

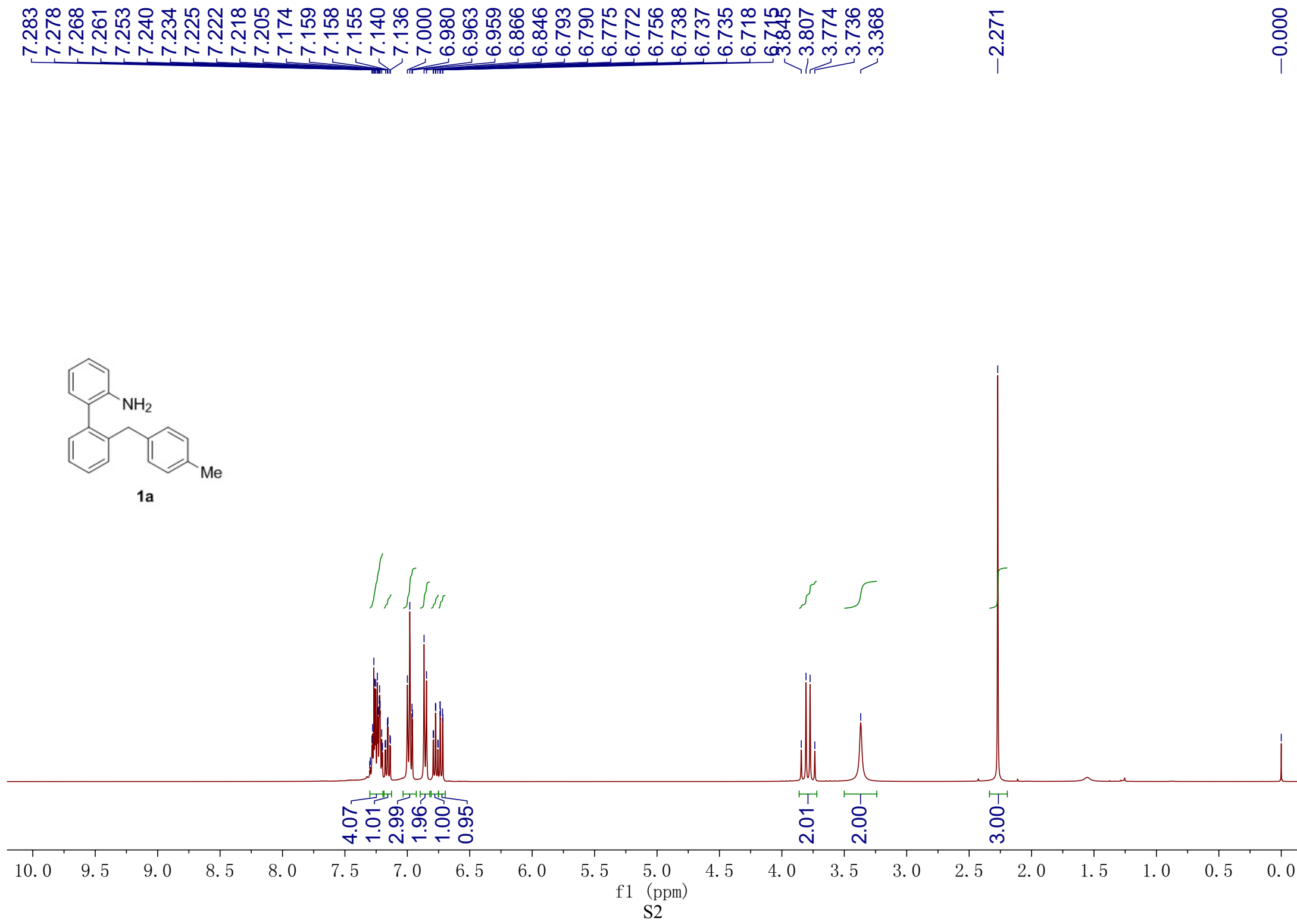
Synthesis of Phenanthridines by I₂-Mediated *sp*³ C–H Amination

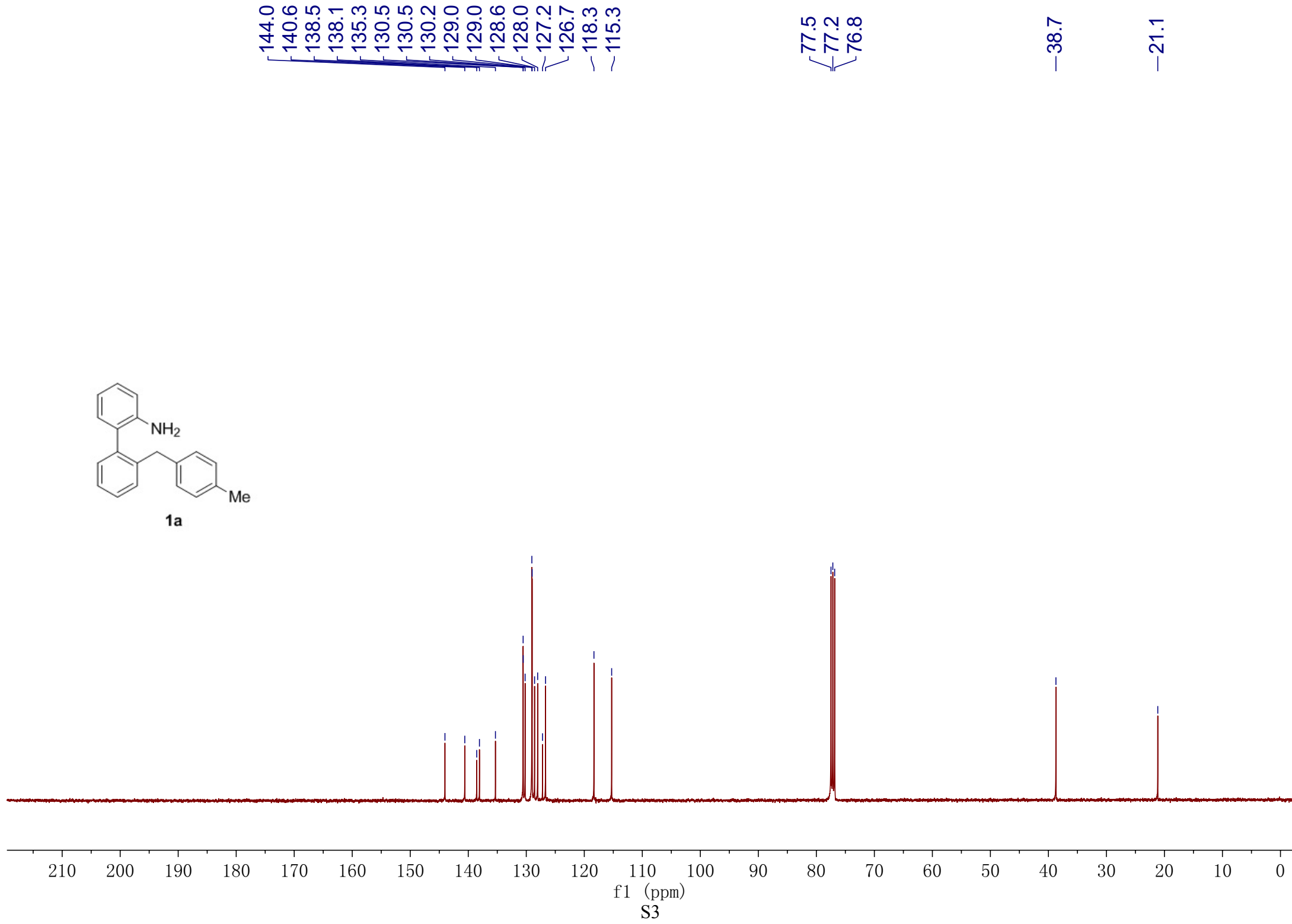
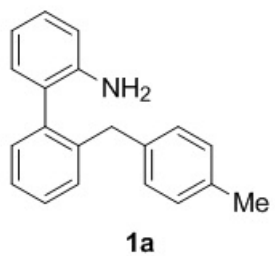
Benyao Fang, Jiao Hou, Jinyue Tian, Wenquan Yu,* and Junbiao Chang*

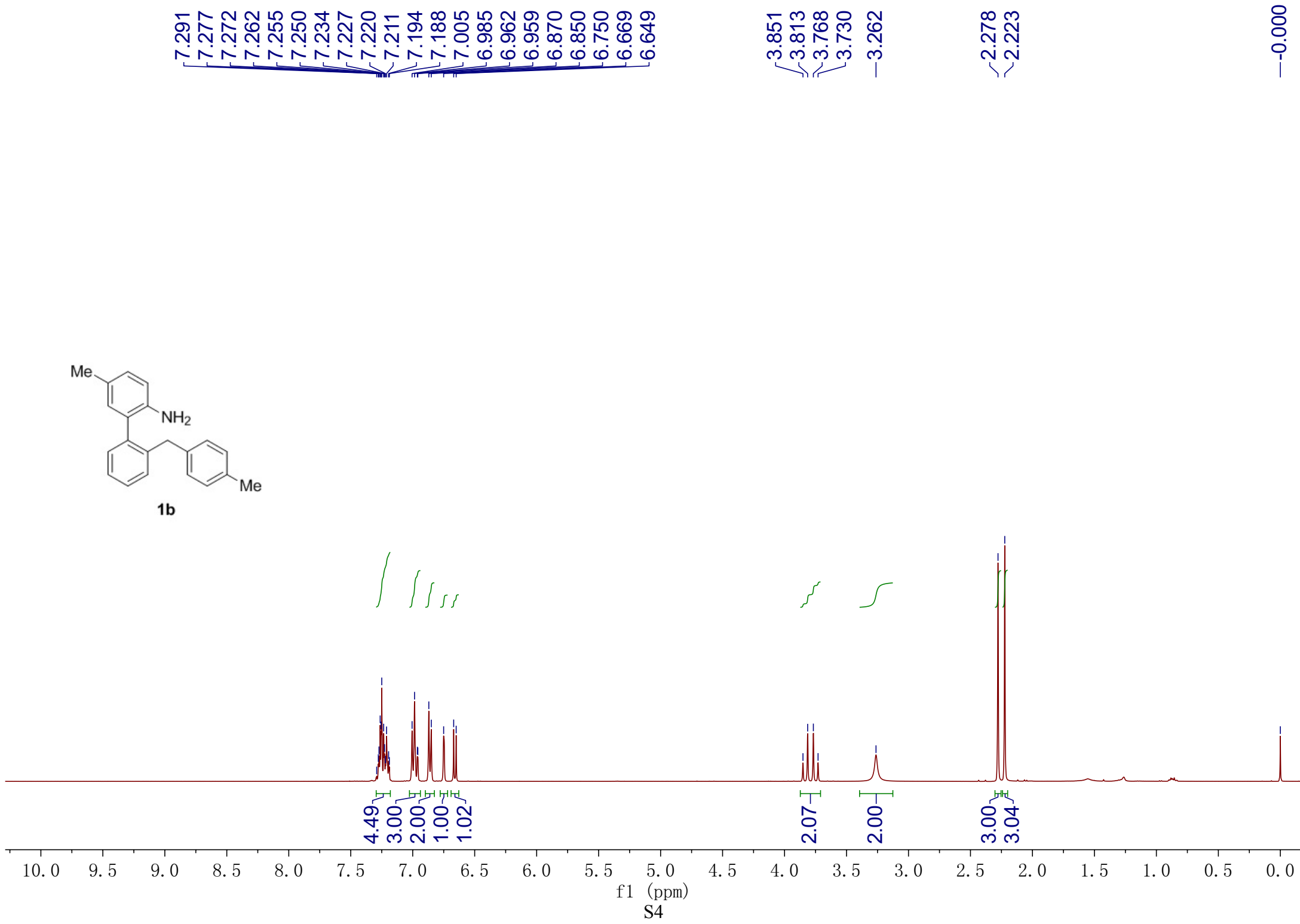
College of Chemistry, Zhengzhou University, Zhengzhou, Henan Province 450001, China

1. NMR Spectra of Isolated Compounds

S2





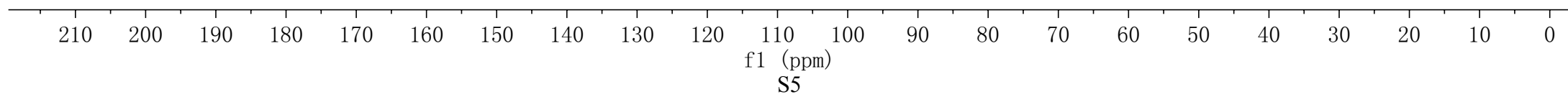
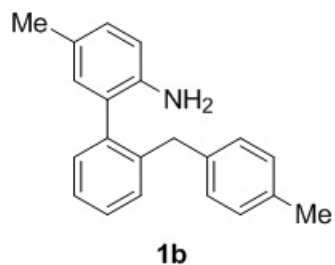


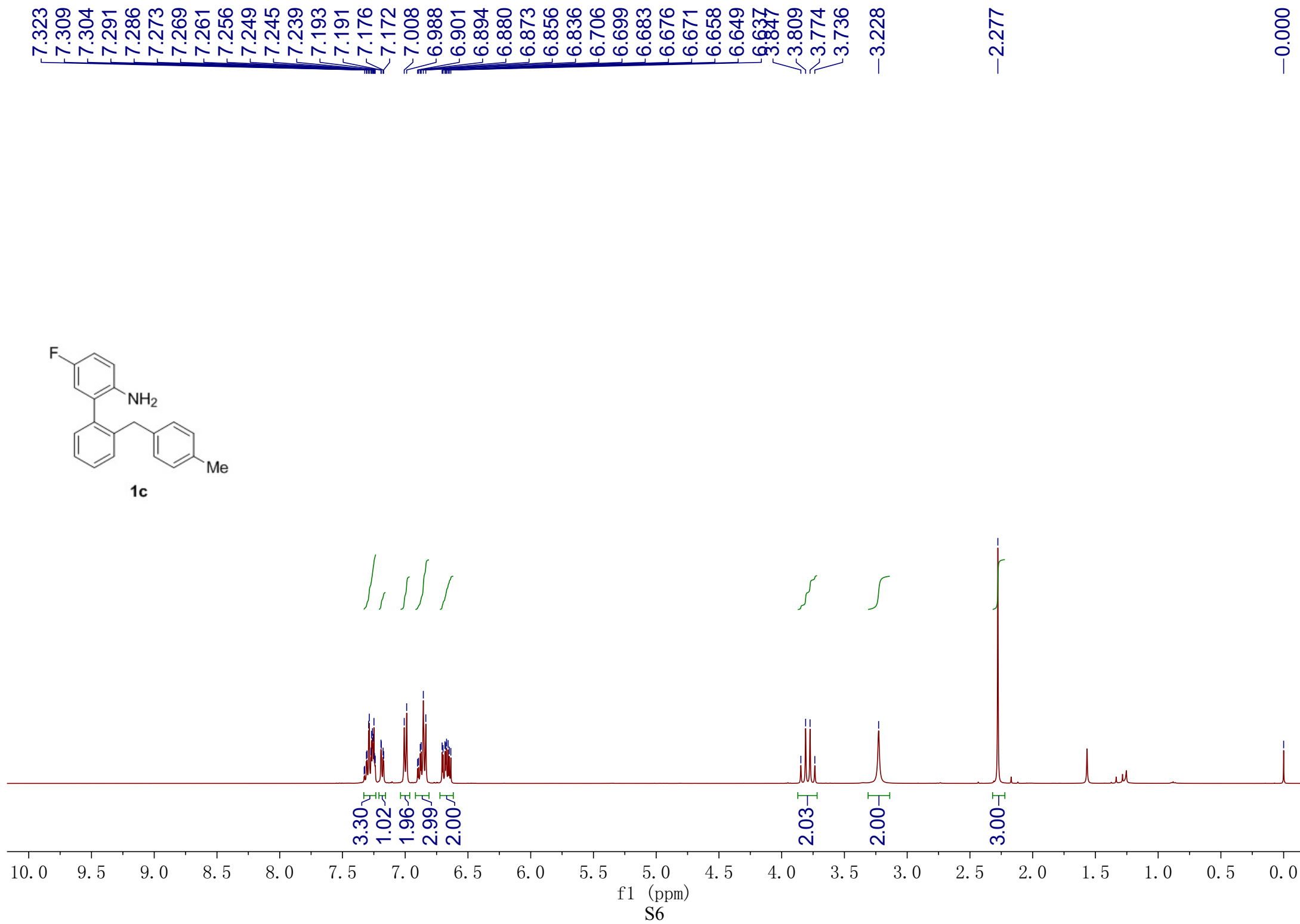
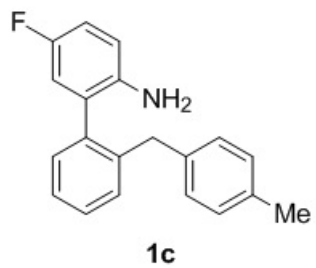
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140.6
138.8
138.2
135.3
131.1
130.5
130.1
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129.1
128.9
127.9
127.5
127.3
126.6
115.4

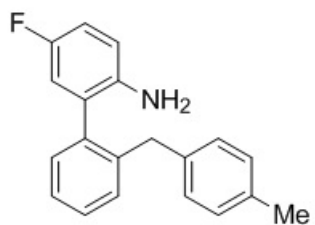
77.5
77.2
76.8

38.8

21.1
20.6







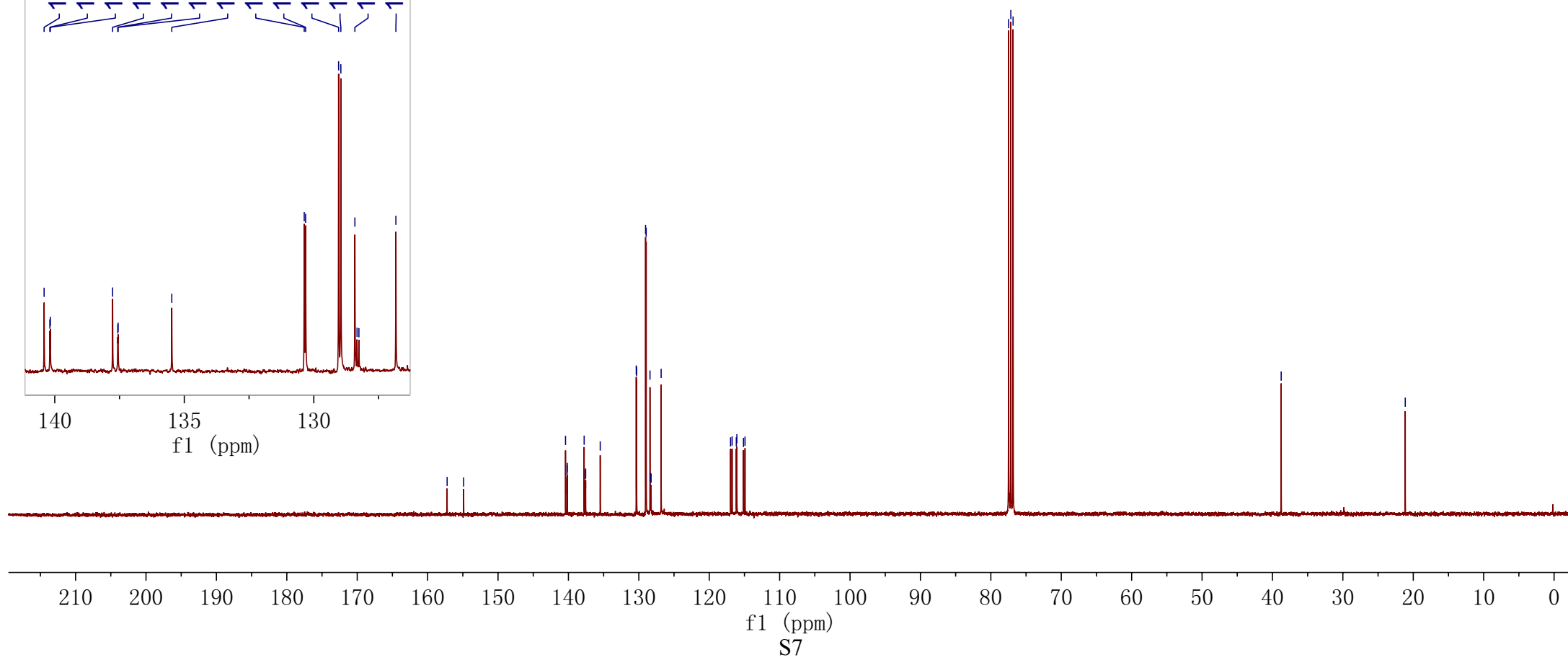
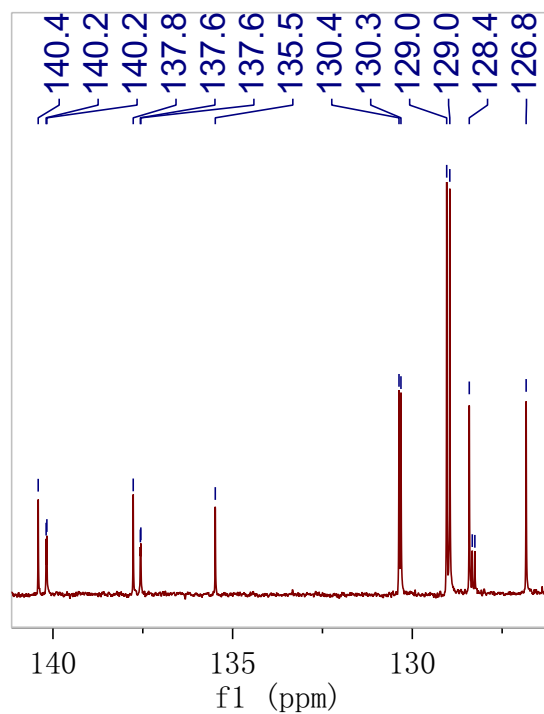
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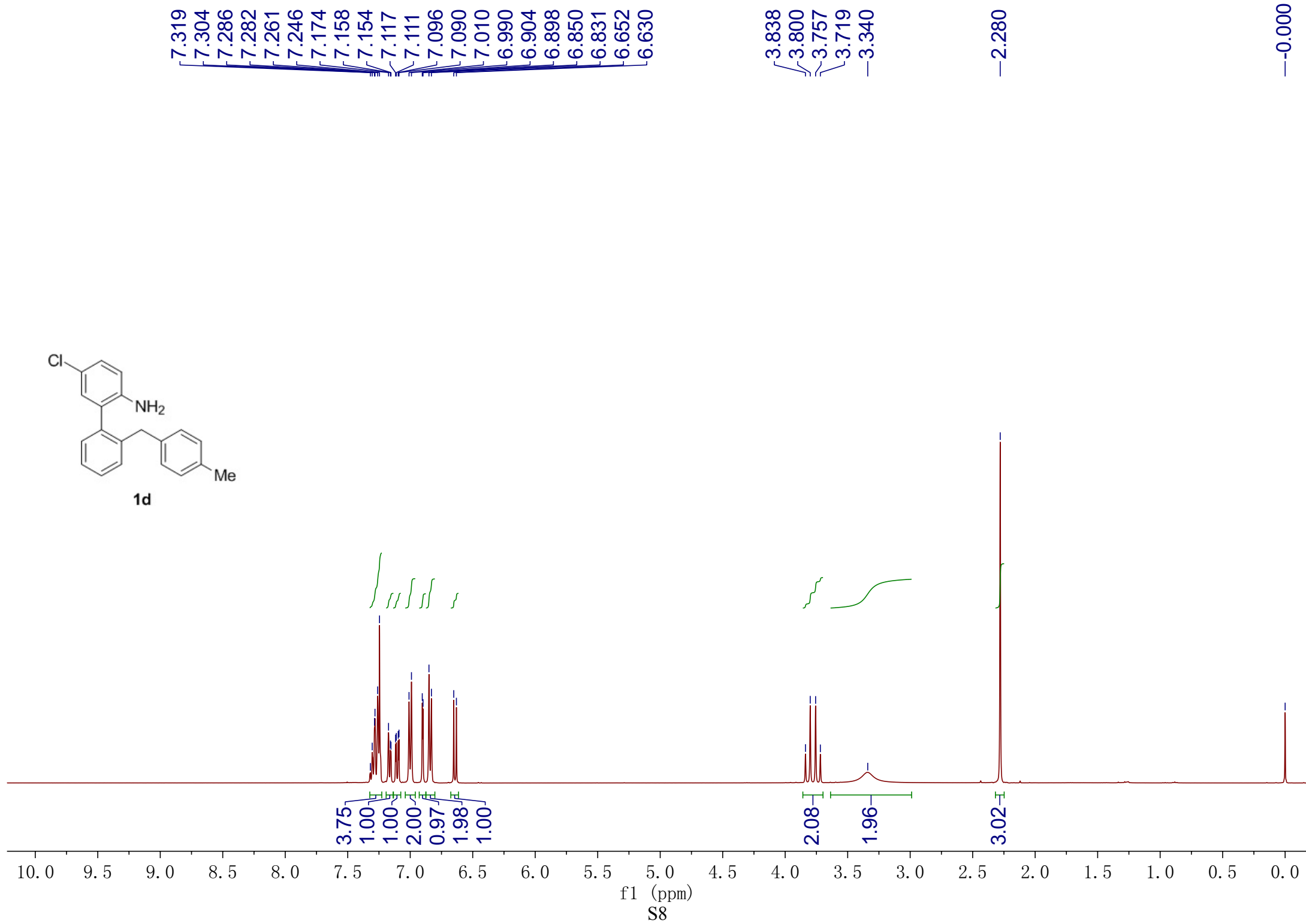
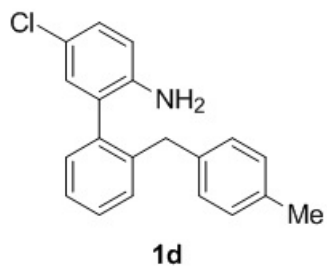
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137.8
130.4
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117.8
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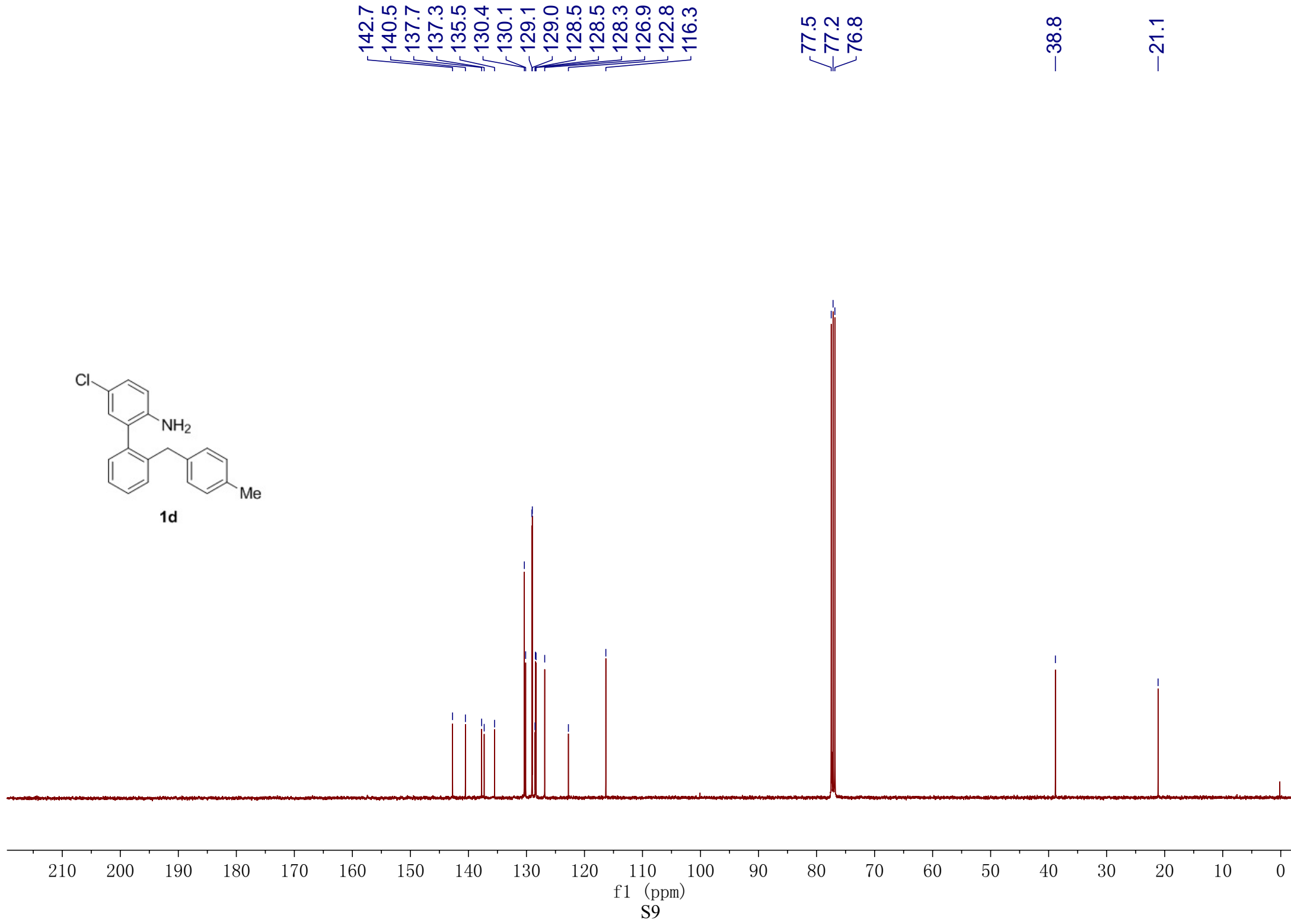
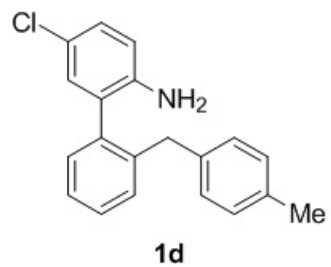
77.5
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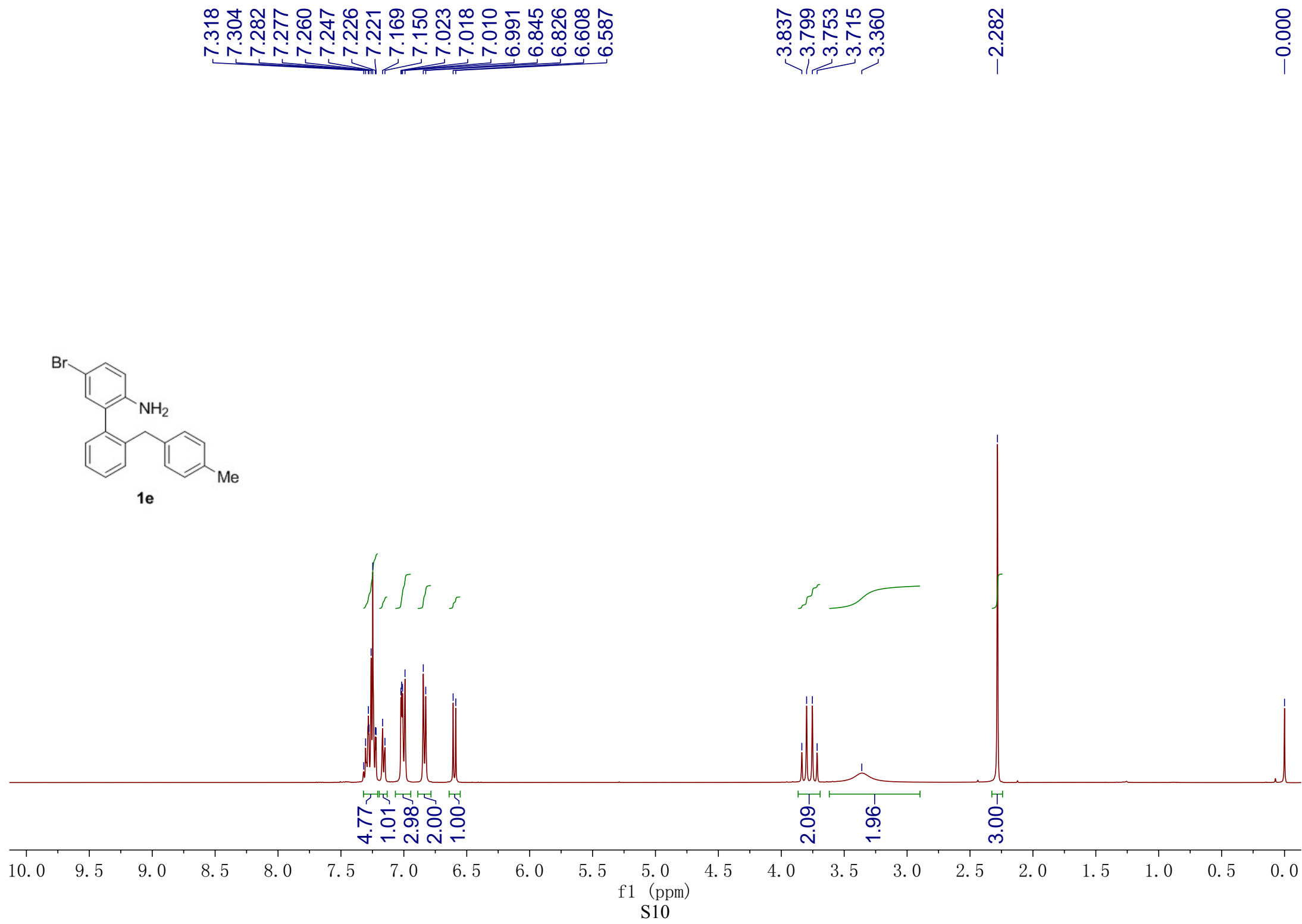
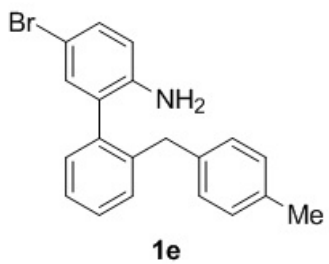
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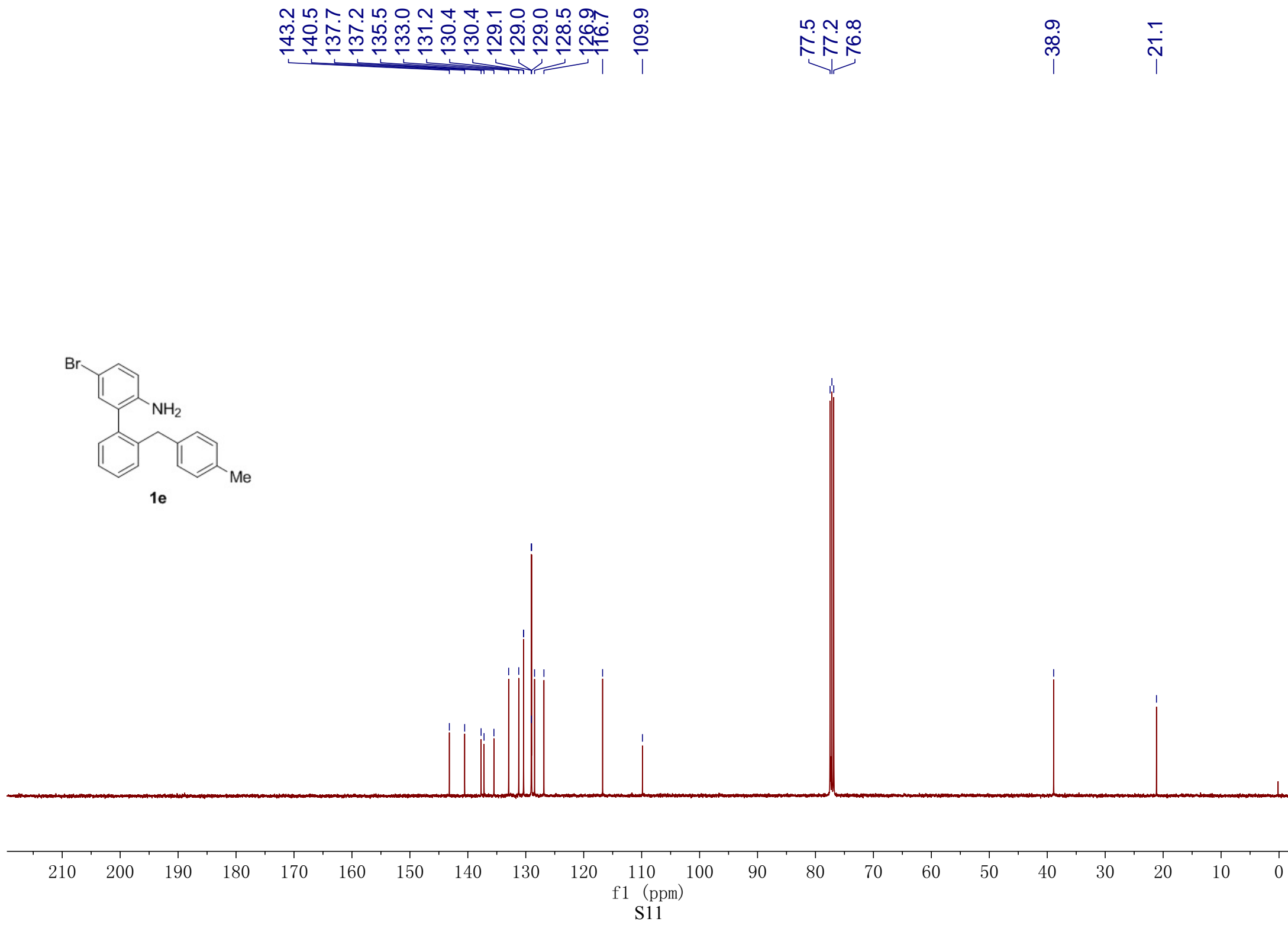
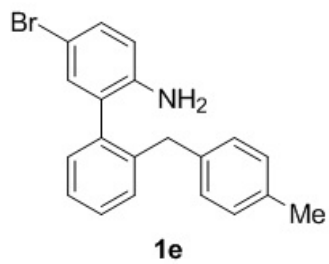
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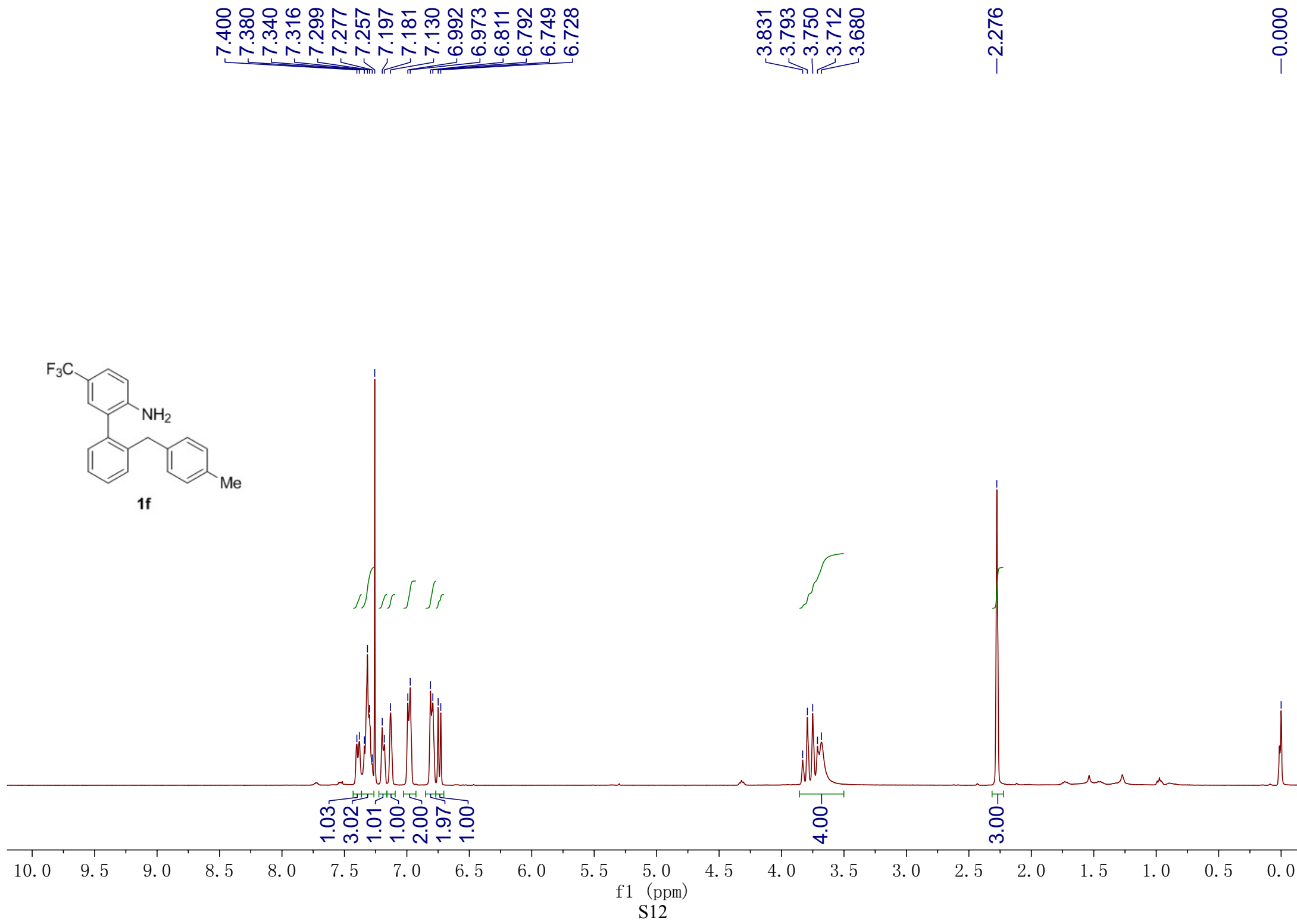
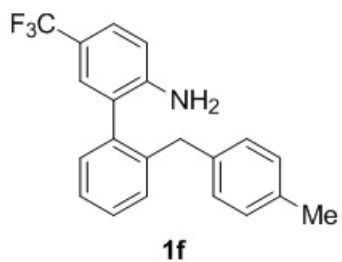


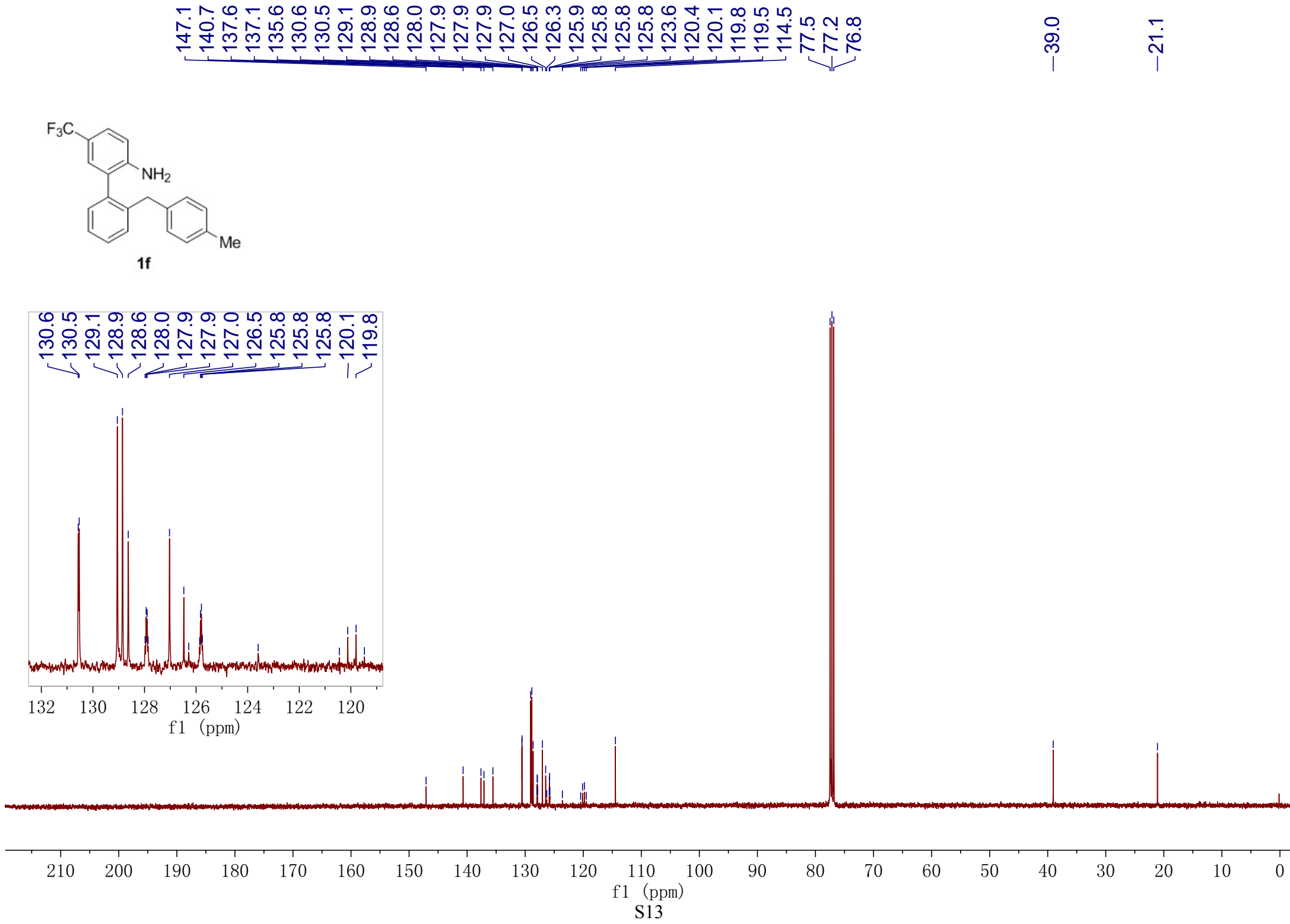
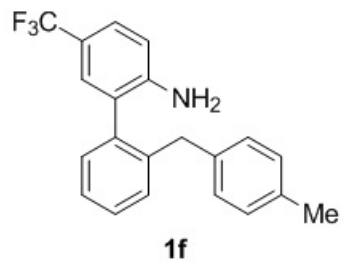


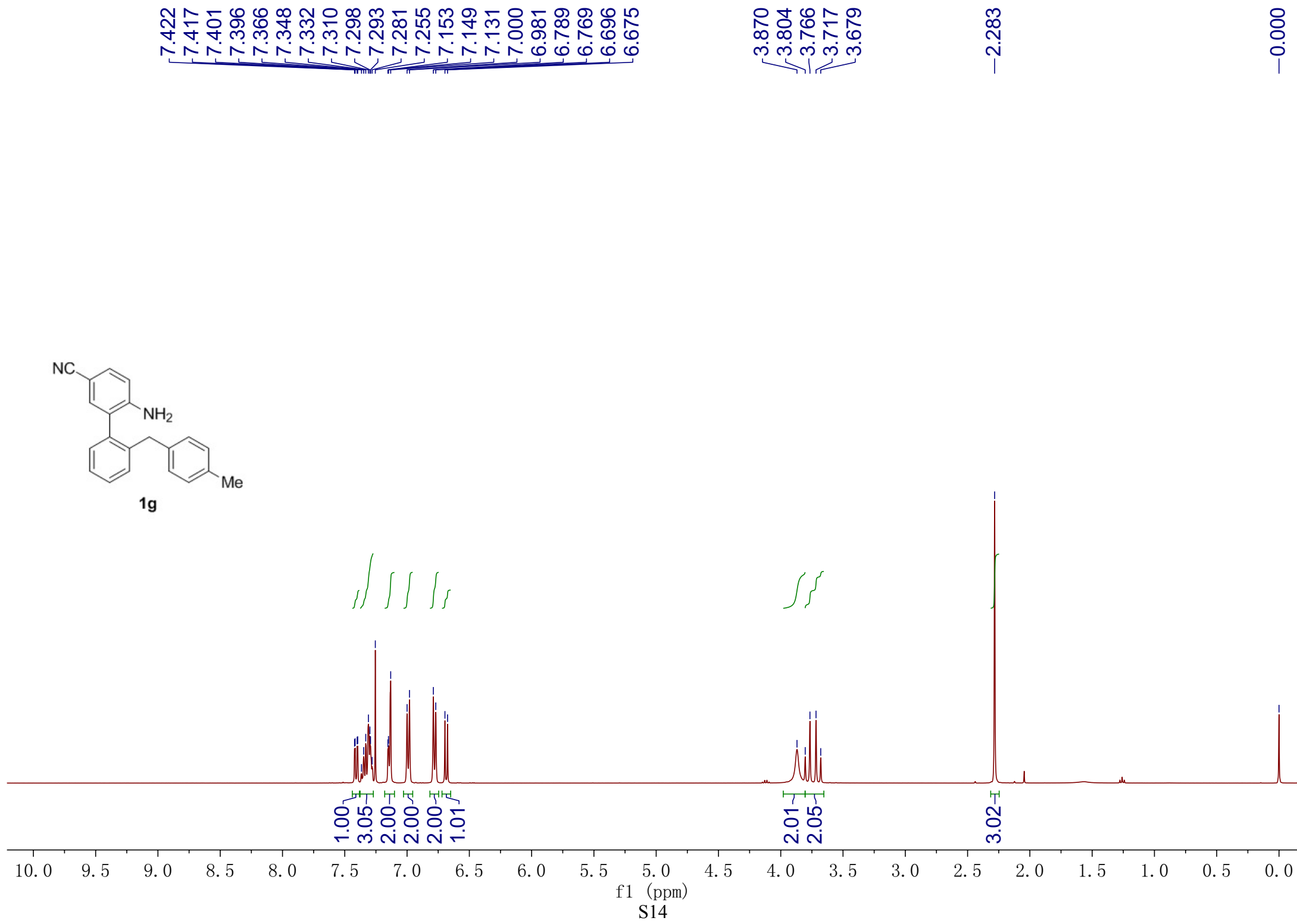
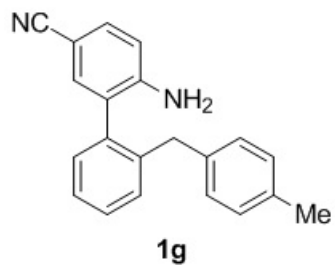


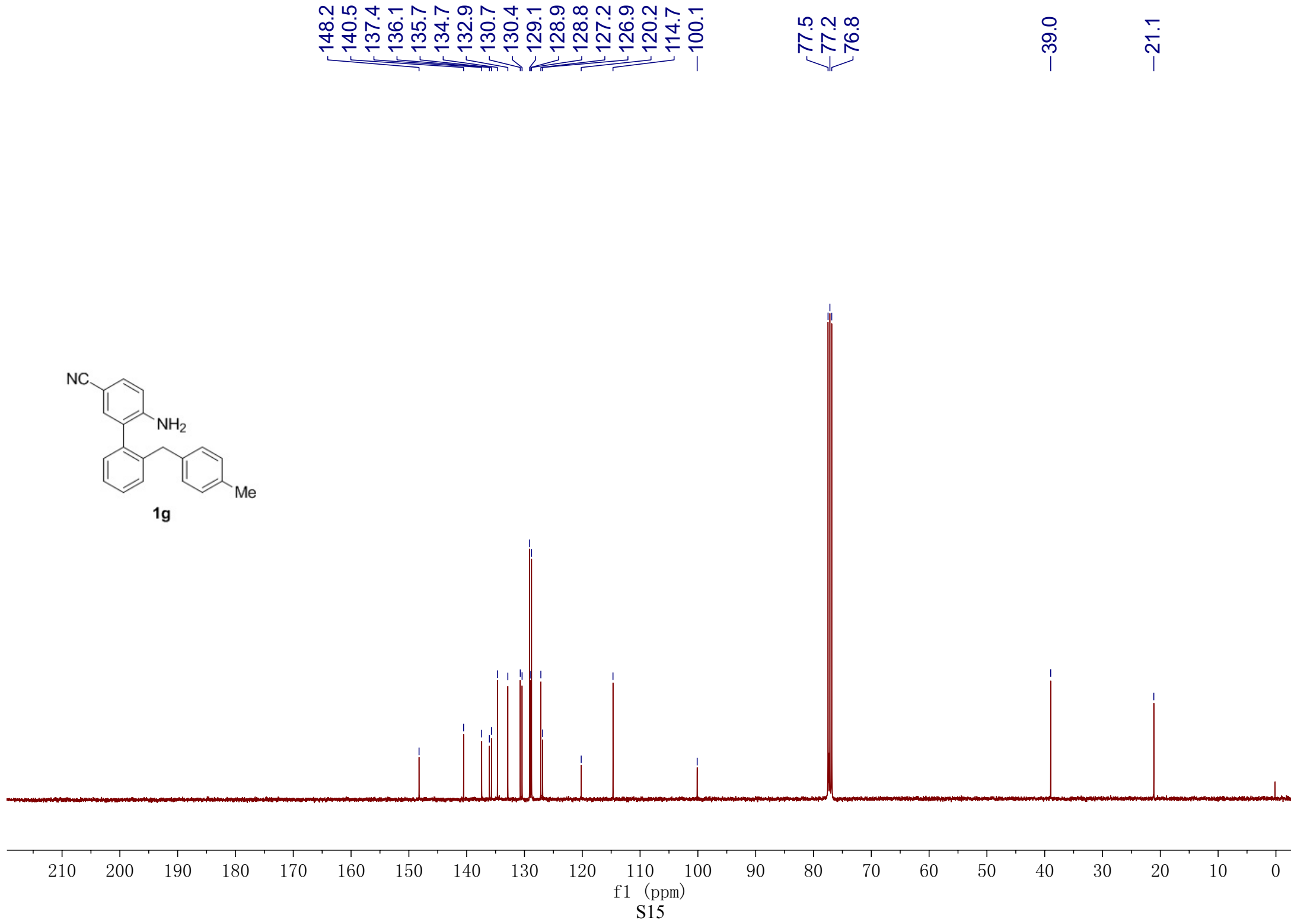
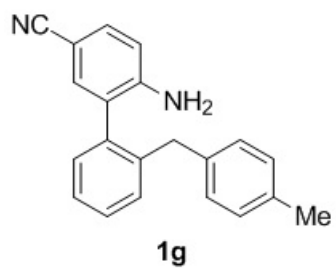


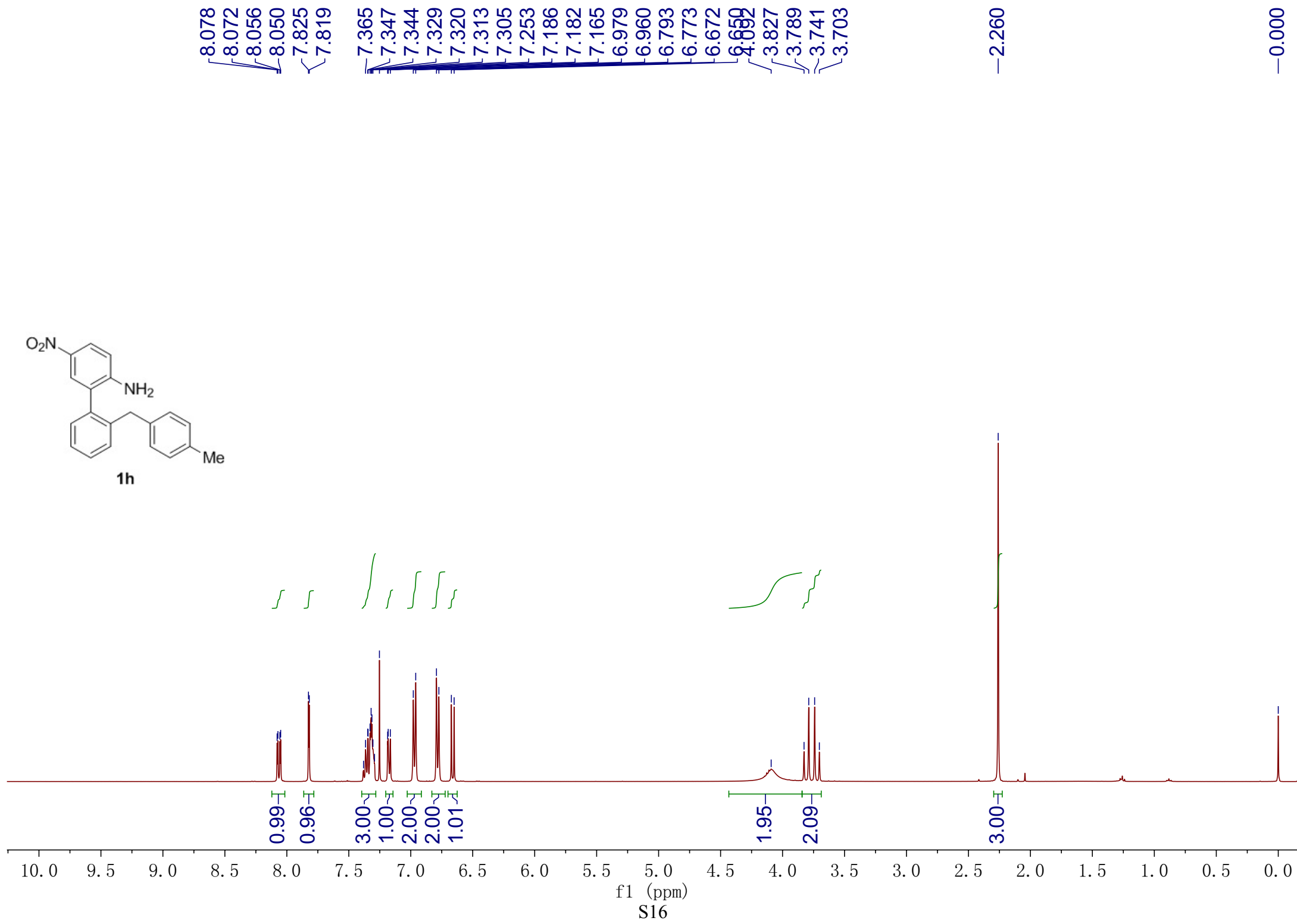
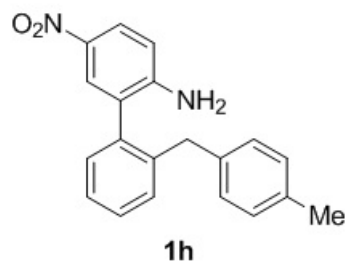


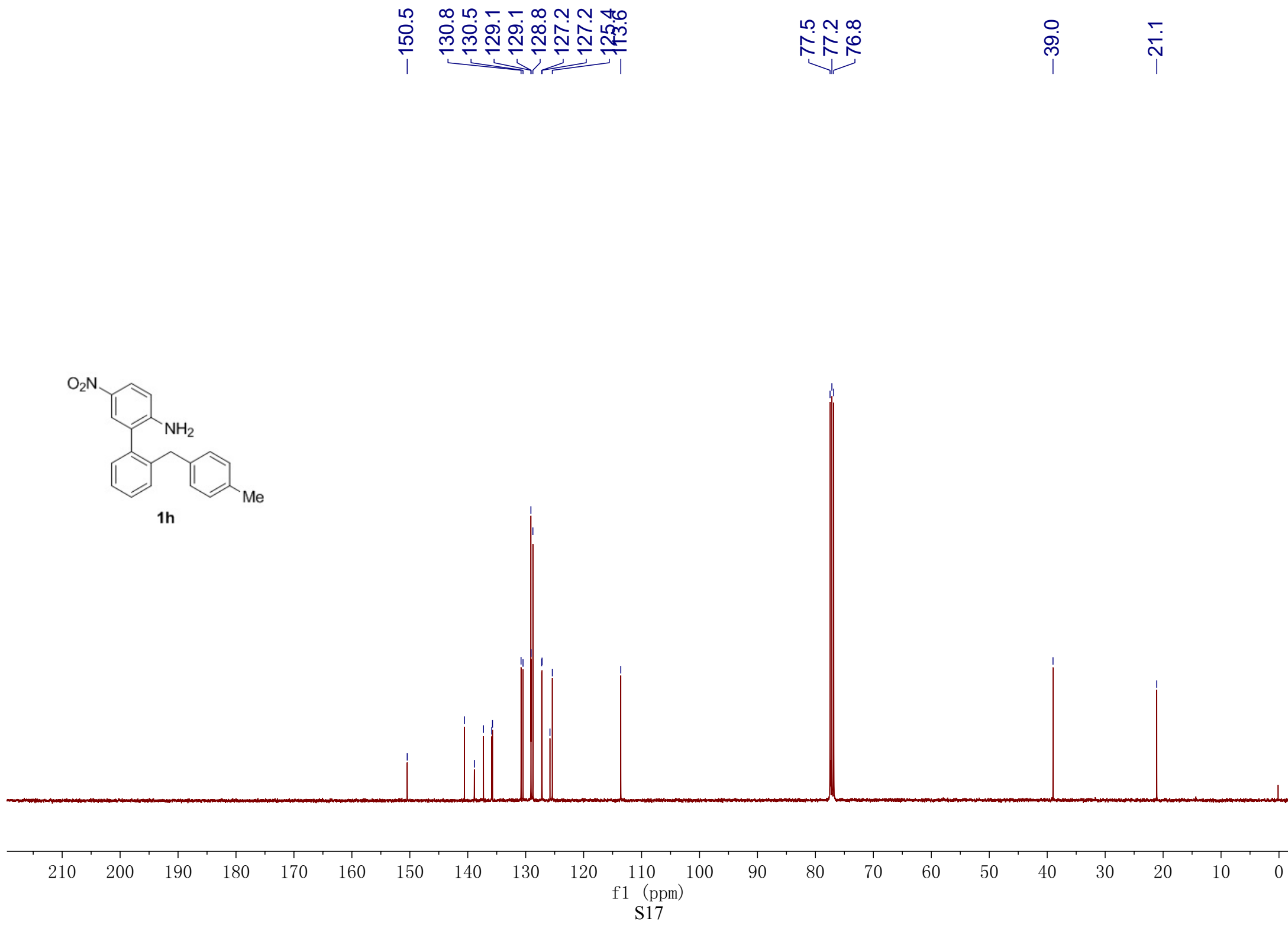
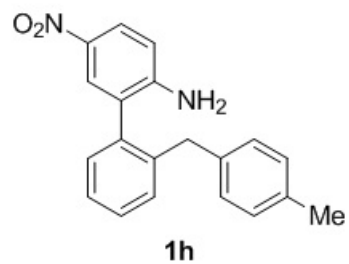


