



# **Synthesis of Medicinally Relevant Scaffolds *via* Earth Metal Catalysis**

**Ashley J Basson**

*Appendix Part I*

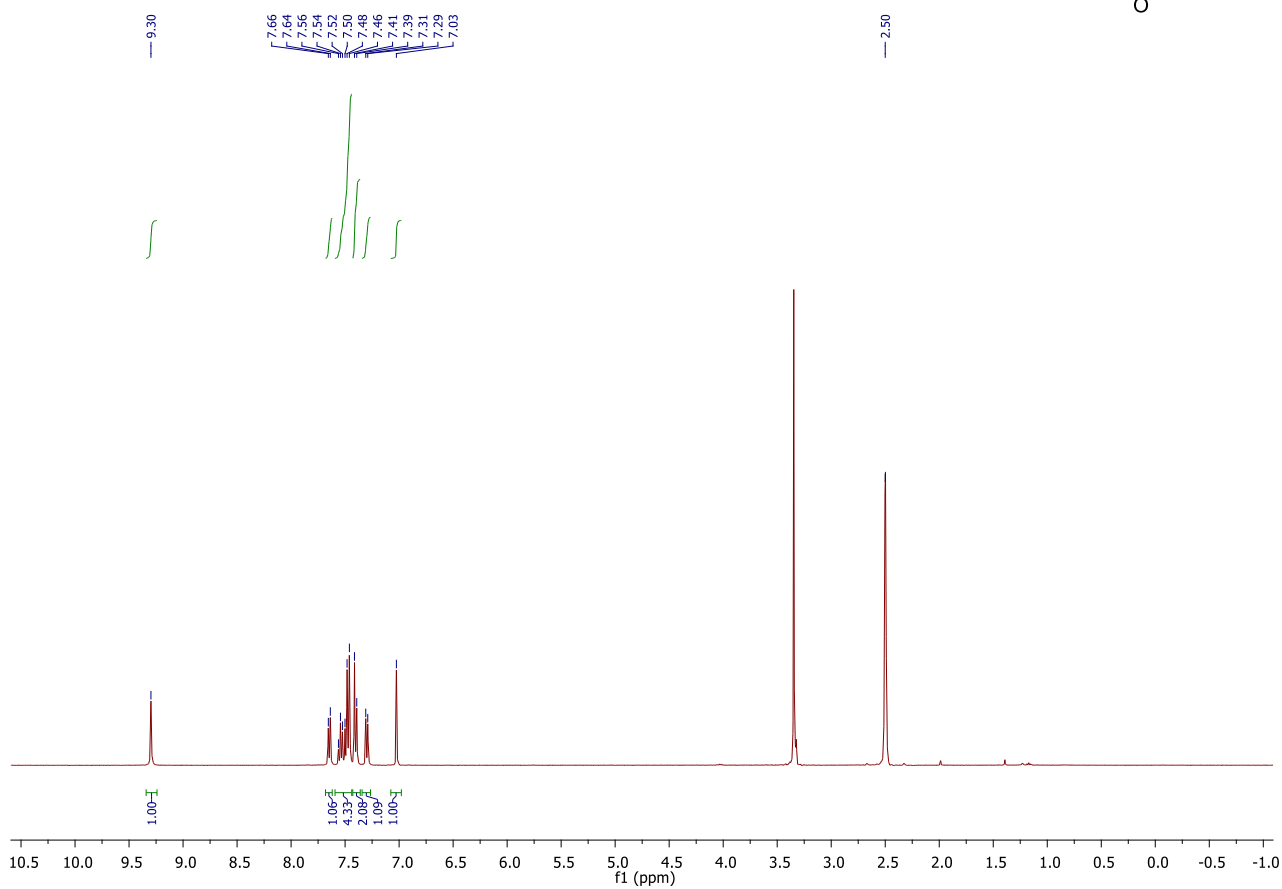
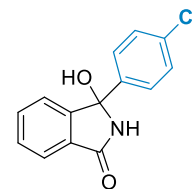
*<sup>1</sup>H and <sup>13</sup>C NMR spectra*

*Chapters 2-3*

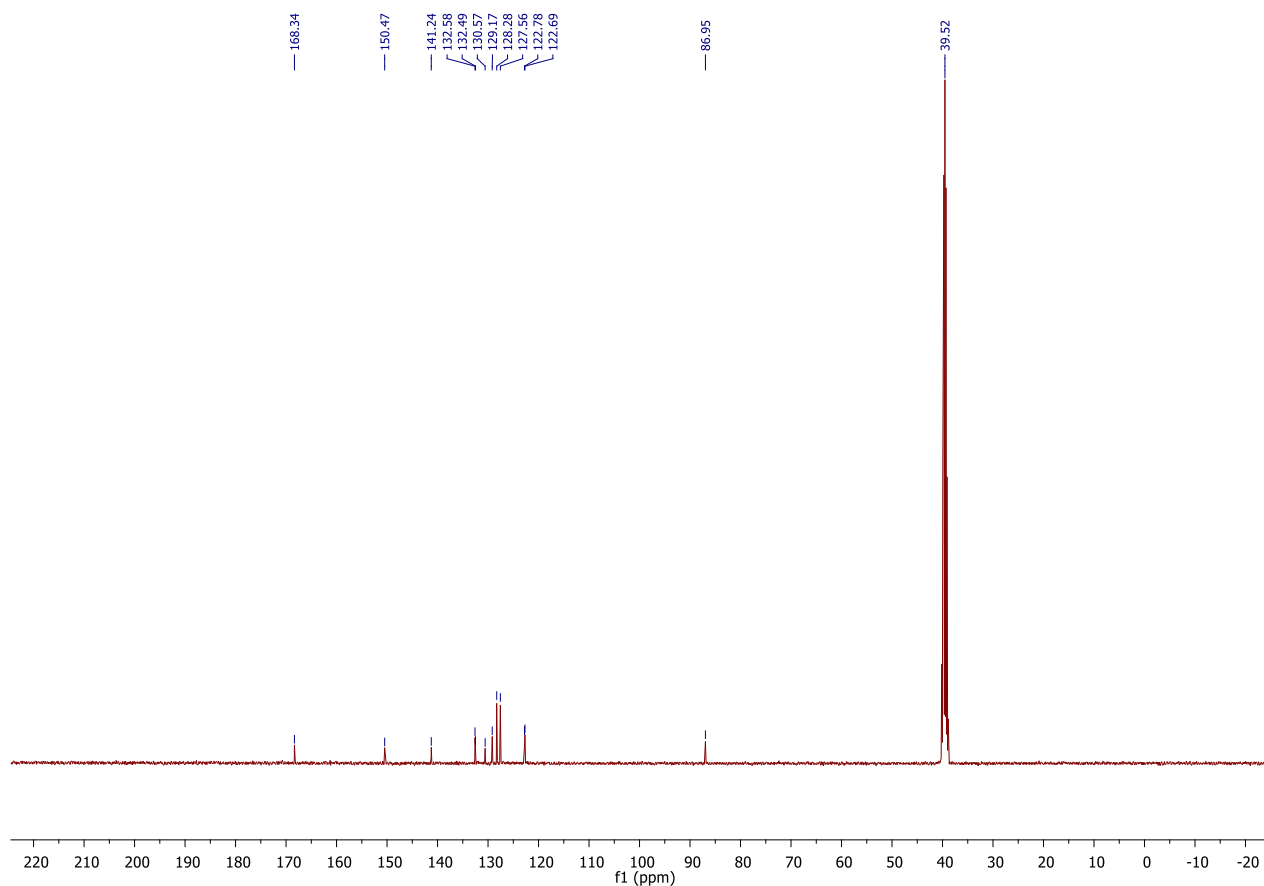
# 1. Chapter 2

## 1.1. 3-(4-chlorophenyl)-3-hydroxyisoindolin-1-one (198b)

$^1\text{H}$  NMR (400 MHz, DMSO- $d_6$ )

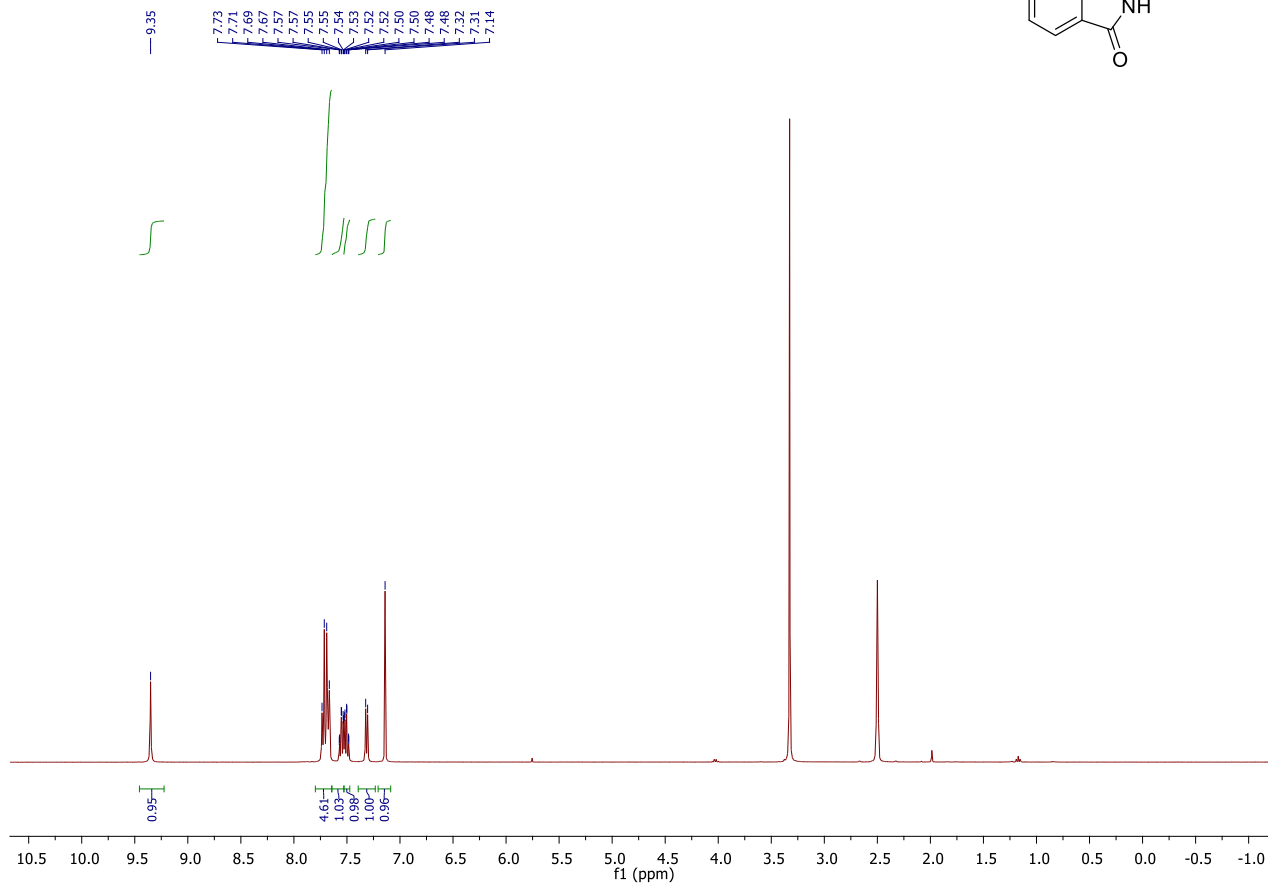
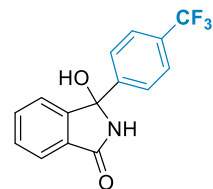


$^{13}\text{C}$  NMR (101 MHz, DMSO- $d_6$ )

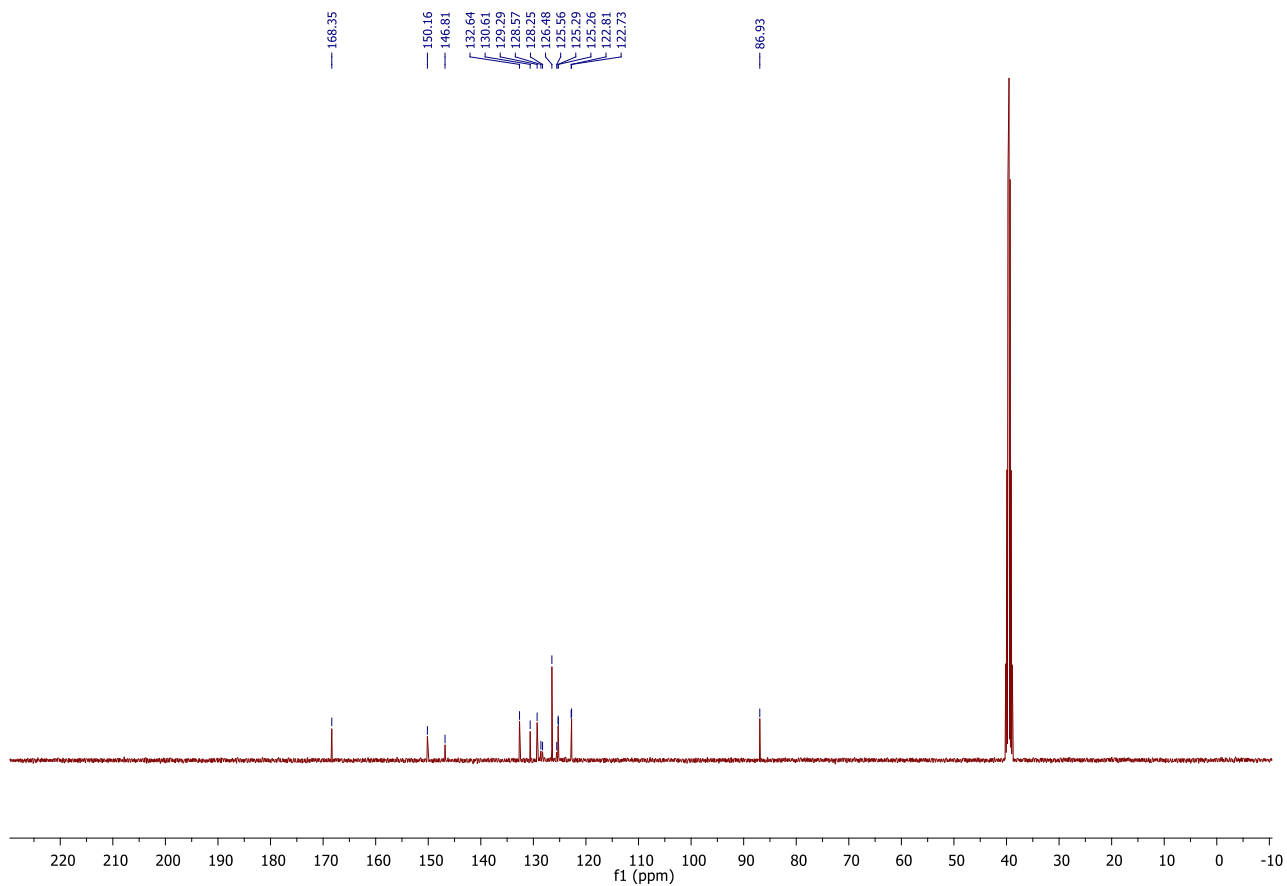


## 1.2. 3-hydroxy-3-(4-(trifluoromethyl)phenyl)isoindolin-1-one (198c)

$^1\text{H}$  NMR (400 MHz,  $\text{DMSO-d}_6$ )

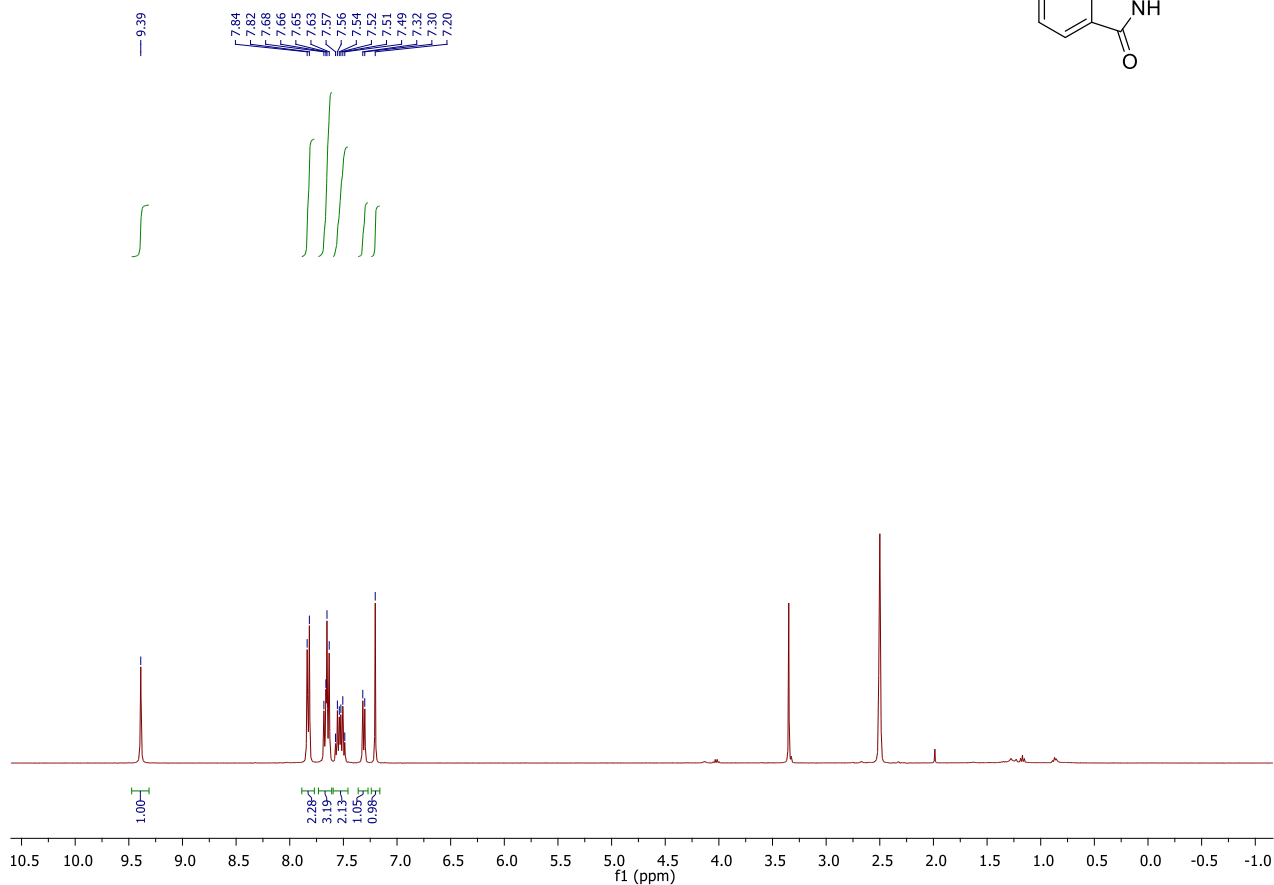
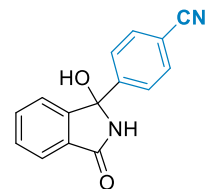


$^{13}\text{C}$  NMR (101 MHz,  $\text{DMSO-d}_6$ )

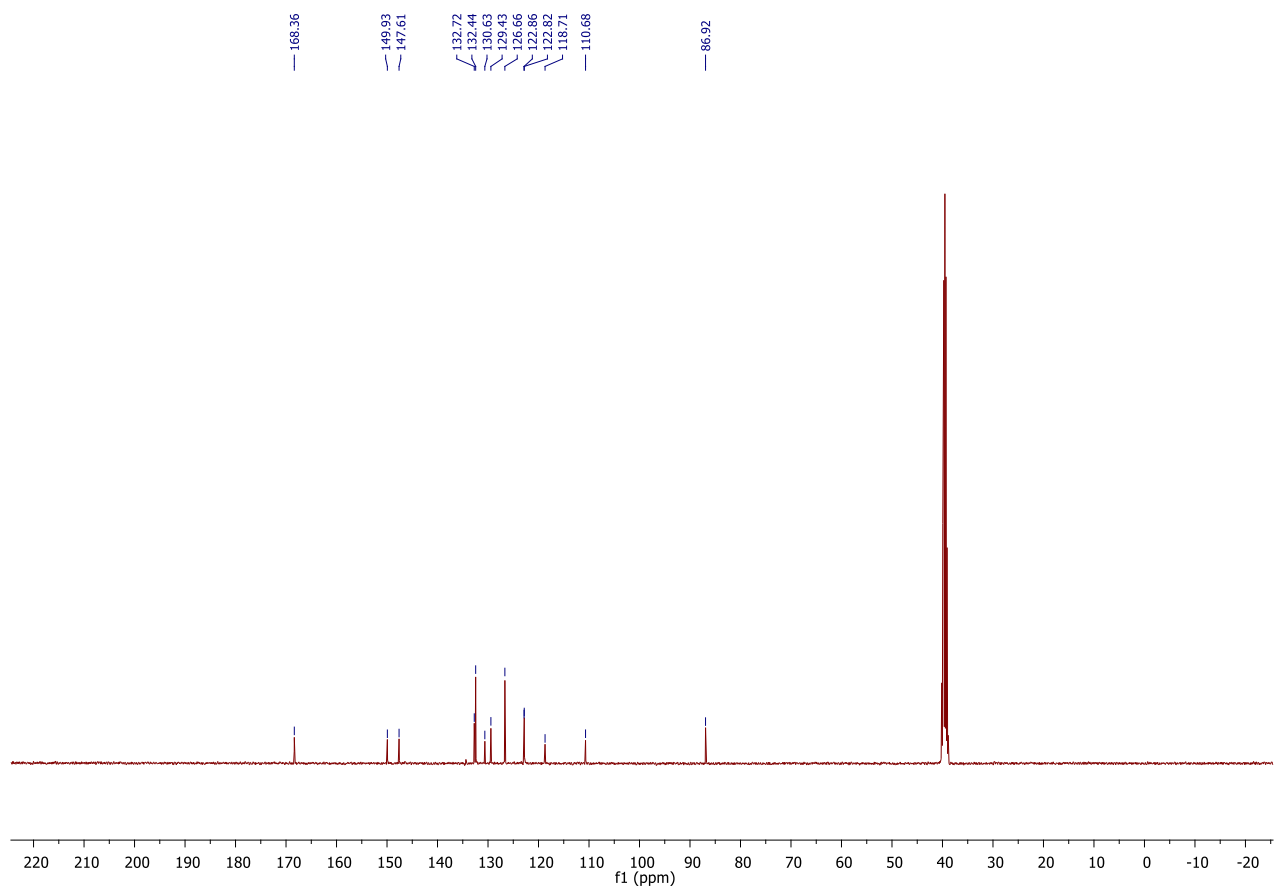


### 1.3. 4-(1-hydroxy-3-oxoisindolin-1-yl)benzonitrile (198d)

$^1\text{H}$  NMR (400 MHz,  $\text{DMSO-d}_6$ )

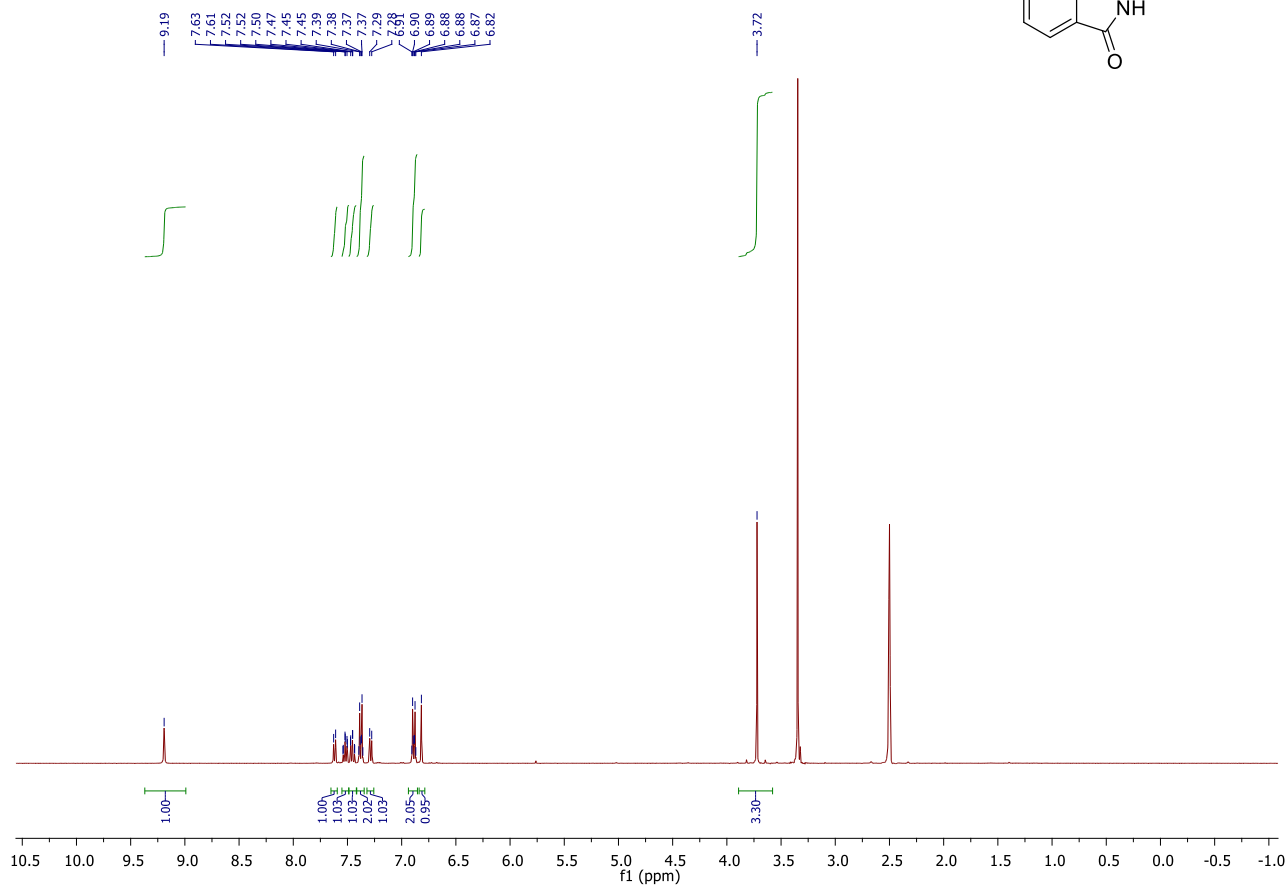
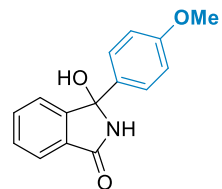


$^{13}\text{C}$  NMR (101 MHz,  $\text{DMSO-d}_6$ )

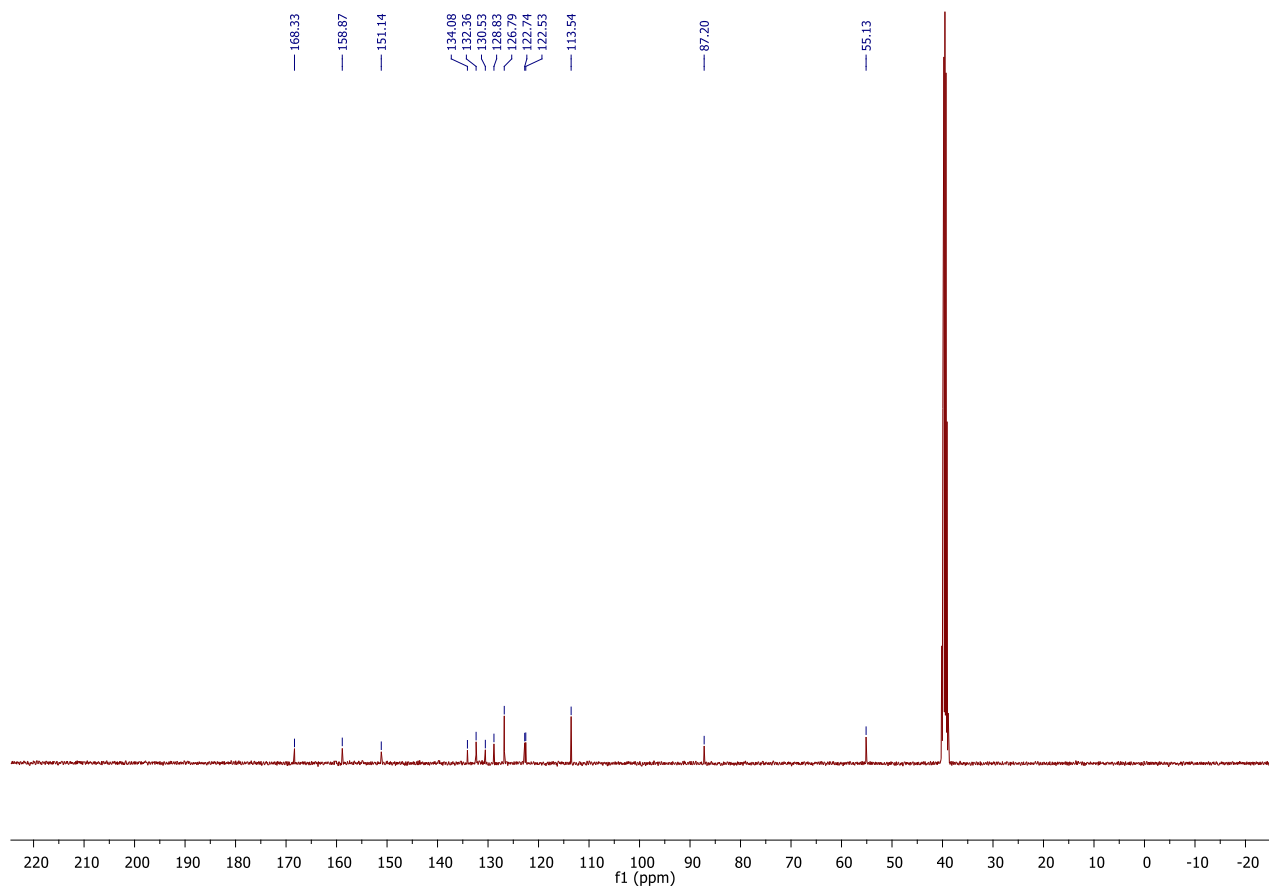


### 1.4. 3-hydroxy-3-(4-methoxyphenyl)isoindolin-1-one (198e)

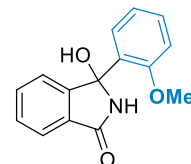
<sup>1</sup>H NMR (400 MHz, DMSO-d<sub>6</sub>)



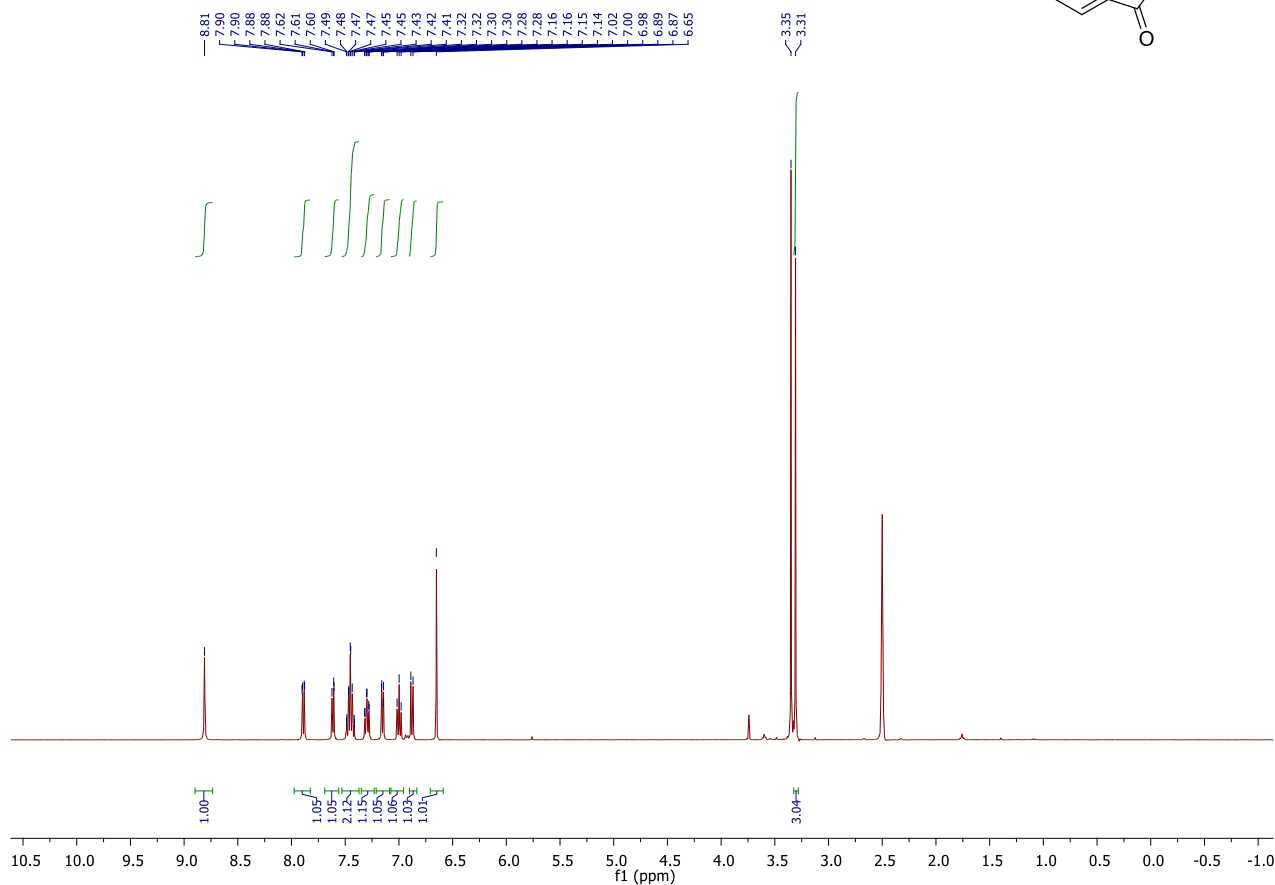
<sup>13</sup>C NMR (101 MHz, DMSO-d<sub>6</sub>)



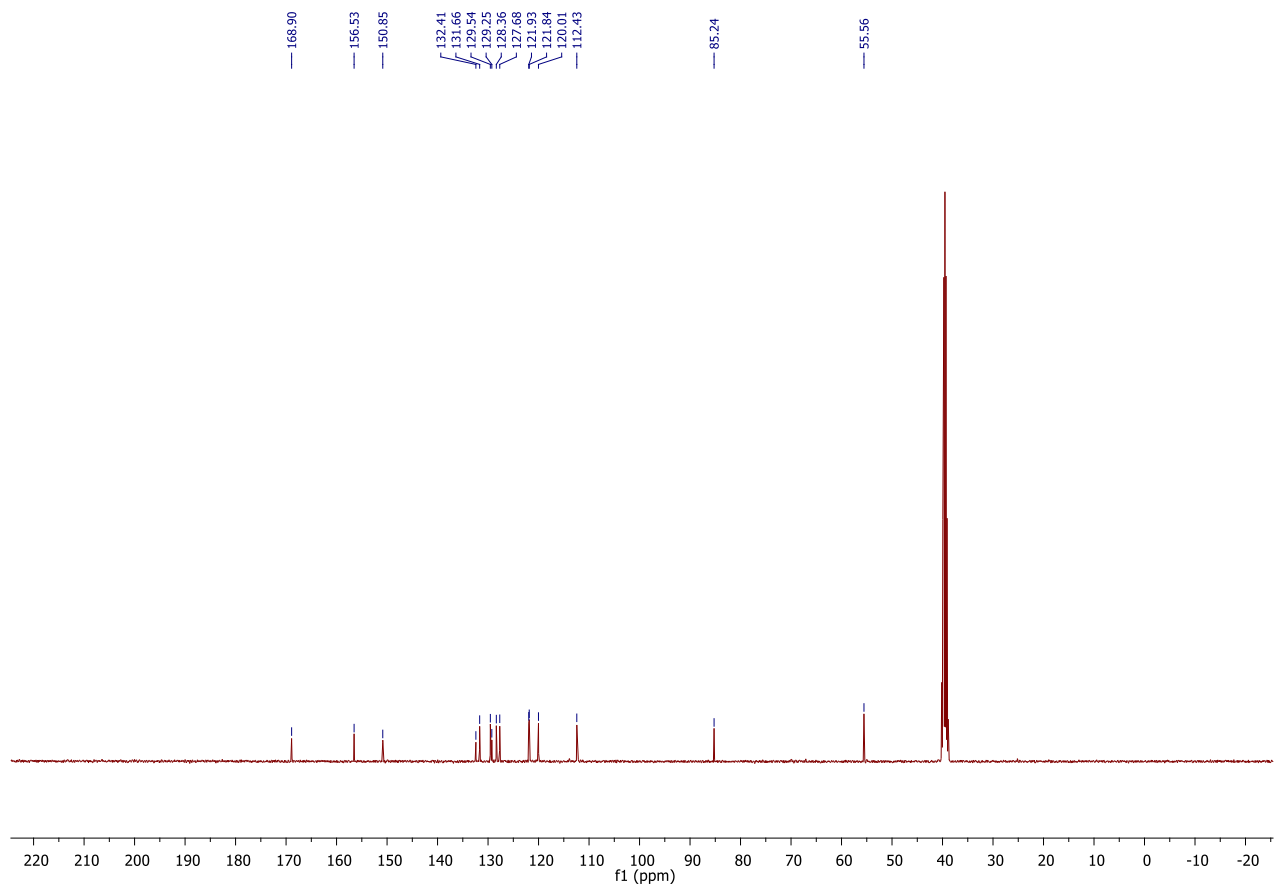
### 1.5. 3-hydroxy-3-(2-methoxyphenyl)isoindolin-1-one (198f)



<sup>1</sup>H NMR (400 MHz, DMSO-d<sub>6</sub>)

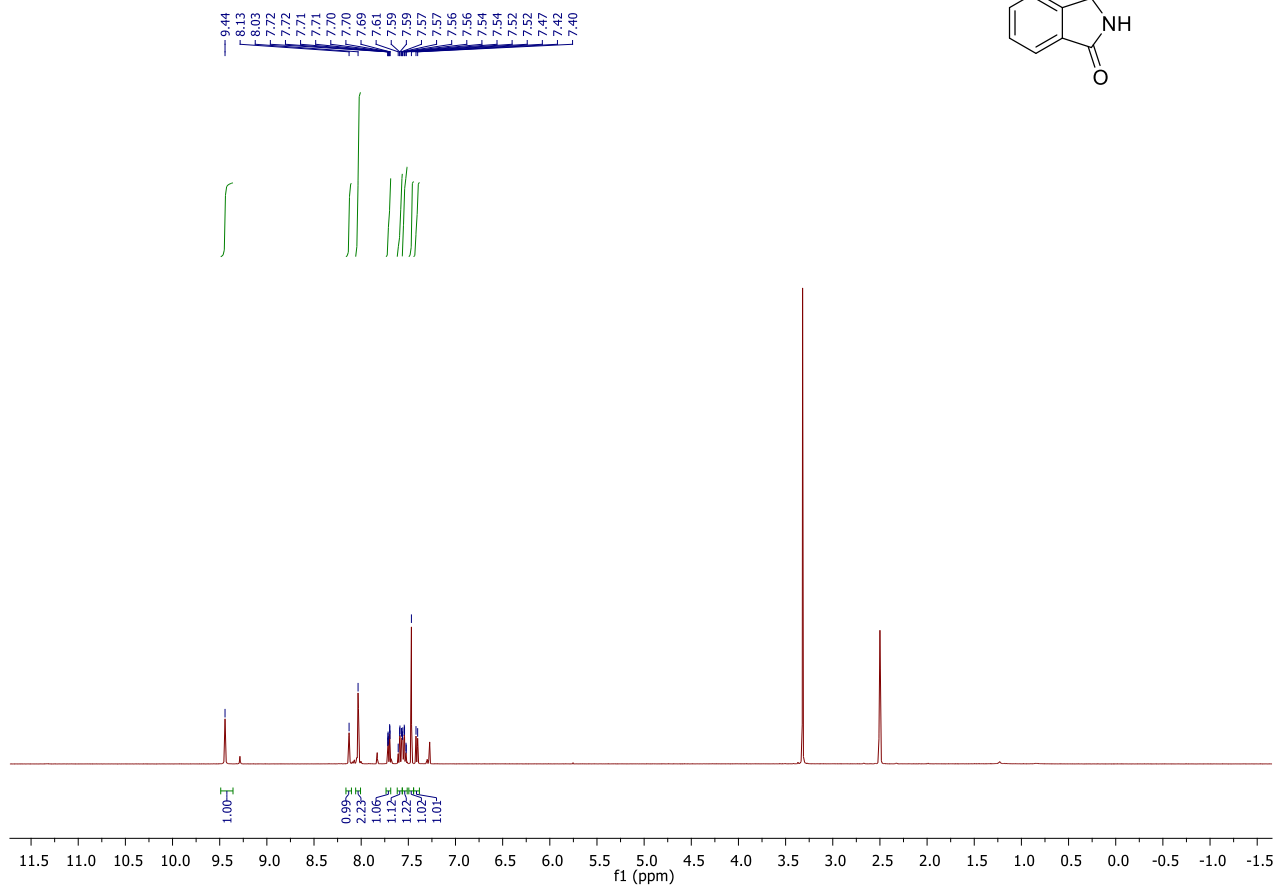
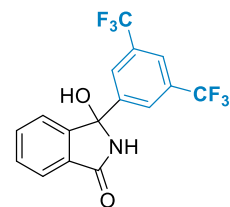


<sup>13</sup>C NMR (101 MHz, DMSO-d<sub>6</sub>)

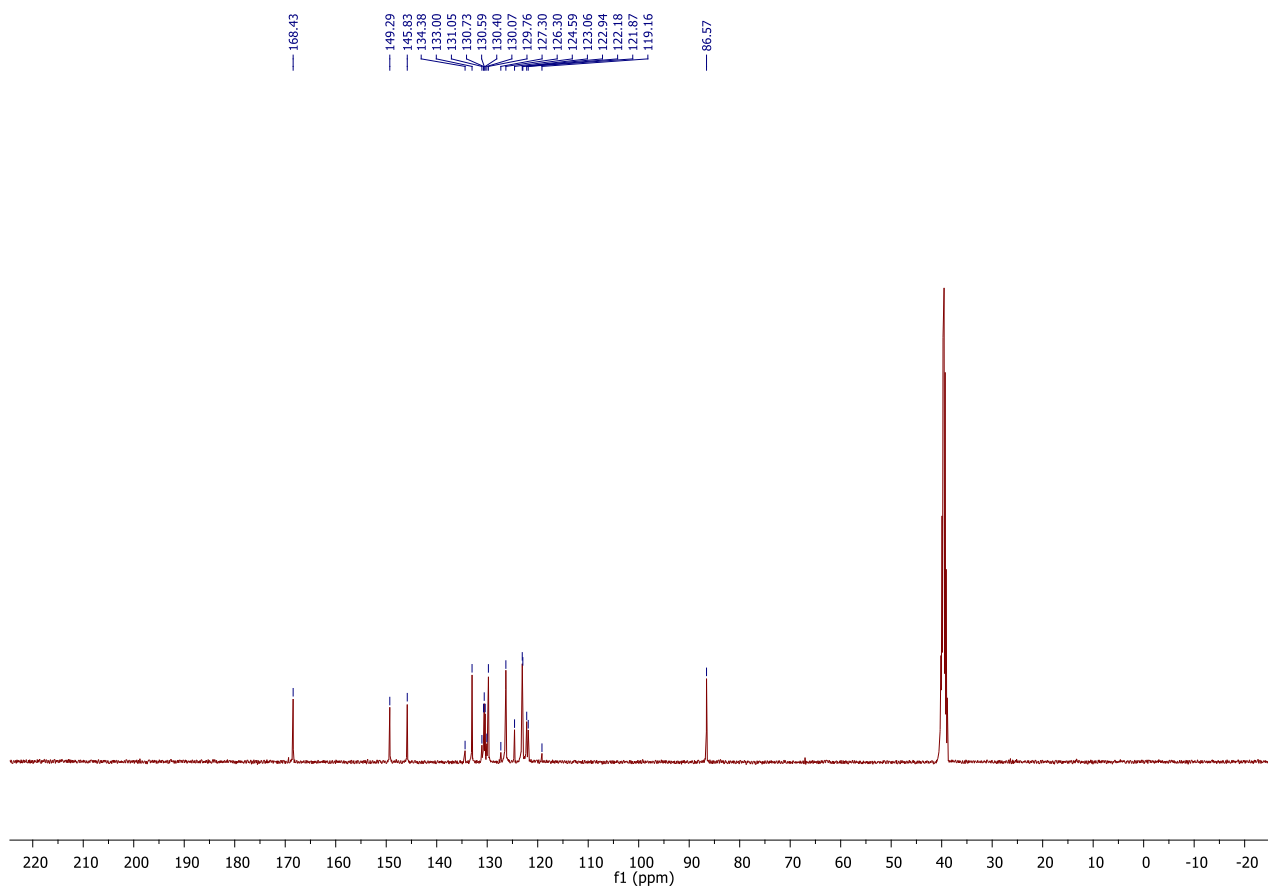


### 1.6. 3-hydroxy-3-(3,5-bis(trifluoromethyl))isoindolin-1-one (198g)

<sup>1</sup>H NMR (400 MHz, DMSO-d<sub>6</sub>)

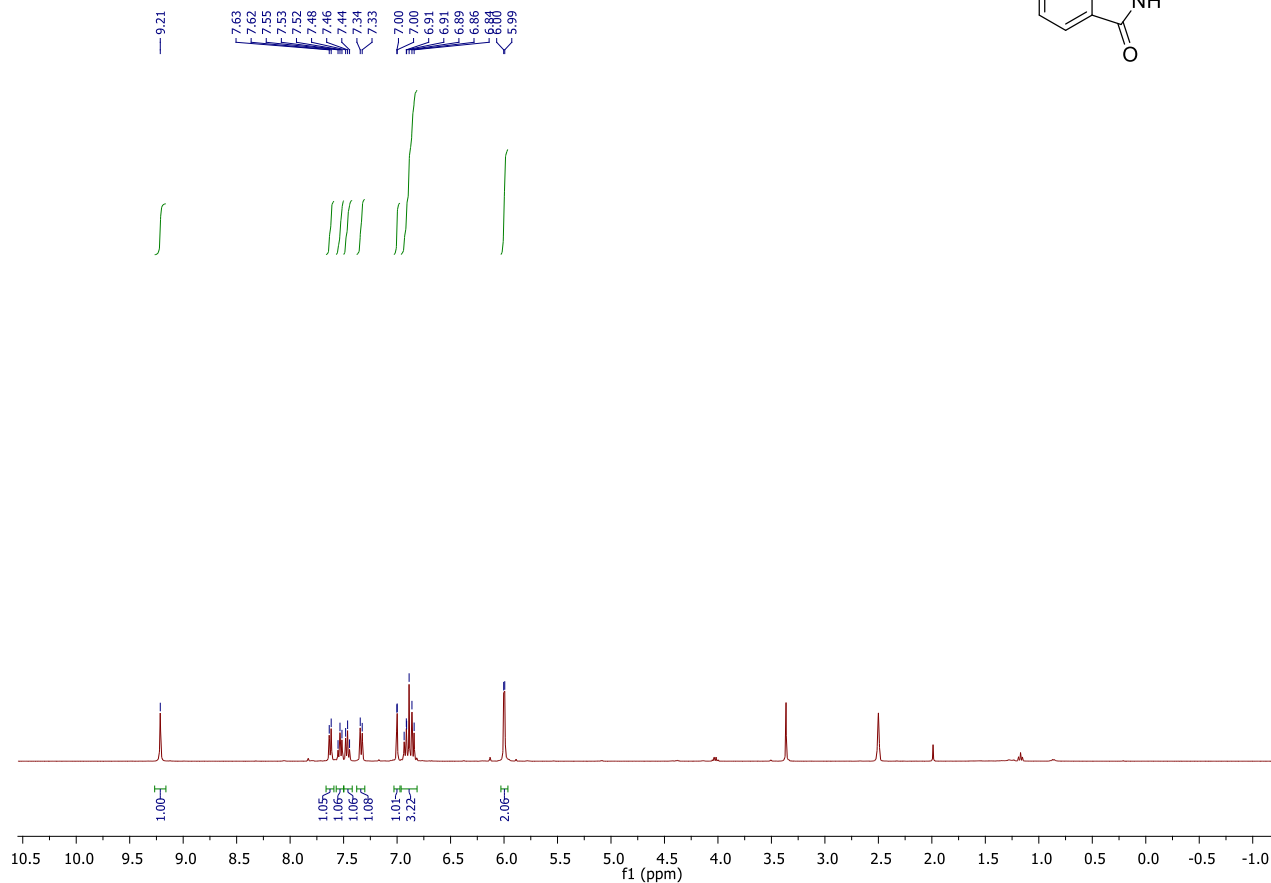
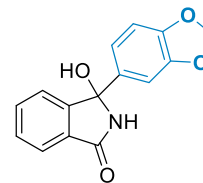


<sup>13</sup>C NMR (101 MHz, DMSO-d<sub>6</sub>)

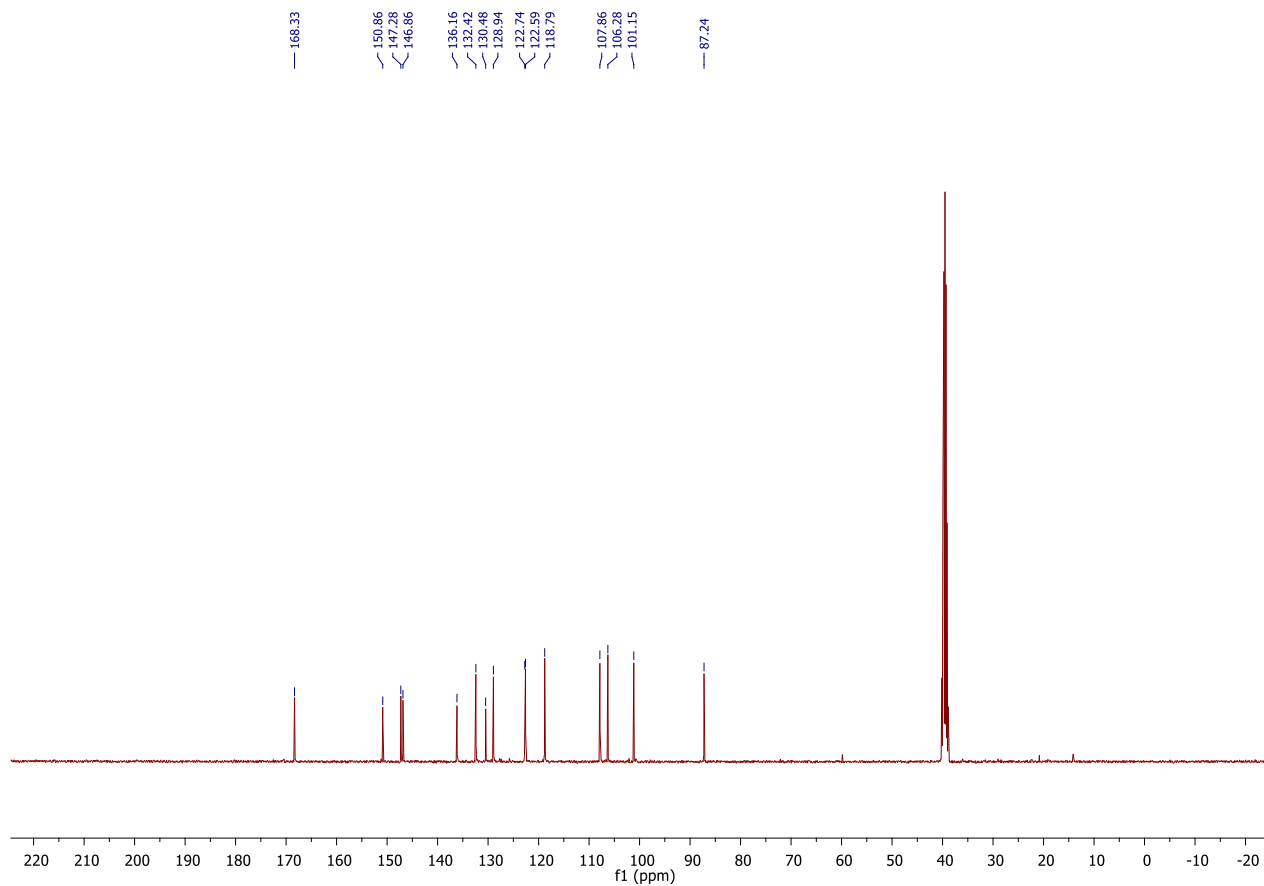


### 1.7. 3-(benzo[d][1,3]dioxol-5-yl)isoindolin-1-one (198h)

<sup>1</sup>H NMR (400 MHz, DMSO-d<sub>6</sub>)



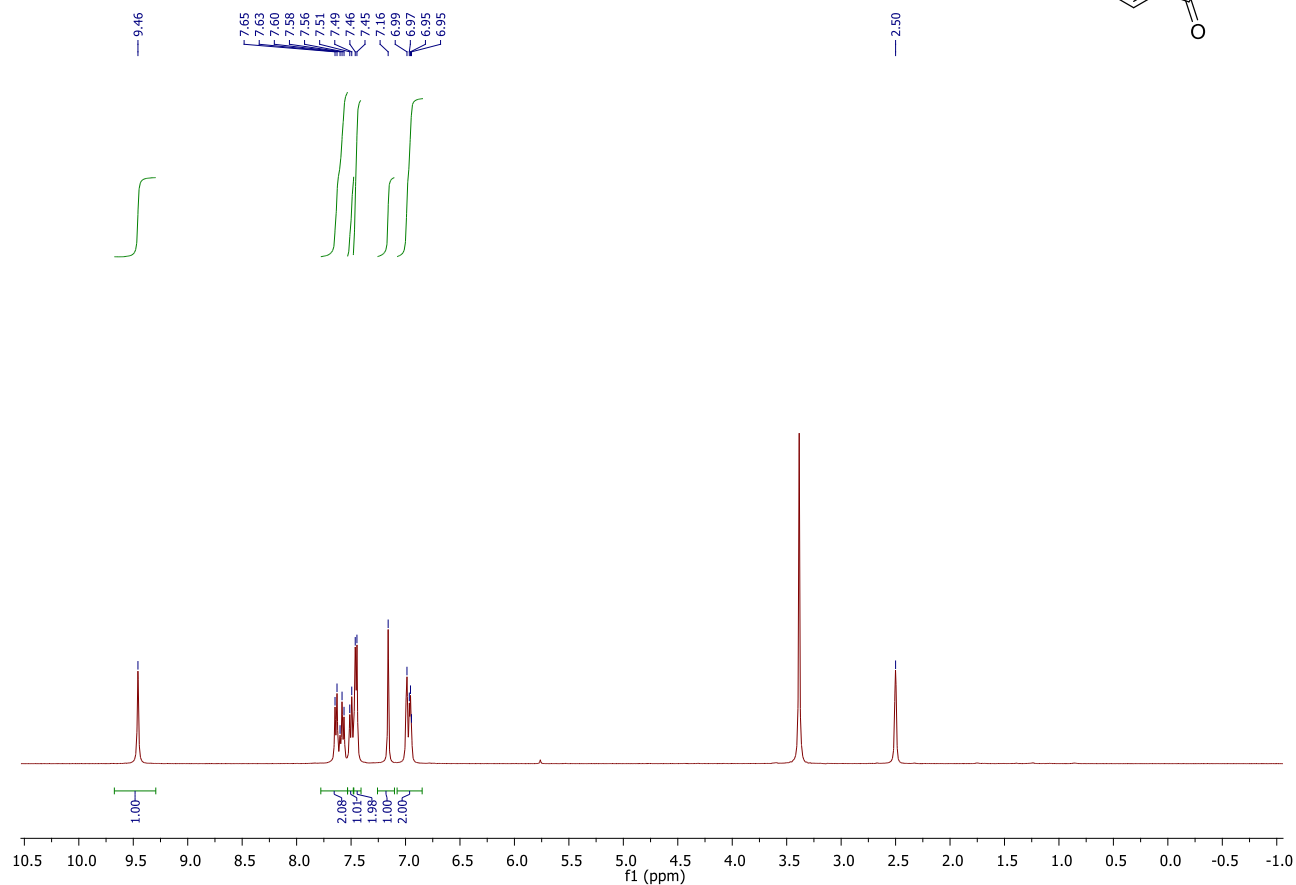
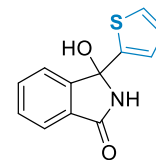
<sup>13</sup>C NMR (101 MHz, DMSO-d<sub>6</sub>)



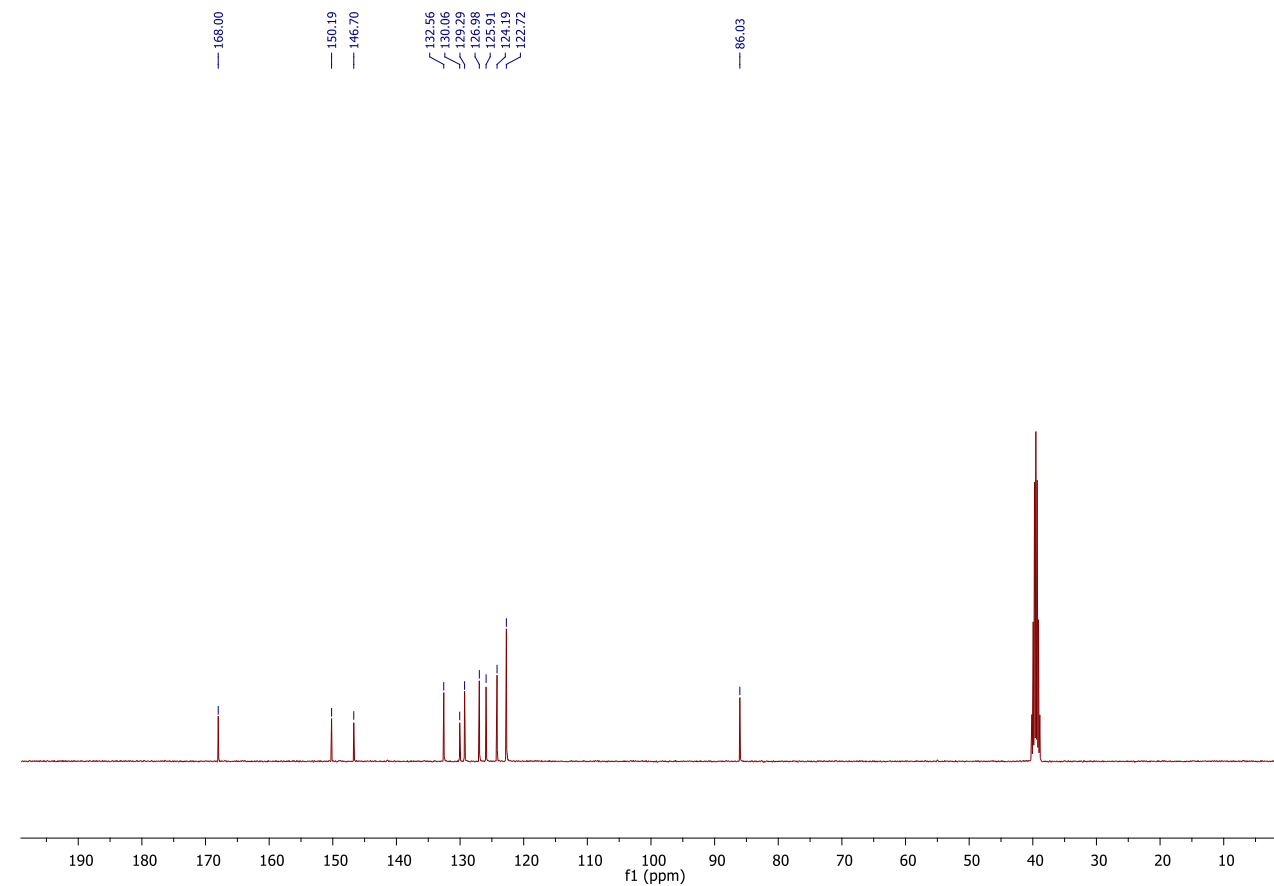


### 1.8. 3-hydroxy-3-(thiophen-2-yl)isoindolin-1-one (198I)

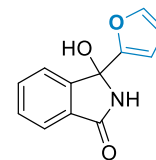
$^1\text{H}$  NMR (400 MHz, DMSO- $d_6$ )



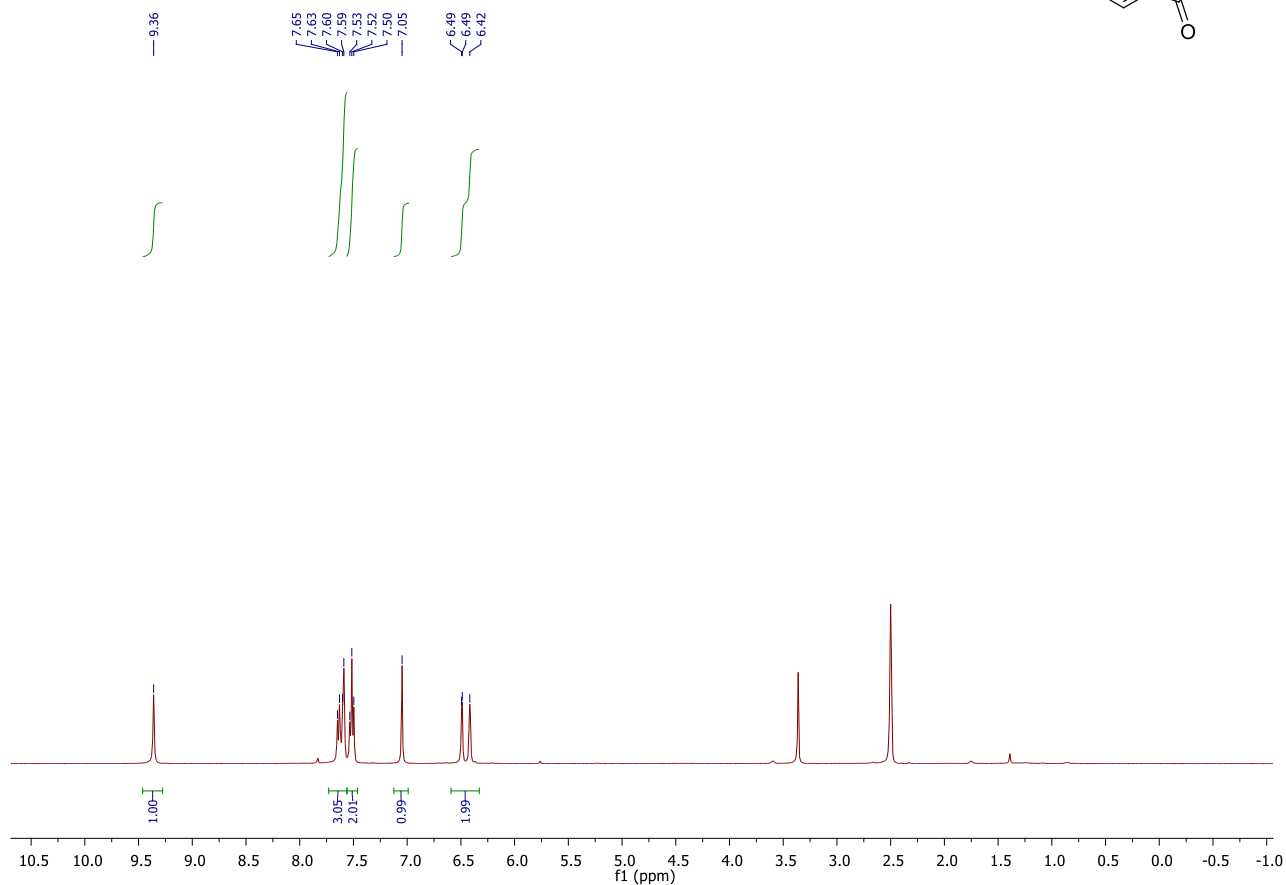
$^{13}\text{C}$  NMR (101 MHz, DMSO- $d_6$ )



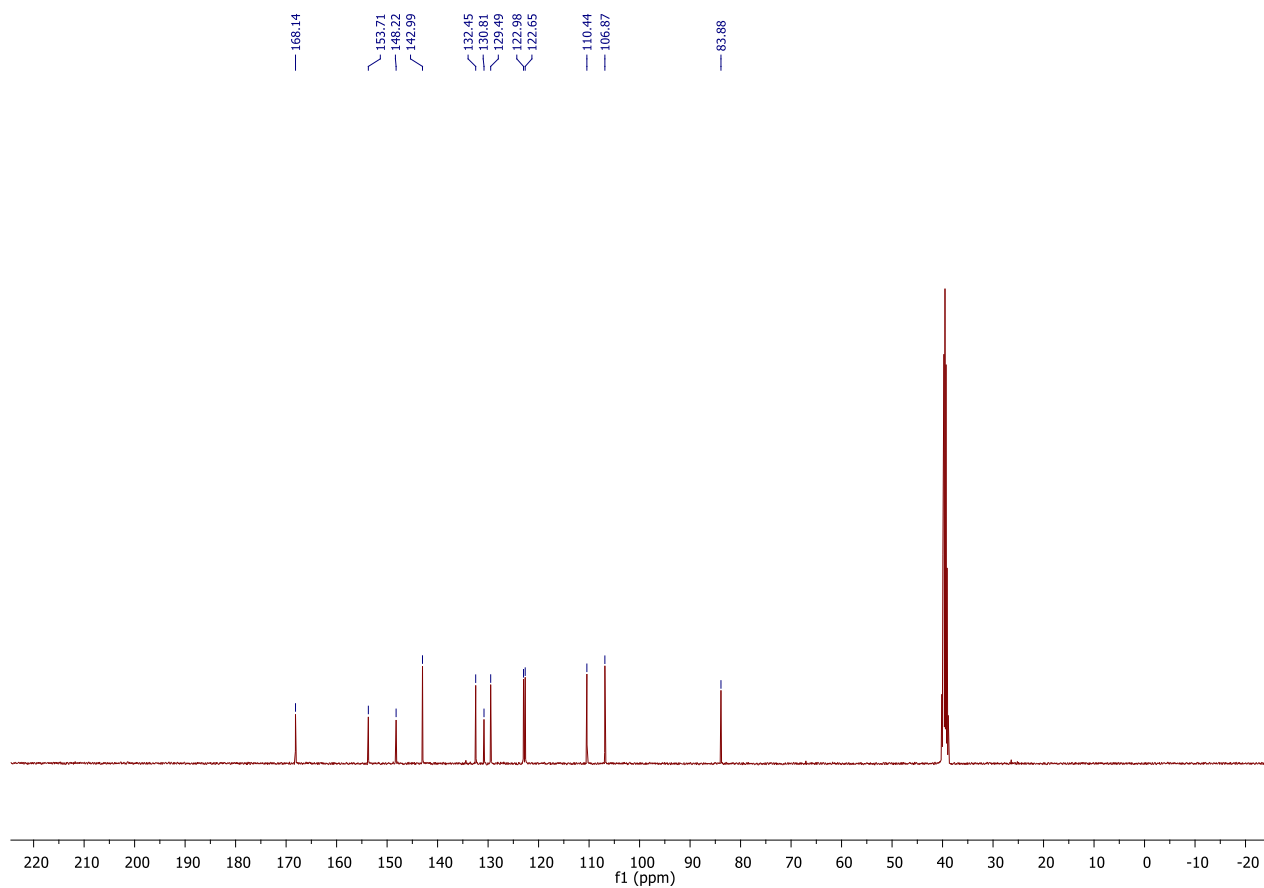
### 1.9. 3-hydroxy-3-(furan-2-yl)isoindolin-1-one (198m)



<sup>1</sup>H NMR (400 MHz, DMSO-d<sub>6</sub>)

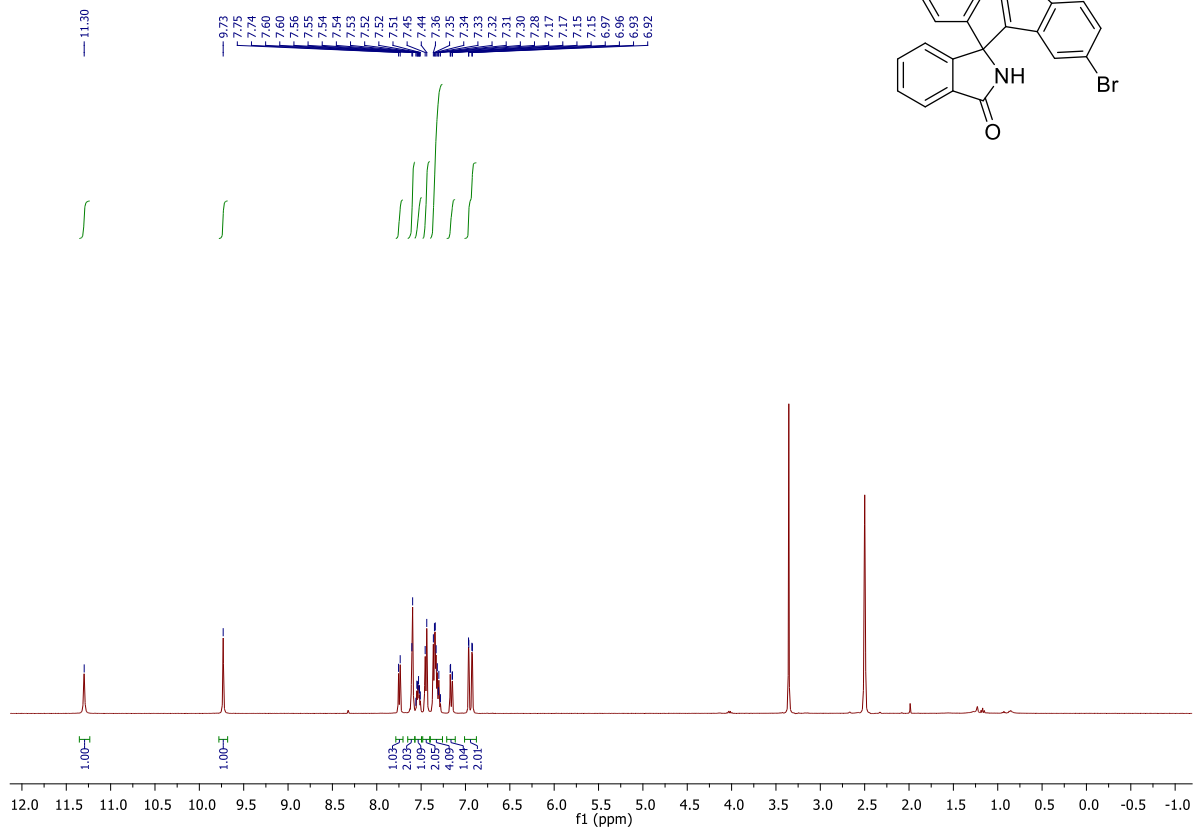
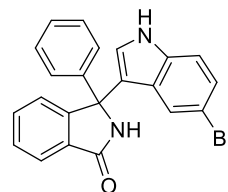


<sup>13</sup>C NMR (101 MHz, DMSO-d<sub>6</sub>)

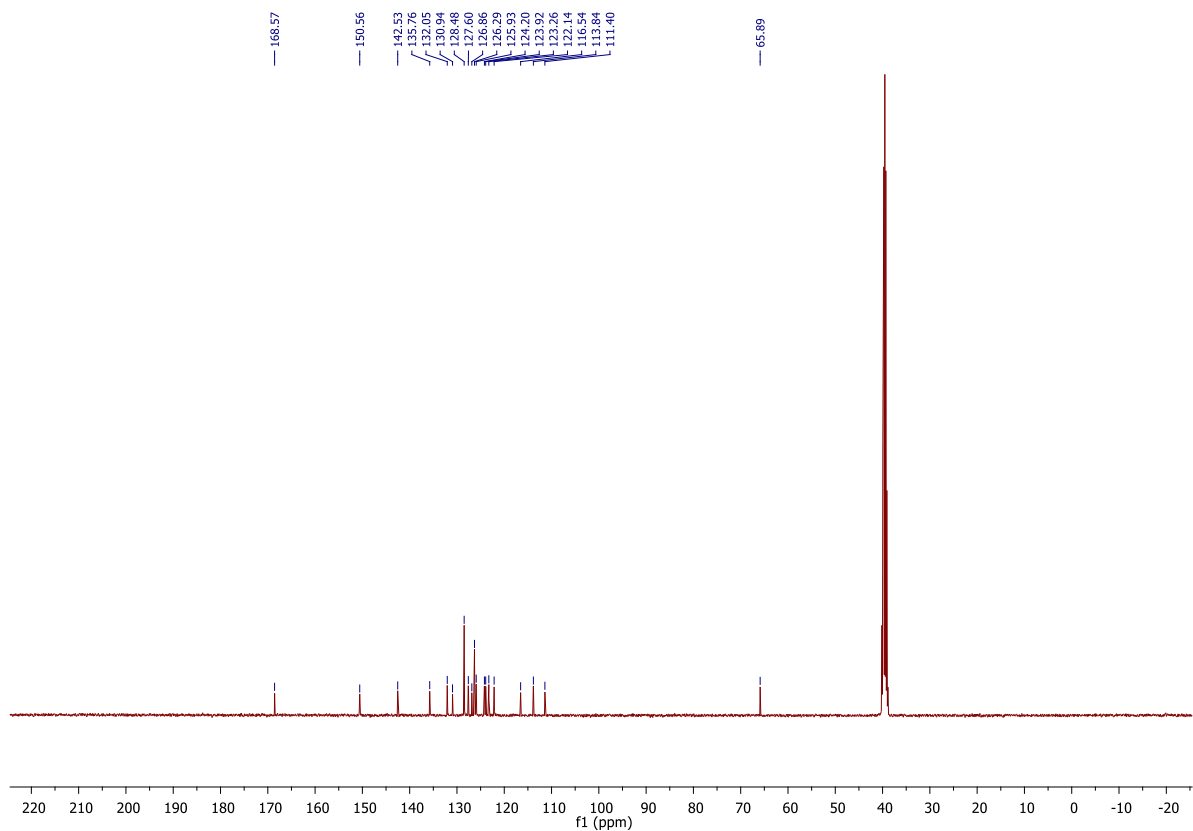


### 1.10. 3-(5-bromo-1H-indol-3-yl)-3-phenyl-2,3-dihydro-1H-isindol-1-one (200a)

<sup>1</sup>H NMR (400 MHz, DMSO-d<sub>6</sub>)

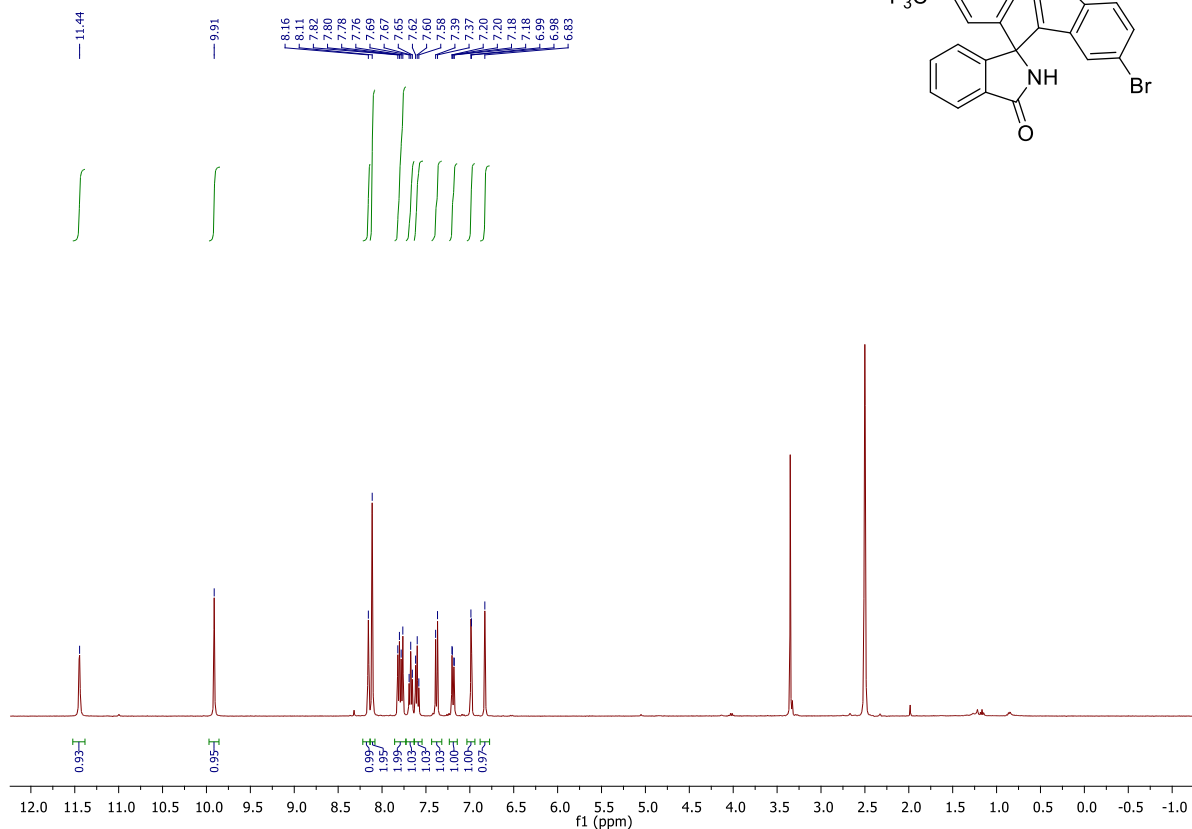
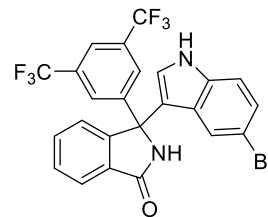


<sup>13</sup>C NMR (101 MHz, DMSO-d<sub>6</sub>)

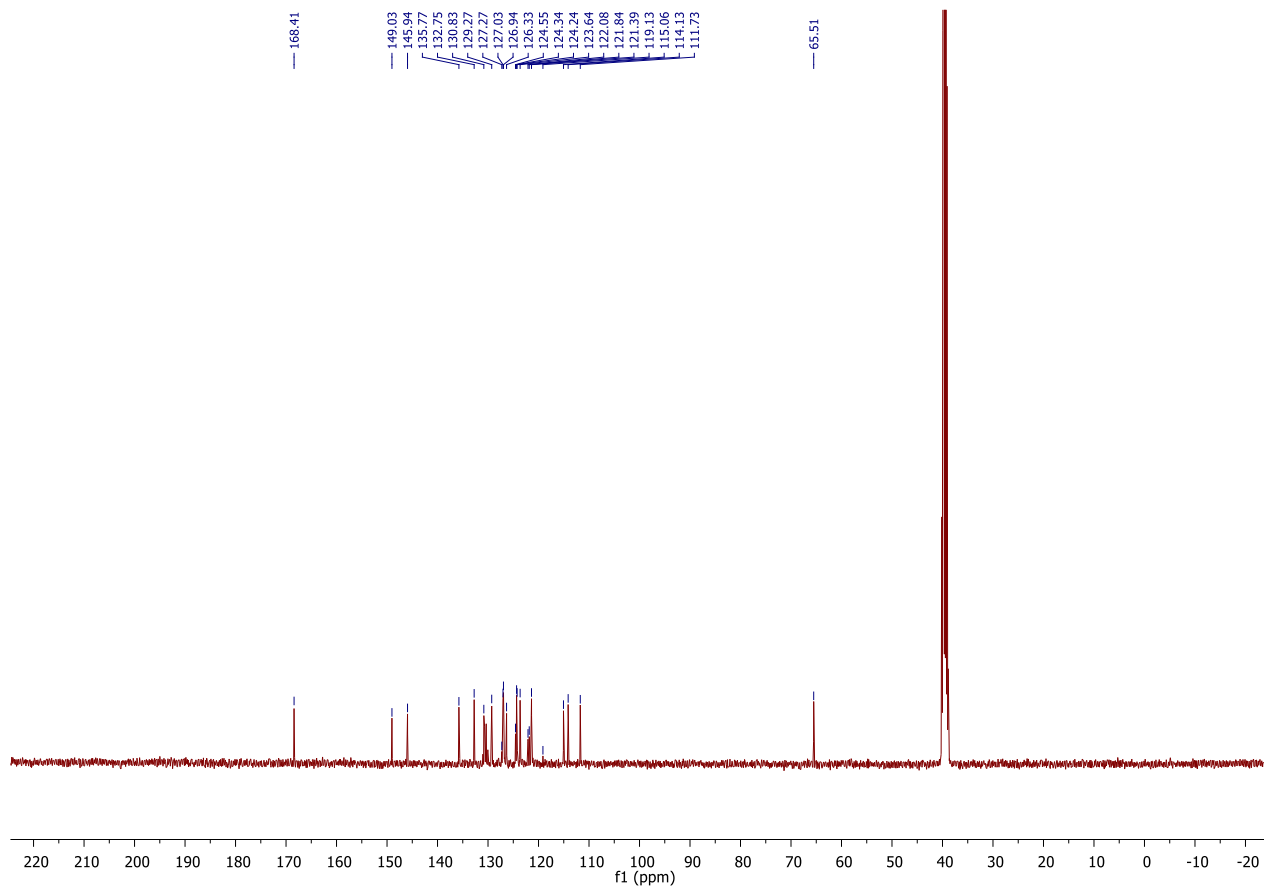


### 1.11. 3-[3,5-bis(trifluoromethyl)phenyl]-3-(5-bromo-1*H*-indol-3-yl)-2,3-dihydro-1*H*-isoindol-1-one (200b)

<sup>1</sup>H NMR (400 MHz, DMSO-d<sub>6</sub>)

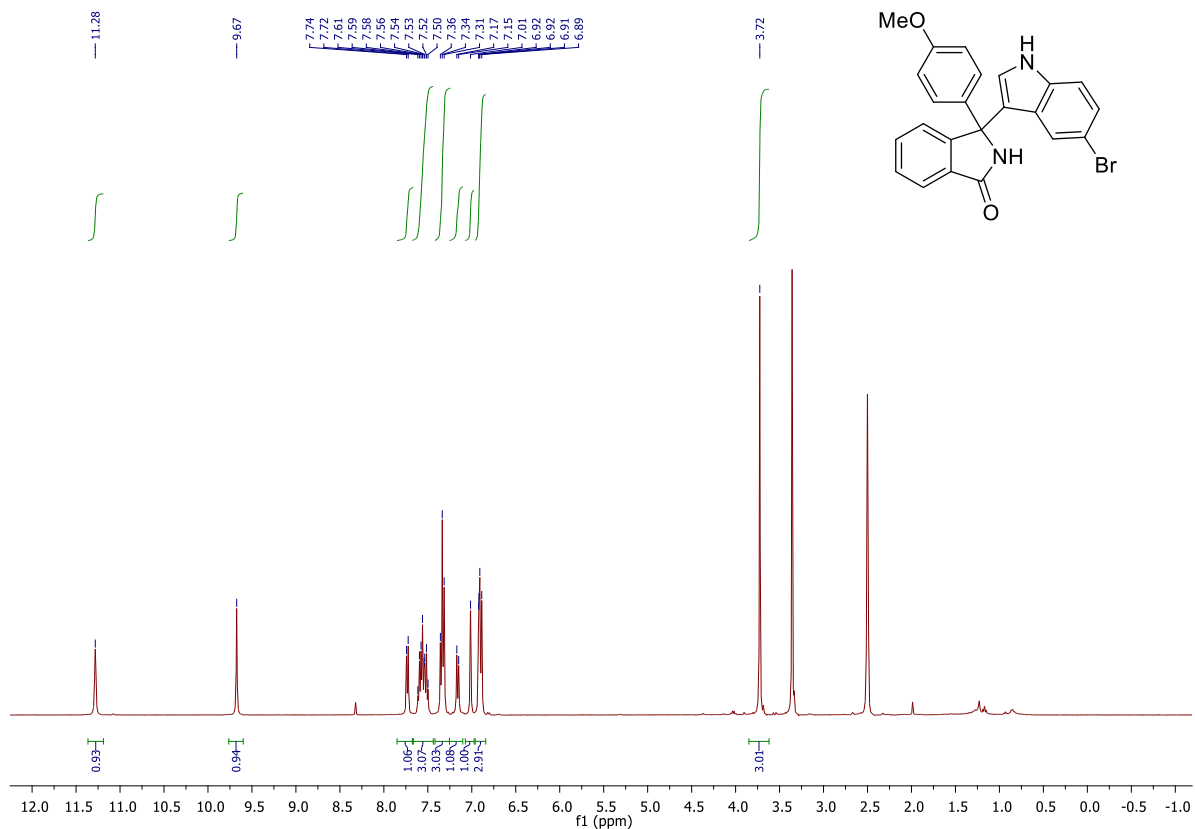


<sup>13</sup>C{<sup>1</sup>H} NMR (101 MHz, DMSO-d<sub>6</sub>)

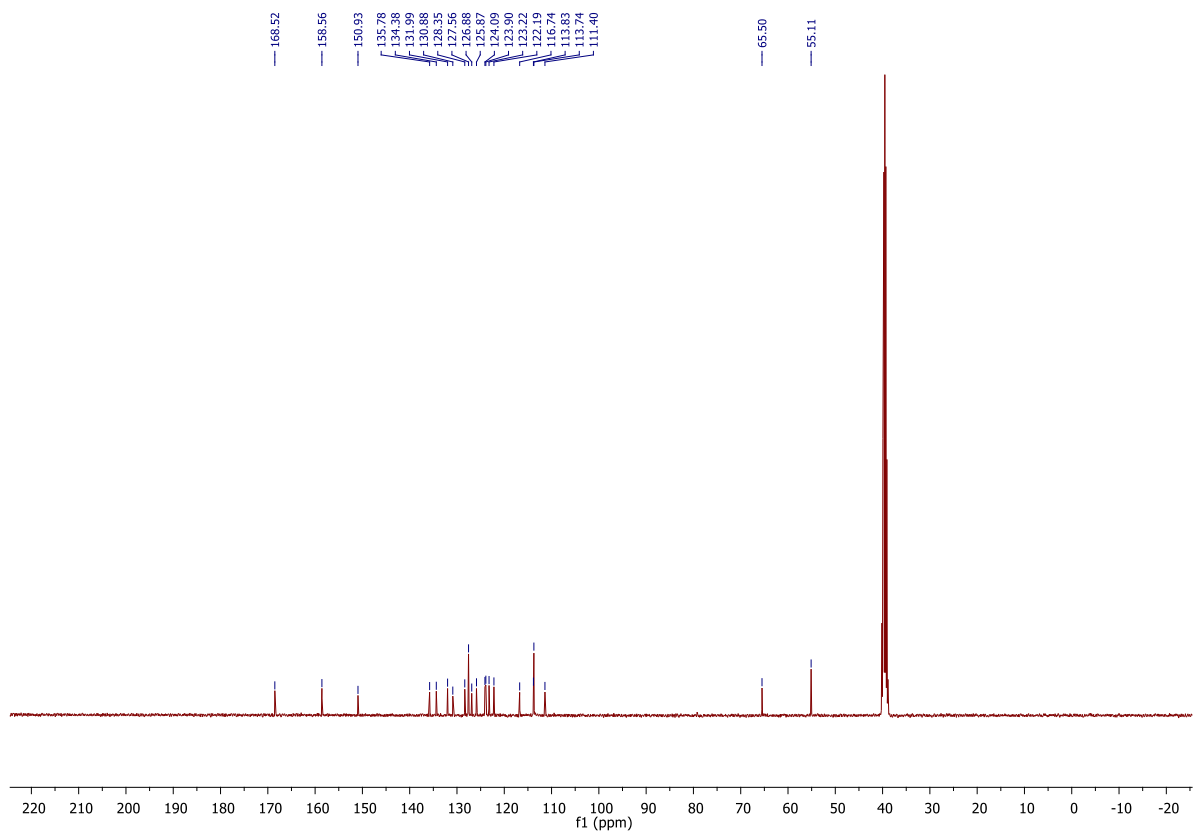


### 1.12. 3-(5-bromo-1*H*-indol-3-yl)-3-(4-methoxyphenyl)-2,3-dihydro-1*H*-isoindol-1-one (200c)

<sup>1</sup>H NMR (400 MHz, DMSO-d<sub>6</sub>)

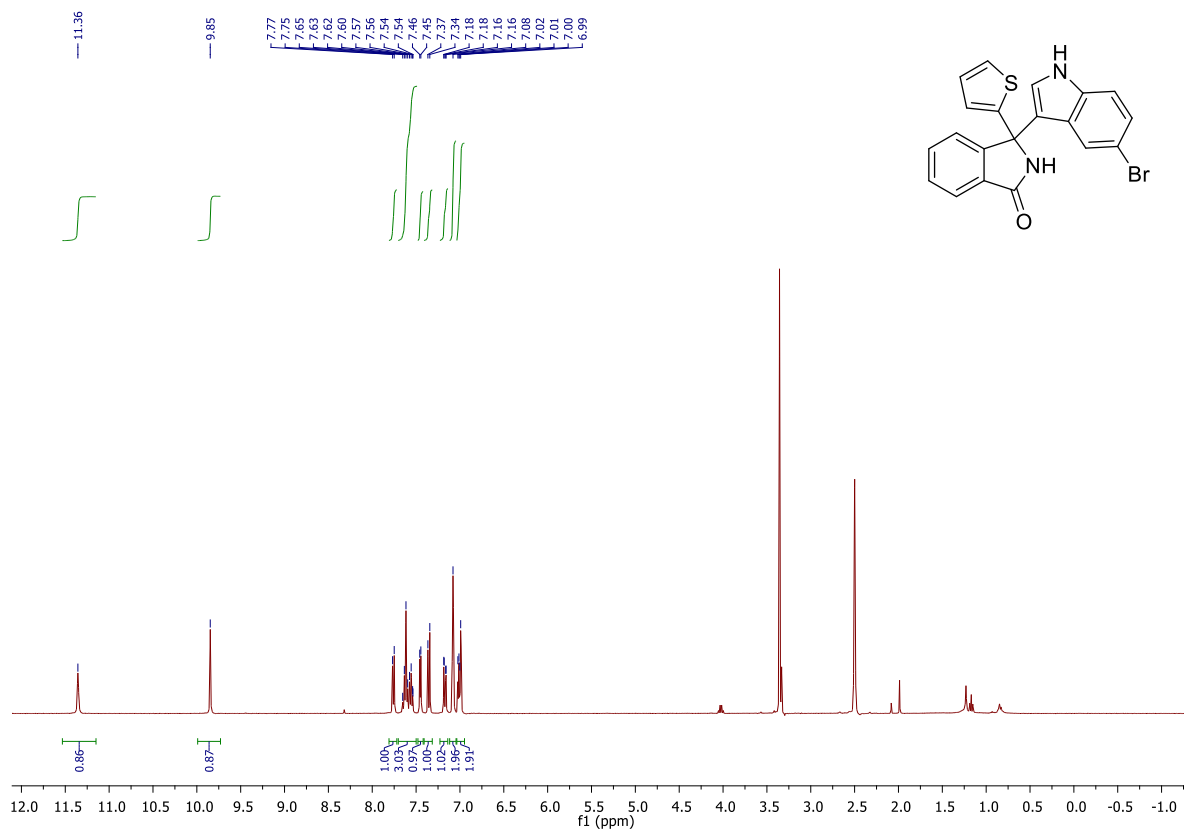


<sup>13</sup>C{<sup>1</sup>H} NMR (101 MHz, DMSO-d<sub>6</sub>)

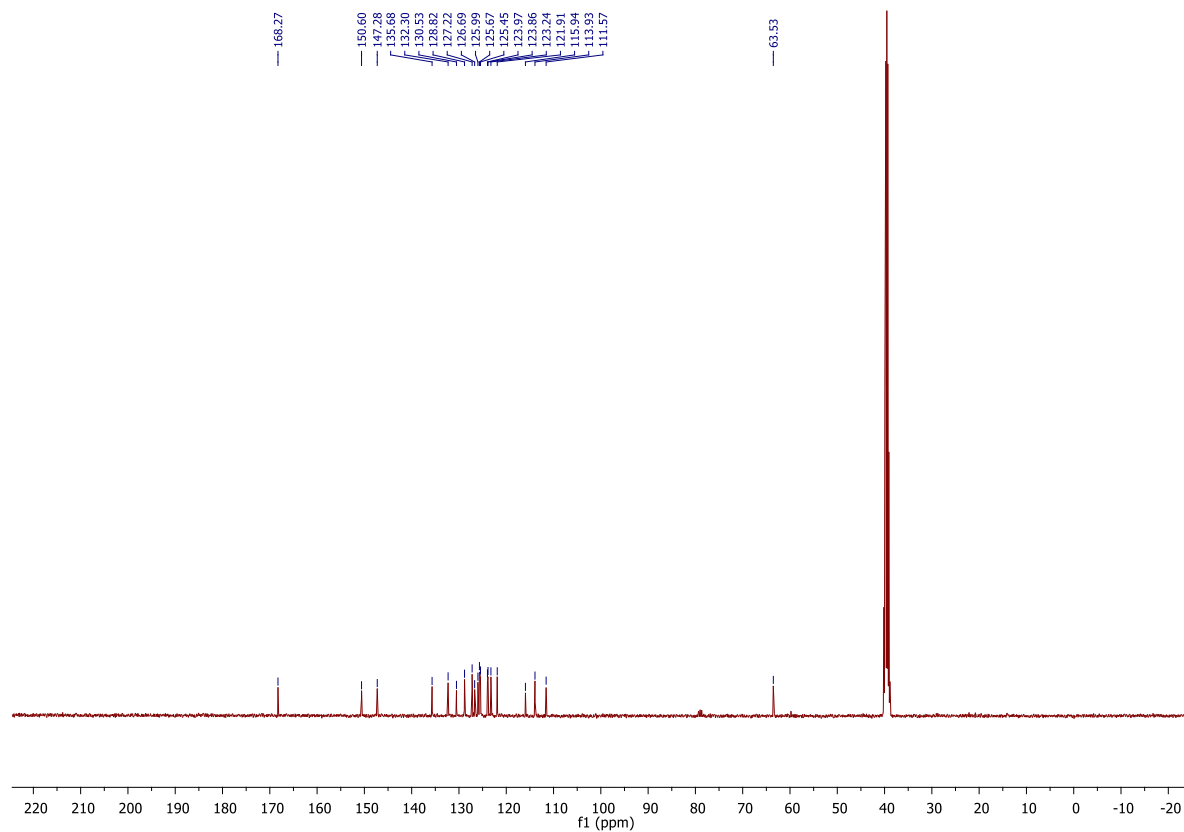


### 1.13. 3-(5-bromo-1*H*-indol-3-yl)-3-(thiophen-2-yl)-2,3-dihydro-1*H*-isoindol-1-one (200d)

$^1\text{H}$  NMR (400 MHz,  $\text{DMSO-d}_6$ )

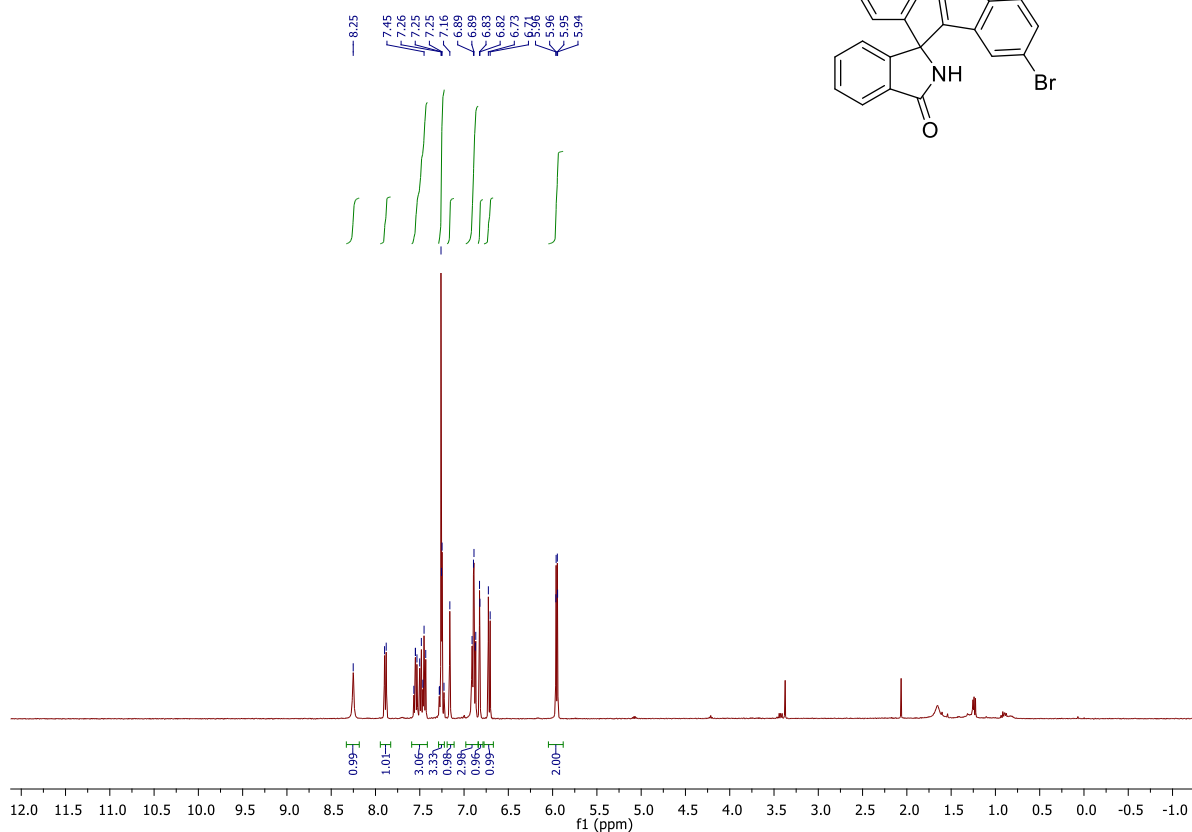


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{DMSO-d}_6$ )

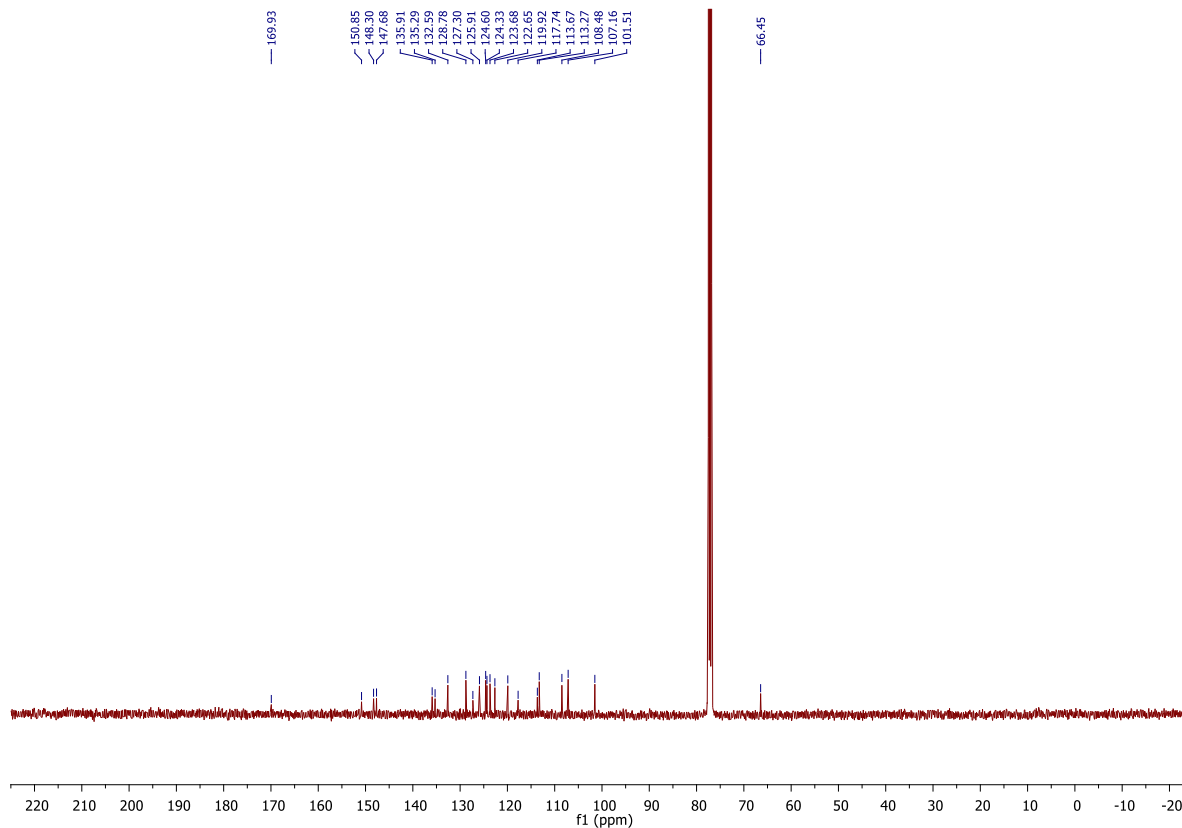


1.14. 3-(2*H*-1,3-benzodioxol-5-yl)-3-(5-bromo-3*a*,7*a*-dihydro-1*H*-indol-2-yl)-2,3-dihydro-1*H*-isoindol-1-one (200e)

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>)

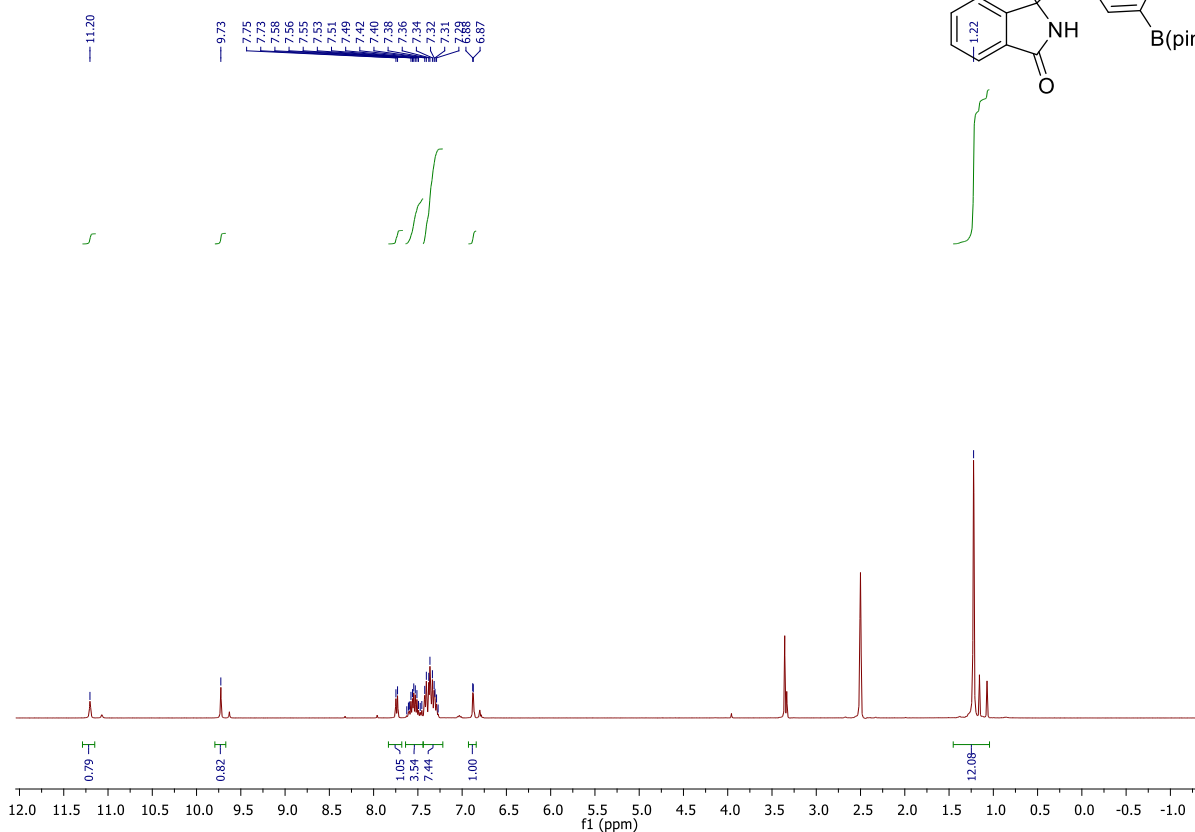


<sup>13</sup>C{<sup>1</sup>H} NMR (101 MHz, CDCl<sub>3</sub>)

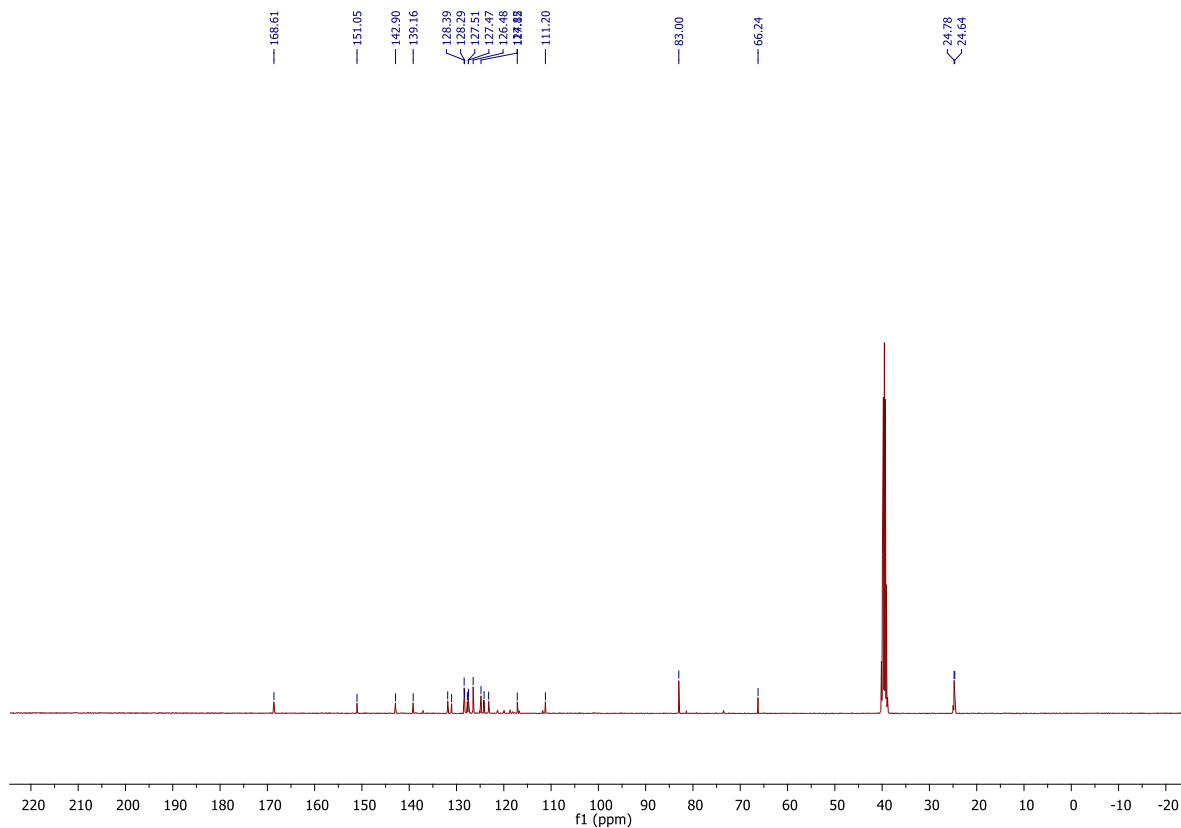


**1.15. 3-phenyl-3-[5-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-3a,7a-dihydro-1H-indol-2-yl]-2,3-dihydro-1H-isoindol-1-one (200f)**

$^1\text{H}$  NMR (400 MHz, DMSO- $d_6$ )

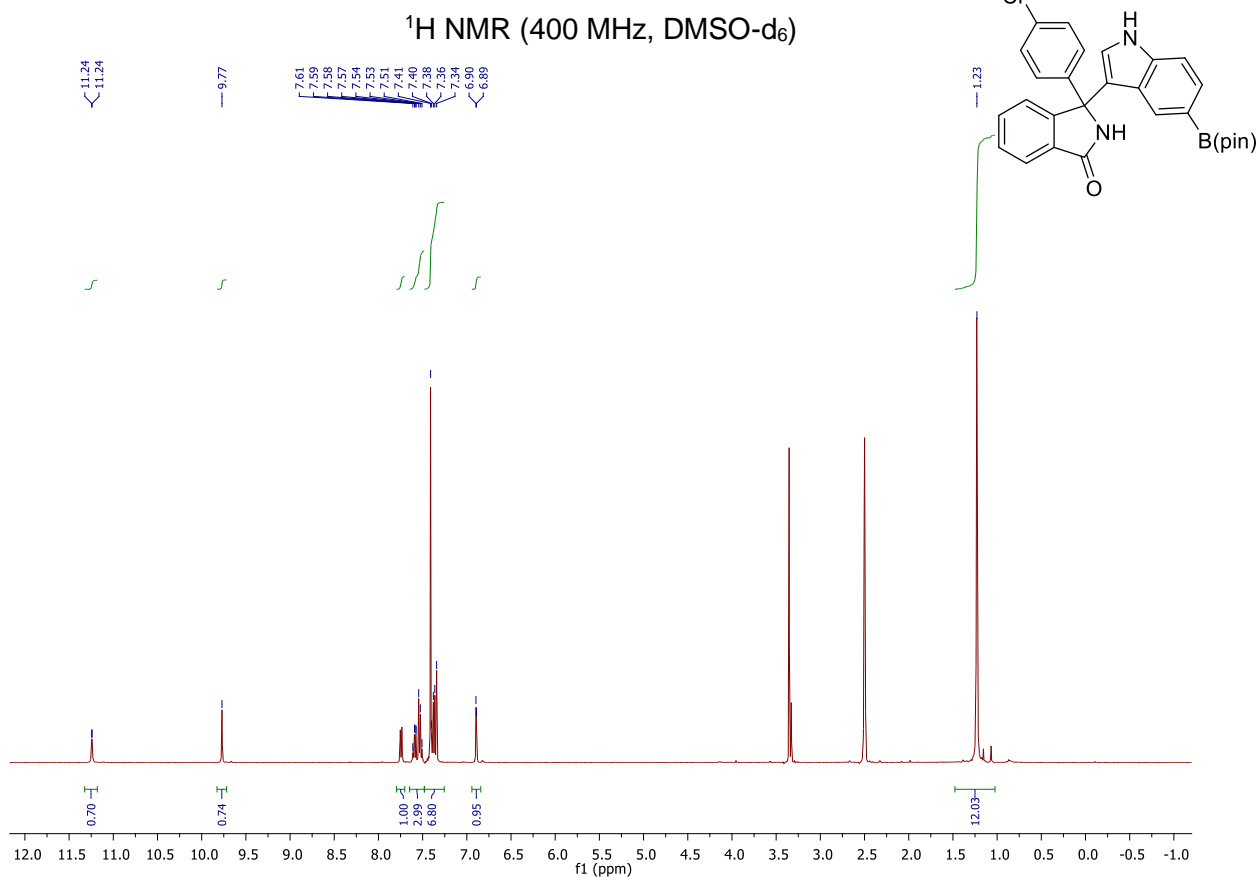


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz, DMSO- $d_6$ )

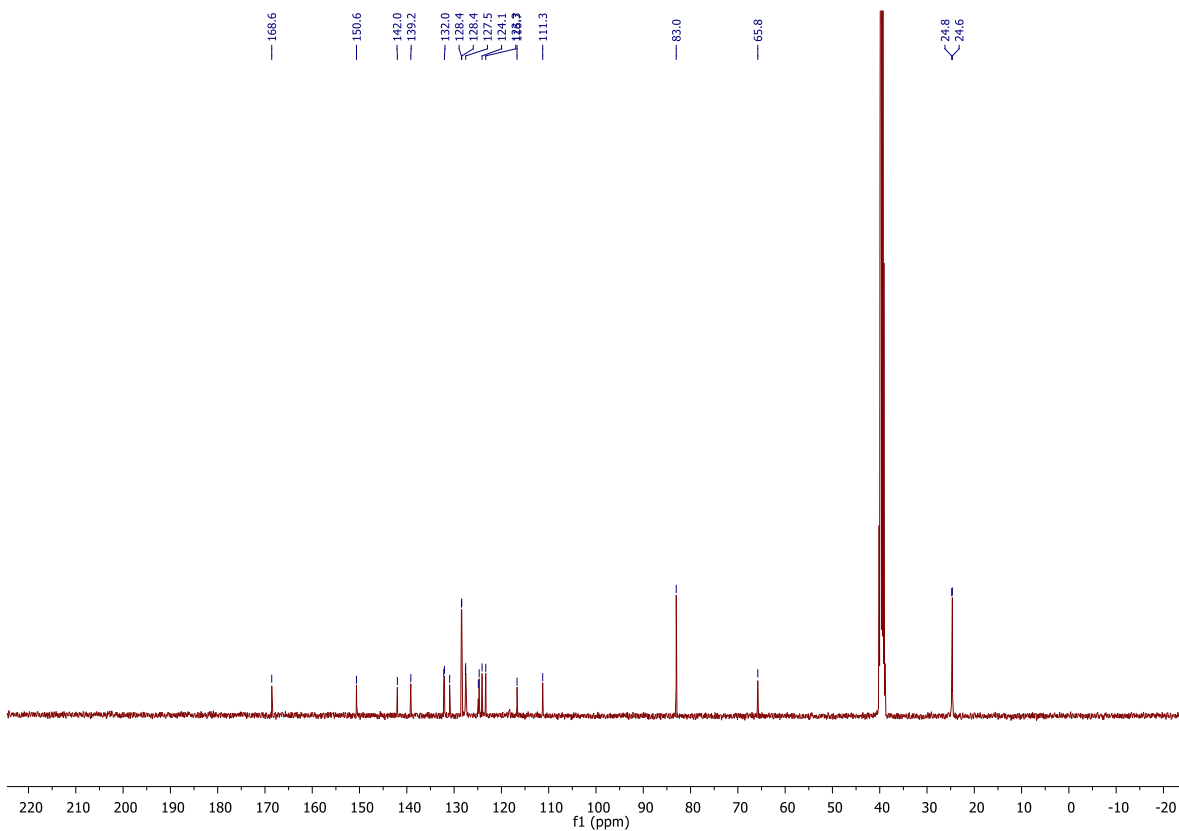




1.16. 3-(4-chlorophenyl)-3-[5-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-3a,7a-dihydro-1H-indol-2-yl]-2,3-dihydro-1H-isindol-1-one (200g)

