SUPPORTING INFORMATION

Visible-Light Induced $FeCl_3$-Catalyzed Reductive Transamidation of *N*-Acyl Benzotriazoles with Nitro Compounds

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1. General Information

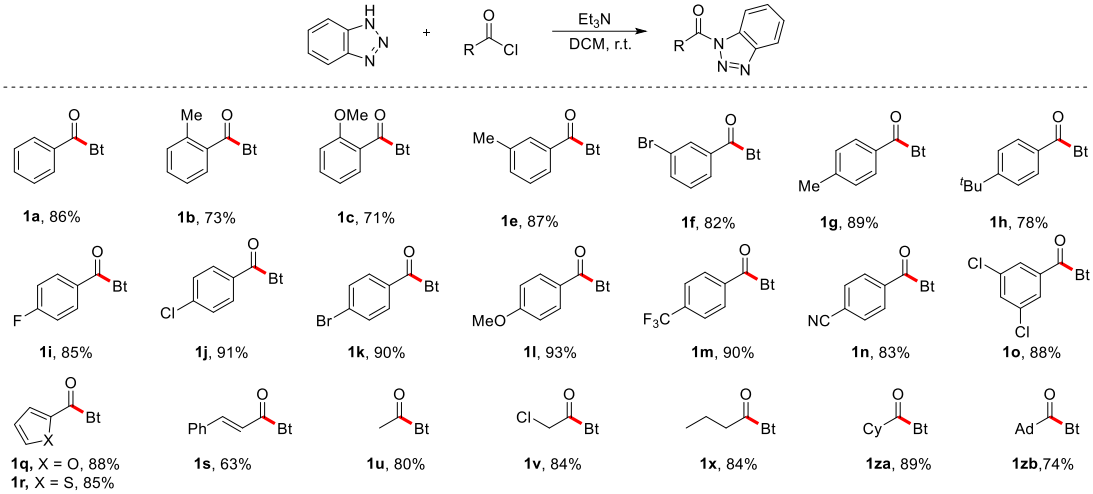
All the visible-light induced $FeCl_3$-catalyzed reactions were set up using standard Schlenk techniques and carried out under N_2 atmosphere with solvents. All chemicals were obtained from commercial sources and used as received without further purification. The super-dry solvents (1,4-dioxane, $PhCF_3$, THF, DMF, MeCN, etc) for catalytic reactions were purchased from Adamas stored in sure-seal bottles with molecular sieves as the desiccants.

Analytical thin layer chromatography (TLC) was performed on silica gel 60 F254 glass plates. TLC plates were visualized by exposure to short wave ultraviolet light (254 nm, 365 nm) and/or iodine. The products were isolated by flash column chromatography on silica gel (300–400 mesh).

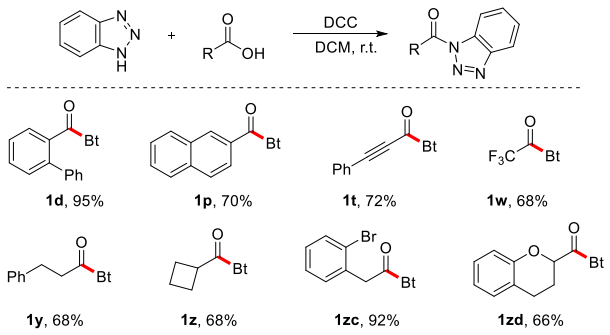
NMR spectra were recorded on a *Bruker AVANCE NEO* 400MHz/500MHz spectrometer at 25 °C in $CDCl_3$ or DMSO. Data are reported as following: chemical shift (δ), multiplicity (s = singlet, d = doublet, t = triplet, q = quartet, br = broad, m = multiplet), coupling constants (Hz), and integration. Chemical shifts (ppm) are given relative to solvent: reference for $CDCl_3$ was 7.26 ppm (^{1}H NMR) and 77.0 ppm (^{13}C NMR); references for d_6-DMSO were 2.50 ppm (^{1}H NMR) and 39.52 ppm (^{13}C NMR). High-resolution mass spectrometry (HRMS) was measured on an *Agilent 1290-6545XT* mass spectrometer. UV-VIS absorbance spectra were measured on a TU-1901 made in China.

2. Synthesis of Starting Materials

2.1 Preparation of *N*-acyl benzotriazoles



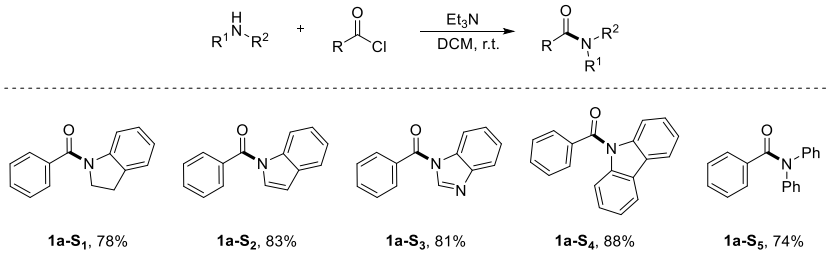
General Procedure A:[1] To a solution of benzotriazole (1.0 g, 8.4 mmol) and Et_3N (1.5 mL,10.9 mmol) in anhydrous DCM (10 mL) was added the corresponding acyl chloride (10.1 mmol) dissolving in DCM (6 mL) at 0 °C under N_2. After stirring for 2 h, the reaction mixture was washed sequentially with 10% aq. HCl (3 × 5 mL), saturated aqueous $NaHCO_3$ (5 mL) and brine (5 mL) before drying over anhydrous Na_2SO_4. After removing of the solvent by rotoevaporation, the crude product was purified by flash column chromatography (Petroleum Ether/Ethyl Acetate). The compounds **1a**, **1b**, **1c**, **1e**, **1f**, **1g**, **1i**, **1j**, **1k**, **1l**, **1m**, **1n**, **1o**, **1q**, **1r**, **1s**, **1u**, **1v**, **1x**, **1za** and **1zb** were prepared by this procedure.



General Procedure B:[2] To a solution of benzotriazole (1.0 g, 8.39 mmol) and carboxylic acid (10.07 mmol, 1.2 equiv) in DCM (15 mL) was added 1, 3-dicyclohexylcarbodiimide (2.6 g, 12.6 mmol). The mixture was then stirred at room

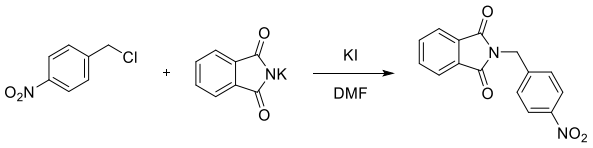
temperature for 10 h. The precipitate was removed by filtration and the residue was concentrated in vacuo. The crude reaction mixture was then purified by flash column chromatography (Petroleum ether/Ethyl acetate) to afford the corresponding *N*-acyl benzotriazoles. The compounds **1d**, **1p**, **1t**, **1w**, **1y**, **1z**, **1zc** and **1zd** were prepared by this procedure.

2.2 Preparation of *N*-acyl amides 1a-S1-5



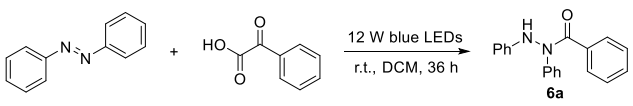
Theese amides **1a-S1-5** were prepared from acyl chloride and the corresponding amines by our previously reported procedure.[3]

2.3 Preparation of nitro compound 2p



2-(4-Nitrobenzyl)isoindoline-1,3-dione (2p).[1] A solution of *p*-nitrobenzyl chloride (2.0 g, 11.7 mmol), potassium phthalimide (2.4 g, 12.8 mmol), KI (0.2 g, 1.2 mmol) in DMF (50 mL) were stirred at room temperature for 1 h. Then water (10 mL) was added and the resultant mixture was extracted with EtOAc (3 × 10 mL). The organic phase was dried over anhydrous Na_2SO_4. The crude product was purified by flash column chromatography (petroleum ether/ethyl acetate = 7/1) as an eluent to afford the title compound as a white solid (2.4 g, 61%).

2.4 Preparation of Intermediate 6a

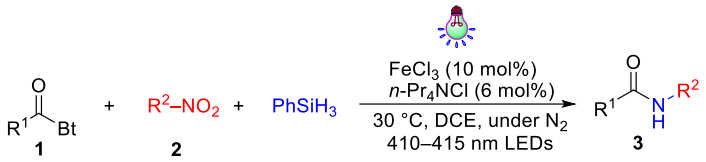


***N*,*N*'-diphenylbenzohydrazide (6a) was synthesized by the literature procedure**.[4]

To a 50 mL round flask were charged with azobenzene (0.5 g, 2.74 mmol), benzoylformic acid (0.42 g, 2.74 mmol) and CH_2Cl_2 (25.0 mL). The mixture was then stirred at room temperature under the irradiated of 30 W LED light source (390–395 nm) for 36 h. Upon completion (monitored by TLC), the reaction mixture was concentrated under vacuum and the residue was purified by column chromatography (Petroleum ether/ethyl acetate = 5:1) to give the desired product **6a** (0.61 g, 76%) as a white solid.

3. Studies on the $FeCl_3$-Catalyzed Reductive Transamidation

3.1 General Procedure

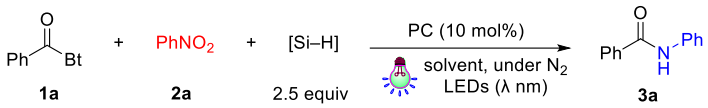


To an oven-dried Schlenk tube was sequentially charged with $FeCl_3$ (6.5 mg, 0.04 mmol), *n*-Pr_4NCl (5.3 mg, 0.024 mmol), *N*-acyl benzotriazole (0.4 mmol) under N_2. Then the Schlenk tube was capped with a rubber septum before connecting to Schlenk line. After three vacuum and backfill cycles, DCE (2 mL) was added with an injector. Then $PhSiH_3$ (123.4 μL, 1.0 mmol) and nitro compounds (0.8 mmol) were added through microsyringes. The perimeter of the septum was carefully sealed with parafilm. Then the mixture was allowed for stirring at 30 °C and irradiated by 410–415 nm LEDs for the specified time. After the reaction was finished, the solvent was removed by a rotary evaporator and the crude product was purified by flash column chromatography (Petroleum Ether/Ethyl Acetate).

Figure S1. Photo of the reaction set-up (λ = 410–415 nm).

Note: We used RLH-AL1 Photo-reactor, manufactured by Shanghai Shanshi technology Co. Ltd., which was equipped with six tunable (0–12 W) 365–750 nm LED light sources.

Table S1. Detailed screening of the reaction conditions.[a]



entry	Photocatalyst	Additives	[Si–H]	Solvent	λ (nm)	Yield of 3a[b]
1	$FeCl_3$	no	$PhSiH_3$	DCE	390–395	18
2	$FeCl_3$	*n*-Bu_4NF	$PhSiH_3$	DCE	390–395	**69**
3	$FeCl_3$	*n*-Bu_4NF	$PhSiH_3$	DCM	390–395	65
4	$FeCl_3$	*n*-Bu_4NF	$PhSiH_3$	PhCl	390–395	46
5	$FeCl_3$	*n*-Bu_4NF	$PhSiH_3$	$CHCl_3$	390–395	48
6	$FeCl_3$	*n*-Bu_4NF	$PhSiH_3$	$PhCF_3$	390–395	32
7	$FeCl_3$	*n*-Bu_4NF	$PhSiH_3$	MeCN	390–395	61
8	$FeCl_3$	*n*-Bu_4NF	$PhSiH_3$	THF	390–395	41
9	$FeCl_3$	*n*-Bu_4NF	$PhSiH_3$	dioxane	390–395	44
10	$FeCl_3$	*n*-Bu_4NF	$PhSiH_3$	PhMe	390–395	16
11	$FeCl_3$	*n*-Bu_4NF	$PhSiH_3$	DMF	390–395	27
12	$FeCl_3{\cdot}6H_2O$	*n*-Bu_4NF	$PhSiH_3$	DCE	390–395	48
13	$FeBr_3$	*n*-Bu_4NF	$PhSiH_3$	DCE	390–395	39
14	$FeCl_2$	*n*-Bu_4NF	$PhSiH_3$	DCE	390–395	42
15	$FeCl_3$	*n*-Bu_4NF	$(TMS)_3SiH$	DCE	390–395	59
16	$FeCl_3$	*n*-Bu_4NF	$(EtO)_3SiH$	DCE	390–395	<5
17	$FeCl_3$	*n*-Bu_4NF	$(Me_2SiH)_2O$	DCE	390–395	66
18	$FeCl_3$	n-Bu_4NF	Et_3SiH	DCE	390–395	32
19	$FeCl_3$	*n*-Bu_4NCl	$PhSiH_3$	DCE	390–395	81
20	$FeCl_3$	*n*-Bu_4NBr	$PhSiH_3$	DCE	390–395	65
21	$FeCl_3$	*n*-Bu_4NI	$PhSiH_3$	DCE	390–395	61
22	$FeCl_3$	$BnEt_3NCl$	$PhSiH_3$	DCE	390–395	87
23	$FeCl_3$	$(n\text{-}C_8H_{17})_3NMeCl$	$PhSiH_3$	DCE	390–395	55
24	$FeCl_3$	Et_4NCl	$PhSiH_3$	DCE	390–395	80
25	$FeCl_3$	*n*-Pr_4NCl	$PhSiH_3$	DCE	390–395	89
26	$FeCl_3$	*n*-Pr_4NCl	$PhSiH_3$	DCE	390–395	73[c]

27	$FeCl_3$	*n*-Pr_4NCl	$PhSiH_3$	DCE	390–395	92[d]
28	$FeCl_3$	*n*-Pr_4NCl	$PhSiH_3$	DCE	365–375	32
29	$FeCl_3$	*n*-Pr_4NCl (6 mol%)	$PhSiH_3$	DCE	410–415	99
30	$FeCl_3$	*n*-Pr_4NCl (6 mol%)	$PhSiH_3$	DCE+1 equiv H_2O	410–415	65
31	$FeCl_3$	*n*-Pr_4NCl (3 mol%)	$PhSiH_3$	DCE	410–415	63
32	$FeCl_3$	*n*-Pr_4NCl (10 mol%)	$PhSiH_3$	DCE	410–415	93
33	$FeCl_3$	LiCl	$PhSiH_3$	DCE	410–415	45
34	$FeCl_3$	HCl	$PhSiH_3$	DCE	410–415	99
35	$FeCl_3$	*n*-Pr_4NCl	$PhSiH_3$	DCE	450–455	44
36	$FeCl_3$	*n*-Pr_4NCl	$PhSiH_3$	DCE	dark	0
37	--	*n*-Pr_4NCl	$PhSiH_3$	DCE	410–415	0
38	$FeCl_3$	*n*-Pr_4NCl	--	DCE	410–415	24
39	$Ir(d^tbpy)(bpy)_2PF_6$	*n*-Pr_4NCl	$PhSiH_3$	DCE	410–415	14
40	CuCl	*n*-Pr_4NCl	$PhSiH_3$	DCE	410–415	41
41	TBADT	*n*-Pr_4NCl	$PhSiH_3$	DCE	410–415	58
42	$NiCl_2$	*n*-Pr_4NCl	$PhSiH_3$	DCE	410–415	13
43	$Ru(bpy)_3Cl_2$	*n*-Pr_4NCl	$PhSiH_3$	DCE	410–415	32

[a]Reaction conditions:**1a** (0.2 mmol), **2a** (2.0 equiv), additive (6 mol%), [Si–H] (2.5 equiv), DCE (2 mL), 12 h, under N_2, irradiation by 12 W LEDs, 30 °C; [b]Isolated yield; [c]5 mol% of $FeCl_3$; [d]20 mol% of $FeCl_3$.

3.2 UV-VIS Study

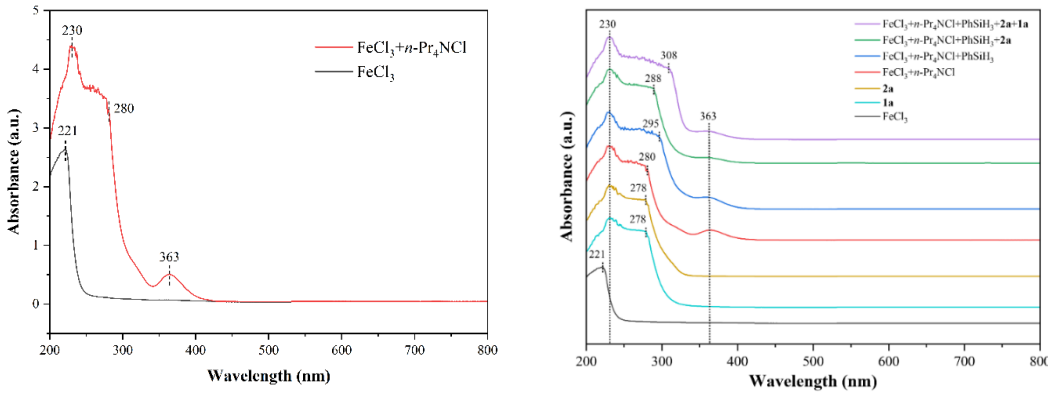


Figure S2 UV-vis absorbance spectra in DCE

Entry	Stock solution	Sample solution preparation for UV-Vis test
1	$FeCl_3$ (75 μM in DCE)	$FeCl_3$ (12.1 mg, 0.075 mmol) was dissolved in 1.0 mL of DCE. After stirring for 15 min, a 3.0 μL aliquot was drawn and added to 3.0 mL of DCE in a quartz cuvette.
2	**1a** (75 μM in DCE)	**1a** (19.7 mg, 0.075 mmol) was dissolved in 1.0 mL of DCE. After stirring for 15 min, a 3.0 μL aliquot was drawn and added to 3.0 mL of DCE in a quartz cuvette.
3	**2a** (75 μM in DCE)	**2a** (16.7 mg, 0.075 mmol) was dissolved in 1.0 mL of DCE. After stirring for 15 min, a 3.0 μL aliquot was drawn and added to 3.0 mL of DCE in a quartz cuvette.
4	$FeCl_3$ + *n*-Pr_4NCl	$FeCl_3$ (12.1 mg, 0.075 mmol) and *n*-Pr_4NCl (9.9 mg, 0.045 mmol) were dissolved in 1.0 mL of DCE. After stirring for 15

		min, a 3.0 μL aliquot was drawn and added to 3.0 mL of DCE in a quartz cuvette.
5	$FeCl_3$ + *n*-Pr_4NCl + $PhSiH_3$	$FeCl_3$ (12.1 mg, 0.075 mmol), *n*-Pr_4NCl (9.9 mg, 0.045 mmol) and $PhSiH_3$ (202.9 mg, 1.88 mmol) was dissolved in 1.0 mL of DCE. After stirring for 15 min, a 3.0 μL aliquot was drawn and added to 3.0 mL of DCE in a quartz cuvette.
6	$FeCl_3$ + *n*-Pr_4NCl + $PhSiH_3$ + **2a**	$FeCl_3$ (12.1 mg, 0.075 mmol), *n*-Pr_4NCl (9.9 mg, 0.045 mmol), $PhSiH_3$ (202.9 mg, 1.88 mmol) and **2a** (184.6 mg, 1.5 mmol) was dissolved in 1.0 mL of DCE. After stirring for 15 min, a 3.0 μL aliquot was drawn and added to 3.0 mL of DCE in a quartz cuvette.
7	$FeCl_3$ + *n*-Pr_4NCl + $PhSiH_3$ + **2a** + **1a**	$FeCl_3$ (12.1 mg, 0.075 mmol), *n*-Pr_4NCl (9.9 mg, 0.045 mmol), $PhSiH_3$ (202.9 mg, 1.88 mmol), **2a** (184.6 mg, 1.5 mmol) and **1a** (167.4 mg, 0.75 mmol) was dissolved in 1.0 mL of DCE. After stirring for 15 min, a 3.0 μL aliquot was drawn and added to 3.0 mL of DCE in a quartz cuvette.

3.4 Visible light irradiation on/off experiment

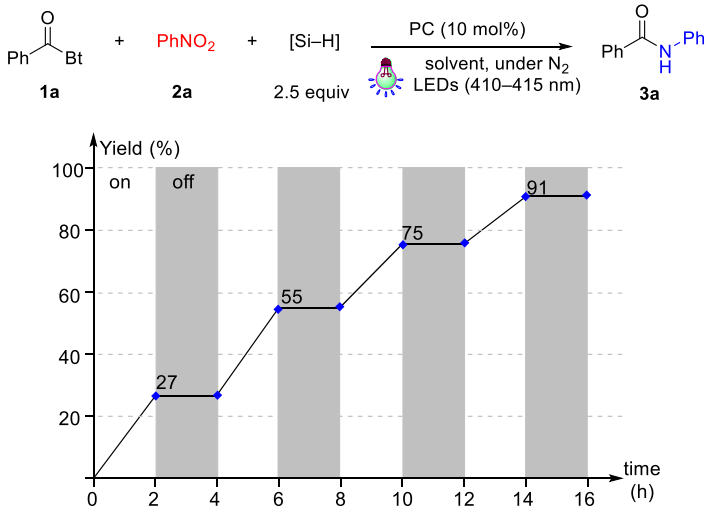
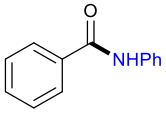


Figure 3. Visible light irradiation on/off experiment.

4. Characterization Data for the Products

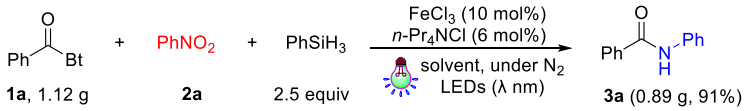


N-Phenylbenzamide (3a)[5]

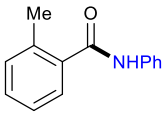
The compound was isolated as a white solid (78.1 mg, 99%) by flash column chromatography (petroleum ether/ethyl acetate = 10/1). **^{1}H NMR** (400 MHz, DMSO-

d_6) δ 10.25 (s, 1H), 7.97 (d, J = 6.9 Hz, 2H), 7.80 (d, J = 7.2 Hz, 2H), 7.63 – 7.57 (m, 1H), 7.57 – 7.50 (m, 2H), 7.38 – 7.33 (m, 2H), 7.11 (t, J = 7.4 Hz, 1H). **^{13}C NMR** (101 MHz, DMSO-d_6) δ 165.6, 139.2, 135.0, 131.6, 128.6, 128.4, 127.7, 123.7, 120.4.

Gram-scale synthesis of 3a from 1a

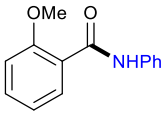


To an oven-dried Schlenk tube was sequentially charged with $FeCl_3$ (81.1 mg, 0.5 mmol), n-Pr_4NCl (66.5 mg, 0.3 mmol), *N*-benzoyl benzotriazole **1a** (1.12 g, 5.0 mmol) under N_2. Then the Schlenk tube was capped with a rubber septum before connecting to Schlenk line. After three vacuum and backfill cycles, DCE (5 mL) was added with an injector. Then $PhSiH_3$ (1.35 g, 12.5 mmol) and $PhNO_2$ (1.23 g, 10.0 mmol) were added through syringes. The perimeter of the septum was carefully sealed with parafilm. Then the mixture was allowed for stirring at 30 °C and irradiated by 410–415 nm LEDs for 24 h. After the reaction was finished, the crude product was purified by column chromatography (petroleum ether/ethyl acetate = 10/1) as an eluent to afford the title compound as a white solid (0.89 g, 91%).



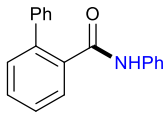
2-Methyl-*N*-phenylbenzamide (3b)[6]

The compound was isolated as a white solid (33.0 mg, 39%) by flash column chromatography (petroleum ether/ethyl acetate = 10/1). **^{1}H NMR** (500 MHz, DMSO-d_6) δ 10.33 (s, 1H), 7.79 (d, J = 7.9 Hz, 2H), 7.47 (d, J = 7.4 Hz, 1H), 7.41 – 7.37 (m, 1H), 7.37 – 7.33 (m, 1H), 7.33 – 7.28 (m, 2H), 7.10 (t, J = 7.4 Hz, 1H), 2.41 (s, 3H). **^{13}C NMR** (126 MHz, DMSO-d_6) δ 167.9, 139.3, 137.3, 135.2, 130.5, 129.6, 128.7, 127.2, 125.6, 123.5, 119.7, 19.3.



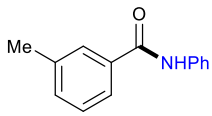
2-Methoxy-*N*-phenylbenzamide (3c)[6]

The compound was isolated as a white solid (38.2 mg, 42%) by flash column chromatography (petroleum ether/ethyl acetate = 10/1). **^{1}H NMR** (400 MHz, $CDCl_3$) δ 9.81 (s, 1H), 8.28 (d, *J* = 7.8 Hz, 1H), 7.69 (d, *J* = 8.4 Hz, 2H), 7.50 – 7.42 (m, 1H), 7.36 (t, *J* = 7.8 Hz, 2H), 7.15 – 7.07 (m, 2H), 6.99 (d, *J* = 8.3 Hz, 1H), 4.00 (s, 3H). **^{13}C NMR** (101 MHz, $CDCl_3$) δ 162.9, 156.8, 138.1, 132.9, 131.9, 128.6, 123.7, 121.3, 121.1, 120.0, 111.2, 55.8.



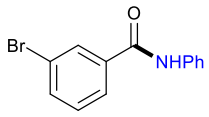
***N*-Phenyl-[1,1'-biphenyl]-2-carboxamide (3d)**[3]

The compound was isolated as a white solid (36.0 mg, 33%) by flash column chromatography (petroleum ether/ethyl acetate = 30/1). **^{1}H NMR** (400 MHz, DMSO-d_6) δ 10.24 (s, 1H), 7.60 – 7.50 (m, 4H), 7.47 (td, *J* = 8.1, 2.5 Hz, 4H), 7.37 (t, *J* = 7.4 Hz, 2H), 7.33 – 7.23 (m, 3H), 7.07 – 7.01 (m, 1H). **^{13}C NMR** (101 MHz, DMSO-d_6) δ 167.9, 140.1, 139.3, 139.2, 137.2, 130.0, 129.8, 128.6, 128.3, 128.3, 127.8, 127.3, 127.2.



3-Methyl-*N*-phenylbenzamide (3e)[6]

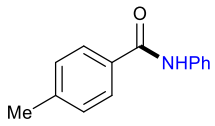
The compound was isolated as a white solid (76.1 mg, 90%) by flash column chromatography (petroleum ether/ethyl acetate = 45/1). **^{1}H NMR** (400 MHz, DMSO-d_6) δ 10.21 (s, 1H), 7.82 – 7.72 (m, 4H), 7.45 – 7.38 (m, 2H), 7.38 – 7.31 (m, 2H), 7.10 (t, *J* = 7.4 Hz, 1H), 2.40 (s, 3H). **^{13}C NMR** (101 MHz, $CDCl_3$) δ 166.0, 138.6, 138.0, 134.9, 132.5, 129.0, 128.5, 127.8, 124.4, 123.9, 120.2, 21.3.



3-Bromo-*N*-phenylbenzamide (3f)[7]

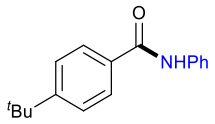
The compound was isolated as a yellow solid (100.6 mg, 91%) by flash column

chromatography (petroleum ether/ethyl acetate = 15/1). **^{1}H NMR** (600 MHz, DMSO-d_6) δ 10.37 (s, 1H), 8.16 (t, J = 1.9 Hz, 1H), 7.98 (d, J = 7.8 Hz, 1H), 7.82 – 7.76 (m, 3H), 7.49 (t, J = 7.9 Hz, 1H), 7.39 – 7.34 (m, 2H), 7.12 (t, J = 7.4 Hz, 1H). **^{13}C NMR** (151 MHz, DMSO-d_6) δ 164.0, 138.9, 137.1, 134.2, 130.6, 130.3, 128.6, 126.9, 123.9, 121.7, 120.5.



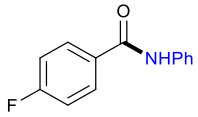
4-Methyl-*N*-phenylbenzamide (3g)[6]

The compound was isolated as a white solid (70.9 mg, 84%) by flash column chromatography (petroleum ether/ethyl acetate = 45/1). **^{1}H NMR** (600 MHz, DMSO-d_6) δ 10.24 (s, 1H), 7.95 (d, J = 8.0 Hz, 2H), 7.89 (d, J = 8.0 Hz, 2H), 7.37 (t, J = 7.8 Hz, 2H), 7.33 (d, J = 7.9 Hz, 2H), 7.11 (t, J = 7.3 Hz, 1H), 2.37 (s, 3H). **^{13}C NMR** (151 MHz, DMSO-d_6) δ 165.5, 141.5, 139.4, 132.2, 128.9, 128.6, 127.7, 123.5, 120.5, 21.0.



4-(*tert*-Butyl)-*N*-phenylbenzamide (3h)[6]

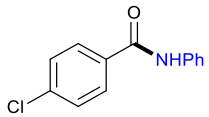
The compound was isolated as a white solid (70.1 mg, 71%) by flash column chromatography (petroleum ether/ethyl acetate = 45/1). **^{1}H NMR** (400 MHz, DMSO-d_6) δ 10.19 (s, 1H), 7.91 (d, J = 8.4 Hz, 2H), 7.81 (d, J = 8.8 Hz, 1H), 7.54 (d, J = 8.3 Hz, 2H), 7.35 (t, J = 7.7 Hz, 2H), 7.09 (t, J = 7.2 Hz, 1H), 1.32 (s, 9H). **^{13}C NMR** (101 MHz, DMSO-d_6) δ 165.5, 154.3, 139.3, 132.3, 128.5, 127.5, 125.1, 123.5, 120.3, 34.6, 30.9.