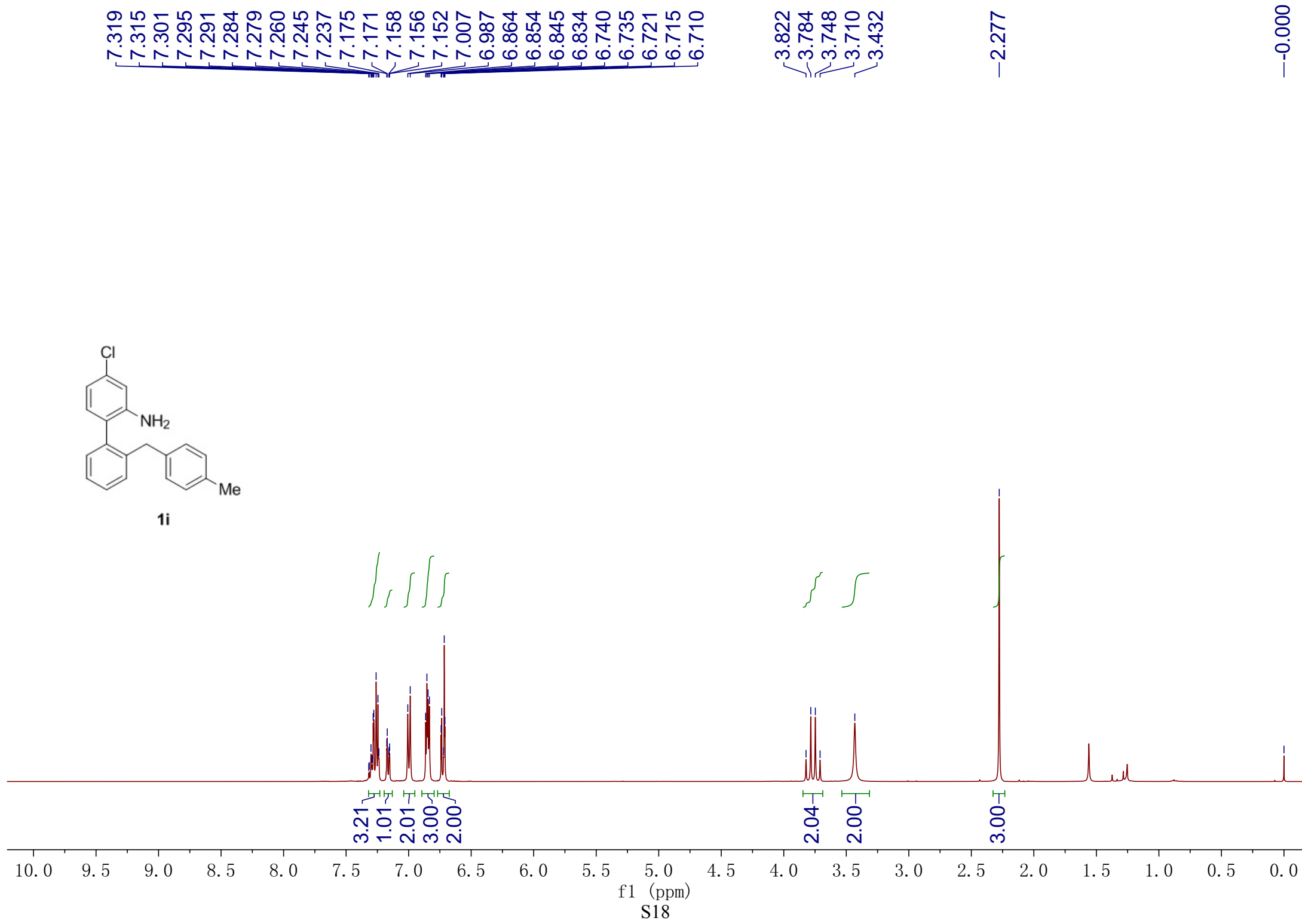


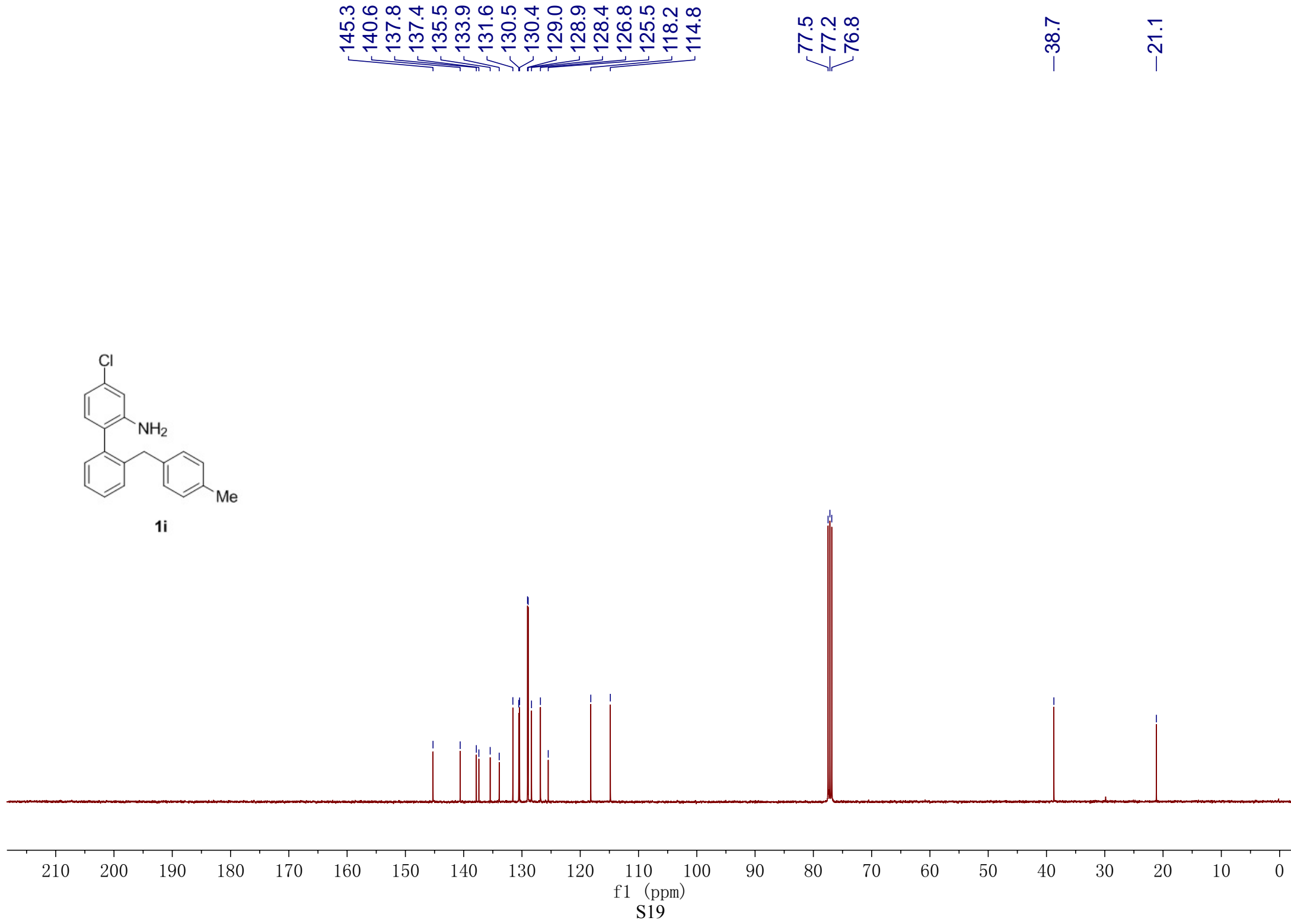
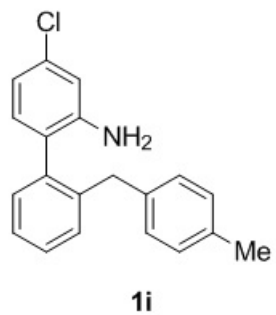


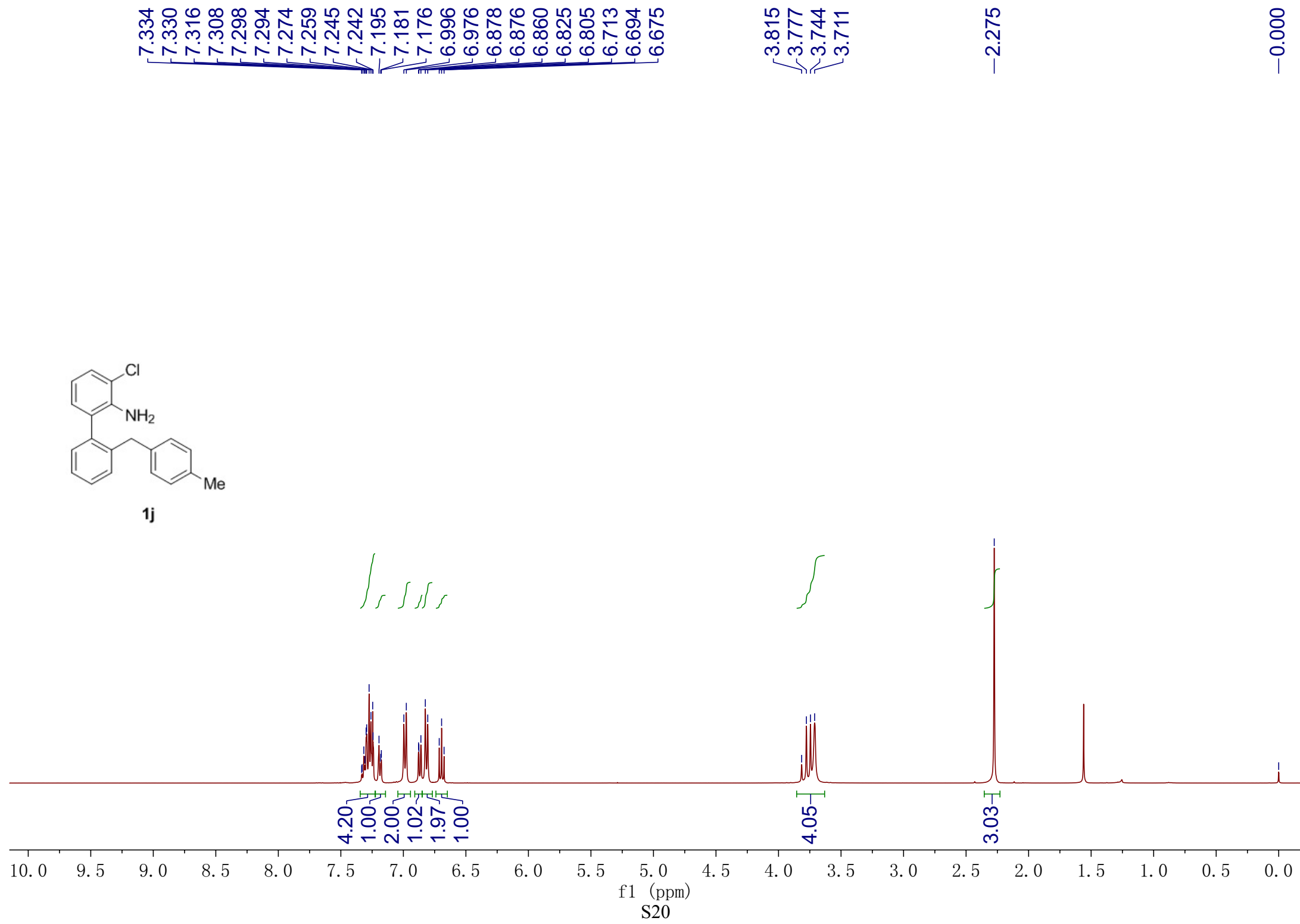


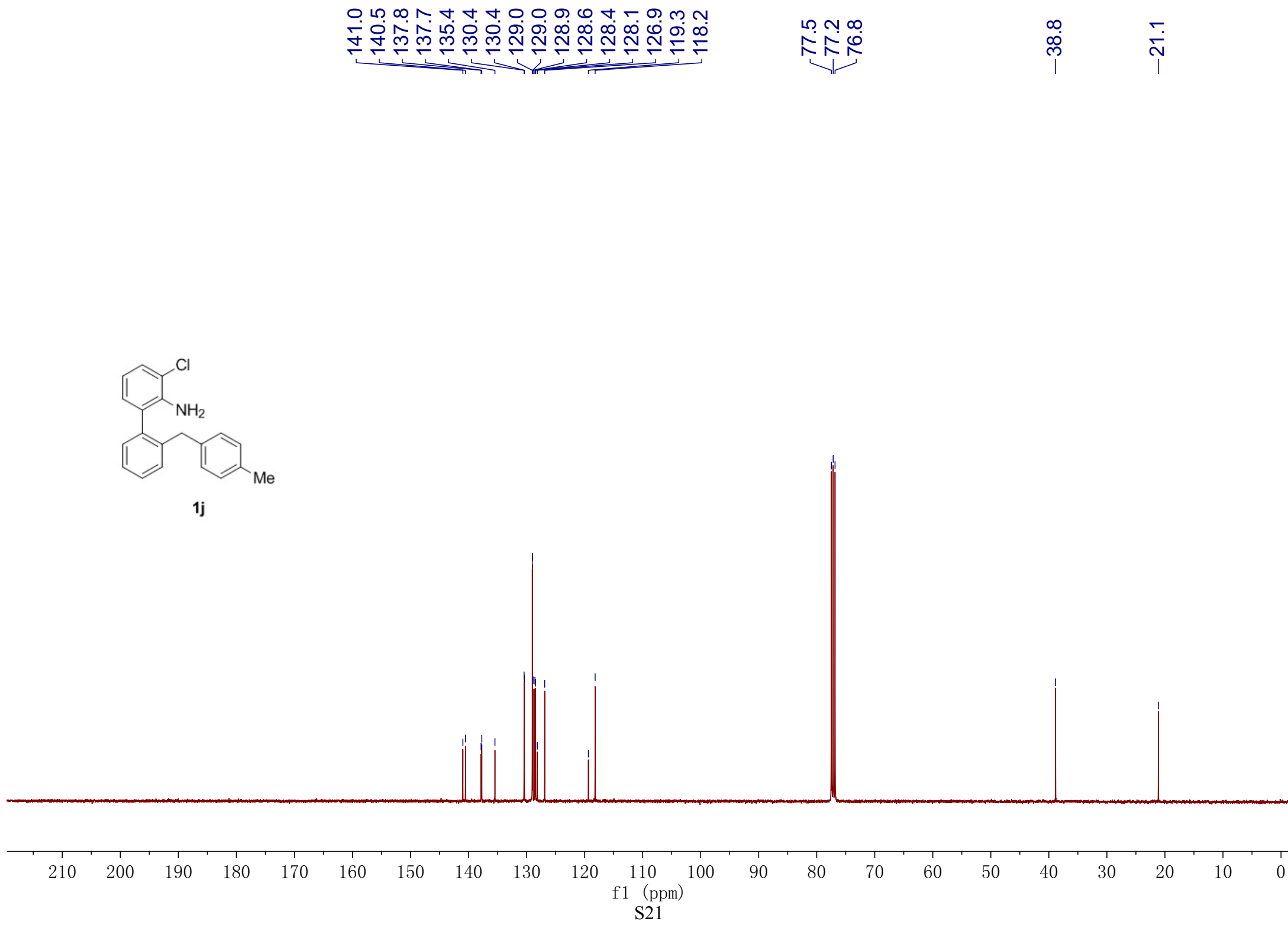
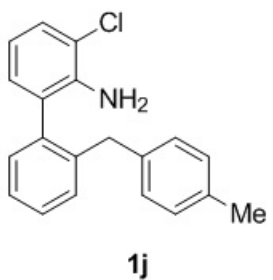


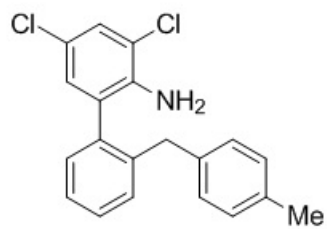




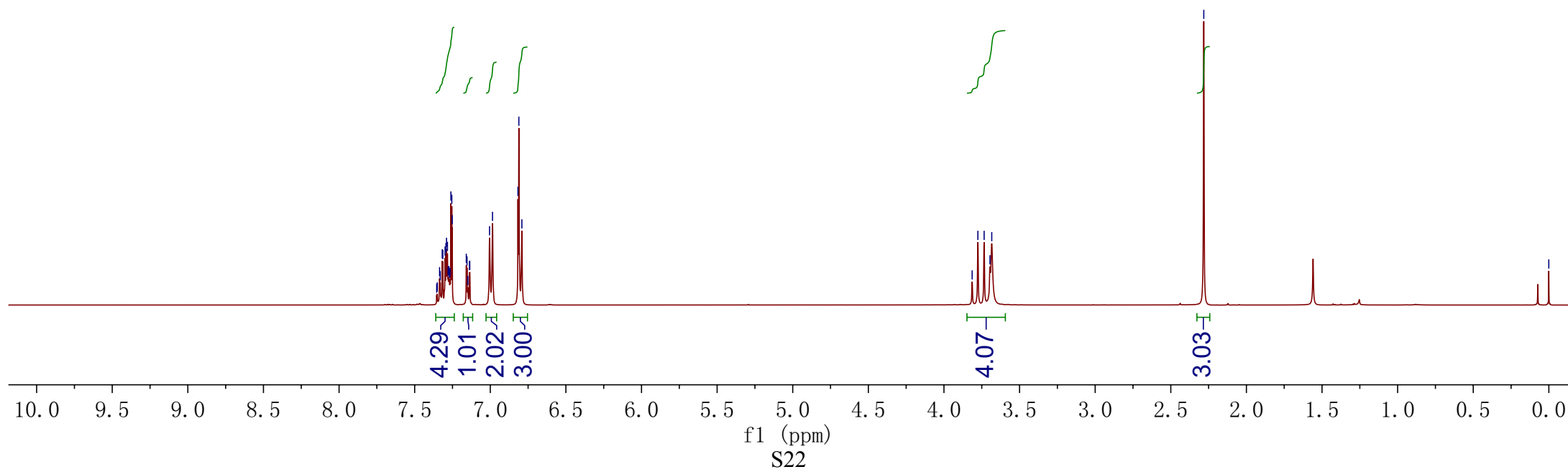


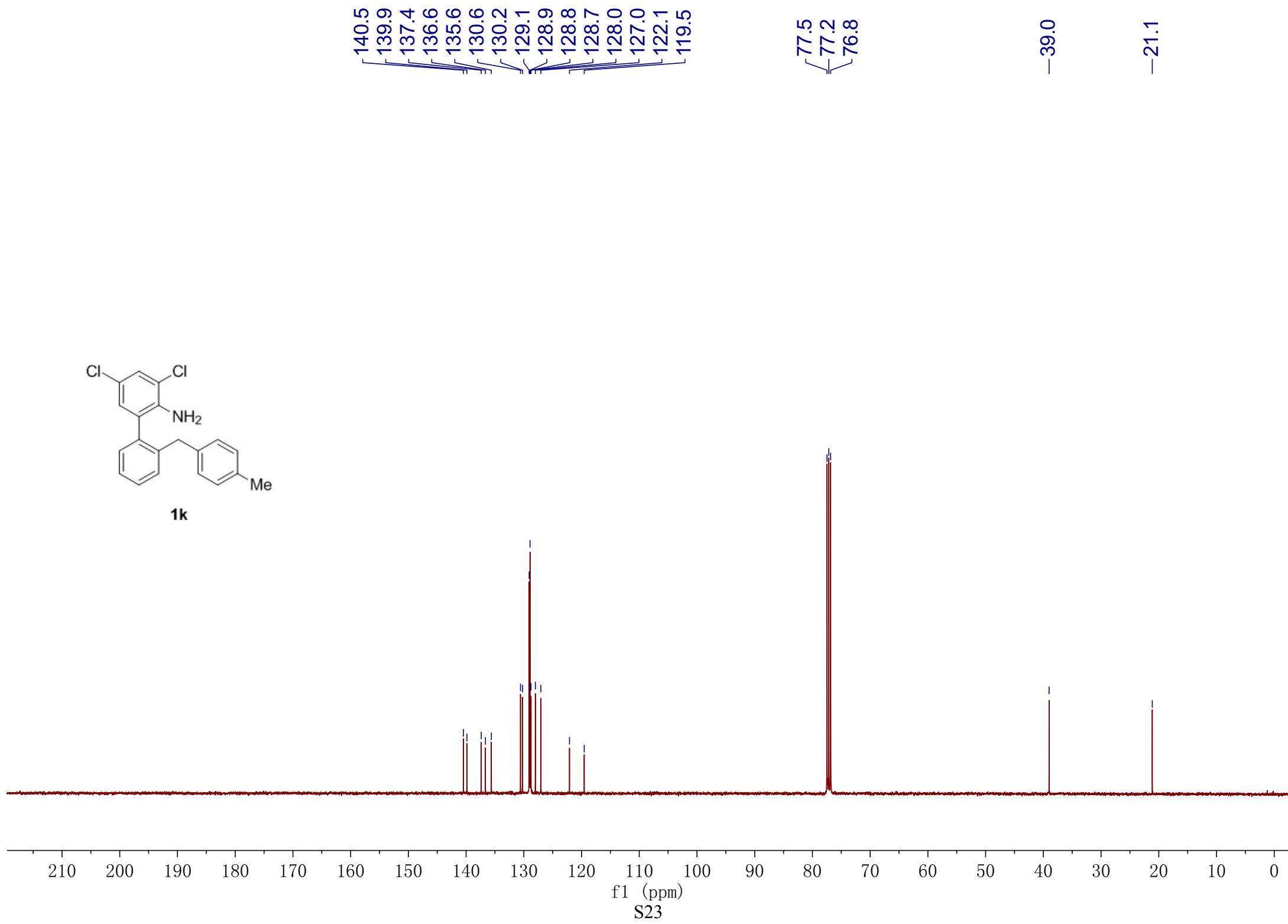
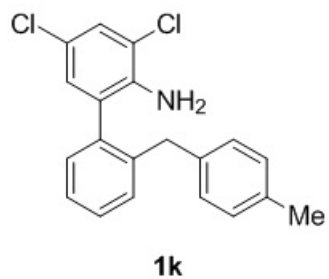


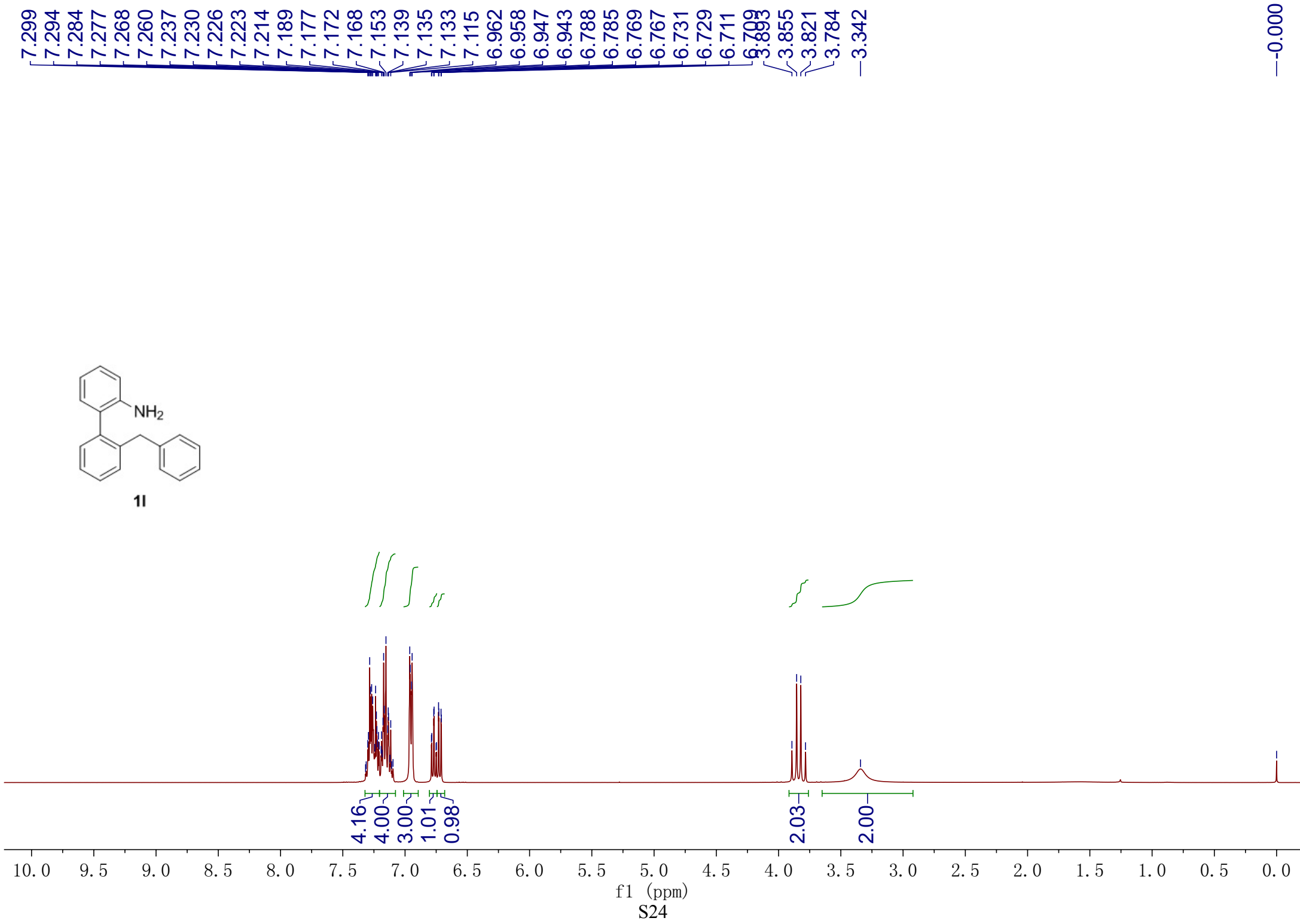


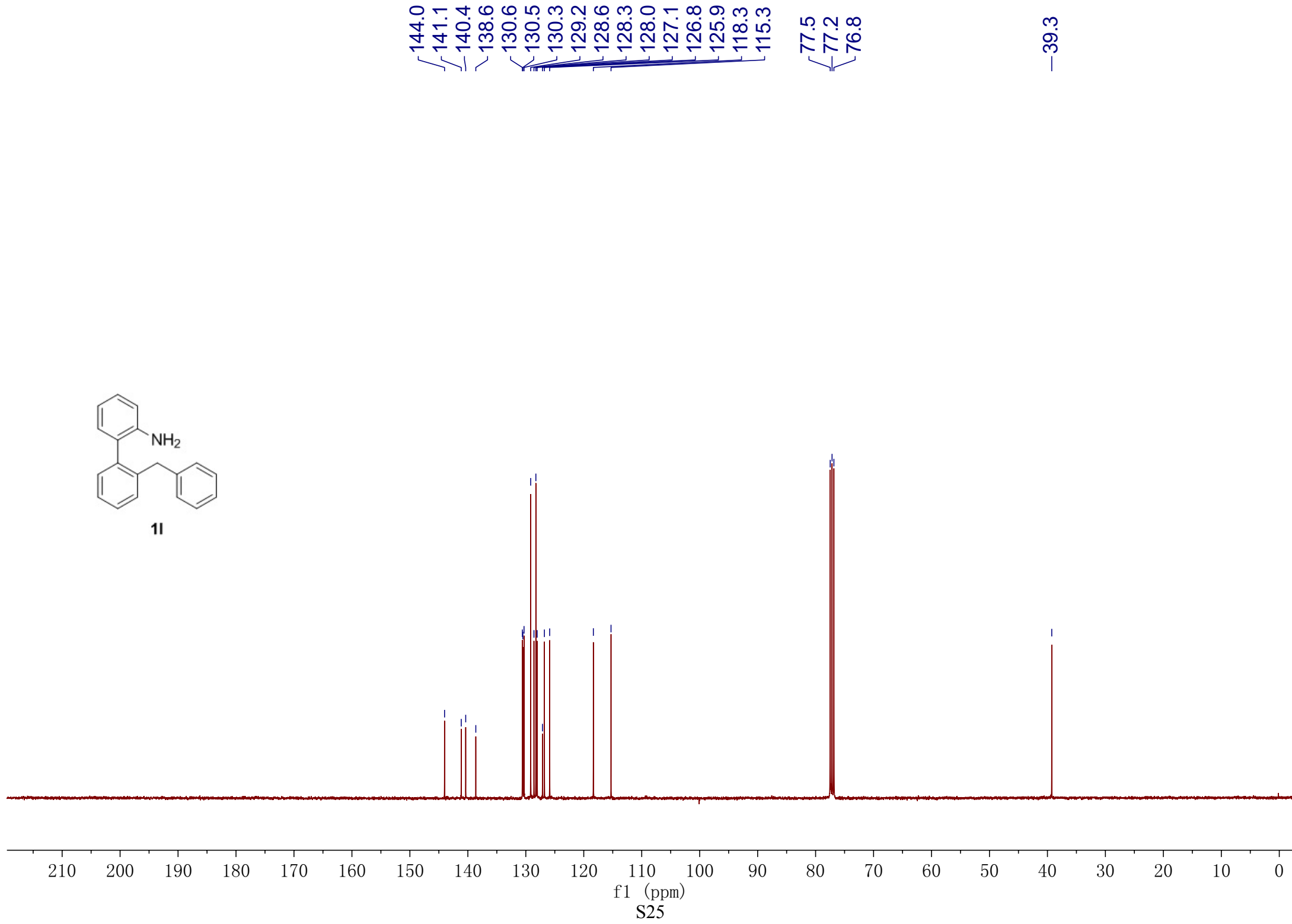
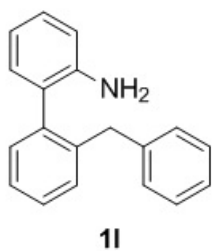


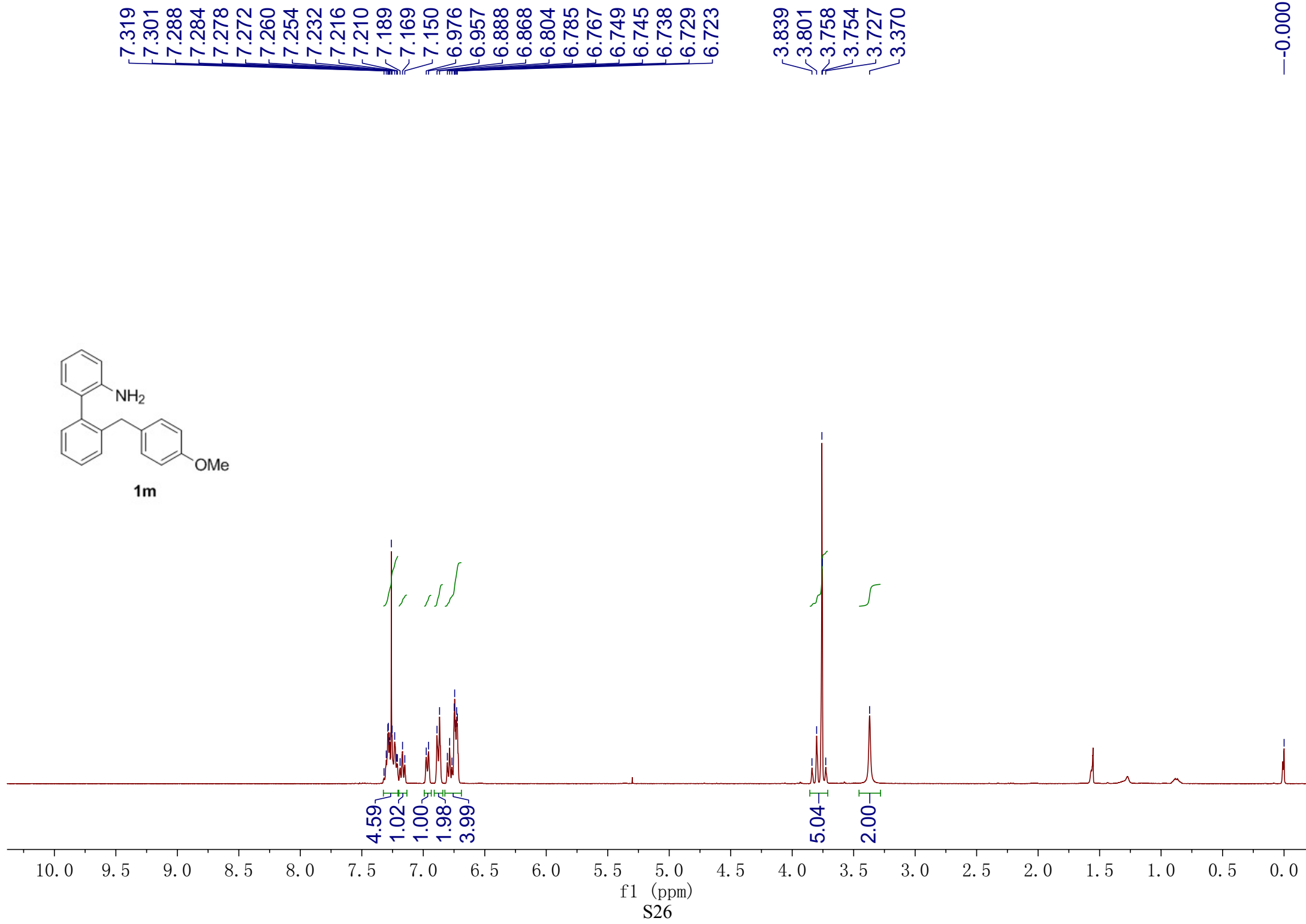
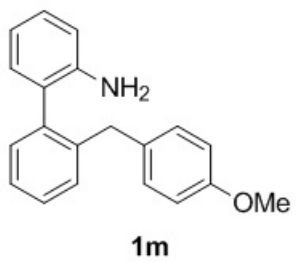
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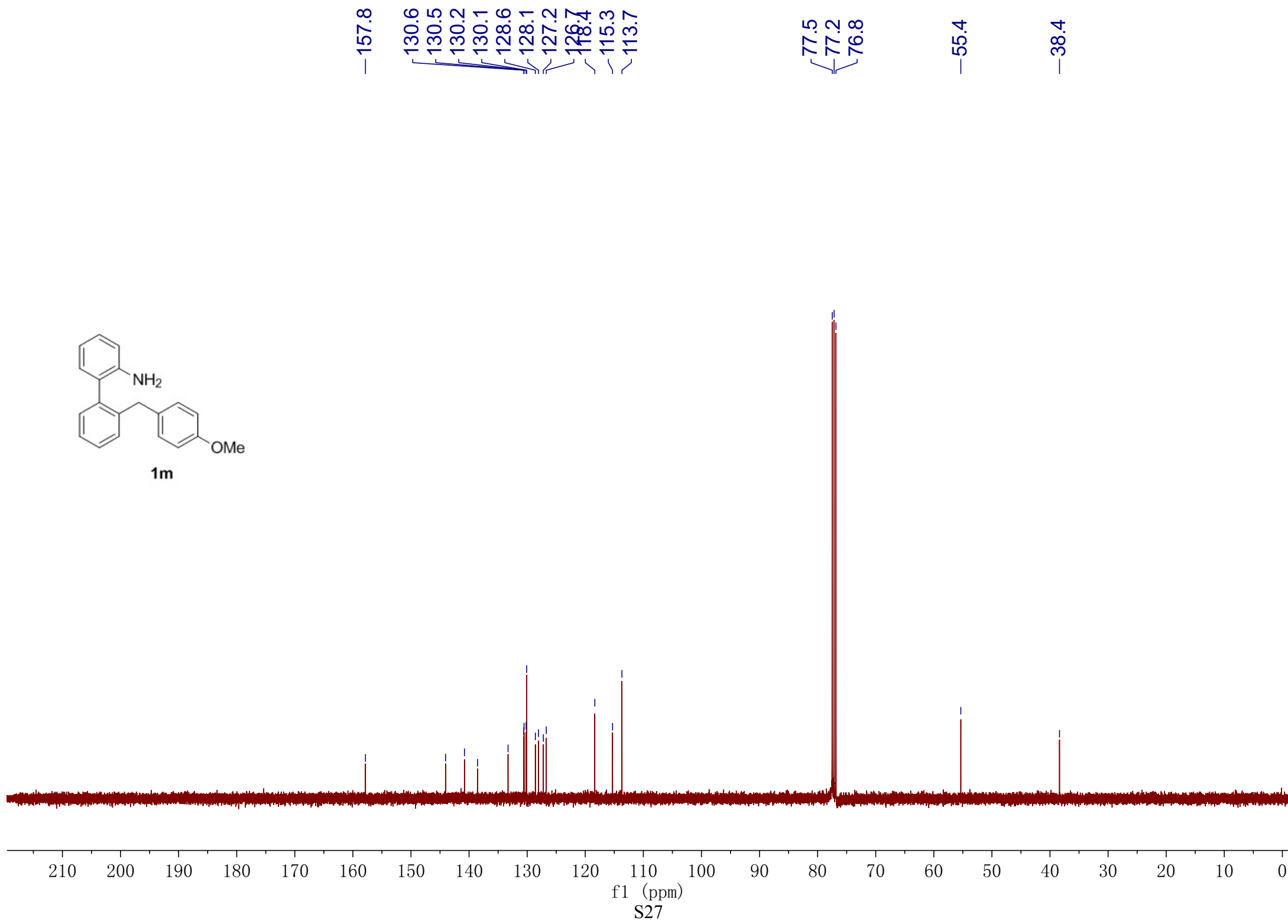
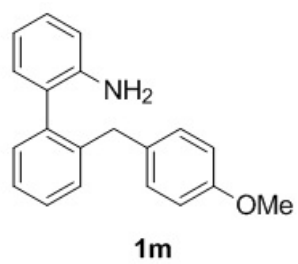


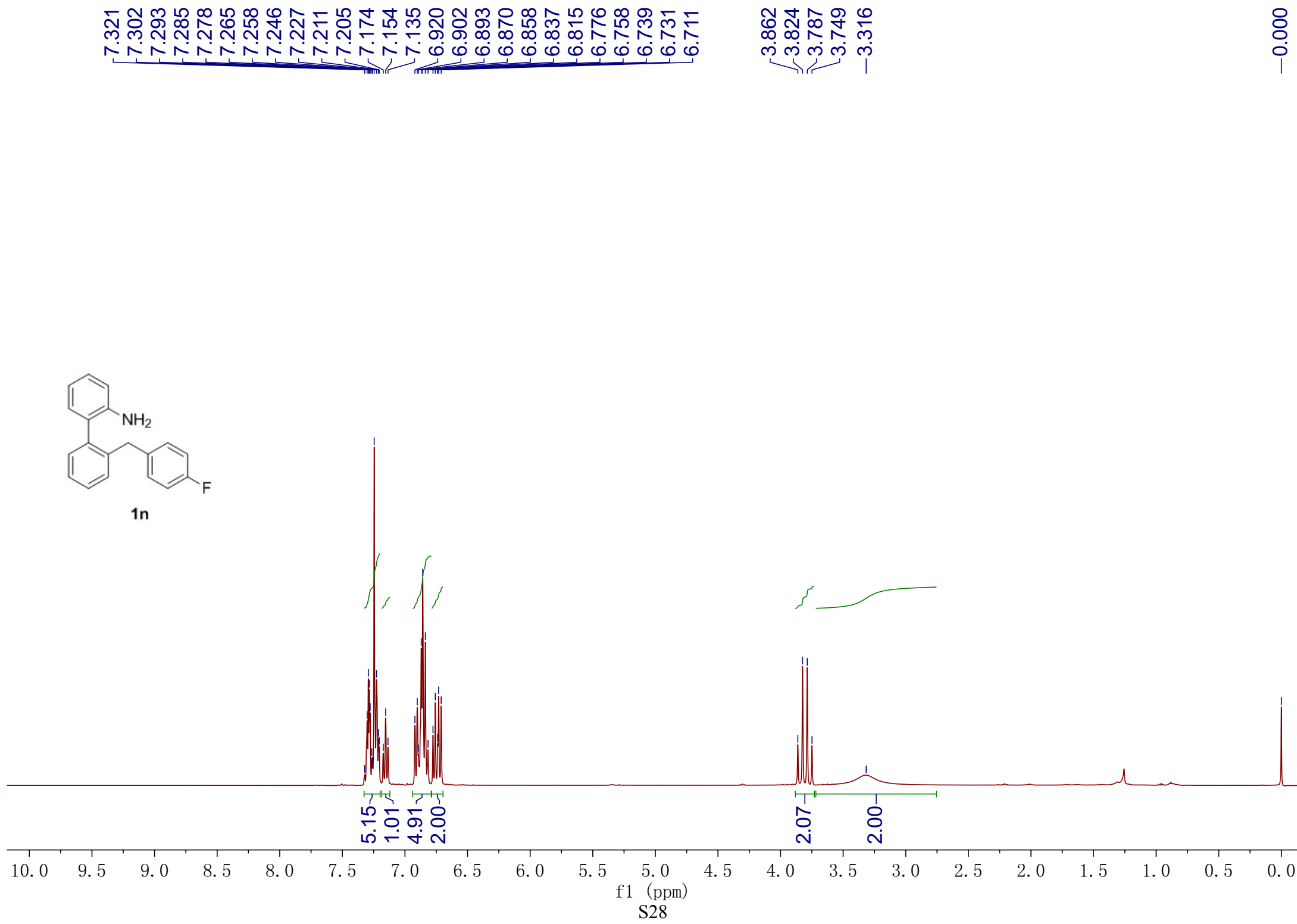
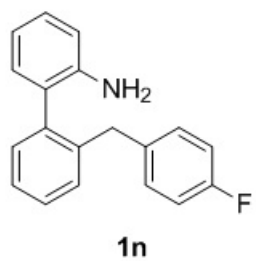


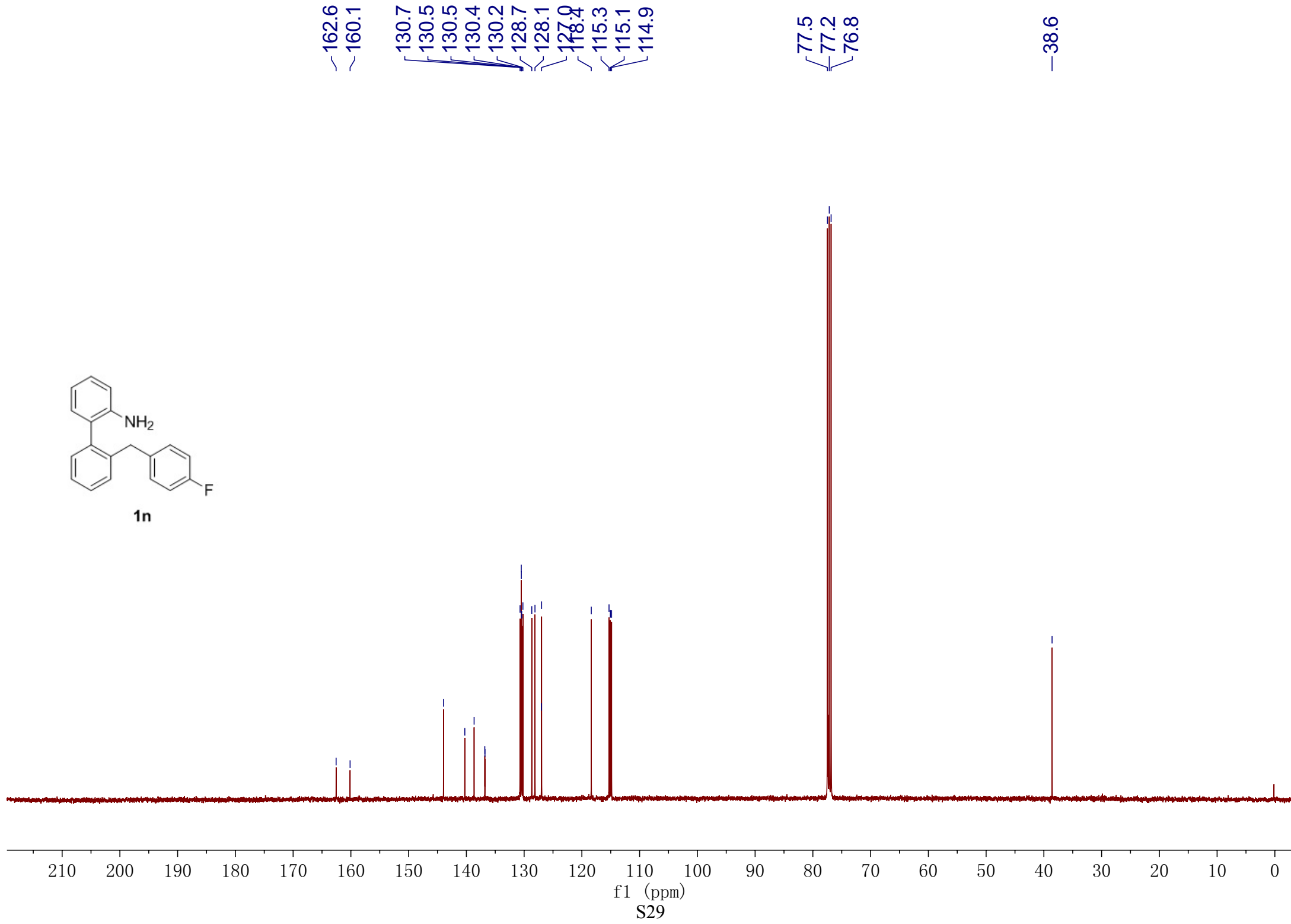
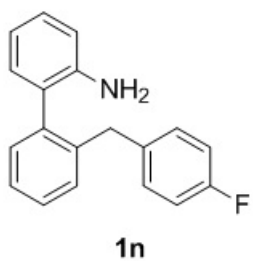


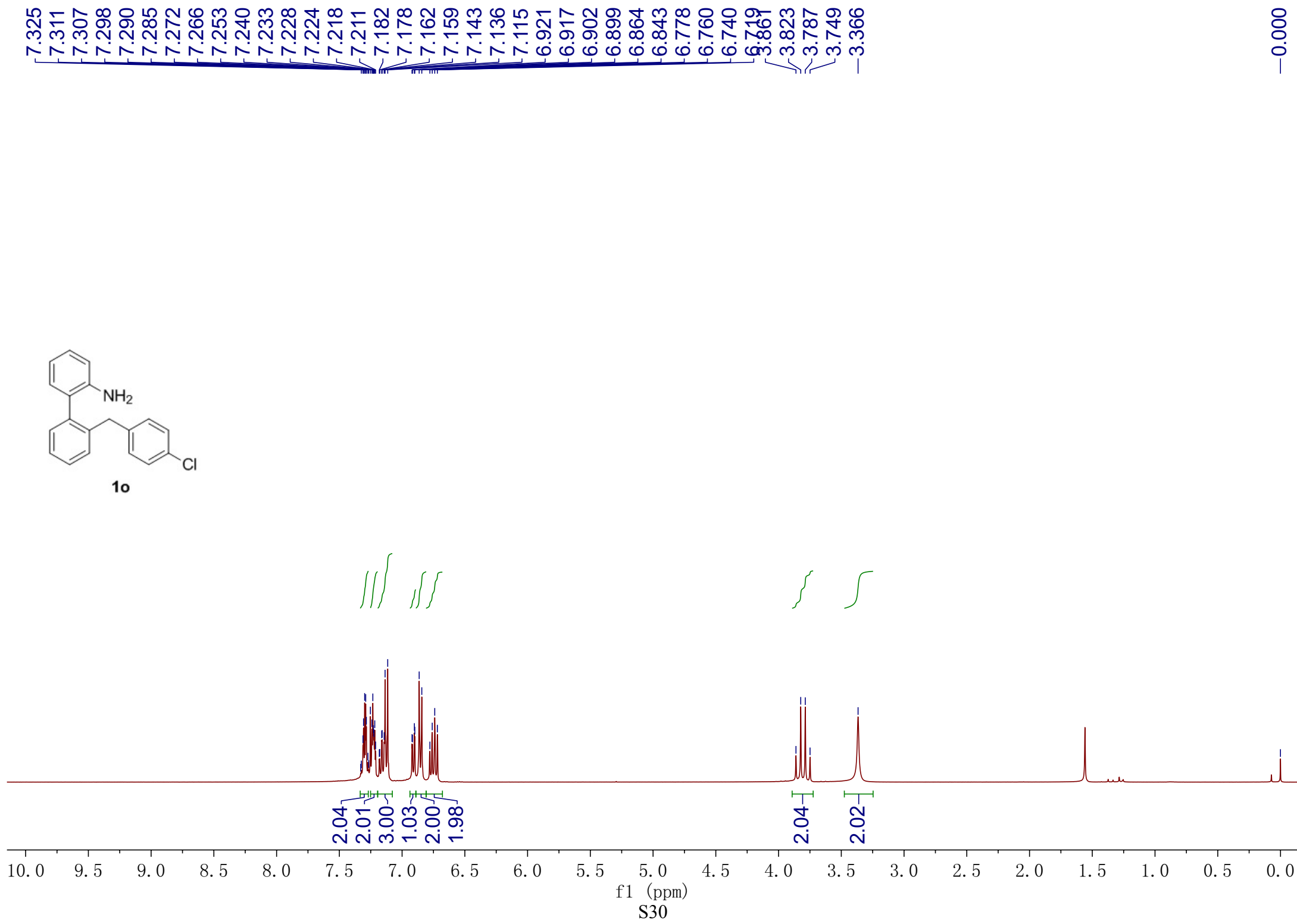
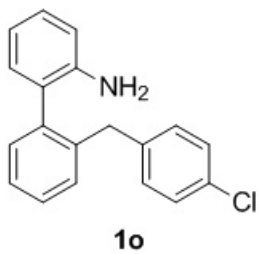


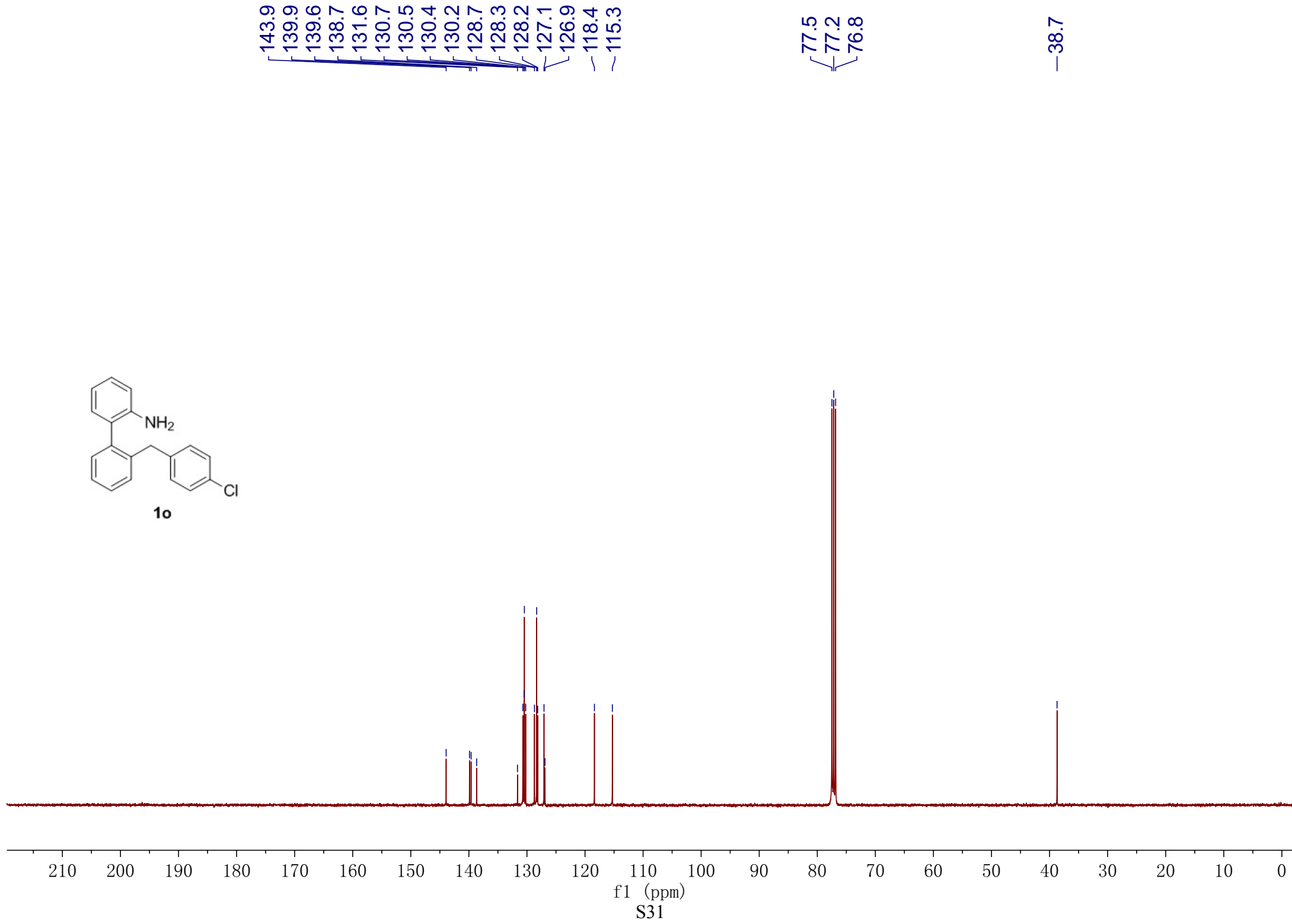
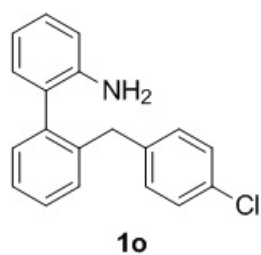


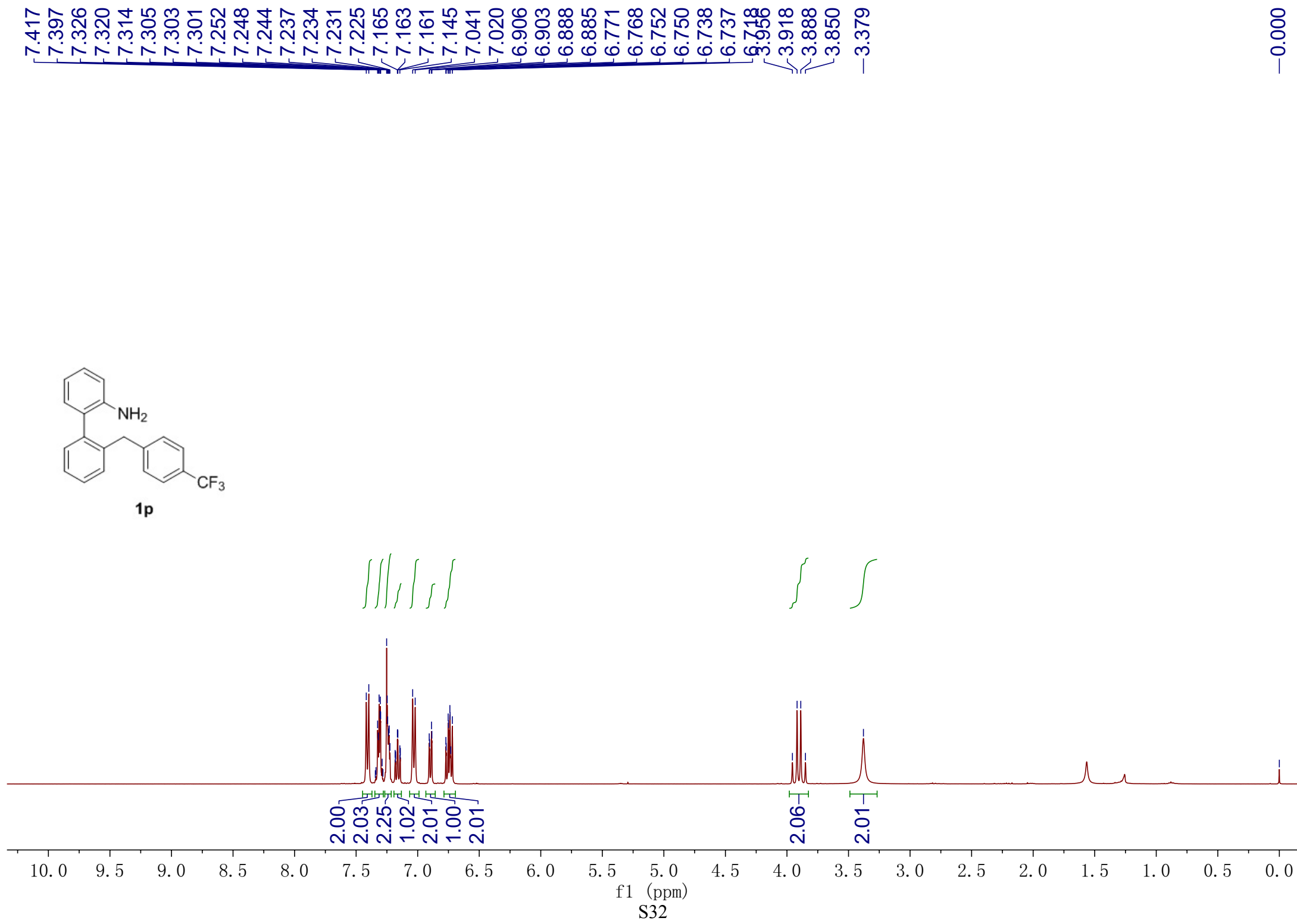


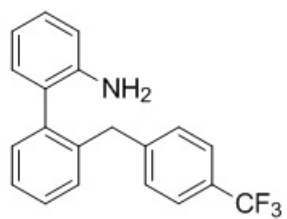










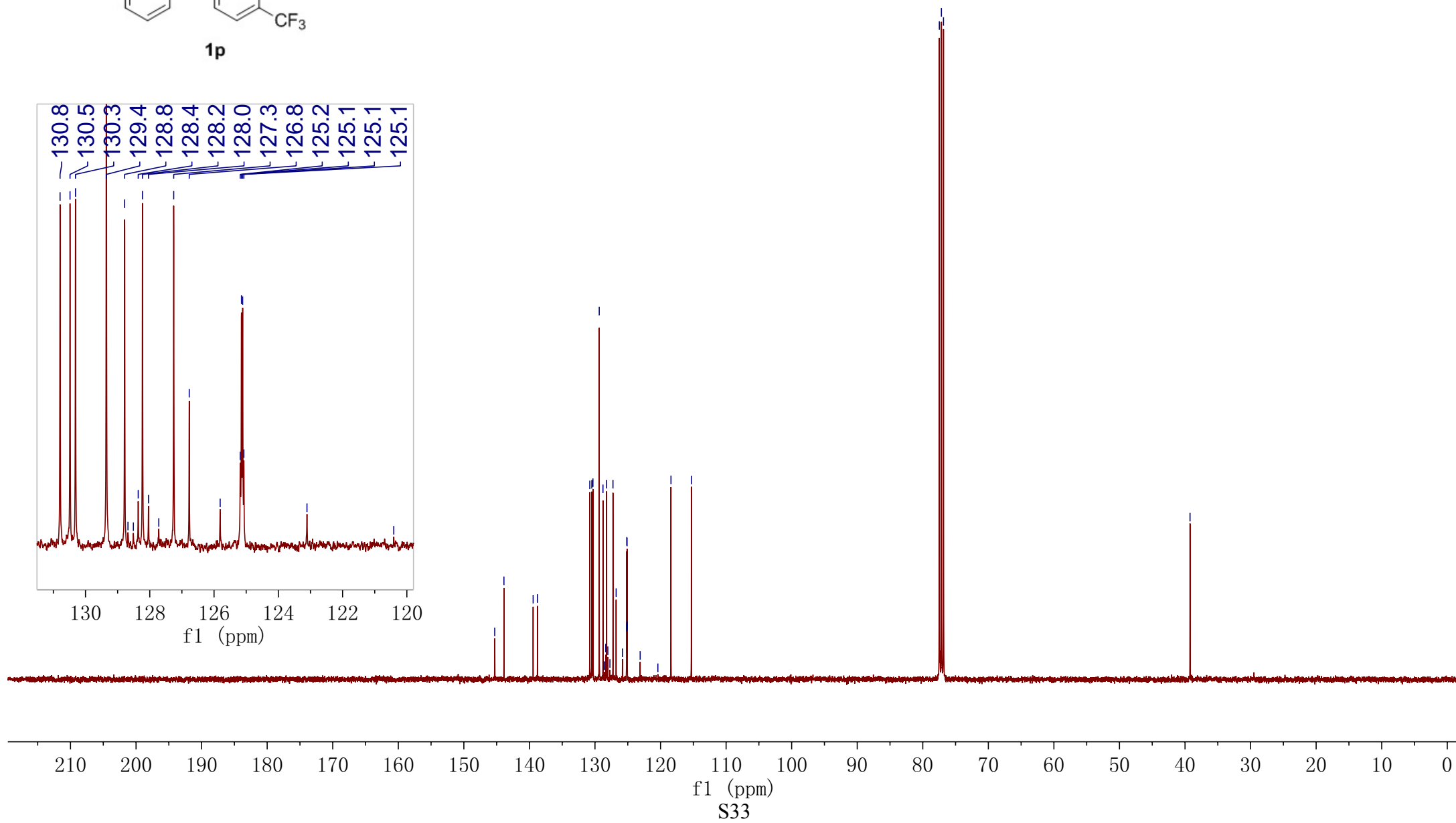
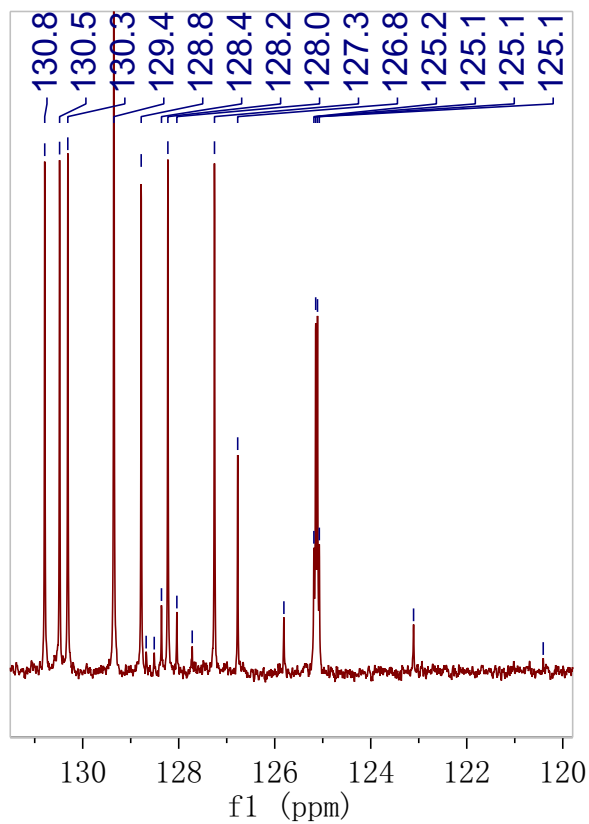


