Supplementary Information for

Late-Stage Diversification of Biologically Active Pyridazinones via Direct C-H Functionalization Strategy

Wei Li,[‡,a] Zhoulong Fan,[‡,b] Kaijun Geng,[b] Youjun Xu*[,a] and Ao Zhang*[,b]

[a] *School of Pharmaceutical Engineering, Shenyang Pharmaceutical University, Shenyang 110016, China*
[b] *CAS Key Laboratory of Receptor Research, and Synthetic Organic & Medicinal Chemistry Laboratory (SOMCL), Shanghai Institute of Materia Medica (SIMM), Chinese Academy of Sciences, Shanghai 201203, China;*

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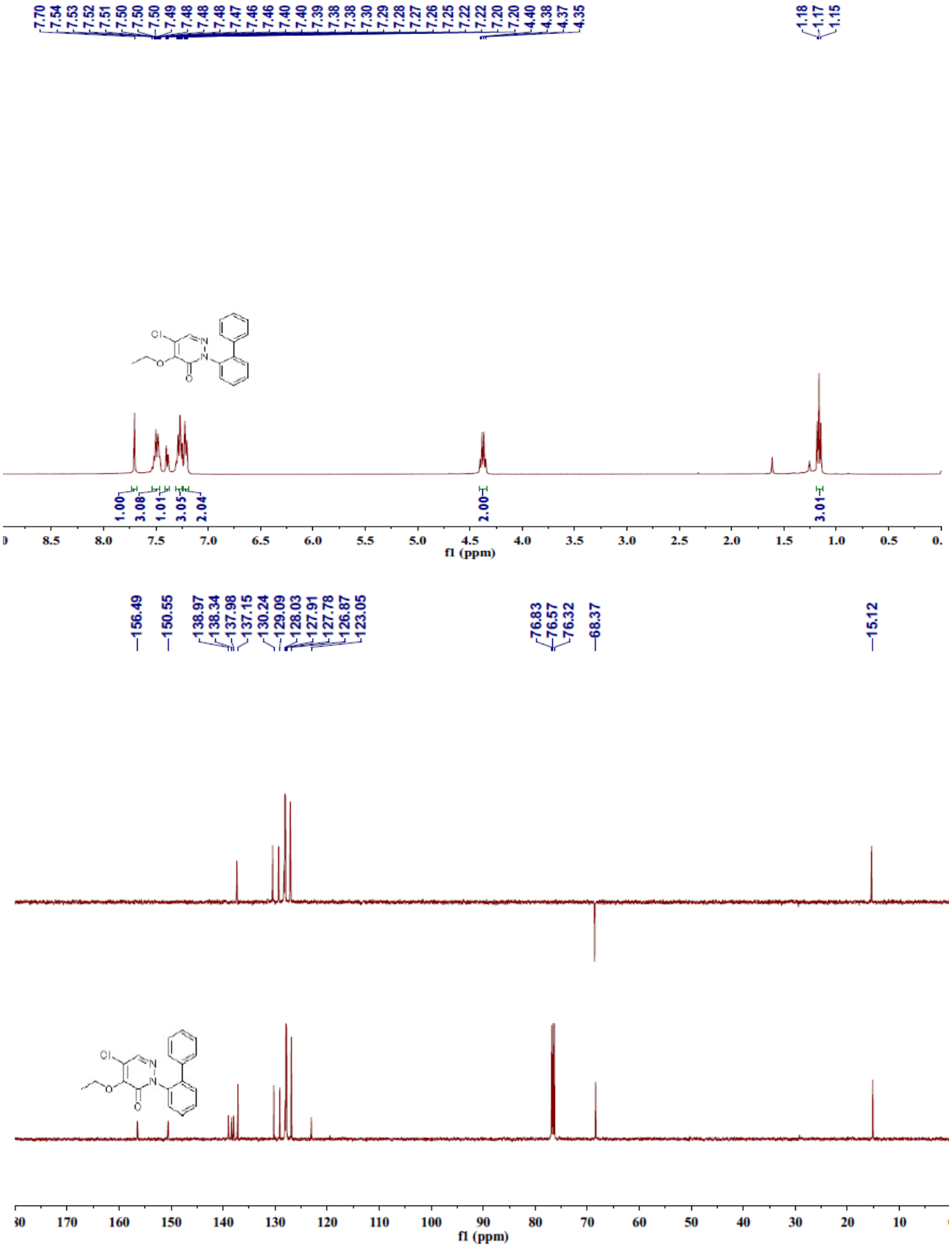
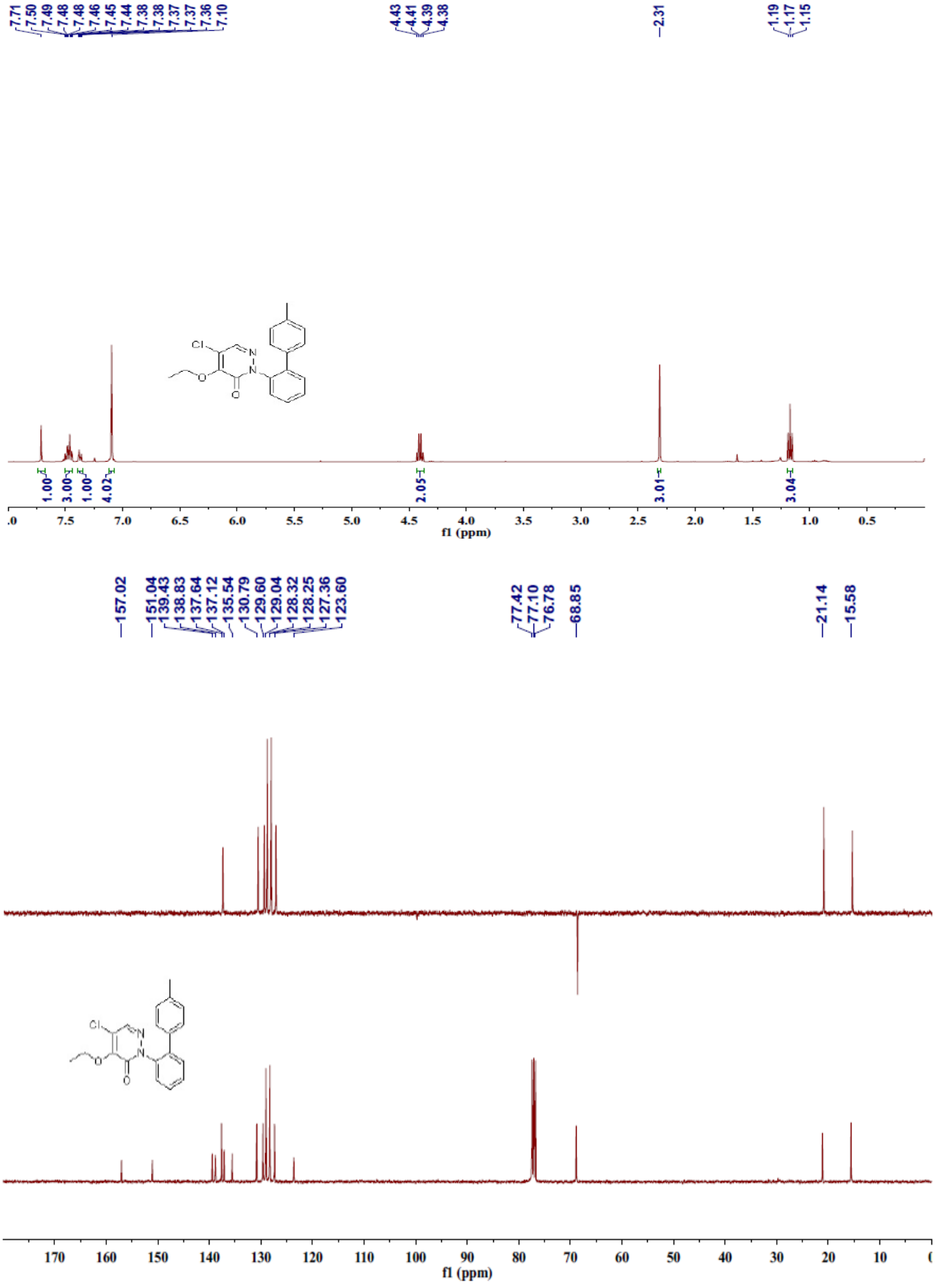
1. Copies of NMR Data for All Compounds.

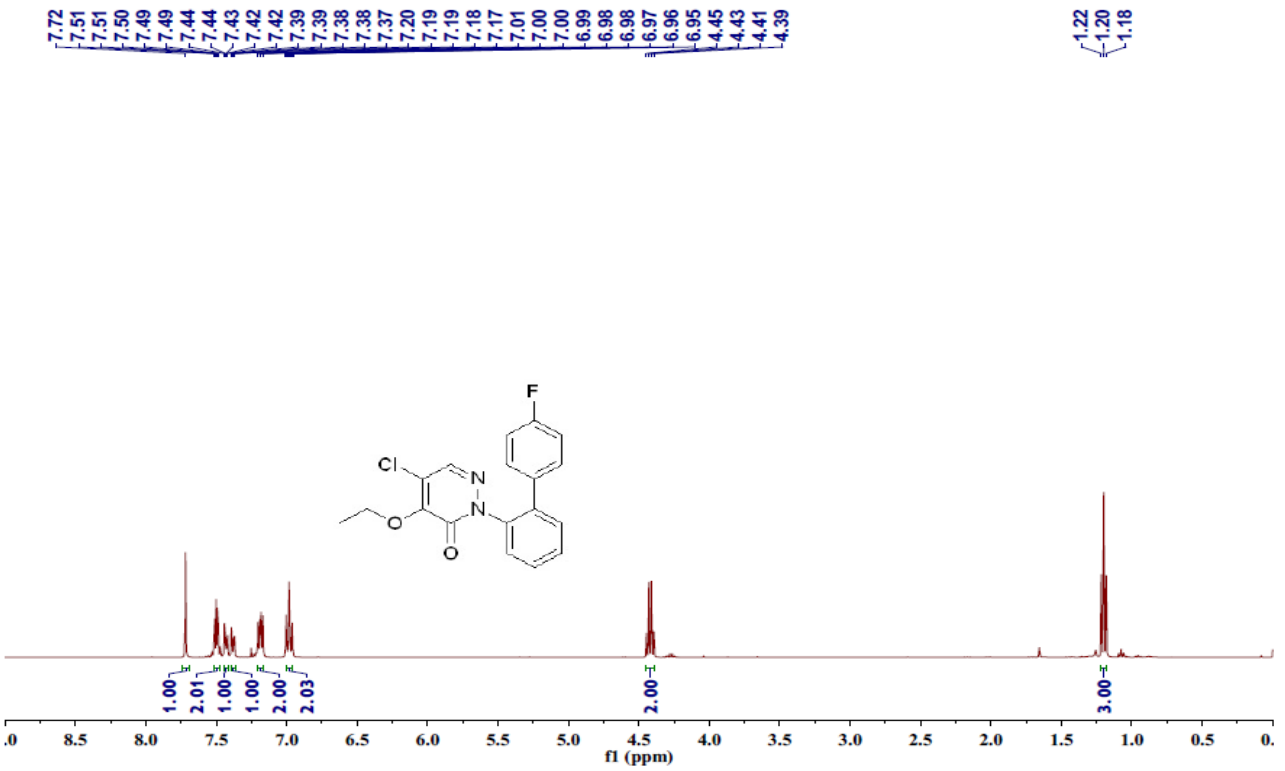
^{1}H and ^{13}C NMR spectra of compound **3a.**

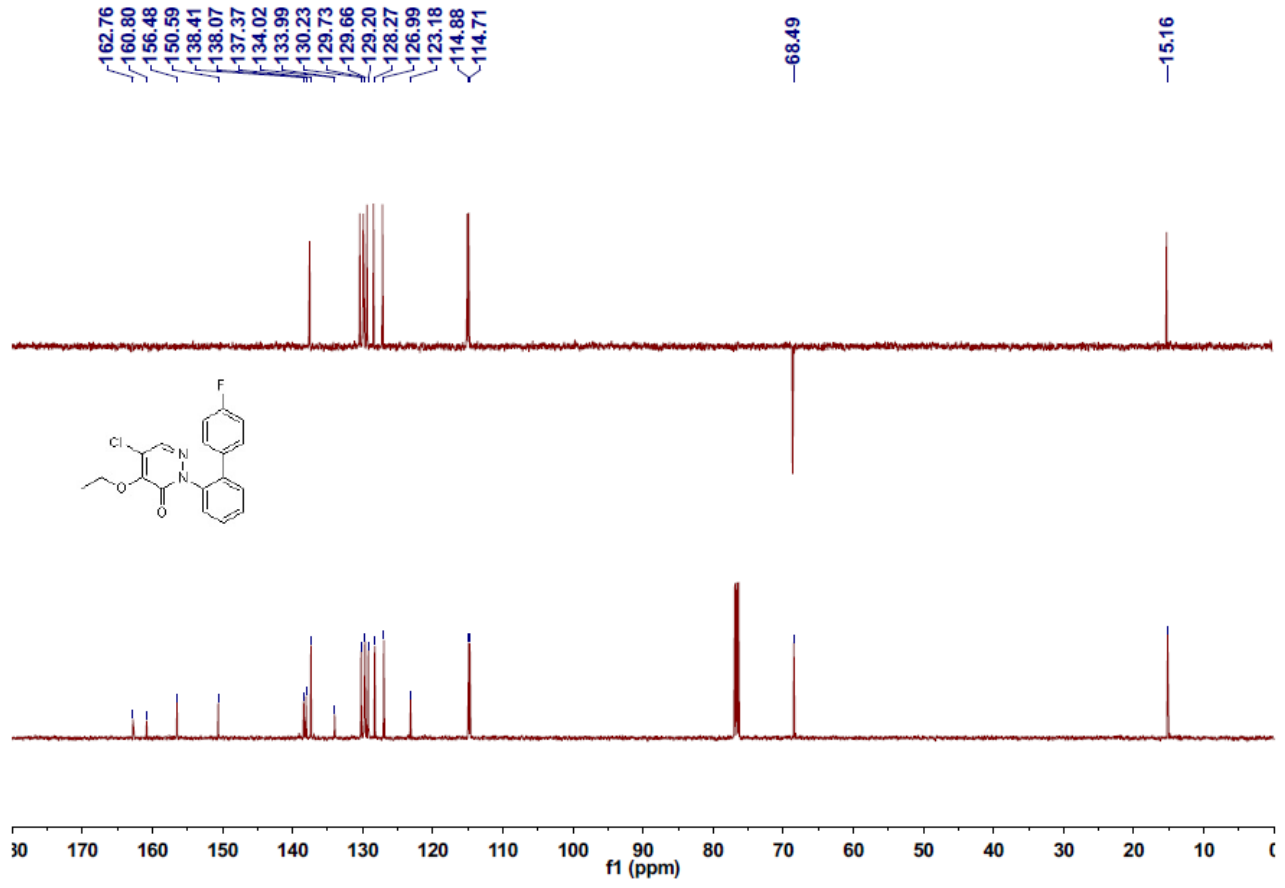


^{1}H and ^{13}C NMR spectra of compound **3b.**

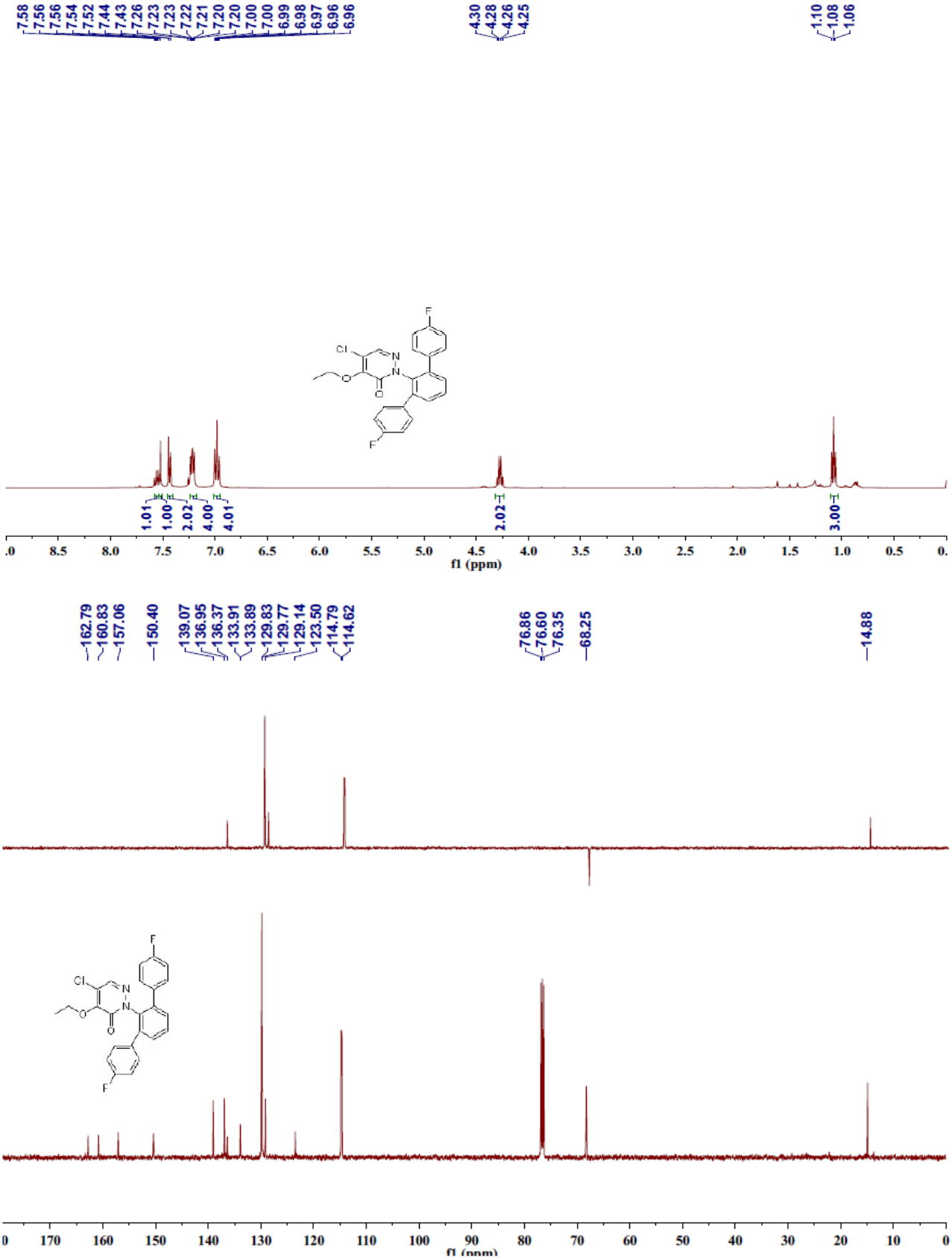


^{1}H and ^{13}C NMR spectra of compound **3c.**

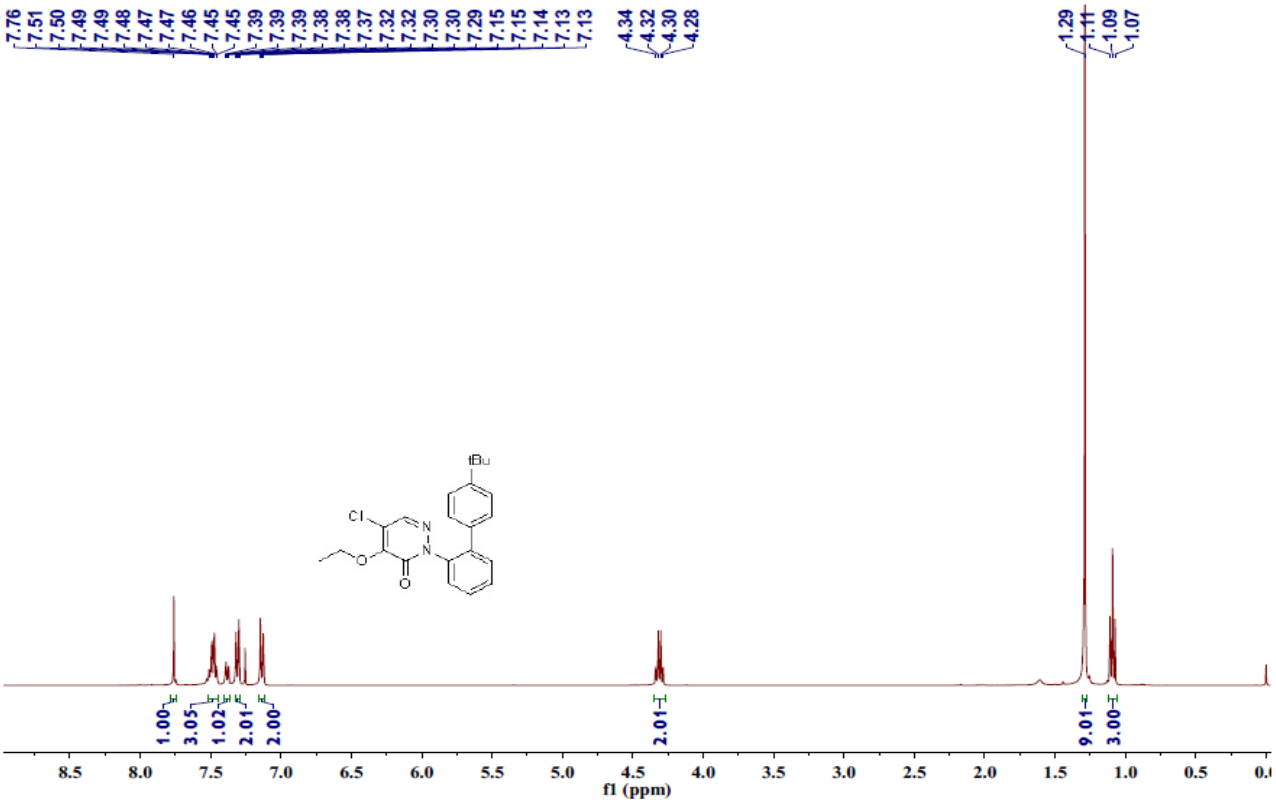


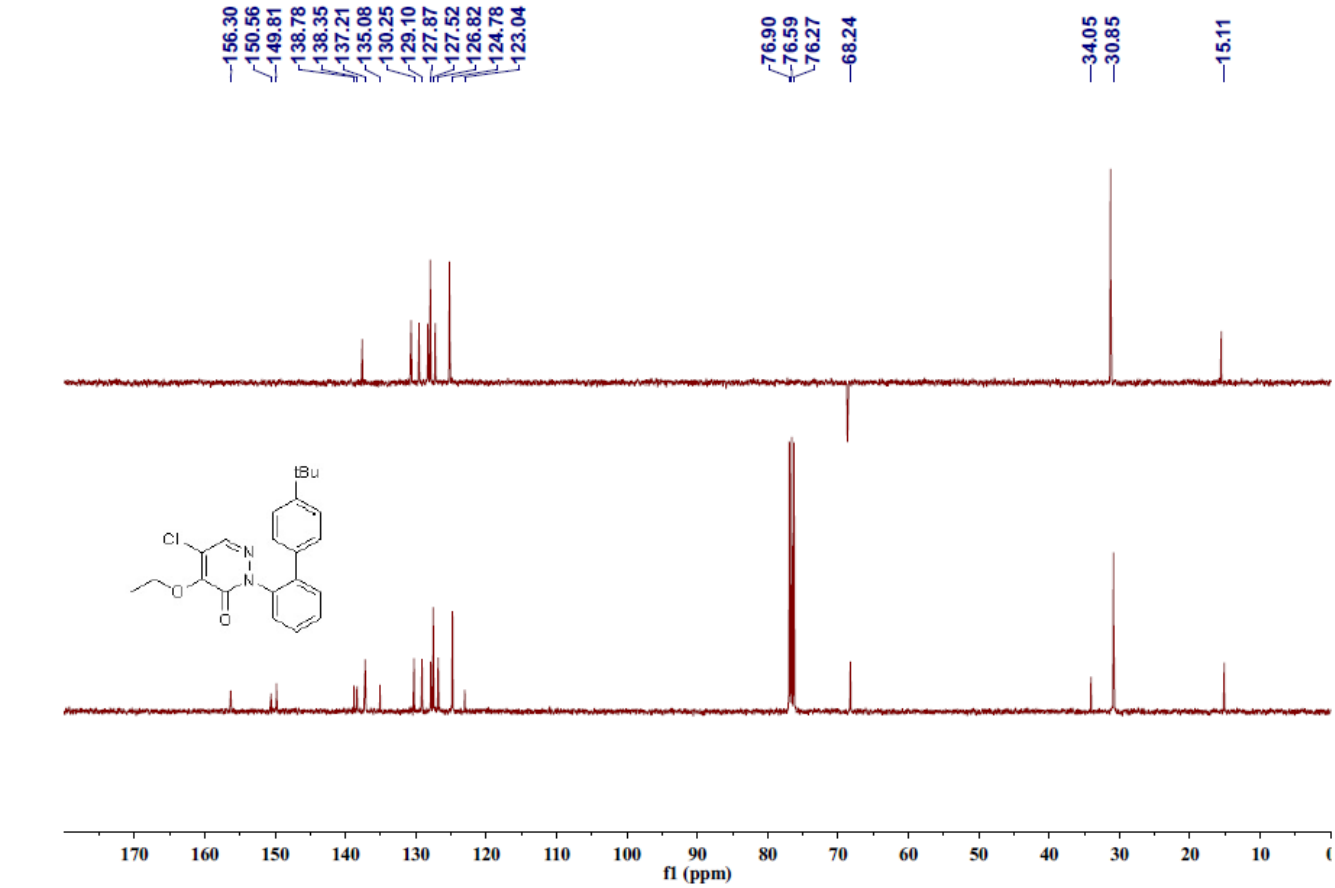


^{1}H and ^{13}C NMR spectra of compound **3c'**.

