Supporting Information

Photo-Induced Deaminative Coupling of Alkylpyridium Salts with Terminal Arylalkynes

Shu-Zhen Lai[‡], Yu-Ming Yang[†], Hai Xu[‡], Zhen-Yu Tang[*,†,‡], Zhuangzhu Luo[*,§]

[†] *School of Pharmaceutical Science (Shenzhen), Sun Yat-sen University， Guangzhou 510275, China*

[‡]*College of Chemistry and Chemical Engineering, Central South University, Changsha 410083, China*

[§] *School of Material, Sun Yat-sen University, Guangzhou 510275, China*

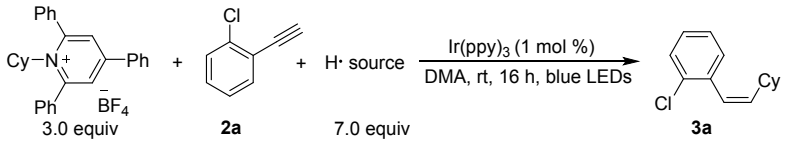
E-mail: tangzhenyu@mail.sysu.edu.cn
E-mail: luozhzhu@mail.sysu.edu.cn

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1. Optimization studies

Table S1 Optimization of H· sources[a]



Entry	H· source	Yield% (*Z/E*)
1	Hantzsch ester	32(78:22)
2	CySH	0
3	Et_3SiH	0

[a] the reaction scale was 0.1mmol. Isolated yields of Z/E mixtures and the Z/E ratio were determined by 1H NMR.

2. Mechanisitic Studies

2.1 Luminescence Quenching Experiments

A) $Ir(ppy)_3$(10 μM)

B) Ir(ppy)3(10 μM) and **1a** (20 mM)

C) Ir(ppy)3(10 μM) and DIPEA (20 mM)

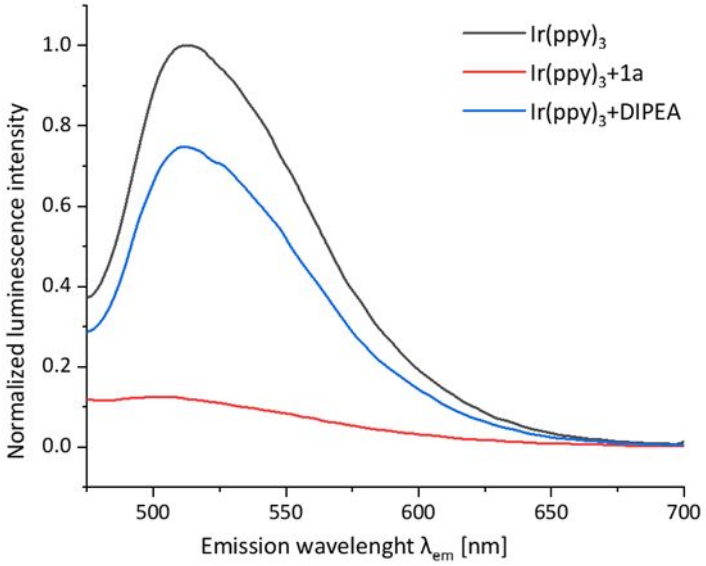


Figure S1. Luminescence Quenching Experiments

2.2 UV/Vis absorption spectroscopy

A) **1a** (0.20 M)

B) Mixture of **1a** (0.20 M) and DIPEA (0.60 M)

C) DIPEA (0.60 M)

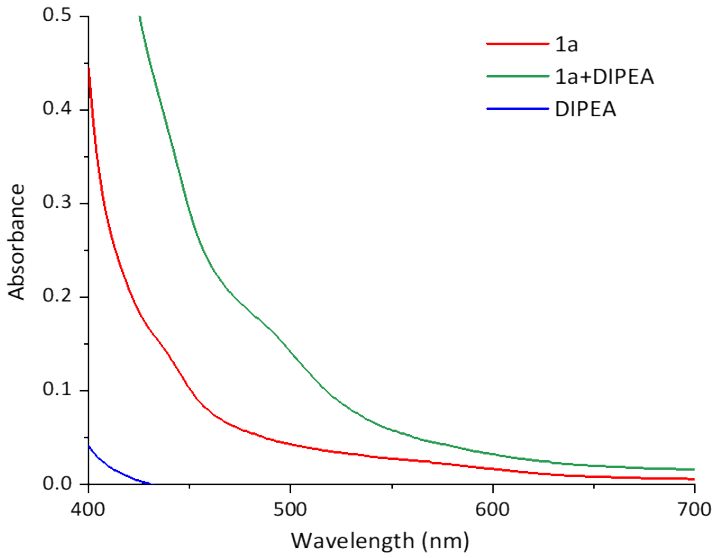
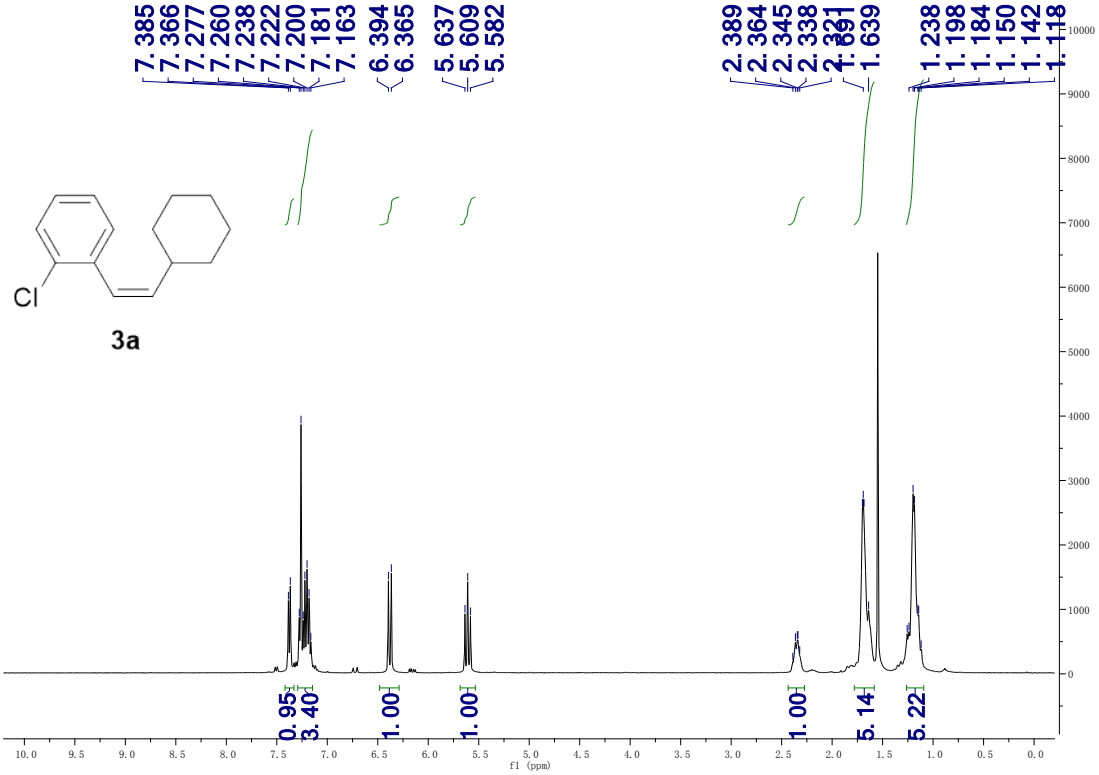


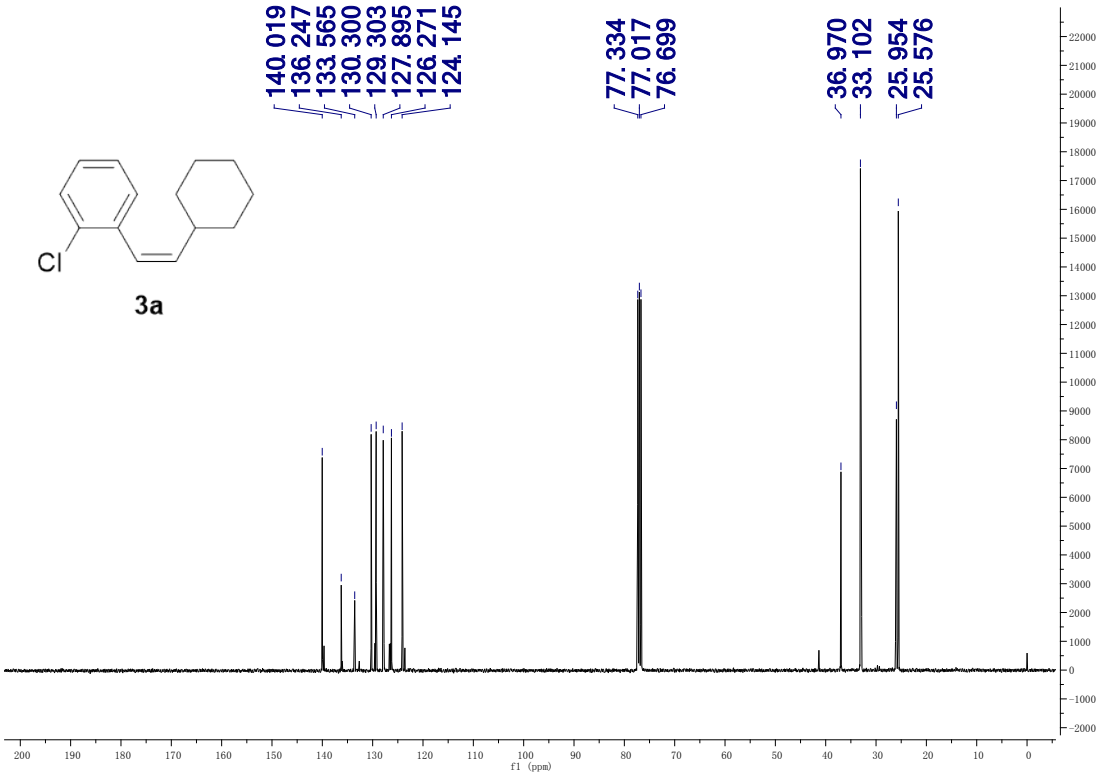
Figure S2. UV/Vis absorption spectra of **1a**.

