Transition Metal Free One-Pot Tandem Synthesis of 3-Ketoisoquinolines from Aldehydes and Phenacyl azides

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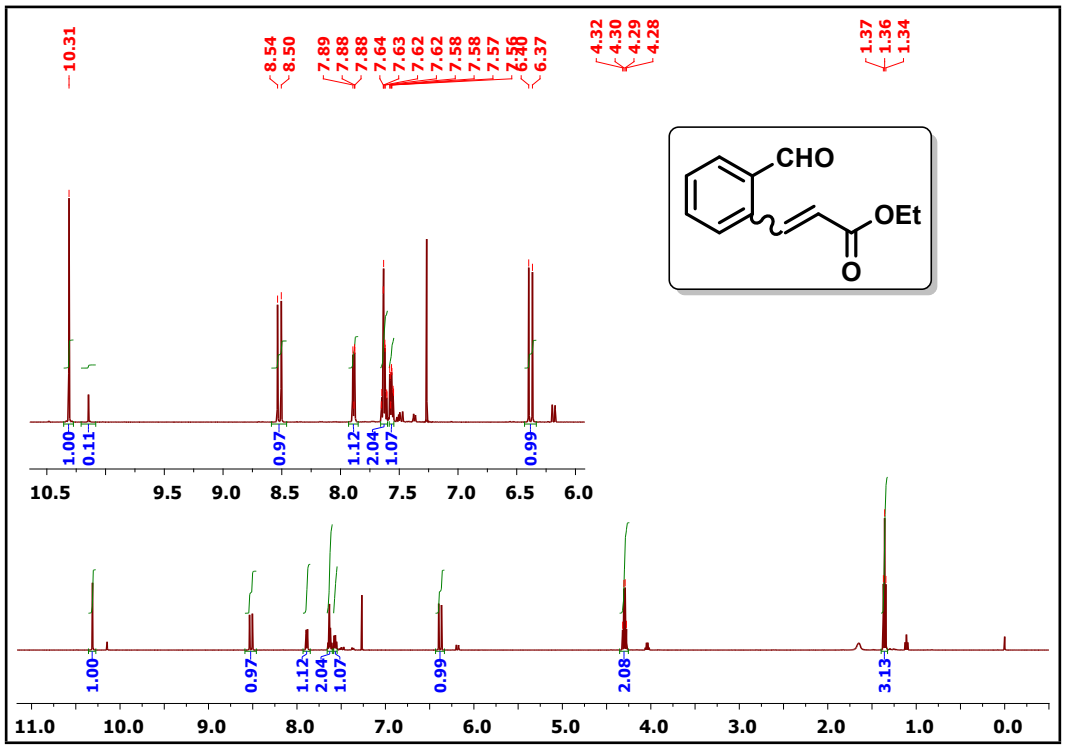
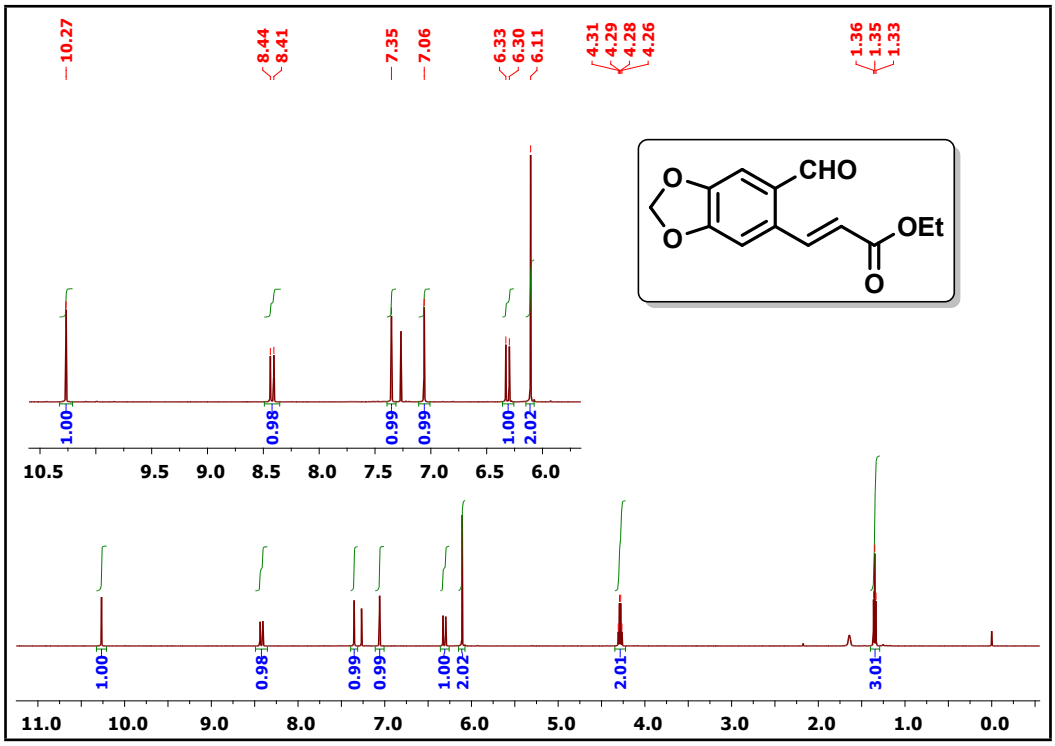
^{1}H and ^{13}C spectra of Compounds (1a-1i)

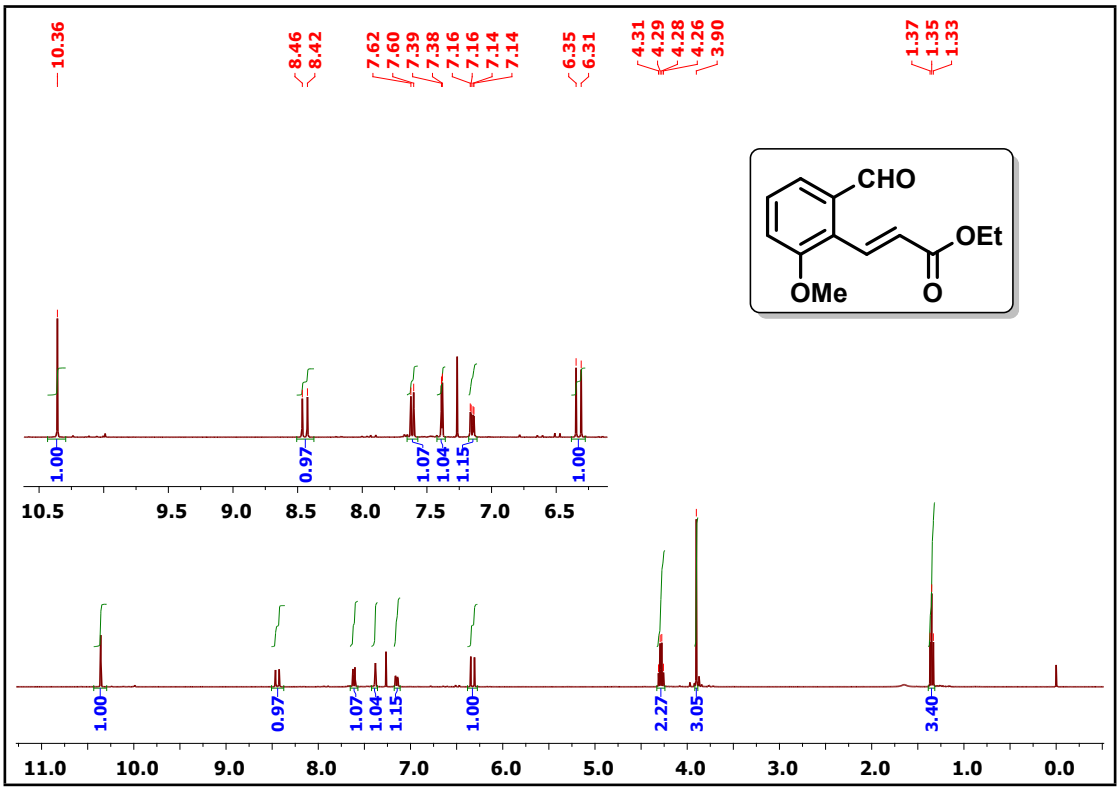
^{1}H NMR spectrum of compound 1a



^{1}H NMR spectrum of compound 1b



^{1}H NMR spectrum of compound 1c



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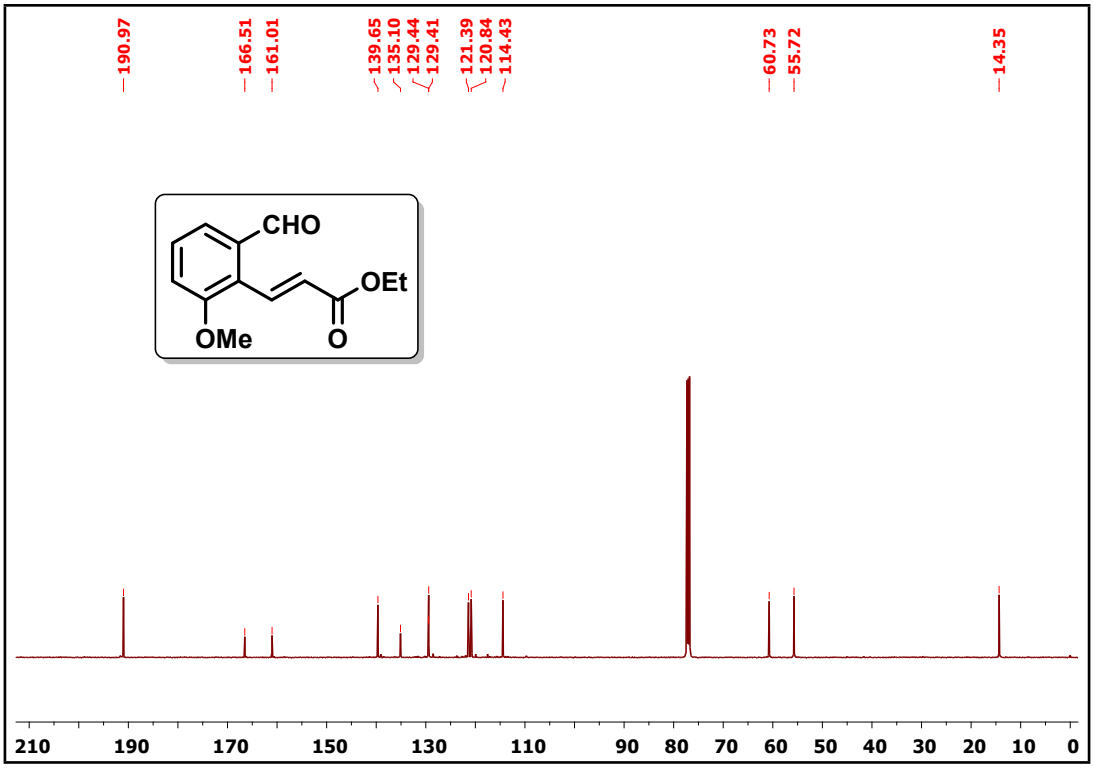
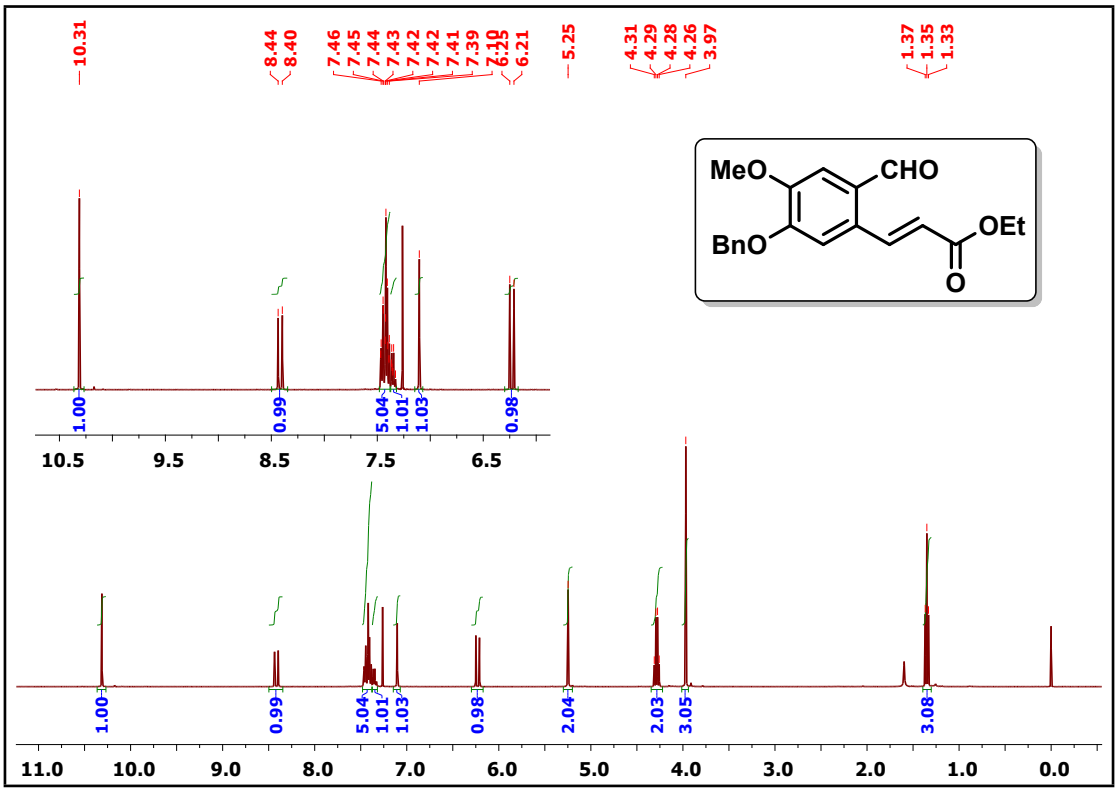
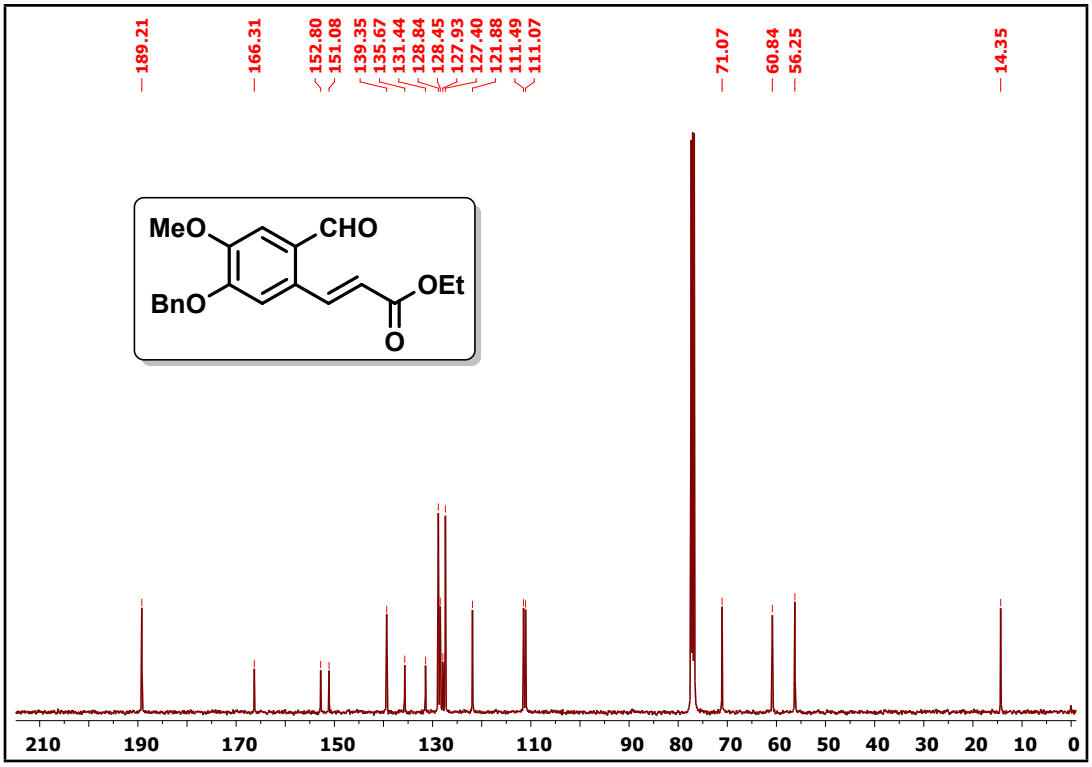


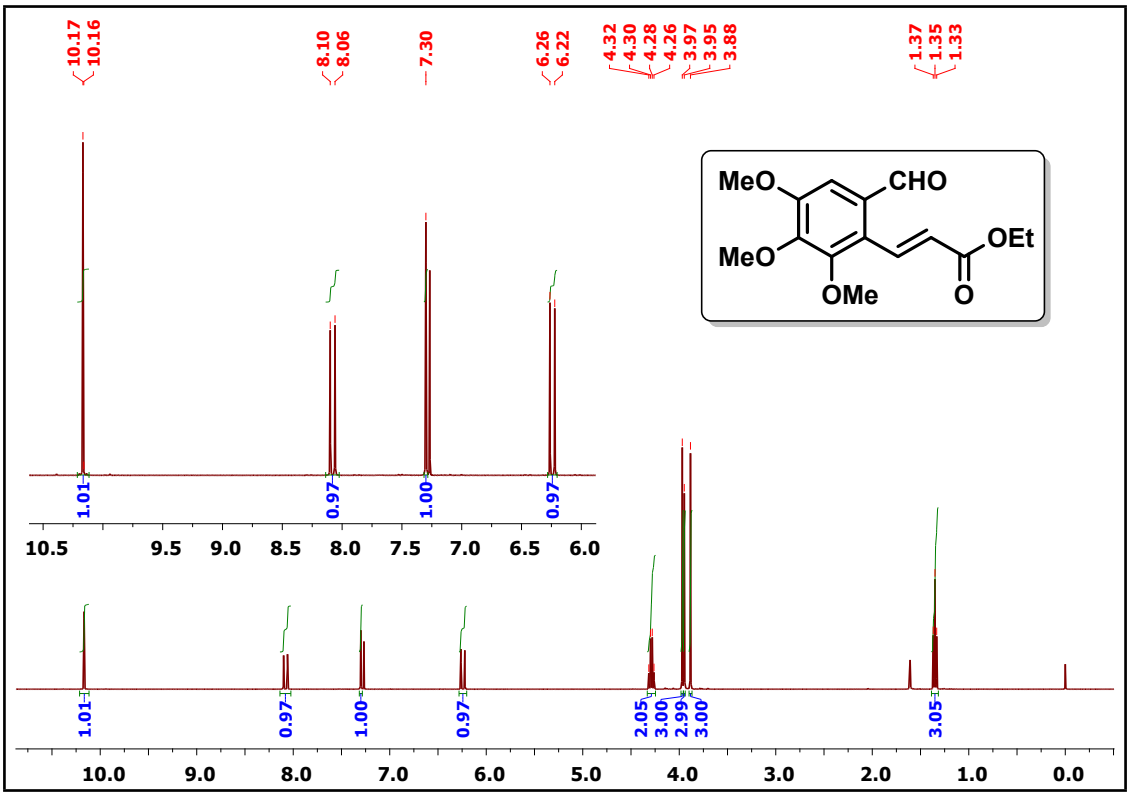
^{1}H NMR spectrum of compound 1d



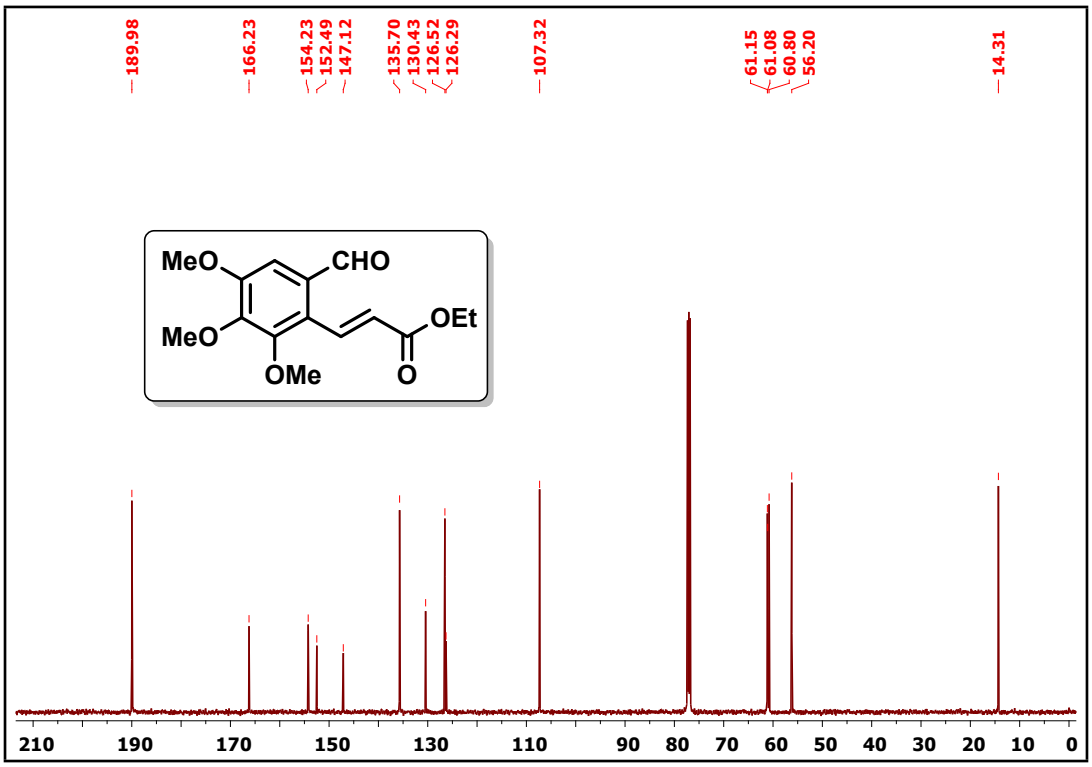
^{13}C NMR spectrum of compound 1d



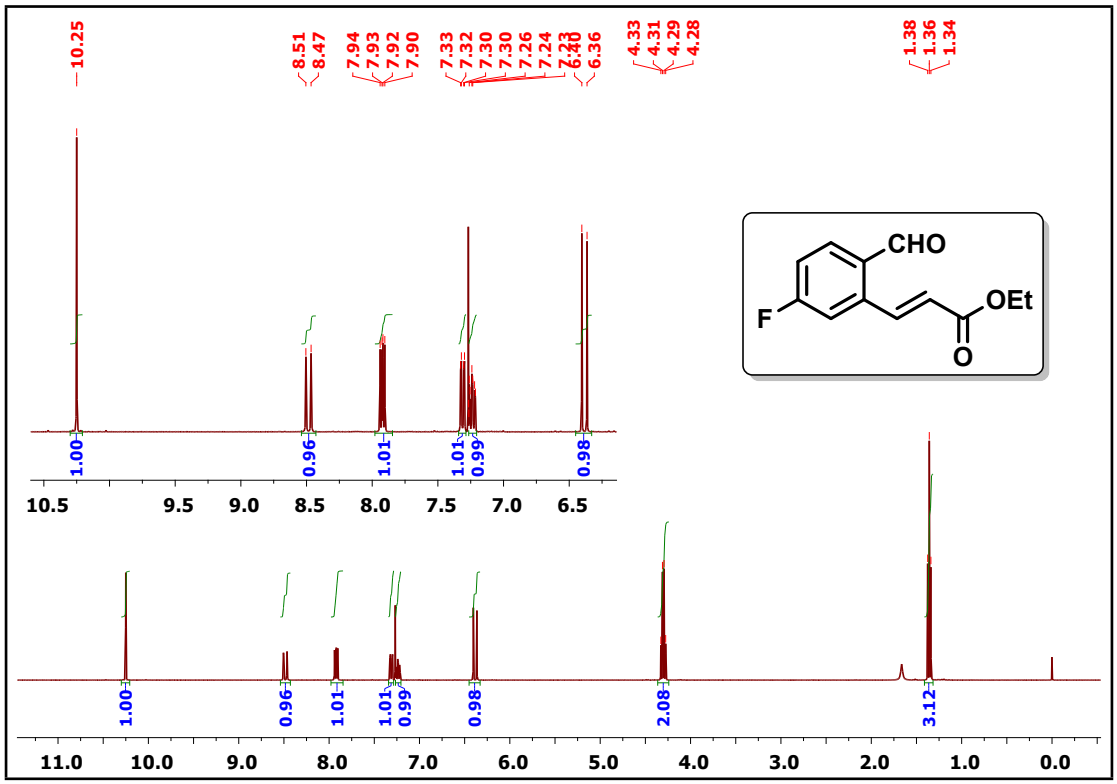
^{1}H NMR spectrum of compound 1e



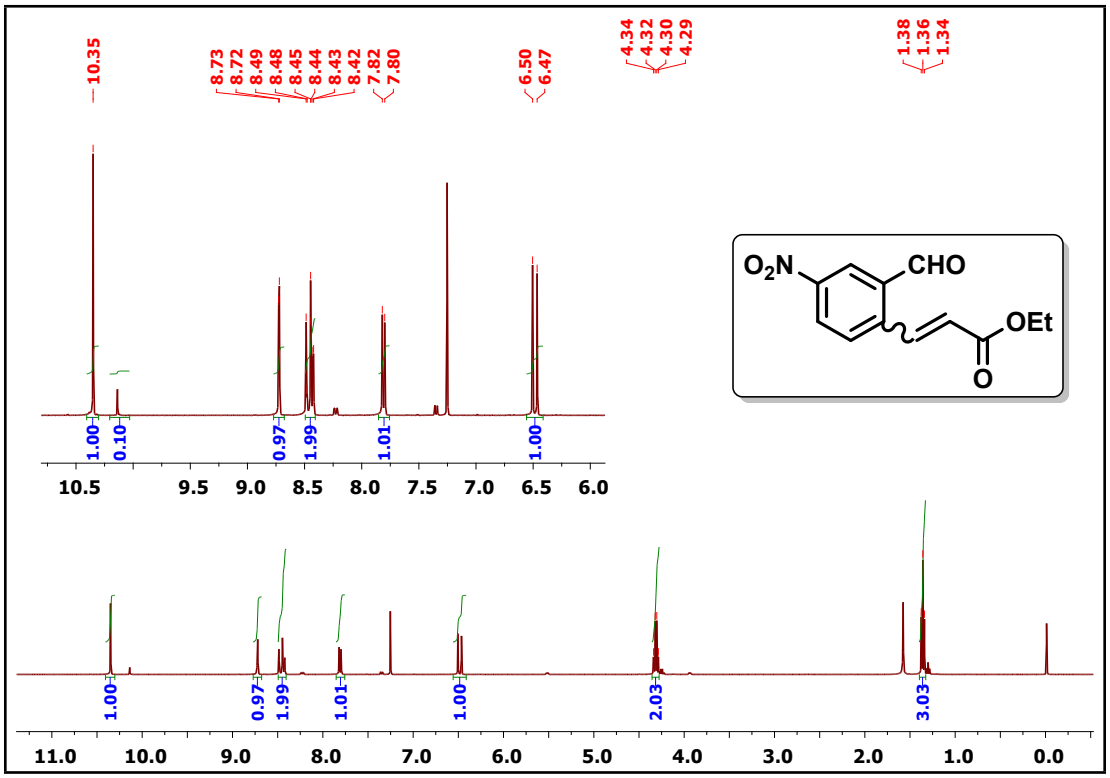
^{13}C NMR spectrum of compound 1e



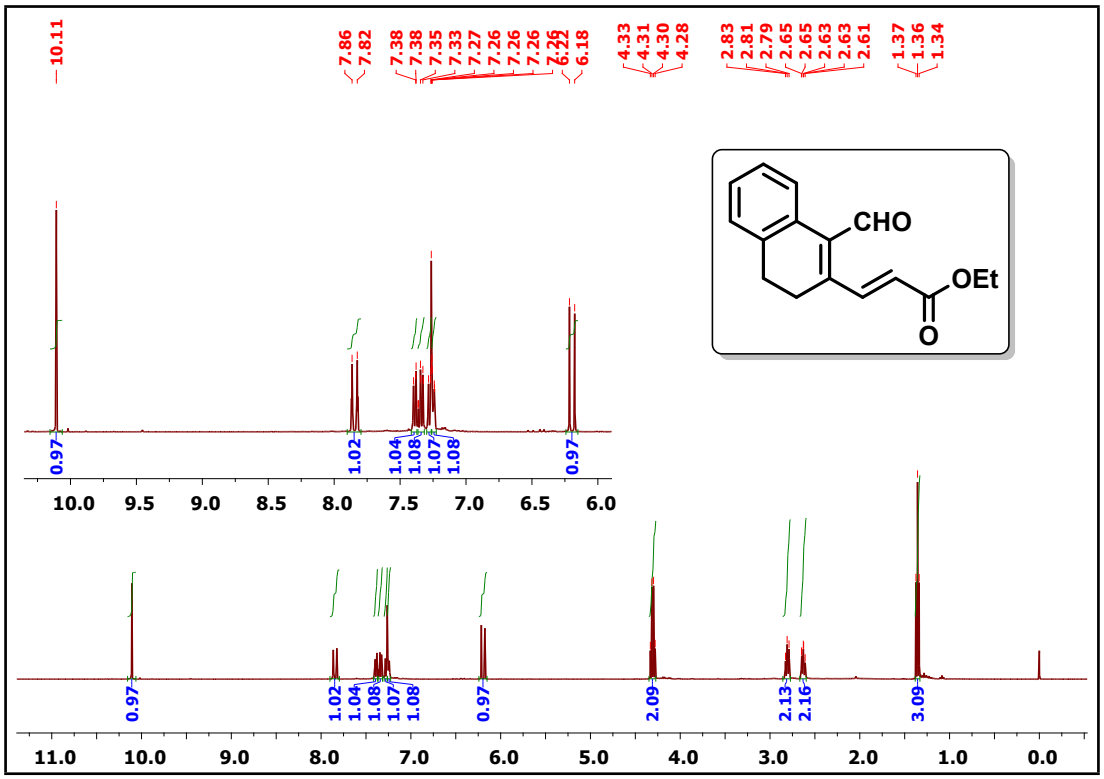
^{1}H NMR spectrum of compound 1f



^{1}H NMR spectrum of compound 1g



^{1}H NMR spectrum of compound 1h



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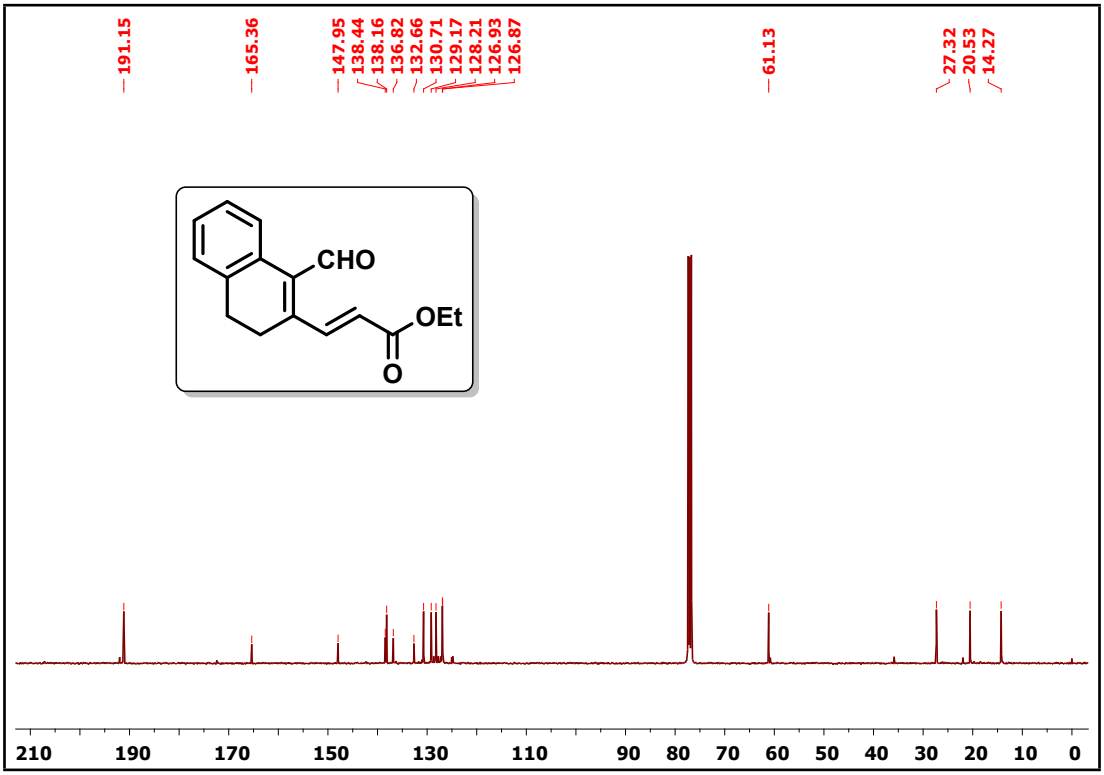

