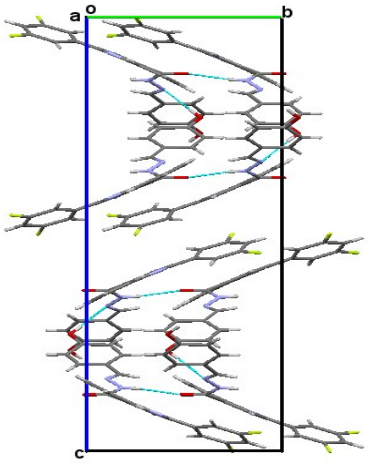
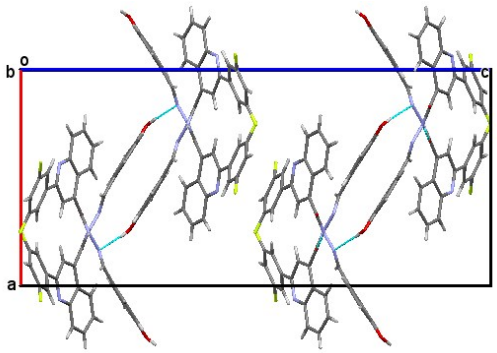
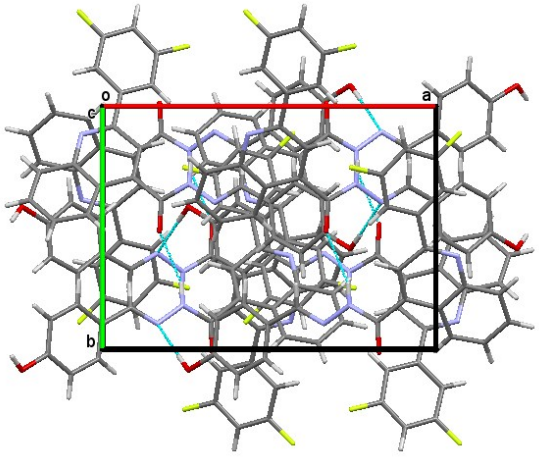
Electronic Supplementary Material (ESI) for New Journal of Chemistry.



(I)



(II)



(III)

Fig S1. Packing of the molecule when viewed along the (I) *a* axis, (II) *b* axis and (III) *c* axis.

Dotted lines represent inter-molecular hydrogen bonds linking the molecules.

Table S1: Physical properties and structural features of target compounds

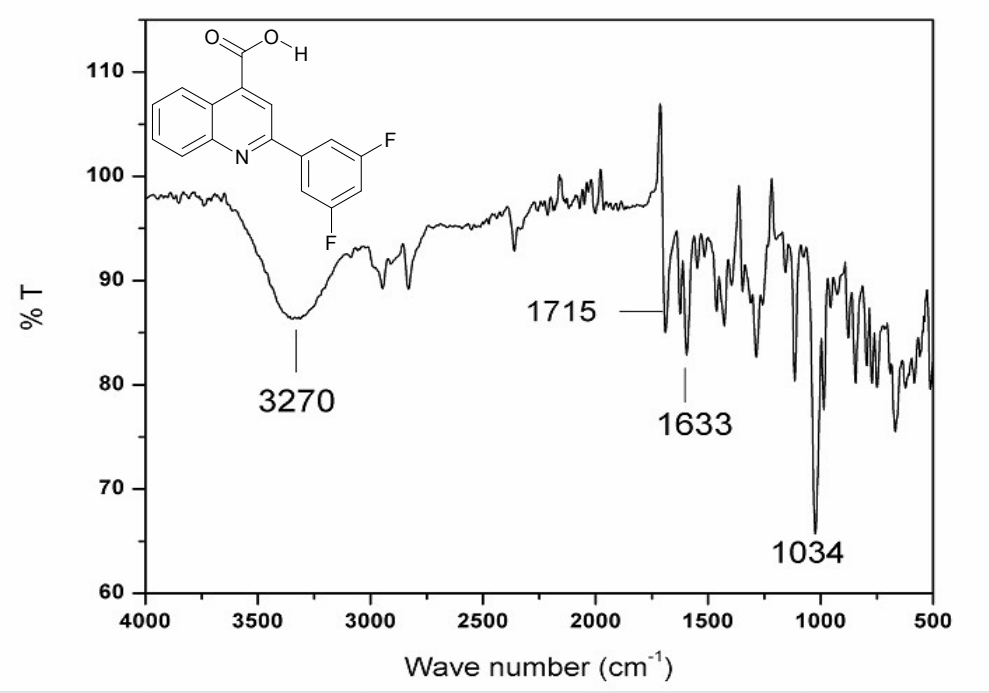
Compd	Ar	Ar[1]	Mol. formula	Mol. weight	M. p. (°C)
1	-	-	$C_{16}H_9F_2NO_2$	285.24	230.5-232
2	-	-	$C_{18}H_{13}F_2NO_2$	313.29	63-67
3	-	-	$C_{16}H_{11}F_2N_3O_2$	299.27	238-241
4a	3,4,5-$(OCH_3)_3$-C_6H_2	-	$C_{26}H_{19}F_2N_3O_4$	475.44	97-102
4b	4-F-C_6H_4	-	$C_{23}H_{12}F_3N_3O$	403.35	130-133
4c	4-Cl-3-NO_2-C_6H_3	-	$C_{23}H_{11}ClF_2N_4O_3$	464.80	154-159
4d	4-OH-C_6H_4	-	$C_{23}H_{13}F_2N_3O_2$	401.36	223-227
4e	4-Cl-C_6H_4	-	$C_{23}H_{12}ClF_2N_3O$	419.81	147-152
4f	4-NO_2- C_6H_4	-	$C_{23}H_{12}F_2N_4O_3$	430.36	203-208
4g	4-NH_2-C_6H_4	-	$C_{23}H_{14}F_2N_4O$	400.38	192-195
5a	-	4-Br-C_6H_4	$C_{23}H_{14}BrF_2N_3O$	466.28	269-273
5b	-	3-NO_2-C_6H_4	$C_{23}H_{14}F_2N_4O_3$	432.37	260-264

5c	-	C_4H_3S	$C_{21}H_{13}F_2N_3OS$	393.40	220-224
5d	-	3,4-$(OCH_3)_2$-C_6H_3	$C_{25}H_{19}F_2N_3O_3$	447.43	237-241
5e	-	3,4,5-$(OCH_3)_3$-C_6H_2	$C_{26}H_{21}F_2N_3O_4$	477.45	242-247
5f	-	2,4-Cl_2- C_6H_3	$C_{23}H_{13}Cl_2F_2N_3O$	456.27	264-268
5g	-	4-OH-C_6H_4	$C_{23}H_{15}F_2N_3O_2$	403.38	183-187

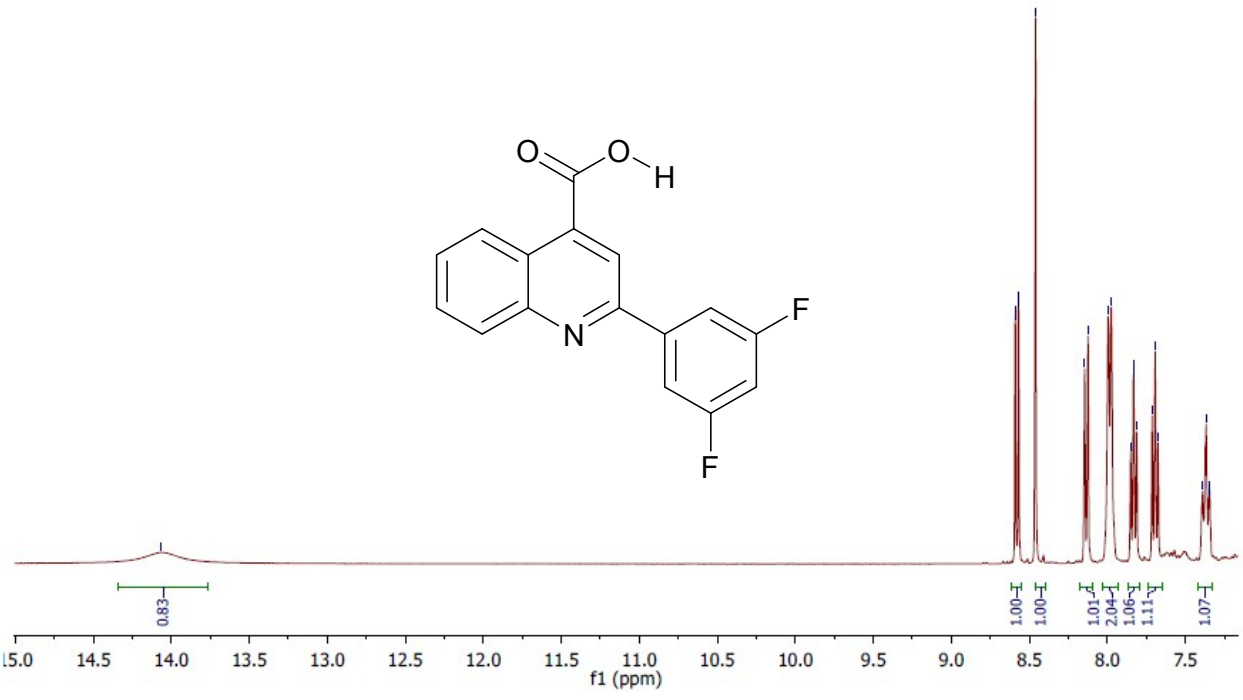
Table S2: Crystal Data and refinement statistics

Crystal Data and refinement statistics	
Empirical Formula	$C_{23}H_{15}F_2N_3O_2$
Formula Weight	403.38
Crystal Color, Habit	yellow color, block
Crystal Dimensions	0.49 X 0.23 X 0.12 mm
Crystal System	orthorhombic
Lattice Type	Primitive
Lattice Parameters	a = 13.178 (7) Å b = 9.598 (5) Å c = 28.580 (17) Å V = 3615 (3) $Å^3$
Space Group	Pbca