3. NMR Spectra

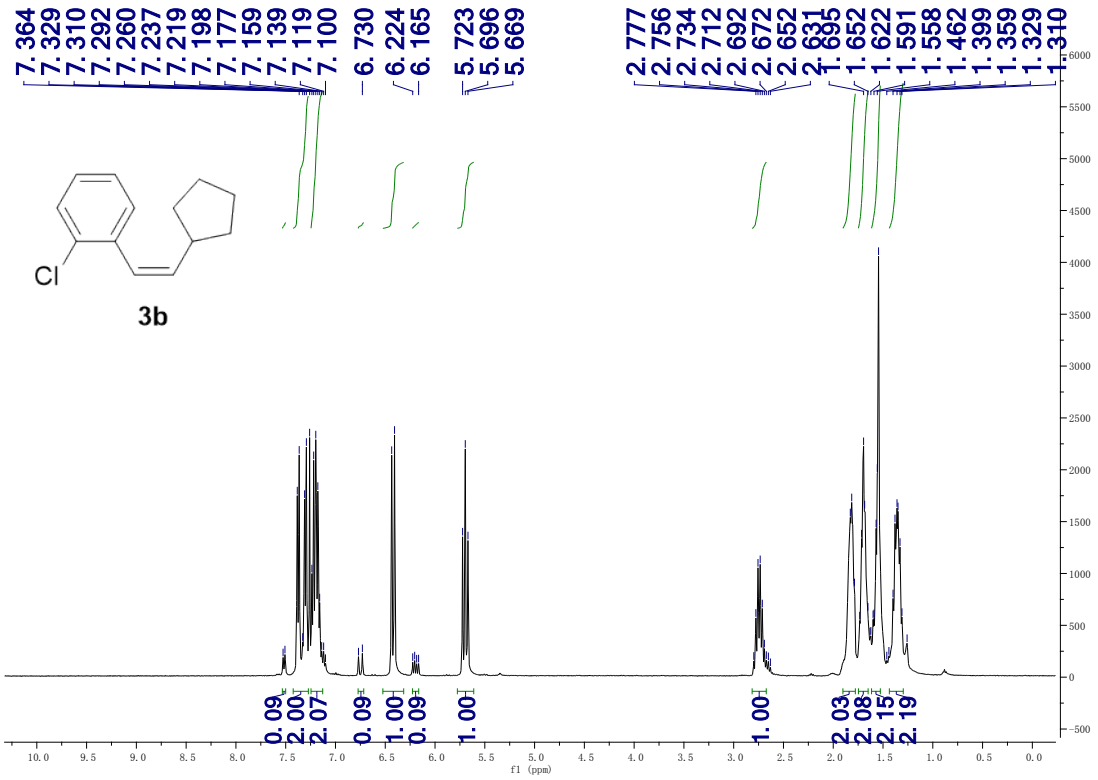
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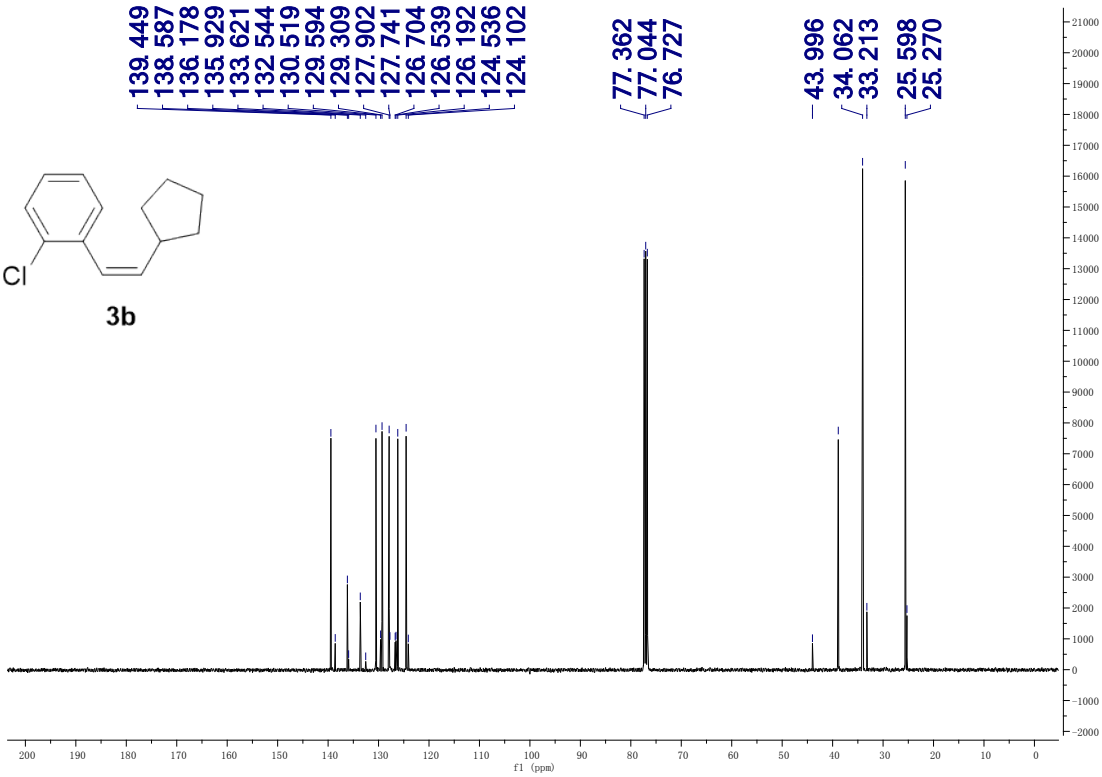
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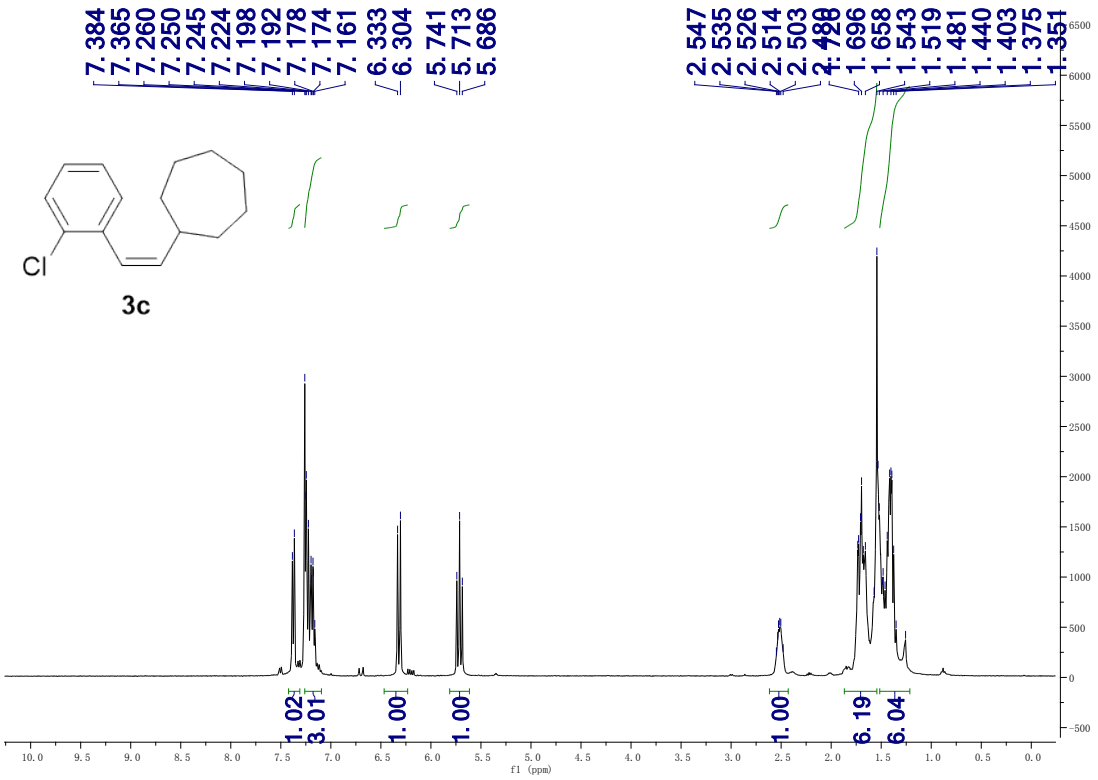
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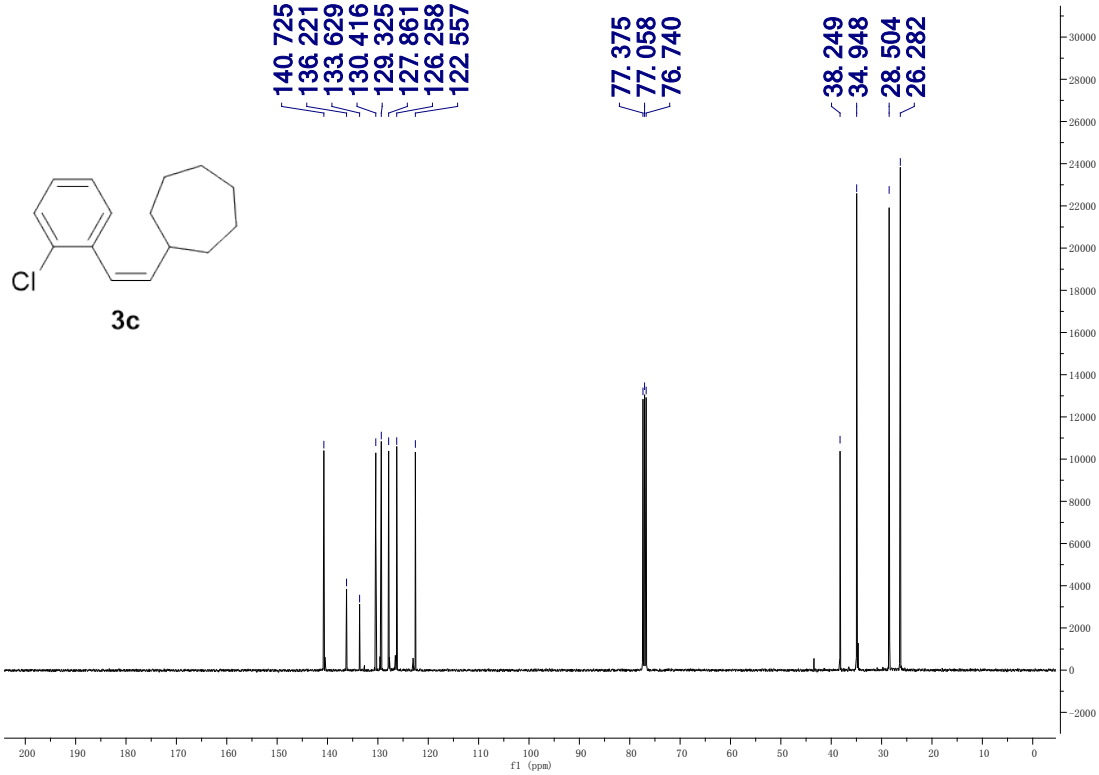
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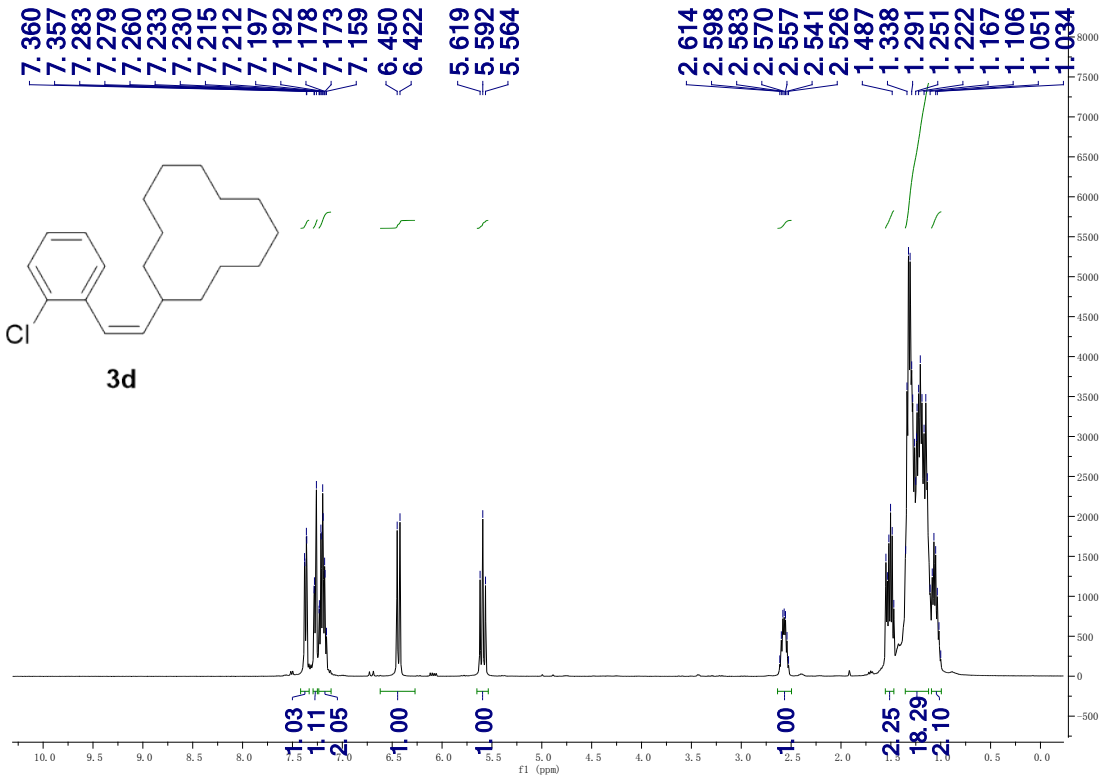
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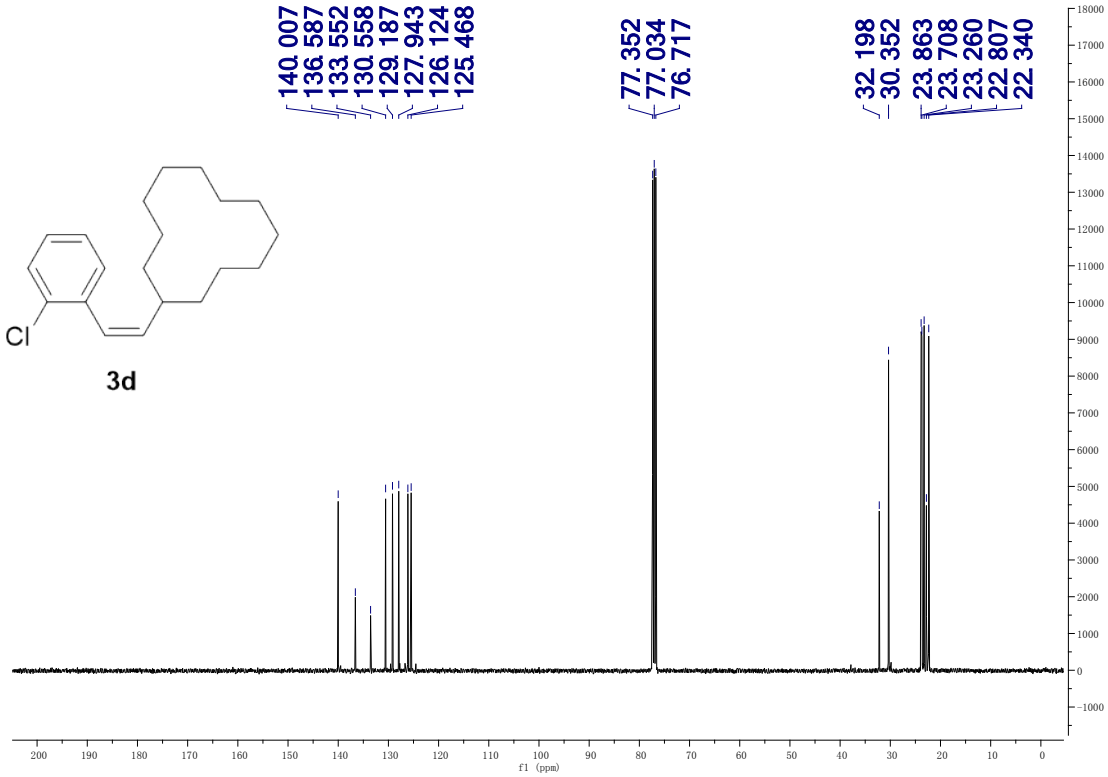
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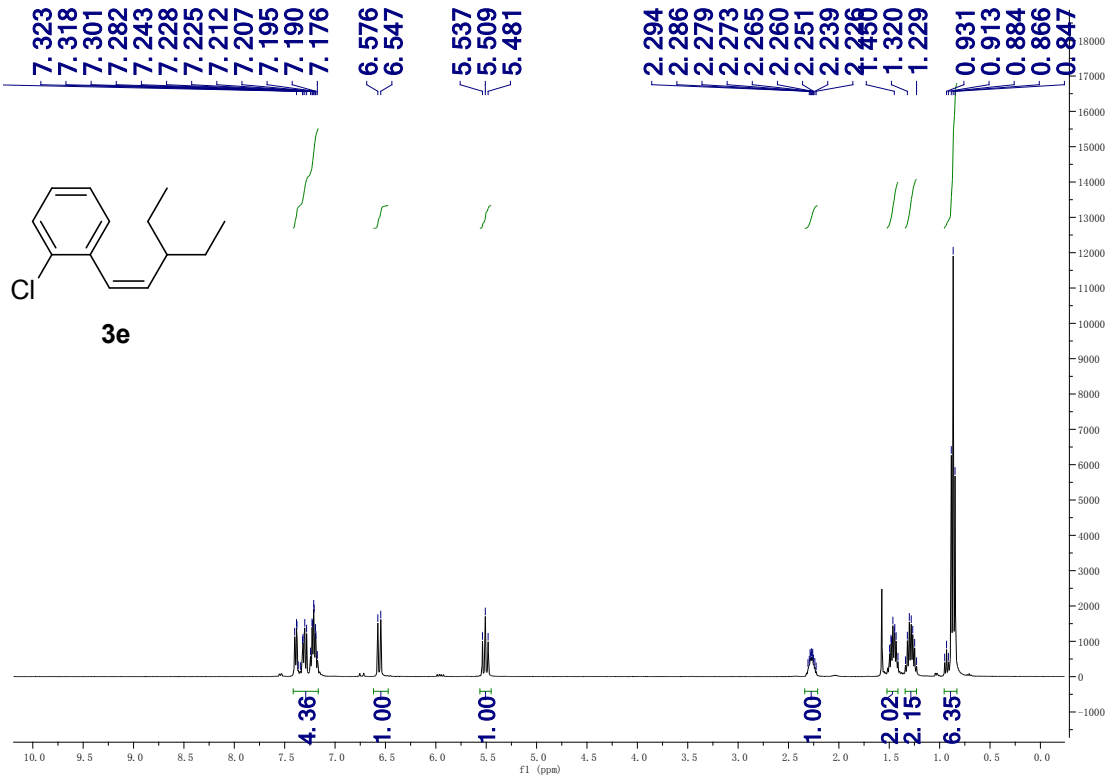
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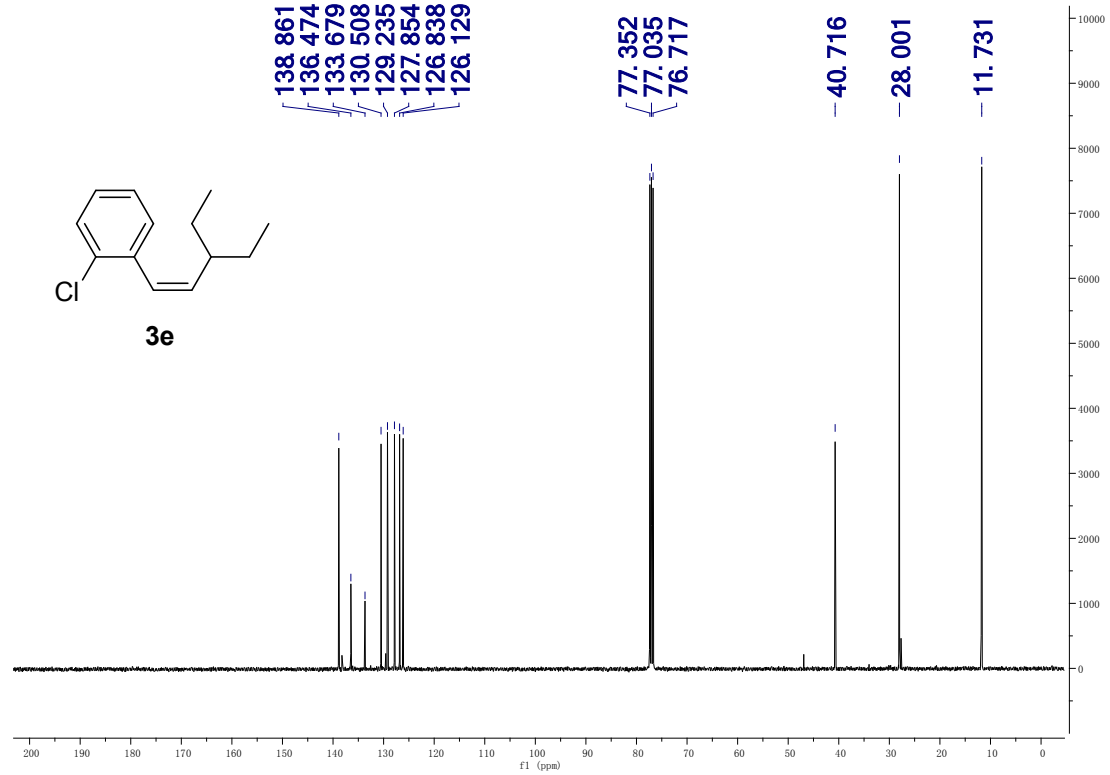


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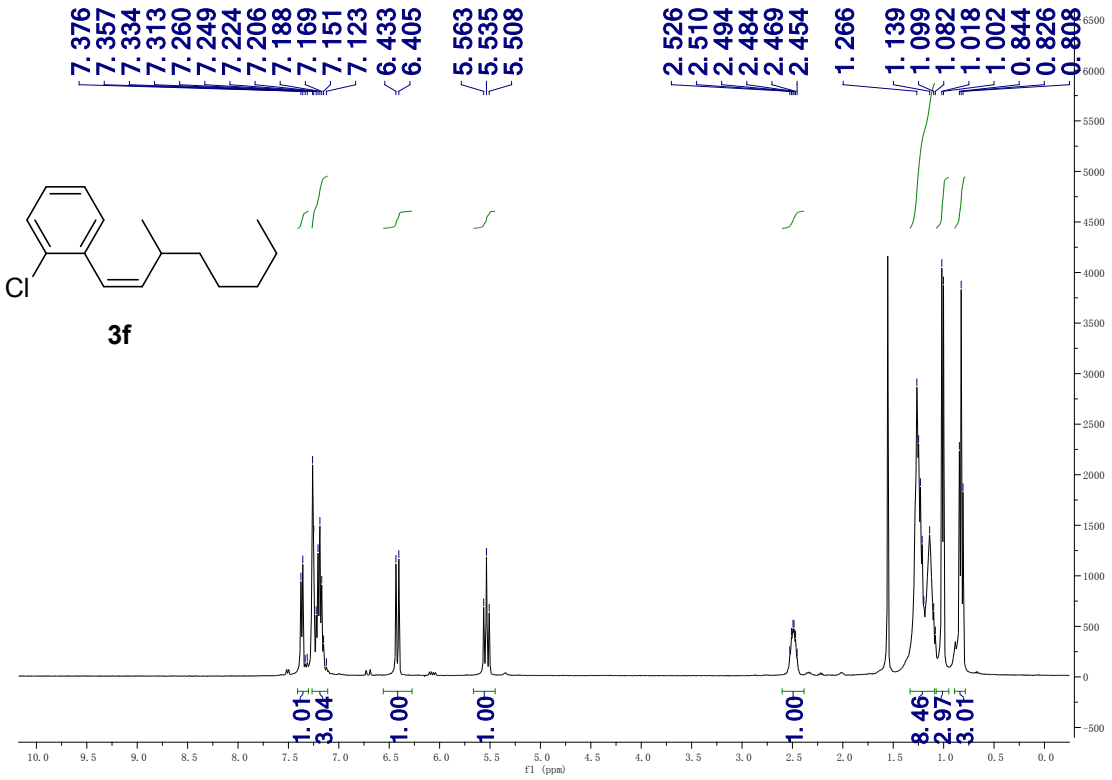
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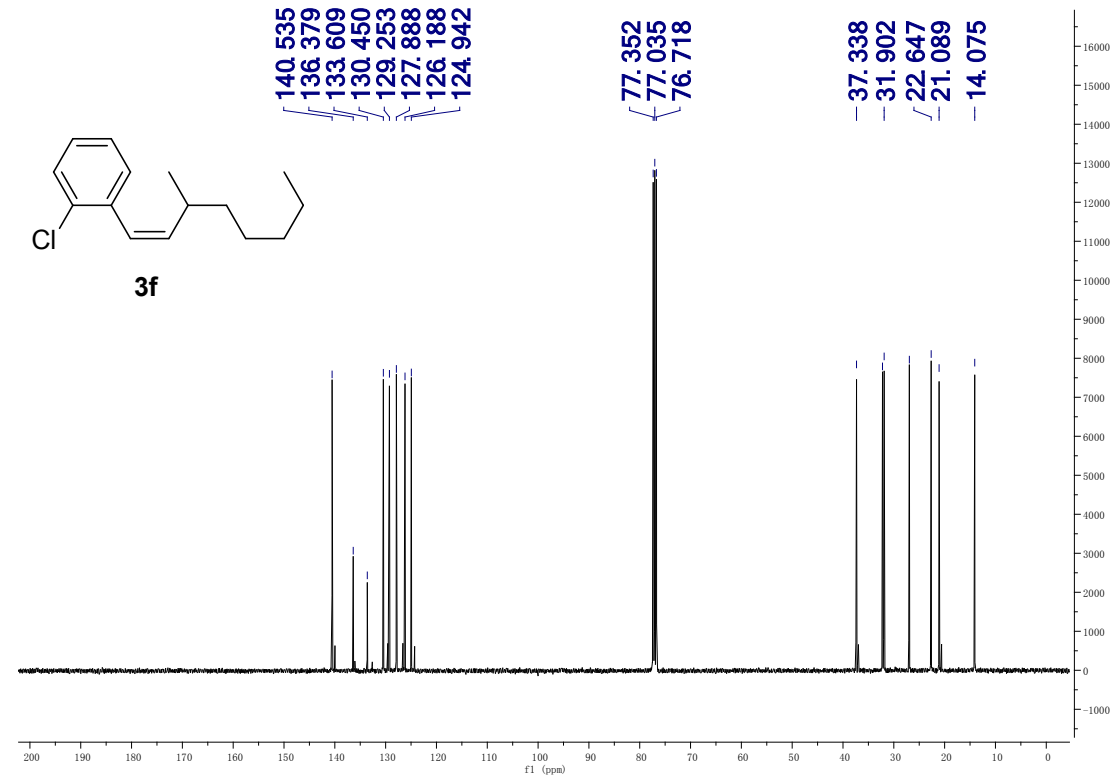


