

*Supporting information for*

**One-pot Conversion of Aldehydes and Aryl Halides to Disubstituted Alkynes  
via Tandem Seyferth-Gilbert Homologation/Copper-Free Sonogashira  
Coupling**

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Saint Petersburg State University, Saint Petersburg 199034, Russian Federation

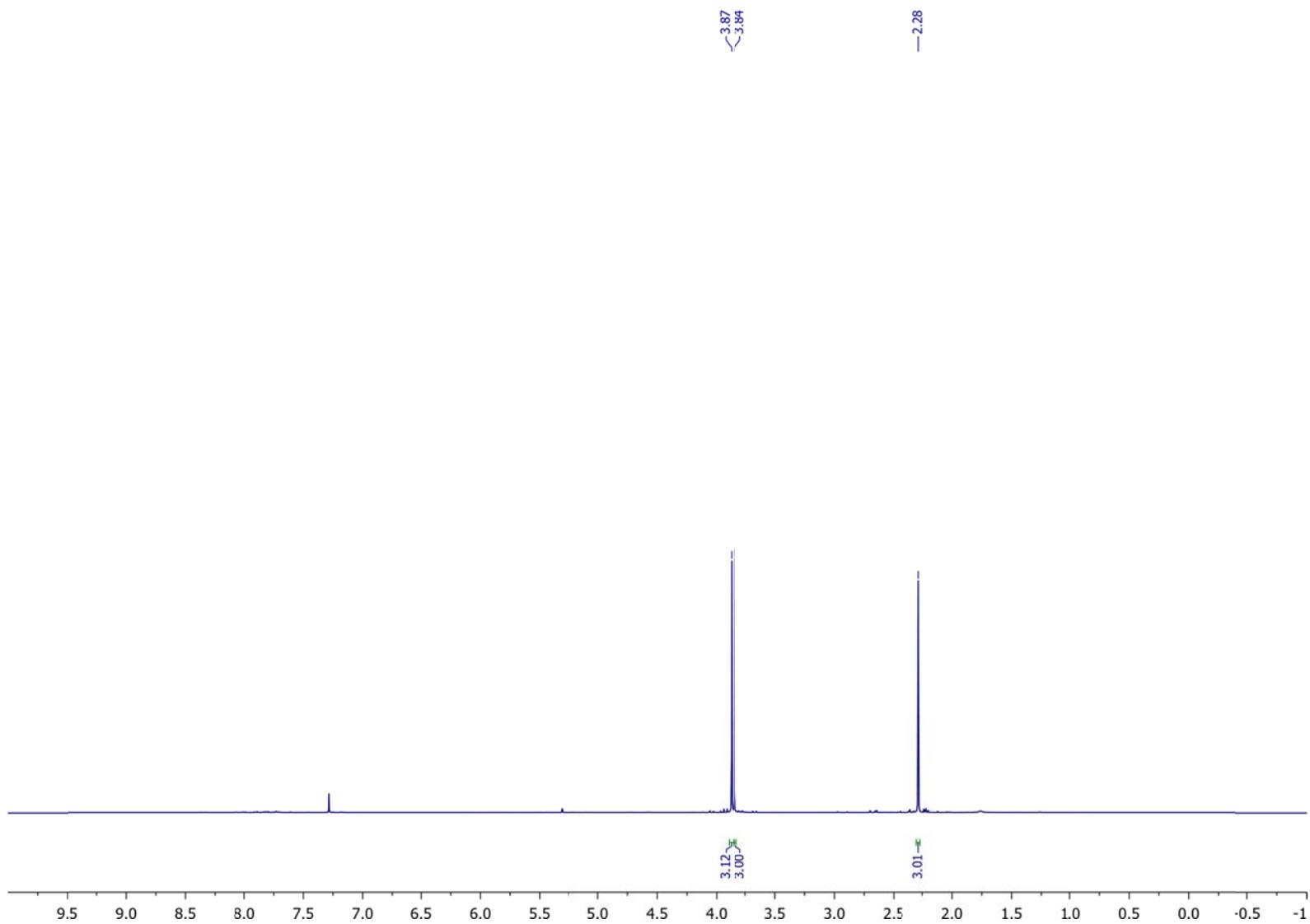
\* Corresponding Author; phone: + 7 931 3617872, fax: +7 812 428 6939.

E-mail: [m.krasavin@spbu.ru](mailto:m.krasavin@spbu.ru)

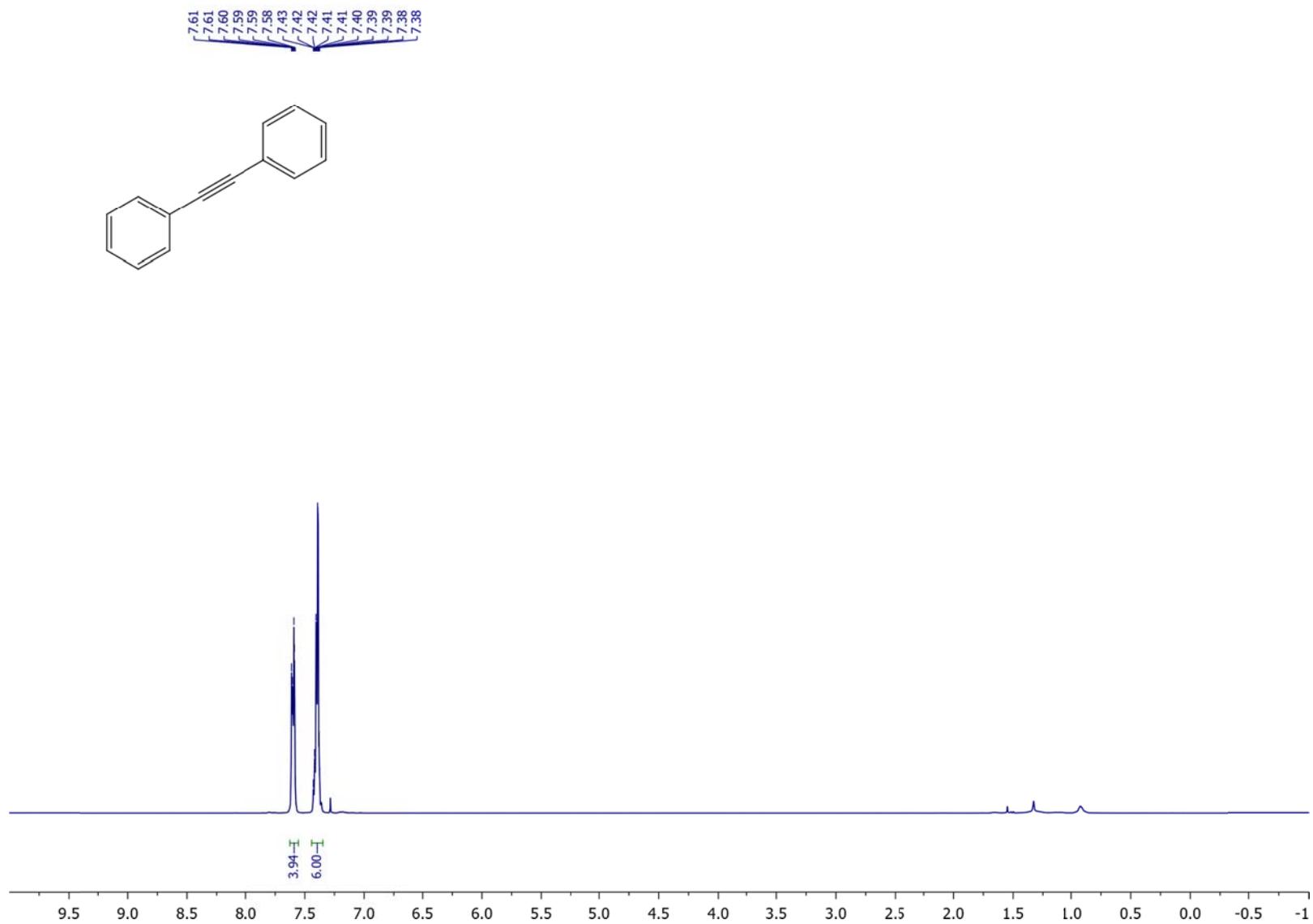
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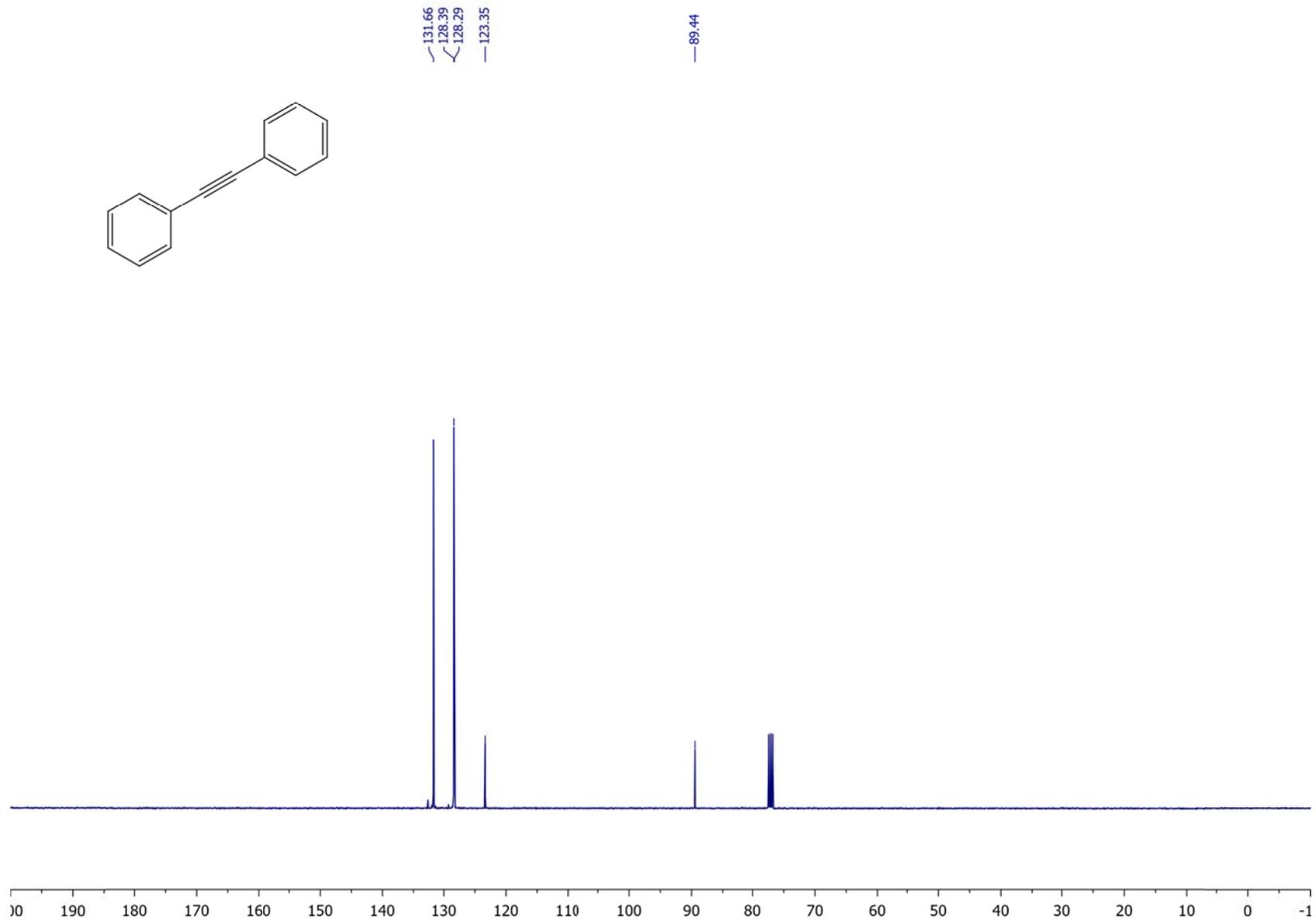
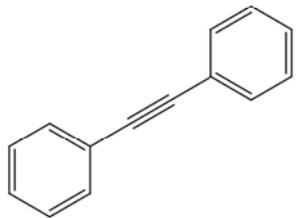
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| I. Copies of $^1\text{H}$ , $^{13}\text{C}$ and $^{19}\text{F}$ NMR spectra of all new compounds ..... | S2-S28 |
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**$^1\text{H}$  NMR spectra of dimethyl (1-diazo-2-oxopropyl)phosphonate**

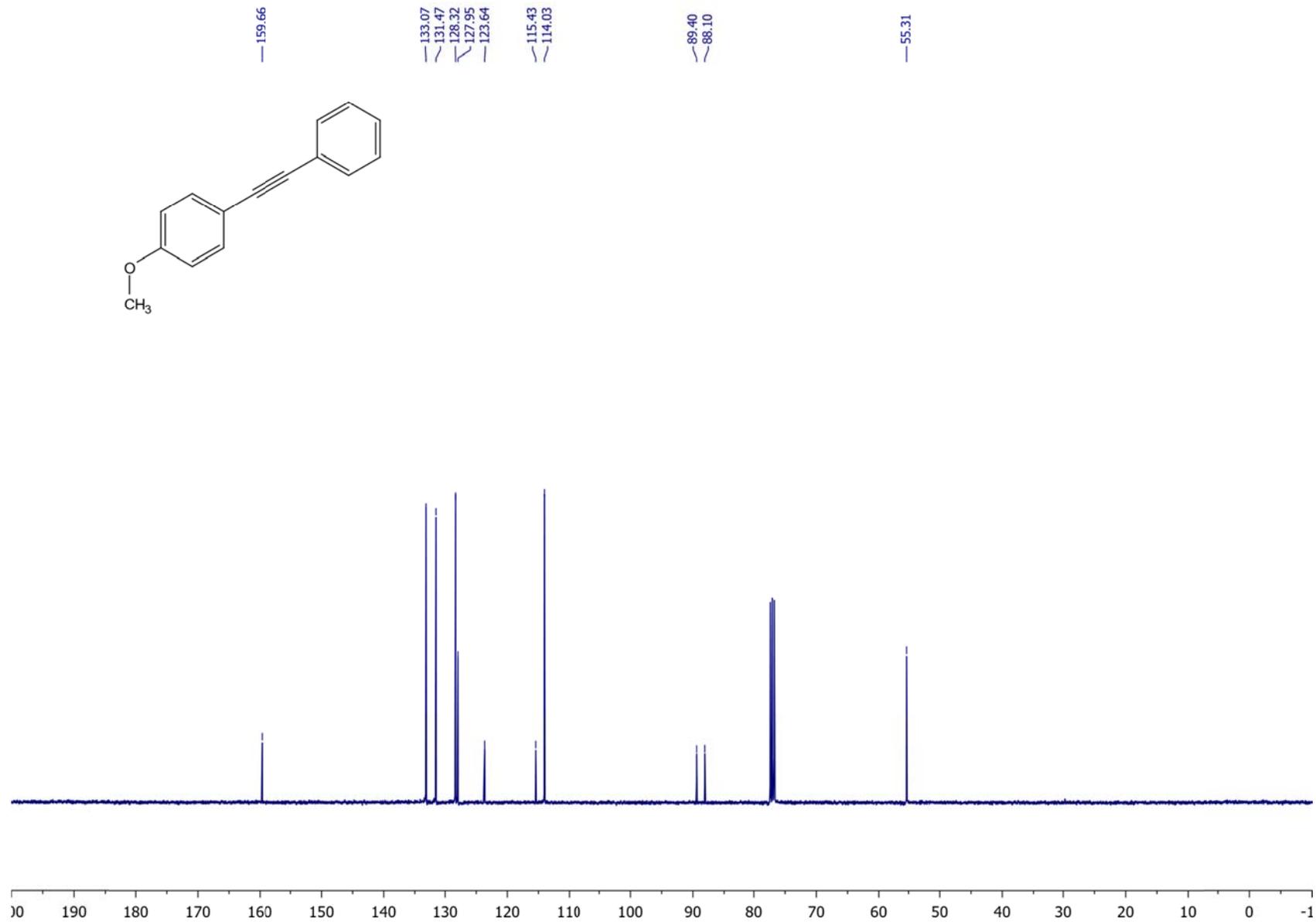
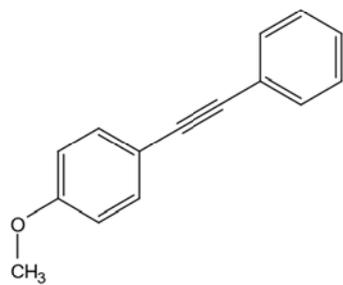


# $^1\text{H}$ and $^{13}\text{C}$ NMR spectra of compound 5a

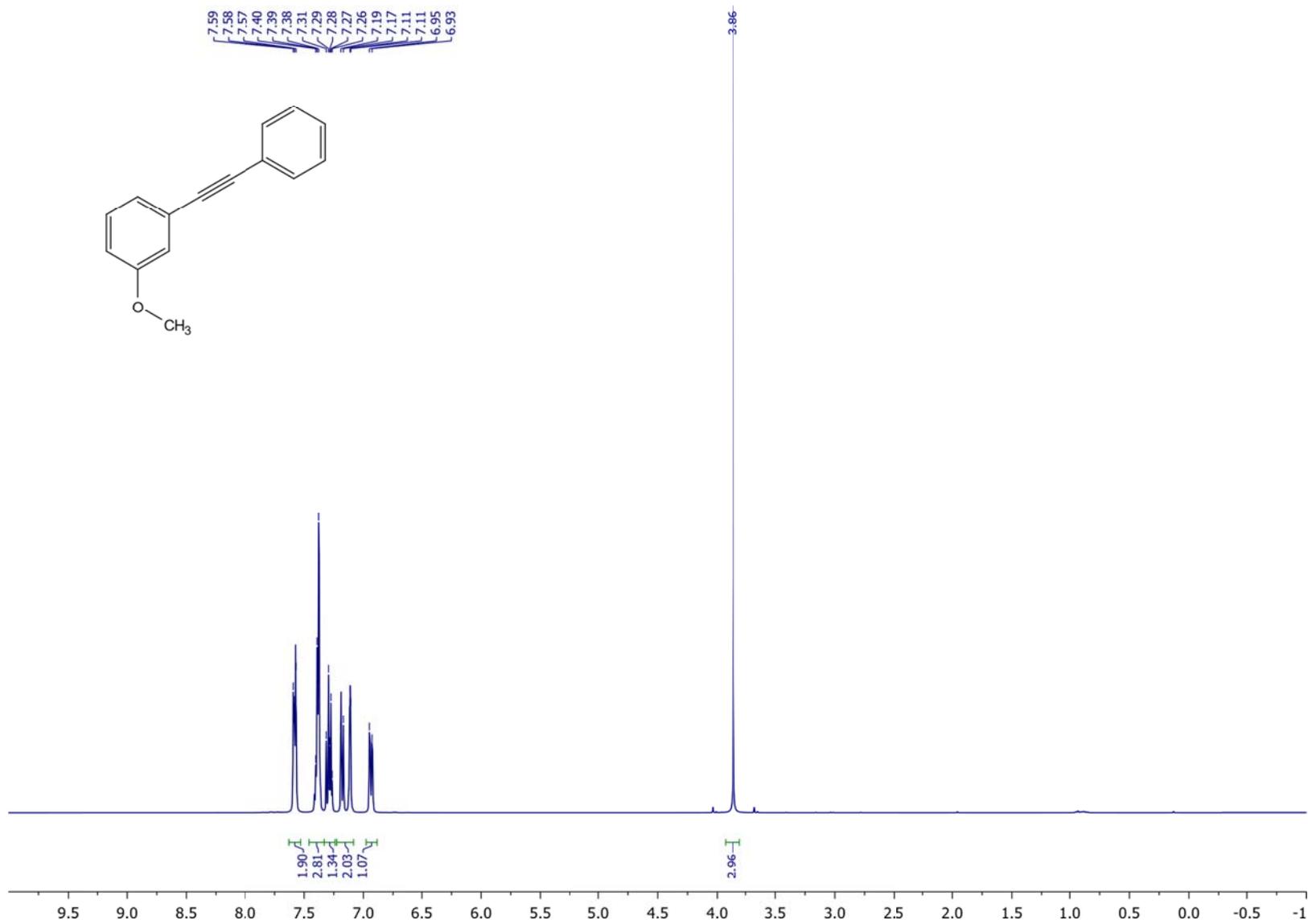


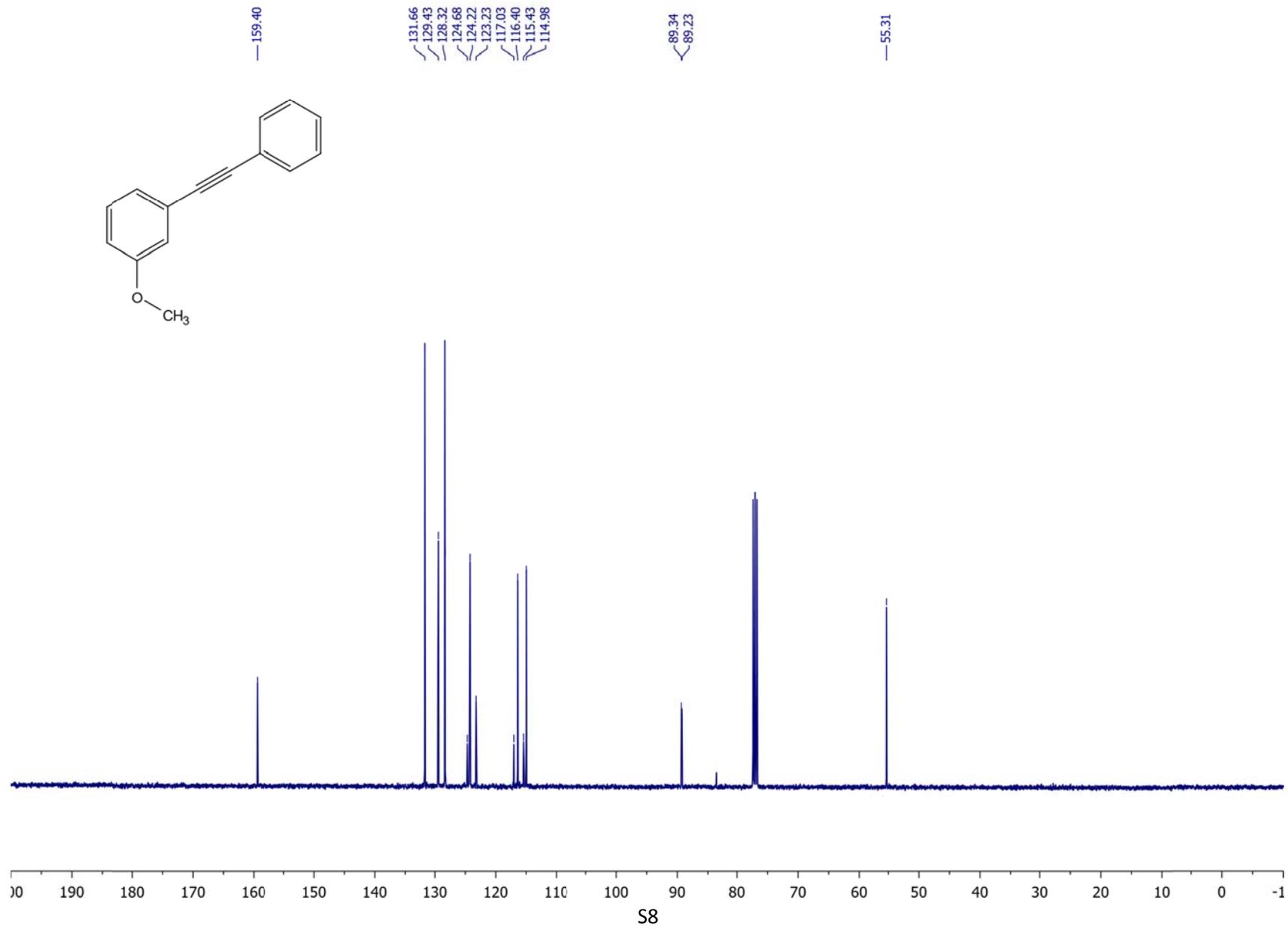
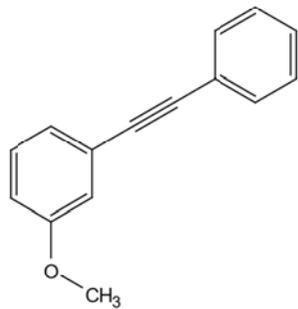




