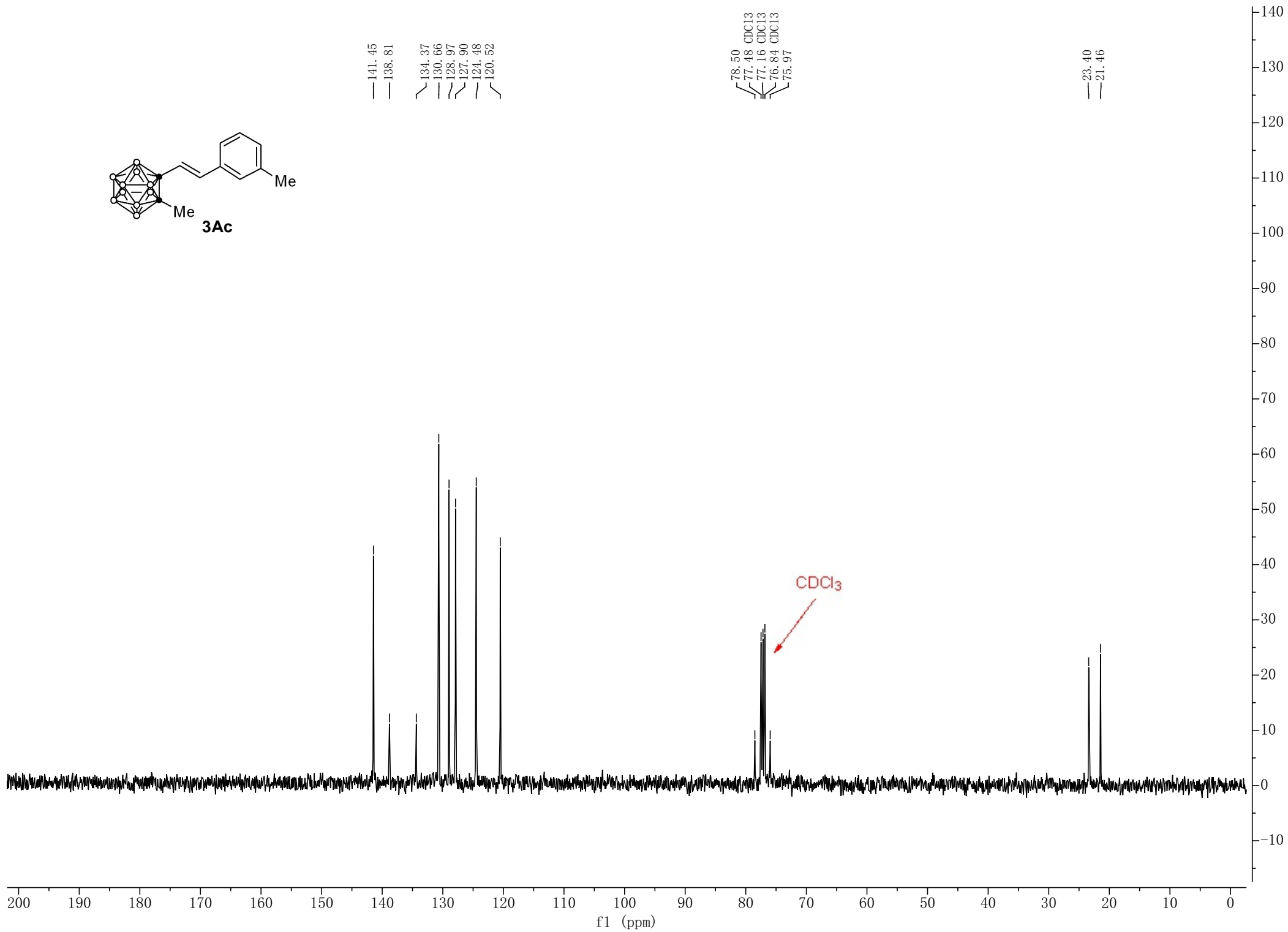
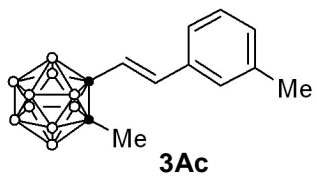


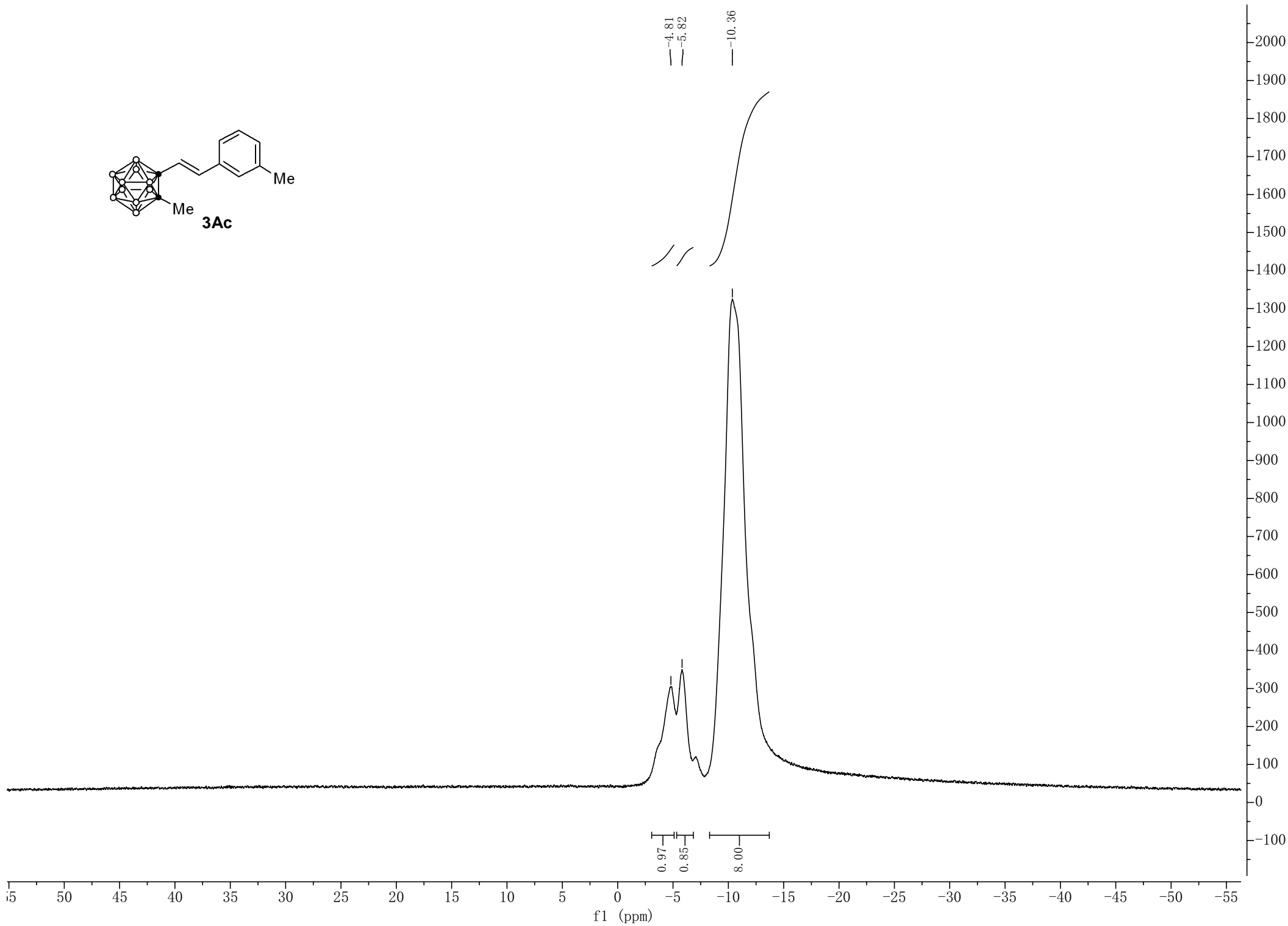
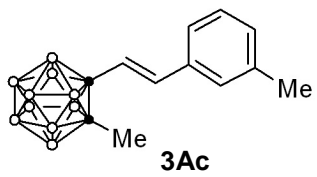
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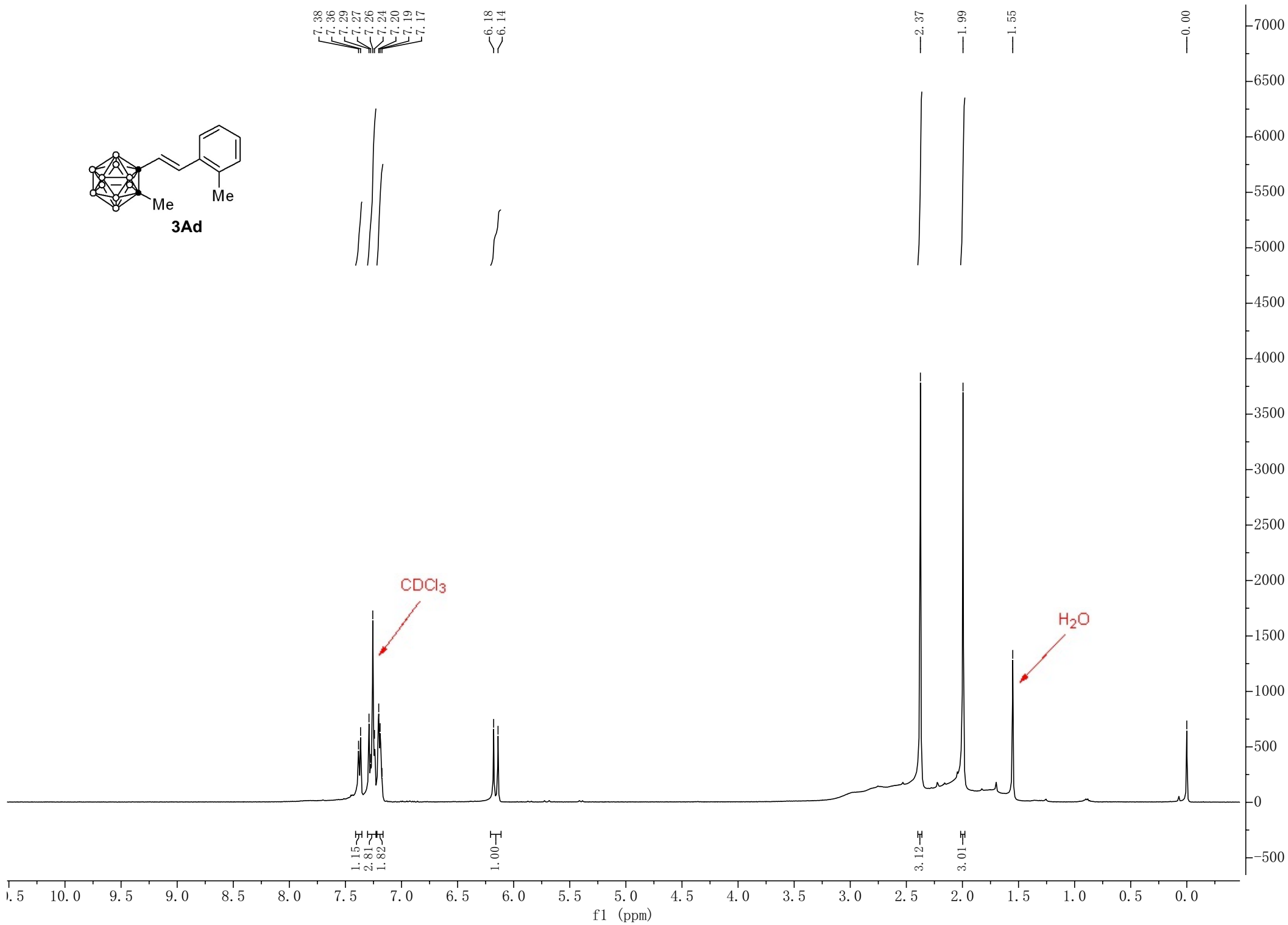
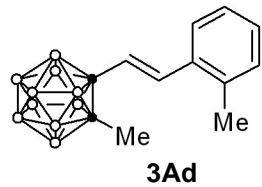




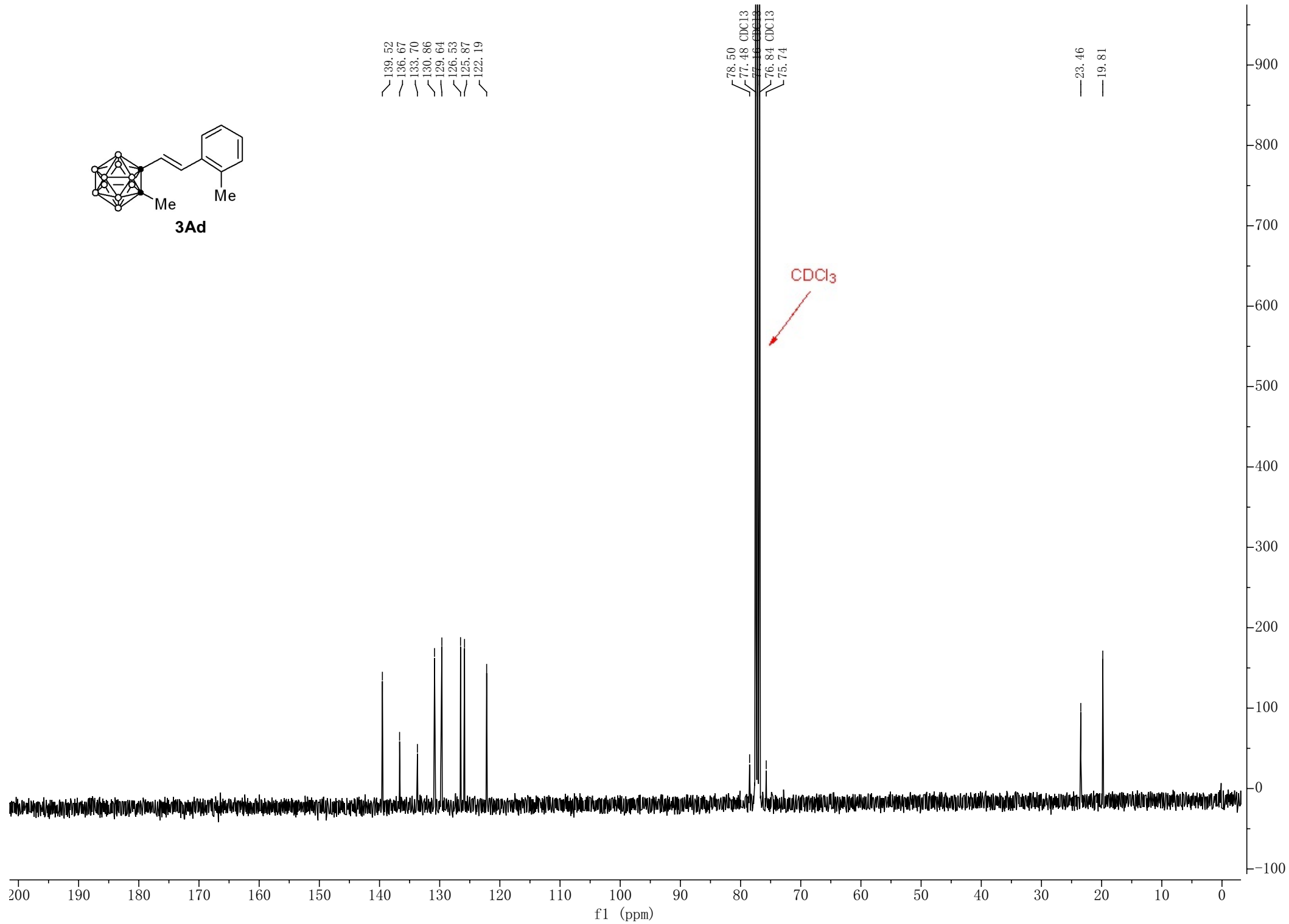
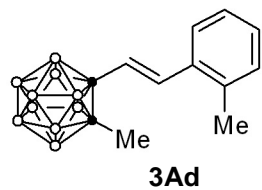


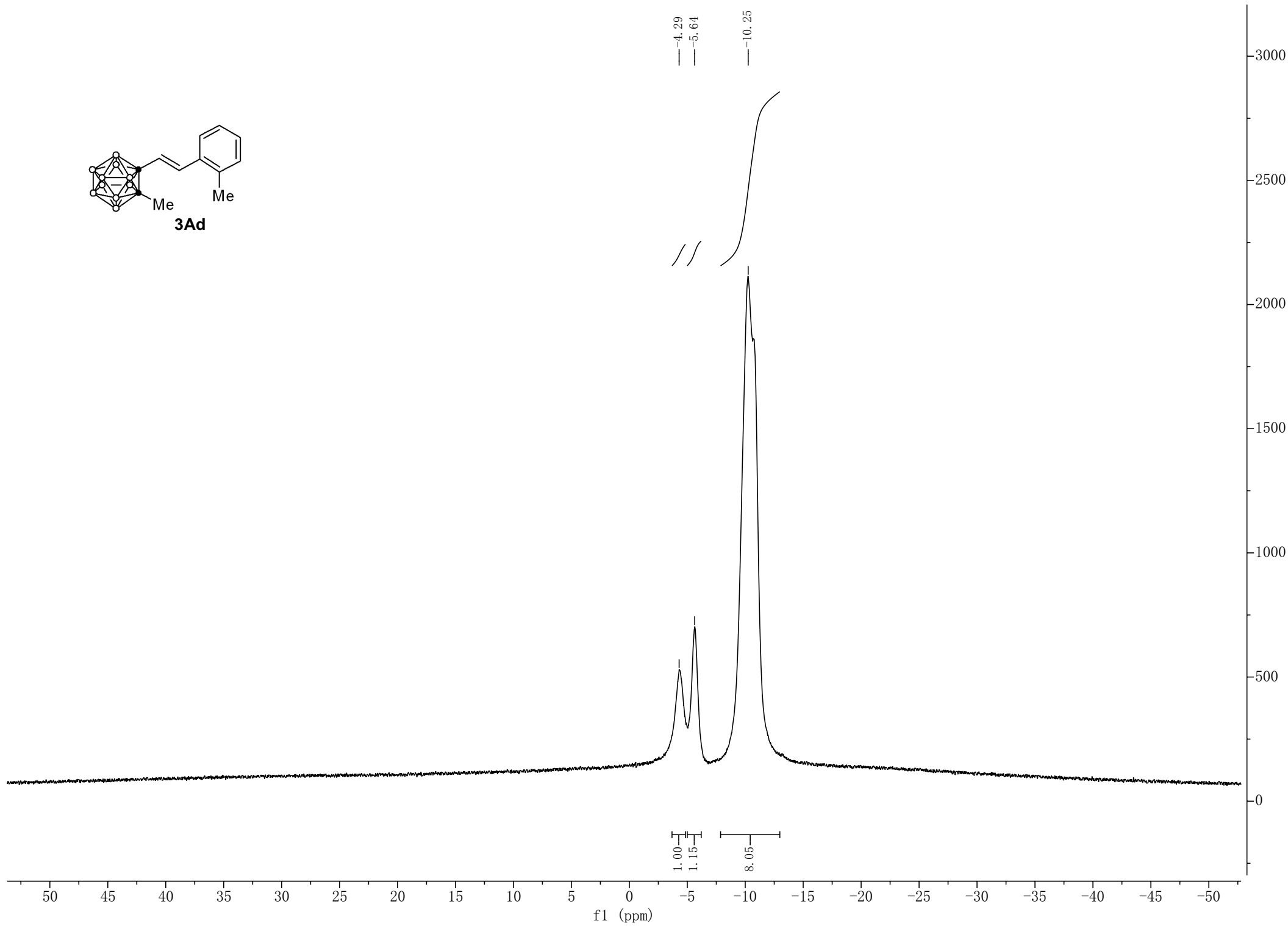
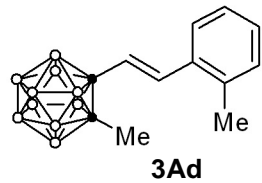


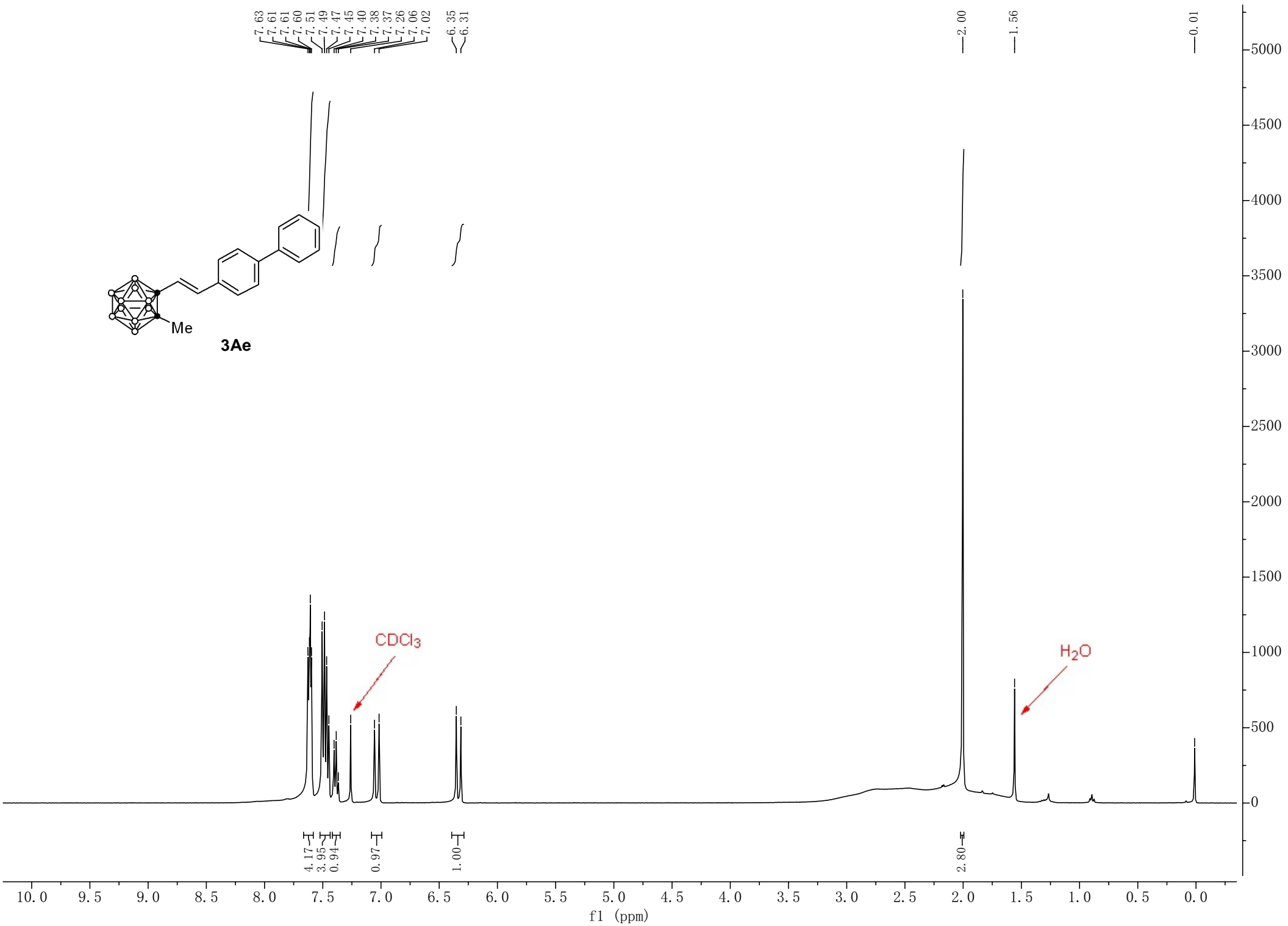


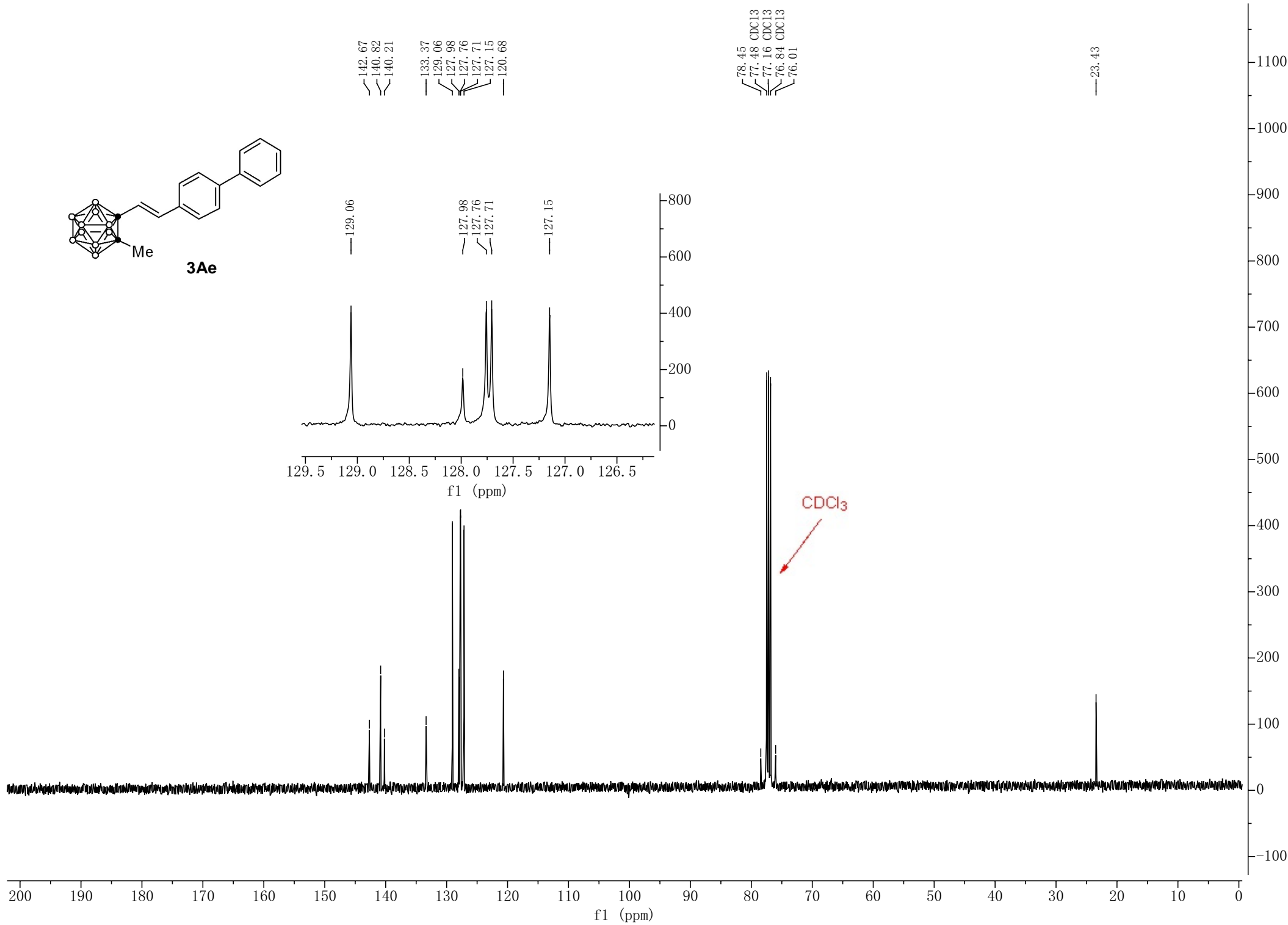
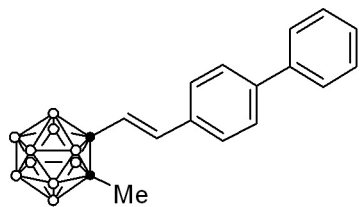


