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Supporting Information

Organoiodine Reagents-Promoted Intermolecular Oxidative Amination: Synthesis of Cyclopropyl Spirooxindoles

Zhiguo Zhang,*[a] Yongchao Zhang,[a] Guoqing Huang,[b] Guisheng Zhang*[a]

[a] *Collaborative Innovation Center of Henan Province for Green Manufacturing of Fine Chemicals, Key Laboratory of Green Chemical Media and Reactions, Ministry of Education, School of Chemistry and Chemical Engineering, Henan Normal University, Xinxiang, Henan 453007, P. R. China.*

[b] *Handan Purification Equipment Research Institute, Handan, Hebei 056027, P. R. China.*

Fax: (+86) 373-3325250E-mail: zhangzg@htu.edu.cn and zgs6668@yahoo.com

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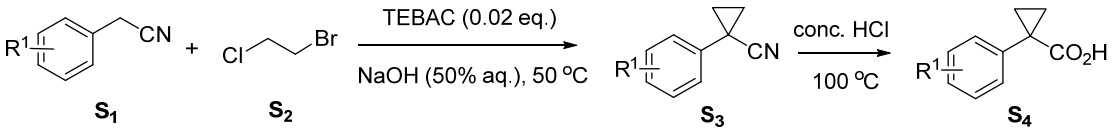
I. General remarks

All reactions were carried out under air atmosphere, unless otherwise indicated. Other all reagents were purchased from commercial sources and used without further treatment, unless otherwise indicated. Petroleum ether (PE) used refers to the 60-90 ºC boiling point fraction of petroleum. Ethyl acetate is abbreviated as EA. ^{1}H NMR and $^{13}C\{^{1}H\}$ NMR spectra were recorded on Bruker Avance/600 (^{1}H: 600 MHz, $^{13}C\{^{1}H\}$: 150 MHz at 25 ºC) or Bruker Avance/400 (^{1}H: 400 MHz, $^{13}C\{^{1}H\}$: 100 MHz at 25 ºC) and TMS as internal standard. Data are represented as follows: chemical shift, integration, multiplicity (br = broad, s = singlet, d = doublet, dd = double doublet, t = triplet, q = quartet, m = multiplet), coupling constants in Hertz (Hz). All high-resolution mass spectra (HRMS) were measured on a mass spectrometer by using electrospray ionization (ESI-oa-TOF), and the purity of all samples used for HRMS (>95%) were confirmed by ^{1}H NMR and $^{13}C\{^{1}H\}$ NMR spectroscopic analysis. Melting points were measured on a melting point apparatus equipped with a thermometer and were uncorrected. All reactions were monitored by TLC with GF254 silica gel coated plates. Flash chromatography was carried out on SiO_2 (silica gel 200−300 mesh).

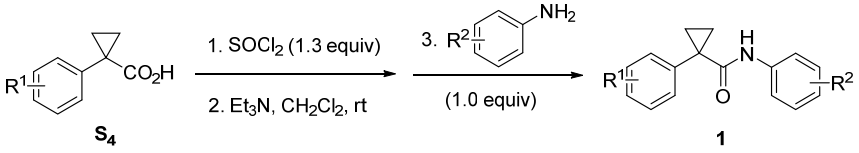
II. Experimental procedure

1. Preparation of cyclopropane-1-carboxamide compounds 1.[1]



S1 **S2** **S3** **S4**

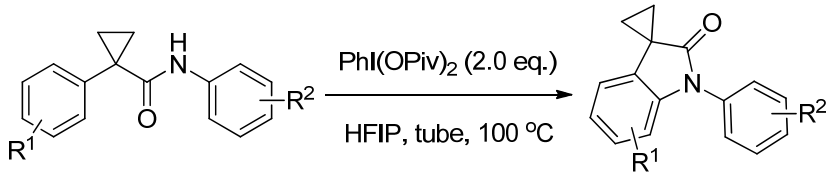
To a 50 mL round bottom flask equipped was added **S1** (10 mmol, 1.0 equiv), **S2** (15 mmol, 1.5 equiv), and triethylbenzyl ammonium chloride (TEBAC, 0.2 mmol, 0.02 equiv). The resulting mixture was heated to 50 °C in an oil bath, and sodium hydroxide (24.0 mmol, 6.0 equiv dissolved into 1.0 mL water) was added dropwise. The mixture was allowed to stir at 50 °C for 16 hours. It was then allowed to cool to room temperature and poured into 50 mL water. This suspension was extracted with three 25 mL portions of methylene chloride, and the combined organic layers then washed with three 50 mL portions of 1.2 N HCl(aq.), three 50 mL portions of water, and 50 ml saturated sodium chloride solution. The organic layer was then dried over magnesium sulfate, filtered, and the solvent removed in vacuo. The crude material was purified by silica gel column chromatography, to give the desired product cyclopropanecarbonitrile **S3**. Then, 25 mL conc. HCl was added to the round bottom flask, the mixture was heated to 100 °C in an oil bath to stir for 12 h. It was then allowed to cool to room temperature and poured into 20 mL water, extracted with dichloromethane (3×10 mL), The organic layer was then dried over magnesium sulfate, filtered, and the solvent removed in vacuo to get the desired product cyclopropanecarboxylic acid **S4**.



S4 **1**

To a 50 mL round bottom flask equipped with 20 mL CH_2Cl_2 was added **S4** (3 mmol, 1.0 equiv), $SOCl_2$ (15 mmol, 1.5 equiv), the mixture was stirred at room temperature for 10 min, then Et_3N was added dropwise to the mixture until there is no white smoke produced. After the mixture was stirred at room temperature for 2 hours, it was quenched by water, and extracted with dichloromethane (3×10 mL). The combined filtrate was washed with saturated brine (3×5 mL) and dried over with anhydrous Na_2SO_4. Then the residue was purified by a short flash silica gel column chromatography (eluent: EA/PE = 1/10) to give the desired product cyclopropanecarboxamide compounds **1**.

2. Typical experimental procedure for 2 (2a as an example):



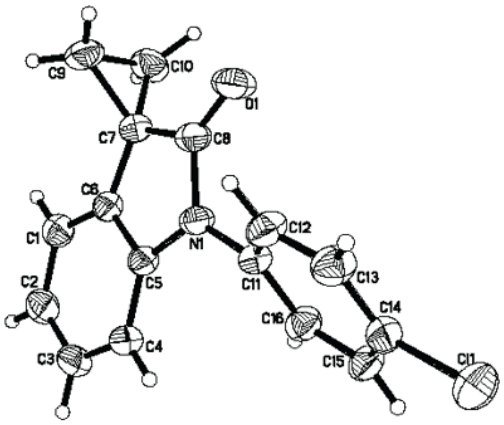
1 **2**

To a pressure tube (15 mL) was added compound **1a** (0.3 mmol, 1.0 eq., 71 mg) and bis(tert-butylcarbonyloxy)iodobenzene ($PhI(OPiv)_2$) (0.6 mmol, 2.0 eq., 244 mg) in 1,1,1,3,3,3-hexafluoro-2-propanol (HFIP) (3 mL), the mixture was allowed to stirred at 100 °C for 10 h (the whole process was closely monitored by TLC). The reaction was quenched by water, extracted with dichloromethane (3×5 mL). The combined filtrate was washed with saturated brine (3×5 mL) and dried over anhydrous Na_2SO_4. The residue was purified by a short flash silica gel column chromatography (eluent: EA/PE = 3/10) to give the desired product 1'-phenylspiro[cyclopropane-1,3'-indolin]-2'-one **2a** as a white solid (59 mg, 84%).

References:

[1] a) A. Huang, A. Moretto, K. Janz, M. Lowe, P. W. B., S. Tam, L. Di, V. Clerin, N. Sushkova, B. Tchernychev, D. H. H. Tsao, J. C. Keith, Jr., G. D. Shaw, R. G. Schaub, Q. Wang, and N. Kaila, *J. Med. Chem.*, 2010, **53**, 6003-6017. b) W. He, B. Zhou, W. Liu, M. Zhang, Z. Shen, Z. Han, Q. Jiang, Q. Yang, C. Song, R. Wang, T. Niu, S. Han, L. Zhang, J. Wu, F. Guo, R. Zhao, W. Yu, J. Chai, J. Chang, *J. Med. Chem.*, 2015, **58**, 7341-7348.

III. X-ray single crystal diffraction data of 2g



Note: Ortep drawing of **2g** with thermal ellipsoids set at 50% probability

Table S1. Crystal data and structure refinement for **2g**

Identification code	**2g**
Empirical formula	$C_{16}H_{12}ClNO$
Formula weight	269.72
Temperature	293(2) K
Wavelength	1.54184 A
Crystal system, space group	monoclinic, P 1 21/c 1
Unit cell dimensions	a = 9.0611(6) A alpha = 90.00 deg.
	b = 7.1551(4) A beta = 93.684(6) deg.
	c = 20.5051(18) A gamma = 90.00 deg.
Volume	1326.67(16) A^3
Z, Calculated density	4, 1.350 Mg/m^3
Absorption coefficient	0.83013 mm^-1
F(000)	560
Theta range for data collection	4.321 to 67.059 deg.
Limiting indices	-10<=h<=10, -8<=k<=8, -24<=l<=24
Reflections collected / unique	4852/2098
Completeness to theta = 66.97	99.92 %
Absorption correction	Empirical
Refinement method	SHELXL
Data / restraints / parameters	2373 / 0 / 172

Goodness-of-fit on F^2	1.039
Final R indices [I>2sigma(I)]	R = 0.0280
R indices (all data)	R = 0.0188
Largest diff. peak and hole	0.385 and -0.398e.A^-3

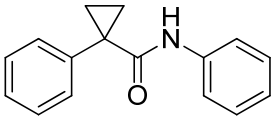
Table S2. Bond lengths [A] and angles [deg] for **2g**

C(1)-H(3)	0.9300	C(2)-C(1)-H(1)	120.4
C(1)-C(2)	1.391(3)	C(6)-C(1)-H(1)	120.4
C(1)-C(6)	1.374(3)	C(6)-C(1)-C(2)	119.2(2)
C(2)-H(2)	0.9300	C(1)-C(2)-H(2)	120.0
C(2)-C(3)	1.383(3)	C(3)-C(2)-C(1)	120.1(2)
C(3)-H(3)	0.9300	C(3)-C(2)-H(2)	120.0
C(3)-C(4)	1.391(3)	C(2)-C(3)-H(3)	119.3
C(4)-H(4)	0.9300	C(2)-C(3)-C(4)	121.5(2)
C(4)-C(5)	1.379(3)	C(4)-C(3)-H(3)	119.3
C(5)-C(6)	1.392(3)	C(3)-C(4)-H(4)	121.3
C(5)-N(1)	1.418(2)	C(5)-C(4)-C(3)	117.4(2)
C(6)-C(7)	1.471(3)	C(5)-C(4)-H(4)	121.3
C(7)-C(8)	1.486(3)	C(4)-C(5)-C(6)	121.80(19)
C(7)-C(9)	1.524(3)	C(4)-C(5)-N(1)	128.62(19)
C(7)-C(10)	1.523(3)	C(6)-C(5)-N(1)	109.54(16)
C(8)-N(1)	1.391(2)	C(1)-C(6)-C(5)	120.04(18)
C(8)-O(1)	1.215(2)	C(1)-C(6)-C(7)	132.60(19)
C(9)-H(9A)	0.9700	C(5)-C(6)-C(7)	107.32(17)
C(9)-H(9B)	0.9700	C(6)-C(7)-C(8)	106.33(16)
C(9)-C(10)	1.479(4)	C(6)-C(7)-C(9)	124.04(19)
C(10)-H(10A)	0.9700	C(6)-C(7)-C(10)	125.34(19)
C(10)-H(10B)	0.9700	C(8)-C(7)-C(9)	118.54(18)
C(11)-C(12)	1.383(3)	C(8)-C(7)-C(10)	118.39(19)
C(11)-C(16)	1.379(3)	C(10)-C(7)-C(9)	58.10(15)
C(11)-N(1)	1.423(2)	N(1)-C(8)-C(7)	106.49(17)
C(12)-H(12)	0.9300	O(1)-C(8)-C(7)	127.91(19)

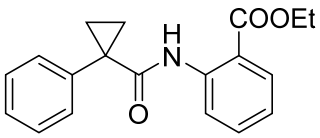
C(12)-C(13)	1.376(3)	O(1)-C(8)-N(1)	125.6(2)
C(13)-H(13)	0.9300	C(7)-C(9)-H(9A)	117.7
C(13)-C(14)	1.369(3)	C(7)-C(9)-H(9B)	117.7
C(14)-C(15)	1.376(3)	H(9A)-C(9)-H(9B)	114.8
C(14)-C(11)	1.740(2)	C(10)-C(9)-C(7)	60.92(15)
C(15)-H(15)	0.9300	C(10)-C(9)-H(9A)	117.7
C(15)-C(16)	1.383(3)	C(10)-C(9)-H(9B)	117.7
C(16)-H(16)	0.9300	C(7)-C(10)-H(10A)	117.7
C(7)-C(10)-H(10B)	117.7	C(14)-C(13)-H(13)	120.3
C(9)-C(10)-C(7)	60.98(14)	C(13)-C(14)-C(15)	121.1(2)
C(9)-C(10)-H(10A)	117.7	C(13)-C(14)-C(11)	118.78(19)
C(9)-C(10)-H(10B)	117.7	C(15)-C(14)-C(11)	120.14(18)
H(10A)-C(10)-	114.8	C(14)-C(15)-H(15)	120.3
H(10B)	119.64(17)	C(14)-C(15)-C(16)	119.3(2)
C(12)-C(11)-N(1)	119.67(19)	C(16)-C(15)-H(15)	120.3
C(16)-C(11)-C(12)	120.69(18)	C(11)-C(16)-C(15)	120.1(2)
C(16)-C(11)-N(1)	119.8	C(11)-C(16)-H(16)	120.0
C(11)-C(12)-H(12)	120.3(2)	C(15)-C(16)-H(16)	120.0
C(13)-C(12)-C(11)	119.8	C(5)-N(1)-C(11)	126.02(16)
C(13)-C(12)-H(12)	120.3	C(8)-N(1)-C(5)	110.30(17)
C(12)-C(13)-H(13)	119.5(2)	C(8)-N(1)-C(11)	123.44(17)
C(14)-C(13)-C(12)			

IV. Analytical data of compound 1 and 2

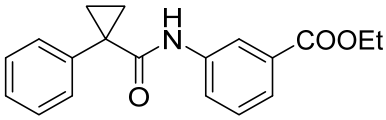
1. Analytical data of compounds 1



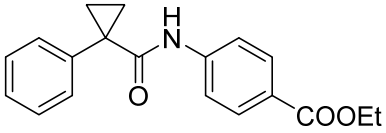
***N*,1-diphenylcyclopropanecarboxamide (1a)**. The product was isolated by flash chromatography (eluent: EA/PE = 1/20) as a light yellow solid (633 mg, 89%): mp 76-78 °C; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.51 (m, 2H, ArH), 7.48-7.38 (m, 3H, ArH), 7.33 (m, 2H, ArH), 7.28-7.22 (m, 2H, ArH), 7.07 (s, 1H, NH), 7.04 (m, 1H, ArH), 1.74 (m, 2H, CH_2), 1.17 (m, 2H, CH_2). ^{13}C NMR (100 MHz, $CDCl_3$) δ 171.9 (C=O), 139.1 (Ar), 137.7 (Ar), 131.0 (Ar), 129.2 (Ar), 128.7 (Ar), 128.2 (Ar), 124.0 (Ar), 119.4 (Ar), 31.1 (CH_2), 16.1 (CH_2). HRMS (ESI), *m/z* calcd. for $C_{16}H_{15}NO$ ($[M+H]^+$) 238.1226, found: 238.1226.



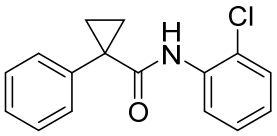
ethyl 2-(1-phenylcyclopropane-1-carboxamido)benzoate (1b). The product was isolated by flash chromatography (eluent: EA/PE = 1/20) as a light yellow solid (815 mg, 88%): mp 103-105 °C; ^{1}H NMR (400 MHz, $CDCl_3$) δ 10.66 (s, 1H, NH), 8.70 (d, J = 8.4, 1H, ArH), 7.90 (d, J = 7.6, 1H, ArH), 7.61-7.30 (m, 6H, ArH), 7.11-6.86 (m, 1H, ArH), 4.13 (m, 2H, CH_2), 1.72 (m, 2H, CH_2), 1.27 (t, J = 7.2 Hz, 3H, CH_3), 1.20 (m, 2H, CH_2). ^{13}C NMR (100 MHz, $CDCl_3$) δ 173.3 (N-C=O), 167.2 (O-C=O), 141.1 (Ar), 138.8 (Ar), 133.9 (Ar), 131.3 (Ar), 130.4 (Ar), 128.8 (Ar), 127.9 (Ar), 122.2 (Ar), 120.3 (Ar), 115.9 (Ar), 60.8 (O-CH_2), 32.0 (C), 16.4 (CH_2-CH_2), 14.0 (CH_3). HRMS (ESI), *m/z* calcd. for $C_{19}H_{19}NO_3$ ($[M+H]^+$) 310.1438, found: 310.1436.



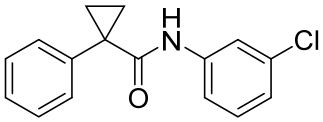
ethyl 3-(1-phenylcyclopropane-1-carboxamido)benzoate (1c). The product was isolated by flash chromatography (eluent: EA/PE = 1/20) as a light yellow solid (788 mg, 85%): mp 56-58 °C; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.79 (m, 1H, ArH), 7.74-7.69 (m, 2H, ArH), 7.50 (m, 2H, ArH), 7.48-7.36 (m, 3H, ArH), 7.36-7.29 (m, 1H, ArH), 7.14 (s, 1H, NH), 4.34 (m, 2H, O-CH_2), 1.73 (m, 2H, CH_2), 1.36 (t, J = 7.0 Hz, 3H, CH_3), 1.18 (m, 2H, CH_2). ^{13}C NMR (100 MHz, $CDCl_3$) δ 172.3 (N-C=O), 166.2 (O-C=O), 139.0 (Ar), 138.0 (Ar), 131.12 (Ar), 131.07 (Ar), 129.4 (Ar), 128.9 (Ar), 128.5 (Ar), 125.1 (Ar), 124.1 (Ar), 120.3 (Ar), 61.1 (O-CH_2), 31.2 (C), 16.4 (CH_2-CH_2), 14.3 (CH_3). HRMS (ESI), *m/z* calcd. for $C_{19}H_{19}NO_3$ ($[M+H]^+$) 310.1438, found: 310.1429.



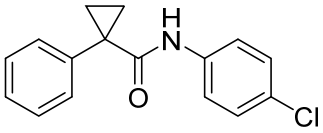
ethyl 4-(1-phenylcyclopropane-1-carboxamido)benzoate (1d). The product was isolated by flash chromatography (eluent: EA/PE = 1/20) as a light yellow solid (844 mg, 91%): mp 94-96 °C; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.96-7.89 (m, 2H, ArH), 7.54-7.48 (m, 2H, ArH), 7.48-7.35 (m, 5H, ArH), 7.21 (s, 1H, NH), 4.33 (m, 2H, O-CH_2), 1.73 (m, 2H, CH_2), 1.36 (t, J = 7.2 Hz, 3H, CH_3), 1.20 (m, 2H, CH_2). ^{13}C NMR (100 MHz, $CDCl_3$) δ 172.3 (N-C=O), 166.1 (O-C=O), 141.8 (Ar), 138.8 (Ar), 131.2 (Ar), 130.6 (Ar), 129.4 (Ar), 128.6 (Ar), 125.7 (Ar), 118.4 (Ar), 60.8 (O-CH_2), 31.4 (C), 16.6 (CH_2-CH_2), 14.3 (CH_3). HRMS (ESI), *m/z* calcd. for $C_{19}H_{19}NO_3$ ([M+Na]$^+$) 332.1257, found: 332.1257.



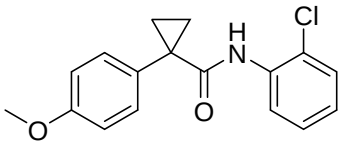
***N*-(2-chlorophenyl)-1-phenylcyclopropane-1-carboxamide (1e).** The product was isolated by flash chromatography (eluent: EA/PE = 1/20) as a light yellow solid (691 mg, 85%): mp 114-116 °C; ^{1}H NMR (600 MHz, $CDCl_3$) δ 8.38 (d, J = 8.4 Hz, 1H, ArH), 7.79 (s, 1H, NH), 7.54 (d, J = 7.8 Hz, 2H, ArH), 7.45 (t, J = 7.2 Hz, 2H, ArH), 7.39 (t, J = 7.2 Hz, 1H, ArH), 7.22 (t, J = 7.8 Hz, 2H, ArH), 6.95 (t, J = 7.8 Hz, 1H, ArH), 1.74 (m, 2H, CH_2), 1.22 (m, 2H, CH_2). ^{13}C NMR (150 MHz, $CDCl_3$) δ 172.2 (N-C=O), 138.7 (Ar), 134.8 (Ar), 131.2 (Ar), 129.2 (Ar), 128.7 (Ar), 128.4 (Ar), 127.5 (Ar), 124.2 (Ar), 122.4 (Ar), 120.6 (Ar), 31.6 (C), 16.4 (CH_2-CH_2). HRMS (ESI), m/z calcd. for $C_{16}H_{14}ClNO$ ([M+Na]$^+$) 294.0656, found: 294.0644.



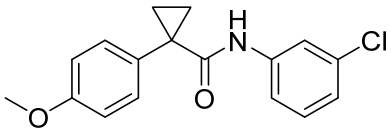
***N*-(3-chlorophenyl)-1-phenylcyclopropane-1-carboxamidee (1f).** The product was isolated by flash chromatography (eluent: EA/PE = 1/20) as a light yellow solid (724 mg, 89%): mp 71-74 °C; ^{1}H NMR (400 MHz, CDCl3) δ 7.53-7.36 (m, 6H, ArH), 7.15 (m, 2H, ArH), 7.07-7.05 (m, 1H, NH), 7.03-6.97 (m, 1H, ArH), 1.71 (m, 2H, CH_2), 1.18 (m, 2H, CH_2). ^{13}C NMR (100 MHz, CDCl3) δ 172.2 (N-C=O), 138.9 (Ar), 134.5 (Ar), 131.1 (Ar), 129.8 (Ar), 129.4 (Ar), 128.5 (Ar), 124.1 (Ar), 119.5 (Ar), 117.4 (Ar), 31.3 (C), 16.5 (CH_2-CH_2). HRMS (ESI), m/z calcd. for $C_{16}H_{14}ClNO$ ([M+Na]$^+$) 294.0656, found: 294.0644.



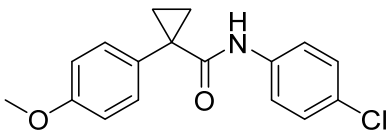
***N*-(4-chlorophenyl)-1-phenylcyclopropane-1-carboxamide (1g).** The product was isolated by flash chromatography (eluent: EA/PE = 1/20) as a light yellow solid (732 mg, 90%): mp 85-87 °C; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.52-7.47 (m, 2H, ArH), 7.47-7.37 (m, 3H, ArH), 7.28 (s, 1H, ArH), 7.26 (t, J = 1.2 Hz, 1H, ArH), 7.19 (d, J = 8.8 Hz, 2H, ArH), 7.03 (s, 1H, NH), 1.71 (m, 2H, CH_2), 1.17 (m, 2H, CH_2). ^{13}C NMR (100 MHz, $CDCl_3$) δ 172.1 (N-C=O), 139.0 (Ar), 136.4 (Ar), 131.1 (Ar), 129.4 (Ar), 129.0 (Ar), 128.8 (Ar), 128.5 (Ar), 120.7 (Ar), 31.2 (C), 16.4 (CH_2-CH_2). HRMS (ESI), *m/z* calcd. for $C_{16}H_{14}ClNO$ ($[M+Na]^+$) 294.0656, found: 294.0650.



***N*-(2-chlorophenyl)-1-(4-methoxyphenyl)cyclopropane-1-carboxamide (1h)**. The product was isolated by flash chromatography (eluent: EA/PE = 1/20) as a light yellow solid (840 mg, 93%): mp 81-83 °C; ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.35 (dd, J = 8.0 Hz, 1H, ArH), 7.85 (s, 1H, NH), 7.51-7.41 (m, 2H, ArH), 7.22 (m, 2H, ArH), 7.00-6.89 (m, 3H, ArH), 3.84 (s, 3H, ArH), 1.69 (m, 2H, CH_2), 1.16 (m, 2H, CH_2). ^{13}C NMR (100 MHz, $CDCl_3$) δ 159.5 (N-C=O), 134.8 (Ar), 132.4 (Ar), 130.7 (Ar), 128.8 (Ar), 127.6 (Ar), 124.2 (Ar), 122.5 (Ar), 120.7 (Ar), 117.9 (Ar), 114.6 (Ar), 55.4 (O-CH_3), 30.8 (C), 16.6 (CH_2-CH_2). HRMS (ESI), *m/z* calcd. for $C_{17}H_{16}ClNO_2$ ($[M+Na]^+$) 324.0762, found: 324.0764.

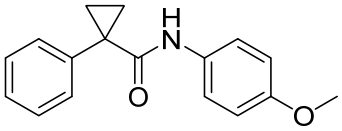


***N*-(3-chlorophenyl)-1-(4-methoxyphenyl)cyclopropane-1-carboxamide (1i)**. The product was isolated by flash chromatography (eluent: EA/PE = 1/20) as a yellow solid (768mg, 85%): mp 93-95 °C; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.44 (t, J = 1.6 Hz, 1H, ArH), 7.42-7.35 (m, 2H, ArH), 7.17 (m, 2H, ArH), 7.11 (s, 1H, NH), 7.01 (m, 1H, ArH), 6.99-6.92 (m, 2H, ArH), 3.86 (s, 3H, CH_3), 1.68 (m, 2H, CH_2), 1.13 (m, 2H, CH_2). ^{13}C NMR (100 MHz, $CDCl_3$) δ 172.6 (N-C=O), 159.5 (Ar), 139.0 (Ar), 134.4 (Ar), 132.3 (Ar), 130.7 (Ar), 129.8 (Ar), 124.0 (Ar), 119.5 (Ar), 117.4 (Ar), 114.7 (Ar), 55.3 (O-CH_3), 30.4 (C), 16.6 (CH_2-CH_2). HRMS (ESI), *m/z* calcd. for $C_{17}H_{16}ClNO_2$ ($[M+Na]^+$) 324.0762, found: 324.0766.

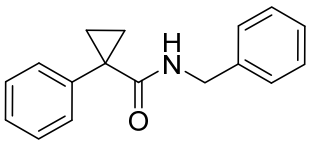


***N*-(4-chlorophenyl)-1-(4-methoxyphenyl)cyclopropane-1-carboxamide (1j)**. The product was isolated by flash chromatography (eluent: EA/PE = 1/20) as a white solid (795 mg, 88%): mp 97-99 °C; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.43-7.37 (m, 2H, ArH), 7.32-7.25 (m, 2H, ArH), 7.22-7.16 (m, 2H,

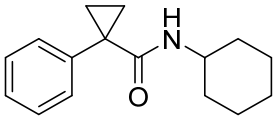
ArH), 7.11 (s, 1H, NH), 7.04-6.87 (m, 2H, ArH), 3.85 (s, 3H, CH_3), 1.68 (m, 2H, CH_2), 1.13 (q, 2H, CH_2). ^{13}C NMR (100 MHz, $CDCl_3$) δ 172.6 (N-C=O), 159.5 (Ar), 136.5 (Ar), 132.3 (Ar), 130.8 (Ar), 128.9 (Ar), 128.8 (Ar), 120.7 (Ar), 114.6 (Ar), 55.3 (O-CH_3), 30.3 (C), 16.5 (CH_2-CH_2). HRMS (ESI), *m/z* calcd. for $C_{17}H_{16}ClNO_2$ ($[M+Na]^+$) 324.0762, found: 324.0767.



***N*-(4-methoxyphenyl)-1-phenylcyclopropane-1-carboxamide (1k)**. The product was isolated by flash chromatography (eluent: ethyl acetate/petroleum ether = 1/20) as a yellow solid (712.9 mg, 89%): mp 78-80 °C; ^1H NMR (400 MHz, $CDCl_3$) δ 7.54-7.48 (m, 2H, ArH), 7.46-7.34 (m, 3H, ArH), 7.22 (m, 2H, ArH), 6.94 (s, 1H, NH), 6.82-6.74 (m, 2H, ArH), 3.75 (s, 3H, CH_3), 1.70 (m, 2H, CH_2), 1.14 (m, 2H, CH_2). ^{13}C NMR (100 MHz, $CDCl_3$) δ 171.9 (N-C=O), 156.3 (Ar), 139.4 (Ar), 131.12 (Ar), 131.07 (Ar), 129.2 (Ar), 128.2 (Ar), 121.4 (Ar), 113.9 (Ar), 55.4 (O-CH_3), 31.0 (C), 16.0 (CH_2- CH_2). HRMS (ESI), *m/z* calcd. for $C_{17}H_{17}NO_2$ ($[M+Na]^+$) 290.1151, found: 290.1141.

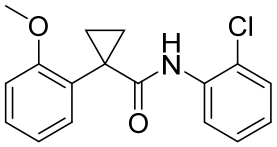


***N*-benzyl-1-phenylcyclopropane-1-carboxamide (1l)**. The product was isolated by flash chromatography (eluent: EA/PE = 1/20) as a light yellow solid (640 mg, 85%): mp 77-79 °C; ^1H NMR (400 MHz, $CDCl_3$) δ 7.41 (d, J = 7.8 Hz, 2H, Ar), 7.33 (t, J = 7.8 Hz, 2H, Ar), 7.30-7.25 (m, 2H, Ar), 7.24 (d, J = 4.1 Hz, 1H, Ar), 7.20 (t, J = 7.3 Hz, 1H, Ar), 7.12 (d, J = 7.2 Hz, 2H, Ar), 5.63 (s, 1H, NH), 4.36 (d, J = 6.0 Hz, 2H, CH_2), 1.64 (m, 2H, CH_2), 1.07 (m, 2H, CH_2). ^{13}C NMR (100 MHz, $CDCl_3$) δ 173.9 (N-C=O), 139.7 (Ar), 138.5 (Ar), 131.1 (Ar), 129.1 (Ar), 128.6 (Ar), 128.0 (Ar), 127.2 (Ar), 127.1 (Ar), 43.8 (N-CH_2), 30.5 (C), 15.6 (CH_2-CH_2). HRMS (ESI), *m/z* calcd. $C_{17}H_{17}NO$ for ($[M+Na]^+$) 274.1202, found: 274.1206.

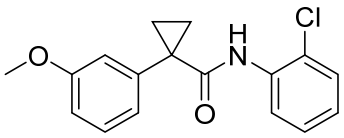


***N*-cyclohexyl-1-phenylcyclopropane-1-carboxamide (1m)**. The product was isolated by flash chromatography (eluent: EA/PE = 1/20) as a light yellow oil (641 mg, 88%); ^1H NMR (600 MHz, $CDCl_3$) δ 7.34 (m, 4H, ArH), 7.28 (m, 1H, ArH), 5.12 (d, J = 5.4 Hz, 1H, NH), 3.91-3.40 (m, 1H, N-CH), 1.73 (d, J = 10.8 Hz, 2H, CH_2), 1.55 (s, 2H, CH_2), 1.49 (m, 3H, CH_2), 1.26 (d, J = 12.6 Hz, 2H, CH_2), 1.04 (m, 1H, CH_2), 0.98 (m, 2H, CH_2), 0.91 (m, 2H, CH_2). ^{13}C NMR (150 MHz, $CDCl_3$) δ 172.8

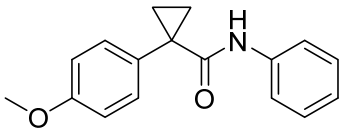
(N-C=O), 140.1 (Ar), 130.9 (Ar), 128.9 (Ar), 127.8 (Ar), 48.4 (N-C), 32.8 (CH_2), 30.4 (C), 25.5 (CH_2), 24.6 (CH_2), 15.3 (CH_2). HRMS (ESI), *m/z* calcd. $C_{16}H_{21}NO$ for ($[M+Na]^+$) 266.1515, found: 266.1513.



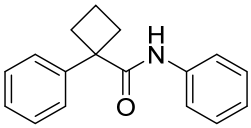
***N*-(2-chlorophenyl)-1-(2-methoxyphenyl)cyclopropane-1-carboxamide (1n)**. The product was isolated by flash chromatography (eluent: EA/PE = 1/20) as a yellow solid (768 mg, 85%): mp 98-100 ^oC; ^1H NMR (400 MHz, $CDCl_3$) δ 8.39 (d, J = 8.0 Hz, 1H, ArH), 7.92 (s, 1H, NH), 7.43-7.35 (m, 2H, ArH), 7.25-7.18 (m, 2H, ArH), 7.08-6.87 (m, 3H, ArH), 3.86 (s, 3H, CH_3), 1.72 (m, 2H, CH_2), 1.13 (m, 2H, CH_2). ^{13}C NMR (100 MHz, $CDCl_3$) δ 172.2 (N-C=O), 159.0 (Ar), 135.1 (Ar), 132.1 (Ar), 129.9 (Ar), 128.7 (Ar), 127.5 (Ar), 126.6 (Ar), 123.9 (Ar), 122.2 (Ar), 120.9 (Ar), 120.8 (Ar), 111.0 (Ar), 55.4 (O-CH_3), 27.4 (C), 16.5 (CH_2-CH_2). HRMS (ESI), *m/z* calcd. for $C_{17}H_{16}ClNO_2$ ($[M+Na]^+$) 324.0762, found: 324.0766.



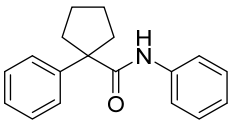
***N*-(2-chlorophenyl)-1-(3-methoxyphenyl)cyclopropane-1-carboxamide (1o)**. The product was isolated by flash chromatography (eluent: EA/PE = 1/20) as a yellow oil (804 mg, 89%); ^1H NMR (600 MHz, $CDCl_3$) δ 8.38 (dd, J = 8.4 Hz, 1H, ArH), 7.87 (s, 1H, NH), 7.38-7.26 (t, J = 8.4 Hz, 1H, ArH), 7.20-7.13 (m, 2H, ArH), 7.11-7.07 (m, 1H, ArH), 7.06-7.03 (m, 1H, ArH), 6.93-6.85 (m, 2H, ArH), 3.79 (s, 3H, O-CH_3), 1.70 (m, 2H, CH_2), 1.18 (m, 2H, CH_2). ^{13}C NMR (150 MHz, $CDCl_3$) δ 171.7 (N-C=O), 159.9 (Ar), 139.9 (Ar), 134.6 (Ar), 130.1 (Ar), 128.5 (Ar), 127.3 (Ar), 123.9 (Ar), 123.0 (Ar), 122.1 (Ar), 120.4 (Ar), 116.3 (Ar), 113.9 (Ar), 55.0 (O-CH_3), 31.5 (C), 16.1 (CH_2-CH_2). HRMS (ESI), *m/z* calcd. for $C_{17}H_{16}ClNO_2$ ($[M+Na]^+$) 324.0762, found: 324.0762.



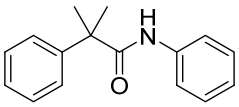
1-(4-methoxyphenyl)-*N*-phenylcyclopropane-1-carboxamide (1p). The product was isolated by flash chromatography (eluent: EA/PE = 1/20) as a yellow solid (729 mg, 91%): mp 75-77 ^oC; ^1H NMR (400 MHz, $CDCl_3$) δ 7.44-7.38 (m, 2H, Ar), 7.33 (m, 2H, Ar), 7.28-7.20 (m, 2H, Ar), 7.11 (s, 1H, NH), 7.07-7.00 (m, 1H, Ar), 6.98-6.92 (m, 2H, Ar), 3.85 (s, 3H, O-CH_3), 1.68 (m, 2H, CH_2), 1.12 (m, 2H, CH_2). ^{13}C NMR (100 MHz, $CDCl_3$) δ 172.5 (N-C=O), 159.4 (Ar), 137.9 (Ar), 132.3 (Ar), 131.1 (Ar), 128.8 (Ar), 124.0 (Ar), 119.4 (Ar), 114.6 (Ar), 55.3 (O-CH_3), 30.4 (C), 16.4 (CH_2-CH_2). HRMS (ESI), *m/z* calcd. for $C_{17}H_{17}NO_2$ ($[M+Na]^+$) 290.1151, found: 290.1150.



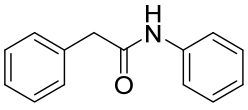
***N*,1-diphenylcyclobutane-1-carboxamide (1q).** The product was isolated by flash chromatography (eluent: EA/PE = 1/20) as a light yellow solid (580 mg, 77%): mp 76-78 °C; ^{1}H NMR (600 MHz, $CDCl_3$) δ 7.39 (m, 6H), 7.30 (t, J = 7.2 Hz, 1H), 7.24 (t, J = 7.2 Hz, 2H), 7.03 (t, J = 7.2 Hz, 1H), 6.78 (s, 1H), 2.93 (m, 2H), 2.54 (m, 2H), 2.20 (m, 1H), 2.01-1.82 (m, 1H). ^{13}C NMR (150 MHz, $CDCl_3$) δ173.99, 143.91, 137.96, 129.04, 128.79, 127.14, 126.24, 124.02 (s), 119.47, 53.65, 31.98, 16.47. HRMS (ESI), *m/z* calcd. $C_{17}H_{17}NO$ for ($[M+Na]^+$) 274.1202, found: 274.1211.



***N*,1-diphenylcyclopentane-1-carboxamide (1r).** The product was isolated by flash chromatography (eluent: EA/PE = 1/20) as a light yellow solid (676 mg, 85%): mp 101-103 °C; ^{1}H NMR (600 MHz, $CDCl_3$) δ 7.46-7.41 (m, 2H), 7.41-7.36 (m, 2H), 7.34 (m, 2H), 7.29 (m, 1H), 7.25 (m, 2H), 7.04 (t, J = 7.4 Hz, 1H), 6.82 (s, 1H), 2.67-2.38 (m, 2H), 2.19-2.00 (m, 2H), 1.99-1.82 (m, 2H), 1.80-1.64 (m, 2H). ^{13}C NMR (100 MHz, $CDCl_3$) δ 174.6, 143.6, 138.0, 129.0, 128.8, 127.2, 126.9, 124.0, 119.5, 60.2, 36.9, 24.1. HRMS (ESI), *m/z* calcd. for $C_{18}H_{19}NO$ ($[M+Na]^+$) 288.1359, found: 288.1360.