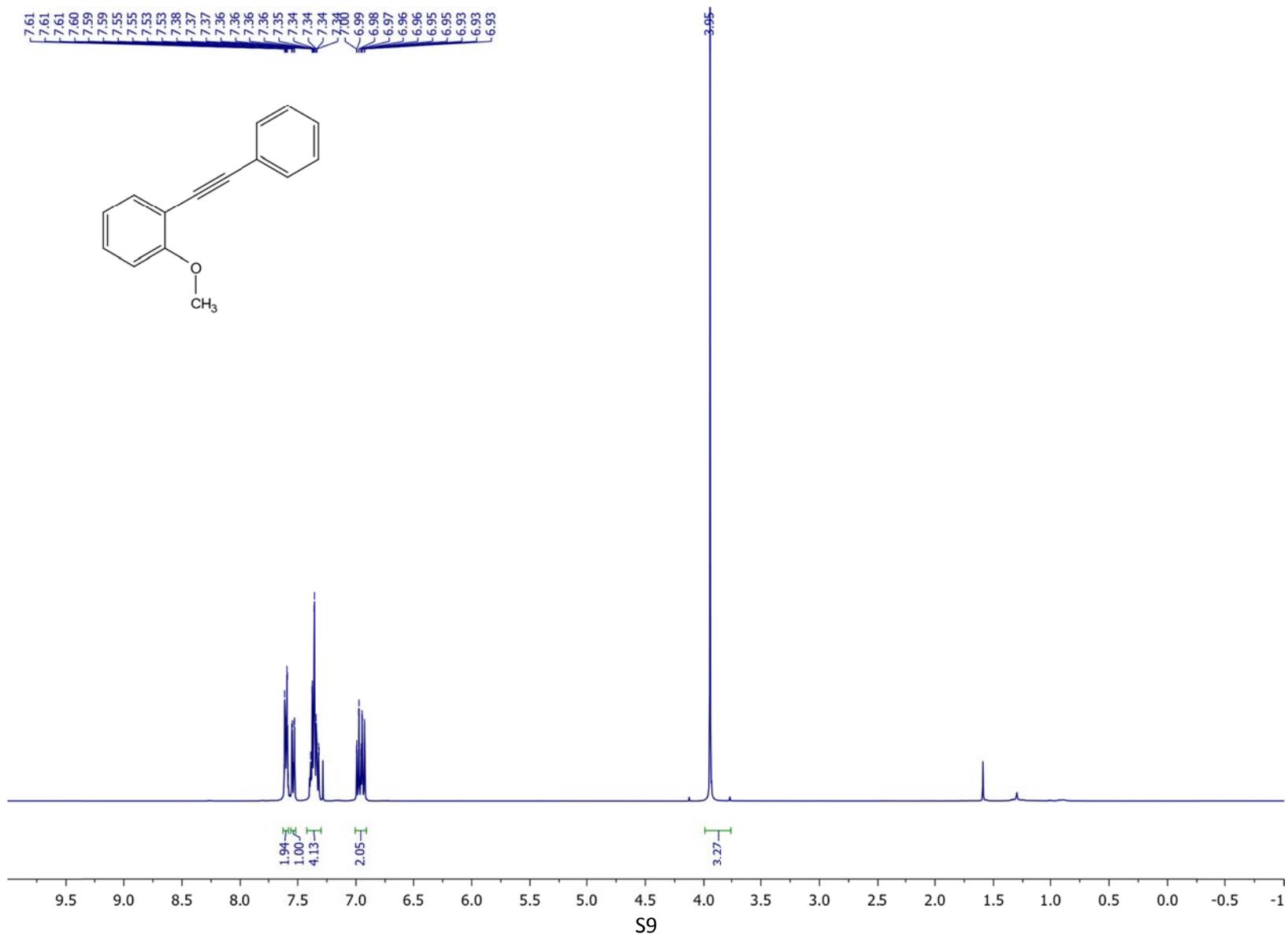


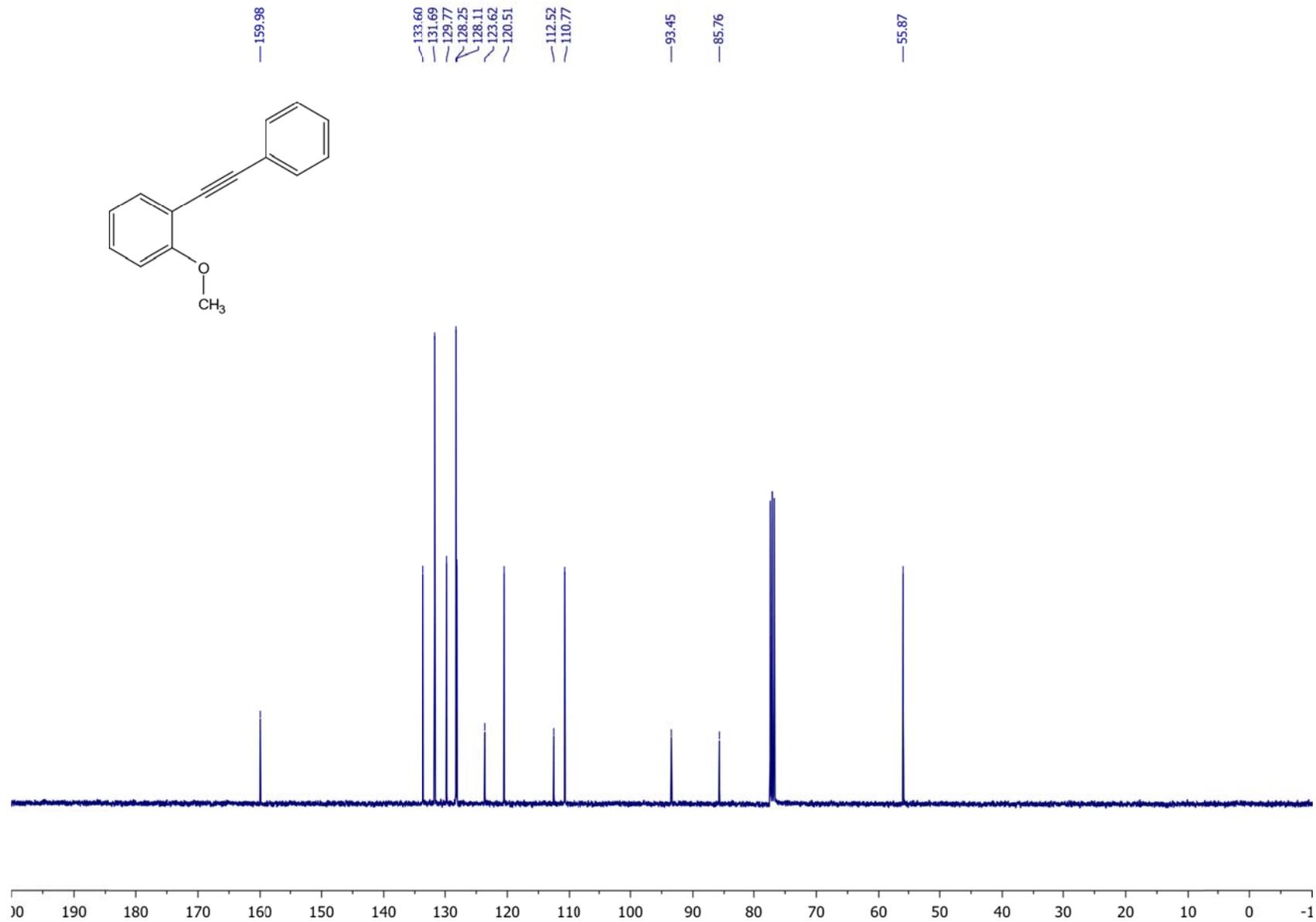
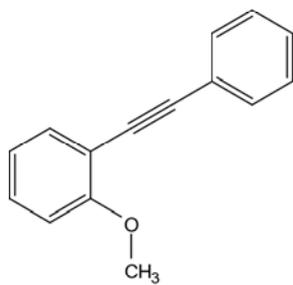
# $^1\text{H}$ and $^{13}\text{C}$ NMR spectra of compound 5c



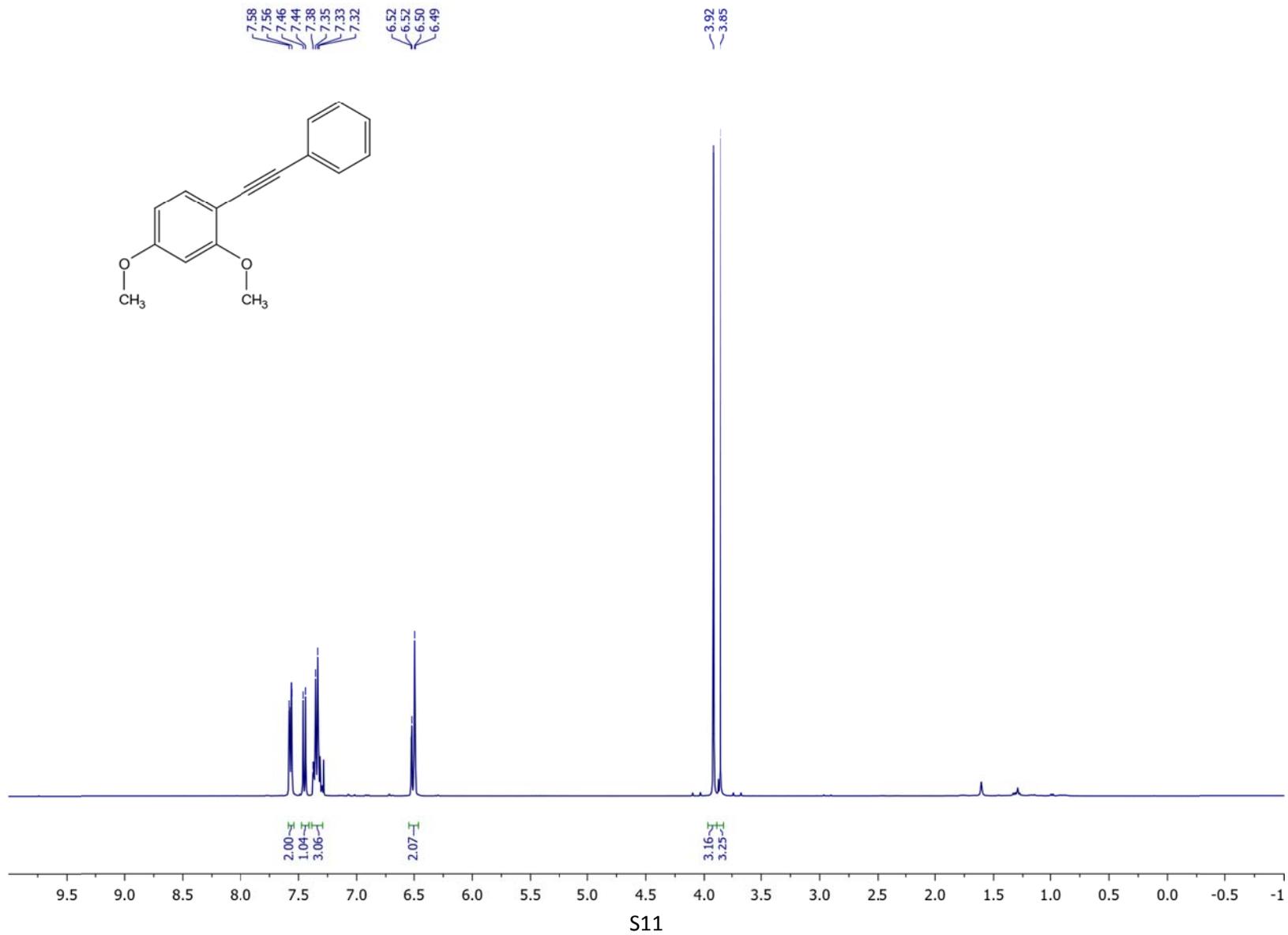


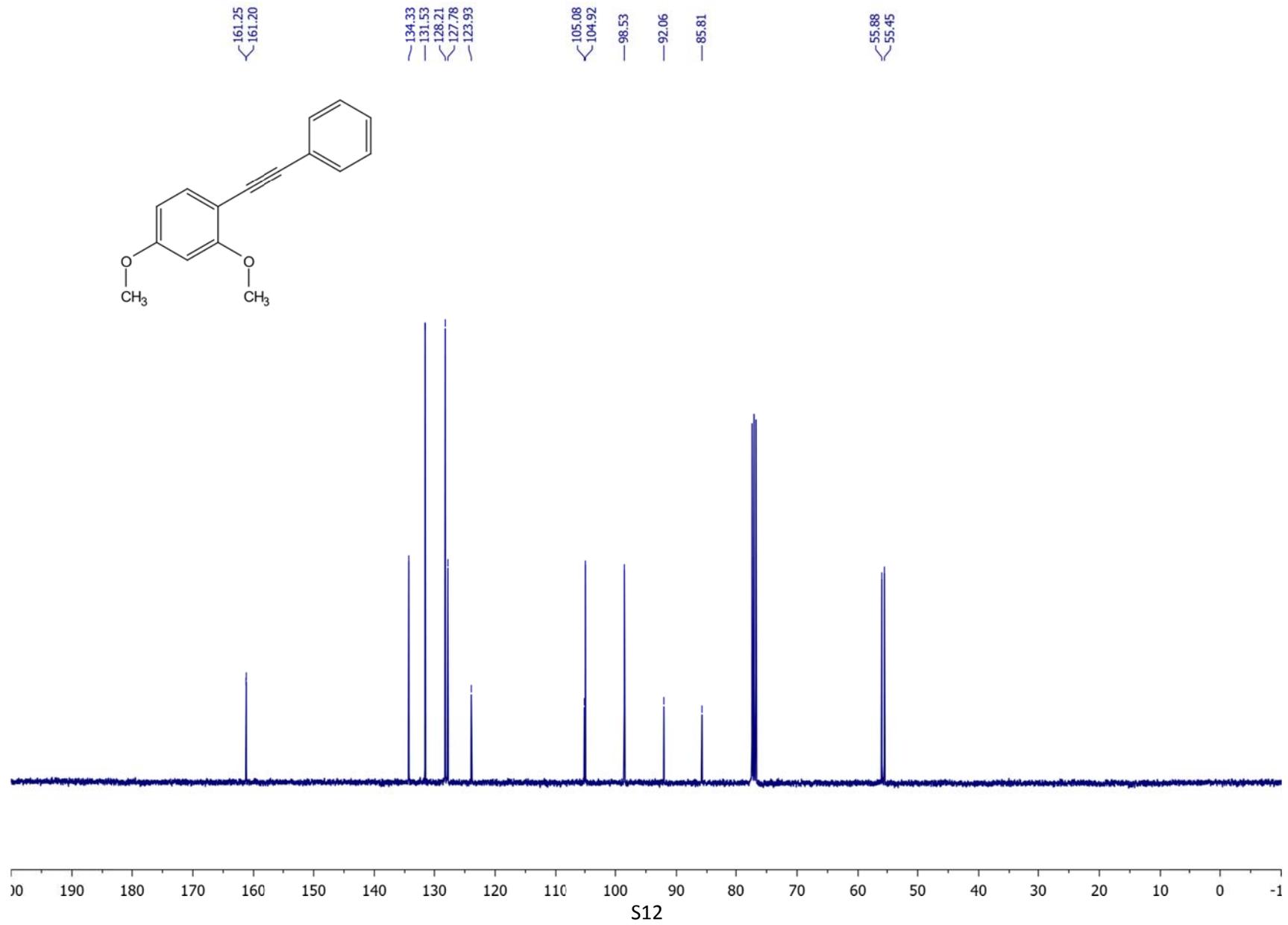
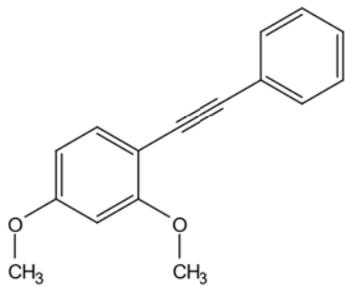
# <sup>1</sup>H and <sup>13</sup>C NMR spectra of compound 5d



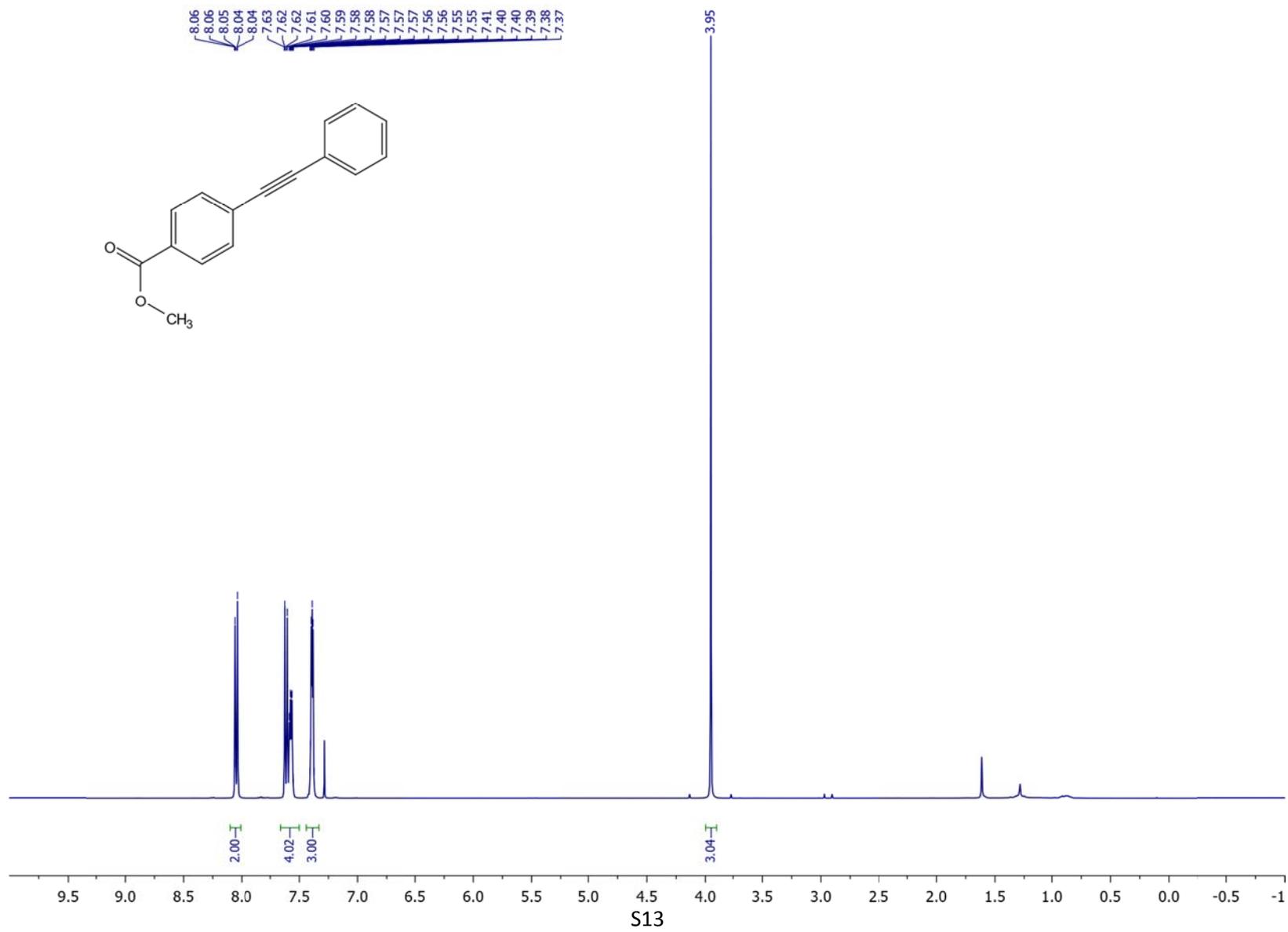


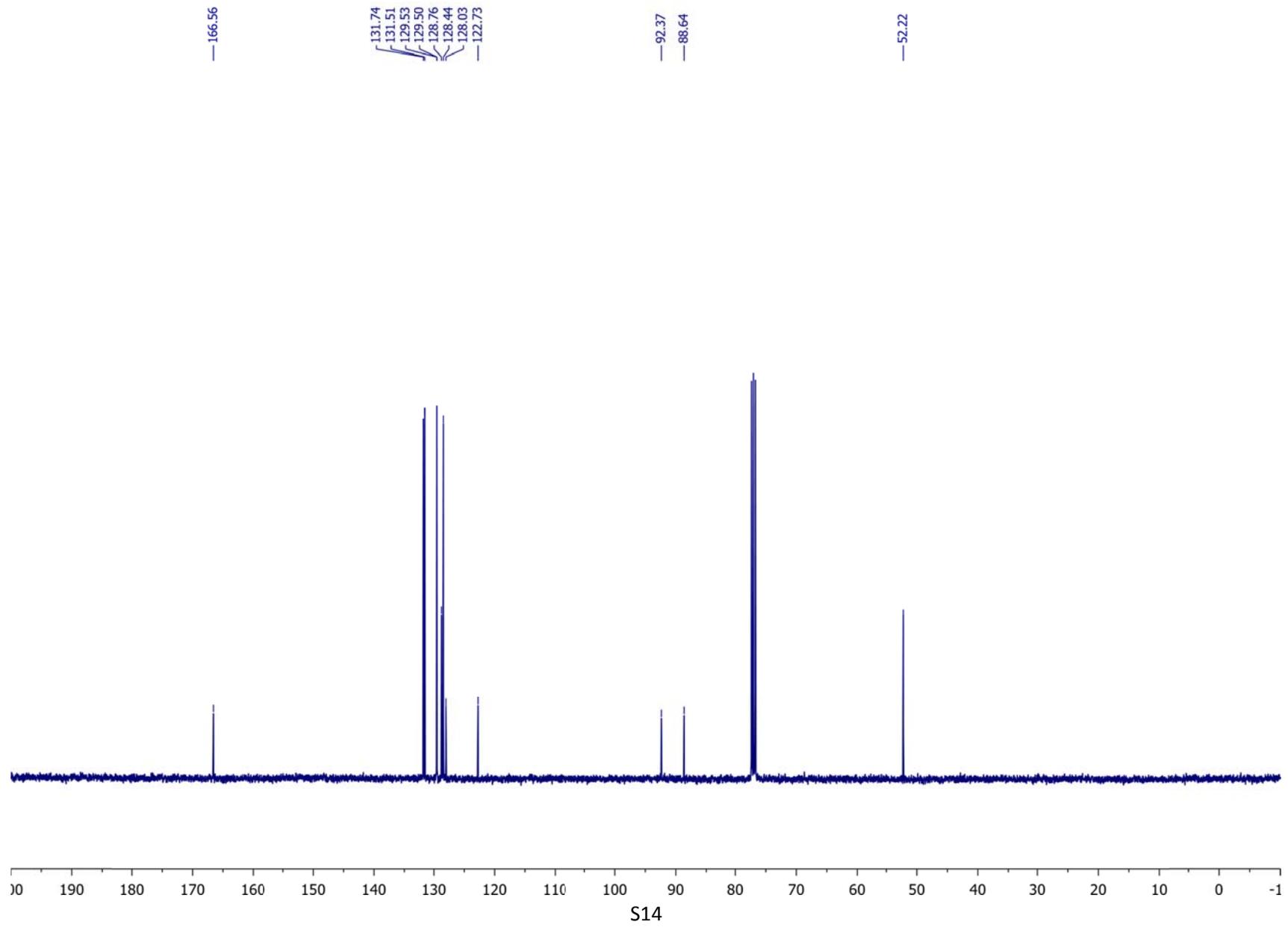
# <sup>1</sup>H and <sup>13</sup>C NMR spectra of compound 5e





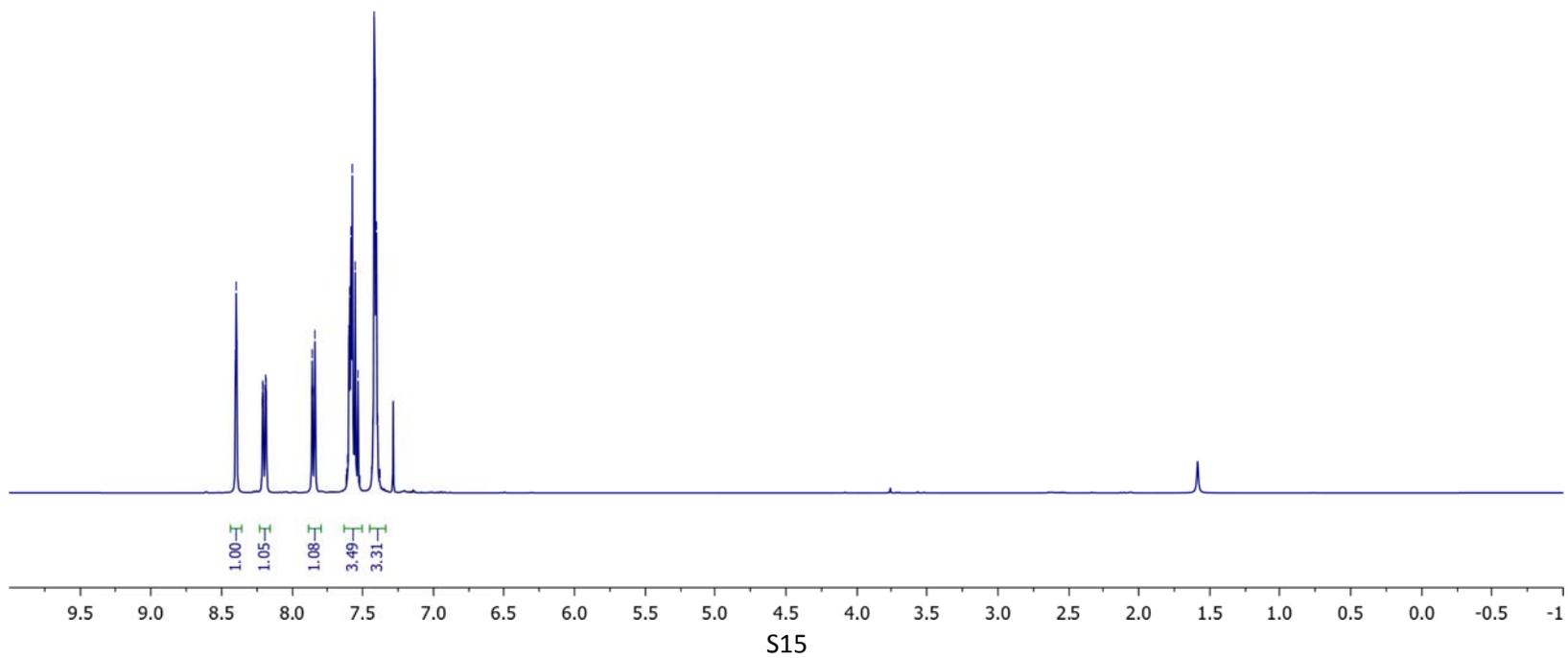
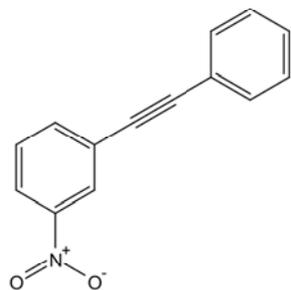
# $^1\text{H}$ and $^{13}\text{C}$ NMR spectra of compound 5f

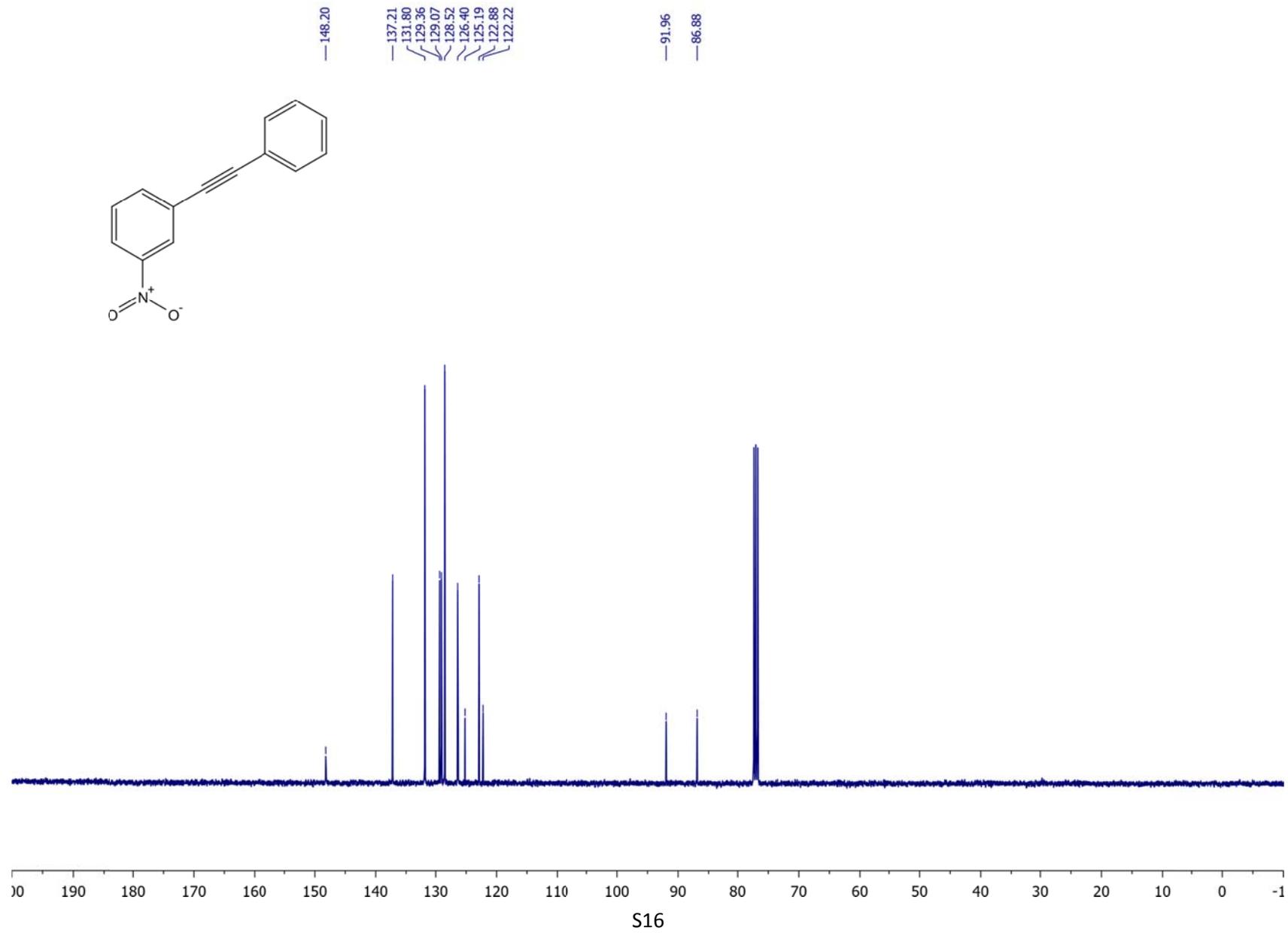
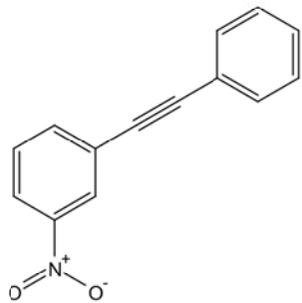




