Supporting Online Material for

A simple and efficient copper-catalyzed three-component reaction to synthesize (*Z*)-1, 2-dihydro-2-iminoquinolines

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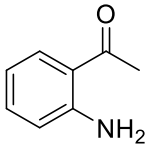
Structures of the starting materials 1a-1i



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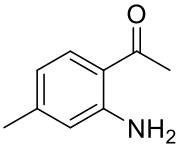

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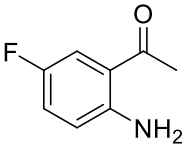

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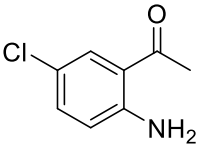

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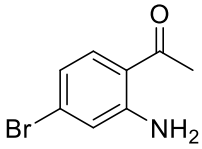

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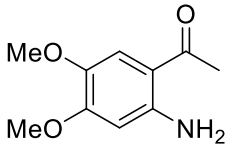

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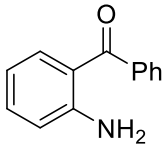

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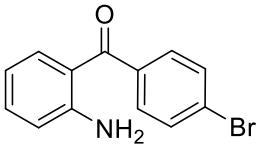

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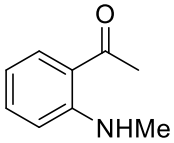
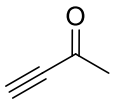


1i

Structures of the starting materials 2a-2g



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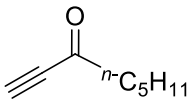

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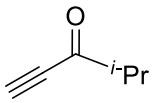

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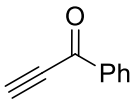

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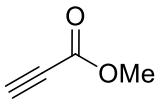

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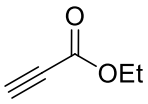

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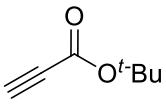

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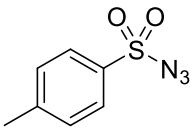
StrStuctures of the starting materials 3a-3i



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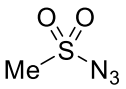

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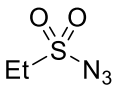

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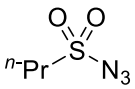

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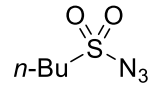

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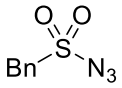

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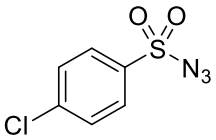

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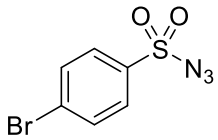

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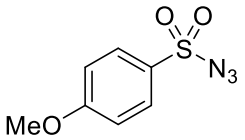


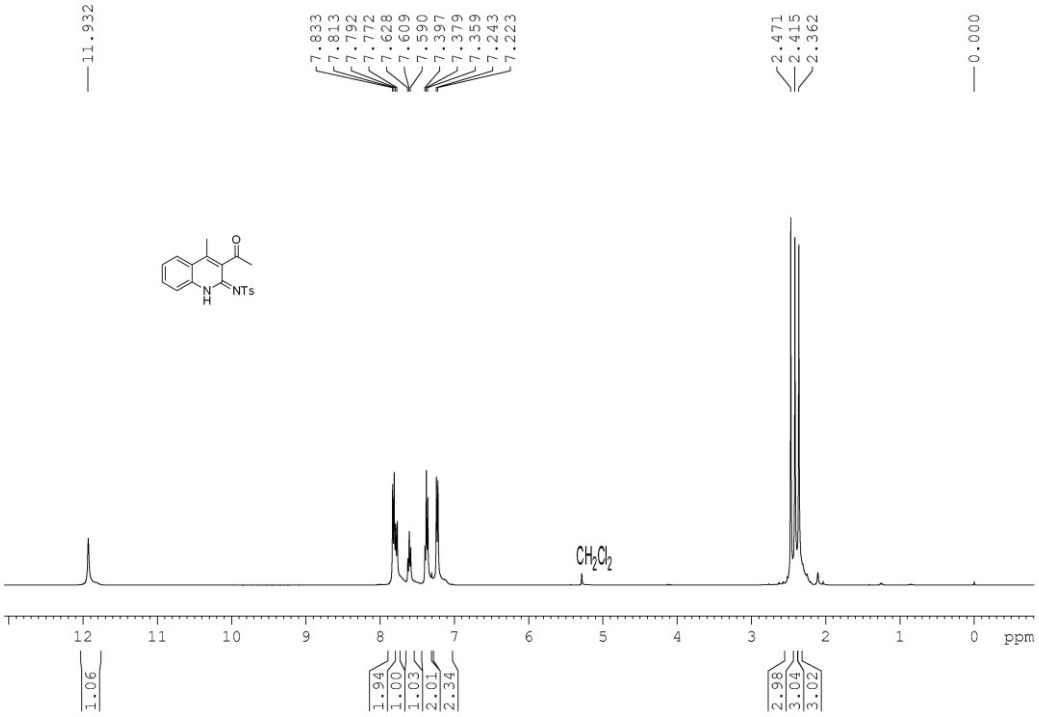
3i

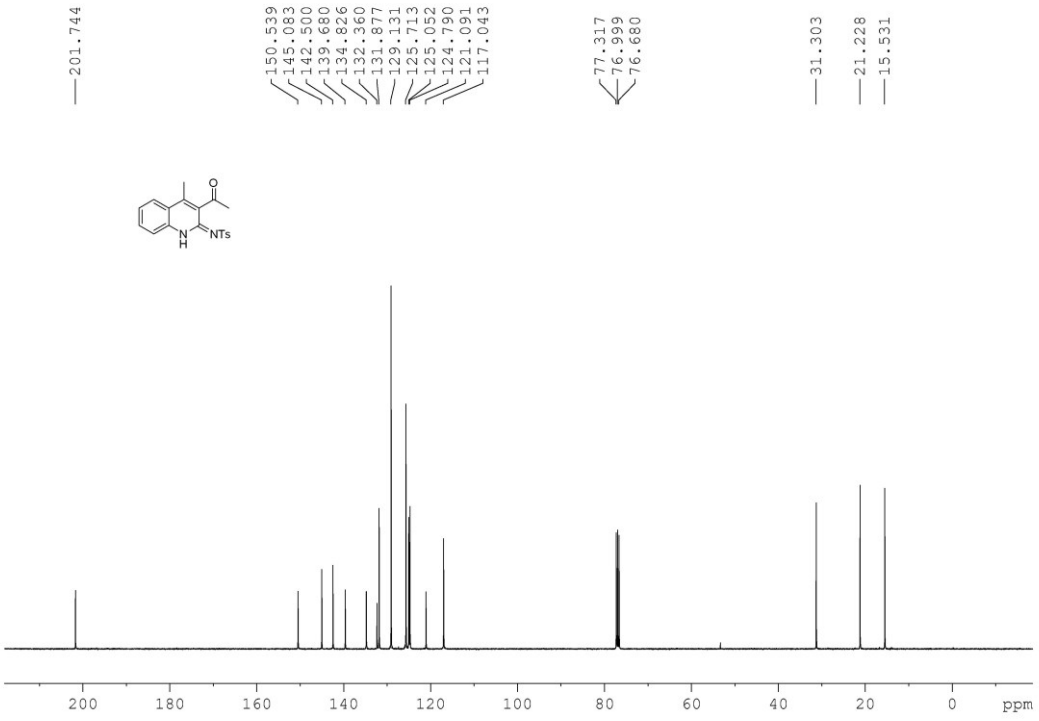
2. General Information

^{1}H and $^{13}C\{^{1}H\}$ NMR spectra were recorded at ambient temperatures on a 400 MHz Bruker spectrometer using $CDCl_3$ or DMSO-d_6 as solvent and tetramethylsilane (TMS) as the internal standard. Chemical shifts are presented as δ values relative to TMS and ^{1}H–^{1}H coupling constants (*J* values) are given in Hz. IR spectra were recorded as KBr pellets on a Nicolet FT-IR 5DX spectrometer while HRMS measurements were carried out on a Bruker micrOTOF-Q II spectrometer. Melting points were determined on a Yanaco melting point apparatus and are uncorrected.

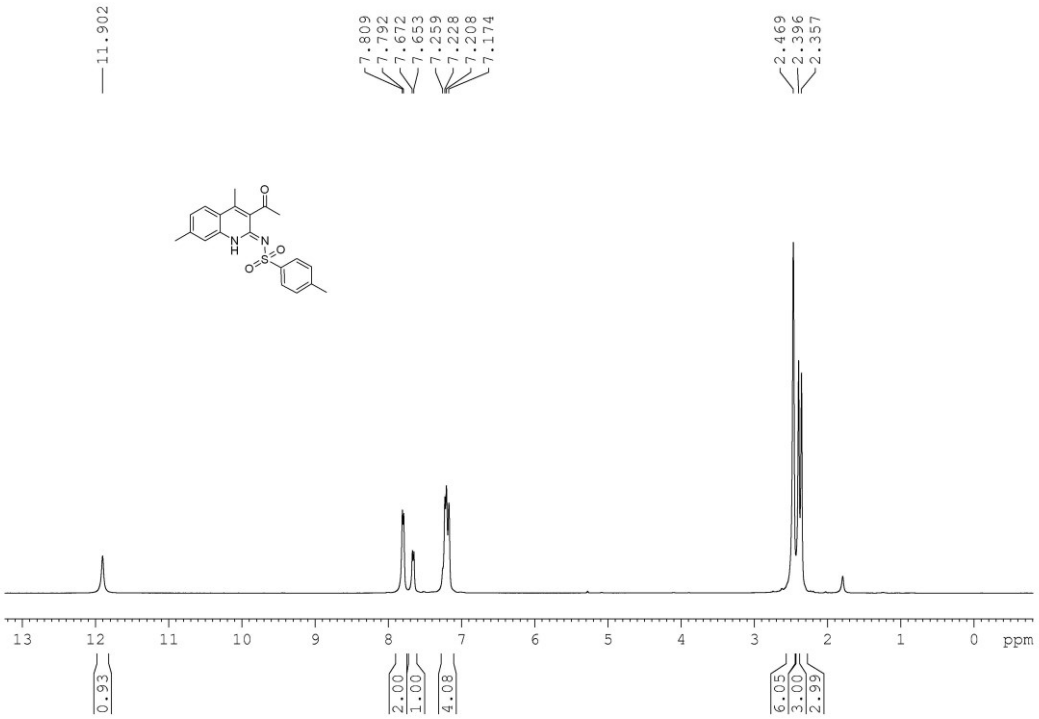
3. NMR Spectra

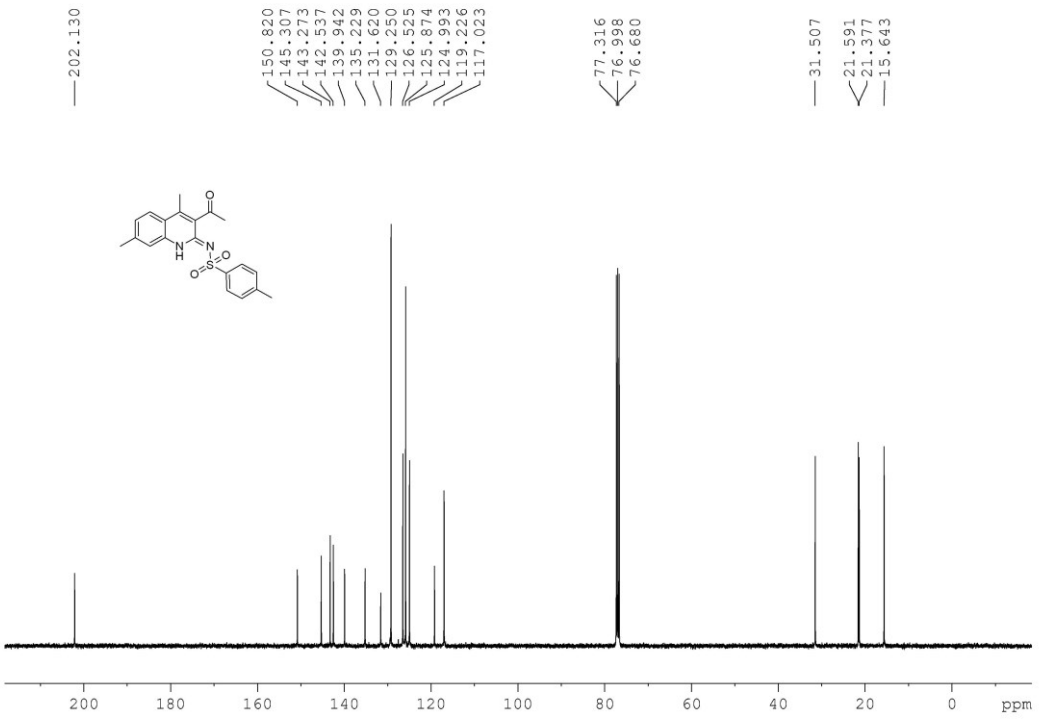
***N*-(3-acetyl-4-methylquinolin-2(1*H*)-ylidene)-4-methylbenzenesulfonamide (4a)**