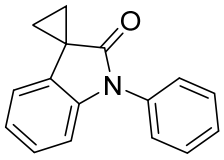


2-methyl-*N*,2-diphenylpropanamide (1s). The product was isolated by flash chromatography (eluent: EA/PE = 1/20) as a light yellow solid (624 mg, 87%): mp 97-99 °C; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.49-7.37 (m, 4H), 7.37-7.29 (m, 3H), 7.29-7.22 (m, 2H), 7.10-6.98 (m, 1H), 6.78 (s, 1H), 1.67 (s, 6H). ^{13}C NMR (100 MHz, $CDCl_3$) δ 175.6, 144.6, 138.0, 129.0, 128.9, 127.4, 126.5, 124.1, 119.6, 48.1, 27.0. HRMS (ESI), *m/z* calcd. $C_{16}H_{17}NO$ for ($[M+H]^+$) 240.1383, found: 240.1382.

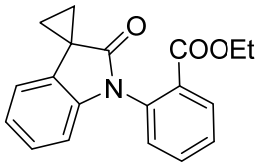


***N*,2-diphenylacetamide (1t).** The product was isolated by flash chromatography (eluent: EA/PE = 1/20) as a white solid (544 mg, 86%): mp 118-120 °C; ^{1}H NMR (600 MHz, $CDCl_3$) δ 7.41 (m, 4H), 7.35 (m, 3H), 7.31-7.22 (t, J = 7.8 Hz, 2H), 7.08 (m, 2H), 3.74 (s, 2H). ^{13}C NMR (150 MHz, $CDCl_3$) δ 169.00, 137.61, 134.43, 129.57, 129.29, 128.96, 127.74, 124.48, 119.79, 44.92. HRMS (ESI), *m/z* calcd. $C_{14}H_{13}NO$ for ($[M+Na]^+$) 234.0889, found: 234.0901.

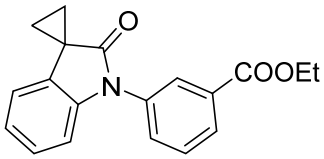
2. Analytical data of compounds 2



1'-phenylspiro[cyclopropane-1,3'-indolin]-2'-one (2a). The product was isolated by flash chromatography (eluent: EA/PE = 1/8) as a white solid (59 mg, 84%): mp 97-99 °C; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.58-7.51 (m, 2H, ArH), 7.47 (m, 2H, ArH), 7.44-7.35 (m, 1H, ArH), 7.20 (m, 1H, ArH), 7.07 (m, 1H, ArH), 6.97-6.89 (m, 2H, ArH), 1.87 (m, 2H, CH_2), 1.62 (m, 2H, CH_2). ^{13}C NMR (100 MHz, $CDCl_3$) δ 176.5 (N-C=O), 143.4 (Ar), 135.0 (Ar), 130.7 (Ar), 129.6 (Ar), 127.9 (Ar), 126.7 (Ar), 126.6 (Ar), 122.5 (Ar), 118.6 (Ar), 109.3 (Ar), 27.3 (C), 20.1 (CH_2-CH_2). HRMS (ESI), *m/z* calcd. $C_{16}H_{13}NO$ for ($[M+Na]^+$) 258.0889, found: 258.0895.

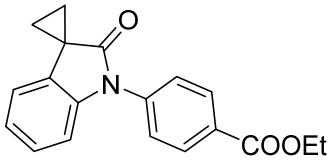


ethyl 2-(2'-oxospiro[cyclopropane-1,3'-indolin]-1'-yl)benzoate (2b). The product was isolated by flash chromatography (eluent: EA/PE = 1/8) as a light yellow solid (54 mg, 58%): mp 101-104 °C; ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.13 (dd, J = 7.6, 1.6 Hz, 1H, ArH), 7.68 (m, 1H, ArH), 7.53 (m, 1H, ArH), 7.45 (m, 1H, ArH), 7.14 (m, 1H, ArH), 7.03 (m, 1H, ArH), 6.90 (d, J = 7.2 Hz, 1H, ArH), 6.62 (d, J = 7.6 Hz, 1H, ArH), 4.10 (m, 2H, O-CH_2), 1.92-1.76 (m, 2H, CH_2), 1.61 (m, 2H, CH_2), 1.02 (t, J = 7.2 Hz, 3H, CH_3). ^{13}C NMR (100 MHz, $CDCl_3$) δ 176.5 (N-C=O), 165.4 (O-C=O), 143.9 (Ar), 134.3 (Ar), 133.2 (Ar), 132.0 (Ar), 130.4 (Ar), 129.5 (Ar), 129.4 (Ar), 128.6 (Ar), 126.7 (Ar), 122.2 (Ar), 118.4 (Ar), 108.7 (Ar), 61.2 (O-CH_2), 27.2 (C), 19.6 (CH_2), 19.5 (CH_2), 13.6 (CH_3). HRMS (ESI), *m/z* calcd. for $C_{19}H_{17}NO_3$ ($[M+H]^+$) 308.1281, found: 308.1280.

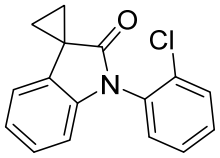


ethyl 3-(2'-oxospiro[cyclopropane-1,3'-indolin]-1'-yl)benzoate (2c). The product was isolated by flash chromatography (eluent: EA/PE = 1/8) as a light yellow solid (65 mg, 71%): mp 87-90 °C; ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.15 (t, J = 1.6 Hz, 1H, ArH), 8.09 (m, 1H, ArH), 7.68 (m, 1H, ArH), 7.61 (t, J = 7.8 Hz, 1H, ArH), 7.20 (m, 1H, ArH), 7.13-7.01 (m, 1H, ArH), 6.92 (m, 2H, ArH), 4.40 (m, 2H, O-CH_2), 1.87 (m, 2H, CH_2), 1.63 (m, 2H, CH_2), 1.39 (t, J = 7.2 Hz, 3H, CH_3). ^{13}C NMR (100 MHz, $CDCl_3$) δ 176.4 (N-C=O), 165.7 (O-C=O), 142.9 (Ar), 135.2 (Ar), 132.1 (Ar), 131.0 (Ar), 130.6 (Ar), 129.6 (Ar), 128.8 (Ar), 127.5 (Ar), 126.7 (Ar), 122.7 (Ar), 118.6 (Ar), 109.1 (Ar), 61.2 (O-CH_2), 27.2

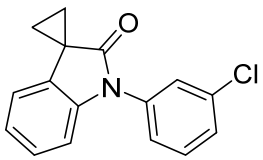
(C), 27.0 (C), 20.1 (CH_2), 14.3 (CH_3). HRMS (ESI), *m/z* calcd. for $C_{19}H_{17}NO_3$ ($[M+H]^+$) 308.1281, found: 308.1287.



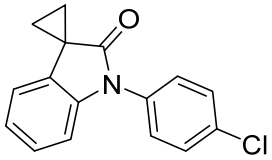
ethyl 4-(2'-oxospiro[cyclopropane-1,3'-indolin]-1'-yl)benzoate (2d). The product was isolated by flash chromatography (eluent: EA/PE = 1/8) as a light yellow oil (70 mg, 76%); ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.29-8.12 (m, 2H, ArH), 7.63-7.54 (m, 2H, ArH), 7.21 (m, 1H, ArH), 7.09 (m, 1H, ArH), 7.00 (d, J = 7.6 Hz, 1H, ArH), 6.92 (dd, J = 7.2 Hz, 1H, ArH), 4.41 (m, 2H, O-CH_2), 1.87 (m, 2H, CH_2), 1.63 (m, 2H, CH_2), 1.42 (t, J = 7.4 Hz, 3H, CH_3). ^{13}C NMR (100 MHz, $CDCl_3$) δ 176.2 (N-C=O), 165.8 (O-C=O), 142.3 (Ar), 138.9 (Ar), 130.8 (Ar), 130.6 (Ar), 129.3 (Ar), 126.7 (Ar), 125.8 (Ar), 122.9 (Ar), 118.7 (Ar), 109.3 (Ar), 61.1 (O-CH_2), 27.3 (C), 20.3 (CH_2), 14.3 (CH_3). HRMS (ESI), *m/z* calcd. for $C_{19}H_{17}NO_3$ ($[M+Na]^+$) 330.1101, found: 330.1092.



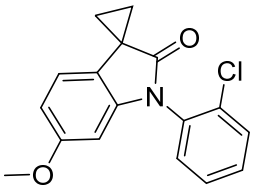
1'-(2-chlorophenyl)spiro[cyclopropane-1,3'-indolin]-2'-one (2e). The product was isolated by flash chromatography (eluent: EA/PE = 1/8) as a white solid (61 mg, 76%): mp 138-140 ^{o}C; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.65-7.53 (m, 1H, ArH), 7.48-7.37 (m, 3H, ArH), 7.16 (m, 1H, ArH), 7.06 (m, 1H, ArH), 6.92 (m, 1H, ArH), 6.57 (d, J = 8.0 Hz, 1H, ArH), 1.96-1.80 (m, 2H, CH_2), 1.69-1.58 (m, 2H, CH_2). ^{13}C NMR (100 MHz, $CDCl_3$) δ 176.2 (N-C=O), 142.9 (Ar), 133.2 (Ar), 132.6 (Ar), 130.8 (Ar), 130.4 (Ar), 130.1 (Ar), 128.0 (Ar), 126.7 (Ar), 122.5 (Ar), 118.5 (Ar), 109.3 (Ar), 27.2 (C), 20.1 (CH_2), 19.8 (CH_2). HRMS (ESI), *m/z* calcd. for $C_{16}H_{12}ClNO$ ($[M+Na]^+$) 292.0500, found: 292.0498.



1'-(3-chlorophenyl)spiro[cyclopropane-1,3'-indolin]-2'-one (2f). The product was isolated by flash chromatography (eluent: EA/PE = 1/8) as a white solid (57 mg, 71%): mp 96-98 ^{o}C; ^{1}H NMR (600 MHz, $CDCl_3$) δ 7.50 (s, 1H, ArH), 7.48-7.43 (m, 1H, ArH), 7.42-7.36 (m, 2H, ArH), 7.21 (t, J = 7.8 Hz, 1H, ArH), 7.08 (t, J = 7.6 Hz, 1H, ArH), 6.92 (m, 2H, ArH), 1.86 (m, 2H, CH_2), 1.62 (m, 2H, CH_2). ^{13}C NMR (100 MHz, $CDCl_3$) δ 176.3 (N-C=O), 142.7 (Ar), 136.1 (Ar), 135.0 (Ar), 130.52 (Ar), 130.47 (Ar), 128.0 (Ar), 126.74 (Ar), 126.72 (Ar), 124.7 (Ar), 122.8 (Ar), 118.6 (Ar), 109.2 (Ar), 27.3 (C), 20.2 (CH_2). HRMS (ESI), *m/z* calcd. for $C_{16}H_{12}ClNO$ ($[M+Na]^+$) 292.0500, found: 292.0496.

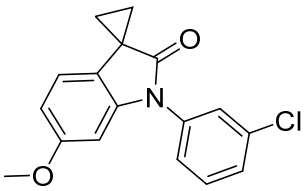


1'-(4-chlorophenyl)spiro[cyclopropane-1,3'-indolin]-2'-one (2g). The product was isolated by flash chromatography (eluent: EA/PE = 1/8) as a white solid (61 mg, 76%): mp 117-119 °C; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.54-7.47 (m, 2H, ArH), 7.46-7.39 (m, 2H, ArH), 7.20 (m, 1H, ArH), 7.08 (m, 1H, ArH), 6.94-6.88 (m, 2H, ArH), 1.85 (m, 2H, CH_2), 1.62 (m, 2H, CH_2). ^{13}C NMR (100 MHz, $CDCl_3$) δ 176.4 (N-C=O), 142.8 (Ar), 133.4 (Ar), 133.3 (Ar), 130.6 (Ar), 129.7 (Ar), 127.8 (Ar), 126.7 (Ar), 122.7 (Ar), 118.6 (Ar), 109.1 (Ar), 27.2 (C), 20.2 (CH_2). HRMS (ESI), *m/z* calcd. for $C_{16}H_{12}ClNO$ ($[M+Na]^+$) 292.0500, found: 292.0496.



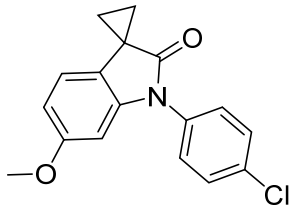
1'-(2-chlorophenyl)-6'-methoxyspiro[cyclopropane-1,3'-indolin]-2'-one (2h)

The product was isolated by flash chromatography (eluent: EA/PE = 1/8) as a white solid (64 mg, 71%): mp 113-115 °C; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.58 (m, 1H, ArH), 7.46-7.37 (m, 3H, ArH), 6.70 (dd, J_1 = 8.6, J_2 = 2.6 Hz, 1H, ArH), 6.52 (d, J = 2.4 Hz, 1H, ArH), 6.48 (d, J = 8.8 Hz, 1H, ArH), 3.78 (s, 3H, O-CH_3), 1.93-1.80 (m, 2H, CH_2), 1.67-1.53 (m, 2H, CH_2). ^{13}C NMR (100 MHz, $CDCl_3$) δ 176.0 (N-C=O), 156.1 (Ar), 136.5 (Ar), 133.1 (Ar), 132.8 (Ar), 131.8 (Ar), 130.8 (Ar), 130.4 (Ar), 130.0 (Ar), 128.0 (Ar), 111.1 (Ar), 109.6 (Ar), 105.8 (Ar), 55.8 (O-CH_3), 27.6 (C), 20.1 (CH_2), 19.8 (CH_2). HRMS (ESI), *m/z* calcd. for $C_{17}H_{14}ClNO_2$ ($[M+Na]^+$) 322.0605, found: 322.0590.

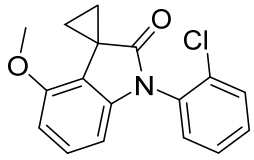


1'-(3-chlorophenyl)-6'-methoxyspiro[cyclopropane-1,3'-indolin]-2'-one (2i). The product was isolated by flash chromatography (eluent: EA/PE = 1/8) as a white solid (40 mg, 45%): mp 105-107 °C; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.50 (t, J = 1.8 Hz, 1H, ArH), 7.45 (t, J = 8.0 Hz, 1H, ArH), 7.40-7.33 (m, 2H, ArH), 6.86 (d, J = 8.4 Hz, 1H, ArH), 6.73 (dd, J_1 = 8.8 Hz, J_2 = 2.4 Hz, 1H), 6.50 (d, J = 2.8 Hz, 1H, ArH), 3.79 (s, 3H, O-CH_3), 1.85 (m, 2H, CH_2), 1.59 (m, 2H, CH_2). ^{13}C NMR (100 MHz, $CDCl_3$) δ 176.0 (N-C=O), 156.3 (Ar), 136.3 (Ar), 136.2 (Ar), 134.9 (Ar), 132.0 (Ar), 130.4 (Ar), 127.7 (Ar), 126.4 (Ar), 124.4 (Ar), 111.1 (Ar), 109.7 (Ar), 105.9 (Ar), 55.8 (O-CH_3), 27.6 (C), 20.3 (CH_2).

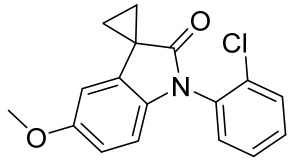
HRMS (ESI), *m/z* calcd. for $C_{17}H_{14}ClNO_2$ ([M+Na]$^+$) 322.0605, found: 322.0597.



1'-(4-chlorophenyl)-6'-methoxyspiro[cyclopropane-1,3'-indolin]-2'-one (2j). The product was isolated by flash chromatography (eluent: EA/PE = 1/8) as a white solid (56 mg, 62%): mp 127-129 ^{o}C; ^{1}H NMR (600 MHz, $CDCl_3$) δ 7.51-7.46 (m, 2H, ArH), 7.45-7.38 (m, 2H, ArH), 6.82 (d, J = 8.4 Hz, 1H, ArH), 6.72 (dd, J = 8.4 Hz, 1H, ArH), 6.50 (d, J = 2.4 Hz, 1H, ArH), 3.79 (s, 3H, O-CH_3), 1.84 (m, 2H, CH_2), 1.58 (m, 2H, CH_2).^{13}C NMR (150 MHz, $CDCl_3$) δ 176.0 (N-C=O), 156.2 (Ar), 136.4 (Ar), 133.7 (Ar), 133.0 (Ar), 132.0 (Ar), 129.6 (Ar), 127.5 (Ar), 111.1 (Ar), 109.5 (Ar), 105.9 (Ar), 55.8 (O-CH_3), 27.6 (C), 20.2 (CH_2). HRMS (ESI), *m/z* calcd. for $C_{17}H_{14}ClNO_2$ ([M+Na]$^+$) 322.0605, found: 322.0597.

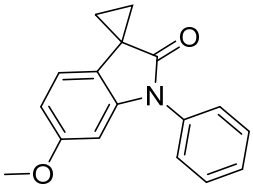


1'-(2-chlorophenyl)-4'-methoxyspiro[cyclopropane-1,3'-indolin]-2'-one (2n). The product was isolated by flash chromatography (eluent: EA/PE = 1/8) as a light yellow oil (50 mg, 60%); ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.54-7.46 (m, 1H, ArH), 7.45-7.38 (m, 1H, ArH), 7.38-7.31 (m, 2H, ArH), 7.02 (dd, J_1 = 8.4, J_2 = 7.6 Hz, 1H, ArH), 6.79 (dd, J = 8.2, 1H, ArH), 6.59-6.53 (dd, J = 7.4, 1H, ArH), 3.51 (s, 3H, O-CH_3), 1.96-1.75 (m, 2H, CH_2), 1.69-1.52 (m, 2H, CH_2). ^{13}C NMR (100 MHz, $CDCl_3$) δ 176.5 (N-C=O), 145.3 (Ar), 135.3 (Ar), 133.3 (Ar), 132.0 (Ar), 130.8 (Ar), 130.3 (Ar), 129.4 (Ar), 129.2 (Ar), 126.8 (Ar), 123.1 (Ar), 111.38 (Ar), 111.35 (Ar), 56.3 (O-CH_3), 27.4 (C), 20.3 (CH_2), 20.1 (CH_2). HRMS (ESI), *m/z* calcd. for $C_{17}H_{14}ClNO_2$ ([M+Na]$^+$) 322.0605, found: 322.0593.



1'-(2-chlorophenyl)-5'-methoxyspiro[cyclopropane-1,3'-indolin]-2'-one (2o). The product was isolated by flash chromatography (eluent: EA/PE = 1/8) as a white solid (66 mg, 73%): mp 110-112 ^{o}C; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.58 (m, 1H, ArH), 7.46-7.36 (m, 3H, ArH), 6.70 (dd, J_1 = 8.6, J_2 = 2.6 Hz, 1H, ArH), 6.52 (d, J = 2.4 Hz, 1H, ArH), 6.48 (d, J = 8.4 Hz, 1H, ArH), 3.78 (s, 3H, O-CH_3), 1.97-1.81 (m, 2H, CH_2), 1.67-1.53 (m, 2H, CH_2). ^{13}C NMR (100 MHz, $CDCl_3$) δ 176.0 (N-C=O), 156.1 (Ar), 136.5 (Ar), 133.1 (Ar), 132.8 (Ar), 131.8 (Ar), 130.8 (Ar), 130.4 (Ar), 130.0 (Ar), 127.9

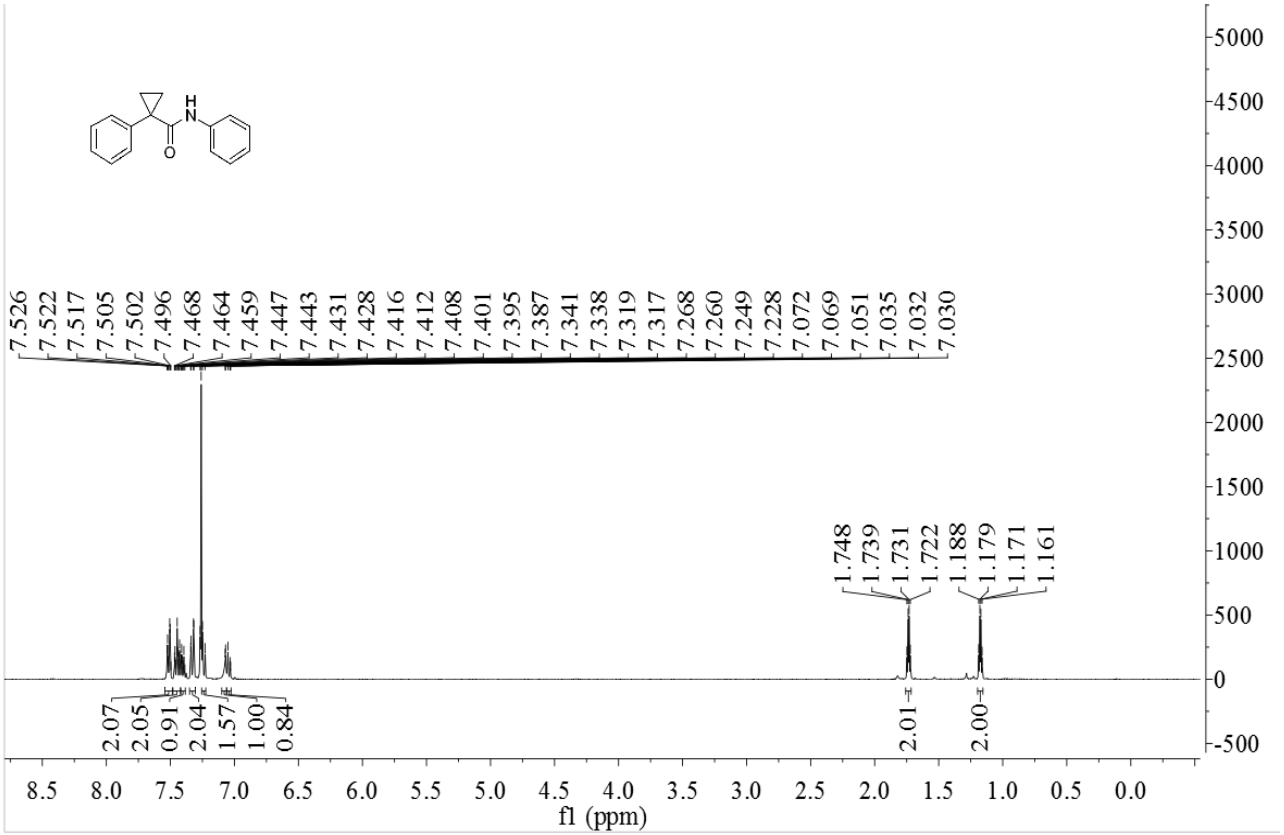
(Ar), 111.1 (Ar), 109.6 (Ar), 105.8 (Ar), 55.8 (O-CH_3), 27.5 (C), 20.1 (CH_2), 19.8 (CH_2). HRMS (ESI), *m/z* calcd. for $C_{17}H_{14}ClNO_2$ ($[M+Na]^+$) 322.0605, found: 322.0594.

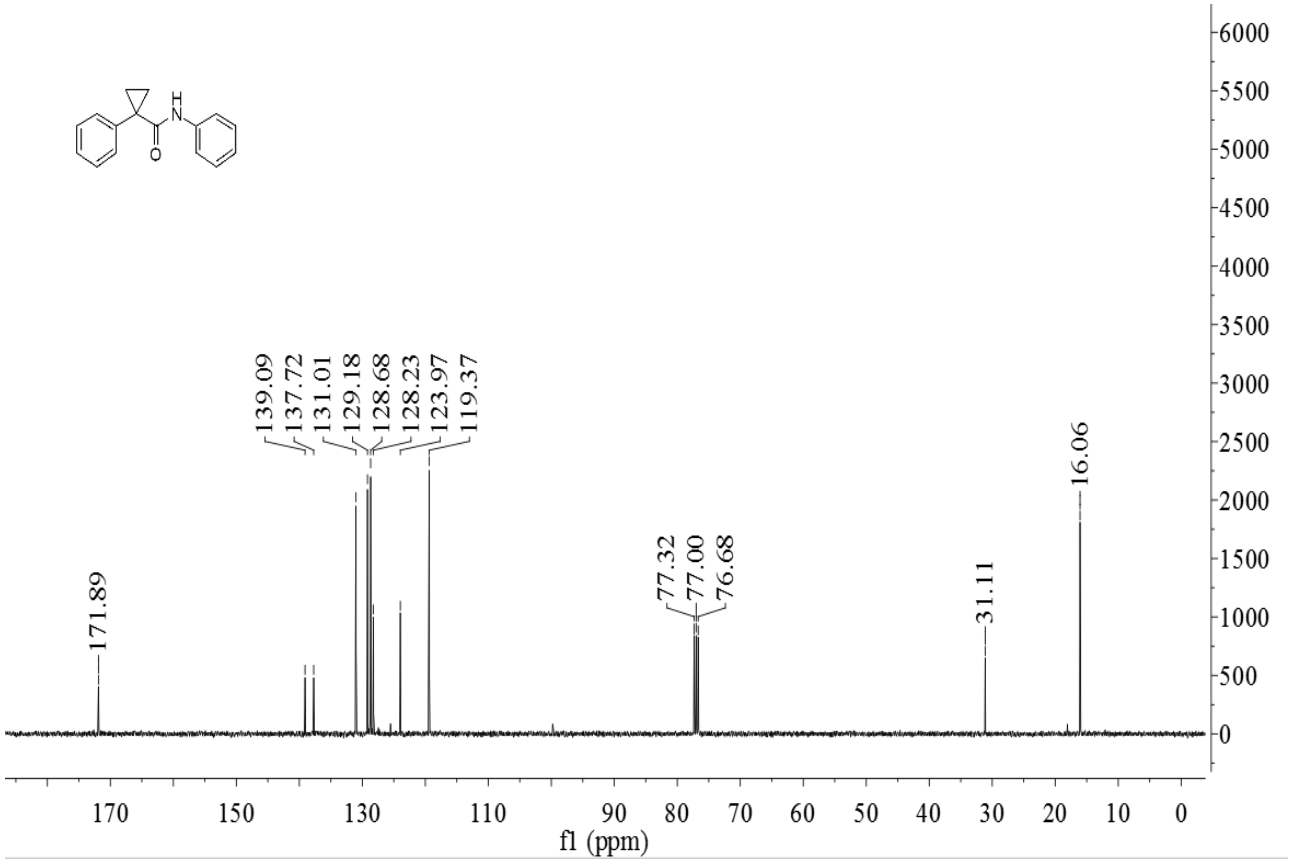


6'-methoxy-1'-phenylspiro[cyclopropane-1,3'-indolin]-2'-one (2p). The product was isolated by flash chromatography (eluent: EA/PE = 1/8) as a white solid (33 mg, 41%): mp 124-127 °C; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.57-7.49 (m, 2H, ArH), 7.46 (m, 2H, ArH), 7.38 (m, 1H, ArH), 6.84 (d, J = 8.8 Hz, 1H, ArH), 6.71 (dd, J_1 = 8.4 Hz, J_2 = 2.4 Hz, 1H, ArH), 6.50 (d, J = 2.4 Hz, 1H, ArH), 3.79 (s, 3H, O-CH_3), 1.85 (m, 2H, CH_2), 1.58 (m, 2H, CH_2). ^{13}C NMR (100 MHz, $CDCl_3$) δ 176.1 (N-C=O), 156.0 (Ar), 136.9 (Ar), 135.1 (Ar), 132.2 (Ar), 129.4 (Ar), 127.6 (Ar), 126.3 (Ar), 111.0 (Ar), 109.7 (Ar), 105.7 (Ar), 55.8 (O-CH_3), 27.6 (C), 20.1 (CH_2). HRMS (ESI), *m/z* calcd. for $C_{17}H_{15}NO_2$ ($[M+Na]^+$) 288.0995, found: 288.0985.

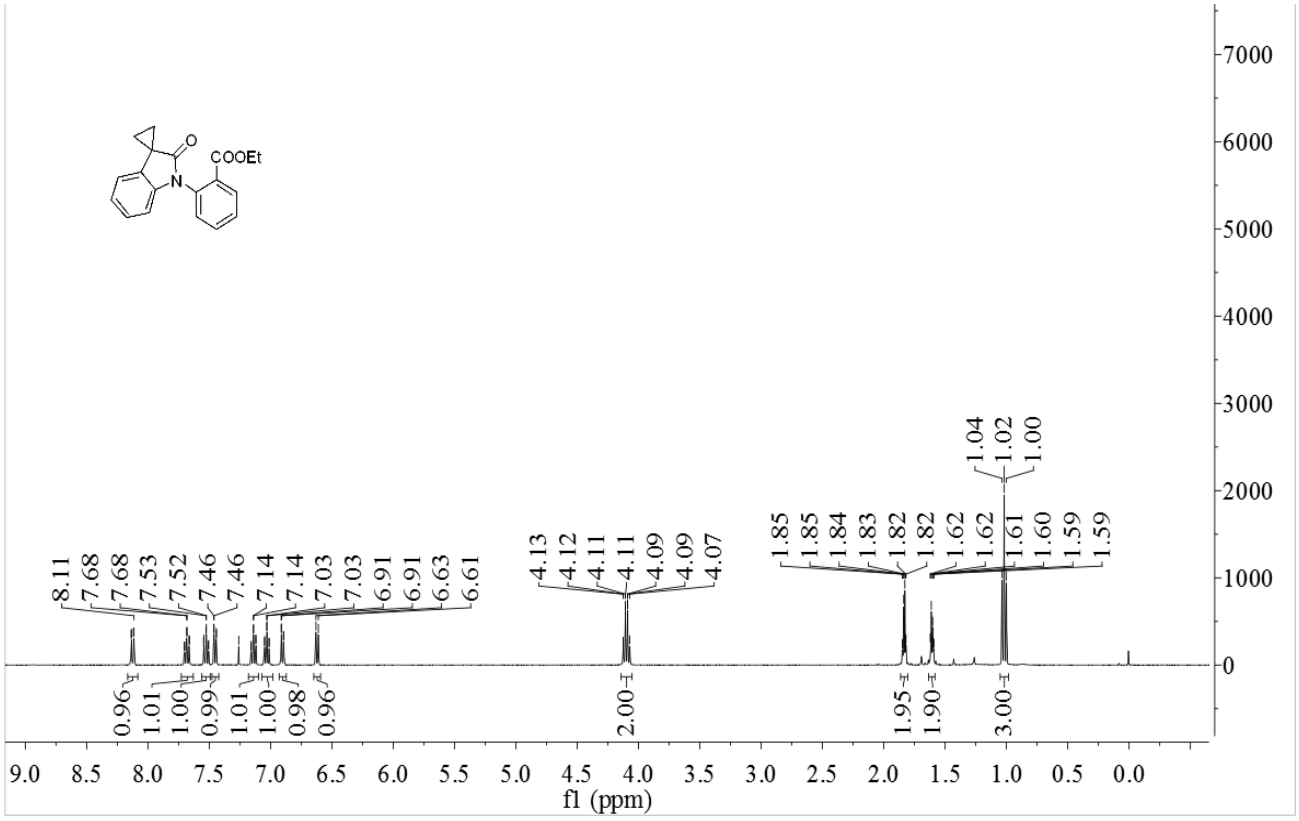
IV ^{1}H NMR and ^{13}C{H} NMR spectra copies of synthesized compounds

Compound **1a**





Compound **1b**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O
N
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7.68
7.68
7.53
7.52
7.46
7.46
7.14
7.14
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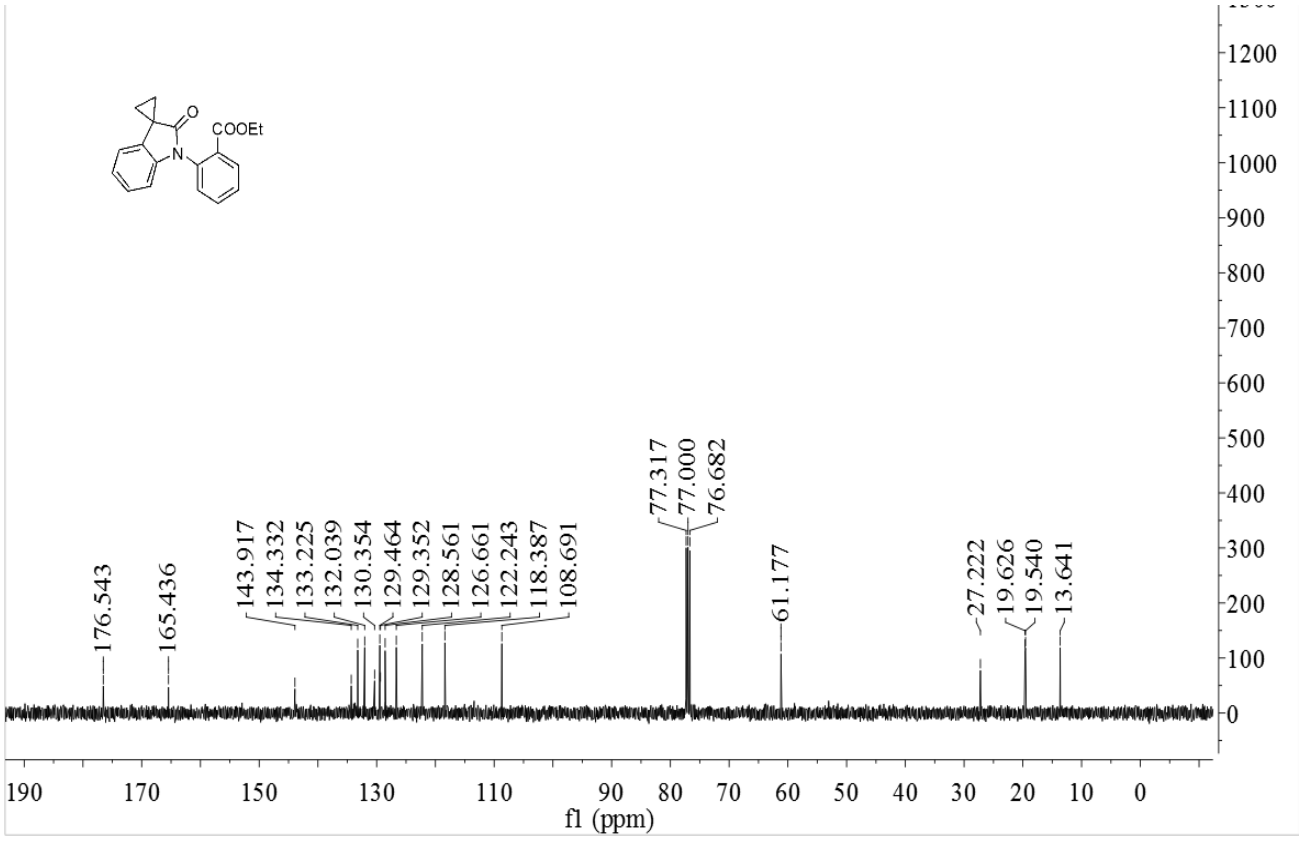
7.03
6.91
6.91
6.63
6.61
4.13
4.12
4.11
4.11
4.09
4.09
4.07
1.85
1.85
1.84
1.83
1.82
1.82
1.62
1.62
1.61
1.60
1.59
1.59
1.04
1.02
1.00
0.96
1.01
1.00
0.99
1.01
1.00
0.98
0.96
2.00
1.95
1.90
3.00
fl (ppm)


COOEt
O
N
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134.332
133.225
132.039
130.354
129.464
129.352
128.561
126.661
122.243
118.387
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77.000
76.682
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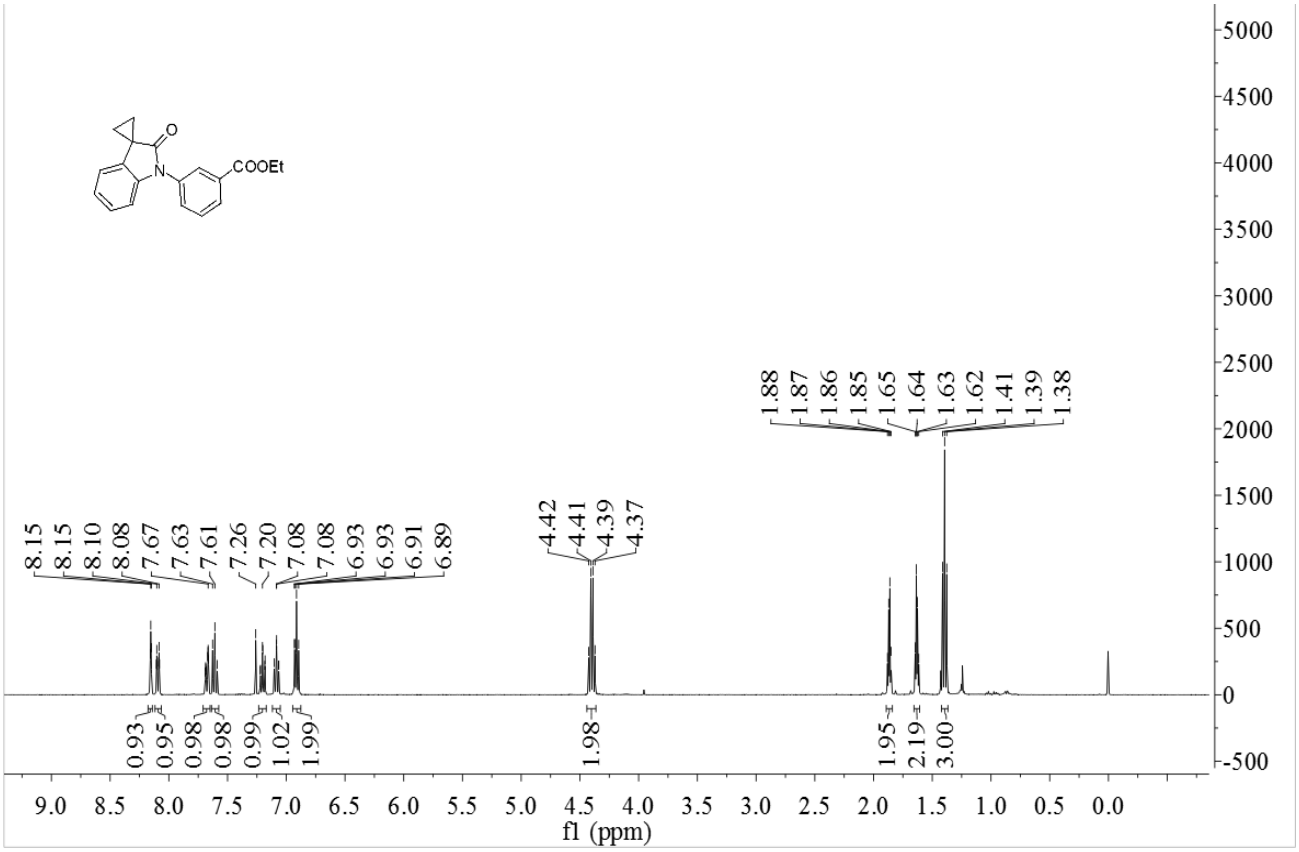
19.626
19.540
13.641
fl (ppm)