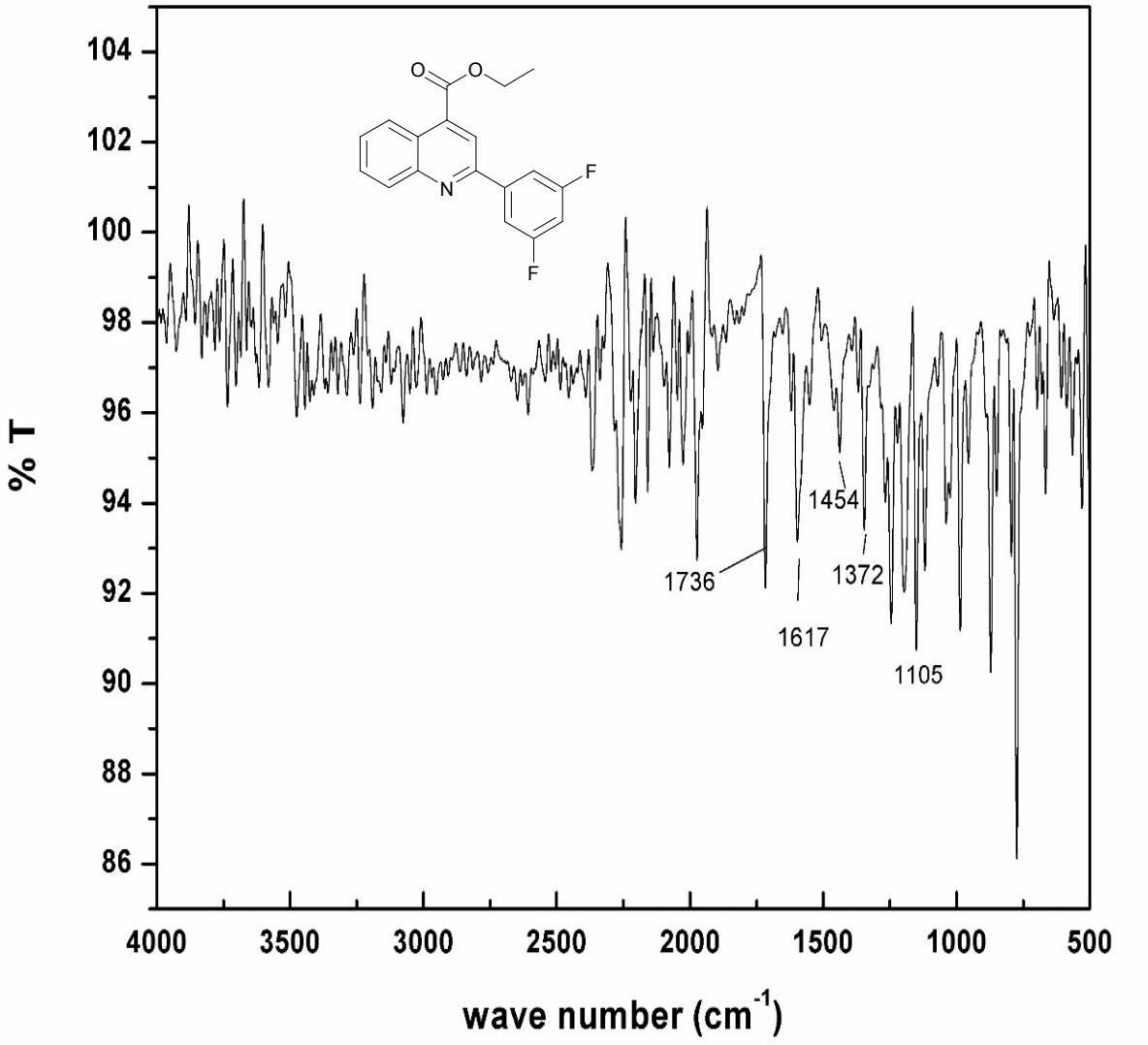
Z value	8
D_{calc}	1.482 g/cm^3
F_{000}	1664.0
μ(MoKα)	0.111 cm^{-1}
Radiation	MoKα (λ = 0.71075 Å)
$2\theta_{max}$	51^o
No. of Reflections Measured	Total: 9388 Unique: 3267 (R_{int} = 0.0612)
Corrections	Lorentz-polarization Absorption (trans. factors: 0.874 - 0.972)
Structure Solution	Direct Methods (SHELX97)
Refinement	Full-matrix least-squares on F^2
No. Variables	272
Residuals: R1 (I>2.00σ(I))	0.0884
Residuals: wR2 (All reflections)	0.1263
Goodness of Fit Indicator	1.143
Maximum peak in Final Diff. Map	0.23 e$^-$/Å^3
Minimum peak in Final Diff. Map	-0.18 e$^-$/Å^3
CCDC	1469162



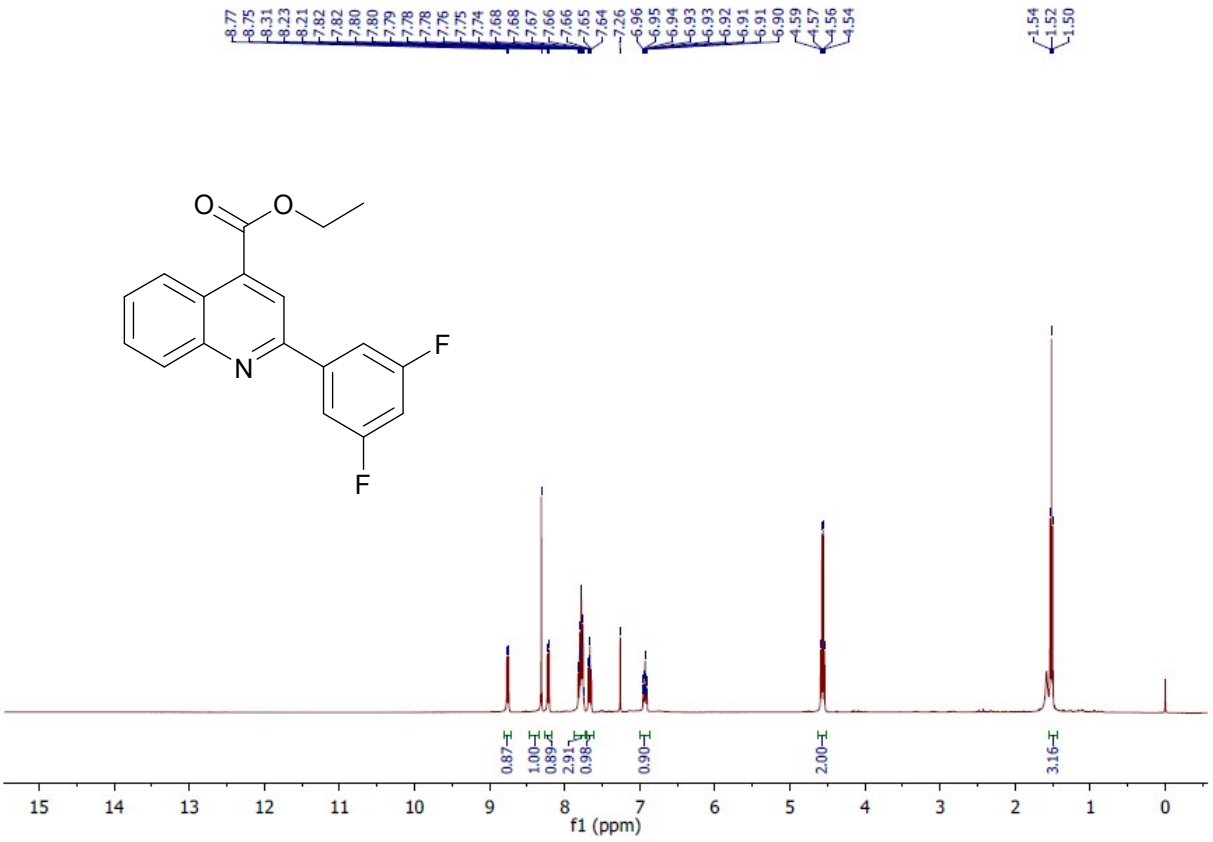
IR spectrum of compound (1) 2-(3,5-difluorophenyl)quinoline-4-carboxylic acid



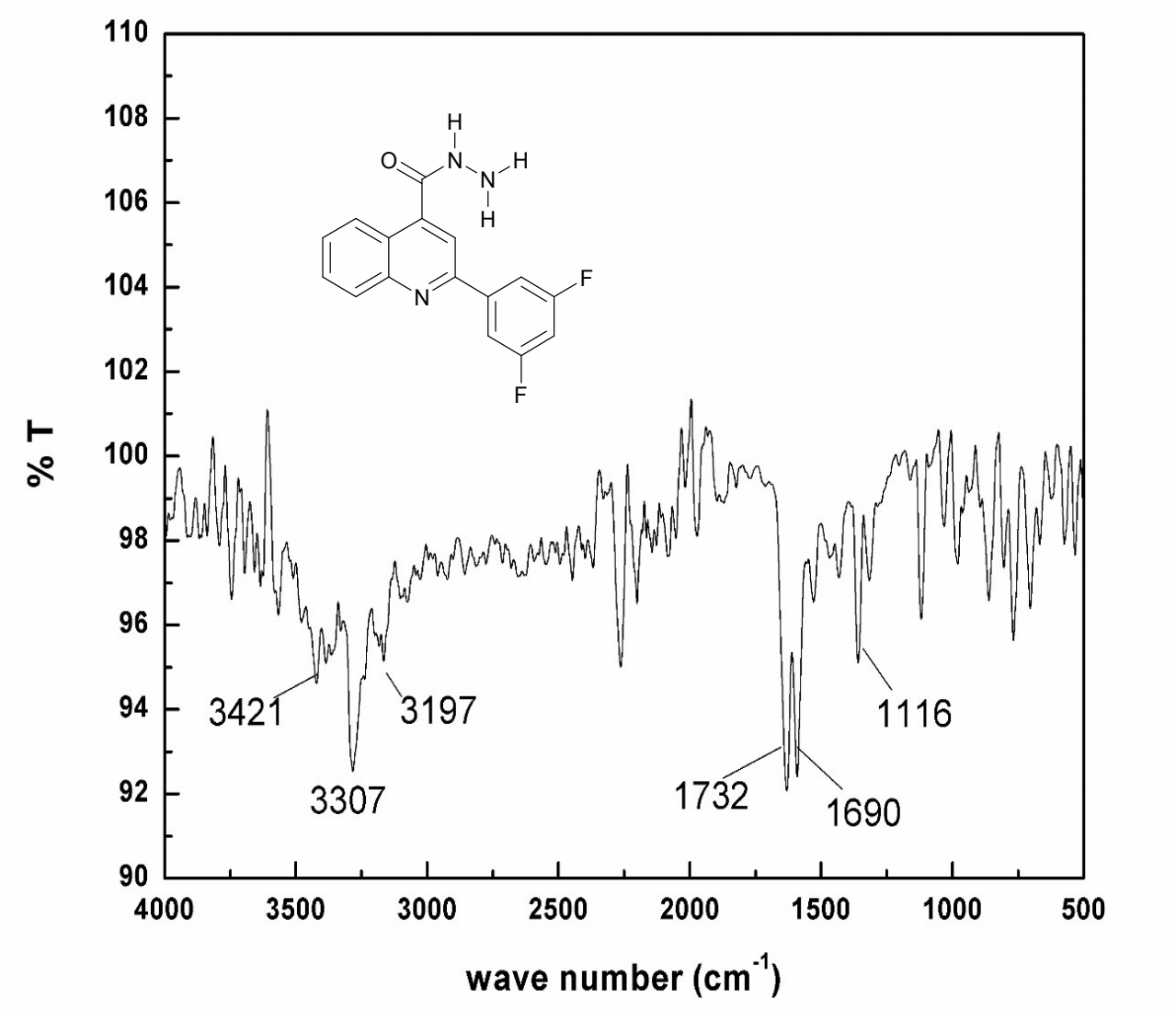
^{1}H NMR of compound (1) 2-(3,5-difluorophenyl)quinoline-4-carboxylic acid