***N*-(3-acetyl-4,7-dimethylquinolin-2(1*H*)-ylidene)-4-methylbenzenesulfonamide (4b)**





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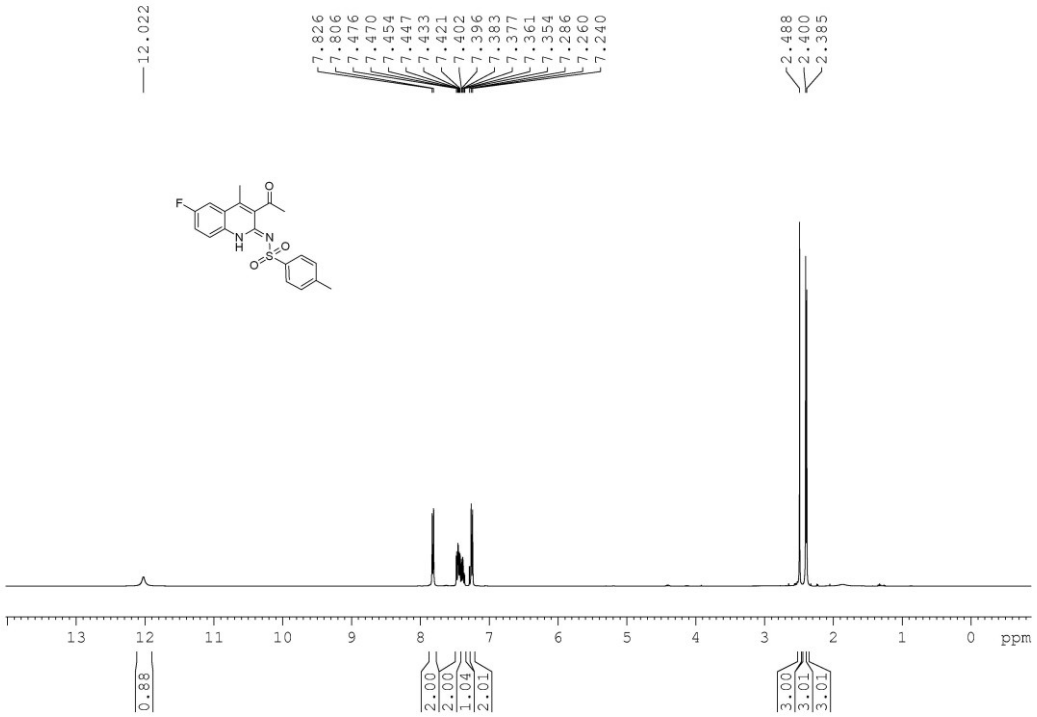
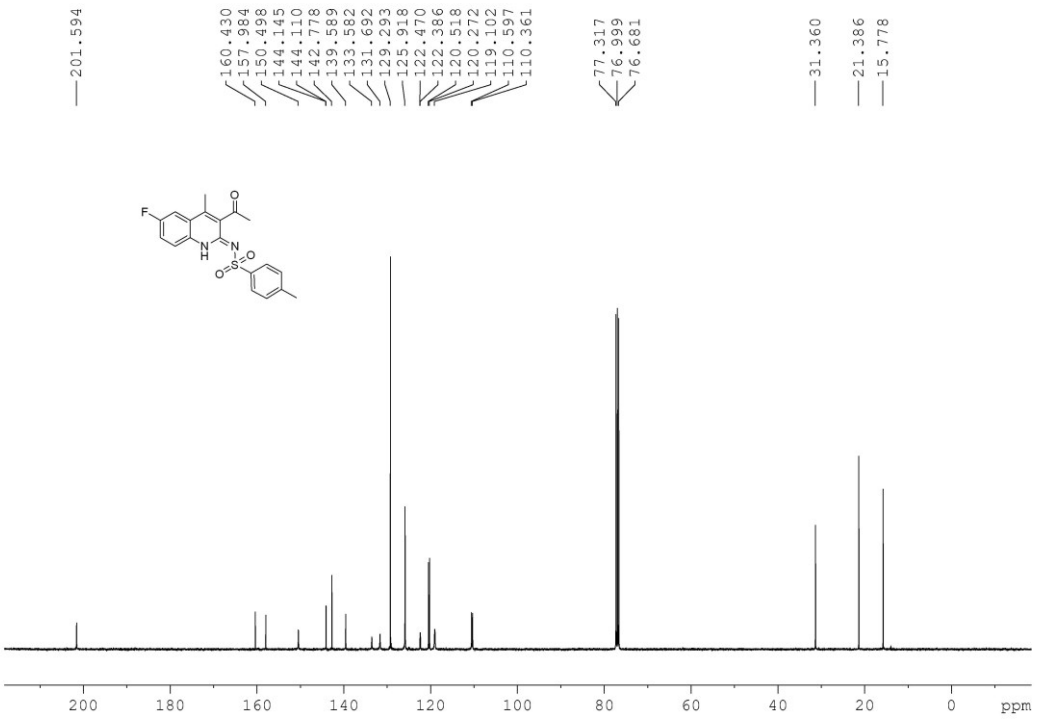
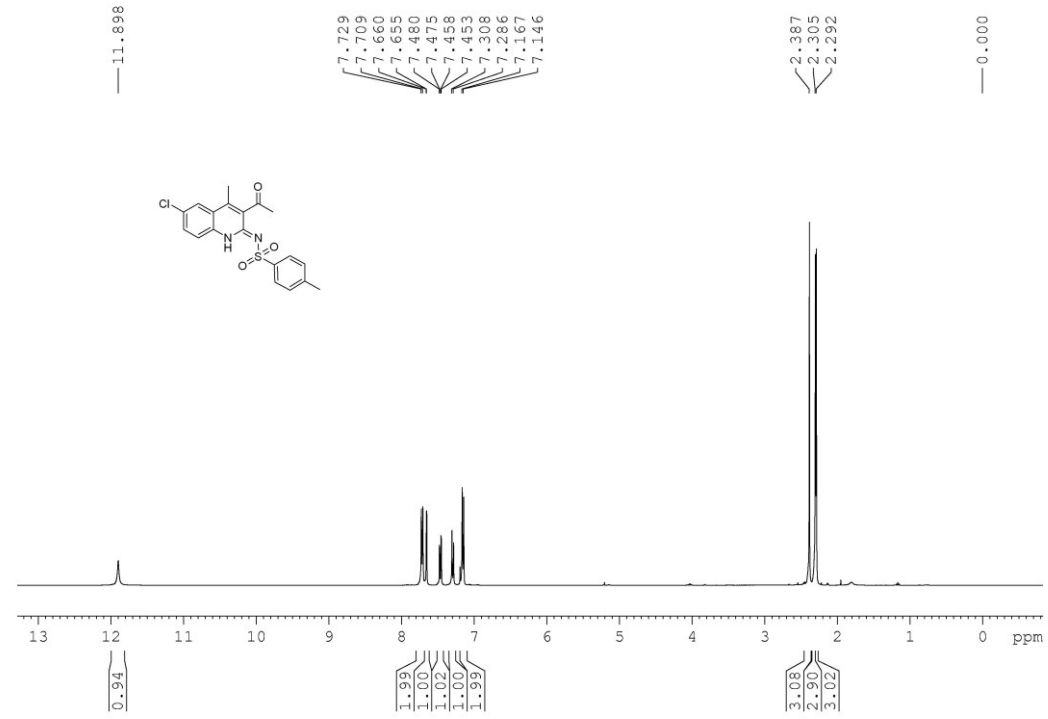
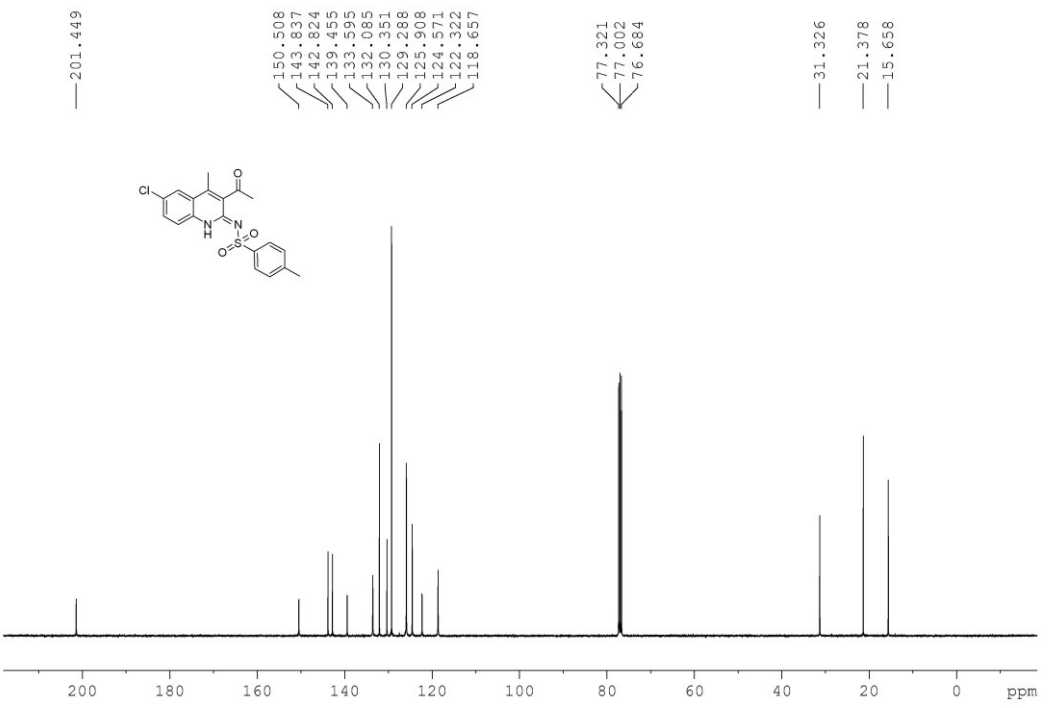




_N_-(3-acetyl-6-chloro-4-methylquinolin-2(1_H_)-ylidene)-4-methylbenzenesulfonamide (4d)





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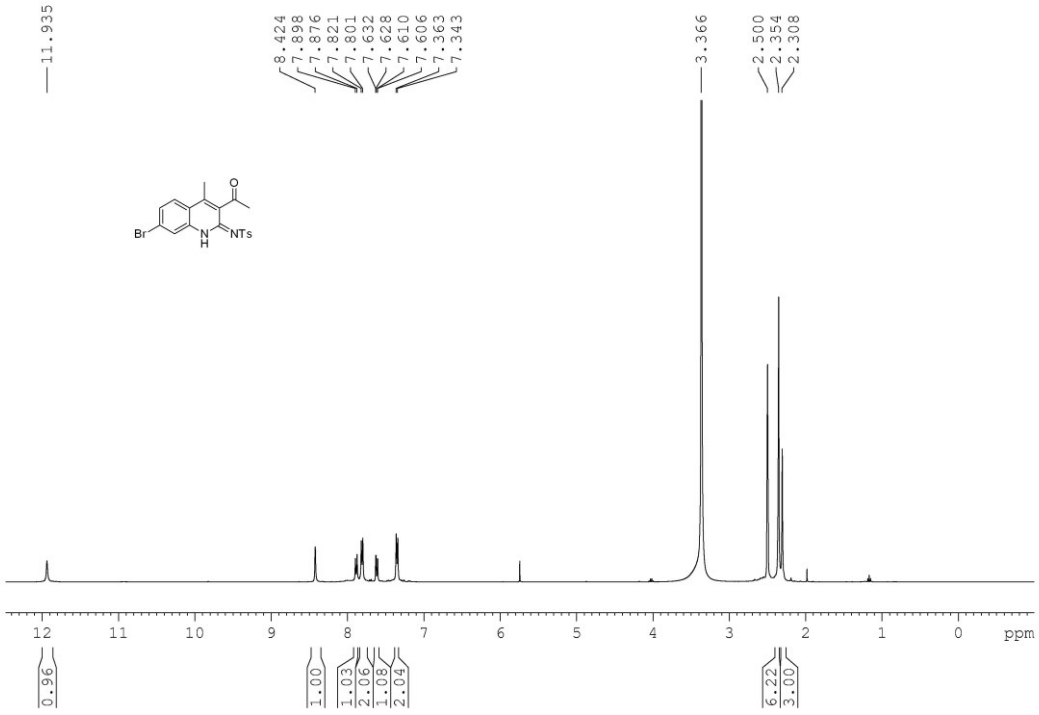

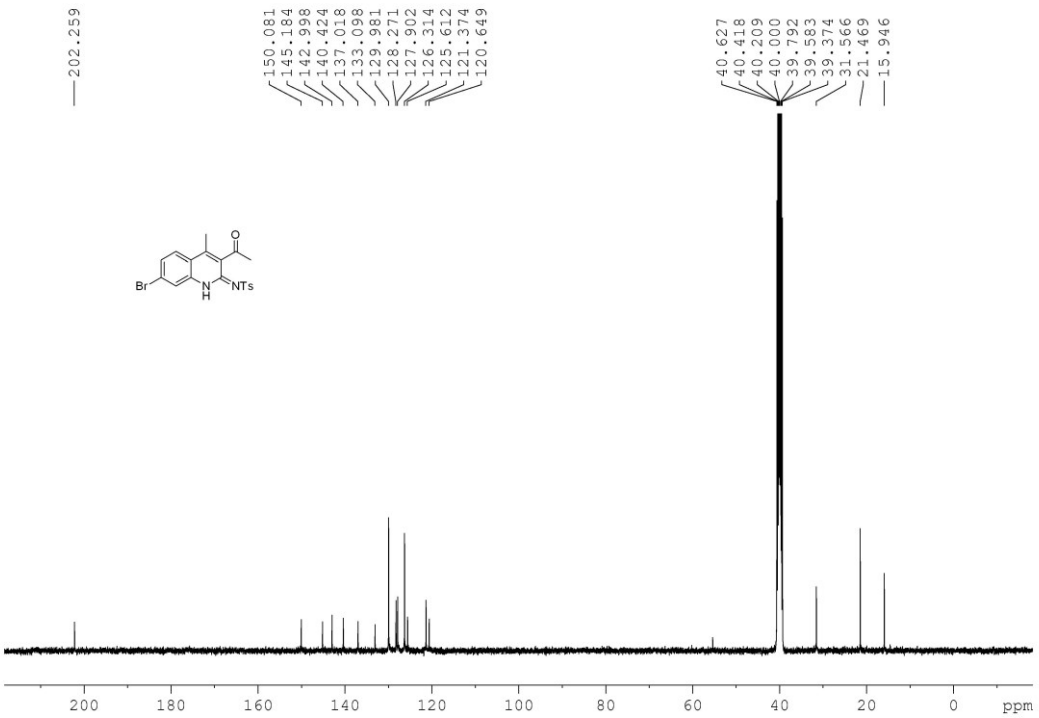

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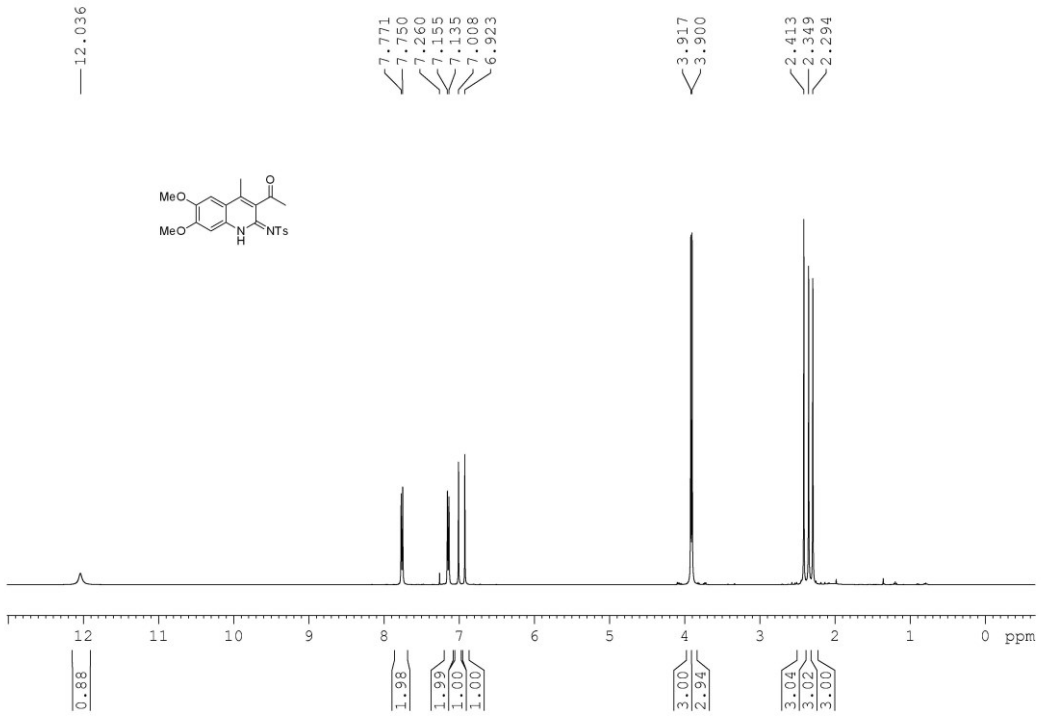
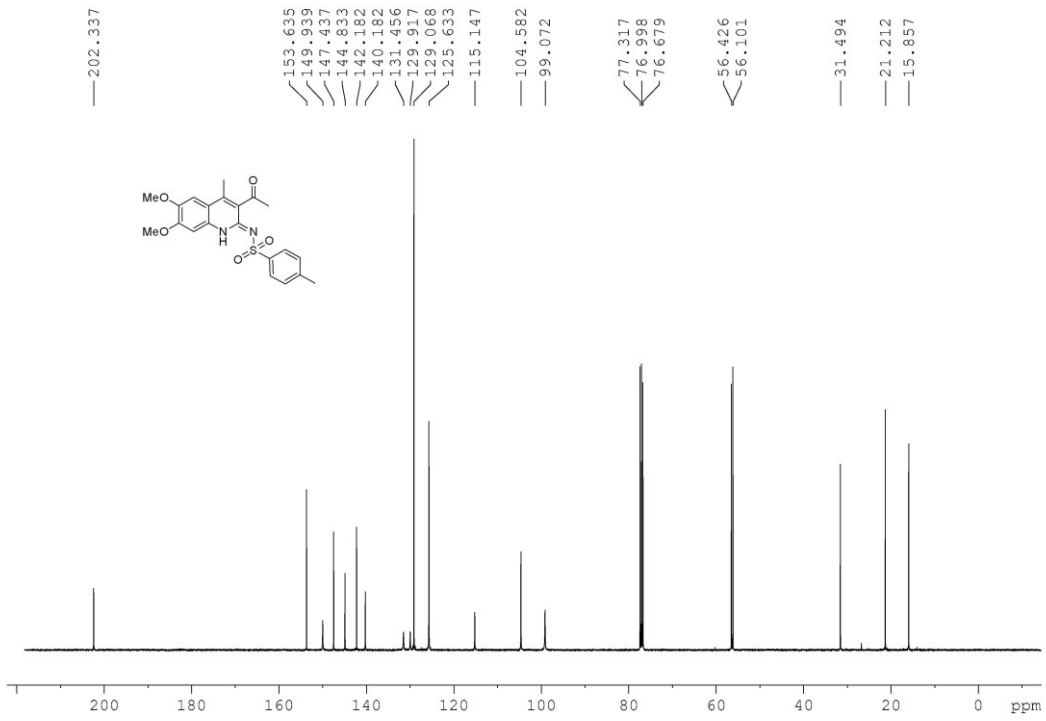
uinolin-2(1_H_)-ylidene)-4-methylbenzenesulfonamide (4f)