Compound **1c**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8.15
8.15
8.10
8.08
7.67
7.63
7.61
7.26
7.20
7.08
7.08
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6.93
6.91
6.89
4.42
4.41
4.39
4.37
1.88
1.87
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1.85
1.65
1.64
1.63
1.62
1.41
1.39
1.38
0.93
0.95
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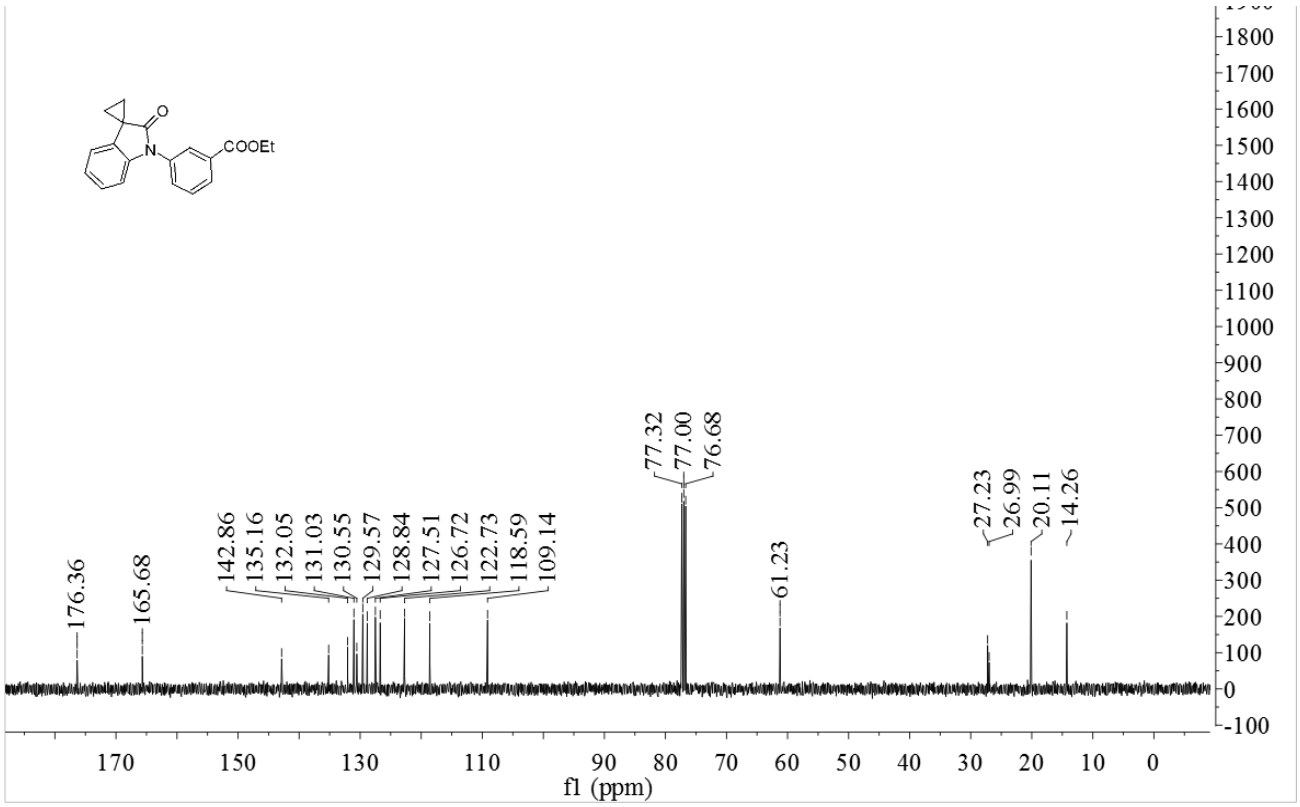
0.98
0.99
1.02
1.99
1.98
1.95
2.19
3.00
fl (ppm)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135.16
132.05
131.03
130.55
129.57
128.84
127.51
126.72
122.73
118.59
109.14
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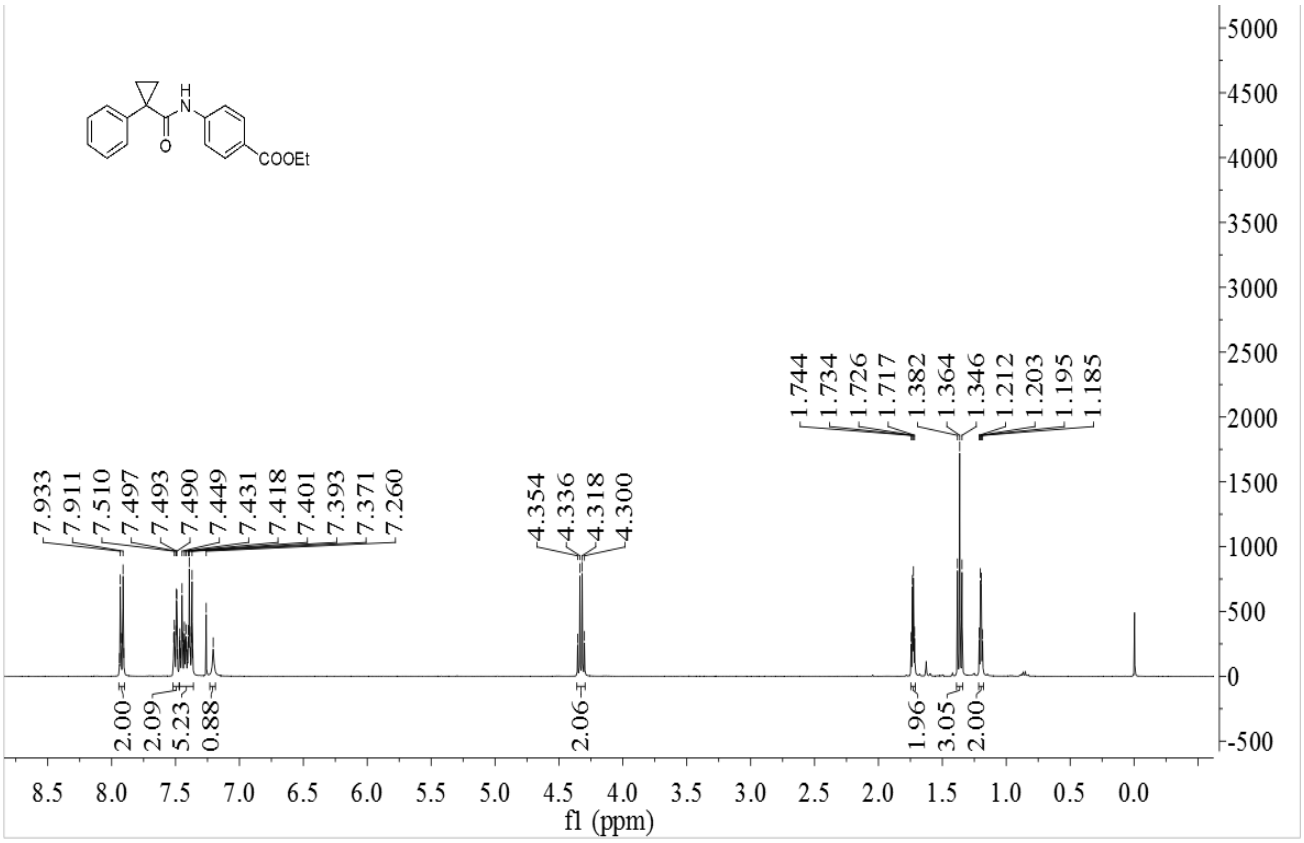
77.00
76.68
61.23
27.23
26.99
20.11
14.26
fl (ppm)

Compound **1d**


COOEt
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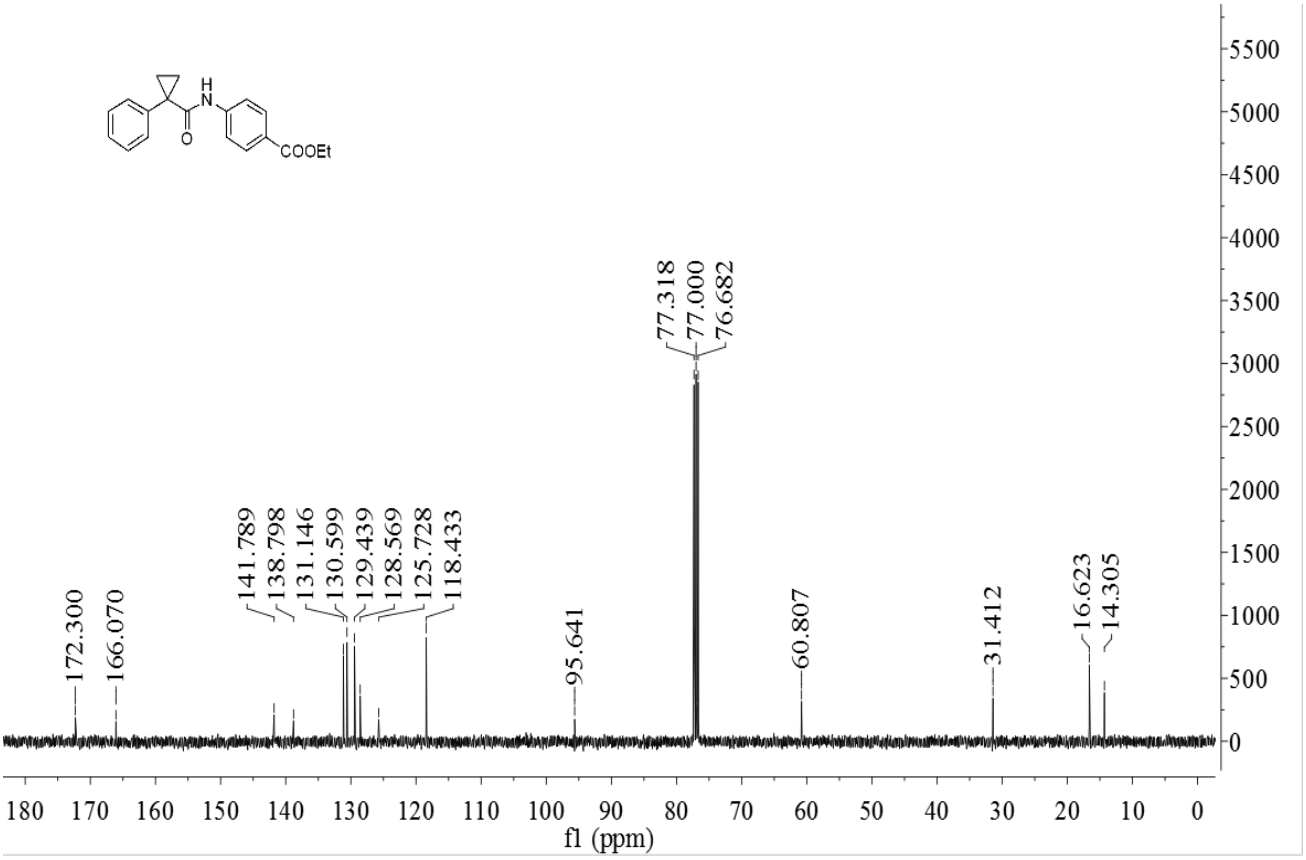
7.911
7.510
7.497
7.493
7.490
7.449
7.431
7.418
7.401
7.393
7.371
7.260
4.354
4.336
4.318
4.300
1.744
1.734
1.726
1.717
1.382
1.364
1.346
1.212
1.203
1.195
1.185
2.00
2.09
5.23
0.88
2.06
1.96
3.05
2.00
f1 (ppm)


COOEt
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138.798
131.146
130.599
129.439
128.569
125.728
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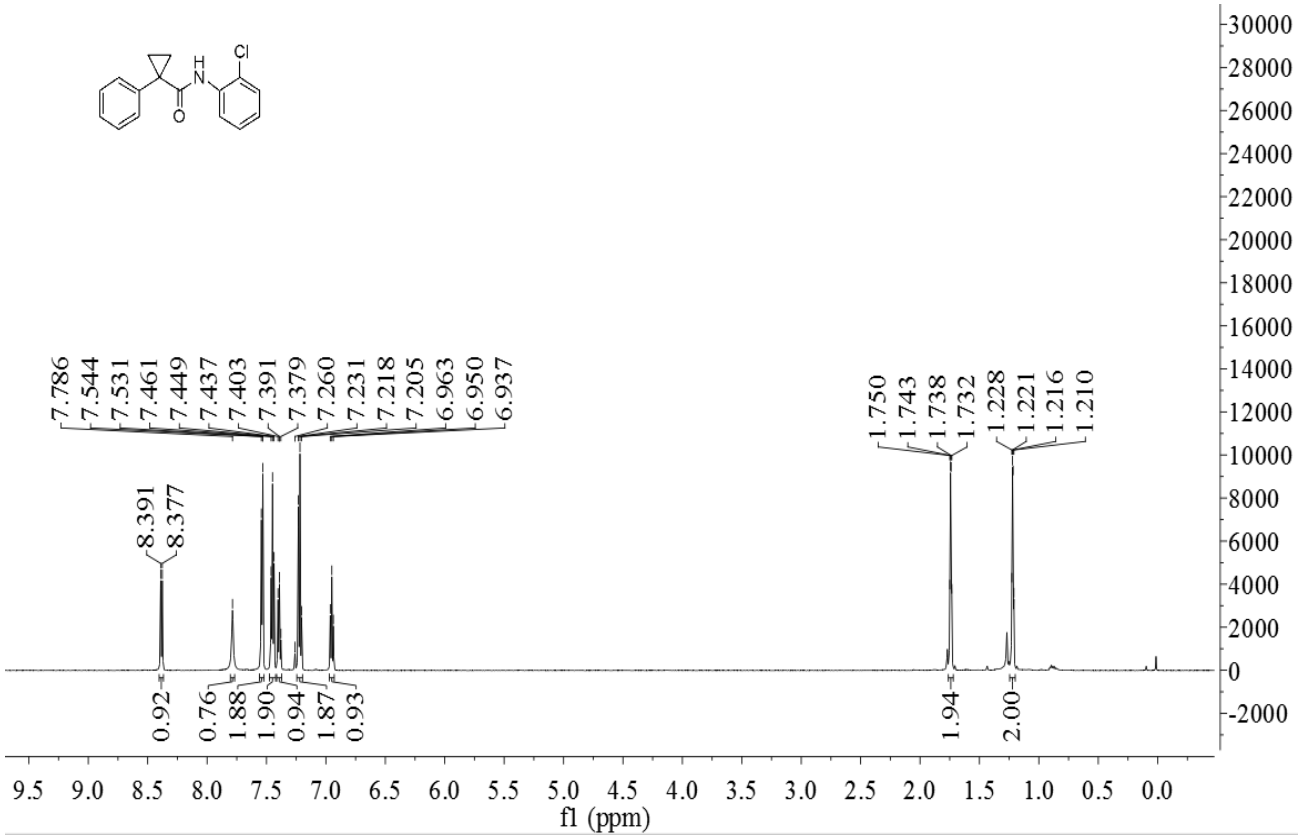
77.000
76.682
60.807
31.412
16.623
14.305
f1 (ppm)

Compound **1e**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7.391
7.379
7.260
7.231
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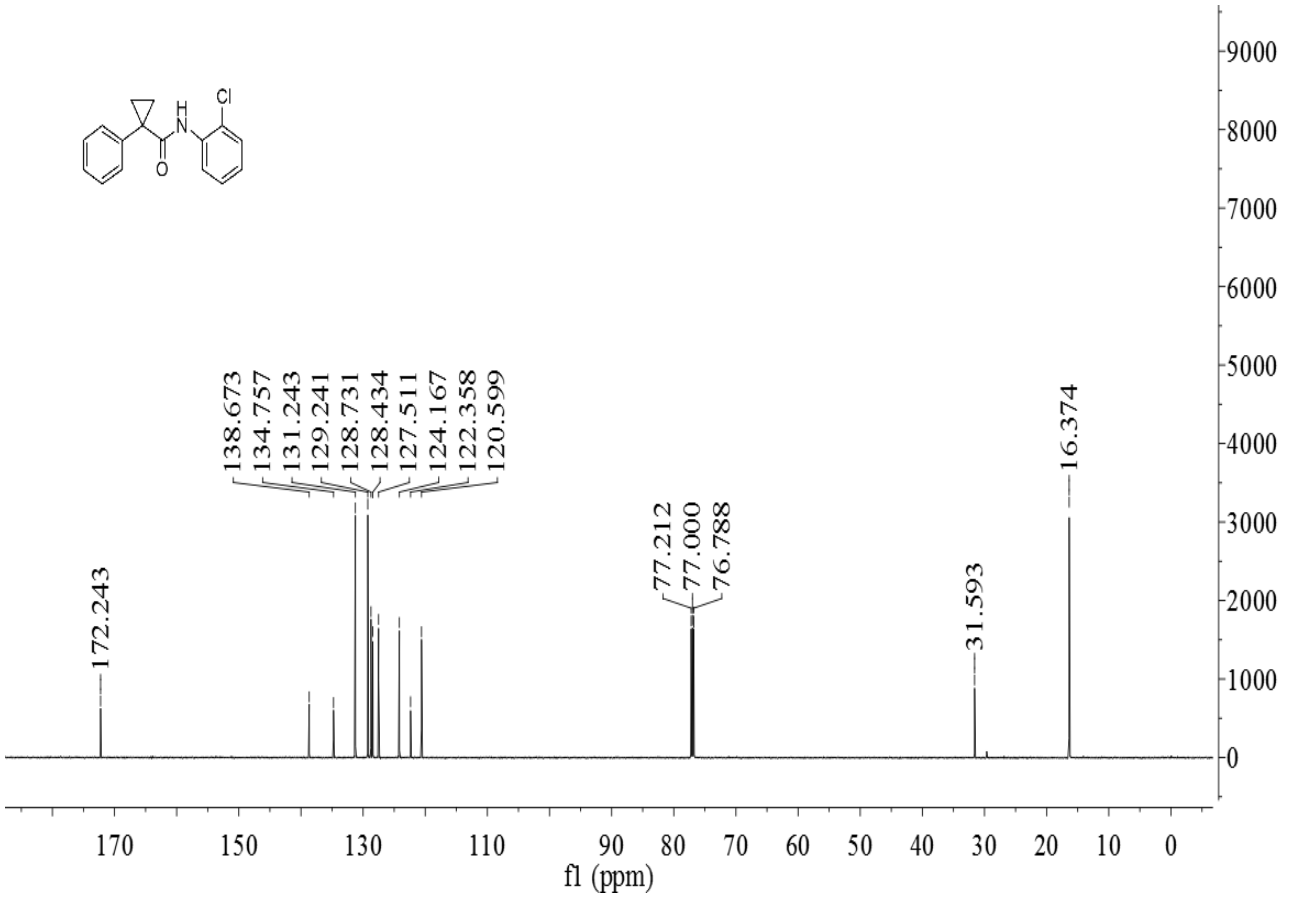
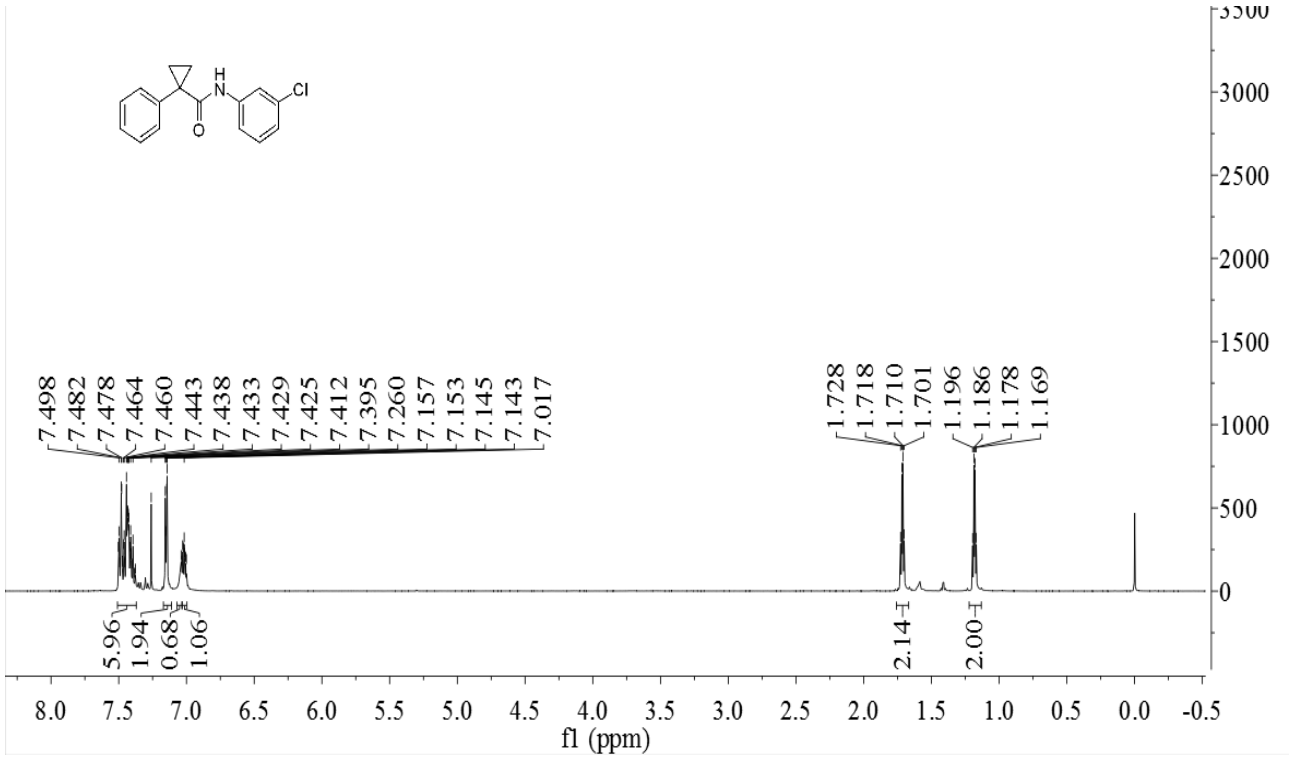
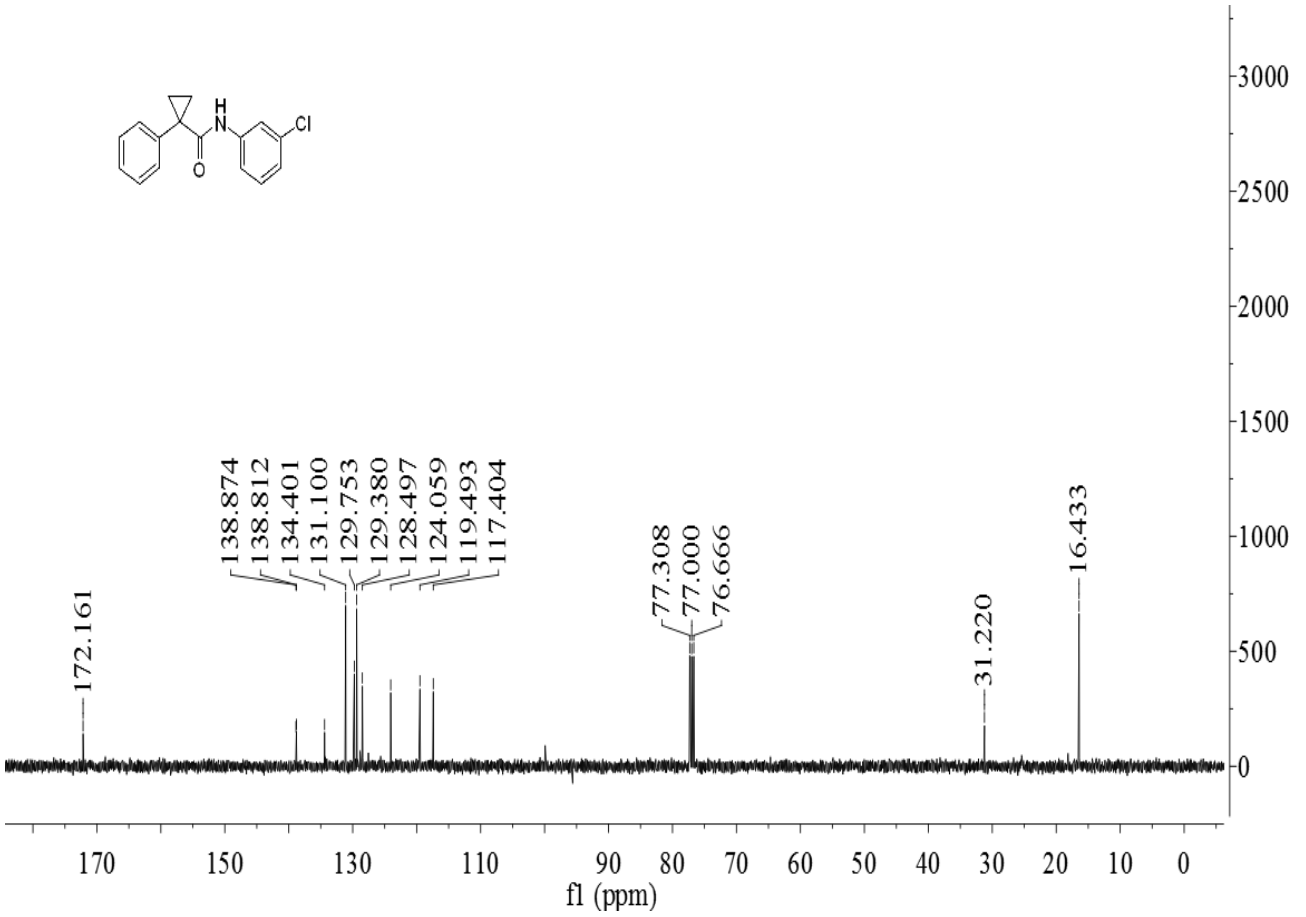
6.963
6.950
6.937
8.391
8.377
1.750
1.743
1.738
1.732
1.228
1.221
1.216
1.210
0.92
0.76
1.88
1.90
0.94
1.87
0.93
1.94
2.00
fl (ppm)

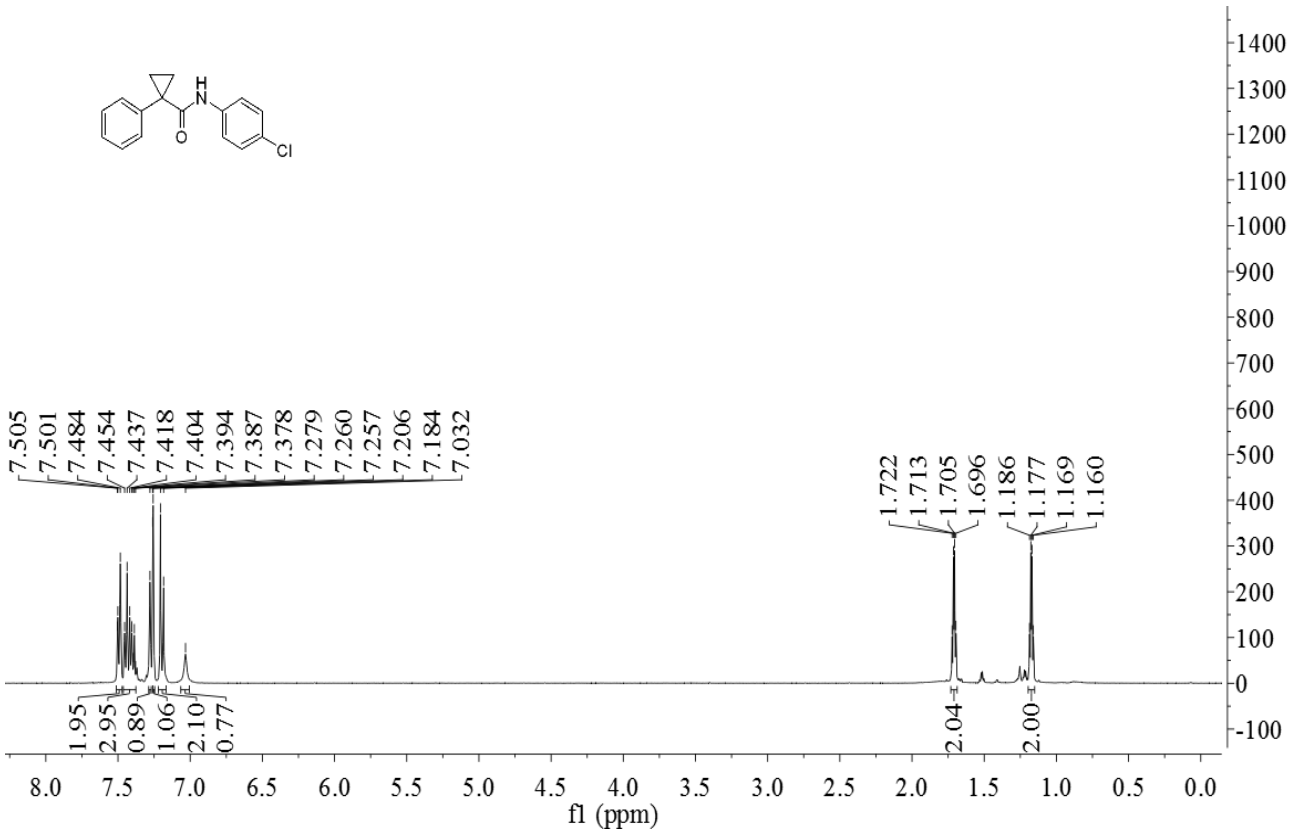

138.673
134.757
131.243
129.241
128.731
128.434
127.511
124.167
122.358
120.599
172.243
77.212
77.000
76.788
31.593
16.374
fl (ppm)

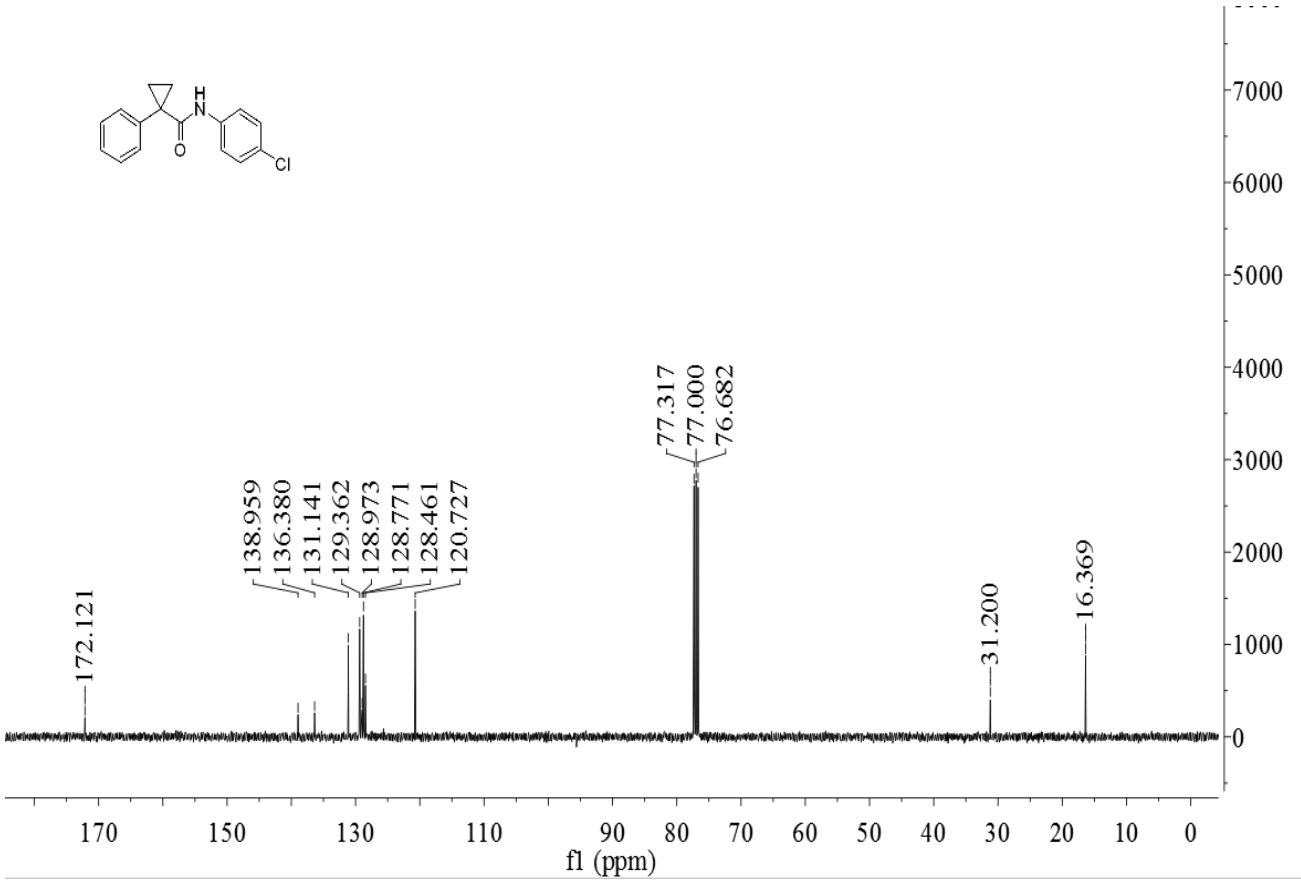
Compound **1f**


7.498
7.482
7.478
7.464
7.460
7.443
7.438
7.433
7.429
7.425
7.412
7.395
7.260
7.157
7.153
7.145
7.143
7.017
1.728
1.718
1.710
1.701
1.196
1.186
1.178
1.169
5.96
1.94
0.68
1.06
2.14
2.00
fl (ppm)

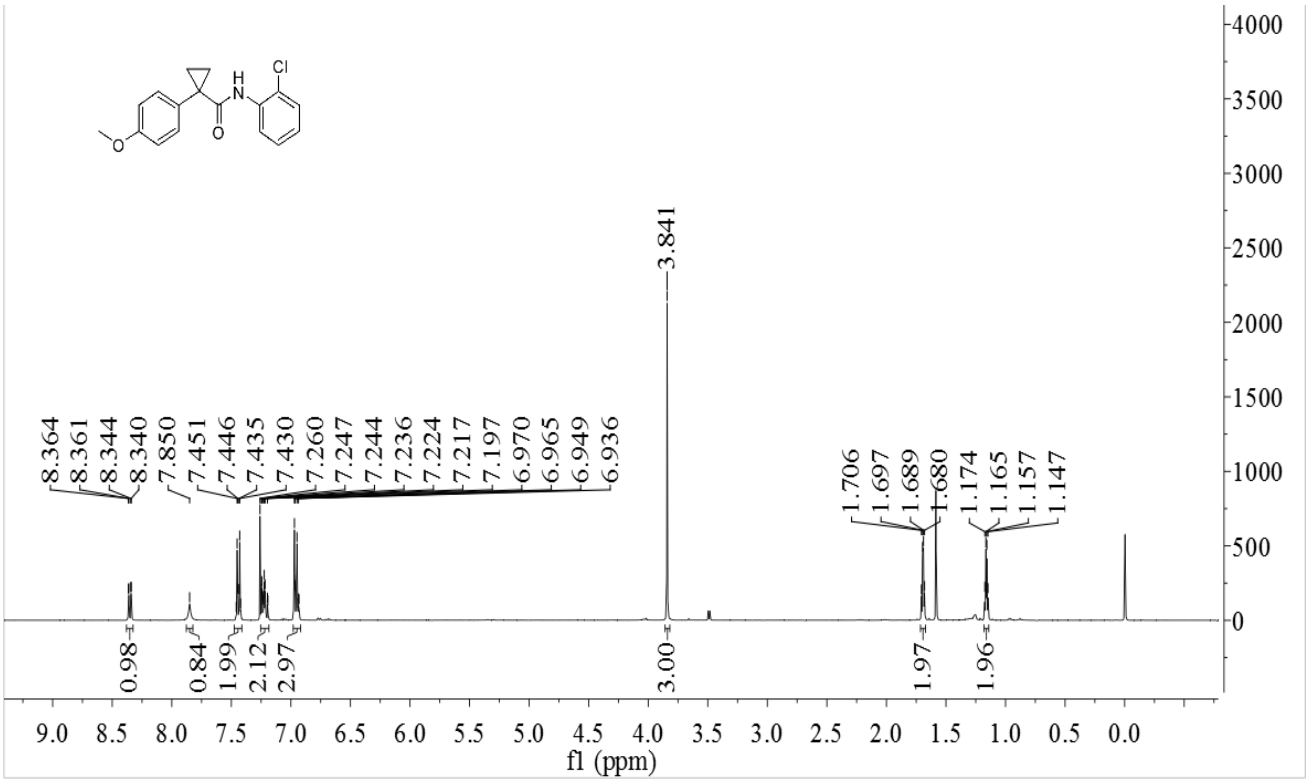

138.874
138.812
134.401
131.100
129.753
129.380
128.497
124.059
119.493
117.404
77.308
77.000
76.666
172.161
31.220
16.433
fl (ppm)

