Supporting Information for

Rhodium-Catalyzed Redox-Neutral Coupling of Phenidones with Alkynes

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[+] These two authors contributed equally to this work

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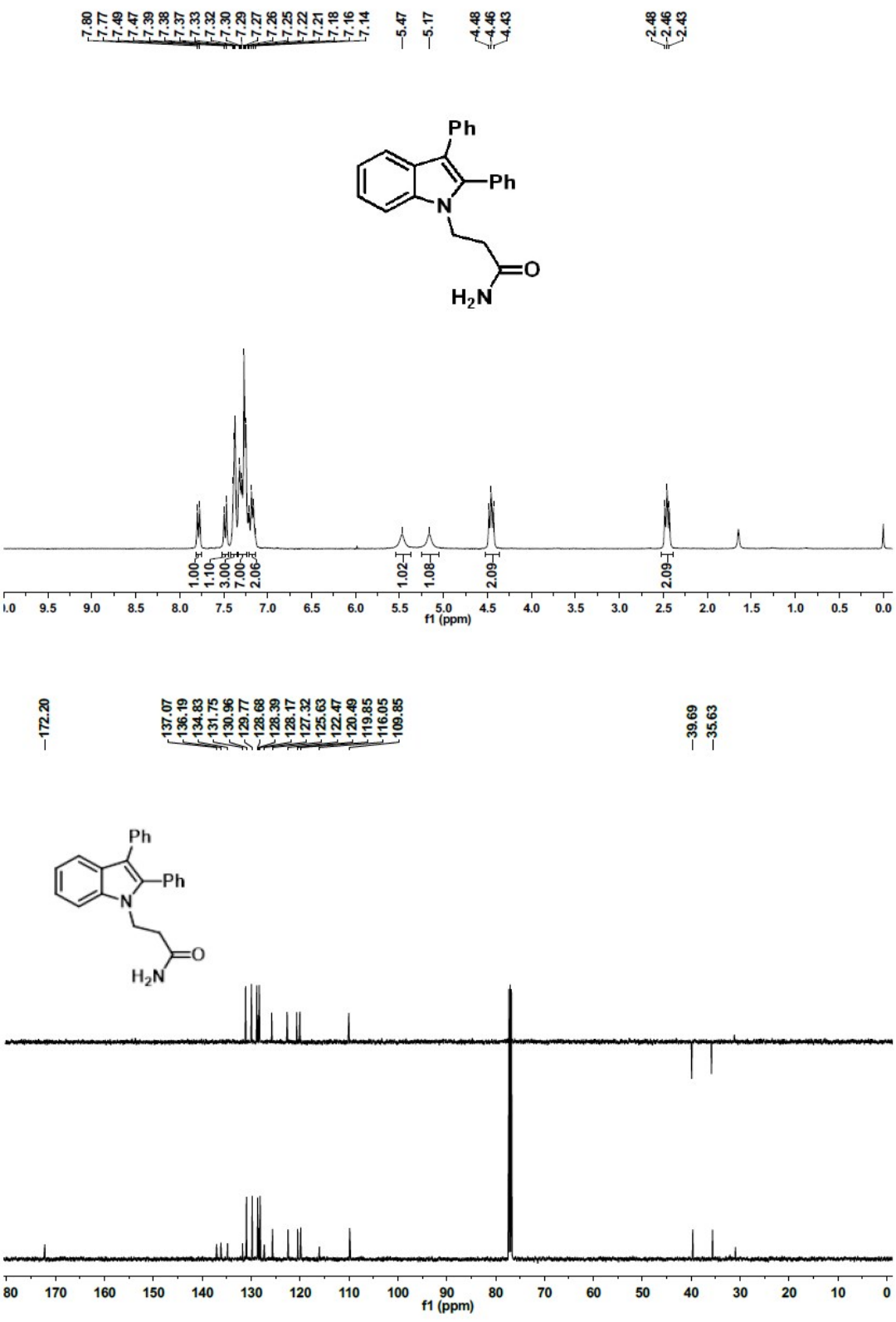
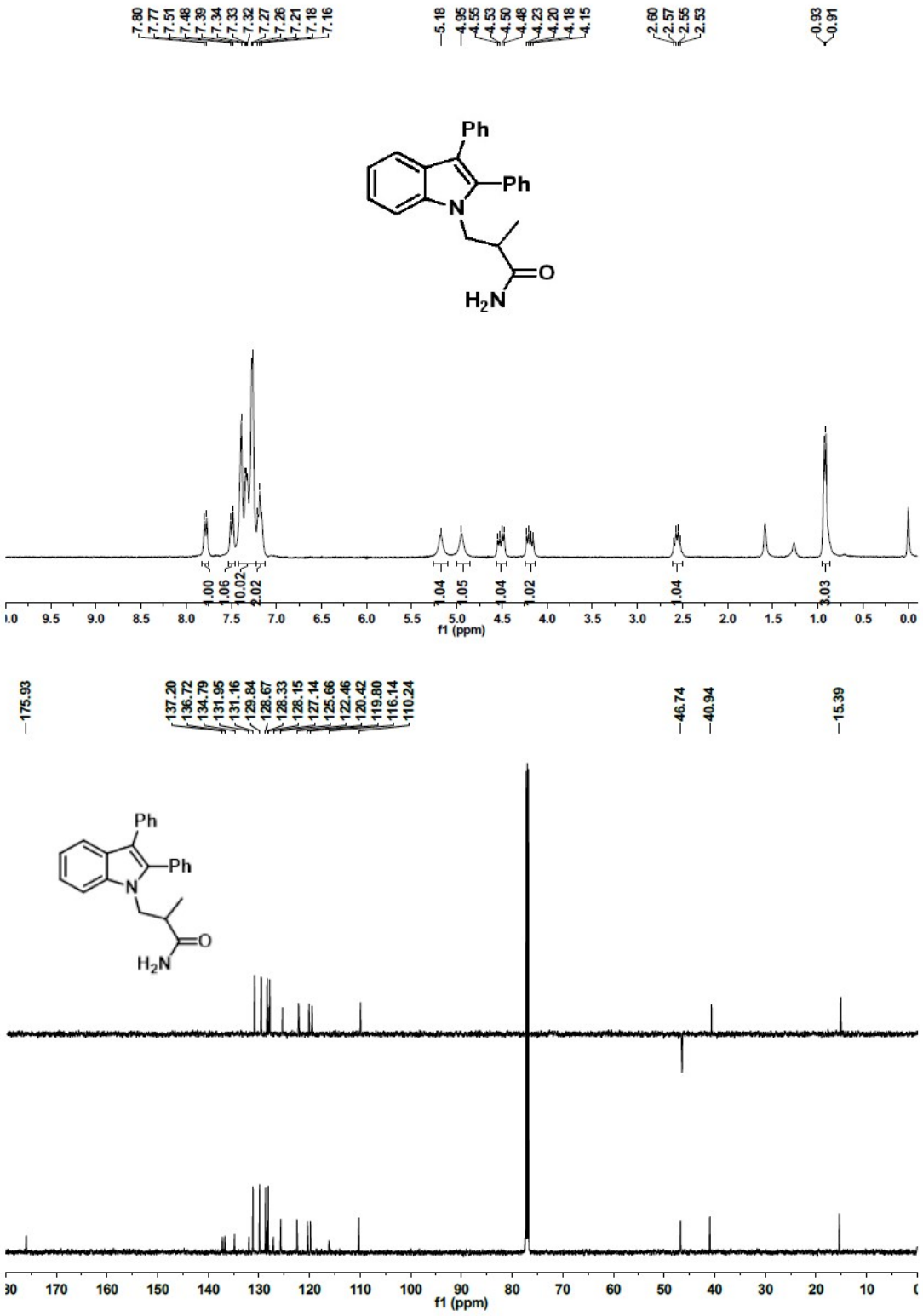
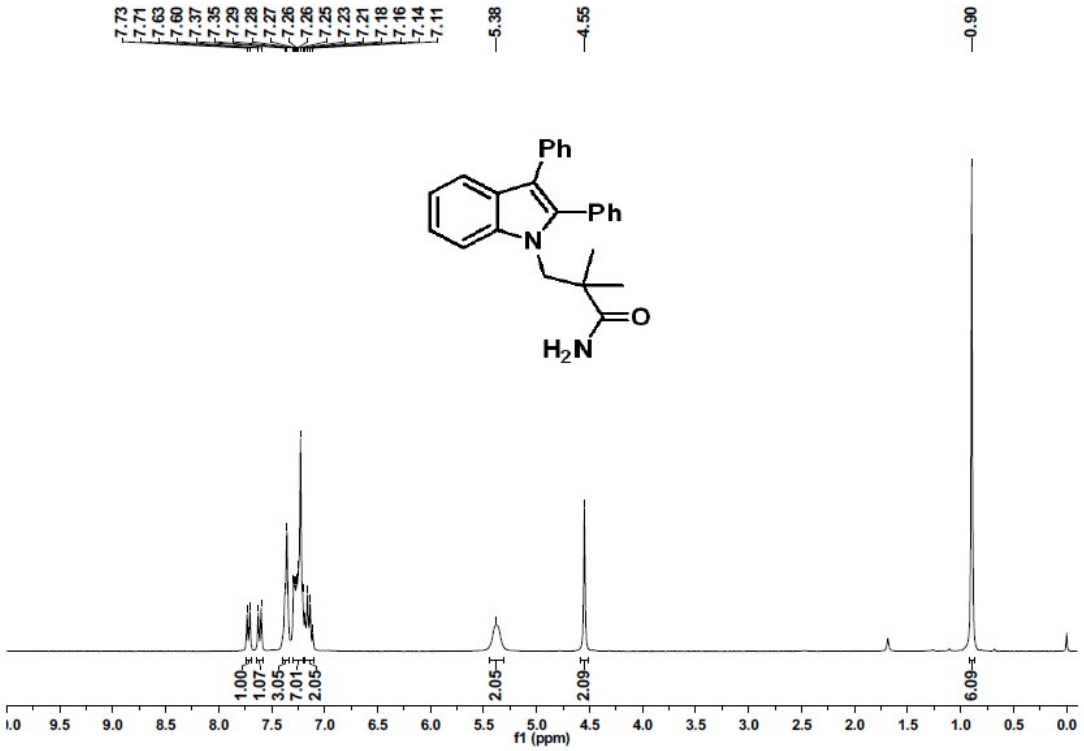
^{1}H and ^{13}C NMR spectra of compound3a