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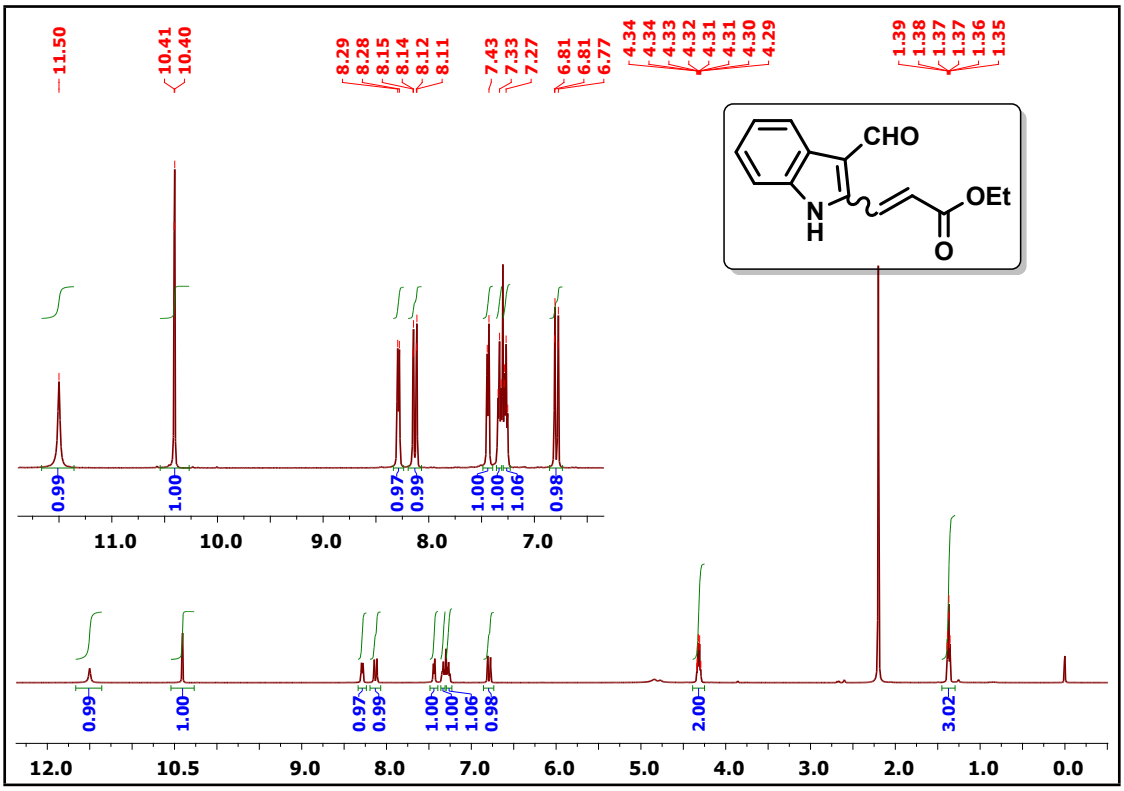
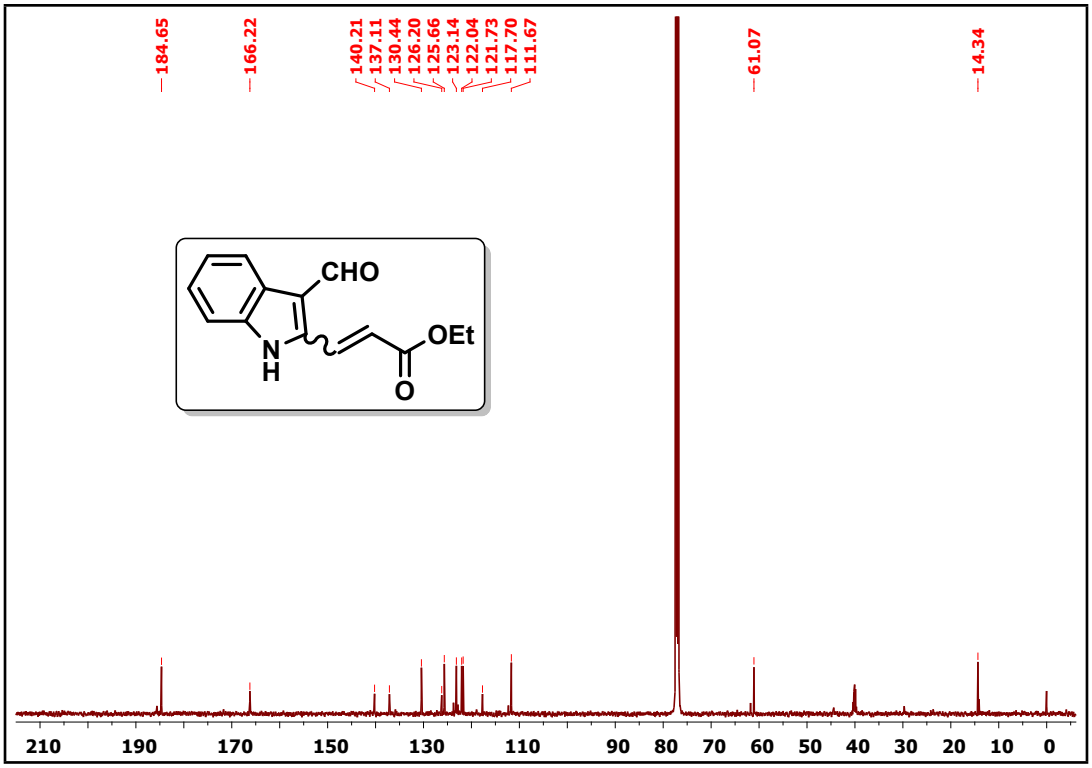
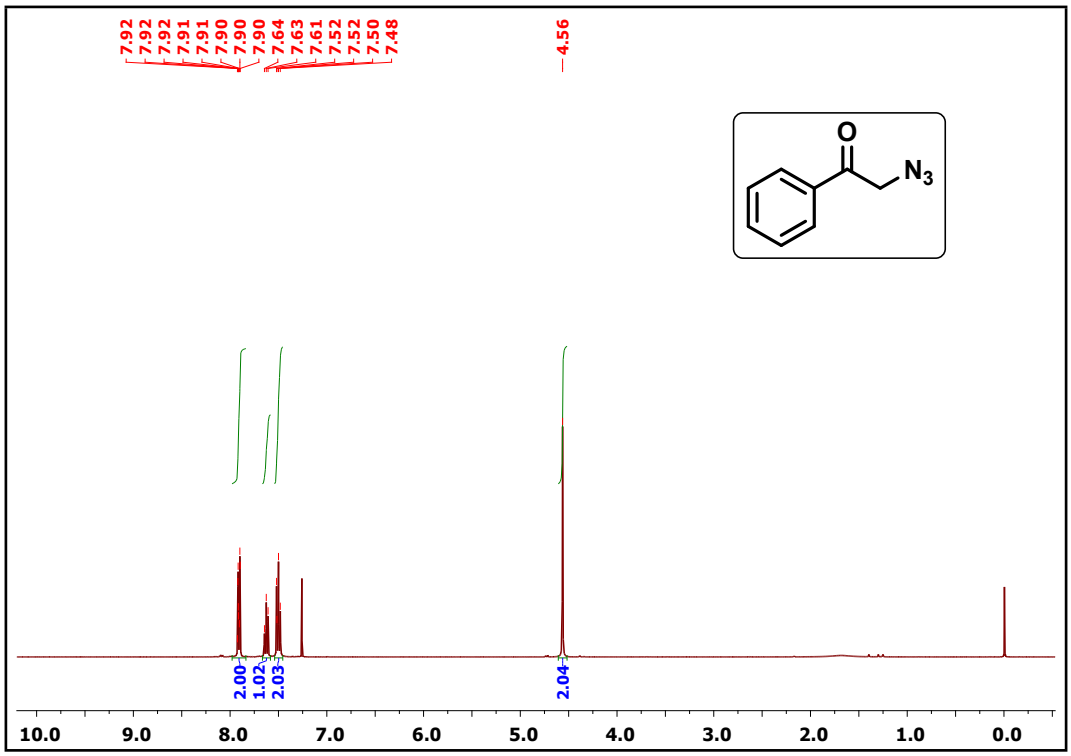


^{13}C NMR spectrum of compound 1i



^{1}H and ^{13}C spectra of Phenacyl Azides (2a-2o)

^{1}H NMR spectrum of compound 2a



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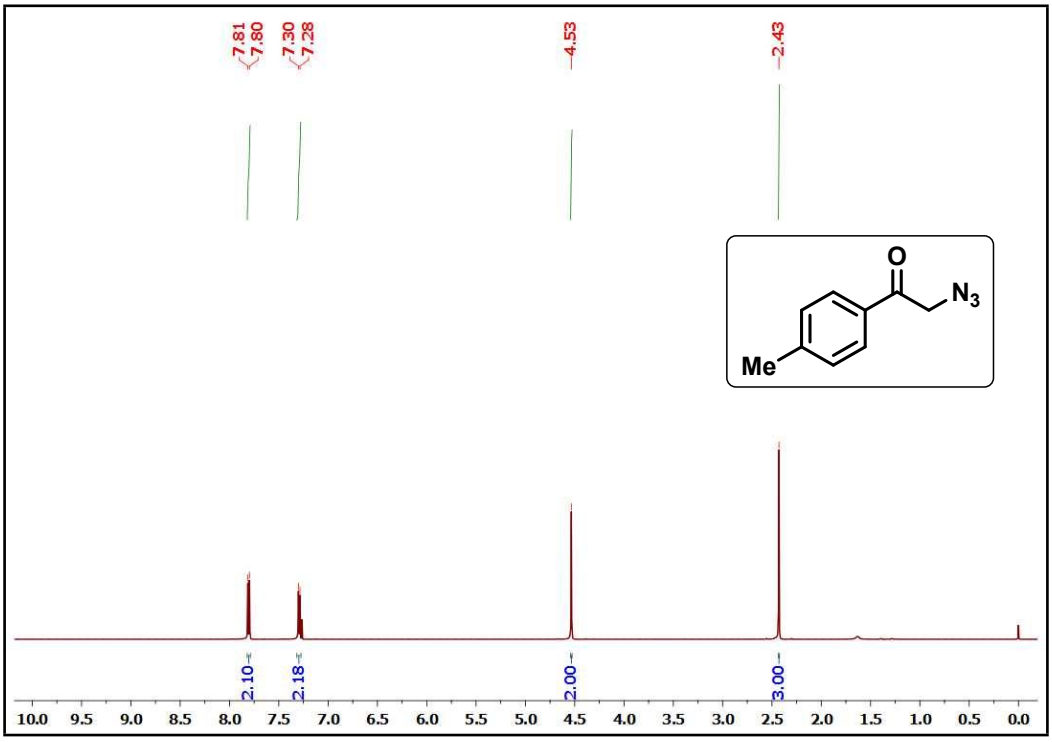
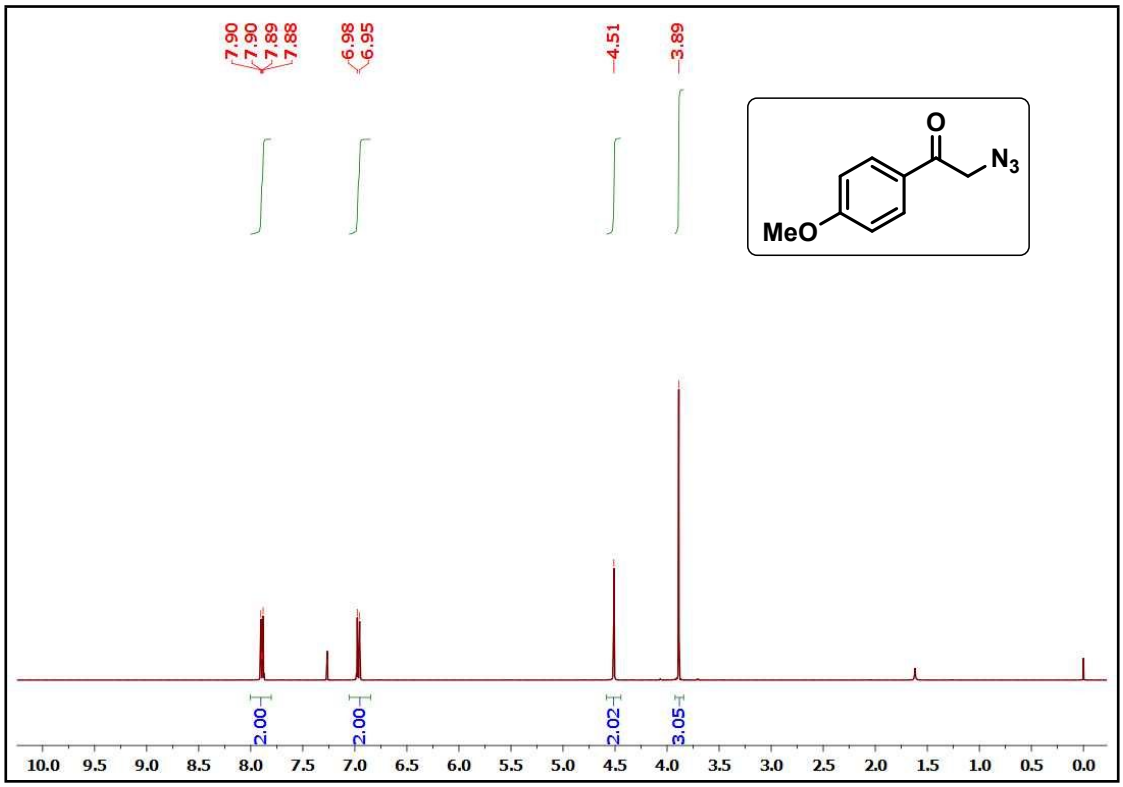


^{1}H NMR spectrum of compound 2c



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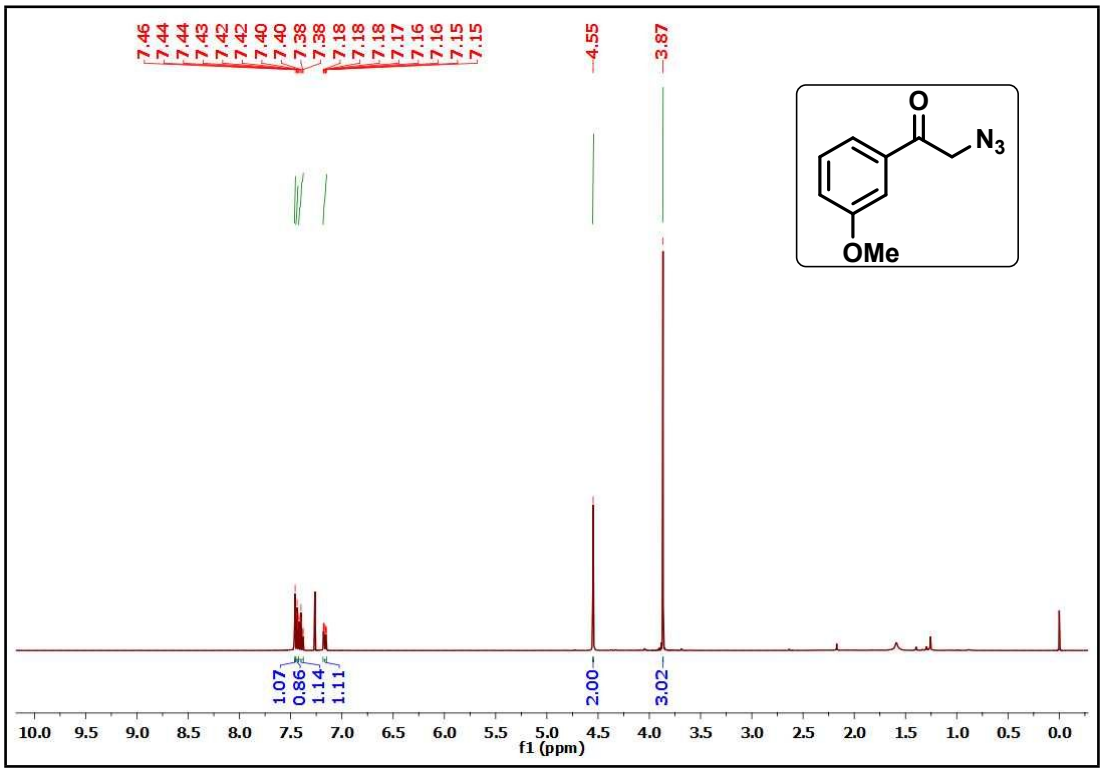

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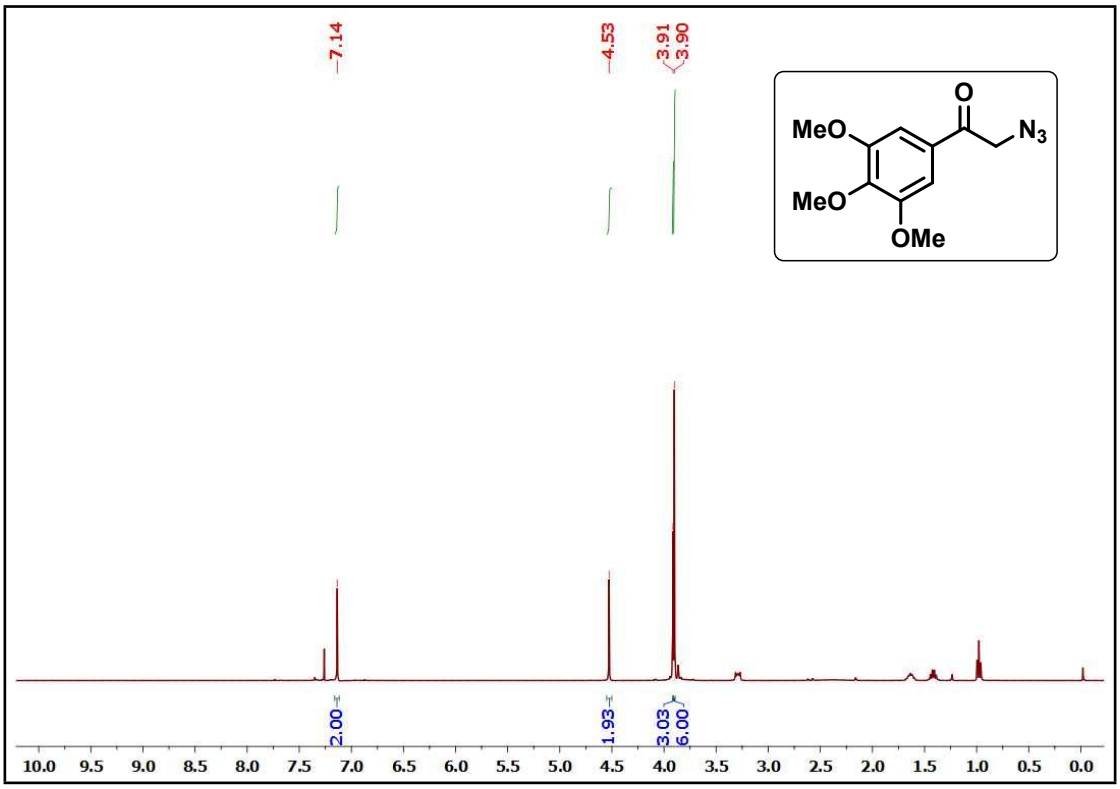
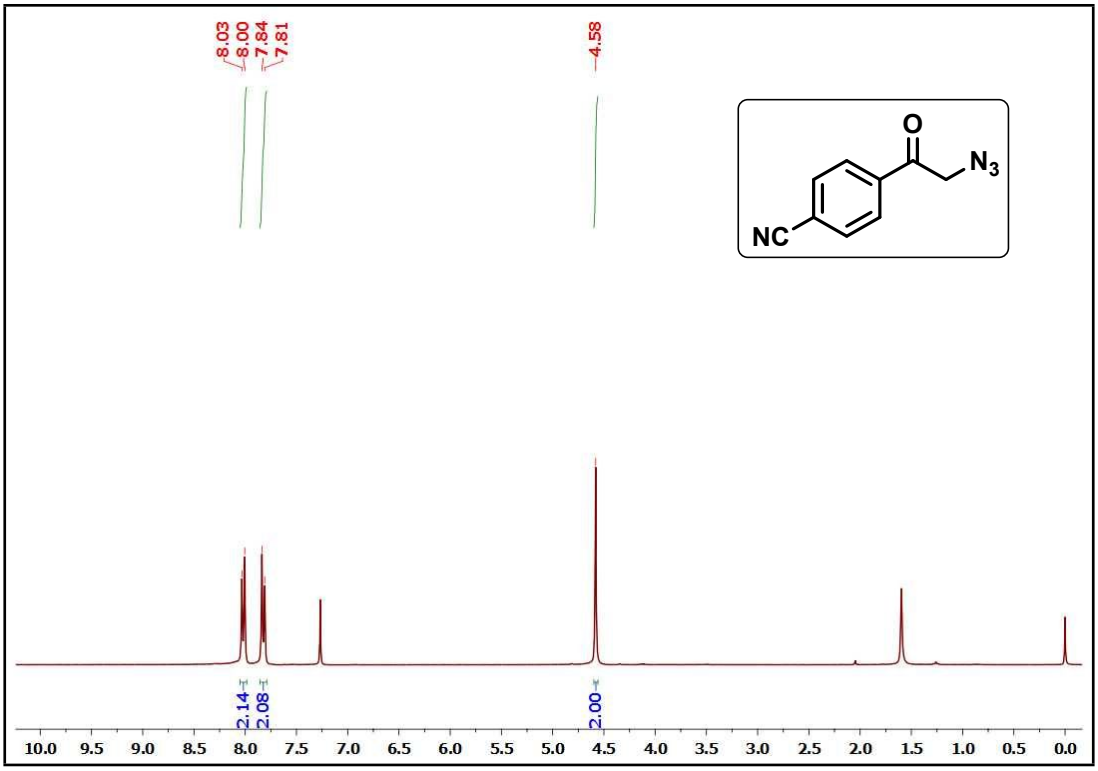


^{1}H NMR spectrum of compound 2f



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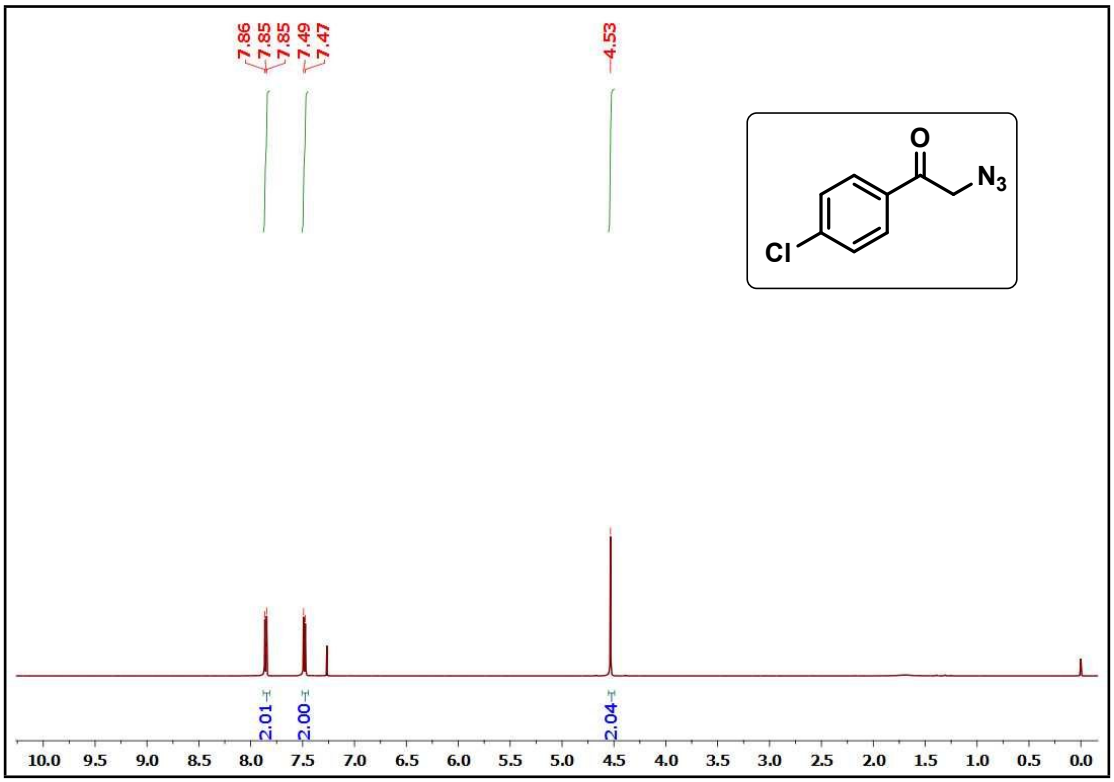
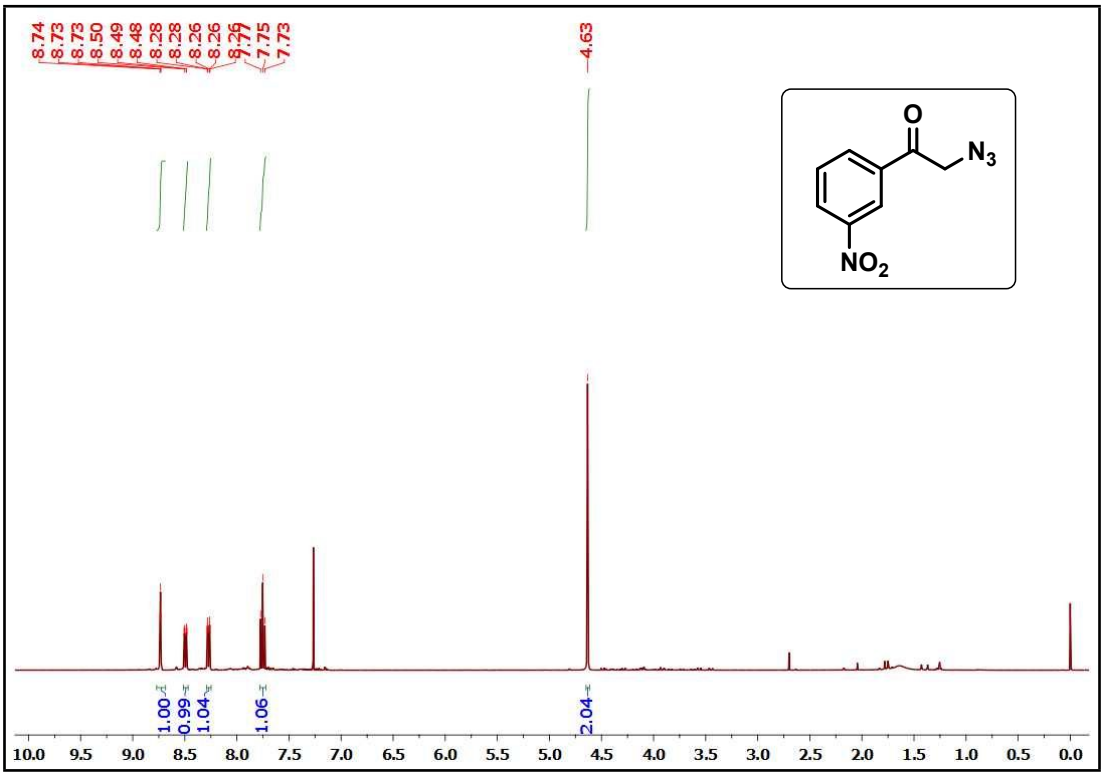


^{1}H NMR spectrum of compound 2h



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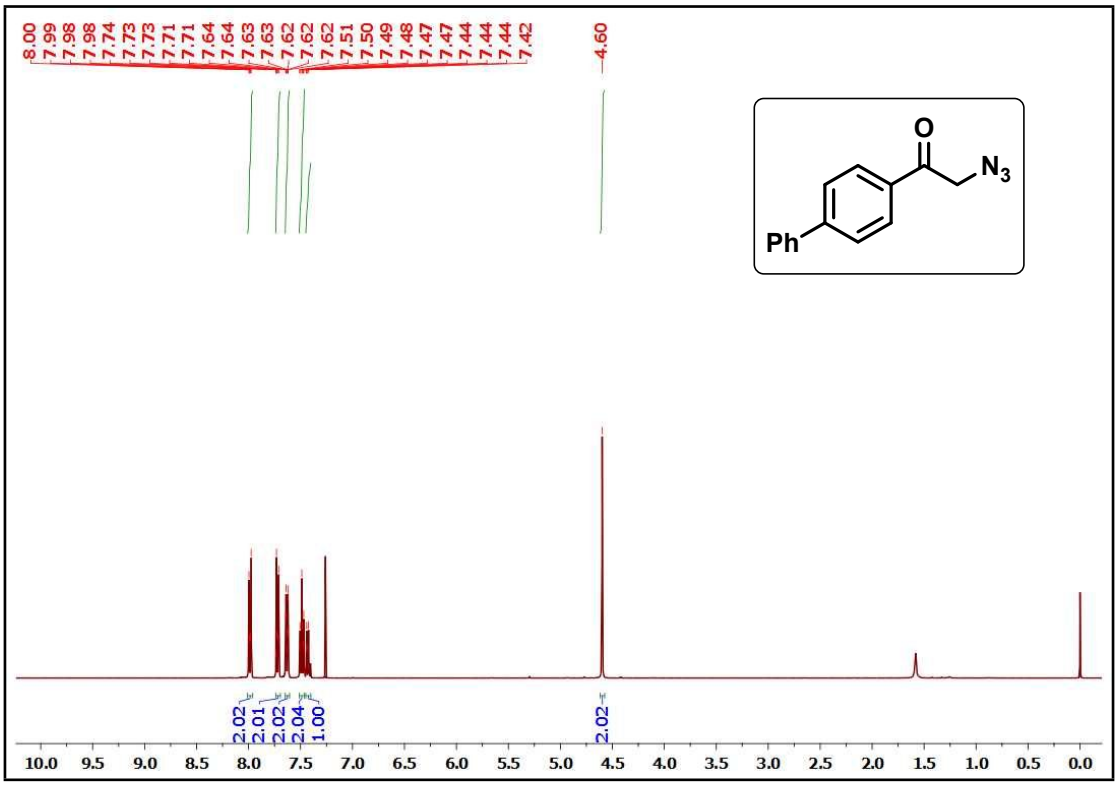