4-Fluoro-*N*-phenylbenzamide (3i)[6]

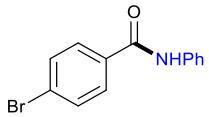
The compound was isolated as a yellow solid (80.9 mg, 94%) by flash column

chromatography (petroleum ether/ethyl acetate = 8/1). **^{1}H NMR** (600 MHz, DMSO-d_6) δ 10.31 (s, 1H), 8.09 (dd, J = 8.6, 5.6 Hz, 2H), 7.84 (d, J = 8.1 Hz, 2H), 7.35 (q, J = 8.4 Hz, 4H), 7.11 (d, J = 7.3 Hz, 1H). **^{13}C NMR** (101 MHz, DMSO-d_6) δ164.4, 164.0 (d, $J_{C\text{-}F}$= 248.9 Hz, 139.1, 131.4 (d, $J_{C\text{-}F}$ = 3.0 Hz), 130.4 (d, $J_{C\text{-}F}$ = 9.1 Hz), 128.6, 123.7, 120.4, 115.3 (d, $J_{C\text{-}F}$ = 21.5 Hz). **^{19}F NMR** (376 MHz, DMSO-d_6) δ -108.85.



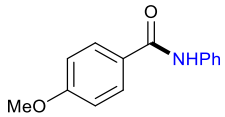
4-Chloro-*N*-phenylbenzamide (3j)[6]

The compound was isolated as a yellow solid (88.1 mg, 95%) by flash column chromatography (petroleum ether/ethyl acetate = 10/1). **^{1}H NMR** (600 MHz, DMSO-d_6) δ 10.34 (s, 1H), 8.02 (d, J = 8.6 Hz, 2H), 7.82 (d, J = 8.0 Hz, 2H), 7.59 (d, J = 8.5 Hz, 2H), 7.39 – 7.30 (m, 2H), 7.11 (t, J = 7.5 Hz, 1H). **^{13}C NMR** (101 MHz, DMSO-d_6) δ 164.4, 139.0, 136.4, 133.7, 129.6, 128.6, 128.4, 123.8, 120.4.



4-Bromo-*N*-phenylbenzamide (3k)[8]

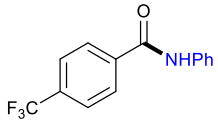
The compound was isolated as a yellow solid (104.9 mg, 95%) by flash column chromatography (petroleum ether/ethyl acetate = 10/1). **^{1}H NMR** (400 MHz, DMSO-d_6) δ 10.33 (s, 1H), 7.93 (d, J = 8.4 Hz, 2H), 7.80 (d, J = 8.9 Hz, 2H), 7.73 (d, J = 8.3 Hz, 2H), 7.36 (t, J = 7.8 Hz, 2H).**^{13}C NMR** (126 MHz, DMSO-d_6) δ 164.6, 139.0, 134.0, 131.4, 129.8, 128.7, 125.3, 123.9, 120.4.



4-Methoxy-*N*-phenylbenzamide (3l)[6]

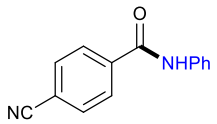
The compound was isolated as a white solid (79.1 mg, 87%) by flash column chromatography (petroleum ether/ethyl acetate = 10/1). **^{1}H NMR** (400 MHz, DMSO-d_6) δ 10.13 (s, 1H), 8.00 (d, J = 8.8 Hz, 2H), 7.85 – 7.78 (m, 2H), 7.35 (t, J = 7.8 Hz,

2H), 7.13 – 7.03 (m, 3H), 3.83 (s, 3H). **^{13}C NMR** (101 MHz, DMSO-d_6) δ 165.0, 161.9, 139.4, 129.6, 128.5, 127.1, 123.4, 120.4, 113.6, 55.4.



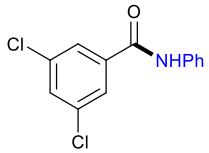
_N_-Phenyl-4-(trifluoromethyl) benzamide (3m)[9]

The compound was isolated as a yellow solid (102.9 mg, 97%) by flash column chromatography (petroleum ether/ethyl acetate = 10/1). **^{1}H NMR** (400 MHz, DMSO-d_6) δ 10.47 (s, 1H), 8.15 (d, J = 8.1 Hz, 2H), 7.92 (d, J = 8.2 Hz, 2H), 7.78(d, J = 7.4 Hz, 2H), 7.37 (t, 2H), 7.13 (t, J = 7.4 Hz, 1H). **^{13}C NMR** (101 MHz, DMSO-d_6) δ 164.4, 138.8 (d, $J_{C\text{-}F}$ = 4.4 Hz), 131.4 (q, $J_{C\text{-}F}$ = 31.9 Hz), 128., 128.6, 125.4 (q, $J_{C\text{-}F}$ = 3.7 Hz), 124.0, 122.6, 120.5. **^{19}F NMR** (376 MHz, DMSO-d_6) δ -61.36.



4-Cyano-_N_-phenylbenzamide (3n)[6]

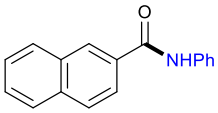
The compound was isolated as a white solid (82.7 mg, 94%) by flash column chromatography (petroleum ether/ethyl acetate = 10/1). **^{1}H NMR** (400 MHz, DMSO-d_6) δ 10.48 (s, 1H), 8.11 (d, J = 8.2 Hz, 2H), 8.02 (d, J = 8.3 Hz, 2H), 7.77 (d, J = 7.9 Hz, 2H), 7.37 (t, J = 7.9 Hz, 2H), 7.13 (t, J = 7.3 Hz, 1H). **^{13}C NMR** (101 MHz, DMSO-d_6) δ 164.1, 139.0, 138.8, 132.4, 128.7, 128.5, 124.1, 120.5, 118.3, 113.9.



3,5-Dichloro-_N_-phenylbenzamide (3o)[10]

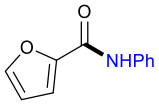
The compound was isolated as a white solid (93.7 mg, 88%) by flash column chromatography (petroleum ether/ethyl acetate = 30/1). **^{1}H NMR** (600 MHz, DMSO-d_6) δ 10.41 (s, 1H), 7.99 (d, J = 2.1 Hz, 2H), 7.80 (d, J = 7.3 Hz, 2H), 7.74 (t, J = 1.8 Hz, 1H), 7.40 – 7.29 (m, 2H), 7.10 (d, J = 7.4 Hz, 1H). **^{13}C NMR** (151 MHz, $CDCl_3$) δ

163.3, 137.8, 137.2, 135.6, 131.61, 129.1, 125.7, 125.2, 120.5.



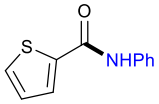
***N*-Phenyl-2-naphthamide (3p)**[3]

The compound was isolated as a yellow solid (93. 9 mg, 95%) by flash column chromatography (petroleum ether/ethyl acetate = 8/1). **^{1}H NMR** (400 MHz, DMSO-d_6) δ 10.58 (s, 1H), 8.71 (s, 1H), 8.18 – 8.09 (m, 2H), 8.05 (d, J = 8.6 Hz, 1H), 7.99 (d, J = 7.6 Hz, 3H), 7.65–7.63 (m, 2H), 7.42 (t, J = 7.8 Hz, 2H), 7.15 (t, J = 7.3 Hz, 1H). **^{13}C NMR** (101 MHz, DMSO-d_6) δ 165.6, 139.2, 132.3, 132.1, 129.0, 128.6, 128.0, 128.0, 127.8, 127.7, 126.8, 124.5, 123.7, 120.4.



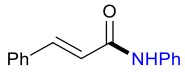
***N*-(Furan-2-yl)benzamide (3q)**[6]

The compound was isolated as a yellow solid (66.7 mg, 89%) by flash column chromatography (petroleum ether/ethyl acetate = 7/1). **^{1}H NMR** (400 MHz, $CDCl_3$) δ 8.22 (s, 1H), 7.67 (d, J = 8.7 Hz, 2H), 7.47 (d, J = 2.0 Hz, 1H), 7.38 – 7.30 (m, 2H), 7.22 (dd, J = 3.3, 0.8 Hz, 1H), 7.17 – 7.09 (m, 1H), 6.54 – 6.49 (m, 1H). **^{13}C NMR** (101 MHz, $CDCl_3$) δ 156.1, 147.7, 144.1, 137.3, 129.0, 124.4, 119.9, 115.1, 112.5.



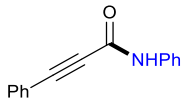
***N*-Phenylthiophene-2-carboxamide (3r)**[6]

The compound was isolated as a yellow solid (62.6 mg, 77%) by flash column chromatography (petroleum ether/ethyl acetate = 15/1). **^{1}H NMR** (400 MHz, DMSO-d_6) δ 10.25 (s, 1H), 8.10 – 8.02 (m, 1H), 7.83 (dd, J = 5.0, 1.1 Hz, 1H), 7.81 – 7.69 (m, 2H), 7.40 – 7.32 (m, 2H), 7.22 (dd, J = 5.0, 3.7 Hz, 1H), 7.10 (t, J = 7.3 Hz, 1H).**^{13}C NMR** (101 MHz, DMSO-d_6) δ 159.9, 138.7, 131.8, 129.1, 128.7, 128.0, 123.7, 120.4.



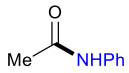
_N_-Phenylcinnamamide (3s)[1]

The compound was isolated as a white solid (41.9 mg, 47%) by flash column chromatography (petroleum ether/ethyl acetate = 10/1). **^{1}H NMR** (400 MHz, $CDCl_3$) δ 7.77 (s, 1H), 7.71 – 7.60 (m, 3H), 7.54 – 7.44 (m, 2H), 7.40 – 7.29 (m, 5H), 7.13 (t, *J* = 7.4 Hz, 1H), 6.59 (d, *J* = 15.5 Hz, 1H). **^{13}C NMR** (101 MHz, $CDCl_3$) δ 164.7, 142.1, 138.1, 134.5, 129.8, 128.9, 128.7, 127.9, 124.4, 121.1, 120.3.



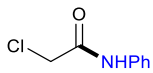
_N_,3-Diphenylpropiolamide (3t)[11]

The compound was isolated as a white solid (59.3 mg, 67%) by flash column chromatography (petroleum ether/ethyl acetate = 10/1). **^{1}H NMR** (400 MHz, DMSO-d_6) δ 10.86 (s, 1H), 7.74 – 7.59 (m, 4H), 7.59 – 7.46 (m, 3H), 7.34 (t, *J* = 7.9 Hz, 2H), 7.12 (t, *J* = 7.2 Hz, 1H). **^{13}C NMR** (101 MHz, DMSO-d_6) δ 150.3, 138.5, 132.2, 130.5, 129.0, 128.8, 124.1, 119.7, 119.6, 84.4, 84.3.



_N_-Phenylacetamide (3u)[5]

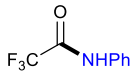
The compound was isolated as a white solid (54.0 mg, 96%) by flash column chromatography (petroleum ether/ethyl acetate = 3/1). **^{1}H NMR** (400 MHz, DMSO-d_6) δ 9.90 (s, 1H), 7.57 (d, *J* = 7.3 Hz, 2H), 7.32 – 7.10 (m, 2H), 7.01 (t, *J* = 7.4 Hz, 1H), 2.03 (s, 3H). **^{13}C NMR** (101 MHz, DMSO-d_6) δ 168.3, 139.4, 128.7, 123.0, 119.1, 24.0.



2-Chloro-_N_-phenylacetamide (3v)[12]

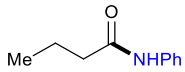
The compound was isolated as a white solid (64.4 mg, 95%) by flash column chromatography (petroleum ether/ethyl acetate = 5/1). **^{1}H NMR** (400 MHz, DMSO-d_6) δ 10.30 (s, 1H), 7.69 – 7.56 (m, 2H), 7.45 – 7.28 (m, 2H), 7.08 (t, J = 7.4 Hz, 1H), 4.26

(s, 2H). **^{13}C NMR** (101 MHz, DMSO-d_6) δ 164.6, 138.5, 128.8, 123.8, 119.4, 43.6.



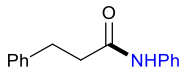
2,2,2-Trifluoro-*N*-phenylacetamide (3w)[5]

The compound was isolated as a yellow solid (28.4 mg, 38%) by flash column chromatography (petroleum ether/ethyl acetate = 60/1). **^{1}H NMR** (400 MHz, DMSO-d_6) δ 11.24 (s, 1H), 7.67 (dd, J = 8.7, 1.2 Hz, 2H), 7.45 – 7.36 (m, 2H), 7.28 – 7.18 (m, 1H). **^{13}C NMR** (101 MHz, DMSO-d_6) δ 154.5 (d, $J_{C\text{-}F}$ = 37.0 Hz), 136.3, 129.0, 125.64, 121.1, 115.8 (d, $J_{C\text{-}F}$= 288.8 Hz). **^{19}F NMR** (376 MHz, DMSO-d_6) δ -73.94.



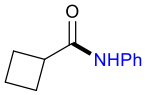
***N*-Phenylbutyramide (3x)**[6]

The compound was isolated as a white solid (47.7 mg, 73%) by flash column chromatography (petroleum ether/ethyl acetate = 5/1). **^{1}H NMR** (400 MHz, DMSO-d_6) δ 9.83 (s, 1H), 7.58 (d, J = 5.5 Hz, 2H), 7.27 (d, J = 8.5 Hz, 2H), 7.03 – 6.97 (m, 1H), 2.27 (t, J = 7.3 Hz, 2H), 1.60 (h, J = 7.4 Hz, 2H), 0.90 (t, J = 7.4 Hz, 3H). **^{13}C NMR** (101 MHz, DMSO-d_6) δ 171.1, 139.3, 128.6, 122.9, 119.0, 38.3, 18.6, 13.6.



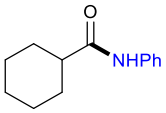
***N*,3-Diphenylpropanamide (3y)**[13]

The compound was isolated as a yellow solid (84.1 mg, 93%) by flash column chromatography (petroleum ether/ethyl acetate = 10/1). **^{1}H NMR** (400 MHz, $CDCl_3$) δ 7.68 (s, 1H), 7.37 (d, J = 7.6 Hz, 2H), 7.18 (d, J = 4.4 Hz, 4H), 7.10 (d, J = 7.4 Hz, 2H), 7.00 (t, J = 7.4 Hz, 1H), 2.93 (t, J = 7.8 Hz, 2H), 2.55 (t, J = 7.8 Hz, 2H). **^{13}C NMR** (101 MHz, $CDCl_3$) δ 170.8, 140.5, 137.7, 128.8, 128.5, 128.3, 126.2, 124.2, 120.1, 39.1, 31.5.



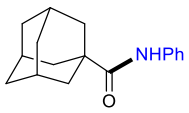
***N*-Phenylcyclobutanecarboxamide (3z)**[3]

The compound was isolated as a yellow solid (64.5 mg, 92%) by flash column chromatography (petroleum ether/ethyl acetate = 40/1). **^{1}H NMR** (600 MHz, DMSO-d_6) δ 9.72 (s, 1H), 7.65 (d, *J* = 8.5 Hz, 2H), 7.42 – 7.20 (m, 2H), 7.00 (t, *J* = 7.4 Hz, 1H), 3.24 (p, *J* = 8.4 Hz, 1H), 2.25 (dq, *J* = 11.6, 9.1 Hz, 2H), 2.14 – 2.06 (m, 2H), 1.98 – 1.87 (m, 1H), 1.81 (td, *J* = 11.4, 9.3, 5.0 Hz, 1H). **^{13}C NMR** (101 MHz, DMSO-d_6) δ 172.8, 139.4, 128.6, 122.9, 119.1, 24.6, 17.7.



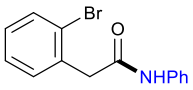
***N*-Phenylcyclohexanecarboxamide (3za)**[6]

The compound was isolated as a yellow solid (77.3 mg, 95%) by flash column chromatography (petroleum ether/ethyl acetate = 45/1). **^{1}H NMR** (400 MHz, DMSO-d_6) δ 9.78 (s, 1H), 7.60 (d, *J* = 7.7 Hz, 2H), 7.26 (t, *J* = 7.9 Hz, 2H), 7.00 (t, *J* = 7.4 Hz, 1H), 2.32 (t, *J* = 11.5 Hz, 1H), 1.77 (t, *J* = 14.9 Hz, 4H), 1.65 (d, *J* = 9.9 Hz, 1H), 1.40 (q, *J* = 11.0, 9.6 Hz, 2H), 1.33 – 1.10 (m, 3H). **^{13}C NMR** (101 MHz, DMSO-d_6) δ 174.3 , 139.5, 128.6, 122.8, 119.0, 44.9, 29.1, 25.4, 25.2.



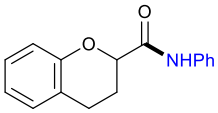
***N*-Phenyladamantane-1-carboxamide (3zb)**[3]

The compound was isolated as a white solid (35.3 mg, 35%) by flash column chromatography (petroleum ether/ethyl acetate = 10/1). **^{1}H NMR** (400 MHz, DMSO-d_6) δ 9.09 (s, 1H), 7.68 – 7.59 (m, 2H), 7.30 – 7.24 (m, 2H), 7.04 – 6.99 (m, 1H), 2.02 (d, *J* = 6.4 Hz, 2H), 1.90 (d, *J* = 2.9 Hz, 6H), 1.71 (d, *J* = 3.1 Hz, 6H). **^{13}C NMR** (101 MHz, DMSO-d_6) δ 175.9, 139.3, 128.3, 123.1, 120.2, 40.9, 38.3, 36.0, 27.7.



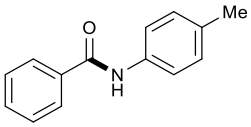
2-(2-Bromophenyl)-*N*-phenylacetamide (3zc)[3]

The compound was isolated as a white solid (81.2 mg, 70%) by flash column chromatography (petroleum ether/ethyl acetate = 10/1). **^{1}H NMR** (400 MHz, $CDCl_3$) δ 7.62 (dd, *J* = 8.0, 1.2 Hz, 1H), 7.48 – 7.44 (m, 2H), 7.43 – 7.40 (m, 1H), 7.36 – 7.31 (m, 2H), 7.29 (t, *J* = 7.9 Hz, 2H), 7.22 – 7.17 (m, 1H), 7.09 (t, *J* = 7.3 Hz, 1H), 3.86 (s, 2H). **^{13}C NMR** (101 MHz, $CDCl_3$) δ 168.0, 137.6, 134.5, 133.0, 131.7, 129.1, 128.8, 127.9, 124.9, 124.3, 120.1, 44.6.



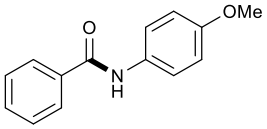
***N*-Phenylchromane-2-carboxamide (3zd)**[14]

The compound was isolated as a white solid (84.9 mg, 84%) by flash column chromatography (petroleum ether/ethyl acetate = 10/1). **^{1}H NMR** (400 MHz, DMSO-d_6) δ 9.97 (s, 1H), 7.71 (d, *J* = 7.9 Hz, 2H), 7.33 (t, *J* = 7.7 Hz, 2H), 7.16 – 7.06 (m, 3H), 6.95 (d, *J* = 8.1 Hz, 1H), 6.87 (t, *J* = 7.3 Hz, 1H), 4.76 – 4.71 (m, 1H), 2.92 – 2.81 (m, 1H), 2.80 – 2.70 (m, 1H), 2.28 – 2.21 (m, 1H), 2.11 – 2.00 (m, 1H). **^{13}C NMR** (101 MHz, DMSO-d_6) δ 168.7, 153.4, 138.4, 129.5, 128.6, 127.2, 123.8, 121.9, 120.5, 112.0, 116.6, 75.0, 24.4, 23.2.



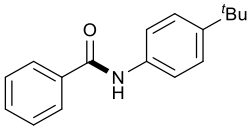
***N*-(*p*-Tolyl)-benzamide (4a)**[6]

The compound was isolated as a yellow solid (75.2 mg, 89%) by flash column chromatography (petroleum ether/ethyl acetate = 10/1). **^{1}H NMR** (400 MHz, DMSO-d_6) δ 10.18 (s, 1H), 7.94 (d, *J* = 6.9 Hz, 2H), 7.65 (d, *J* = 8.4 Hz, 2H), 7.59 – 7.49 (m, 3H), 7.15 (d, *J* = 8.3 Hz, 2H), 2.28 (s, 3H). **^{13}C NMR** (101 MHz, DMSO-d_6) δ 165.3, 136.7, 135.1, 132.6, 131.4, 129.0, 128.3, 127.6, 120.4, 20.5.



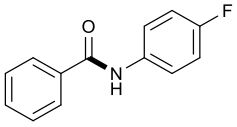
***N*-(*p*-Methoxy)-benzamide (4b)**[3]

The compound was isolated as a white solid (82.7 mg, 91%) by flash column chromatography (petroleum ether/ethyl acetate = 5/1). **^{1}H NMR** (400 MHz, DMSO-d_6) δ 10.11 (s, 1H), 7.94 (d, J = 6.8 Hz, 2H), 7.68 (d, J = 9.0 Hz, 2H), 7.60 – 7.49 (m, 3H), 6.93 (d, J = 9.0 Hz, 2H), 3.75 (s, 3H). **^{13}C NMR** (101 MHz, DMSO-d_6) δ 165.1, 155.6, 135.1, 132.3, 131.4, 128.3, 127.6, 122.0, 113.7, 55.2.



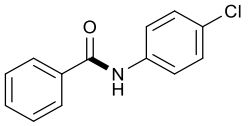
***N*-(4-(*tert*-Butyl)phenyl)benzamide (4c)**[6]

The compound was isolated as a white solid (88.2 mg, 87%) by flash column chromatography (petroleum ether/ethyl acetate = 5/1). **^{1}H NMR** (400 MHz, DMSO-d_6) δ 10.18 (s, 1H), 8.00 – 7.92 (m, 2H), 7.74 – 7.68 (m, 2H), 7.63 – 7.47 (m, 4H), 7.39 – 7.33 (m, 2H), 1.28 (s, 9H). **^{13}C NMR** (101 MHz, DMSO-d_6) δ 165.3, 146.0, 136.6, 135.0, 131.4, 128.3, 127.6, 125.2, 120.1, 34.0, 31.2.



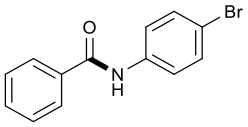
***N*-(4-Fluorophenyl)benzamide (4d)**[6]

The compound was isolated as a white solid (75.8 mg, 88%) by flash column chromatography (petroleum ether/ethyl acetate = 10/1). **^{1}H NMR** (400 MHz, DMSO-d_6) δ 10.31 (s, 1H), 7.95 (d, J = 7.2 Hz, 2H), 7.85 – 7.73 (m, 2H), 7.62 – 7.50 (m, 3H), 7.19 (t, J = 8.6 Hz, 2H). **^{13}C NMR** (101 MHz, DMSO-d_6) δ 165.5, 158.4 (d, $J_{C\text{-}F}$ = 240.3 Hz), 135.6, 134.9, 131.6, 128.4, 127.7, 122.2 (d, $J_{C\text{-}F}$ = 7.8 Hz), 115.2 (d, $J_{C\text{-}F}$ = 22.2 Hz). **^{19}F NMR** (376 MHz, DMSO-d_6) δ -118.83.



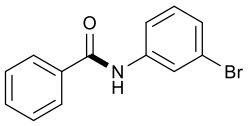
***N*-(4-Chlorophenyl)-2-(trifluoromethyl)benzamide (4e)**[8]

The compound was isolated as a white solid (85.3 mg, 92%) by flash column chromatography (petroleum ether/ethyl acetate = 10/1). **^{1}H NMR** (600 MHz, DMSO-d_6) δ 10.41 (s, 1H), 7.98 (d, J = 9.0 Hz, 2H), 7.87 (d, J = 8.8 Hz, 2H), 7.59 (d, J = 7.4 Hz, 1H), 7.53 (t, J = 7.5 Hz, 2H), 7.41 (d, J = 8.8 Hz, 2H). **^{13}C NMR** (101 MHz, DMSO-d_6) δ 165.6, 138.2, 134.7, 131.7, 128.5, 128.4, 127.7, 127.3.



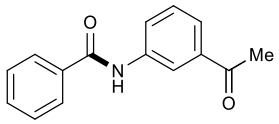
***N*-(4-Bromophenyl)benzamide (4f)**[8]

The compound was isolated as a yellow solid (96.1 mg, 87%) by flash column chromatography (petroleum ether/ethyl acetate = 10/1). **^{1}H NMR** (400 MHz, DMSO-d_6) δ 10.37 (s, 1H), 8.05 – 7.91 (m, 2H), 7.81 – 7.72 (m, 2H), 7.60 (t, J = 7.3 Hz, 1H), 7.58 – 7.49 (m, 4H). **^{13}C NMR** (101 MHz, DMSO-d_6) δ 165.7, 138.6, 134.7, 131.7, 131.4, 128.4, 127.7, 122.2, 115.3.



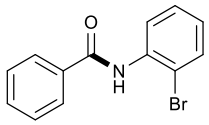
***N*-(*m*-Bromo)benzamide (4g)**[3]

The compound was isolated as a yellow solid (100.1 mg, 91%) by flash column chromatography (petroleum ether/ethyl acetate = 10/1). **^{1}H NMR** (400 MHz, $CDCl_3$) δ 7.88 (s, 1H), 7.80 (t, J = 2.0 Hz, 1H), 7.76 – 7.72 (m, 1H), 7.45 (td, J = 6.2, 5.2, 2.6 Hz, 2H), 7.36 (t, J = 7.5 Hz, 2H), 7.17 (d, J = 8.1 Hz, 1H), 7.11 (t, J = 8.0 Hz, 1H). **^{13}C NMR** (101 MHz, $CDCl_3$) δ 166.1, 139.2, 134.3, 132.0, 130.2, 128.7, 127.4, 127.1, 123.3, 122.5, 118.9.



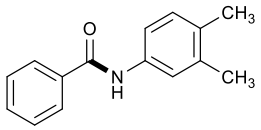
***N*-(3-Acetylphenyl)benzamide (4h)**[3]

The compound was isolated as a white solid (86.2 mg, 89%) by flash column chromatography (petroleum ether/ethyl acetate = 5/1). **^{1}H NMR** (400 MHz, DMSO-d_6) δ 10.46 (s, 1H), 8.40 (s, 1H), 8.10 (dd, J = 8.0, 2.1 Hz, 1H), 8.00 (dd, J = 7.5, 2.3 Hz, 2H), 7.72 (d, J = 6.4 Hz, 1H), 7.64 – 7.48 (m, 4H), 2.59 (s, 3H). **^{13}C NMR** (101 MHz, DMSO-d_6) δ 197.7, 165.7, 139.6, 137.3, 134.6, 131.8, 129.0, 128.4, 127.7, 124.8, 123.6, 119.7, 26.8.



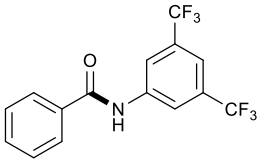
***N*-(2-Bromophenyl)benzamide (4i)**[8]

The compound was isolated as a yellow solid (68.5 mg, 62%) by flash column chromatography (petroleum ether/ethyl acetate = 30/1). **^{1}H NMR** (500 MHz, $CDCl_3$) δ 8.56 (dd, J = 8.3, 1.4 Hz, 1H), 8.48 (s, 1H), 7.97 – 7.88 (m, 2H), 7.61 – 7.55 (m, 2H), 7.55 – 7.48 (m, 2H), 7.37 (td, J = 8.5, 8.0, 1.5 Hz, 1H), 7.01 (td, J = 7.7, 1.6 Hz, 1H). **^{13}C NMR** (126 MHz, $CDCl_3$) δ 165.2, 135.8, 134.5, 132.2, 132.1, 128.9, 128.5, 127.0, 125.2, 121.7, 113.7.



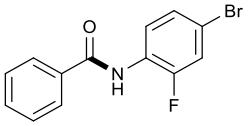
***N*-(3, 4-Dimethylphenyl)benzamide (4j)**[15]

The compound was isolated as a white solid (76.6 mg, 85%) by flash column chromatography (petroleum ether/ethyl acetate = 50/1). **^{1}H NMR** (600 MHz, DMSO-d_6) δ 10.18 (s, 1H), 8.06 – 7.96 (m, 2H), 7.65 (d, J = 2.3 Hz, 1H), 7.62 – 7.56 (m, 2H), 7.52 (t, J = 7.4 Hz, 2H), 7.11 (d, J = 8.2 Hz, 1H), 2.23 (s, 3H), 2.20 (s, 3H). **^{13}C NMR** (151 MHz, DMSO-d_6) δ 165.3, 137.0, 136.1, 135.2, 131.4, 131.3, 129.5, 128.3, 127.6, 121.7, 118.0, 19.6, 18.8.