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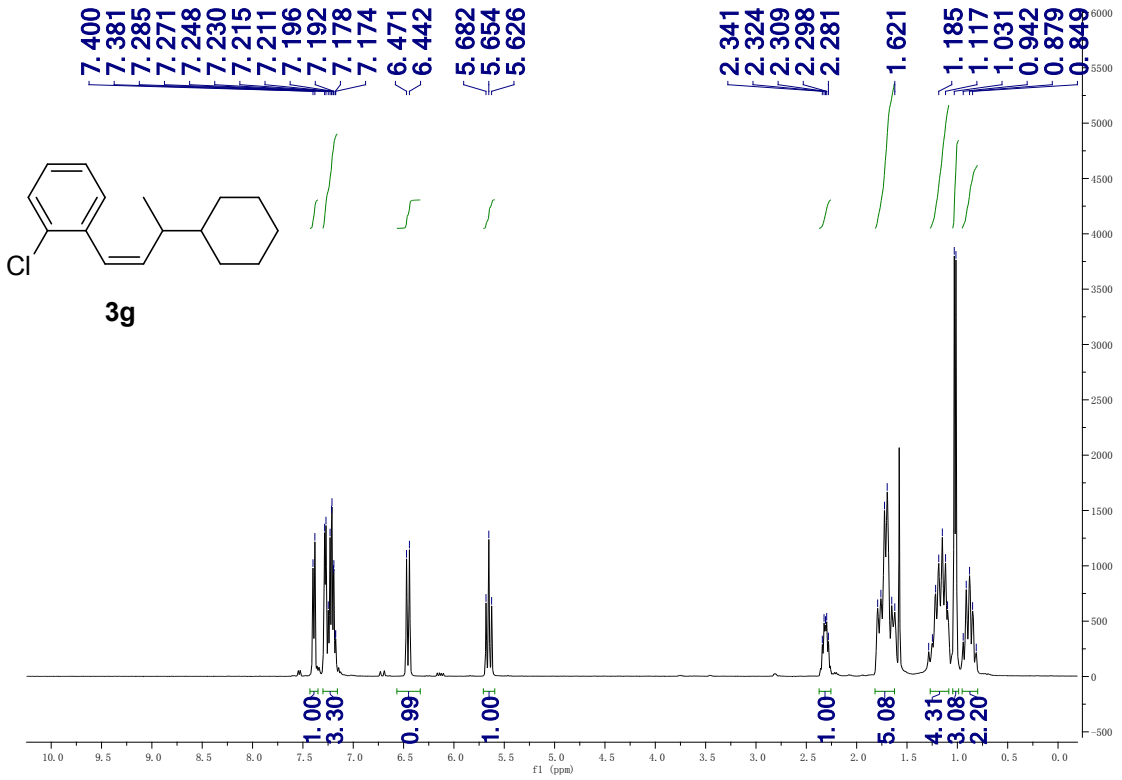
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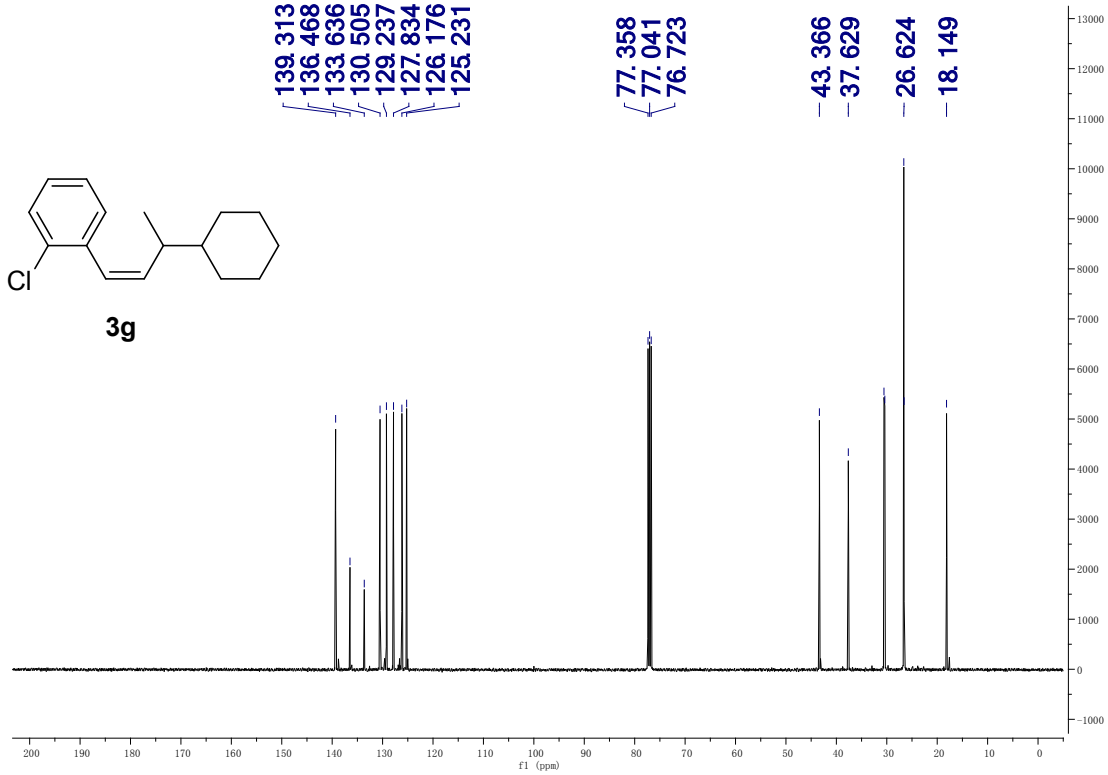
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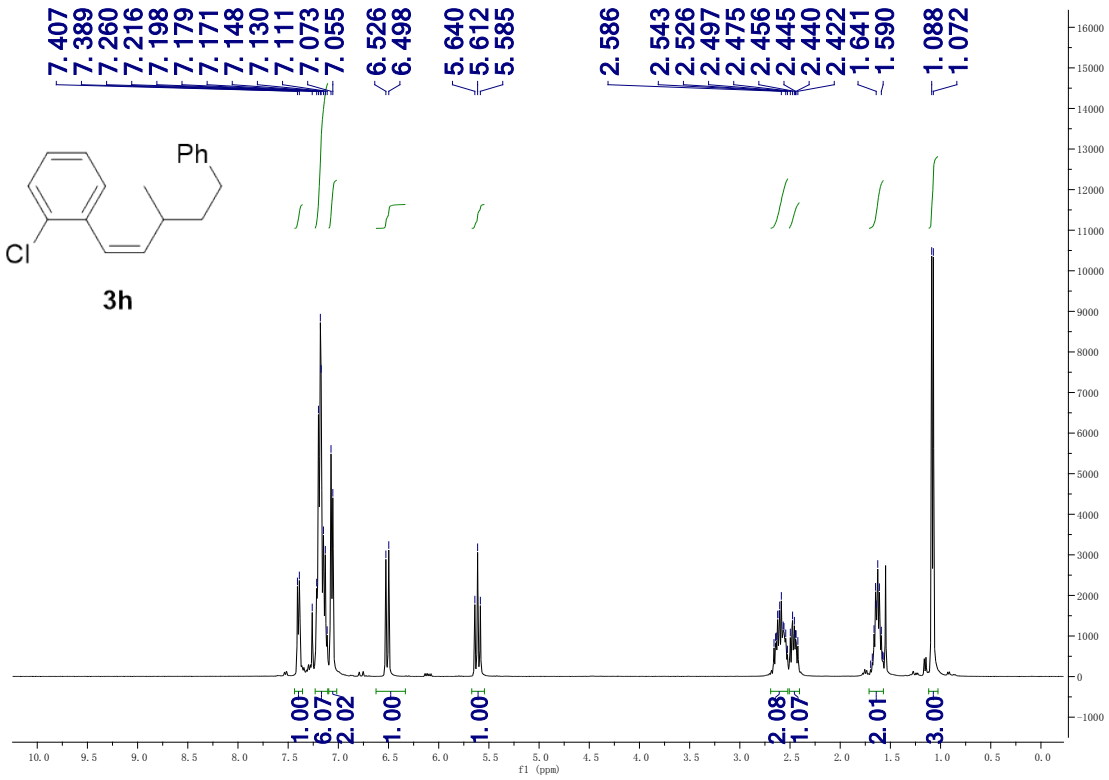
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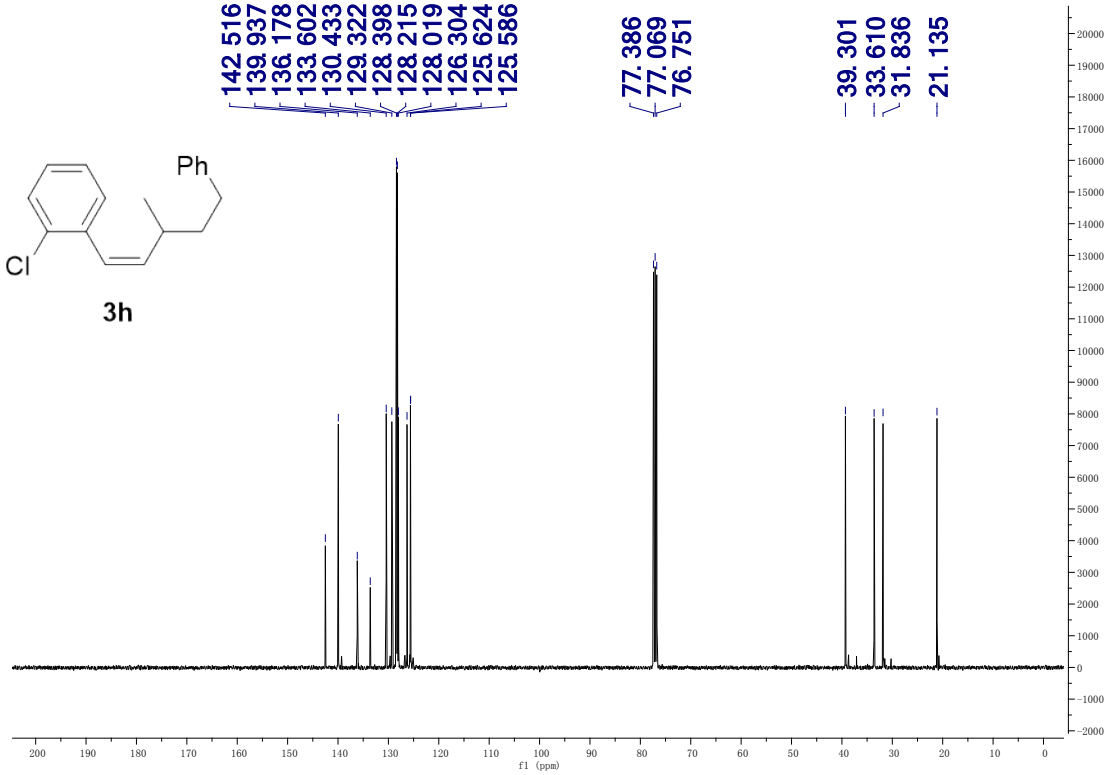
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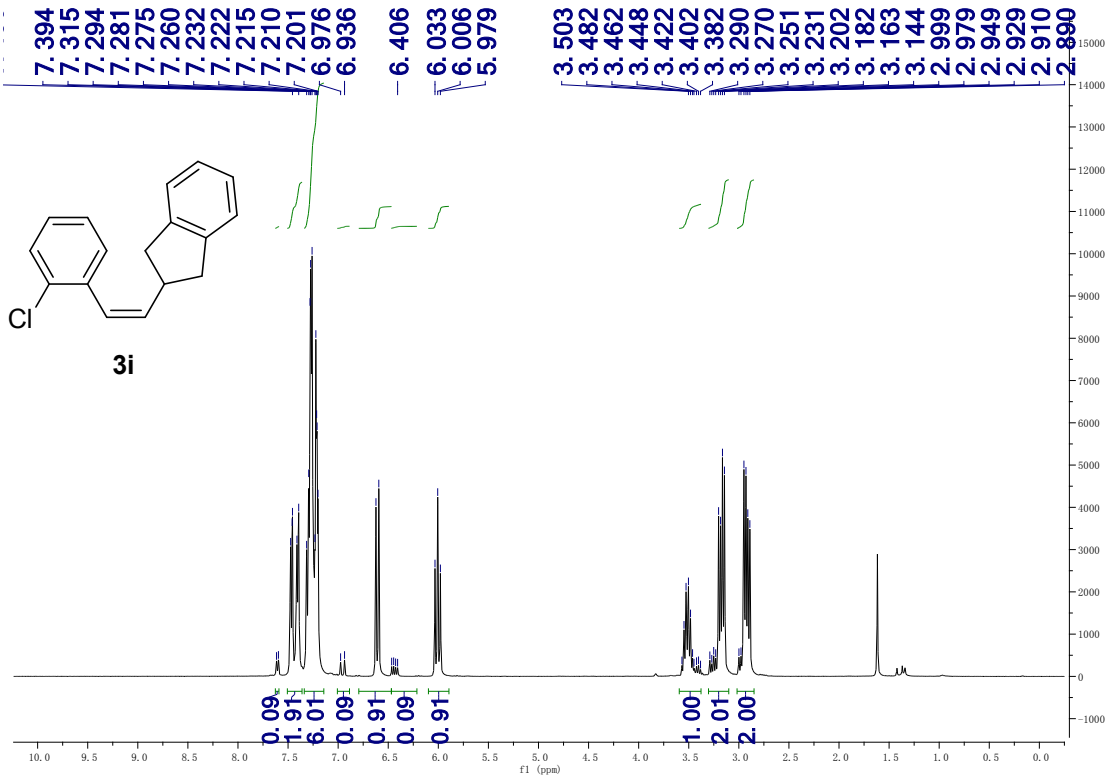
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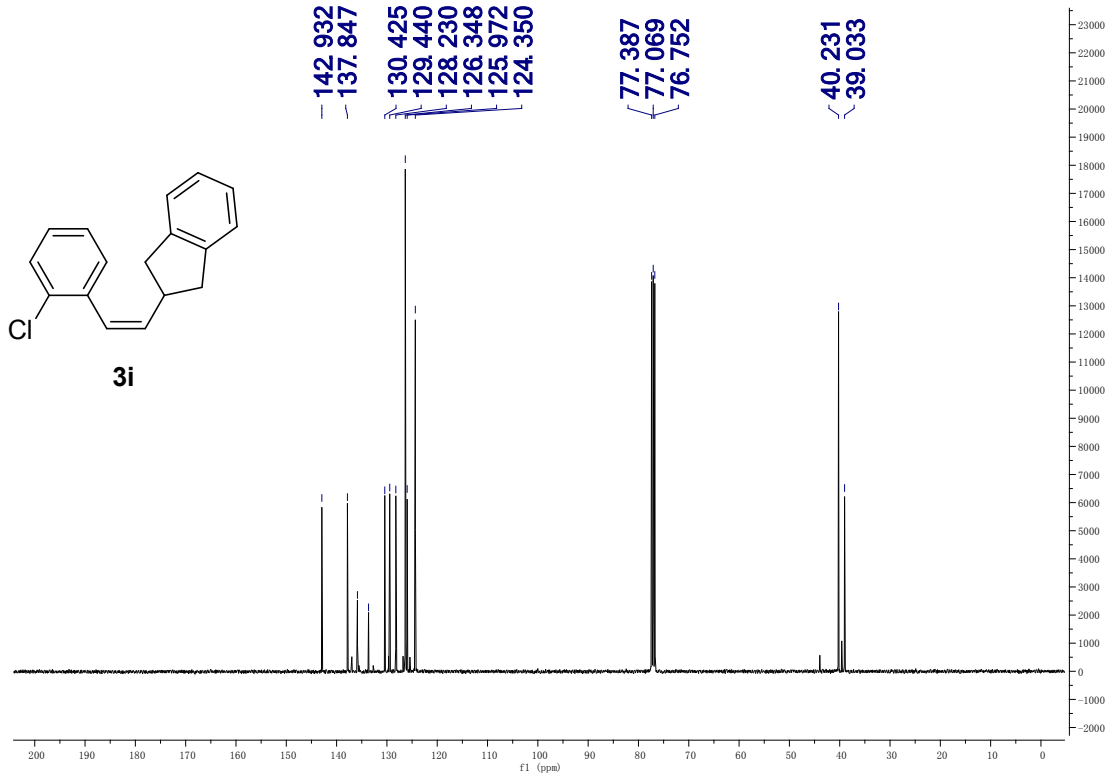
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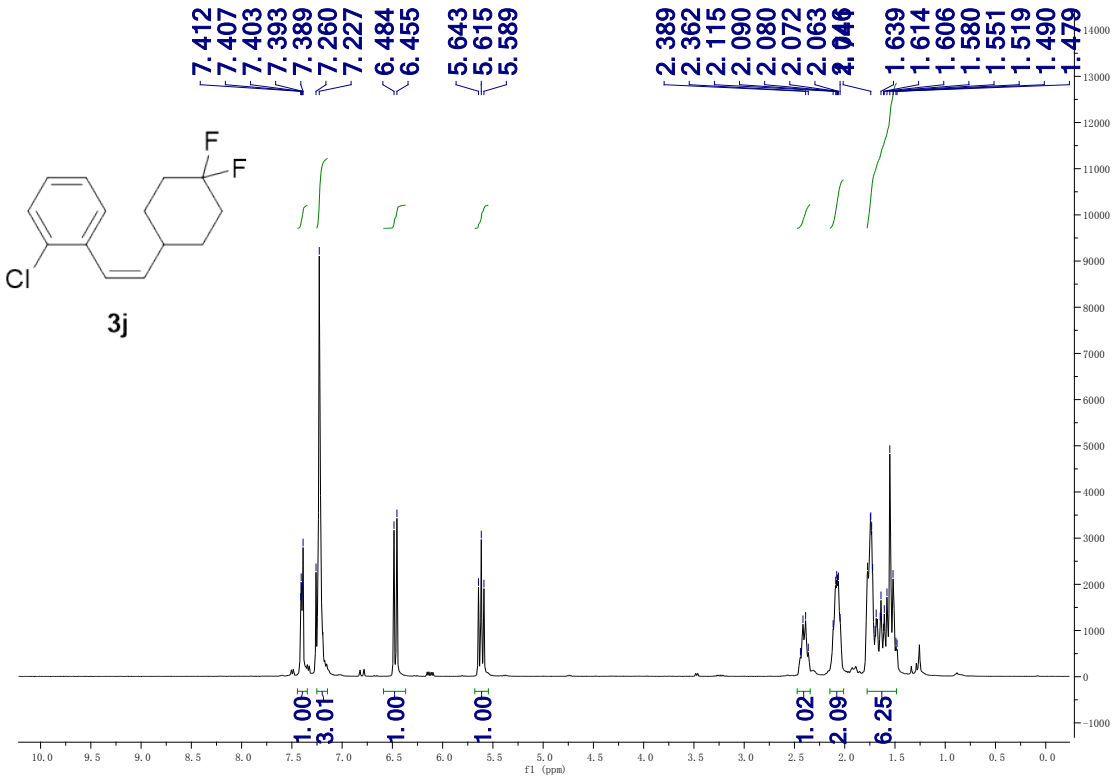
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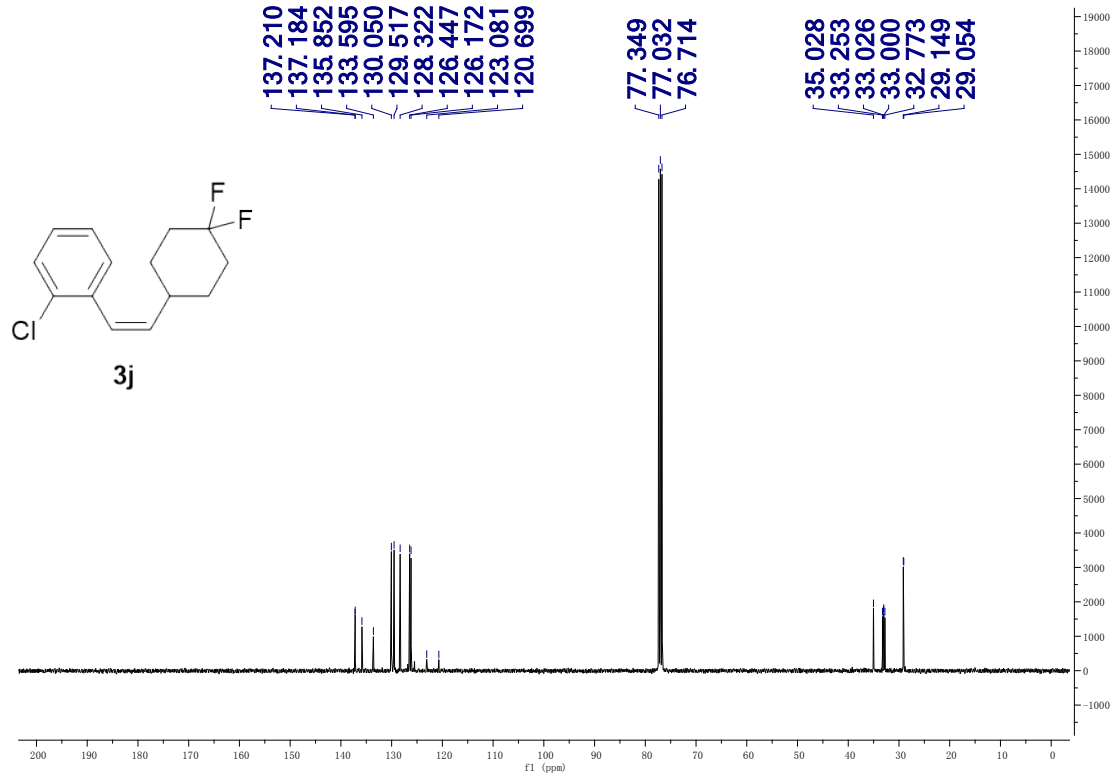


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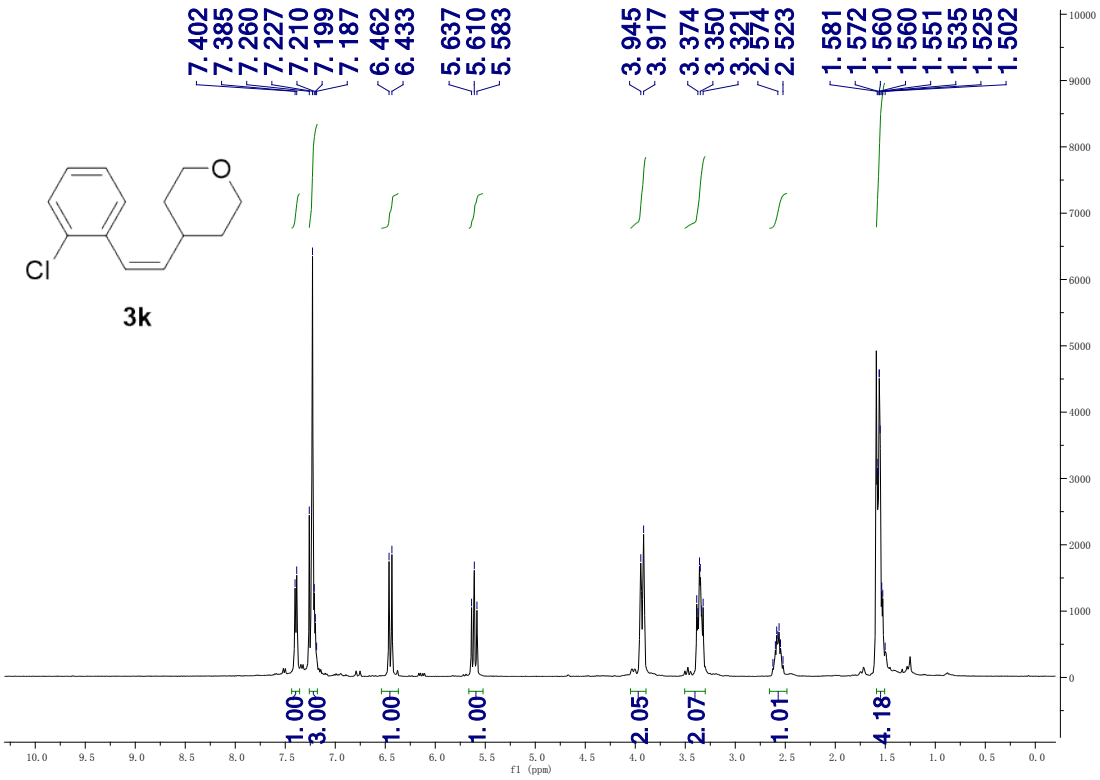
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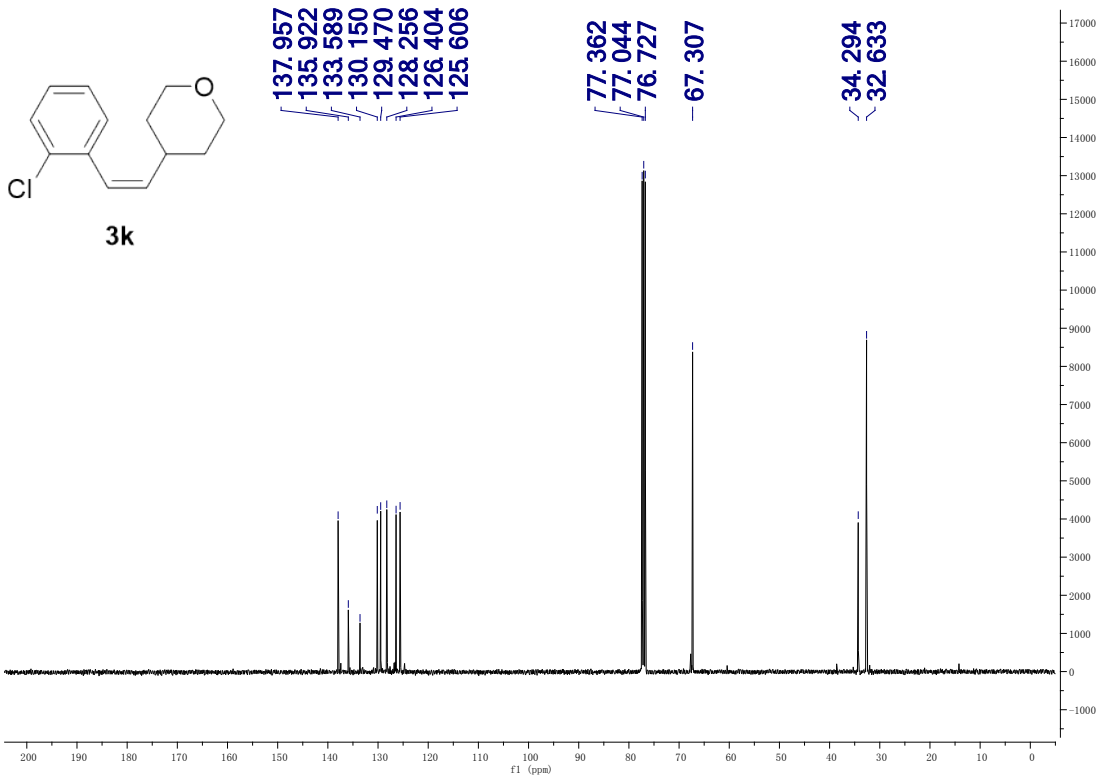