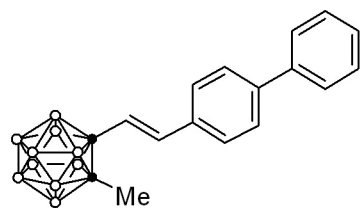




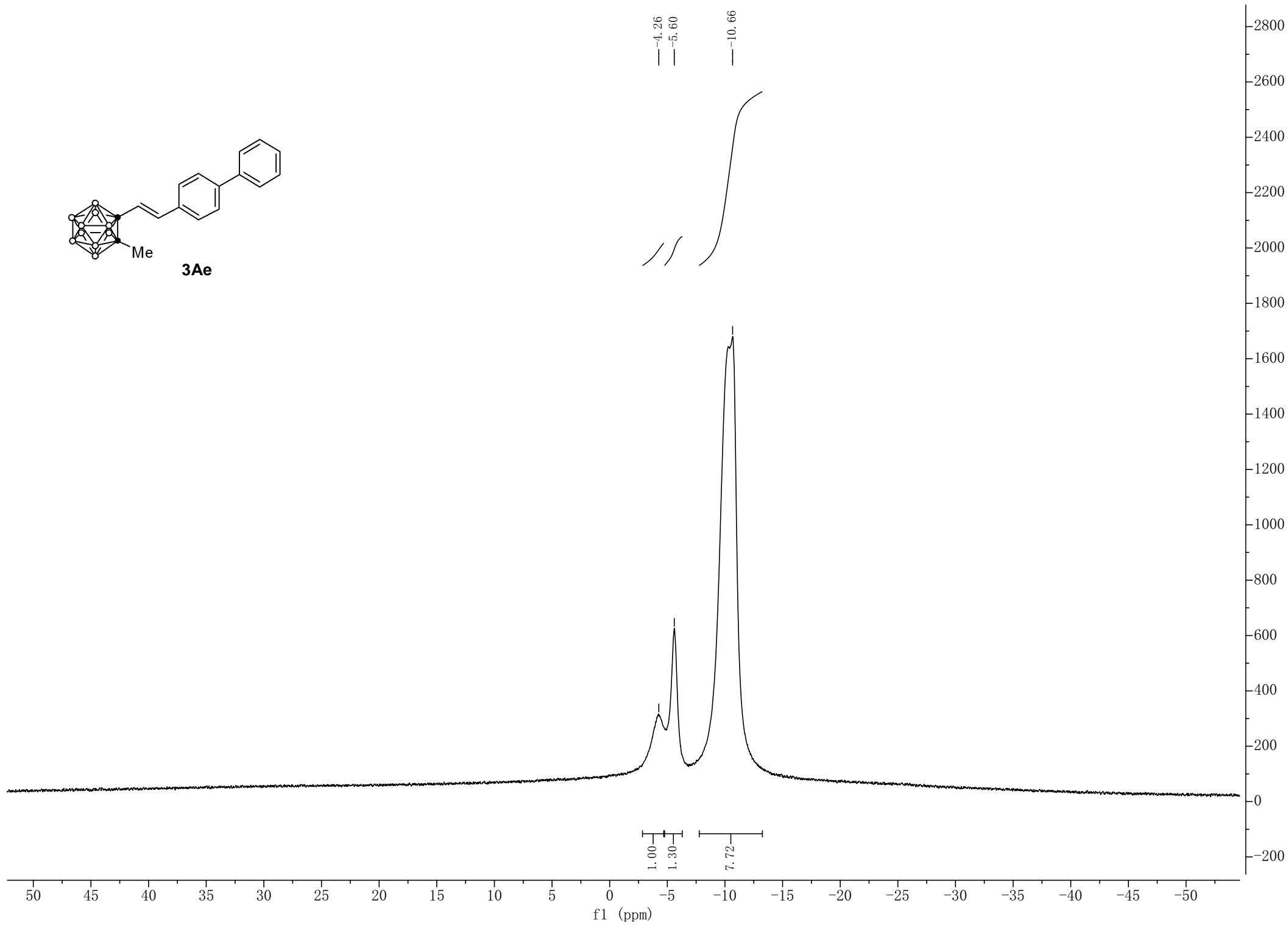


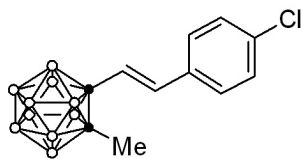




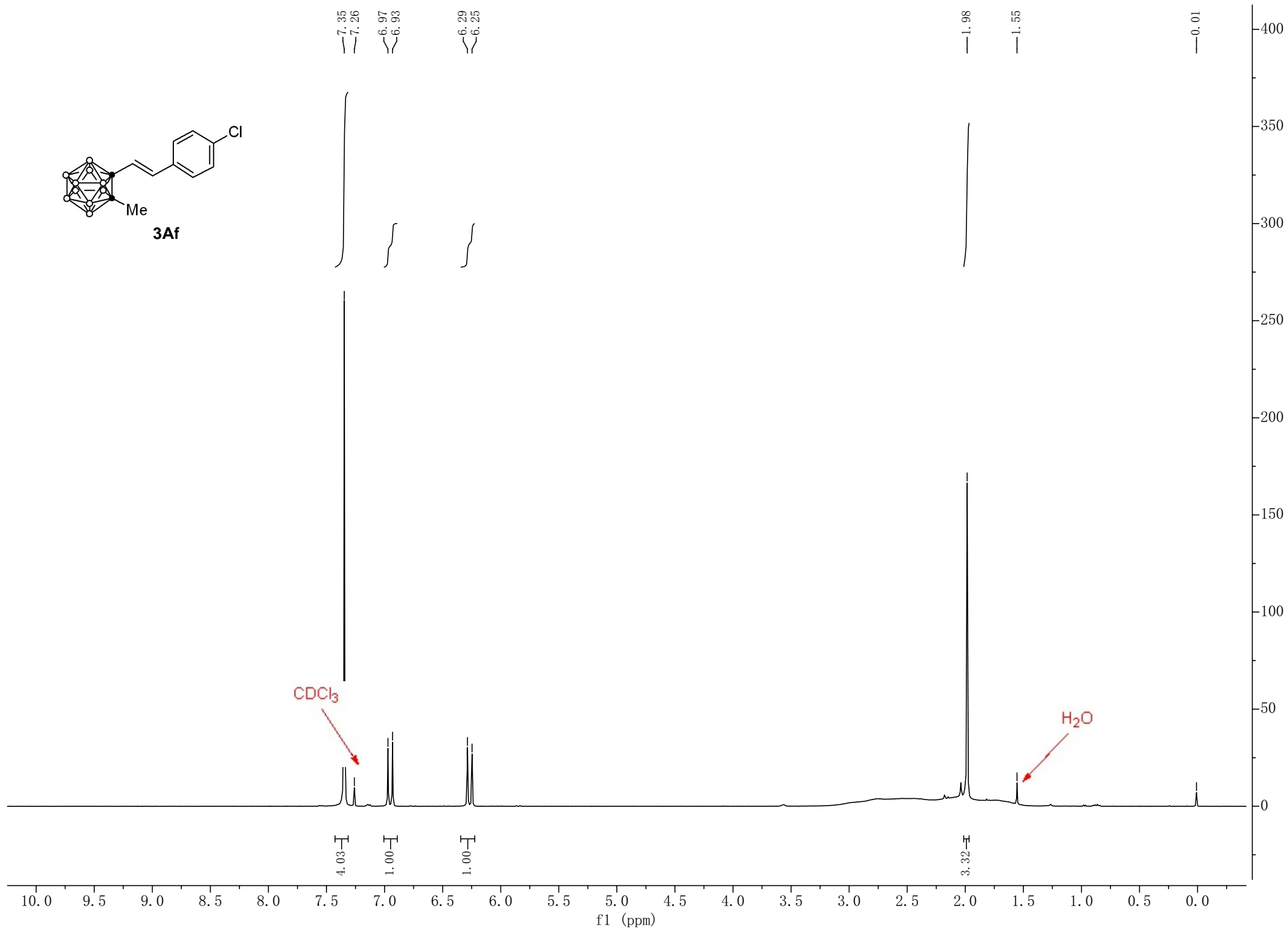


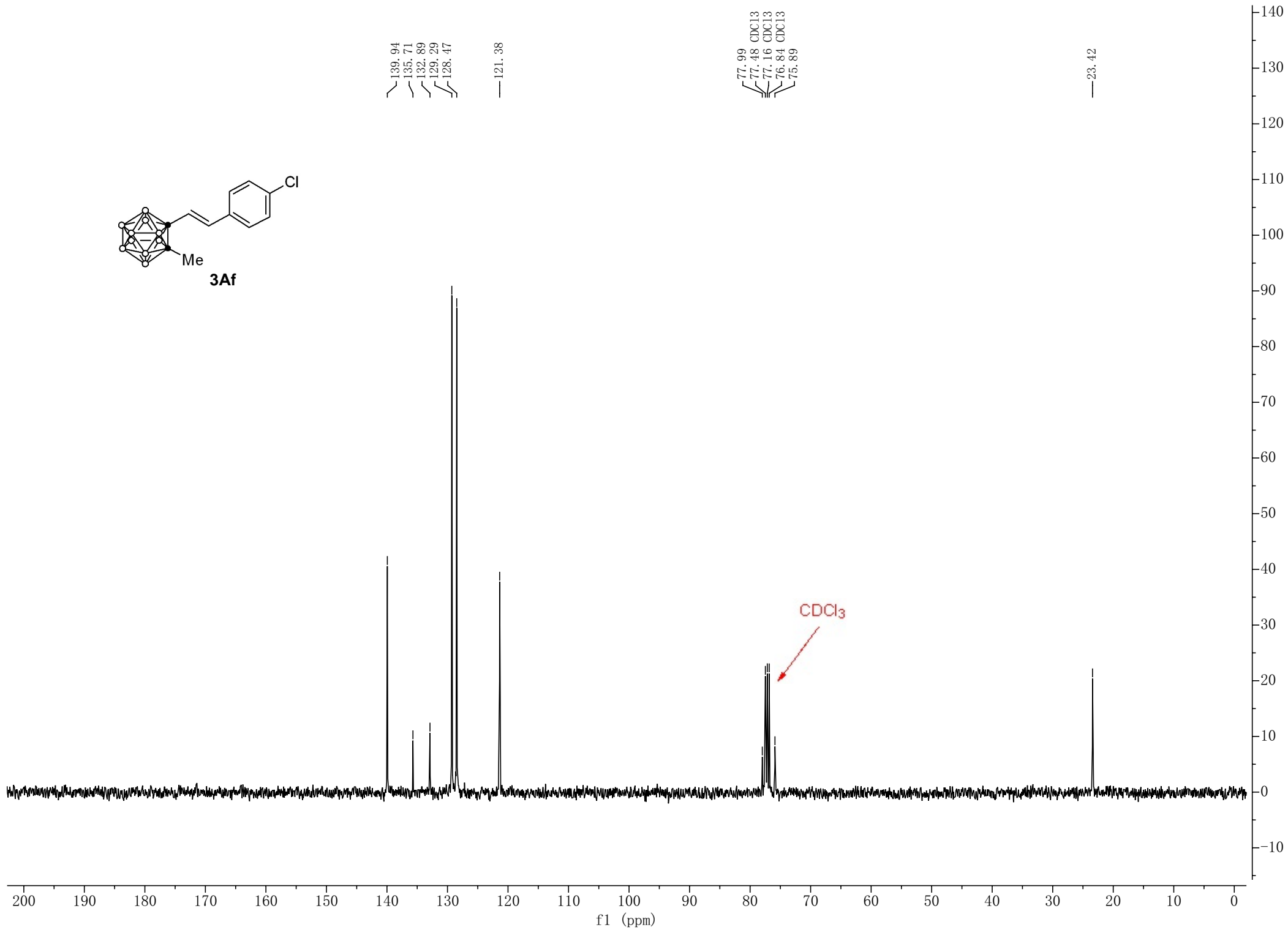
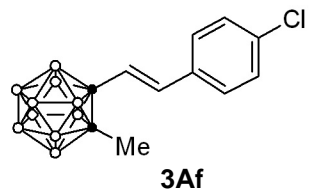
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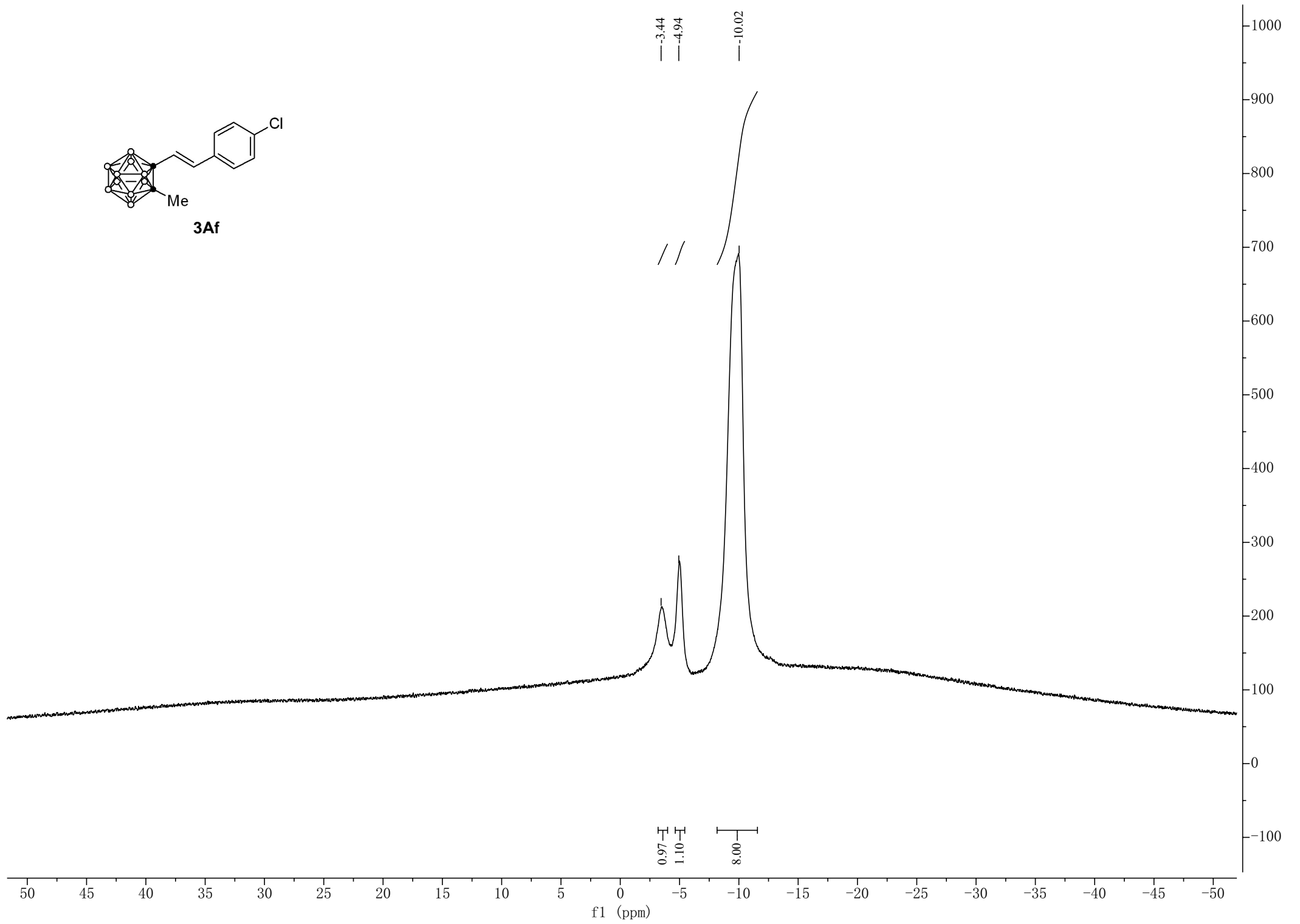
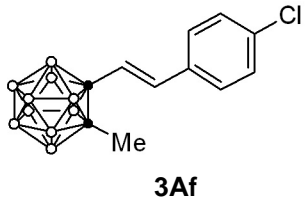




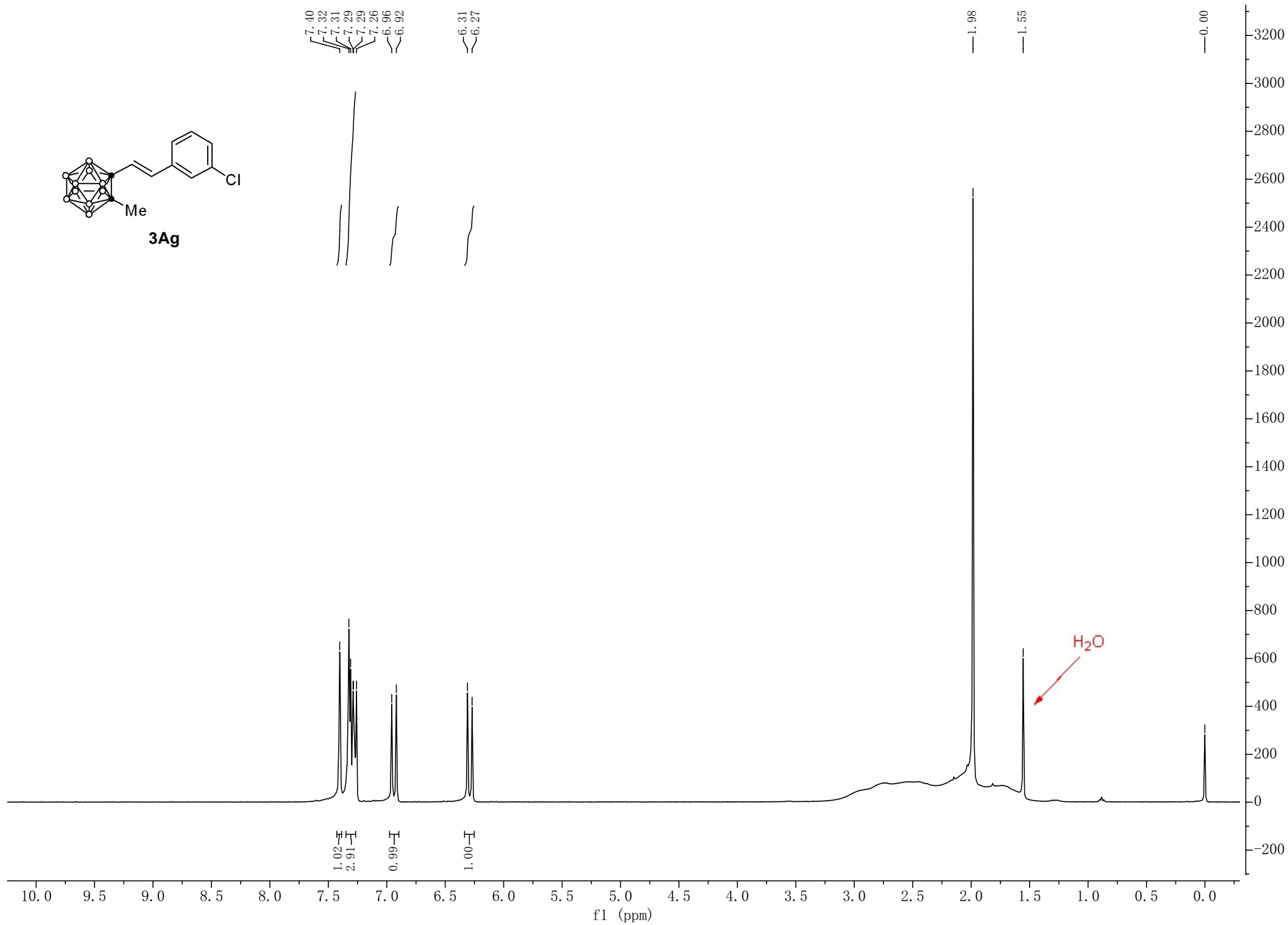
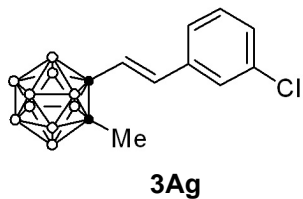
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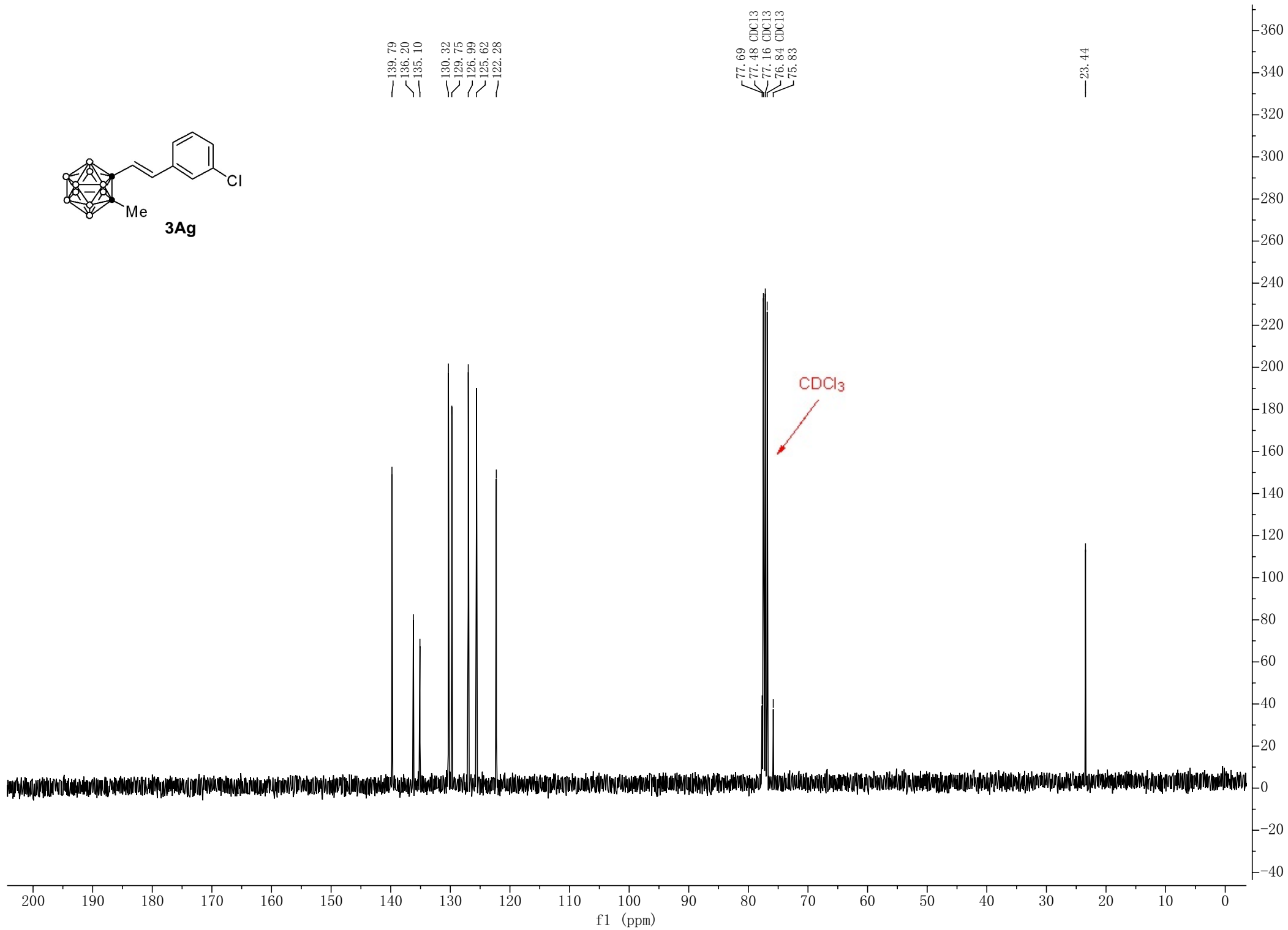
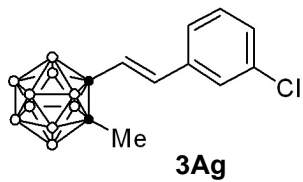


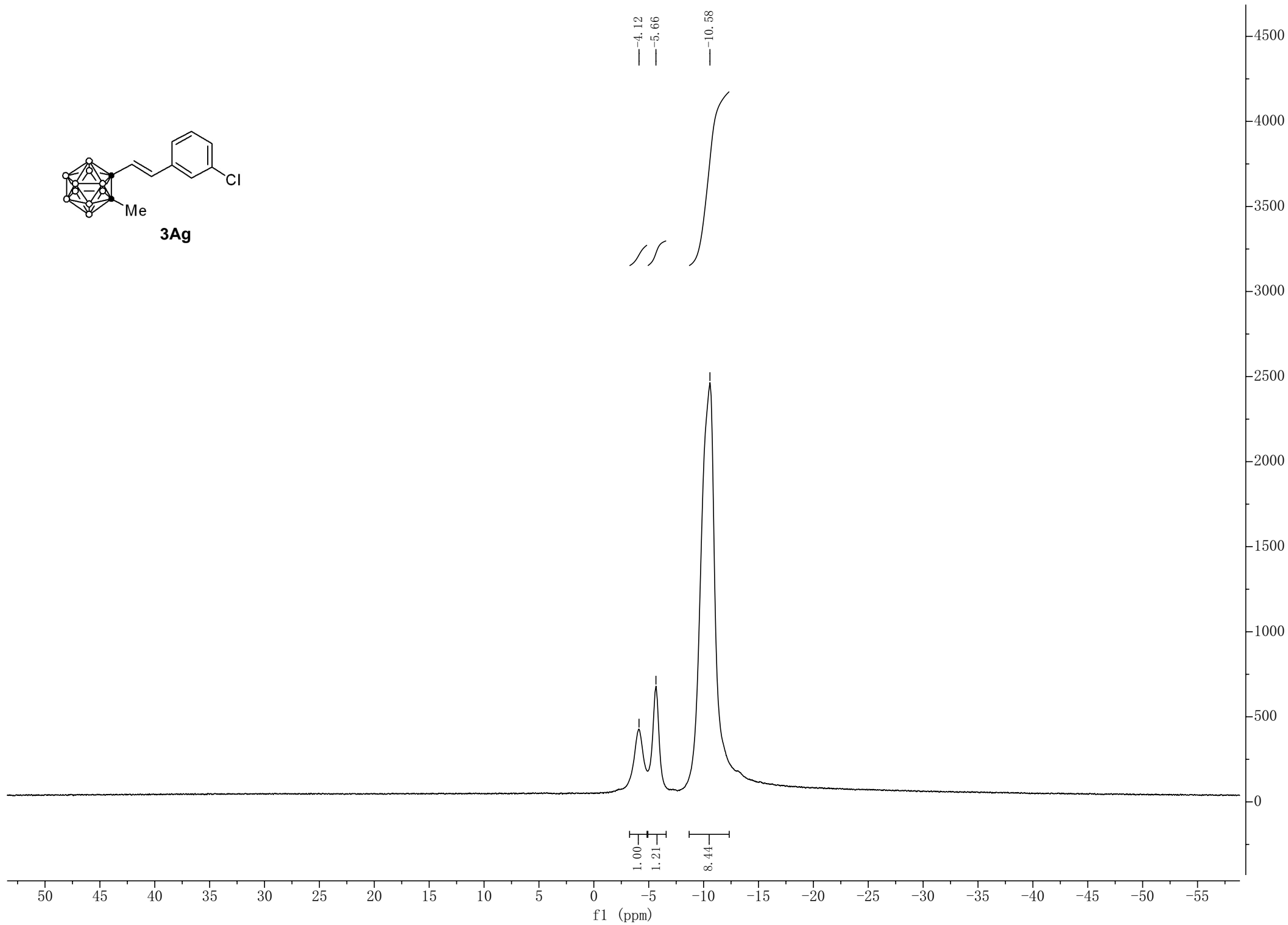
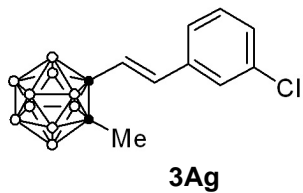


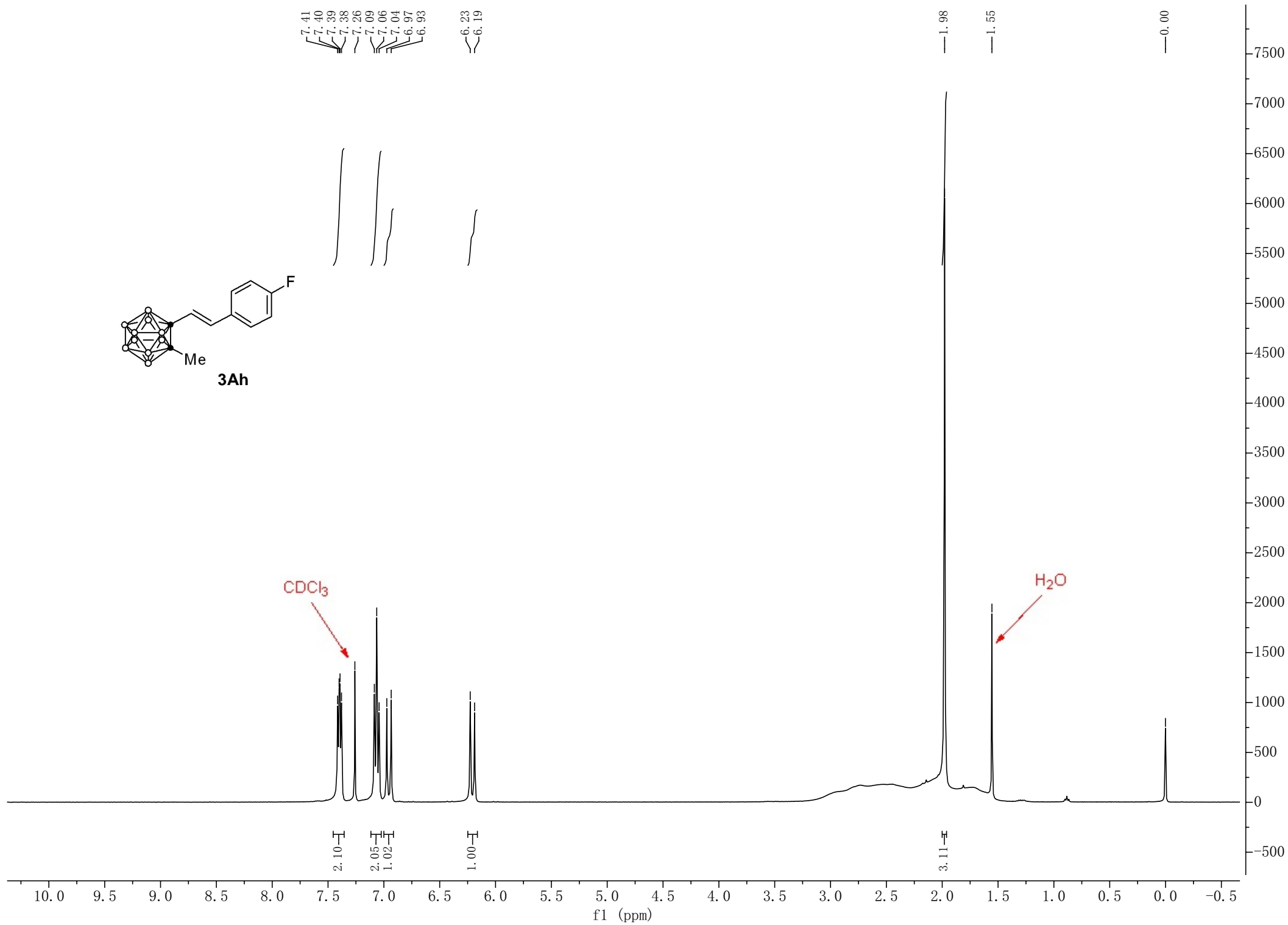
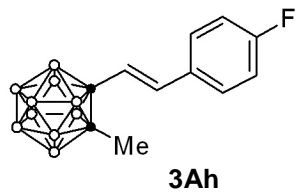


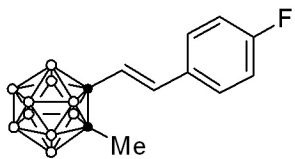




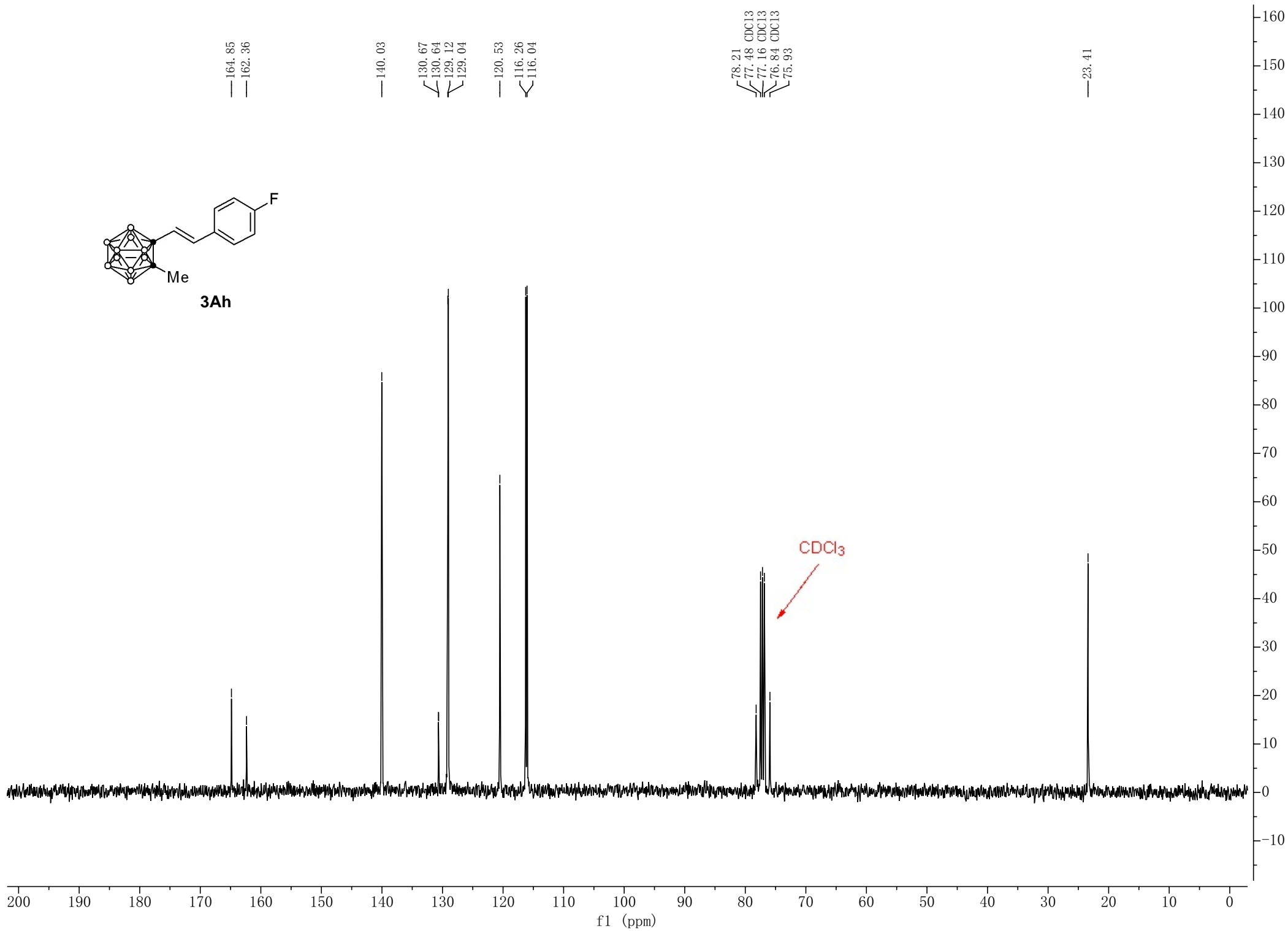


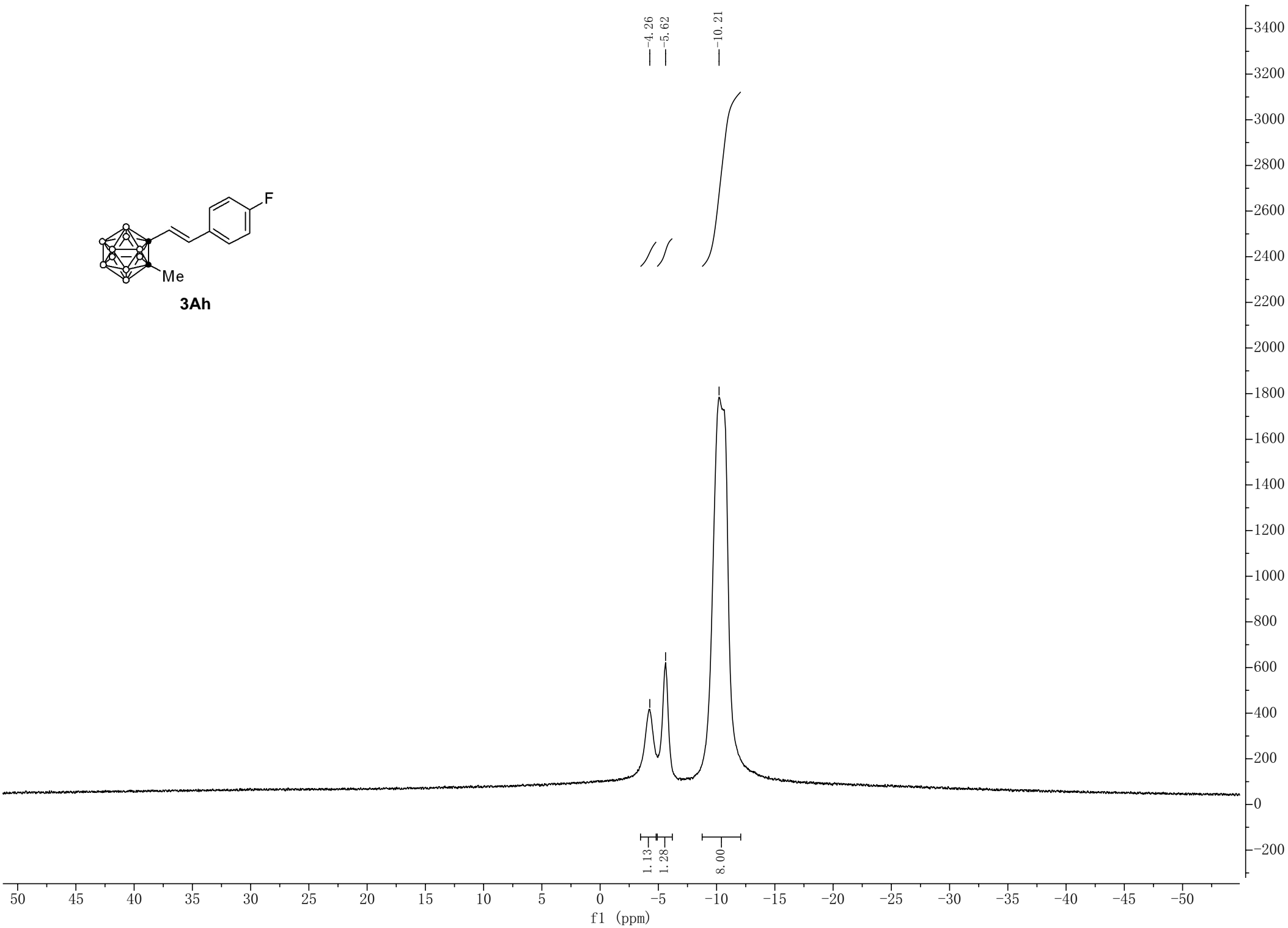
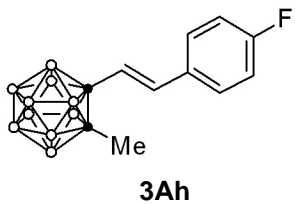