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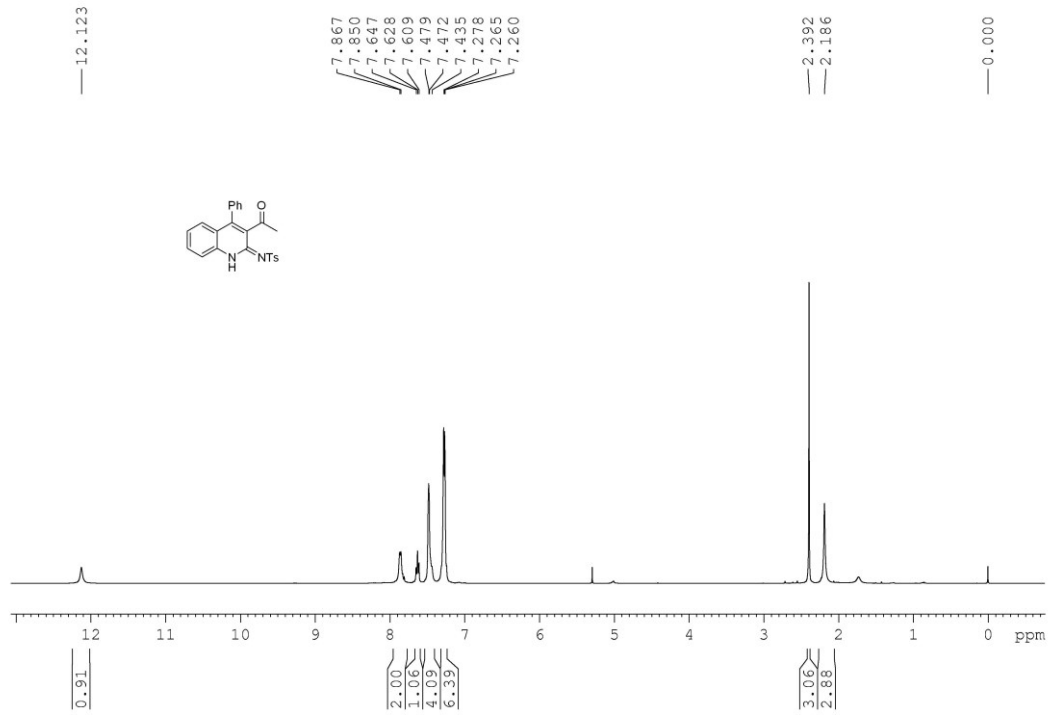

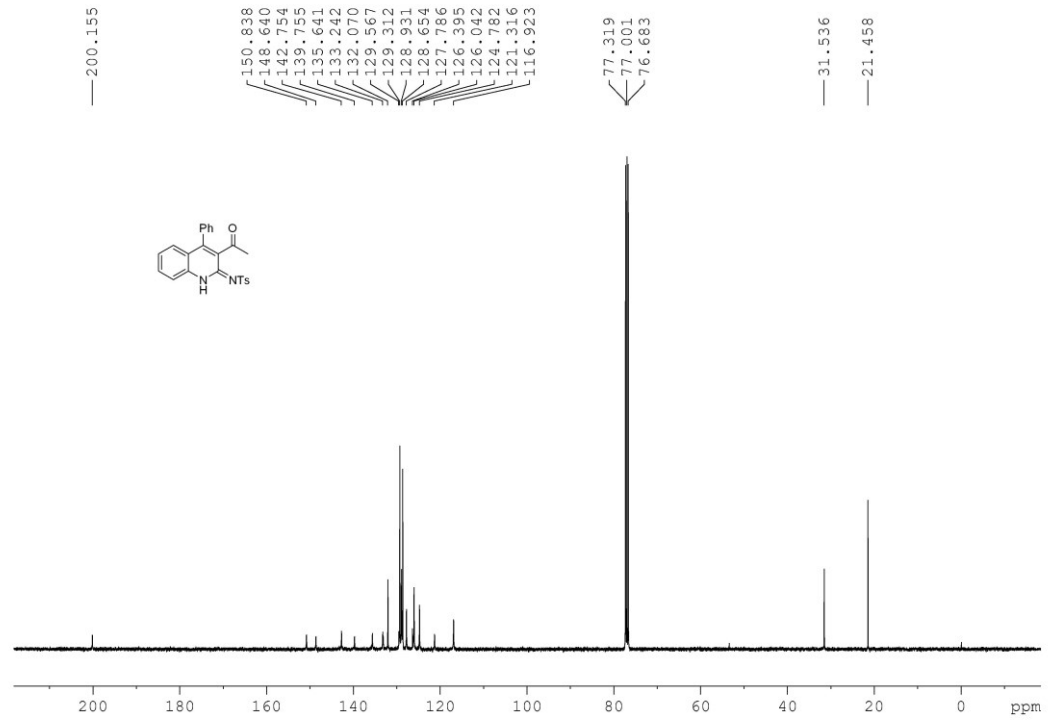

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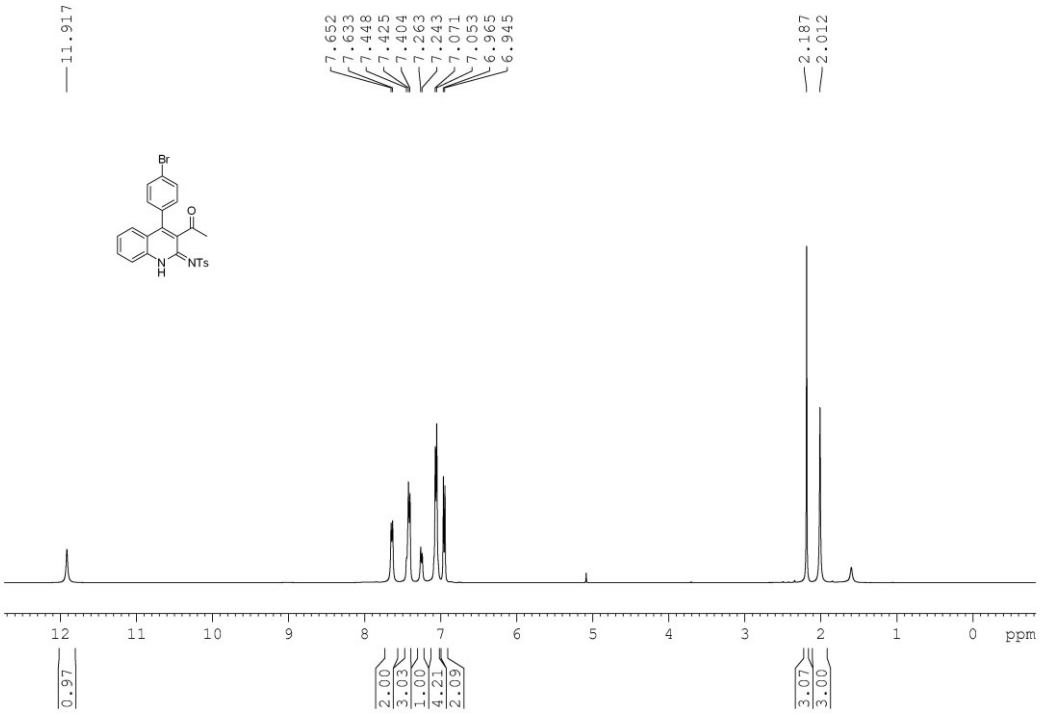

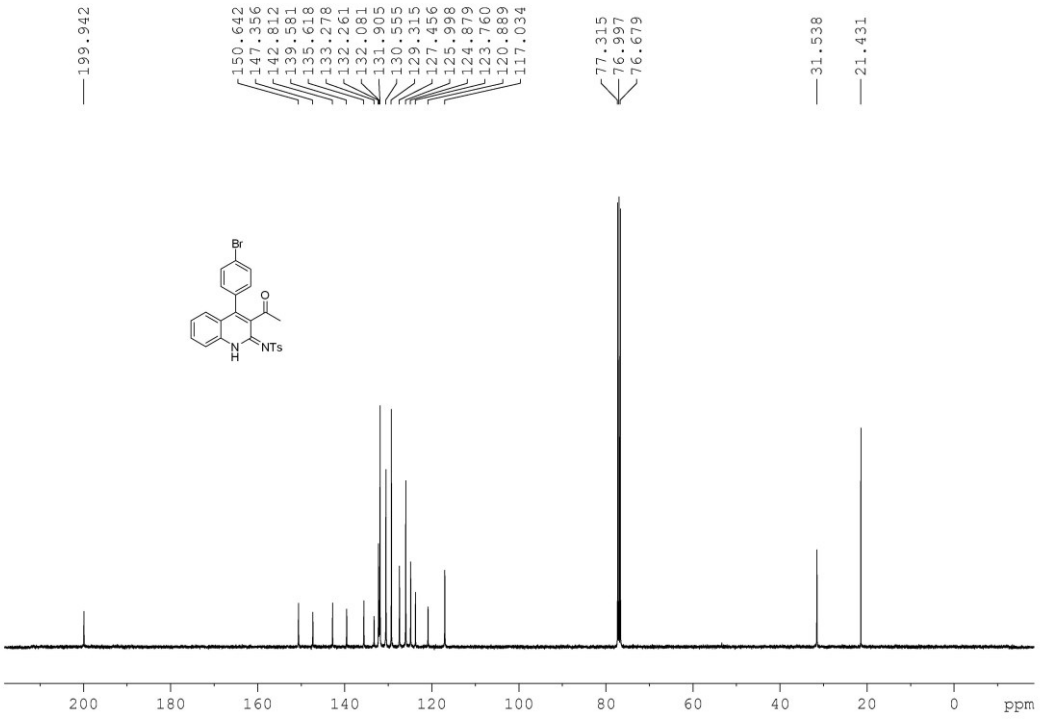

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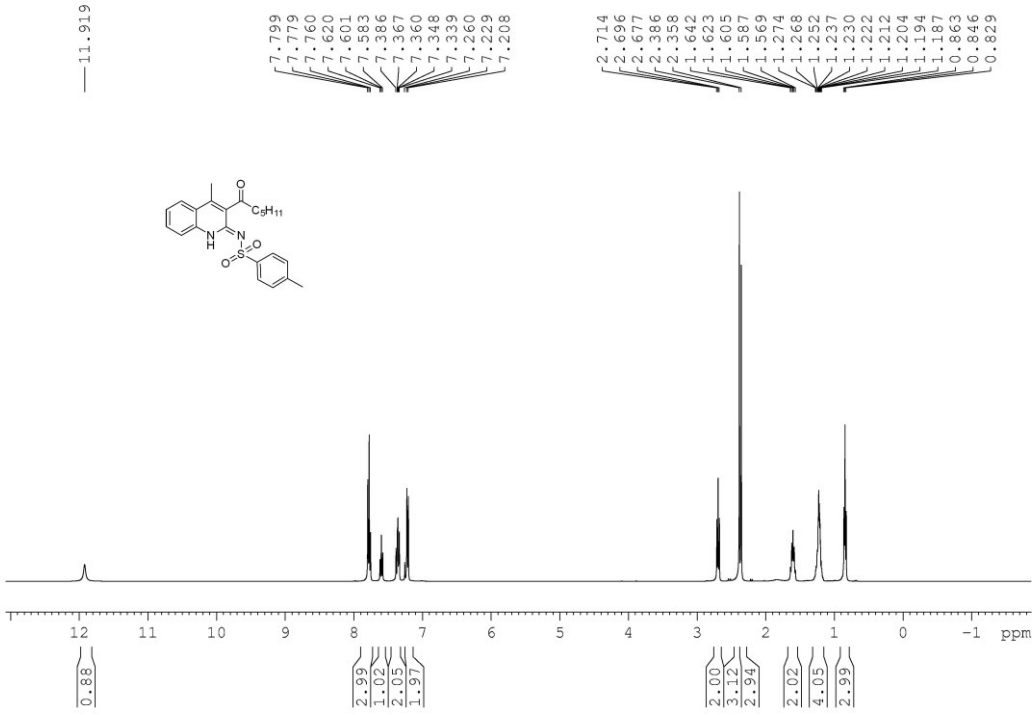

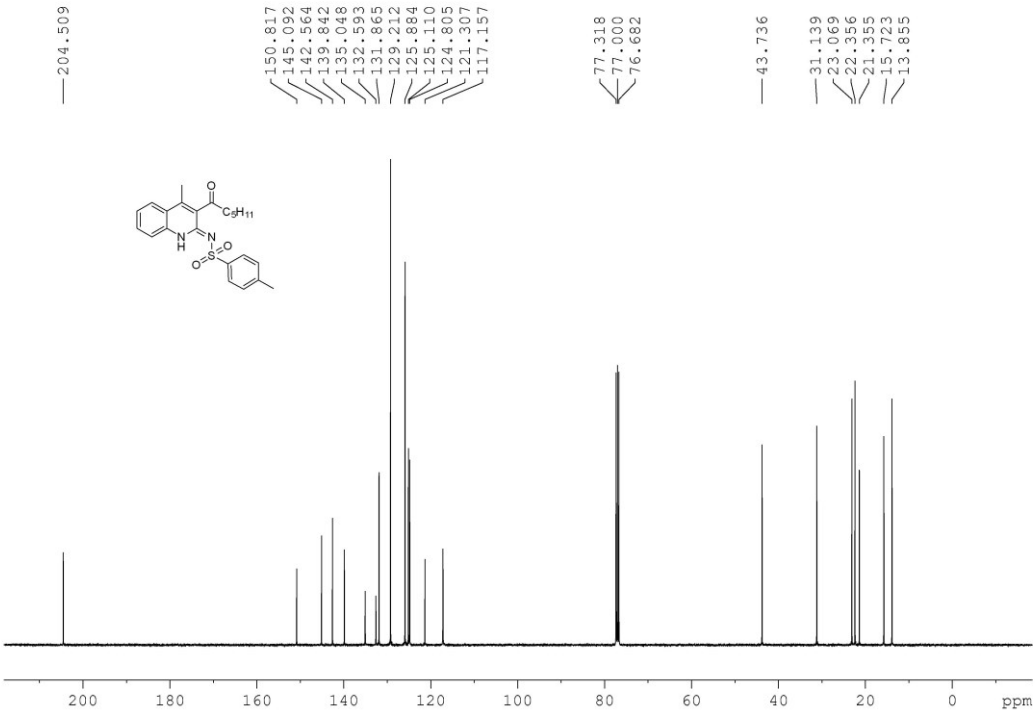

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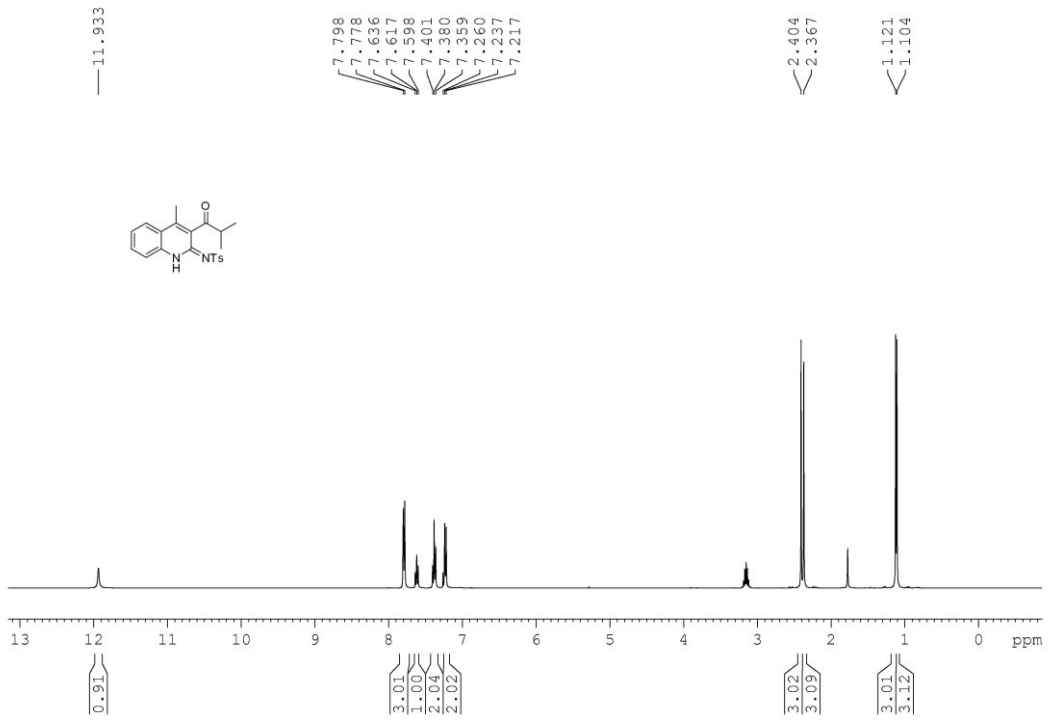