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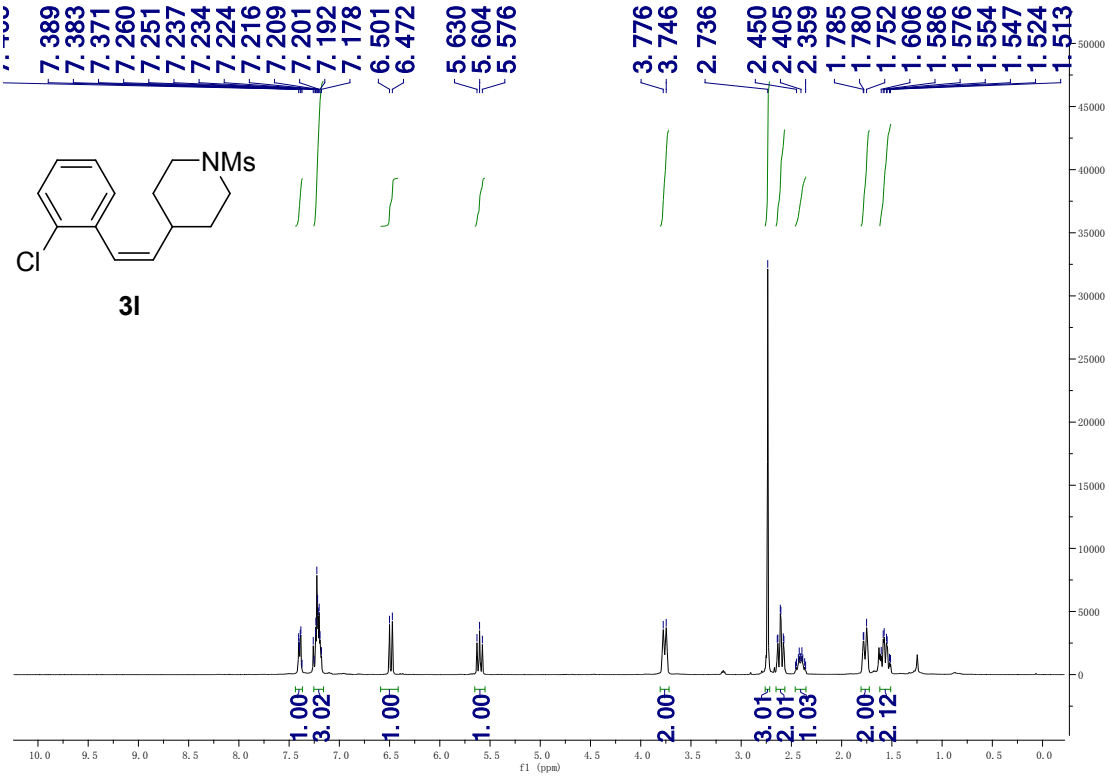
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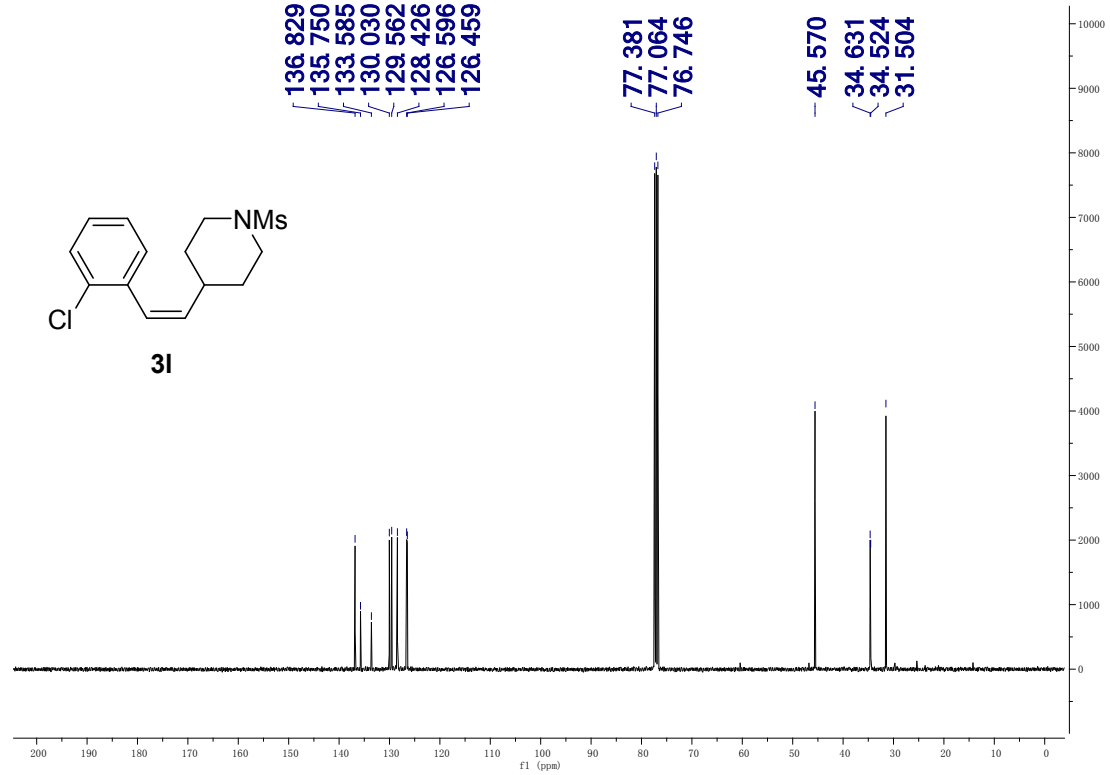


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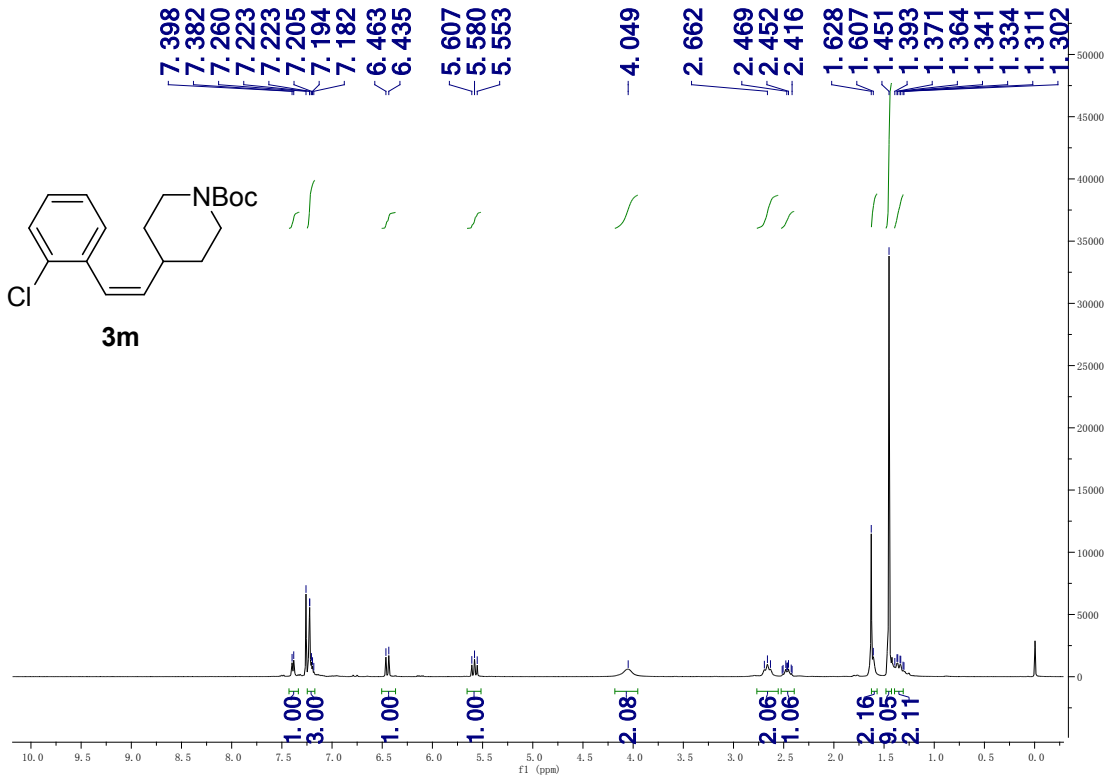
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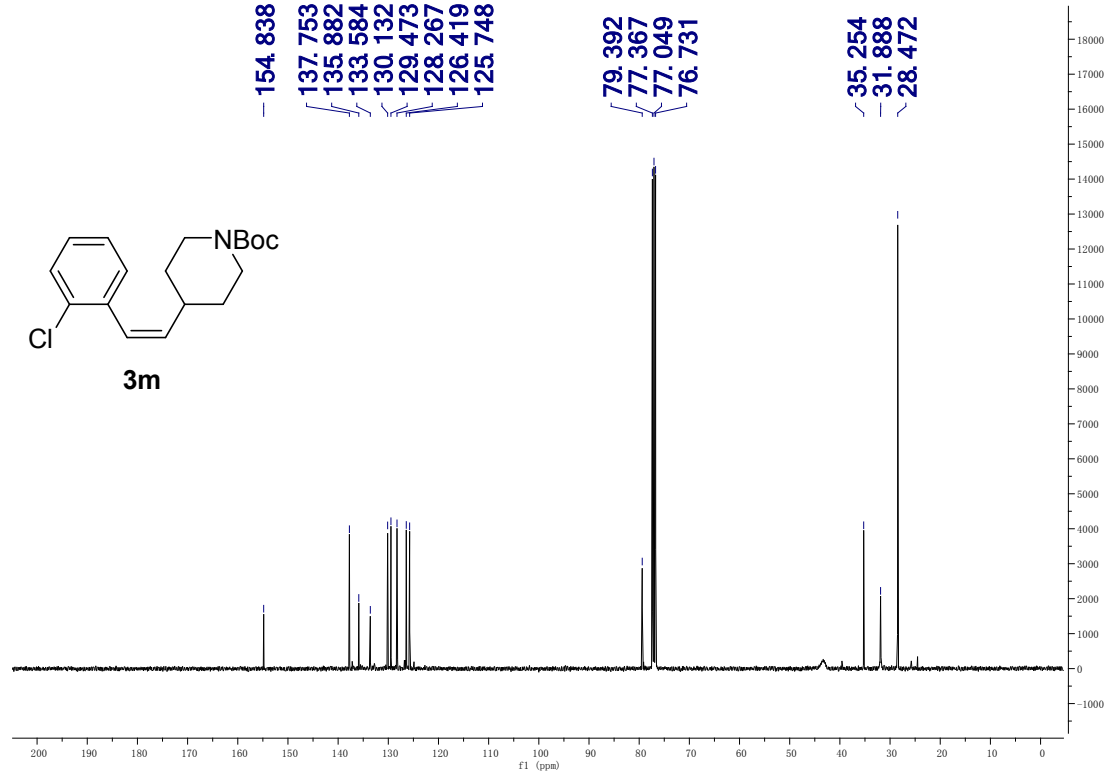
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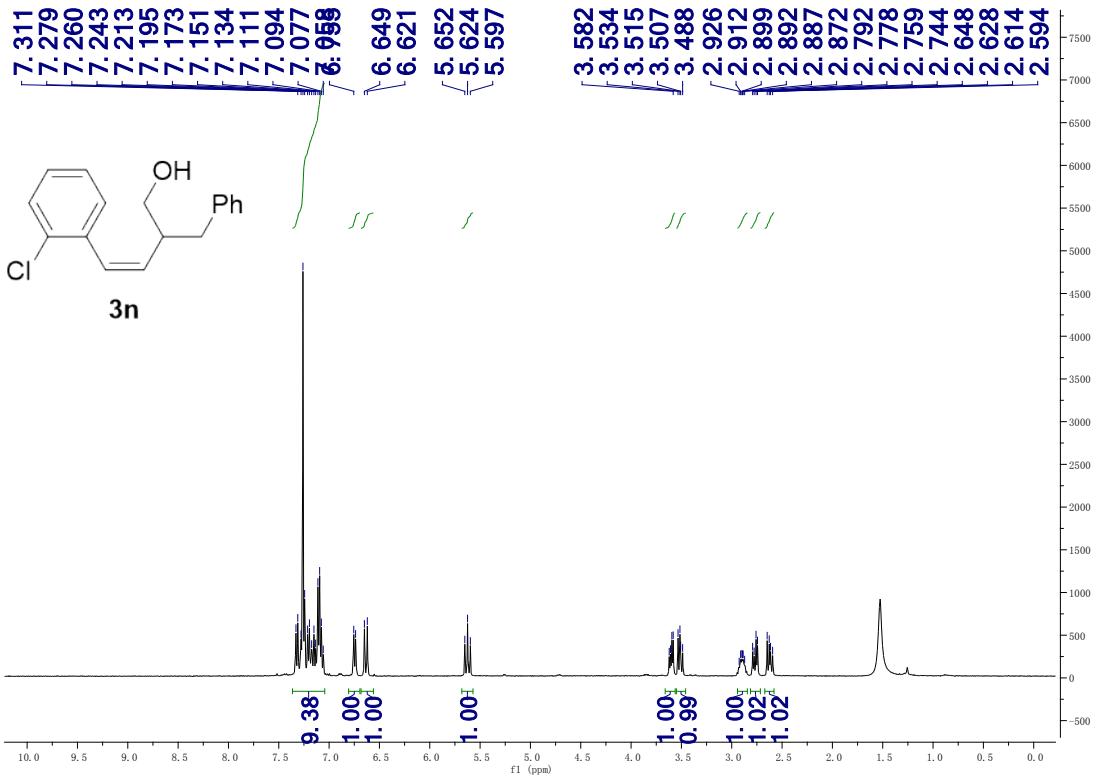
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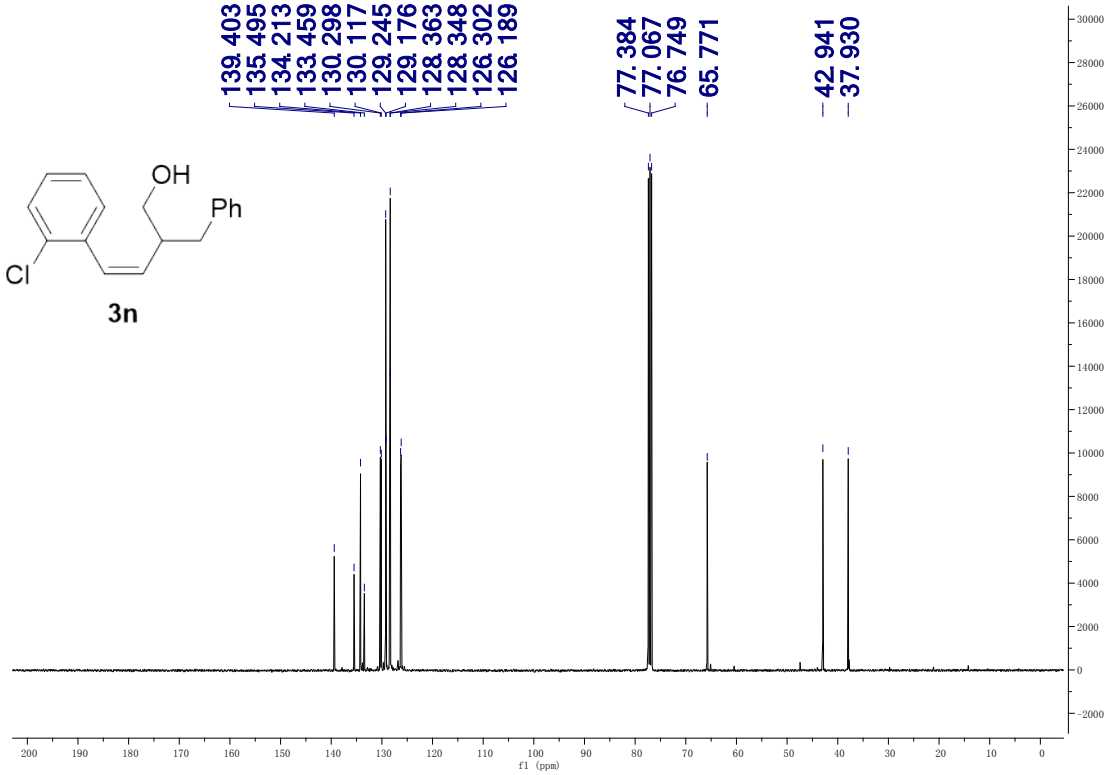