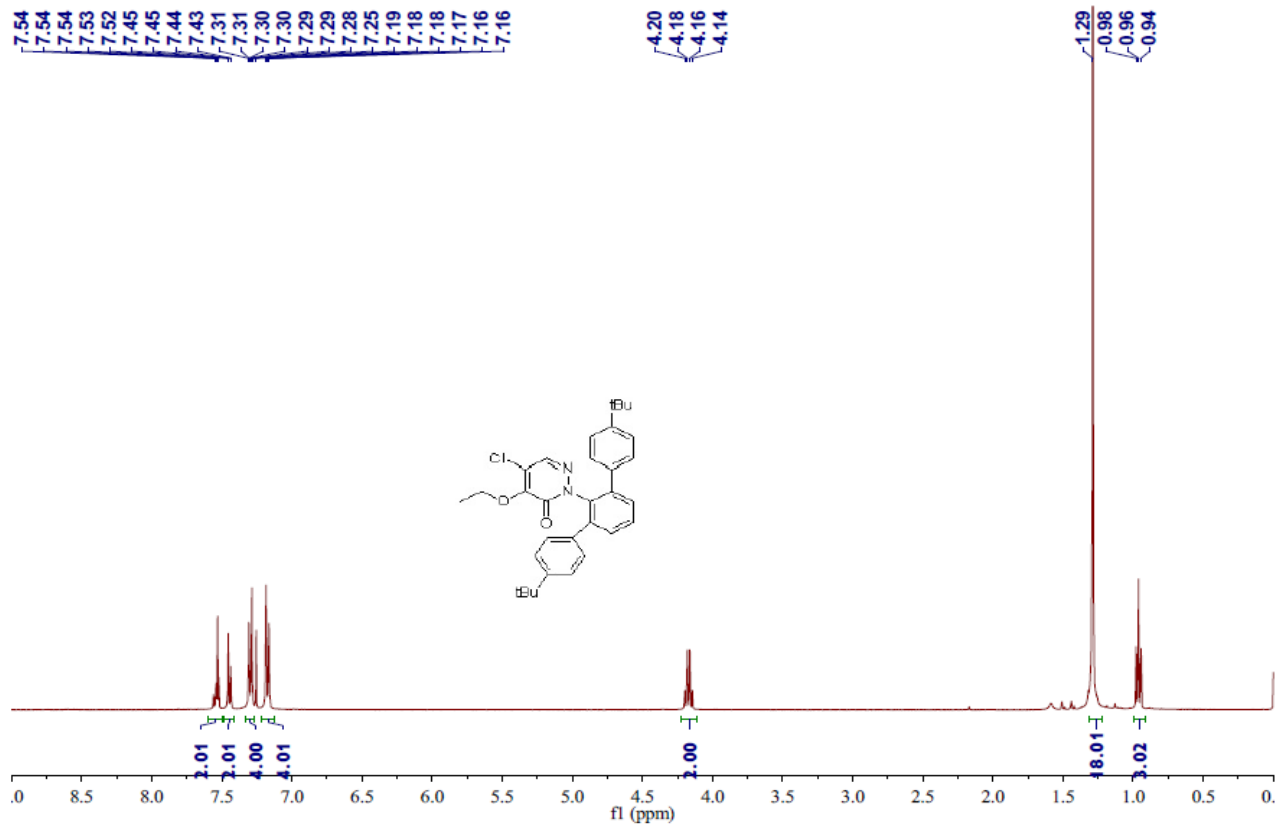


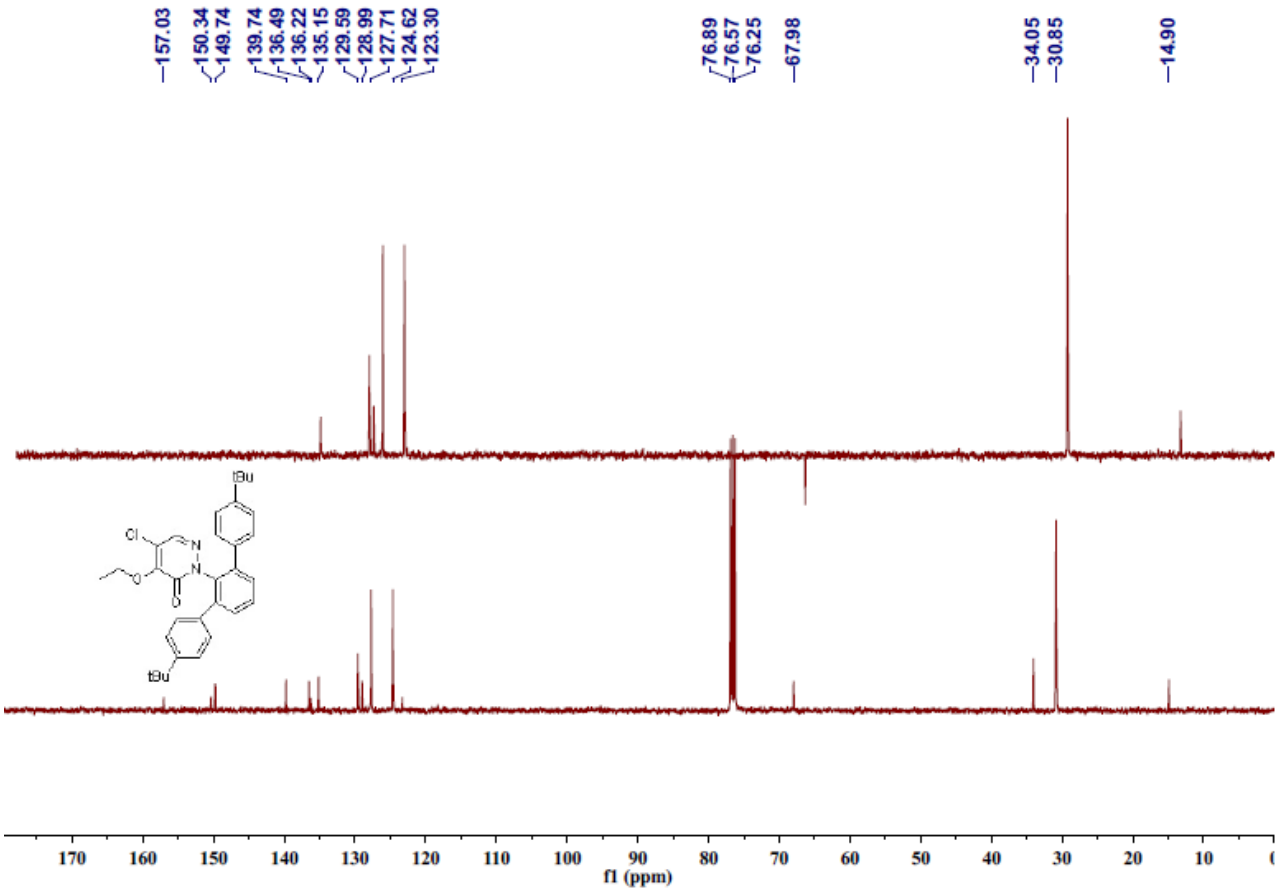
^{1}H and ^{13}C NMR spectra of compound **3d.**



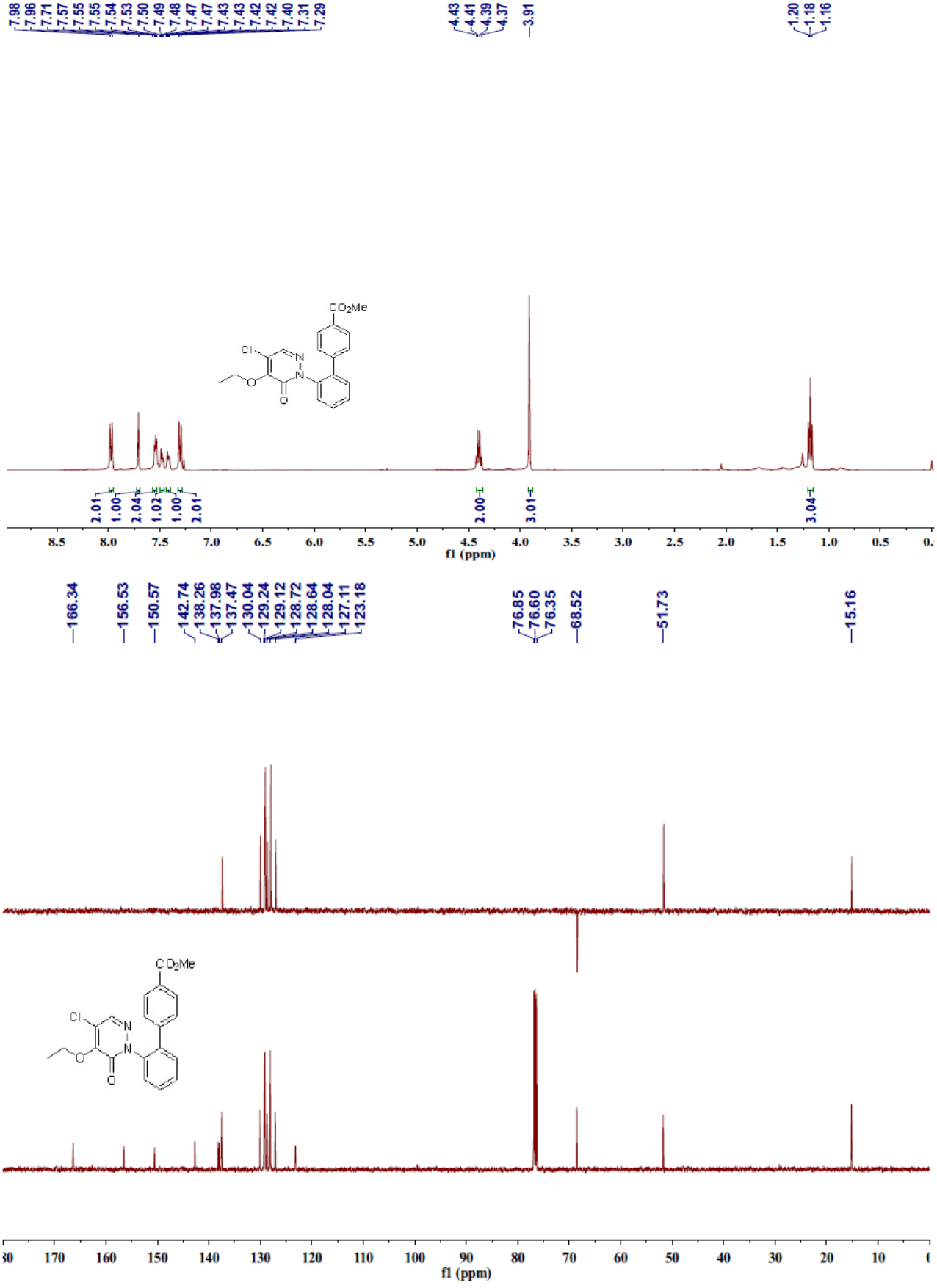


^{1}H and ^{13}C NMR spectra of compound **3d'.**

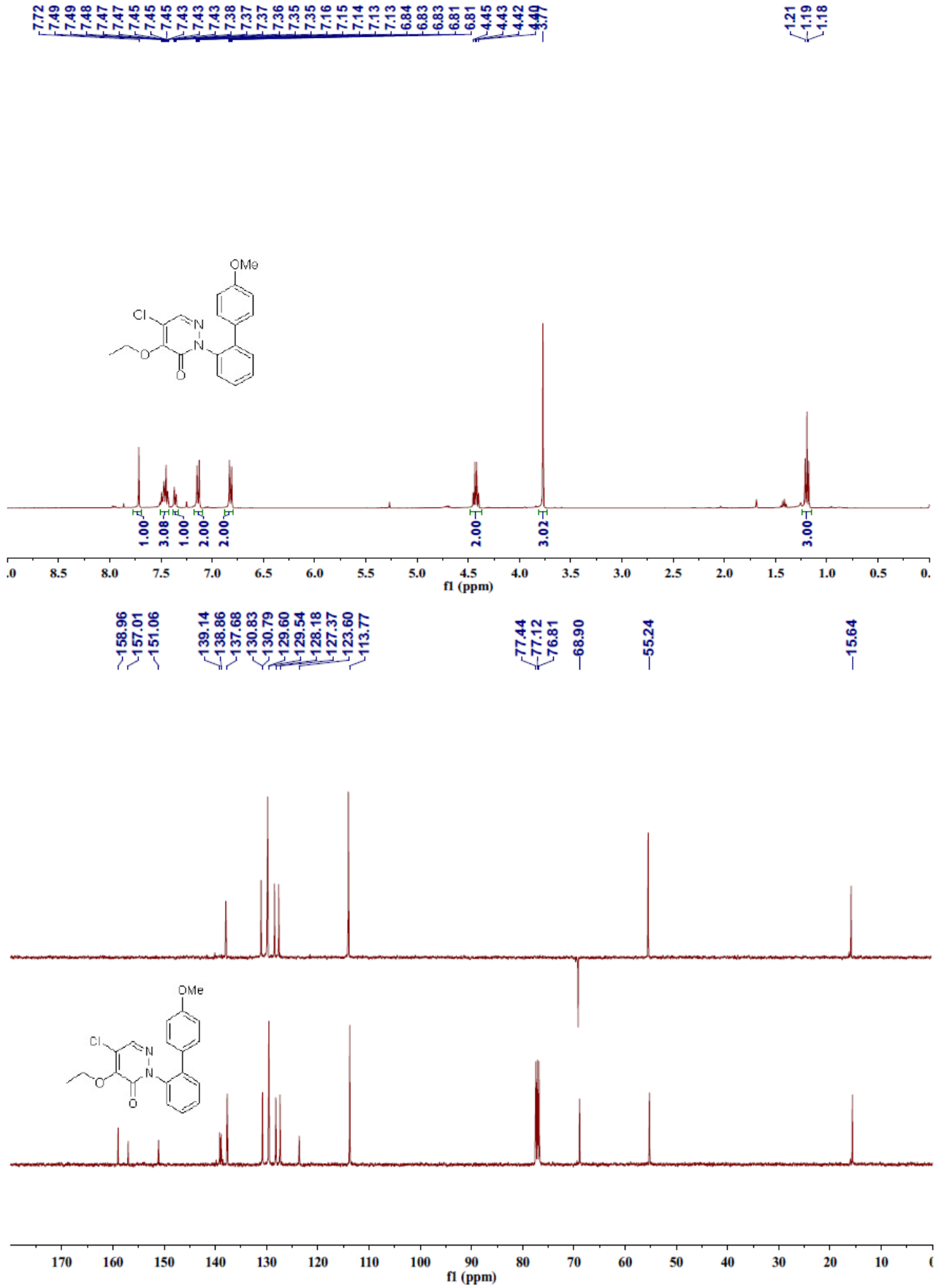




^{1}H and ^{13}C NMR spectra of compound **3e.**



^{1}H and ^{13}C NMR spectra of compound **3f.**



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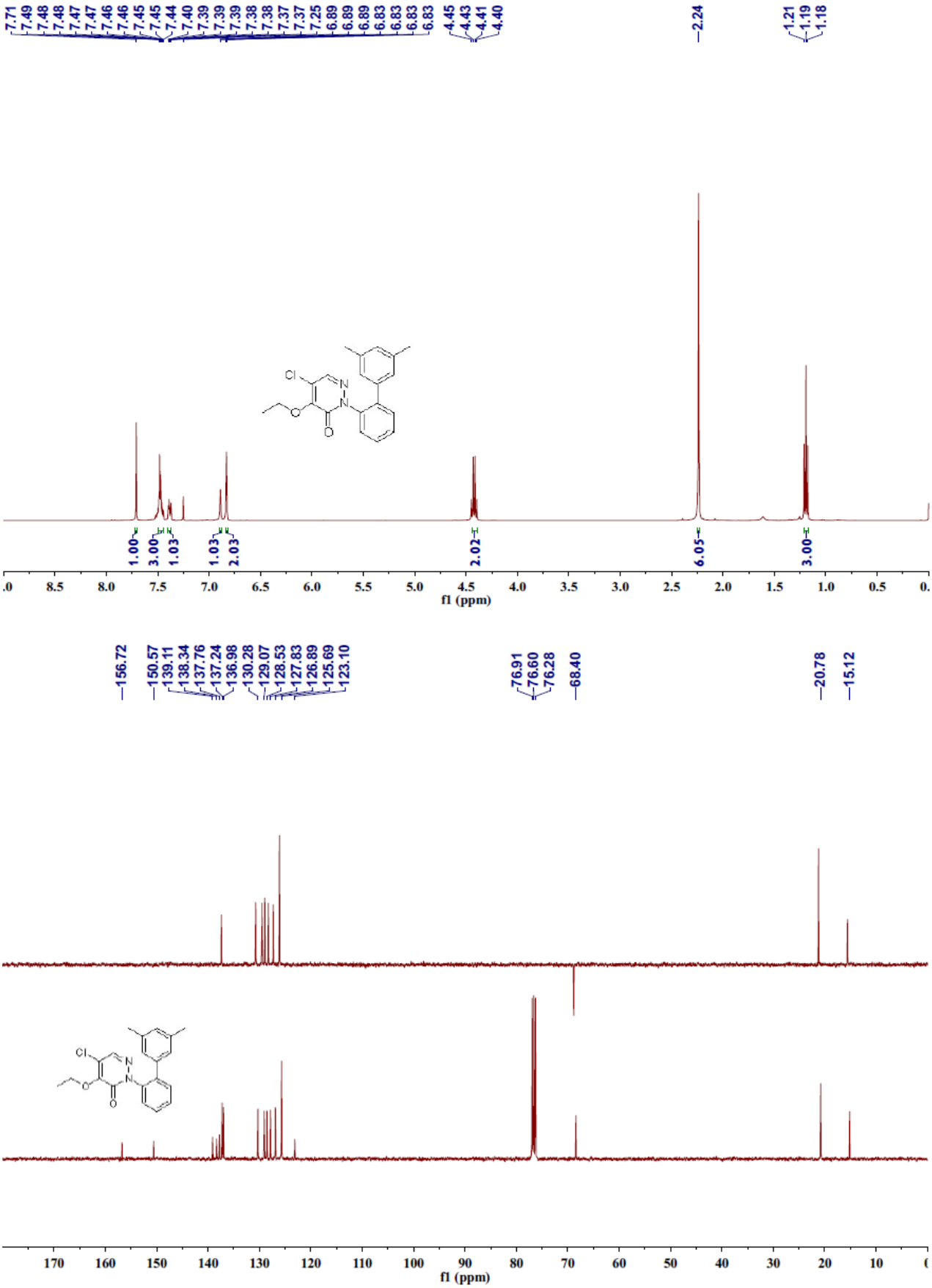
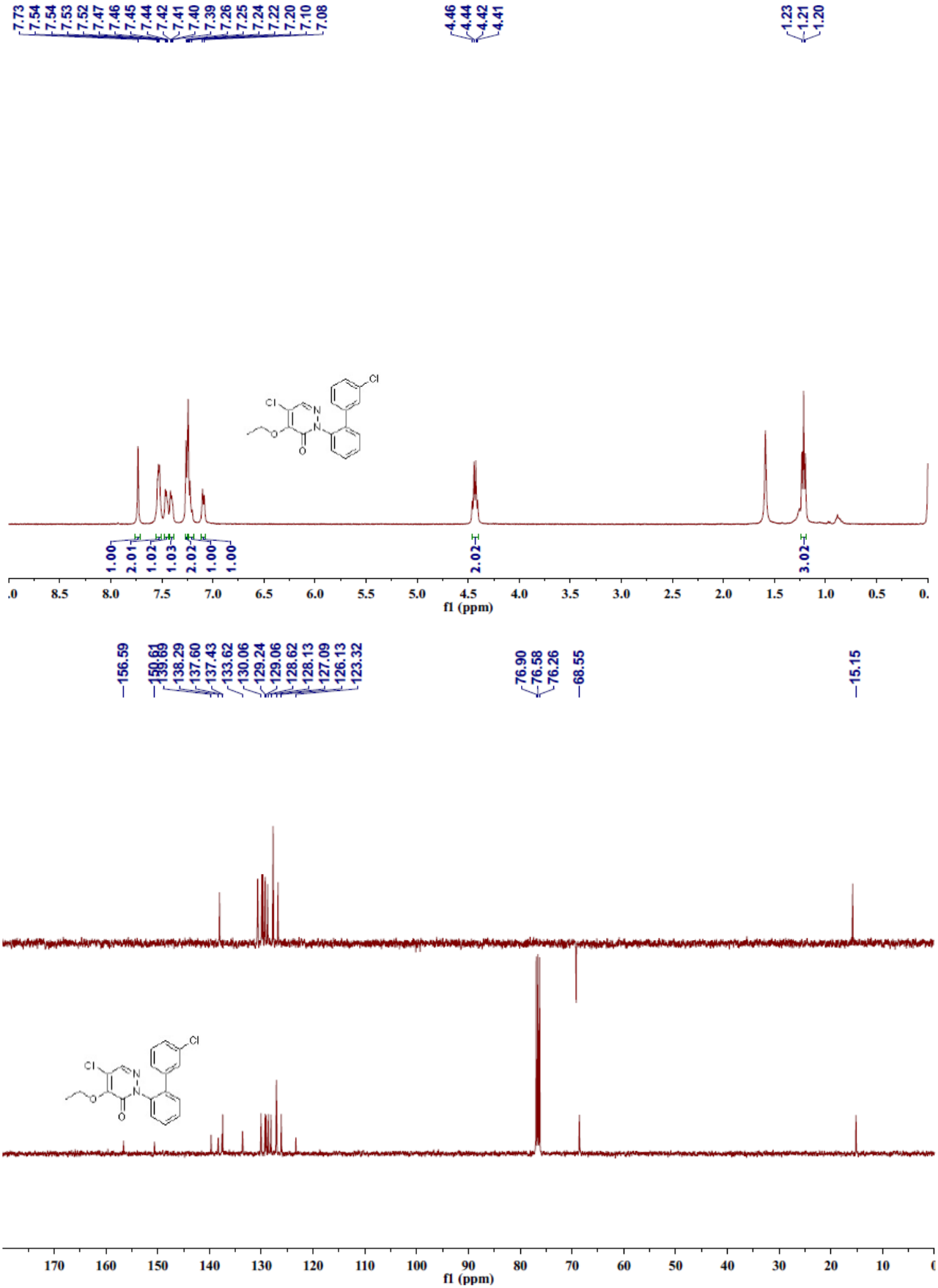