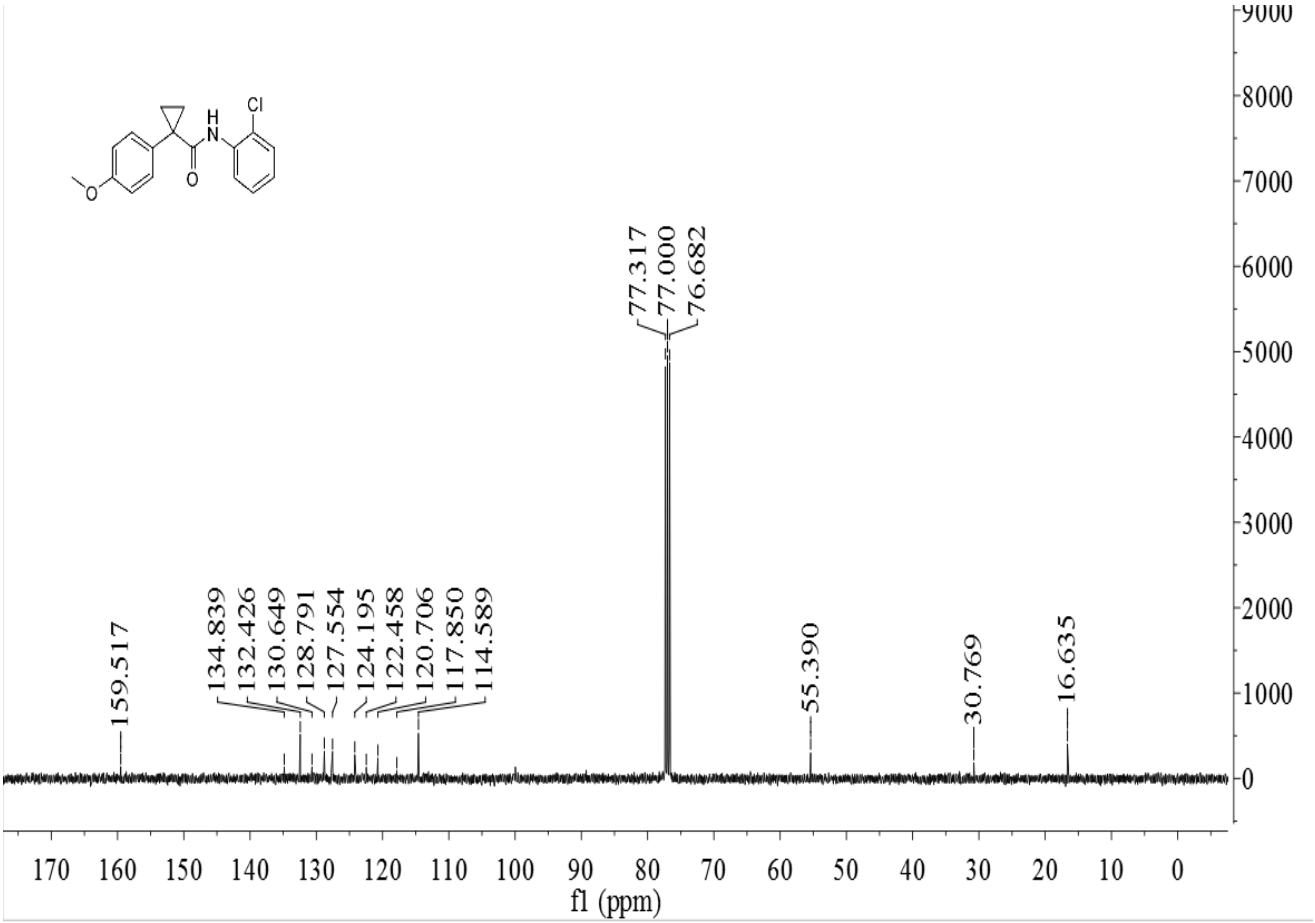
Compound **1g**


7.505
7.501
7.484
7.454
7.437
7.418
7.404
7.394
7.387
7.378
7.279
7.260
7.257
7.206
7.184
7.032
1.722
1.713
1.705
1.696
1.186
1.177
1.169
1.160
1.95
2.95
0.89
1.06
2.10
0.77
2.04
2.00
fl (ppm)

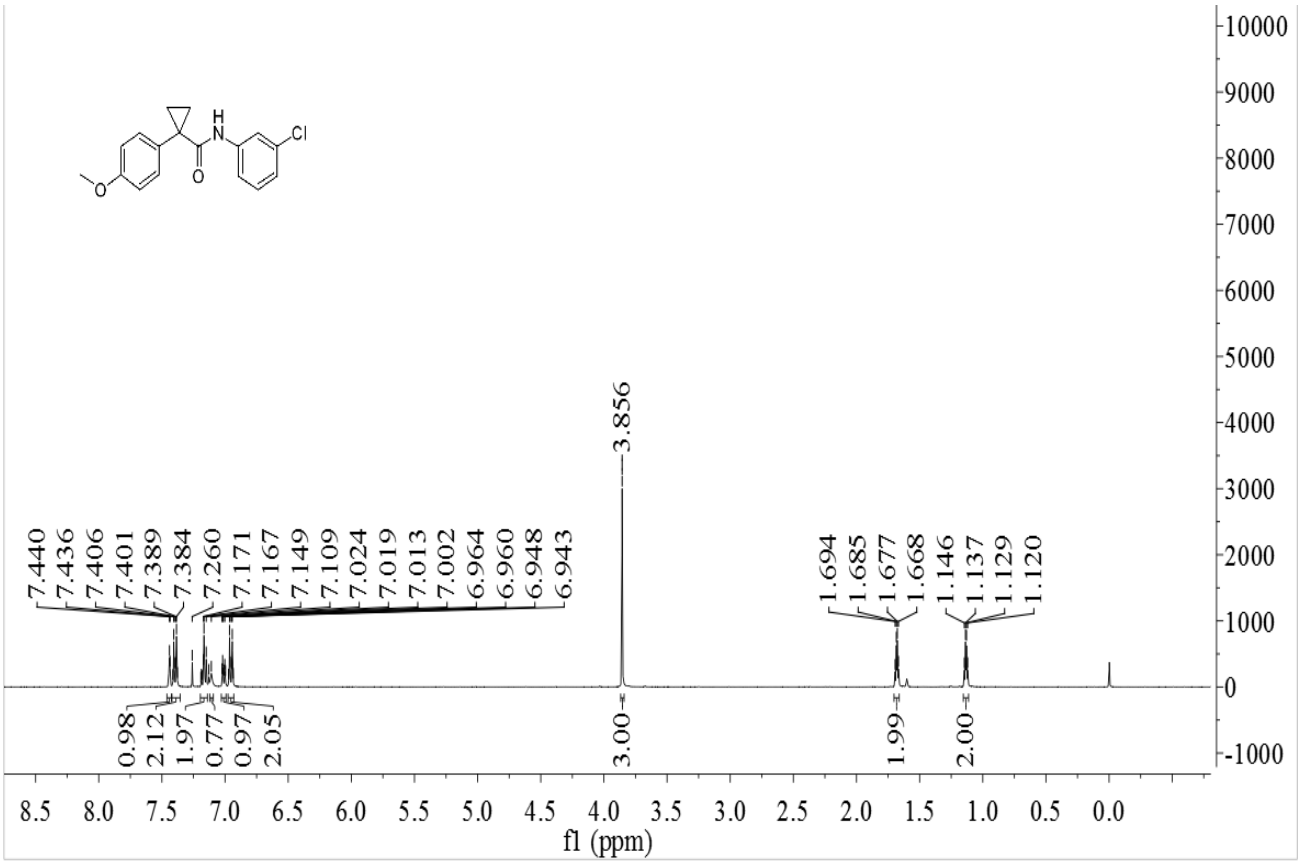

172.121
138.959
136.380
131.141
129.362
128.973
128.771
128.461
120.727
77.317
77.000
76.682
31.200
16.369
fl (ppm)

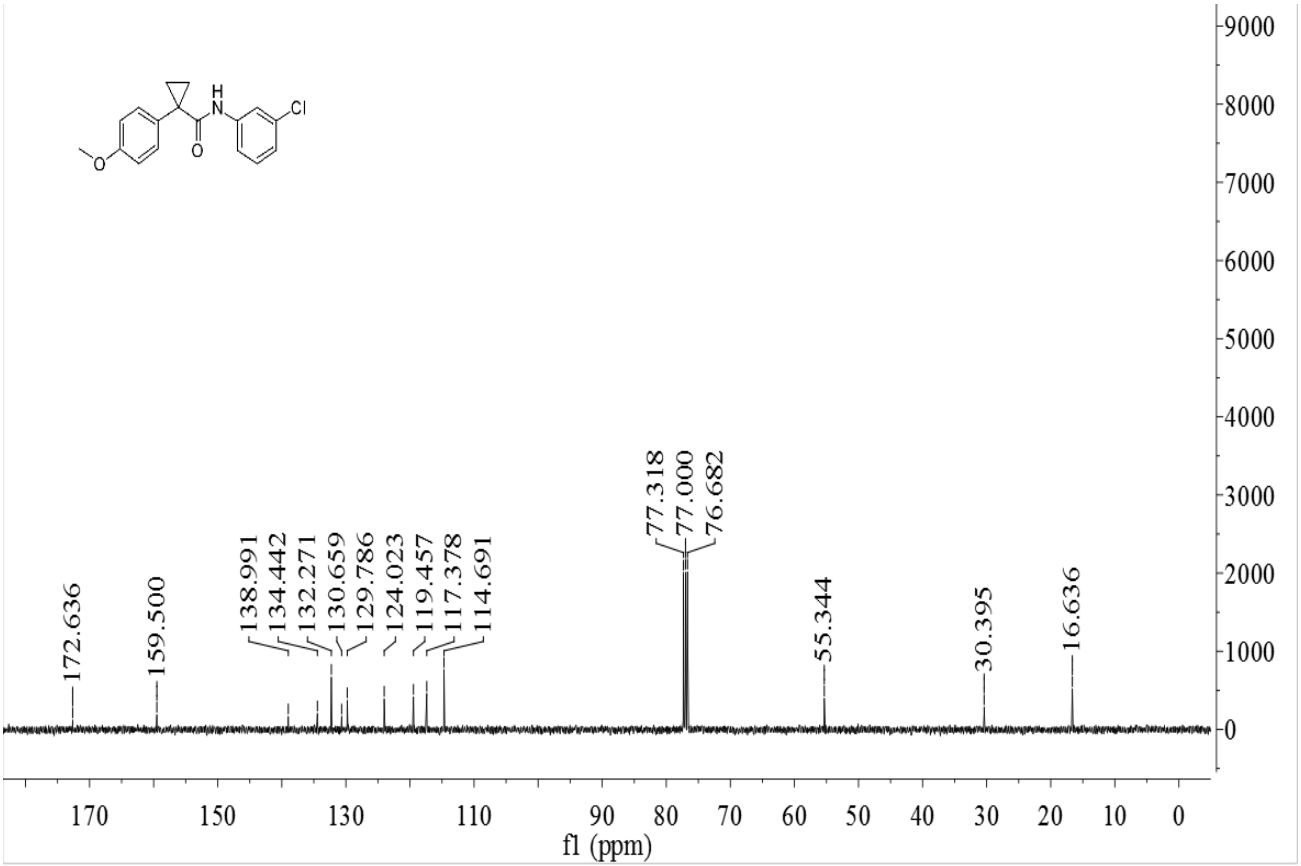
Compound **1h**


8.364
8.361
8.344
8.340
7.850
7.451
7.446
7.435
7.430
7.260
7.247
7.244
7.236
7.224
7.217
7.197
6.970
6.965
6.949
6.936
3.841
1.706
1.697
1.689
1.680
1.174
1.165
1.157
1.147
0.98
0.84
1.99
2.12
2.97
3.00
1.97
1.96
f1 (ppm)

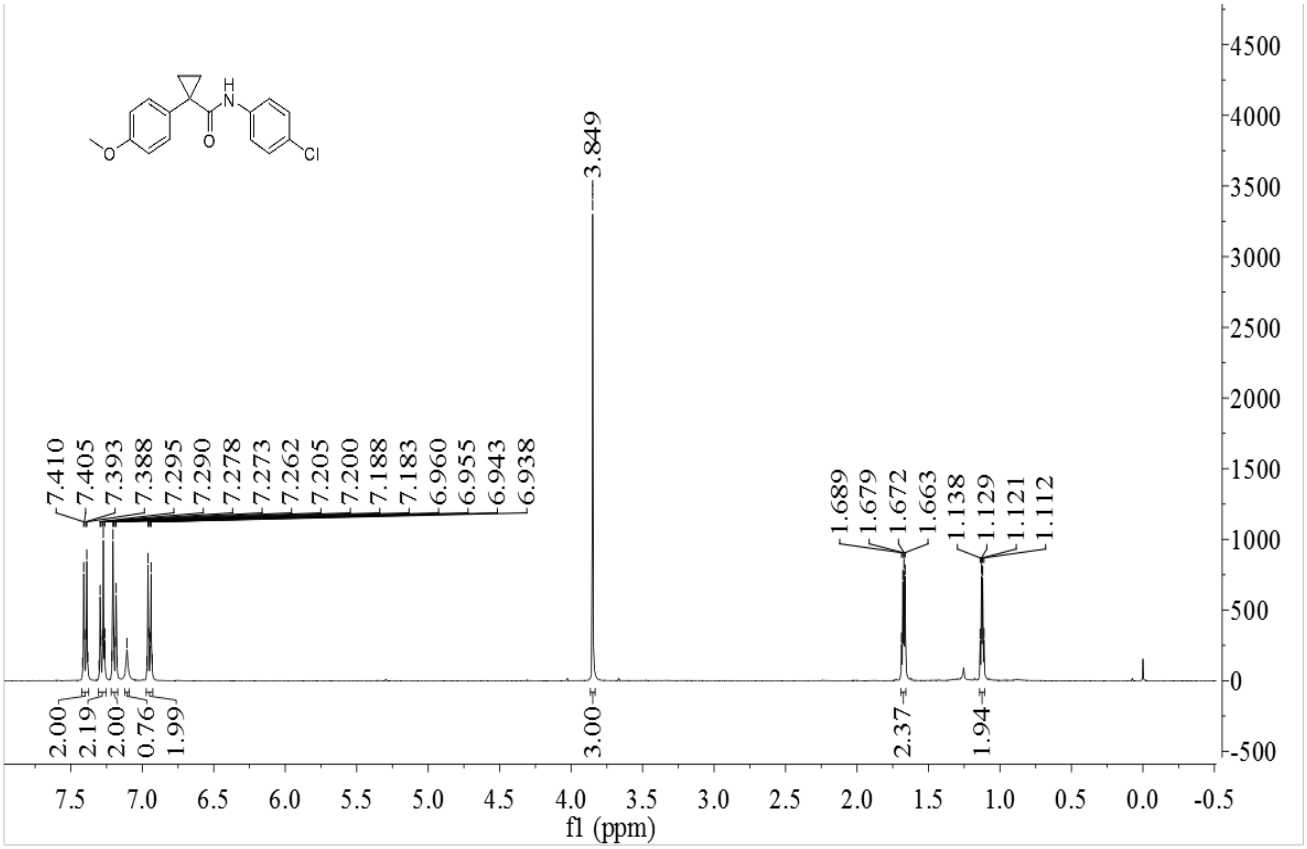

77.317
77.000
76.682
159.517
134.839
132.426
130.649
128.791
127.554
124.195
122.458
120.706
117.850
114.589
55.390
30.769
16.635
f1 (ppm)

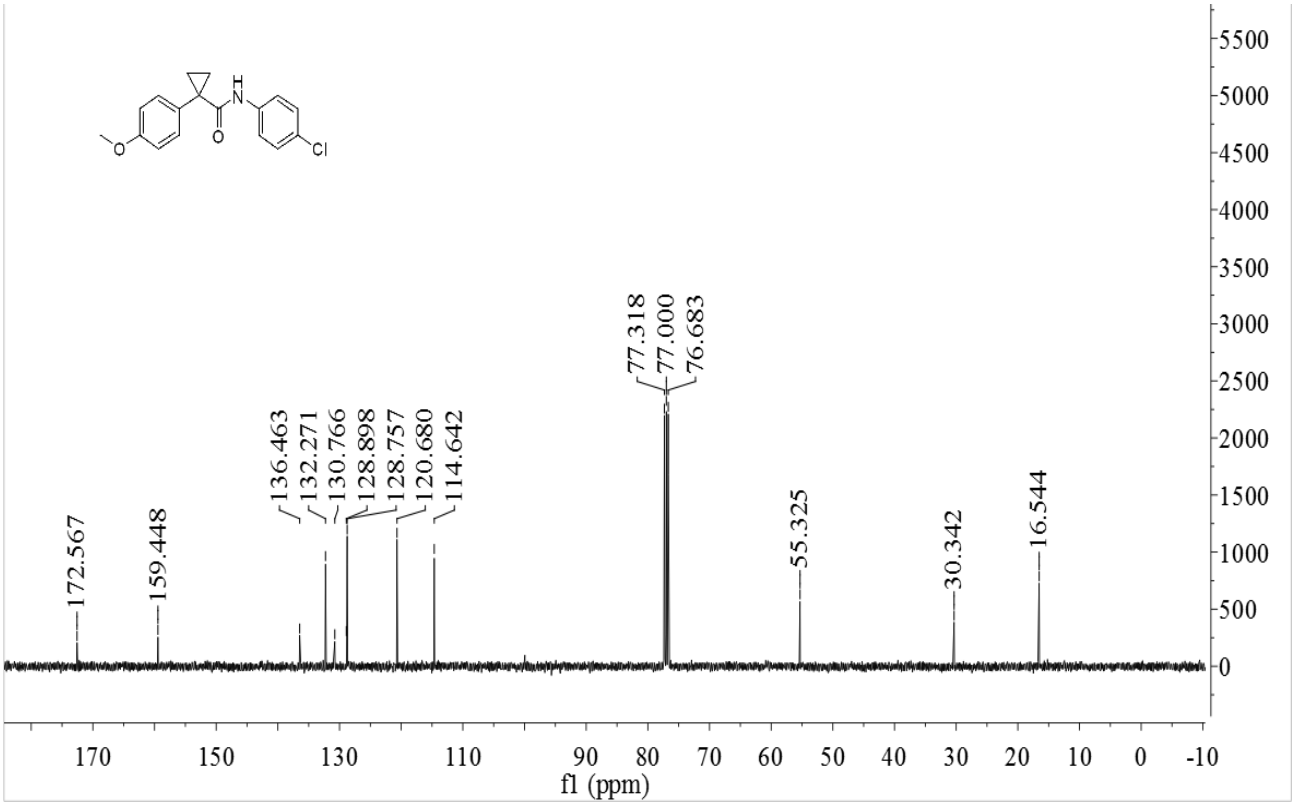
Compound **1i**


7.440
7.436
7.406
7.401
7.389
7.384
7.260
7.171
7.167
7.149
7.109
7.024
7.019
7.013
7.002
6.964
6.960
6.948
6.943
3.856
1.694
1.685
1.677
1.668
1.146
1.137
1.129
1.120
0.98
2.12
1.97
0.77
0.97
2.05
3.00
1.99
2.00
fl (ppm)

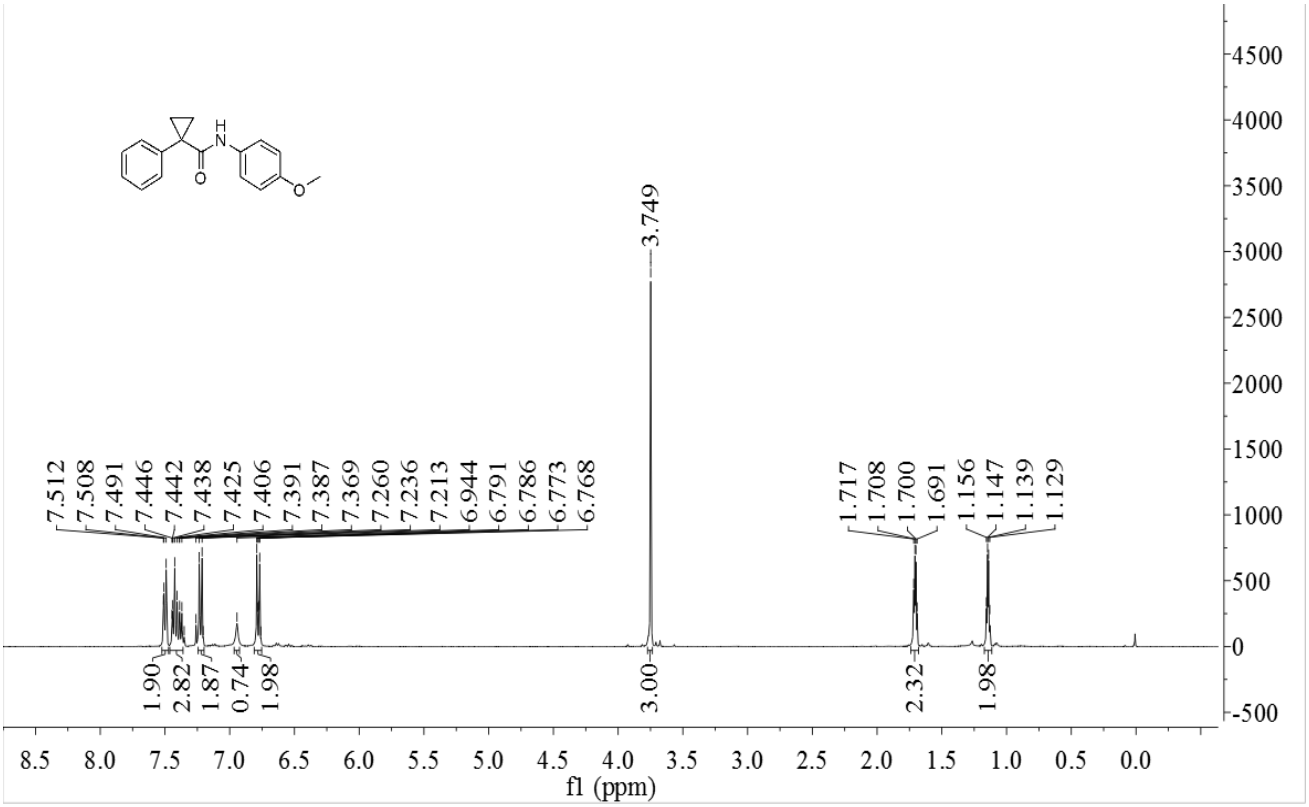

172.636
159.500
138.991
134.442
132.271
130.659
129.786
124.023
119.457
117.378
114.691
77.318
77.000
76.682
55.344
30.395
16.636
fl (ppm)

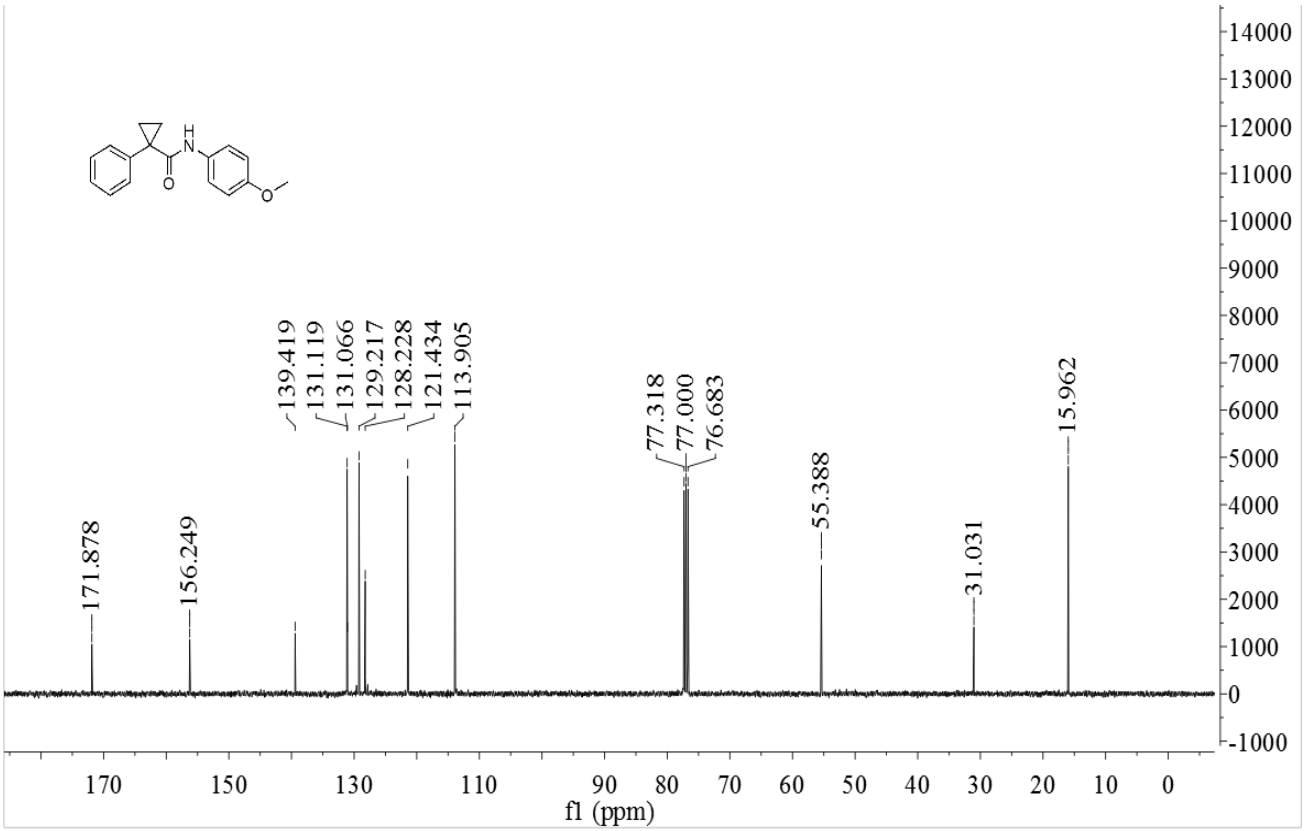
Compound **1j**


7.410
7.405
7.393
7.388
7.295
7.290
7.278
7.273
7.262
7.205
7.200
7.188
7.183
6.960
6.955
6.943
6.938
3.849
1.689
1.679
1.672
1.663
1.138
1.129
1.121
1.112
2.00
2.19
2.00
0.76
1.99
3.00
2.37
1.94
fl (ppm)

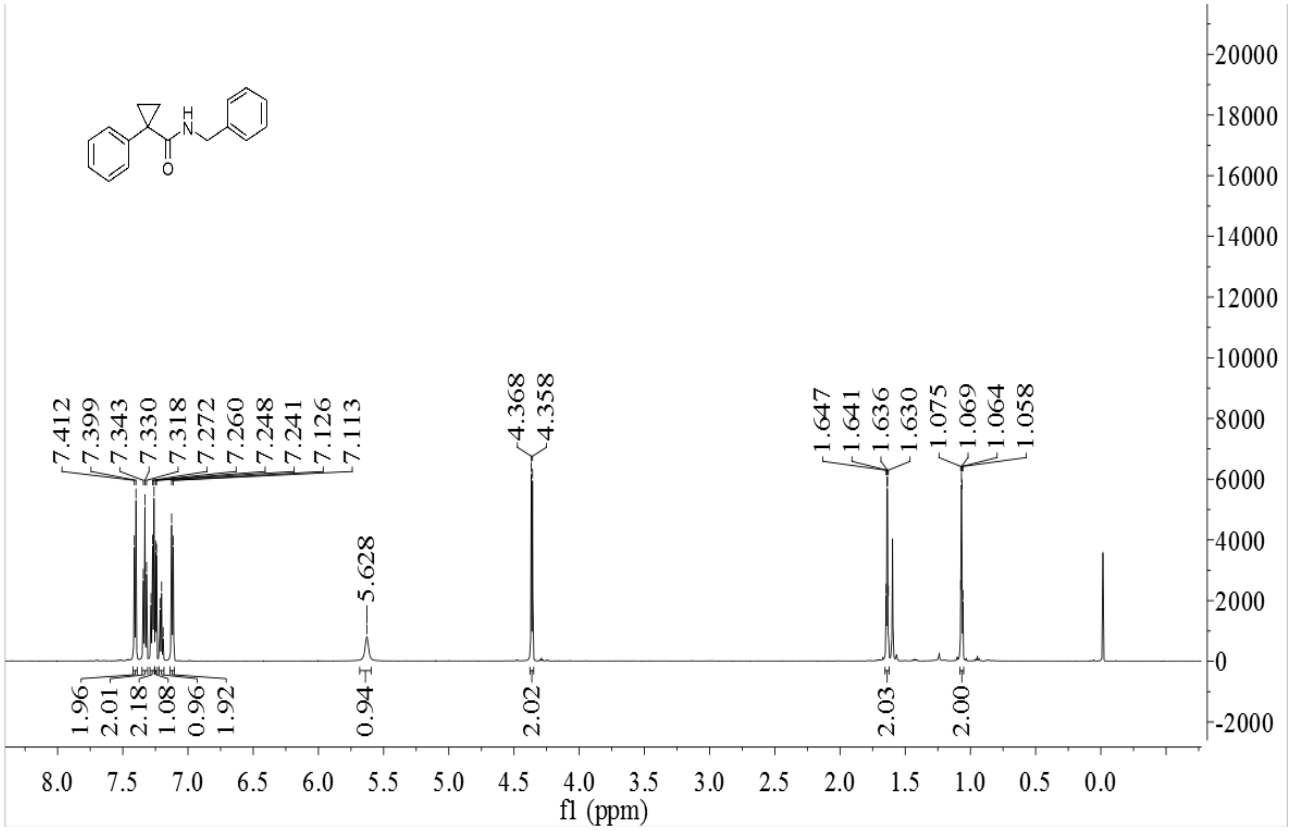

172.567
159.448
136.463
132.271
130.766
128.898
128.757
120.680
114.642
77.318
77.000
76.683
55.325
30.342
16.544
fl (ppm)

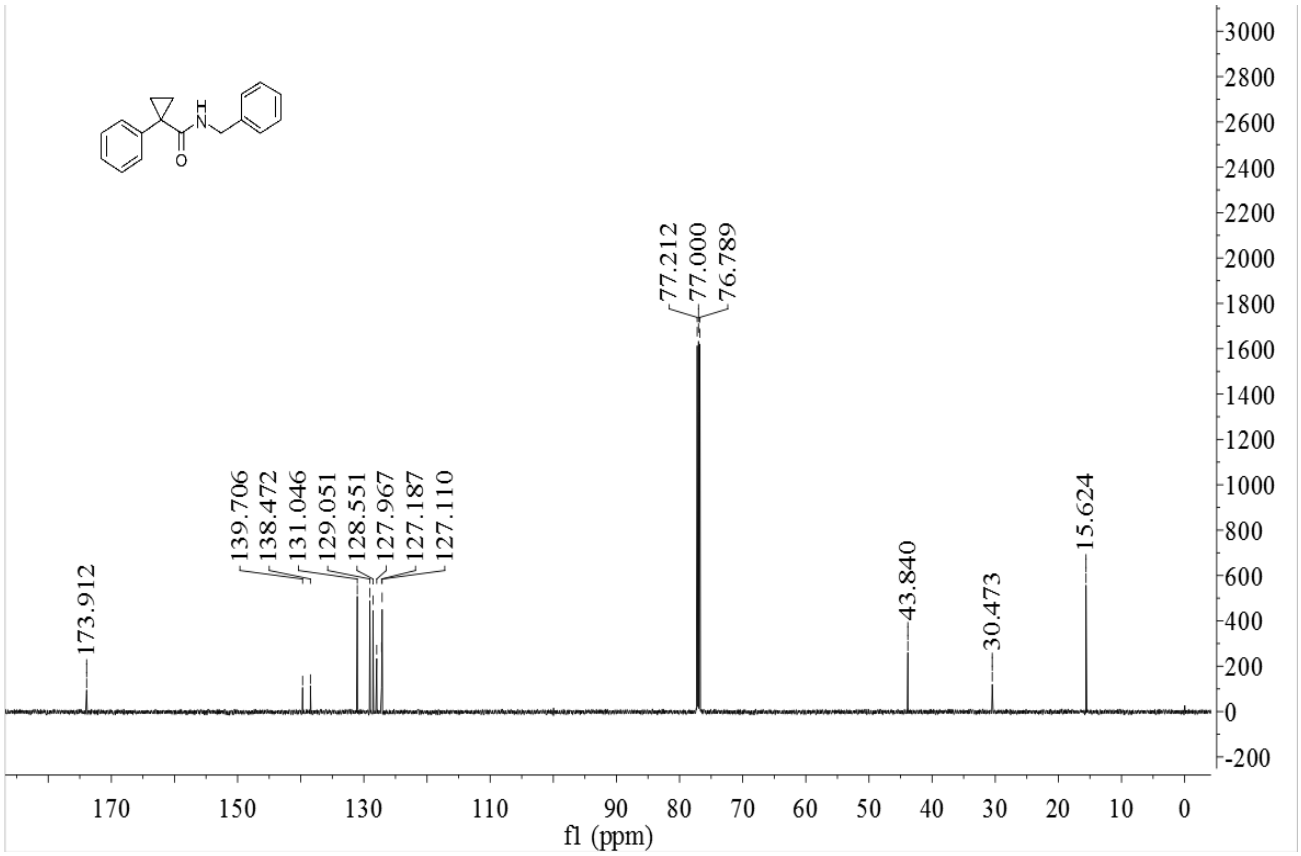
Compound **1k**


7.512
7.508
7.491
7.446
7.442
7.438
7.425
7.406
7.391
7.387
7.369
7.260
7.236
7.213
6.944
6.791
6.786
6.773
6.768
3.749
1.717
1.708
1.700
1.691
1.156
1.147
1.139
1.129
1.90
2.82
1.87
0.74
1.98
3.00
2.32
1.98
fl (ppm)

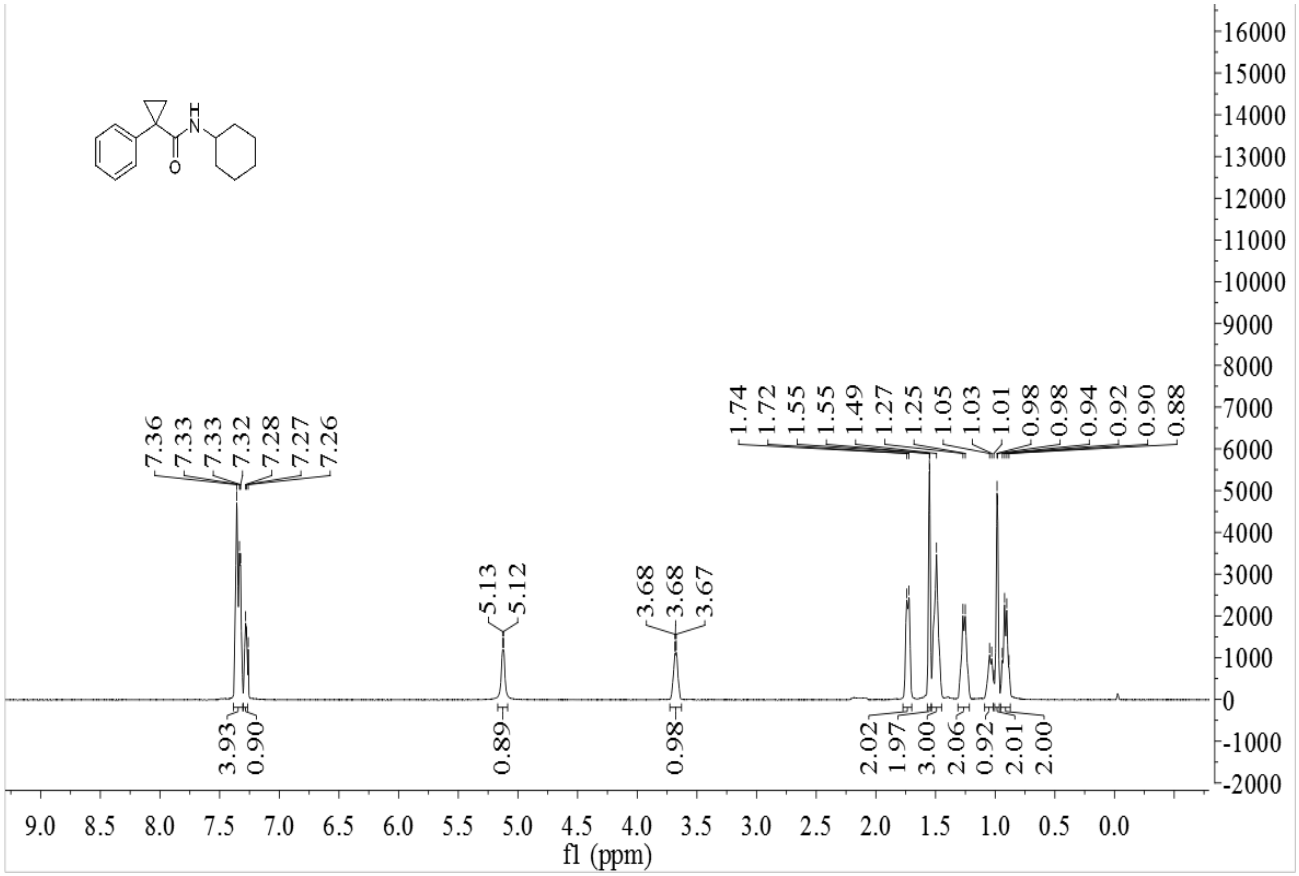

171.878
156.249
139.419
131.119
131.066
129.217
128.228
121.434
113.905
77.318
77.000
76.683
55.388
31.031
15.962
fl (ppm)

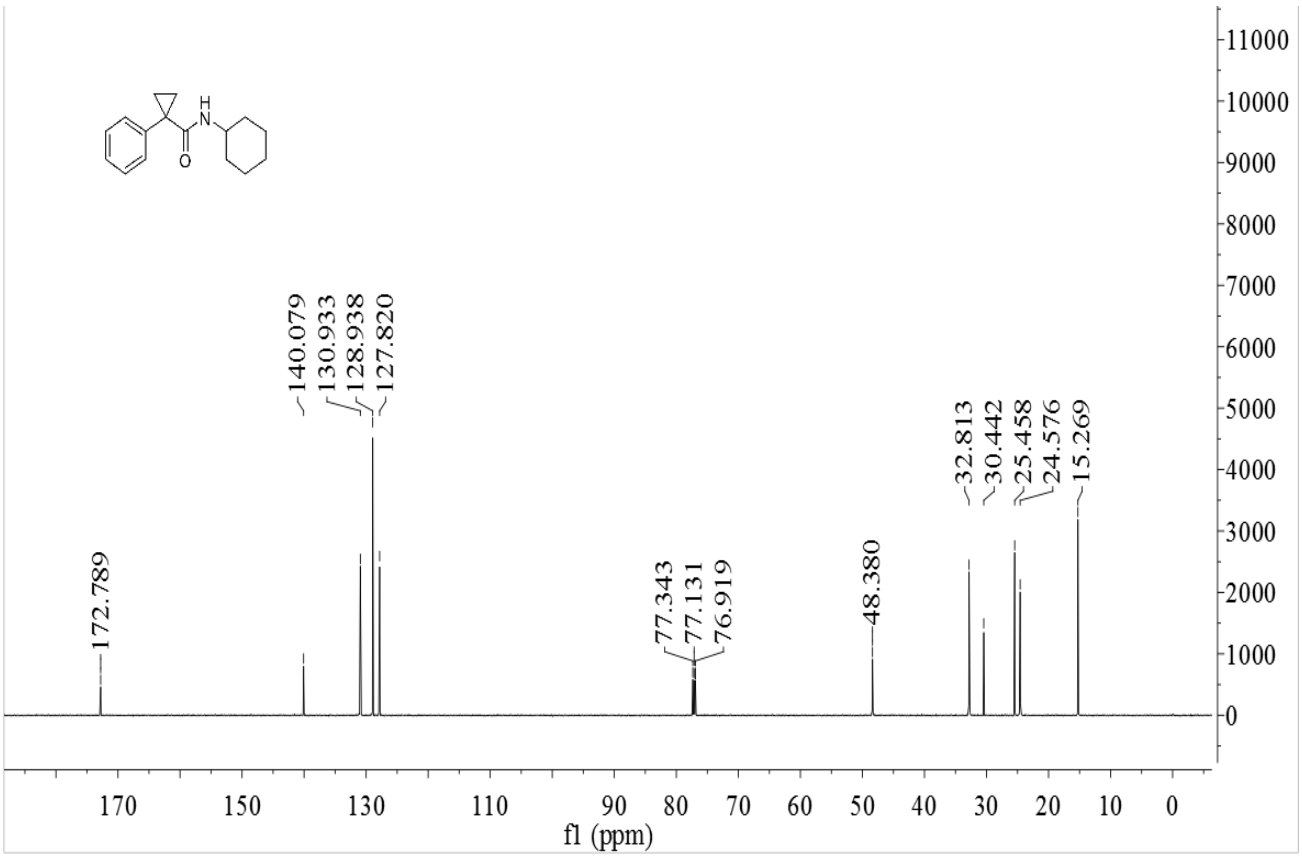
Compound **1l**


7.412
7.399
7.343
7.330
7.318
7.272
7.260
7.248
7.241
7.126
7.113
5.628
4.368
4.358
1.647
1.641
1.636
1.630
1.075
1.069
1.064
1.058
1.96
2.01
2.18
1.08
0.96
1.92
0.94
2.02
2.03
2.00
f1 (ppm)

