Supporting Information for

(4+2) Cyclization of Aza-*o*-quinone Methides with Azlactones: Construction of Biologically Important Dihydroquinolinone Framework

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[b]*Core Facility Center of Affiliated Hospital of Nanjing Medical University, Nanjing, 210029, P. R. China*

[‡]*These authors contributed equally to this work.*

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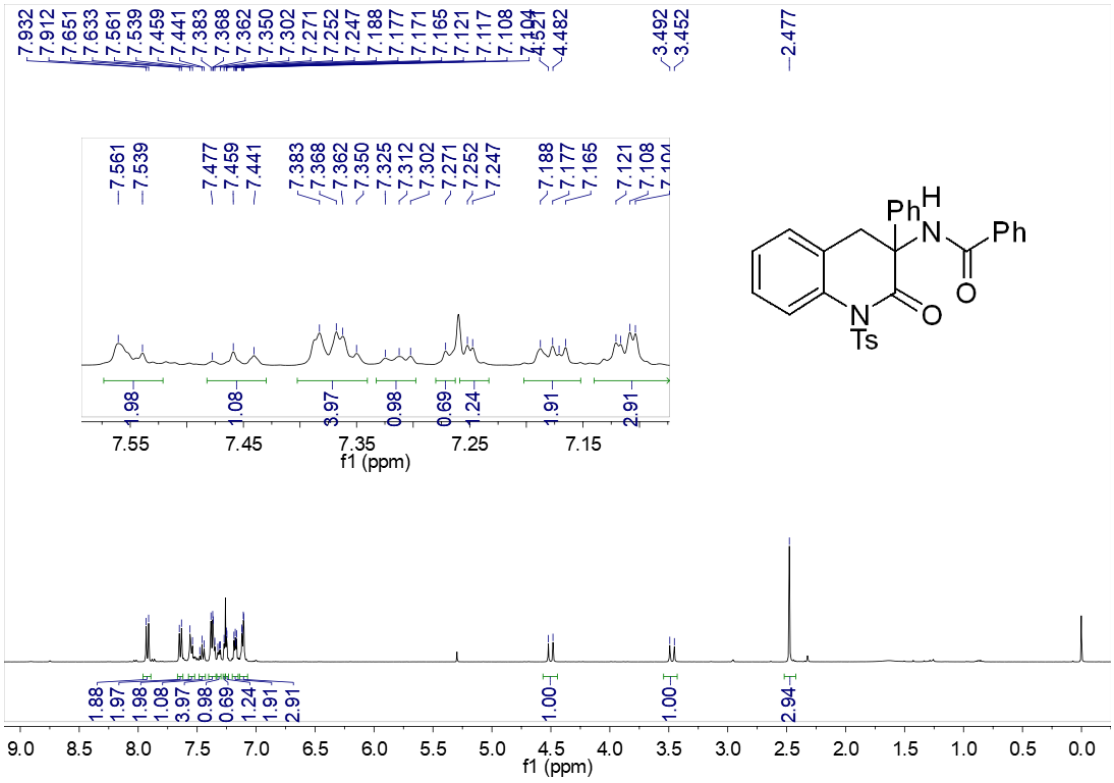
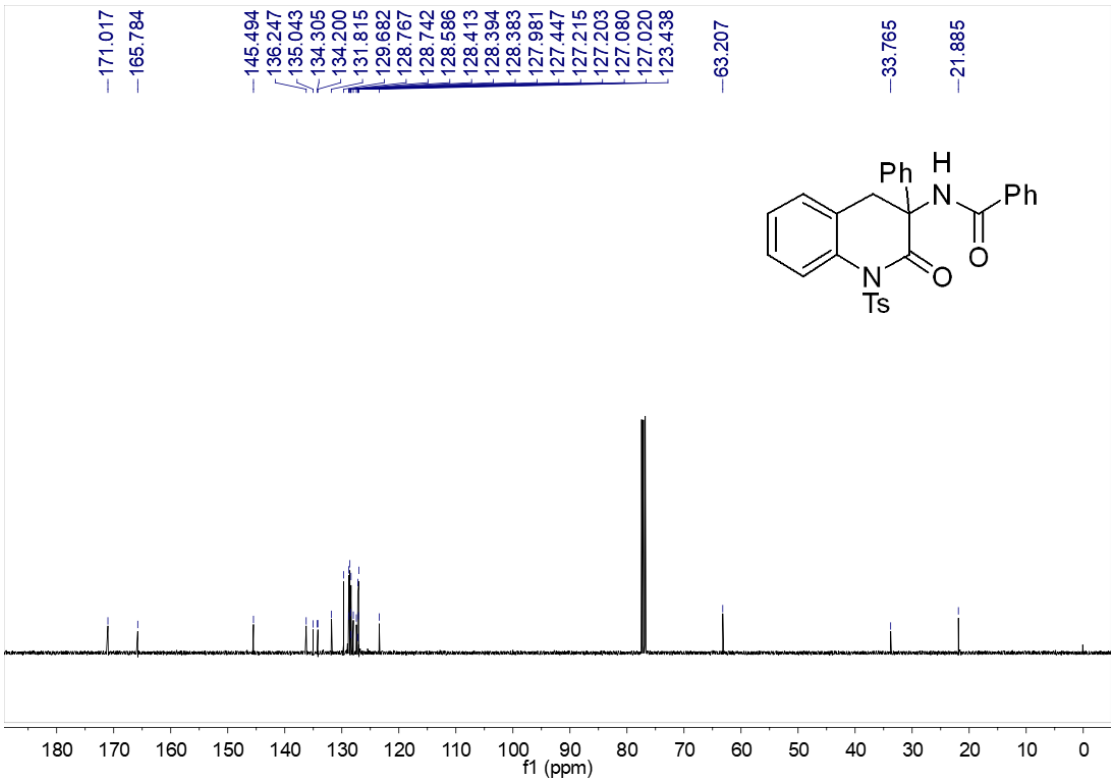
Contents:

1. NMR spectra of products 3-5 and compound I

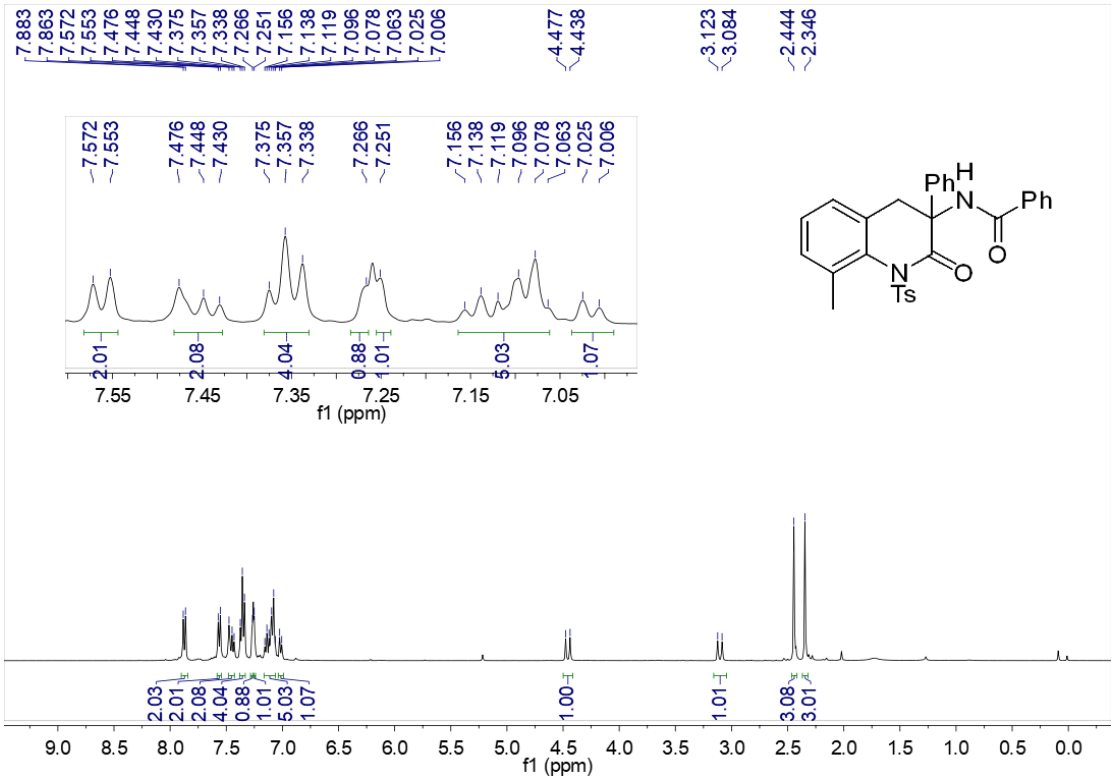
^{1}H NMR (400 MHz, $CDCl_3$) of compound **3aa**:



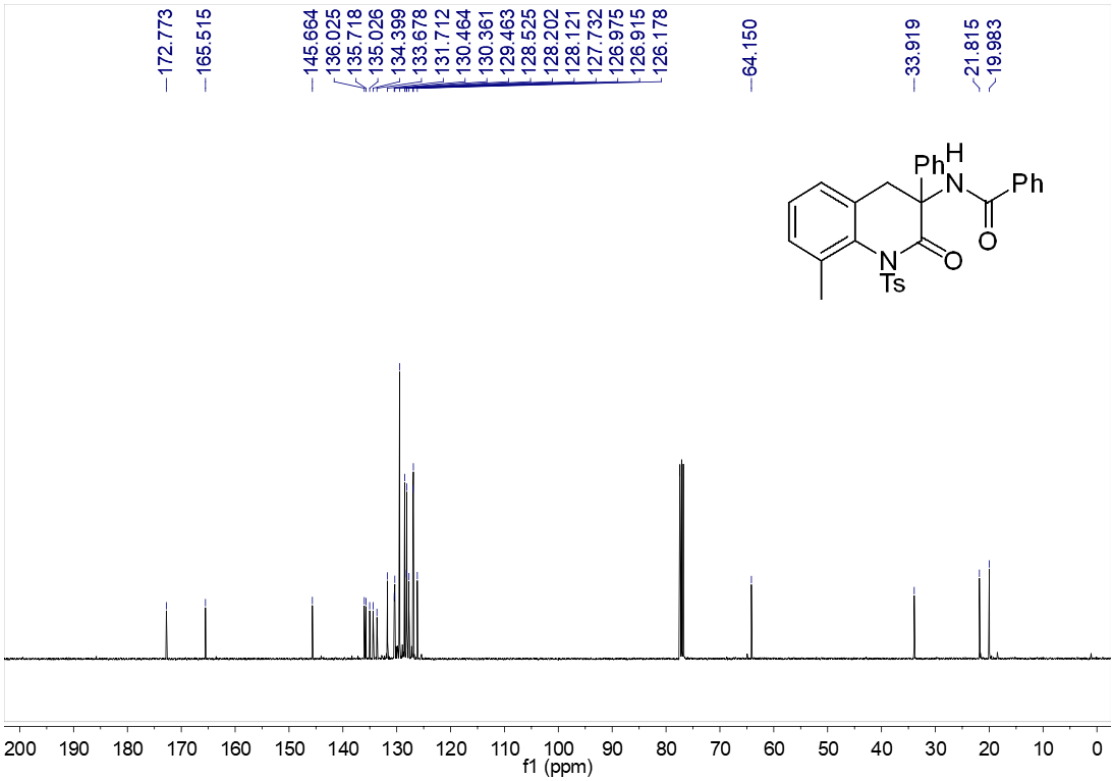
^{13}C NMR (100 MHz, $CDCl_3$) of compound **3aa**:



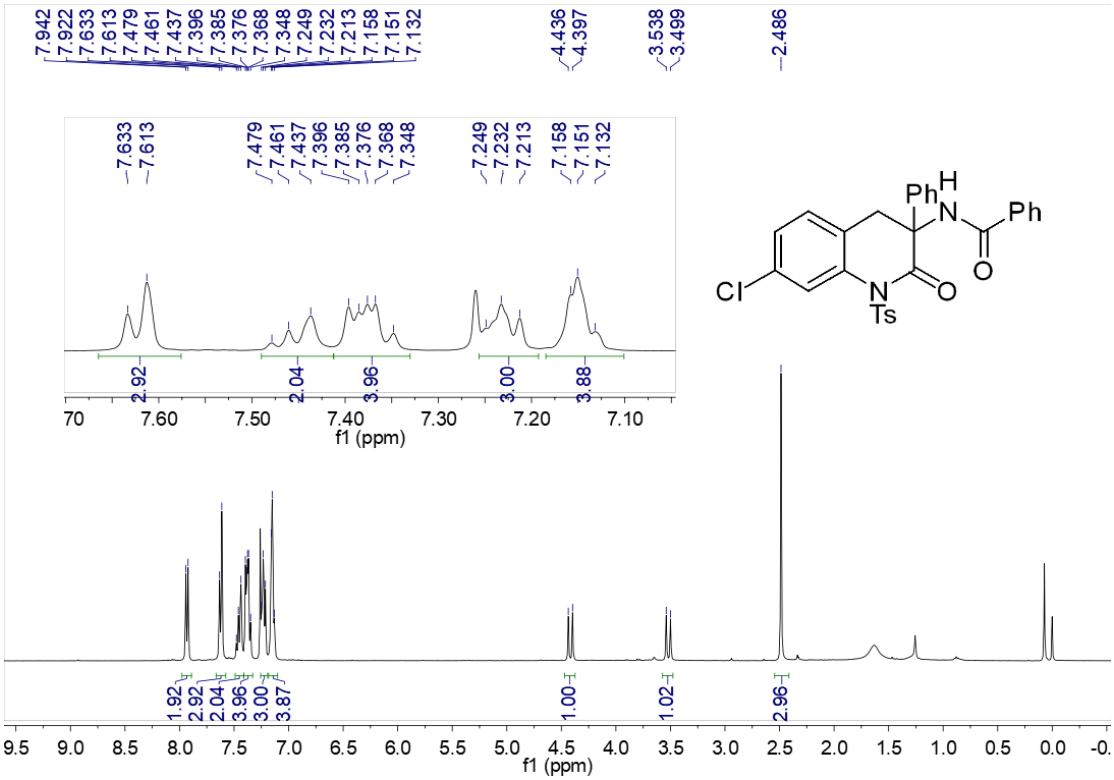
^{1}H NMR (400 MHz, $CDCl_3$) of compound **3ba**:



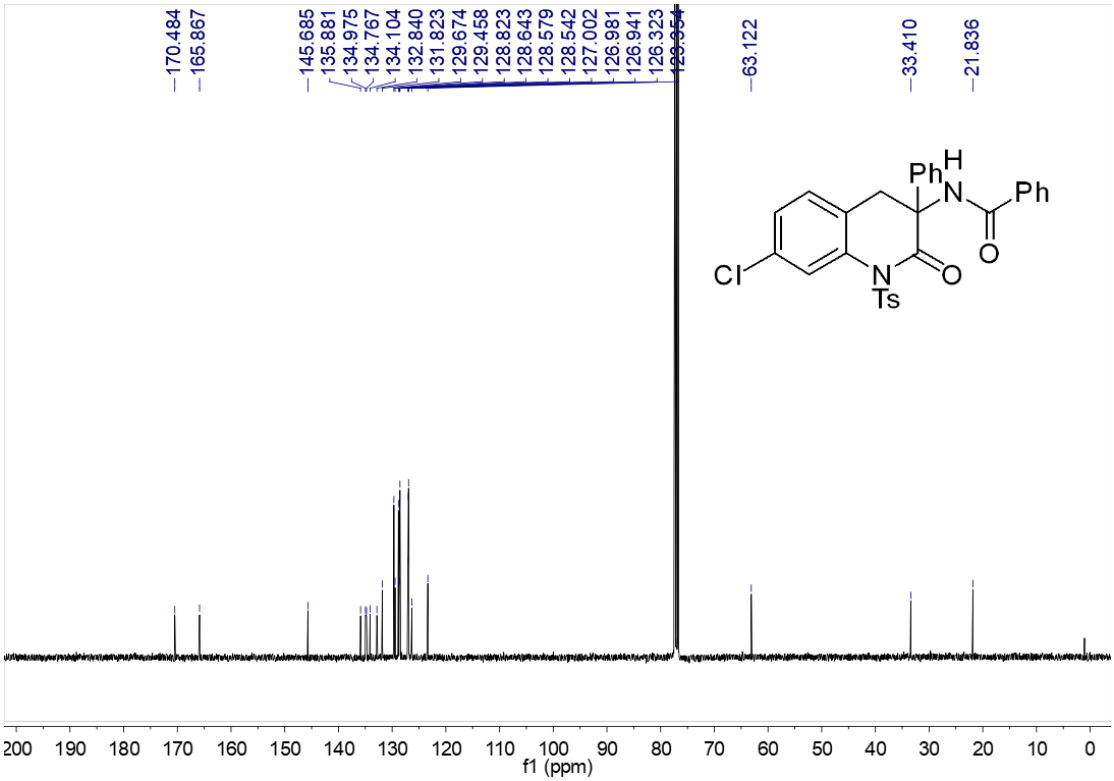
^{13}C NMR (100 MHz, $CDCl_3$) of compound **3ba**:



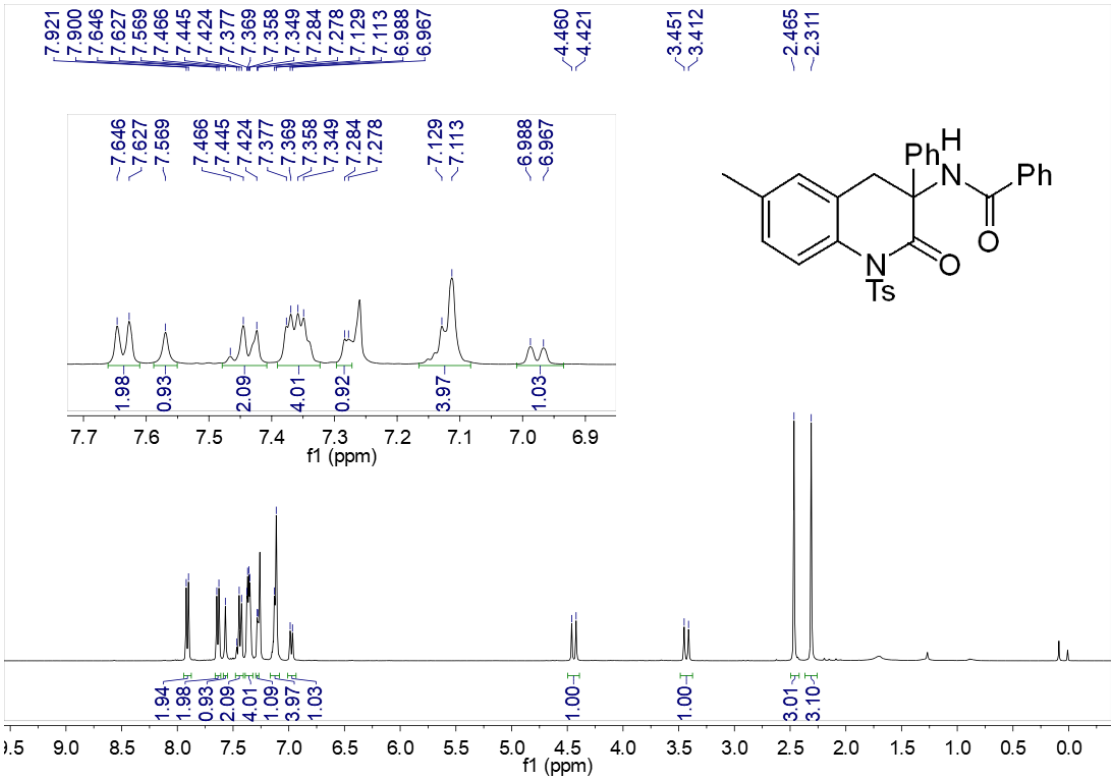
^{1}H NMR (400 MHz, $CDCl_3$) of compound **3ca**:



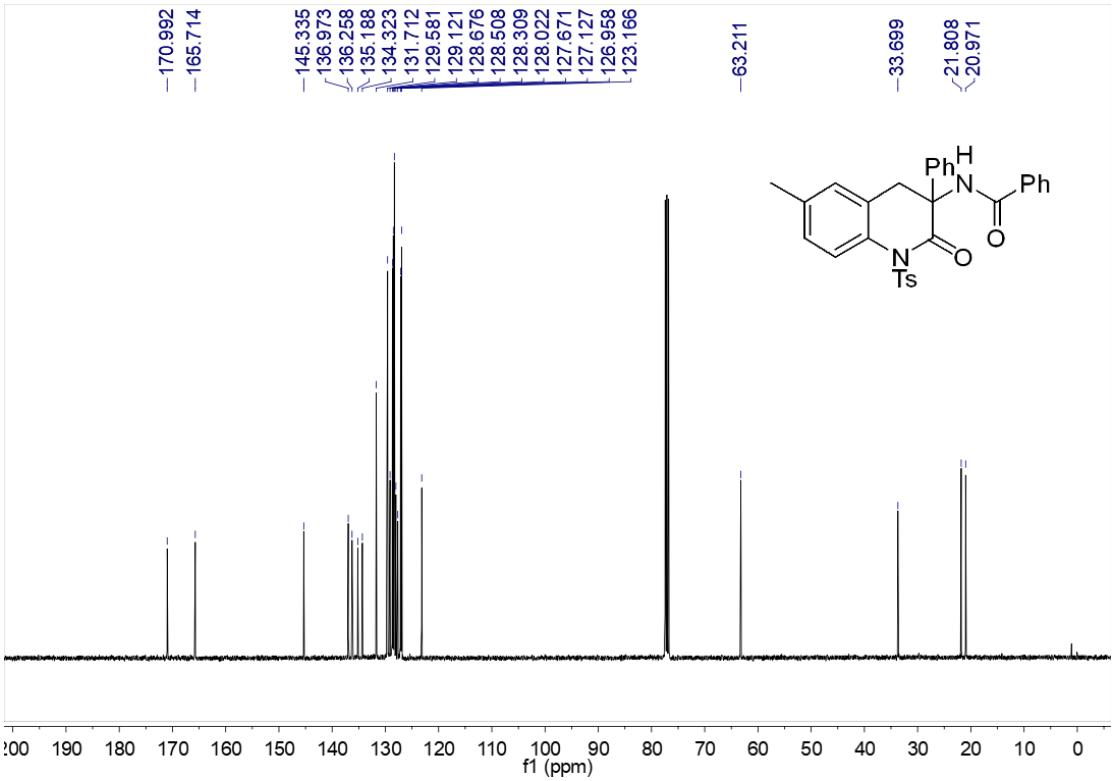
^{13}C NMR (100 MHz, $CDCl_3$) of compound **3ca**:



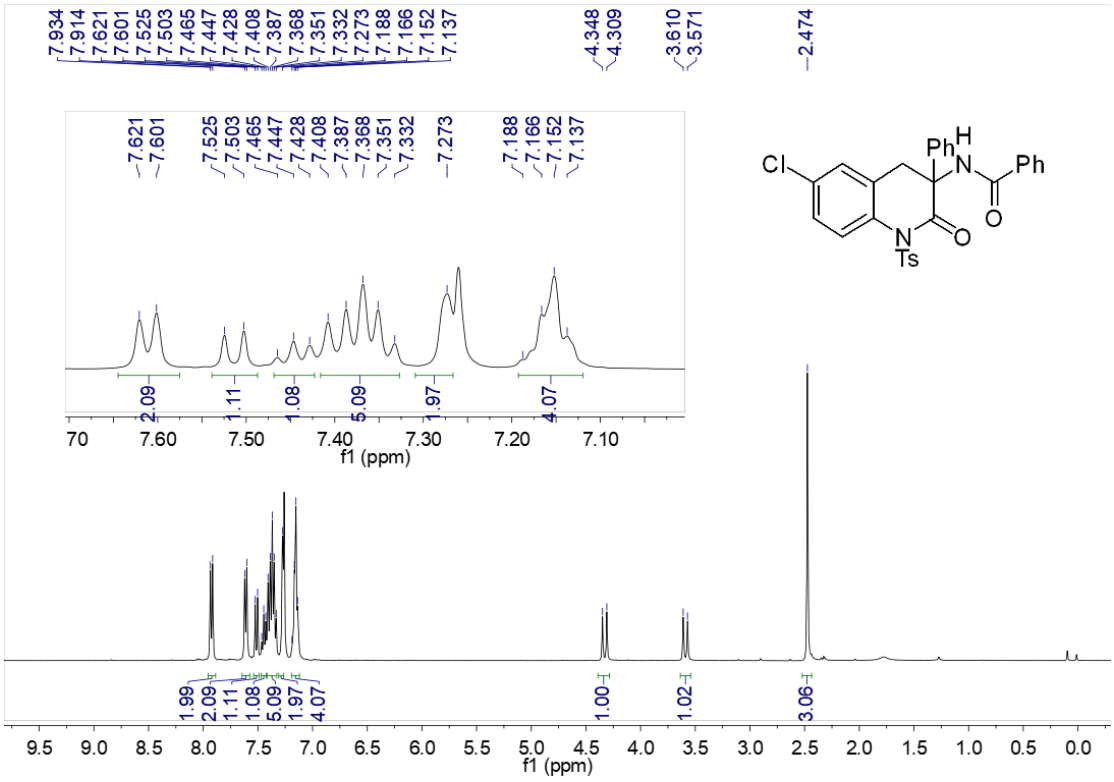
^{1}H NMR (400 MHz, $CDCl_3$) of compound **3da**:



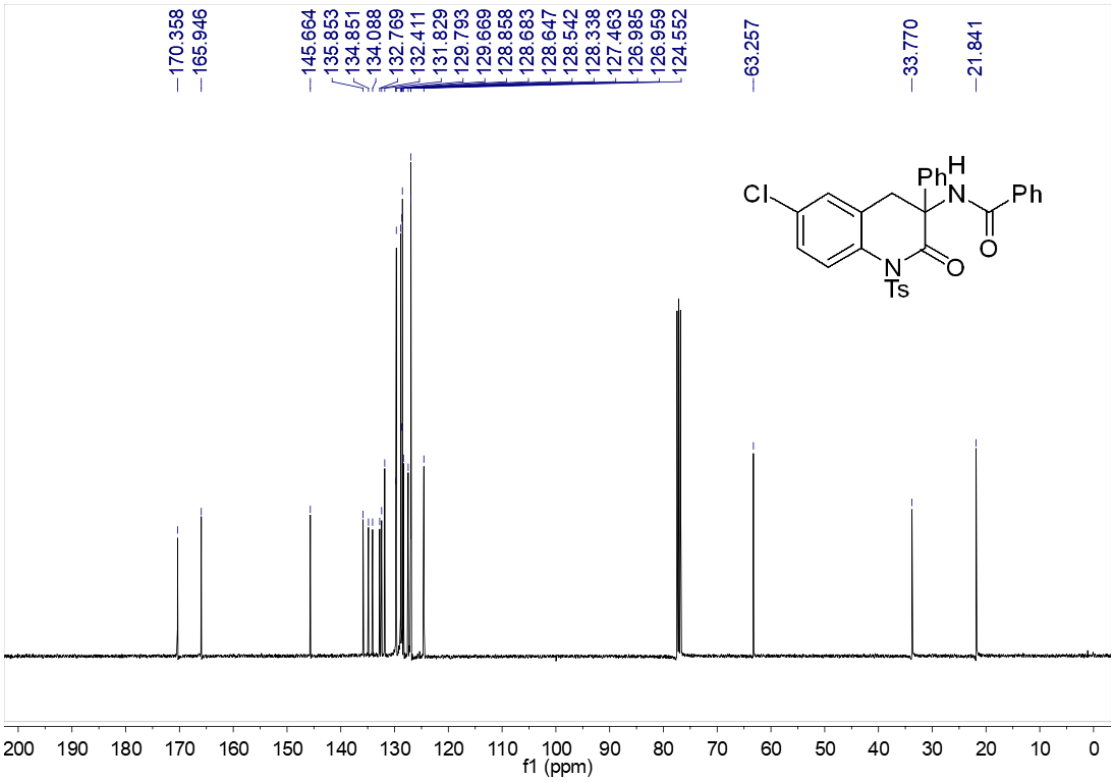
^{13}C NMR (100 MHz, $CDCl_3$) of compound **3da**:



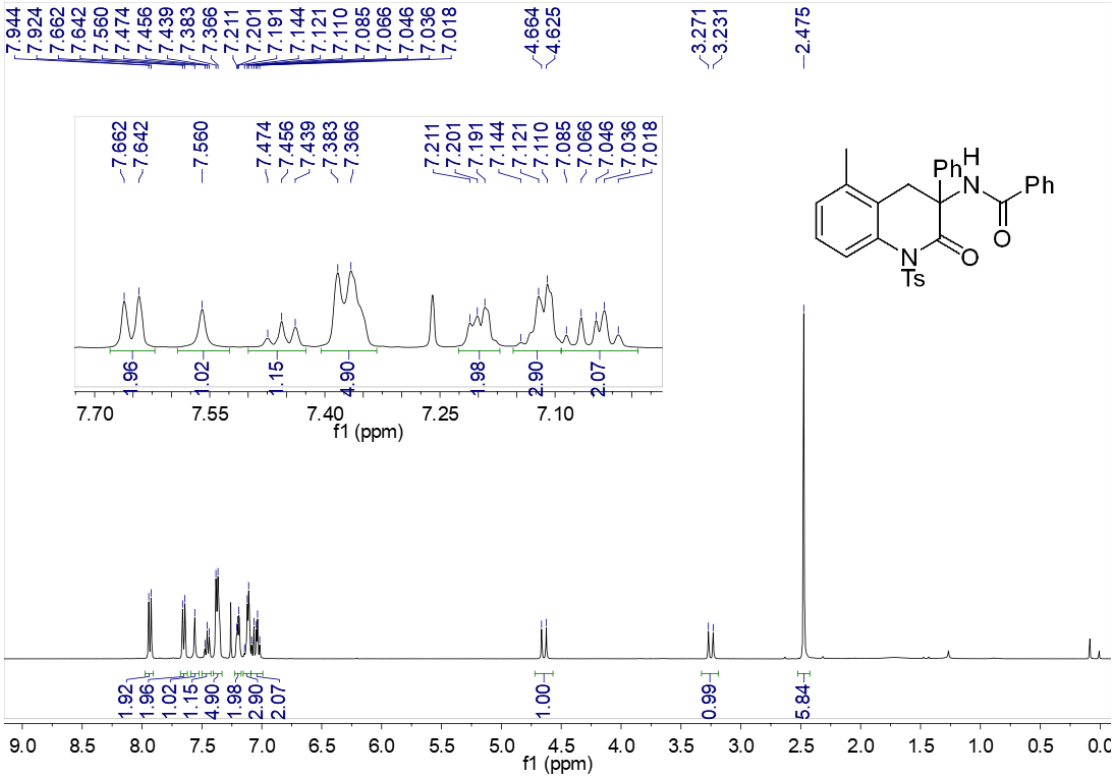
^{1}H NMR (400 MHz, $CDCl_3$) of compound **3ea**:



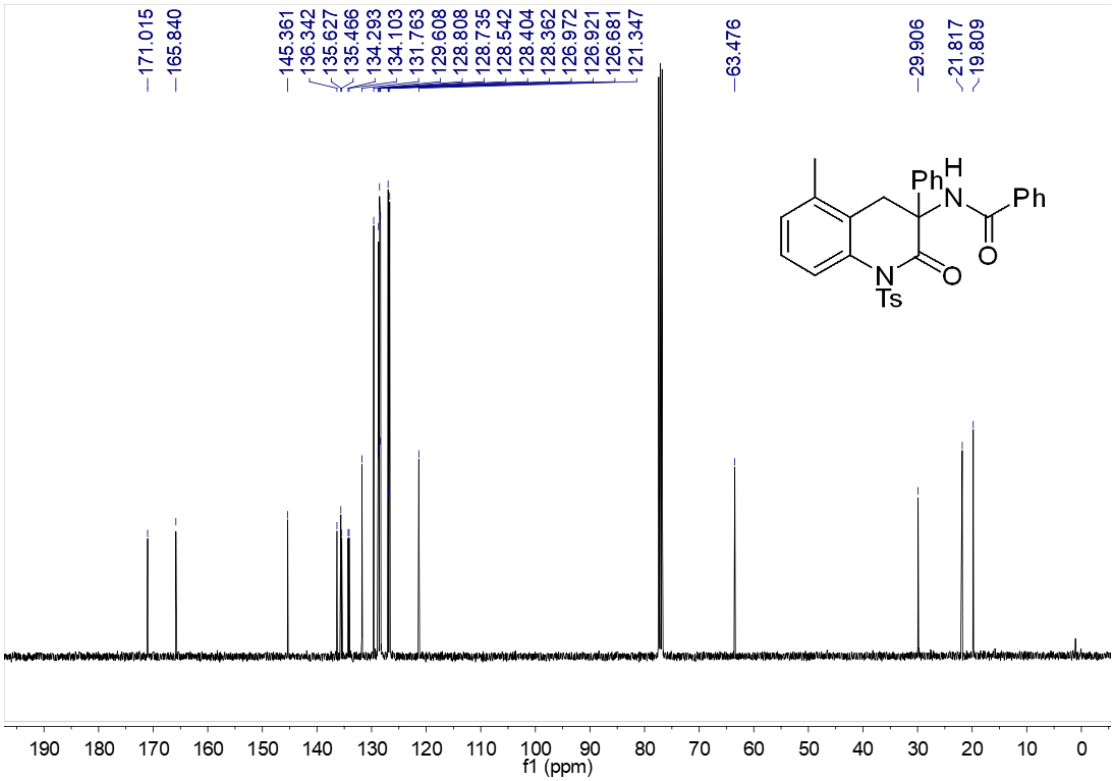
^{13}C NMR (100 MHz, $CDCl_3$) of compound **3ea**:



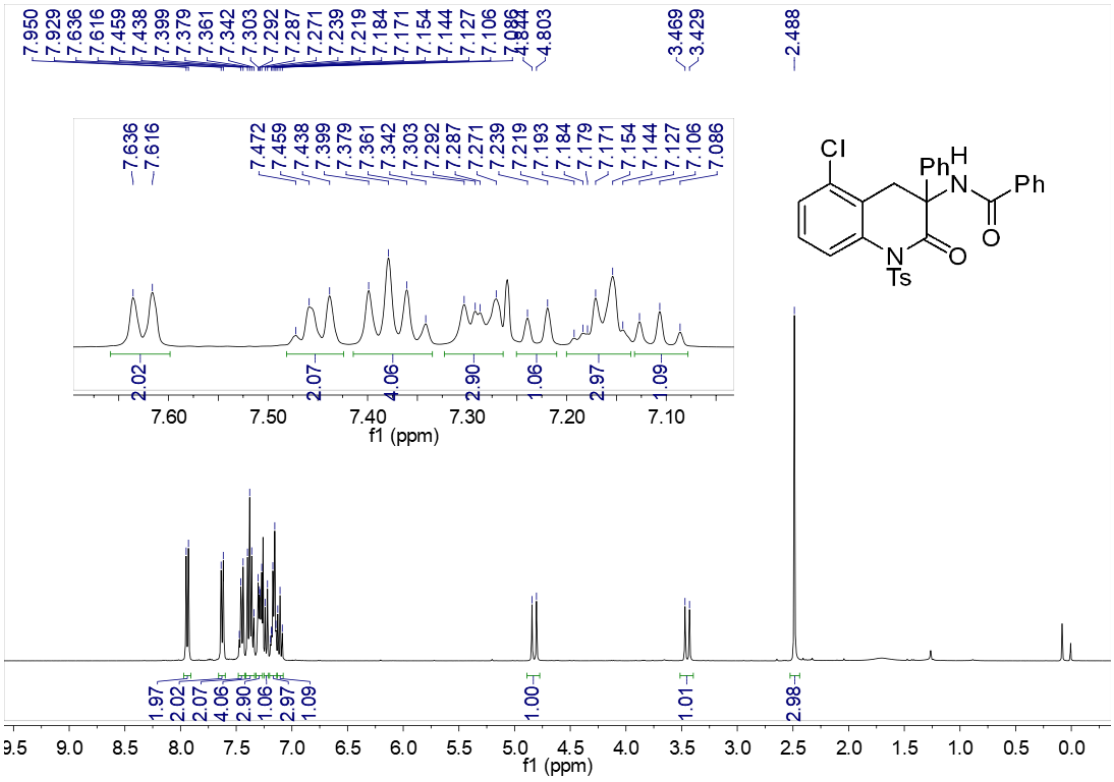
^{1}H NMR (400 MHz, $CDCl_3$) of compound **3fa**:



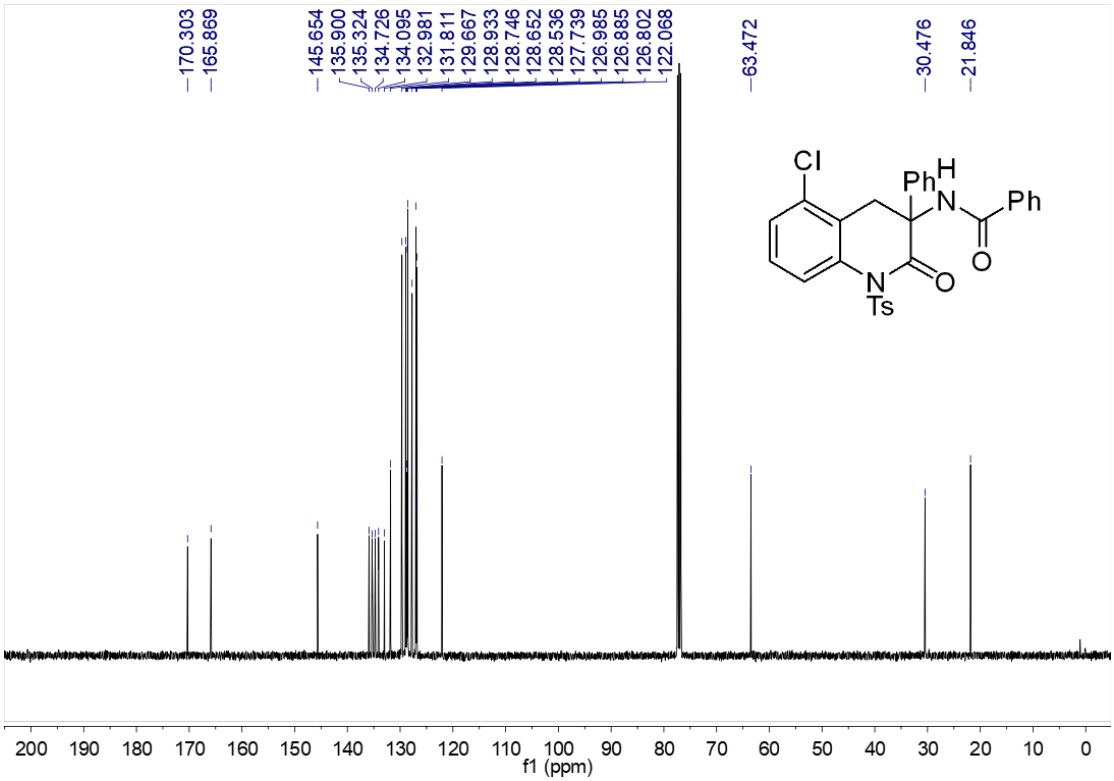
^{13}C NMR (100 MHz, $CDCl_3$) of compound **3fa**:



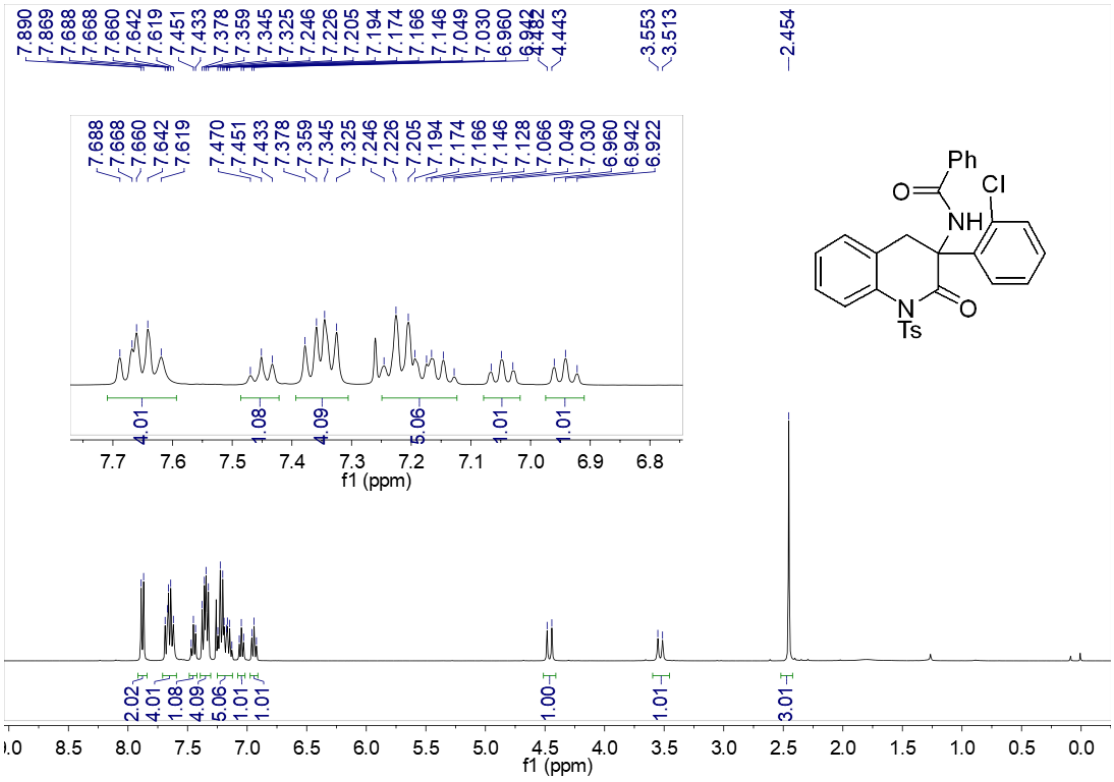
^{1}H NMR (400 MHz, $CDCl_3$) of compound **3ga**:



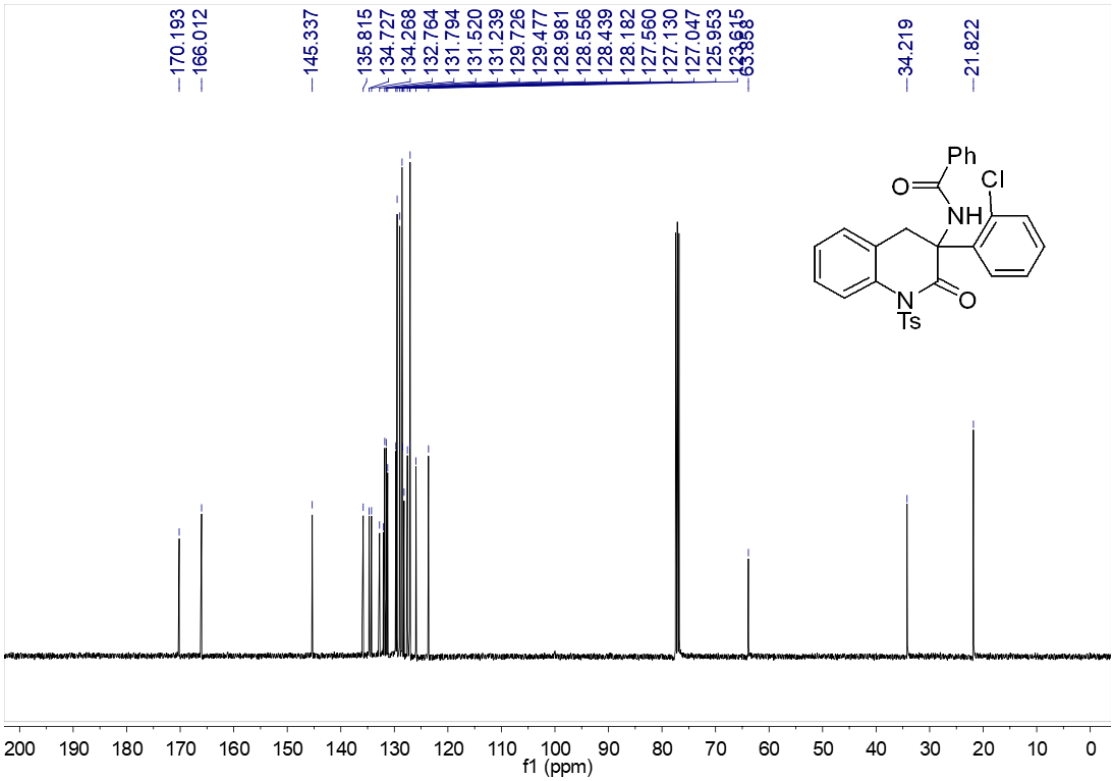
^{13}C NMR (100 MHz, $CDCl_3$) of compound **3ga**:



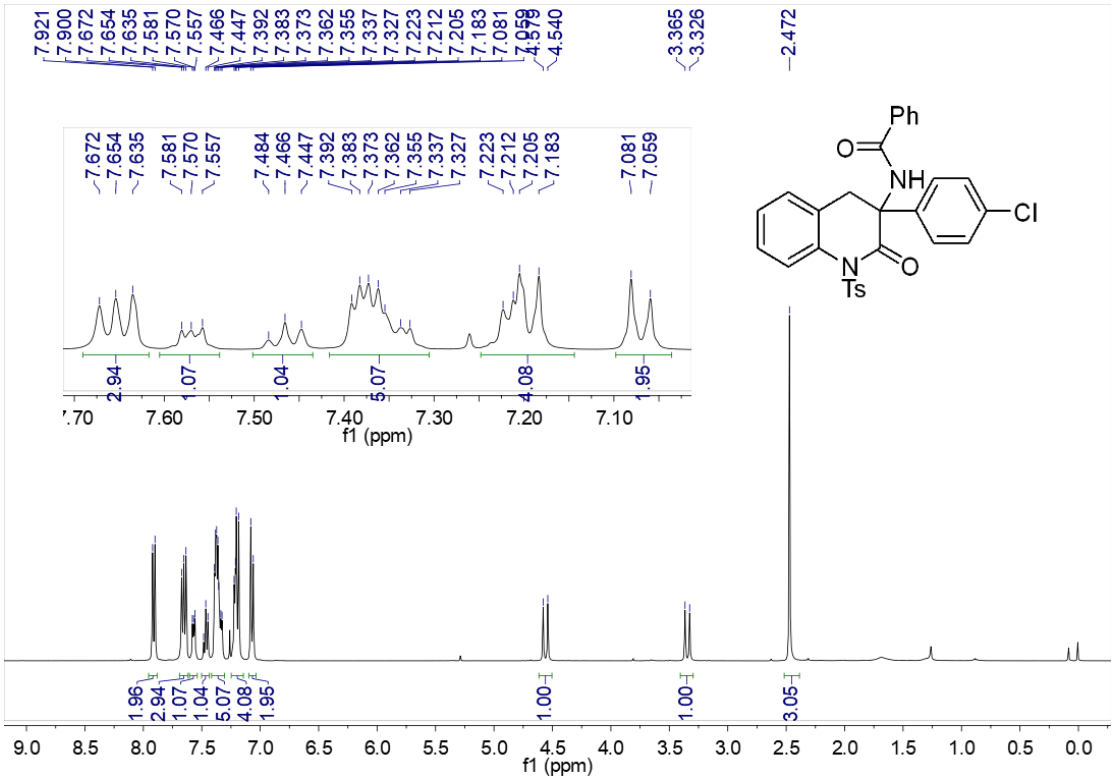
^{1}H NMR (400 MHz, $CDCl_3$) of compound **3ab**:



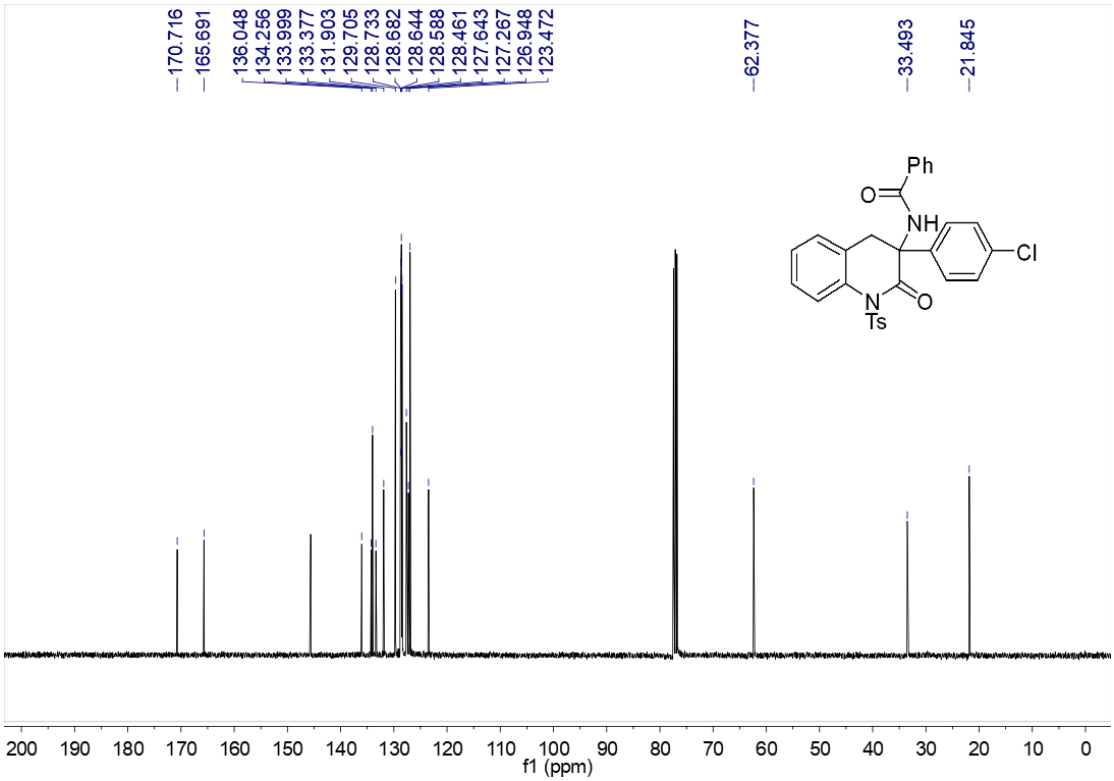
^{13}C NMR (100 MHz, $CDCl_3$) of compound **3ab**:



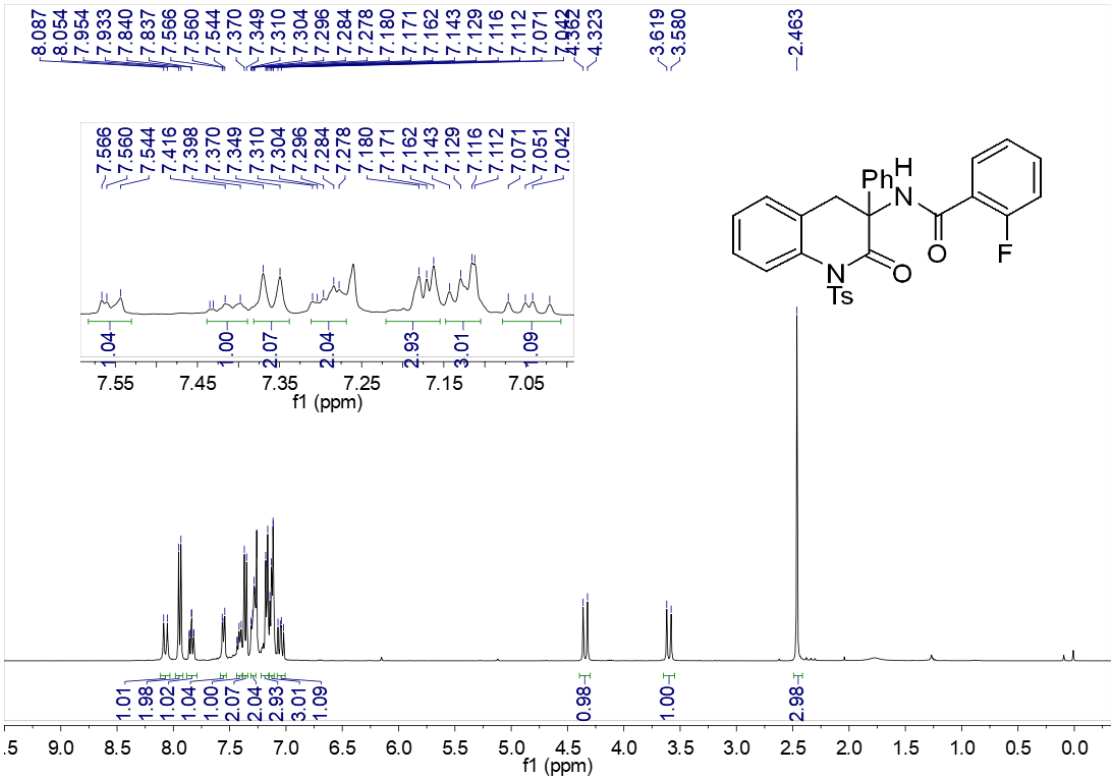
^{1}H NMR (400 MHz, $CDCl_3$) of compound **3ac**:



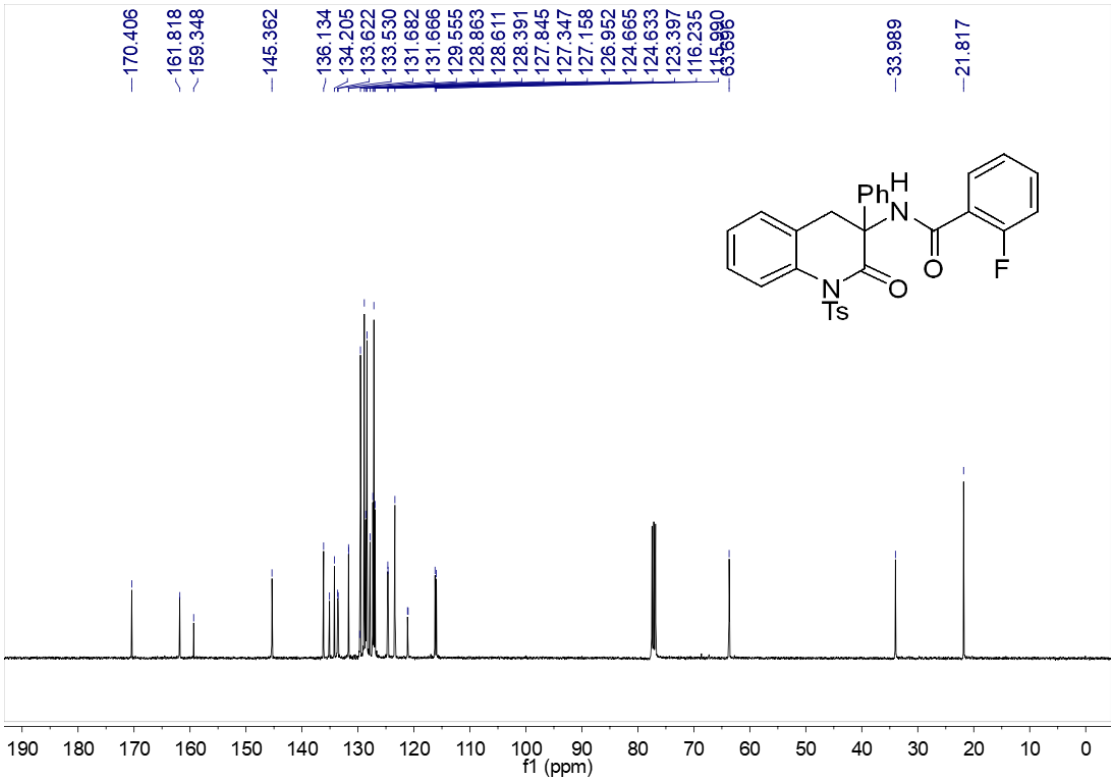
^{13}C NMR (100 MHz, $CDCl_3$) of compound **3ac**:



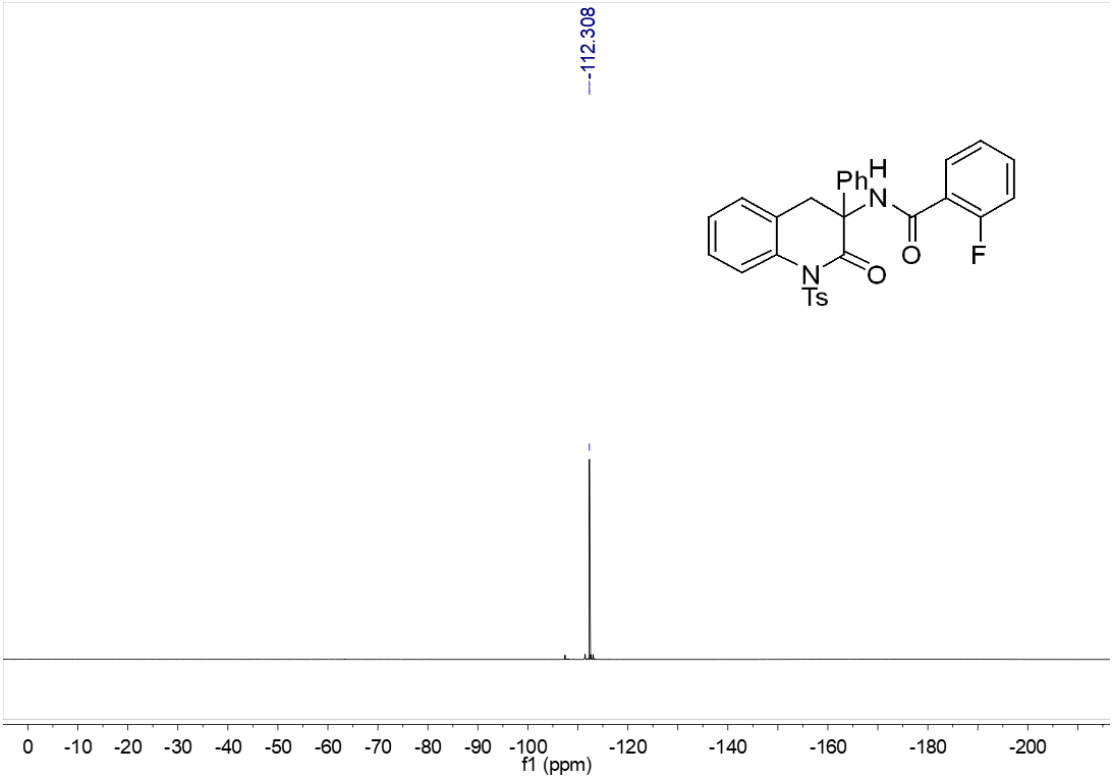
^{1}H NMR (400 MHz, $CDCl_3$) of compound **3ad**:



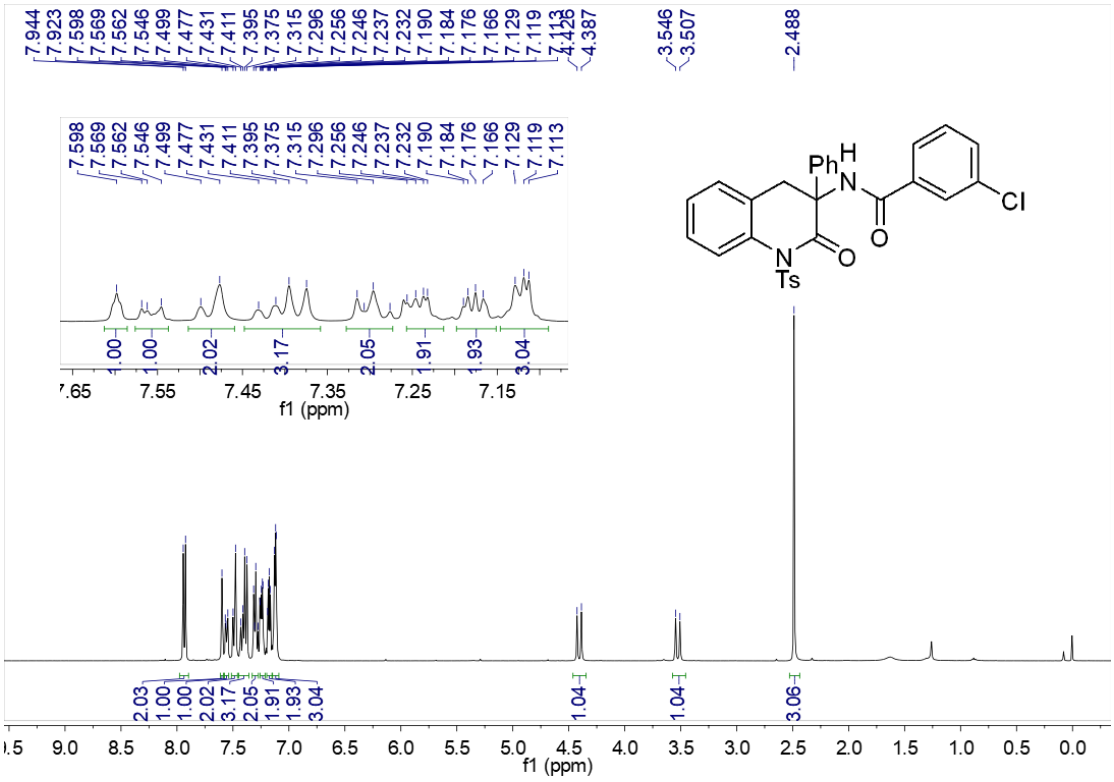
^{13}C NMR (100 MHz, $CDCl_3$) of compound **3ad**:



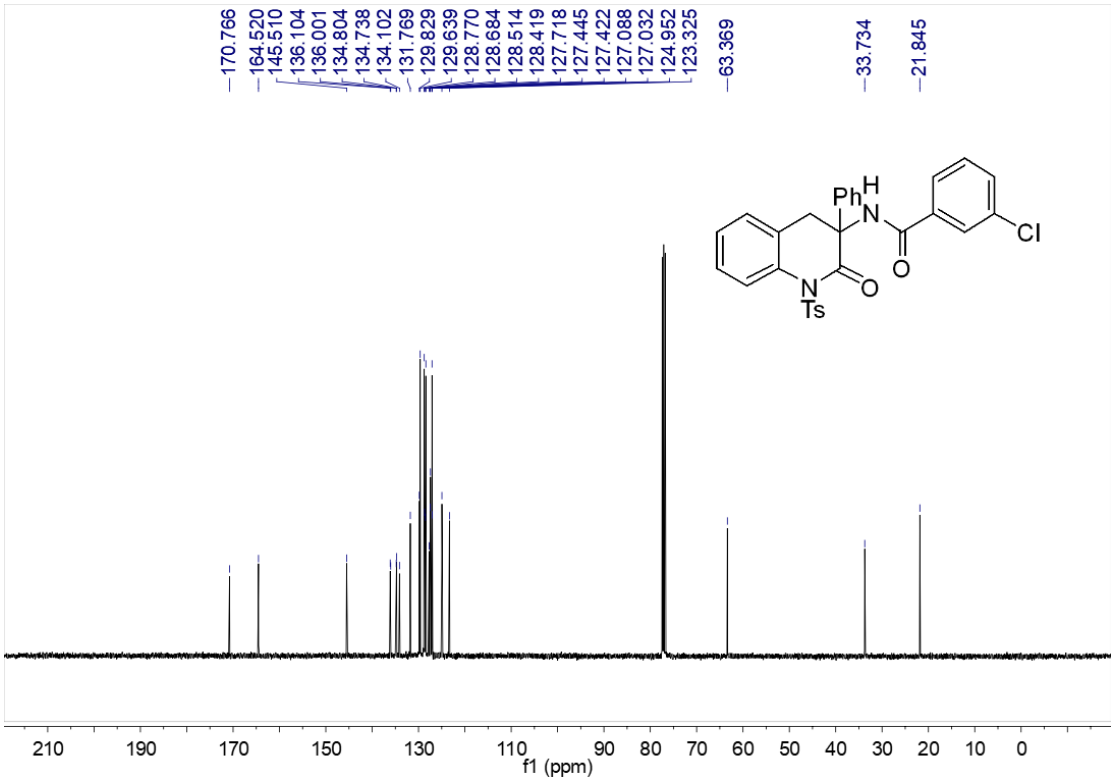
^{19}F NMR (376 MHz, $CDCl_3$) of compound **3ad**:



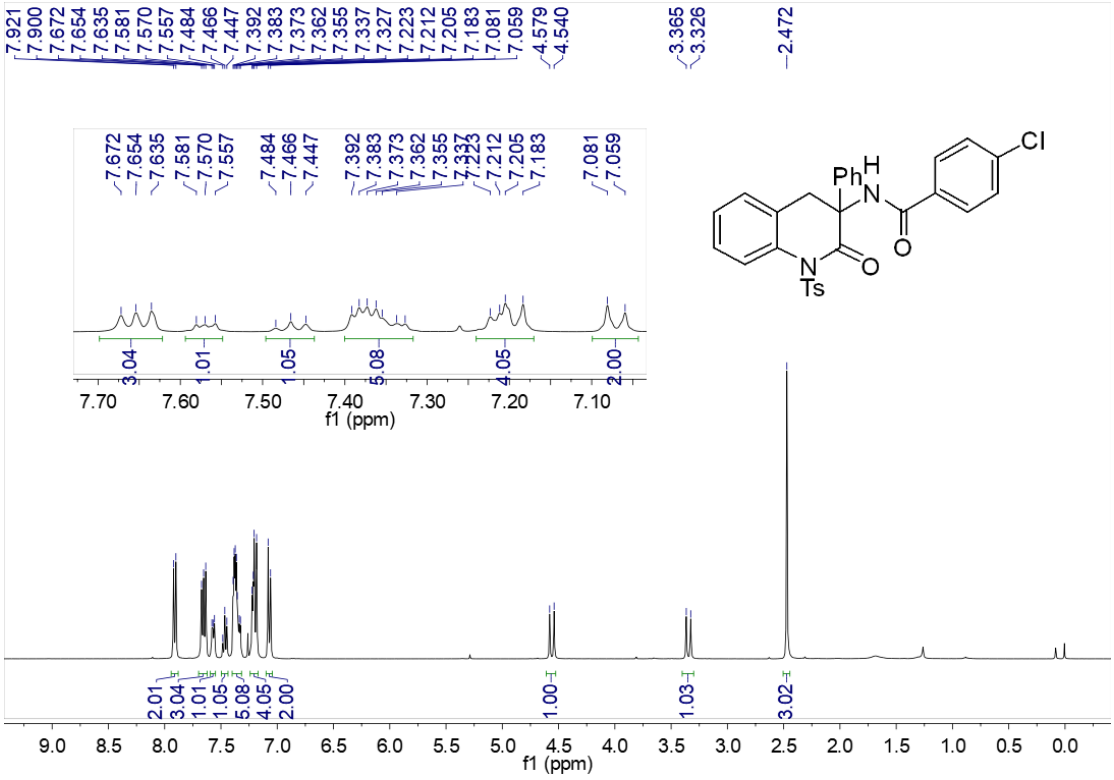
^{1}H NMR (400 MHz, $CDCl_3$) of compound **3ae**:



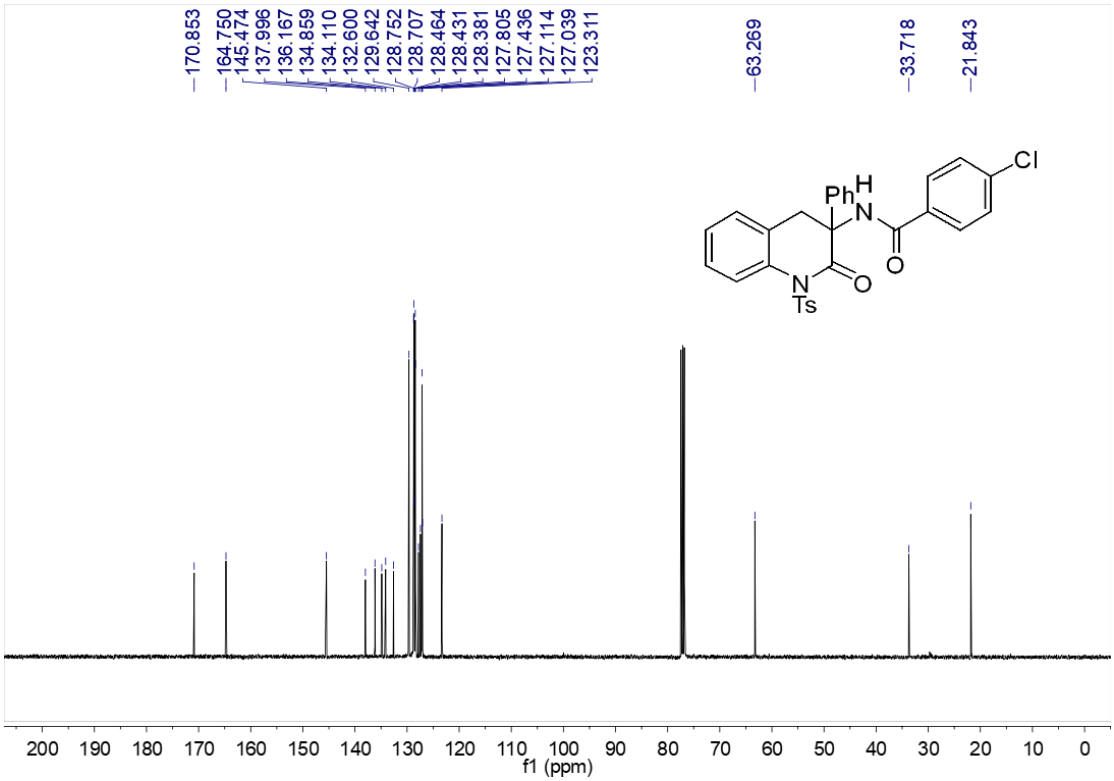
^{13}C NMR (100 MHz, $CDCl_3$) of compound **3ae**:



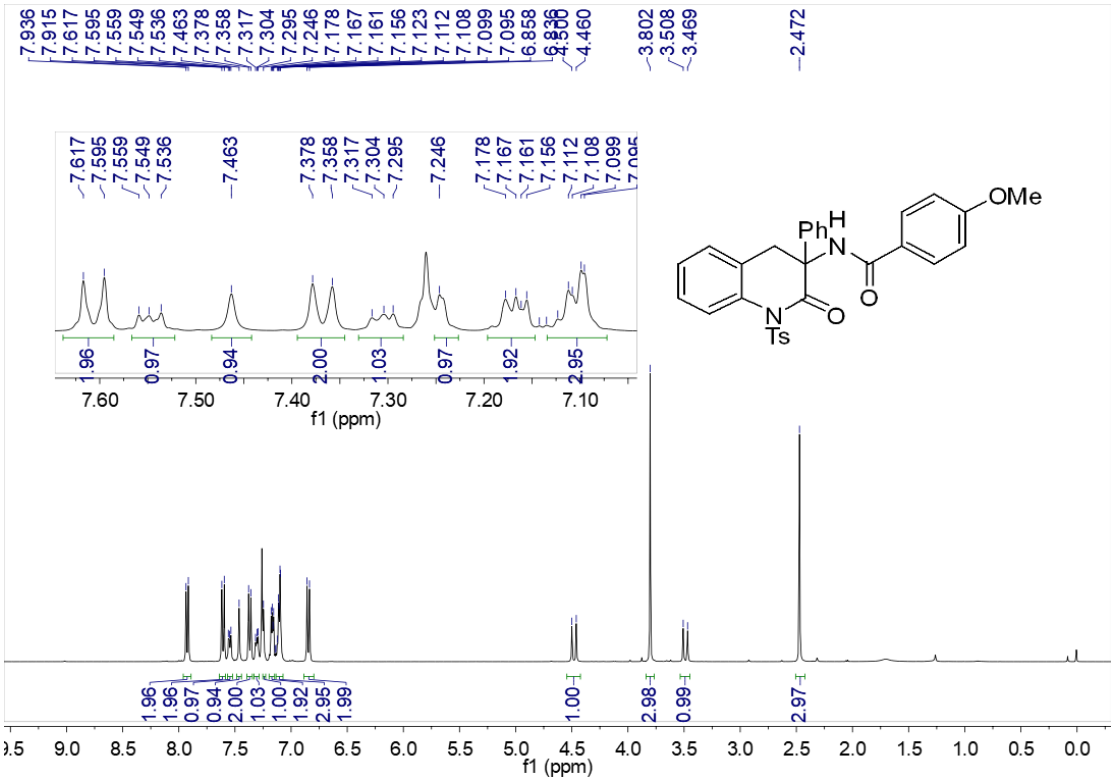
^{1}H NMR (400 MHz, $CDCl_3$) of compound **3af**:



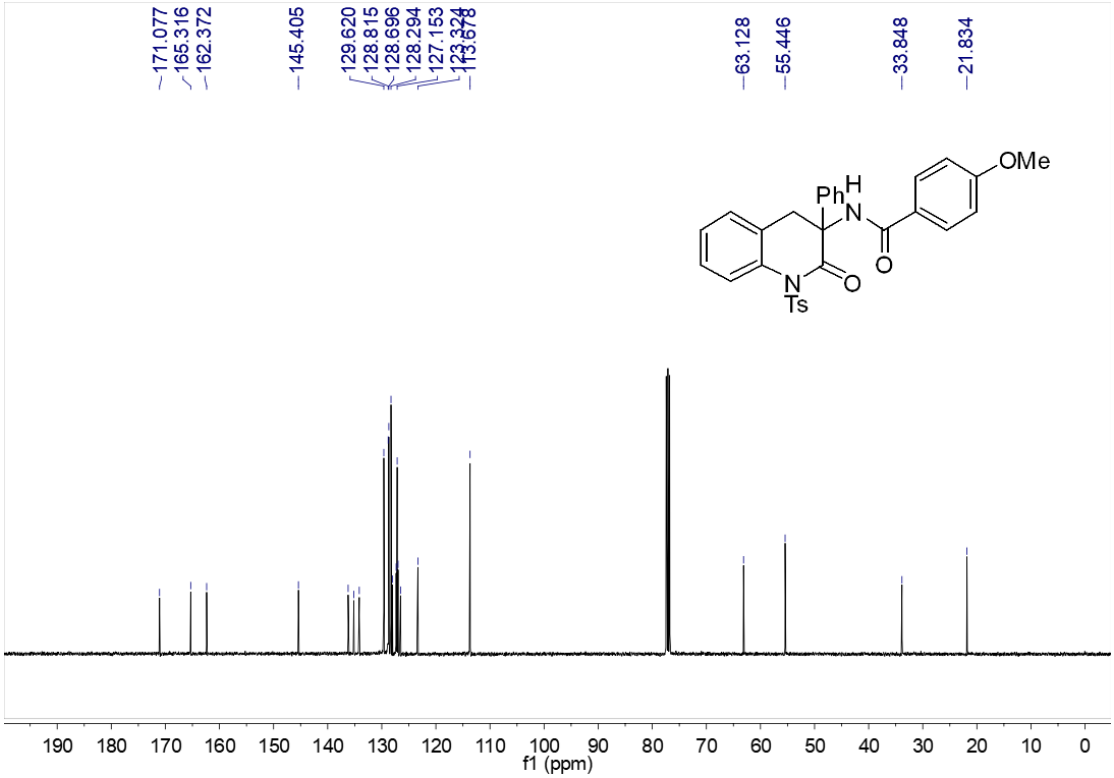
^{13}C NMR (100 MHz, $CDCl_3$) of compound **3af**:



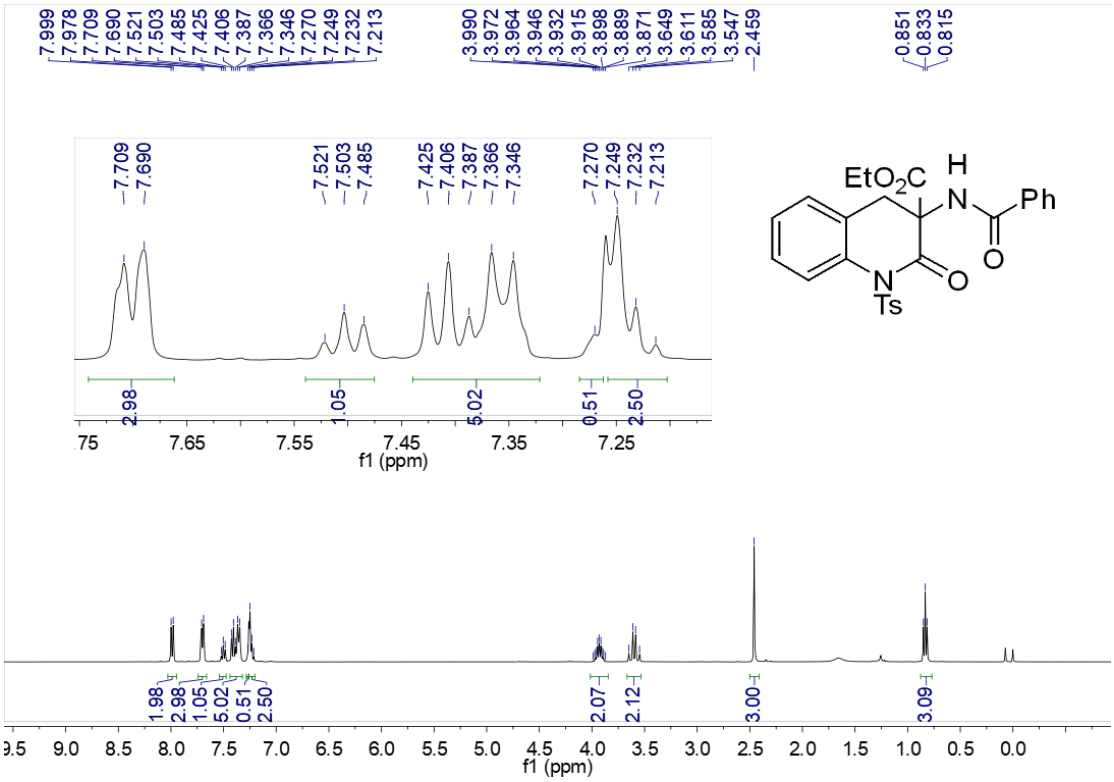
^{1}H NMR (400 MHz, $CDCl_3$) of compound **3ag**:



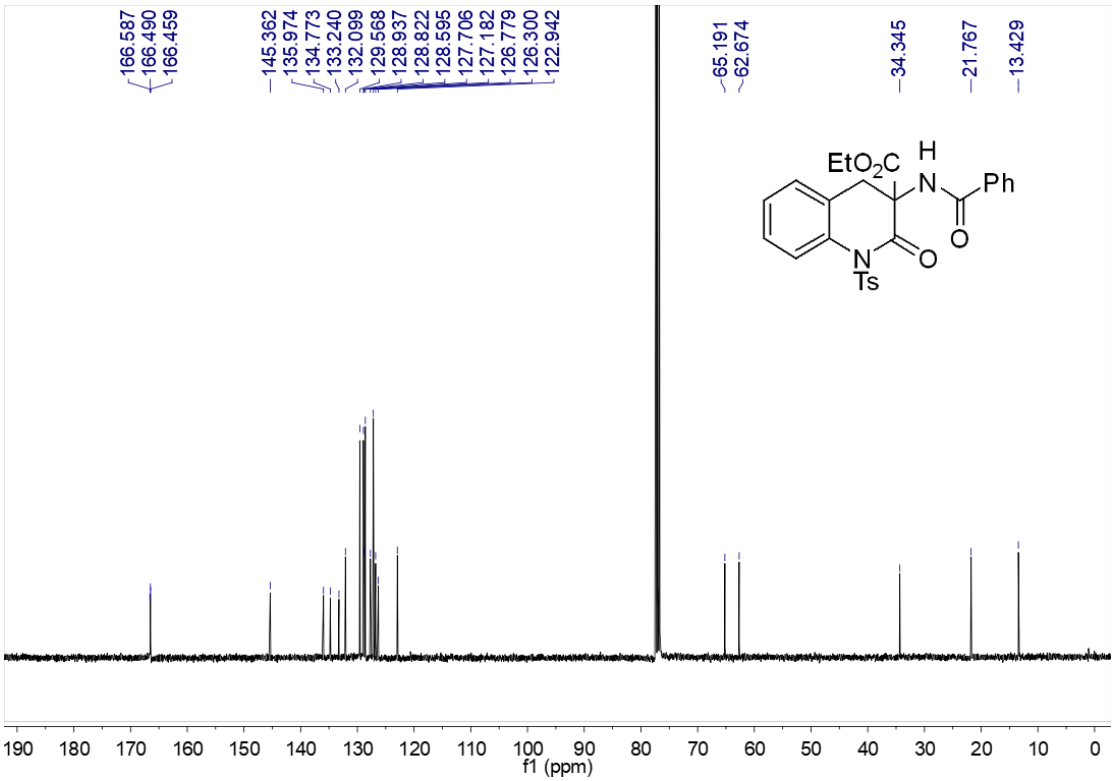
^{13}C NMR (100 MHz, $CDCl_3$) of compound **3ag**:



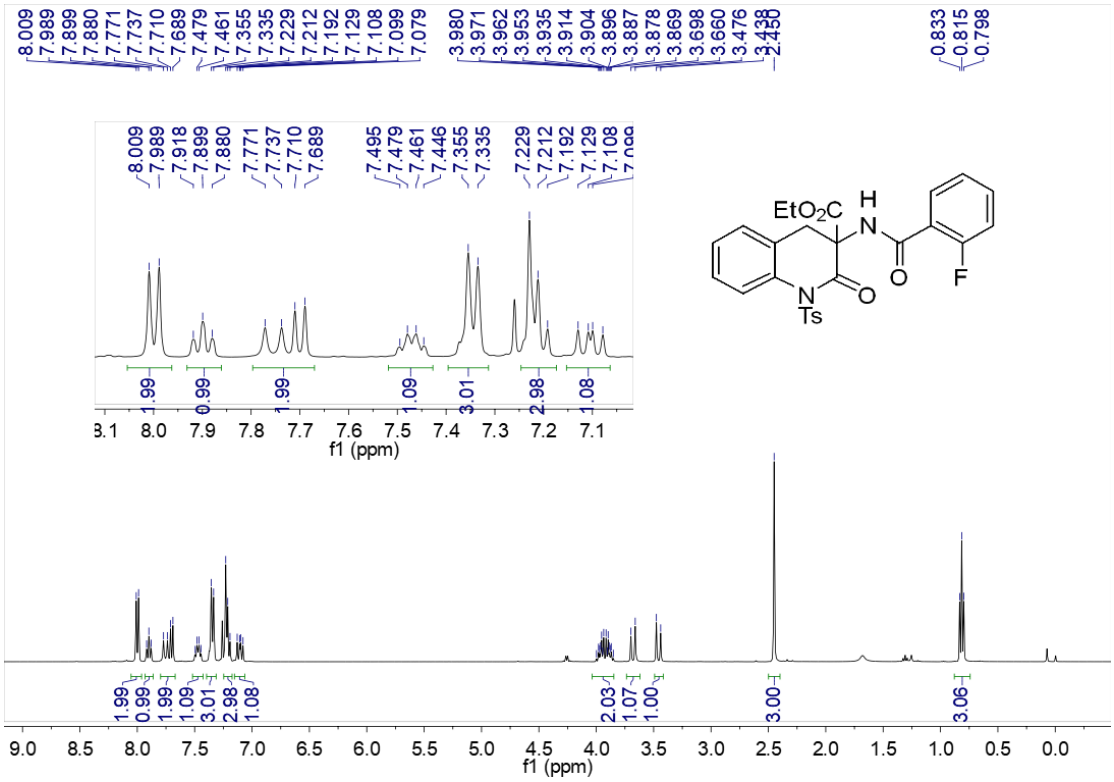
^{1}H NMR (400 MHz, $CDCl_3$) of compound **3ah**:



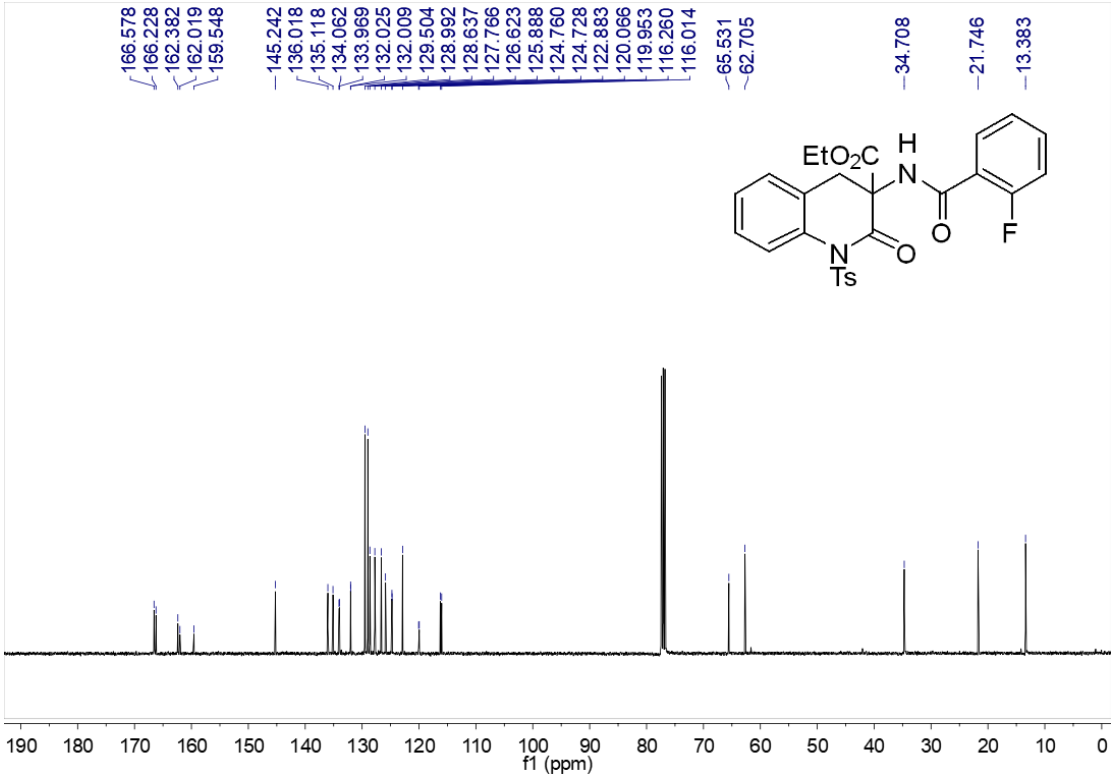
^{13}C NMR (100 MHz, $CDCl_3$) of compound **3ah**:



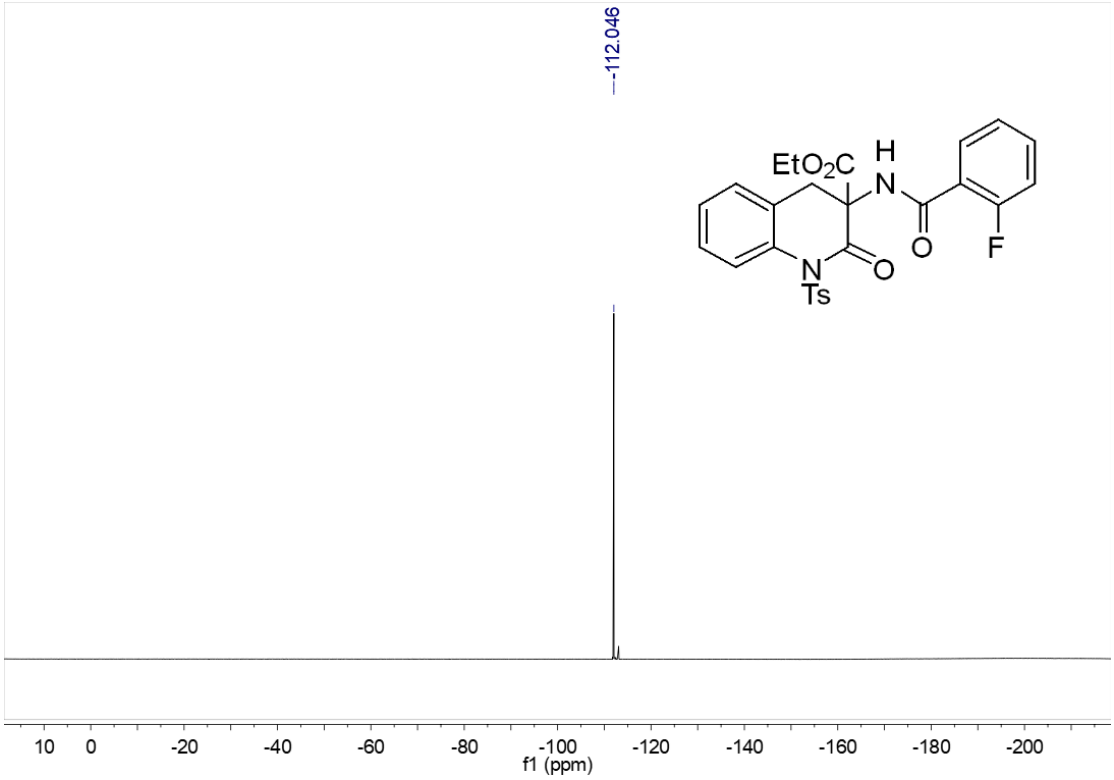
^{1}H NMR (400 MHz, $CDCl_3$) of compound **3ai**:



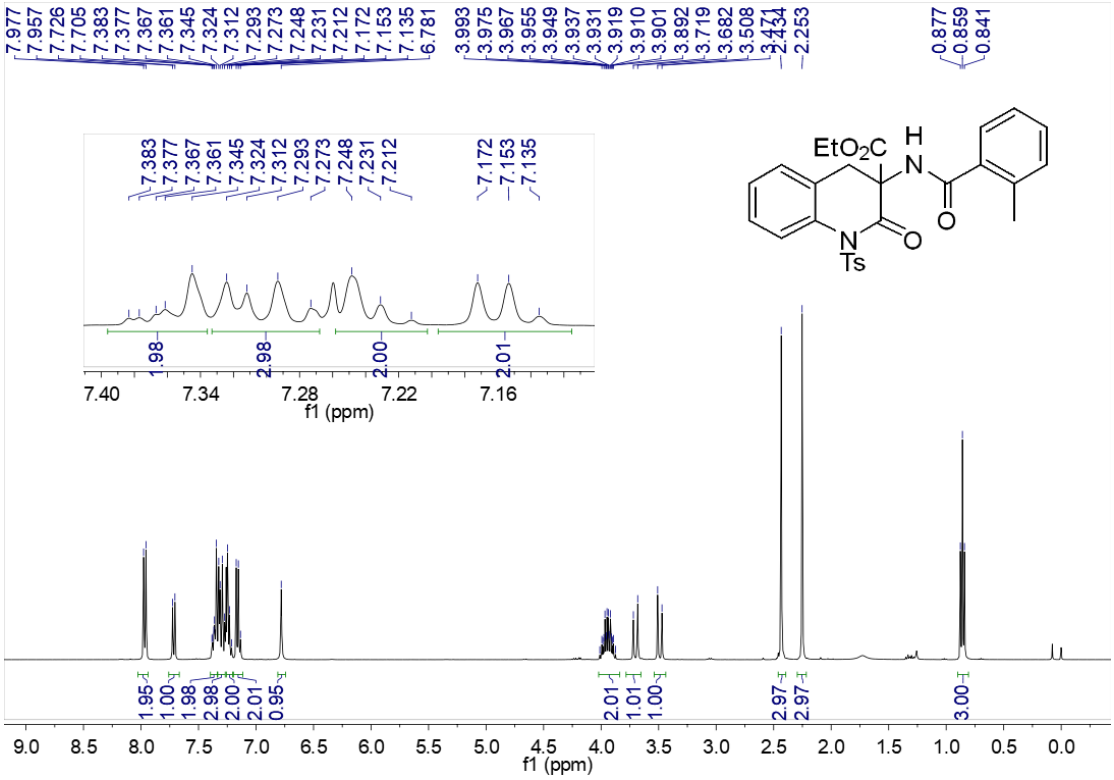
^{13}C NMR (100 MHz, $CDCl_3$) of compound **3ai**:



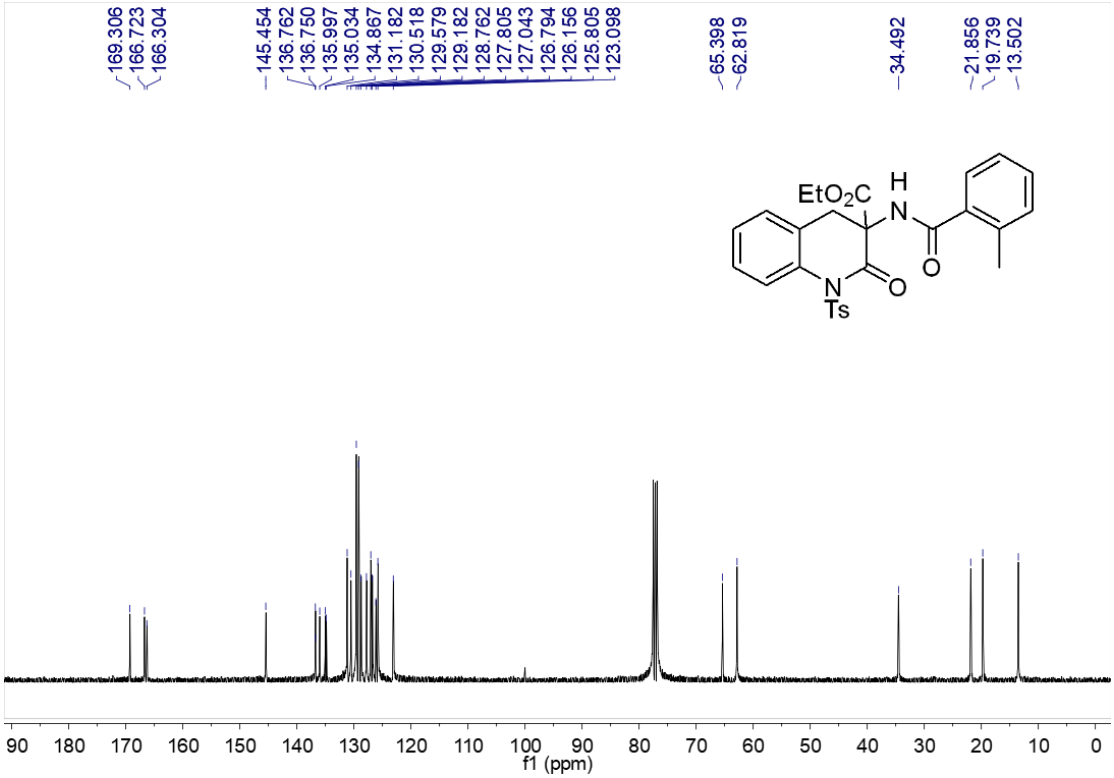
^{19}F NMR (376 MHz, $CDCl_3$) of compound **3ai**:



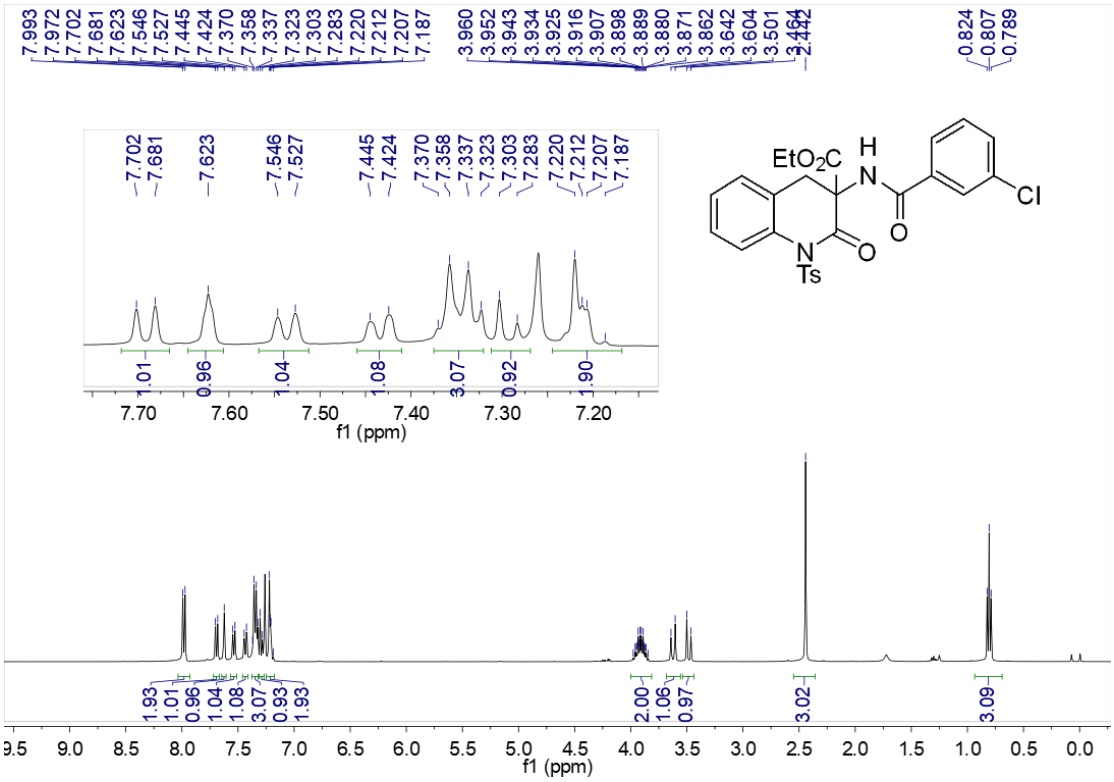
^{1}H NMR (400 MHz, $CDCl_3$) of compound **3aj**:



^{13}C NMR (100 MHz, $CDCl_3$) of compound **3aj**:



^{1}H NMR (400 MHz, $CDCl_3$) of compound **3ak**:



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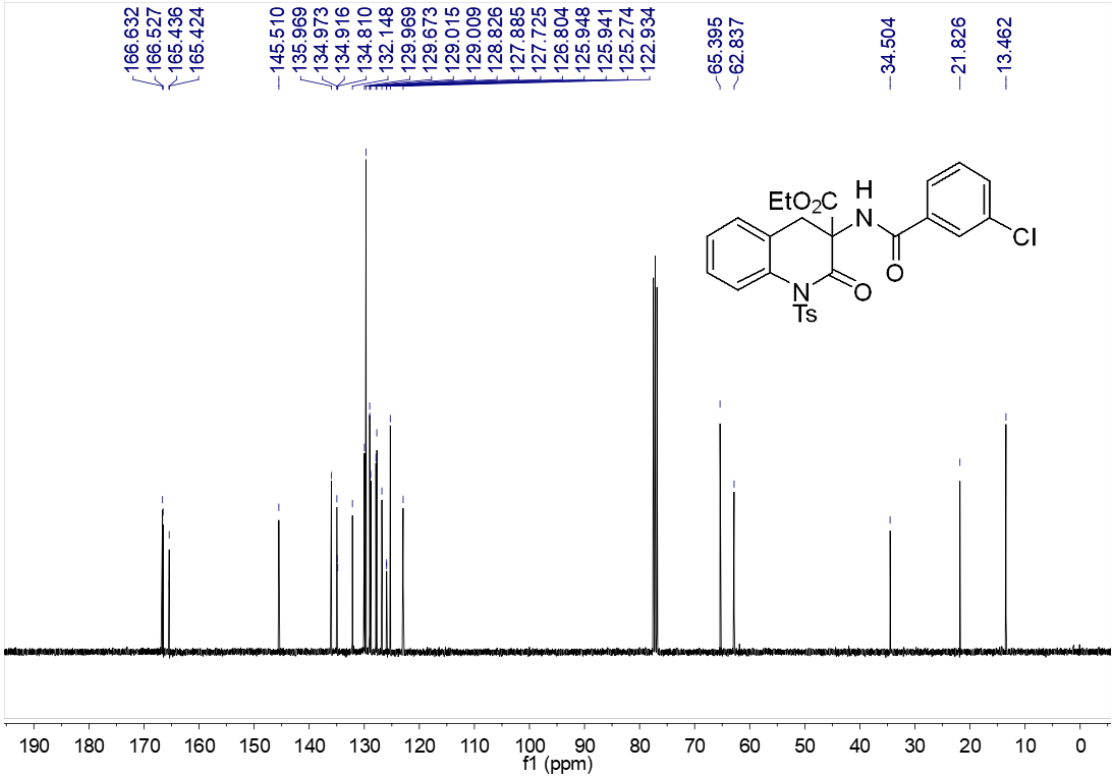
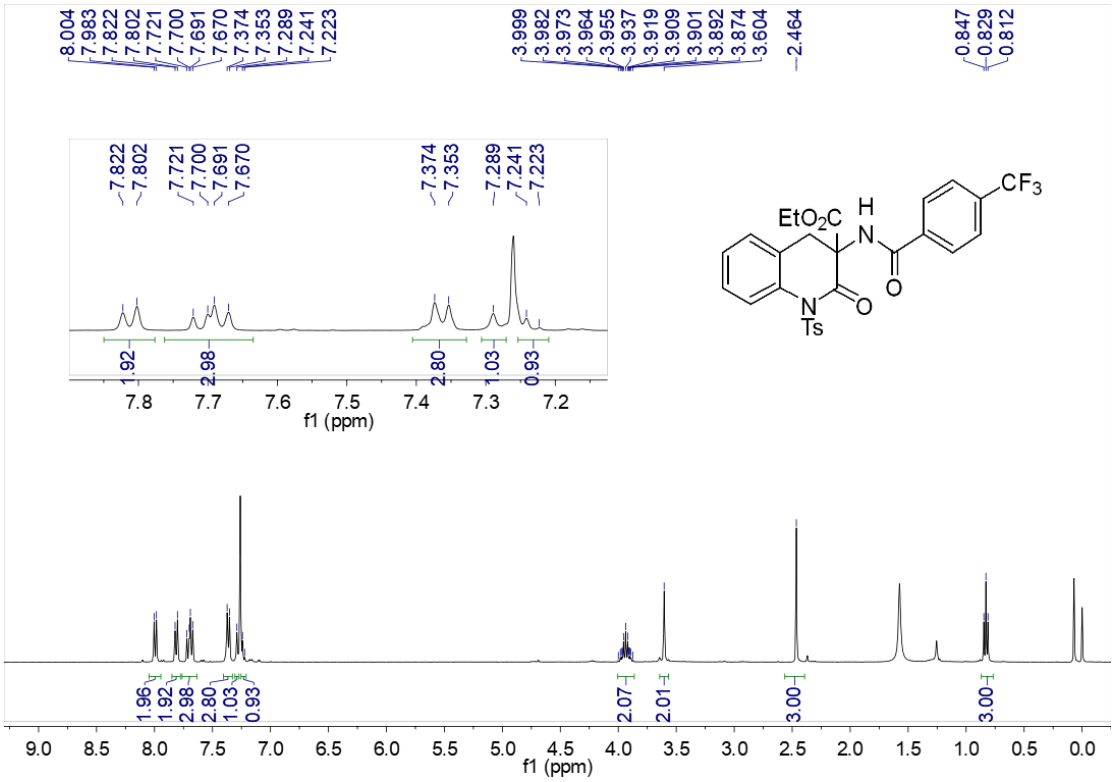
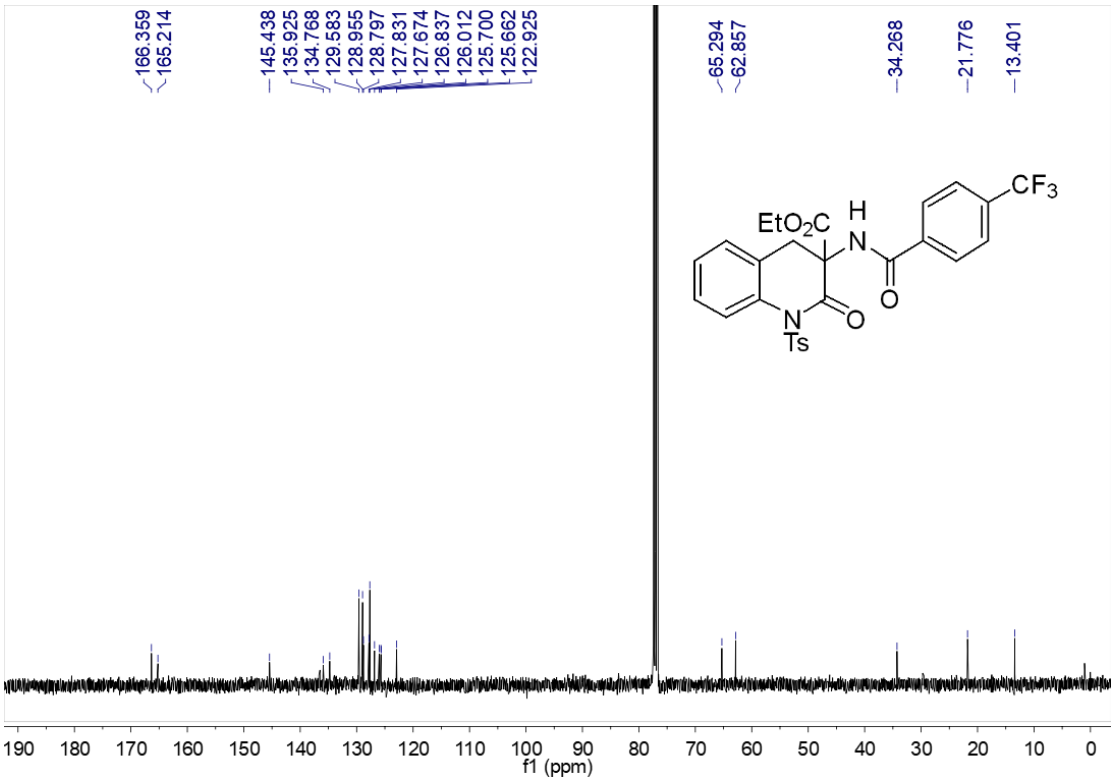


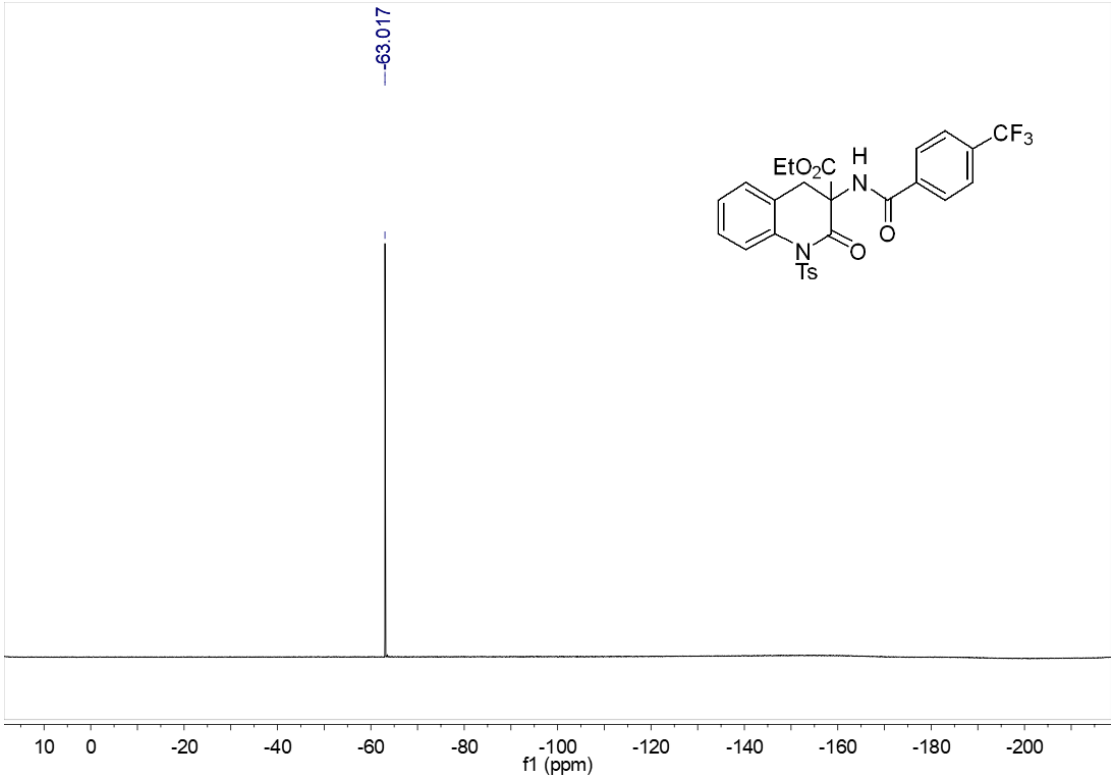
^{1}H NMR (400 MHz, $CDCl_3$) of compound **3al**:



^{13}C NMR (100 MHz, $CDCl_3$) of compound **3al**:



^{19}F NMR (376 MHz, $CDCl_3$) of compound **3al**:



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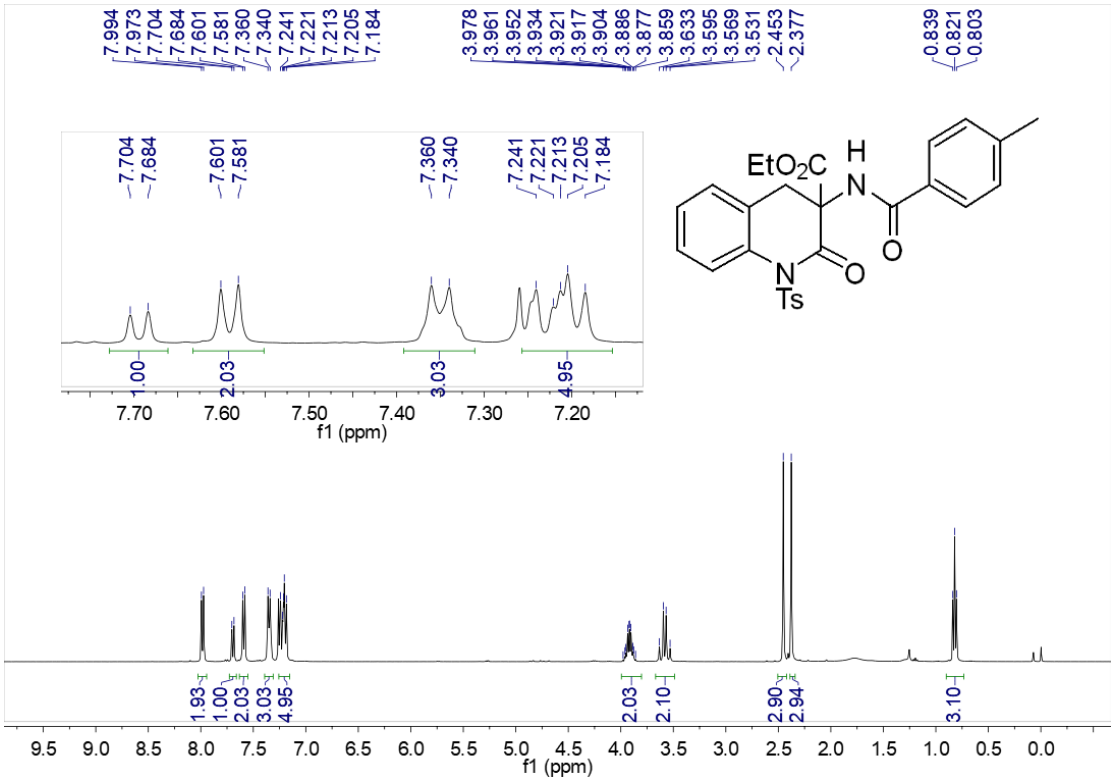

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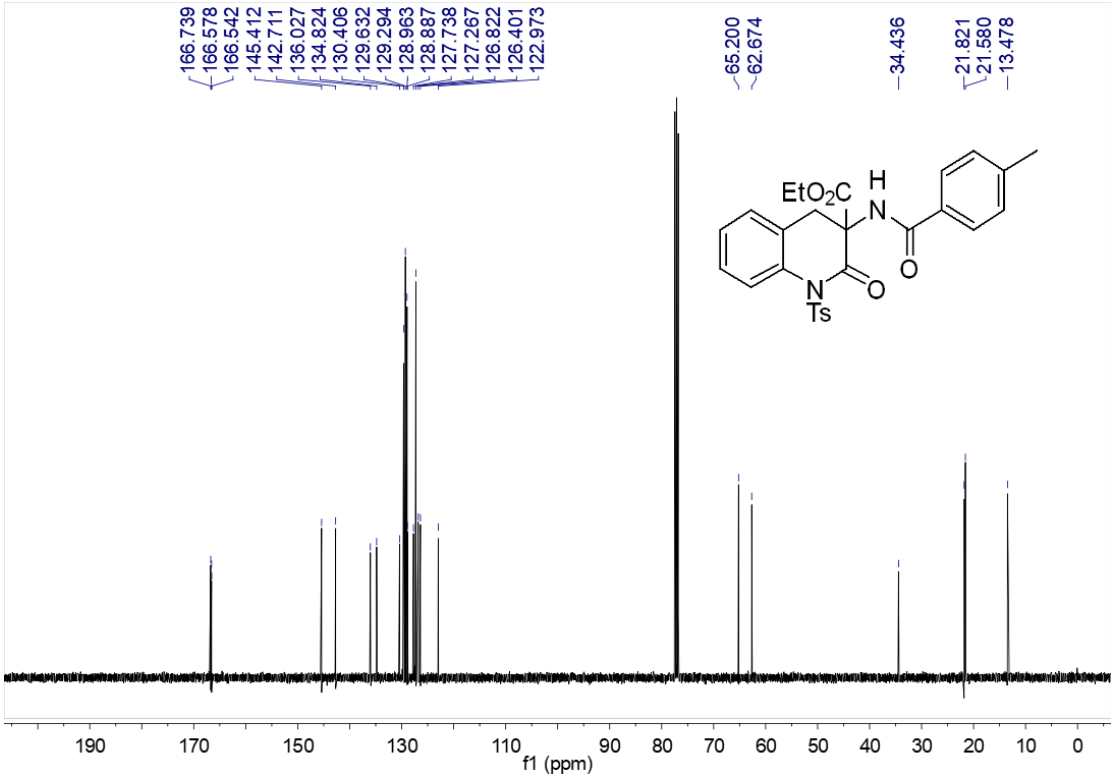

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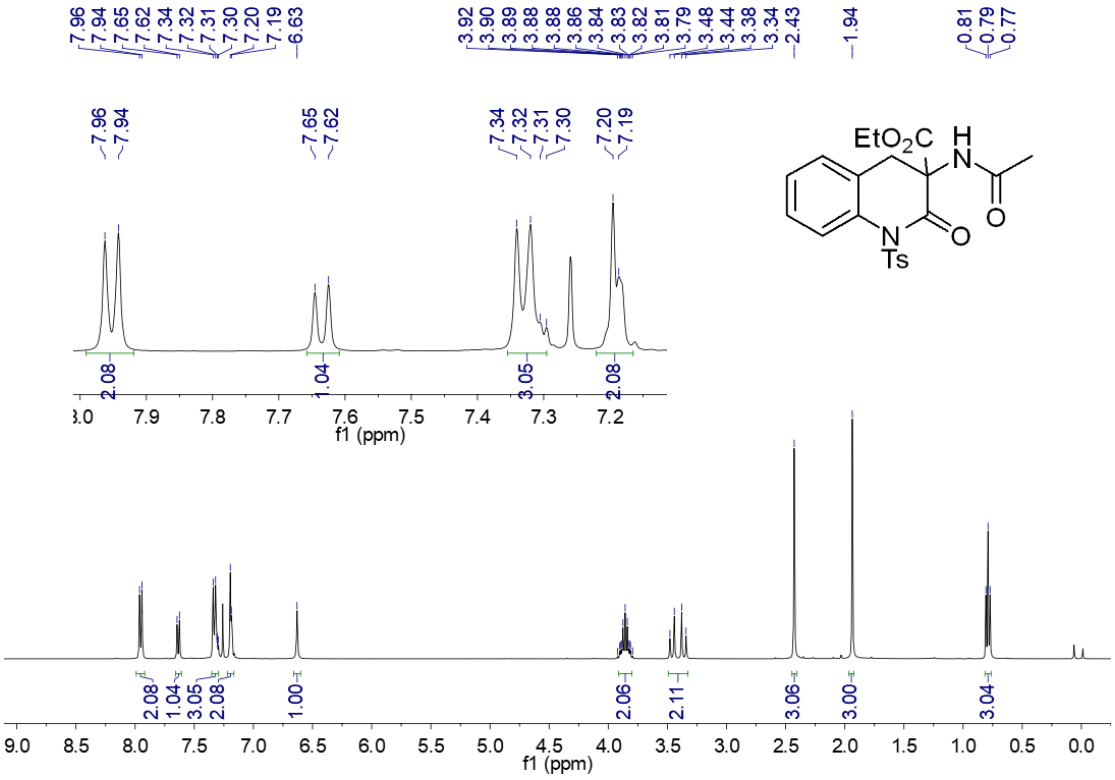
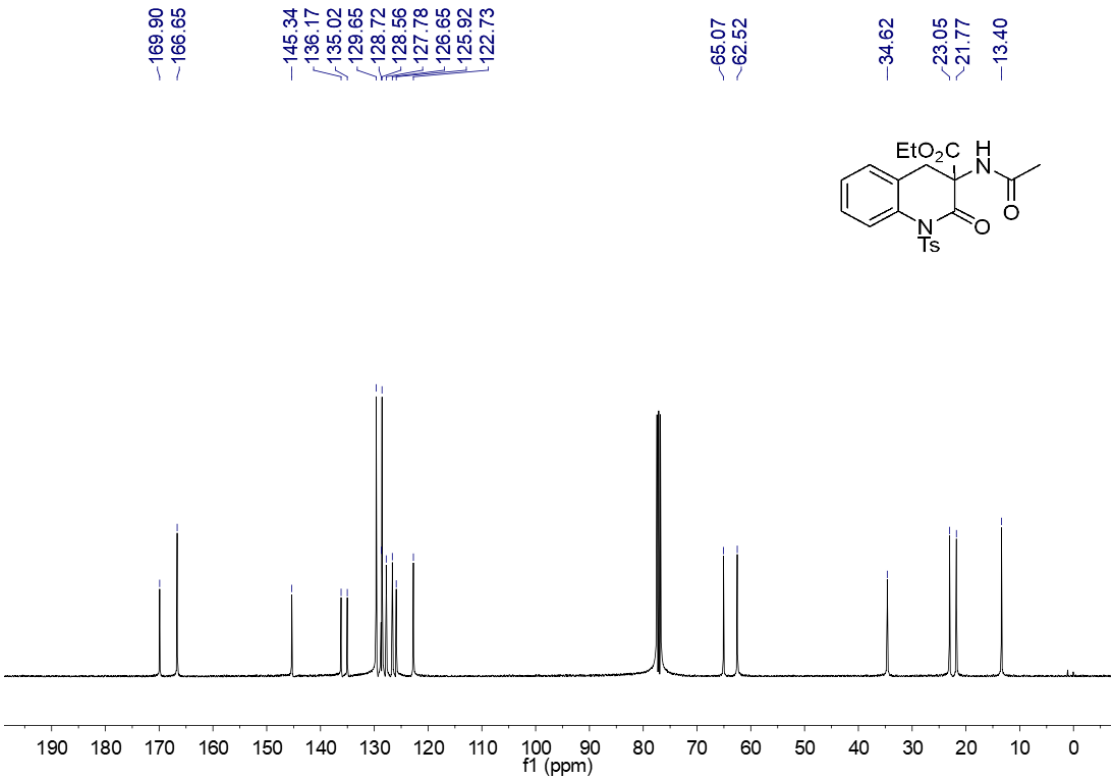
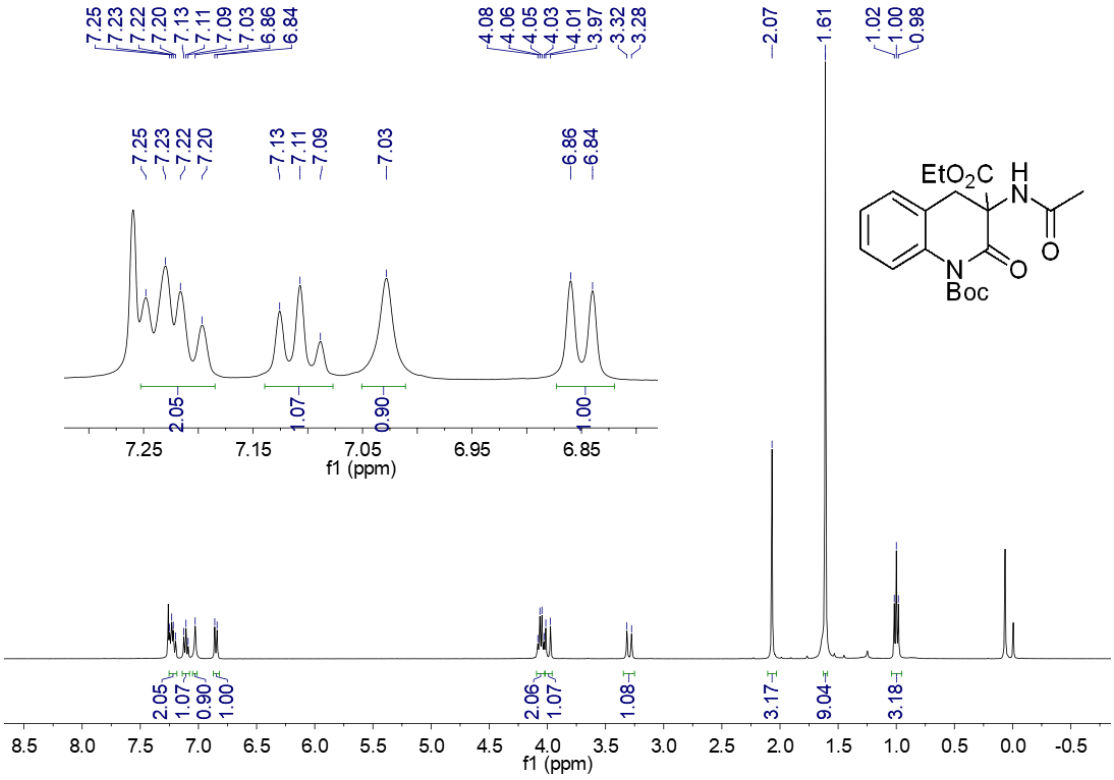


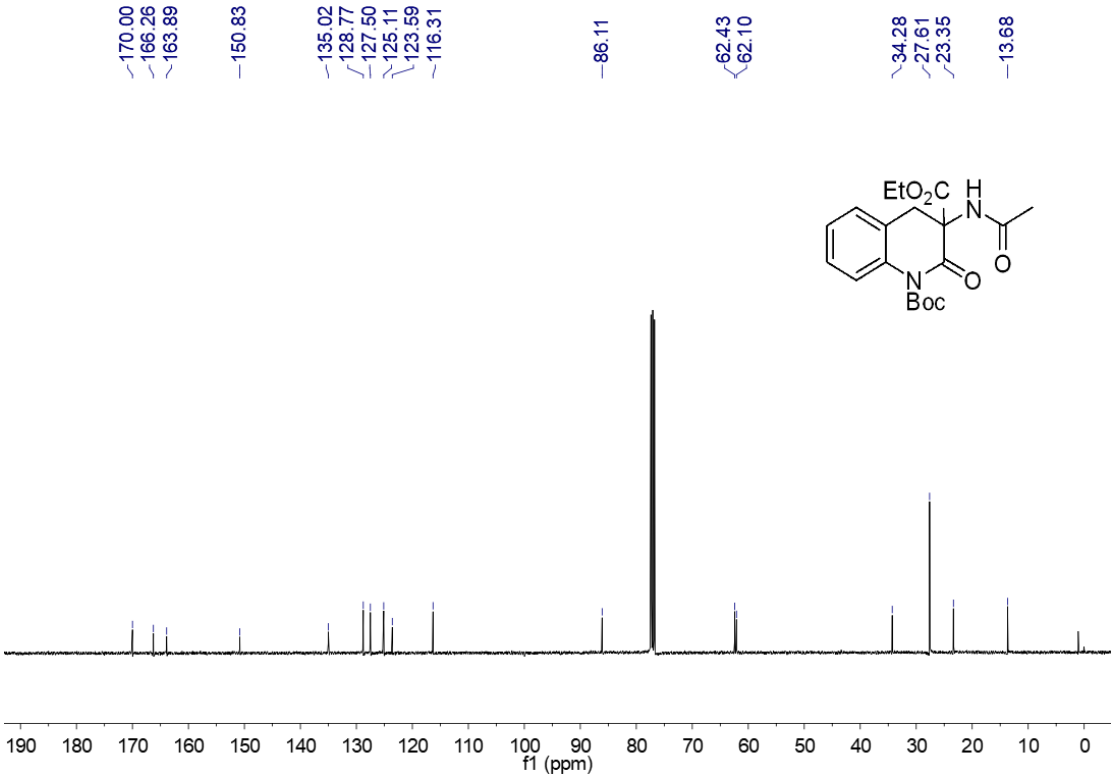
^{13}C NMR (100 MHz, $CDCl_3$) of compound **3an**:



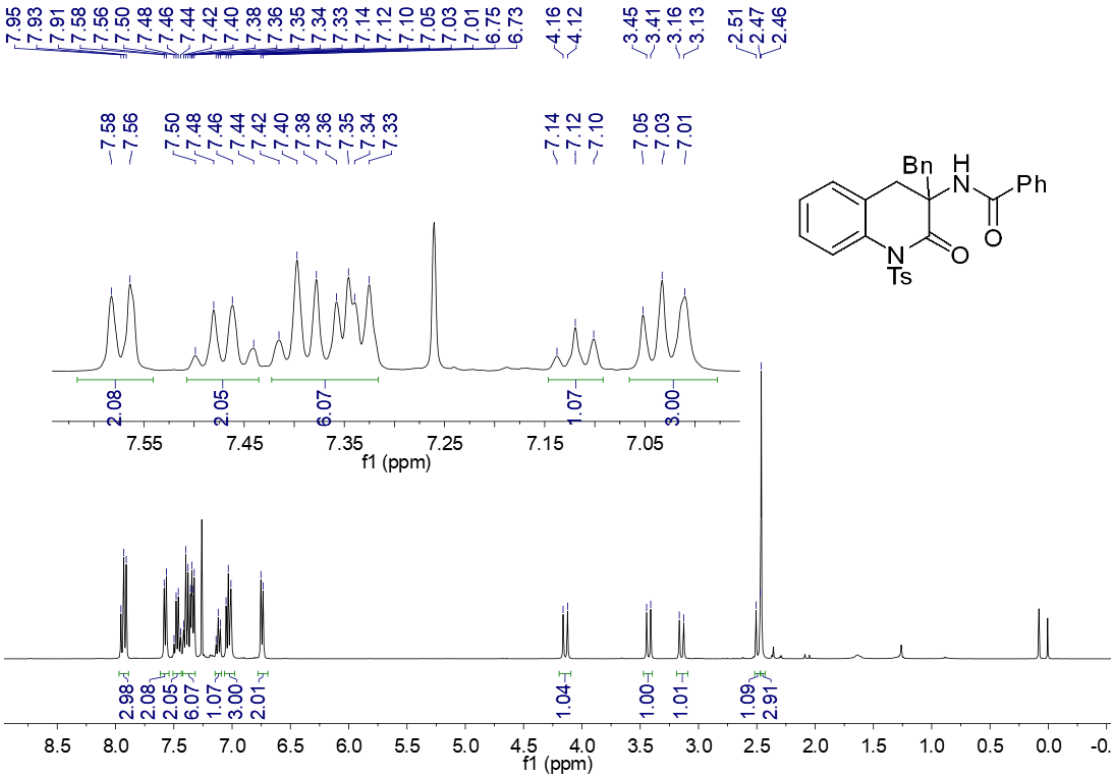
^{1}H NMR (400 MHz, $CDCl_3$) of compound **3hn**:



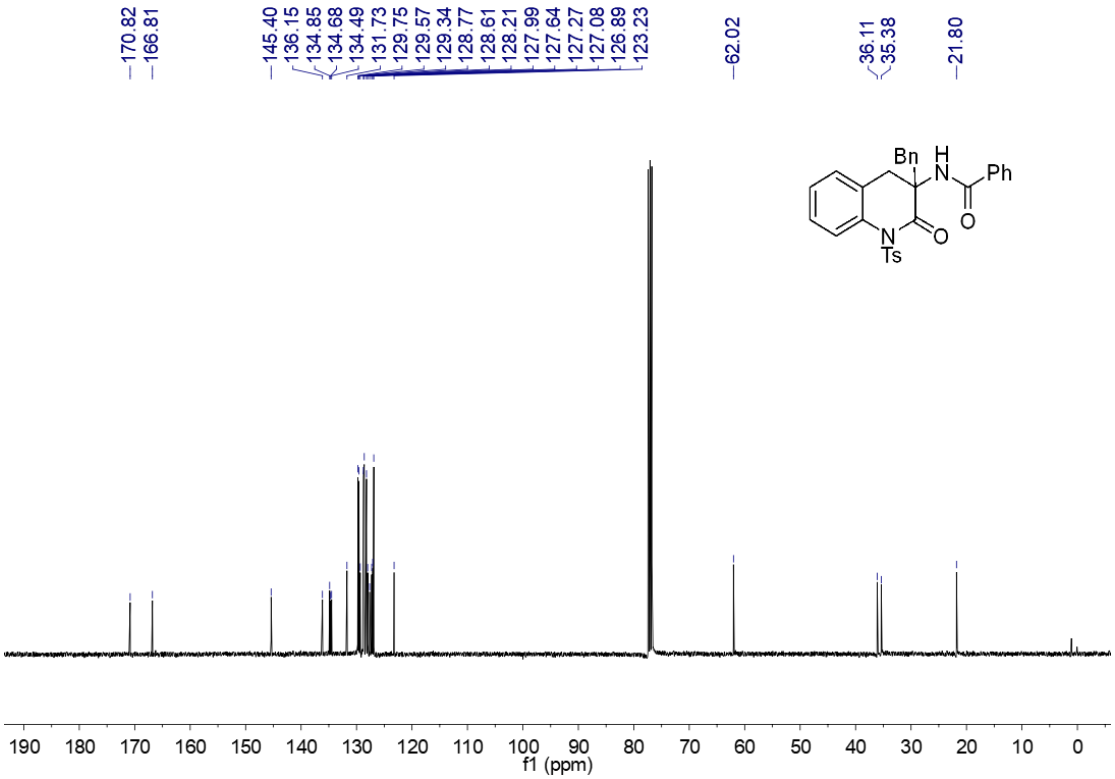
^{13}C NMR (100 MHz, $CDCl_3$) of compound **3hn**:



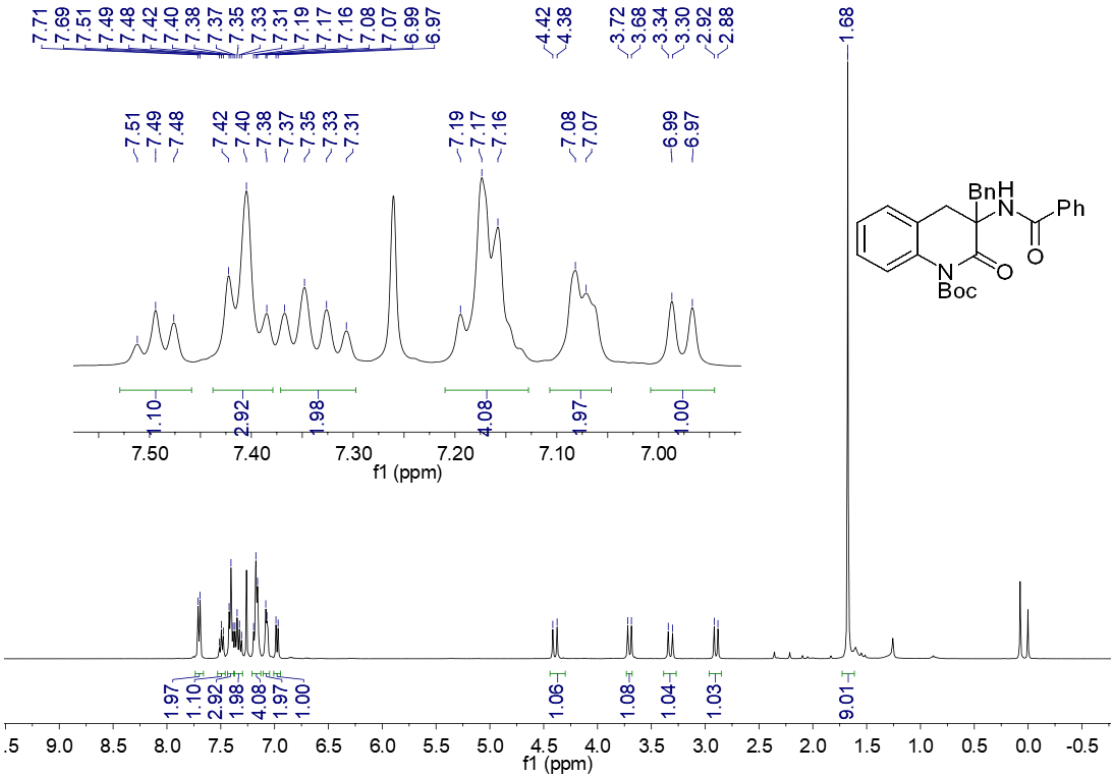
^{1}H NMR (400 MHz, $CDCl_3$) of compound **3ao**:



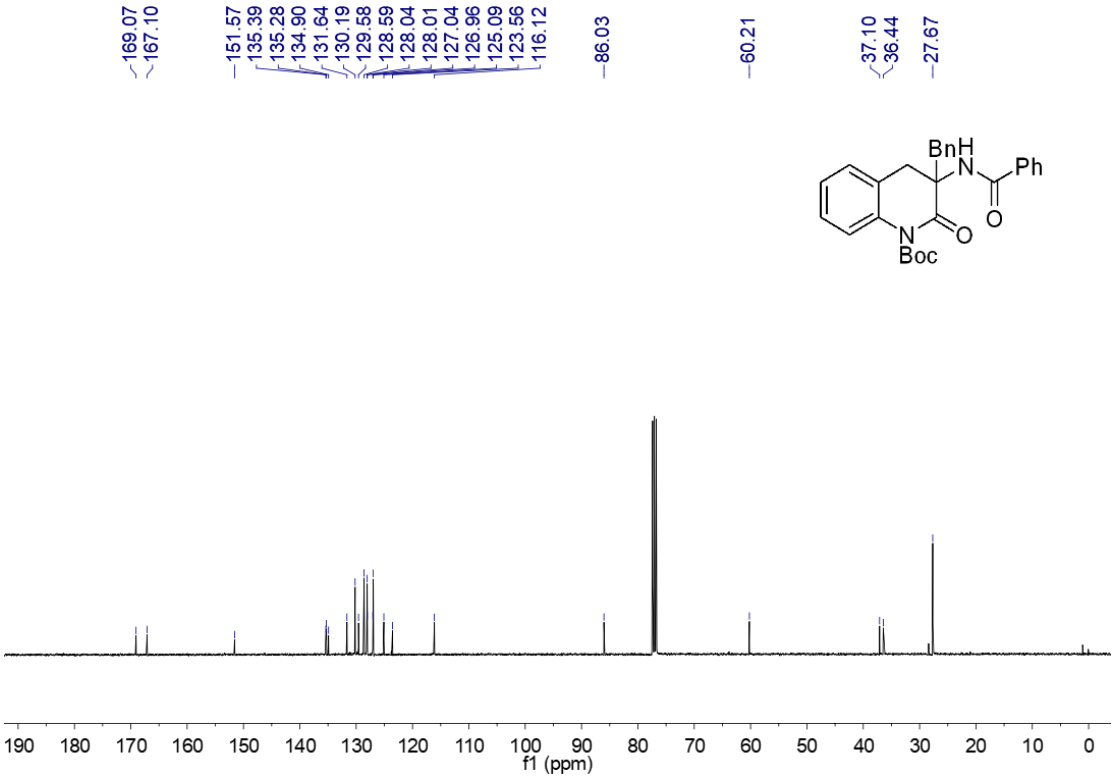
^{13}C NMR (100 MHz, $CDCl_3$) of compound **3ao**:



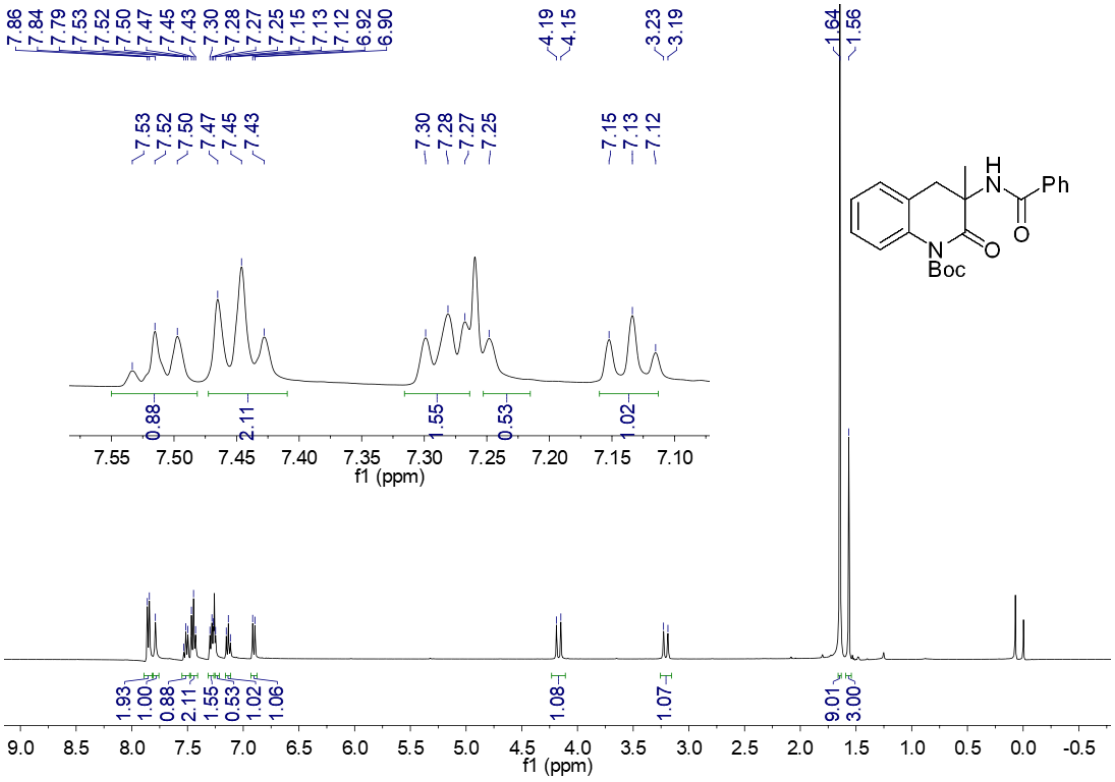
^{1}H NMR (400 MHz, $CDCl_3$) of compound **3ho**:



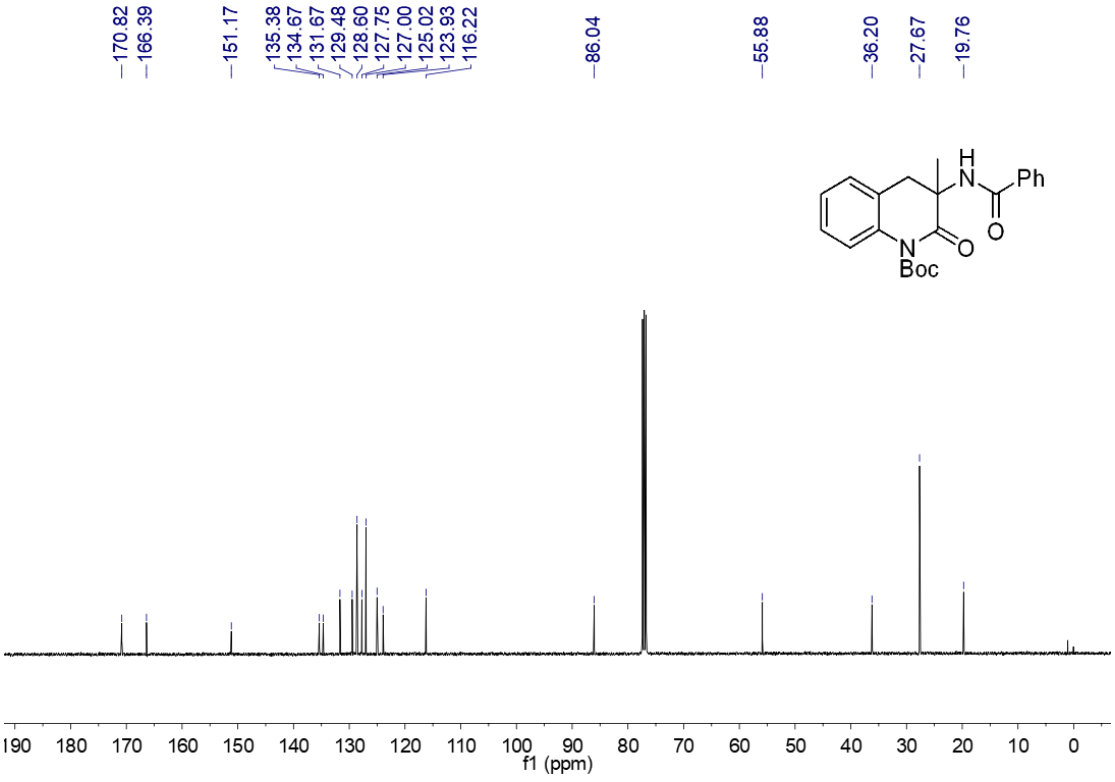
^{13}C NMR (100 MHz, $CDCl_3$) of compound **3ho**:



^{1}H NMR (400 MHz, $CDCl_3$) of compound **3hp**:



^{13}C NMR (100 MHz, $CDCl_3$) of compound **3hp**:



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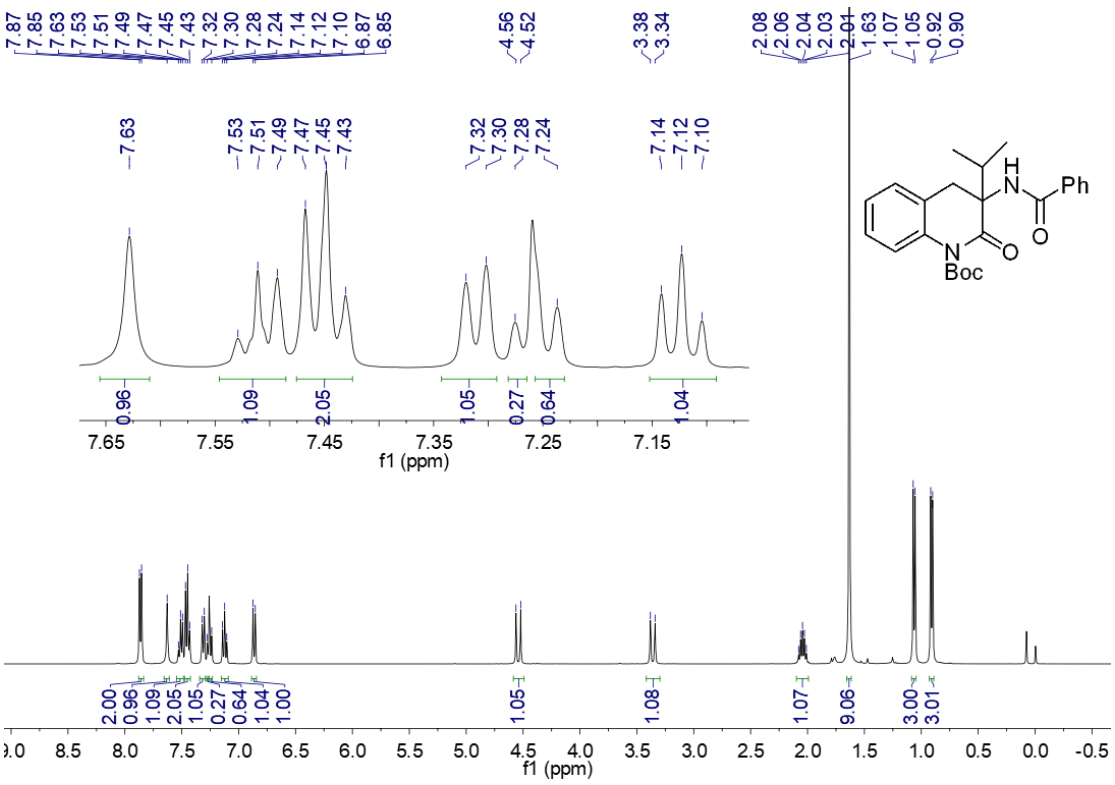
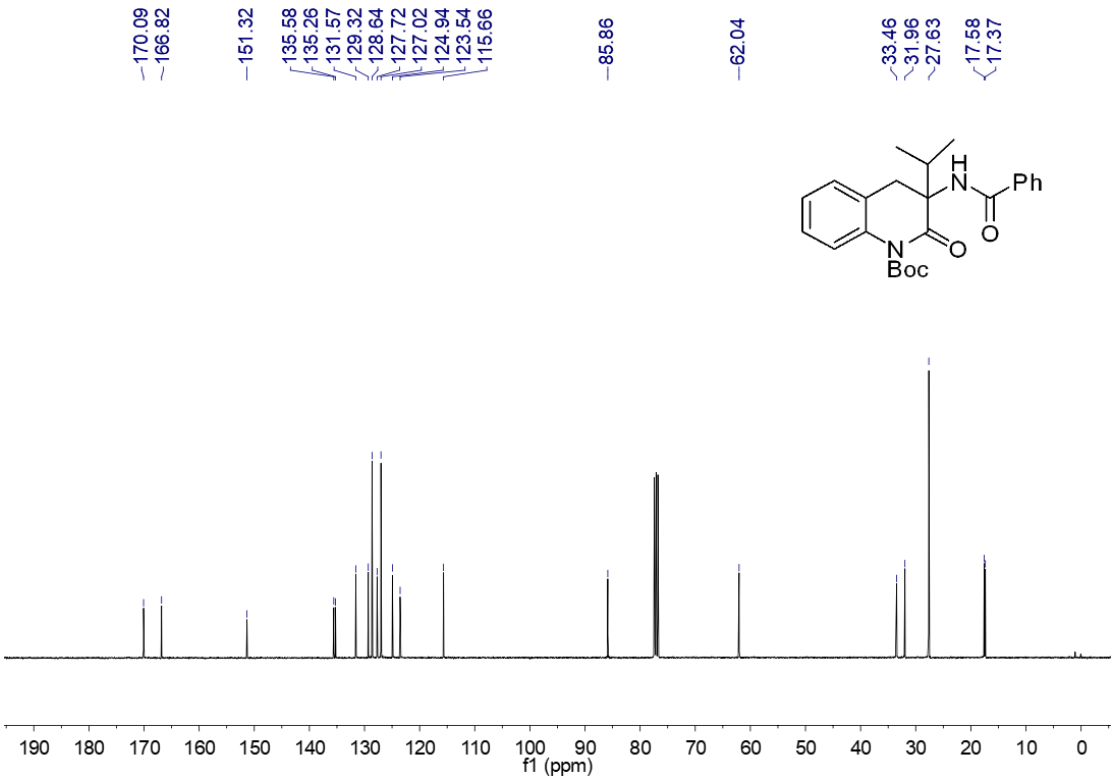
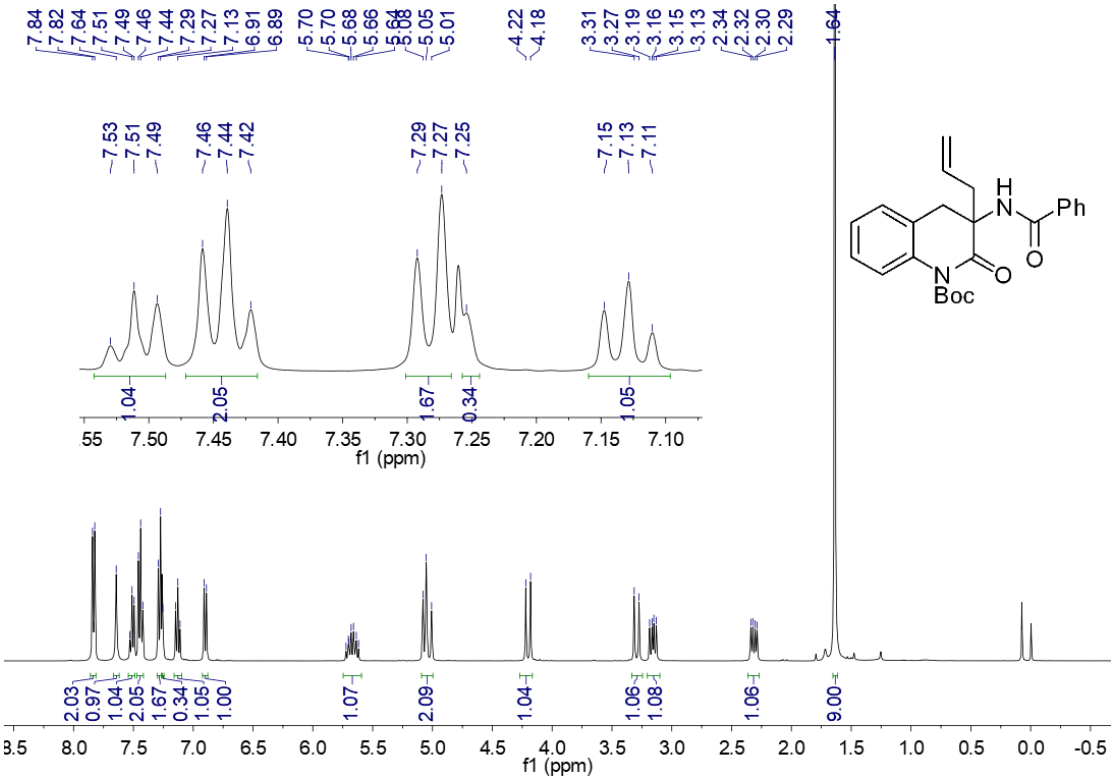


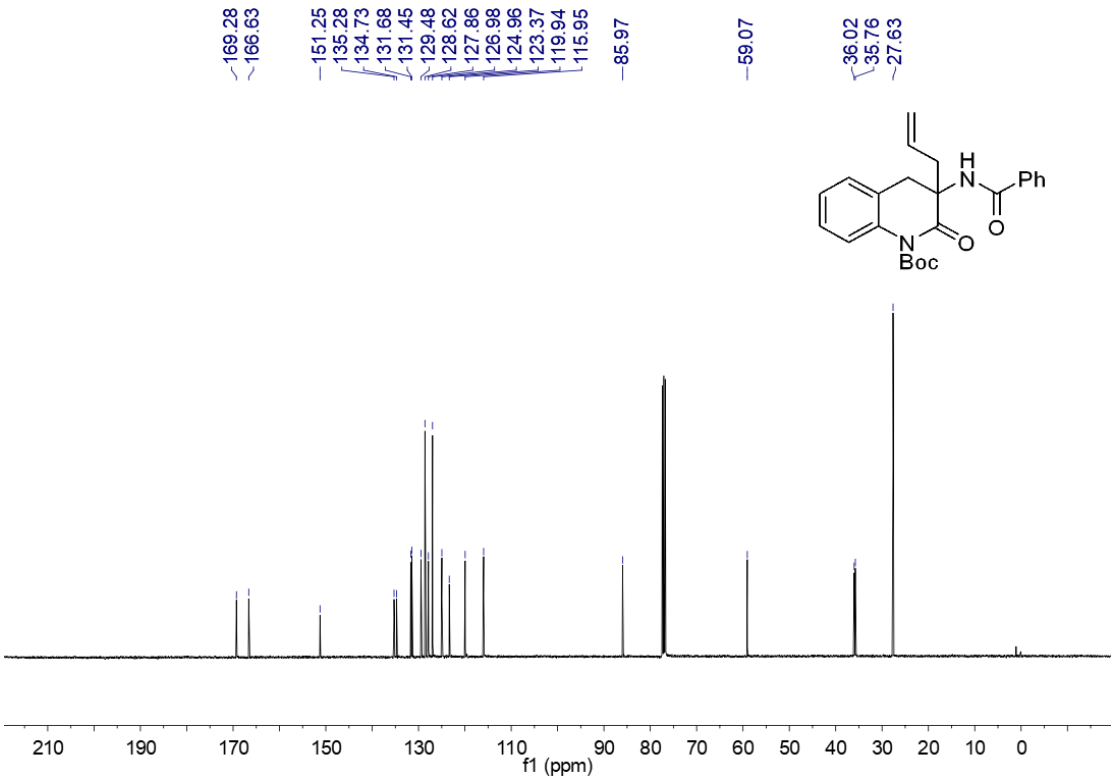
^{13}C NMR (100 MHz, $CDCl_3$) of compound **3hq**:



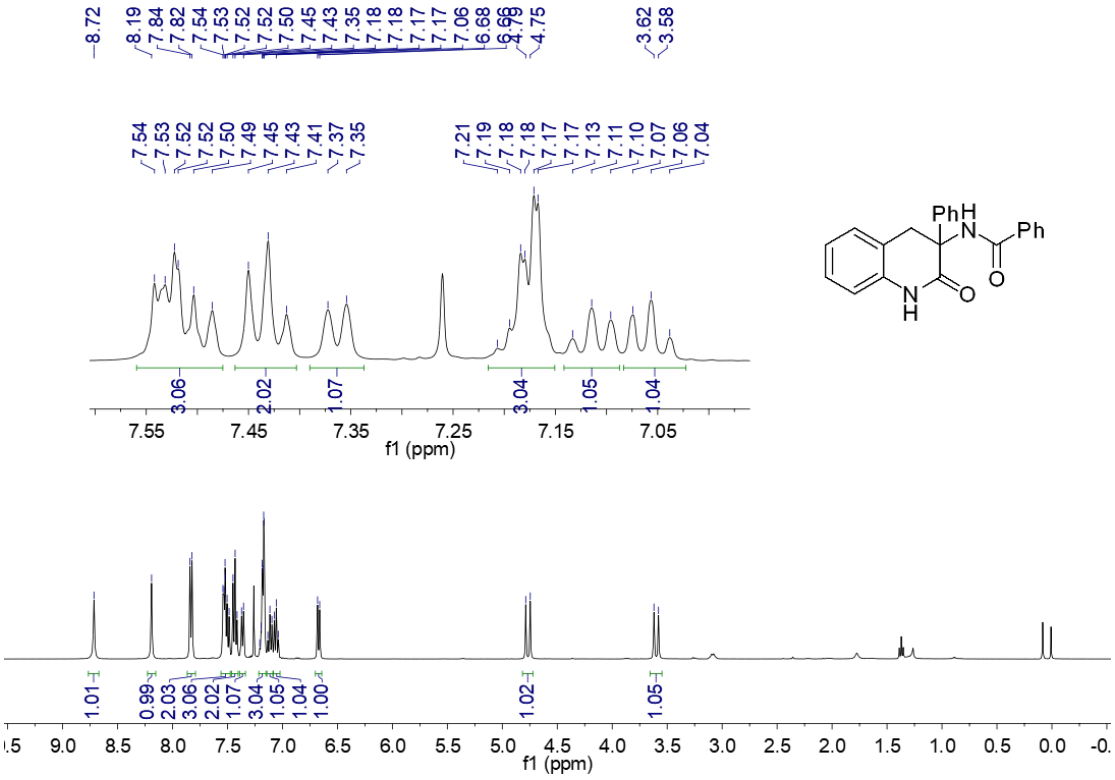
^{1}H NMR (400 MHz, $CDCl_3$) of compound **3hr**:



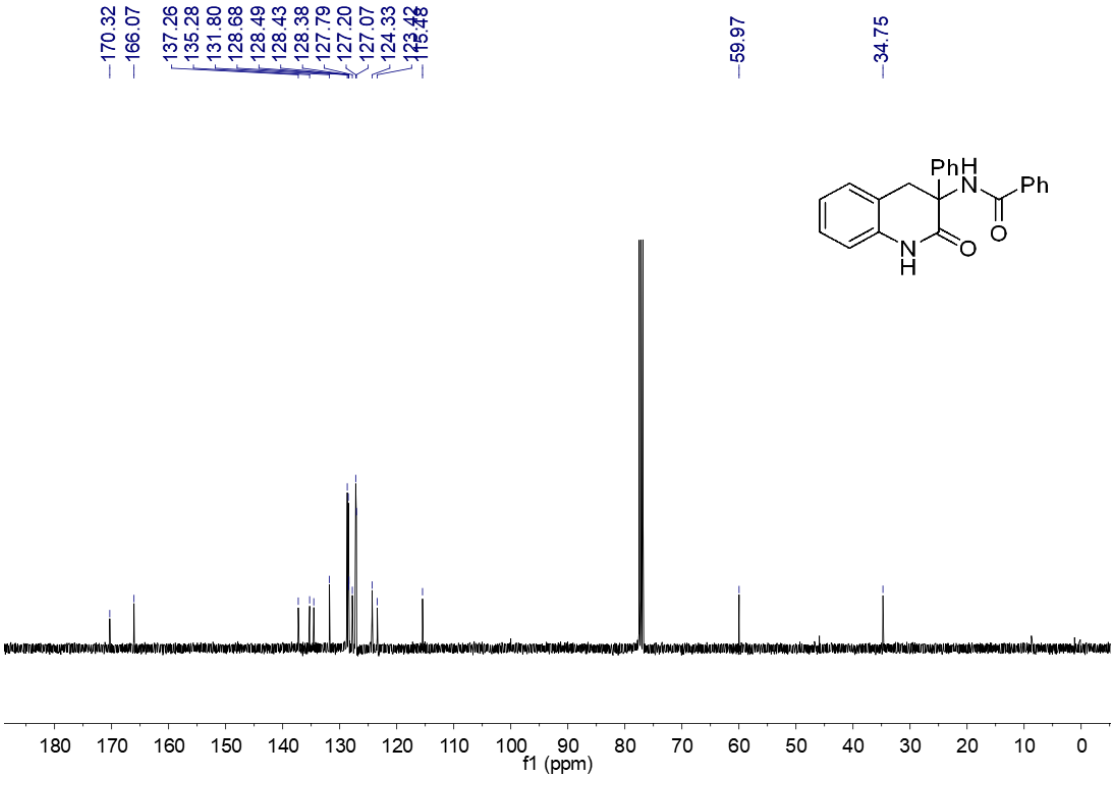
^{13}C NMR (100 MHz, $CDCl_3$) of compound **3hr**:



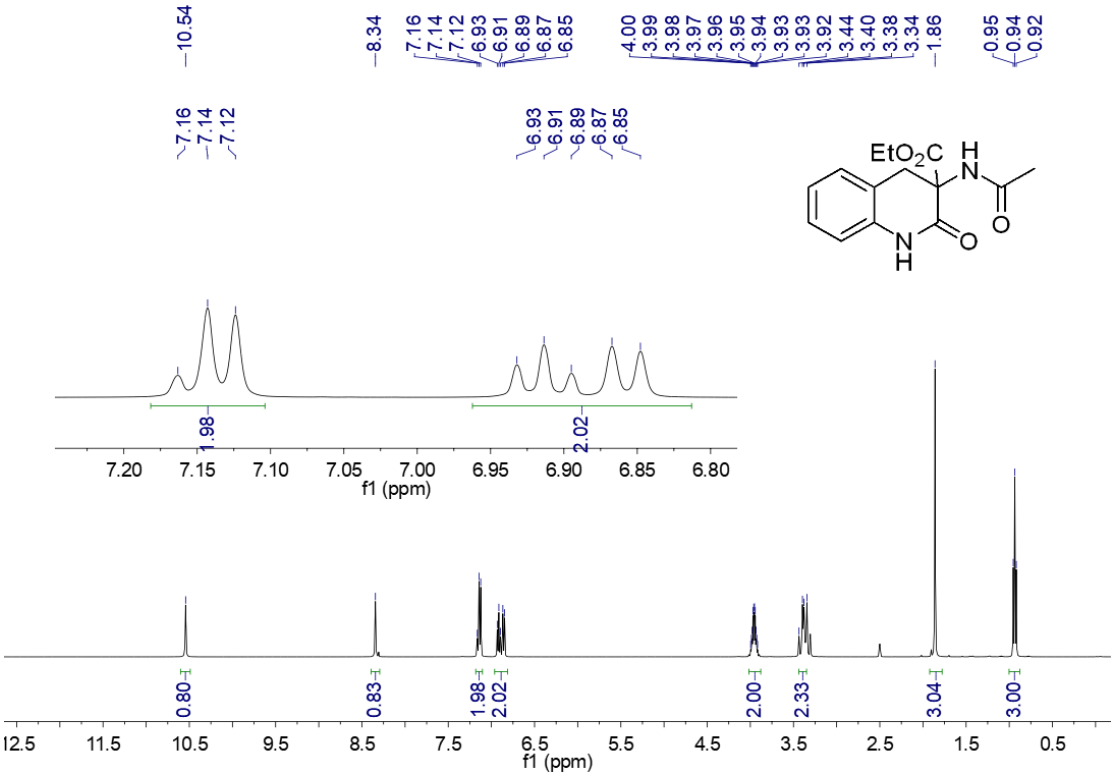
^{1}H NMR (400 MHz, $CDCl_3$) of compound **4**:



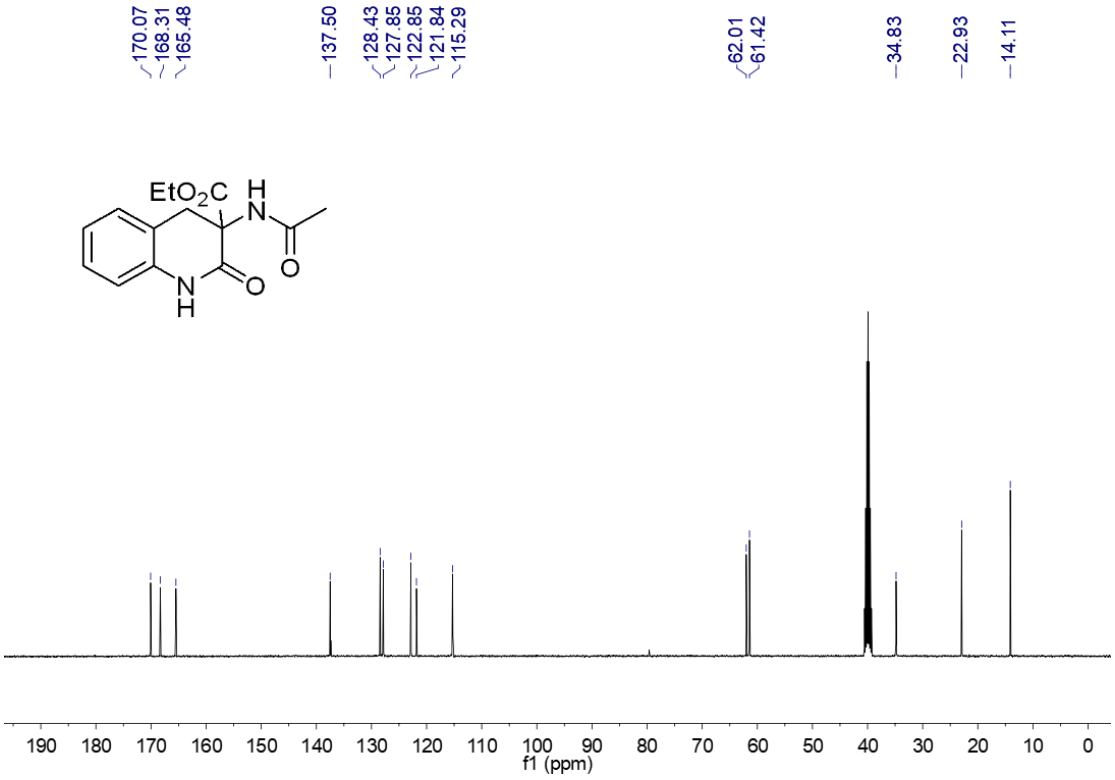
^{13}C NMR (100 MHz, $CDCl_3$) of compound **4**:



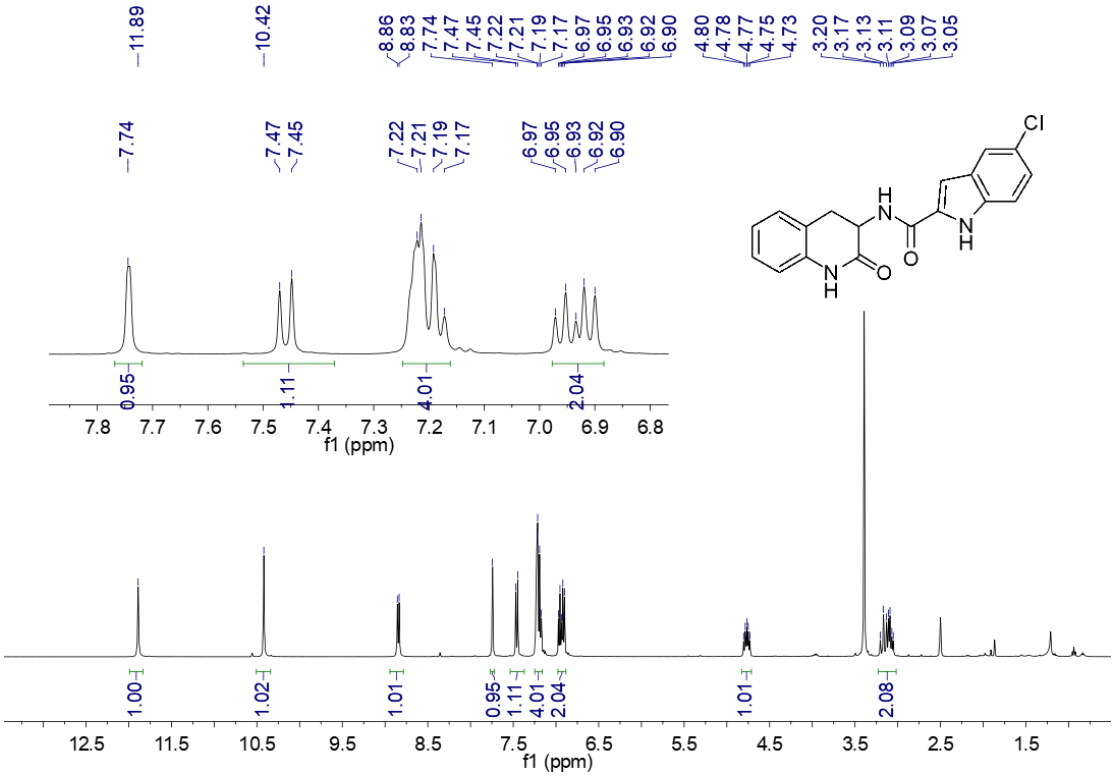
^{1}H NMR (400 MHz, DMSO-d_6) of compound **5**:



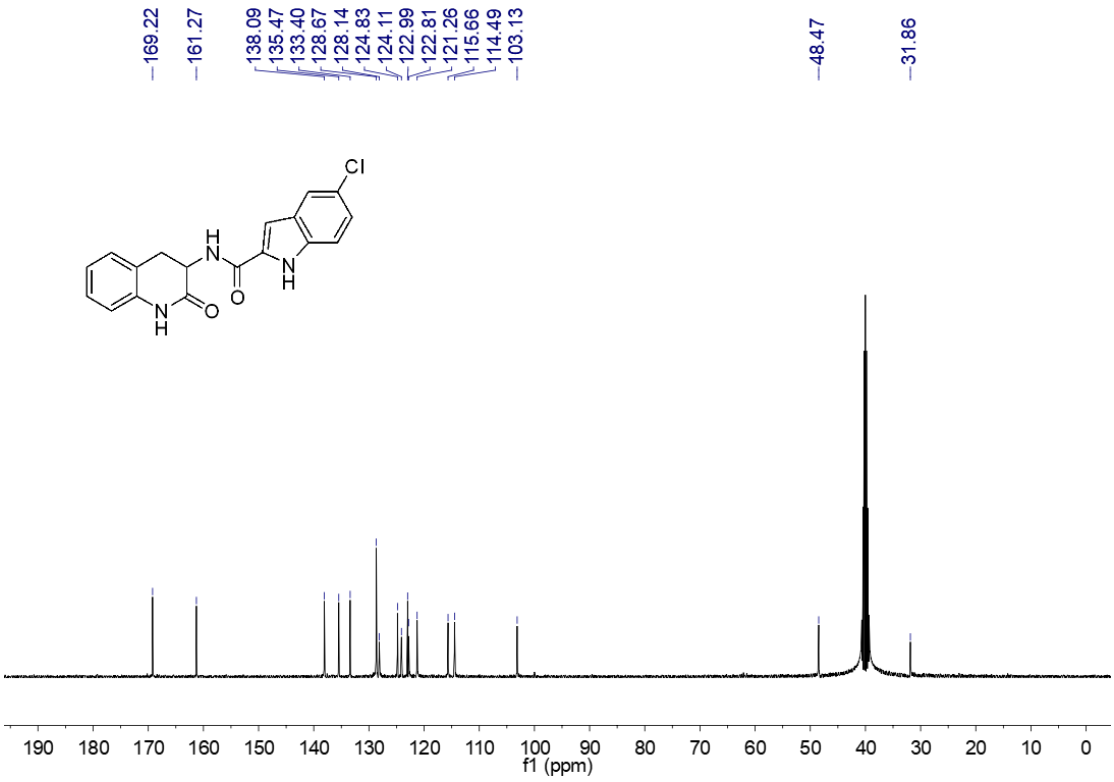
^{13}C NMR (100 MHz, DMSO-d_6) of compound **5**:



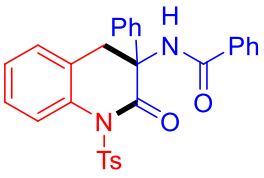
^{1}H NMR (400 MHz, DMSO-d_6) of compound **I**:



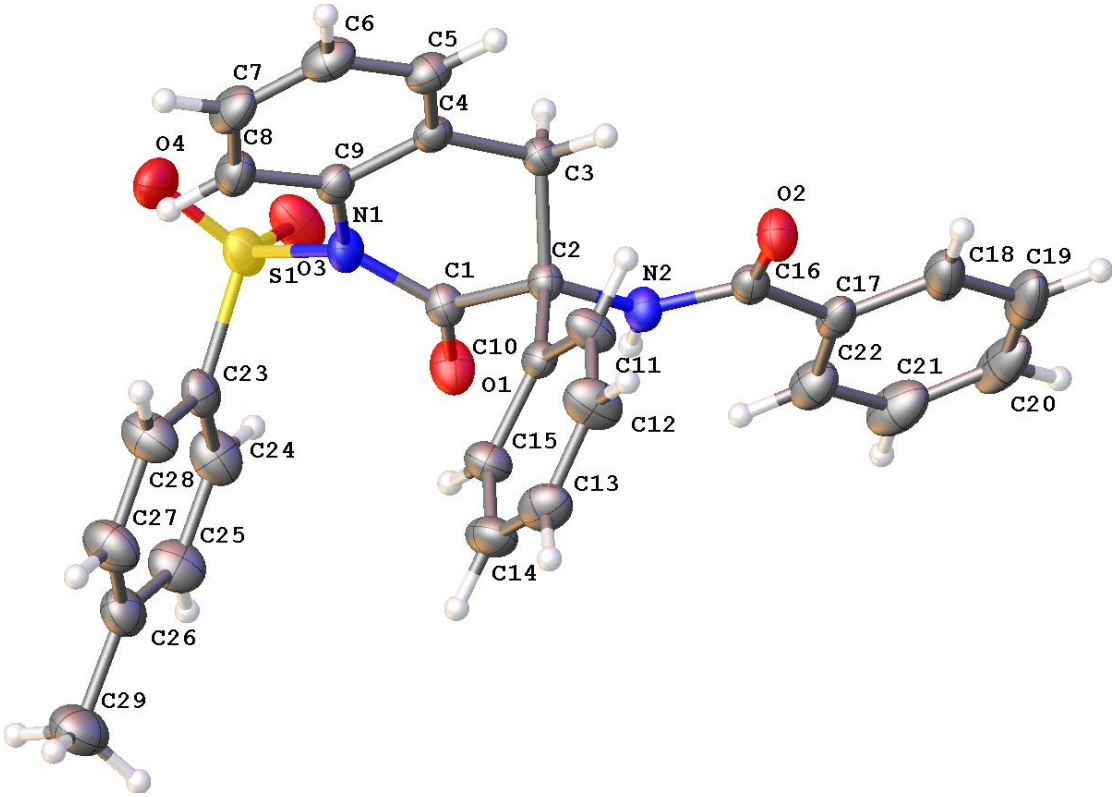
^{13}C NMR (100 MHz, DMSO-d_6) of compound **I**:



2. X-ray single crystal data for product 3aa



3aa



The thermal ellipsoid was drawn at the 30% probability level.

Identification code	sf20190405a_0m	
Empirical formula	C29 H24 N2 O4 S	
Formula weight	496.56	
Temperature	181.65 K	
Wavelength	0.71073 Å	
Crystal system	Triclinic	
Space group	P-1	
Unit cell dimensions	a = 8.3267(18) Å	α= 97.684(3) °.
	b = 8.7156(19) Å	β= 91.300(2) °.
	c = 16.902(4) Å	γ = 94.942(2) °.
Volume	1210.3(5) Å^3	
Z	2	
Density (calculated)	1.363 Mg/m^3	

Absorption coefficient	0.173 mm^{-1}
F(000)	520
Theta range for data collection	2.704 to 26.368 °.
Index ranges	-10<=h<=10, -10<=k<=8, -16<=l<=21
Reflections collected	6813
Independent reflections	4826 [R(int) = 0.0142]
Completeness to theta = 25.242 °	98.3 %
Absorption correction	Semi-empirical from equivalents
Max. and min. transmission	0.7455 and 0.6519
Refinement method	Full-matrix least-squares on F^2
Data / restraints / parameters	4826 / 0 / 326
Goodness-of-fit on F^2	1.029
Final R indices [I>2sigma(I)]	R1 = 0.0480, wR2 = 0.1196
R indices (all data)	R1 = 0.0630, wR2 = 0.1288
Extinction coefficient	n/a
Largest diff. peak and hole	0.347 and -0.319 e.$Å^{-3}$