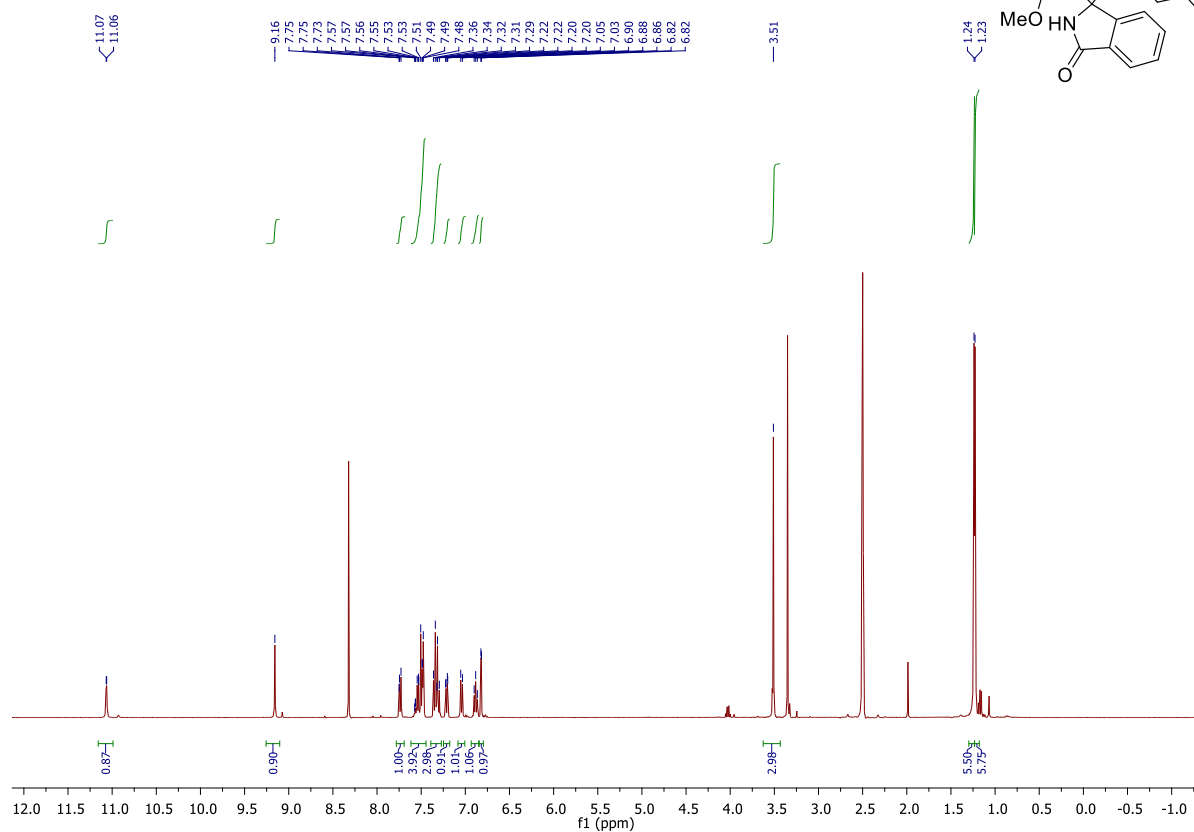


<sup>13</sup>C{<sup>1</sup>H} NMR (101 MHz, DMSO-d<sub>6</sub>)

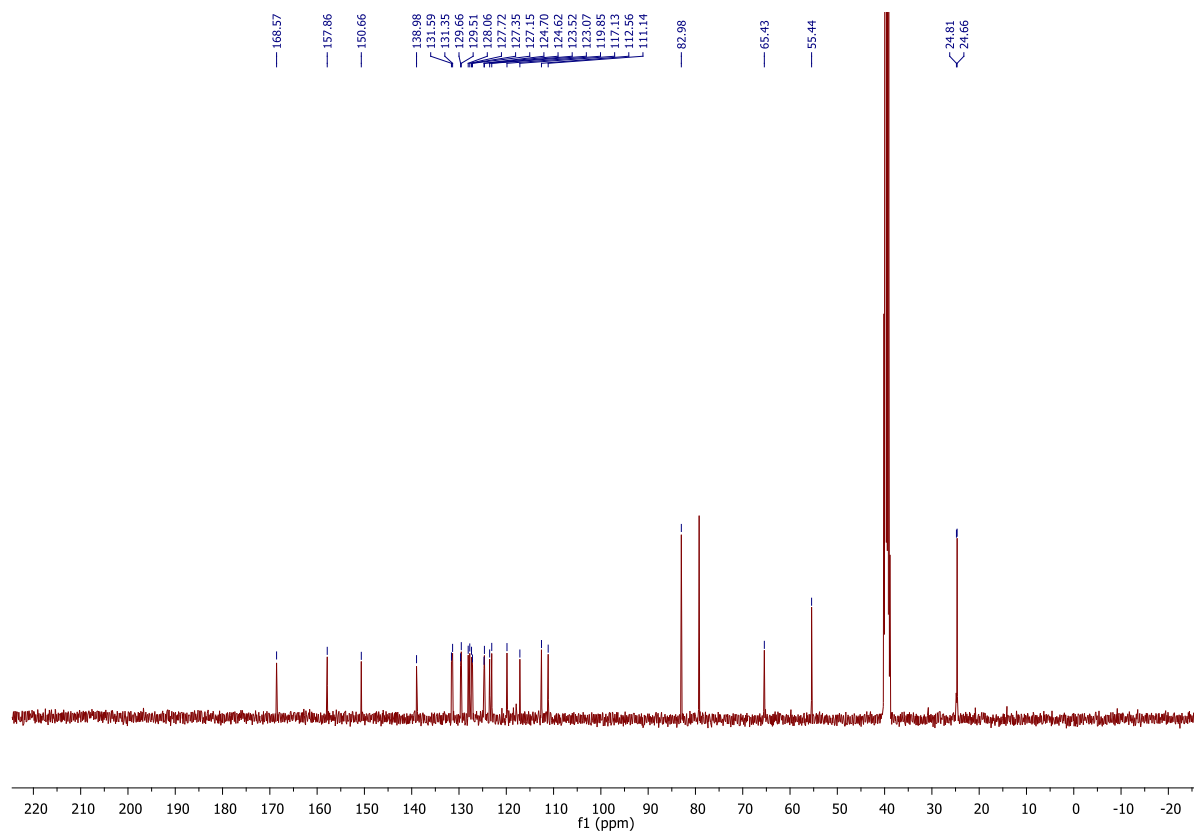


1.17. 3-(2-methoxyphenyl)-3-[5-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-3a,7a-dihydro-1H-indol-2-yl]-2,3-dihydro-1H-isoindol-1-one (200h)

$^1\text{H}$  NMR (400 MHz,  $\text{DMSO-d}_6$ )

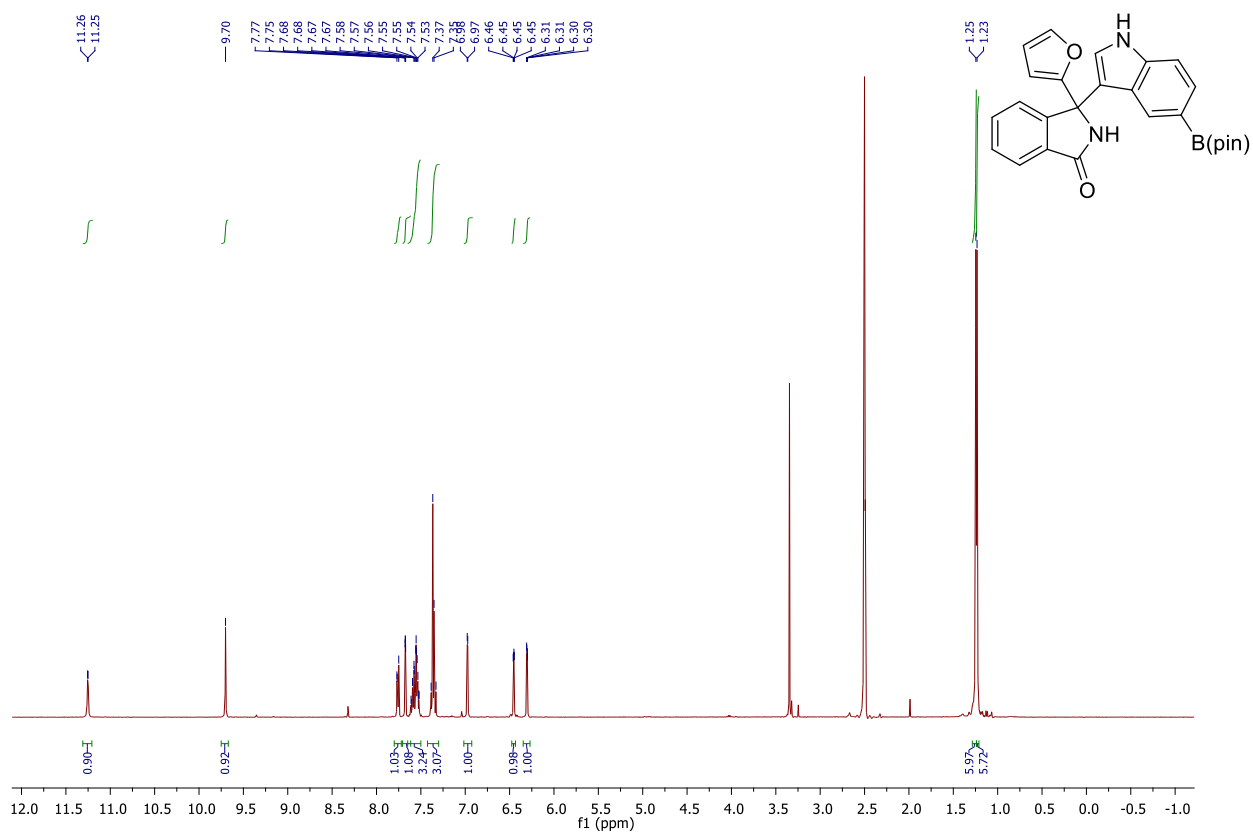


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{DMSO-d}_6$ )

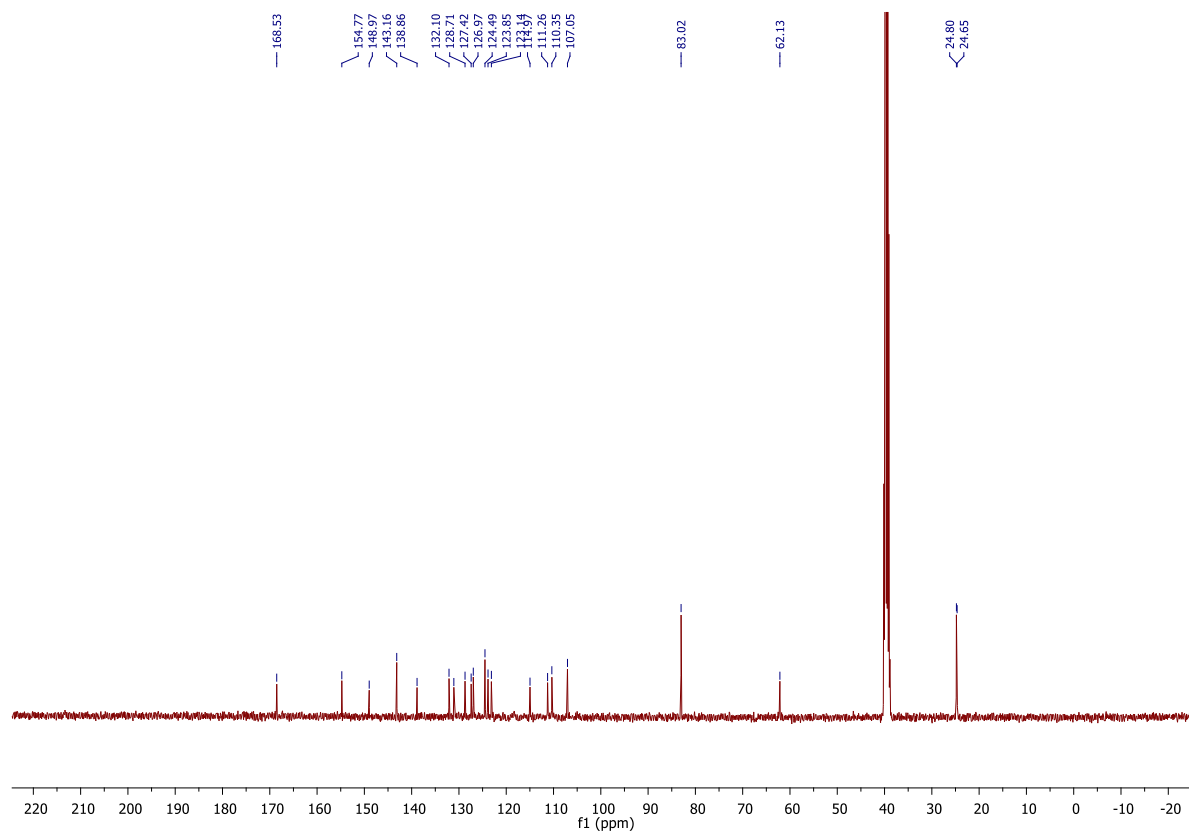


**1.18. 3-(furan-2-yl)-3-[5-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-3a,7a-dihydro-1H-indol-2-yl]-2,3-dihydro-1H-isoindol-1-one (200i)**

$^1\text{H}$  NMR (400 MHz,  $\text{DMSO-d}_6$ )

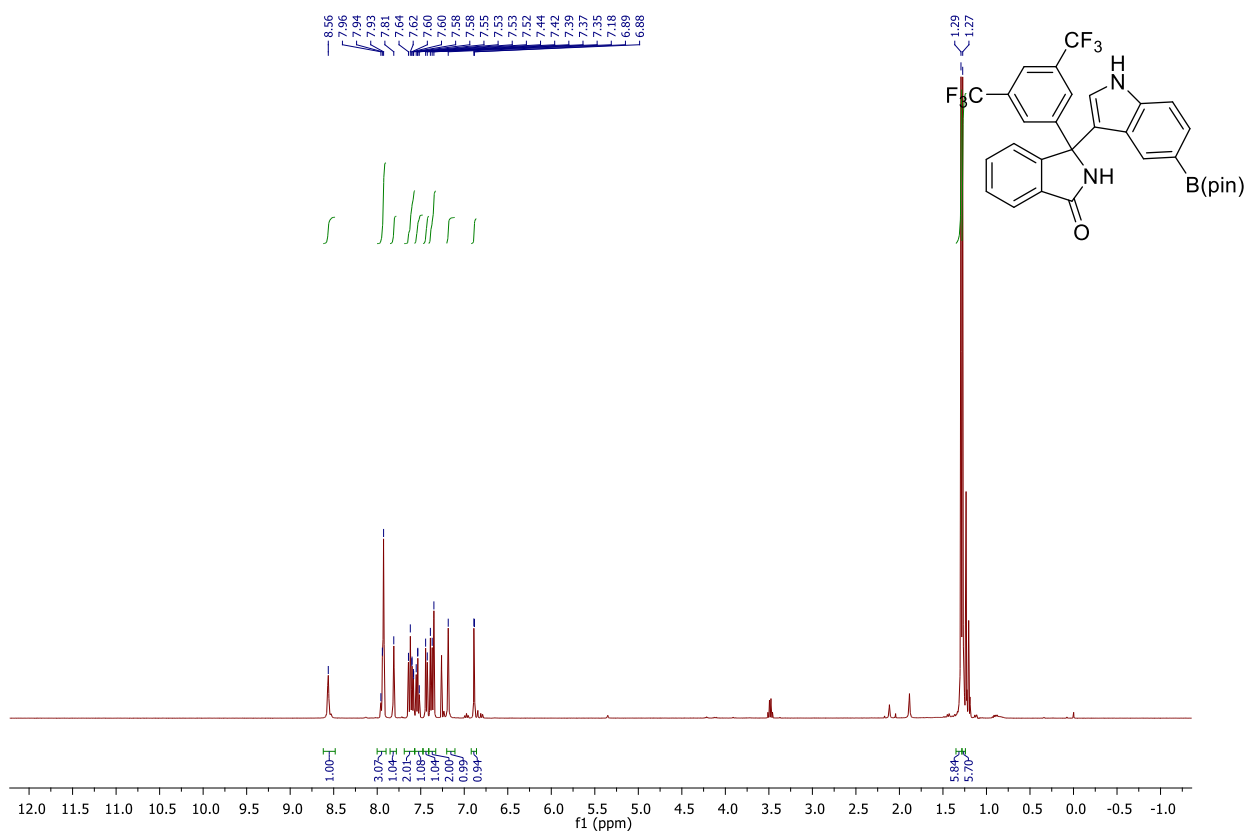


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{DMSO-d}_6$ )

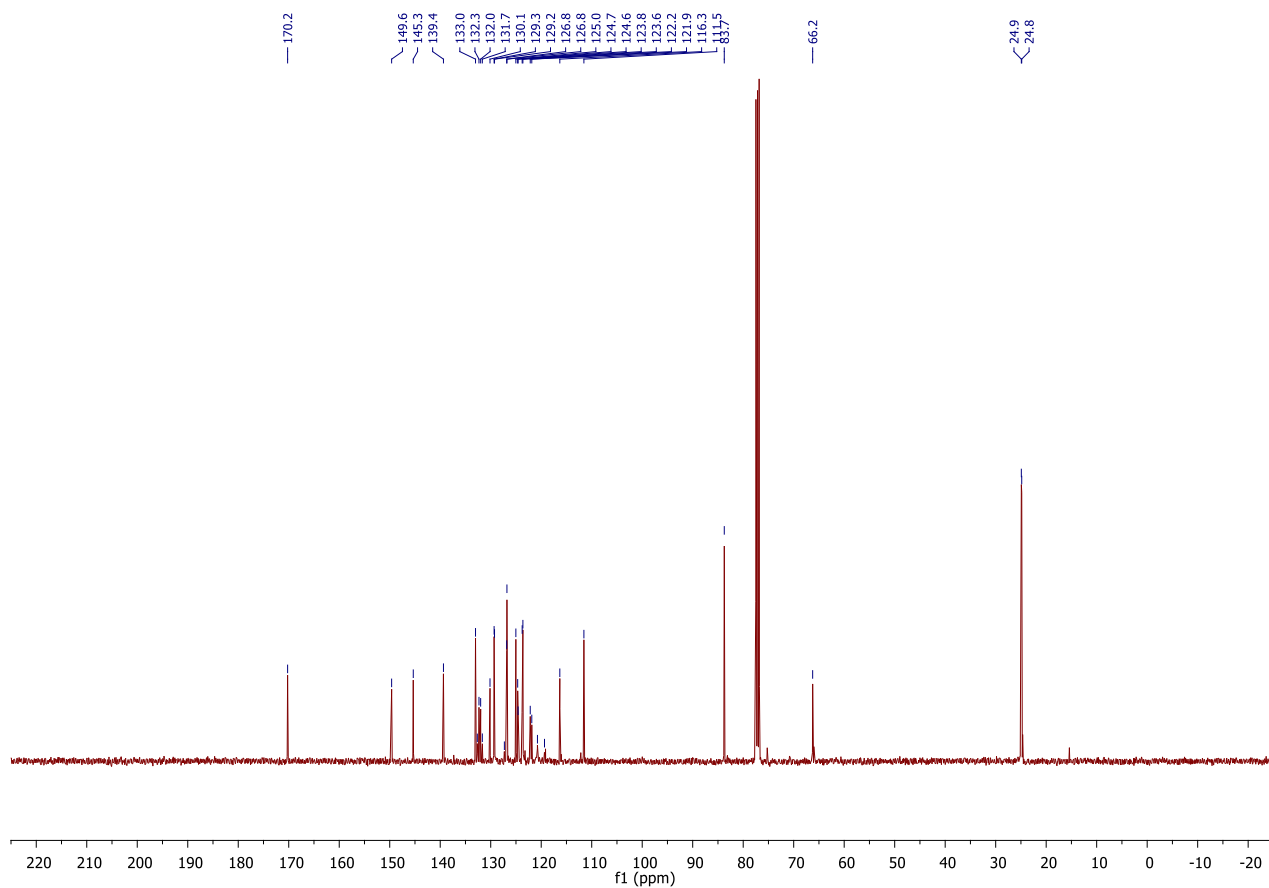


1.19. 3-[3,5-bis(trifluoromethyl)phenyl]-3-[5-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-3a,7a-dihydro-1H-indol-2-yl]-2,3-dihydro-1H-isoindol-1-one (200j)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

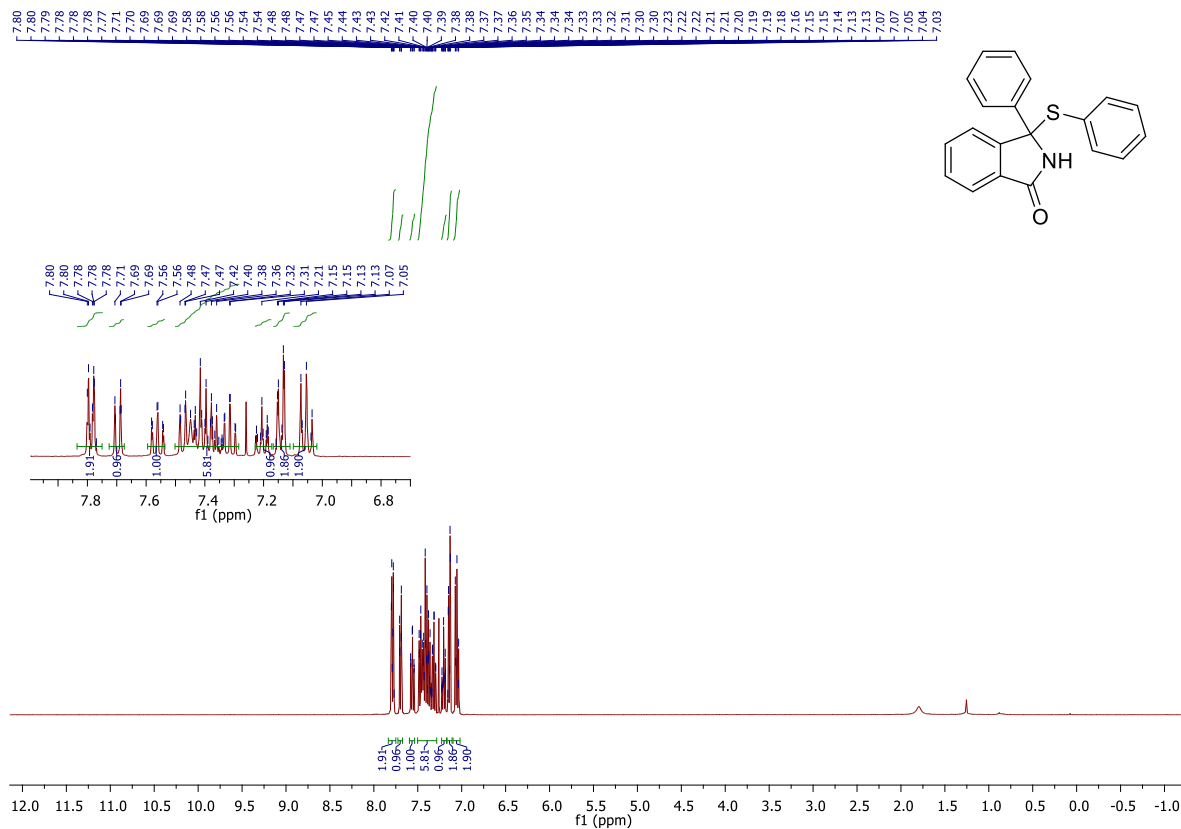


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

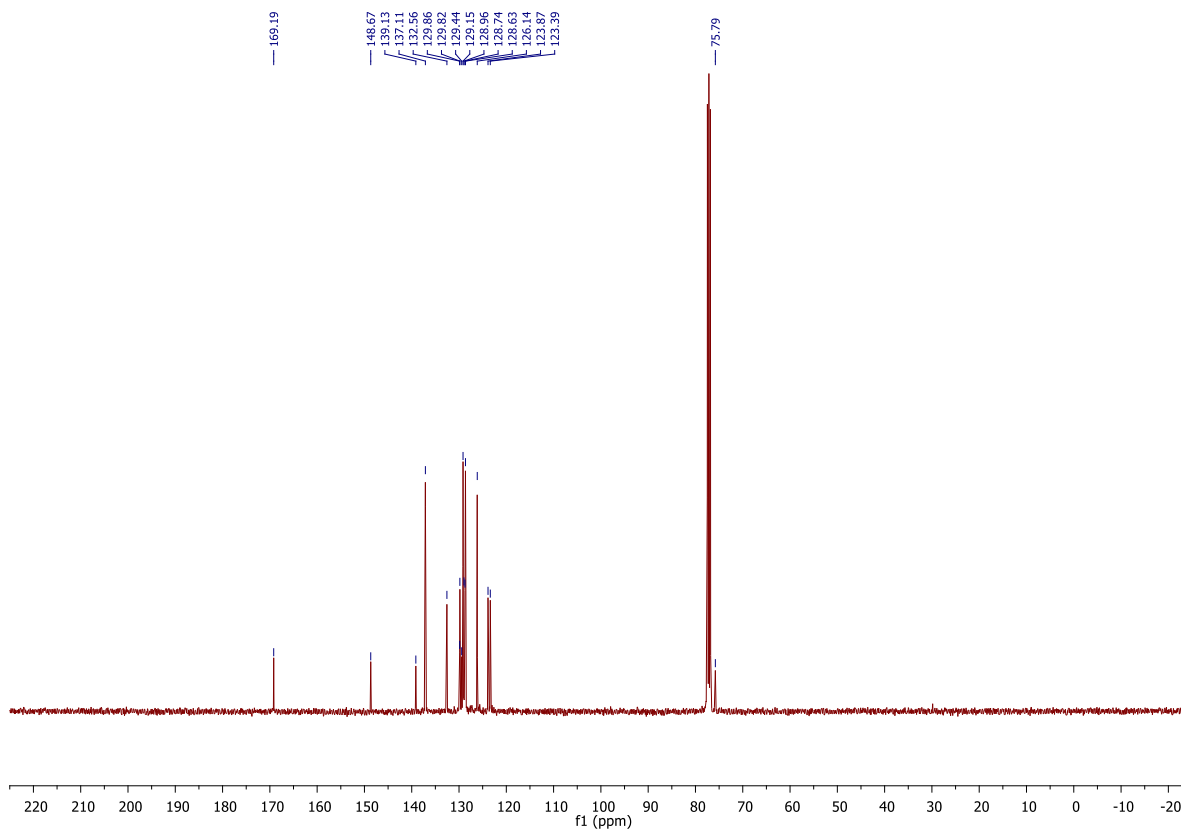


## 1.20. 3-phenyl-3-phenylsulfanyl-2,3-dihydro-isoindol-1-one (203a)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

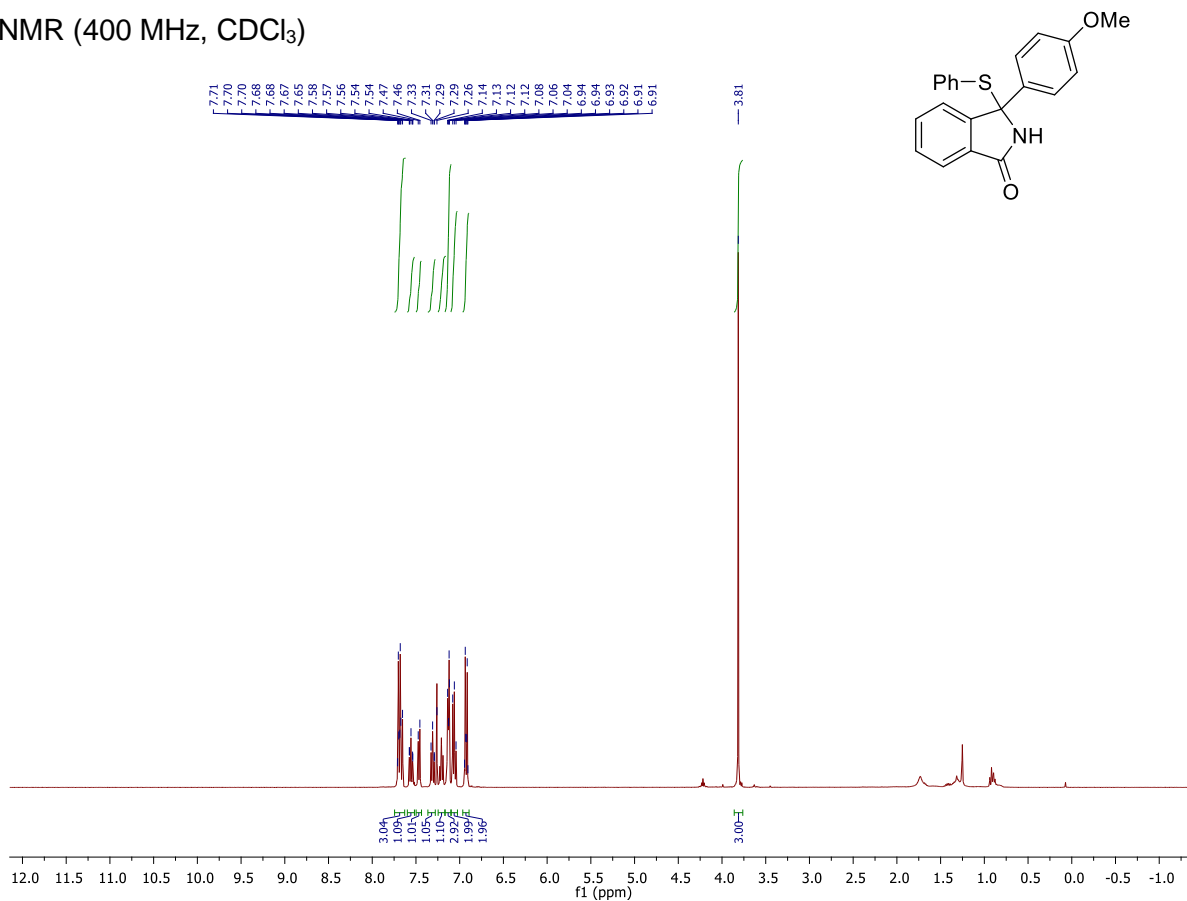


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

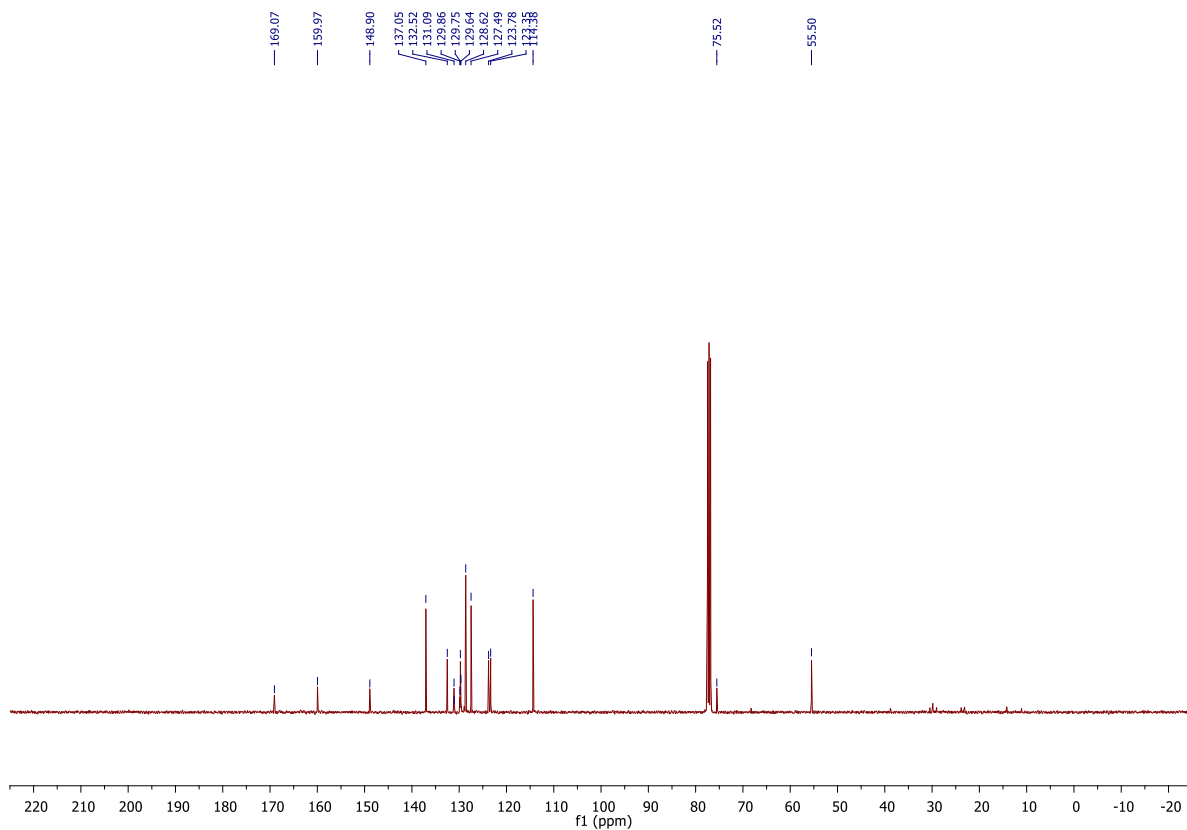


### 1.21. 3-(4-methoxyphenyl)-3-(phenylthio)isoindolin-1-one (203b)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

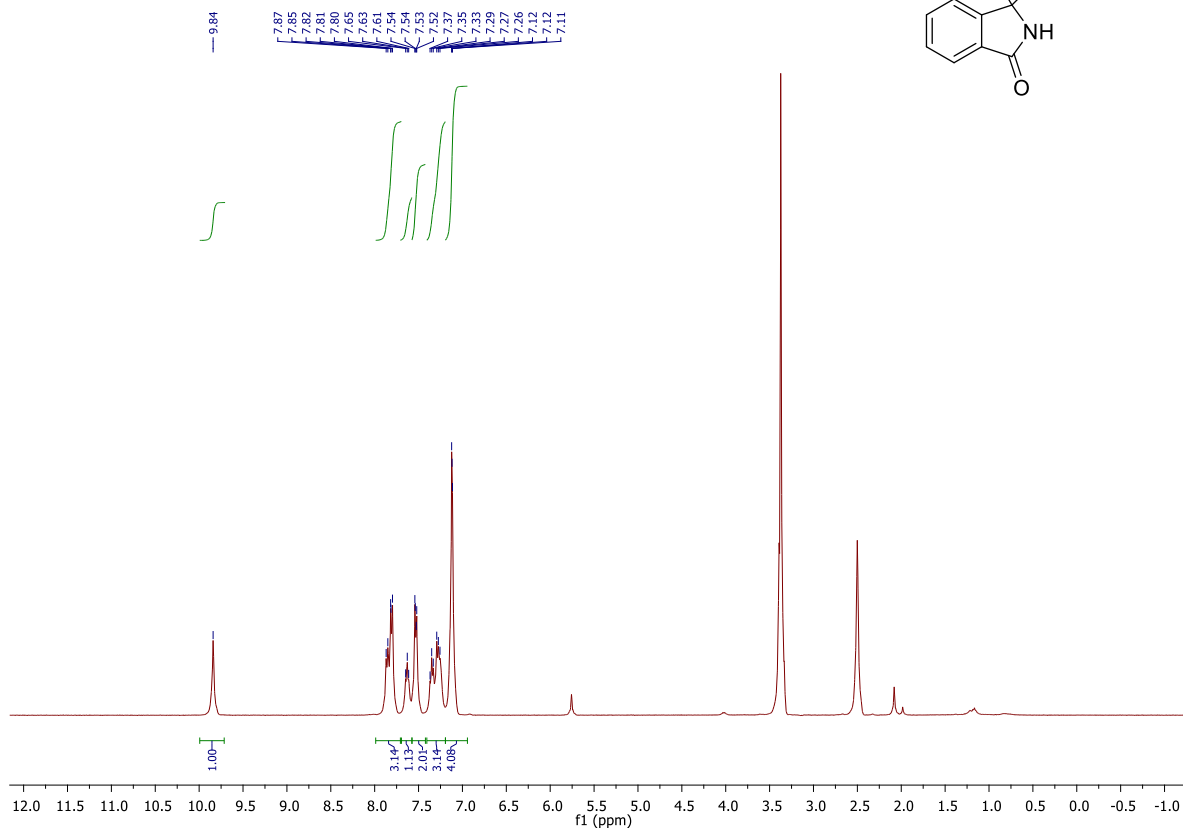
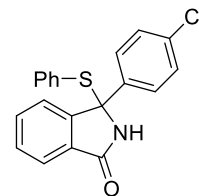


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

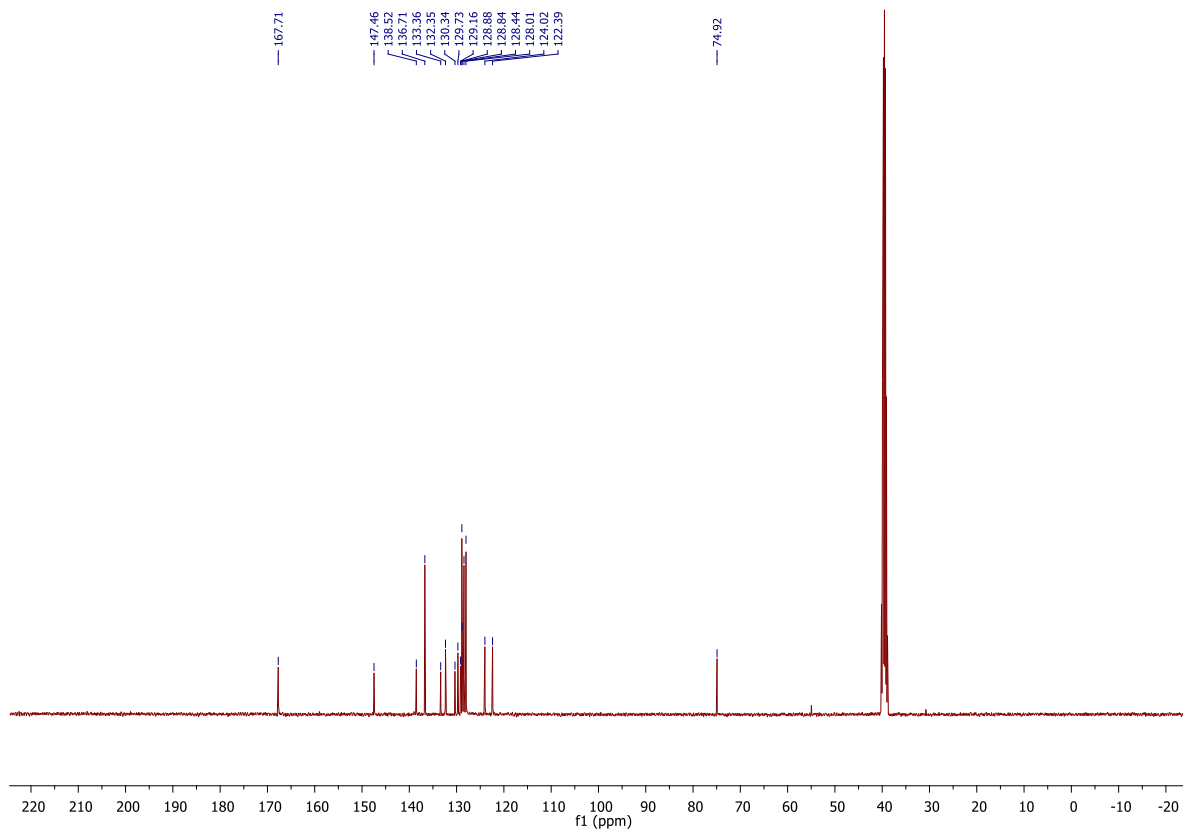


### 1.22. 3-(4-chlorophenyl)-3-(phenylthio)isoindolin-1-one (203c)

$^1\text{H}$  NMR (400 MHz,  $\text{DMSO-d}_6$ )

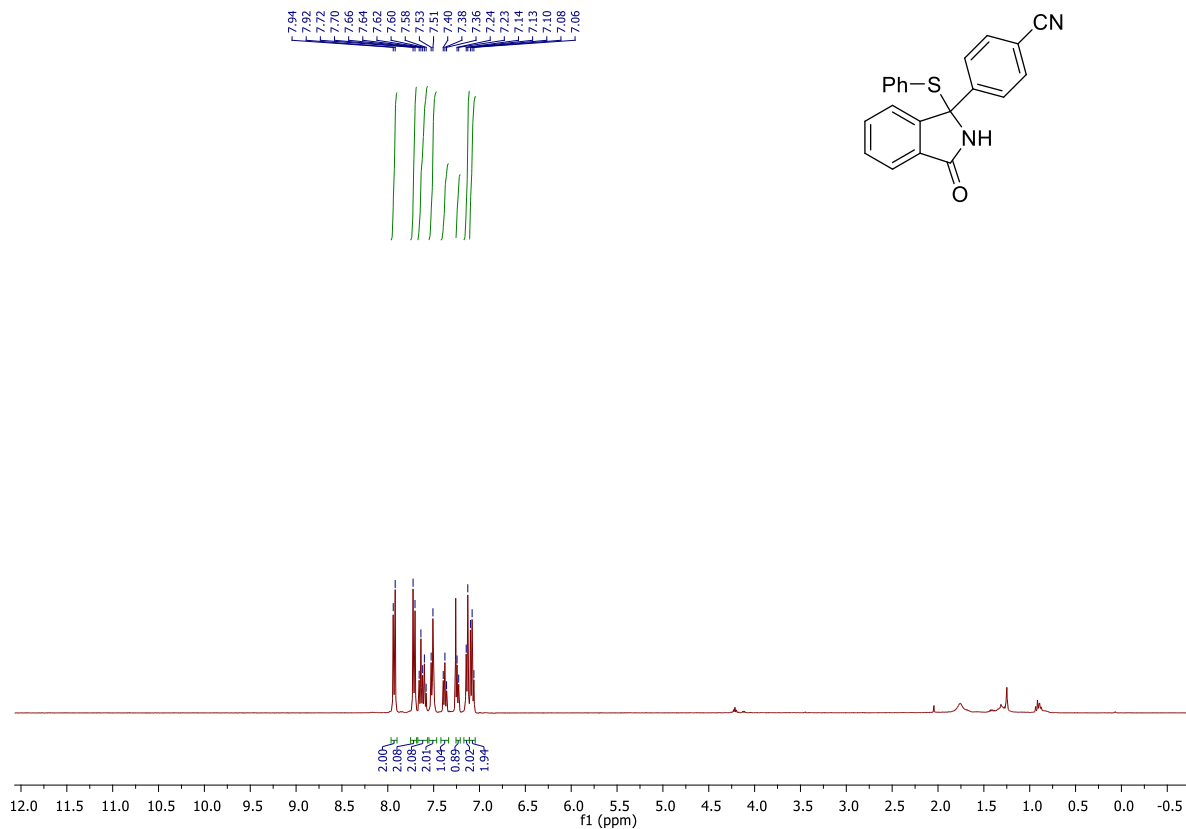


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{DMSO-d}_6$ )

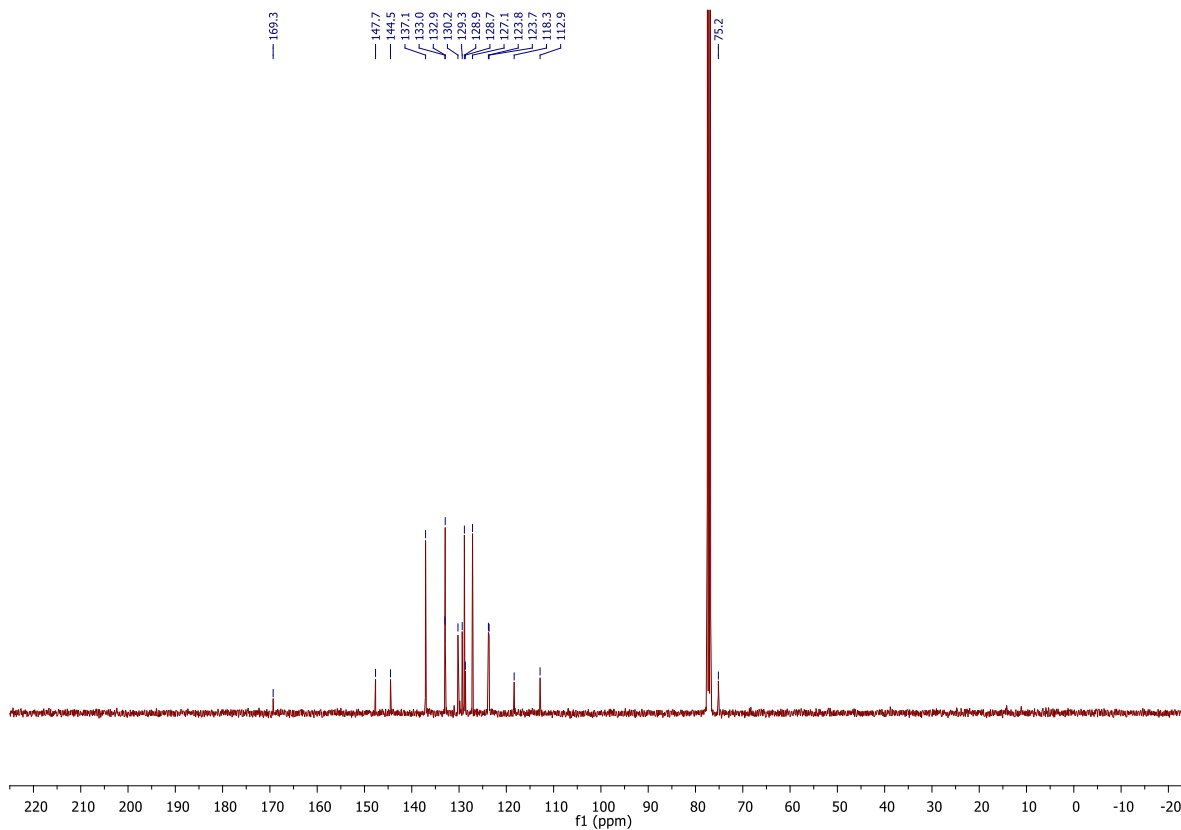


### 1.23. 4-(1-Hydroxy-3-oxoisindolin-1-yl)benzonitrile (203d)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )



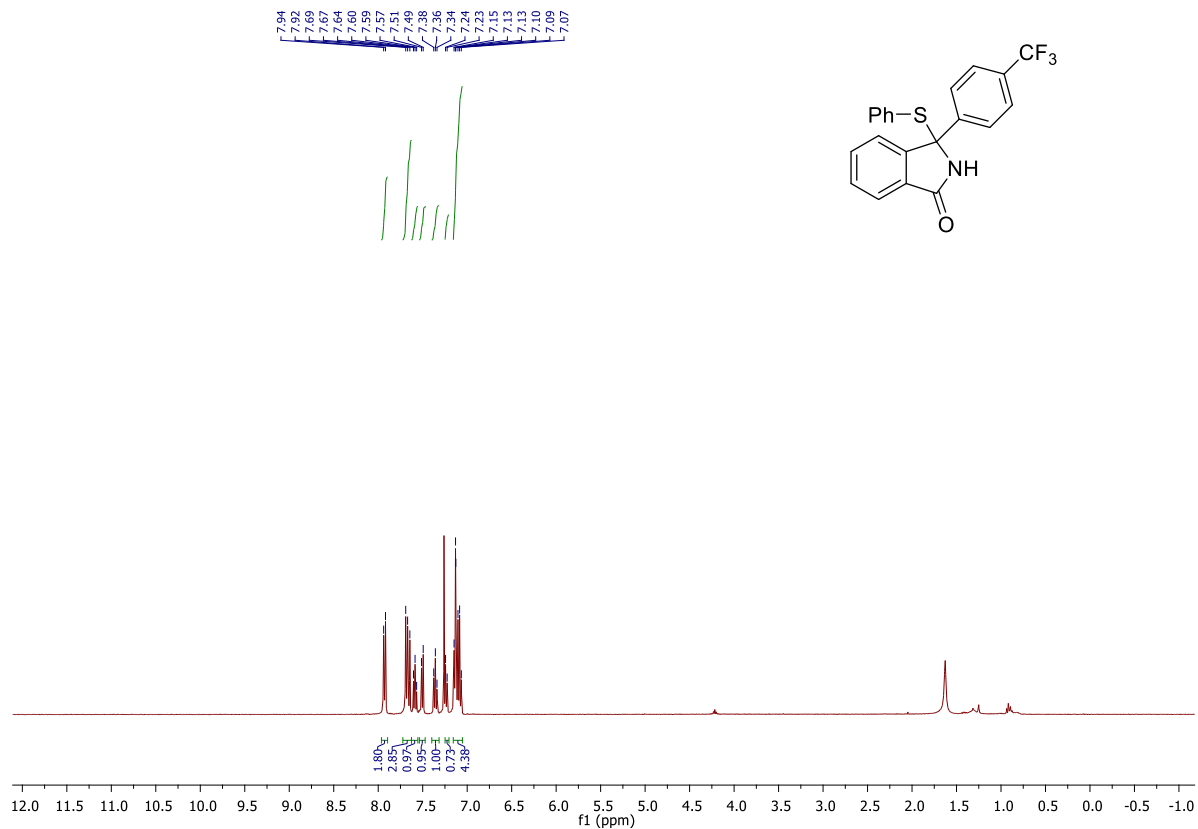
$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )



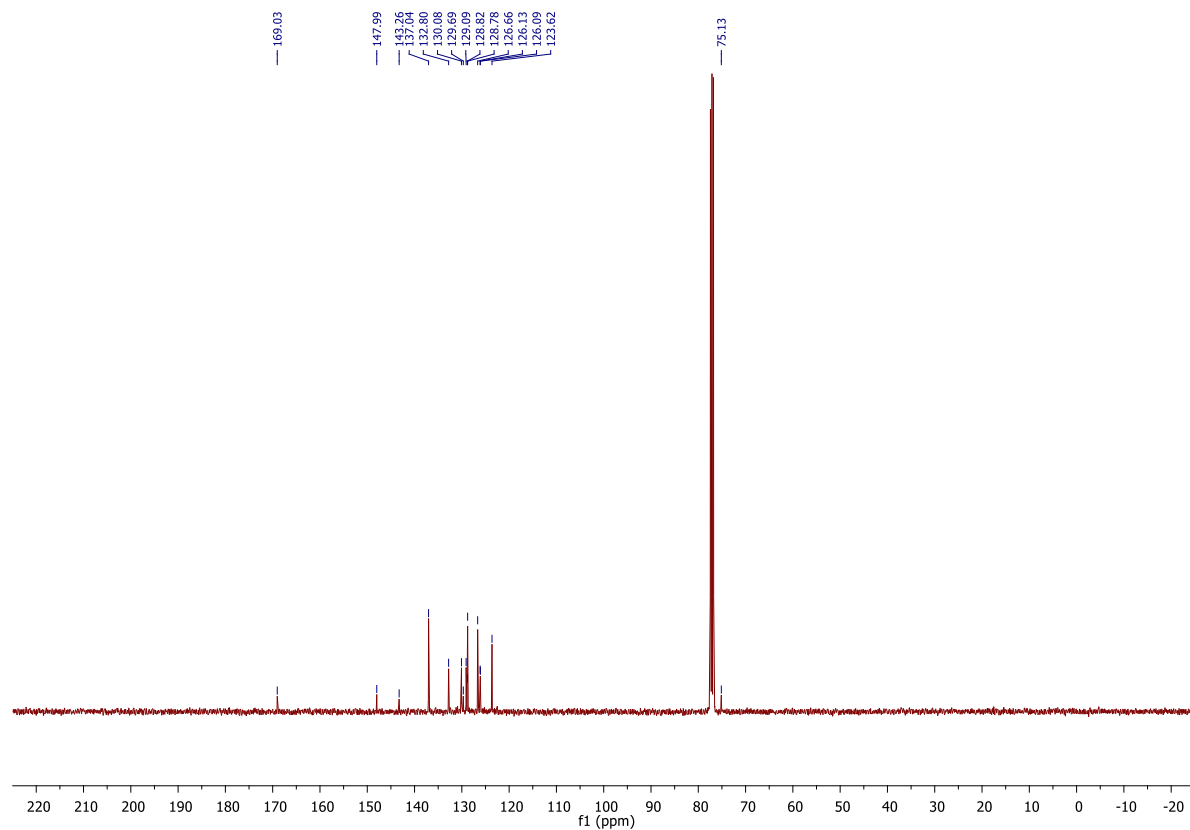


### 1.24. 3-(4-trifluoromethylphenyl)-3-(phenylthio)isoindolin-1-one (203e)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

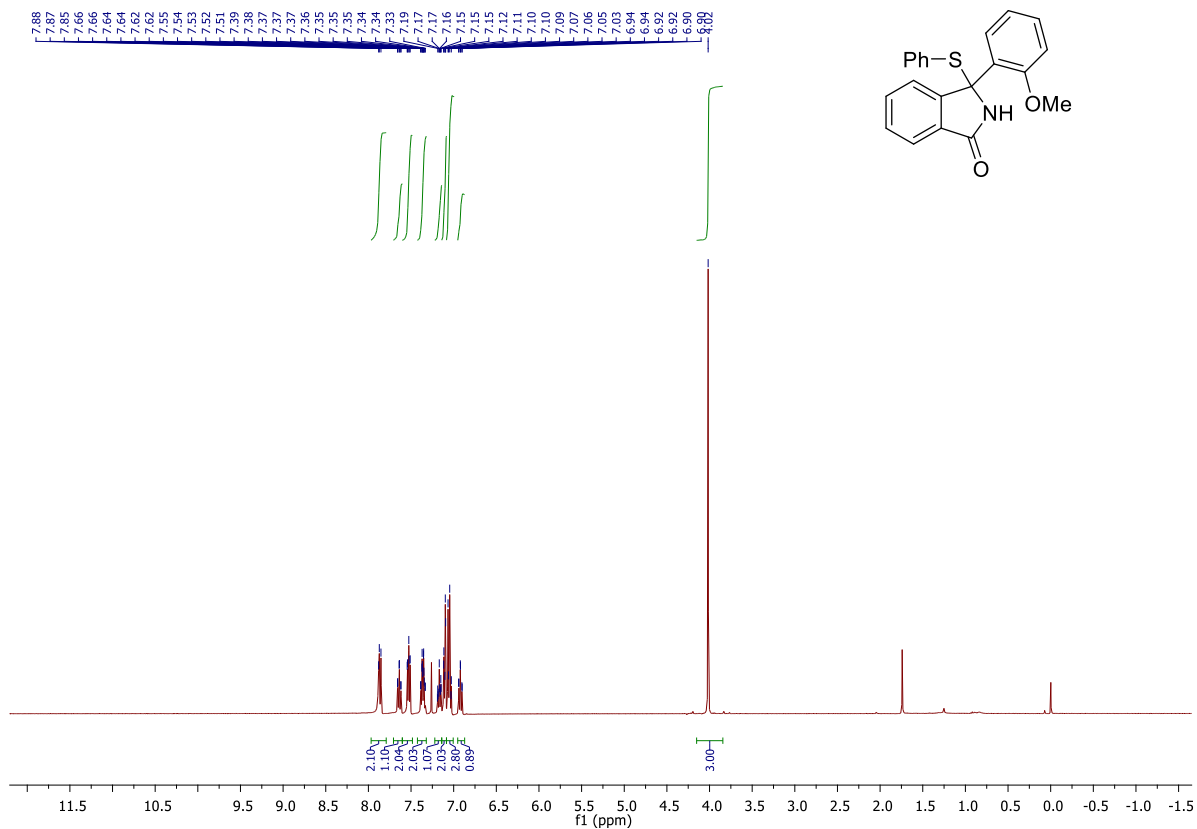


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

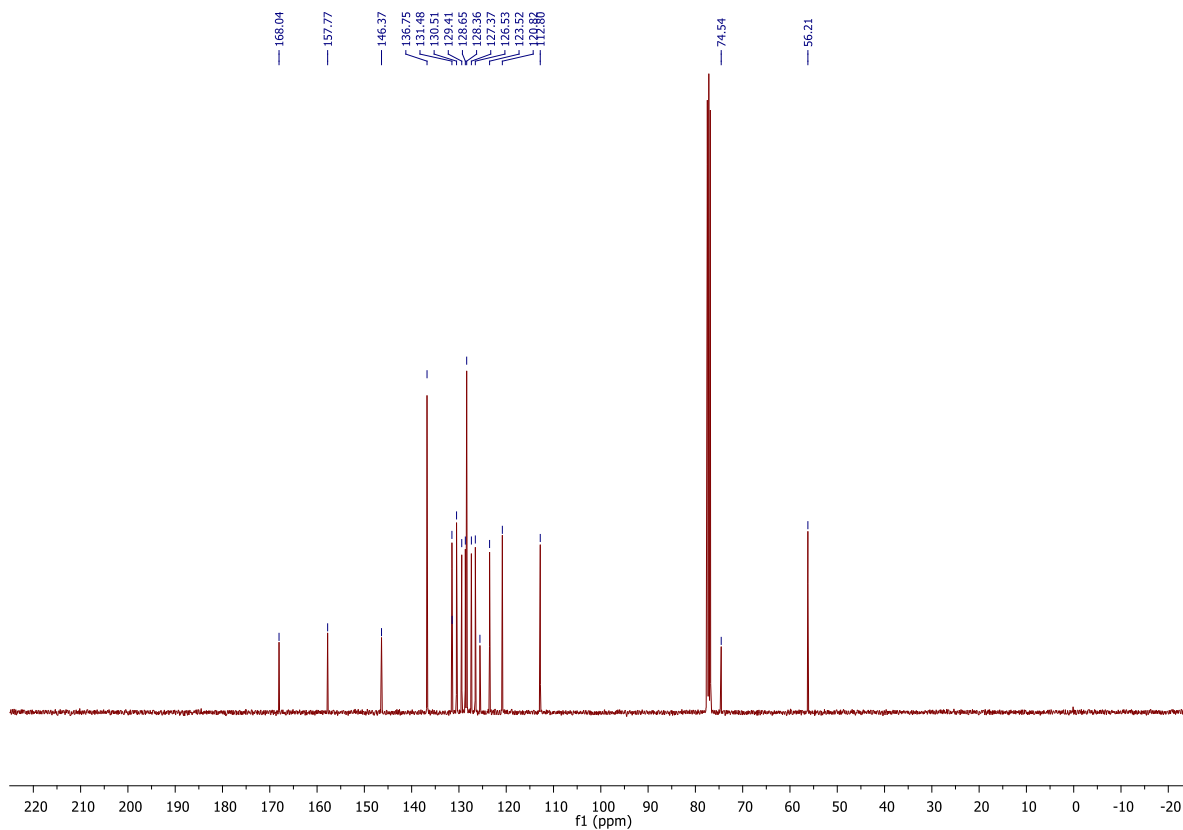


### 1.25. 3-(2-methoxyphenyl)-3-(phenylthio)isoindolin-1-one (203f)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

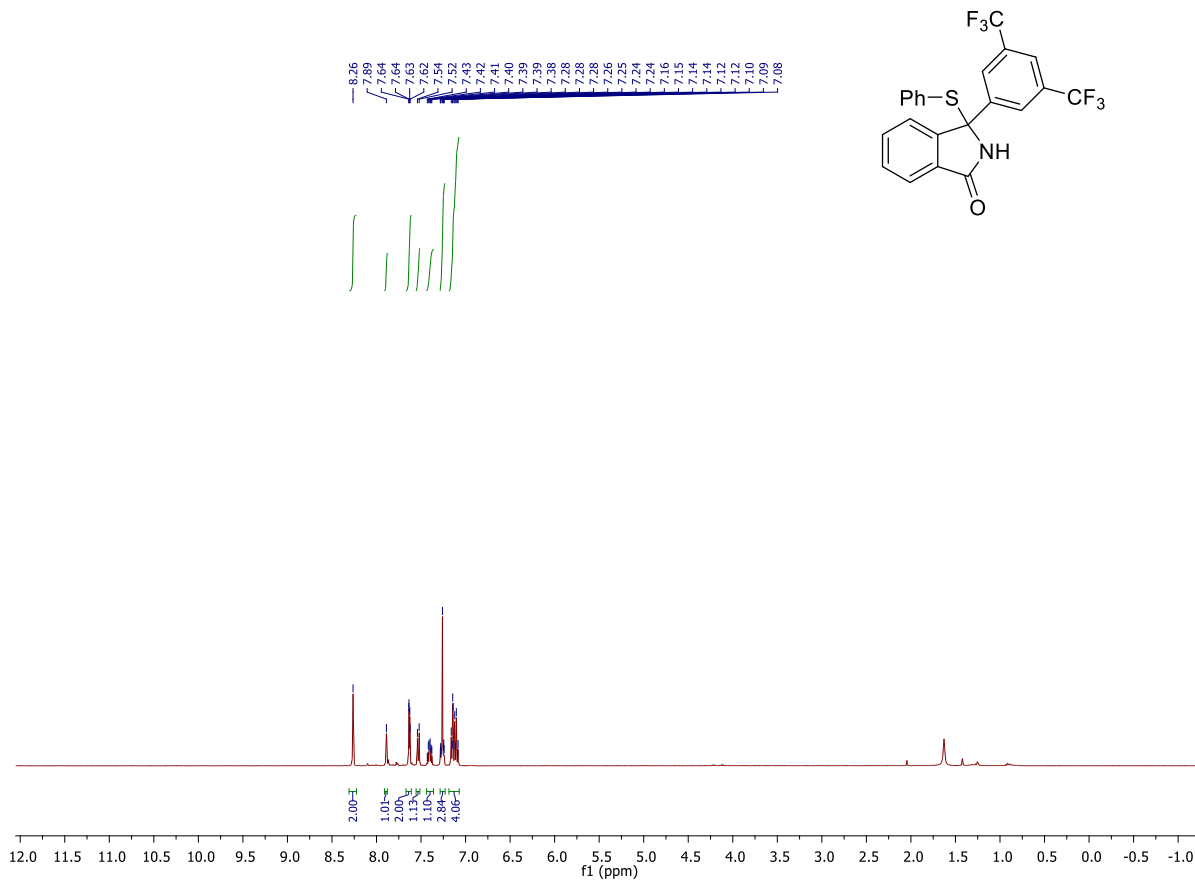


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

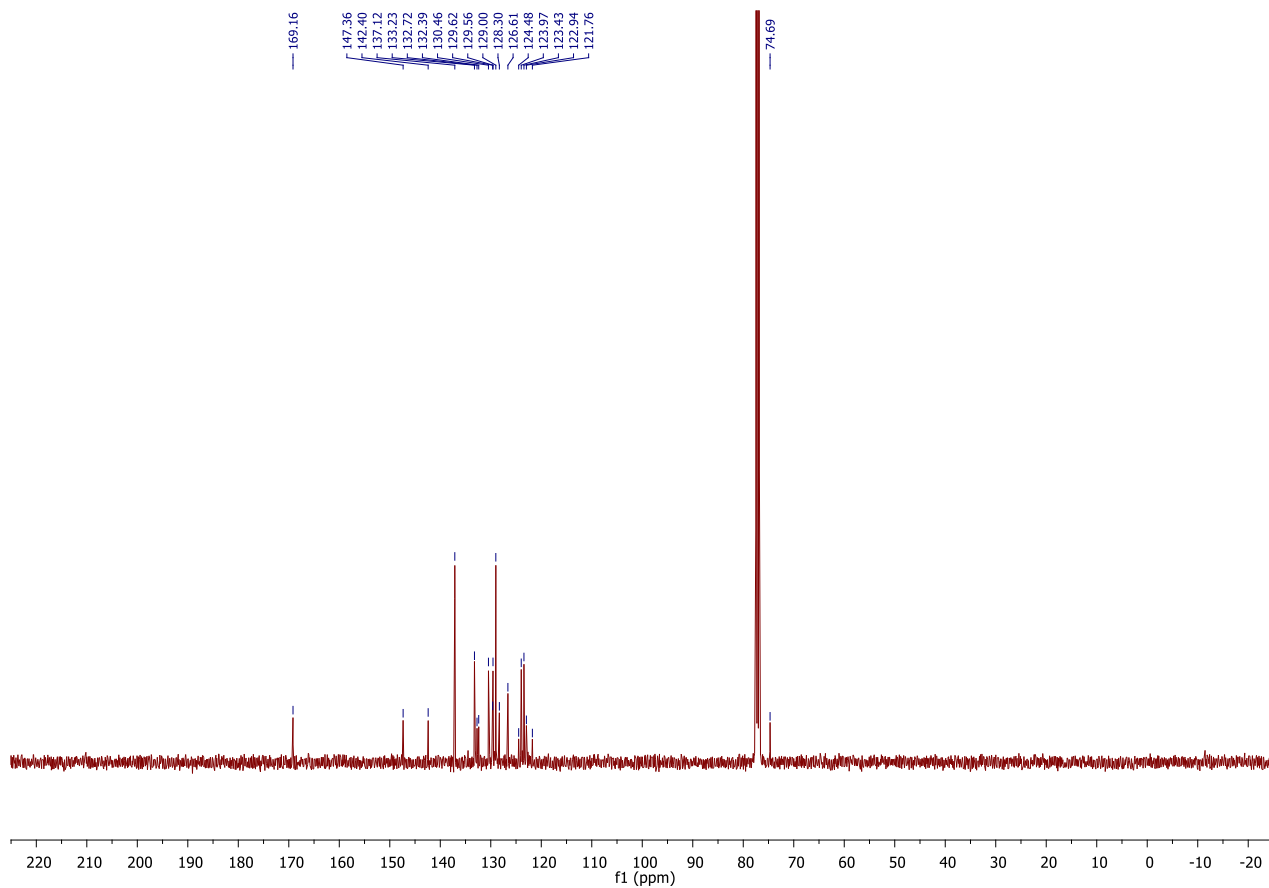


### 1.26. 3-(3,5-bis(trifluoromethyl))-3-(phenylthio)isoindolin-1-one (203g)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

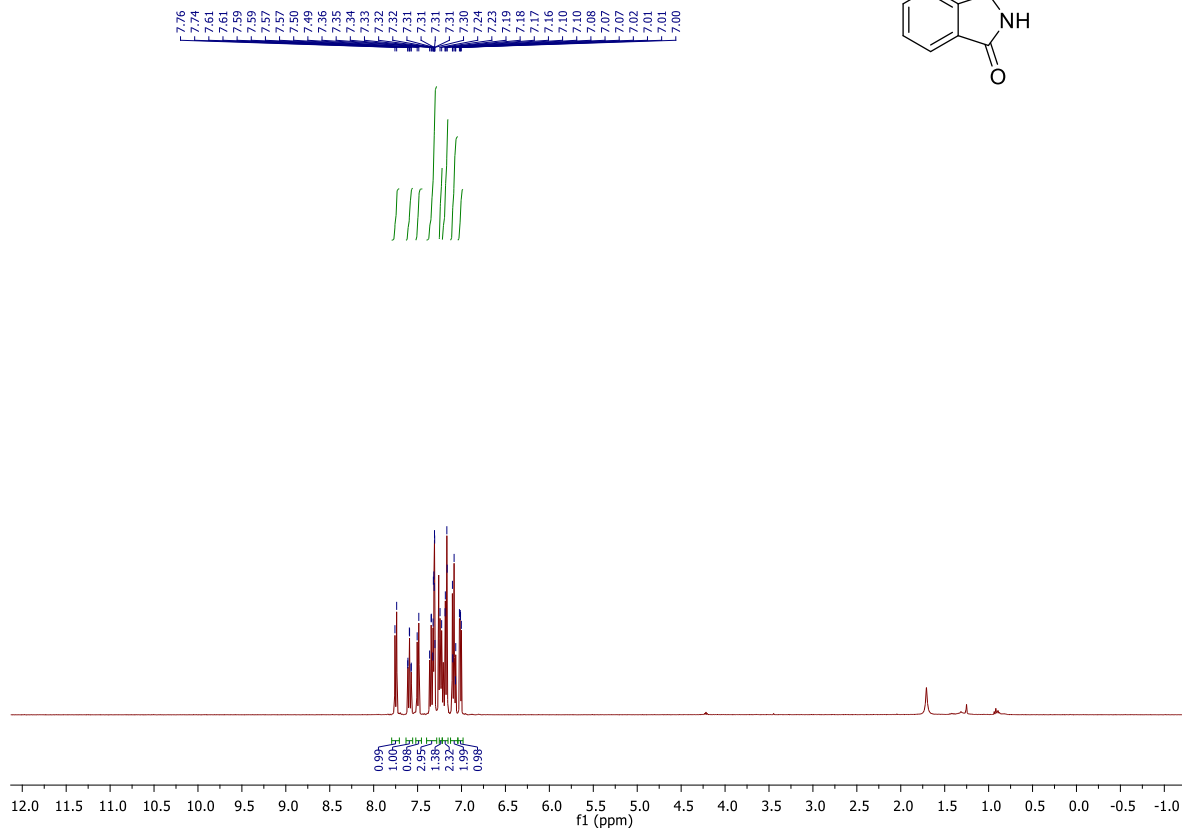
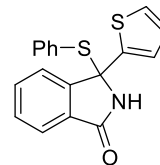


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

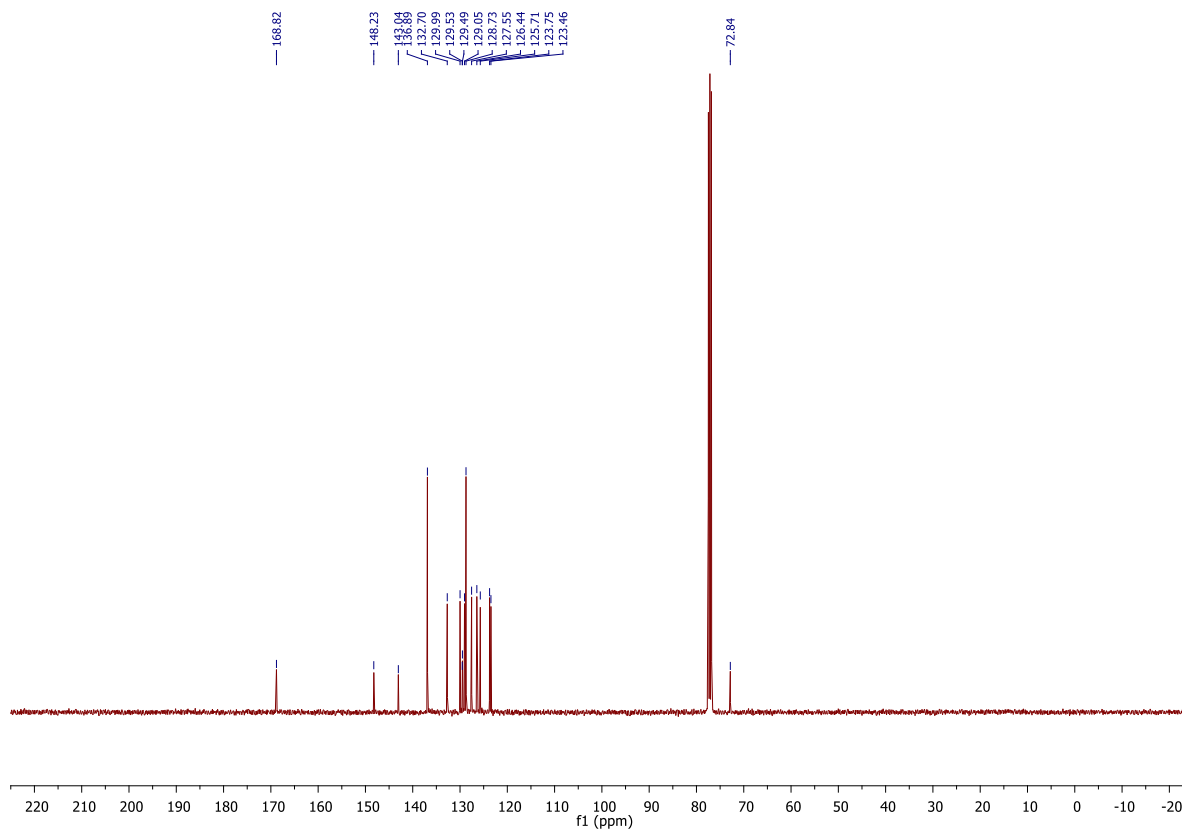


### 1.27. 3-(thiophen-2-yl)-3-(phenylthio)isoindolin-1-one (203h)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

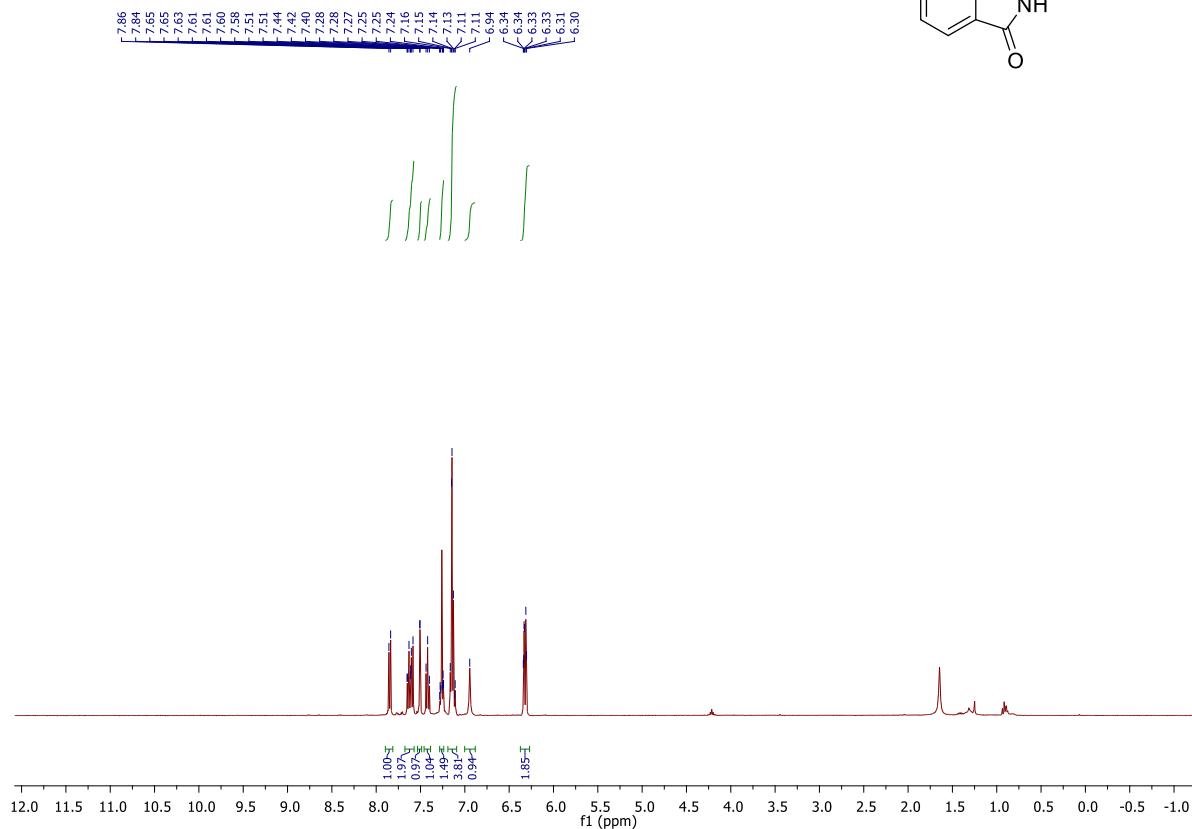
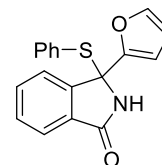


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

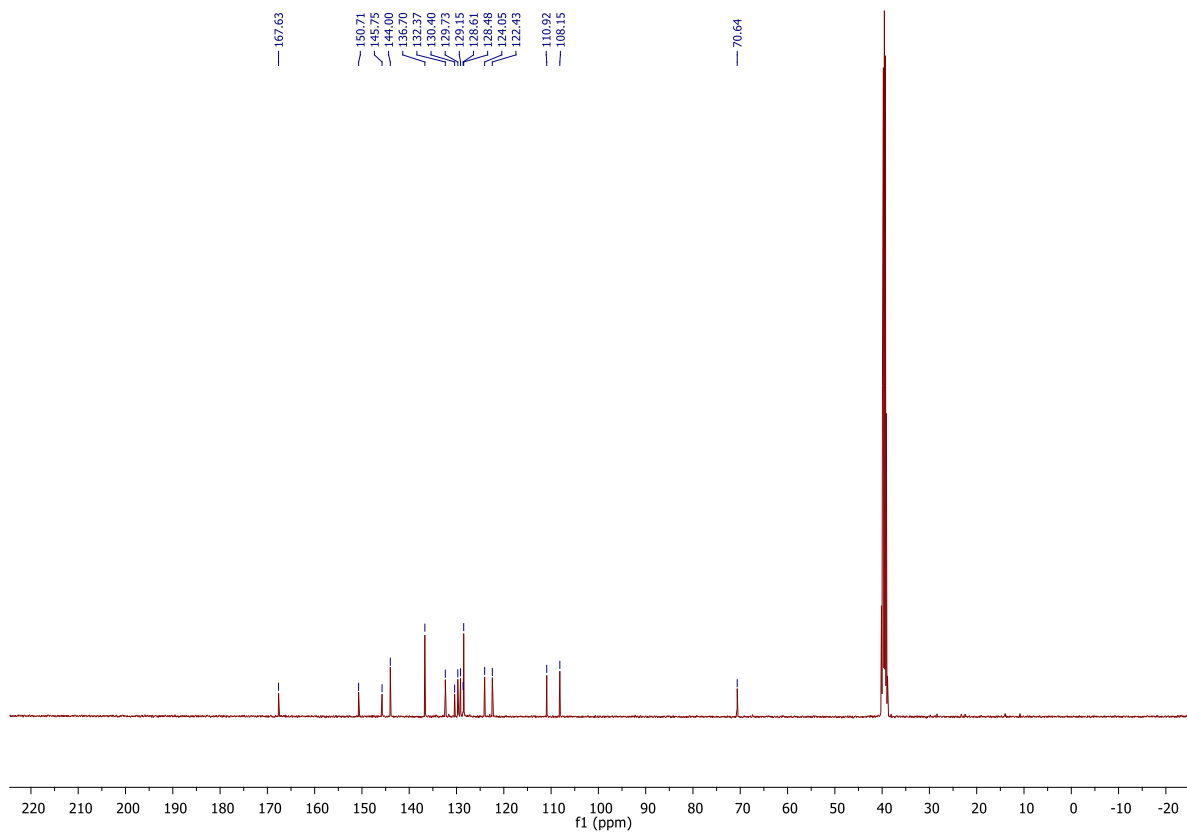


### 1.28. 3-(furan-2-yl)-3-(phenylthio)isoindolin-1-one (203i)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

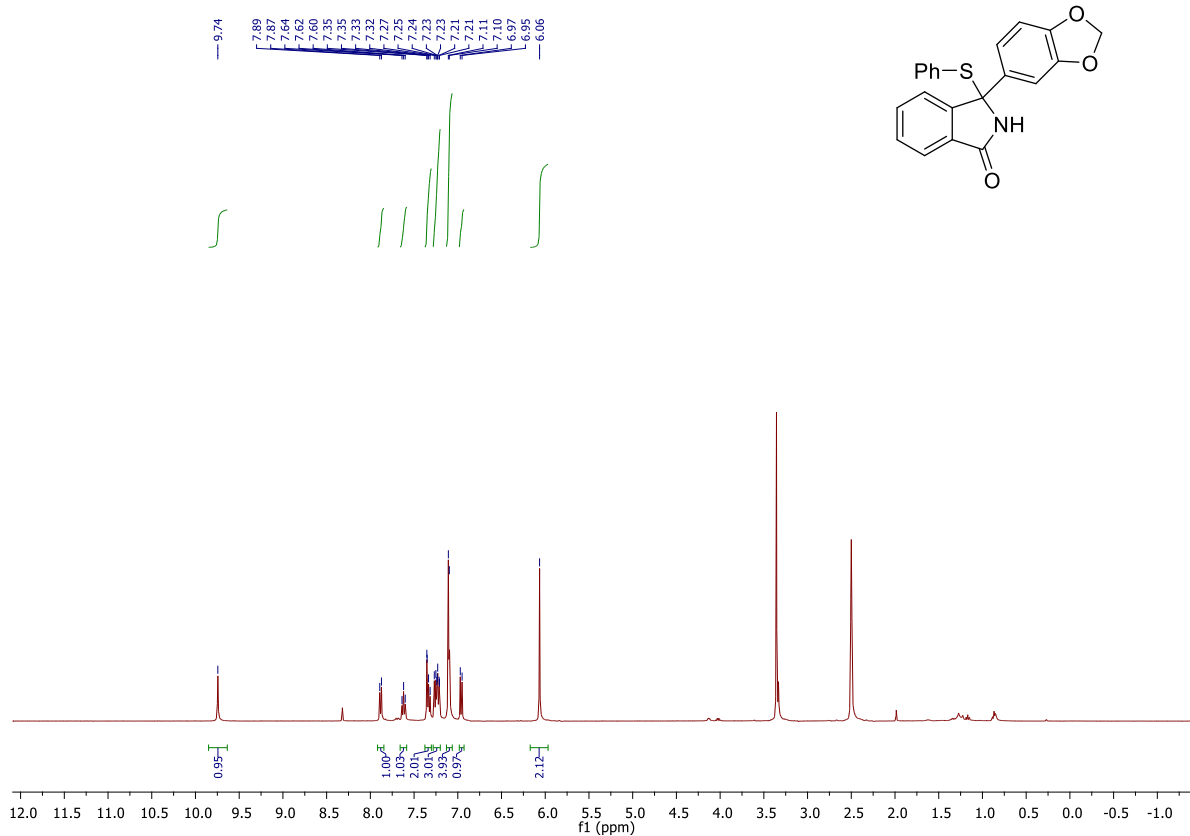


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{DMSO-d}_6$ )

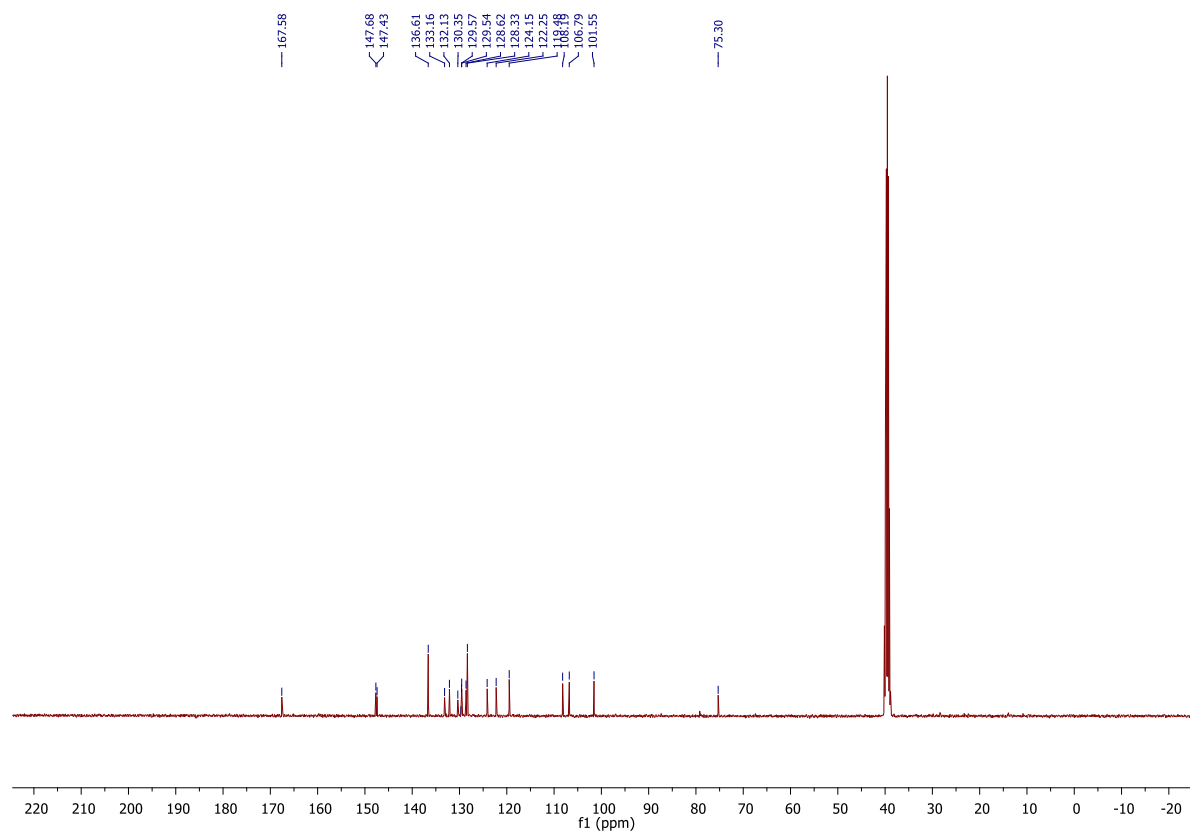


### 1.29. 3-(benzo[d][1,3]dioxol-5-yl)-3-(phenylthio)isoindolin-1-one (203)

$^1\text{H}$  NMR (400 MHz,  $\text{DMSO-d}_6$ )

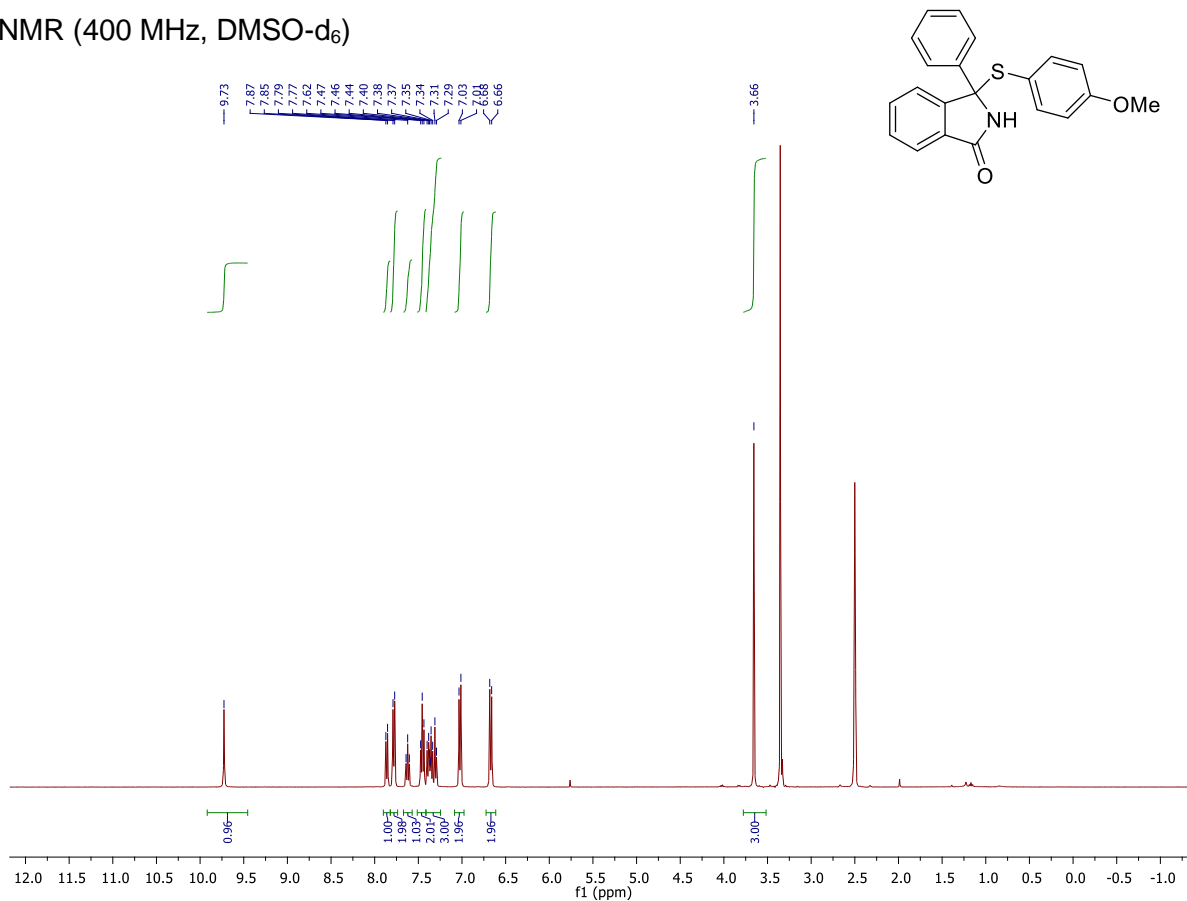


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{DMSO-d}_6$ )

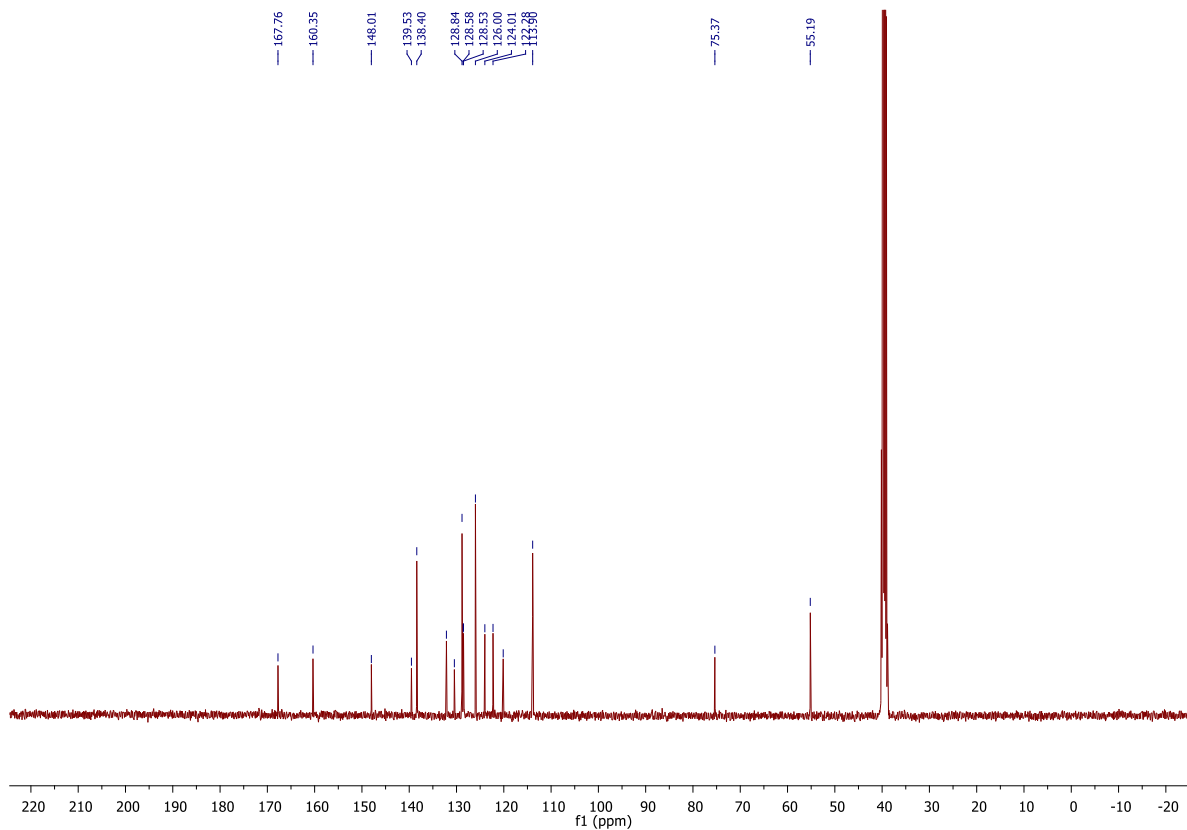


### 1.30. 3-((4-methoxyphenyl)thio)-3-phenylisoindolin-1-one (205a)

$^1\text{H}$  NMR (400 MHz,  $\text{DMSO-d}_6$ )

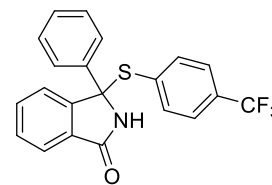
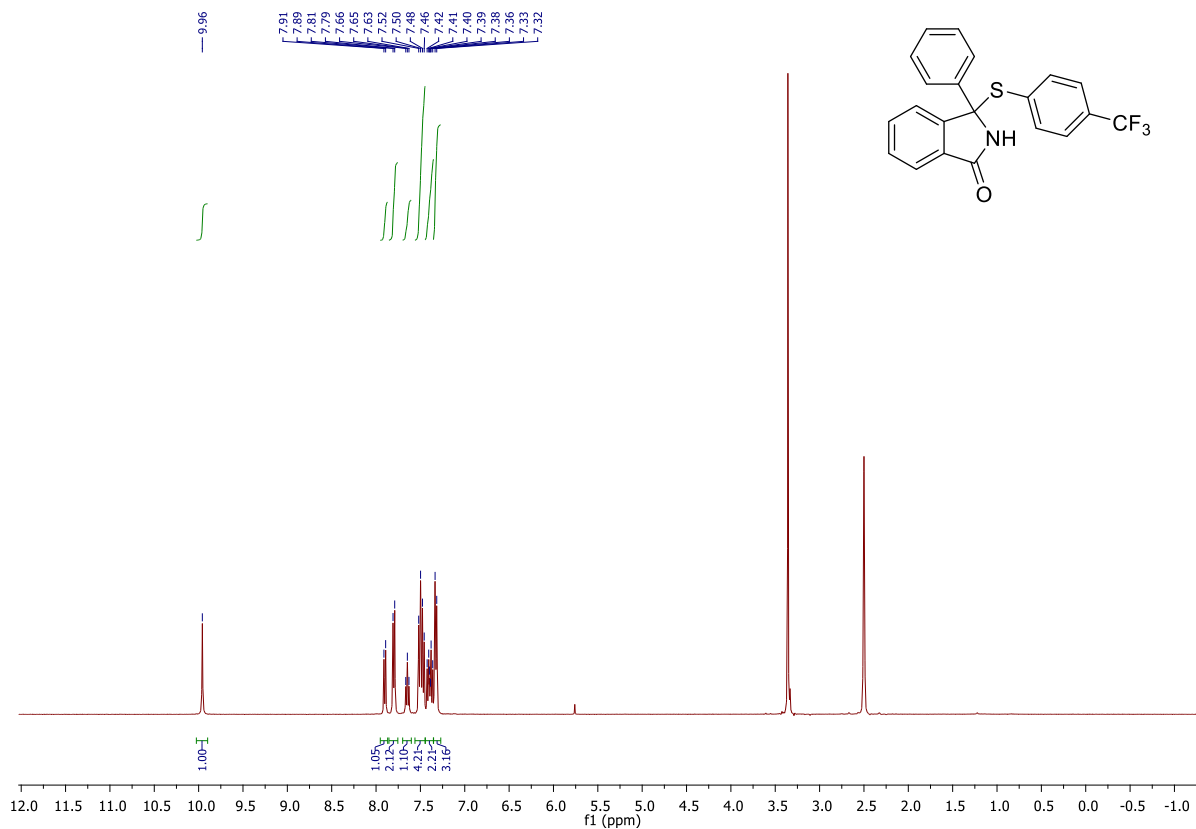


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{DMSO-d}_6$ )

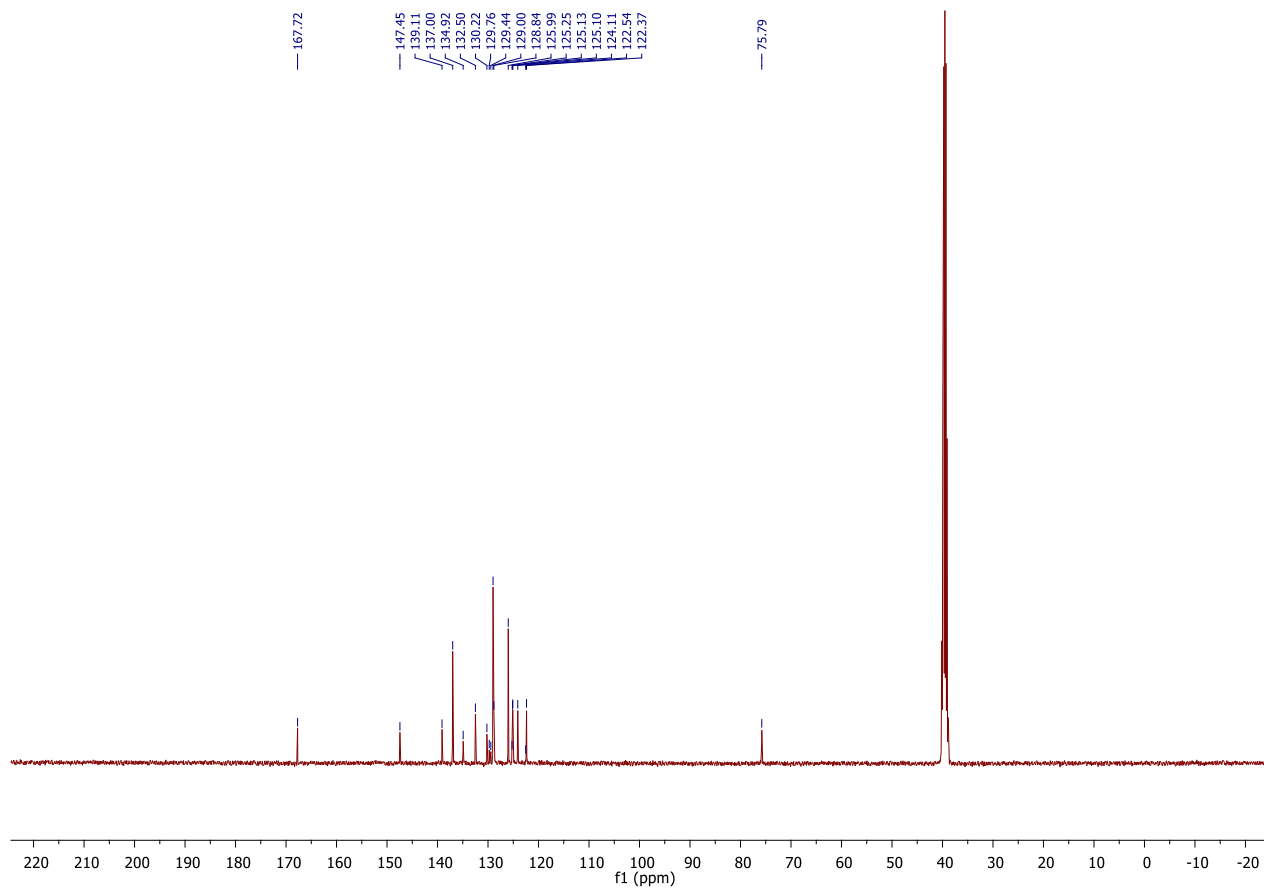


### 1.31. 3-((4-(trifluoromethyl)phenyl)thio)-3-phenylisoindolin-1-one (205b)

$^1\text{H}$  NMR (400 MHz,  $\text{DMSO-d}_6$ )



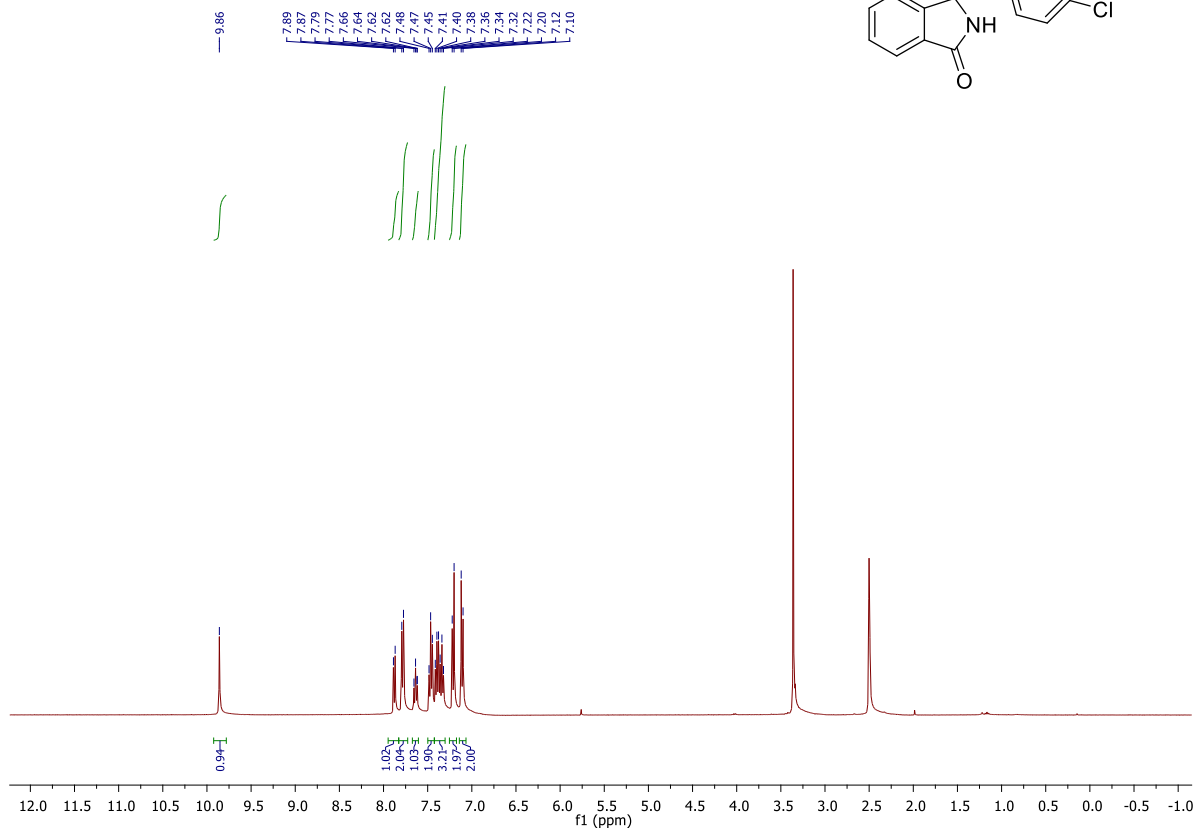
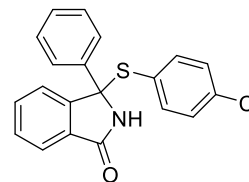
$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{DMSO-d}_6$ )



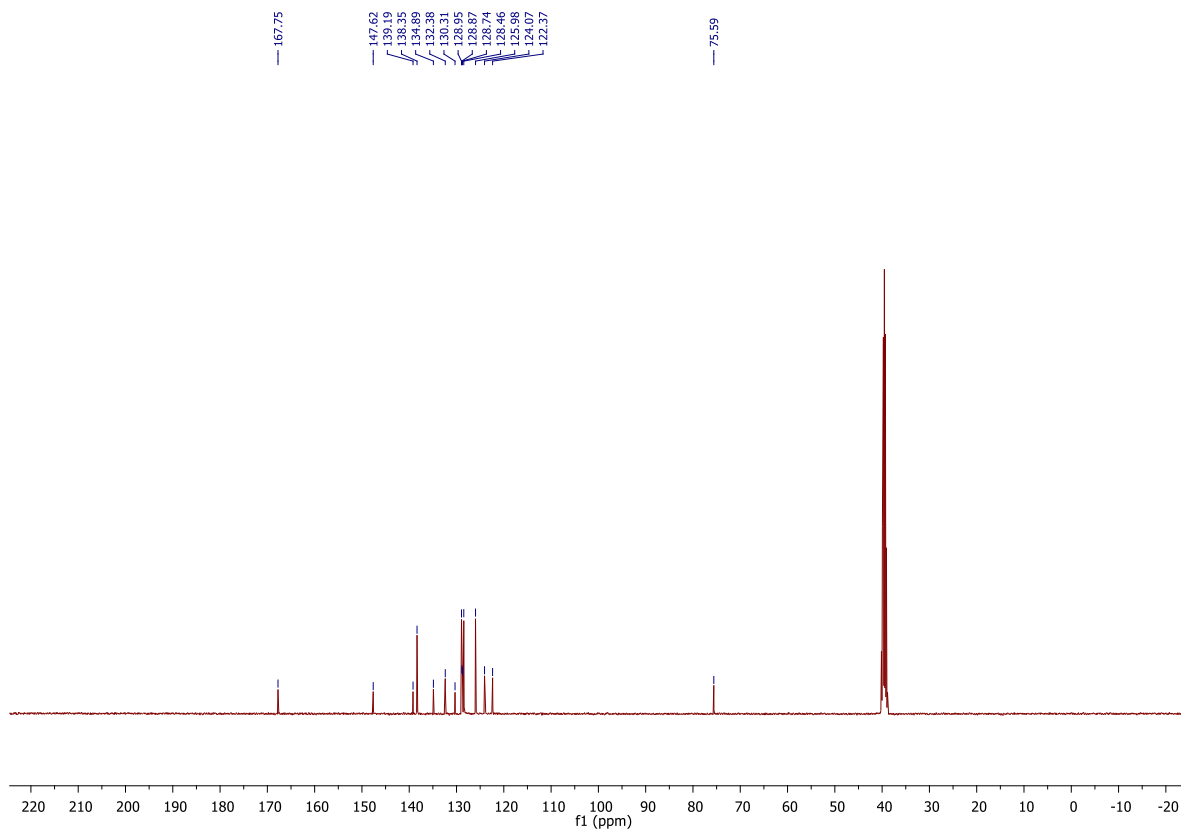


### 1.32. 3-((4-chlorophenyl)thio)-3-phenylisoindolin-1-one (205c)

$^1\text{H}$  NMR (400 MHz, DMSO- $d_6$ )

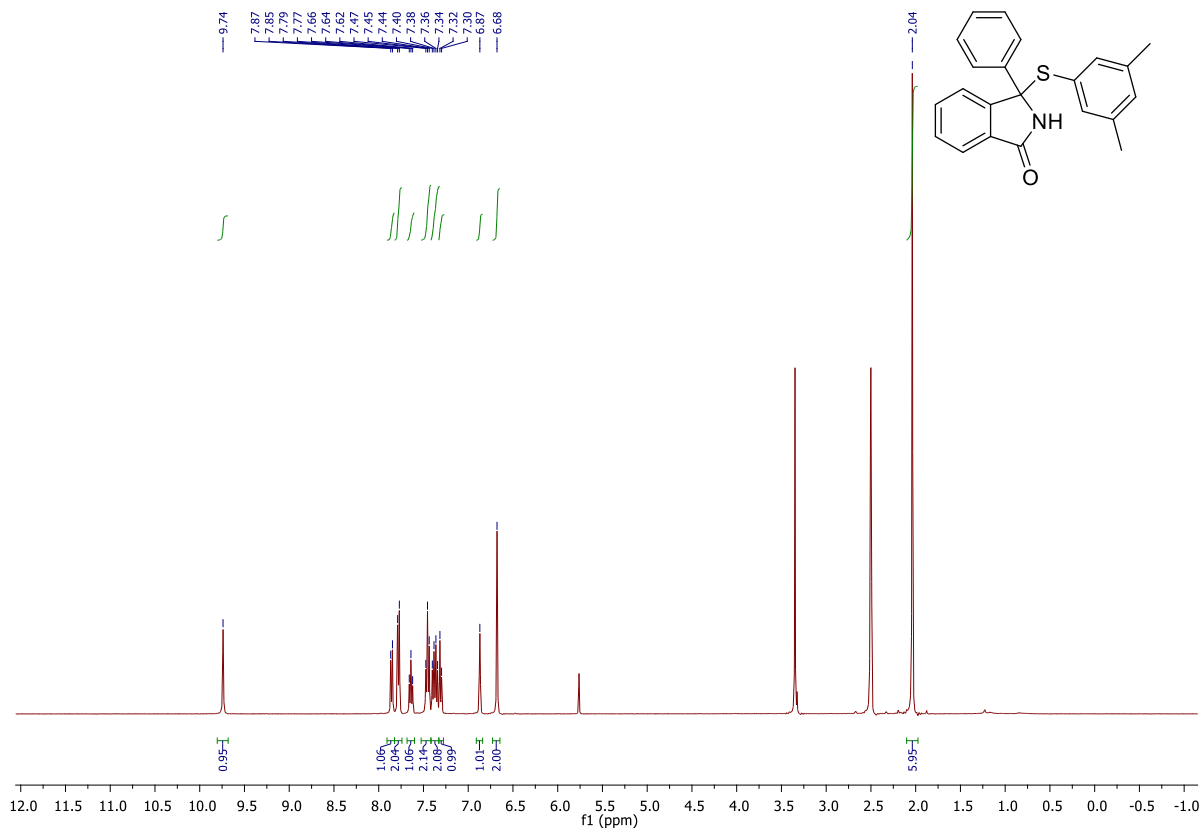


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz, DMSO- $d_6$ )

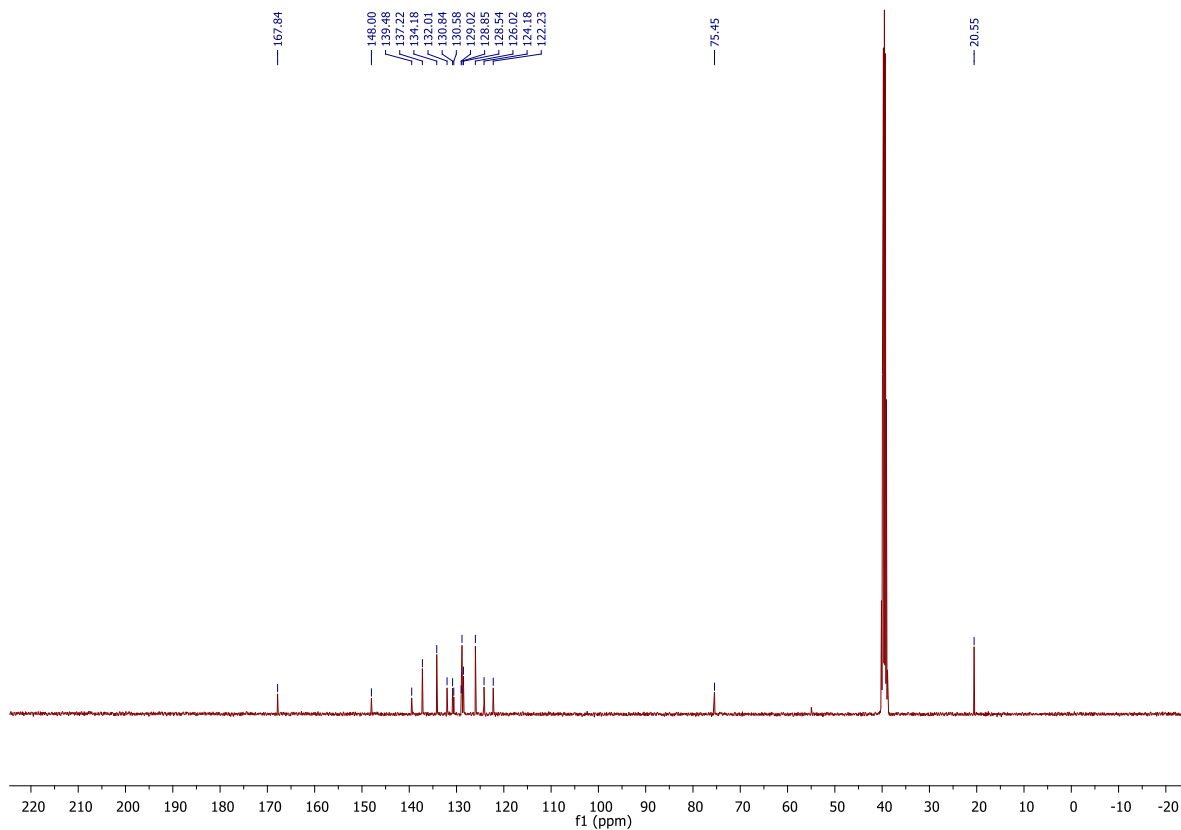


### 1.33. 3-((3,5-dimethylphenyl)thio)-3-phenylisoindolin-1-one (205d)

$^1\text{H}$  NMR (400 MHz,  $\text{DMSO-d}_6$ )

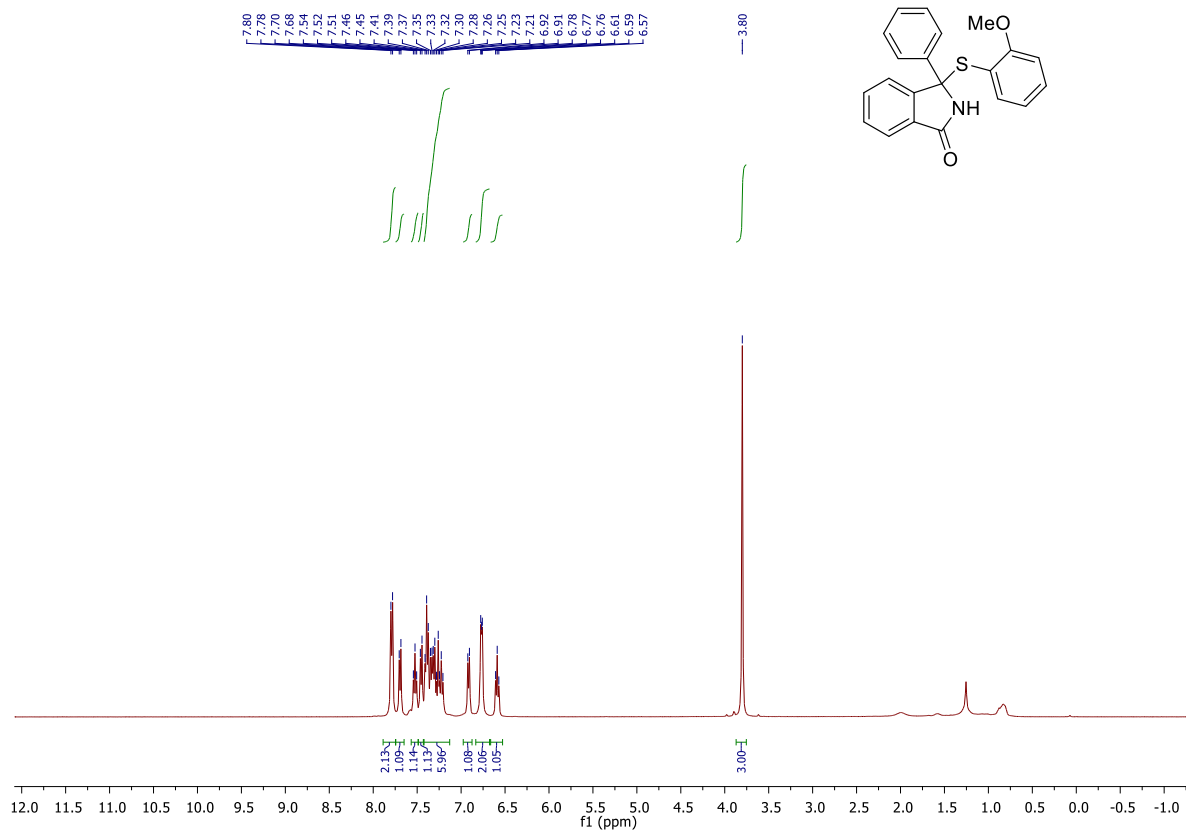


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{DMSO-d}_6$ )