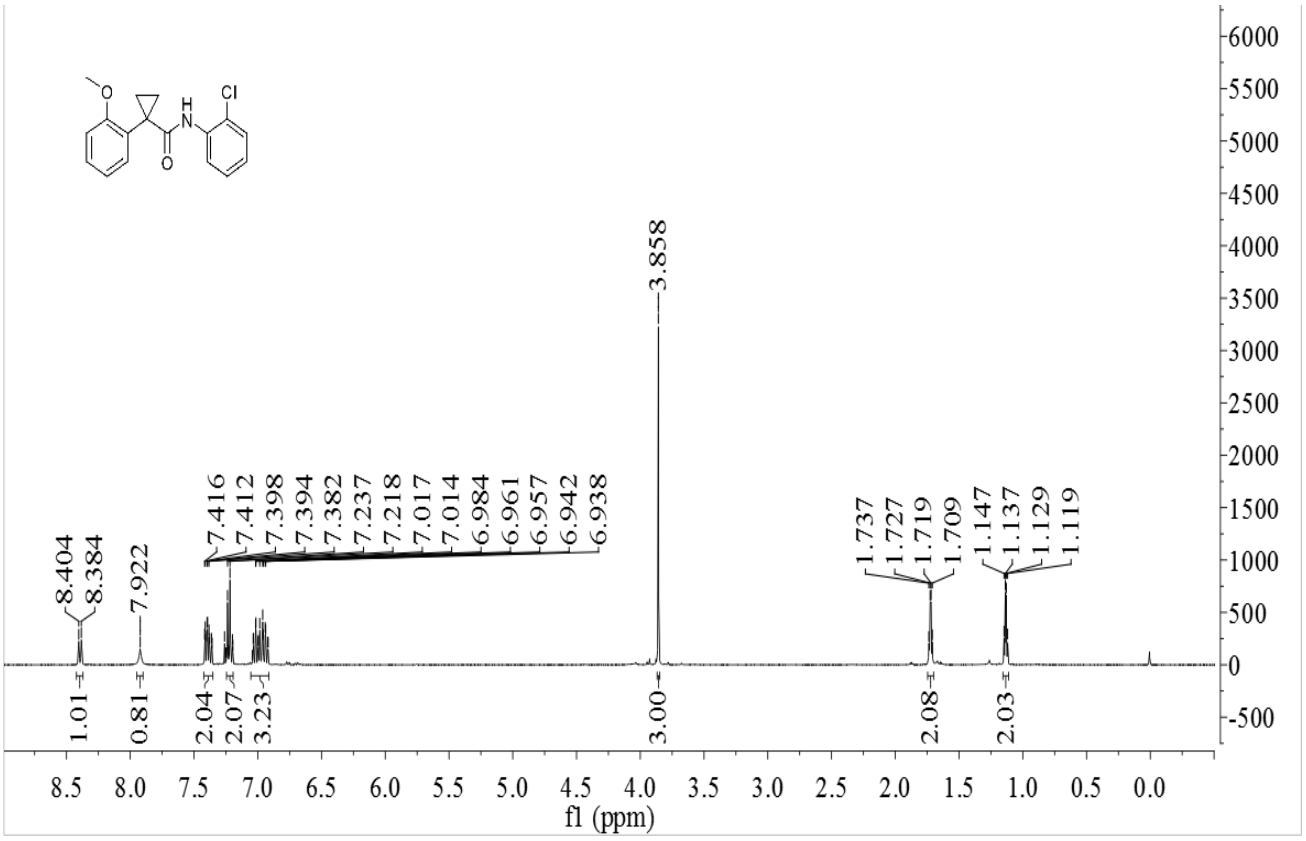

173.912
139.706
138.472
131.046
129.051
128.551
127.967
127.187
127.110
77.212
77.000
76.789
43.840
30.473
15.624
f1 (ppm)

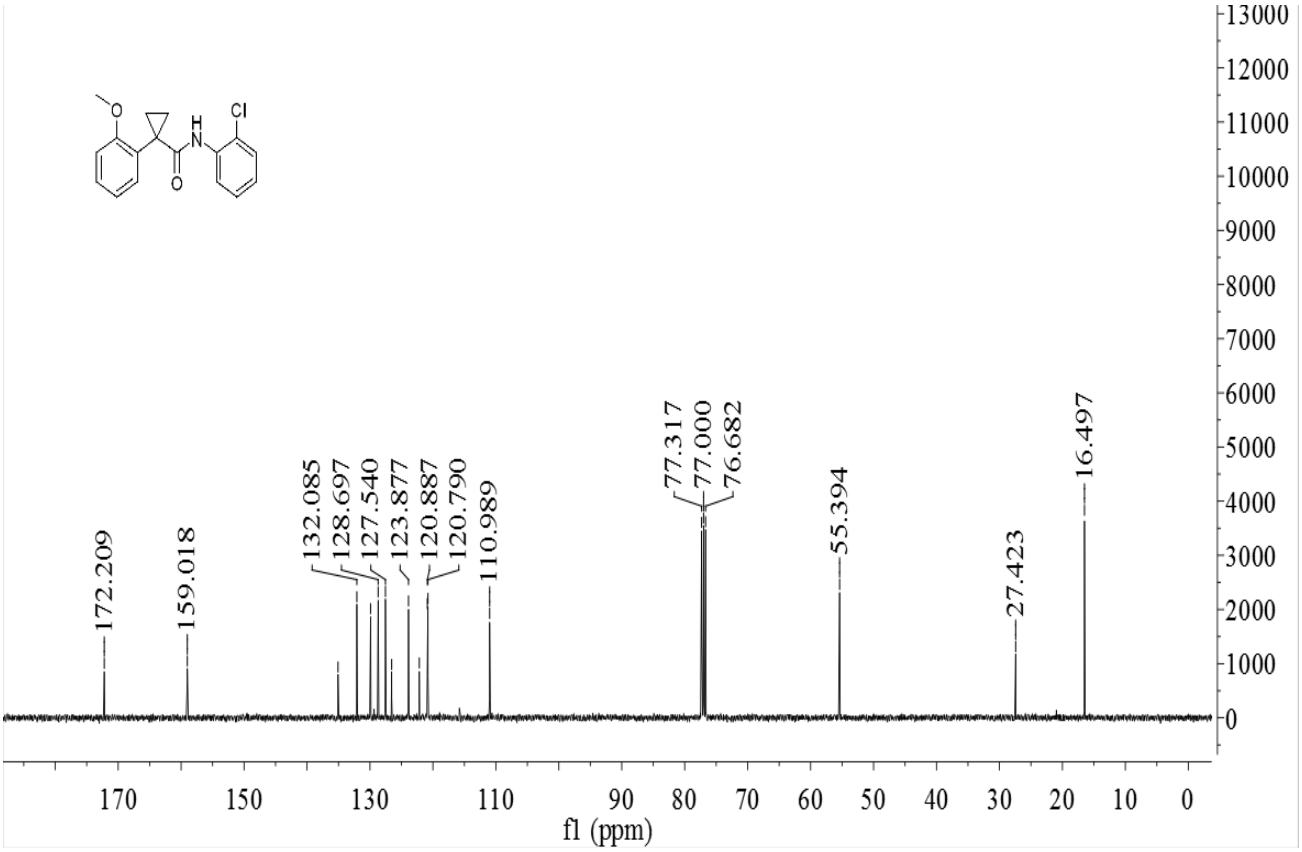
Compound **1m**


7.36
7.33
7.33
7.32
7.28
7.27
7.26
5.13
5.12
3.68
3.68
3.67
1.74
1.72
1.55
1.55
1.49
1.27
1.25
1.05
1.03
1.01
0.98
0.98
0.94
0.92
0.90
0.88
3.93
0.90
0.89
0.98
2.02
1.97
3.00
2.06
0.92
2.01
2.00
fl (ppm)

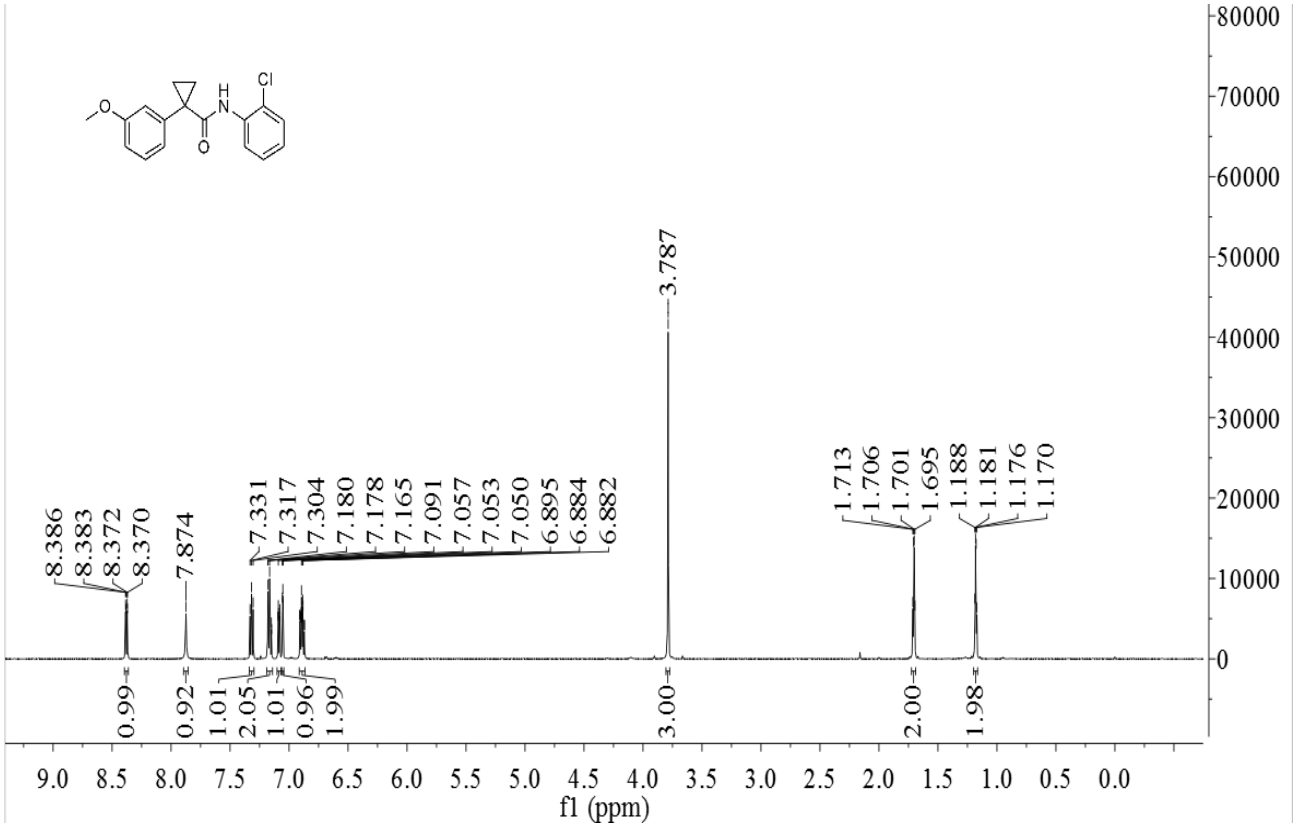

172.789
140.079
130.933
128.938
127.820
77.343
77.131
76.919
48.380
32.813
30.442
25.458
24.576
15.269
fl (ppm)

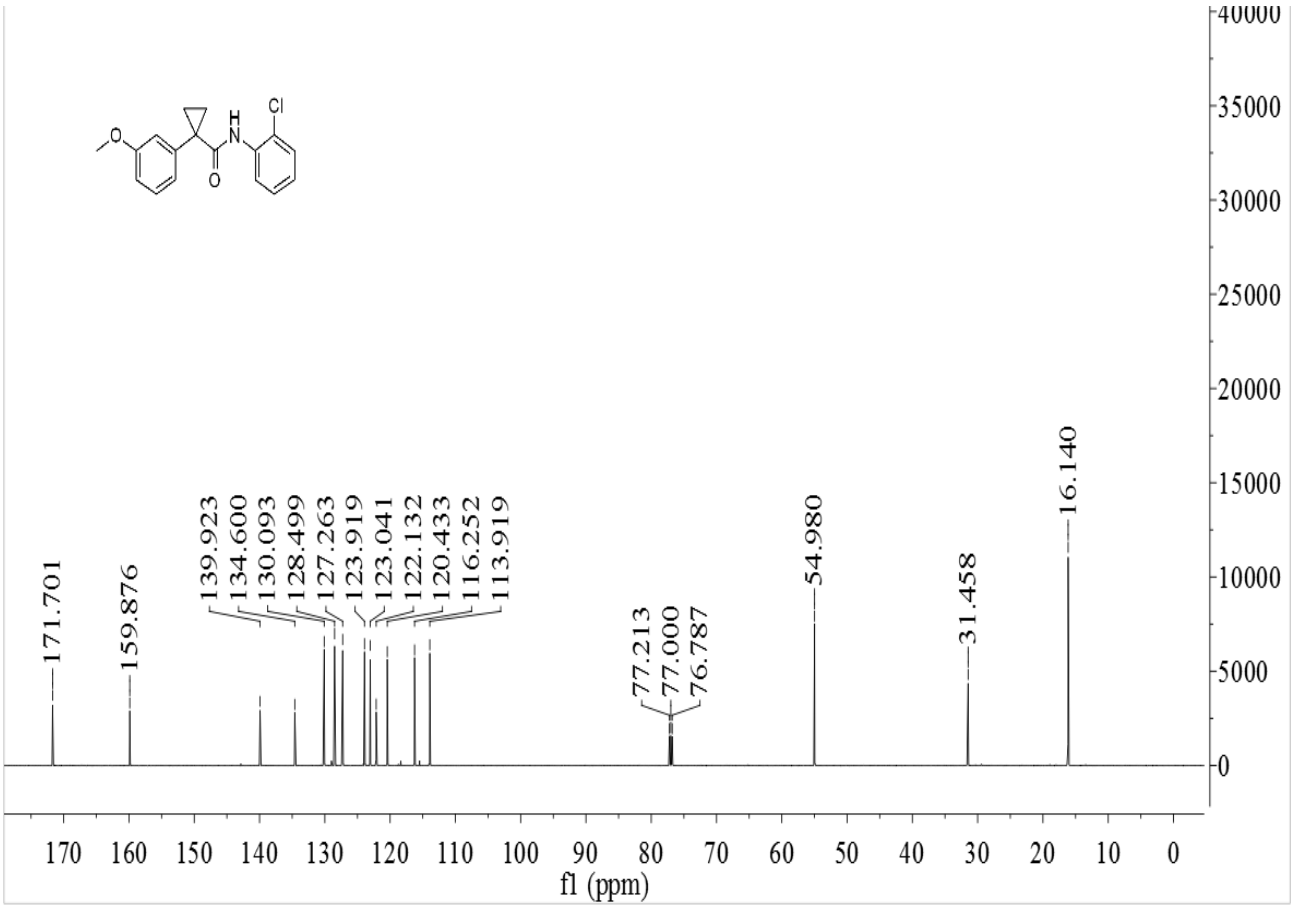
Compound **1n**


8.404
8.384
7.922
7.416
7.412
7.398
7.394
7.382
7.237
7.218
7.017
7.014
6.984
6.961
6.957
6.942
6.938
3.858
1.737
1.727
1.719
1.709
1.147
1.137
1.129
1.119
1.01
0.81
2.04
2.07
3.23
3.00
2.08
2.03
f1 (ppm)

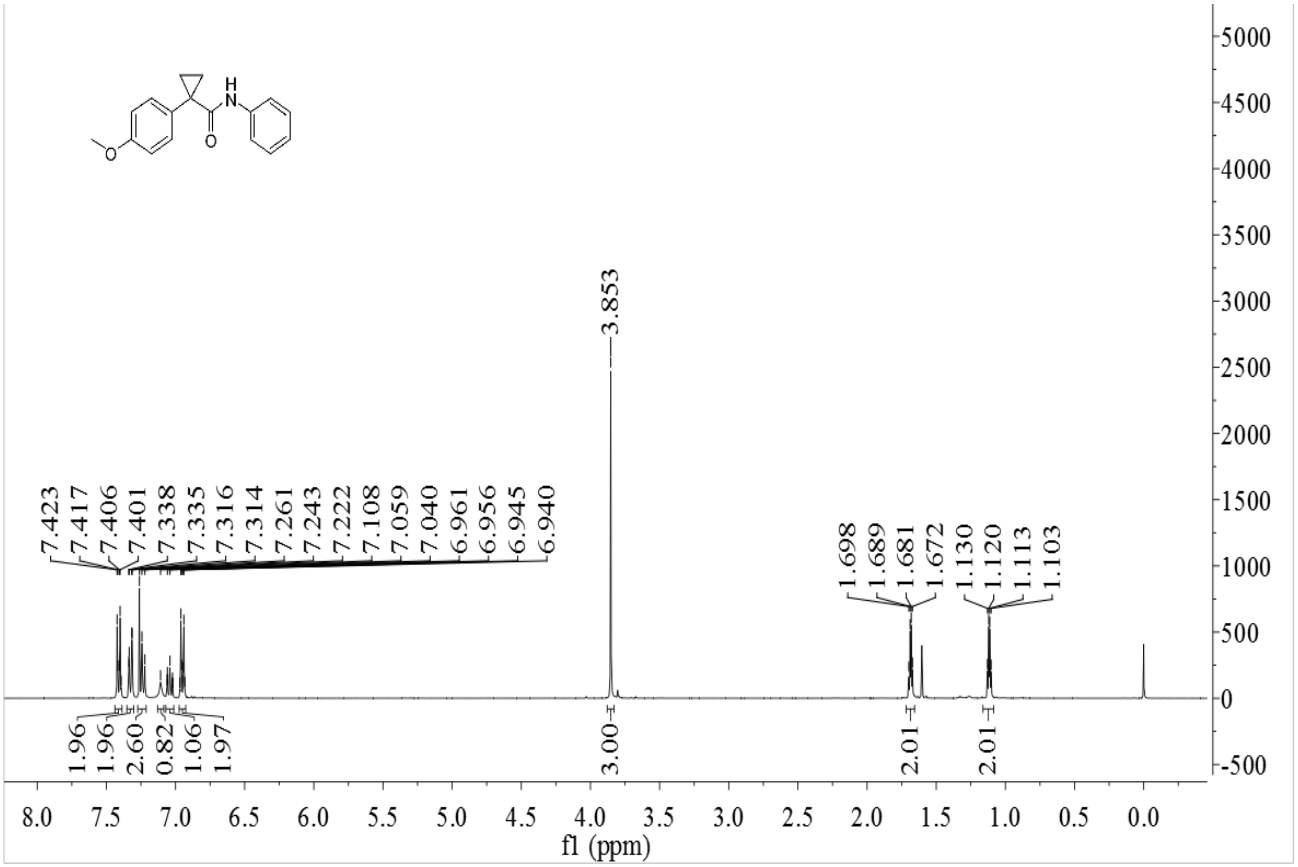

172.209
159.018
132.085
128.697
127.540
123.877
120.887
120.790
110.989
77.317
77.000
76.682
55.394
27.423
16.497
f1 (ppm)

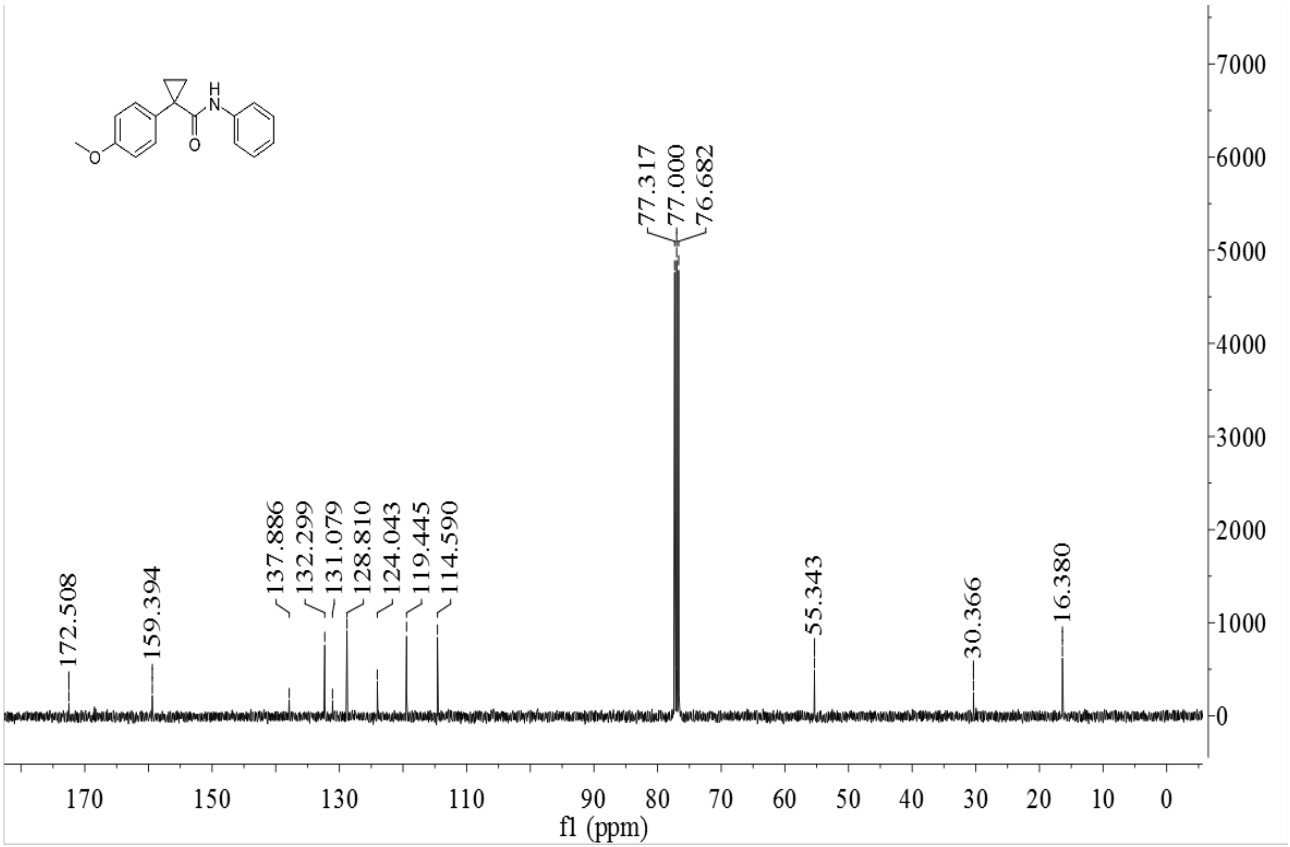
Compound **1o**


8.386
8.383
8.372
8.370
7.874
7.331
7.317
7.304
7.180
7.178
7.165
7.091
7.057
7.053
7.050
6.895
6.884
6.882
3.787
1.713
1.706
1.701
1.695
1.188
1.181
1.176
1.170
0.99
0.92
1.01
2.05
1.01
0.96
1.99
3.00
2.00
1.98
f1 (ppm)

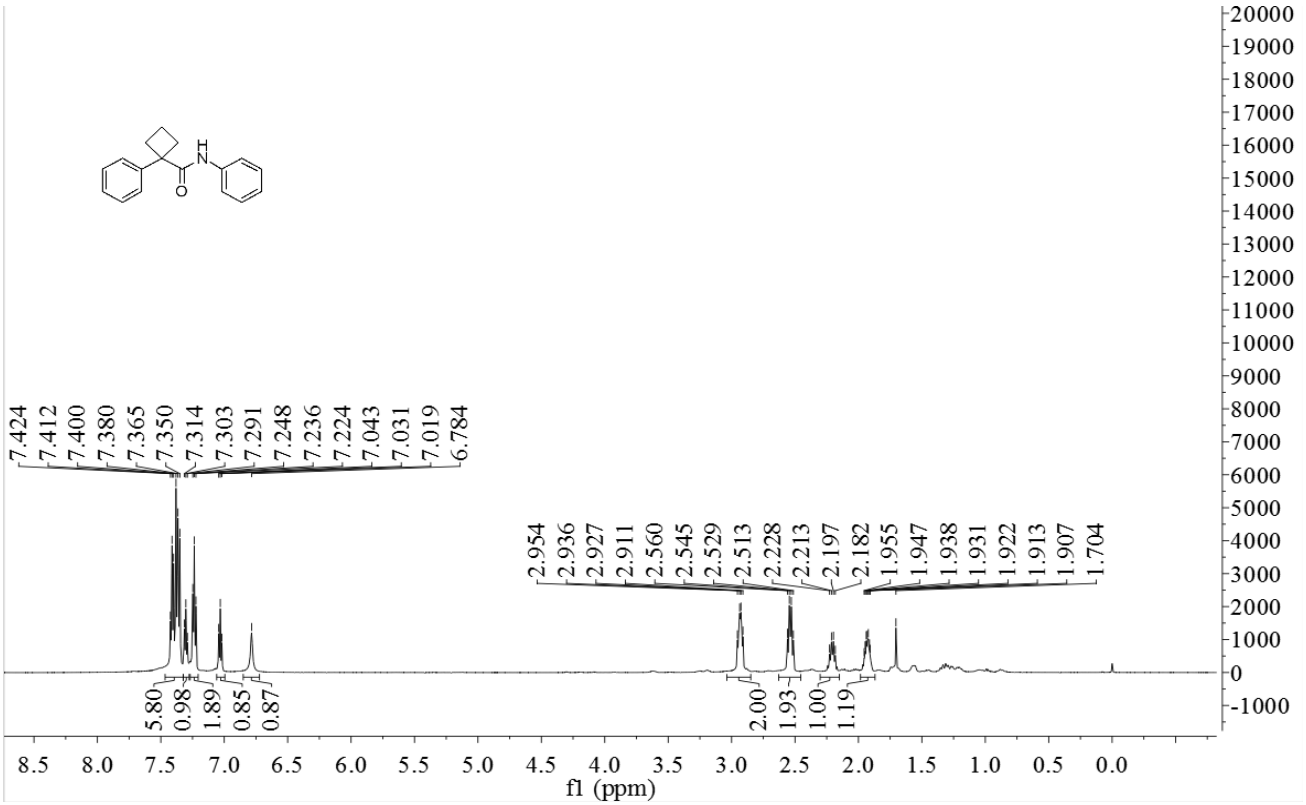

171.701
159.876
139.923
134.600
130.093
128.499
127.263
123.919
123.041
122.132
120.433
116.252
113.919
77.213
77.000
76.787
54.980
31.458
16.140
f1 (ppm)

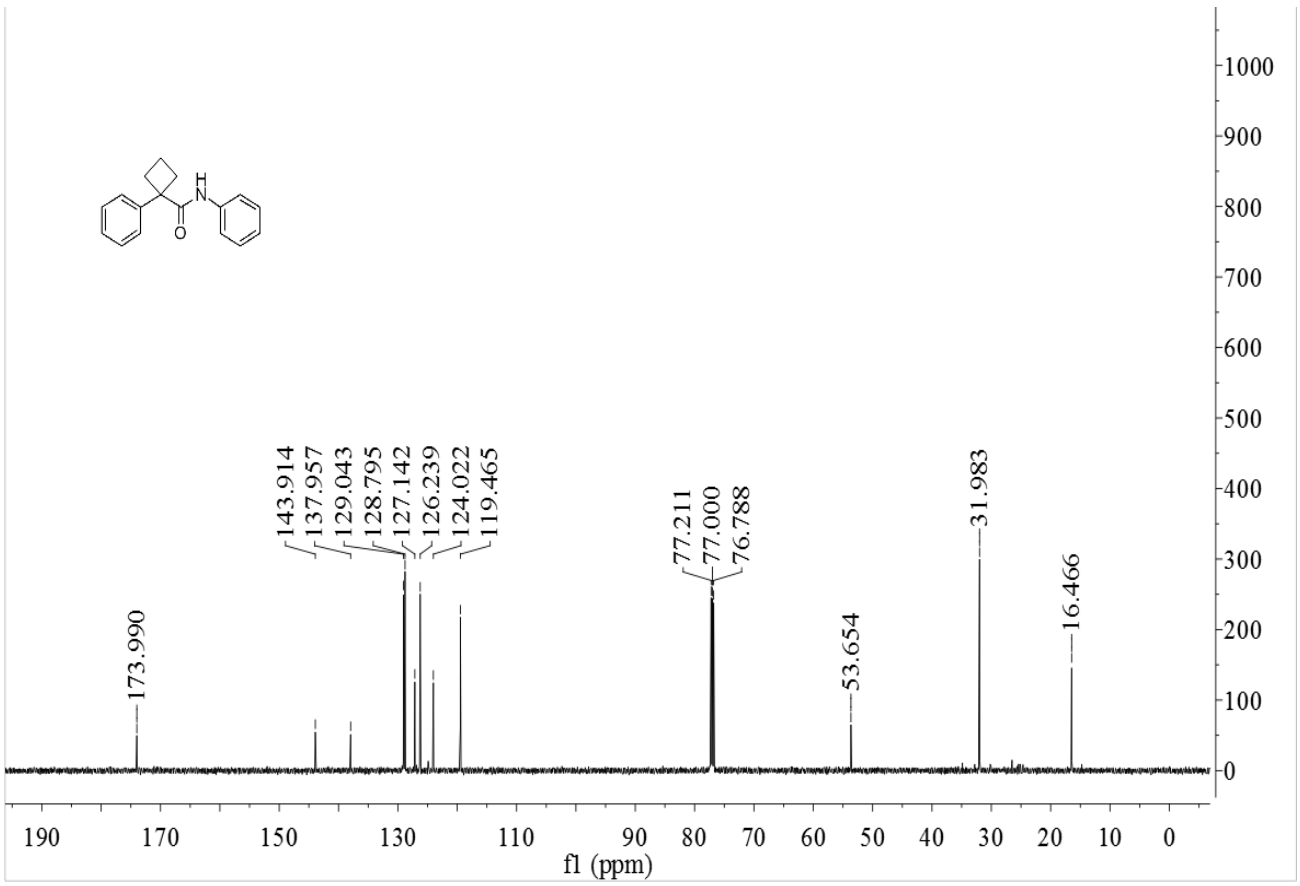
Compound **1p**


7.423
7.417
7.406
7.401
7.338
7.335
7.316
7.314
7.261
7.243
7.222
7.108
7.059
7.040
6.961
6.956
6.945
6.940
3.853
1.698
1.689
1.681
1.672
1.130
1.120
1.113
1.103
1.96
1.96
2.60
0.82
1.06
1.97
3.00
2.01
2.01
fl (ppm)

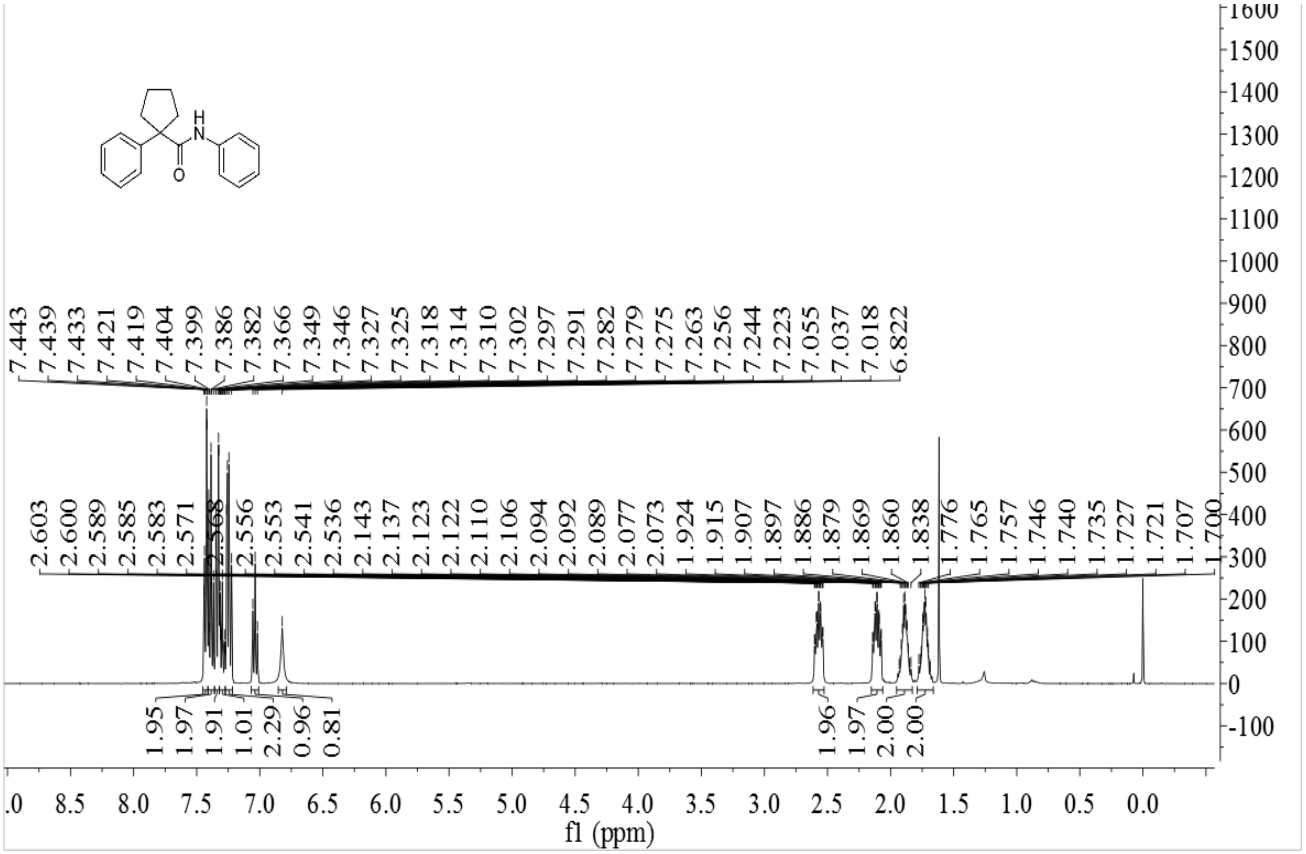

77.317
77.000
76.682
172.508
159.394
137.886
132.299
131.079
128.810
124.043
119.445
114.590
55.343
30.366
16.380
fl (ppm)

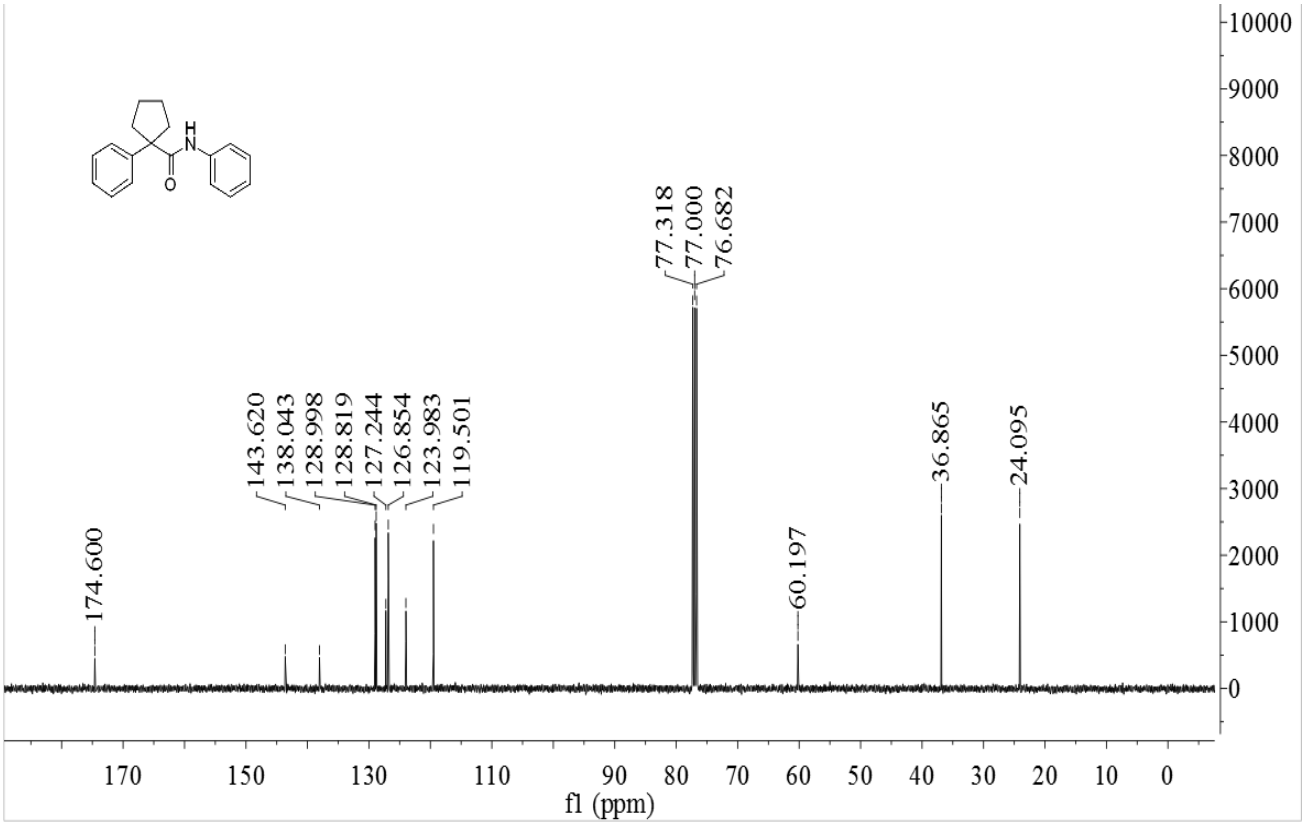
Compound **1q**


7.424
7.412
7.400
7.380
7.365
7.350
7.314
7.303
7.291
7.248
7.236
7.224
7.043
7.031
7.019
6.784
2.954
2.936
2.927
2.911
2.560
2.545
2.529
2.513
2.228
2.213
2.197
2.182
1.955
1.947
1.938
1.931
1.922
1.913
1.907
1.704
5.80
0.98
1.89
0.85
0.87
2.00
1.93
1.00
1.19
f1 (ppm)