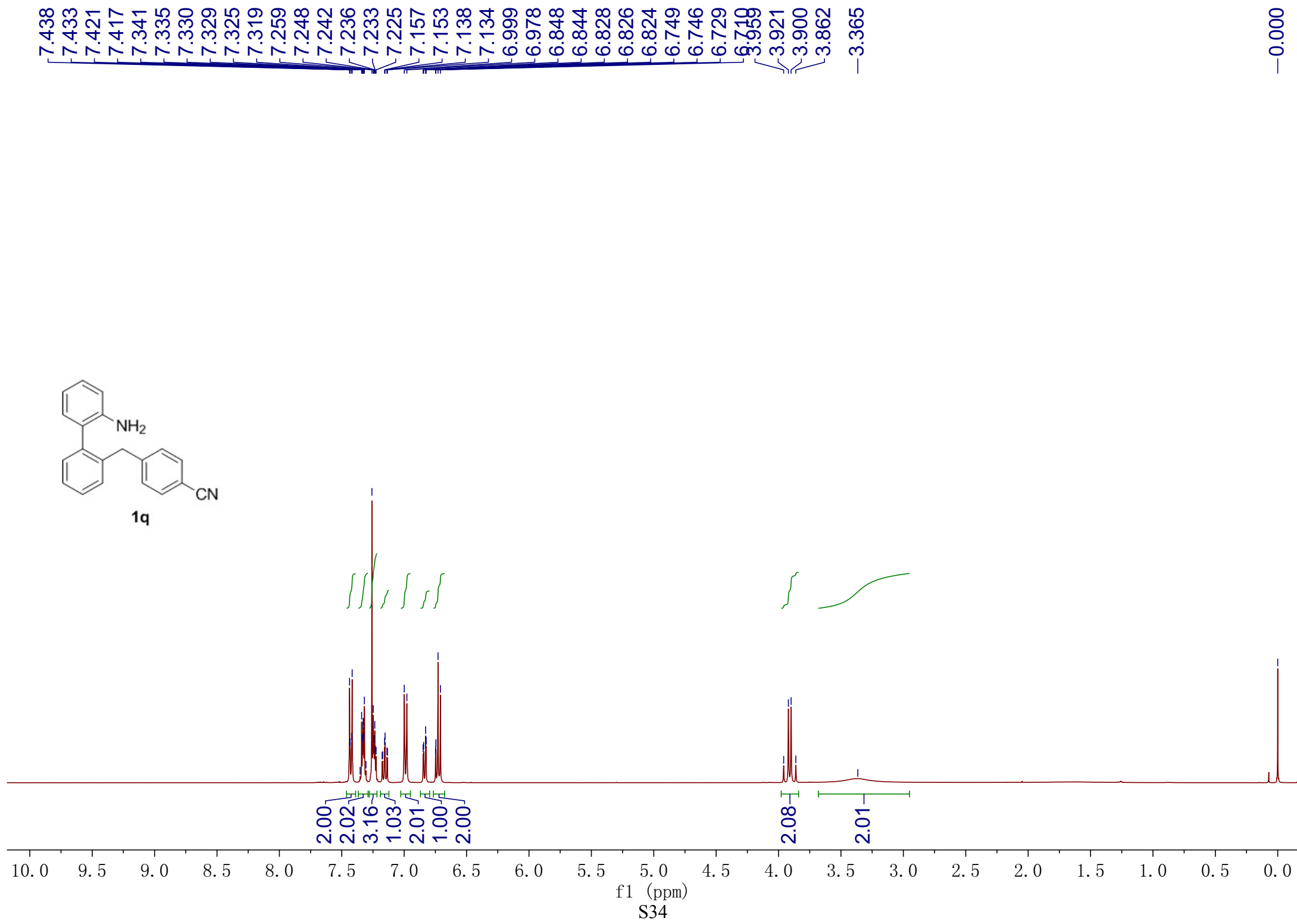
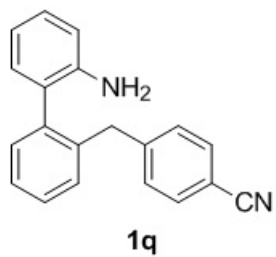
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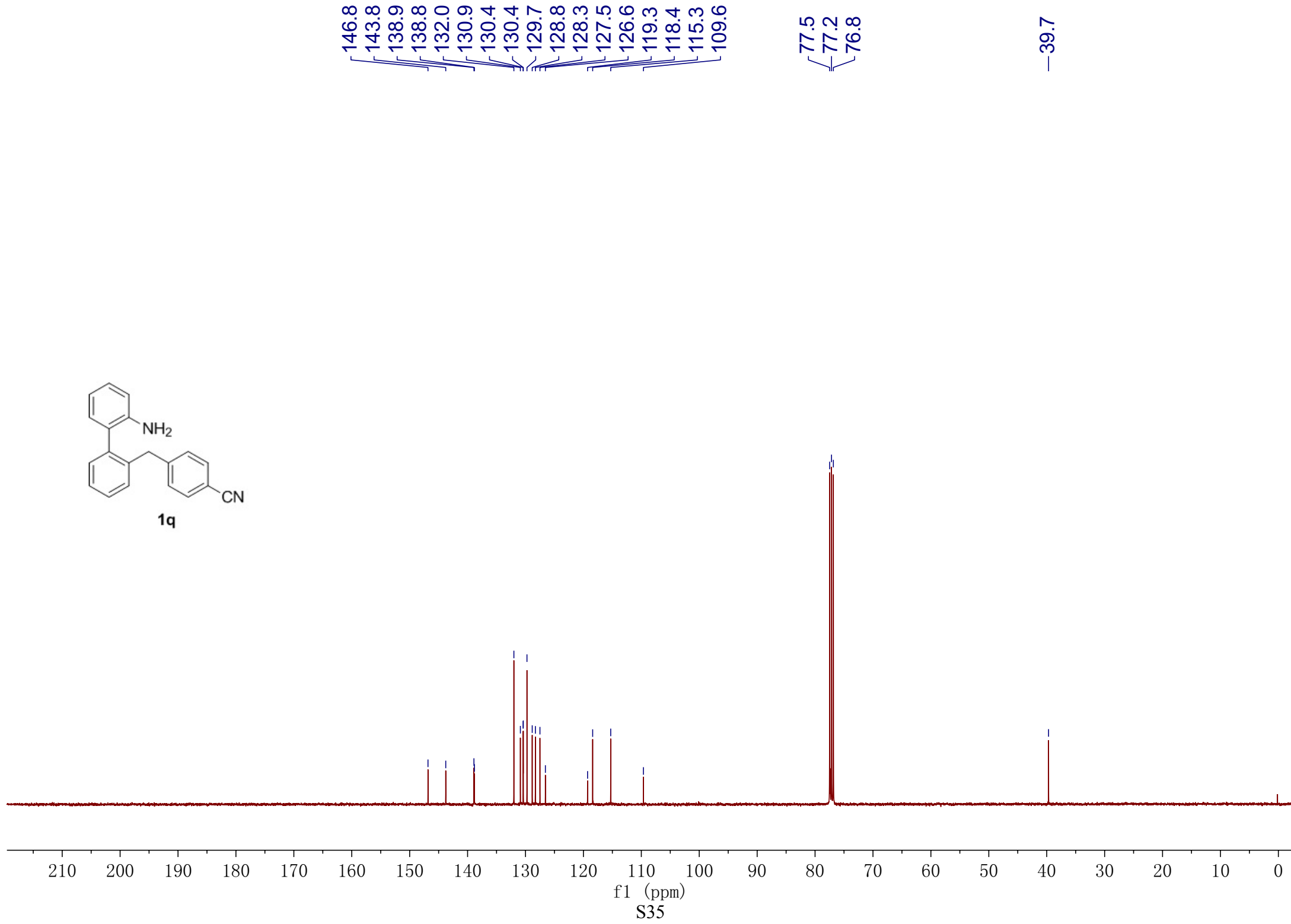
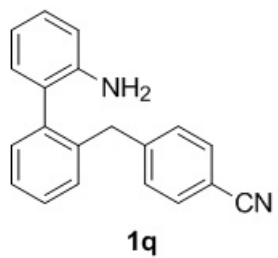
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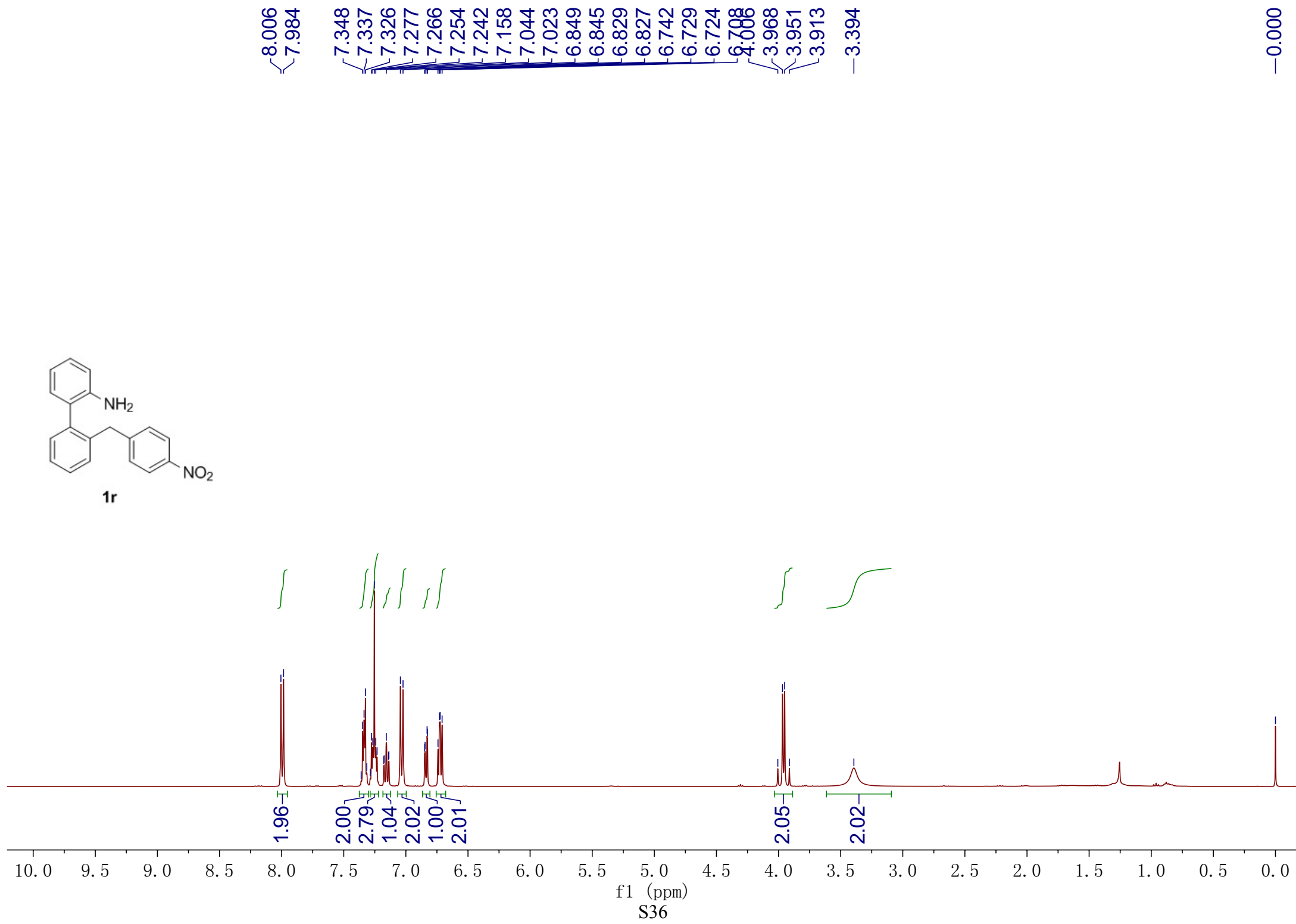
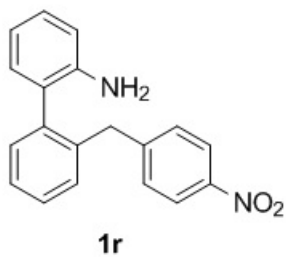
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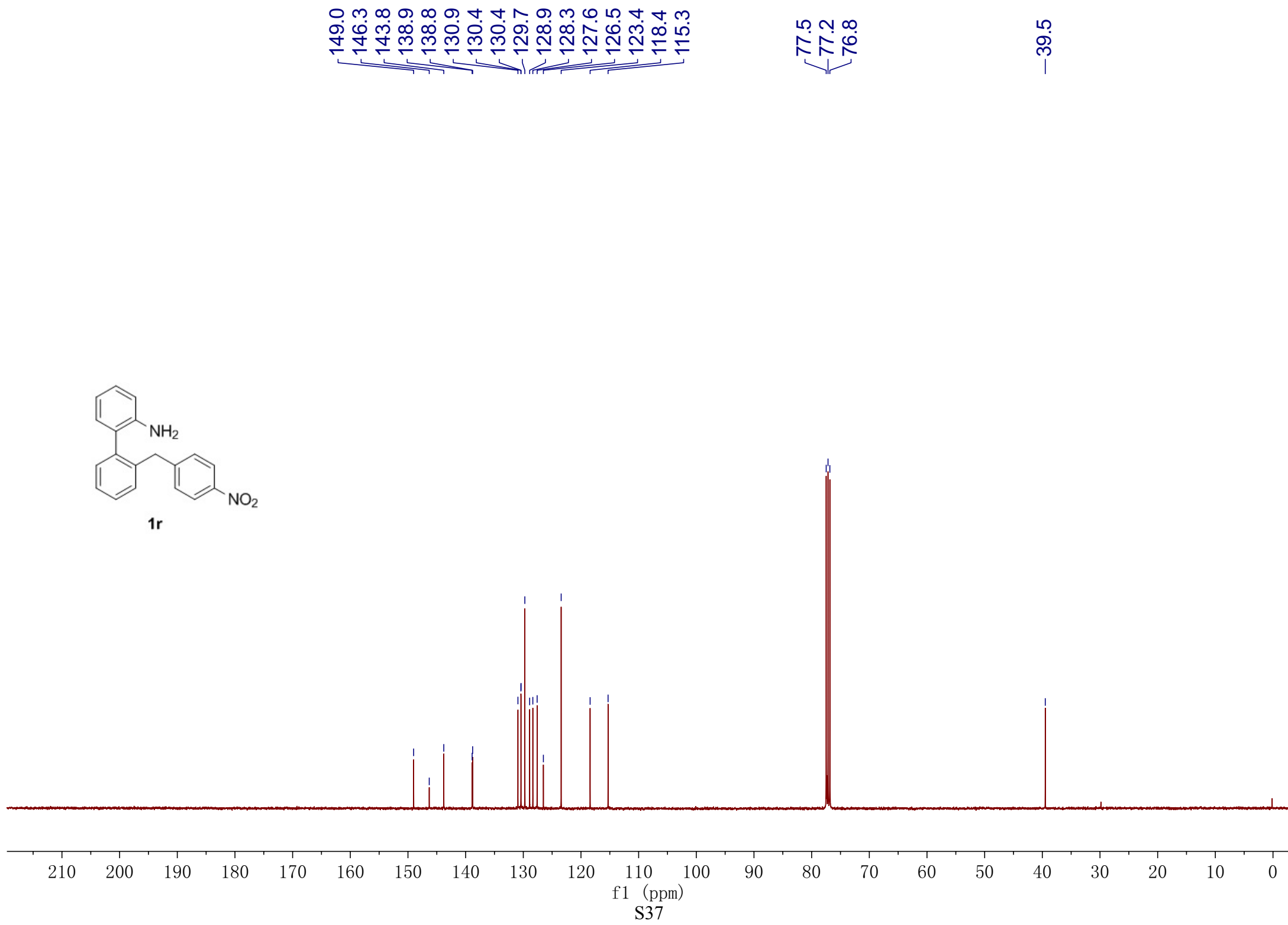
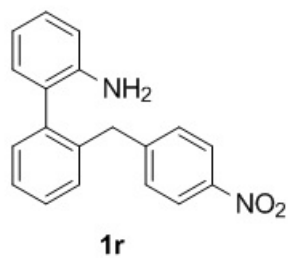
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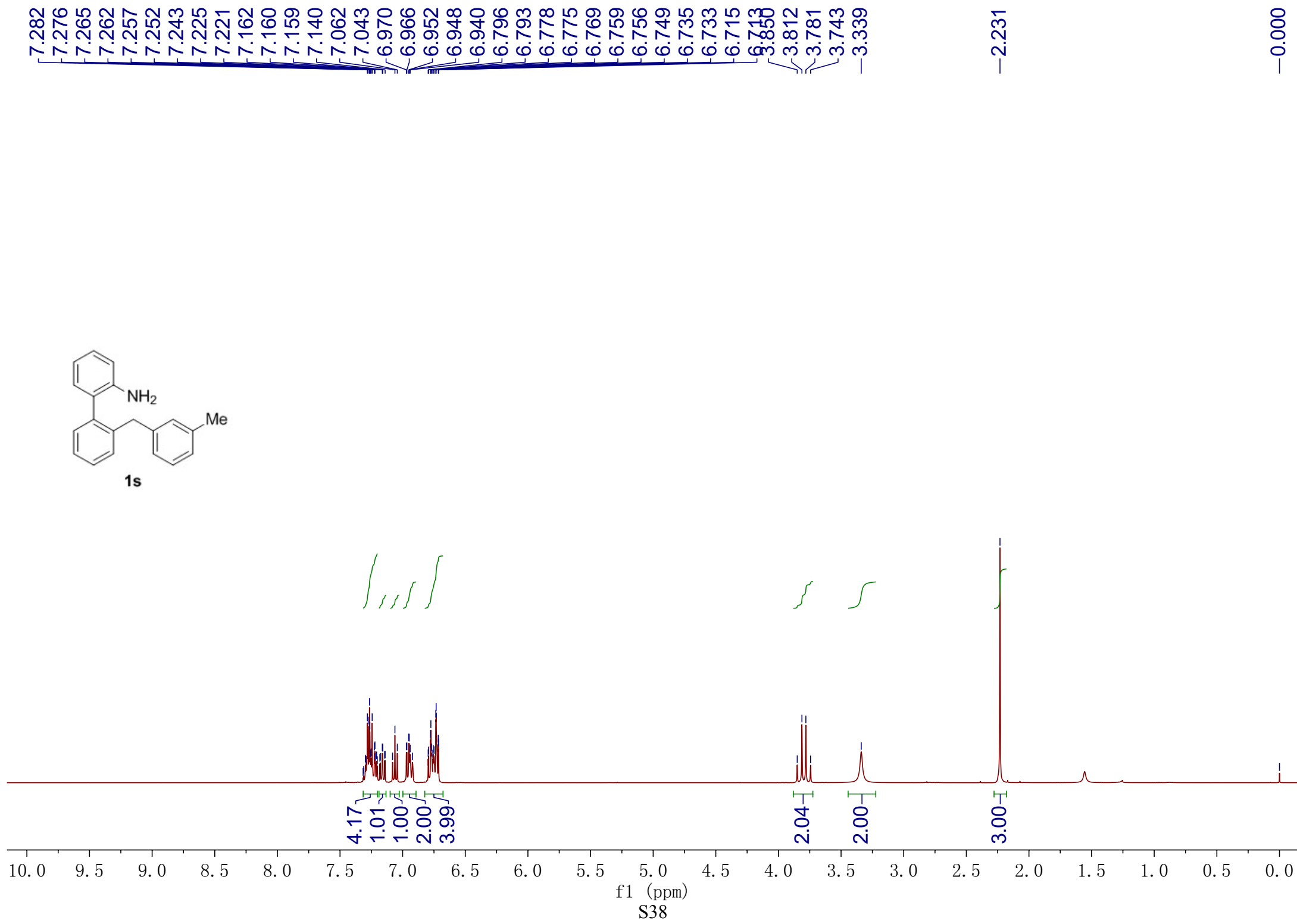


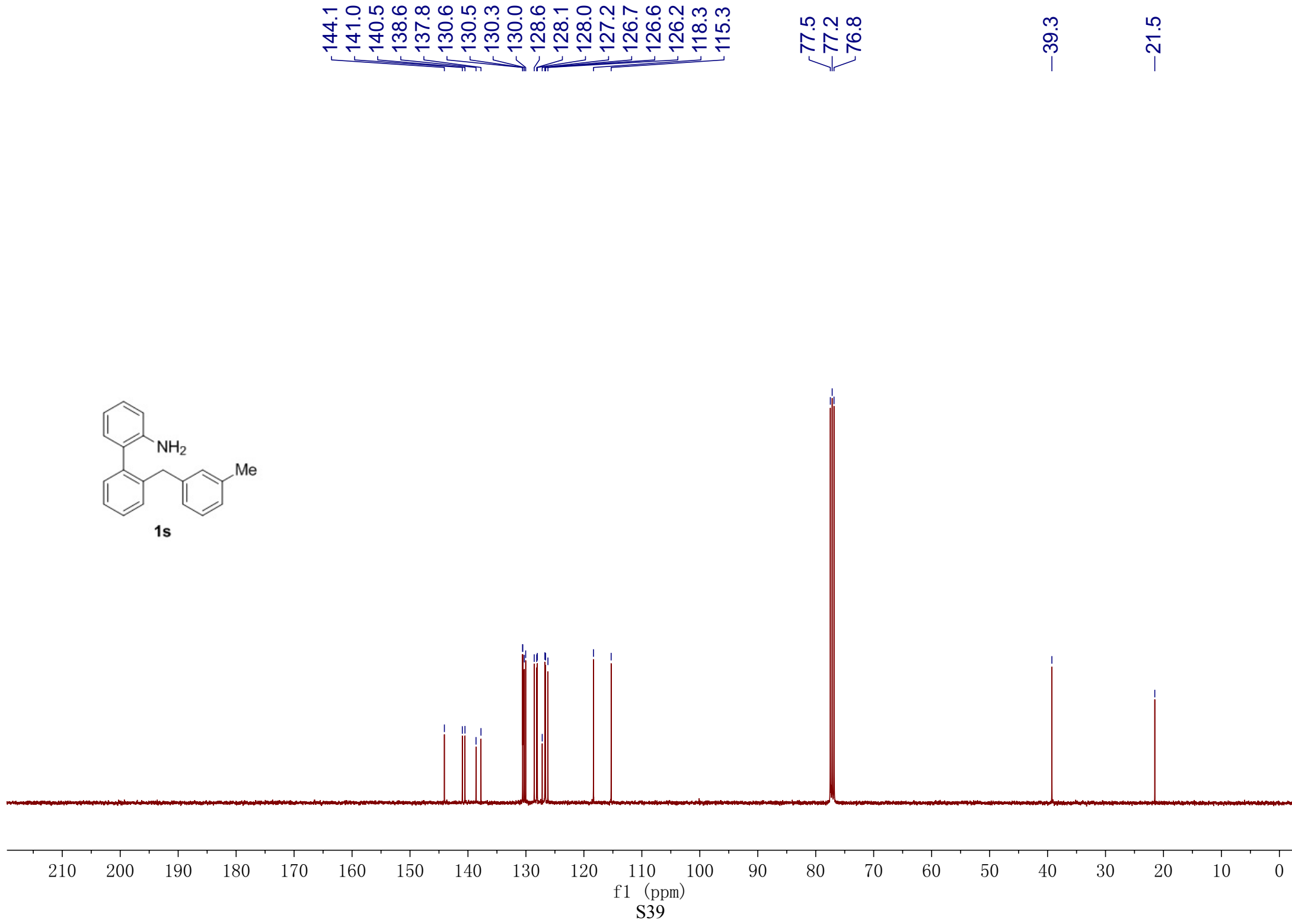
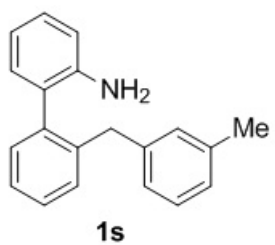


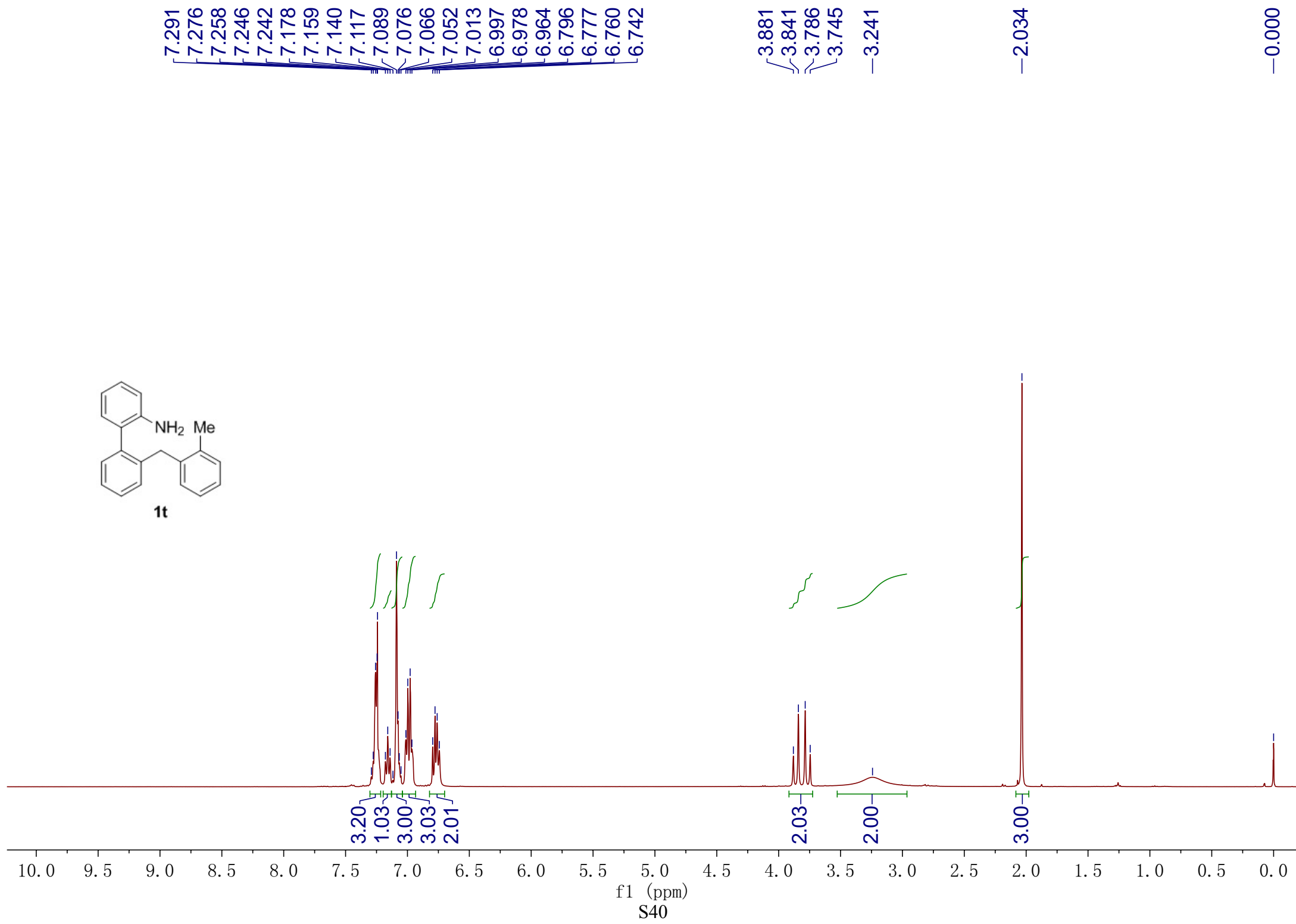
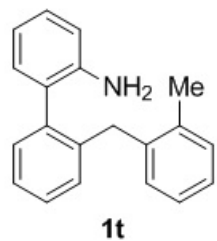


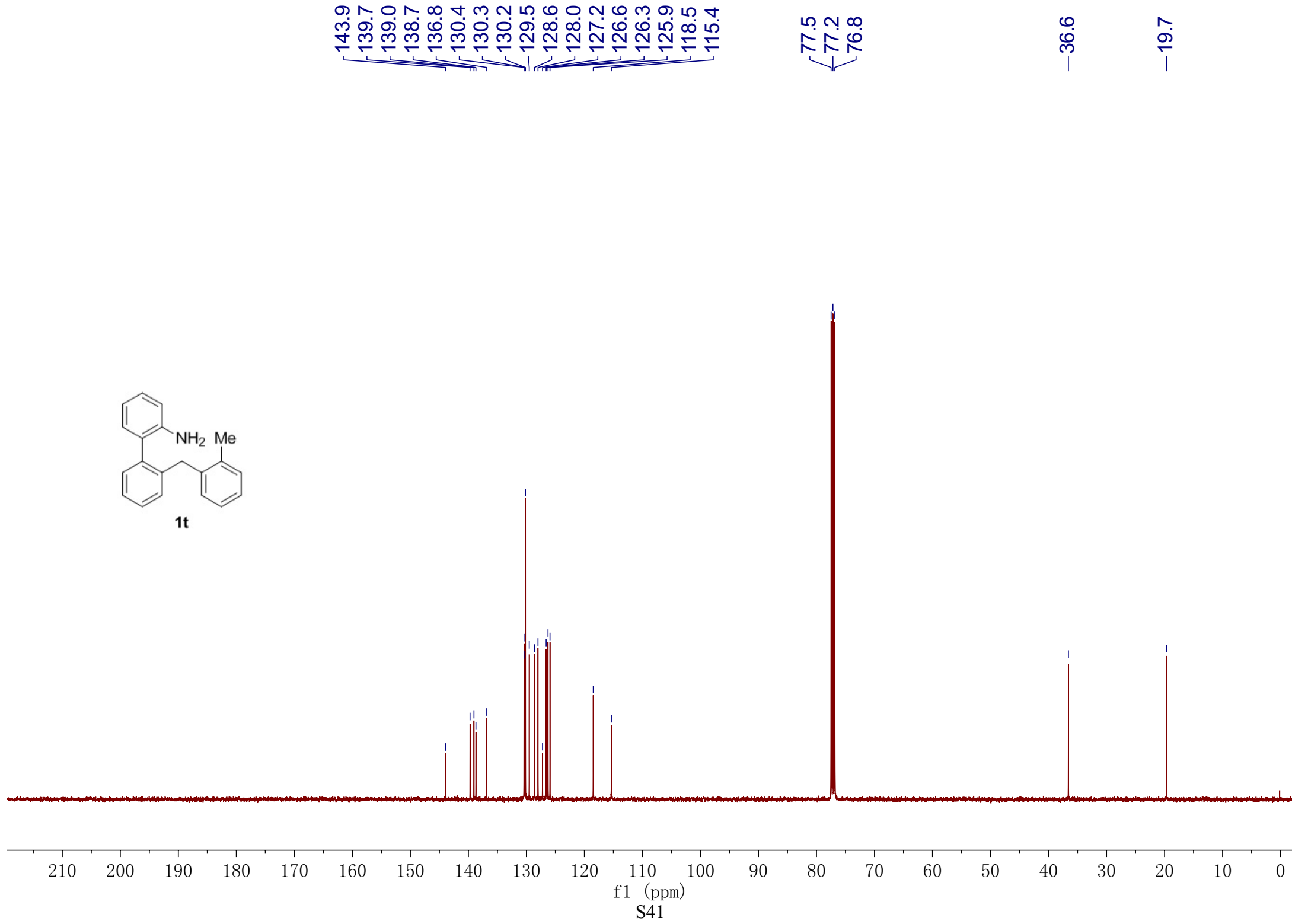
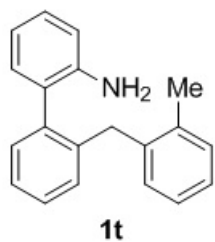


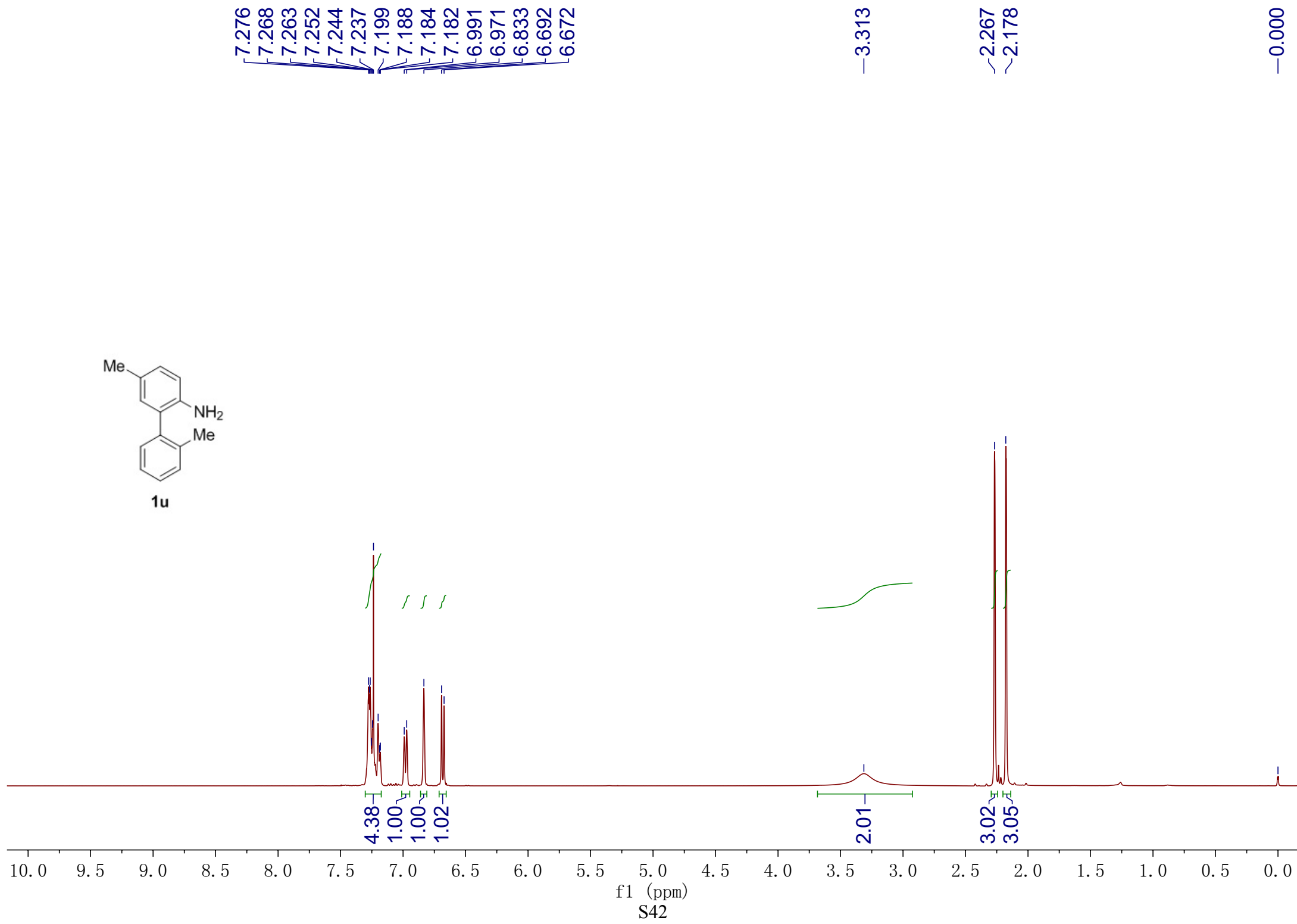
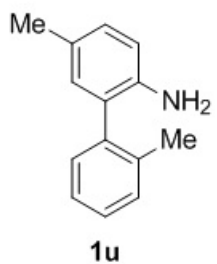


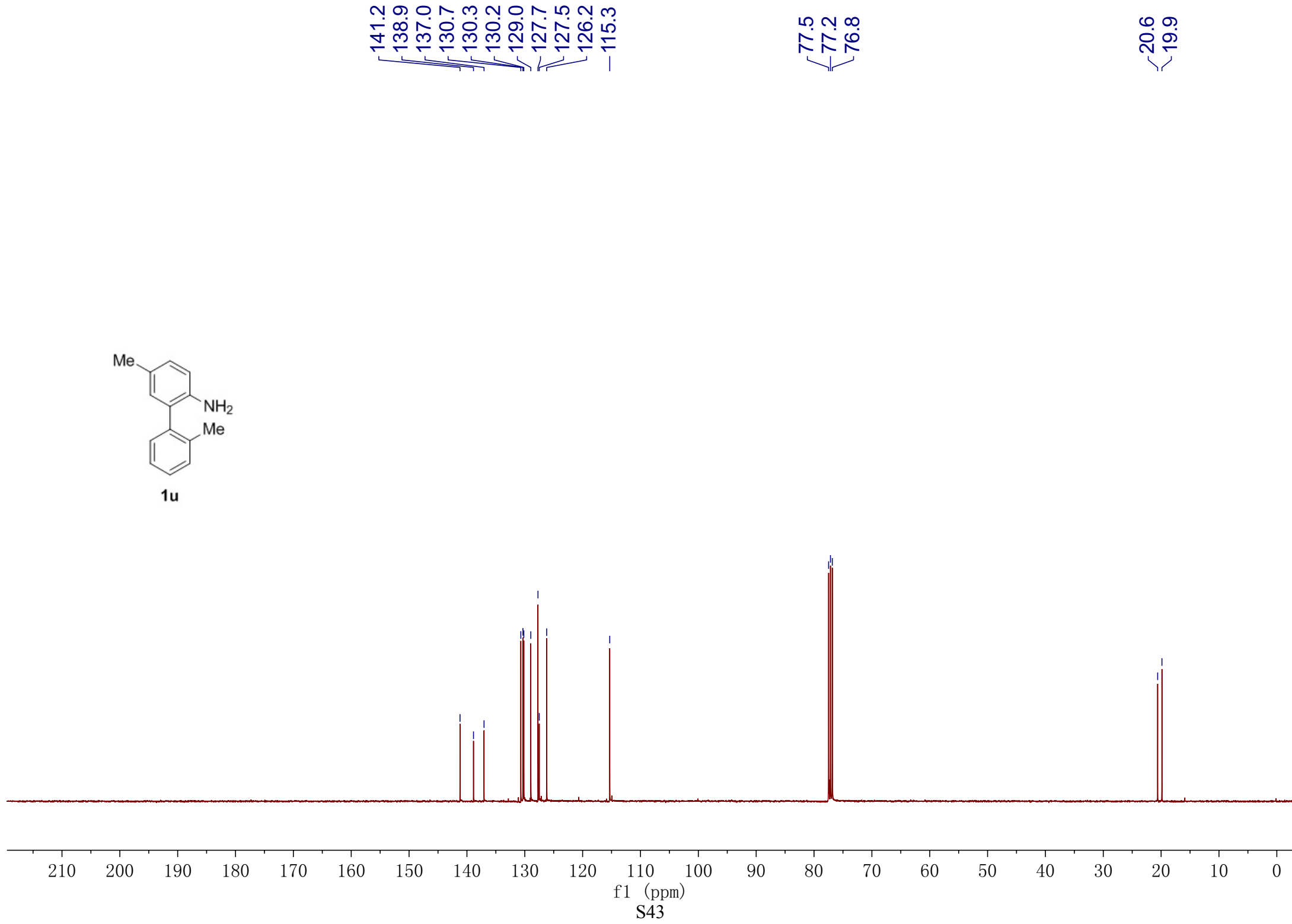
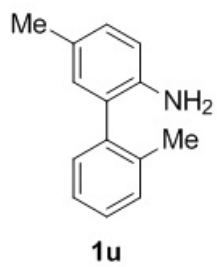


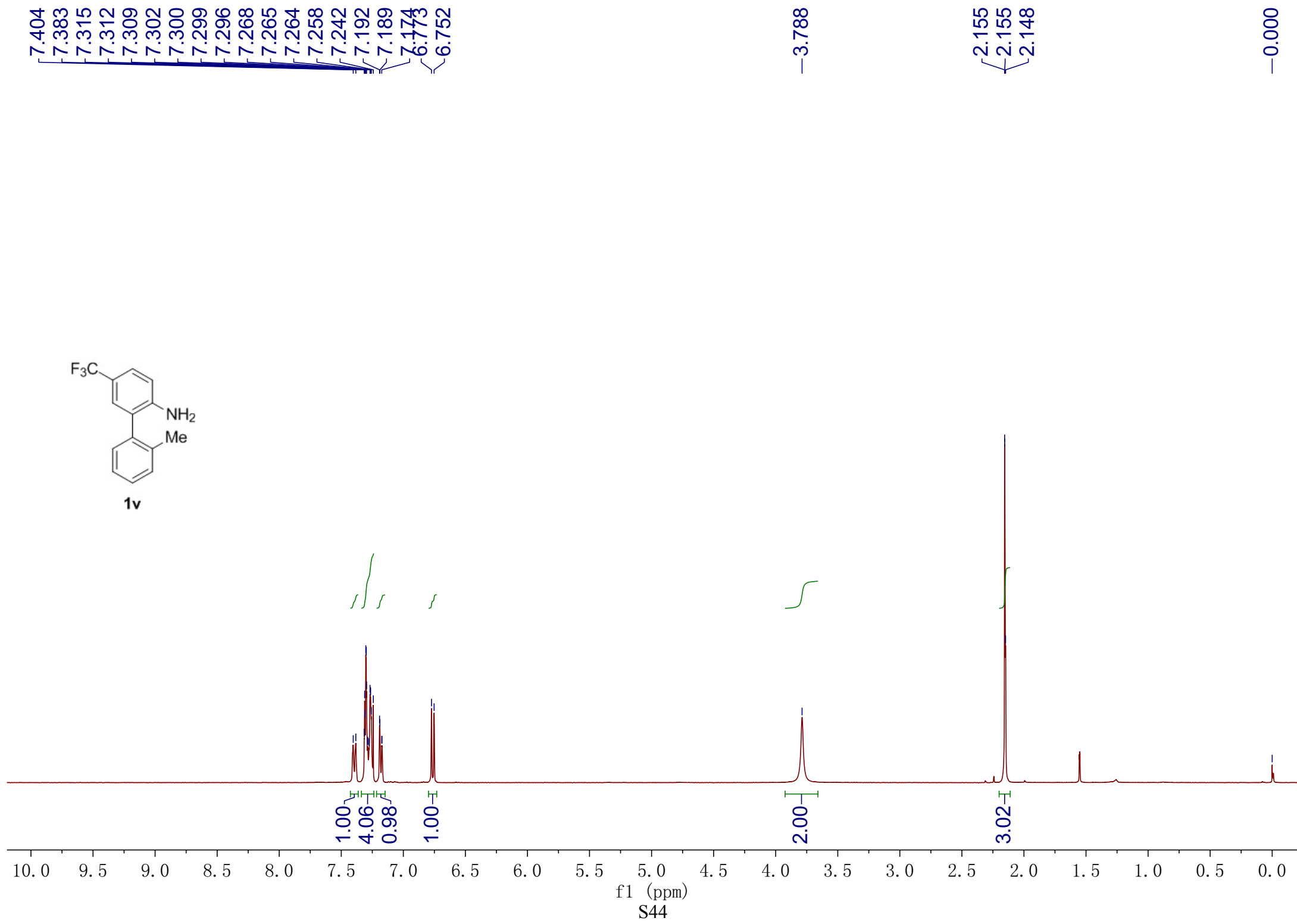
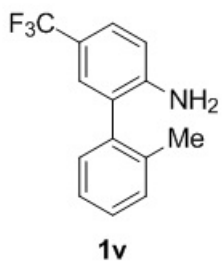


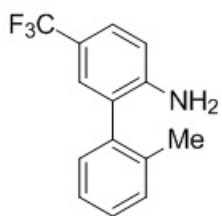




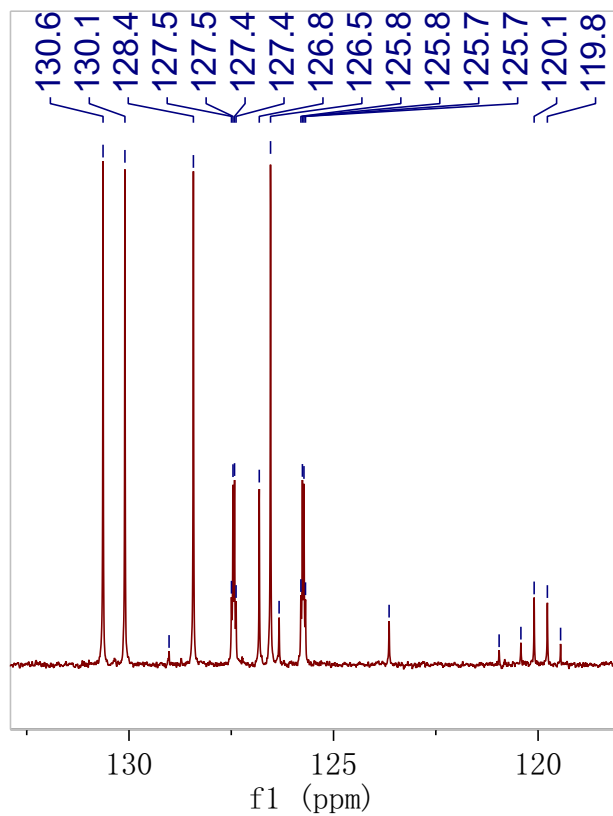






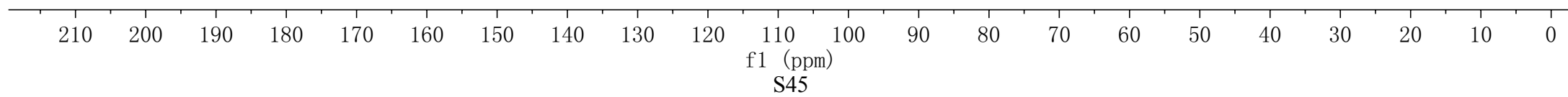


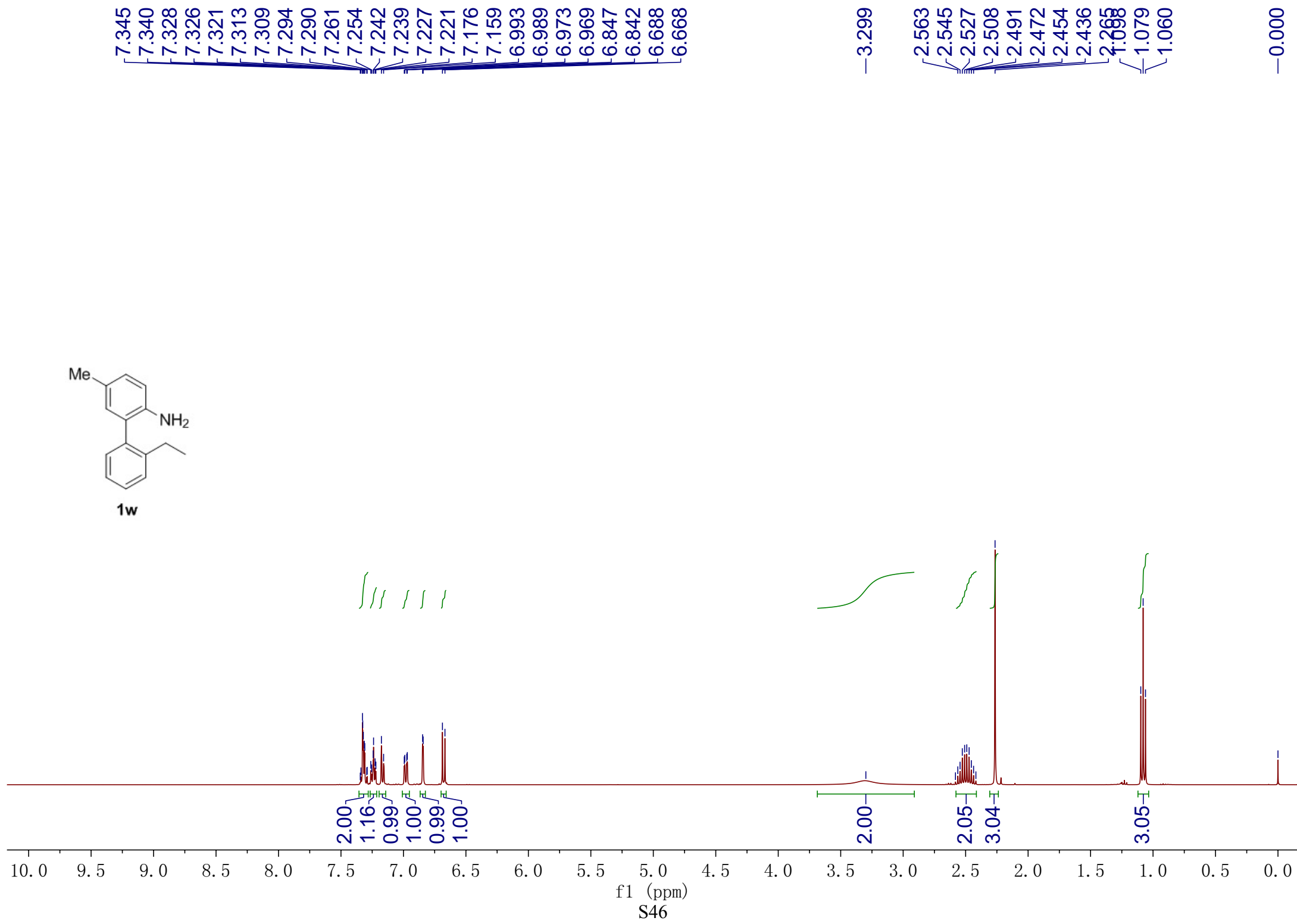
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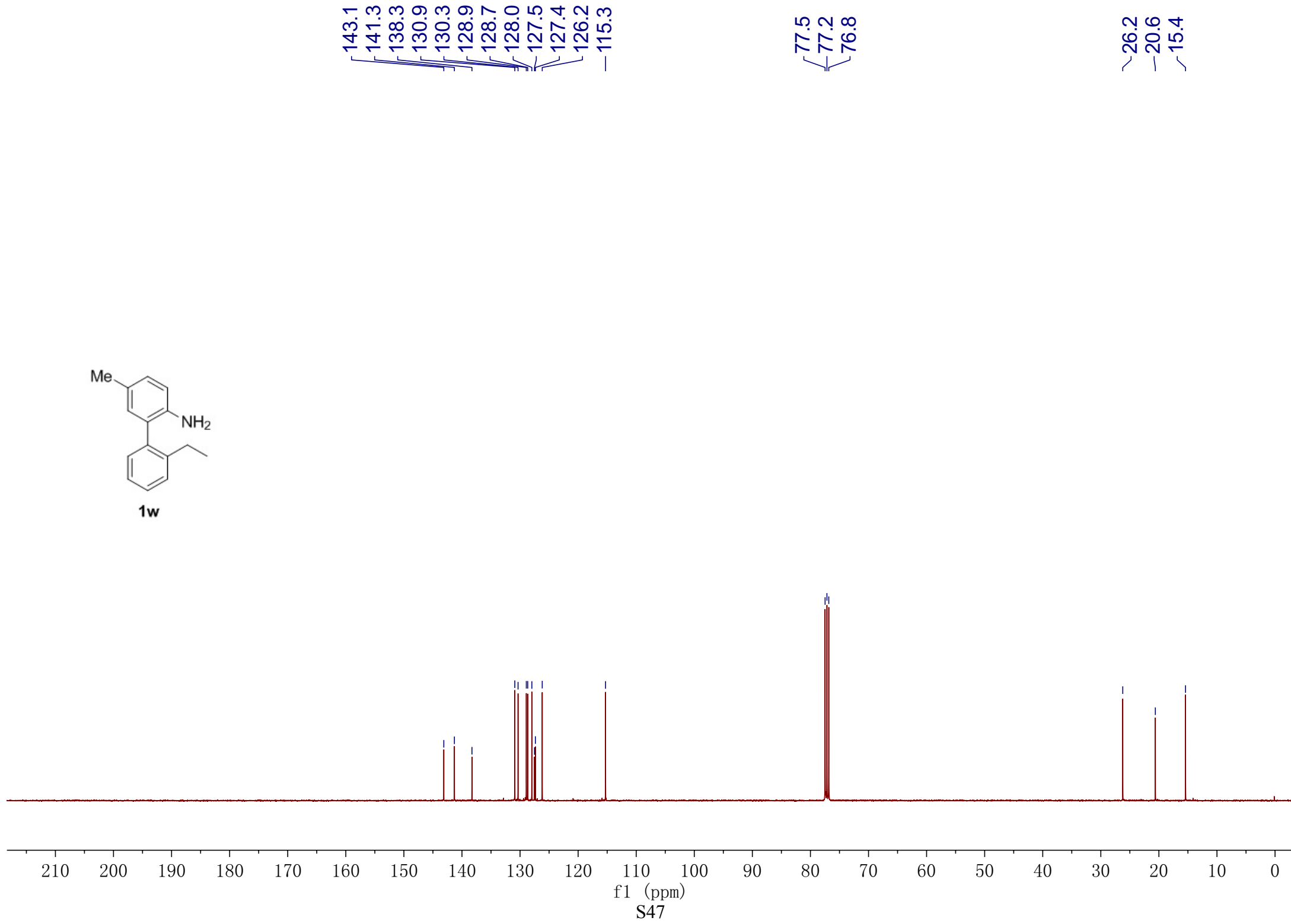
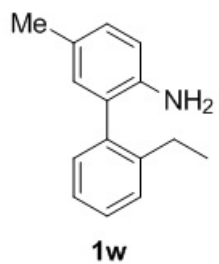


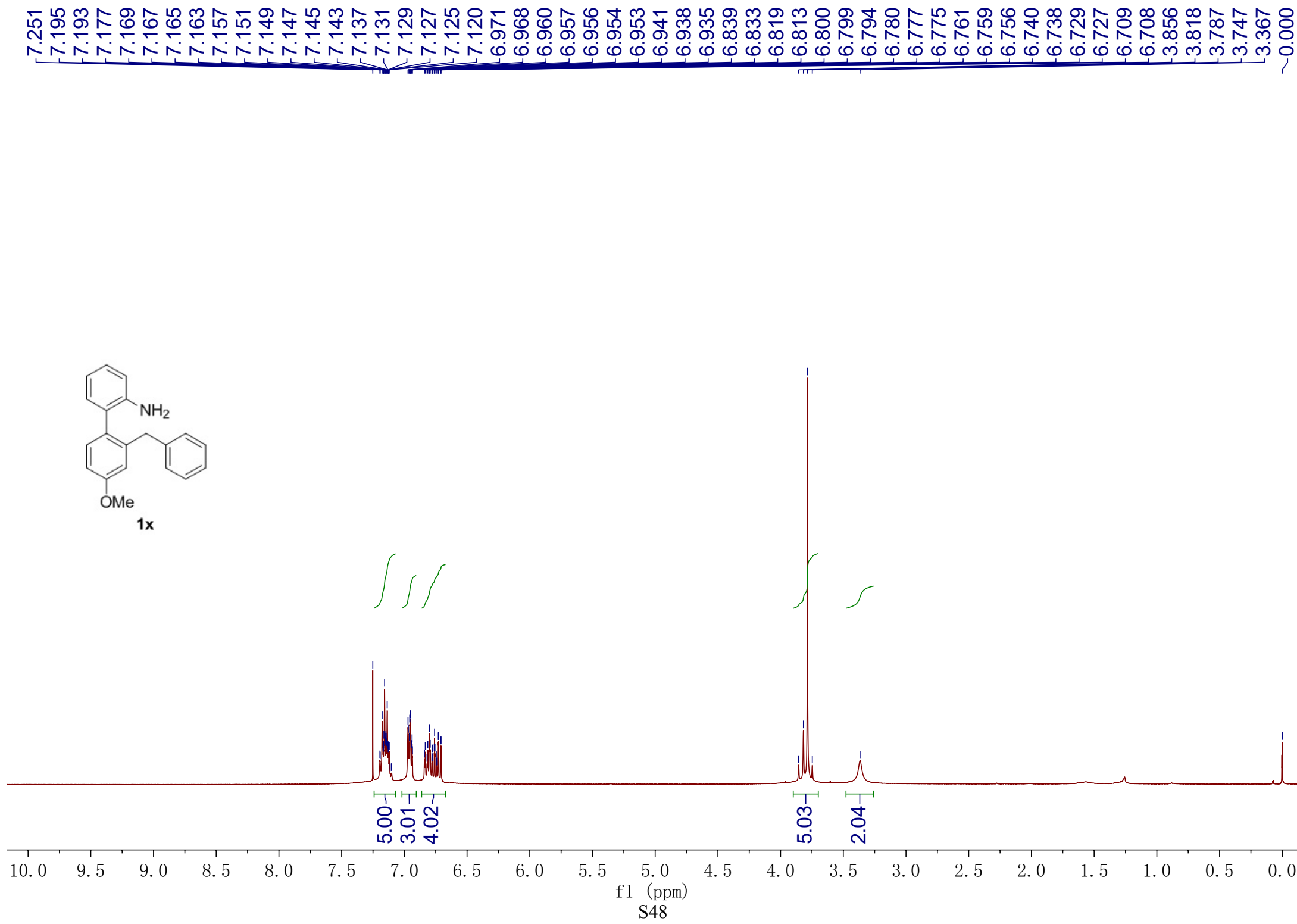
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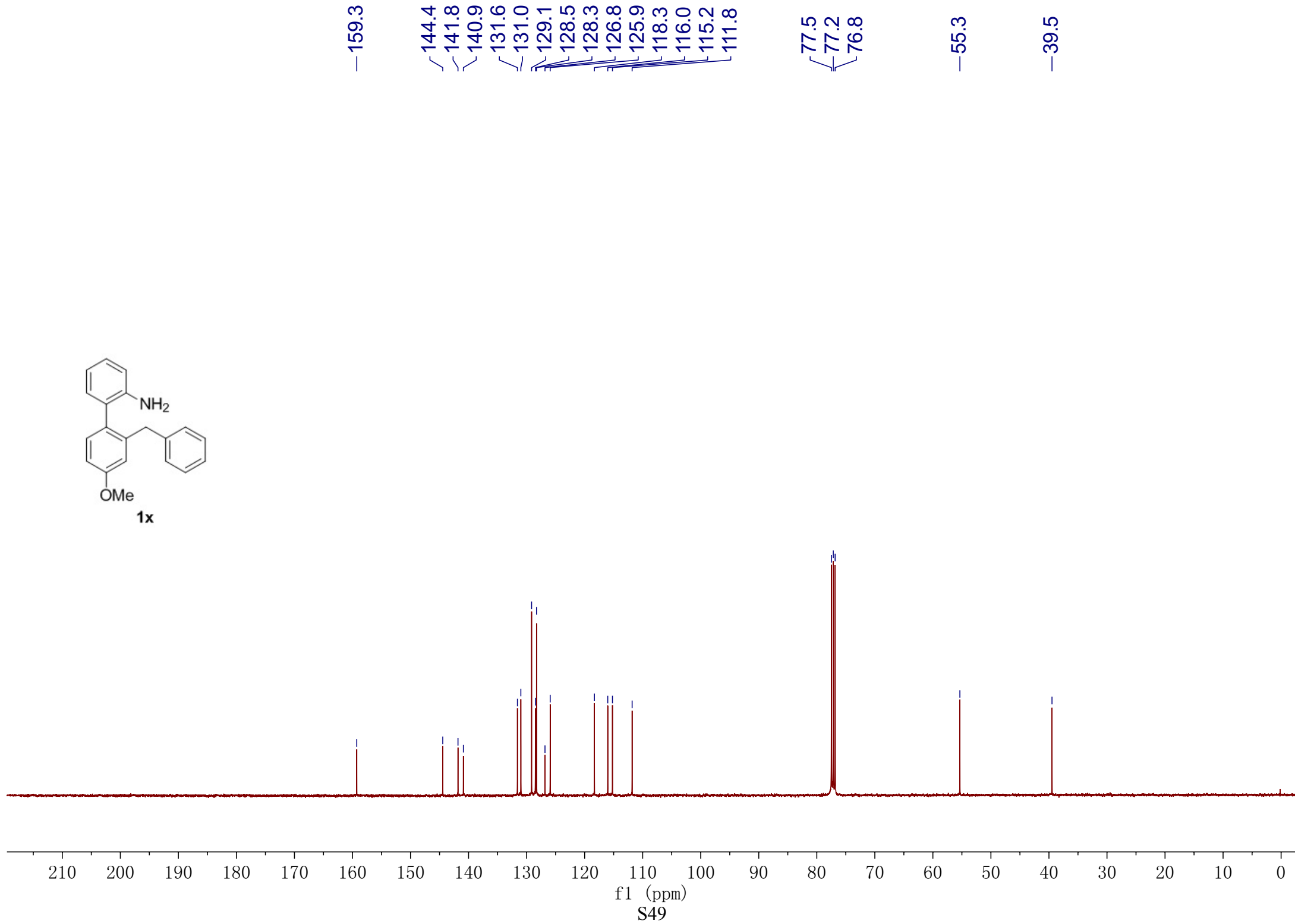
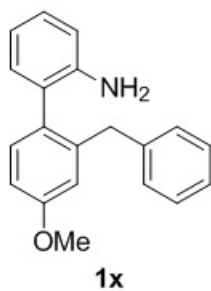
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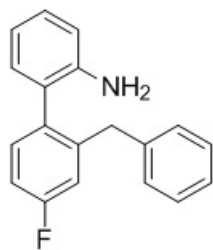