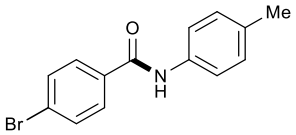
***N*-(3,5-Bis(trifluoromethyl)phenyl)benzamide (4k)**[10]

The compound was isolated as a white solid (126.6 mg, 95%) by flash column chromatography (petroleum ether/ethyl acetate = 200/1). **^{1}H NMR** (600 MHz, DMSO-d_6) δ 10.80 (s, 1H), 8.53 (s, 2H), 8.00 (d, J = 7.2 Hz, 2H), 7.69 (s, 1H), 7.59 (t, J = 7.4 Hz, 1H), 7.52 (t, J = 7.6 Hz, 2H). **^{13}C NMR** (126 MHz, DMSO-d_6) δ 166.2, 141.1, 133.86, 132.3, 130.7 (q, $J_{C\text{-}F}$ = 32.7 Hz), 128.6, 127.79, 123.3 (d, $J_{C\text{-}F}$ = 273.0 Hz), 119.9 (d, $J_{C\text{-}F}$ = 4.0 Hz), 116.4. **^{19}F NMR** (376 MHz, $CDCl_3$) δ -62.99.



***N*-(4-Bromo-2-fluorophenyl)benzamide (4l)**[3]

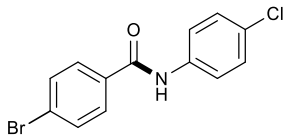
The compound was isolated as a white solid (95.3 mg, 81%) by flash column chromatography (petroleum ether/ethyl acetate = 150/1). **^{1}H NMR** (600 MHz, DMSO-d_6) δ 10.23 (s, 1H), 8.02 (d, J = 7.9 Hz, 2H), 7.69 – 7.55 (m, 2H), 7.53 (t, J = 7.6 Hz, 2H), 7.44 (dd, J = 8.7, 2.2 Hz, 1H). **^{13}C NMR** (101 MHz, $CDCl_3$) δ 165.3, 152.3 (d, $J_{C\text{-}F}$ = 247.4 Hz), 134.2, 132.3, 129.0, 127.9 (d, $J_{C\text{-}F}$ = 3.7 Hz), 127.1, 125.8 (d, $J_{C\text{-}F}$ = 10.0 Hz), 122.7 (d, $J_{C\text{-}F}$ = 1.6 Hz), 118.4 (d, $J_{C\text{-}F}$ = 22.5 Hz), 115.9 (d, $J_{C\text{-}F}$ = 9.4 Hz). **^{19}F NMR** (376 MHz, $CDCl_3$) δ -128.60.



4-Bromo-*N*-(*p*-tolyl)benzamide (4m)[16]

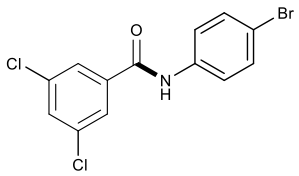
The compound was isolated as a white solid (69.6 mg, 60%) by flash column chromatography (petroleum ether/ethyl acetate = 20/1). **^{1}H NMR** (600 MHz, DMSO-d_6) δ 10.24 (s, 1H), 7.91 (d, J = 8.5 Hz, 2H), 7.72 (d, J = 8.4 Hz, 2H), 7.66 (d, J = 8.2

Hz, 2H), 7.15 (d, *J* = 8.2 Hz, 2H), 2.27 (s, 3H). **^{13}C NMR** (101 MHz, DMSO-d_6) δ 164.3, 136.41, 134.1, 132.8, 131.4, 129.8, 129.0, 125.2, 120.4, 20.5.



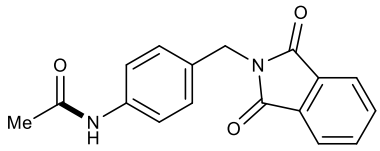
4-Bromo-*N*-(4-chlorophenyl)benzamide (4n)[17]

The compound was isolated as a white solid (87.2 mg, 70%) by flash column chromatography (petroleum ether/ethyl acetate = 40/1). **^{1}H NMR** (400 MHz, DMSO-d_6) δ 10.44 (s, 1H), 7.93 – 7.88 (m, 2H), 7.84 – 7.72 (m, 4H), 7.42 (dd, 2H). **^{13}C NMR** (101 MHz, DMSO-d_6) δ 164.6, 139.0, 133.7, 131.5, 129.8, 128.6, 127.4, 125.5, 121.9.



***N*-(4-Bromophenyl)-3,5-dichloro benzamide (4o)**

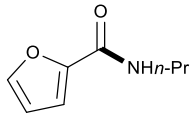
The compound was isolated as a white solid (85.0 mg, 62%) by flash column chromatography (petroleum ether/ethyl acetate = 40/1). **^{1}H NMR** (400 MHz, DMSO-d_6) δ 10.50 (s, 1H), 7.96 (s, 1H), 7.88 – 7.71 (m, 3H), 7.53 (d, *J* = 8.4 Hz, 2H). **^{13}C NMR** (101 MHz, DMSO-d_6) δ 162.7, 138.0, 137.8, 134.3, 131.5, 131.0, 126.5, 122.3, 115.9. **HRMS (ESI^{+}) m/z:** $[M+H]^{+}$ Calcd for $C_{13}H_9BrCl_2NO$, 343.9245; found: 343.9238.



***N*-(4-((1,3-Dioxoisoindolin-2-yl)methyl)phenyl)benzamide (4p)**[3]

The compound was isolated as a white solid (84.7 mg, 72%) by flash column chromatography (petroleum ether/ethyl acetate = 2/1). **^{1}H NMR** (400 MHz, DMSO-d_6) δ 9.93 (s, 1H), 7.96 – 7.79 (m, 4H), 7.51 (d, *J* = 8.2 Hz, 2H), 7.23 (d, *J* = 8.2 Hz, 2H),

4.70 (s, 2H), 2.01 (s, 3H). **^{13}C NMR** (101 MHz, DMSO-d_6) δ 168.3, 167.7, 138.6, 134.5, 131.6, 131.1, 128.0, 123.2, 119.1, 40.5, 24.0.



***N*-Propylfuran-2-carboxamide (4q)[18]**

The compound was isolated as a yellow solid (20.5 mg, 34%) by flash column chromatography (petroleum ether/ethyl acetate = 10/1). **^{1}H NMR** (400 MHz, $CDCl_3$) δ 7.30 (d, J = 1.8 Hz, 1H), 6.97 (d, J = 2.7 Hz, 1H), 6.73 (s, 1H), 6.34 (dd, J = 3.5, 1.8 Hz, 1H), 3.26 (q, J = 14.2, 6.2 Hz, 1H), 1.50 (h, J = 7.4 Hz, 2H), 0.83 (t, J = 7.4 Hz, 3H). **^{13}C NMR** (101 MHz, $CDCl_3$) δ 158.3, 147.9, 143.5, 113.4, 111.6, 40.6, 22.6, 11.1.

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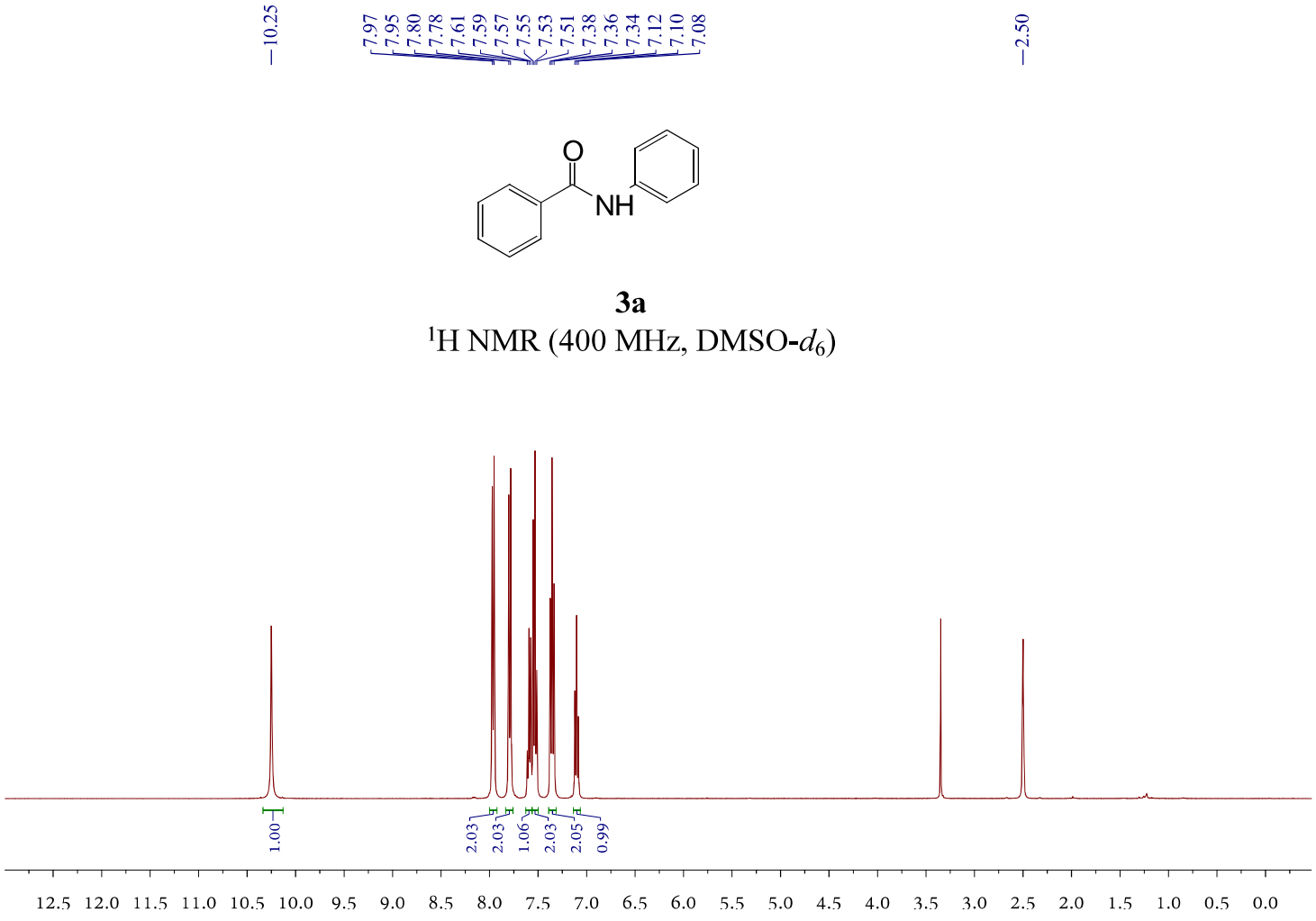
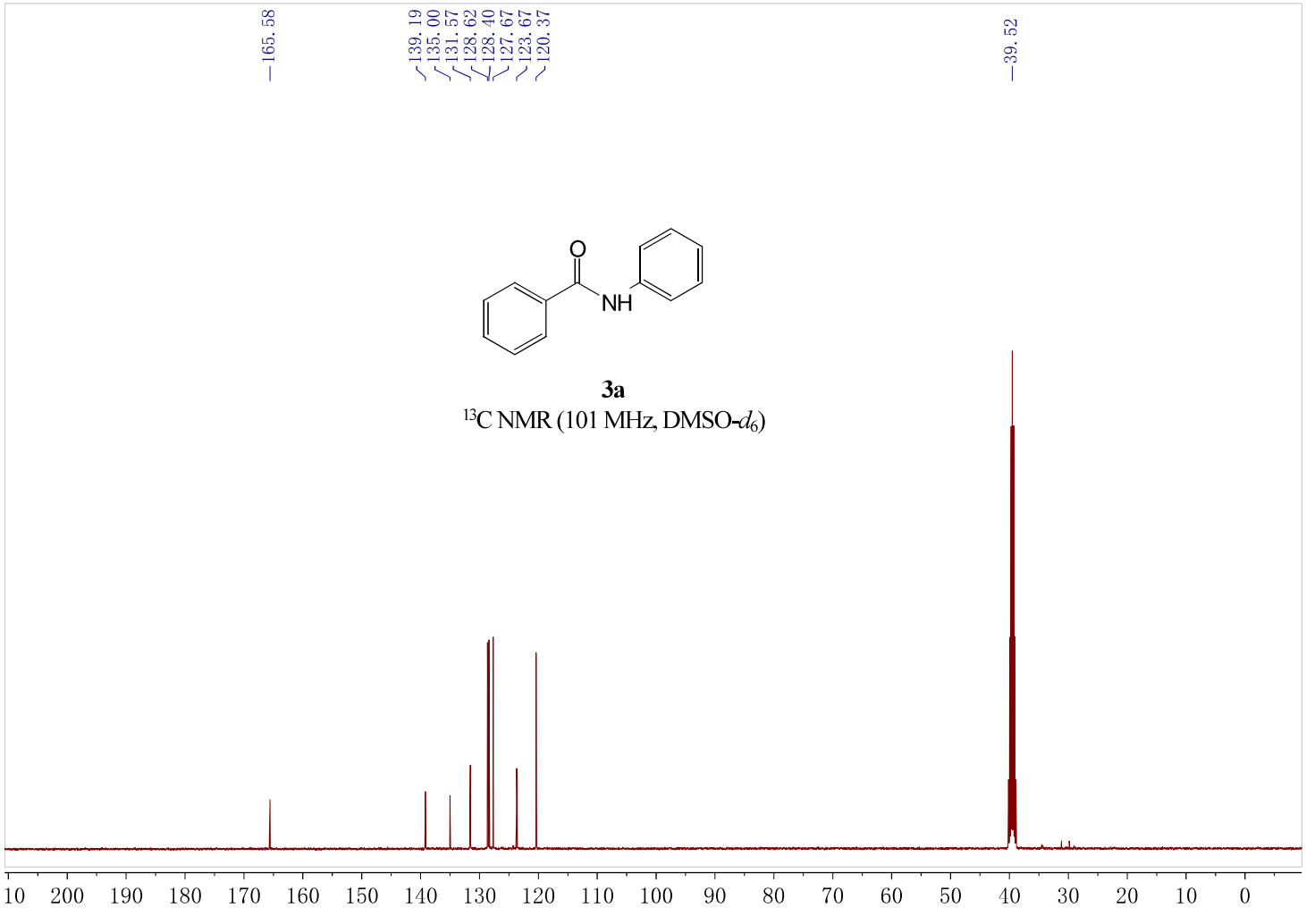
6. Copies of NMR Spectra



3a

^{1}H NMR (400 MHz, DMSO-d_6)



3a

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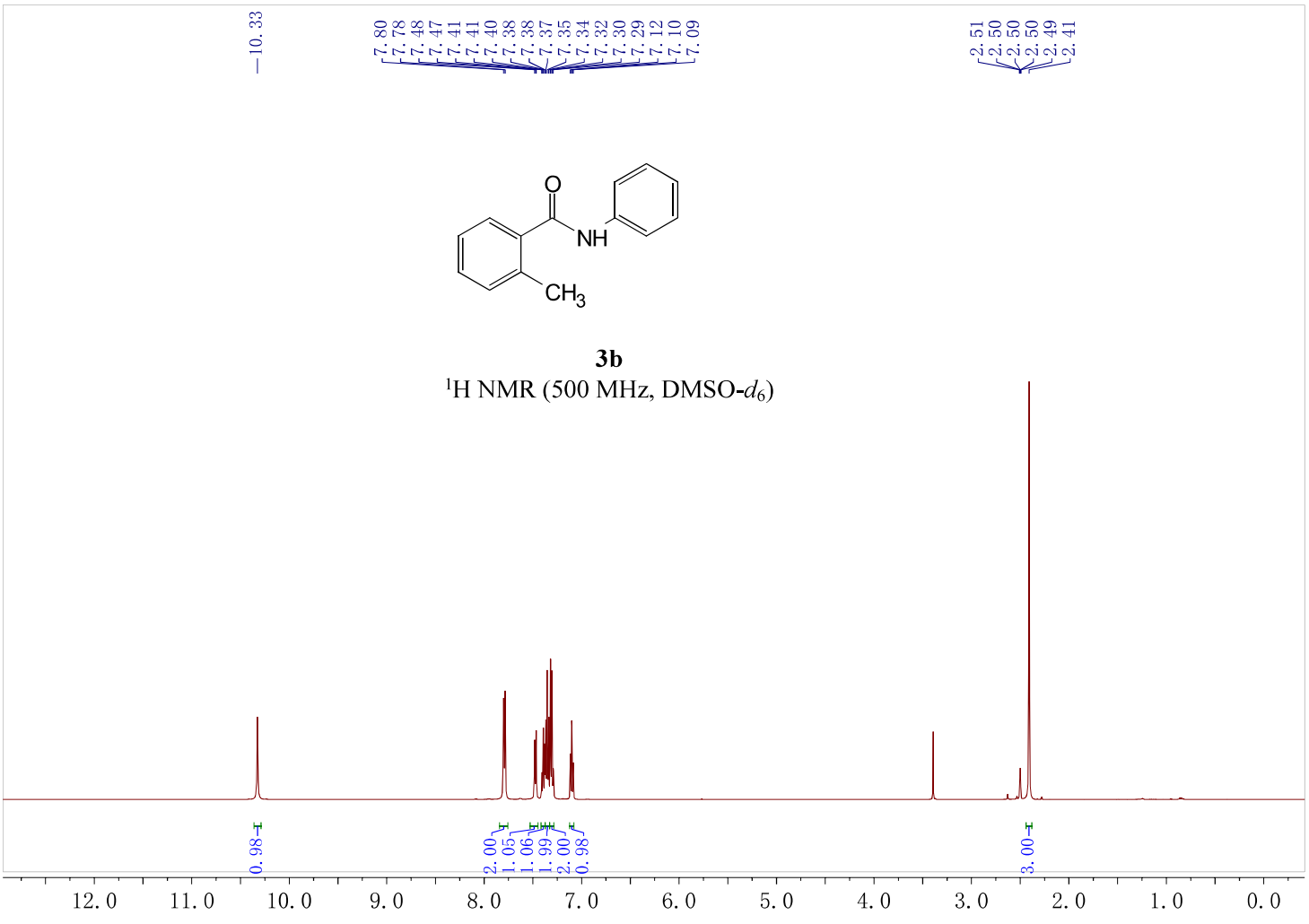

3b

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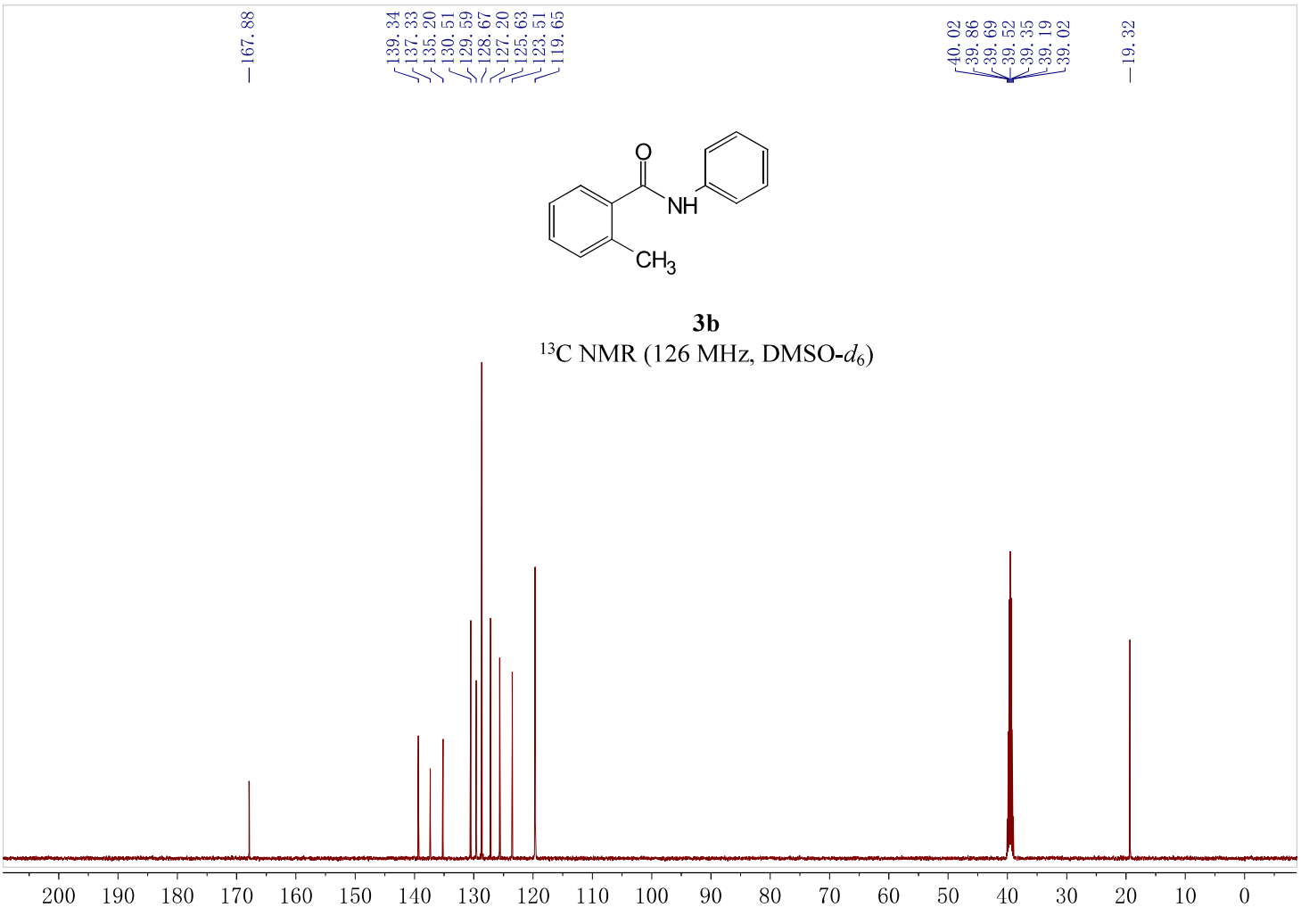

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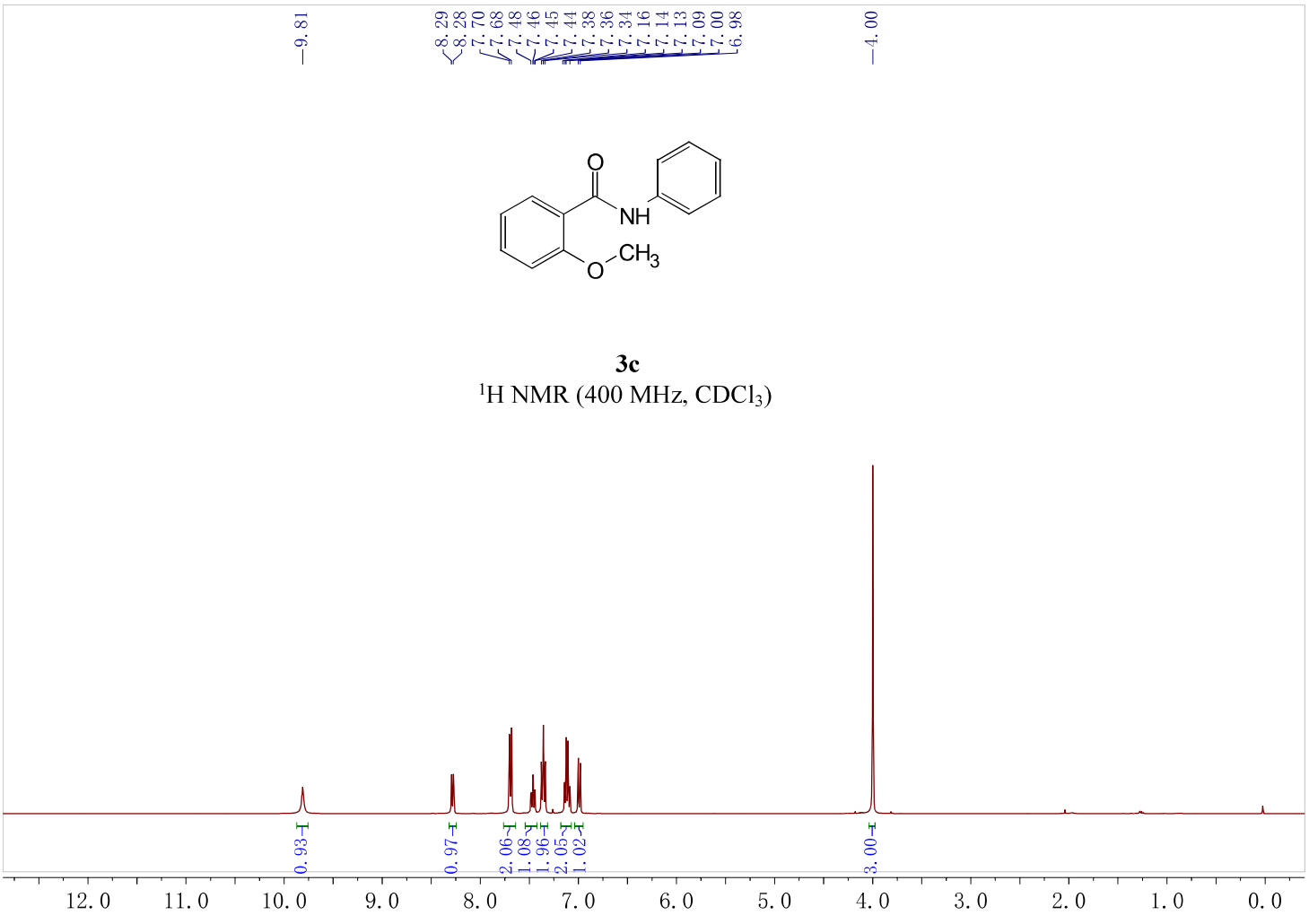

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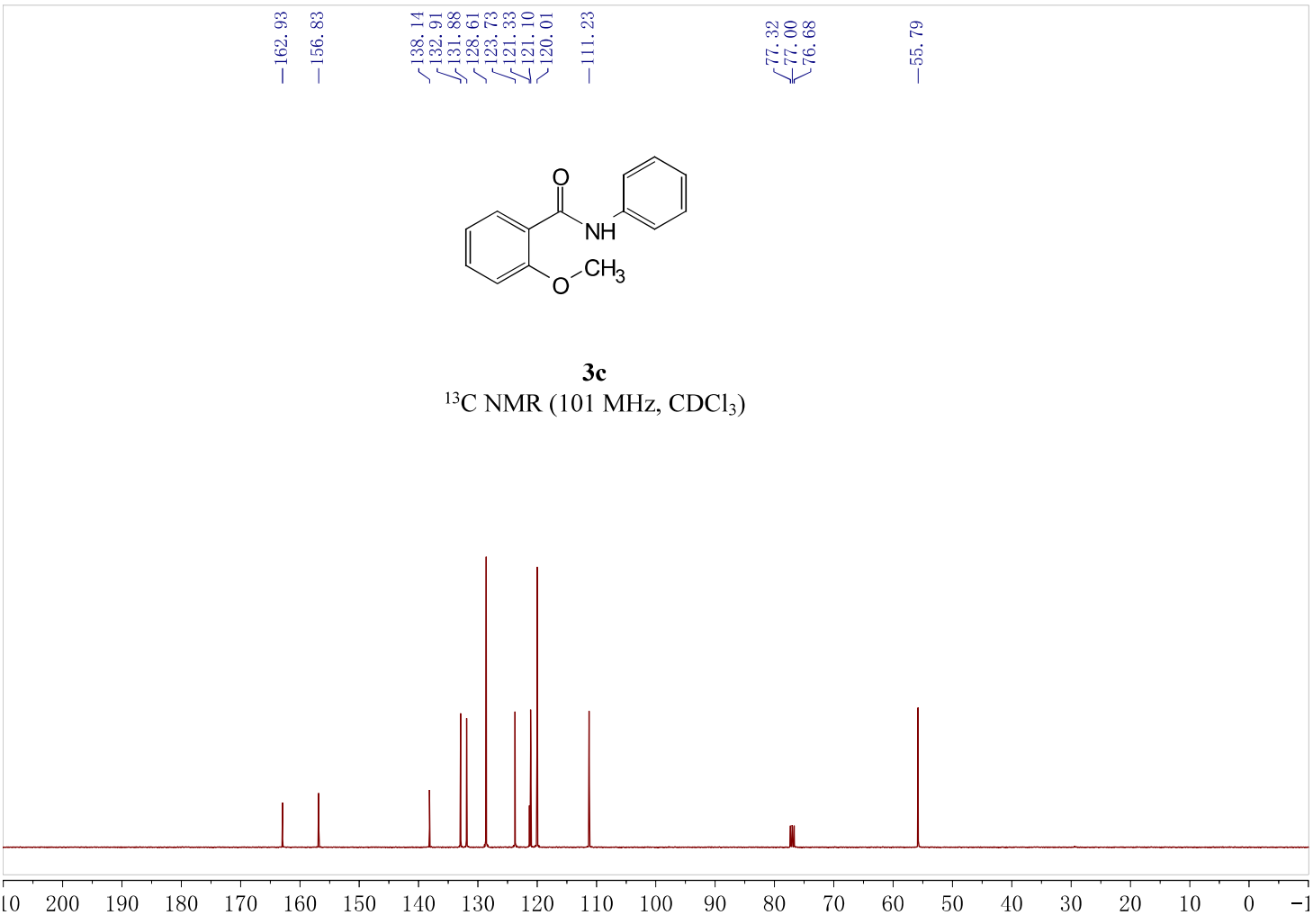