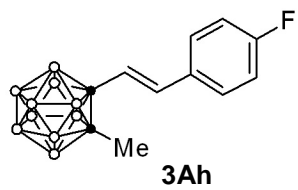


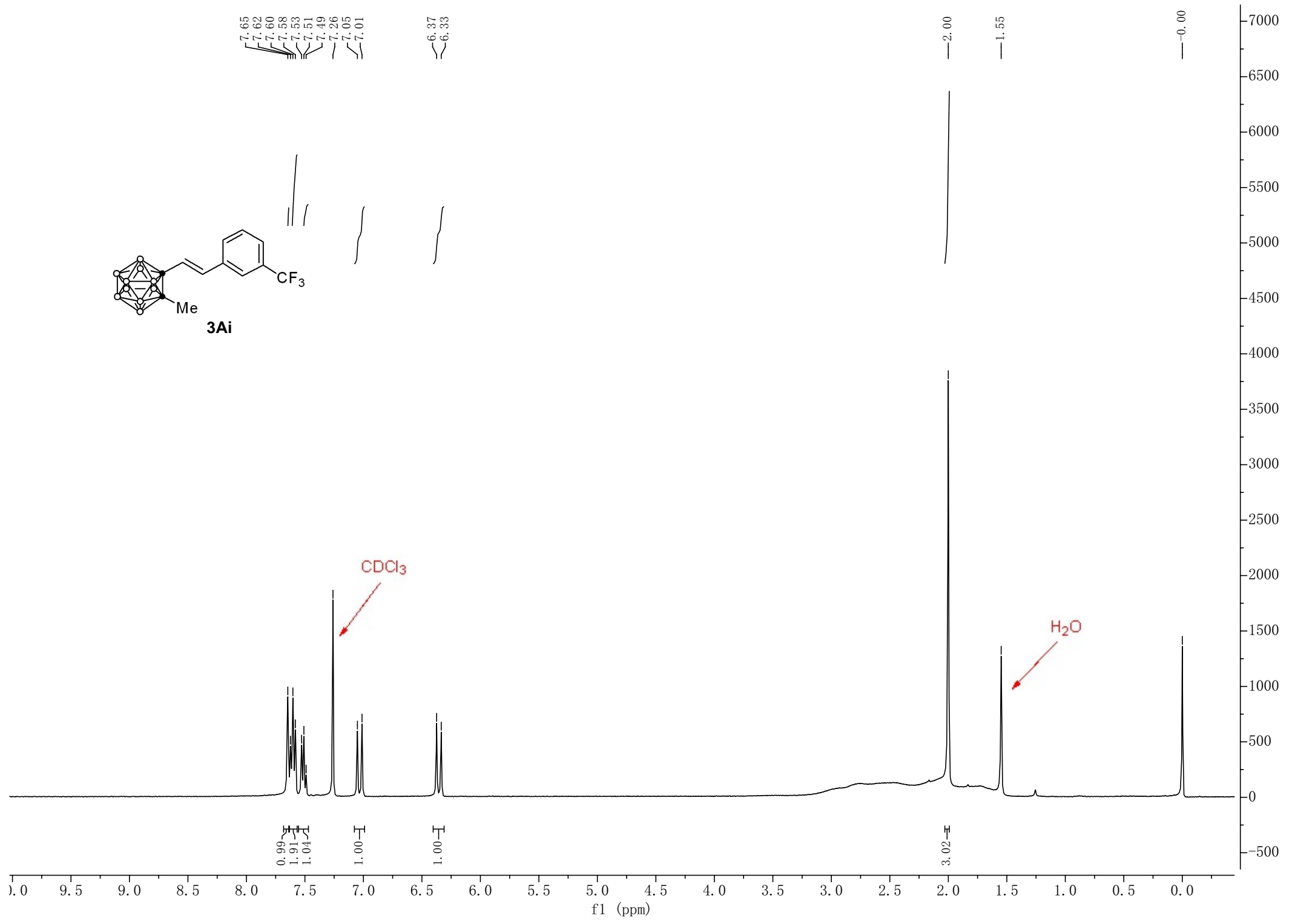


3Ah

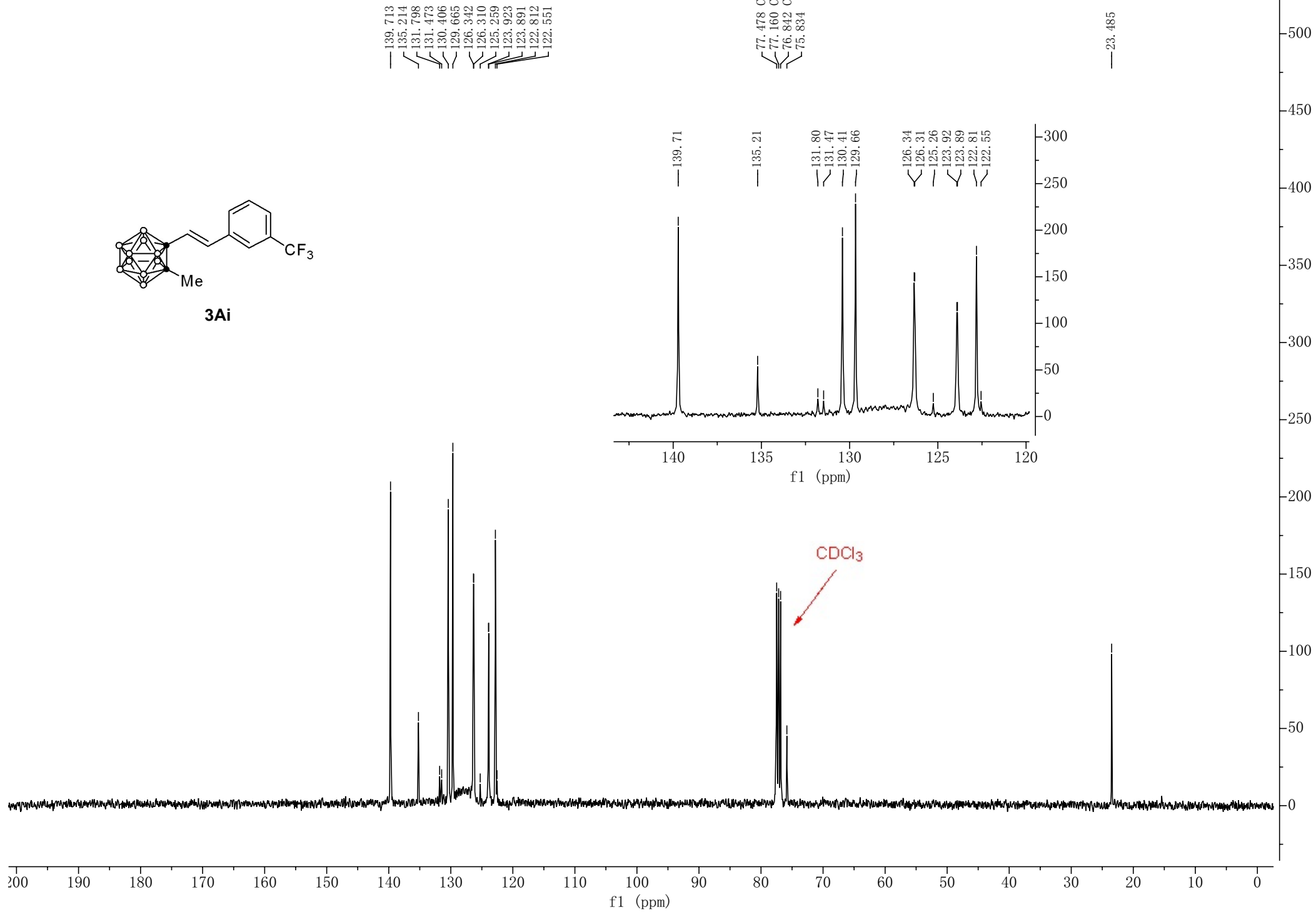
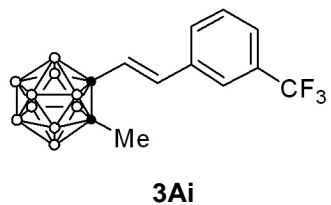


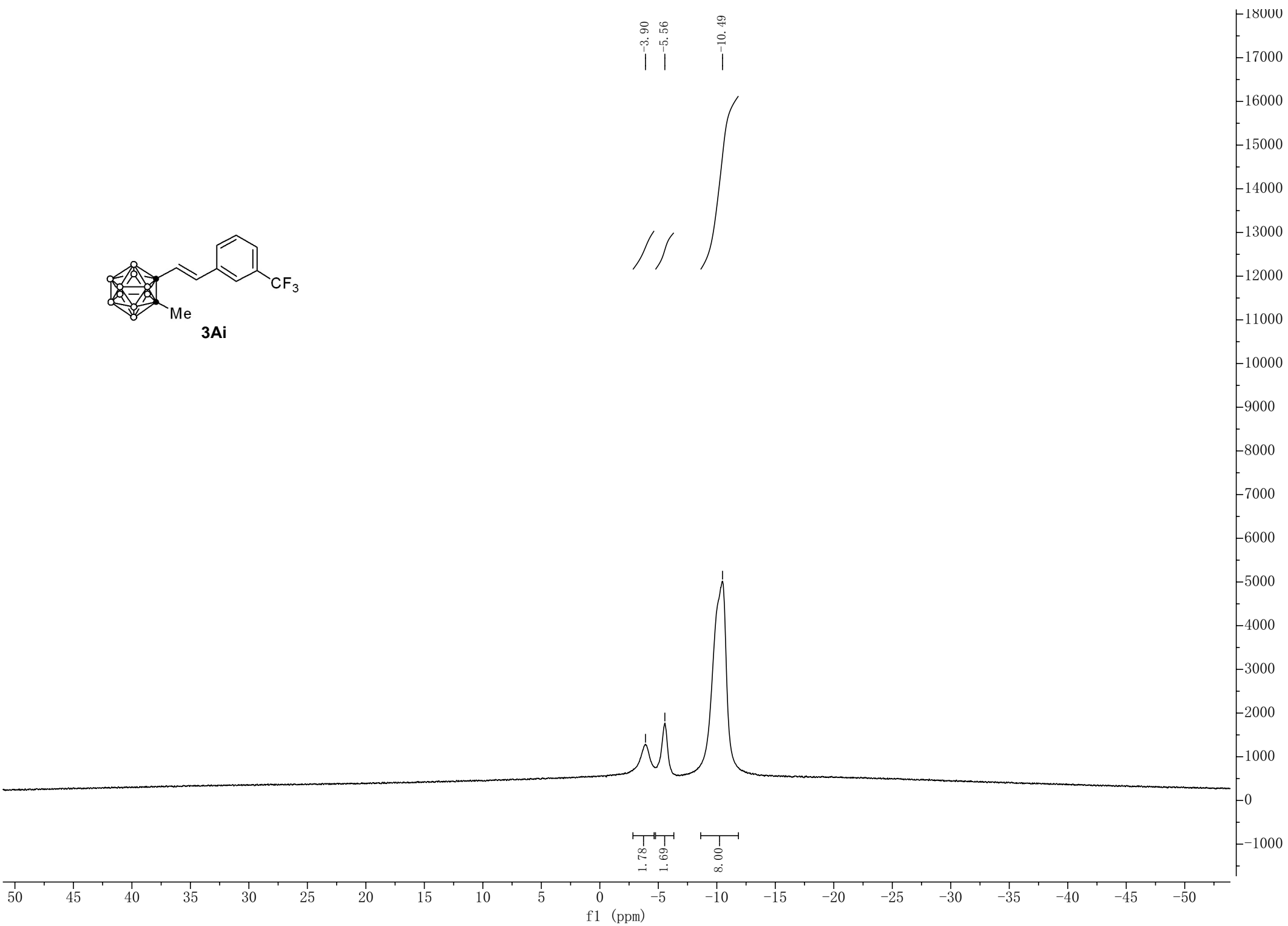
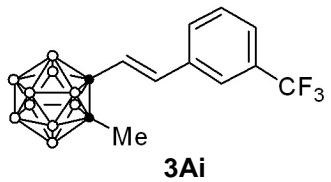


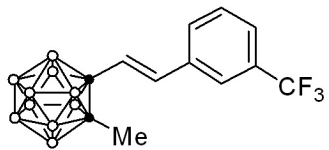




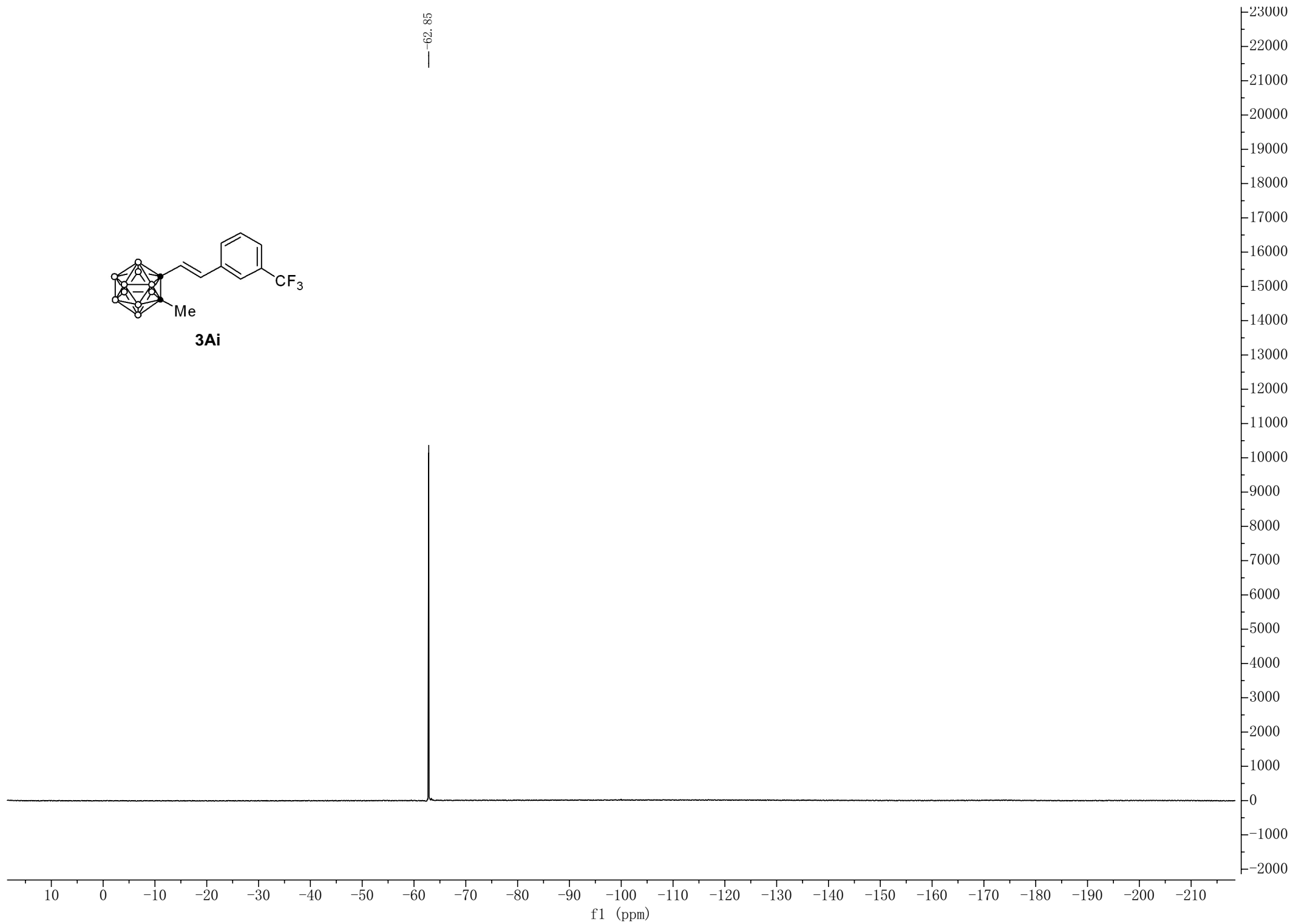


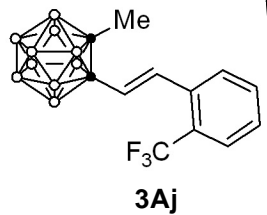






**3Ai**



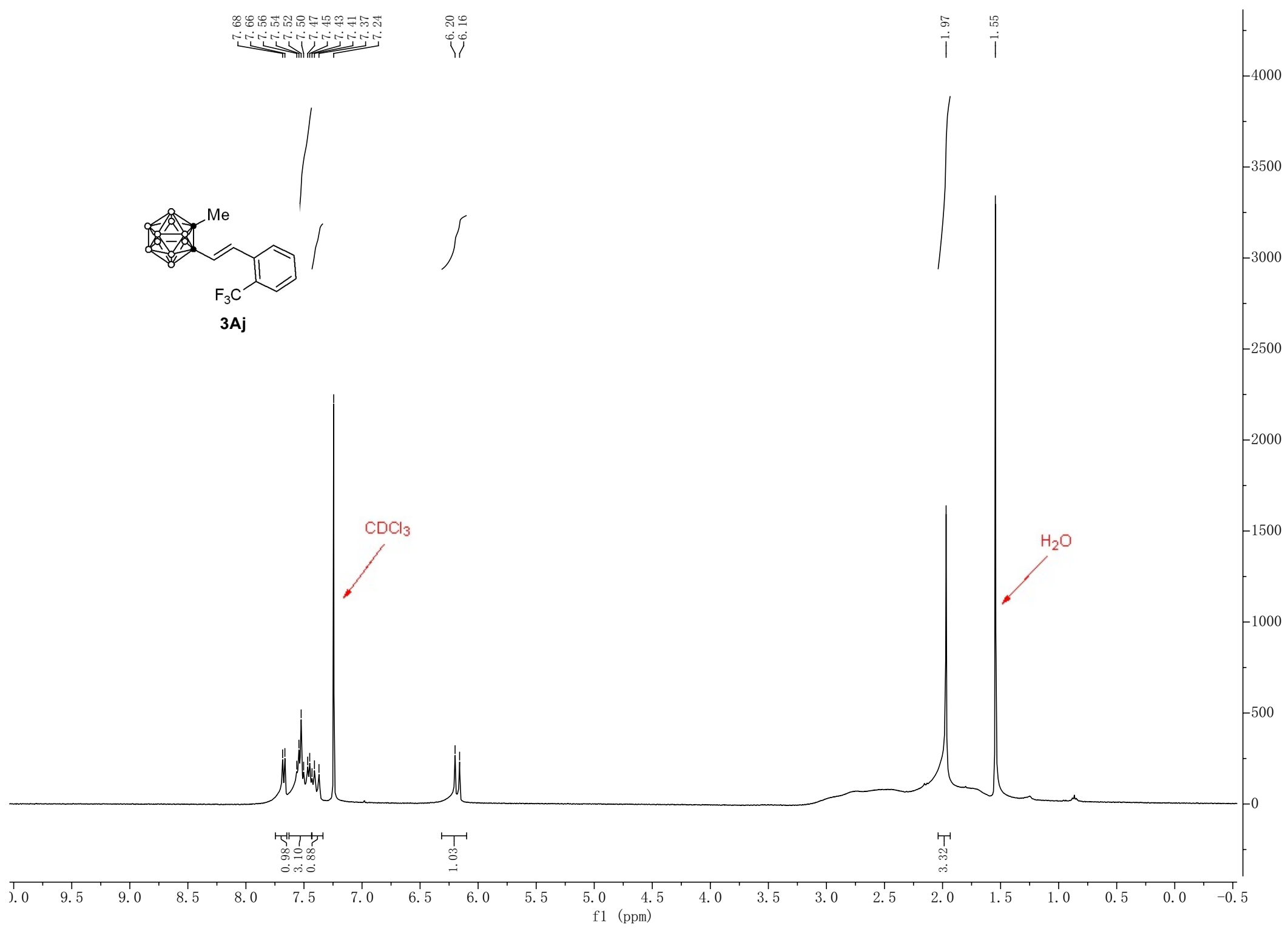


7.68  
7.66  
7.56  
7.54  
7.52  
7.50  
7.47  
7.45  
7.43  
7.41  
7.37  
7.24

6.20  
6.16

1.97

1.55



CDCl<sub>3</sub>

H<sub>2</sub>O

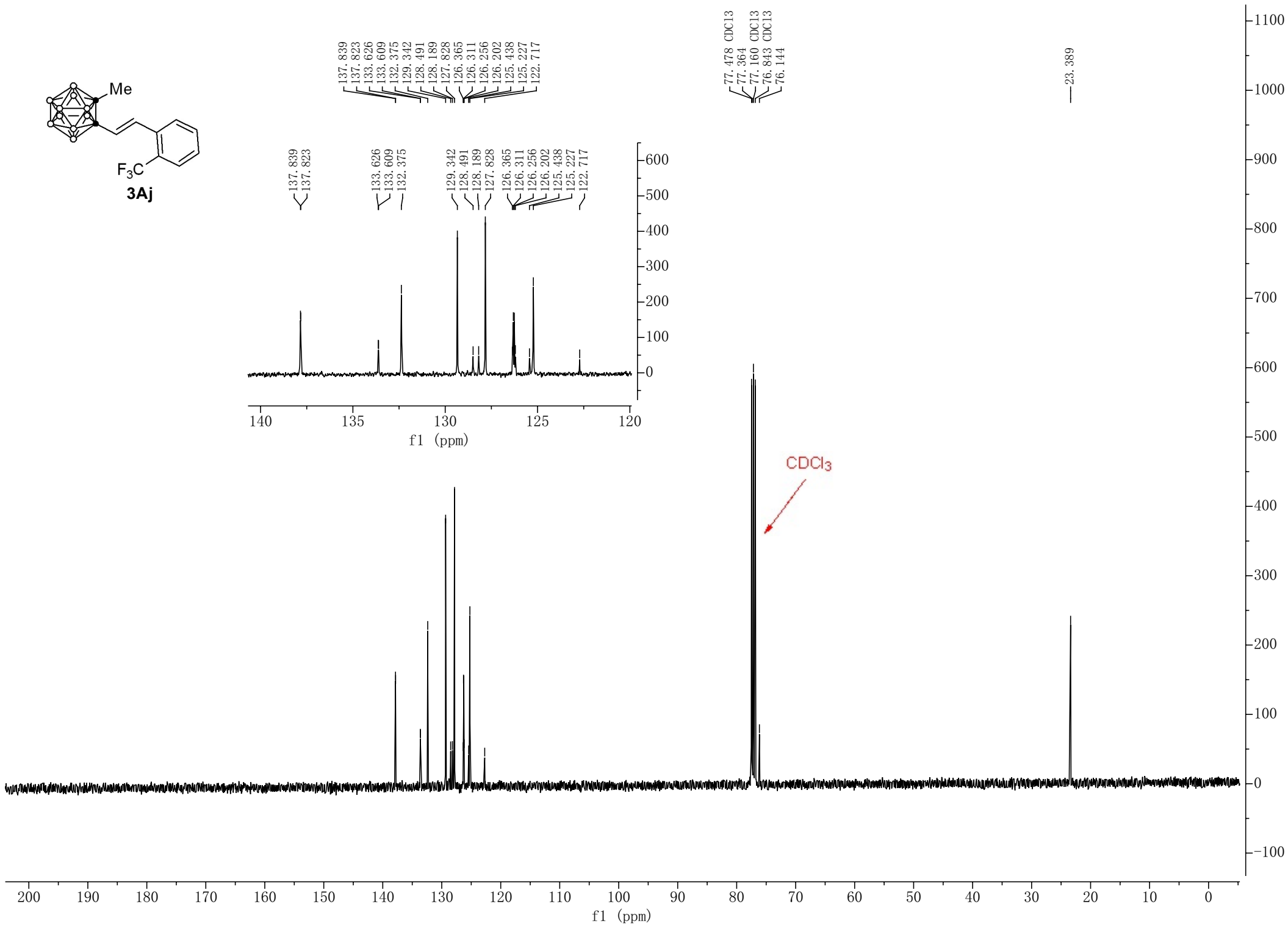
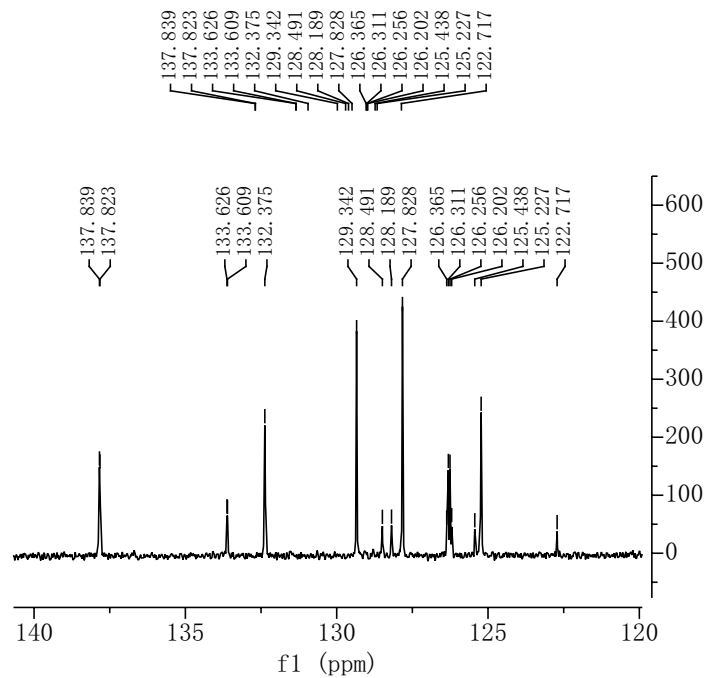
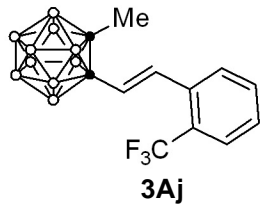
0.98  
3.10  
0.88

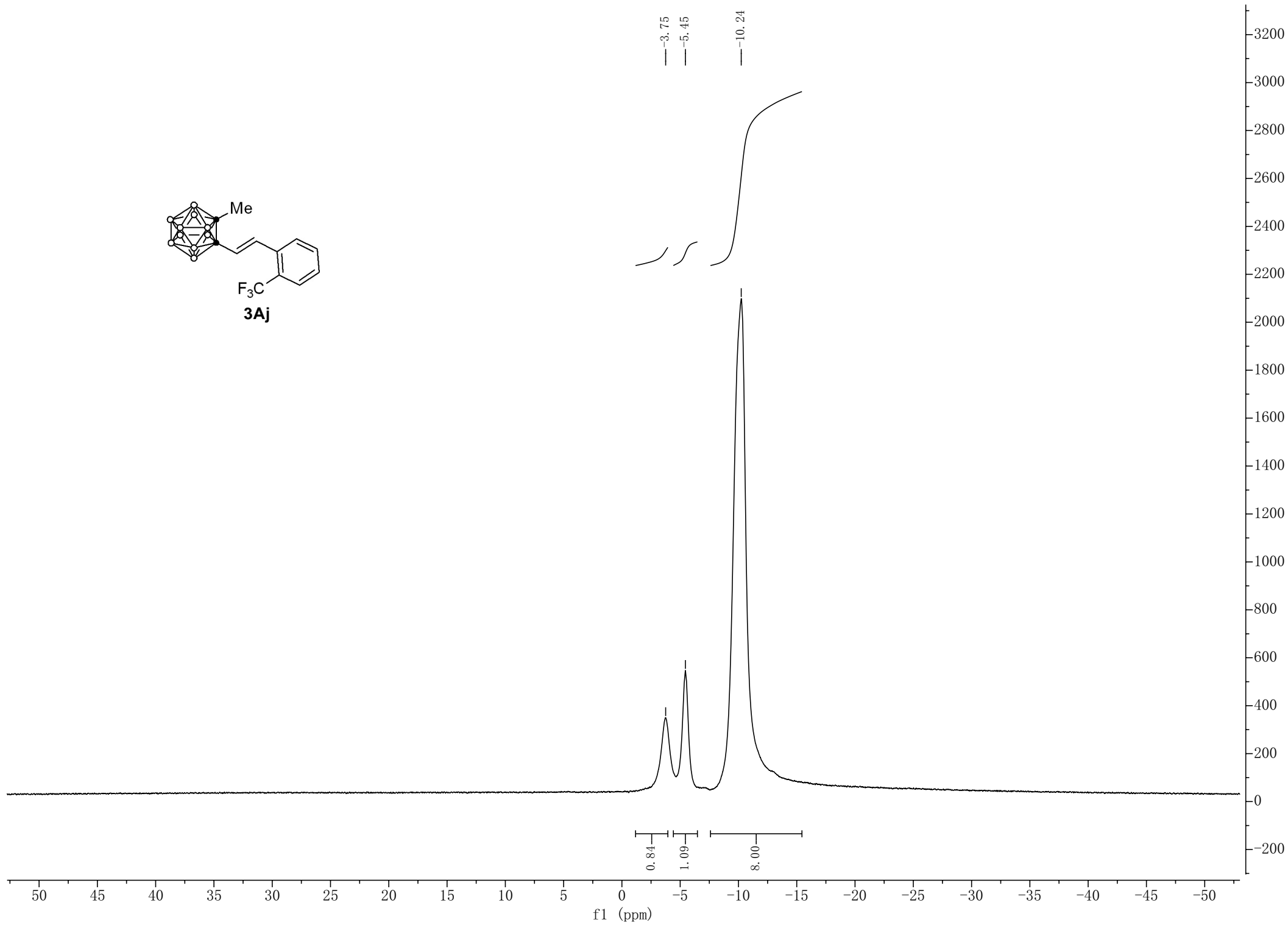
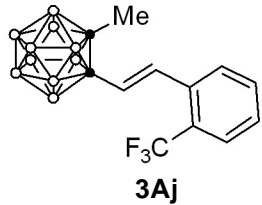
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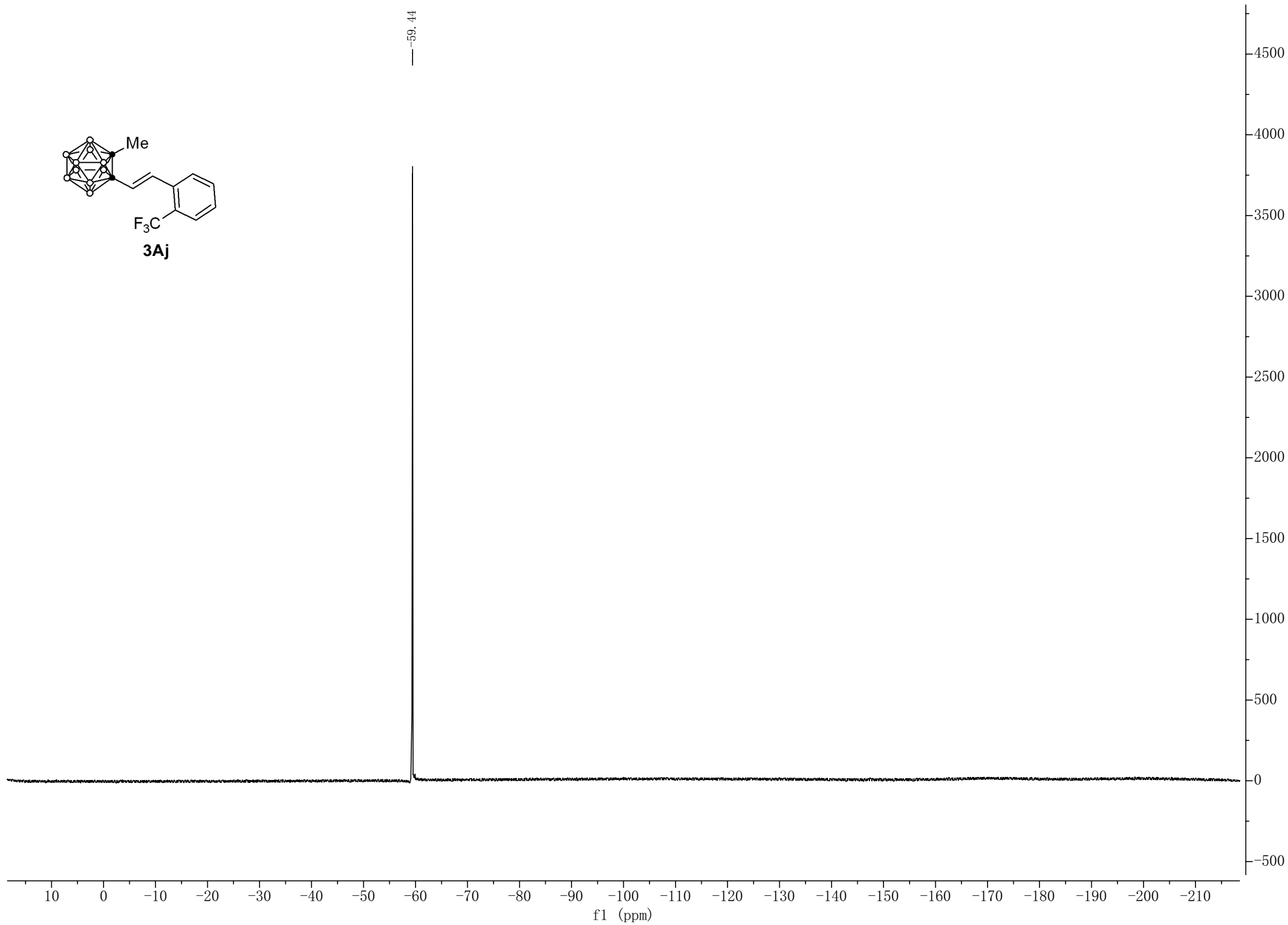
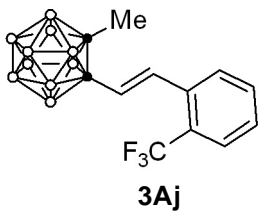
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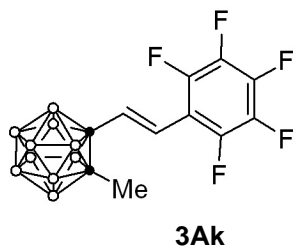
1.55

f1 (ppm)