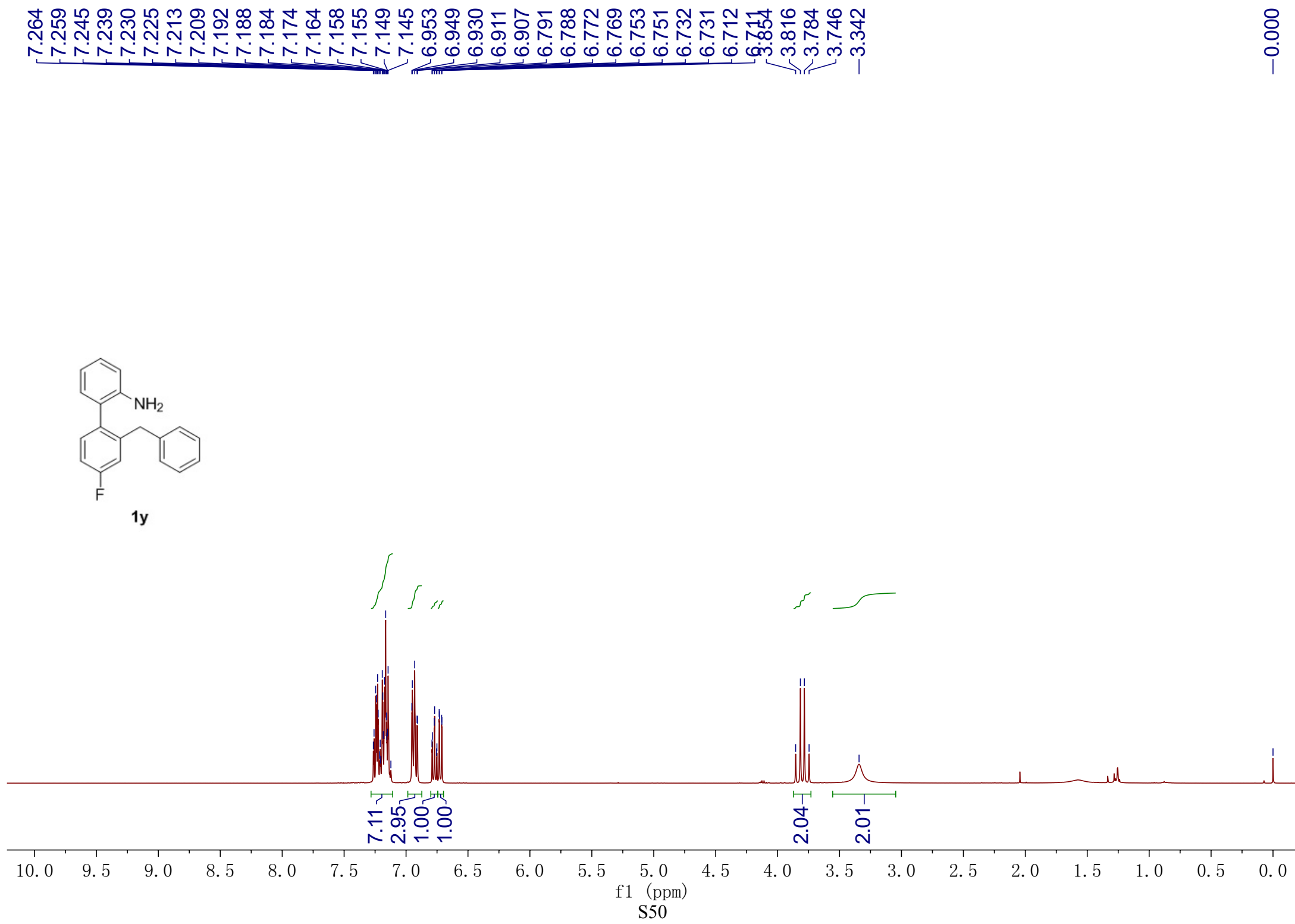


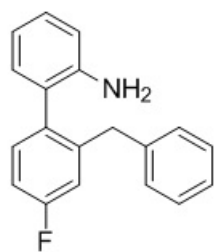




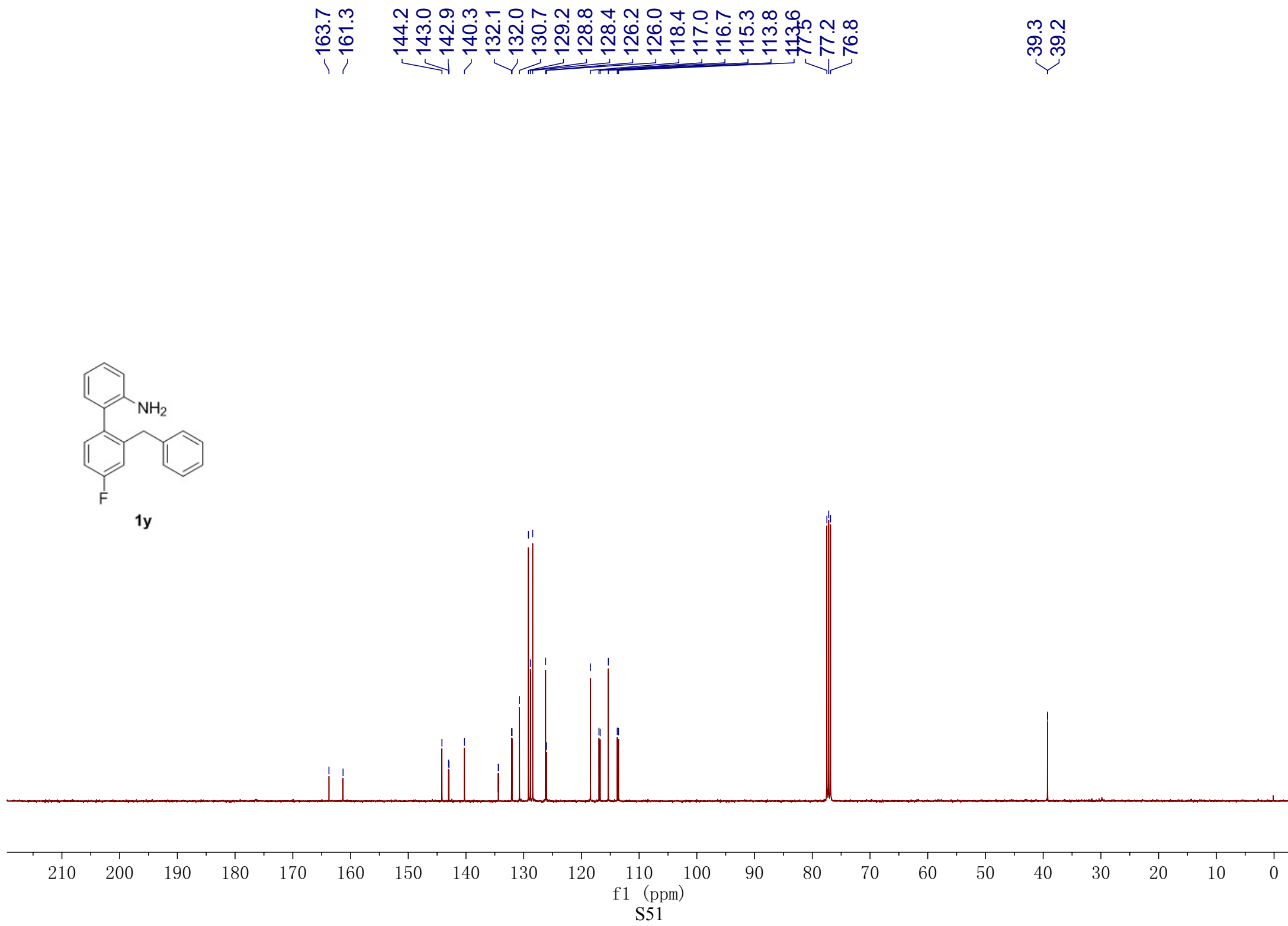


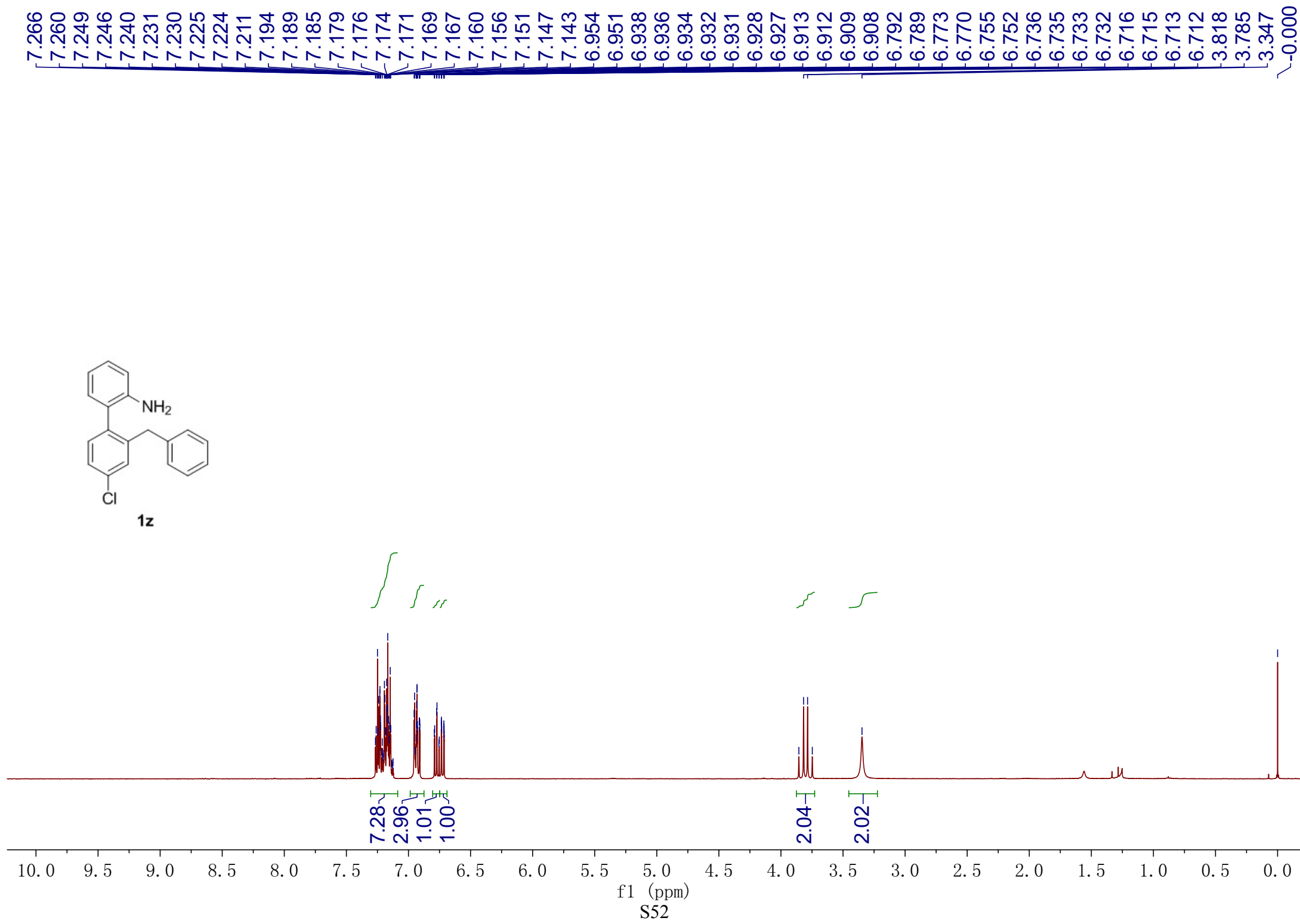
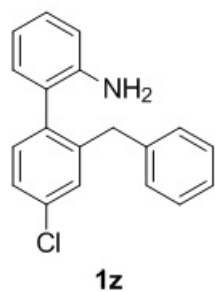
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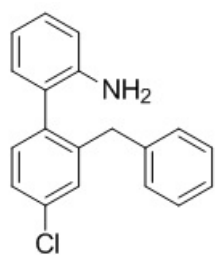




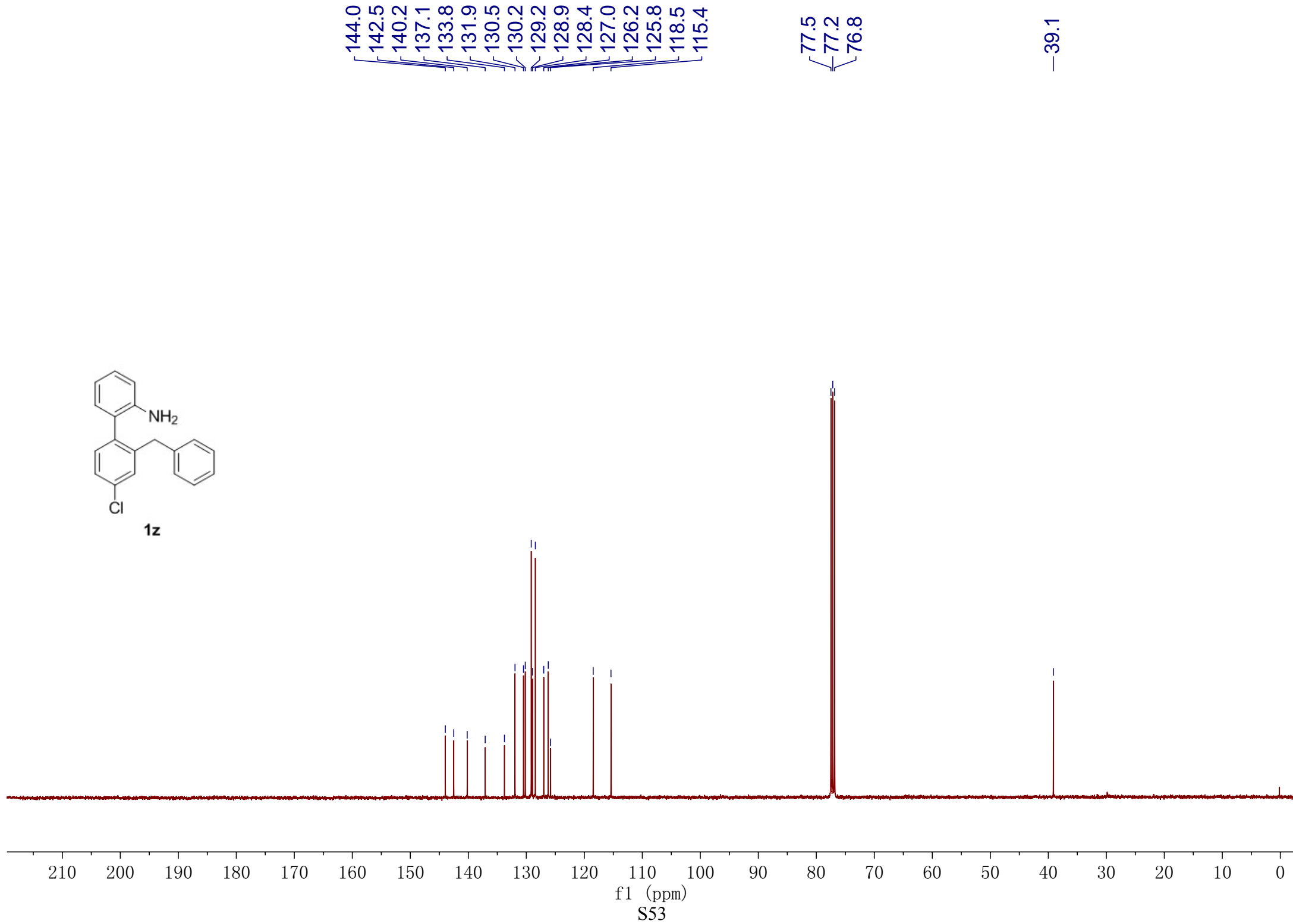
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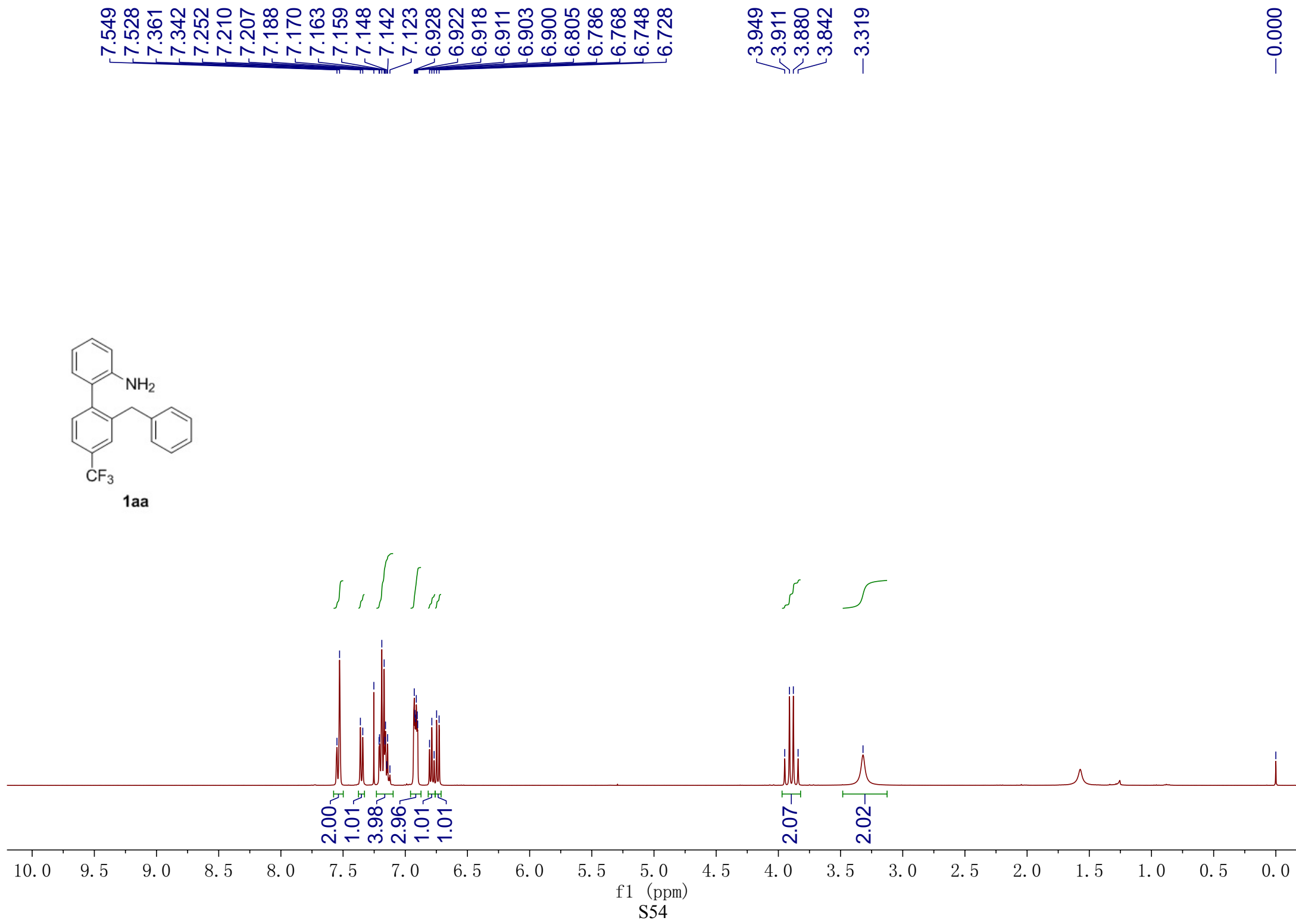
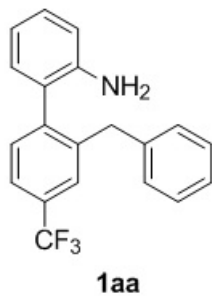


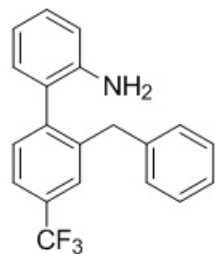




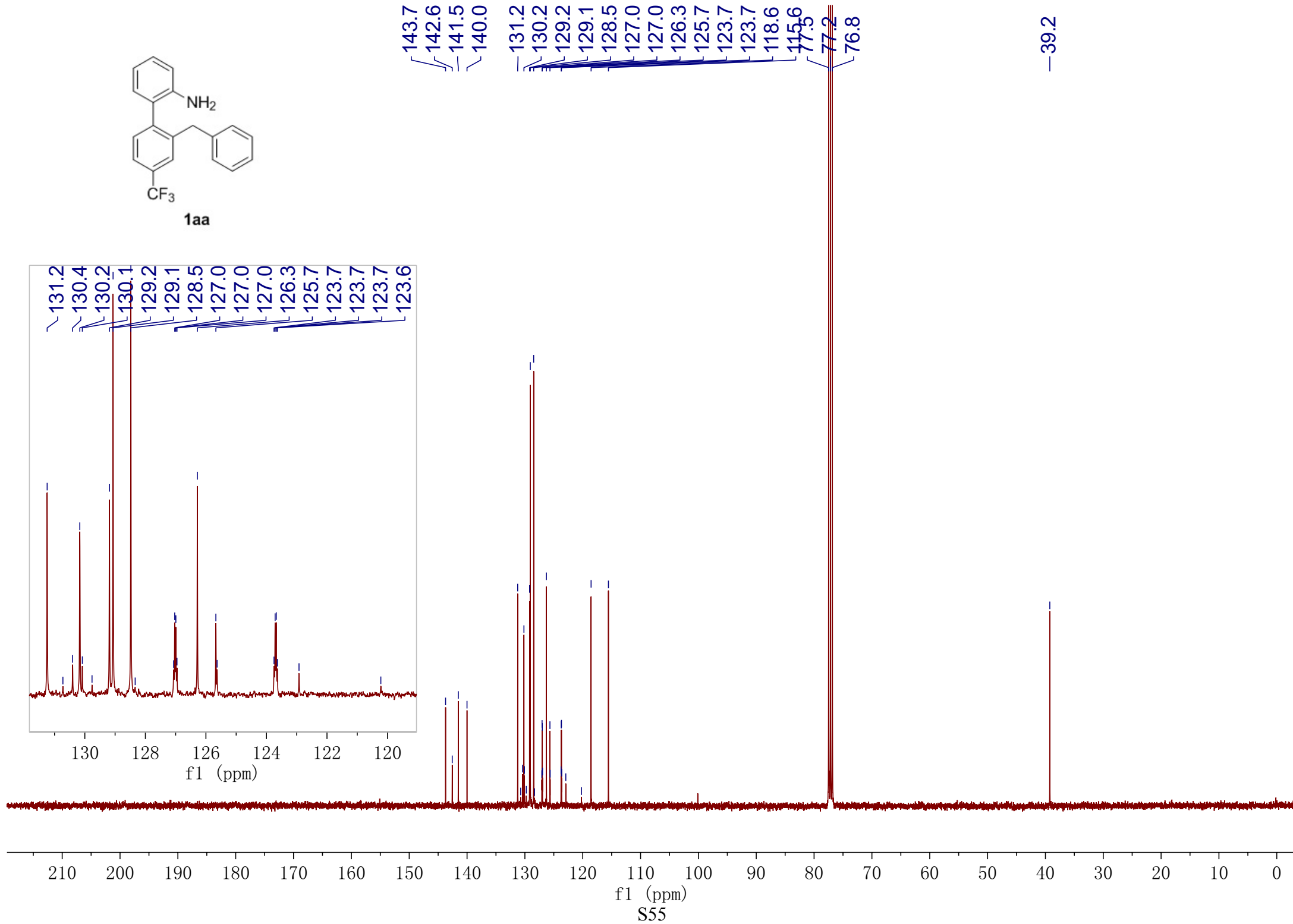
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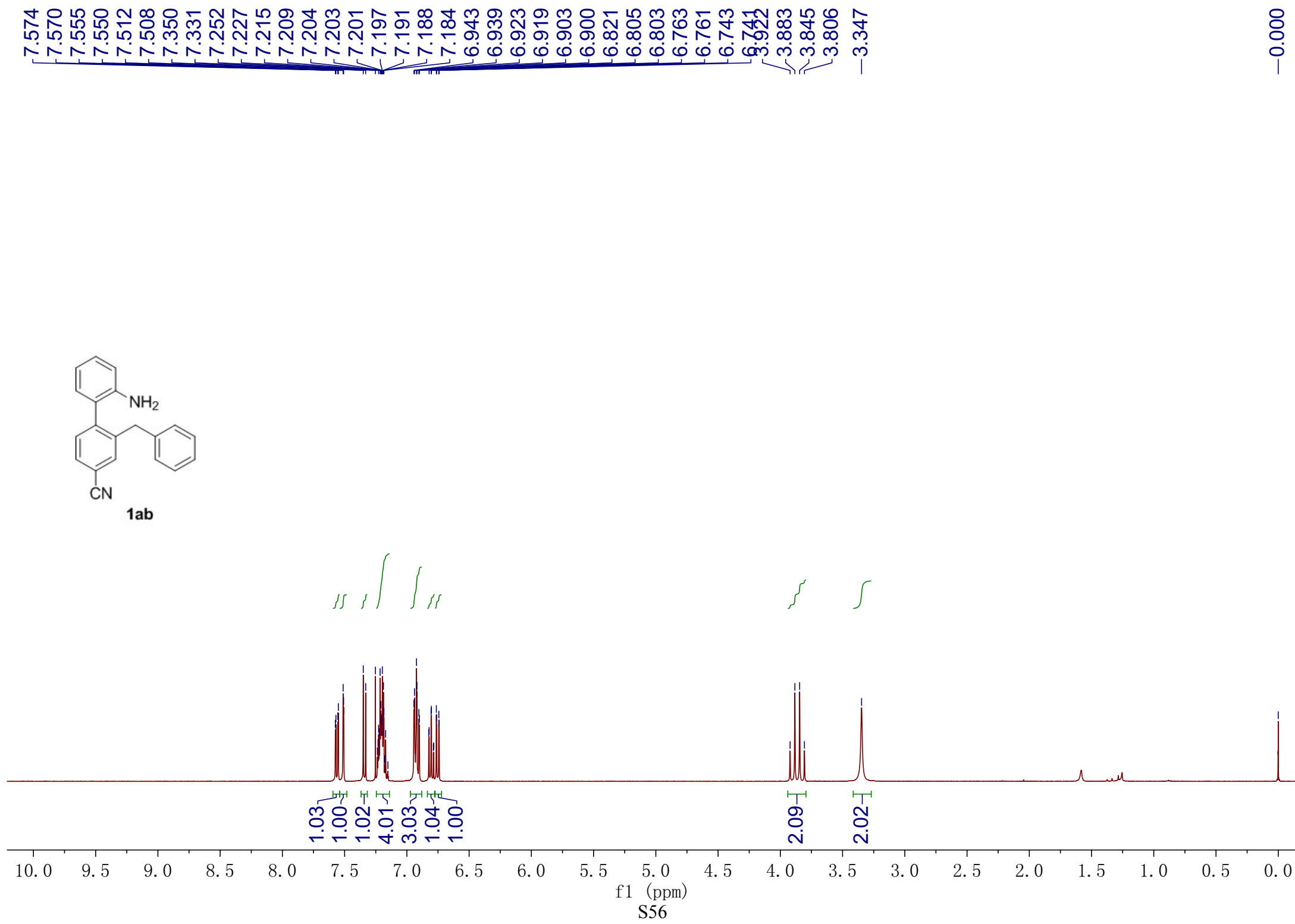
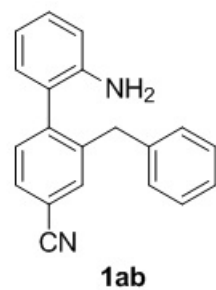


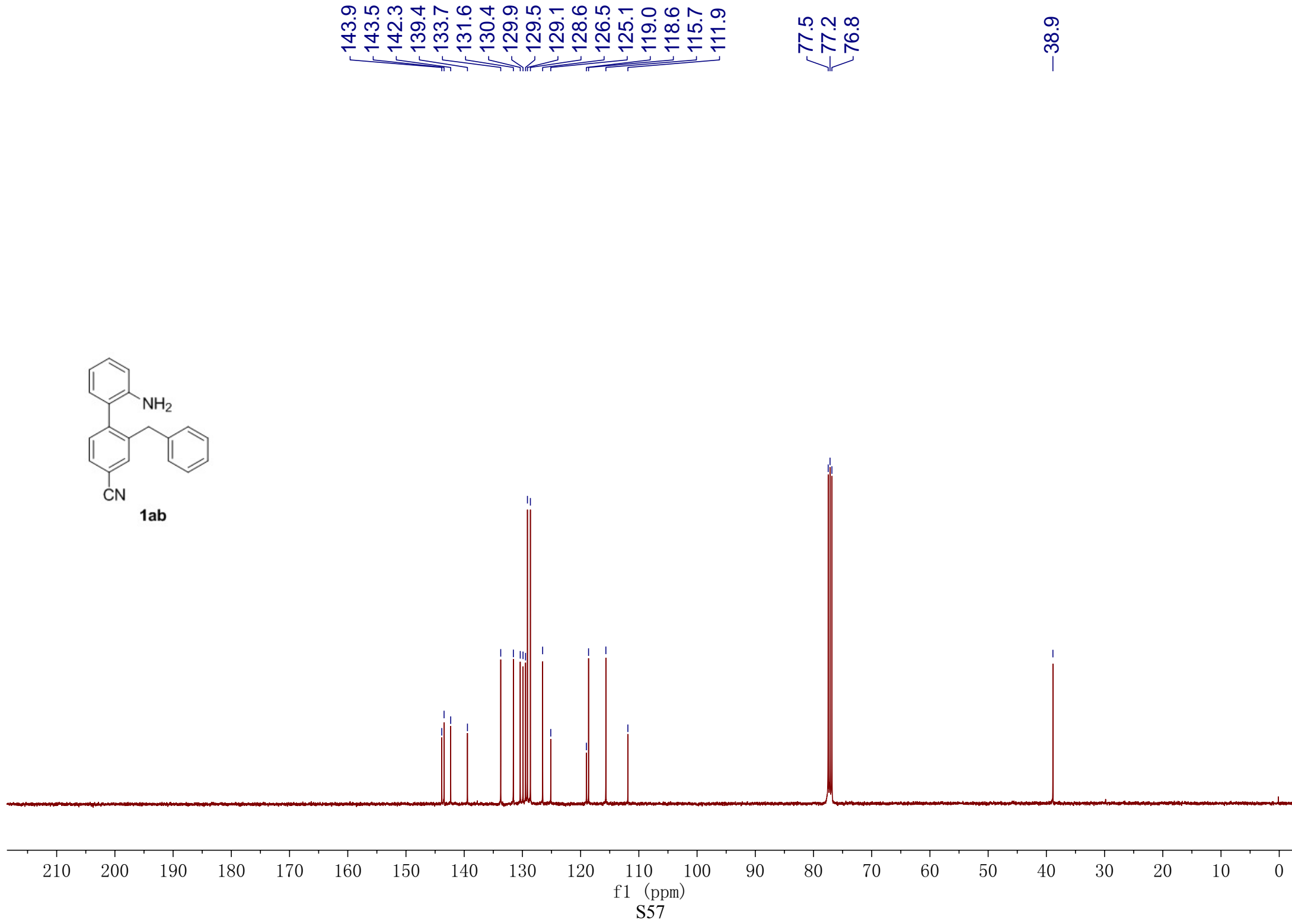
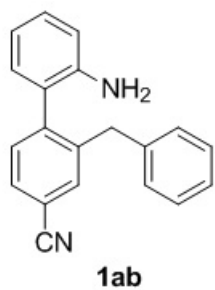


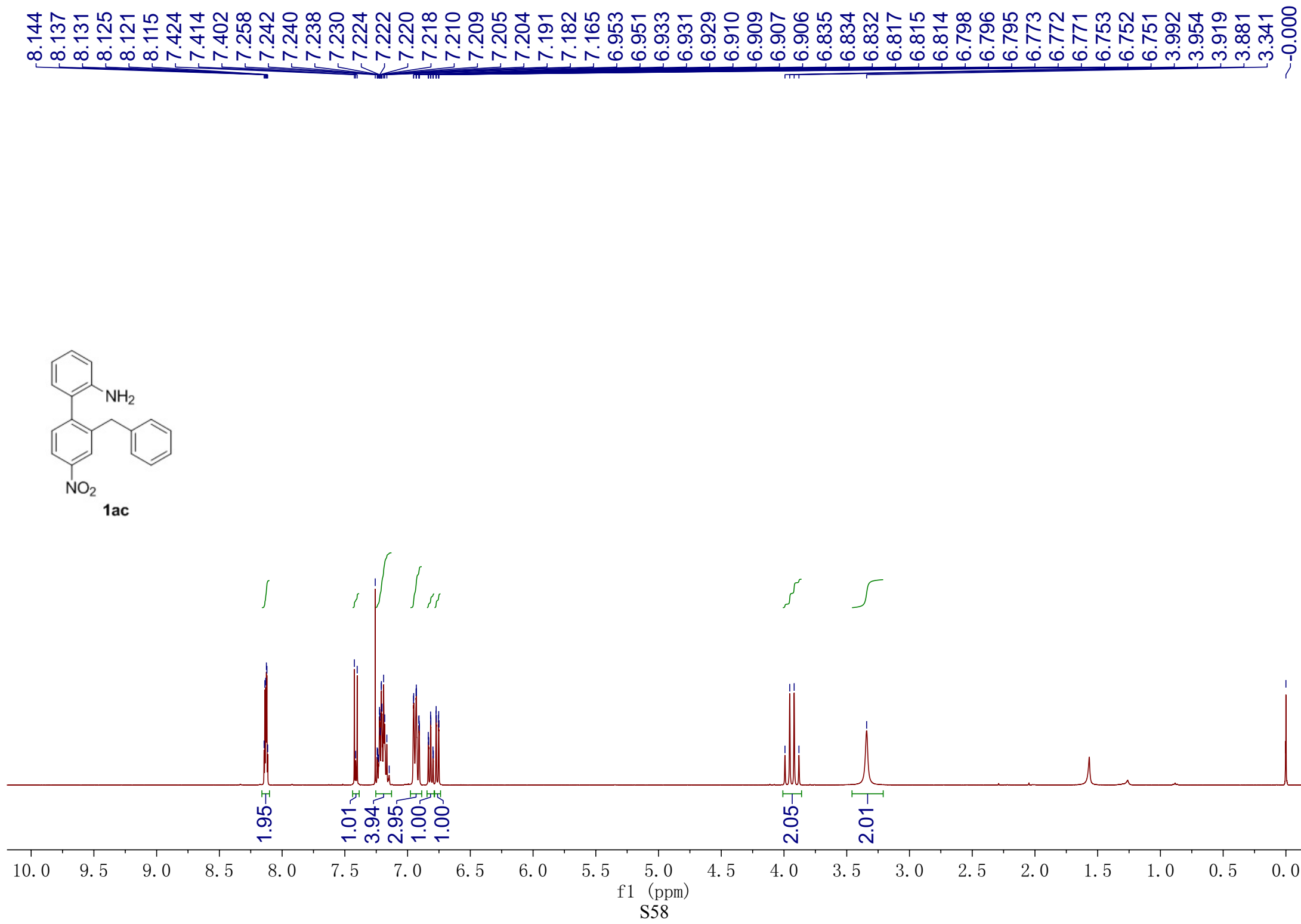
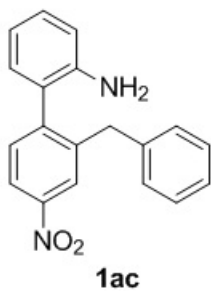


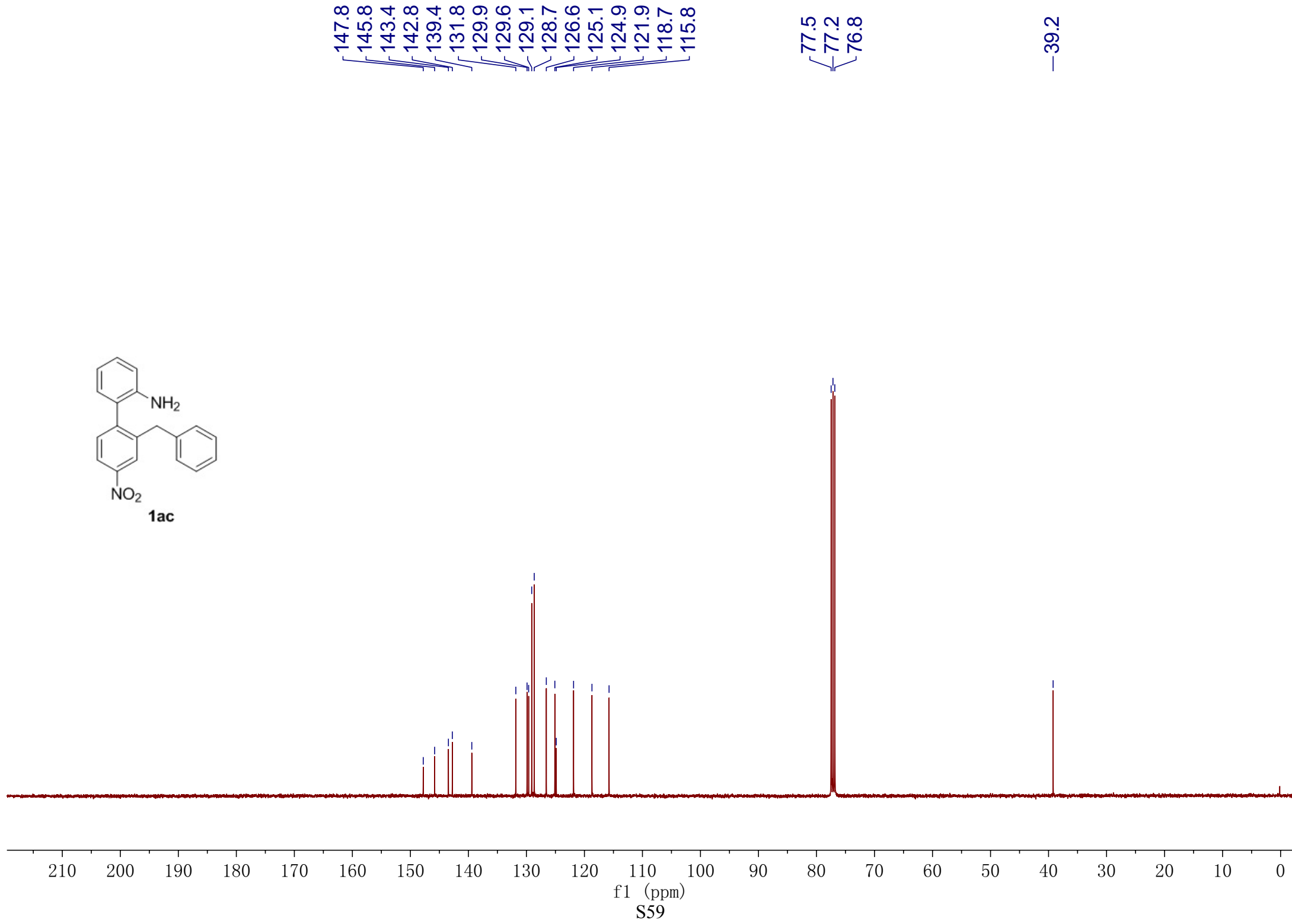
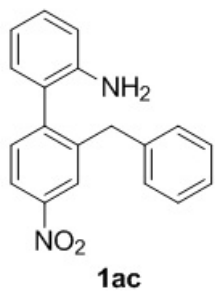
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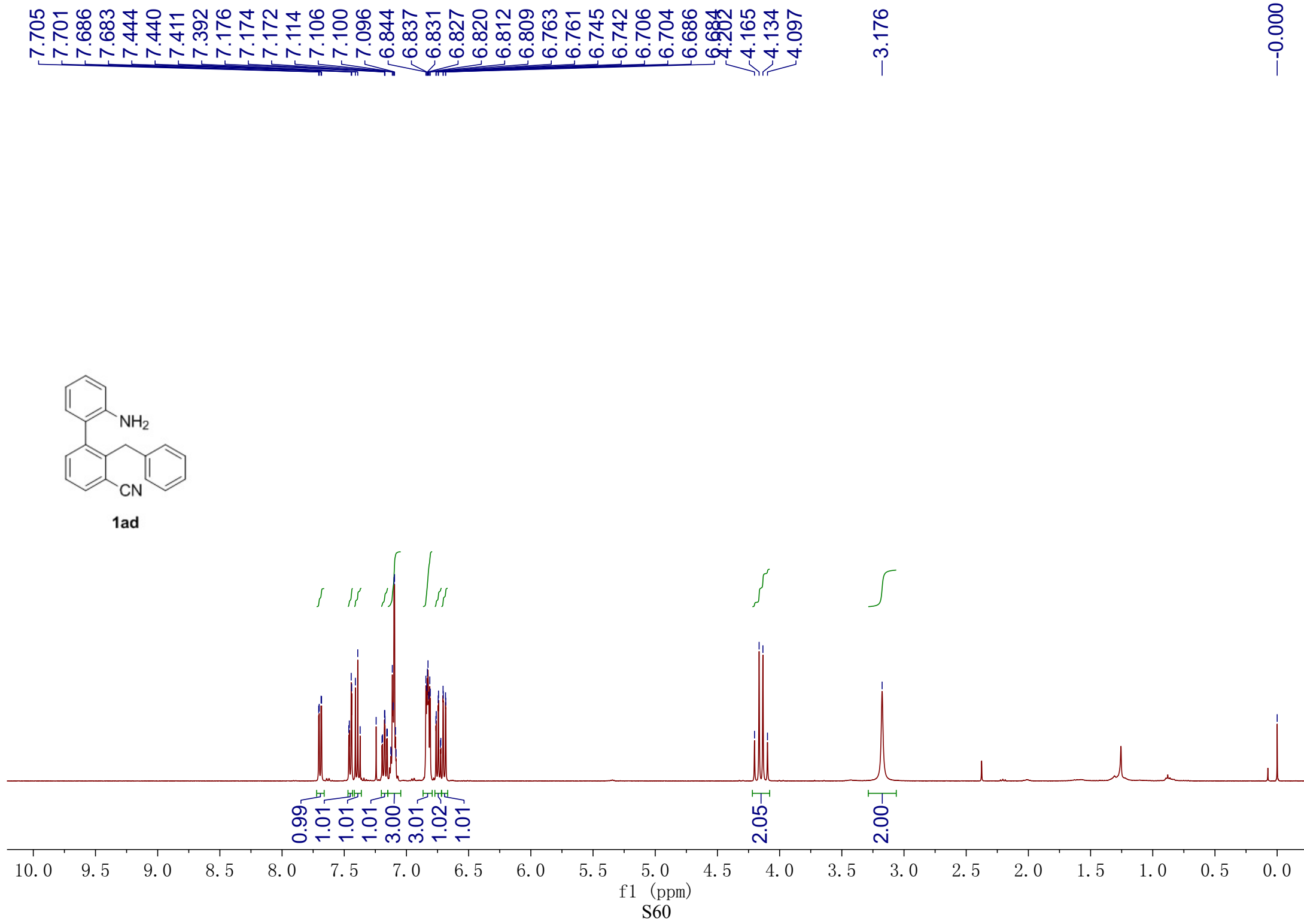
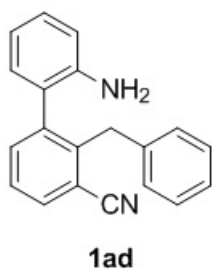


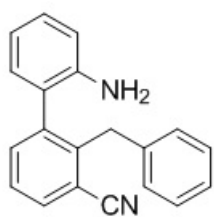




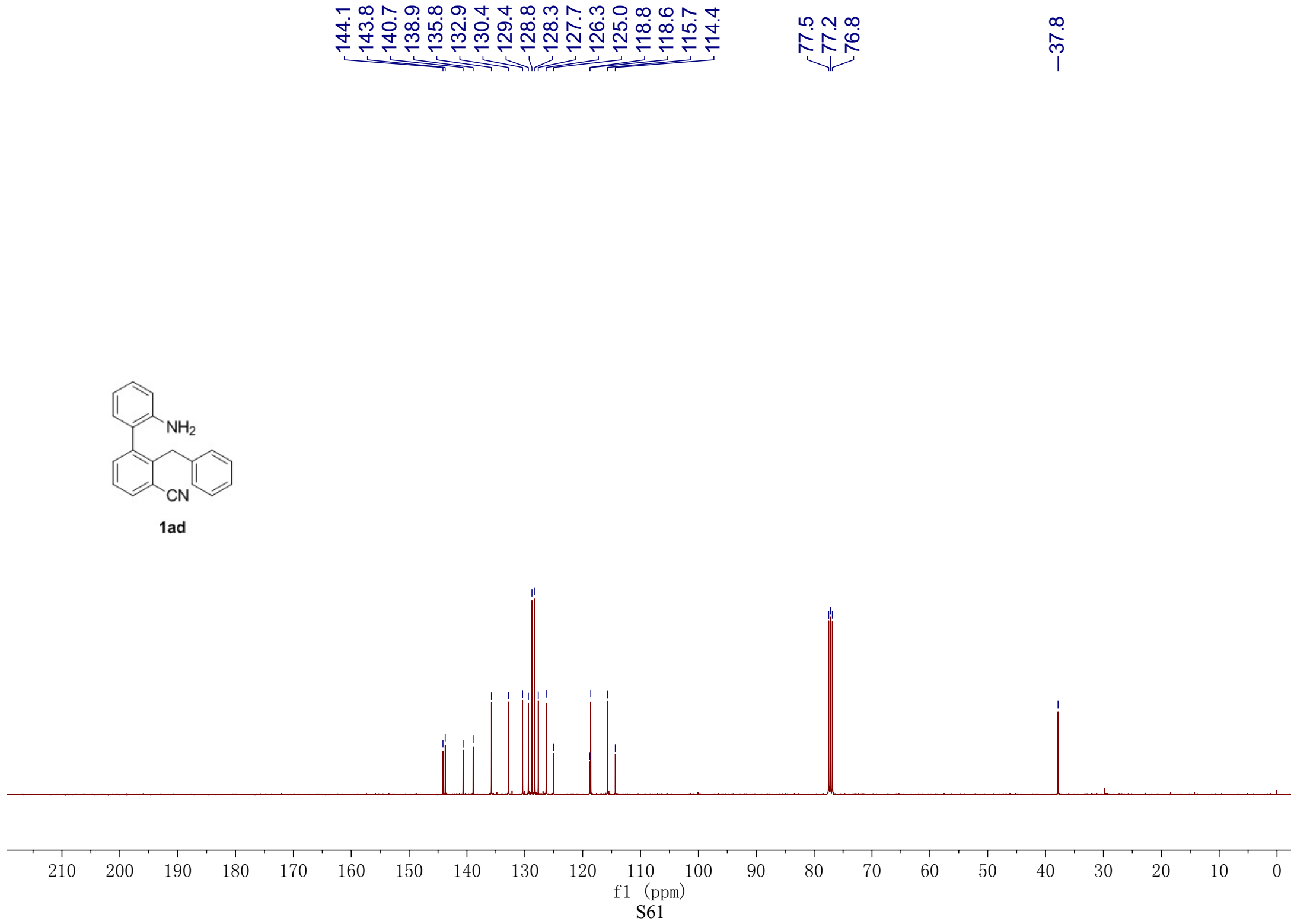


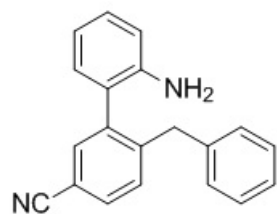




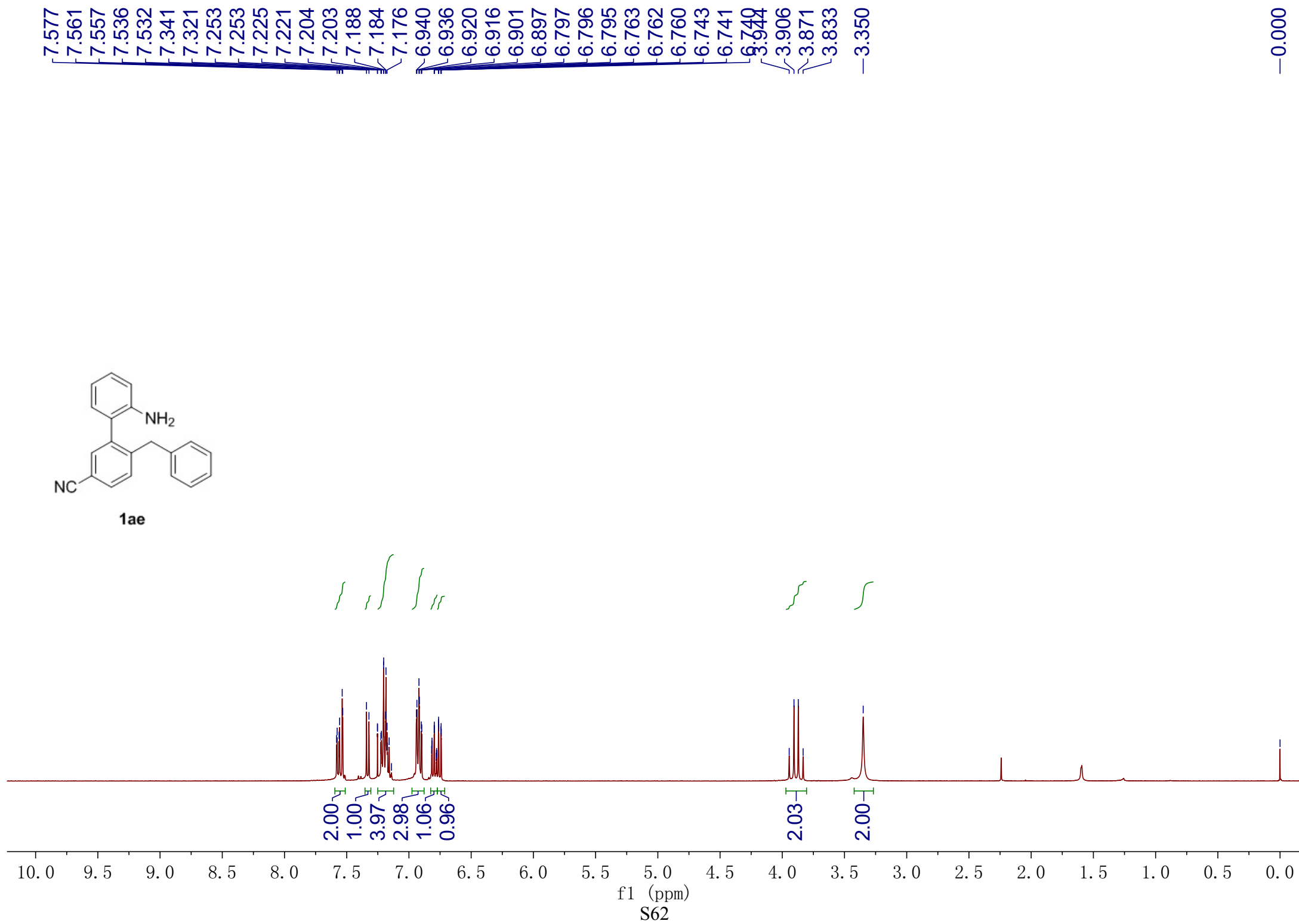


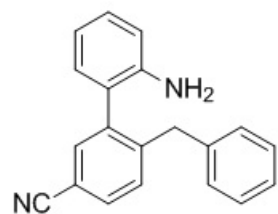
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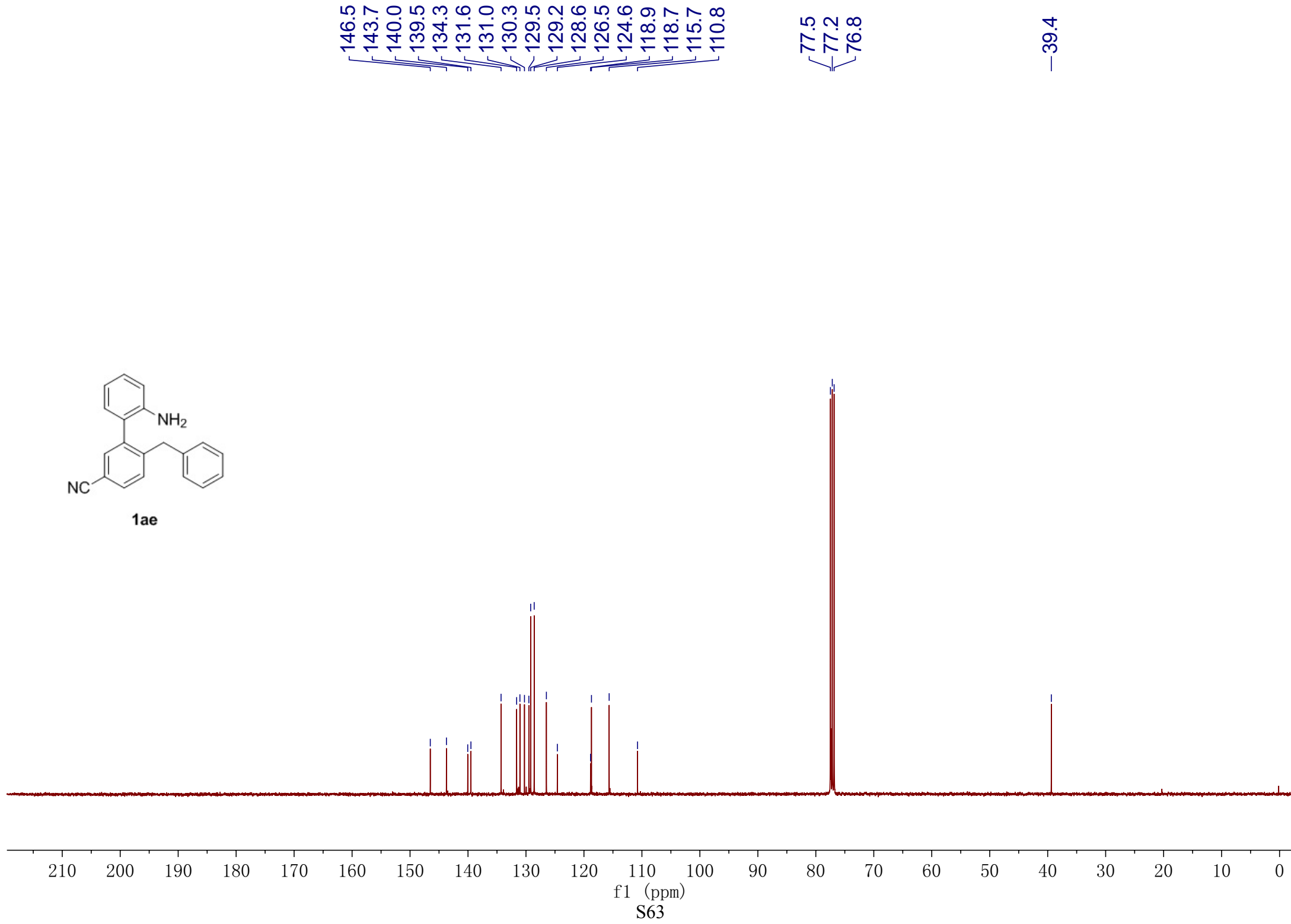


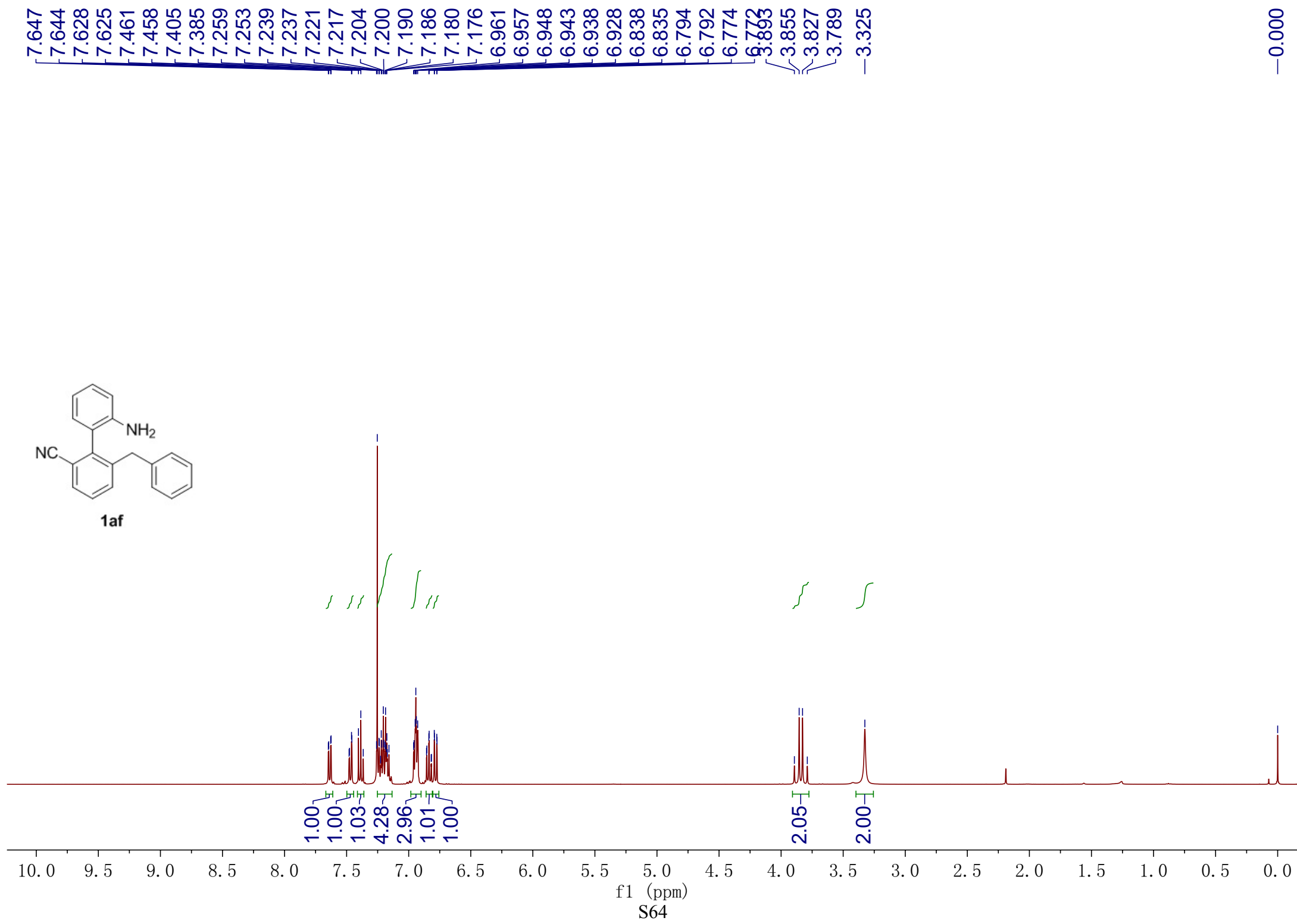
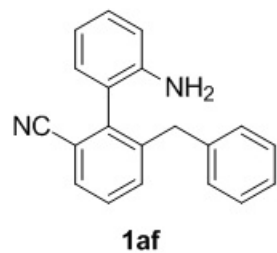
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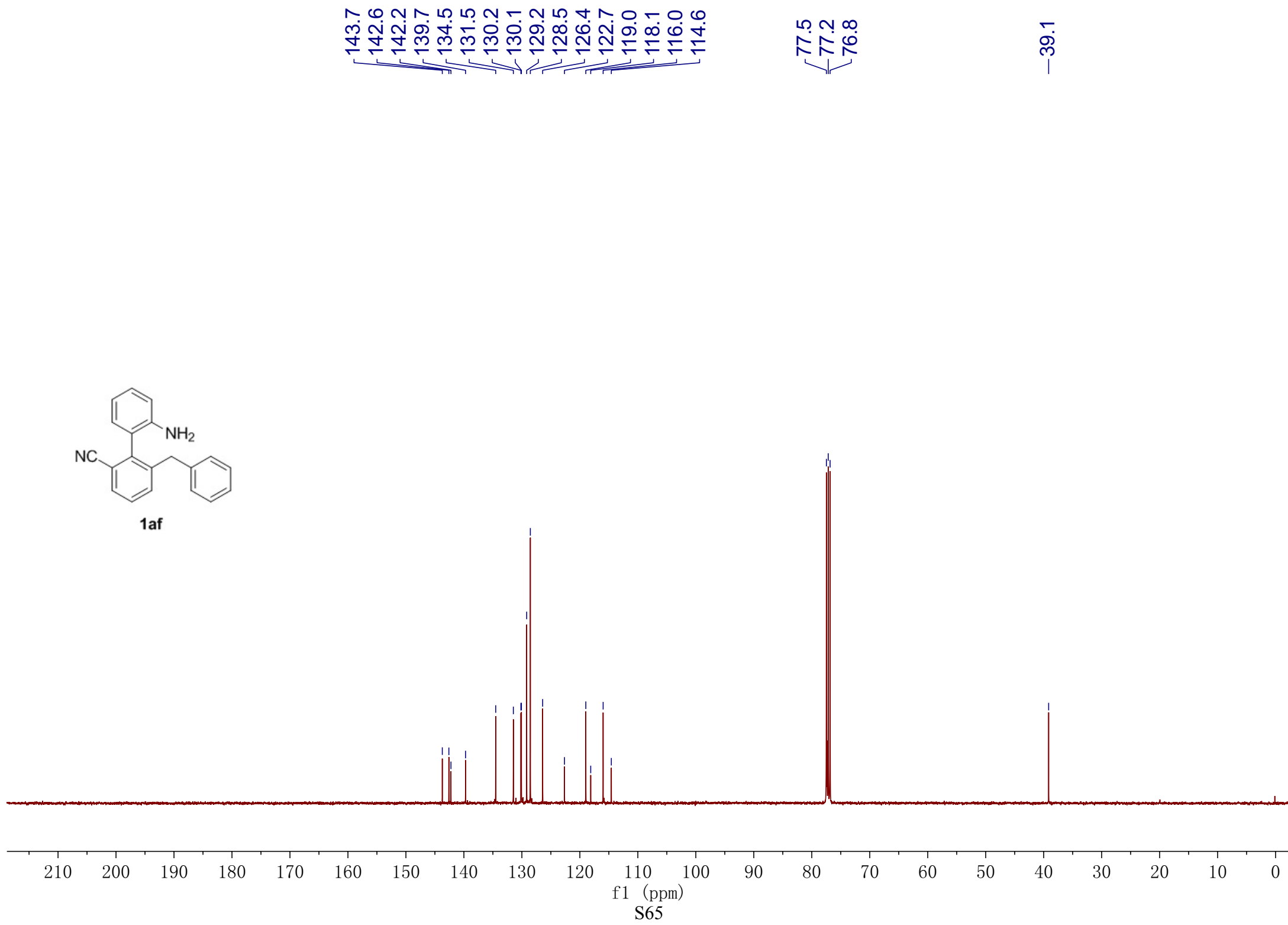
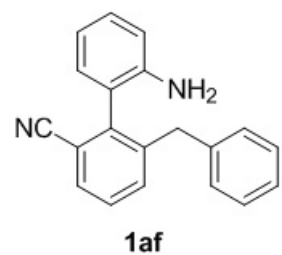


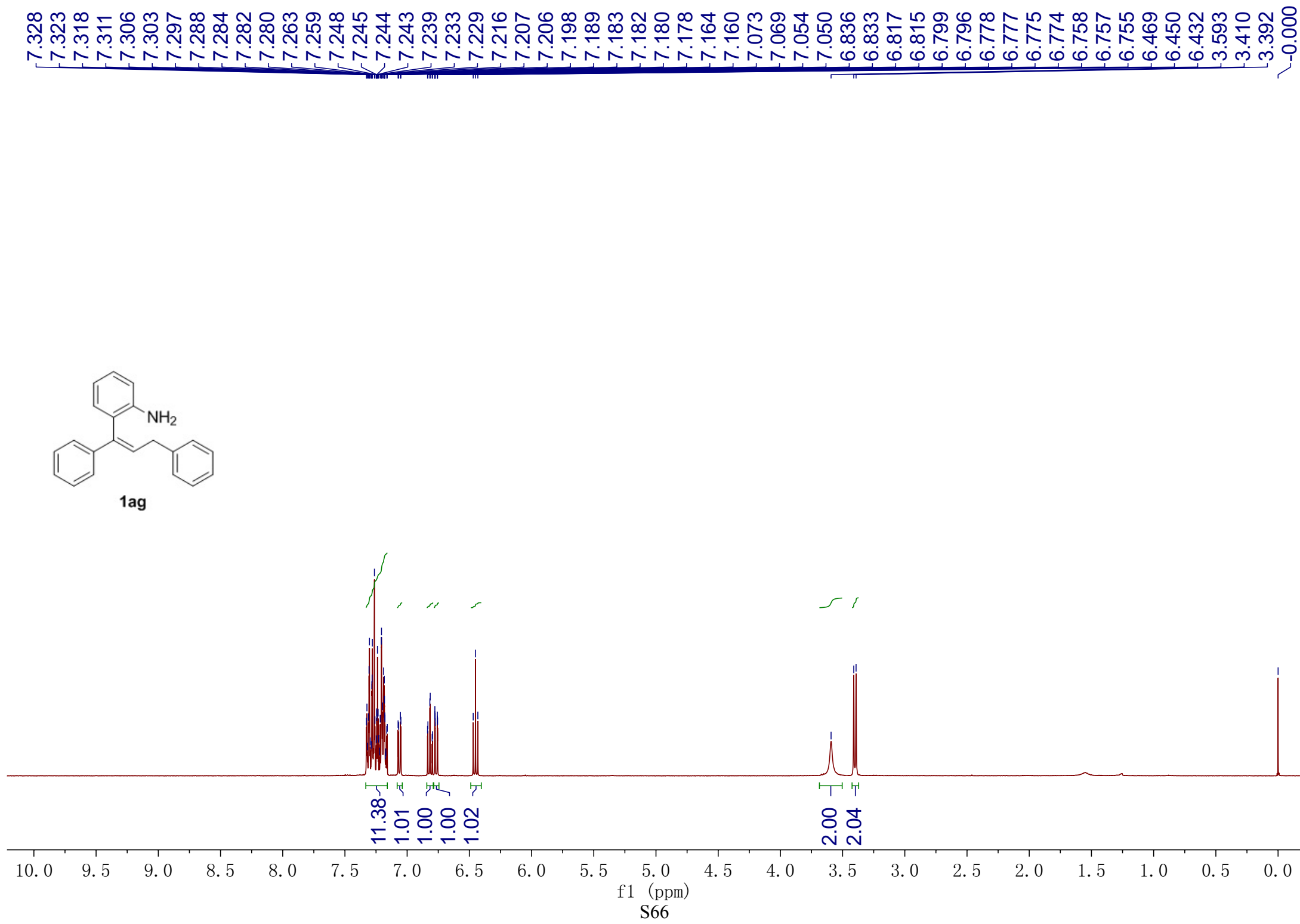
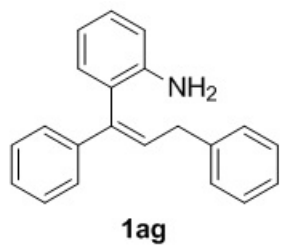