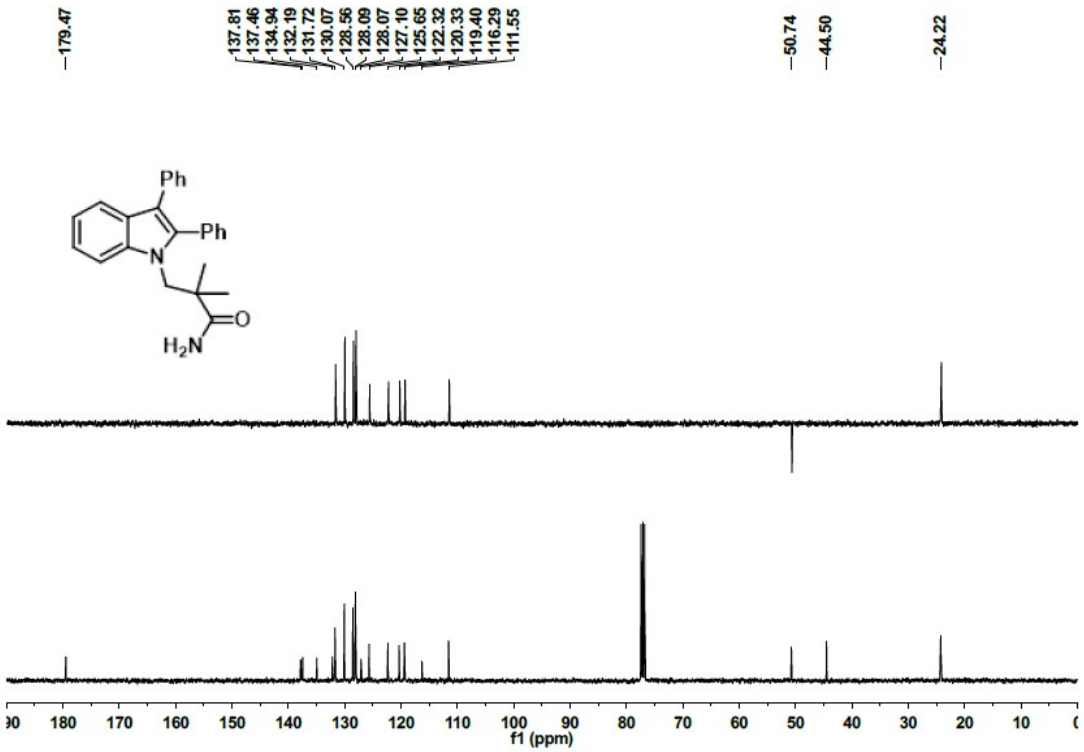


^{1}H and ^{13}C NMR spectra of compound 3b

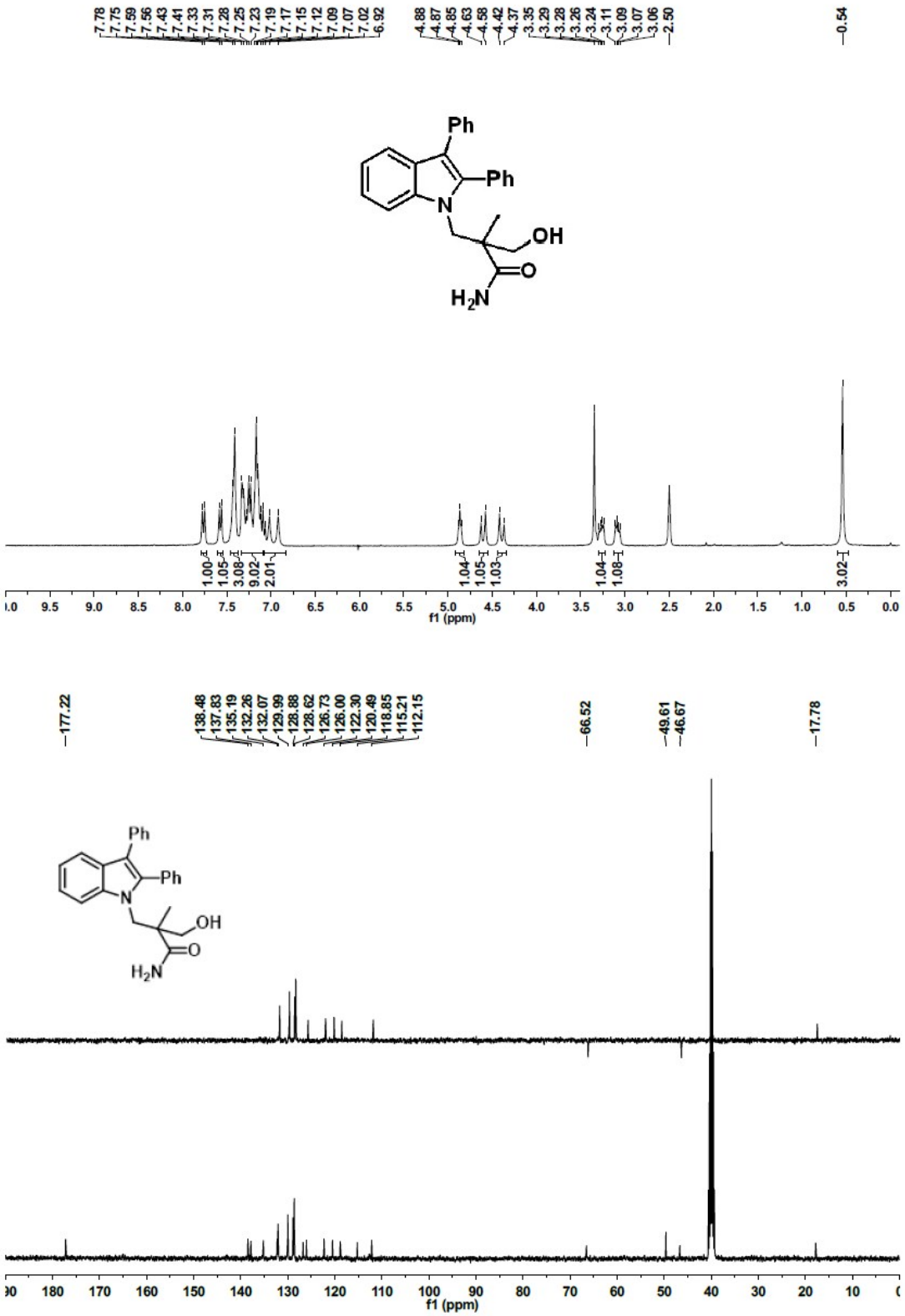


^{1}H and ^{13}C NMR spectra of compound 3c

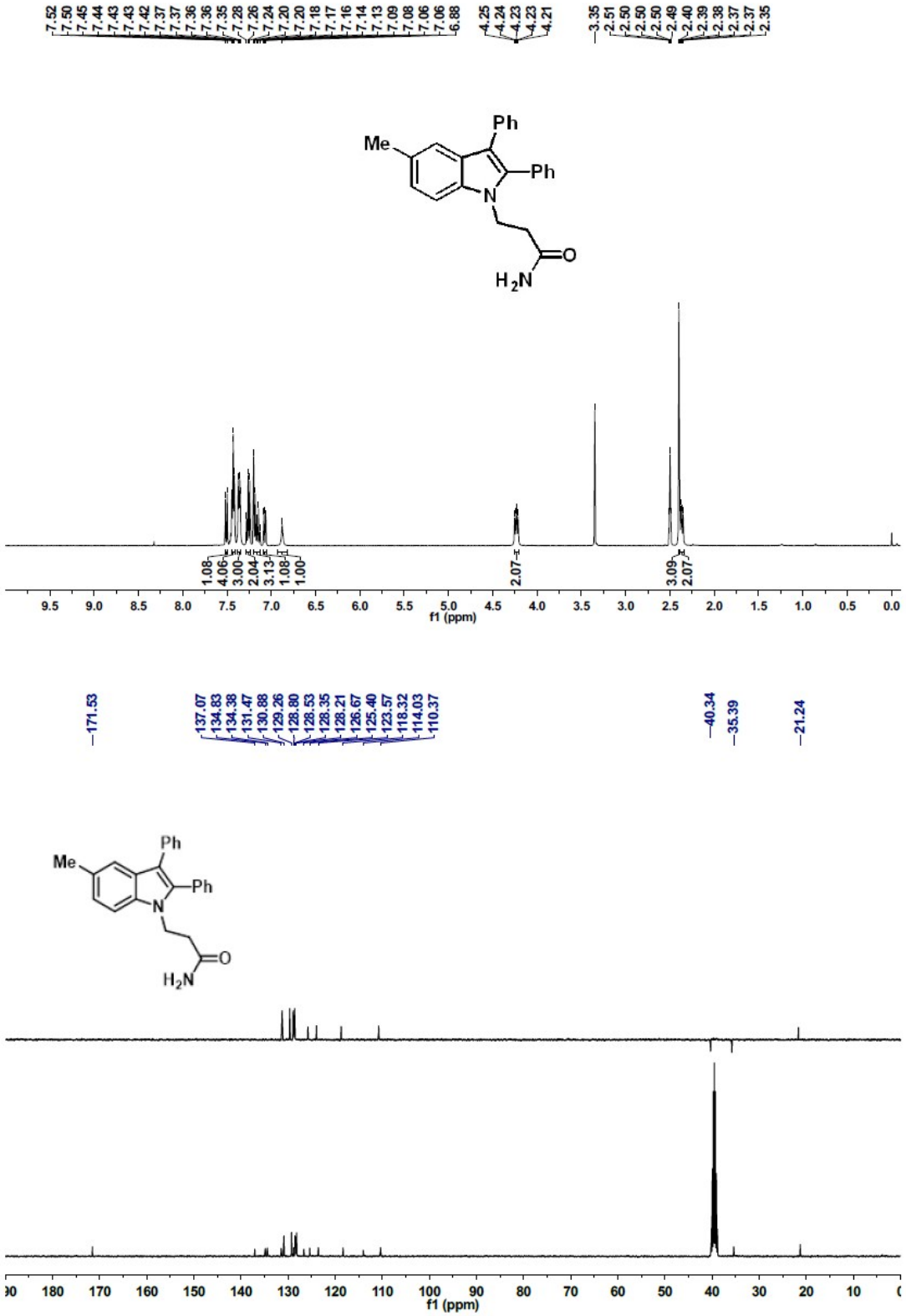




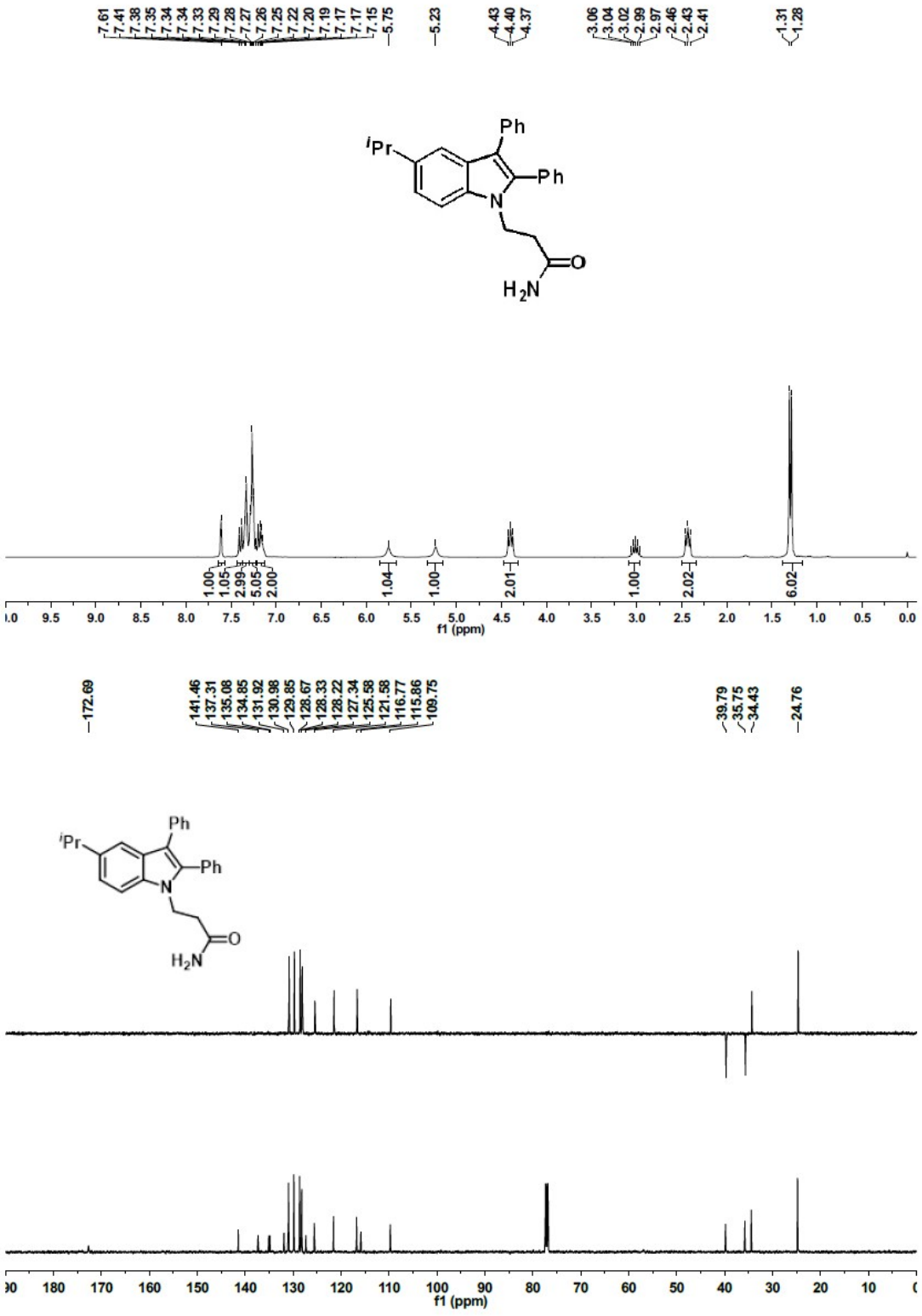
^{1}H and ^{13}C NMR spectra of compound 3d



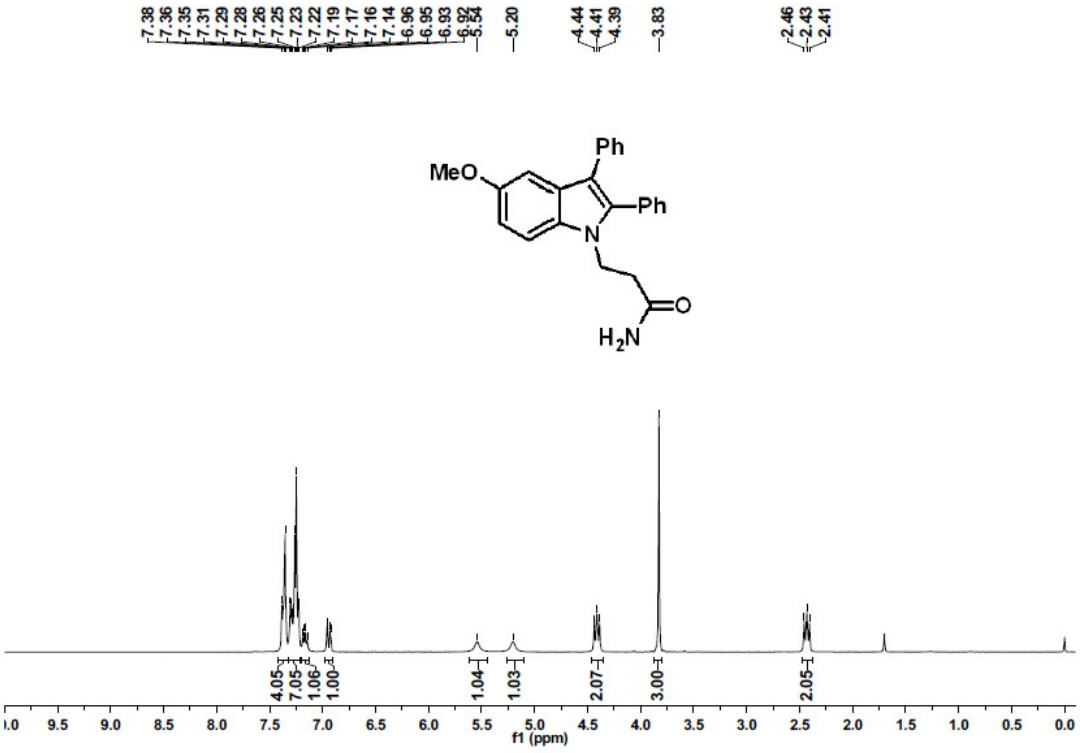
^{1}H and ^{13}C NMR spectra of compound 3e