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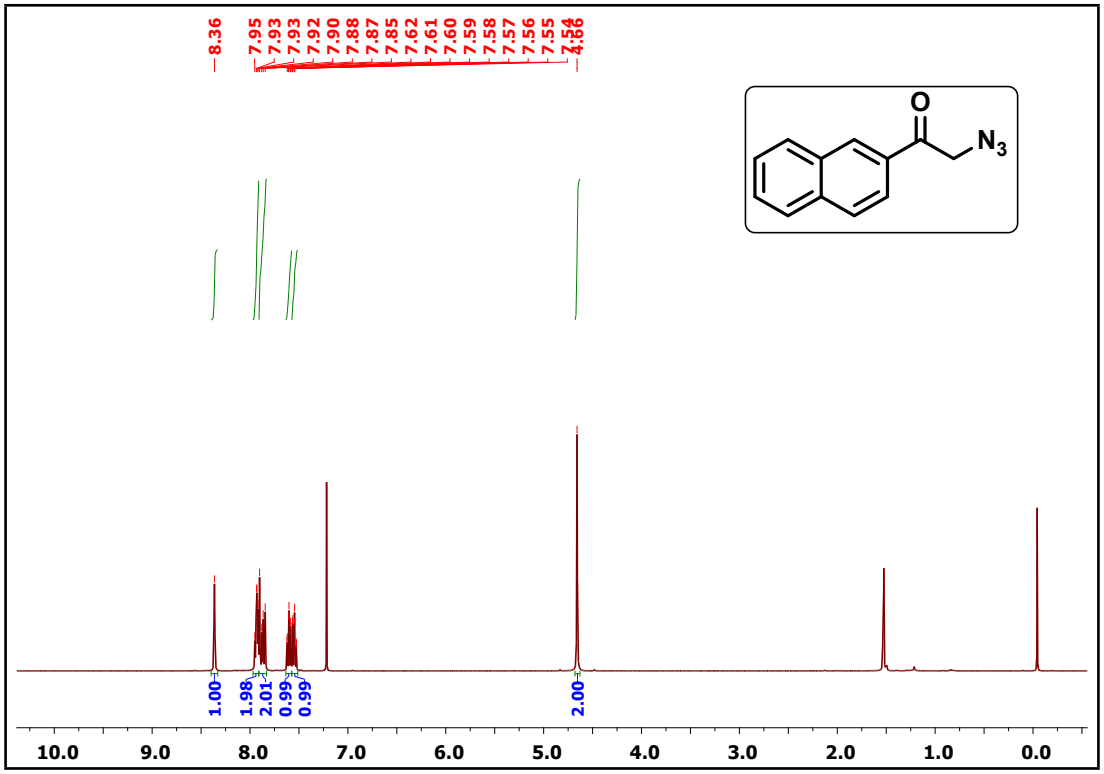
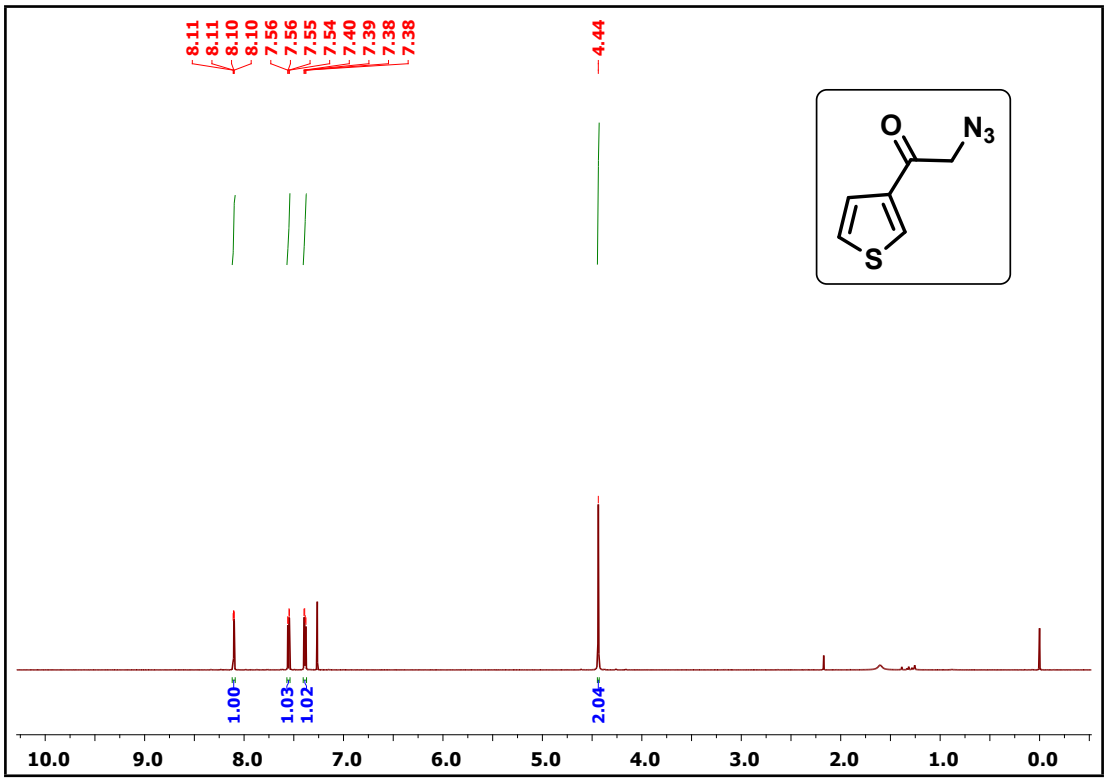
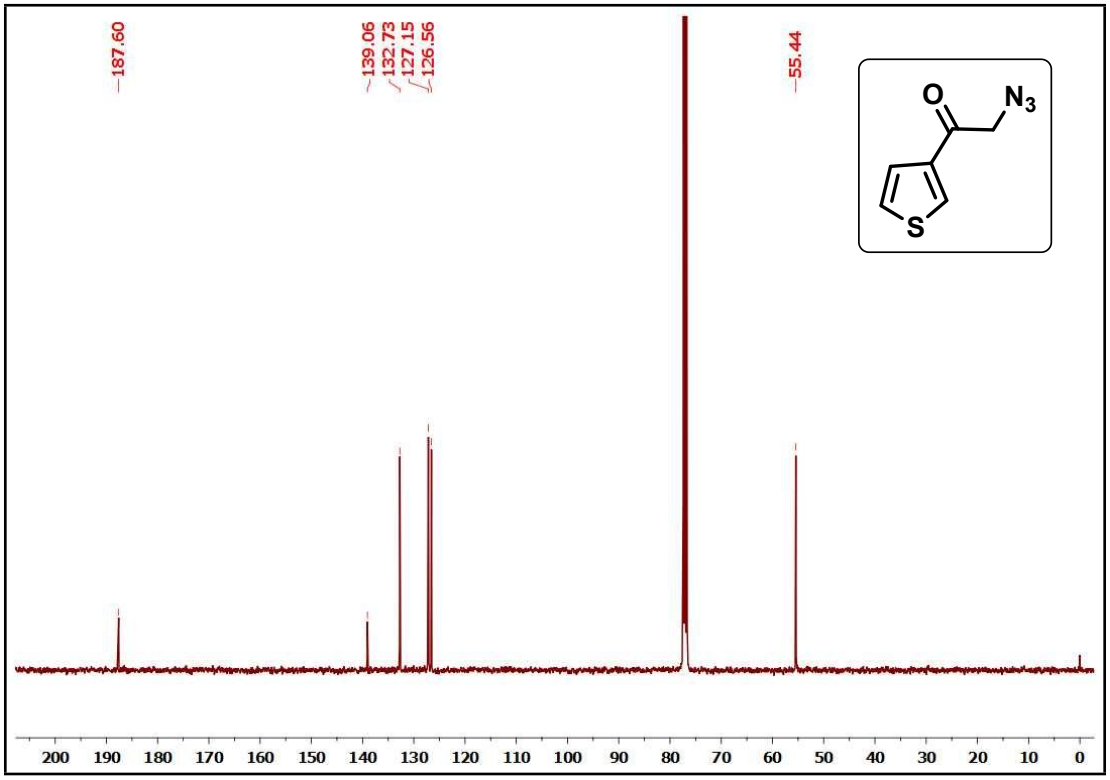


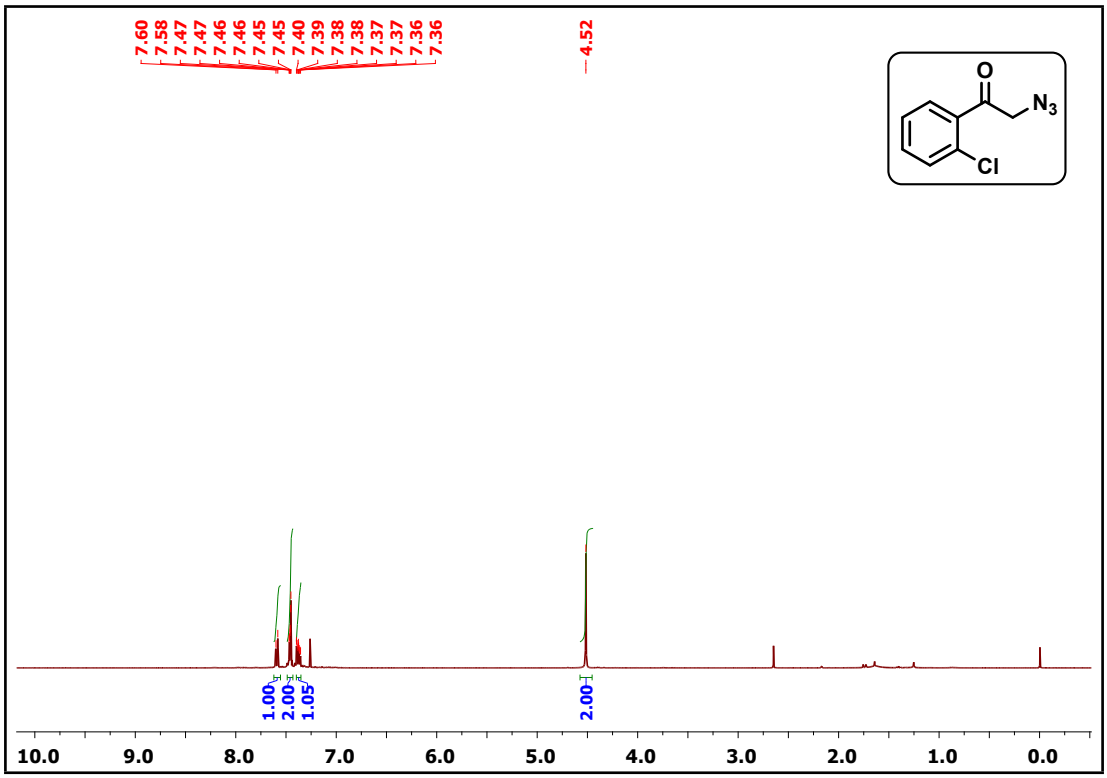
^{1}H NMR spectrum of compound 2k



^{13}C NMR spectrum of compound 2k



^{1}H NMR spectrum of compound 2l



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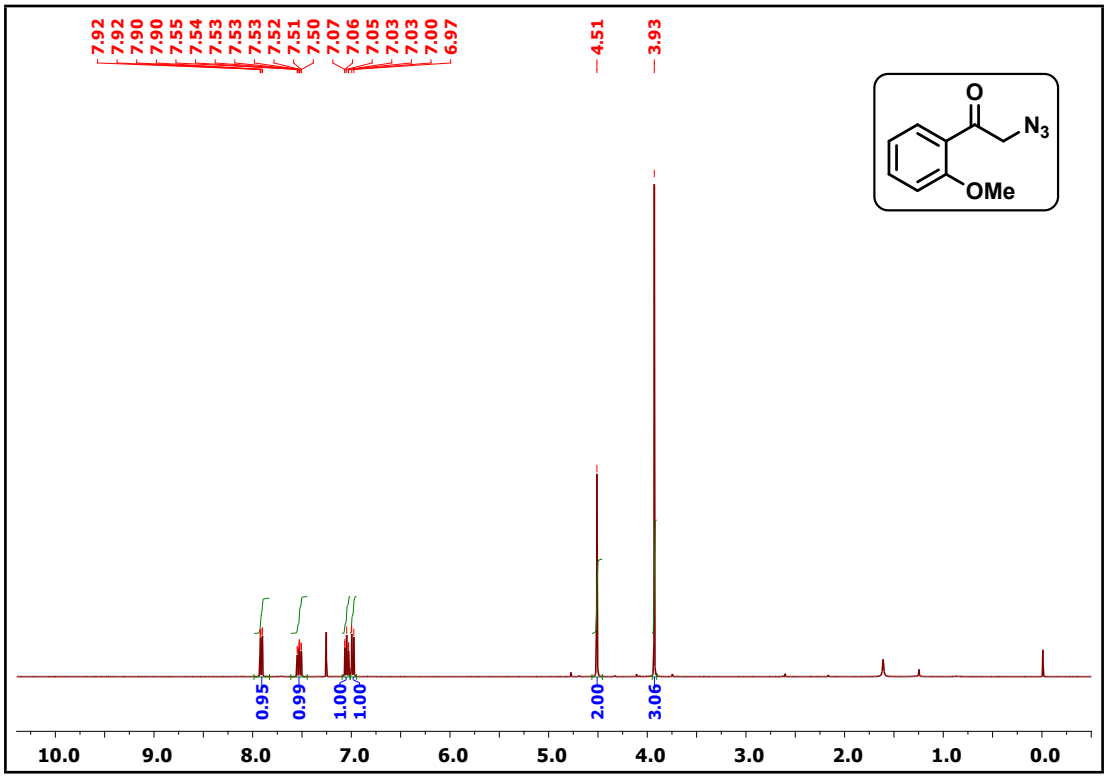
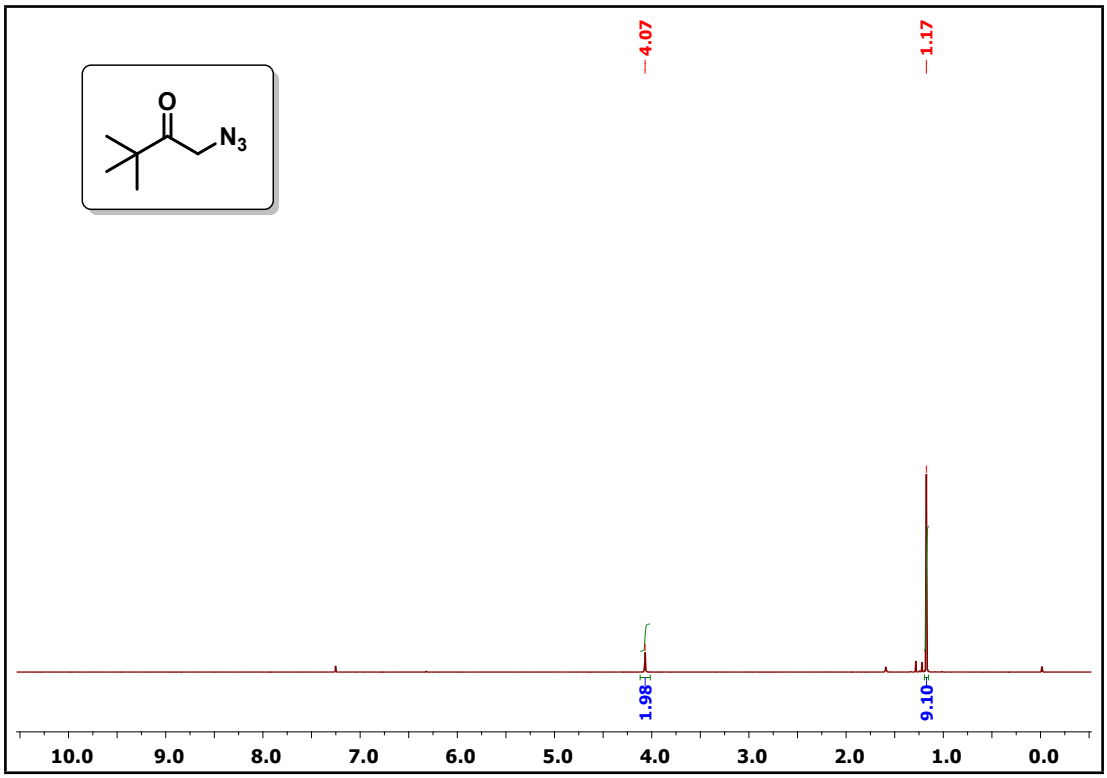
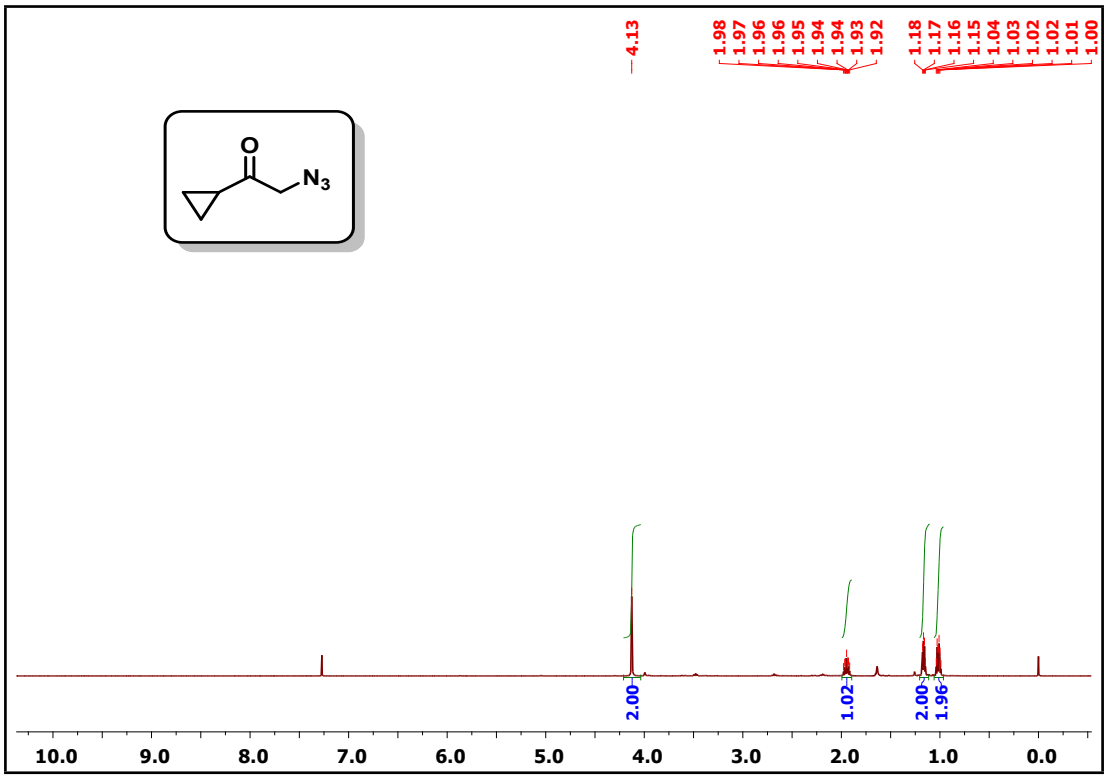


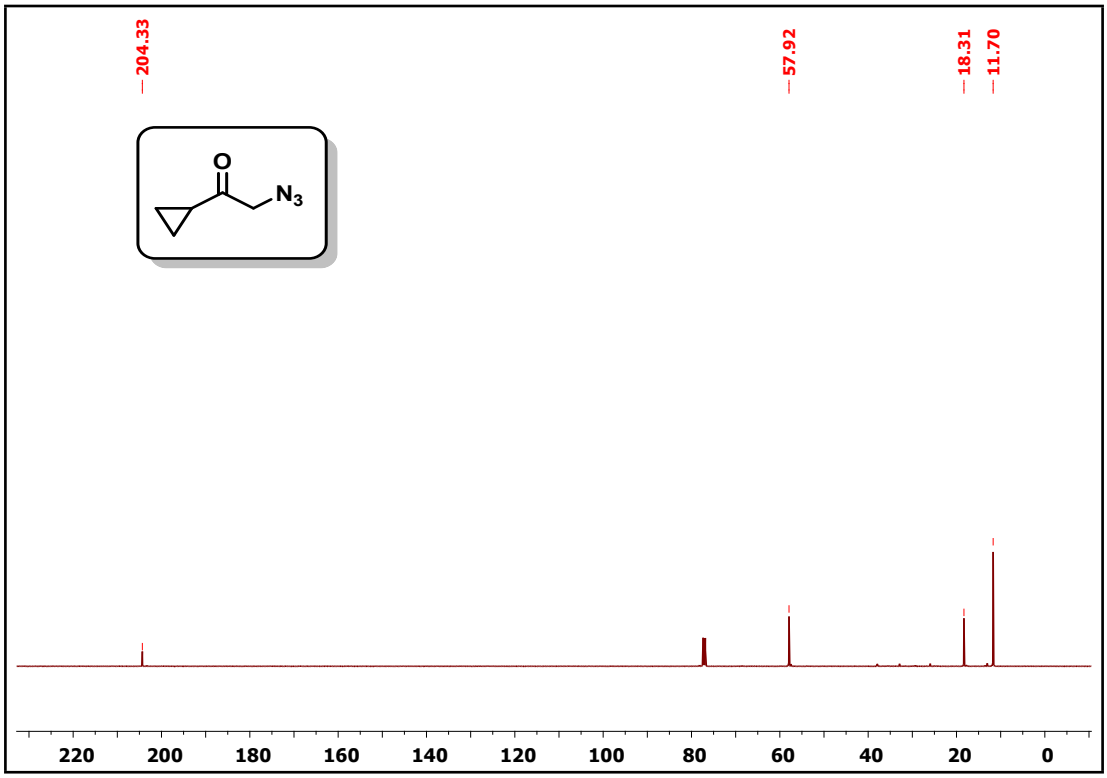
^{1}H NMR spectrum of compound 2n



^{1}H NMR spectrum of compound 2o



^{13}C NMR spectrum of compound 2o



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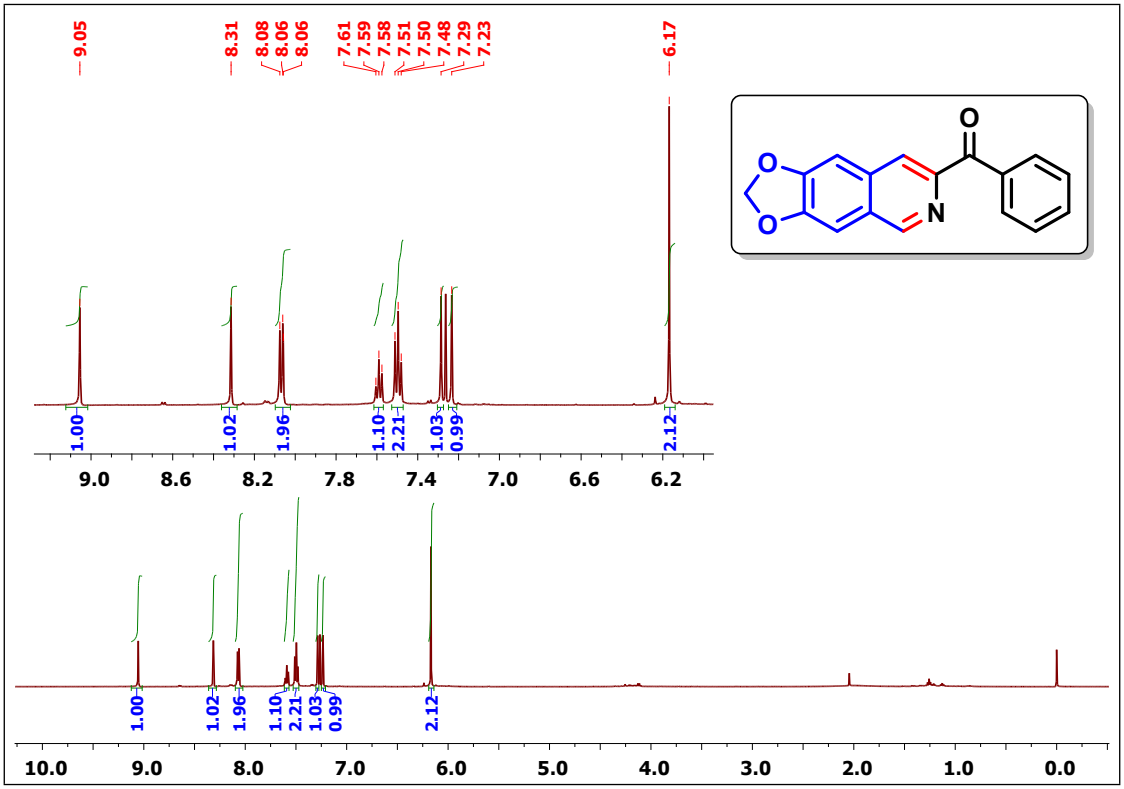

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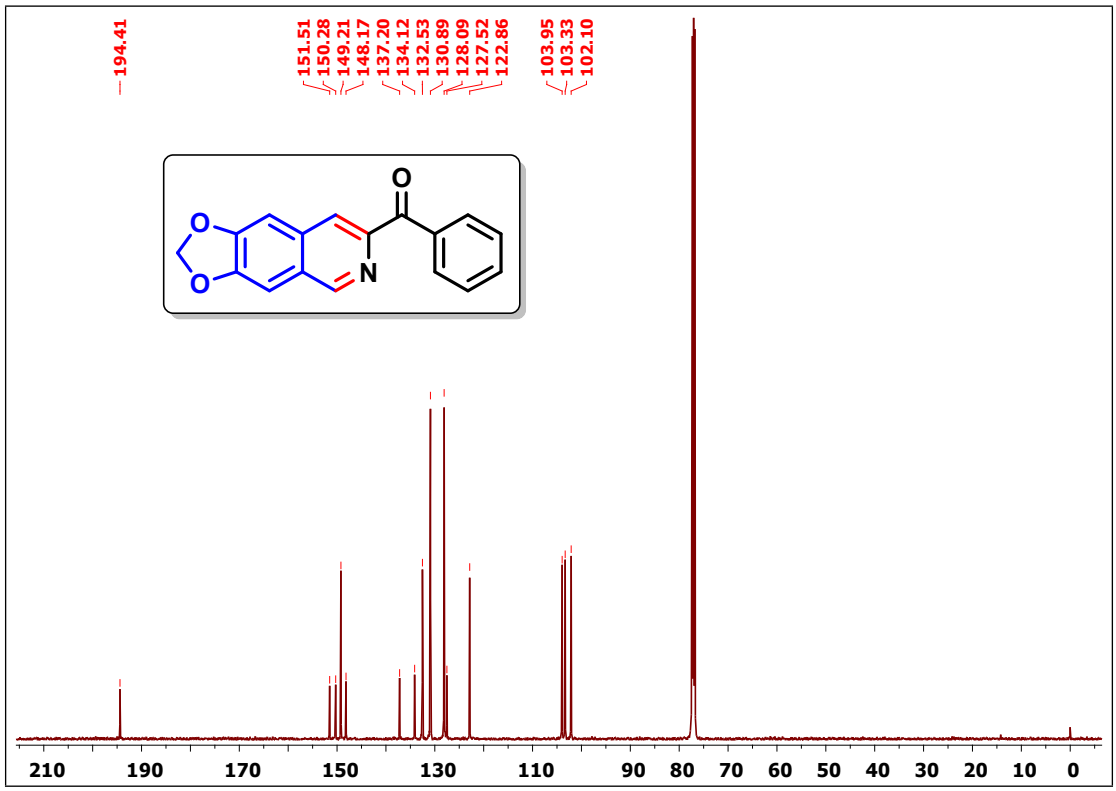

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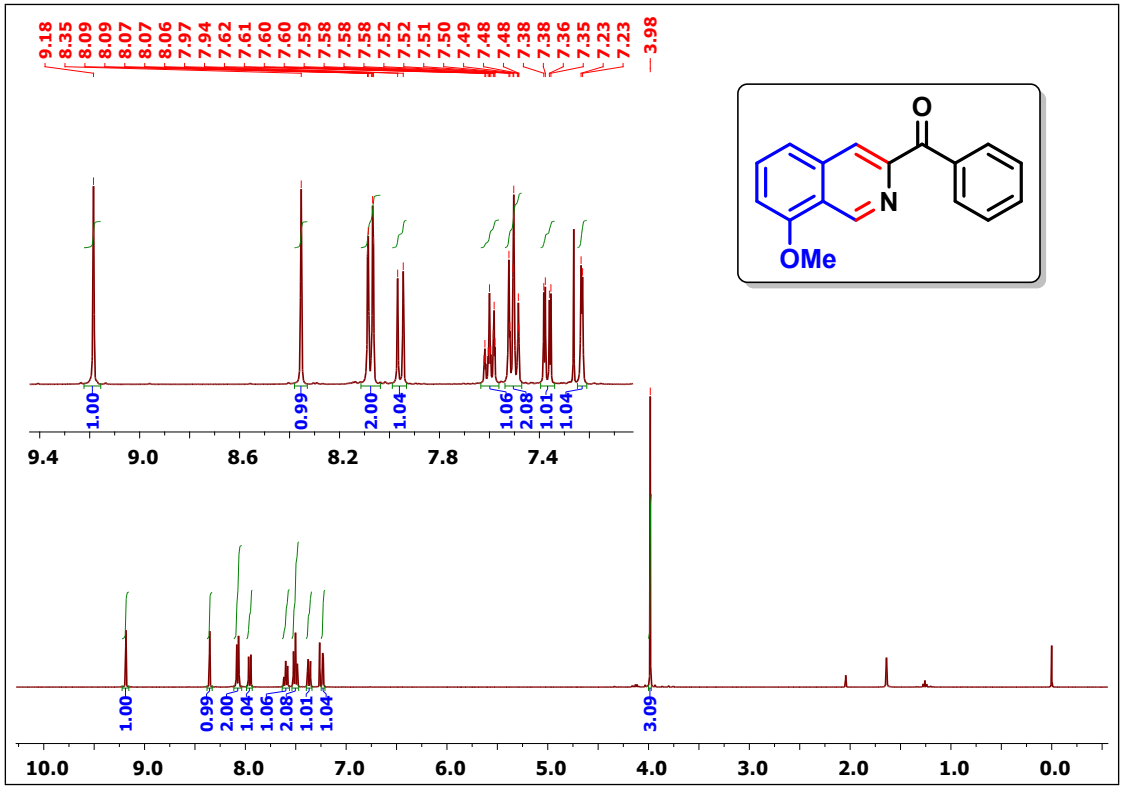

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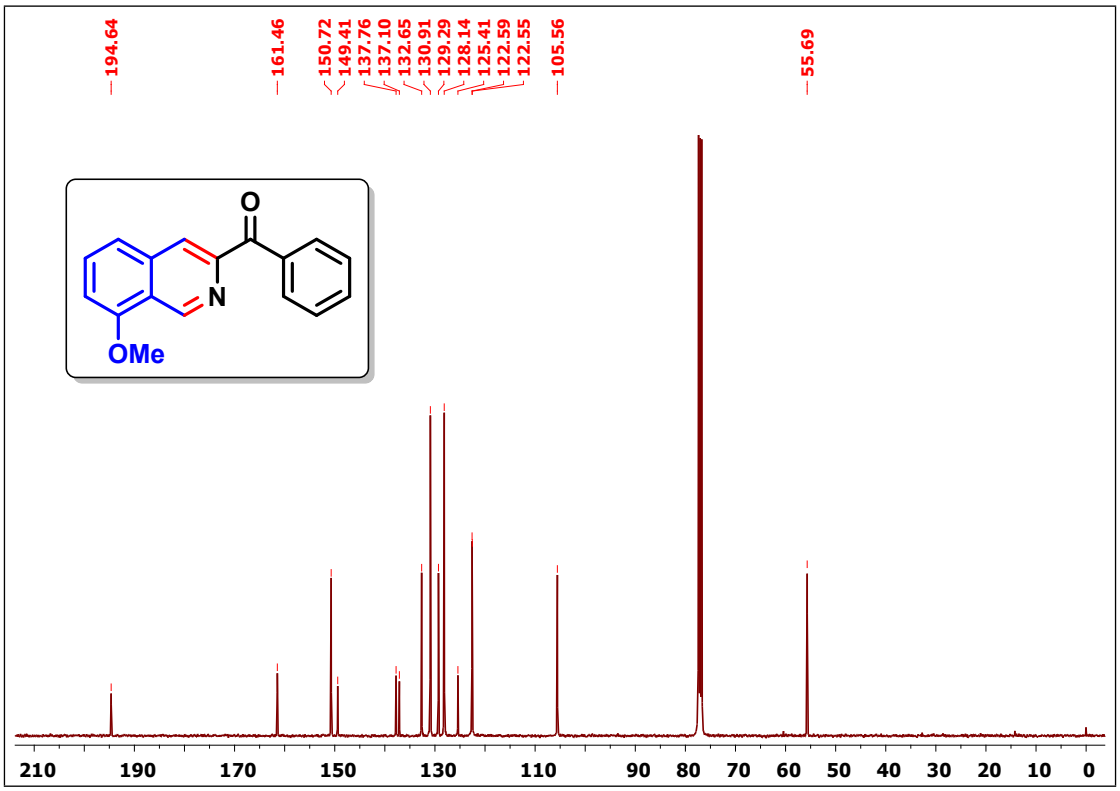

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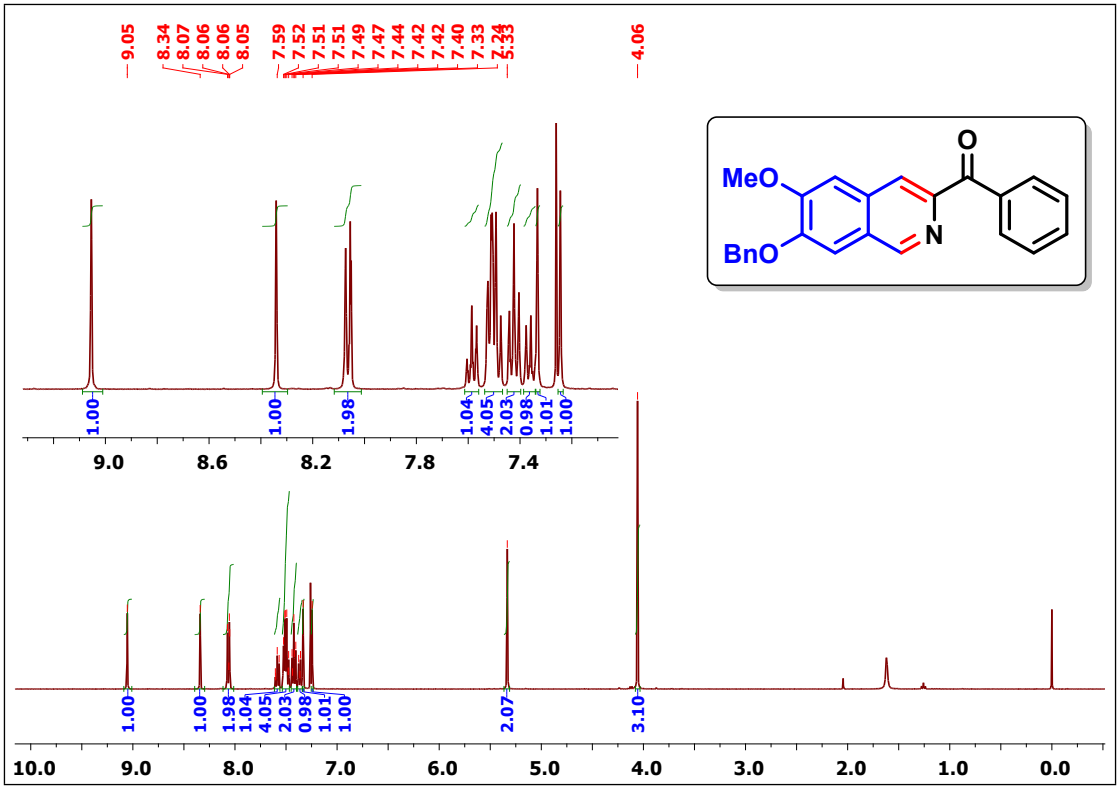