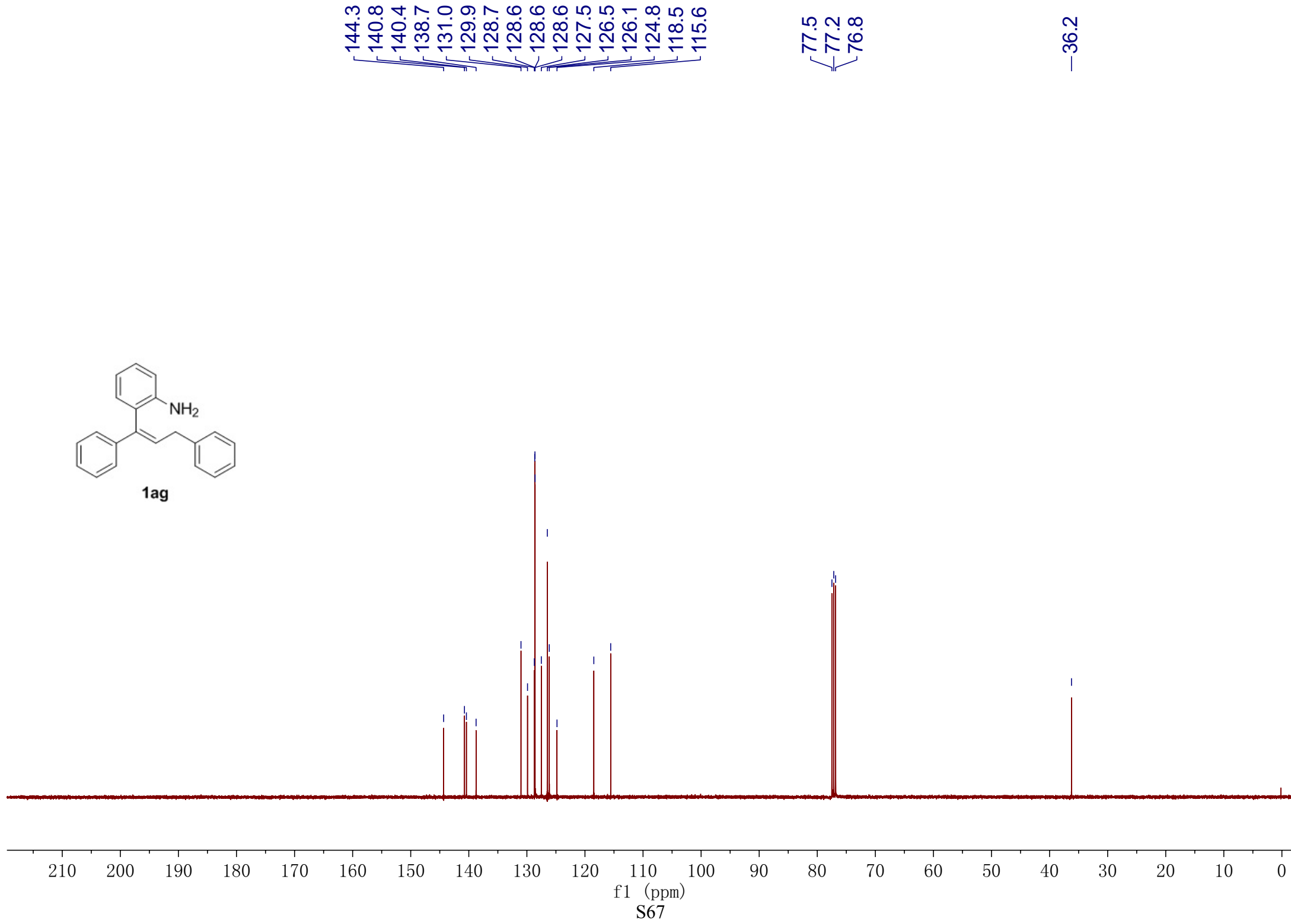
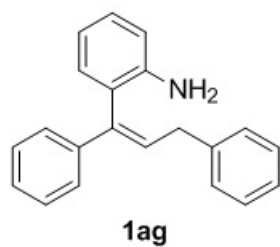
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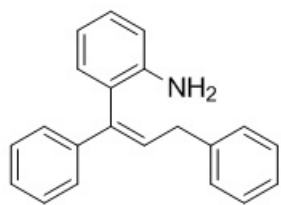




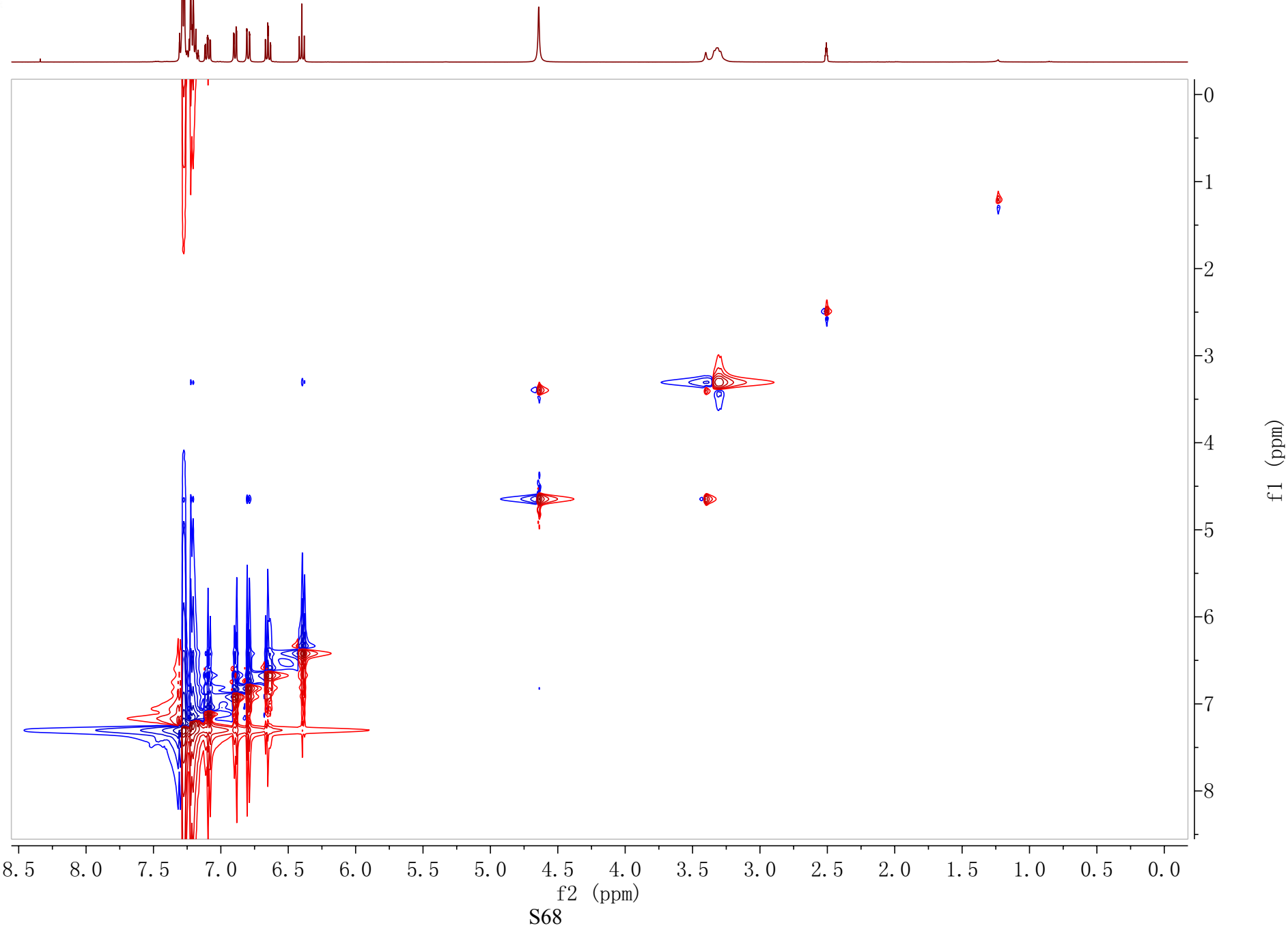


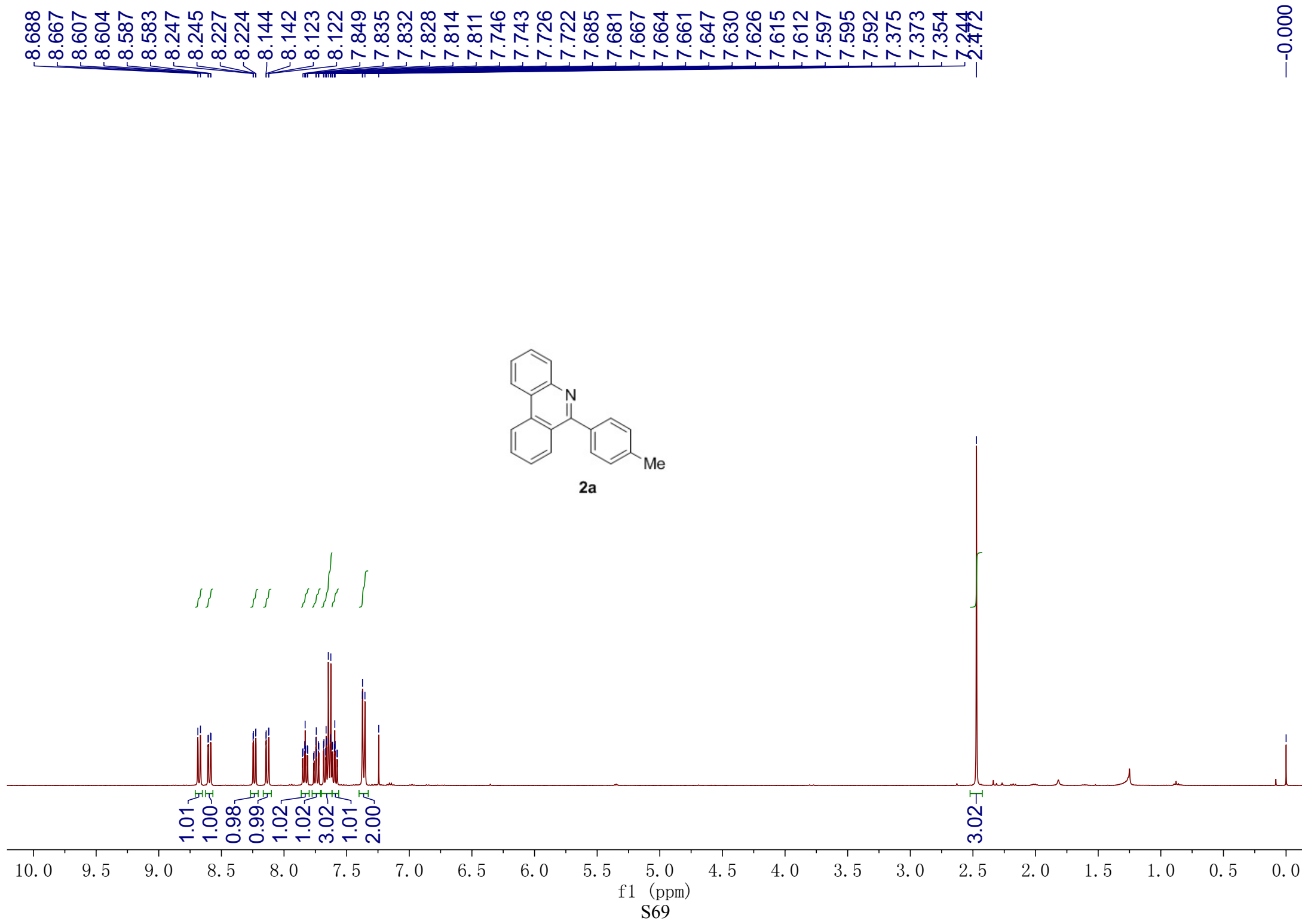


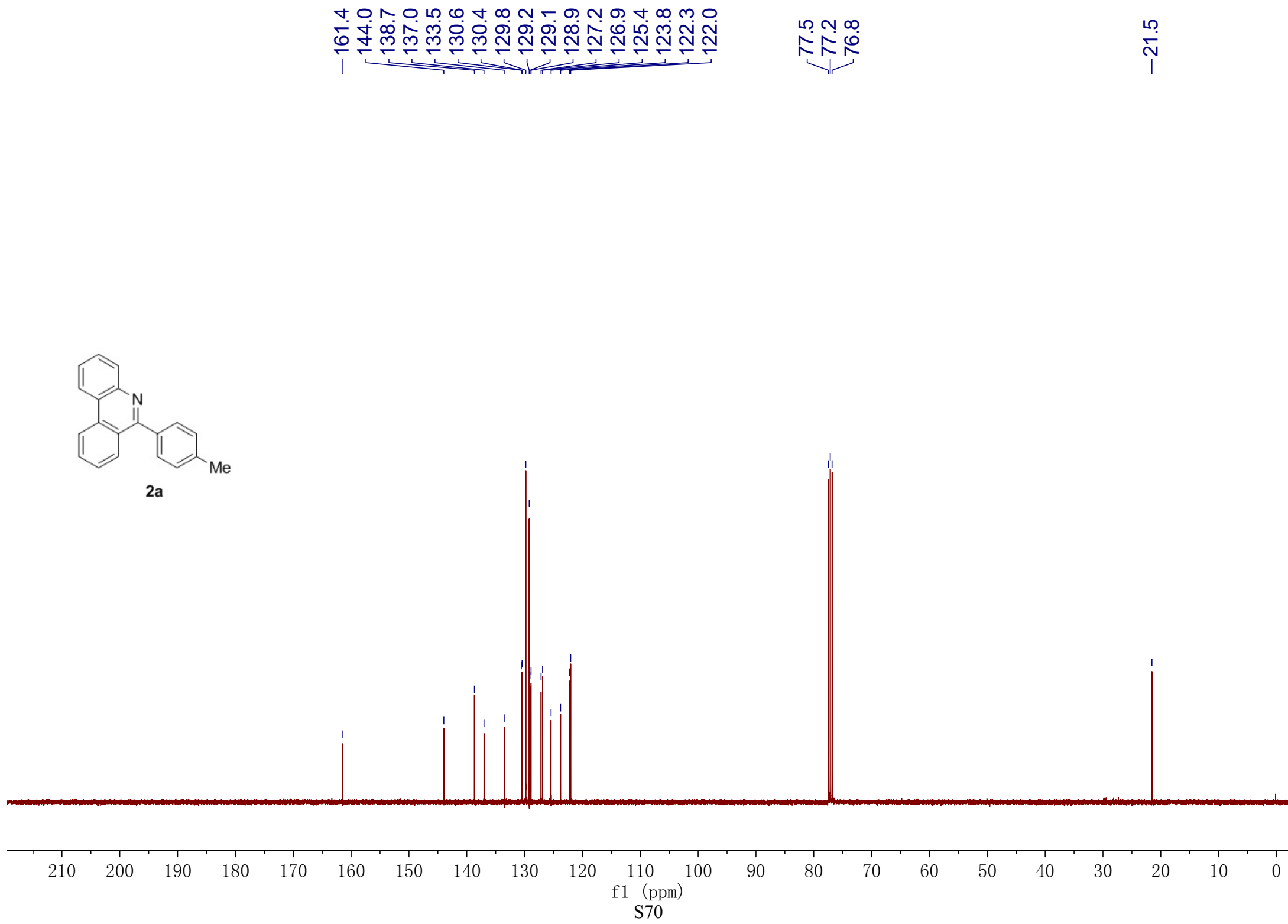
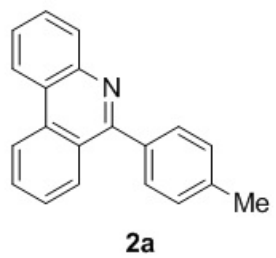


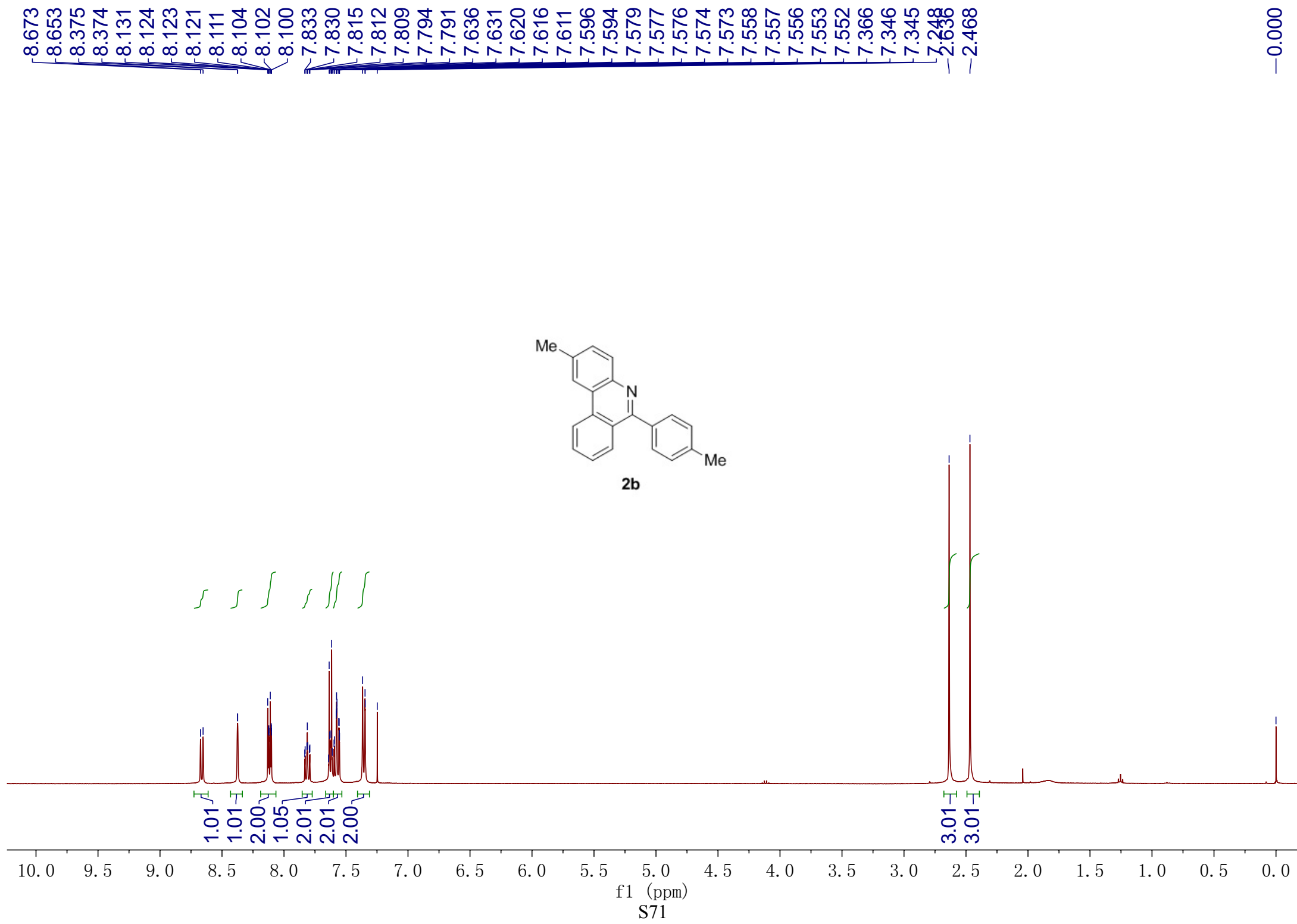


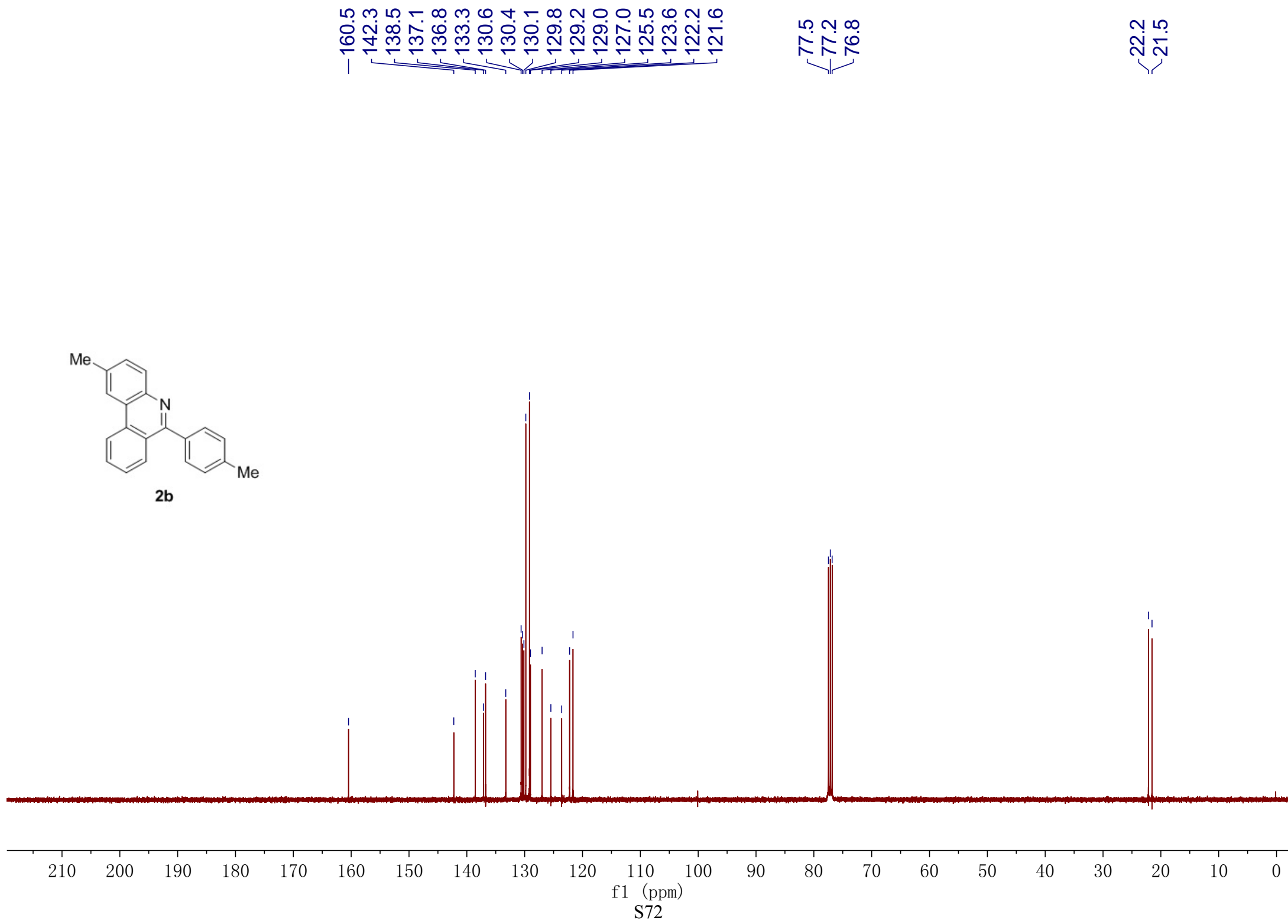
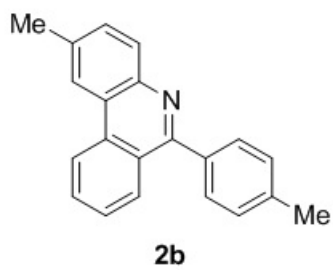
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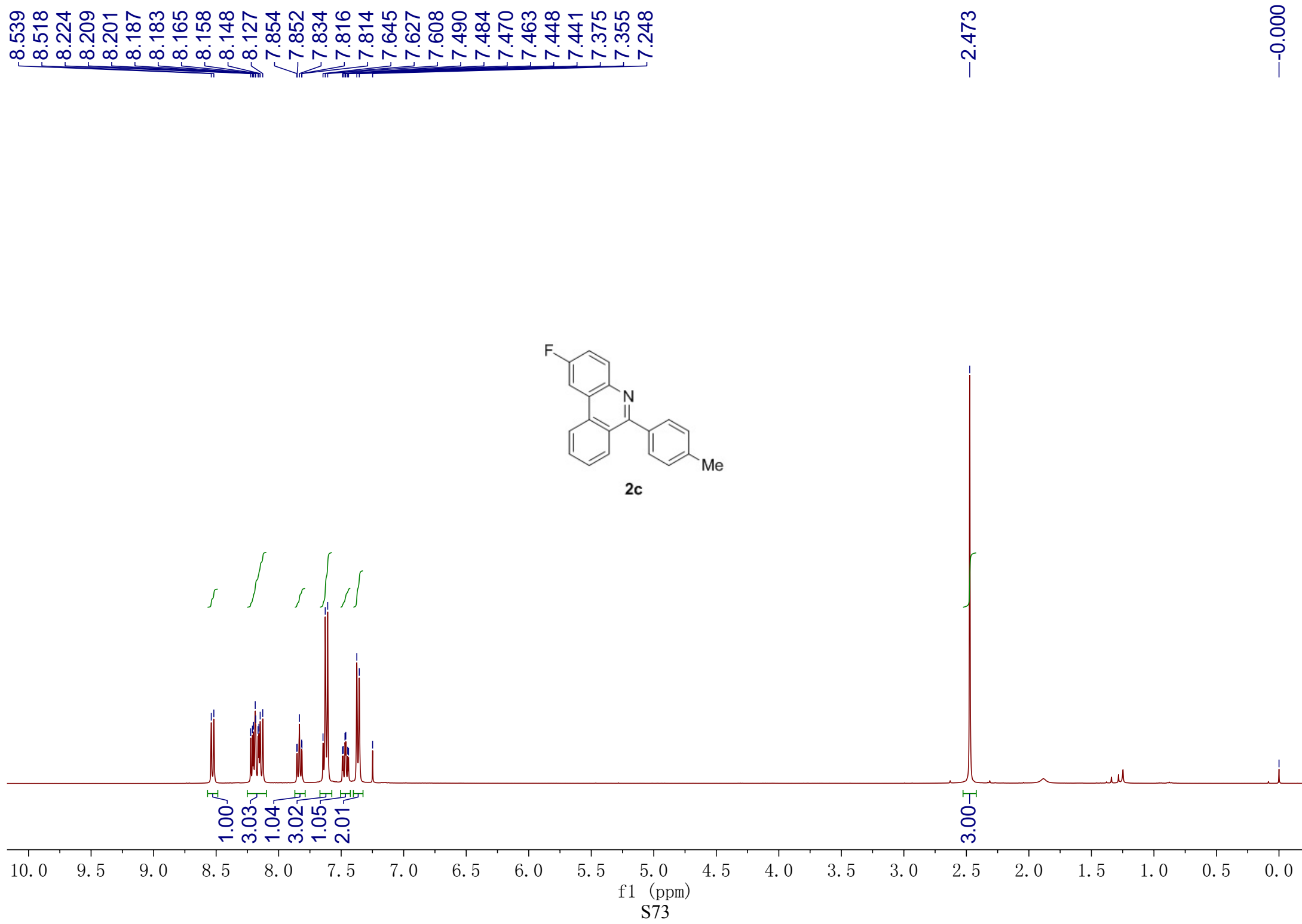


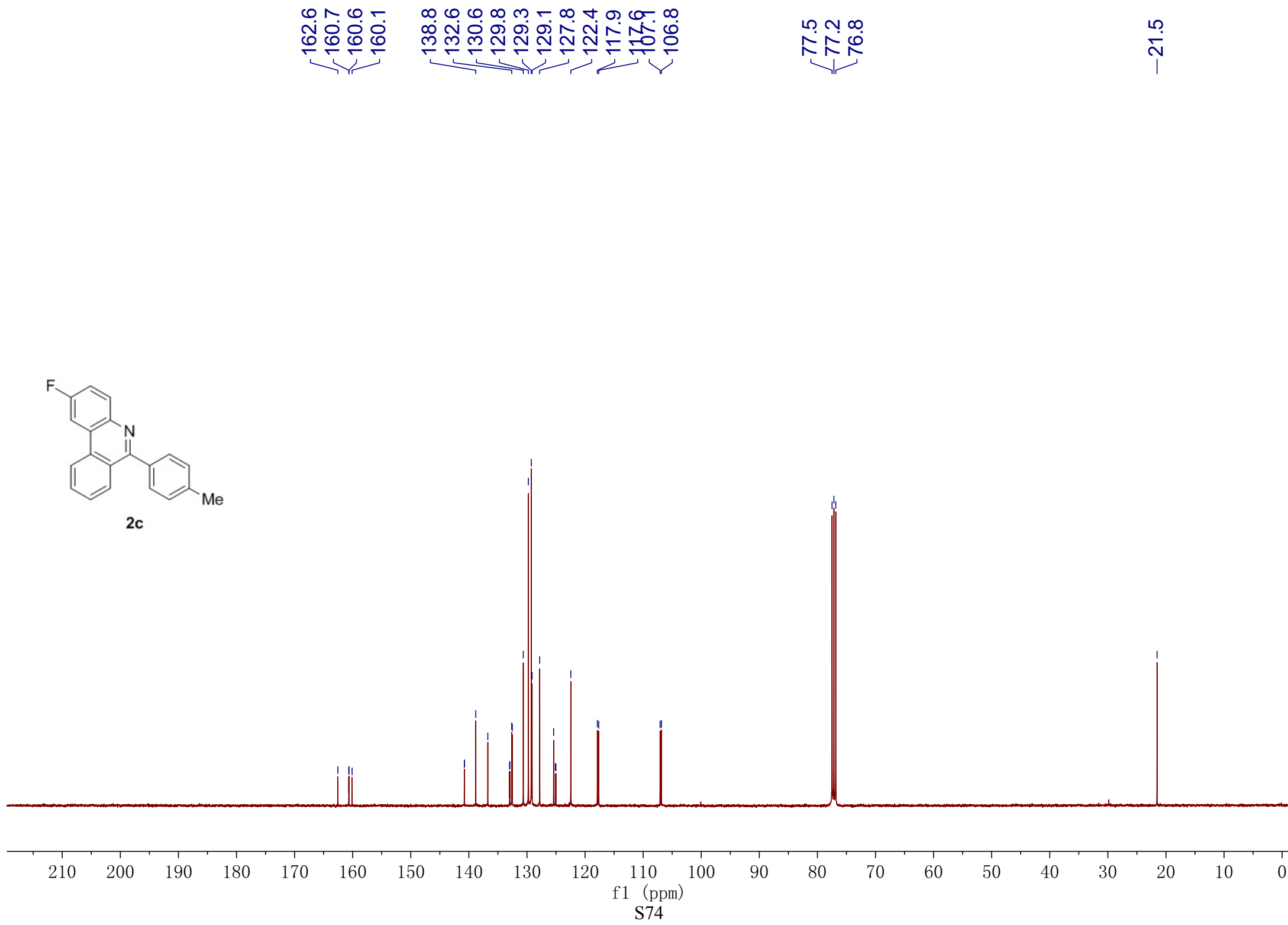
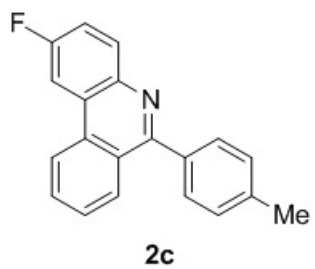


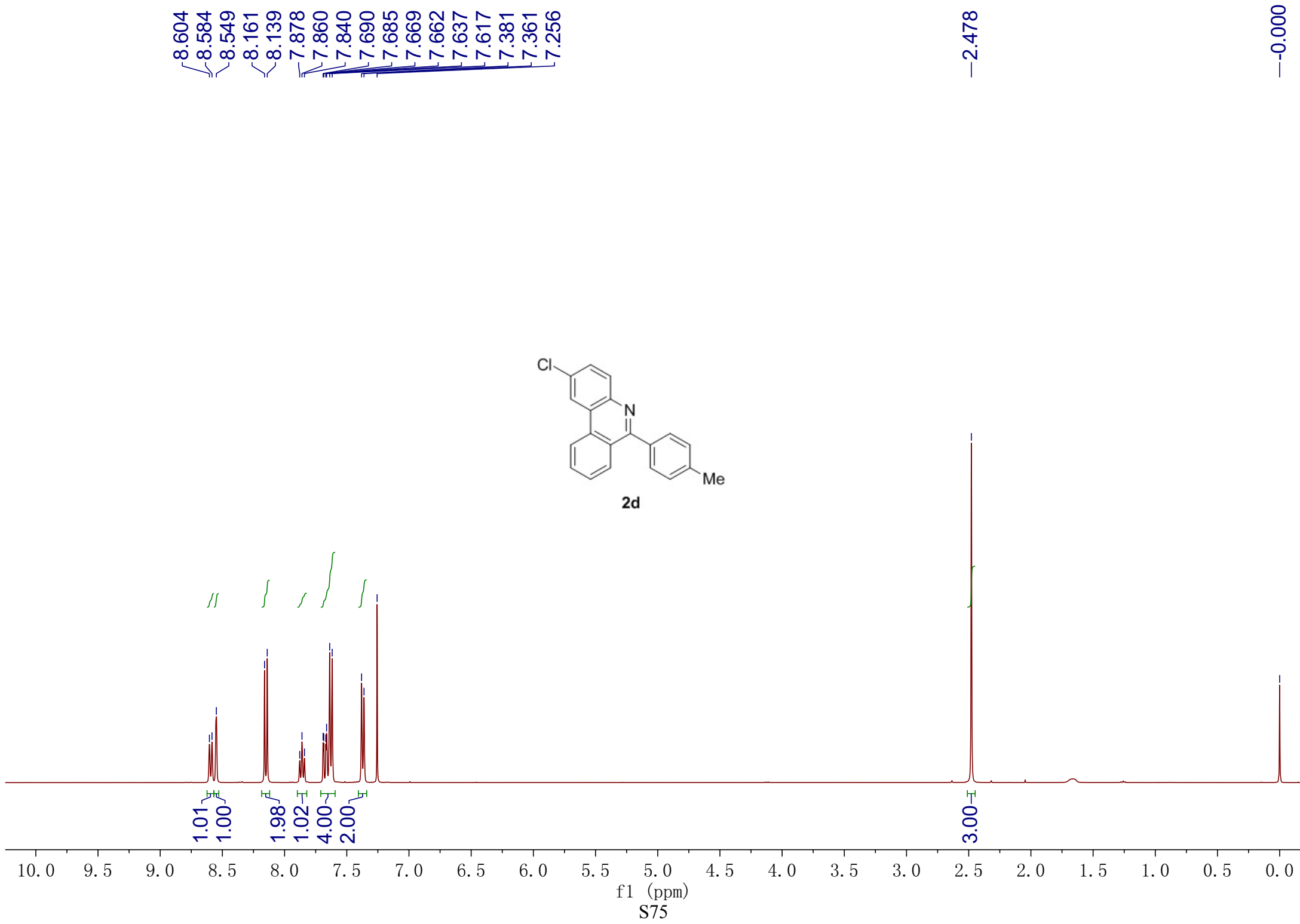


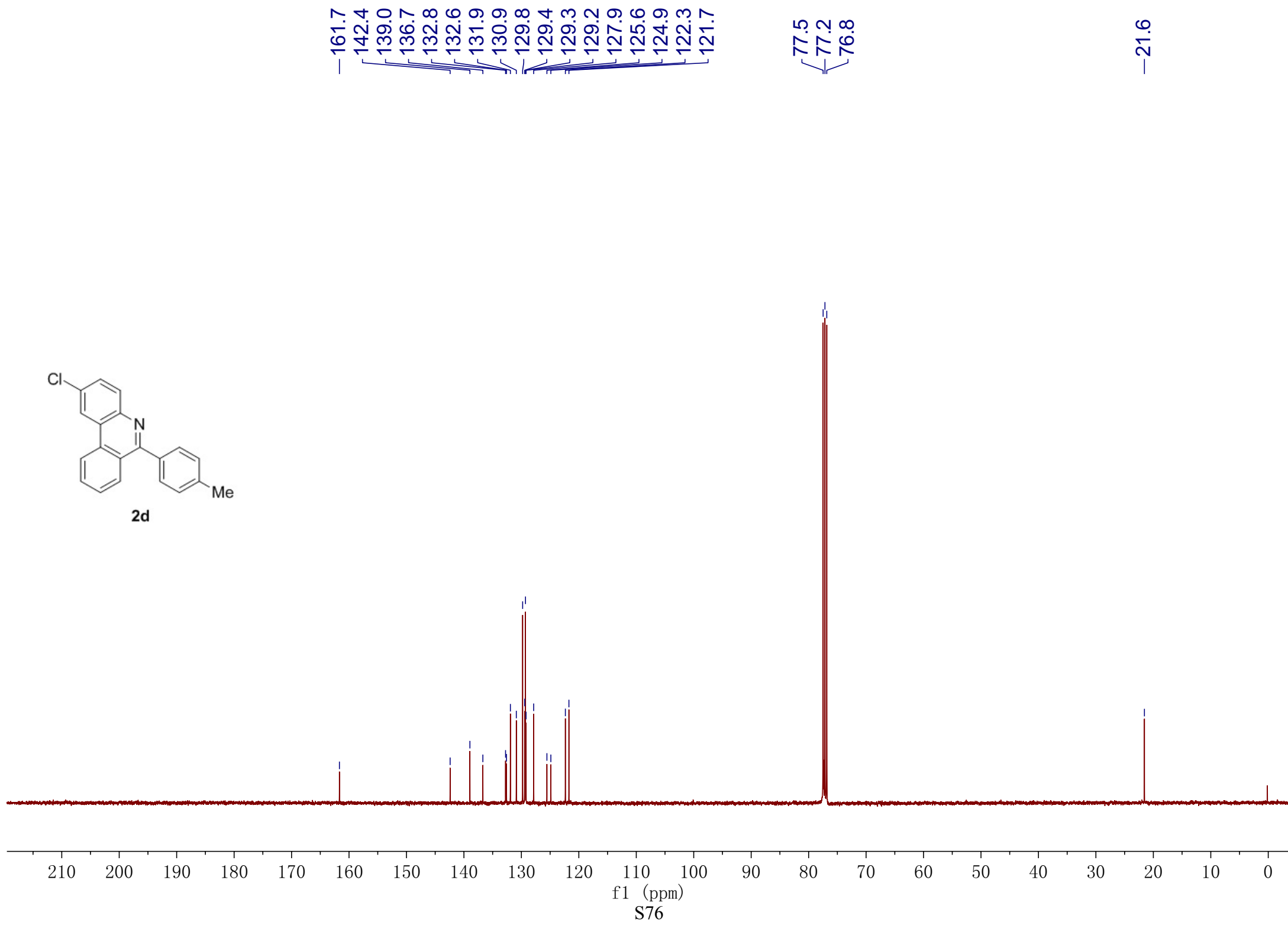
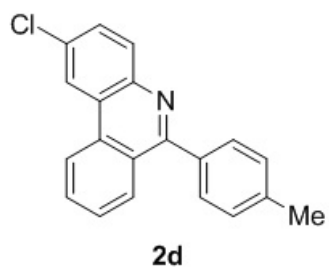


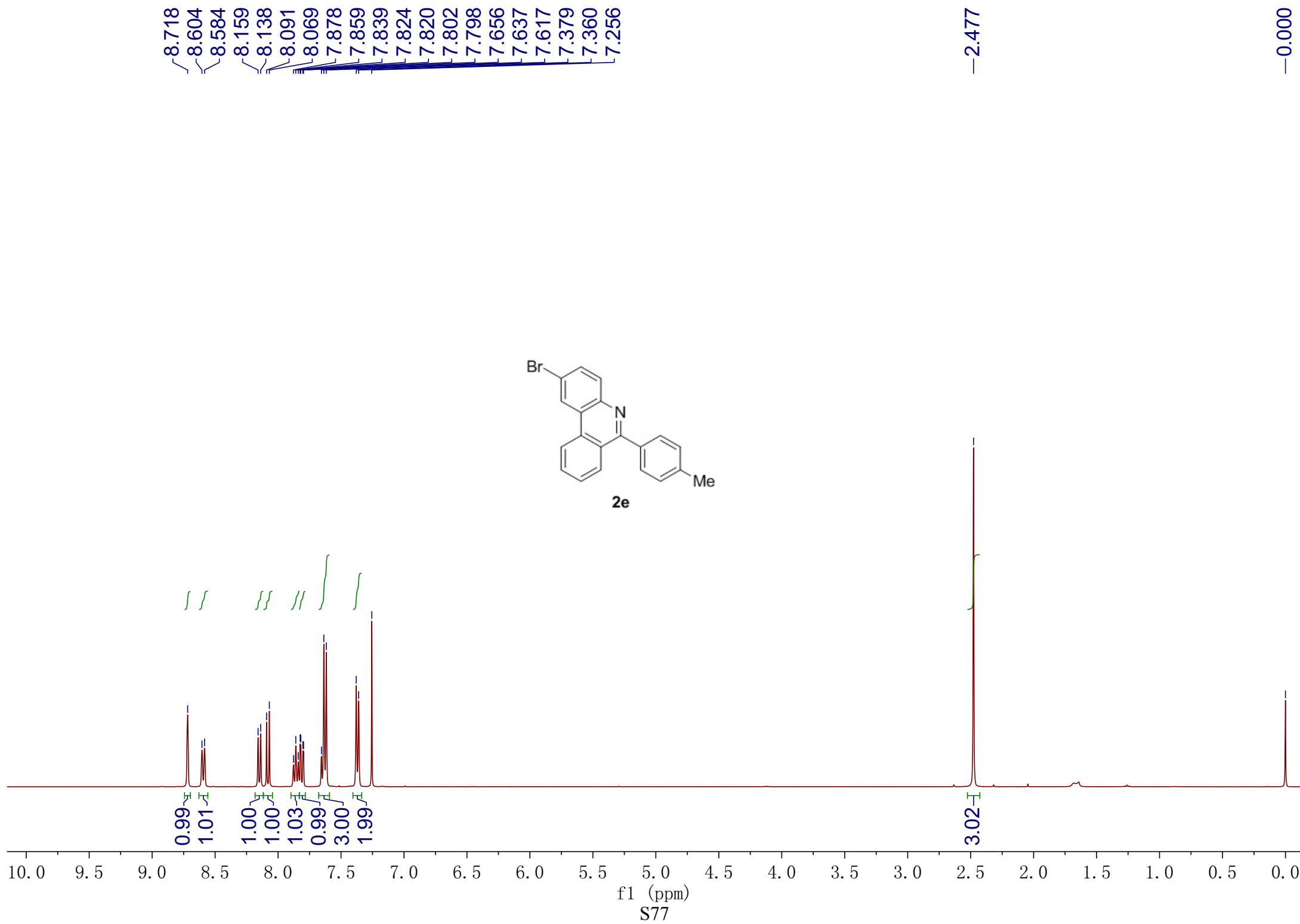


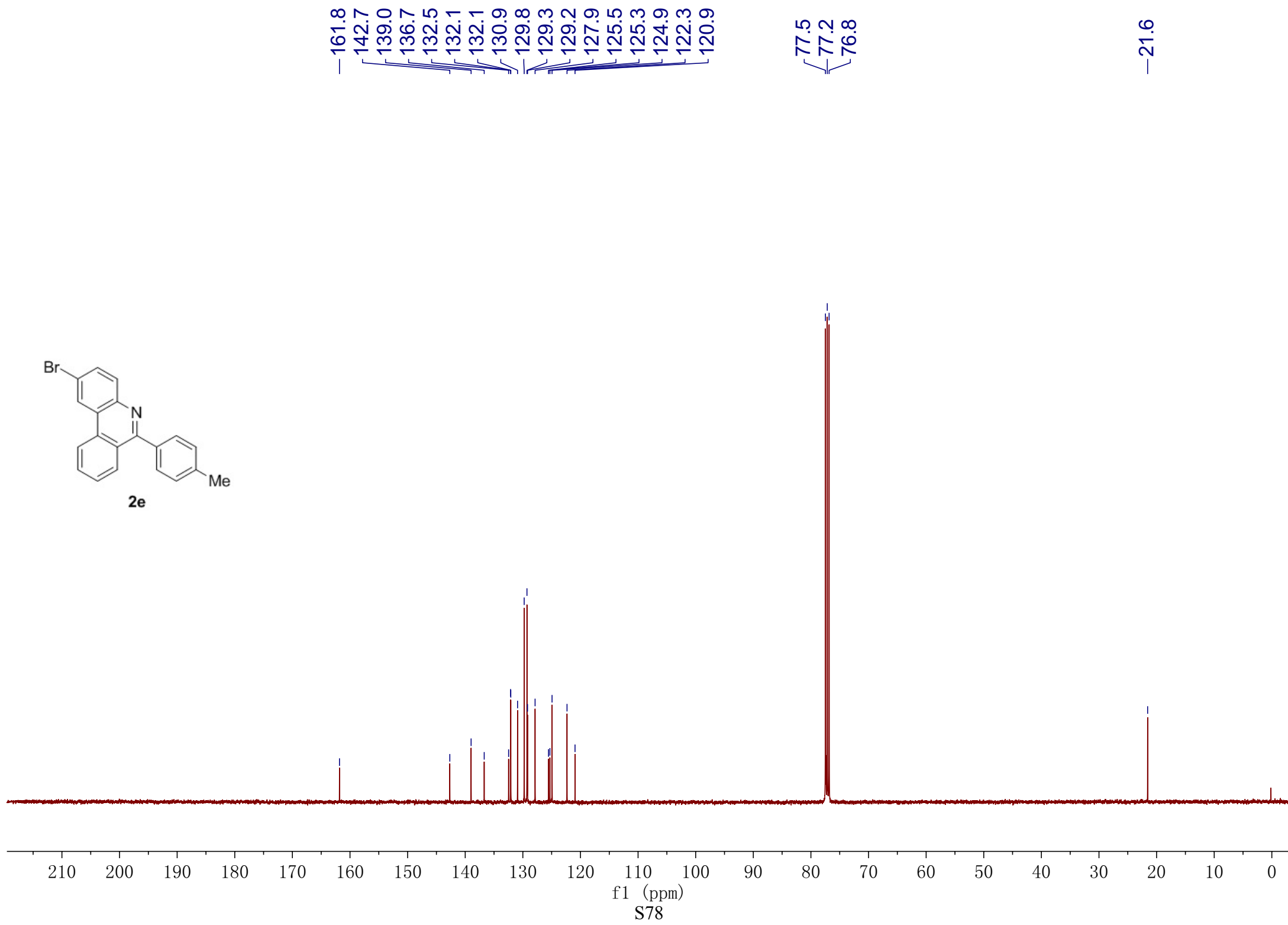
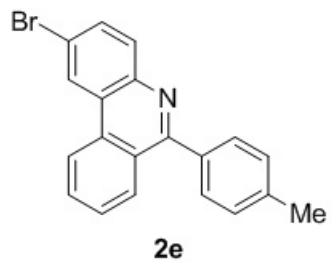


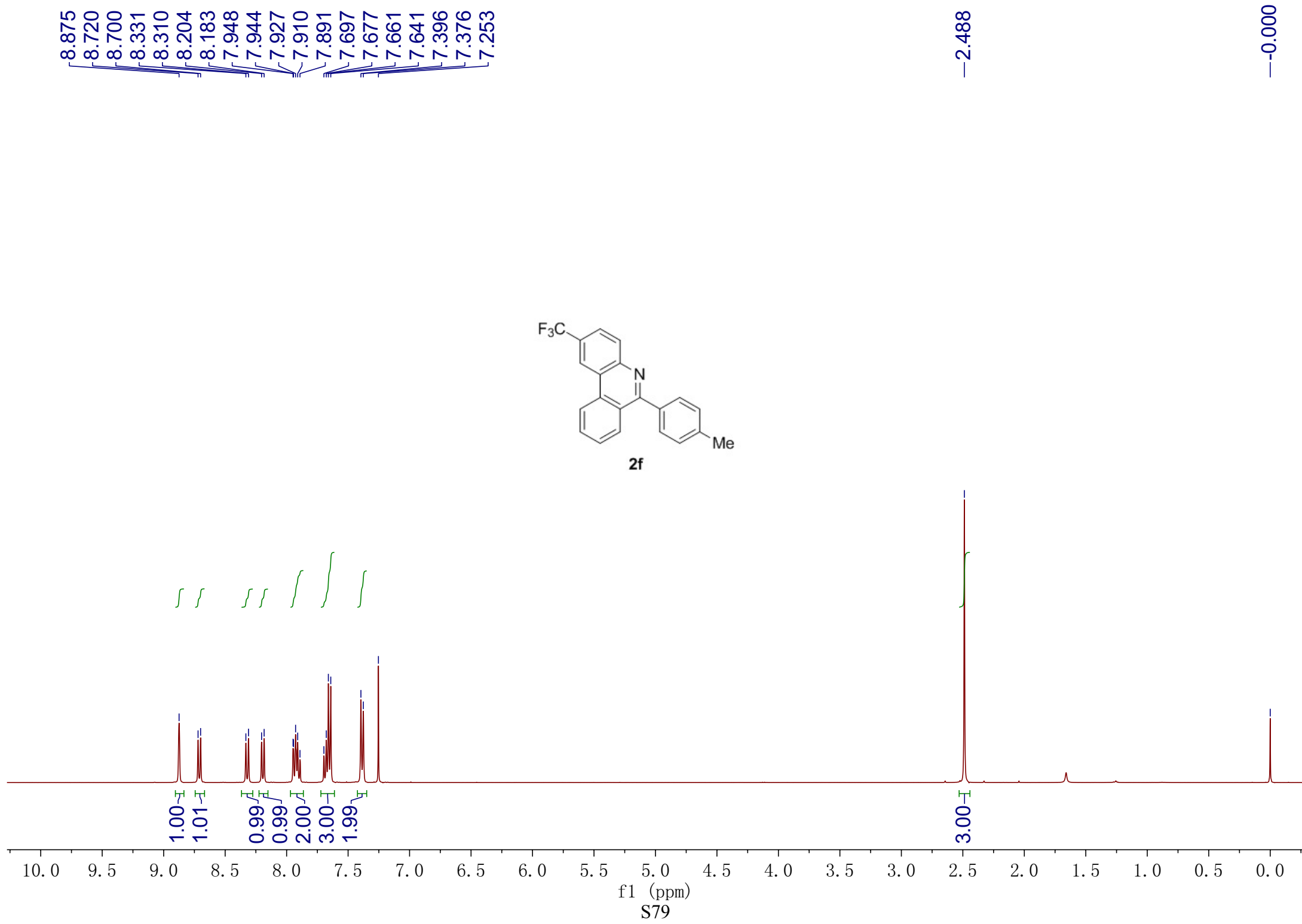


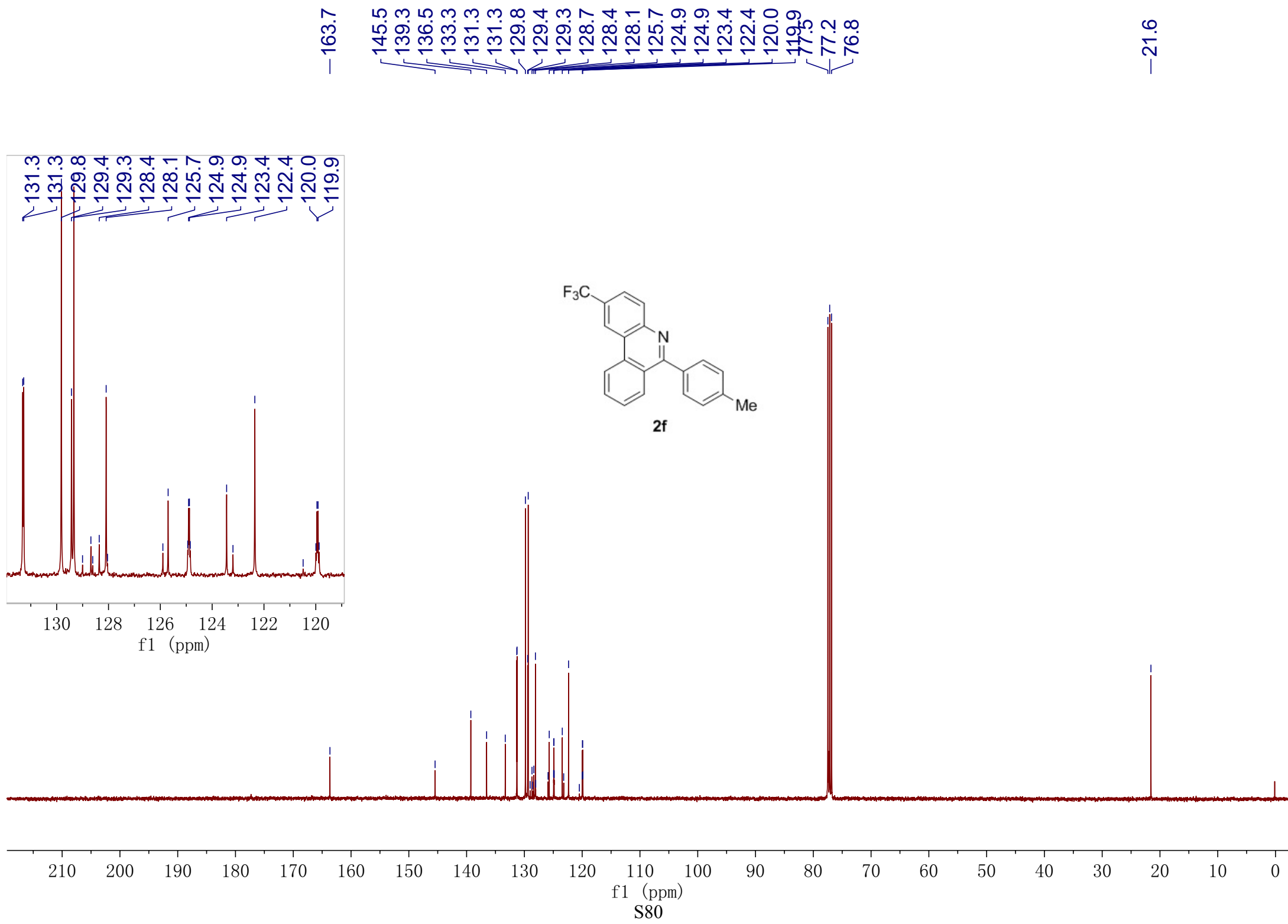
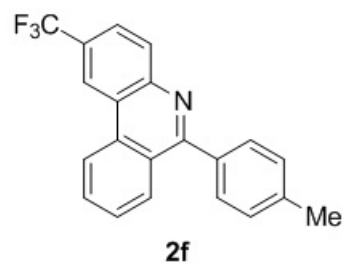
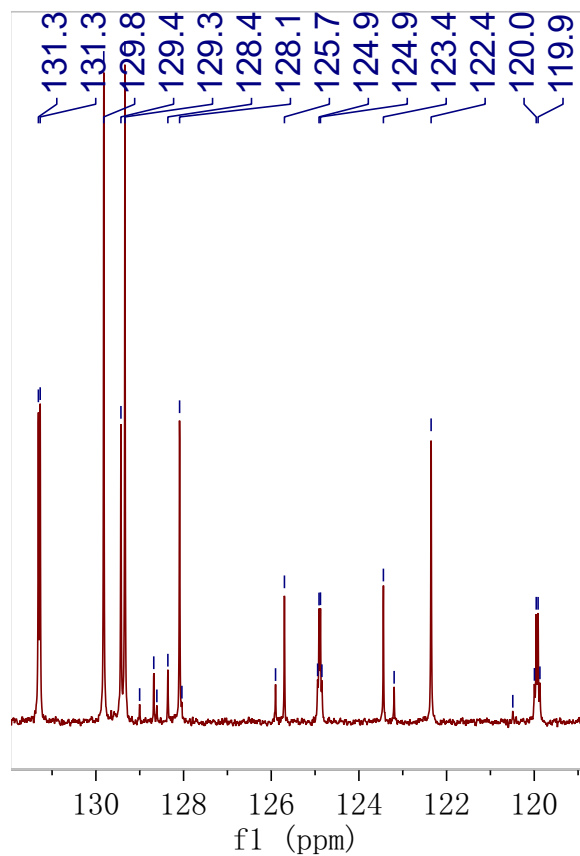


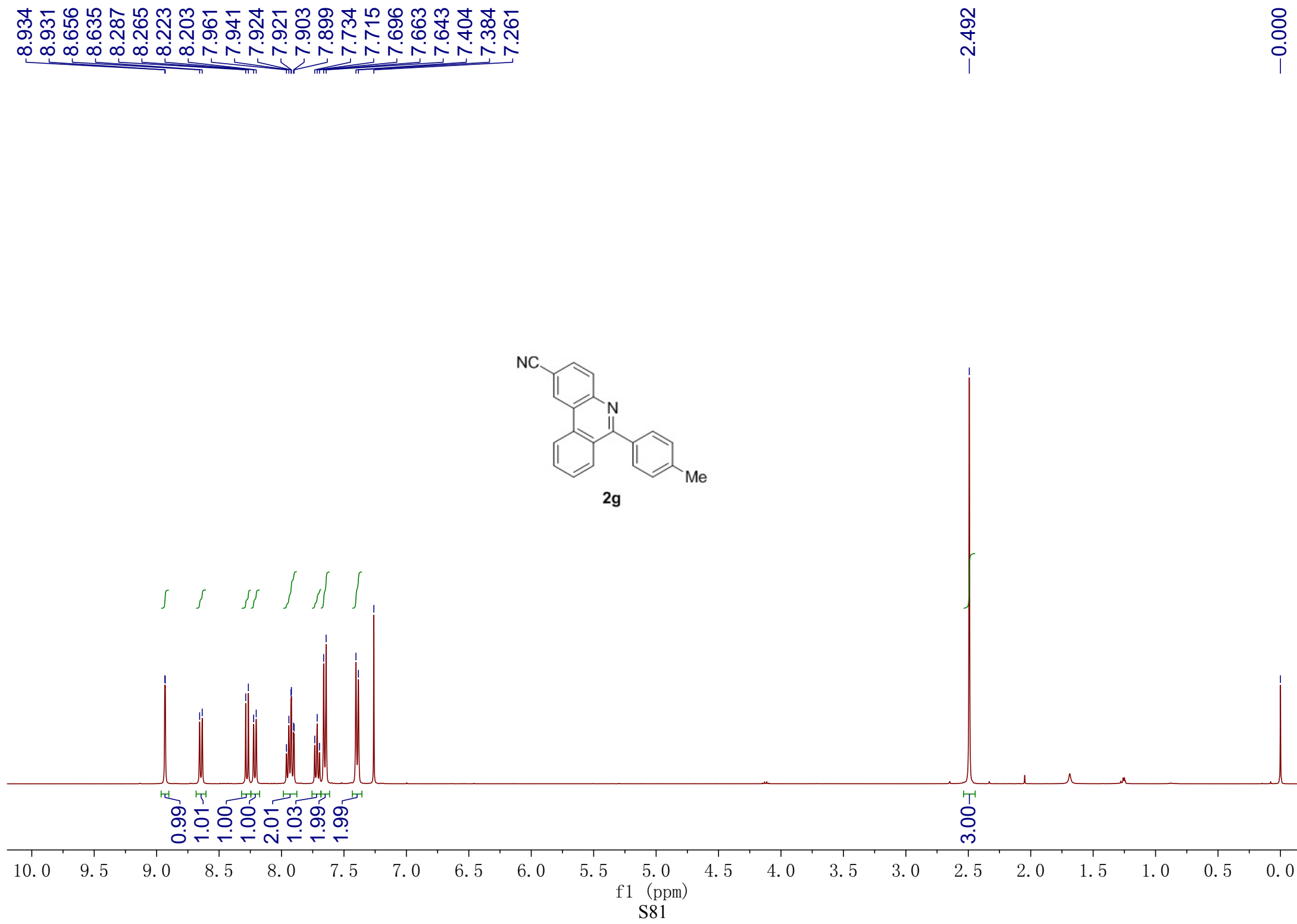


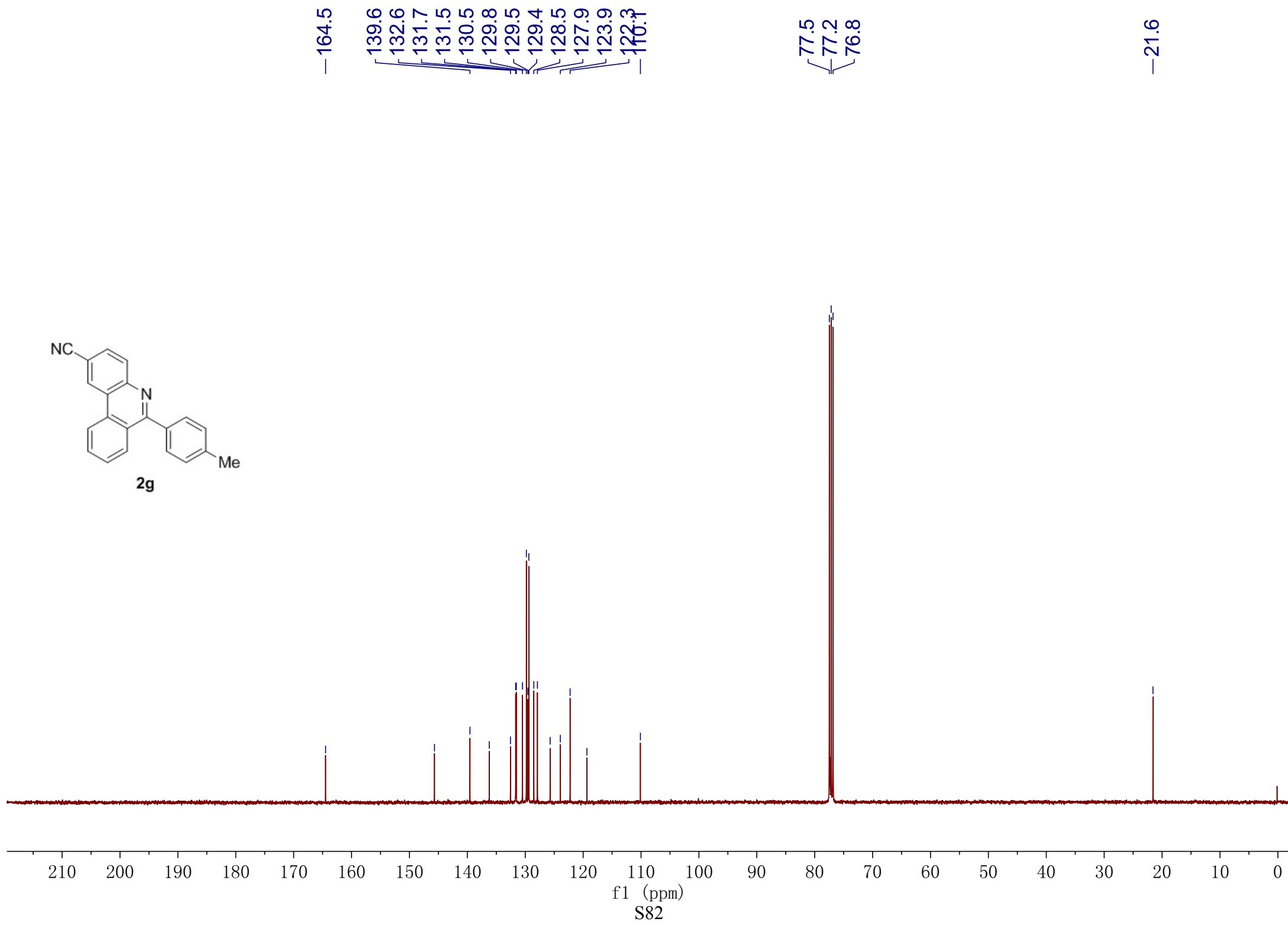
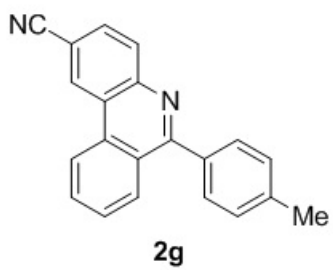