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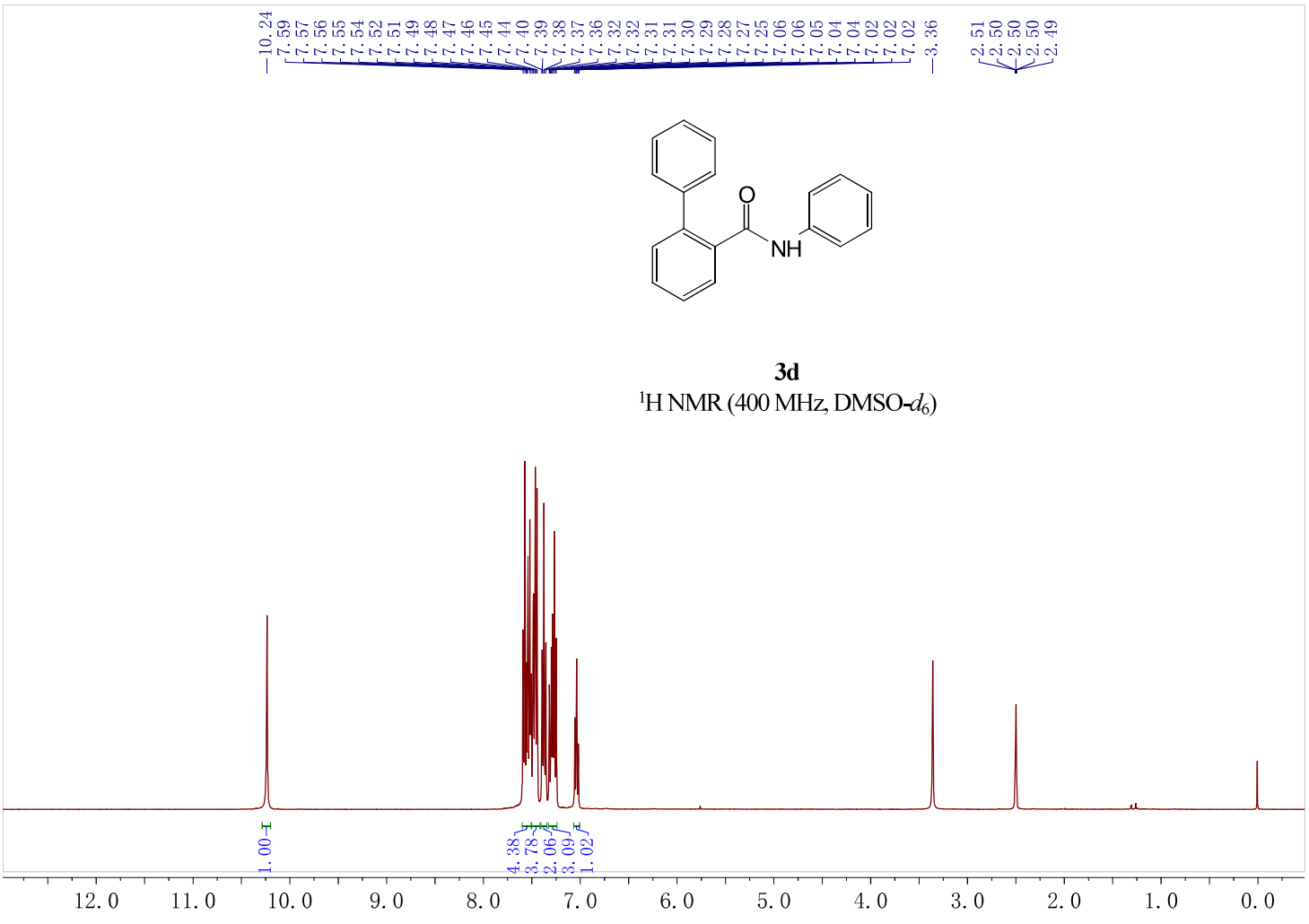

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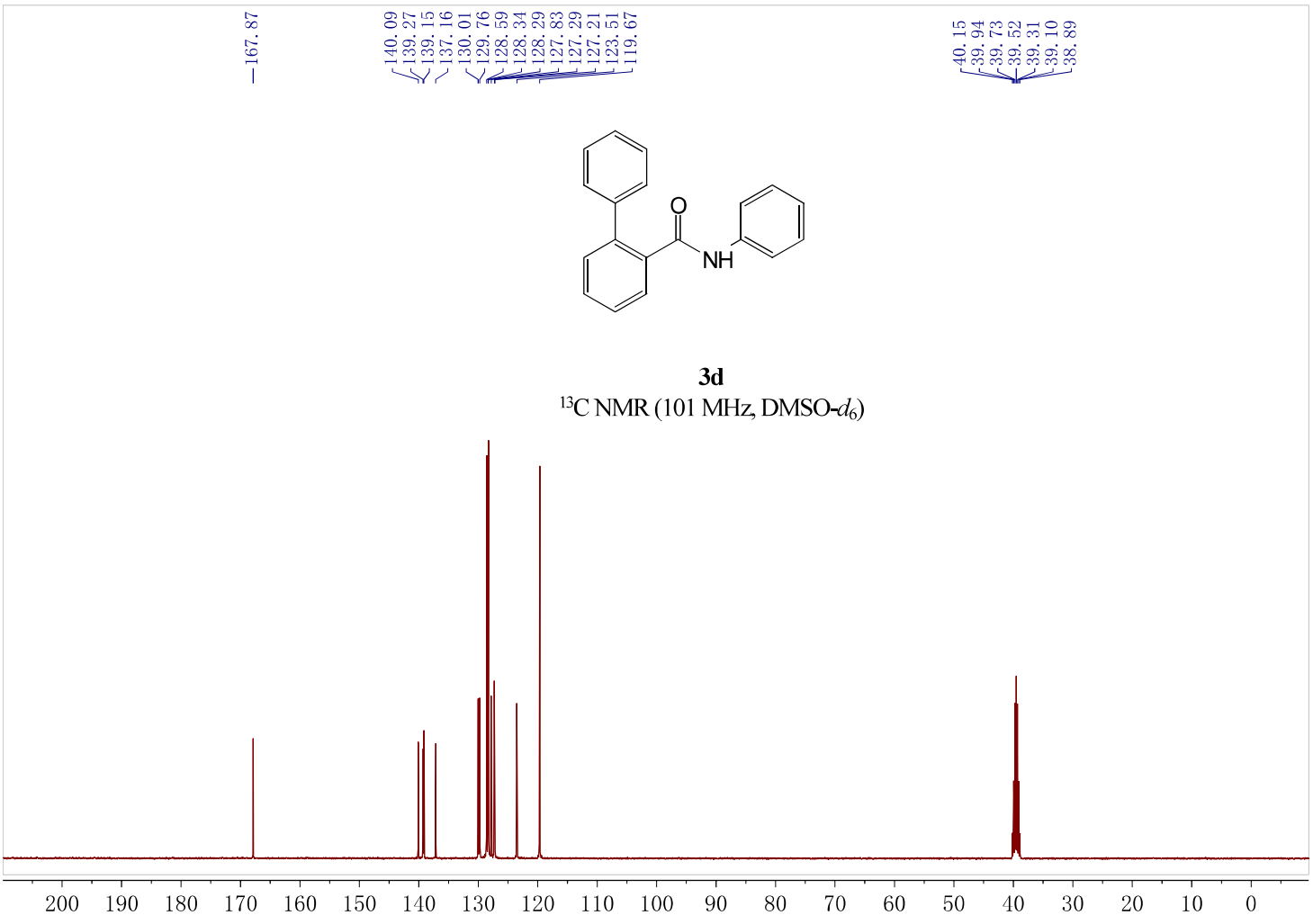

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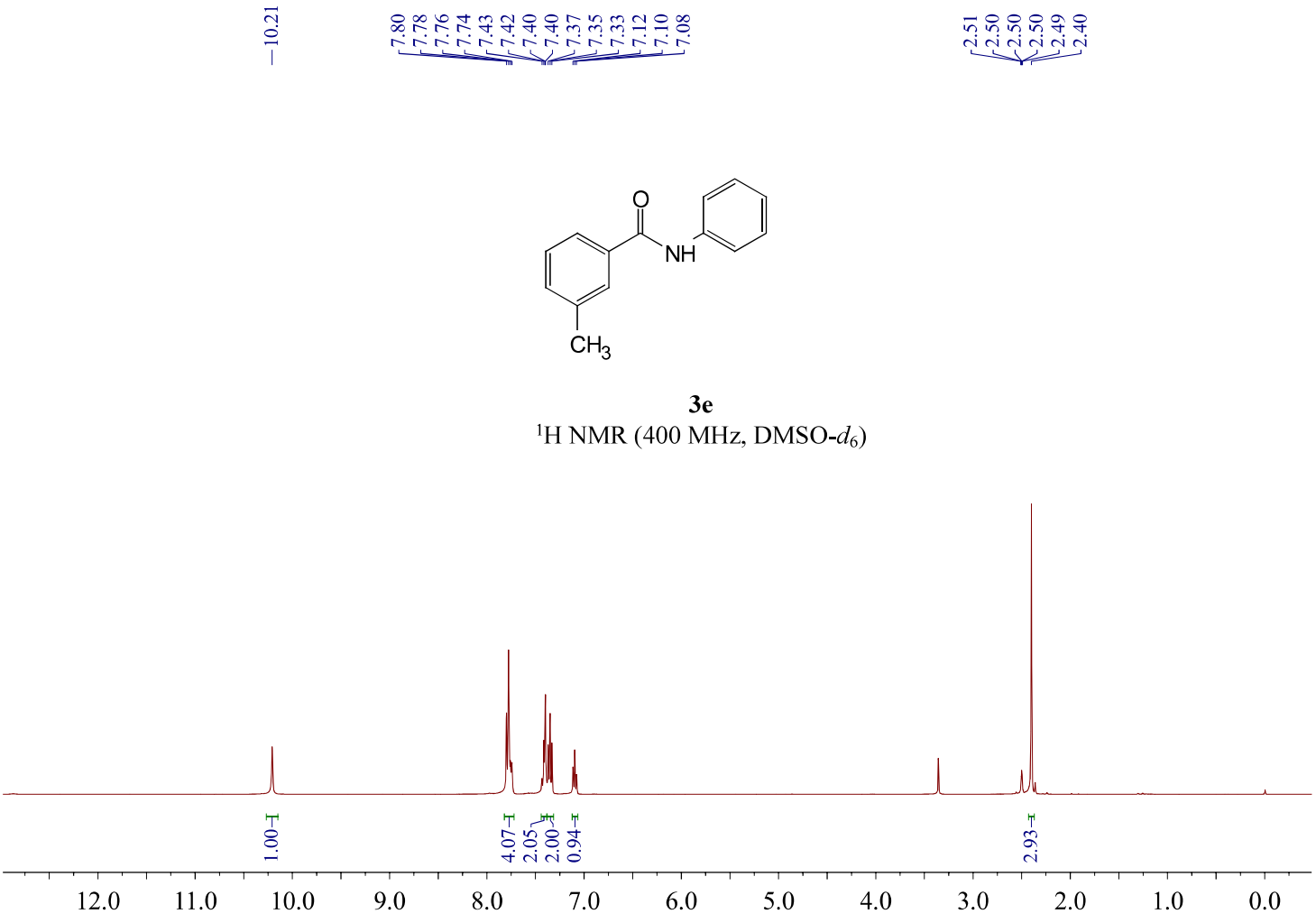

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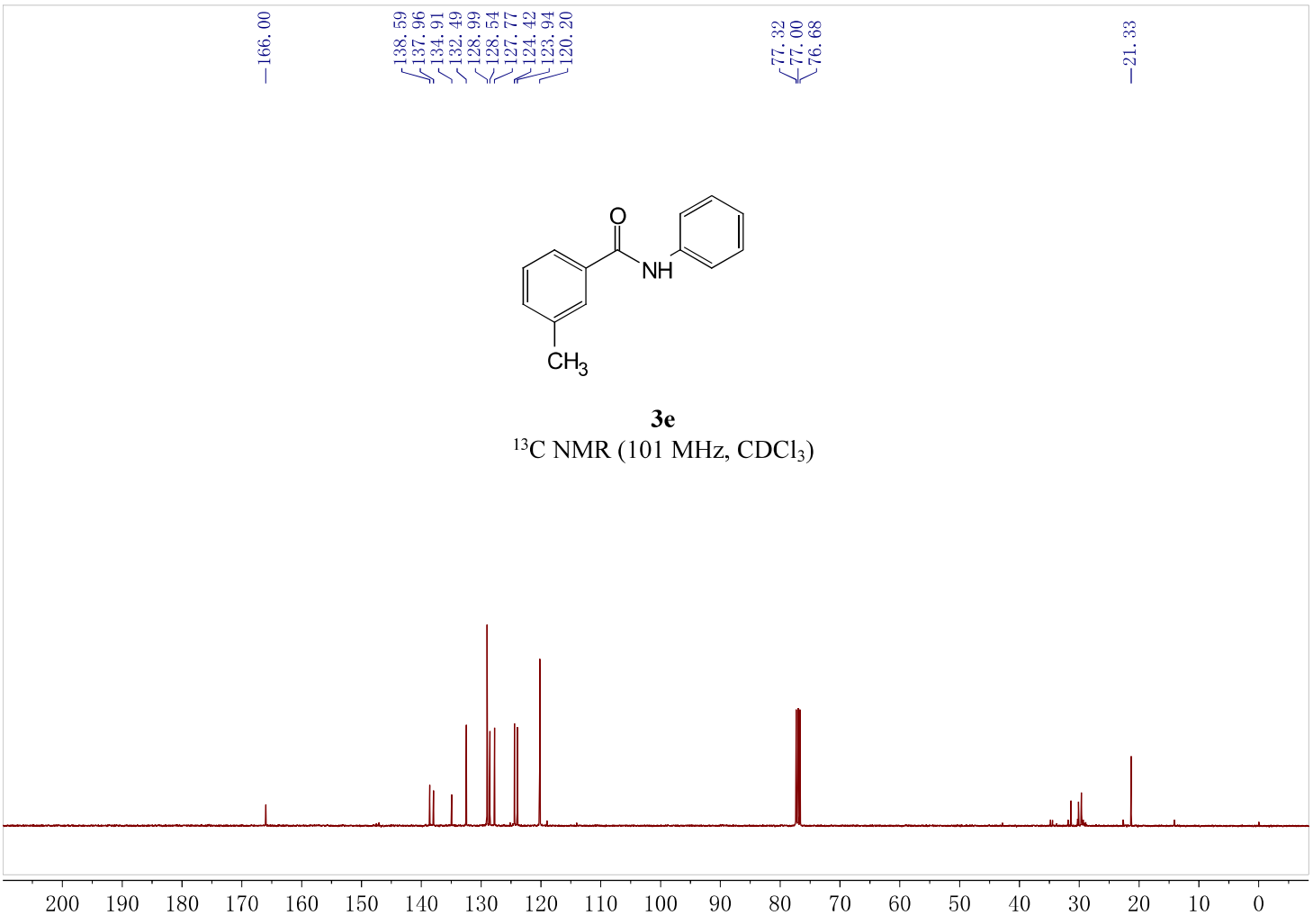

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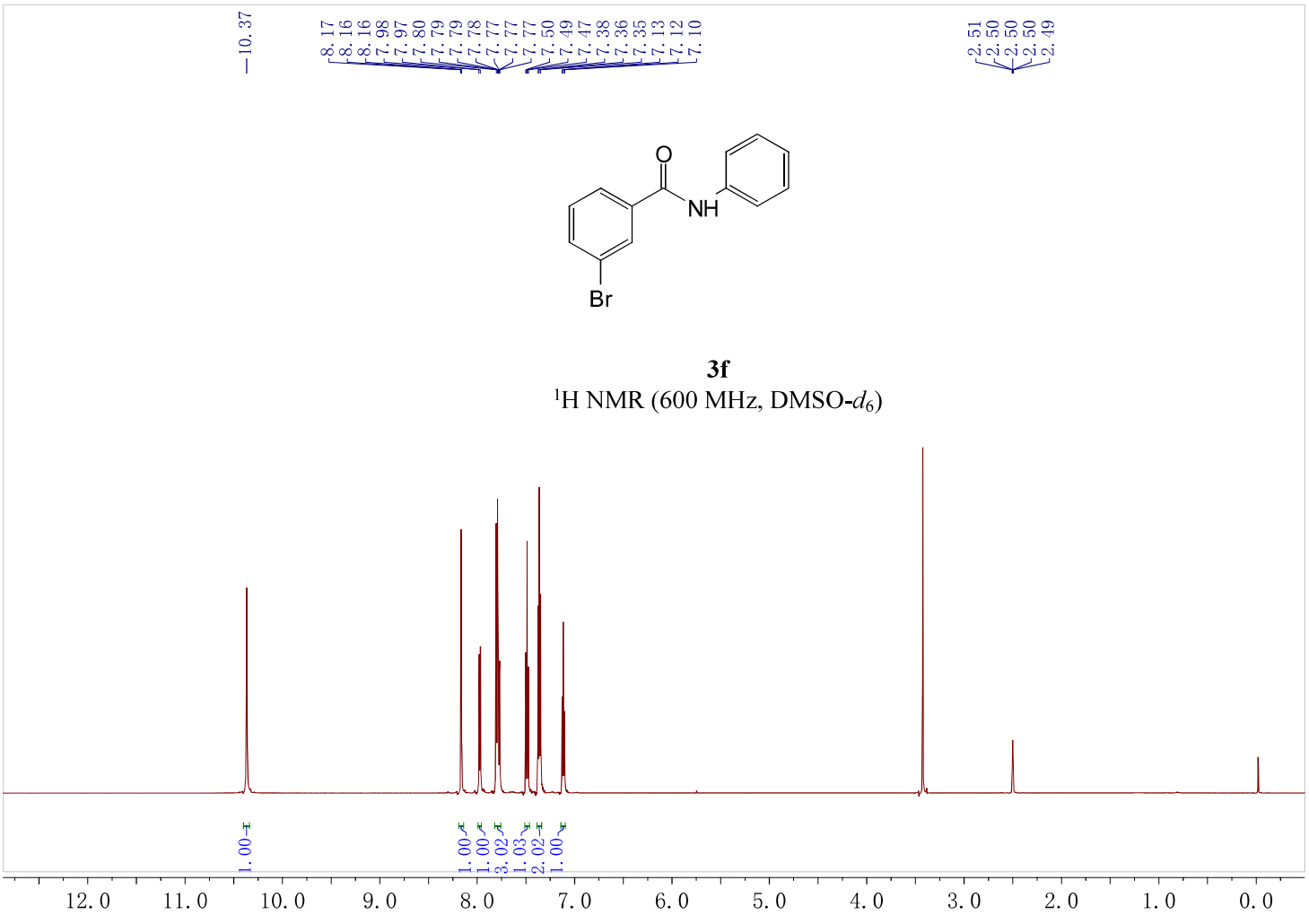

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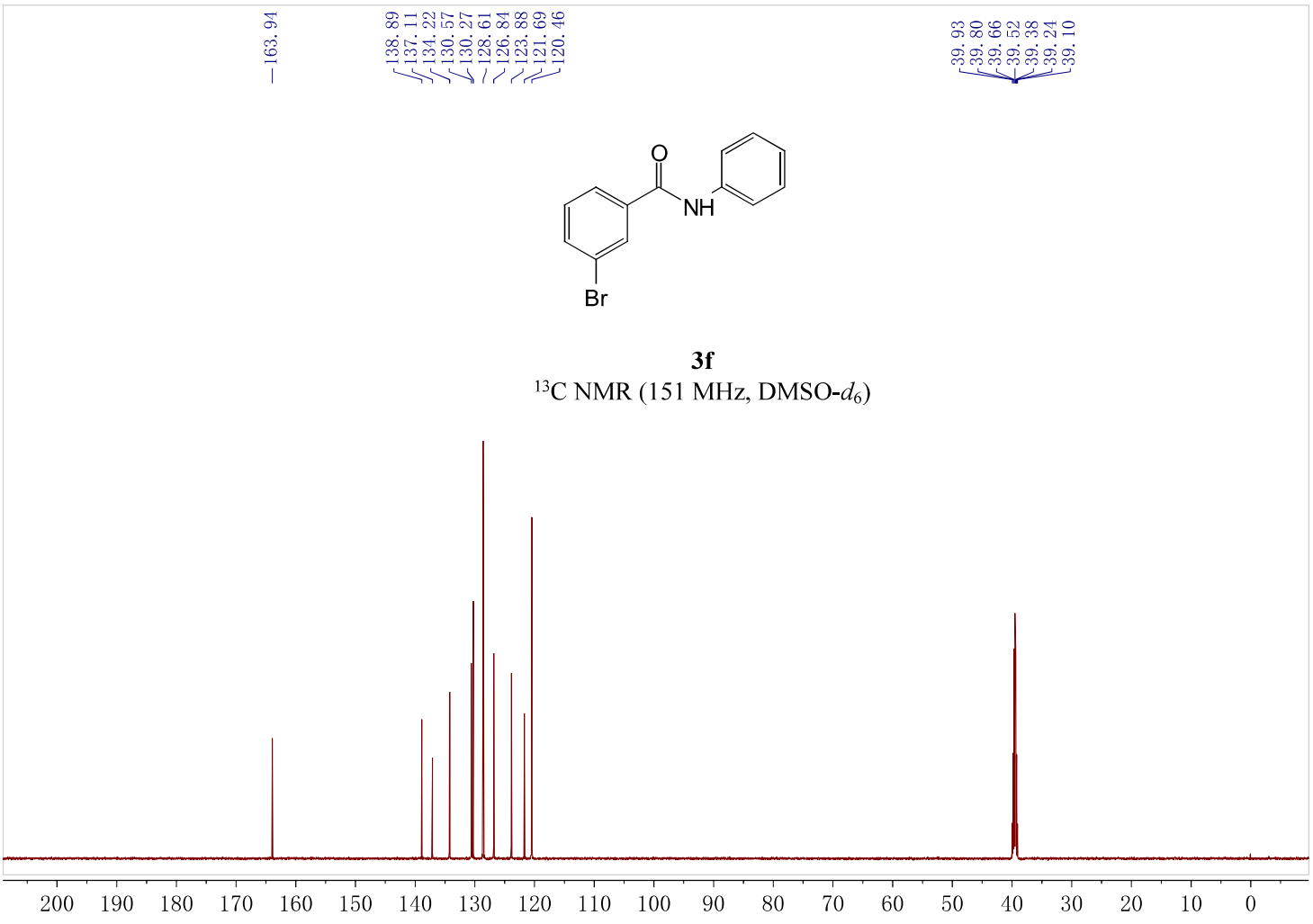

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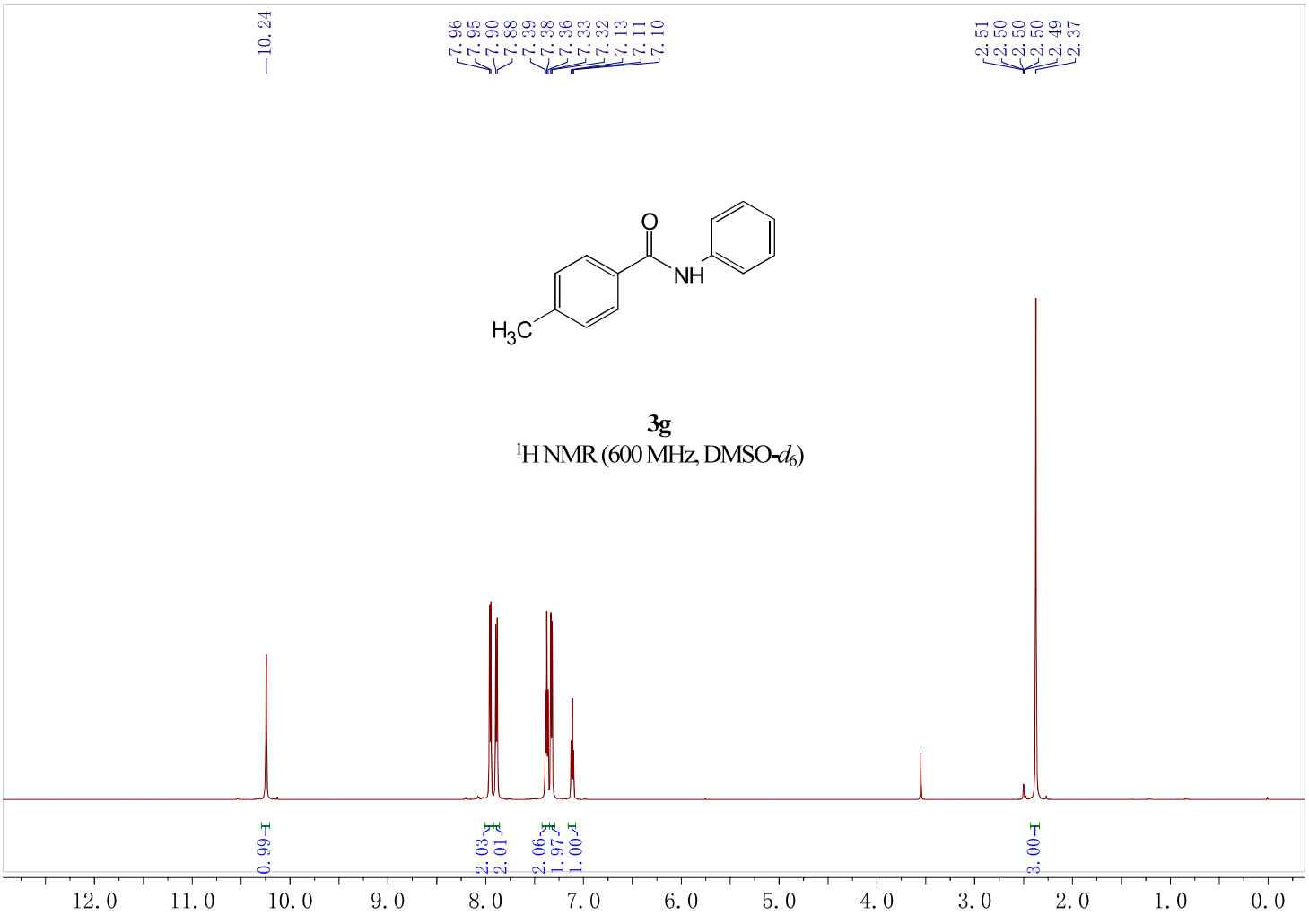

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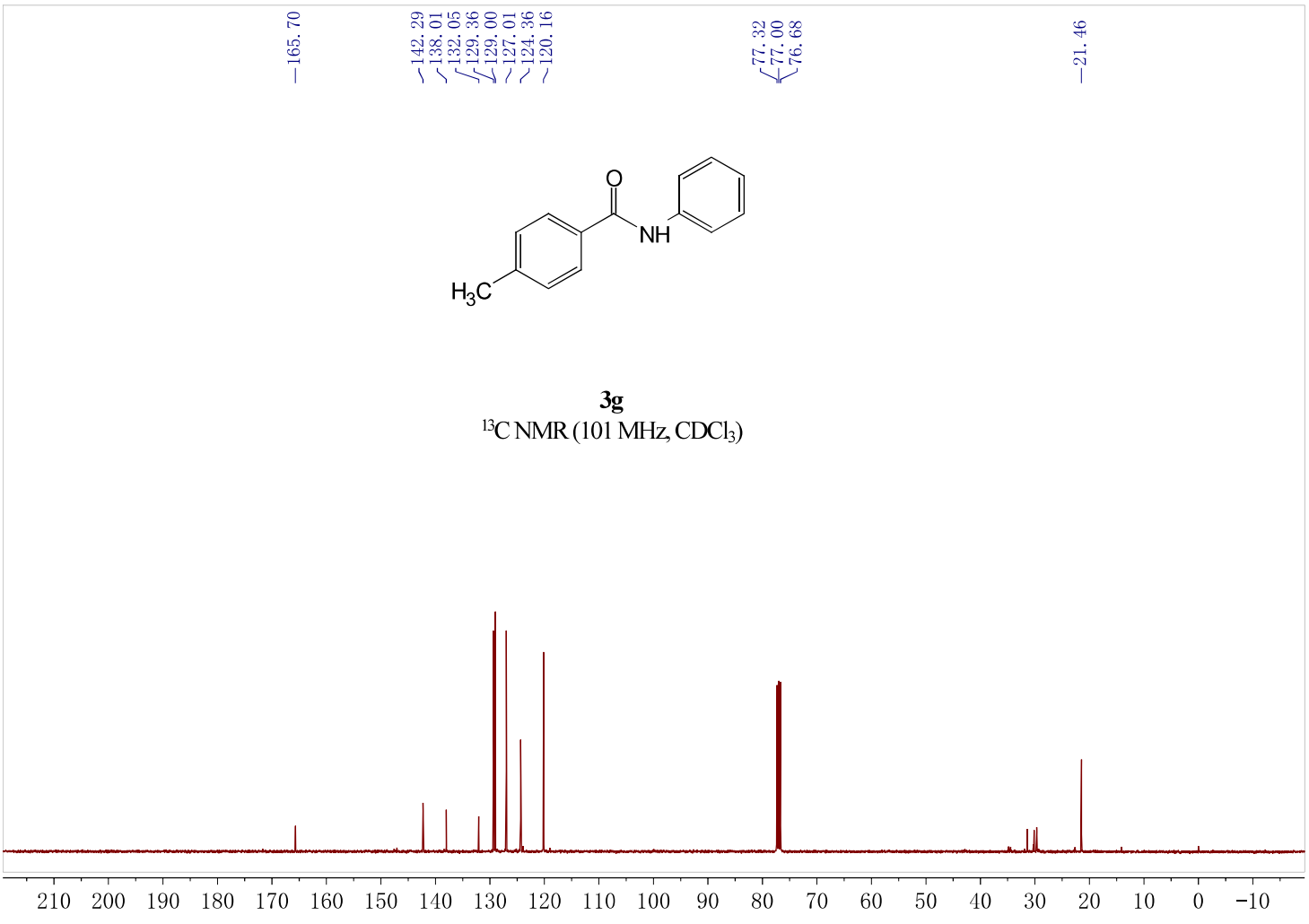