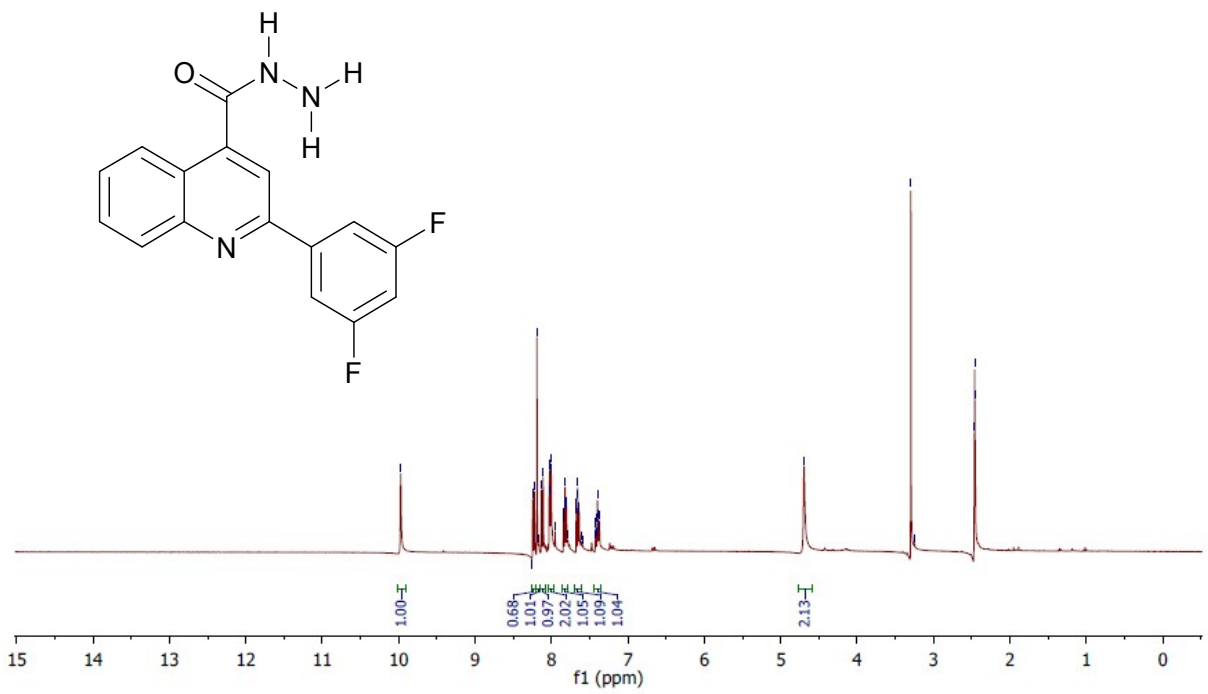
IR spectrum of compound (2) ethyl 2-(3,5-difluorophenyl)quinoline-4-carboxylate



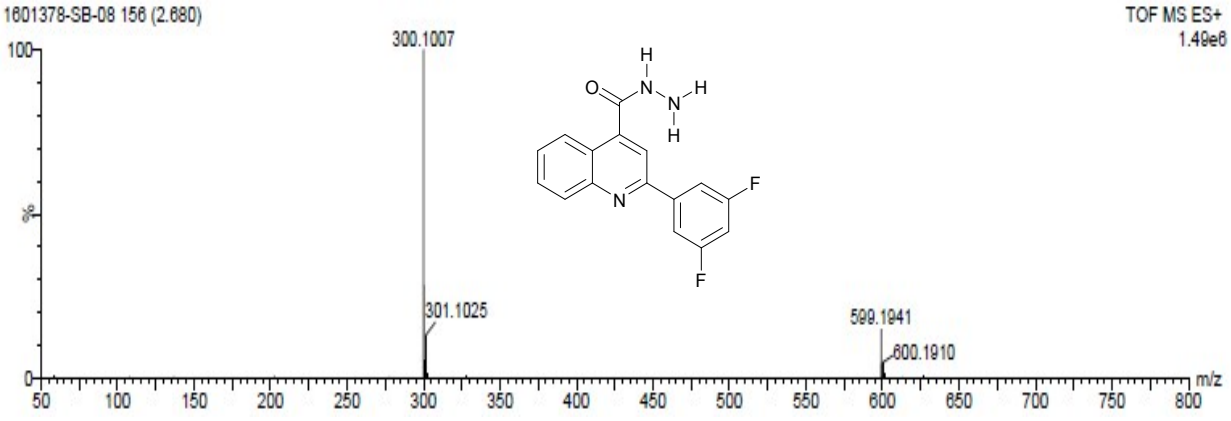
^{1}H NMR of compound (2) ethyl 2-(3,5-difluorophenyl)quinoline-4-carboxylate



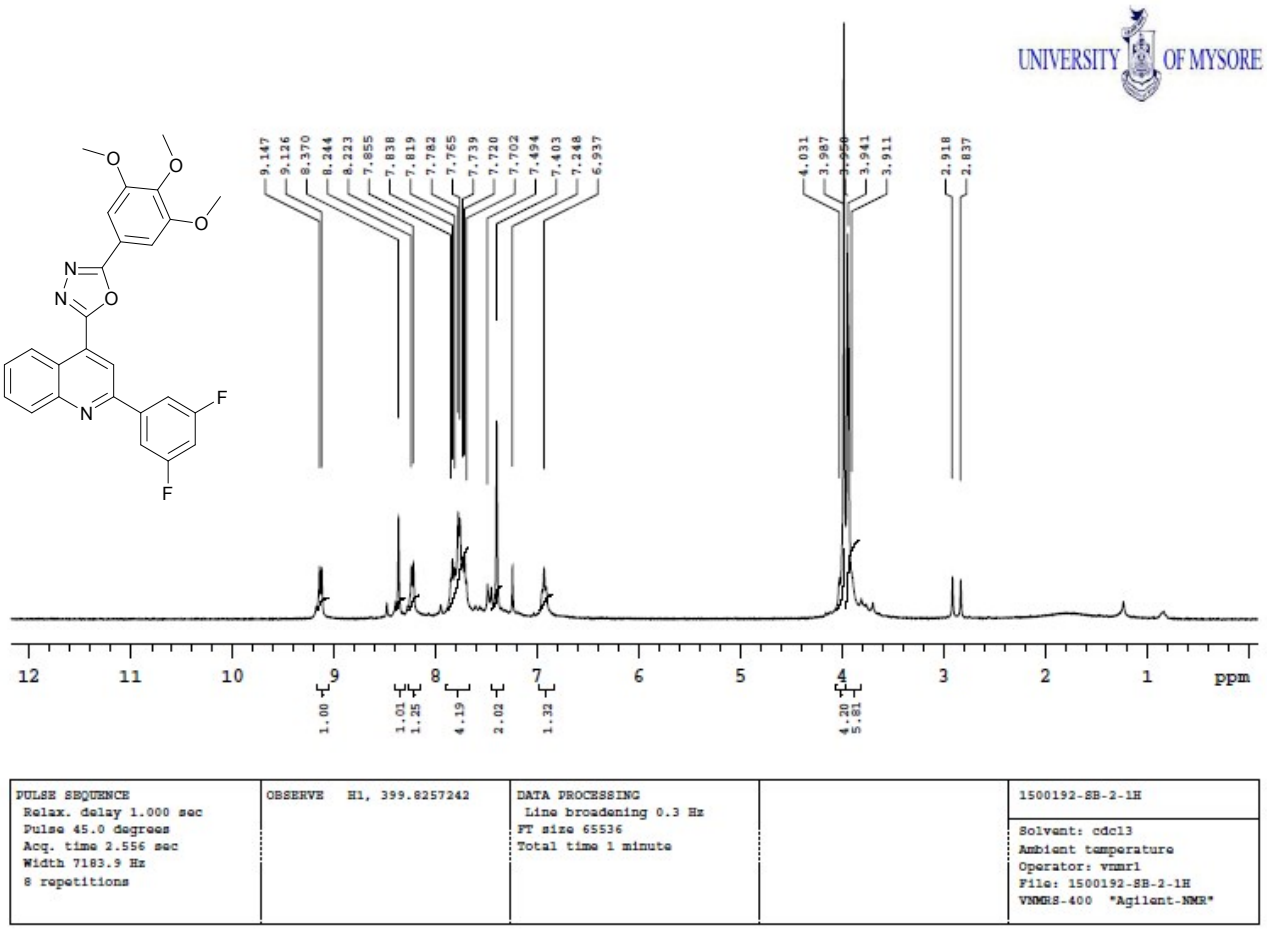
IR spectrum of compound (3) 2-(3,5-difluorophenyl)quinoline-4-carbohydrazide