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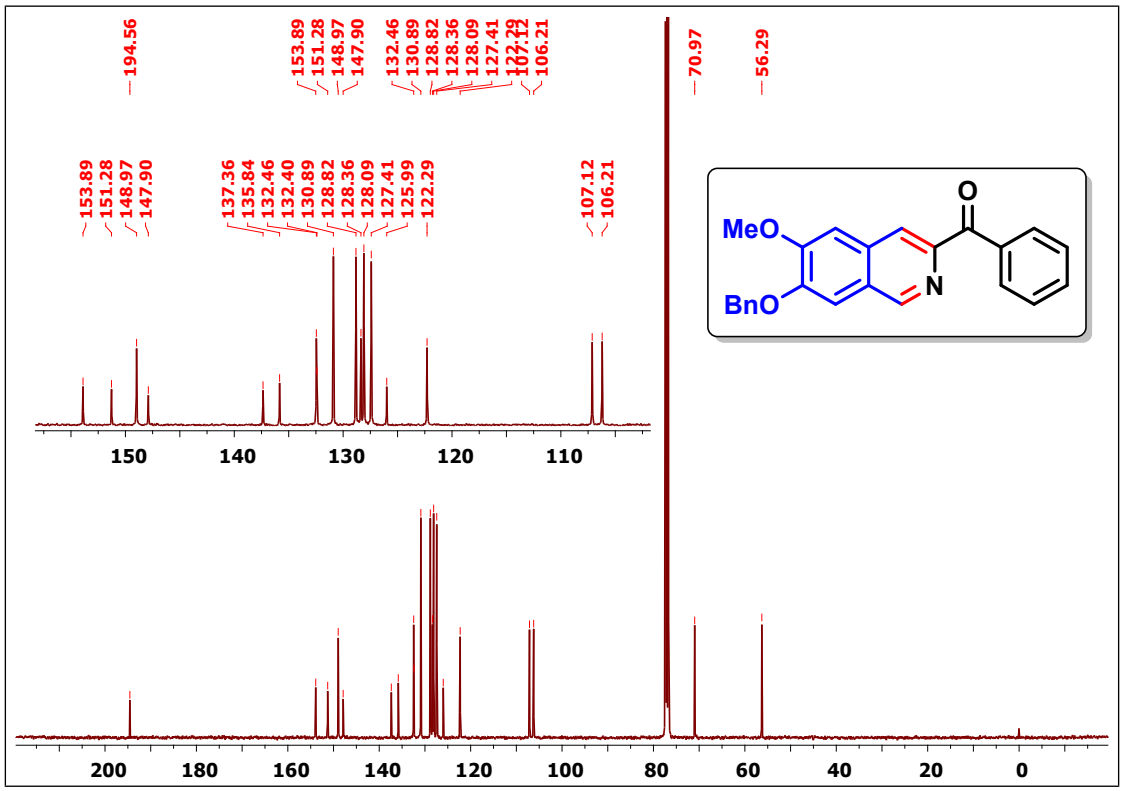

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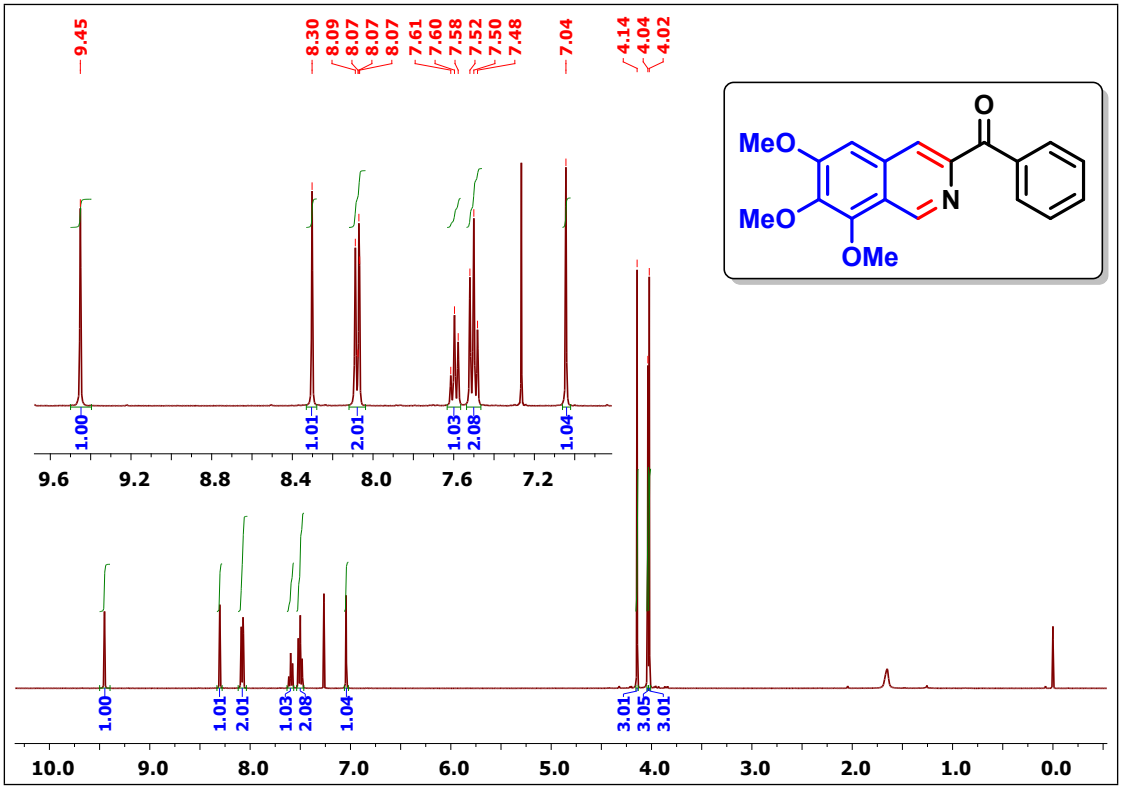

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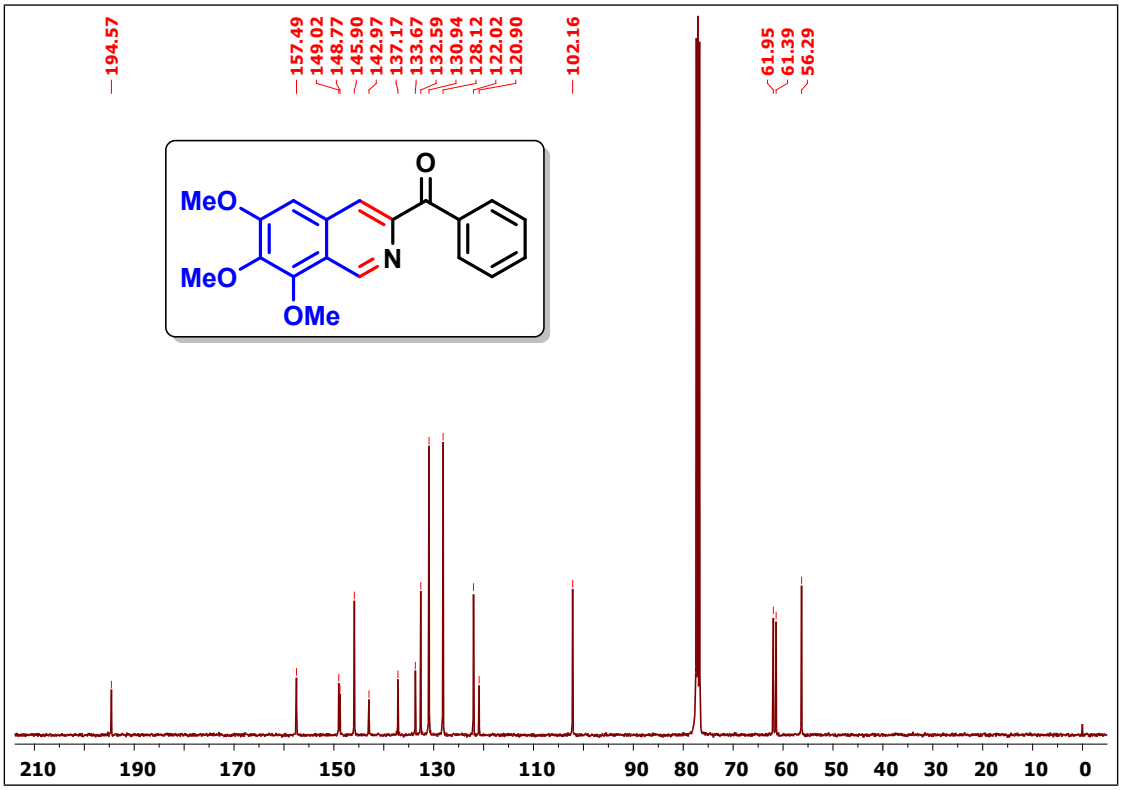

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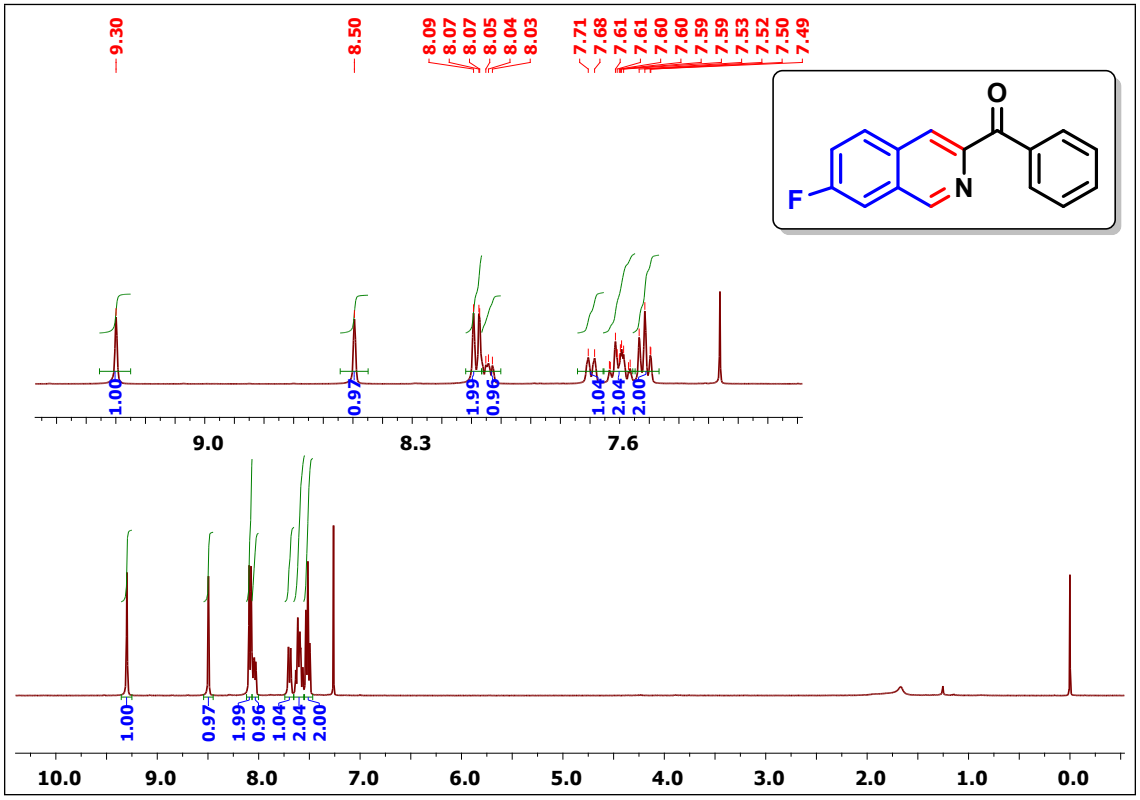
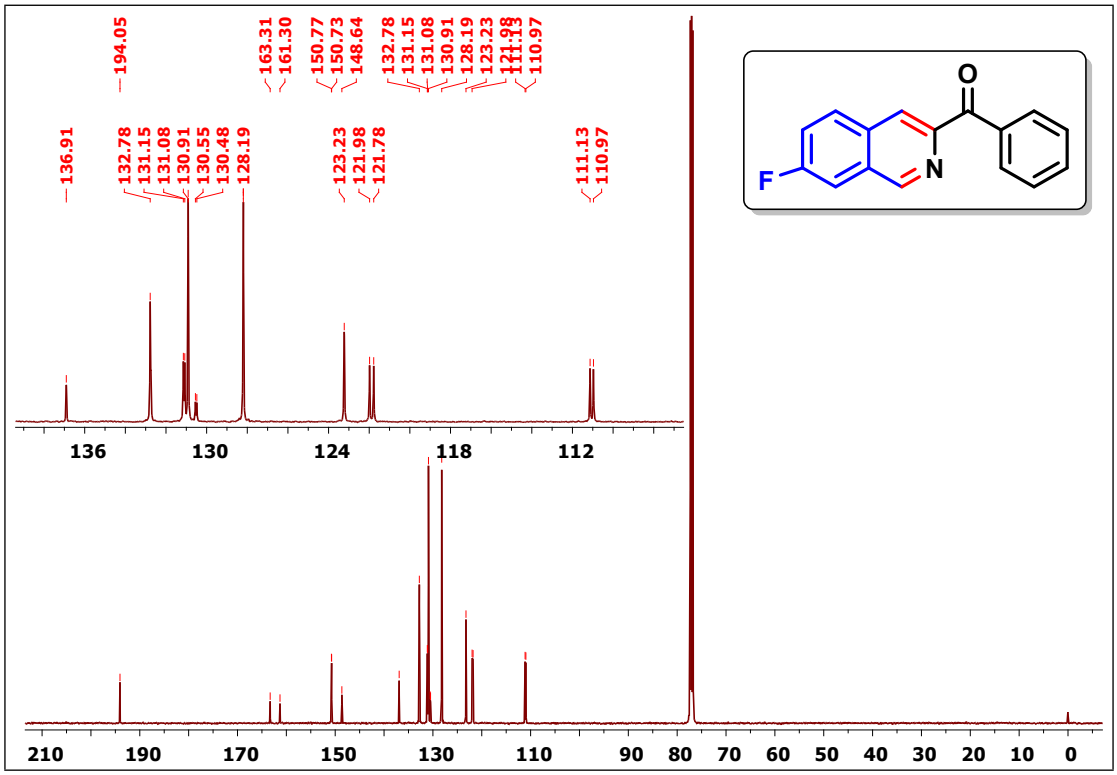
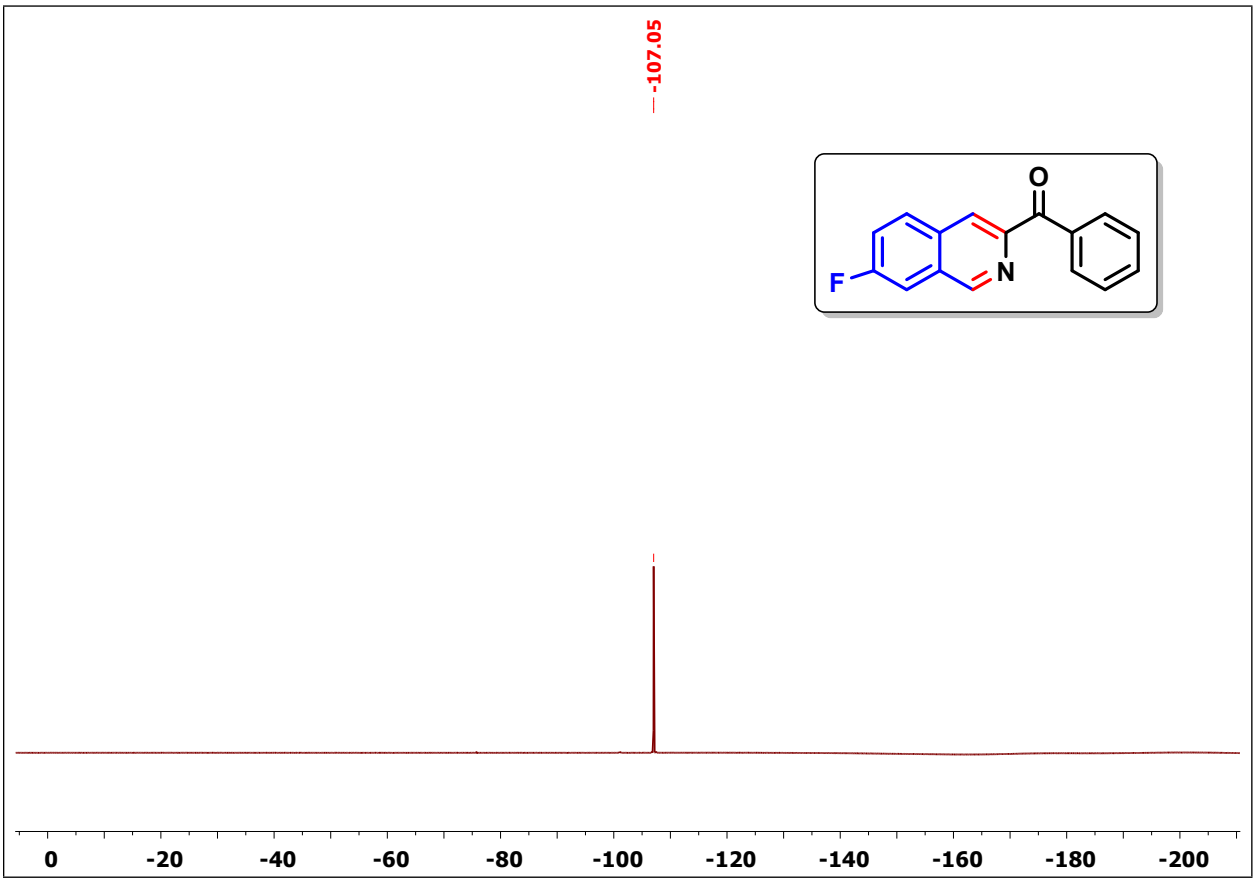


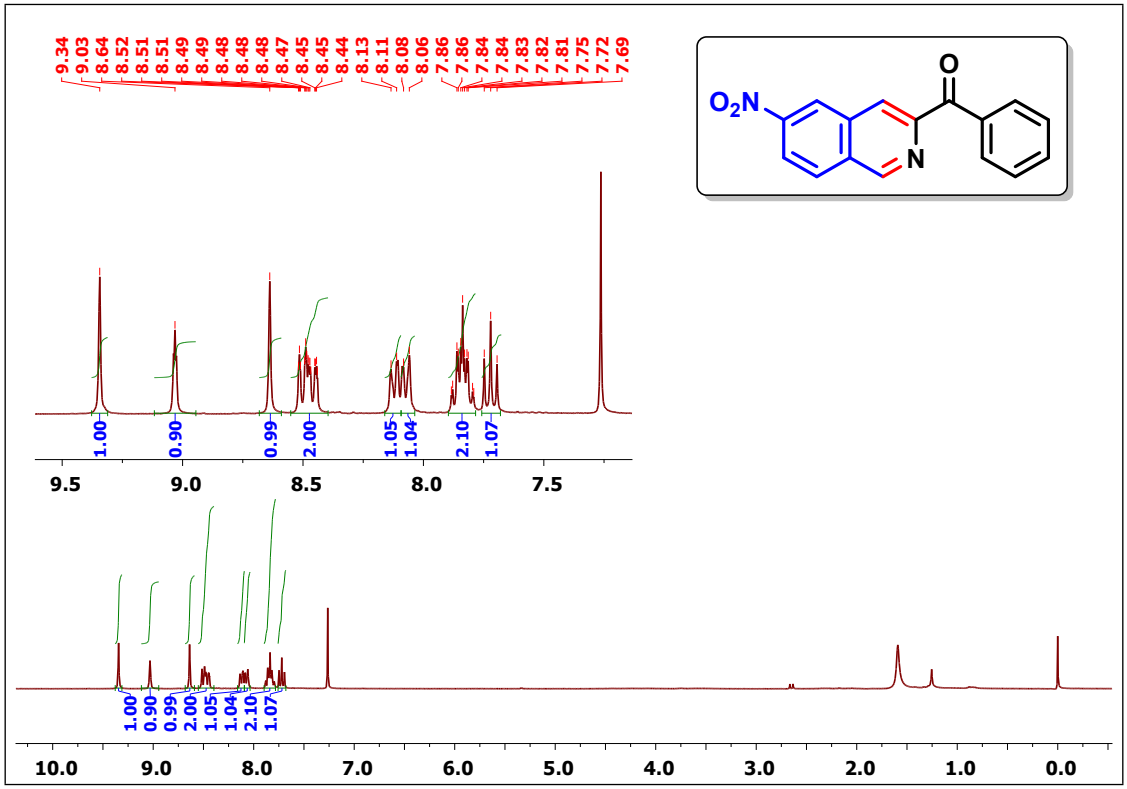
^{13}C NMR spectrum of compound 3fa



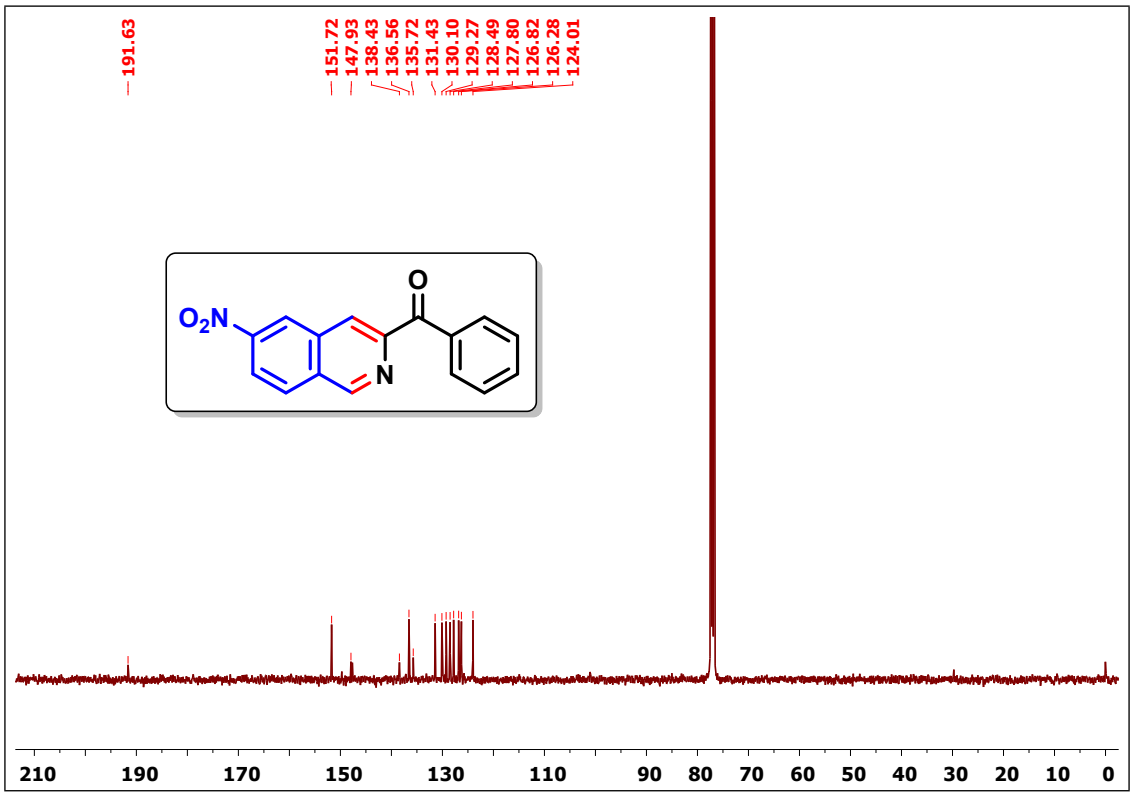
^{19}F NMR spectrum of compound 3fa



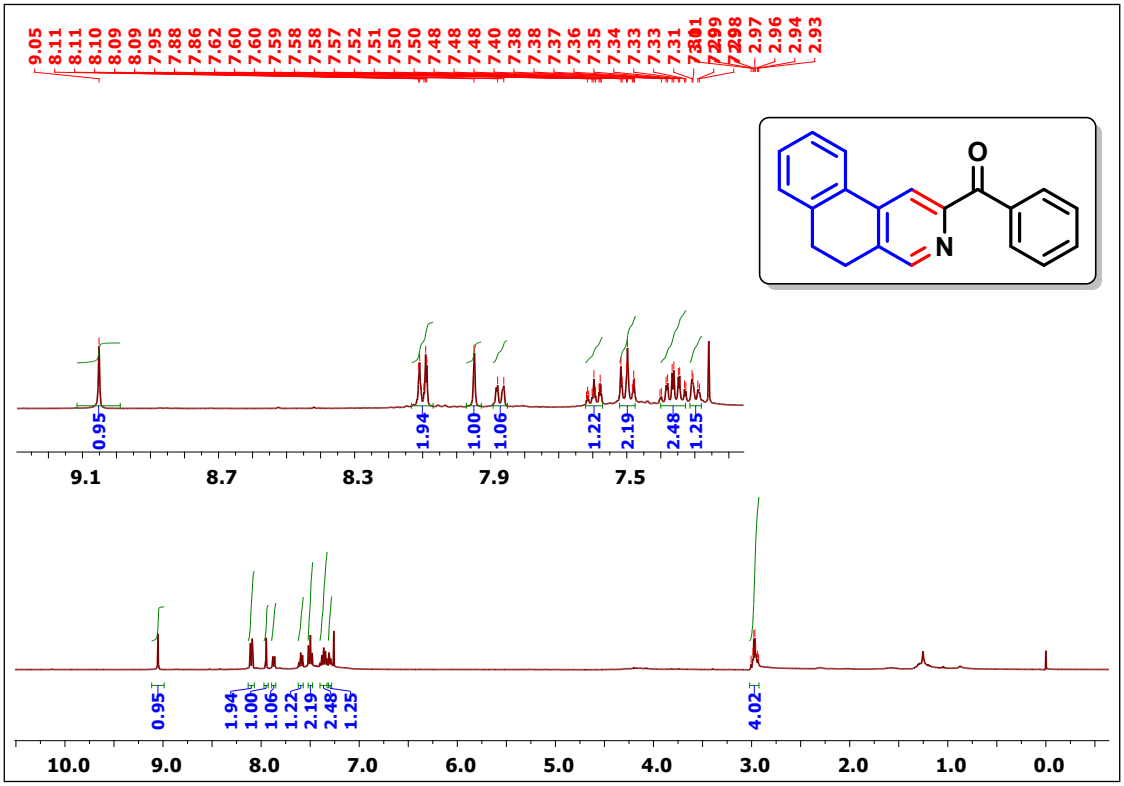
^{1}H NMR spectrum of compound 3ga



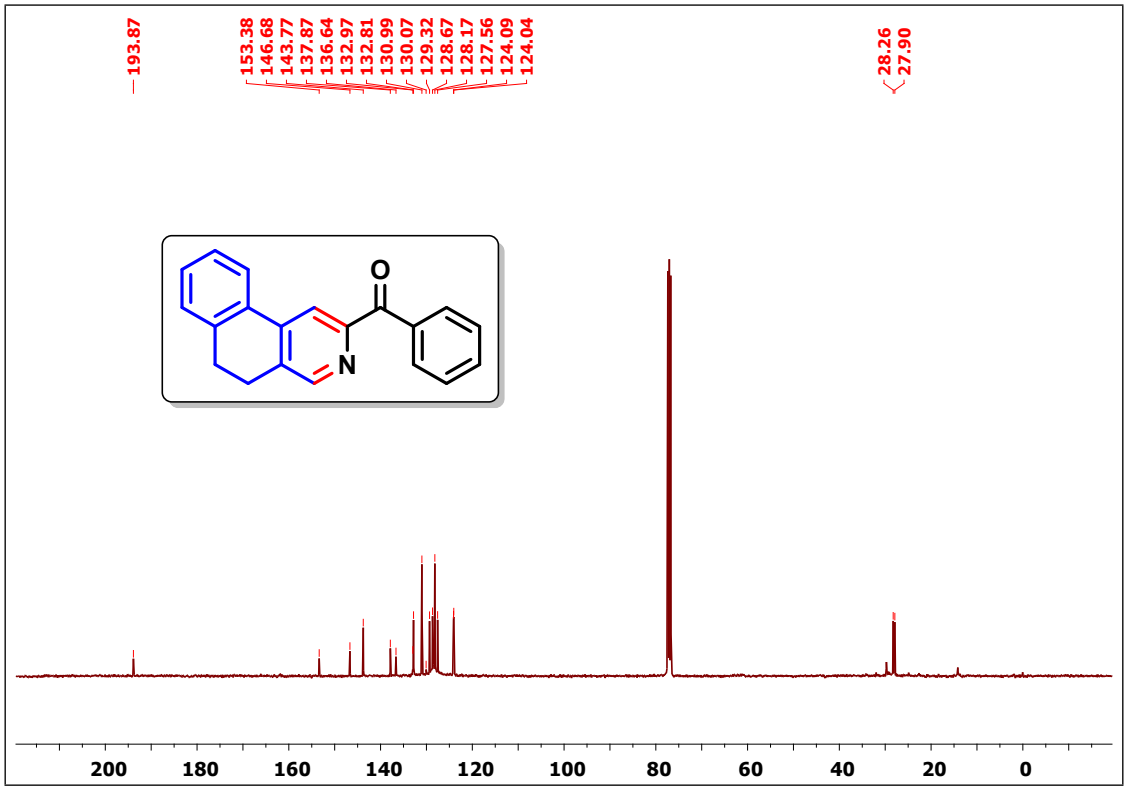
^{13}C NMR spectrum of compound 3ga



^{1}H NMR spectrum of compound 3ha



^{13}C NMR spectrum of compound 3ha



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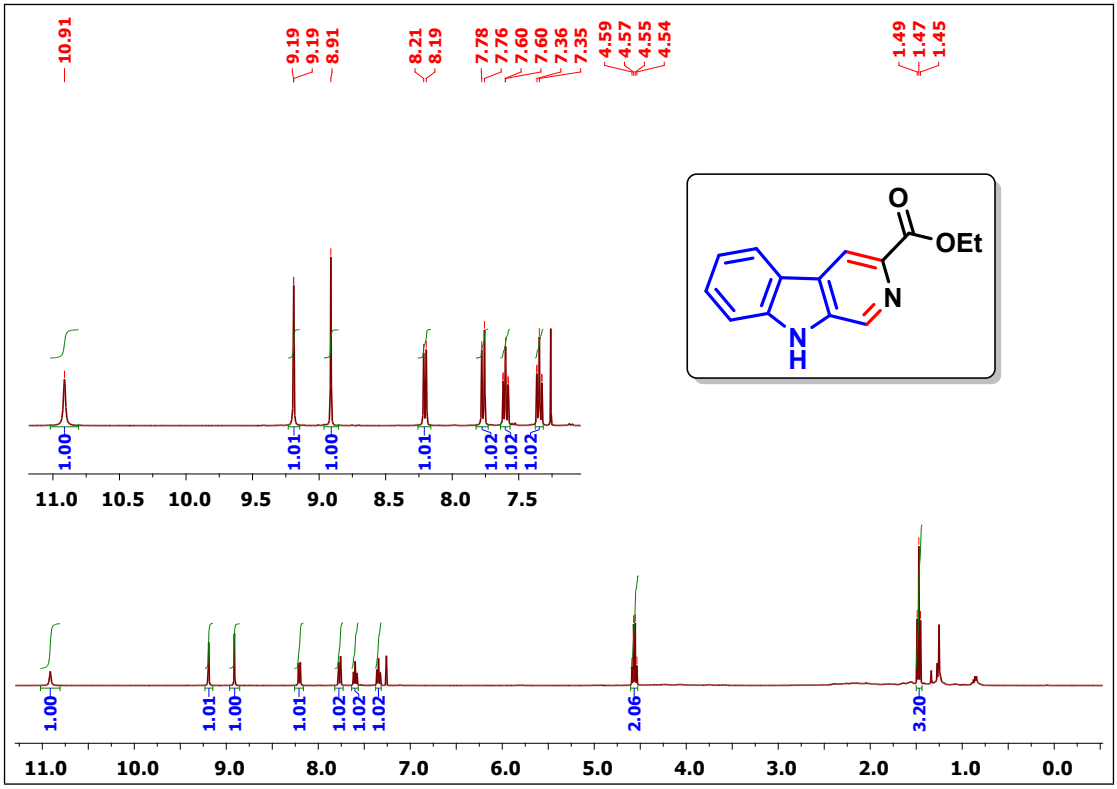
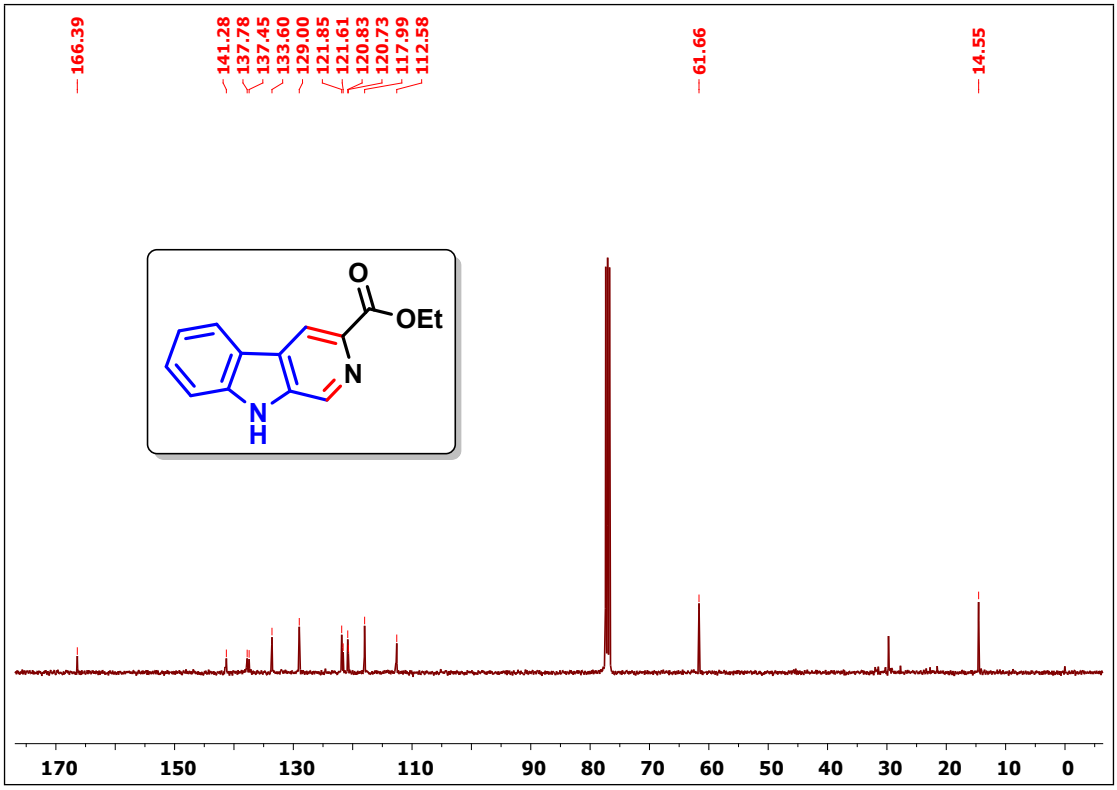
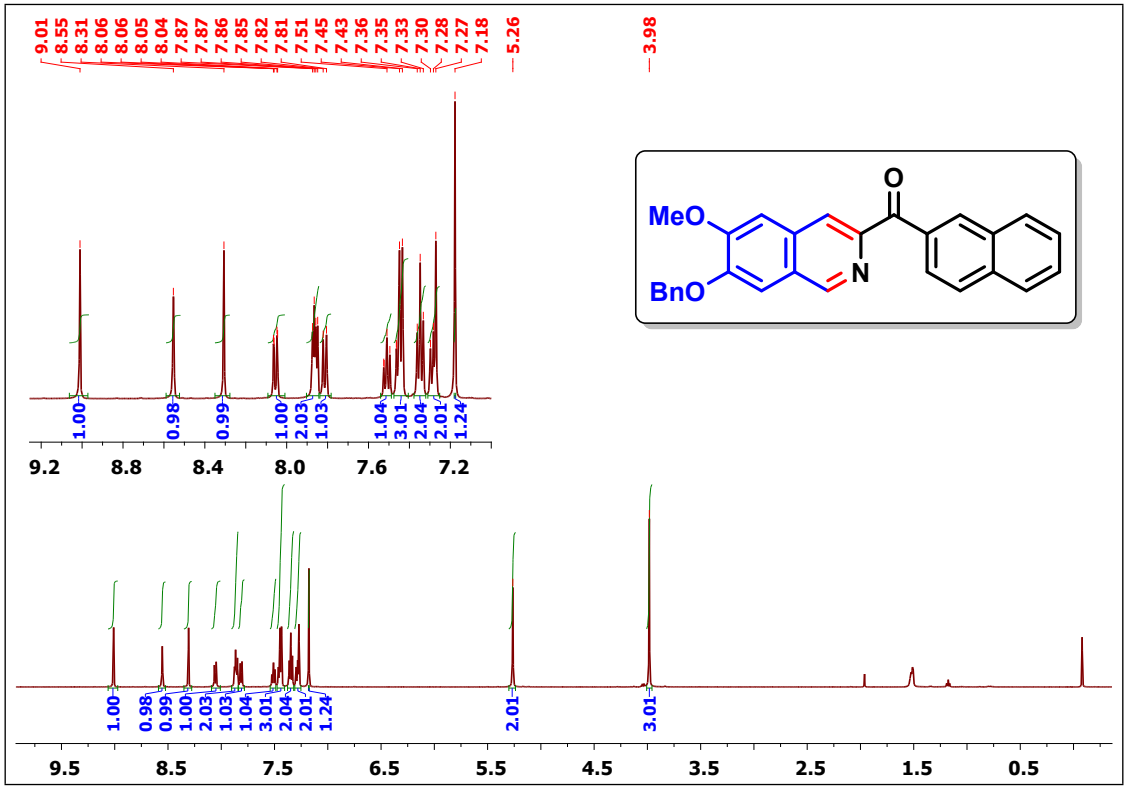