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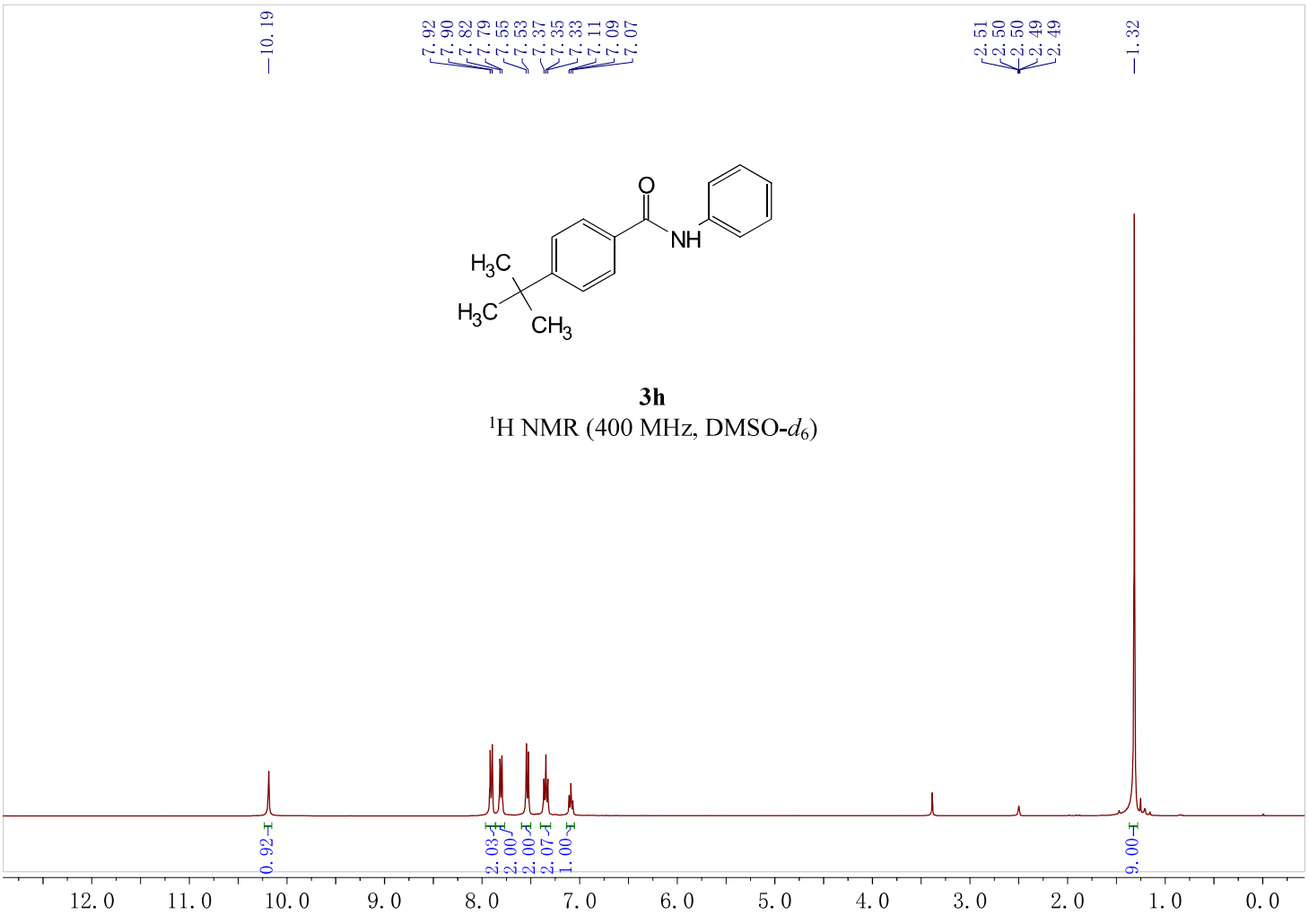

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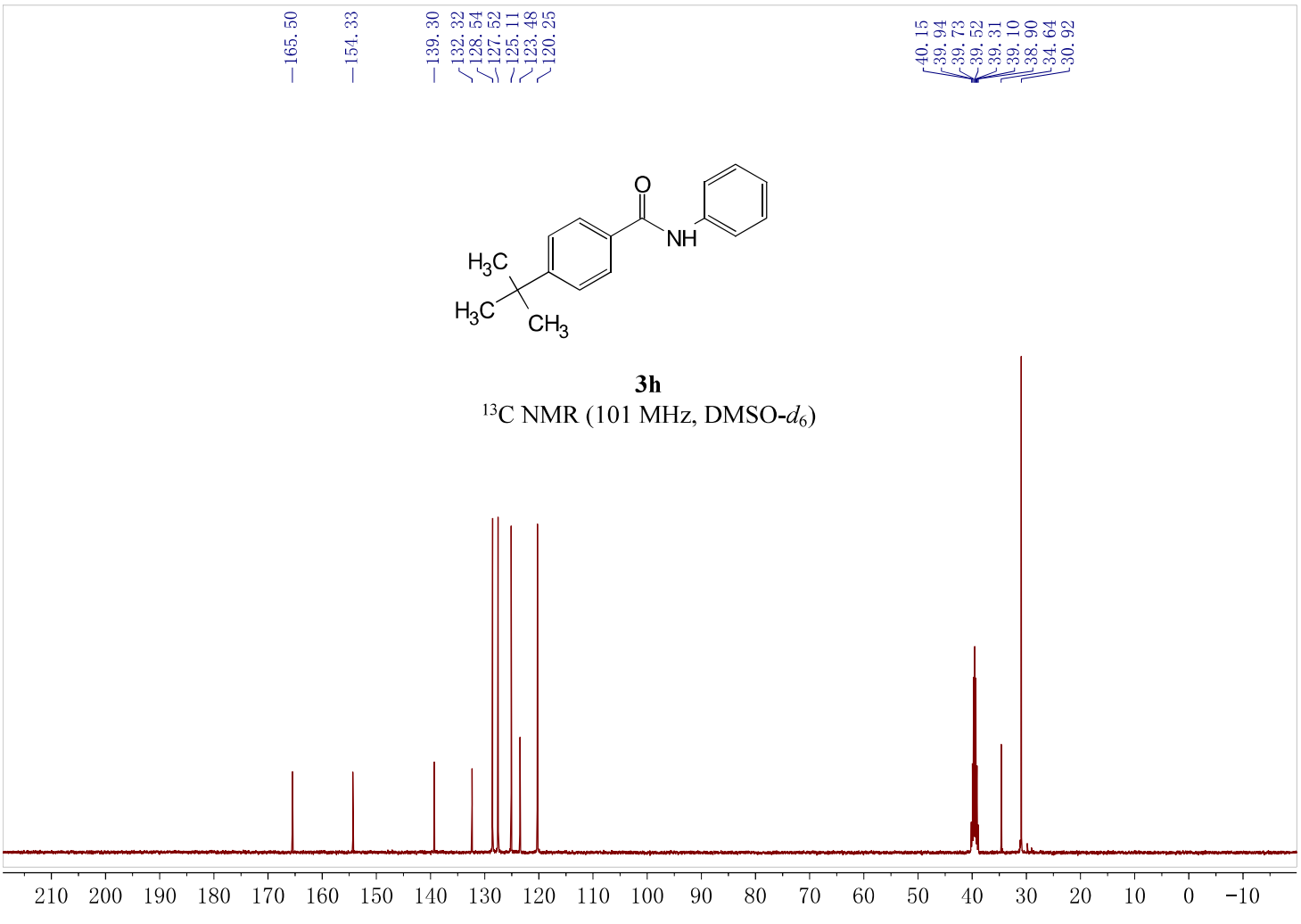

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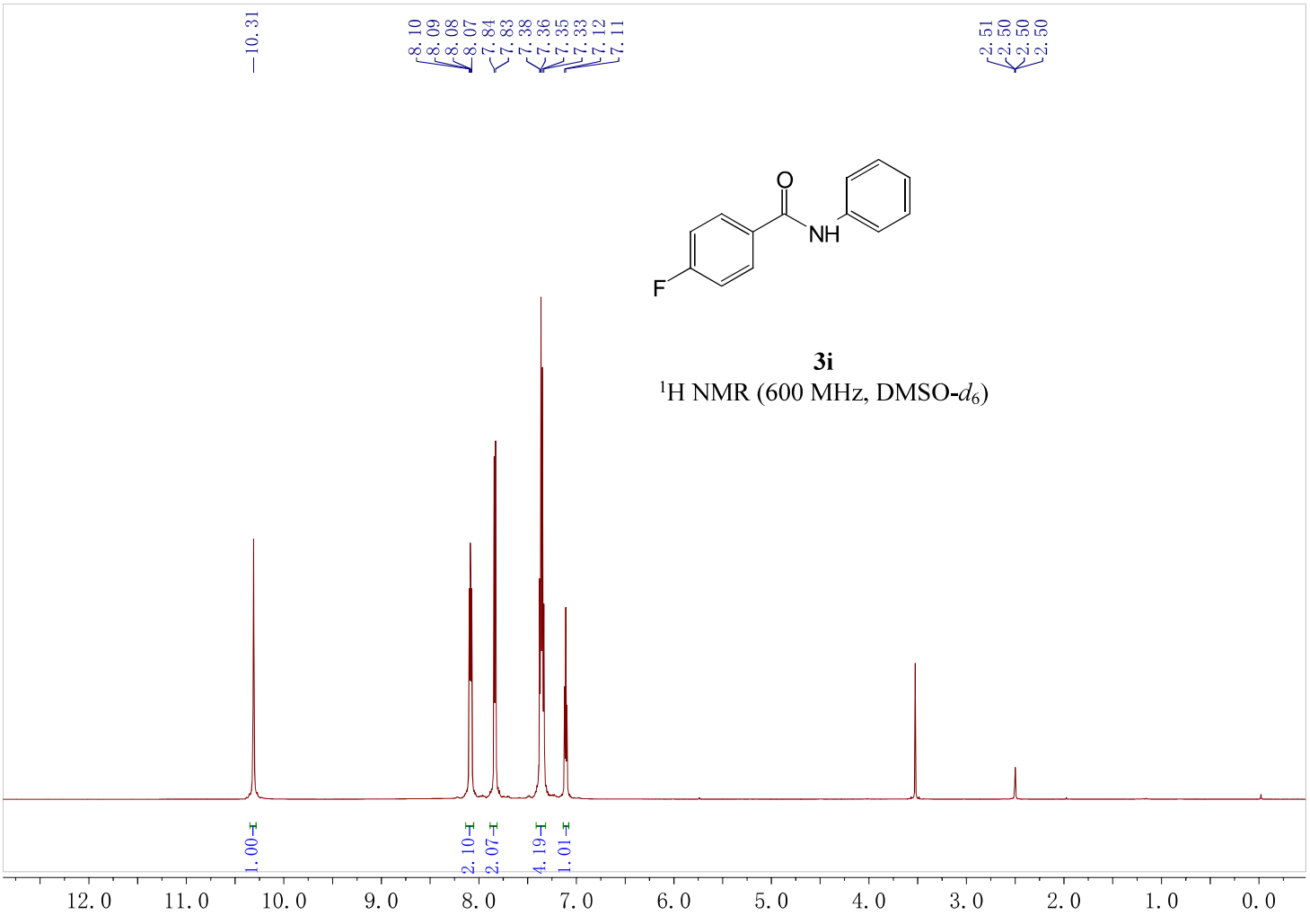

3i

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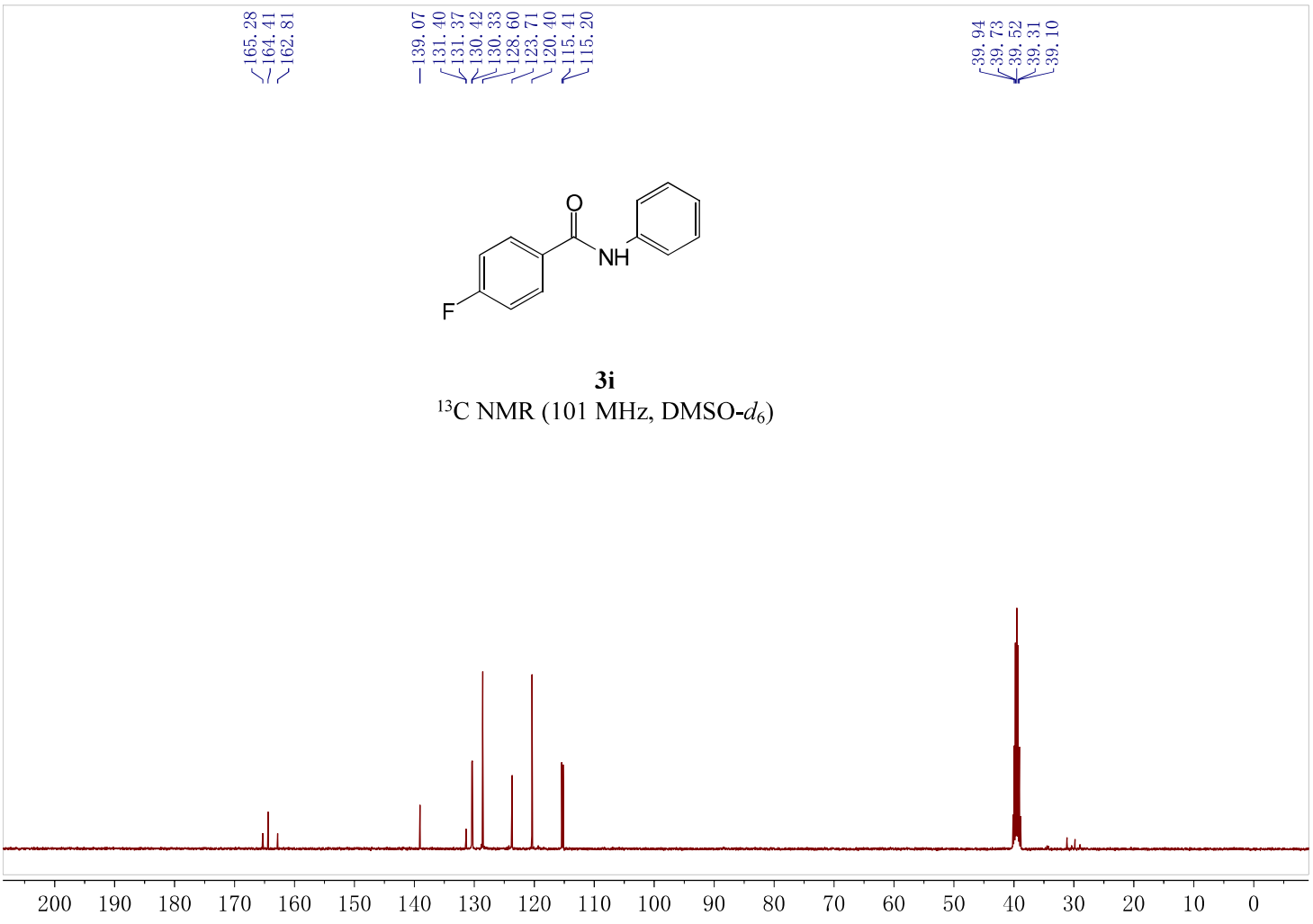

3i

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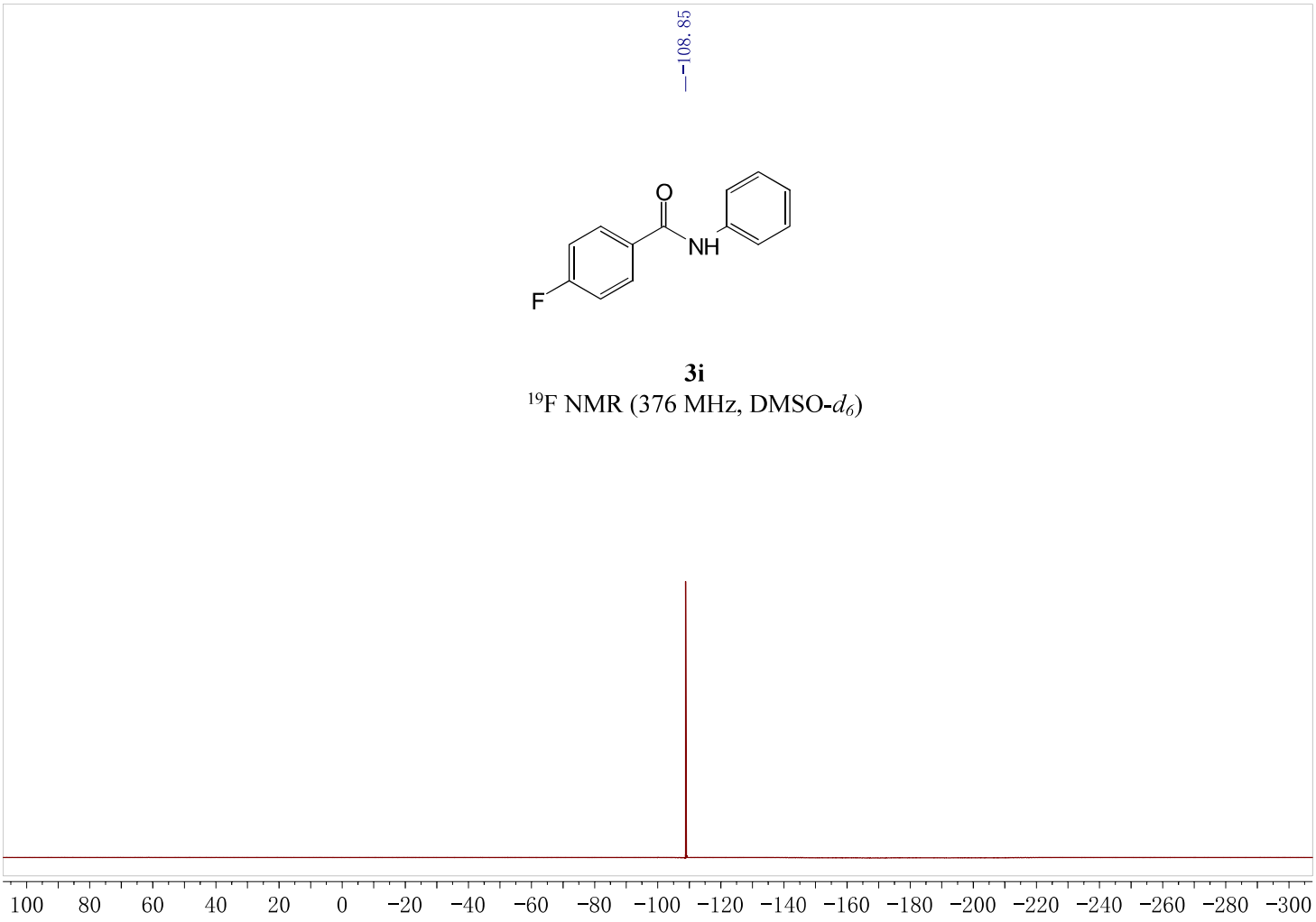

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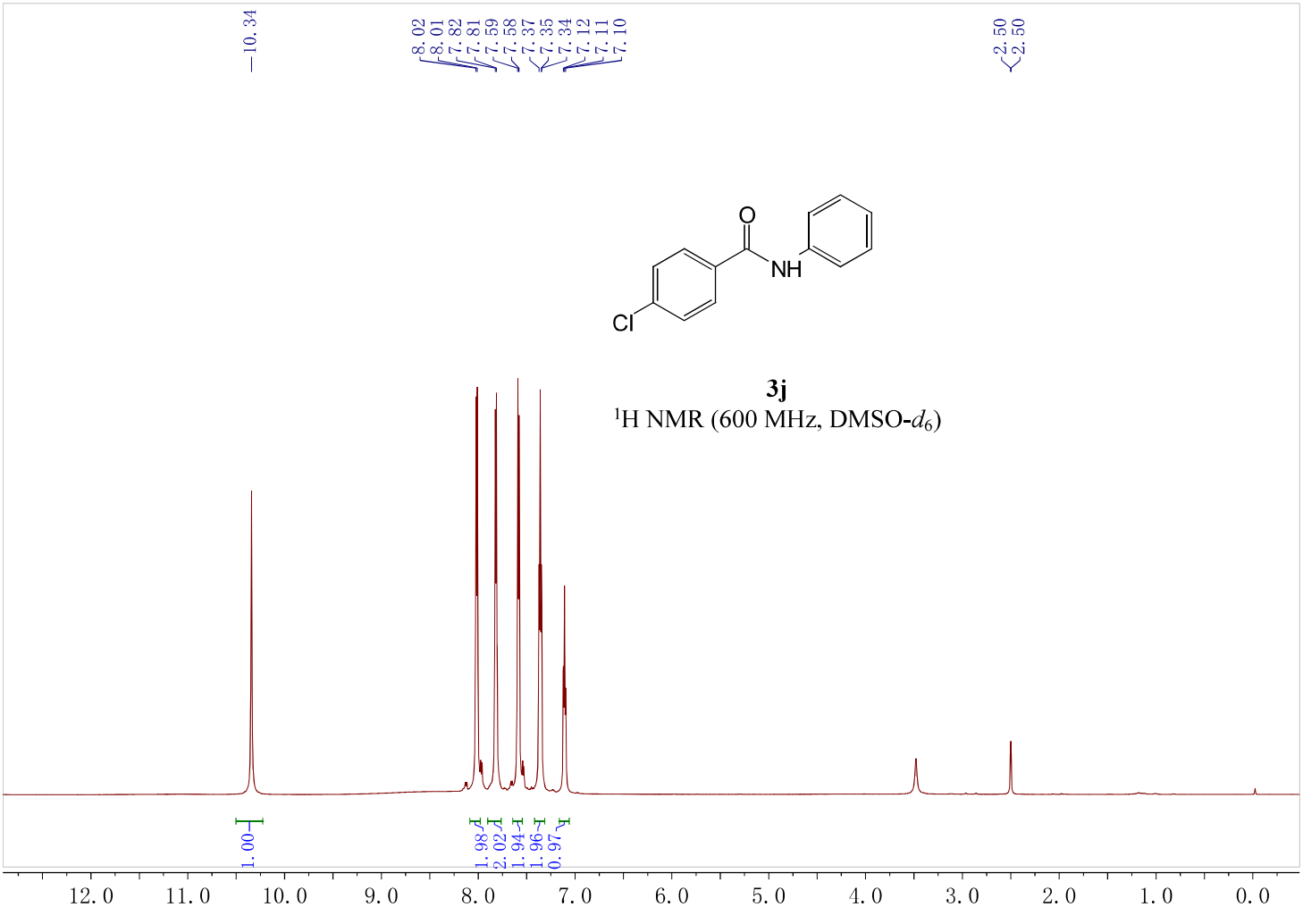

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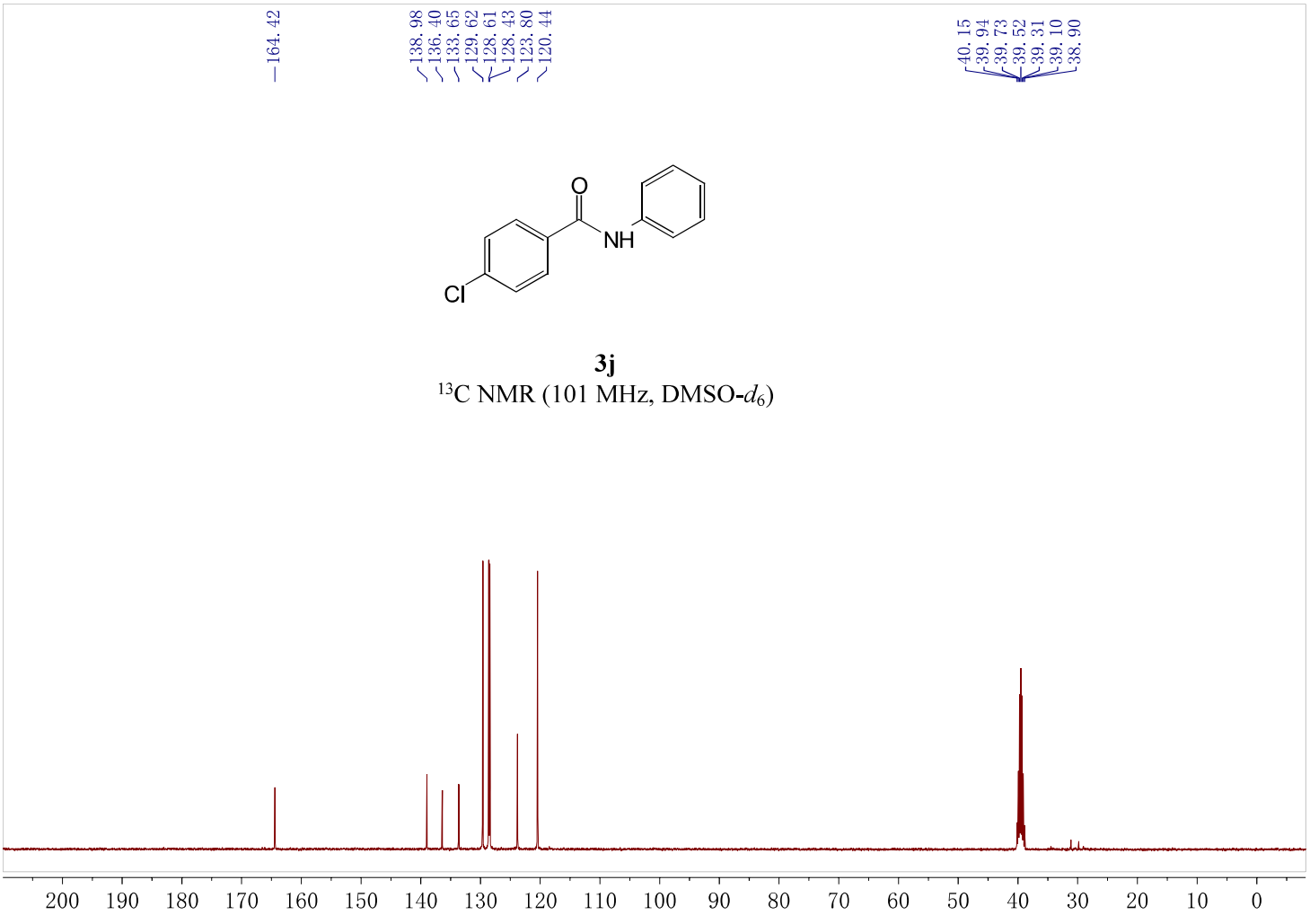

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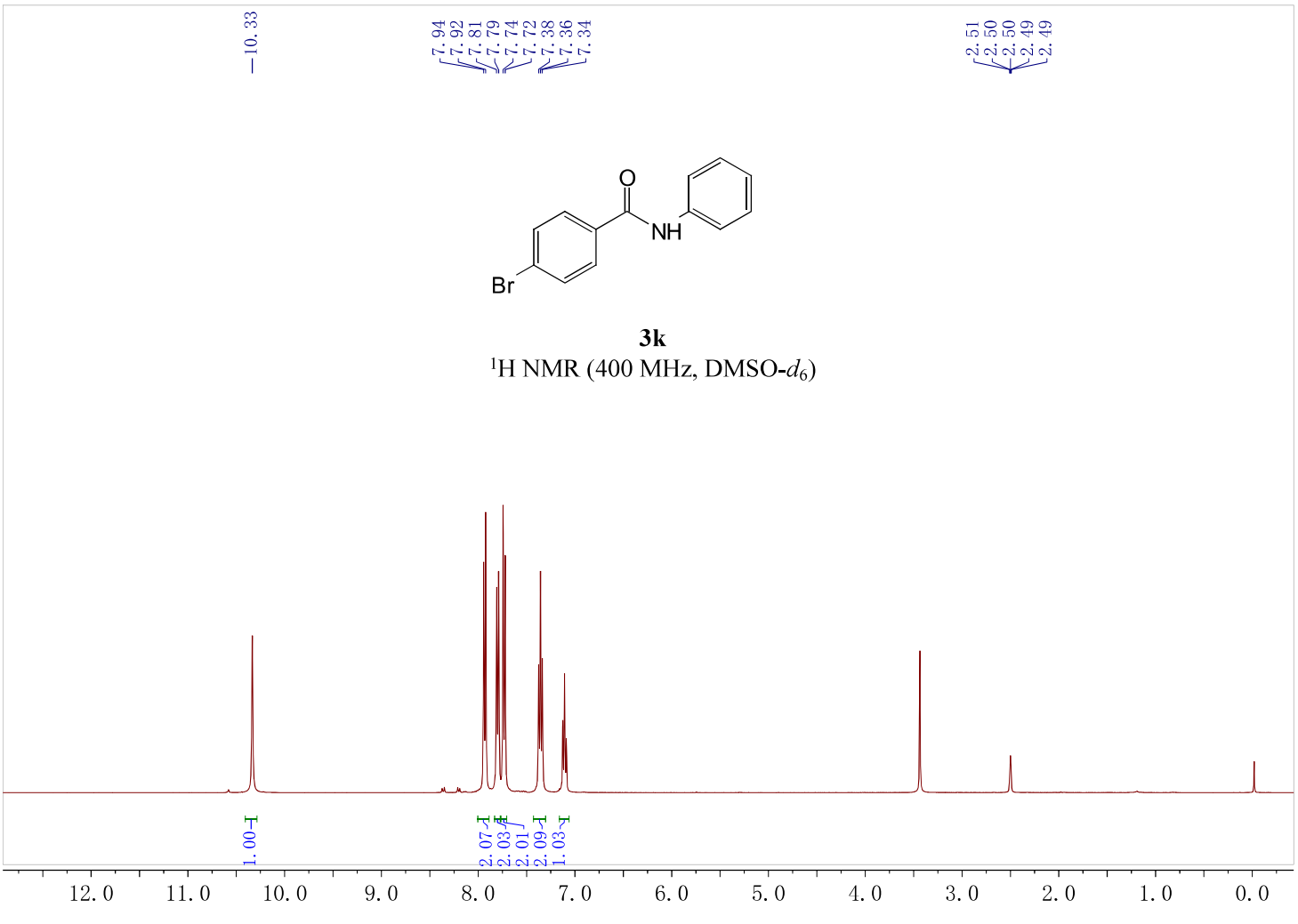