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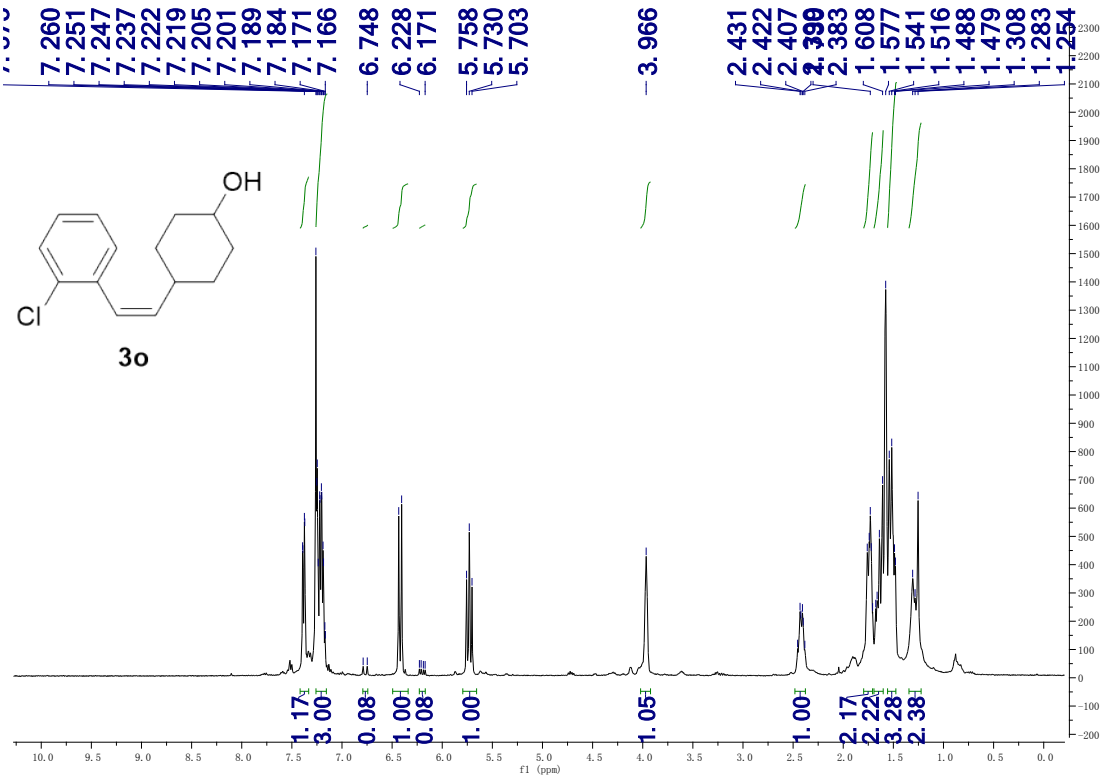
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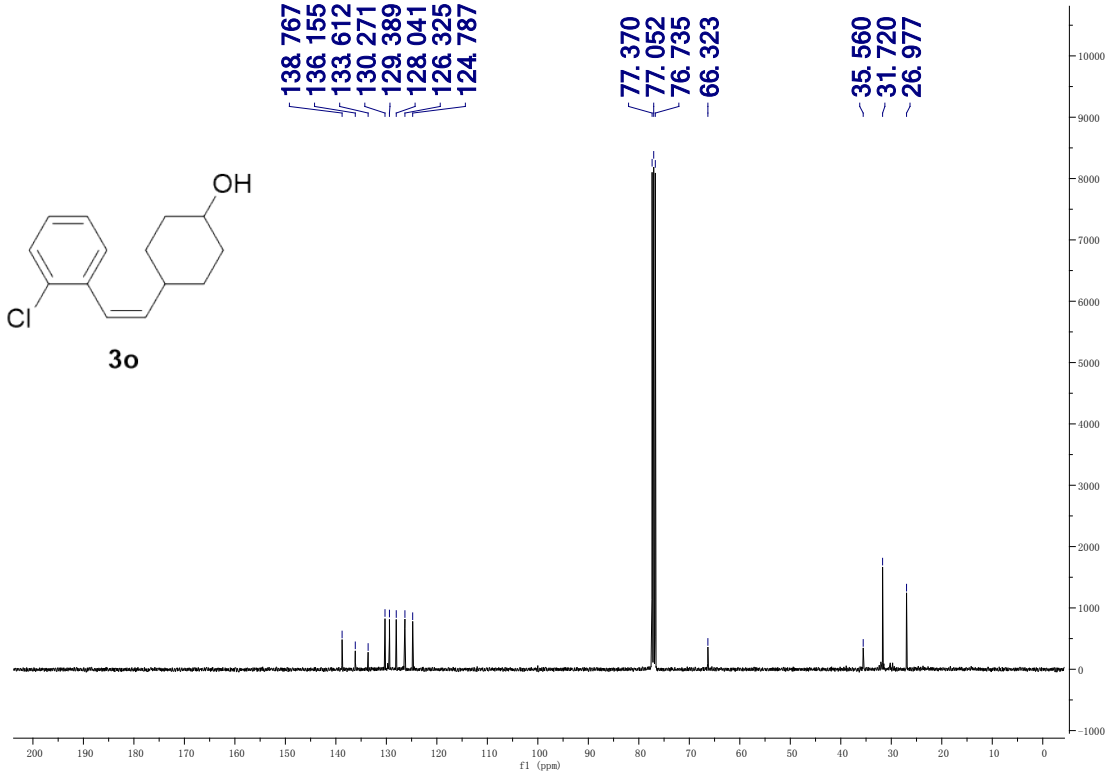
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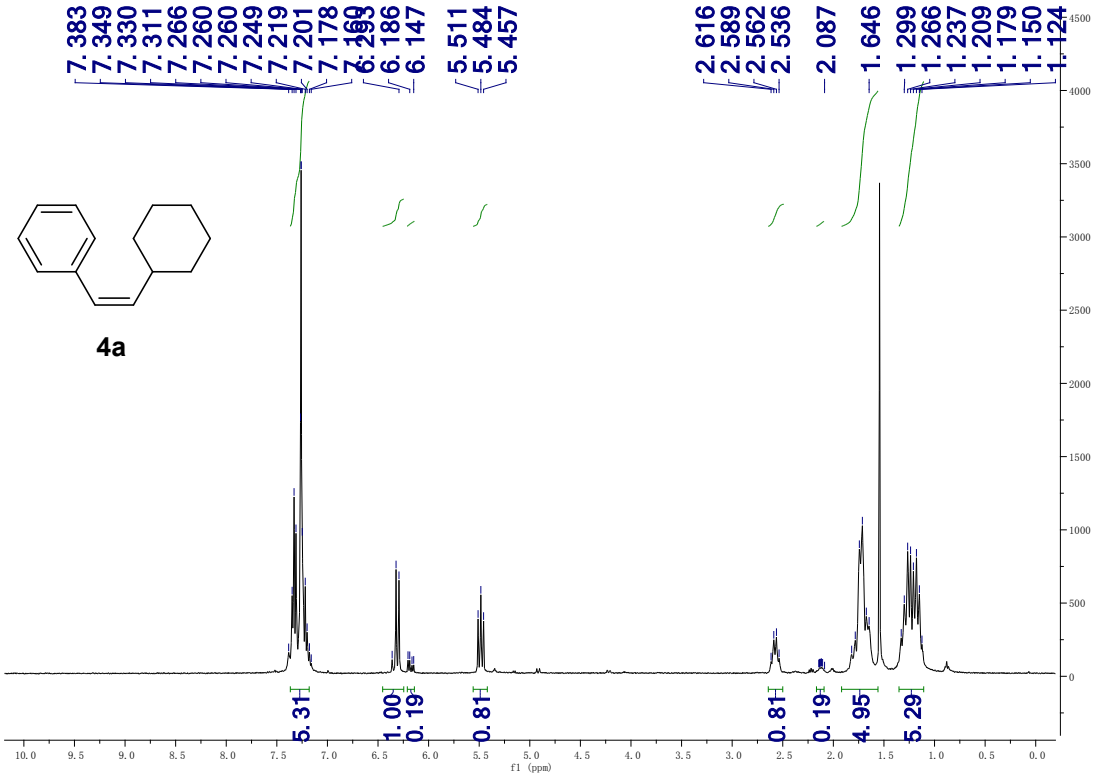
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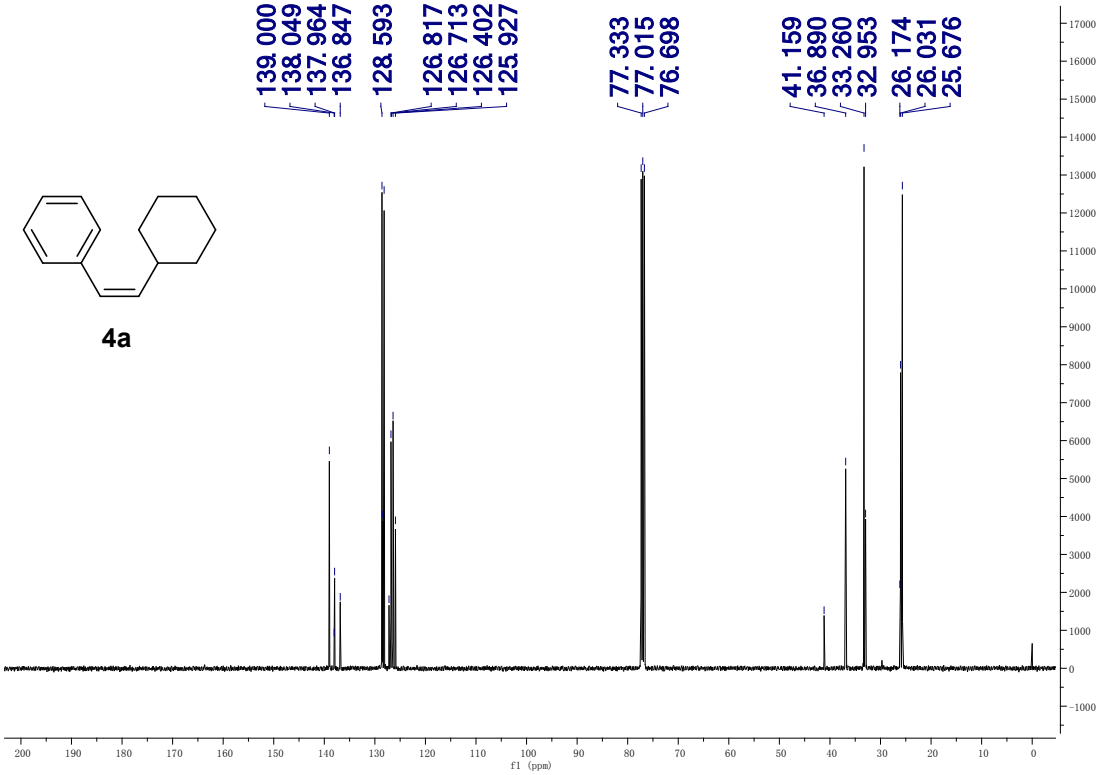


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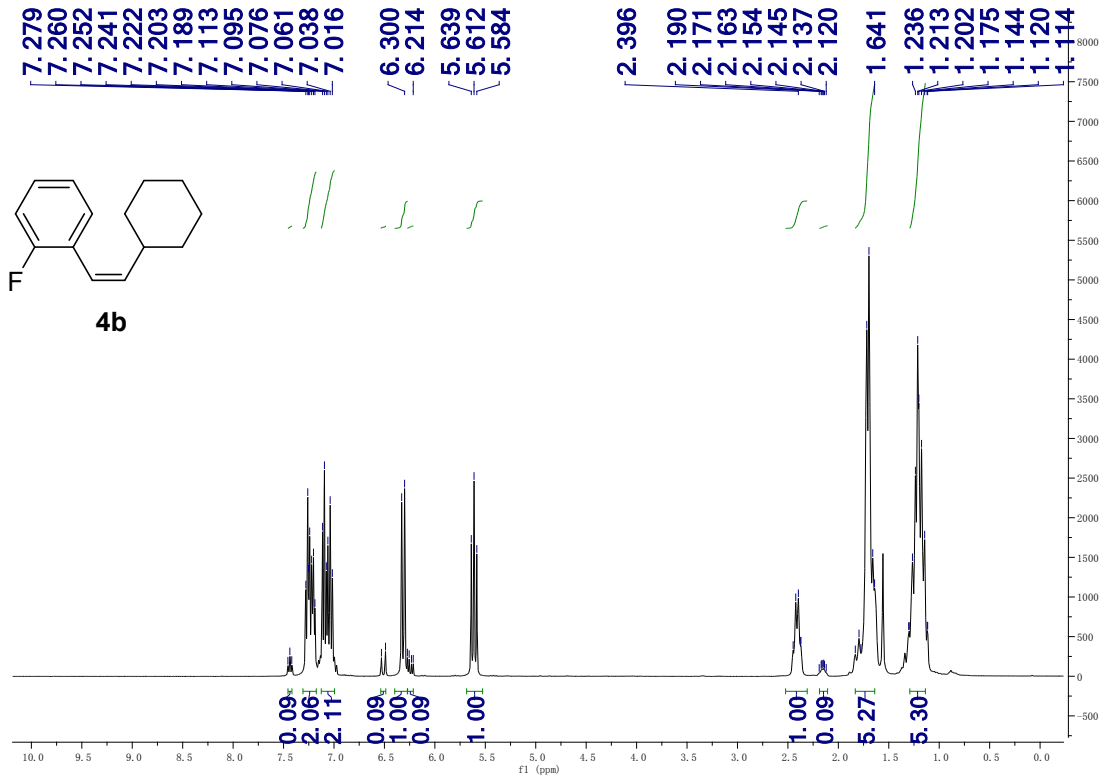
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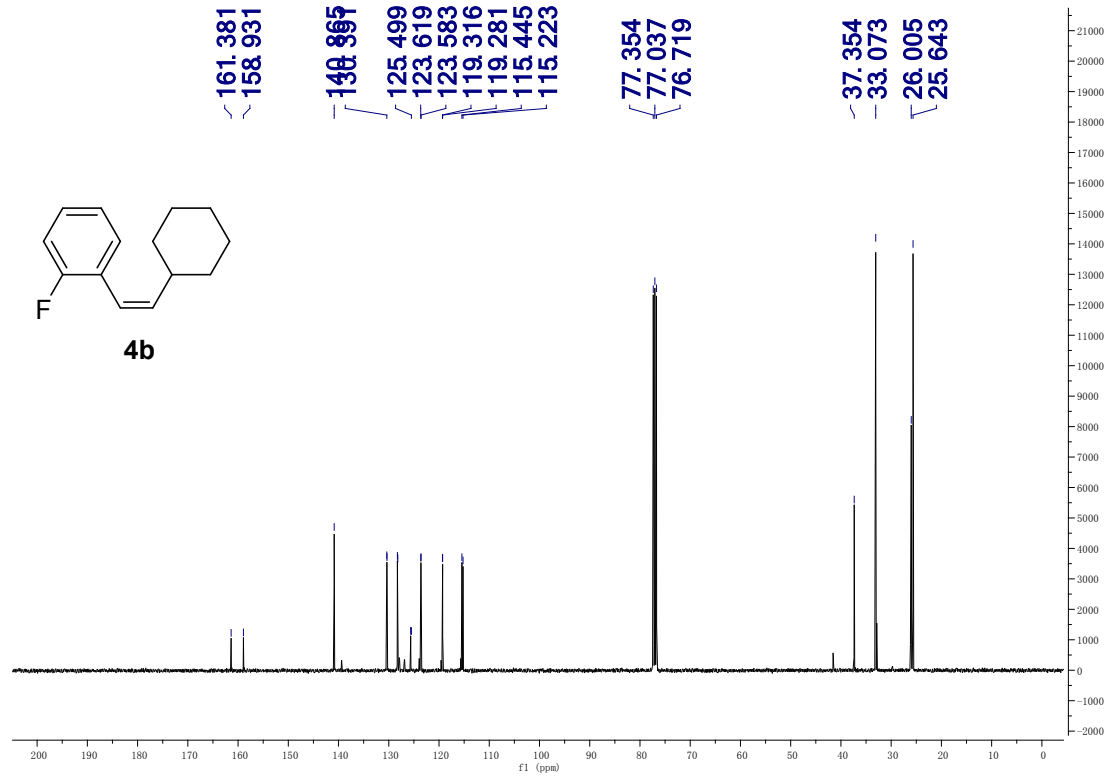


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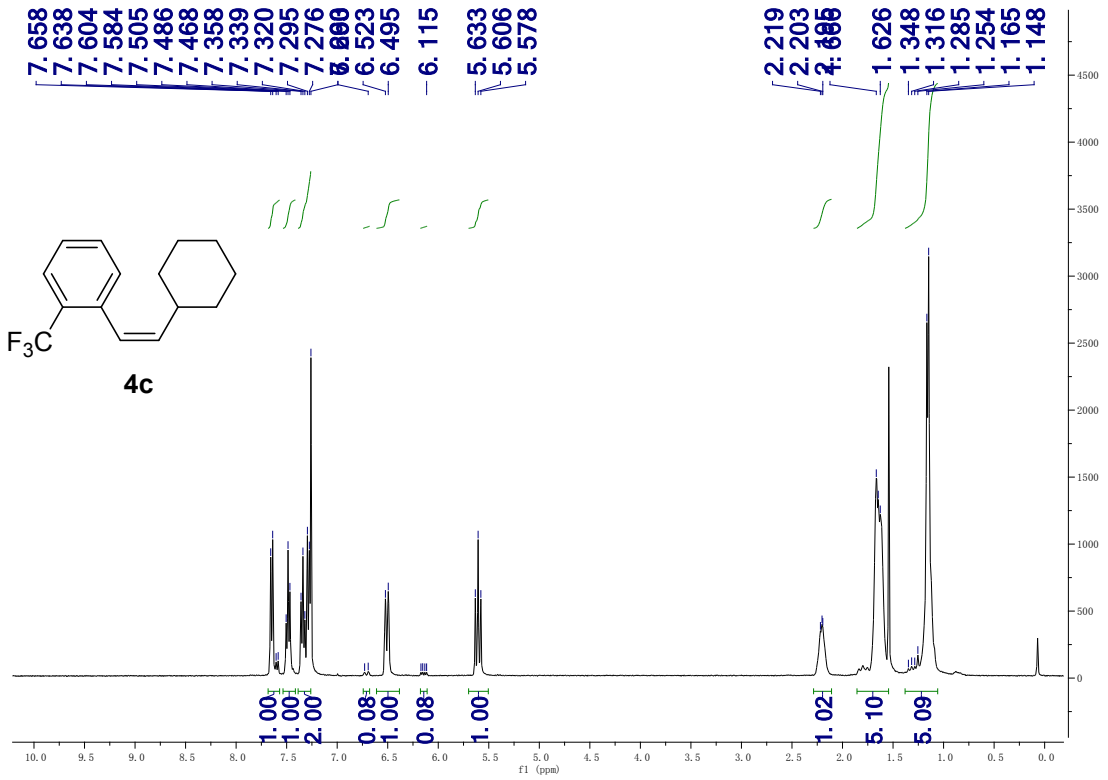
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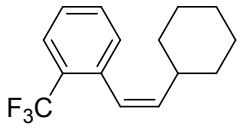


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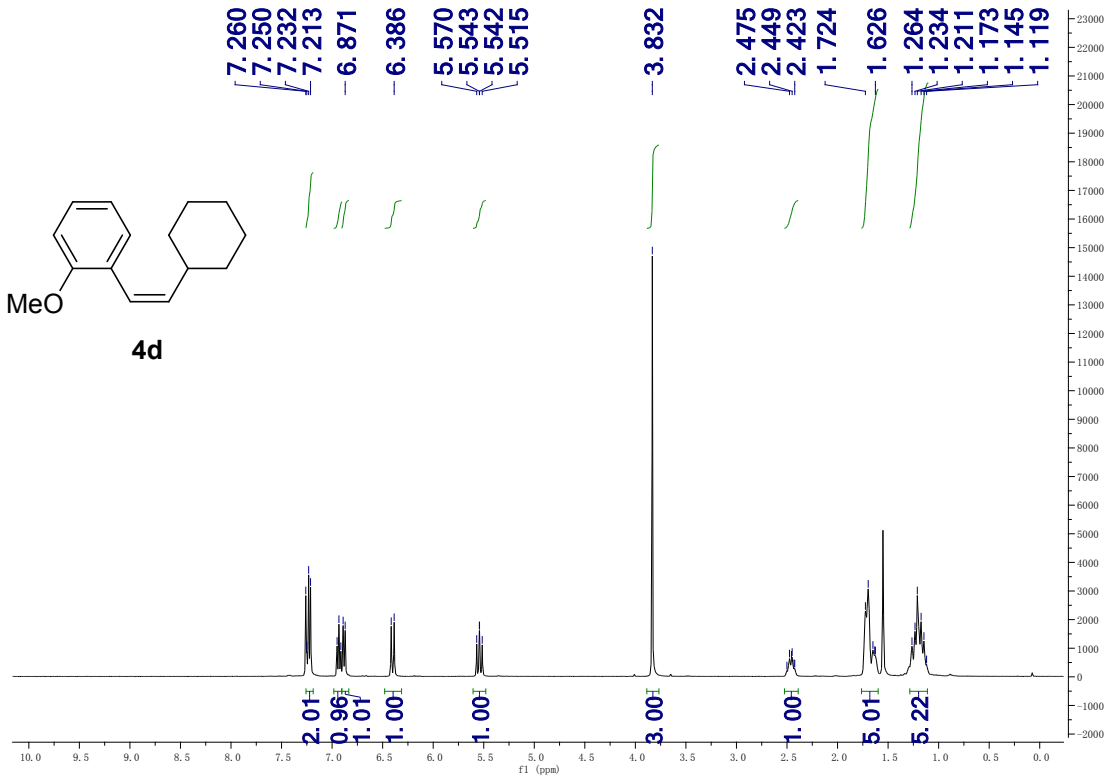