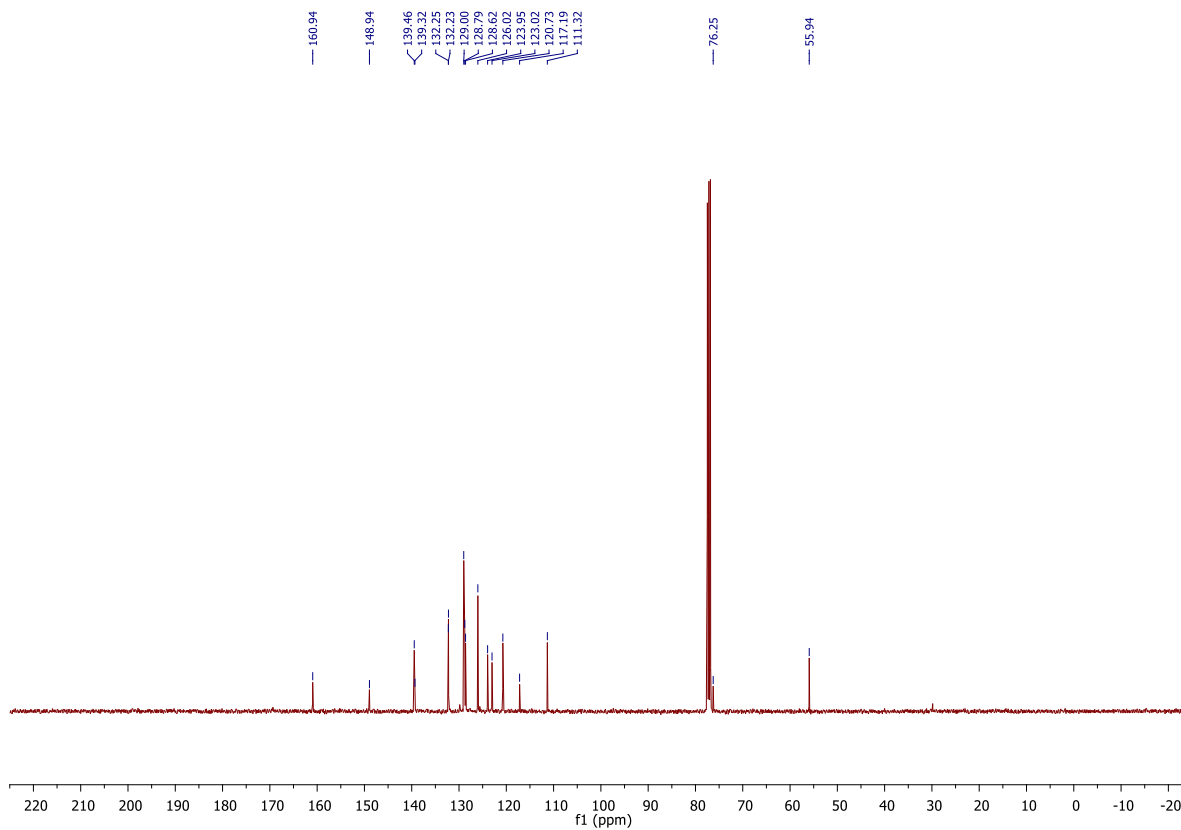


### 1.34. 3-((2-methoxyphenyl)thio)-3-phenylisoindolin-1-one (205e)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

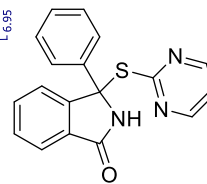
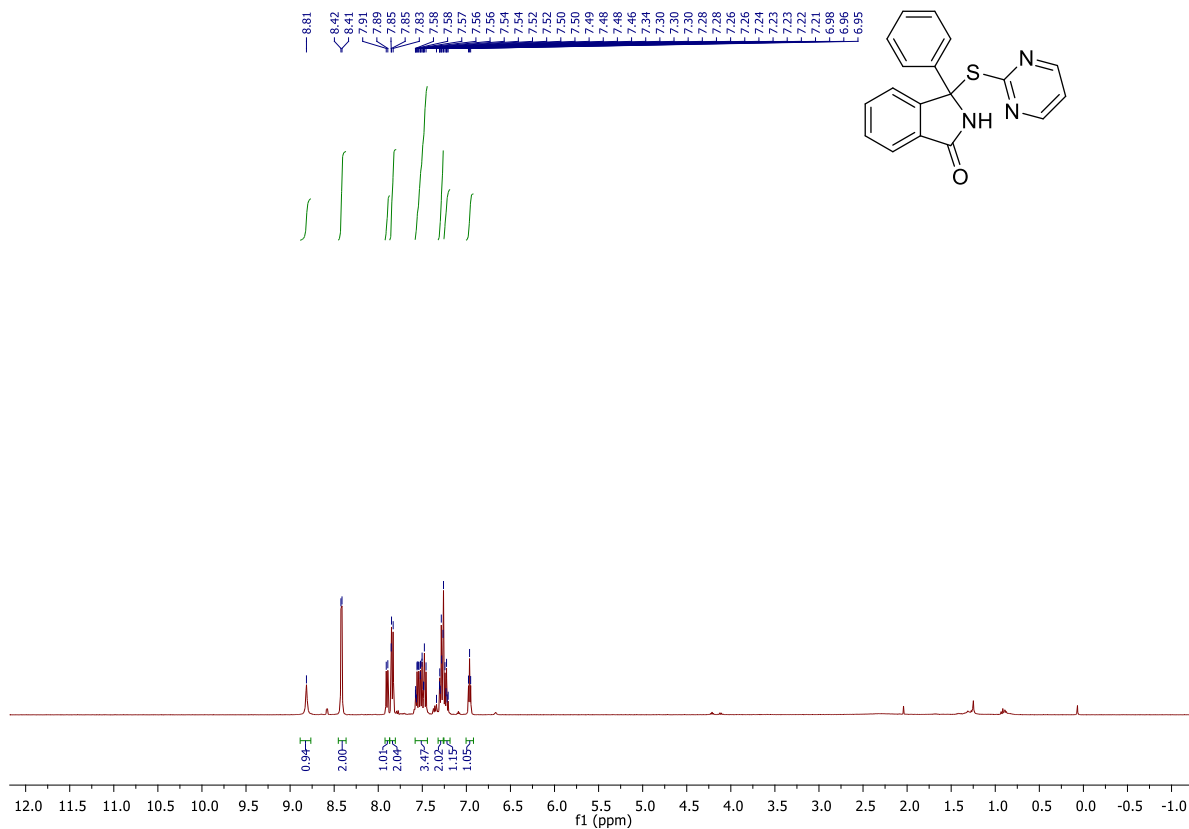


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

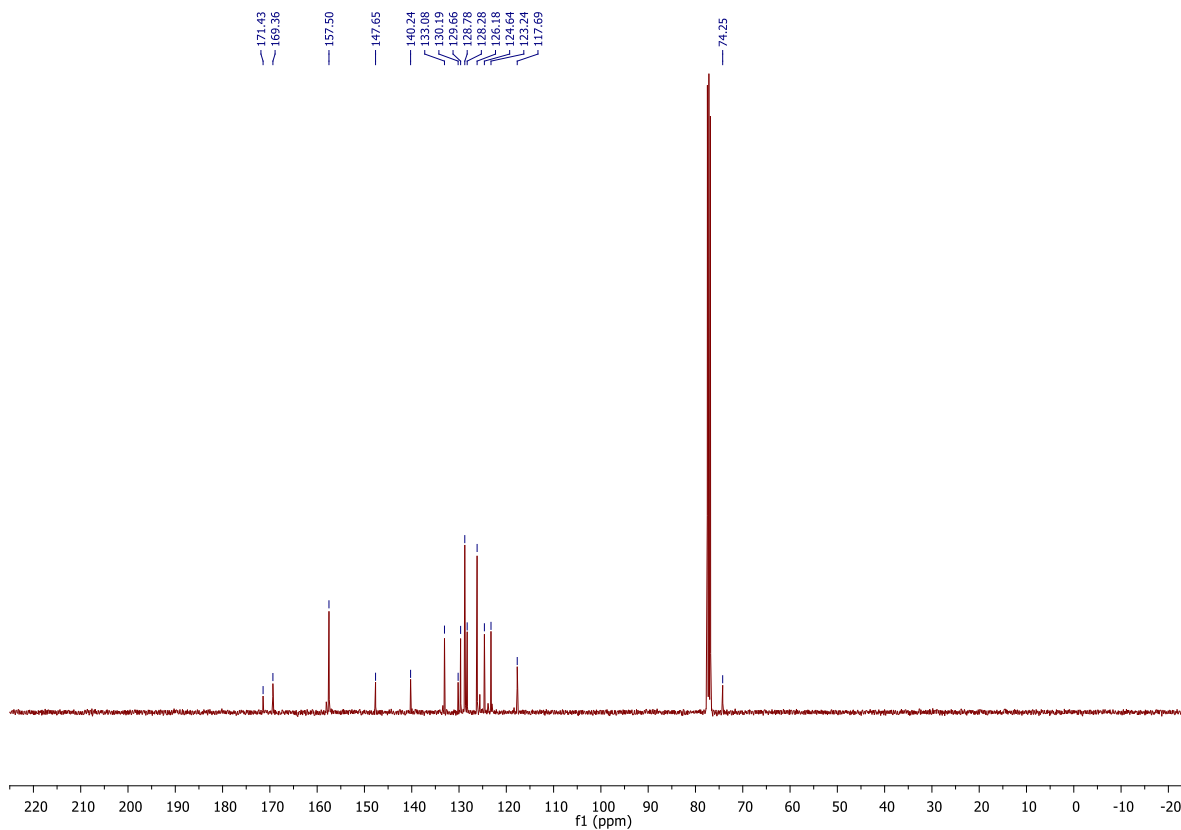


### 1.35. 3-(2-pyrimidinethio)-3-phenylisoindolin-1-one (205f)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

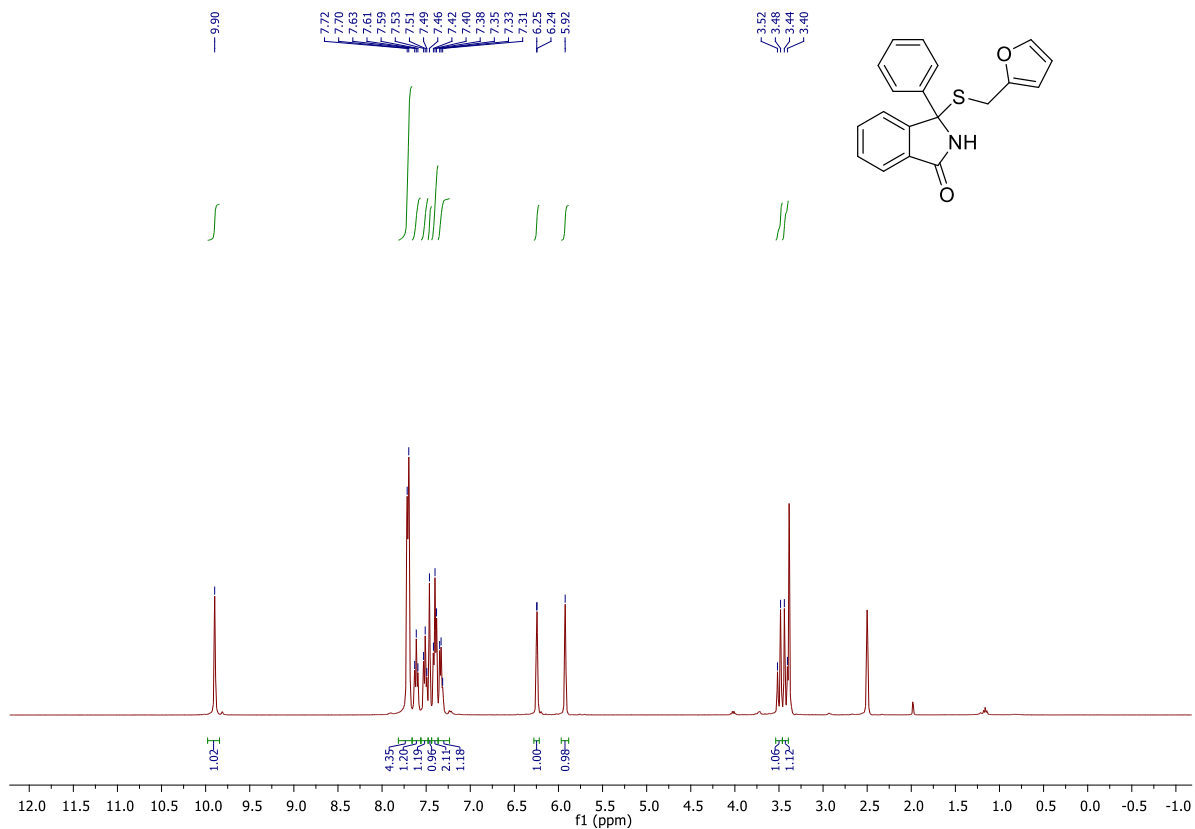


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

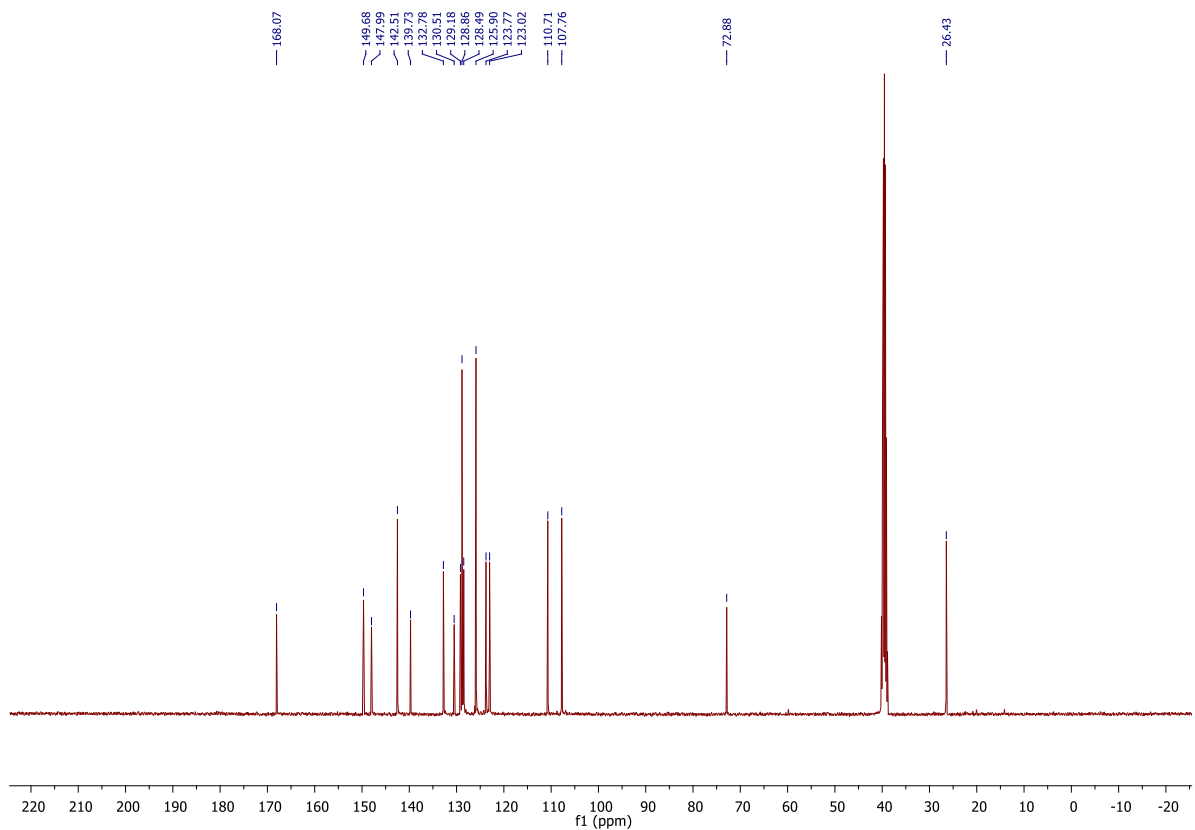


### 1.36. 3-(2-furfurylthio)-3-phenylisoindolin-1-one (205g)

$^1\text{H}$  NMR (400 MHz, DMSO- $d_6$ )

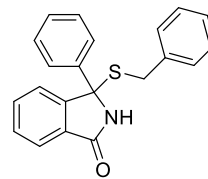
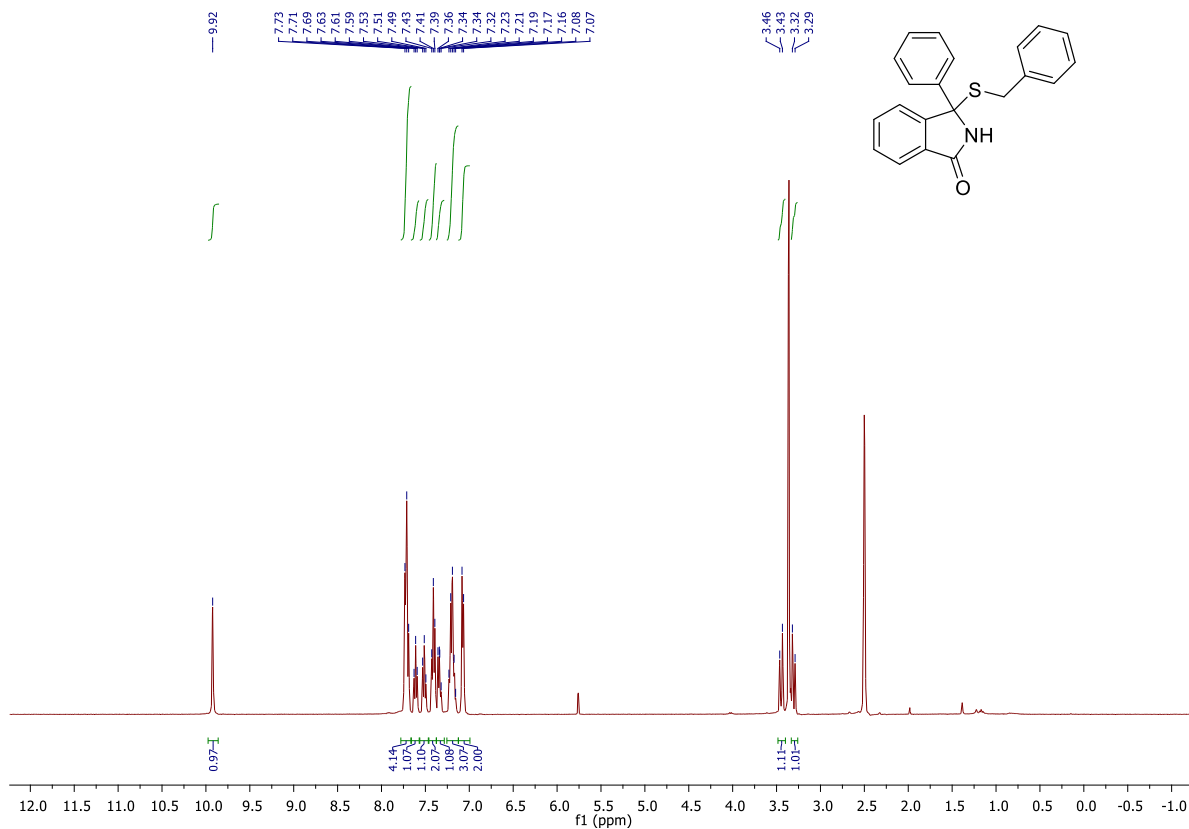


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz, DMSO- $d_6$ )

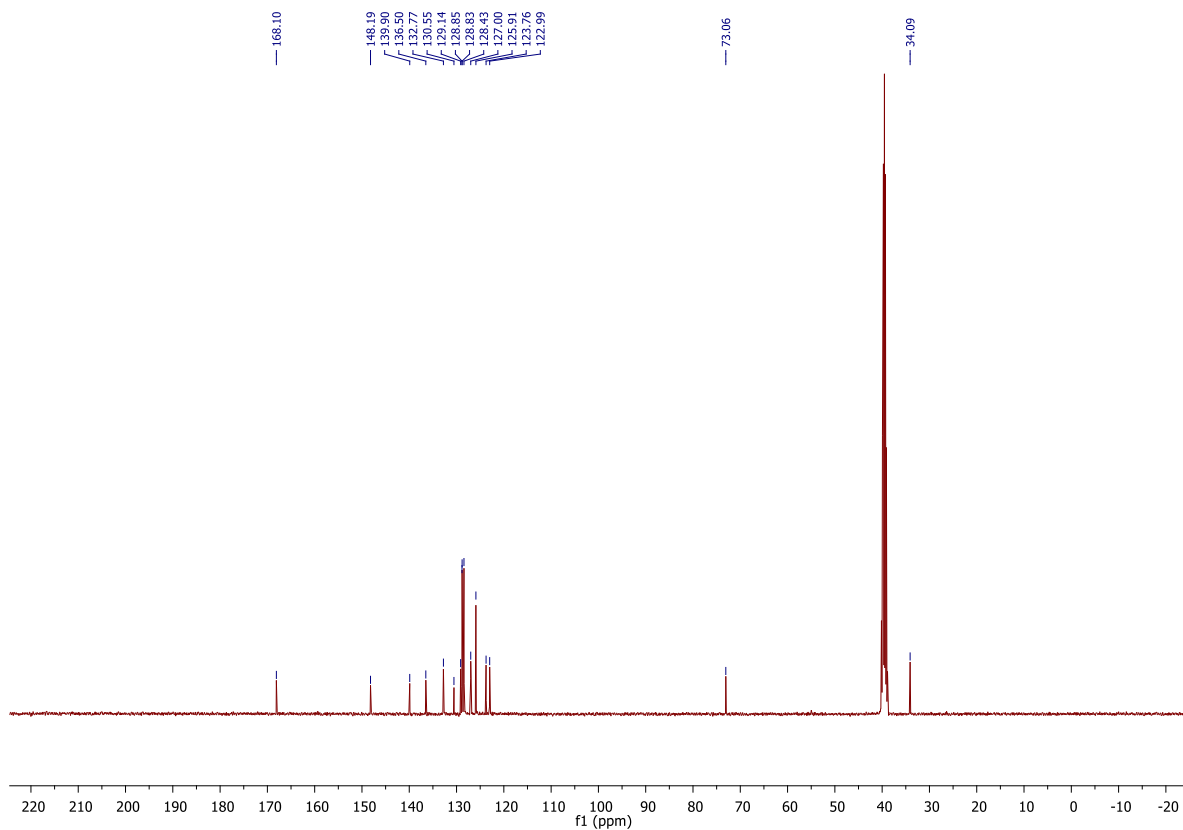


### 1.37. 3-(benzylthio)-3-phenylisoindolin-1-one (205h)

$^1\text{H}$  NMR (400 MHz, DMSO- $d_6$ )

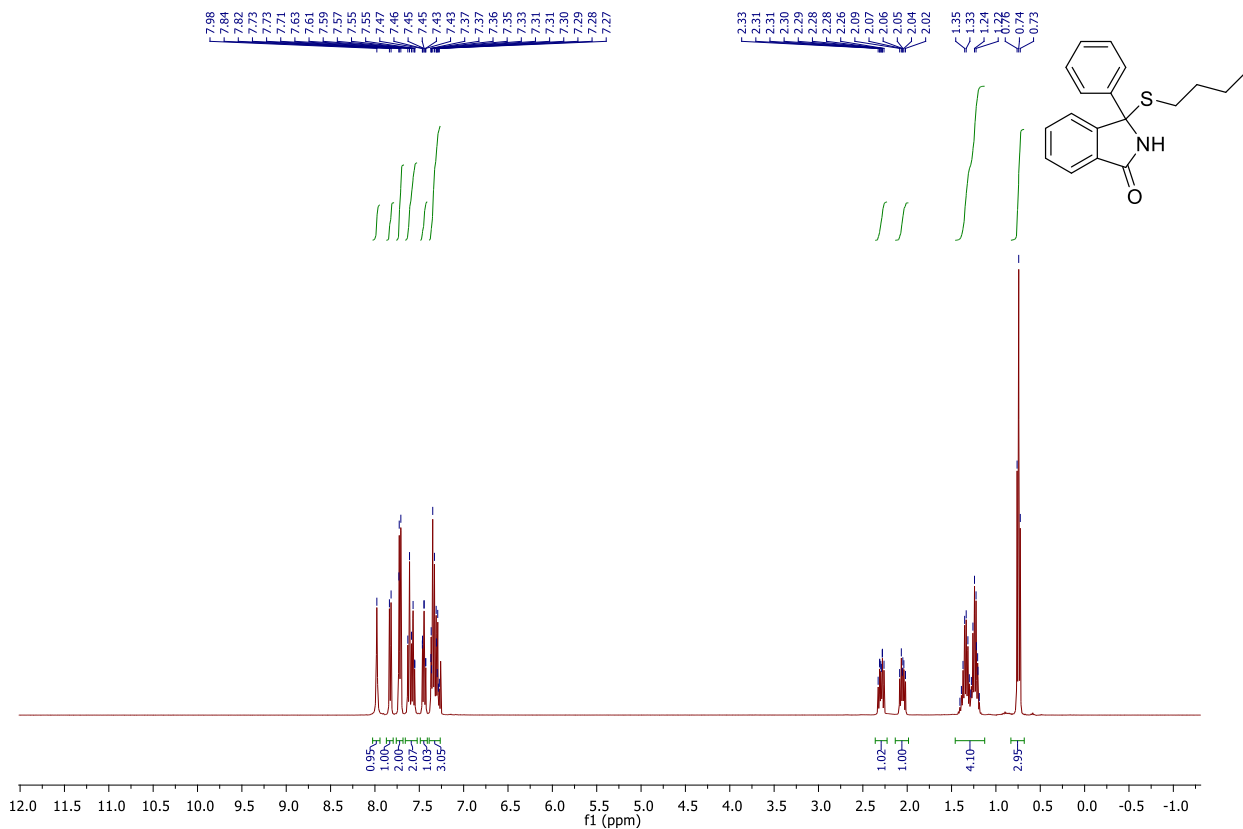


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz, DMSO- $d_6$ )

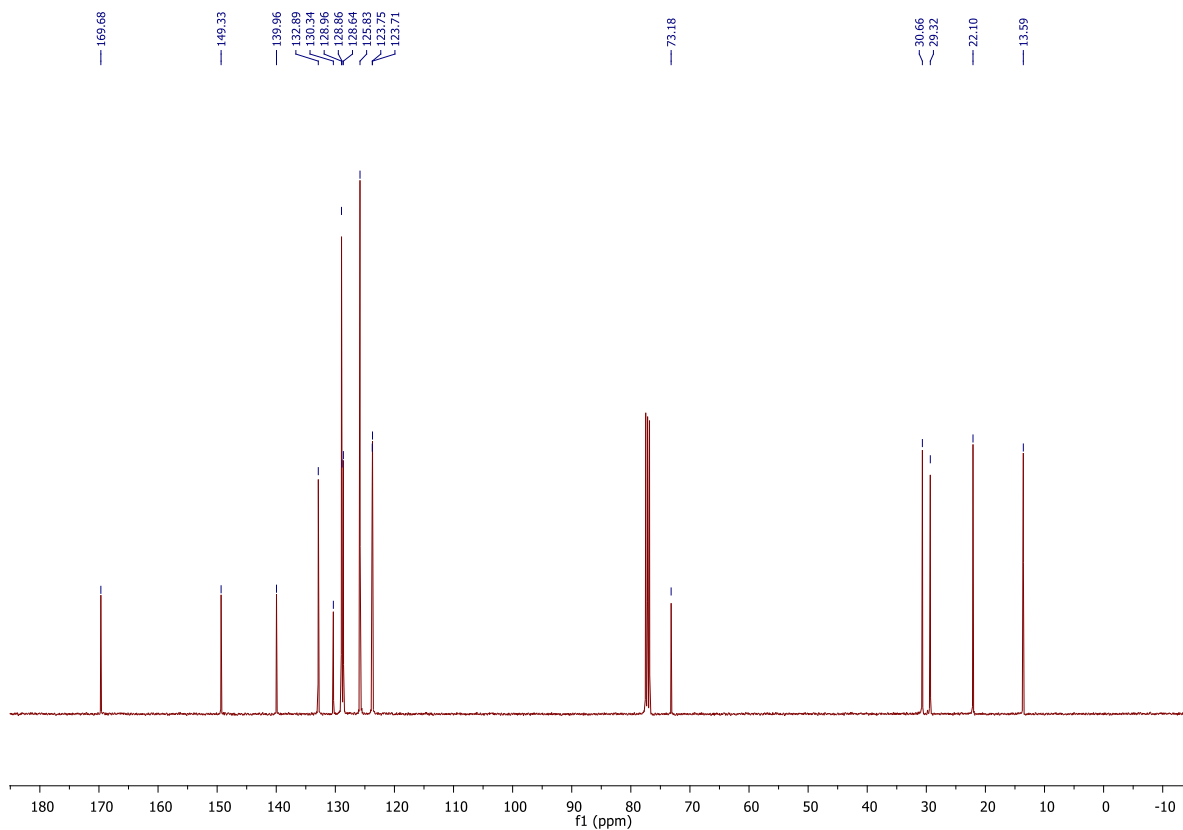


### 1.38. 3-(butanethio)-3-phenylisoindolin-1-one (205i)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

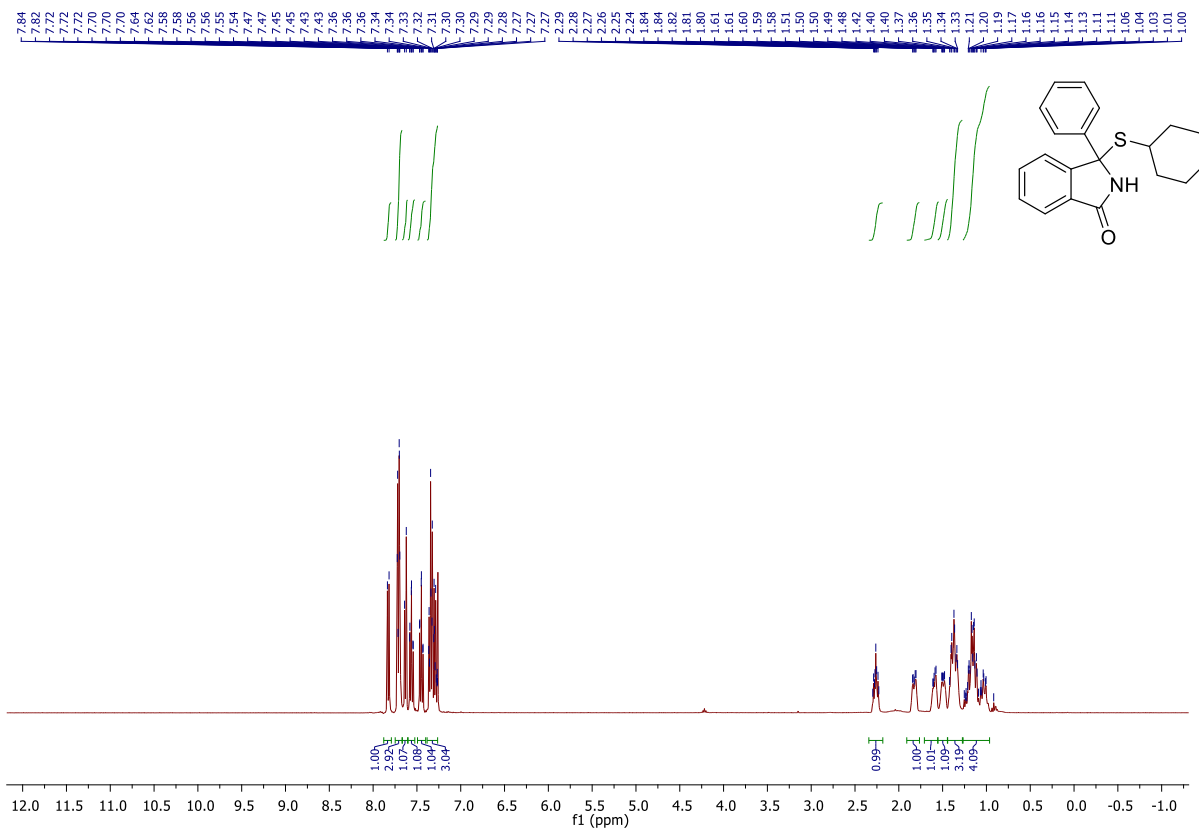


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

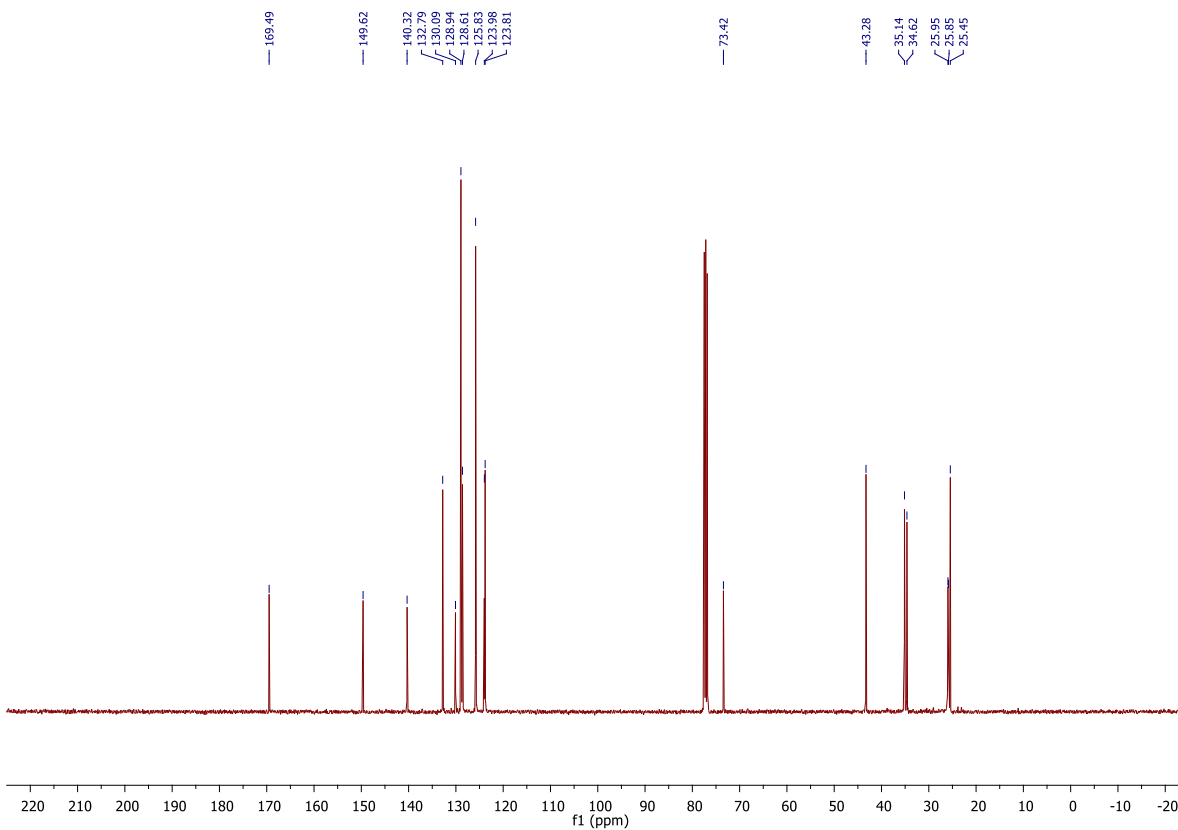


### 1.39. 3-(cyclohexanethio)-3-phenylisoindolin-1-one (205j)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )



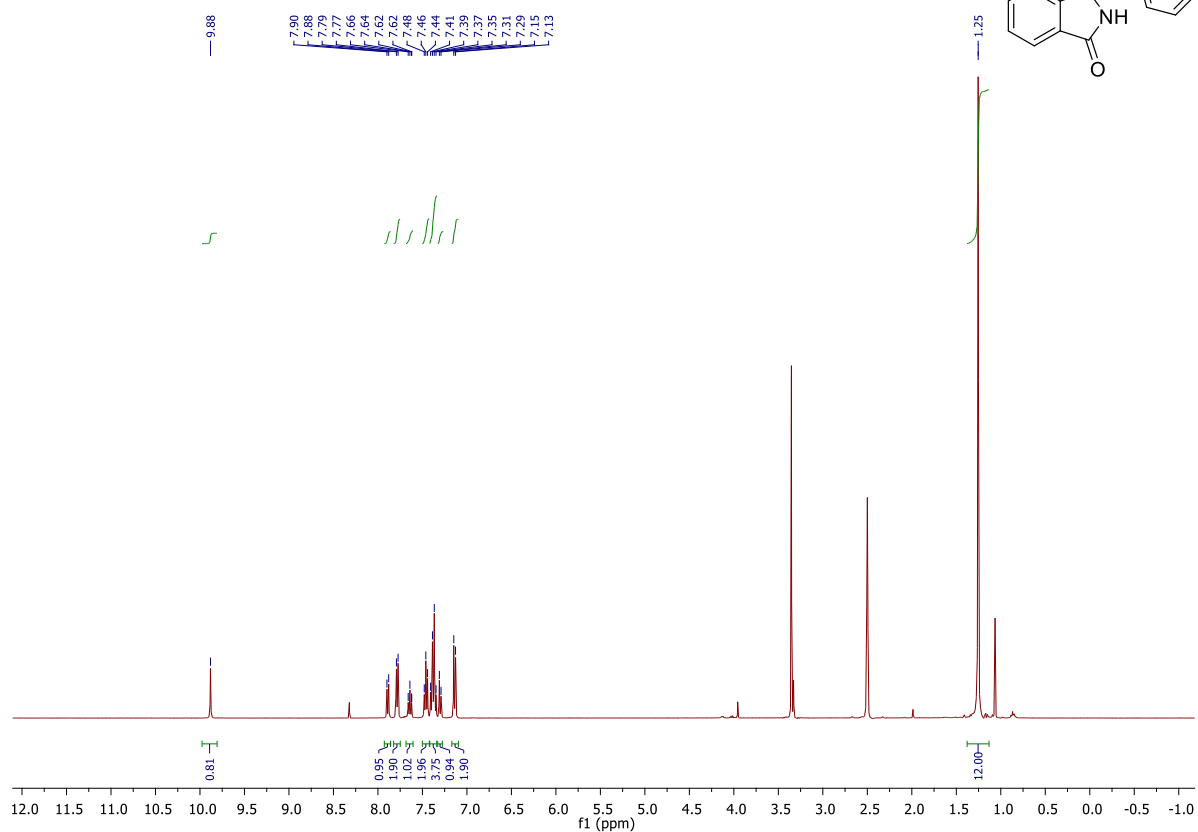
$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )



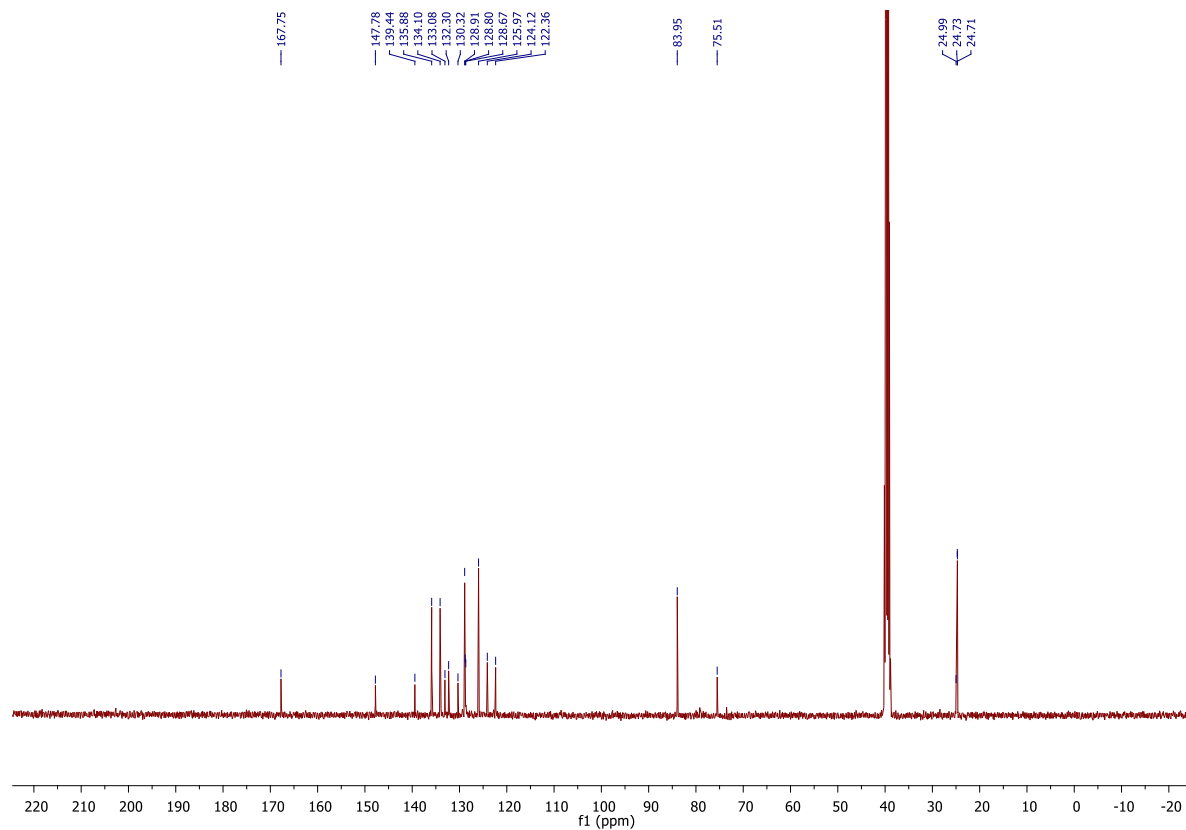


1.40. 3-(4-(4,4,5,5-Tetramethyl-1,3,2-dioxaborolan-2-yl)benzenethiol)-3-phenylisoindolin-1-one (205k)

$^1\text{H}$  NMR (400 MHz,  $\text{DMSO-d}_6$ )

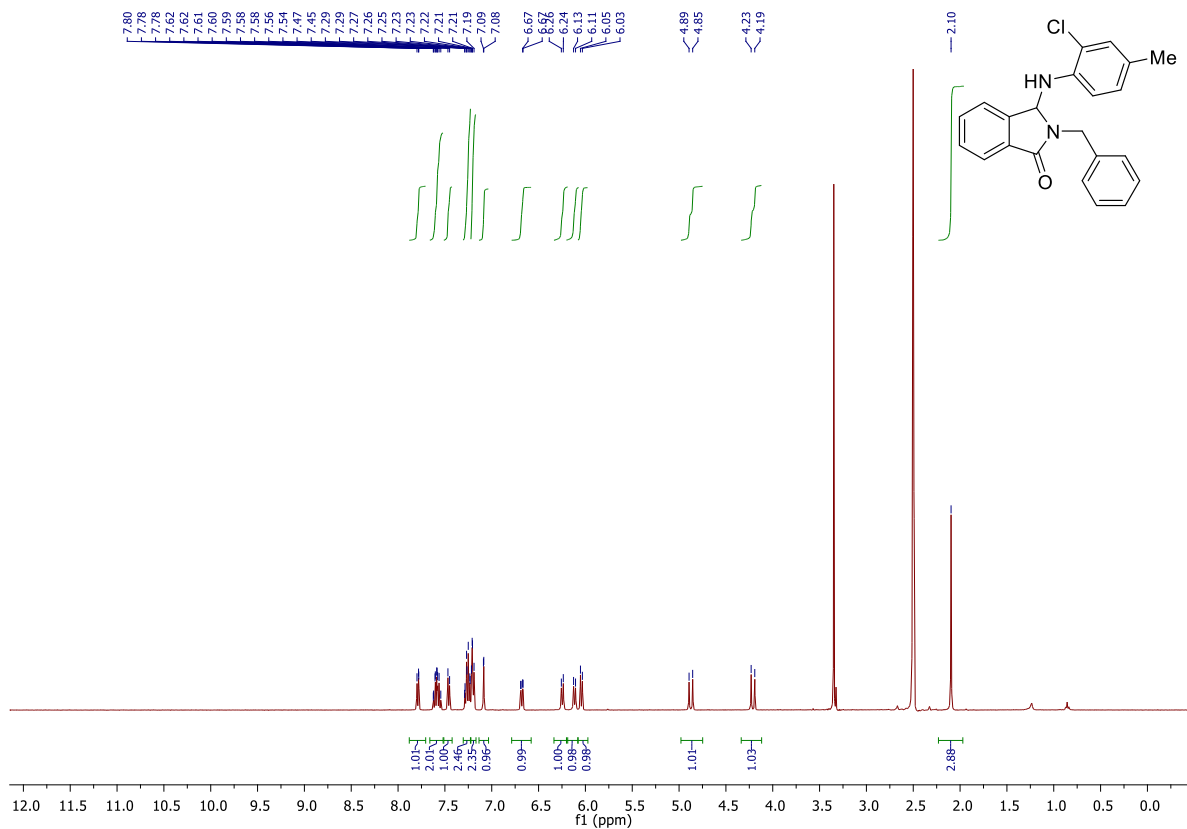


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{DMSO-d}_6$ )

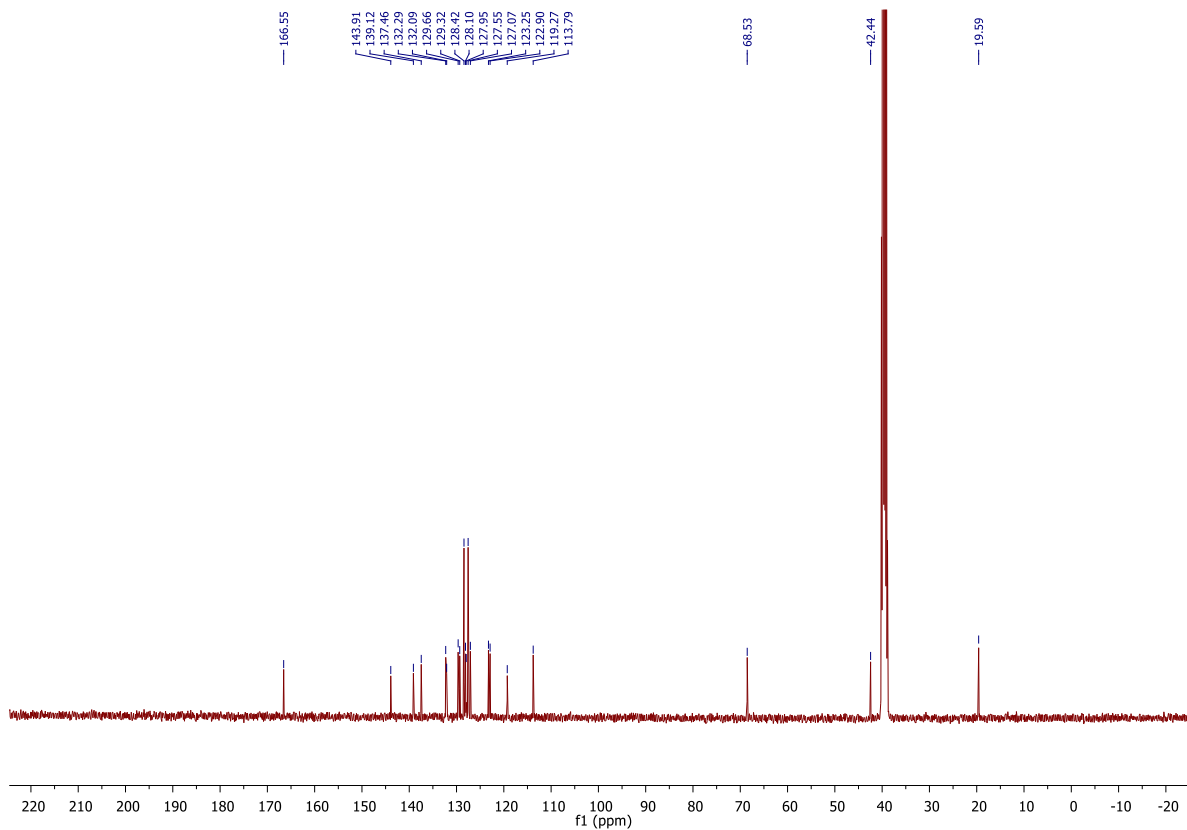


### 1.41. 2-benzyl-3-(2-chloro-4-methylanilino)-2,3-dihydro-1H-isoindol-1-one (227a)

$^1\text{H}$  NMR (400 MHz,  $\text{DMSO-d}_6$ )

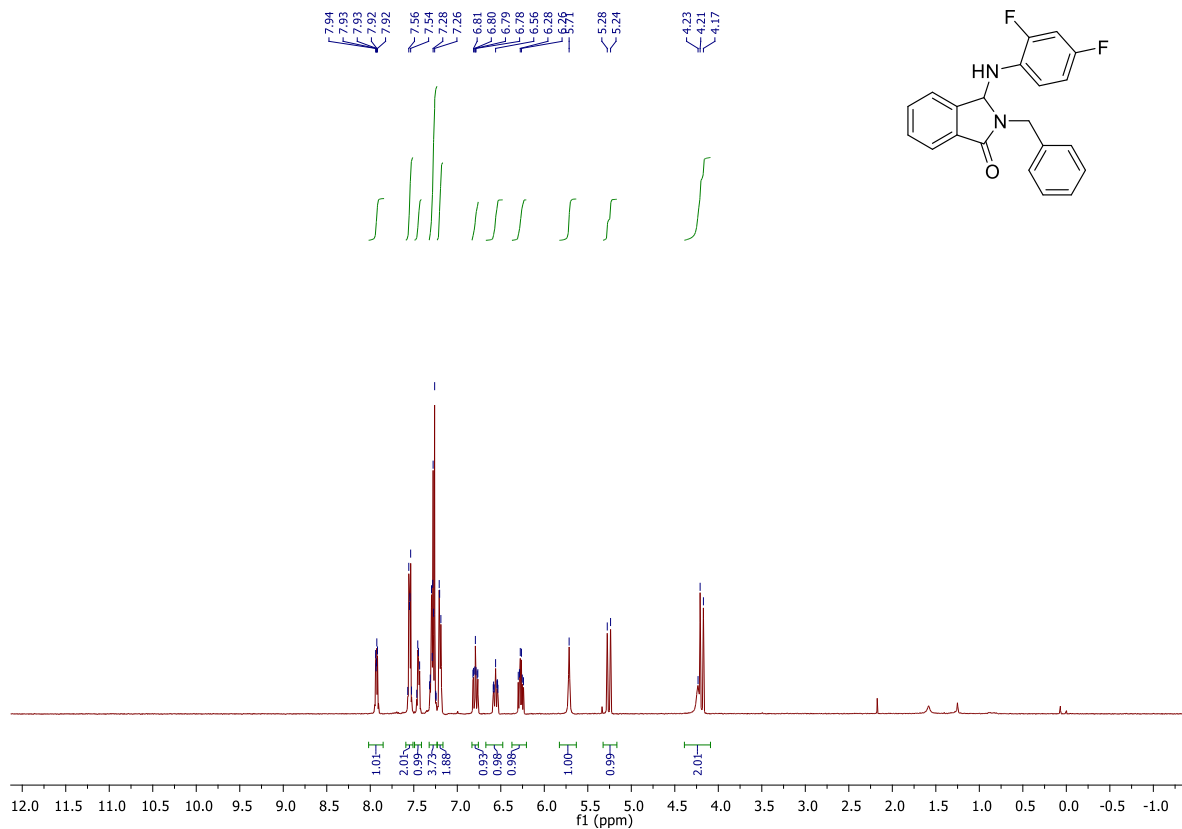


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{DMSO-d}_6$ )

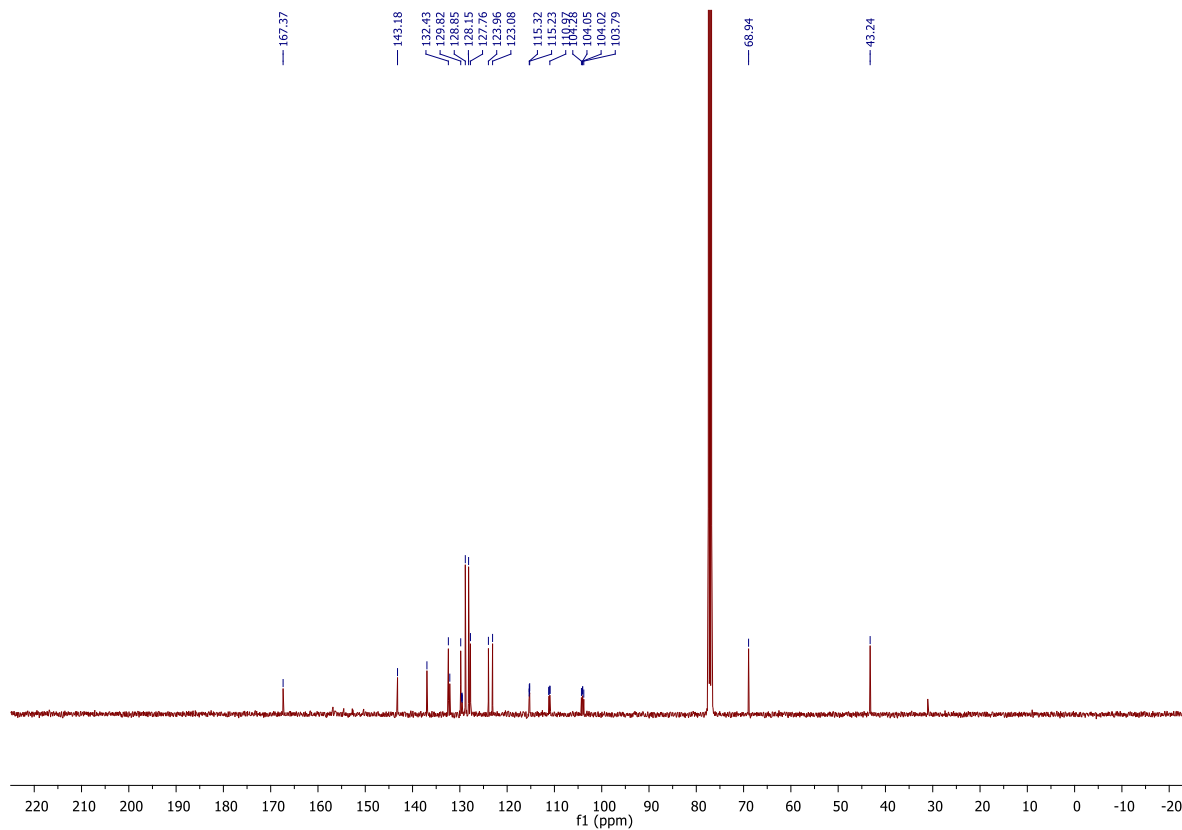


### 1.42. 2-benzyl-3-(2,4-difluoroanilino)-2,3-dihydro-1H-indol-1-one (227b)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

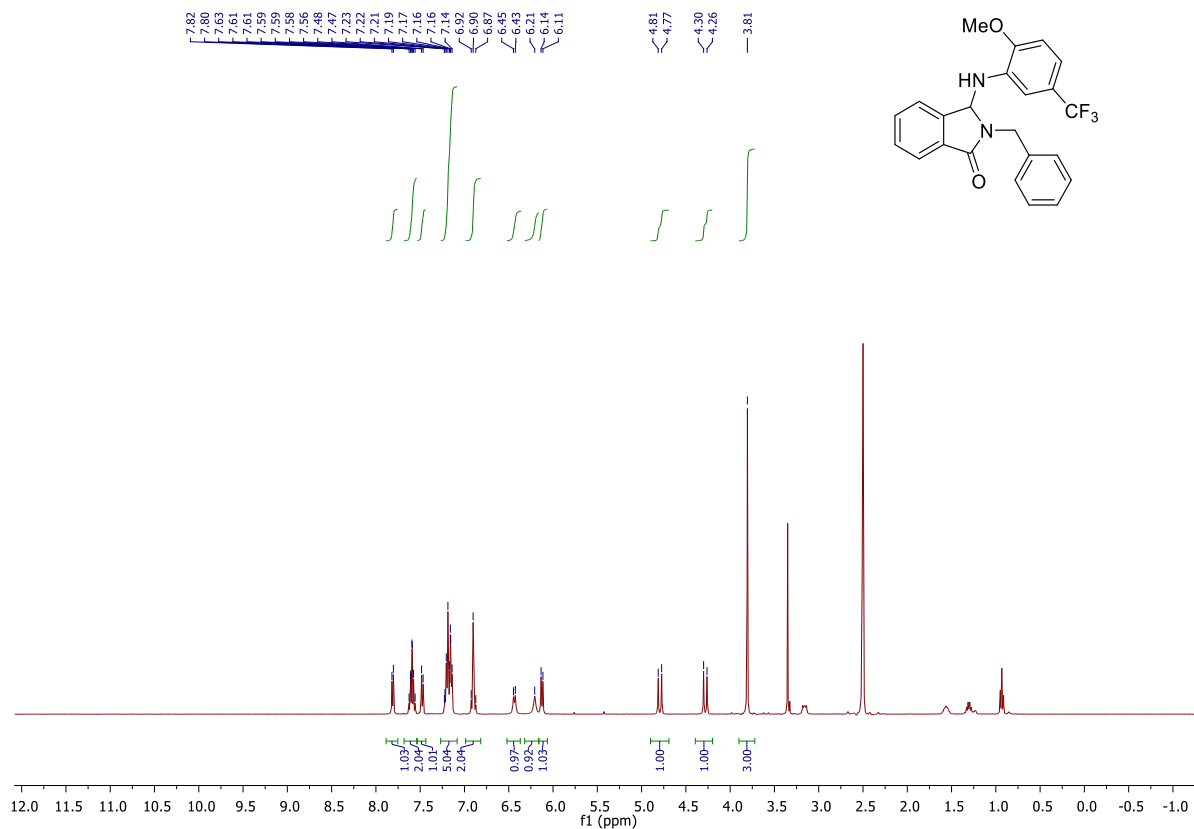


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

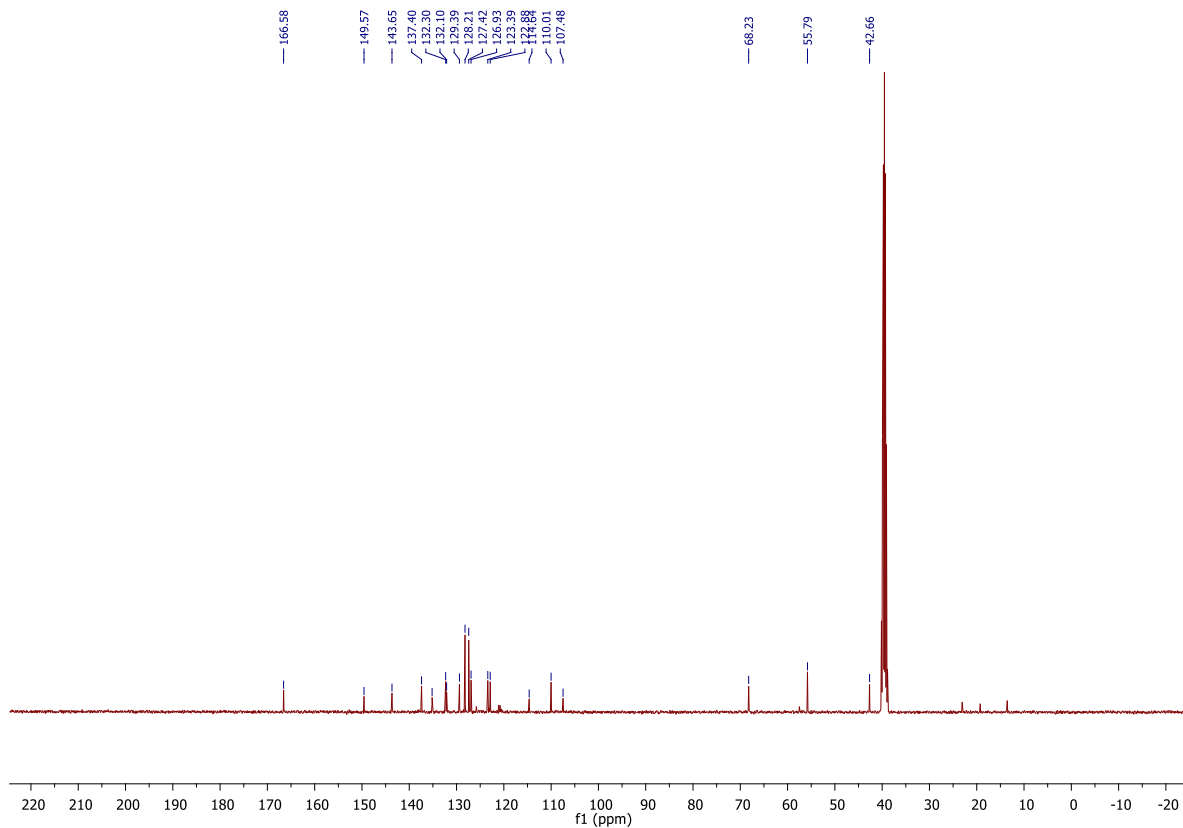


1.43. 2-benzyl-3-[2-methoxy-5-(trifluoromethyl)anilino]-2,3-dihydro-1H-isindol-1-one (227c)

$^1\text{H}$  NMR (400 MHz, DMSO- $d_6$ )

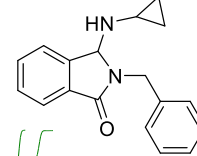
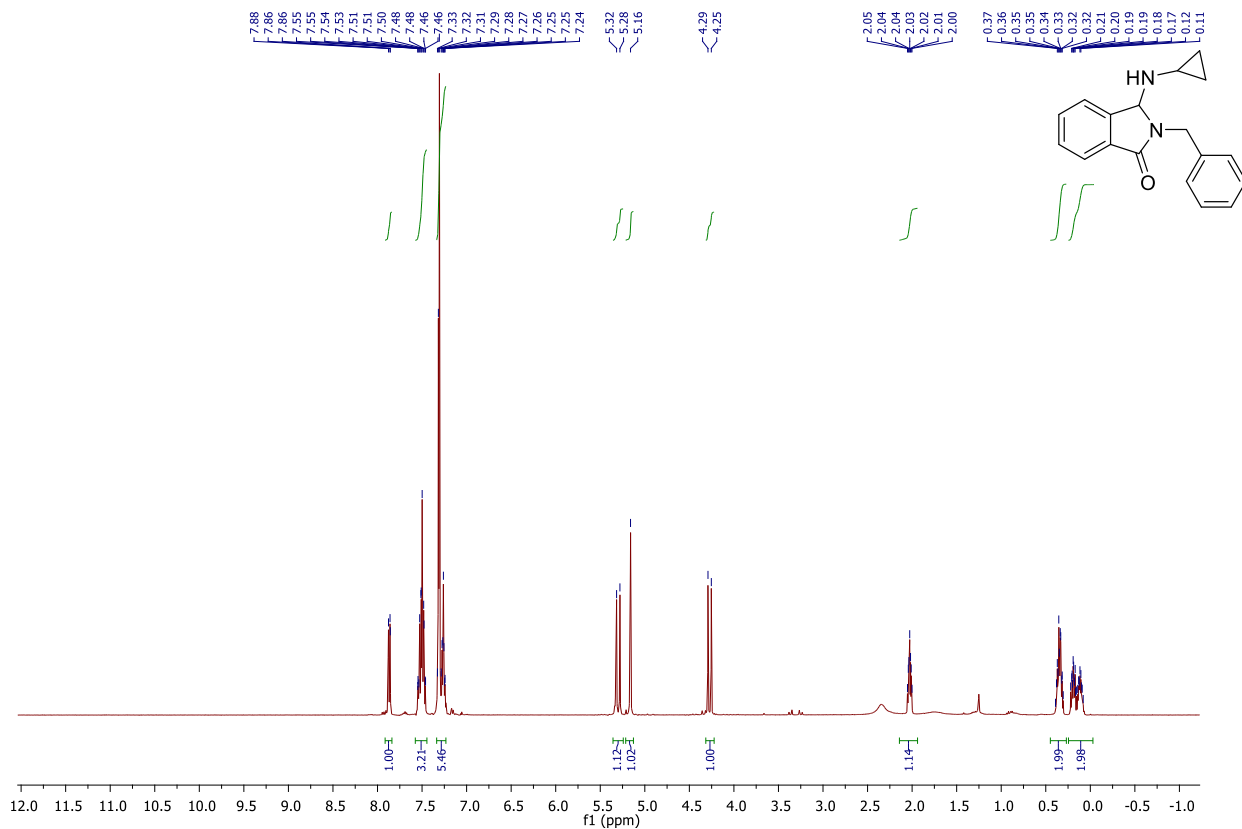


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz, DMSO- $d_6$ )

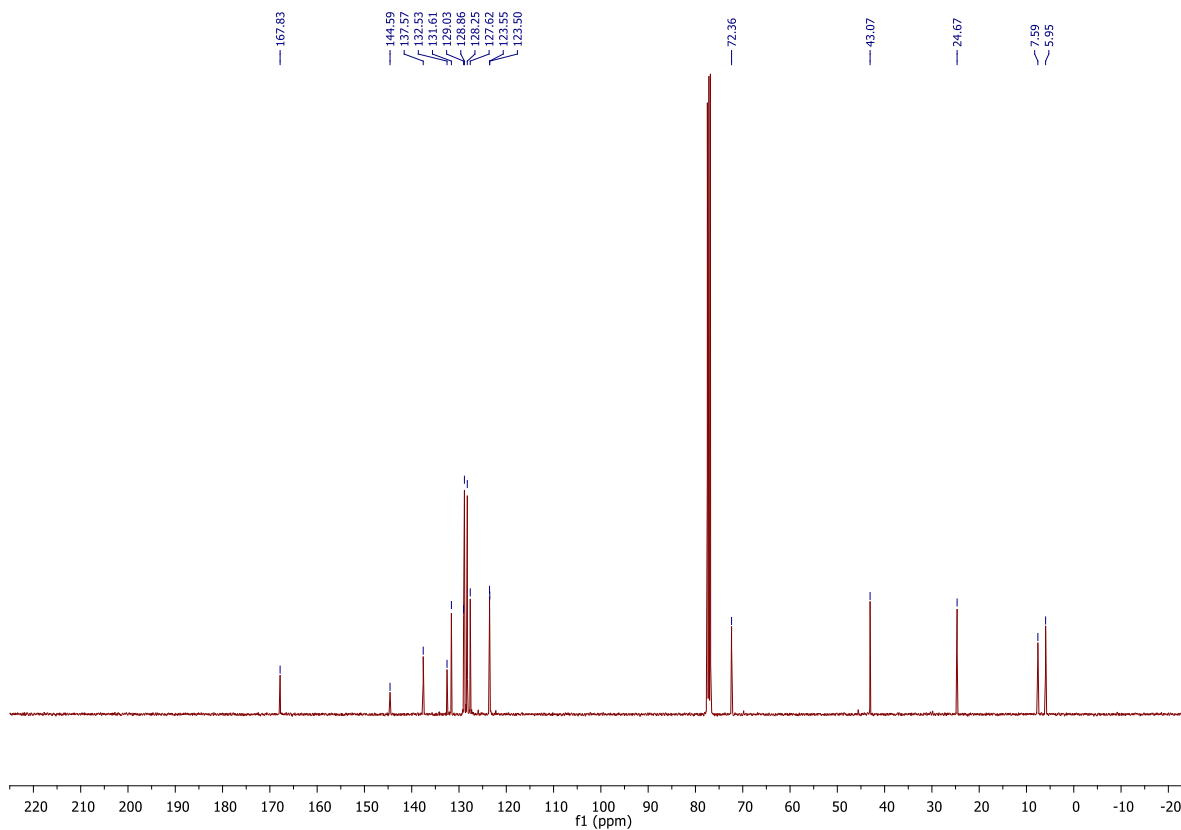


### 1.44. 2-benzyl-3-(cyclopropylamino)-2,3-dihydro-1H-indol-1-one (227d)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

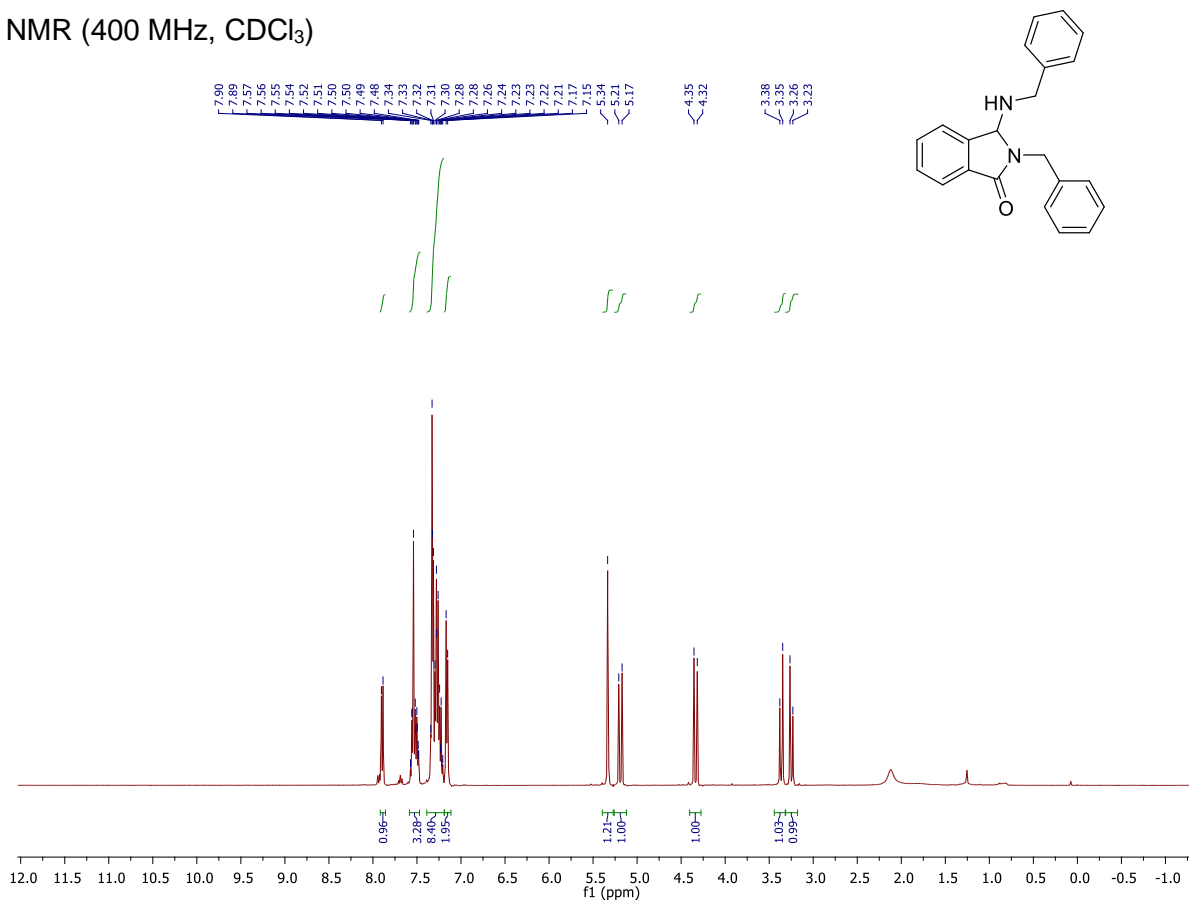


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

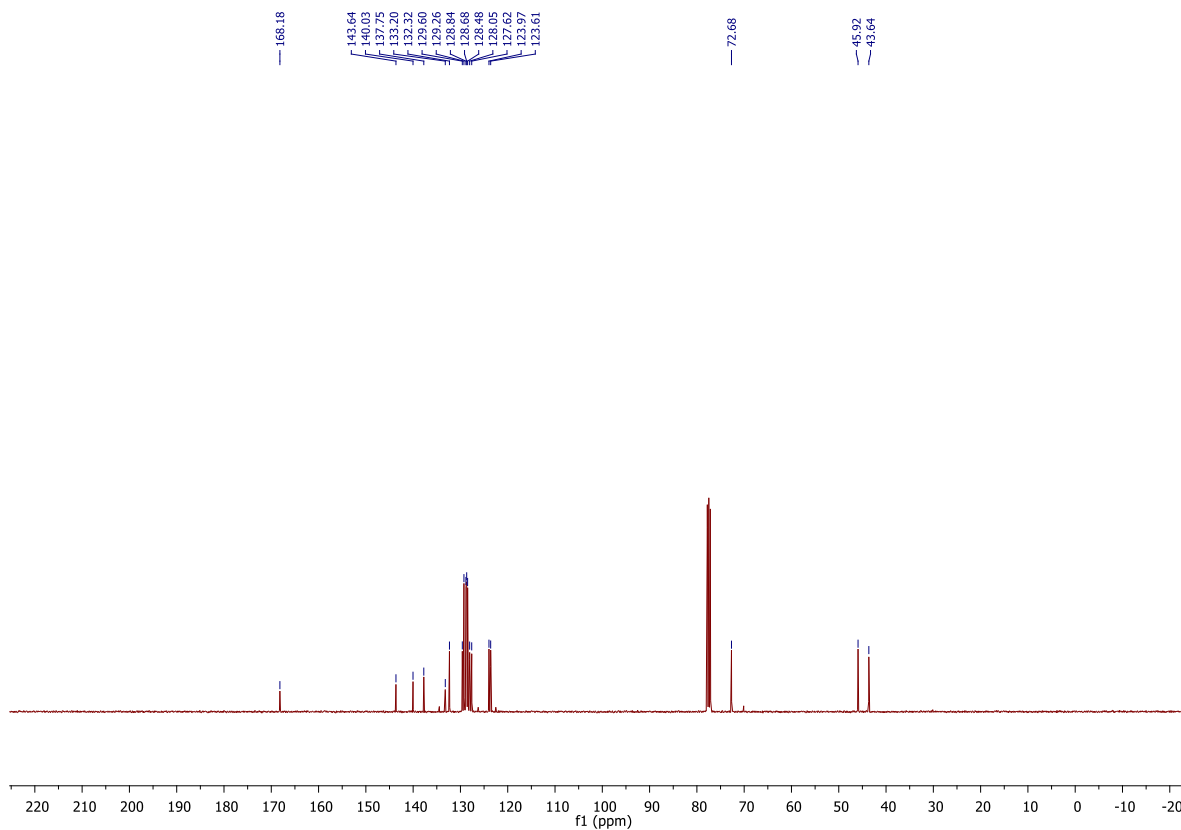


### 1.45. 2-benzyl-3-(benzylamino)-2,3-dihydro-1H-isoindol-1-one (227e)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

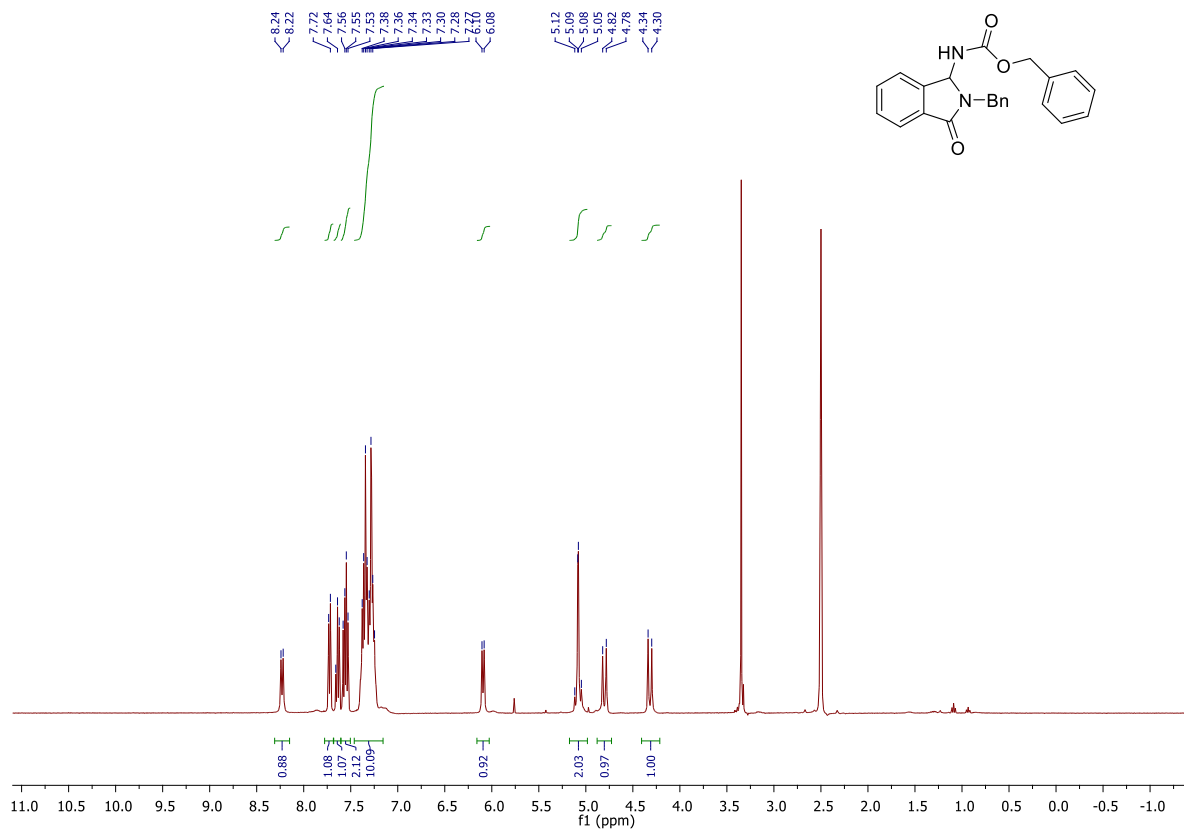


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

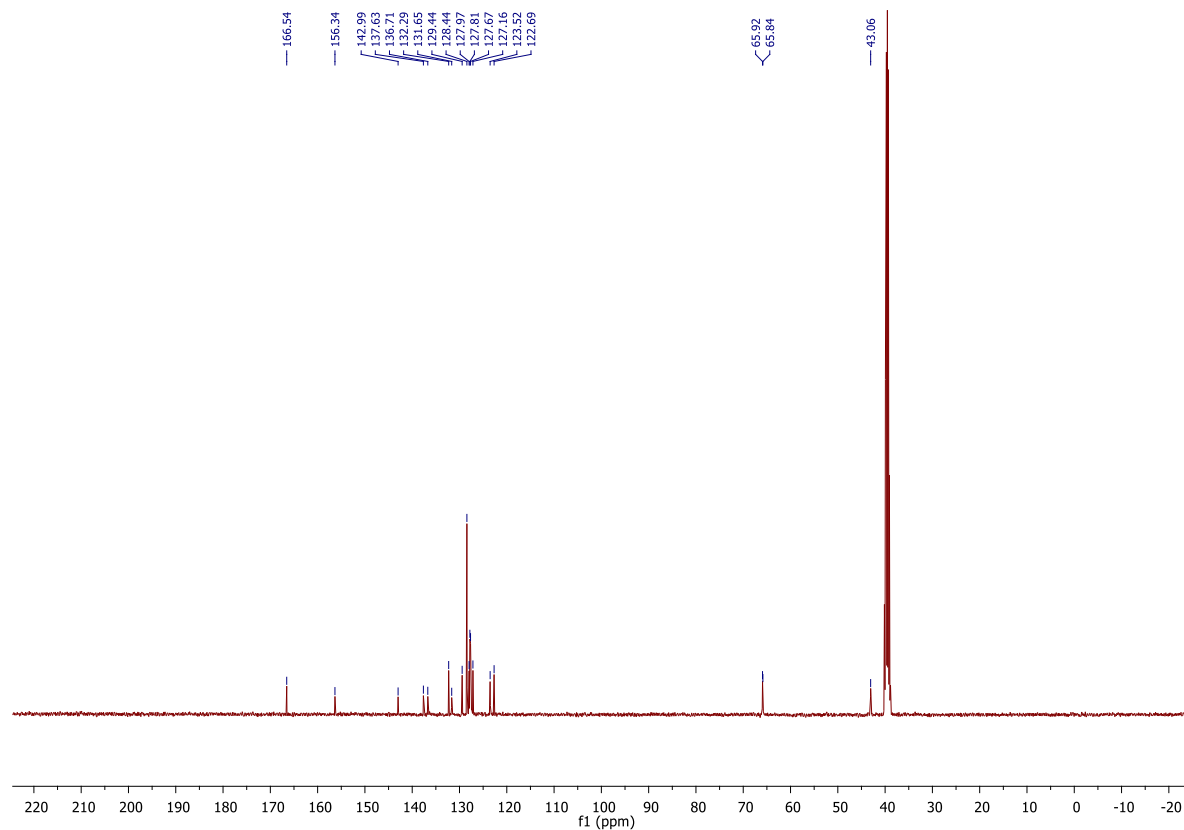


### 1.46. Benzyl (2-benzyl-3-oxo-2,3-dihydro-1H-isoindol-1-yl)carbamate (236a)

$^1\text{H}$  NMR (400 MHz, DMSO- $d_6$ )

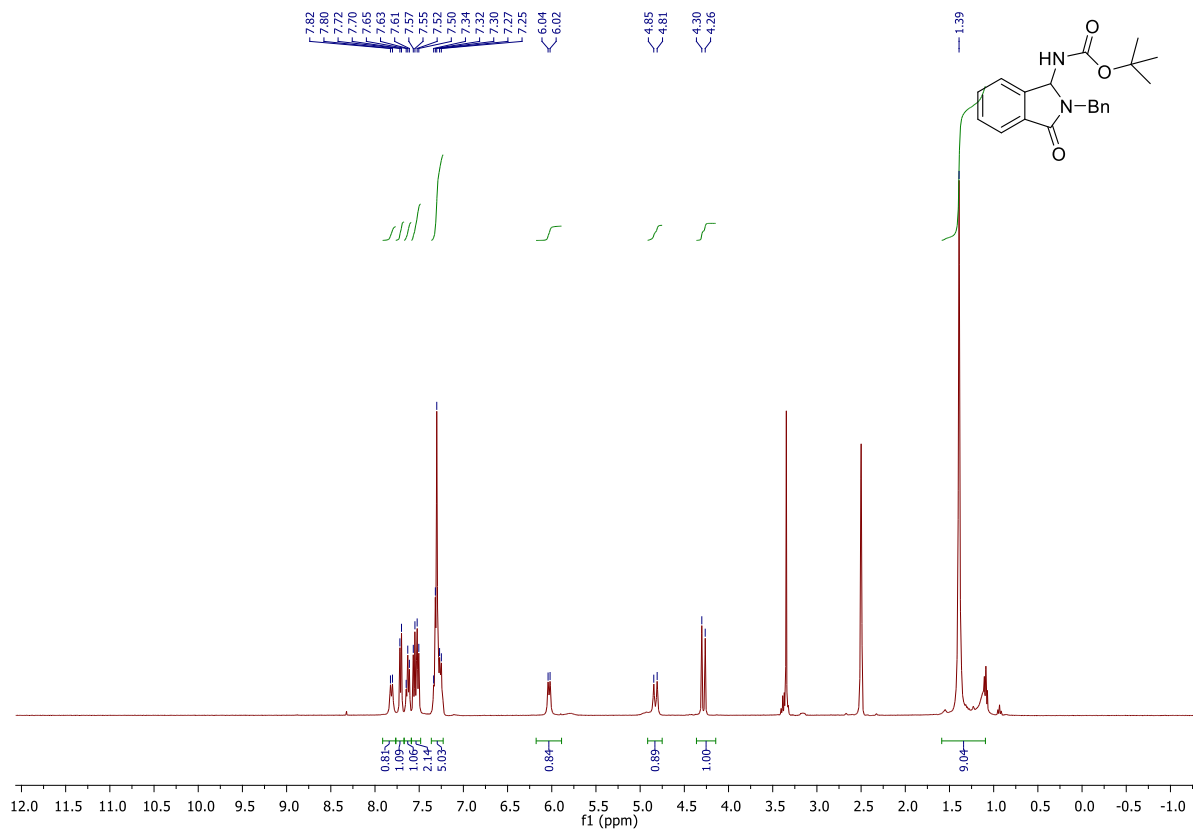


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz, DMSO- $d_6$ )

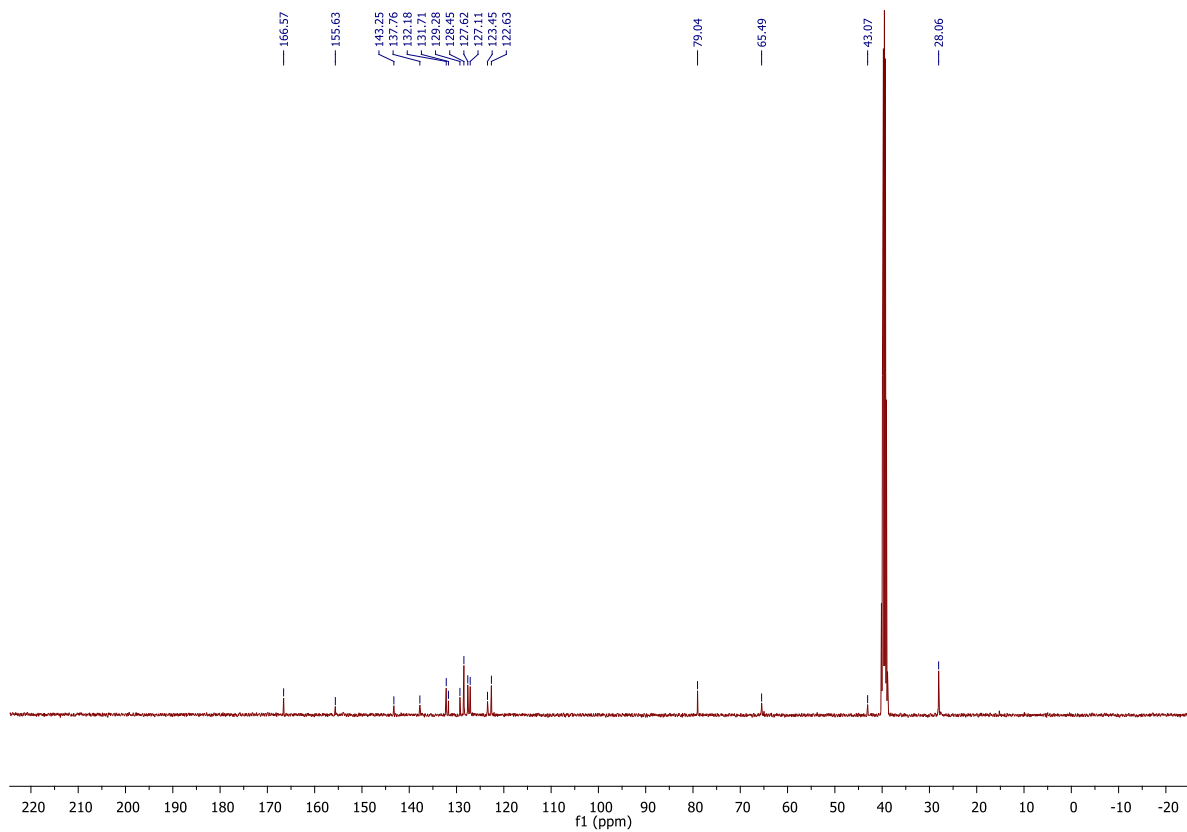


1.47. *tert*-butyl (2-benzyl-3-oxo-2,3-dihydro-1H-isoindol-1-yl)carbamate (236b)

$^1\text{H}$  NMR (400 MHz, DMSO- $d_6$ )



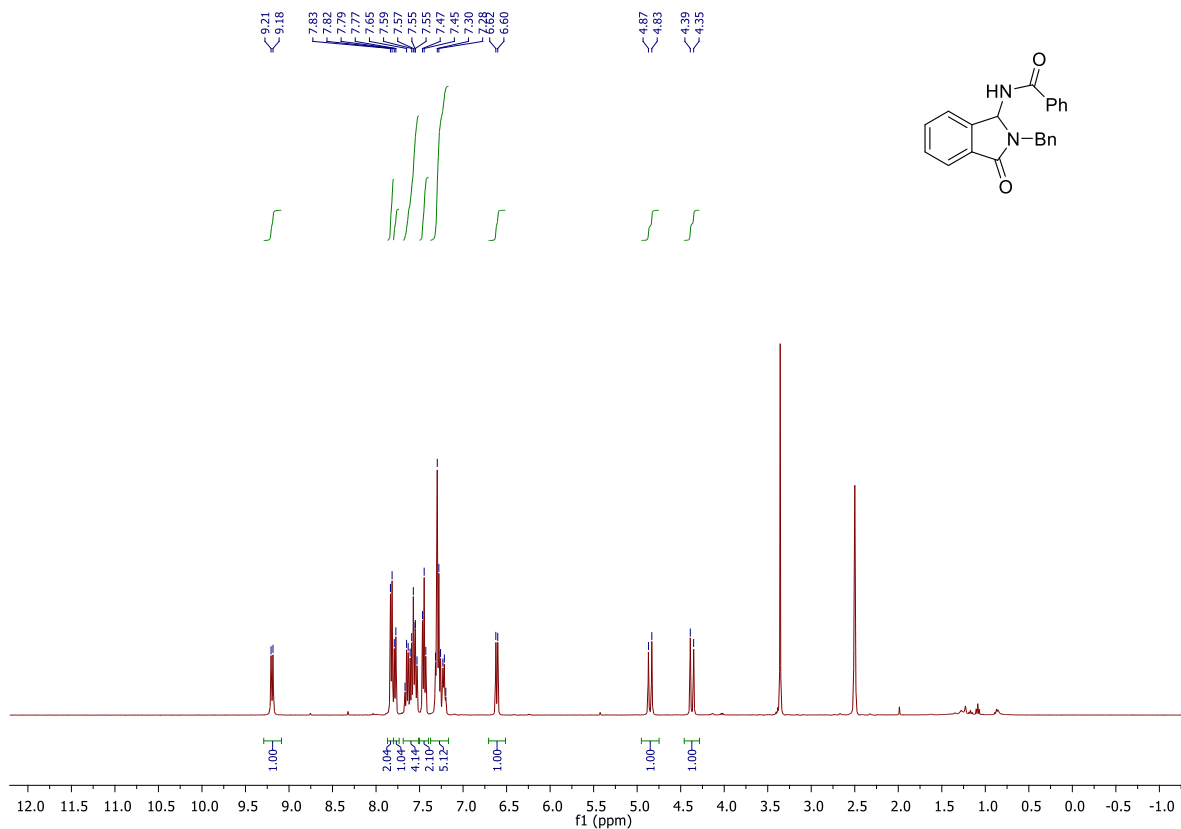
$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz, DMSO- $d_6$ )



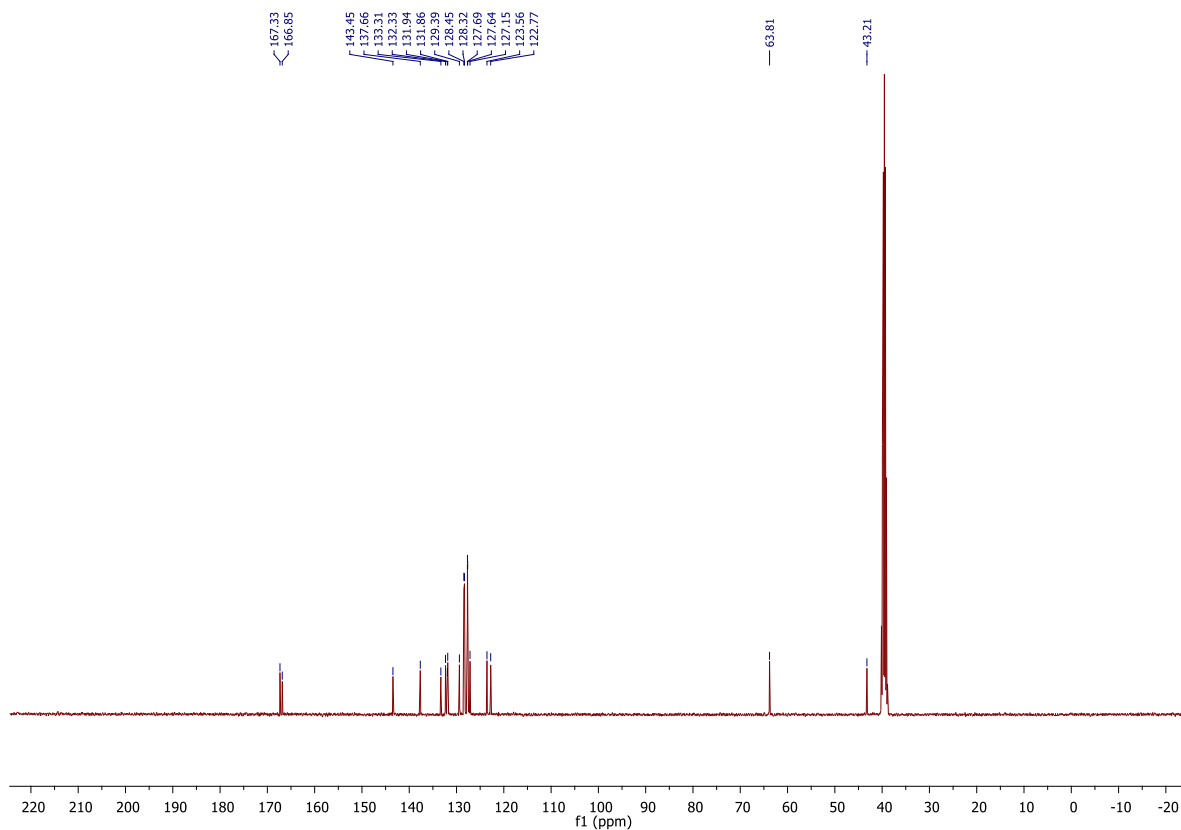


### 1.48. N-(2-benzyl-3-oxo-2,3-dihydro-1H-isoindol-1-yl)benzamide (236c)

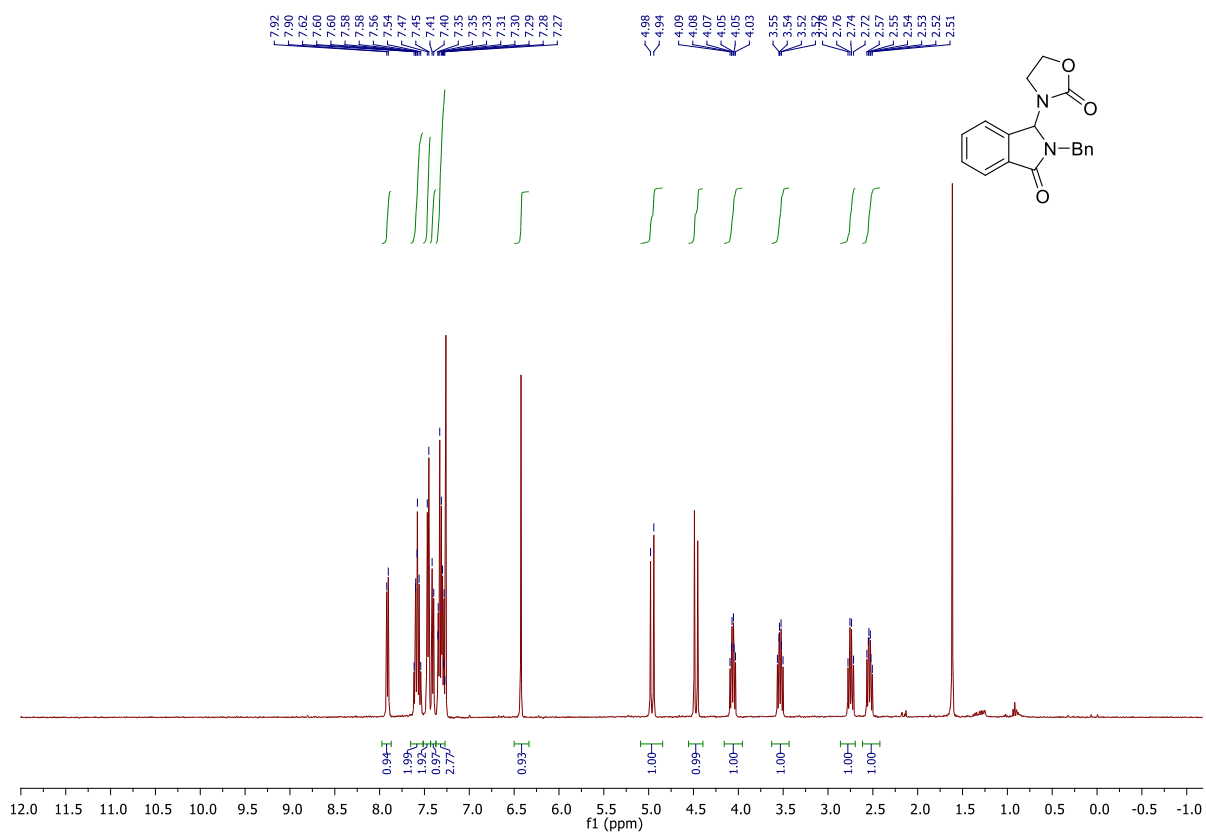
$^1\text{H}$  NMR (400 MHz, DMSO- $d_6$ )



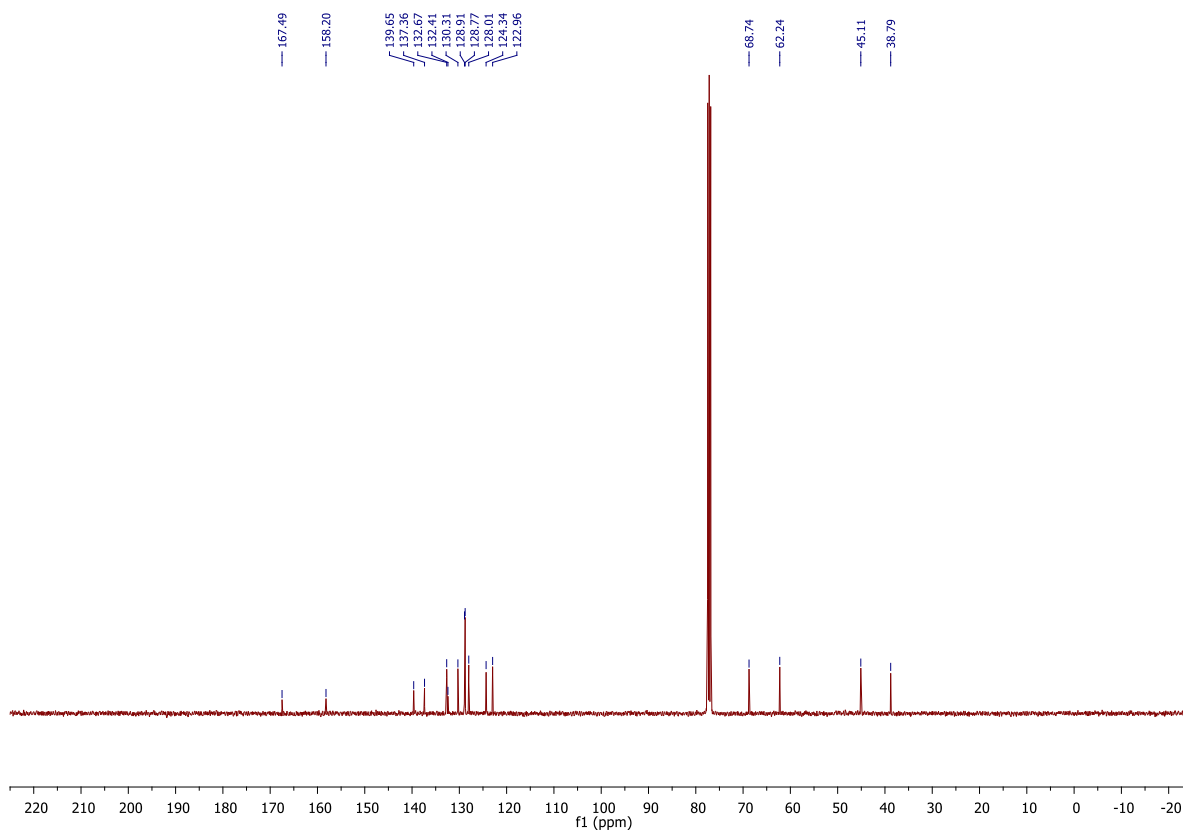
$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz, DMSO- $d_6$ )



1.49. 2-benzyl-3-(2-oxo-1,3-oxazolidin-3-yl)-2,3-dihydro-1H-isoindol-1-one (236d)

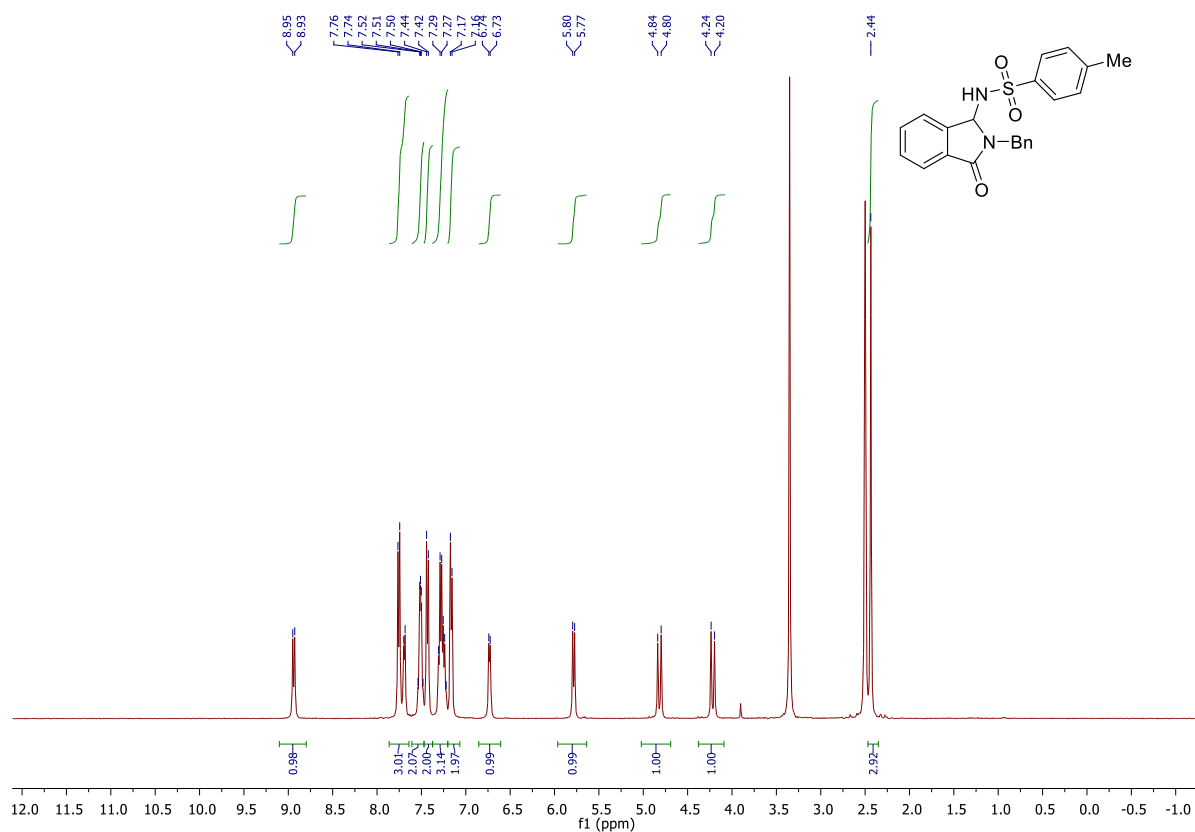


<sup>13</sup>C{<sup>1</sup>H} NMR (101 MHz, CDCl<sub>3</sub>)

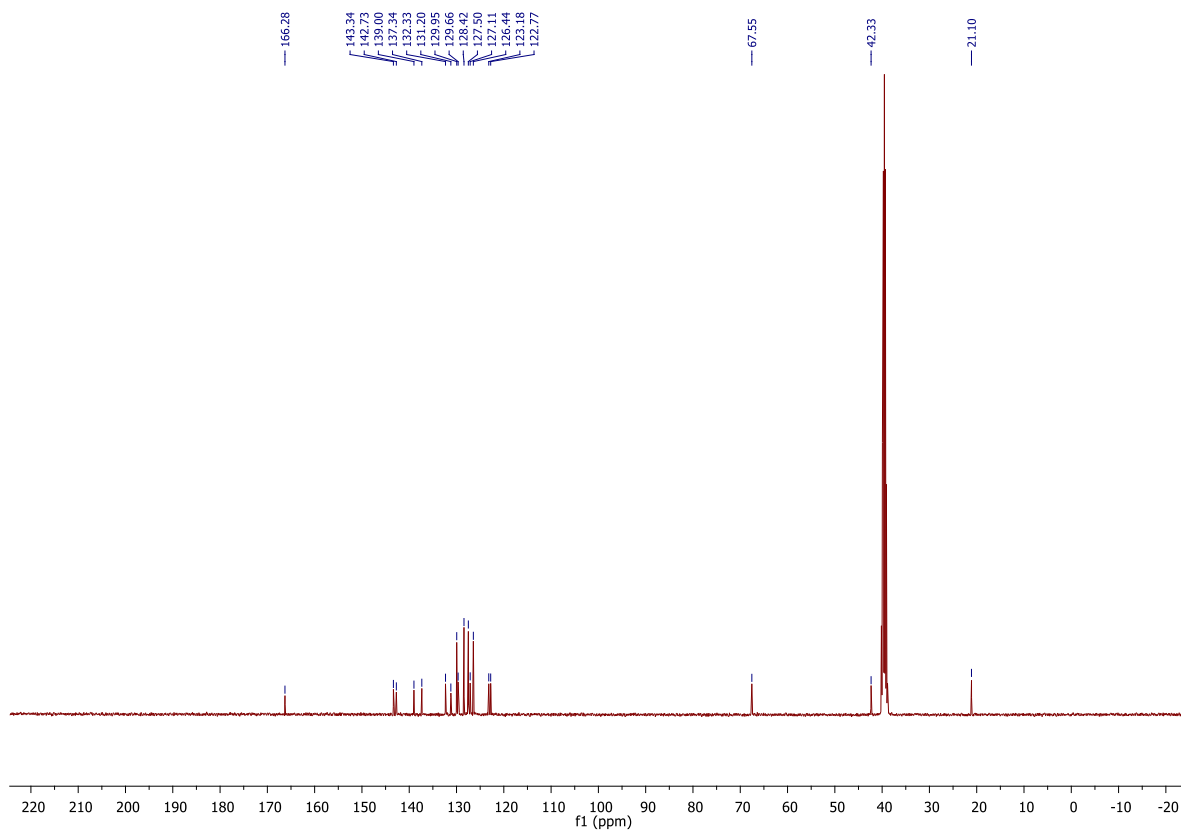


1.50. *N*-(2-benzyl-3-oxo-2,3-dihydro-1*H*-isoindol-1-yl)-4-methylbenzene-1-sulfonamide (240a)

<sup>1</sup>H NMR (400 MHz, DMSO-d<sub>6</sub>)

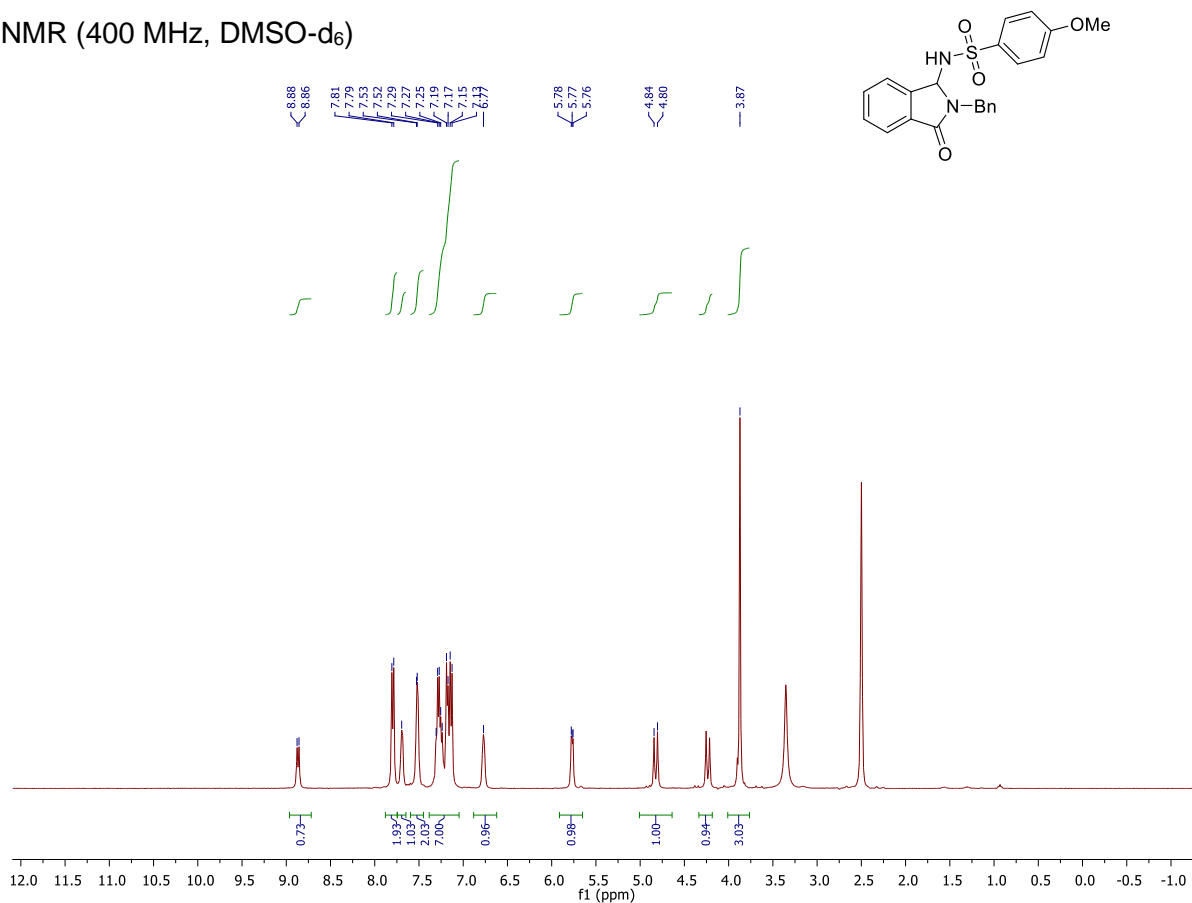


<sup>13</sup>C{<sup>1</sup>H} NMR (101 MHz, DMSO-d<sub>6</sub>)

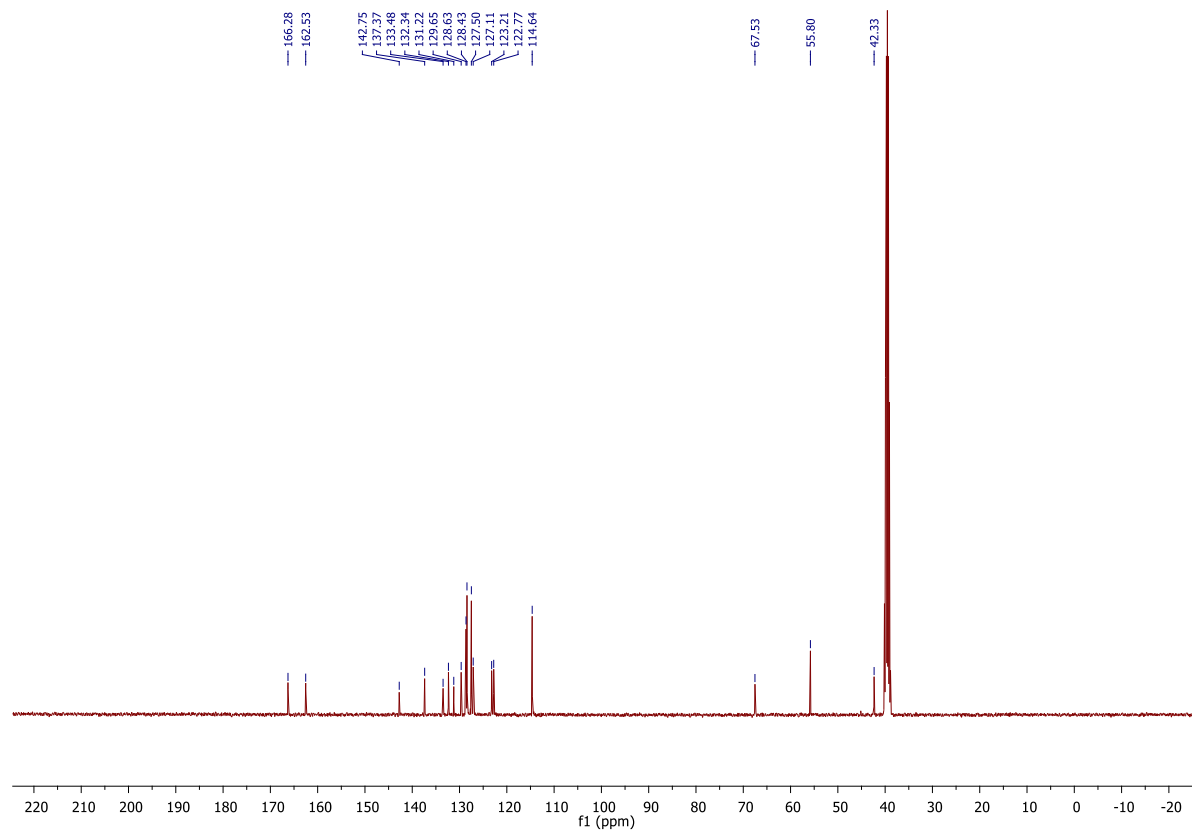


1.51. *N*-(2-benzyl-3-oxo-2,3-dihydro-1*H*-isoindol-1-yl)-4-methoxybenzene-1-sulfonamide (240b)