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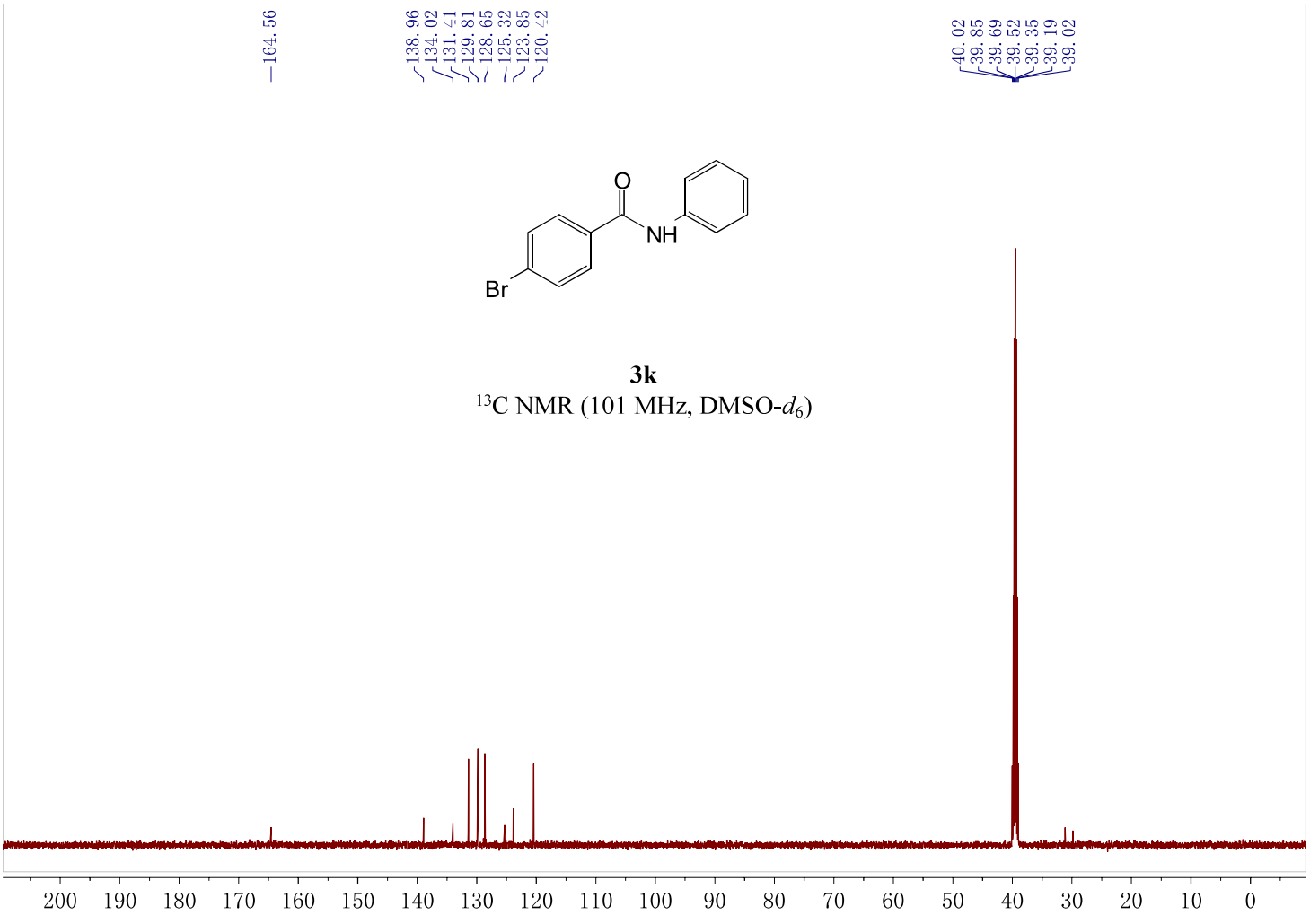

3k

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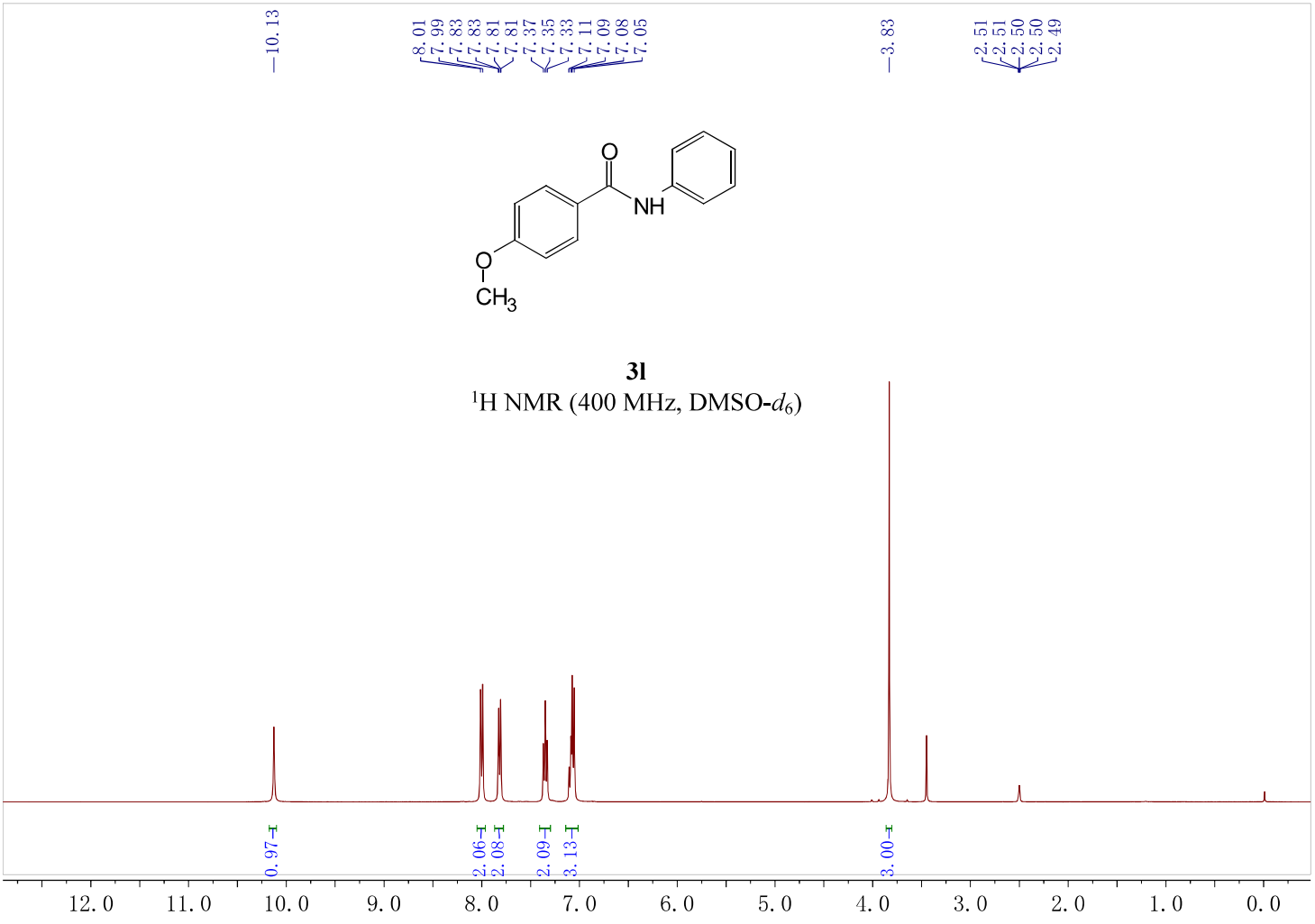

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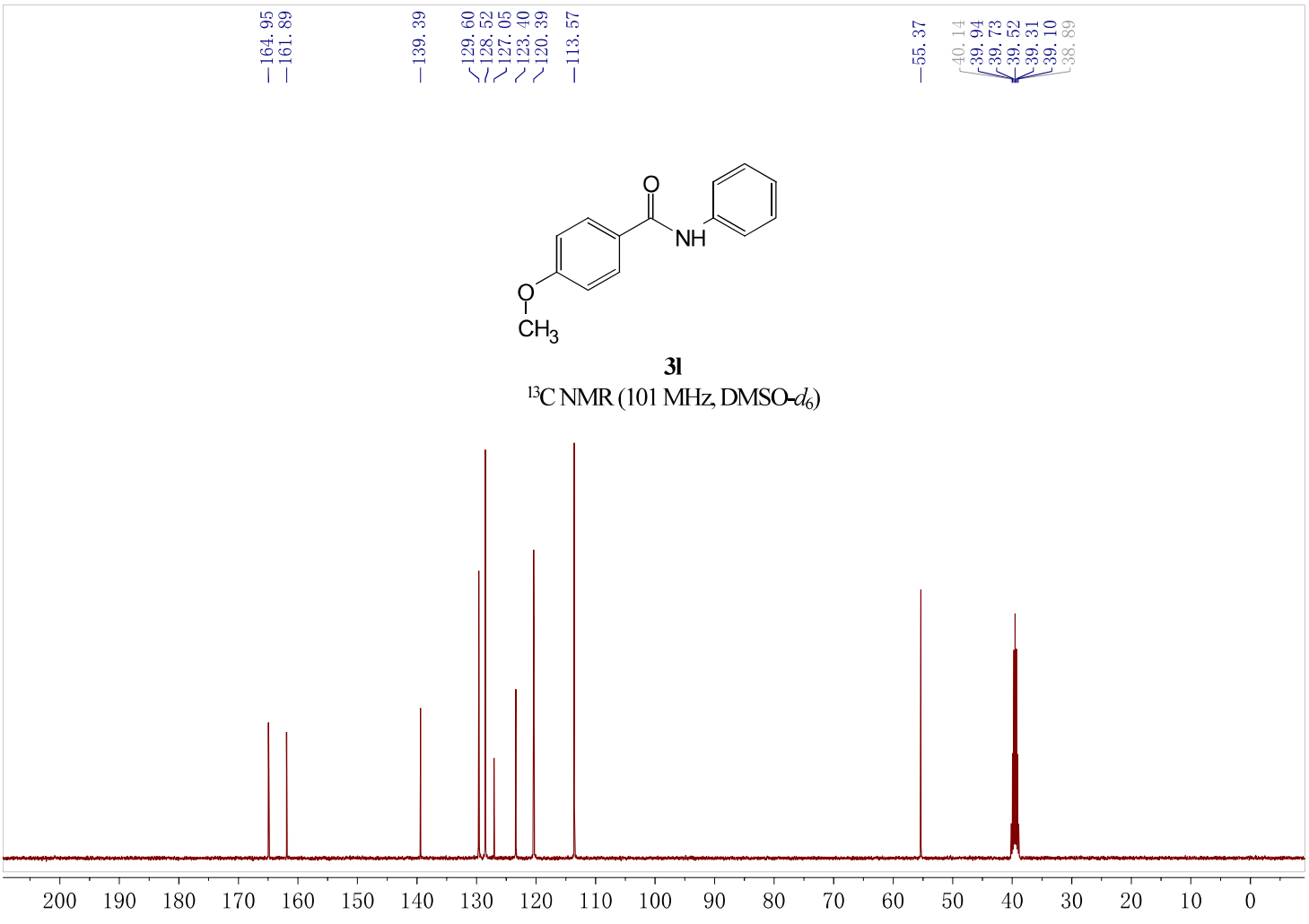

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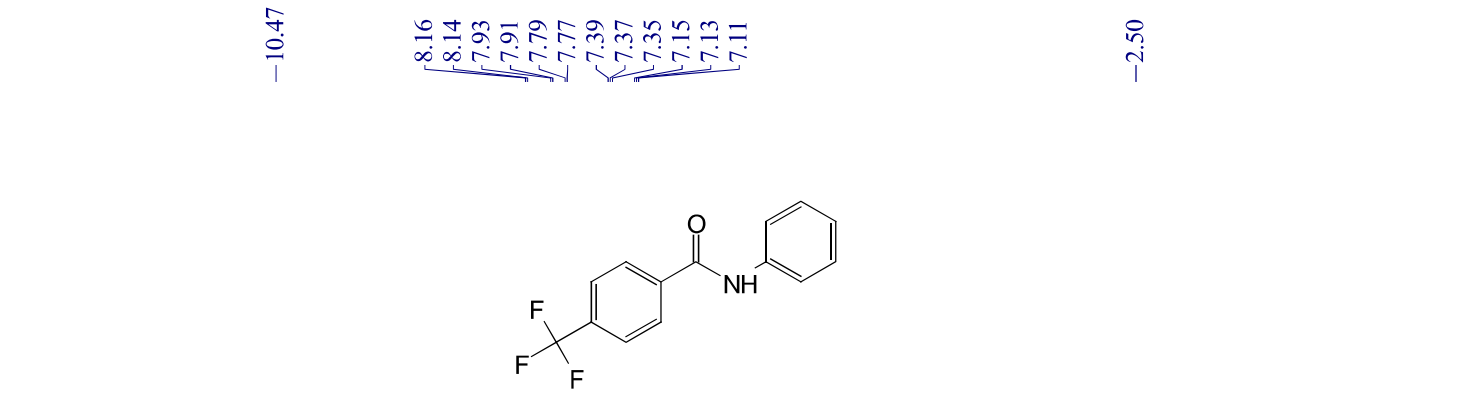

3m

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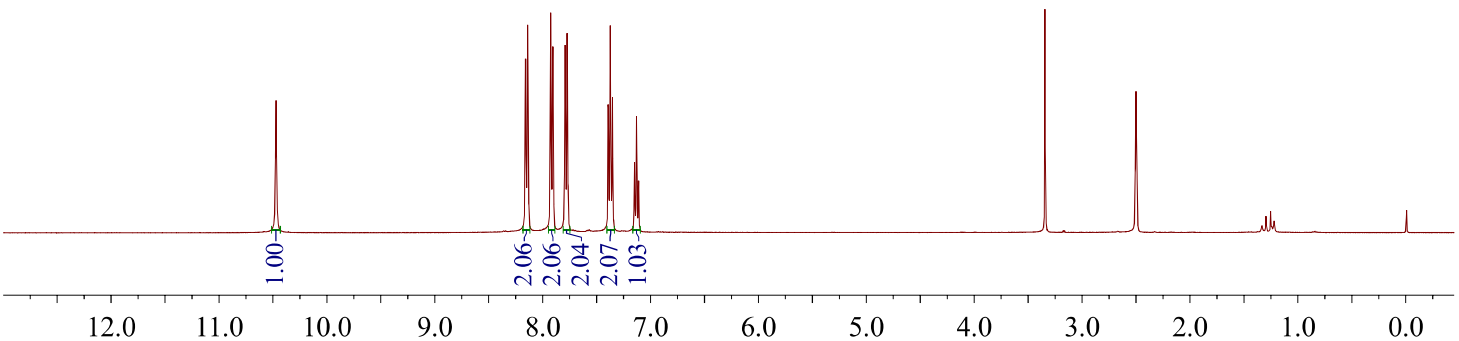

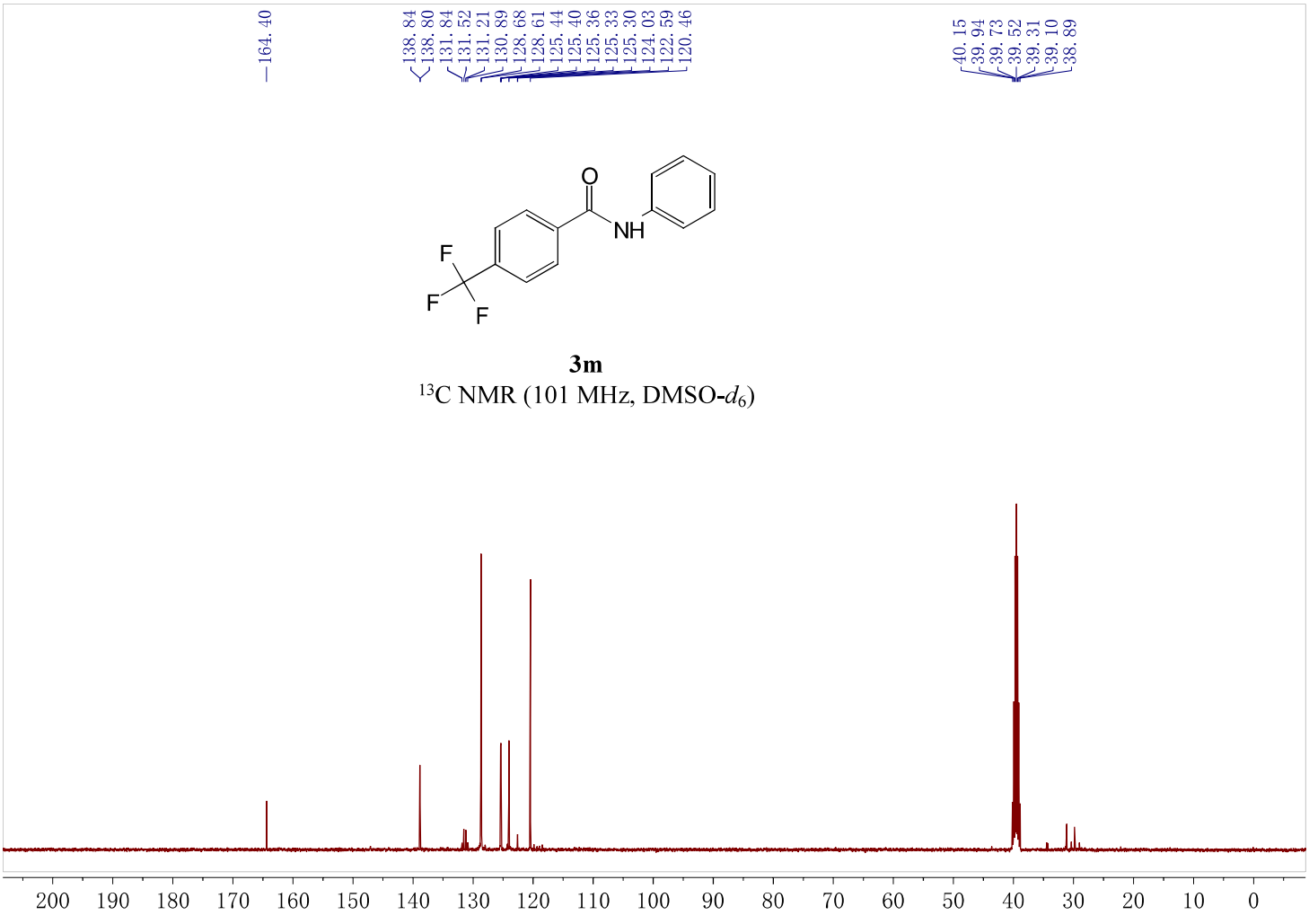

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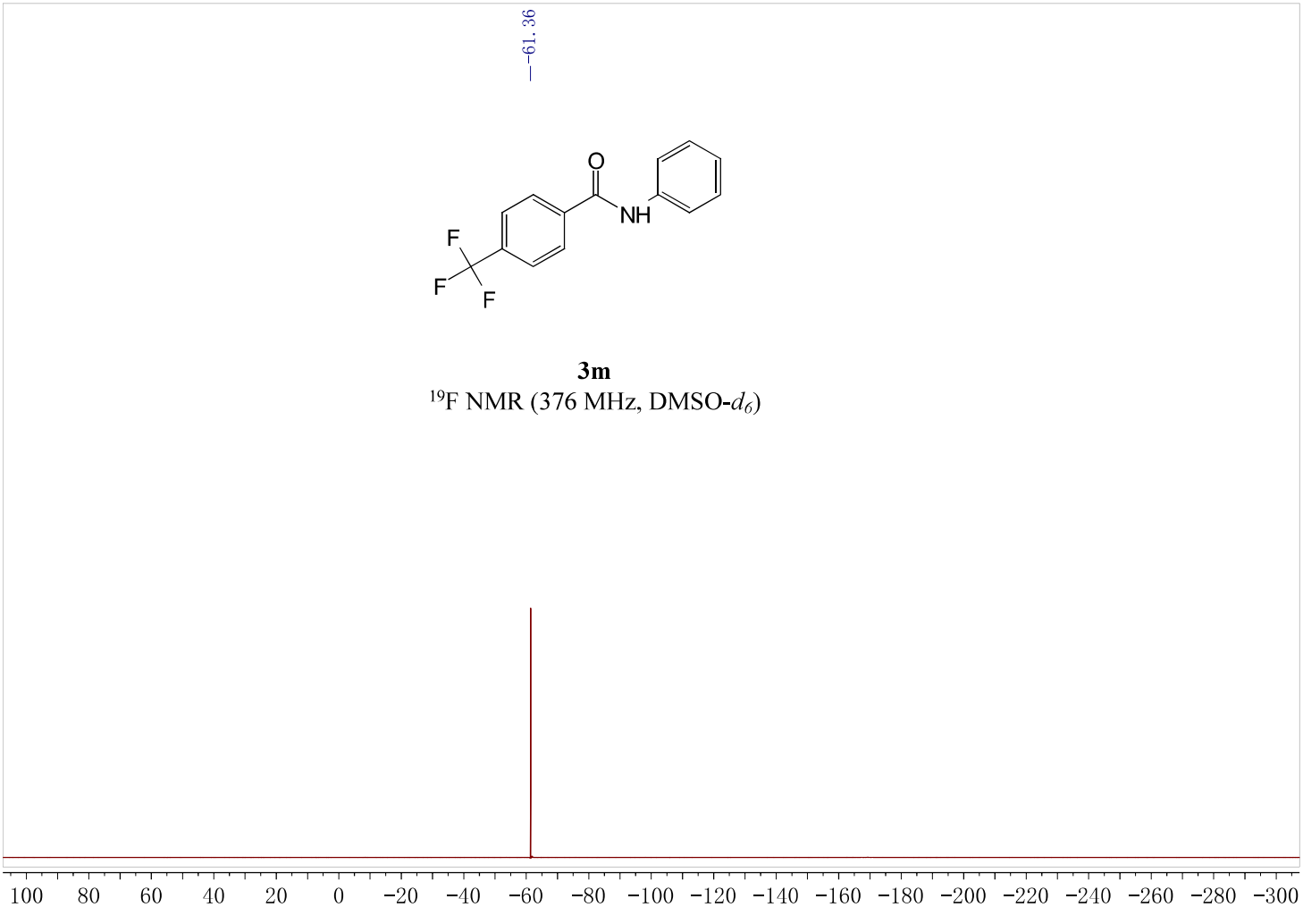

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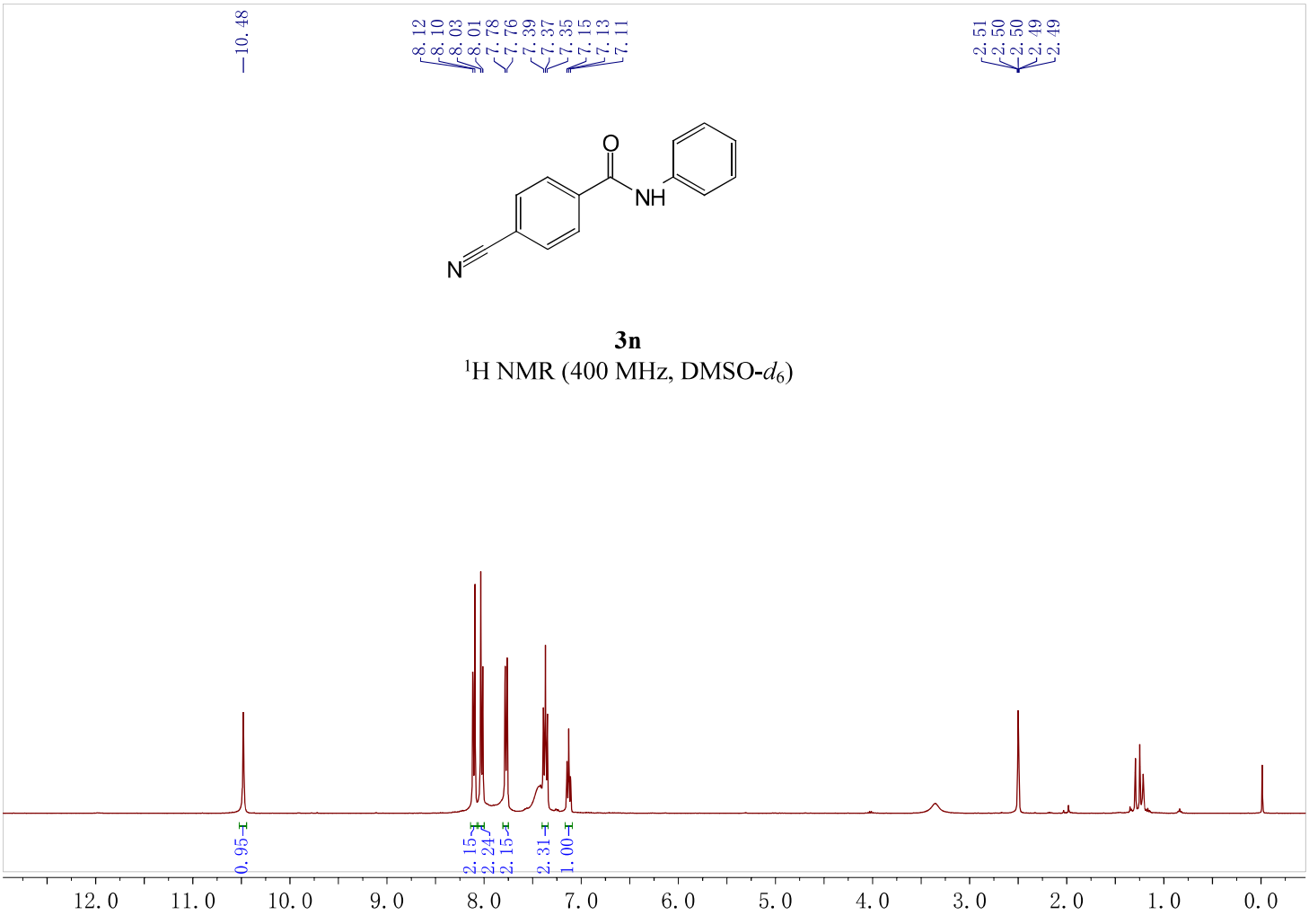
^{19}F NMR (376 MHz, DMSO-d_6)