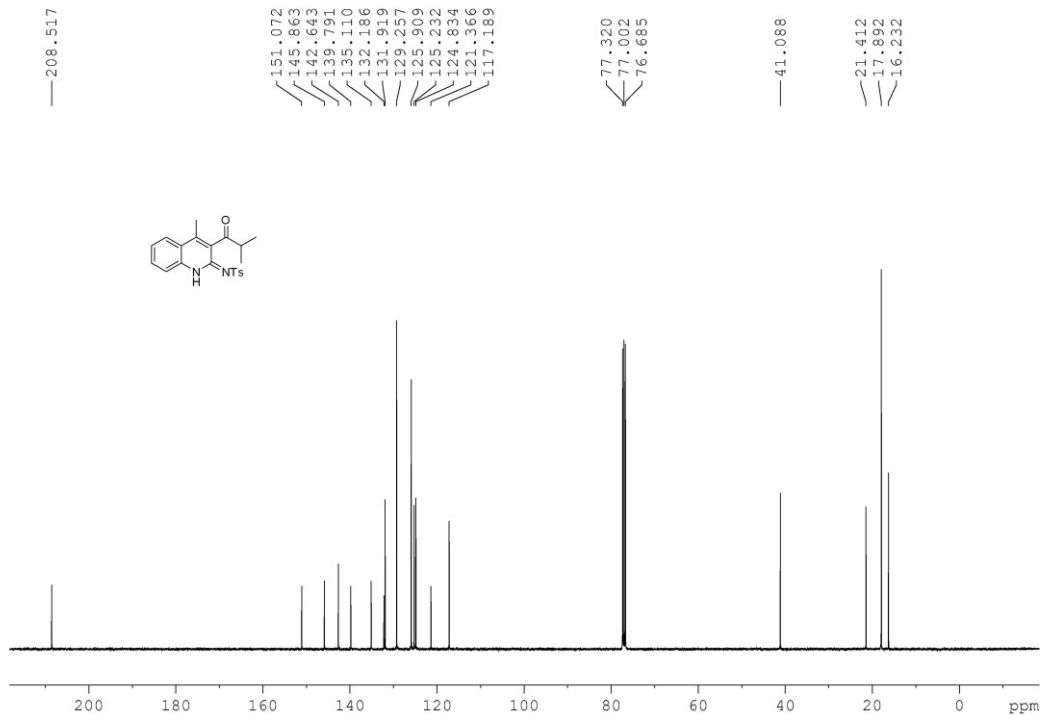

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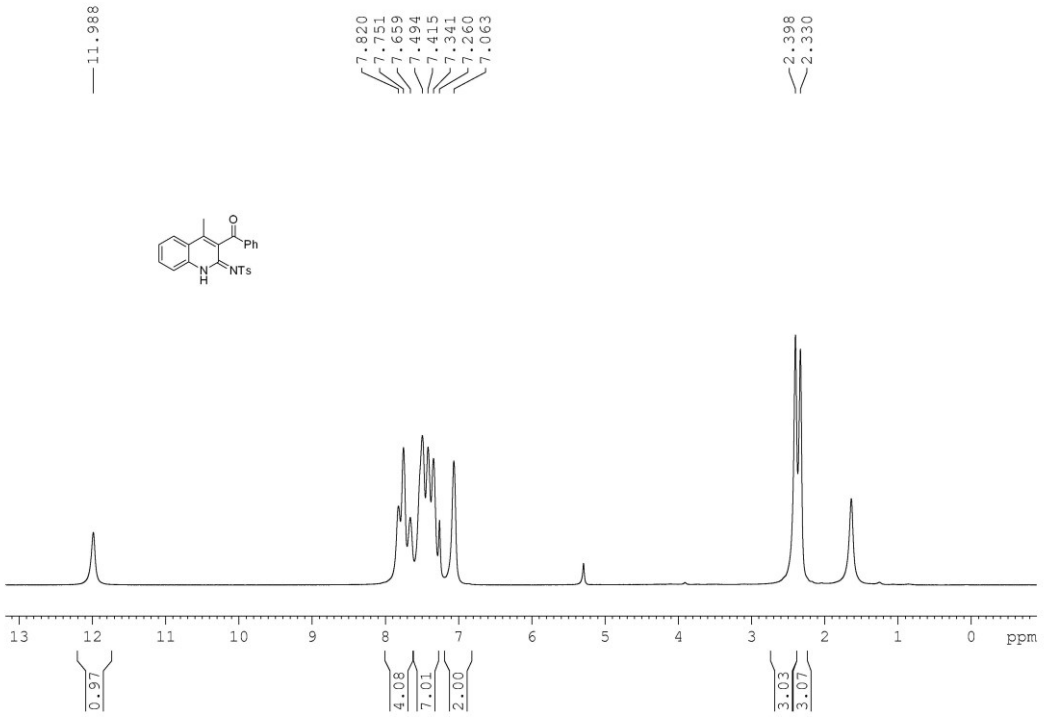

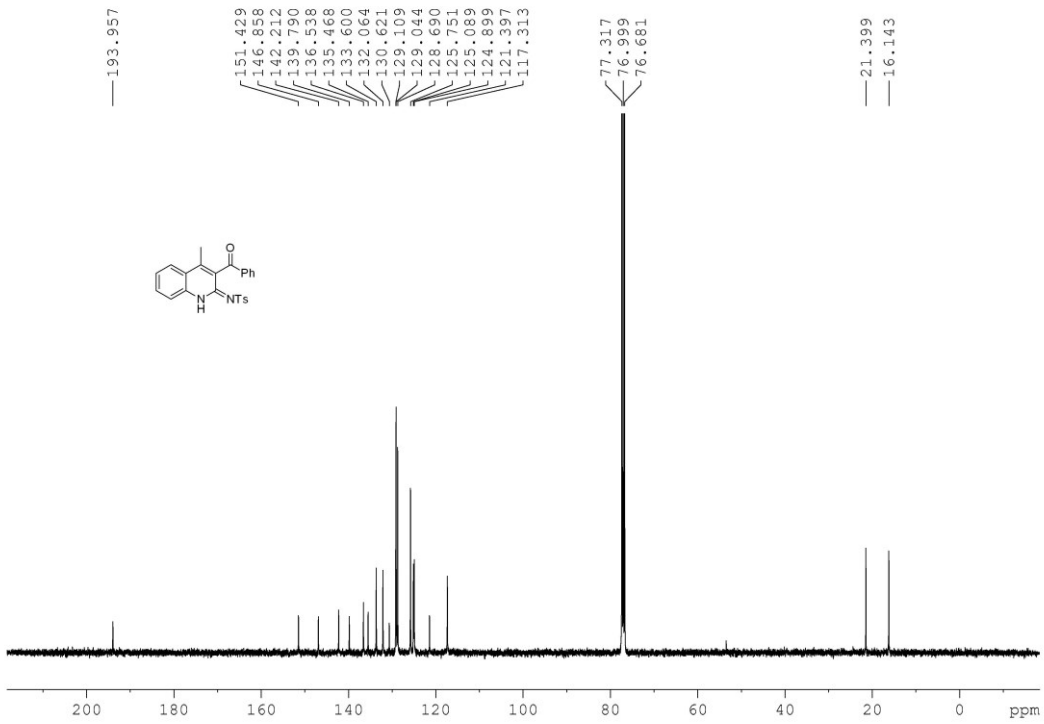

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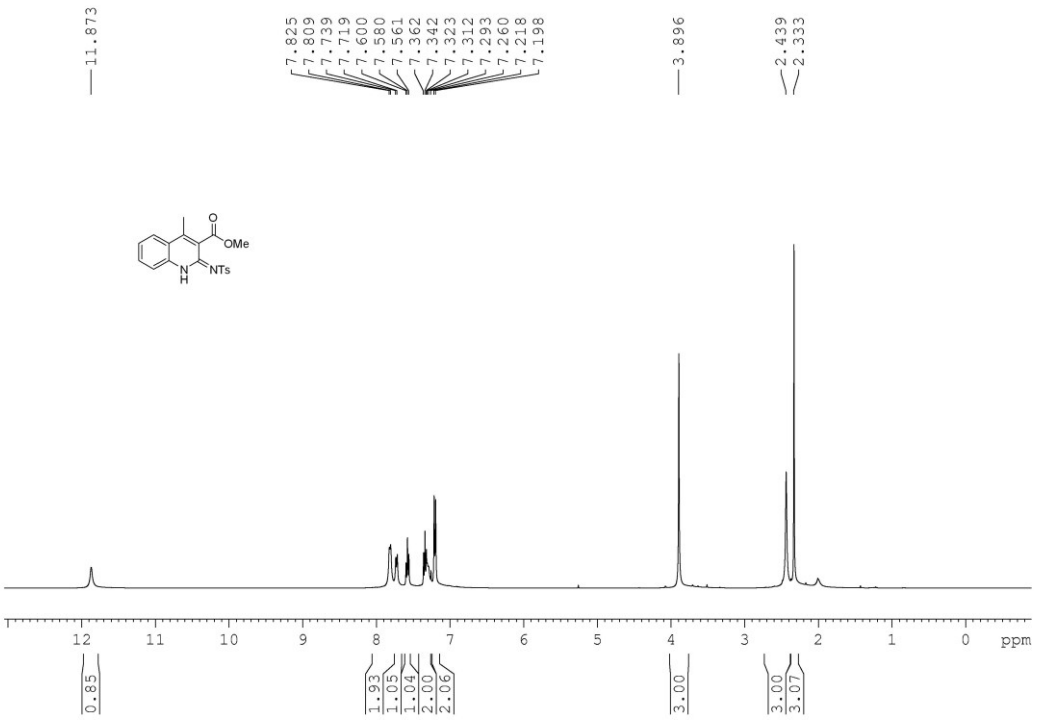

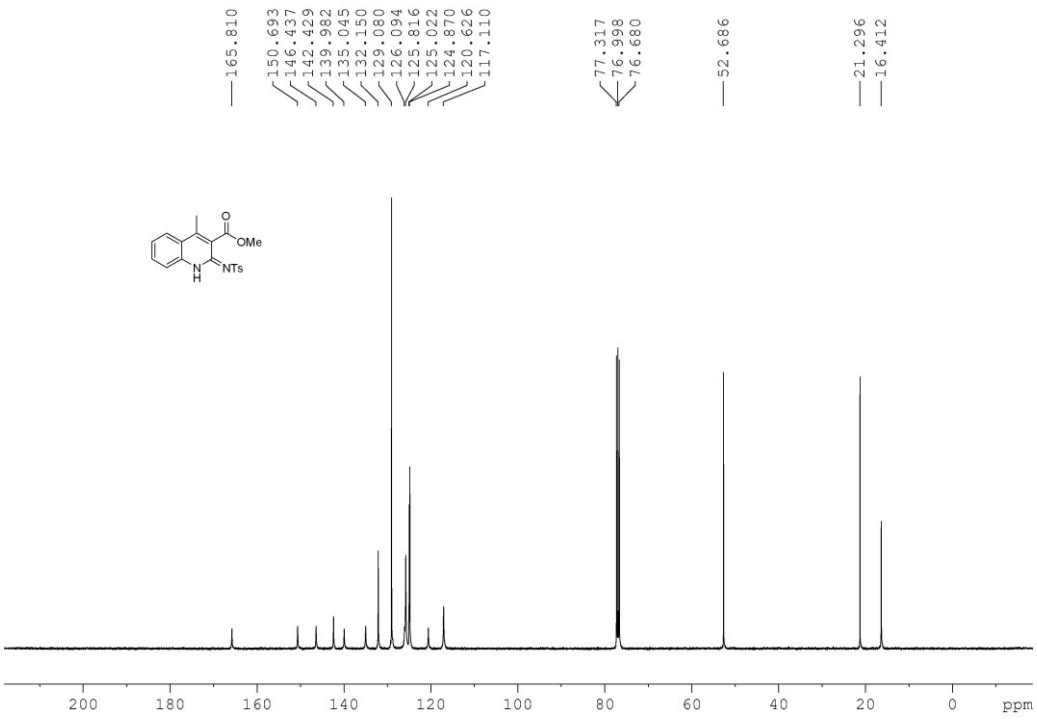

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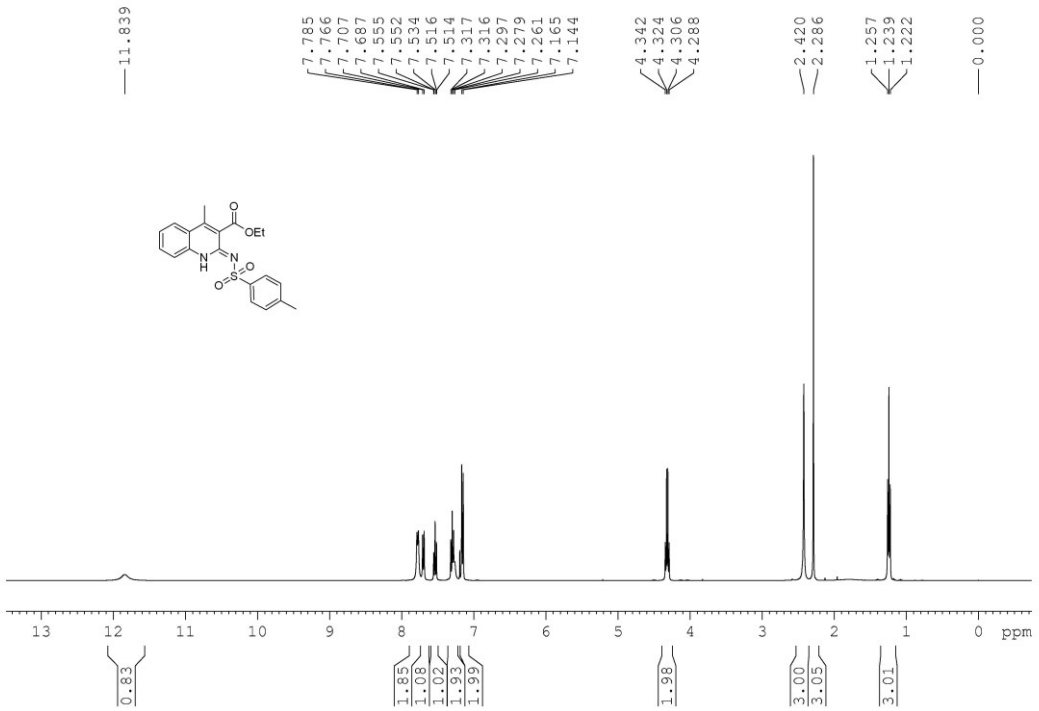