<sup>1</sup>H NMR (400 MHz, DMSO-d<sub>6</sub>)

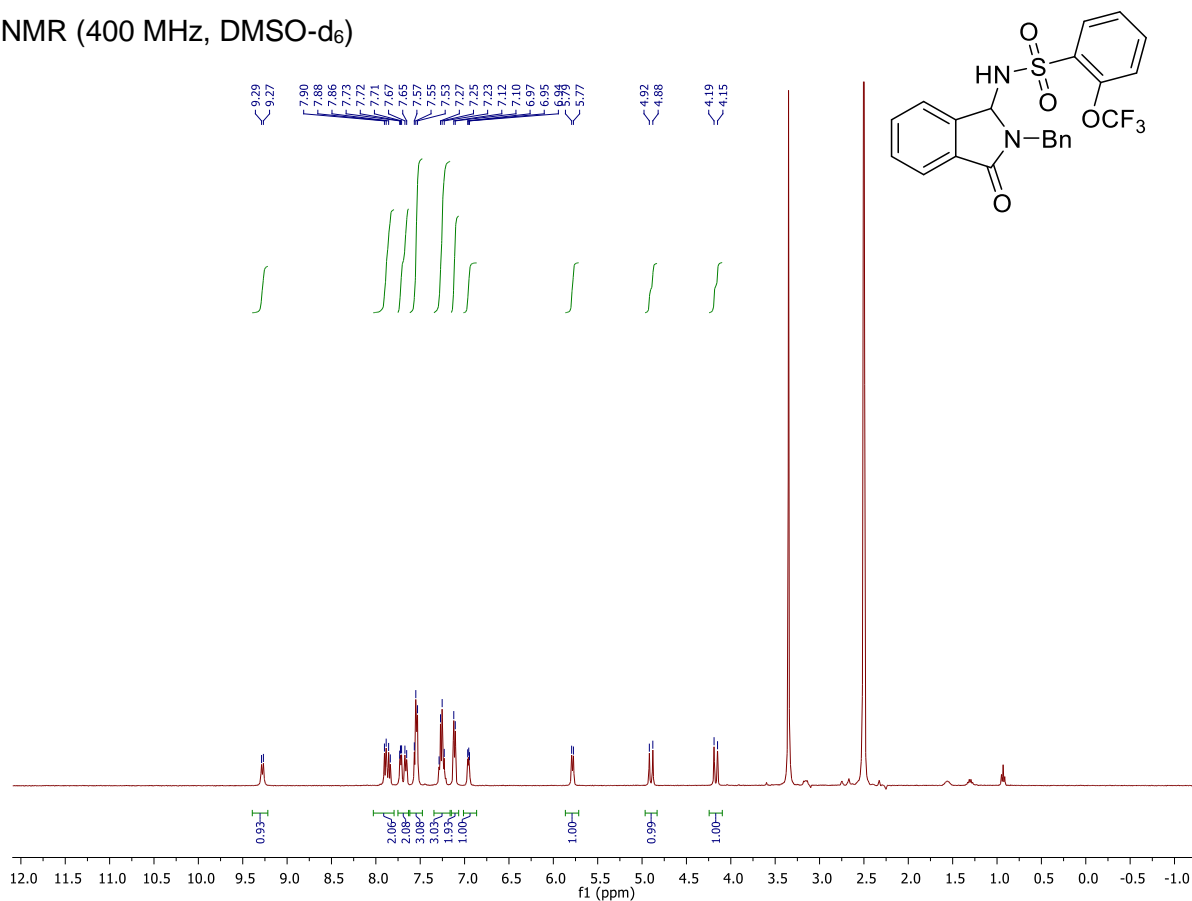


<sup>13</sup>C{<sup>1</sup>H} NMR (101 MHz, DMSO-d<sub>6</sub>)

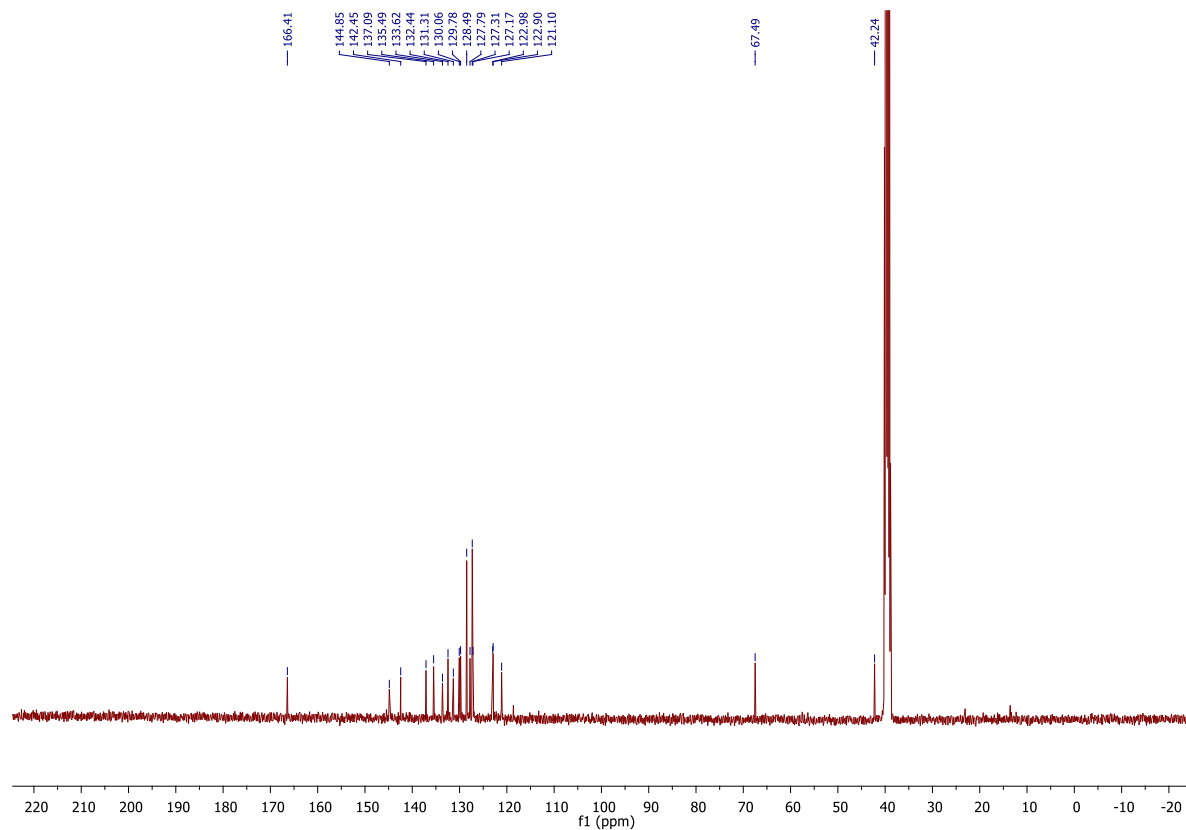


1.52. *N*-(2-benzyl-3-oxo-2,3-dihydro-1*H*-isoindol-1-yl)-2-(trifluoromethoxy)benzene-1-sulfonamide (240c)

<sup>1</sup>H NMR (400 MHz, DMSO-d<sub>6</sub>)

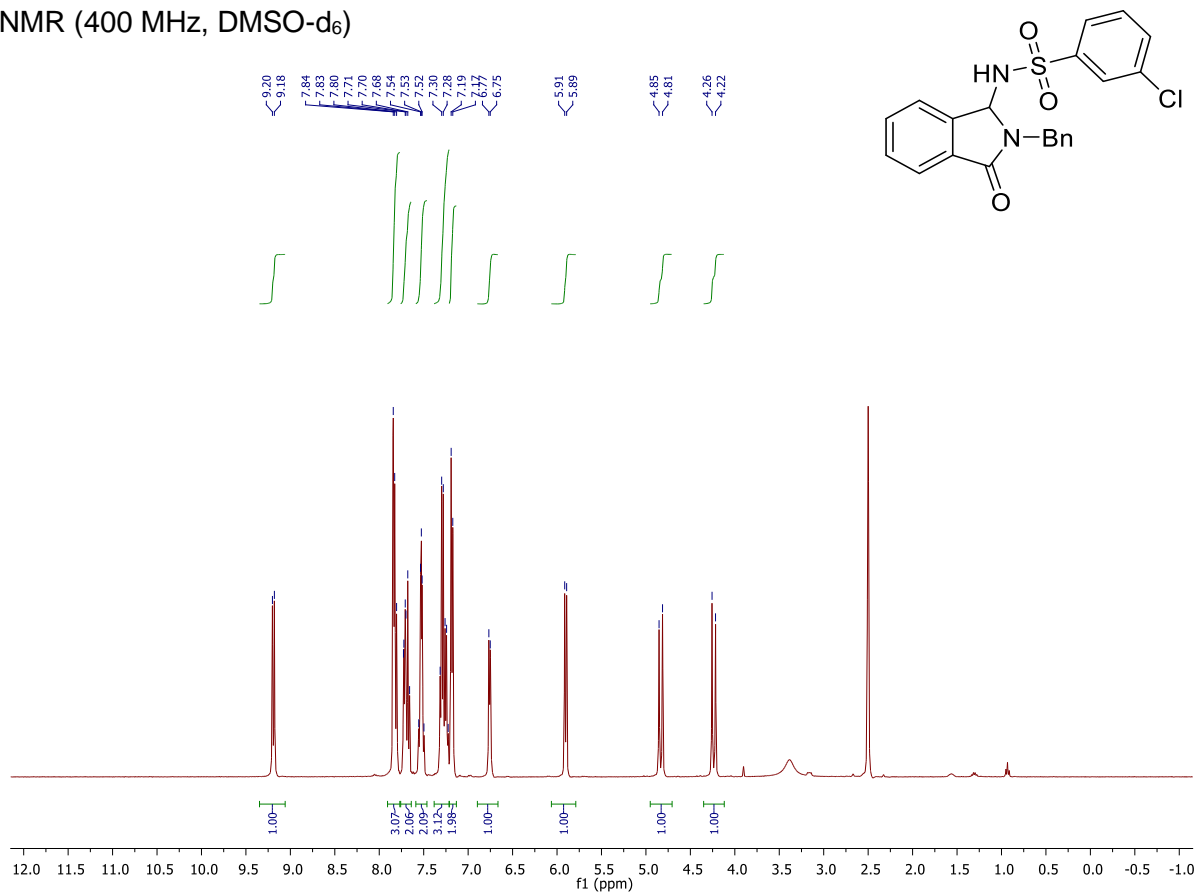


<sup>13</sup>C{<sup>1</sup>H} NMR (101 MHz, DMSO-d<sub>6</sub>)

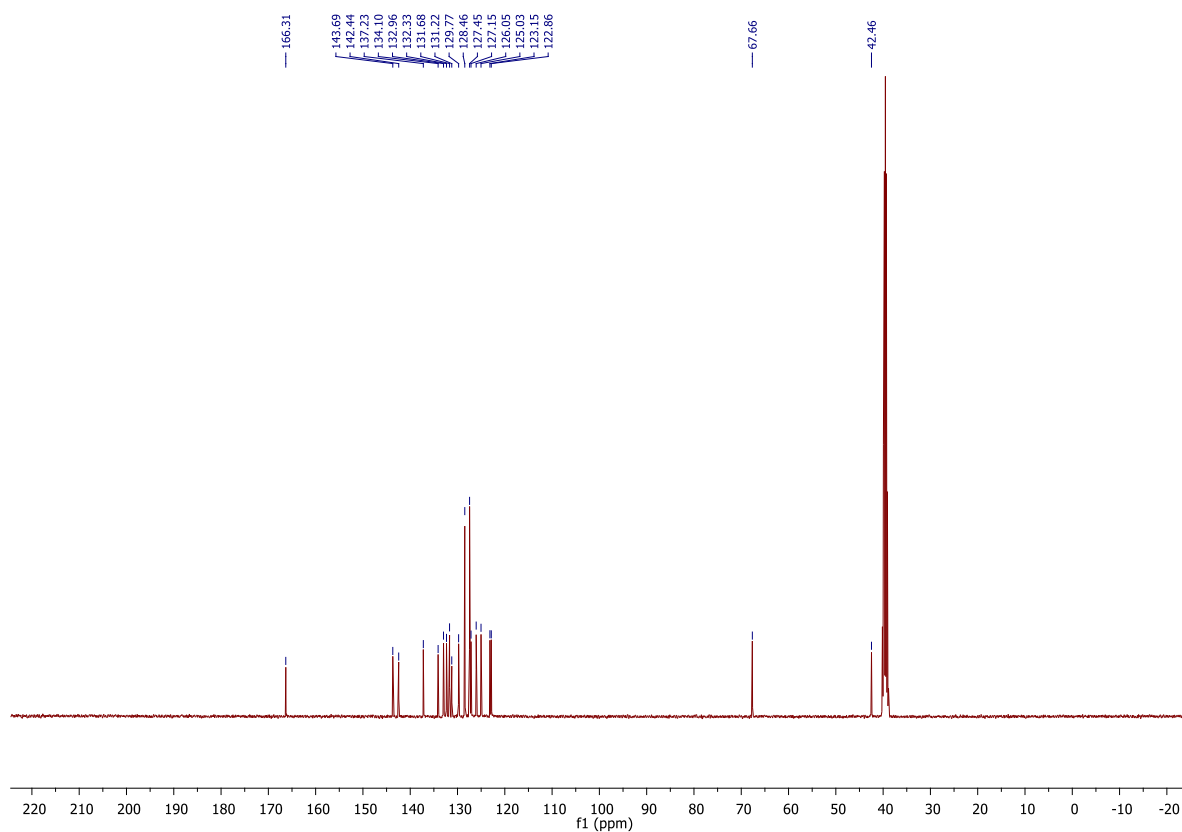


1.53. *N*-(2-benzyl-3-oxo-2,3-dihydro-1*H*-isoindol-1-yl)-3-chlorobenzene-1-sulfonamide (240d)

<sup>1</sup>H NMR (400 MHz, DMSO-d<sub>6</sub>)

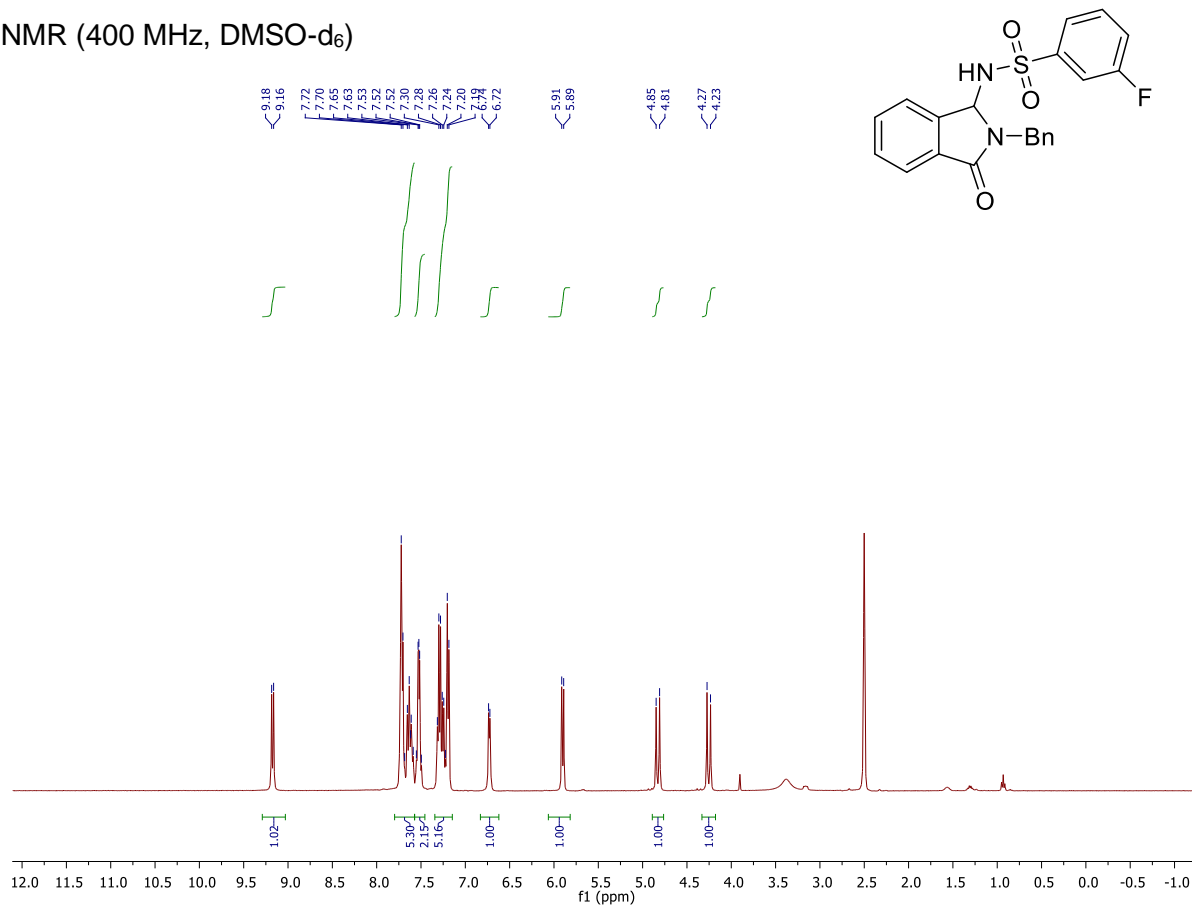


<sup>13</sup>C{<sup>1</sup>H} NMR (101 MHz, DMSO-d<sub>6</sub>)

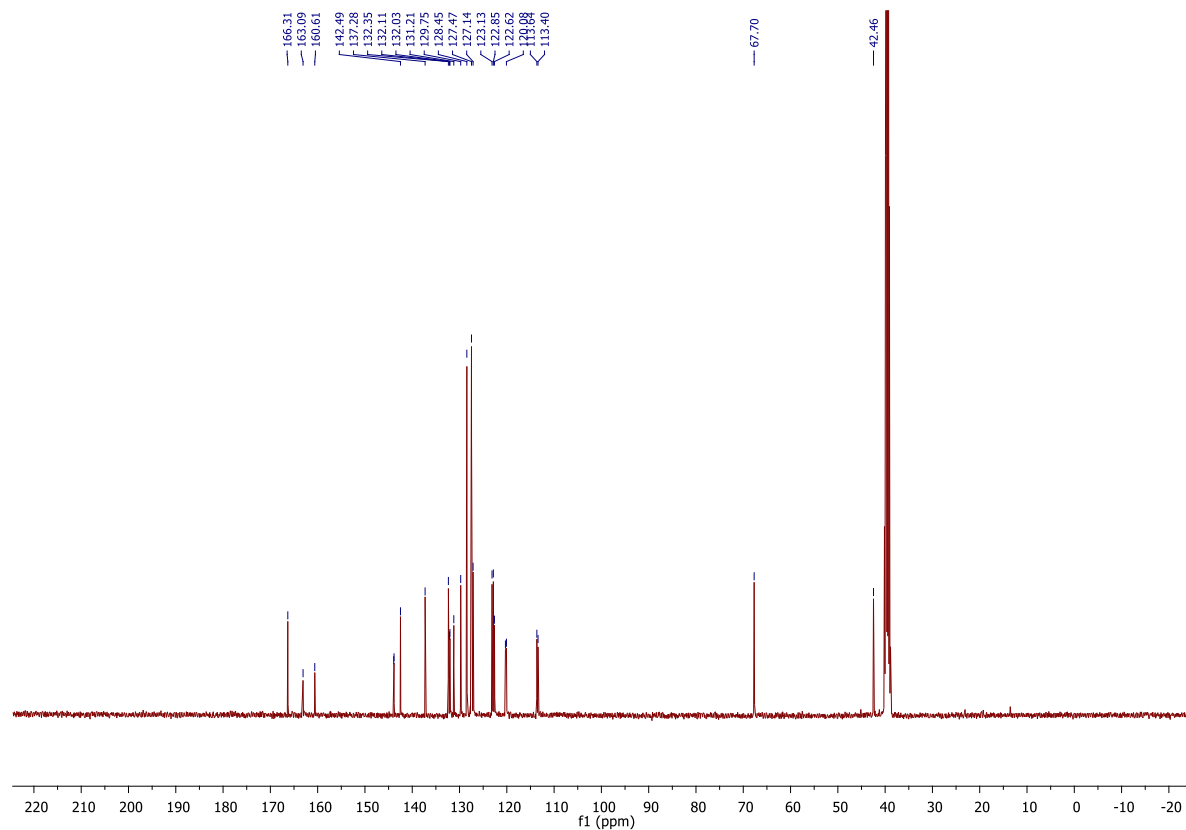


1.54. *N*-(2-benzyl-3-oxo-2,3-dihydro-1*H*-isoindol-1-yl)-3-fluorobenzene-1-sulfonamide (240e)

<sup>1</sup>H NMR (400 MHz, DMSO-d<sub>6</sub>)

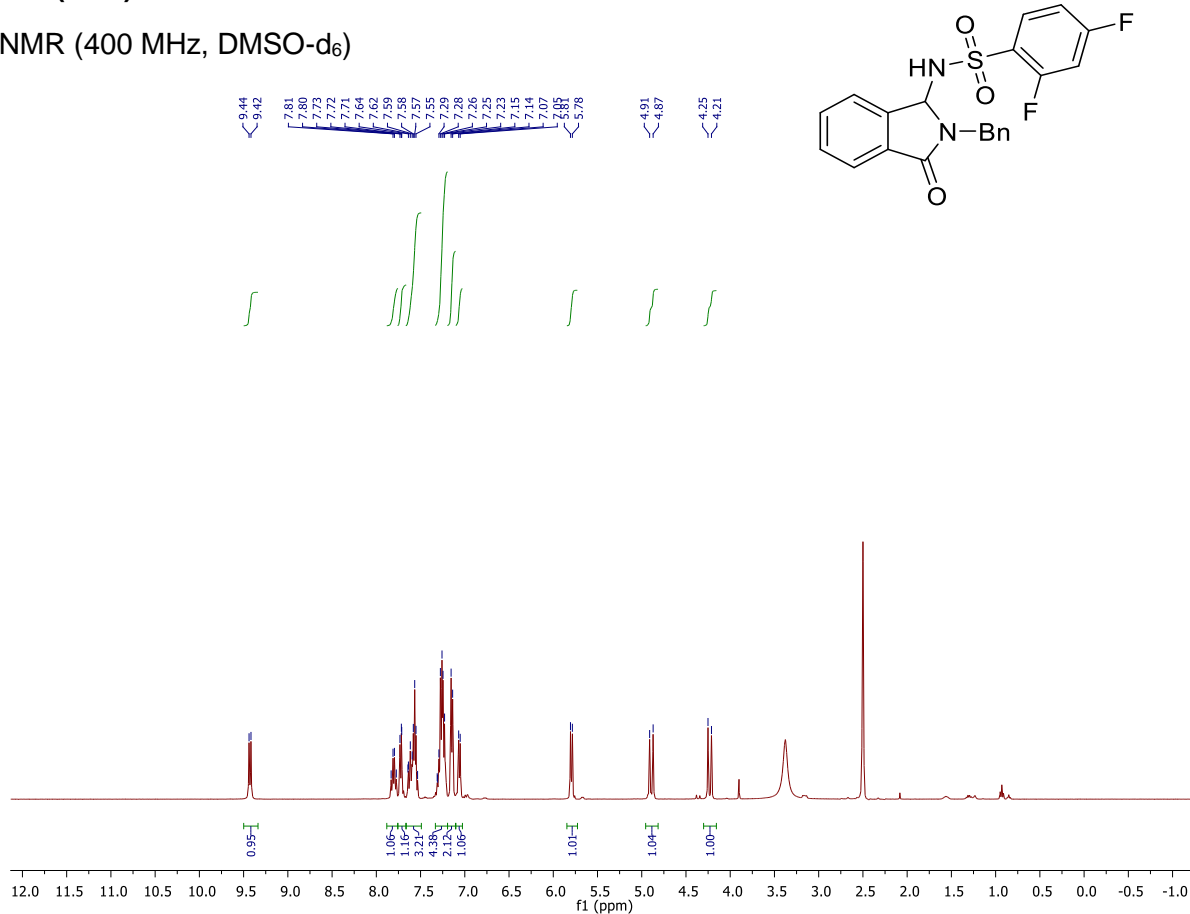


<sup>13</sup>C{<sup>1</sup>H} NMR (101 MHz, DMSO-d<sub>6</sub>)

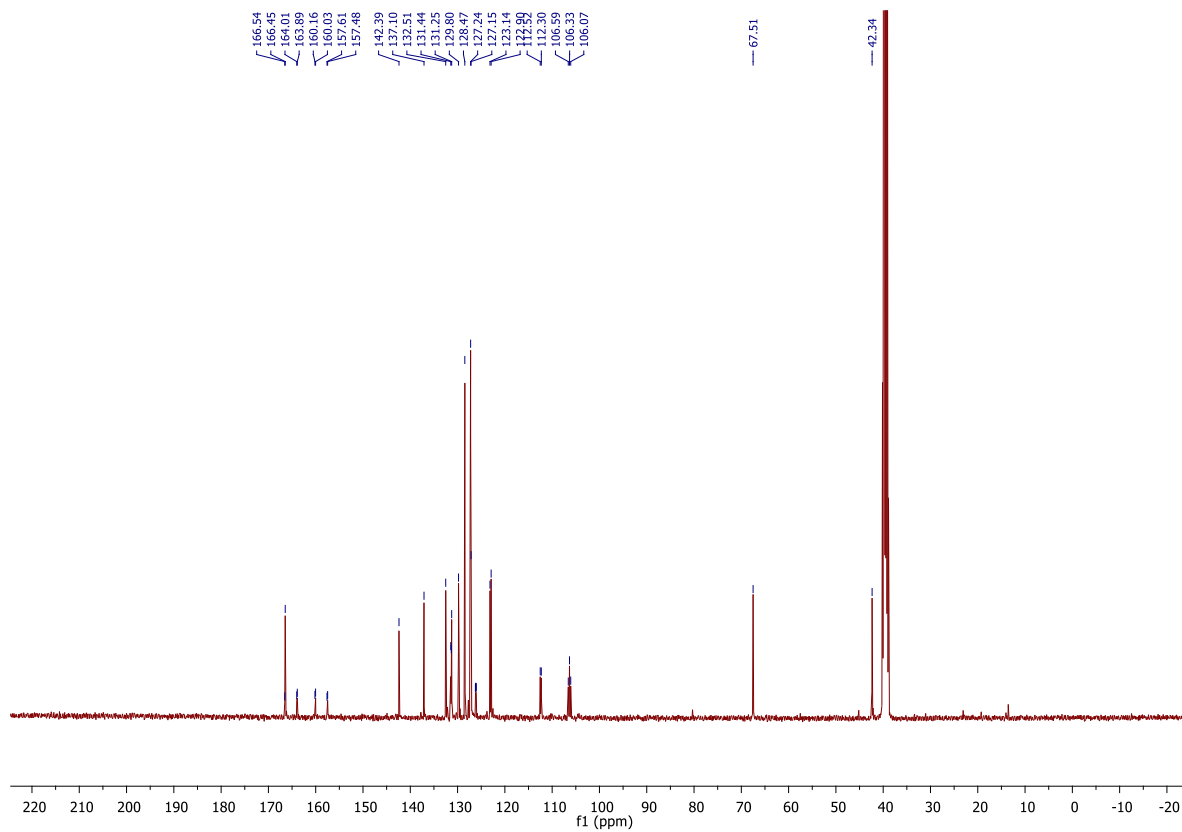


1.55. *N*-(2-benzyl-3-oxo-2,3-dihydro-1*H*-isoindol-1-yl)-2,4-difluorobenzene-1-sulfonamide (240f)

<sup>1</sup>H NMR (400 MHz, DMSO-d<sub>6</sub>)



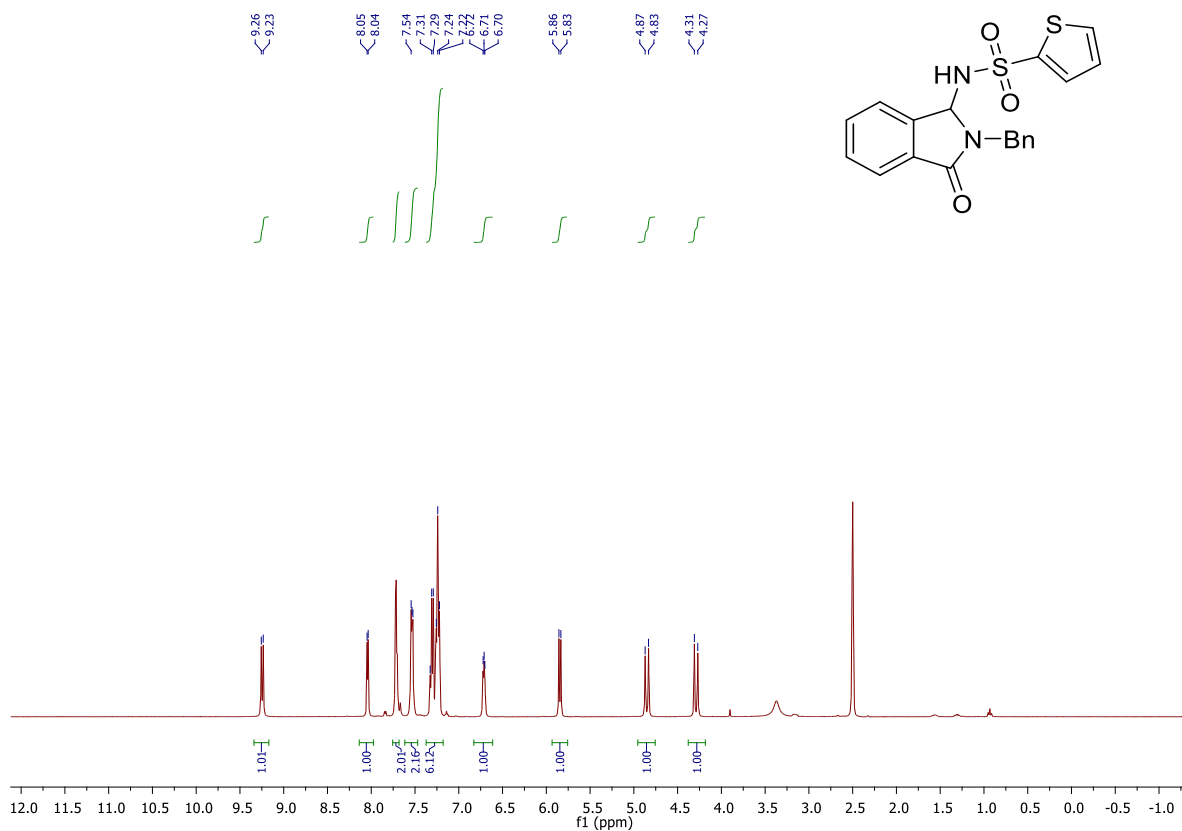
<sup>13</sup>C{<sup>1</sup>H} NMR (101 MHz, DMSO-d<sub>6</sub>)



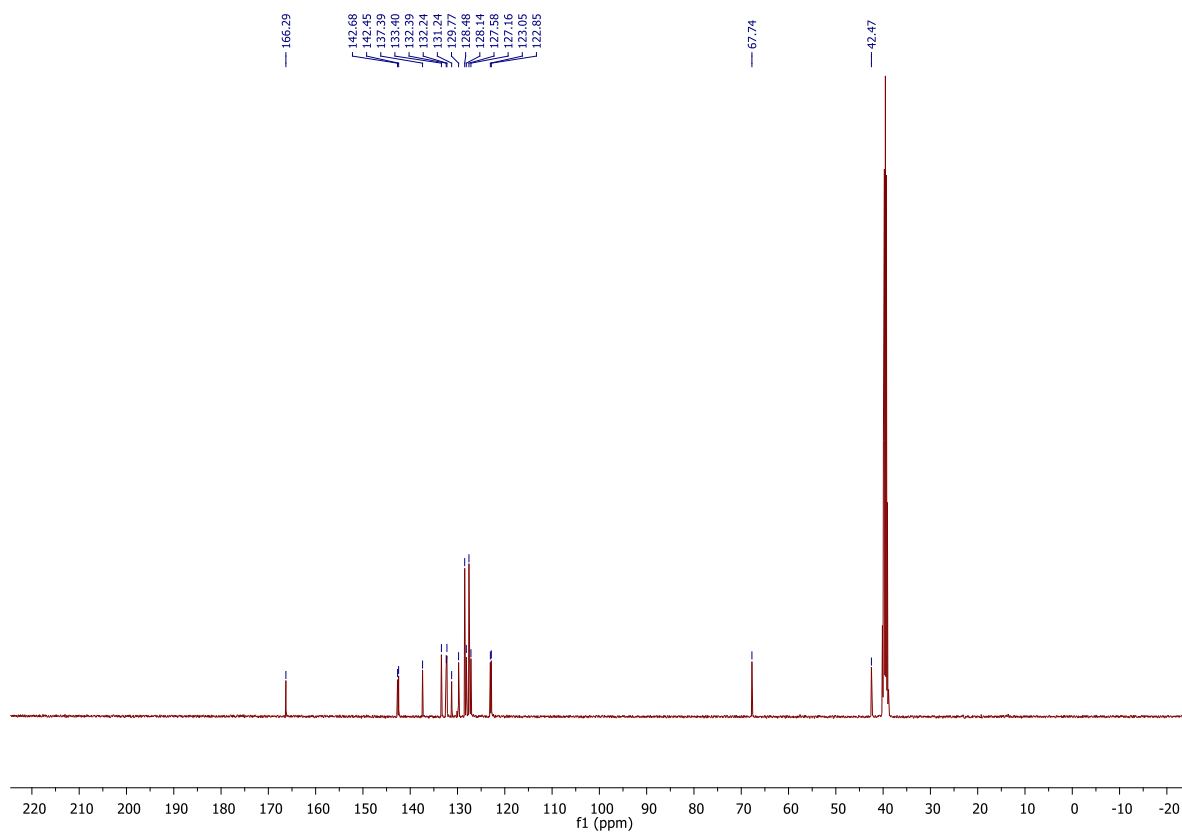


1.56. *N*-(2-benzyl-3-oxo-2,3-dihydro-1*H*-isoindol-1-yl)thiophene-2-sulfonamide (240g)

<sup>1</sup>H NMR (400 MHz, DMSO-d<sub>6</sub>)

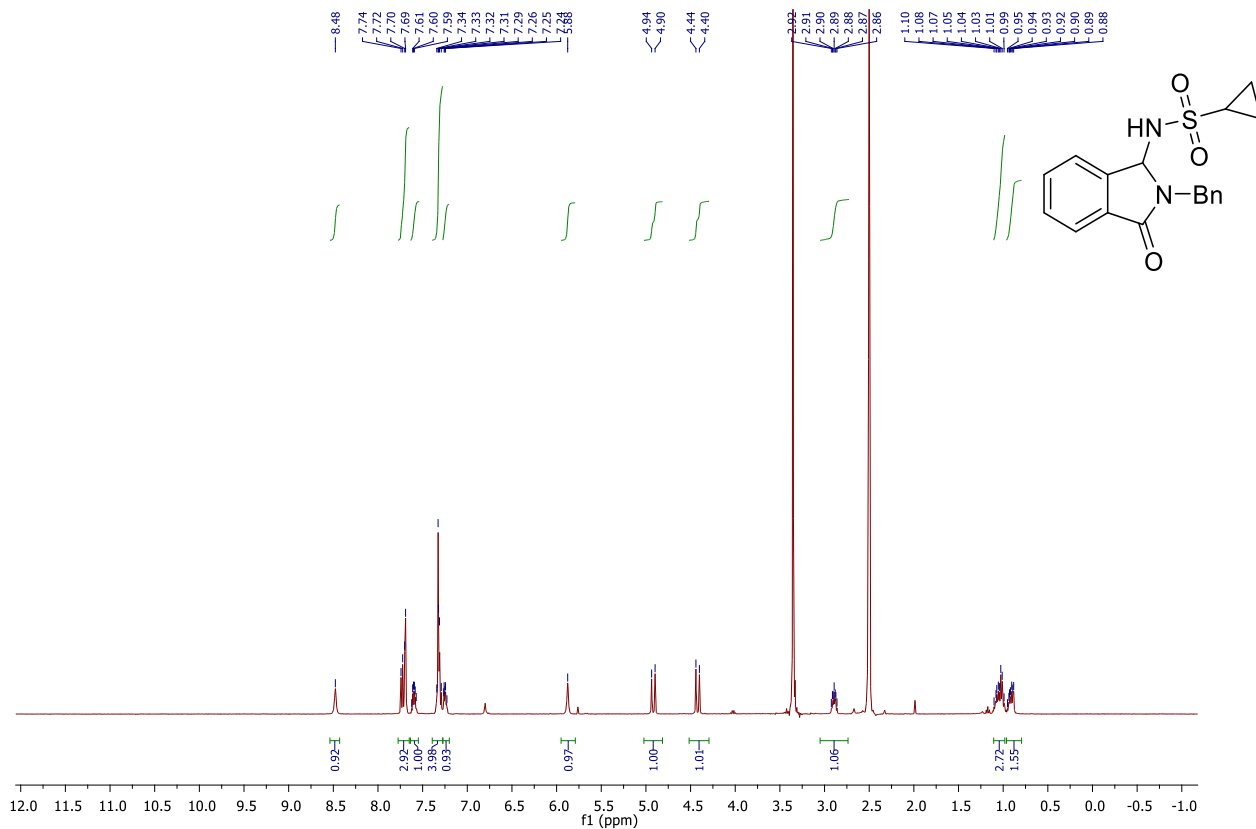


<sup>13</sup>C{<sup>1</sup>H} NMR (101 MHz, DMSO-d<sub>6</sub>)

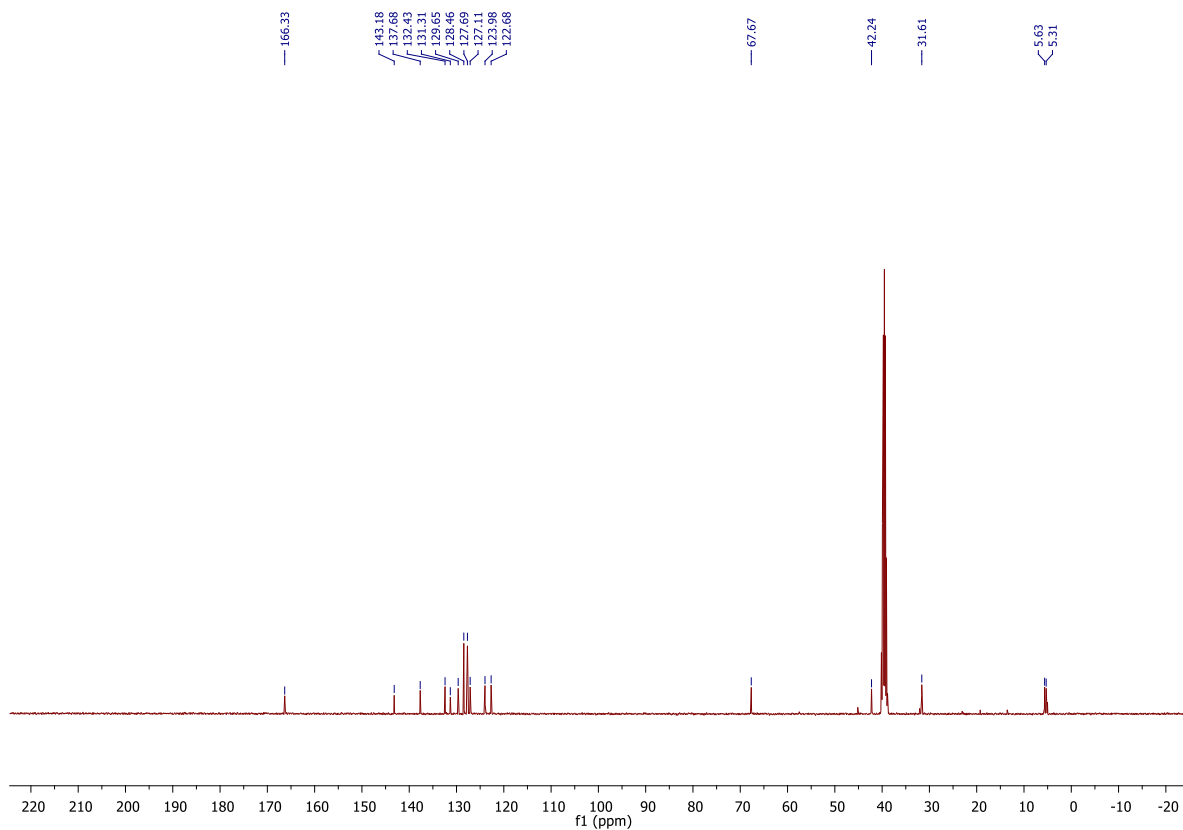


1.57. *N*-(2-benzyl-3-oxo-2,3-dihydro-1*H*-isoindol-1-yl)cyclopropanesulfonamide (240h)

<sup>1</sup>H NMR (400 MHz, DMSO-d<sub>6</sub>)



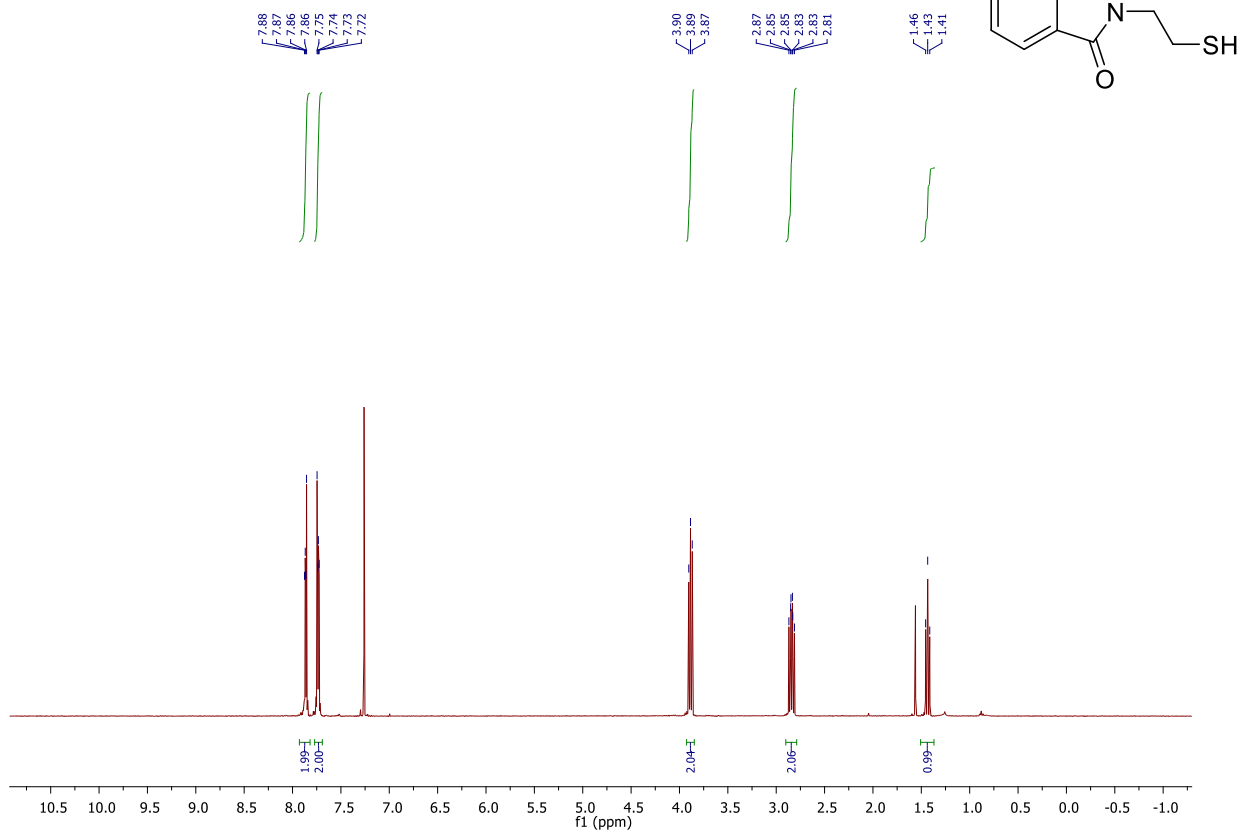
<sup>13</sup>C{<sup>1</sup>H} NMR (101 MHz, DMSO-d<sub>6</sub>)



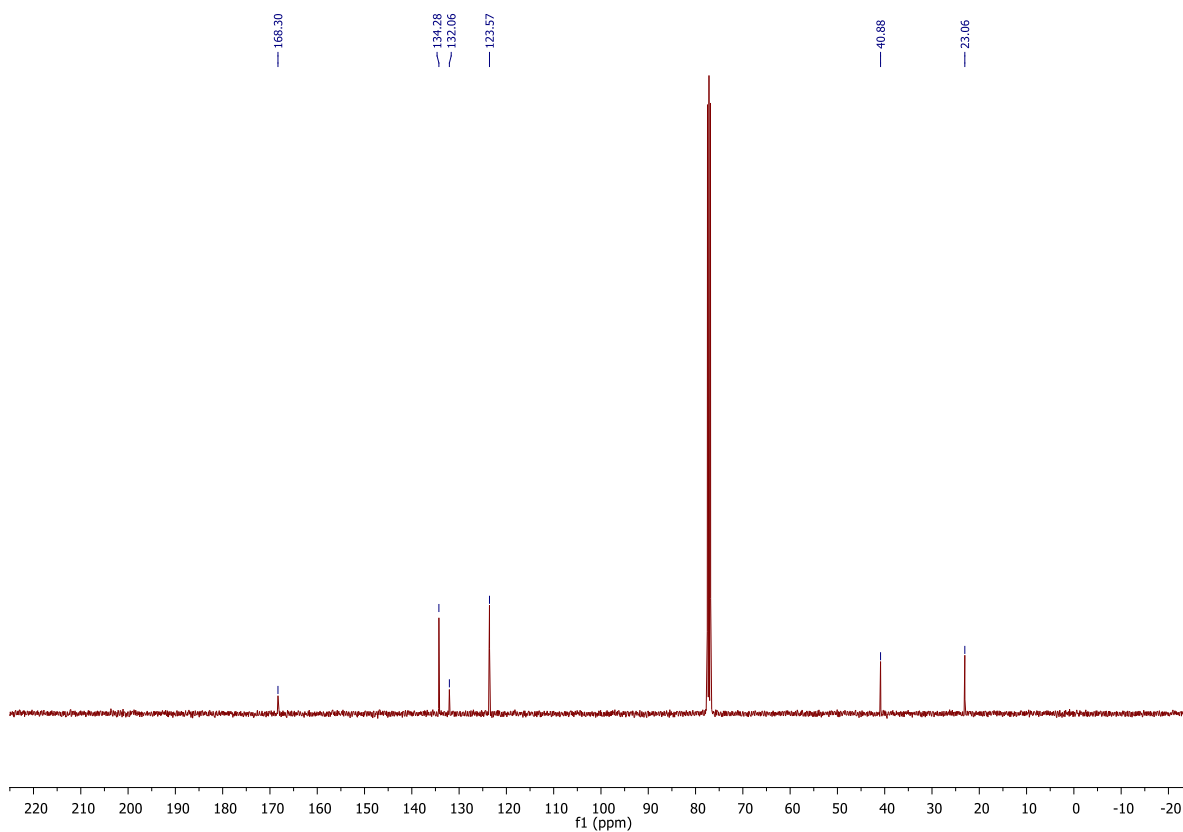
### Chapter 3

#### 1.58. N-(2-mercaptoethyl)-phthalimide (310)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

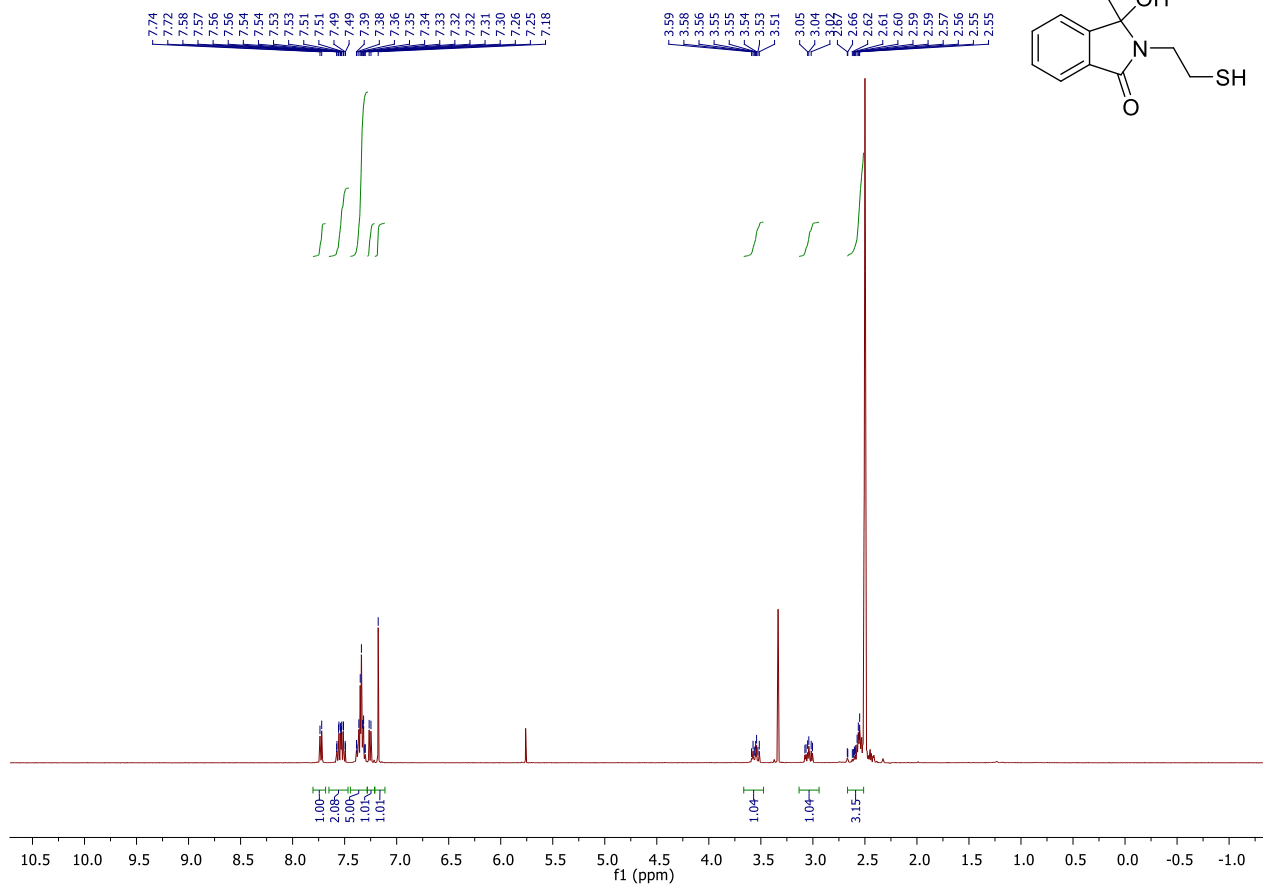
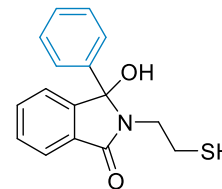


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

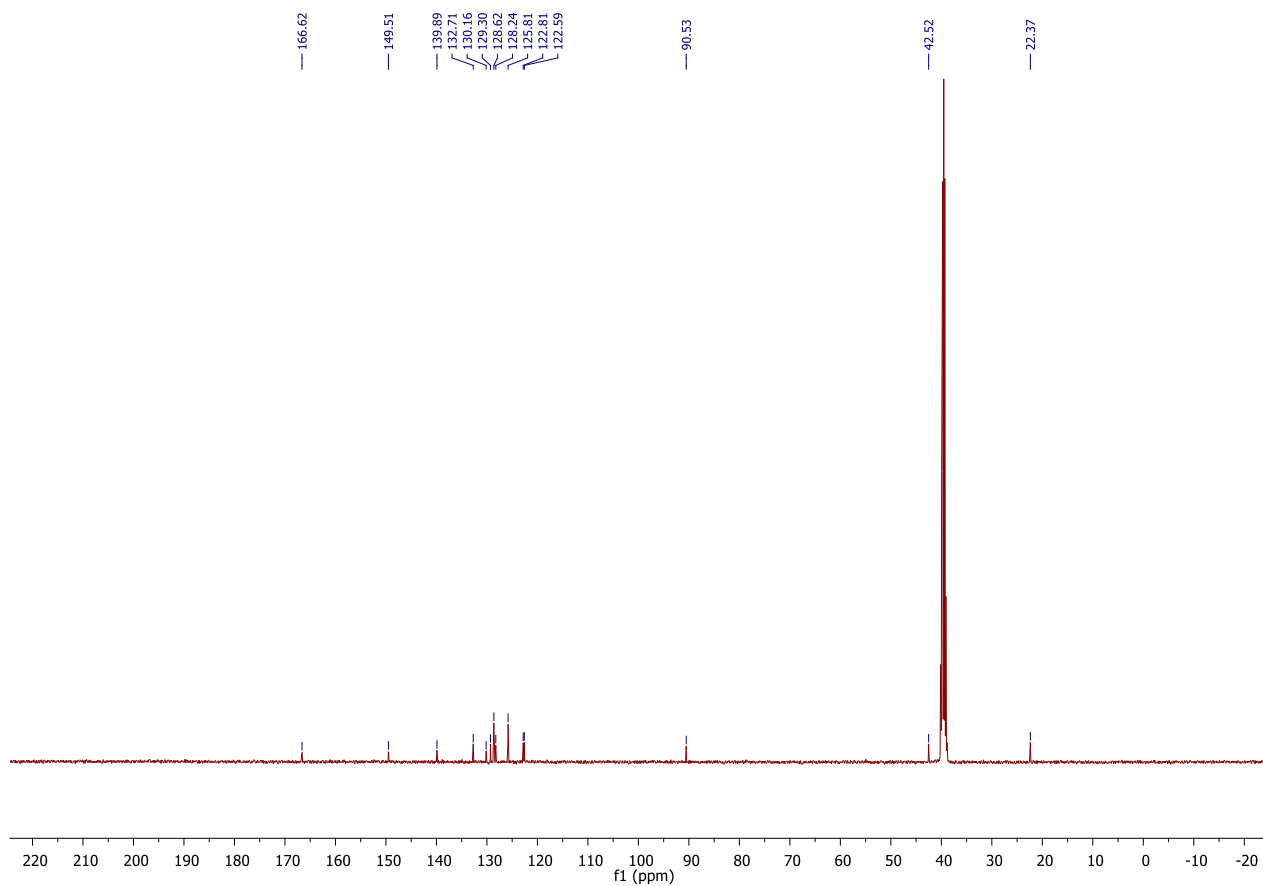


### 1.59. 3-hydroxy-3-phenyl-2-(2-sulfanylethyl)isoindolin-1-one (311a)

$^1\text{H}$  NMR (400 MHz, DMSO- $d_6$ )

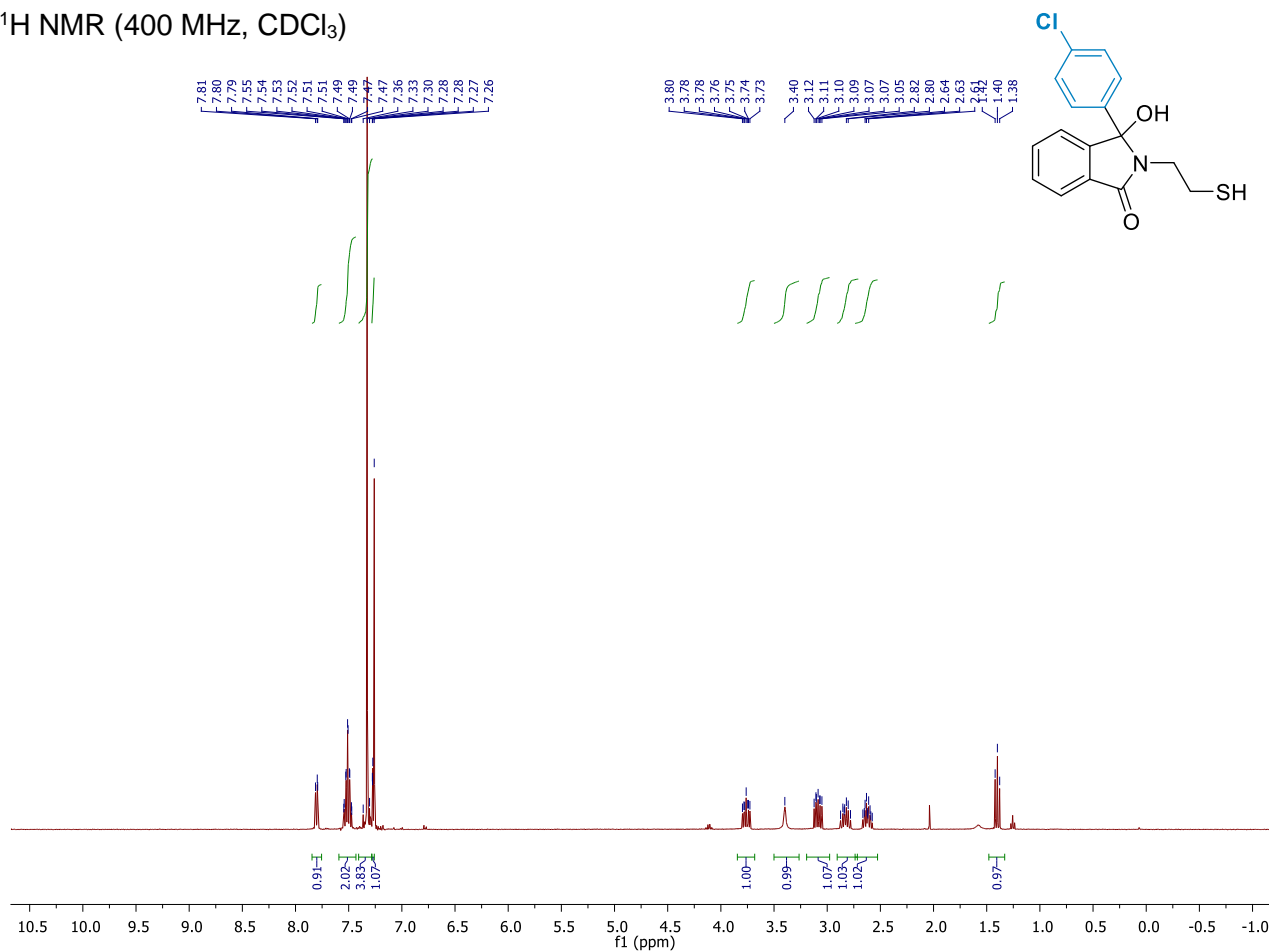


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz, DMSO- $d_6$ )

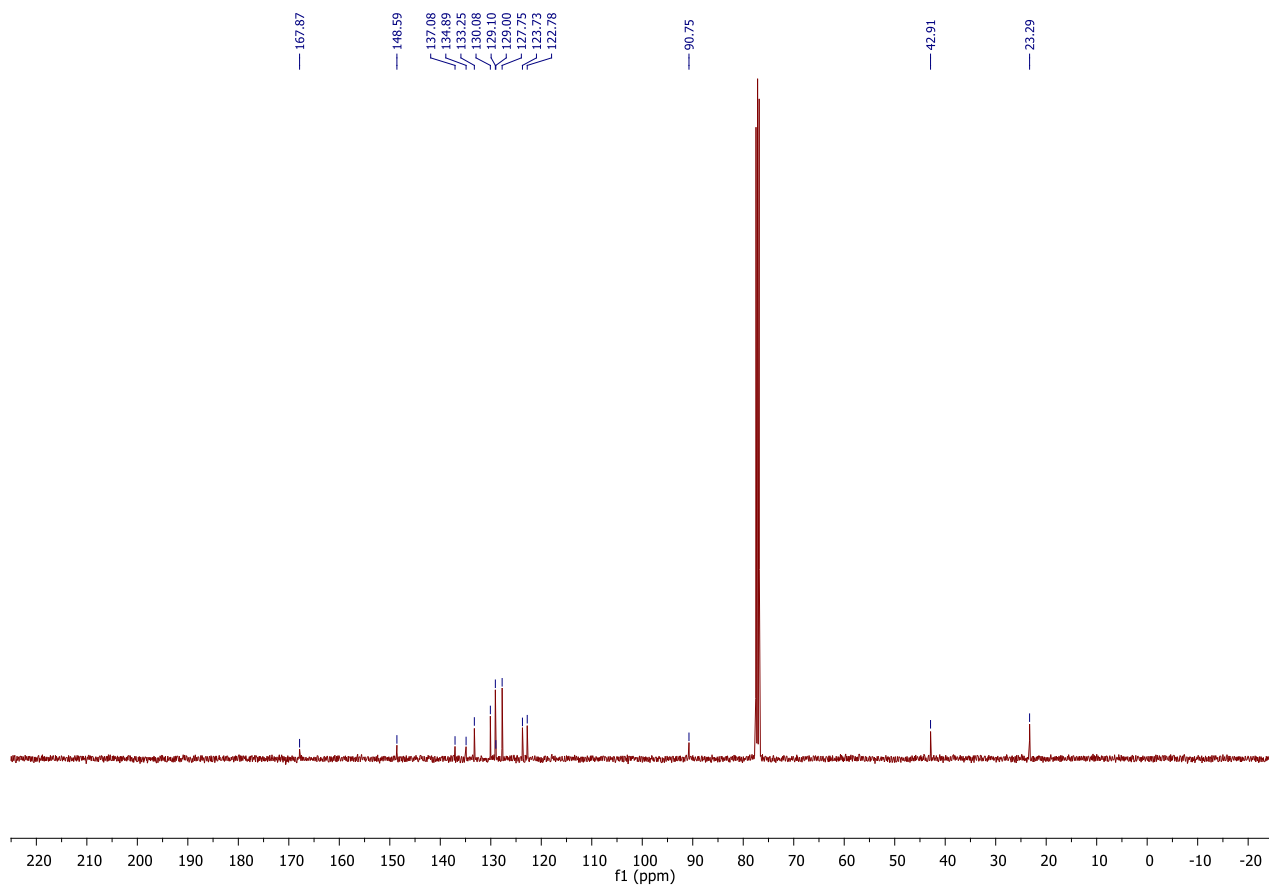


### 1.60. 3-(4-chlorophenyl)-3-hydroxy-2-(2-sulfanylethyl)isoindolin-1-one (311b)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

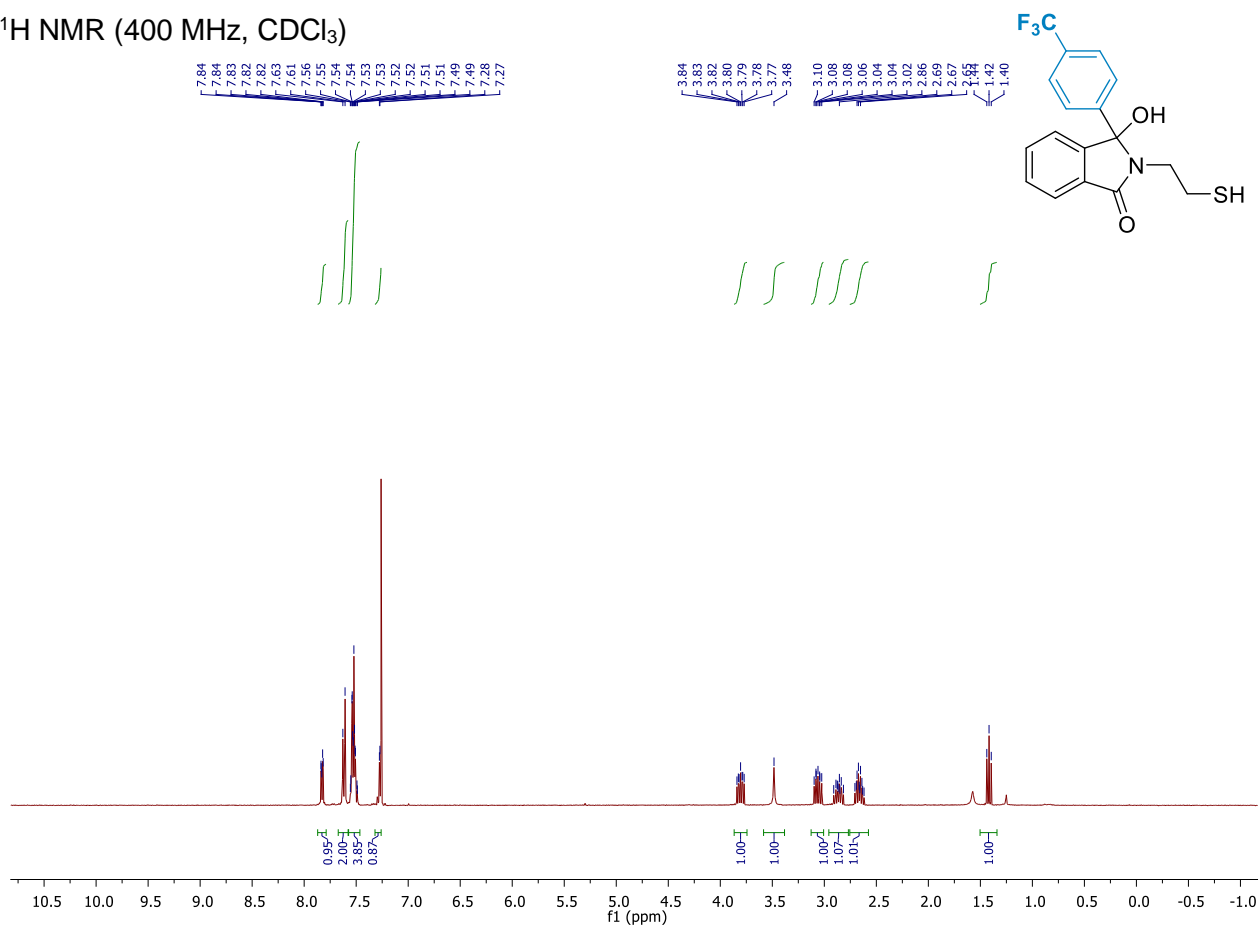


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

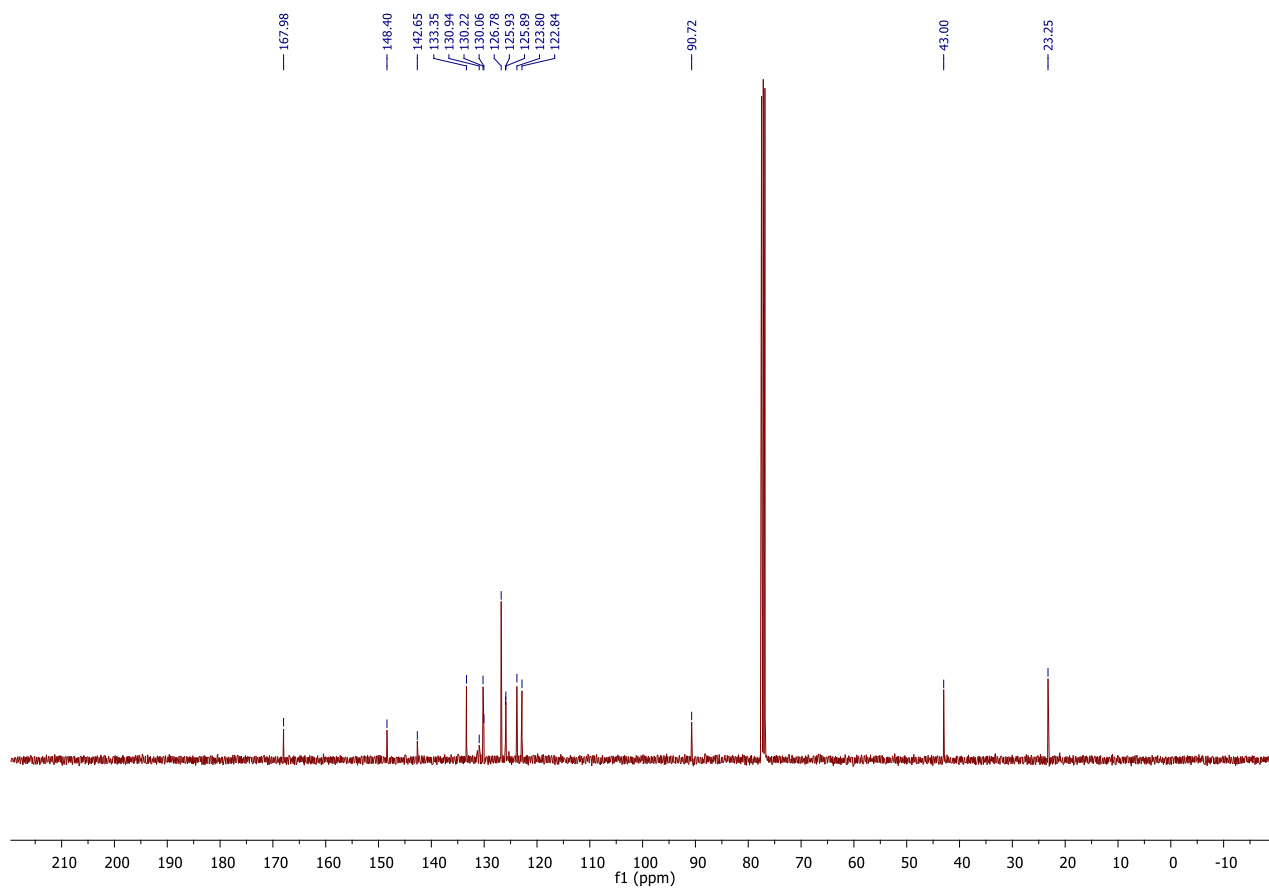


### 1.61. 3-hydroxy-2-(2-sulfanylethyl)-3-[4-(trifluoromethyl)phenyl]isoindolin-1-one (311c)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

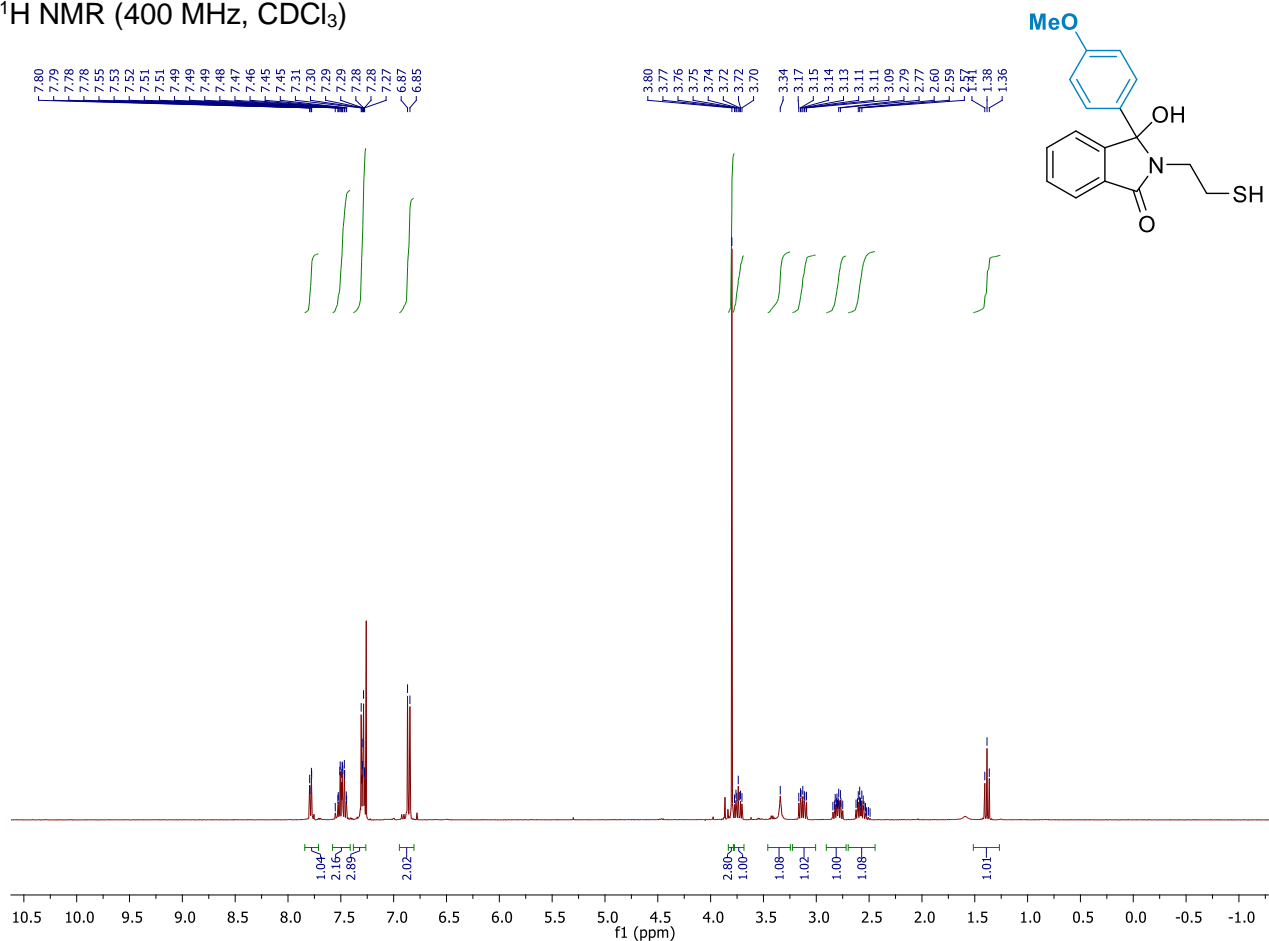


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

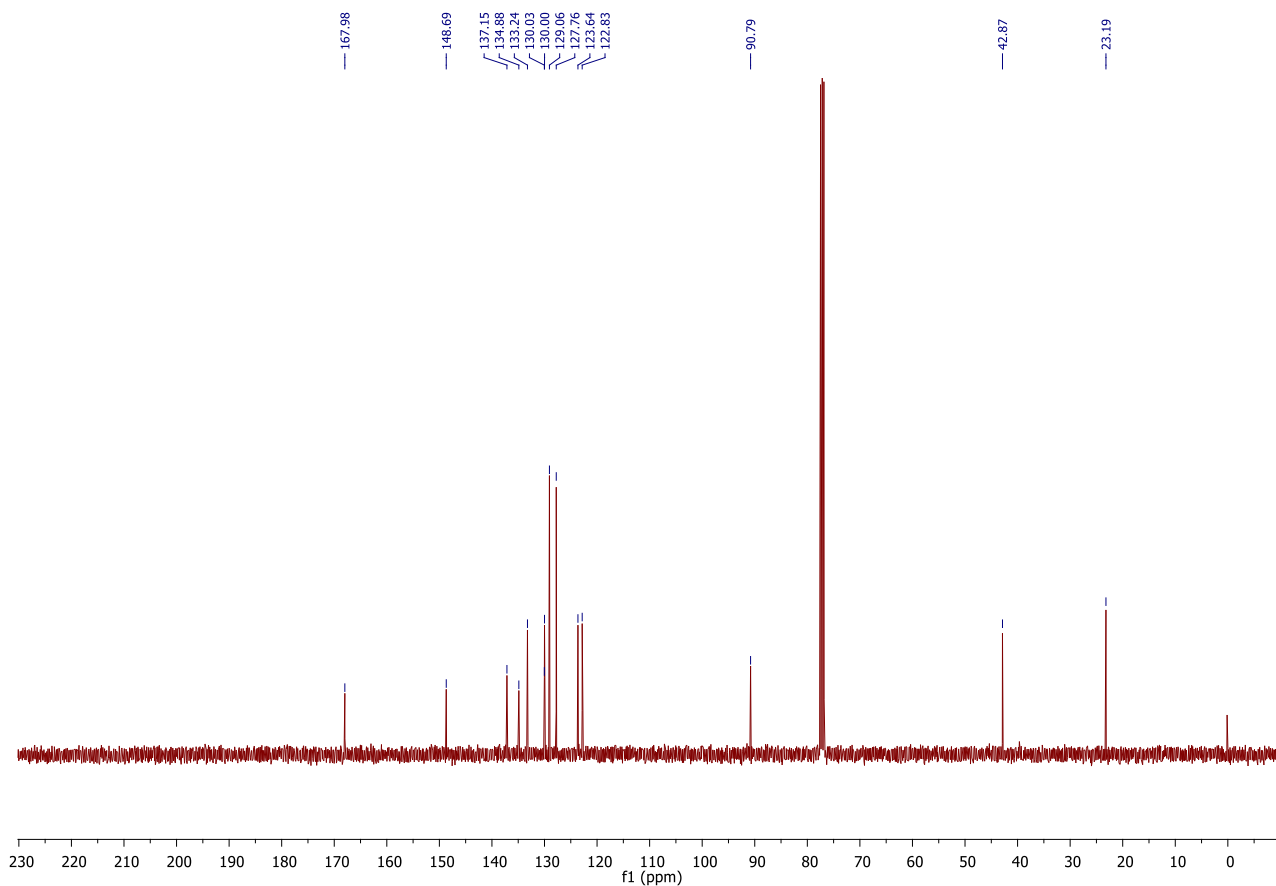


### 1.62. 3-hydroxy-3-(4-methoxyphenyl)-2-(2-sulfanylethyl)isoindolin-1-one (311d)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

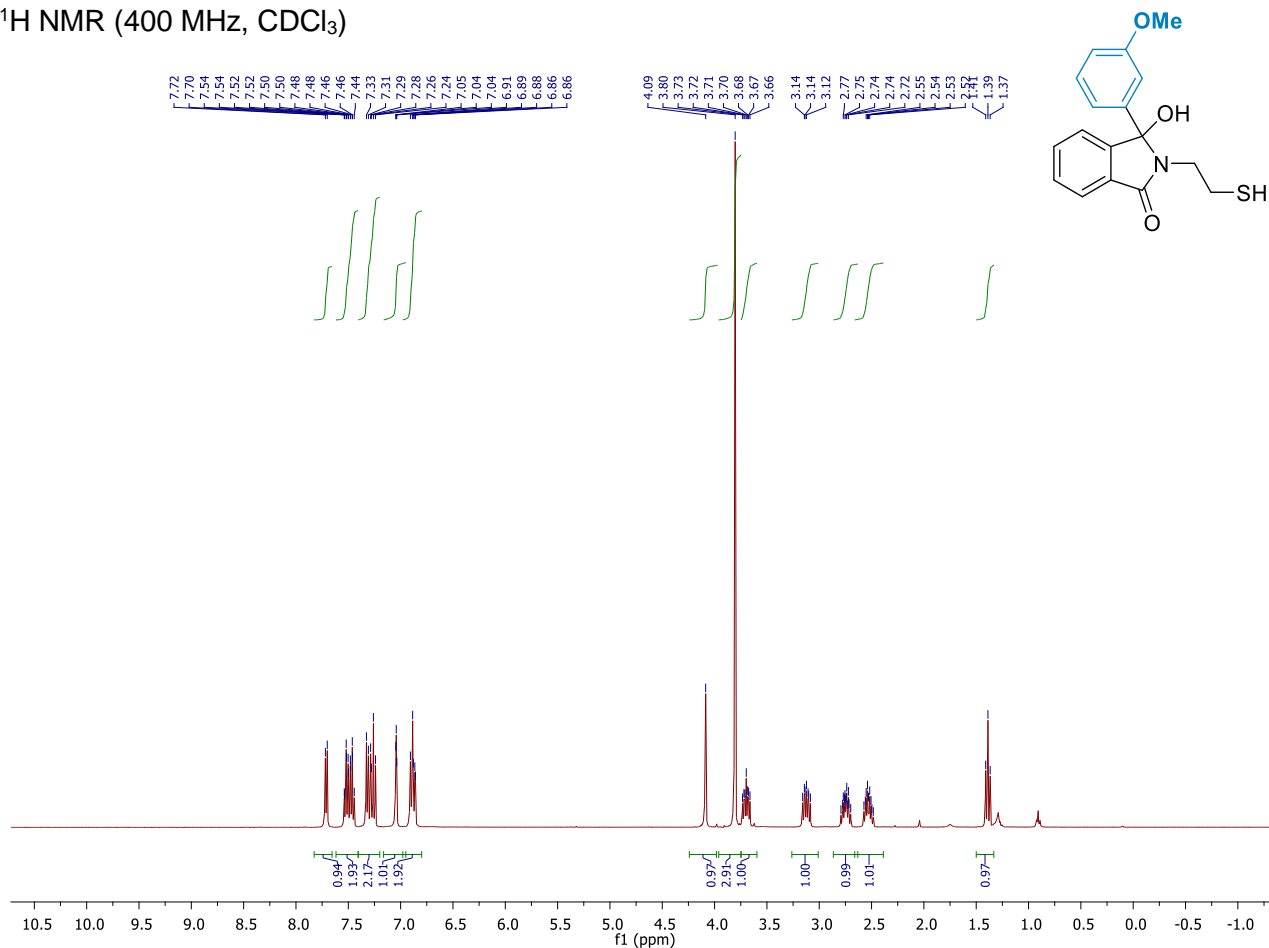


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

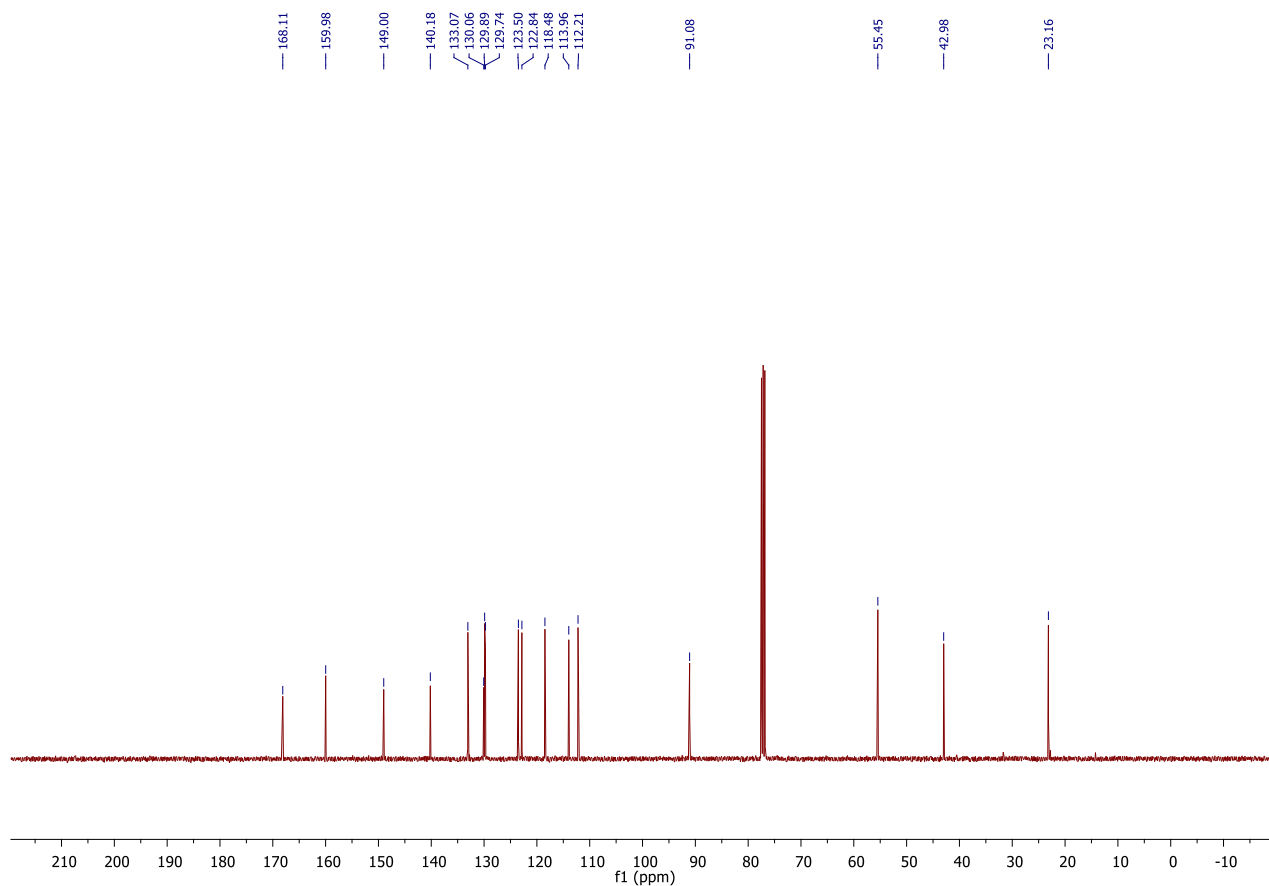


1.63. 3-hydroxy-3-(3-methoxyphenyl)-2-(2-sulfanylethyl)isoindolin-1-one (311e)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )



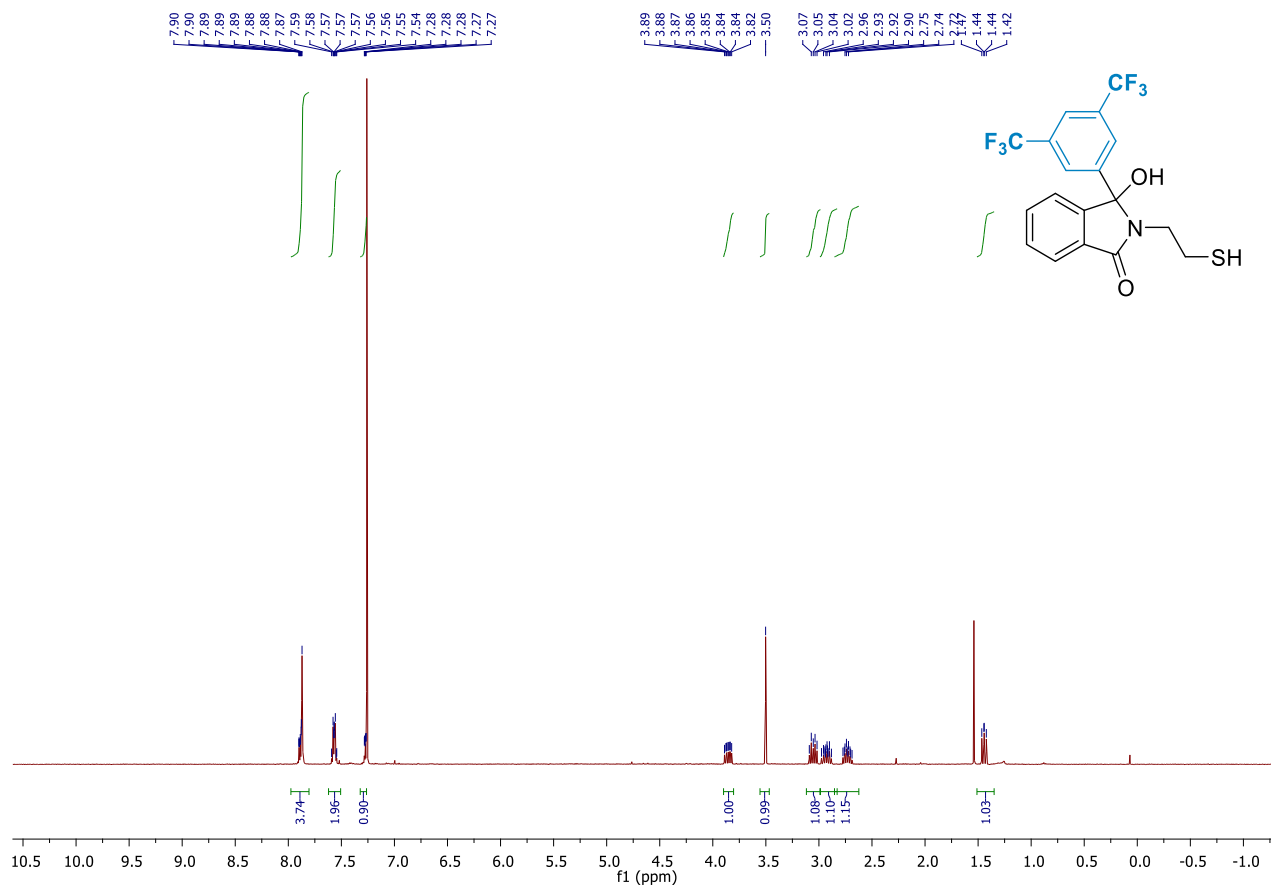
$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )



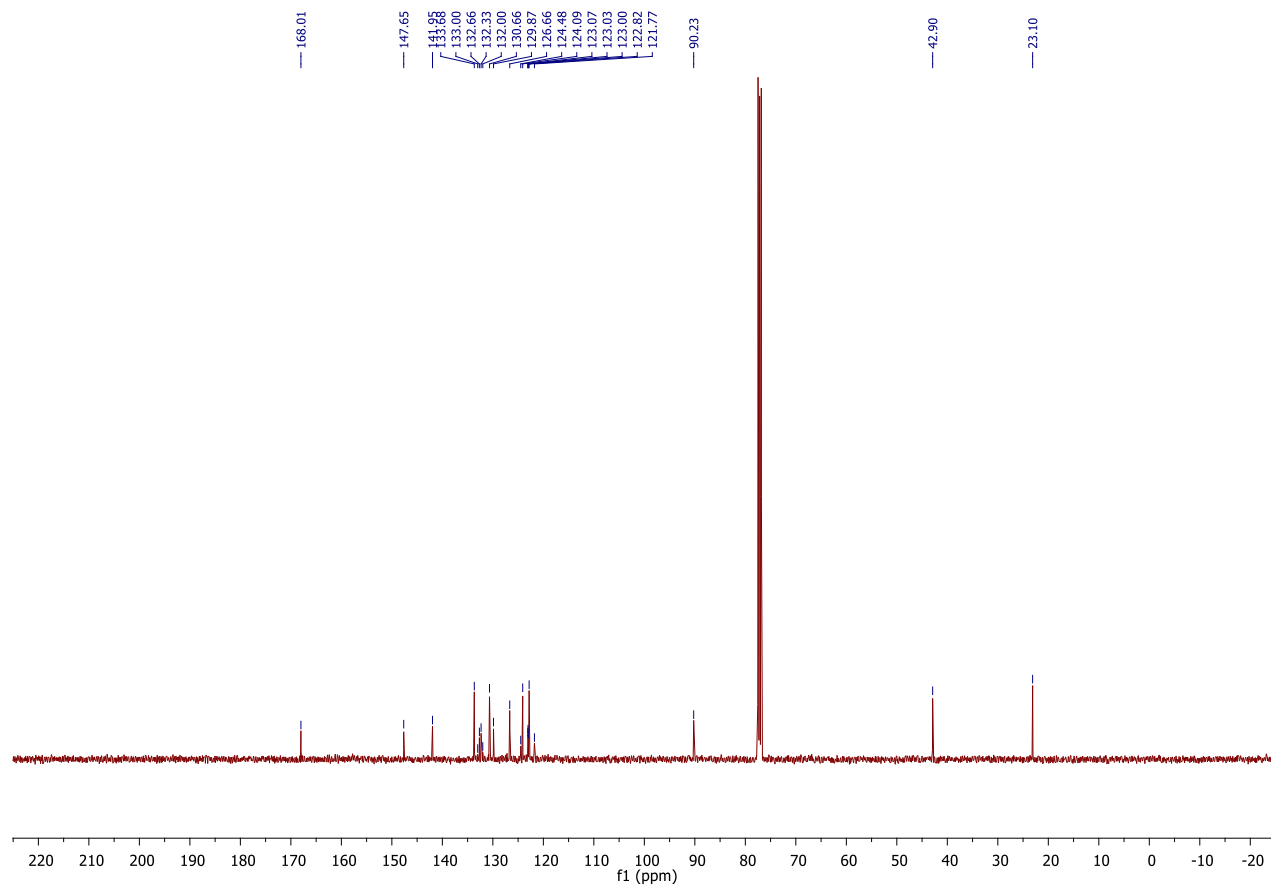


### 1.64. 3-[3,5-bis(trifluoromethyl)phenyl]-3-hydroxy-2-(2-sulfanylethyl)isoindolin-1-one (311f)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

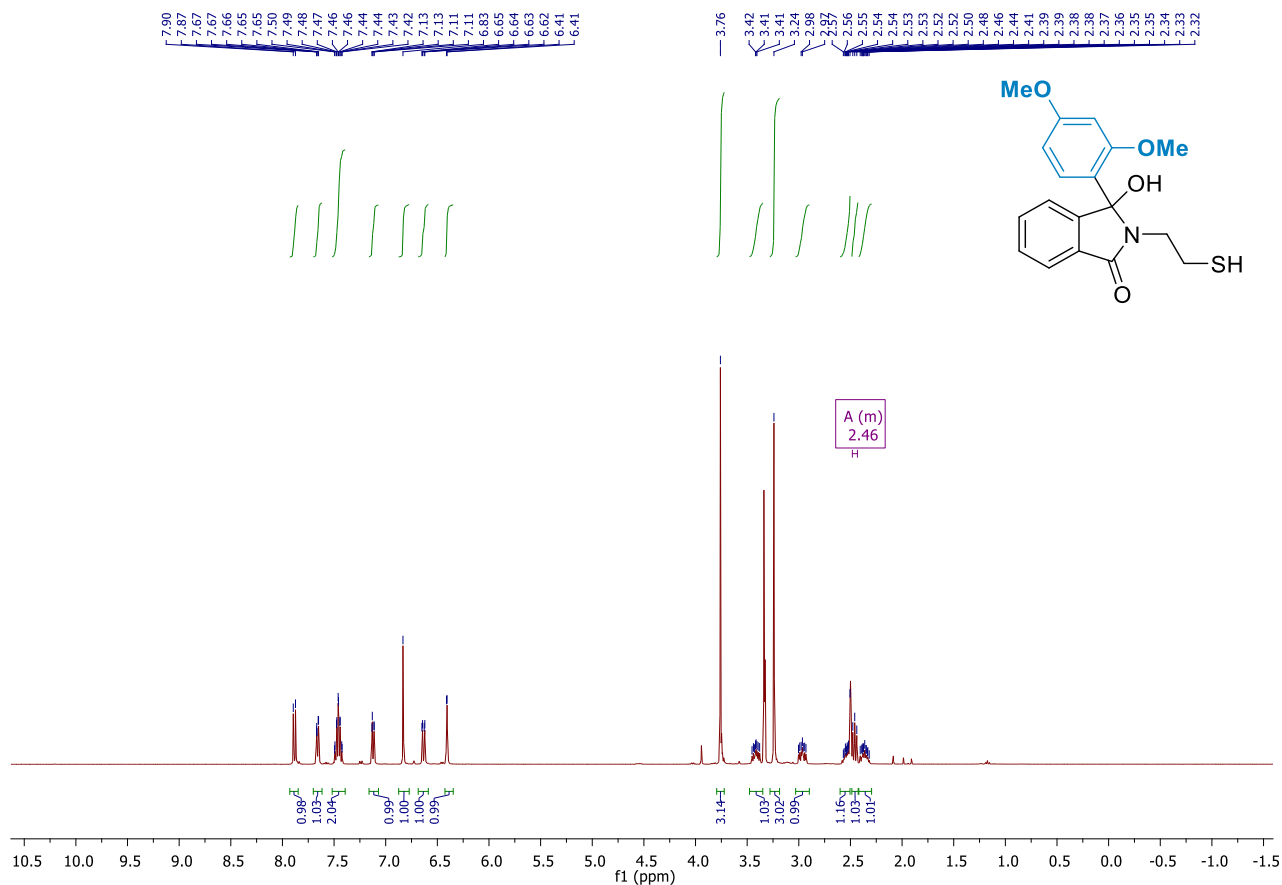


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

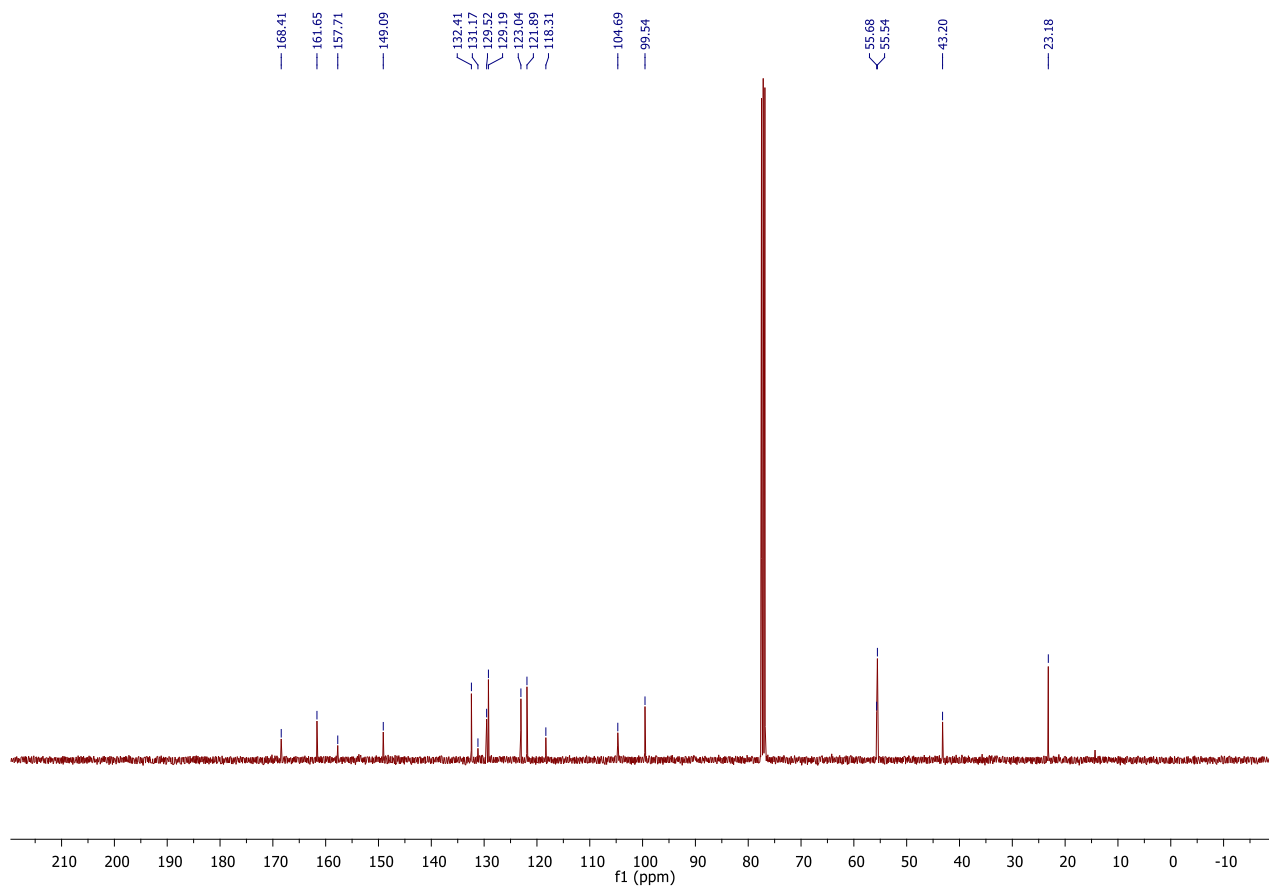


### 1.65. 3-(2,4-dimethoxyphenyl)-3-hydroxy-2-(2-sulfanylethyl)isoindolin-1-one (311g)

$^1\text{H}$  NMR (400 MHz,  $\text{DMSO-d}_6$ )

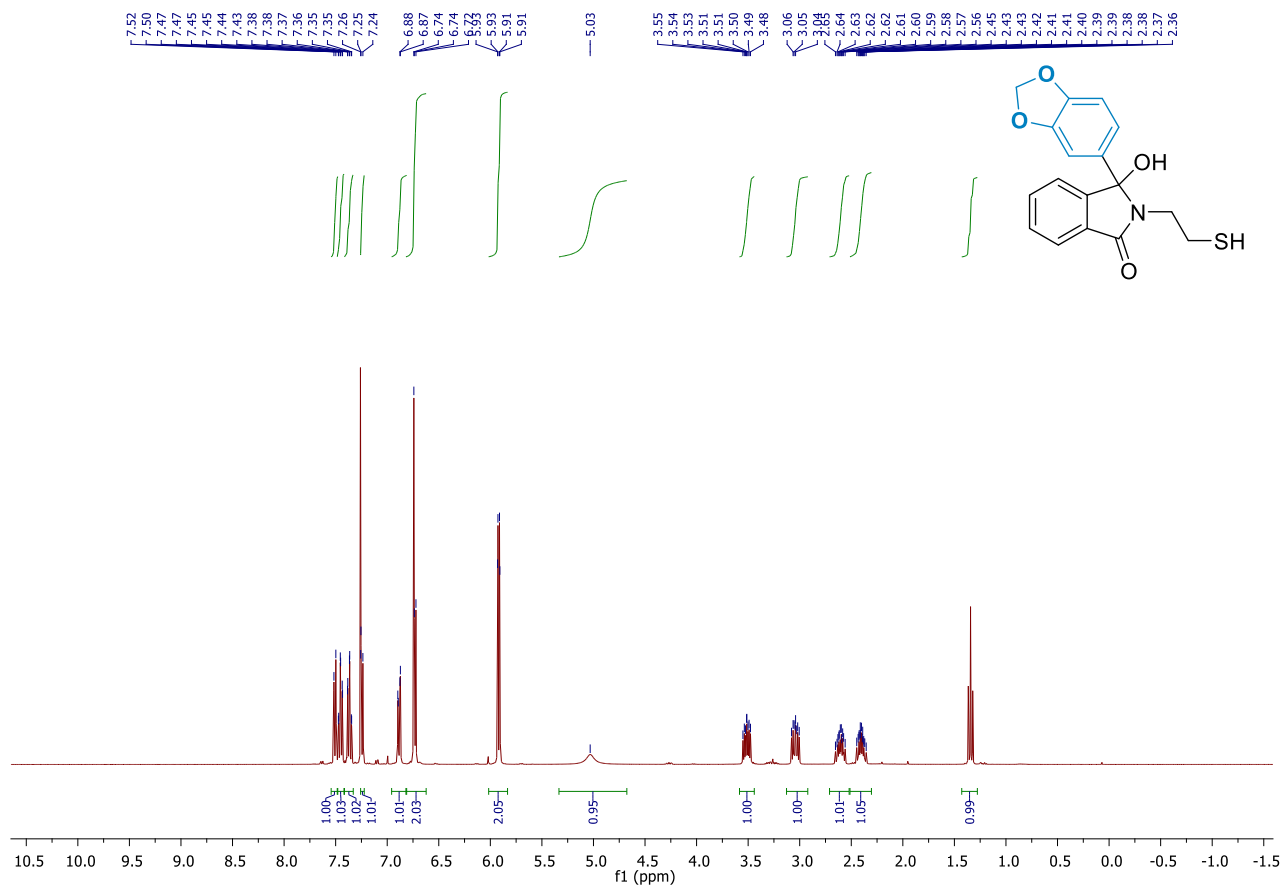


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

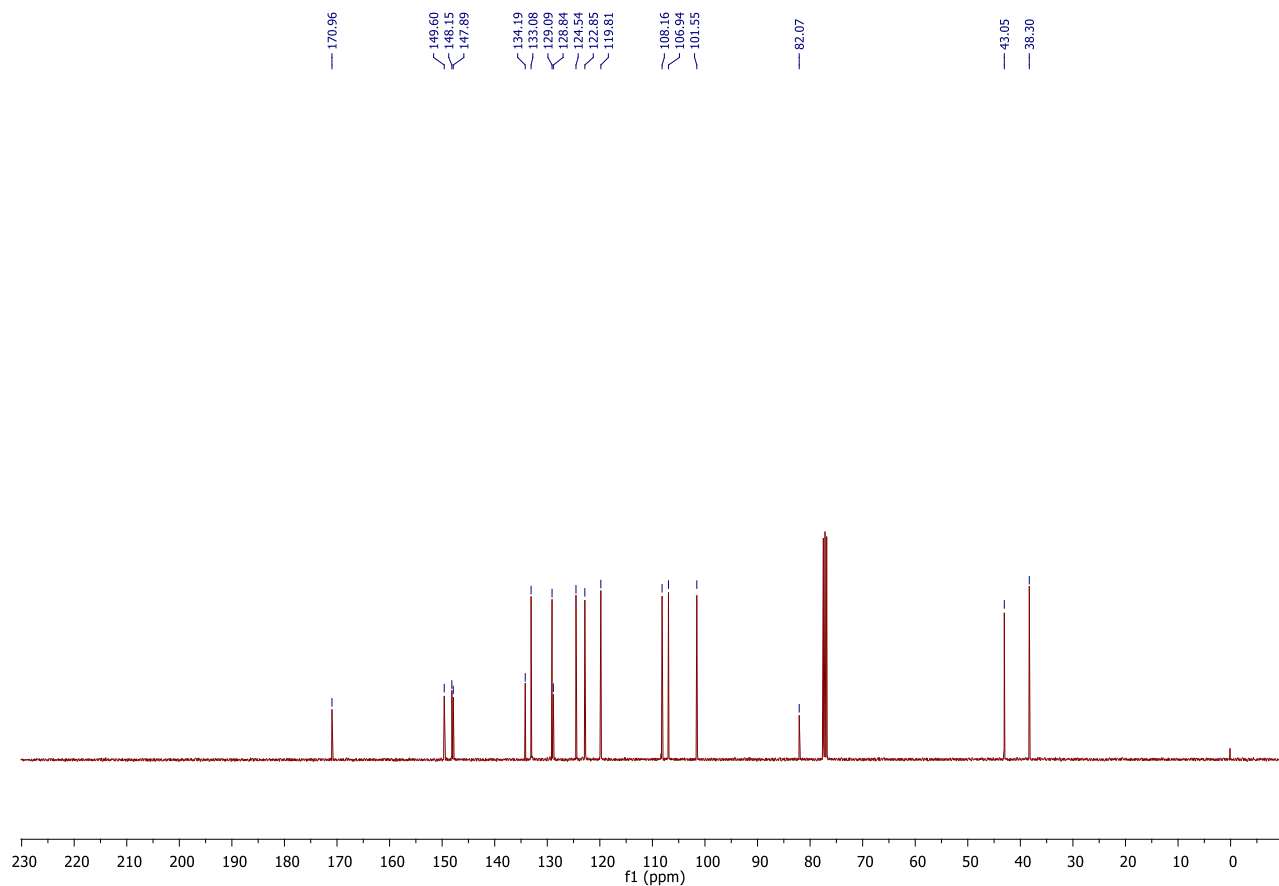


### 1.66. 3-(1,3-benzodioxol-5-yl)-3-hydroxy-2-(2-sulfanylethyl)isoindolin-1-one (311m)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

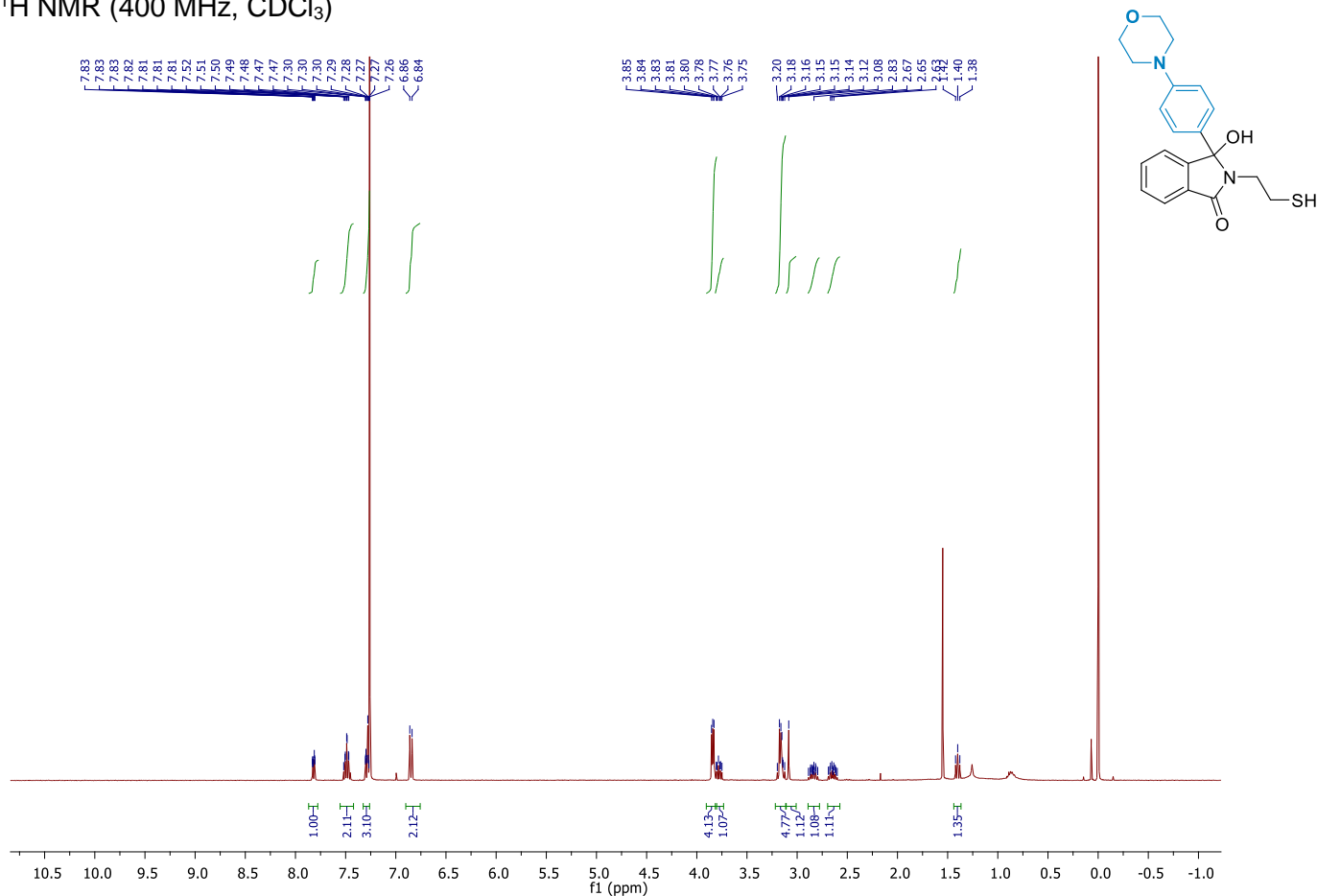


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

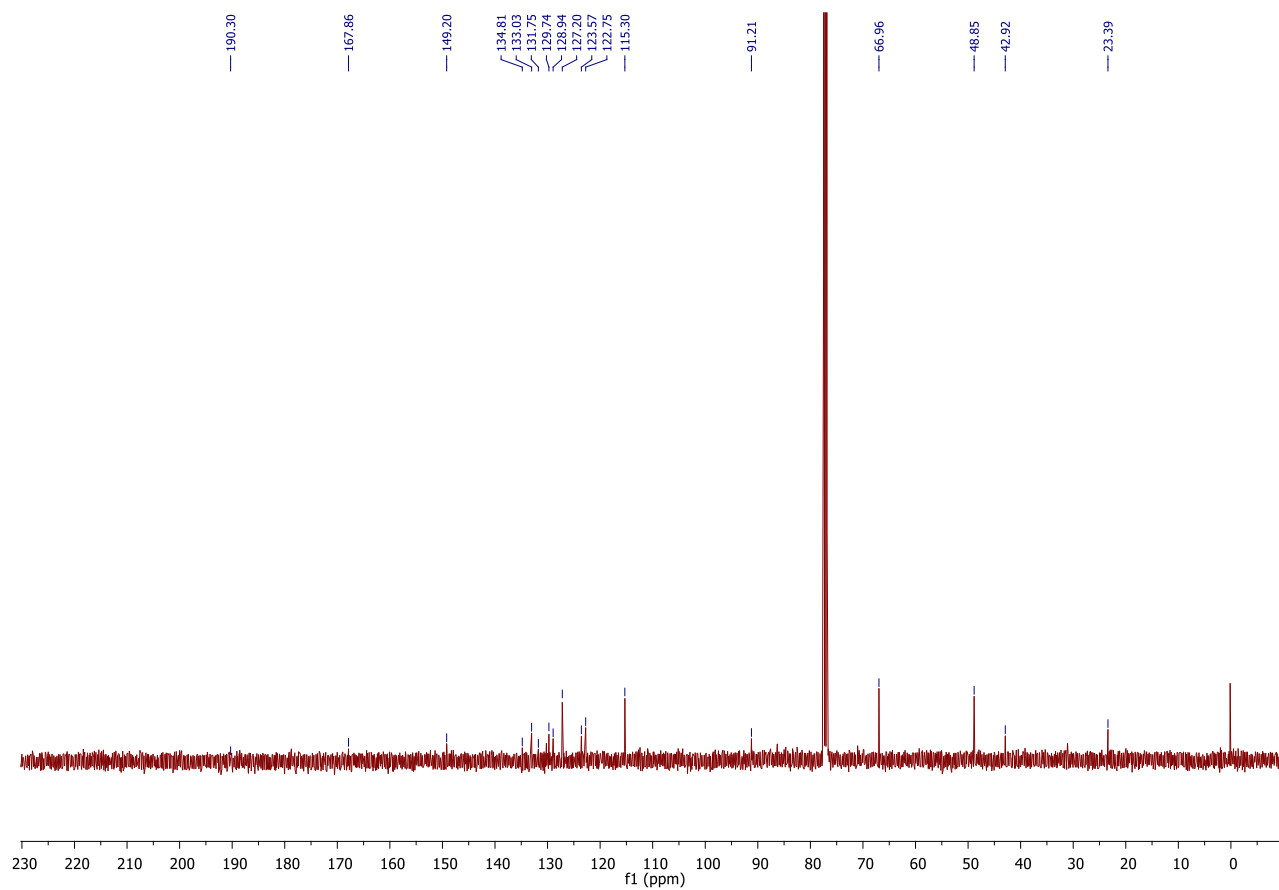


### 1.67. 3-hydroxy-3-(4-morpholinophenyl)-2-(2-sulfanylethyl)isoindolin-1-one (311n)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