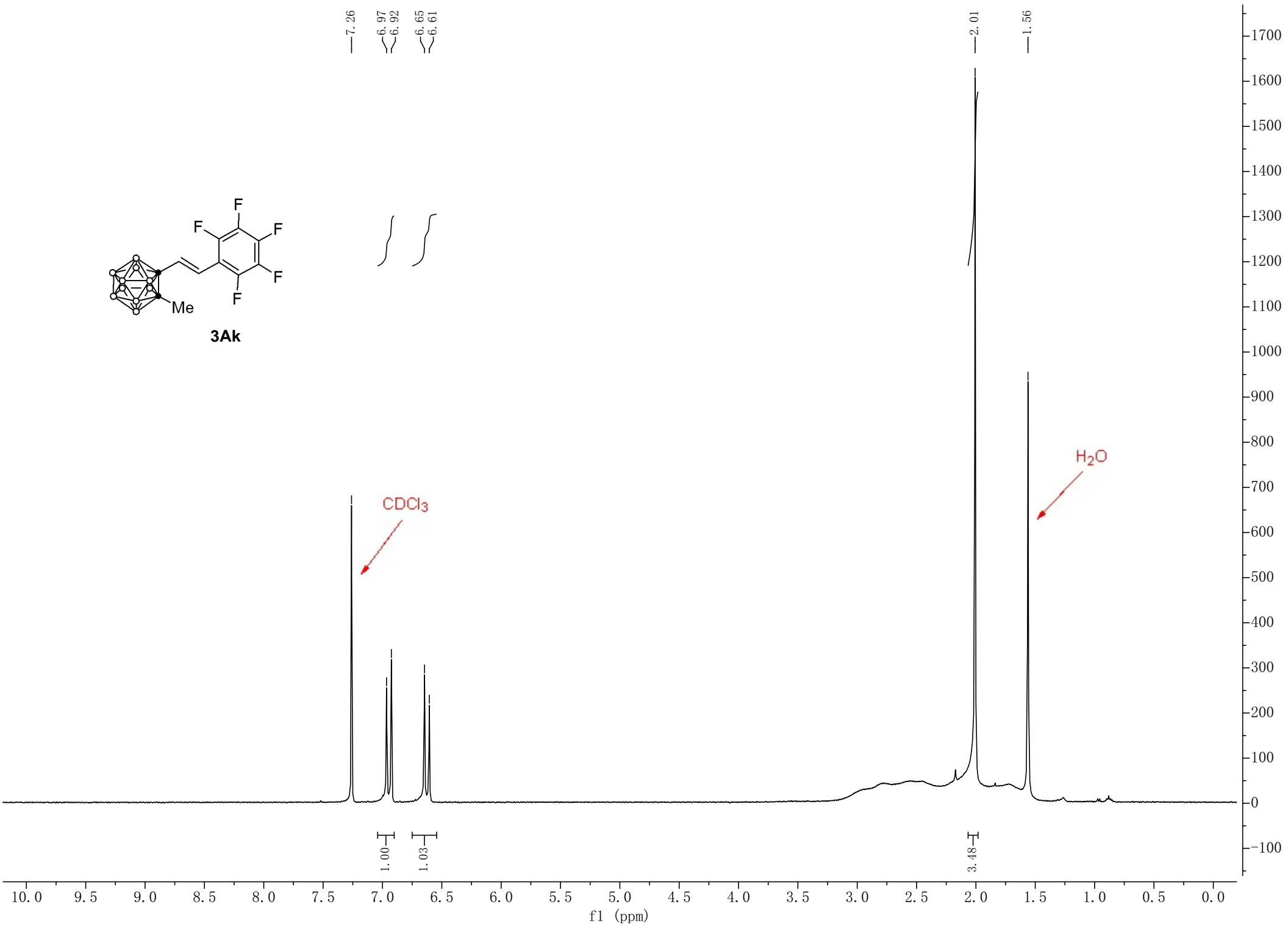




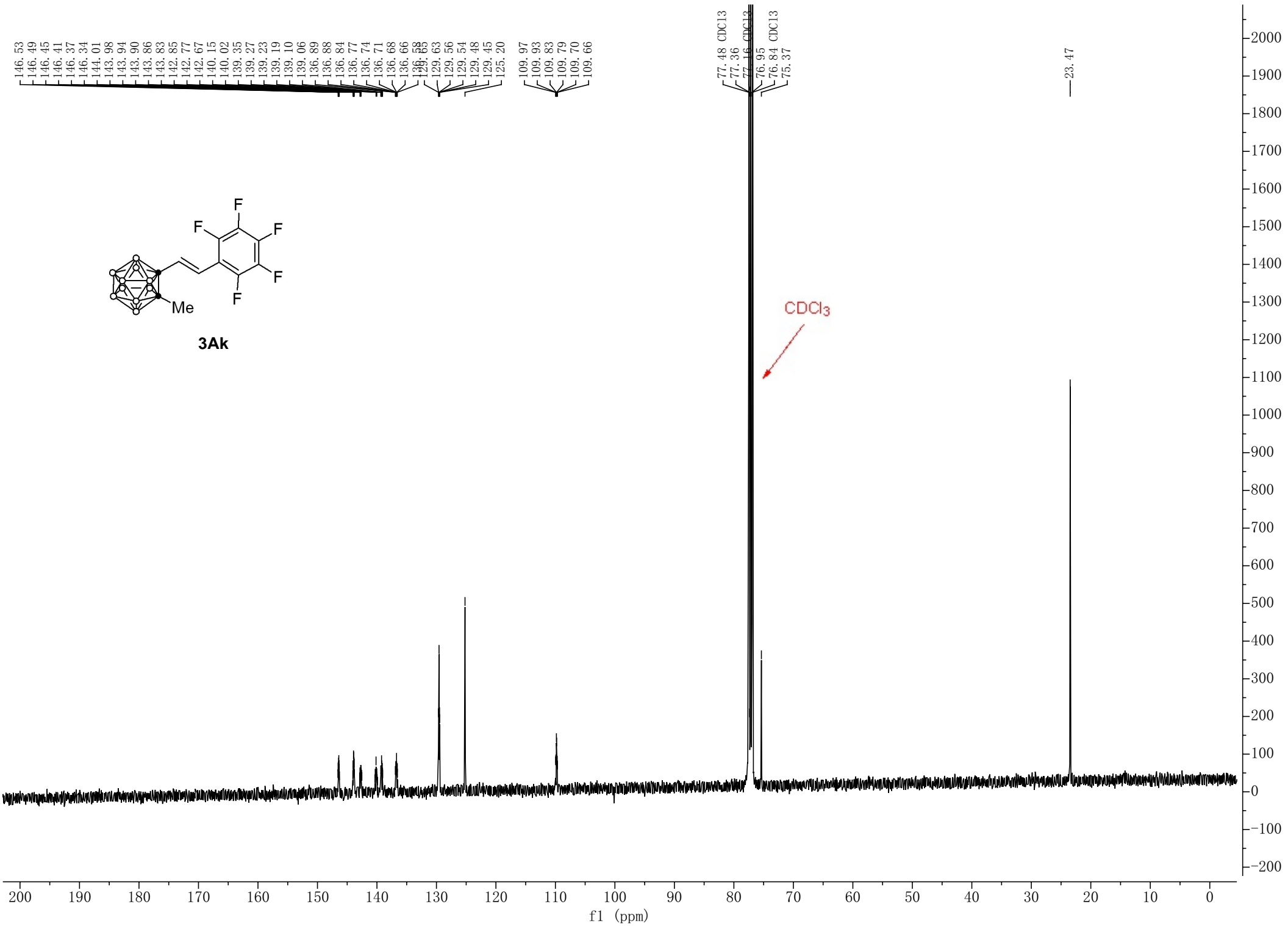


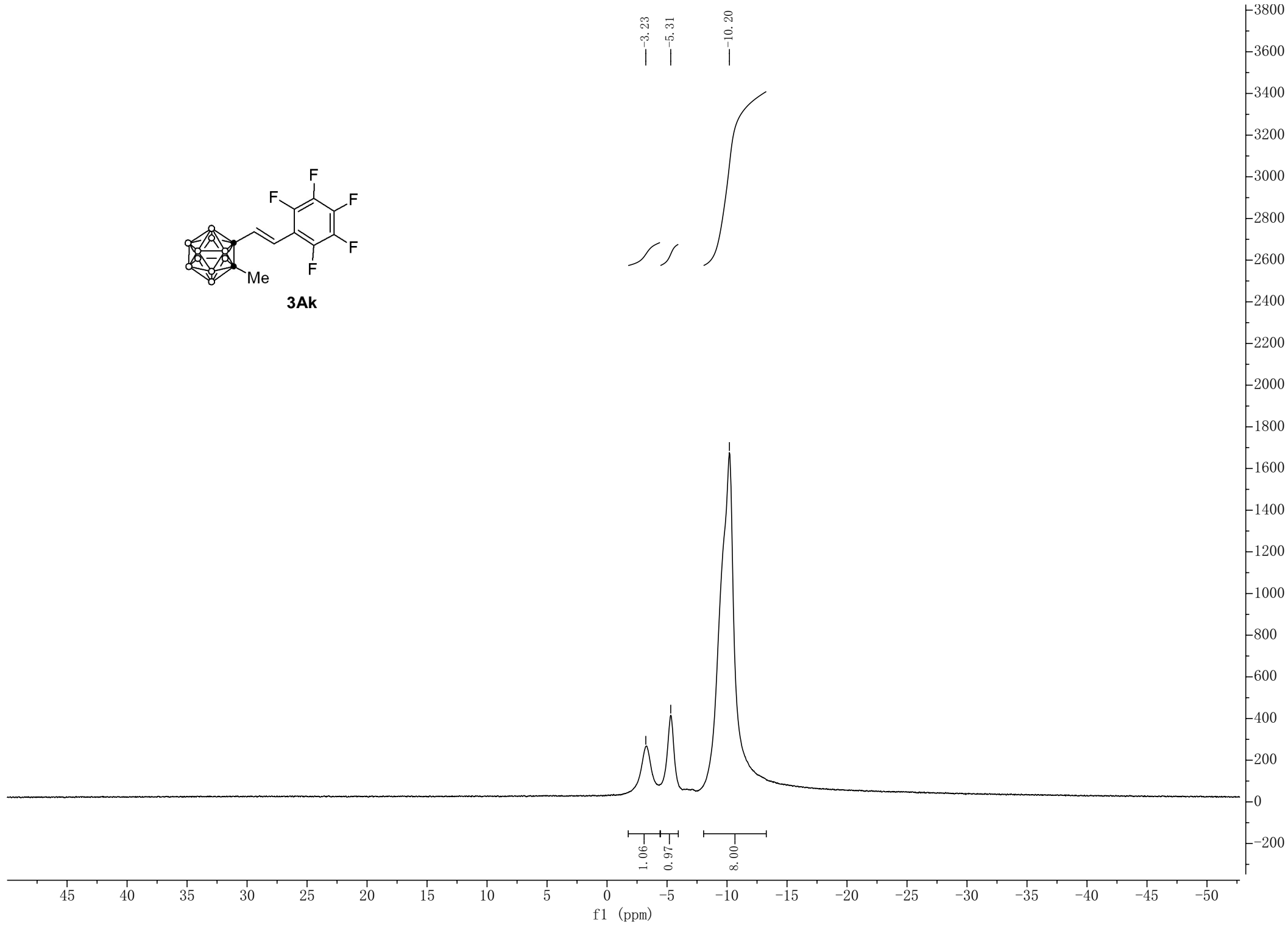
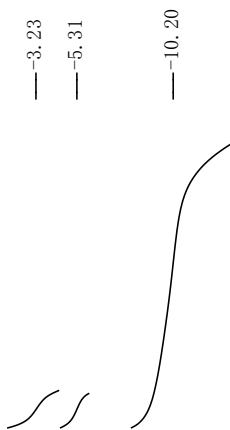
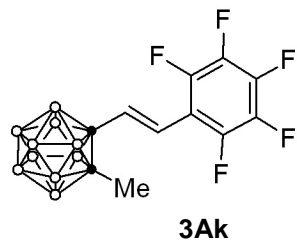
7.26  
6.97  
6.92  
6.65  
6.61

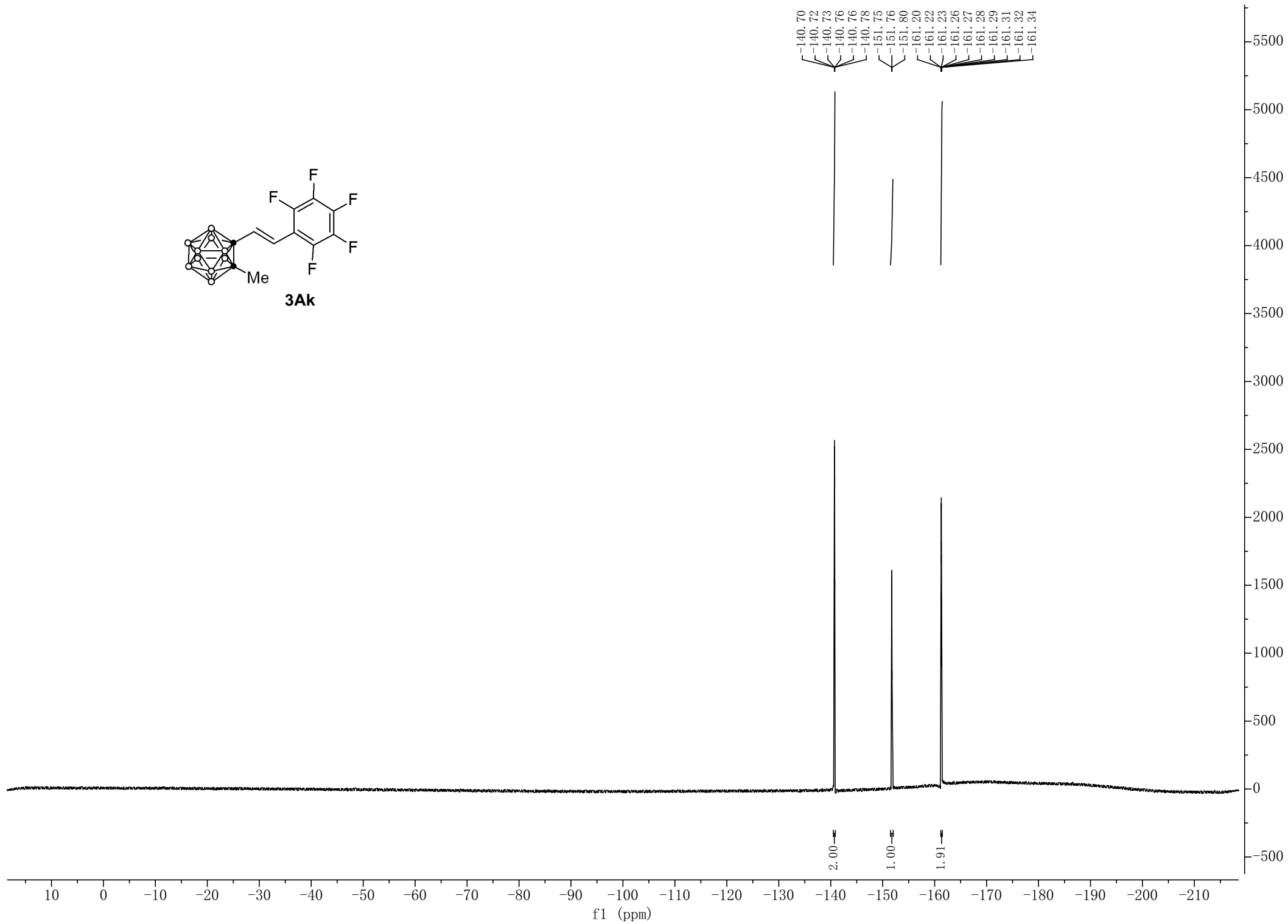
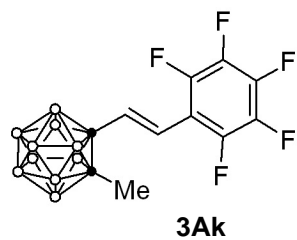
2.01  
1.56

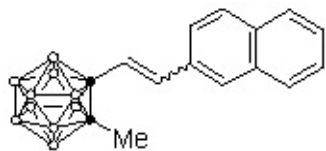








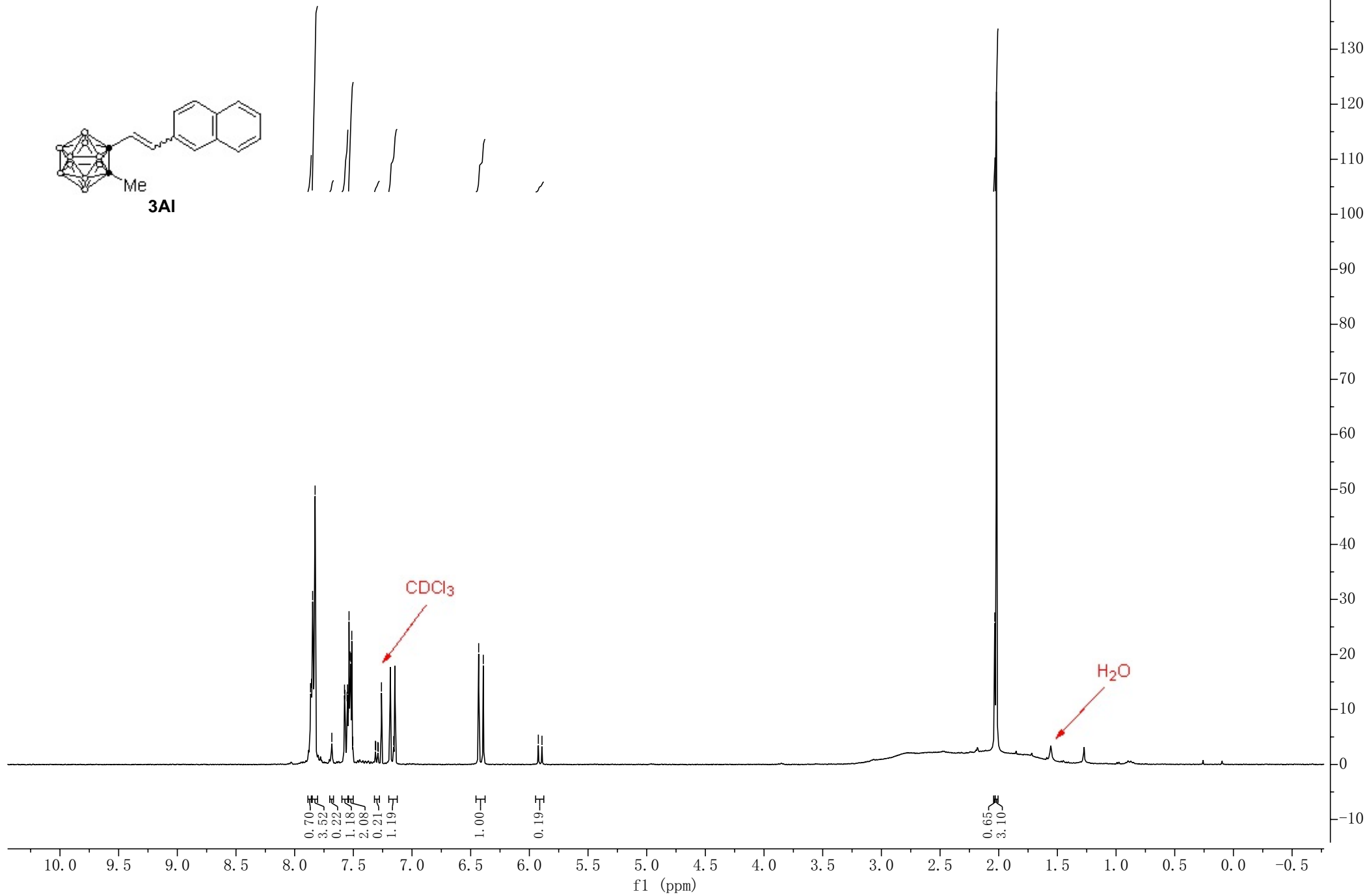


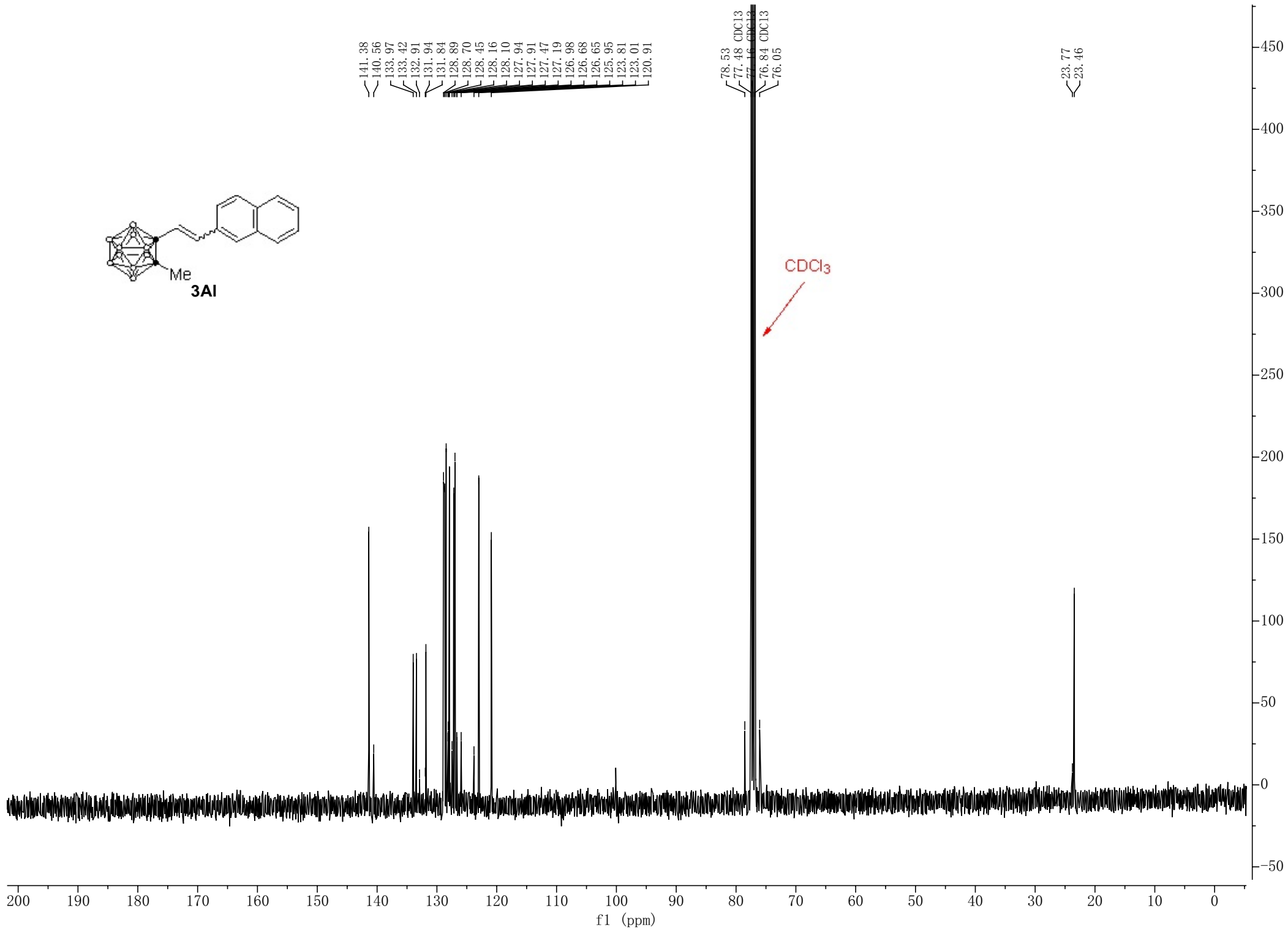
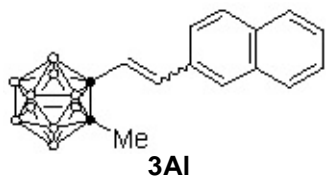


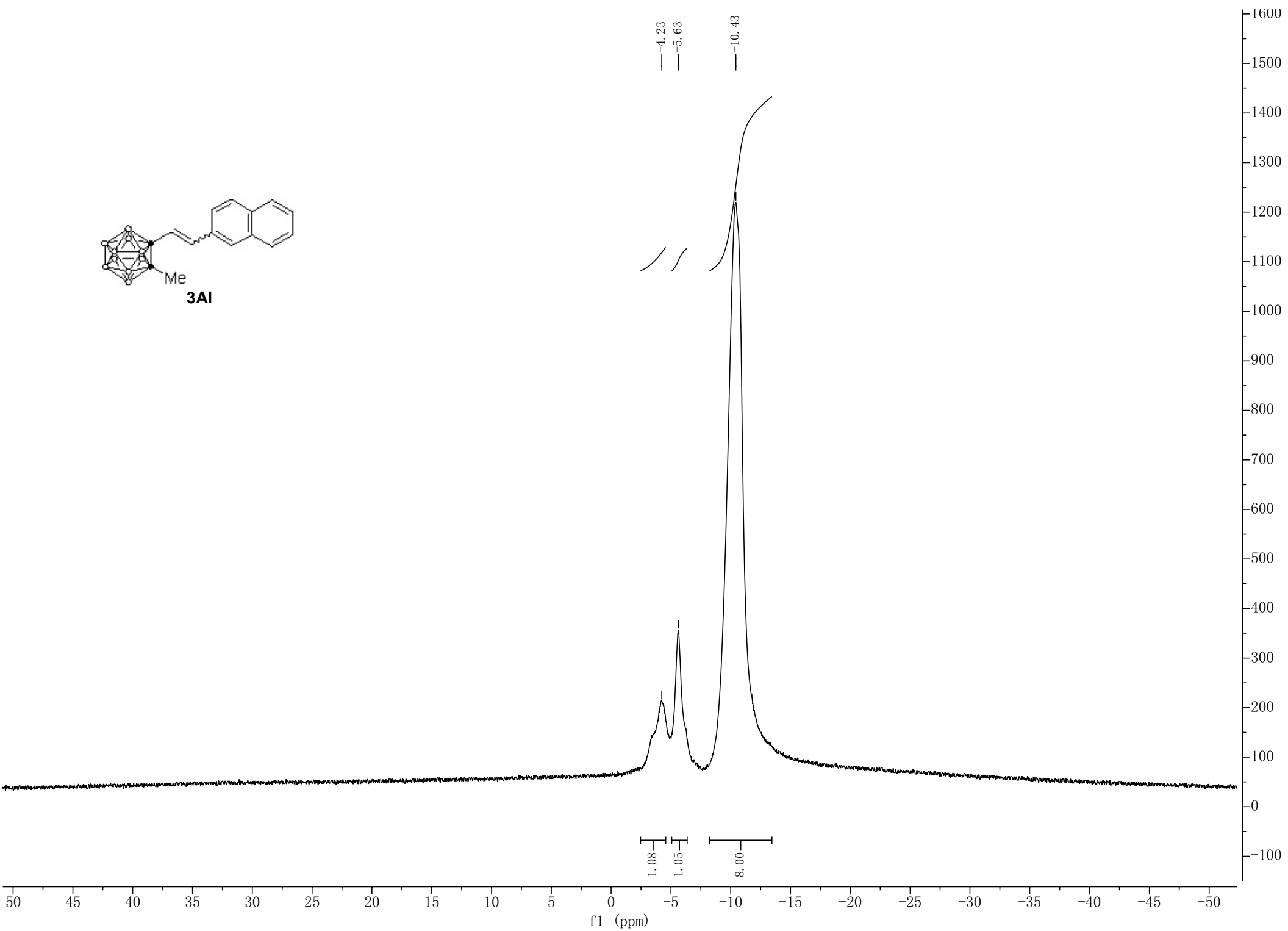
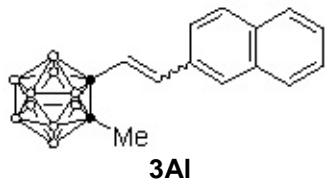
3AI

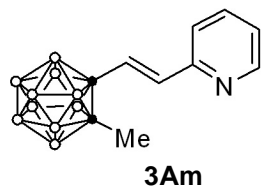
7.865  
7.856  
7.847  
7.826  
7.683  
7.575  
7.572  
7.553  
7.550  
7.542  
7.537  
7.528  
7.521  
7.513  
7.505  
7.312  
7.309  
7.291  
7.288  
7.260  
7.185  
7.156  
7.146  
6.432  
6.393  
5.924  
5.892