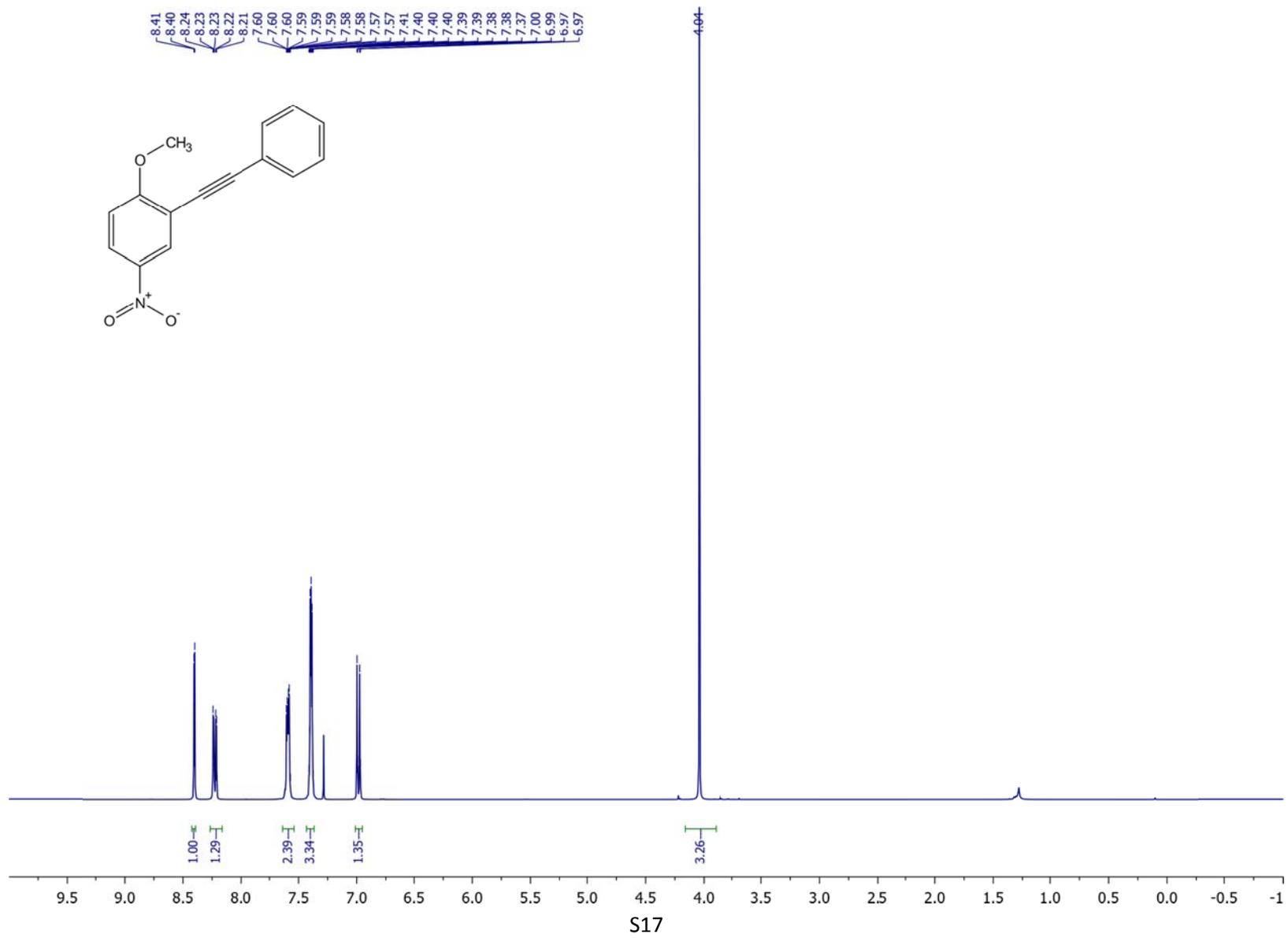
# <sup>1</sup>H and <sup>13</sup>C NMR spectra of compound 5g

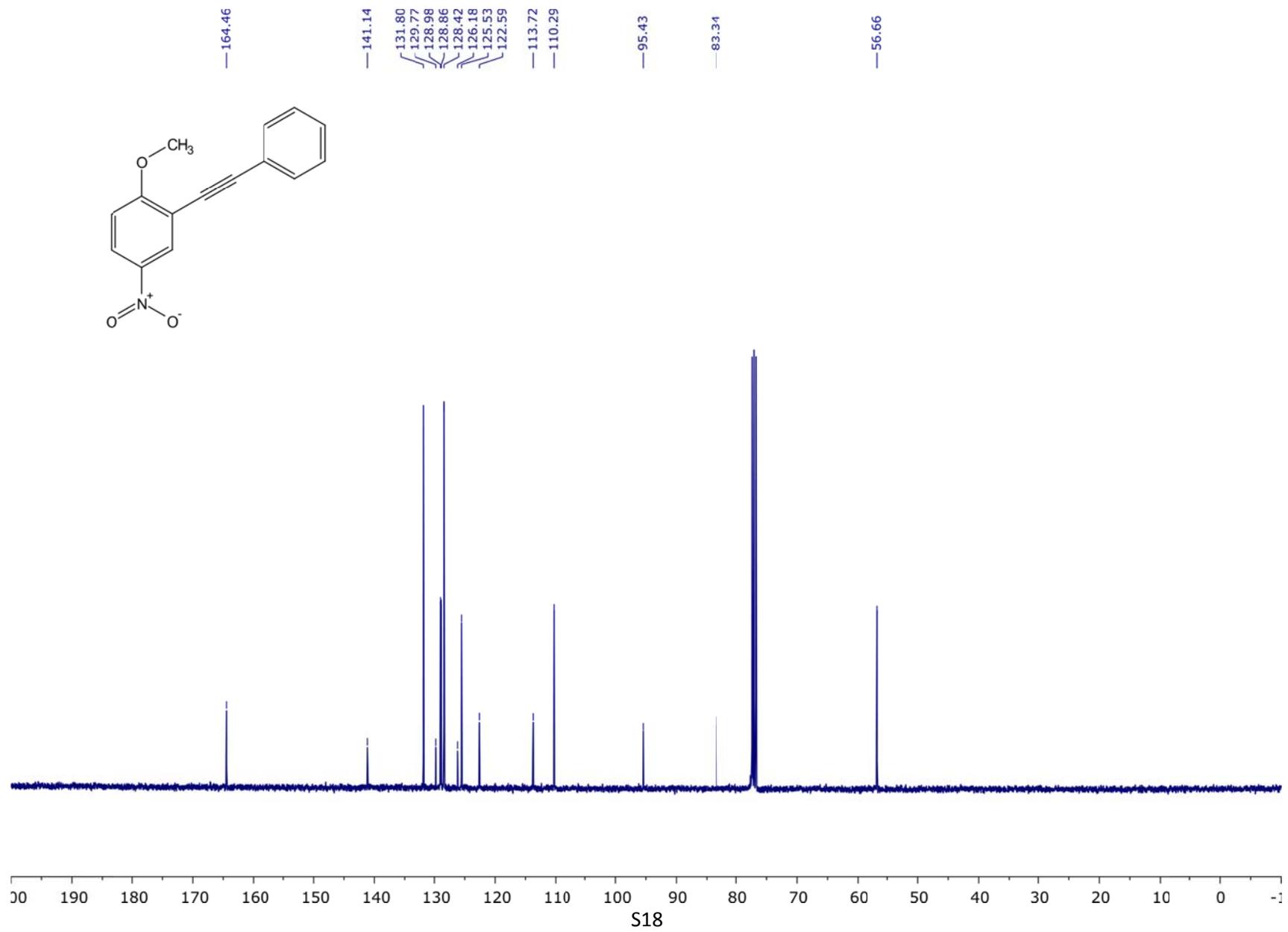
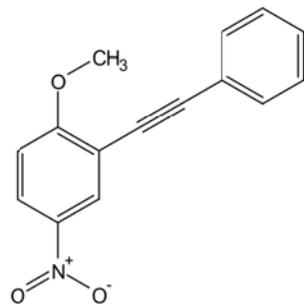
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7.84  
7.83  
7.62  
7.61  
7.61  
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7.44  
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7.38  
7.38



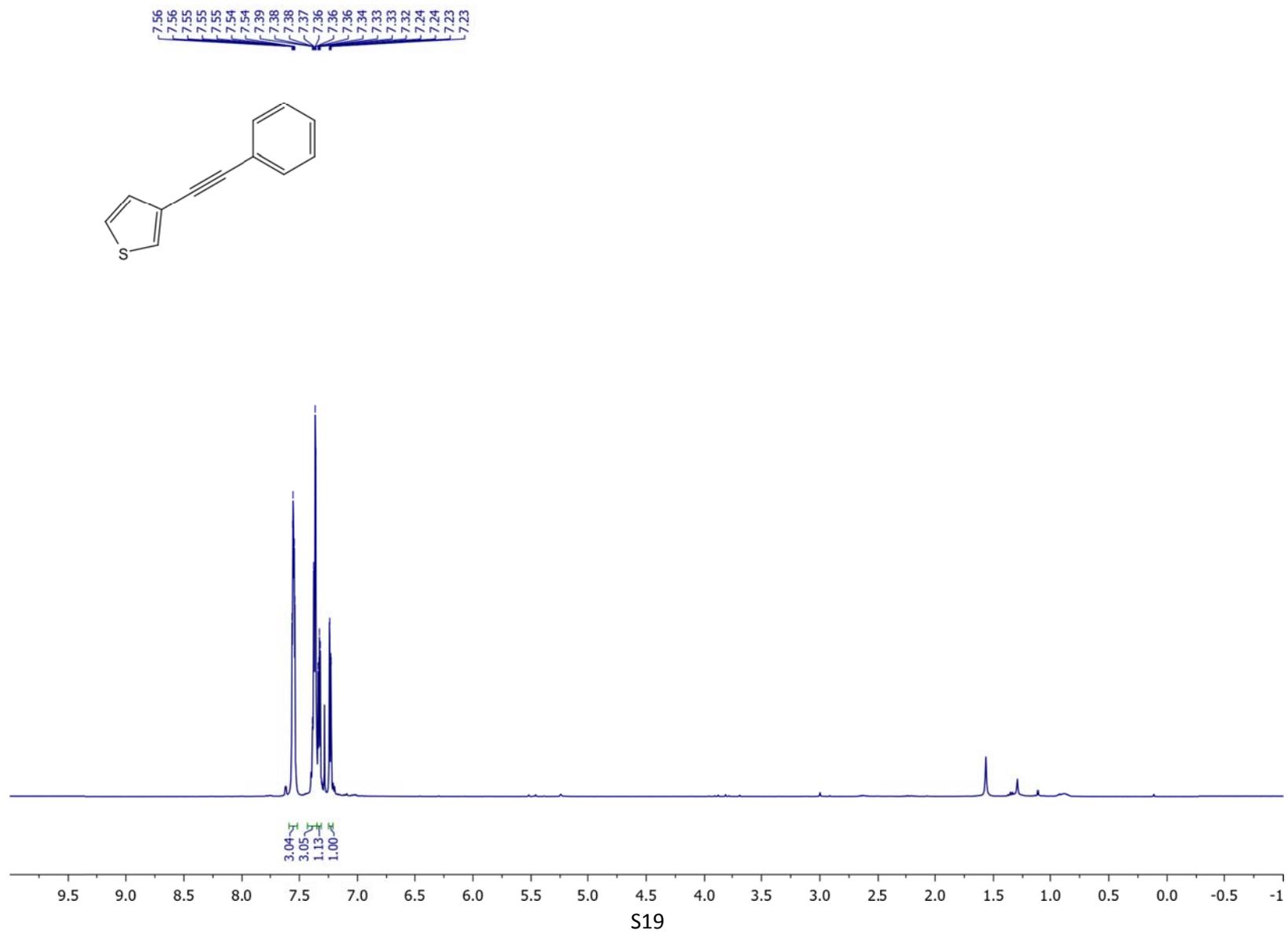


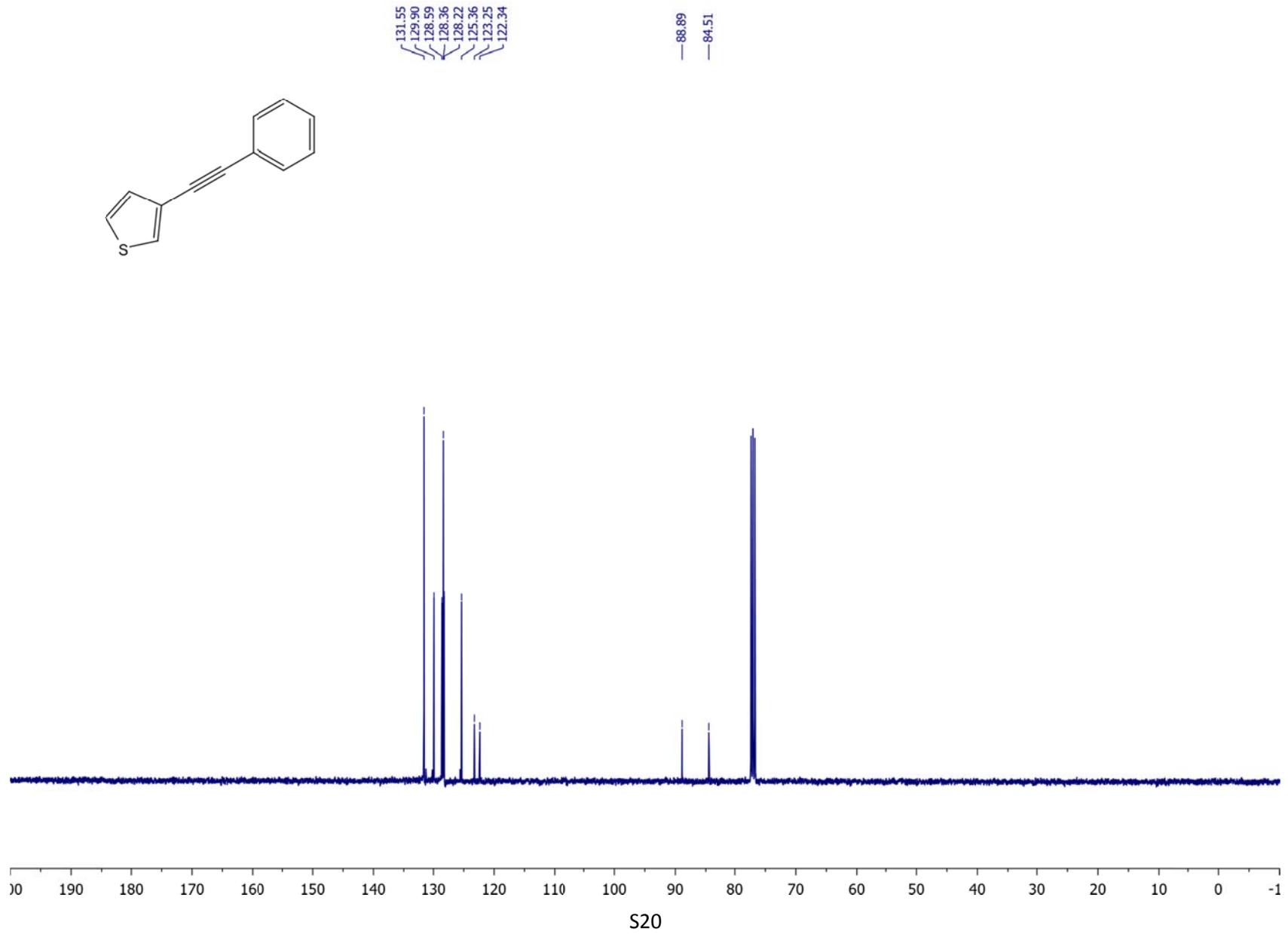
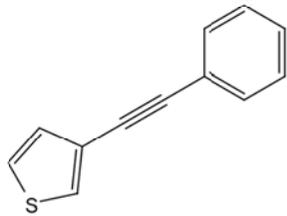
# <sup>1</sup>H and <sup>13</sup>C NMR spectra of compound 5h



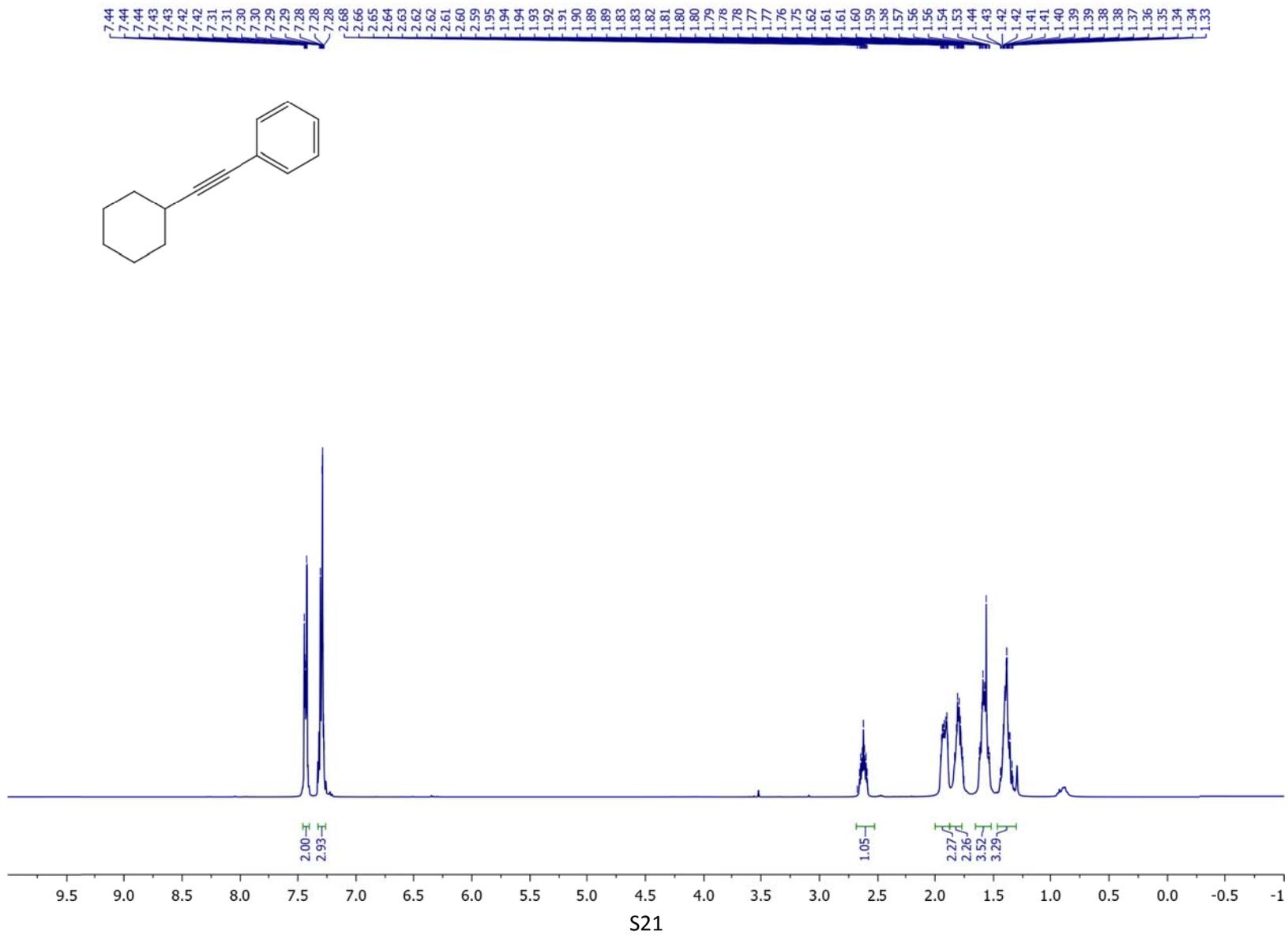


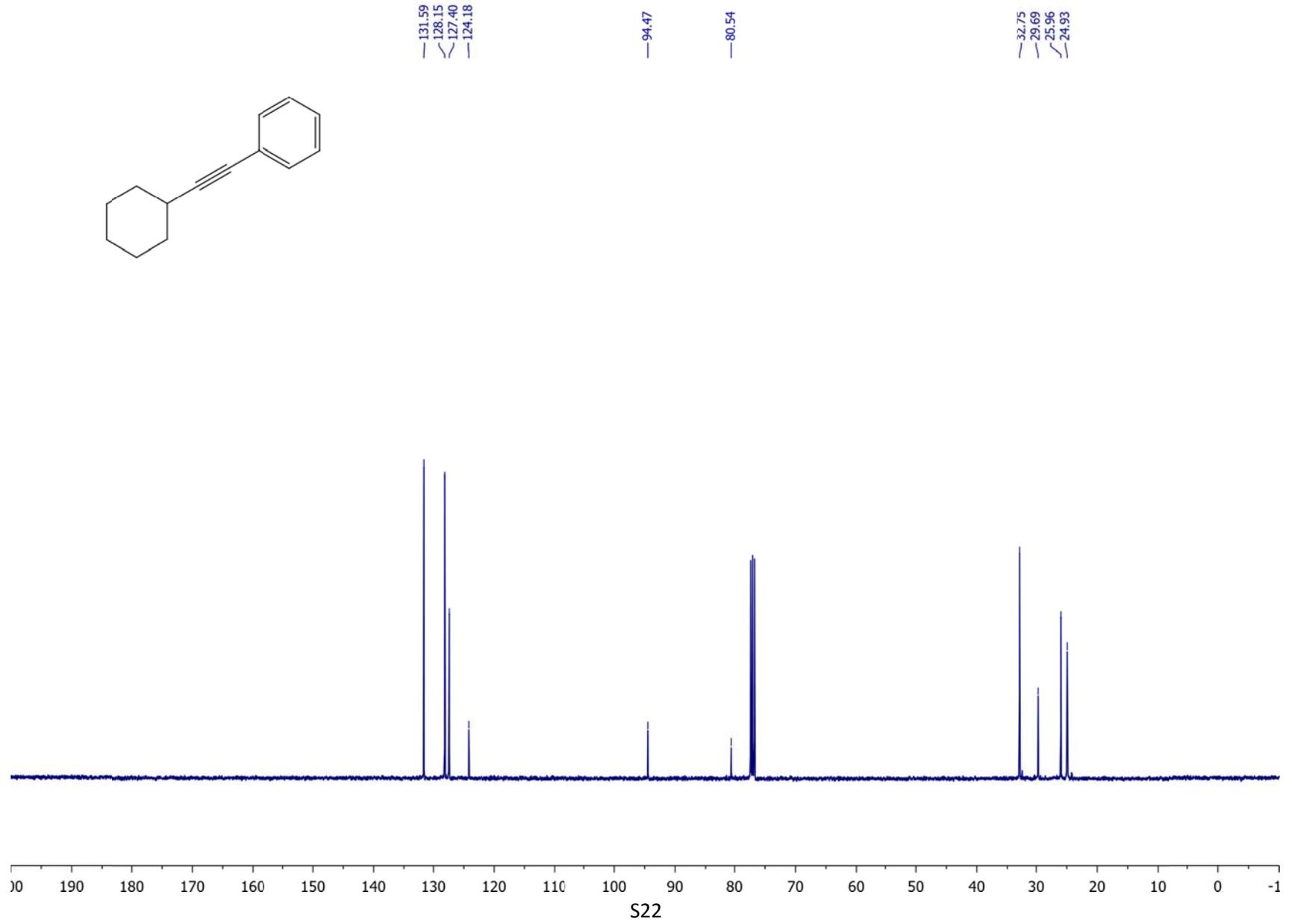
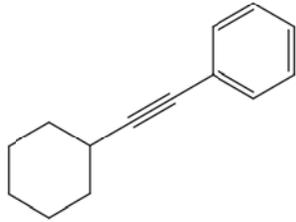
# $^1\text{H}$ and $^{13}\text{C}$ NMR spectra of compound 5i