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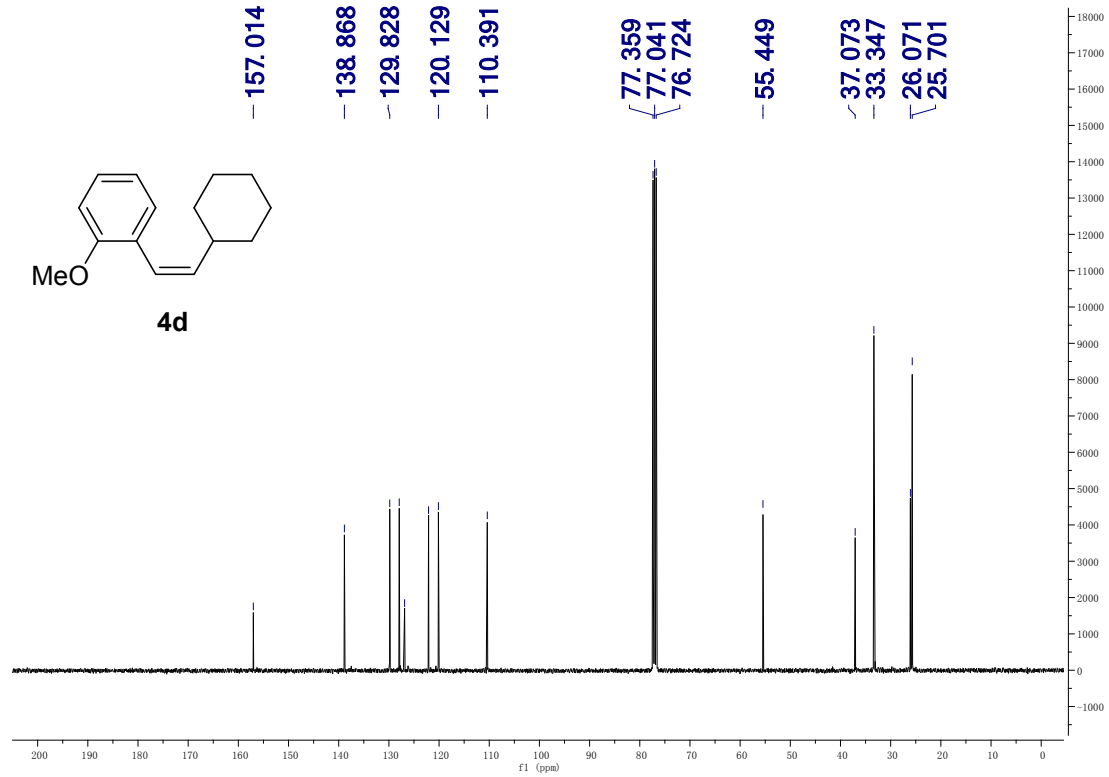
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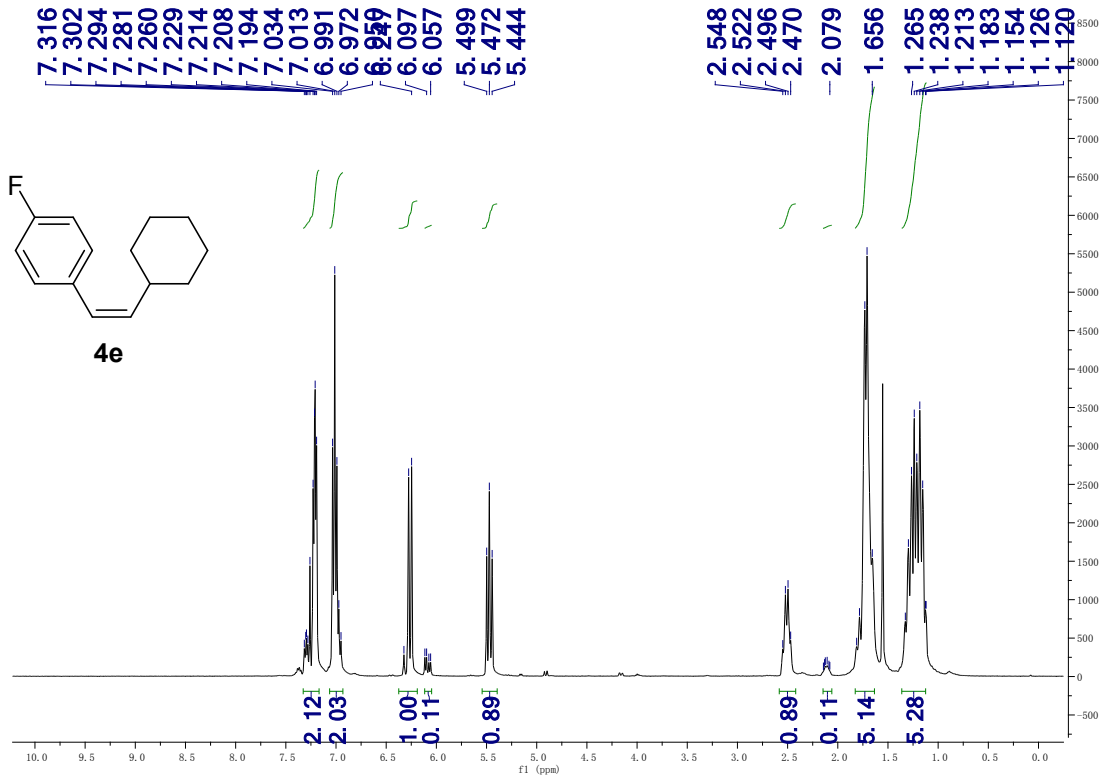
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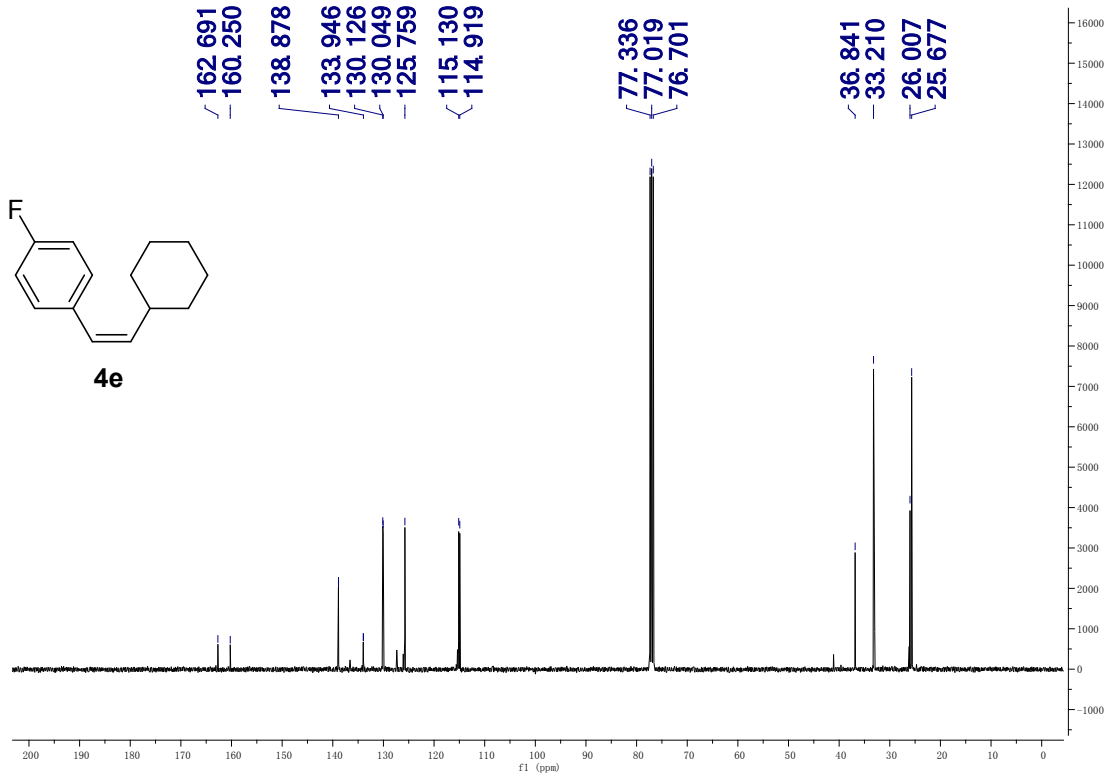


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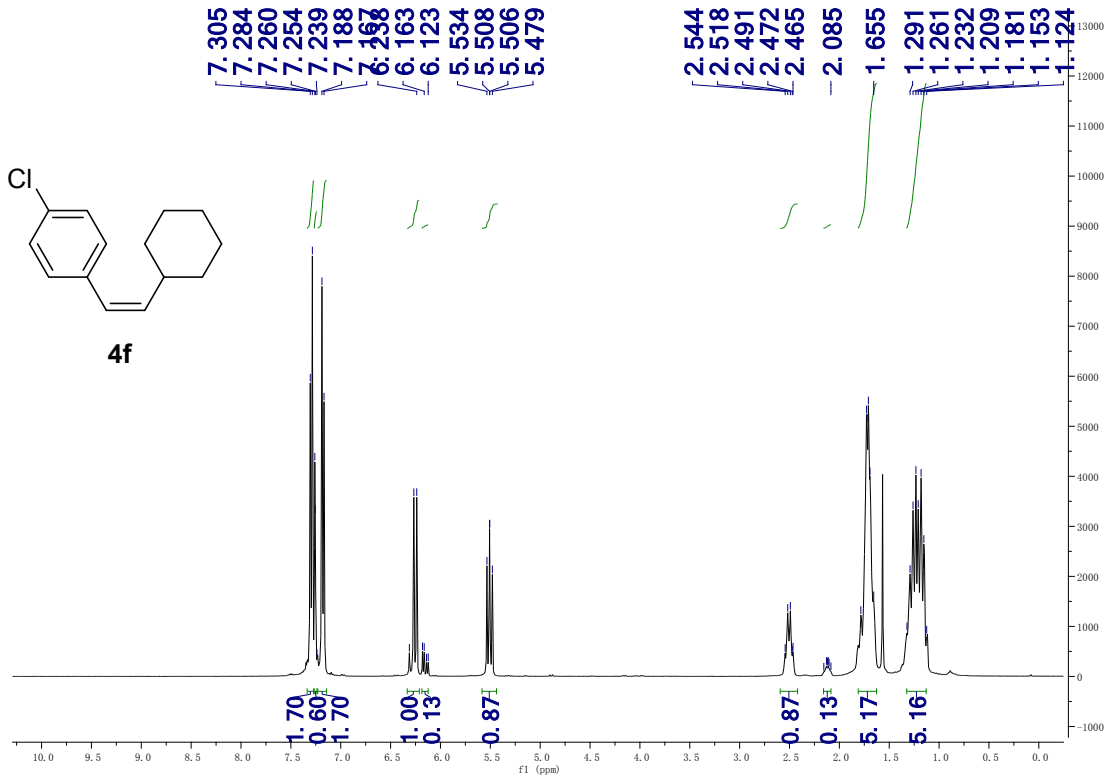
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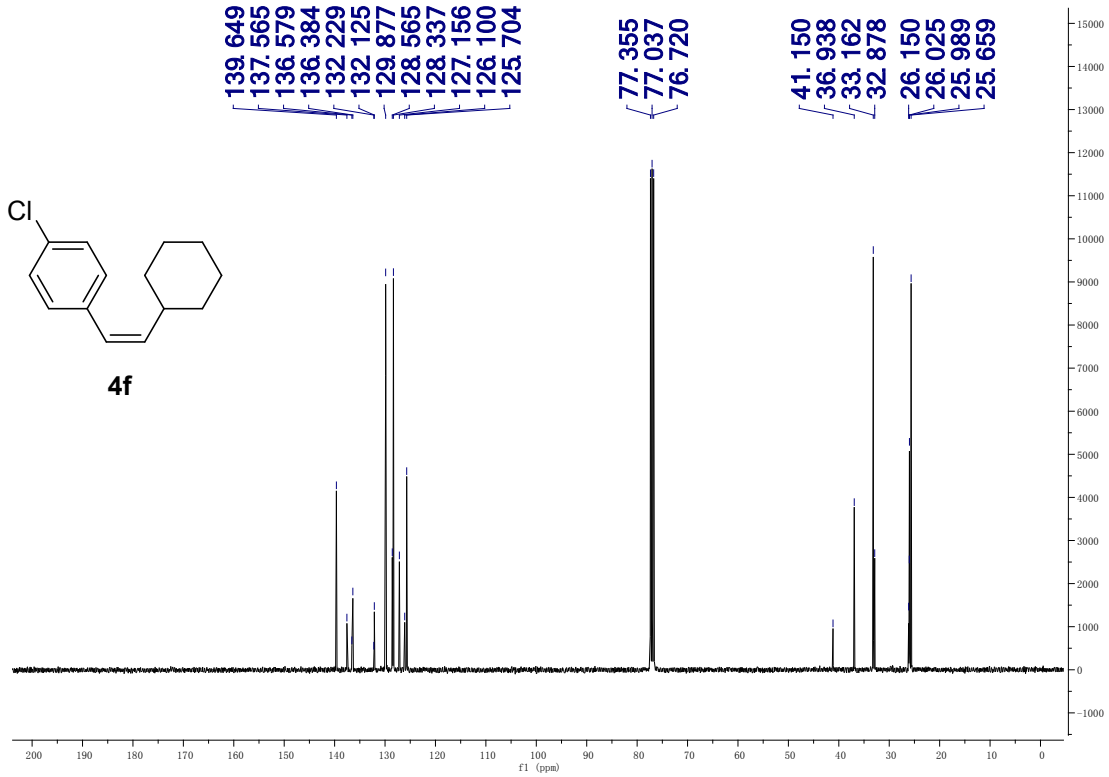


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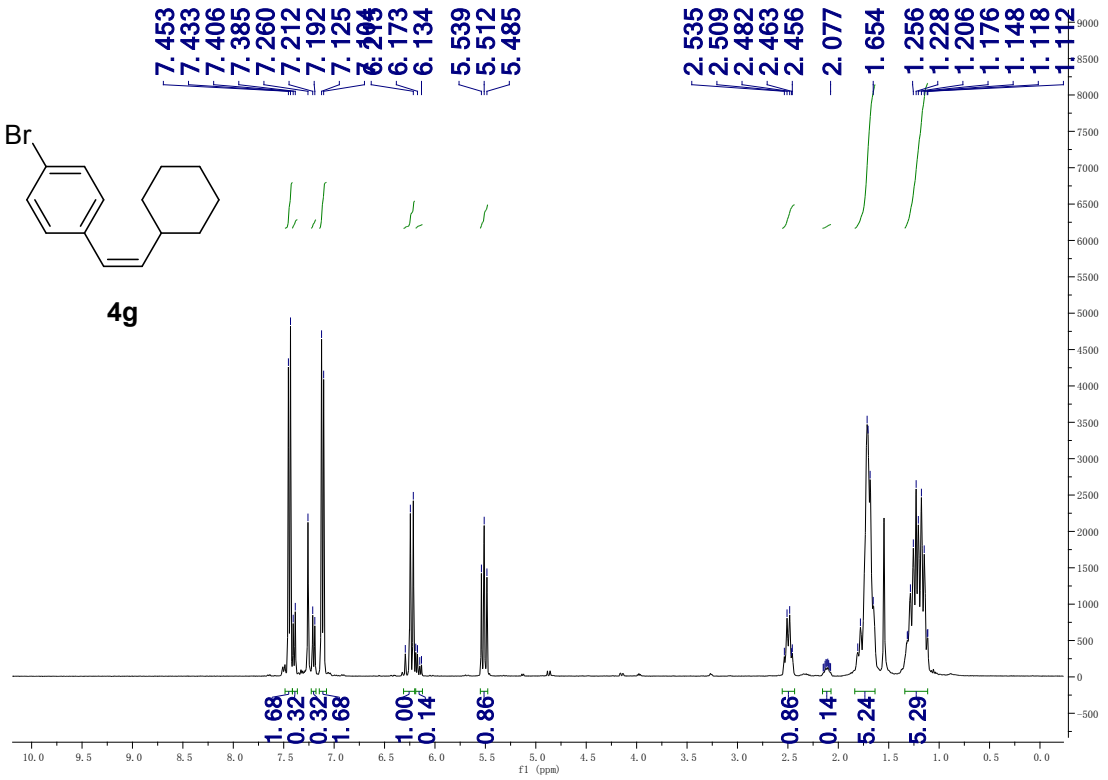
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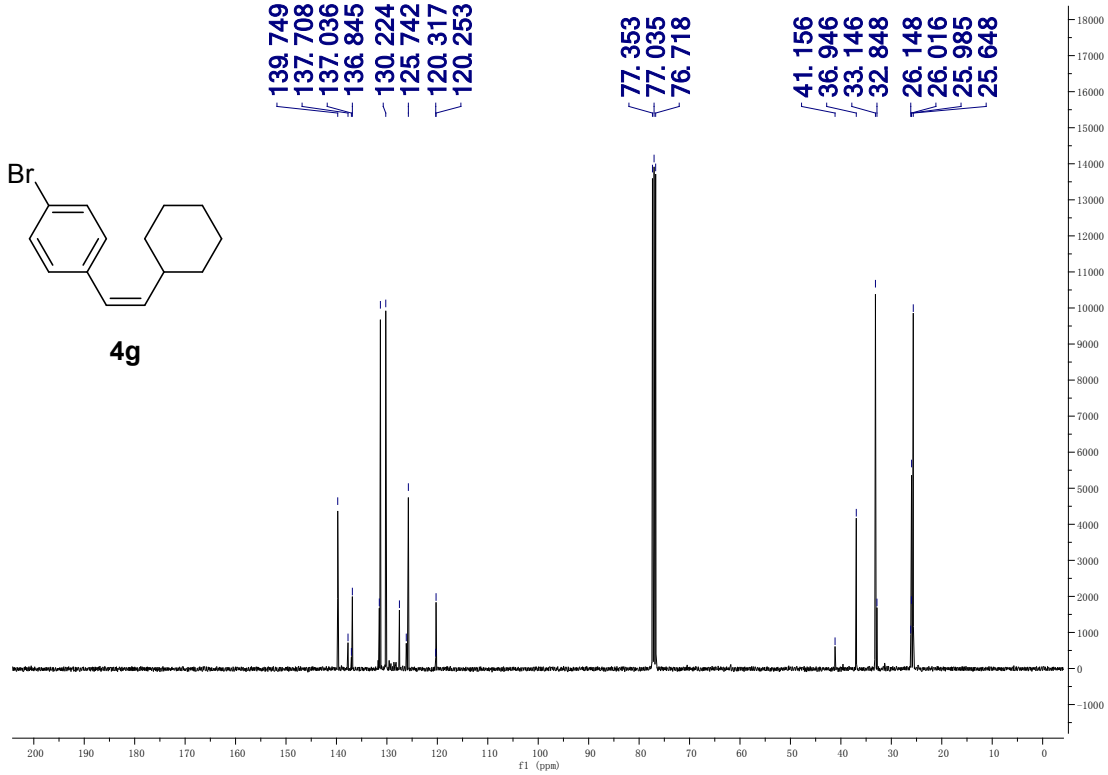


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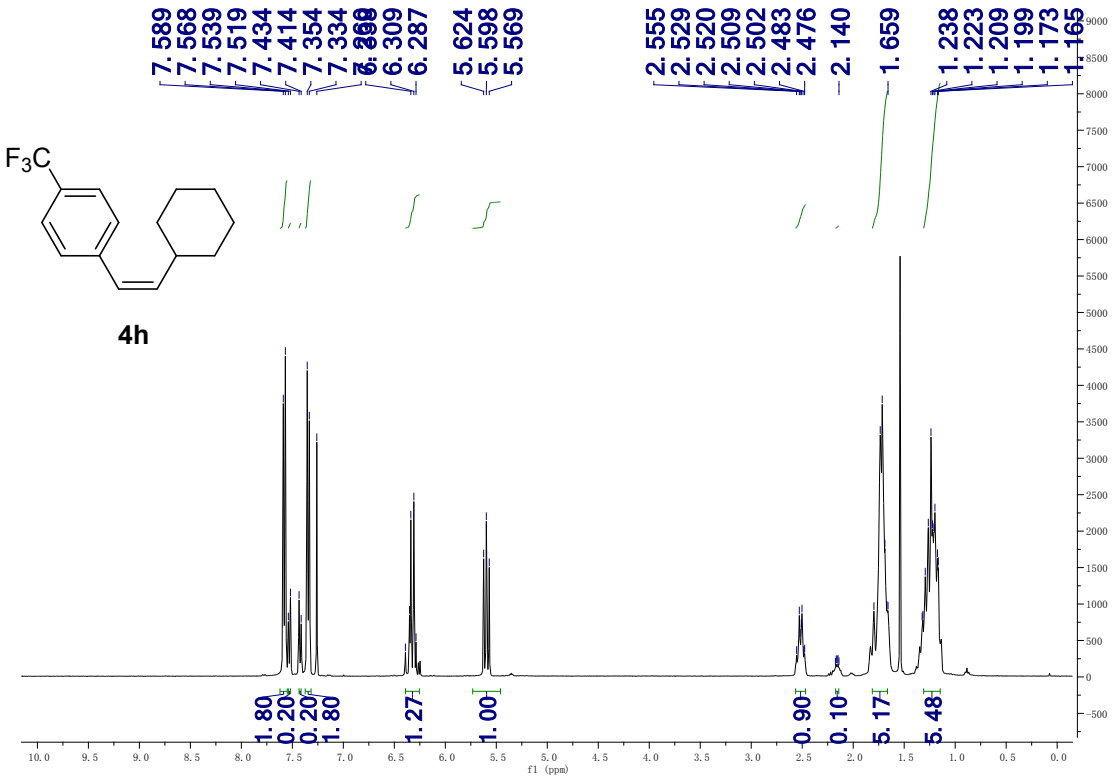
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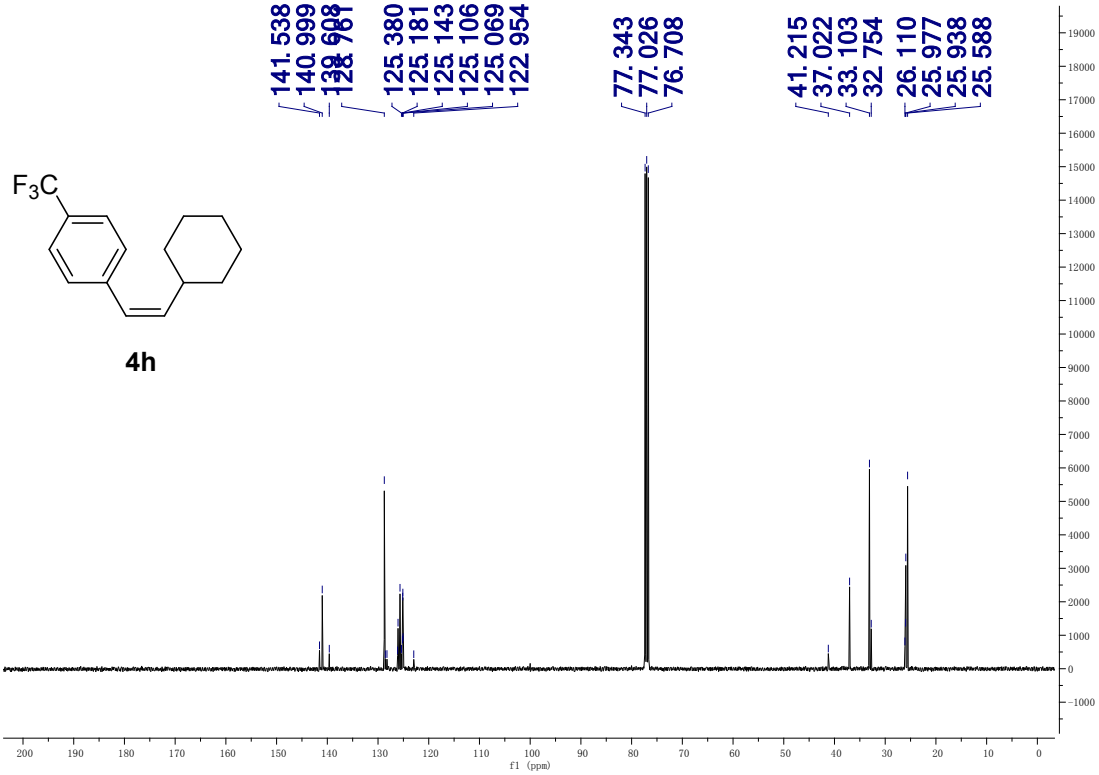
^{13}C NMR (100 MHz, $CDCl_3$)