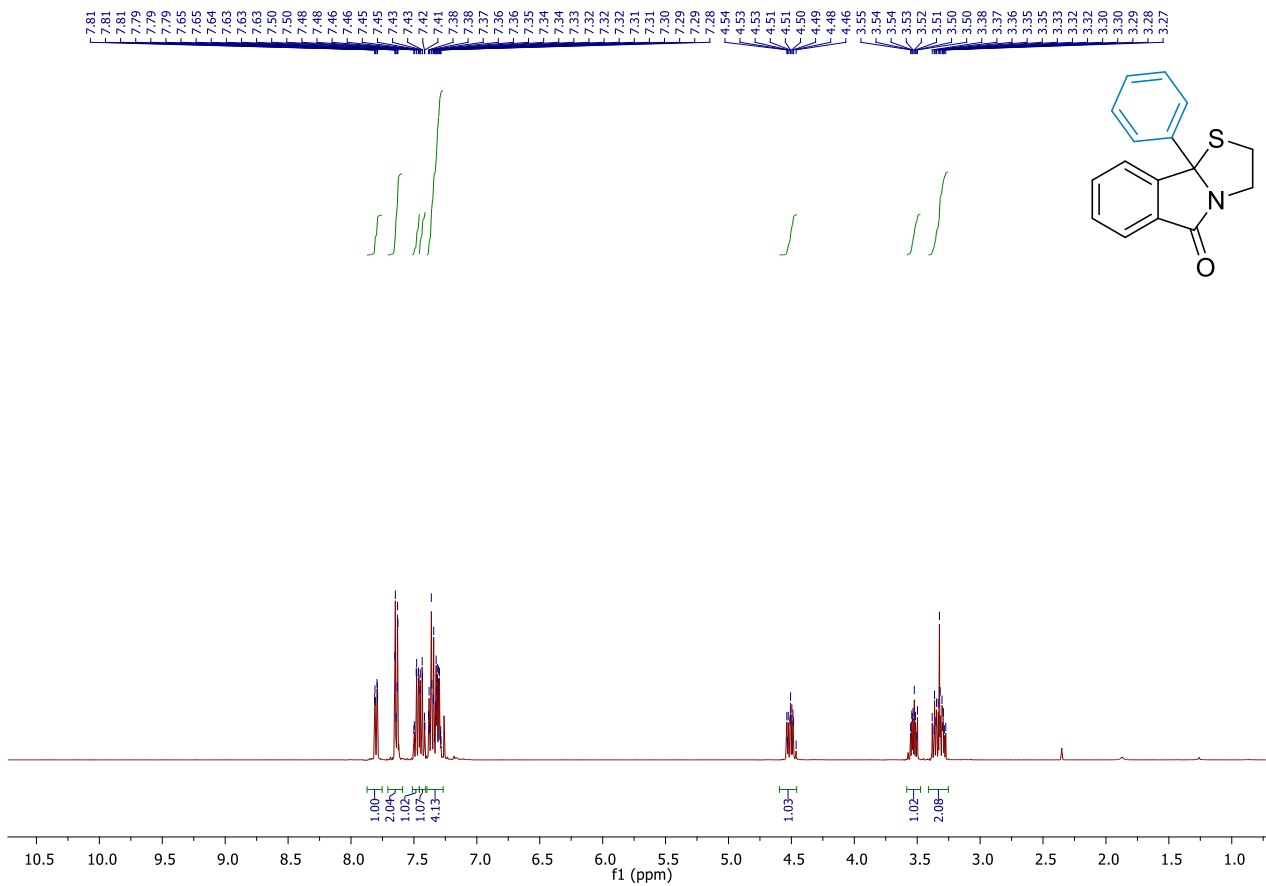


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

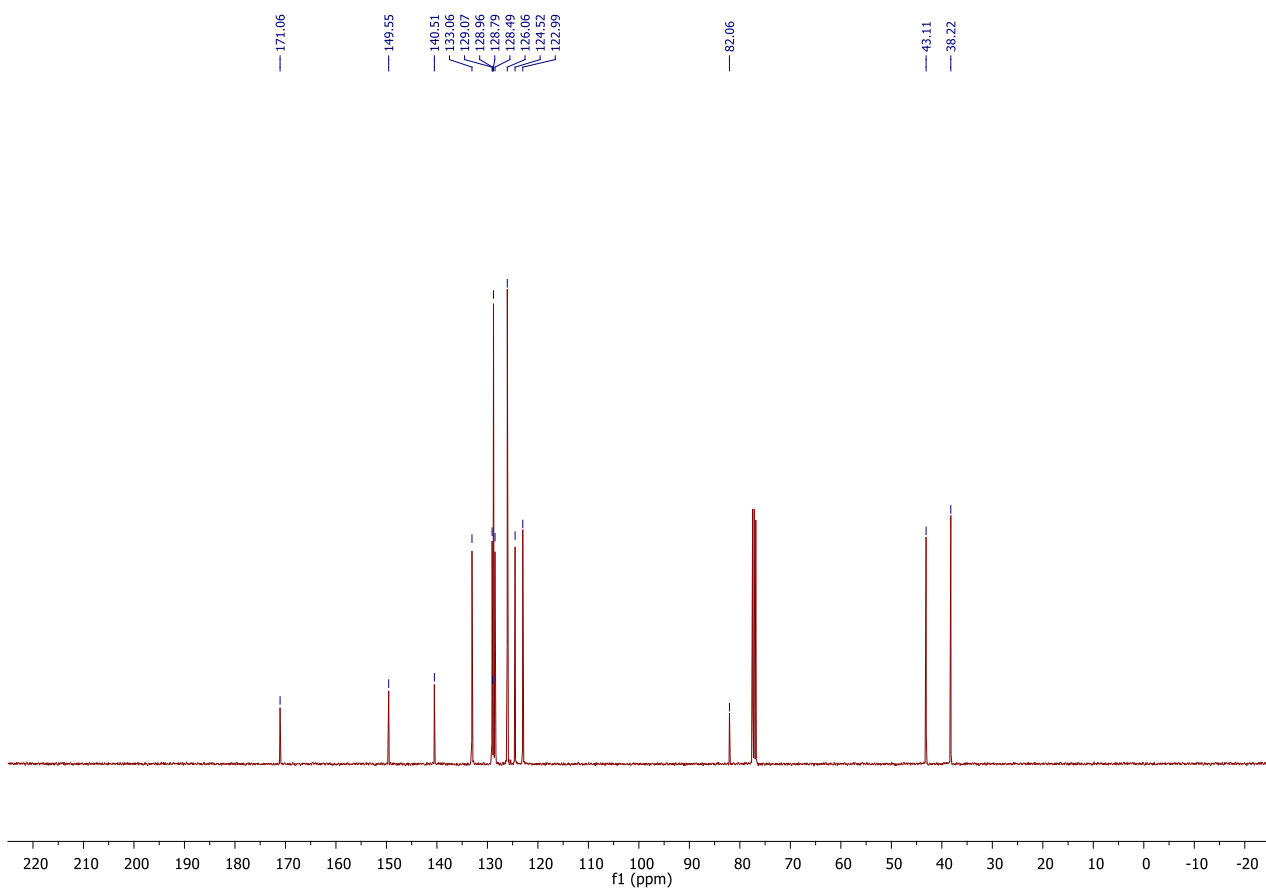


1.68. 9b-phenyl-2,3-dihydrothiazolo[2,3-a]isoindol-5-one (312a)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

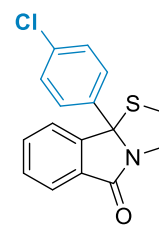
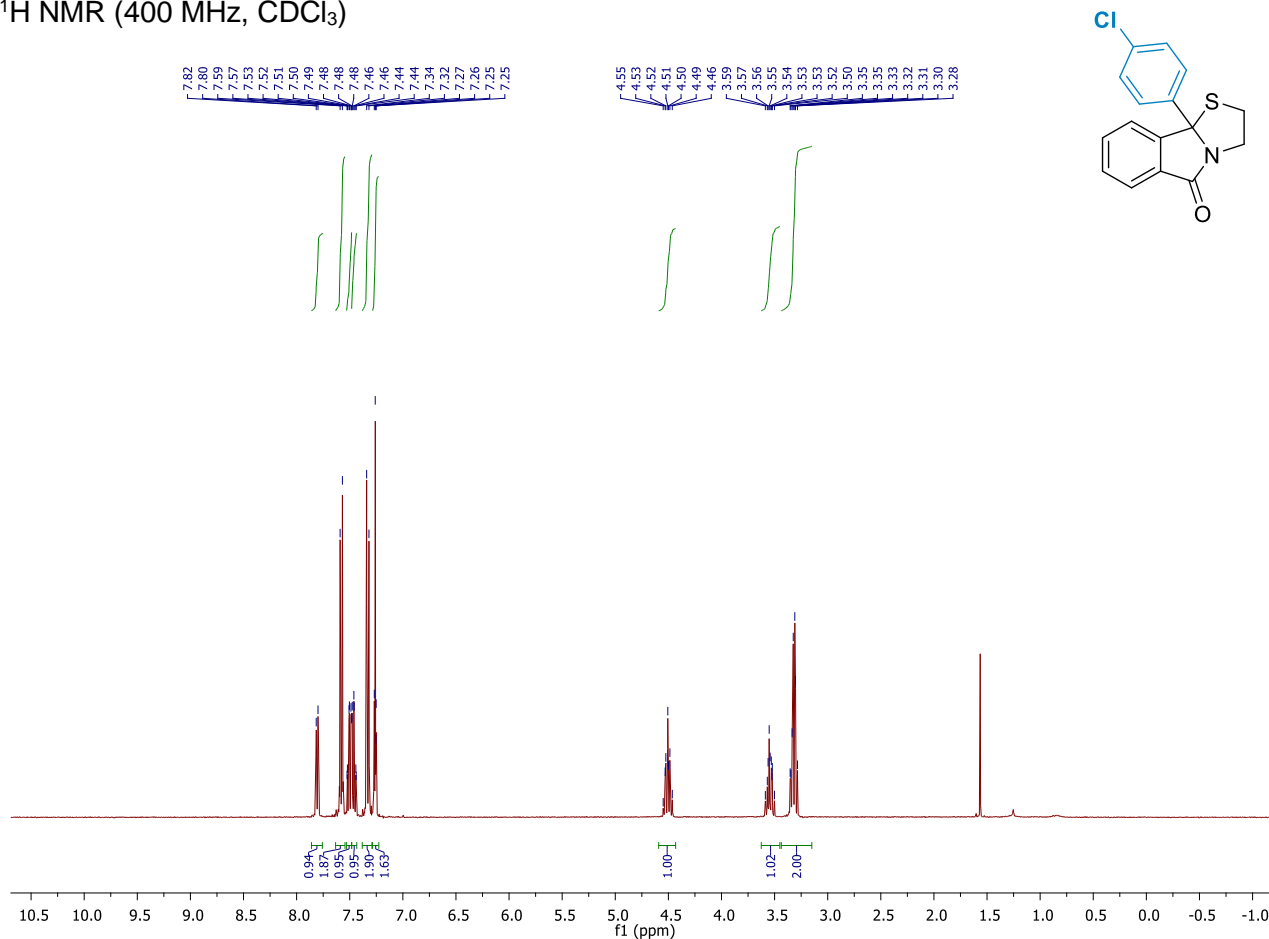


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

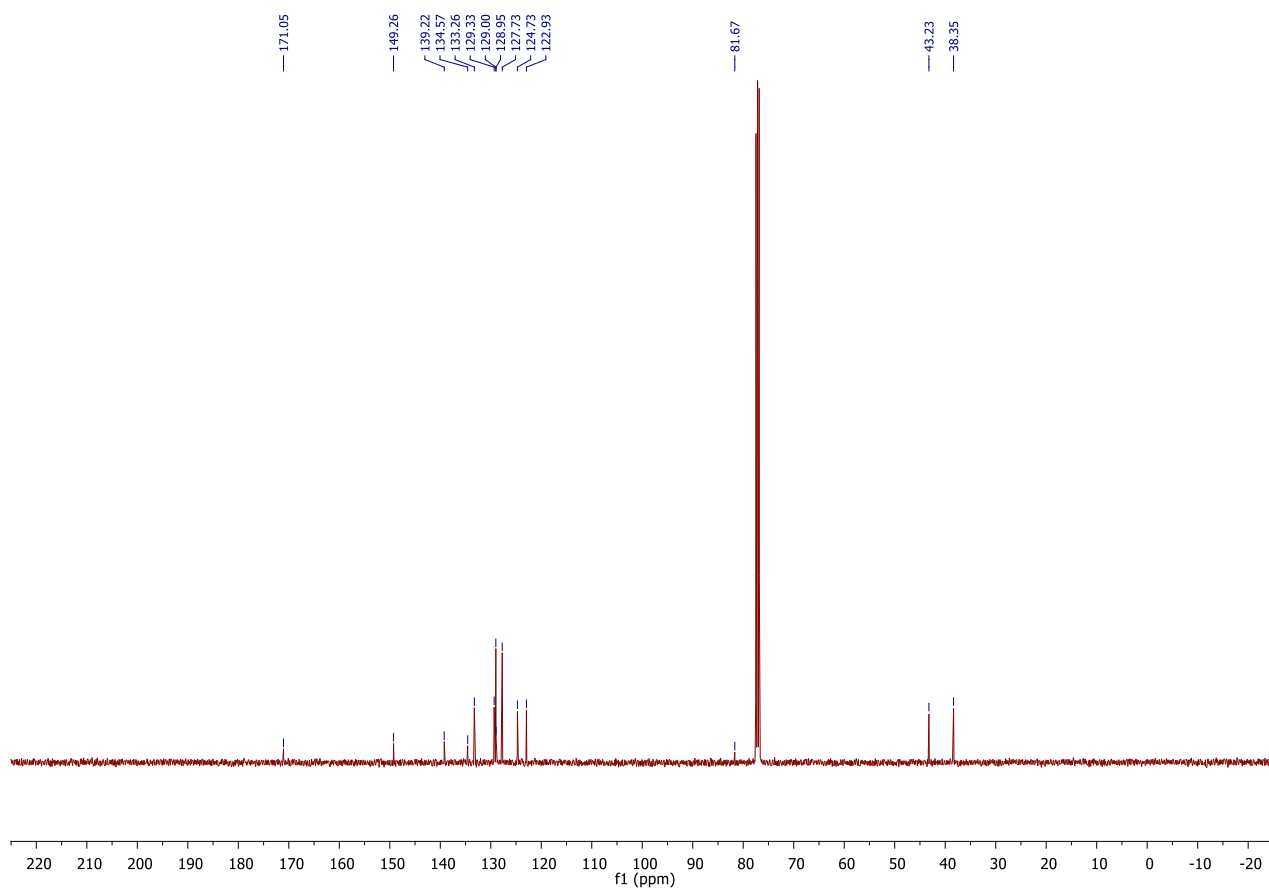


### 1.69. 9b-(4-chlorophenyl)-2,3-dihydrothiazolo[2,3-a]isoindol-5-one (312b)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

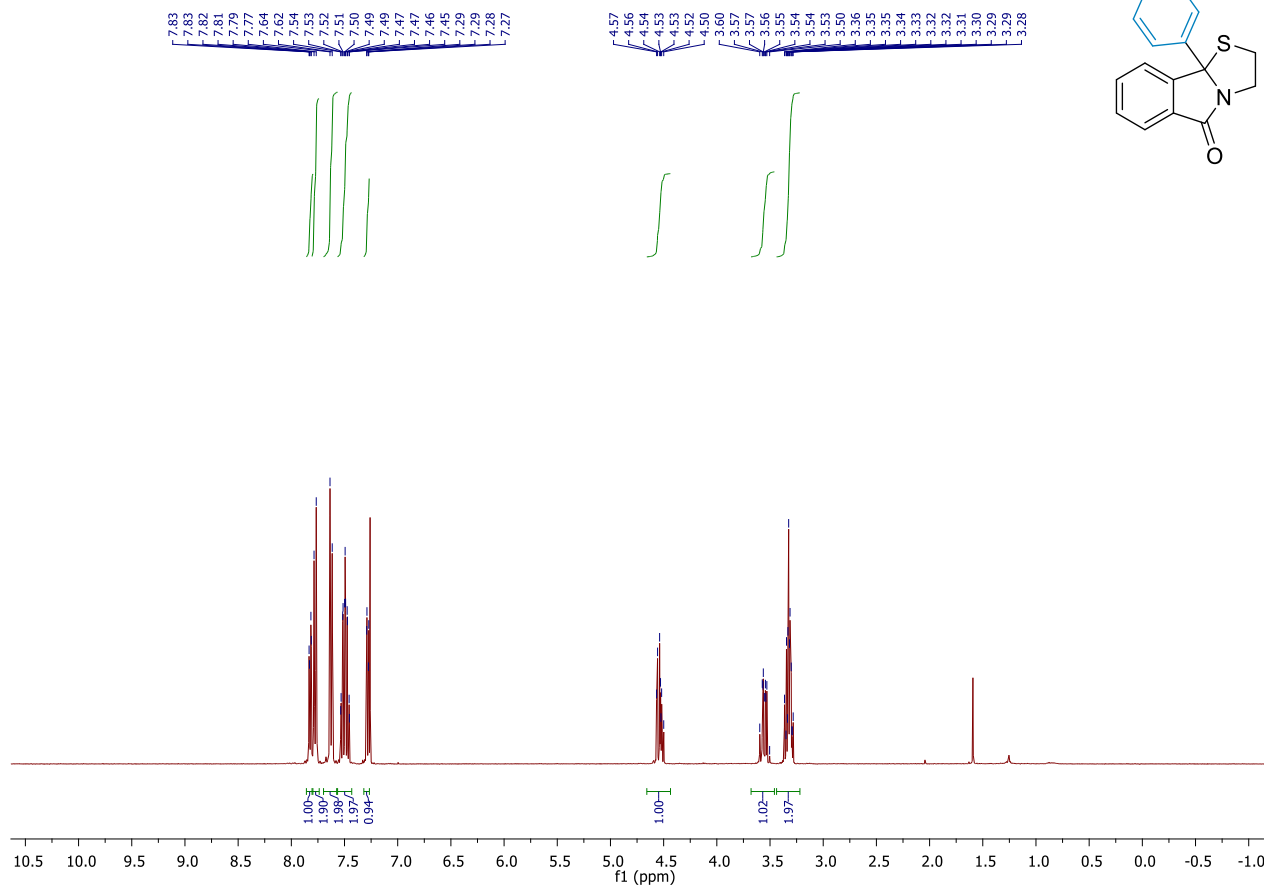
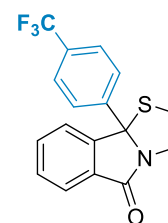


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

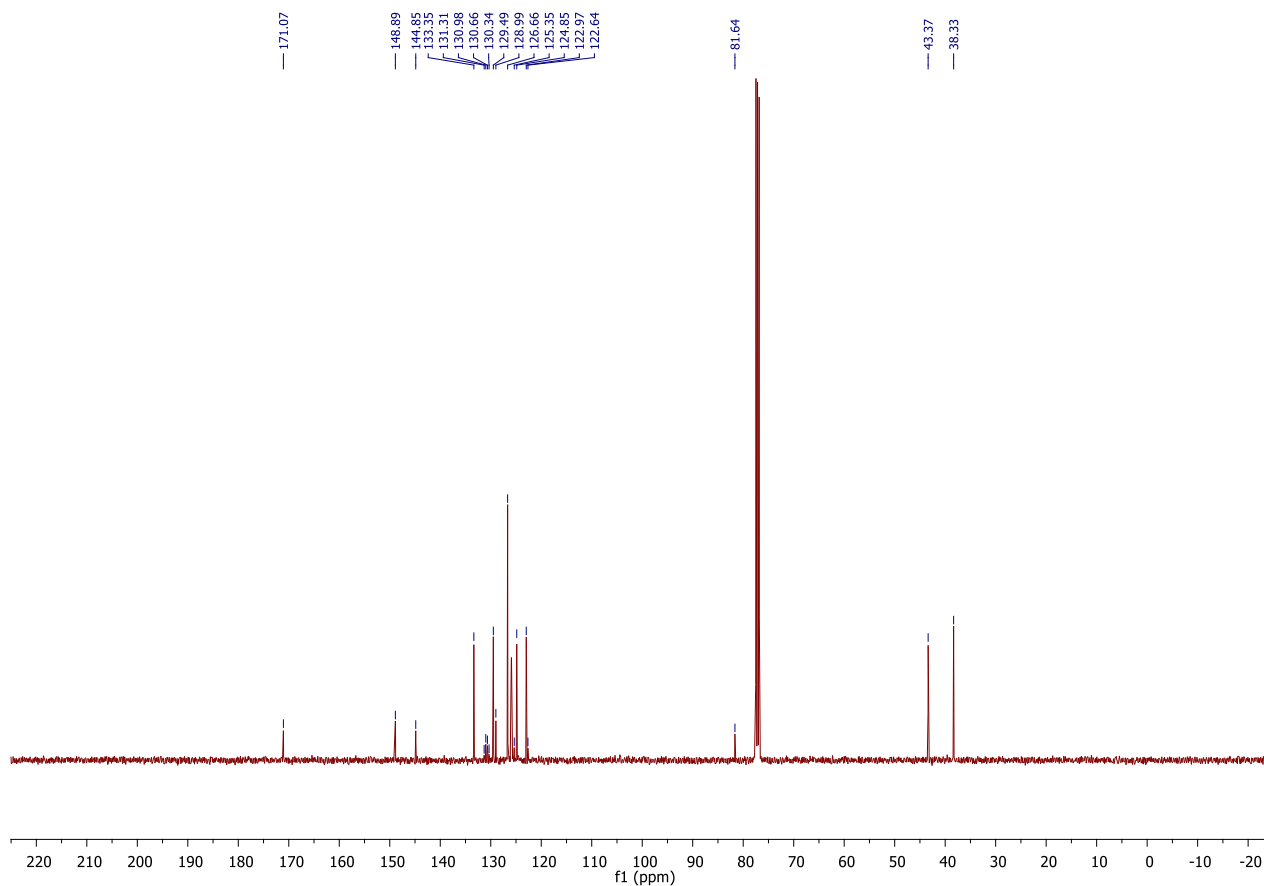


### 1.70. 9b-[4-(trifluoromethyl)phenyl]-2,3-dihydrothiazolo[2,3-a]isoindol-5-one (312c)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

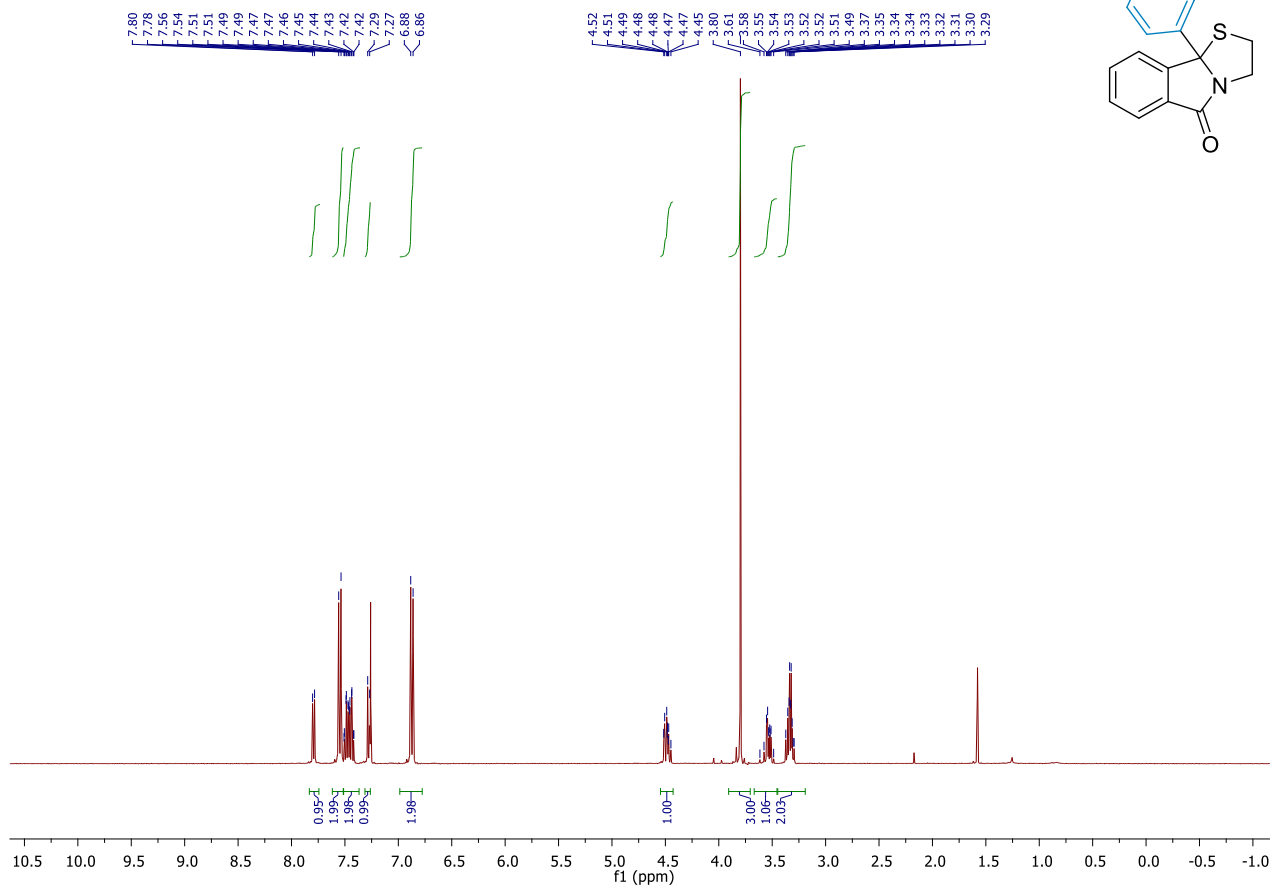


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

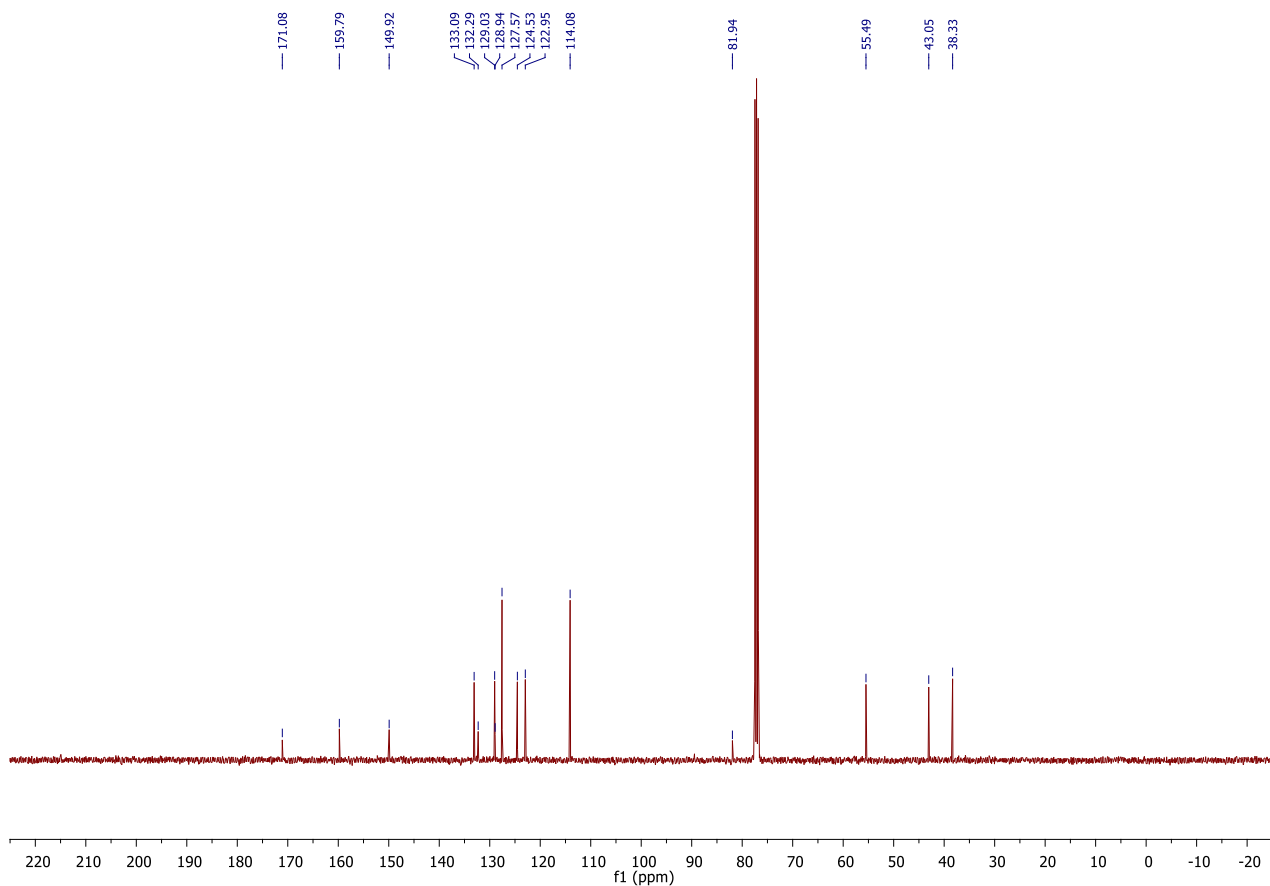


### 1.71. 9b-(4-methoxyphenyl)-2,3-dihydrothiazolo[2,3-a]isoindol-5-one (312d)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )



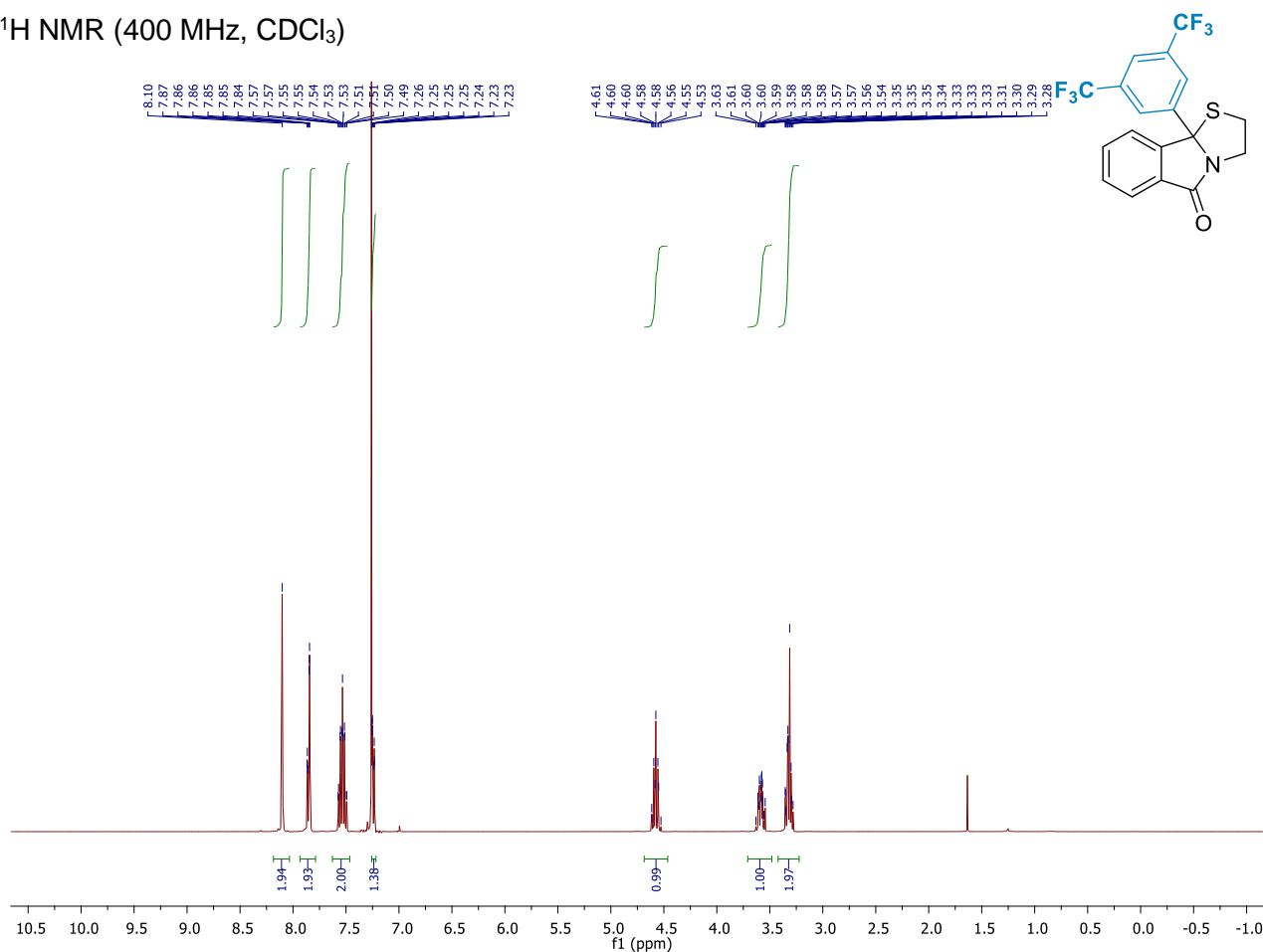
$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )



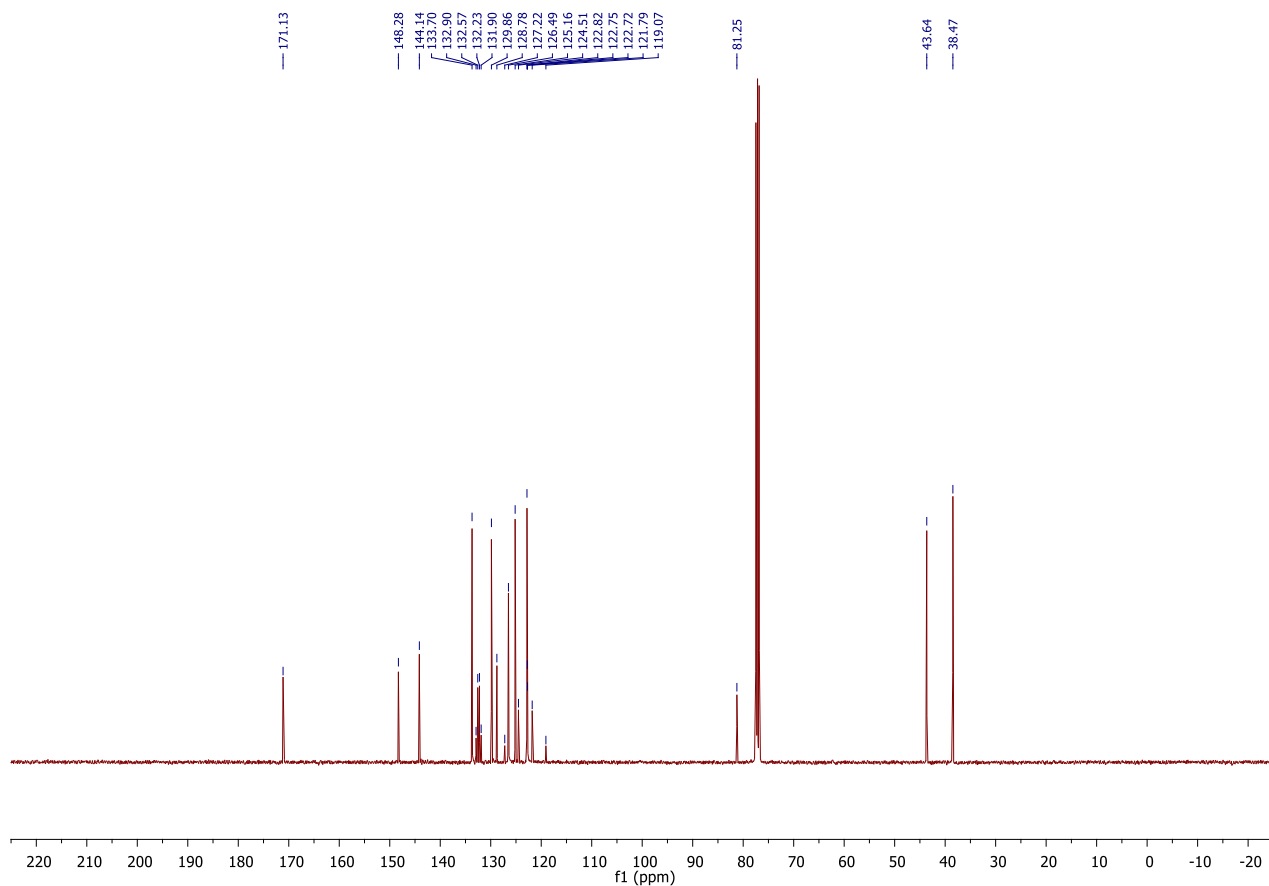


### 1.72. 9b-[3,5-bis(trifluoromethyl)phenyl]-2,3-dihydrothiazolo[2,3-a]isoindol-5-one (312e)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

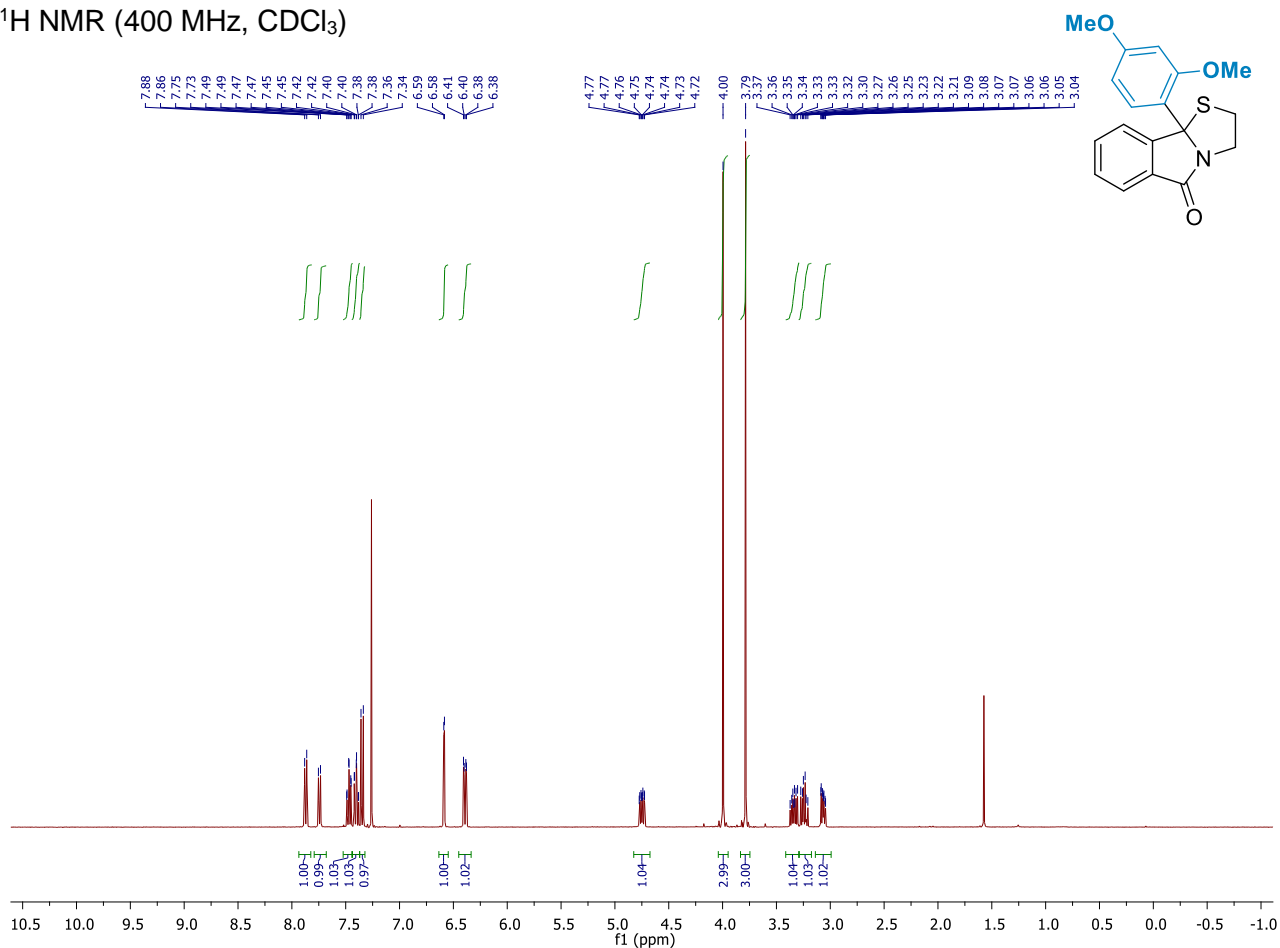


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

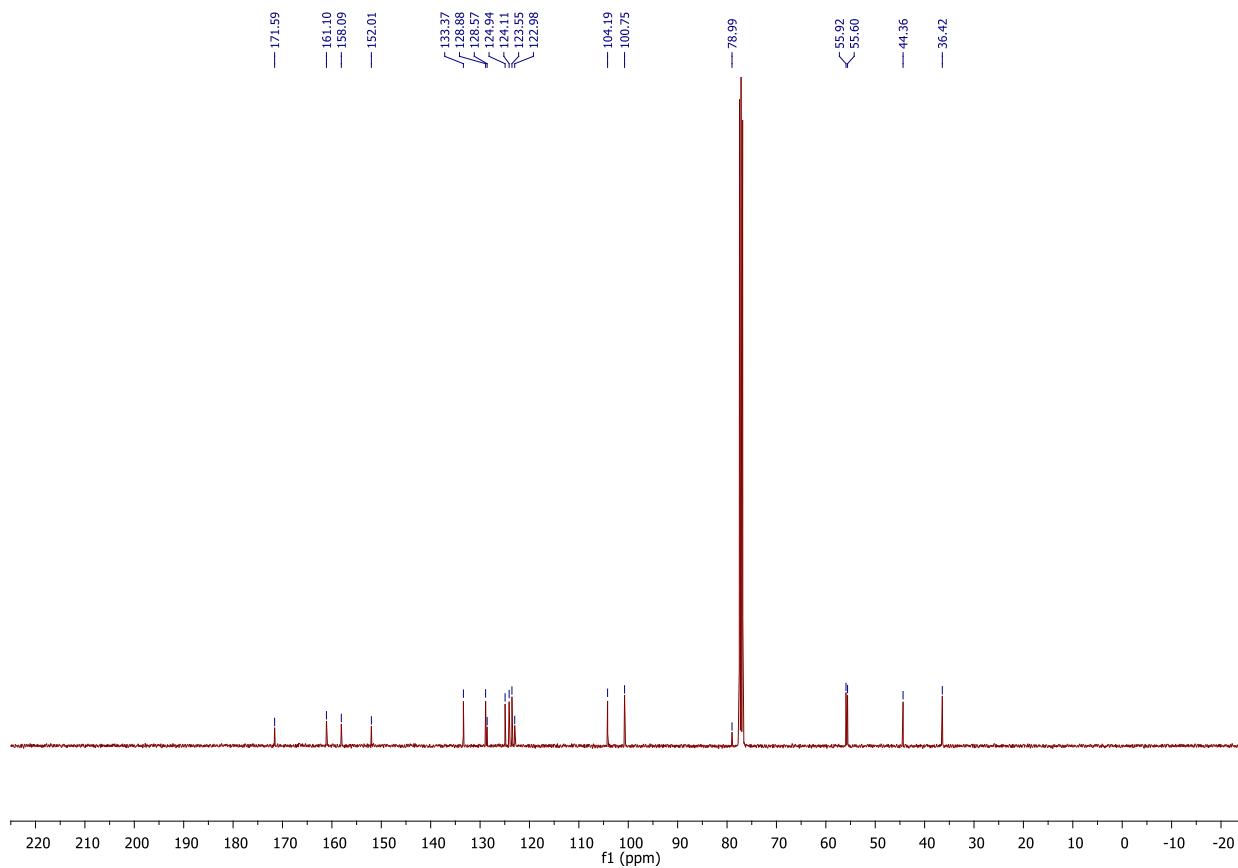


1.73. 9b-(2,4-dimethoxyphenyl)-2,3-dihydrothiazolo[2,3-a]isoindol-5-one (312f)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

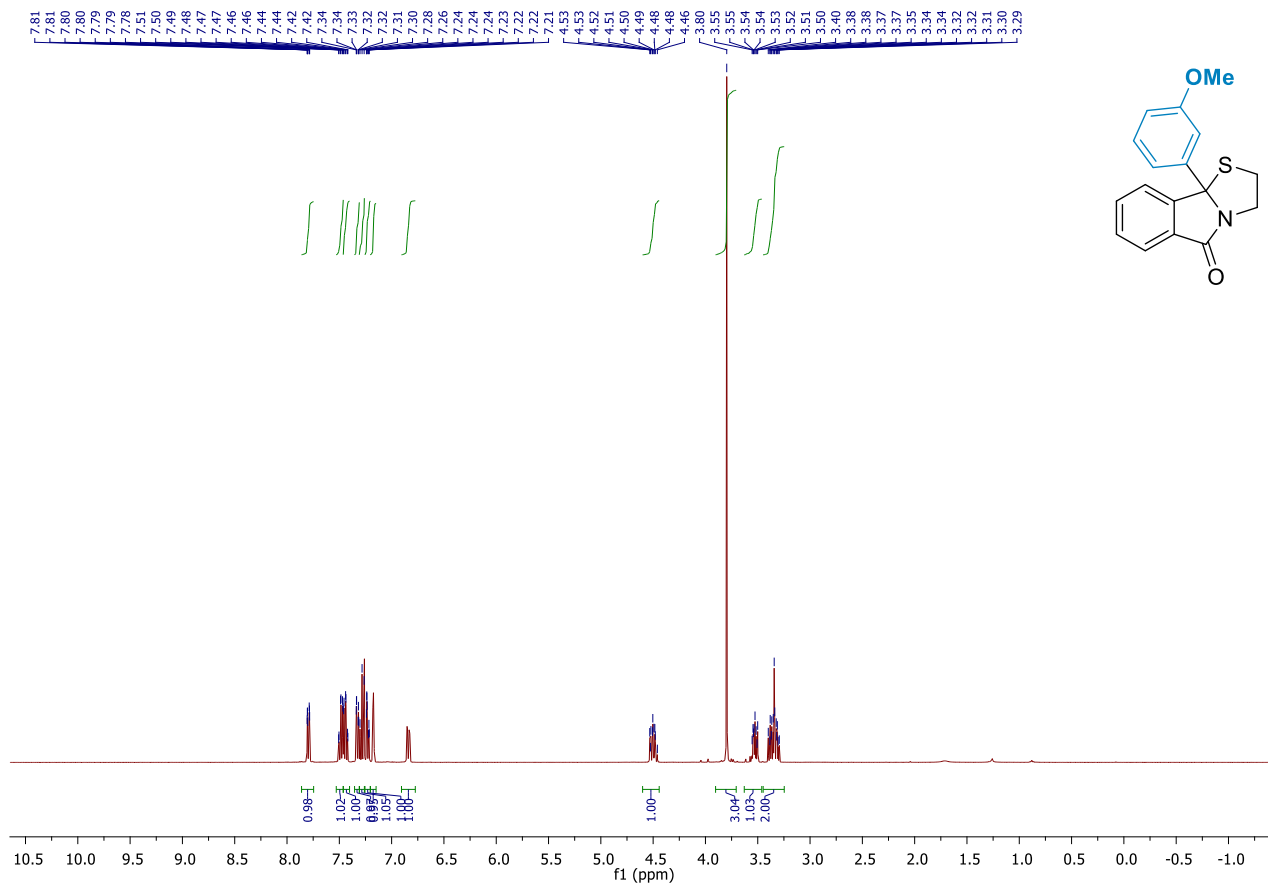


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

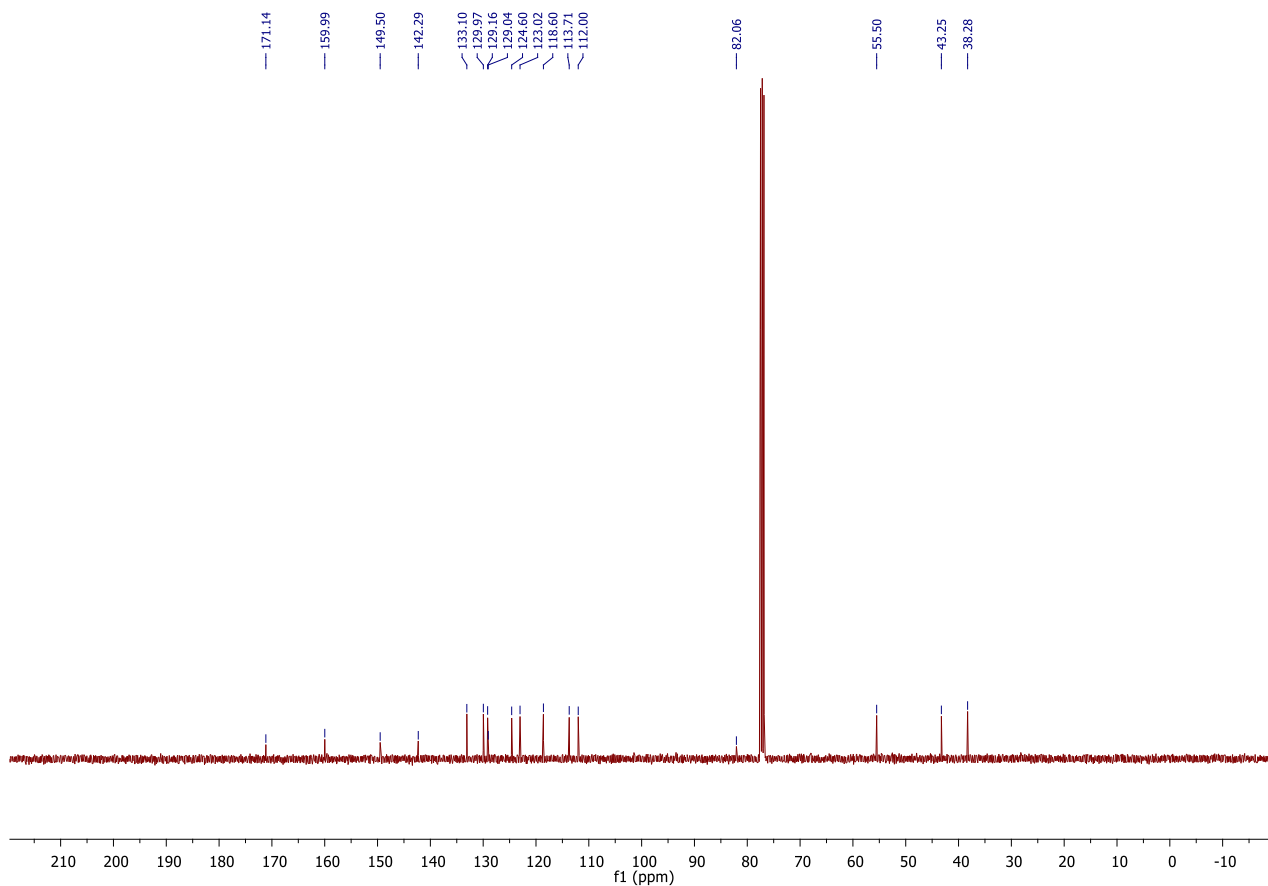


### 1.74. 9b-(3-methoxyphenyl)-2,3-dihydrothiazolo[2,3-a]isoindol-5-one (312g)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

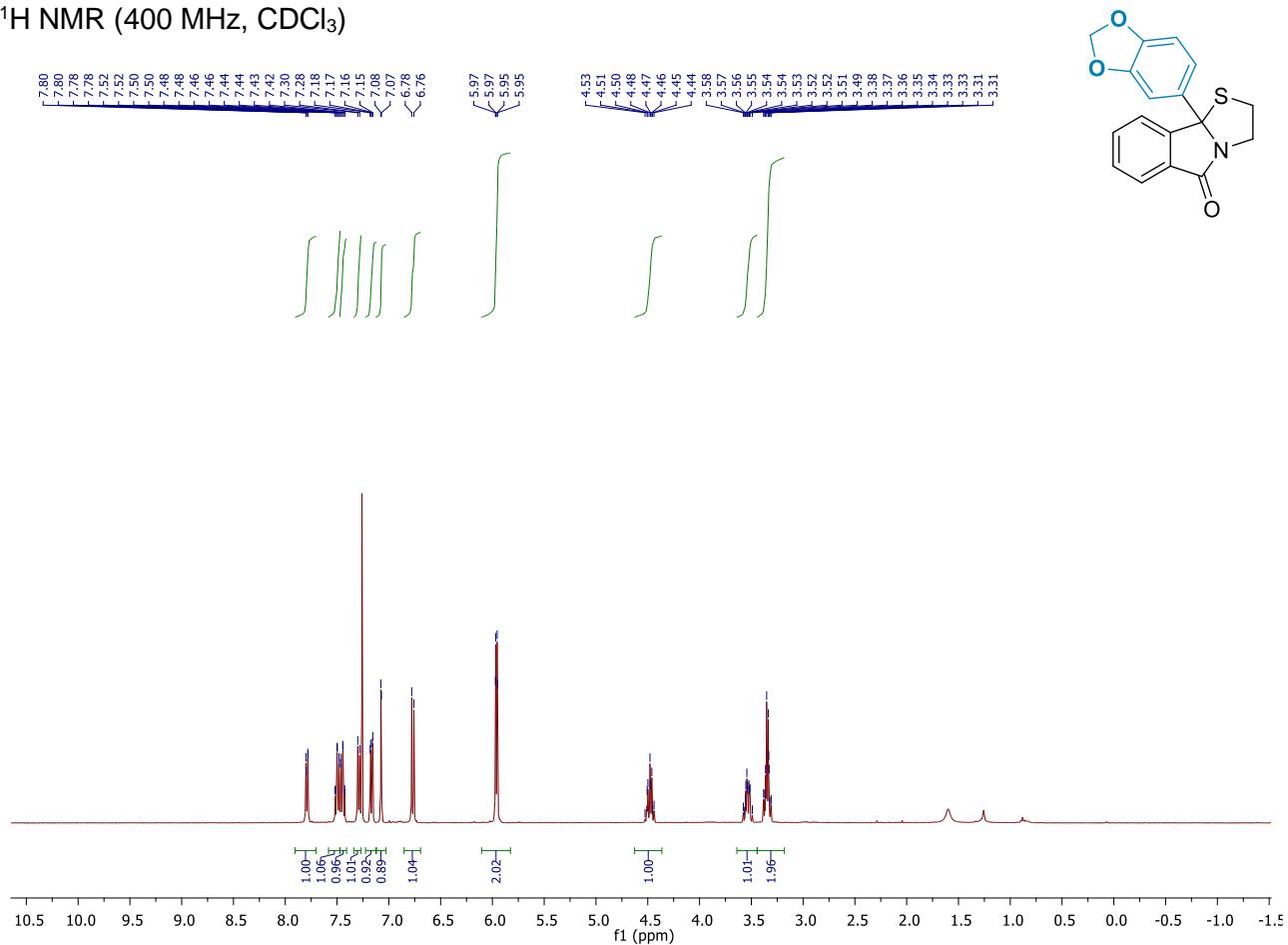


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

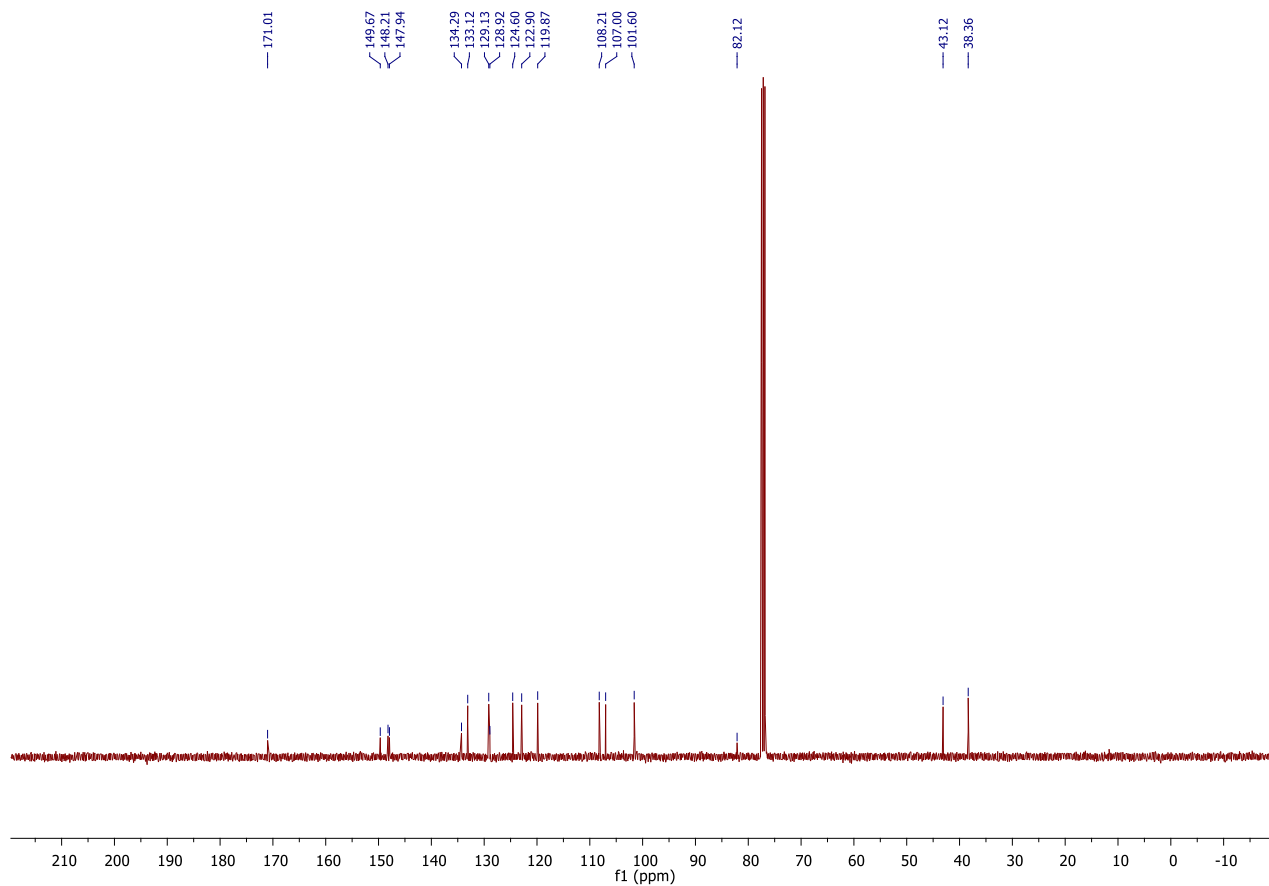


### 1.75. 9b-(1,3-benzodioxol-5-yl)-2,3-dihydrothiazolo[2,3-a]isoindol-5-one (312h)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

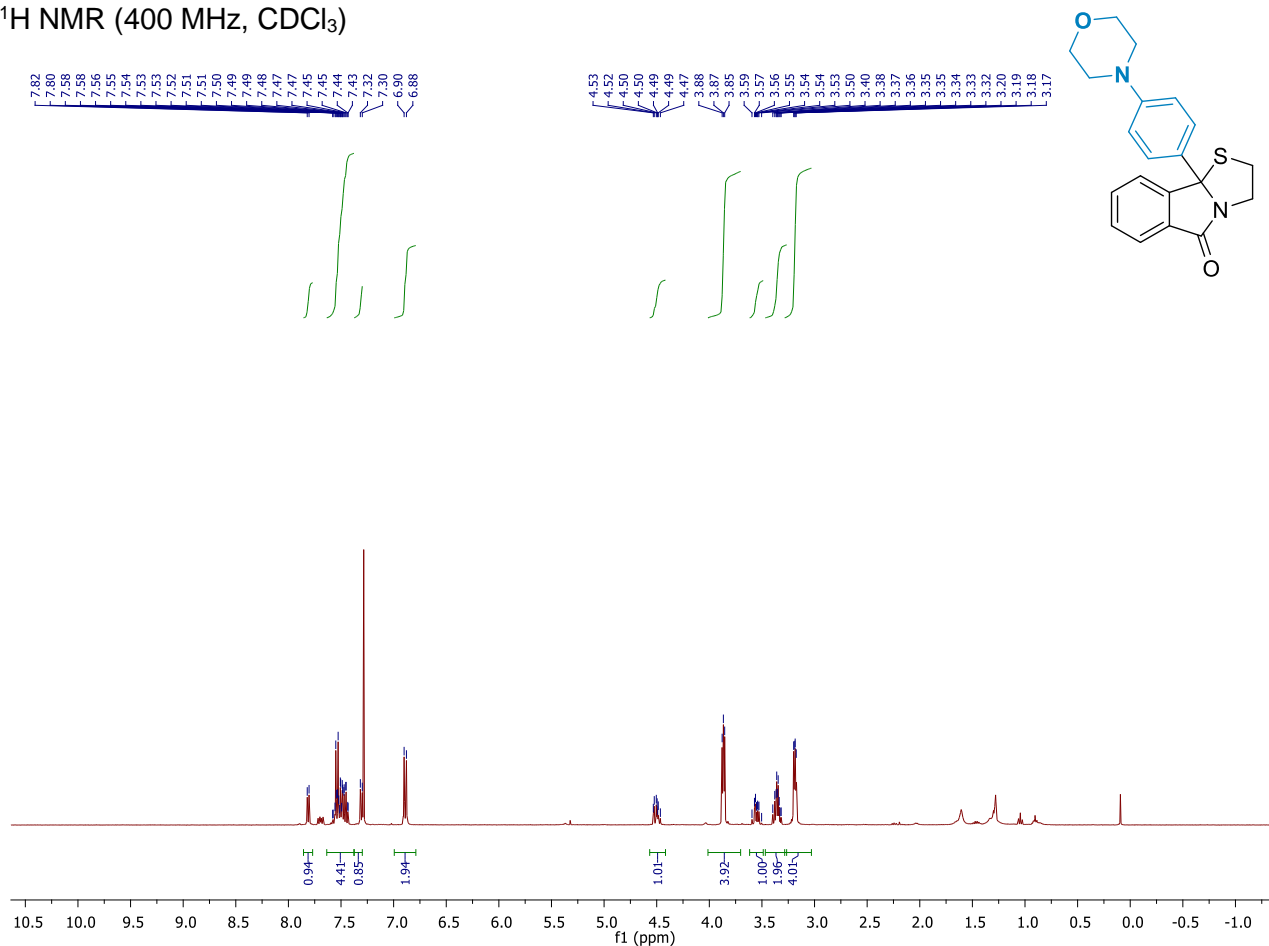


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

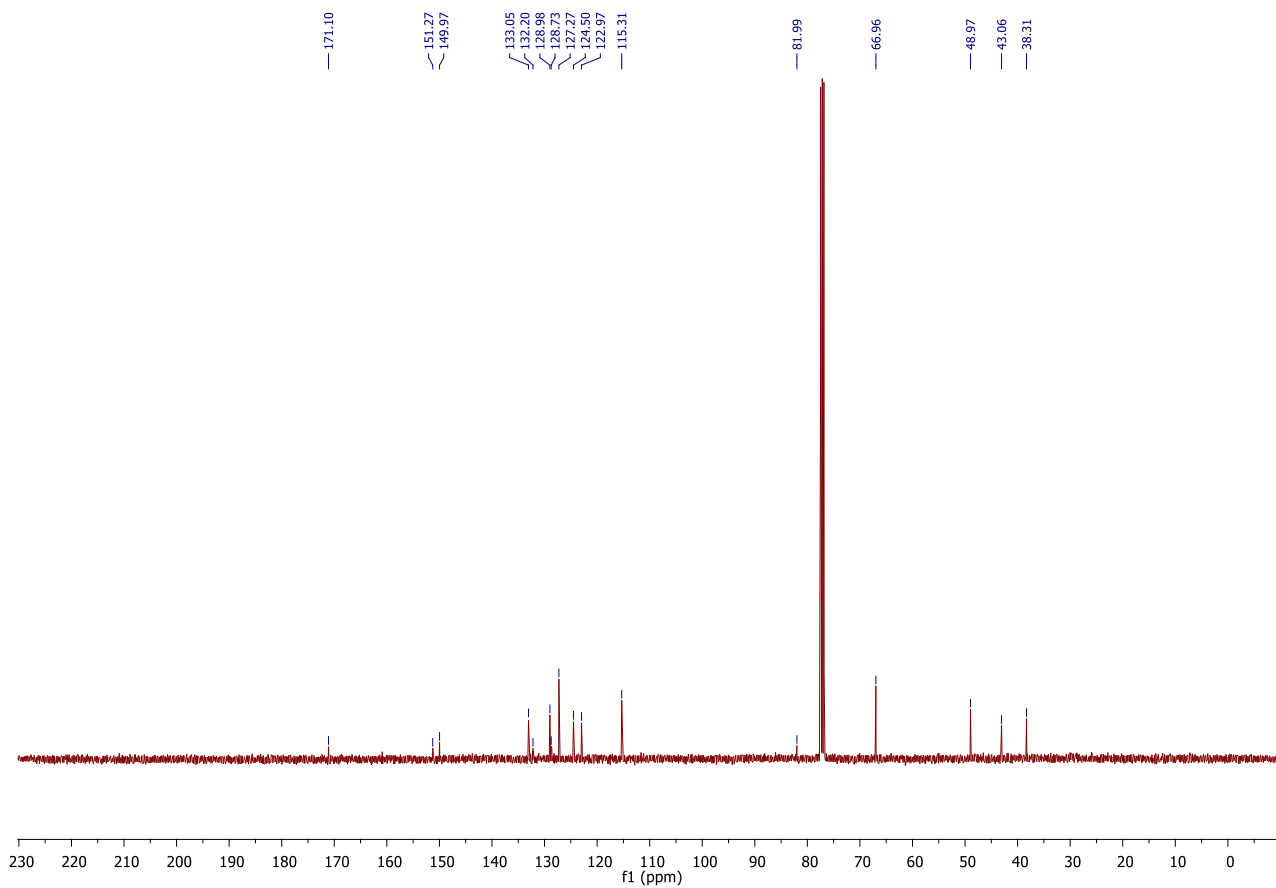


### 1.76. 9b-(4-morpholinophenyl)-2,3-dihydrothiazolo[2,3-a]isoindol-5-one (312i)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

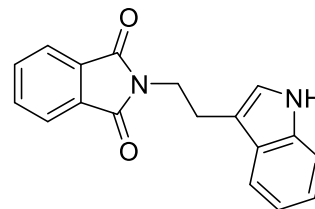
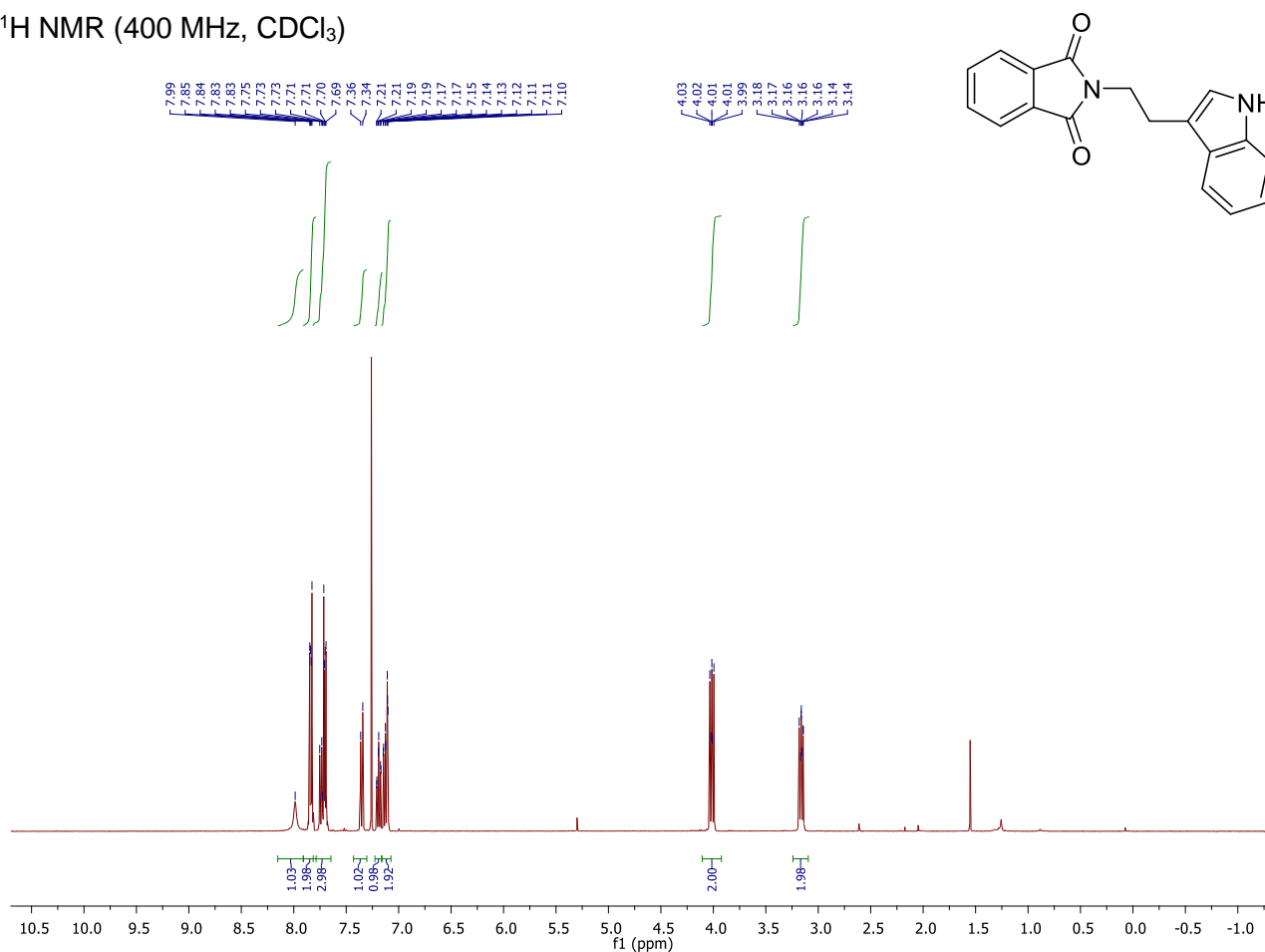


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

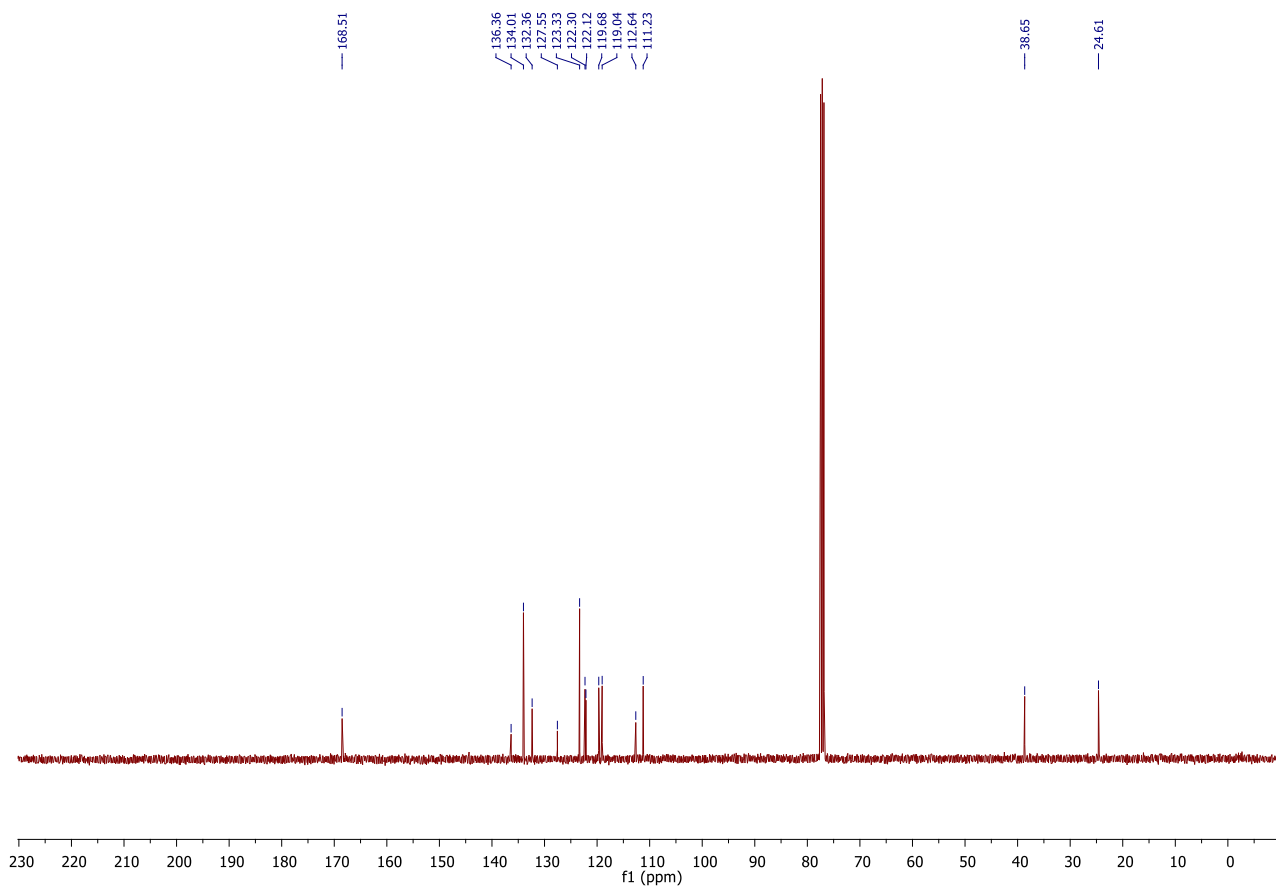


### 1.77. 2-[2-(1H-indol-3-yl)ethyl]isoindoline-1,3-dione (315)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

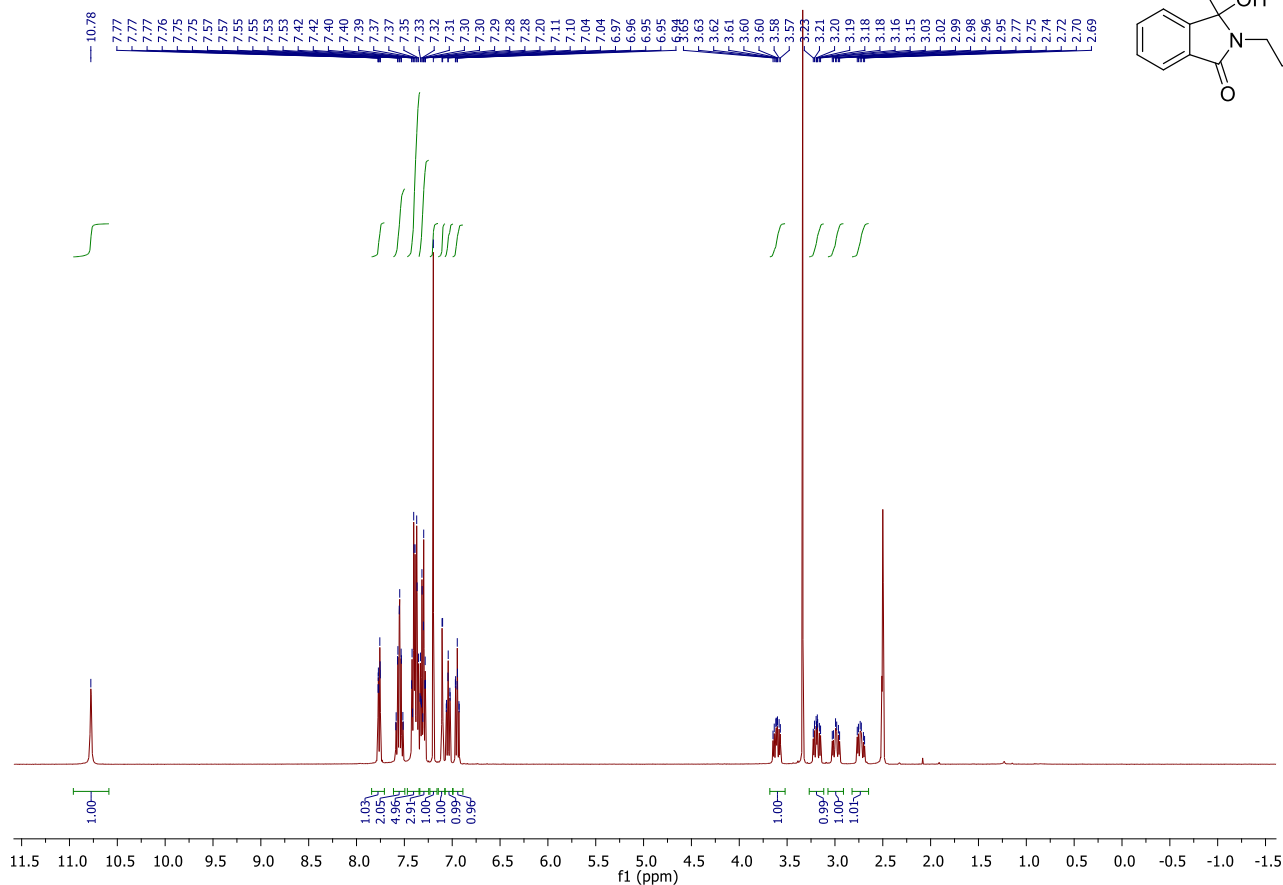
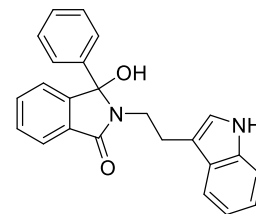


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

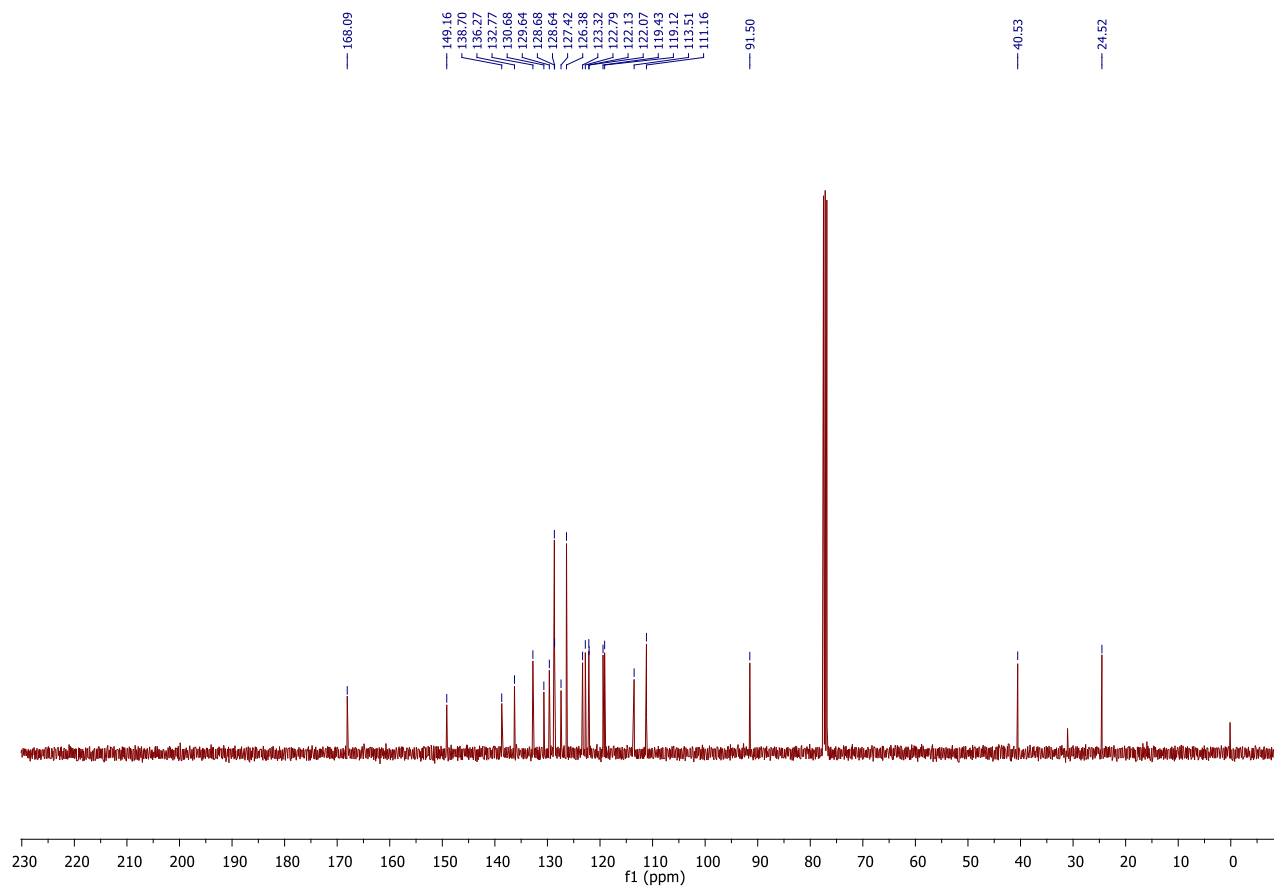


### 1.78. 3-hydroxy-2-[2-(1H-indol-3-yl)ethyl]-3-phenyl-isoindolin-1-one (316a)

$^1\text{H}$  NMR (400 MHz,  $\text{DMSO-d}_6$ )

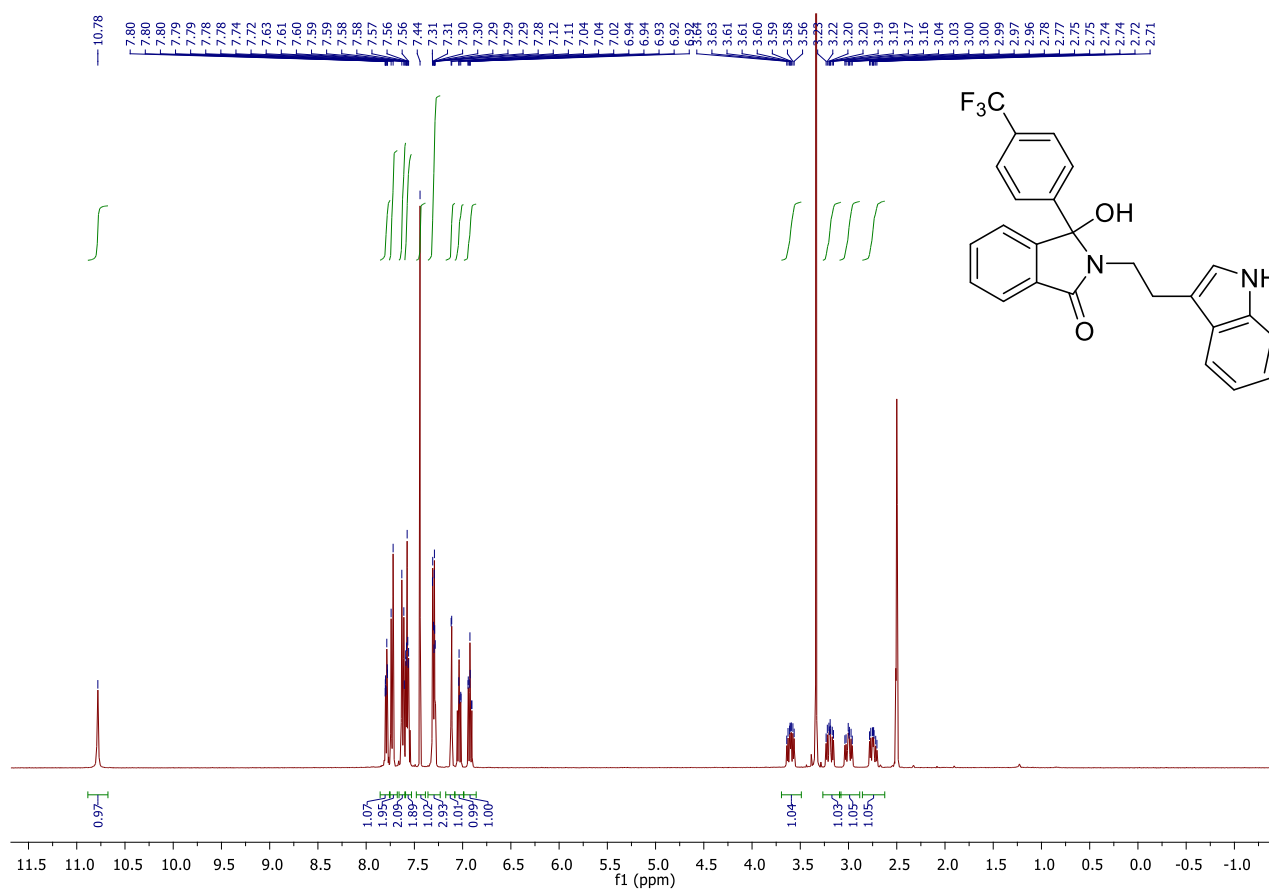


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

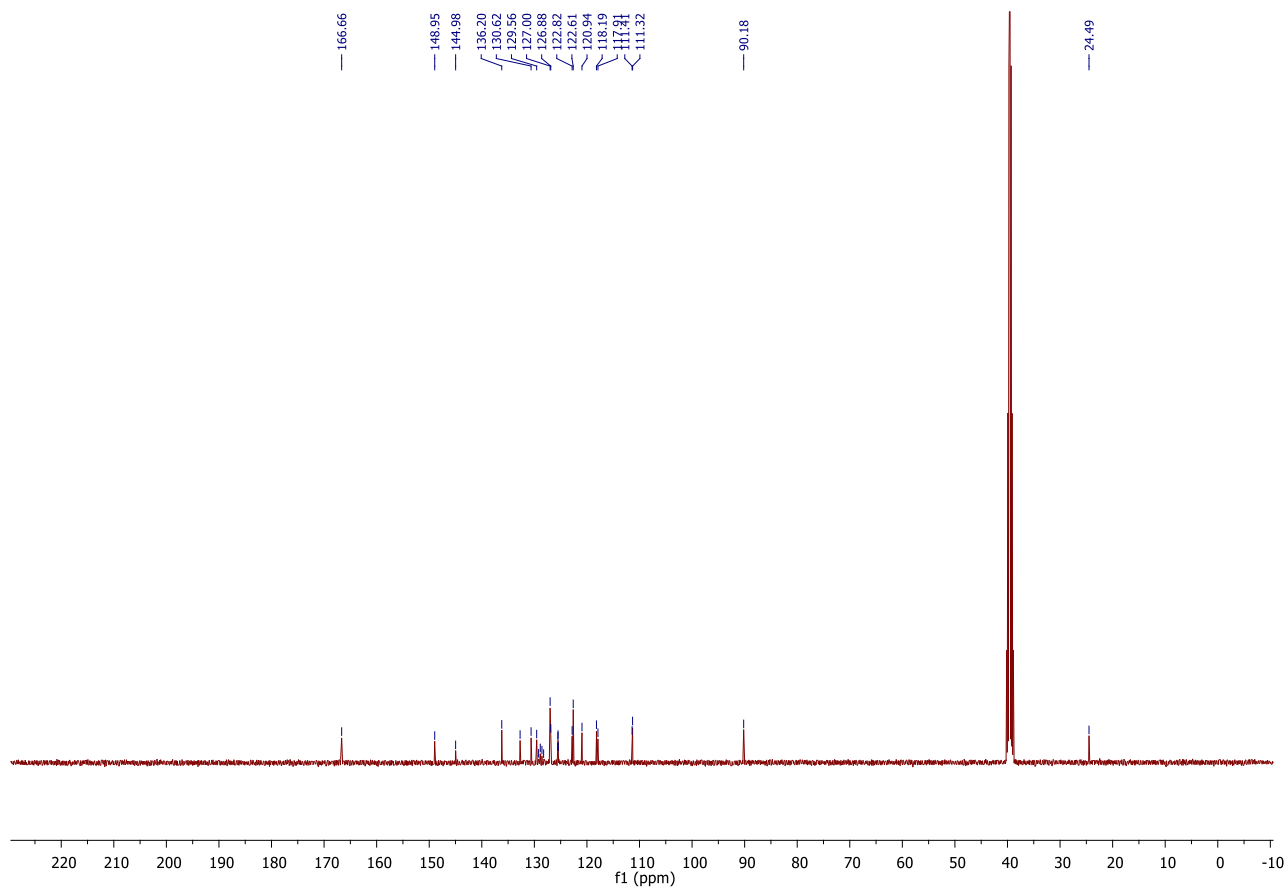


1.79. 3-hydroxy-2-[2-(1H-indol-3-yl)ethyl]-3-[4-(trifluoromethyl)phenyl]isoindolin-1-one (316b)

$^1\text{H}$  NMR (400 MHz,  $\text{DMSO-d}_6$ )



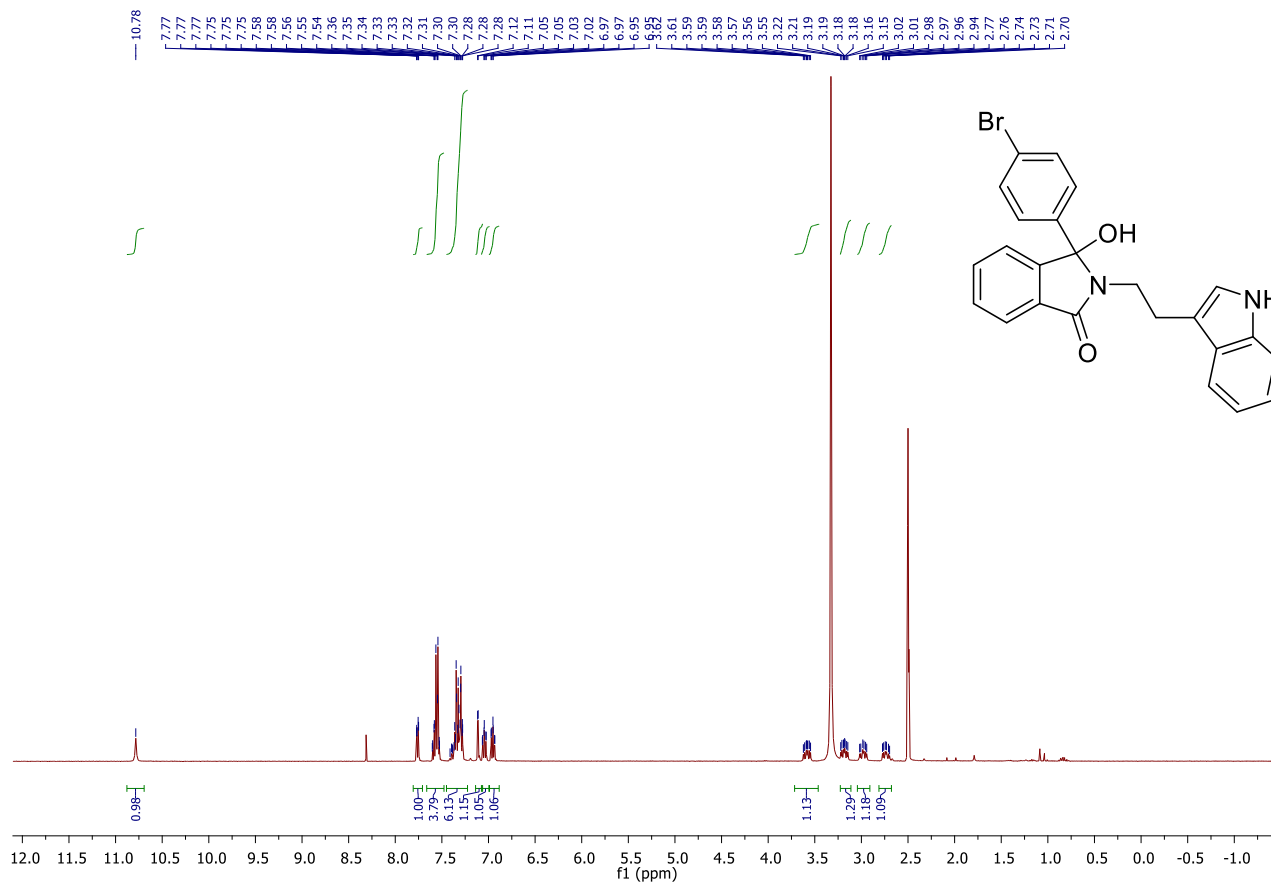
$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{DMSO-d}_6$ )



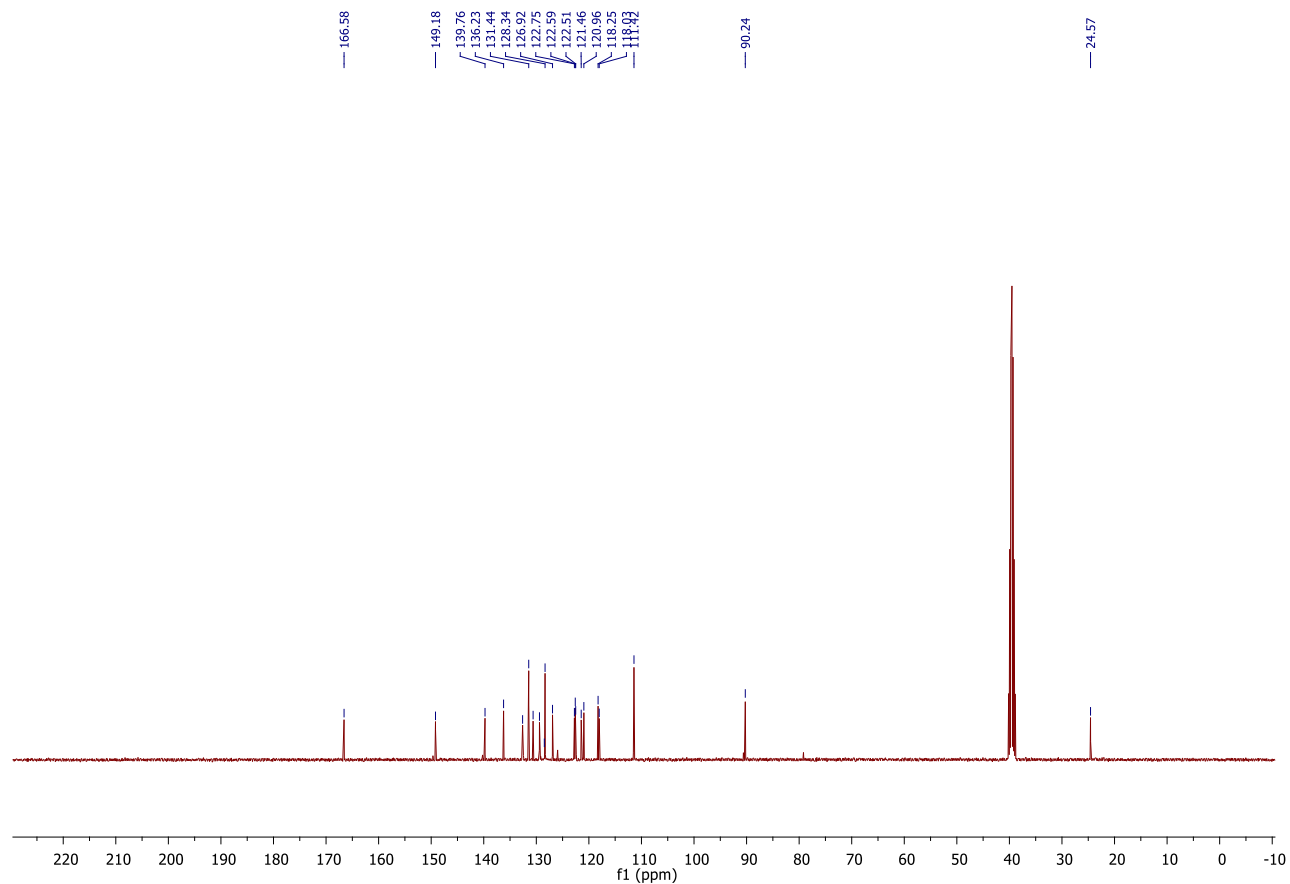


### 1.80. 3-(4-bromophenyl)-3-hydroxy-2-[2-(1H-indol-3-yl)ethyl]isoindolin-1-one (316c)

$^1\text{H}$  NMR (400 MHz, DMSO- $d_6$ )

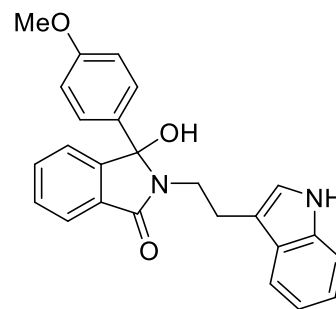
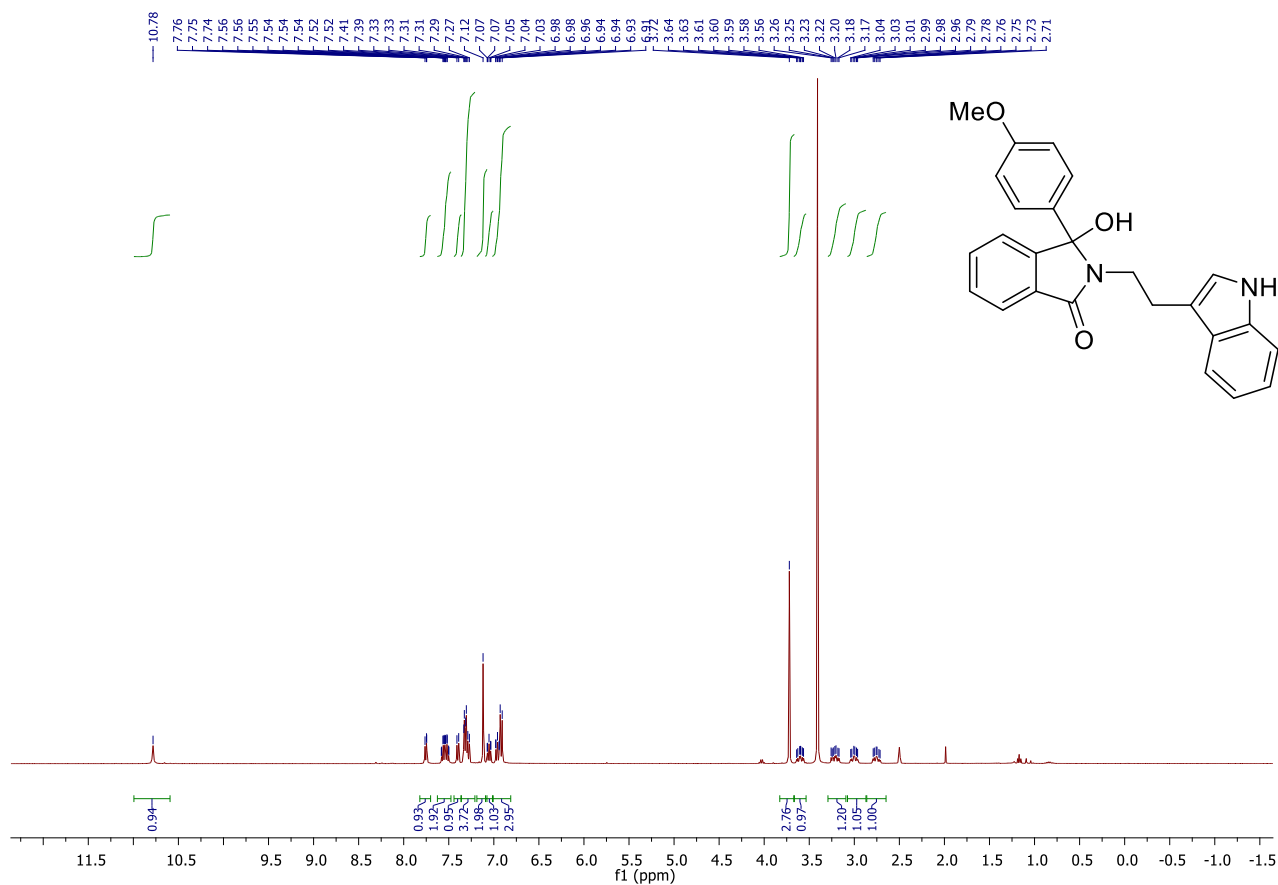


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz, DMSO- $d_6$ )

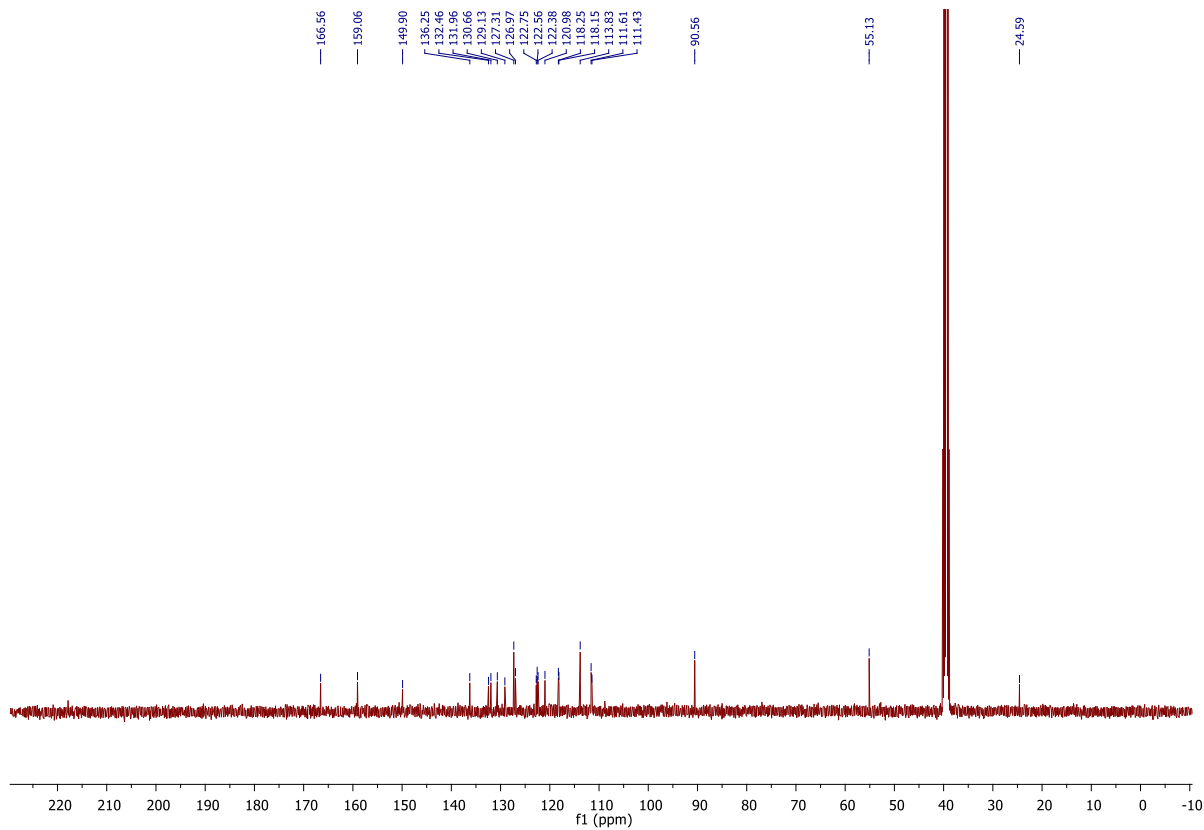


### 1.81. 3-hydroxy-2-[2-(1H-indol-3-yl)ethyl]-3-(4-methoxyphenyl)isoindolin-1-one (316d)

$^1\text{H}$  NMR (400 MHz,  $\text{DMSO-d}_6$ )

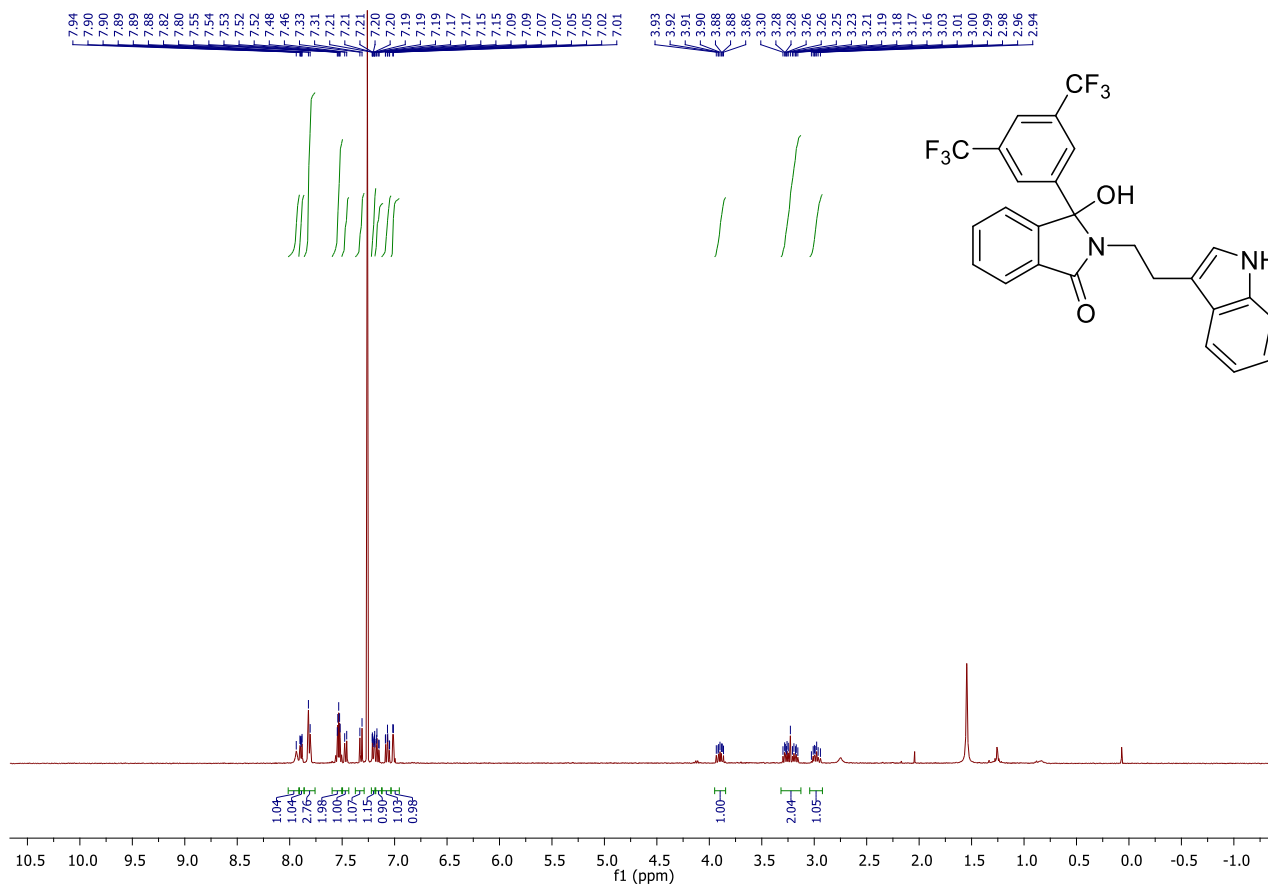


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{DMSO-d}_6$ )

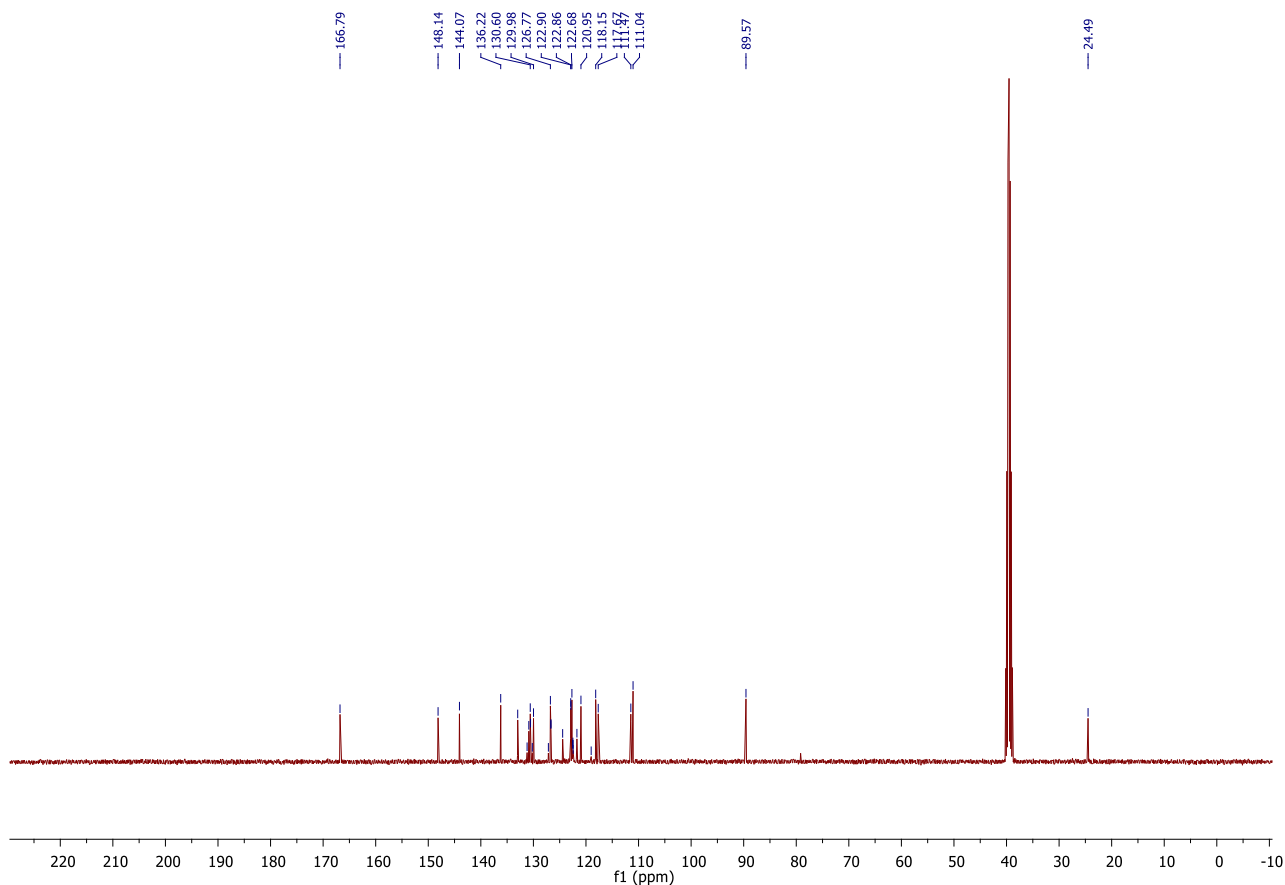


1.82. 3-[3,5-bis(trifluoromethyl)phenyl]-3-hydroxy-2-[2-(1H-indol-3-yl)ethyl]isoindolin-1-one (316e)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

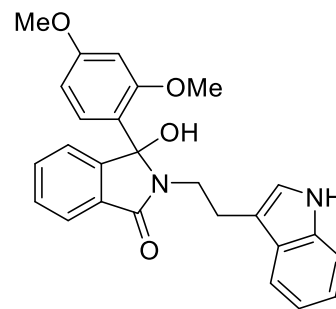
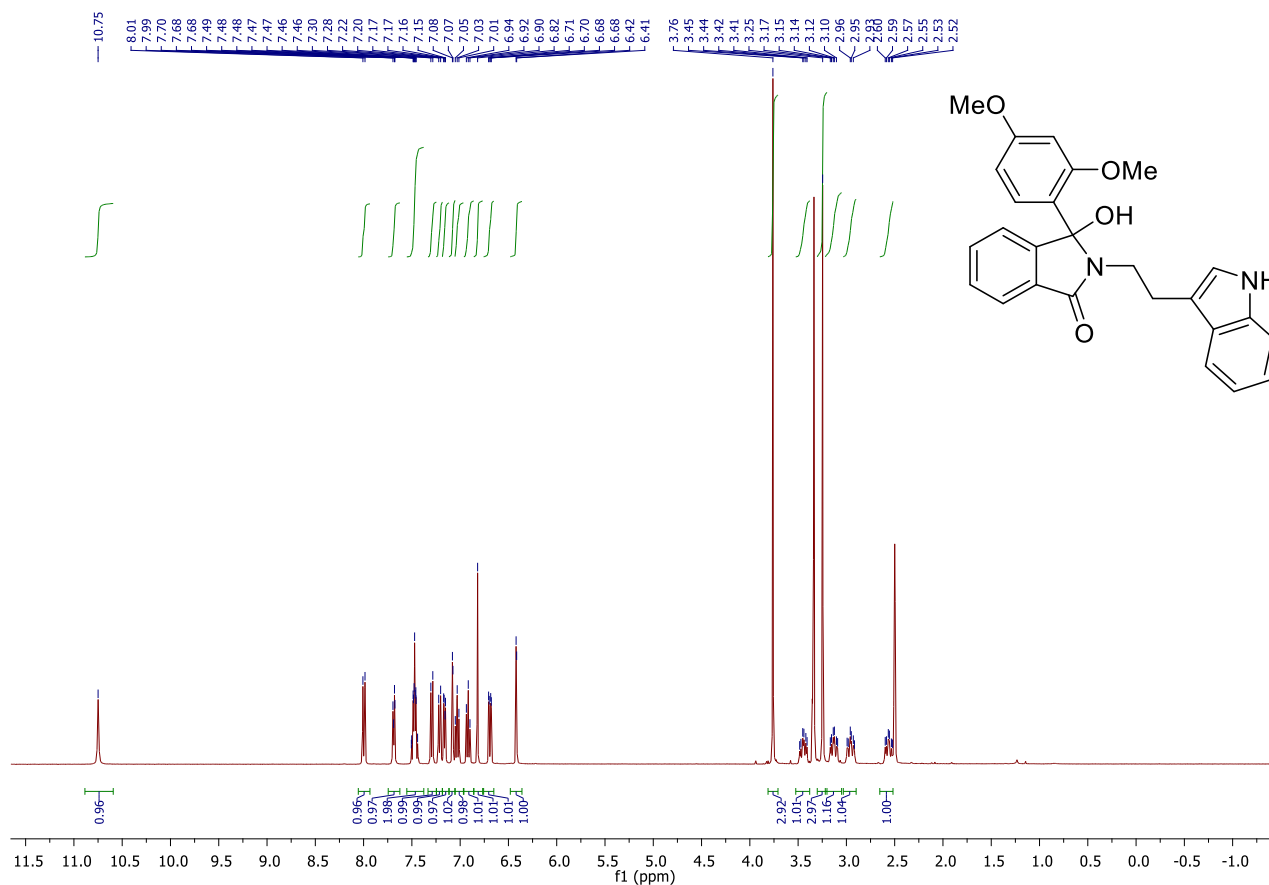