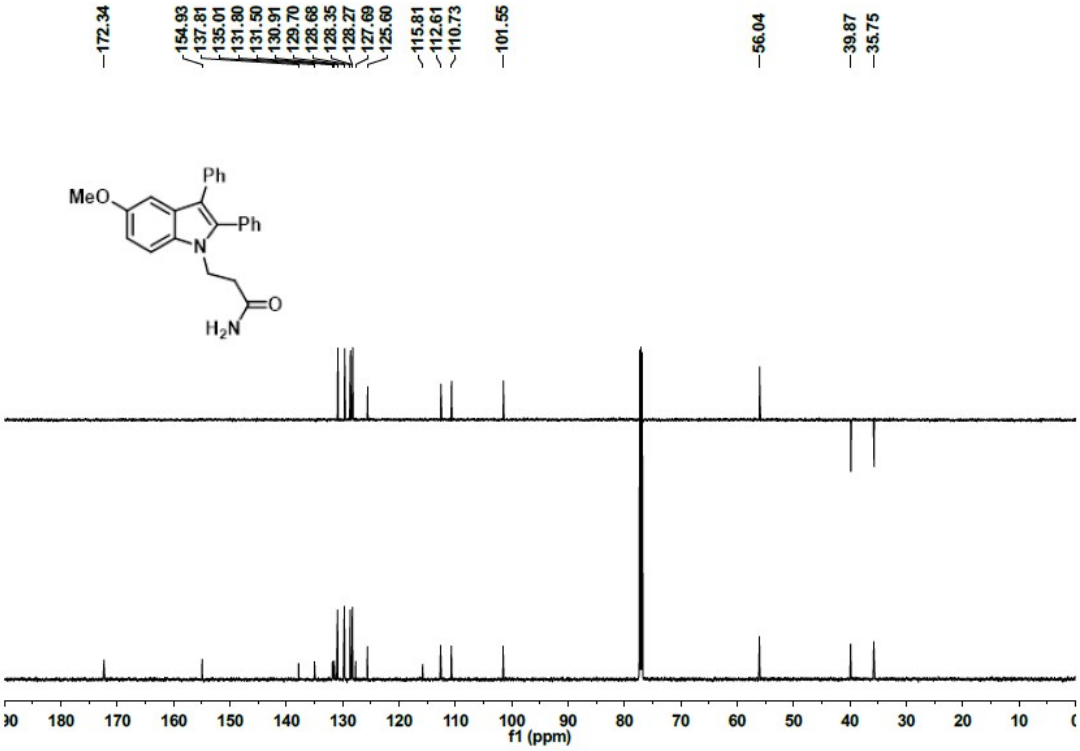


^{1}H and ^{13}C NMR spectra of compound 3f

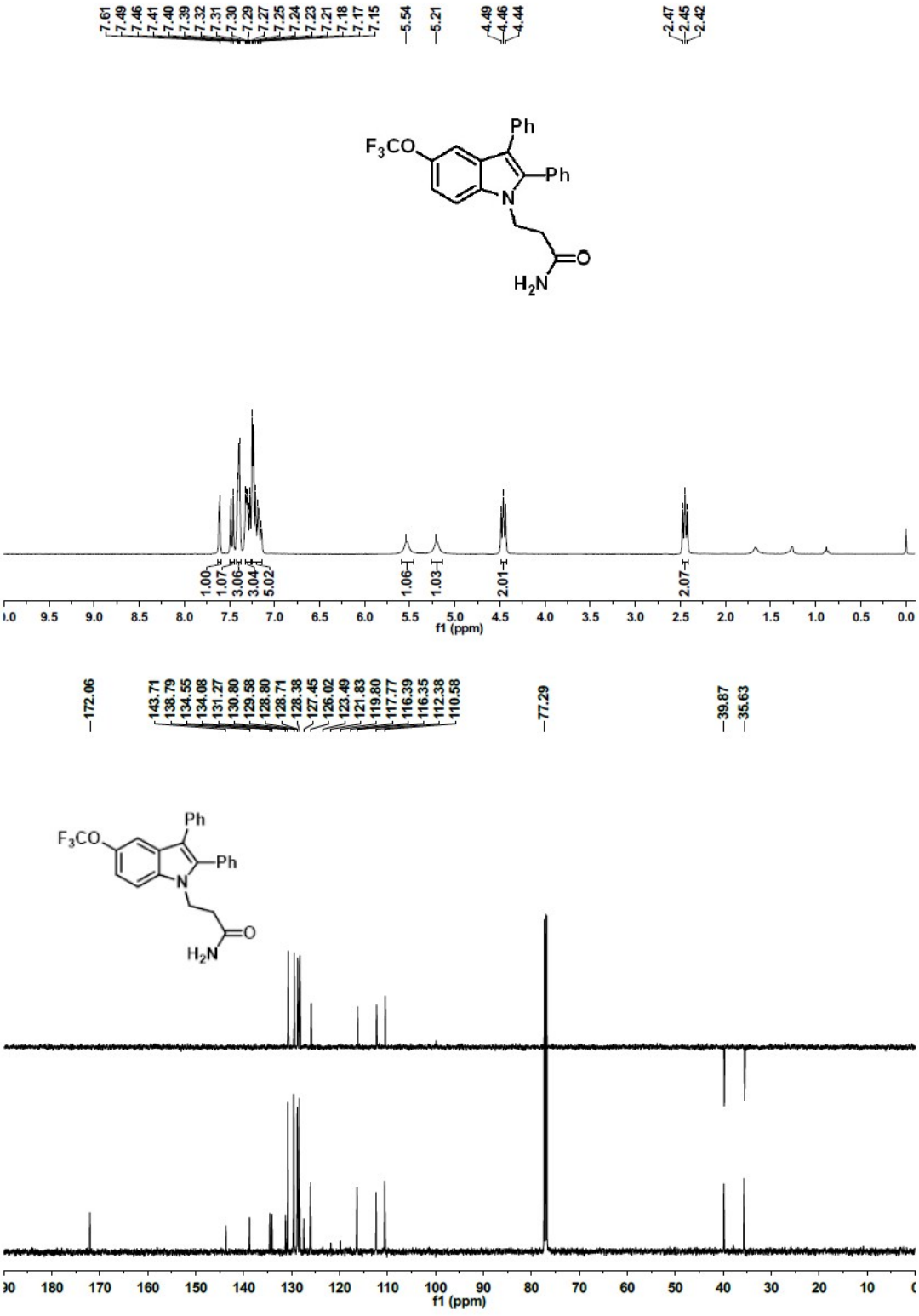


^{1}H and ^{13}C NMR spectra of compound 3g

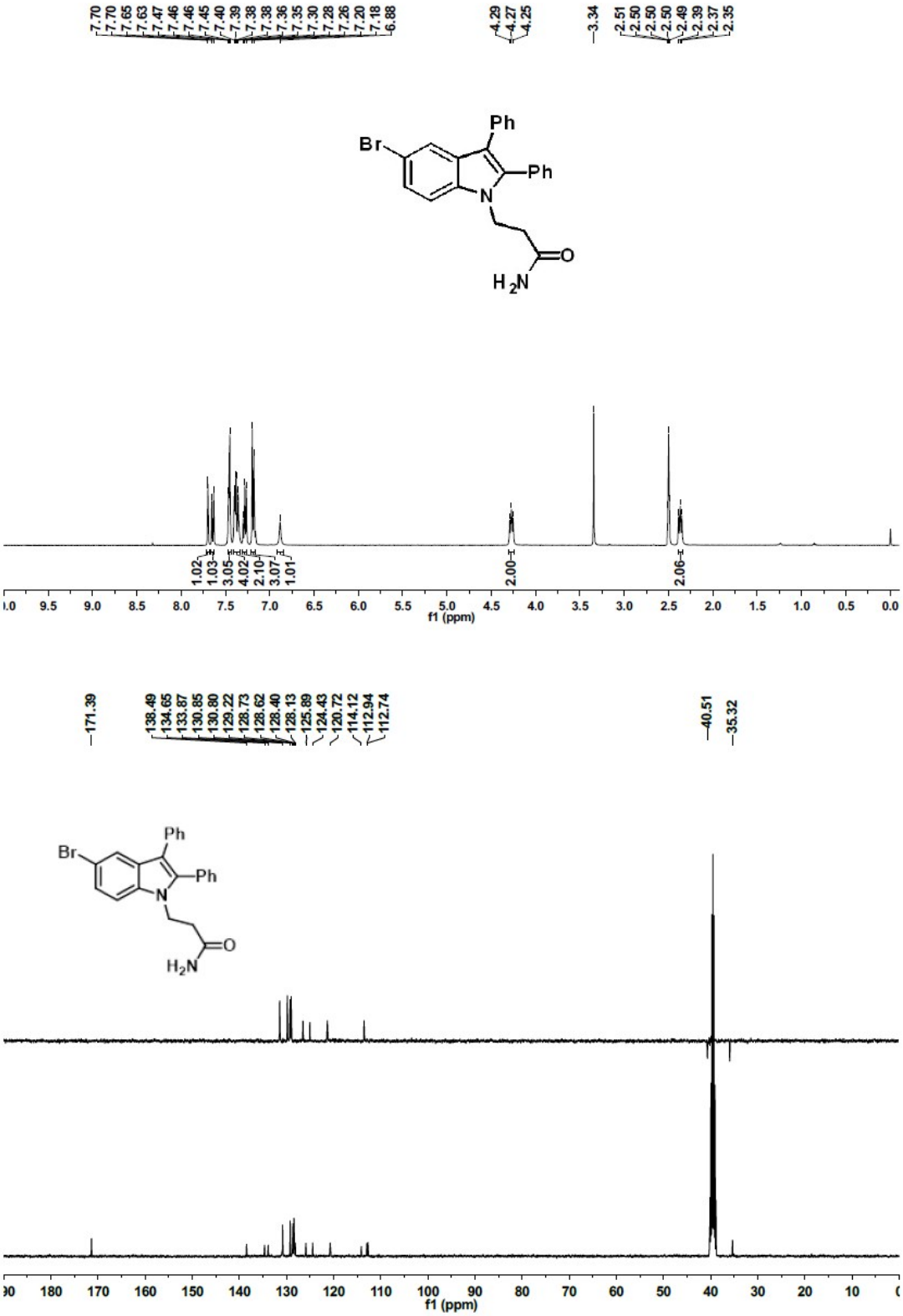




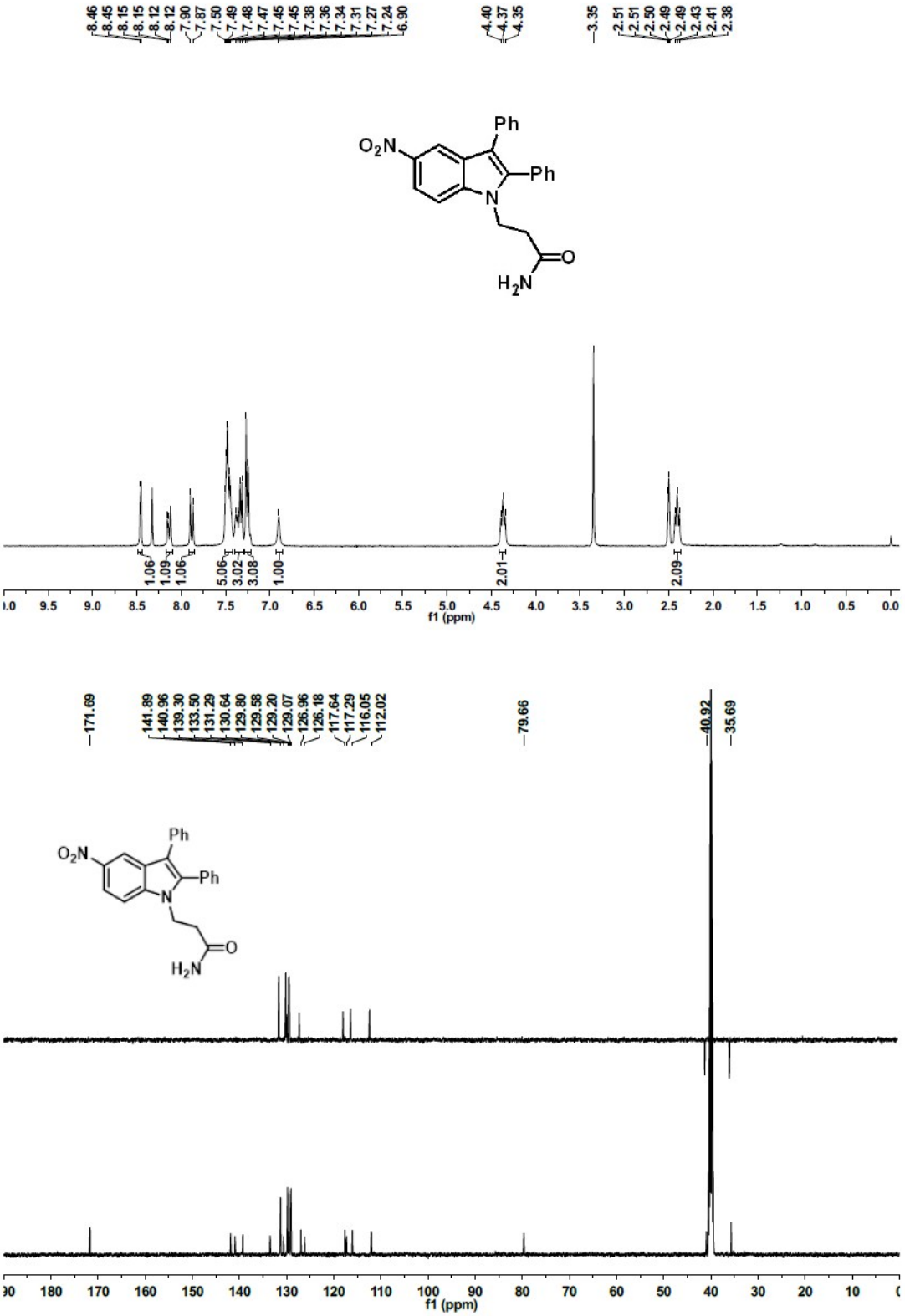
^{1}H and ^{13}C NMR spectra of compound 3h



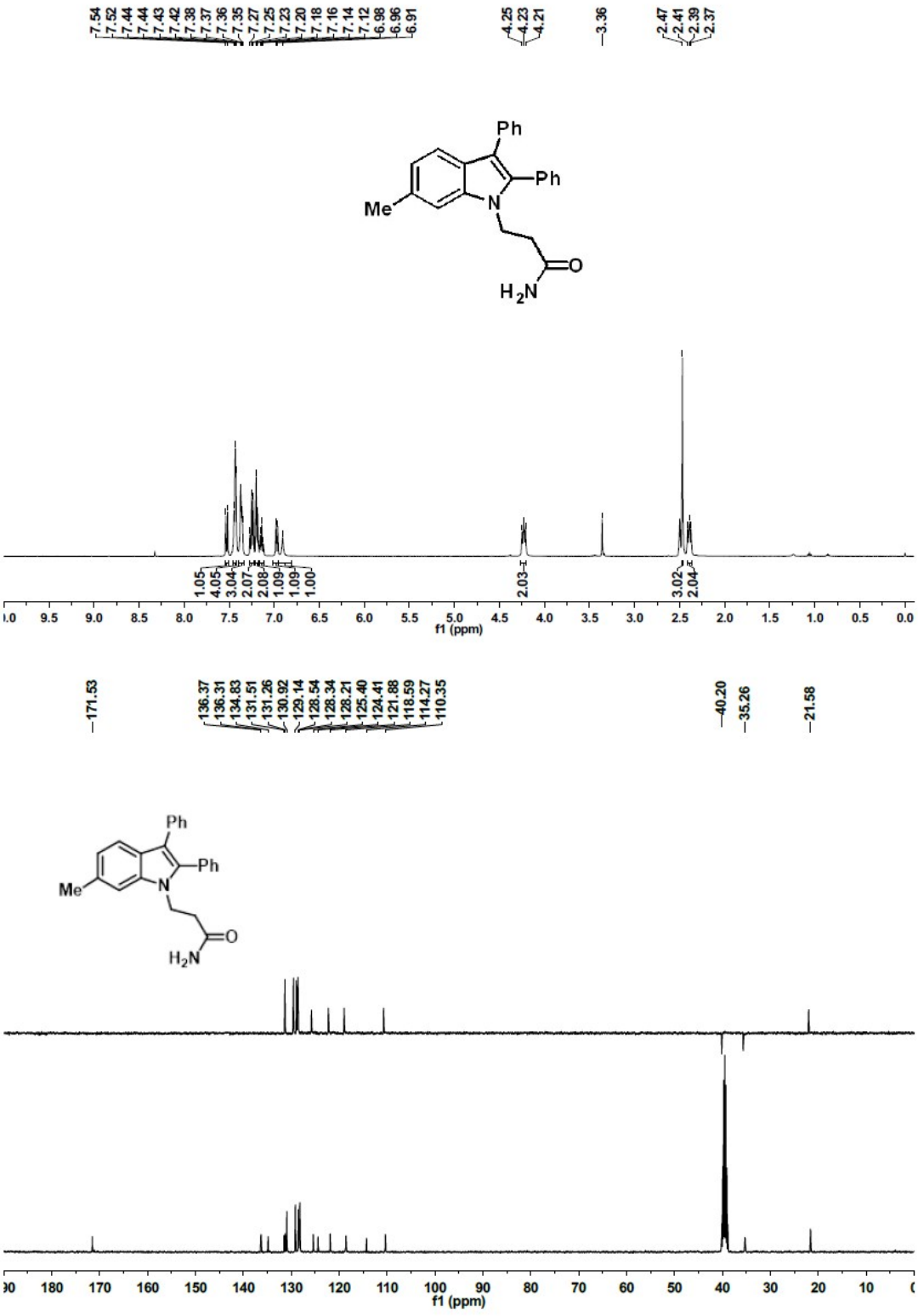
^{1}H and ^{13}C NMR spectra of compound 3i



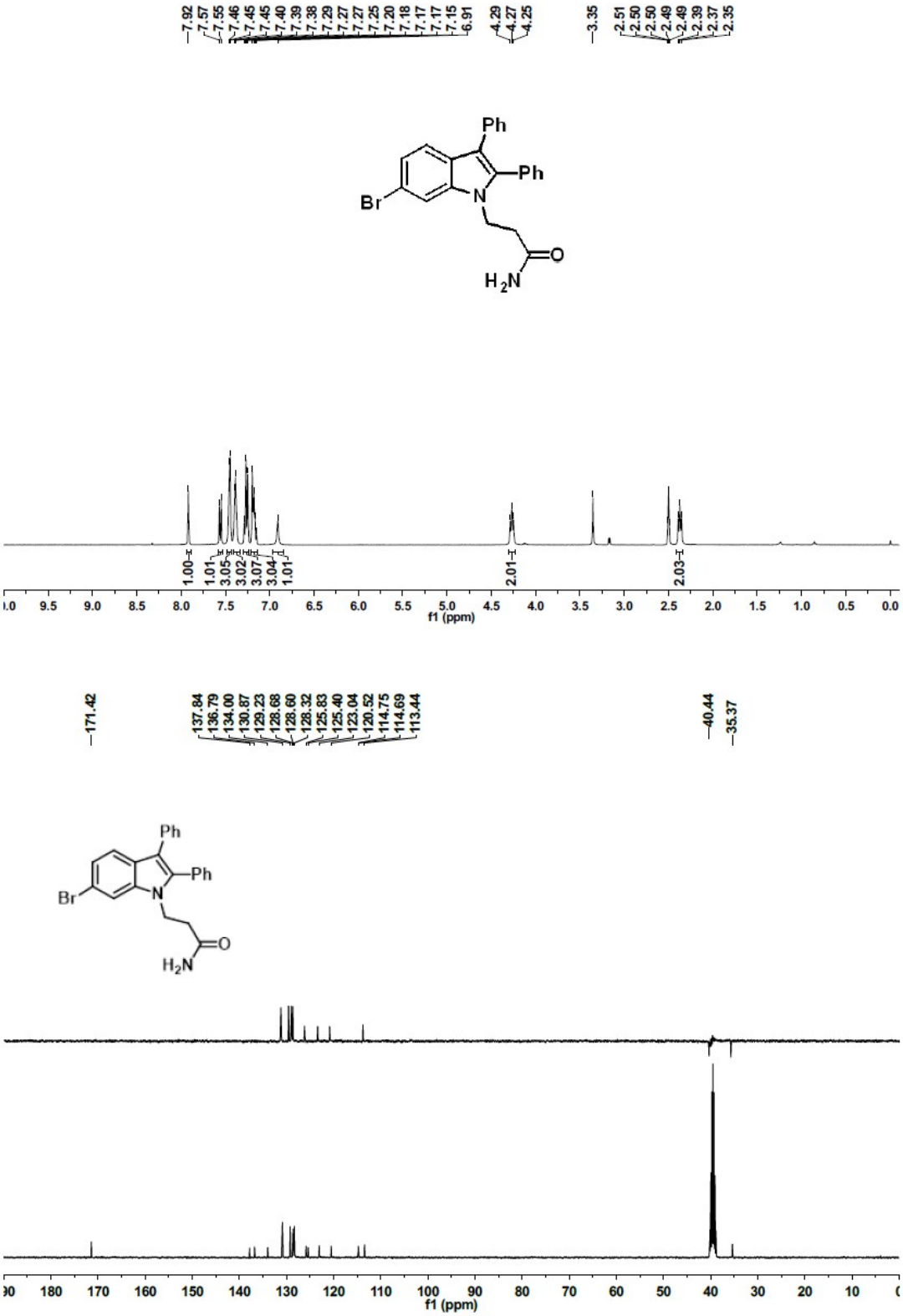
^{1}H and ^{13}C NMR spectra of compound 3j



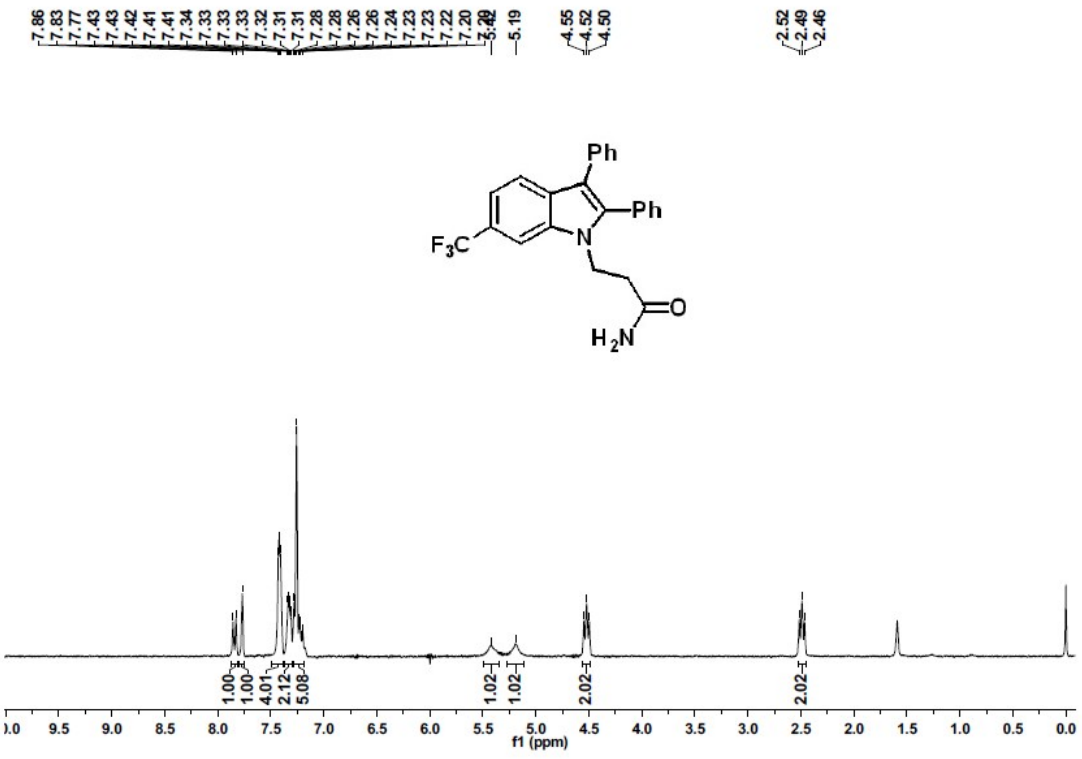
^{1}H and ^{13}C NMR spectra of compound 3k