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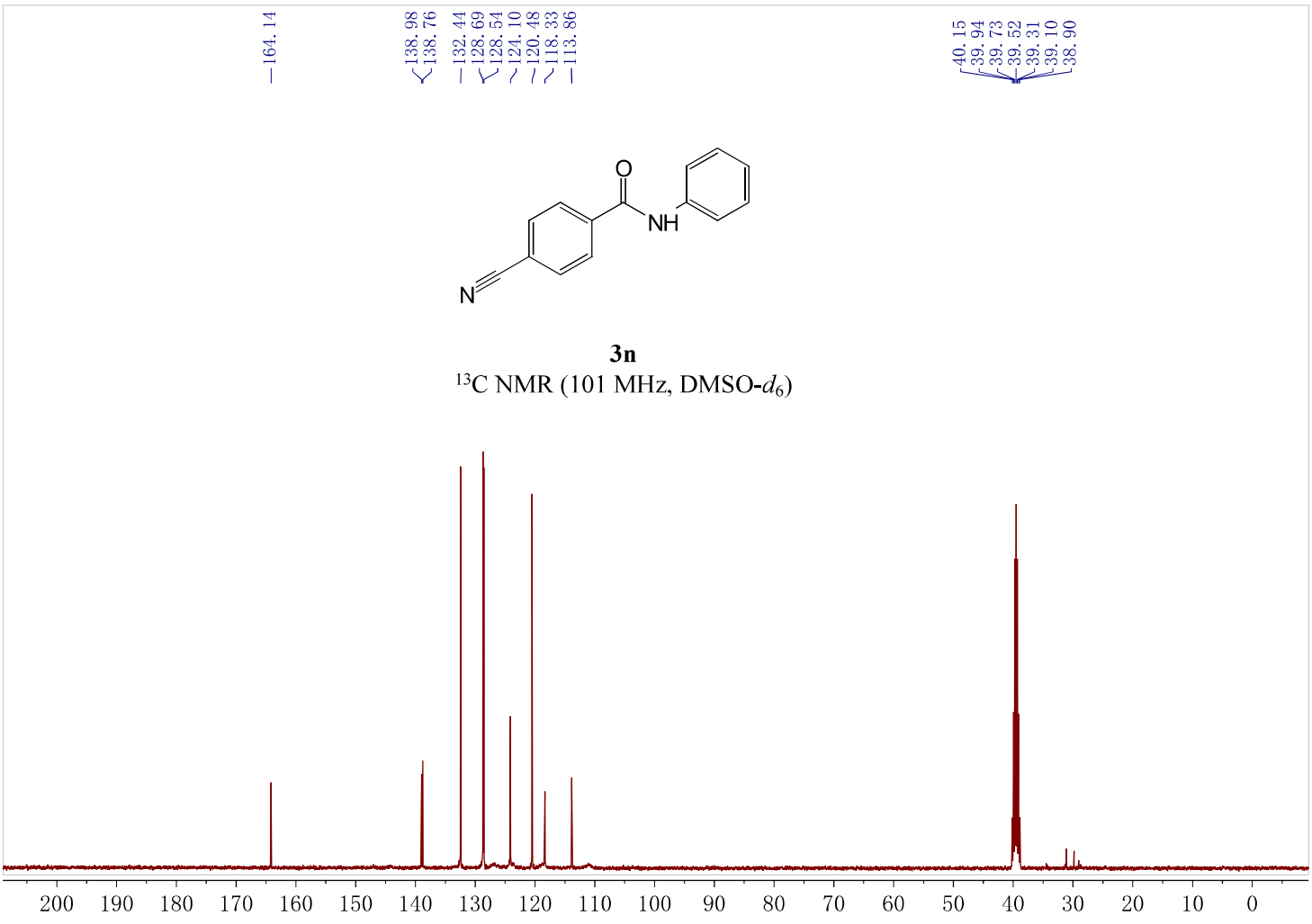

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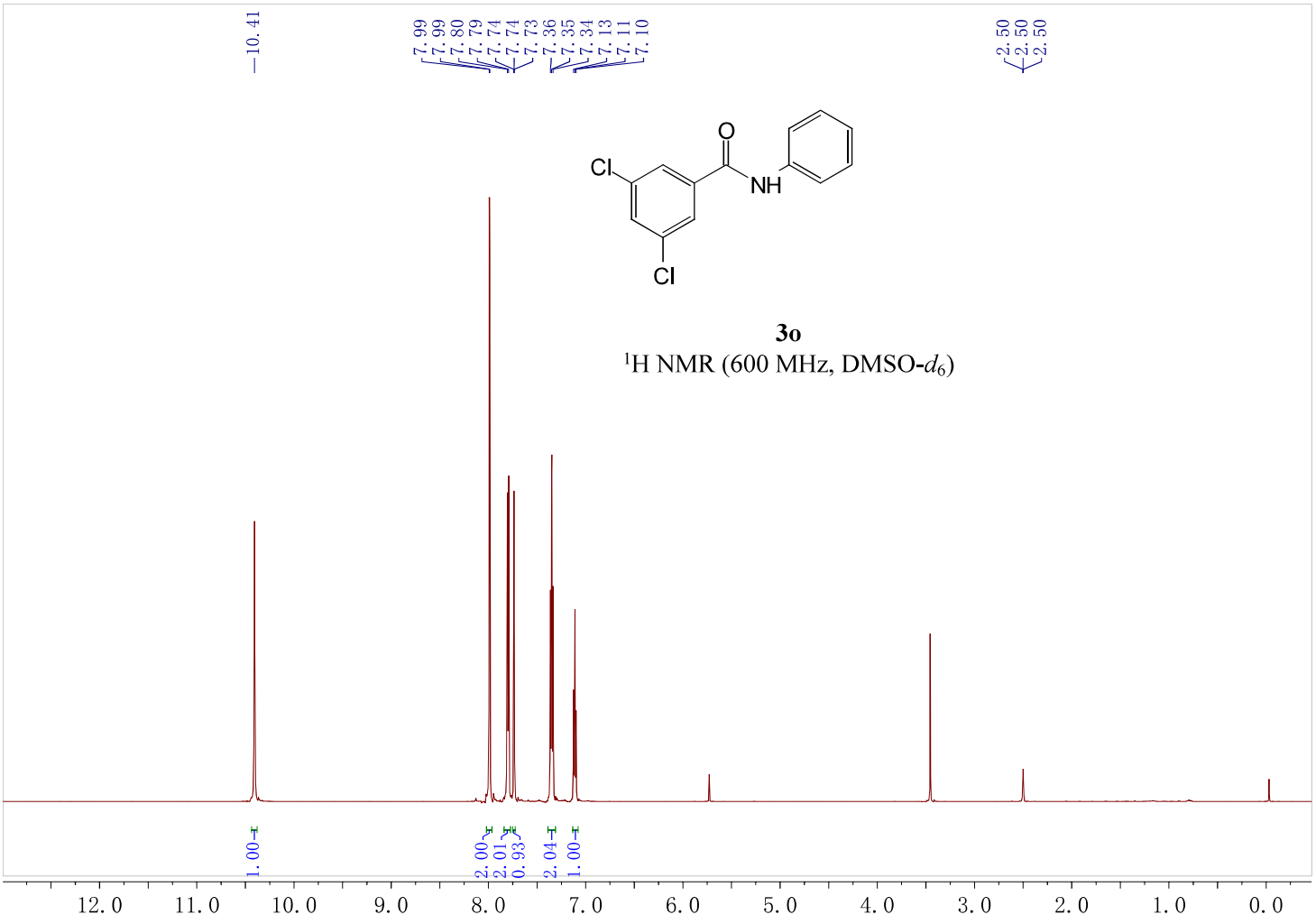

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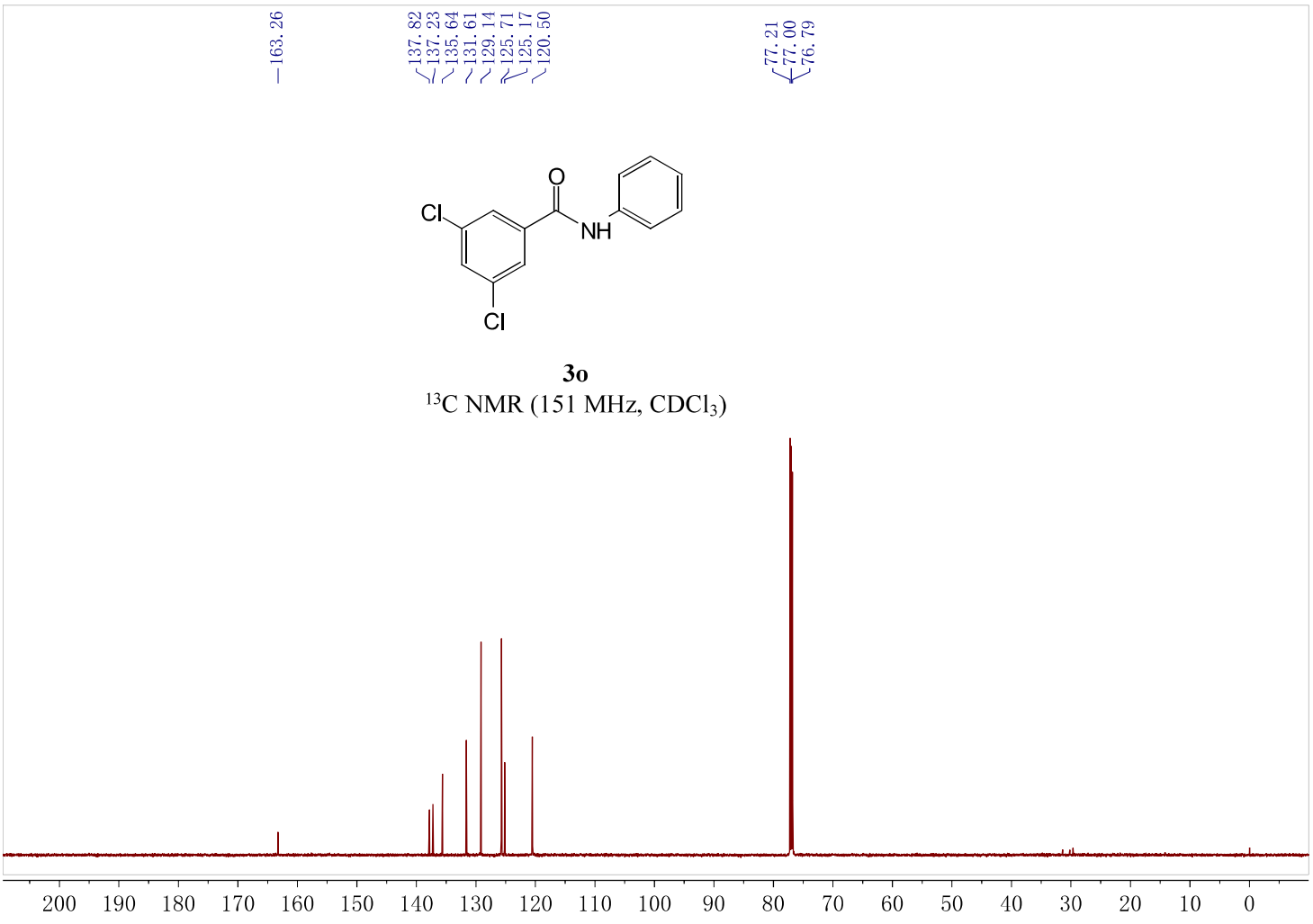
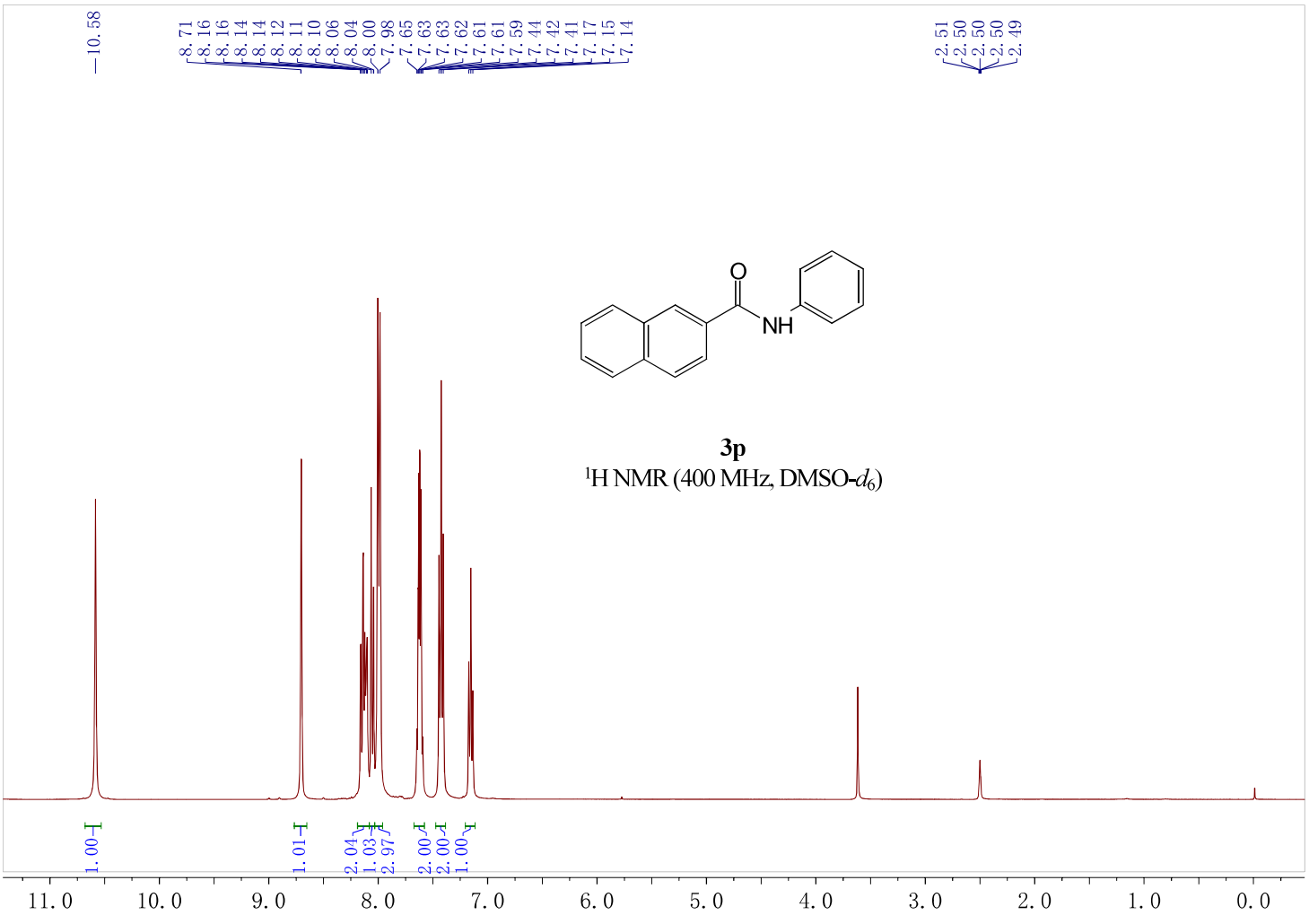


3o

^{13}C NMR (151 MHz, $CDCl_3$)



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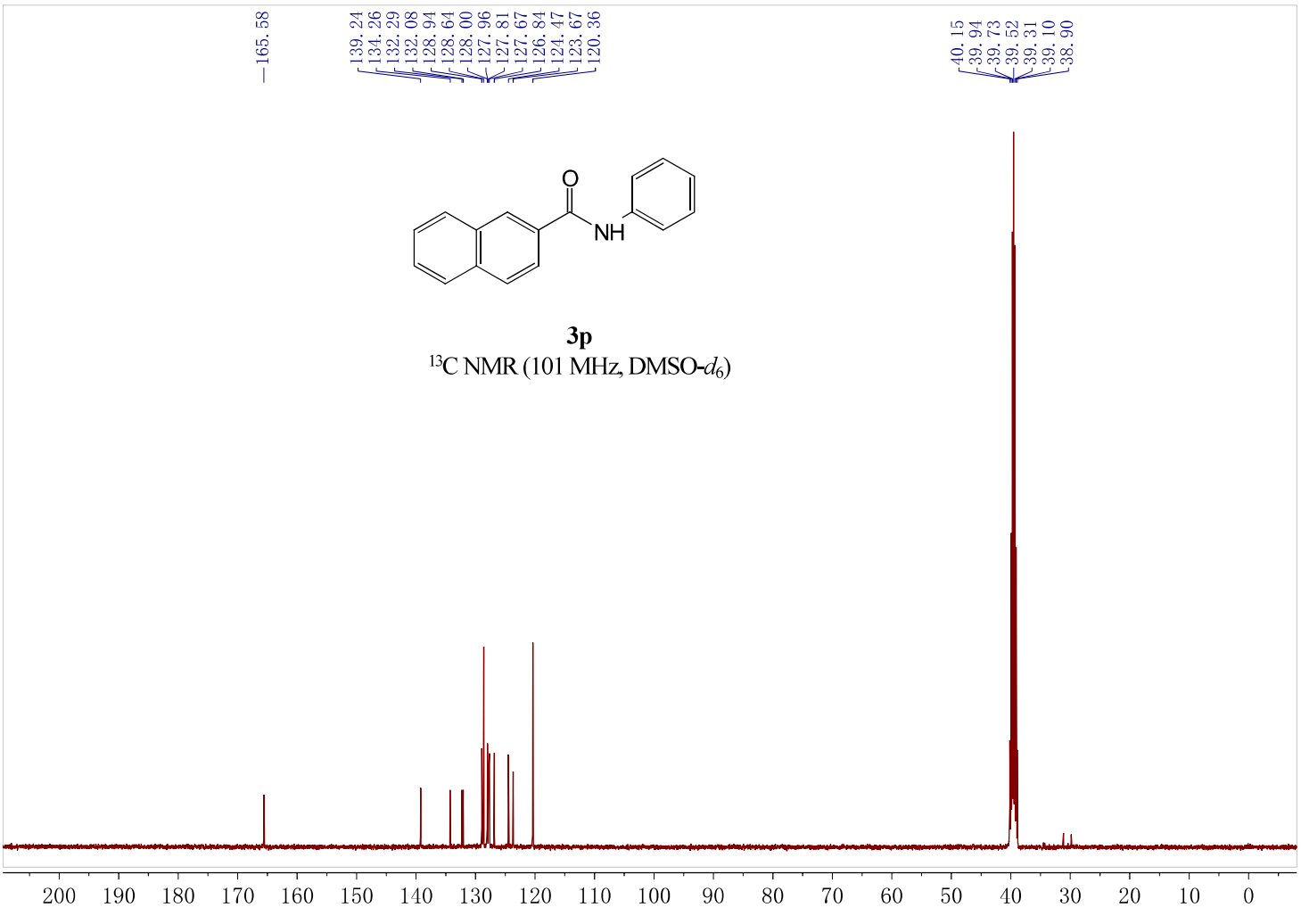

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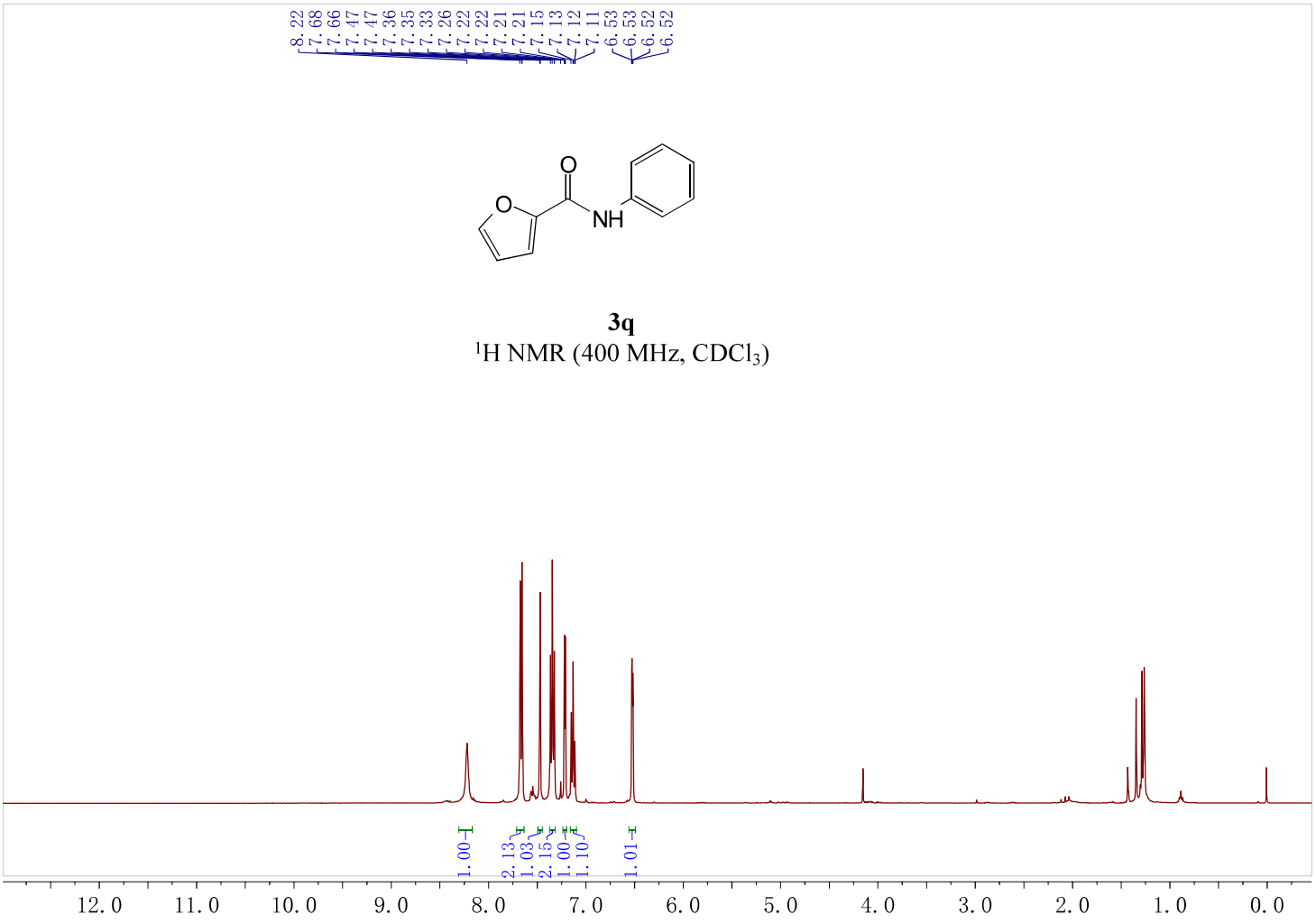

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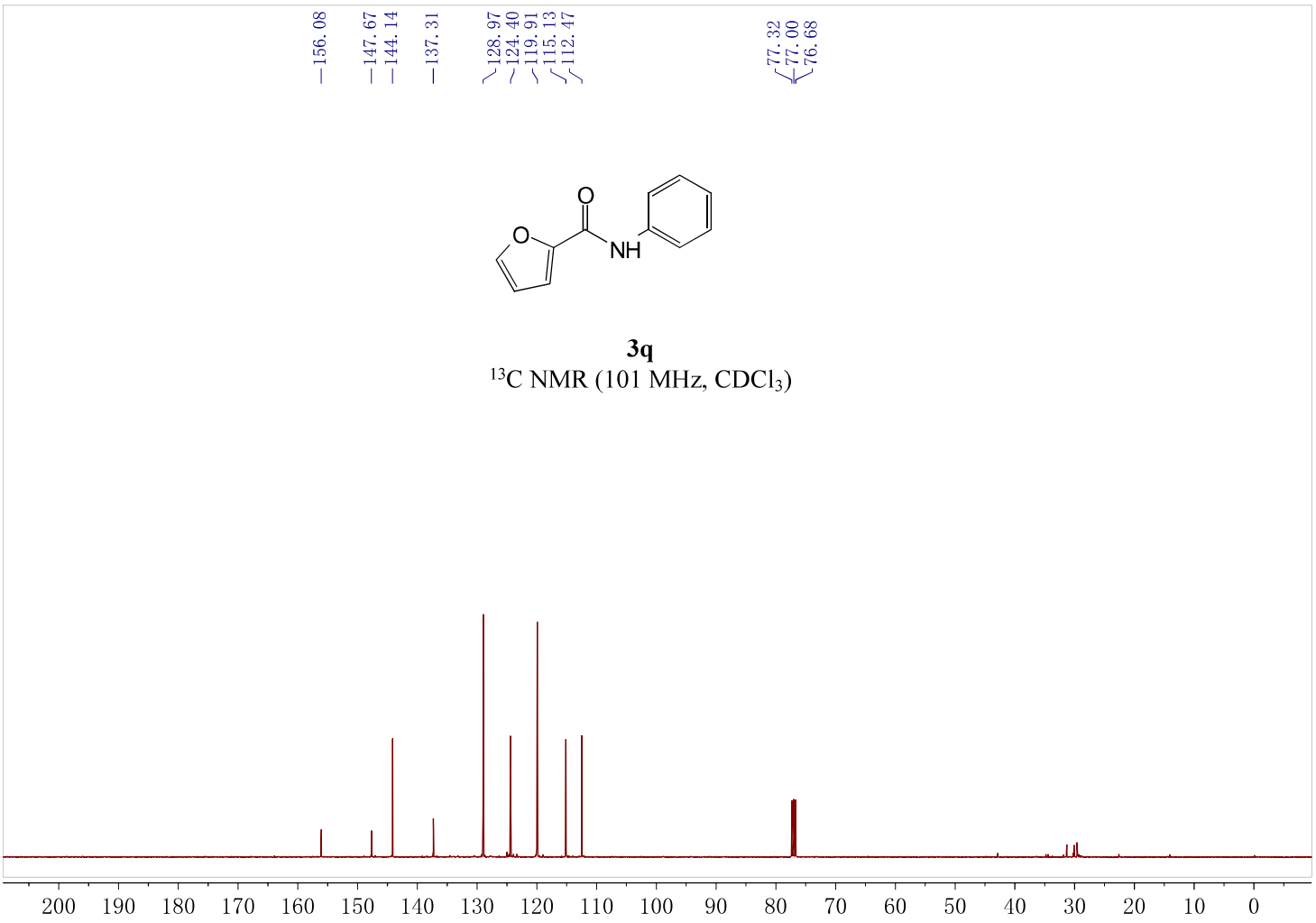

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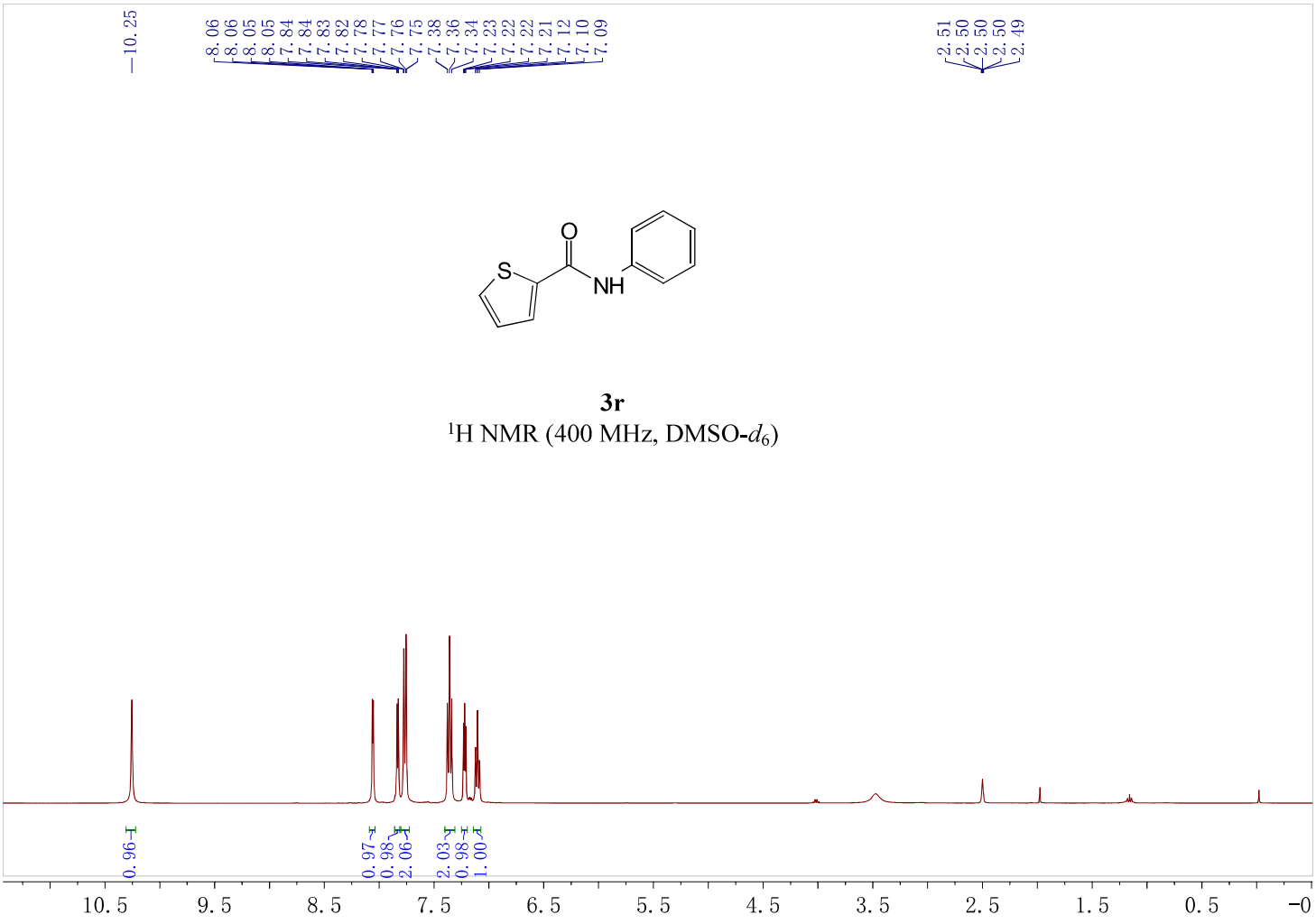