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{DMSO-d}_6$ )

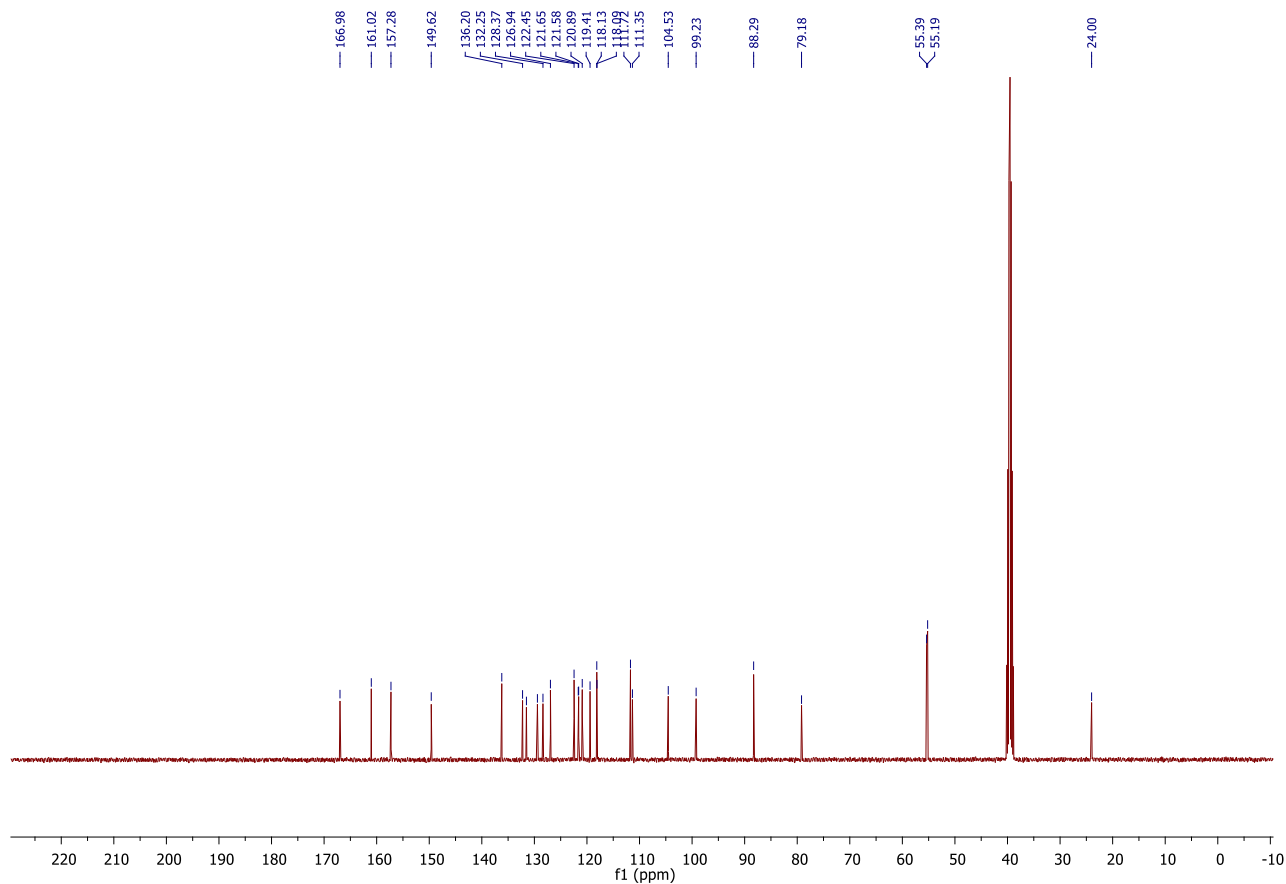


### 1.83. 3-(2,4-dimethoxyphenyl)-3-hydroxy-2-[2-(1H-indol-3-yl)ethyl]isoindolin-1-one (316f)

$^1\text{H}$  NMR (400 MHz,  $\text{DMSO-d}_6$ )

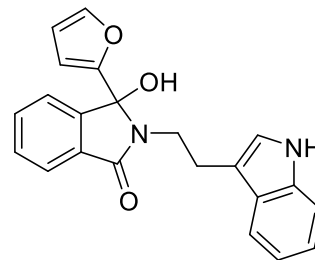
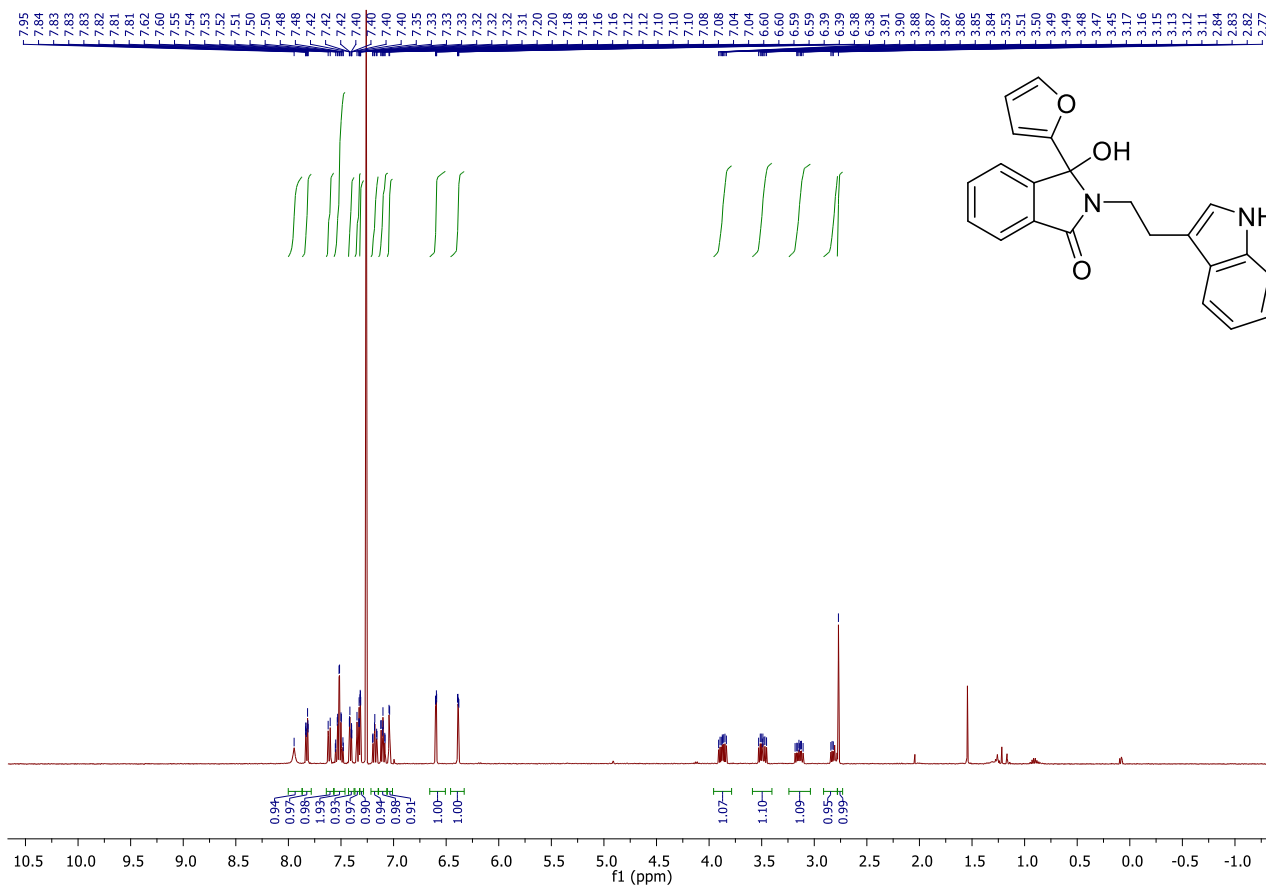


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{DMSO-d}_6$ )

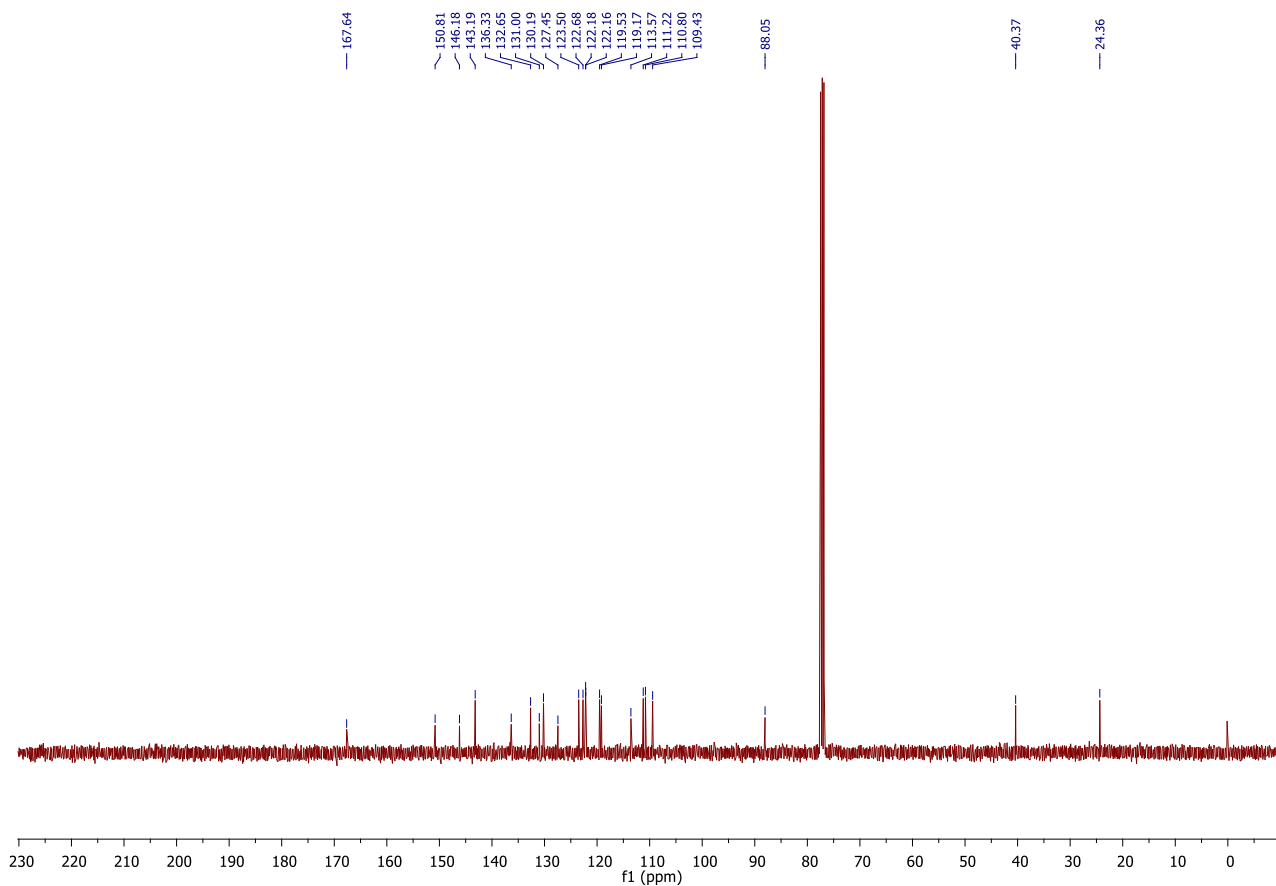


### 1.84. 3-(2-furyl)-3-hydroxy-2-[2-(1H-indol-3-yl)ethyl]isoindolin-1-one (316g)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

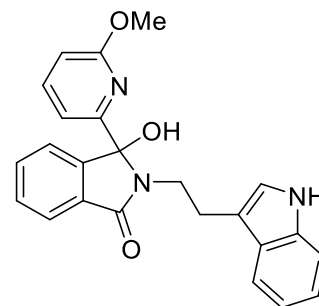
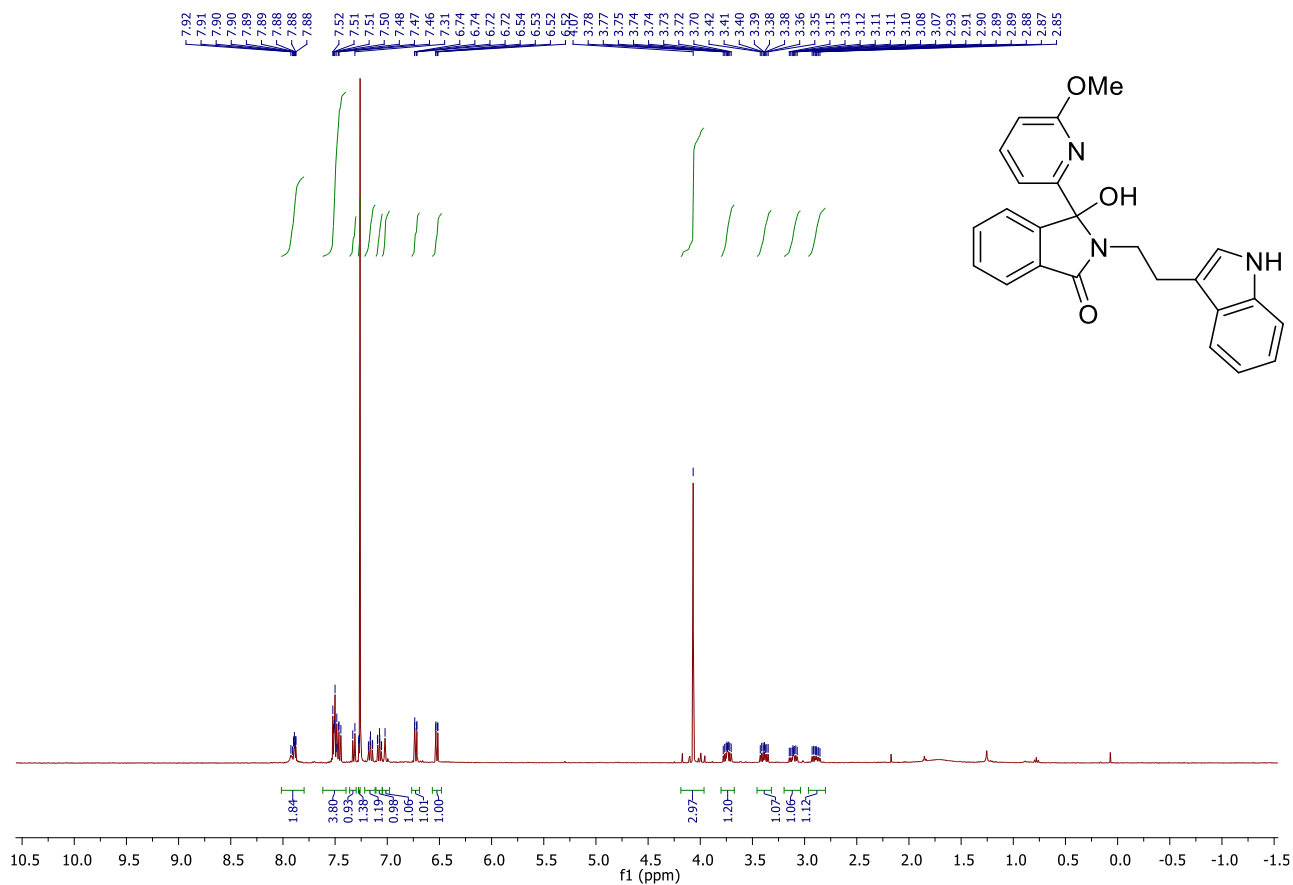


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

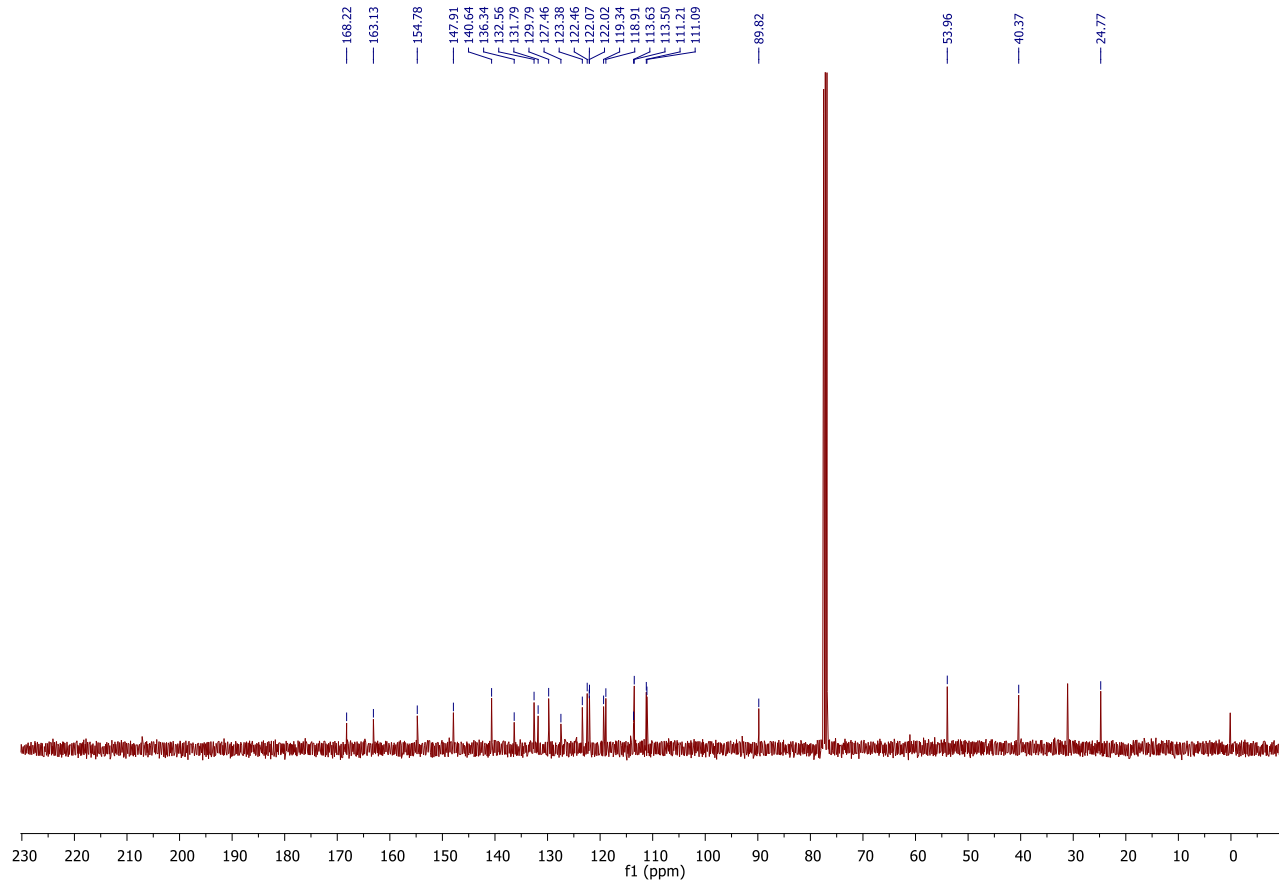


1.85. 3-hydroxy-2-[2-(1H-indol-3-yl)ethyl]-3-(6-methoxy-2-pyridyl)isoindolin-1-one (316h)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

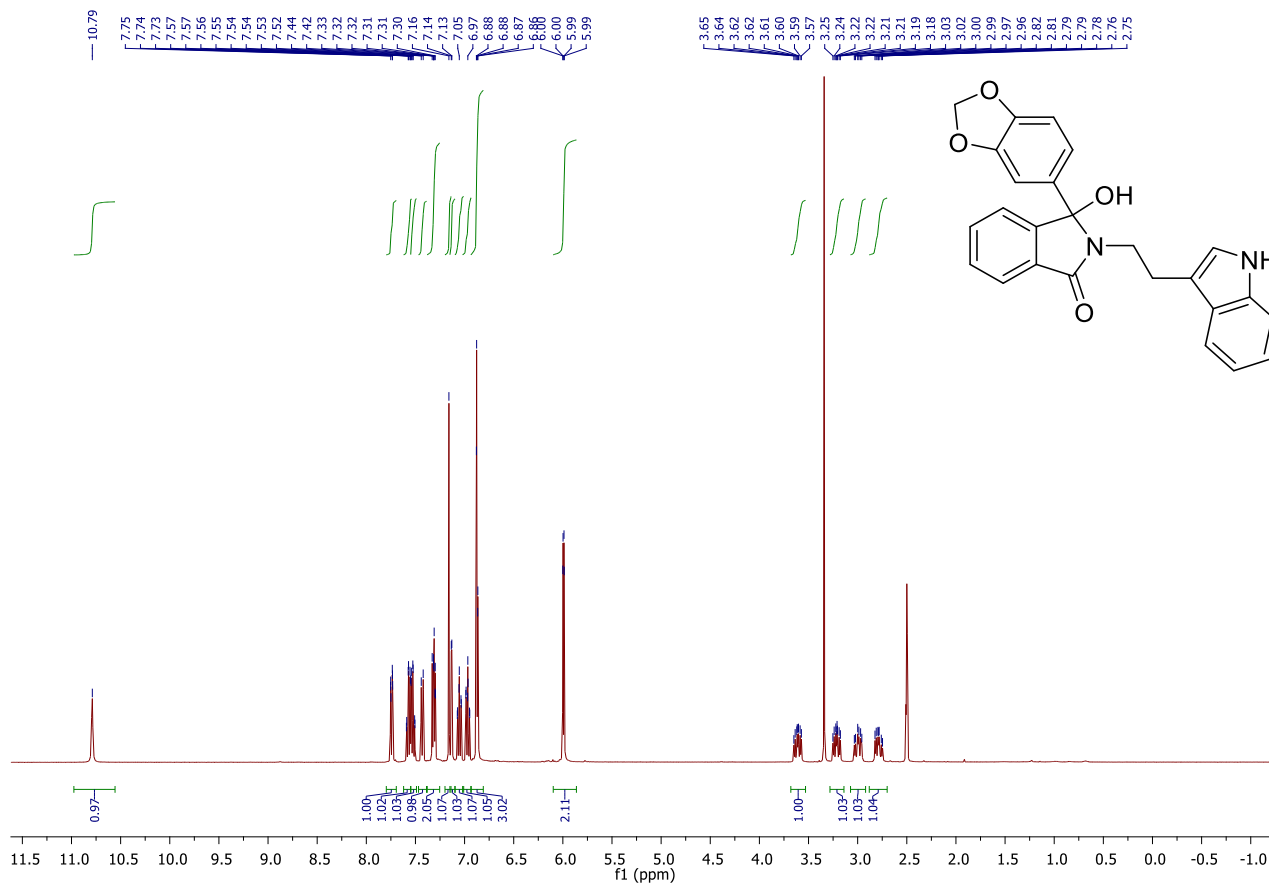


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

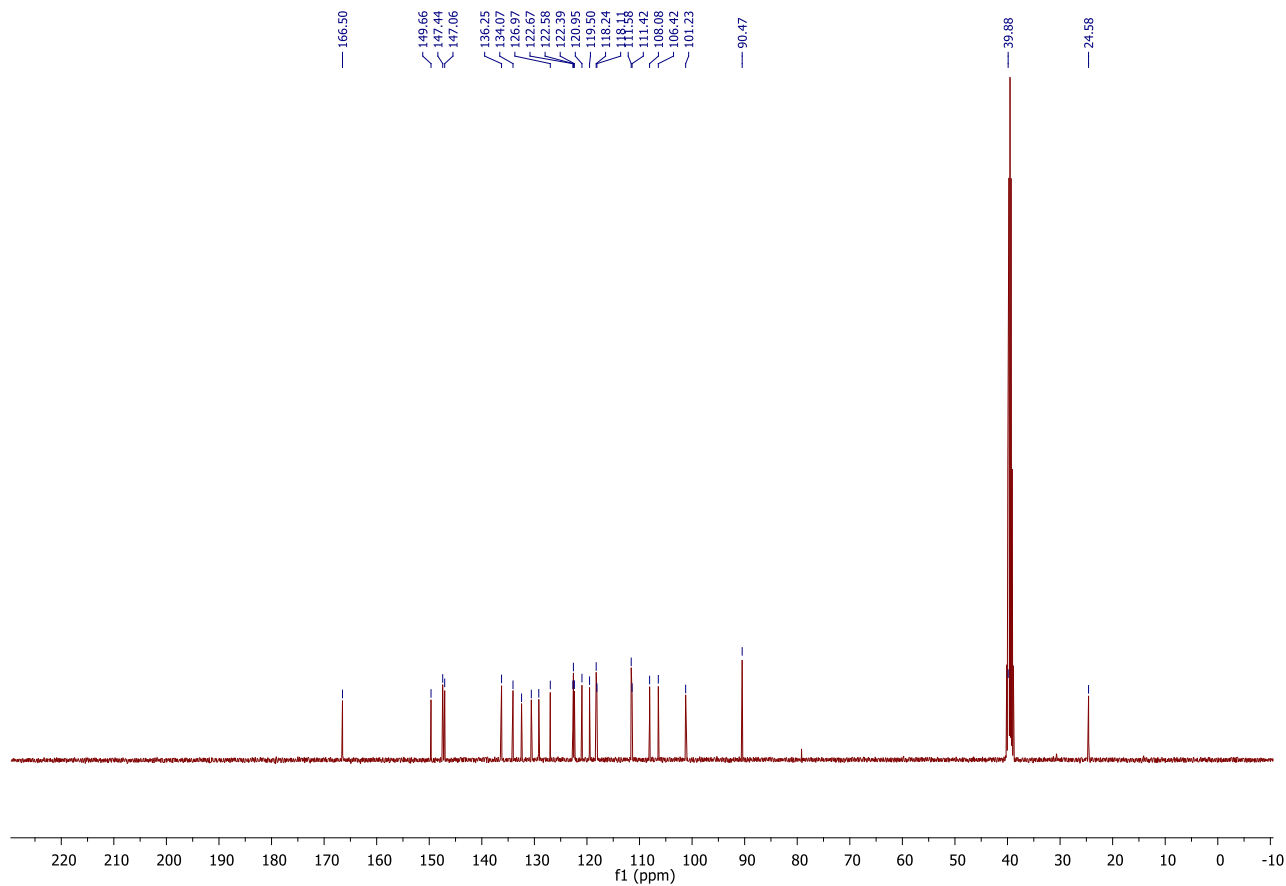


1.86. 3-(1,3-benzodioxol-5-yl)-3-hydroxy-2-[2-(1H-indol-3-yl)ethyl]isoindolin-1-one (316i)

<sup>1</sup>H NMR (400 MHz, DMSO-d<sub>6</sub>)

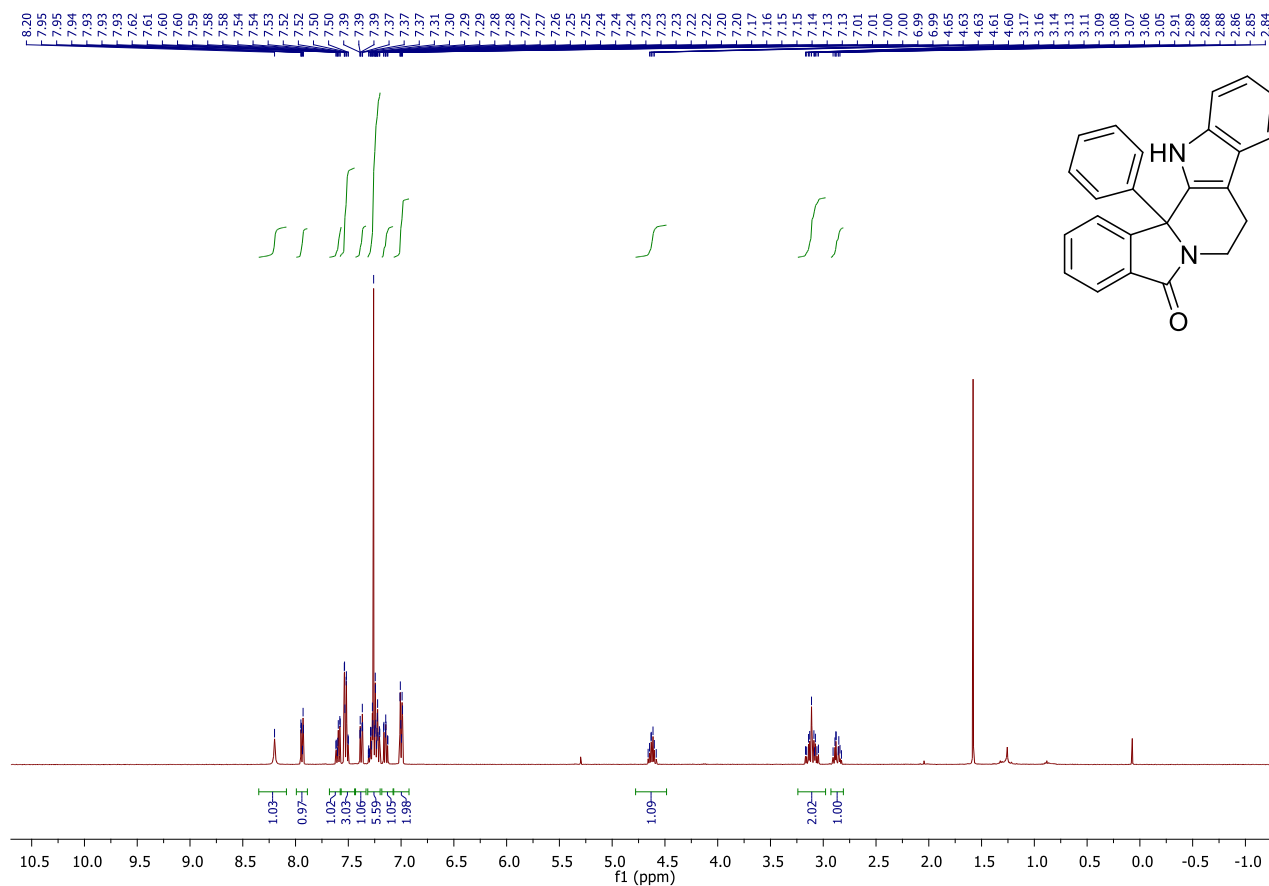


<sup>13</sup>C{<sup>1</sup>H} NMR (101 MHz, DMSO-d<sub>6</sub>)

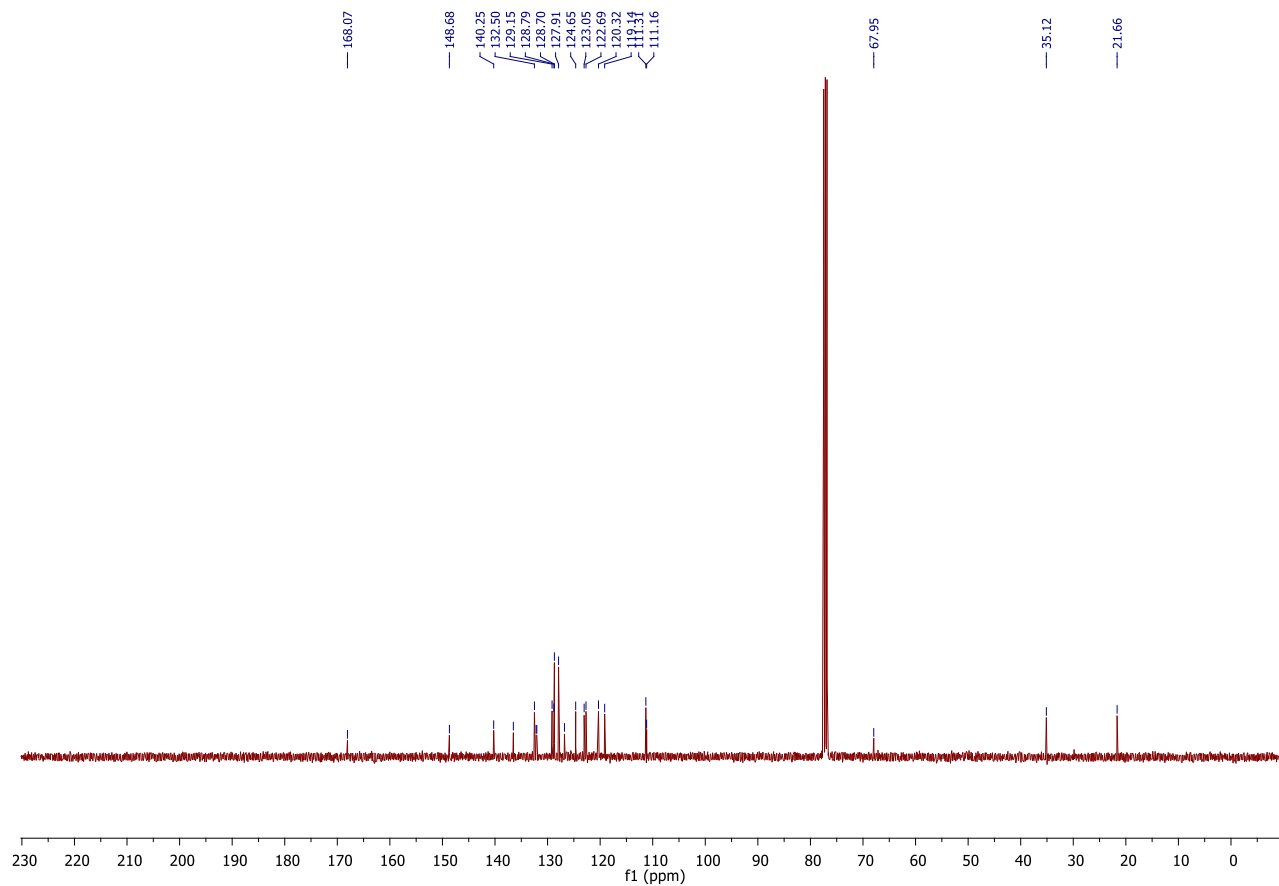


**1.87. 2-phenyl-10,20-diazapentacyclo[11.7.0.0.2,10.0.3,8.0.14,19]jcosa-1(13),3,5,7,14(19),15,17-heptaen-9-one (317a)**

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )



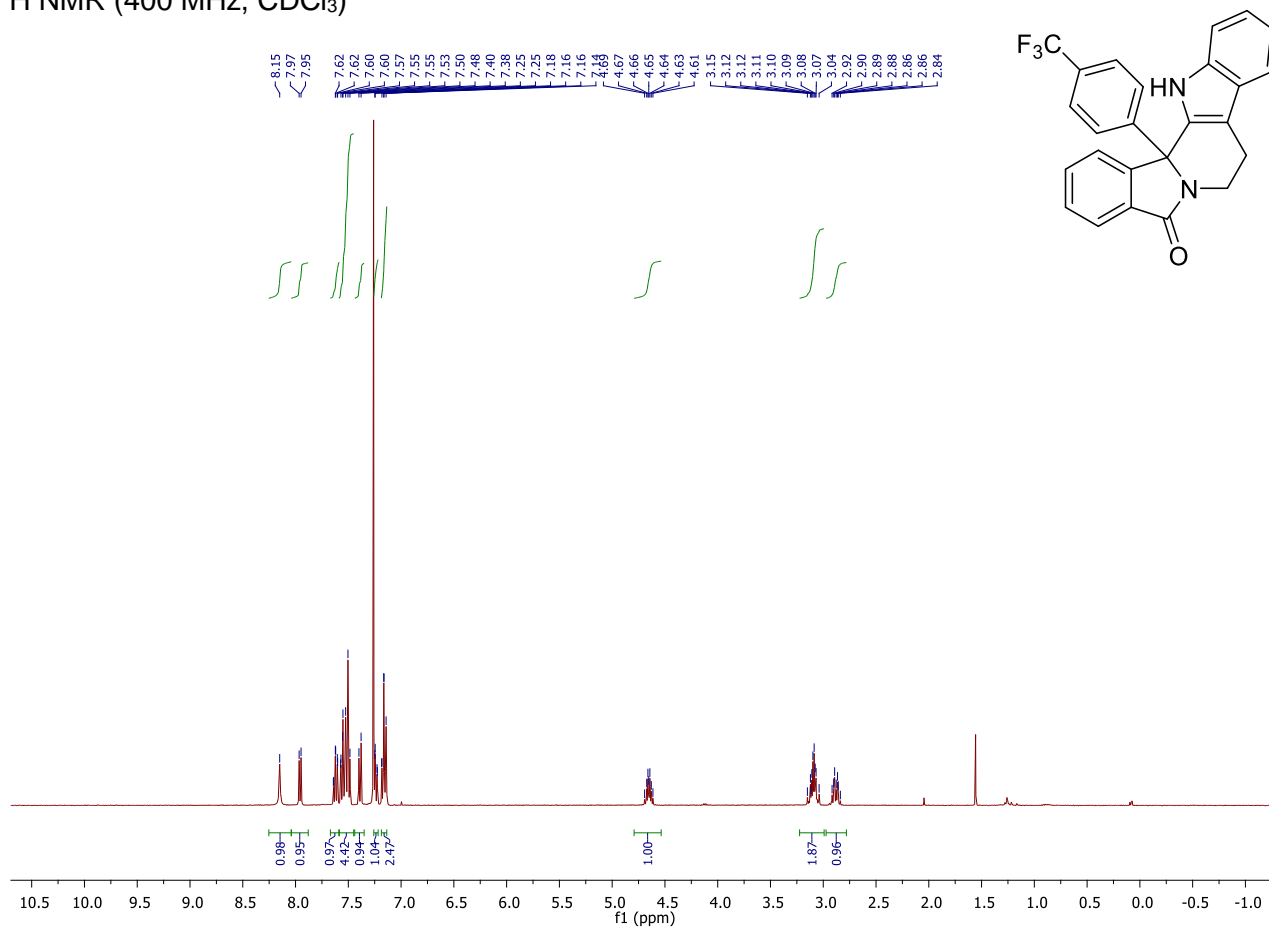
$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )



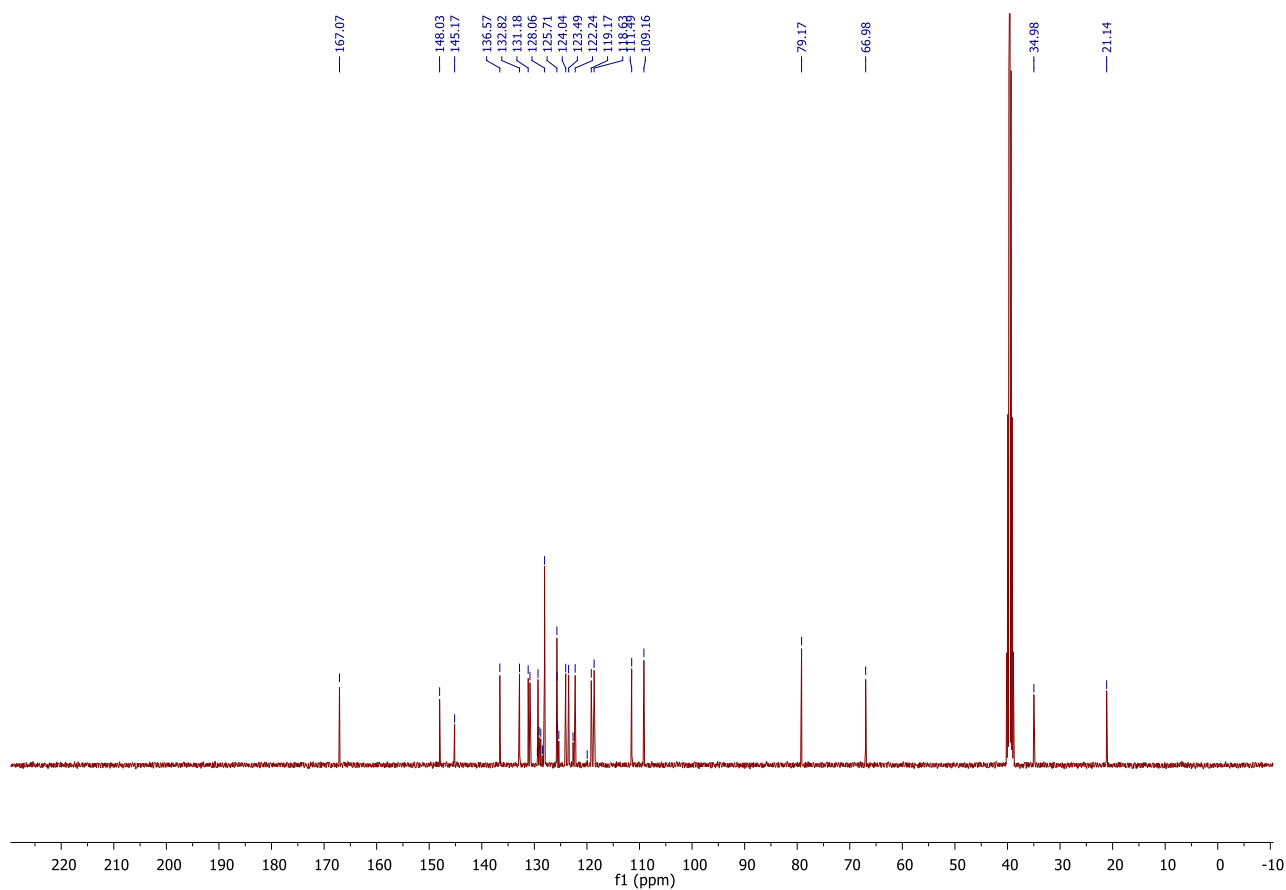


**1.88. 2-[4-(trifluoromethyl)phenyl]-10,20-diazapentacyclo[11.7.0.0.2,10.0.3,8.0.14,19]icosa-1(13),3,5,7,14(19),15,17-heptaen-9-one (317b)**

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

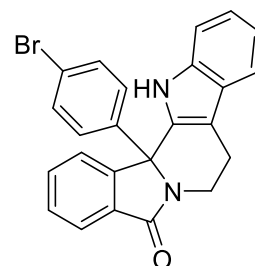
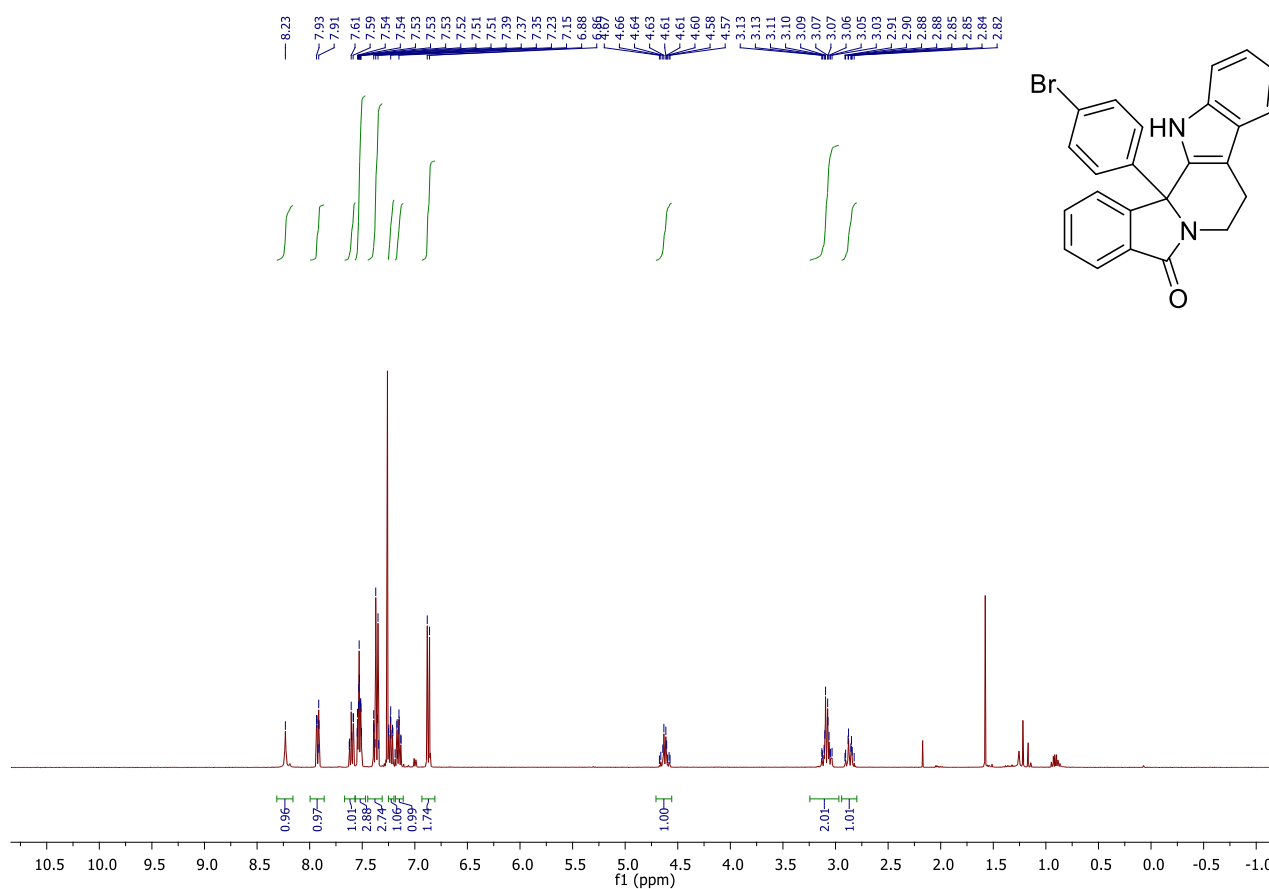


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{DMSO-d}_6$ )

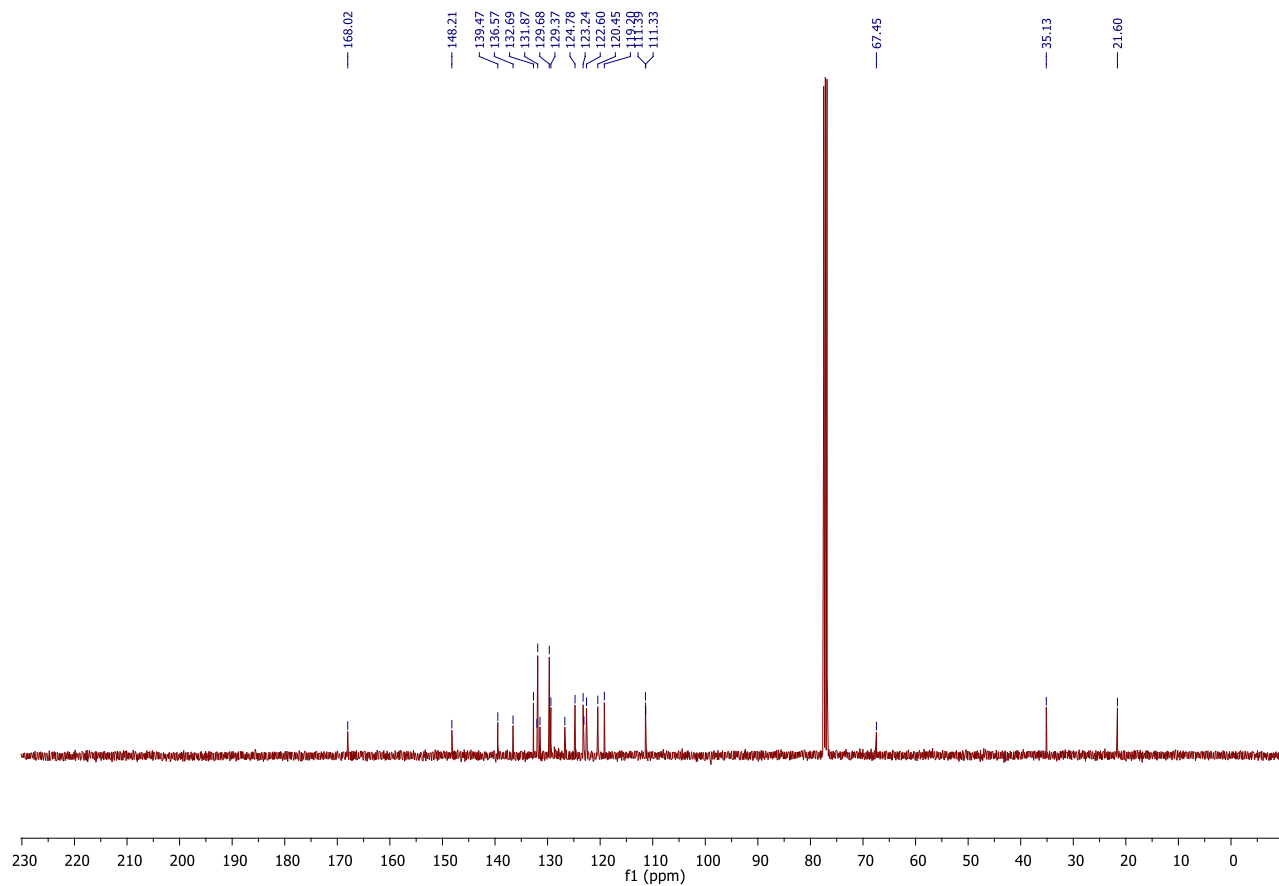


1.89. 2-(4-bromophenyl)-10,20-diazapentacyclo[11.7.0.02,10.03,8.014,19]icosa-1(13),3,5,7,14(19),15,17-heptaen-9-one (317c)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

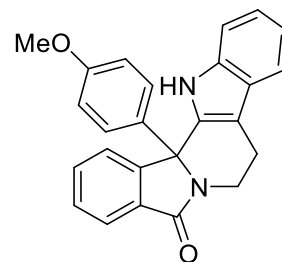
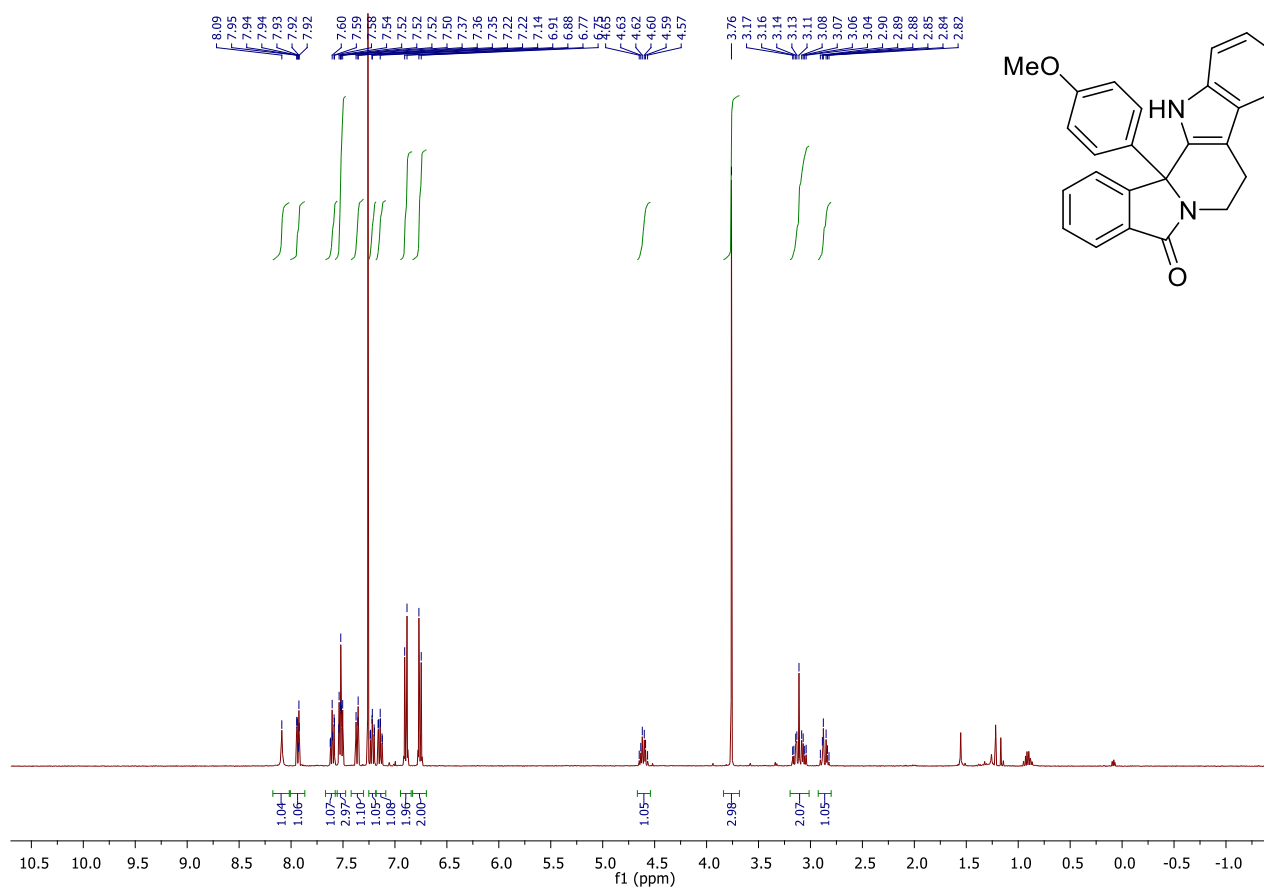


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

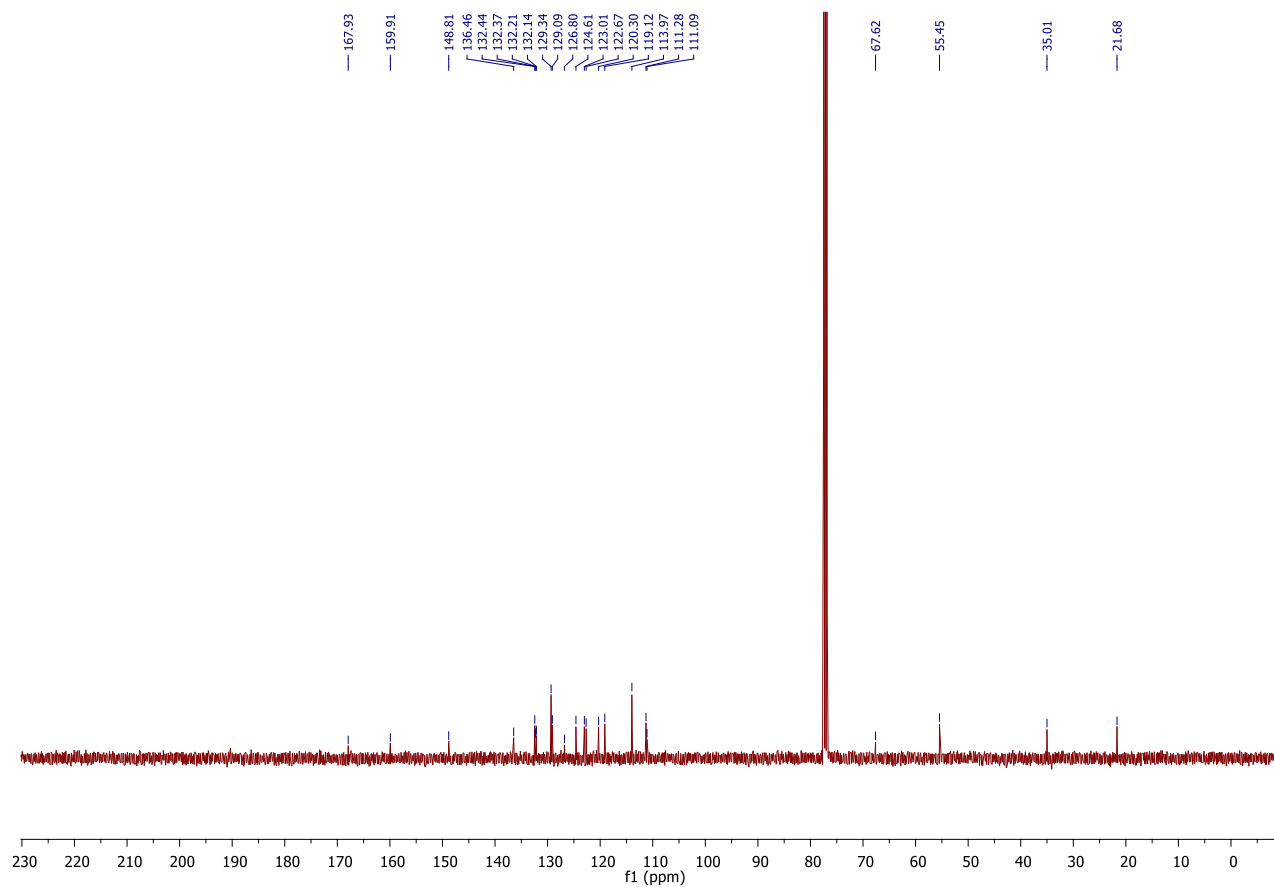


**1.90. 2-(4-methoxyphenyl)-10,20-diazapentacyclo[11.7.0.0.2,10.0.3,8.0.14,19]icosa-1(13),3,5,7,14(19),15,17-heptaen-9-one (317d)**

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

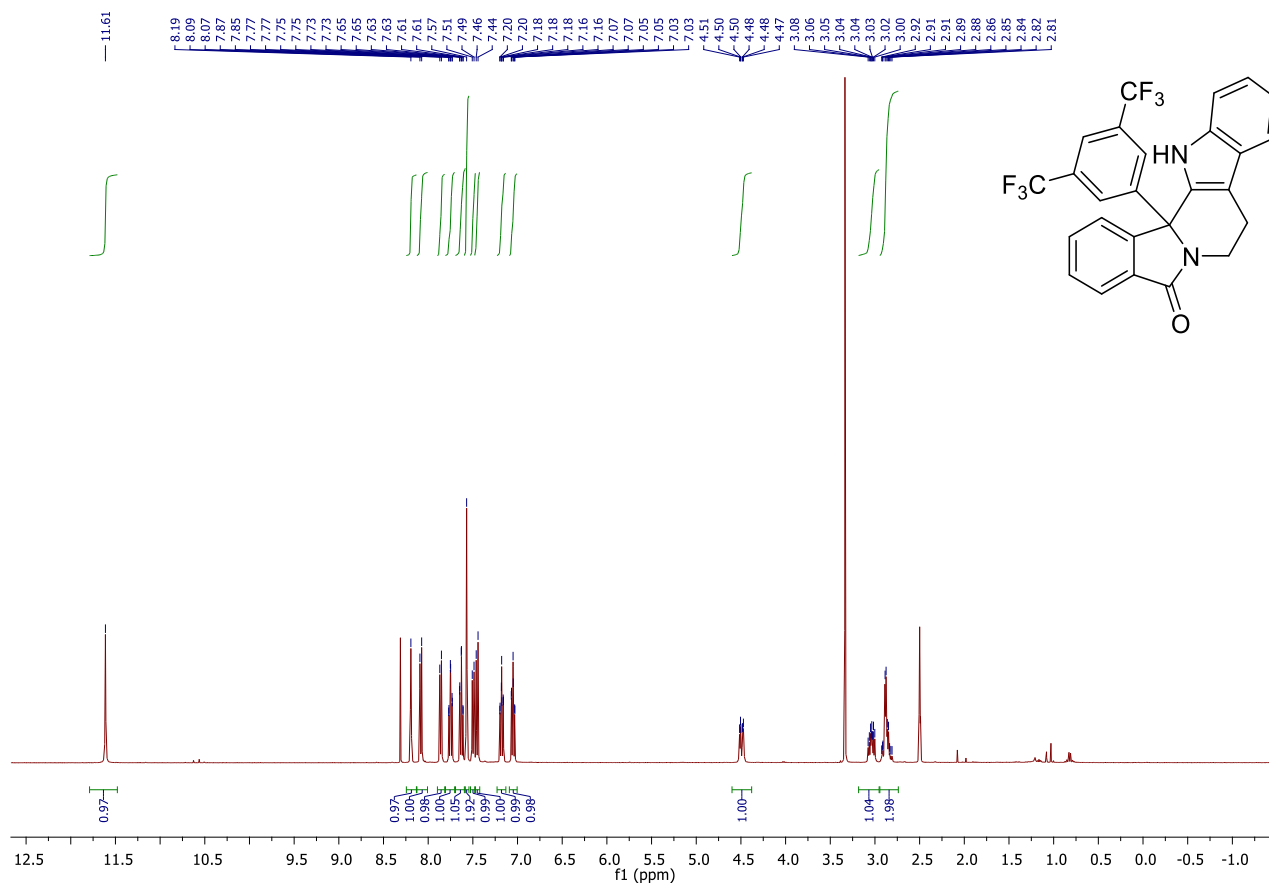


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

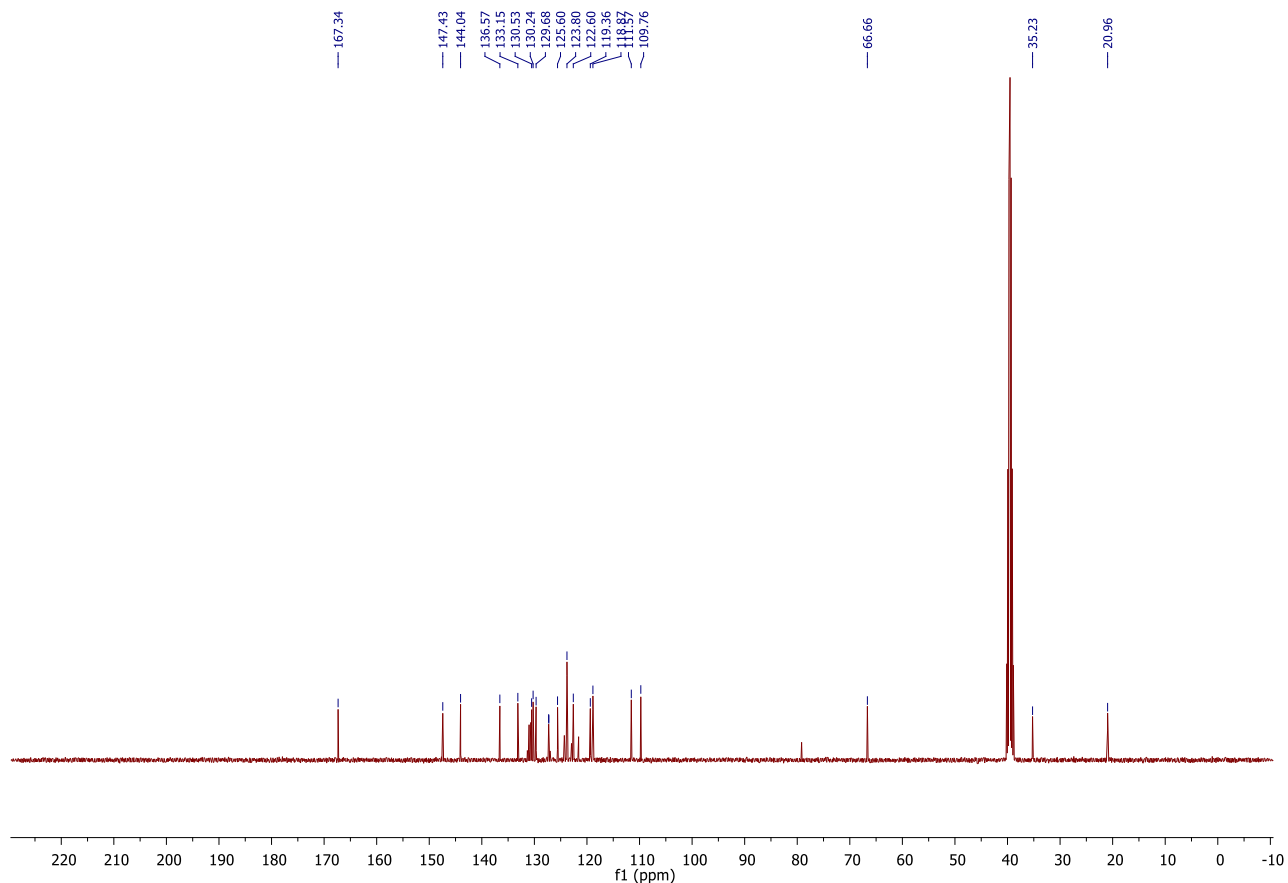


1.91. 2-[3,5-bis(trifluoromethyl)phenyl]-10,20-diazapentacyclo[11.7.0.02,10.03,8.014,19]icosa-1(13),3,5,7,14(19),15,17-heptaen-9-one (317e)

$^1\text{H}$  NMR (400 MHz,  $\text{DMSO-d}_6$ )

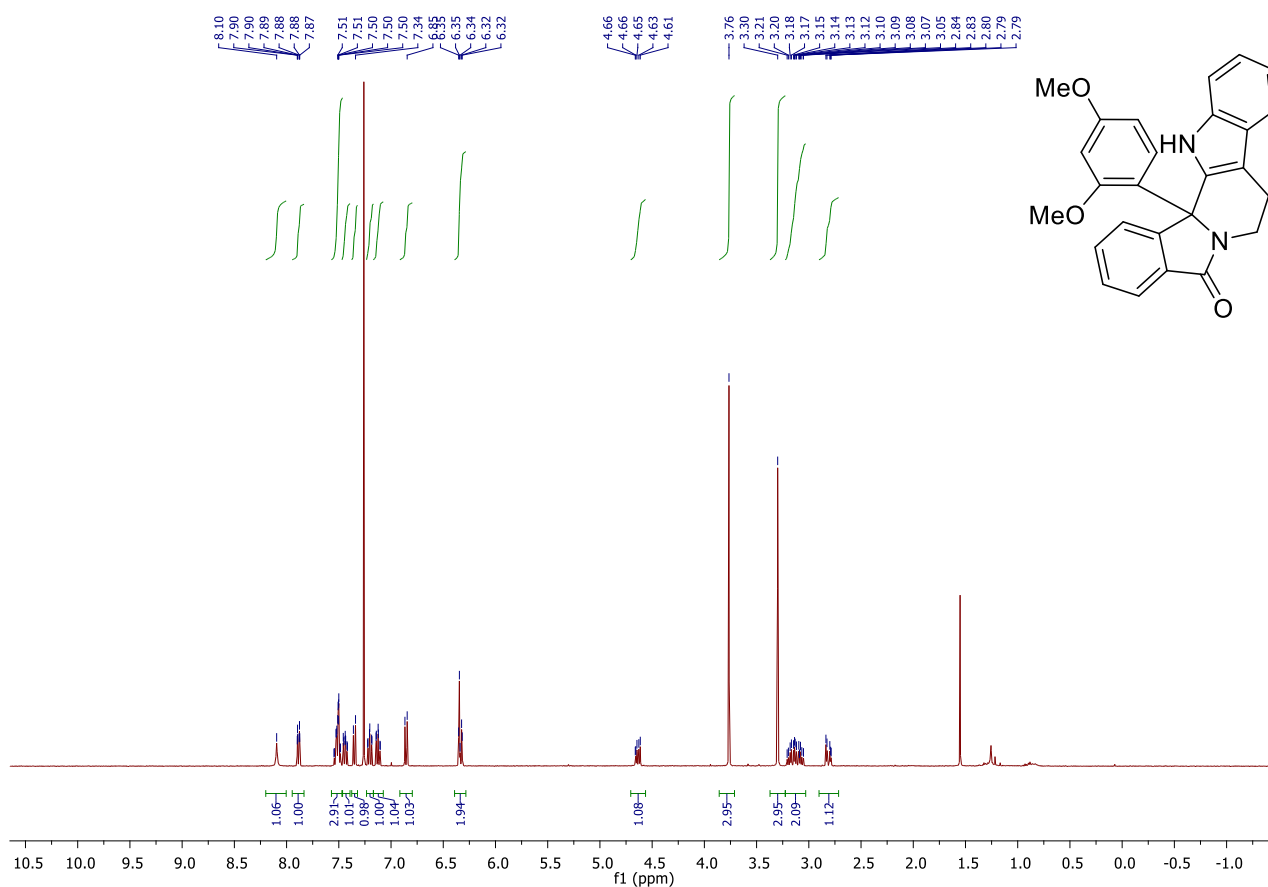


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{DMSO-d}_6$ )

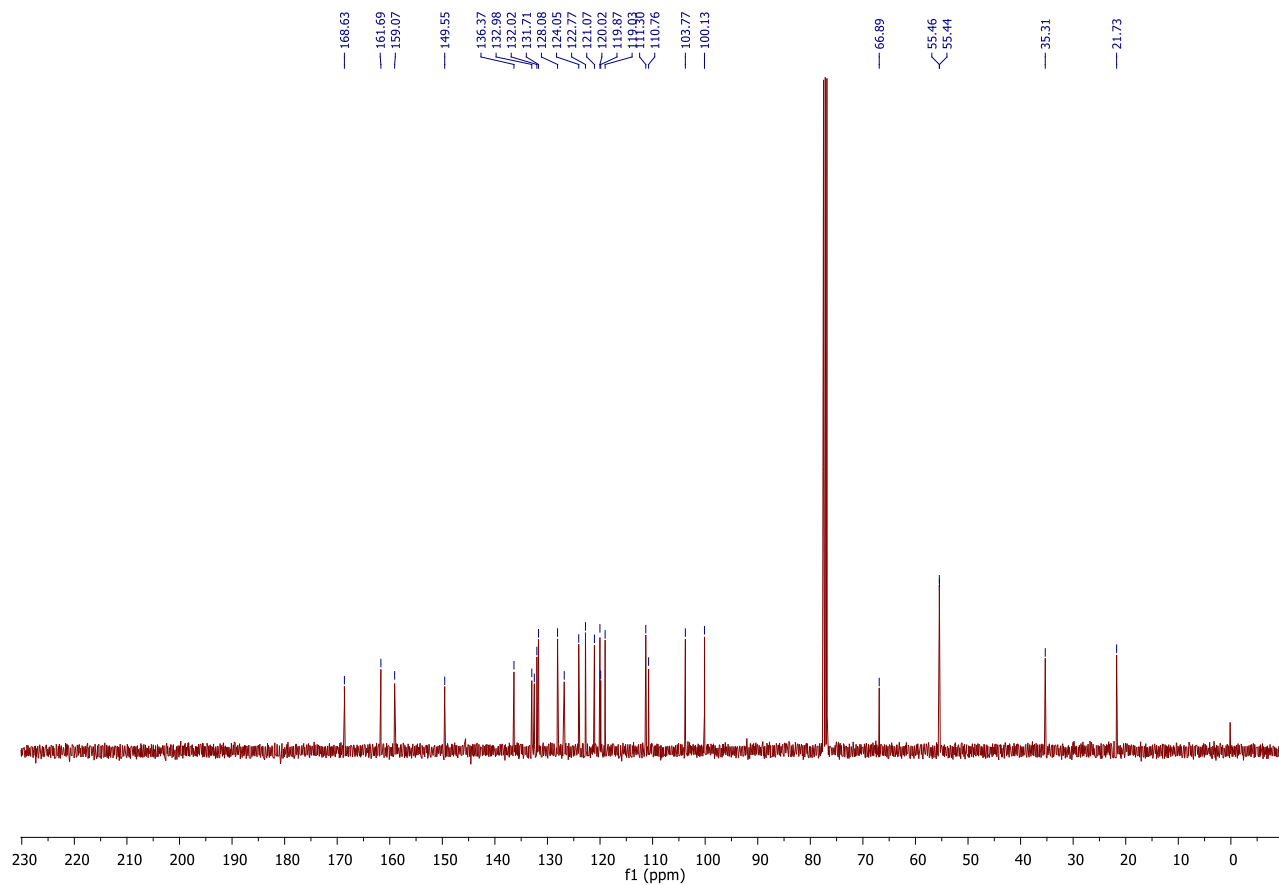


**1.92. 2-(2,4-dimethoxyphenyl)-10,20-diazapentacyclo[11.7.0.02,10.03,8.014,19]icosa-1(13),3,5,7,14(19),15,17-heptaen-9-one (317f)**

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

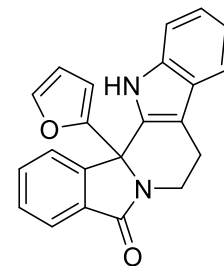
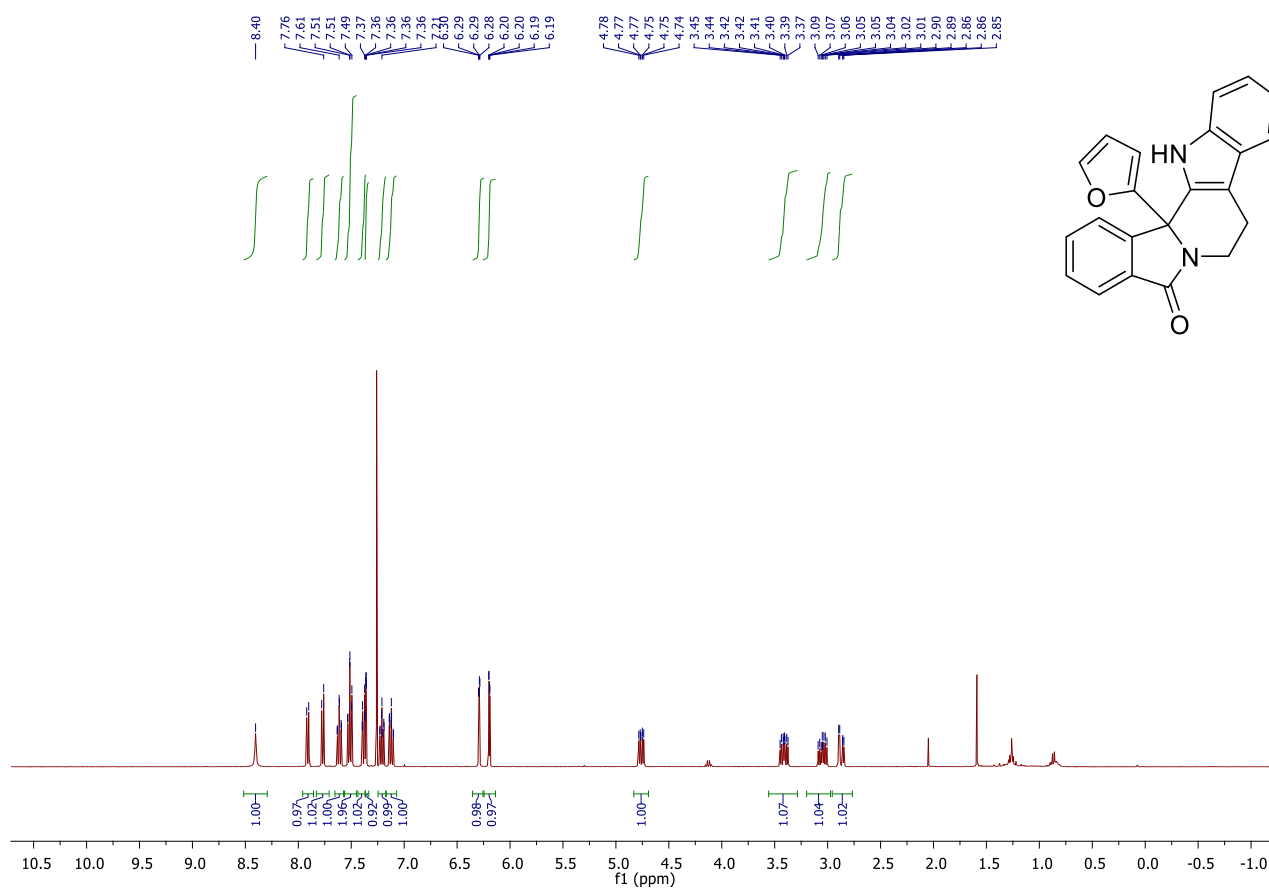


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

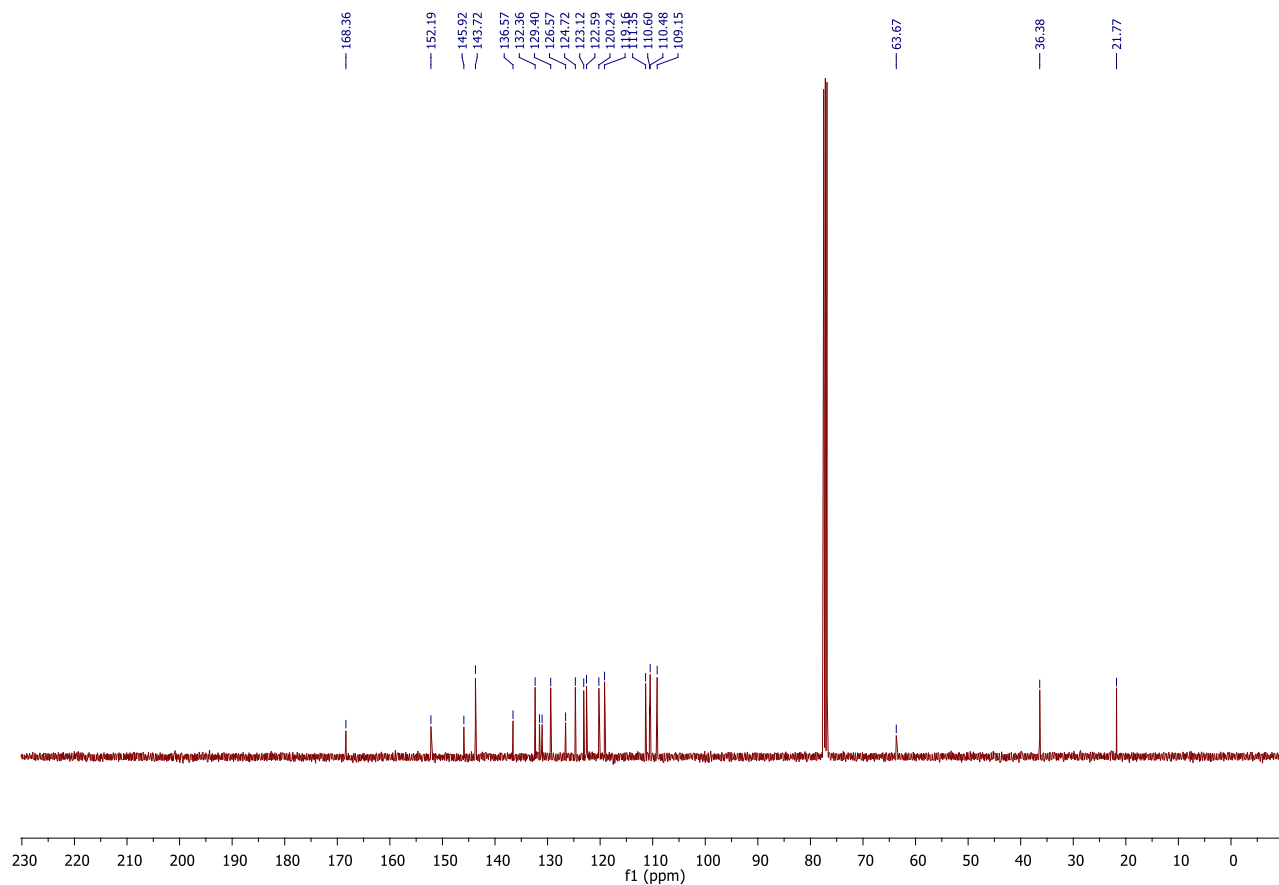


1.93. 2-(2-furyl)-10,20-diazapentacyclo[11.7.0.02,10.03,8.014,19]icosa-1(13),3,5,7,14(19),15,17-heptaen-9-one (317g)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

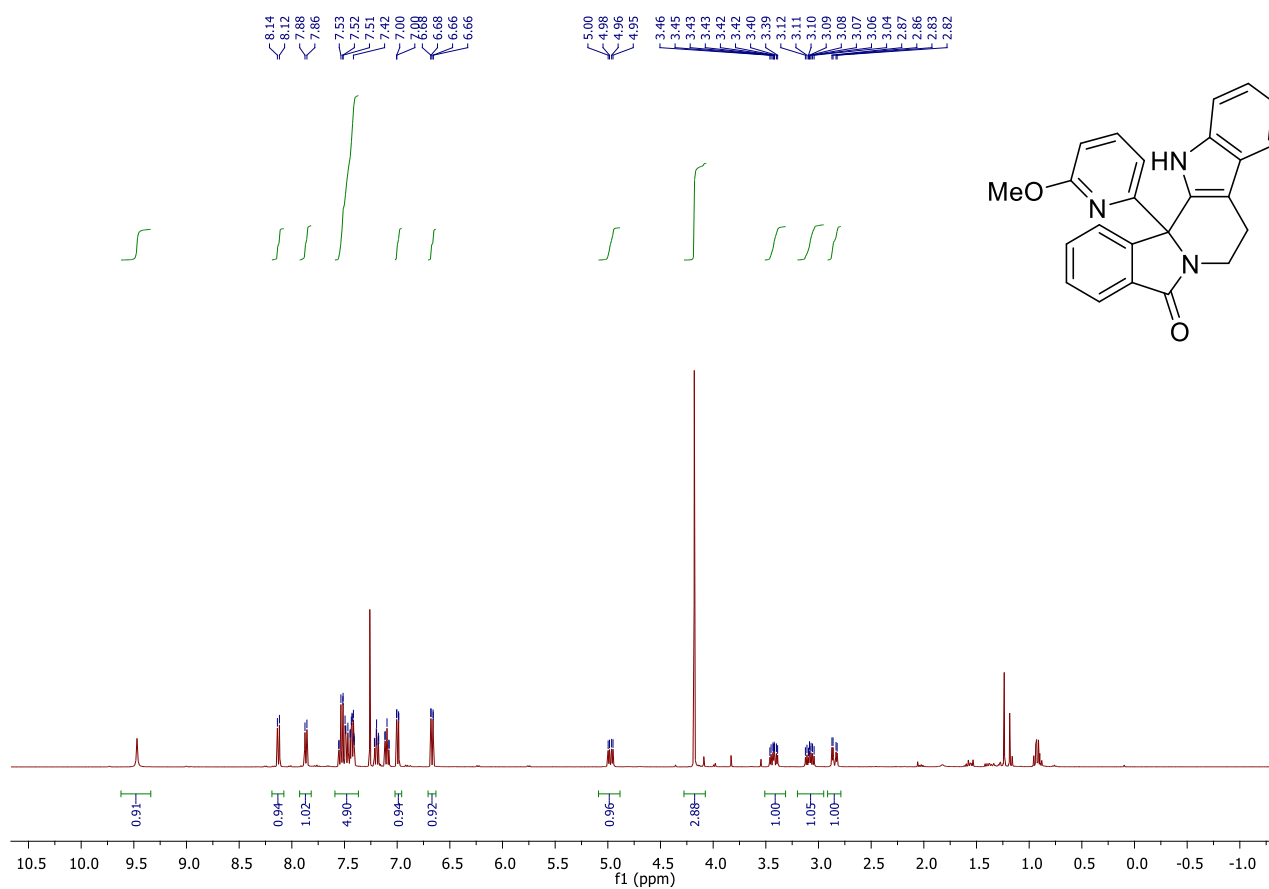


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

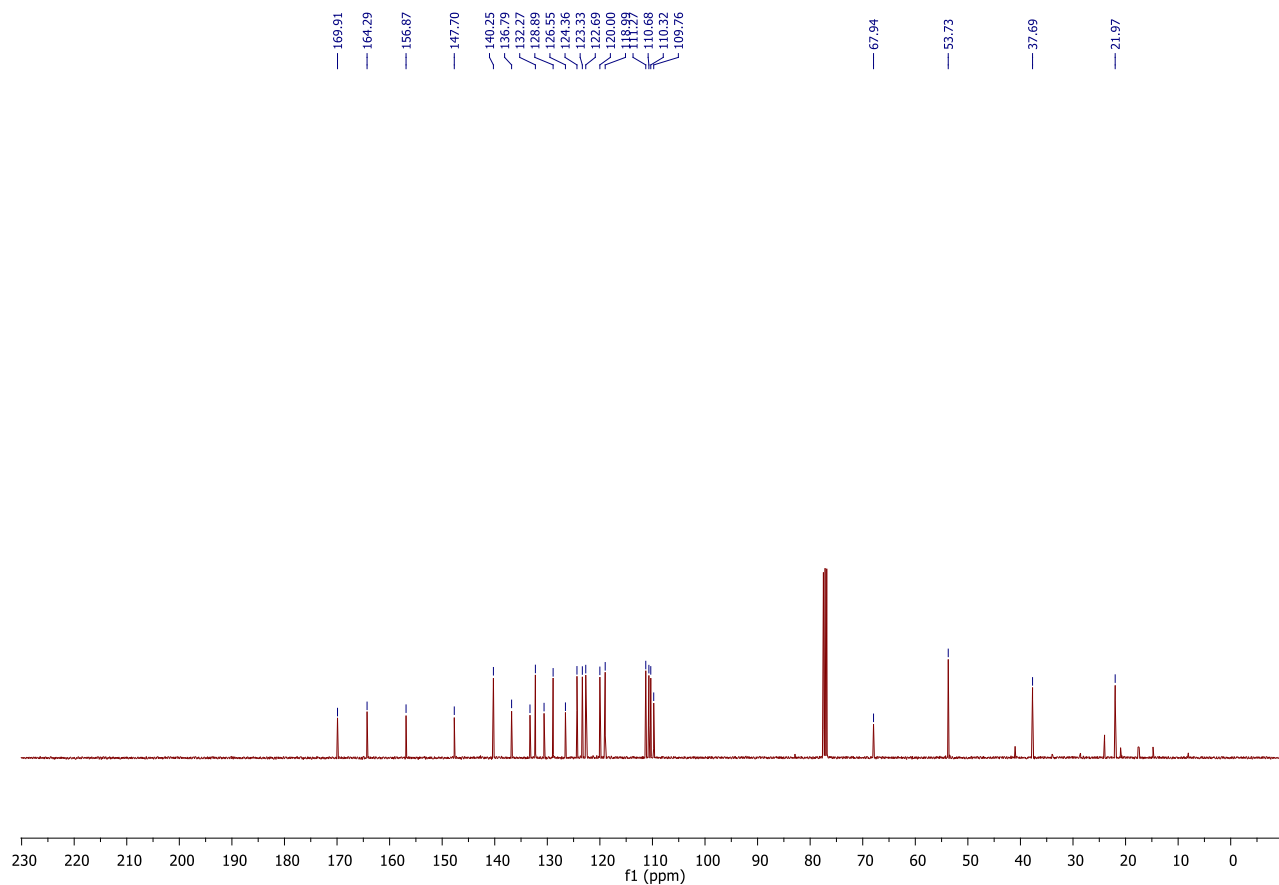


**1.94. 2-(6-methoxy-2-pyridyl)-10,20-diazapentacyclo[11.7.0.0.2,10.0.3,8.0.14,19]icosa-1(13),3,5,7,14(19),15,17-heptaen-9-one (317h)**

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

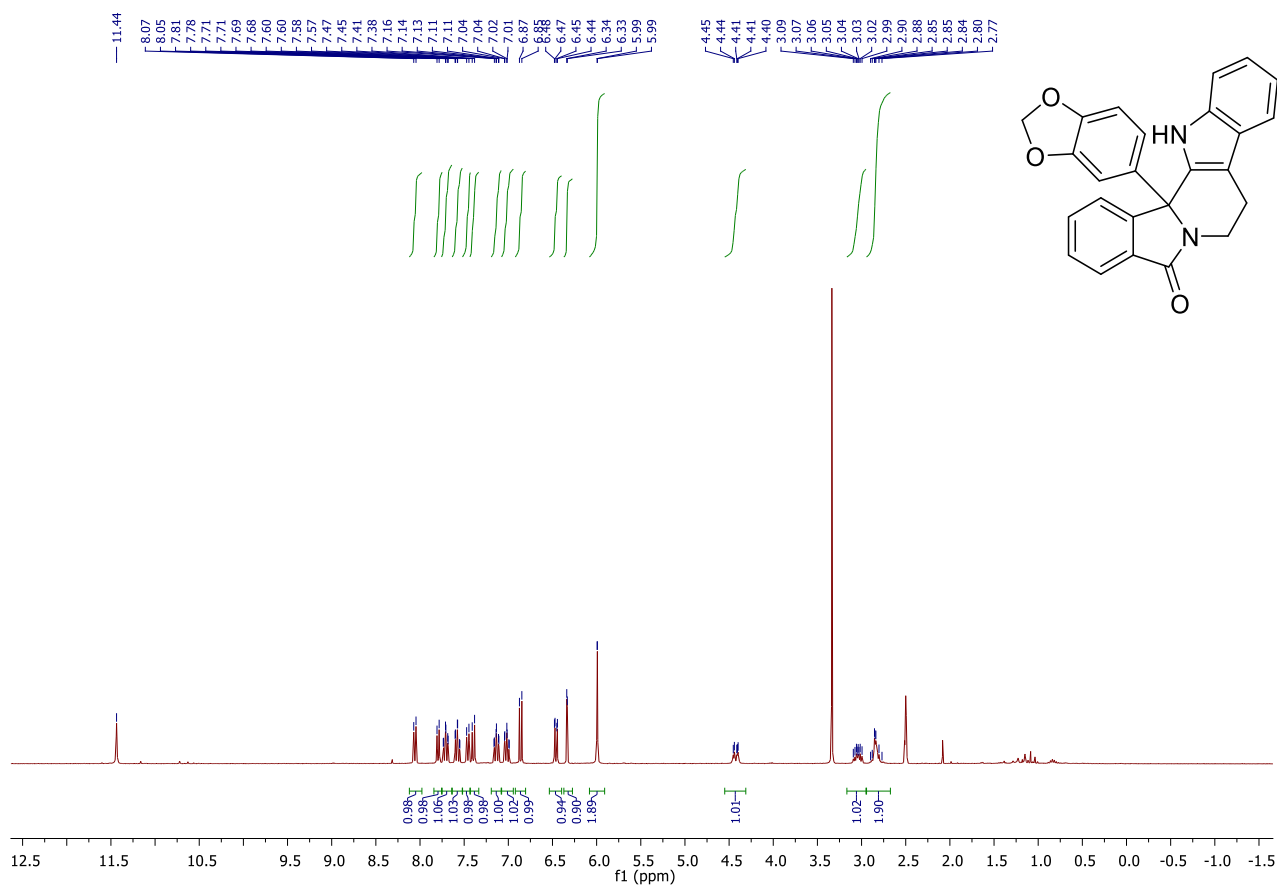


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

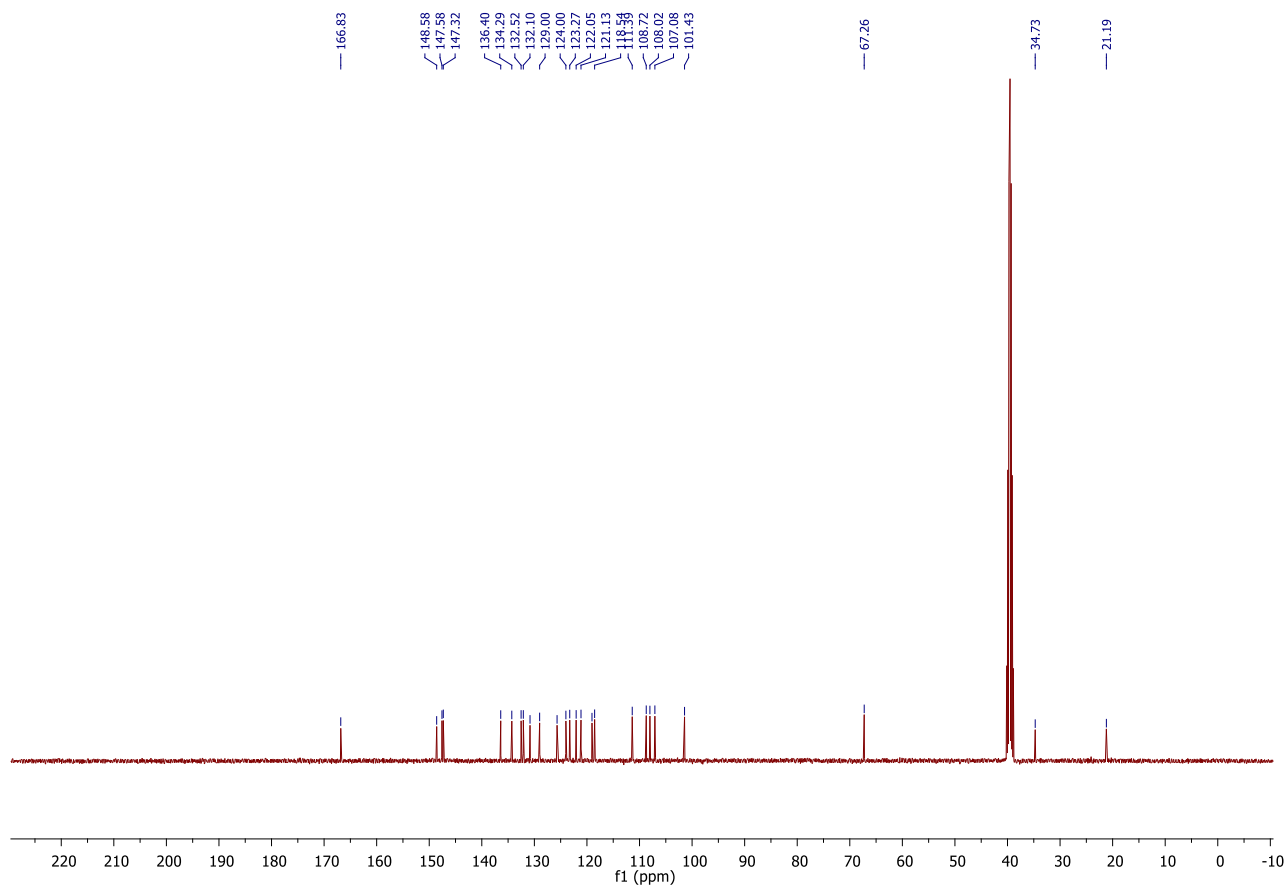


1.95. 2-(1,3-benzodioxol-5-yl)-10,20-diazapentacyclo[11.7.0.0.2,10.0.3,8.0.14,19]icosa-1(13),3,5,7,14(19),15,17-heptaen-9-one (317i)

$^1\text{H}$  NMR (400 MHz,  $\text{DMSO-d}_6$ )



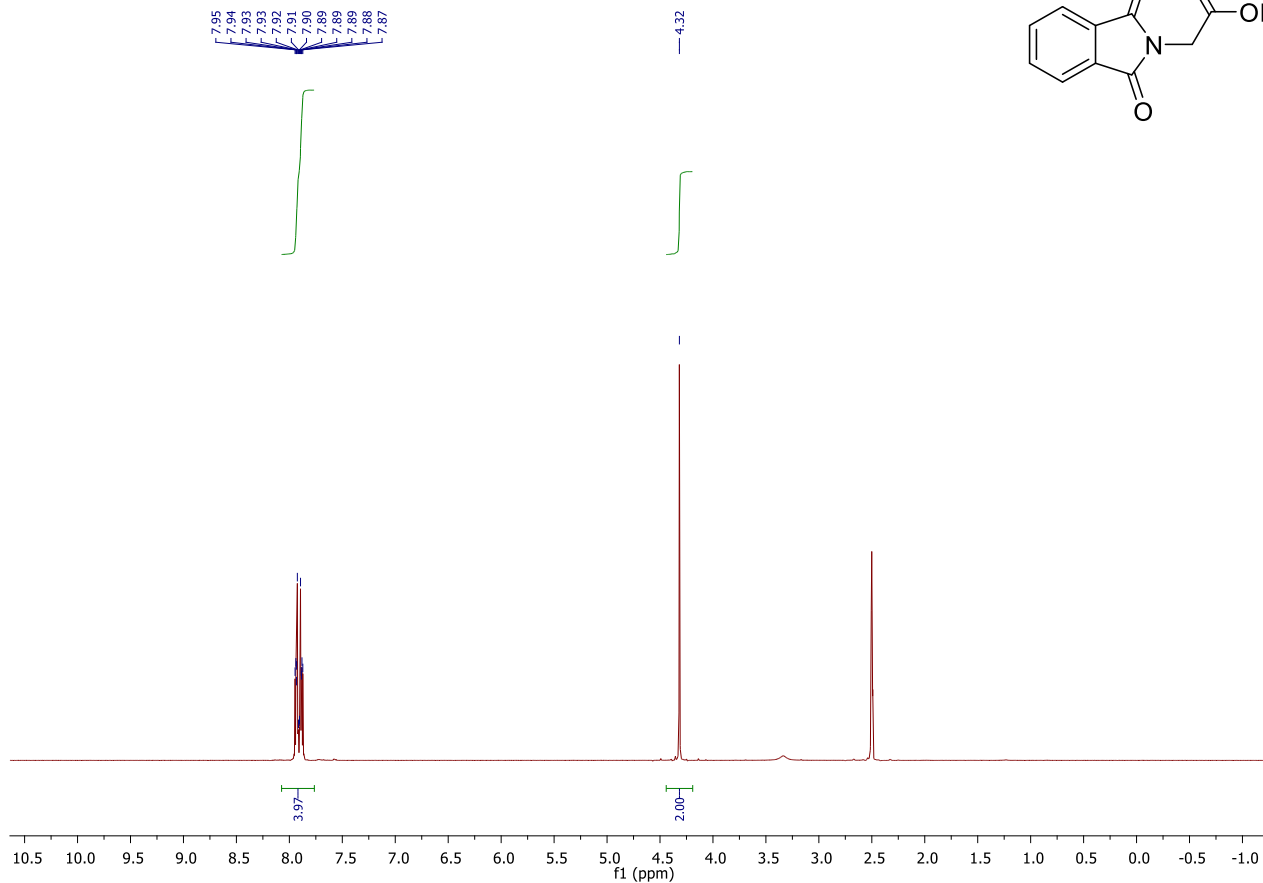
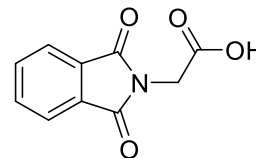
$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{DMSO-d}_6$ )



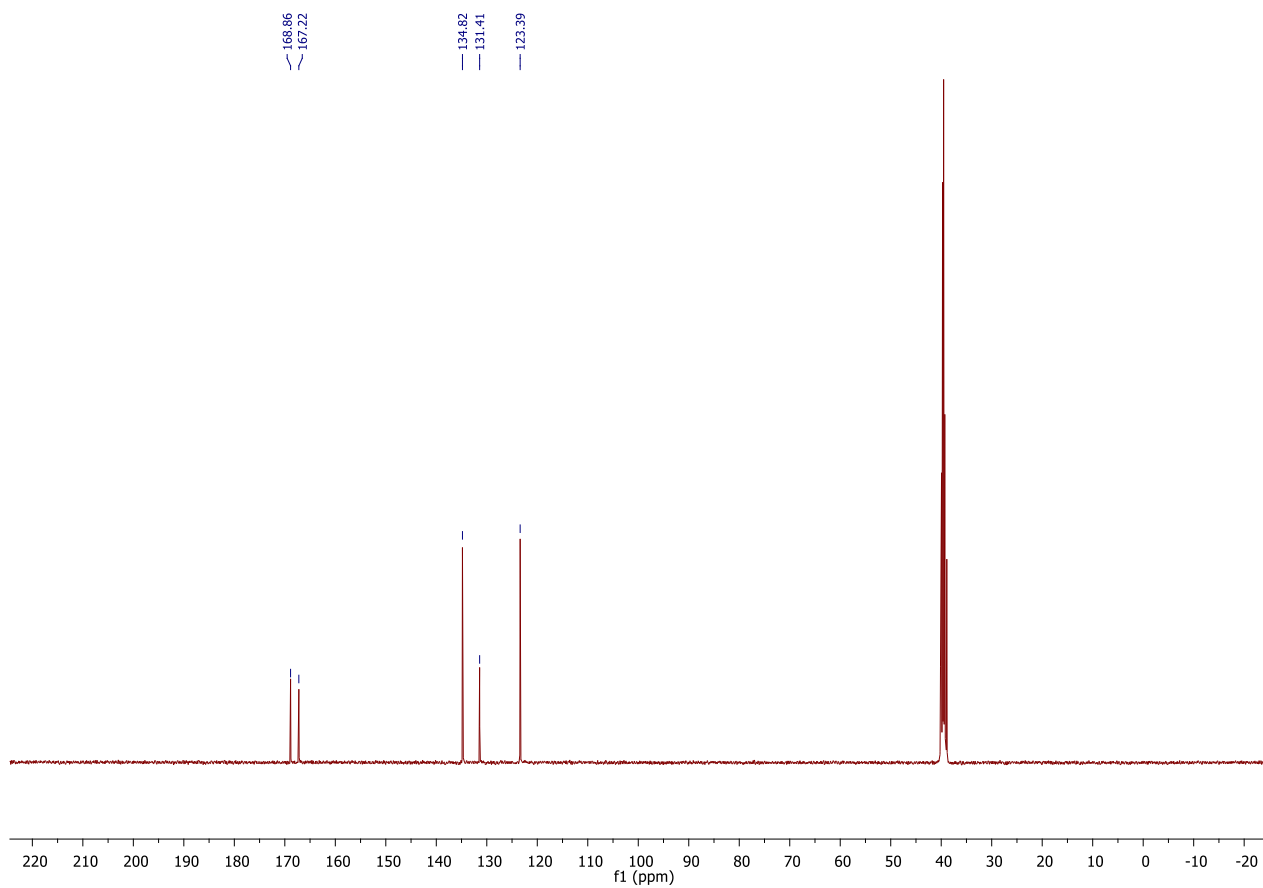


1.96. (1,3-dioxo-1,3-dihydro-2H-isoindol-2-yl)acetic acid (Phthalimidoglycine) (323)

$^1\text{H}$  NMR (400 MHz, DMSO- $\text{d}_6$ )

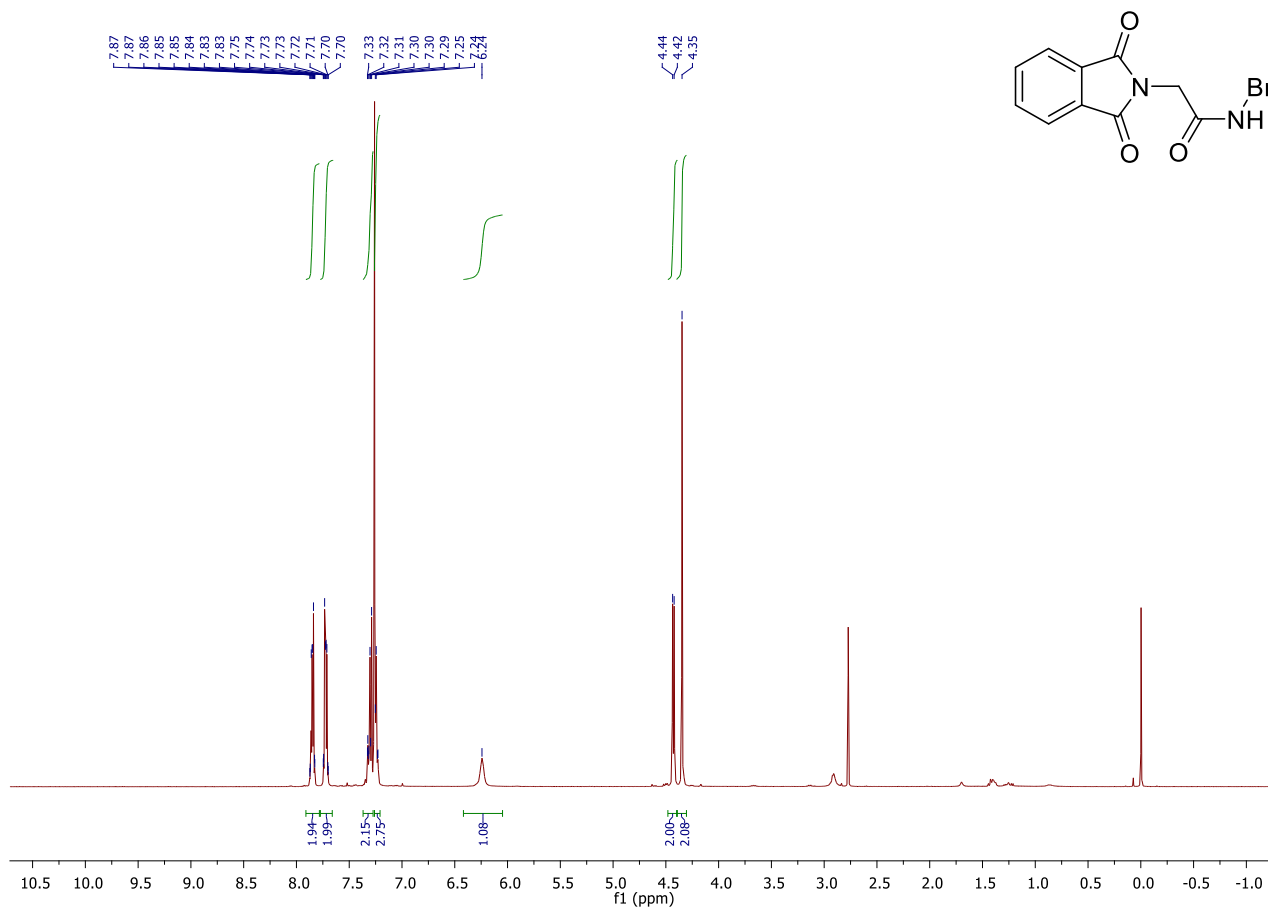


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz, DMSO- $\text{d}_6$ )

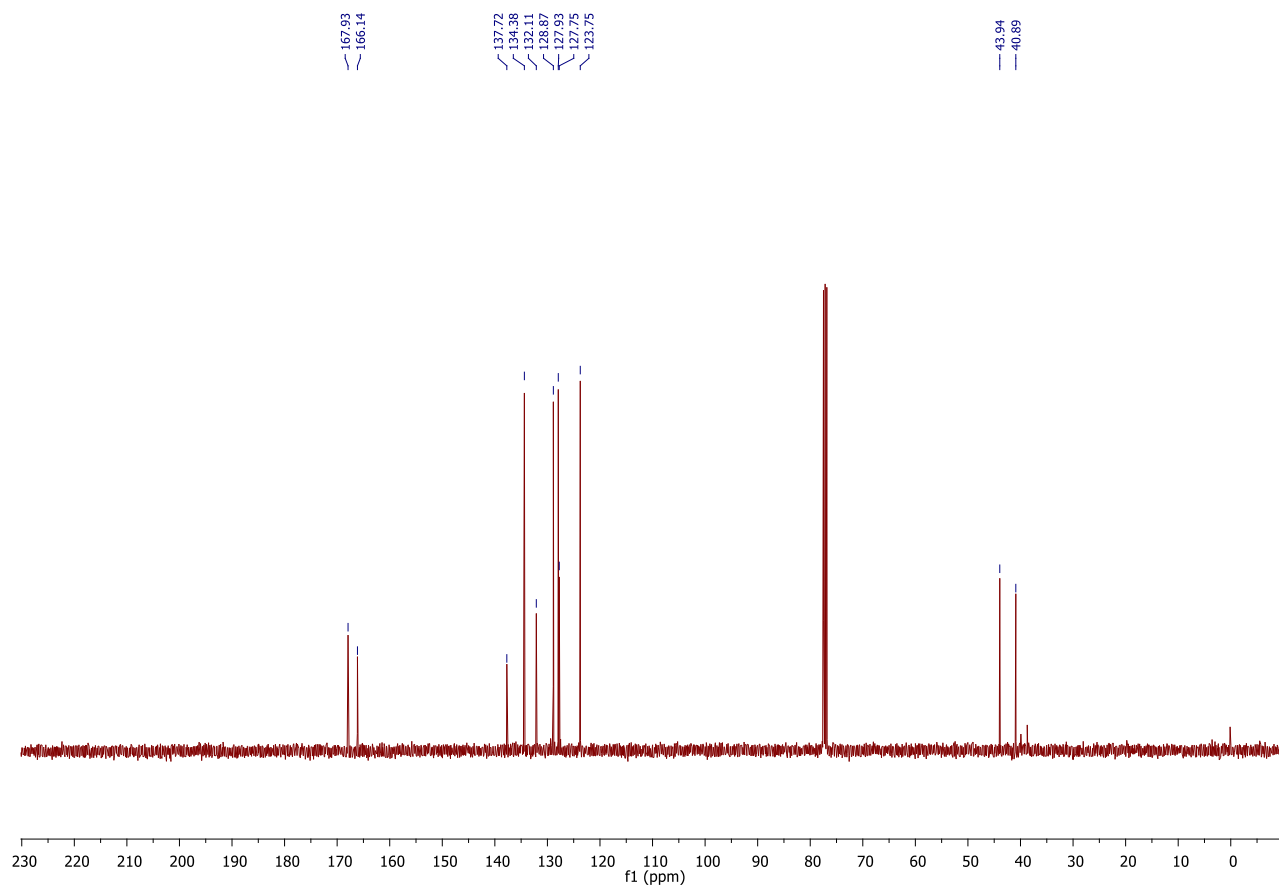


### 1.97. N-benzyl-2-(1,3-dioxisoindolin-2-yl)acetamide (324a)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

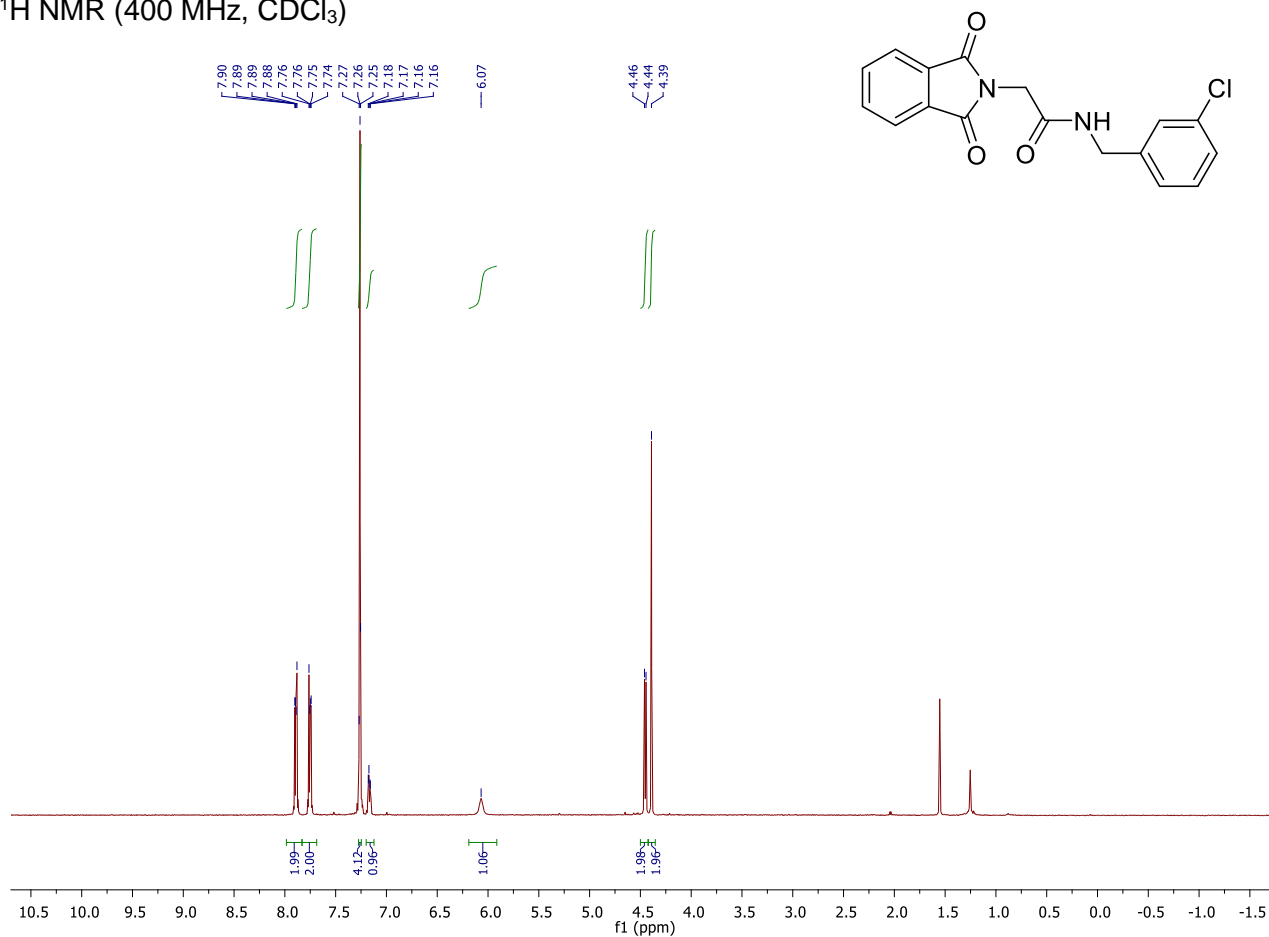


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

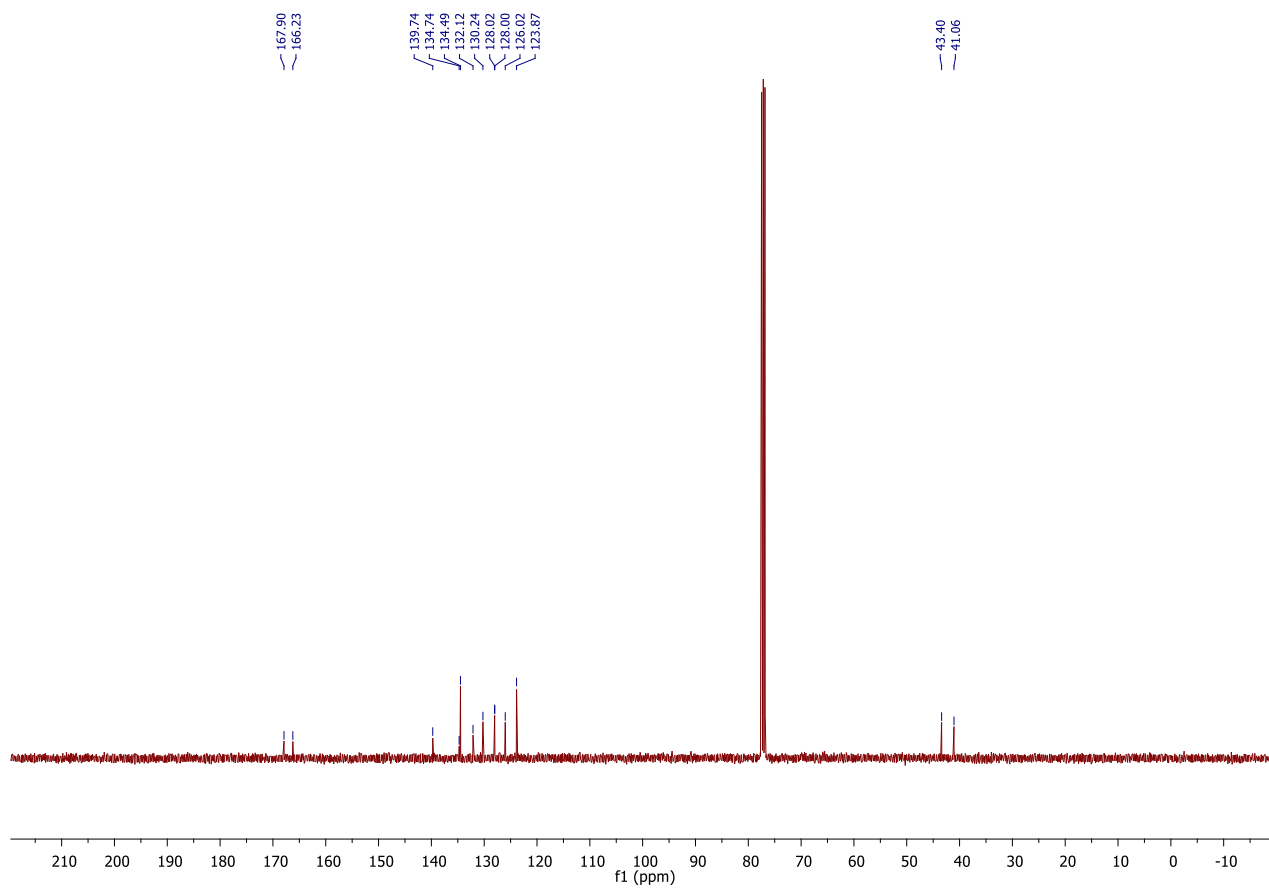


### 1.98. N-[(3-chlorophenyl)methyl]-2-(1,3-dioxisoindolin-2-yl)acetamide (324b)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