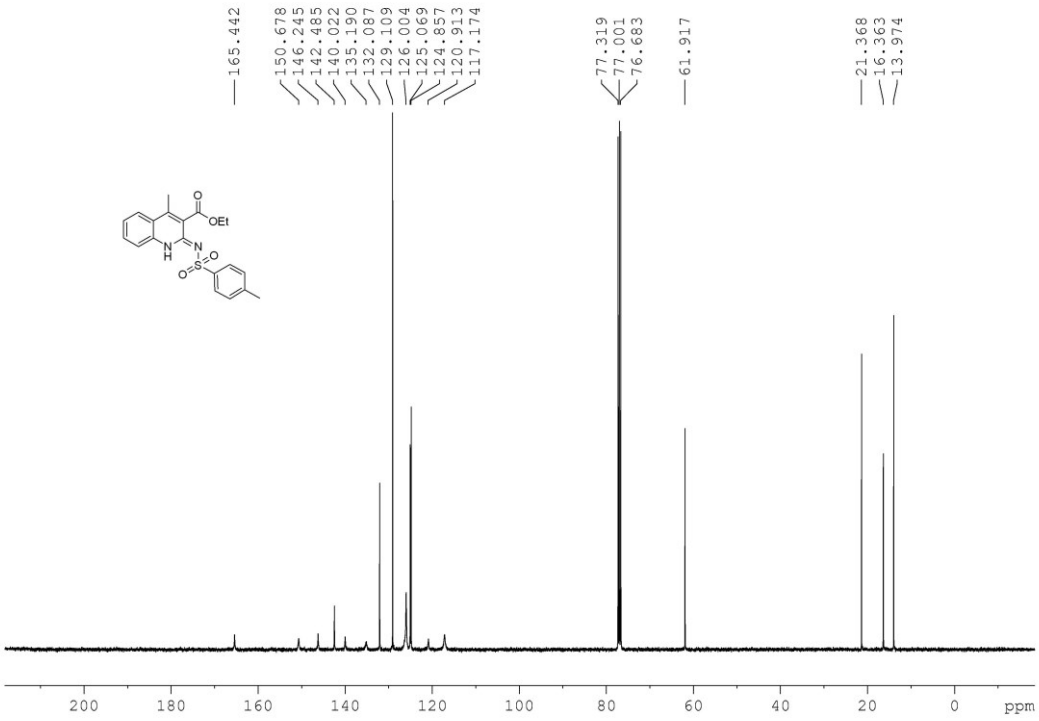

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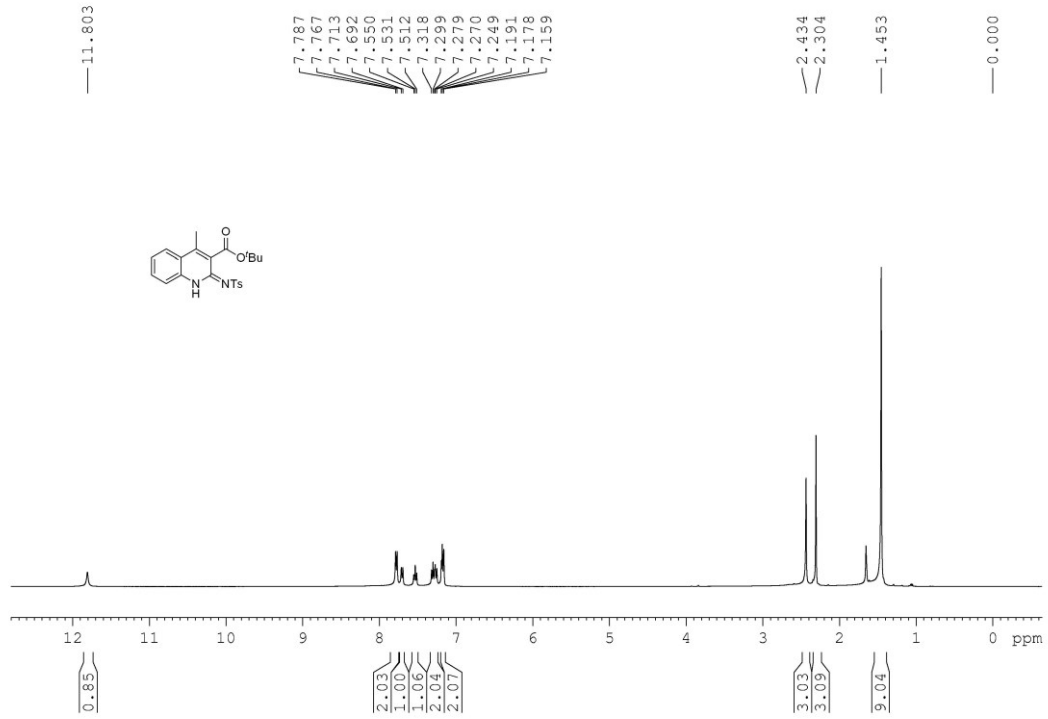
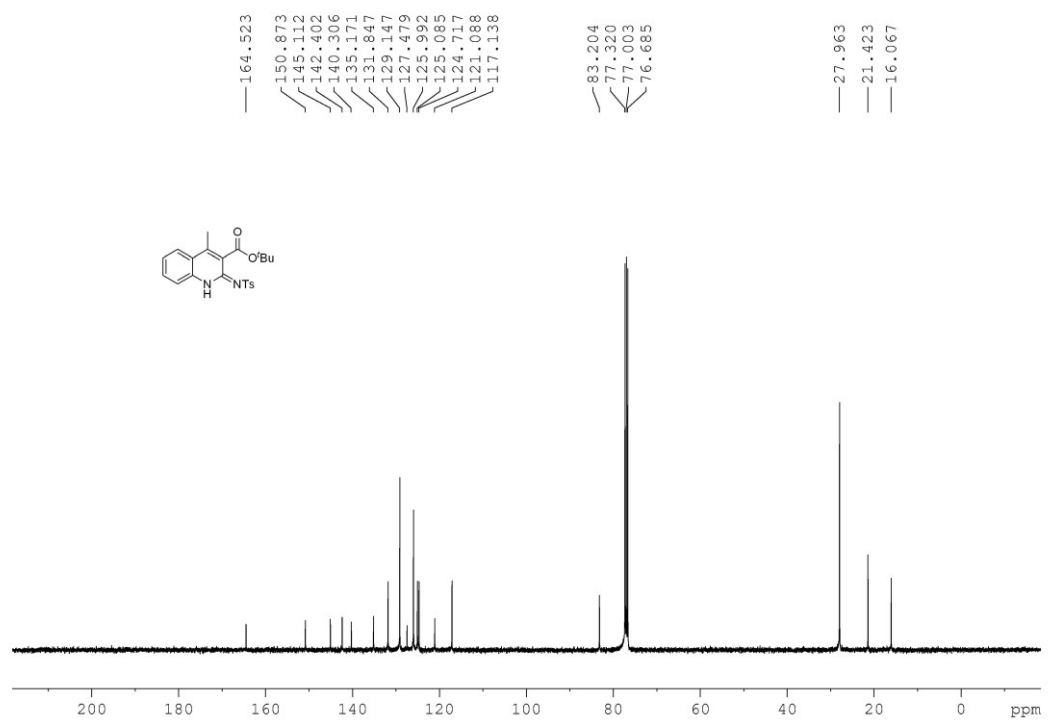
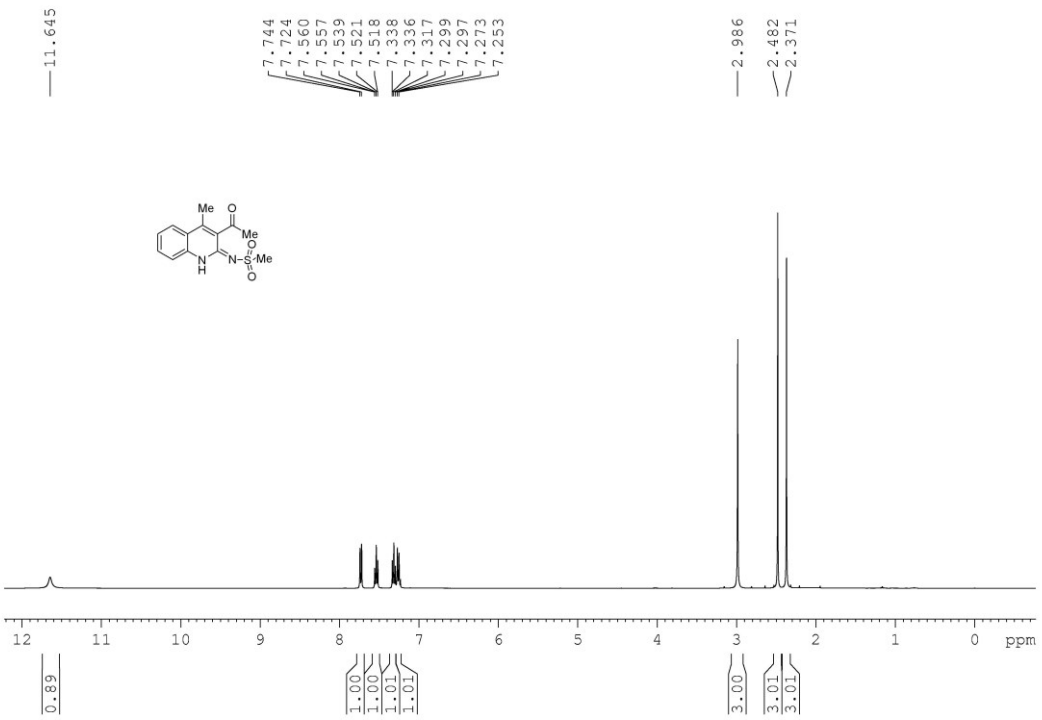
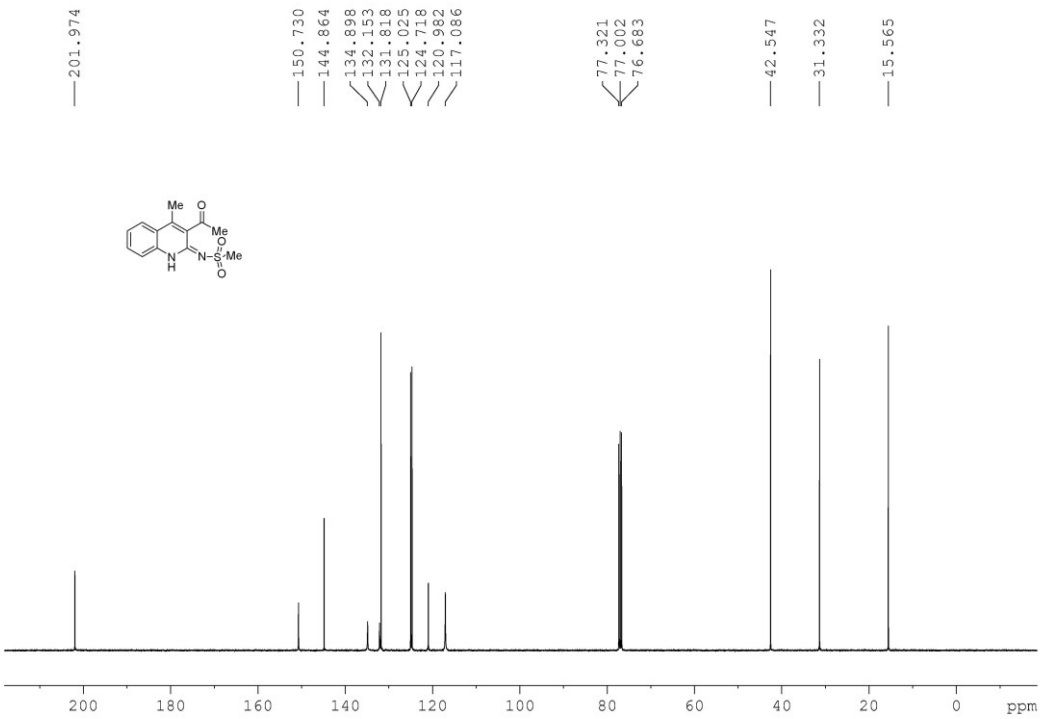


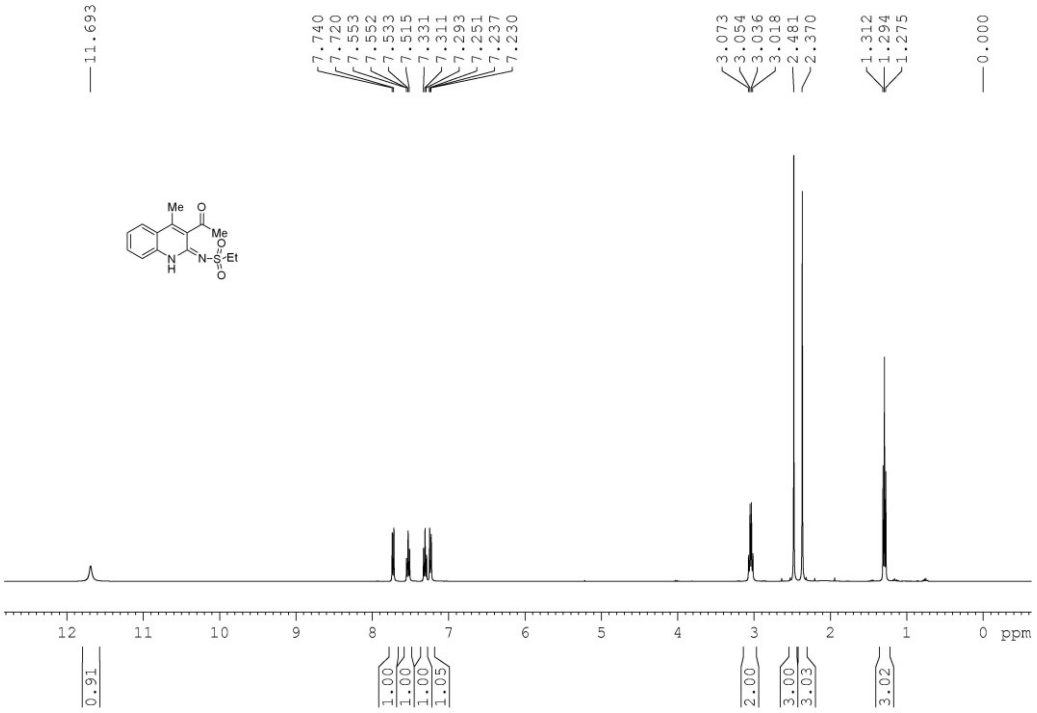


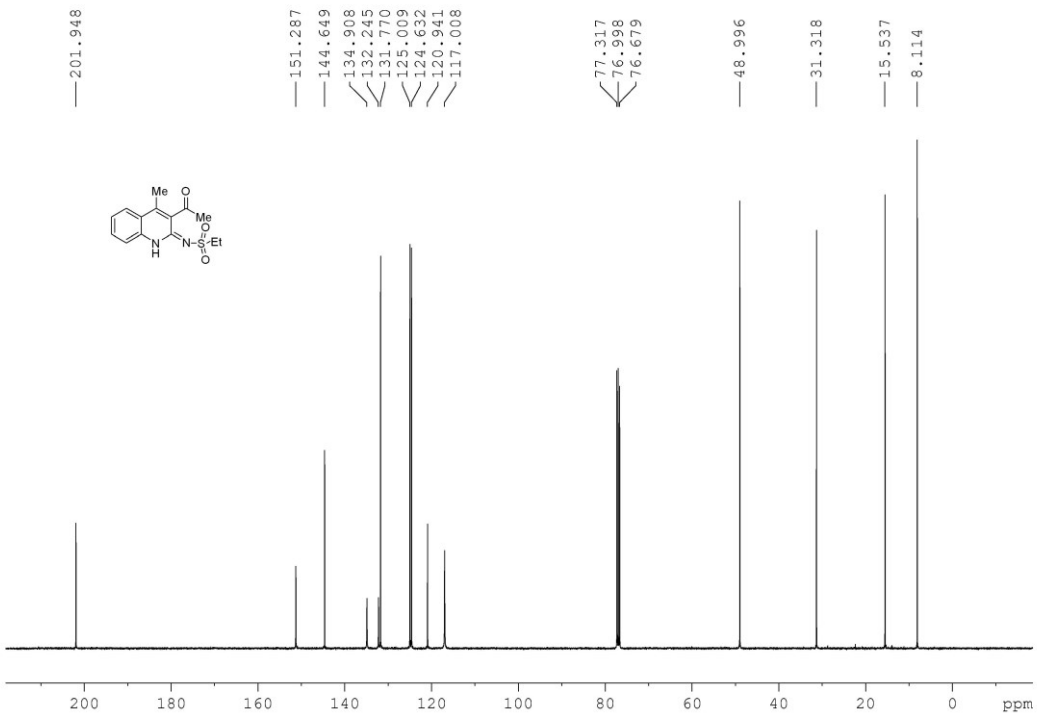
(*E*)-*N*-(3-acetyl-4-methylquinolin-2(1*H*)-ylidene)methanesulfonamide (4o)