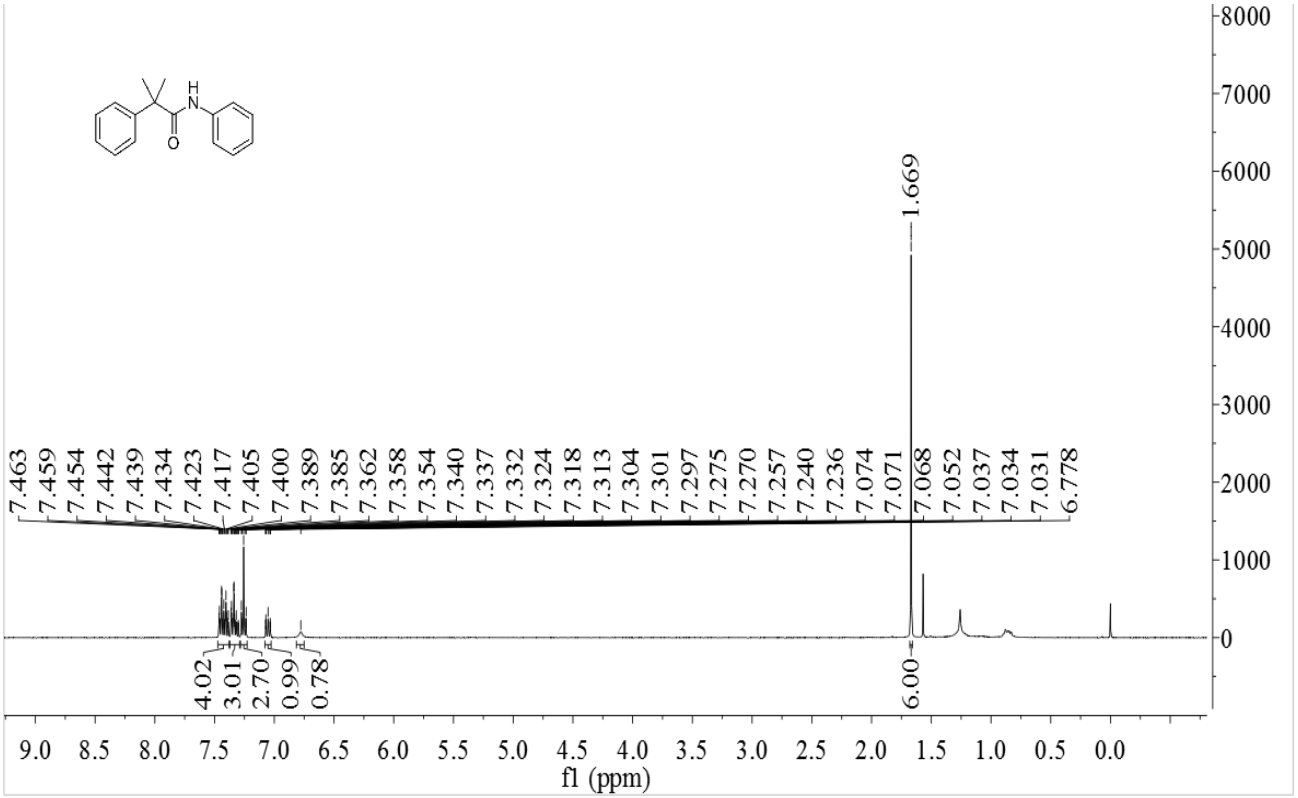

143.914
137.957
129.043
128.795
127.142
126.239
124.022
119.465
77.211
77.000
76.788
173.990
53.654
31.983
16.466
f1 (ppm)

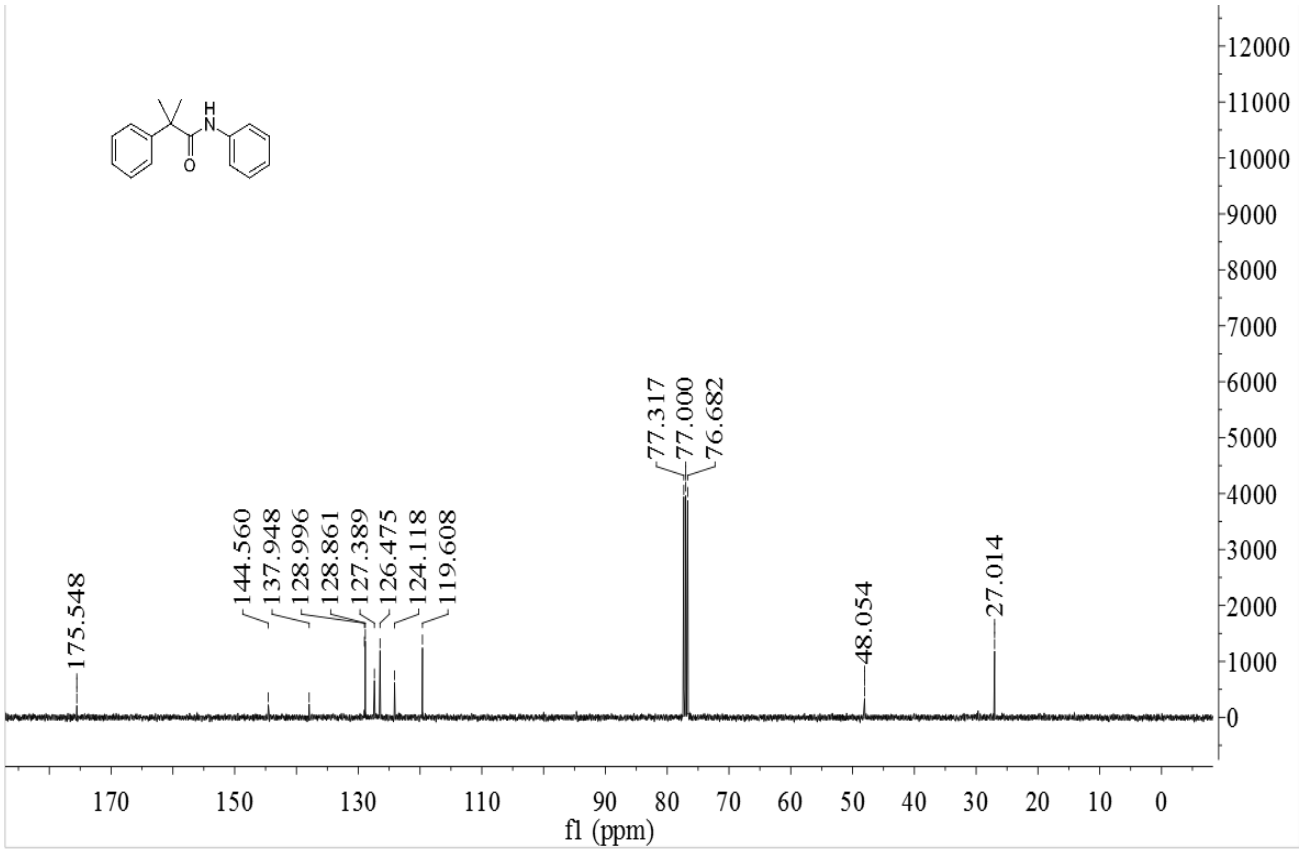
Compound **1r**


7.443
7.439
7.433
7.421
7.419
7.404
7.399
7.386
7.382
7.366
7.349
7.346
7.327
7.325
7.318
7.314
7.310
7.302
7.297
7.291
7.282
7.279
7.275
7.263
7.256
7.244
7.223
7.055
7.037
7.018
6.822
2.603
2.600
2.589
2.585
2.583
2.571
2.556
2.553
2.541
2.536
2.143
2.137
2.123
2.122
2.110
2.106
2.094
2.092
2.089
2.077
2.073
1.924
1.915
1.907
1.897
1.886
1.879
1.869
1.860
1.838
1.776
1.765
1.757
1.746
1.740
1.735
1.727
1.721
1.707
1.700
1.95
1.97
1.91
1.01
2.29
0.96
0.81
1.96
1.97
2.00
2.00
f1 (ppm)

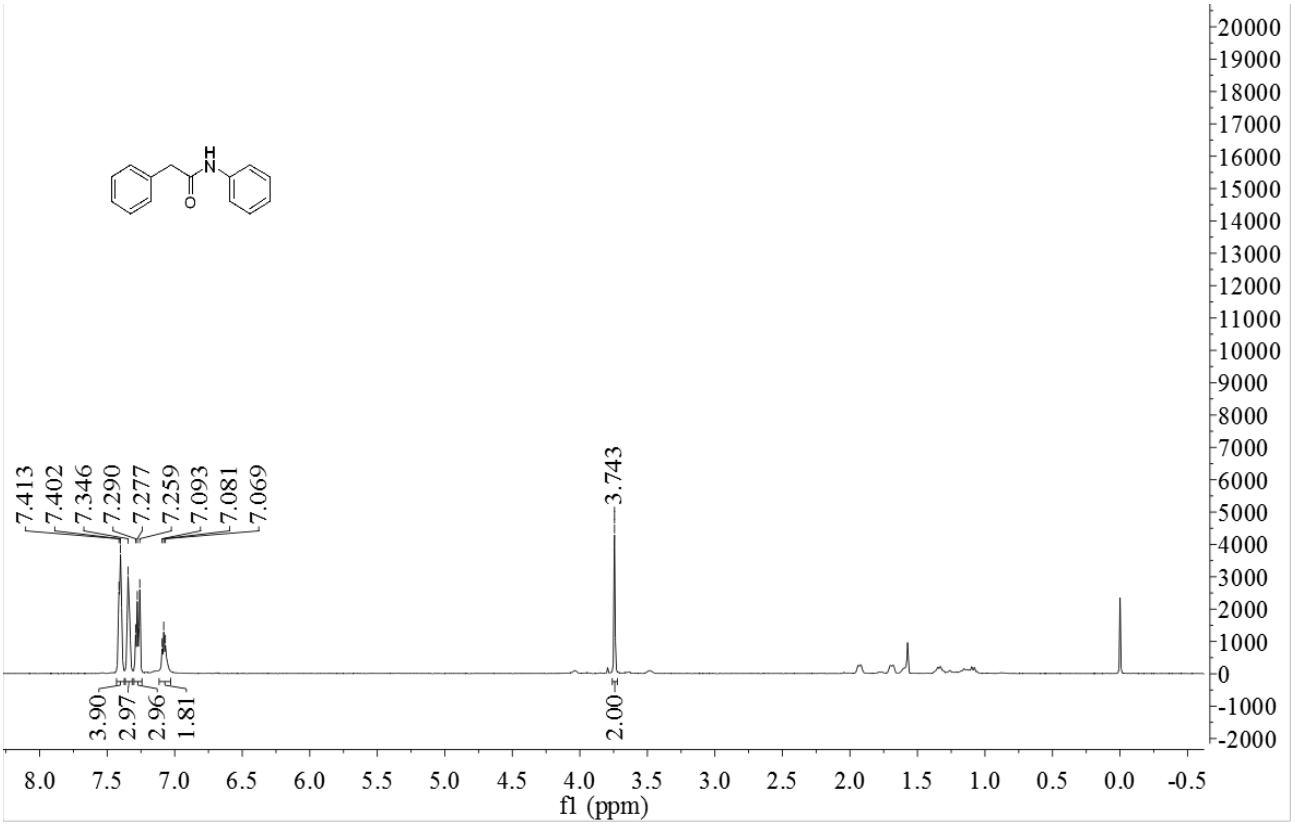

174.600
143.620
138.043
128.998
128.819
127.244
126.854
123.983
119.501
77.318
77.000
76.682
60.197
36.865
24.095
f1 (ppm)

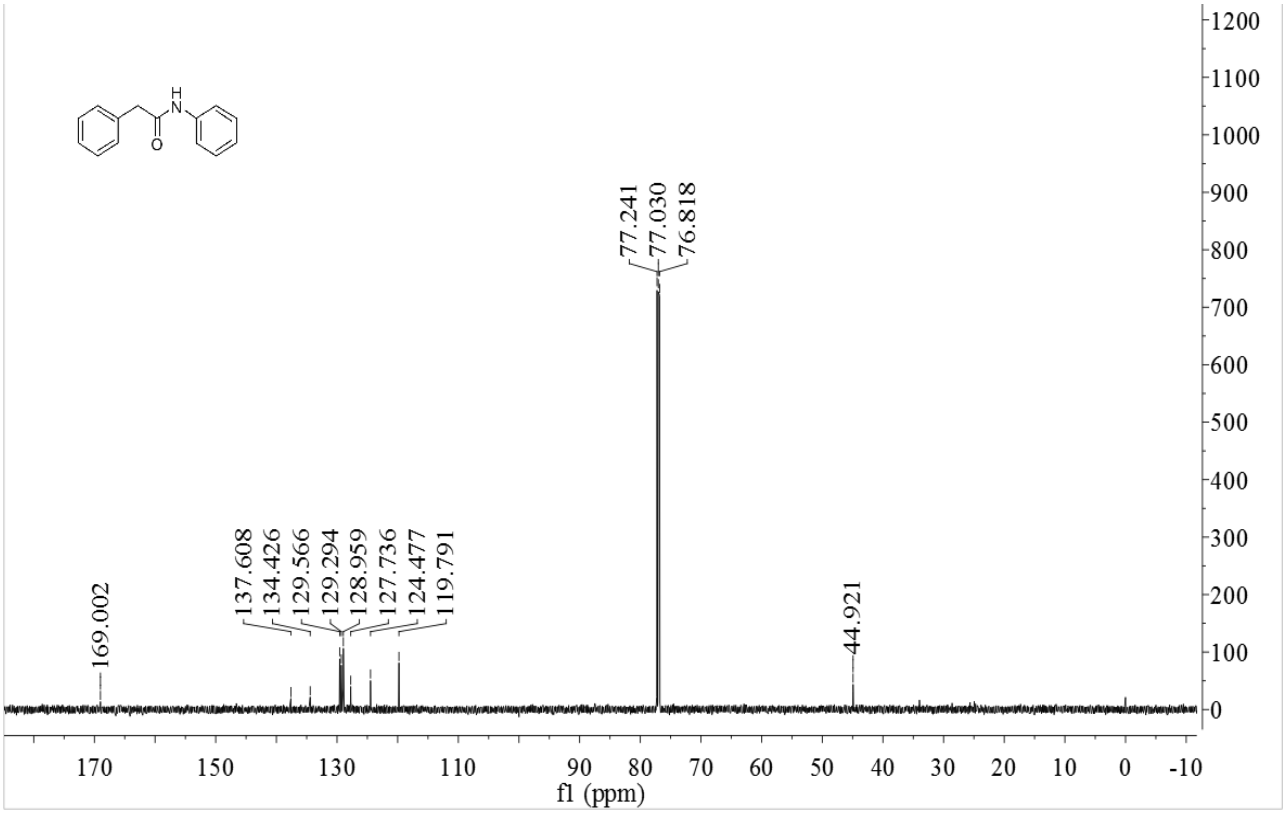
Compound **1s**


7.463
7.459
7.454
7.442
7.439
7.434
7.423
7.417
7.405
7.400
7.389
7.385
7.362
7.358
7.354
7.340
7.337
7.332
7.324
7.318
7.313
7.304
7.301
7.297
7.275
7.270
7.257
7.240
7.236
7.074
7.071
7.068
7.052
7.037
7.034
7.031
6.778
1.669
4.02
3.01
2.70
0.99
0.78
6.00
fl (ppm)

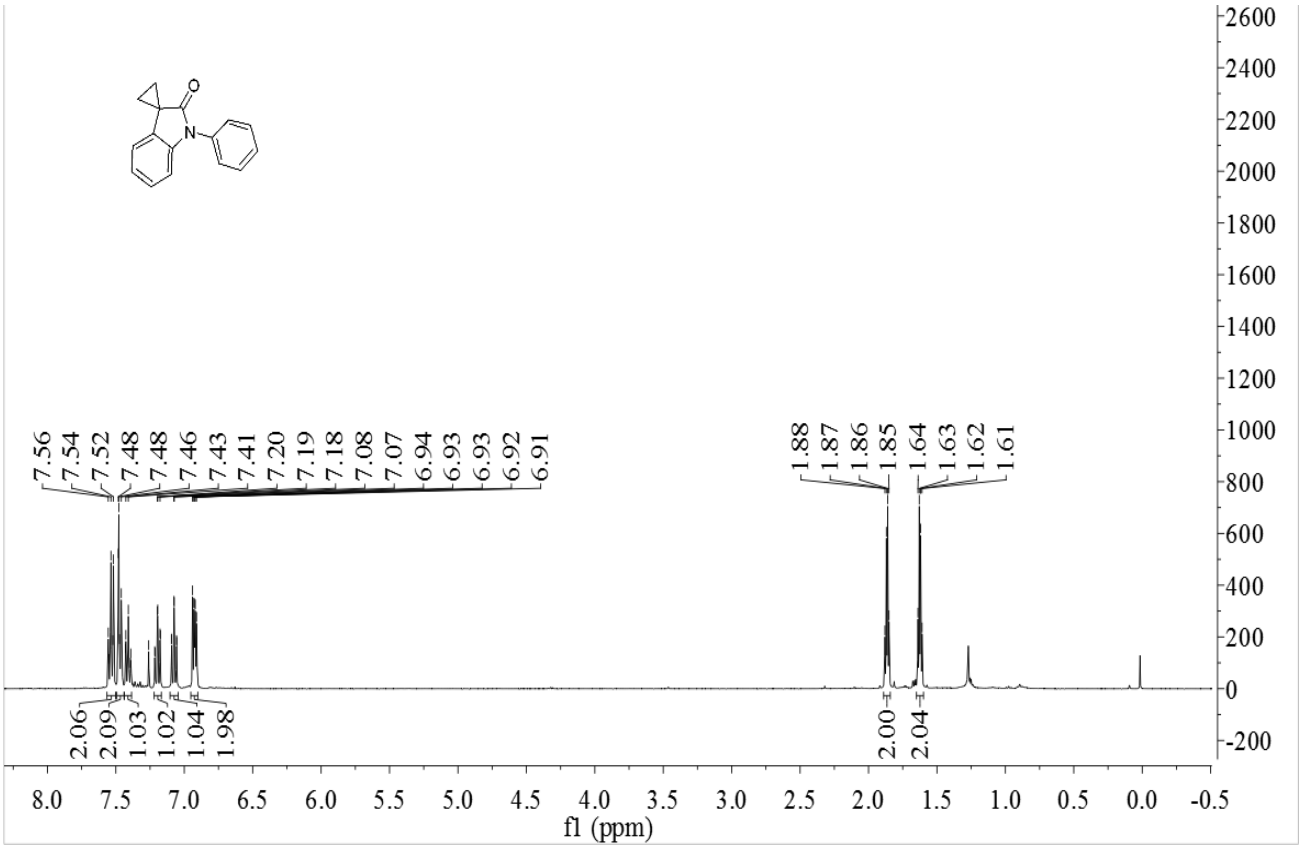

175.548
144.560
137.948
128.996
128.861
127.389
126.475
124.118
119.608
77.317
77.000
76.682
48.054
27.014
fl (ppm)

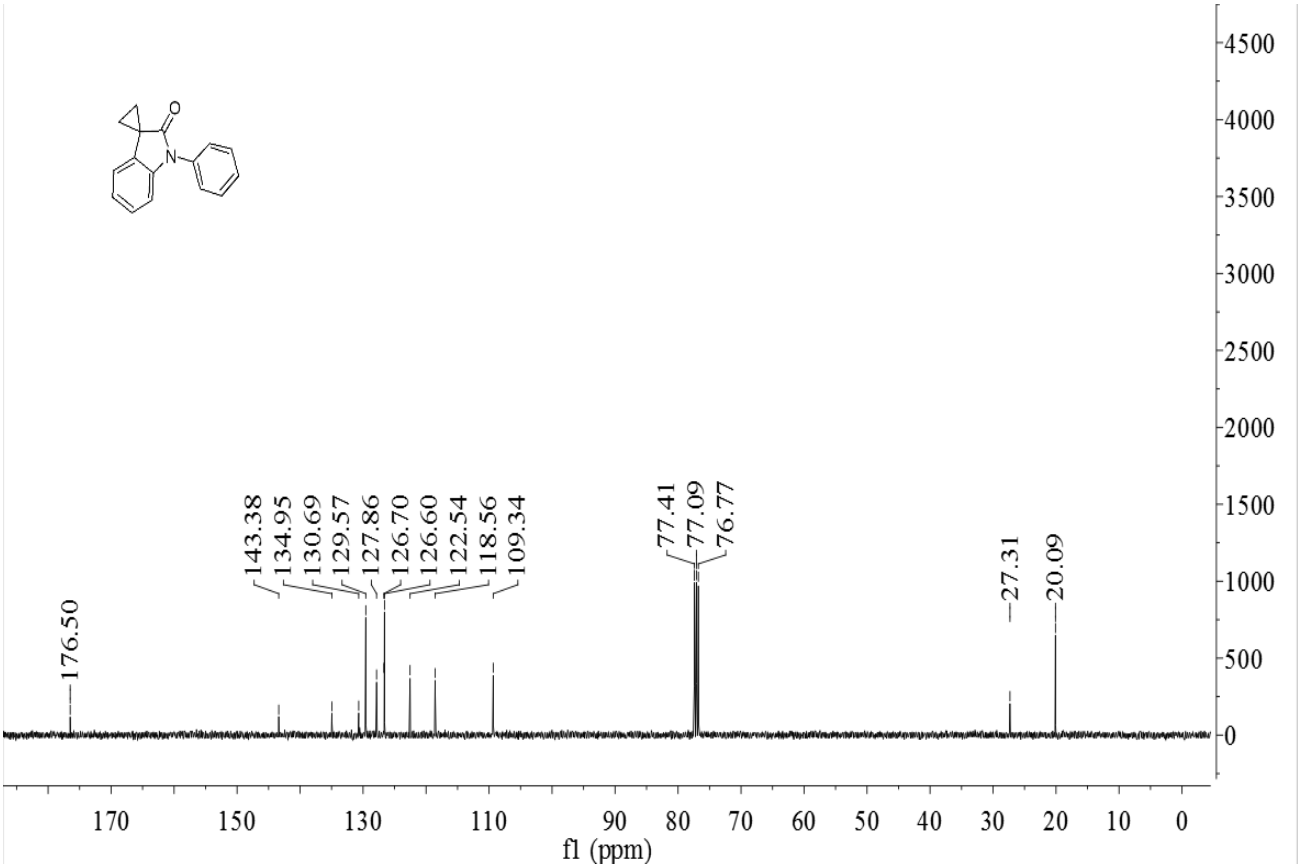
Compound **1t**


7.413
7.402
7.346
7.290
7.277
7.259
7.093
7.081
7.069
3.743
3.90
2.97
2.96
1.81
2.00
f1 (ppm)

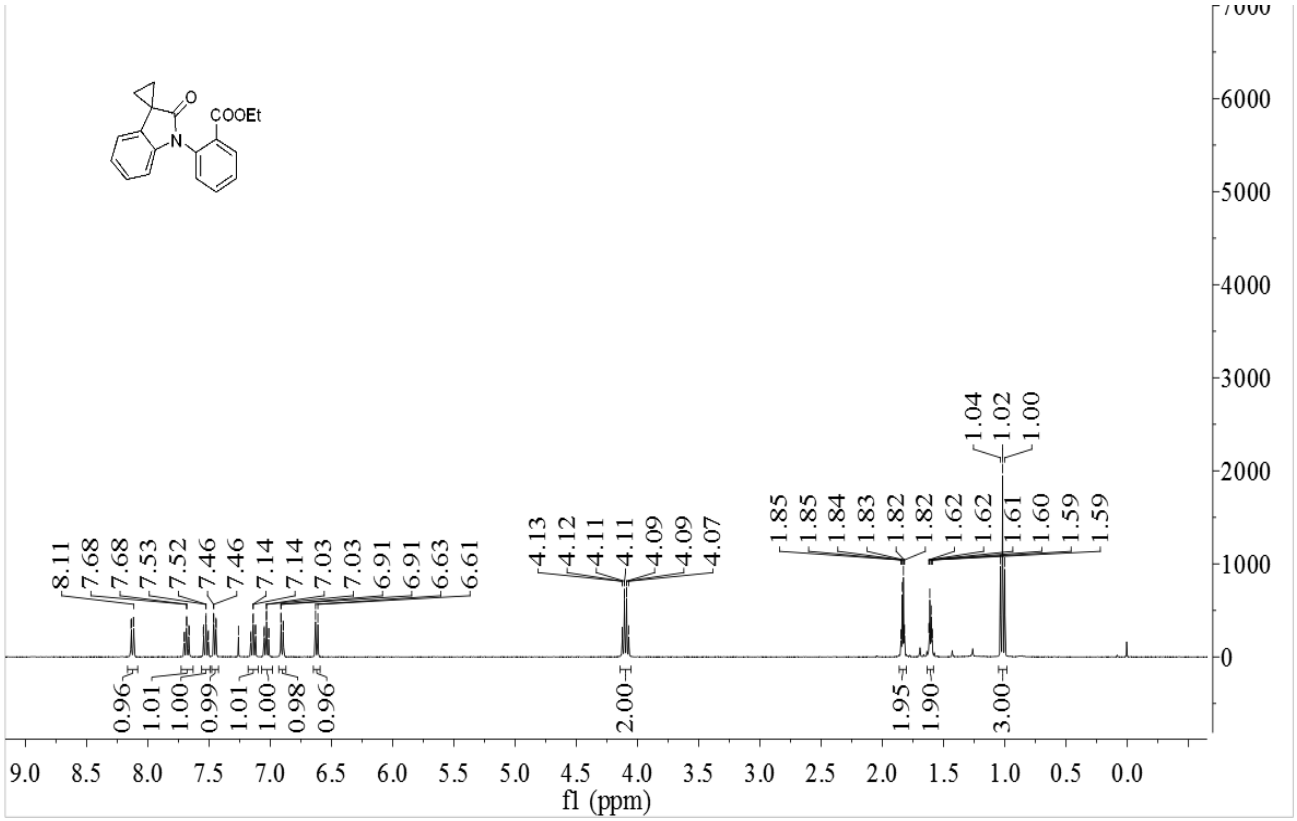

77.241
77.030
76.818
169.002
137.608
134.426
129.566
129.294
128.959
127.736
124.477
119.791
44.921
f1 (ppm)

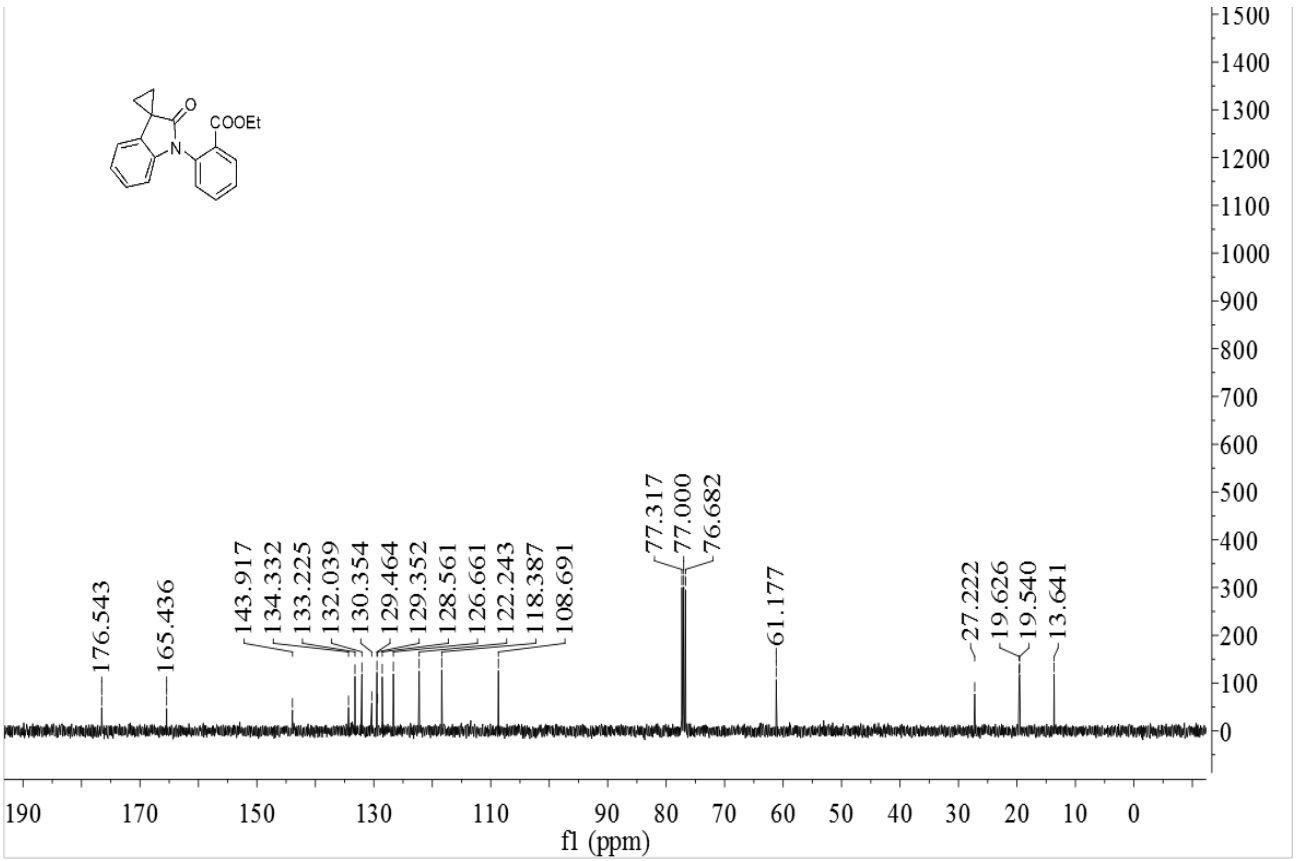
Compound **2a**


7.56
7.54
7.52
7.48
7.48
7.46
7.43
7.41
7.20
7.19
7.18
7.08
7.07
6.94
6.93
6.93
6.92
6.91
1.88
1.87
1.86
1.85
1.64
1.63
1.62
1.61
2.06
2.09
1.03
1.02
1.04
1.98
2.00
2.04
f1 (ppm)

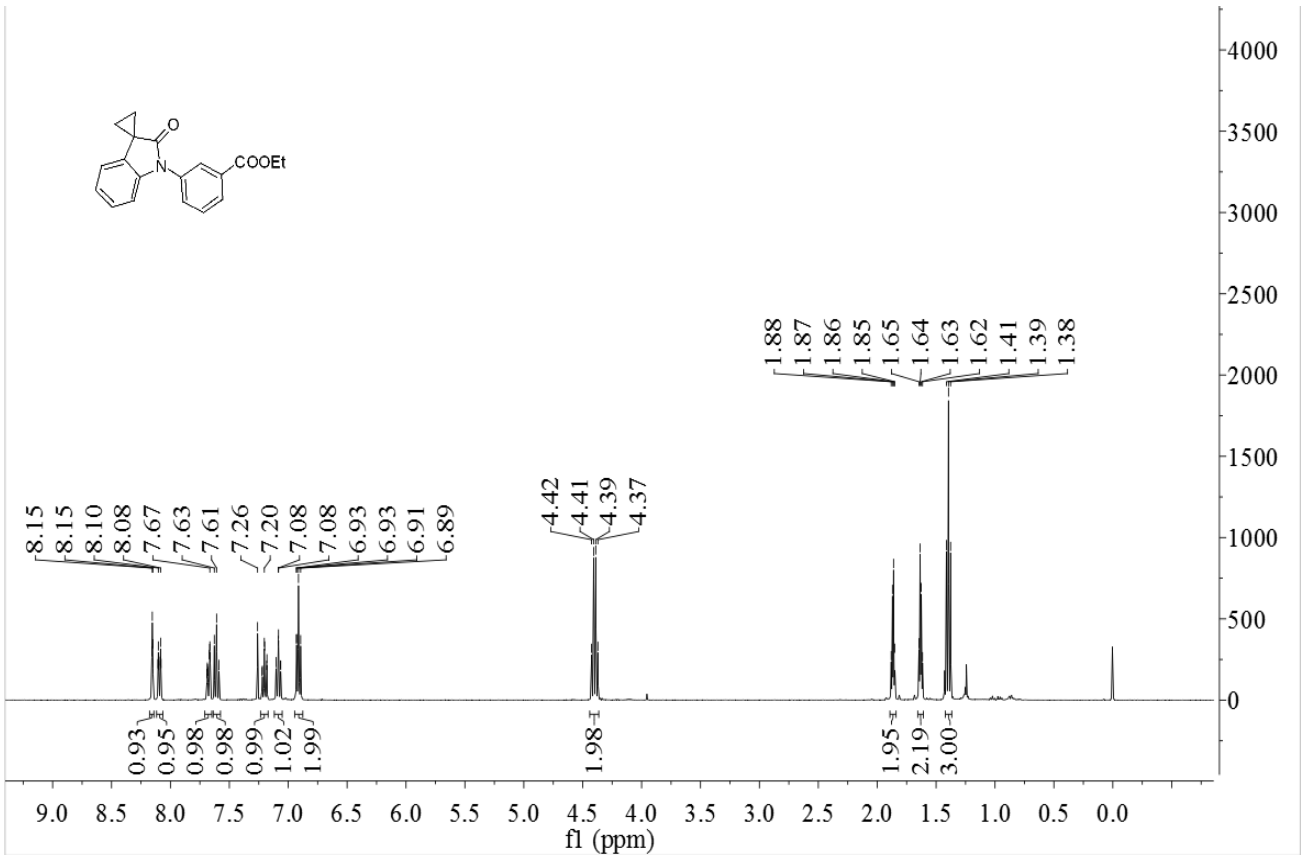

176.50
143.38
134.95
130.69
129.57
127.86
126.70
126.60
122.54
118.56
109.34
77.41
77.09
76.77
27.31
20.09
f1 (ppm)

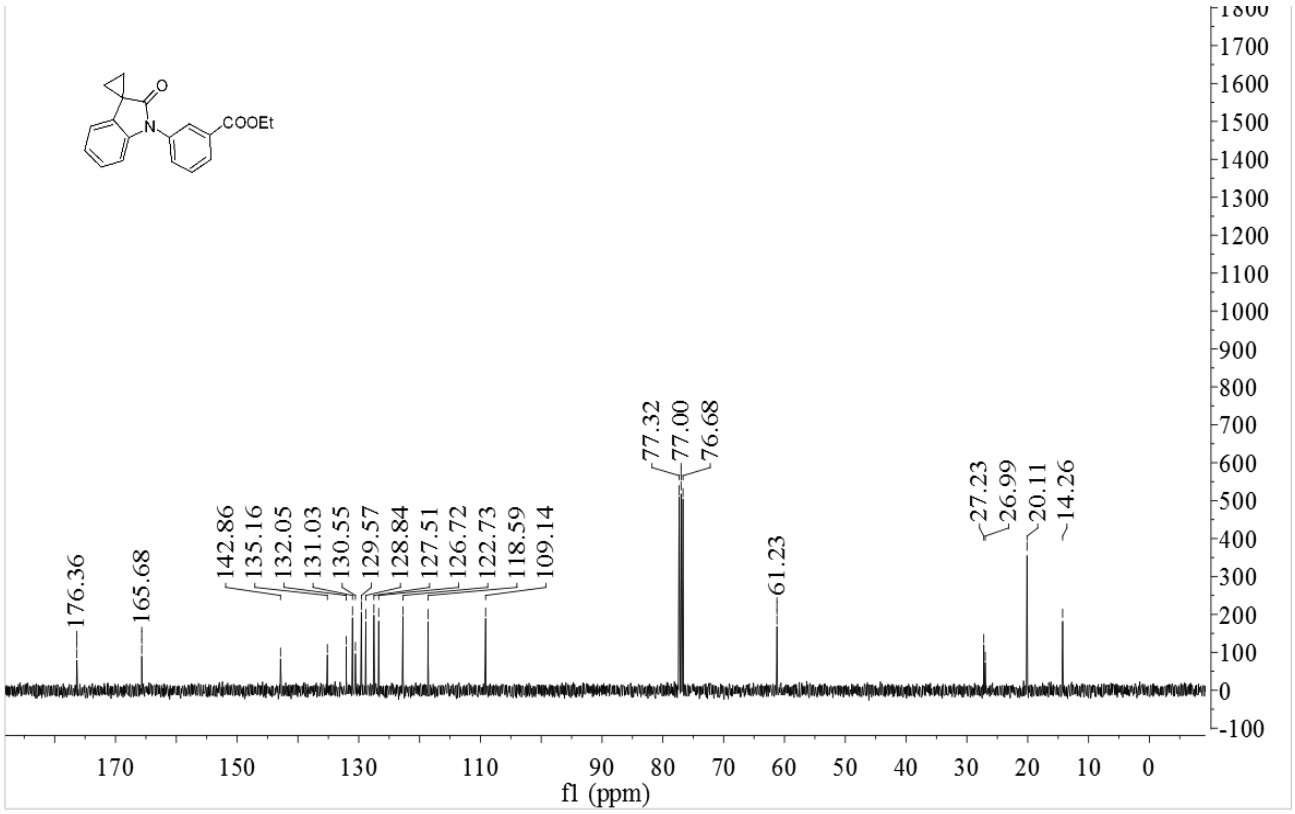
Compound **2b**


COOEt
8.11
7.68
7.68
7.53
7.52
7.46
7.46
7.14
7.14
7.03
7.03
6.91
6.91
6.63
6.61
4.13
4.12
4.11
4.11
4.09
4.09
4.07
1.85
1.85
1.84
1.83
1.82
1.82
1.62
1.62
1.61
1.60
1.59
1.59
1.04
1.02
1.00
0.96
1.01
1.00
0.99
1.01
1.00
0.98
0.96
2.00
1.95
1.90
3.00
fl (ppm)