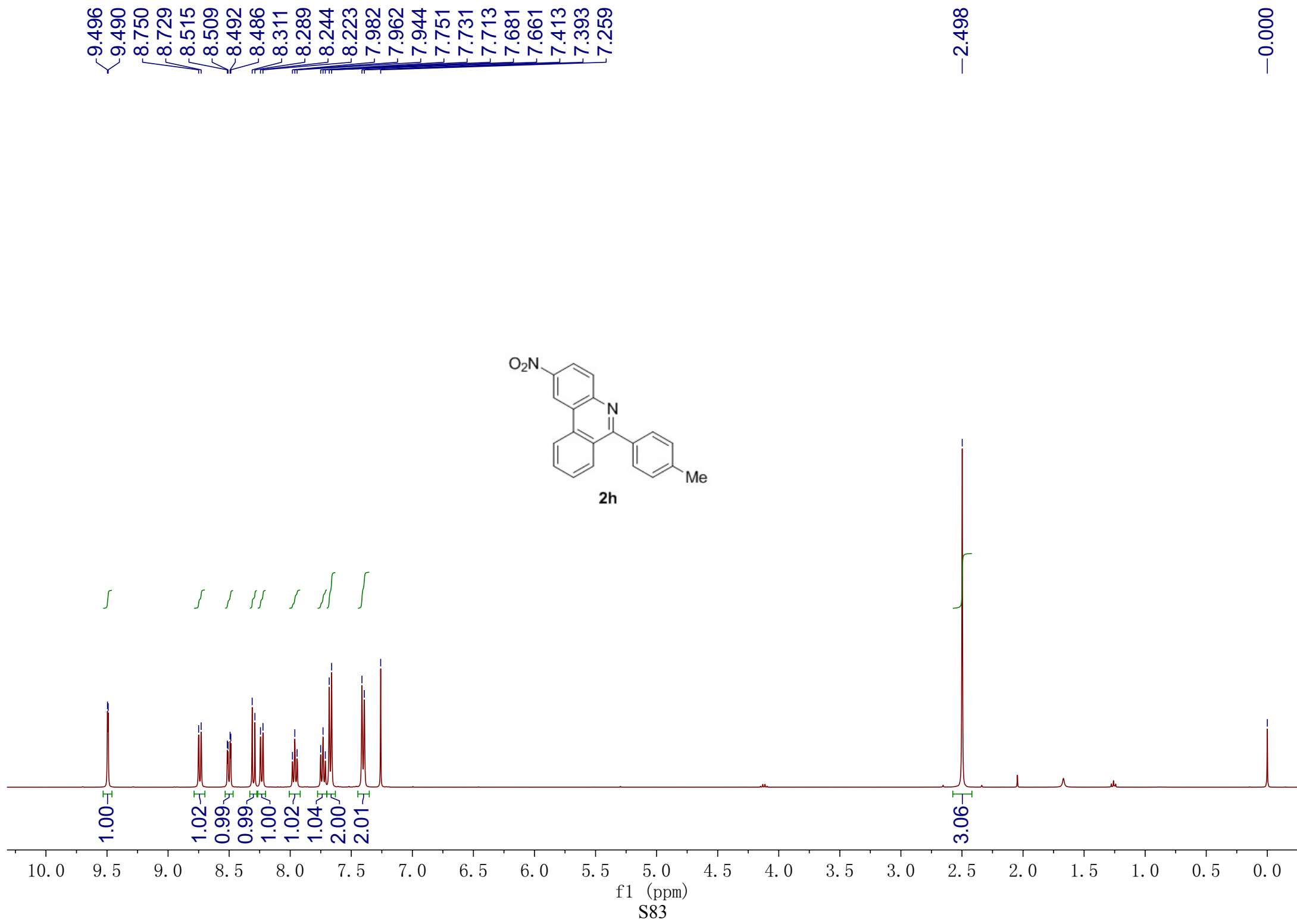


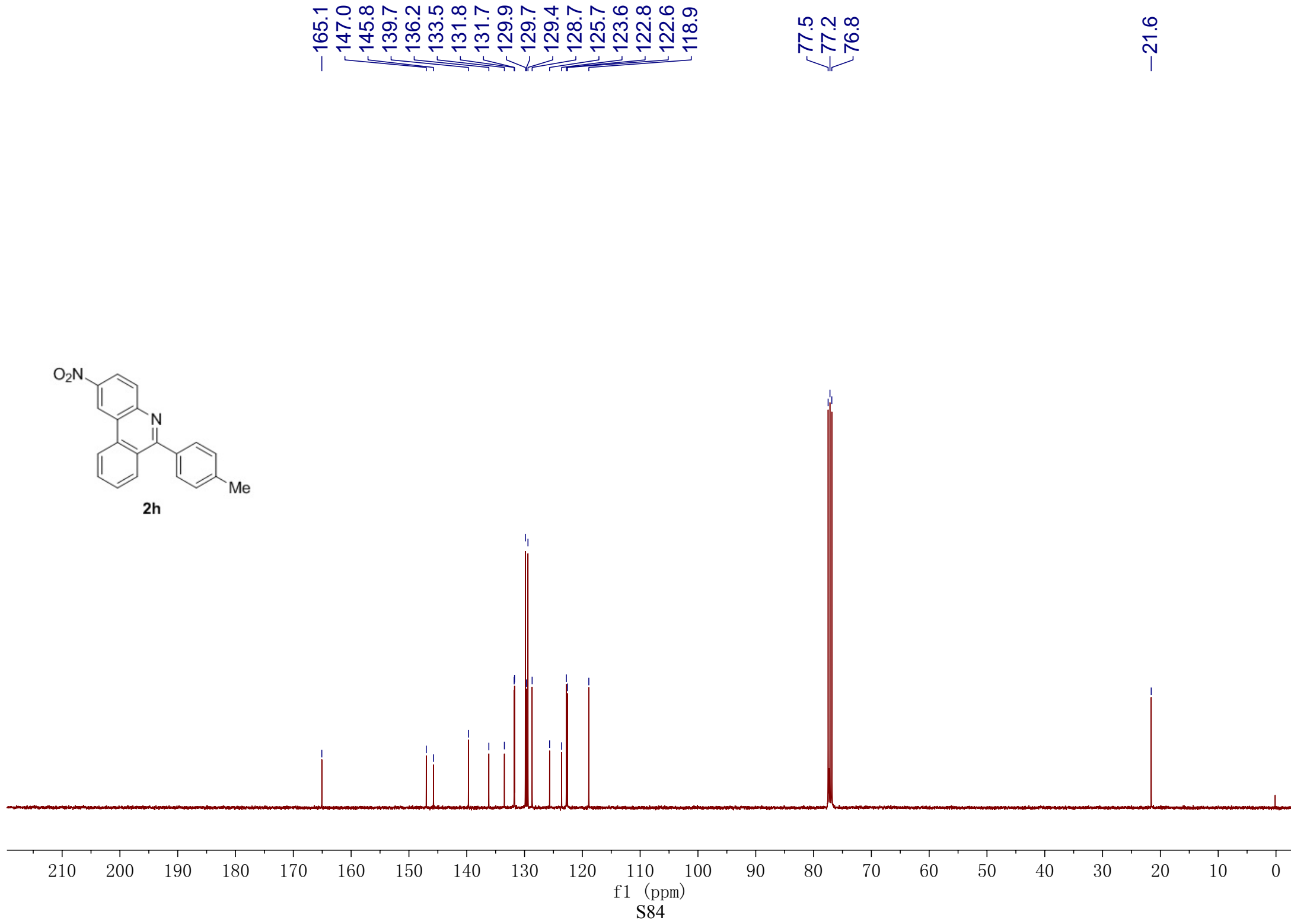
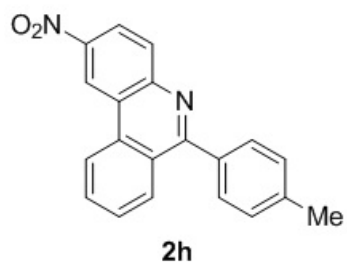


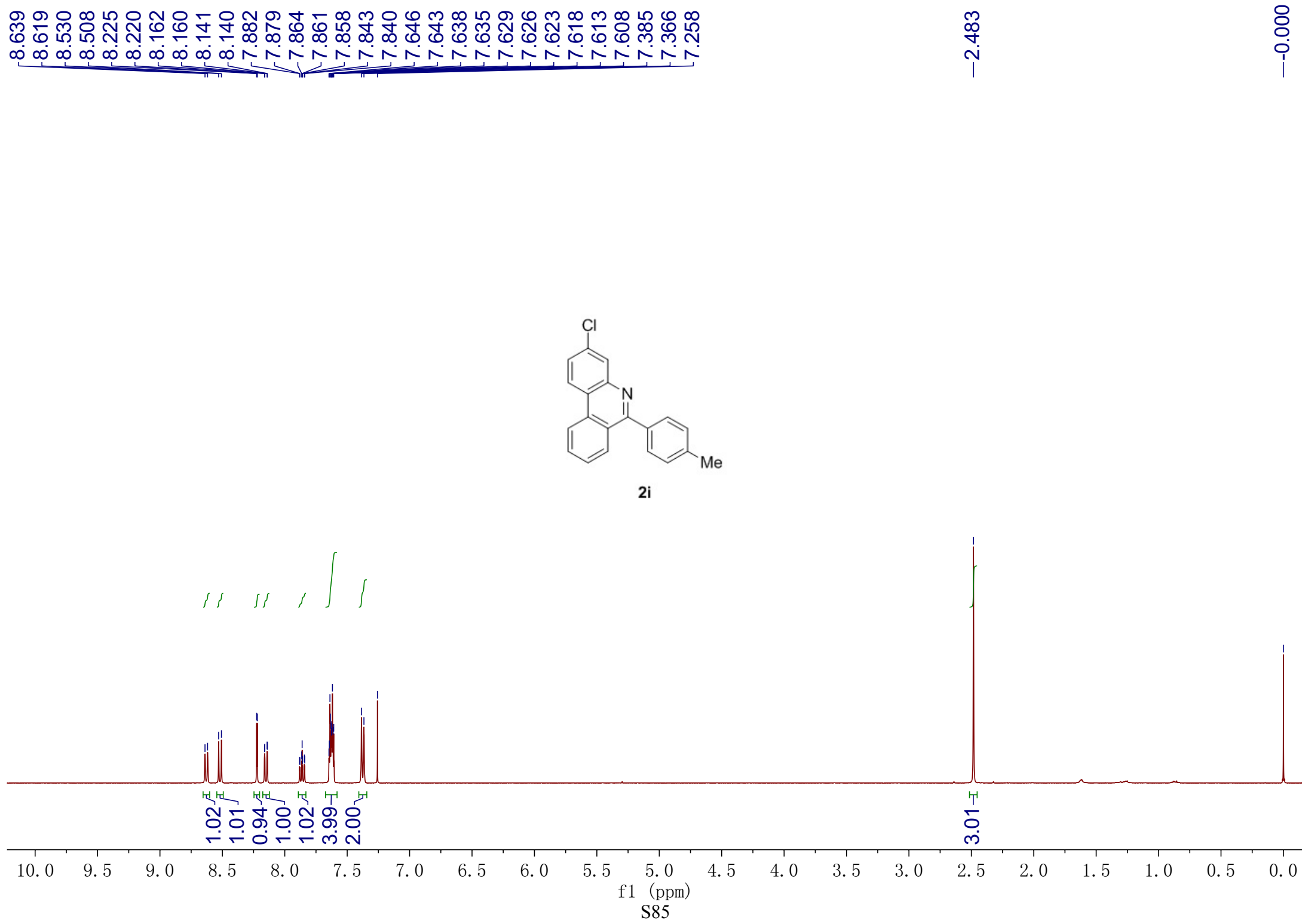


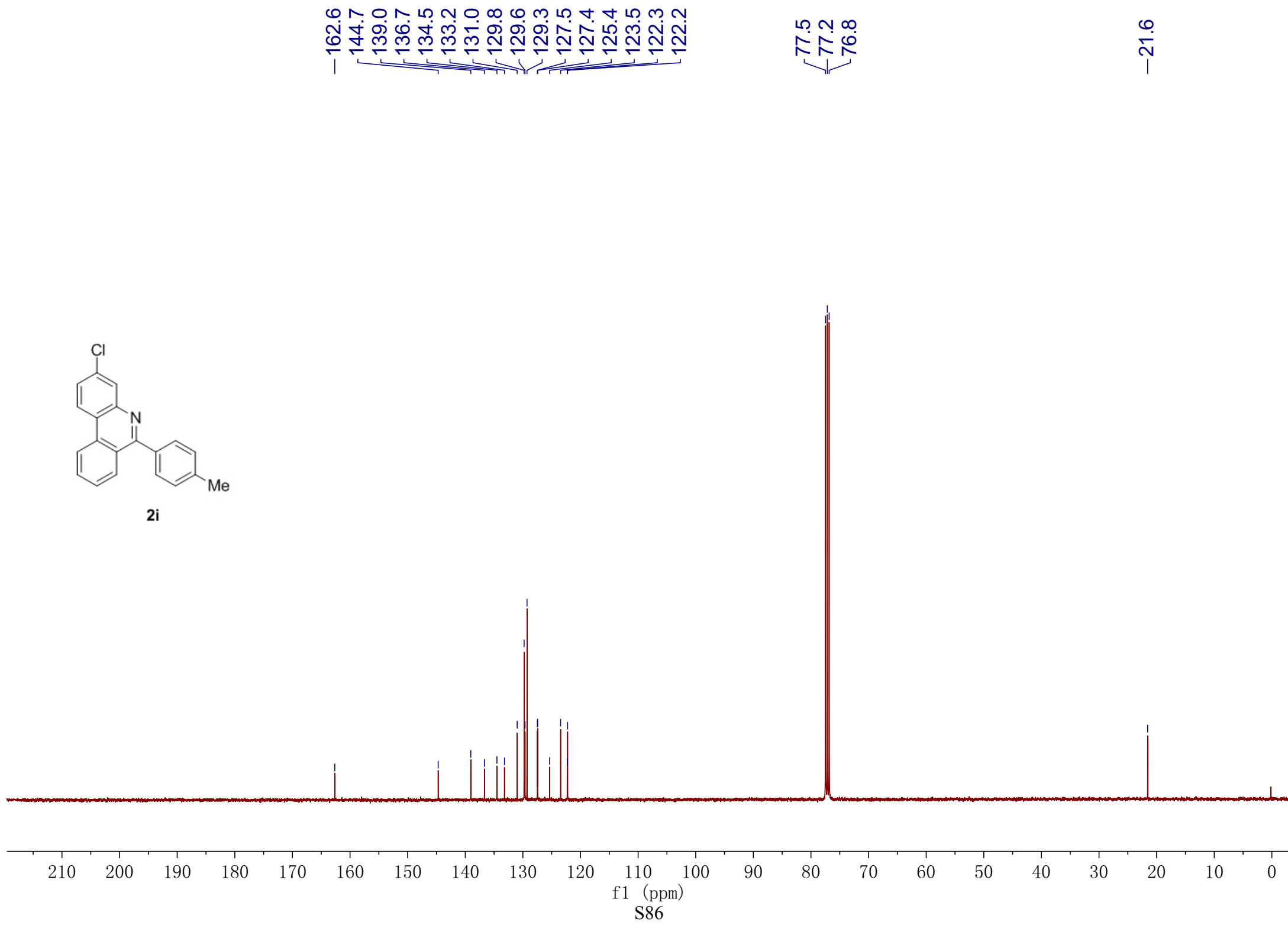
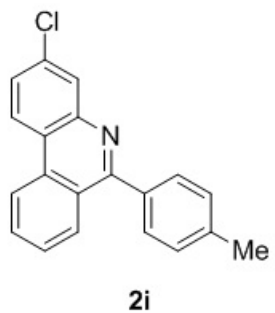


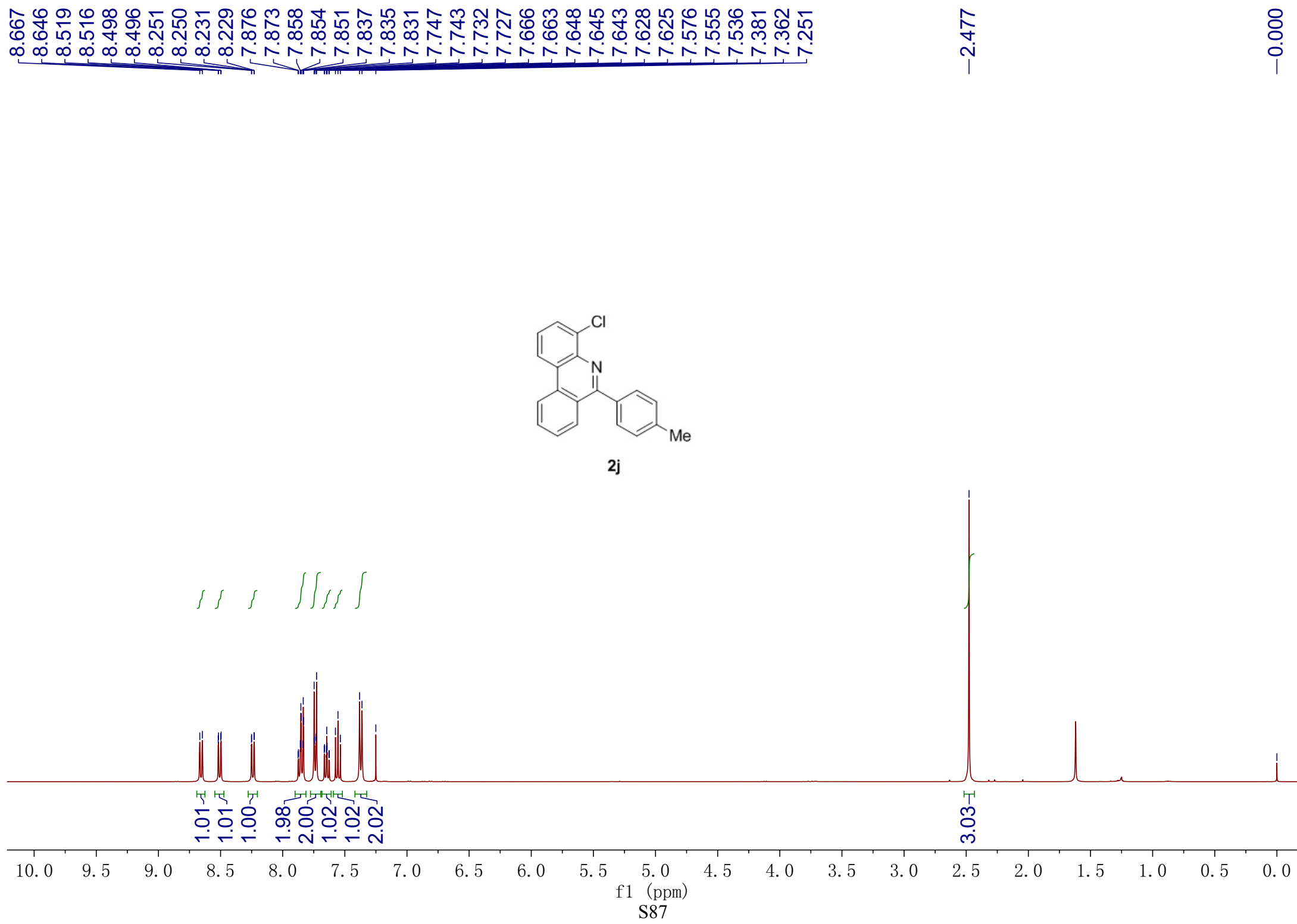


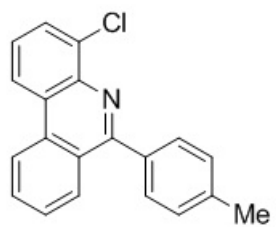




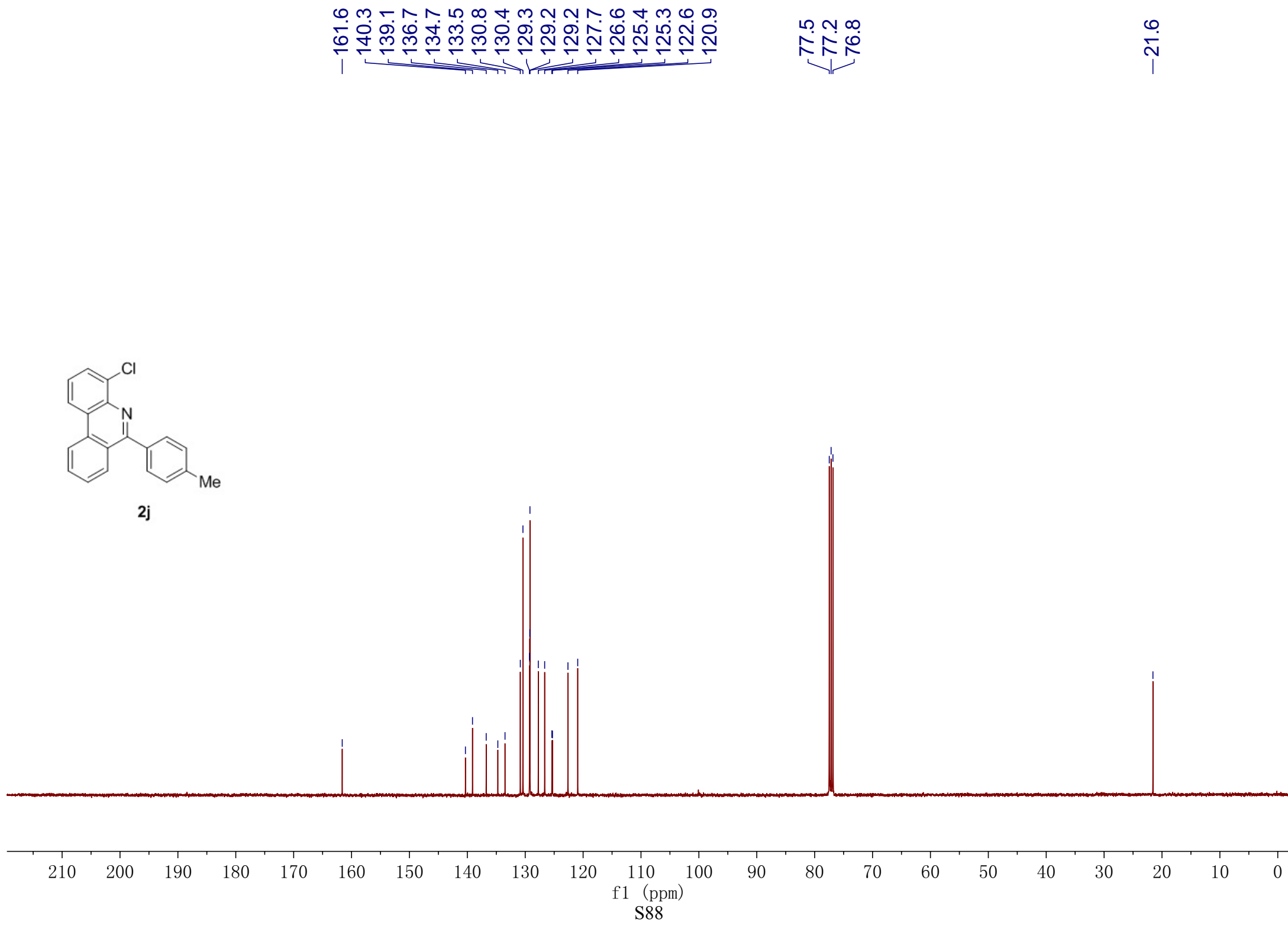








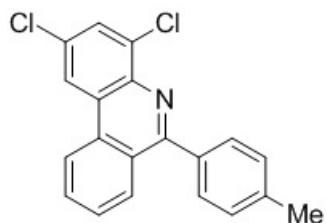
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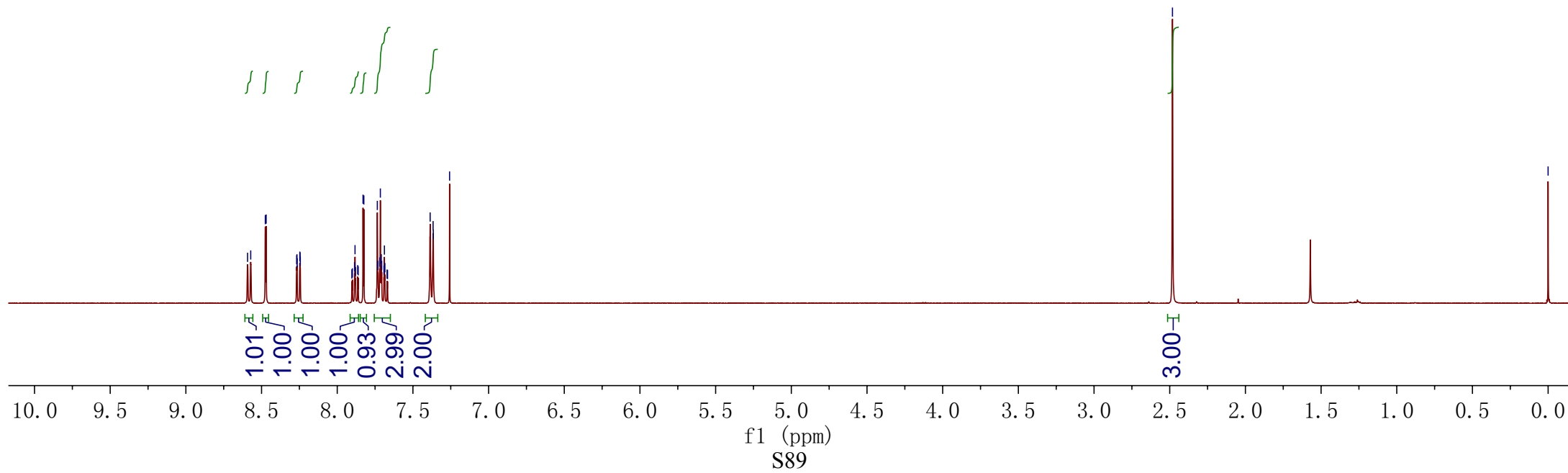
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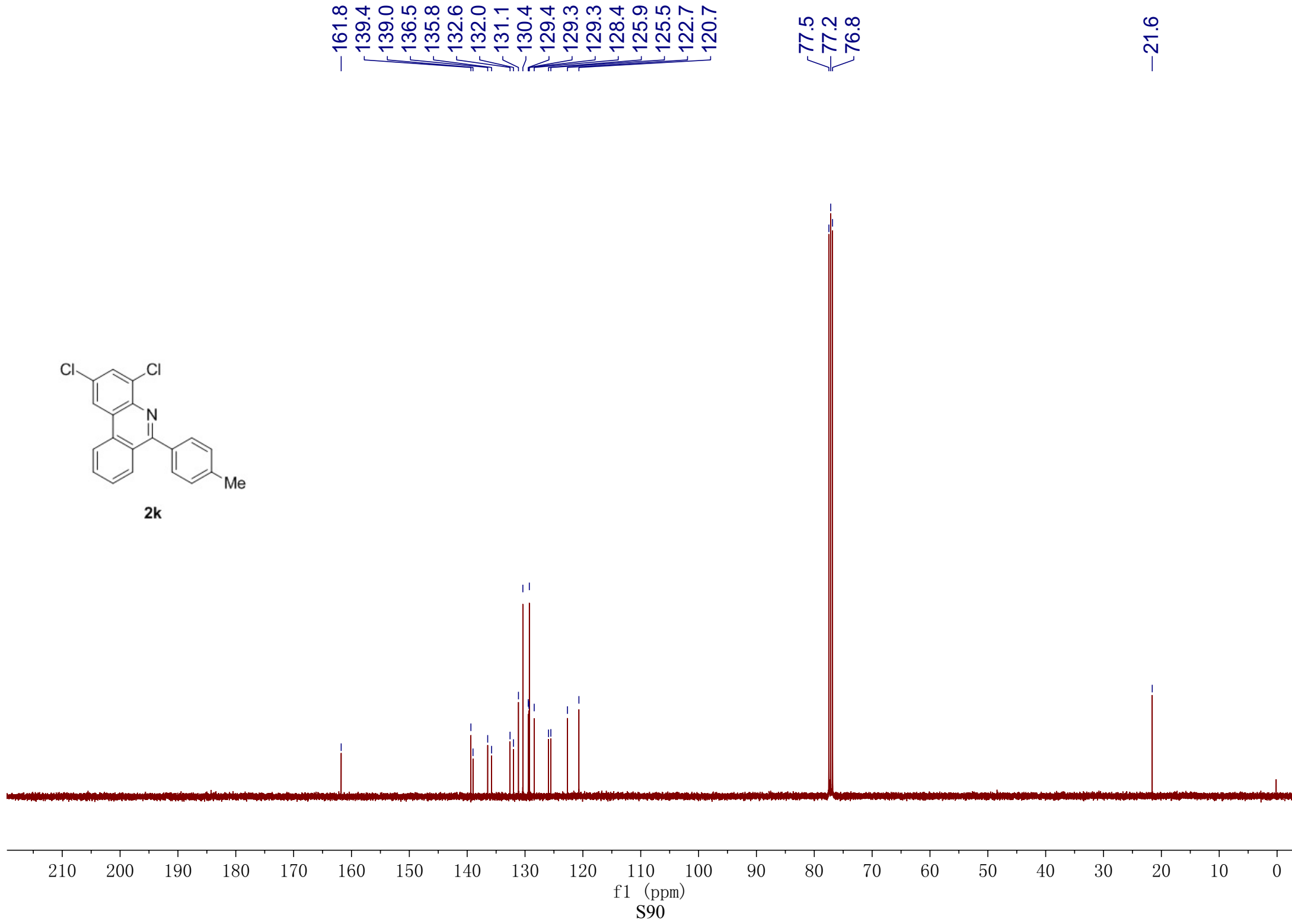
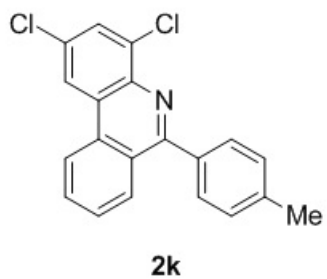
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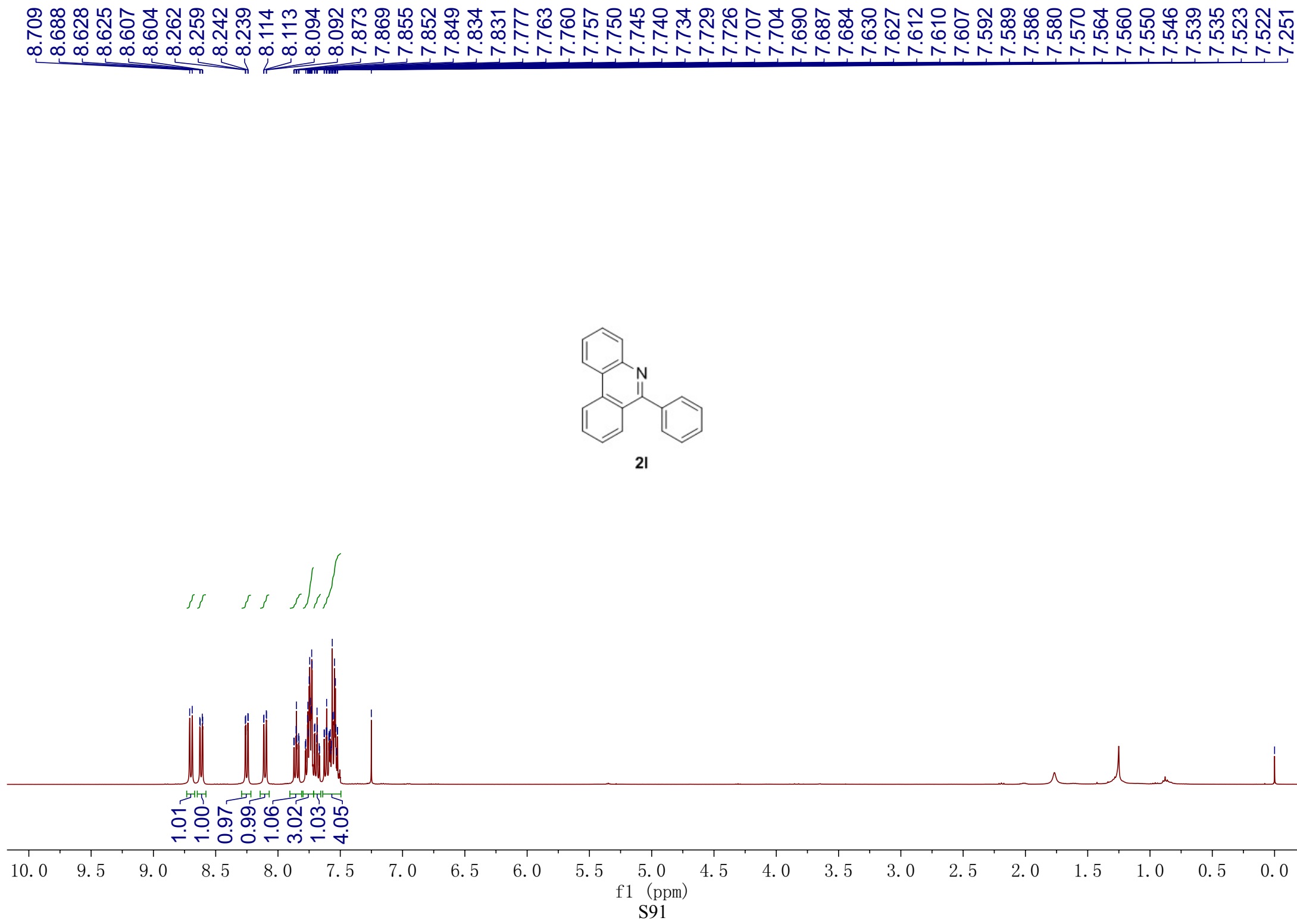
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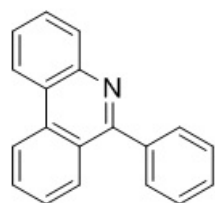


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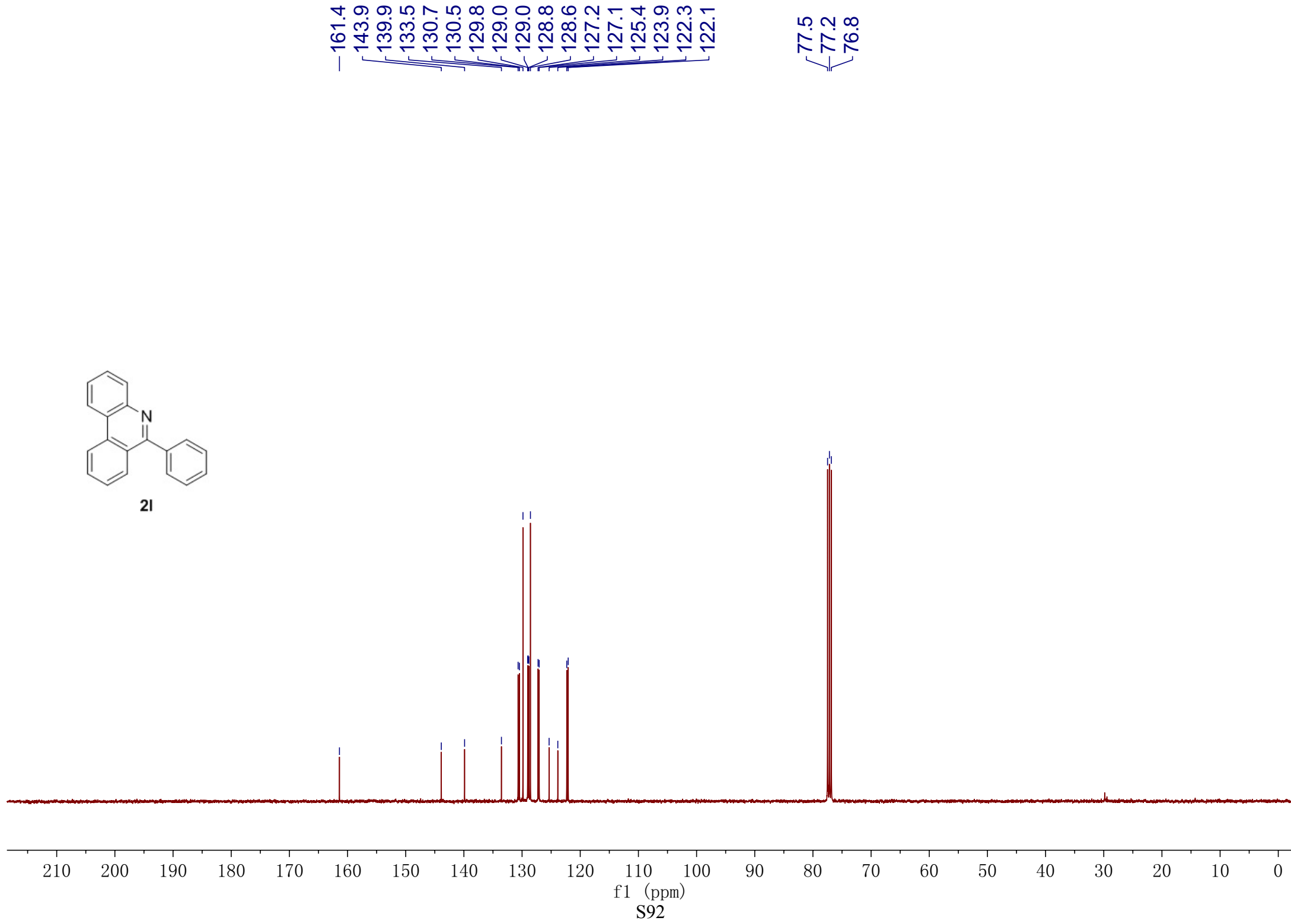


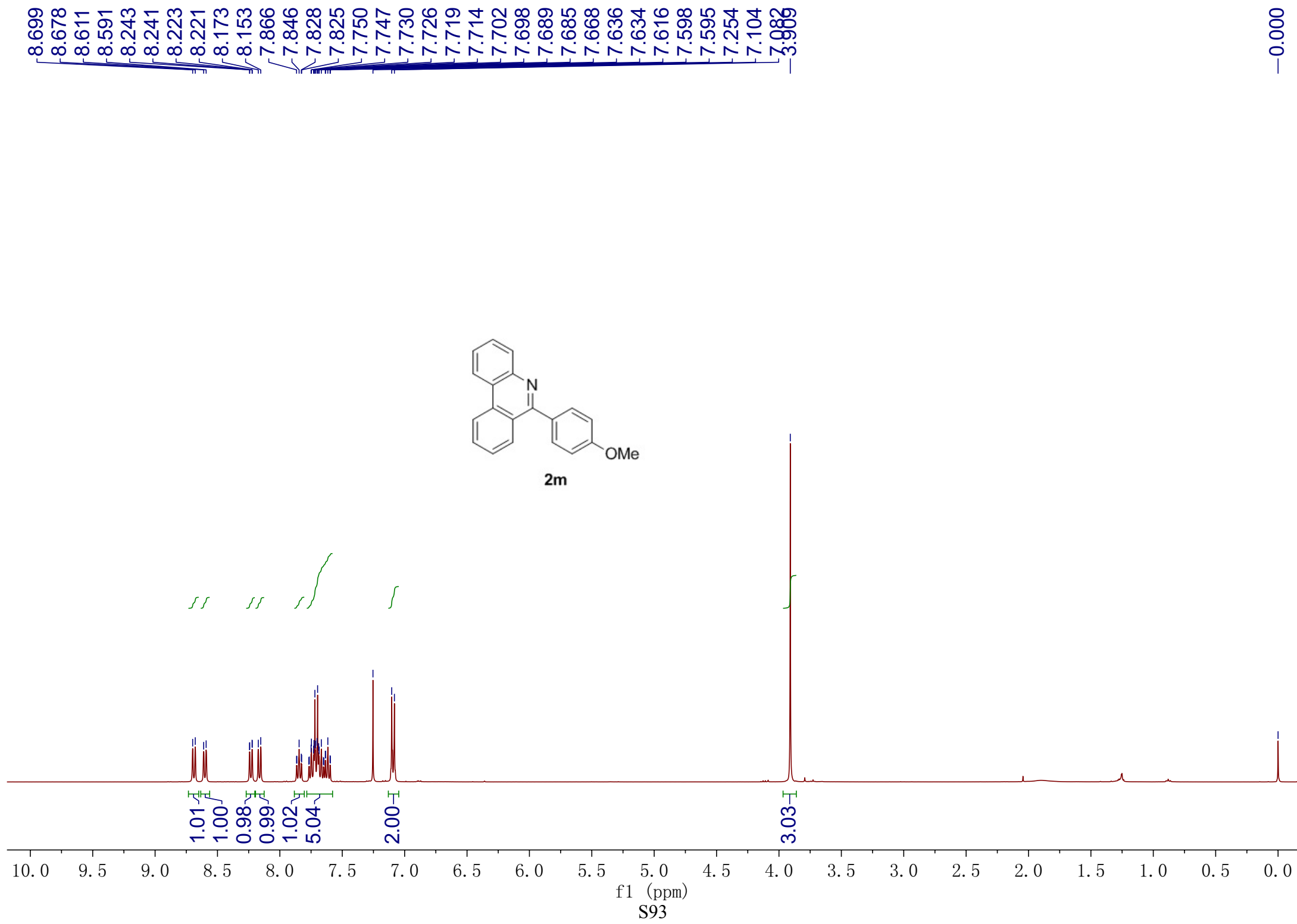


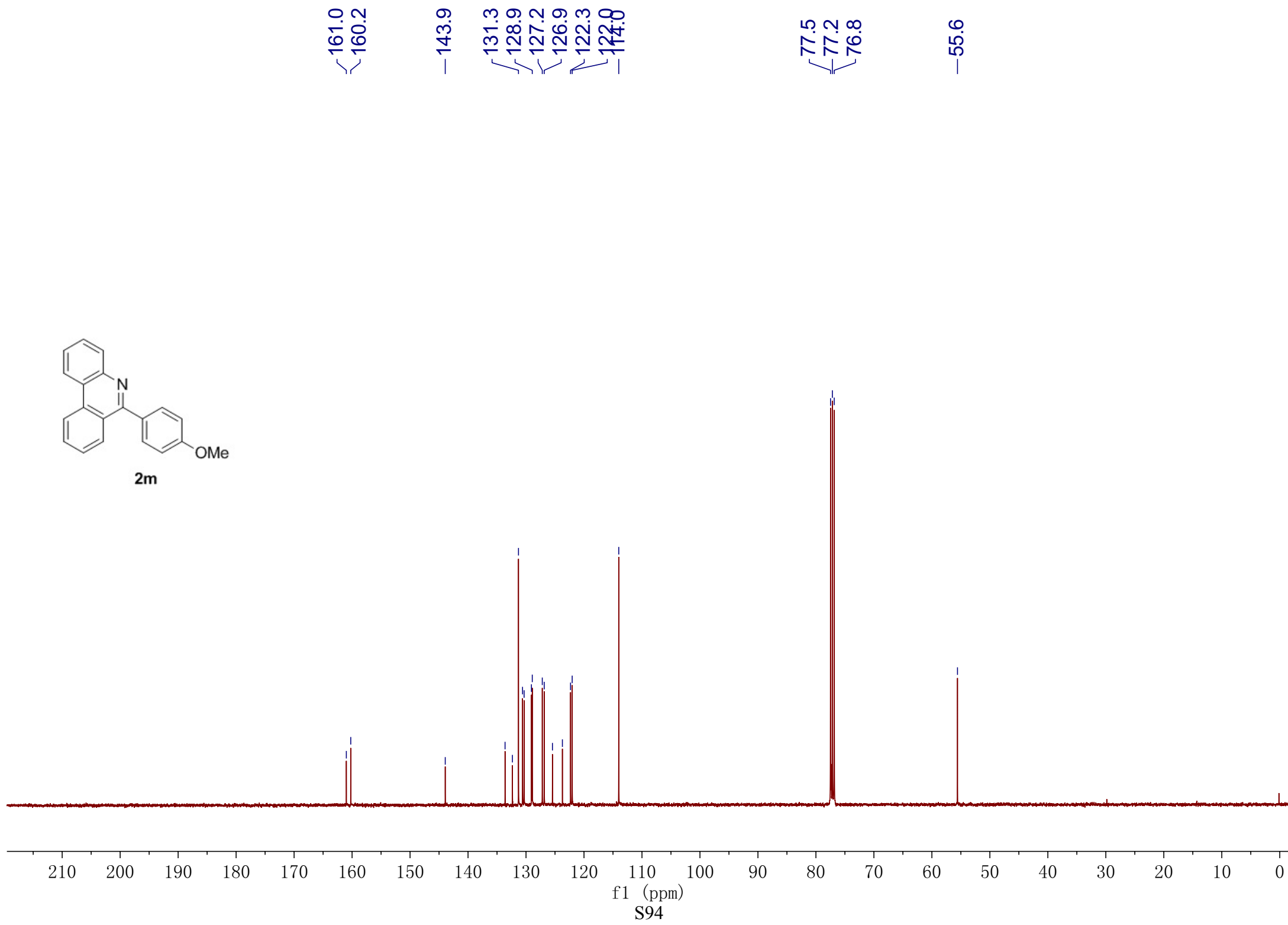
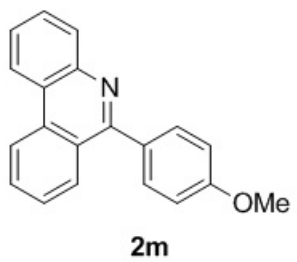


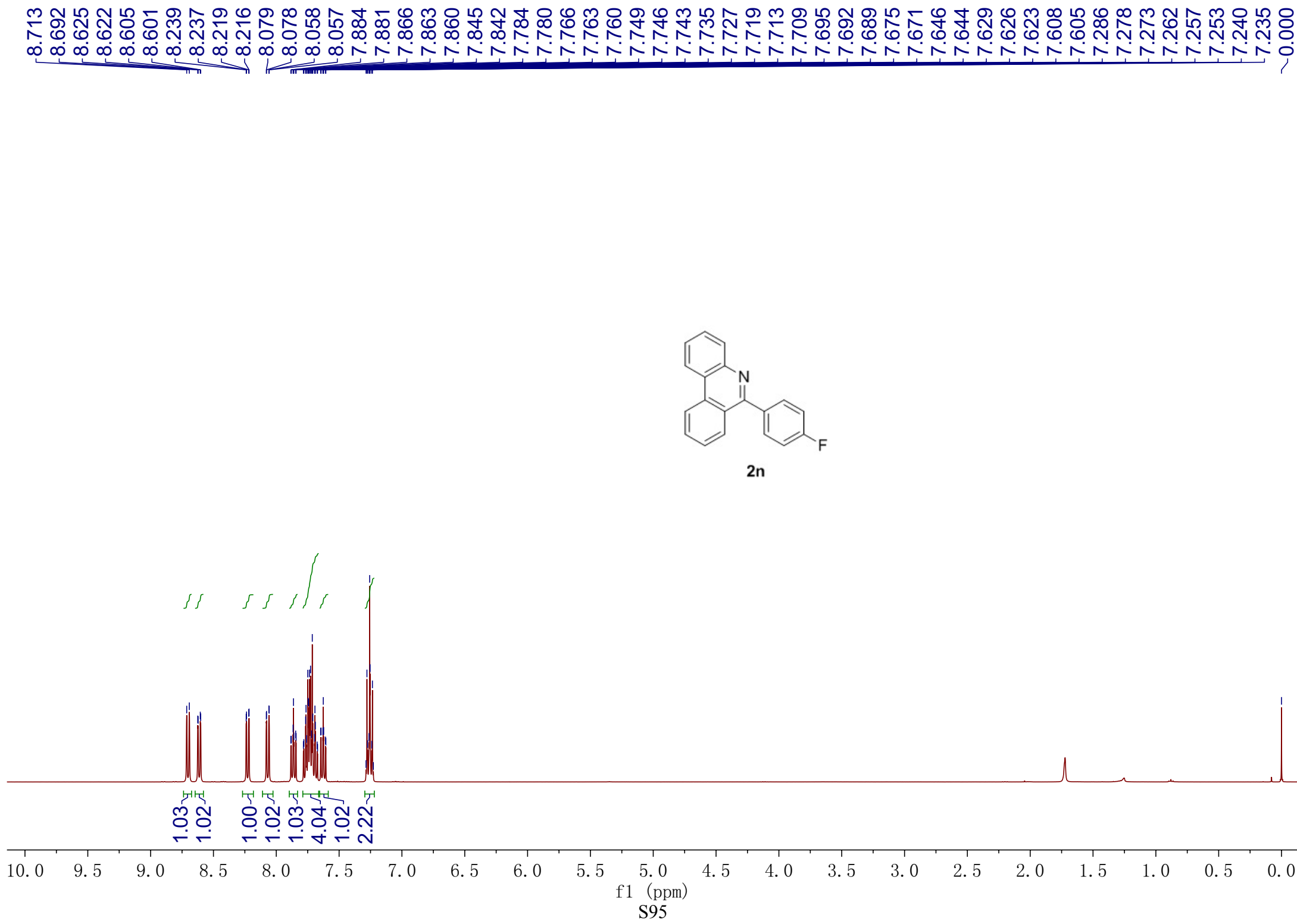


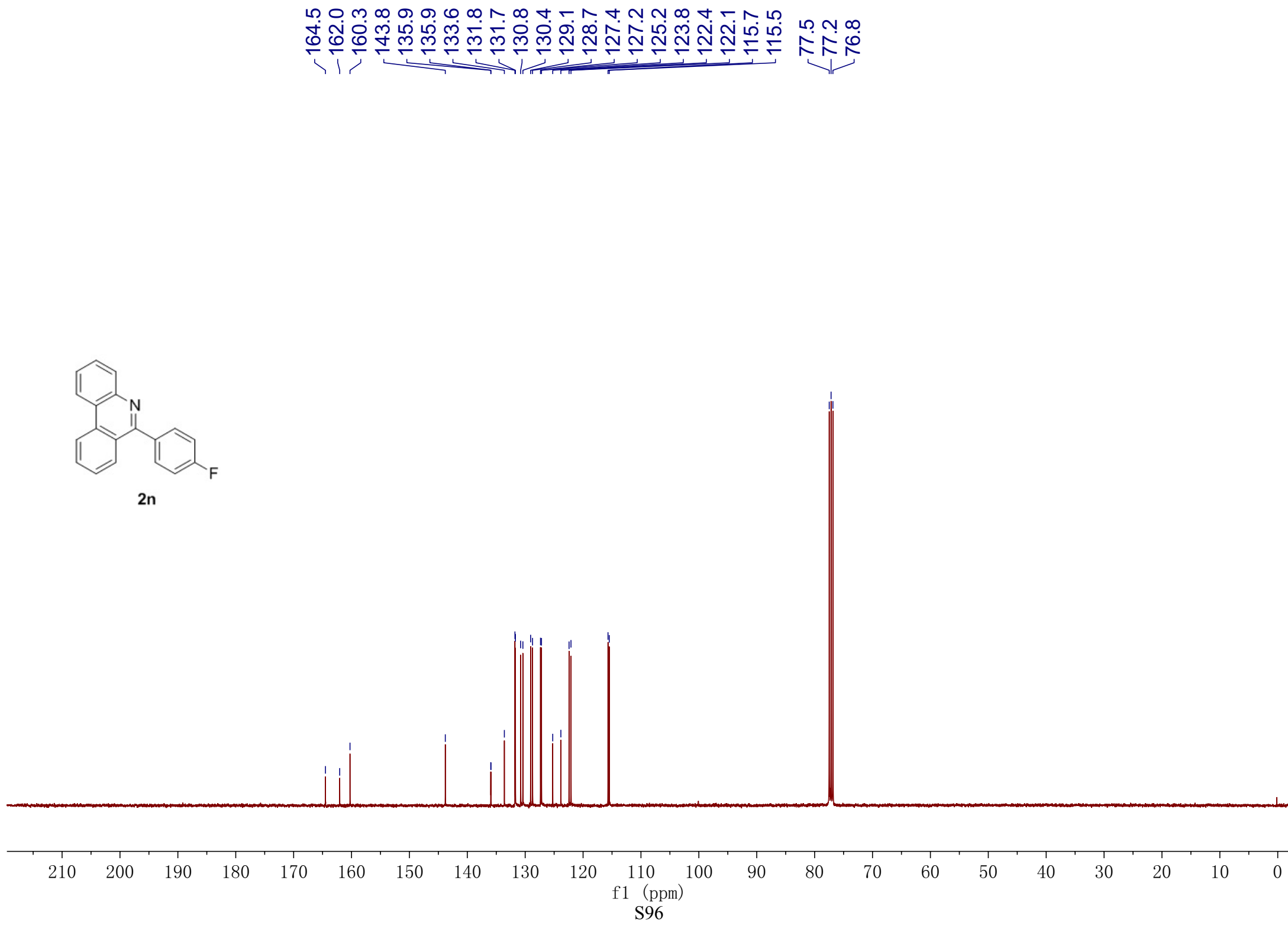
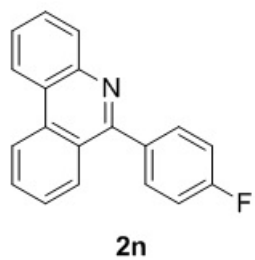
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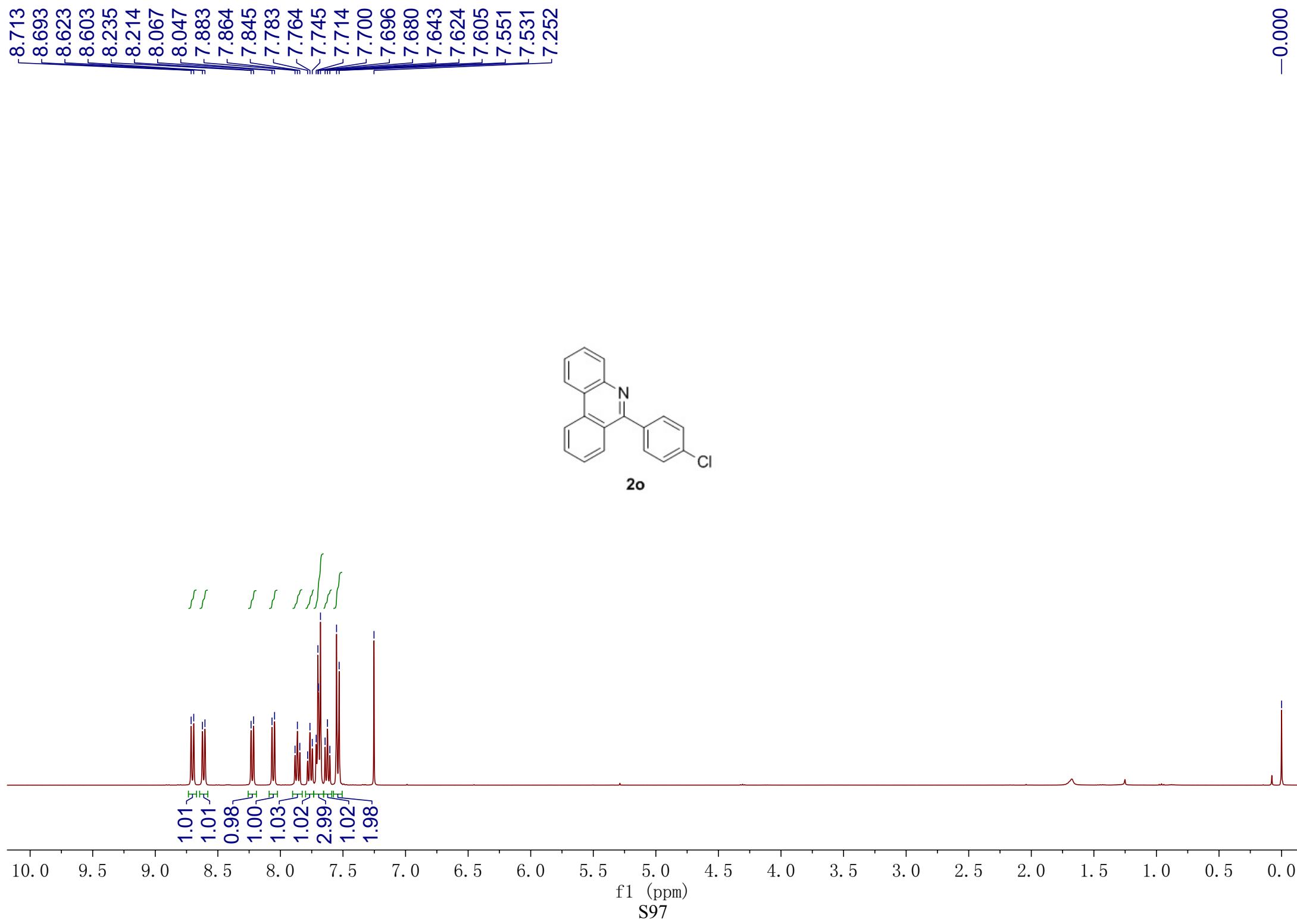


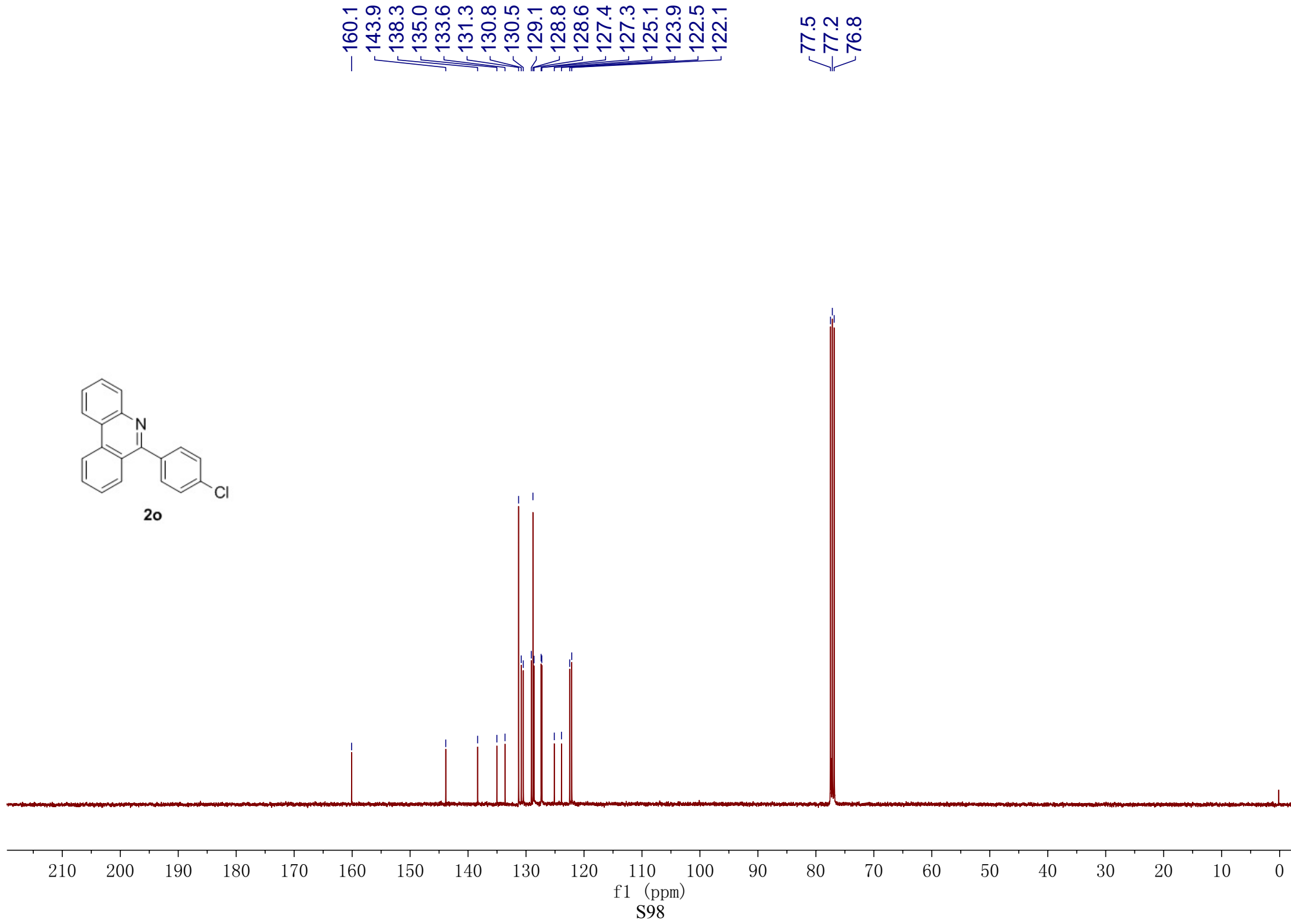
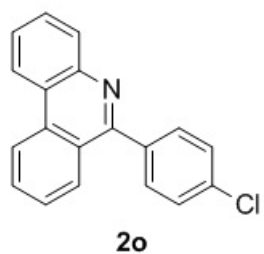