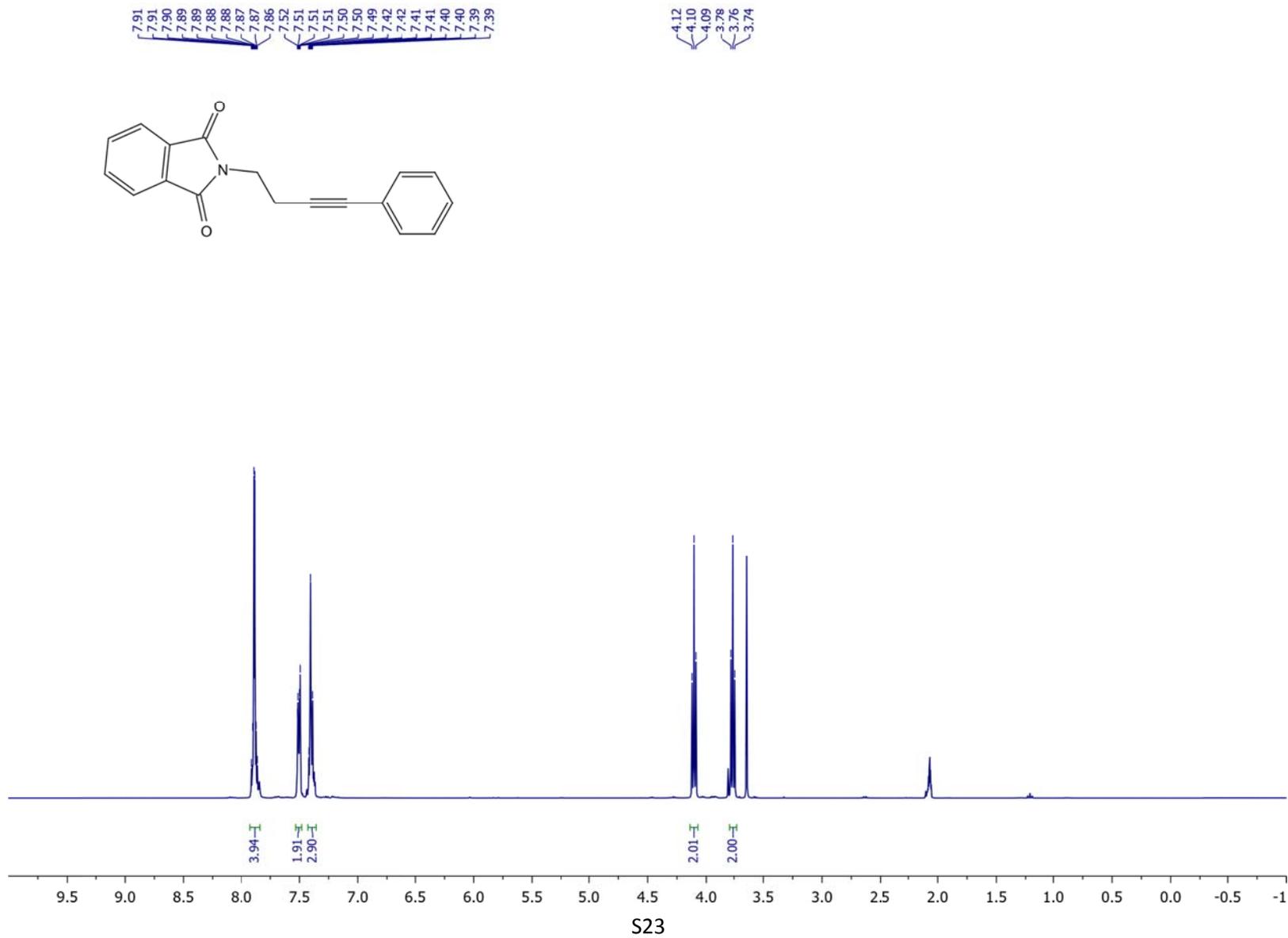


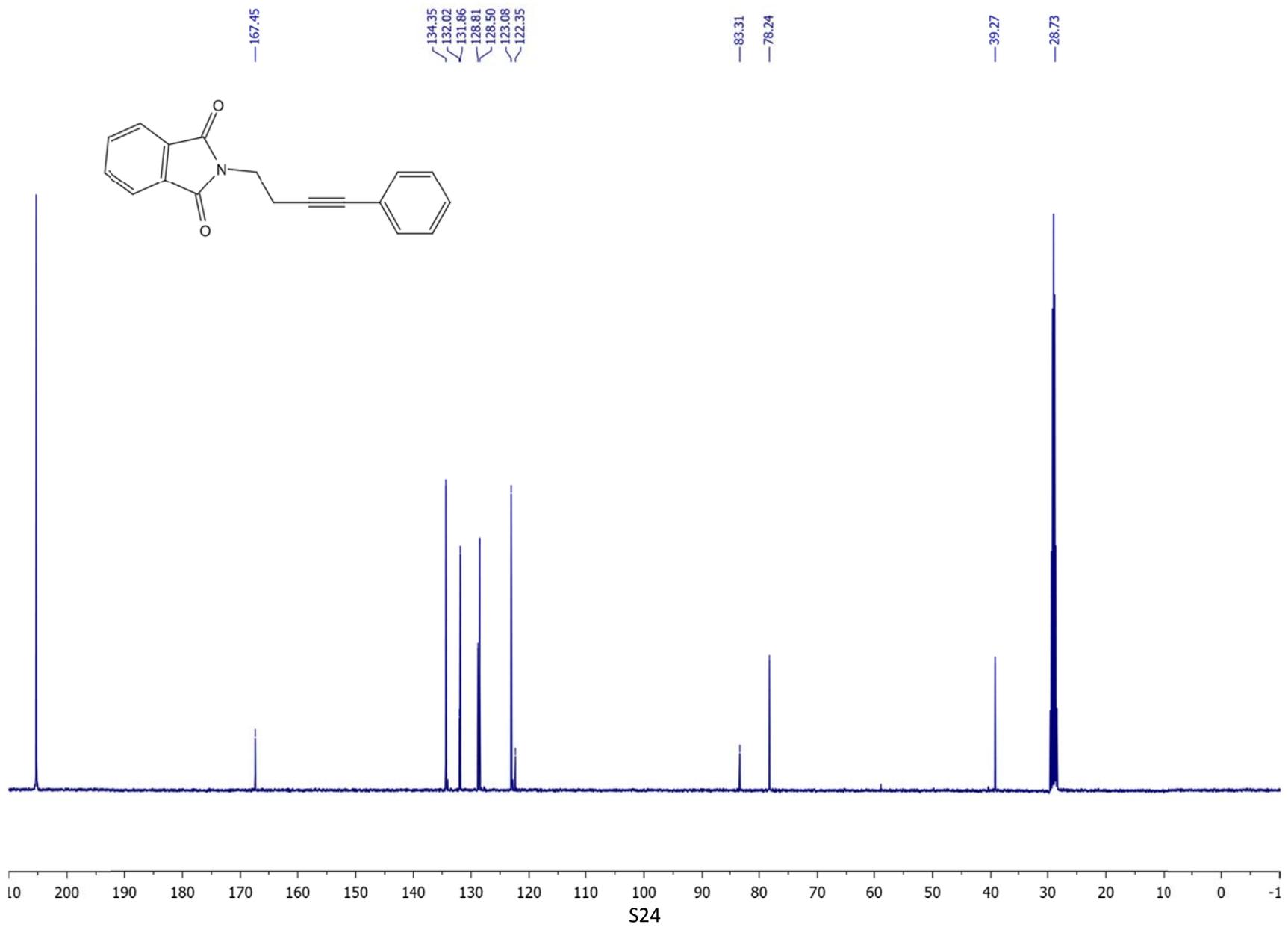
# $^1\text{H}$ and $^{13}\text{C}$ NMR spectra of compound 5j





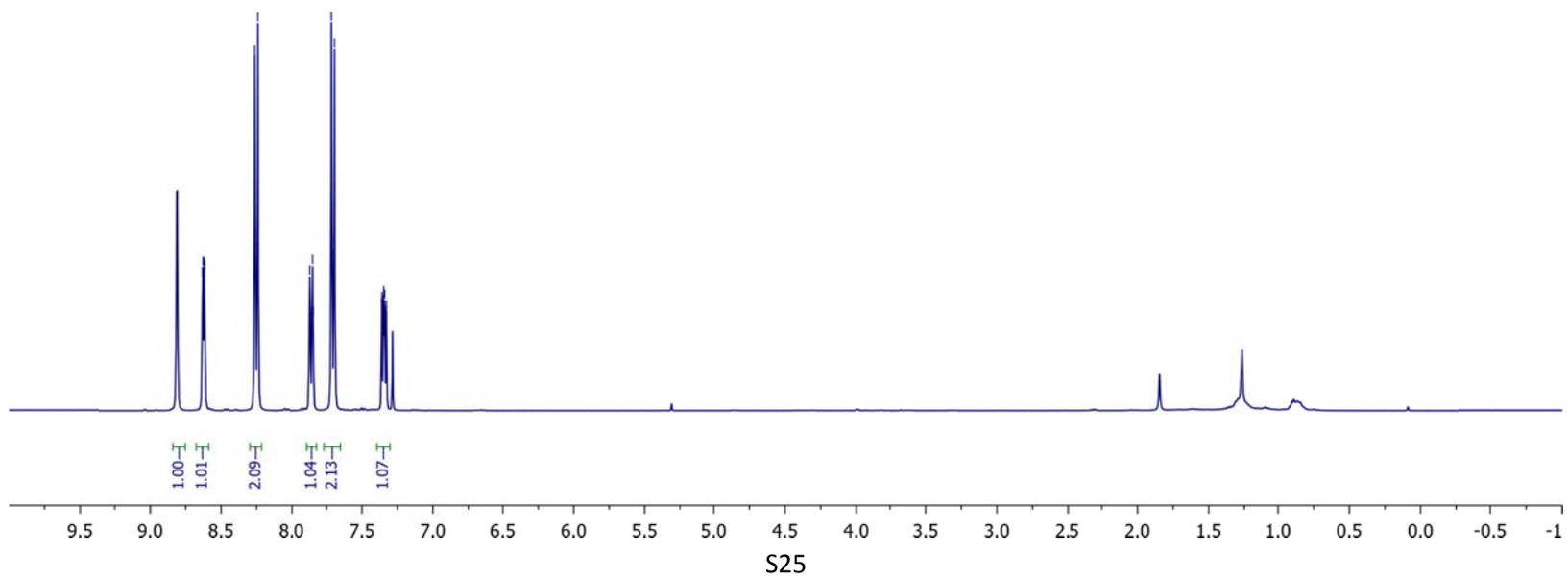
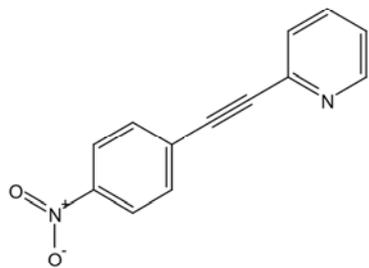
# $^1\text{H}$ and $^{13}\text{C}$ NMR spectra of compound 5k

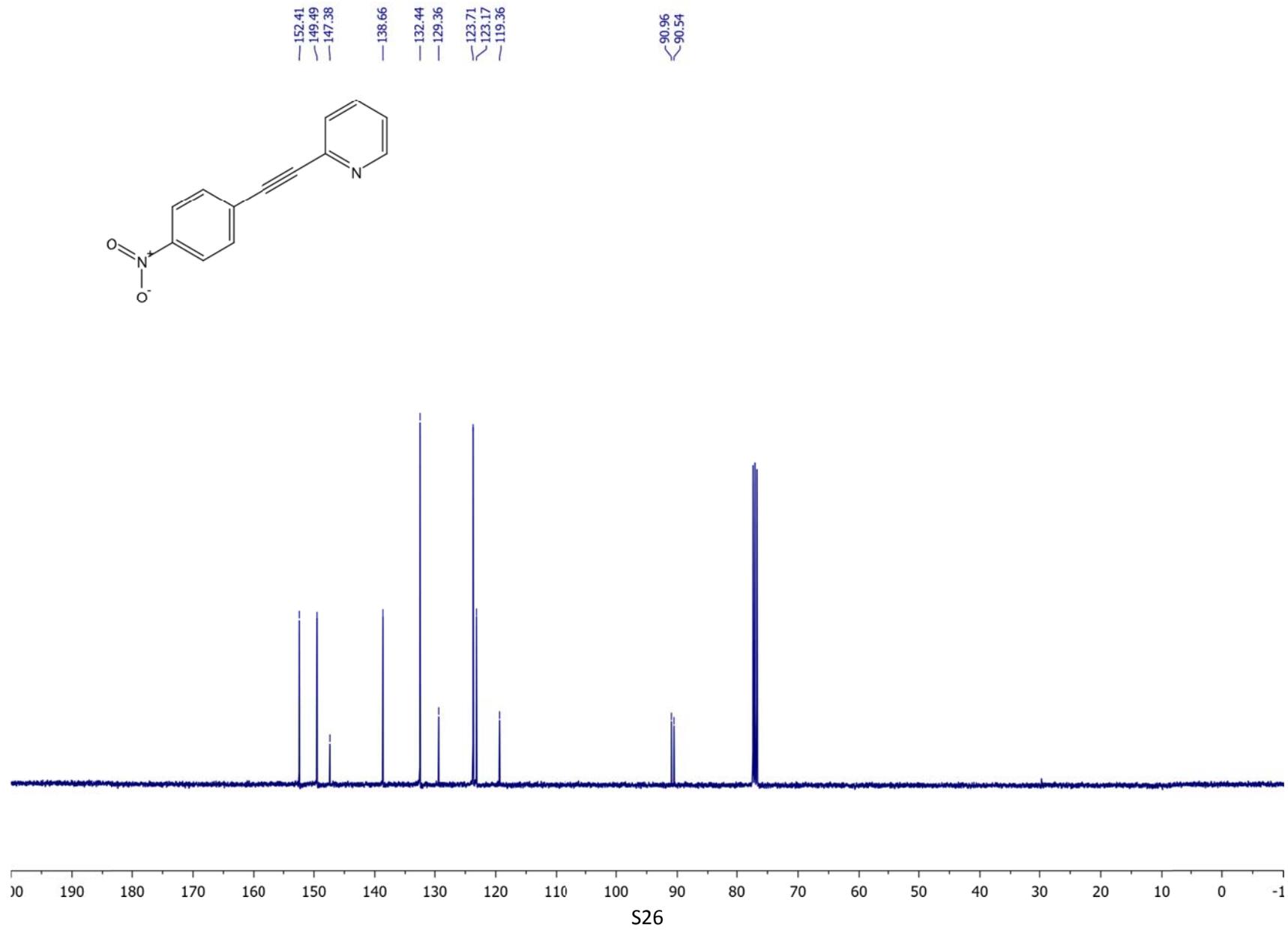
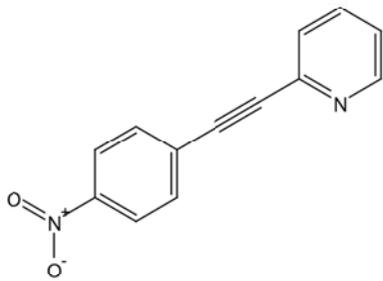




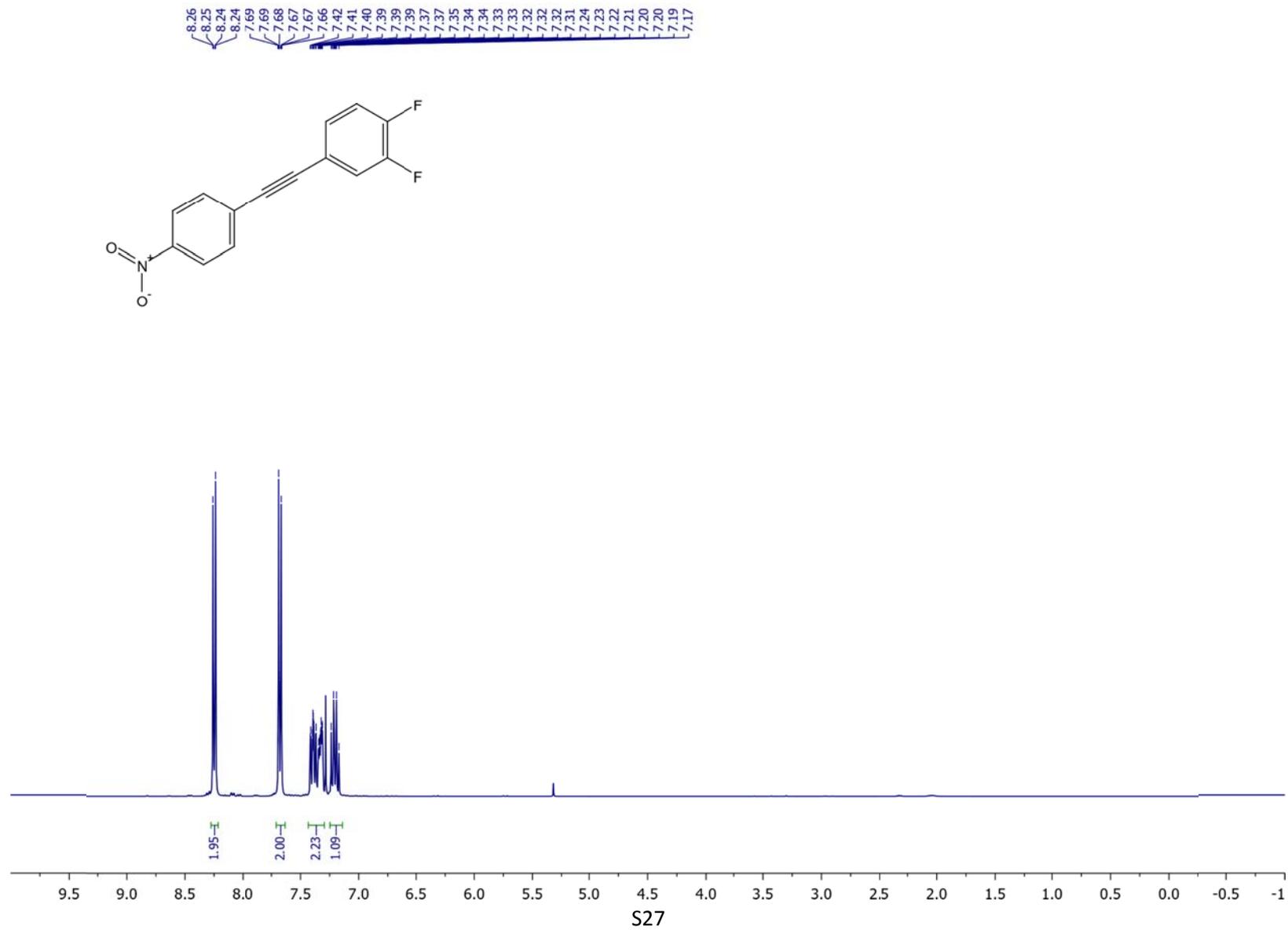
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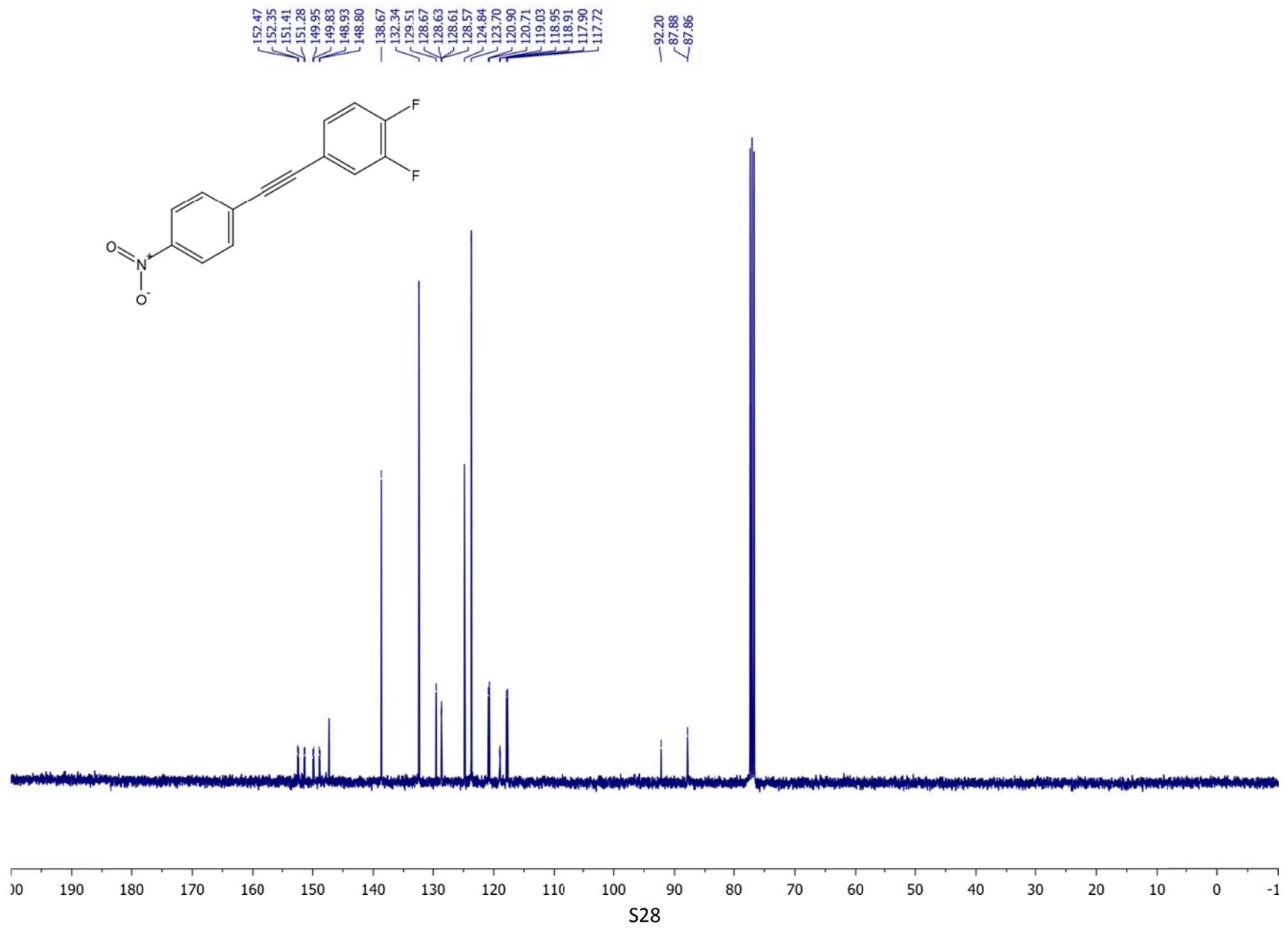
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7.33

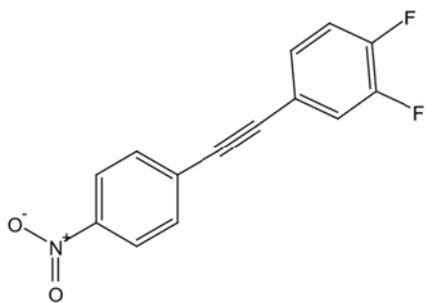




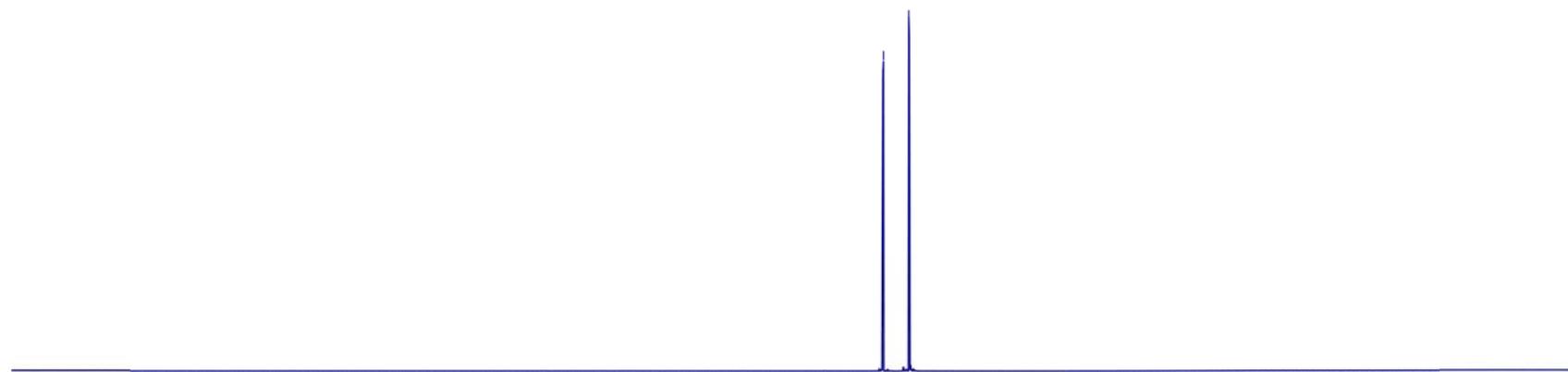
# $^1\text{H}$ , $^{13}\text{C}$ and $^{19}\text{F}$ NMR spectra of compound 5m







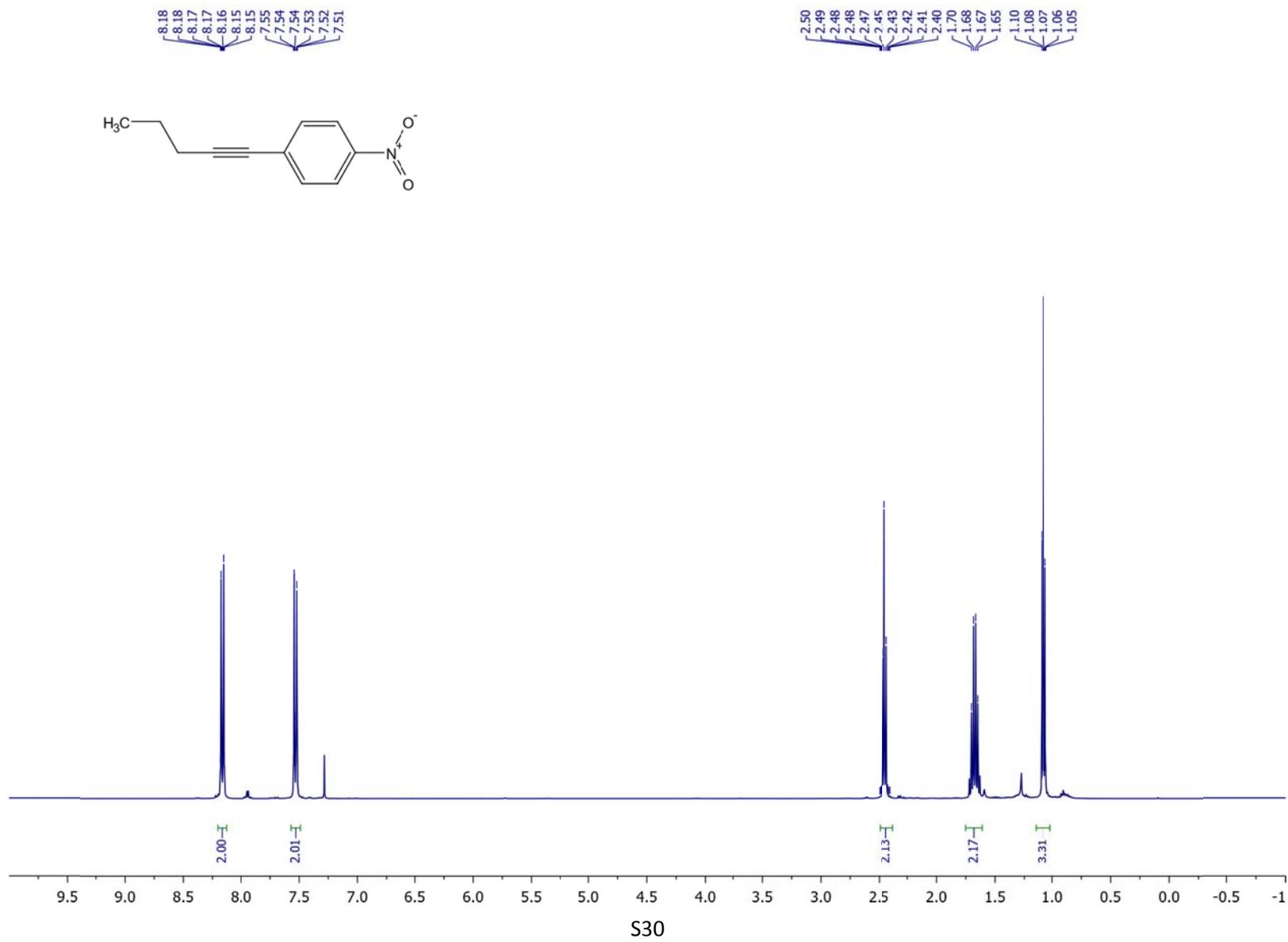
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136.47