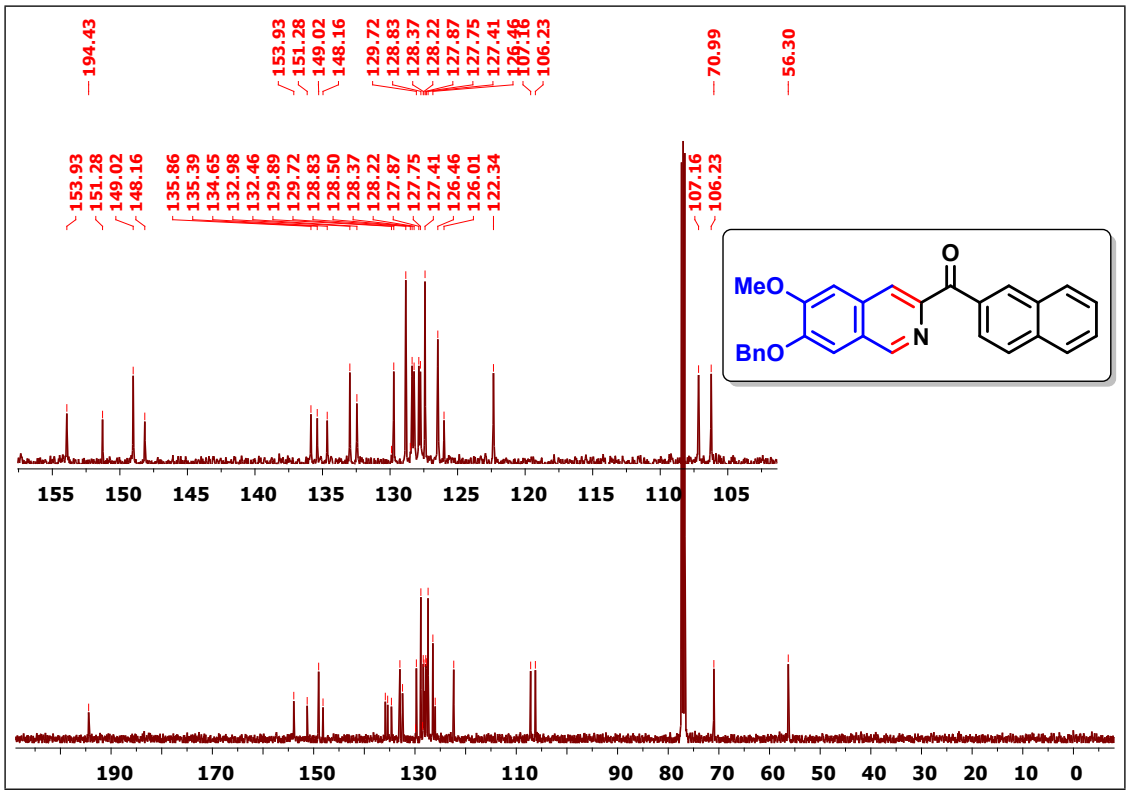
^{13}C NMR spectrum of compound 3il



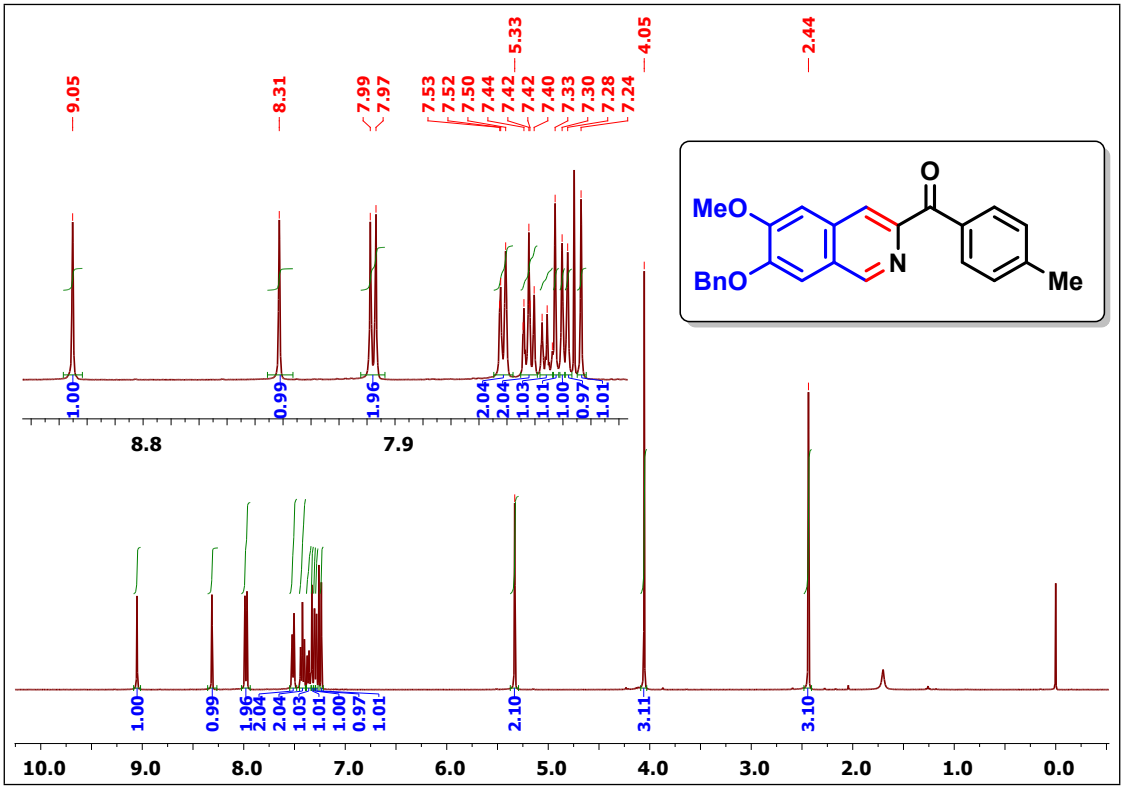
^{1}H NMR spectrum of compound 3jj



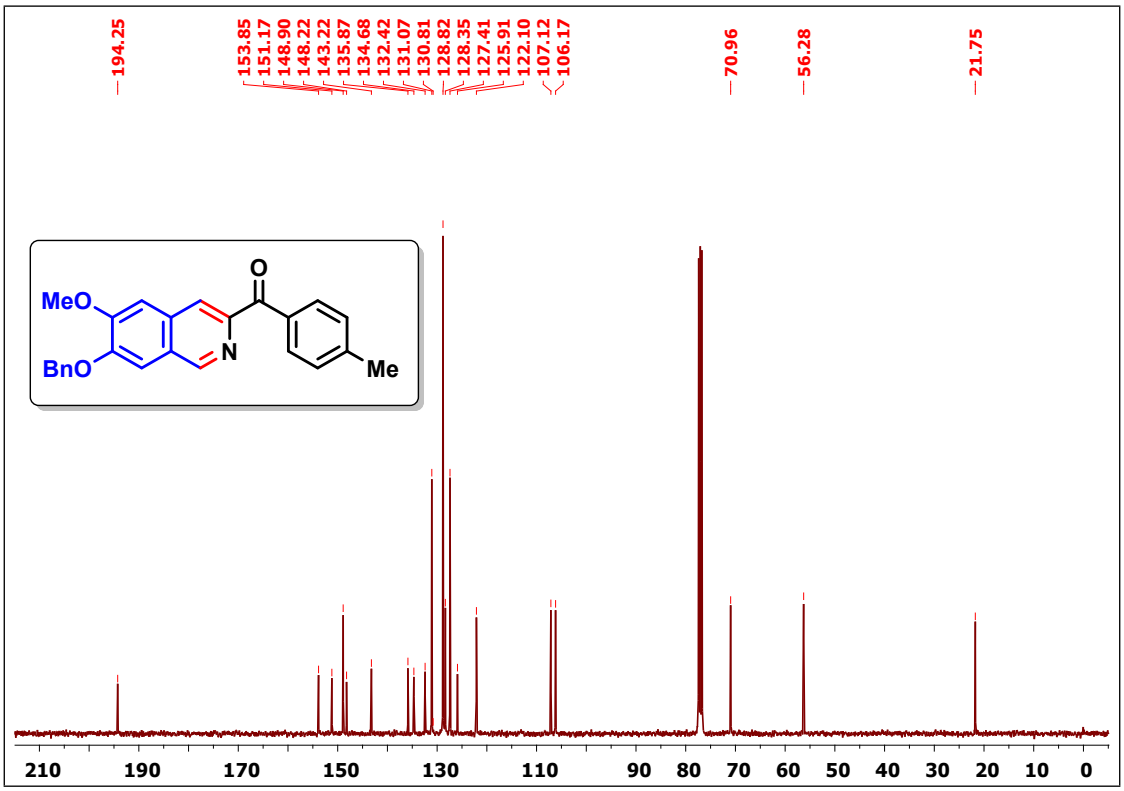
^{13}C NMR spectrum of compound 3jj



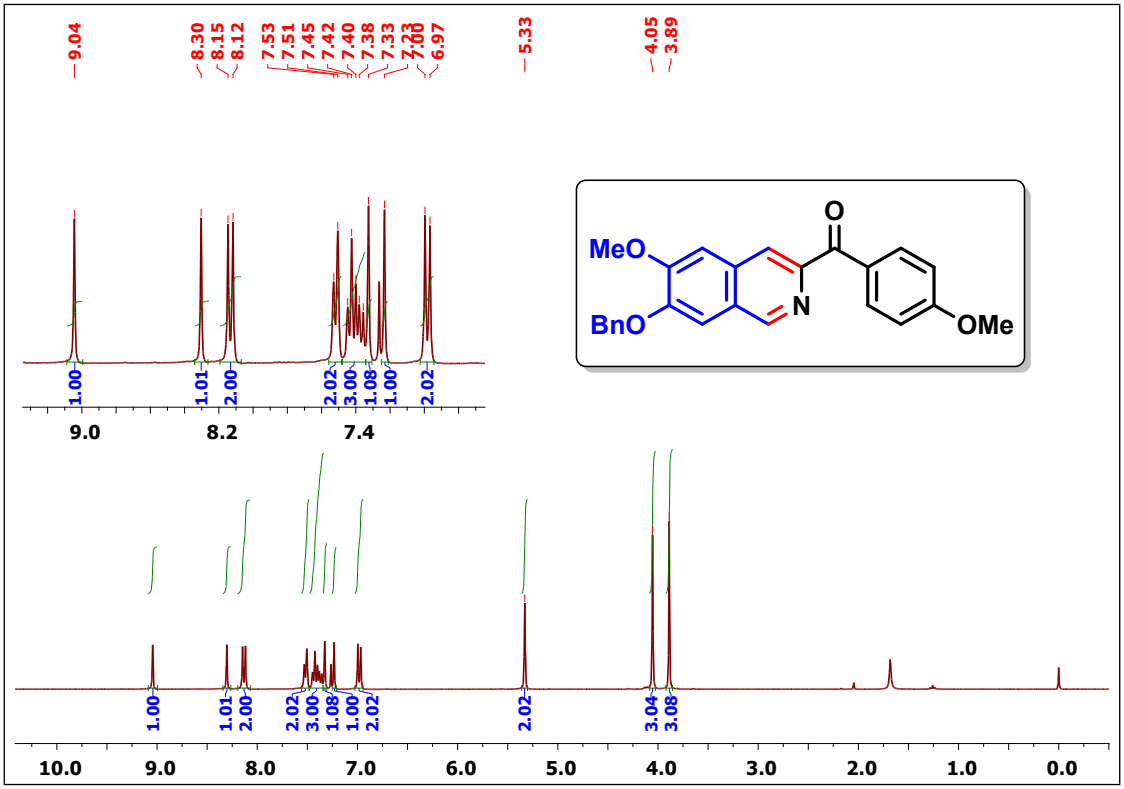
^{1}H NMR spectrum of compound 3jb



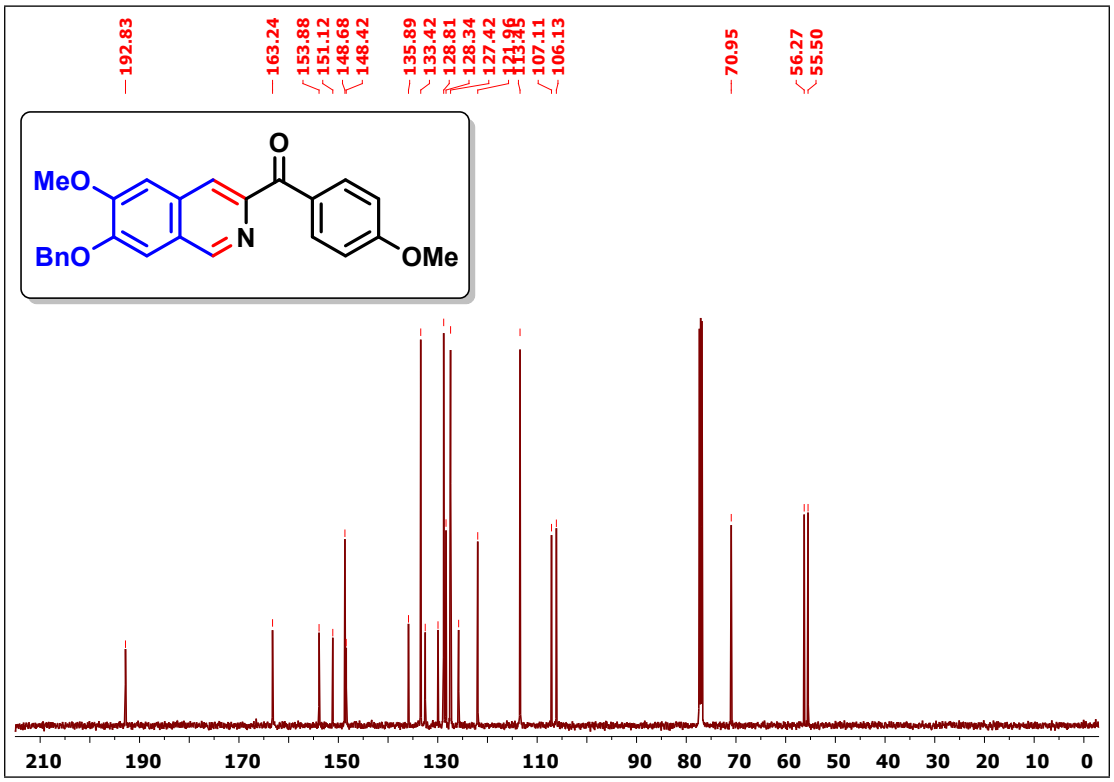
^{13}C NMR spectrum of compound 3jb



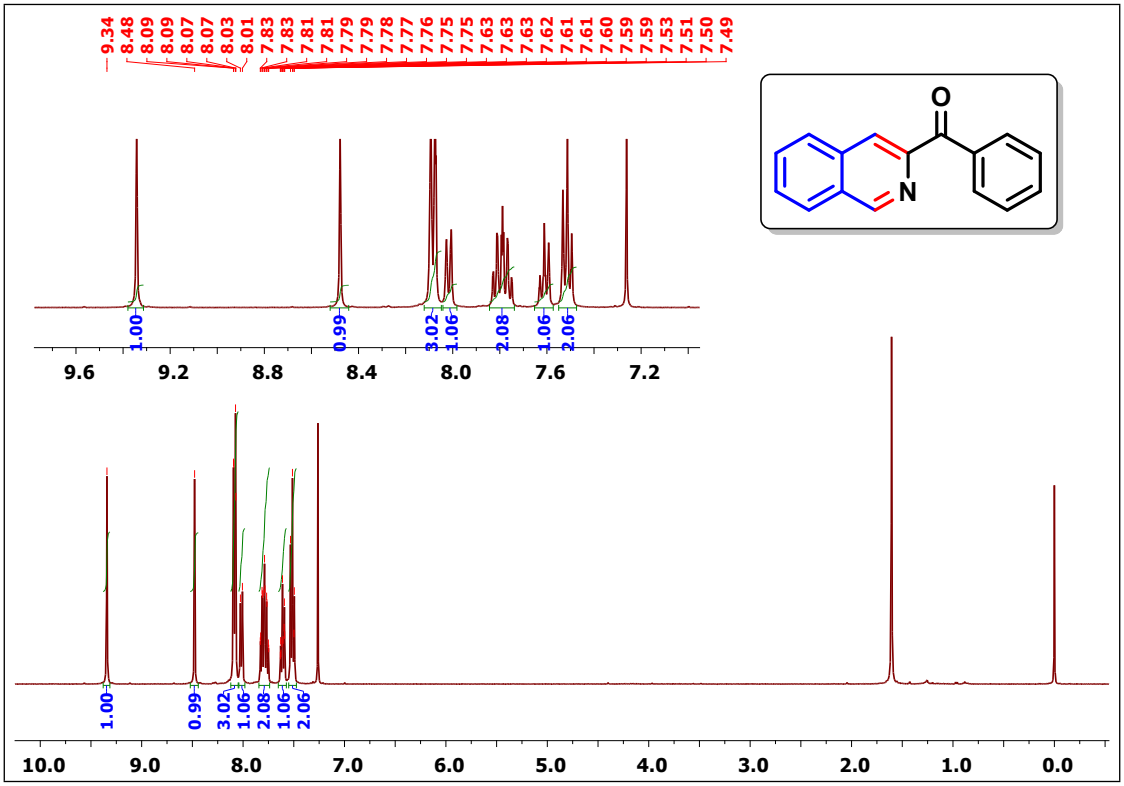
^{1}H NMR spectrum of compound 3jc



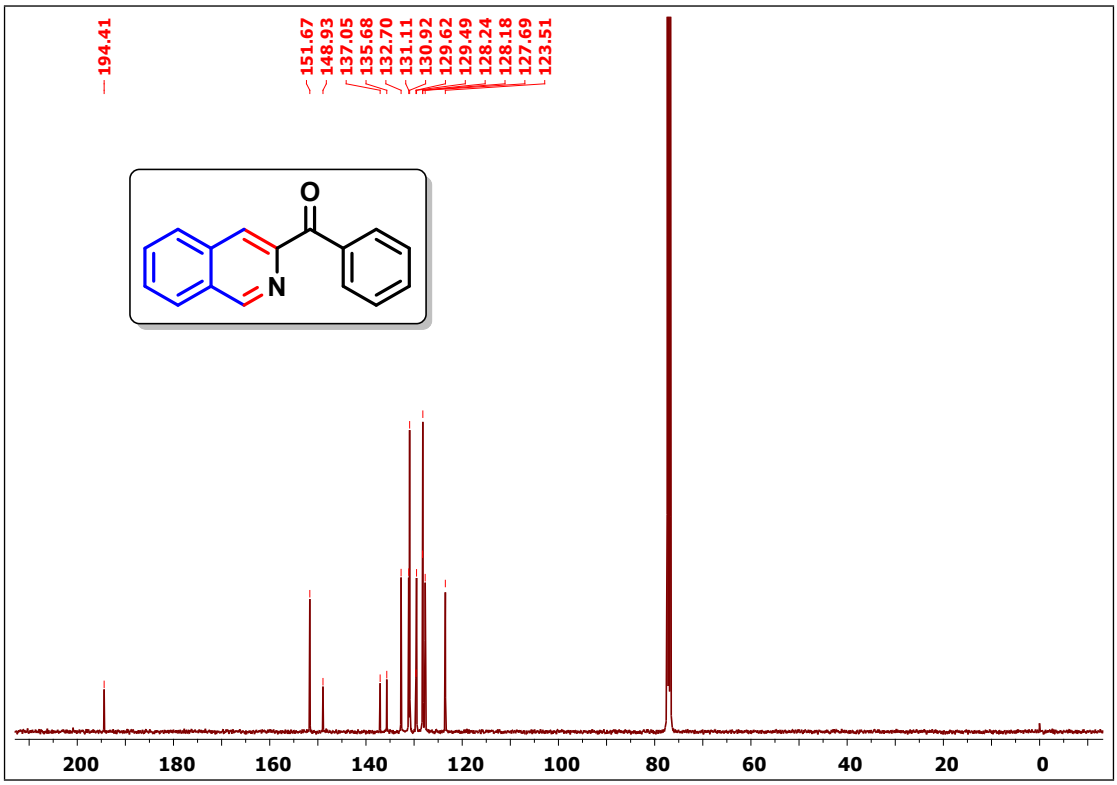
^{13}C NMR spectrum of compound 3jc



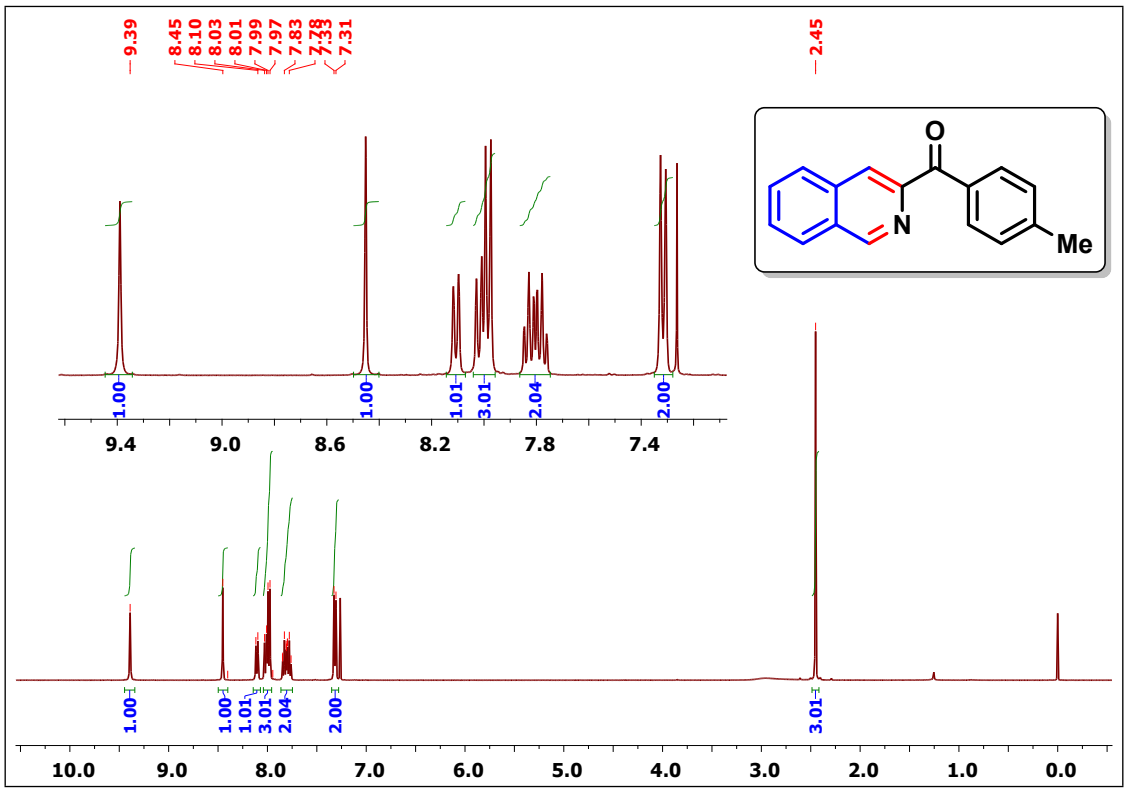
^{1}H NMR spectrum of compound 3aa



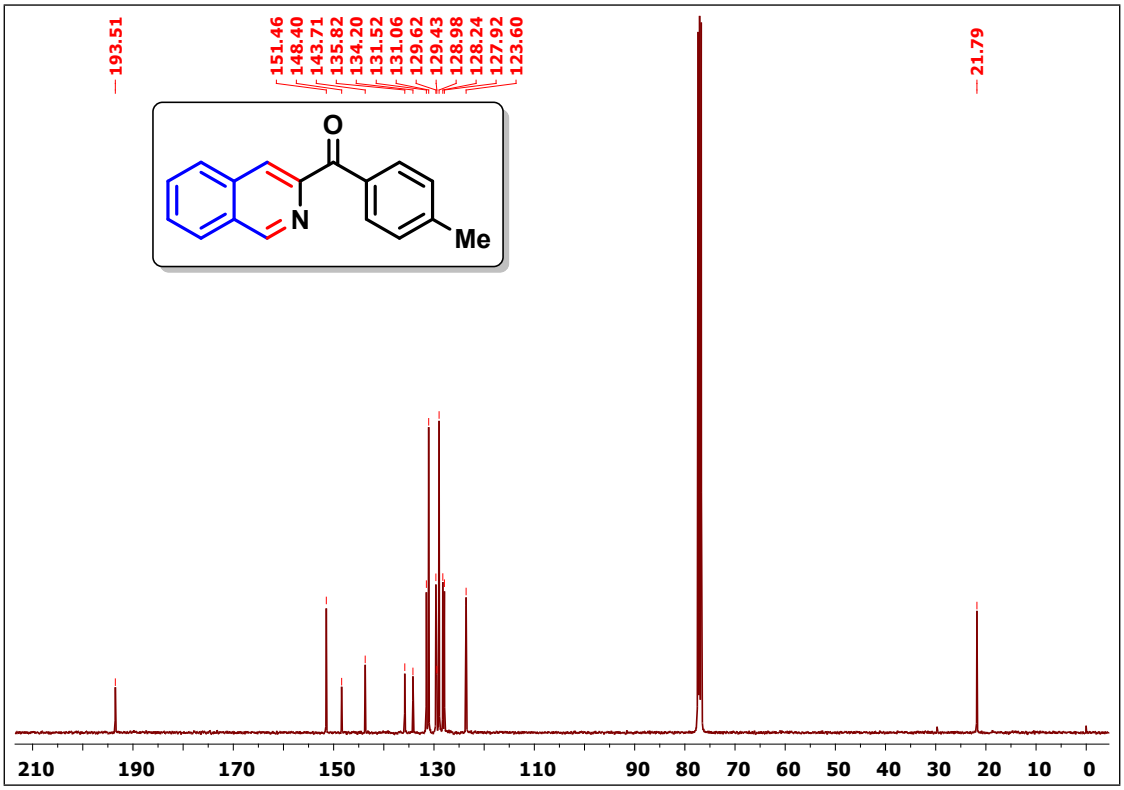
^{13}C NMR spectrum of compound 3aa



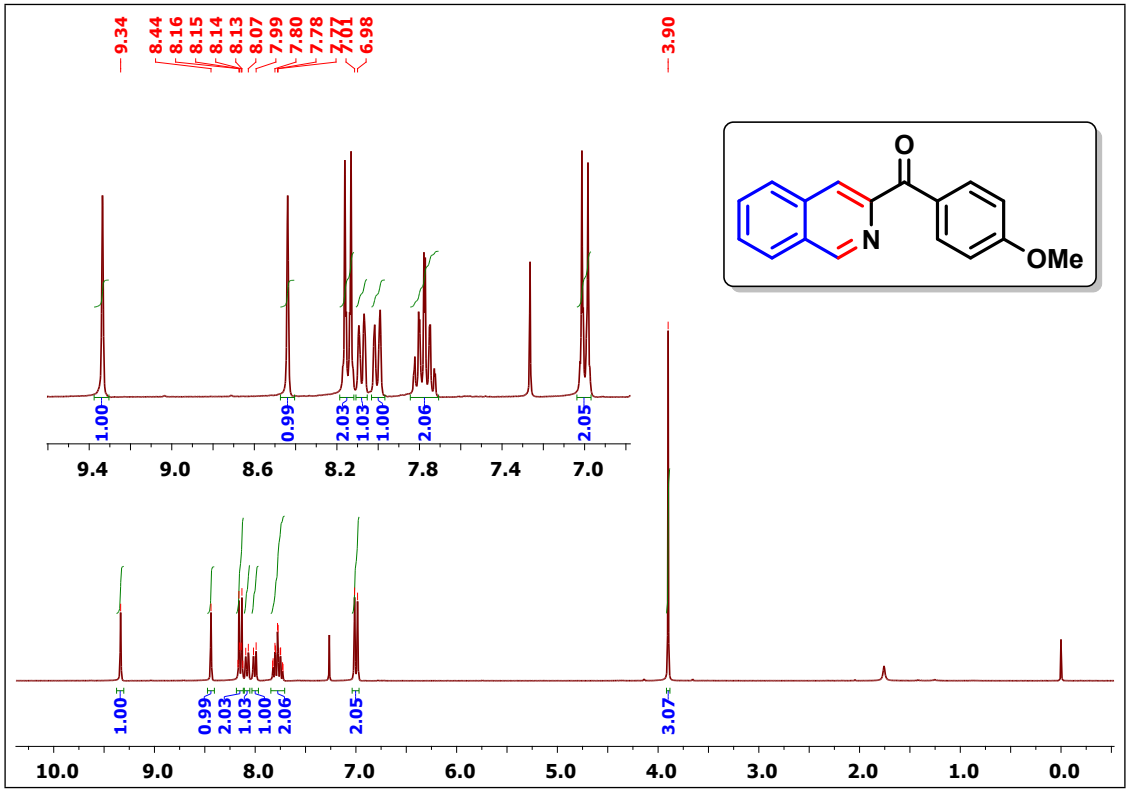
^{1}H NMR spectrum of compound 3ab



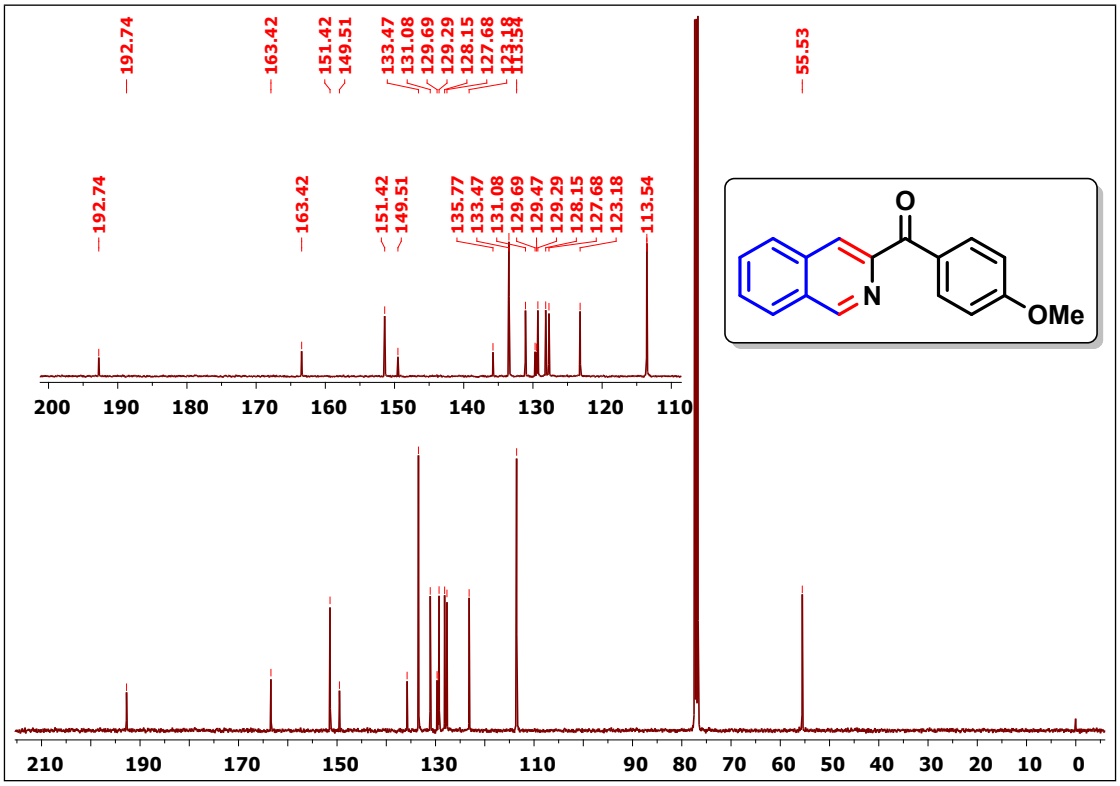
^{13}C NMR spectrum of compound 3ab



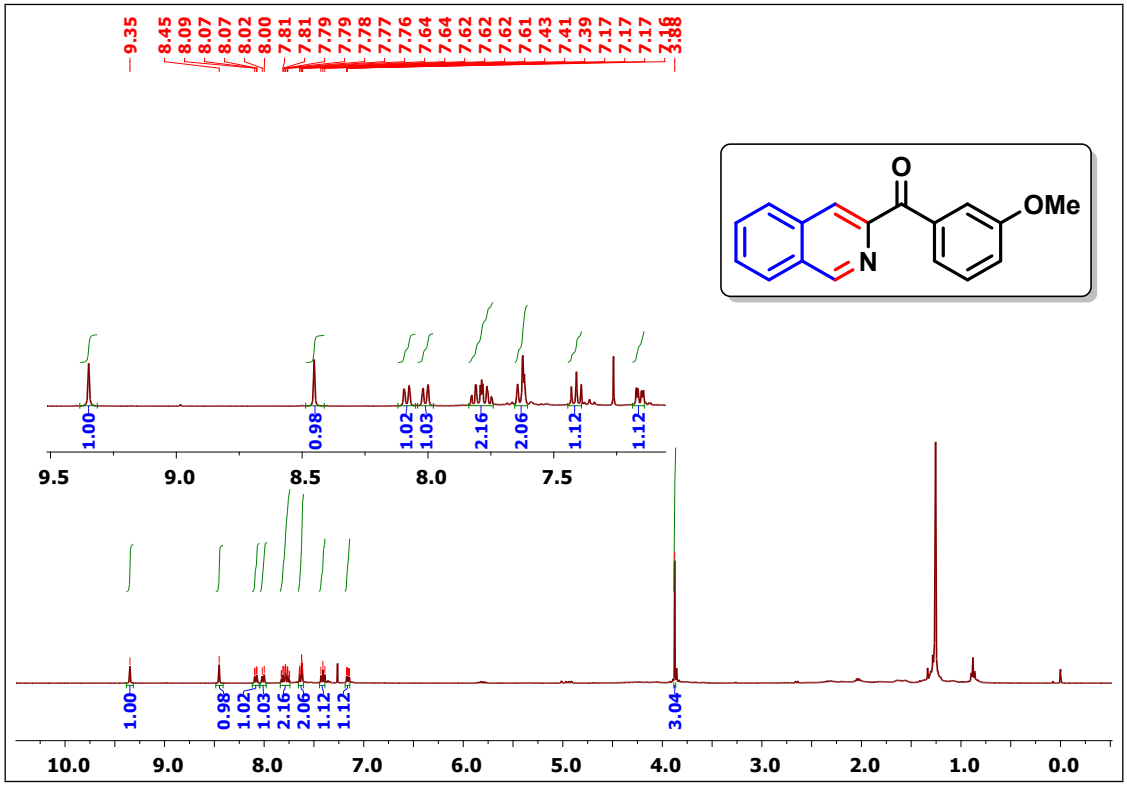