^{1}H and ^{13}C NMR spectra of compound **3h.**



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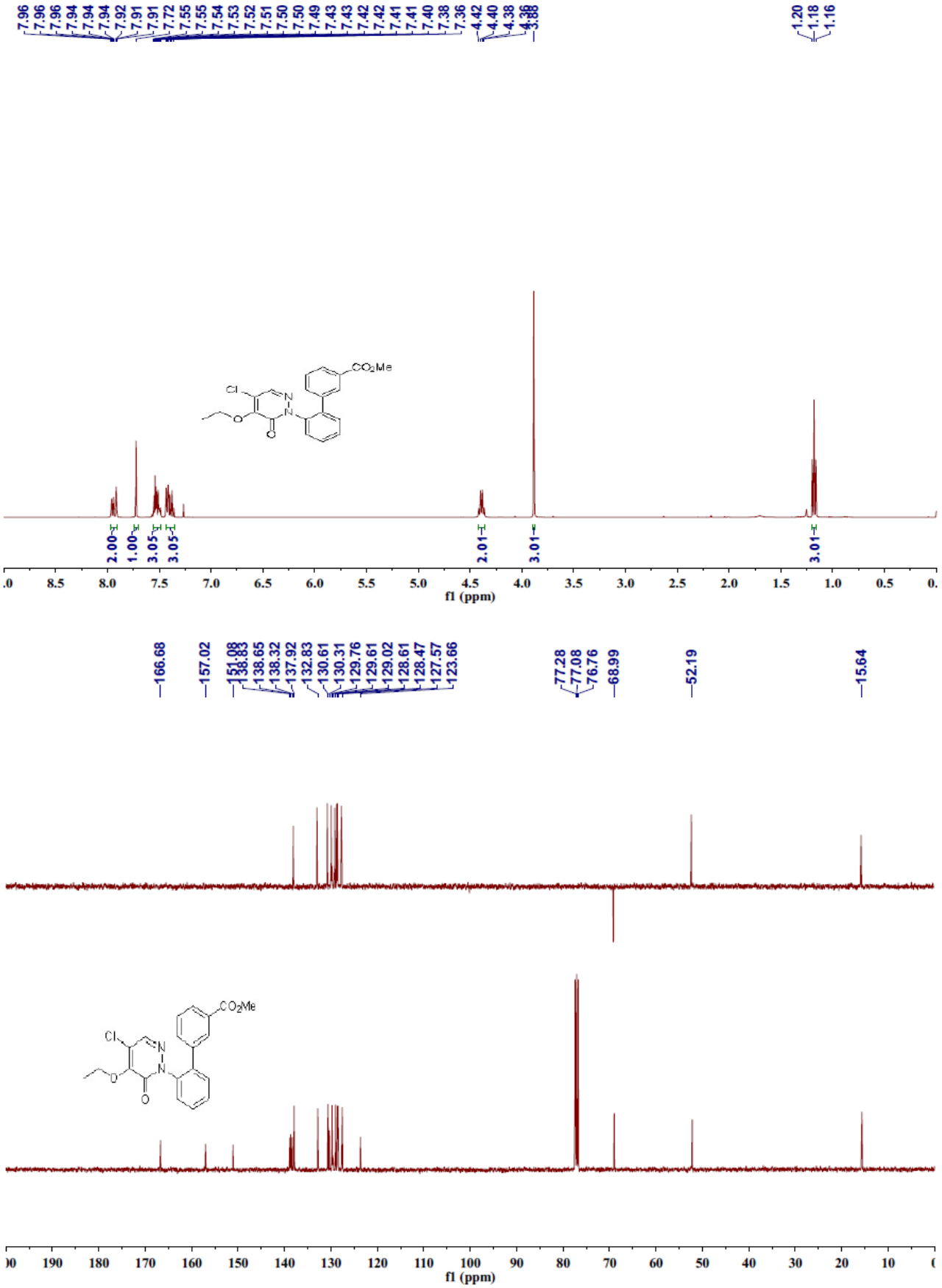
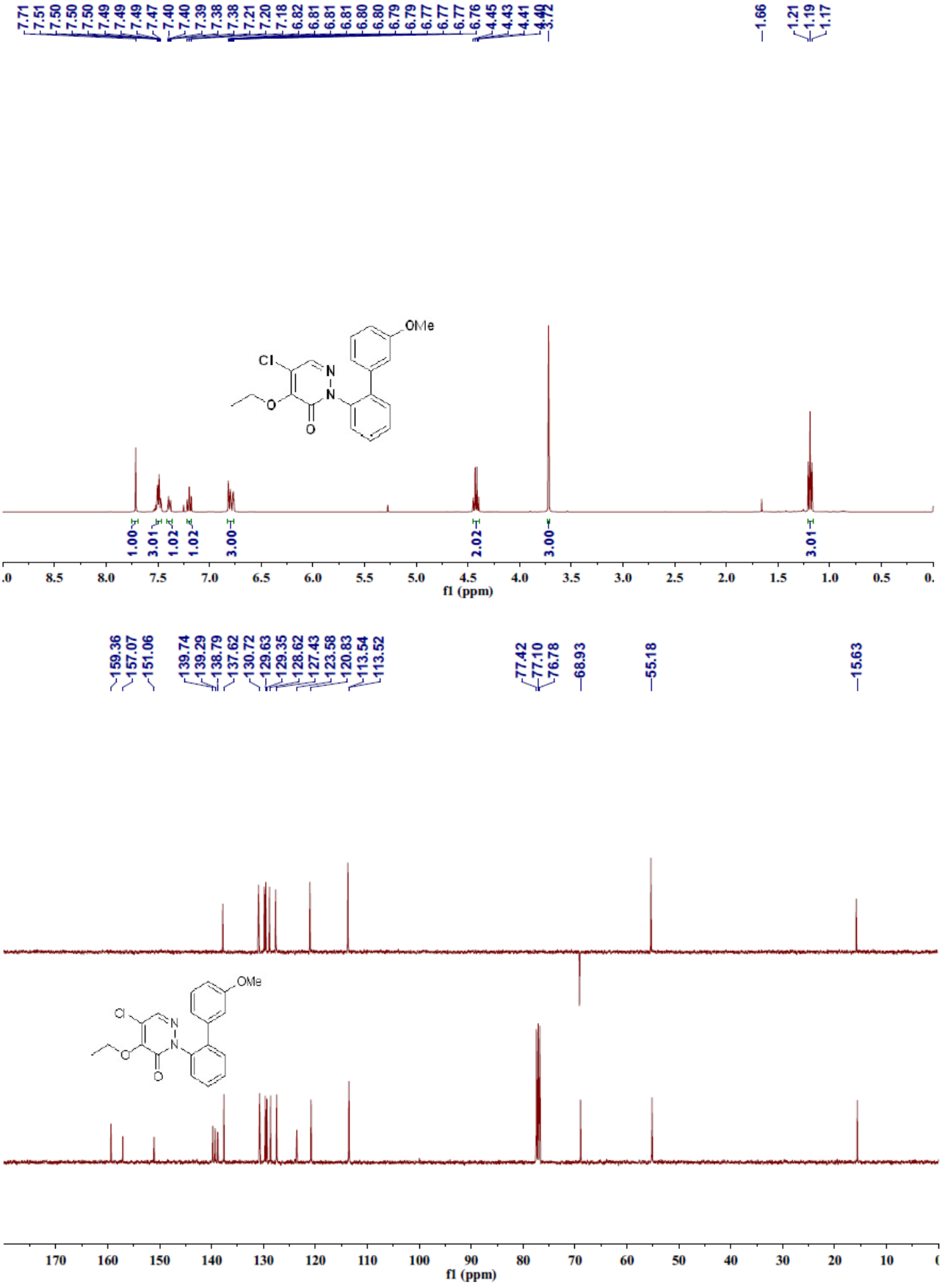
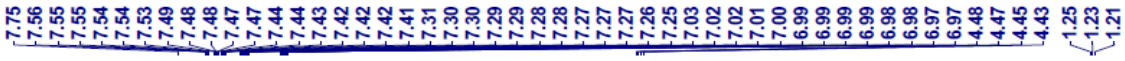
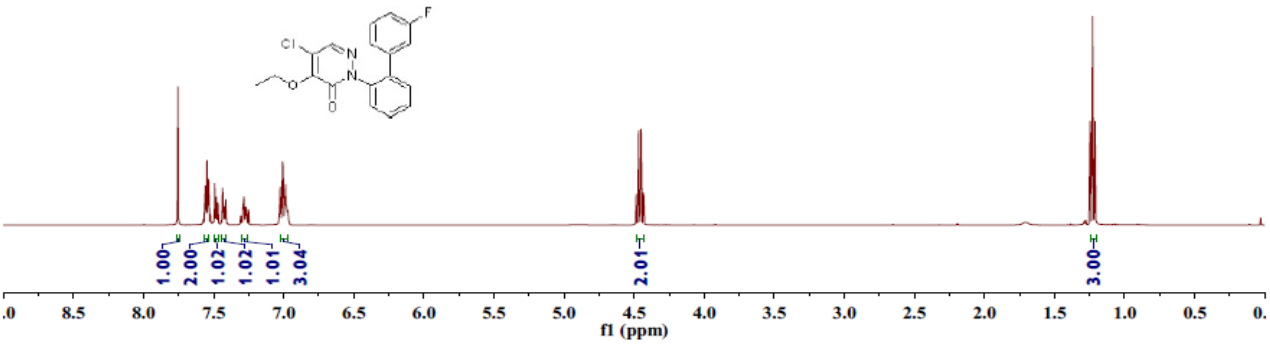


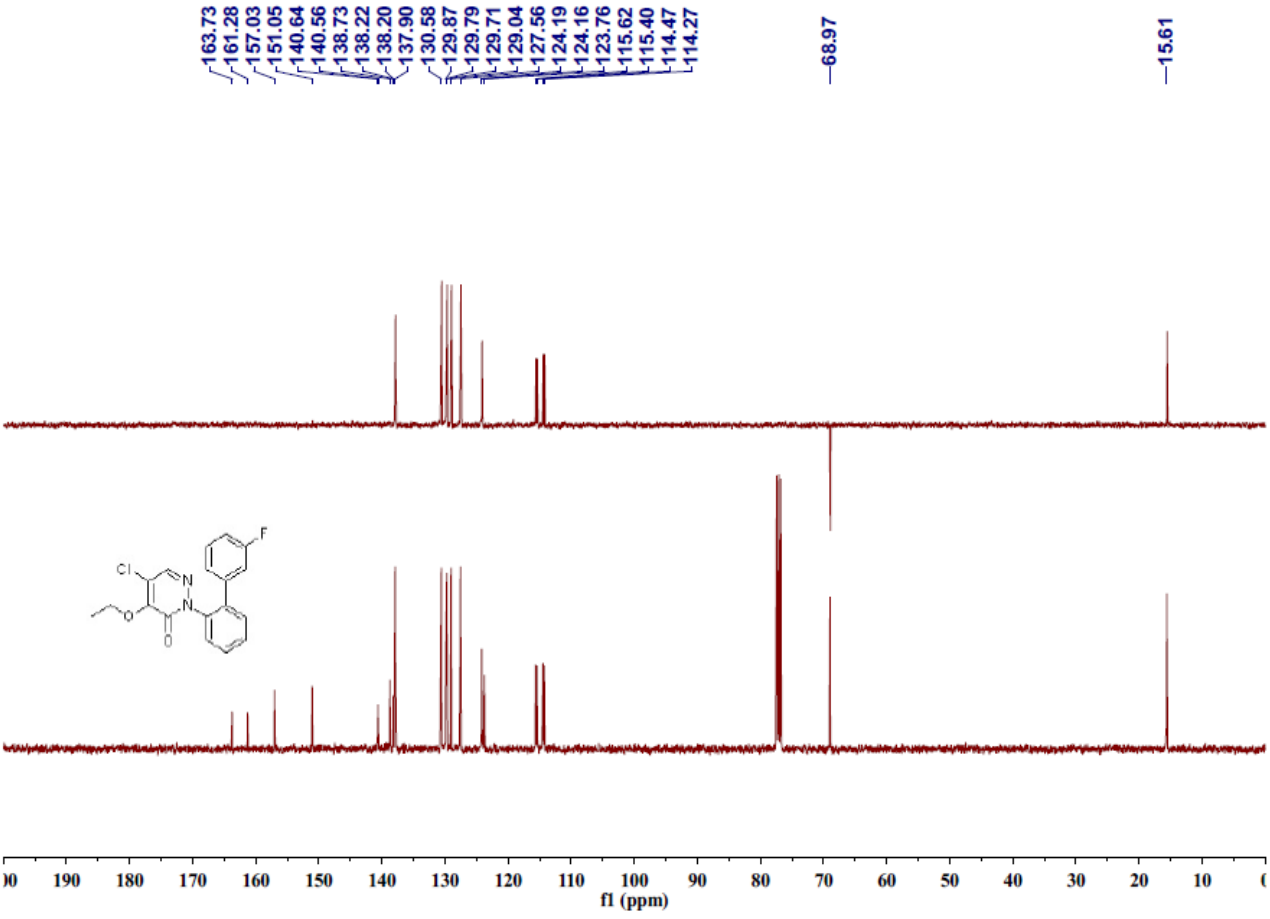
^{1}H and ^{13}C NMR spectra of compound **3j.**



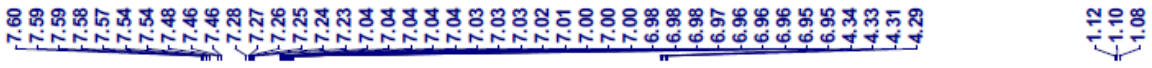
^{1}H and ^{13}C NMR spectra of compound **3k.**

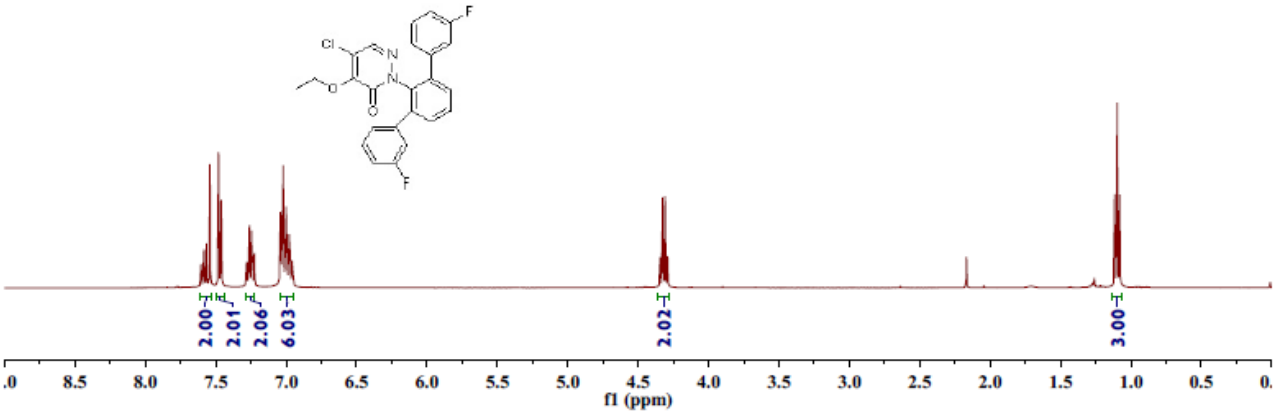


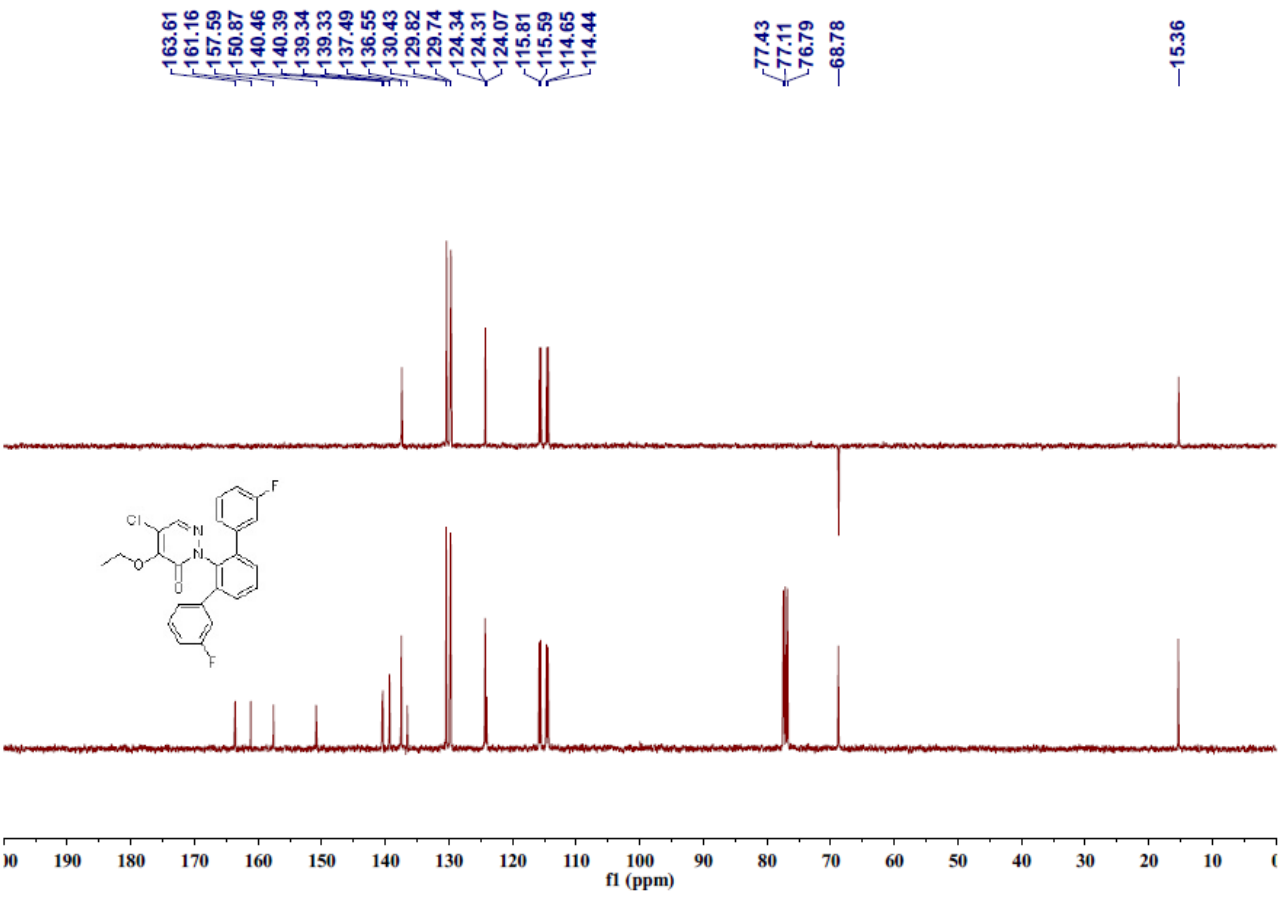




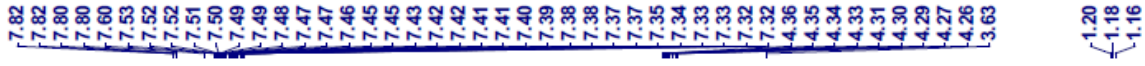
^{1}H and ^{13}C NMR spectra of compound **3k'.**

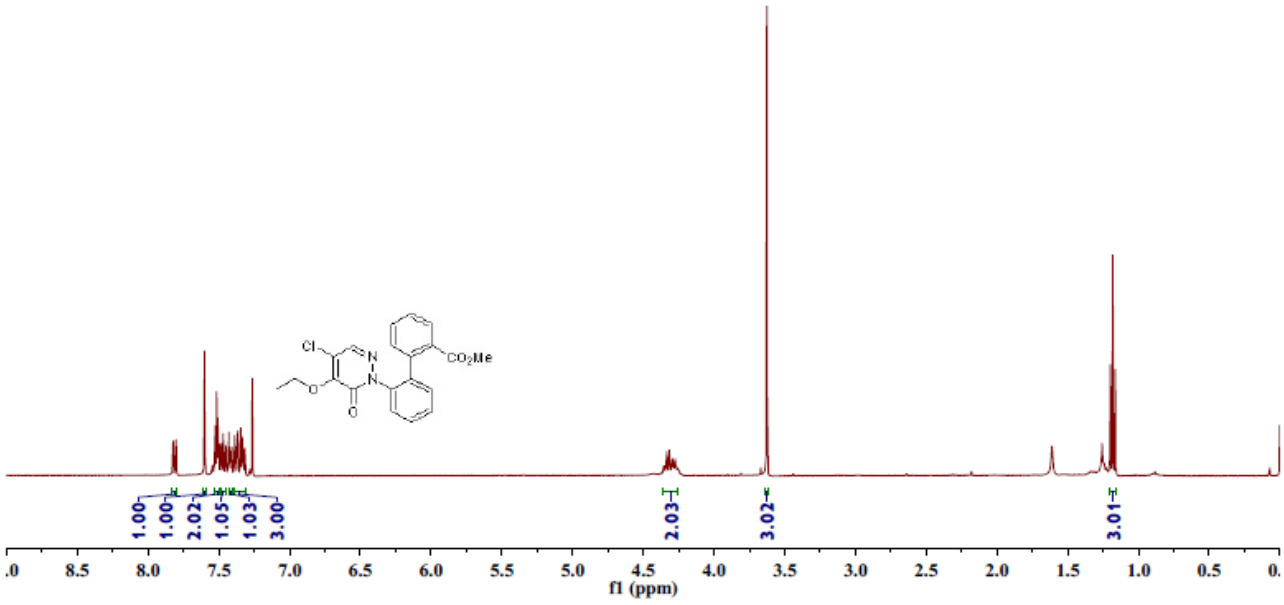


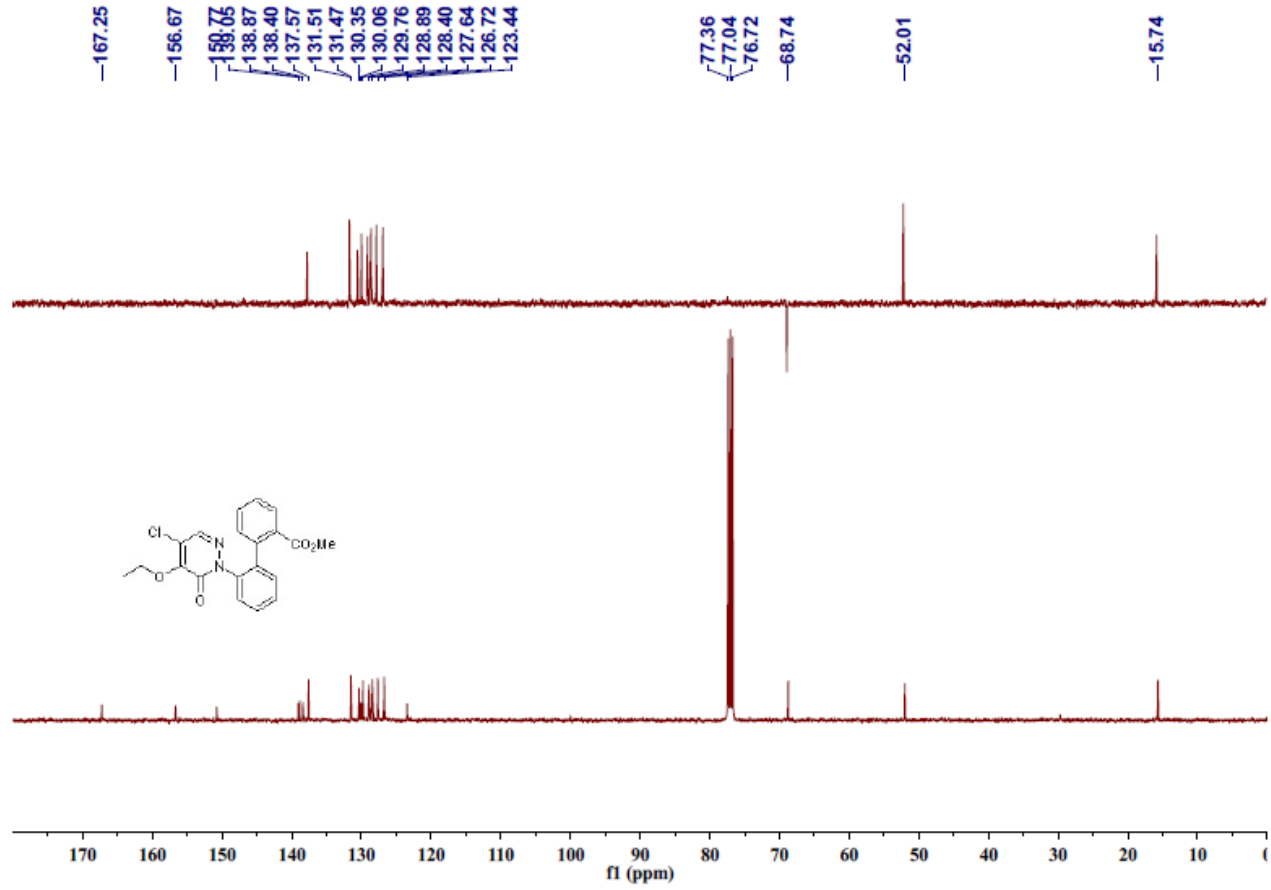




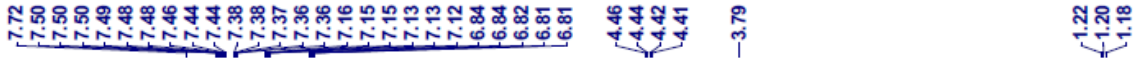
^{1}H and ^{13}C NMR spectra of compound **3l.**