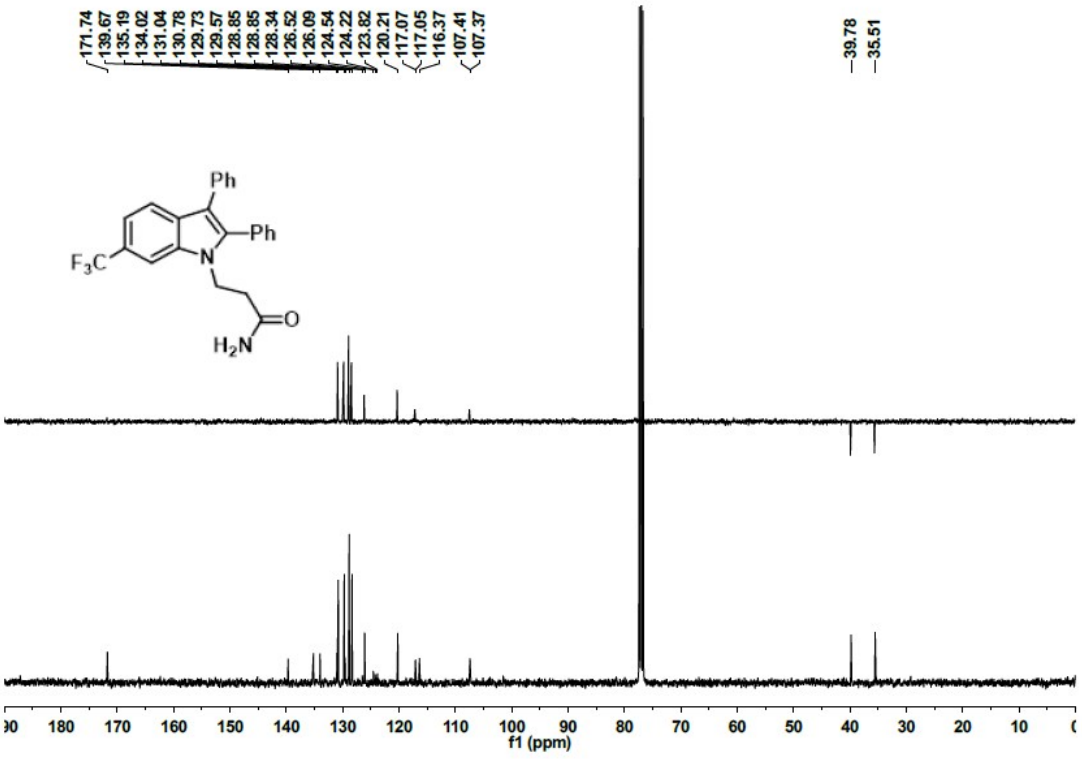


^{1}H and ^{13}C NMR spectra of compound 3l

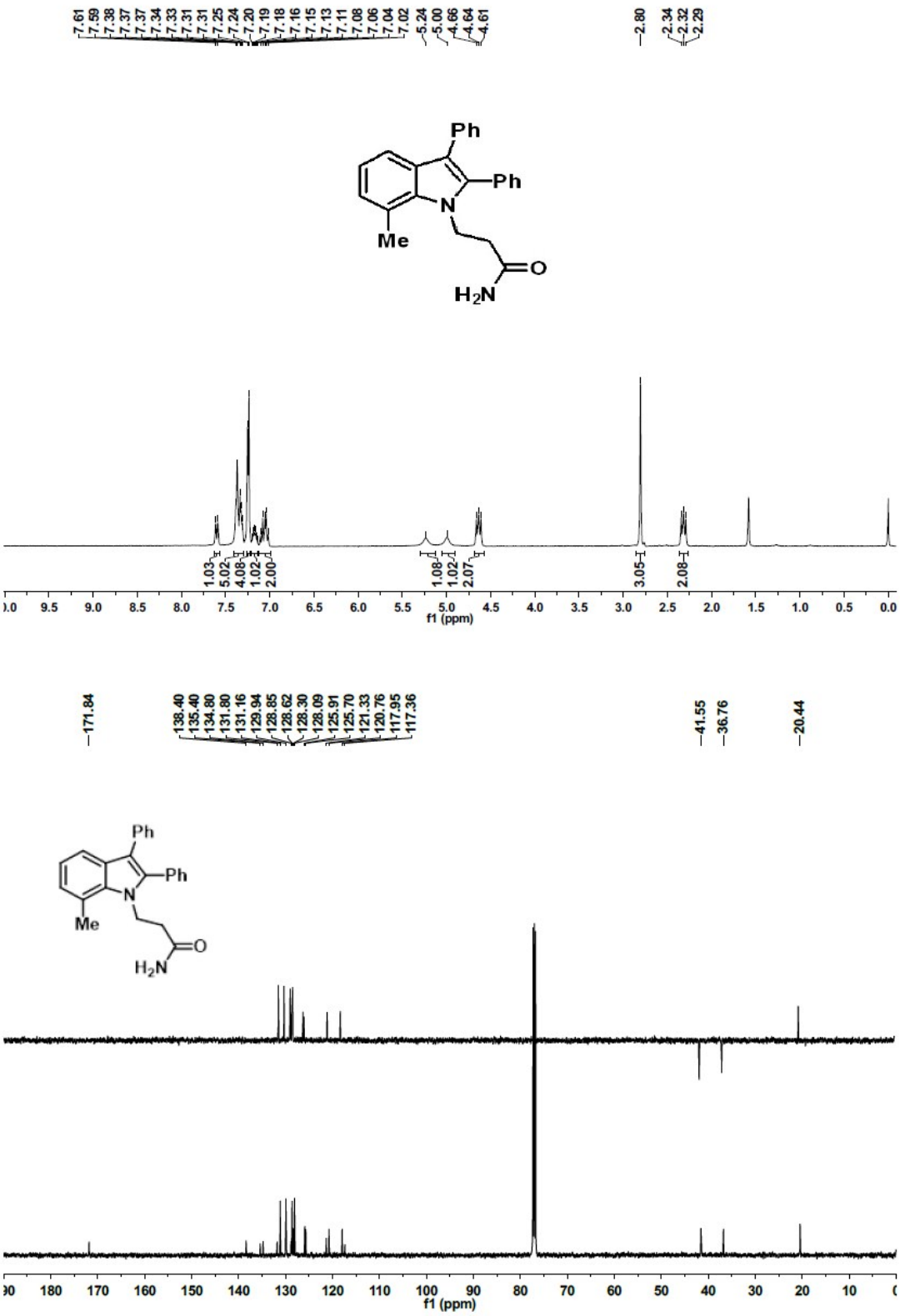


^{1}H and ^{13}C NMR spectra of compound 3m

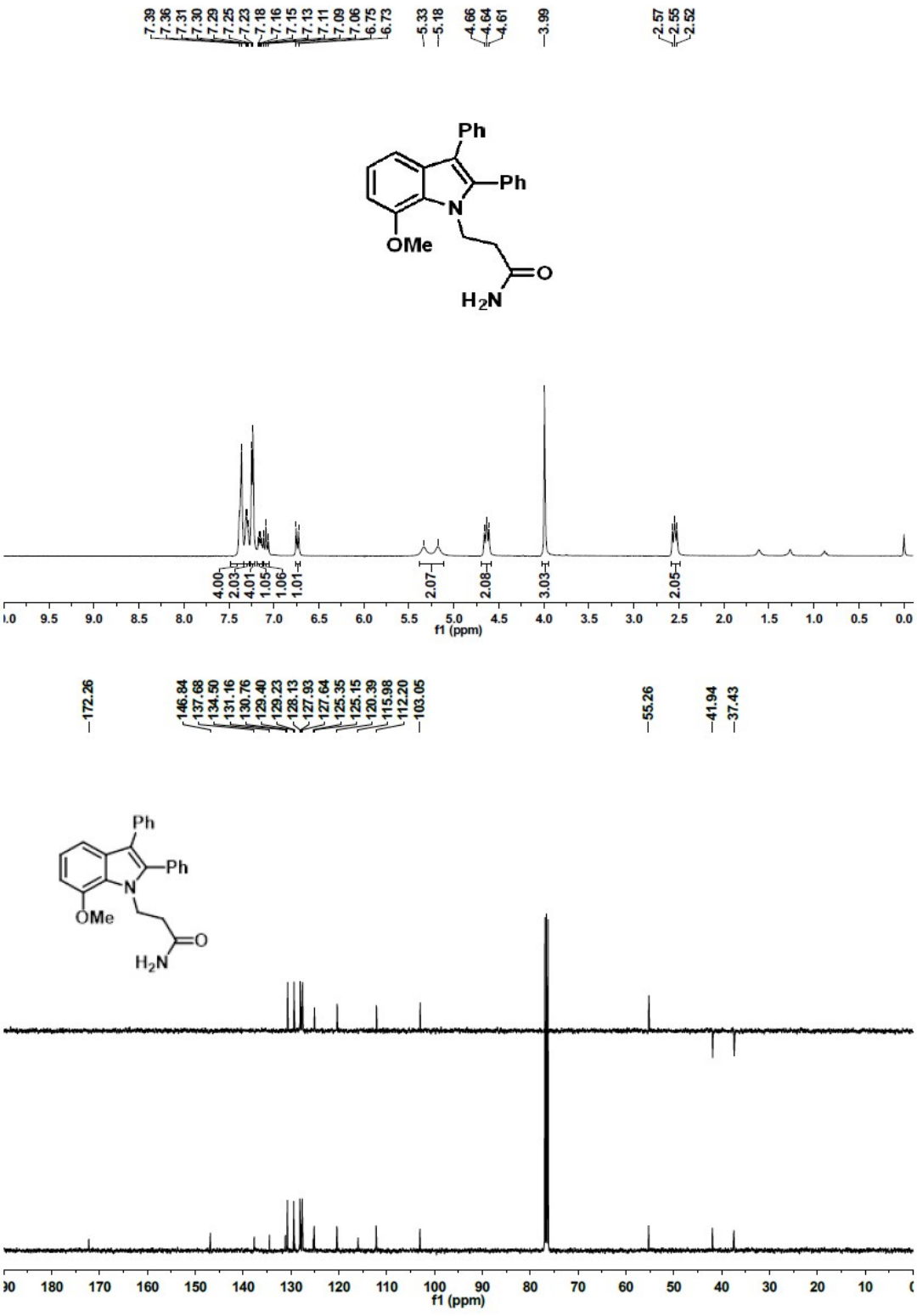




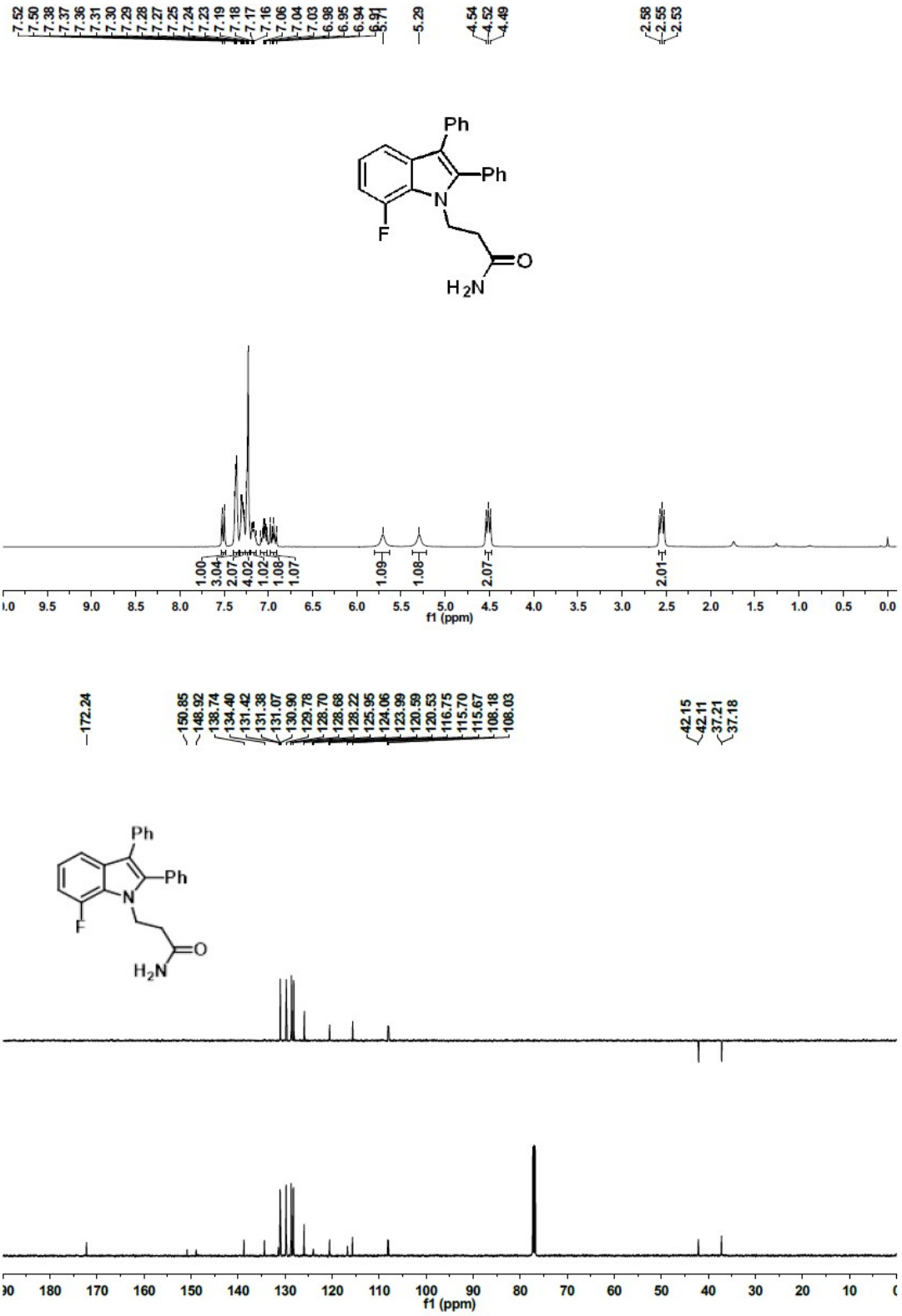
^{1}H and ^{13}C NMR spectra of compound 3n



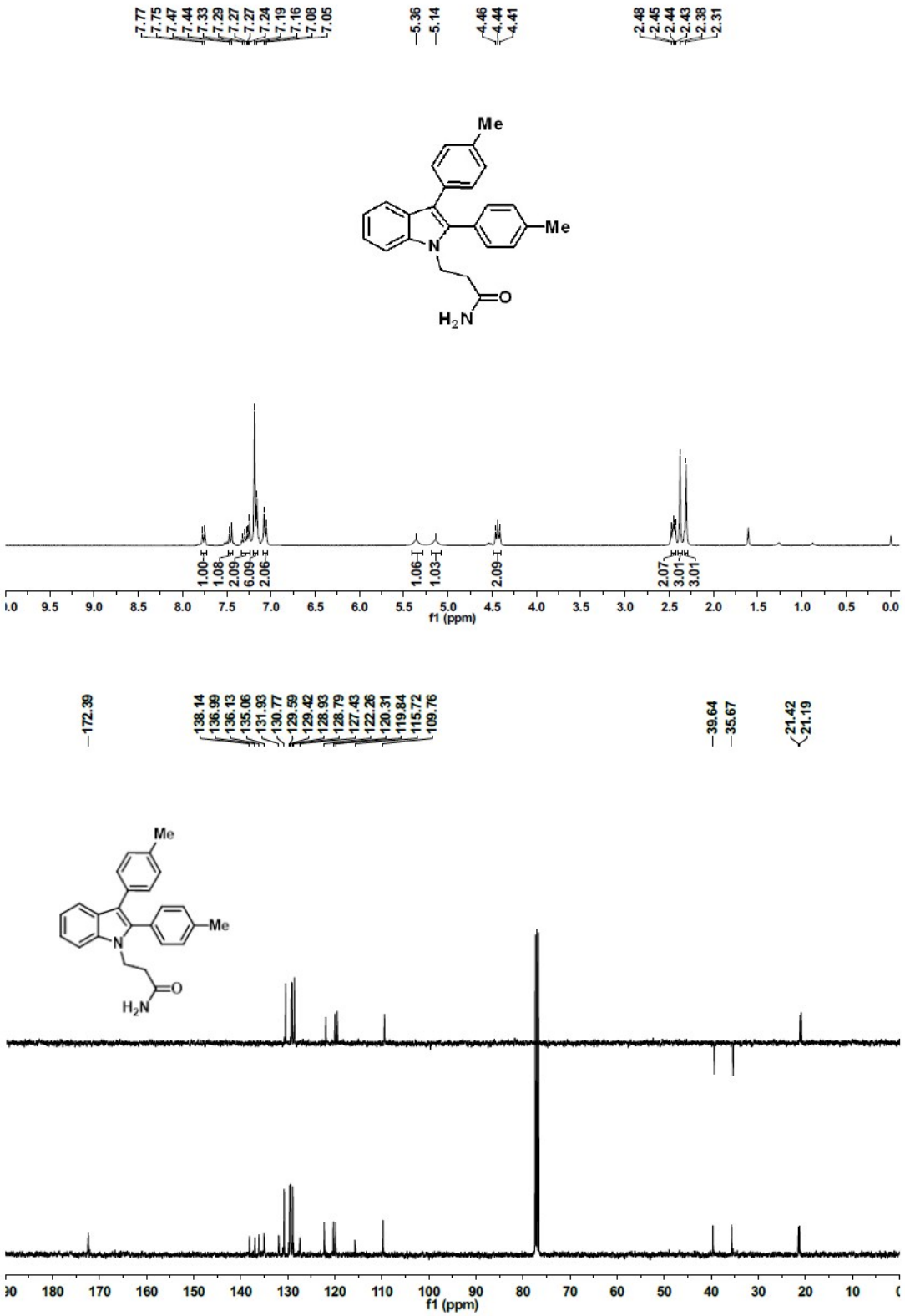
^{1}H and ^{13}C NMR spectra of compound 3o