2.034  
2.020

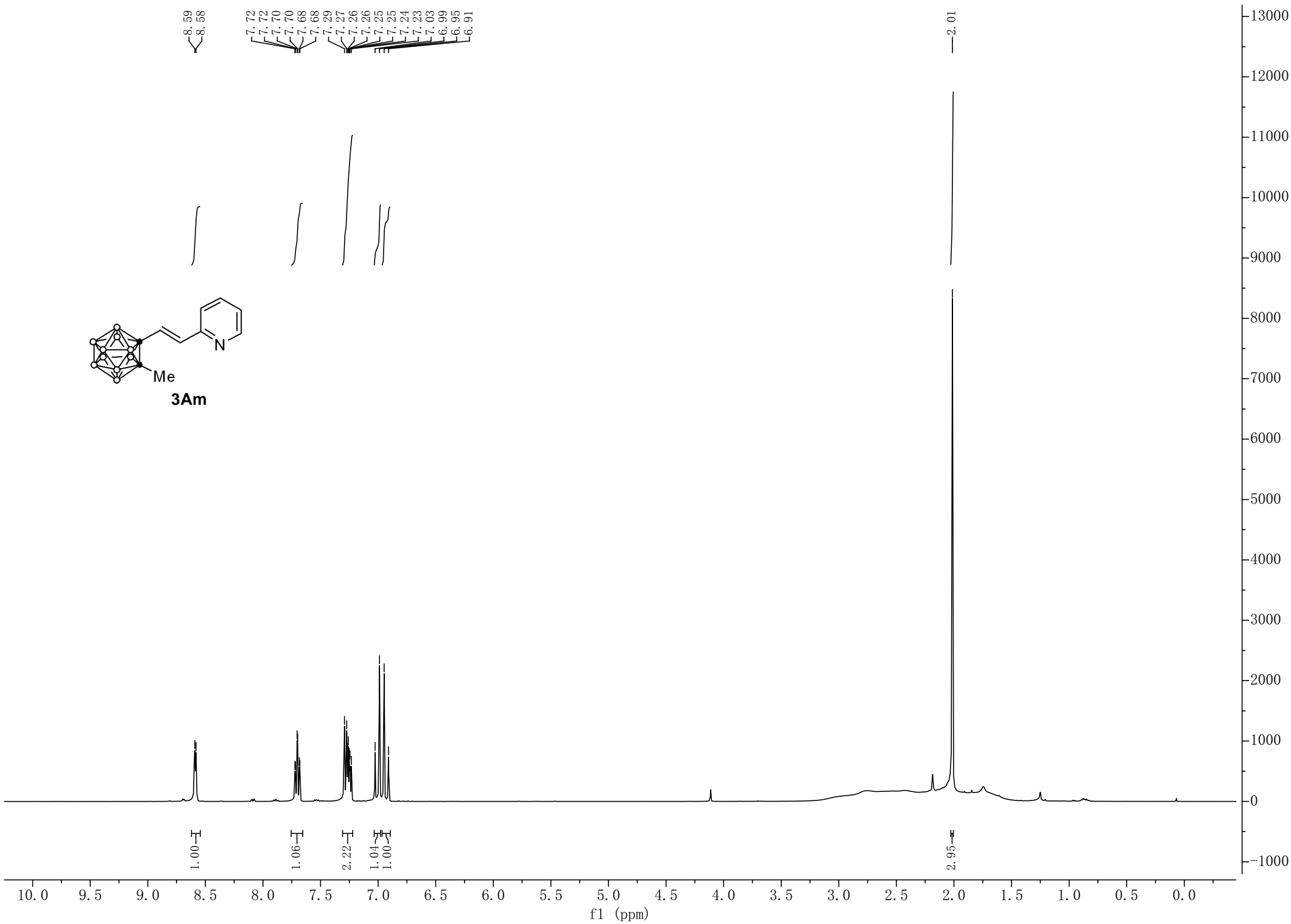


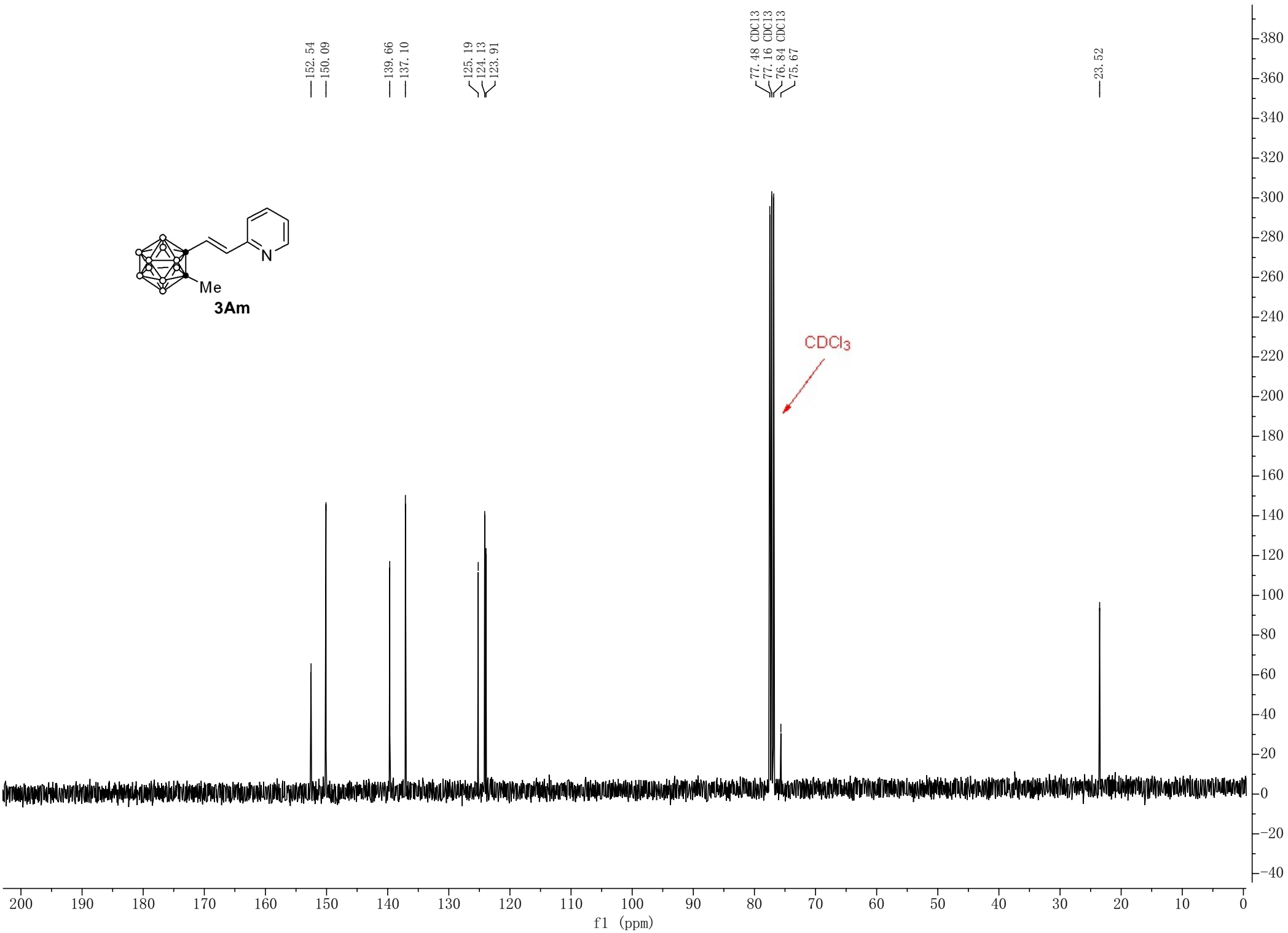
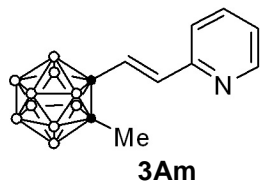




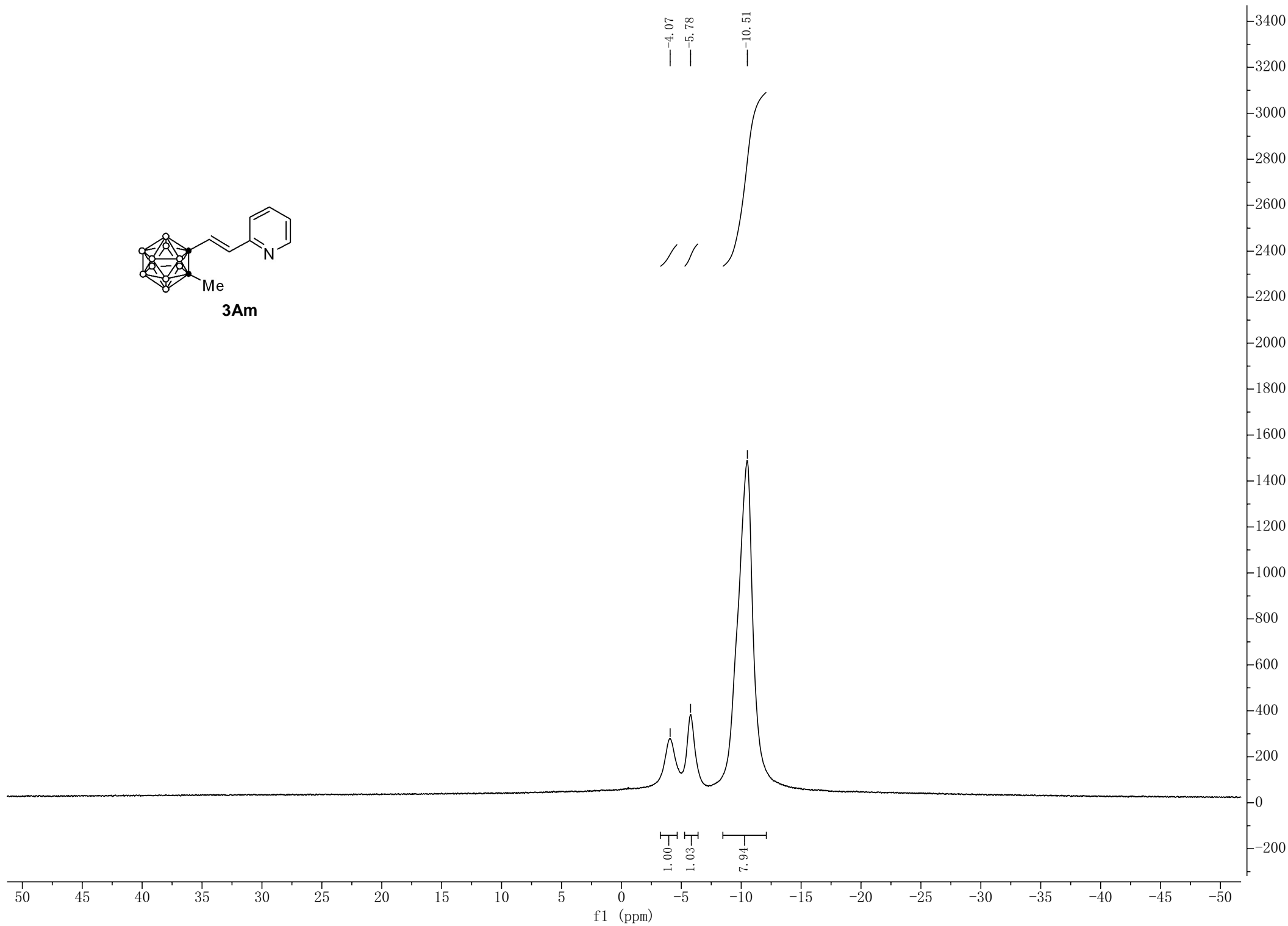
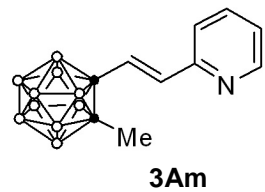


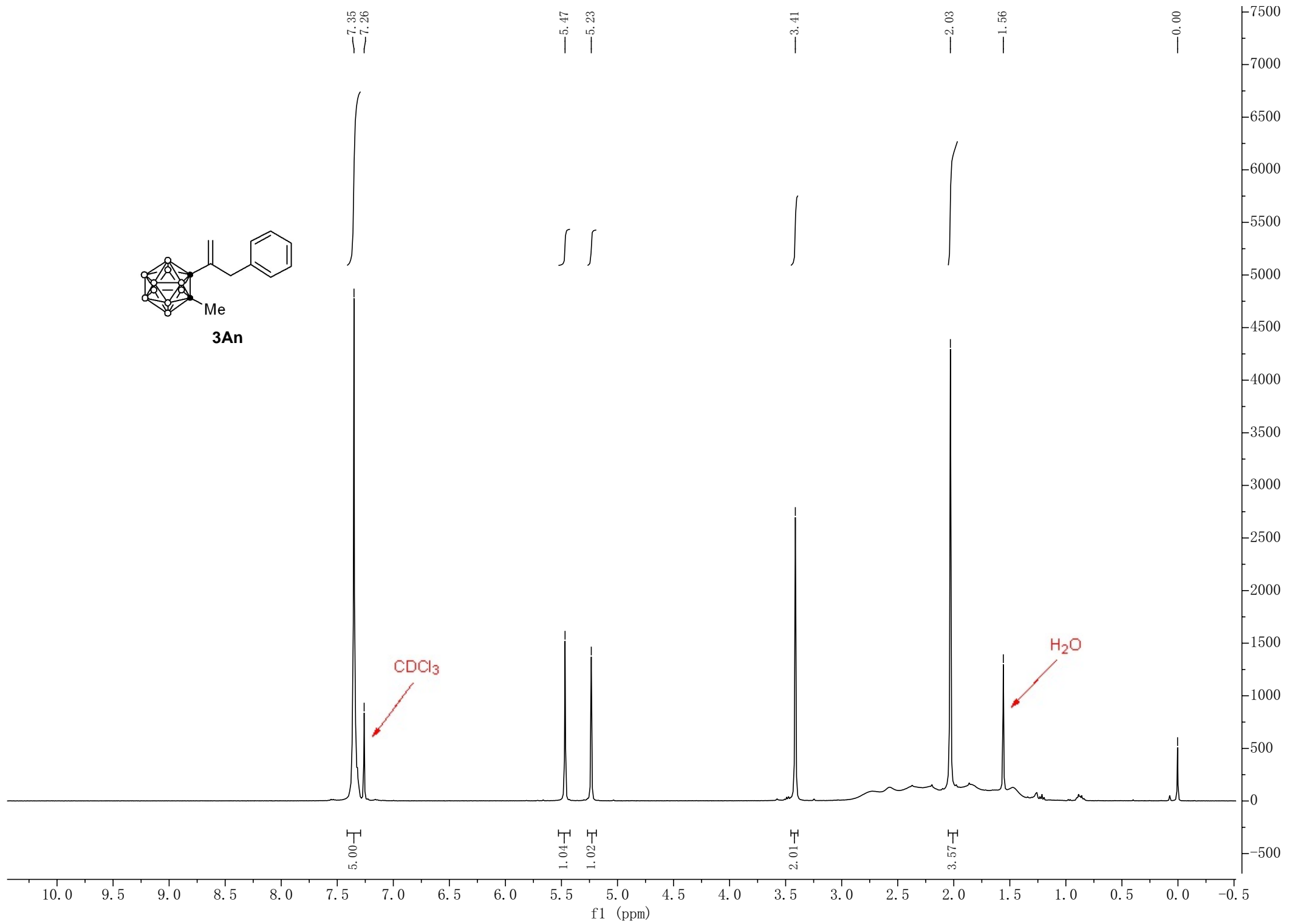
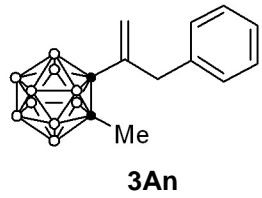
8.59  
8.58  
7.72  
7.72  
7.70  
7.70  
7.68  
7.68  
7.29  
7.27  
7.26  
7.26  
7.25  
7.25  
7.24  
7.23  
7.03  
6.99  
6.95  
6.91

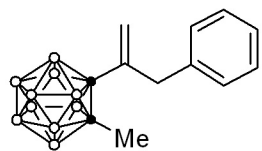




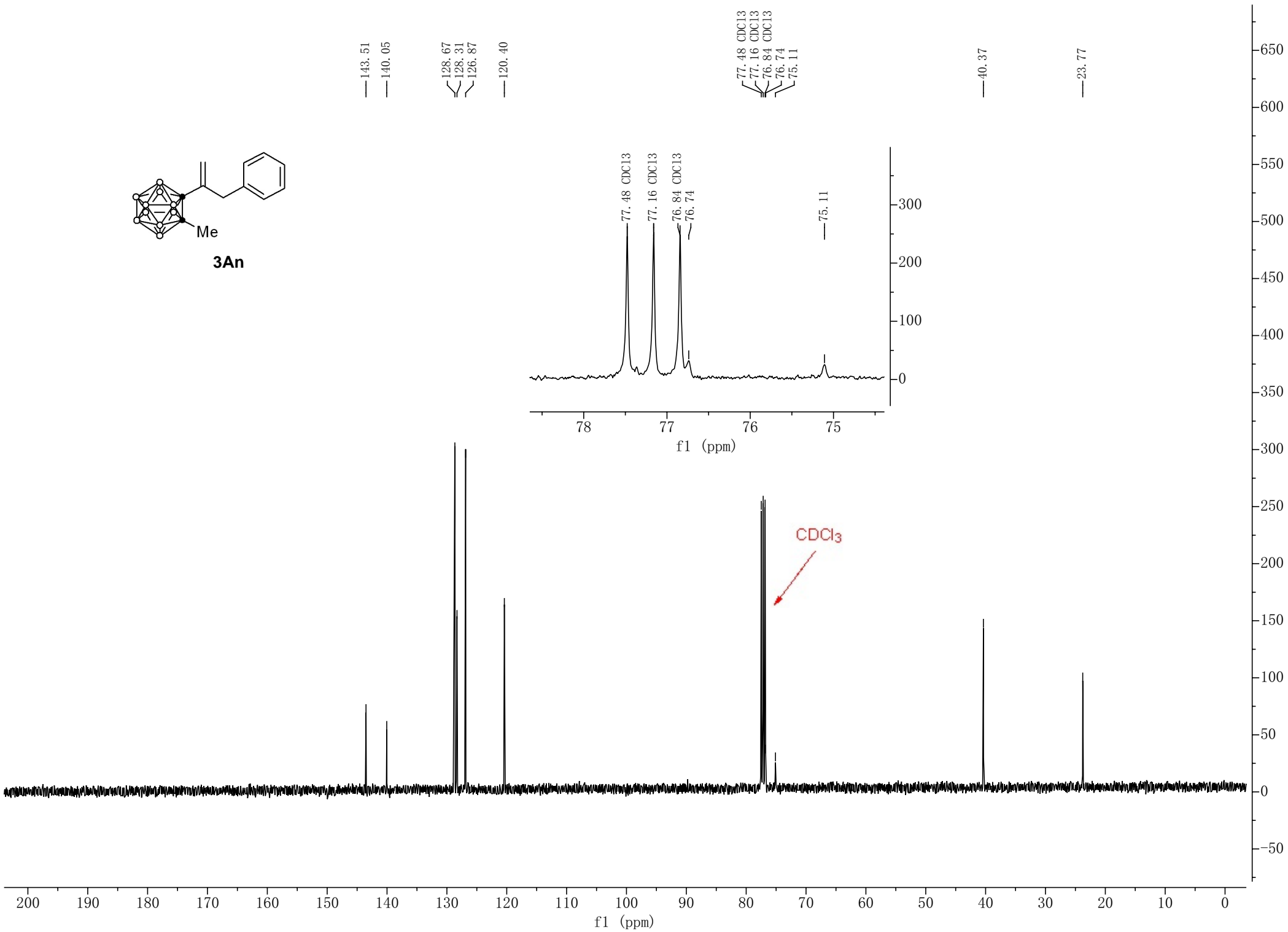


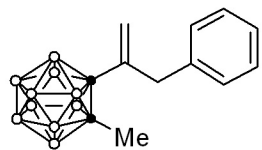




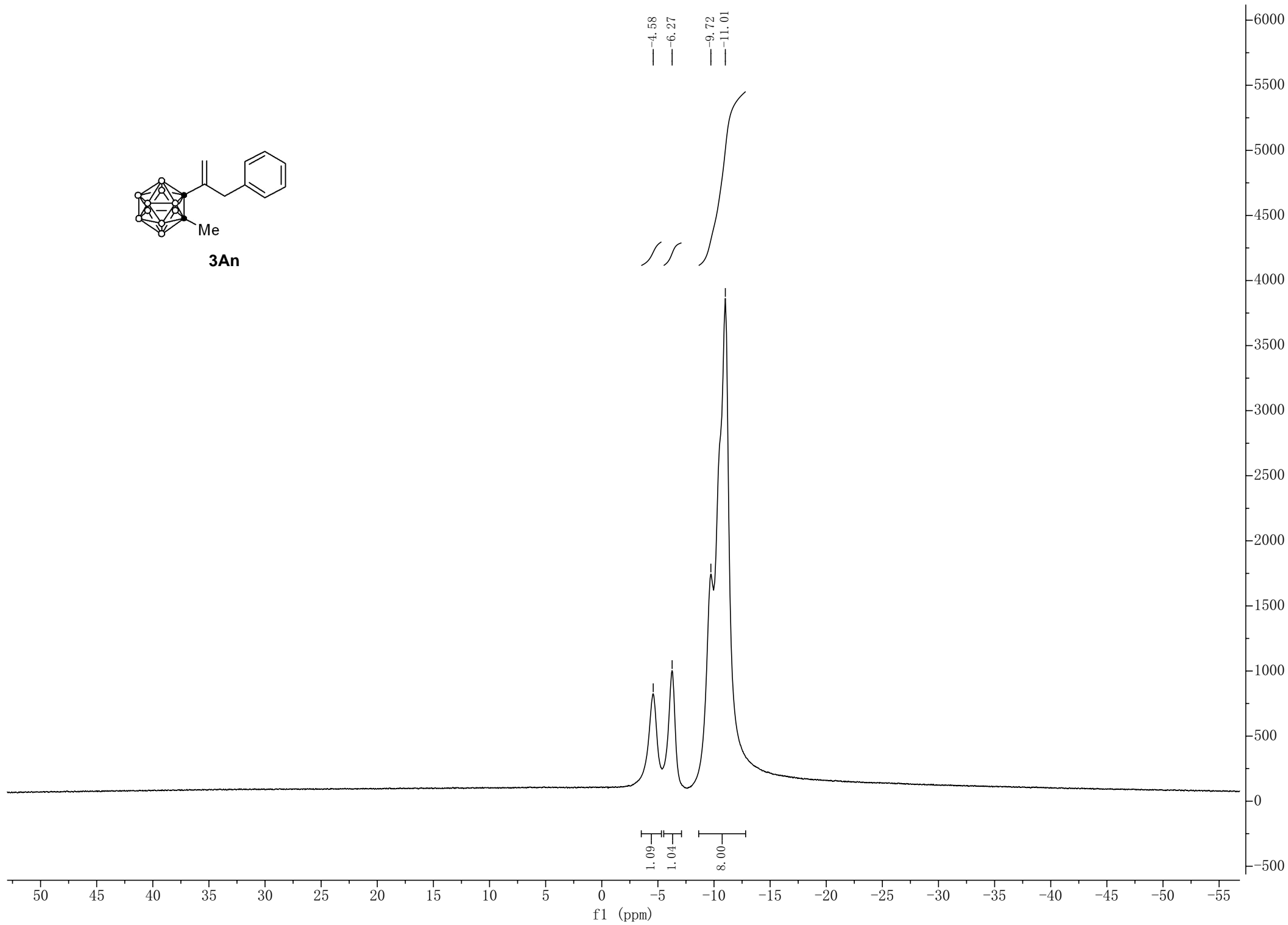


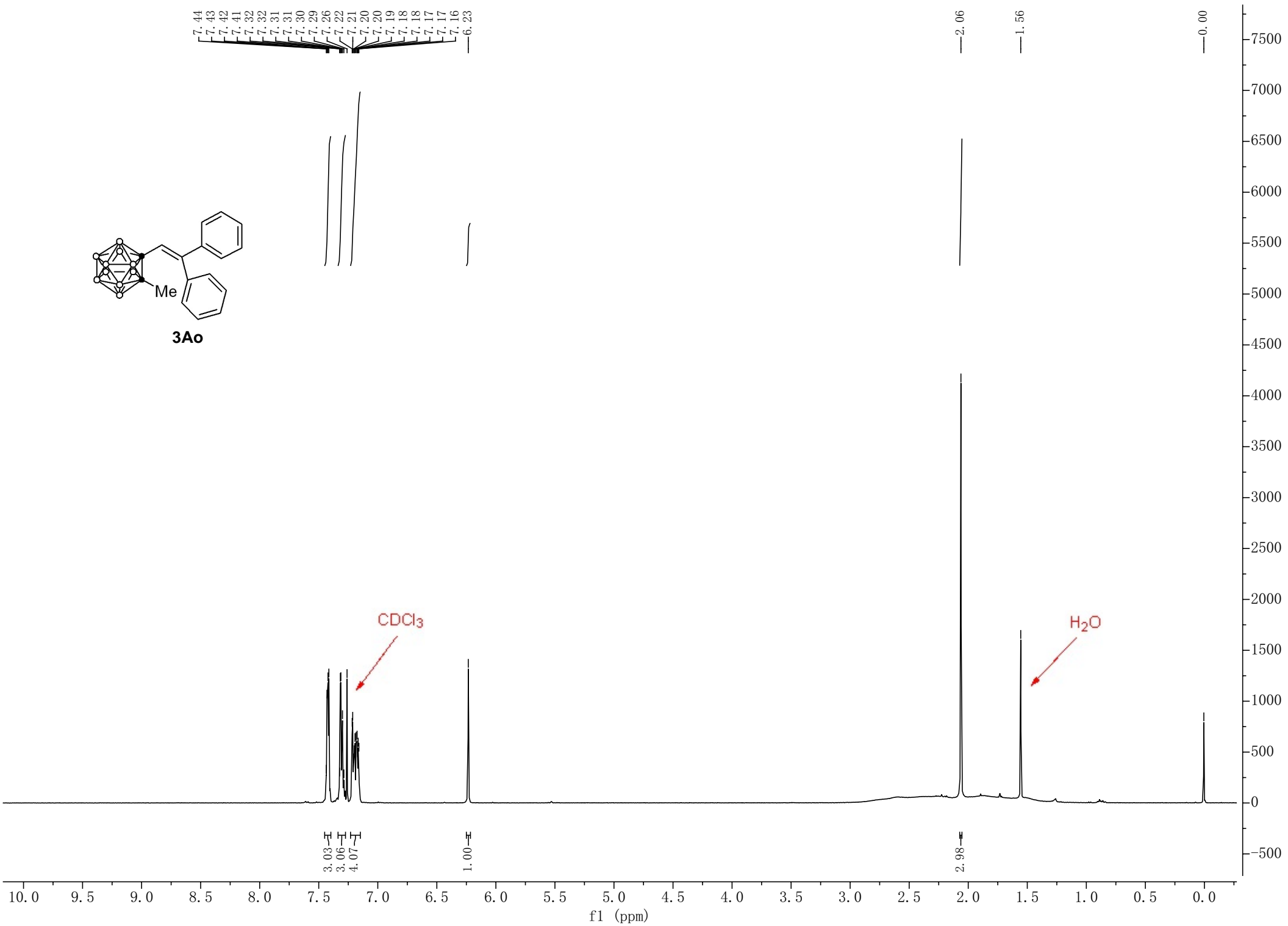
3An

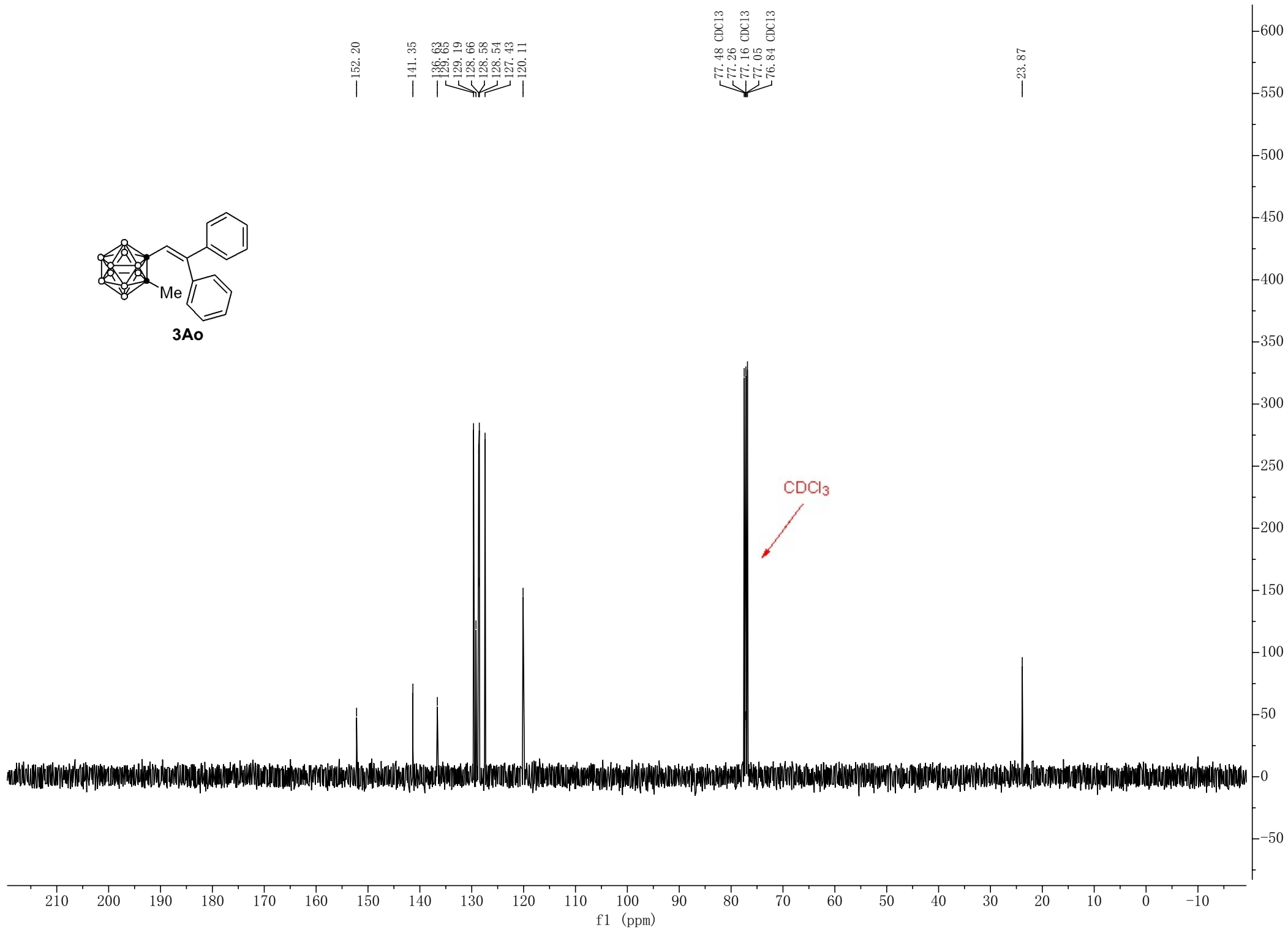
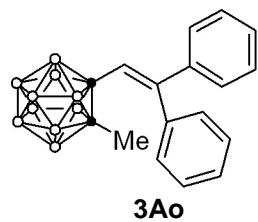


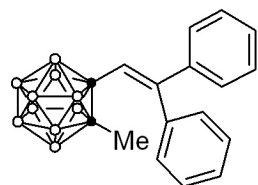


**3An**

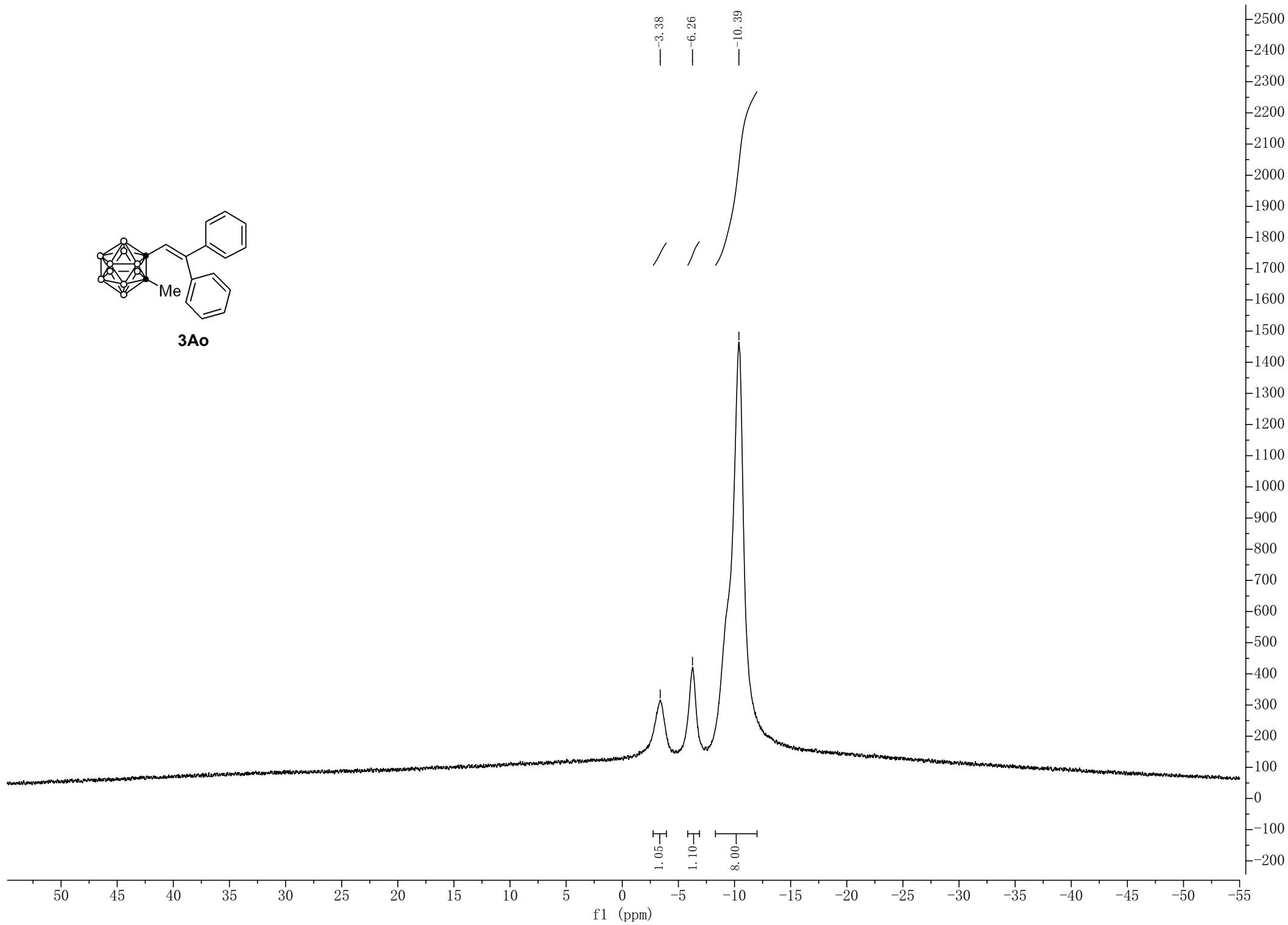


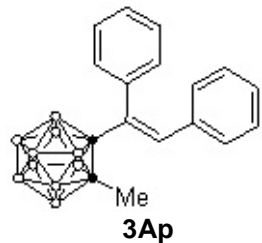




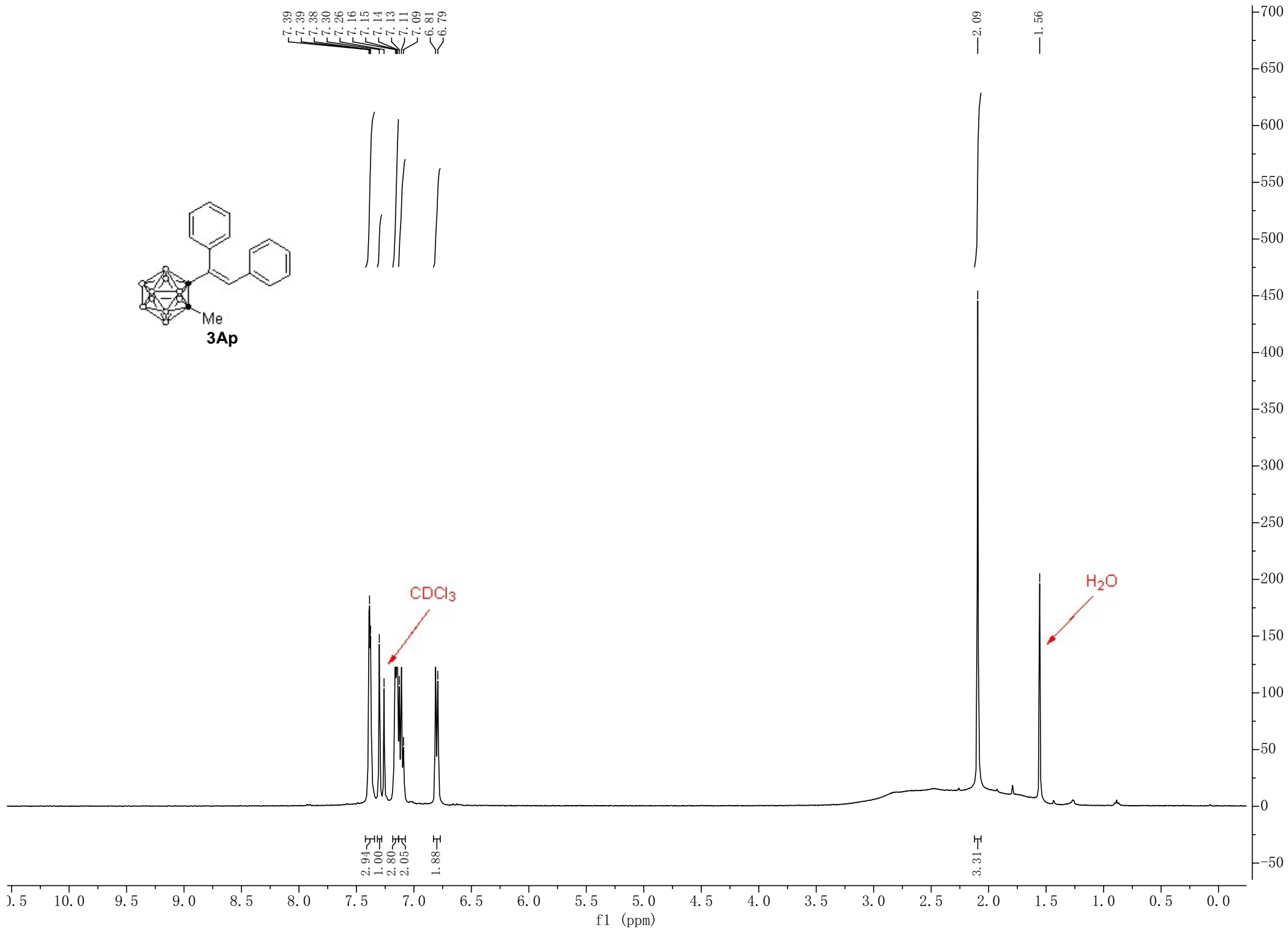
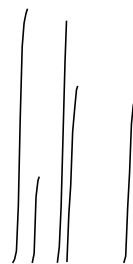