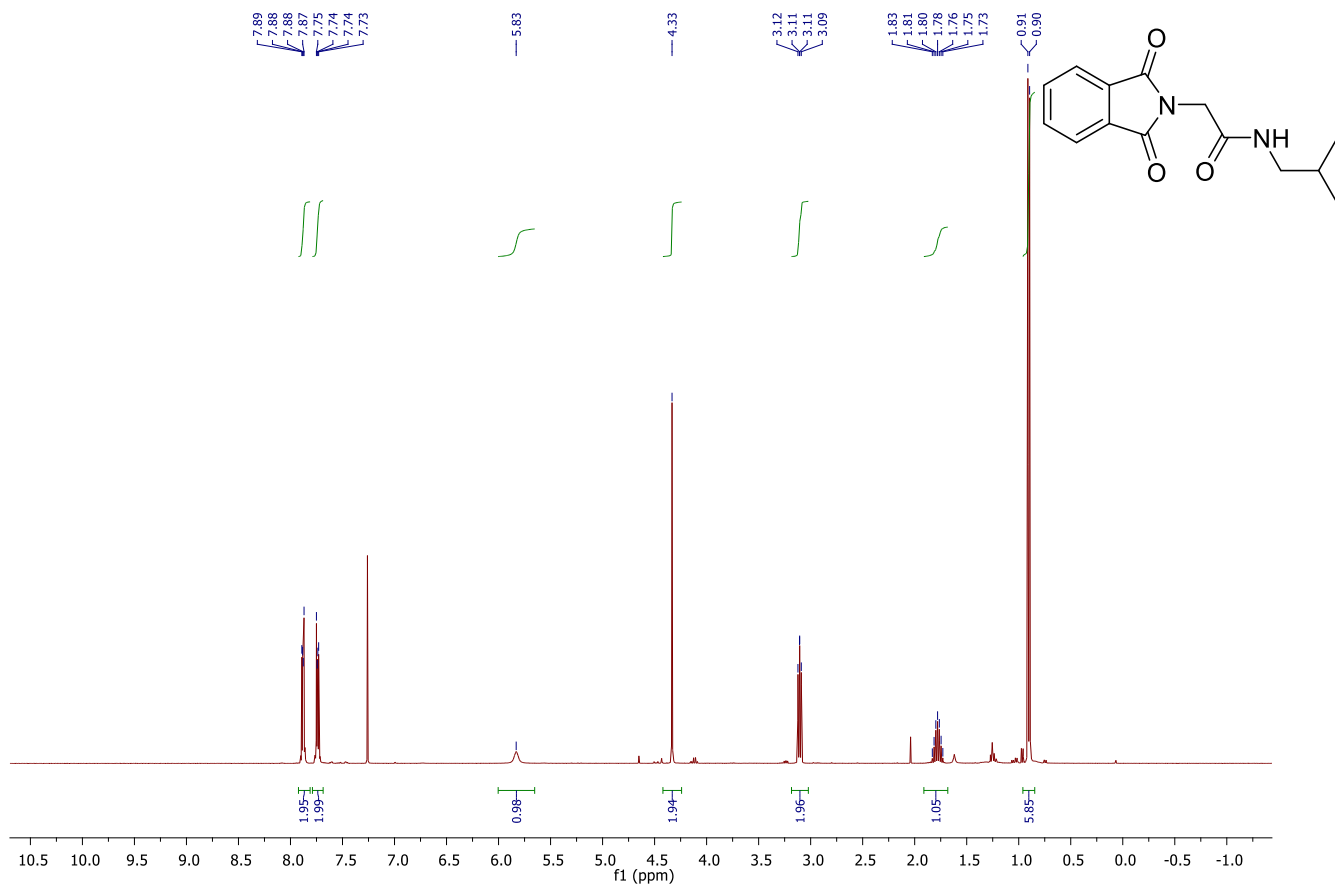


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

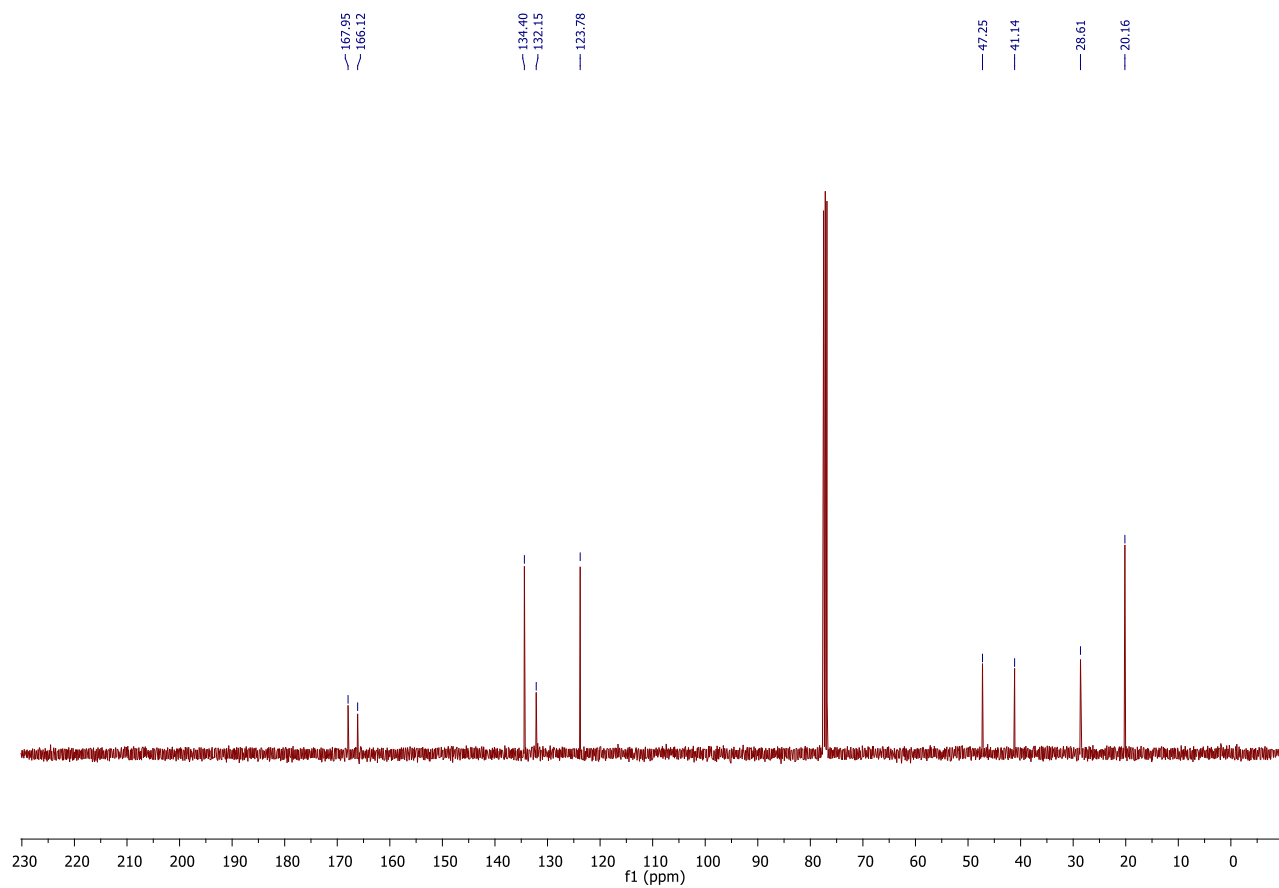


### 1.99. 2-(1,3-dioxoisindolin-2-yl)-N-isobutyl-acetamide (324c)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

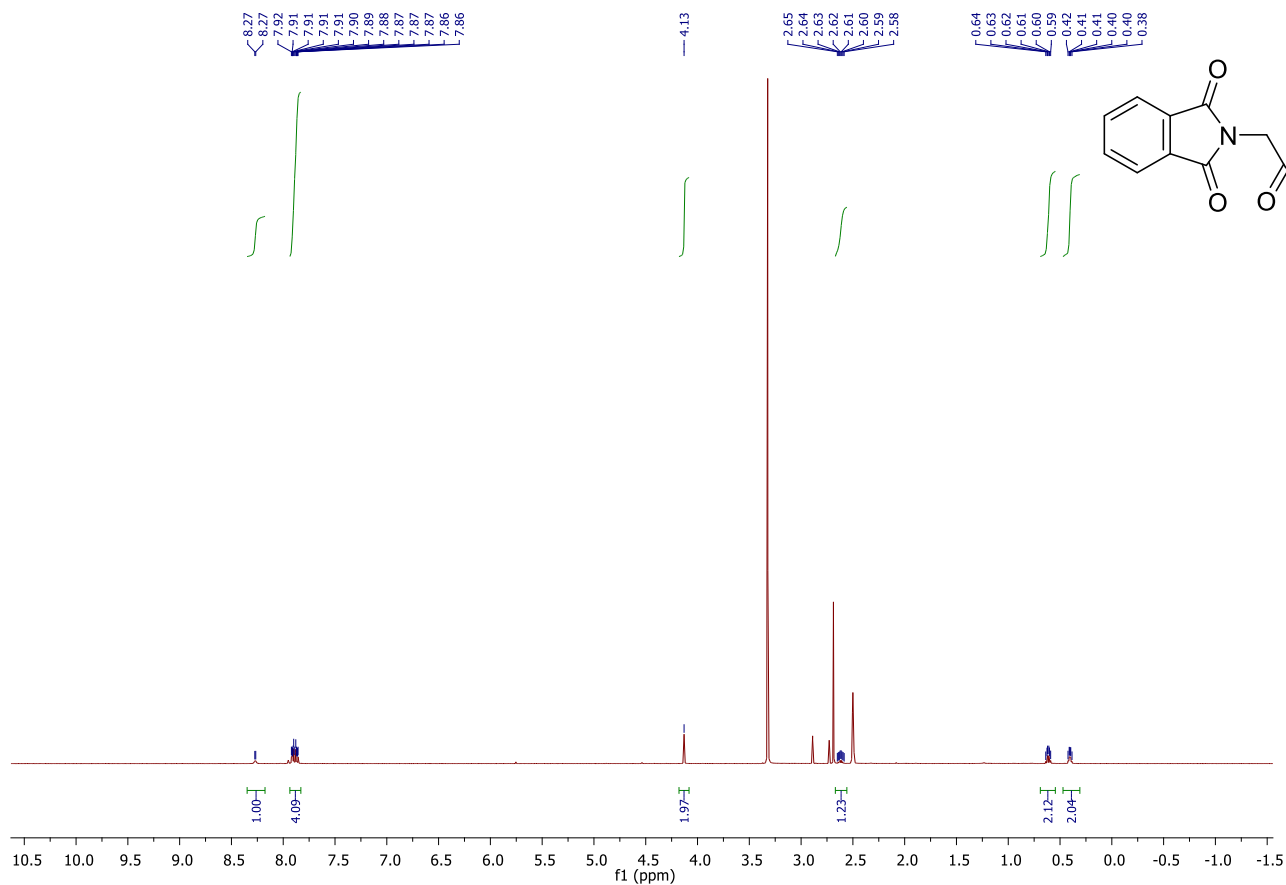


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

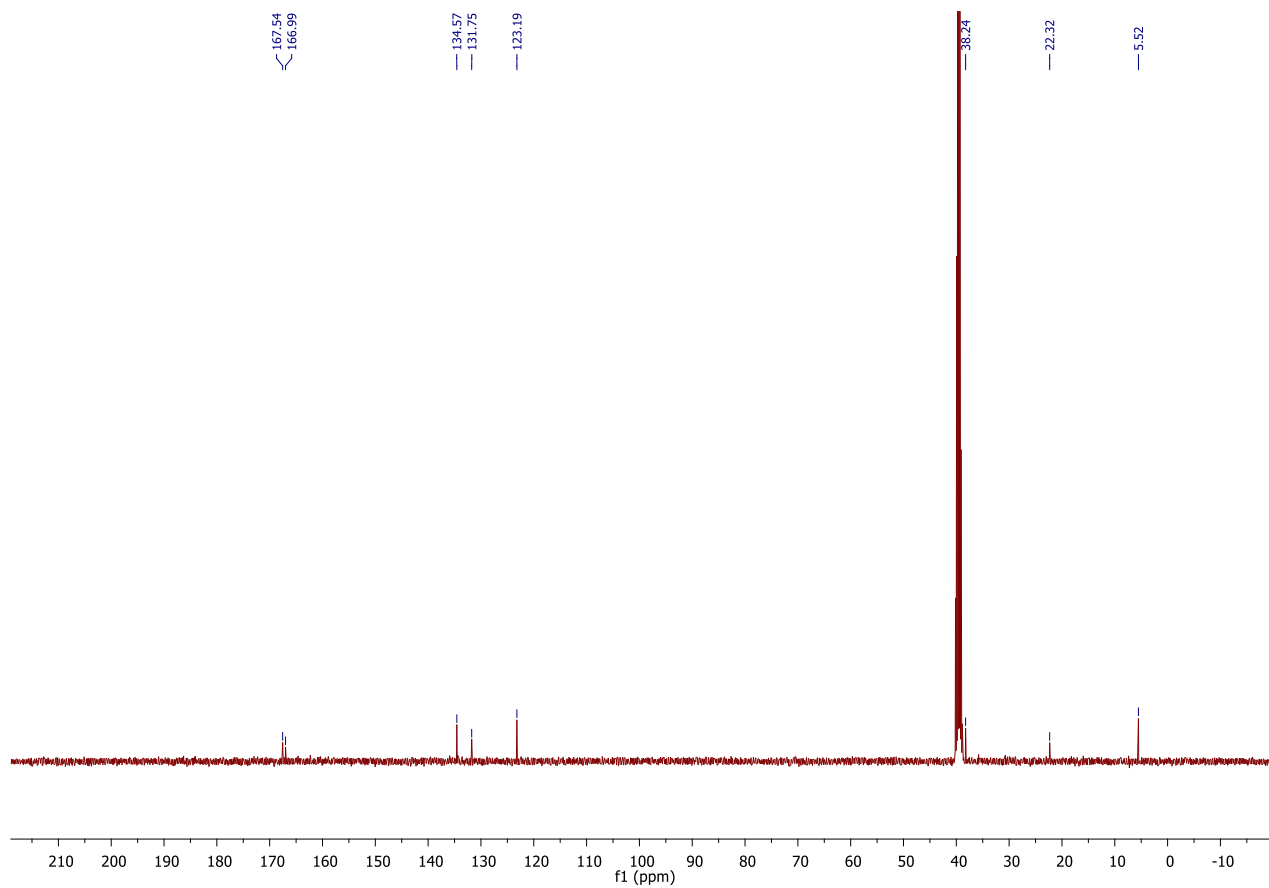


### 1.100. N-cyclopropyl-2-(1,3-dioxisoindolin-2-yl)acetamide (324d)

$^1\text{H}$  NMR (400 MHz, DMSO- $d_6$ )

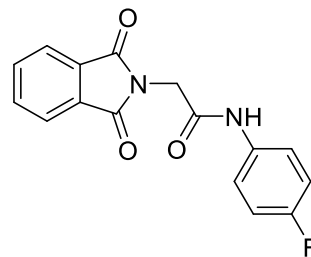
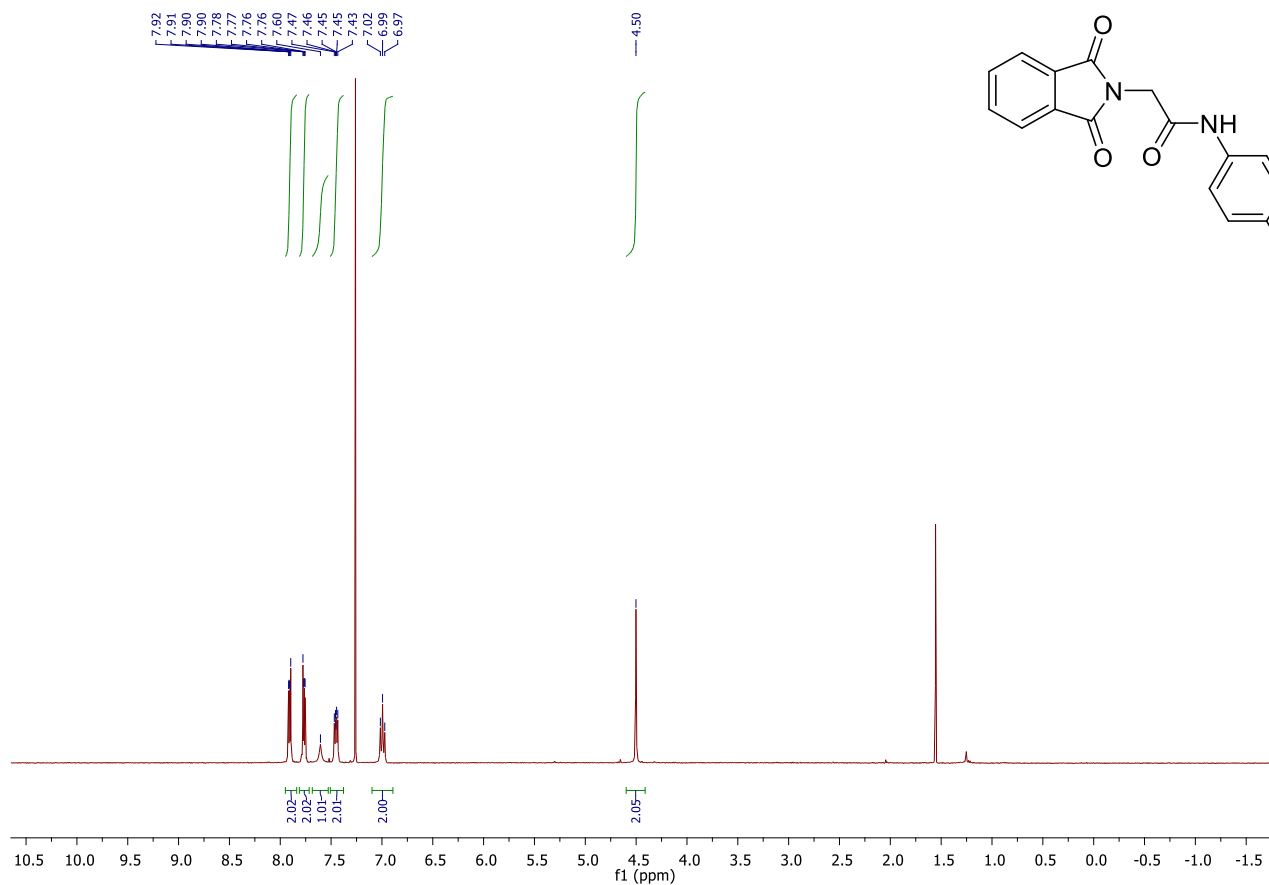


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz, DMSO- $d_6$ )

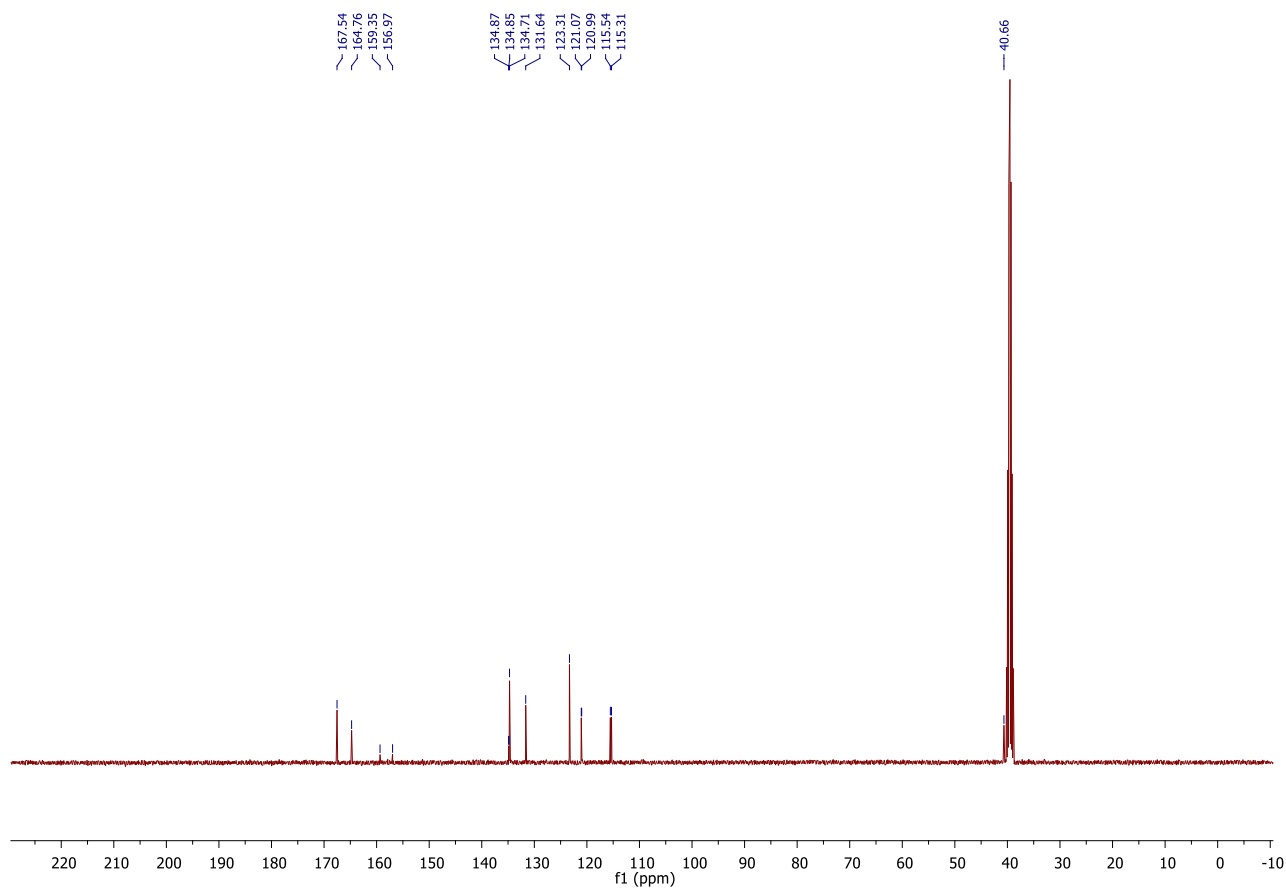


### 1.101. 2-(1,3-dioxisoindolin-2-yl)-N-(4-fluorophenyl)acetamide (324e)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

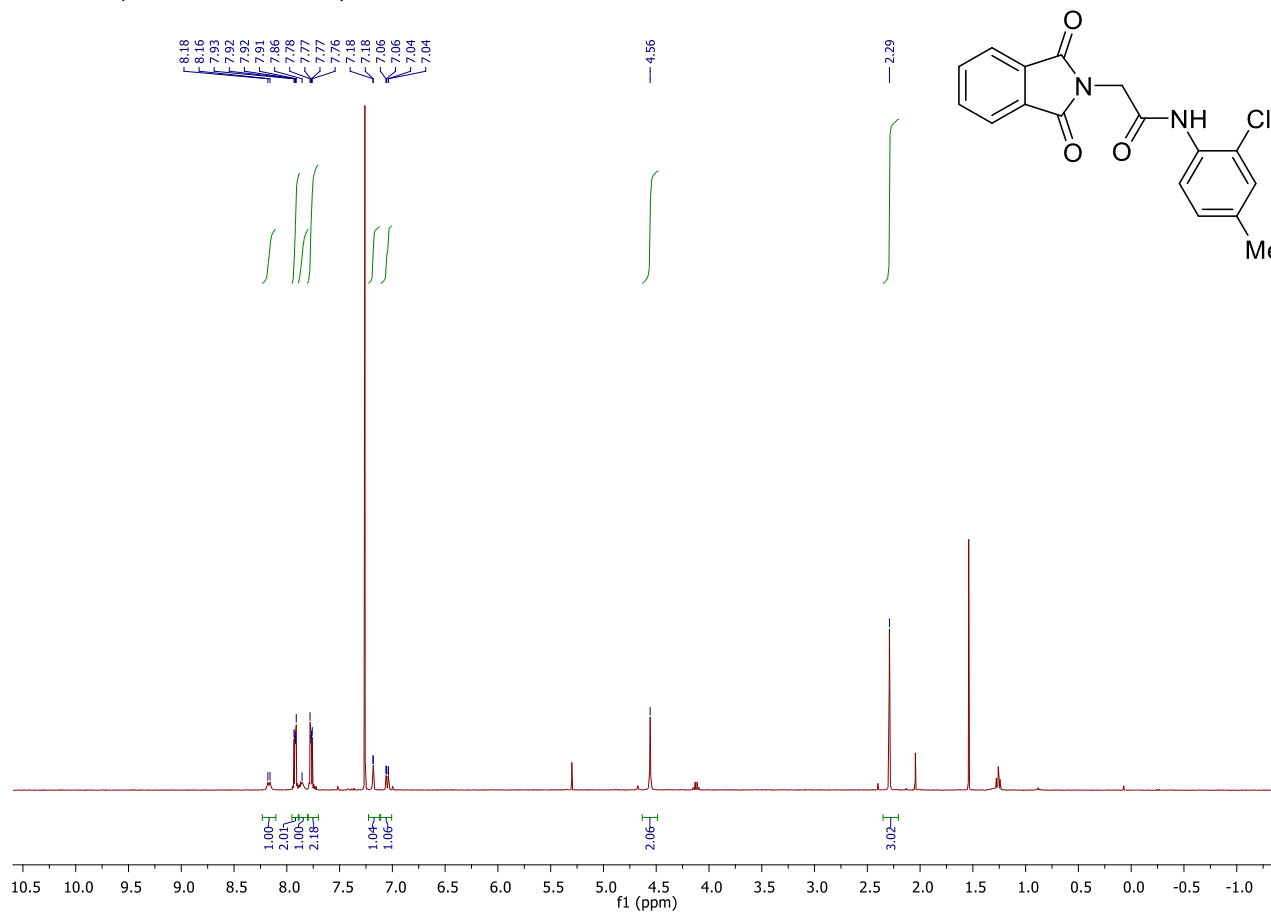


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{DMSO-d}_6$ )

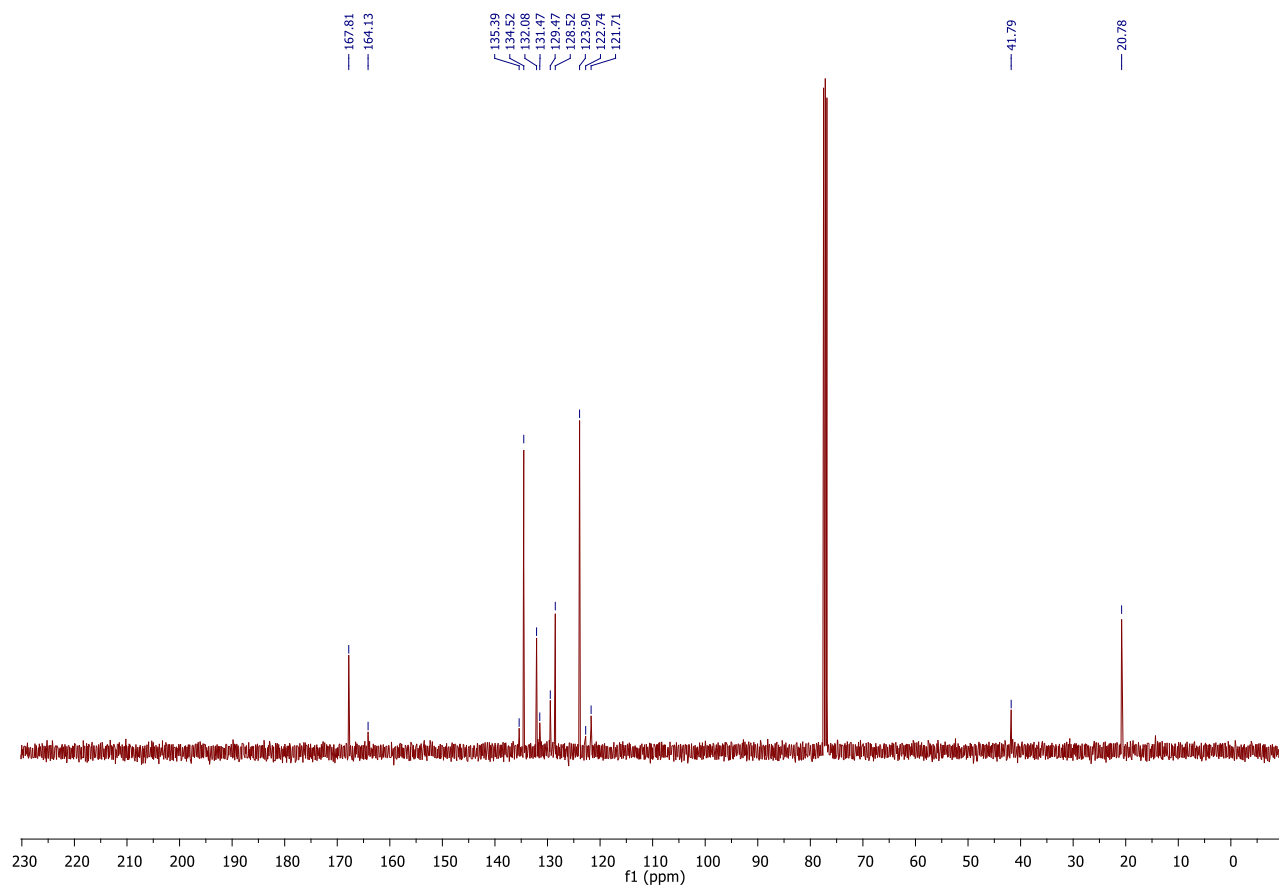


### 1.102. N-(2-chloro-4-methyl-phenyl)-2-(1,3-dioxisoindolin-2-yl)acetamide (324f)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

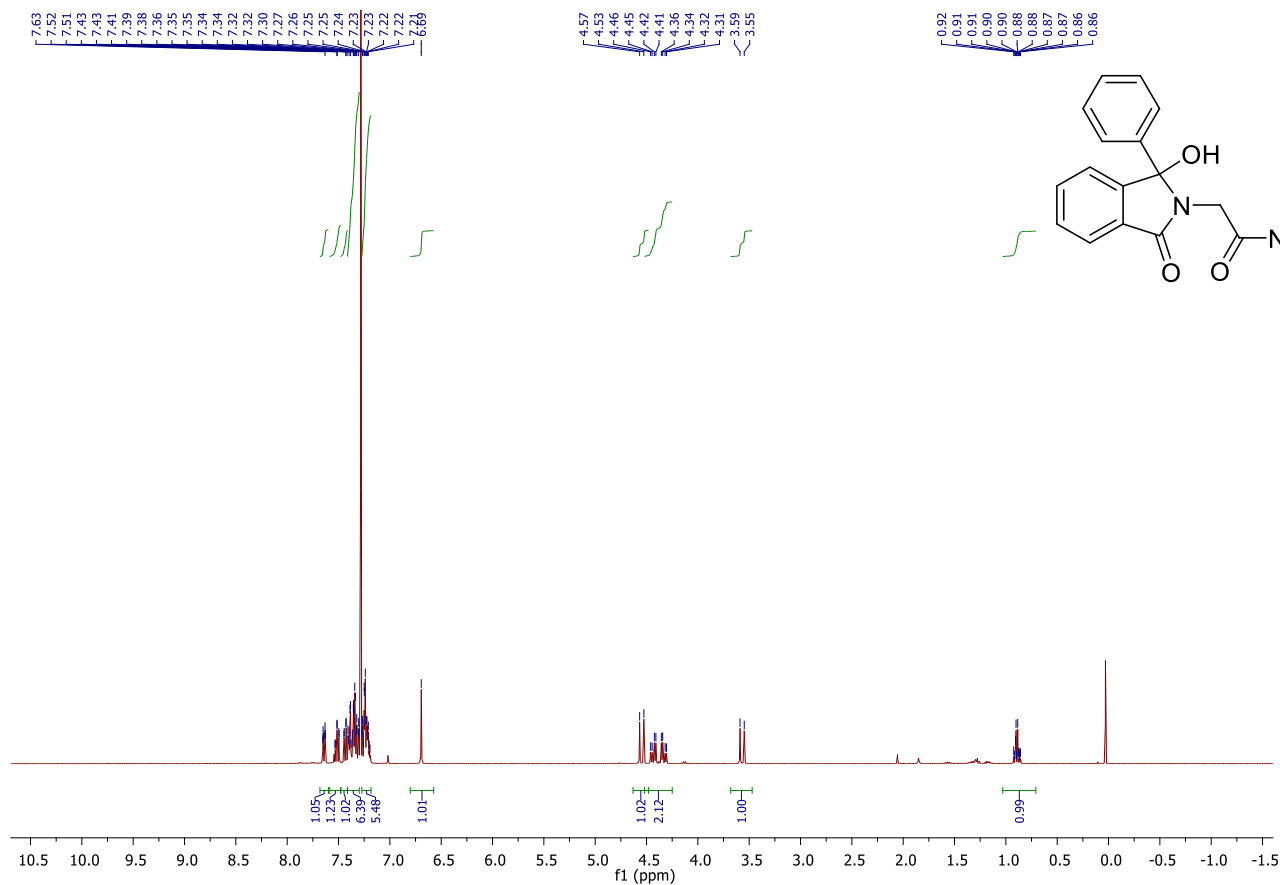


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

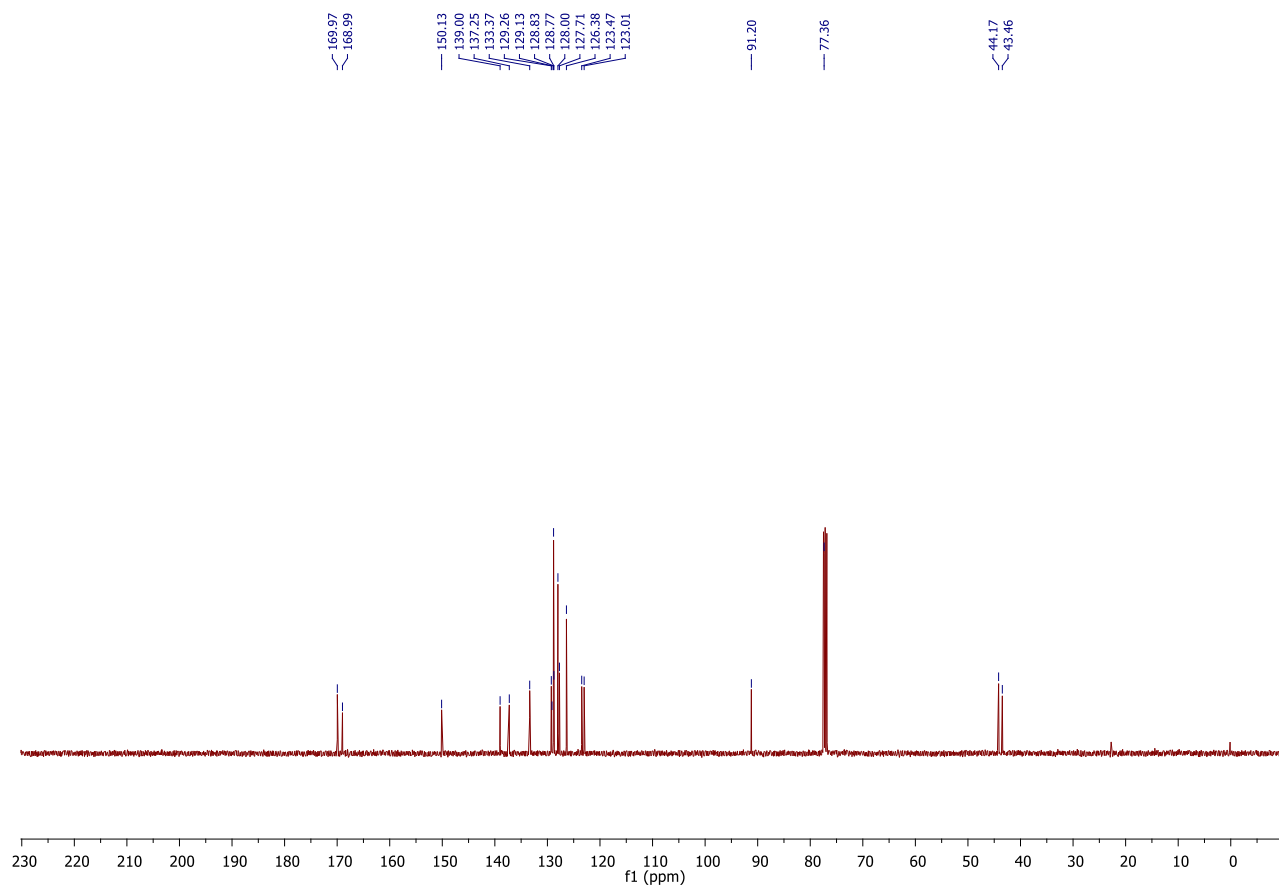


### 1.103. N-benzyl-2-(1-hydroxy-3-oxo-1-phenyl-isoindolin-2-yl)acetamide (327a)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )



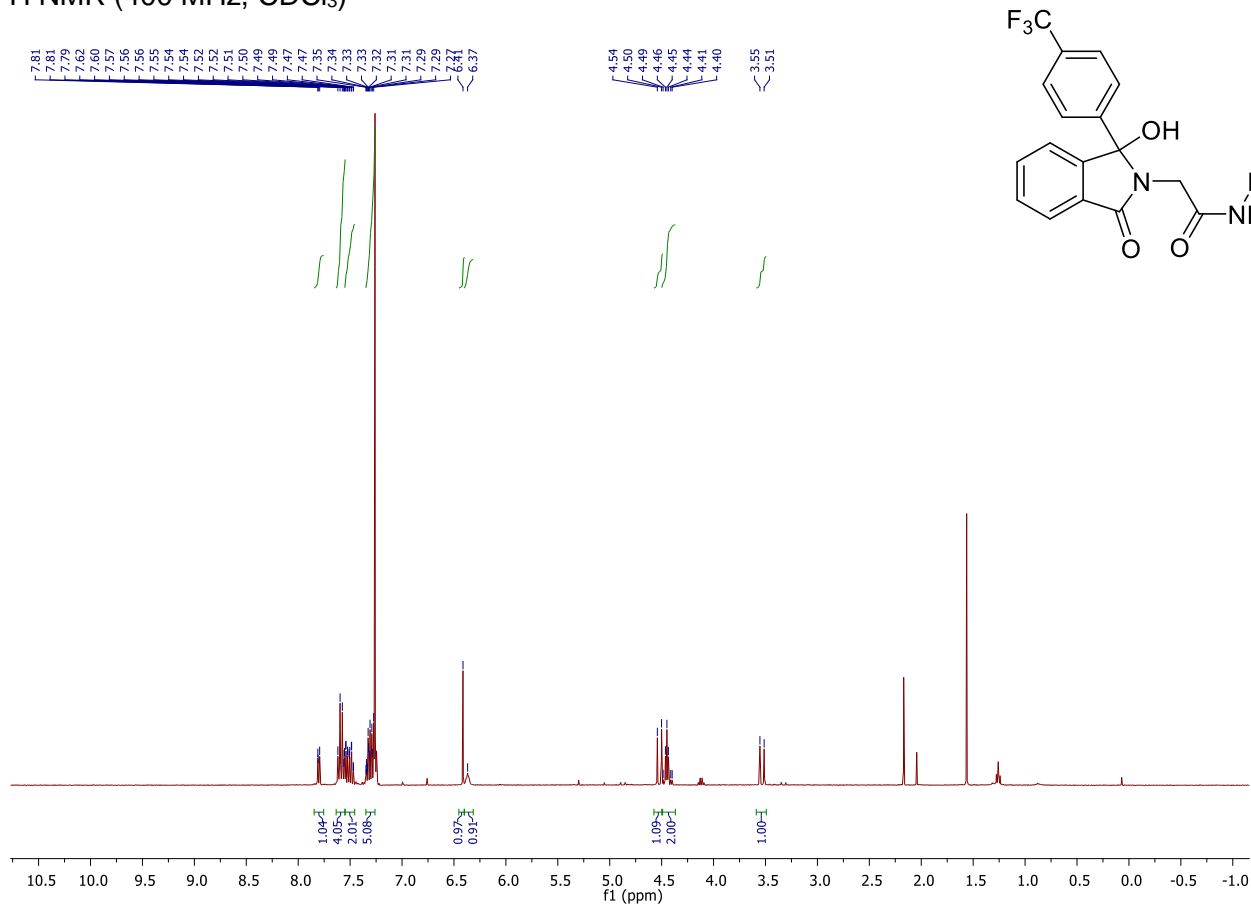
$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )



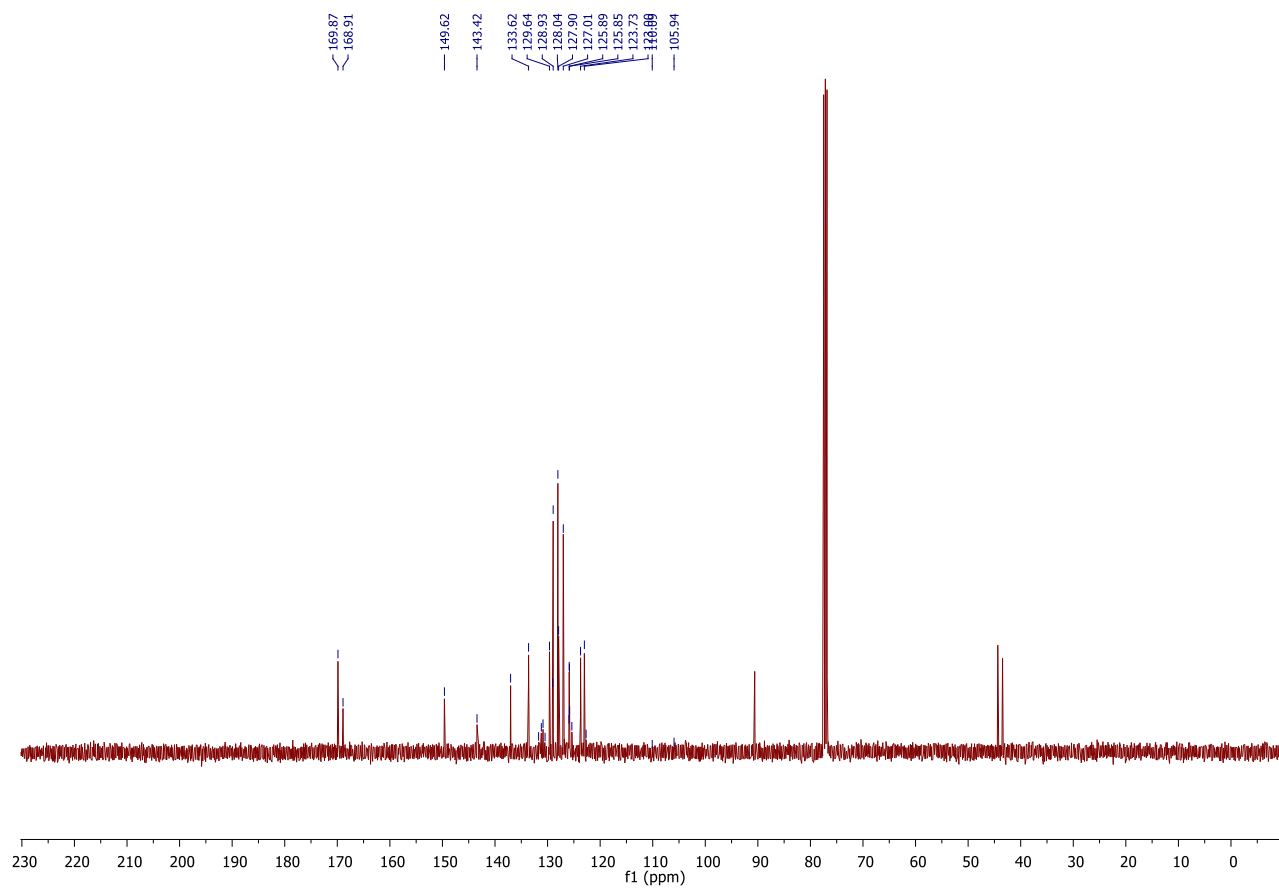


1.104. N-benzyl-2-[1-hydroxy-3-oxo-1-[4-(trifluoromethyl)phenyl]isoindolin-2-yl]acetamide (327b)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

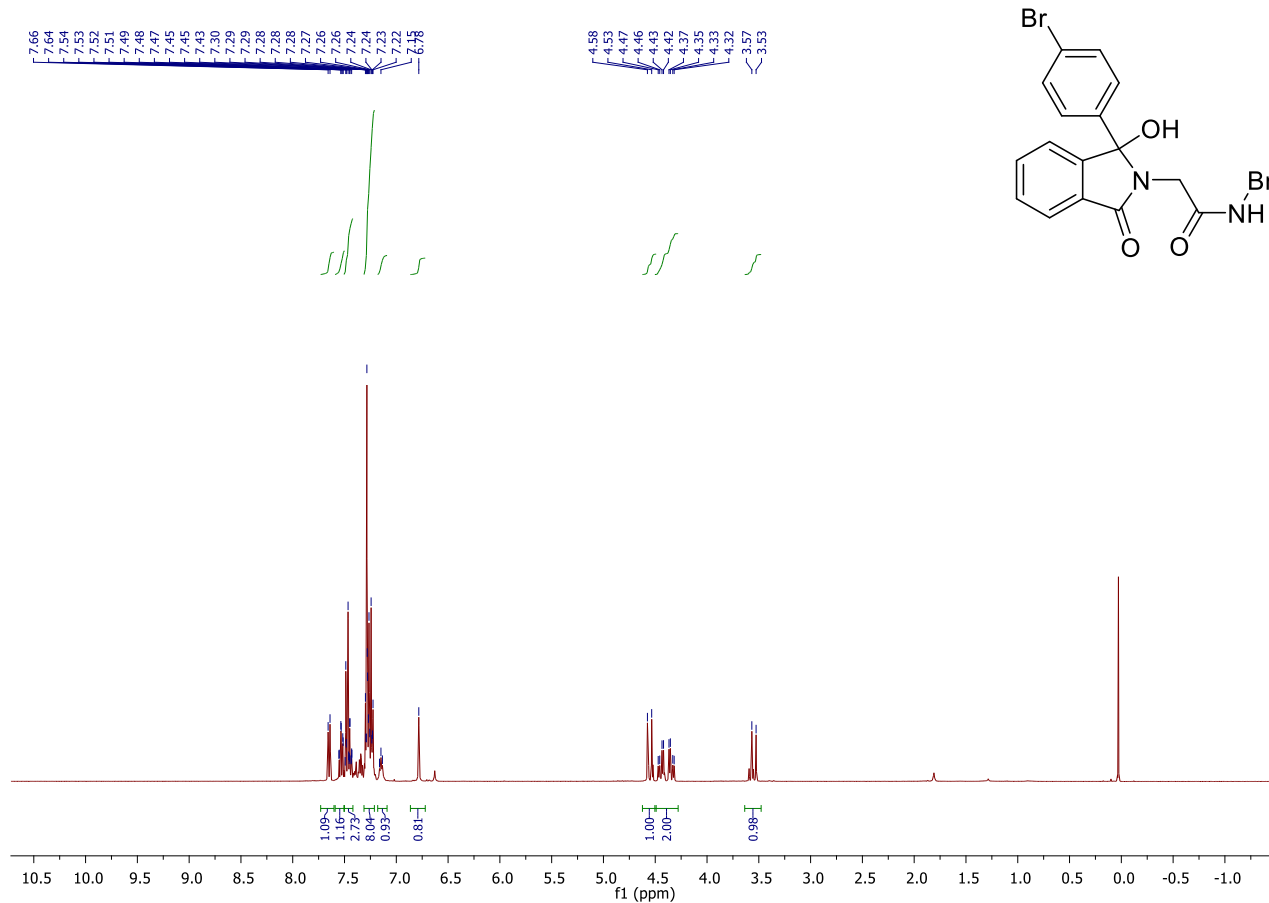


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

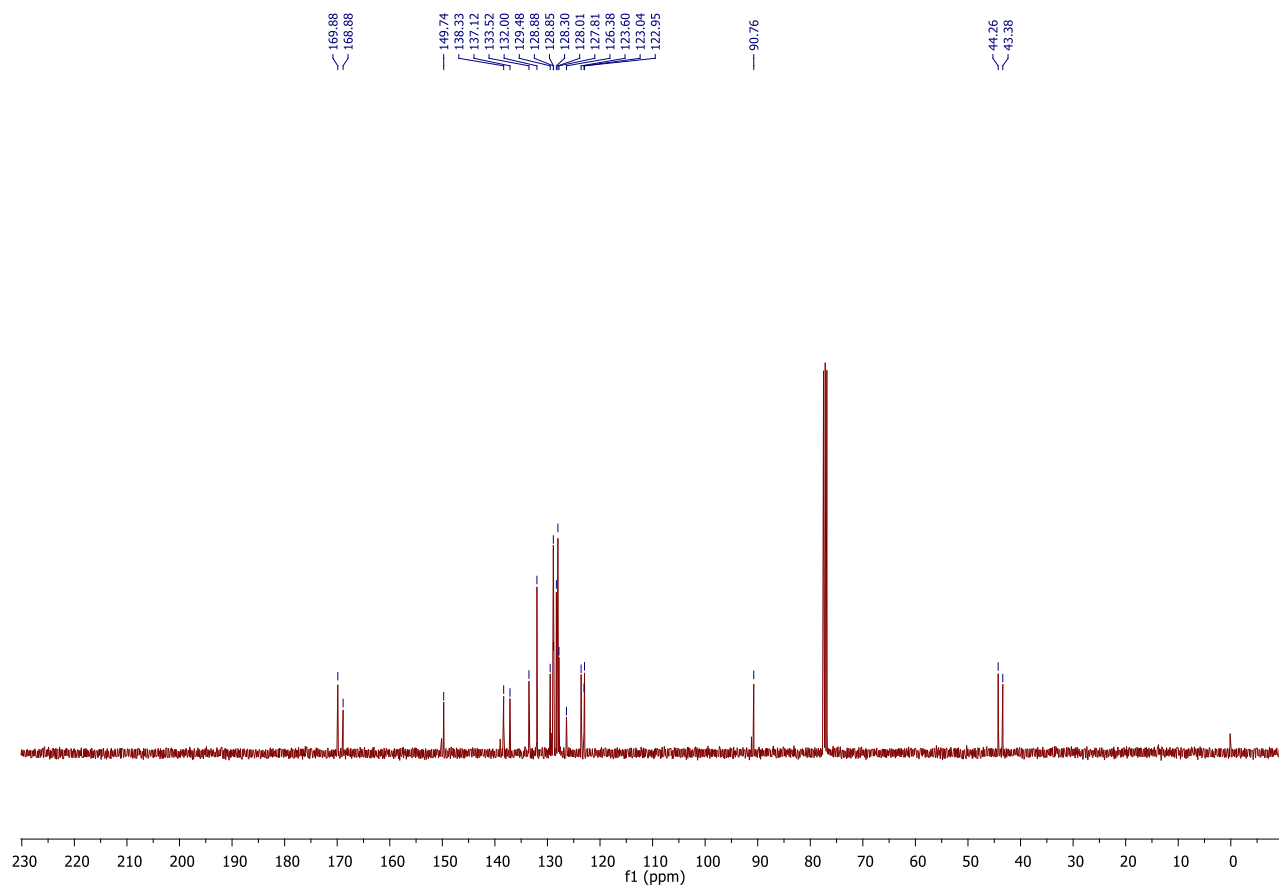


### 1.105. N-benzyl-2-[1-(4-bromophenyl)-1-hydroxy-3-oxo-isoindolin-2-yl]acetamide (327c)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

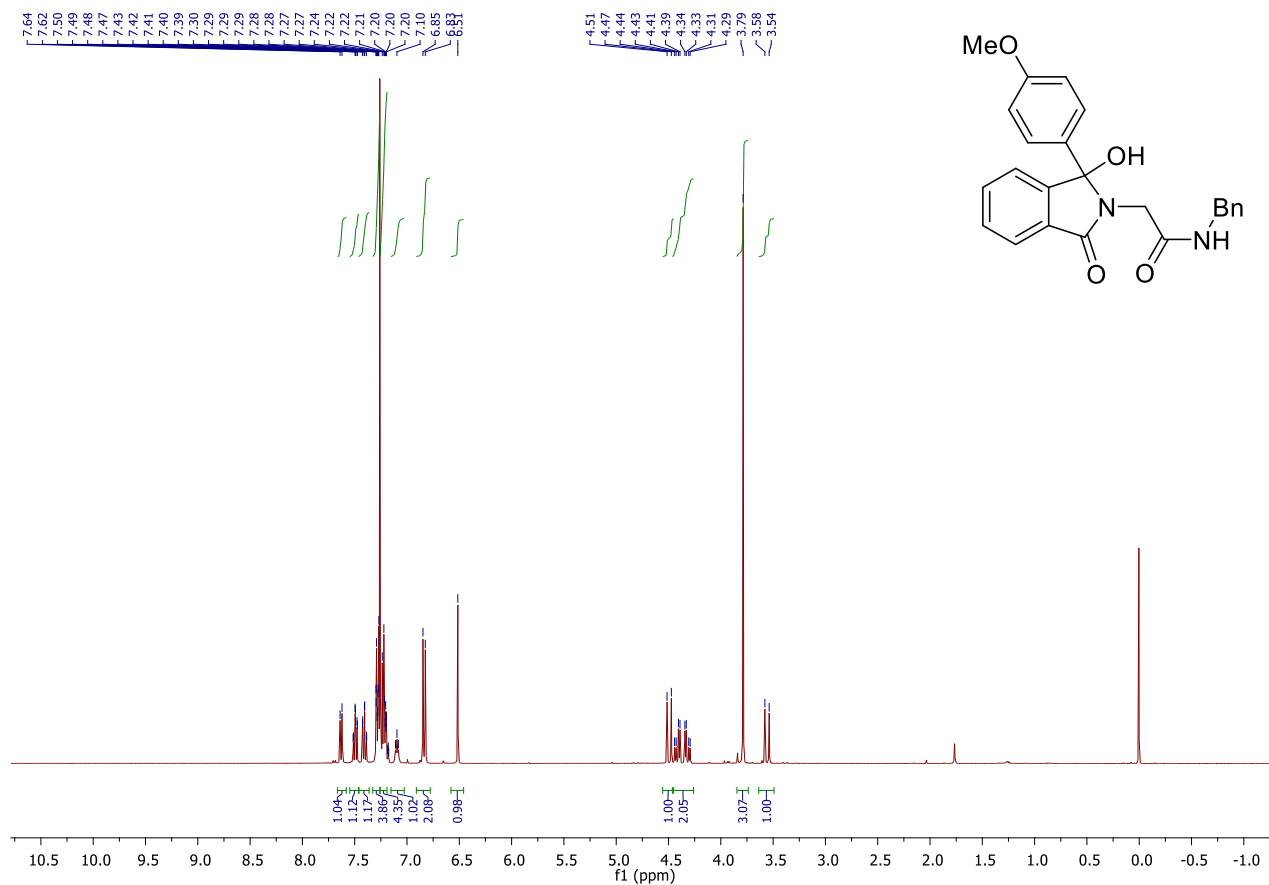


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

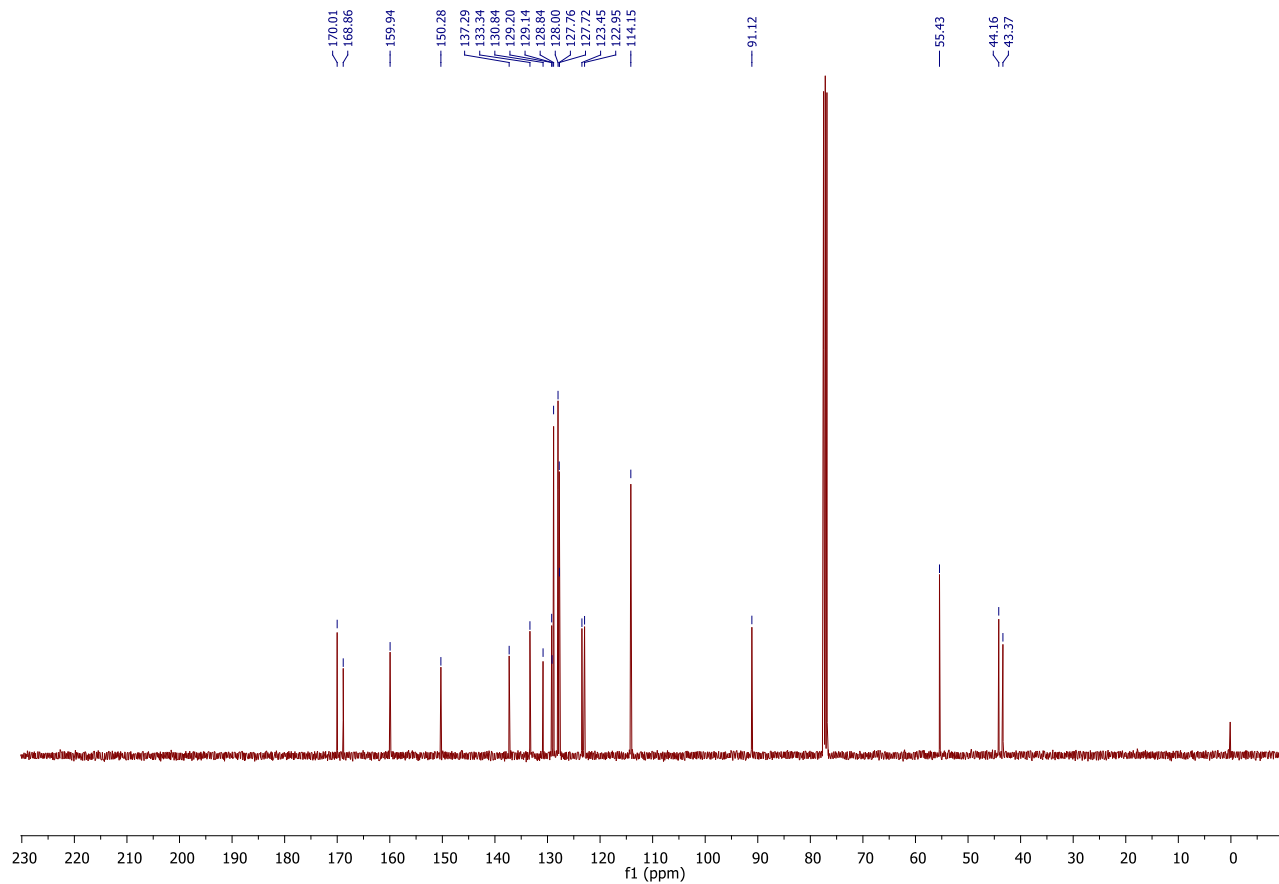


### 1.106. N-benzyl-2-[1-hydroxy-1-(4-methoxyphenyl)-3-oxo-isoindolin-2-yl]acetamide (327d)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

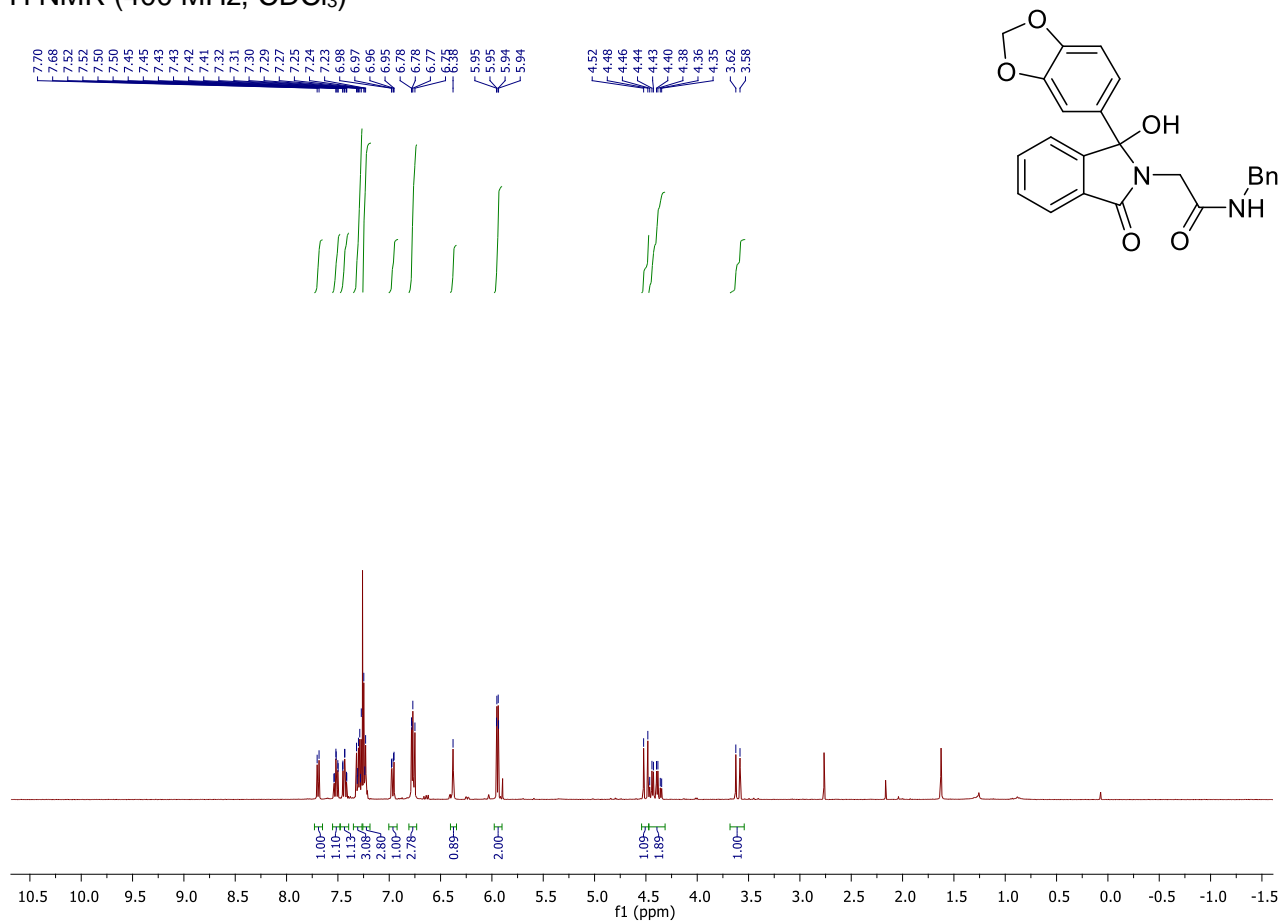


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

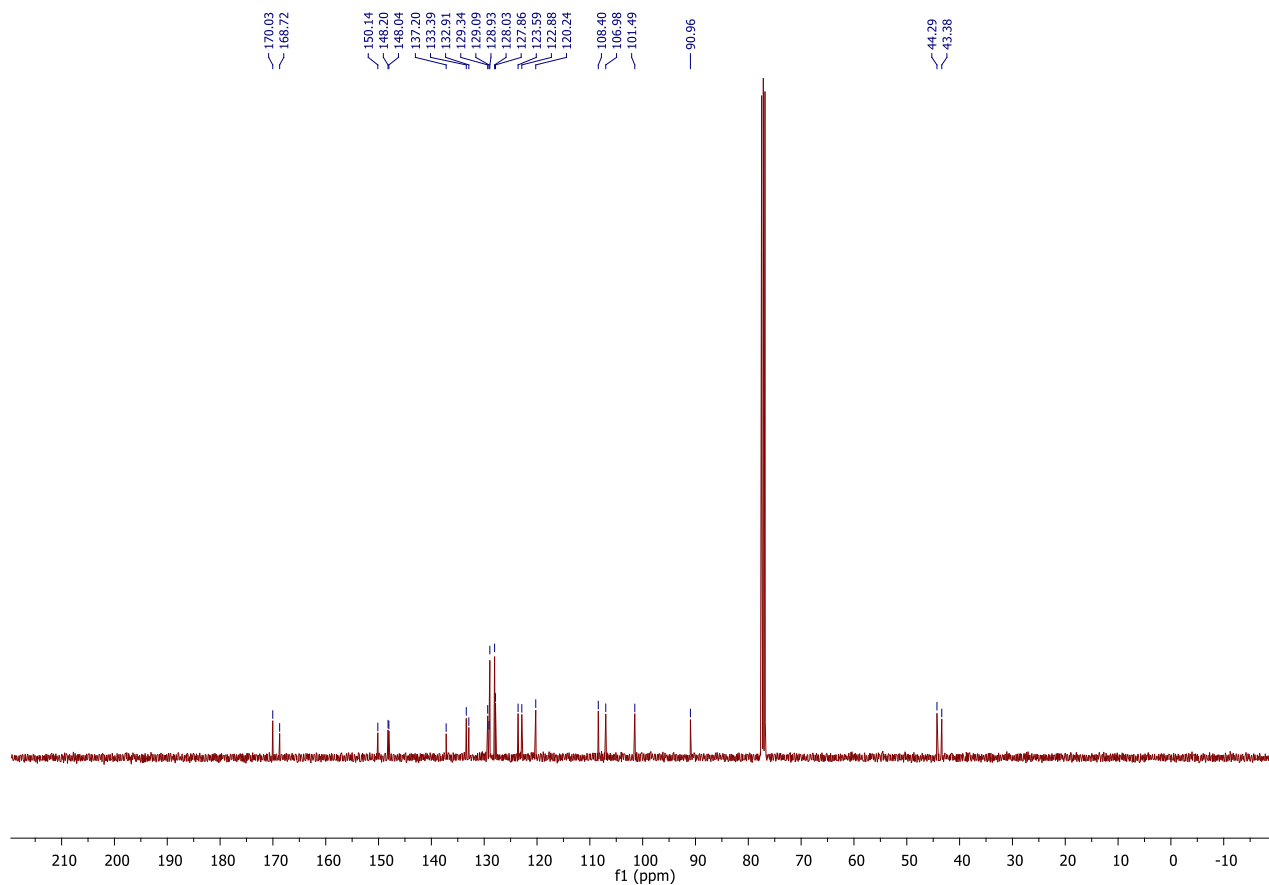


1.107. 2-[1-(1,3-benzodioxol-5-yl)-1-hydroxy-3-oxo-isoindolin-2-yl]-N-benzyl-acetamide  
(327e)

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>)

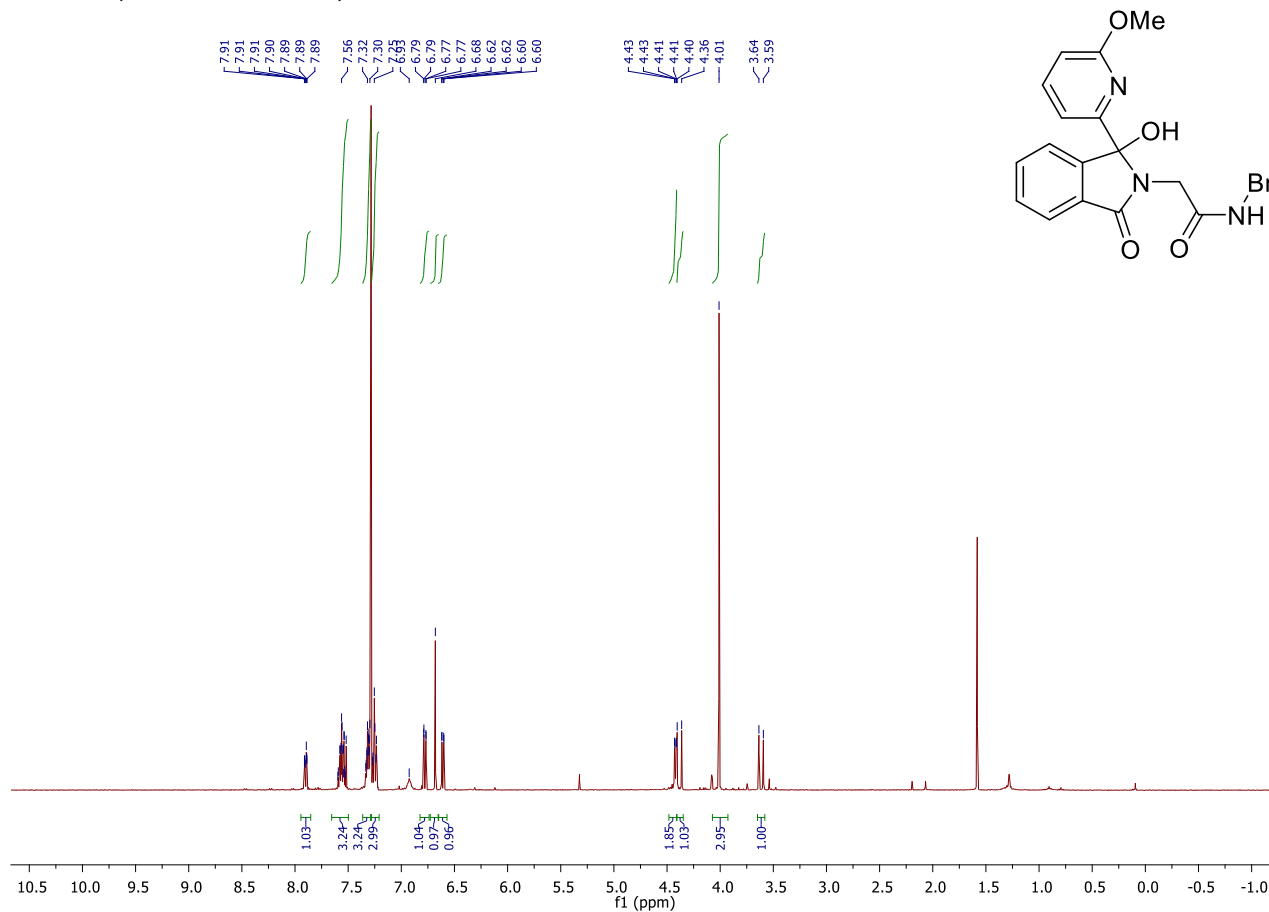


<sup>13</sup>C{<sup>1</sup>H} NMR (101 MHz, CDCl<sub>3</sub>)

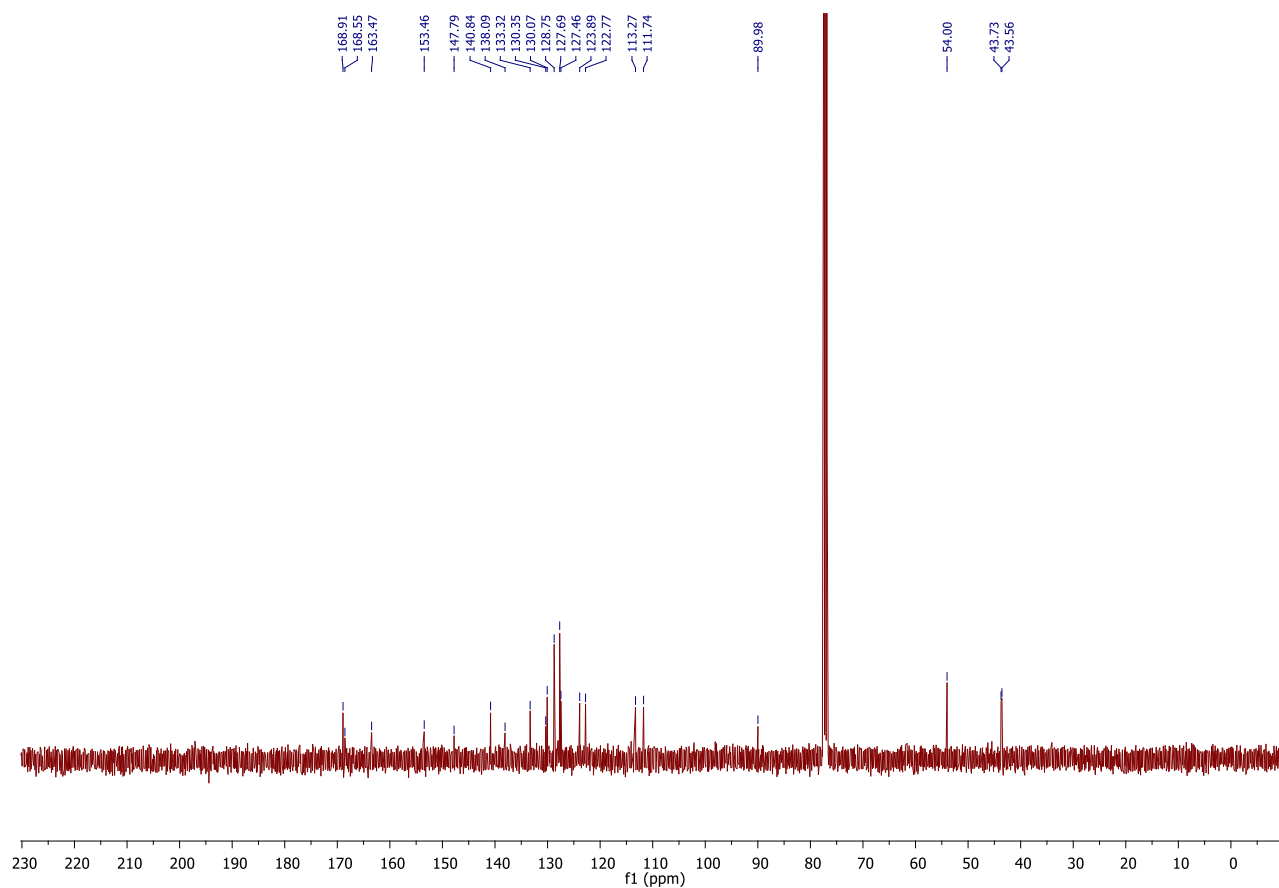


### 1.108. N-benzyl-2-[1-hydroxy-1-(6-methoxy-2-pyridyl)-3-oxo-isoindolin-2-yl]acetamide (327f)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

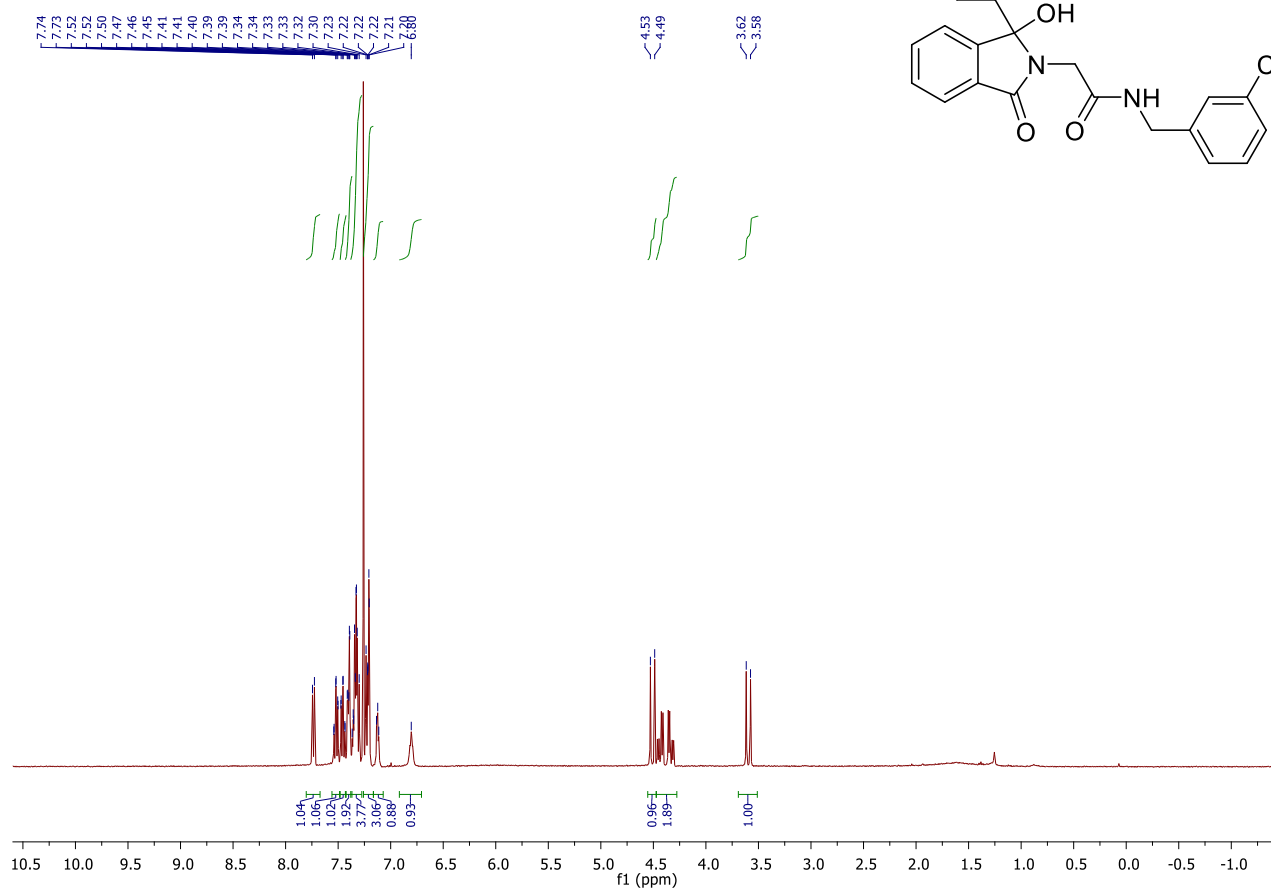


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

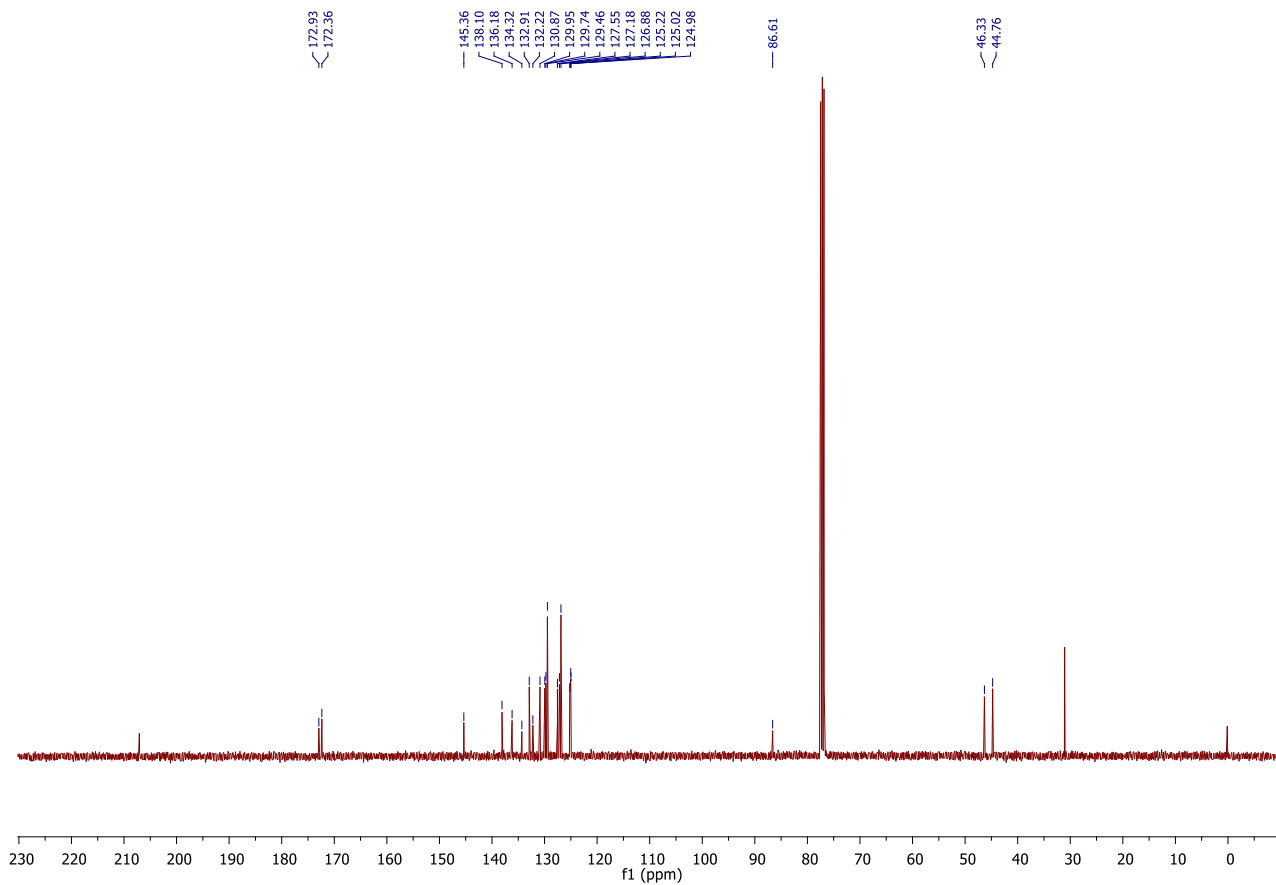


# N-[(3-chlorophenyl)methyl]-2-(1-hydroxy-3-oxo-1-phenyl-isoindolin-2-yl)acetamide (327g)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

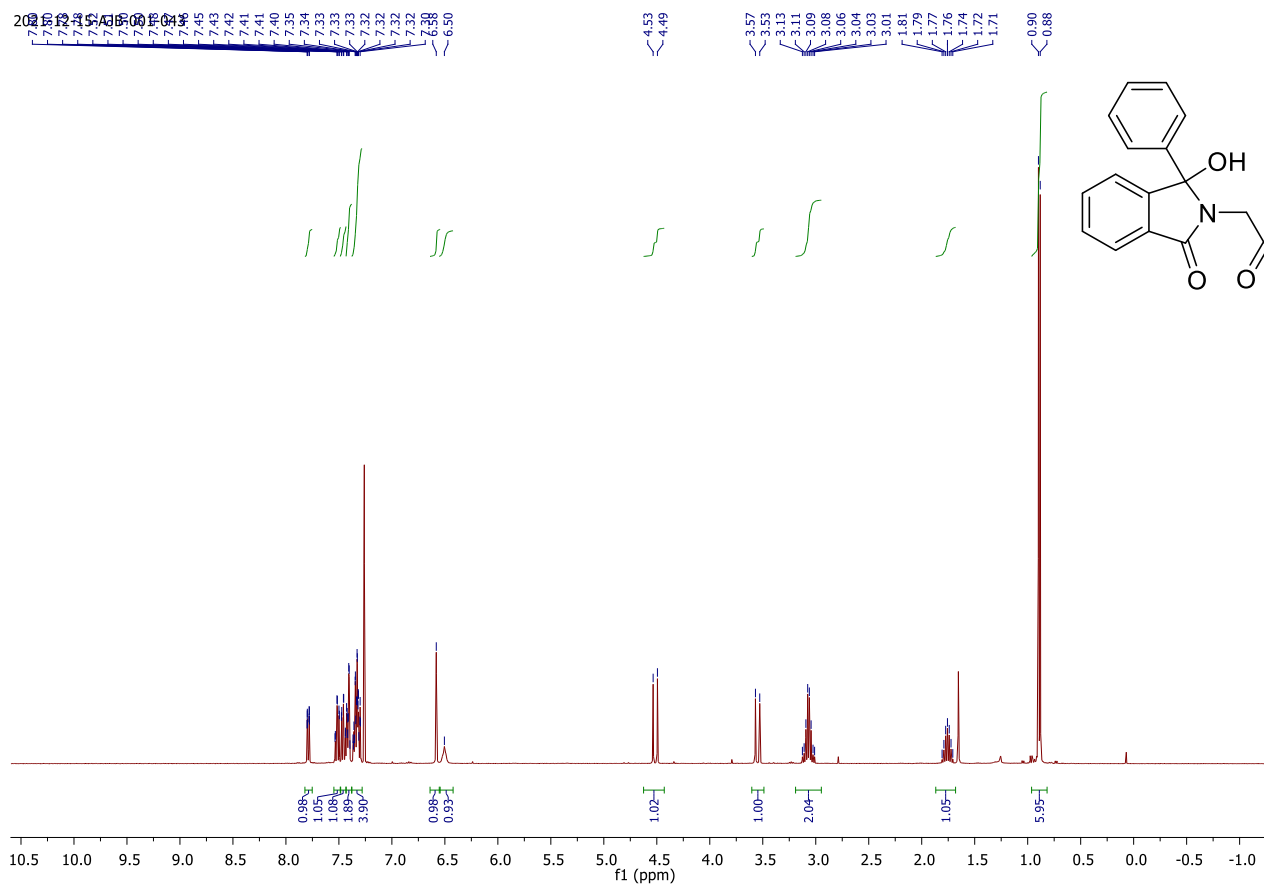


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

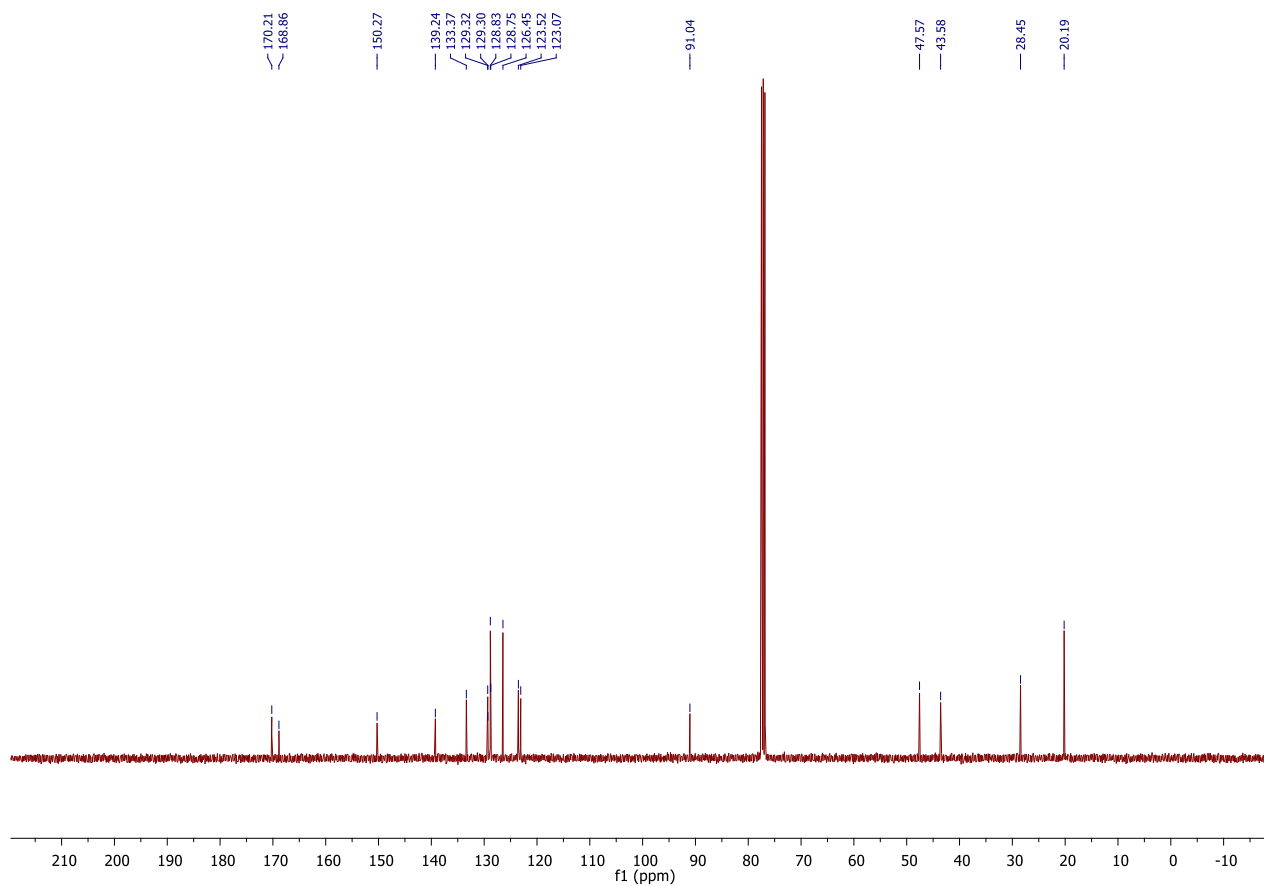


### 1.109. 2-(1-hydroxy-3-oxo-1-phenyl-isoindolin-2-yl)-N-isobutyl-acetamide (327h)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

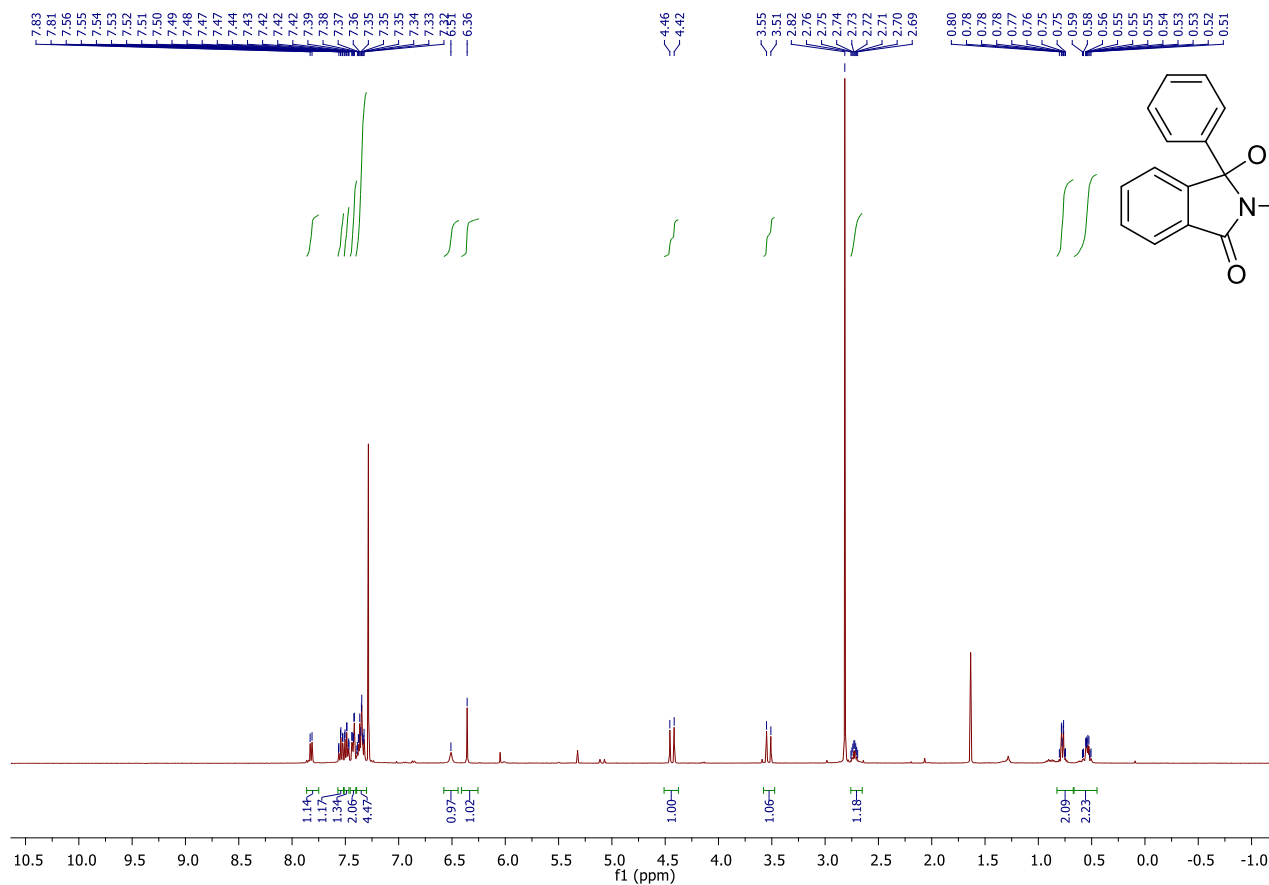


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

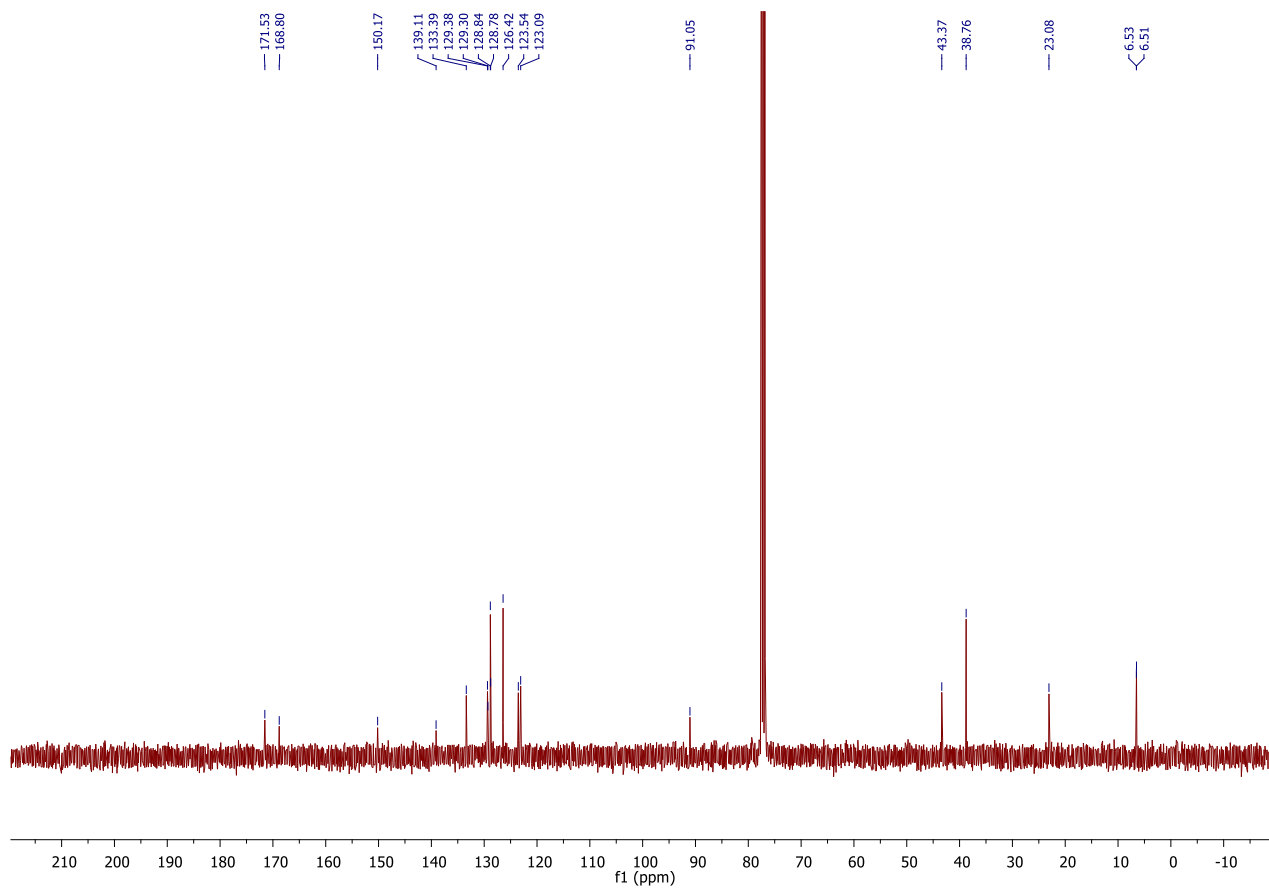


### 1.110. N-cyclopropyl-2-(1-hydroxy-3-oxo-1-phenyl-isoindolin-2-yl)acetamide (327i)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )



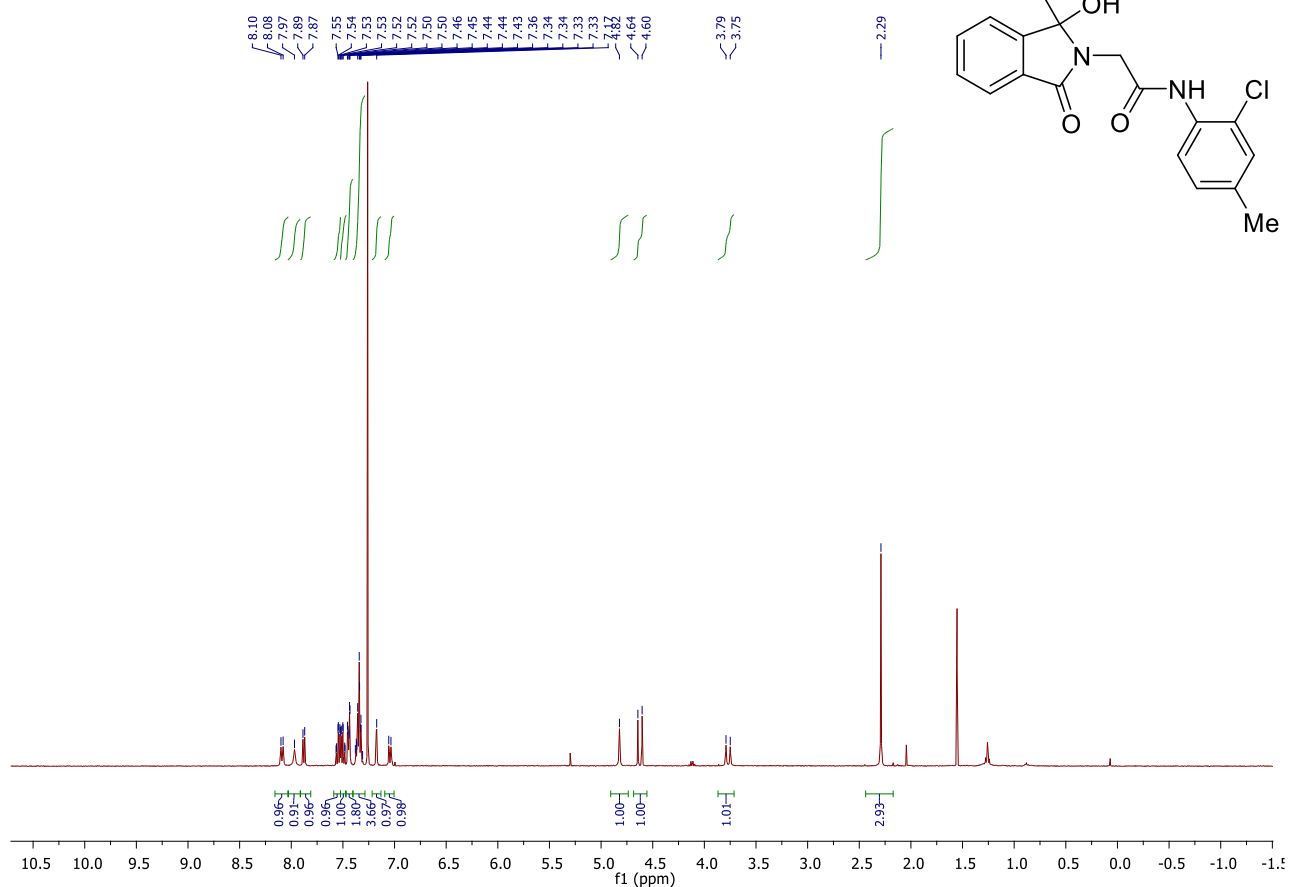
$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )



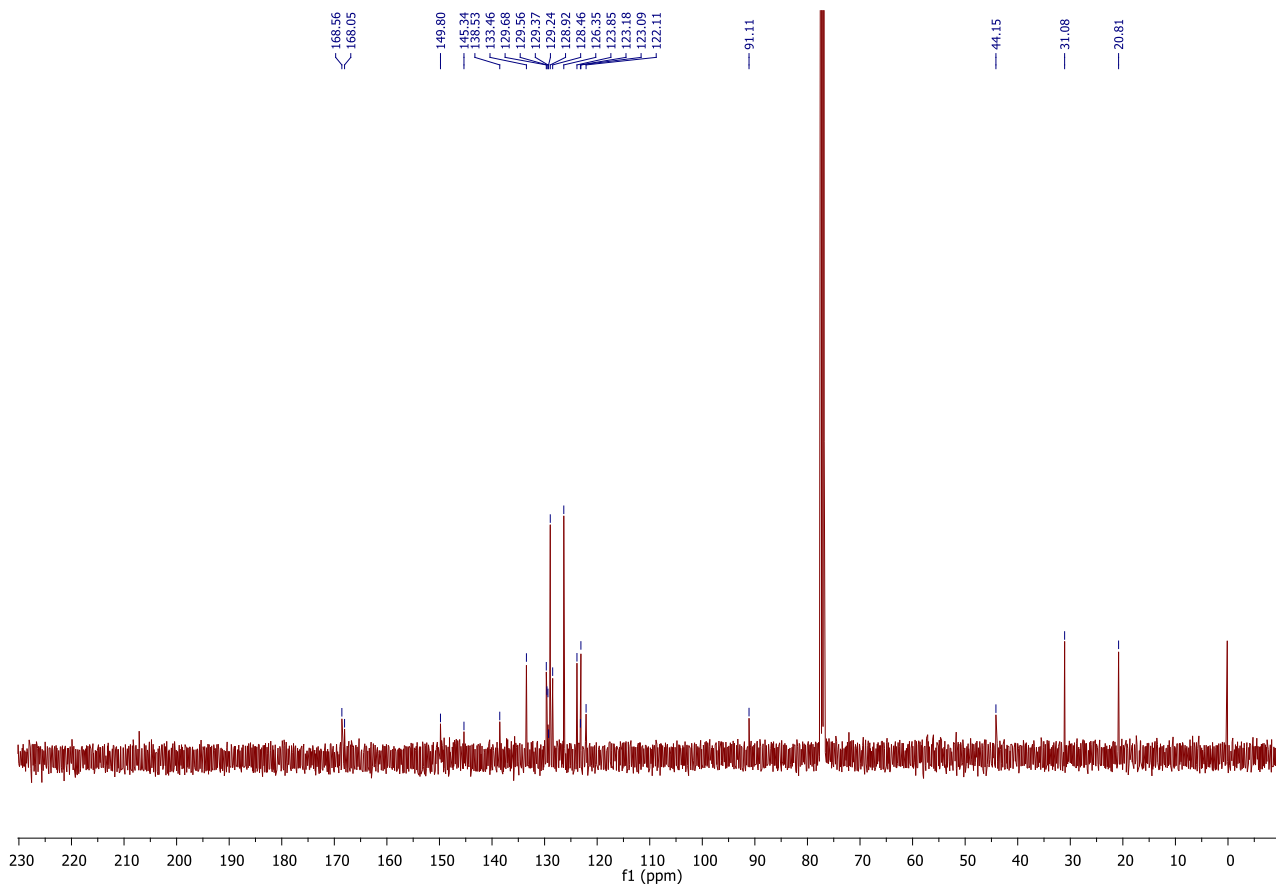


1.111. N-(2-chloro-4-methyl-phenyl)-2-(1-hydroxy-3-oxo-1-phenyl-isoindolin-2-yl)acetamide (327j)

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>)

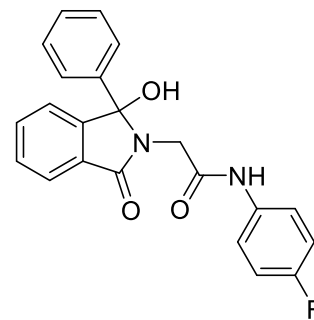
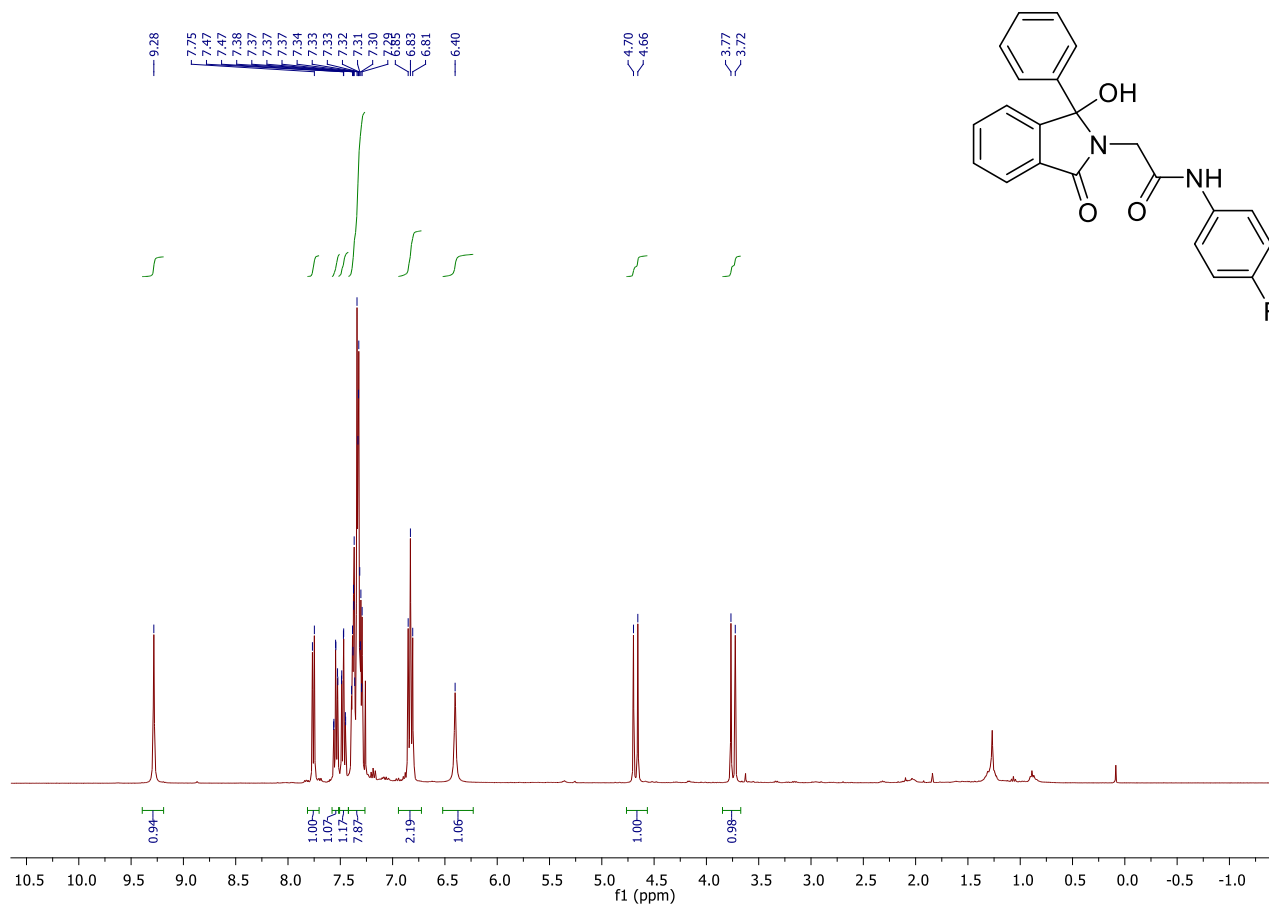


<sup>13</sup>C{<sup>1</sup>H} NMR (101 MHz, CDCl<sub>3</sub>)

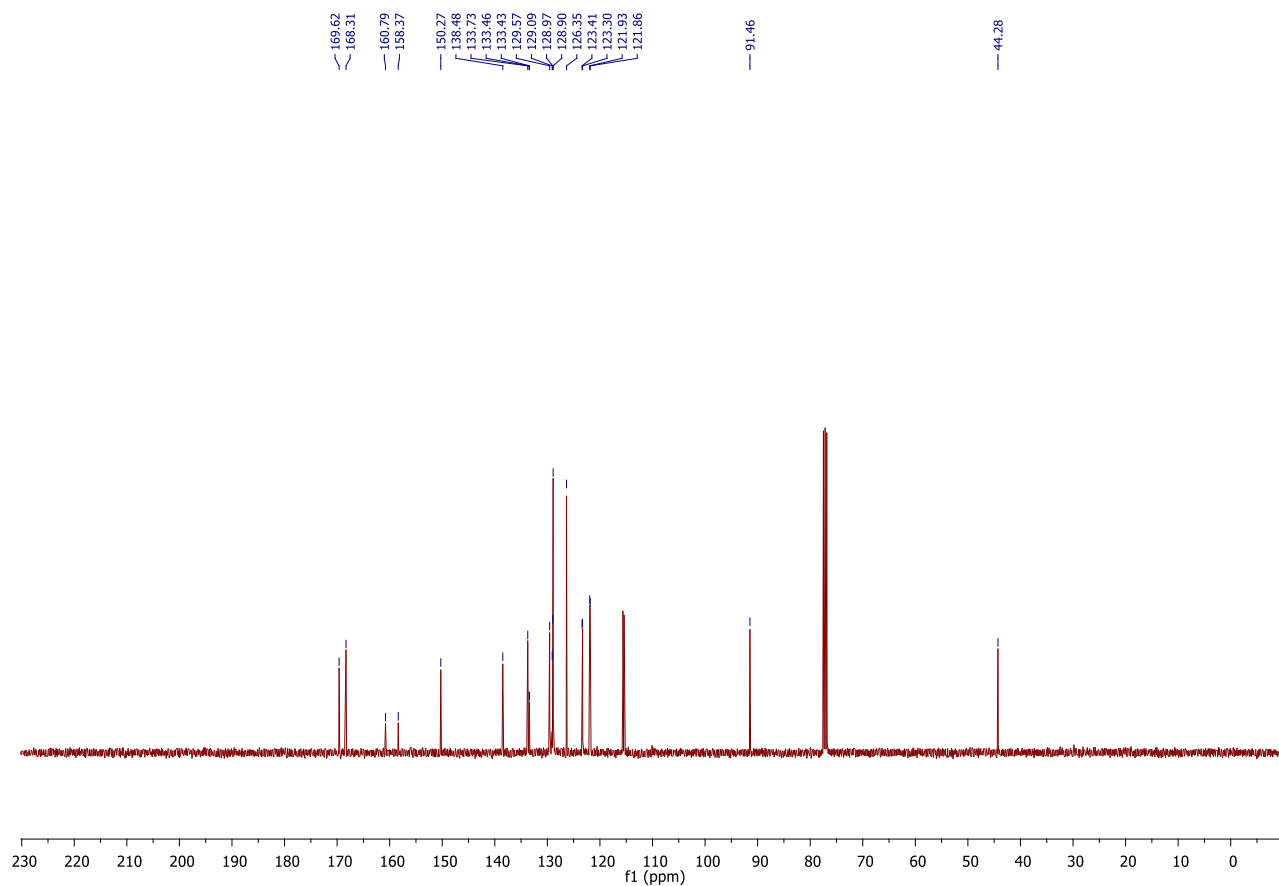


### 1.112. N-(4-fluorophenyl)-2-(1-hydroxy-3-oxo-1-phenyl-isoindolin-2-yl)acetamide (327k)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