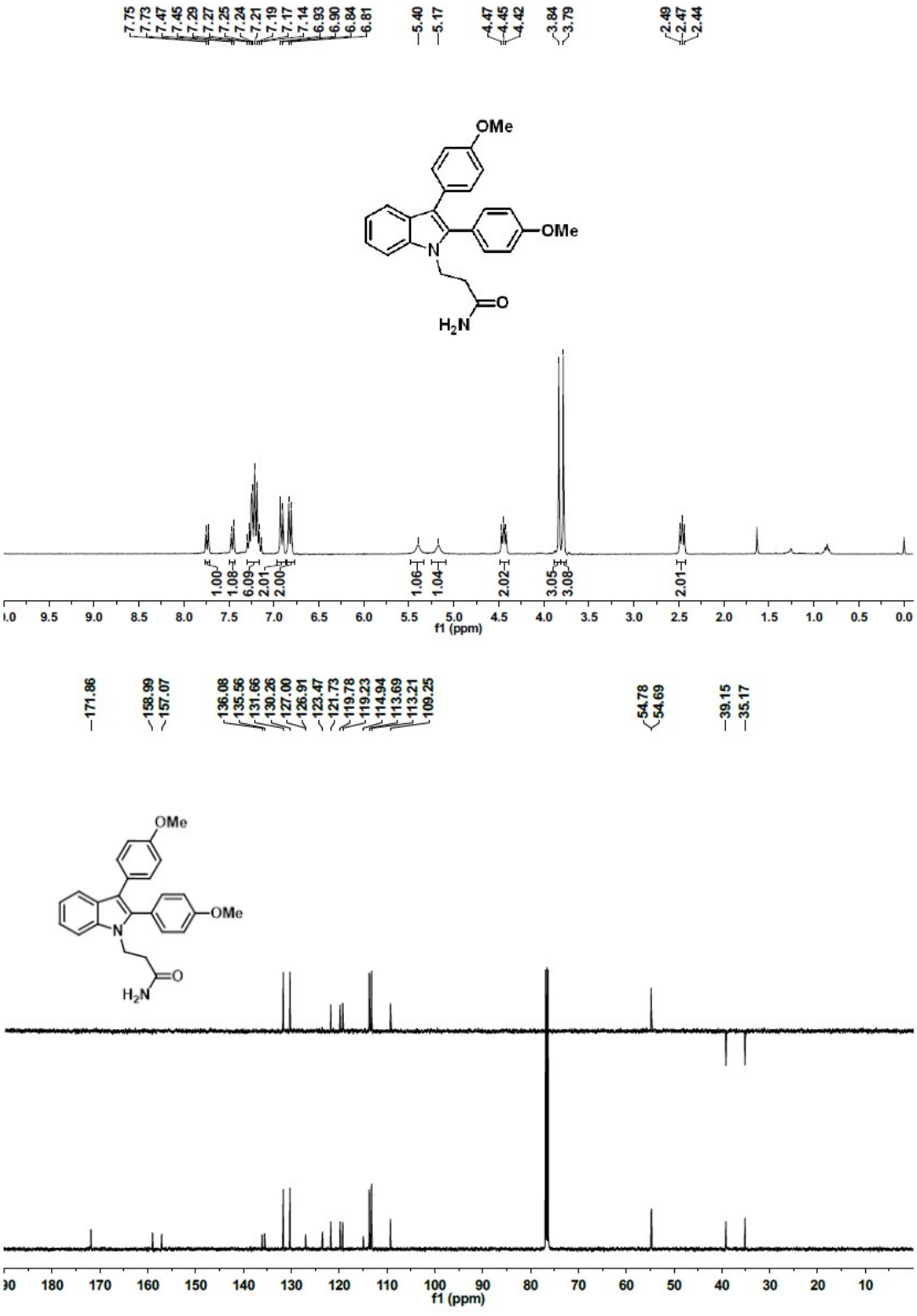
^{1}H and ^{13}C NMR spectra of compound 3p



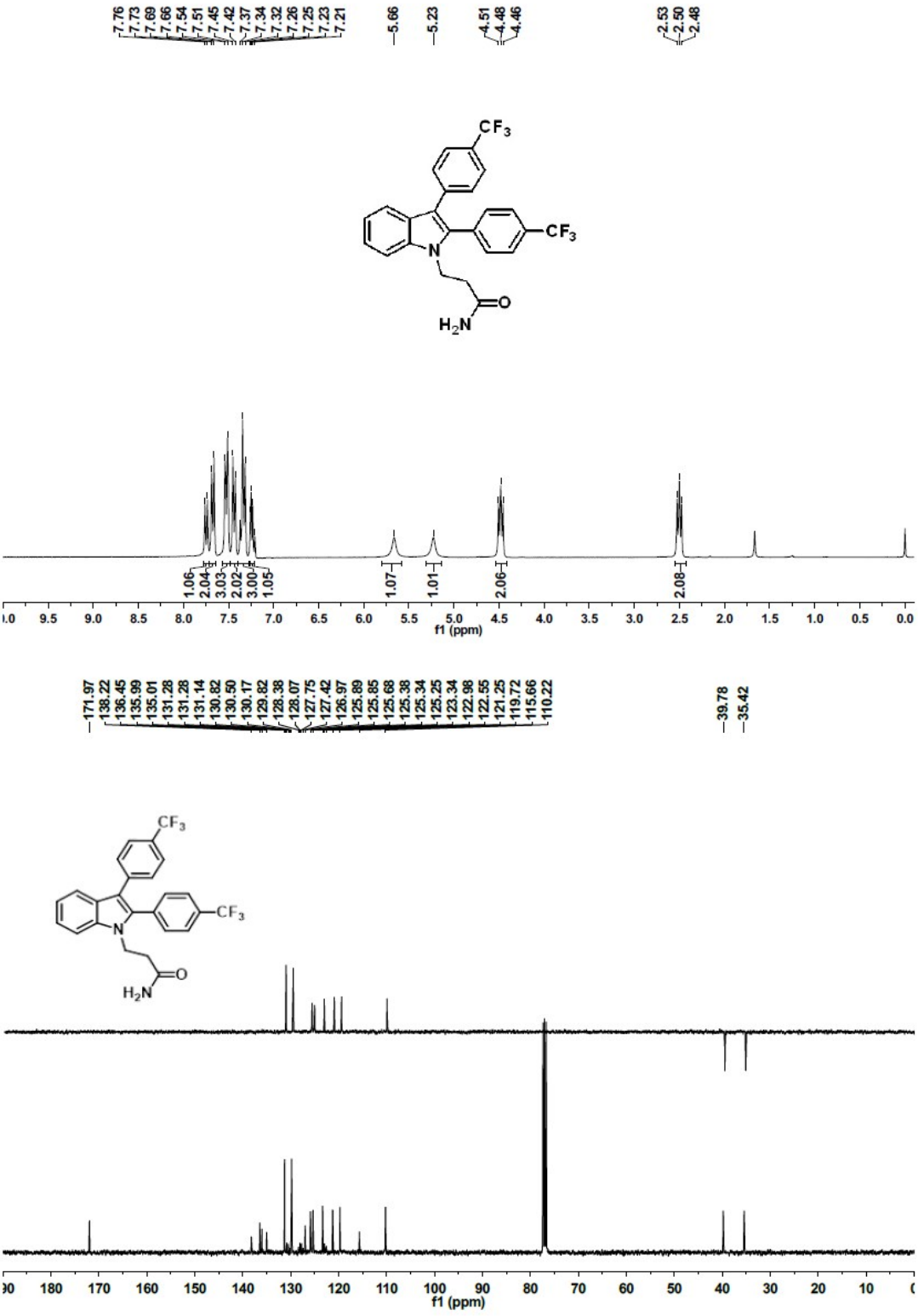
^{1}H and ^{13}C NMR spectra of compound 3q



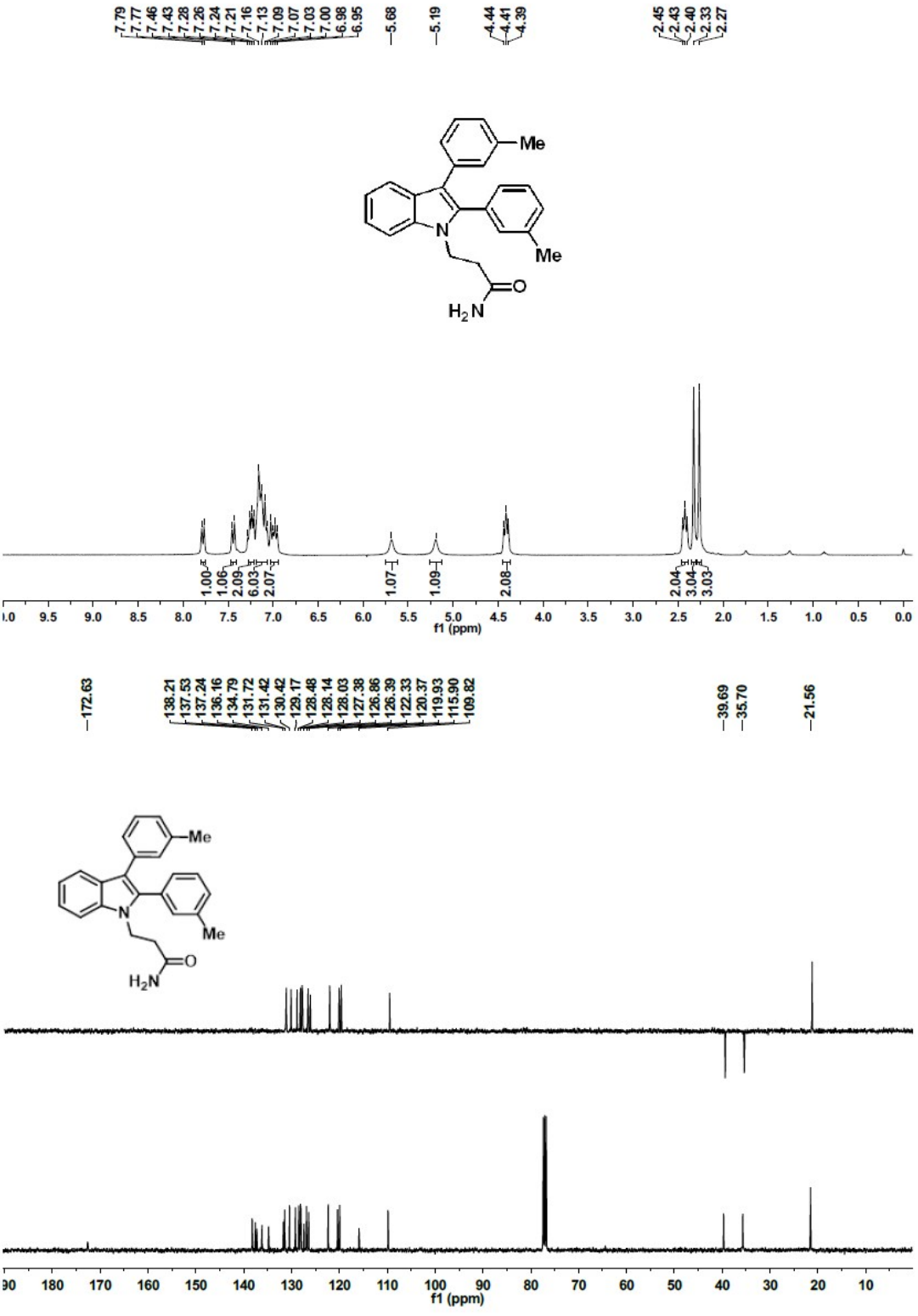
^{1}H and ^{13}C NMR spectra of compound 3r



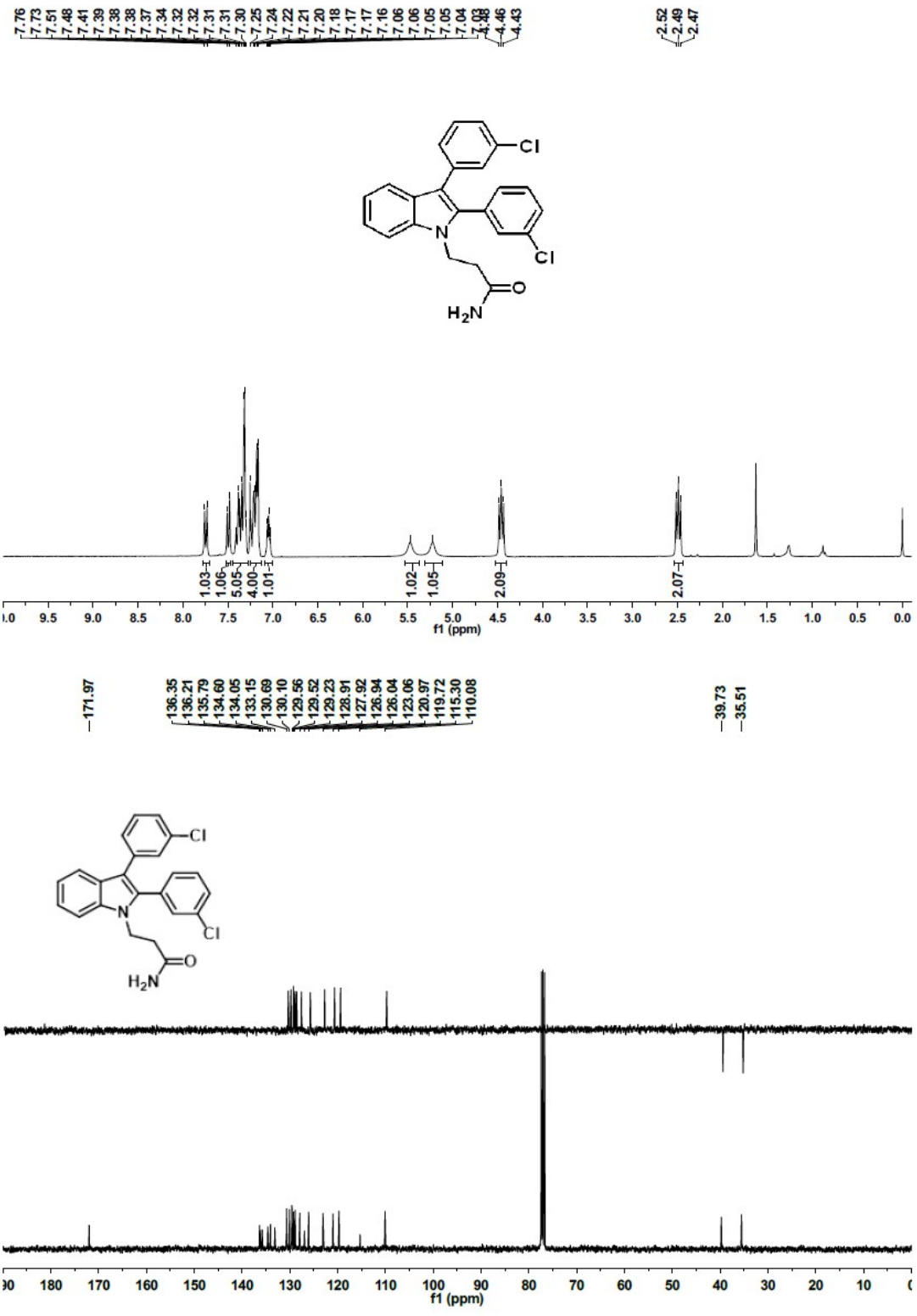
^{1}H and ^{13}C NMR spectra of compound 3s



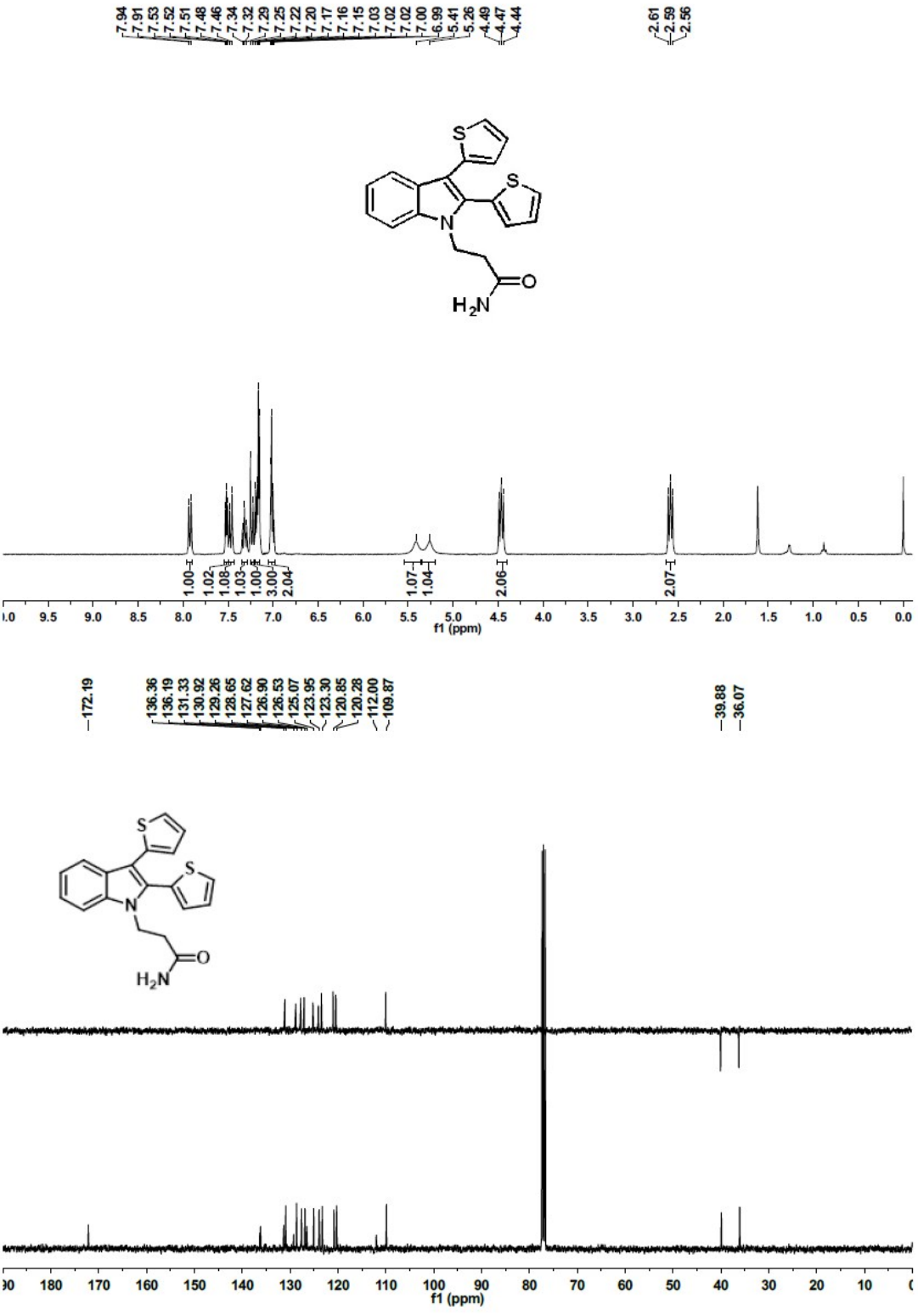
^{1}H and ^{13}C NMR spectra of compound 3t