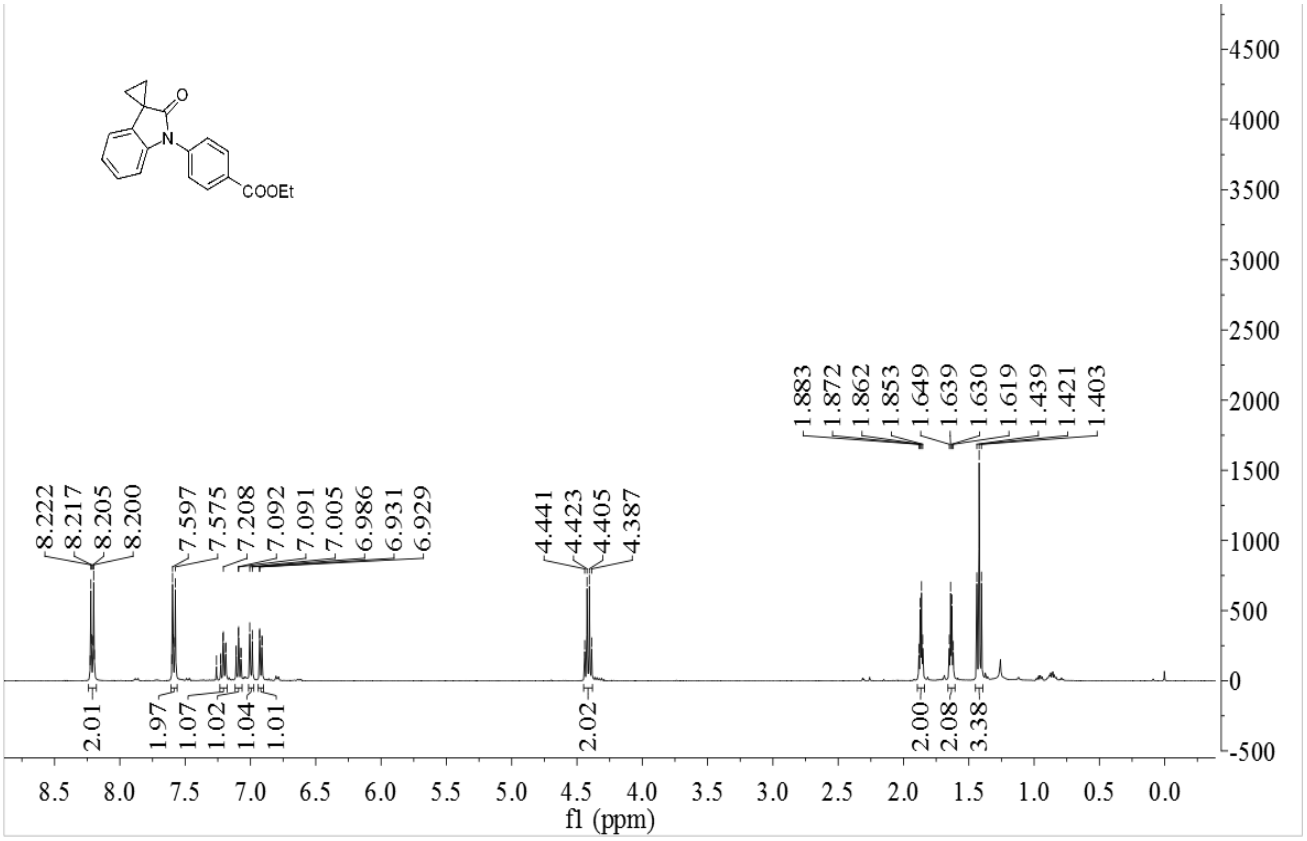

COOEt
176.543
165.436
143.917
134.332
133.225
132.039
130.354
129.464
129.352
128.561
126.661
122.243
118.387
108.691
77.317
77.000
76.682
61.177
27.222
19.626
19.540
13.641
fl (ppm)

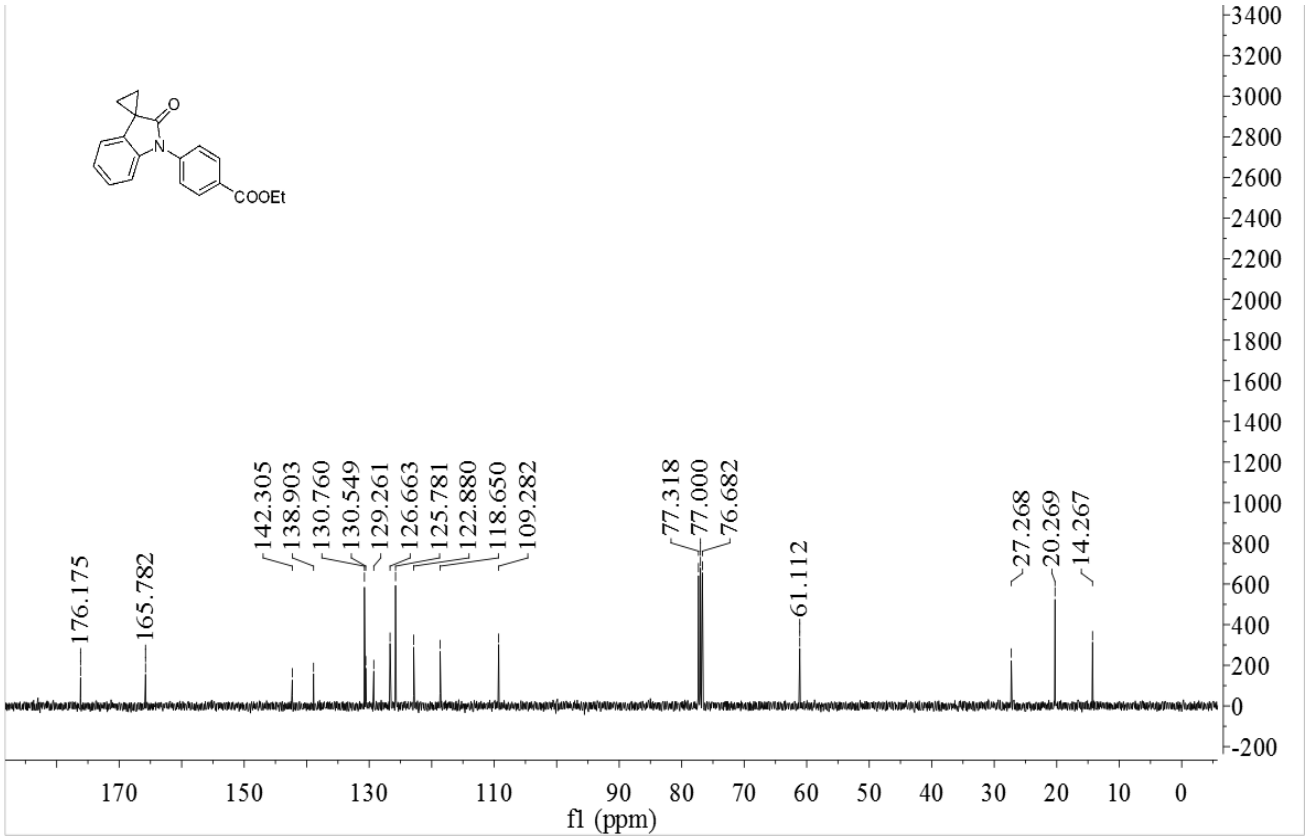
Compound **2c**


COOEt
8.15
8.15
8.10
8.08
7.67
7.63
7.61
7.26
7.20
7.08
7.08
6.93
6.93
6.91
6.89
4.42
4.41
4.39
4.37
1.88
1.87
1.86
1.85
1.65
1.64
1.63
1.62
1.41
1.39
1.38
0.93
0.95
0.98
0.98
0.99
1.02
1.99
1.98
1.95
2.19
3.00
fl (ppm)

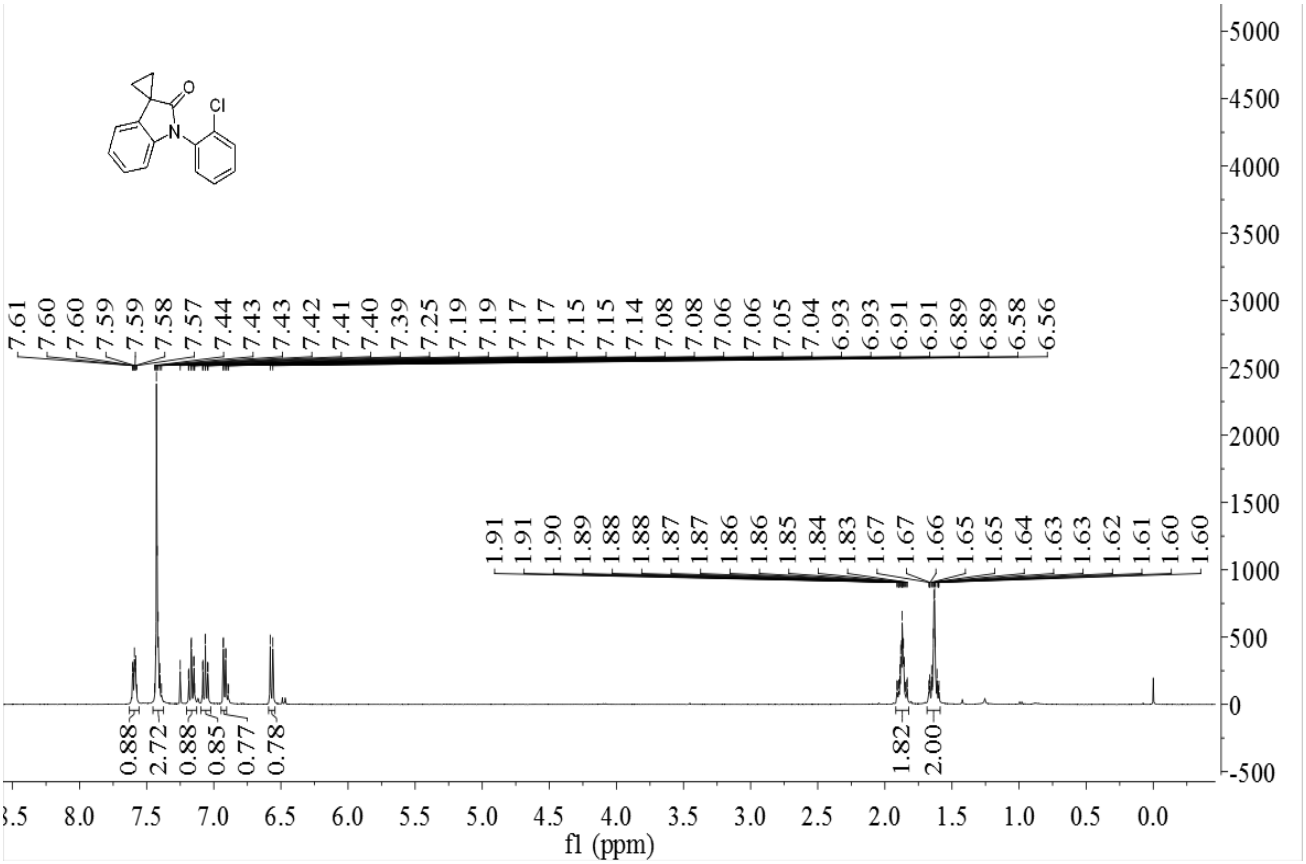

COOEt
176.36
165.68
142.86
135.16
132.05
131.03
130.55
129.57
128.84
127.51
126.72
122.73
118.59
109.14
77.32
77.00
76.68
61.23
27.23
26.99
20.11
14.26
fl (ppm)

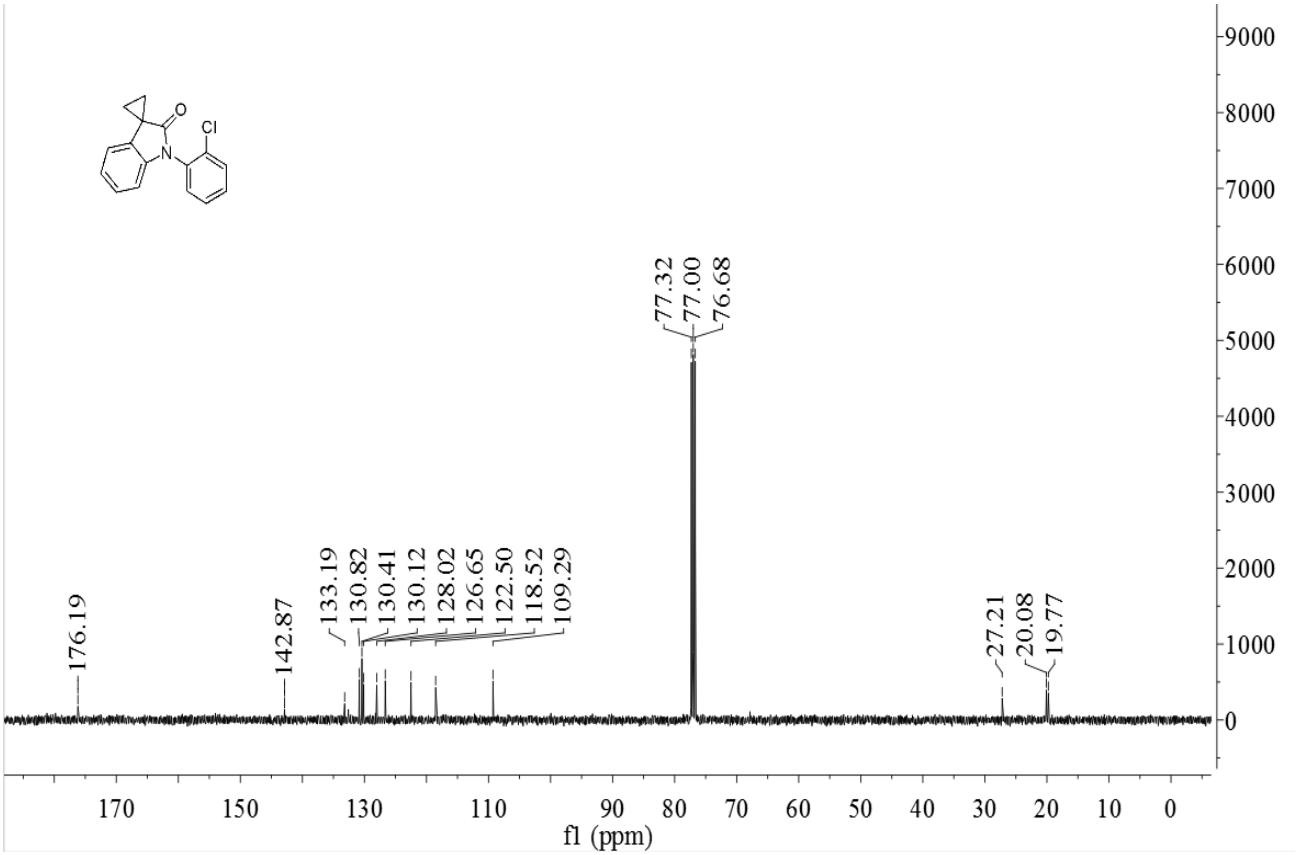
Compound **2d**


COOEt
8.222
8.217
8.205
8.200
7.597
7.575
7.208
7.092
7.091
7.005
6.986
6.931
6.929
4.441
4.423
4.405
4.387
1.883
1.872
1.862
1.853
1.649
1.639
1.630
1.619
1.439
1.421
1.403
2.01
1.97
1.07
1.02
1.04
1.01
2.02
2.00
2.08
3.38
fl (ppm)

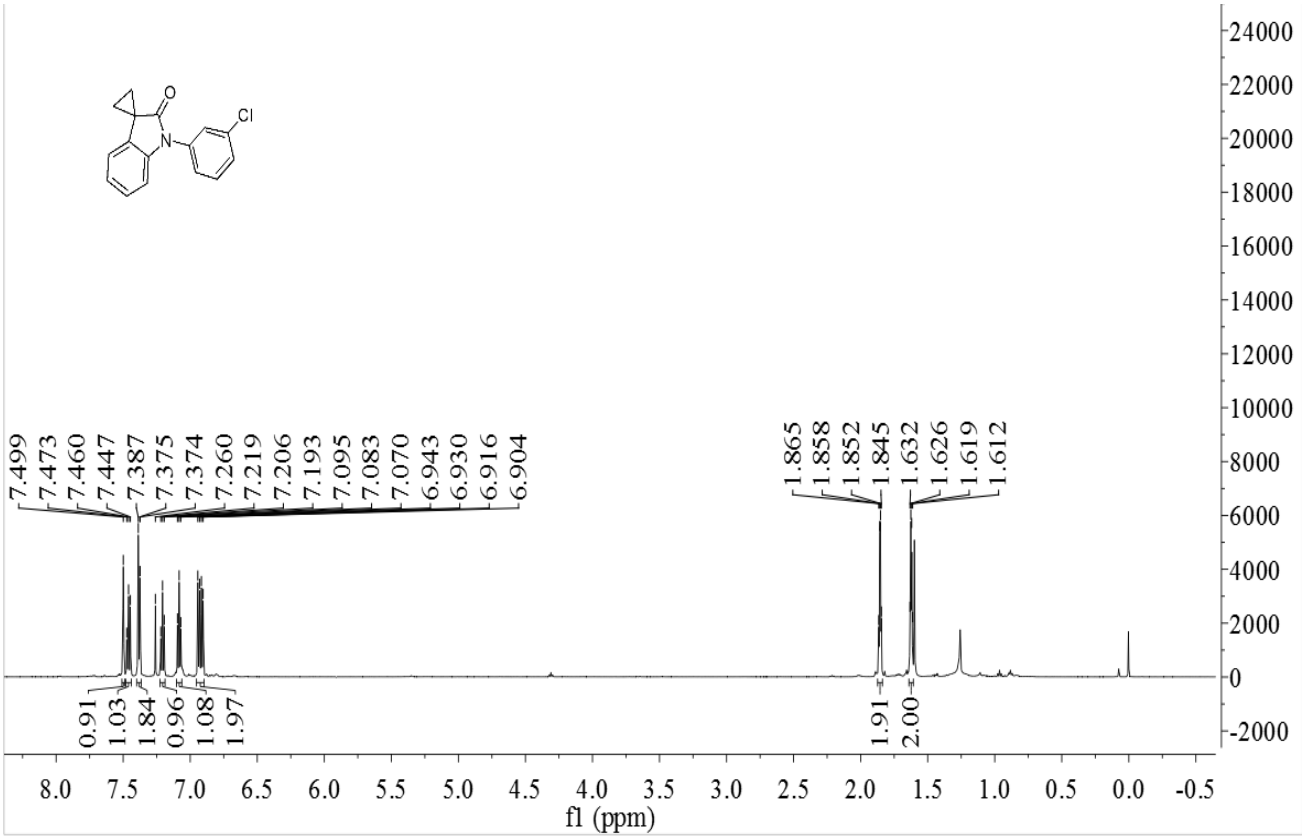

COOEt
176.175
165.782
142.305
138.903
130.760
130.549
129.261
126.663
125.781
122.880
118.650
109.282
77.318
77.000
76.682
61.112
27.268
20.269
14.267
fl (ppm)

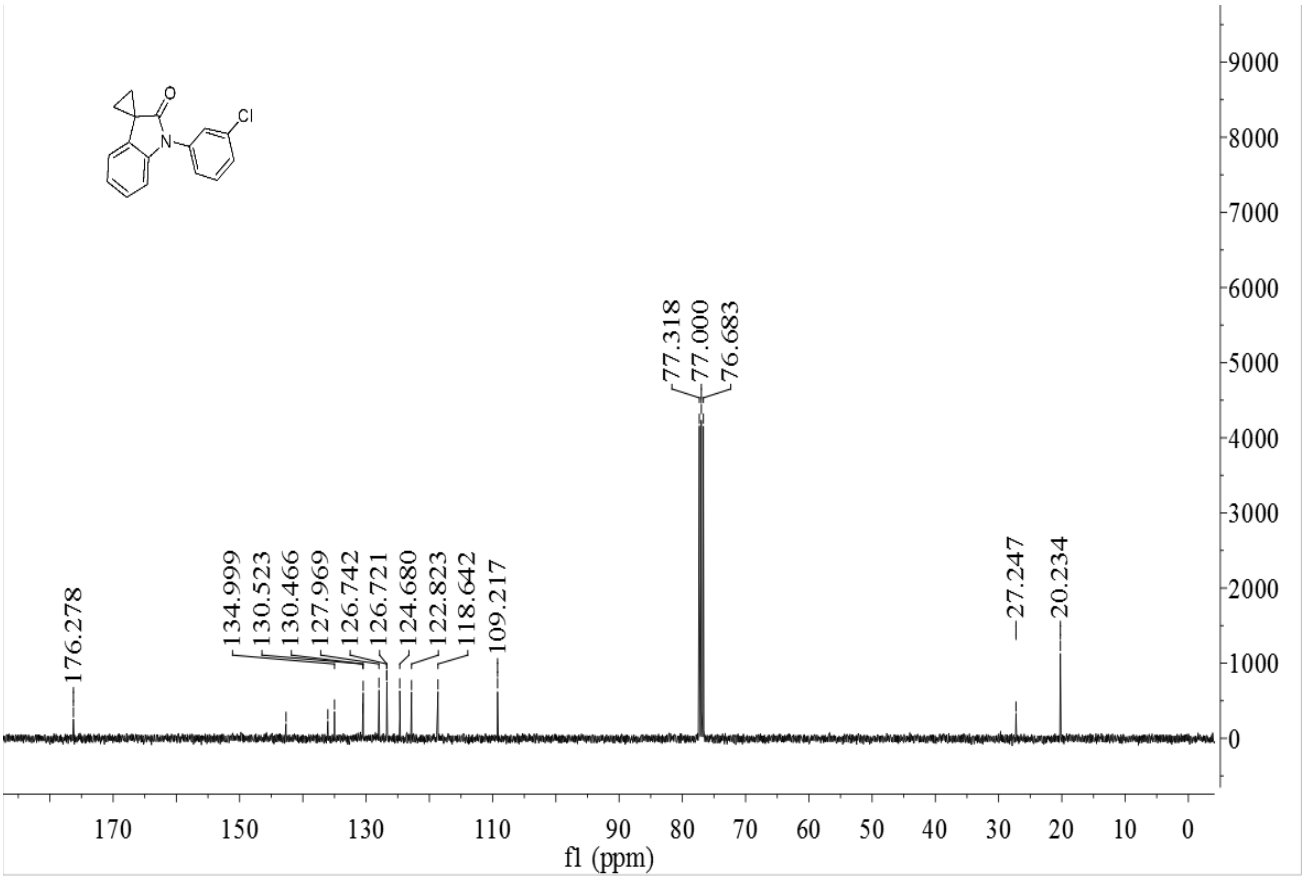
Compound **2e**


Cl
O
N
7.61 7.60 7.60 7.59 7.59 7.58 7.57 7.44 7.43 7.43 7.42 7.41 7.40 7.39 7.25 7.19 7.19 7.17 7.17 7.15 7.15 7.14 7.08 7.08 7.06 7.06 7.05 7.04 6.93 6.93 6.91 6.91 6.89 6.89 6.58 6.56
1.91 1.91 1.90 1.89 1.88 1.88 1.87 1.87 1.86 1.86 1.85 1.84 1.83 1.67 1.67 1.66 1.65 1.65 1.64 1.63 1.63 1.62 1.61 1.60 1.60
0.88 2.72 0.88 0.85 0.77 0.78
1.82 2.00
f1 (ppm)

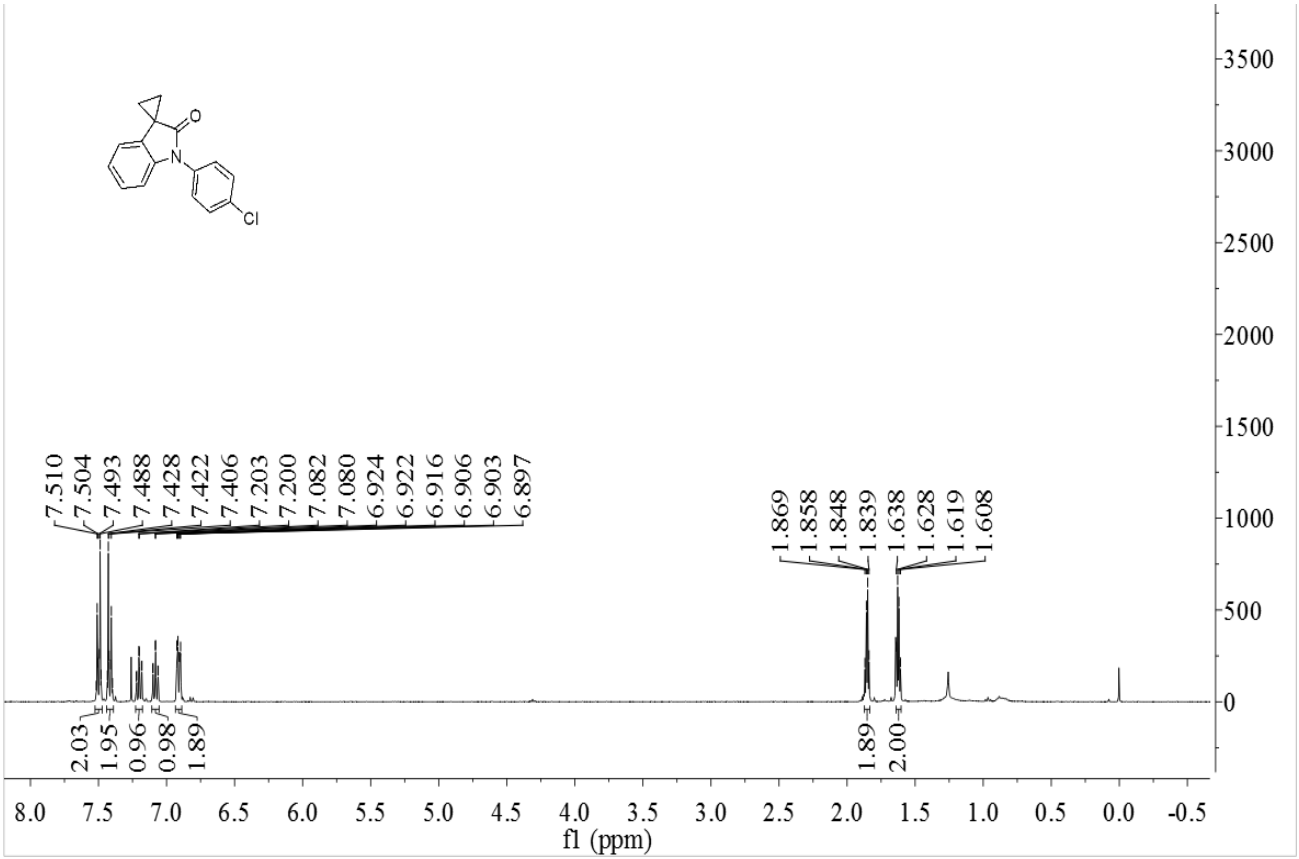

Cl
O
N
176.19
142.87
133.19
130.82
130.41
130.12
128.02
126.65
122.50
118.52
109.29
77.32
77.00
76.68
27.21
20.08
19.77
f1 (ppm)

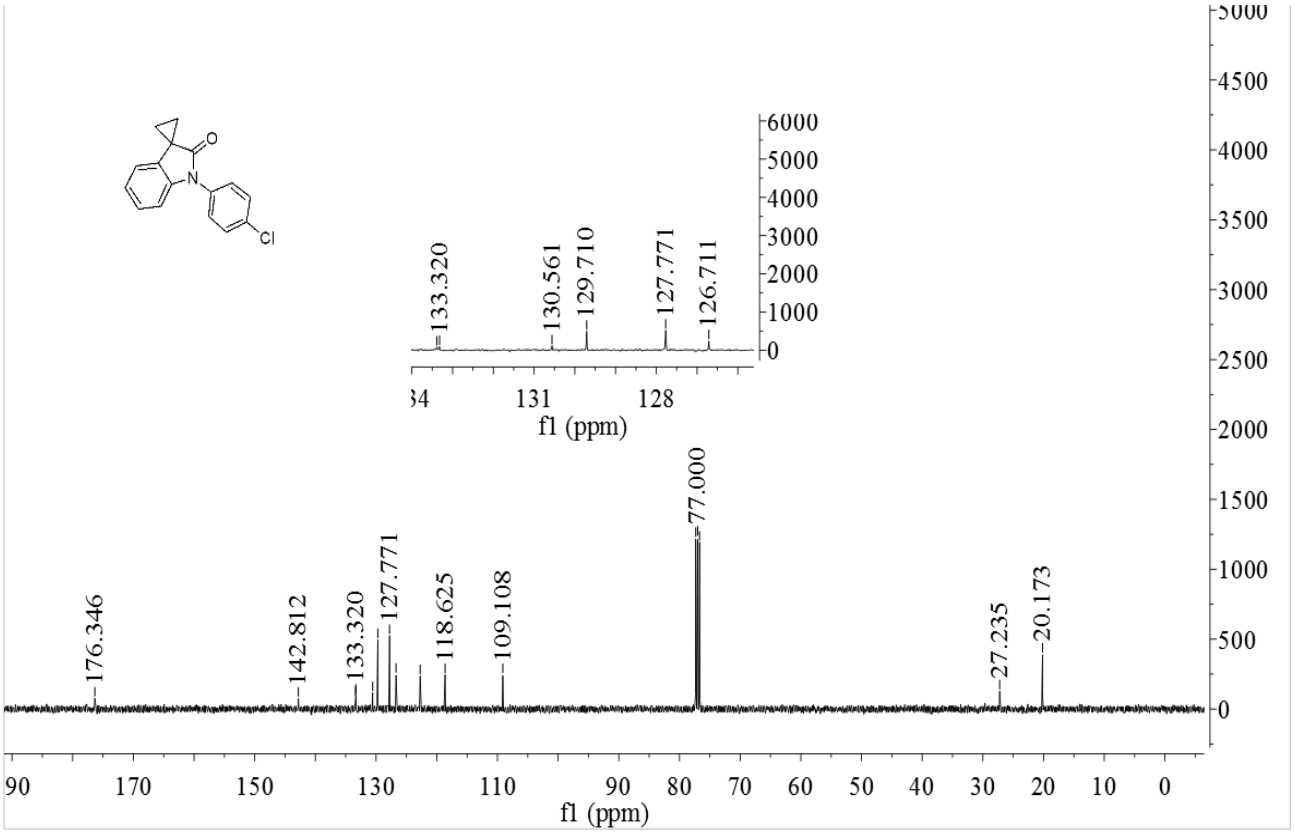
Compound **2f**


7.499
7.473
7.460
7.447
7.387
7.375
7.374
7.260
7.219
7.206
7.193
7.095
7.083
7.070
6.943
6.930
6.916
6.904
1.865
1.858
1.852
1.845
1.632
1.626
1.619
1.612
0.91
1.03
1.84
0.96
1.08
1.97
1.91
2.00
f1 (ppm)

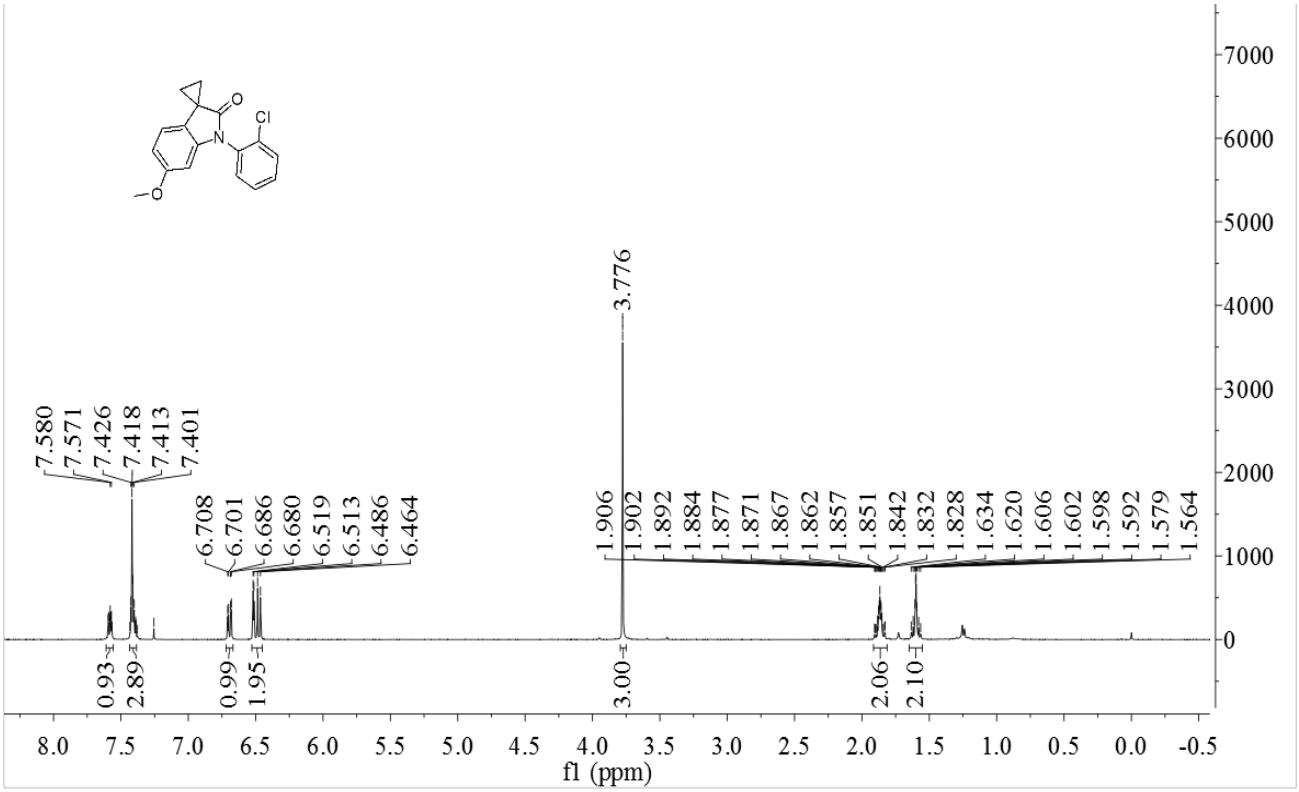

176.278
134.999
130.523
130.466
127.969
126.742
126.721
124.680
122.823
118.642
109.217
77.318
77.000
76.683
27.247
20.234
f1 (ppm)

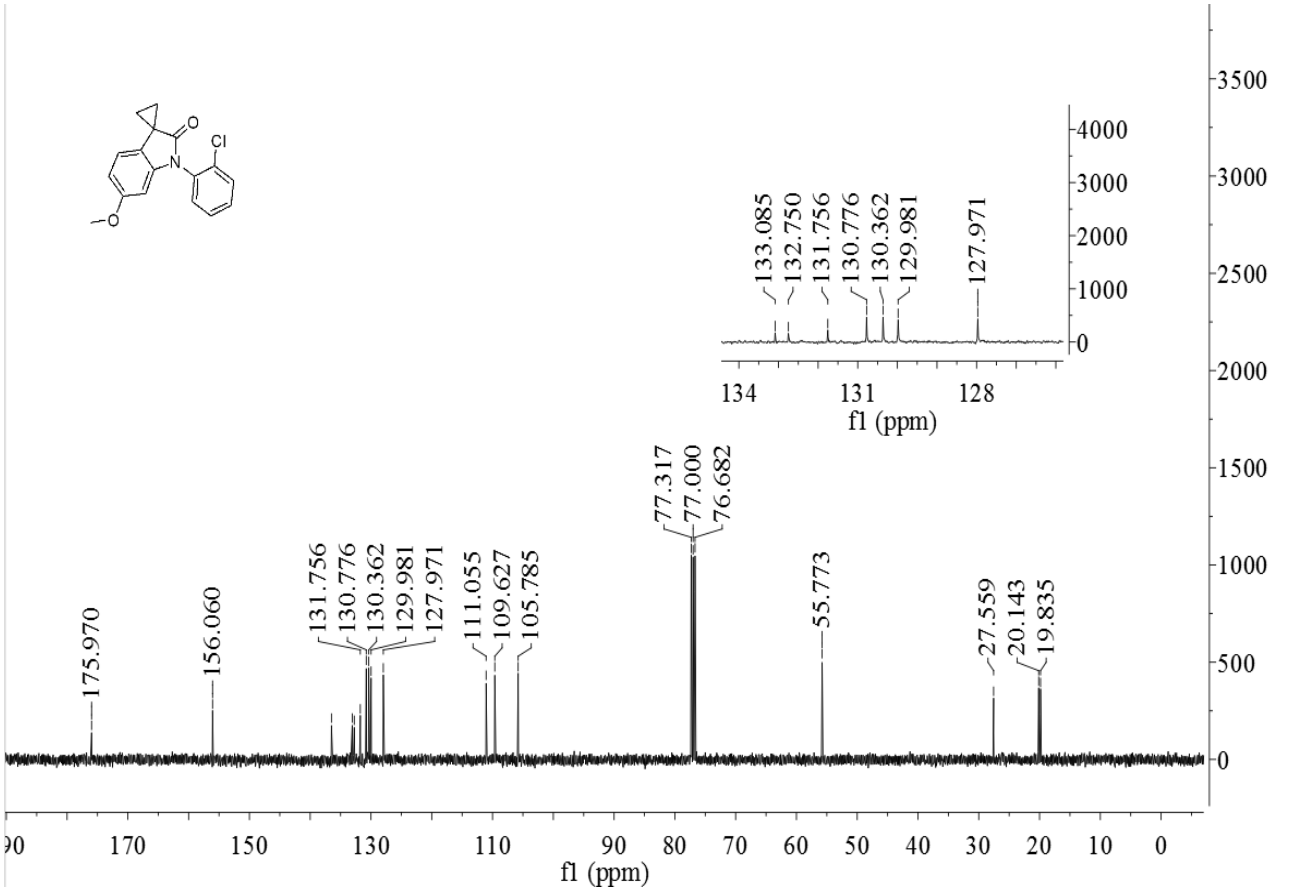
Compound **2g**


7.510
7.504
7.493
7.488
7.428
7.422
7.406
7.203
7.200
7.082
7.080
6.924
6.922
6.916
6.906
6.903
6.897
1.869
1.858
1.848
1.839
1.638
1.628
1.619
1.608
2.03
1.95
0.96
0.98
1.89
1.89
2.00
f1 (ppm)