^{1}H NMR spectrum of compound 3ac



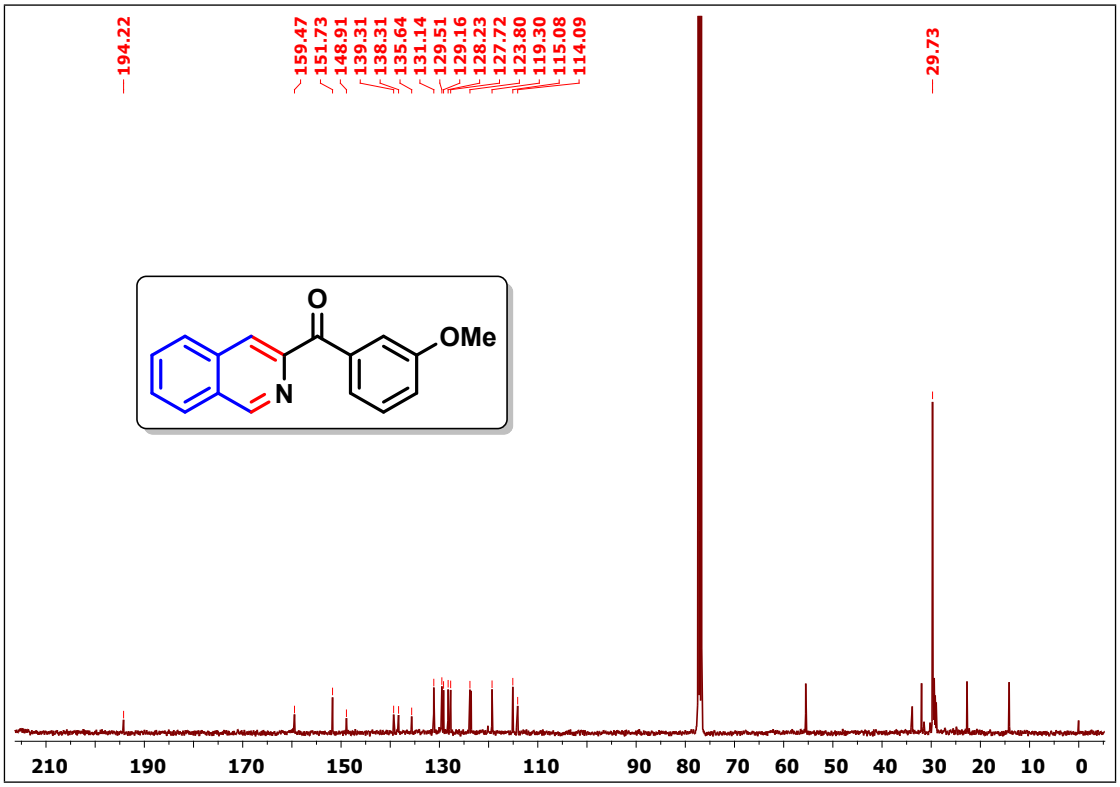
^{13}C NMR spectrum of compound 3ac



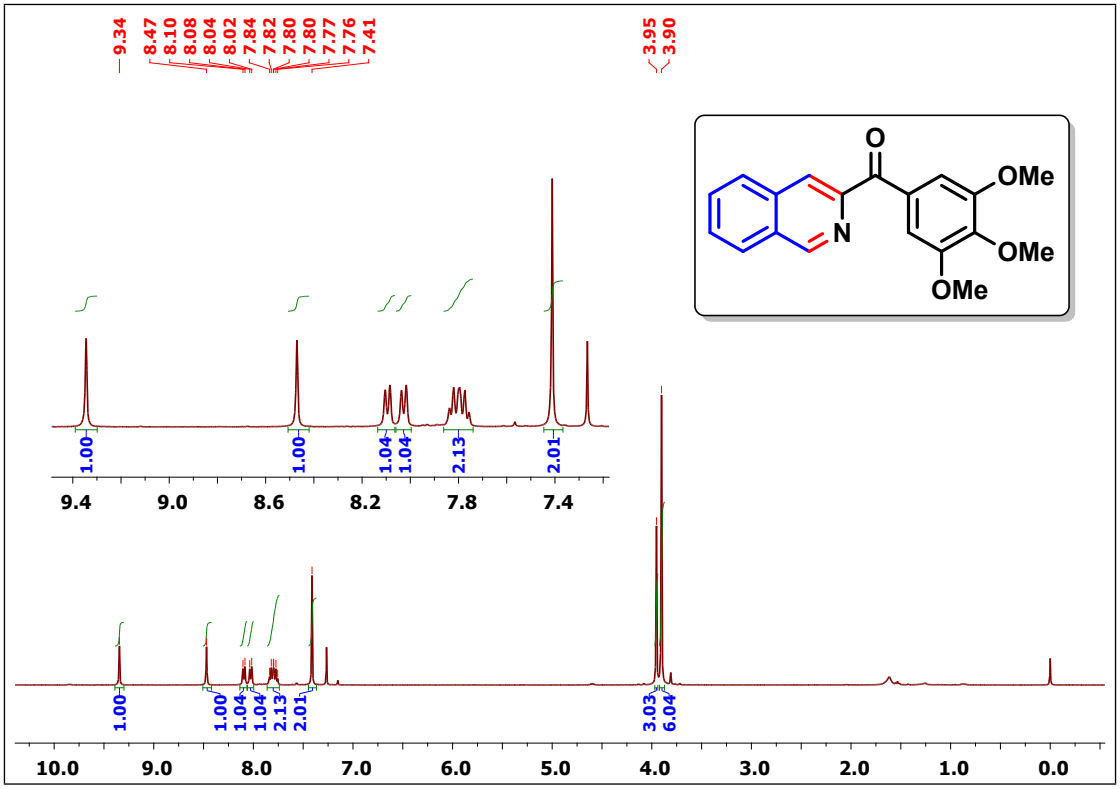
^{1}H NMR spectrum of compound 3ad



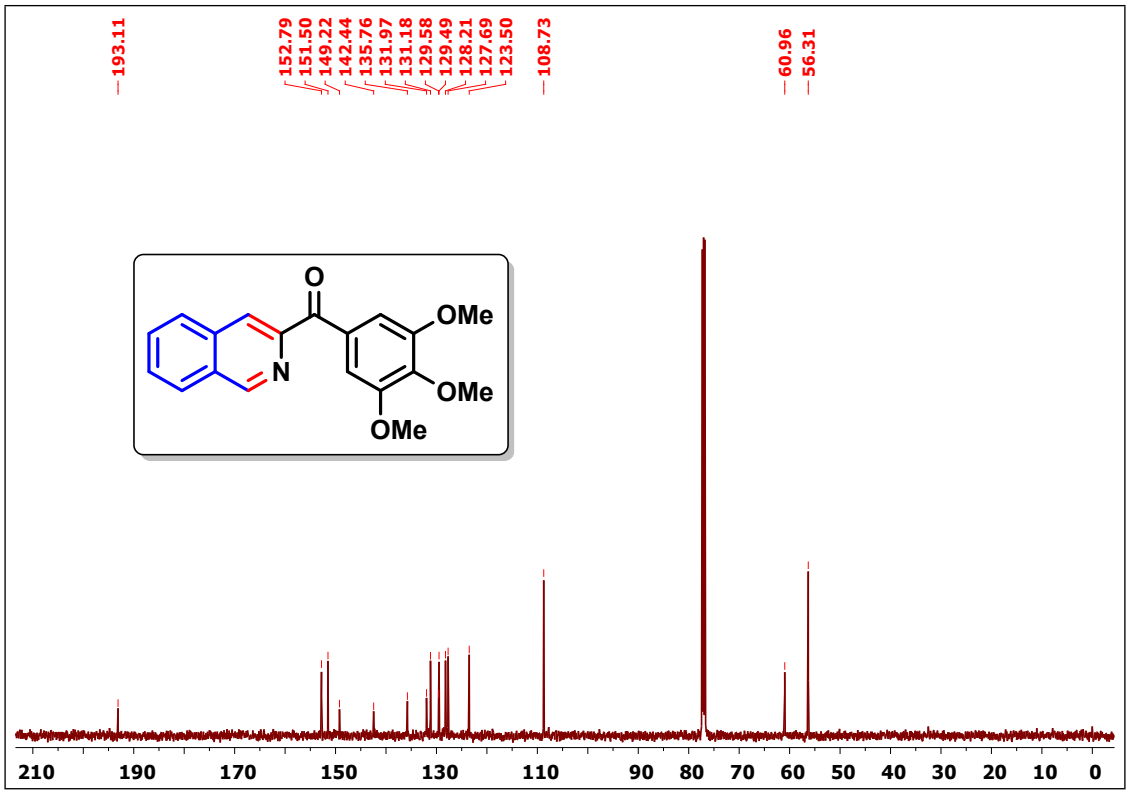
^{13}C NMR spectrum of compound 3ad



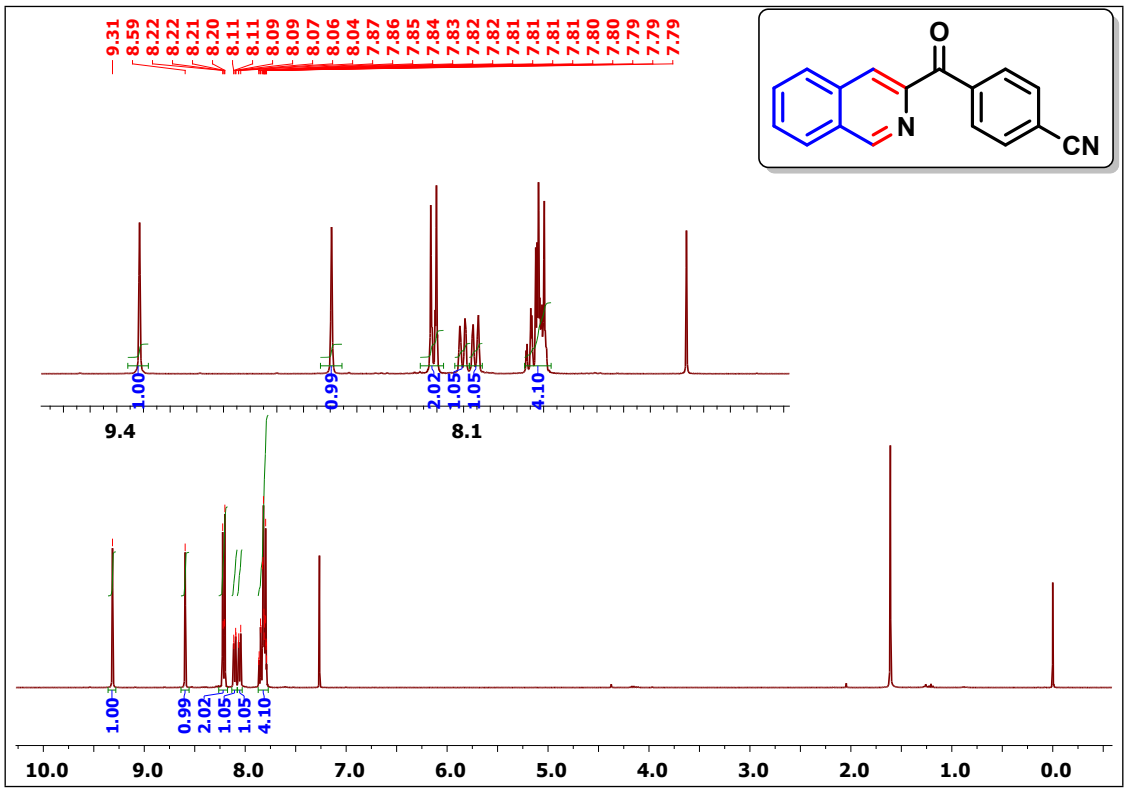
^{1}H NMR spectrum of compound 3ae



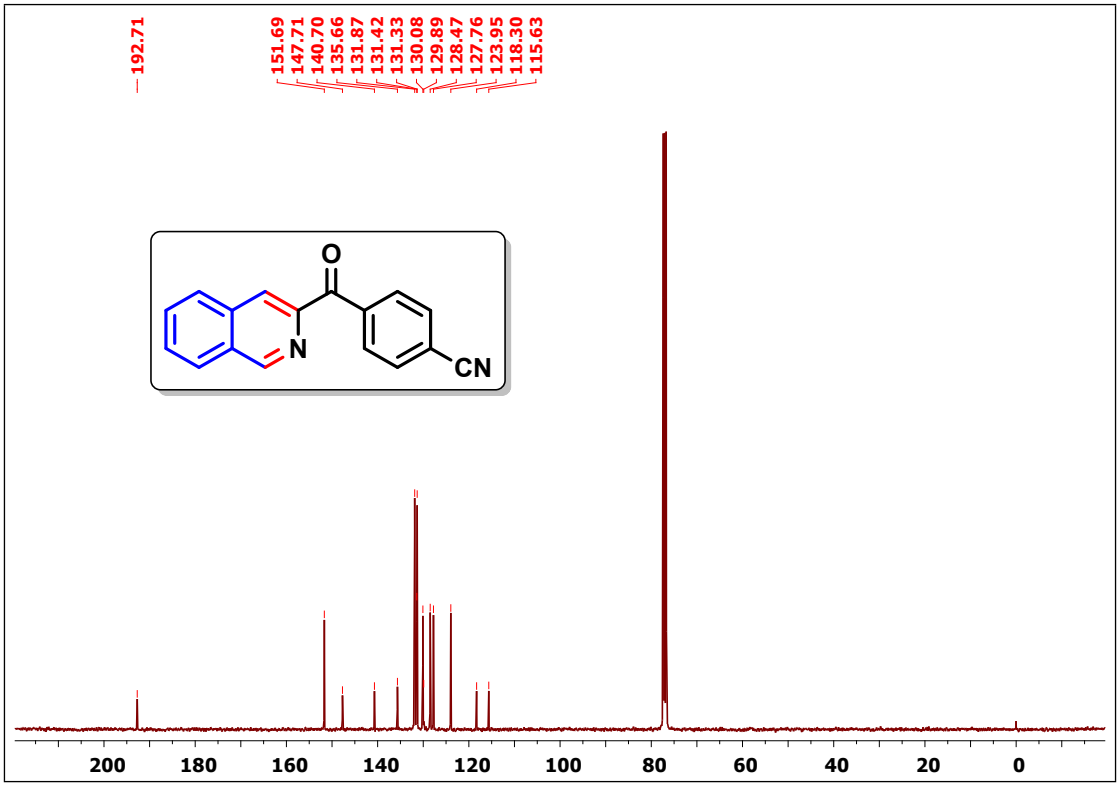
^{13}C NMR spectrum of compound 3ae



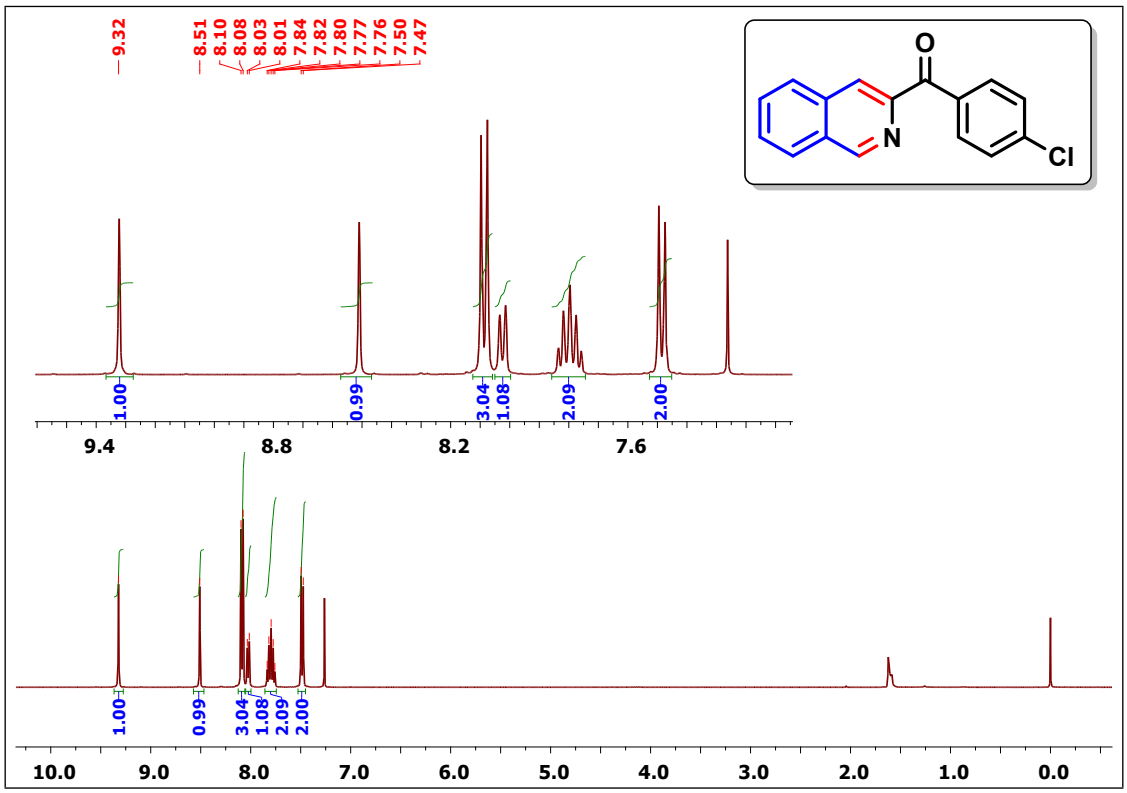
^{1}H NMR spectrum of compound 3af



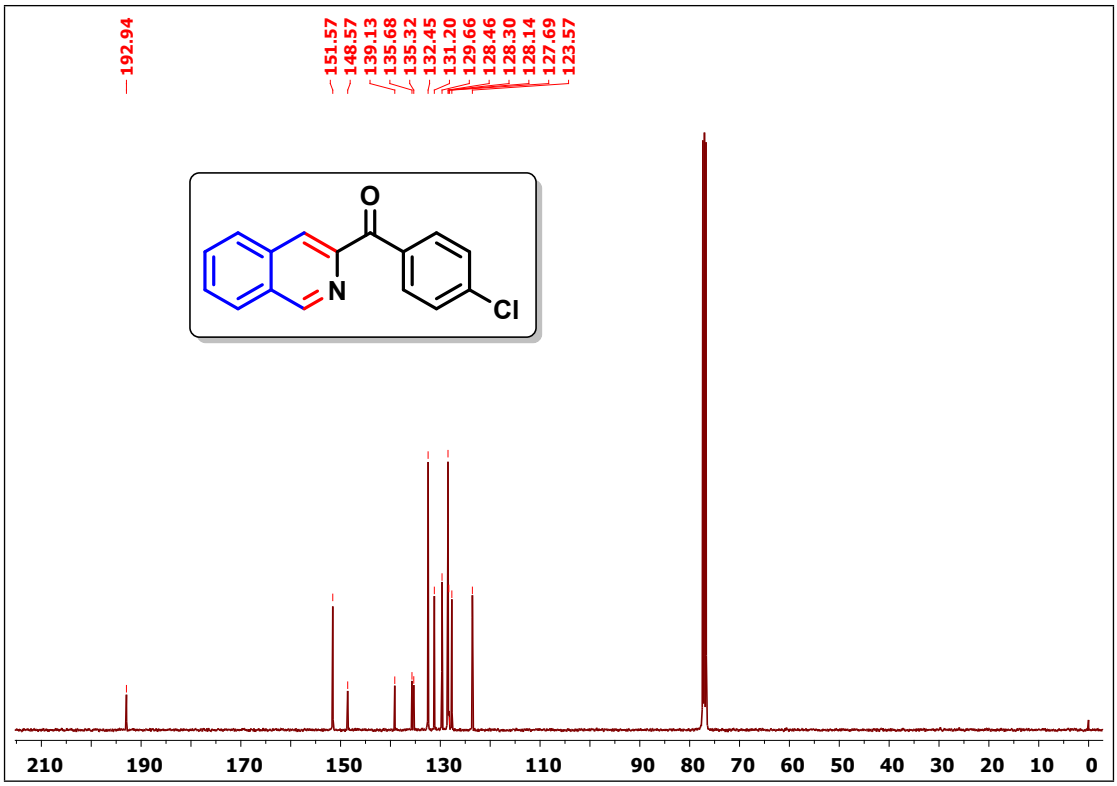
^{13}C NMR spectrum of compound 3af



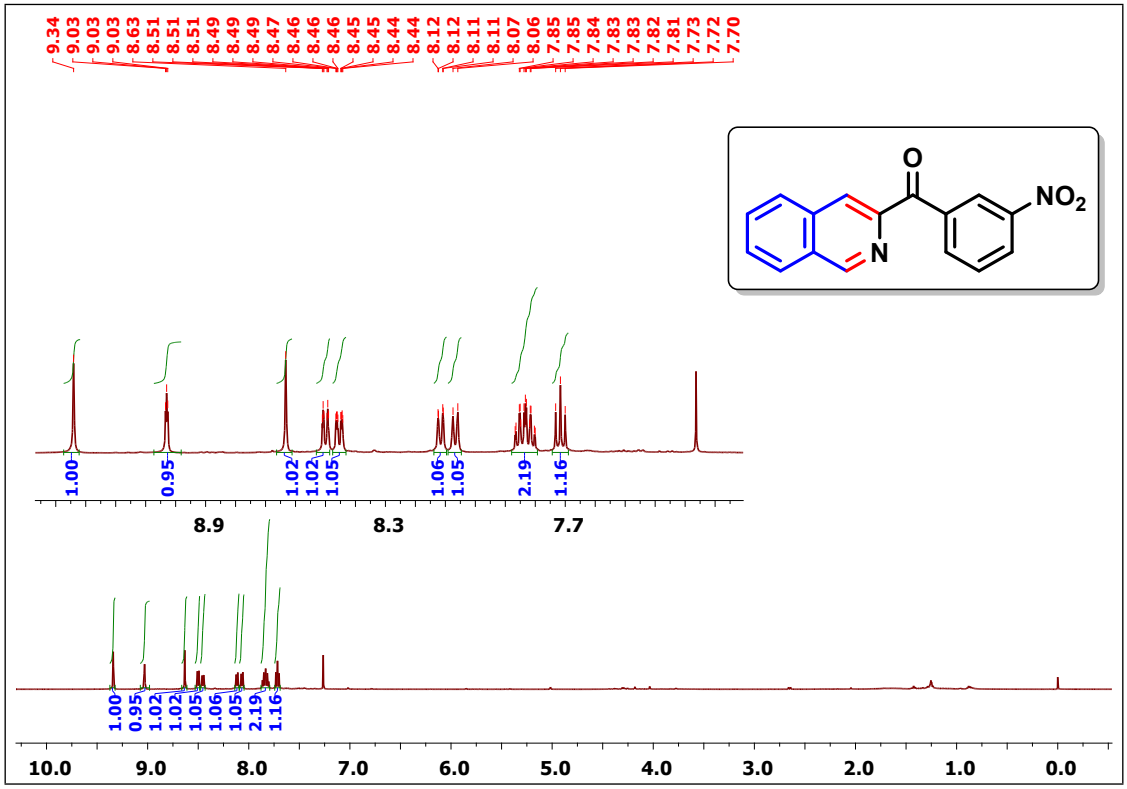
^{1}H NMR spectrum of compound 3ag



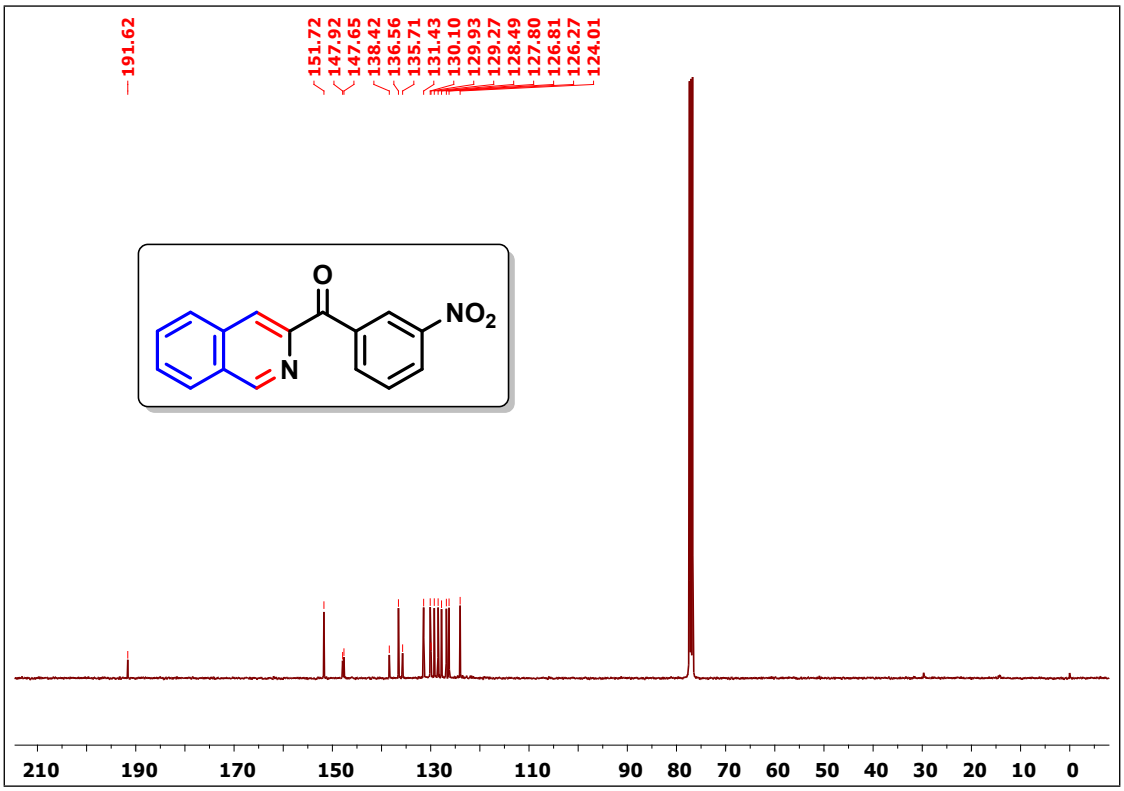
^{13}C NMR spectrum of compound 3ag



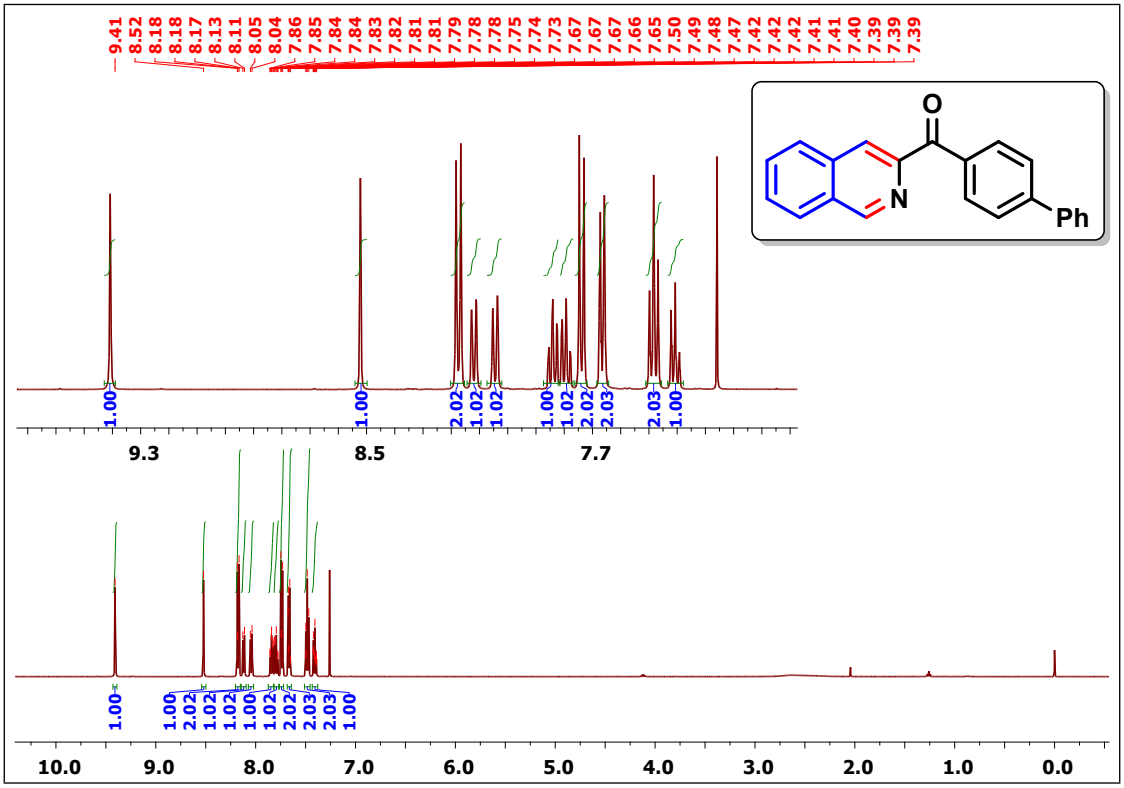
^{1}H NMR spectrum of compound 3ah



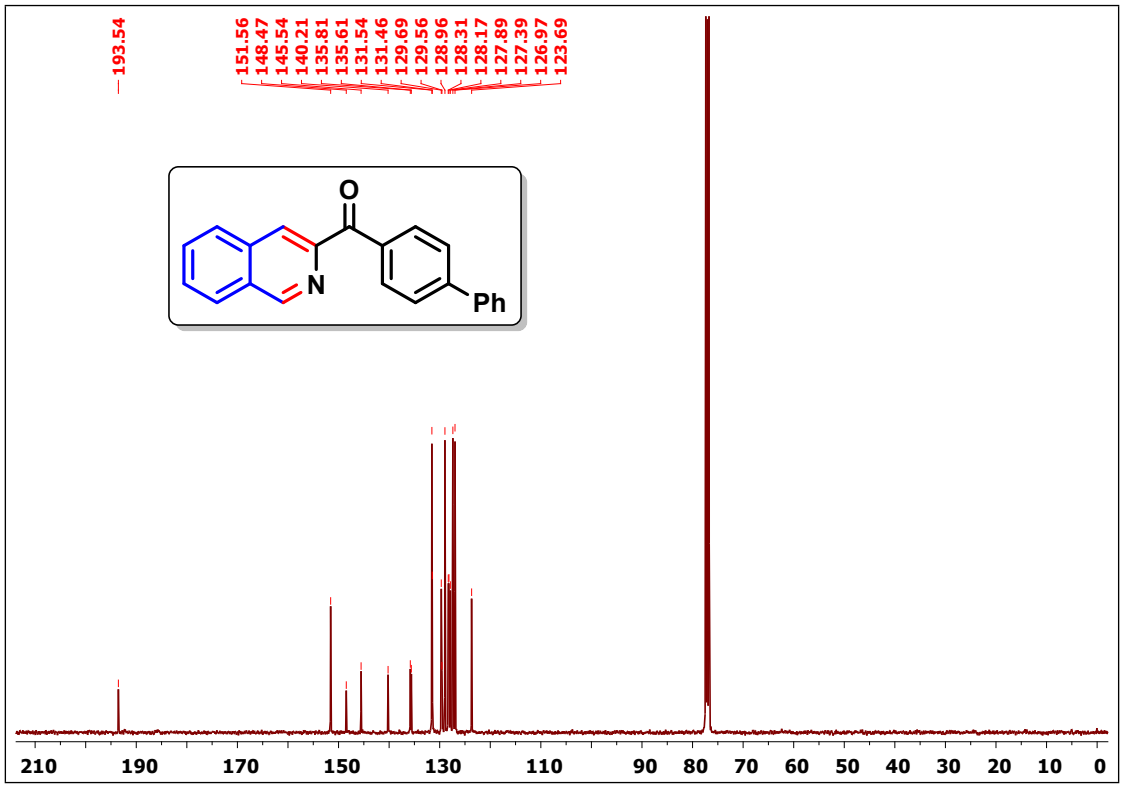
^{13}C NMR spectrum of compound 3ah