**3Ao**

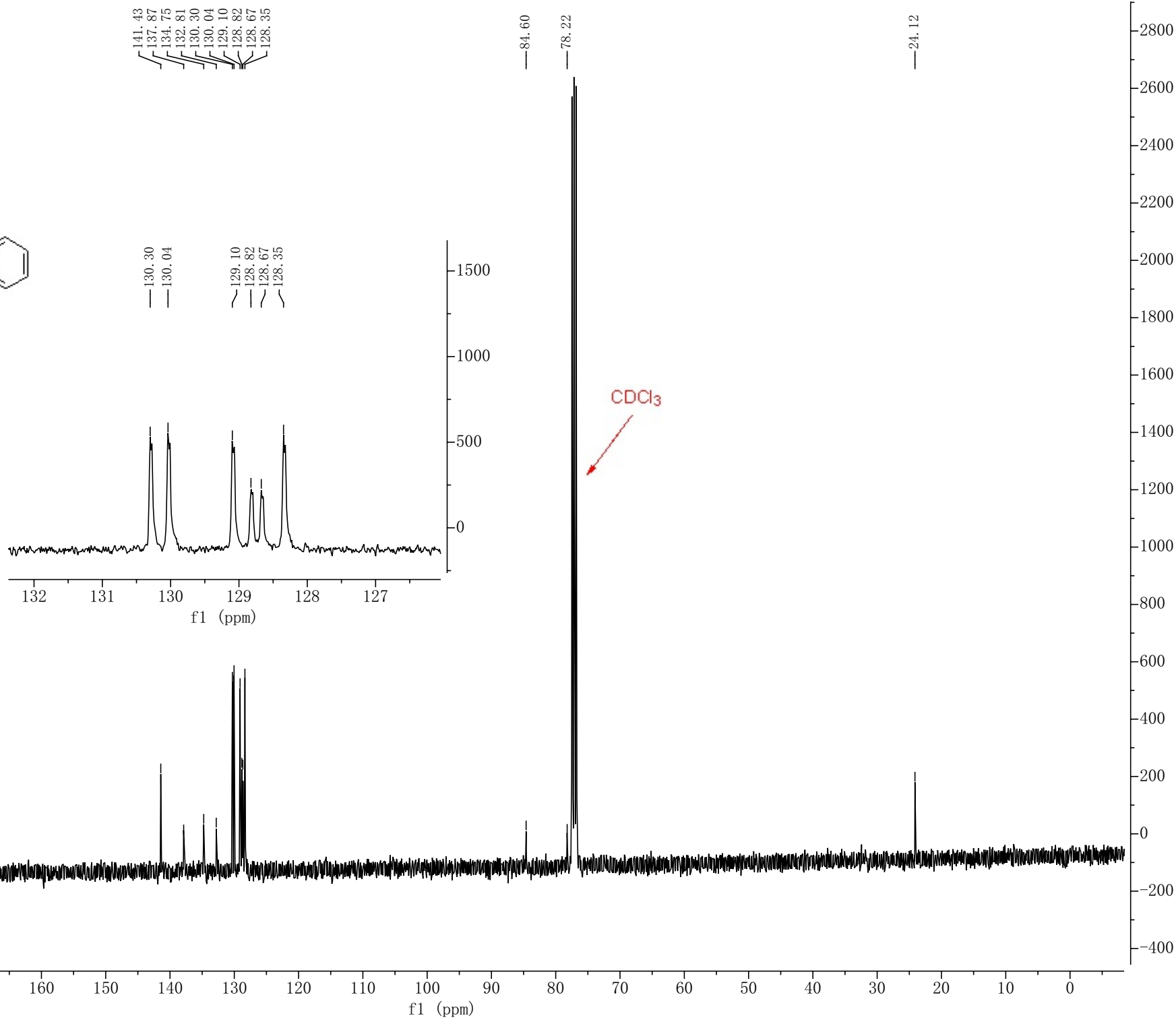
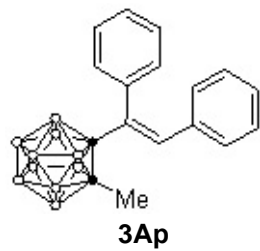


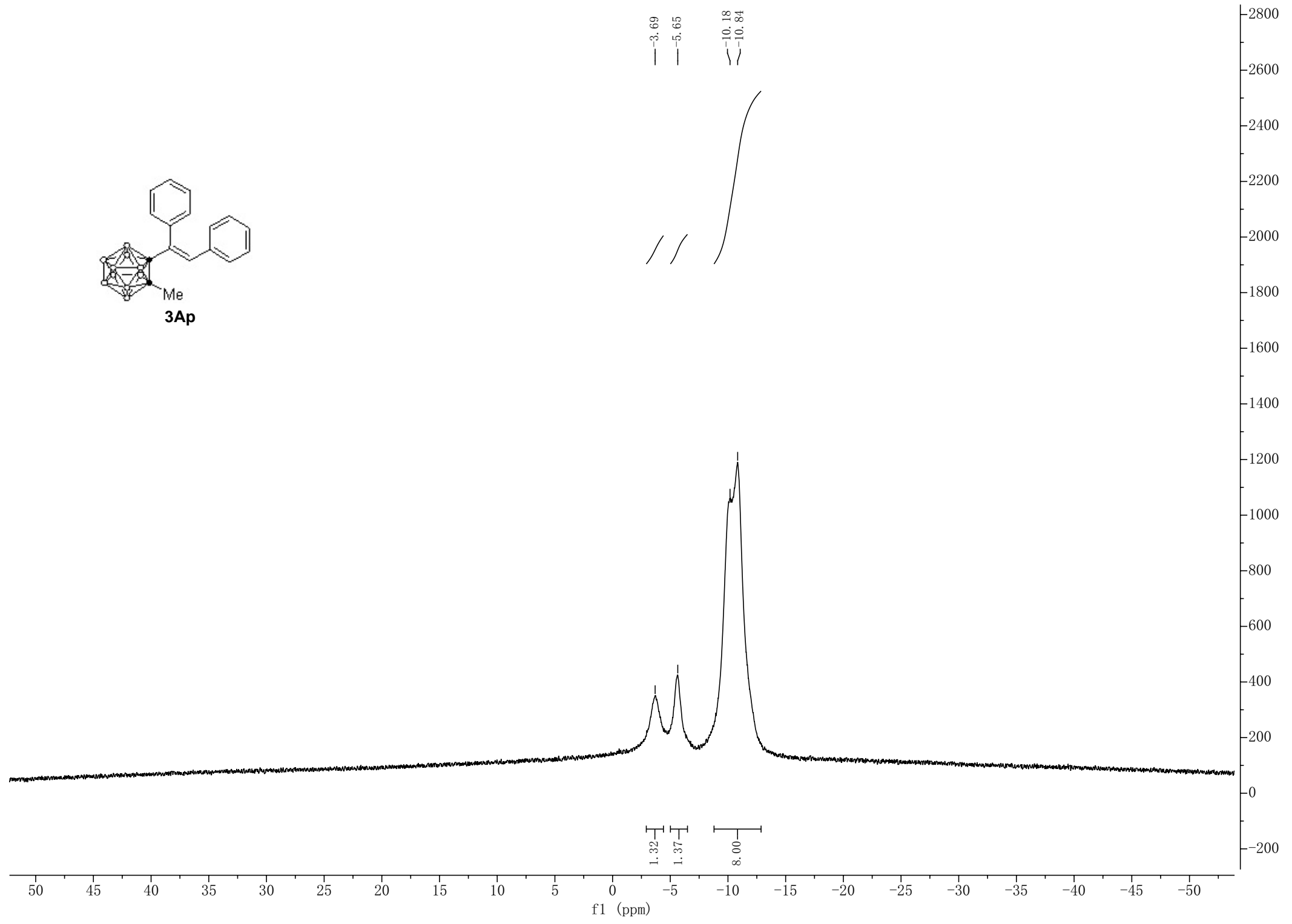
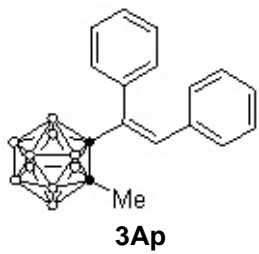


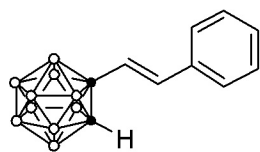
7.39  
7.39  
7.38  
7.30  
7.26  
7.16  
7.15  
7.14  
7.13  
7.11  
7.09  
6.81  
6.79



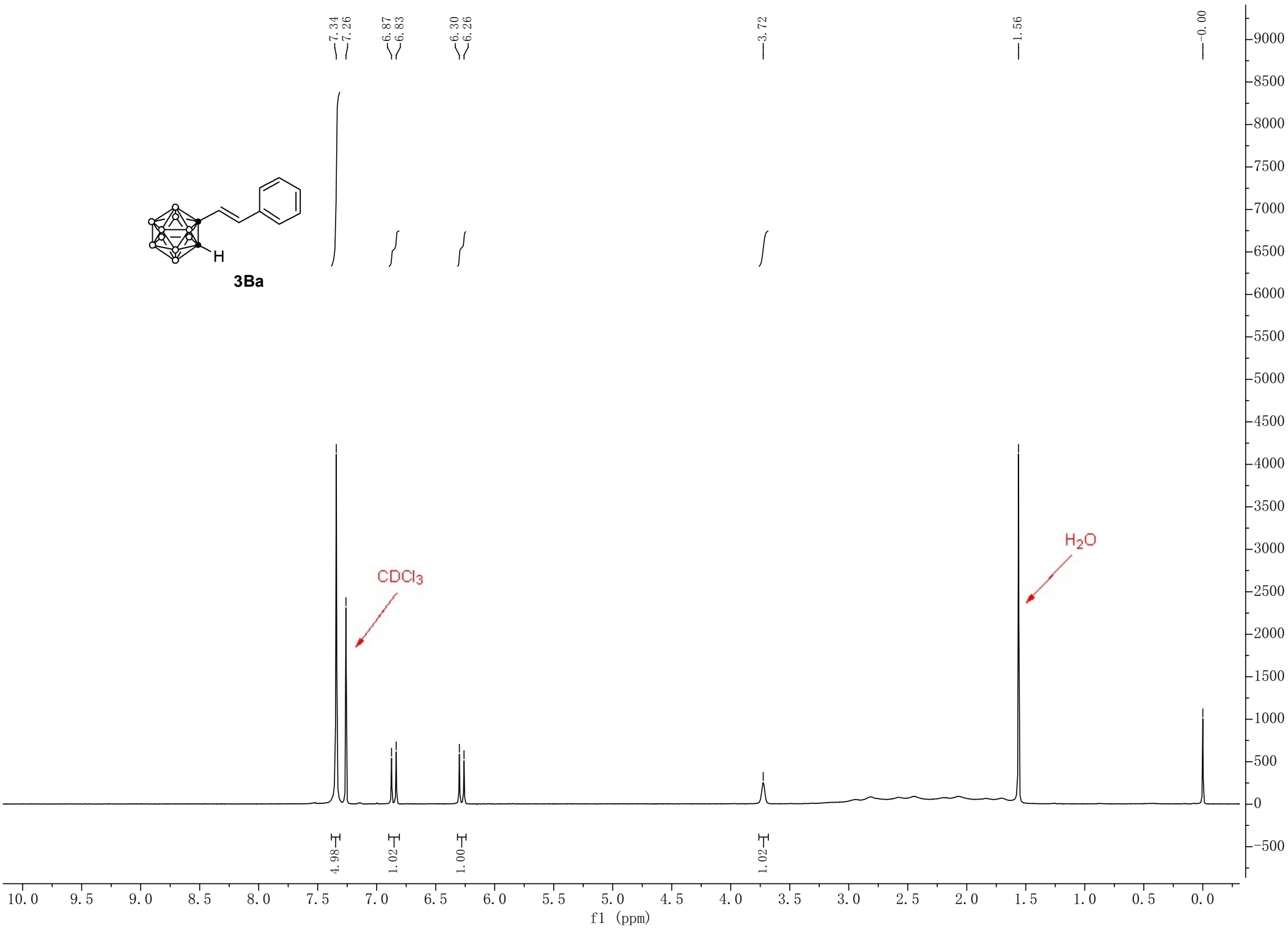


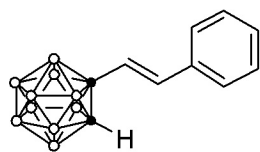






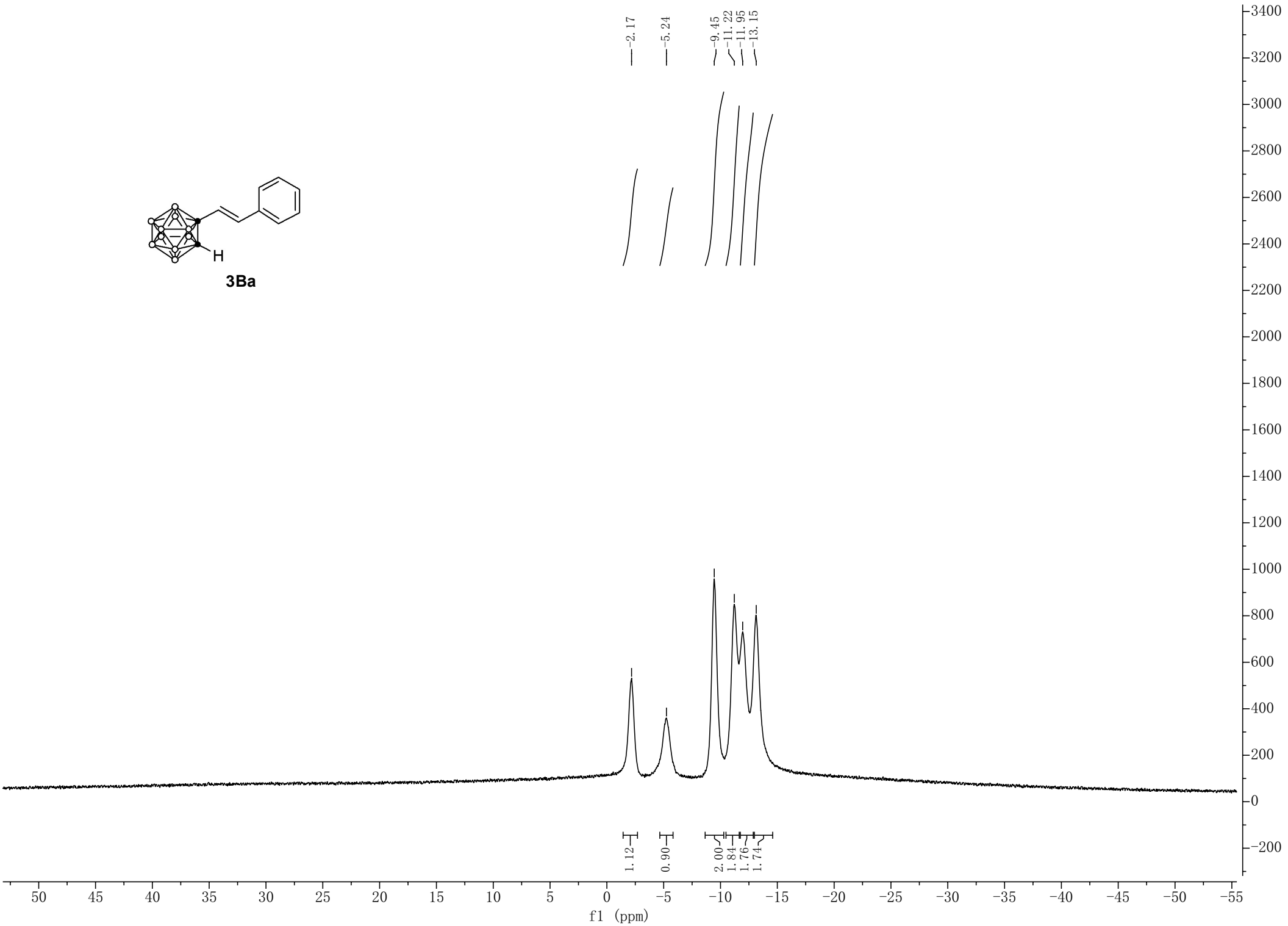
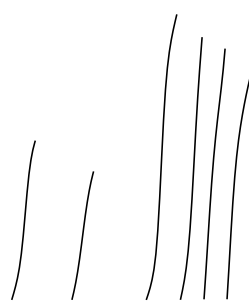
**3Ba**

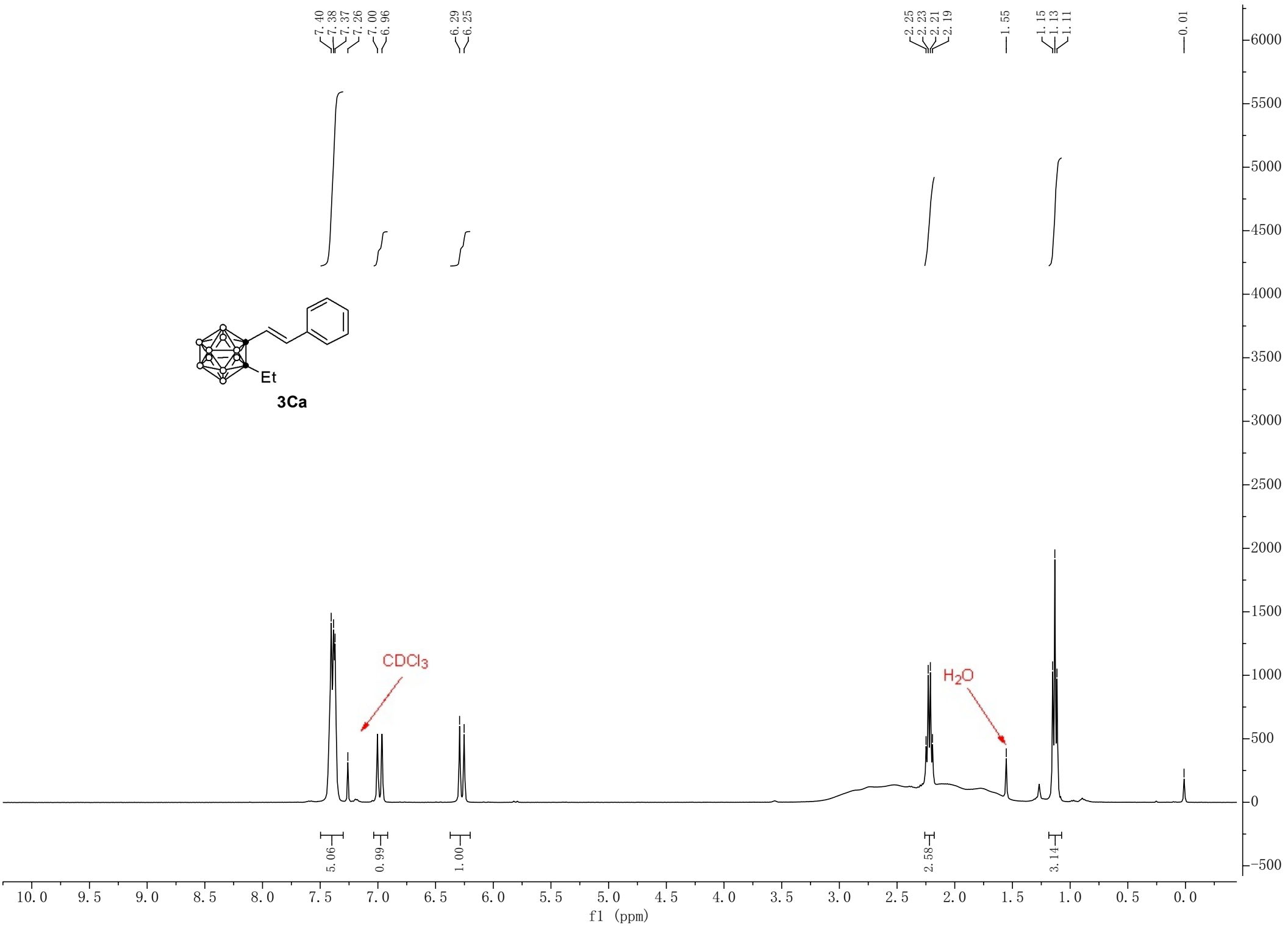


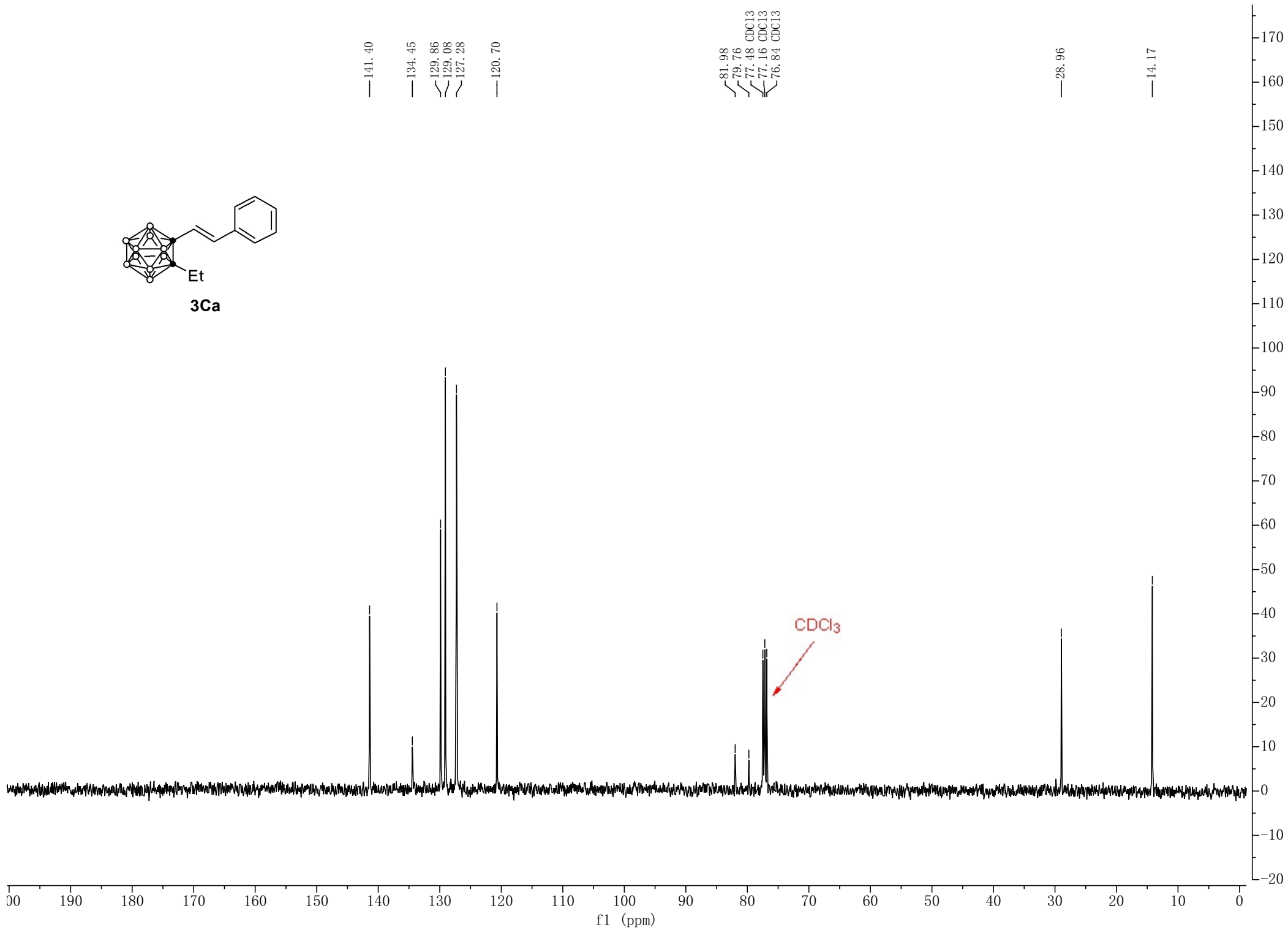
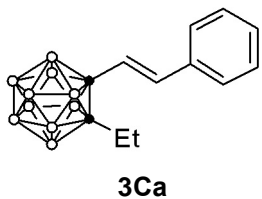


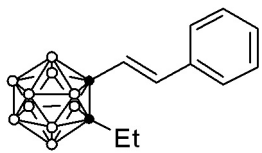
3Ba

-2.17  
-5.24  
-9.45  
-11.22  
-11.95  
-13.15

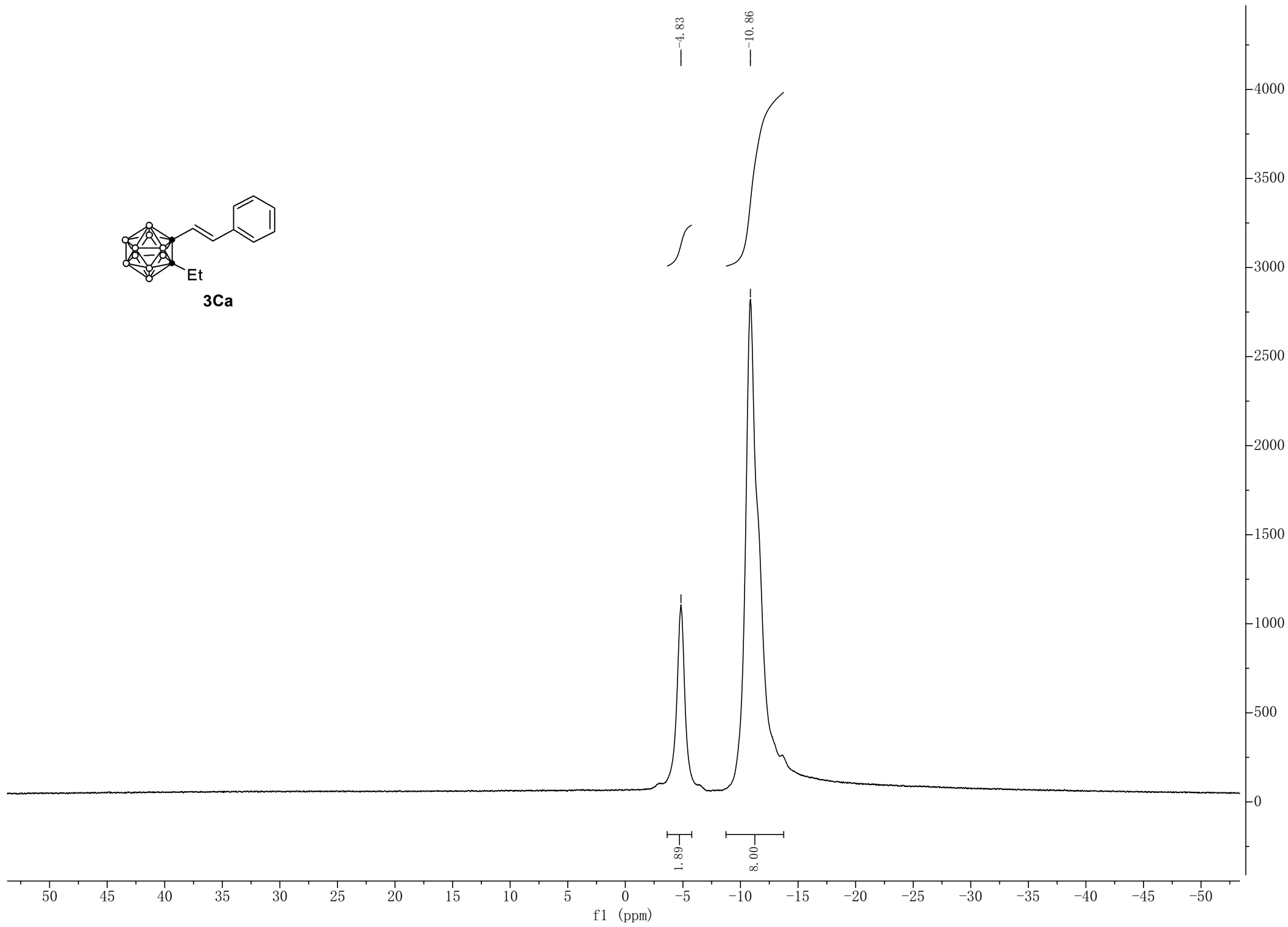


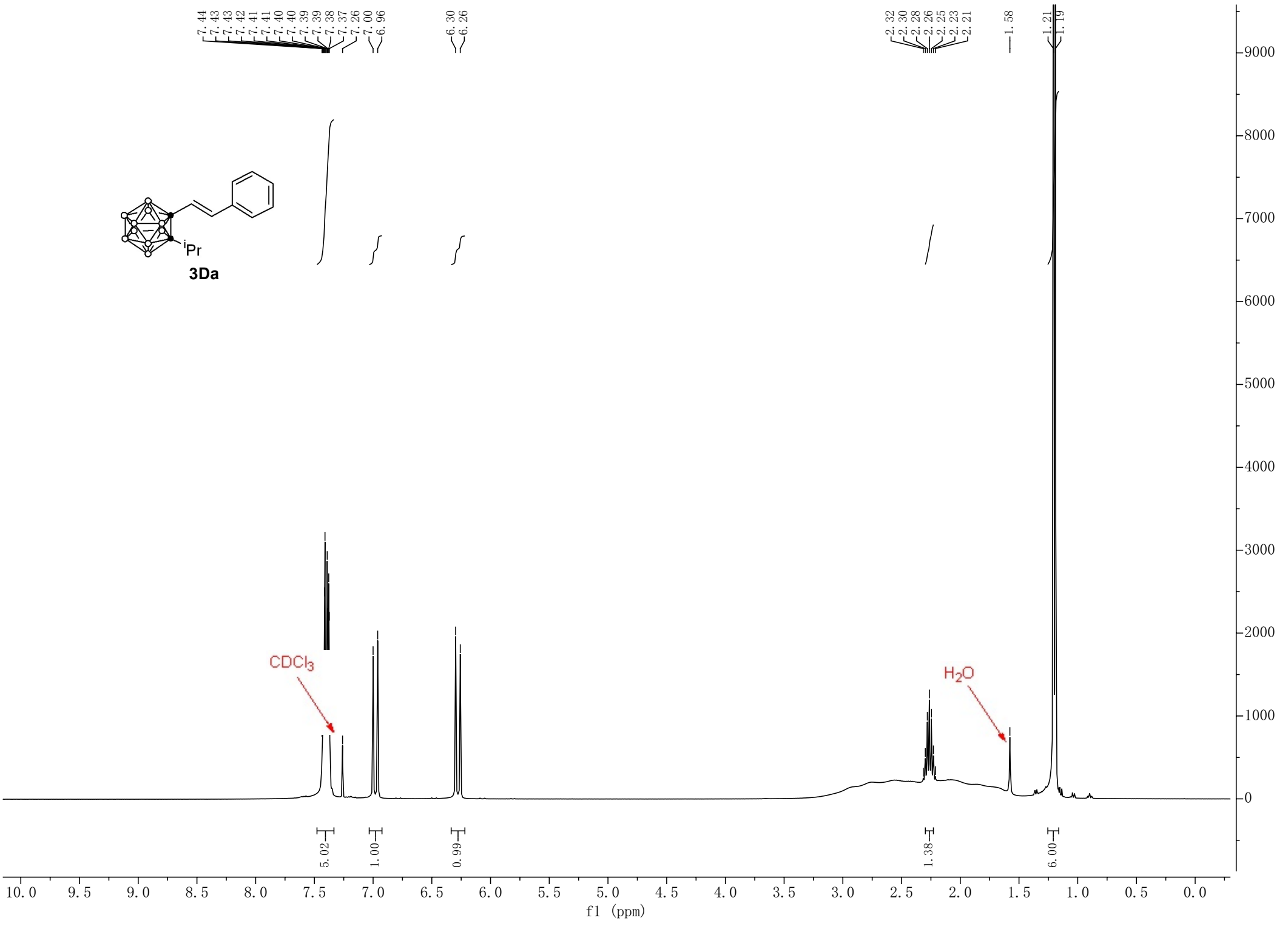
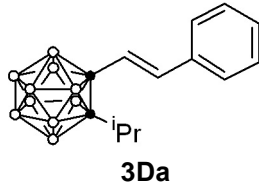