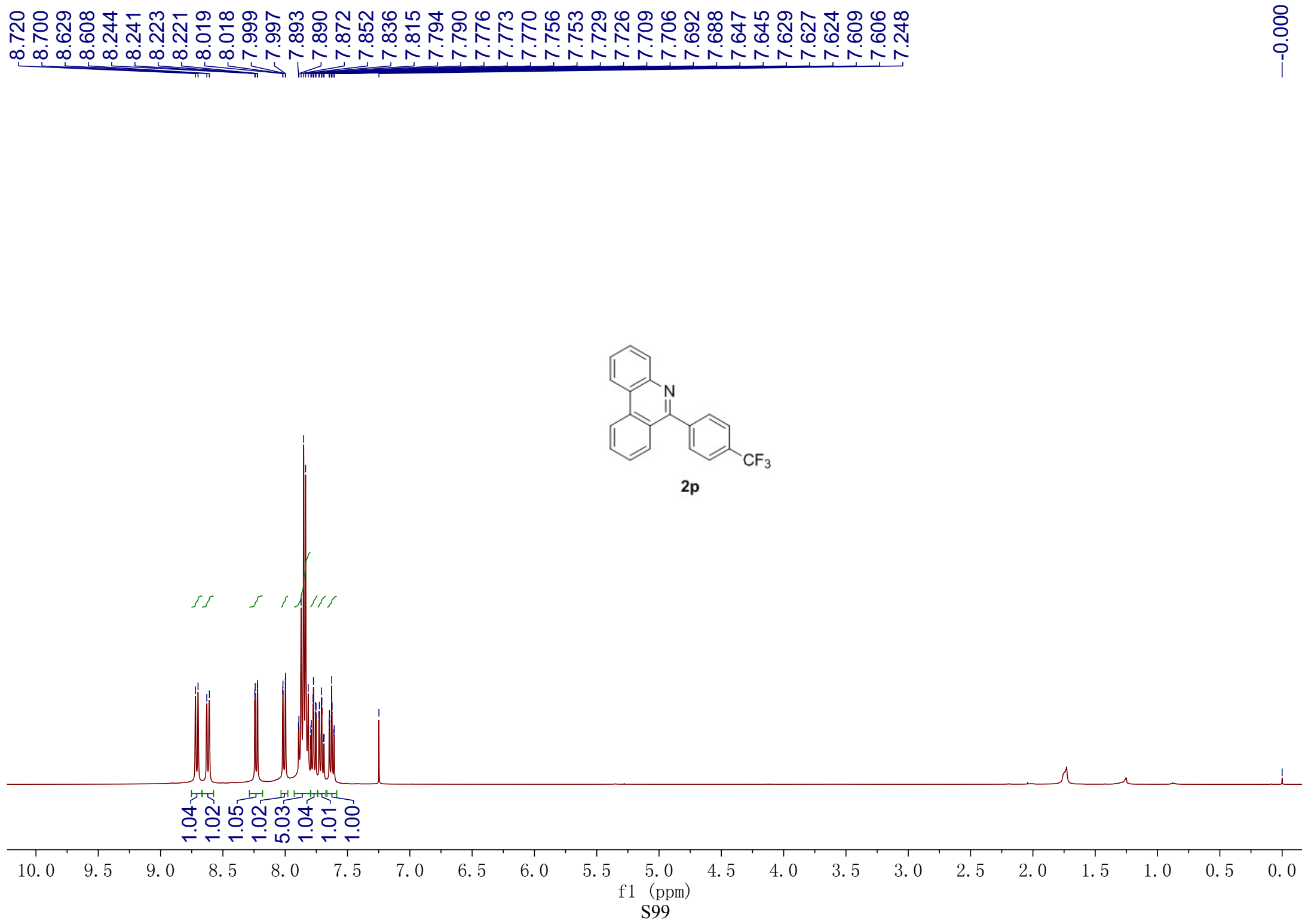


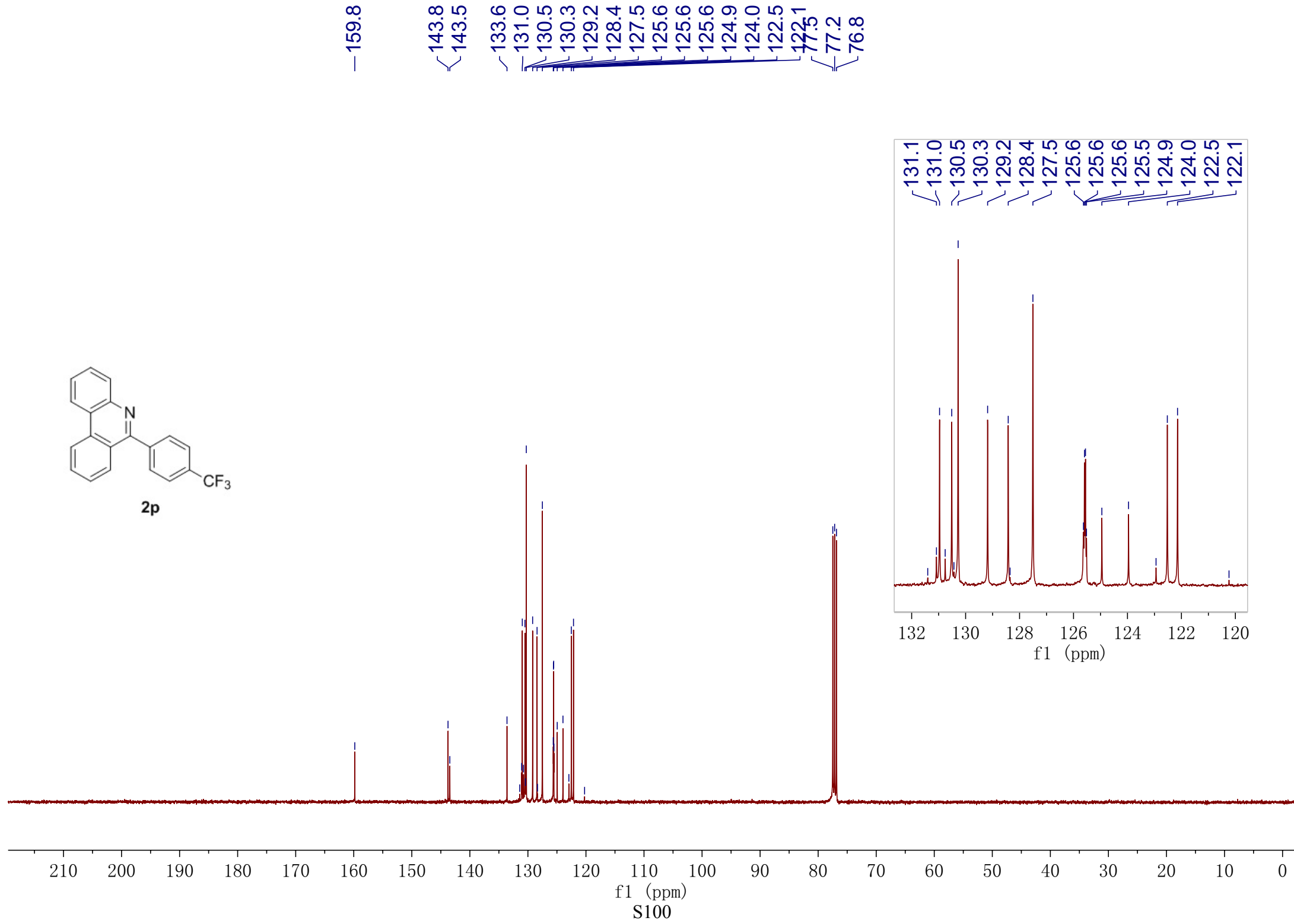


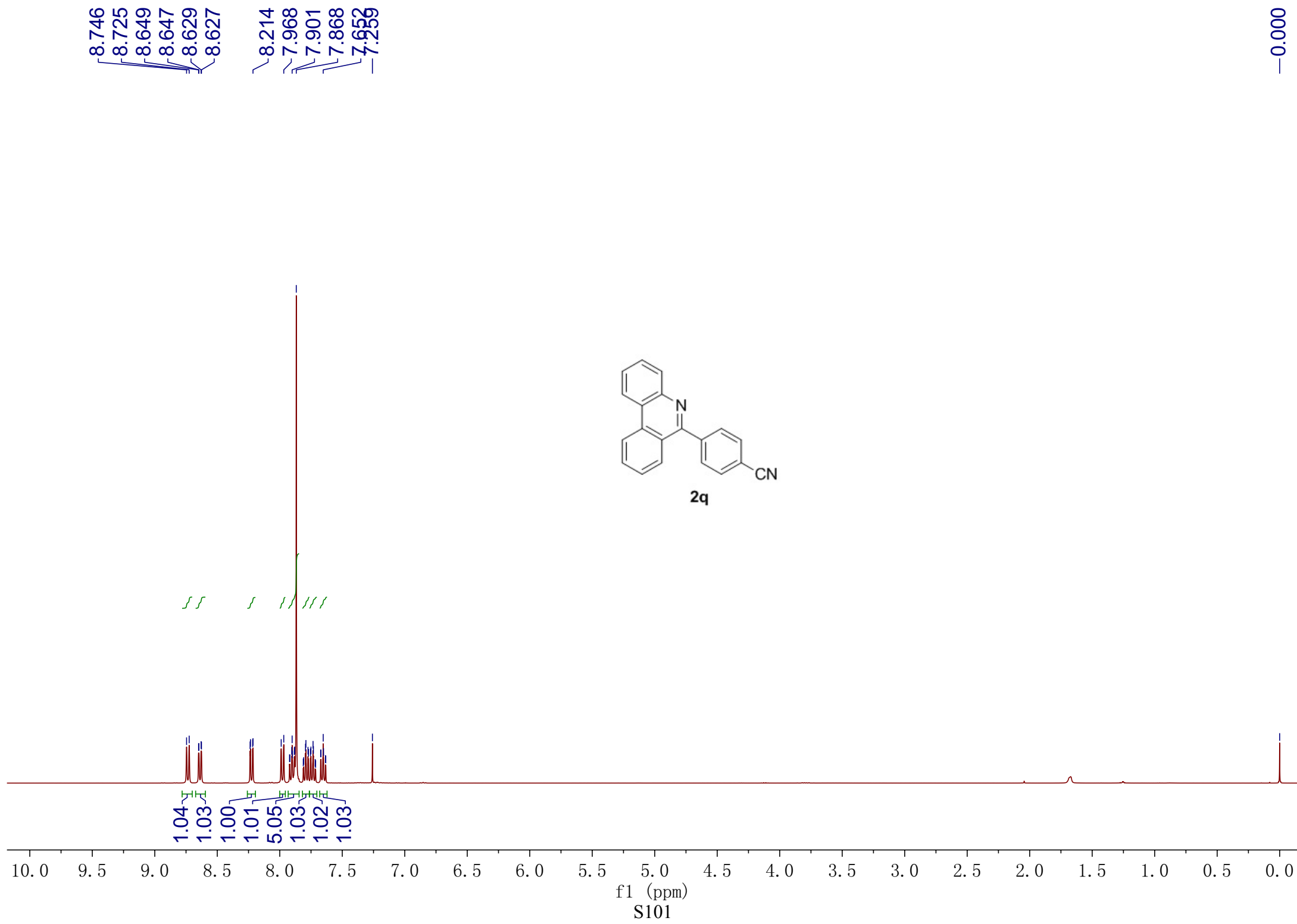


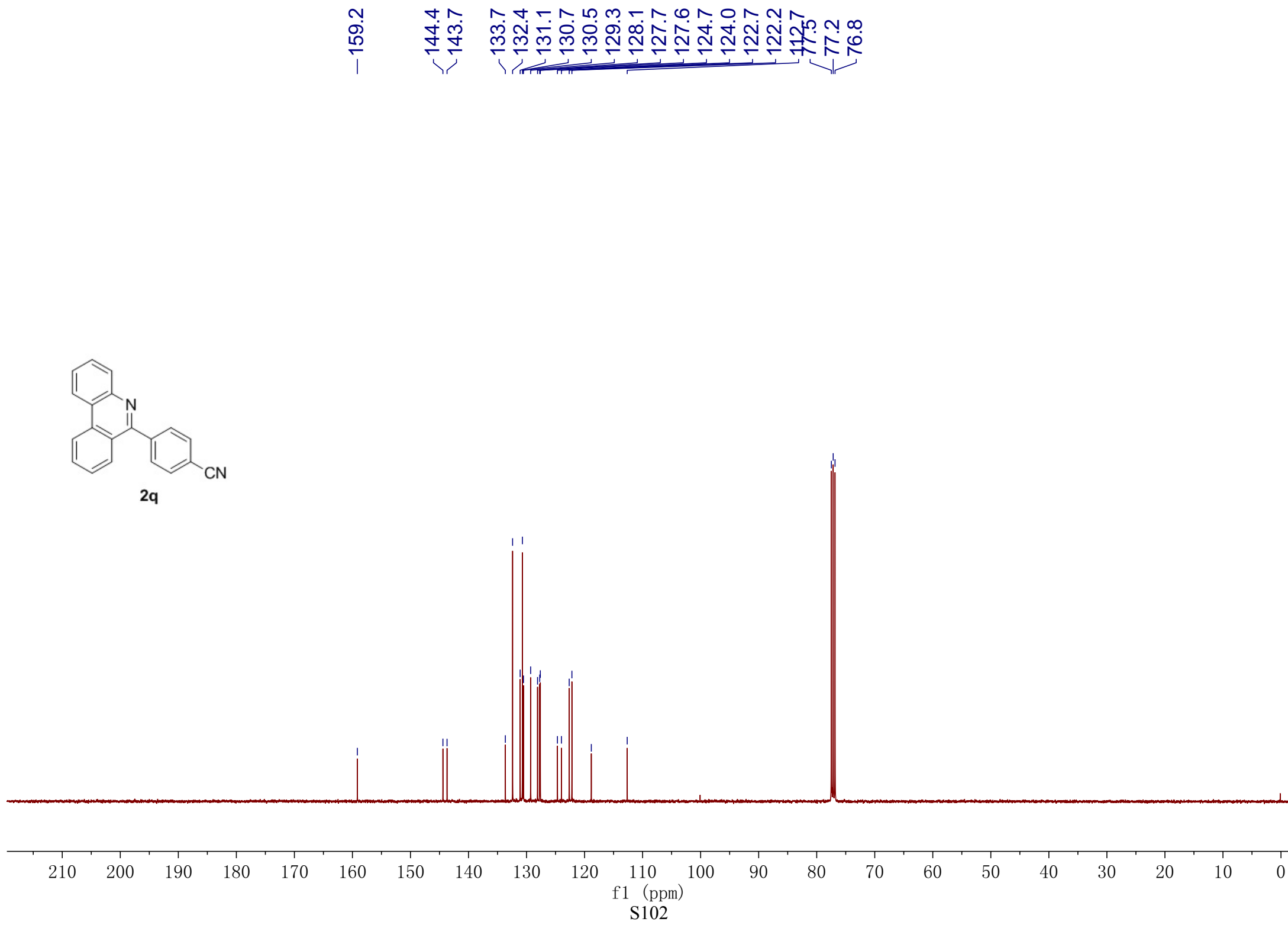
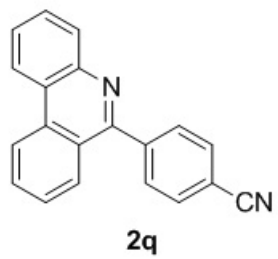


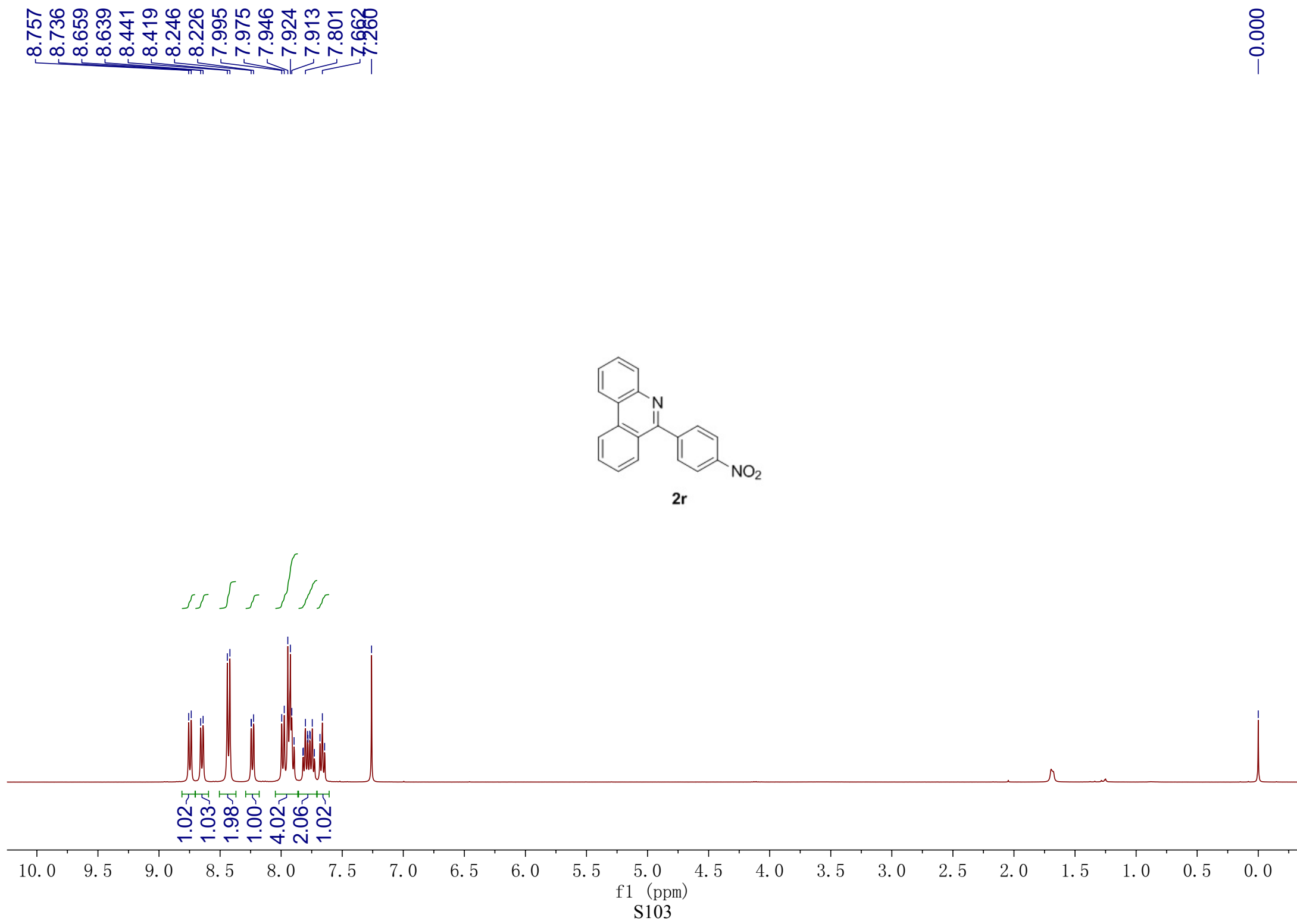


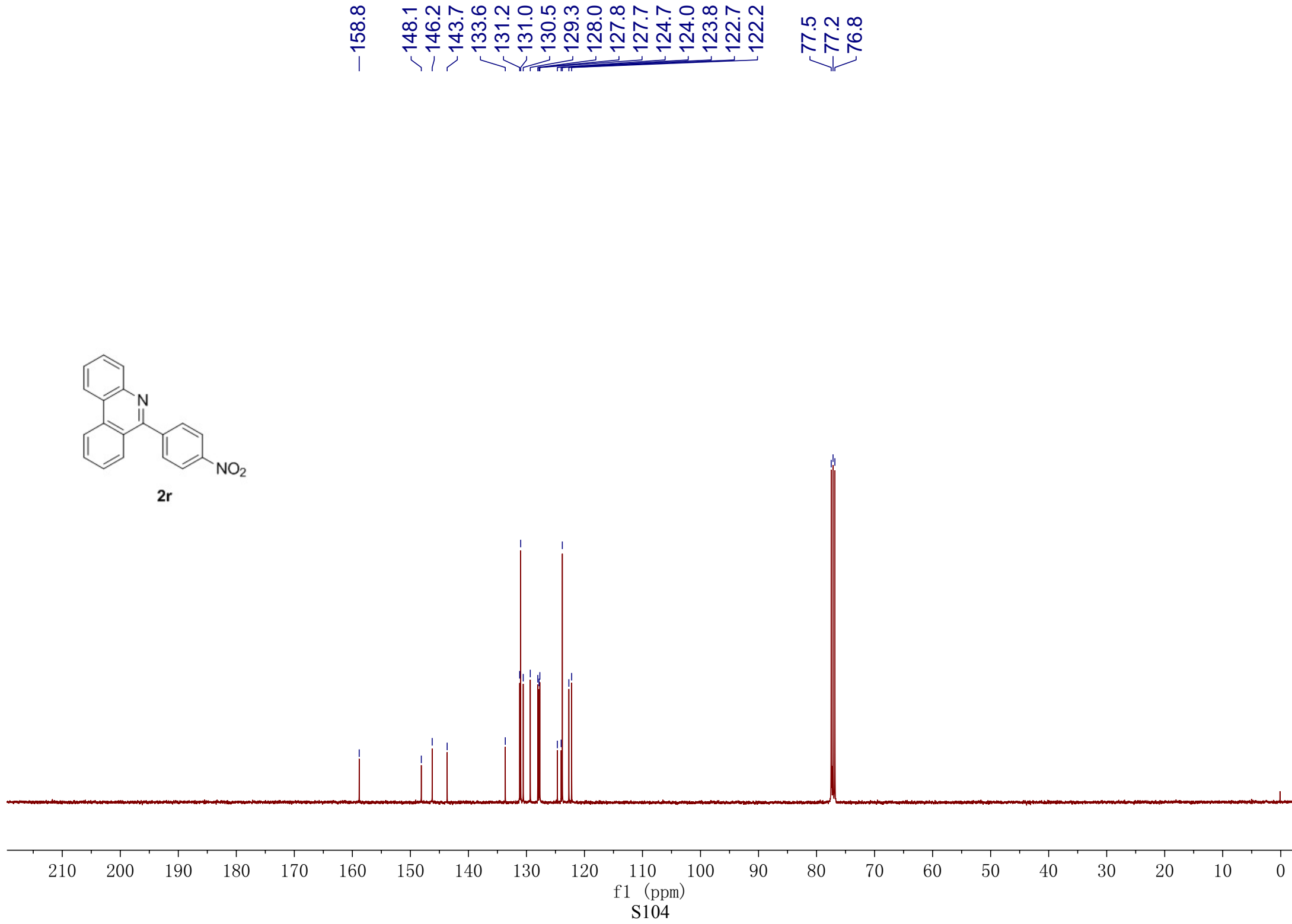
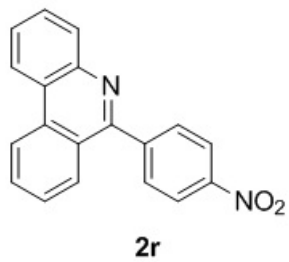


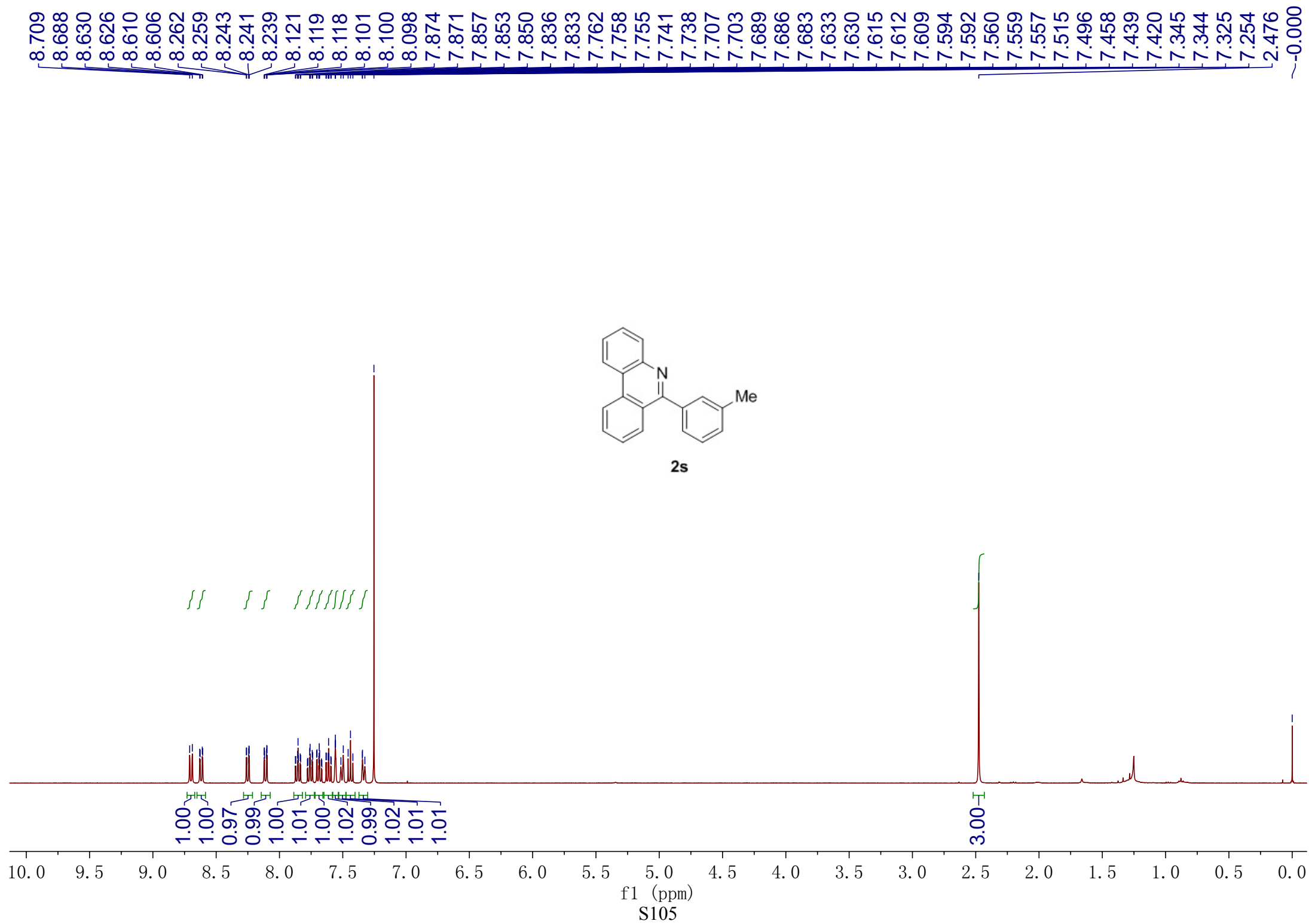


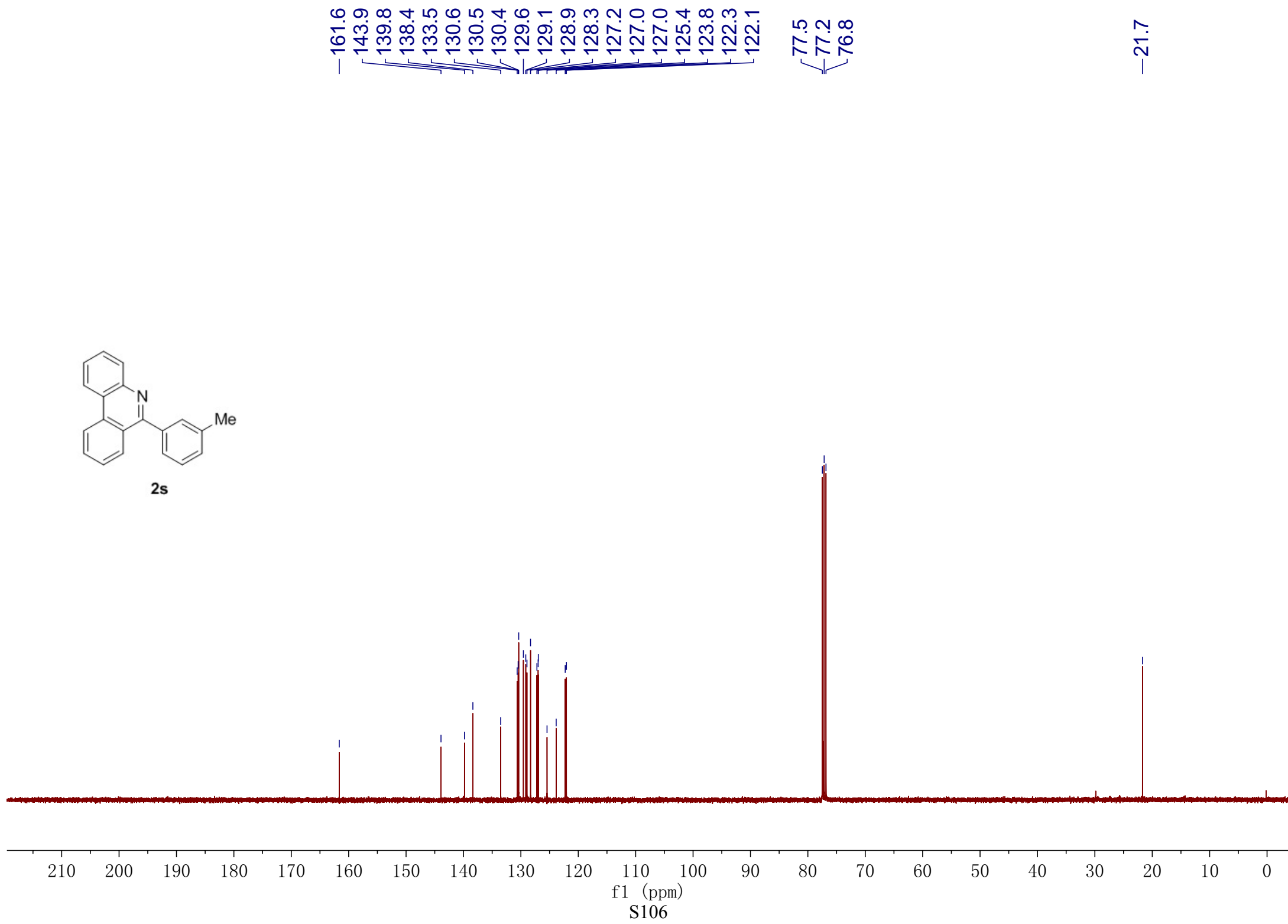
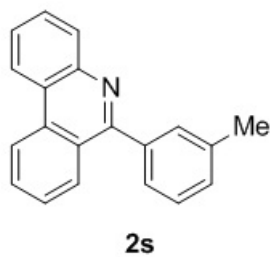


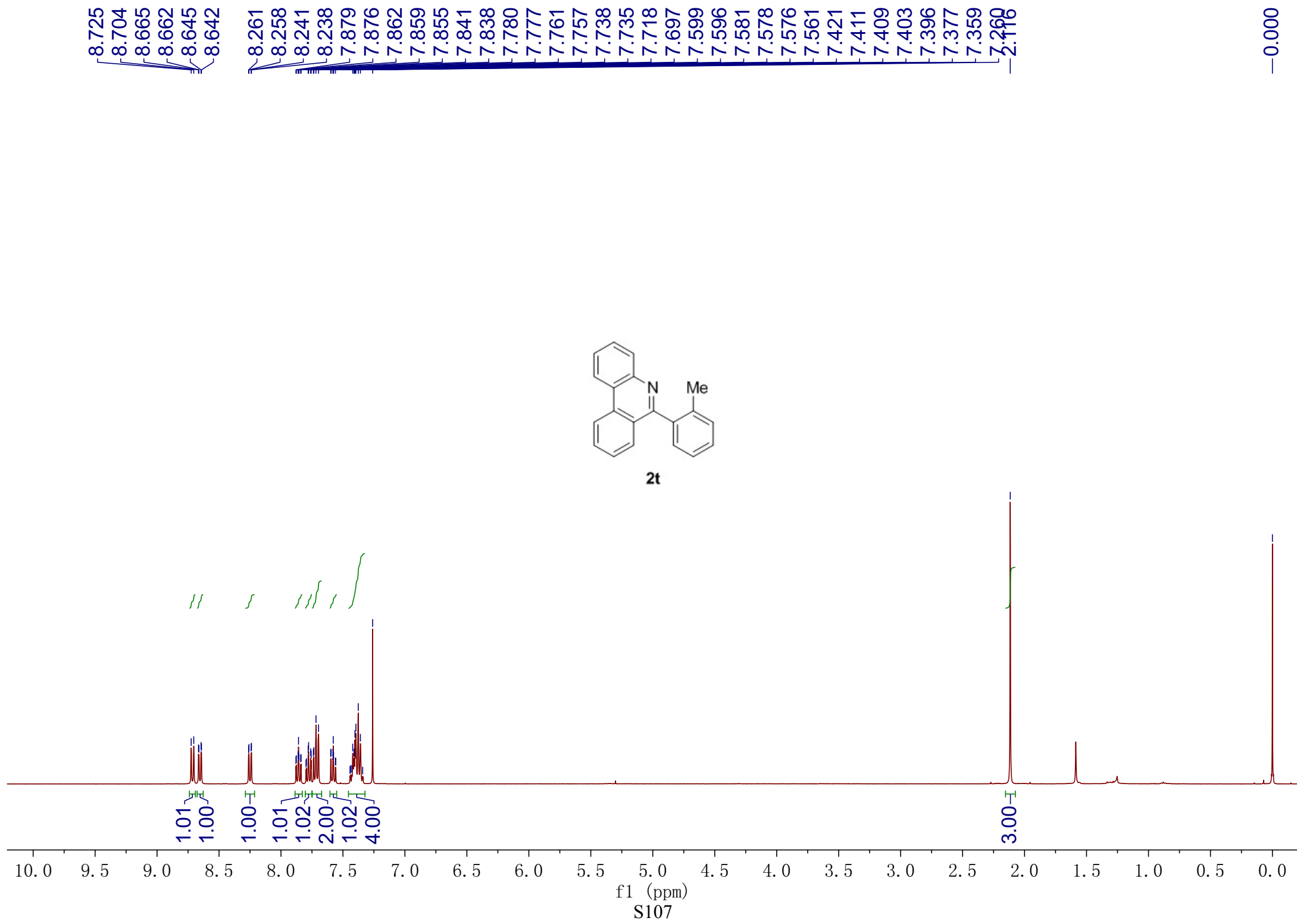


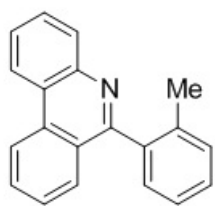




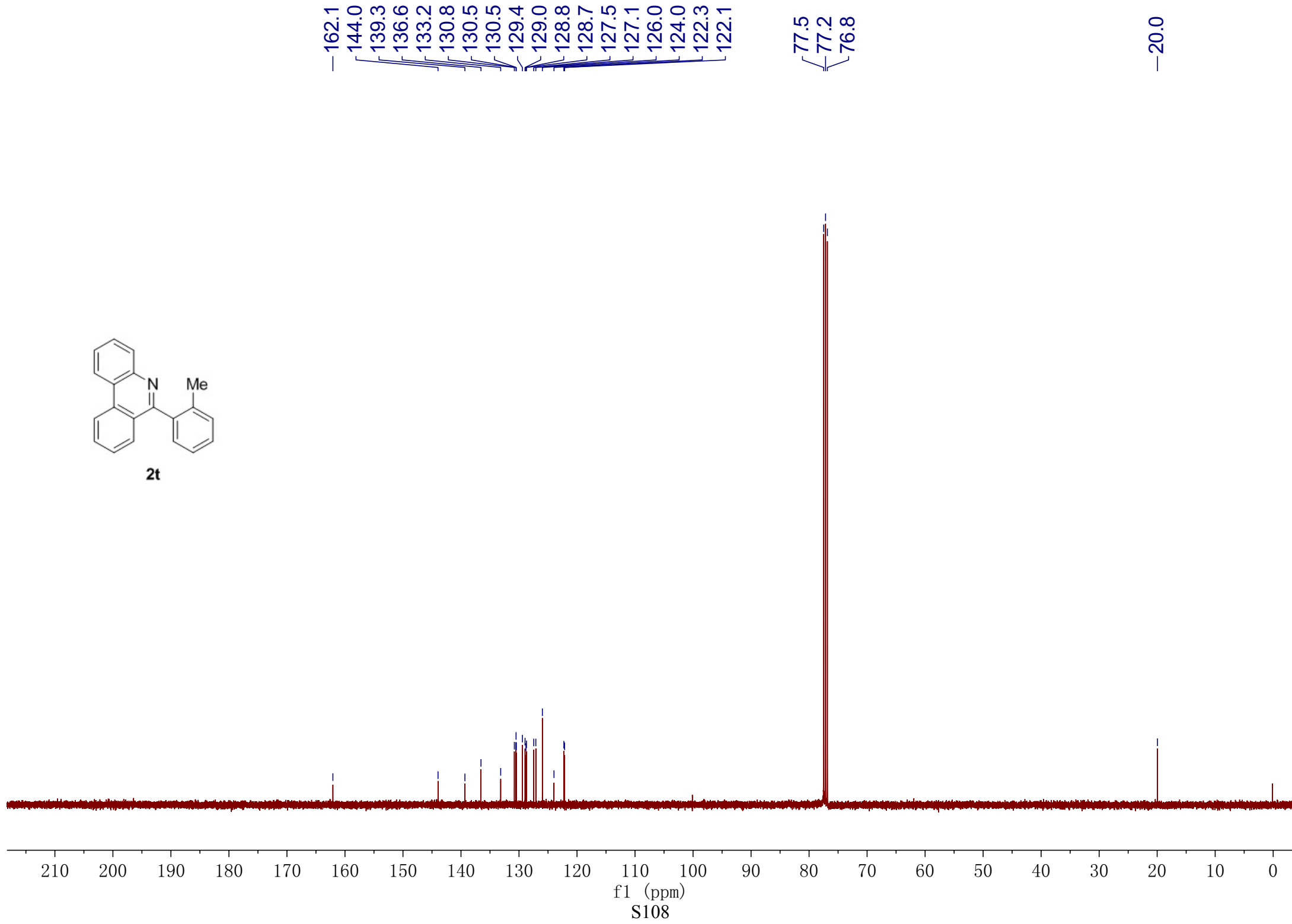


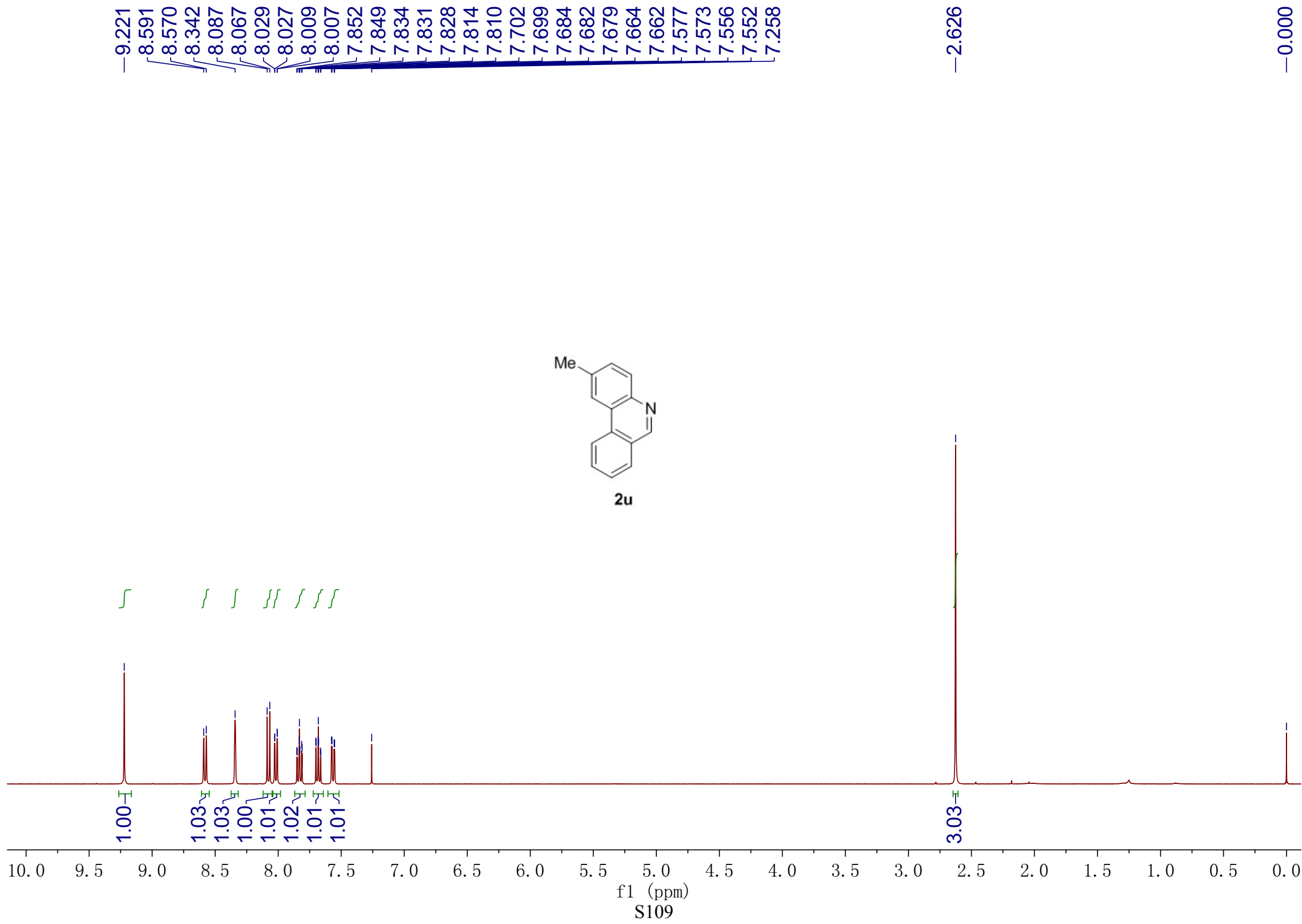


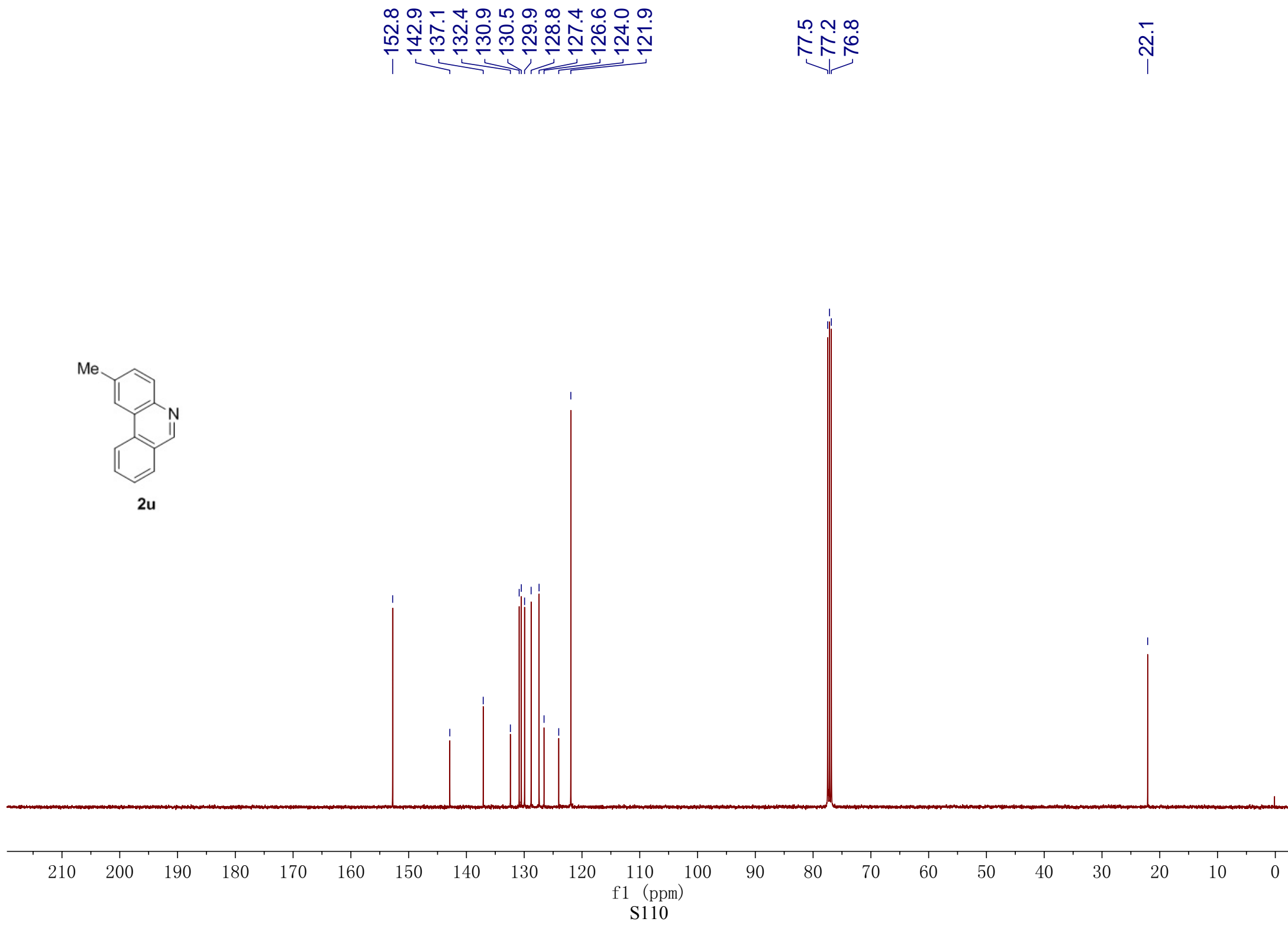
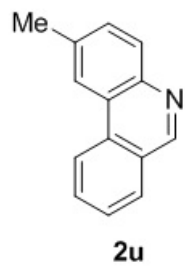


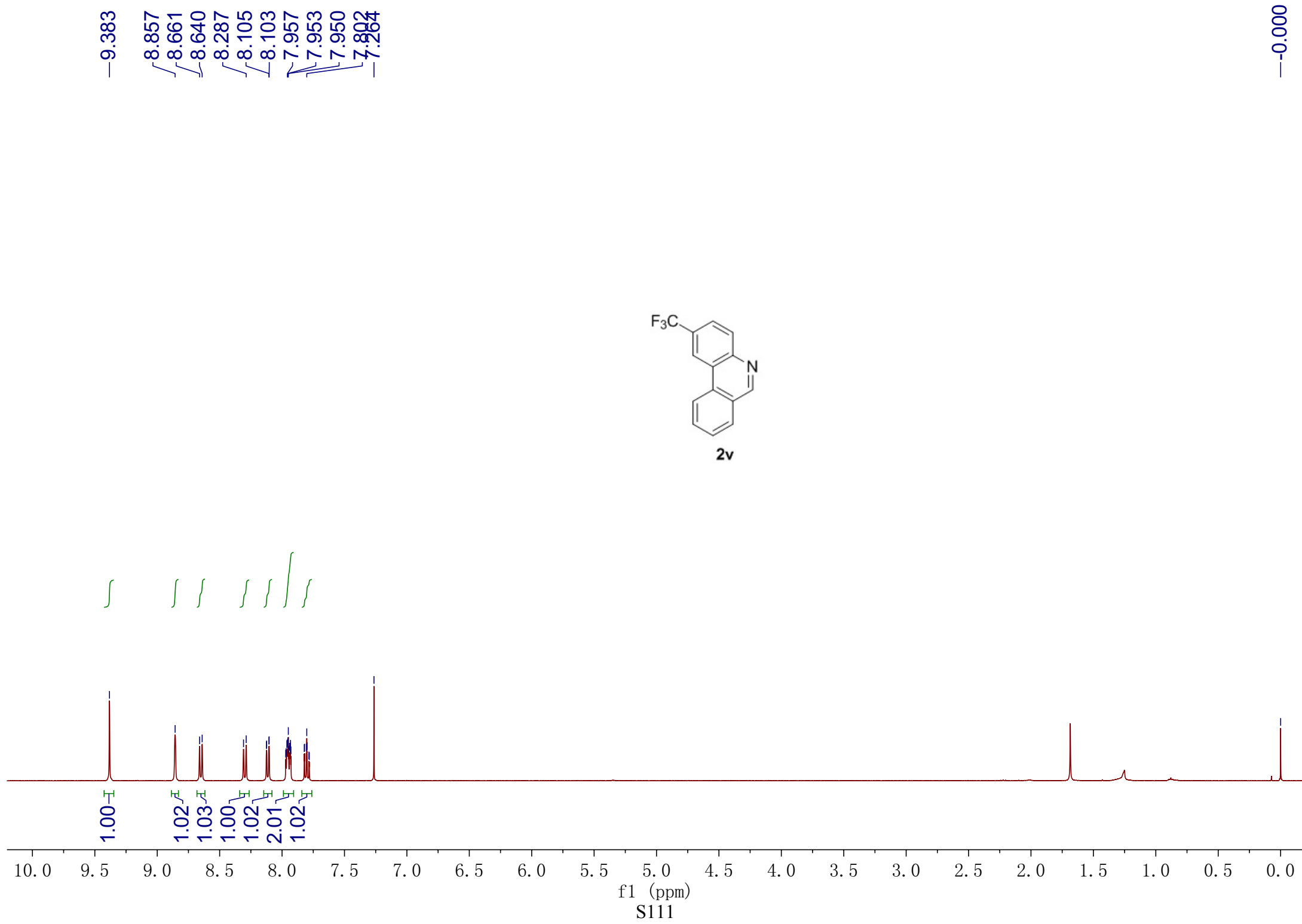


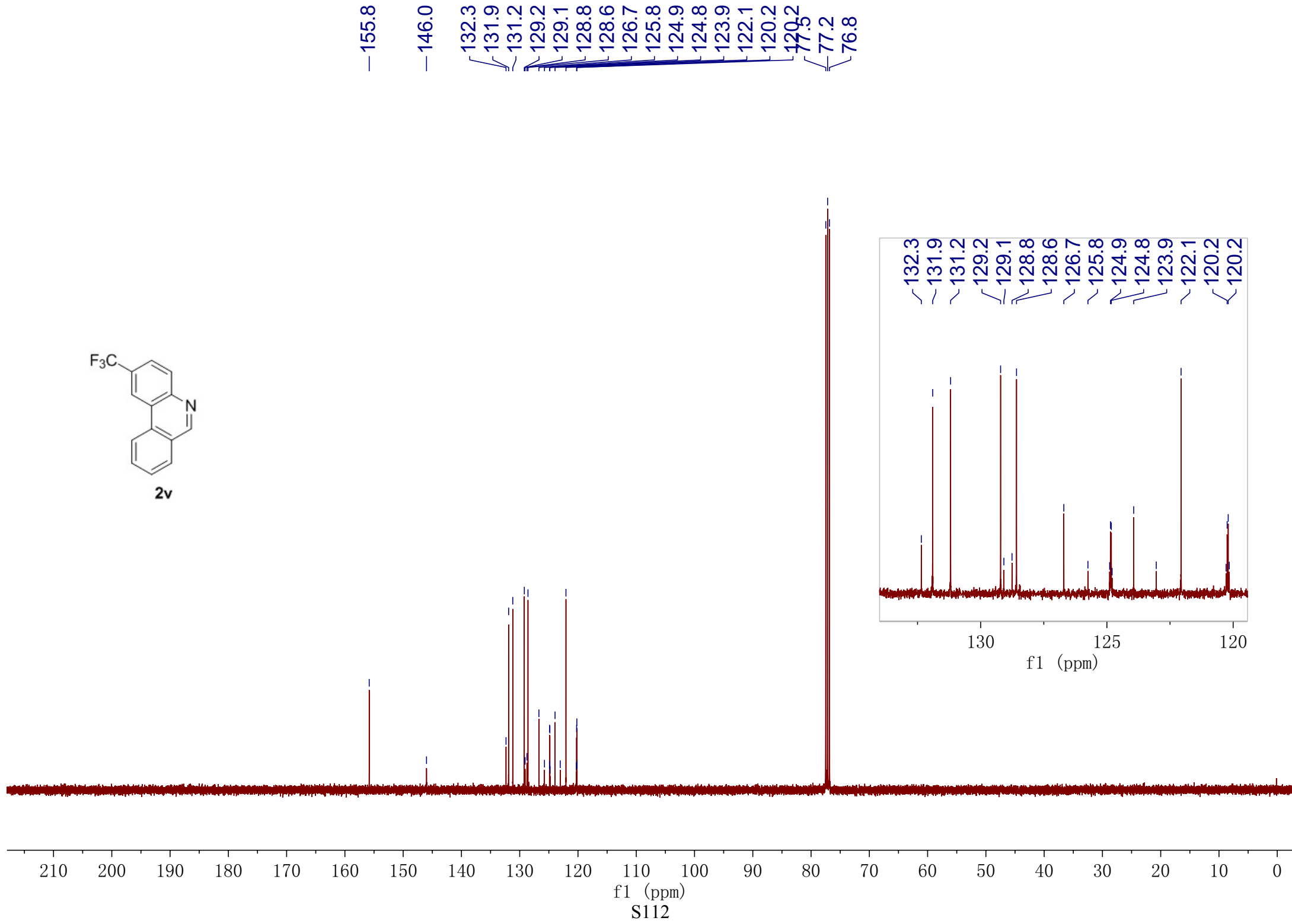
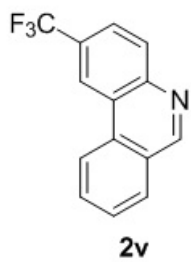
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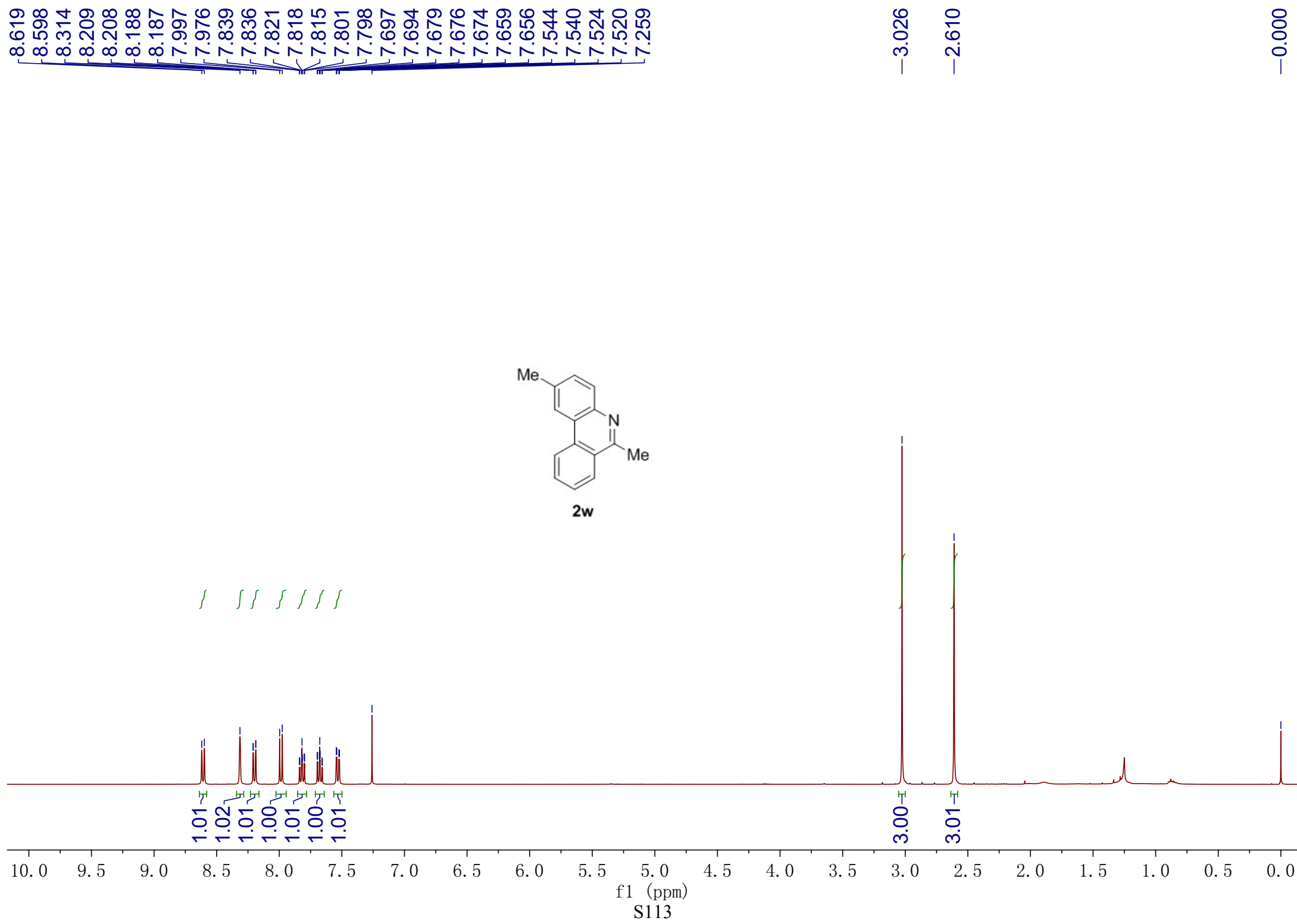


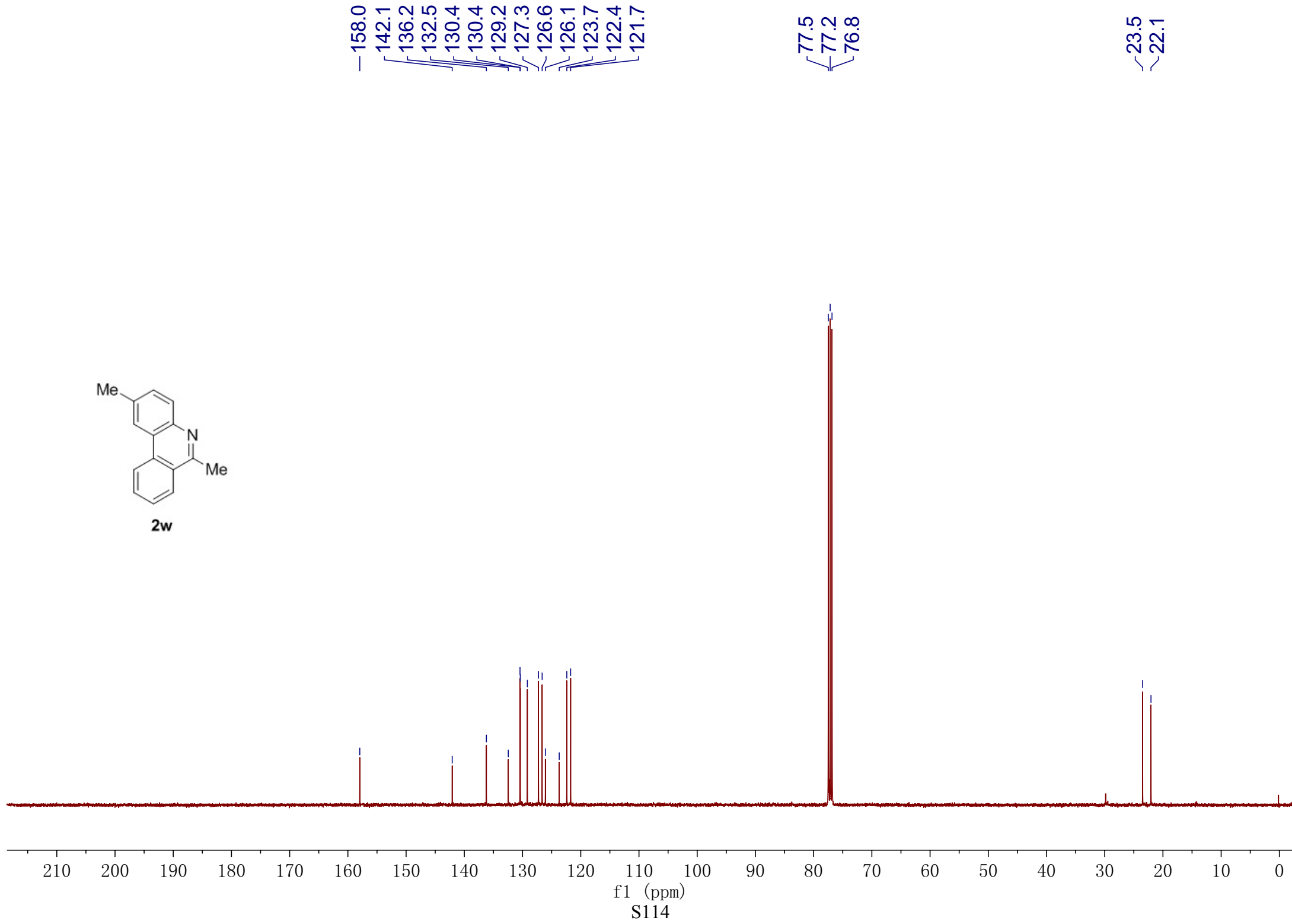
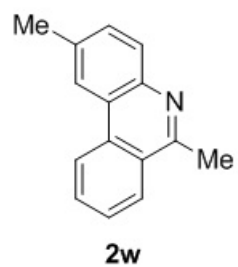


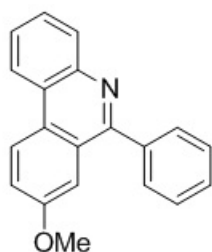




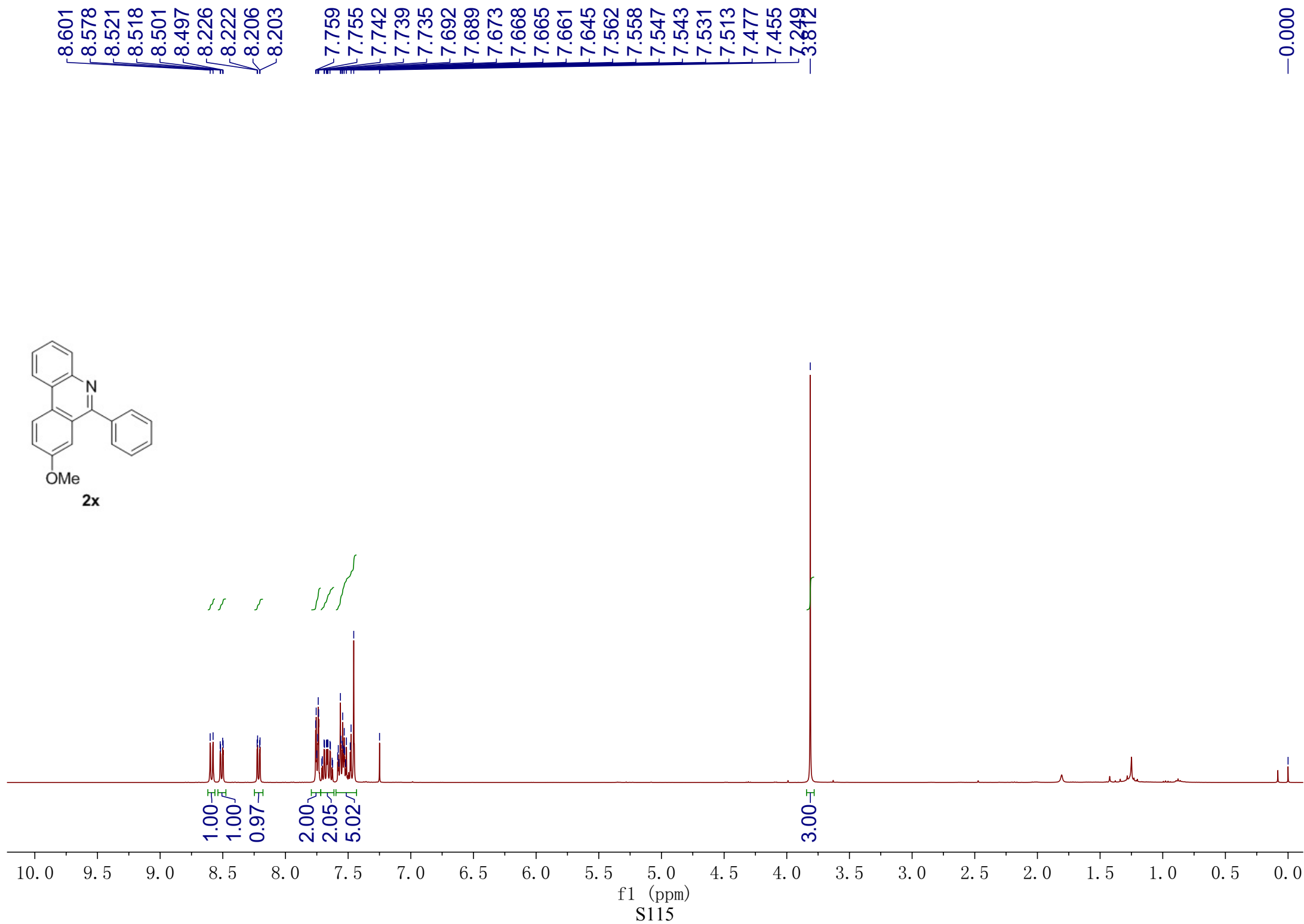


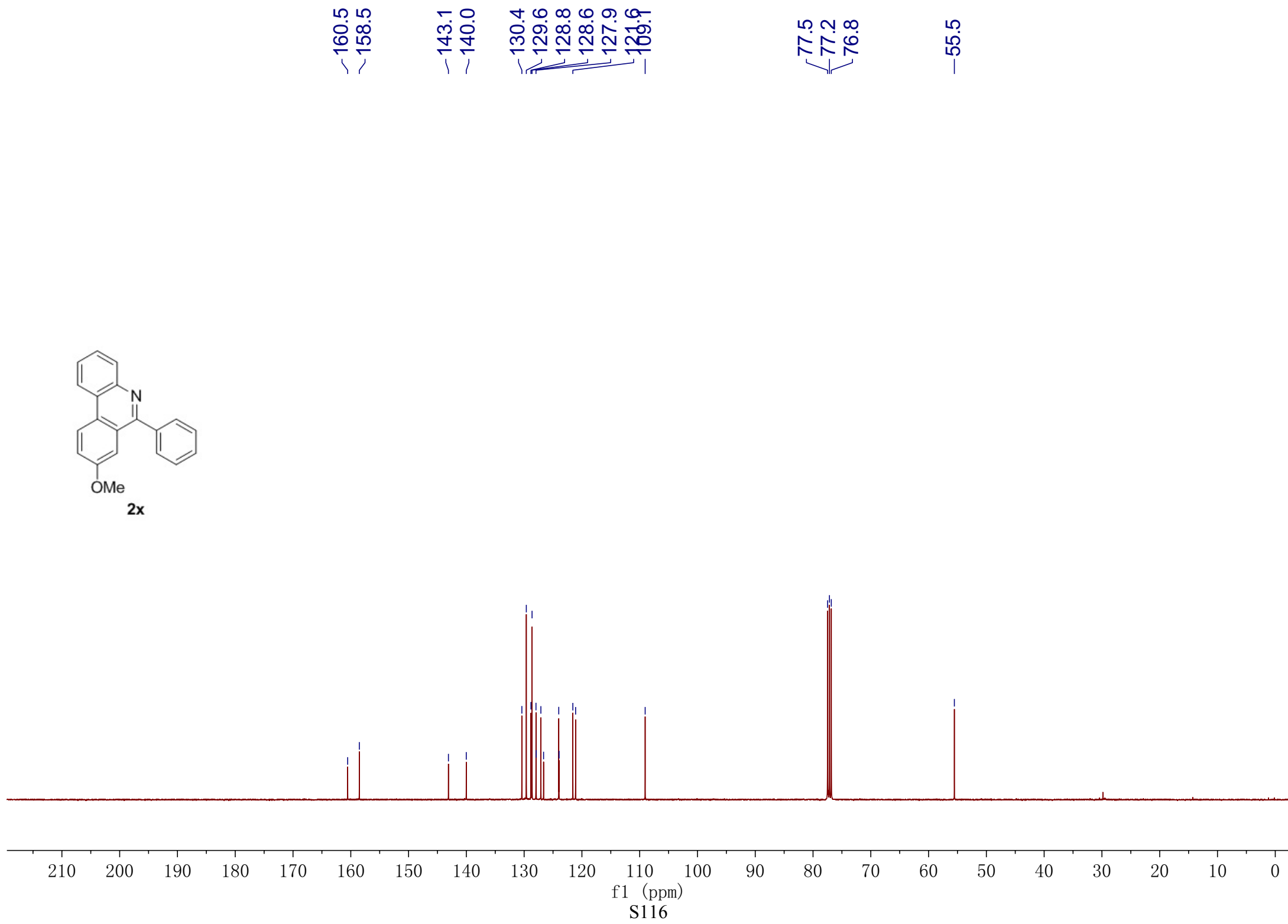
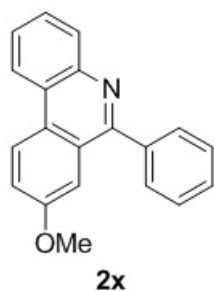