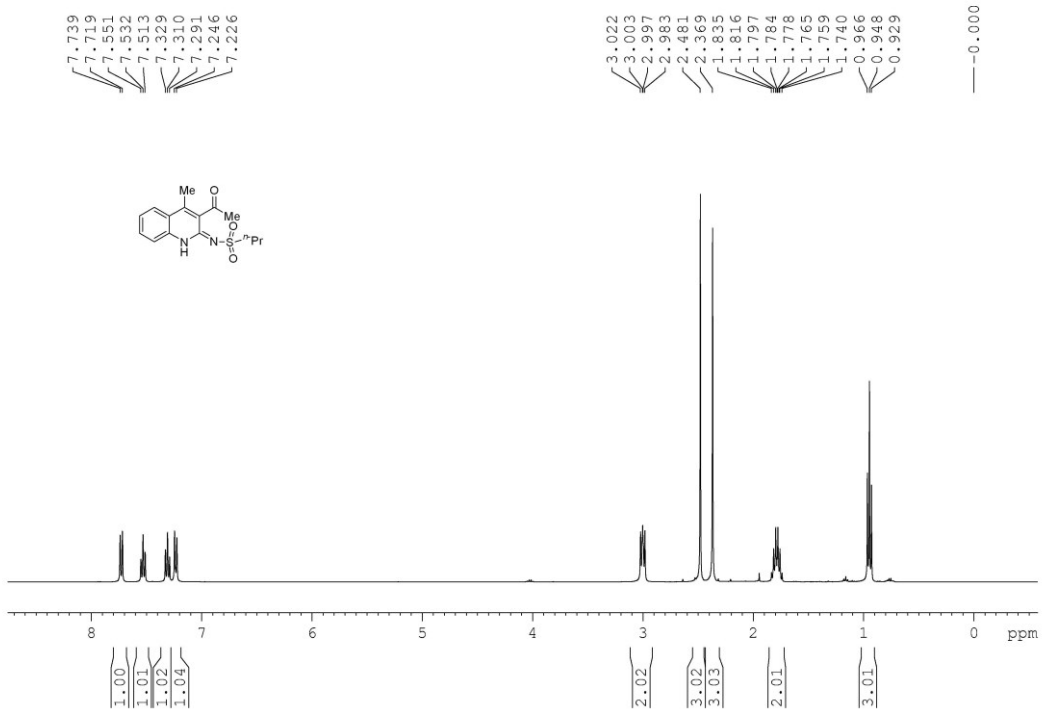


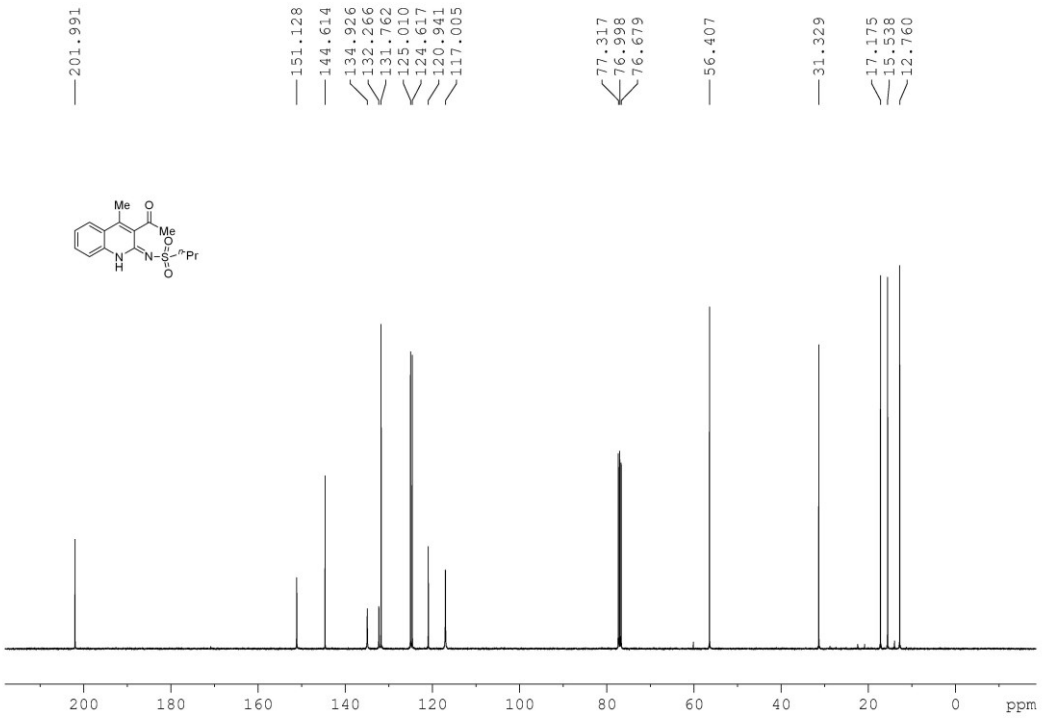
(*E*)-*N*-(3-acetyl-4-methylquinolin-2(1*H*)-ylidene)ethanesulfonamide (4p)



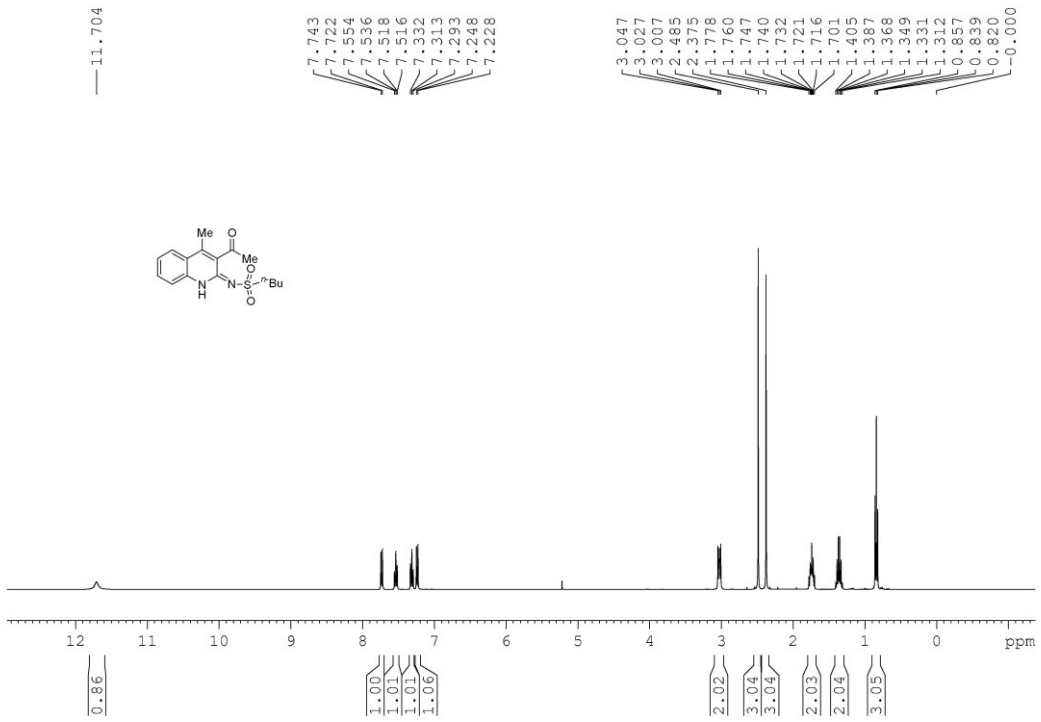


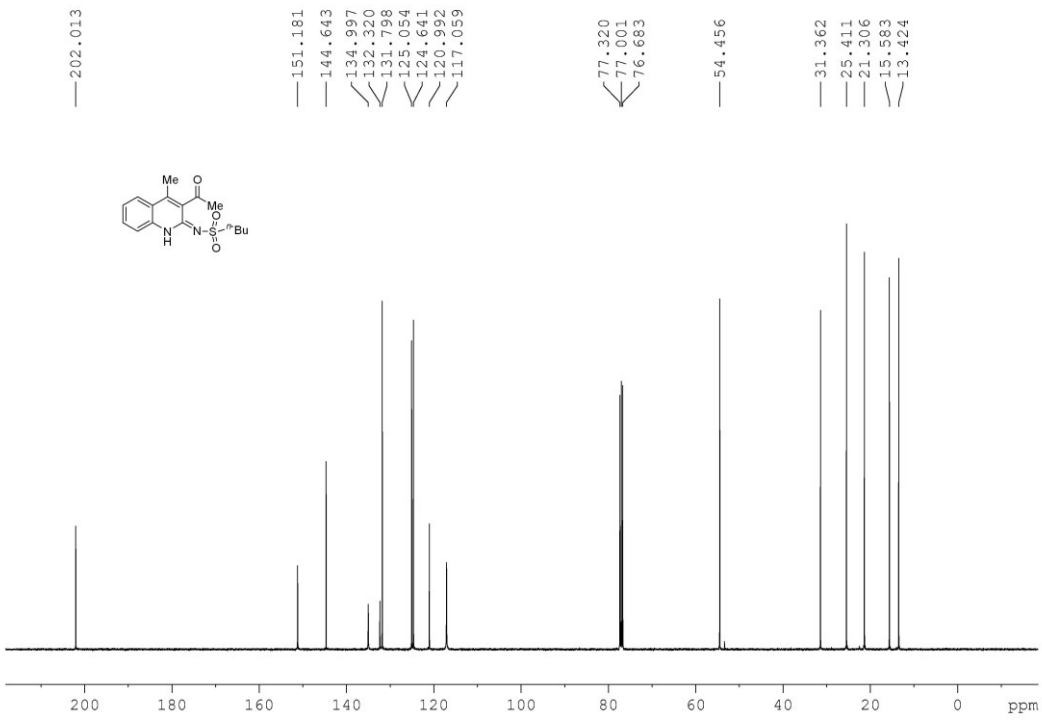
(*E*)-*N*-(3-acetyl-4-methylquinolin-2(1*H*)-ylidene)propane-1-sulfonamide (4q)



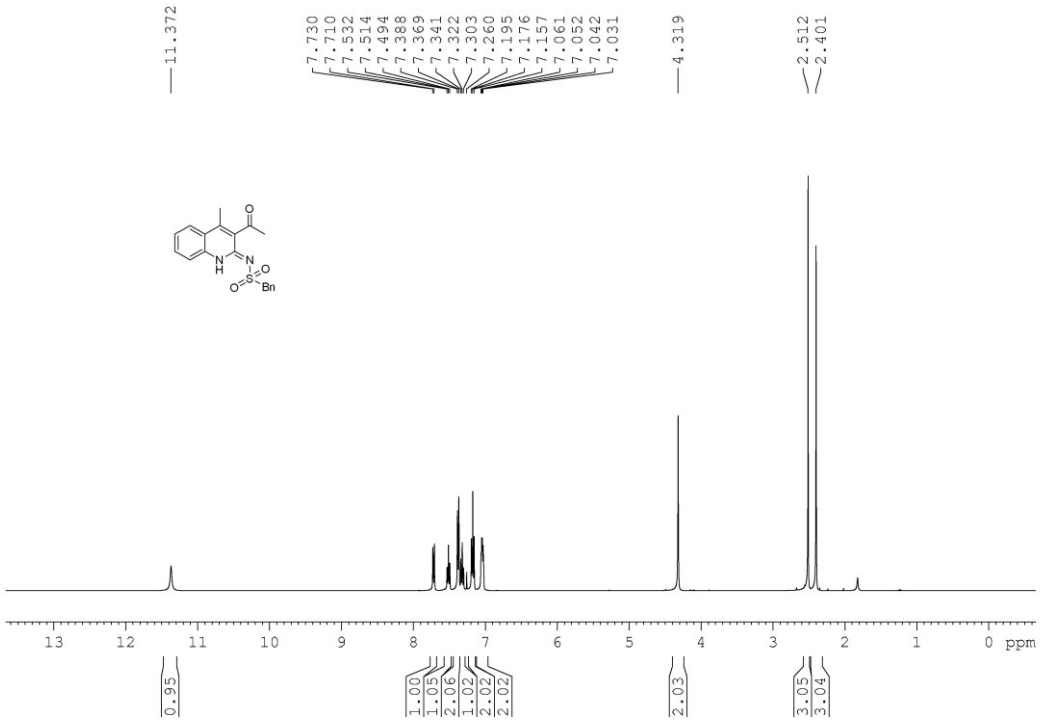


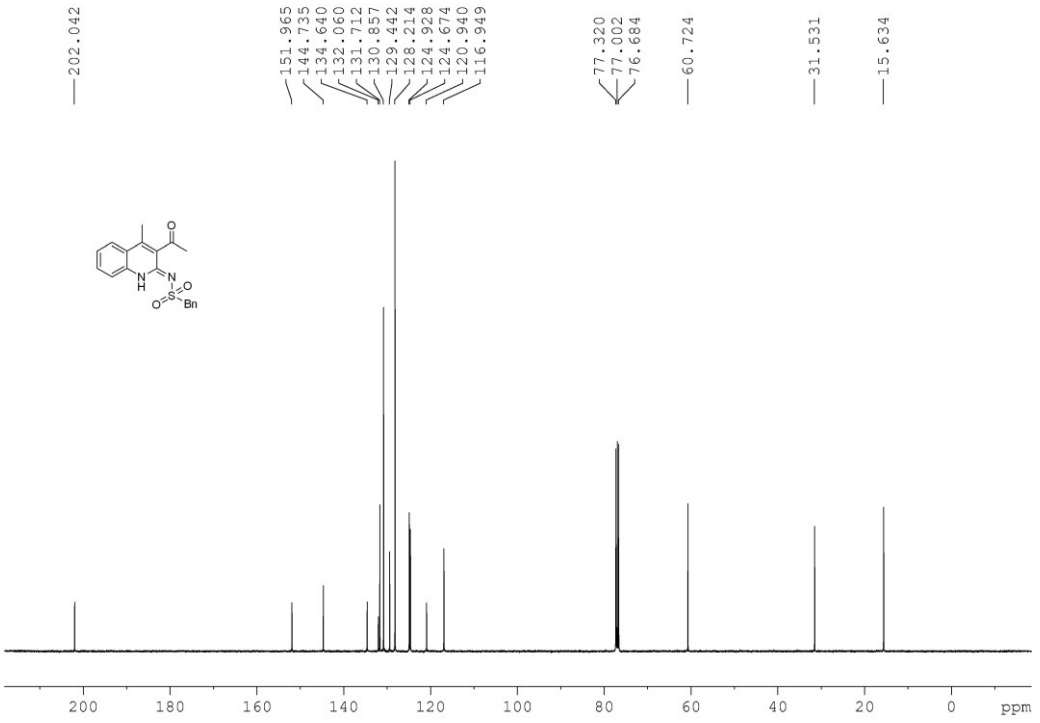
(*E*)-*N*-(3-acetyl-4-methylquinolin-2(1*H*)-ylidene)butane-1-sulfonamide (4r)