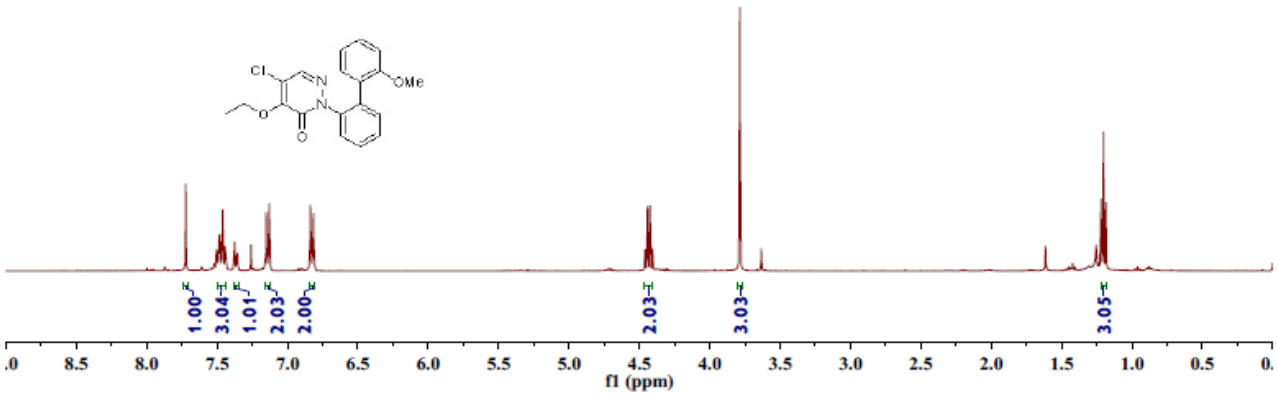


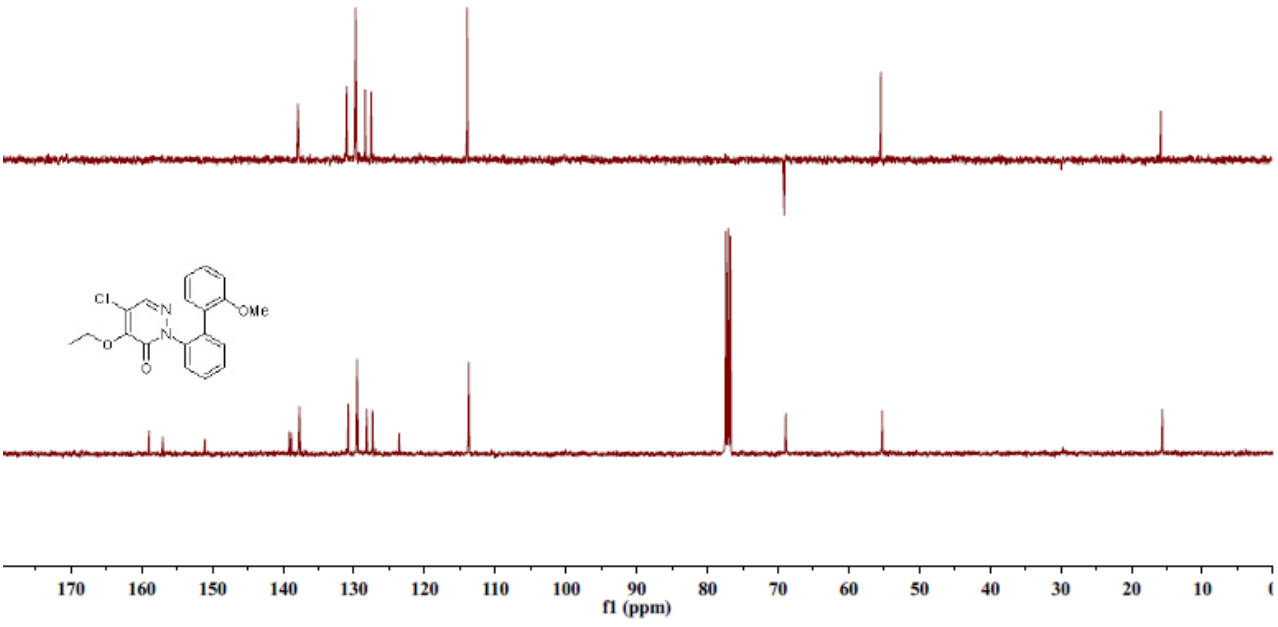




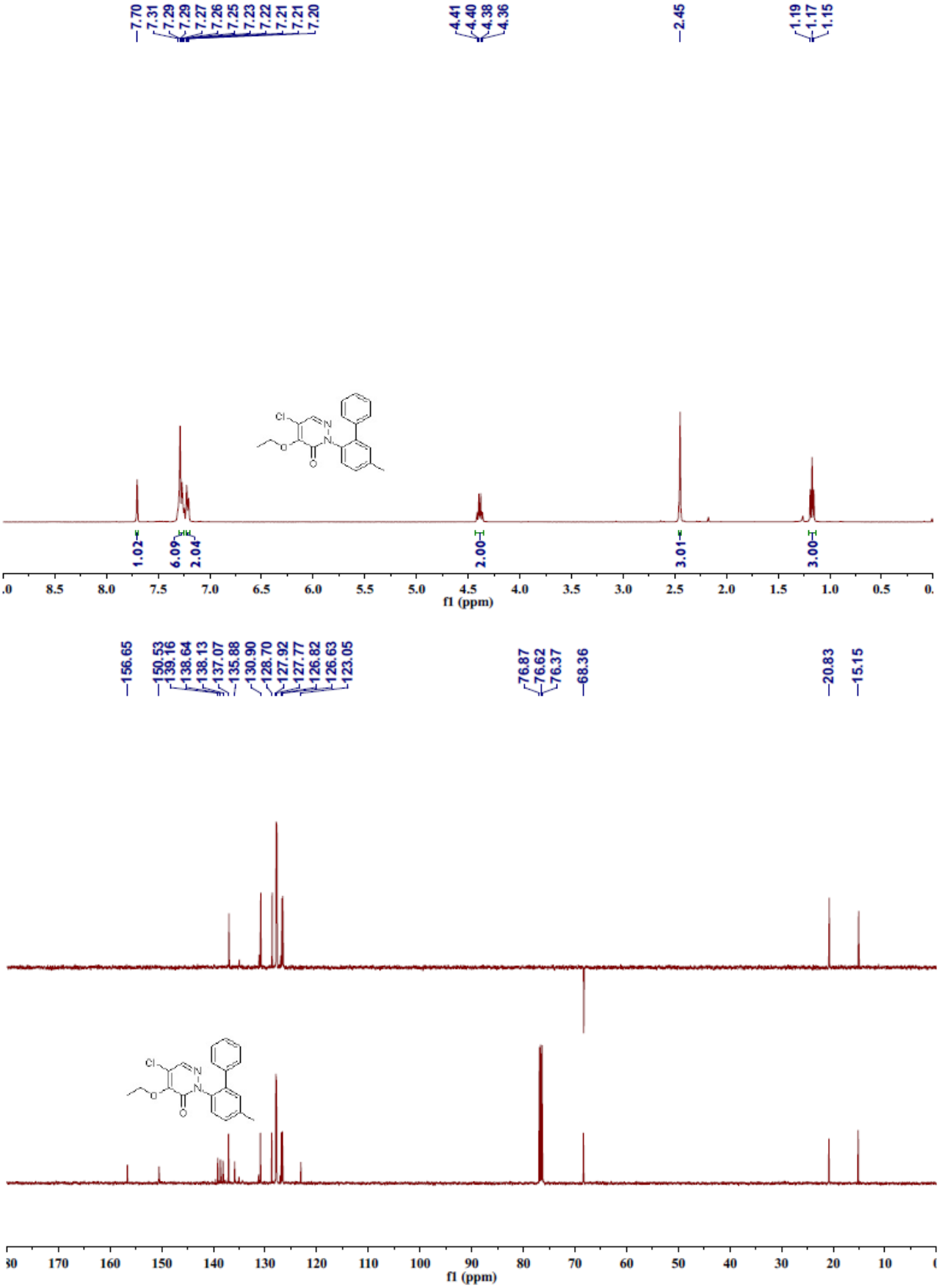
^{1}H and ^{13}C NMR spectra of compound **3m.**



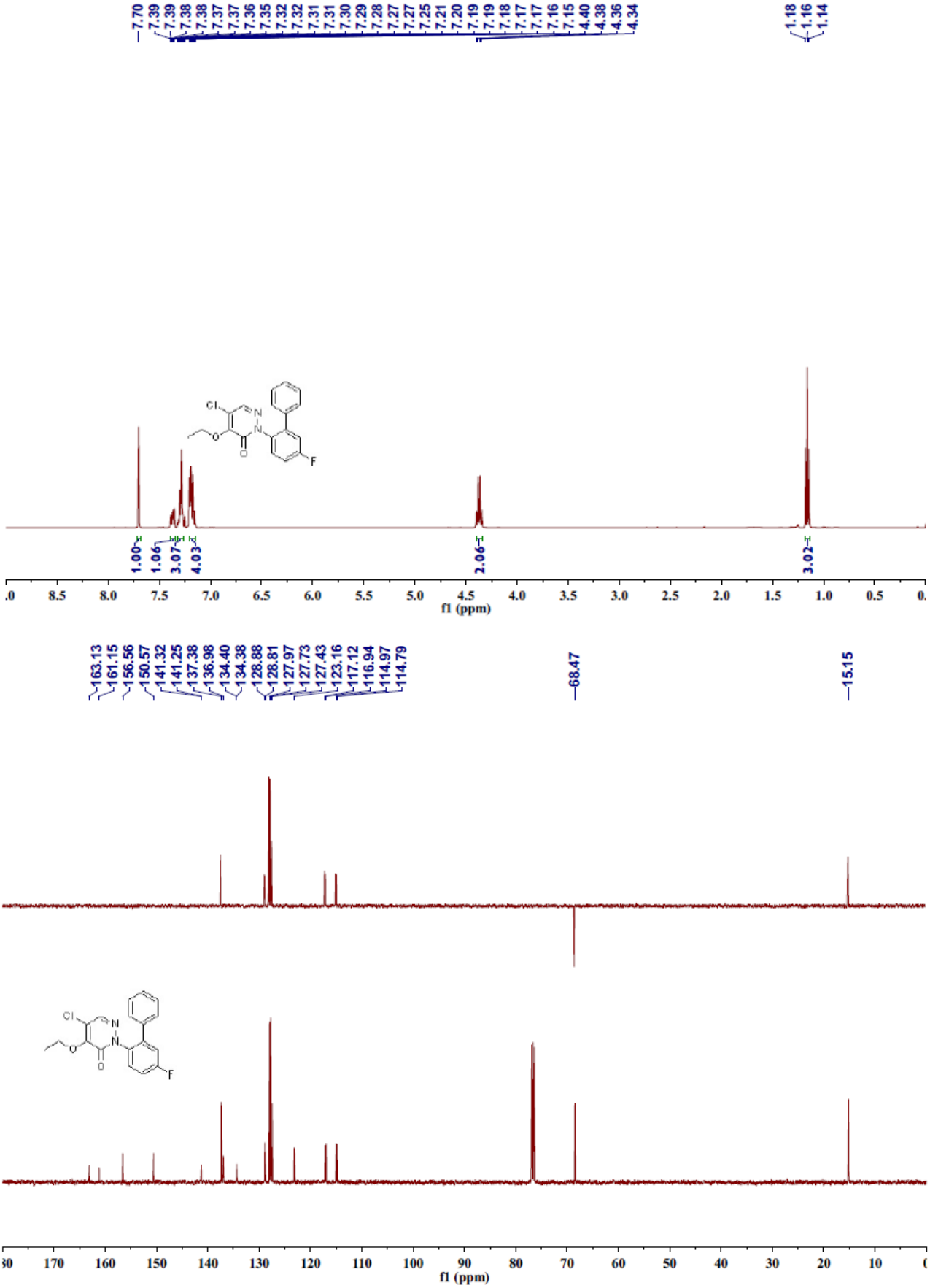




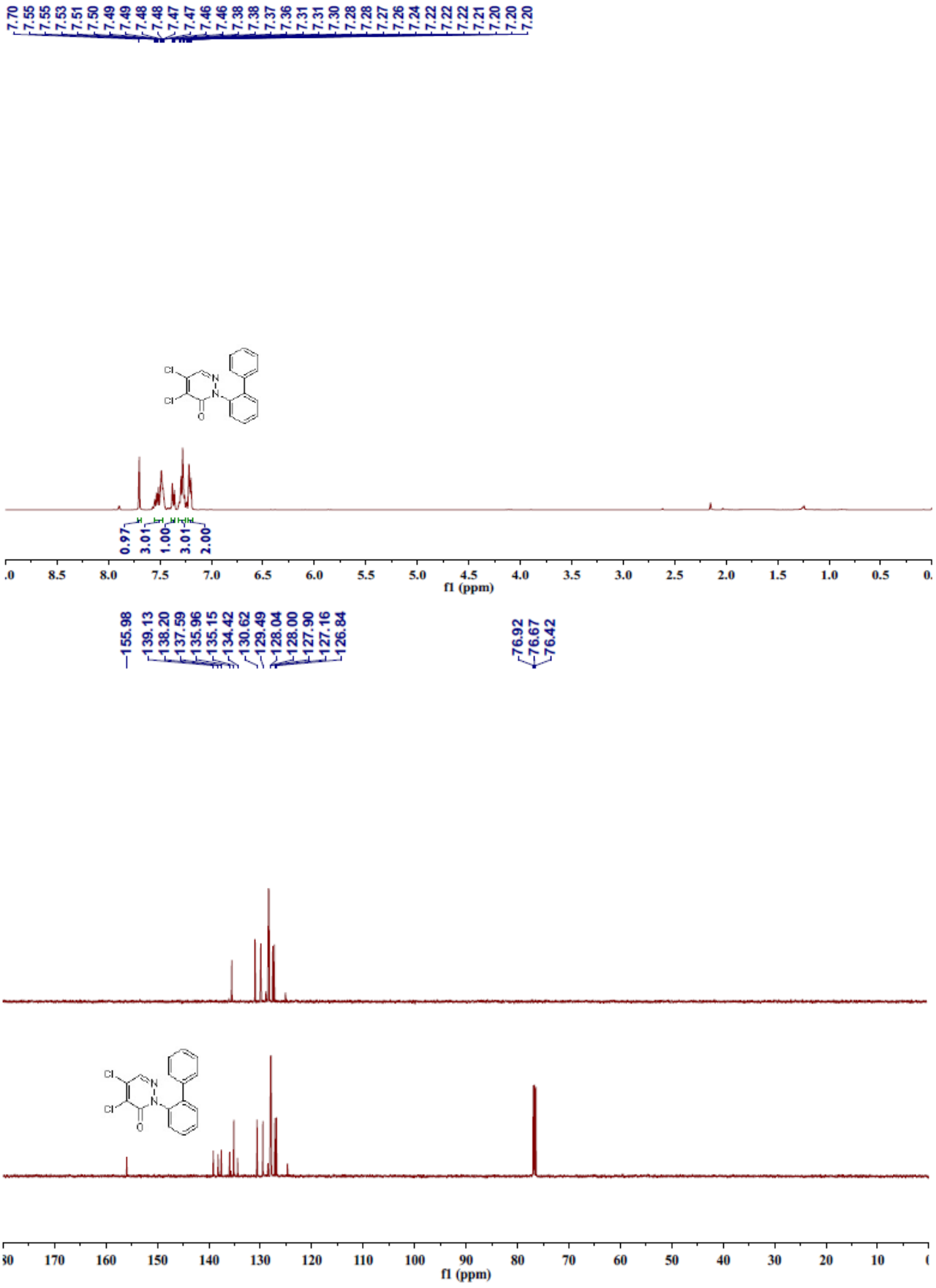
^{1}H and ^{13}C NMR spectra of compound **3n.**



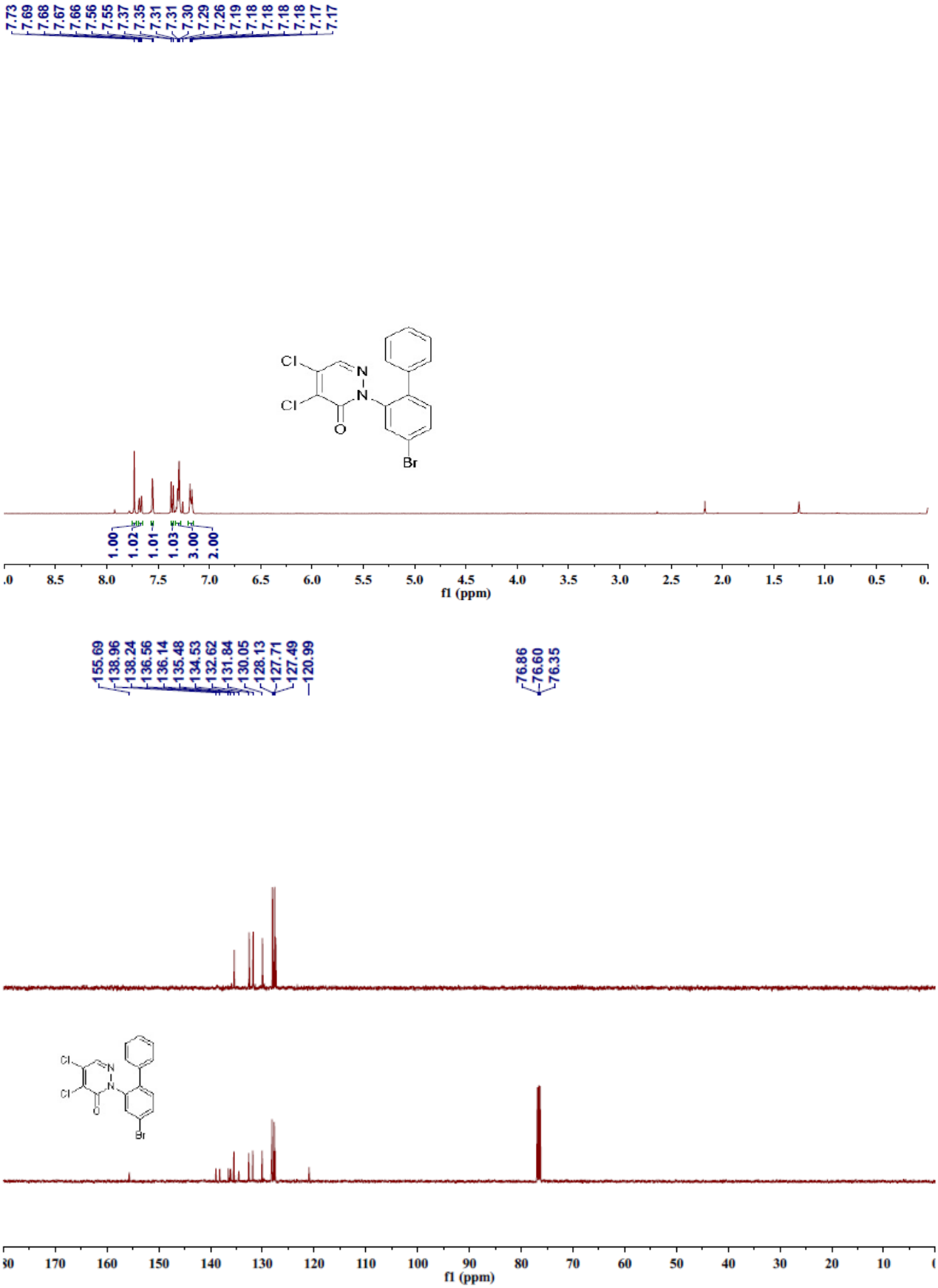
^{1}H and ^{13}C NMR spectra of compound **3o.**



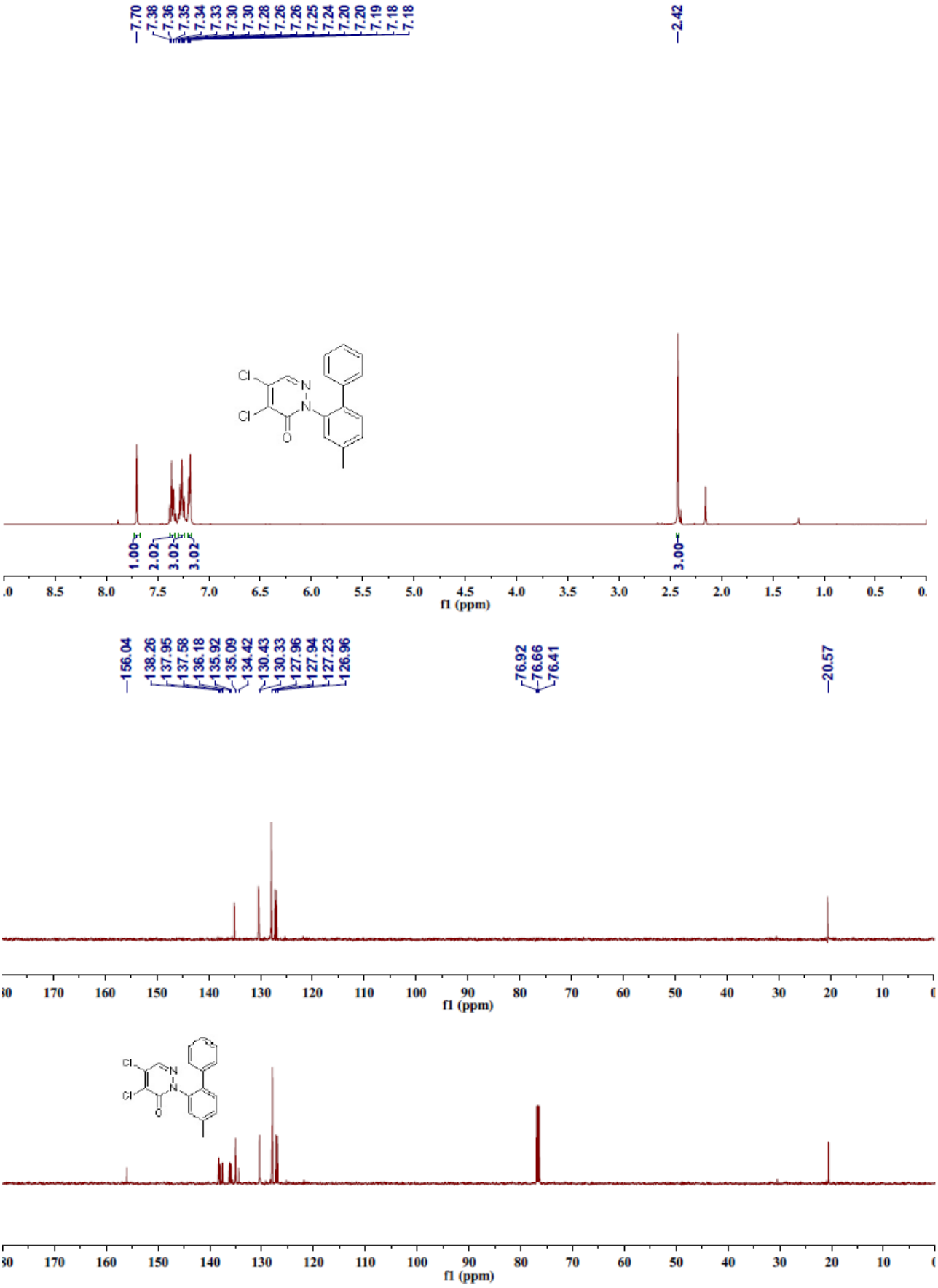
^{1}H and ^{13}C NMR spectra of compound **3p.**



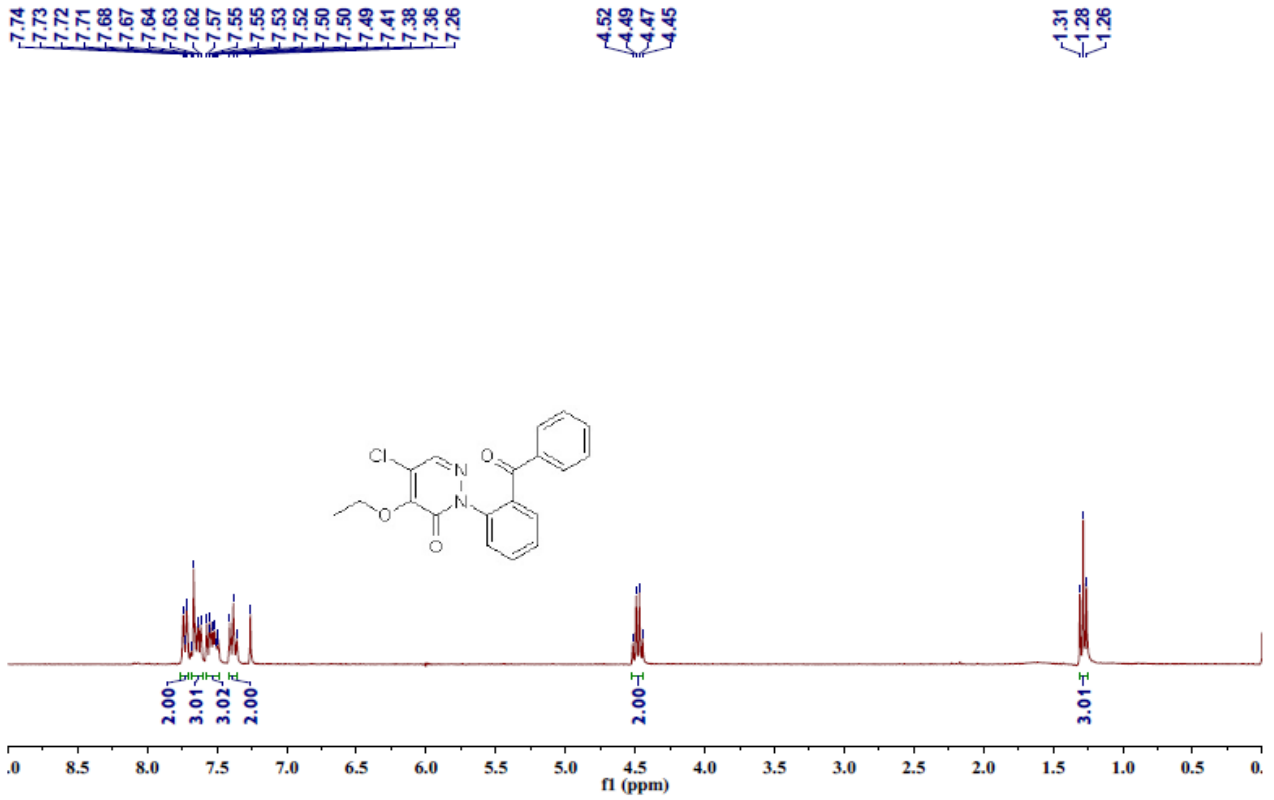
^{1}H and ^{13}C NMR spectra of compound **3q.**