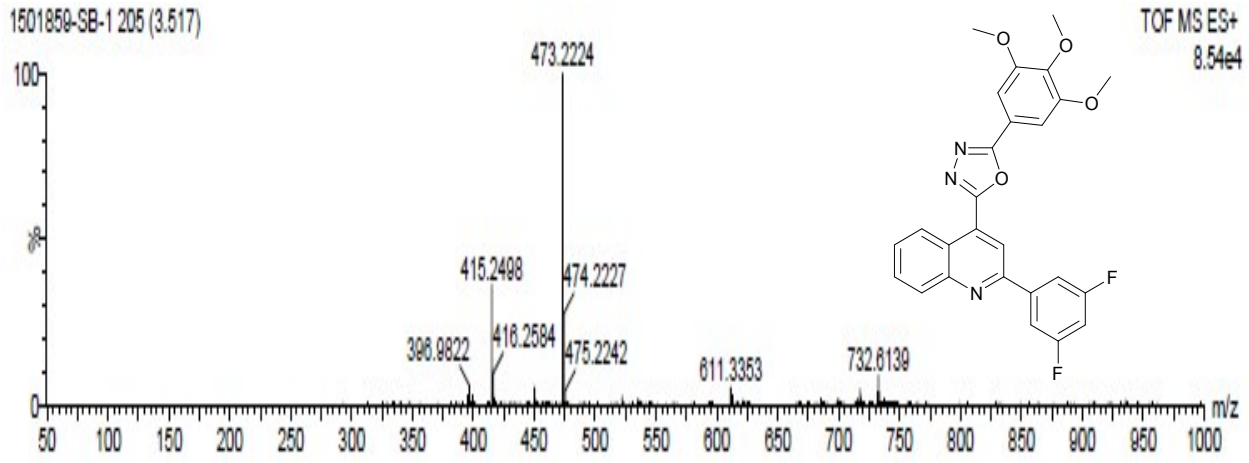
^{1}H NMR of compound (3) 2-(3,5-difluorophenyl)quinoline-4-carbohydrazide



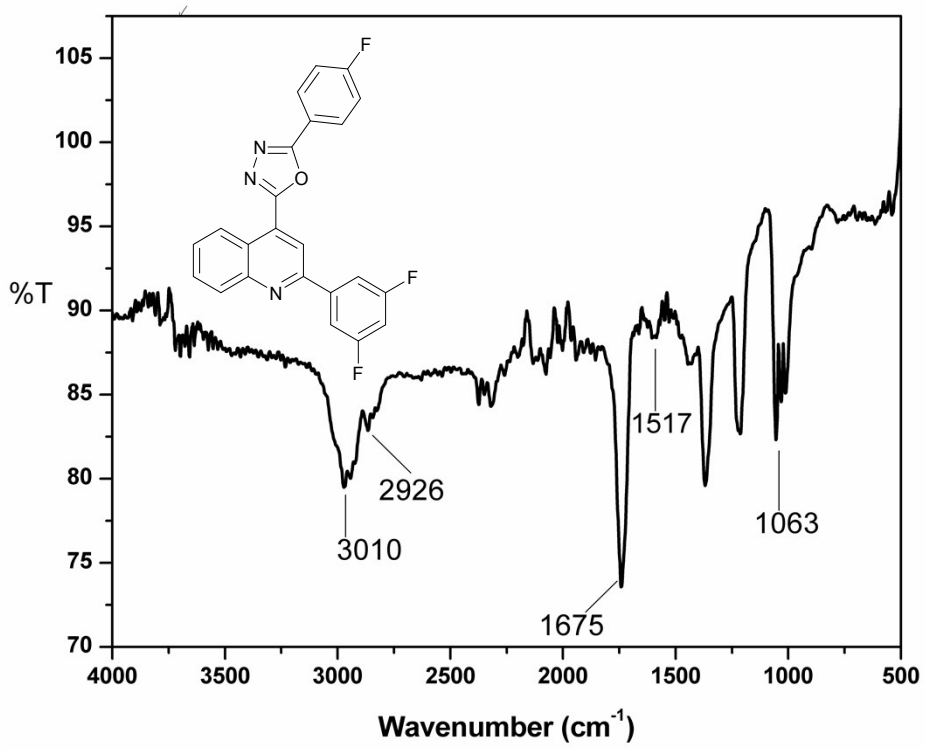
LCMS Spectrum of compound (3) 2-(3,5-difluorophenyl)quinoline-4-carbohydrazide



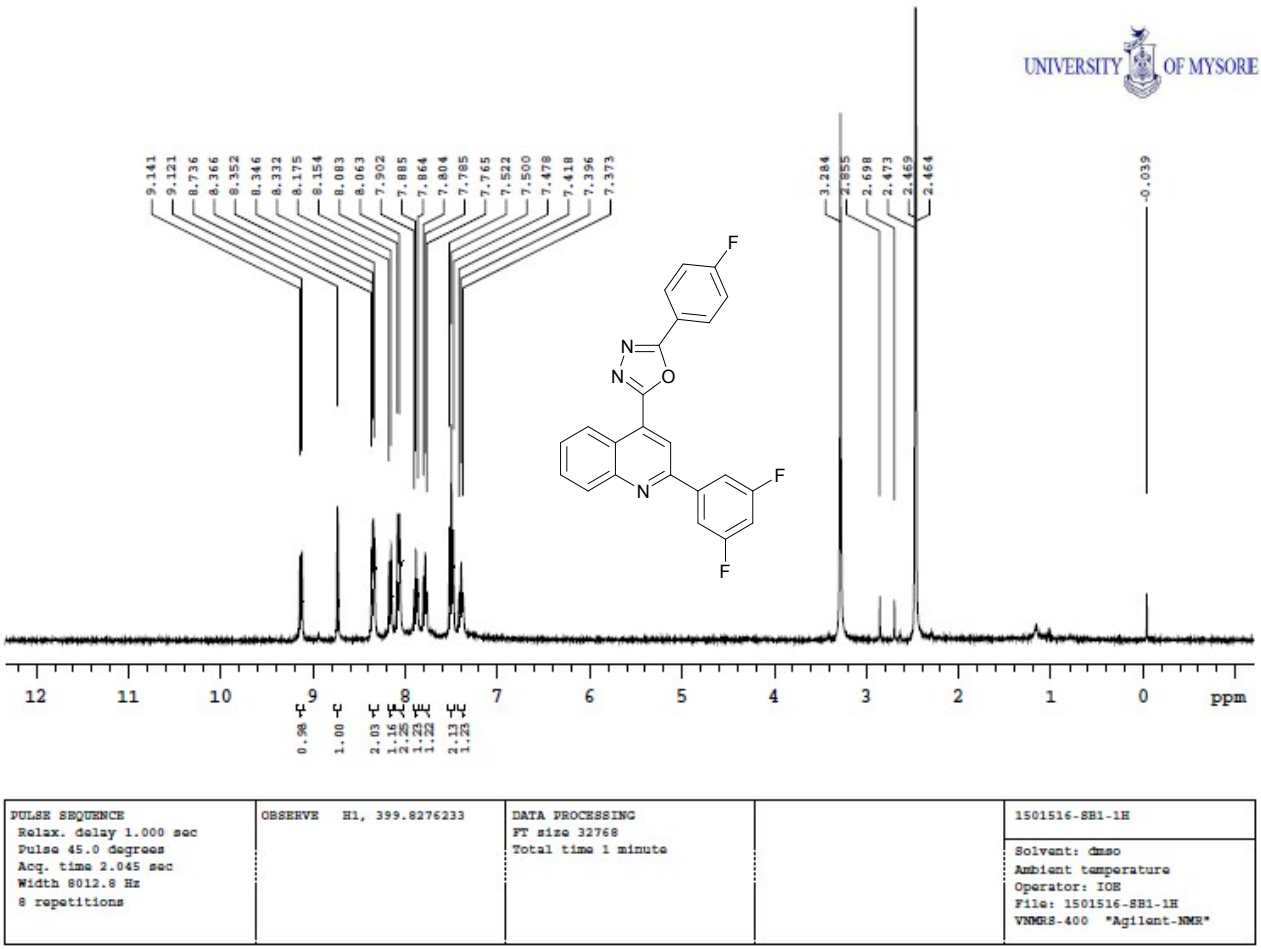
^{1}H NMR spectrum of compound (4a) 2-(3,5-difluorophenyl)-4-(5-(3,4,5-trimethoxyphenyl)-1,3,4-oxadiazol-2-yl)quinoline



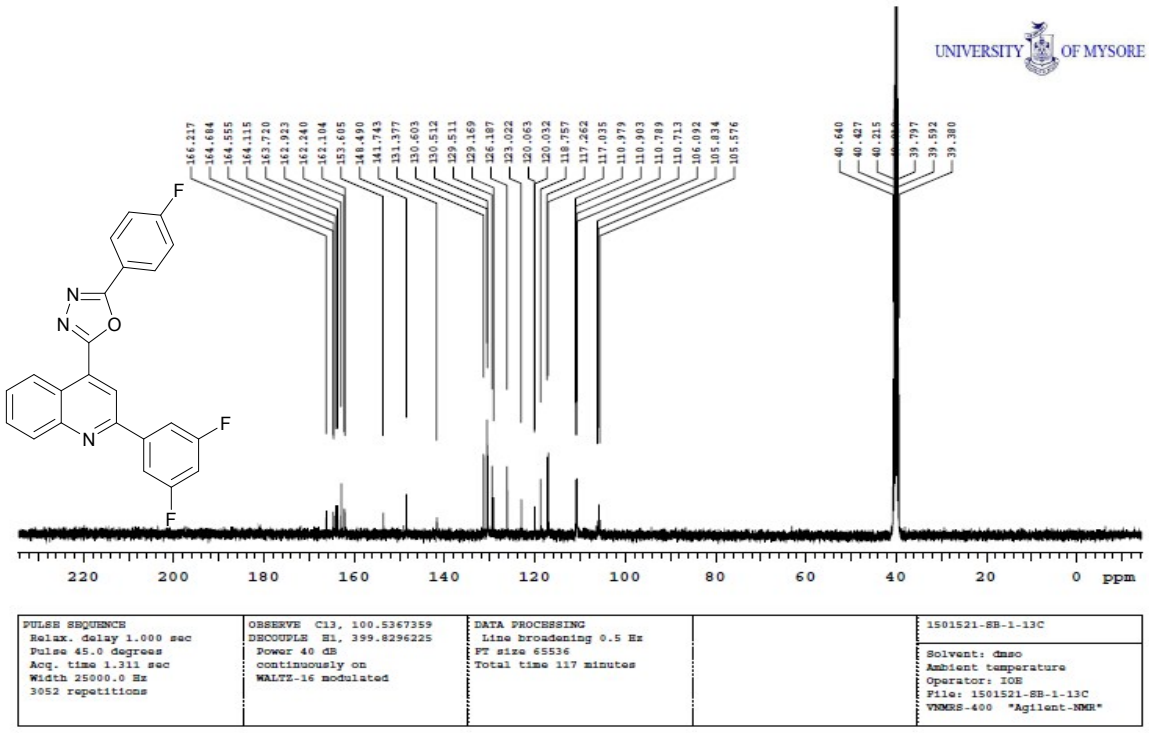
LCMS Spectrum of compound (4a) 2-(3,5-difluorophenyl)-4-[5-(4-fluorophenyl)-1,3,4,-oxadiazol-2-yl]quinolin