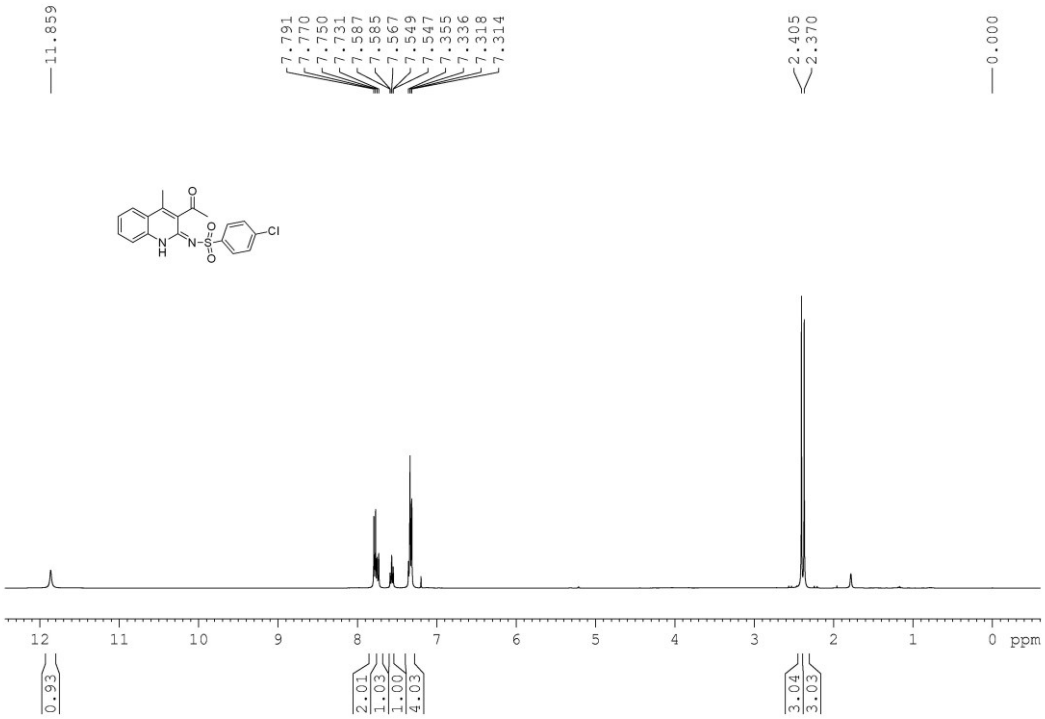
(*E*)-*N*-(3-acetyl-4-methylquinolin-2(1*H*)-ylidene)-1-phenylmethanesulfonamide (4s)

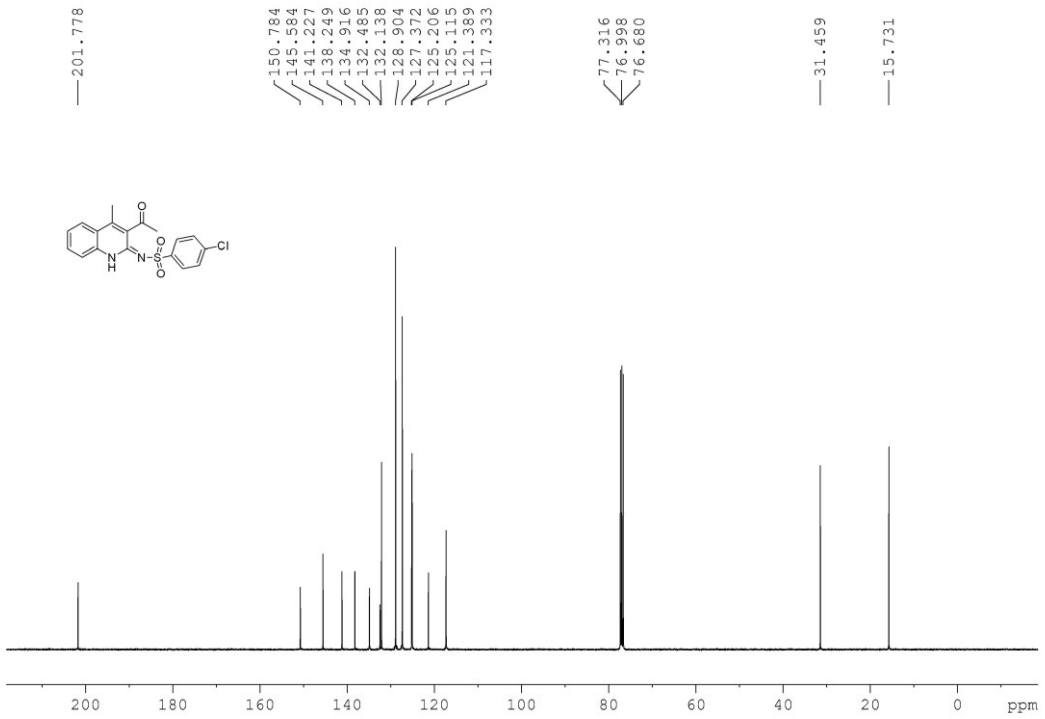




(*E*)-N-(3-acetyl-4-methylquinolin-2(1*H*)-ylidene)-4-chlorobenzenesulfonamide

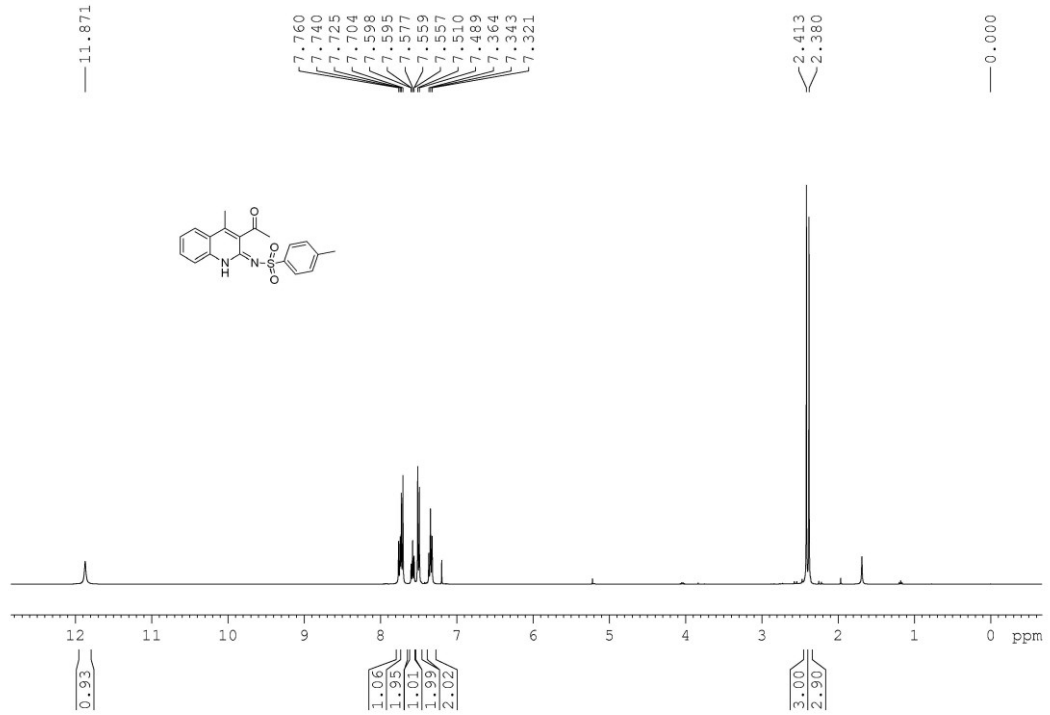
(4t)

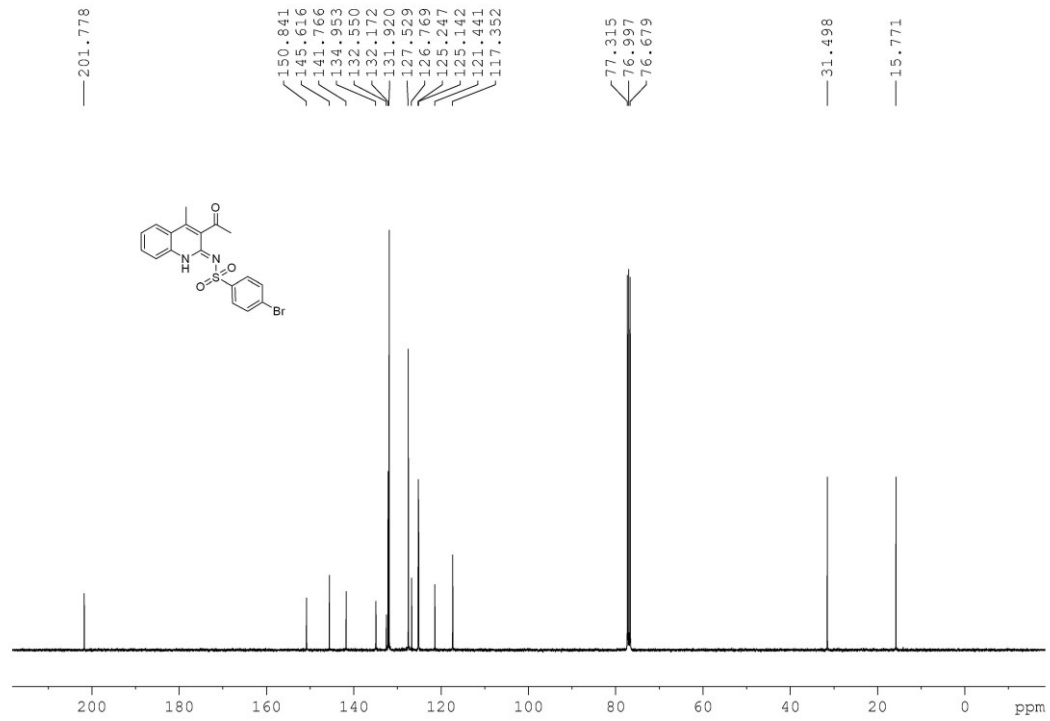




(*E*)-*N*-(3-acetyl-4-methylquinolin-2(1*H*)-ylidene)-4-bromobenzenesulfonamide

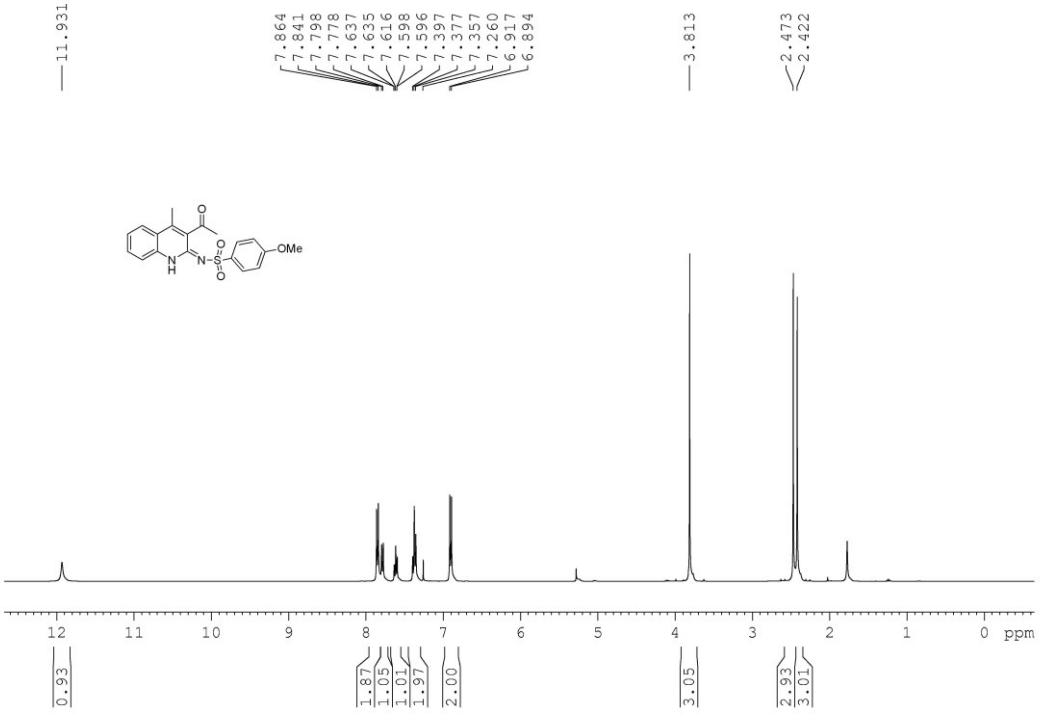
(4u)

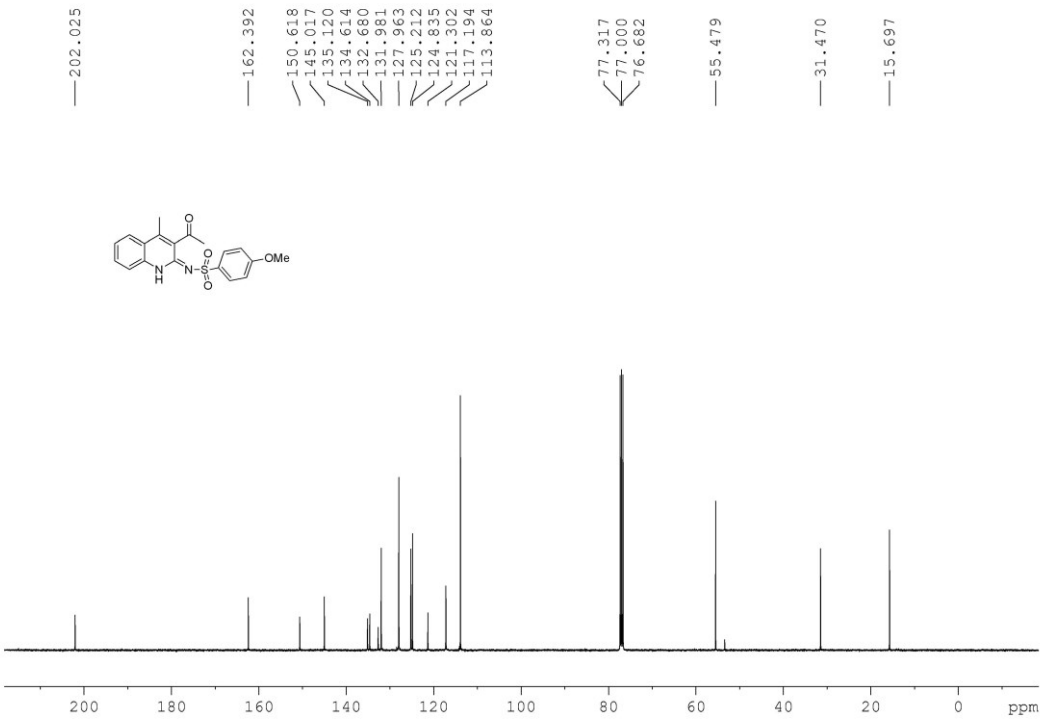




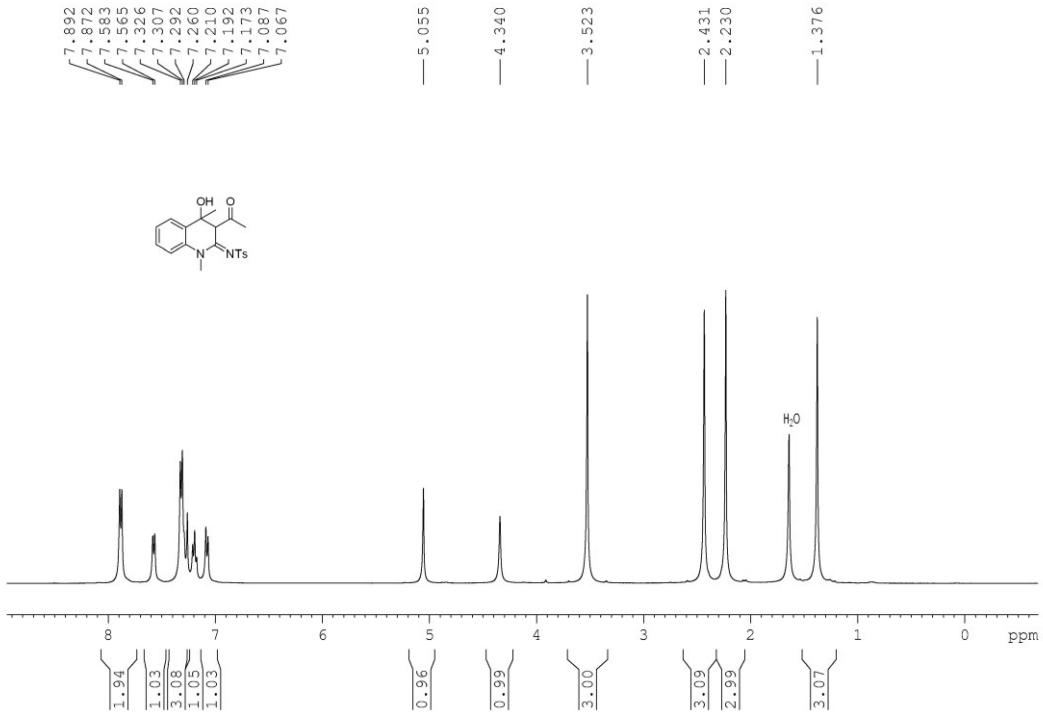
(*E*)-N-(3-acetyl-4-methylquinolin-2(1*H*)-ylidene)-4-methoxybenzenesulfonamide