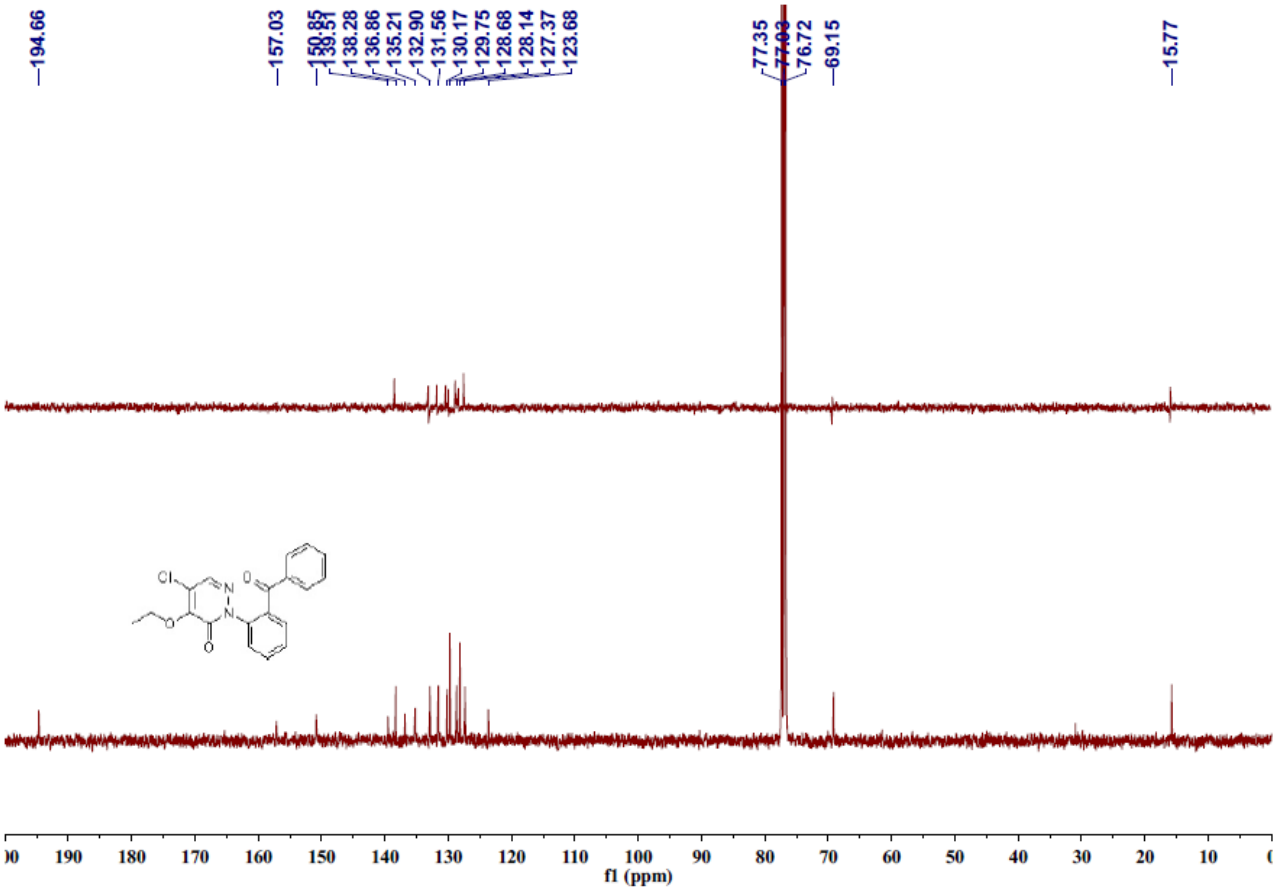


^{1}H and ^{13}C NMR spectra of compound **3r.**

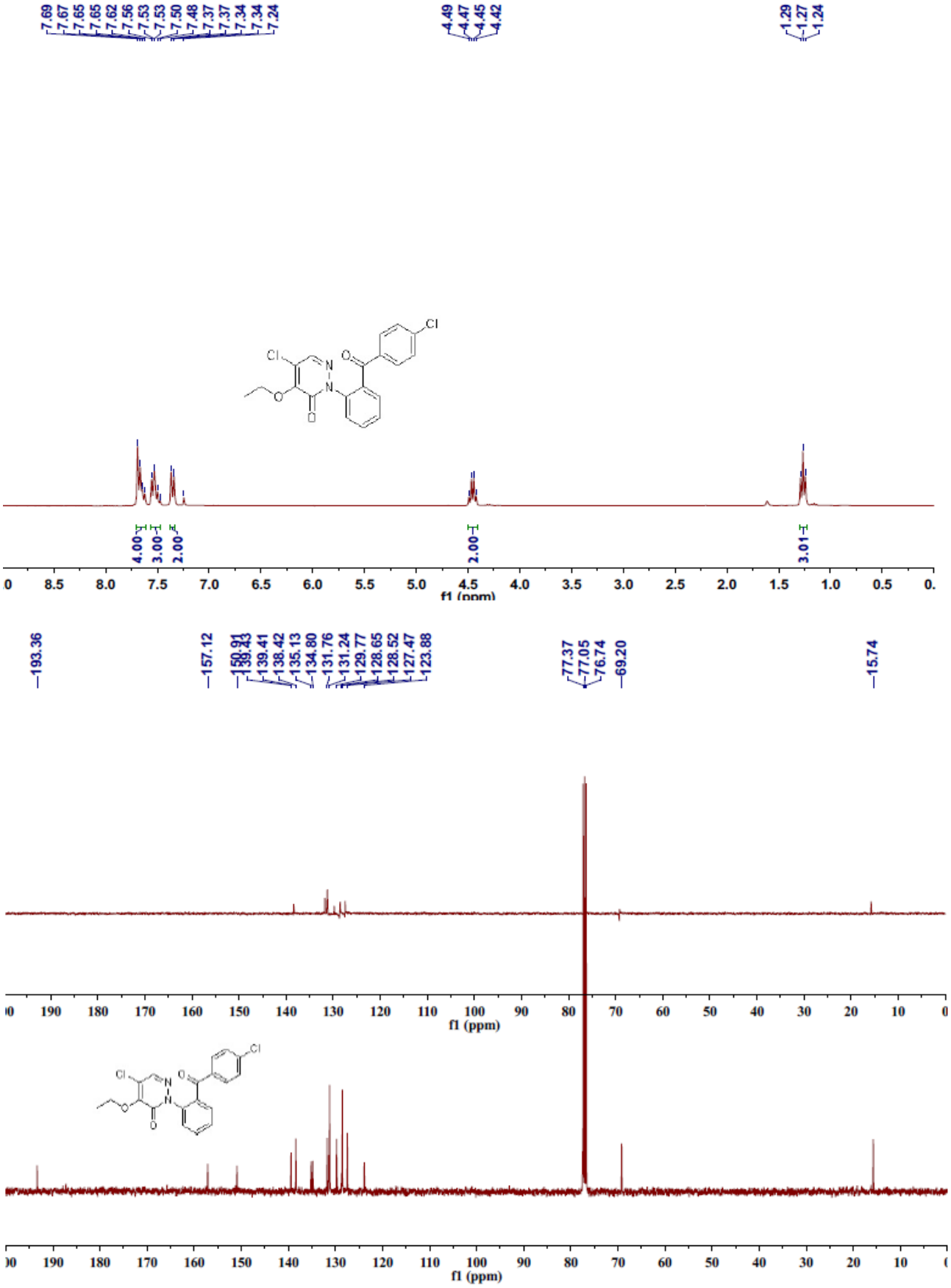


^{1}H and ^{13}C NMR spectra of compound **5a.**

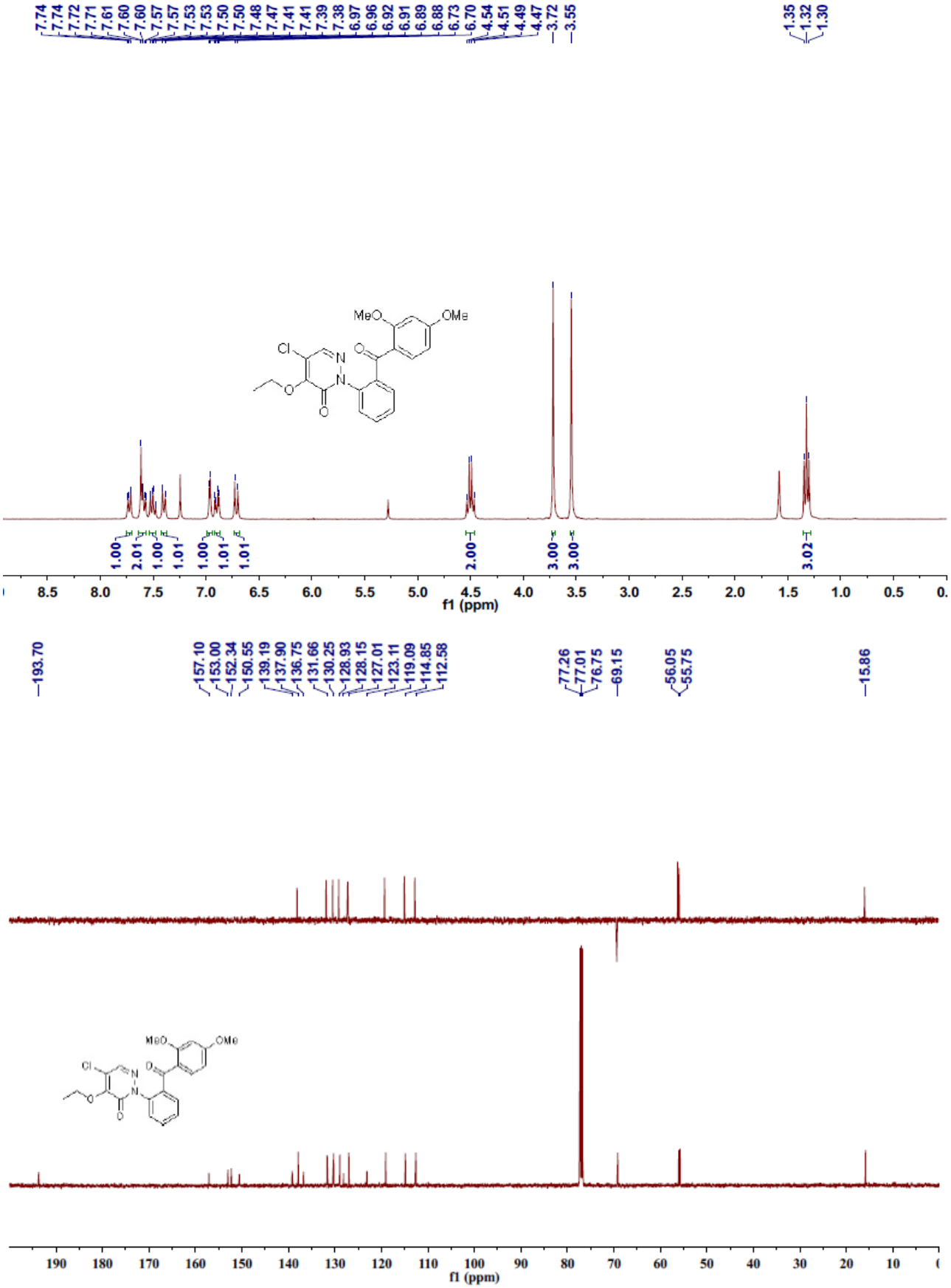




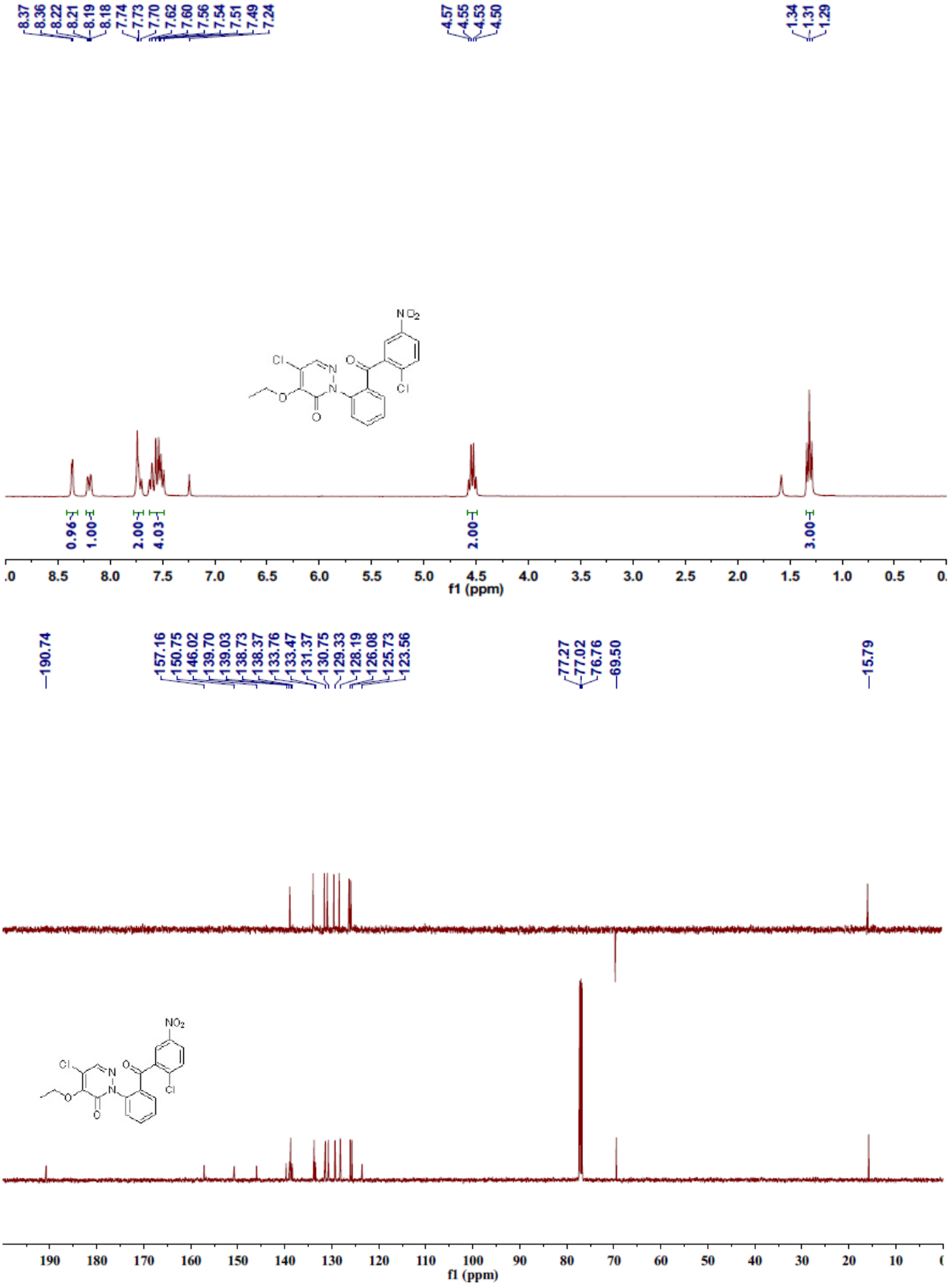
^{1}H and ^{13}C NMR spectra of compound **5b.**



^{1}H and ^{13}C NMR spectra of compound **5c.**



^{1}H and ^{13}C NMR spectra of compound **5d.**



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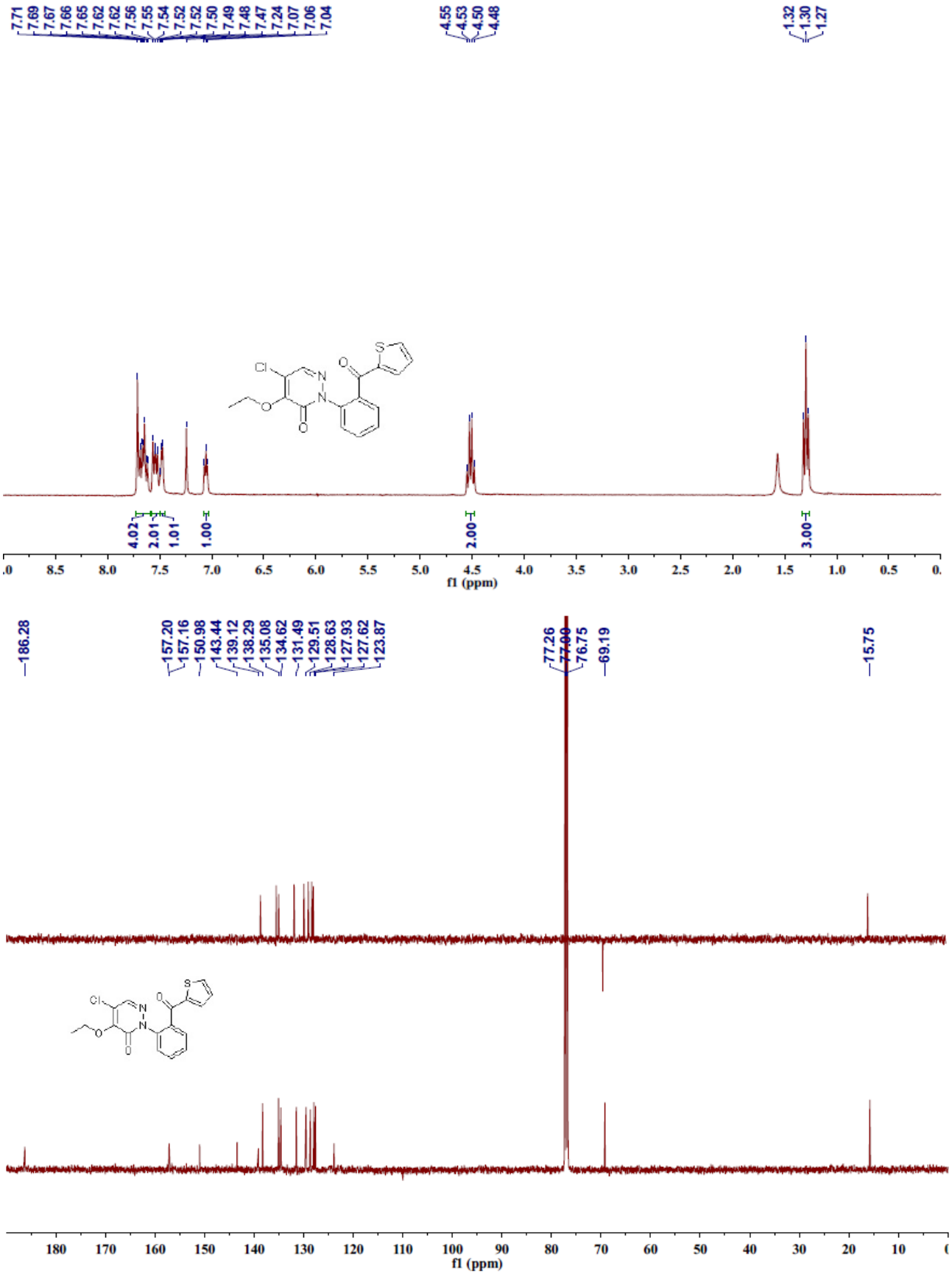

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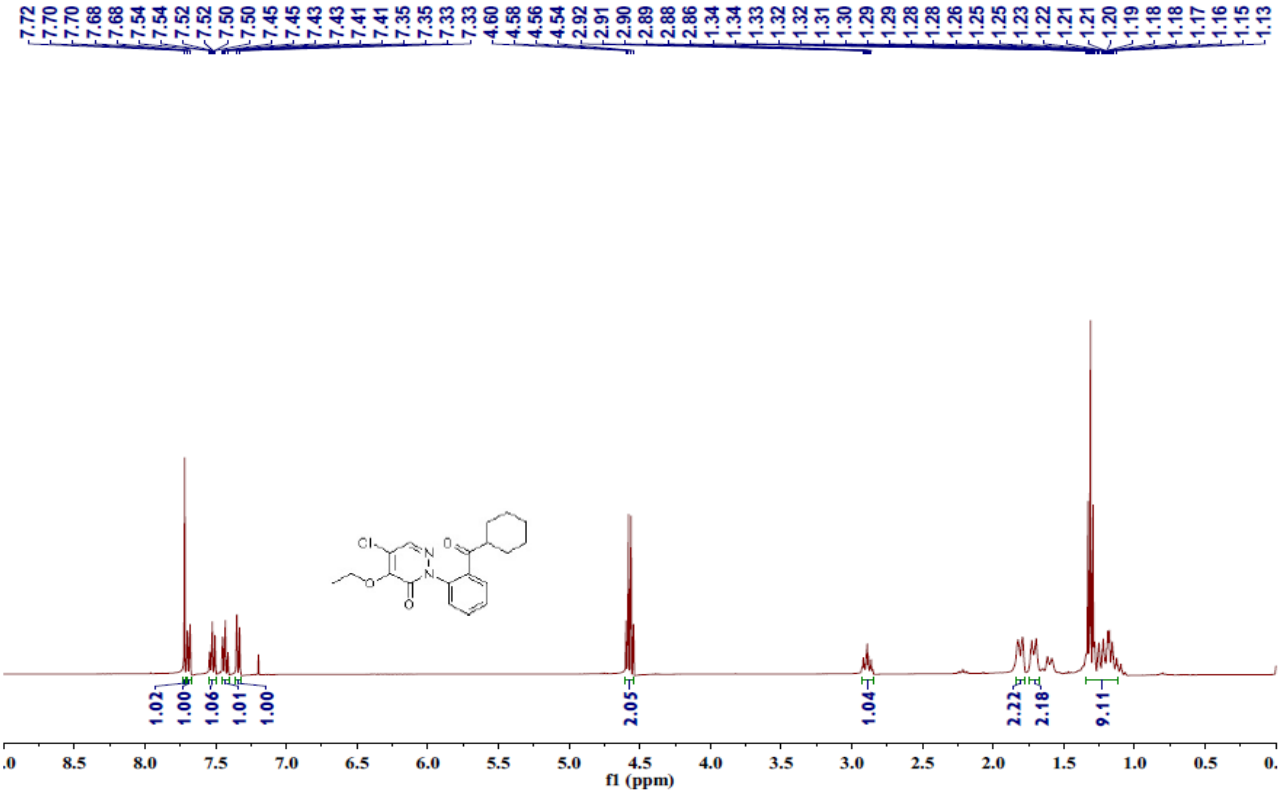