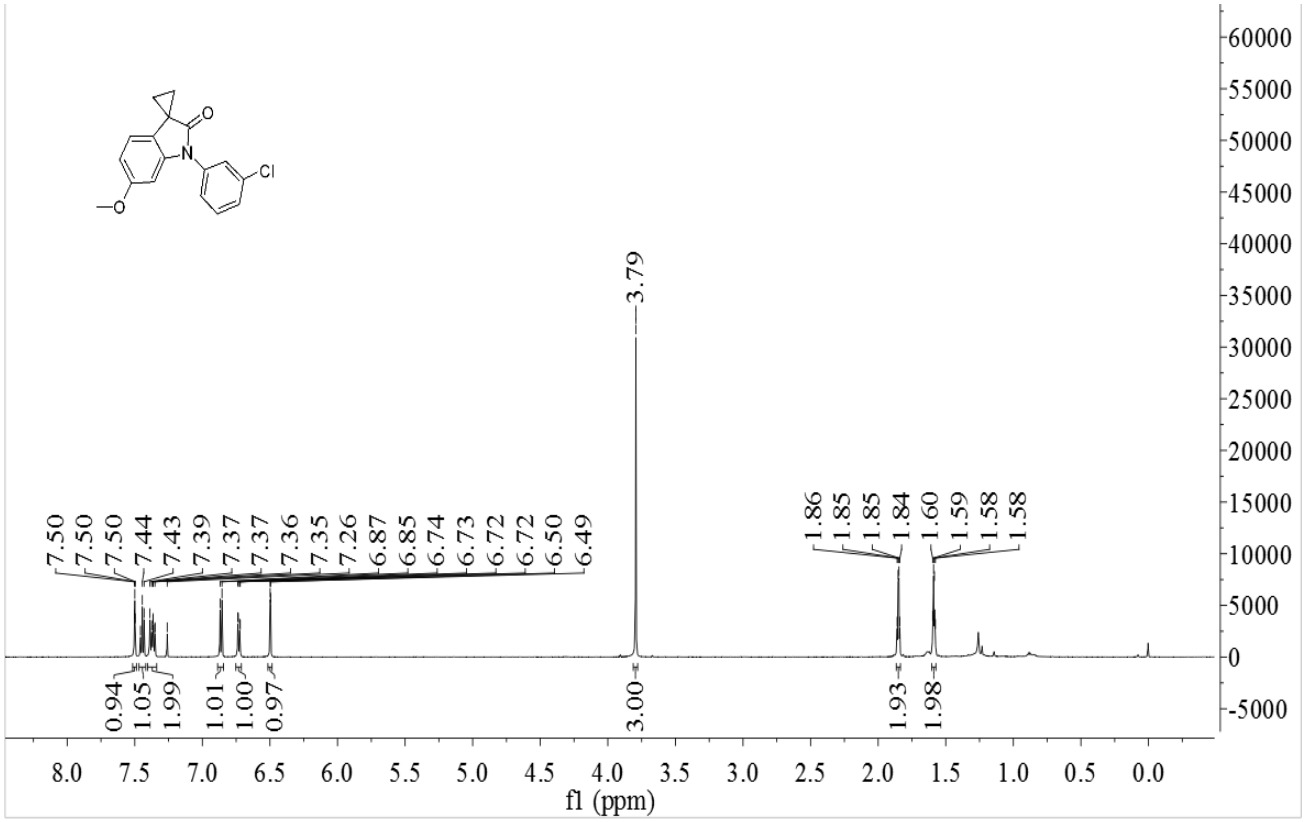

133.320
130.561
129.710
127.771
126.711
f1 (ppm)
176.346
142.812
133.320
127.771
118.625
109.108
77.000
27.235
20.173
f1 (ppm)

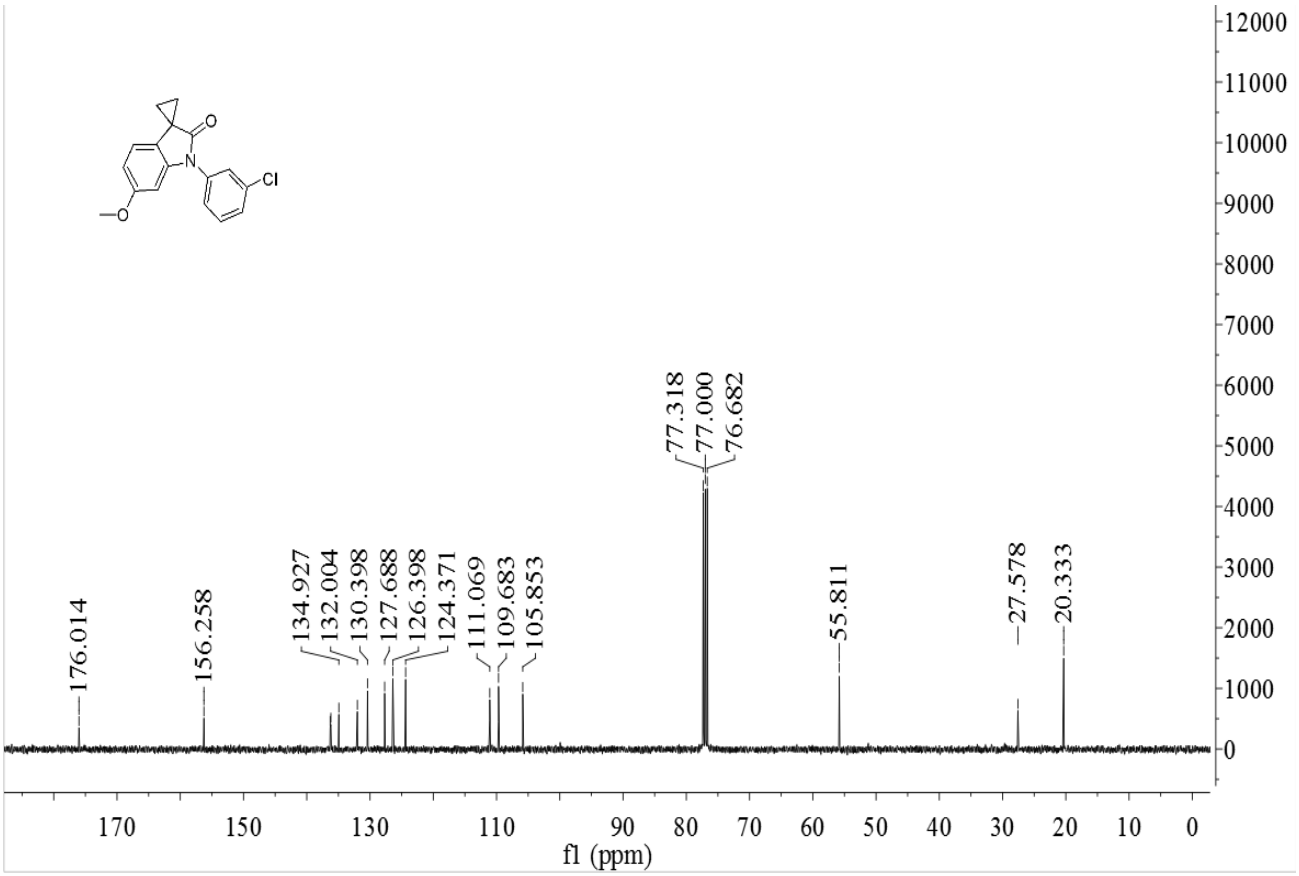
Compound **2h**


7.580
7.571
7.426
7.418
7.413
7.401
6.708
6.701
6.686
6.680
6.519
6.513
6.486
6.464
3.776
1.906
1.902
1.892
1.884
1.877
1.871
1.867
1.862
1.857
1.851
1.842
1.832
1.828
1.634
1.620
1.606
1.602
1.598
1.592
1.579
1.564
0.93
2.89
0.99
1.95
3.00
2.06
2.10
f1 (ppm)

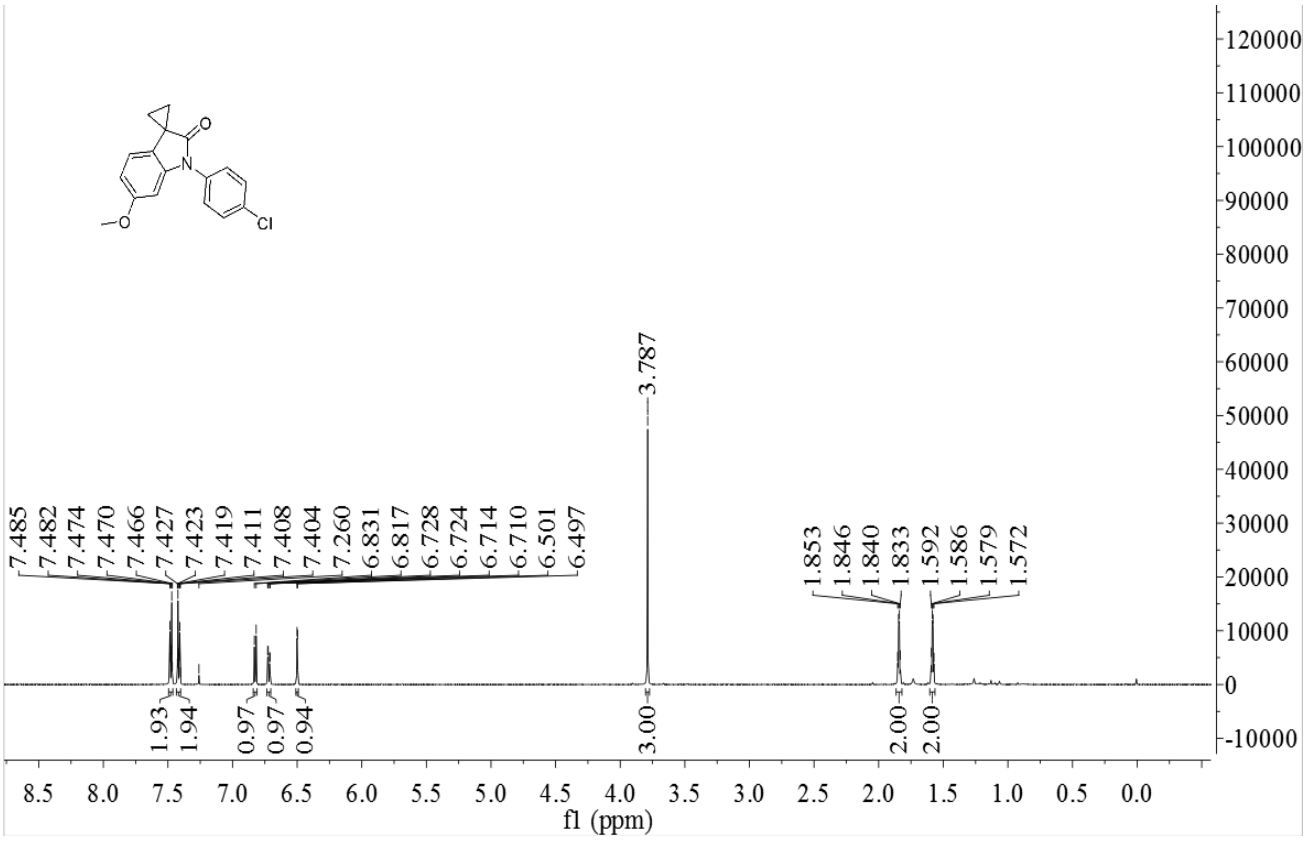

133.085
132.750
131.756
130.776
130.362
129.981
127.971
f1 (ppm)
175.970
156.060
131.756
130.776
130.362
129.981
127.971
111.055
109.627
105.785
77.317
77.000
76.682
55.773
27.559
20.143
19.835
f1 (ppm)

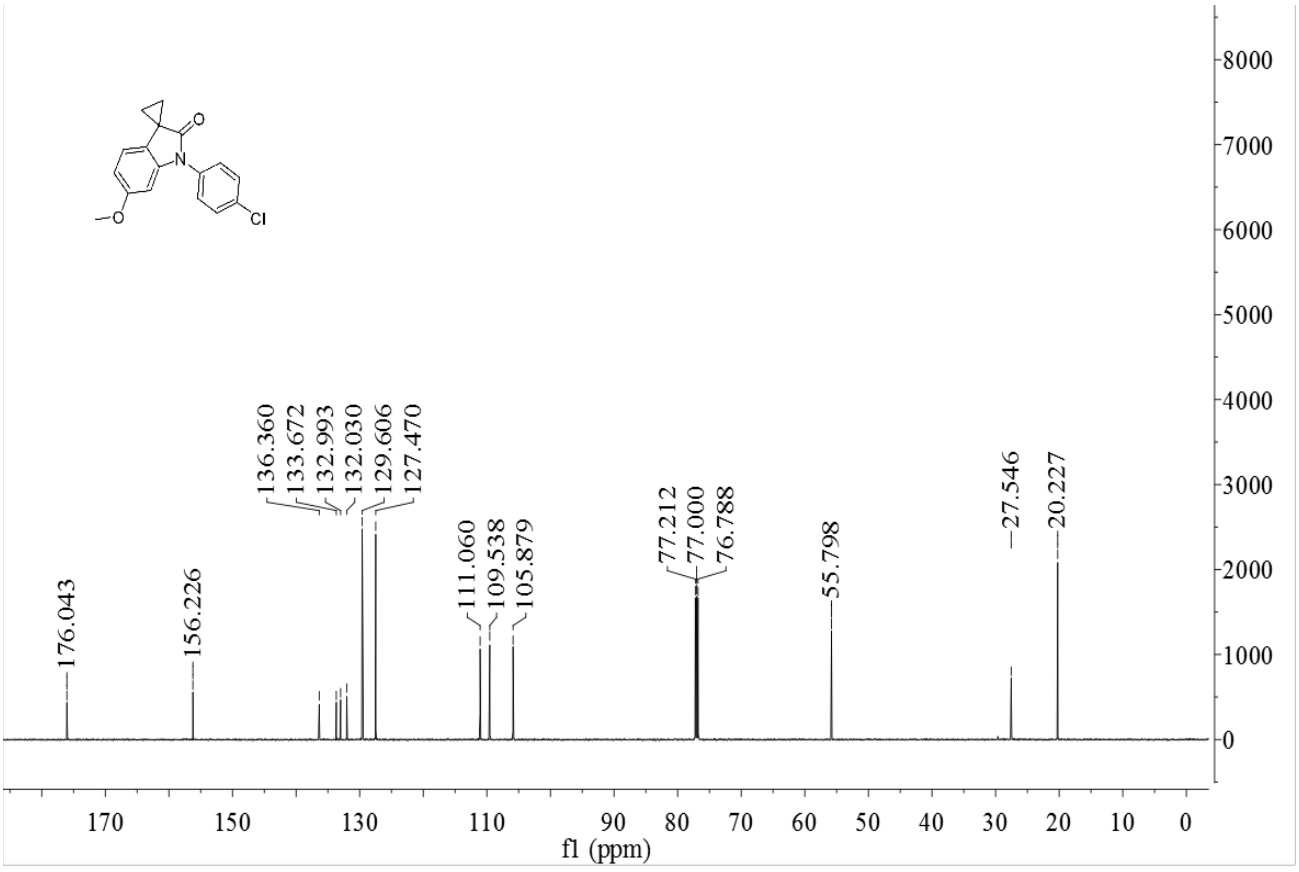
Compound **2i**


7.50
7.50
7.50
7.44
7.43
7.39
7.37
7.37
7.36
7.35
7.26
6.87
6.85
6.74
6.73
6.72
6.72
6.50
6.49
3.79
1.86
1.85
1.85
1.84
1.60
1.59
1.58
1.58
0.94
1.05
1.99
1.01
1.00
0.97
3.00
1.93
1.98
f1 (ppm)

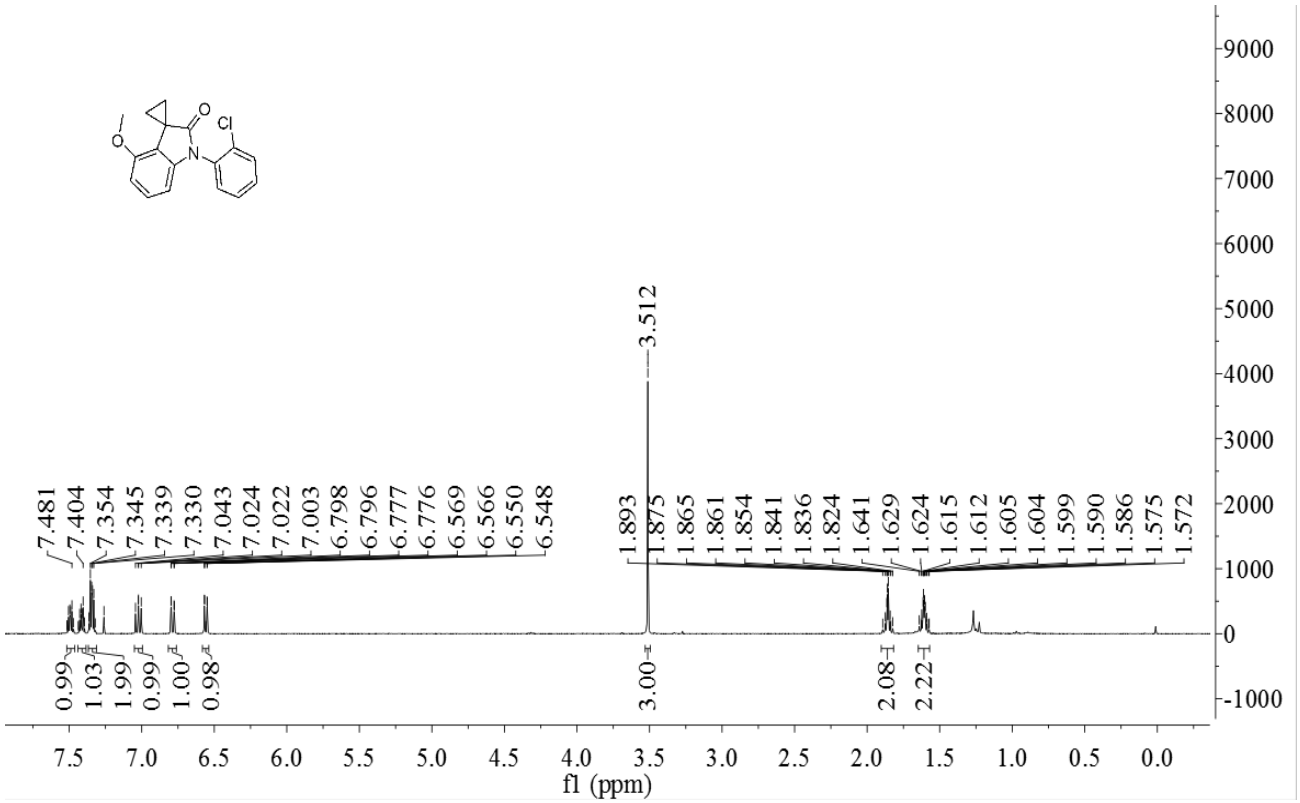

176.014
156.258
134.927
132.004
130.398
127.688
126.398
124.371
111.069
109.683
105.853
77.318
77.000
76.682
55.811
27.578
20.333
f1 (ppm)

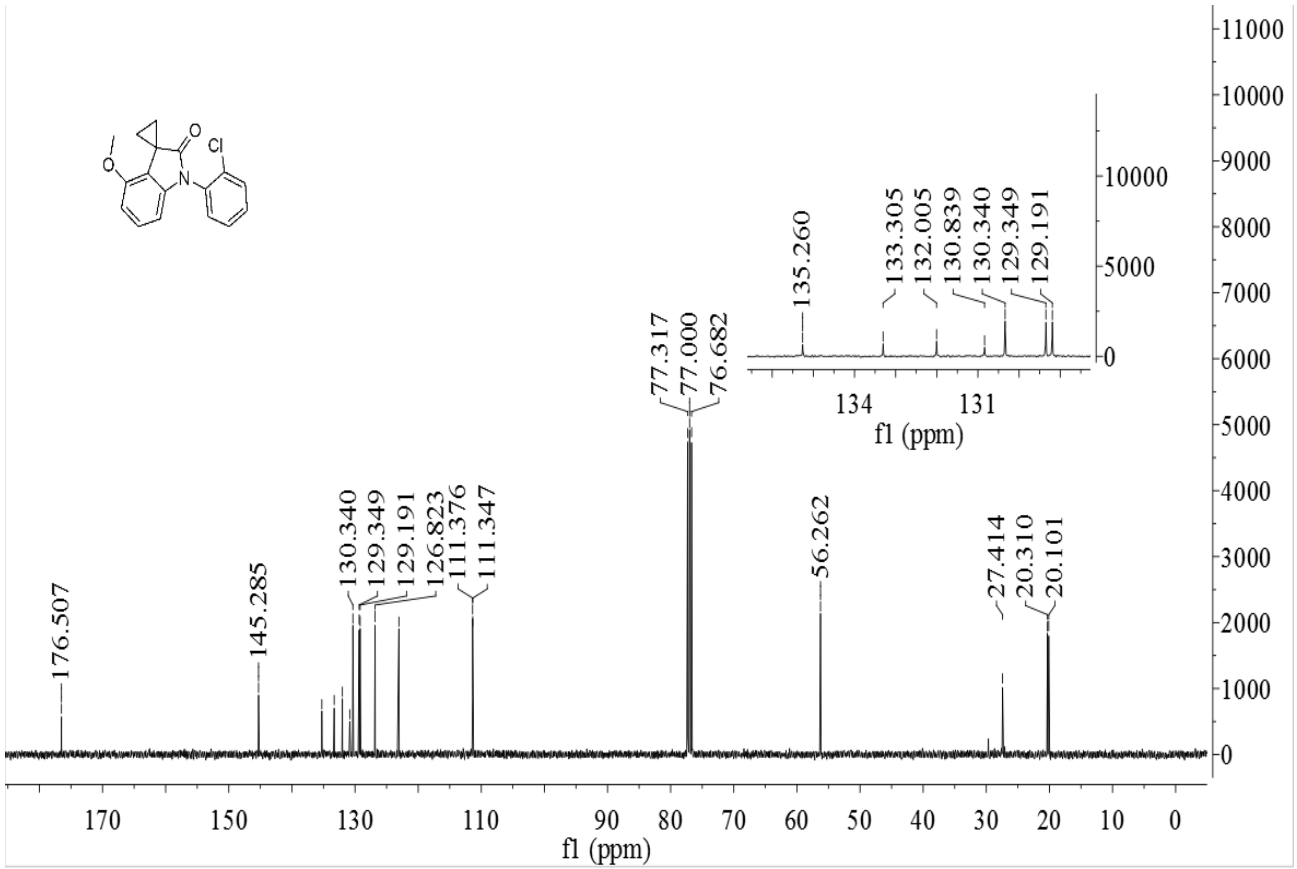
Compound **2j**


7.485
7.482
7.474
7.470
7.466
7.427
7.423
7.419
7.411
7.408
7.404
7.260
6.831
6.817
6.728
6.724
6.714
6.710
6.501
6.497
3.787
1.853
1.846
1.840
1.833
1.592
1.586
1.579
1.572
1.93
1.94
0.97
0.97
0.94
3.00
2.00
2.00
fl (ppm)

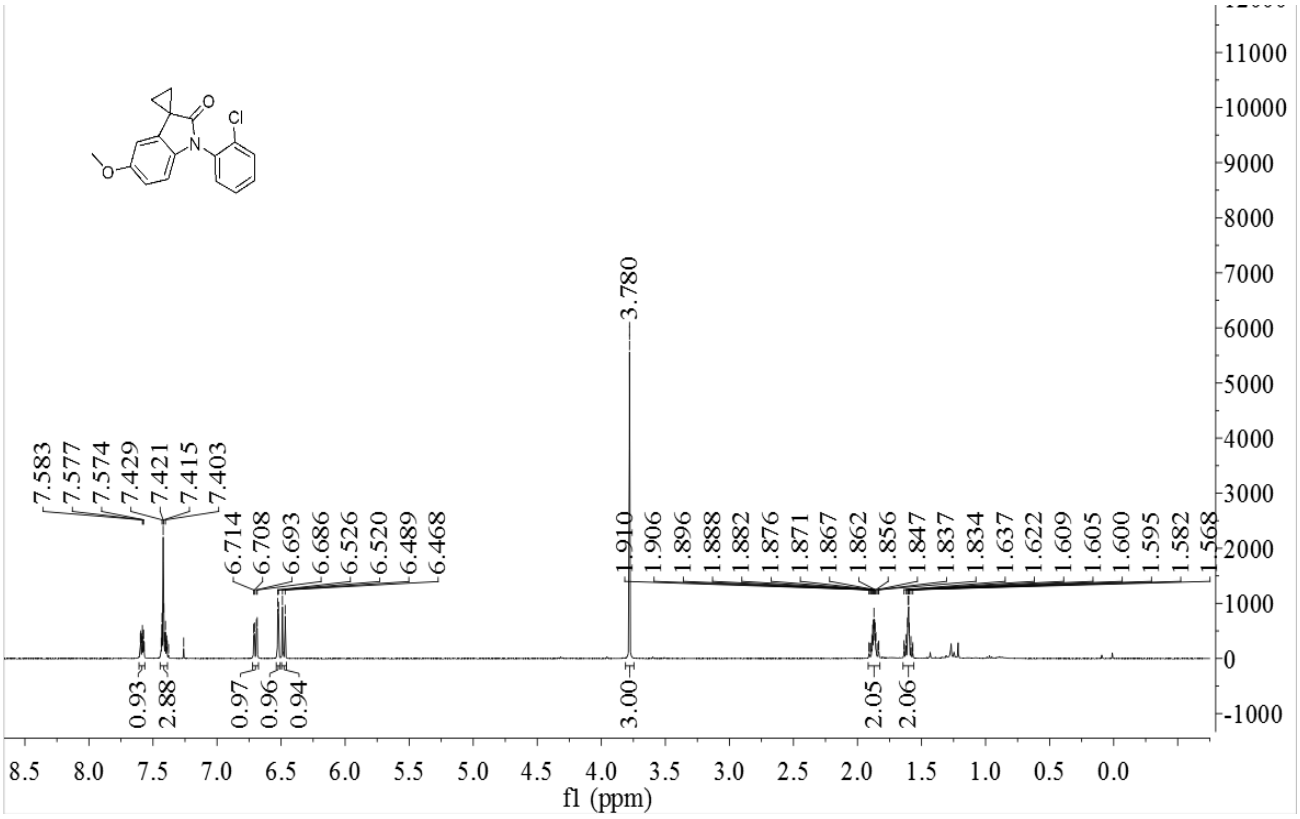

176.043
156.226
136.360
133.672
132.993
132.030
129.606
127.470
111.060
109.538
105.879
77.212
77.000
76.788
55.798
27.546
20.227
fl (ppm)

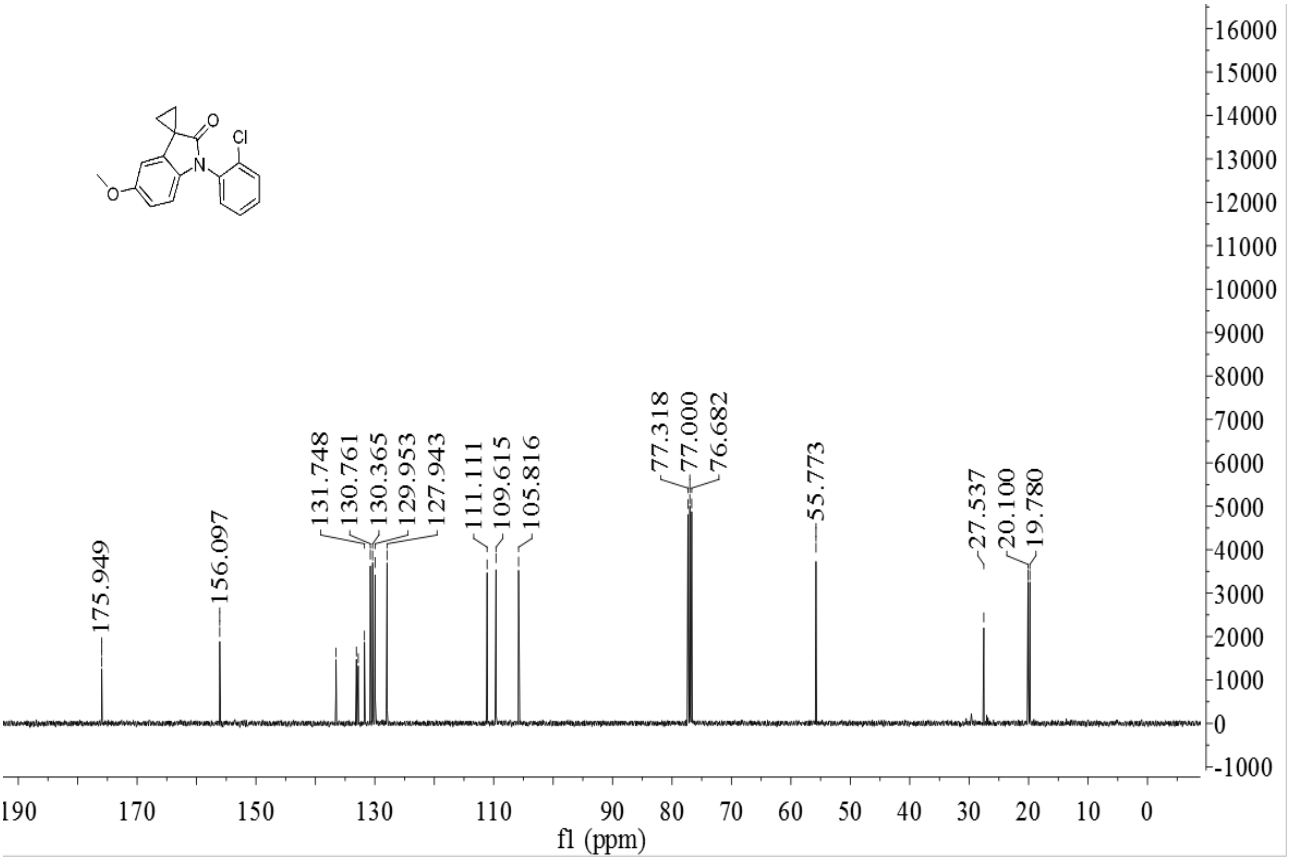
Compound **2n**


7.481
7.404
7.354
7.345
7.339
7.330
7.043
7.024
7.022
7.003
6.798
6.796
6.777
6.776
6.569
6.566
6.550
6.548
3.512
1.893
1.875
1.865
1.861
1.854
1.841
1.836
1.824
1.641
1.629
1.624
1.615
1.612
1.605
1.604
1.599
1.590
1.586
1.575
1.572
0.99
1.03
1.99
0.99
1.00
0.98
3.00
2.08
2.22
f1 (ppm)

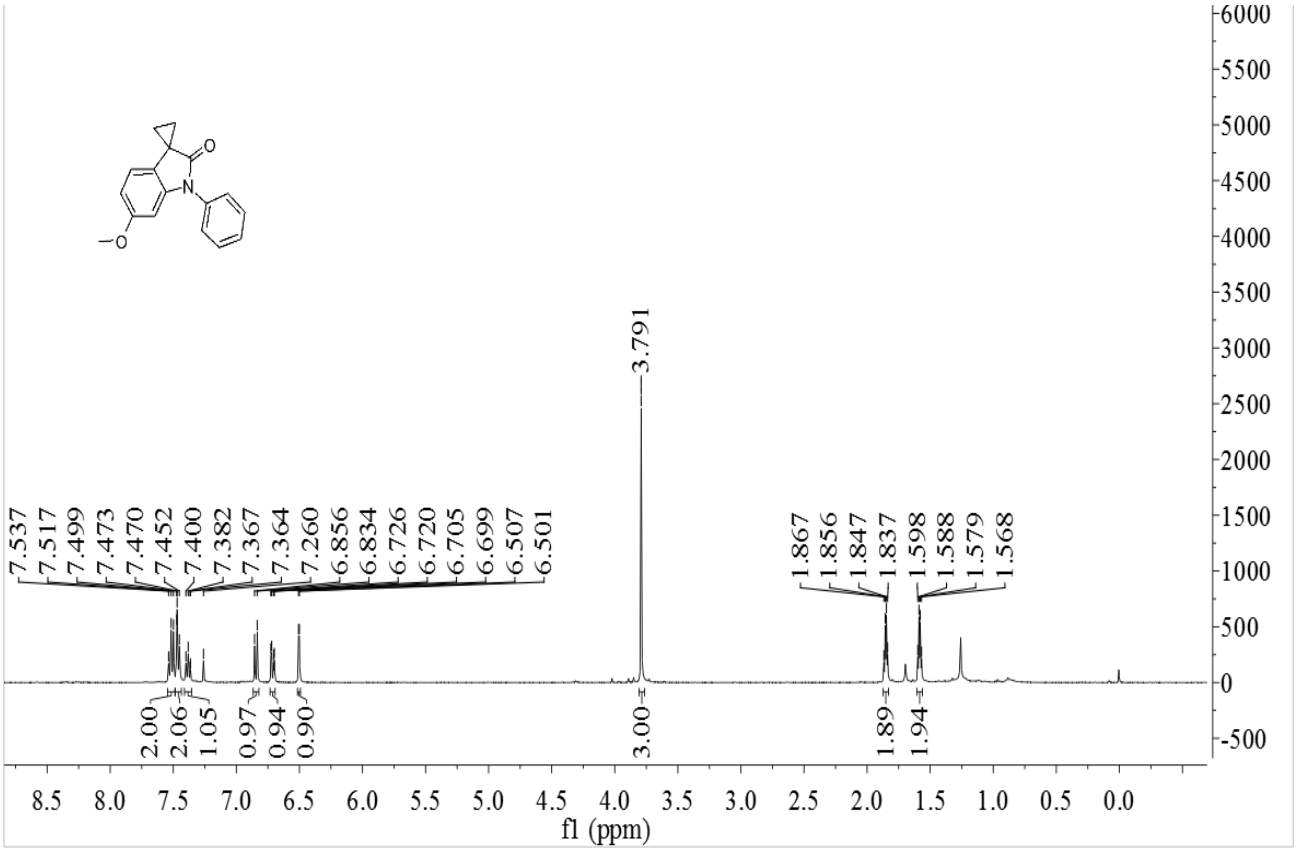

135.260
133.305
132.005
130.839
130.340
129.349
129.191
77.317
77.000
76.682
176.507
145.285
130.340
129.349
129.191
126.823
111.376
111.347
56.262
27.414
20.310
20.101
f1 (ppm)

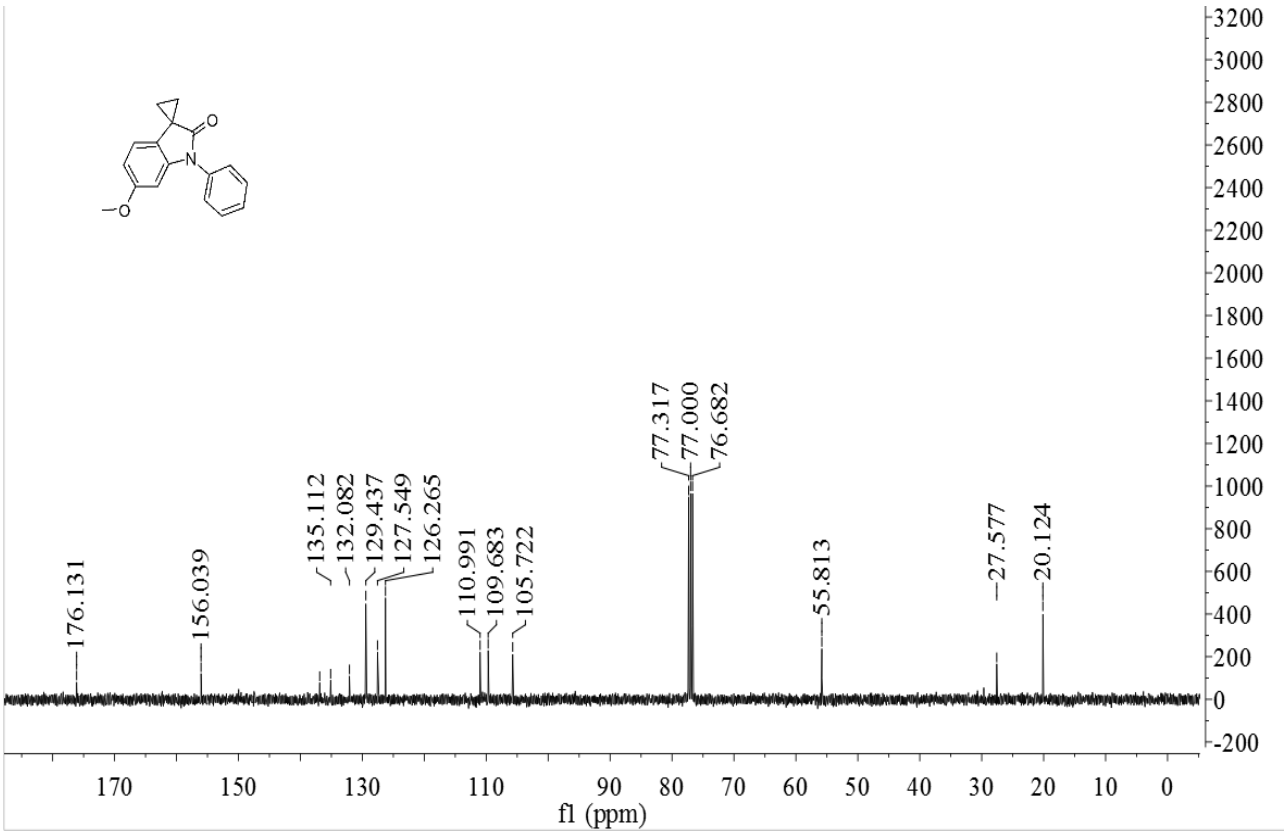
Compound **2o**


7.583
7.577
7.574
7.429
7.421
7.415
7.403
6.714
6.708
6.693
6.686
6.526
6.520
6.489
6.468
3.780
1.910
1.906
1.896
1.888
1.882
1.876
1.871
1.867
1.862
1.856
1.847
1.837
1.834
1.637
1.622
1.609
1.605
1.600
1.595
1.582
1.568
0.93
2.88
0.97
0.96
0.94
3.00
2.05
2.06
fl (ppm)


175.949
156.097
131.748
130.761
130.365
129.953
127.943
111.111
109.615
105.816
77.318
77.000
76.682
55.773
27.537
20.100
19.780
fl (ppm)

Compound **2p**


7.537
7.517
7.499
7.473
7.470
7.452
7.400
7.382
7.367
7.364
7.260
6.856
6.834
6.726
6.720
6.705
6.699
6.507
6.501
3.791
1.867
1.856
1.847
1.837
1.598
1.588
1.579
1.568
2.00
2.06
1.05
0.97
0.94
0.90
3.00
1.89
1.94
fl (ppm)


176.131
156.039
135.112
132.082
129.437
127.549
126.265
110.991
109.683
105.722
77.317
77.000
76.682
55.813
27.577
20.124
fl (ppm)