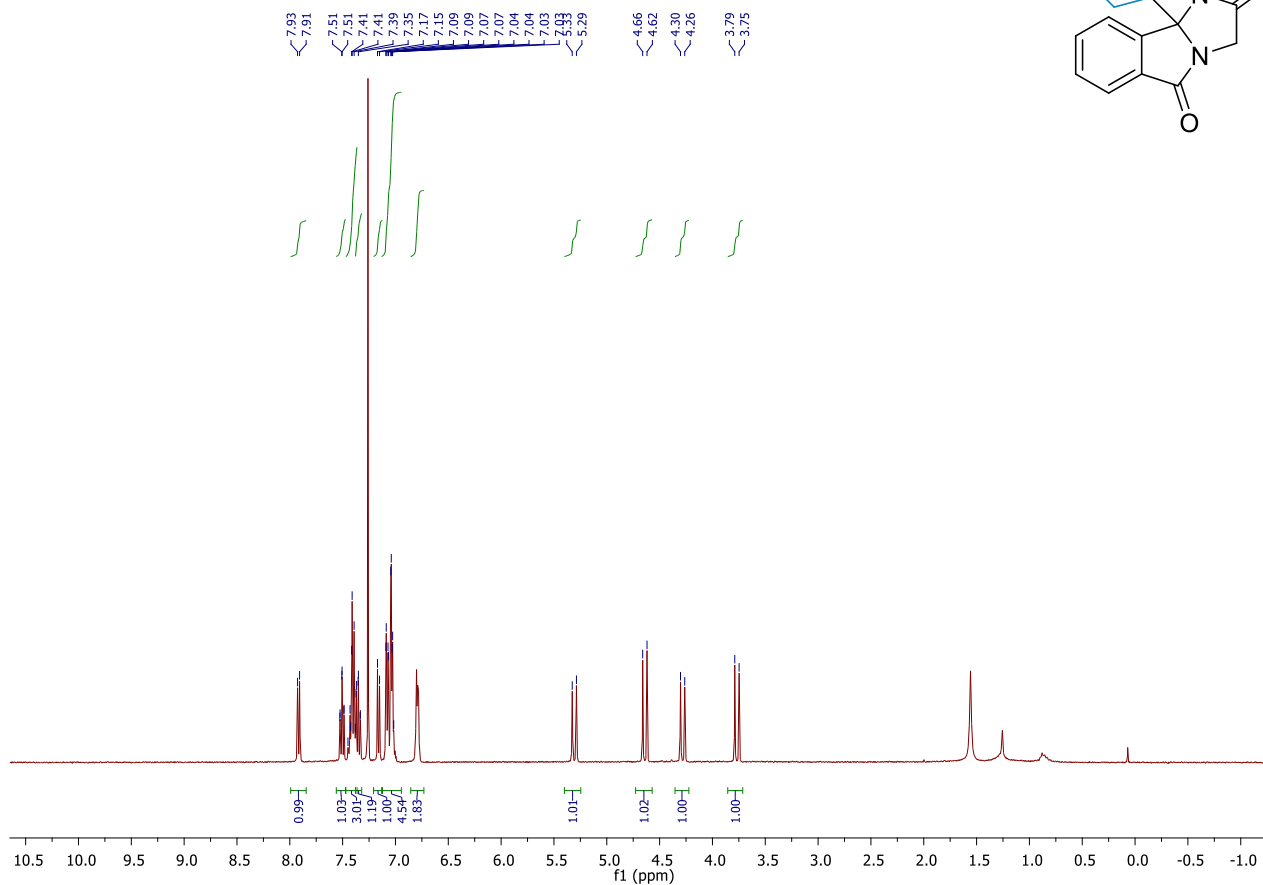
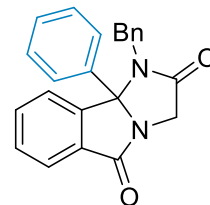


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

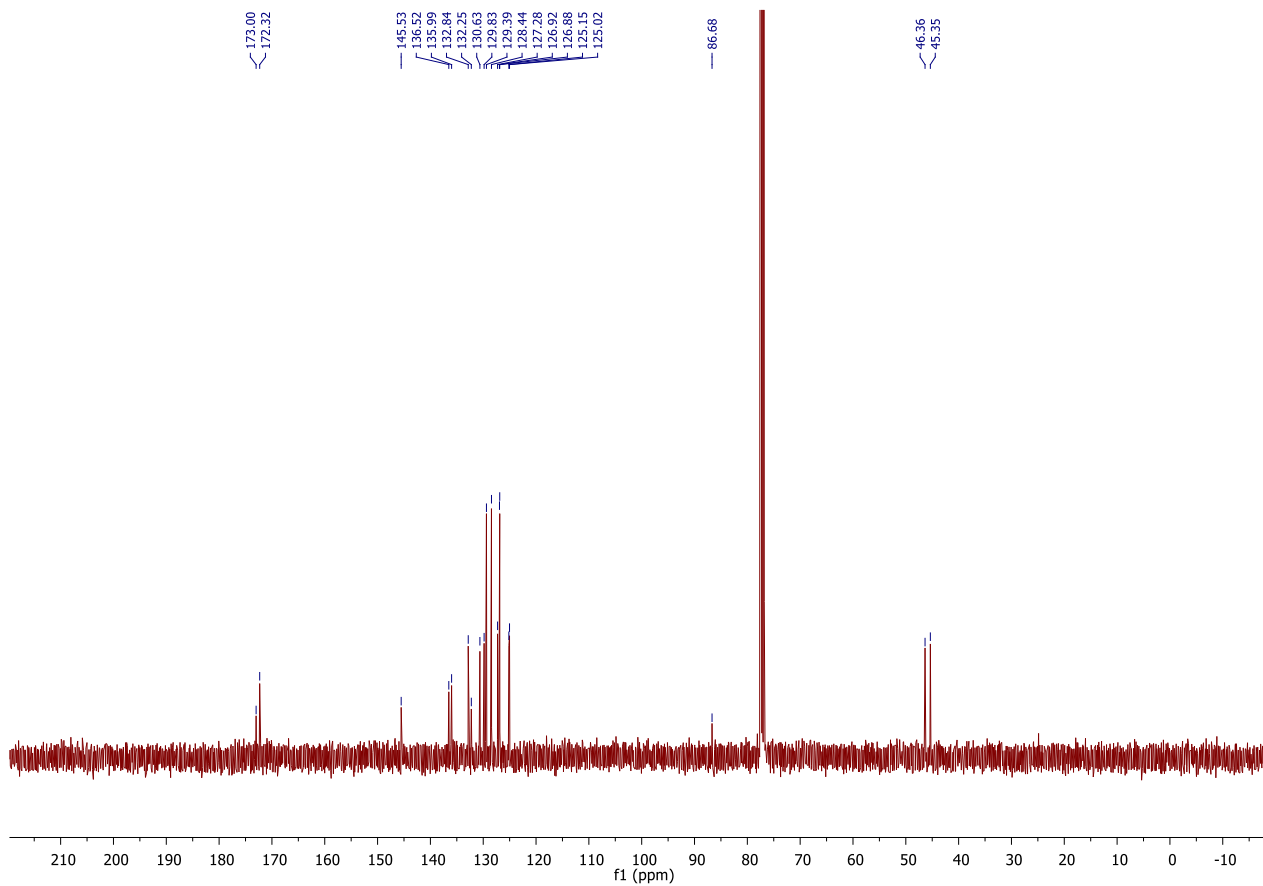


### 1.113. 1-benzyl-9b-phenyl-3H-imidazo[2,1-a]isoindole-2,5-dione (328a)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

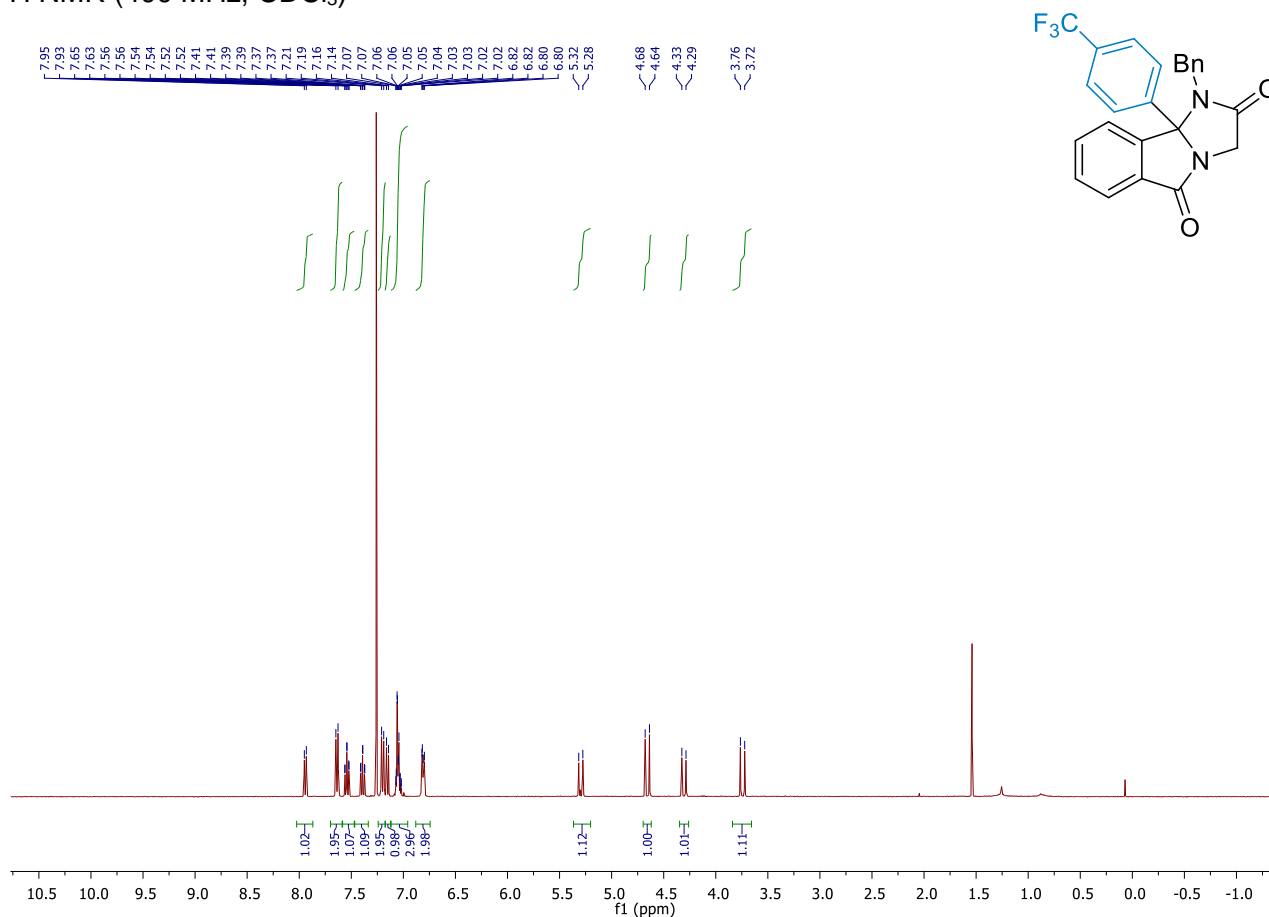


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

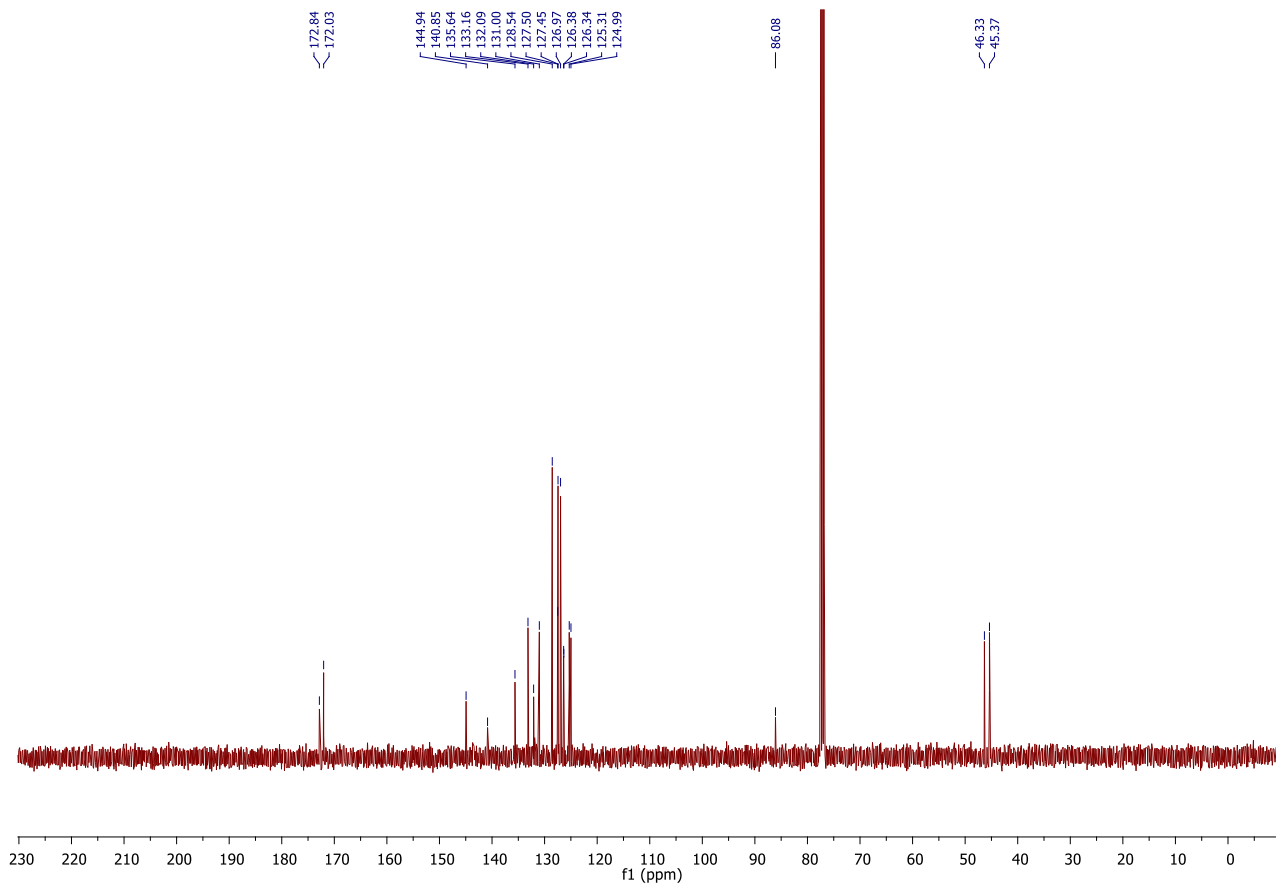


### 1.114. 1-benzyl-9b-[4-(trifluoromethyl)phenyl]-3H-imidazo[2,1-a]isoindole-2,5-dione (328b)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

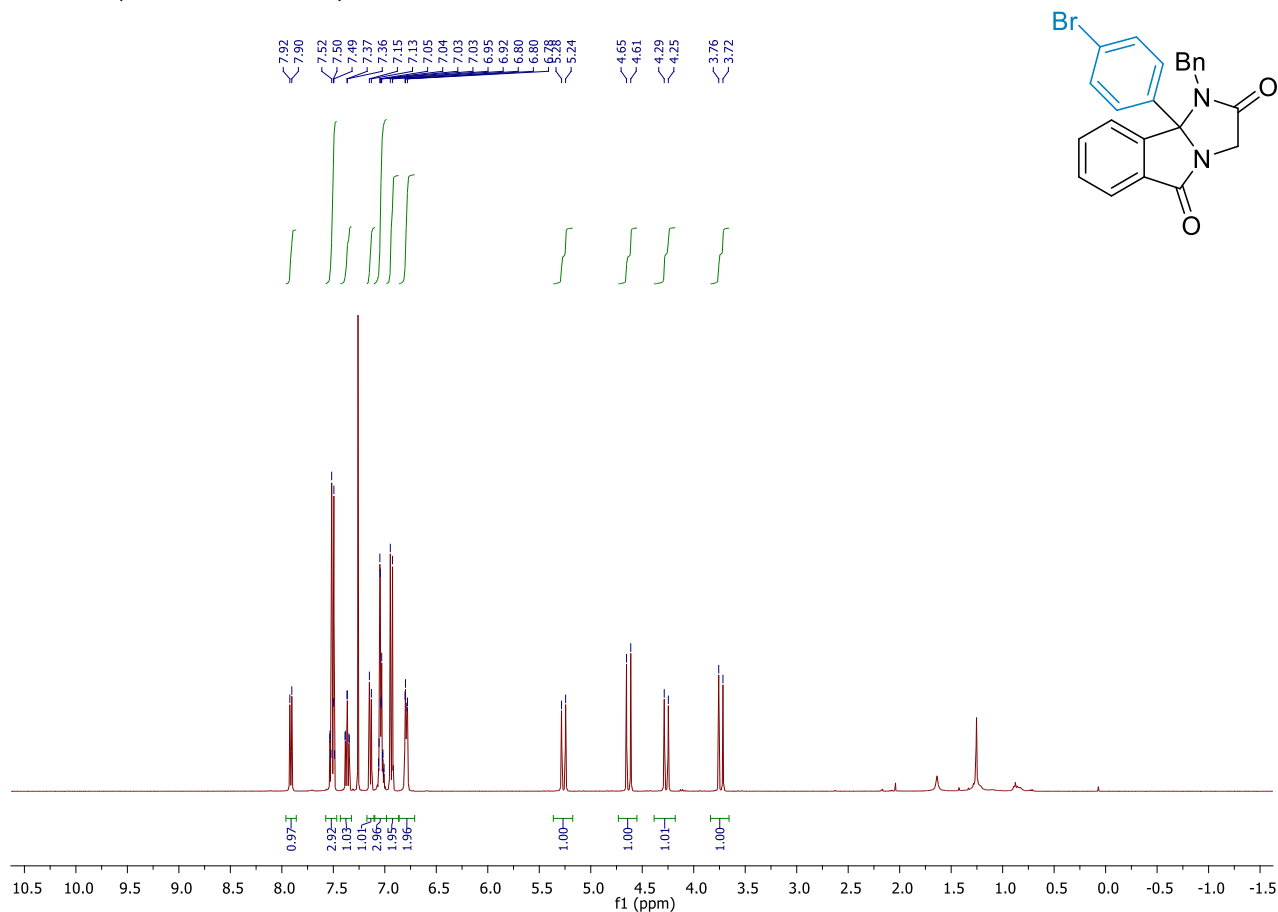


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

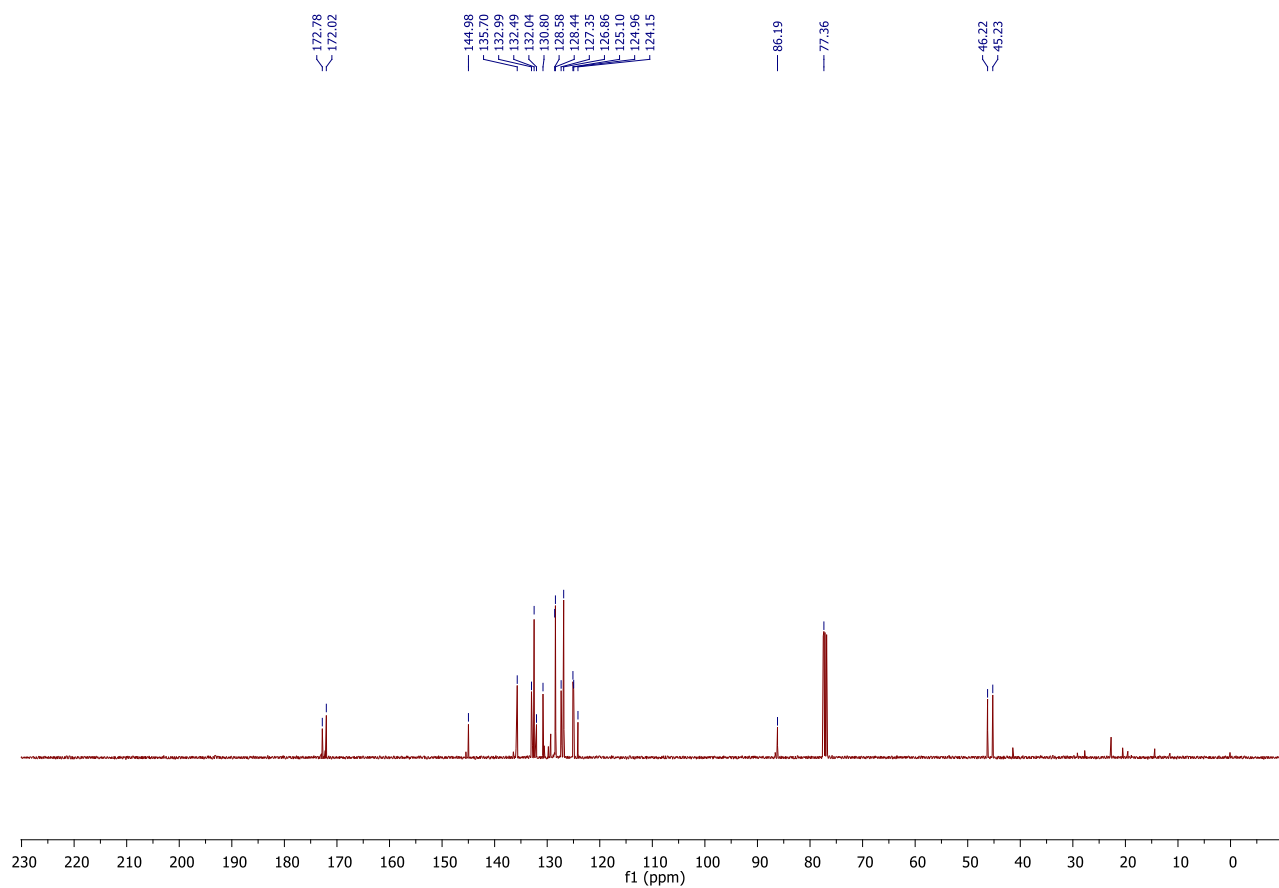


### 1.115. 1-benzyl-9b-(4-bromophenyl)-3H-imidazo[2,1-a]isoindole-2,5-dione (328c)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

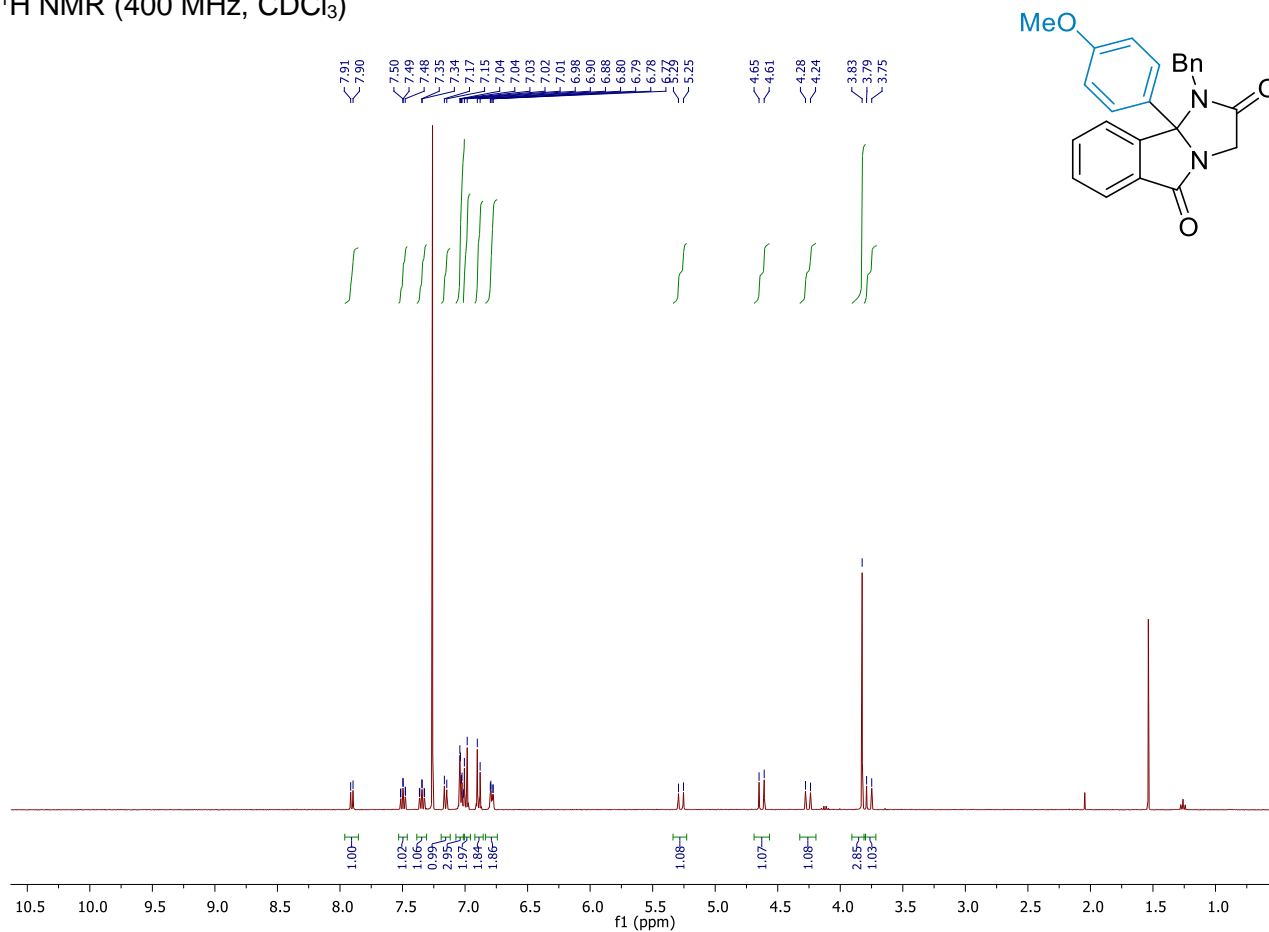


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

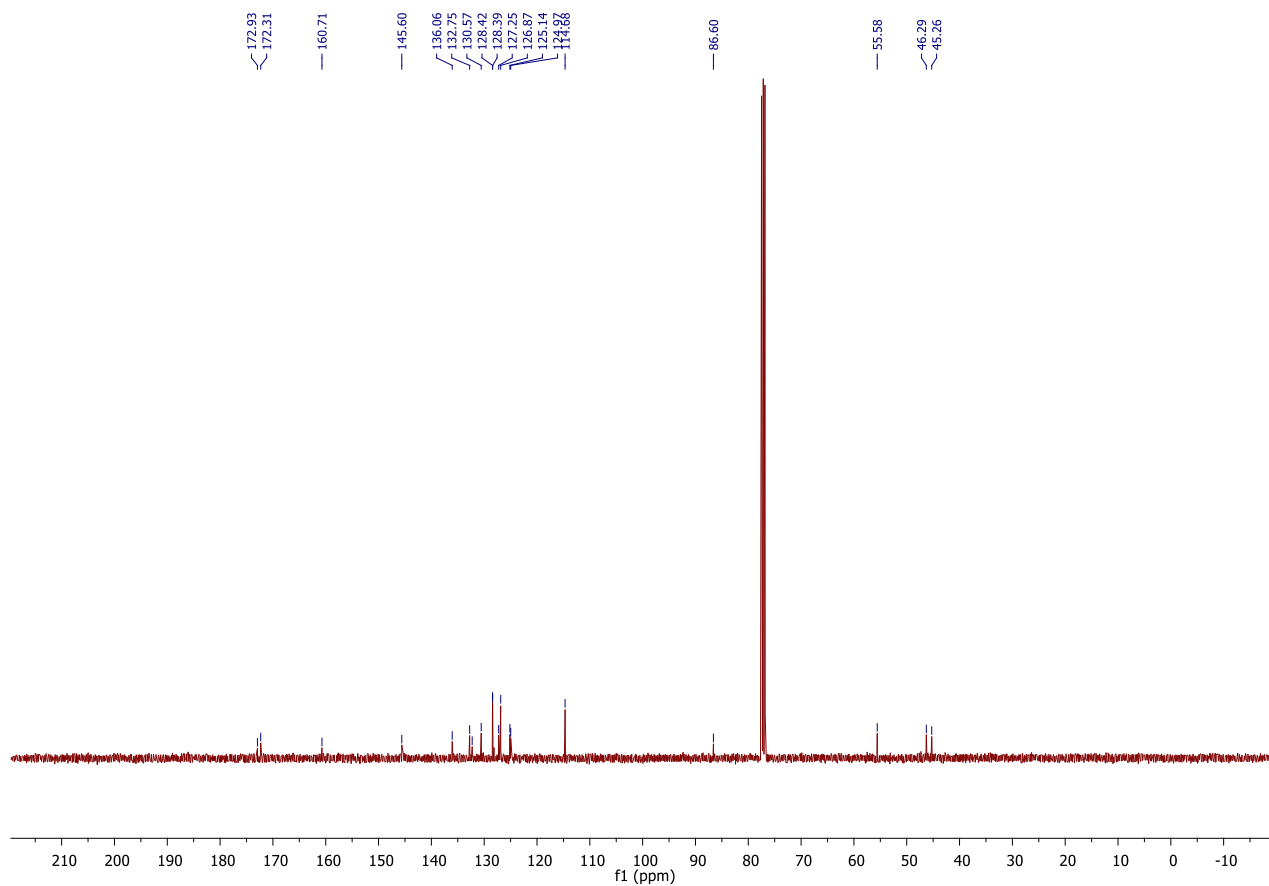


### 1.116. 1-benzyl-9b-(4-methoxyphenyl)-3H-imidazo[2,1-a]isoindole-2,5-dione (328d)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

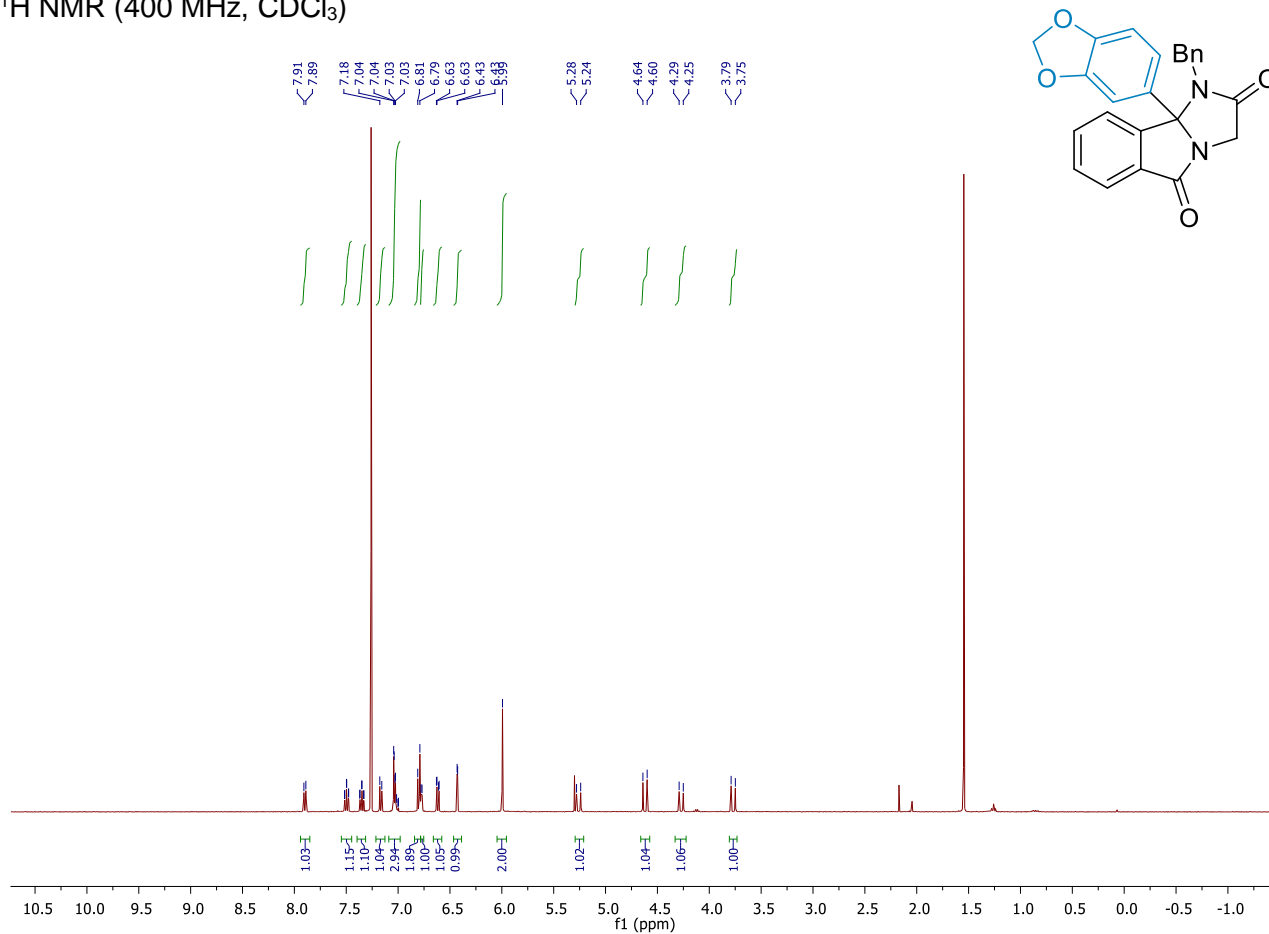


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

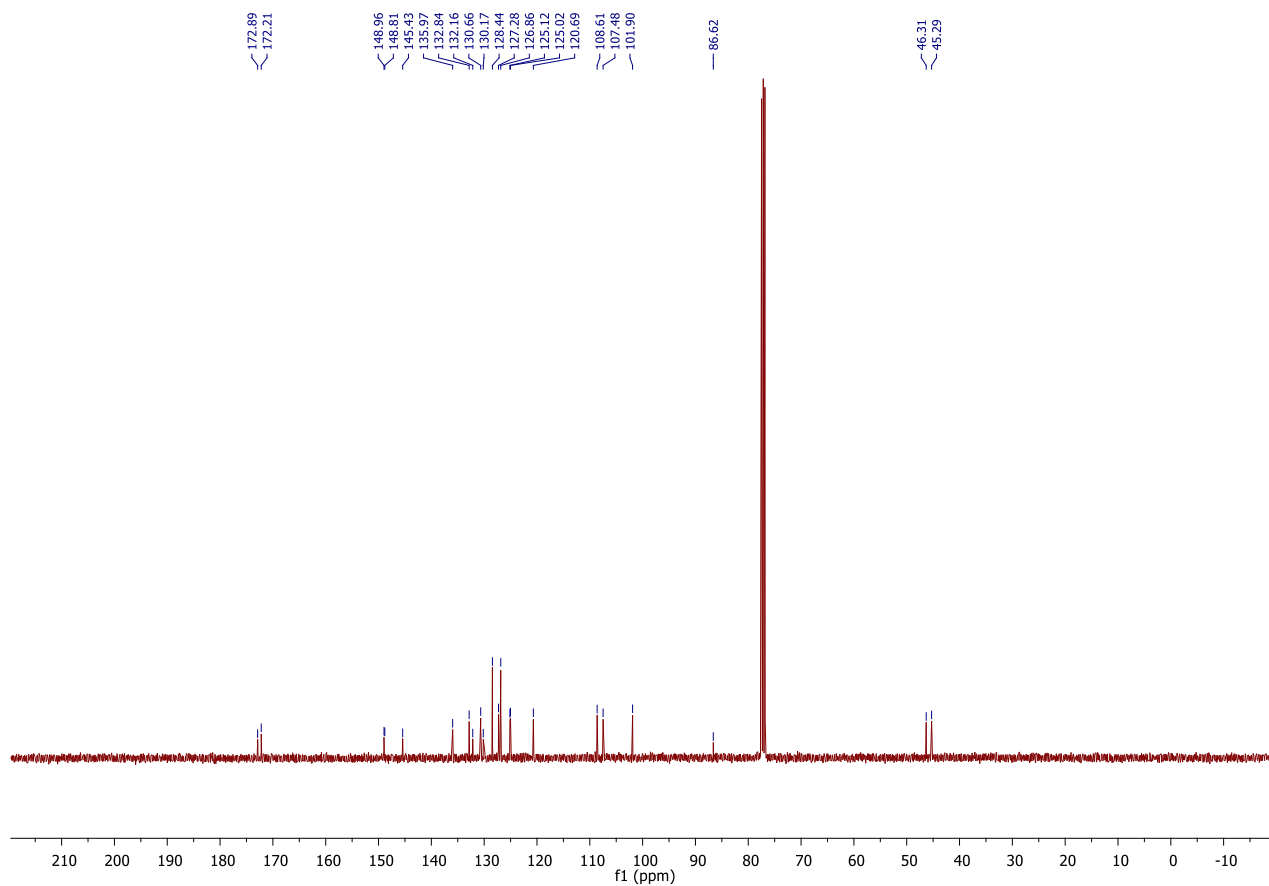


1.117. 9b-(1,3-benzodioxol-5-yl)-1-benzyl-3H-imidazo[2,1-a]isoindole-2,5-dione (328e)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

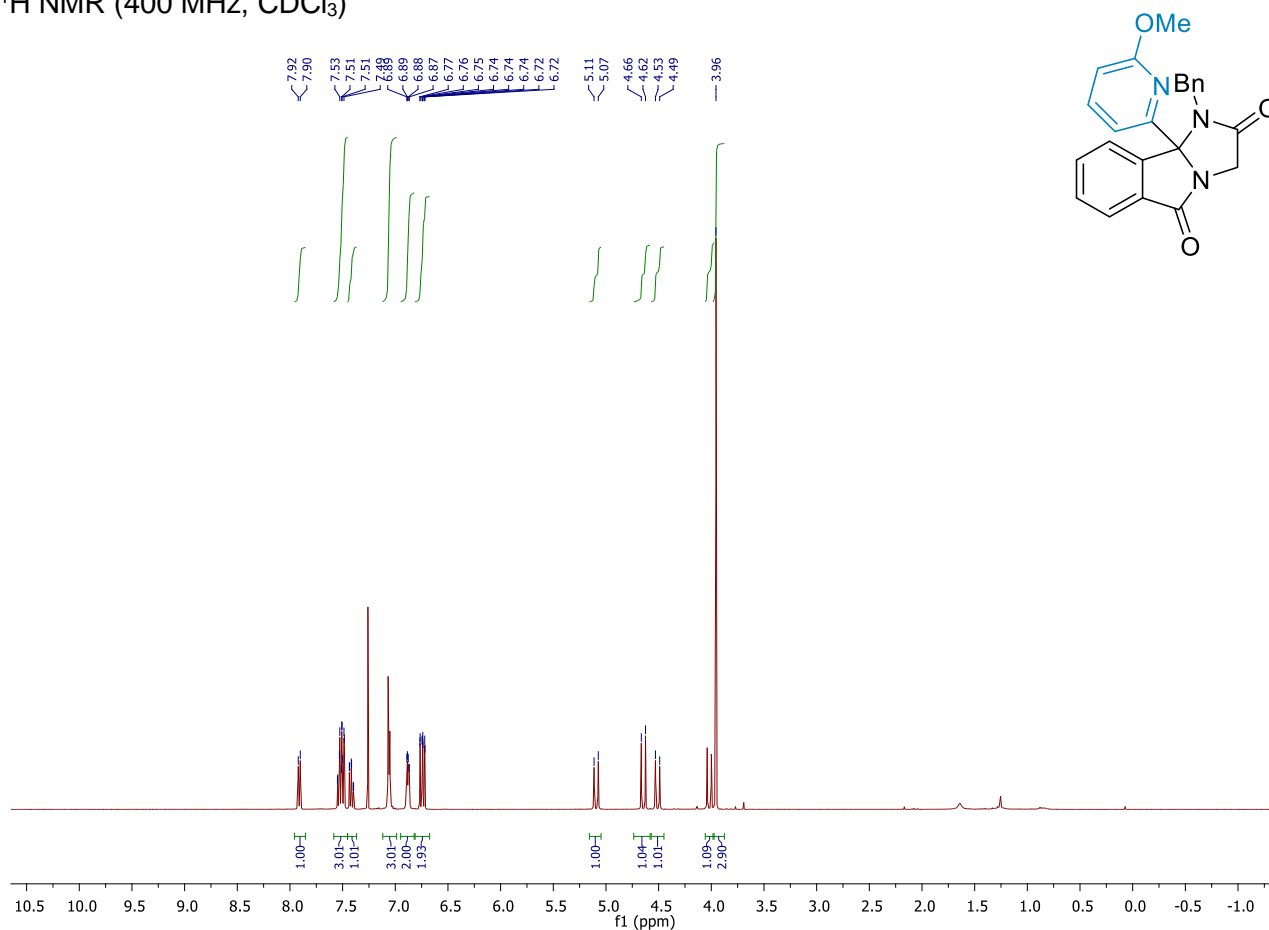


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

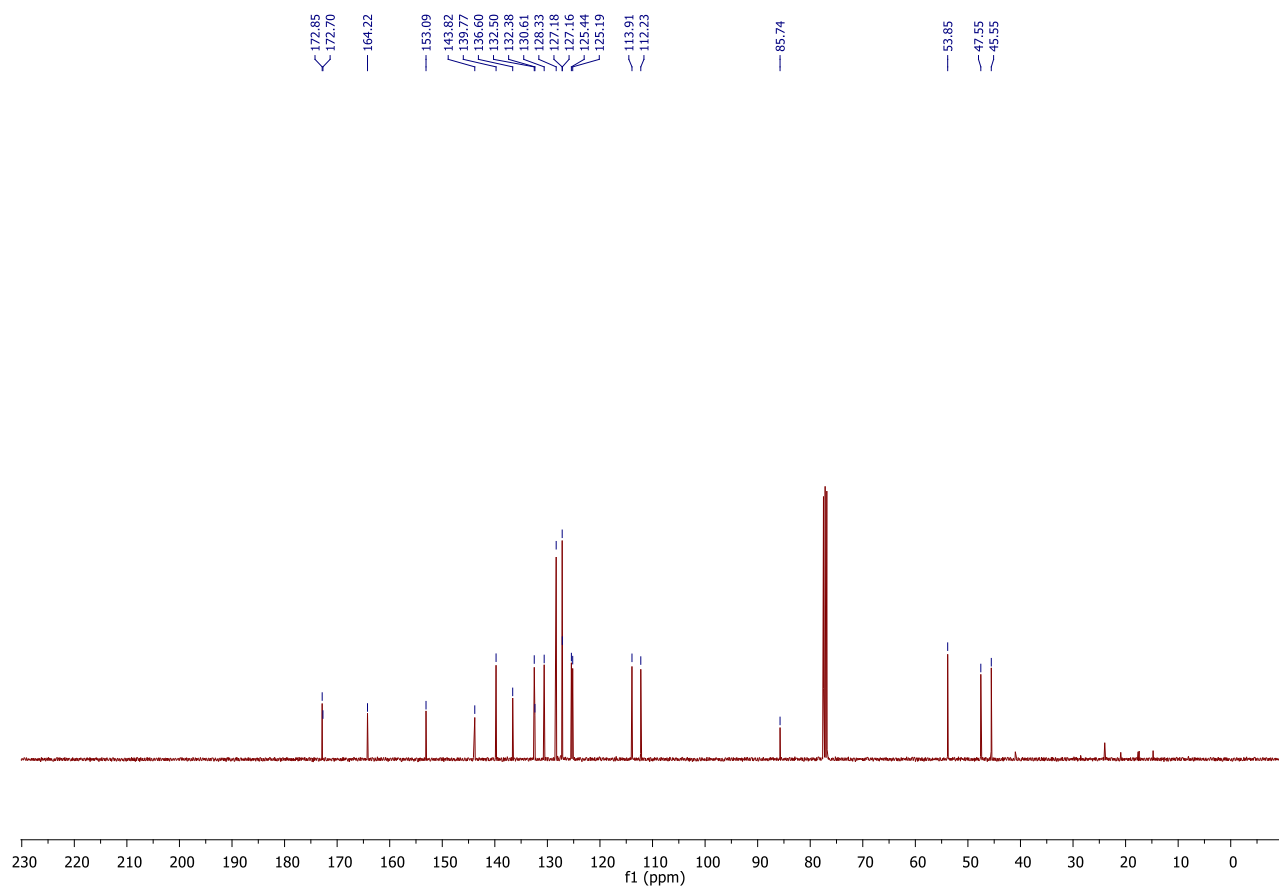


### 1.118. 1-benzyl-9b-(6-methoxy-2-pyridyl)-3H-imidazo[2,1-a]isoindole-2,5-dione (328f)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )



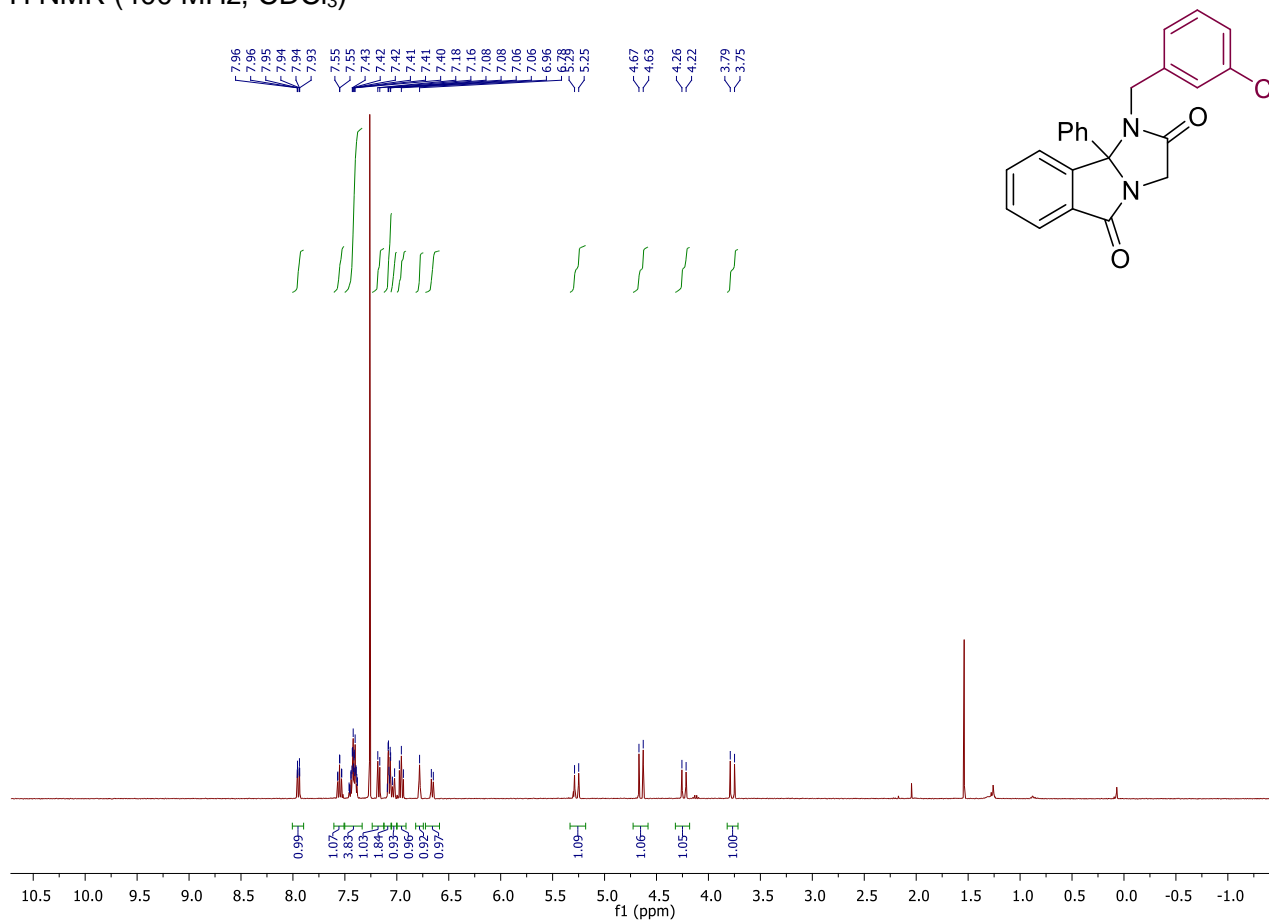
$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )



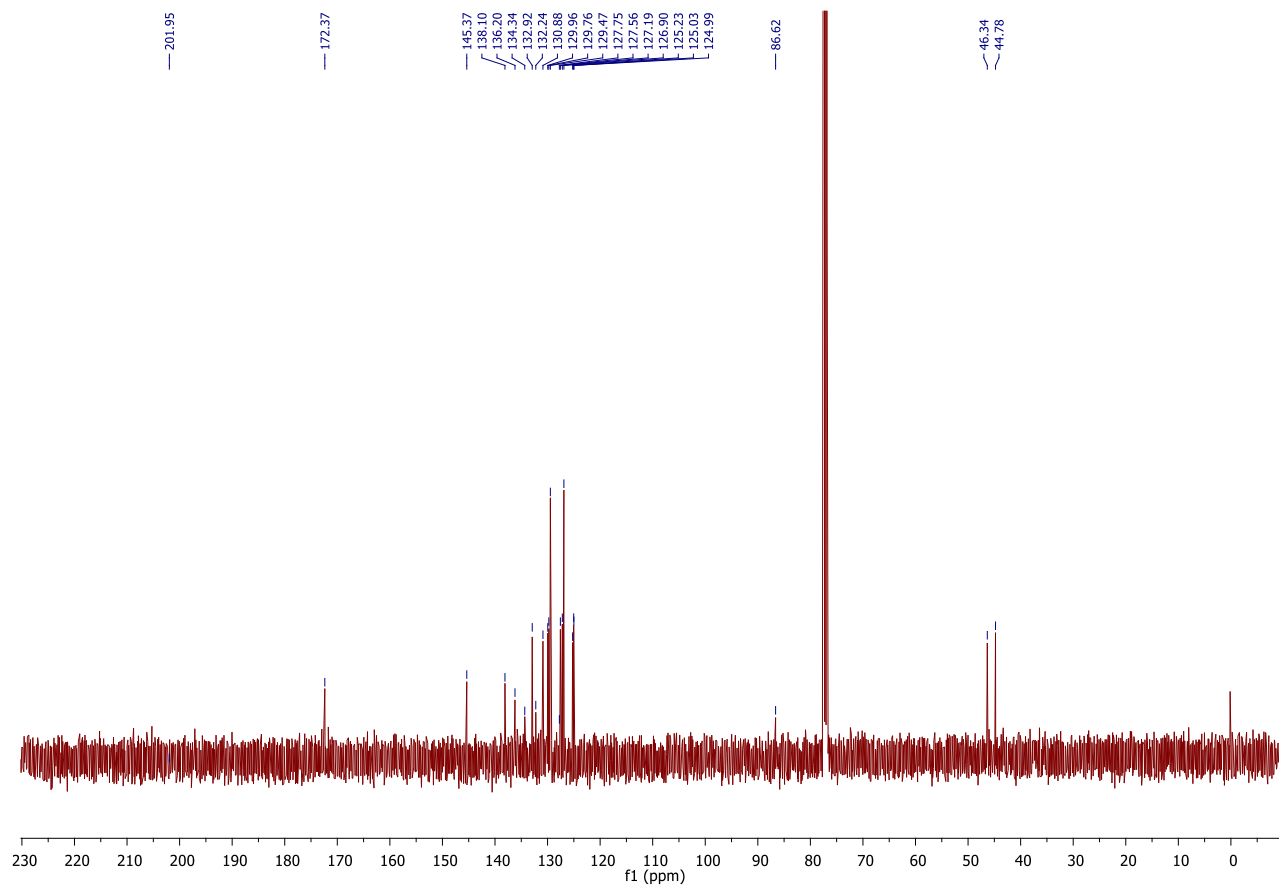


1.119. 1-[(3-chlorophenyl)methyl]-9b-phenyl-3H-imidazo[2,1-a]isoindole-2,5-dione (328g)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

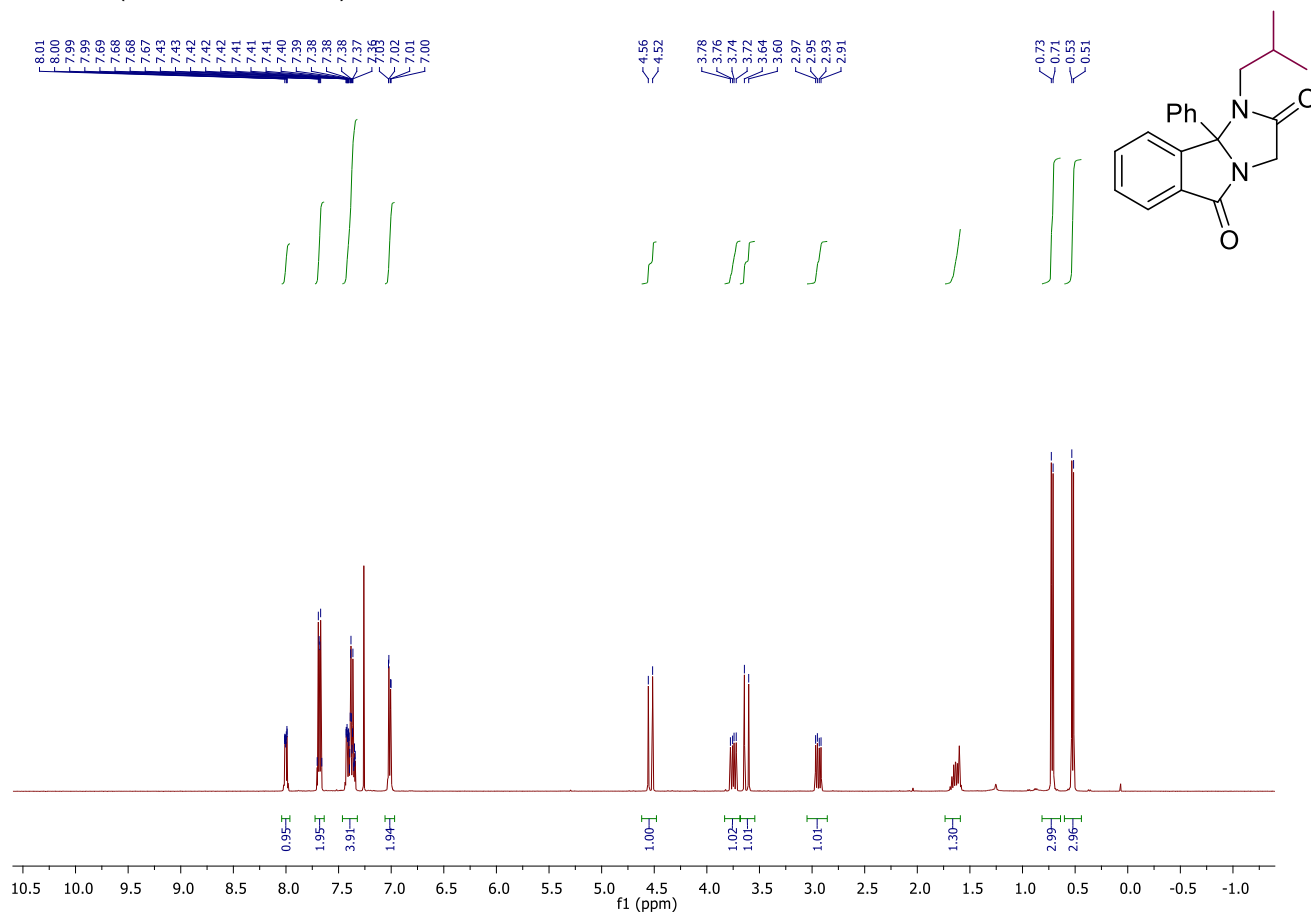


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

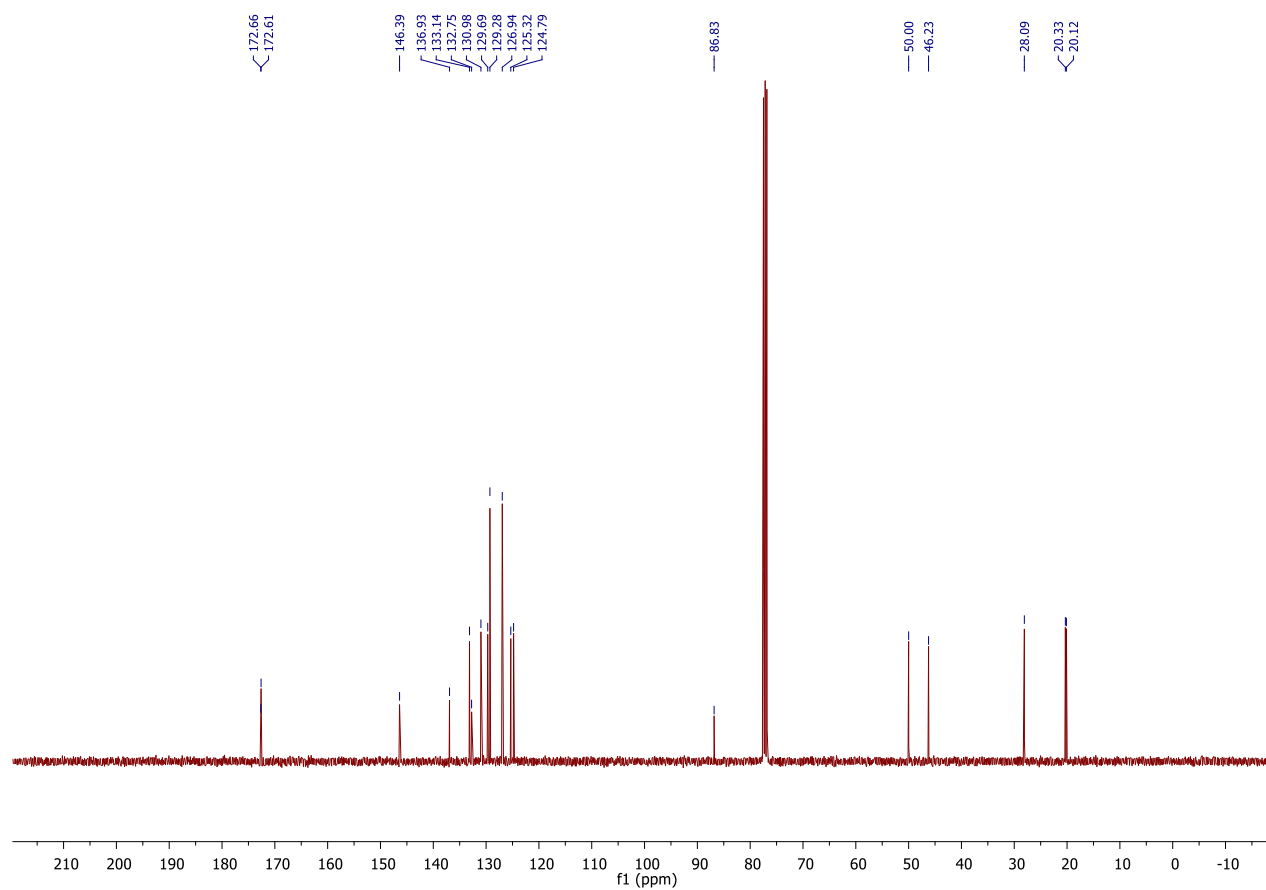


### 1.120. 1-isobutyl-9b-phenyl-3H-imidazo[2,1-a]isoindole-2,5-dione (328h)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

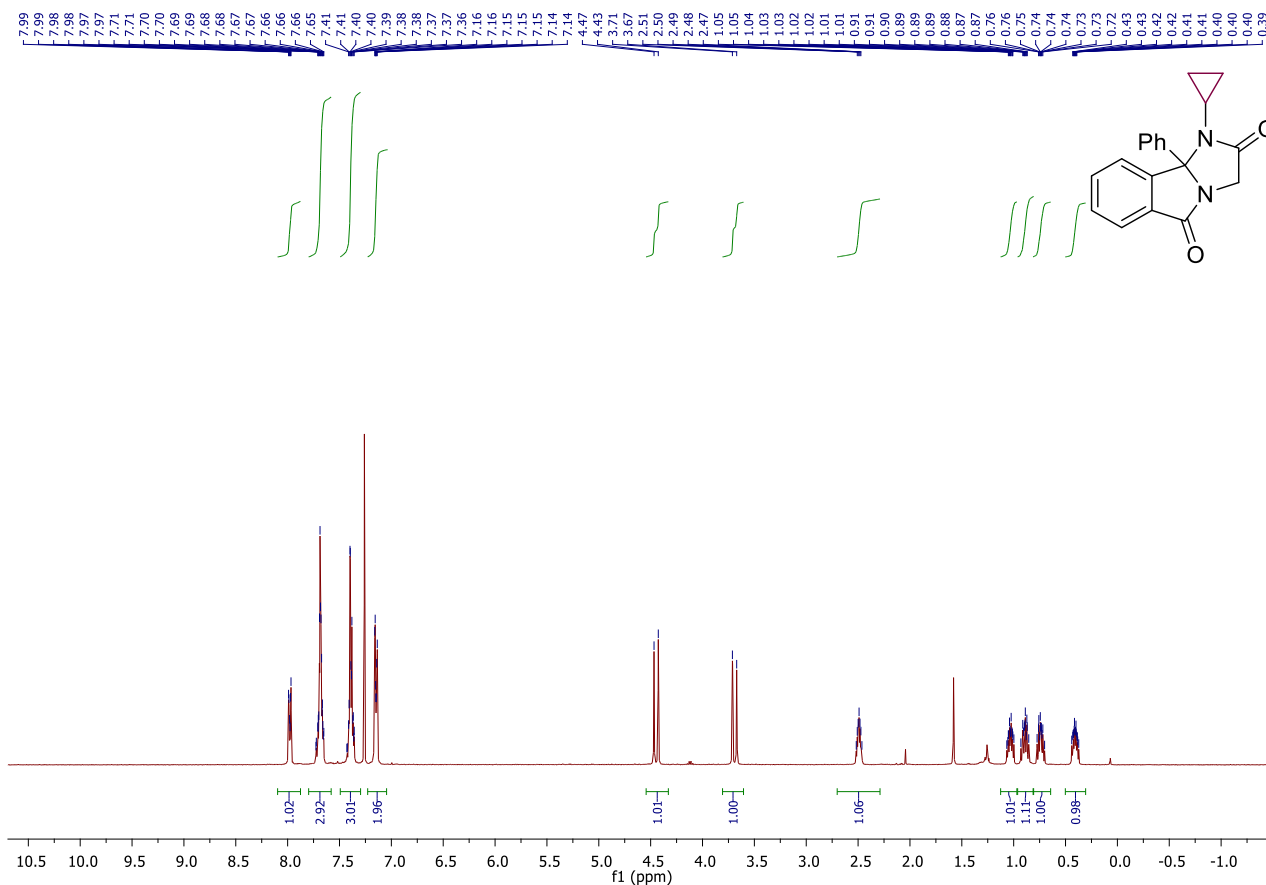


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

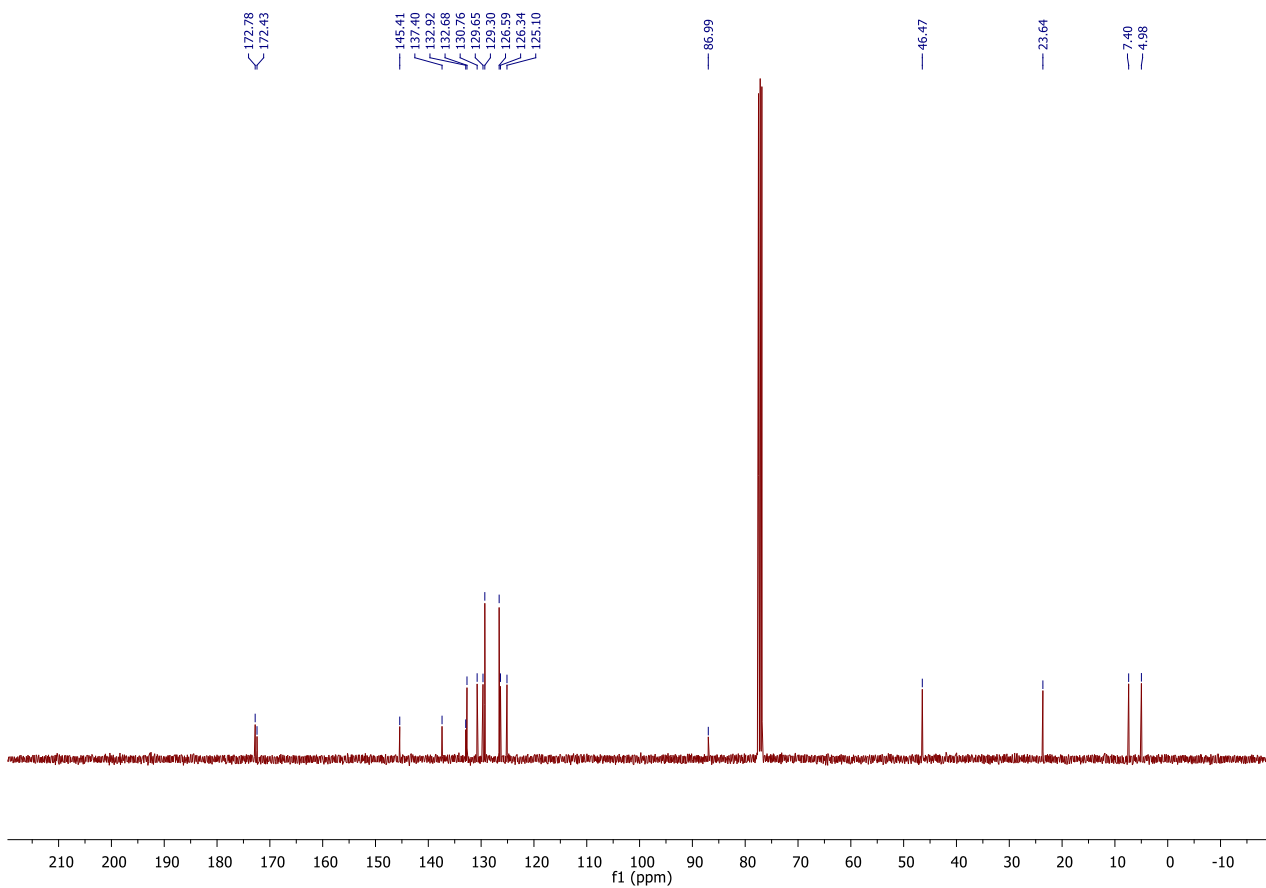


### 1.121. 1-cyclopropyl-9b-phenyl-3H-imidazo[2,1-a]isoindole-2,5-dione (328i)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

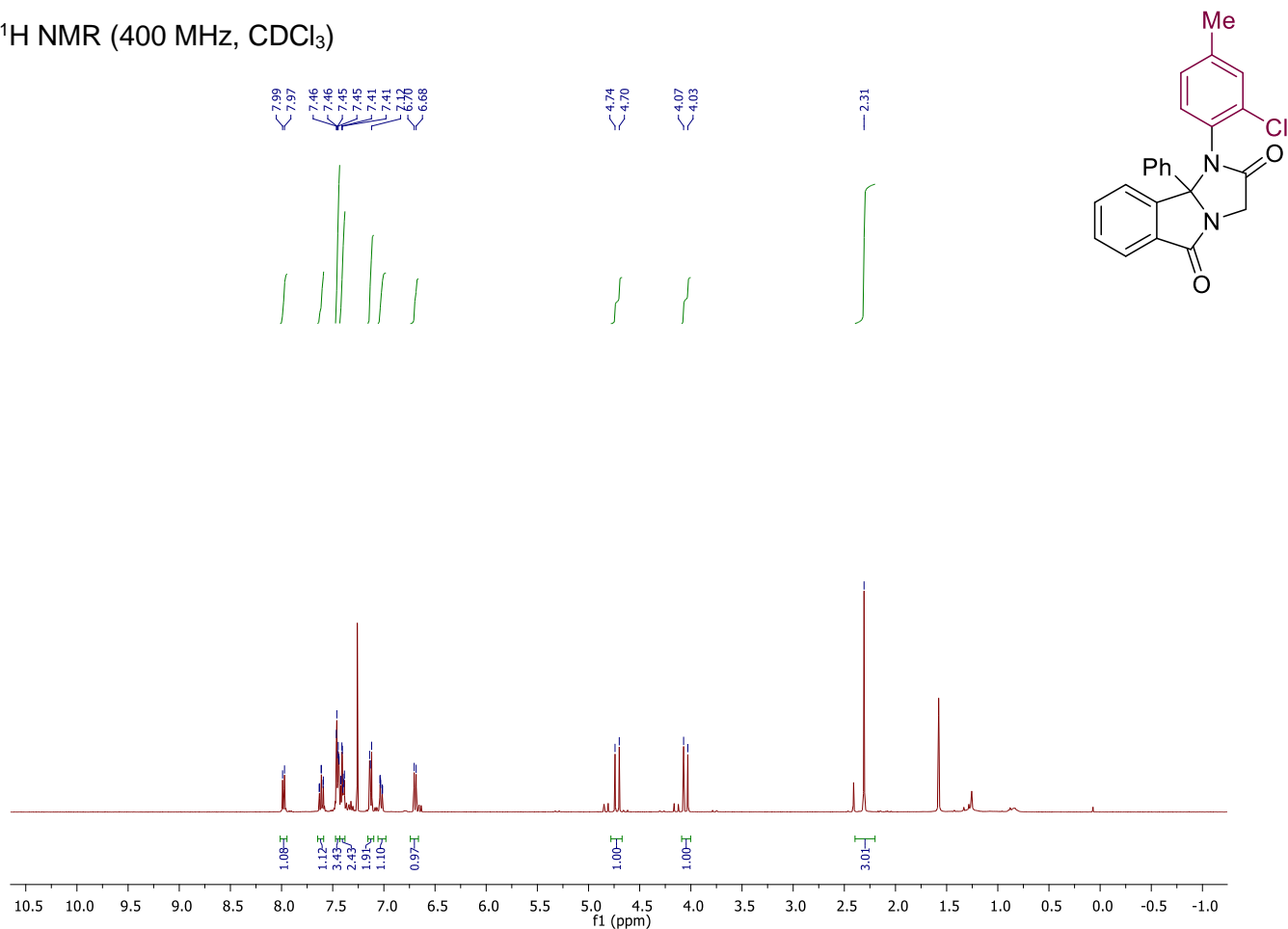


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

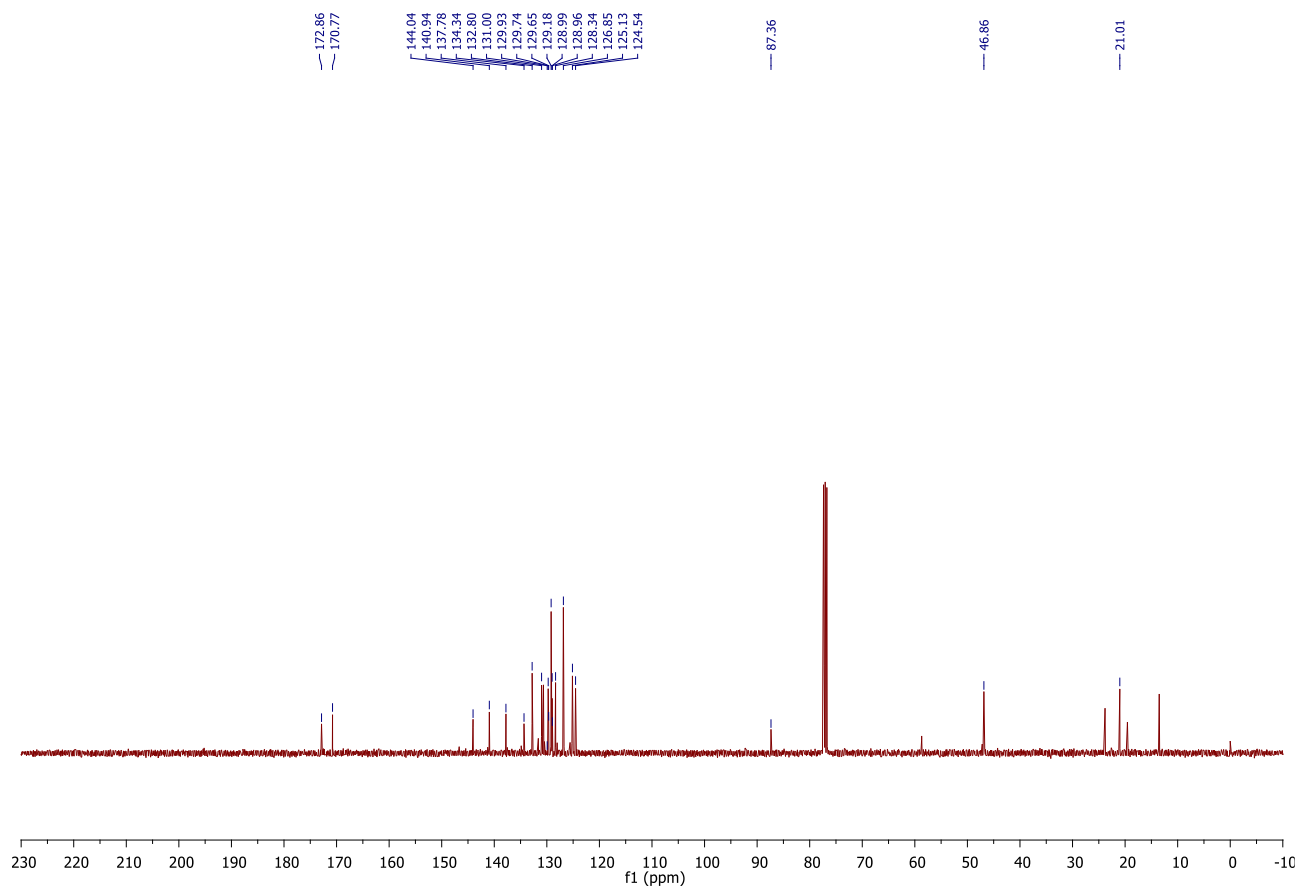


### 1.122. 1-(2-chloro-4-methyl-phenyl)-9b-phenyl-3H-imidazo[2,1-a]isoindole-2,5-dione (328j)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

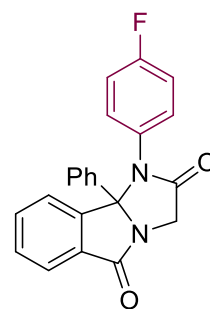
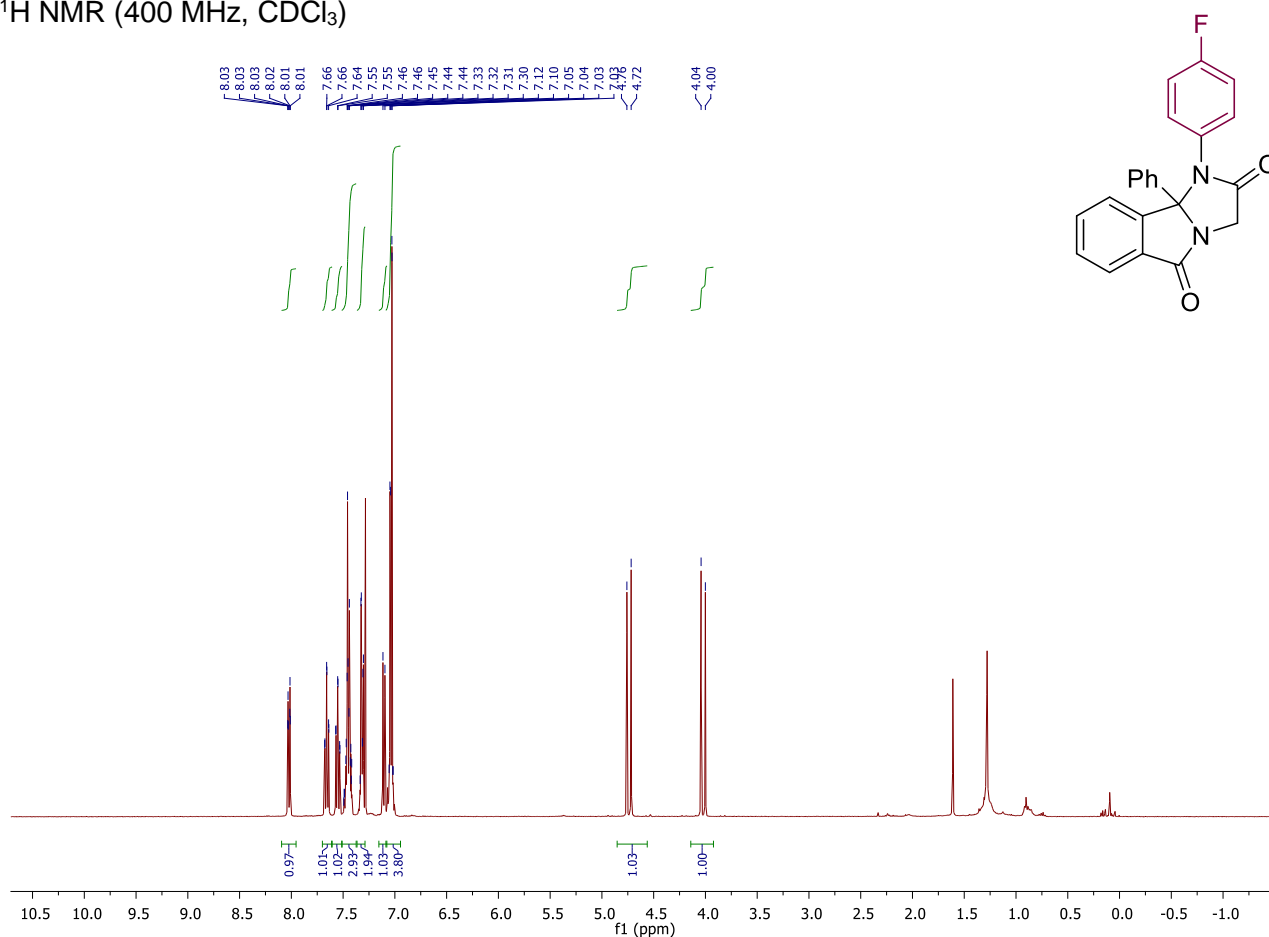


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

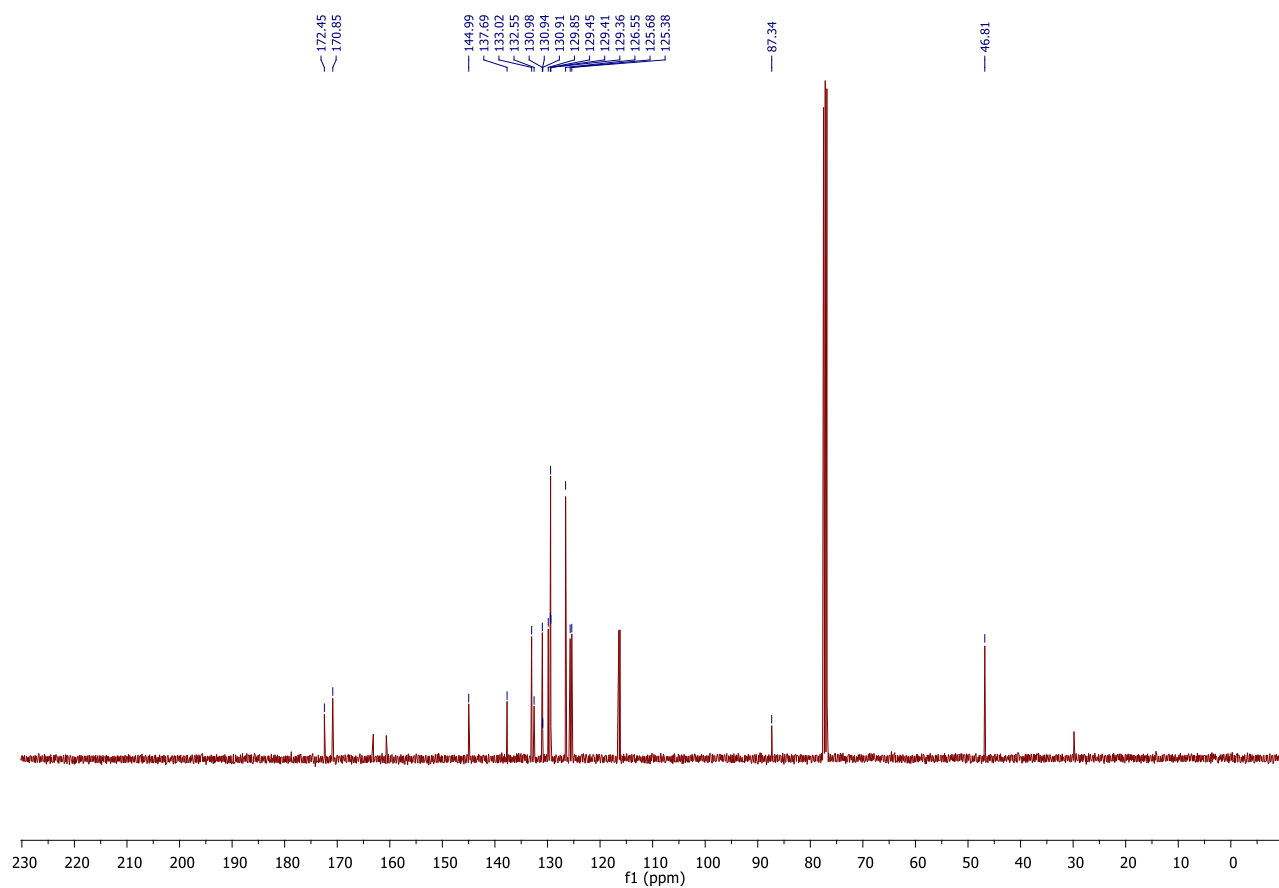


### 1.123. 1-(4-fluorophenyl)-9b-phenyl-3H-imidazo[2,1-a]isoindole-2,5-dione (328k)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

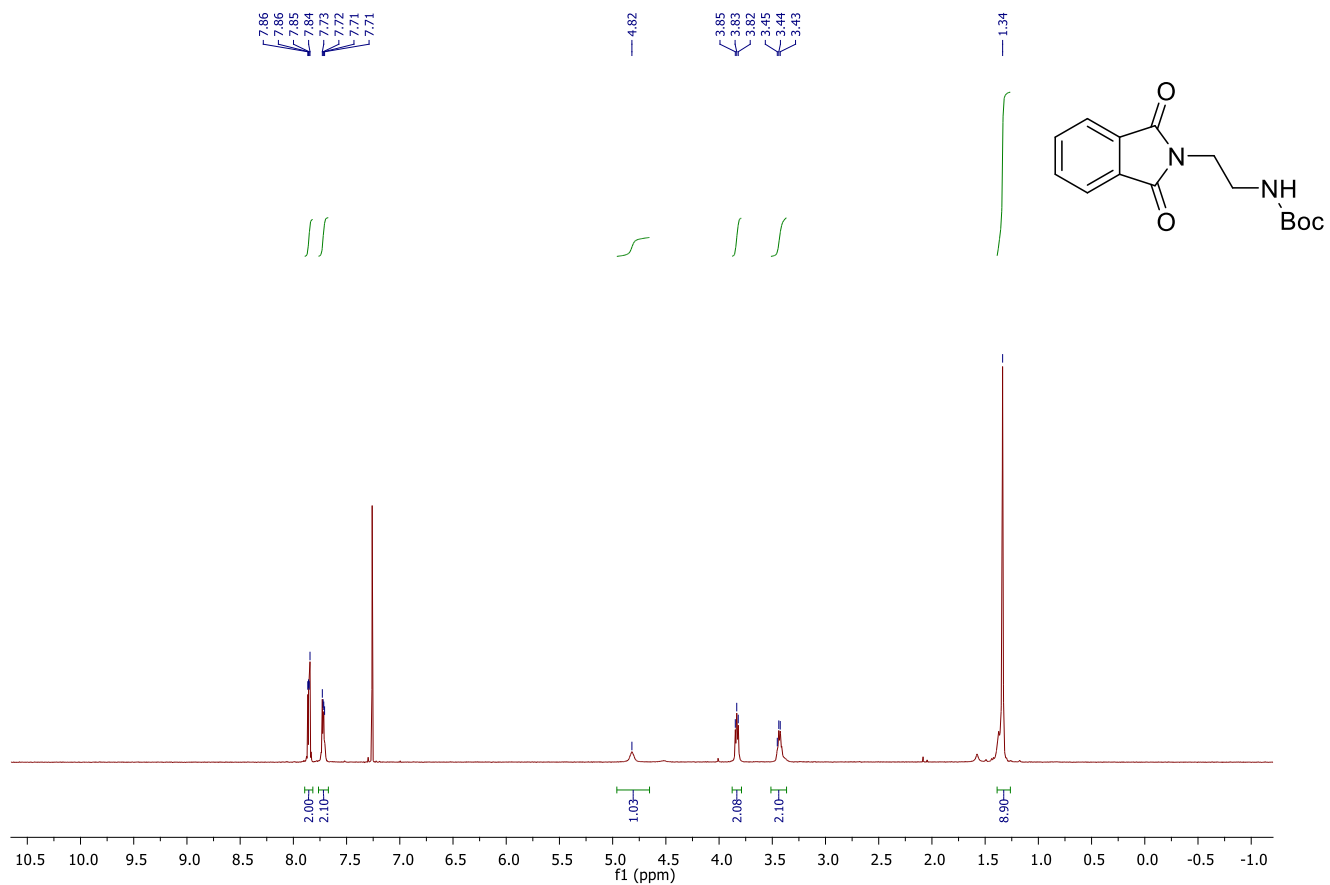


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

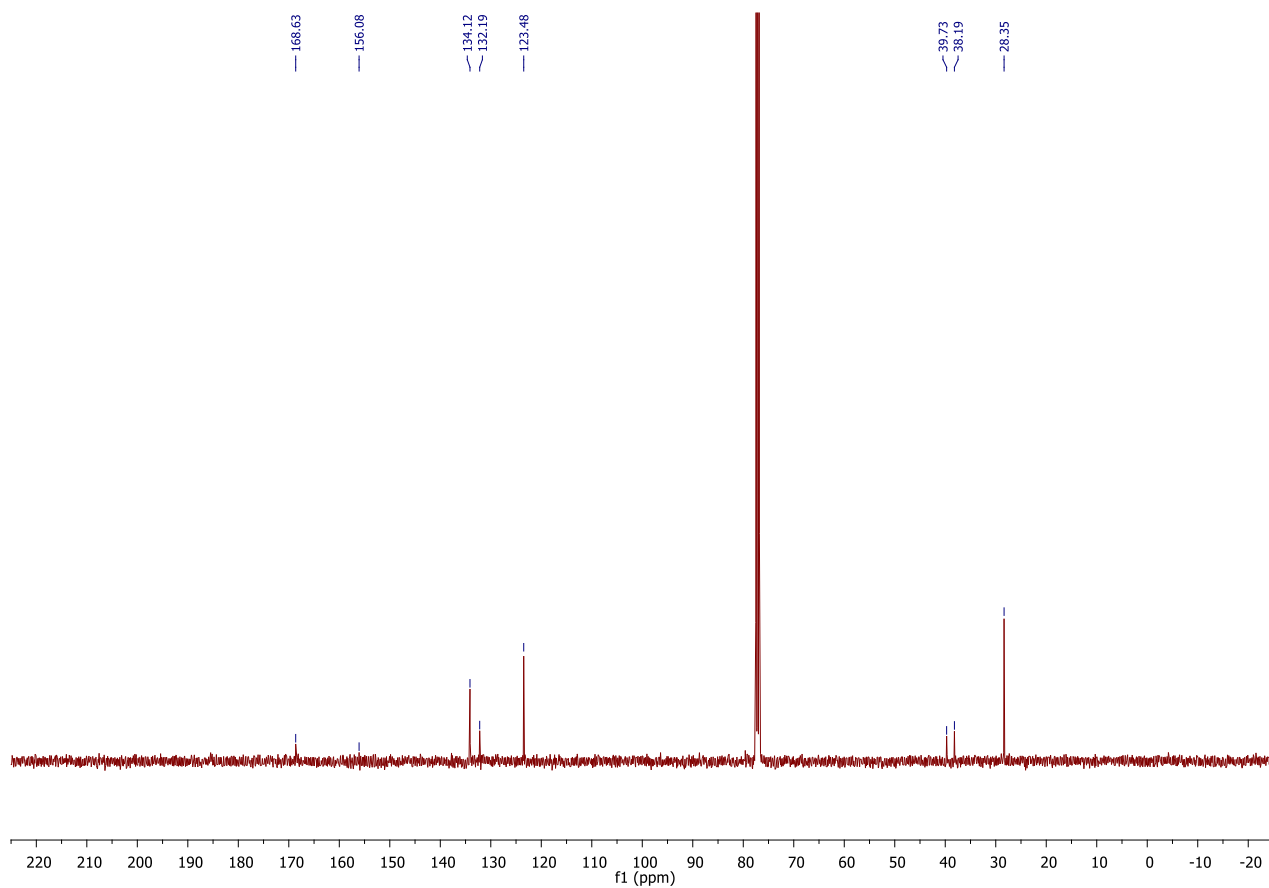


### 1.124. tert-Butyl (2-(1,3-dioxisoindolin-2-yl)ethyl)carbamate (332)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

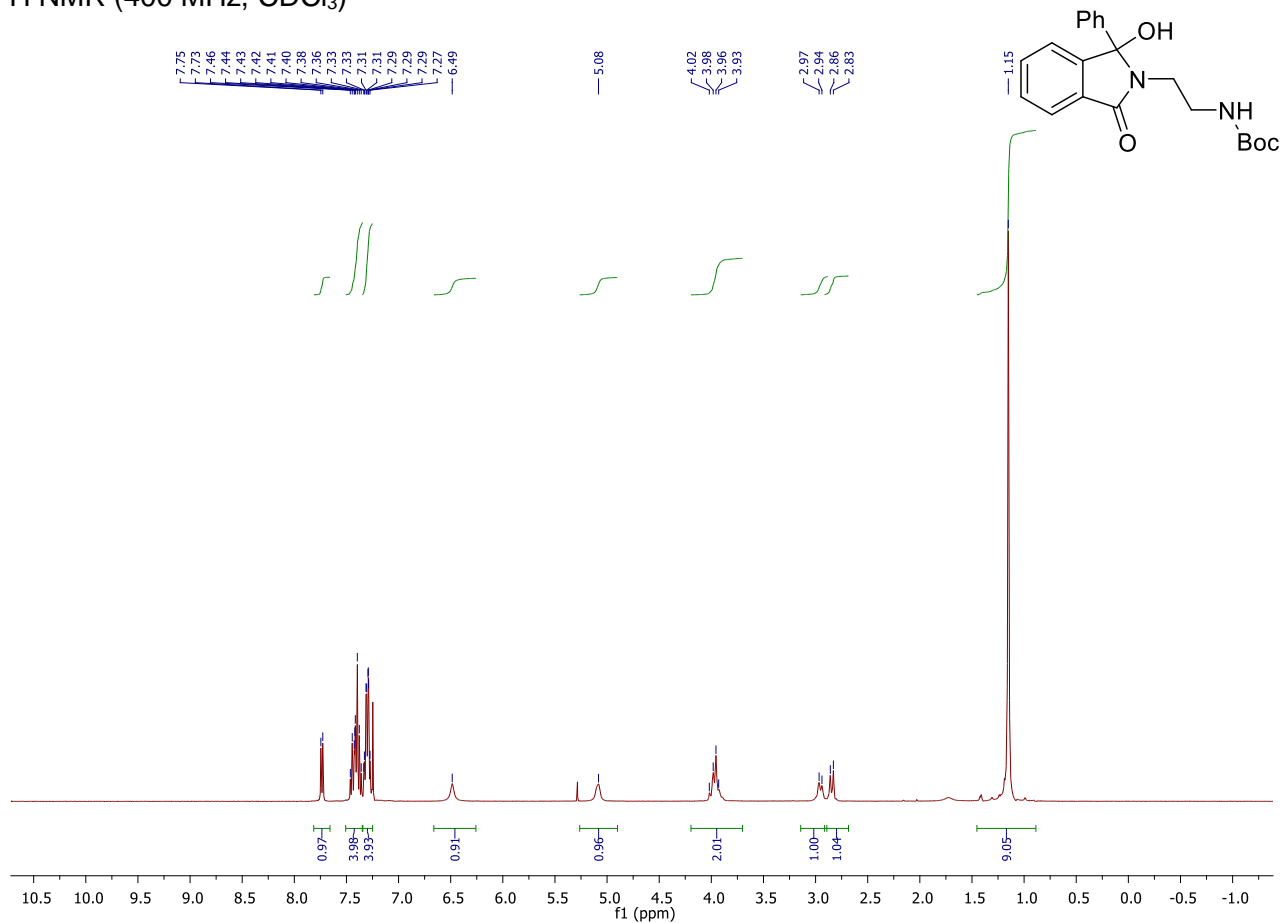


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

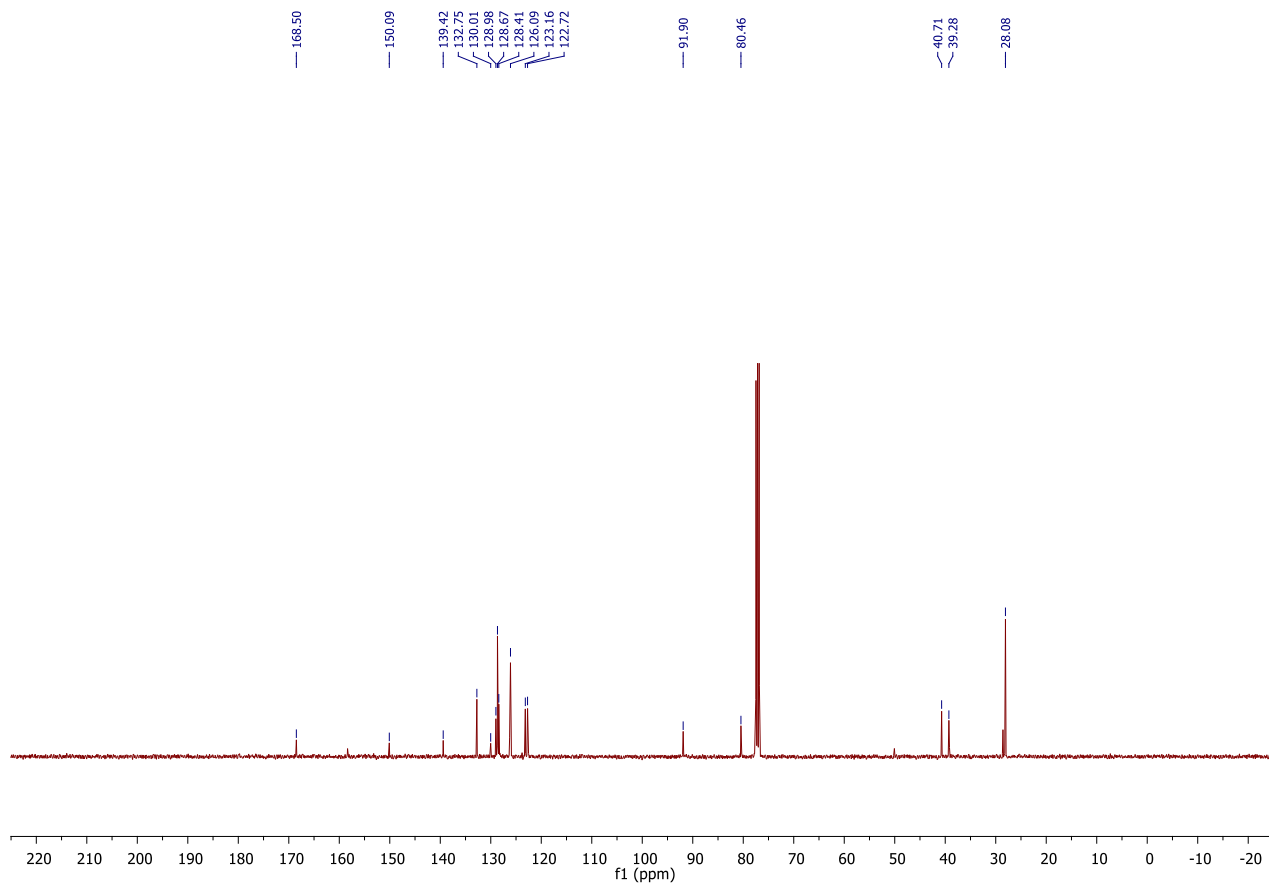


### 1.125. tert-butyl N-[2-(1-hydroxy-3-oxo-1-phenyl-isoindolin-2-yl)ethyl]carbamate (333a)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

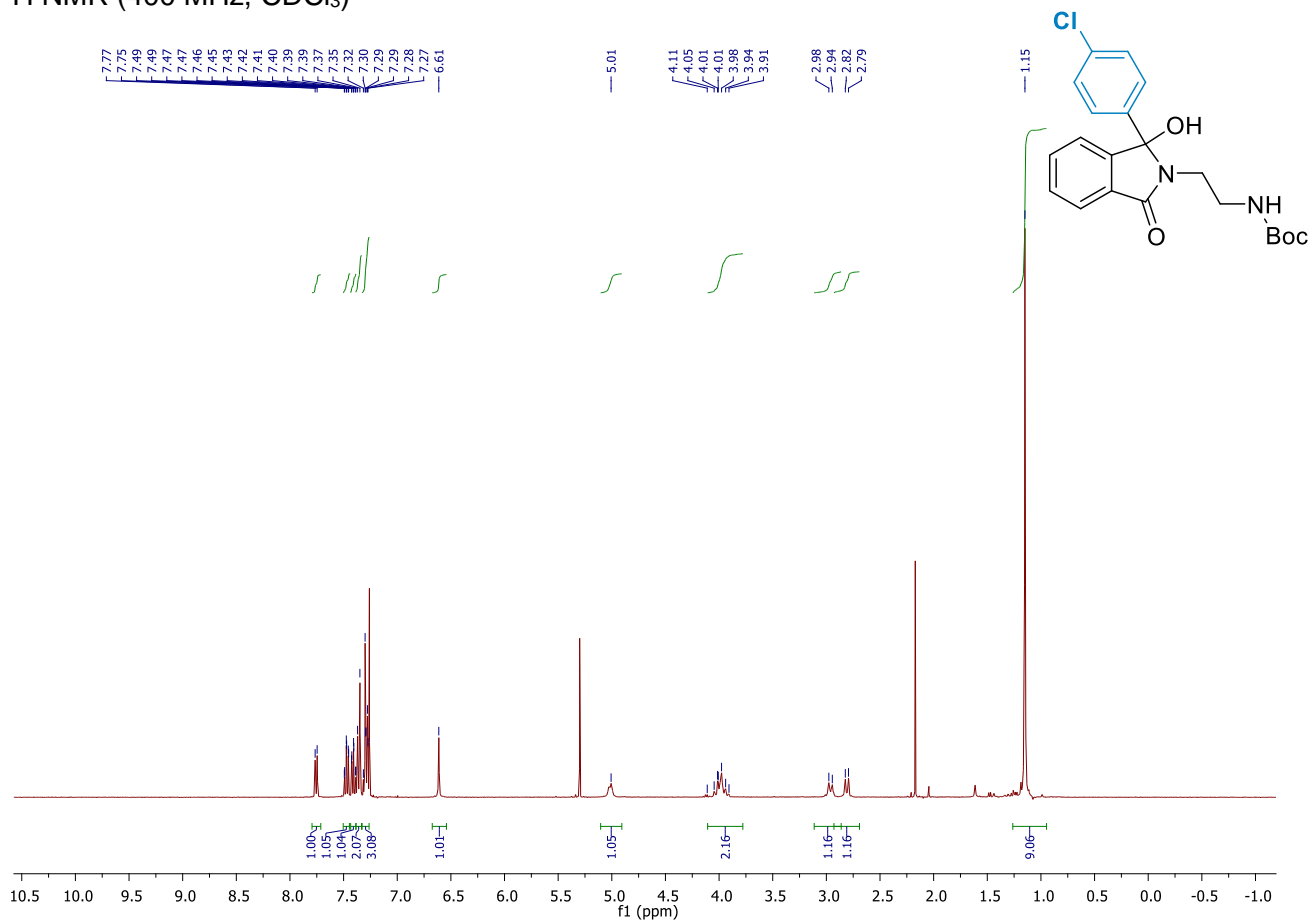


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

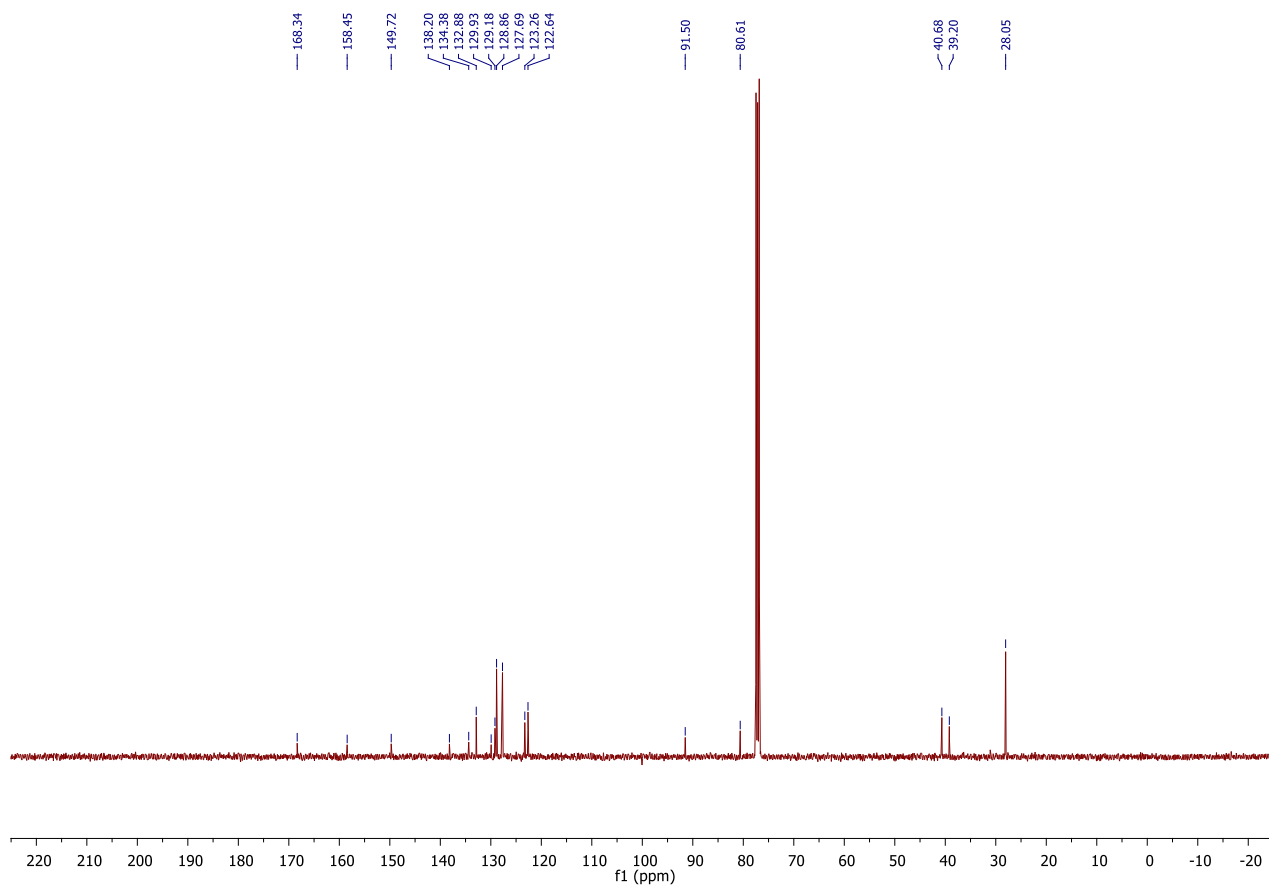


1.126. tert-butyl N-[2-[1-(4-chlorophenyl)-1-hydroxy-3-oxo-isoindolin-2-yl]ethyl]carbamate (333b)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )



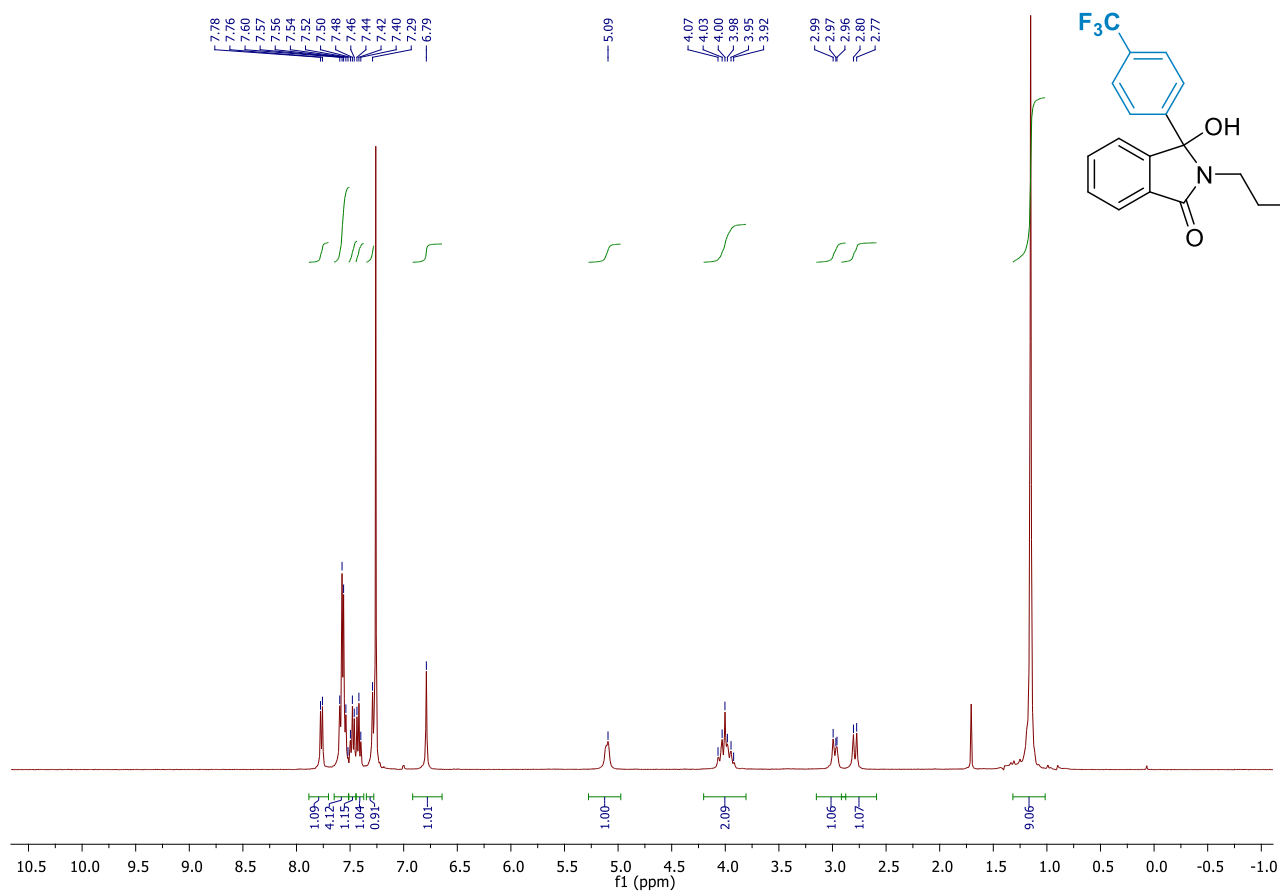
$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )



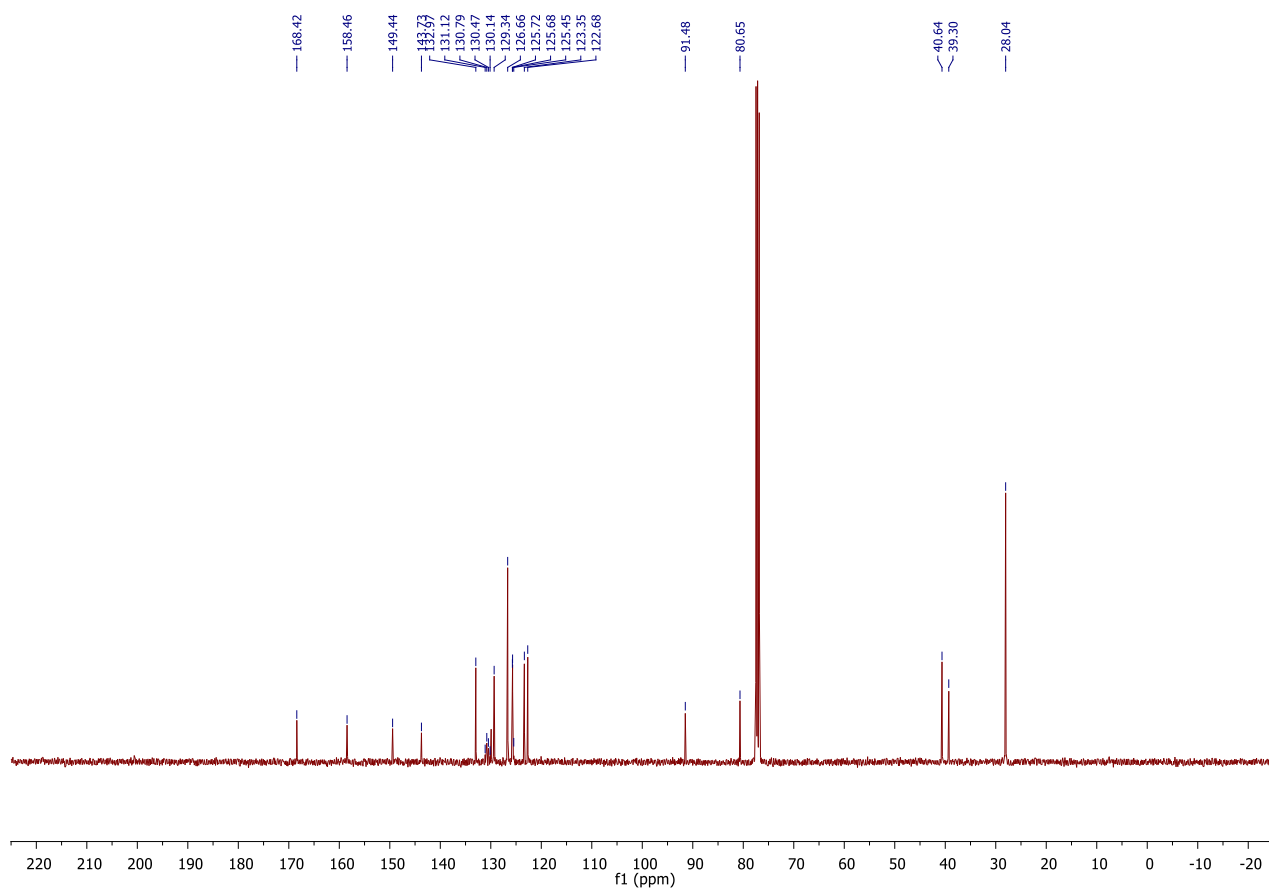


1.127. tert-butyl N-[2-[1-hydroxy-3-oxo-1-[4-(trifluoromethyl)phenyl]isoindolin-2-yl]ethyl]carbamate (333c)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )

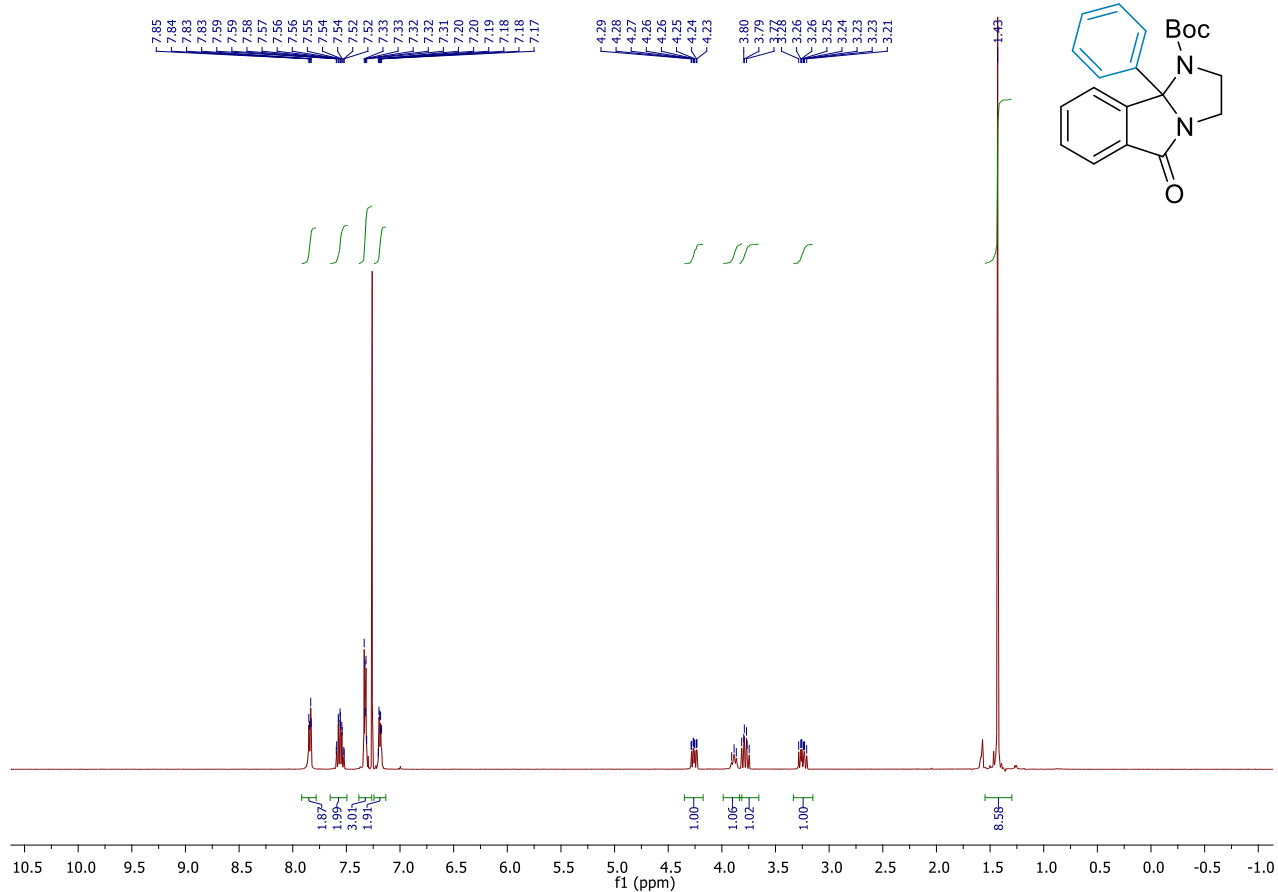


$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )



### 1.128. tert-butyl 5-oxo-9b-phenyl-2,3-dihydroimidazo[2,1-a]isoindole-1-carboxylate (334a)

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )



$^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{CDCl}_3$ )