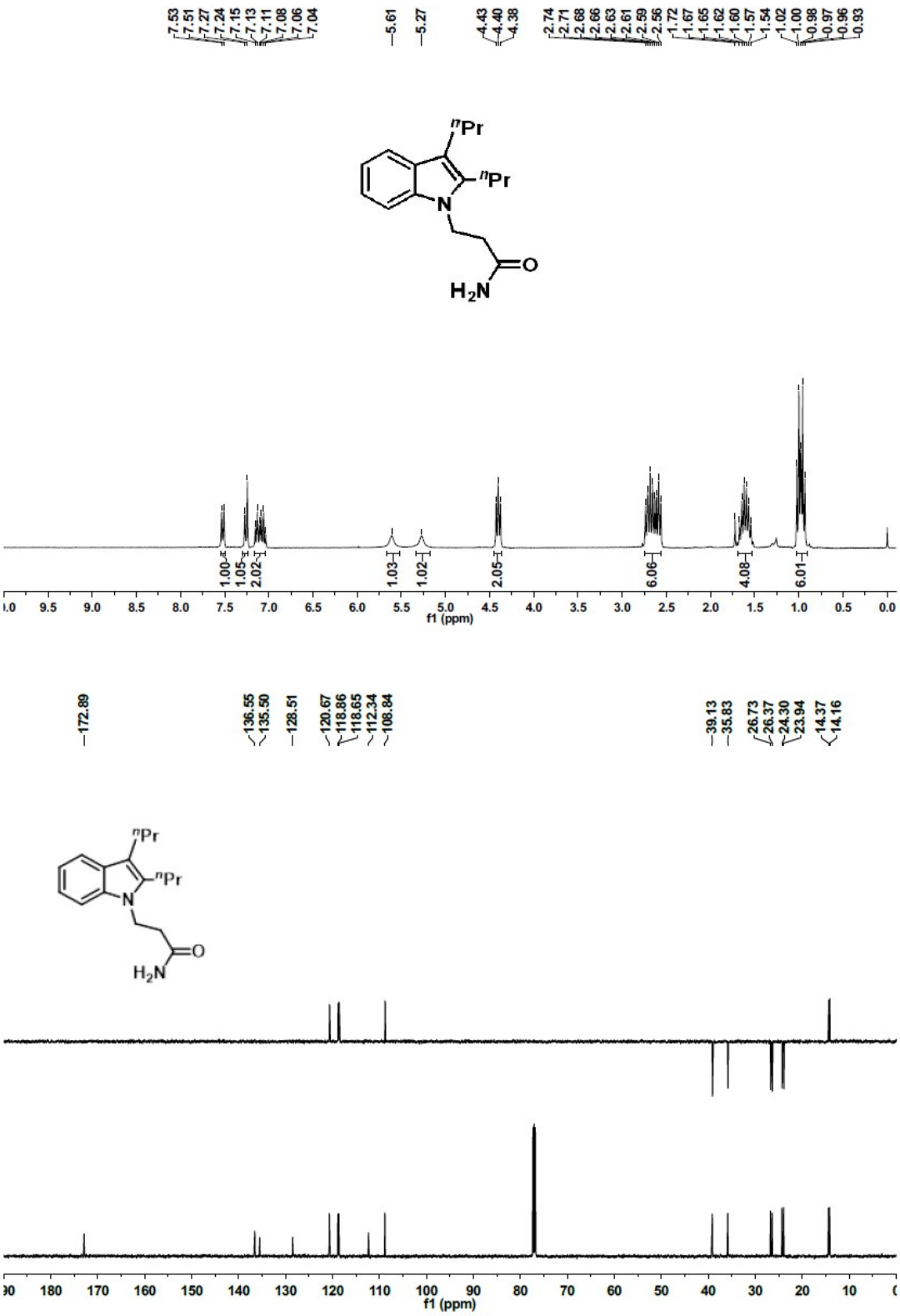
^{1}H and ^{13}C NMR spectra of compound 3u



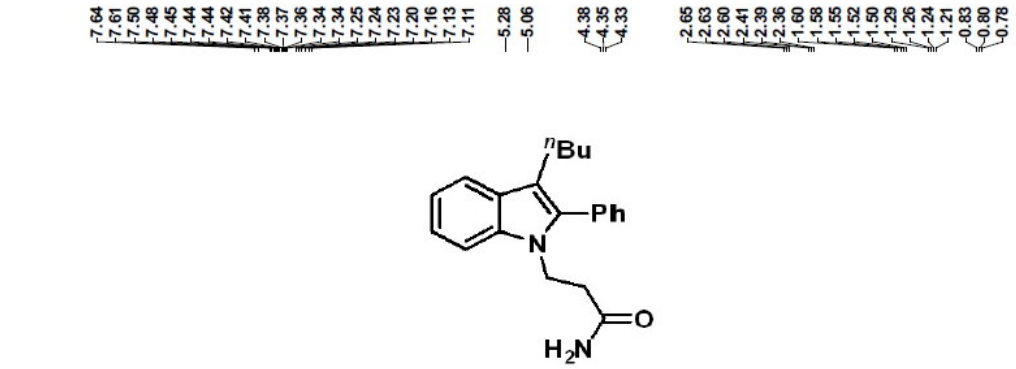
^{1}H and ^{13}C NMR spectra of compound 3v

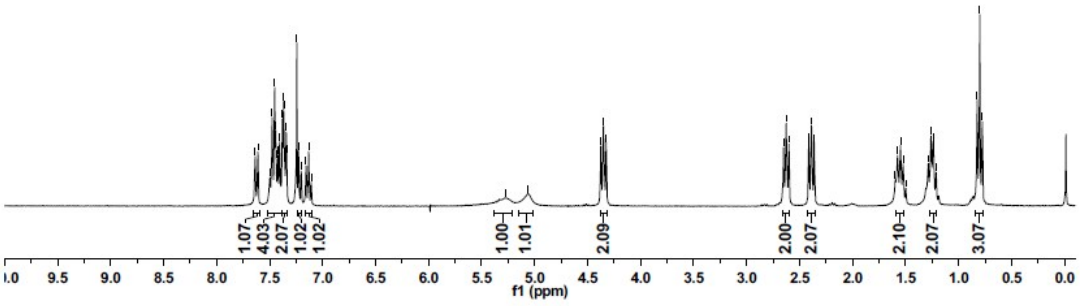


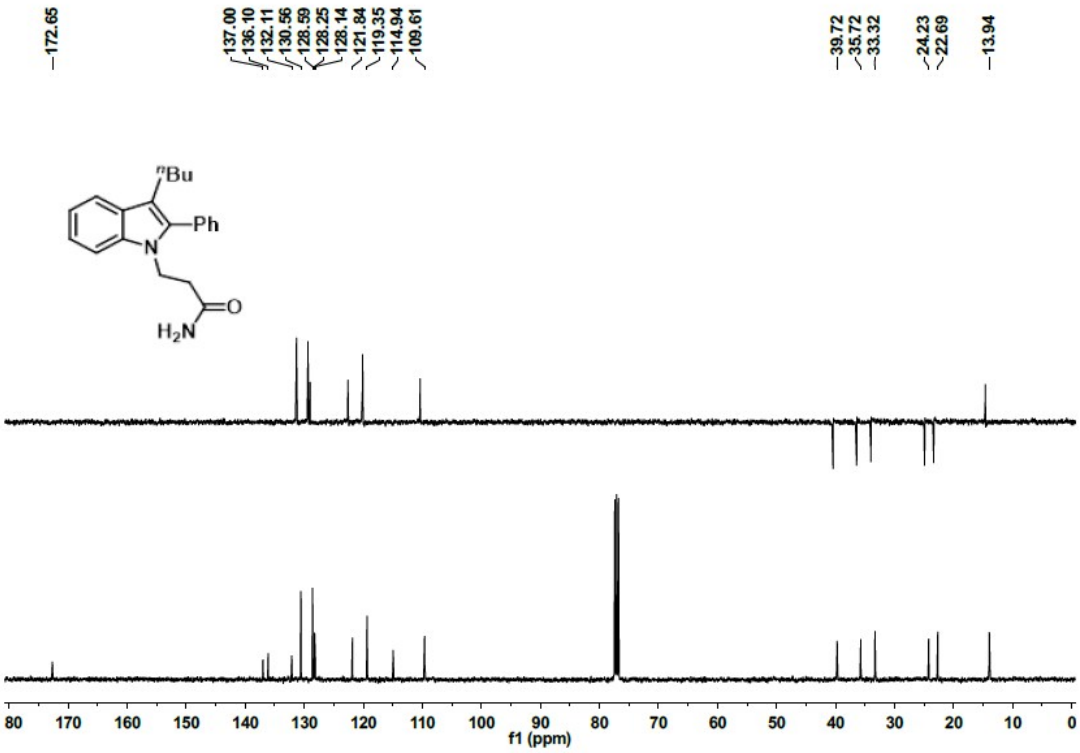
^{1}H and ^{13}C NMR spectra of compound 3w



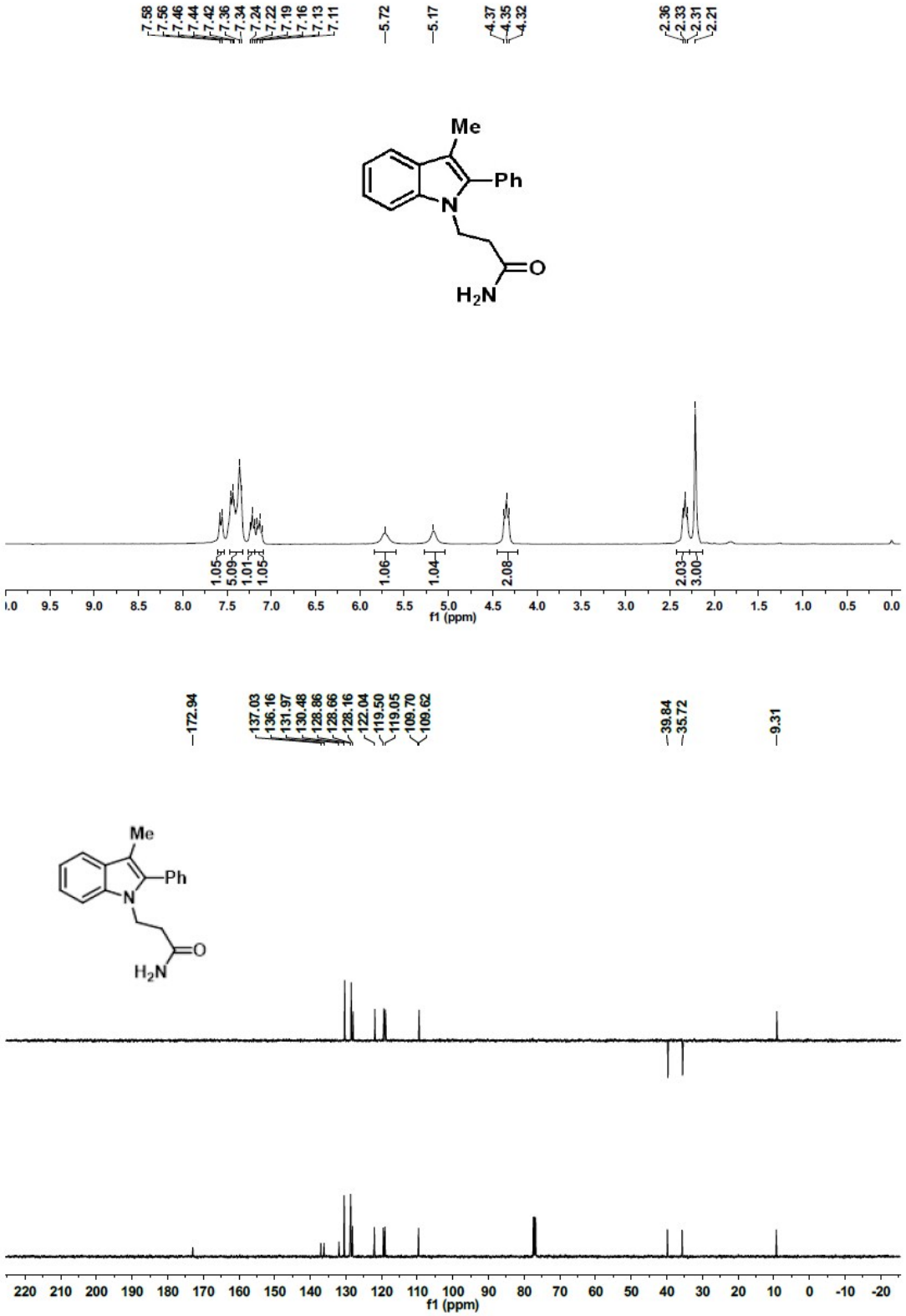
^{1}H and ^{13}C NMR spectra of compound 3x