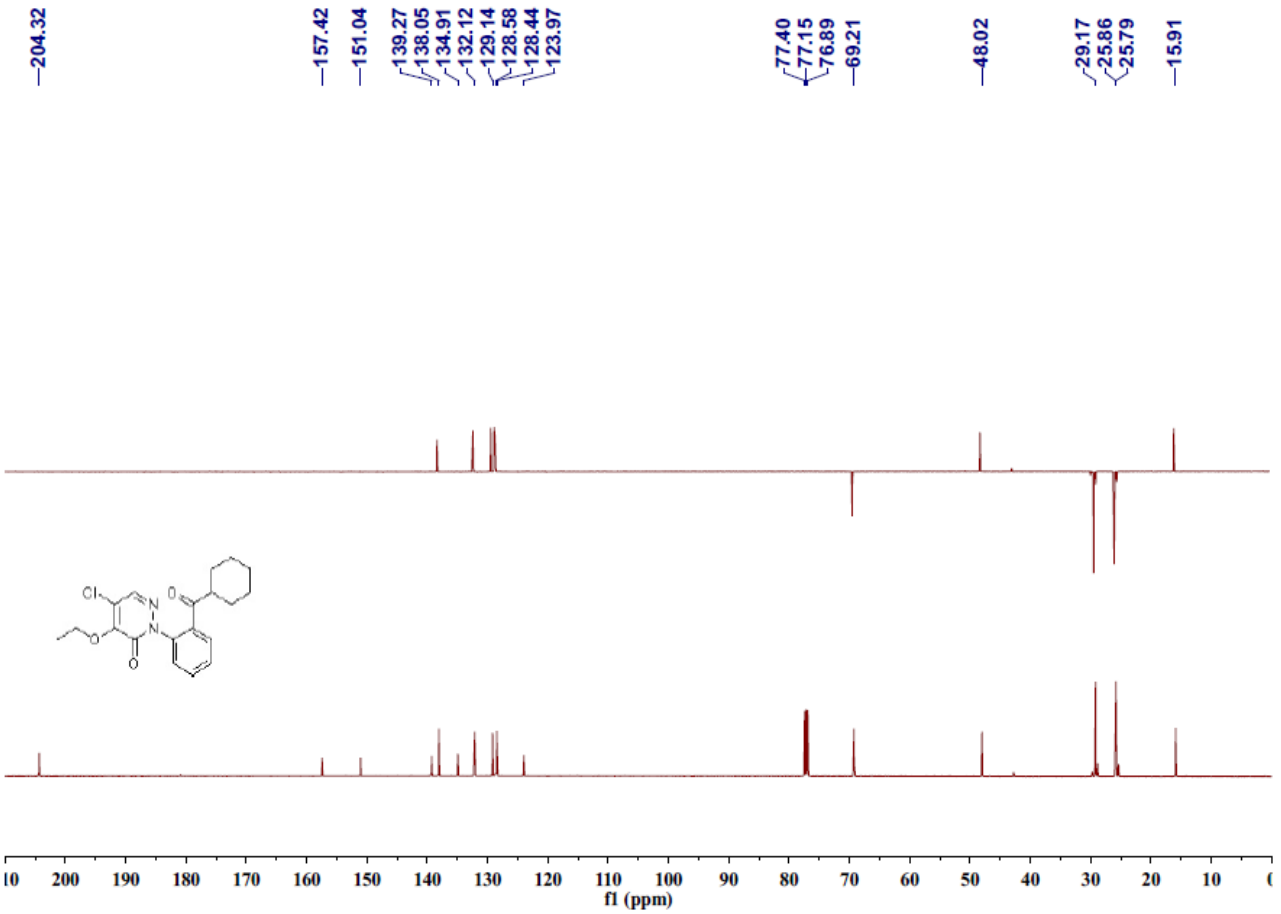

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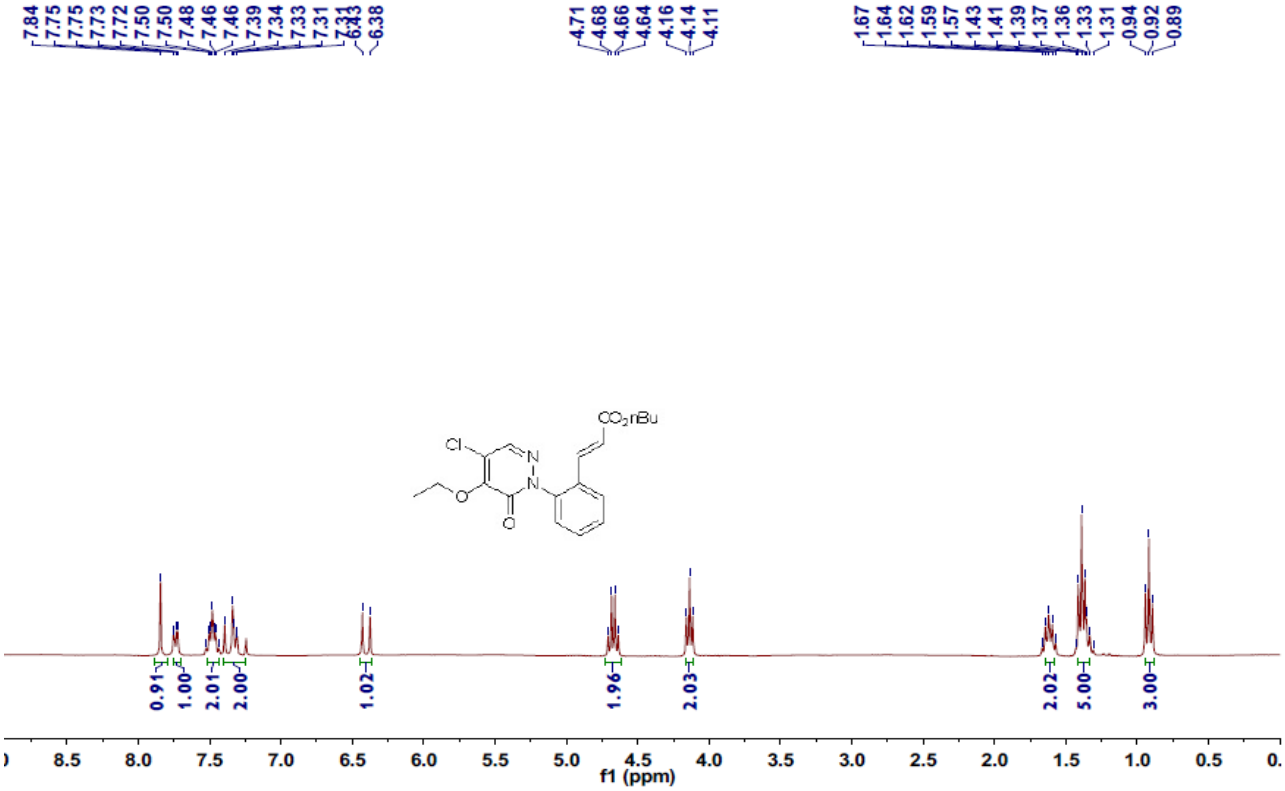
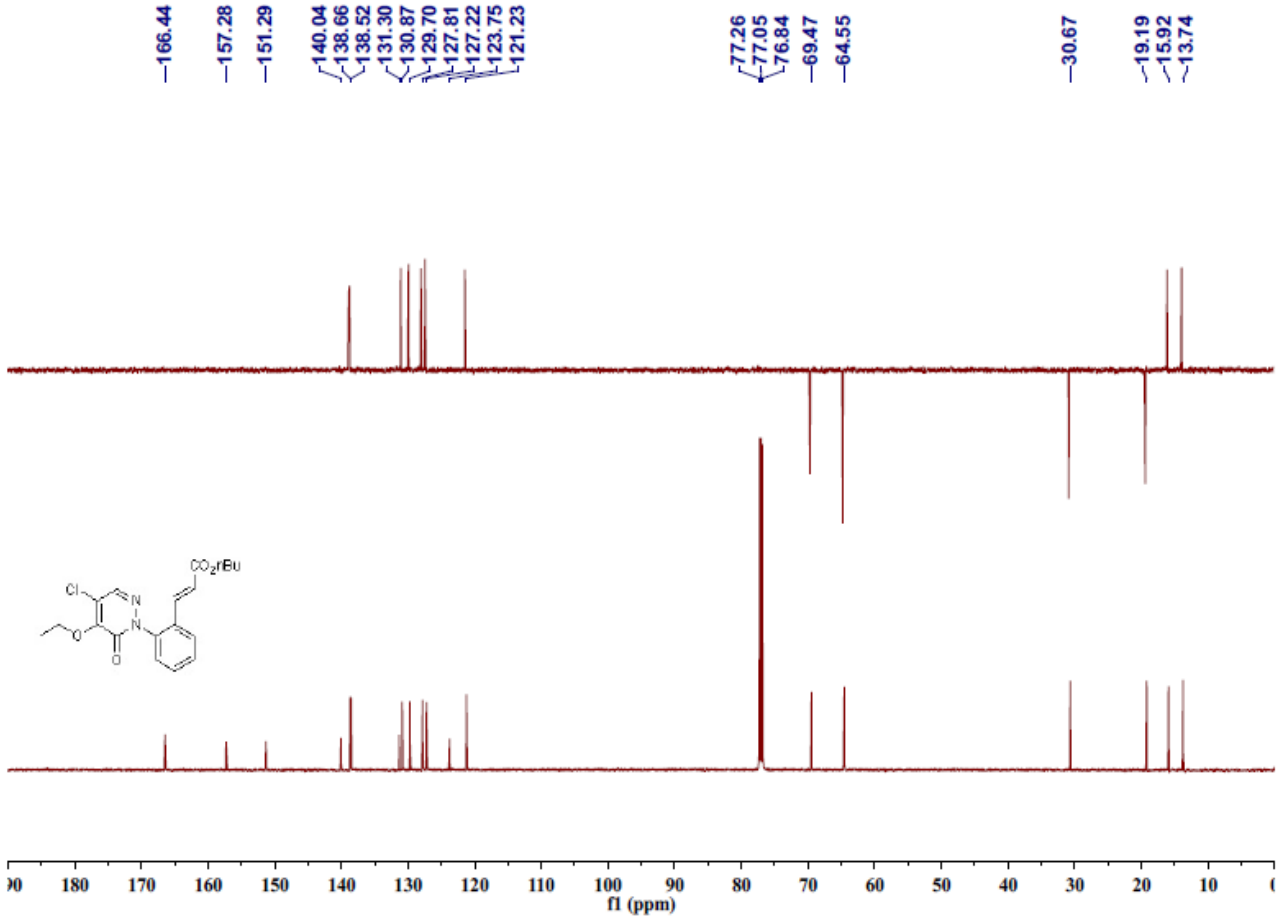
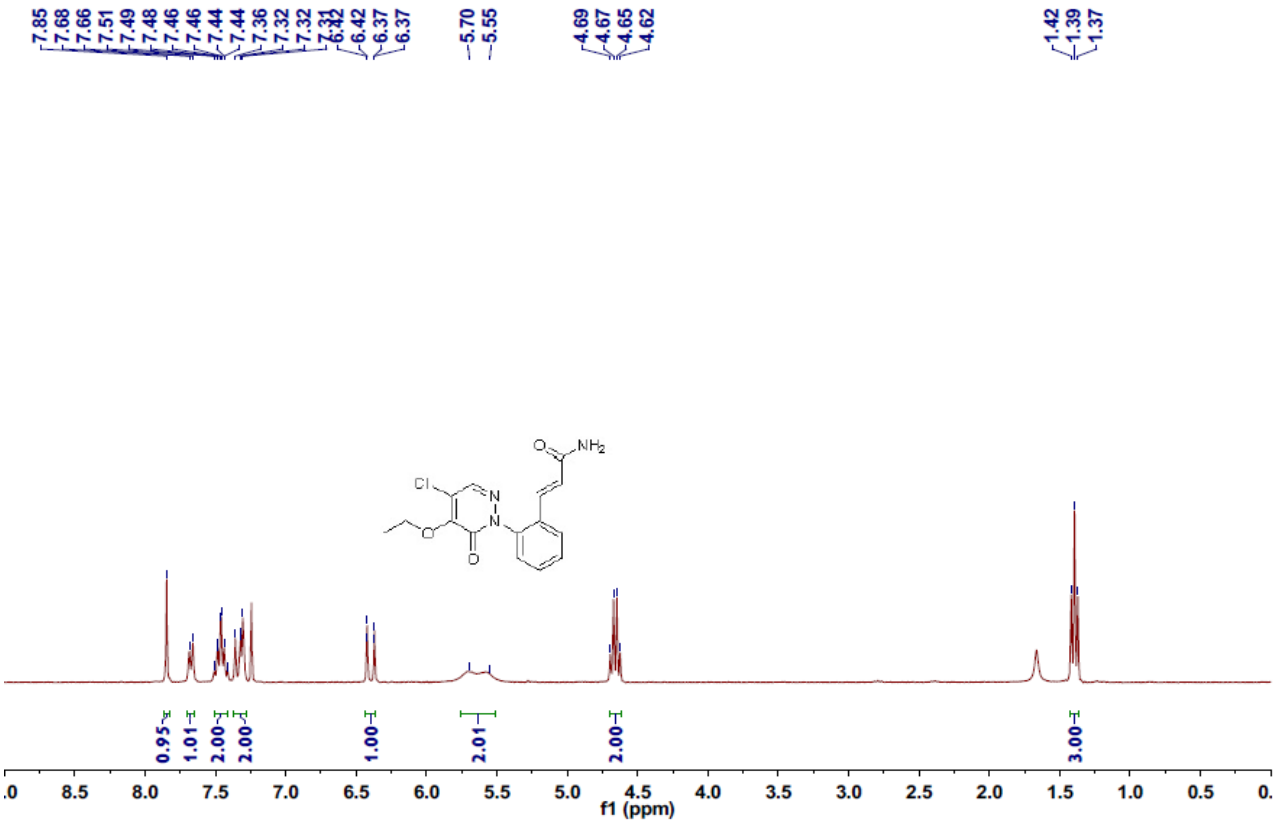
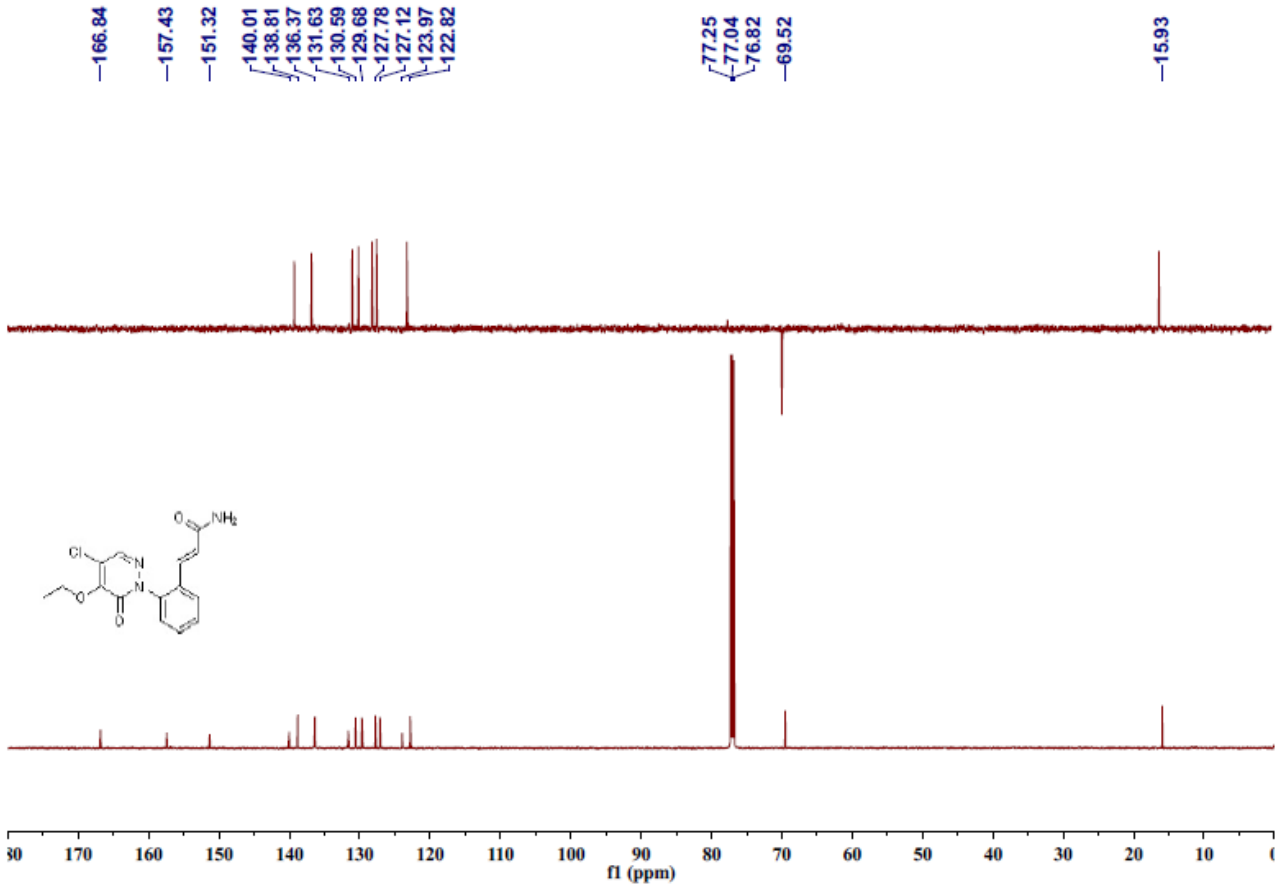


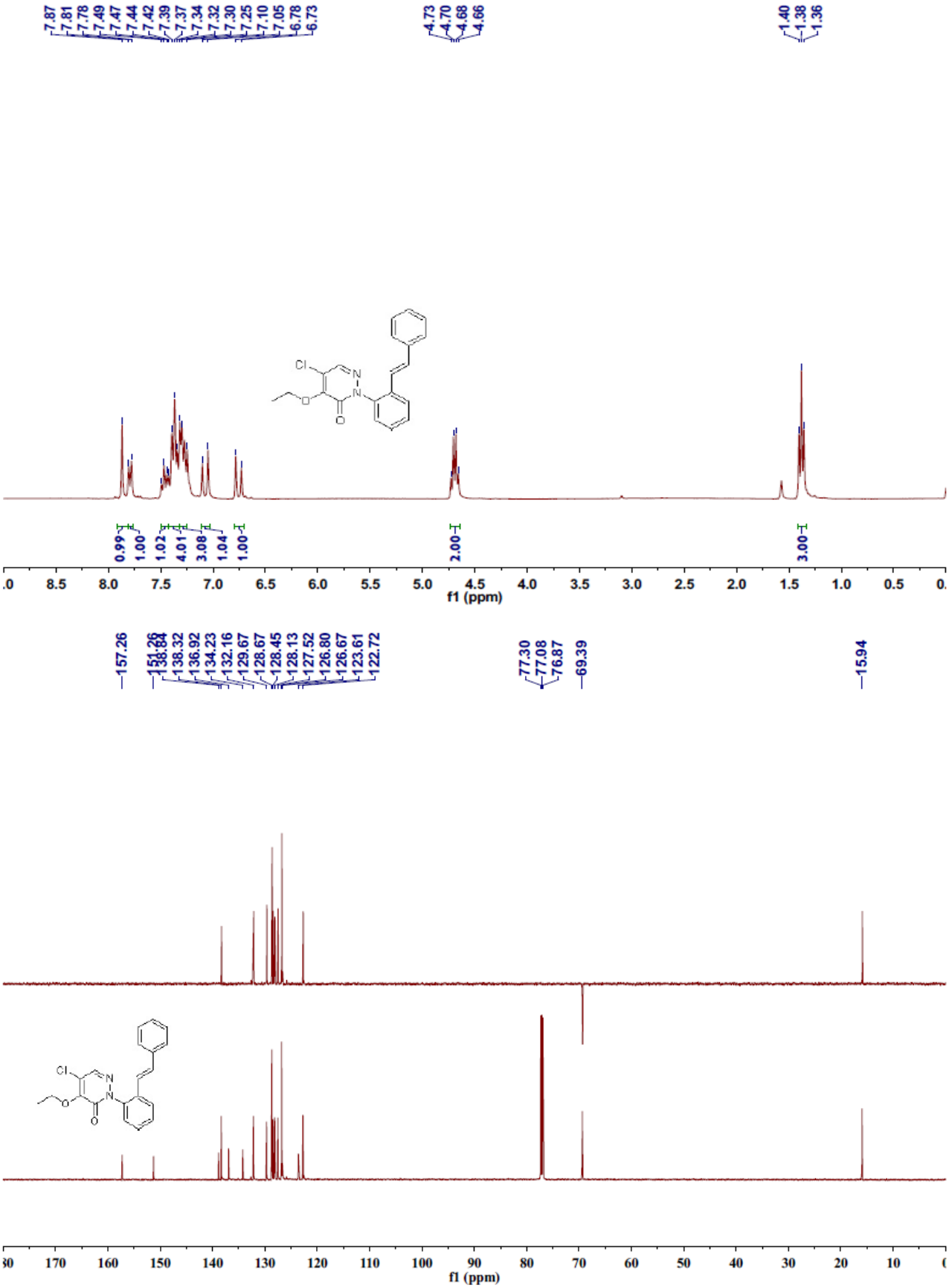


^{1}H and ^{13}C NMR spectra of compound **7b.**

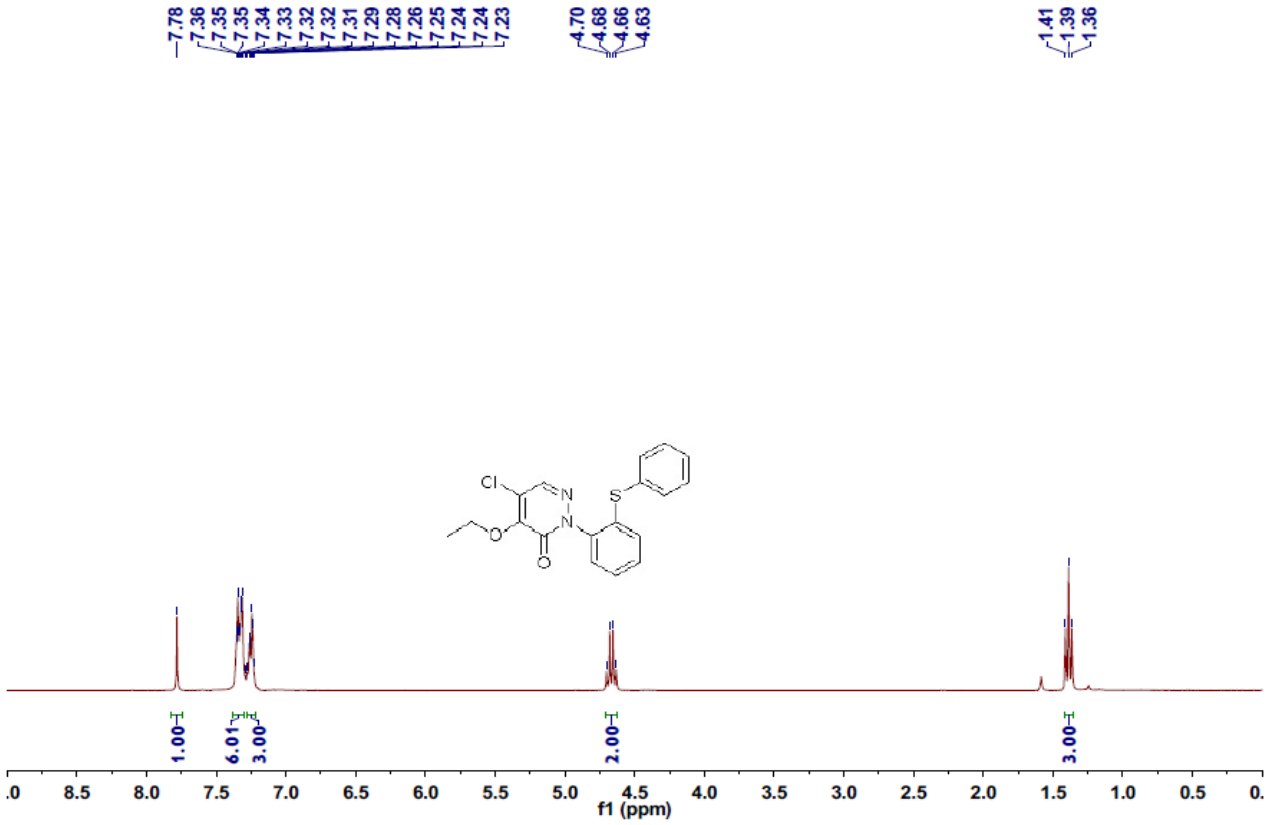


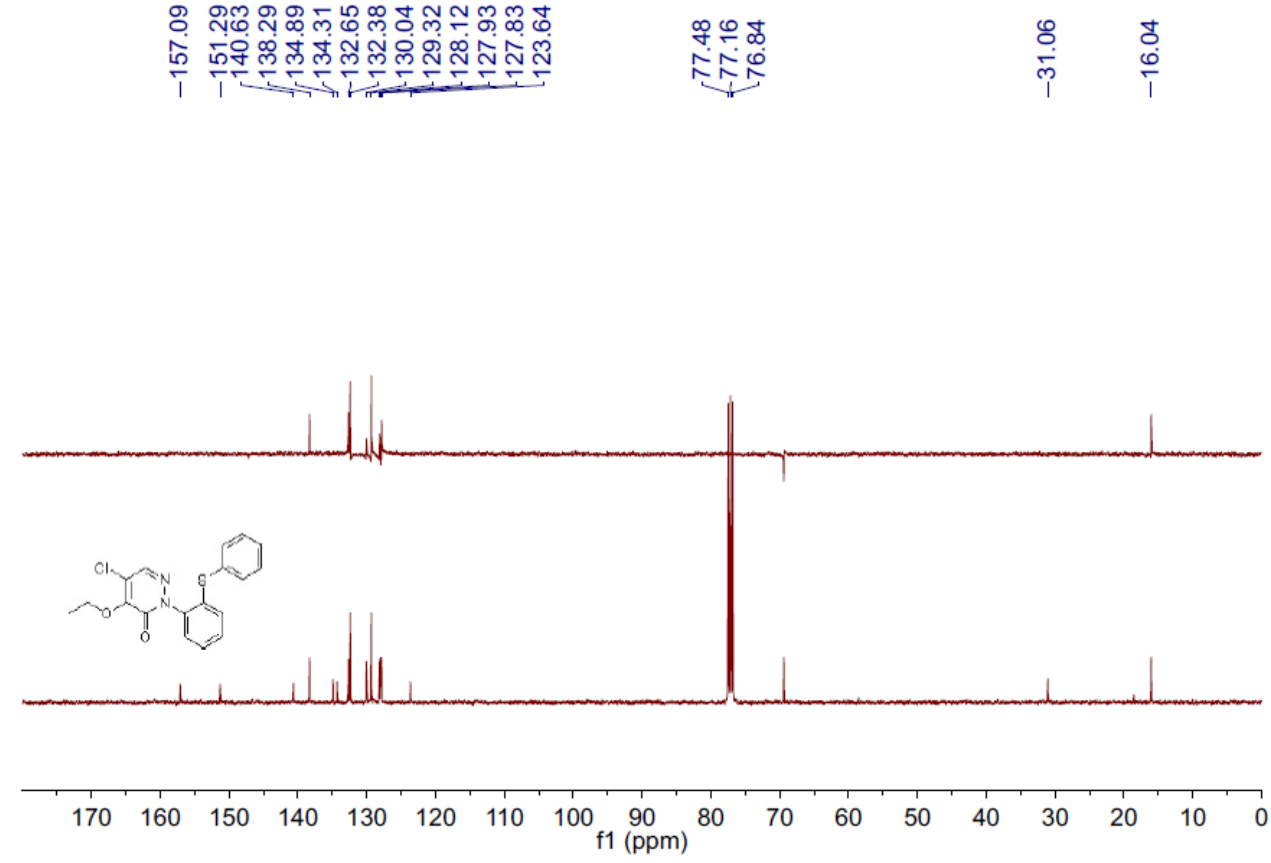


^{1}H and ^{13}C NMR spectra of compound **7c.**

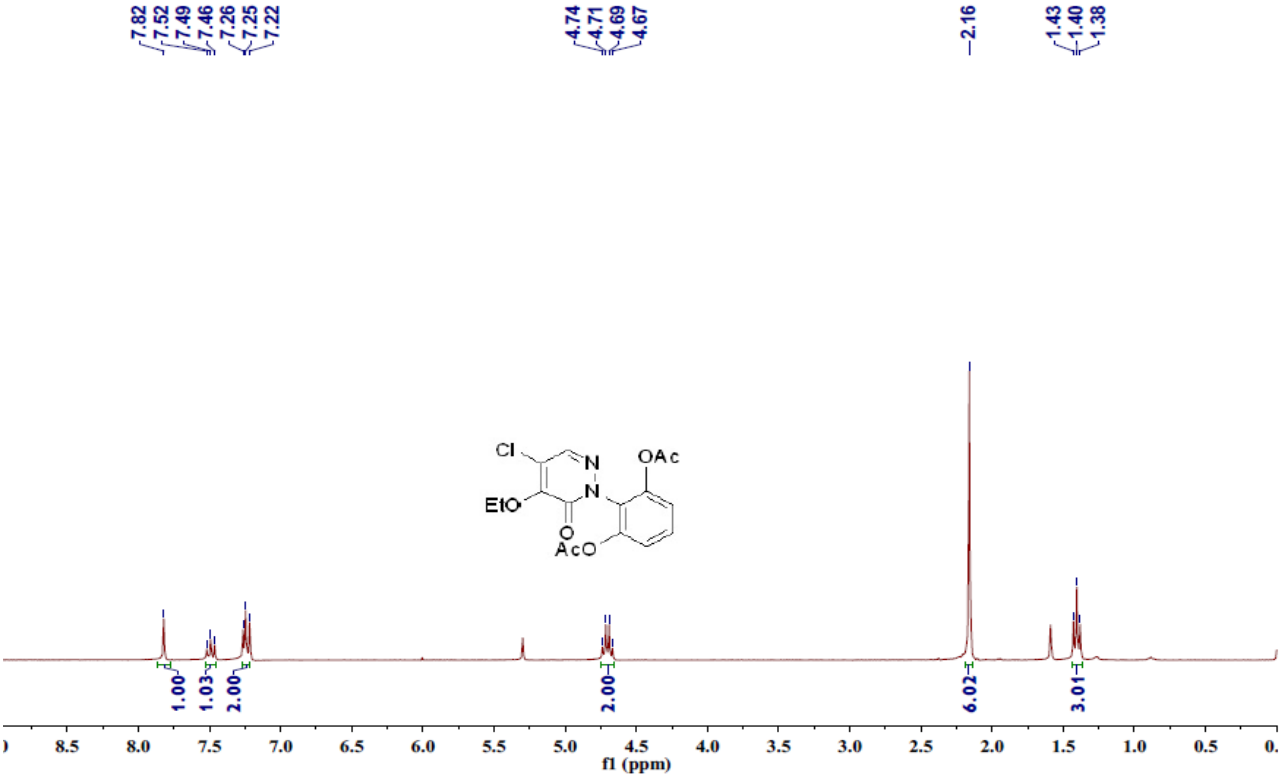


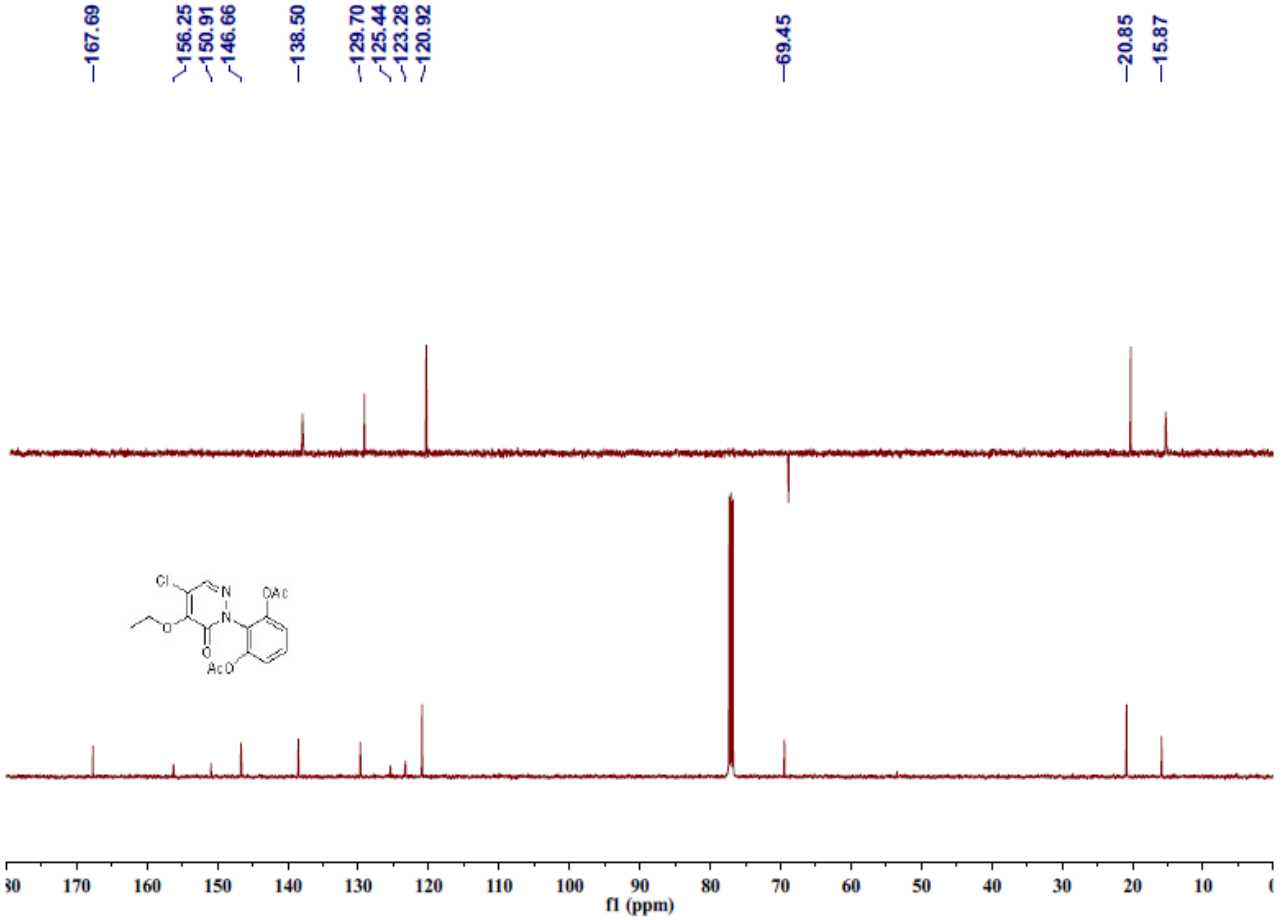
^{1}H and ^{13}C NMR spectra of compound **8.**