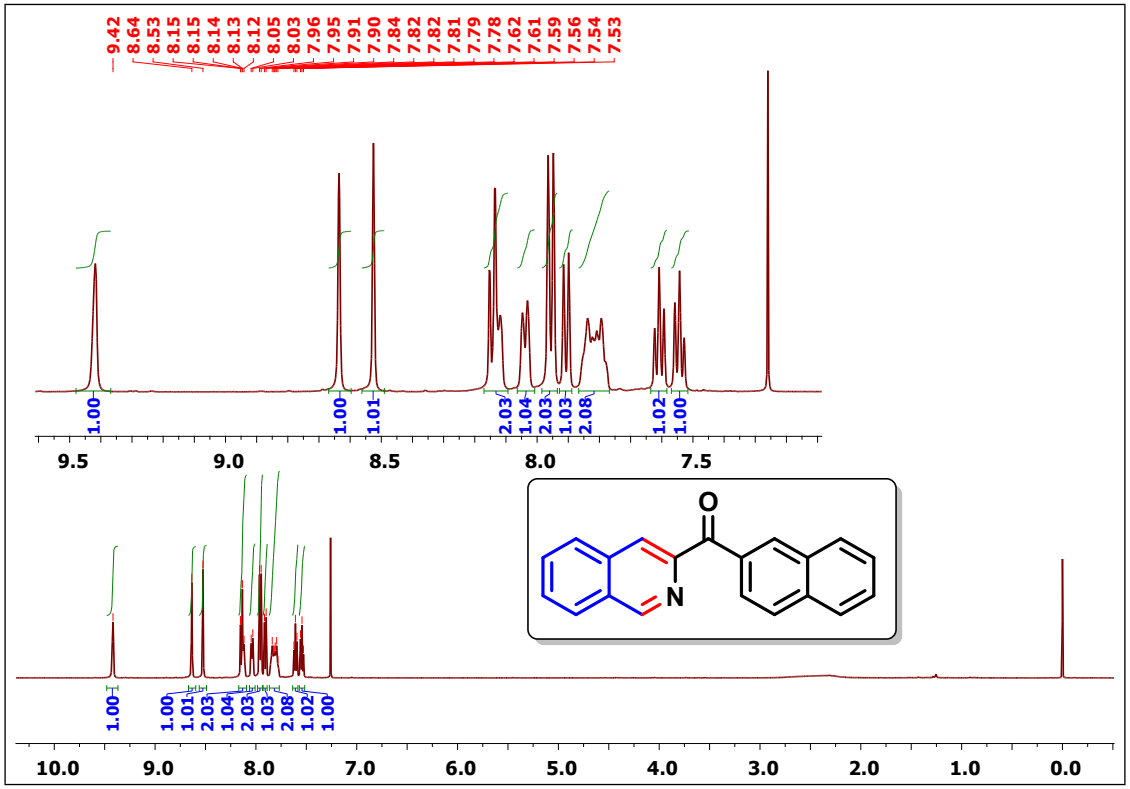
^{1}H NMR spectrum of compound 3ai



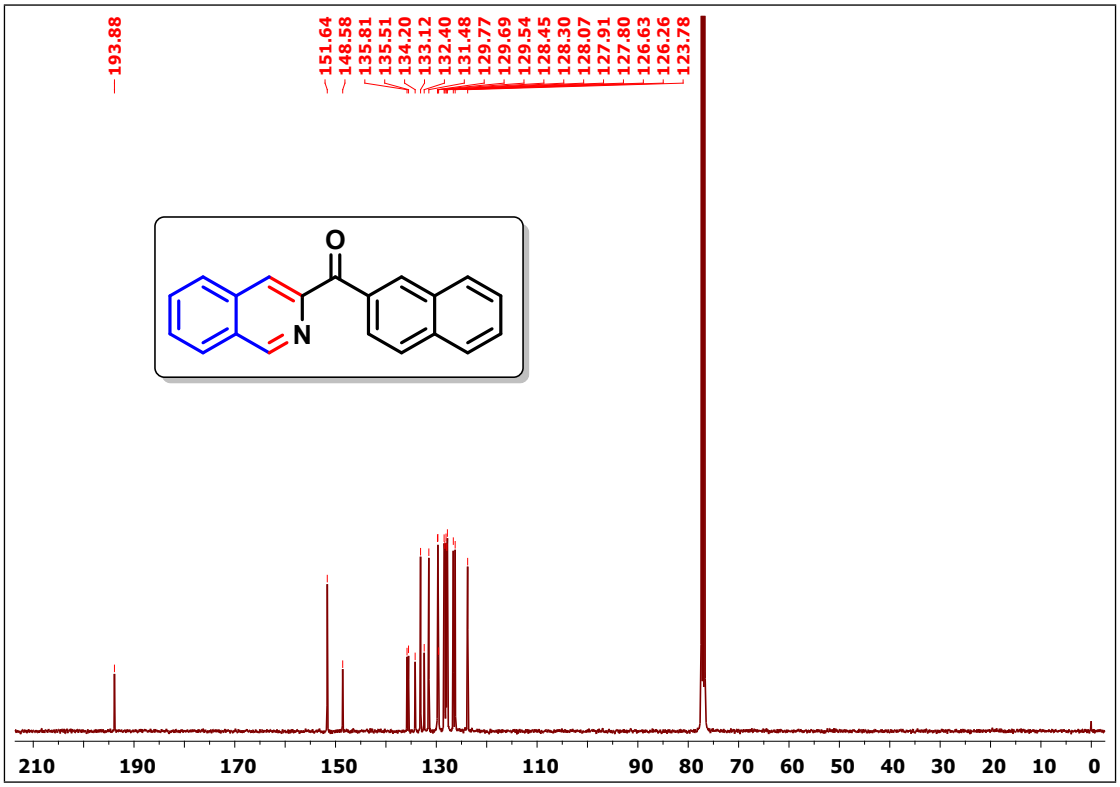
^{13}C NMR spectrum of compound 3ai



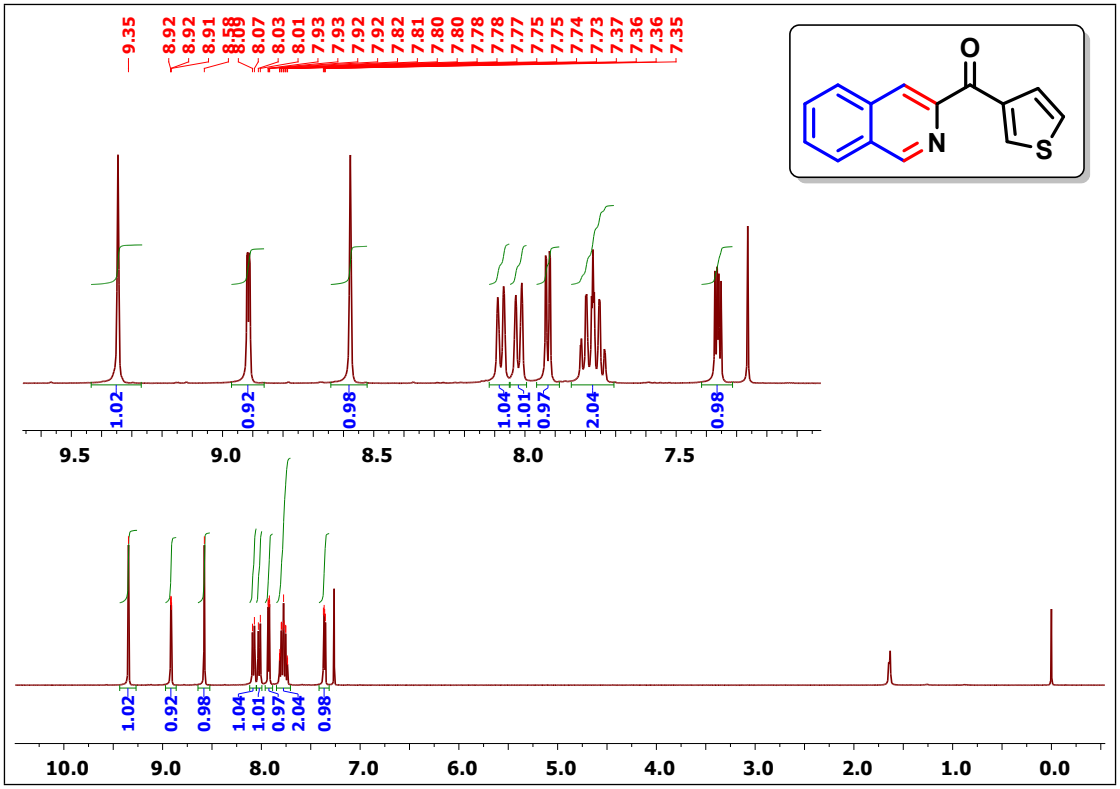
^{1}H NMR spectrum of compound 3aj



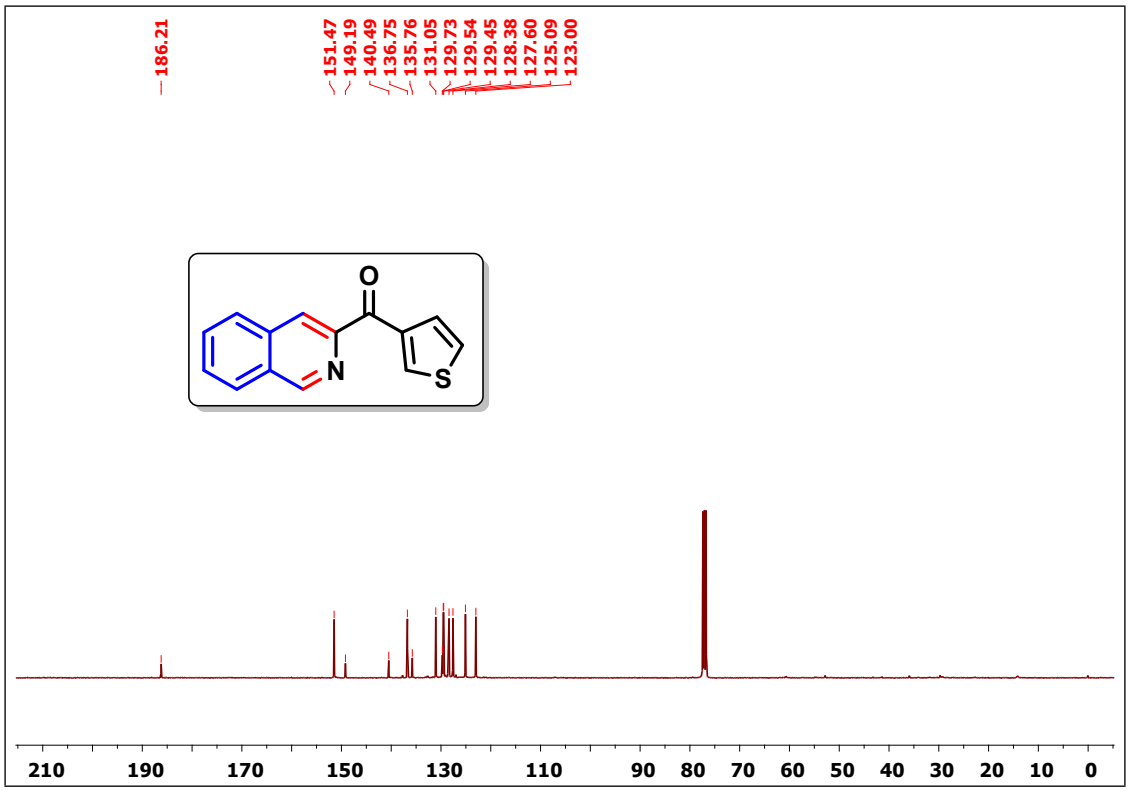
^{13}C NMR spectrum of compound 3aj



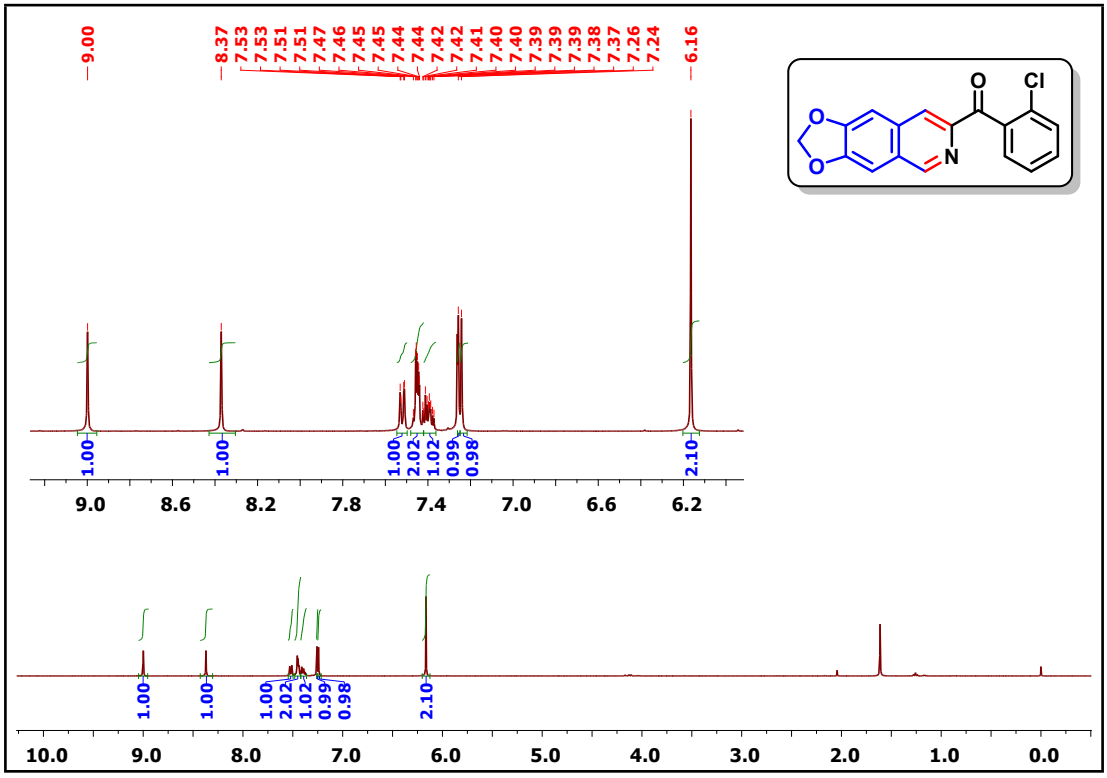
^{1}H NMR spectrum of compound 3ak



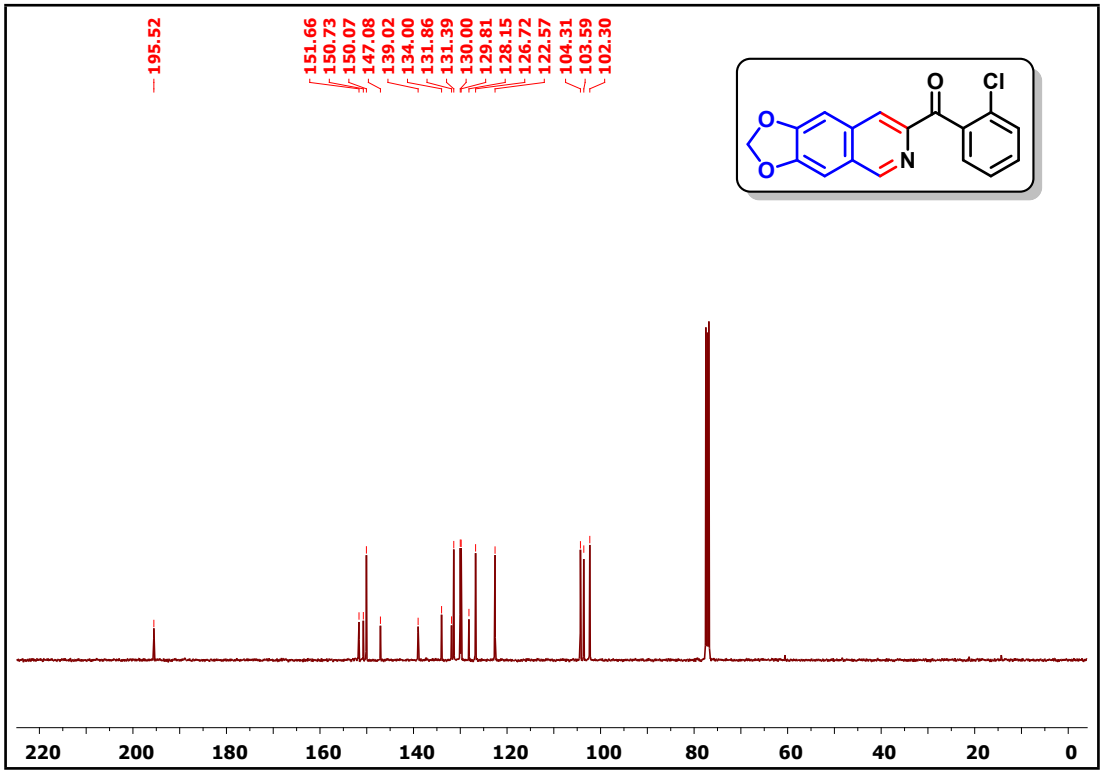
^{13}C NMR spectrum of compound 3ak



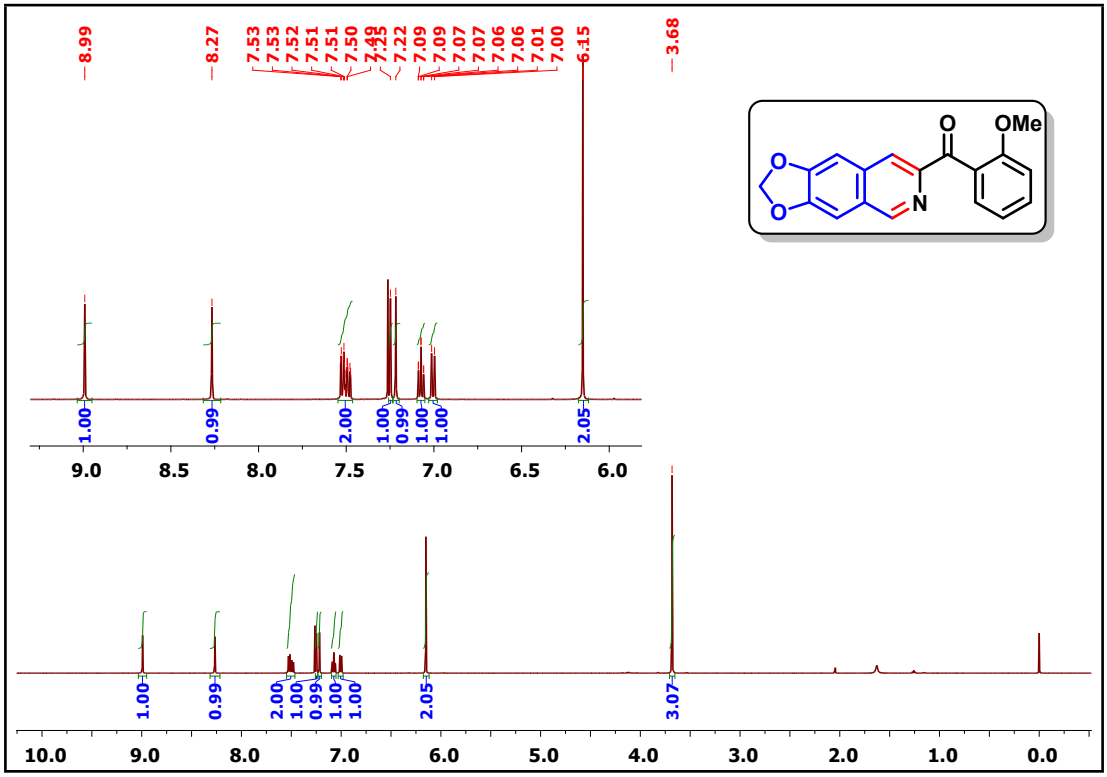
^{1}H NMR spectrum of compound 3bl



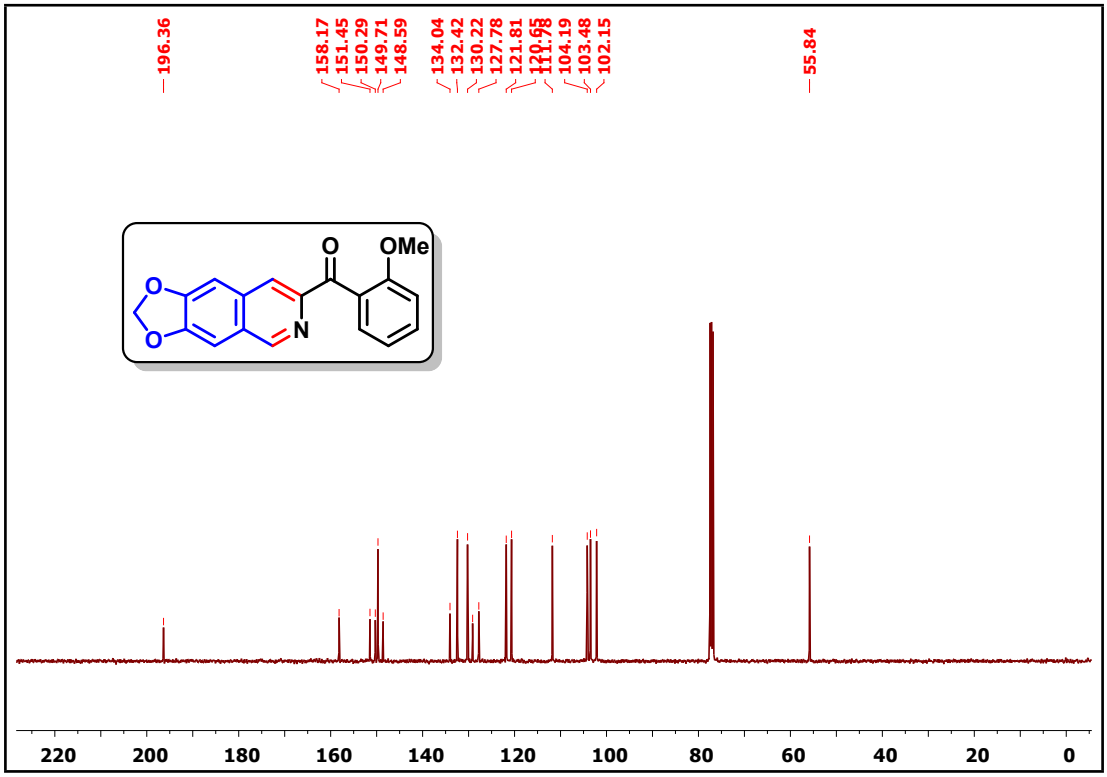
^{13}C NMR spectrum of compound 3bl



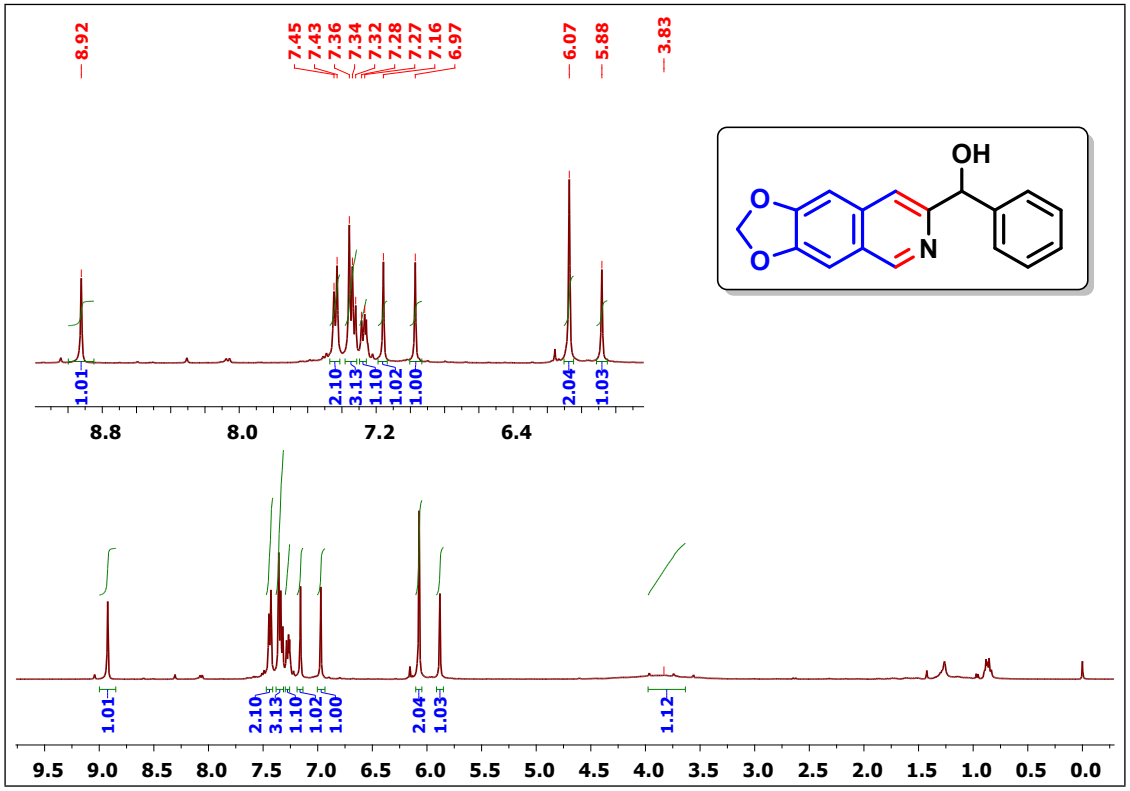
^{1}H NMR spectrum of compound 3bm



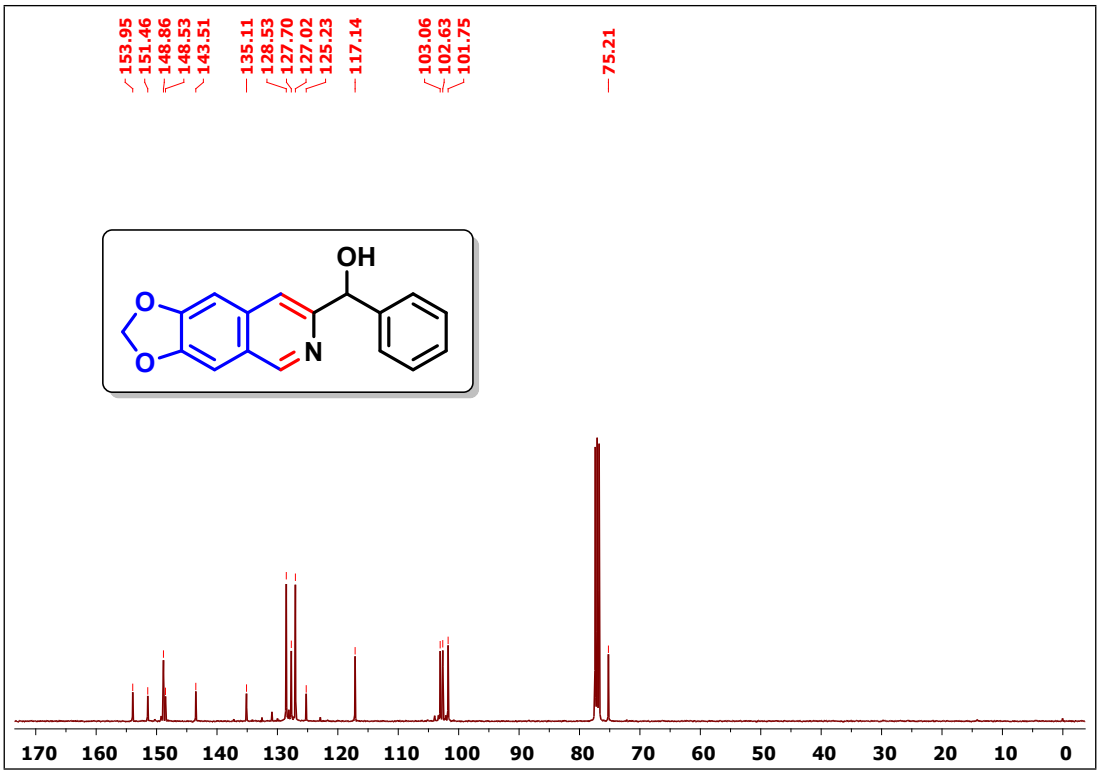
^{13}C NMR spectrum of compound 3bm



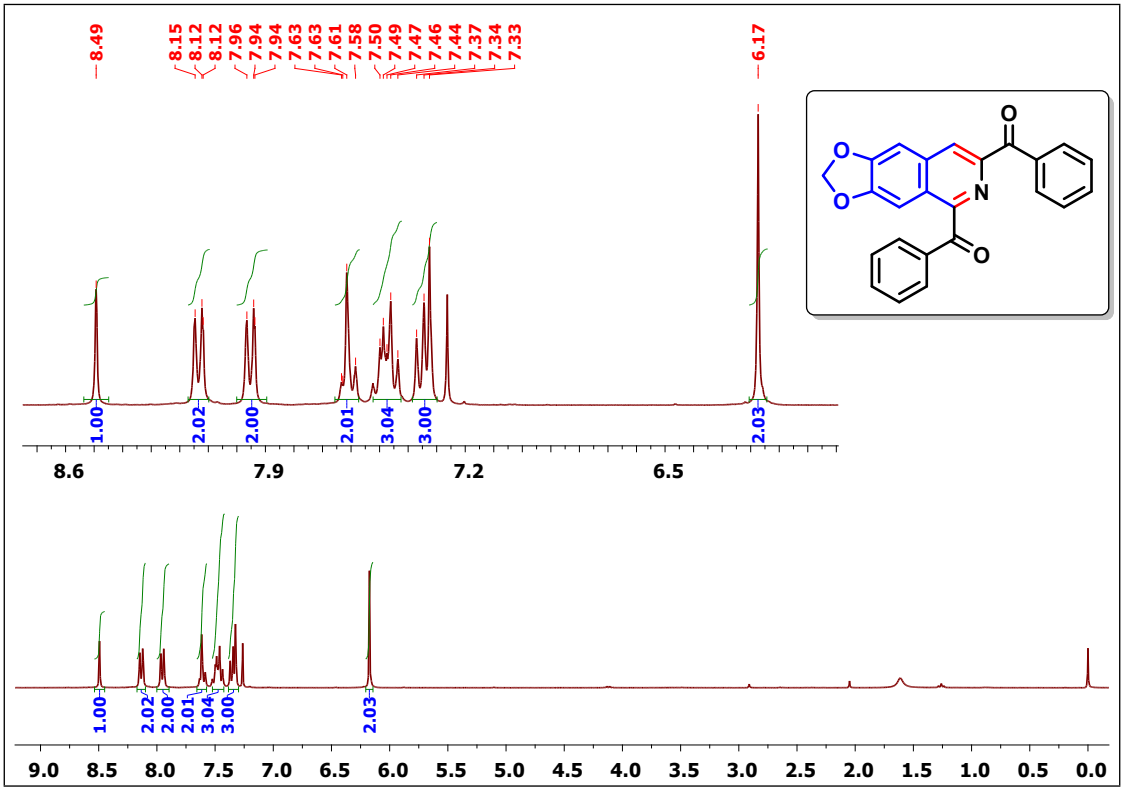
^{1}H NMR spectrum of compound 4



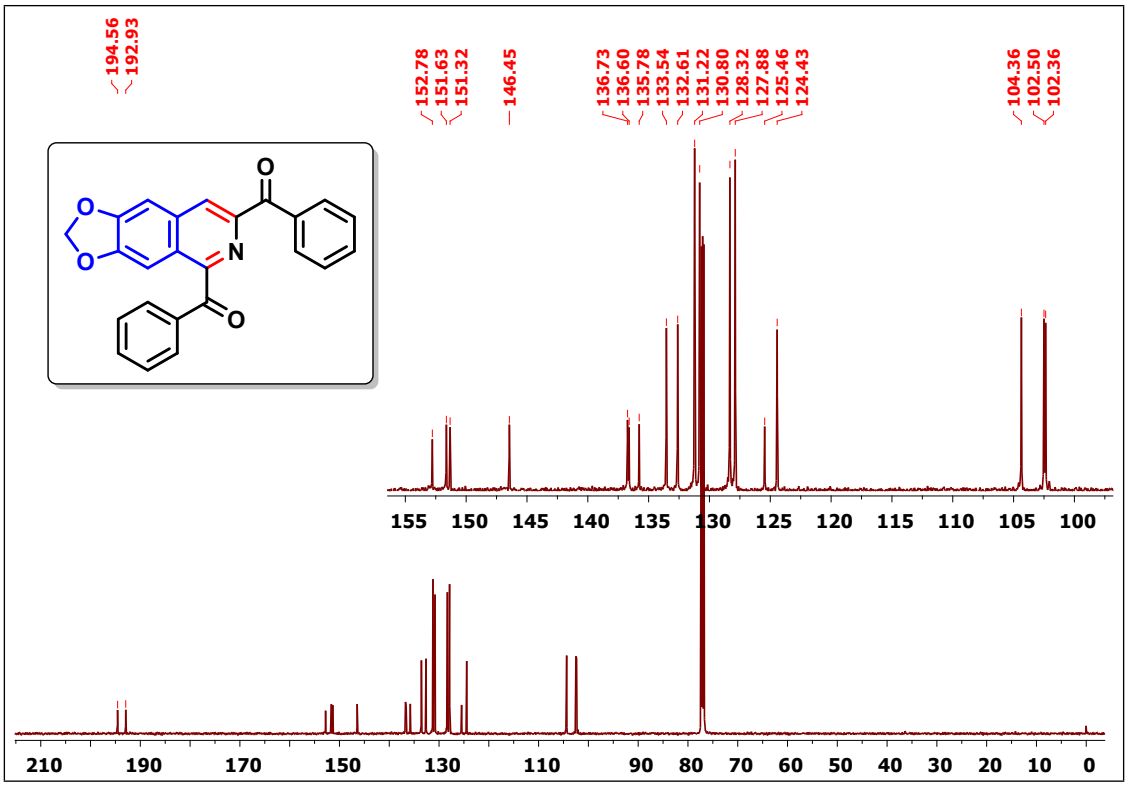