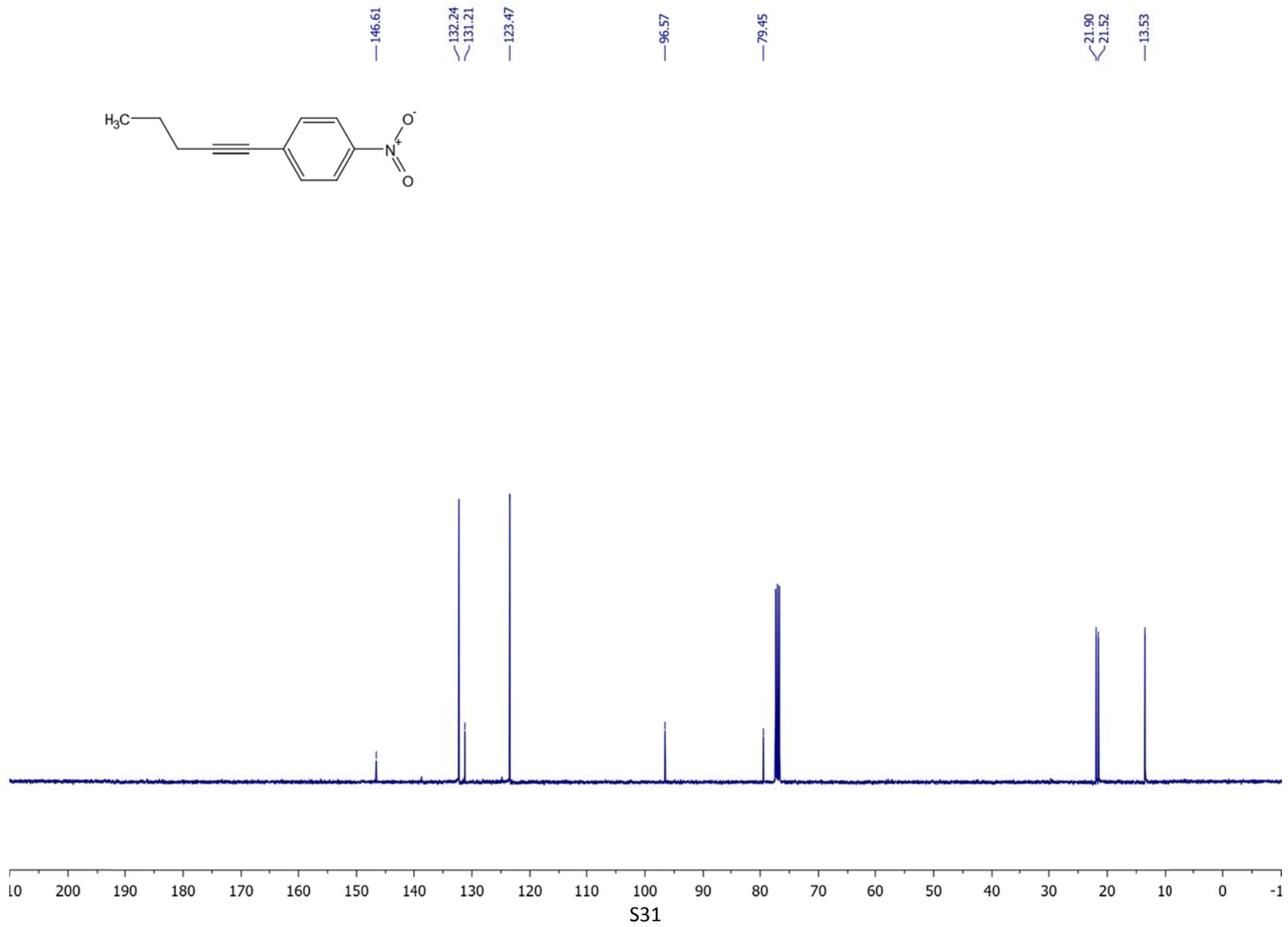
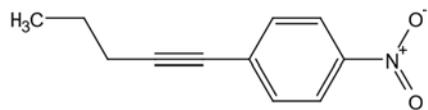


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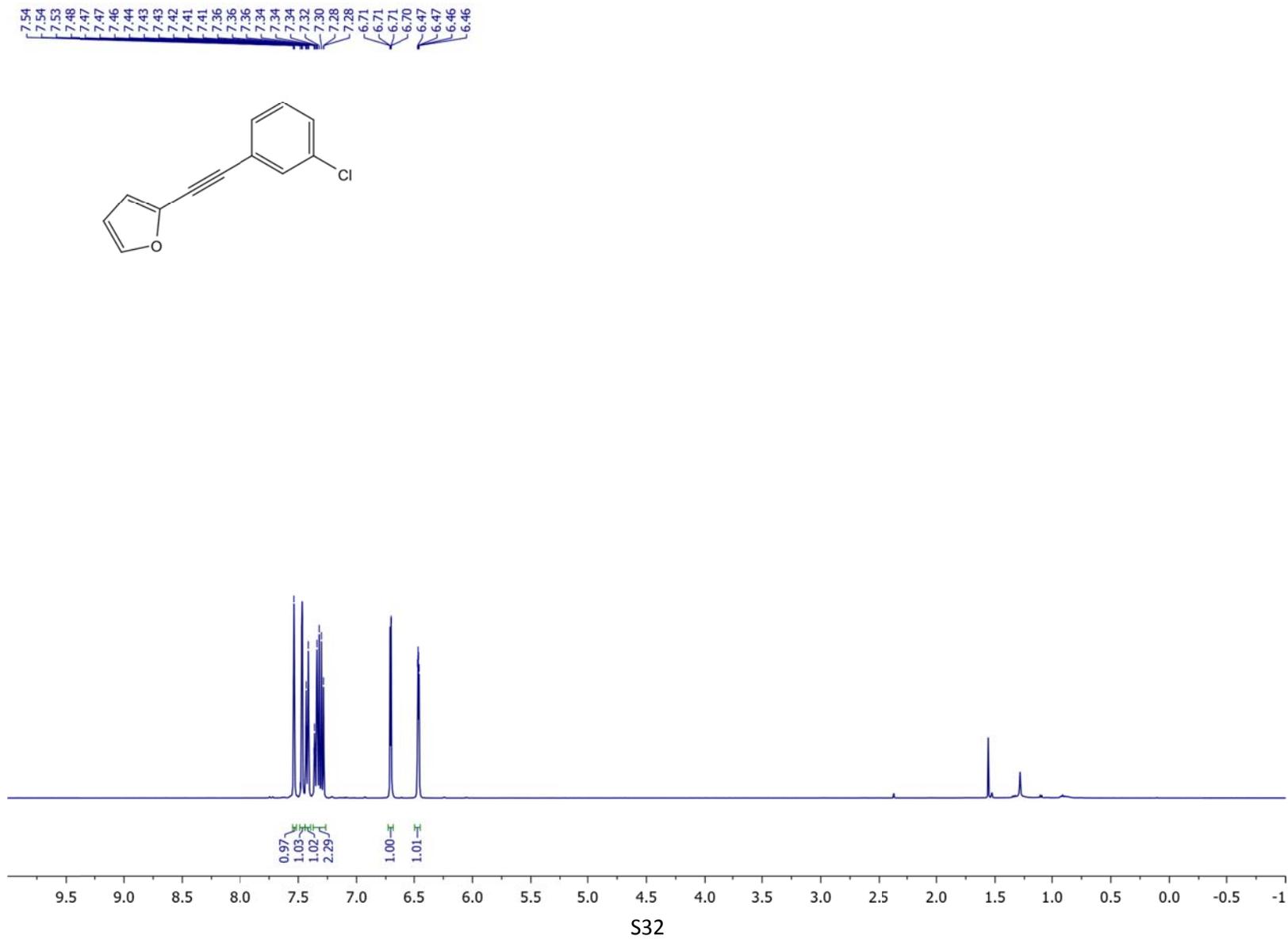
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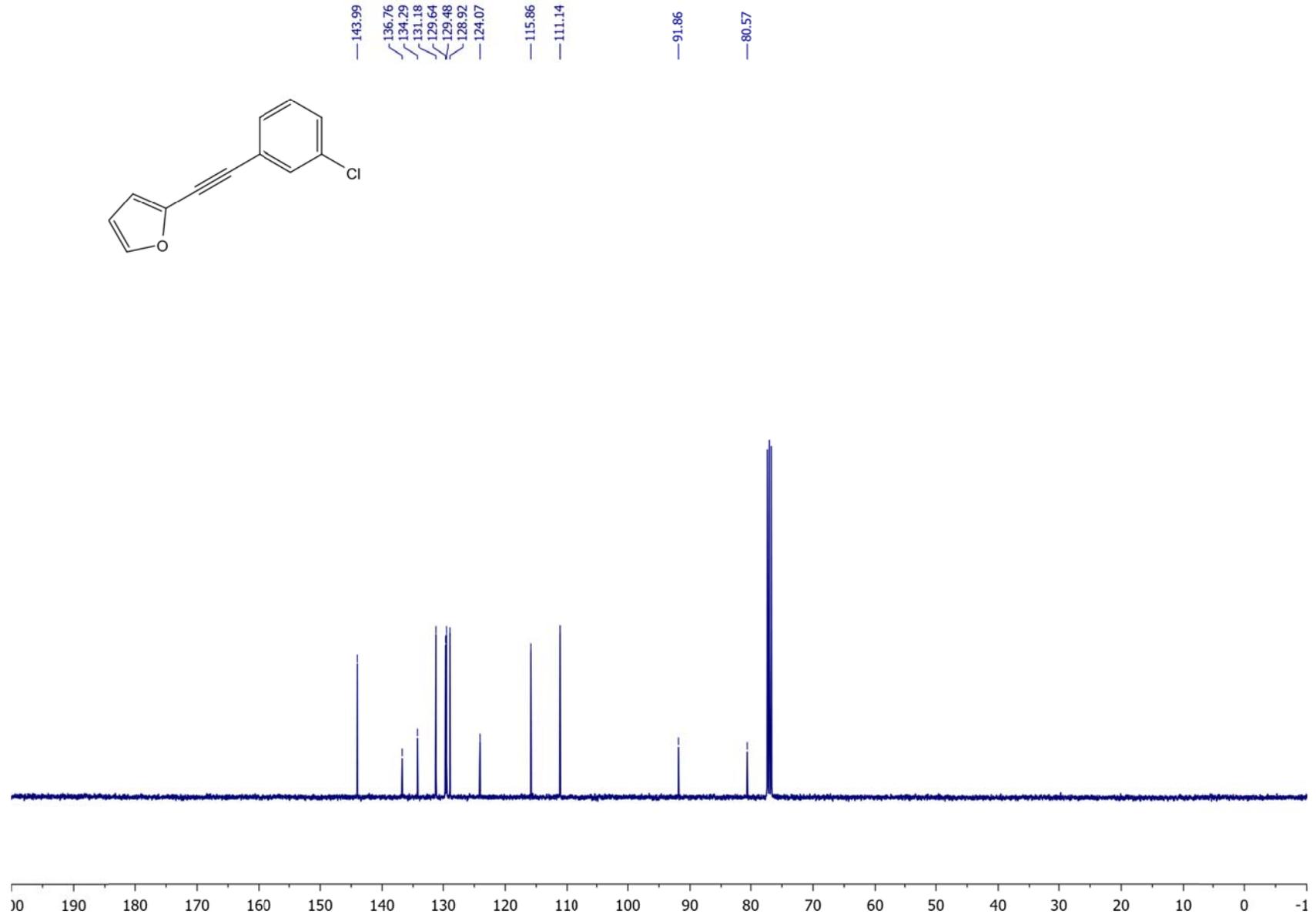
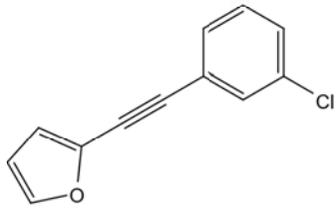
# $^1\text{H}$ and $^{13}\text{C}$ NMR spectra of compound 5n





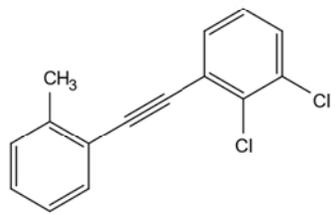
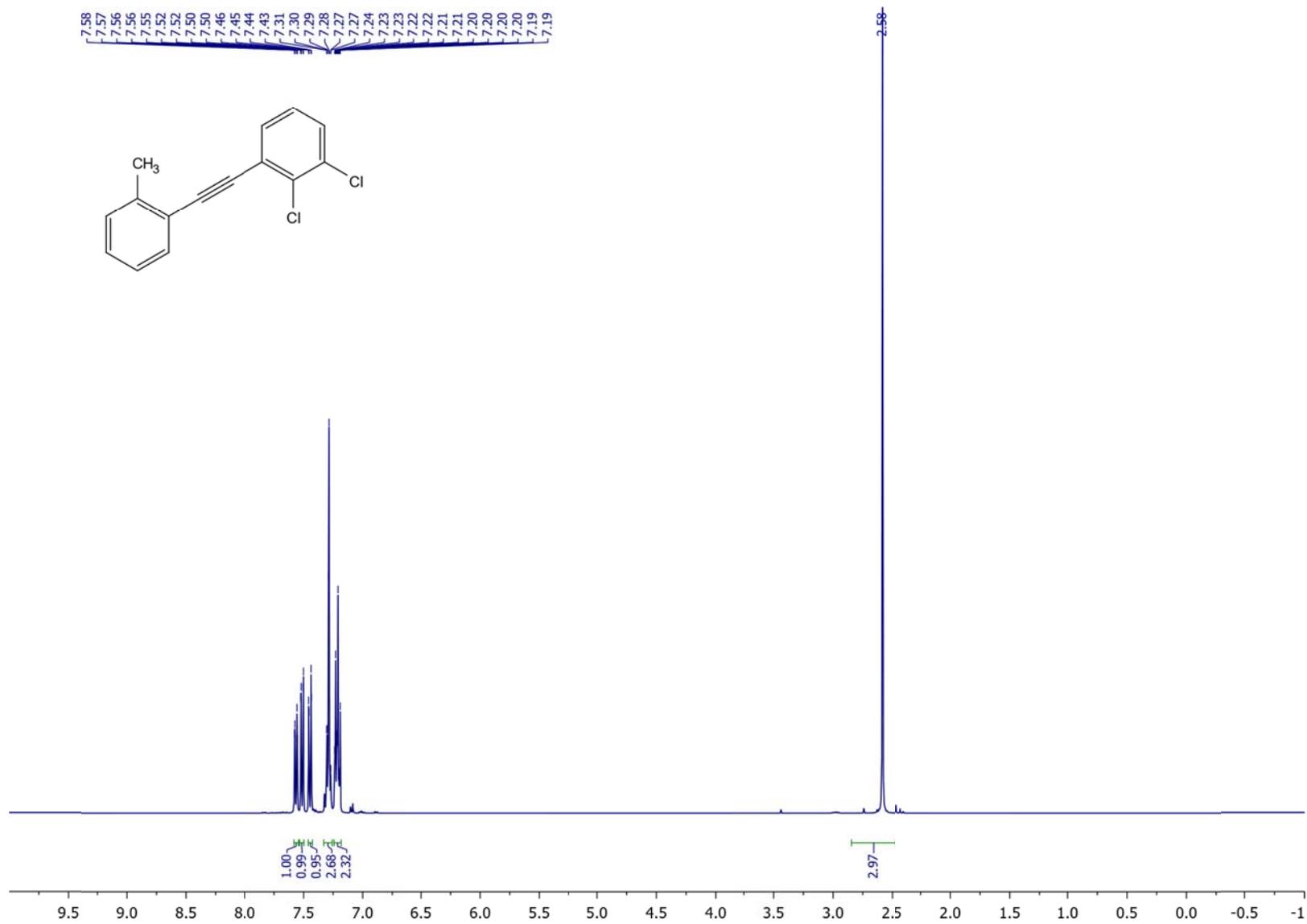
# $^1\text{H}$ and $^{13}\text{C}$ NMR spectra of compound 5o

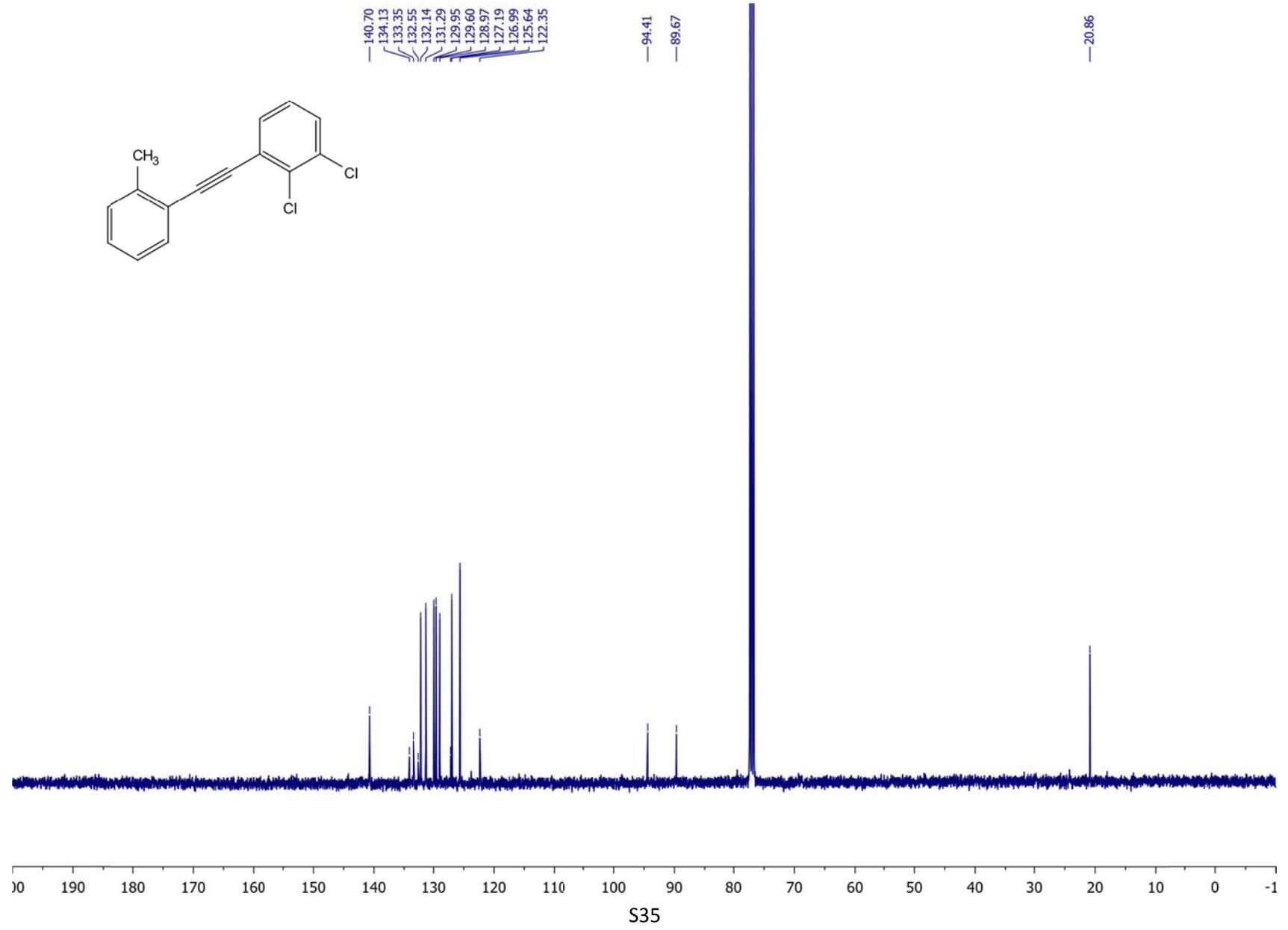
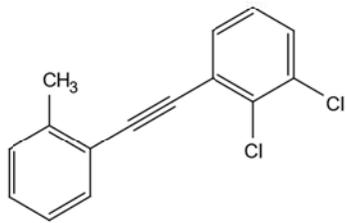




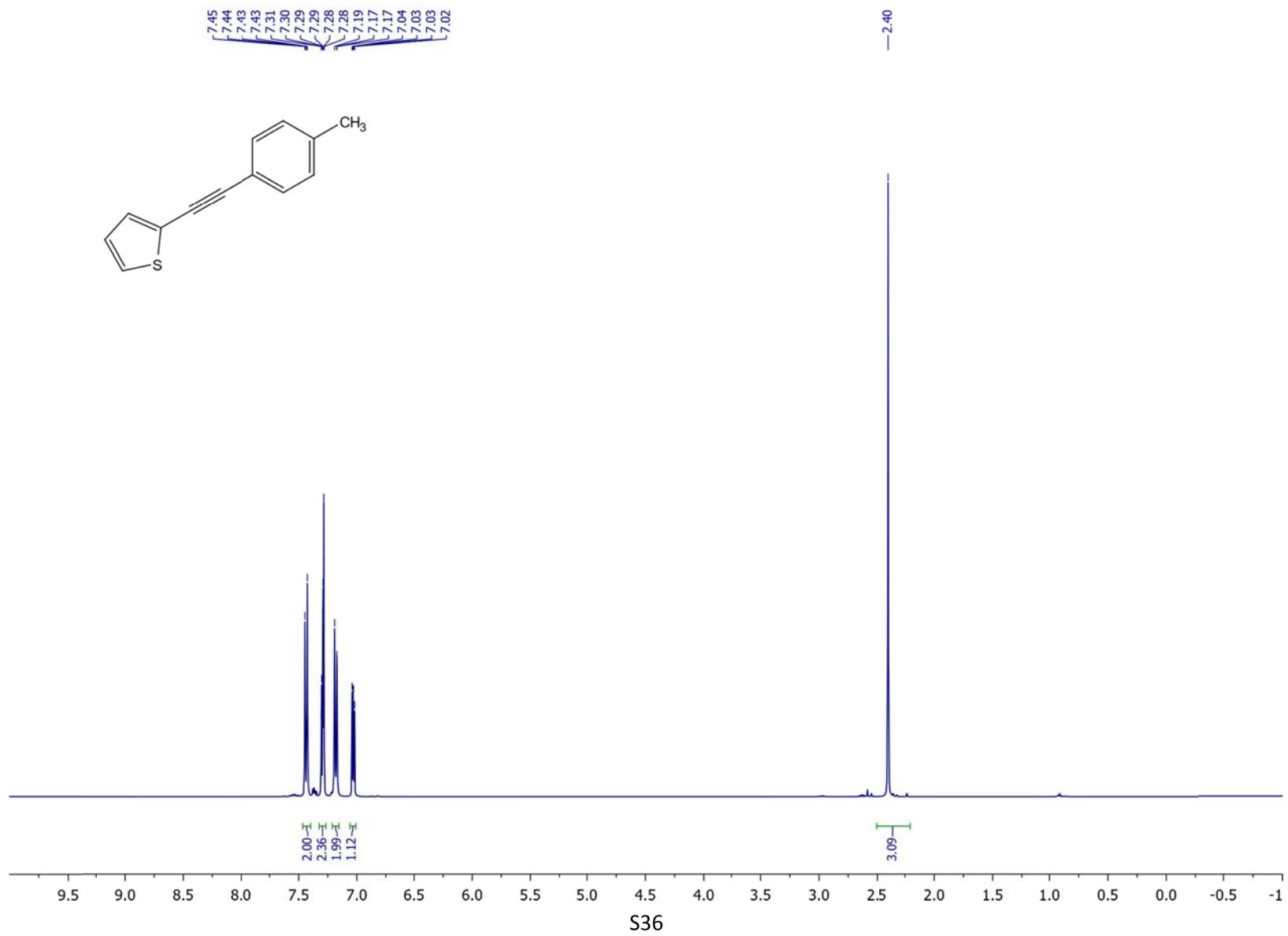
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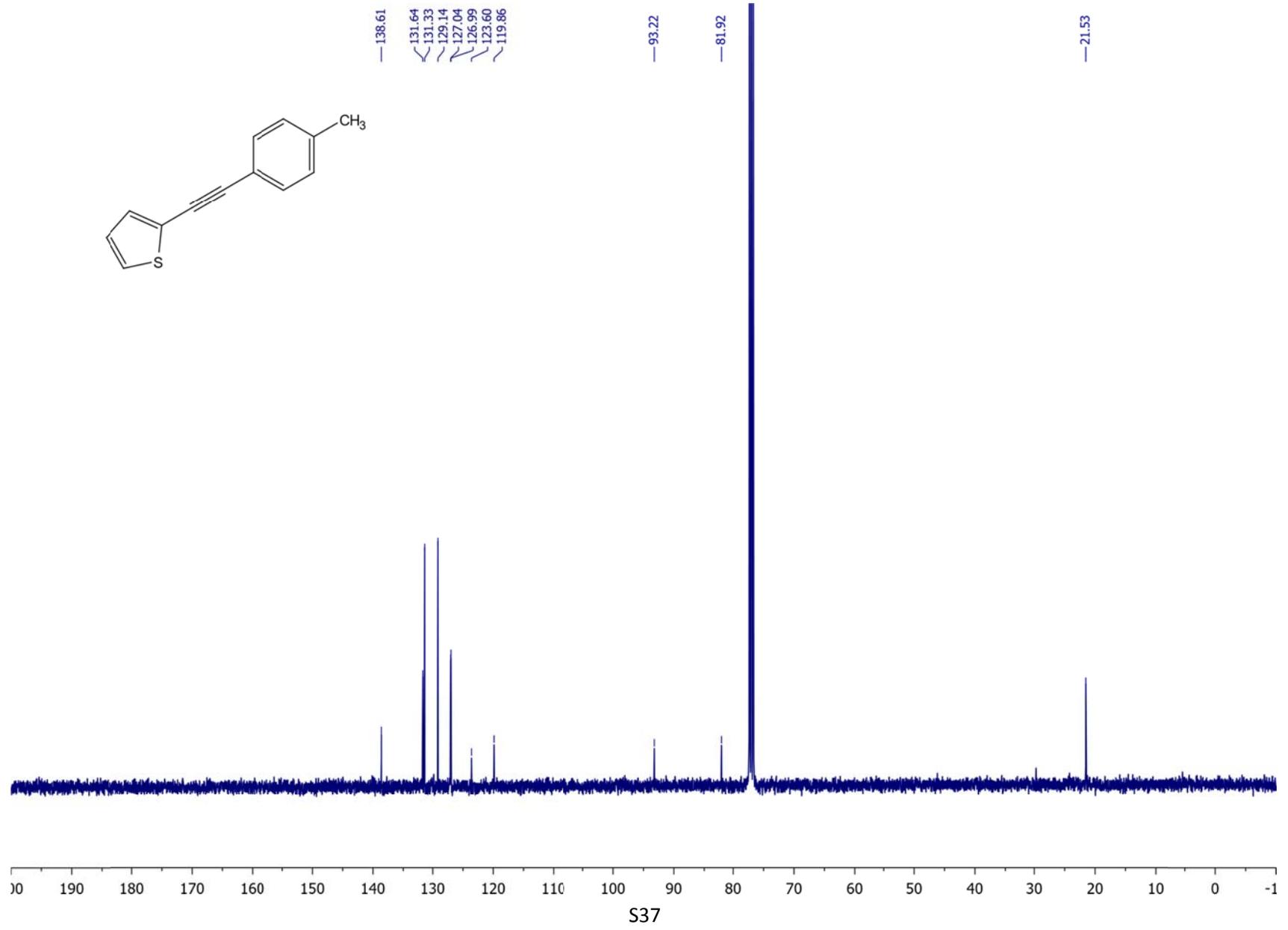
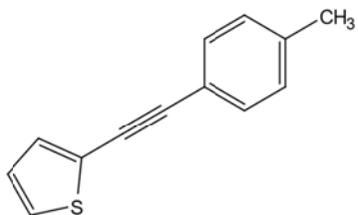
# <sup>1</sup>H and <sup>13</sup>C NMR spectra of compound 5p