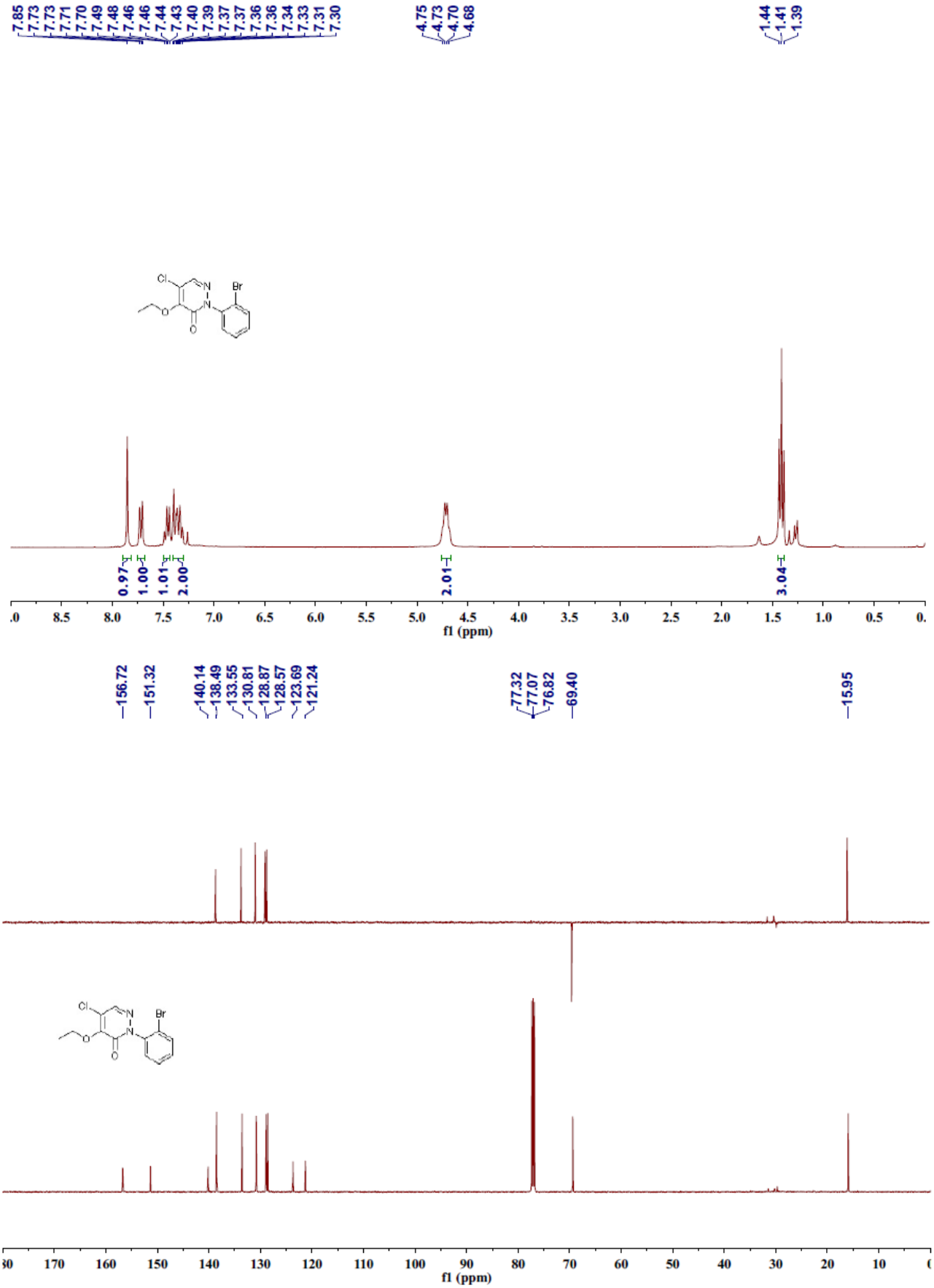


^{1}H and ^{13}C NMR spectra of compound **9.**

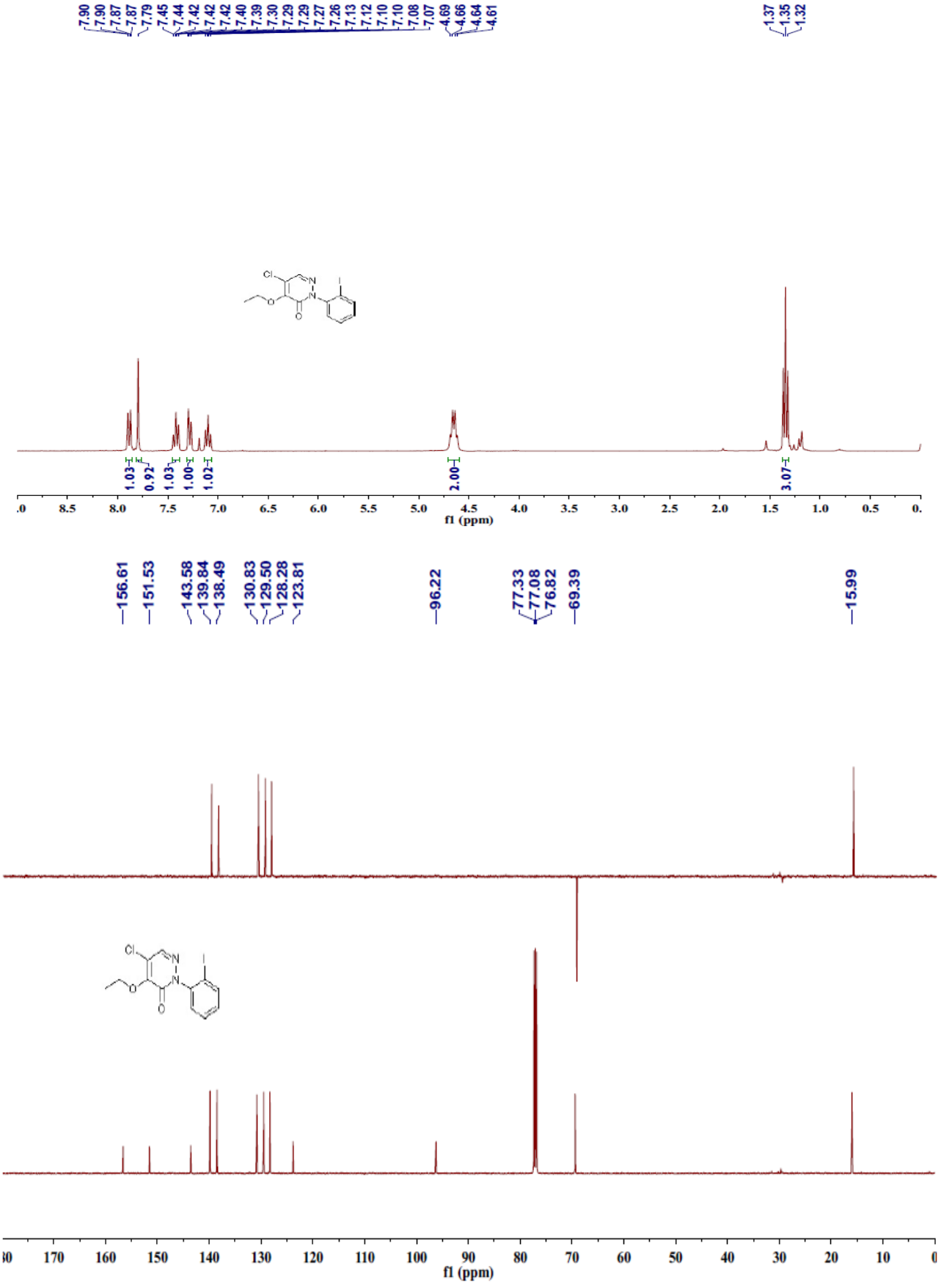




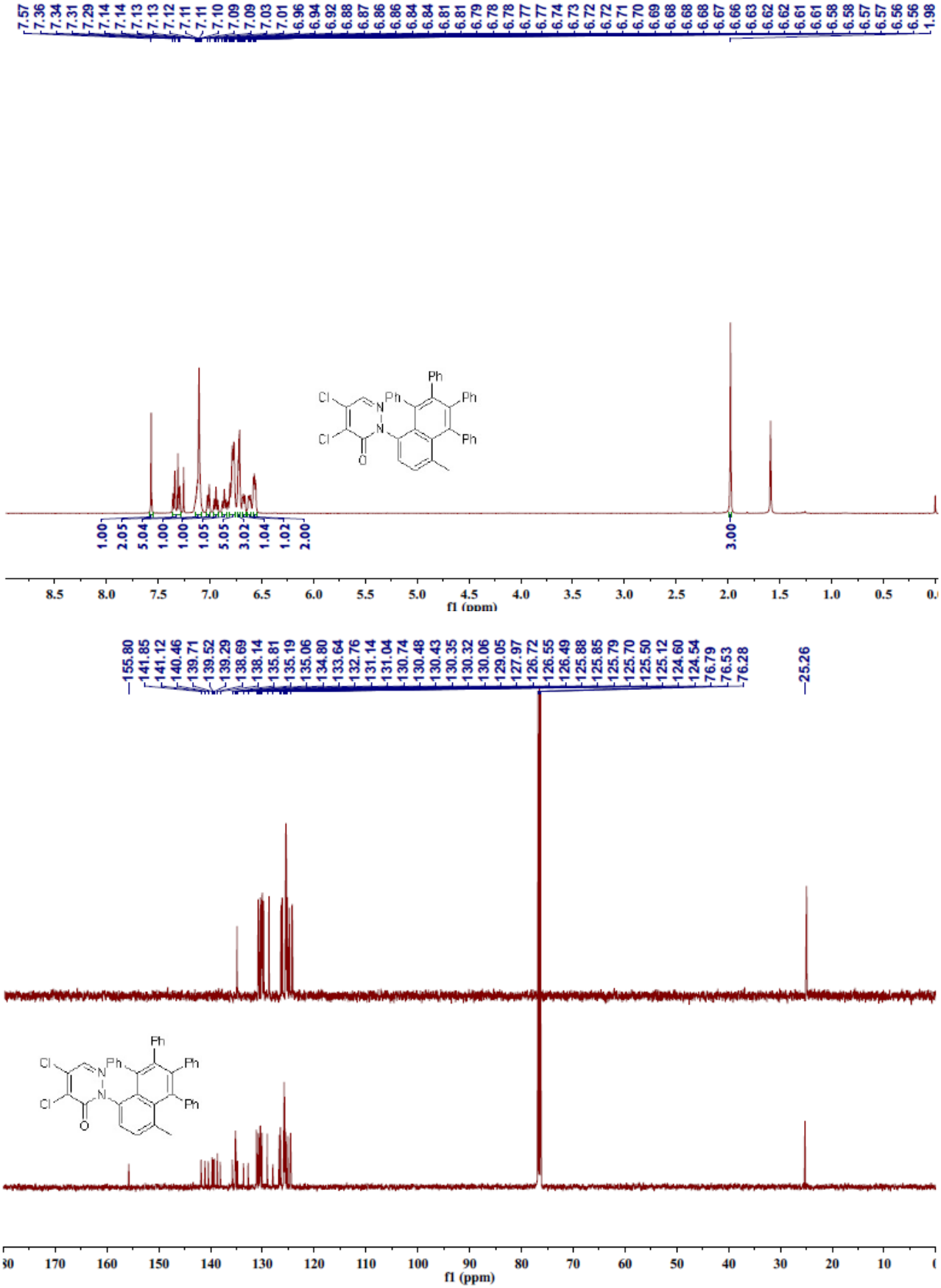
^{1}H and ^{13}C NMR spectra of compound **10.**



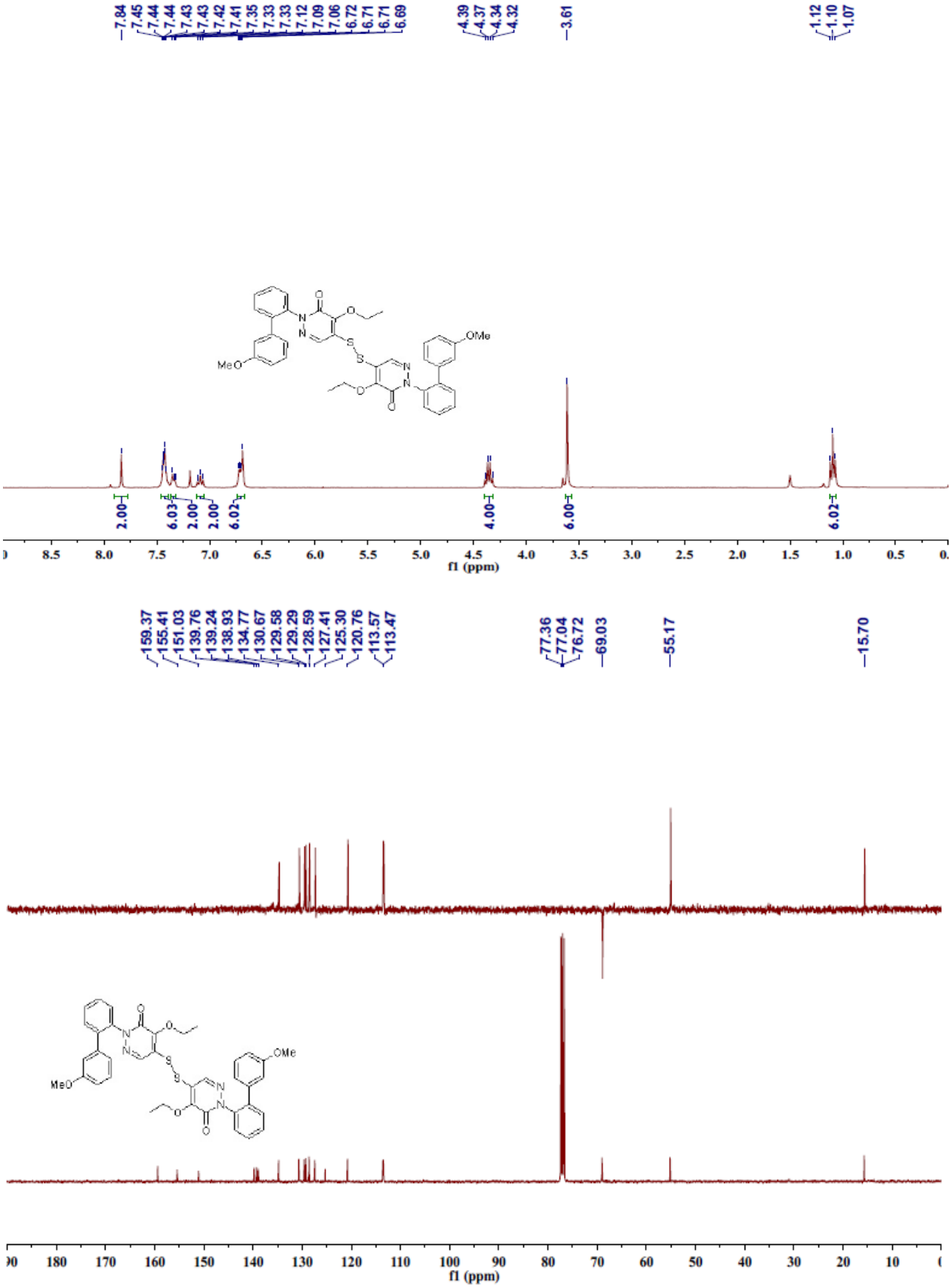
^{1}H and ^{13}C NMR spectra of compound **11.**



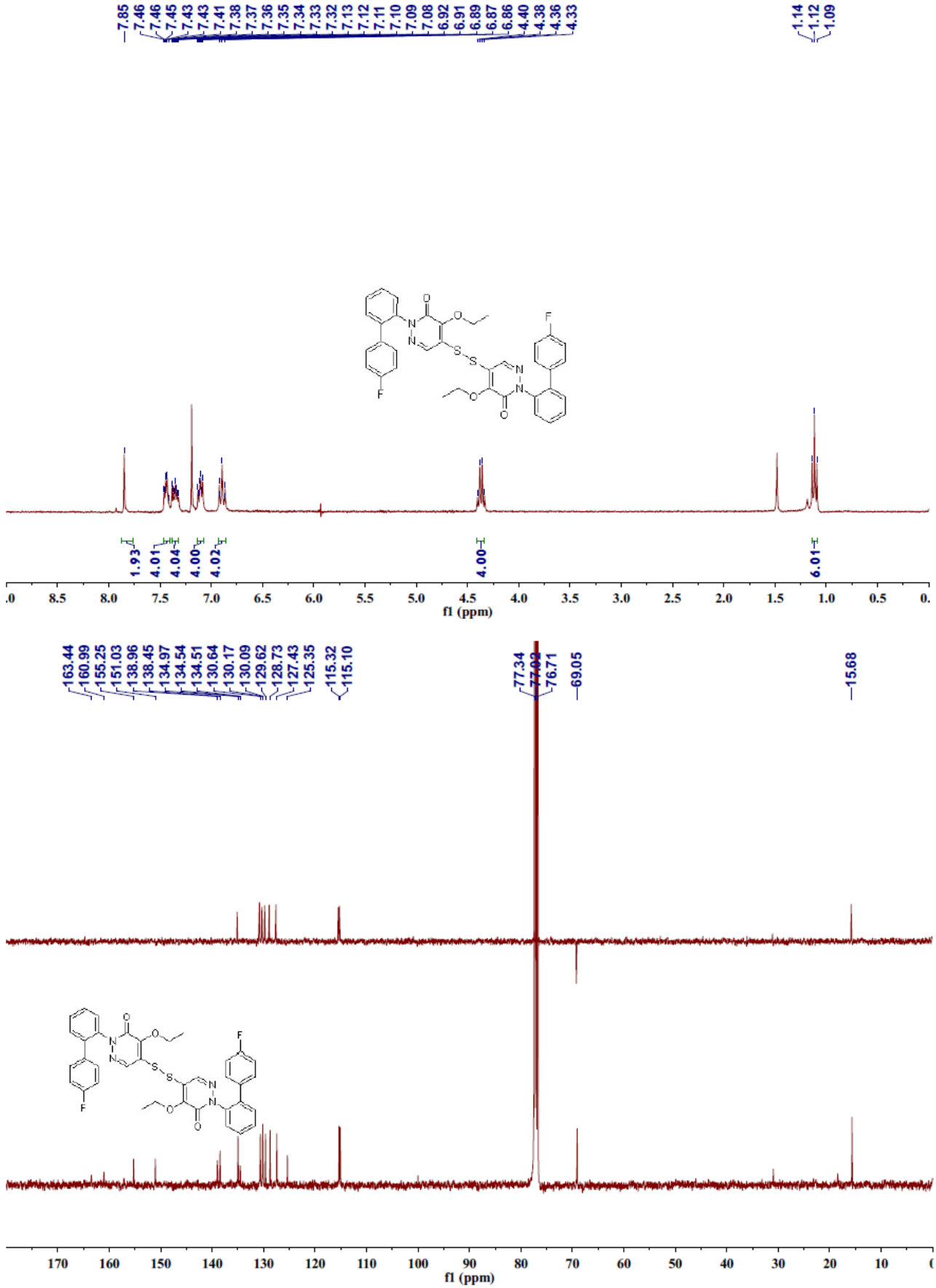
^{1}H and ^{13}C NMR spectra of compound **12.**



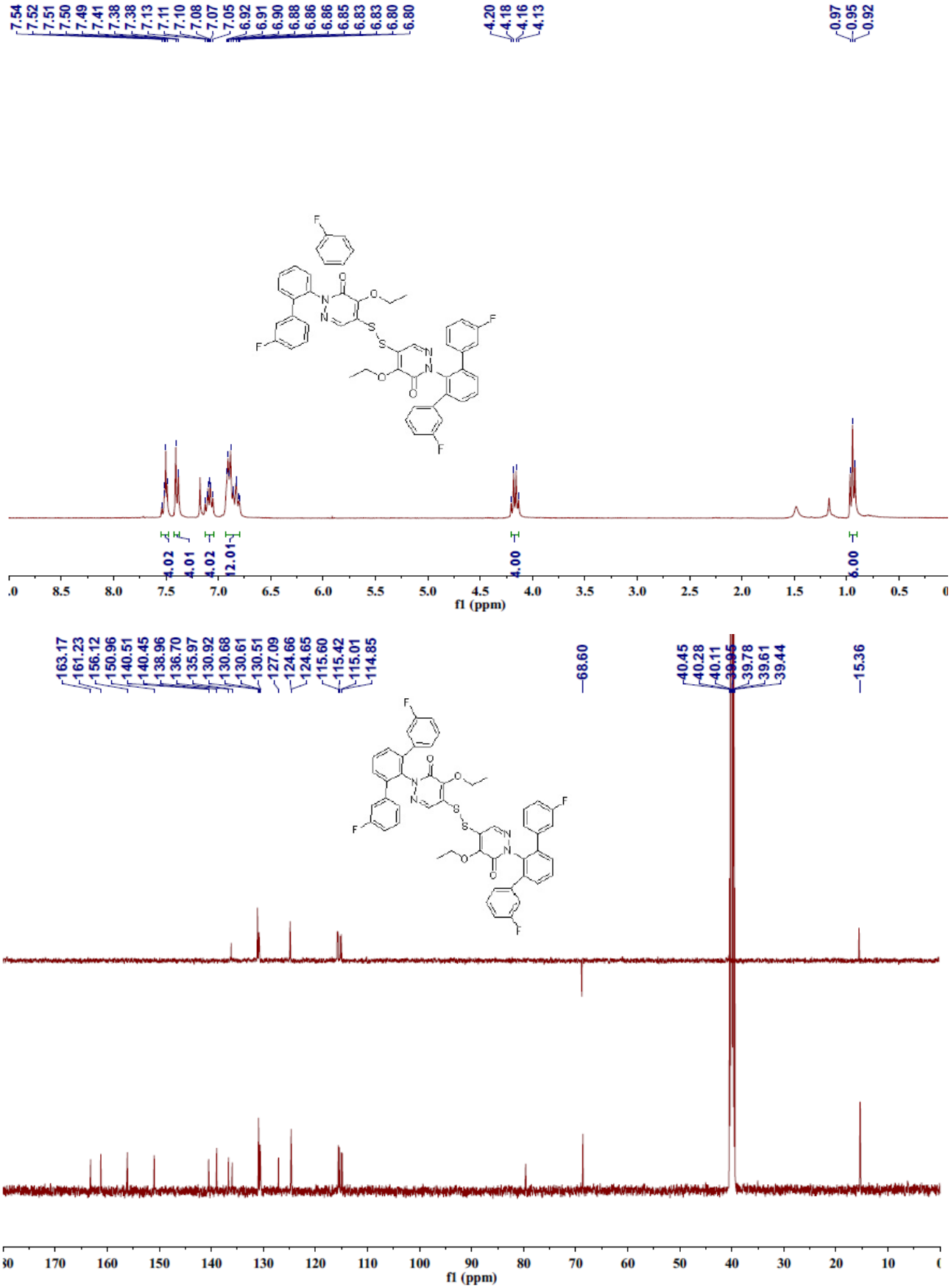
^{1}H and ^{13}C NMR spectra of compound **14a.**