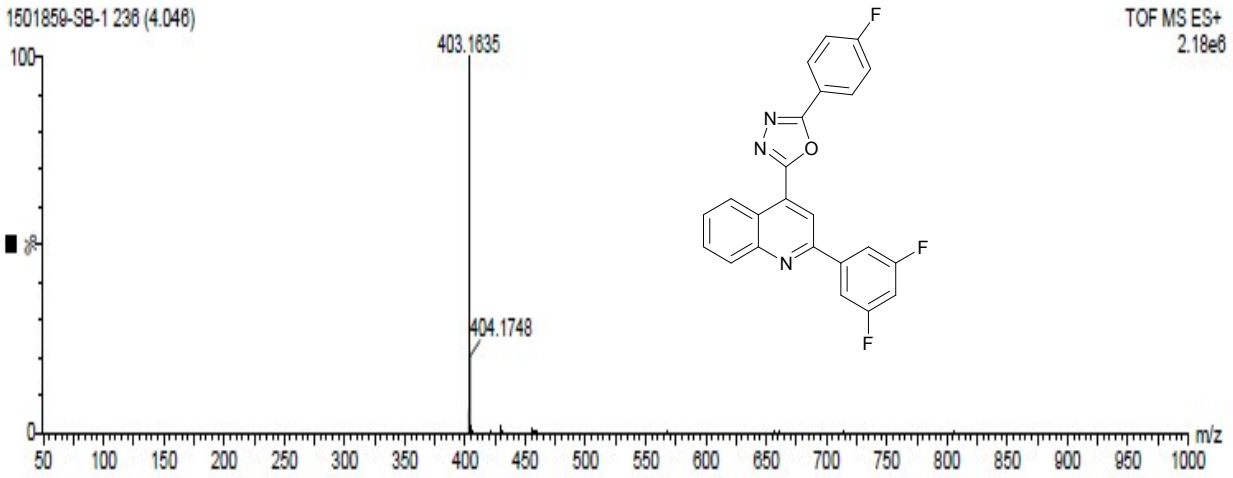
IR spectrum of compound (4b) 2-(3,5-difluorophenyl)-4-[5-(4-fluorophenyl)-1,3,4,-oxadiazol-2-yl]quinoline



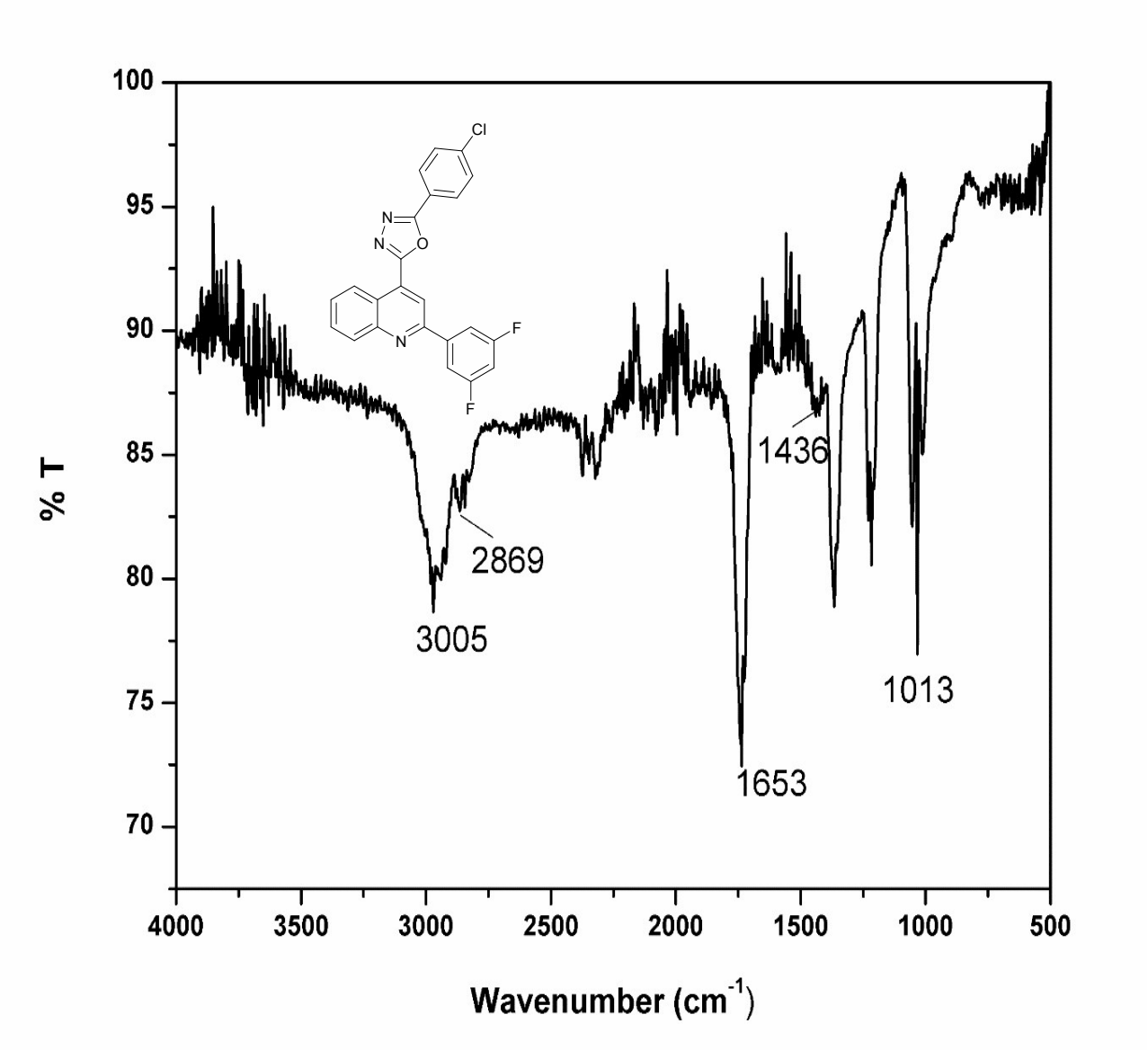
^{1}H NMR spectrum of compound (4b) 2-(3,5-difluorophenyl)-4-[5-(4-fluorophenyl)-1,3,4,-oxadiazol-2-yl]quinoline



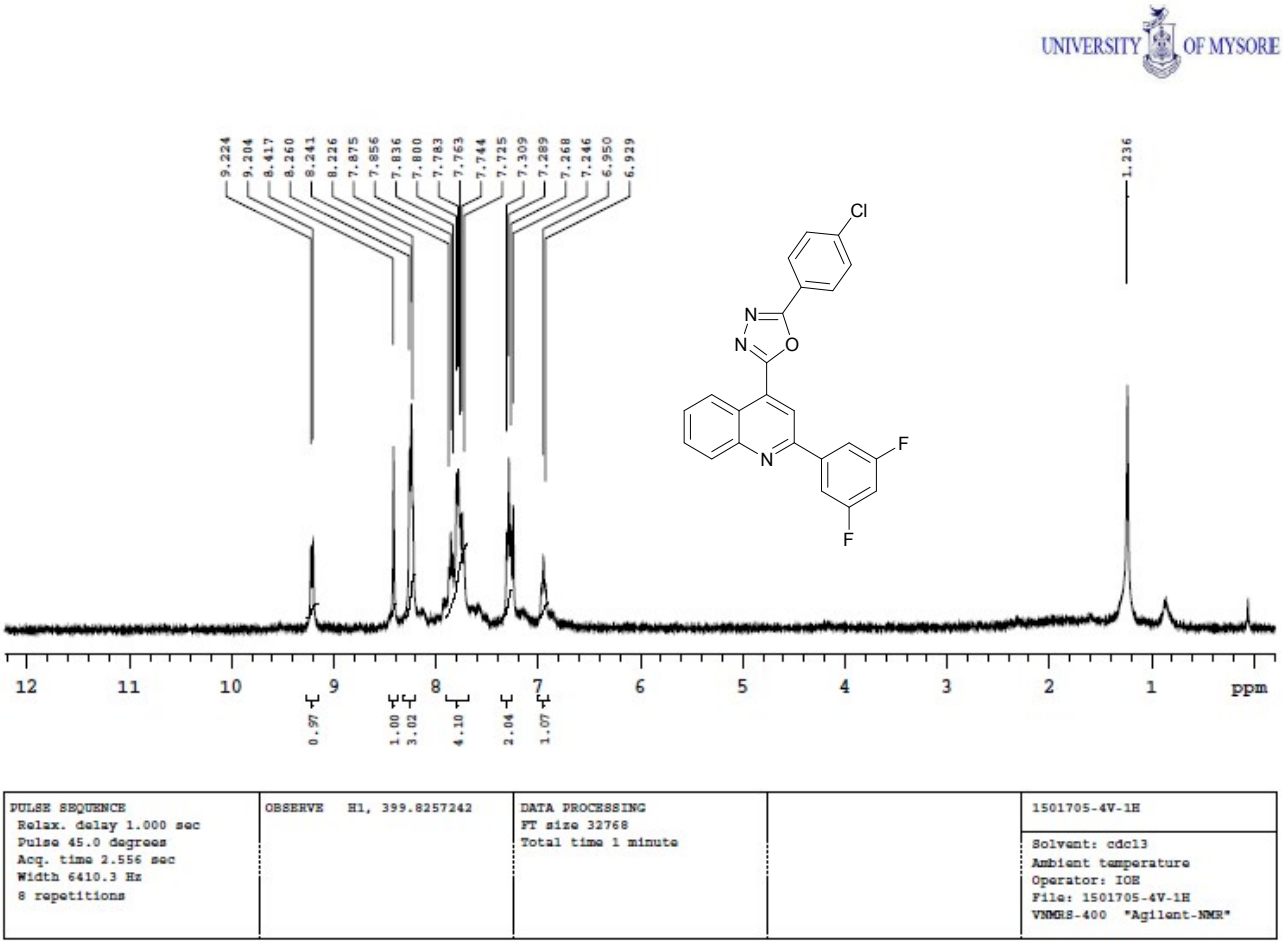
^{13}C NMR spectrum of compound (4b) 2-(3,5-difluorophenyl)-4-[5-(4-fluorophenyl)-1,3,4,-oxadiazol-2-yl]quinoline