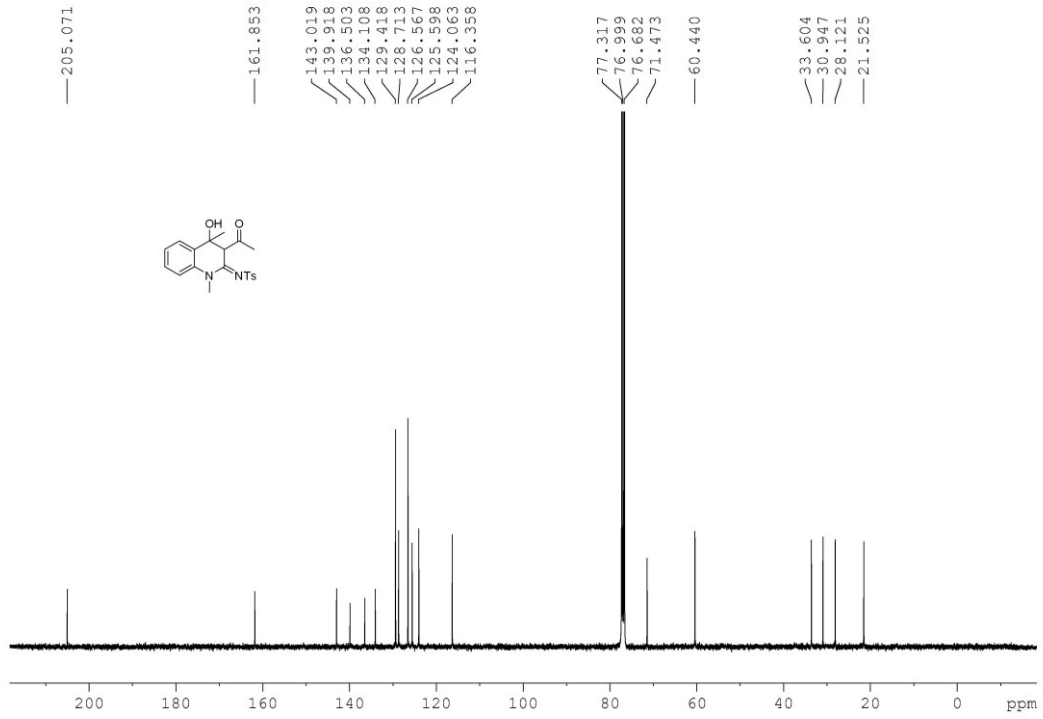
(4v)



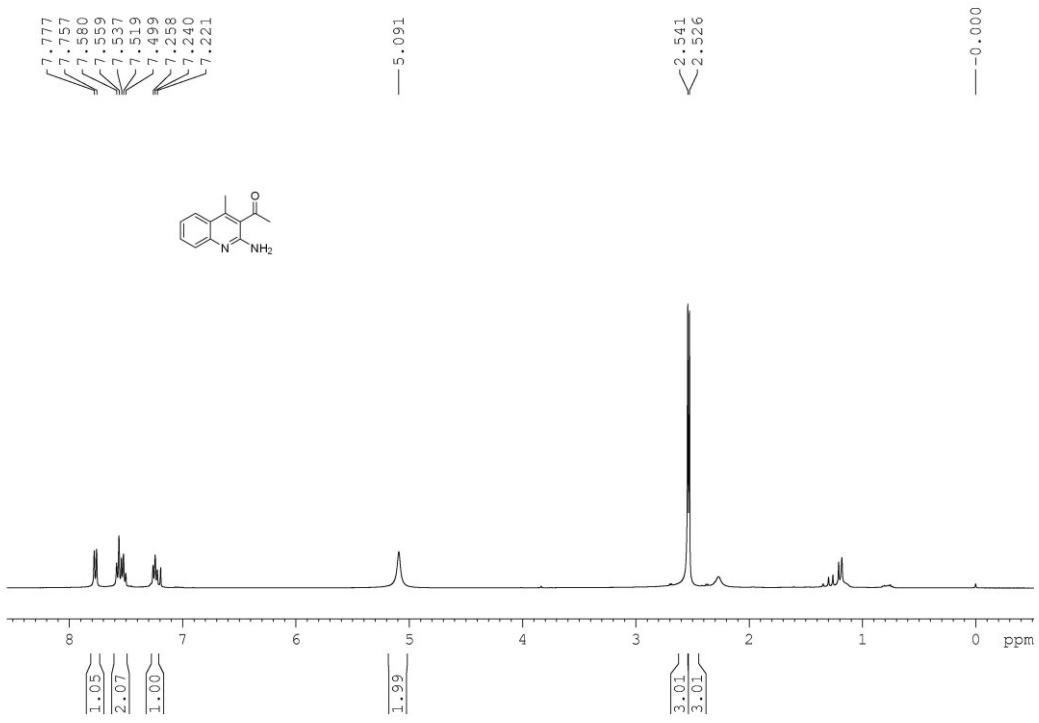


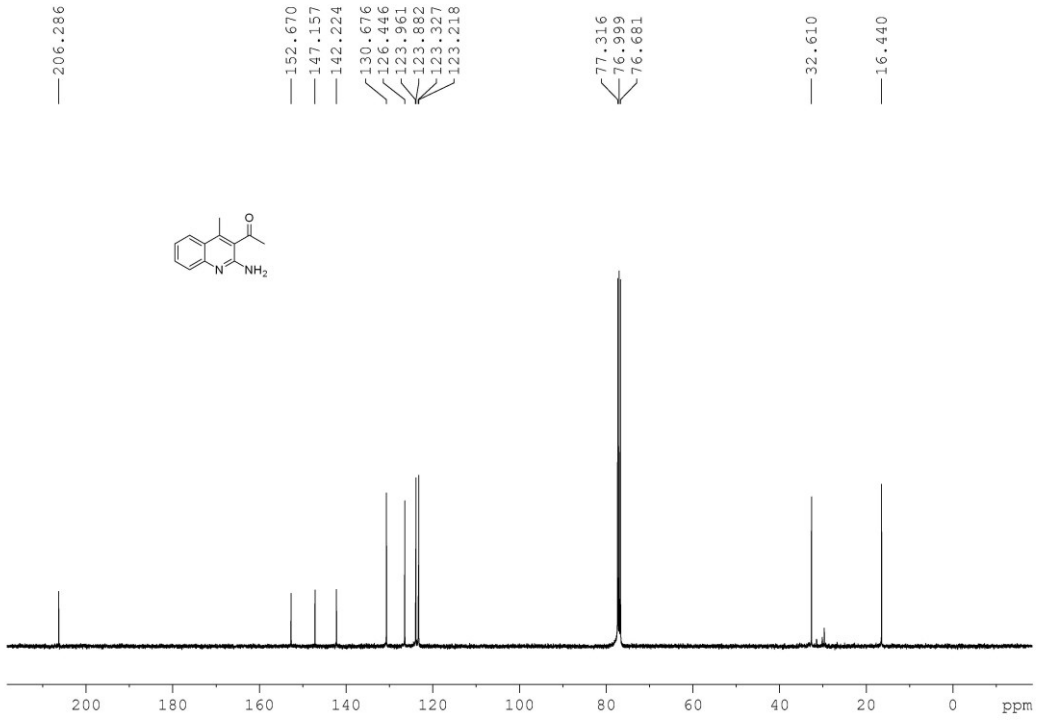
_N_-(3-acetyl-4-hydroxy-1,4-dimethyl-3,4-dihydroquinolin-2(1_H_)-ylidene)-4-meth ylbenzenesulfonamide（4w）



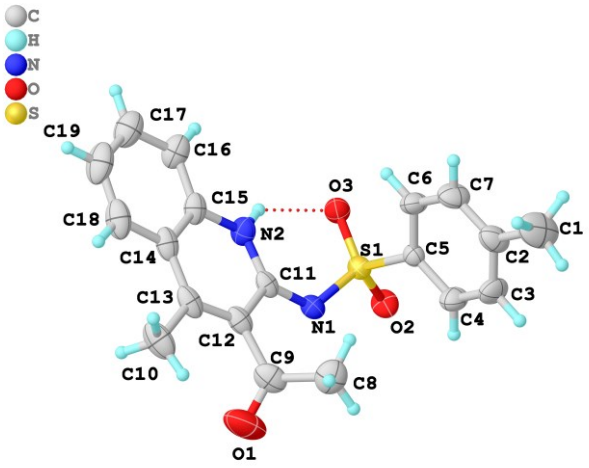


1-(2-amino-4-methylquinolin-3-yl)ethanone (5a)





4.1 X-ray Crystallographic Data for Compound **4a** (CCDC deposition number 2092343)



Bond precision: C-C = 0.0043 A Wavelength=0.71073

Cell: a=7.7587(5) b=18.0168(12) c=19.7560(13)
alpha=104.844(2) beta=98.140(2) gamma=92.385(2)
Temperature: 273 K

	Calculated	Reported
Volume	2633.8(3)	2633.8(3)
Space group	P -1	P -1
Hall group	-P 1	-P 1
Moiety formula	C19 H18 N2 O3 S	C19 H18 N2 O3 S
Sum formula	C19 H18 N2 O3 S	C19 H18 N2 O3 S
Mr	354.41	354.41
Dx,g cm-3	1.341	1.341
Z	6	6
Mu (mm-1)	0.205	0.205
F000	1116.0	1116.0
F000'	1117.22	
h,k,lmax	9,21,23	9,21,23
Nref	9308	9293
Tmin,Tmax	0.936,0.987	0.691,0.746
Tmin'	0.905	

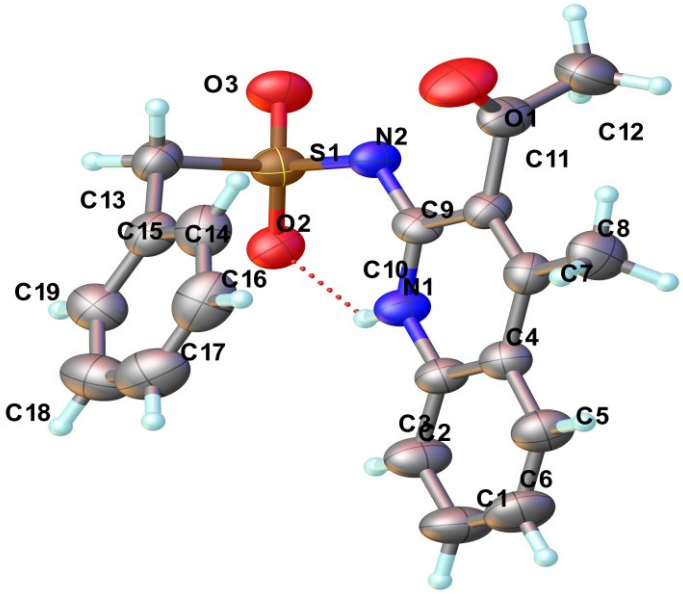
Correction method= # Reported T Limits: Tmin=0.691 Tmax=0.746
AbsCorr = MULTI-SCAN

Data completeness= 0.998 Theta(max)= 25.027

R(reflections)= 0.0500(6099) wR2(reflections)= 0.1243(9293)

S = 1.026 Npar= 685

4.2 X-ray Crystallographic Data for Compound **4s** (CCDC deposition number 2092351)



Bond precision: C-C = 0.0087 A Wavelength=0.71073

Cell: a=10.929(18) b=10.763(18) c=15.62(3)
alpha=90 beta=109.953(17) gamma=90
Temperature: 296 K

	Calculated	Reported
Volume	1727(5)	1726(5)
Space group	P 21/c	P 1 21/c 1
Hall group	-P 2ybc	-P 2ybc
Moiety formula	C19 H18 N2 O3 S	C19 H18 N2 O3 S
Sum formula	C19 H18 N2 O3 S	C19 H18 N2 O3 S
Mr	354.41	354.41
Dx,g cm-3	1.363	1.364
Z	4	4
Mu (mm-1)	0.208	0.208
F000	744.0	744.0
F000'	744.81	
h,k,lmax	13,13,19	13,13,19
Nref	3443	3319
Tmin,Tmax	0.975,0.983	0.526,0.745
Tmin'	0.975	

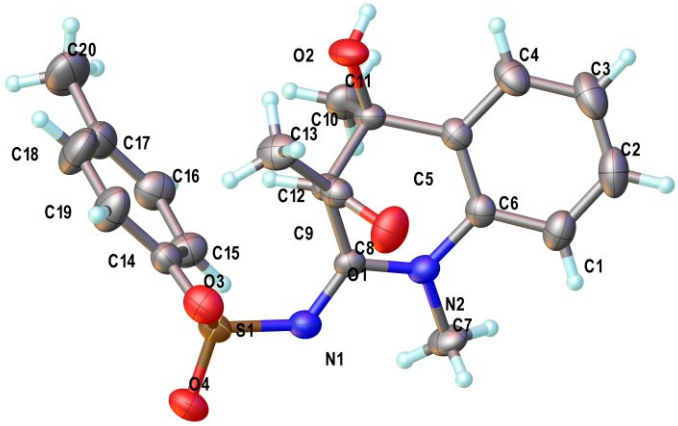
Correction method= # Reported T Limits: Tmin=0.526 Tmax=0.745
AbsCorr = MULTI-SCAN

Data completeness= 0.964 Theta(max)= 26.127

R(reflections)= 0.0968(1990) wR2(reflections)= 0.1968(3319)

S = 1.157 Npar= 228

4.3 X-ray Crystallographic Data for Compound **4w** (CCDC deposition number 2092350)



Bond precision: C-C = 0.0024 A Wavelength=0.71073

Cell: a=33.074(19) b=7.648(4) c=16.250(9)
alpha=90 beta=111.766(6) gamma=90
Temperature: 296 K

	Calculated	Reported
Volume	3817(4)	3817(4)
Space group	C 2/c	C 1 2/c 1
Hall group	-C 2yc	-C 2yc
Moiety formula	C20 H22 N2 O4 S	C20 H22 N2 O4 S
Sum formula	C20 H22 N2 O4 S	C20 H23 N2 O4 S
Mr	386.46	387.46
Dx,g cm-3	1.345	1.348
Z	8	8
Mu (mm-1)	0.198	0.198
F000	1632.0	1640.0
F000'	1633.72	
h,k,lmax	43,10,21	42,9,21
Nref	4481	4399
Tmin,Tmax	0.972,0.980	0.625,0.746
Tmin'	0.965	

Correction method= # Reported T Limits: Tmin=0.625 Tmax=0.746
AbsCorr = MULTI-SCAN

Data completeness= 0.982 Theta(max)= 27.722

R(reflections)= 0.0391(3708) wR2(reflections)= 0.1114(4399)

S = 1.036 Npar= 249