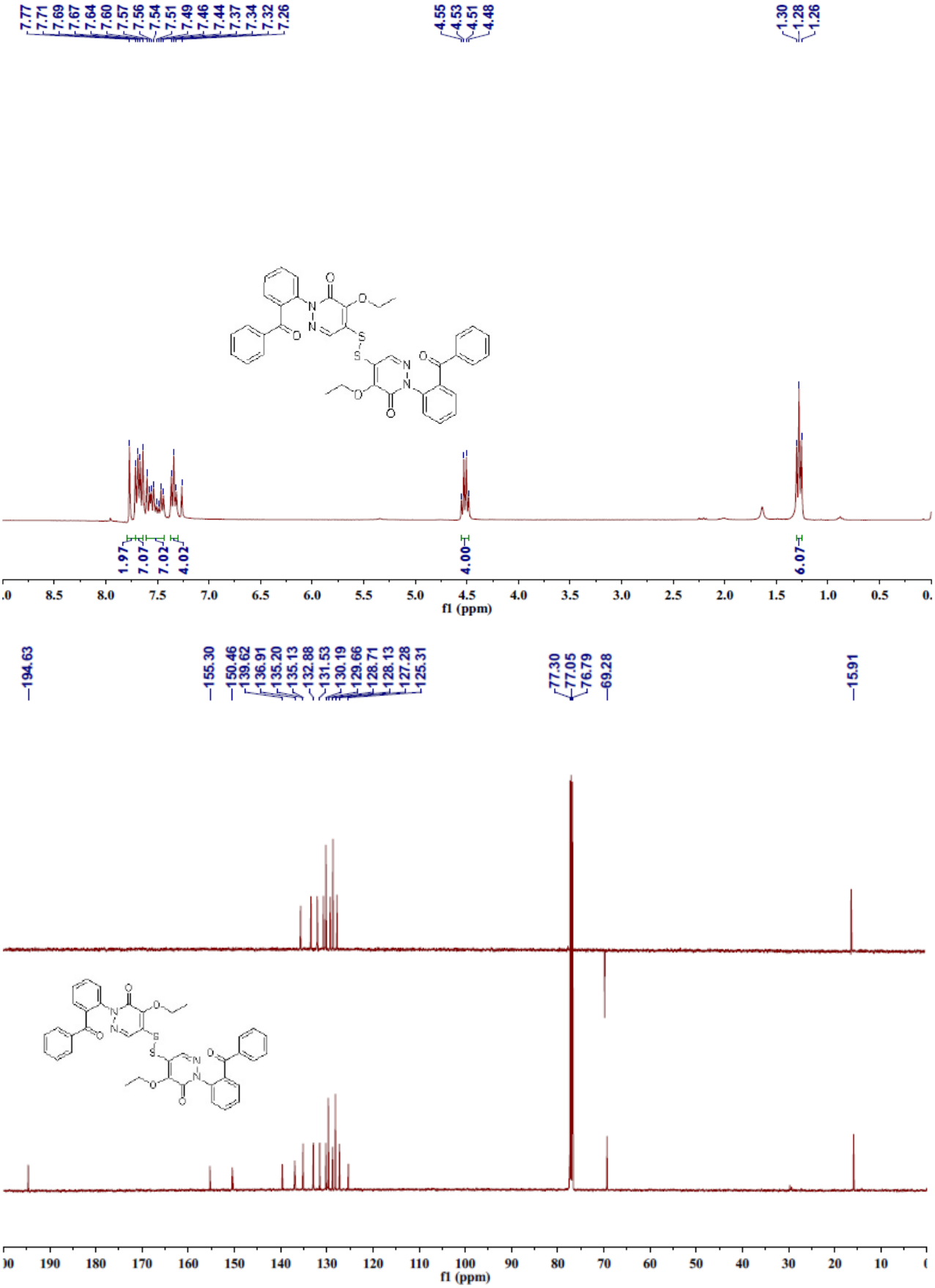
^{1}H and ^{13}C NMR spectra of compound **14b.**



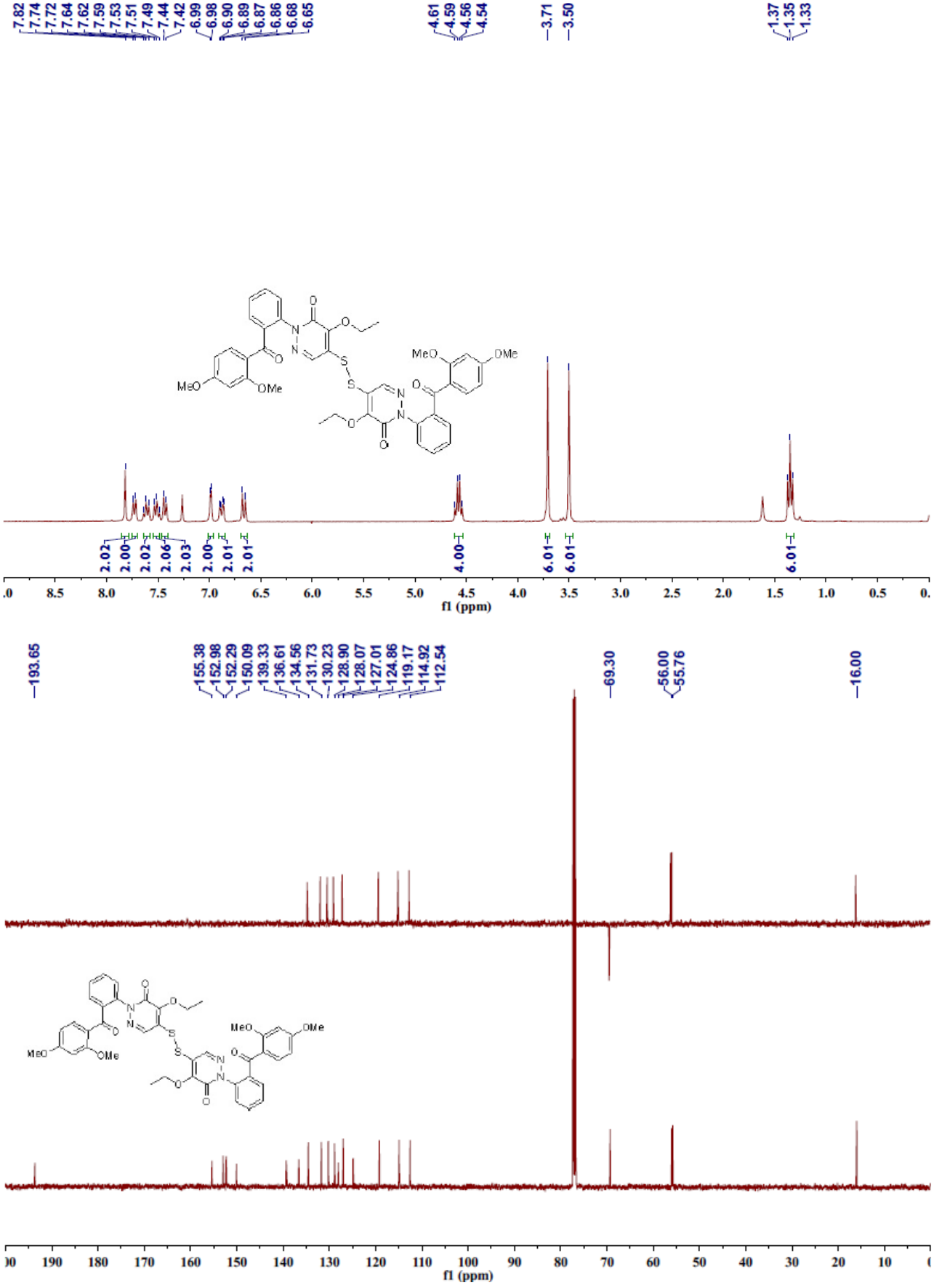
^{1}H and ^{13}C NMR spectra of compound **14c.**



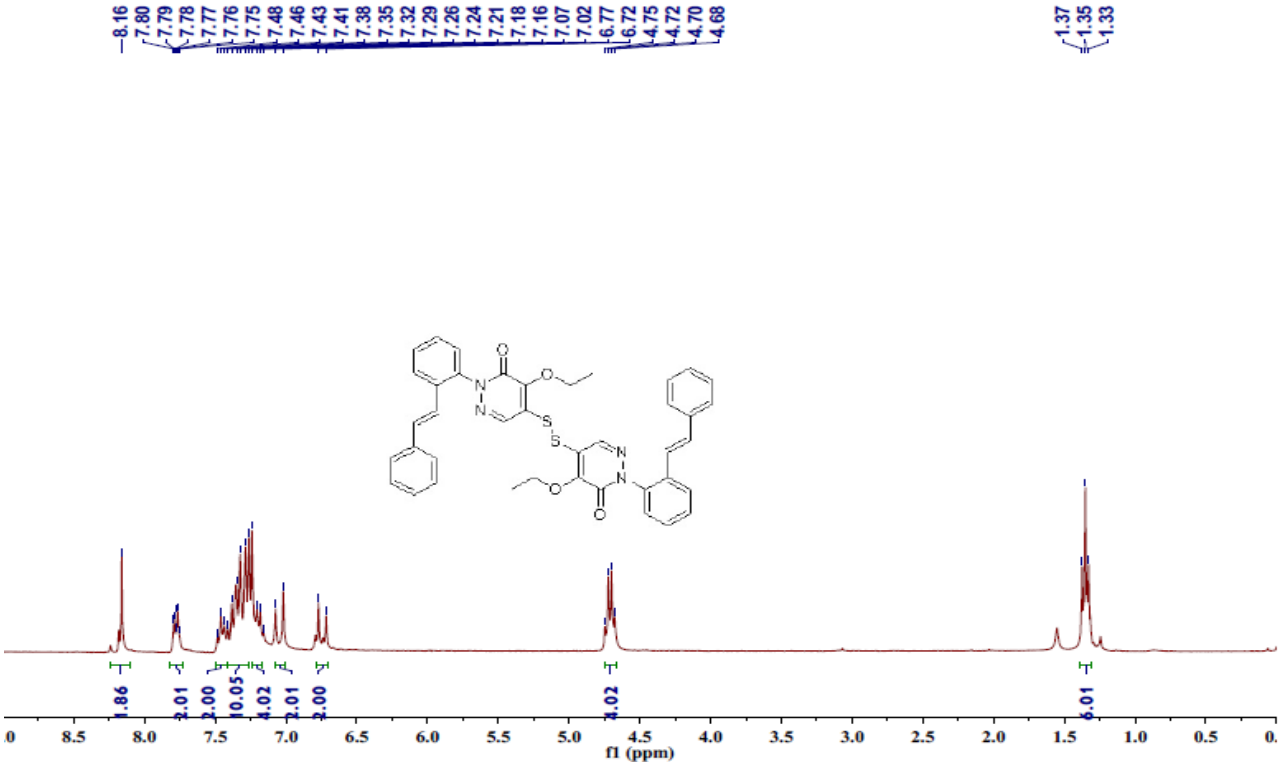
^{1}H and ^{13}C NMR spectra of compound **14d.**

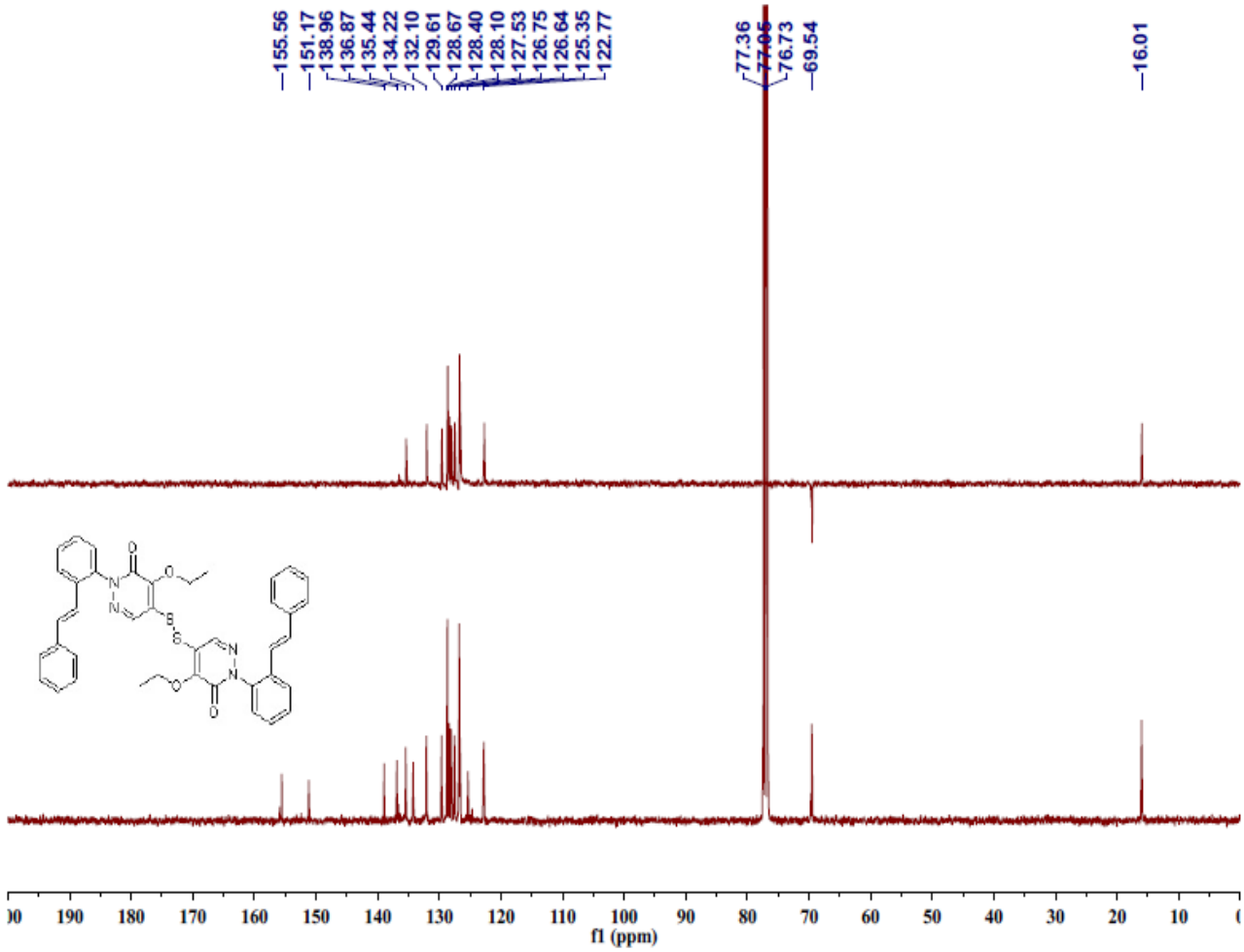


^{1}H and ^{13}C NMR spectra of compound **14e.**

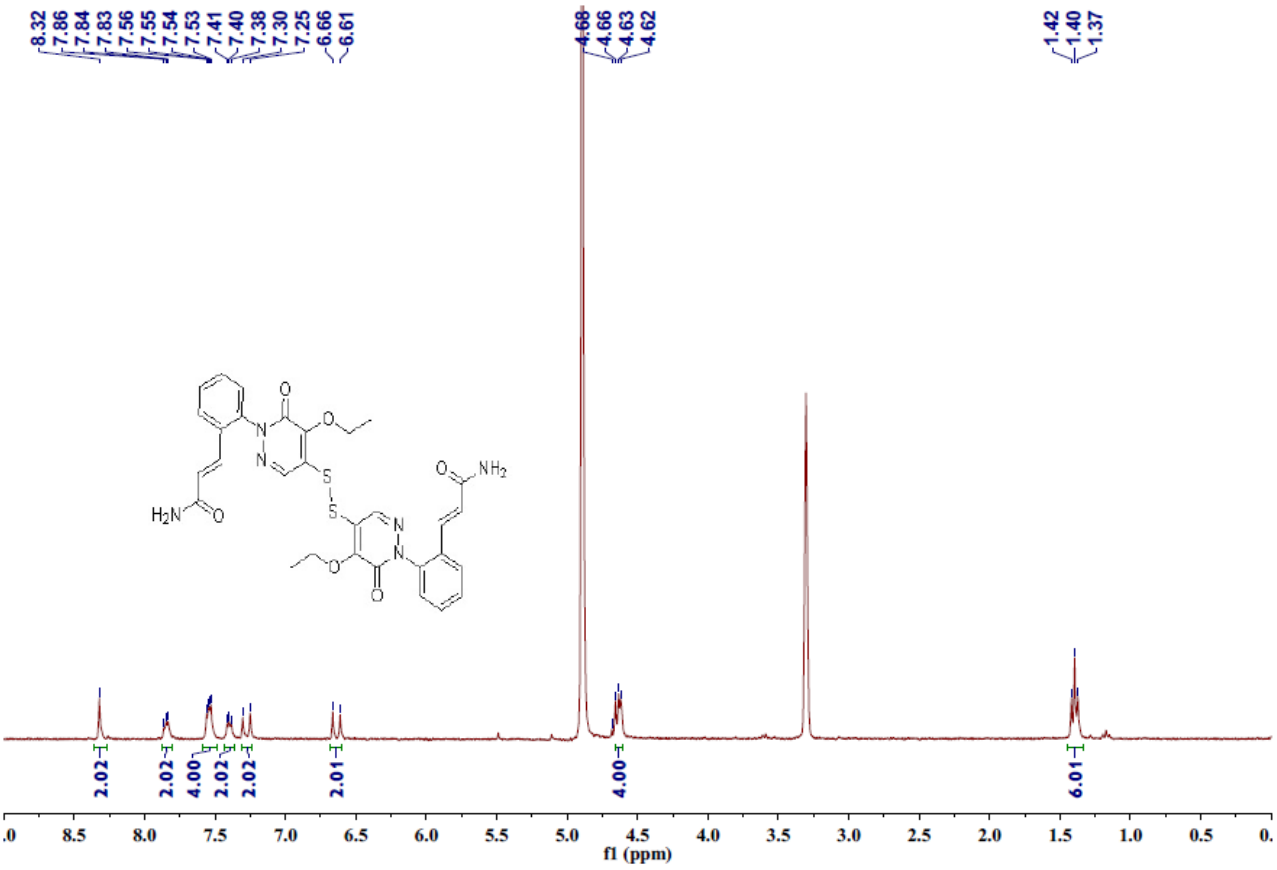


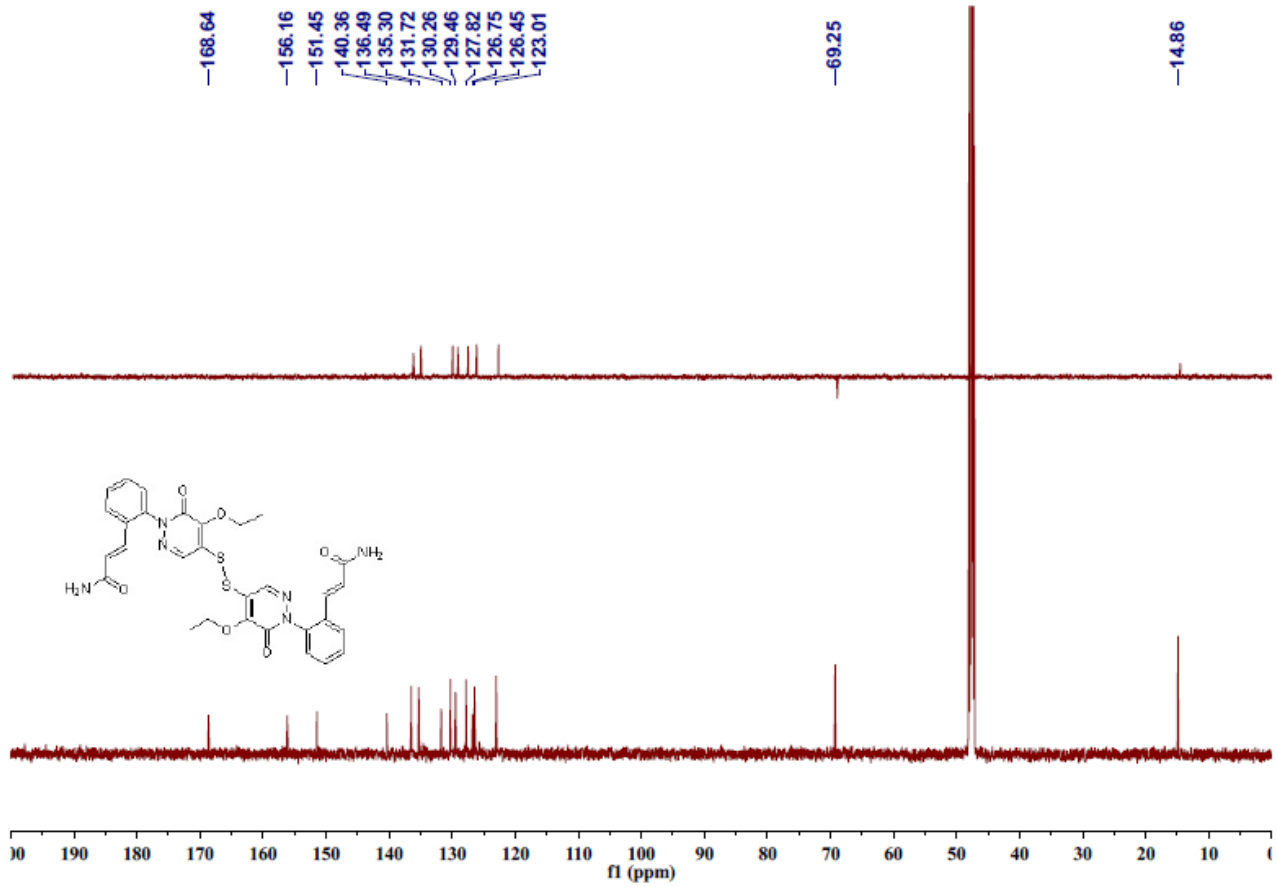
^{1}H and ^{13}C NMR spectra of compound **14f.**





^{1}H and ^{13}C NMR spectra of compound **14g.**





2. X-ray Data of Compound 12.

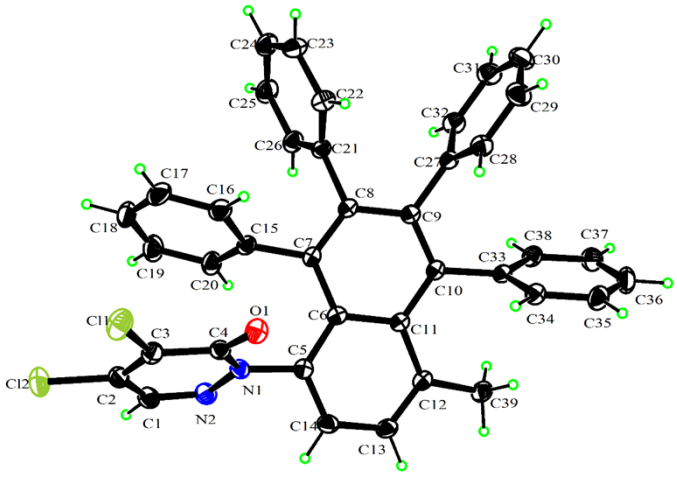


Table 1 Crystal data and structure refinement details for compound **12**.

Identification code	2014283	
Chemical formula	$C_{39}H_{26}Cl_2N_2O$	
Formula weight	609.52	
Temperature	296(2) K	
Wavelength	0.71073 Å	
Crystal size	0.200 x 0.300 x 0.700 mm	
Crystal system	orthorhombic	
Space group	P 21 21 21	
Unit cell dimensions	a = 7.1928(3) Å	α = 90°
	b = 13.3215(6) Å	β = 90°
	c = 32.7007(16) Å	γ = 90°
Volume	3133.3(2) $Å^3$	
Z	4	
Density (calculated)	1.292 Mg/cm^3	
Absorption coefficient	0.242 mm^{-1}	
F(000)	1264	
Theta range for data collection	1.65 to 27.65°	
Index ranges	-9<=h<=8, -17<=k<=16, -33<=l<=42	
Reflections collected	16279	
Independent reflections	7109 [R(int) = 0.0221]	
Coverage of independent reflections	99.6%	
Absorption correction	multi-scan	
Max. and min. transmission	0.9522 and 0.8459	
Structure solution technique	direct methods	

Structure solution program	SHELXS-97 (Sheldrick, 2008)	
Refinement method	Full-matrix least-squares on F^2	
Refinement program	SHELXL-97 (Sheldrick, 2008)	
Function minimized	$\Sigma\, w(F_o^2 - F_c^2)^2$	
Data / restraints / parameters	7109 / 0 / 399	
Goodness-of-fit on F^2	1.023	
Final R indices	5579 data; $I>2\sigma(I)$	R1 = 0.0596, wR2 = 0.1151
	all data	R1 = 0.0418, wR2 = 0.1051
Weighting scheme	$w=1/[\sigma^2(F_o^2)+(0.0600P)^2+0.2800P]$ where $P=(F_o^2+2F_c^2)/3$	
Extinction coefficient	0.0018(6)	
Largest diff. peak and hole	0.242 and -0.221 eÅ^{-3}	
R.M.S. deviation from mean	0.037 eÅ^{-3}	
CCDC	1023268	