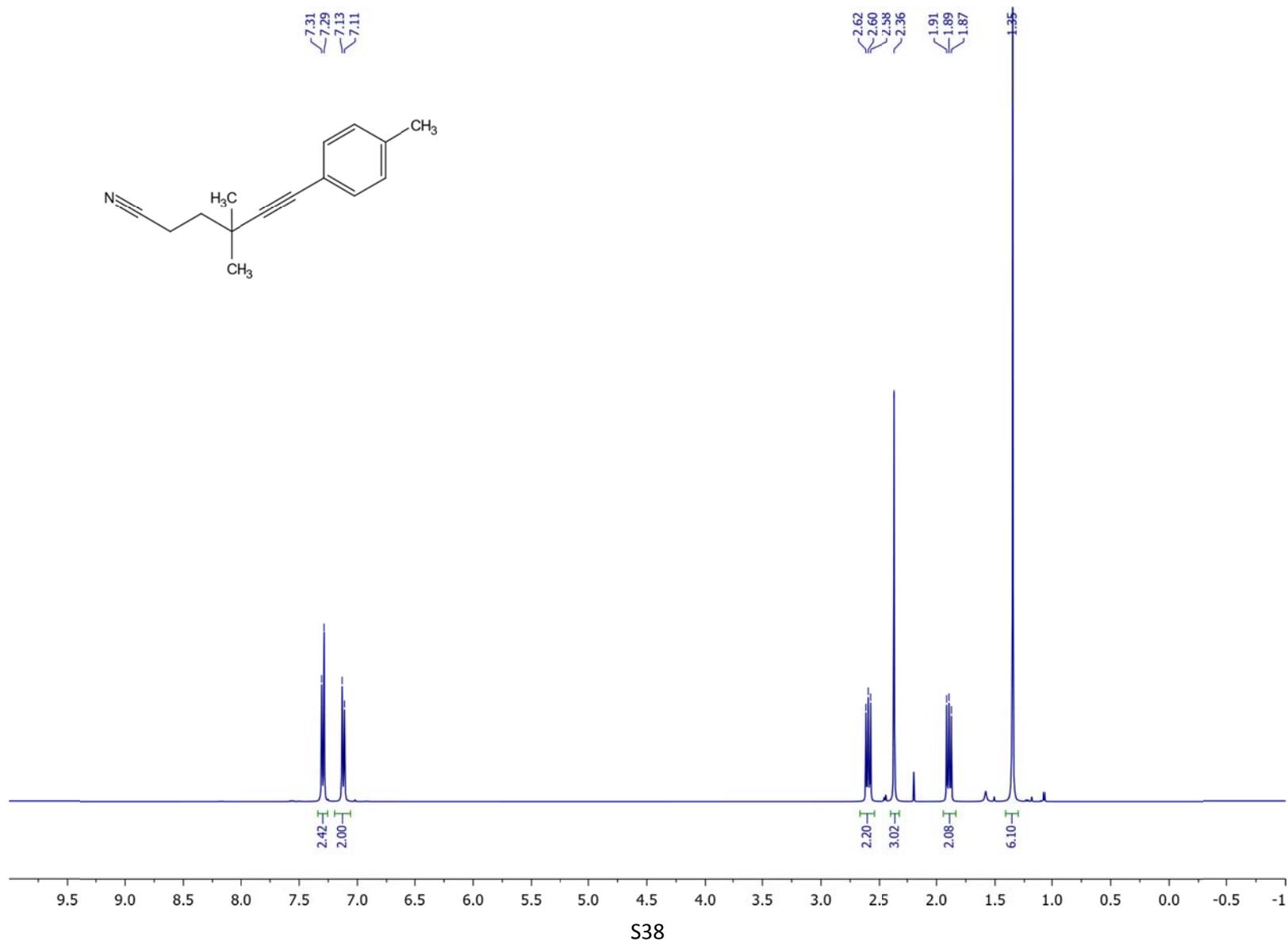


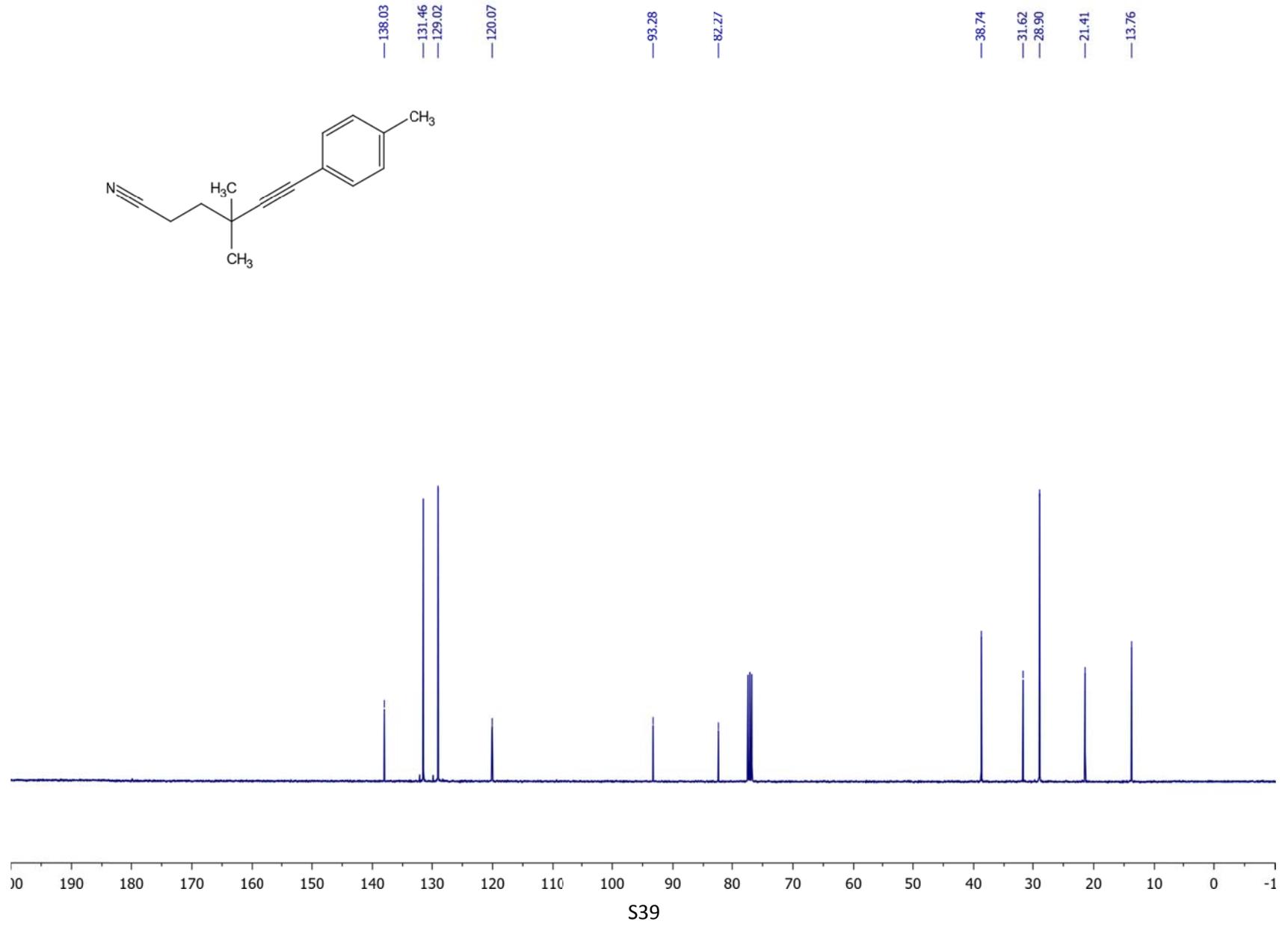
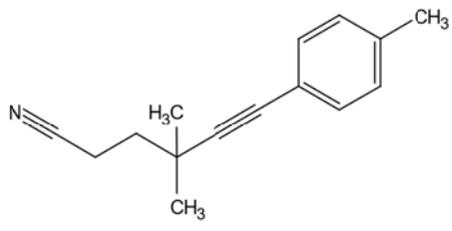
# $^1\text{H}$ and $^{13}\text{C}$ spectra of compound 5q



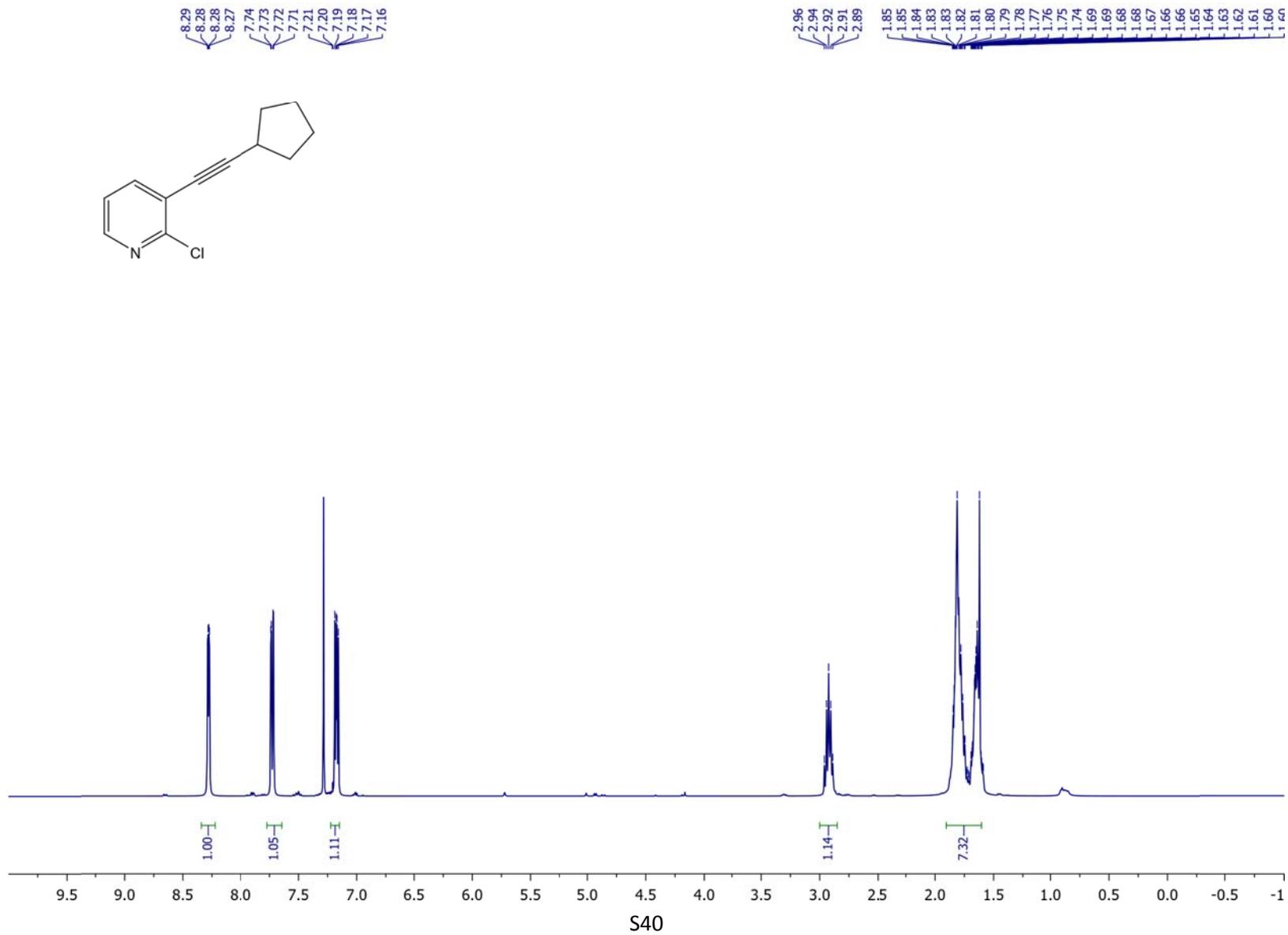


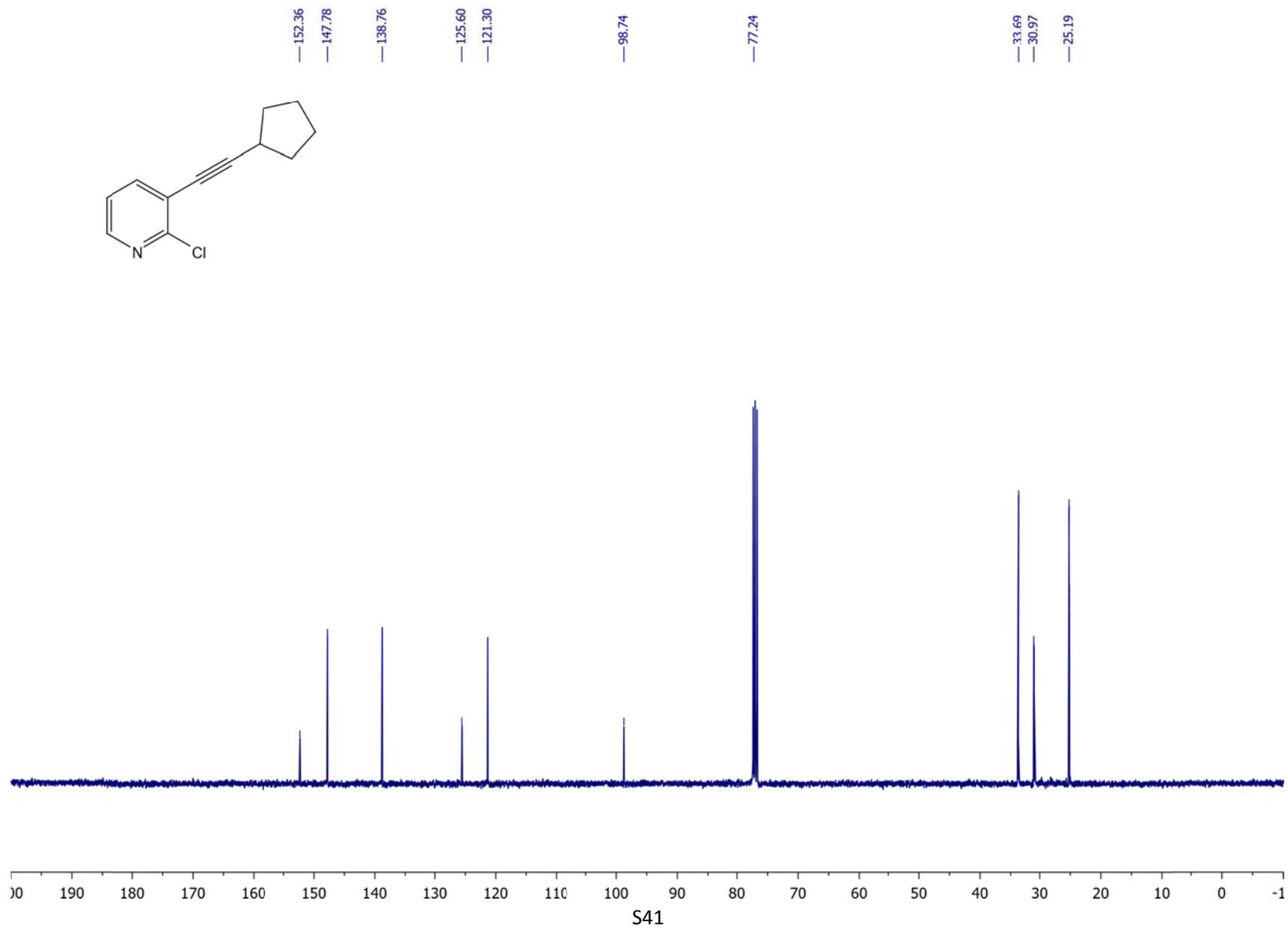
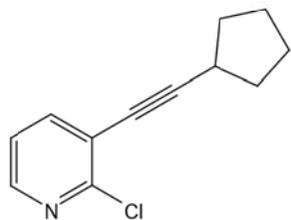
# $^1\text{H}$ and $^{13}\text{C}$ NMR spectra of compound 5r



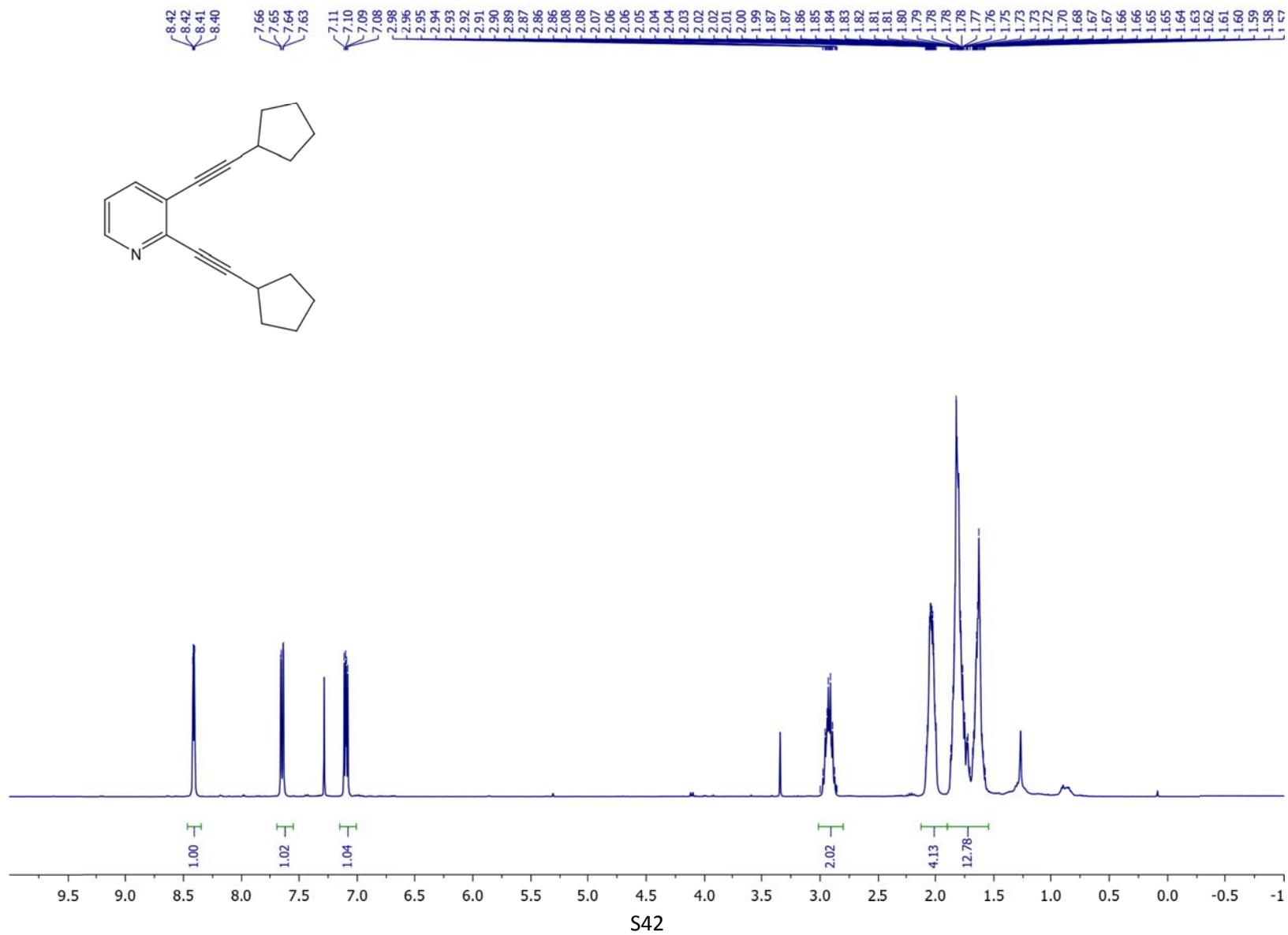


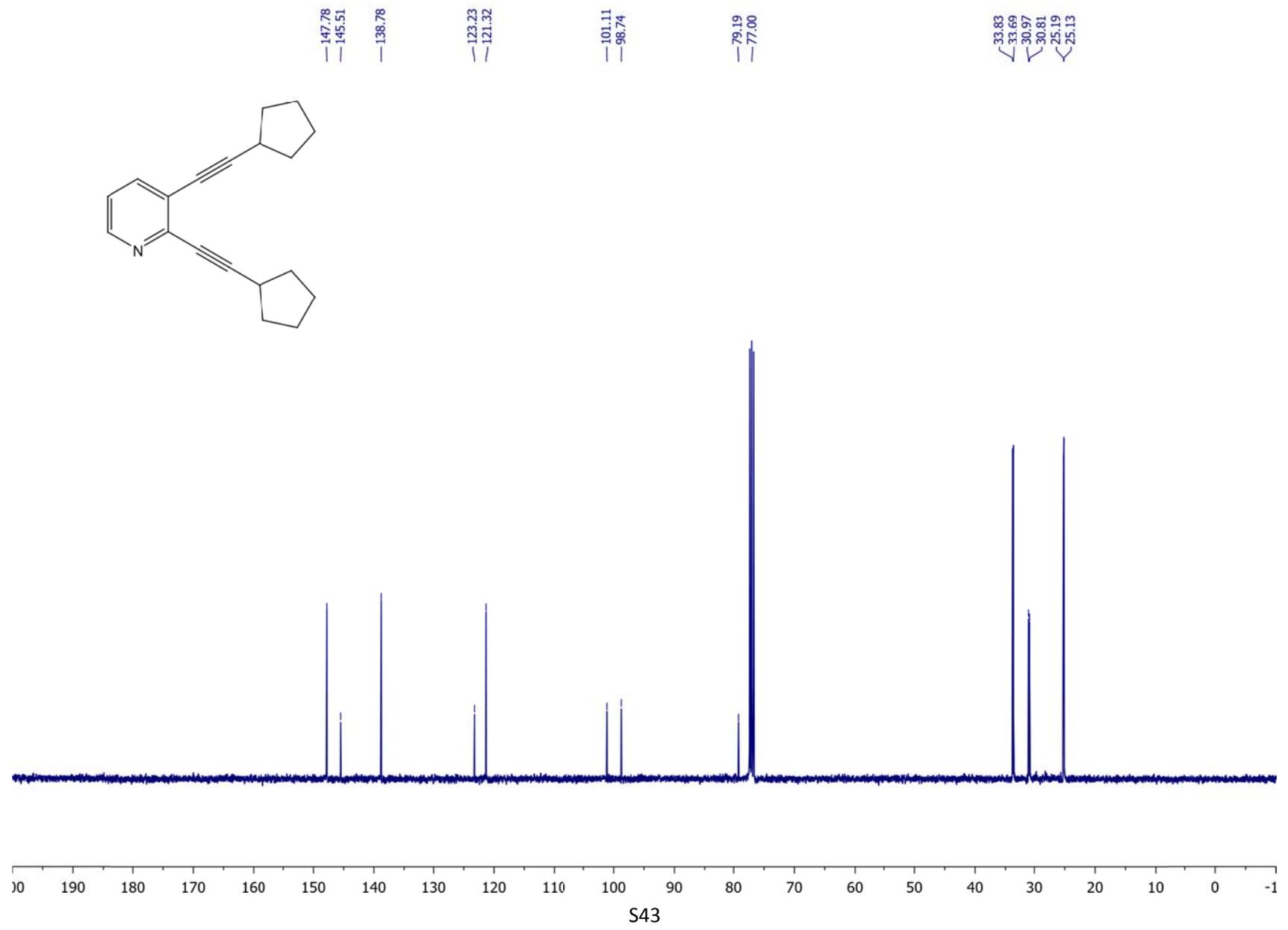
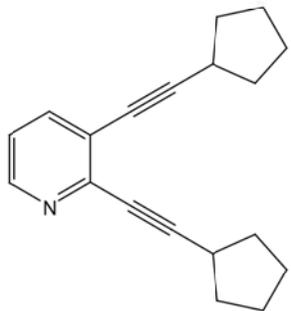
# $^1\text{H}$ and $^{13}\text{C}$ NMR spectra of compound 5s



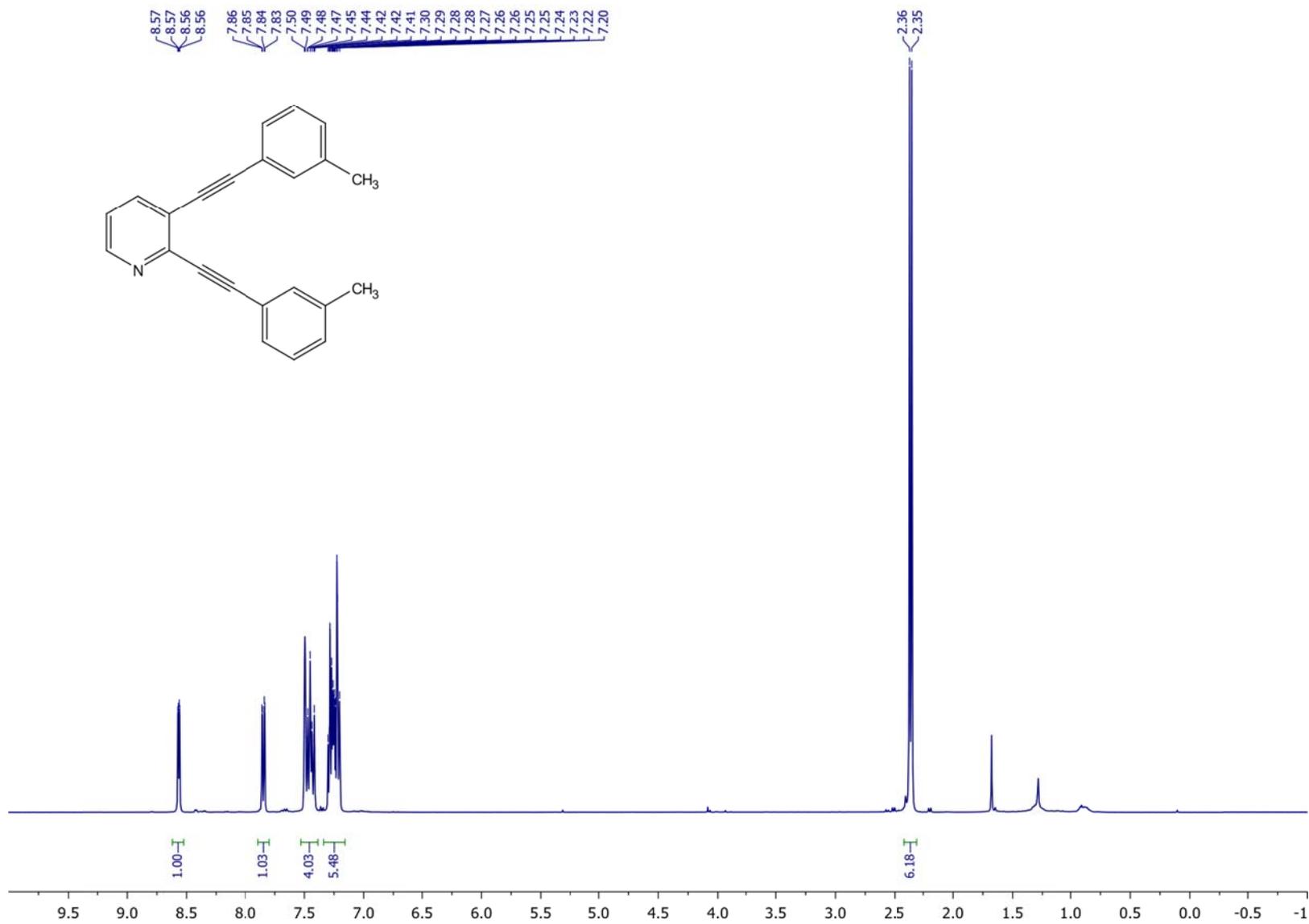


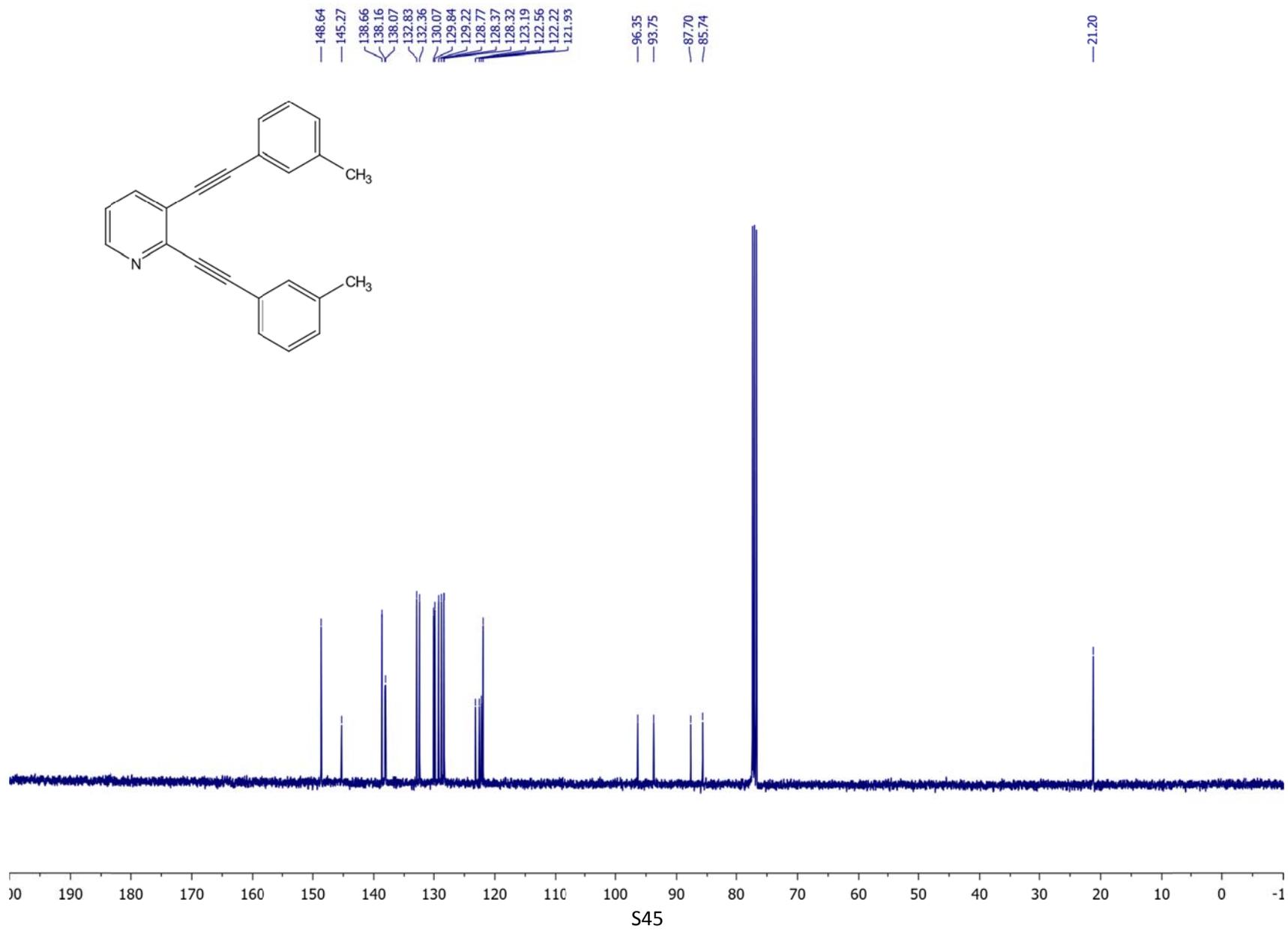
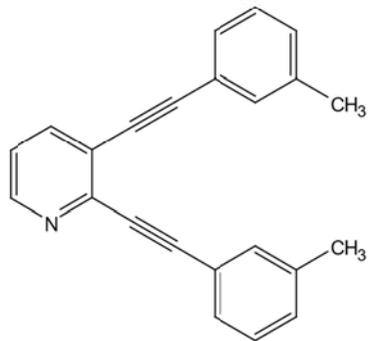
# <sup>1</sup>H and <sup>13</sup>C NMR spectra of compound 5s'