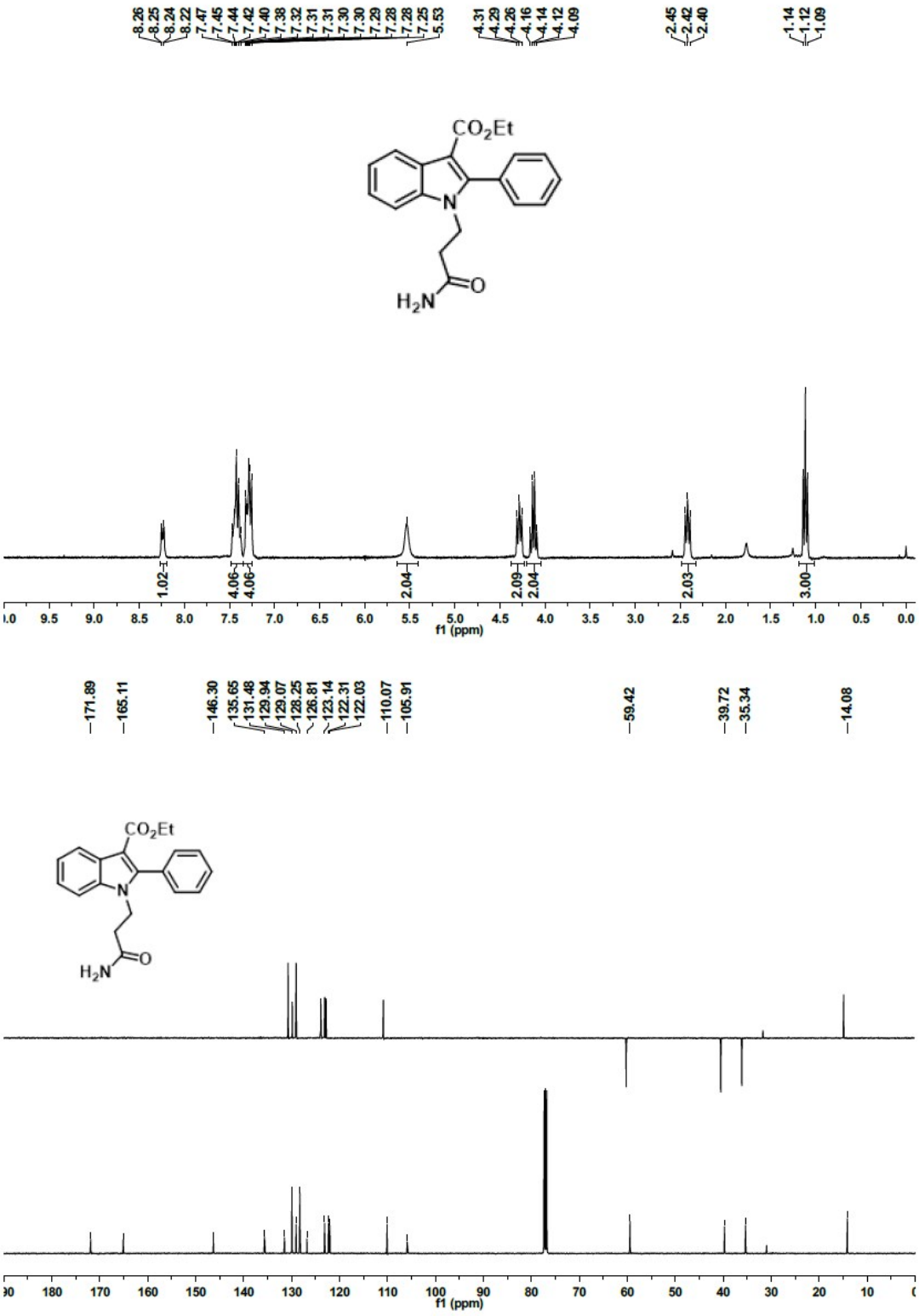




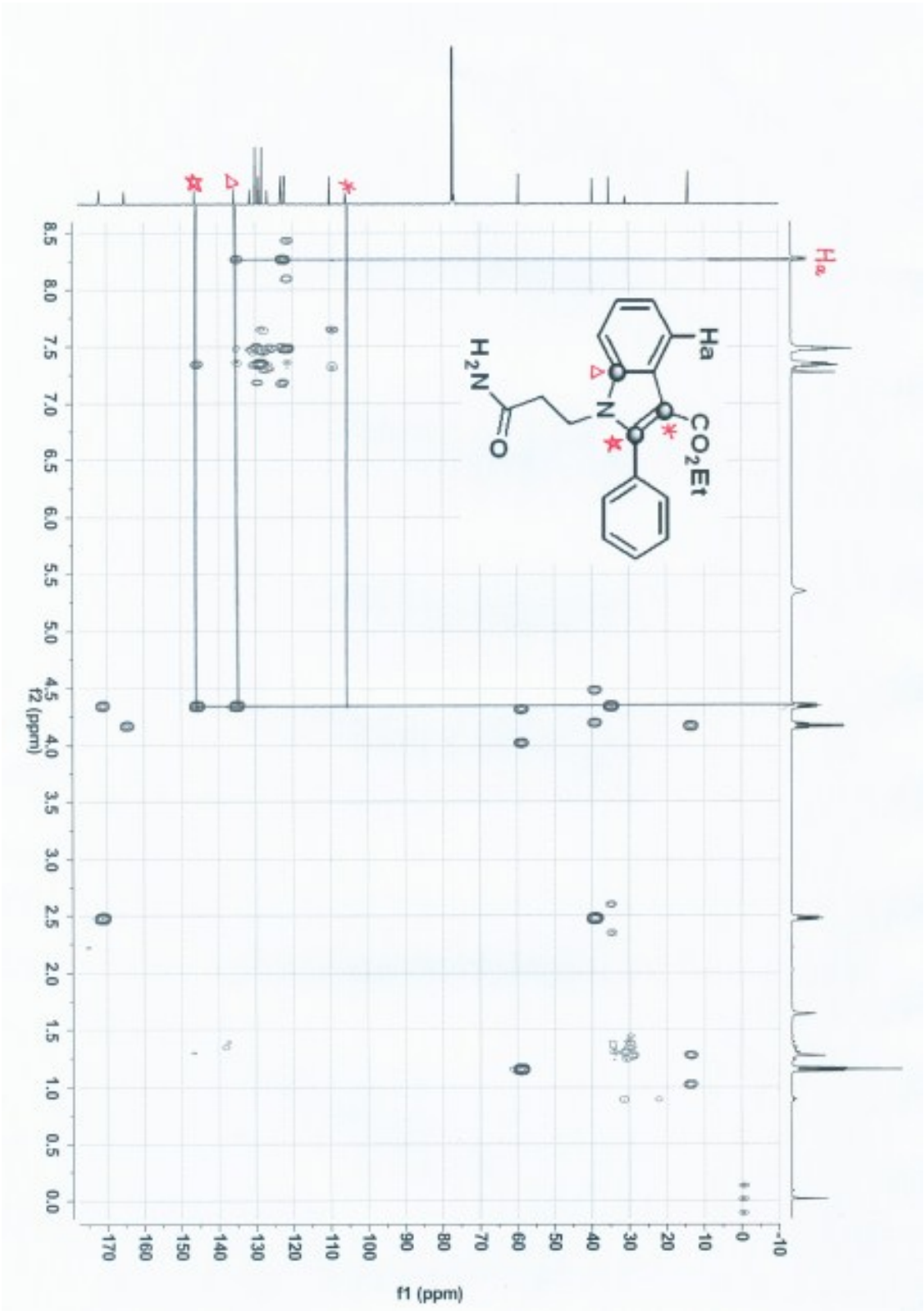
^{1}H and ^{13}C NMR spectra of compound 3y



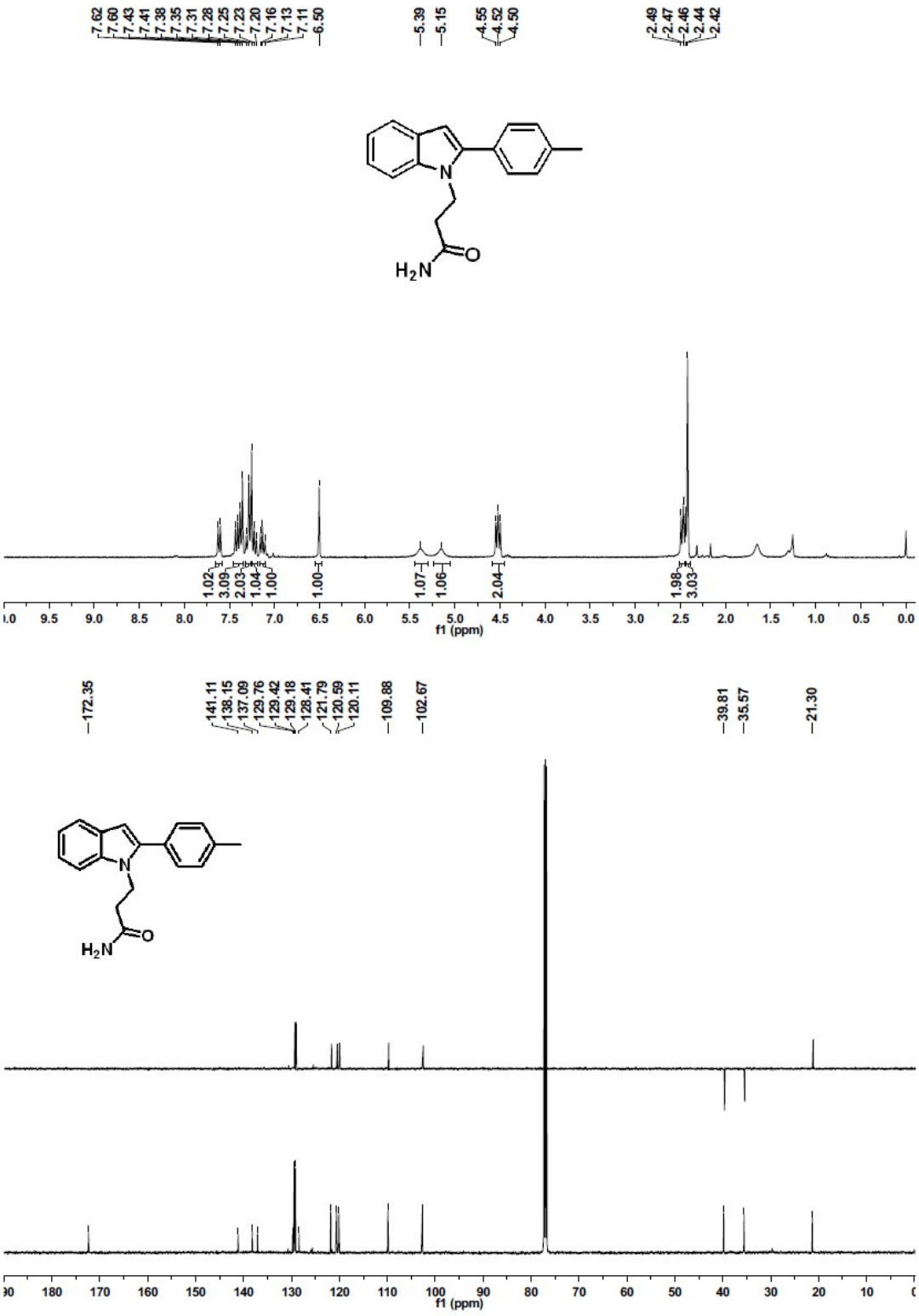
^{1}H and ^{13}C NMR spectra of compound 3z



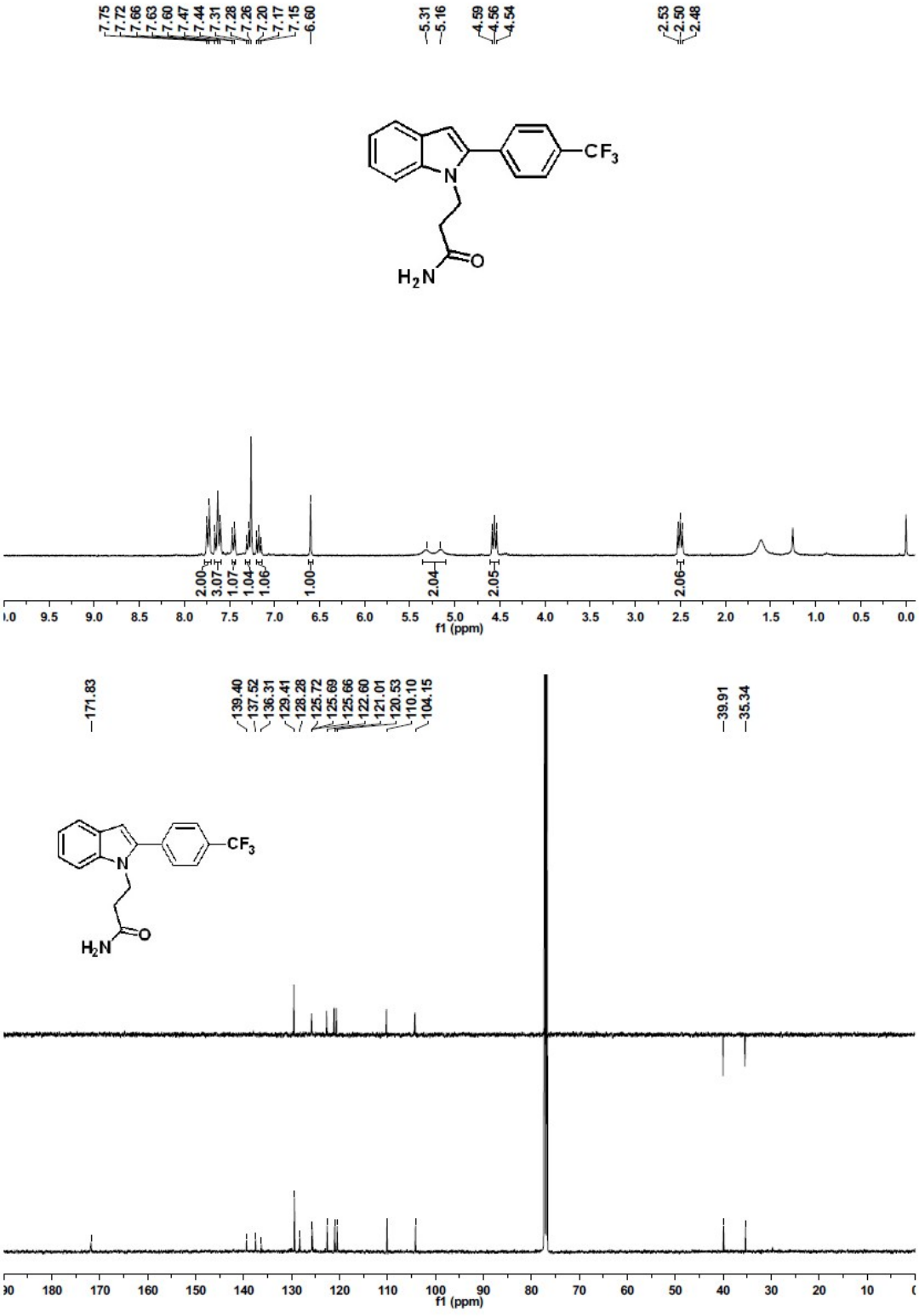
HMBC of compound 3z



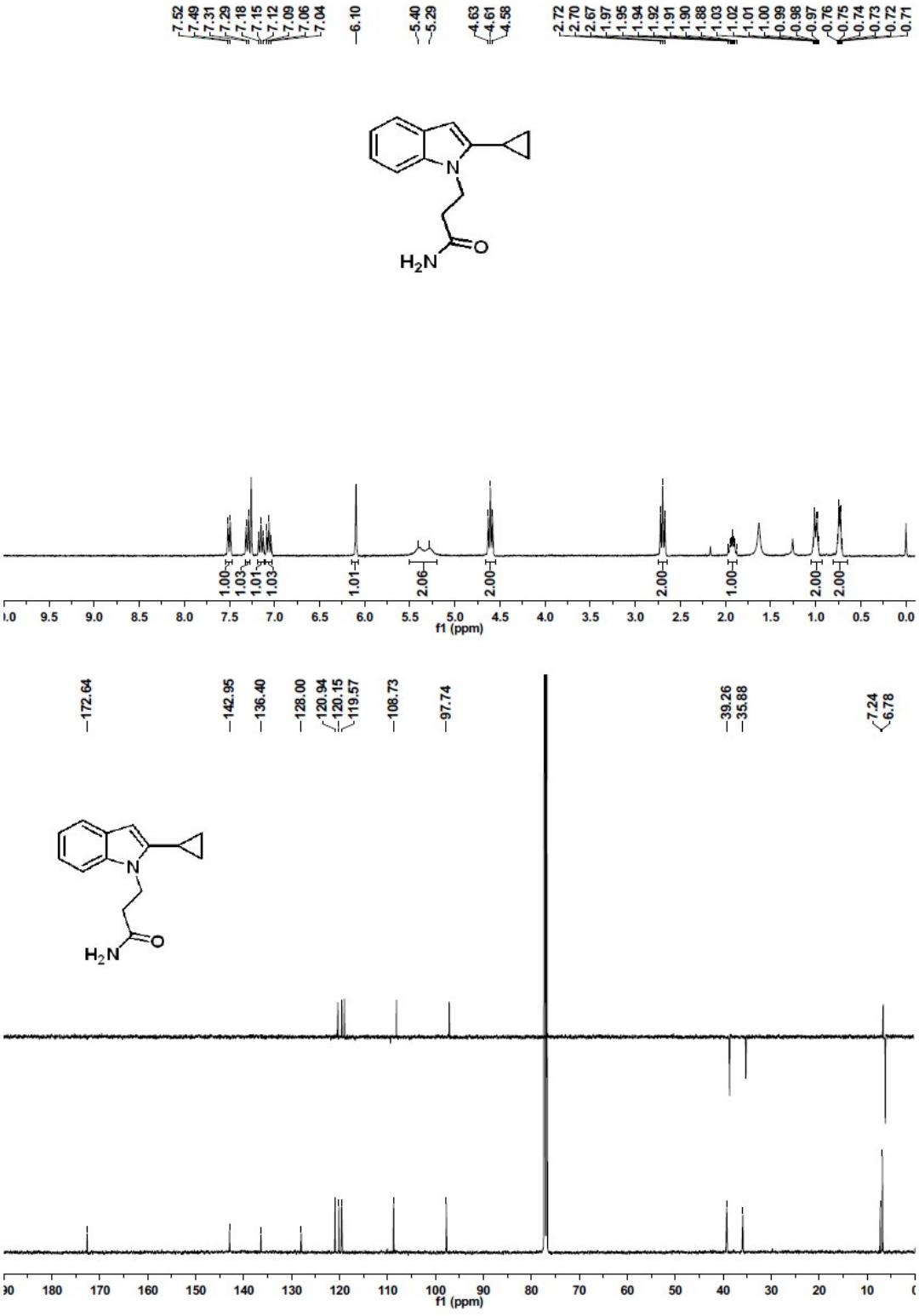
^{1}H and ^{13}C NMR spectra of compound 3aa



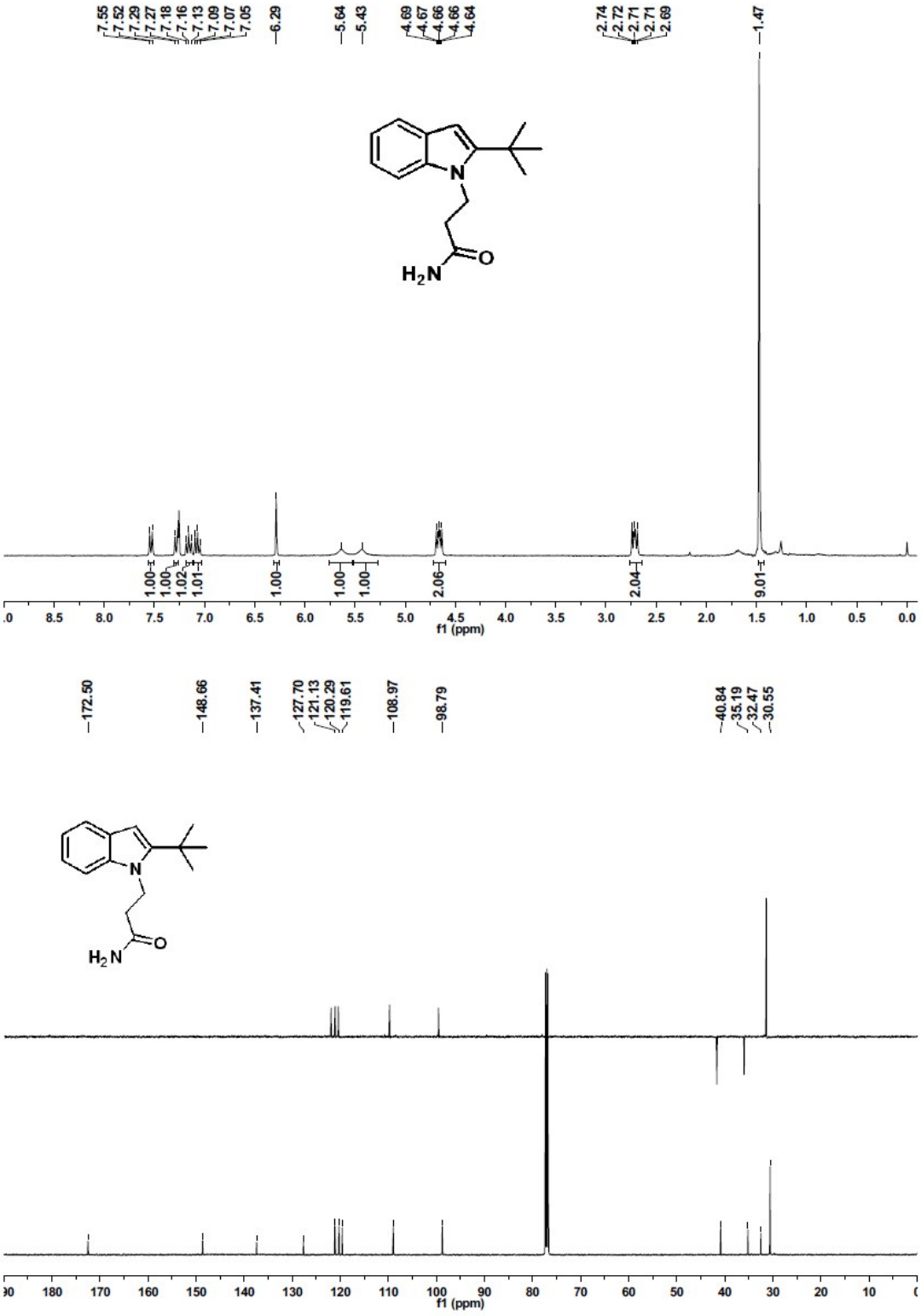
^{1}H and ^{13}C NMR spectra of compound 3ab