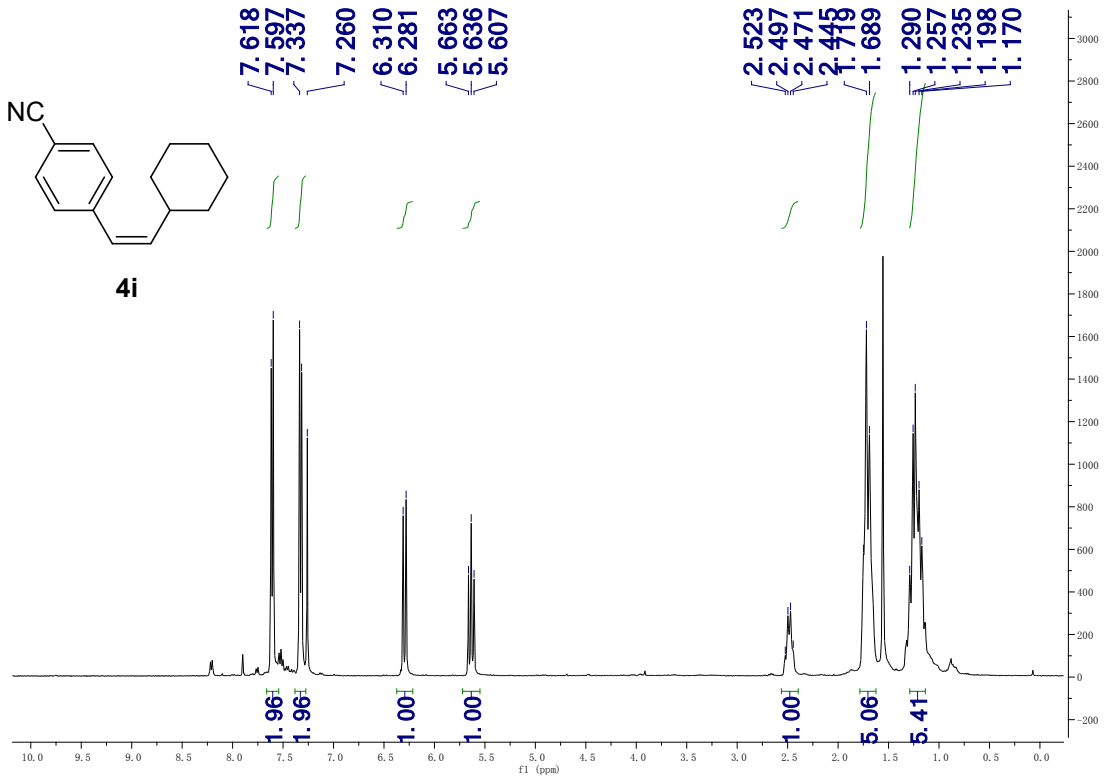
^{1}H NMR (400 MHz, $CDCl_3$)



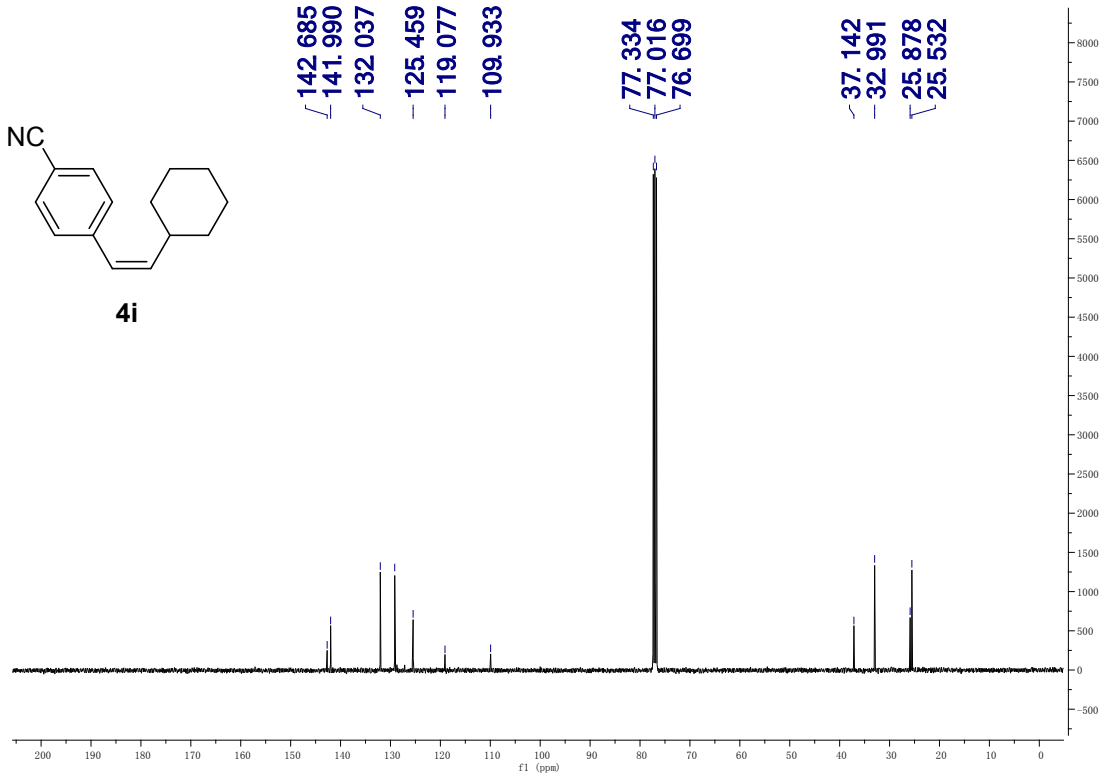
^{13}C NMR (100 MHz, $CDCl_3$)



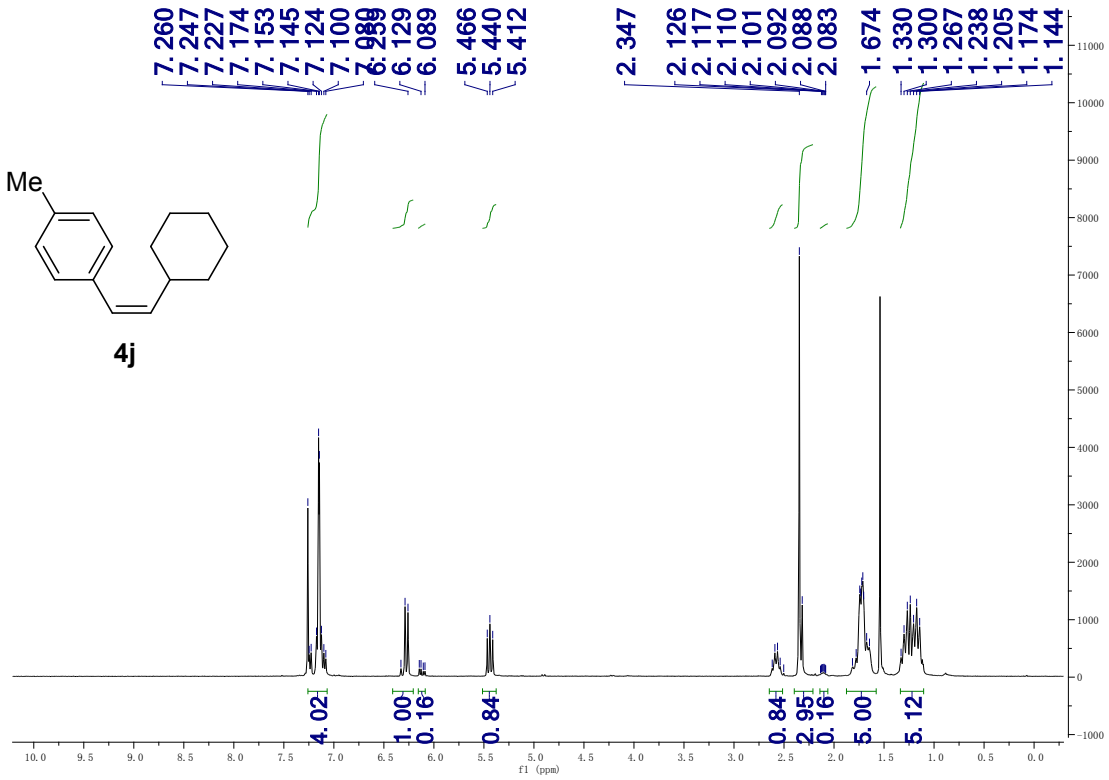
^{1}H NMR (400 MHz, $CDCl_3$)



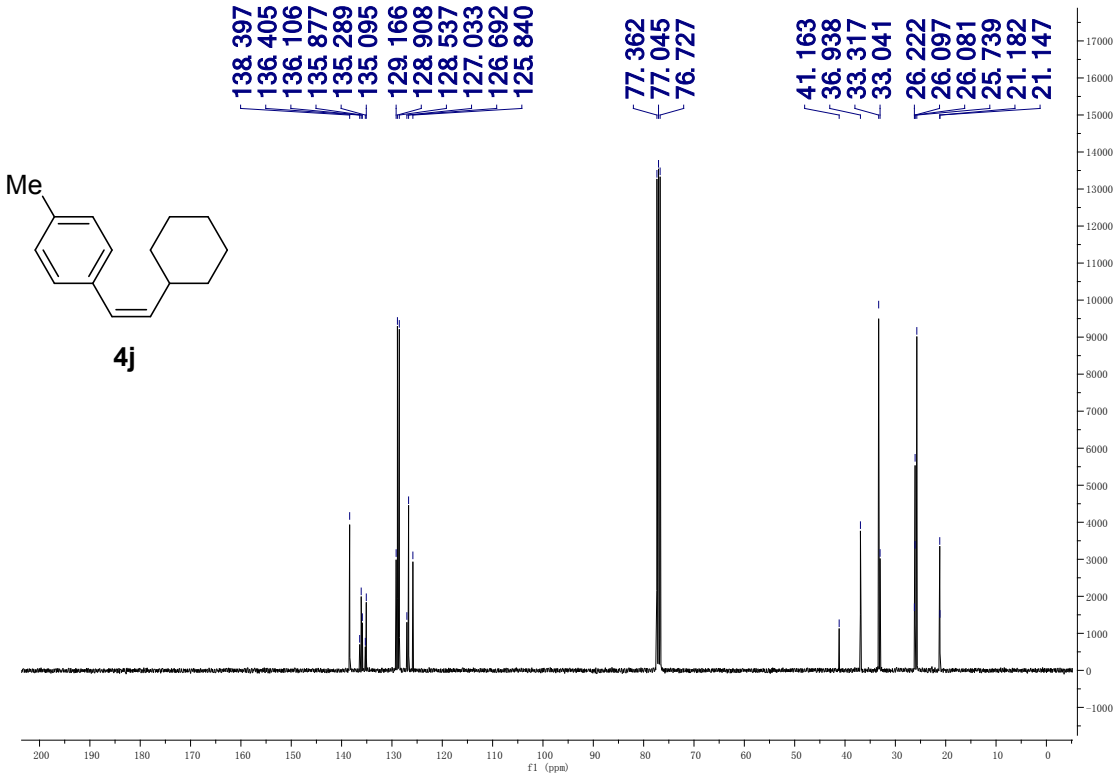
^{13}C NMR (100 MHz, $CDCl_3$)



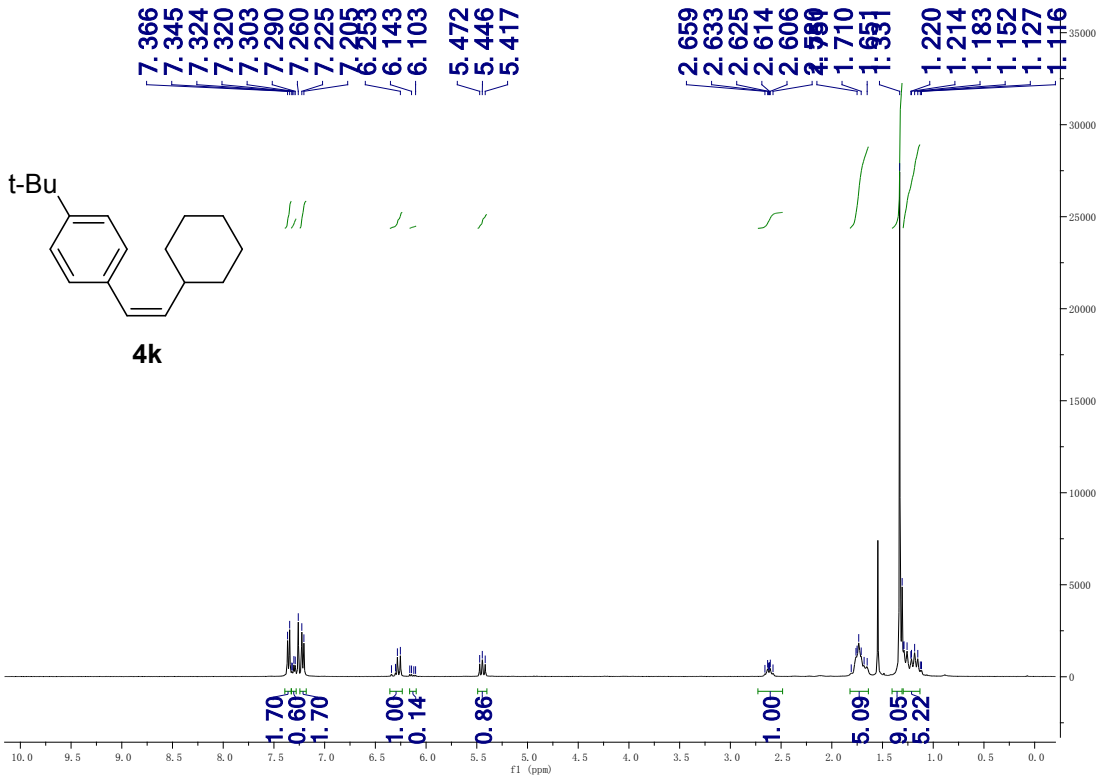
^{1}H NMR (400 MHz, $CDCl_3$)



^{13}C NMR (100 MHz, $CDCl_3$)

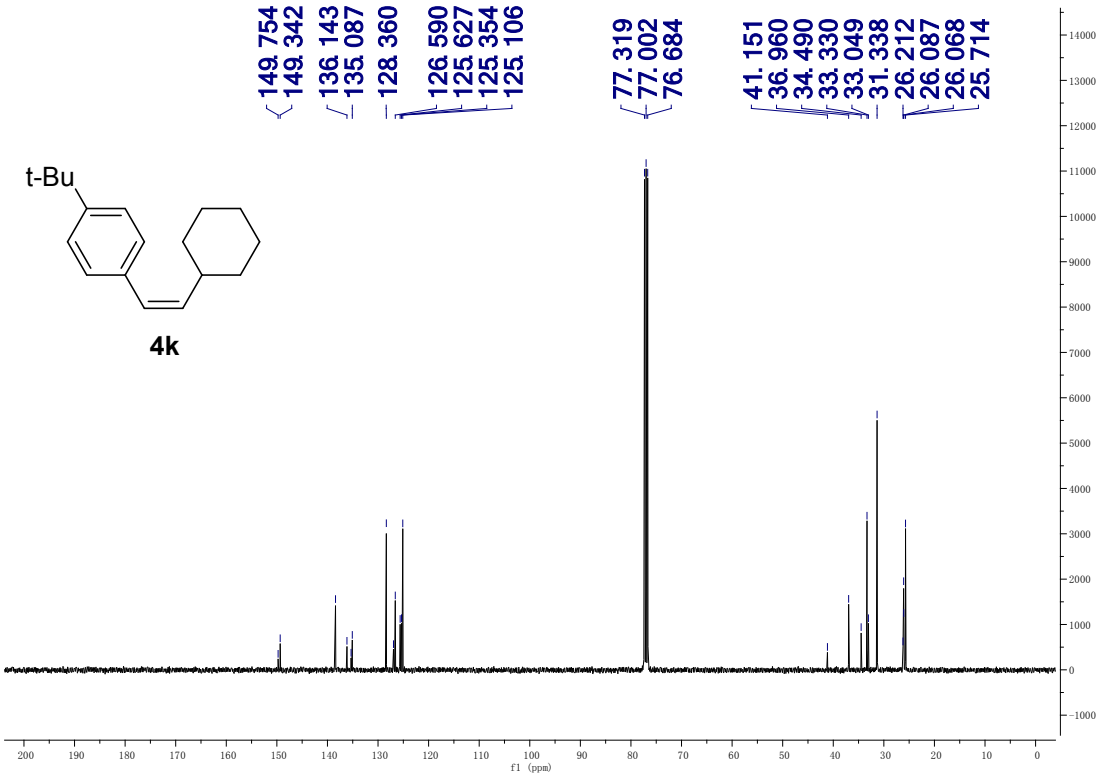


^{1}H NMR (400 MHz, $CDCl_3$)



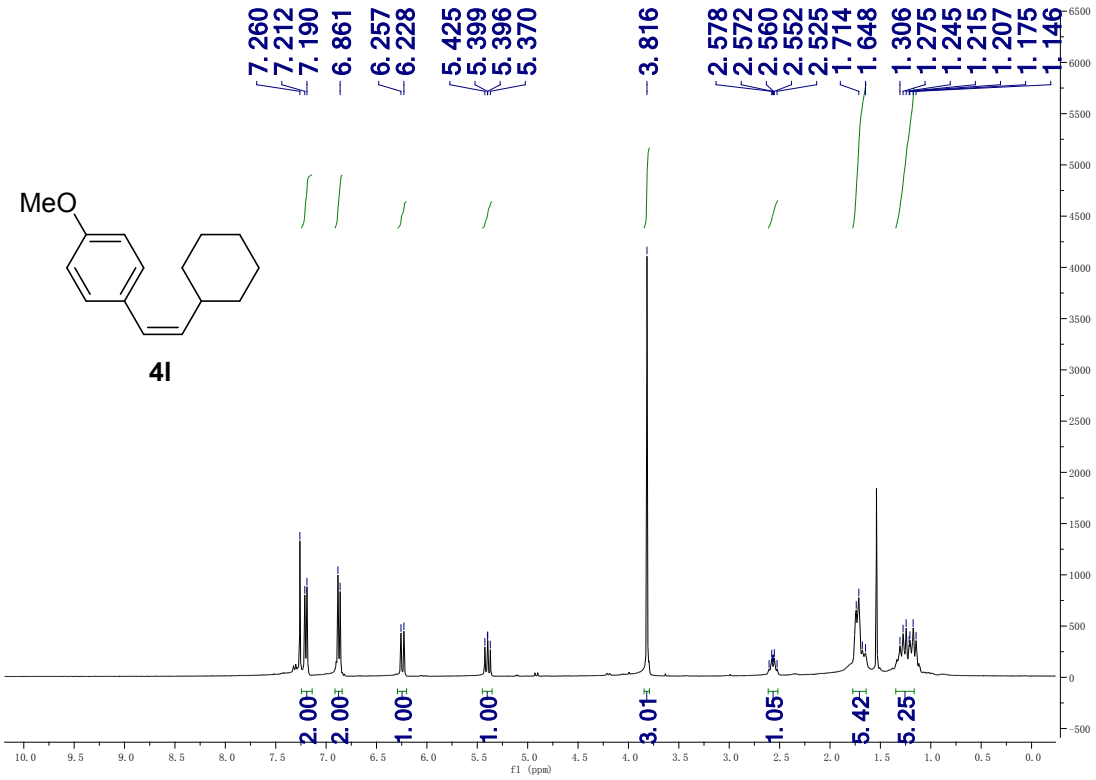
4k

^{13}C NMR (100 MHz, $CDCl_3$)