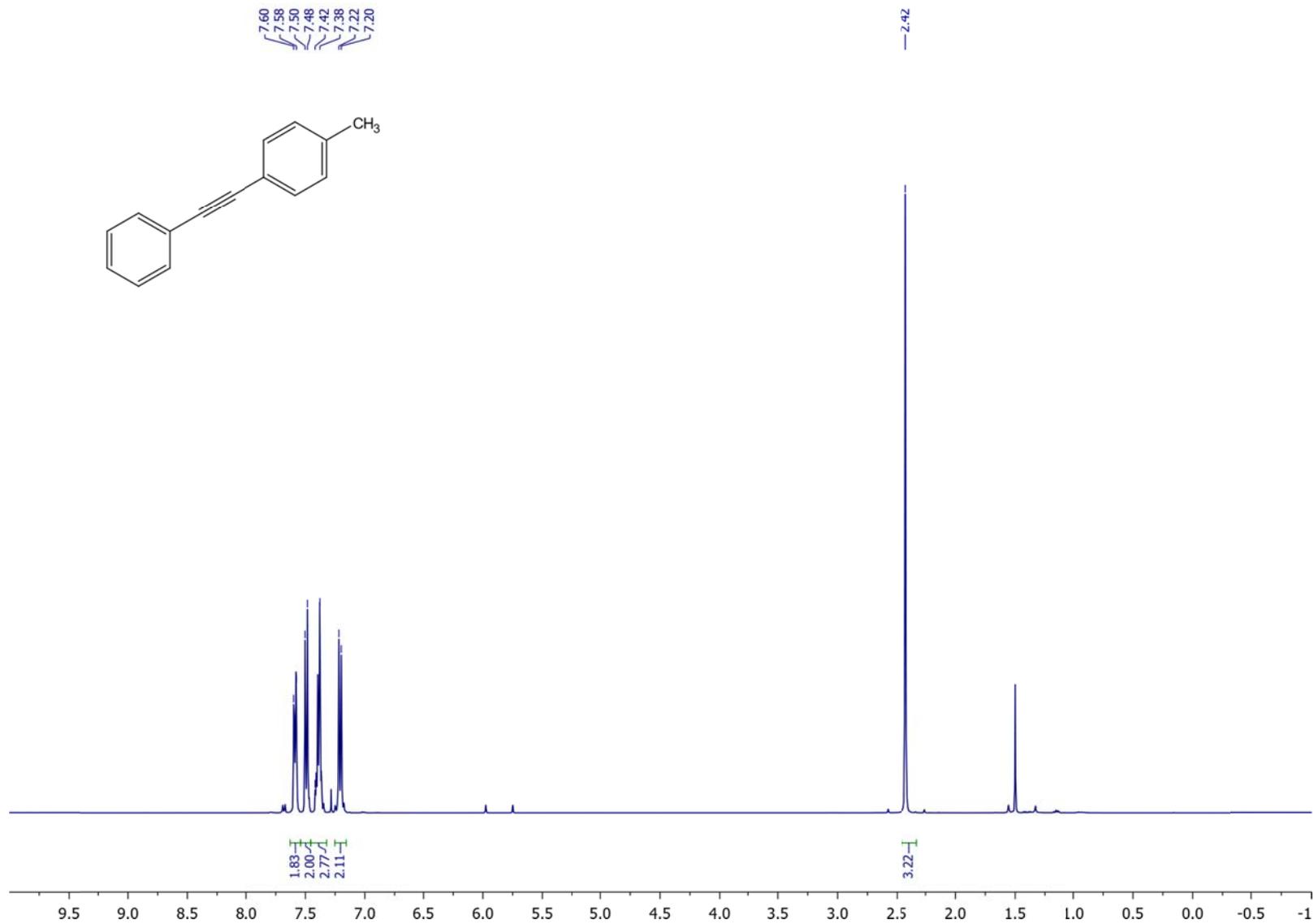


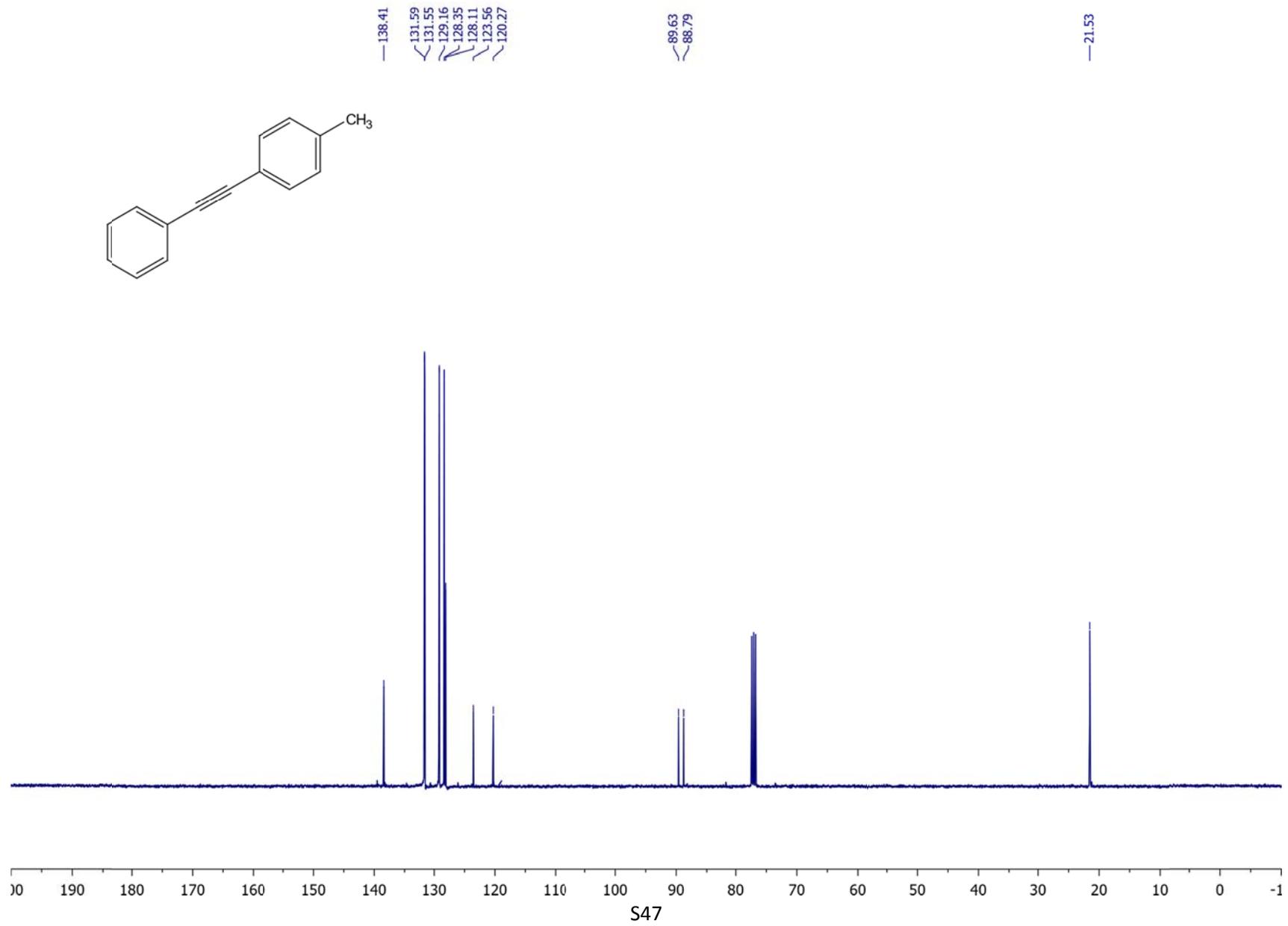
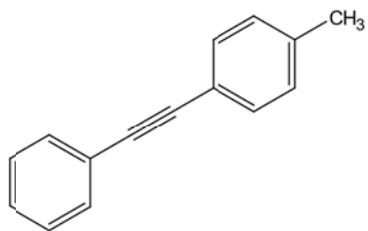
# $^1\text{H}$ and $^{13}\text{C}$ NMR spectra of compound 5t



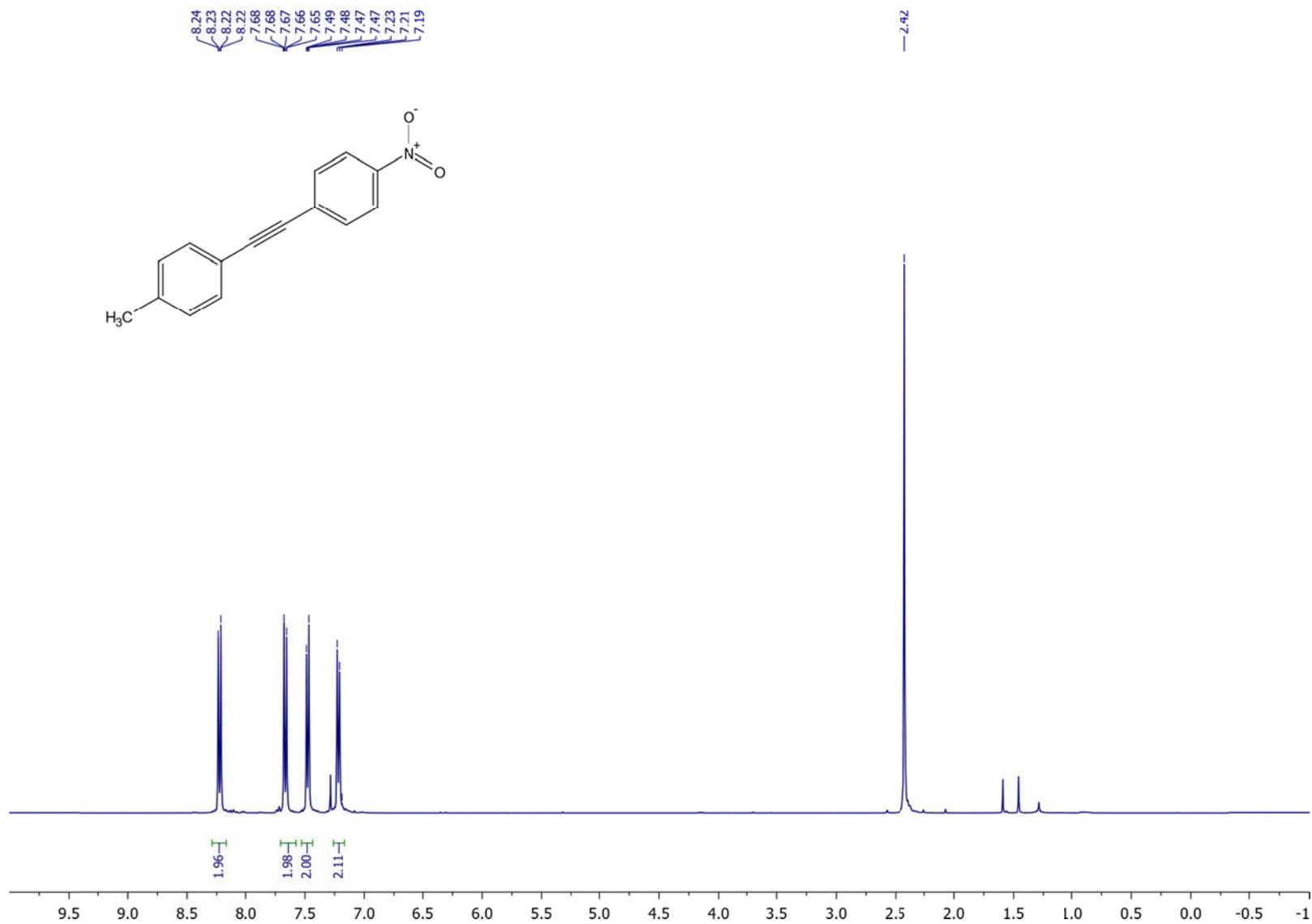


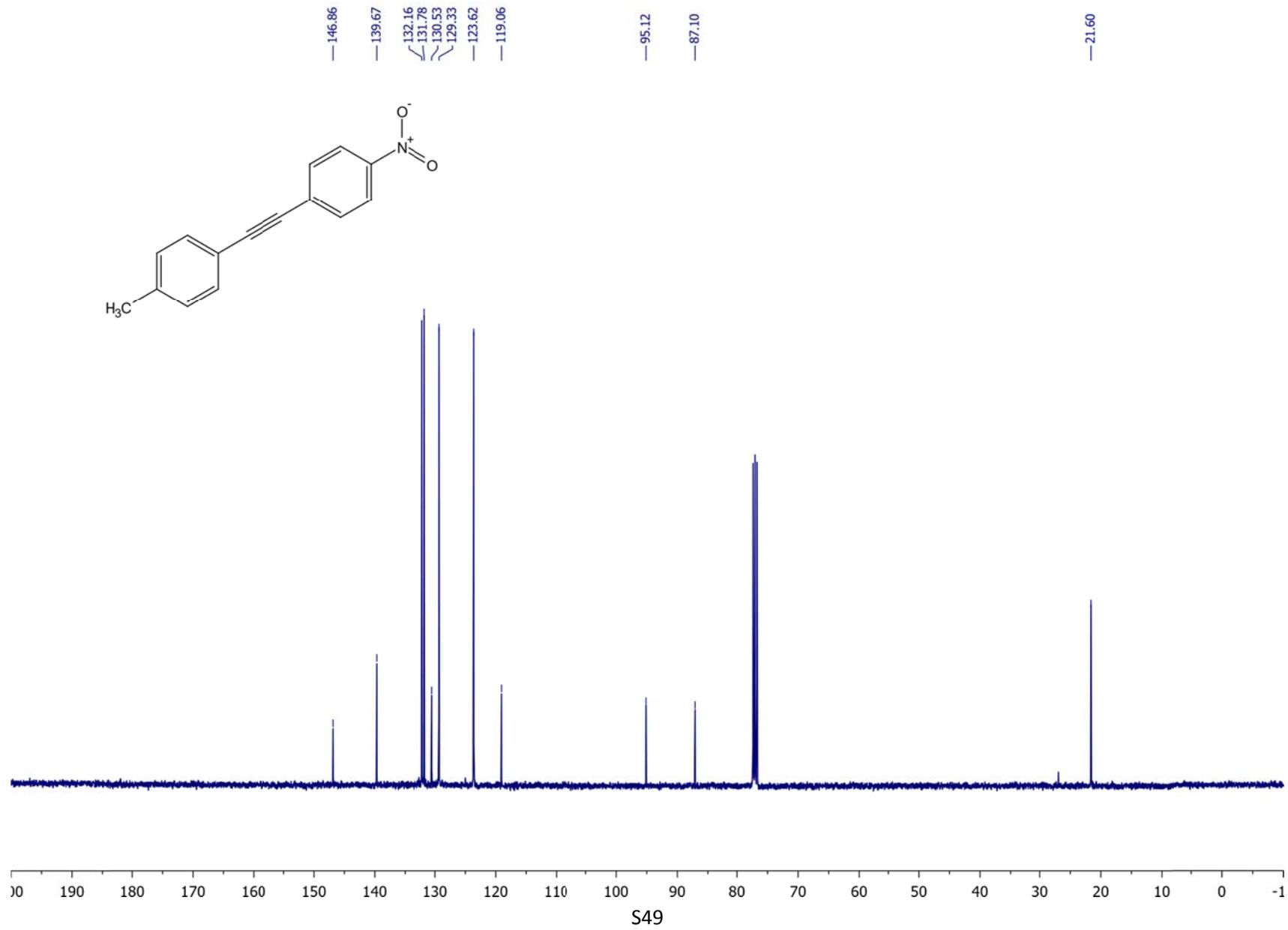
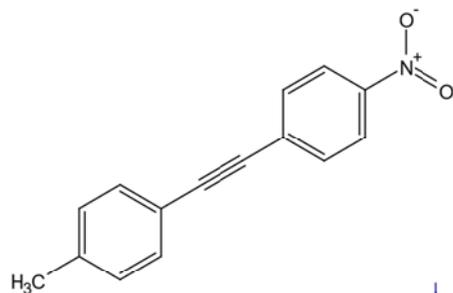
# $^1\text{H}$ and $^{13}\text{C}$ NMR spectra of compound 5u



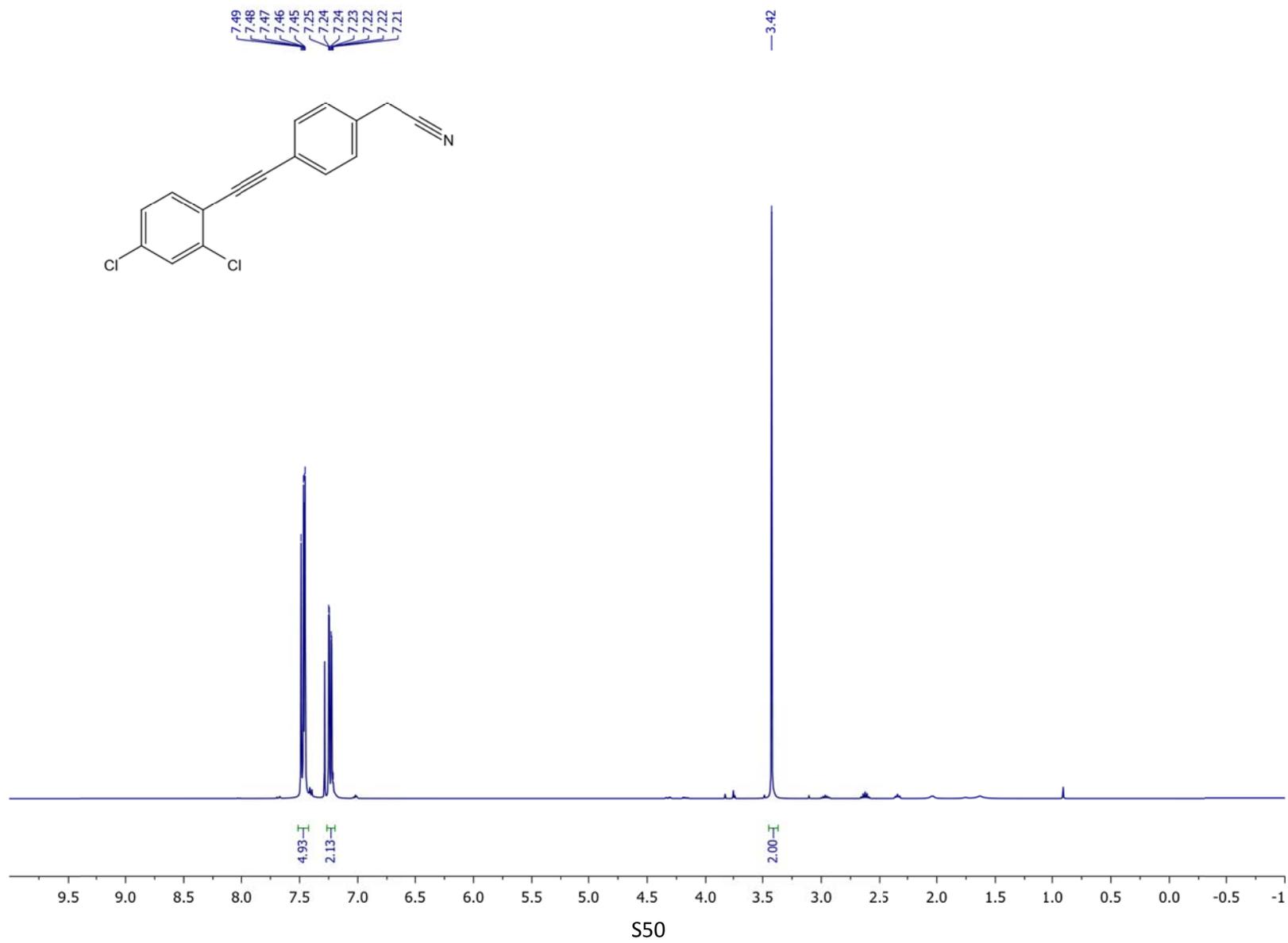


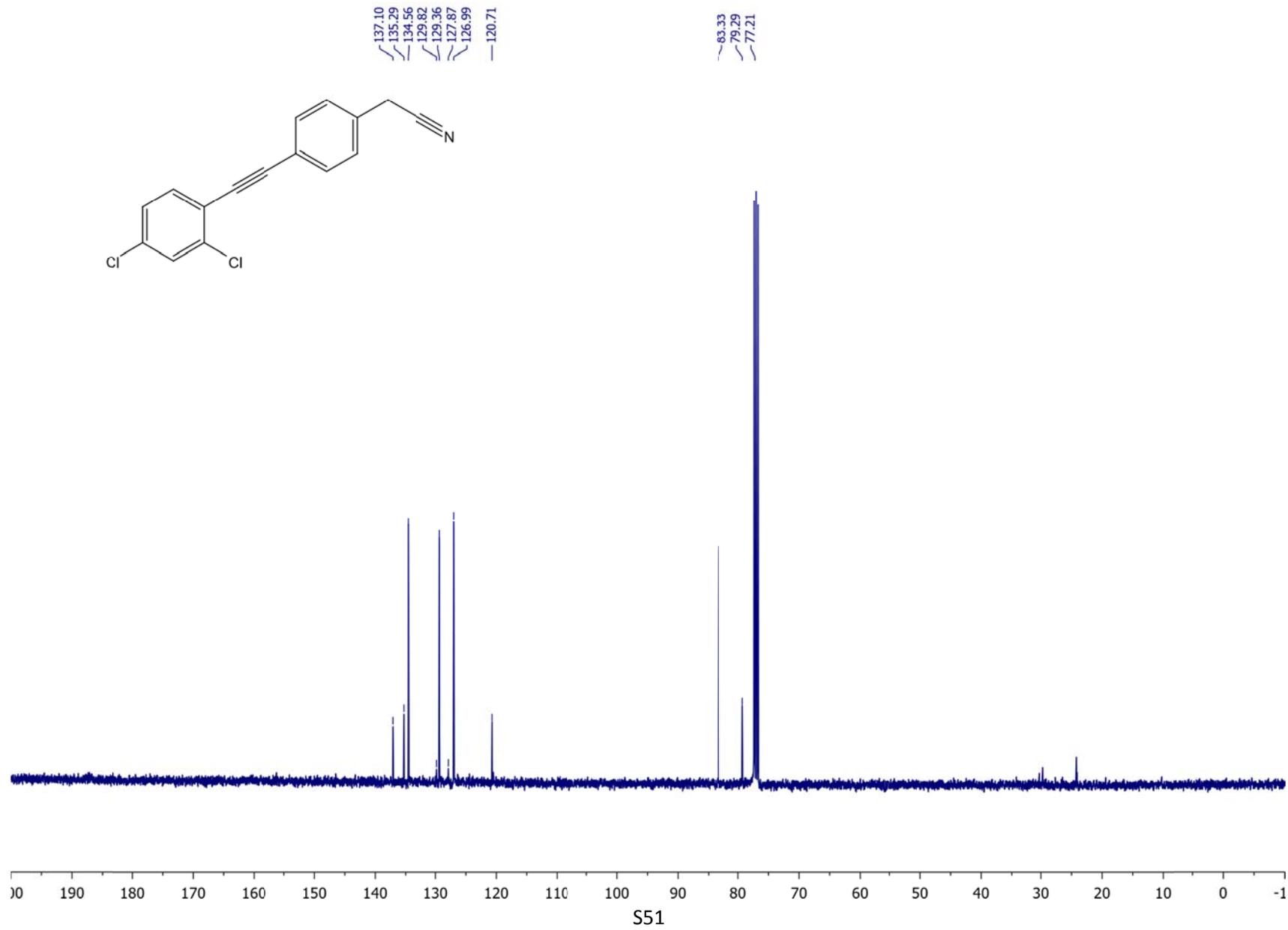
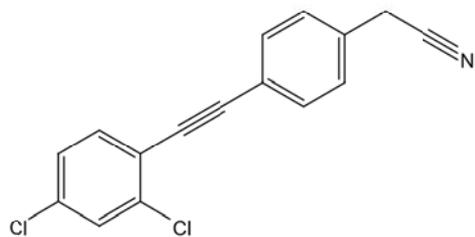
# $^1\text{H}$ and $^{13}\text{C}$ NMR spectra of compound 5v