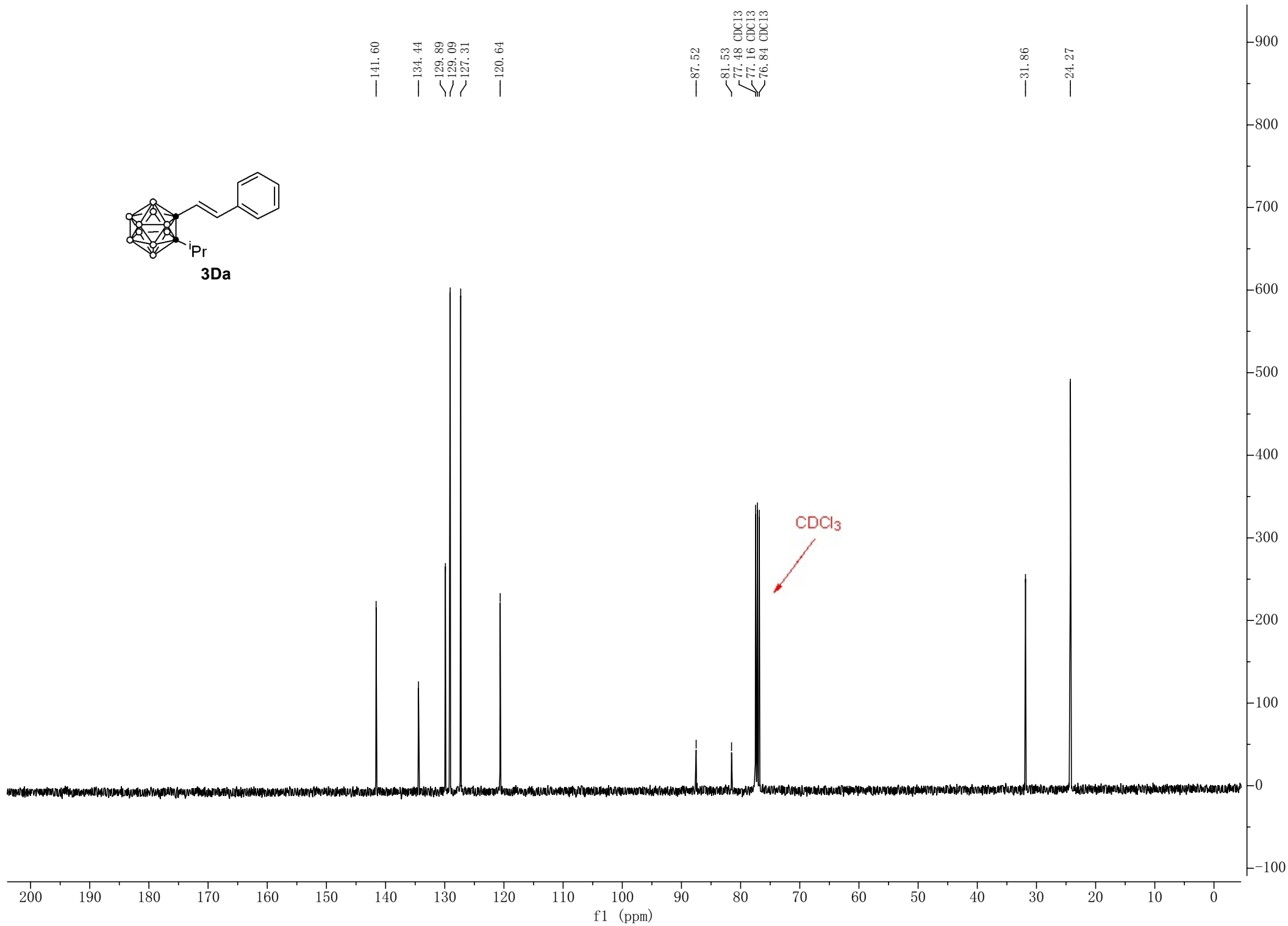
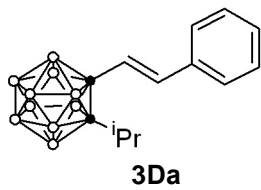


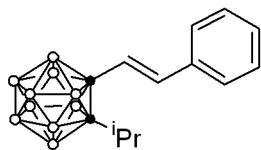
**3Ca**



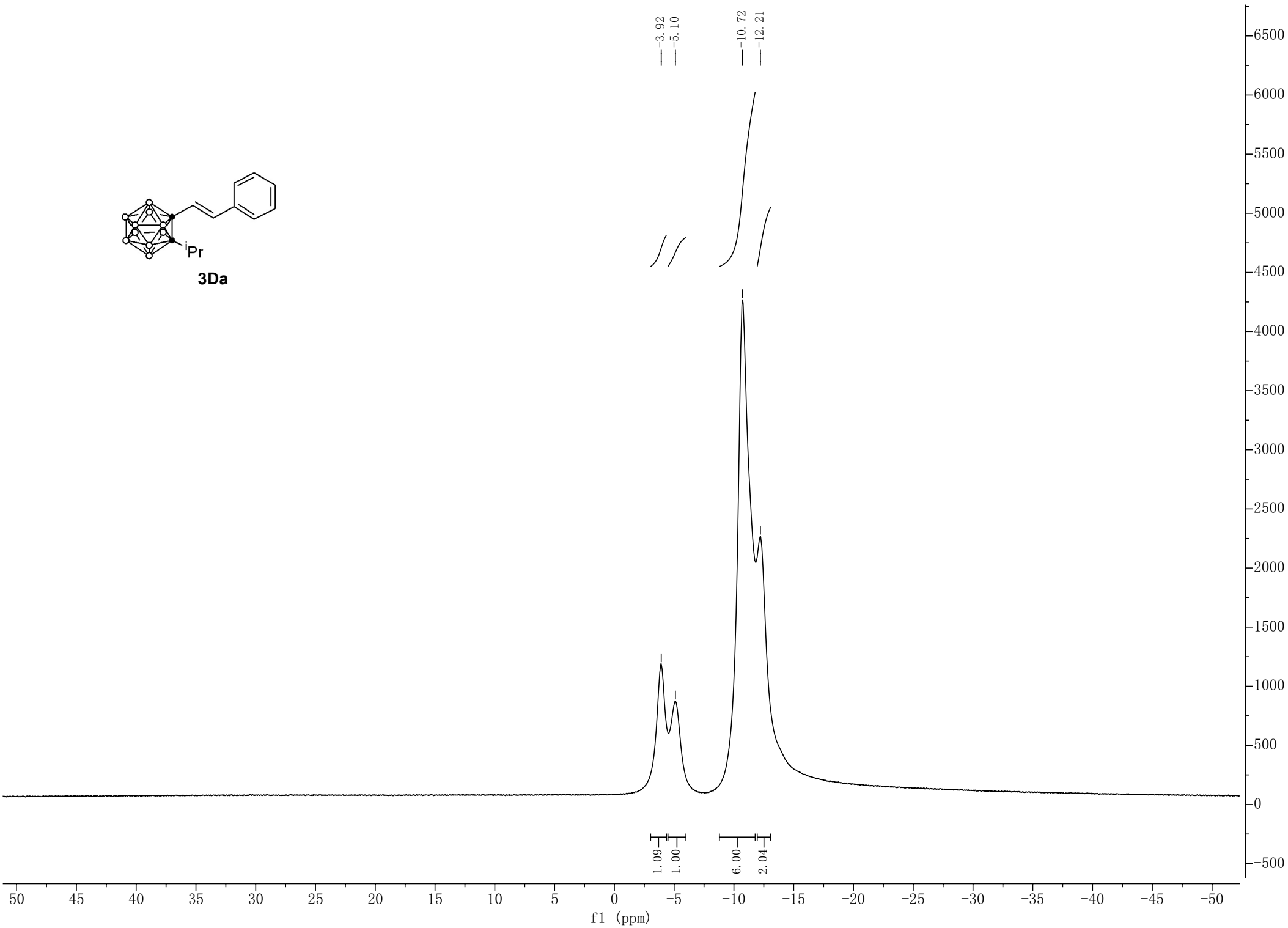


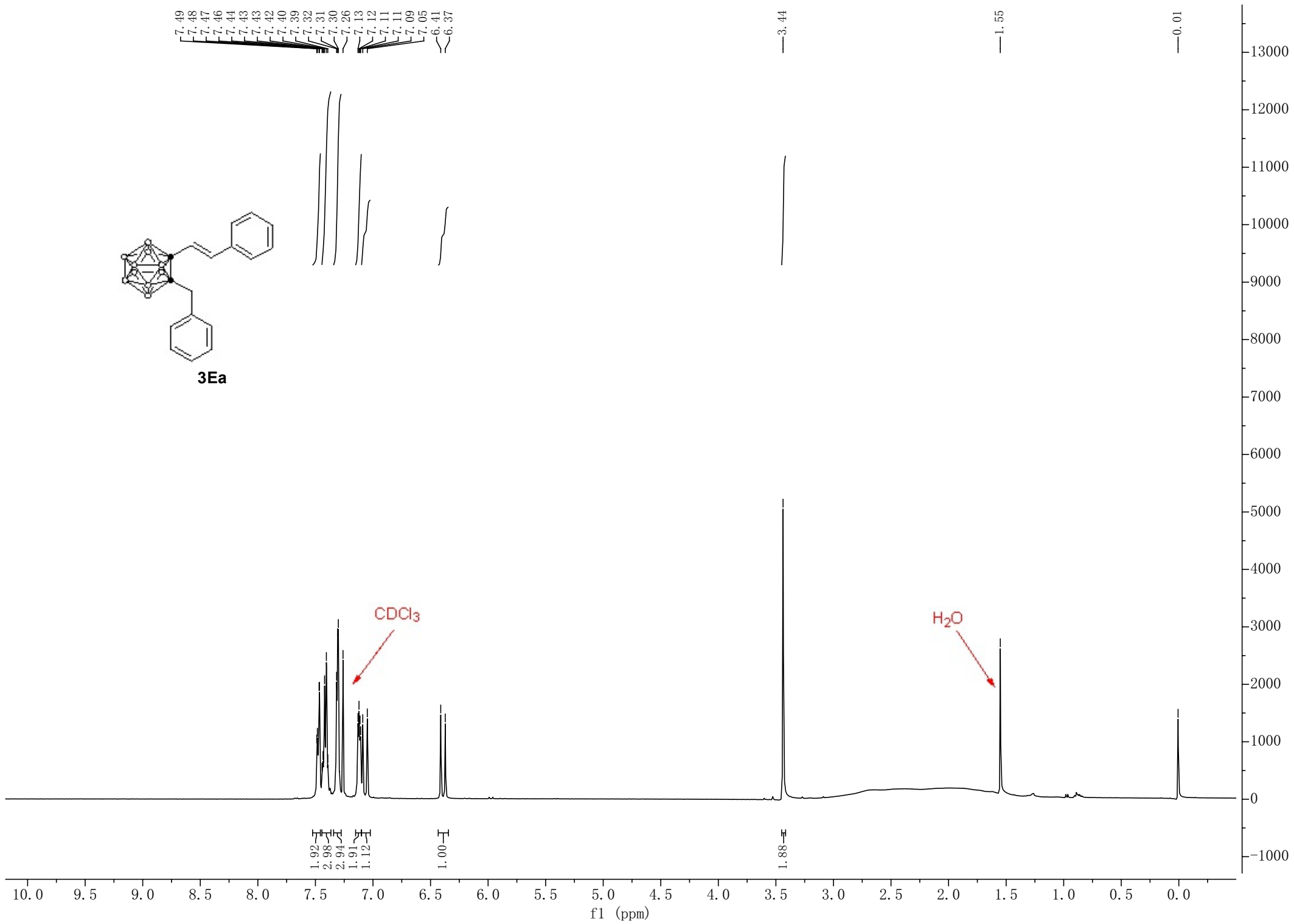


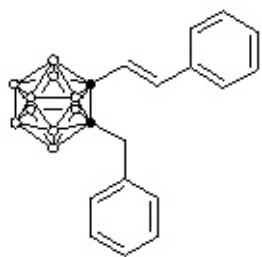




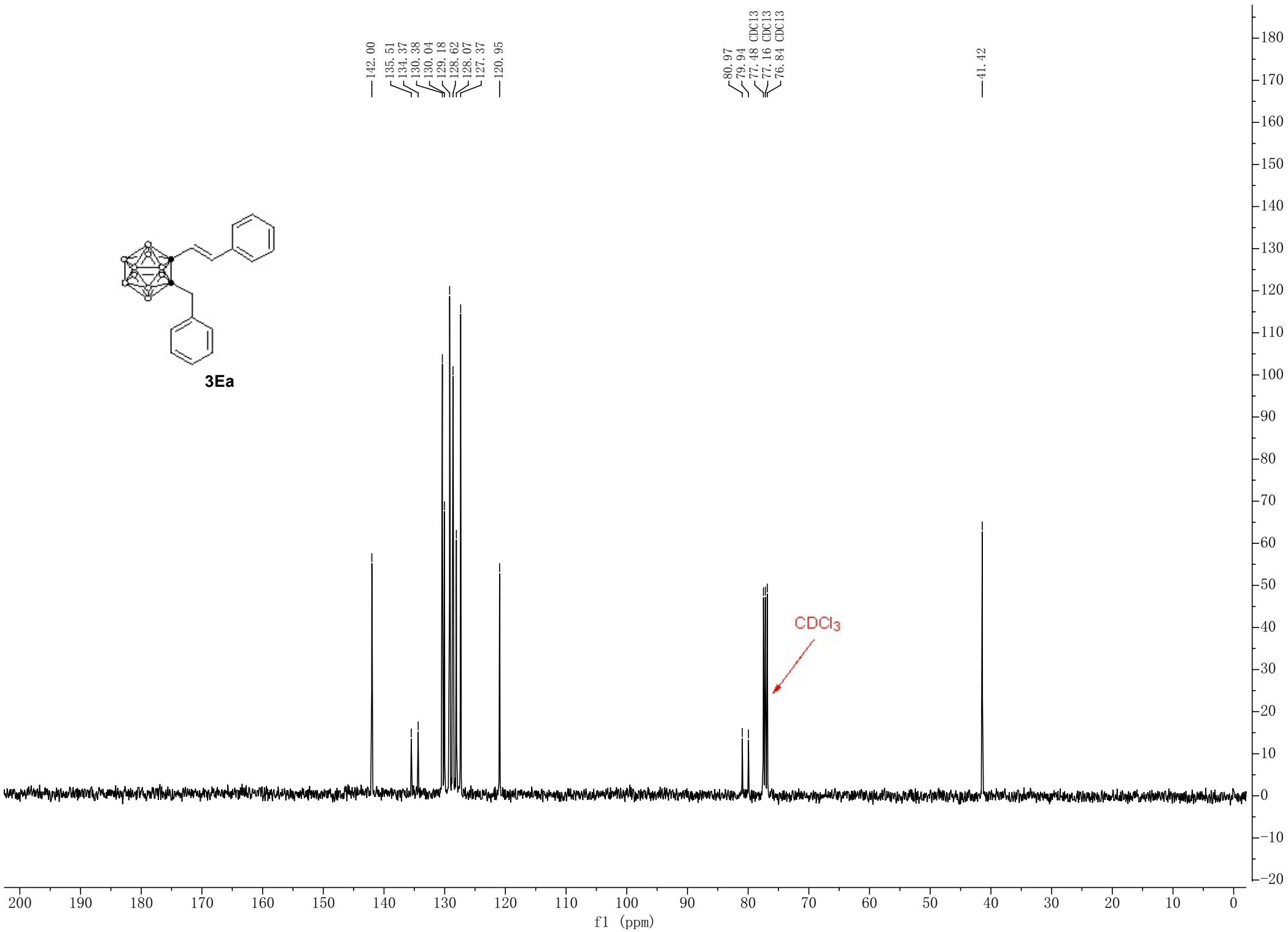
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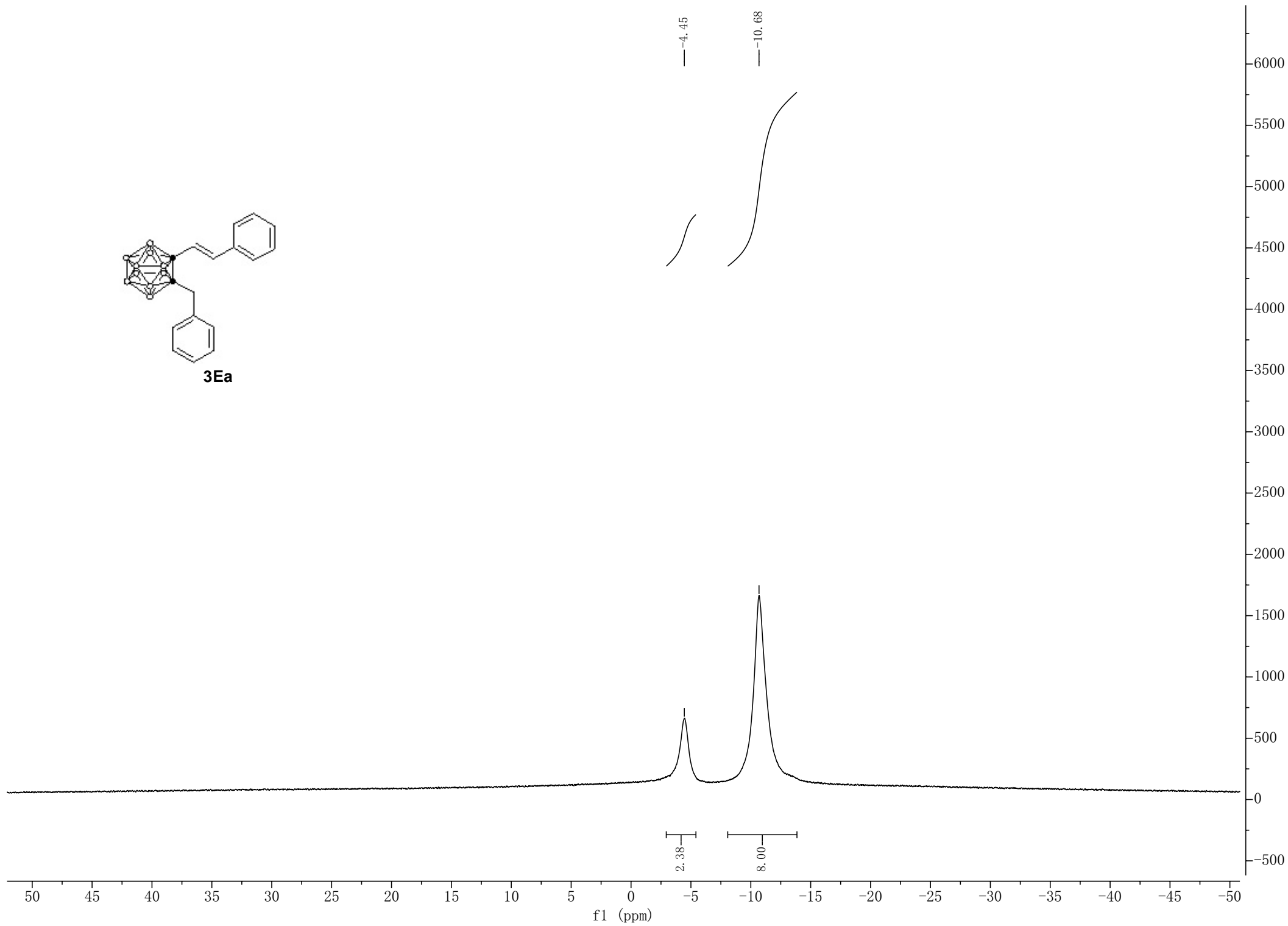
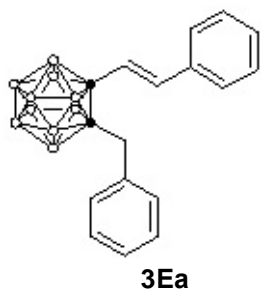


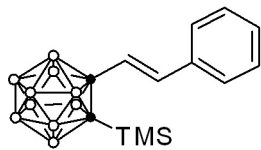




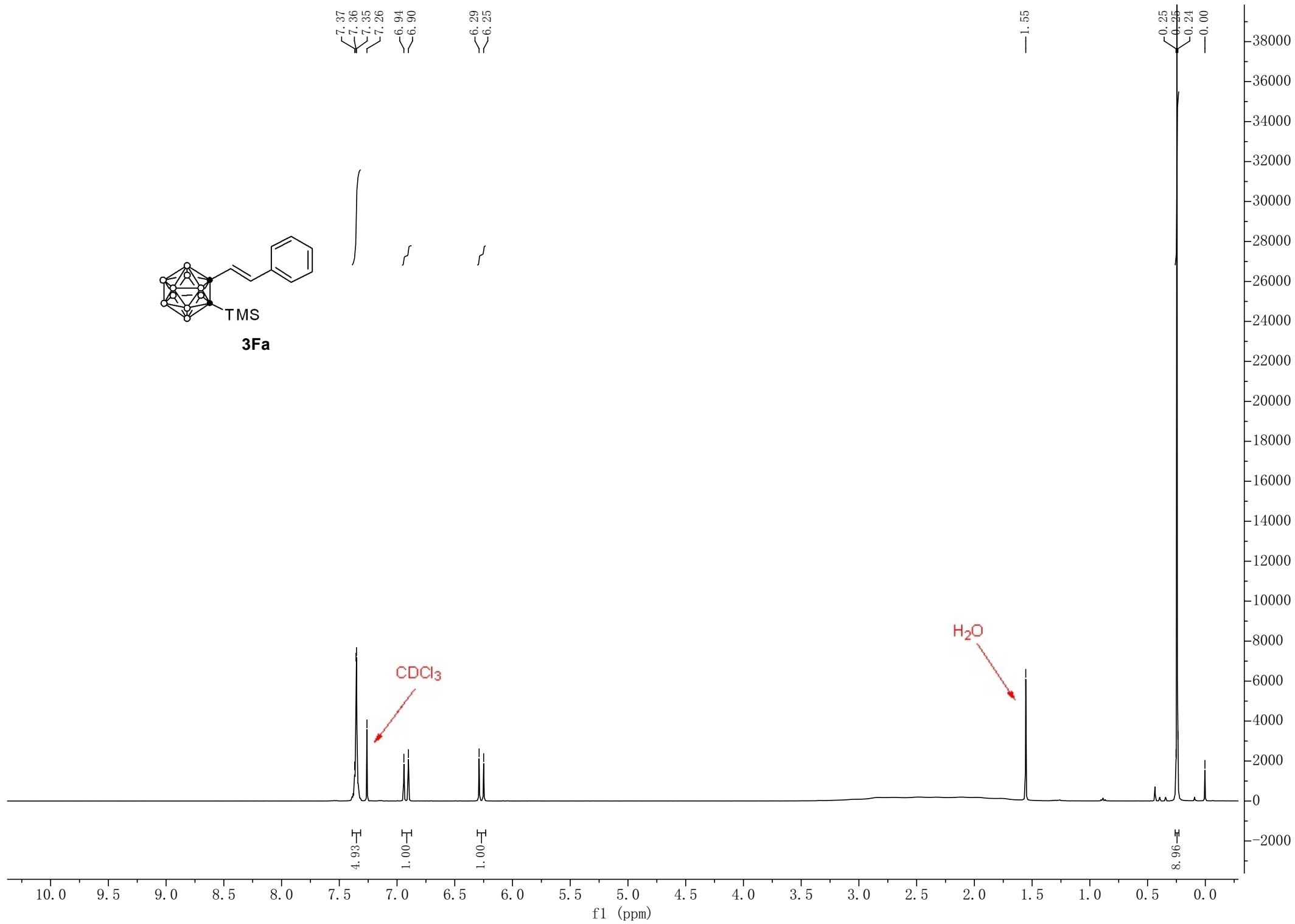
**3Ea**

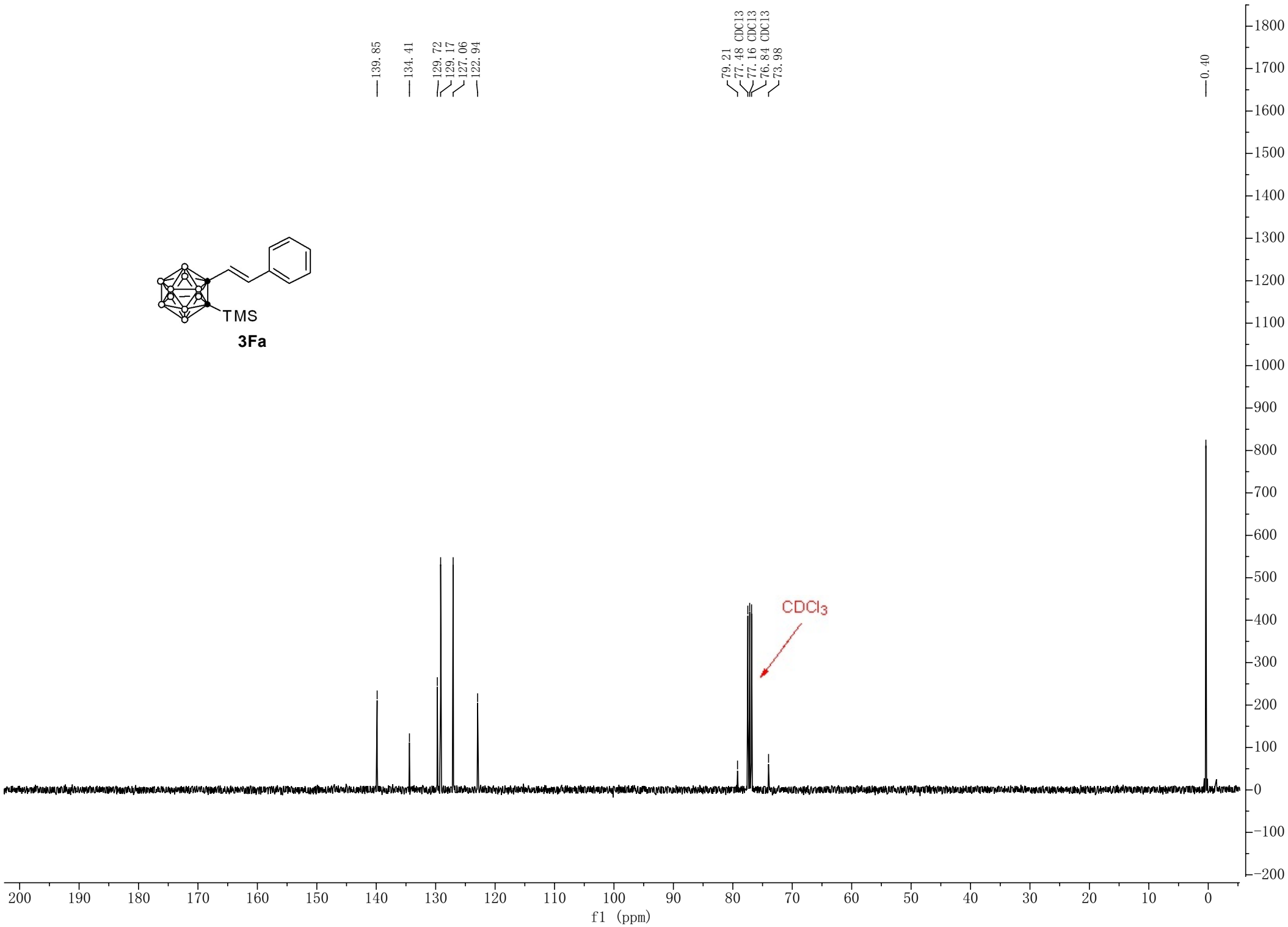
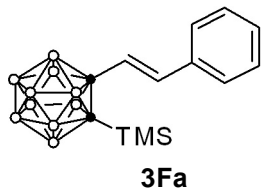


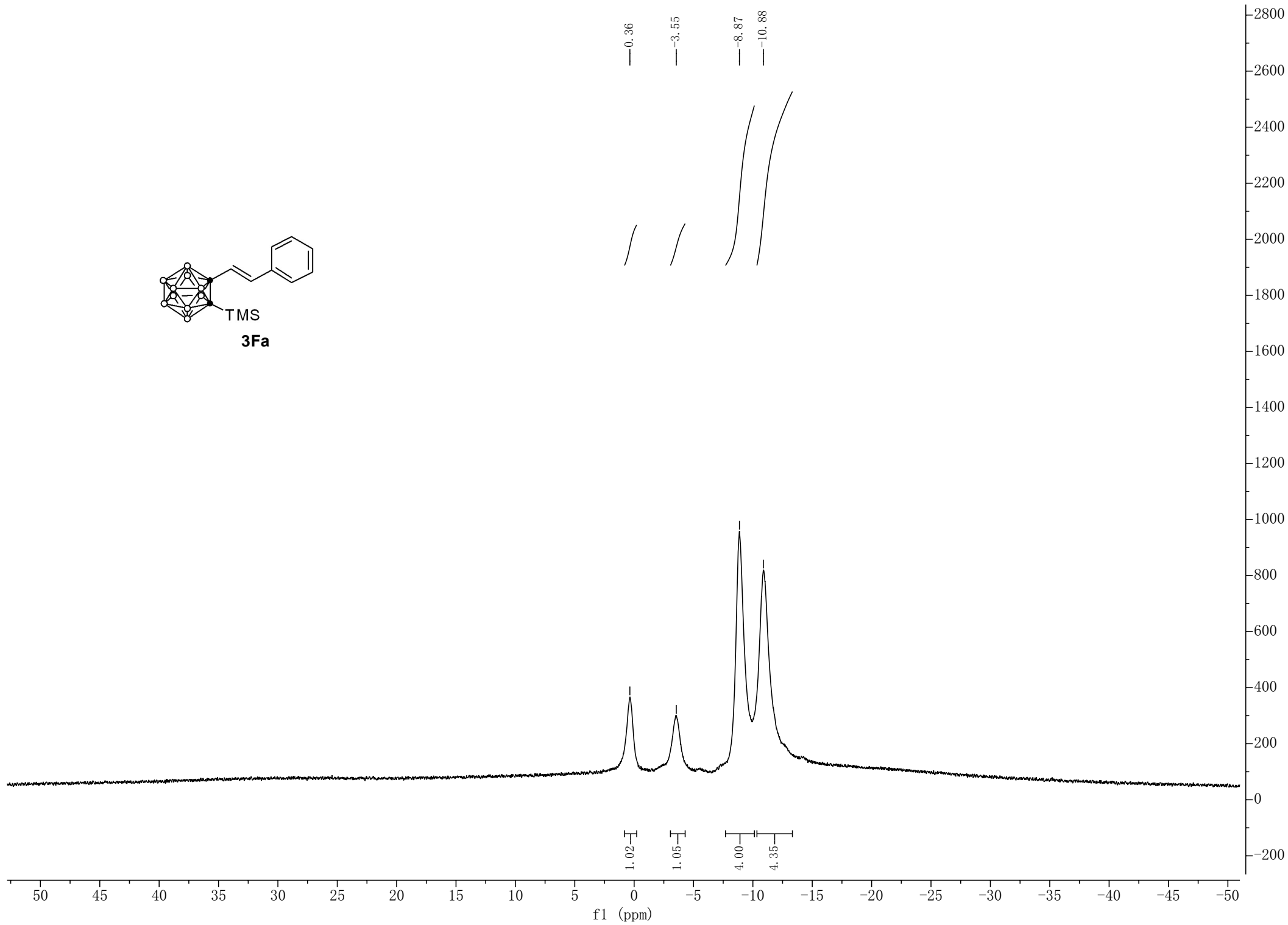
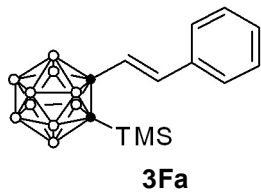