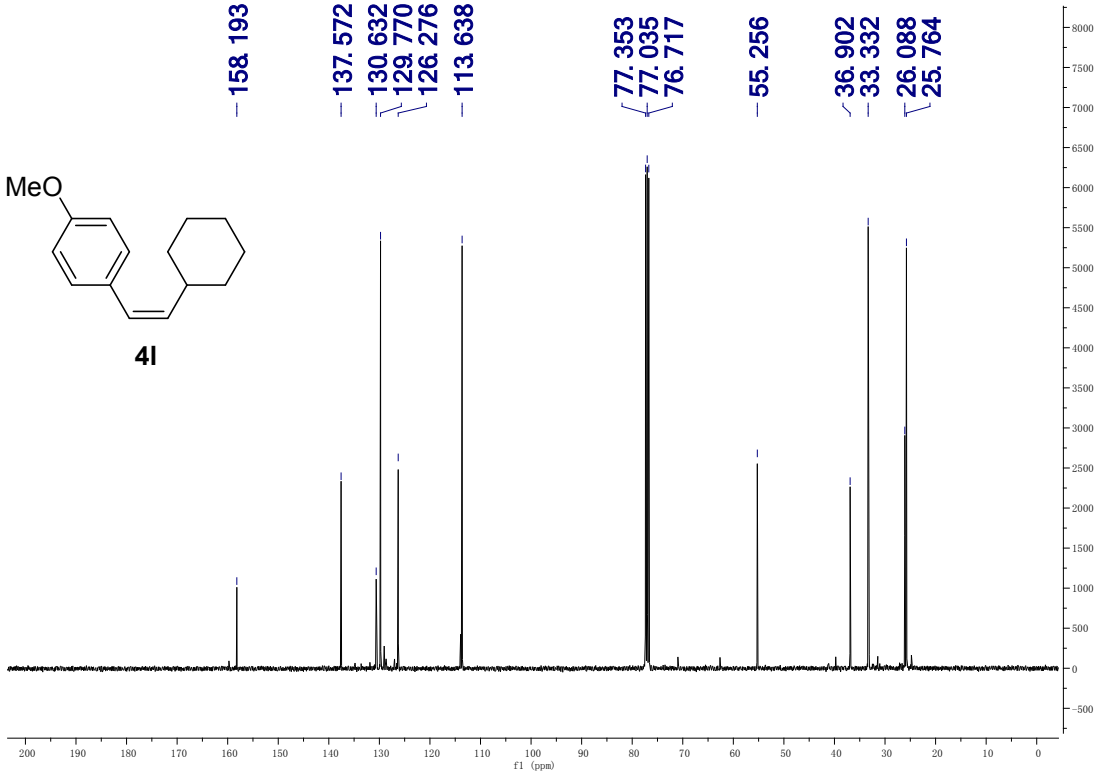
4k

^{1}H NMR (400 MHz, $CDCl_3$)



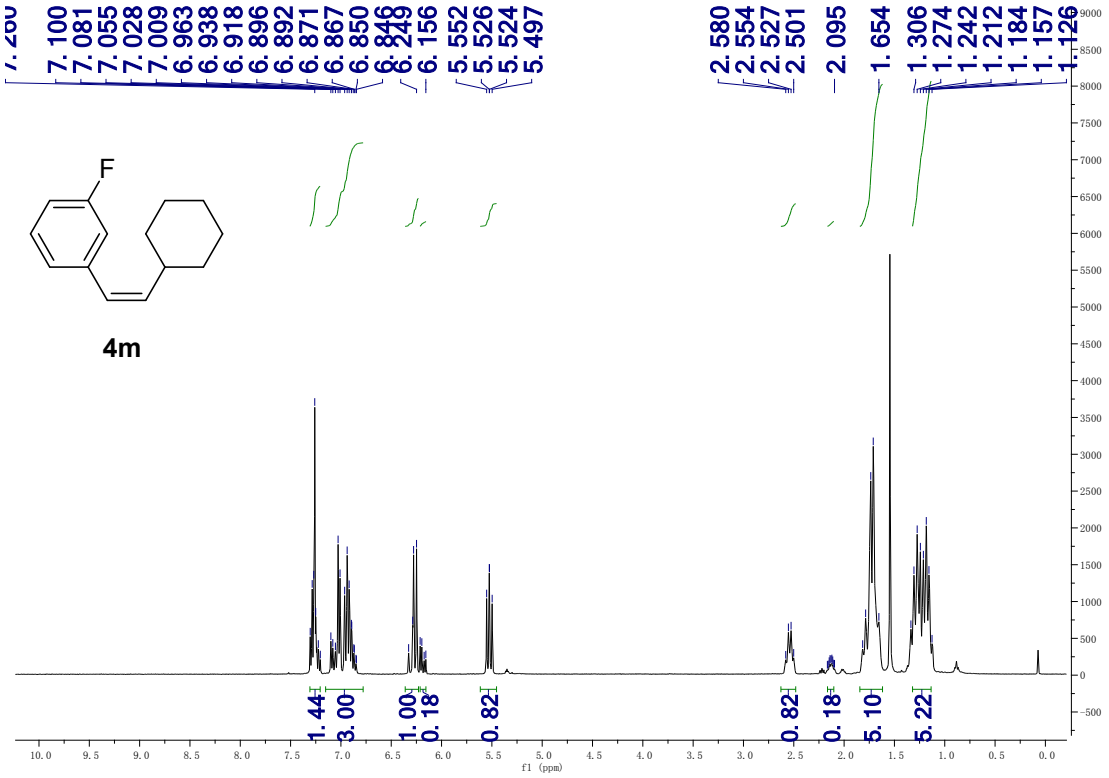
4l

^{13}C NMR (100 MHz, $CDCl_3$)

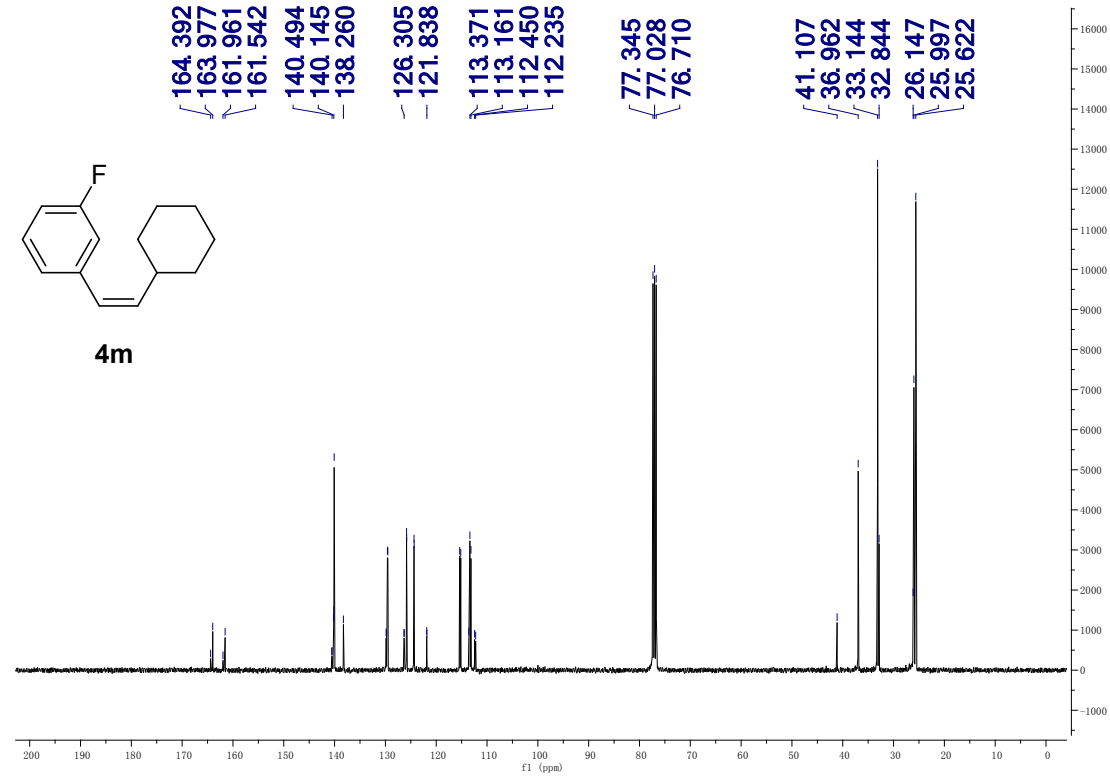


4l

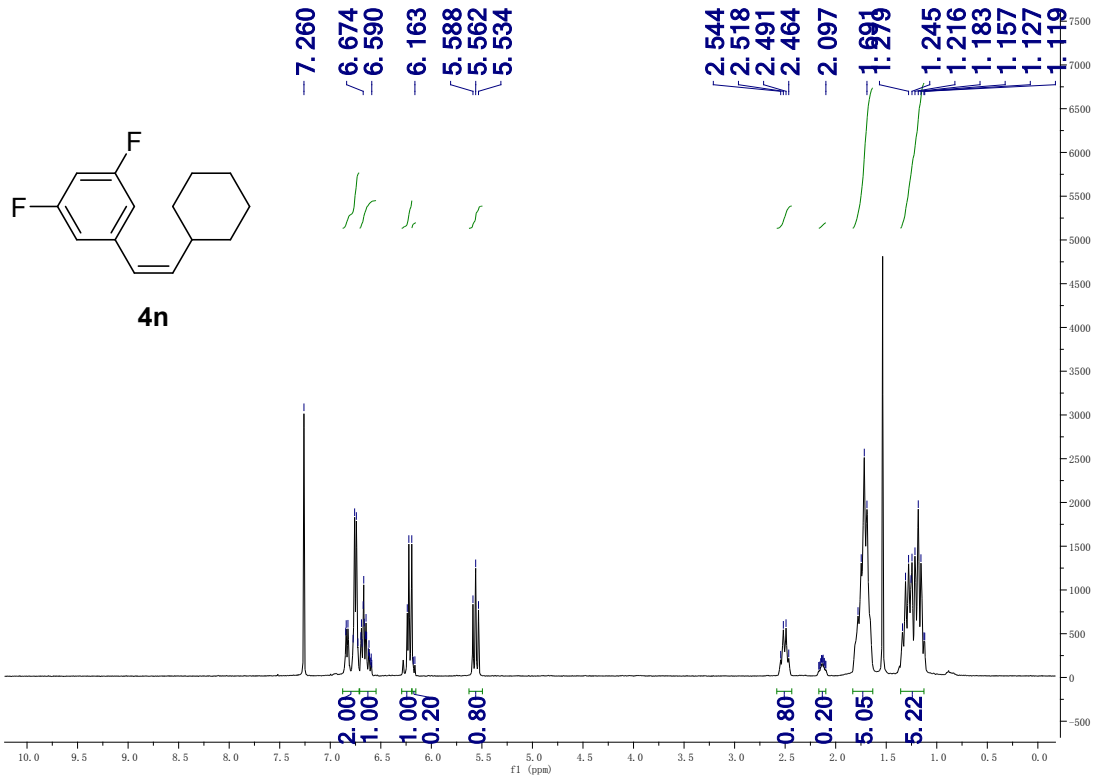
^{1}H NMR (400 MHz, $CDCl_3$)



^{13}C NMR (100 MHz, $CDCl_3$)

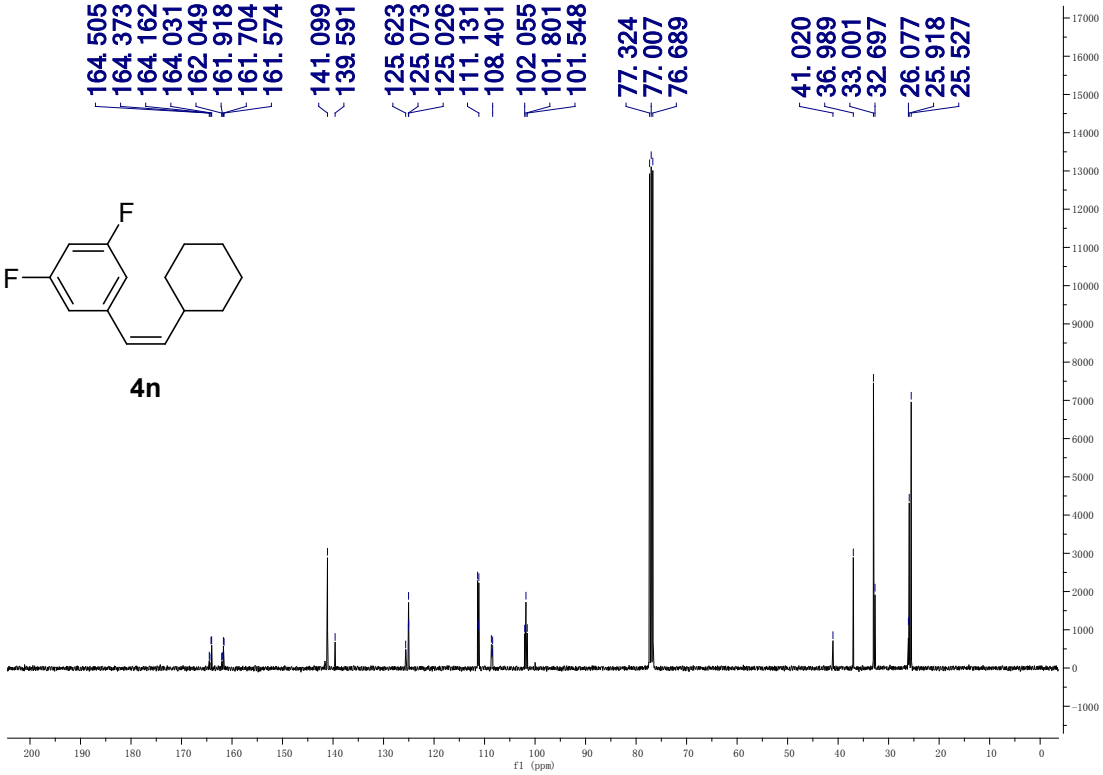


^{1}H NMR (400 MHz, $CDCl_3$)



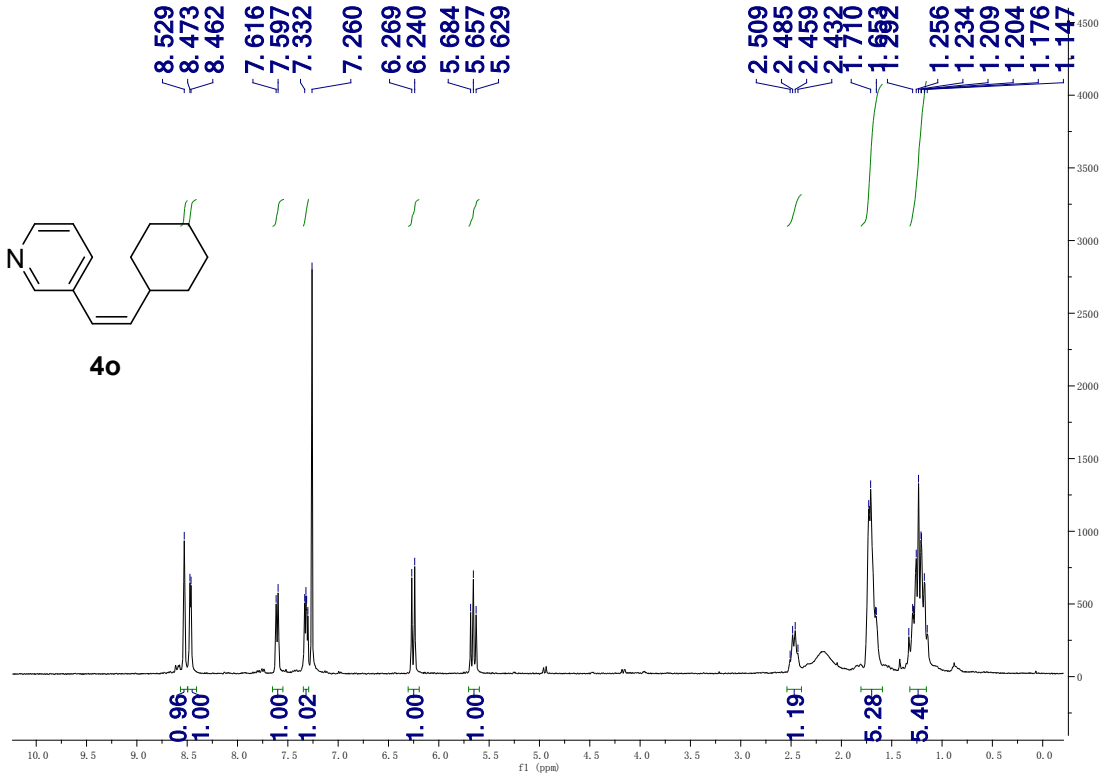
4n

^{13}C NMR (100 MHz, $CDCl_3$)



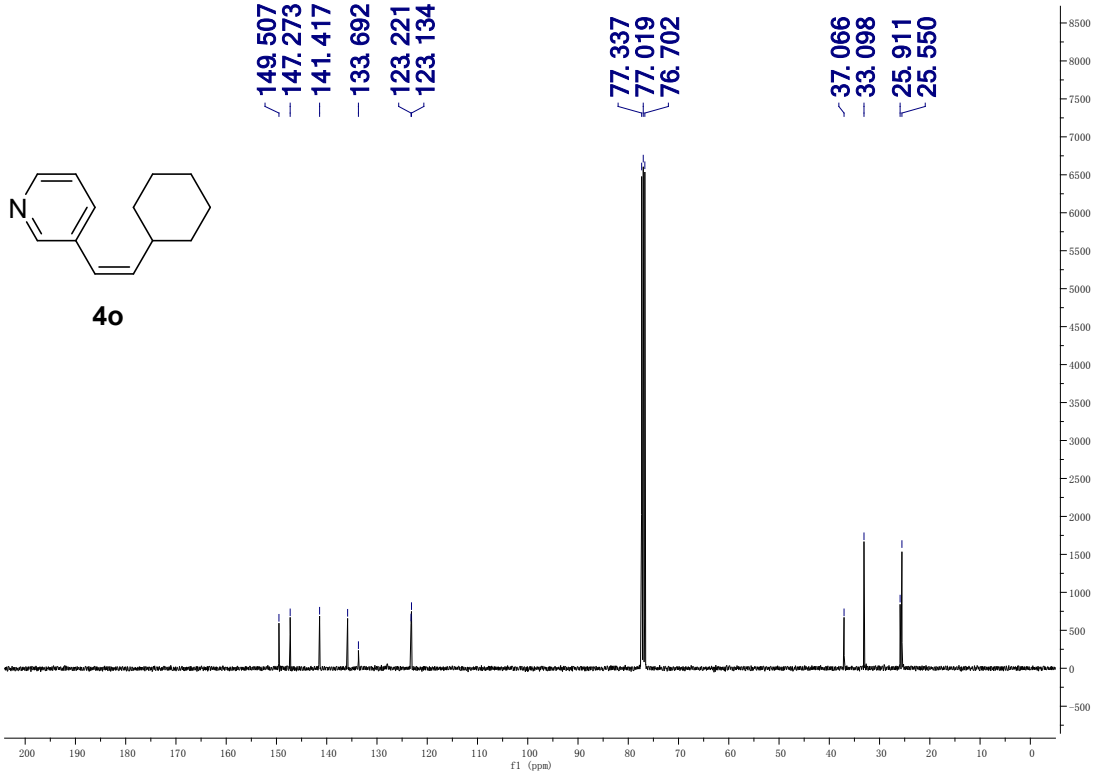
4n

^{1}H NMR (400 MHz, $CDCl_3$)



4o

^{13}C NMR (100 MHz, $CDCl_3$)



4o