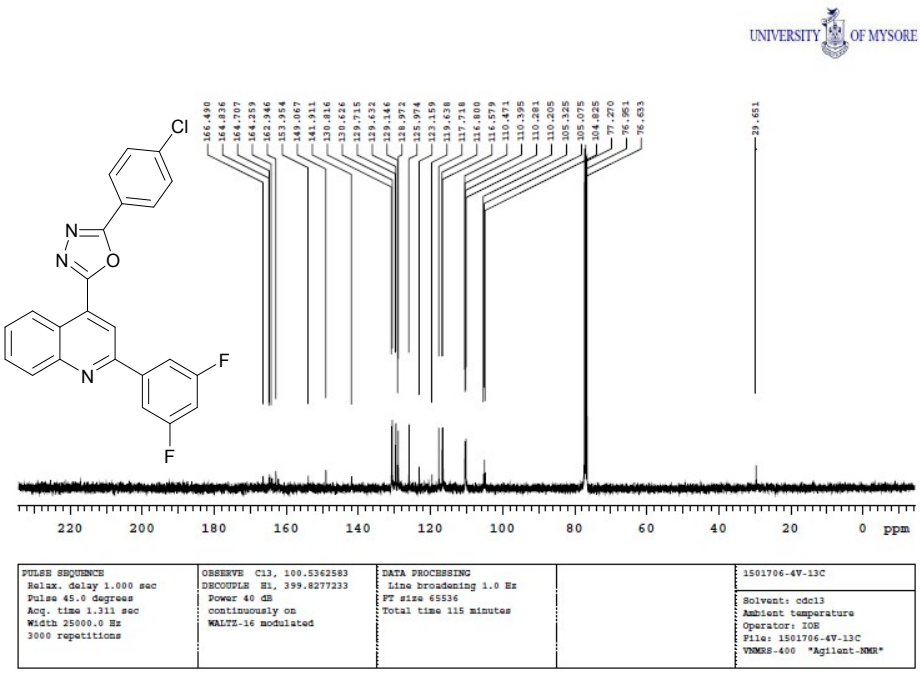
LCMS Spectrum of compound (4b) 2-(3,5-difluorophenyl)-4-[5-(4-fluorophenyl)-1,3,4,-oxadiazol-2-yl]quinoline



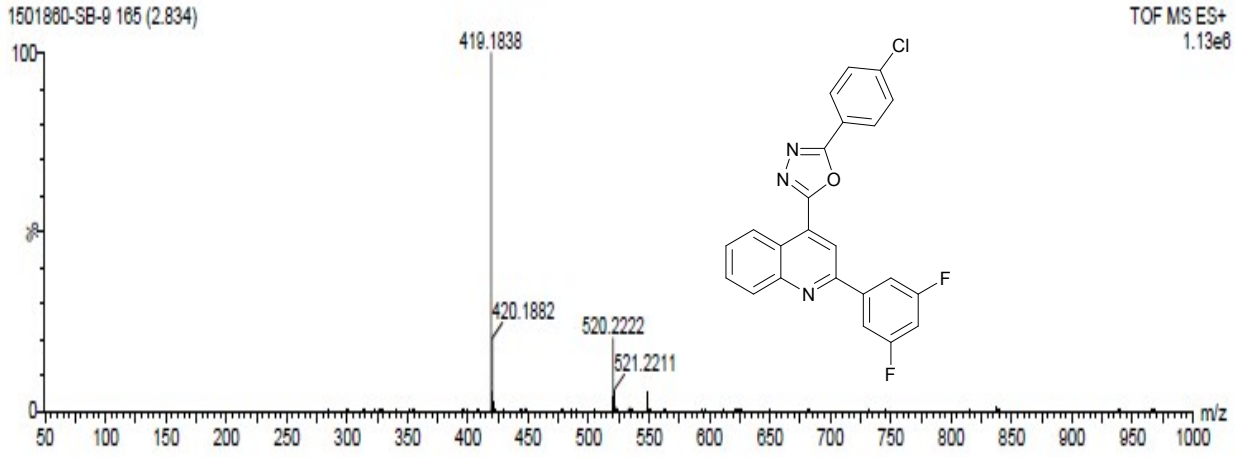
IR spectrum of compound (4e) 4-(5-(4-chlorophenyl)-1,3,4-oxadiazol-2-yl)-2-(3,5-difluorophenyl) quinoline



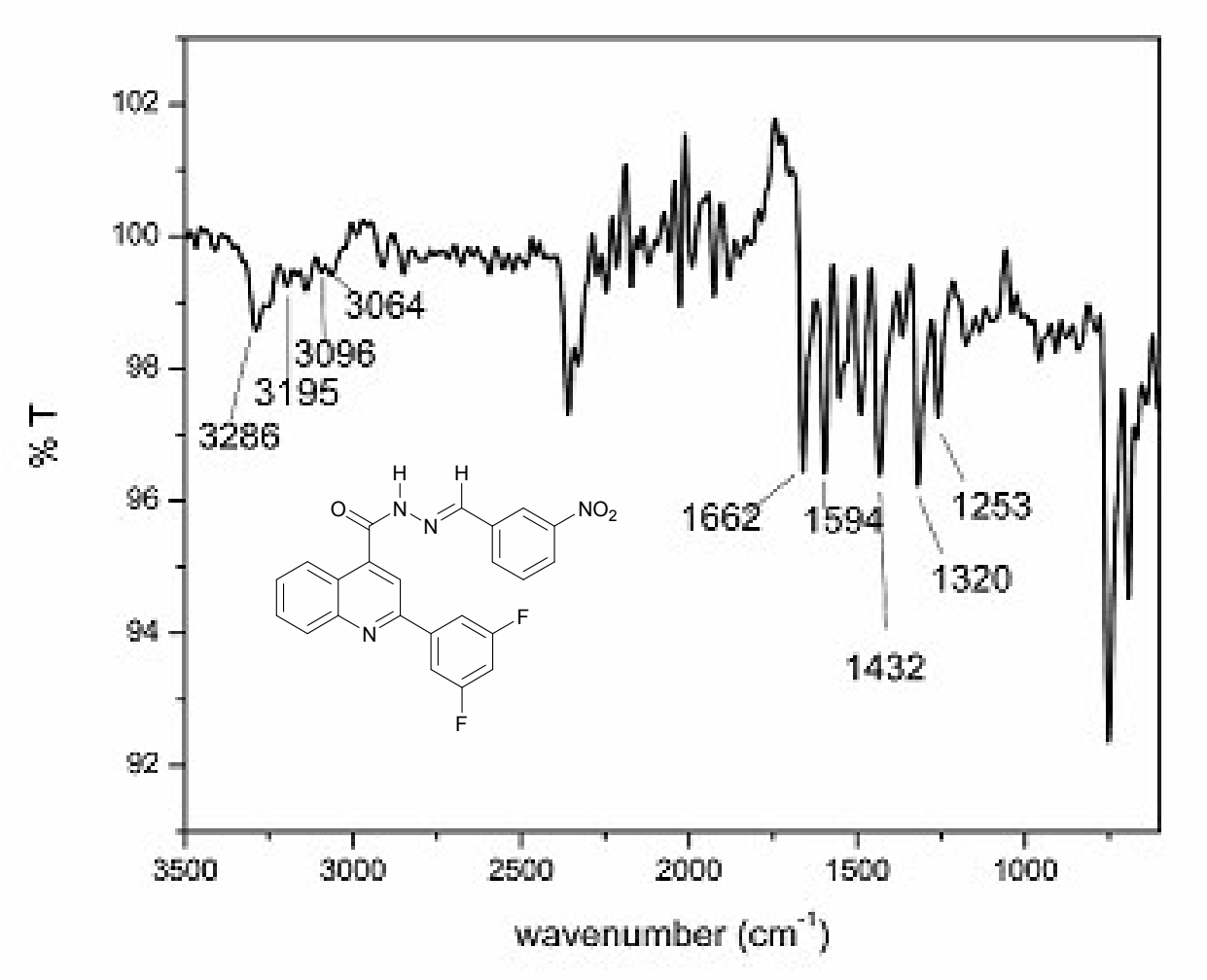
^{1}H NMR spectrum of compound (4e) 4-(5-(4-chlorophenyl)-1,3,4-oxadiazol-2-yl)-2-(3,5-difluorophenyl) quinoline



^{13}C NMR spectrum of compound (4e) 4-(5-(4-chlorophenyl)-1,3,4-oxadiazol-2-yl)-2-(3,5-difluorophenyl) quinoline



LCMS Spectrum of compound (4e) 4-(5-(4-chlorophenyl)-1,3,4-oxadiazol-2-yl)-2-(3,5-difluorophenyl) quinoline



IR spectrum of compound 5b. 2-(3,5-difluorophenyl)-N'-[(E)-(3-nitrophenyl)methylidene]quinoline-4-carbohydrazide