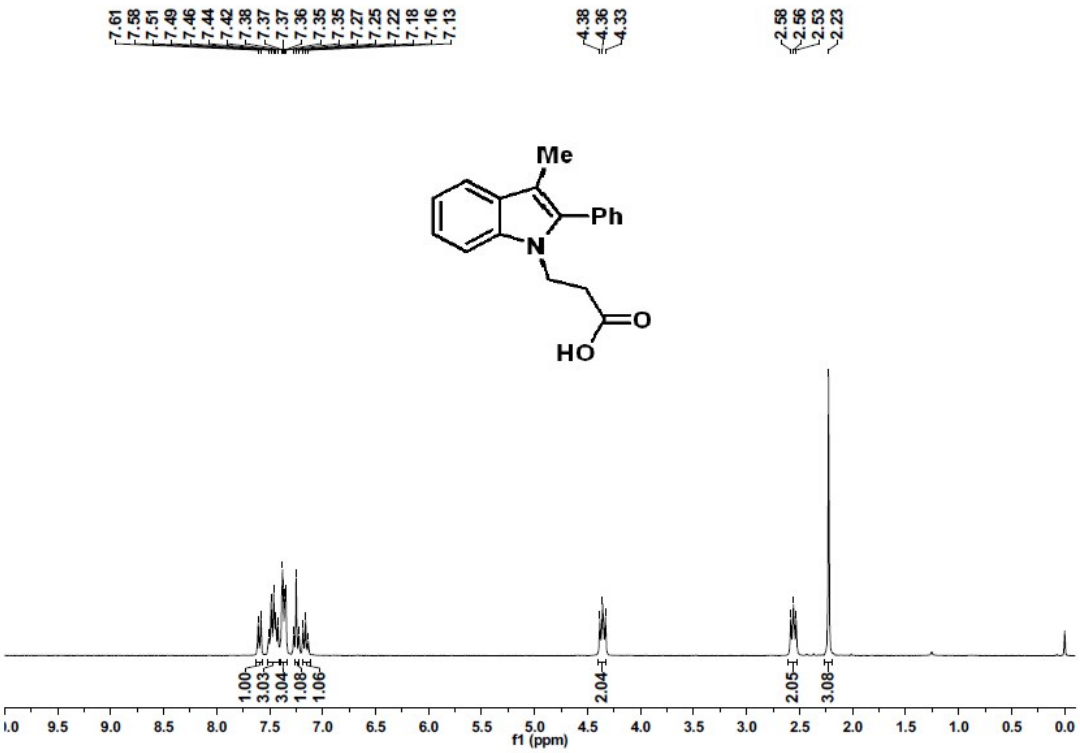
^{1}H and ^{13}C NMR spectra of compound 3ac

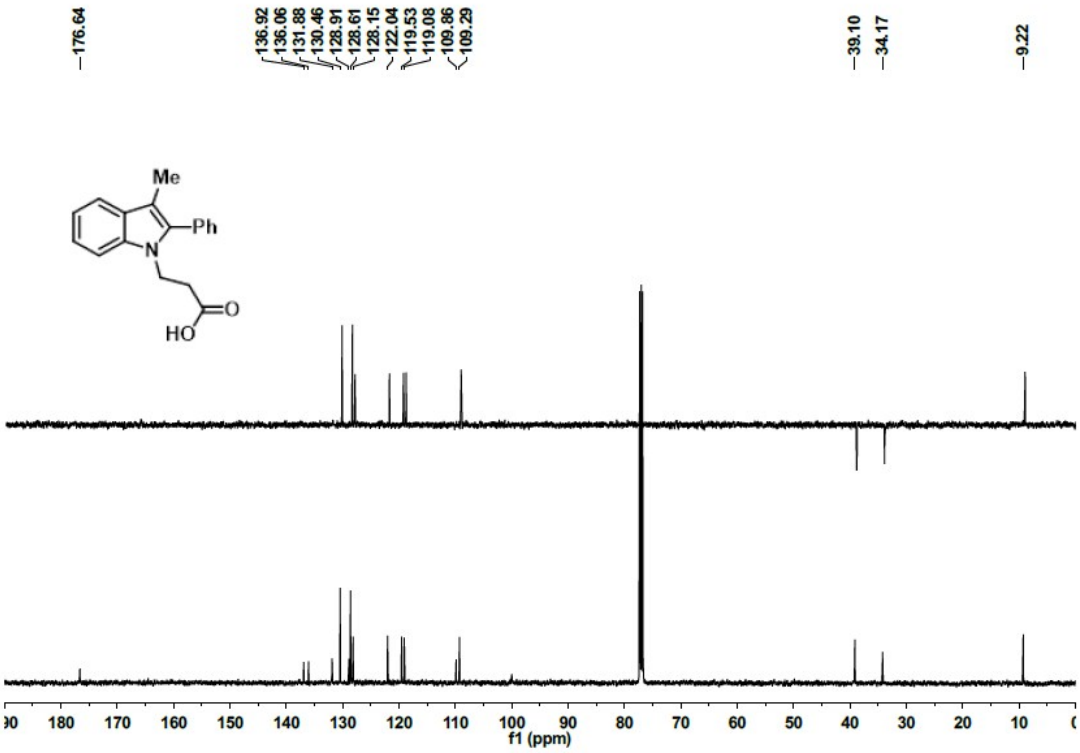


^{1}H and ^{13}C NMR spectra of compound 3ad

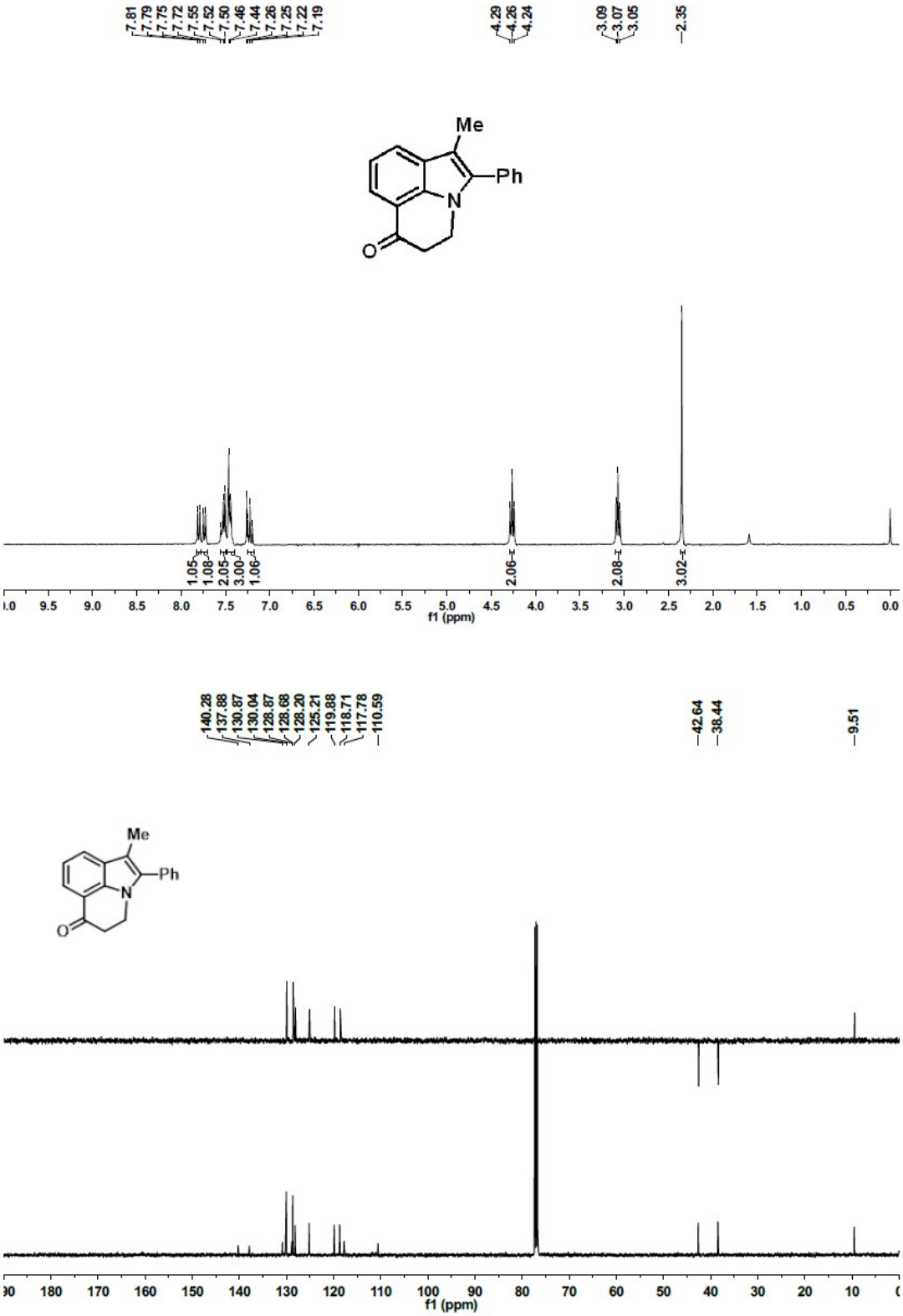


^{1}H and ^{13}C NMR spectra of compound 4

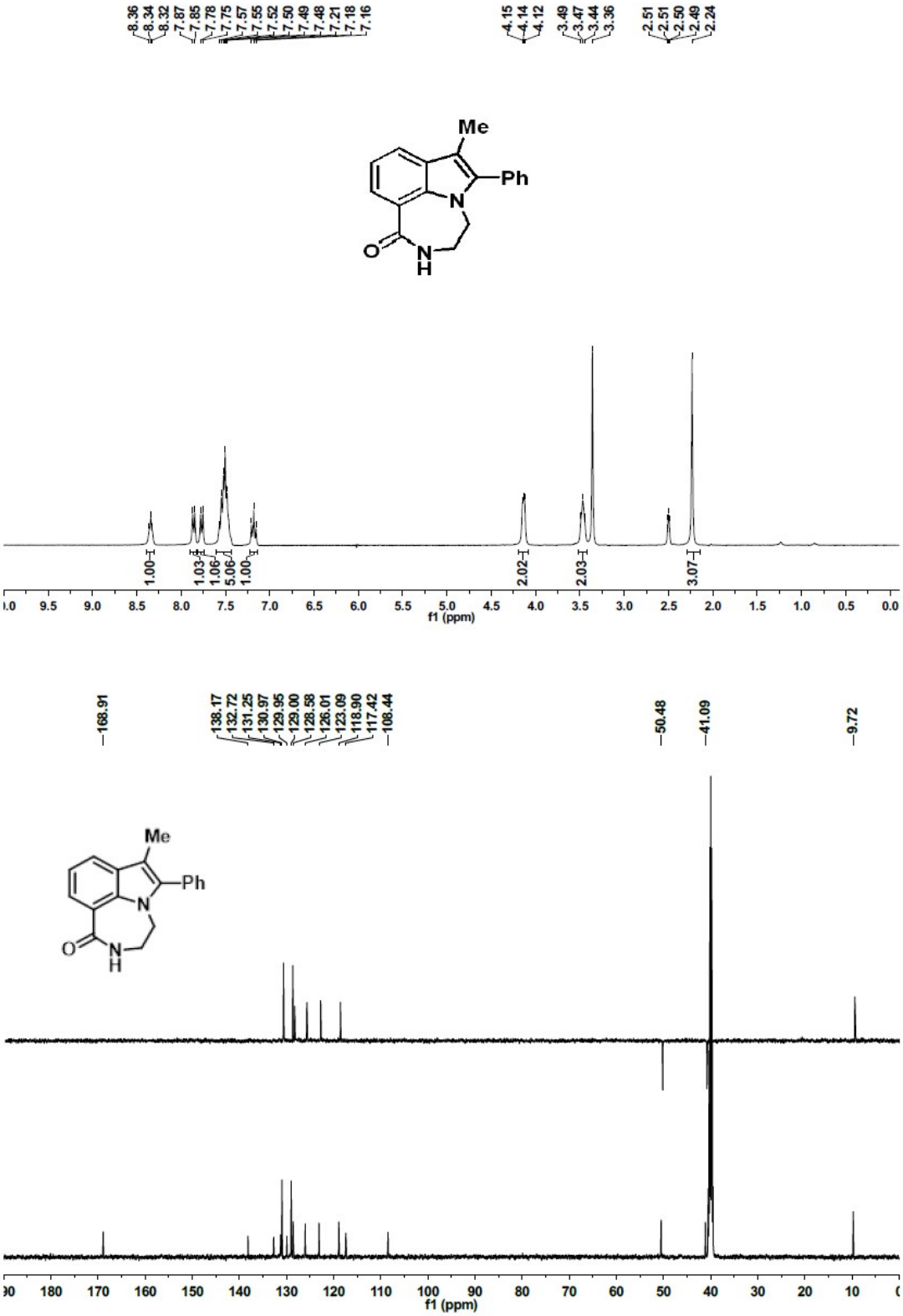




^{1}H and ^{13}C NMR spectra of compound 5



^{1}H and ^{13}C NMR spectra of compound 6



2. X-ray structure of compound 3a

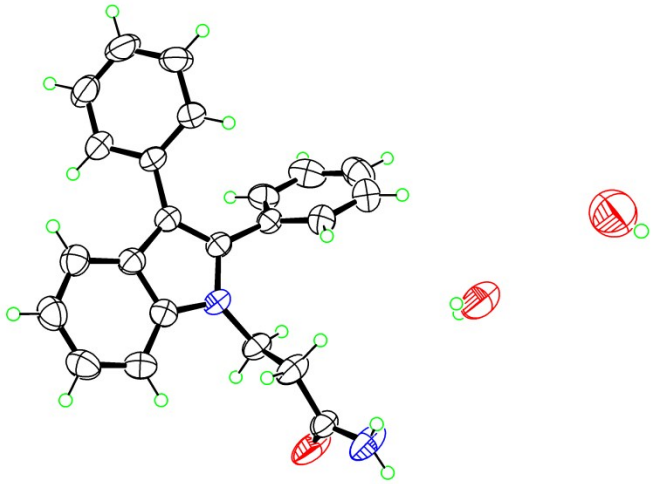


Figure S1. Ortep representation of compound **3a**

Table S1. Sample and crystal data for compound **3a**

CCDC	1540588	
Chemical formula	$C_{23}H_{20}N_2O_{2.50}$	
Formula weight	364.41	
Temperature	296(2) K	
Wavelength	0.71073 Å	
Crystal size	0.050 x 0.080 x 0.100 mm	
Crystal system	monoclinic	
Space group	C 1 2/c 1	
Unit cell dimensions	a = 24.0516(14) Å	α = 90°
	b = 8.6236(5) Å	β = 106.207(3)°
	c = 20.5558(10) Å	γ = 90°
Volume	4094.1(4) $Å^3$	
Z	8	
Density (calculated)	1.182 Mg/cm^3	
Absorption coefficient	0.078 mm^{-1}	
F(000)	1536	

Table S2. Data collection and structure refinement for compound **3a**

Theta range for data collection	1.76 to 25.00°	
Index ranges	-25<=h<=28, -10<=k<=10, -24<=l<=24	
Reflections collected	15097	
Independent reflections	3602 [R(int) = 0.0283]	
Coverage of independent reflections	99.9%	
Absorption correction	multi-scan	
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	3602 / 8 / 258	
Goodness-of-fit on F^2	1.751	
Δ/σ_{max}	2.988	
Final R indices	2662 data; $I>2\sigma(I)$	R1 = 0.1179, wR2 = 0.3808
	all data	R1 = 0.1386, wR2 = 0.4087
Weighting scheme	$w=1/[\sigma^2(F_o^2)+(0.2000P)^2+0.0000P]$ where $P=(F_o^2+2F_c^2)/3$	
Extinction coefficient	0.0110(30)	
Largest diff. peak and hole	1.808 and -0.506 eÅ^{-3}	
R.M.S. deviation from mean	0.131 eÅ^{-3}	