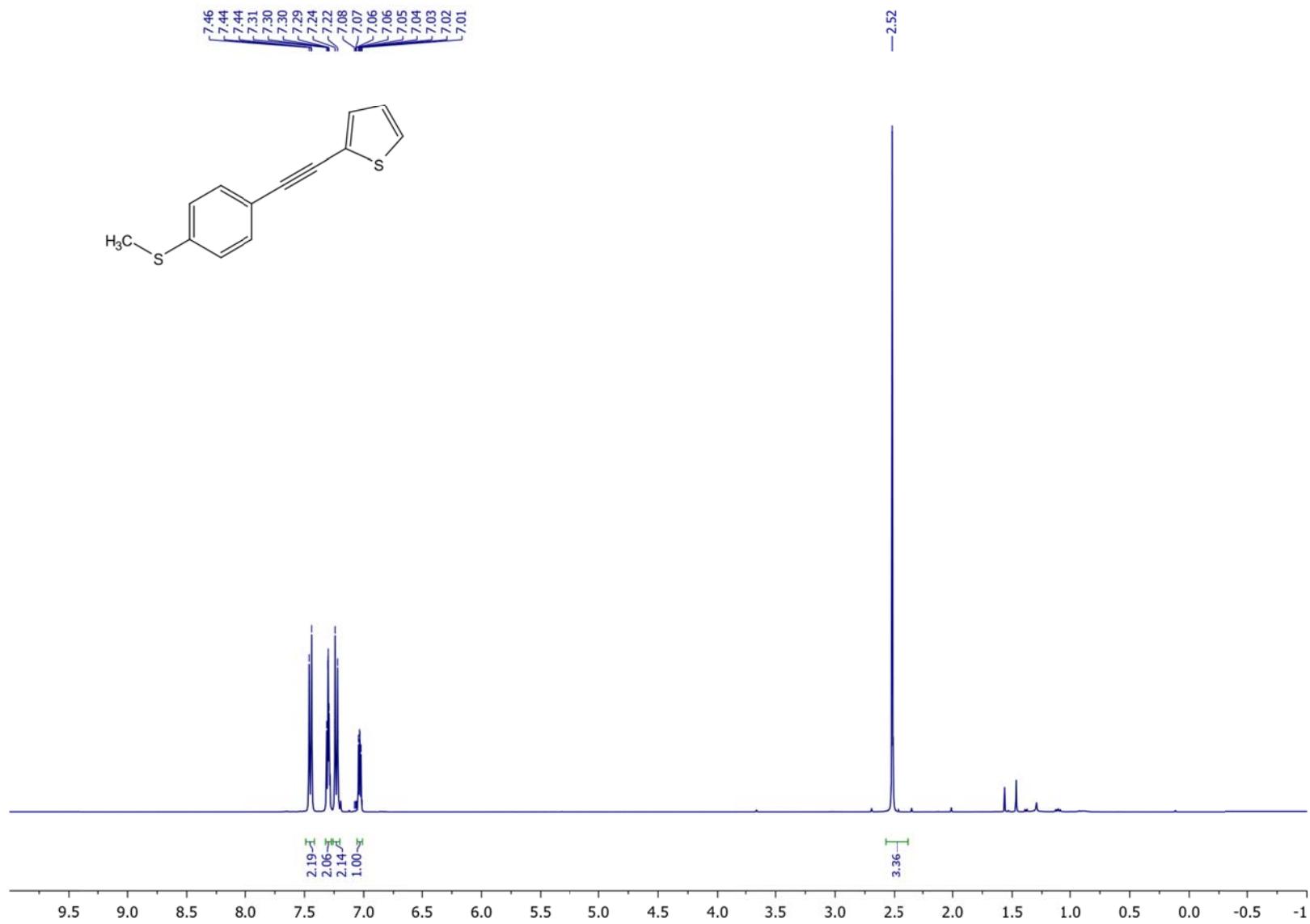


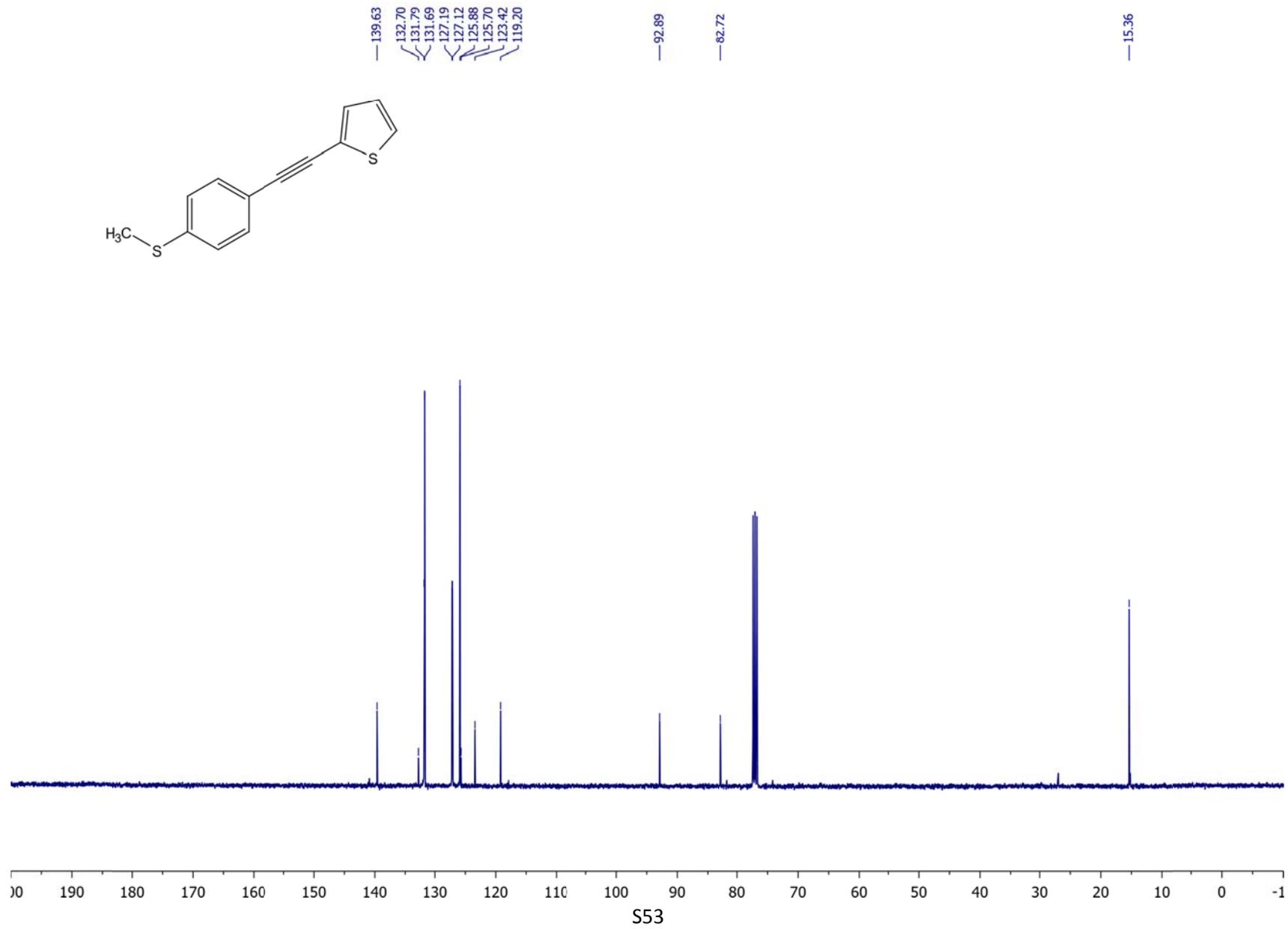
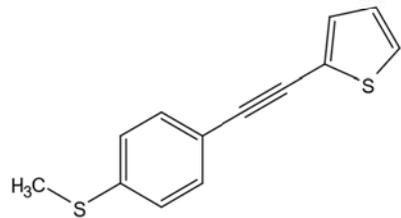
# $^1\text{H}$ and $^{13}\text{C}$ NMR spectra of compound 5w



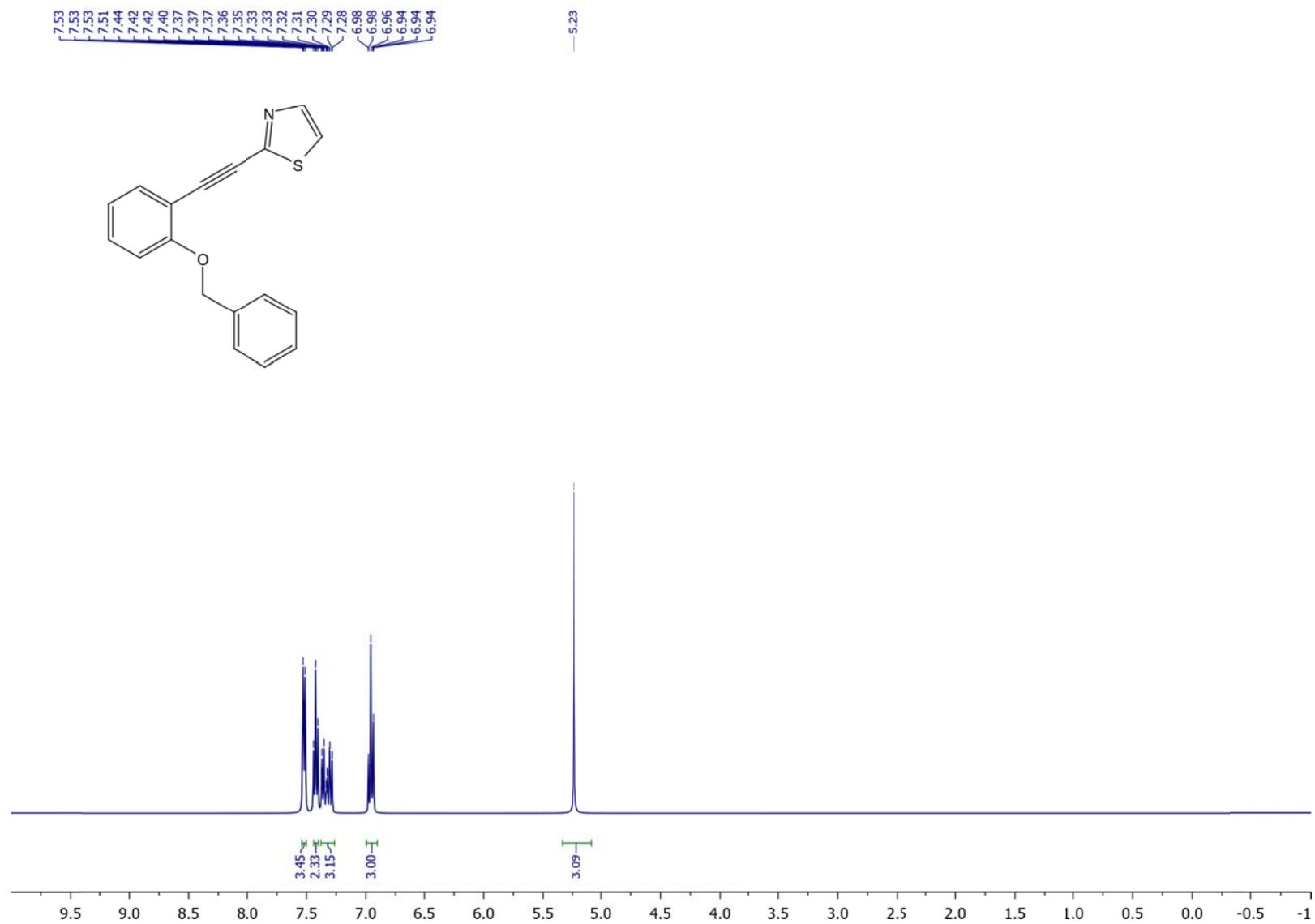


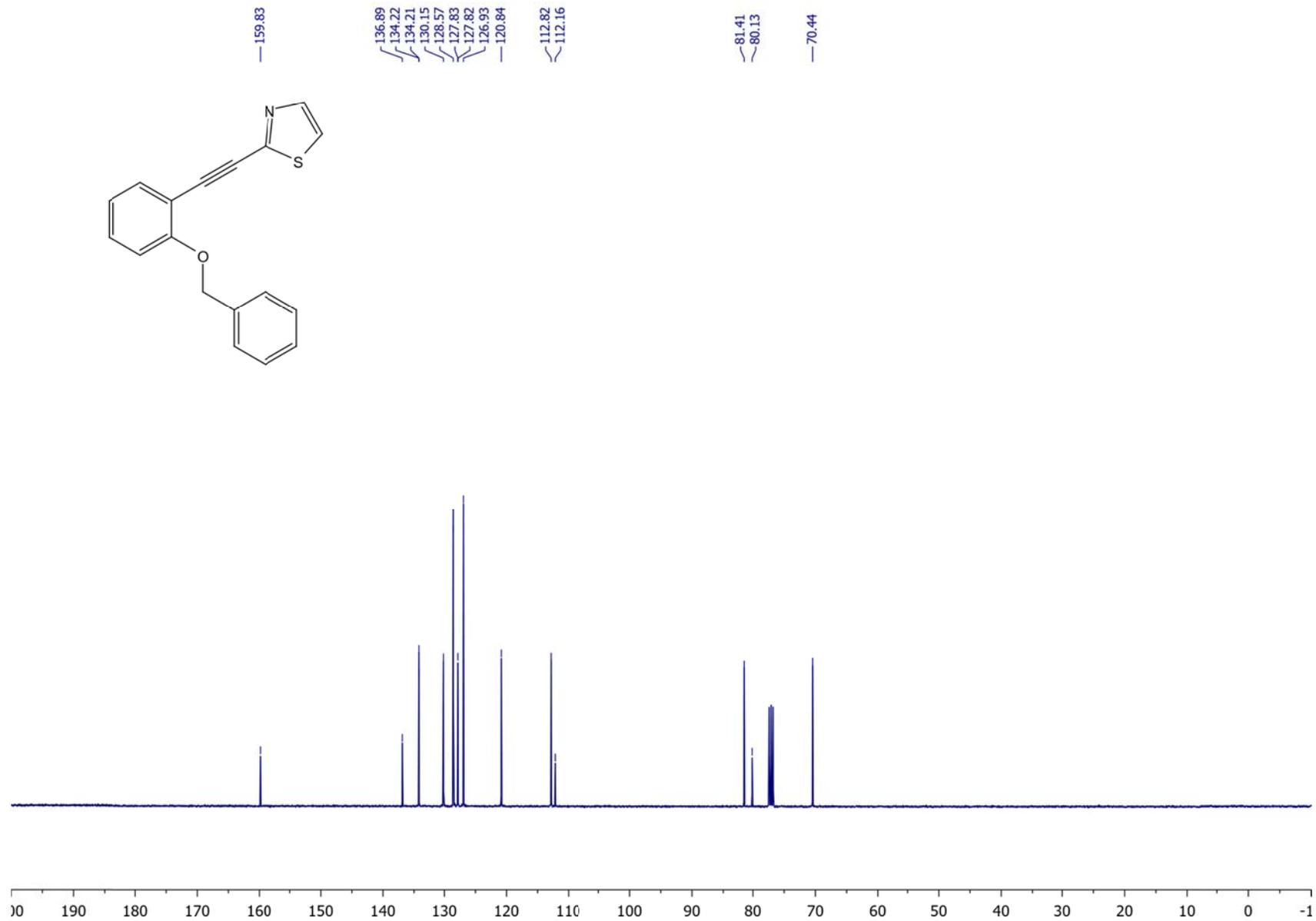
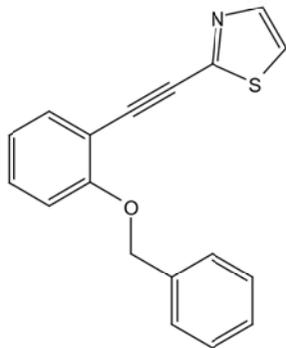
# <sup>1</sup>H and <sup>13</sup>C NMR spectra of compound 5x





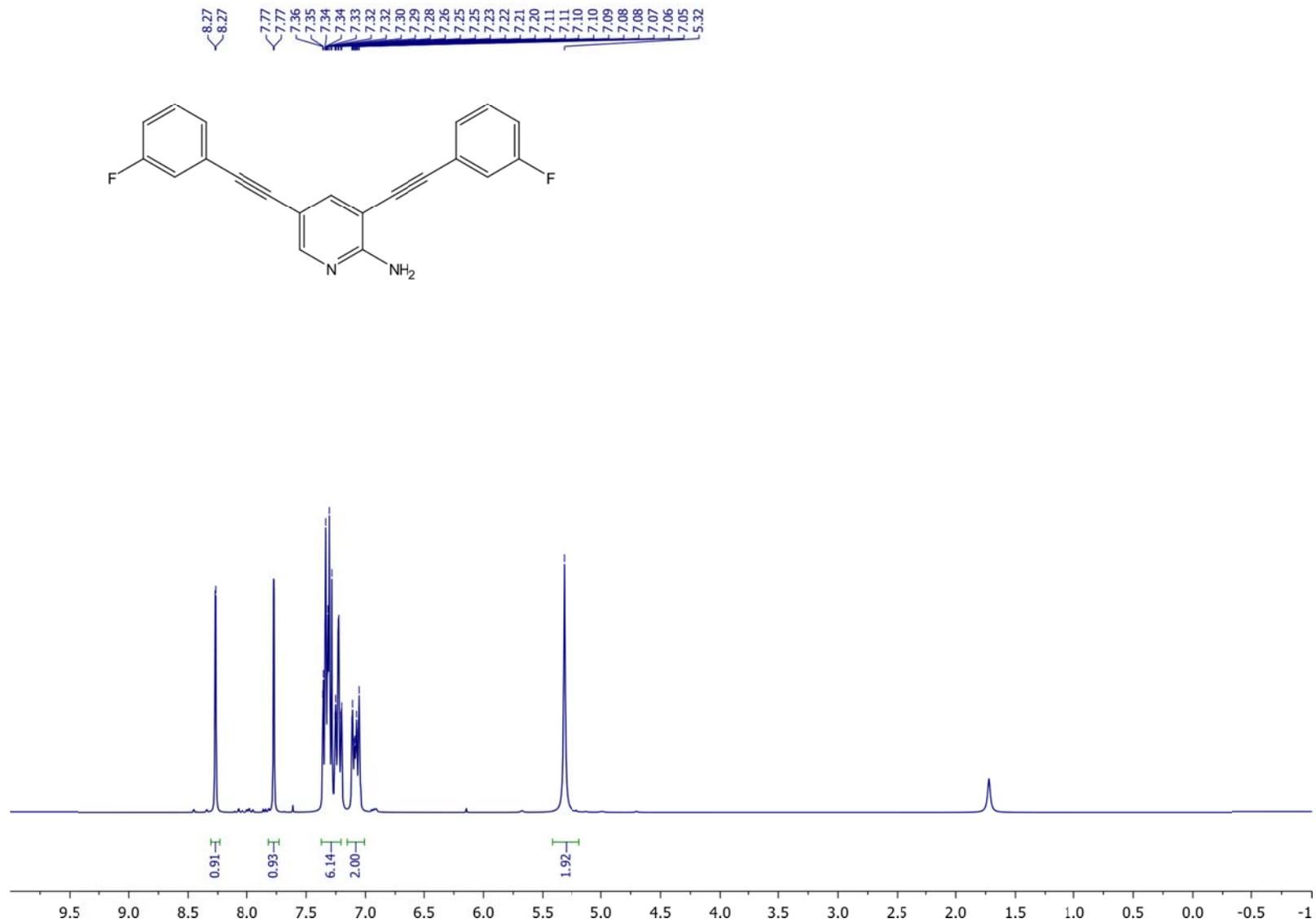
# <sup>1</sup>H and <sup>13</sup>C NMR spectra of compound 5y

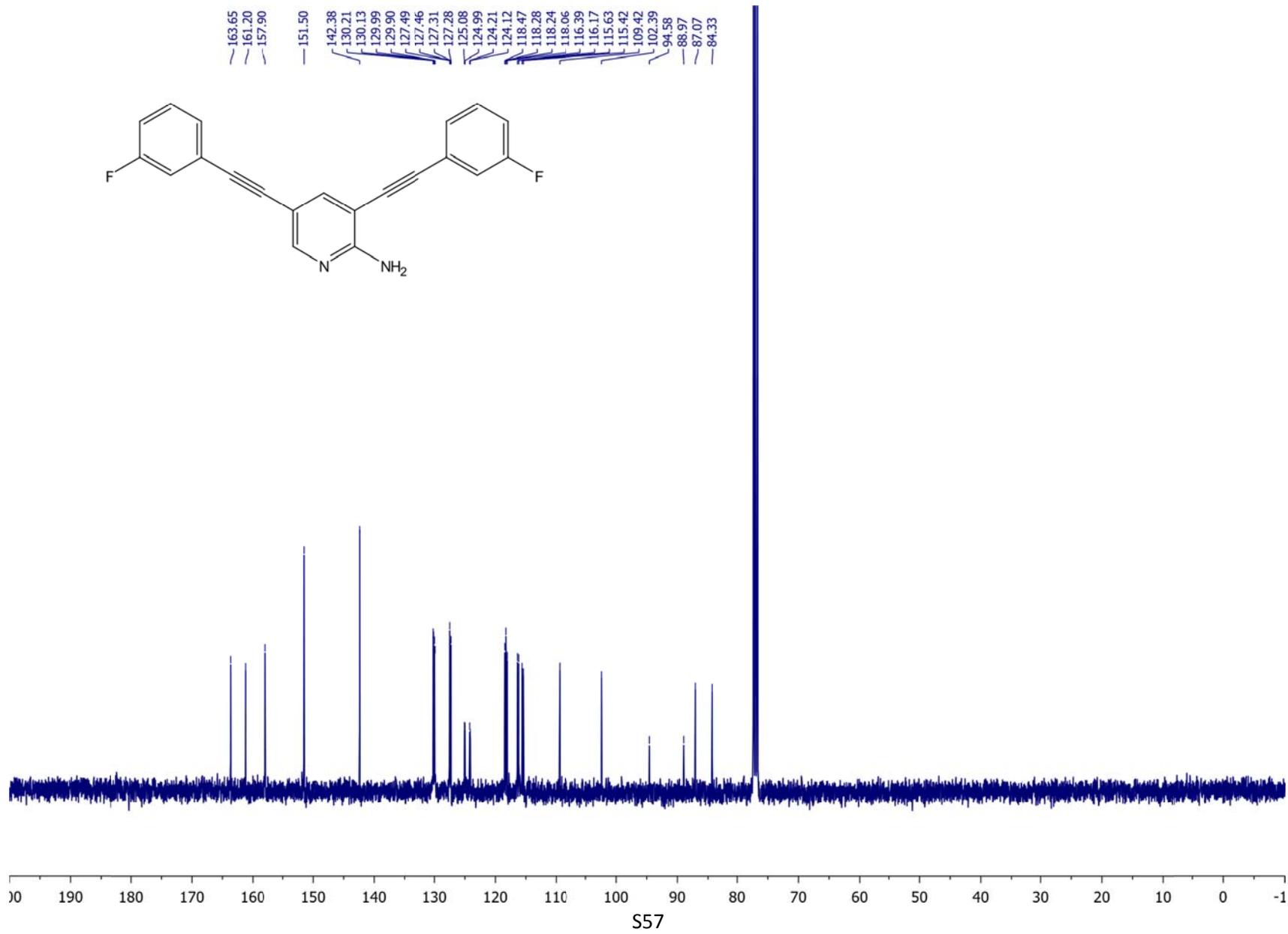


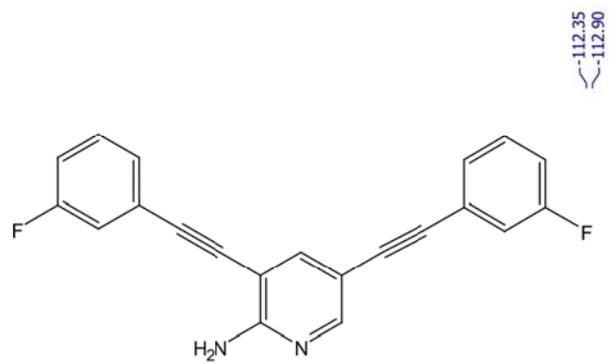


S55

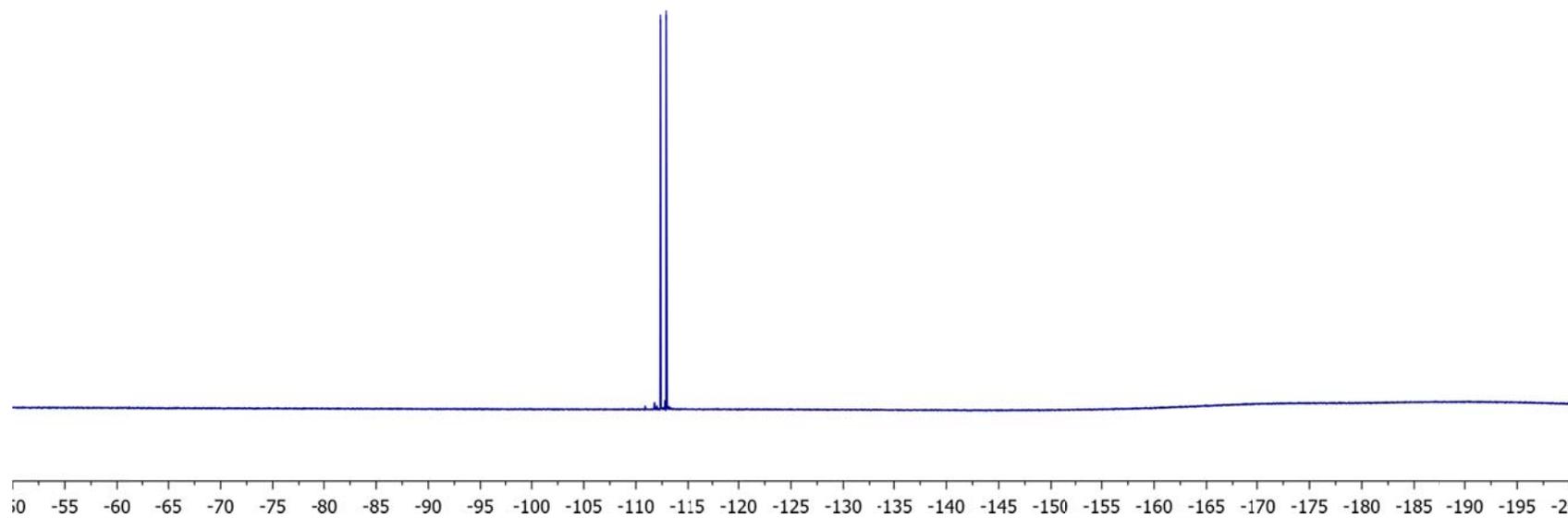
$^1\text{H}$ ,  $^{13}\text{C}$  and  $^{19}\text{F}$  NMR spectra of compound 5z







112.35  
112.90



S58

# $^1\text{H}$ and $^{13}\text{C}$ NMR spectra of compound 5aa