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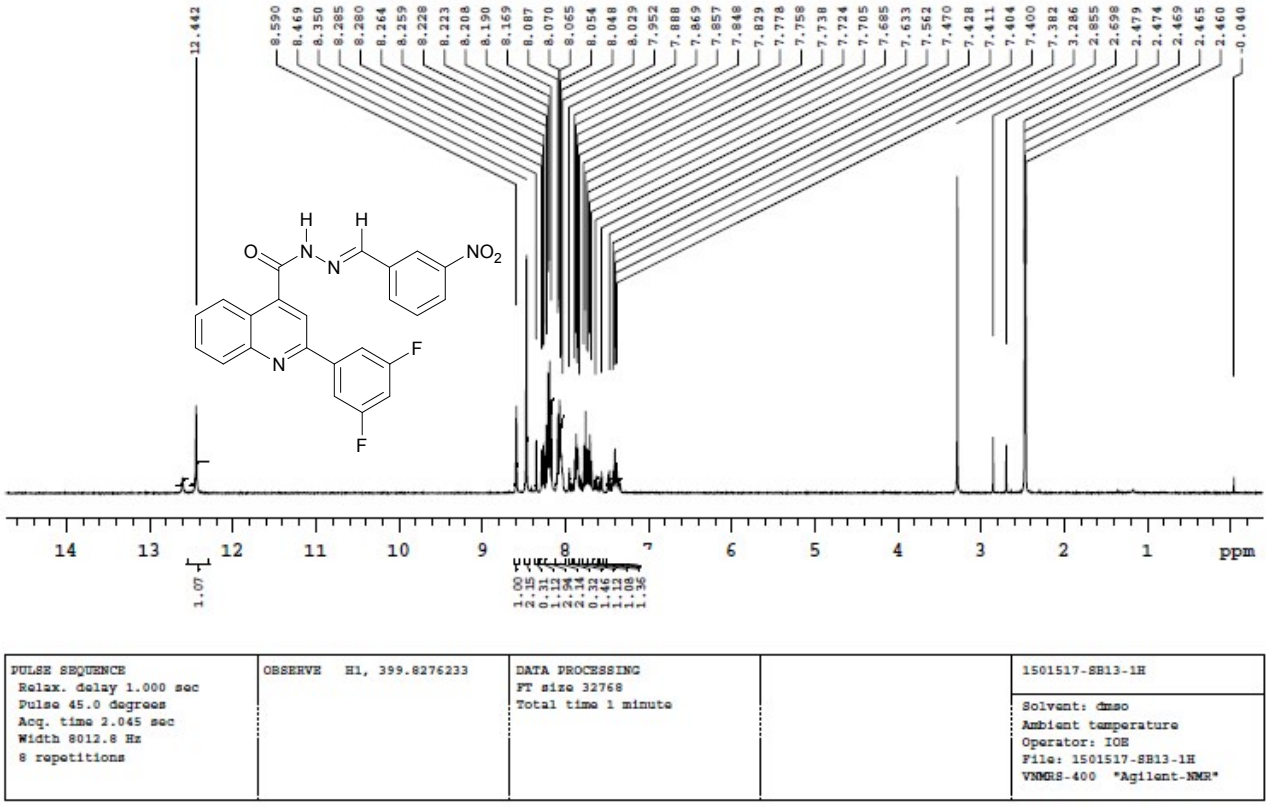

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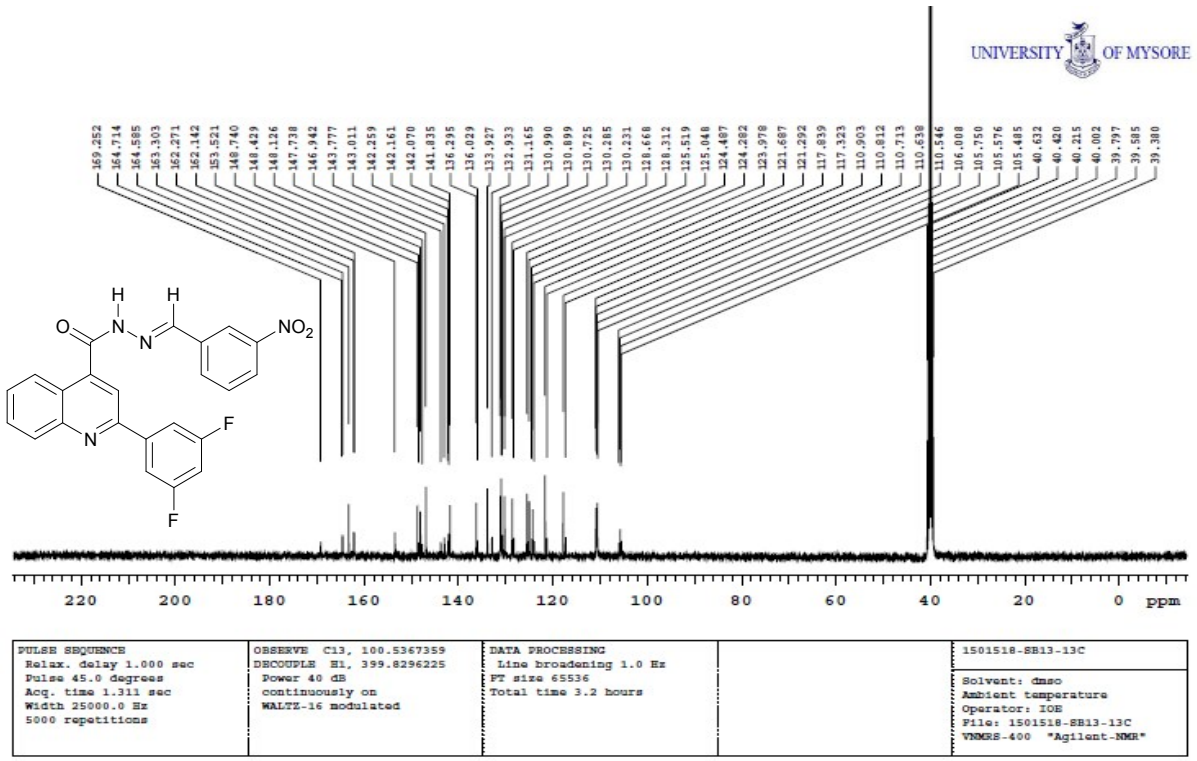
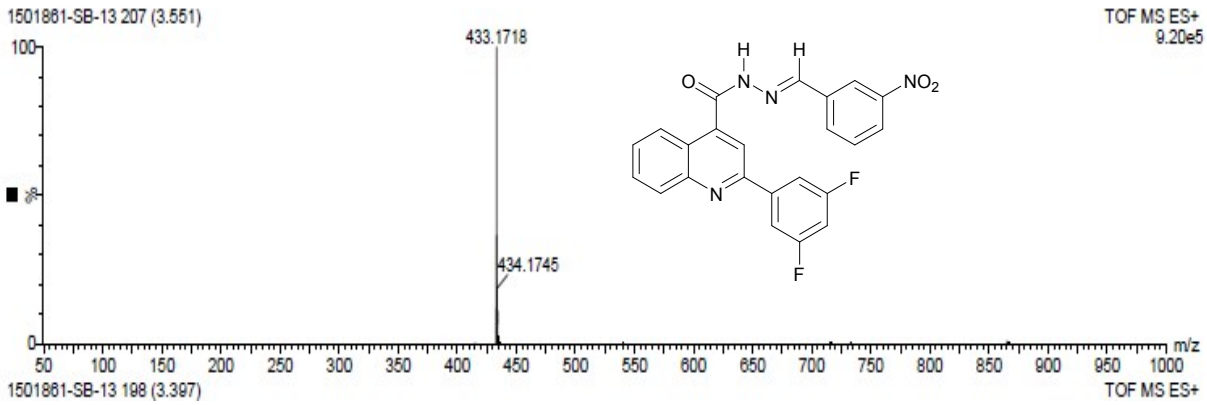
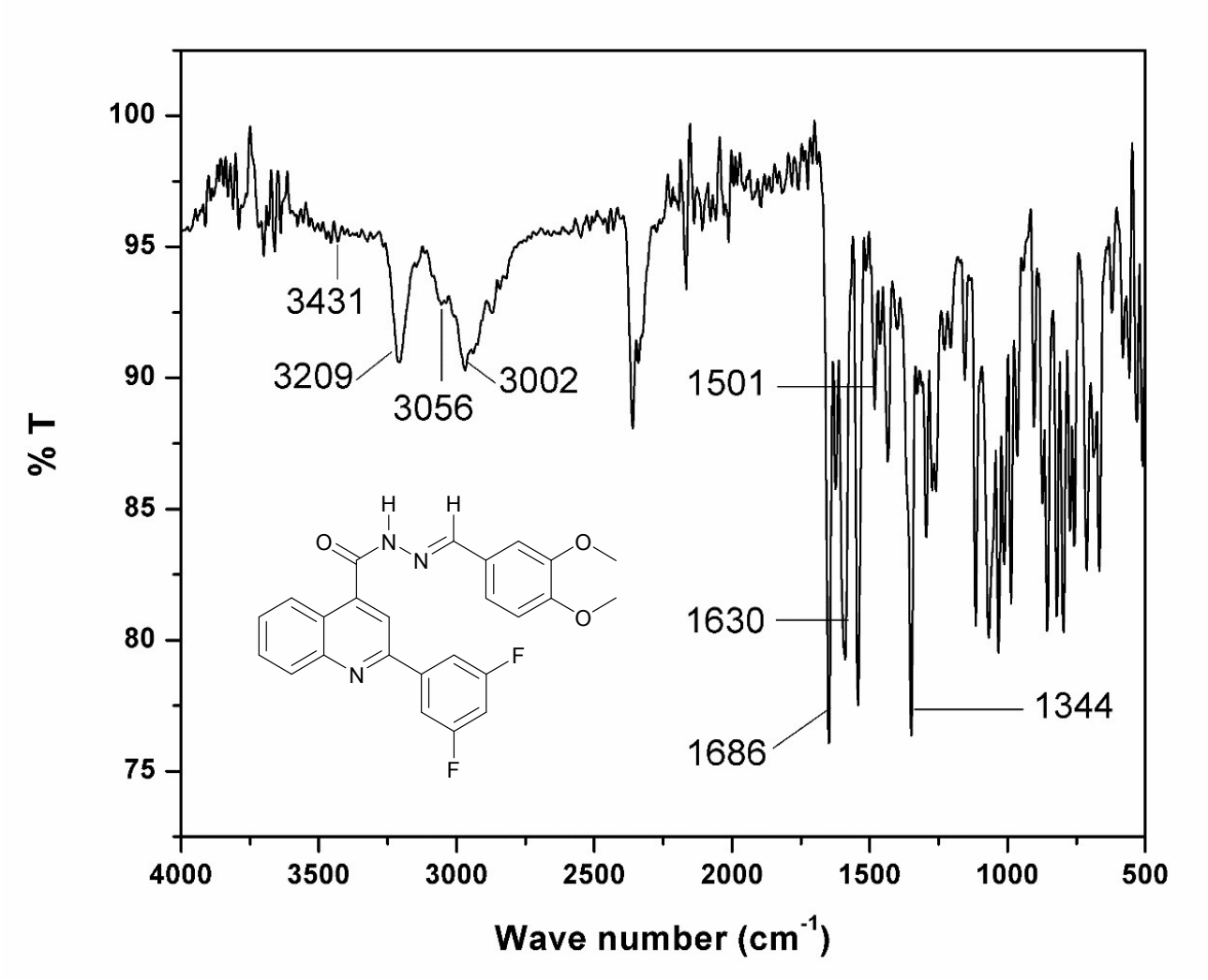
^{1}H NMR spectrum of compound 5b. 2-(3,5-difluorophenyl)-N'-[(E)-(3-nitrophenyl)methylidene]quinoline-4-carbohydrazide