^{13}C NMR spectrum of compound 4



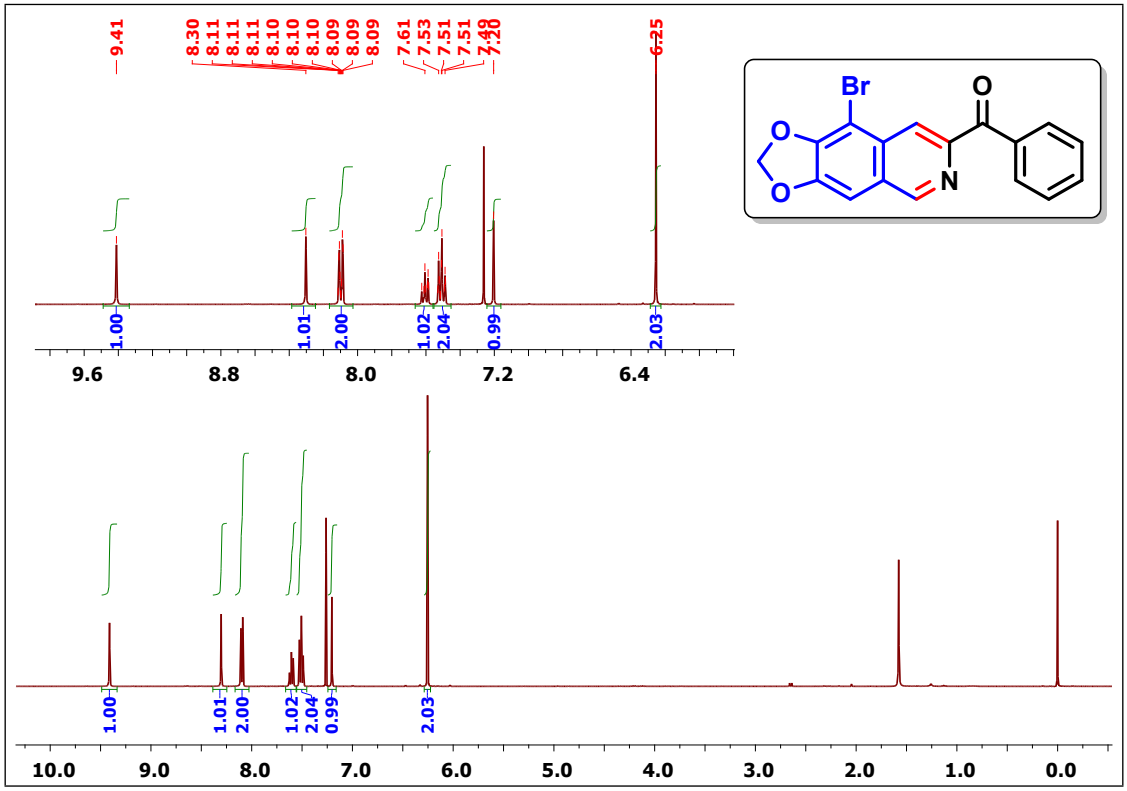
^{1}H NMR spectrum of compound 5



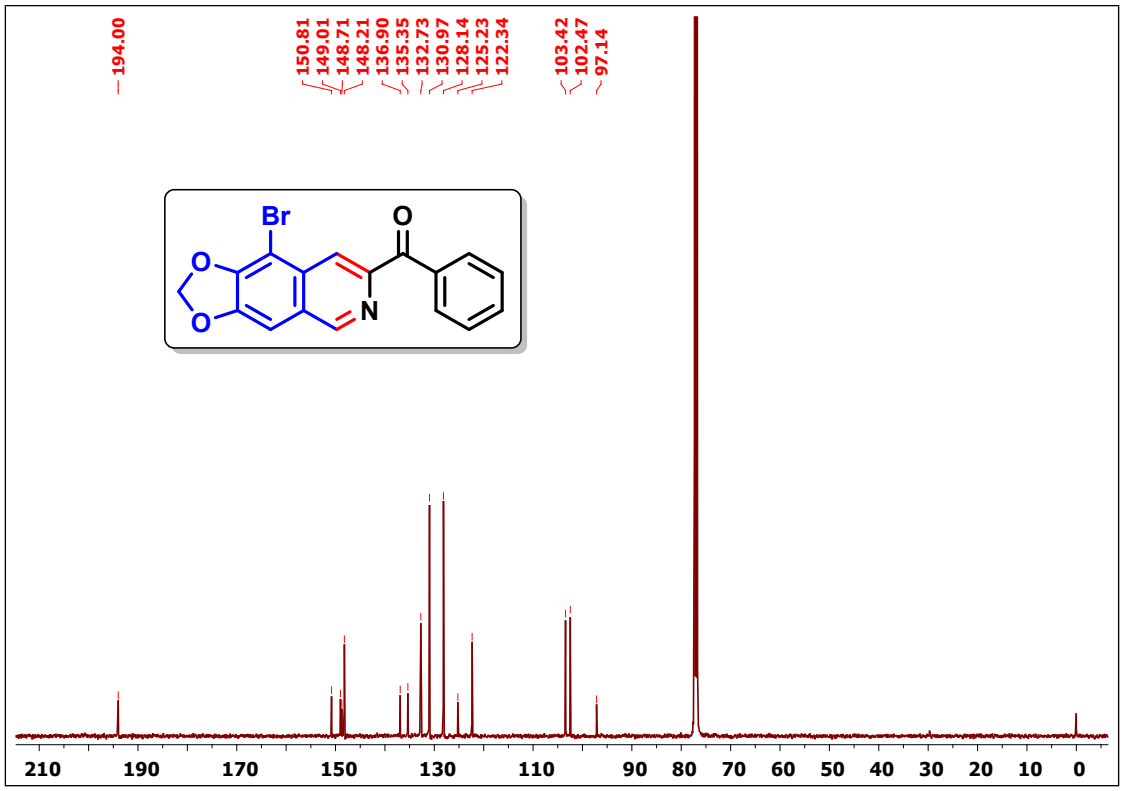
^{13}C NMR spectrum of compound 5



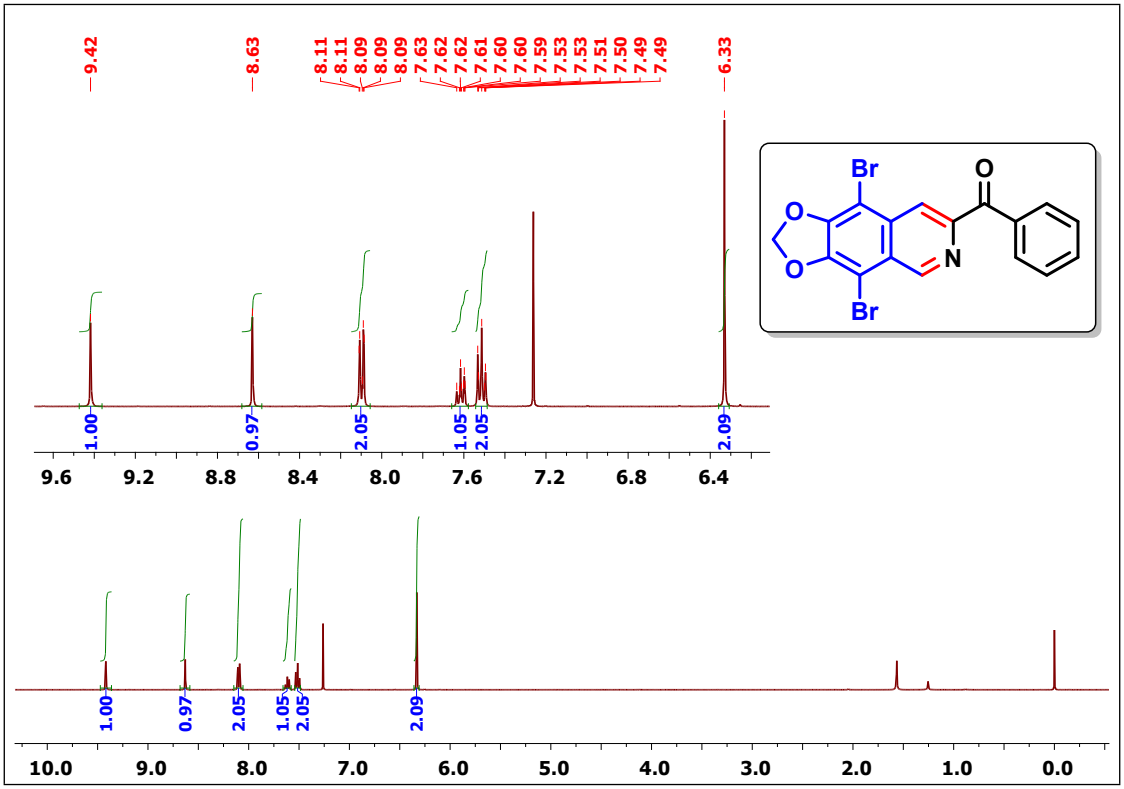
^{1}H NMR spectrum of compound 6



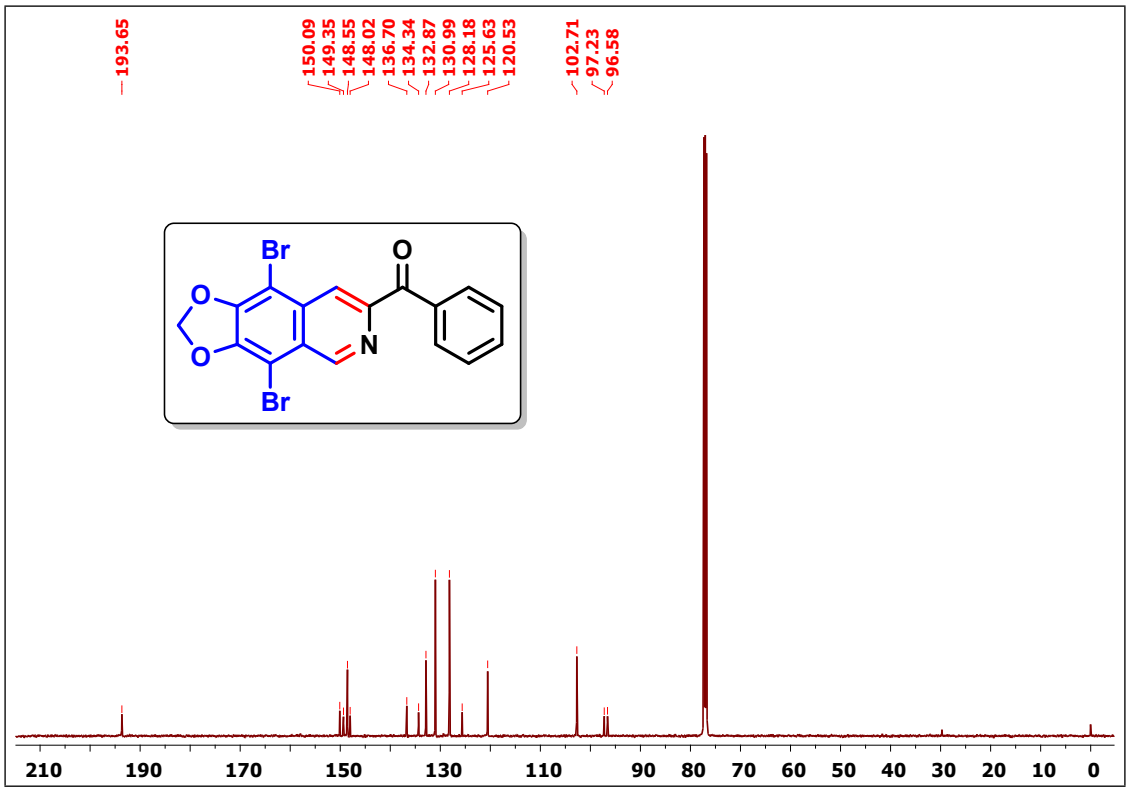
^{13}C NMR spectrum of compound 6



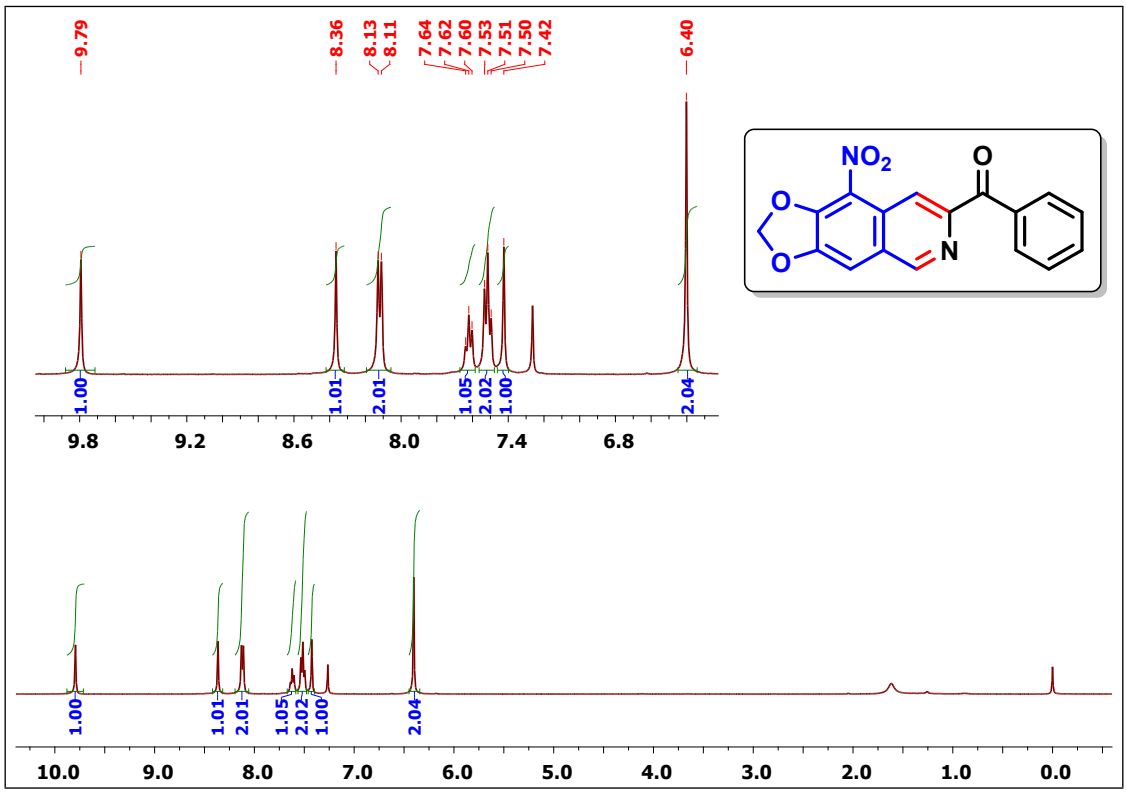
^{1}H NMR spectrum of compound 7



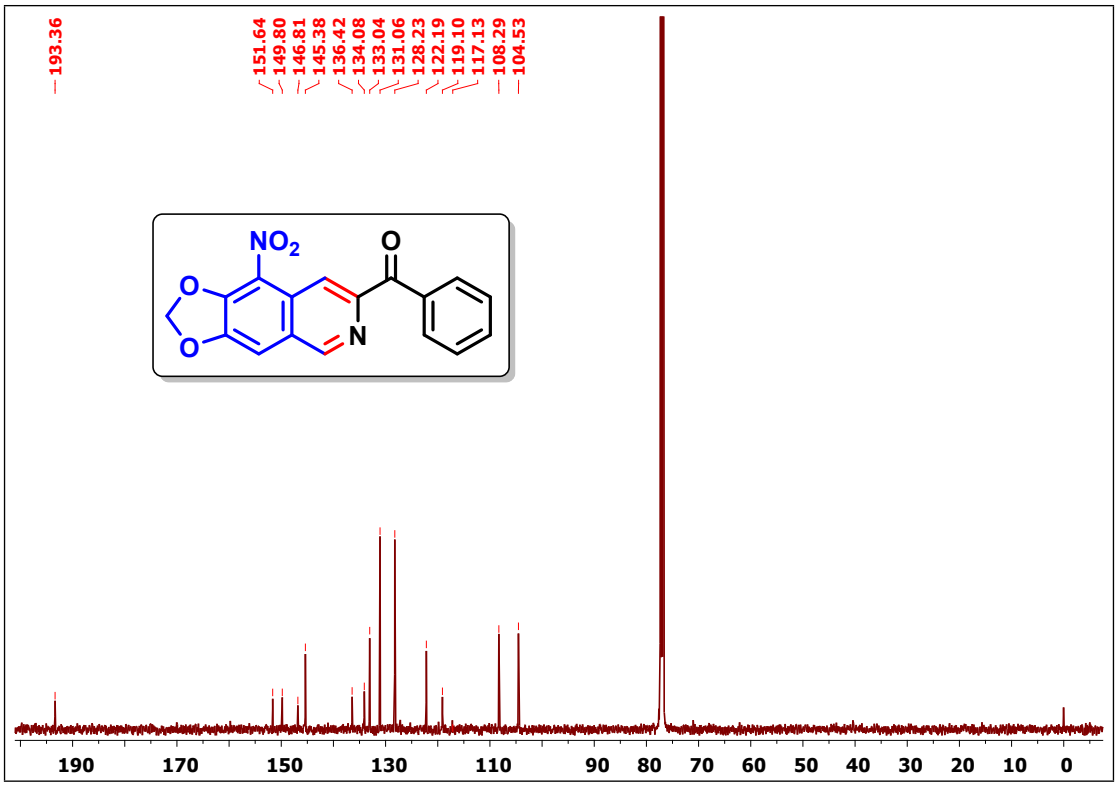
^{13}C NMR spectrum of compound 7



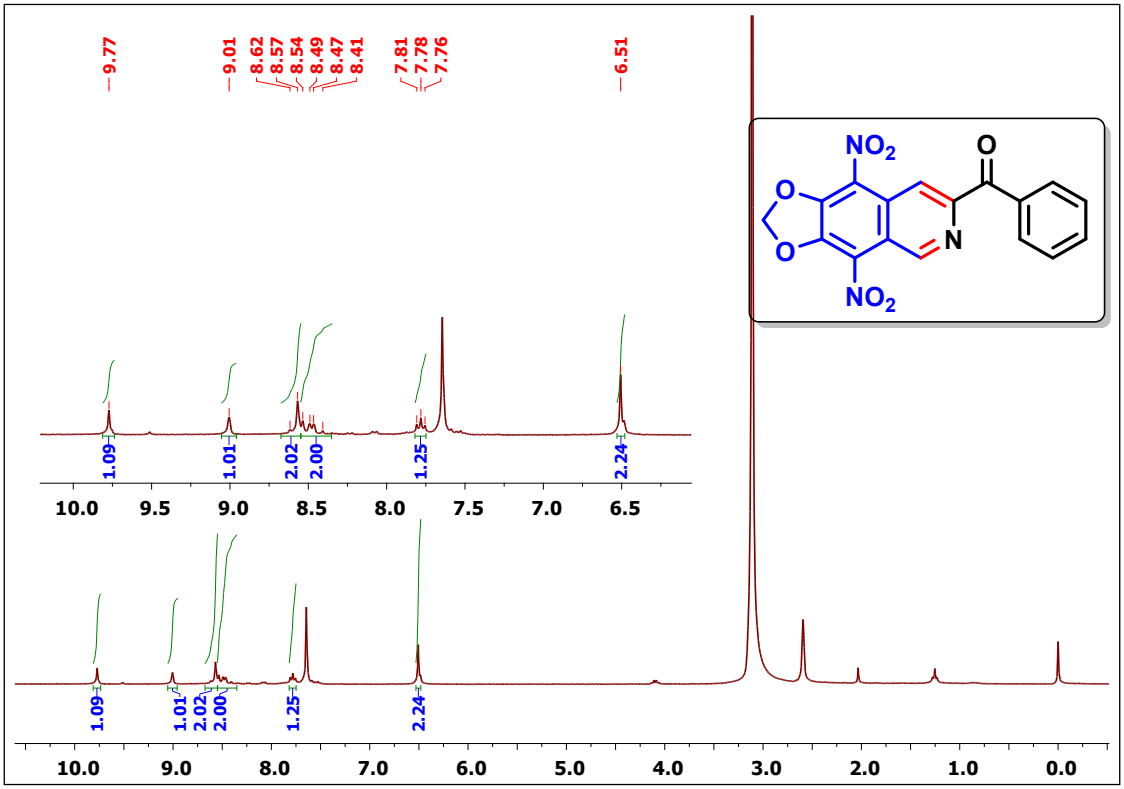
^{1}H NMR spectrum of compound 8



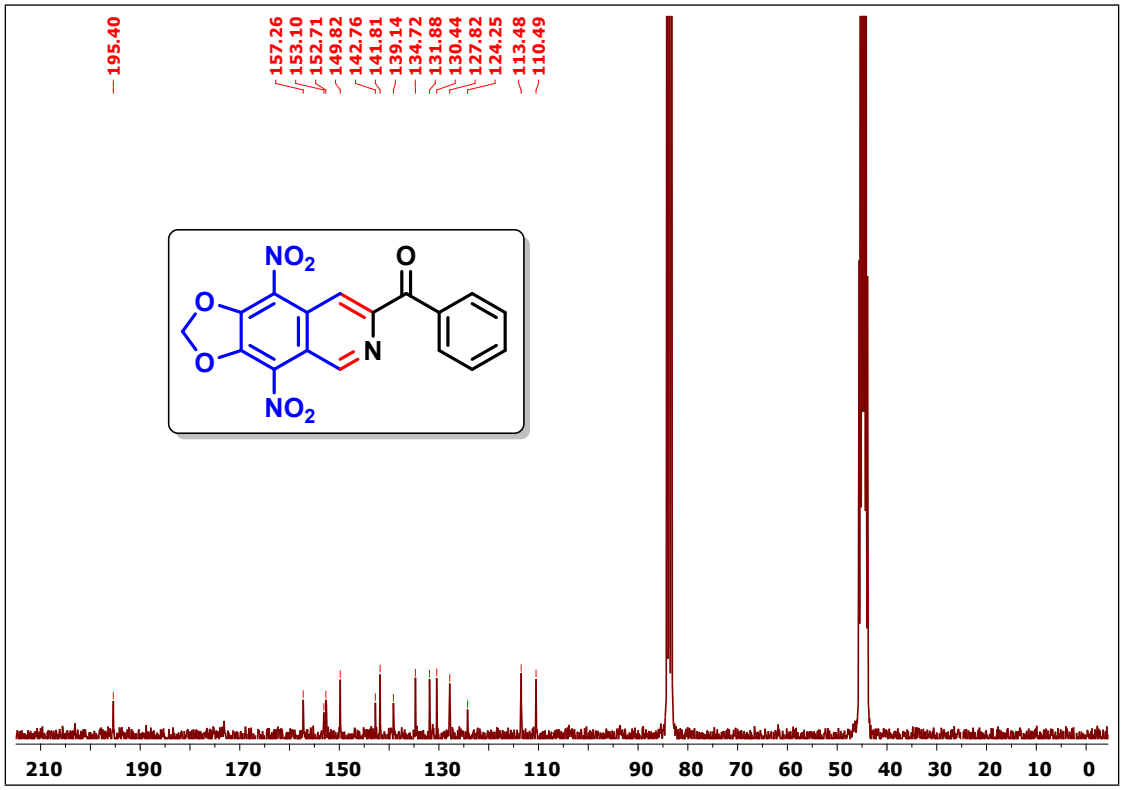
^{13}C NMR spectrum of compound 8



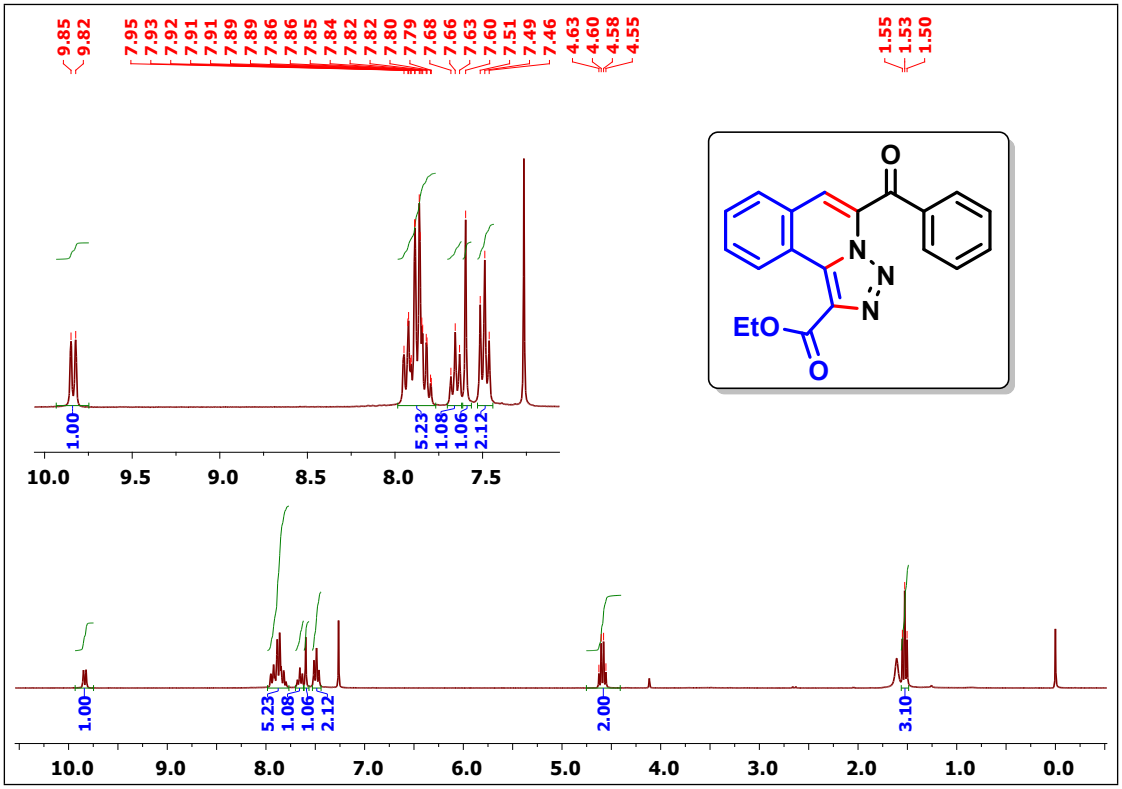
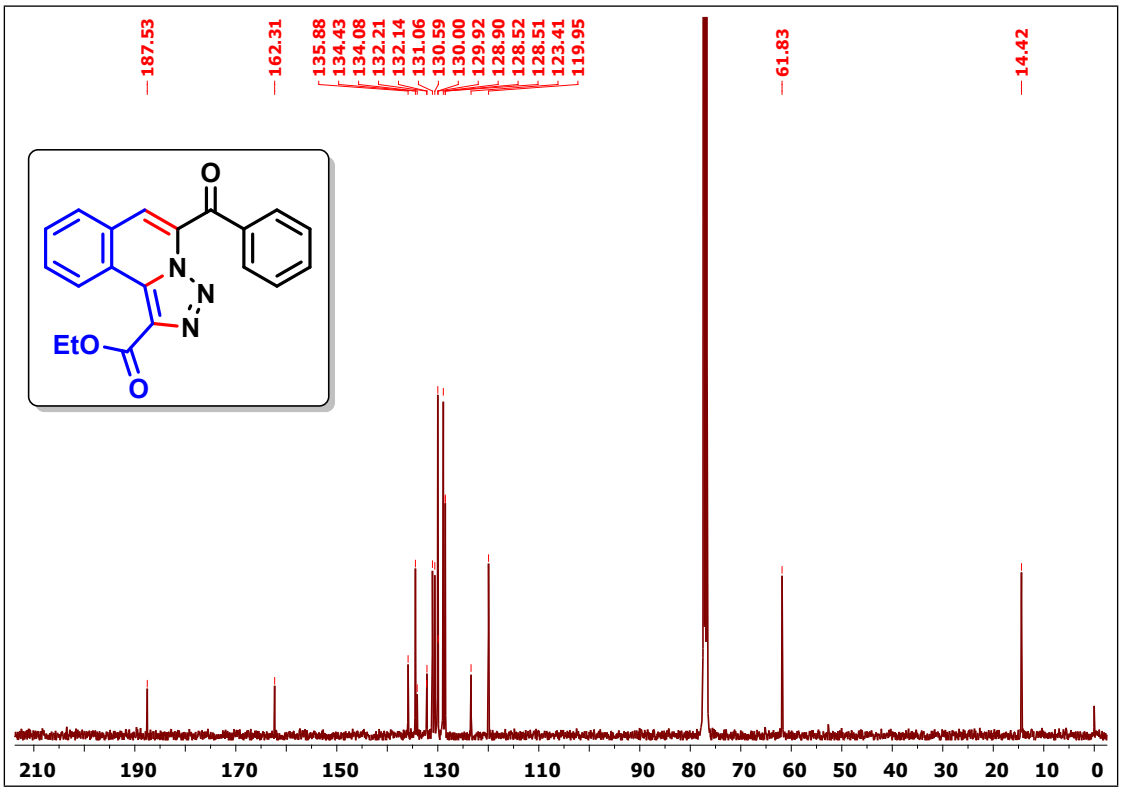
^{1}H NMR spectrum of compound 9



^{13}C NMR spectrum of compound 9



^{1}H NMR spectrum of compound 3aa'



^{13}C NMR spectrum of compound 3aa'