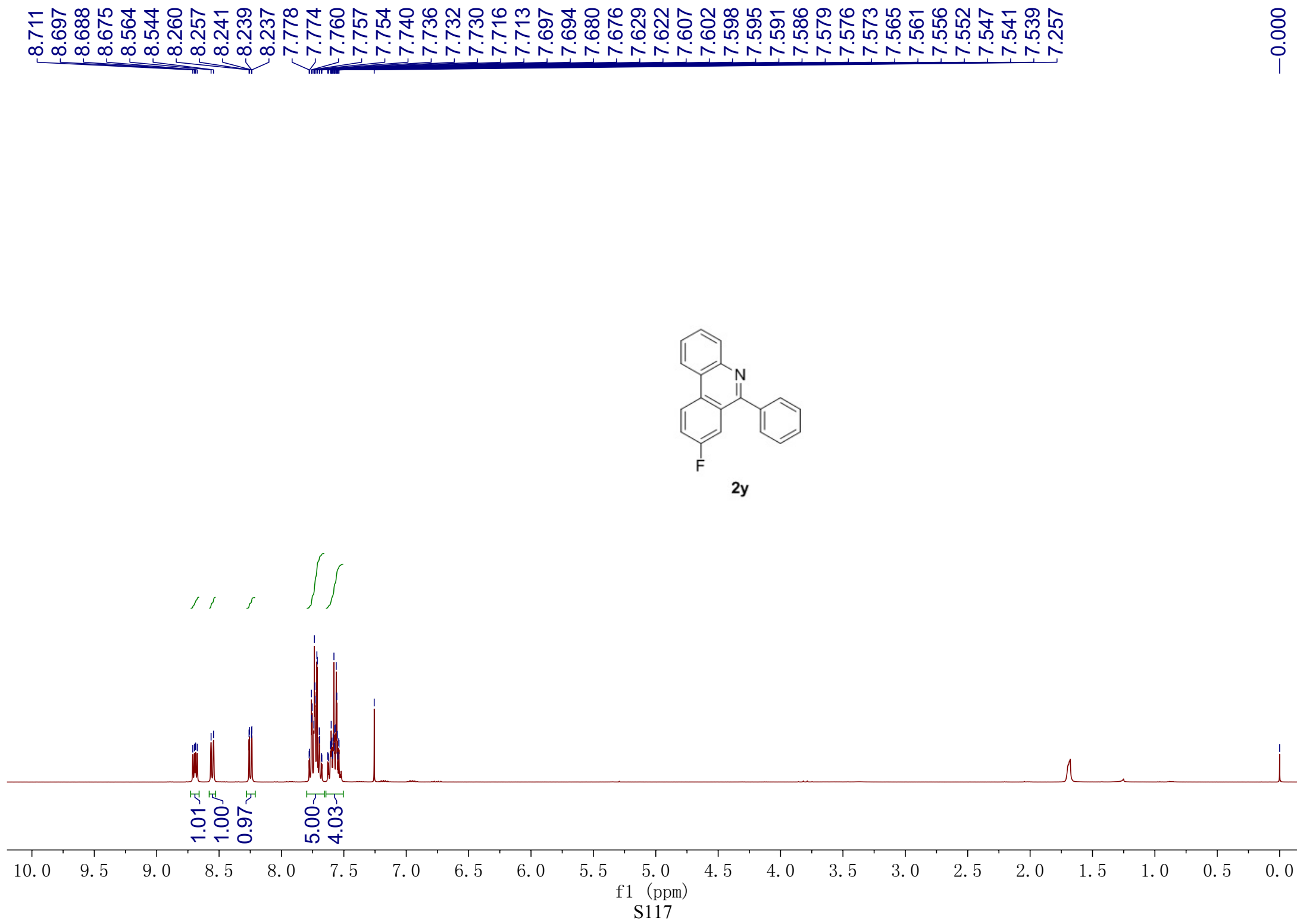


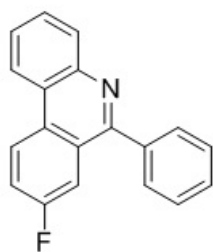


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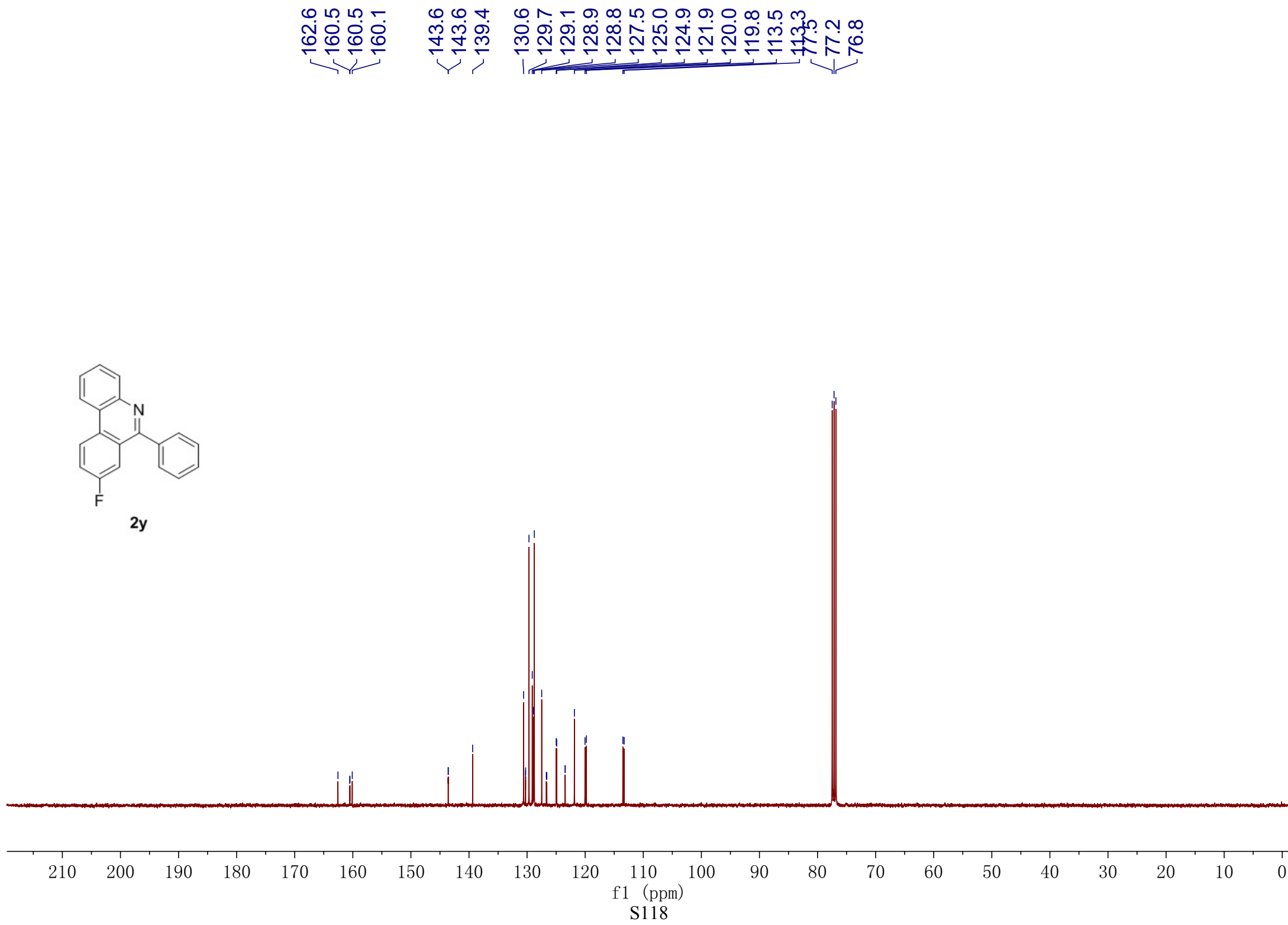


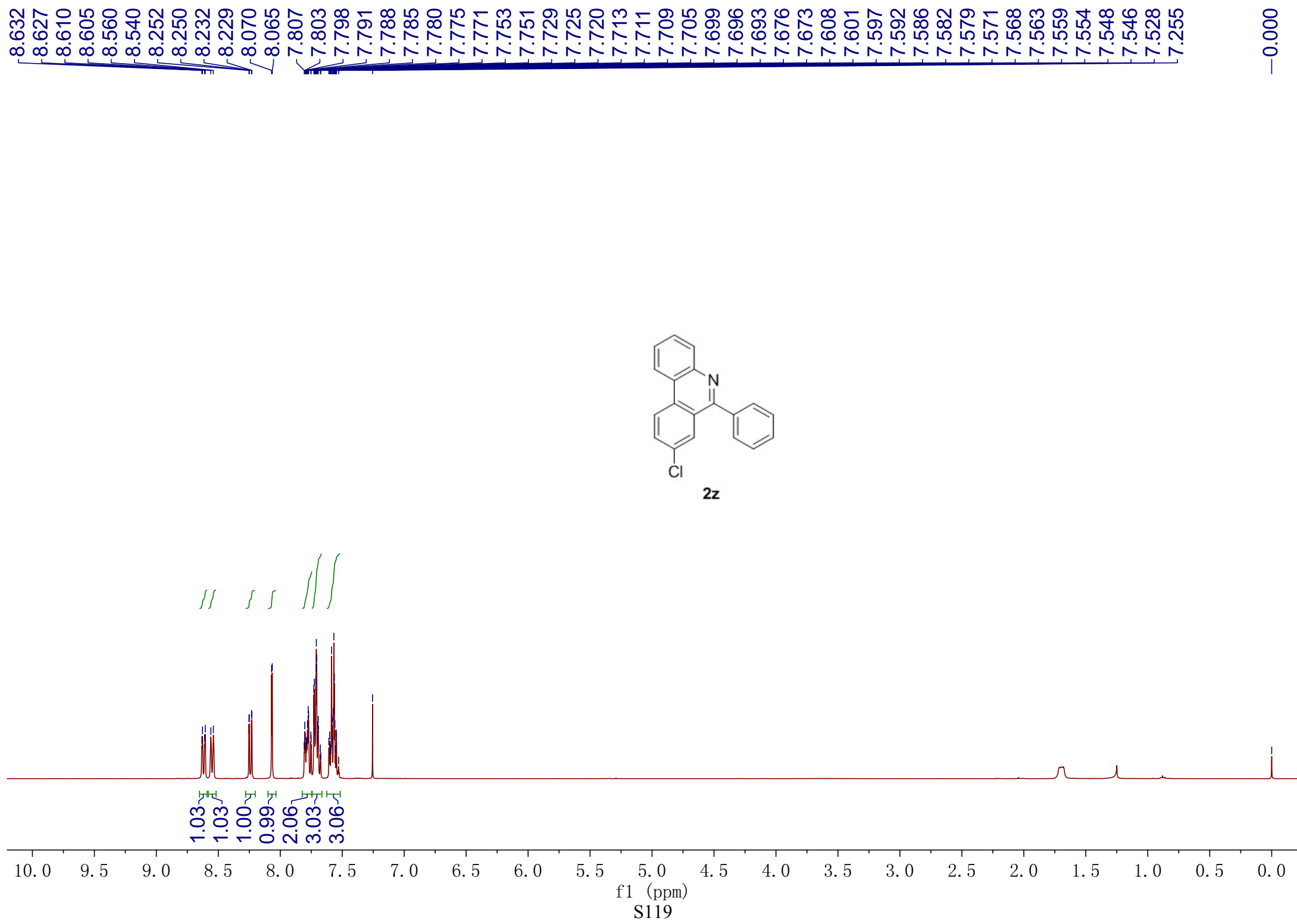


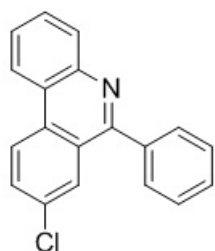




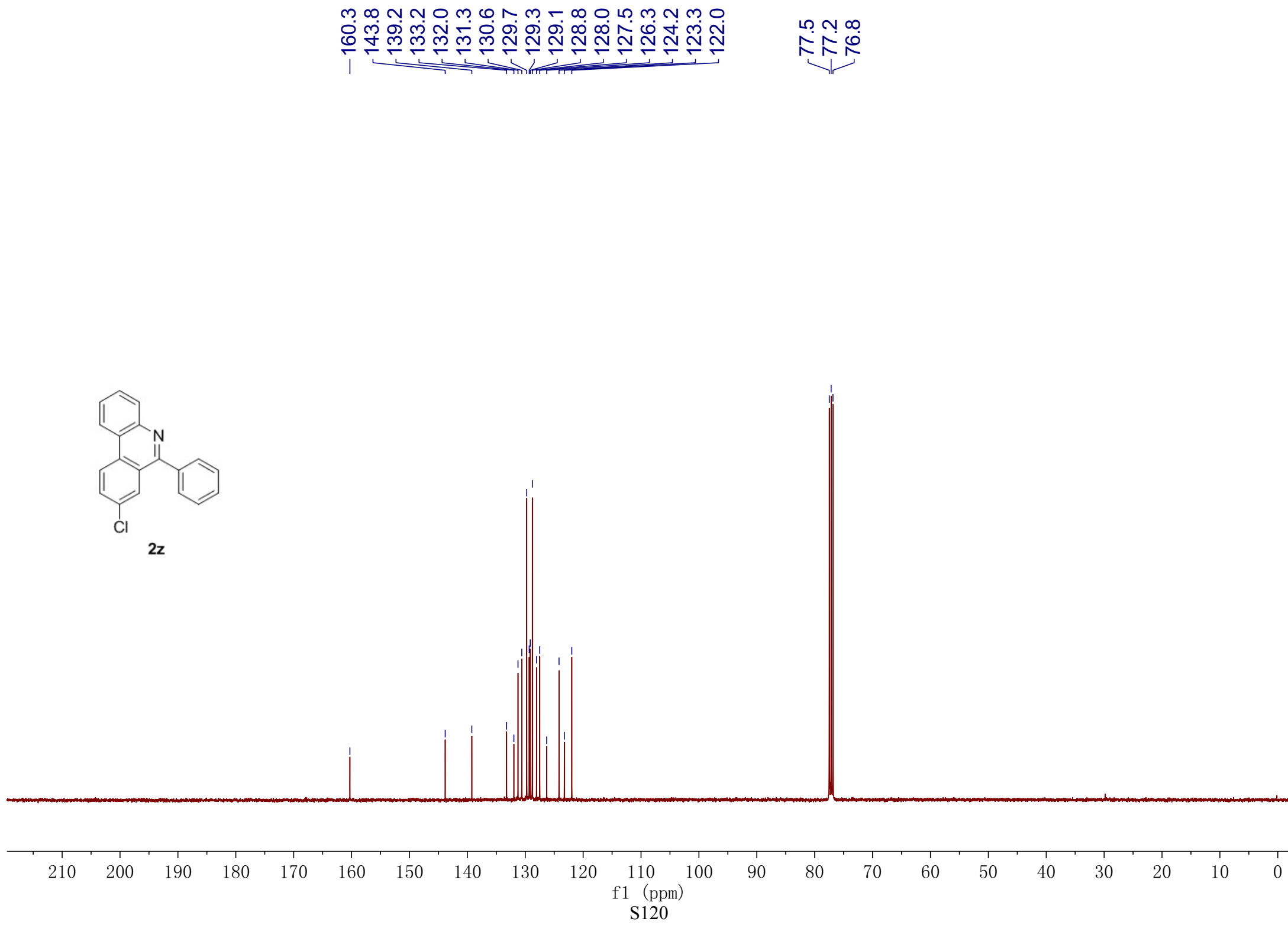
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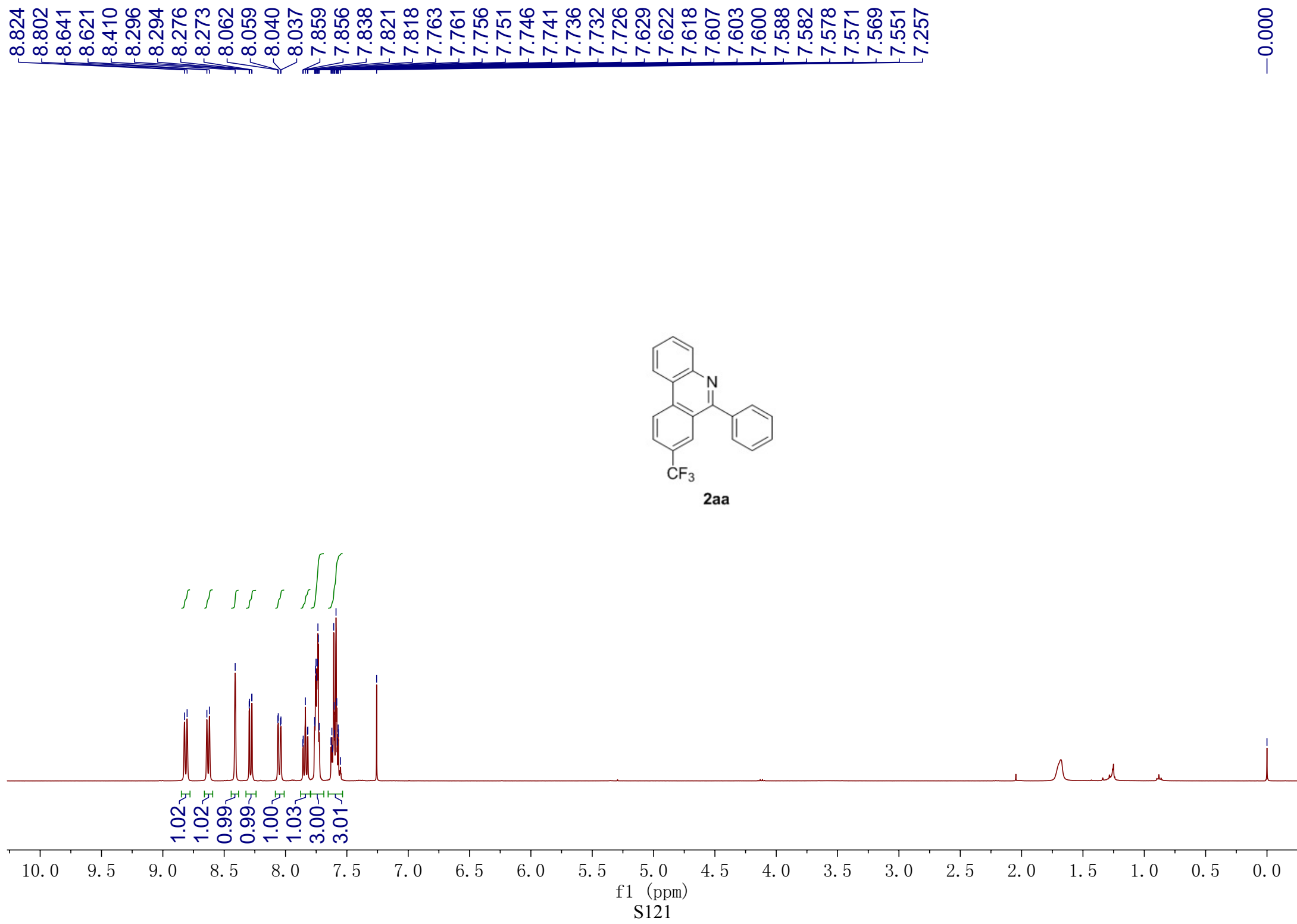


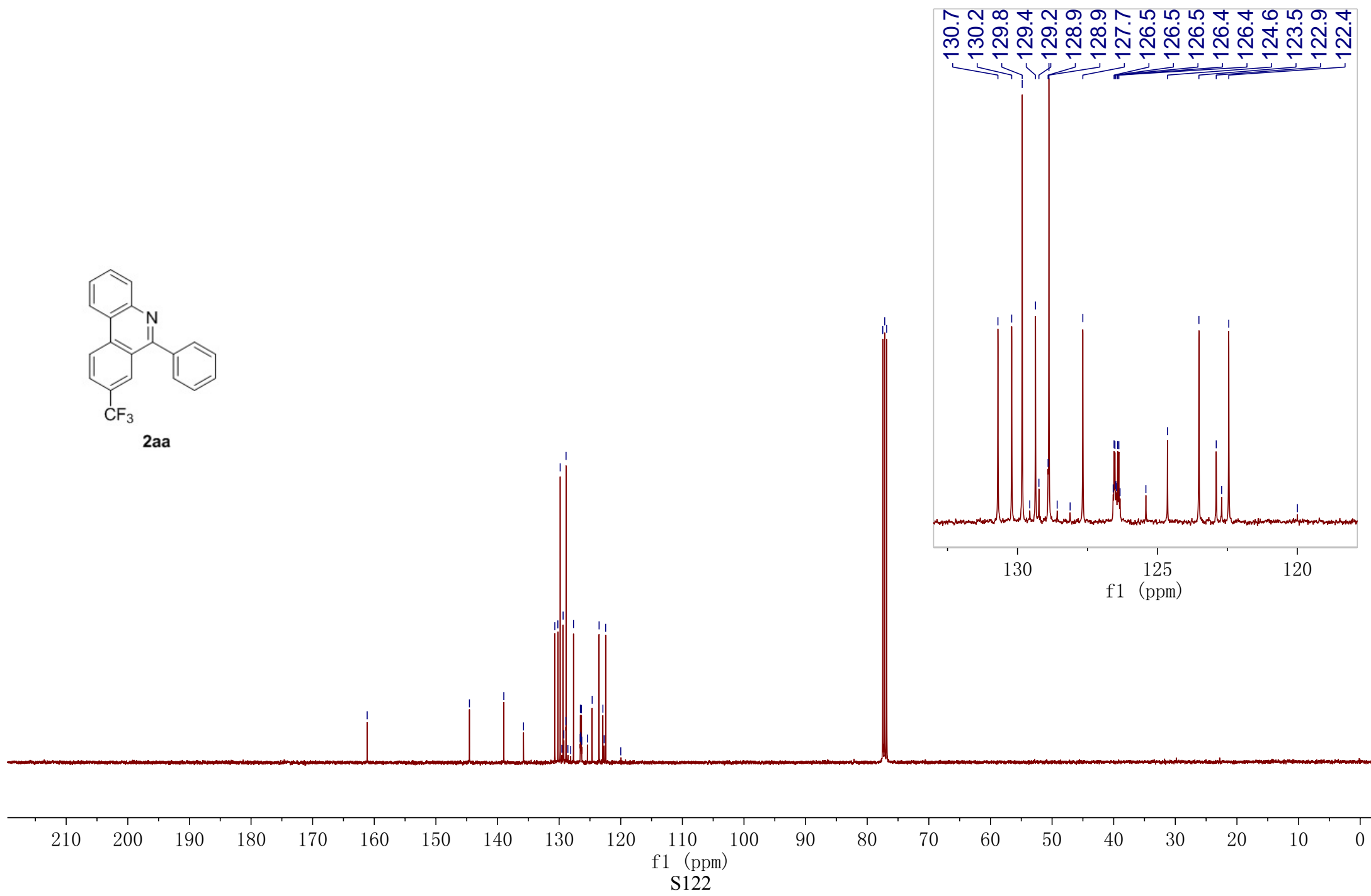
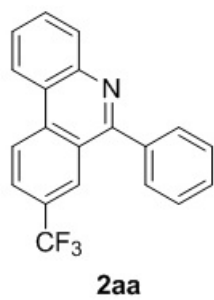


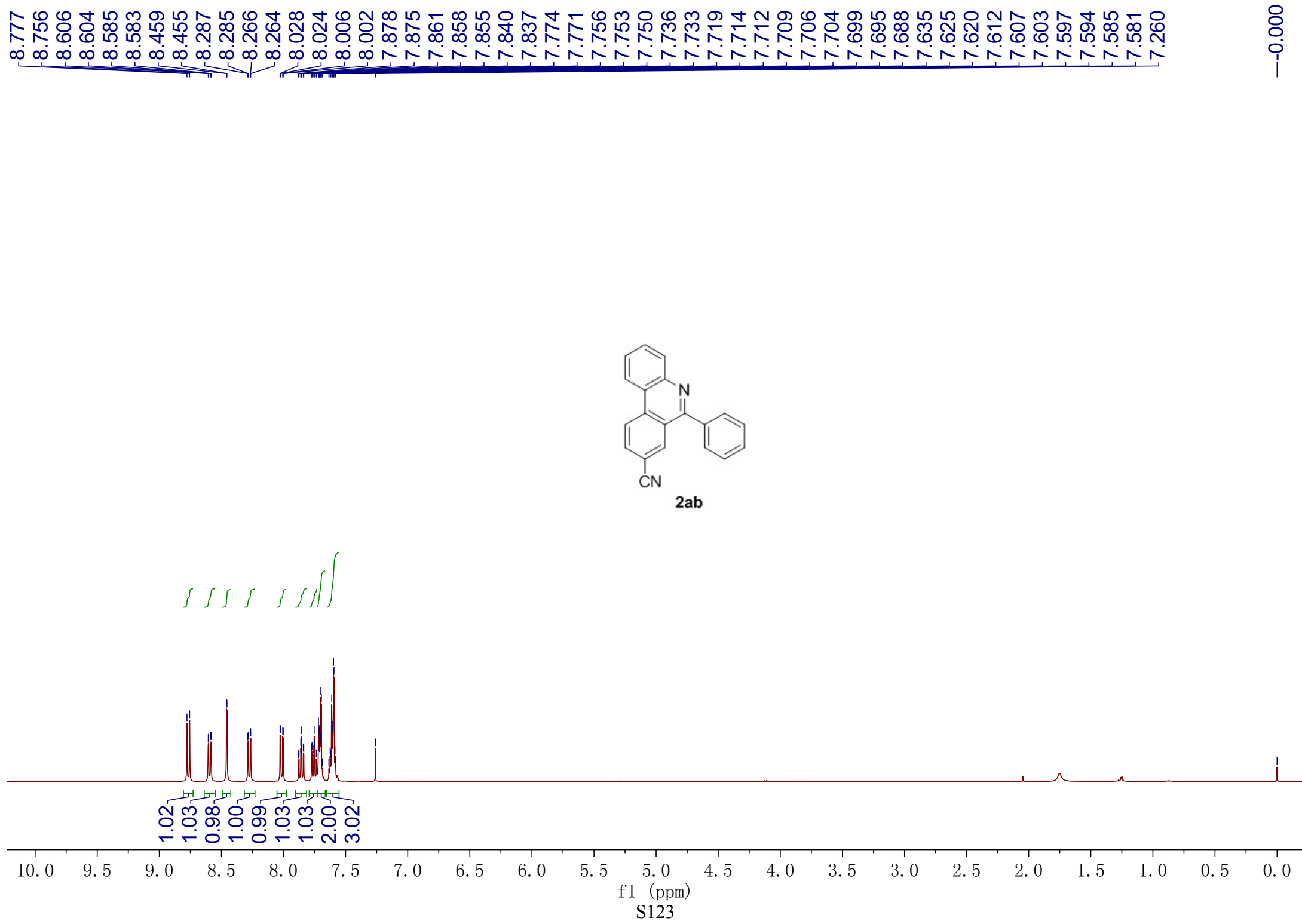


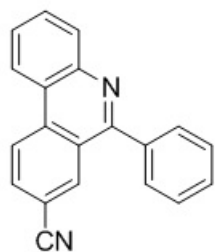
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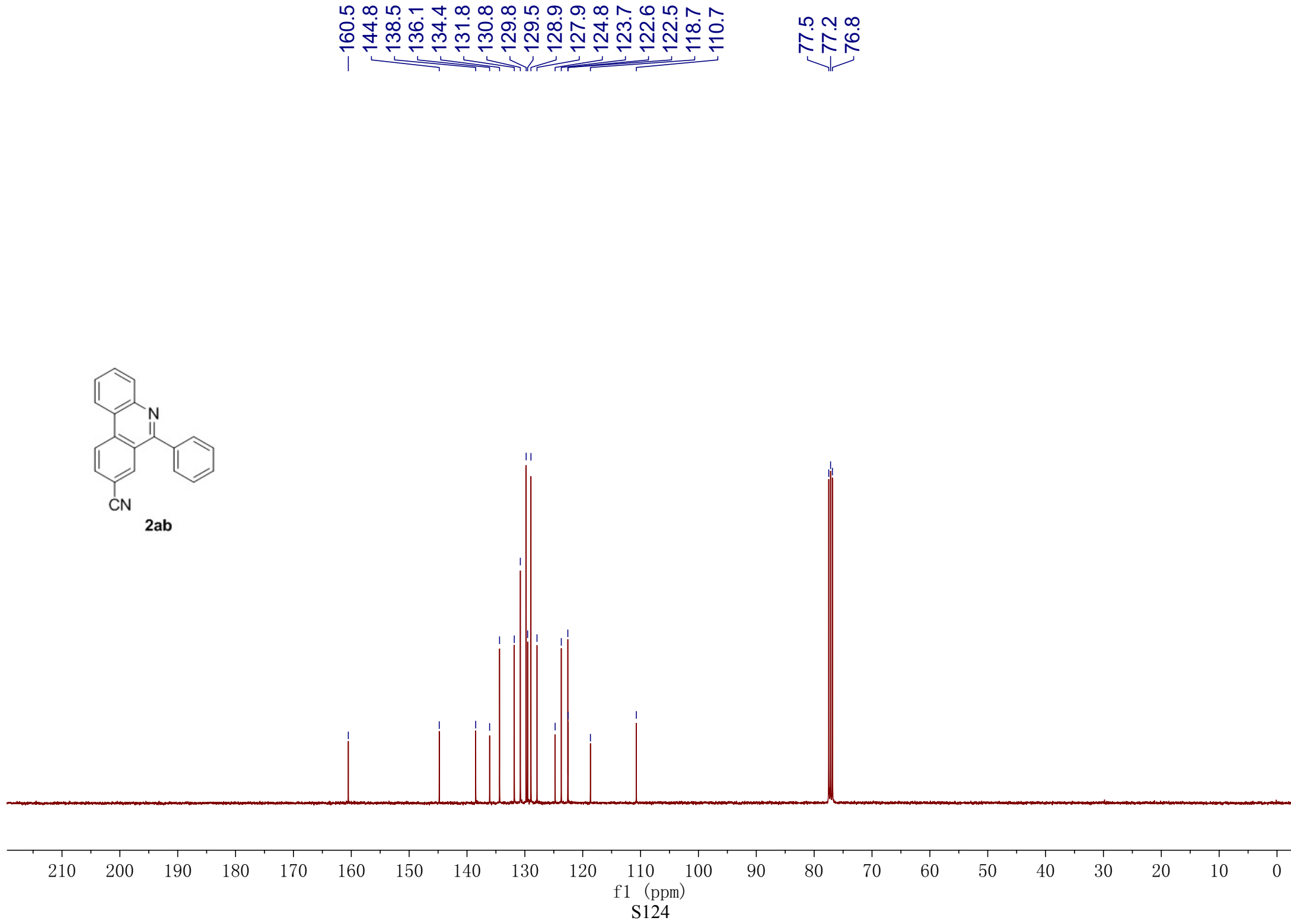


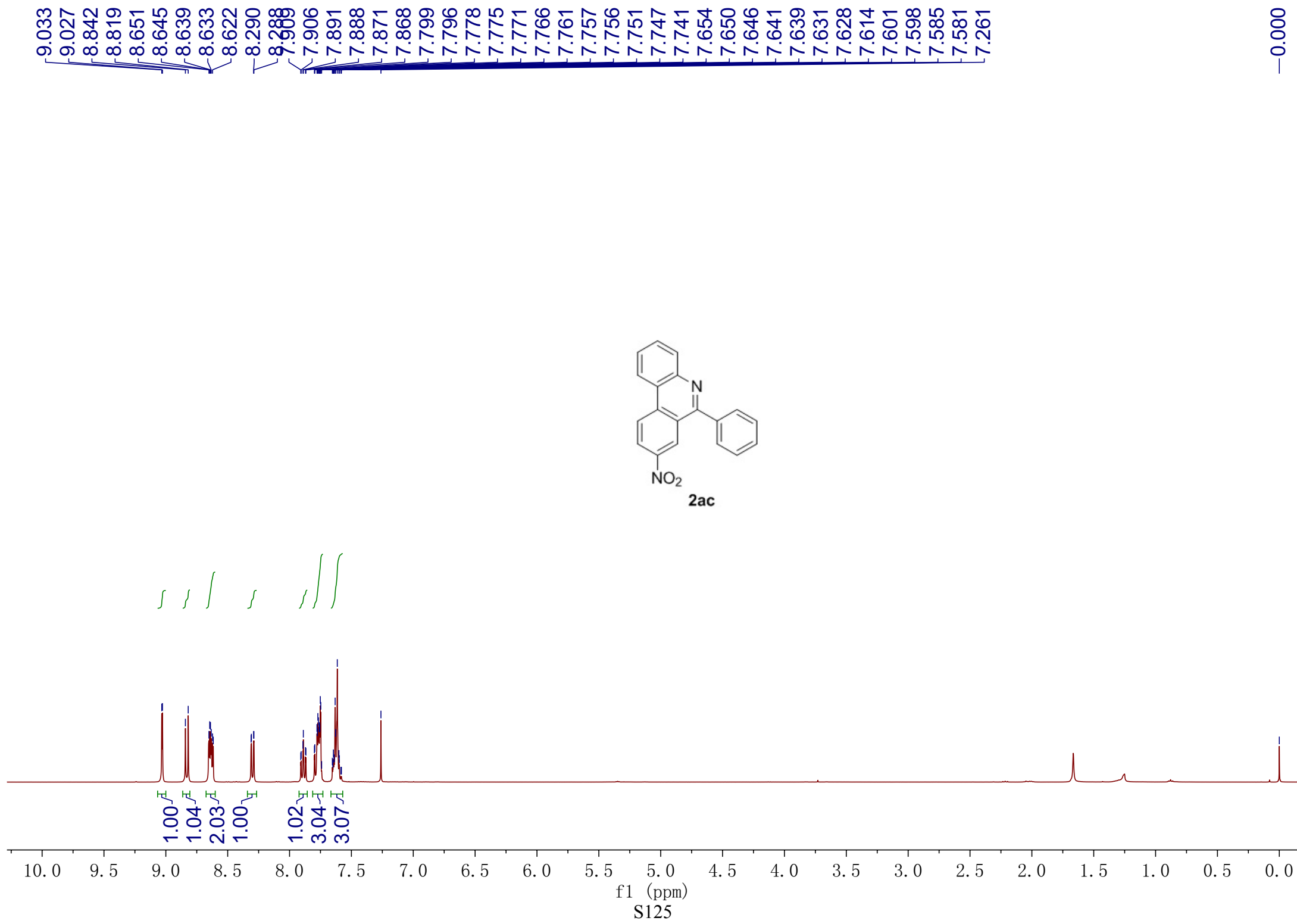


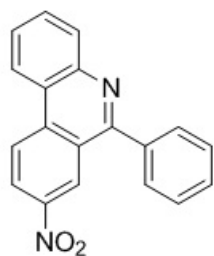




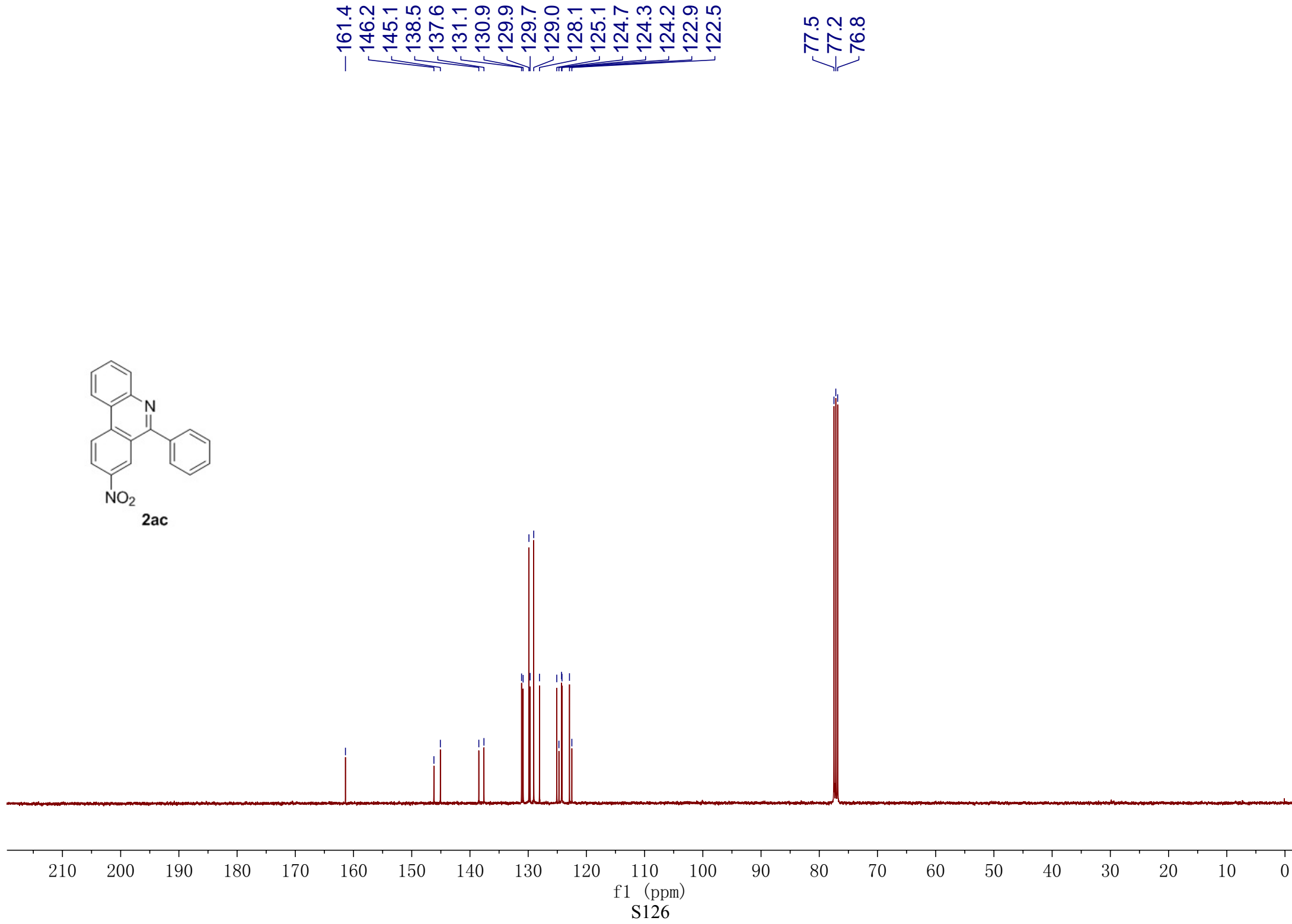
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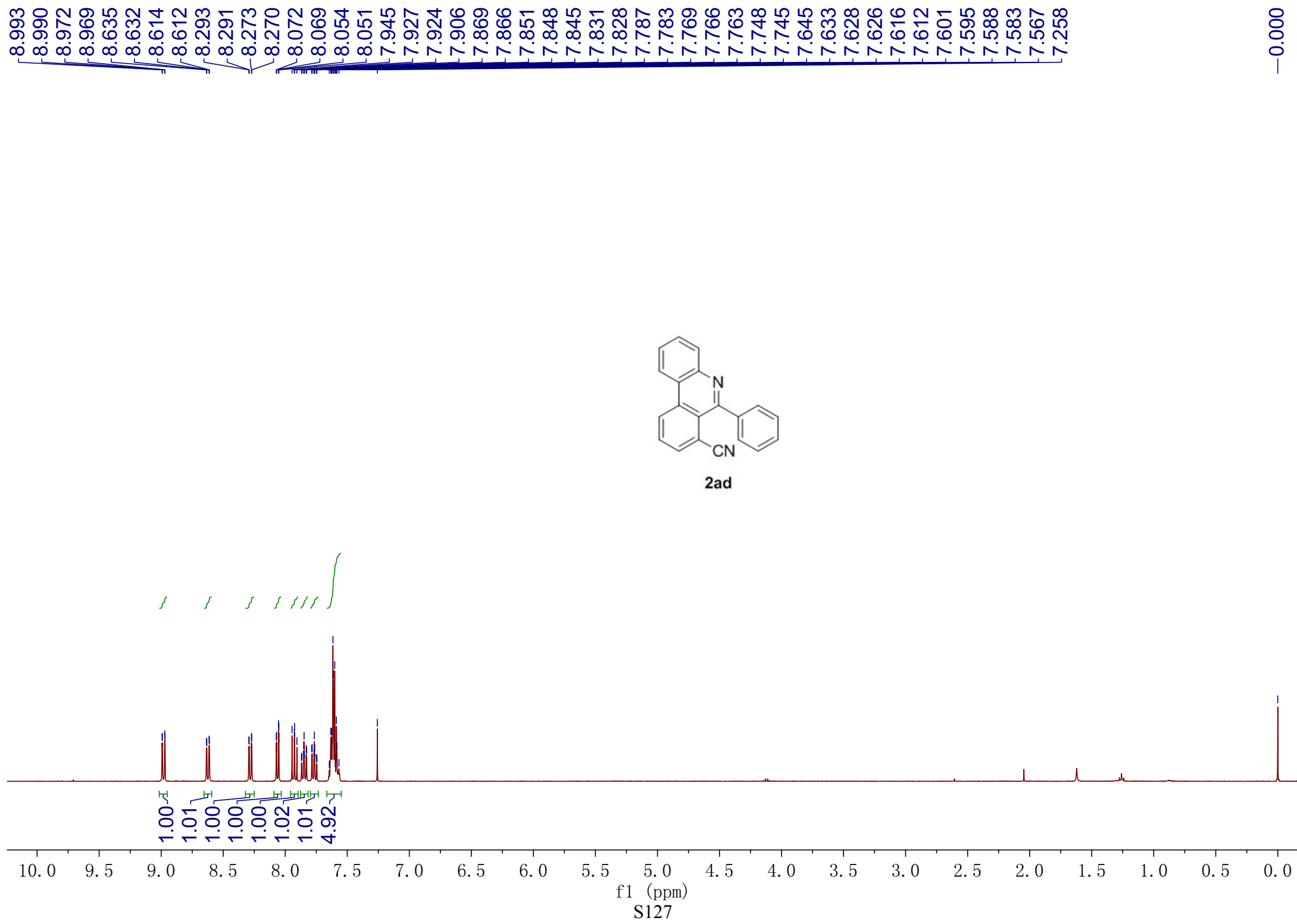


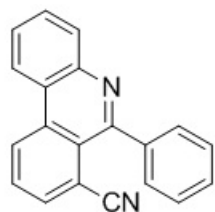




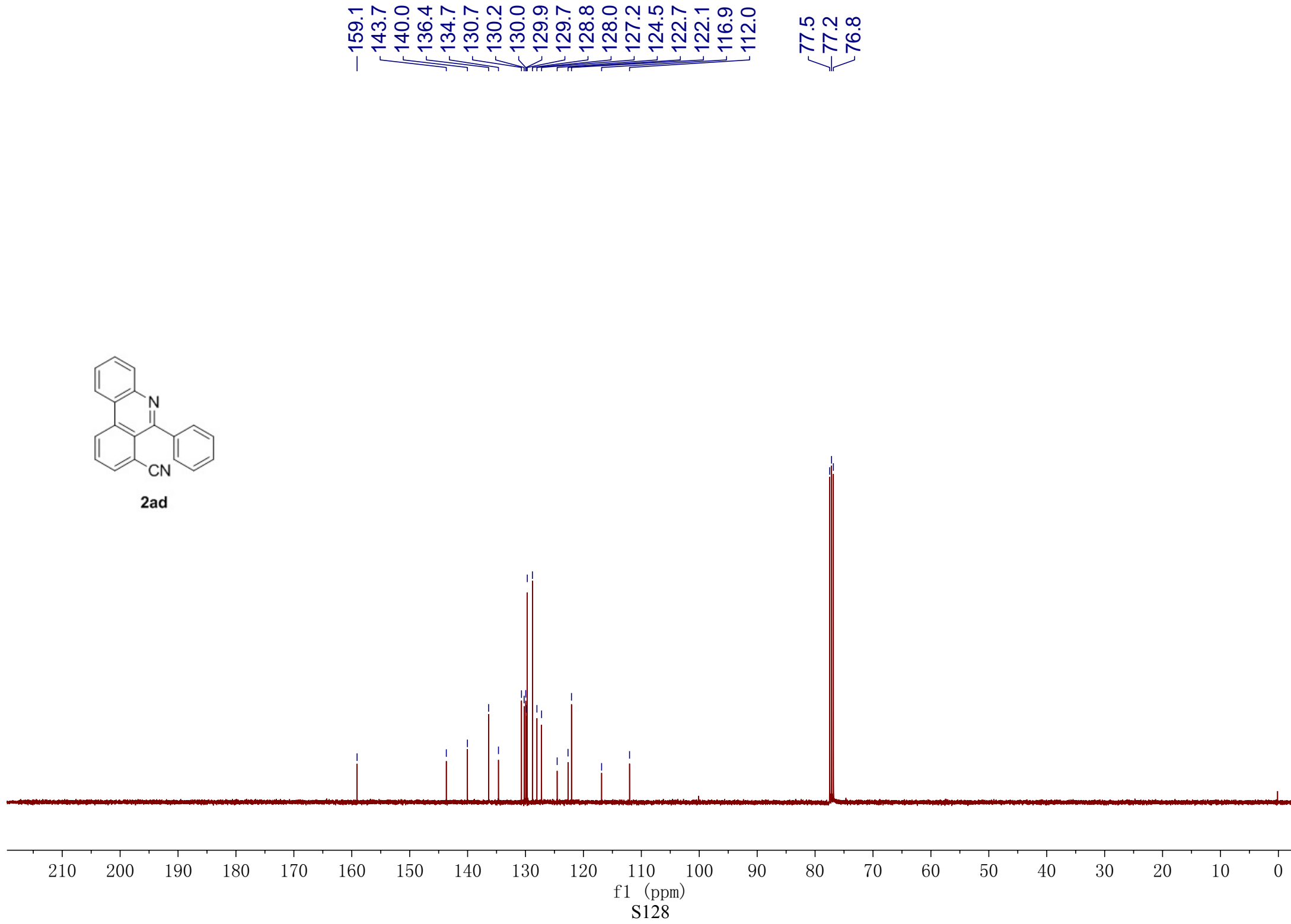
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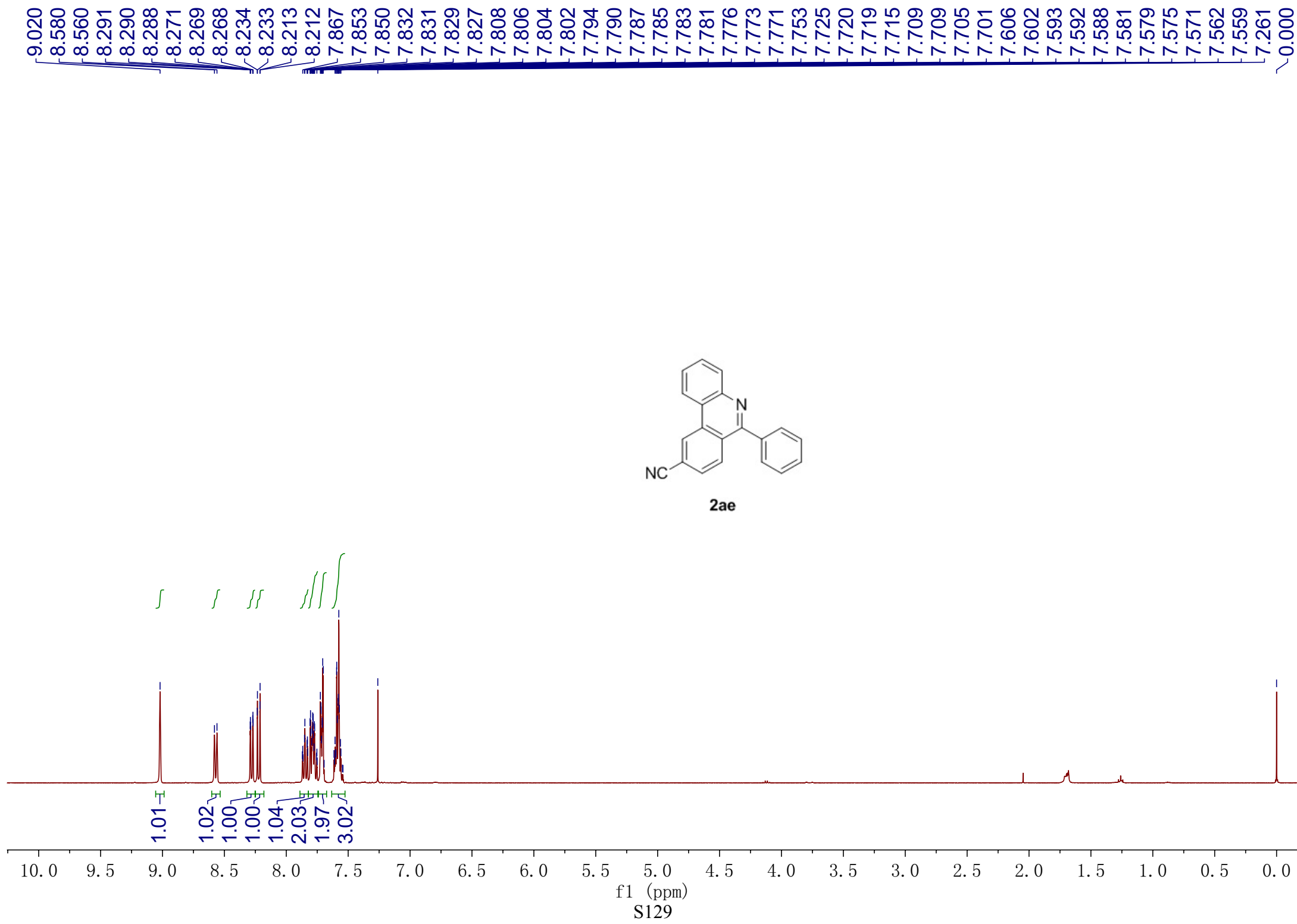


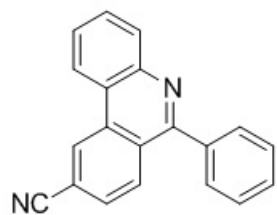




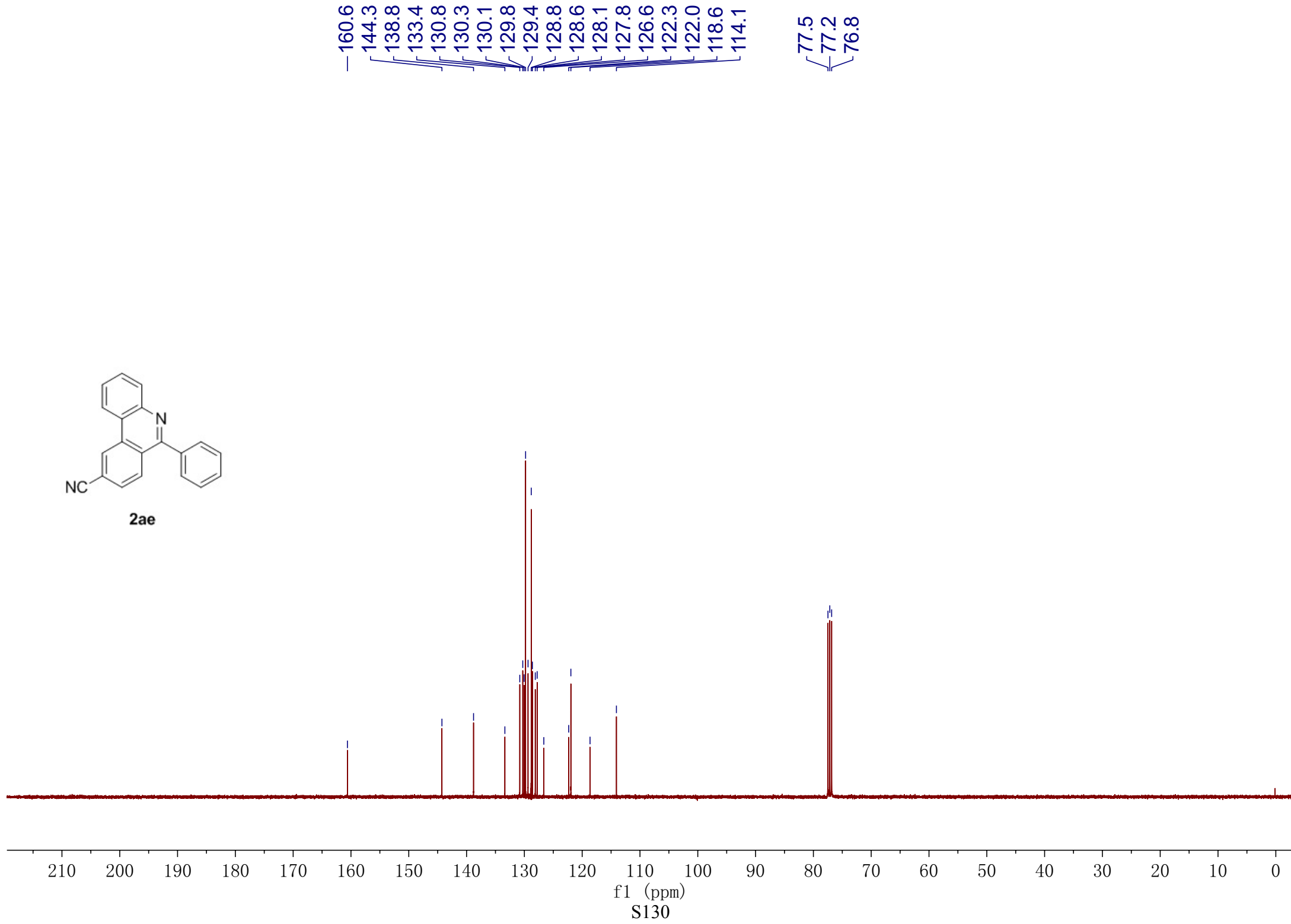
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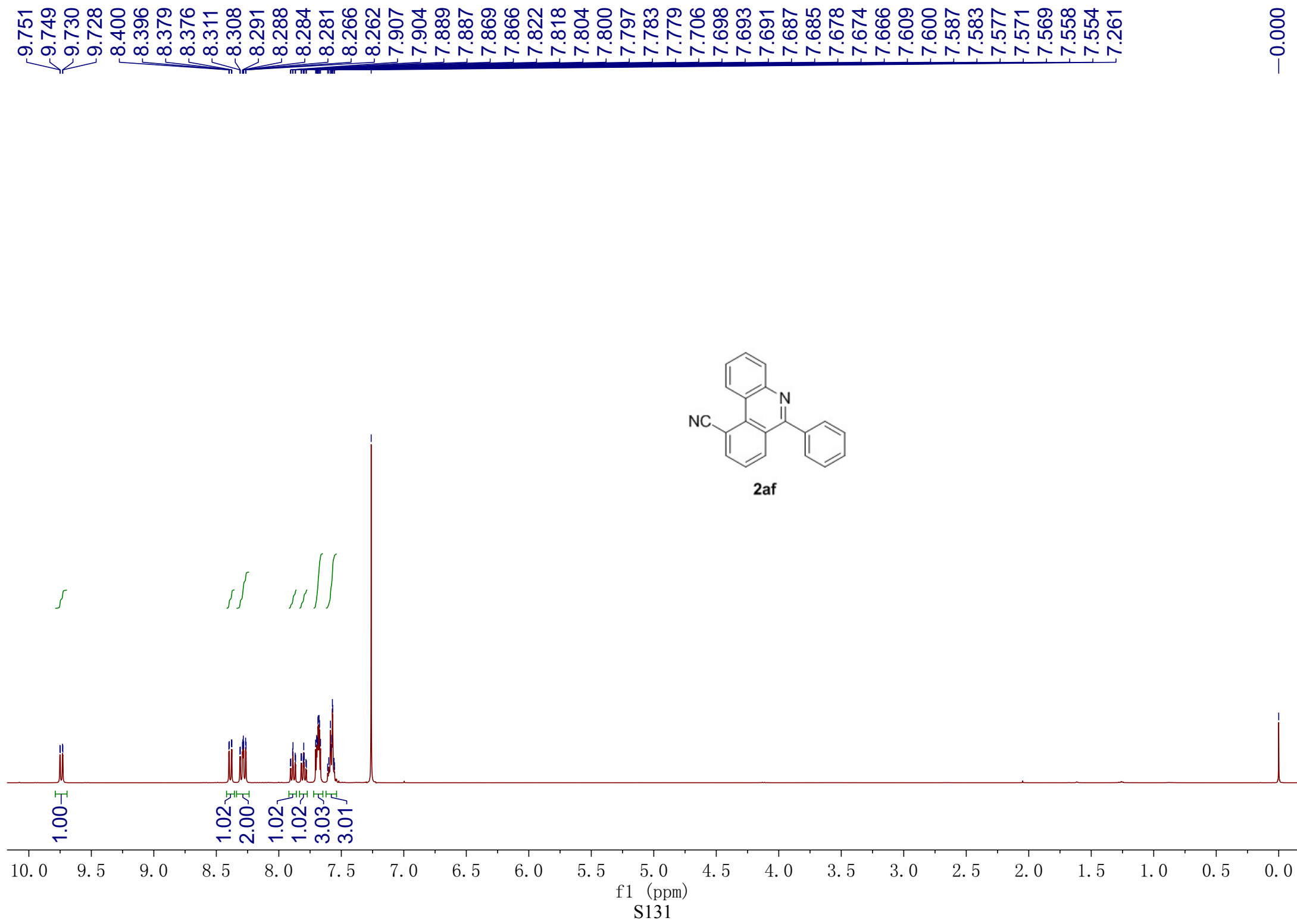


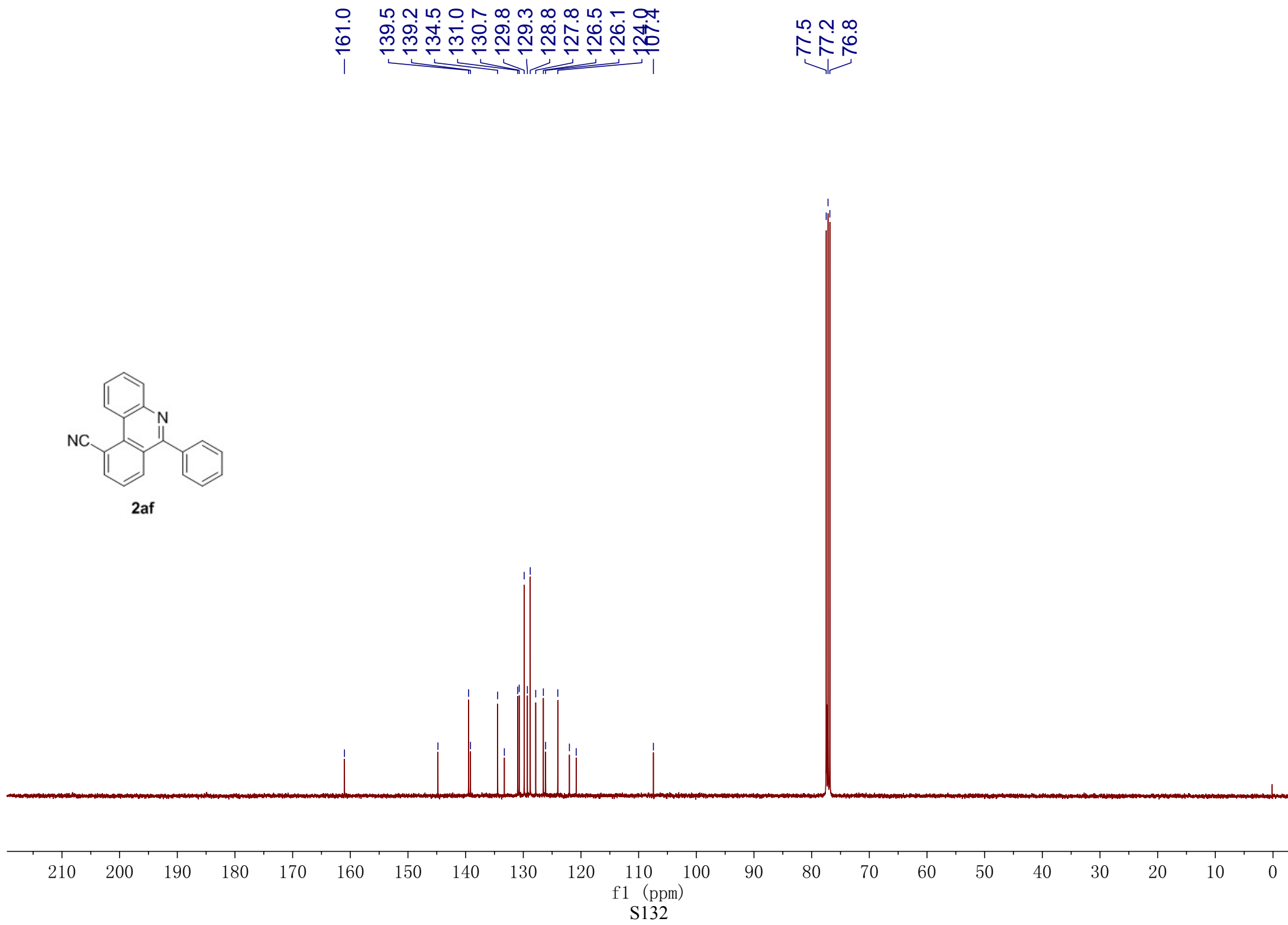
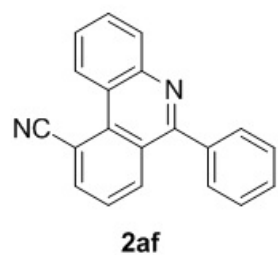




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