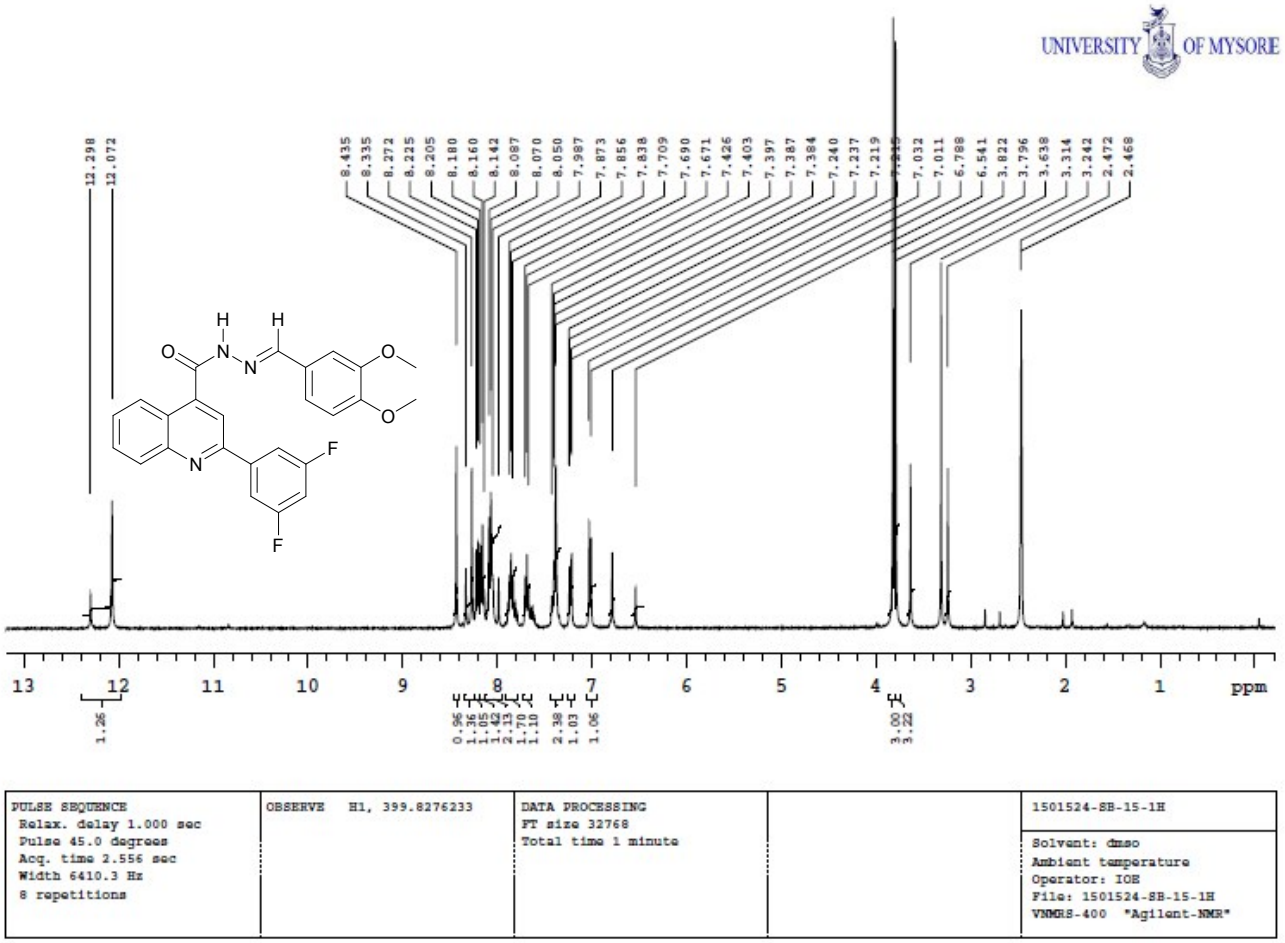
^{13}C NMR spectrum of compound 5b. 2-(3,5-difluorophenyl)-N'-[(E)-(3-nitrophenyl)methylidene]quinoline-4-carbohydrazide



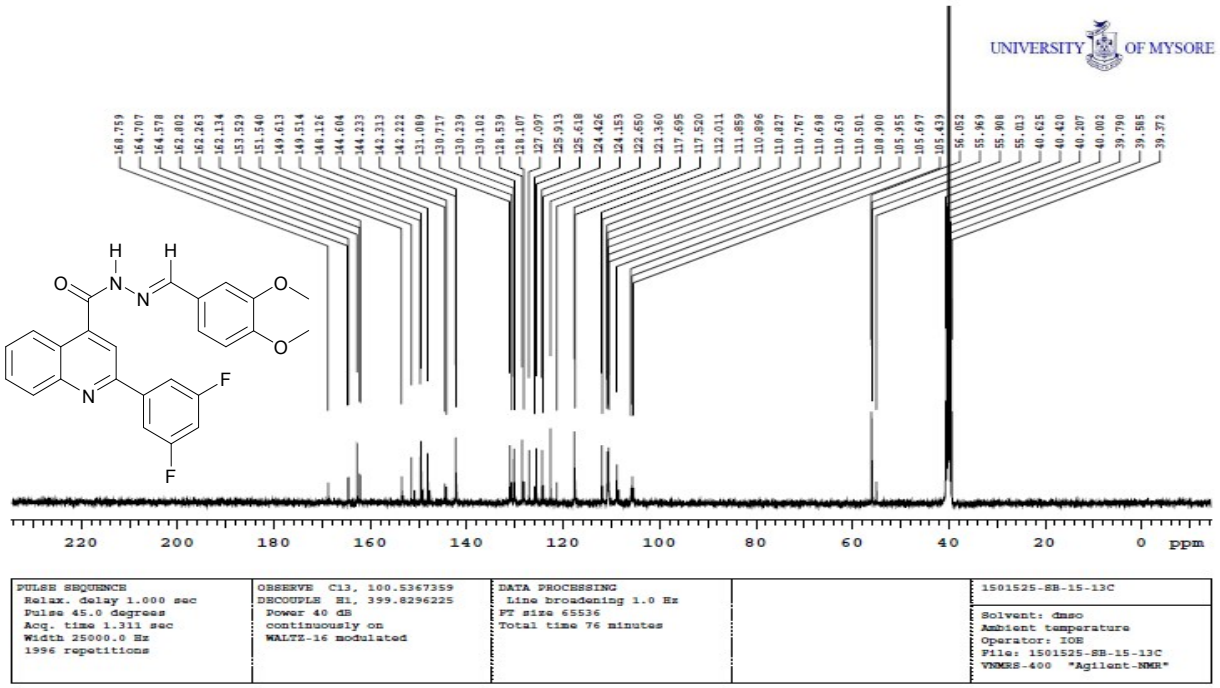
LCMS Spectrum of compound (5b) 2-(3,5-difluorophenyl)-N'-[(E)-(3-nitrophenyl)methylidene]quinoline-4-carbohydrazide



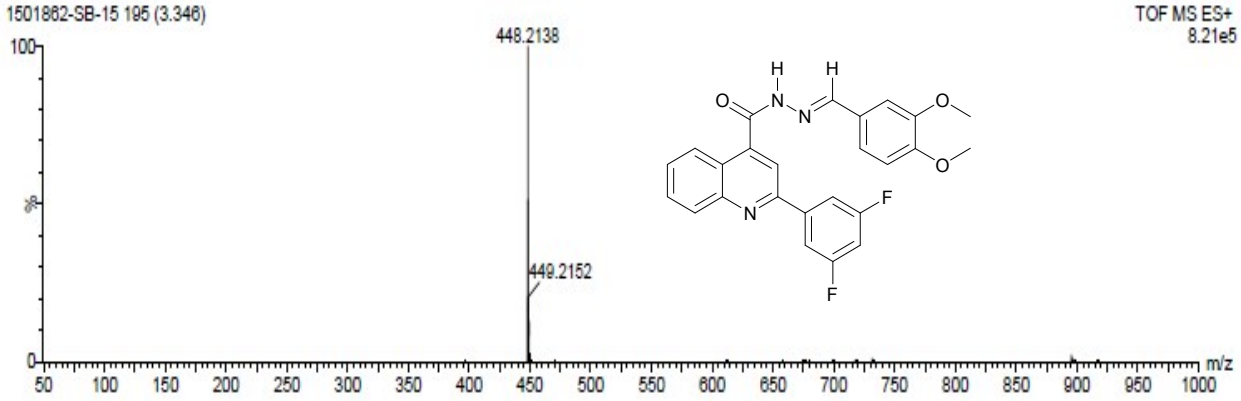
IR- spectrum of compound (5d) (E)-N'-(3,4-dimethoxybenzylidene)-2-(3,5-difluorophenyl)quinoline-4-carbohydrazide



^{1}H NMR spectrum of compound (5d) (E)-N'-(3,4-dimethoxybenzylidene)-2-(3,5-difluorophenyl)quinoline-4-carbohydrazide



^{13}C NMR spectrum of compound (5d) (E)-N'-(3,4-dimethoxybenzylidene)-2-(3,5-difluorophenyl)quinoline-4-carbohydrazide



LCMS spectrum of compound (5d) (E)-N'-(3,4-dimethoxybenzylidene)-2-(3,5-difluorophenyl)quinoline-4-carbohydrazide