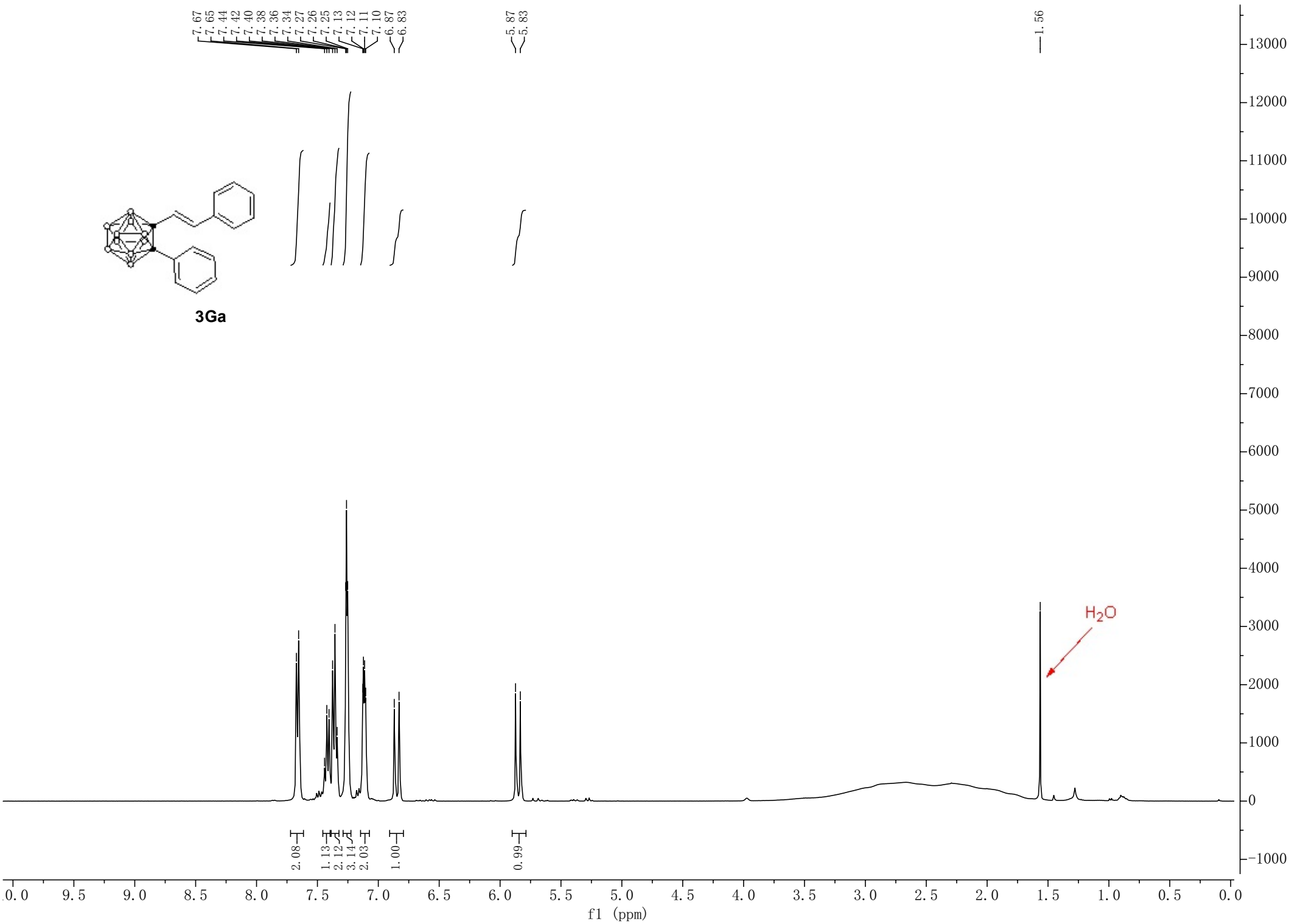
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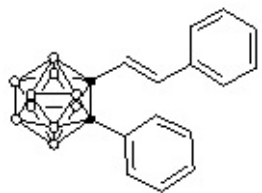




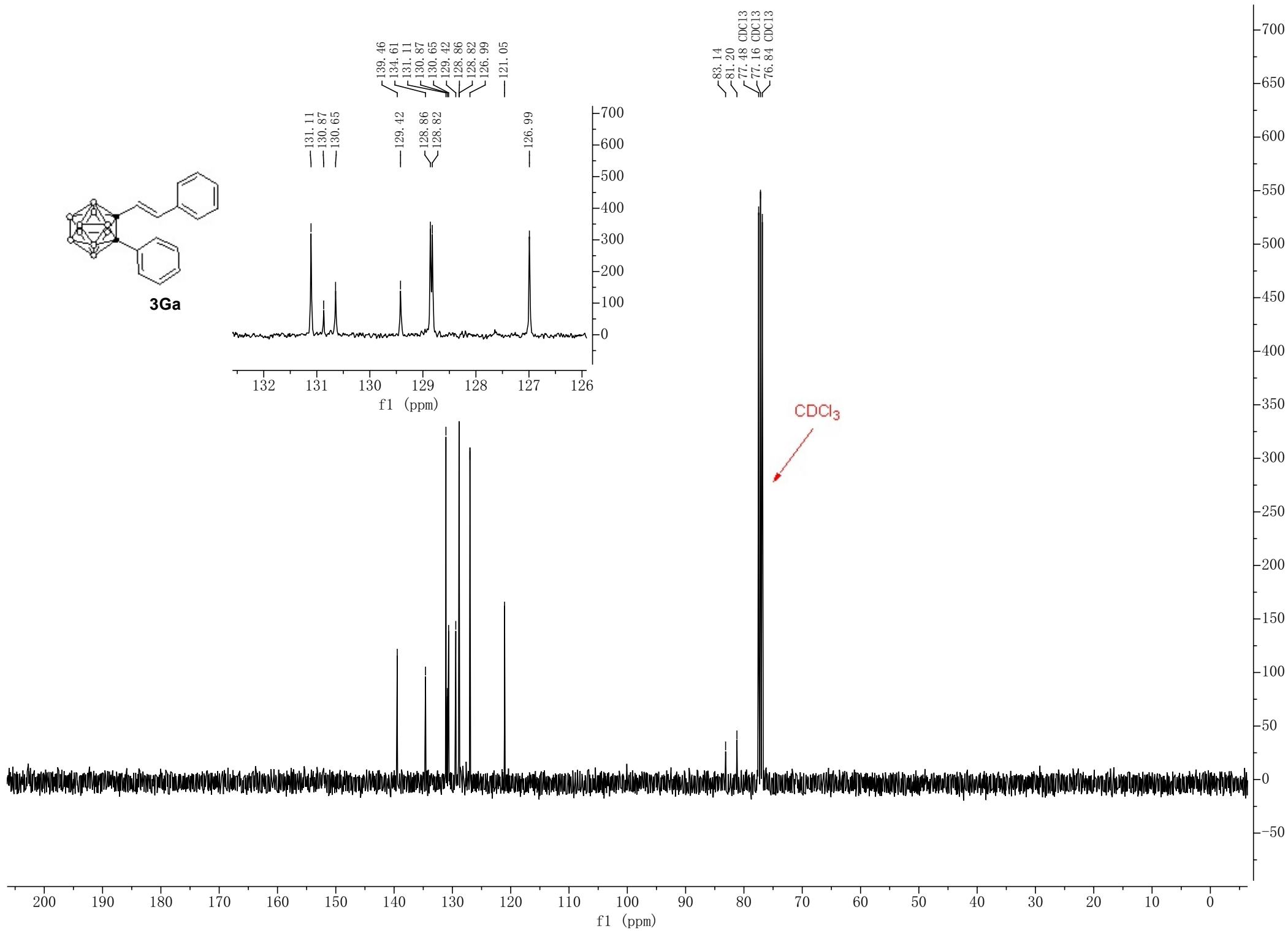
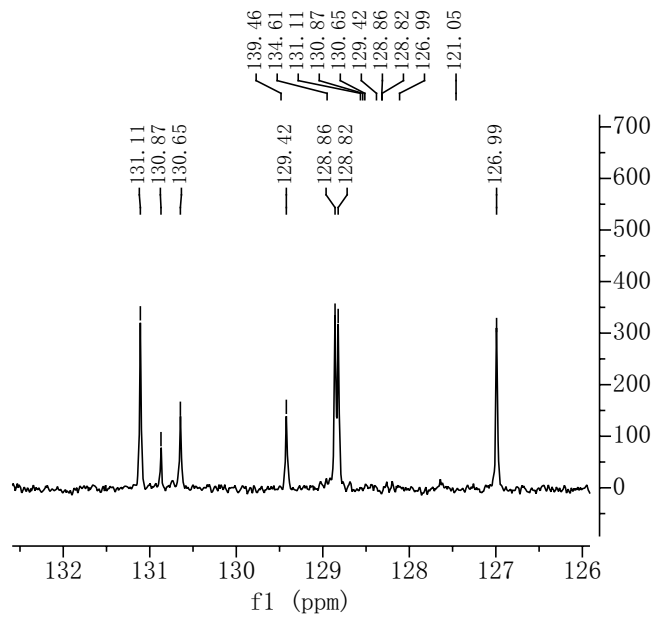


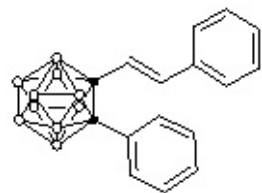




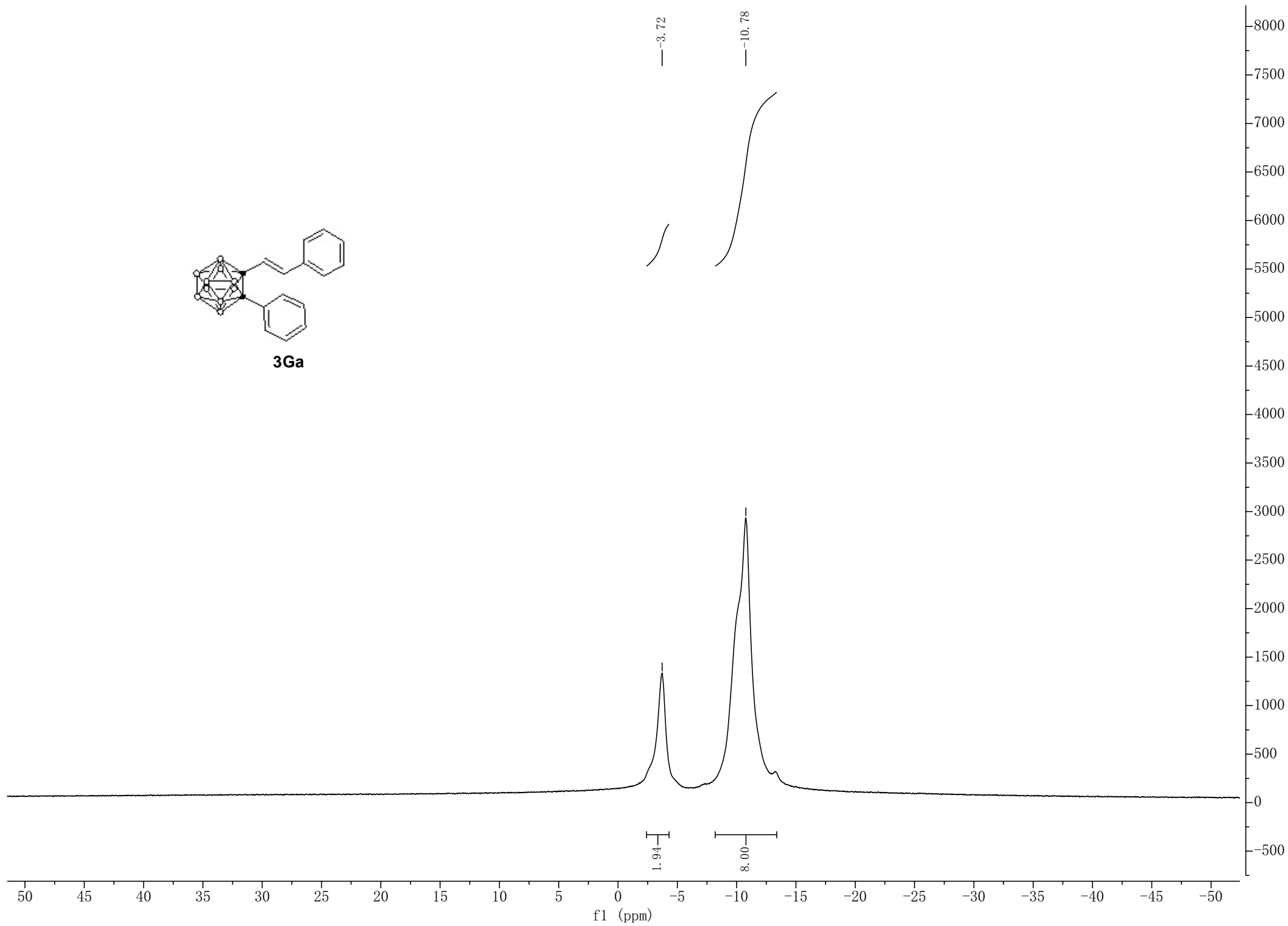


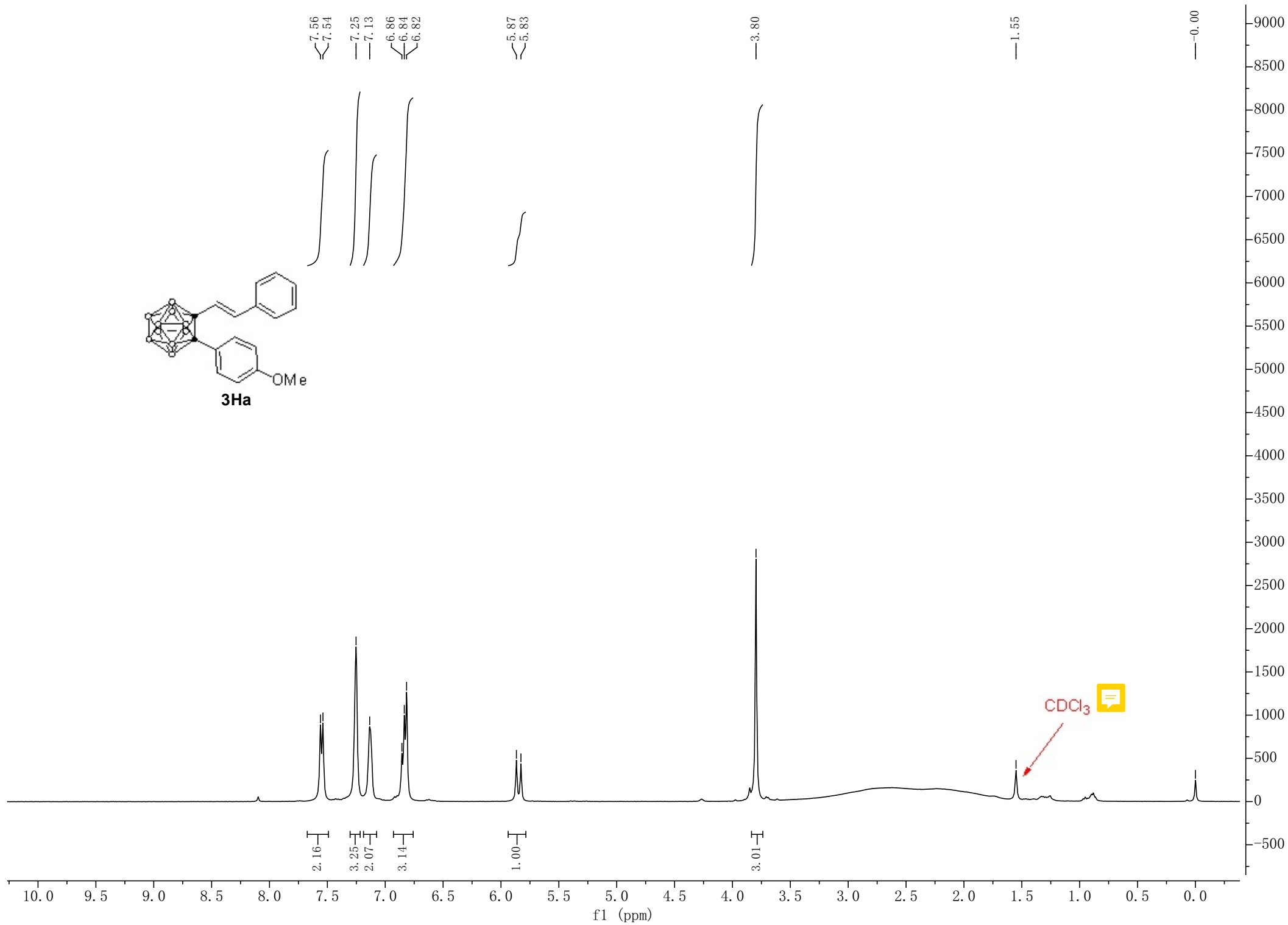
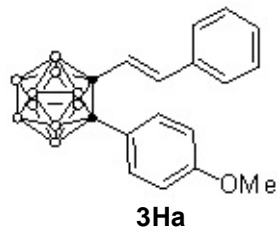
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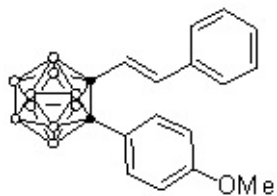




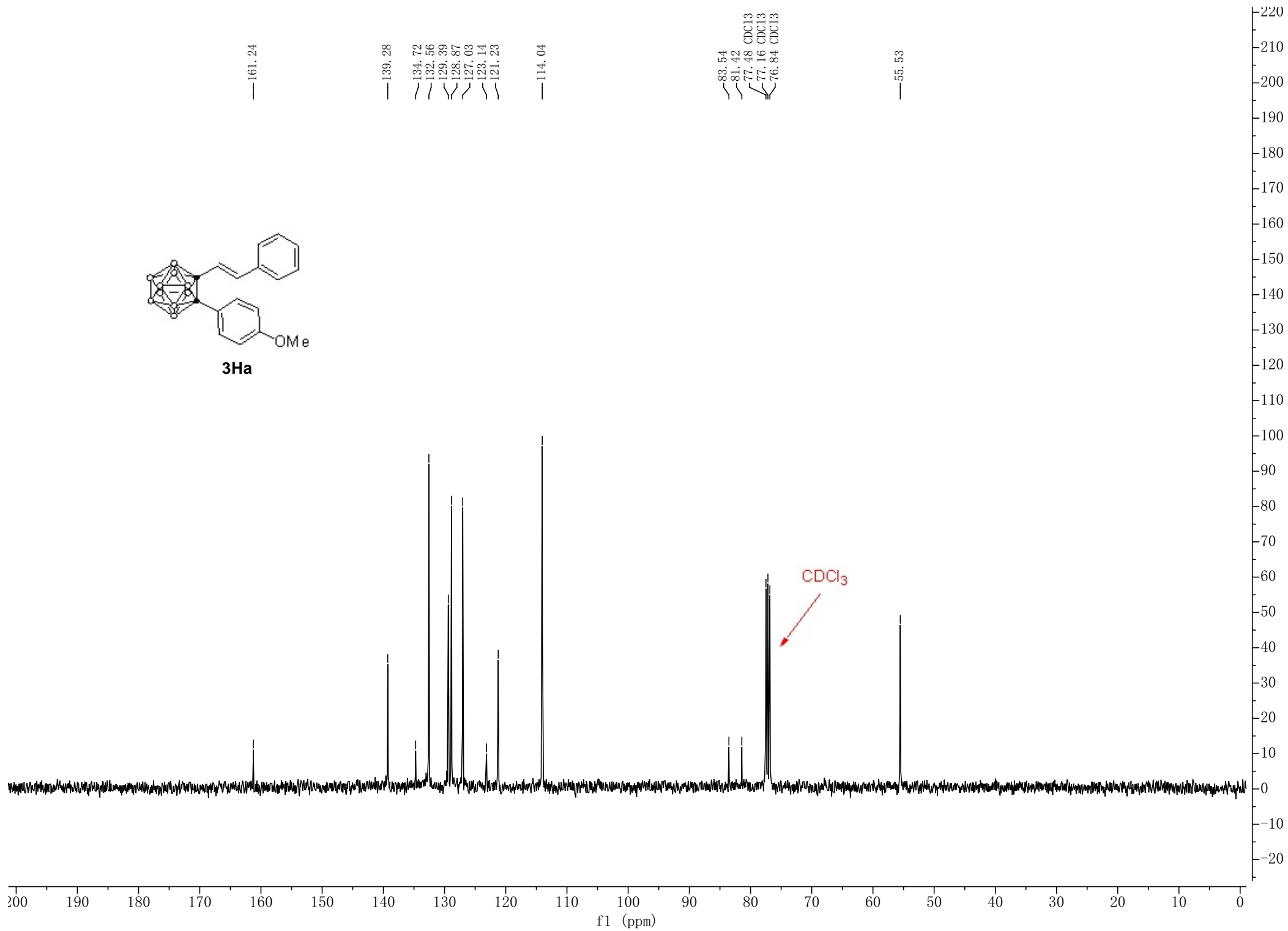
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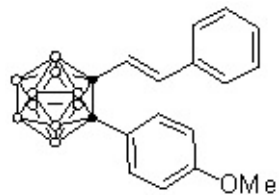




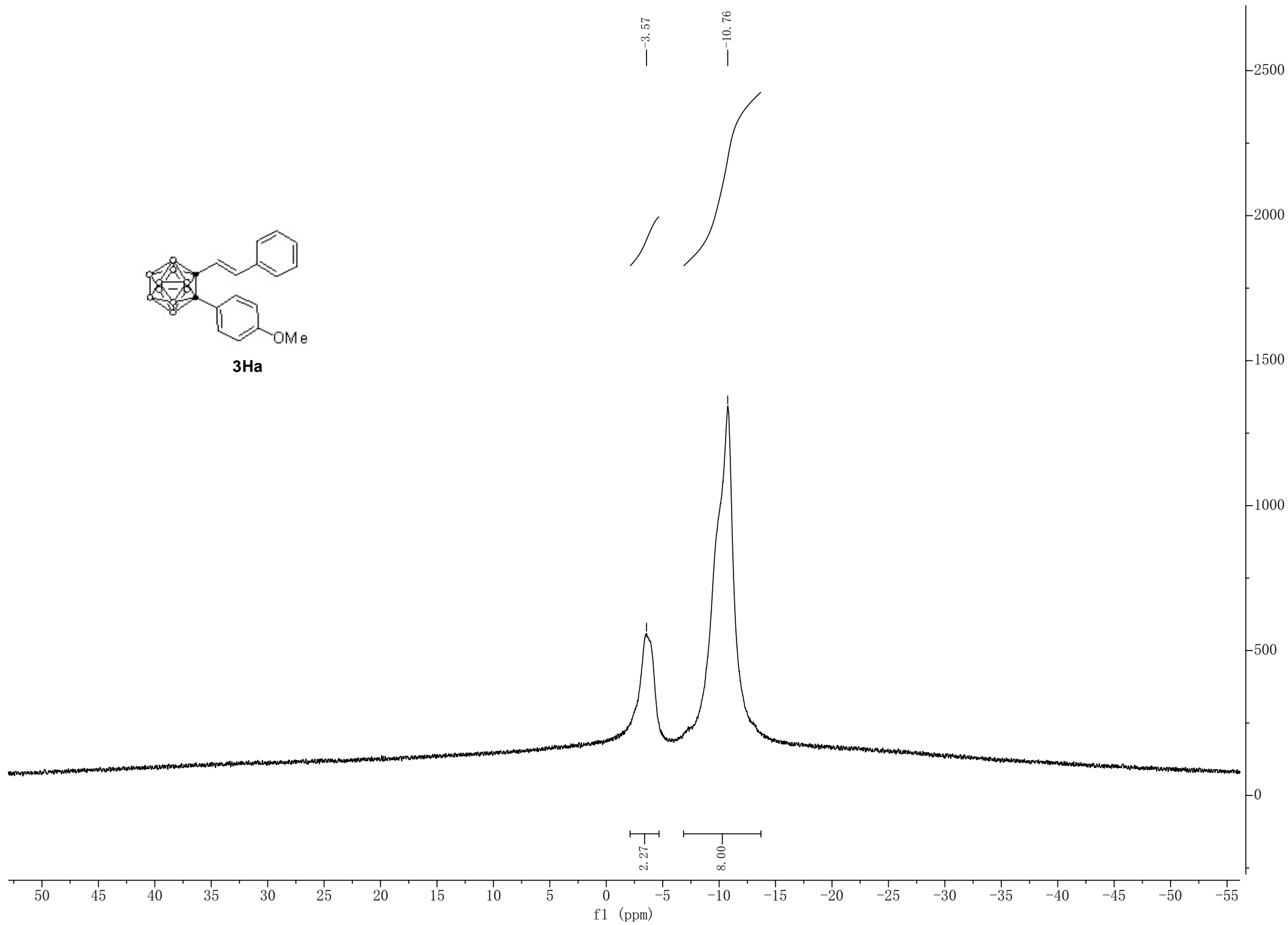


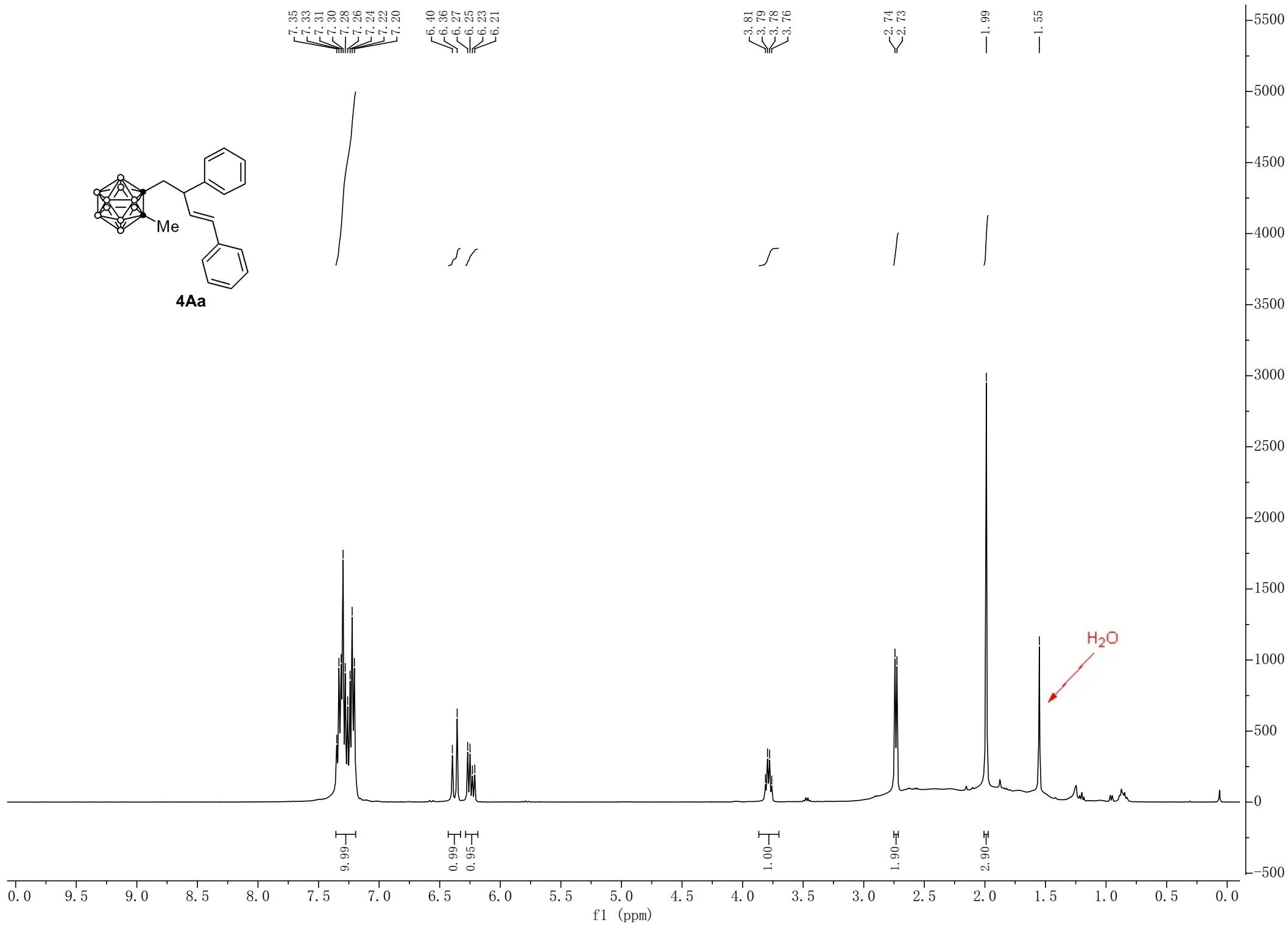
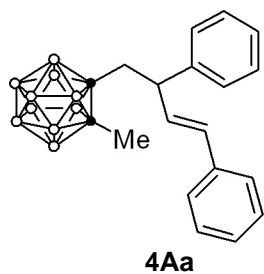
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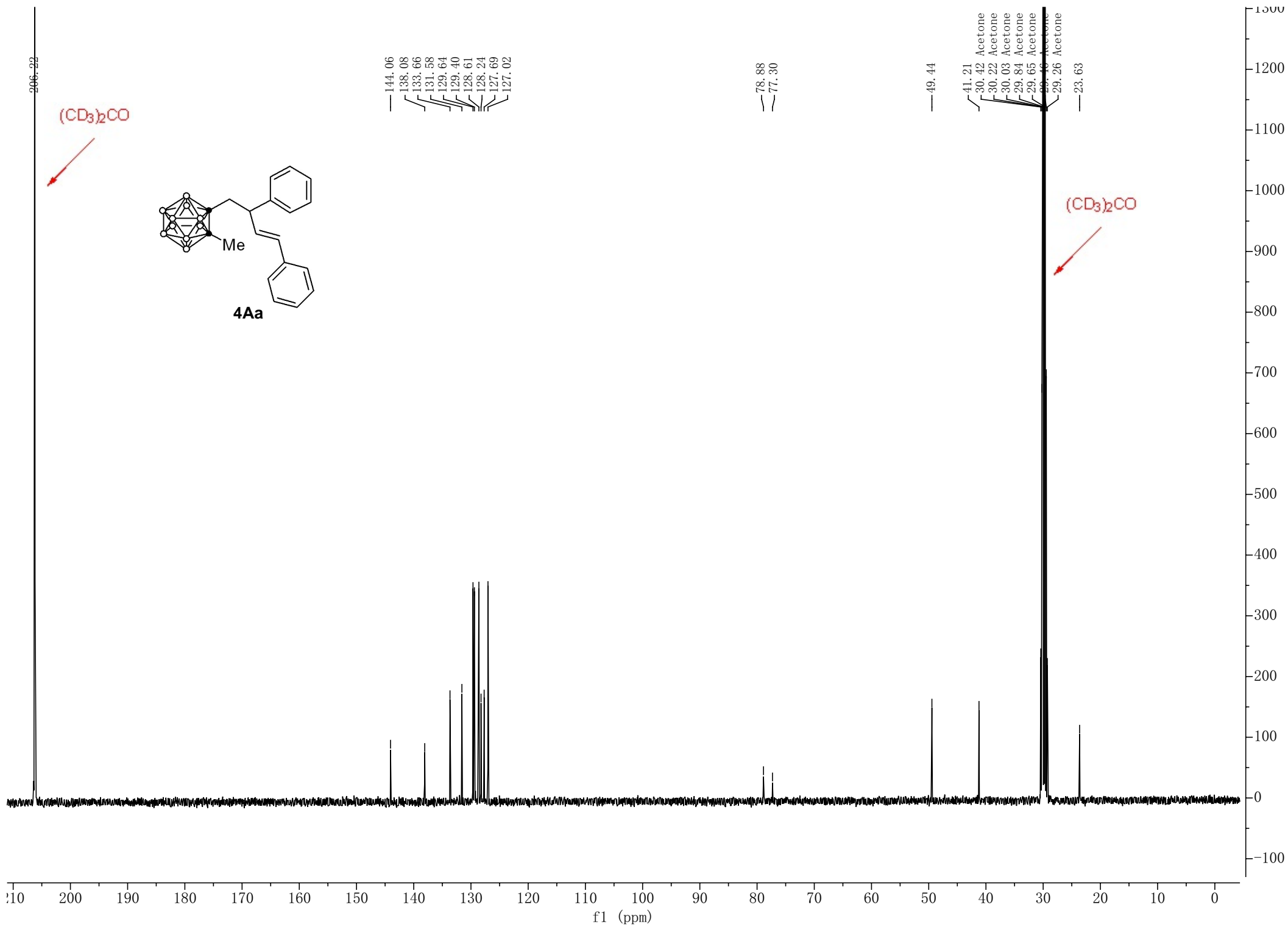




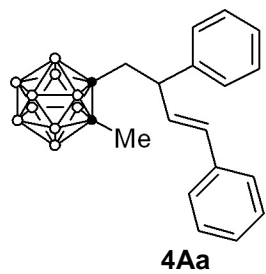
**3Ha**











— 4.33  
— 6.08  
— 10.80