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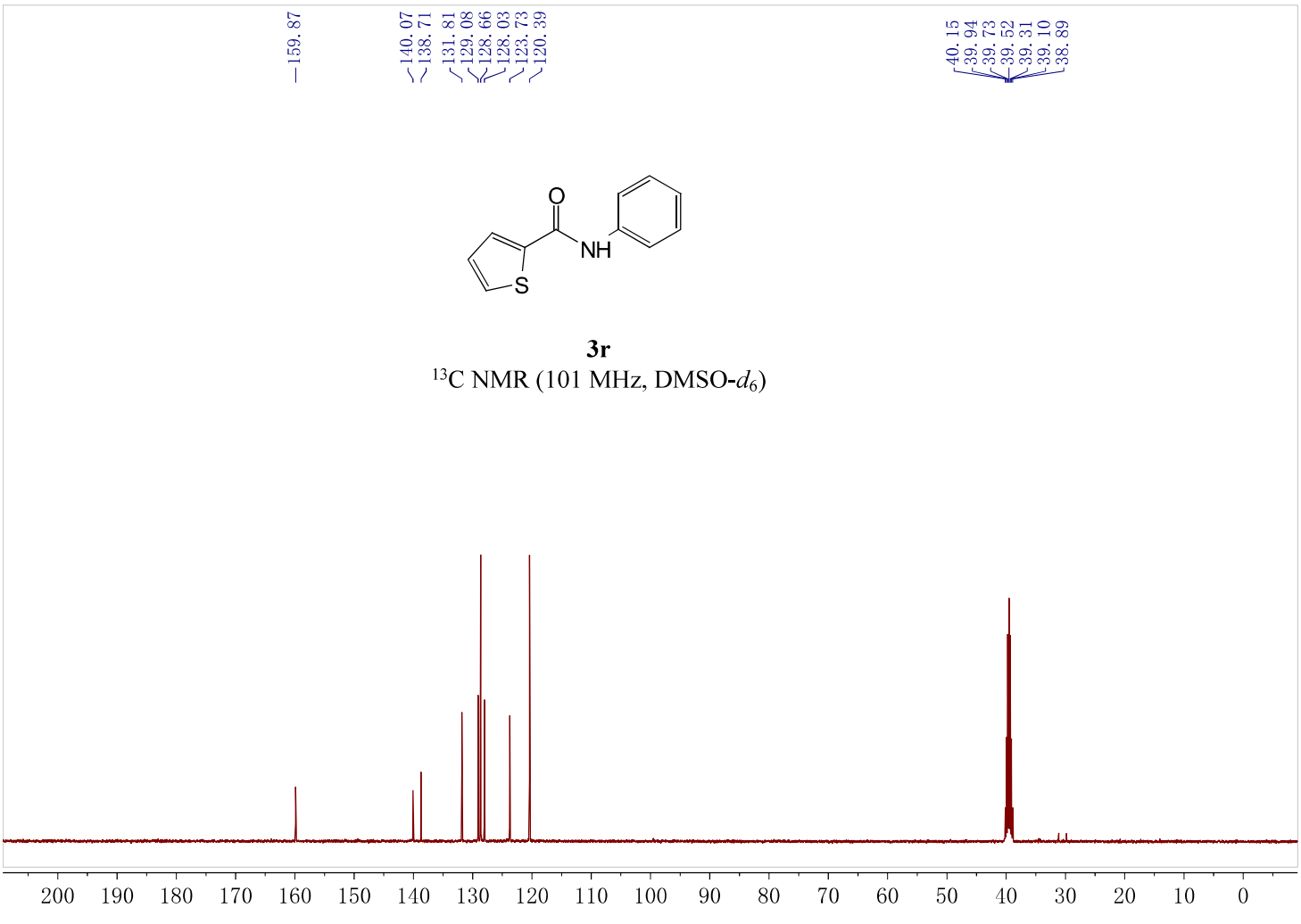

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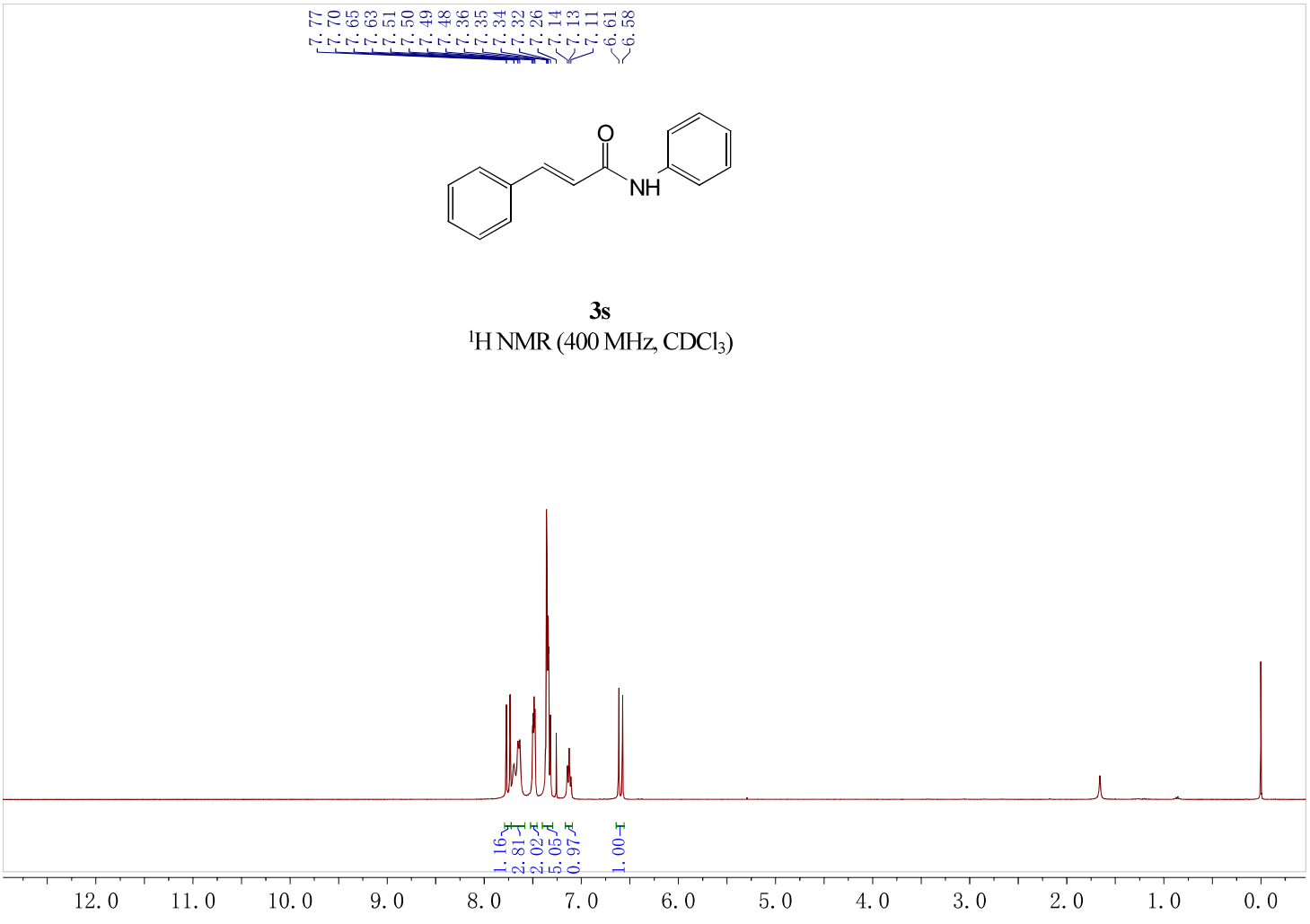

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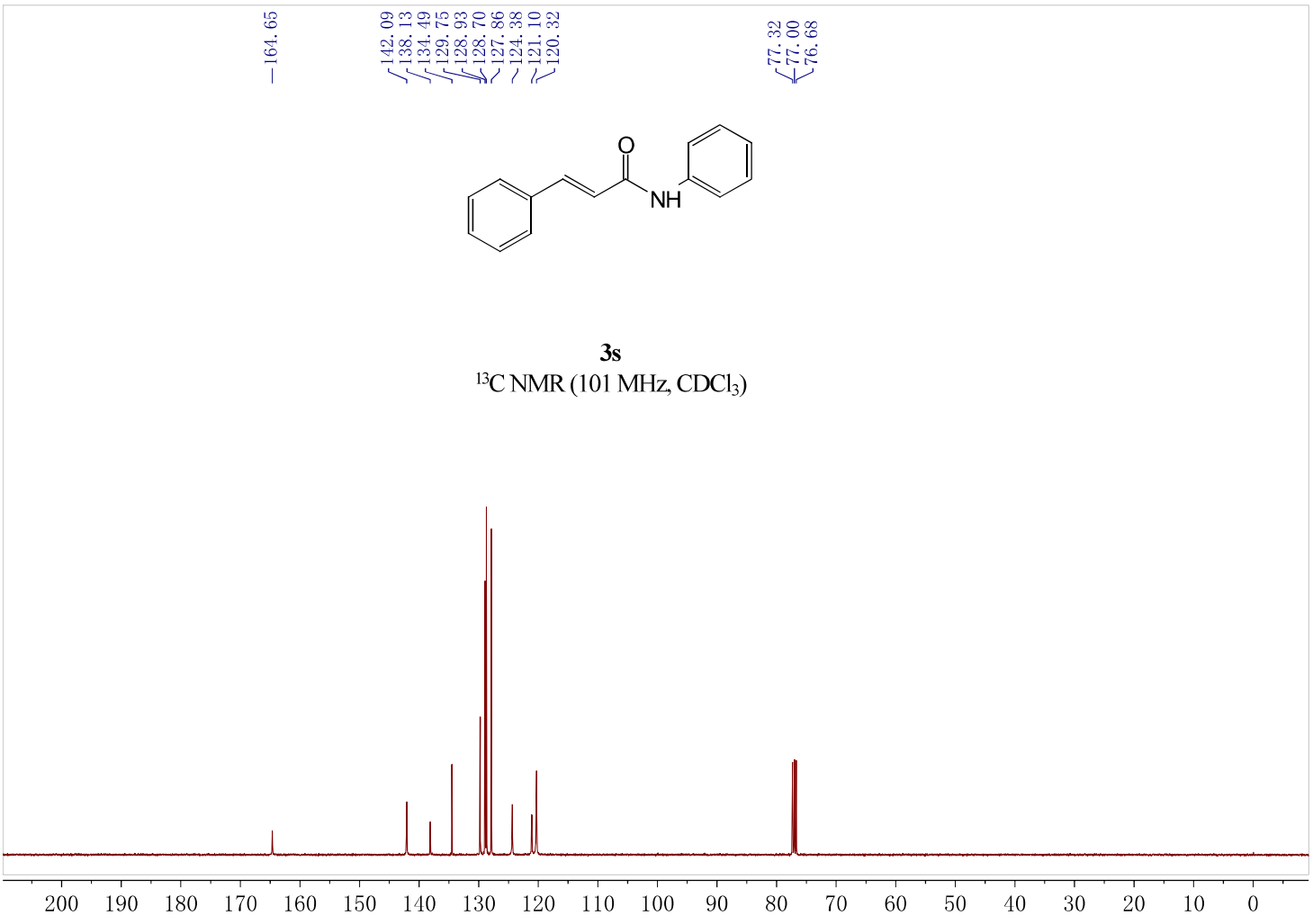

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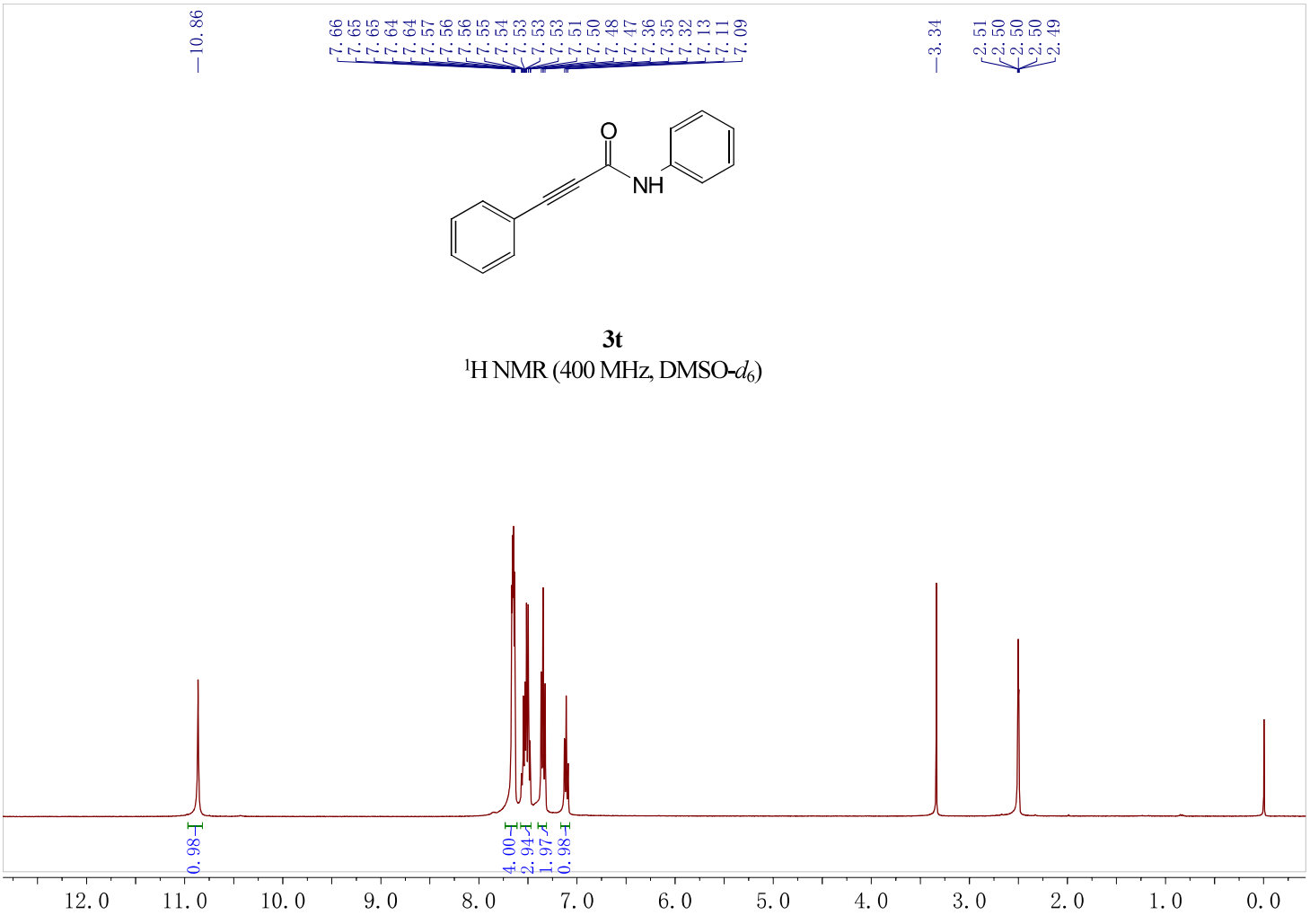

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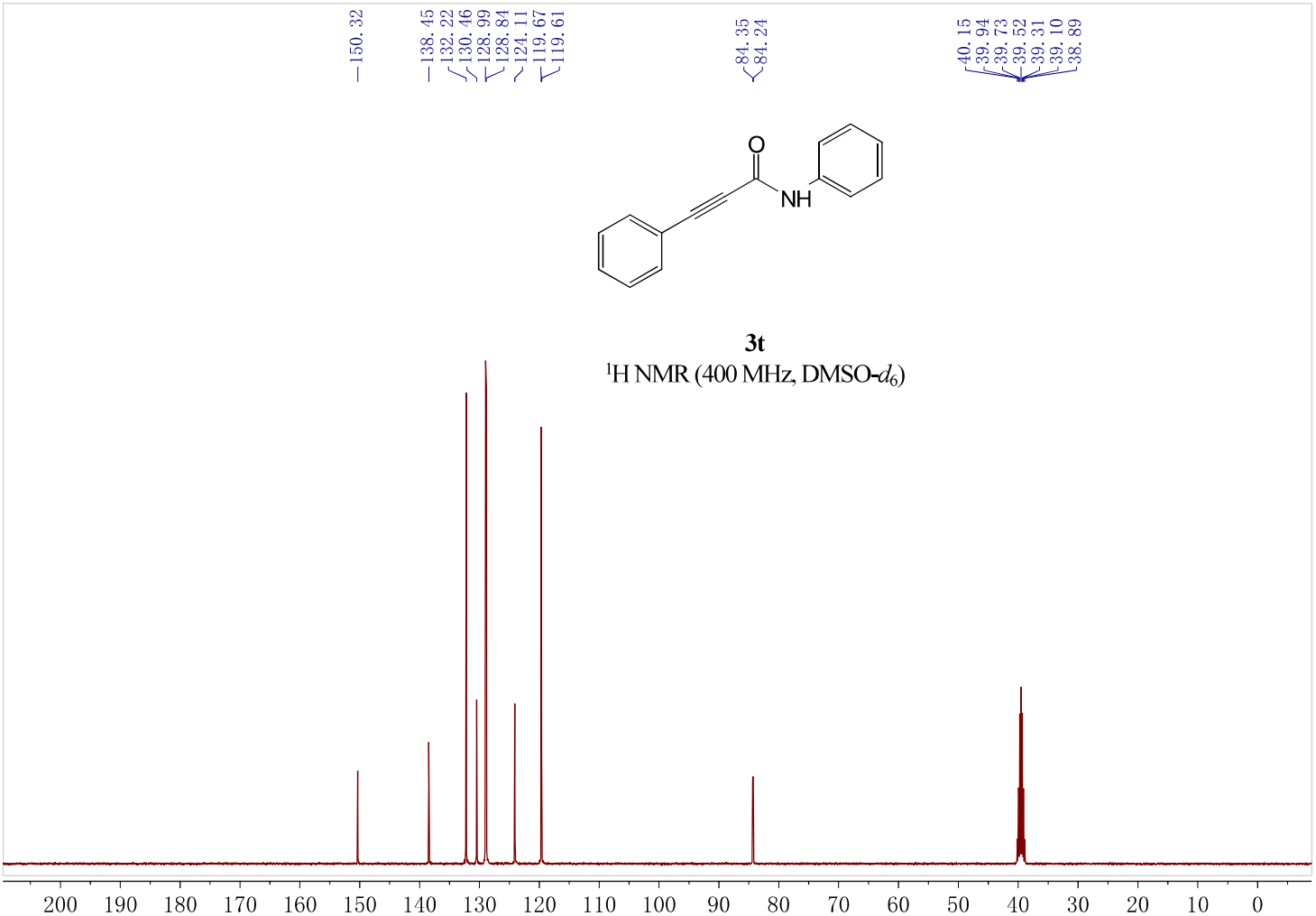

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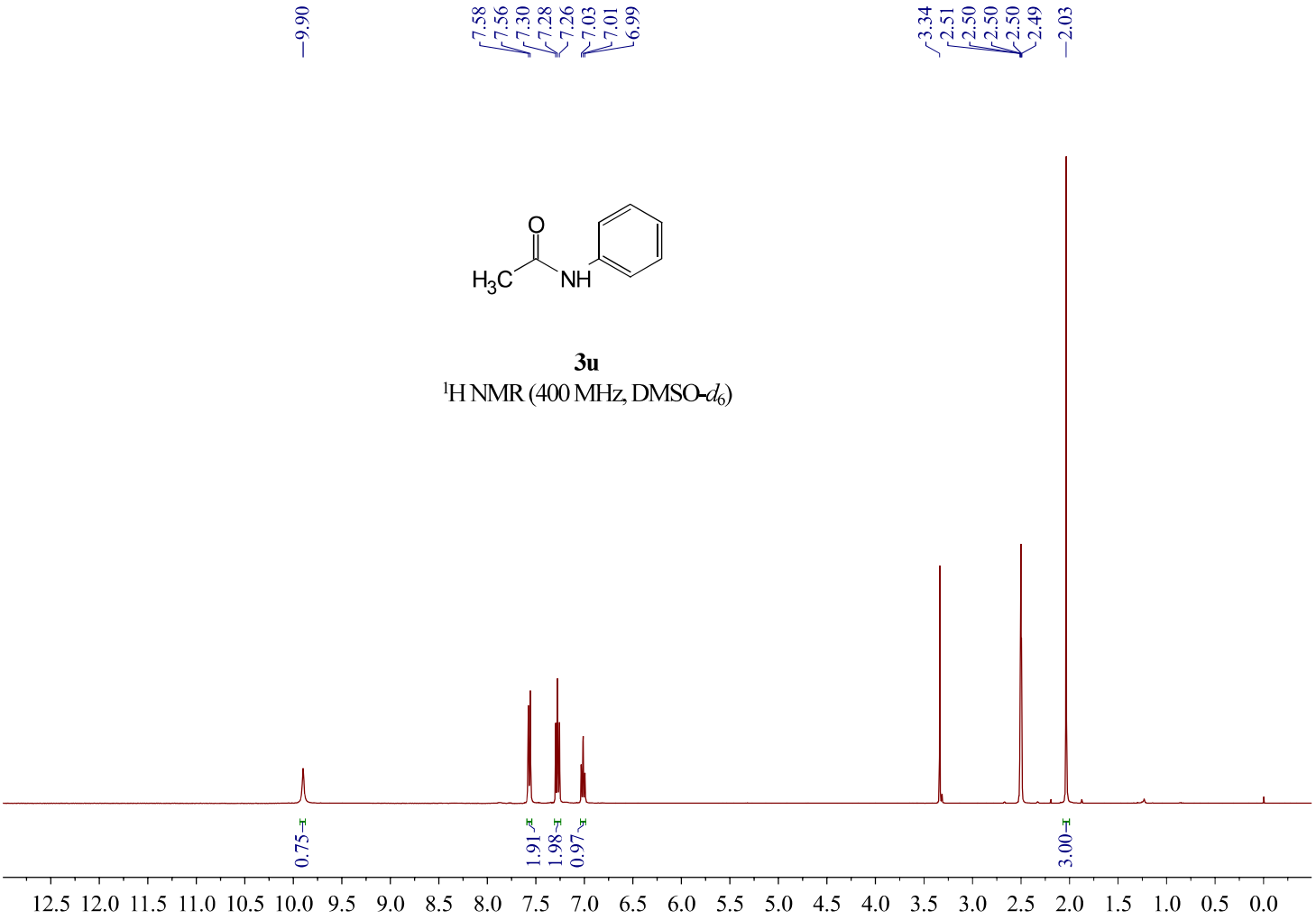

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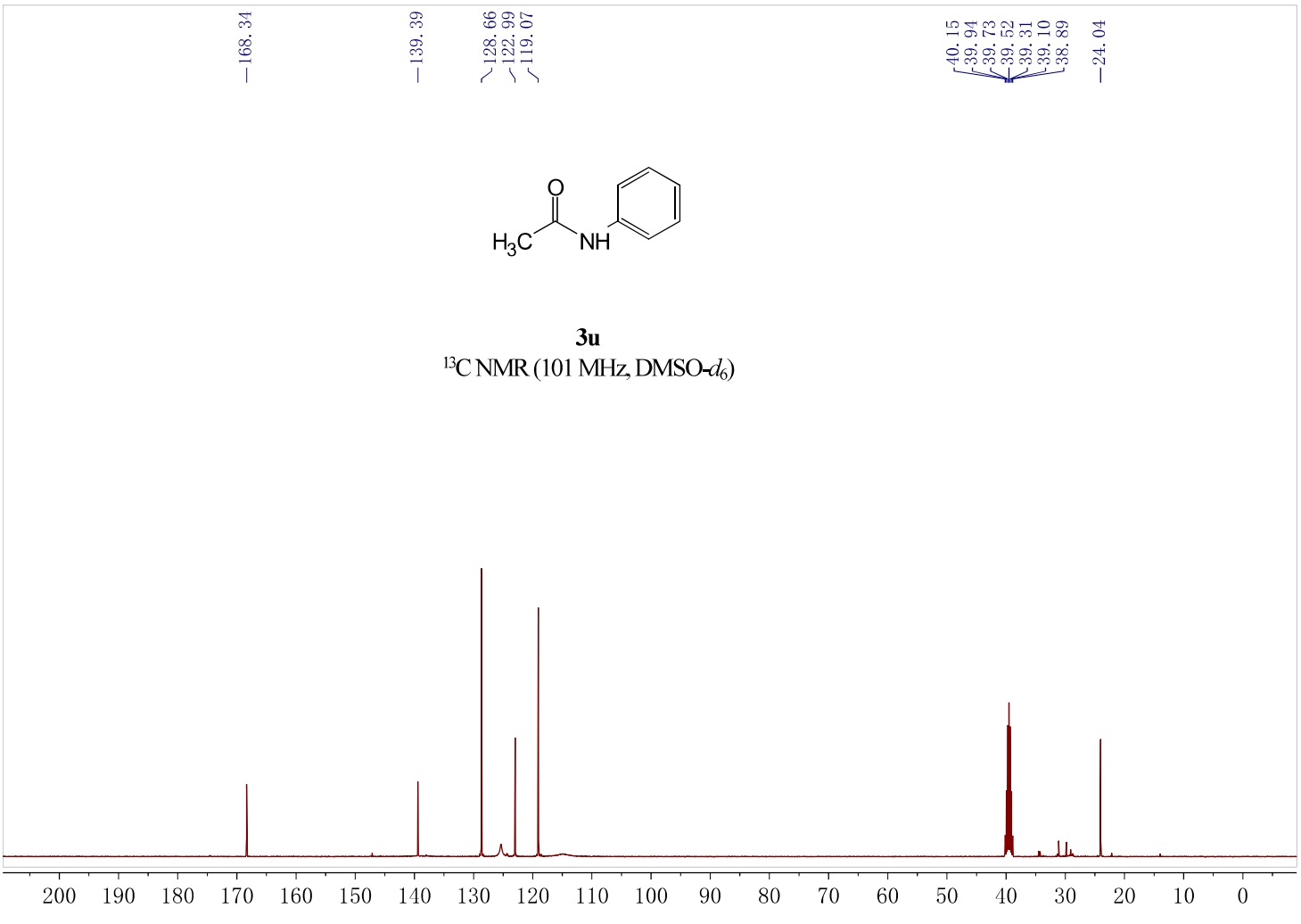

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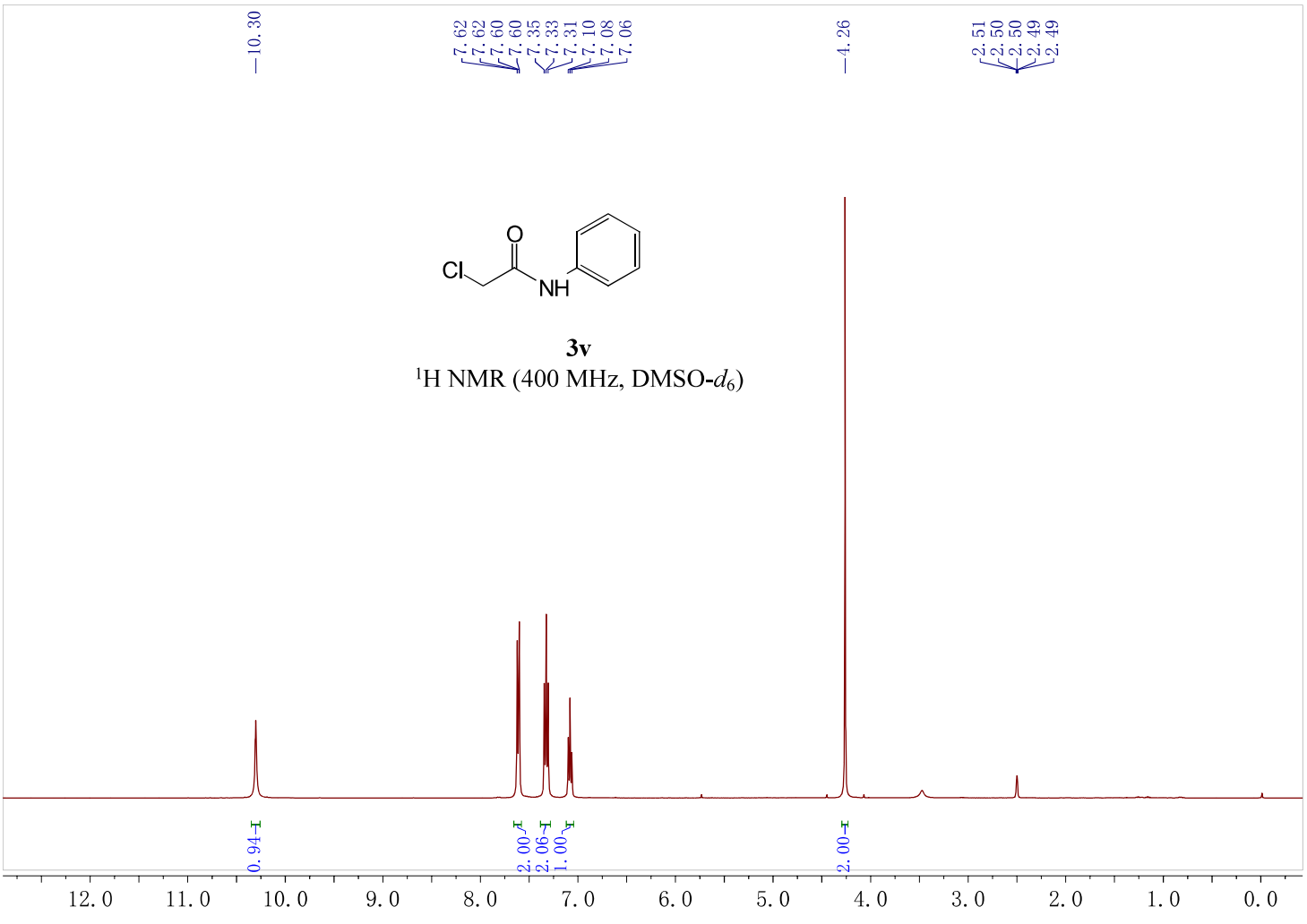

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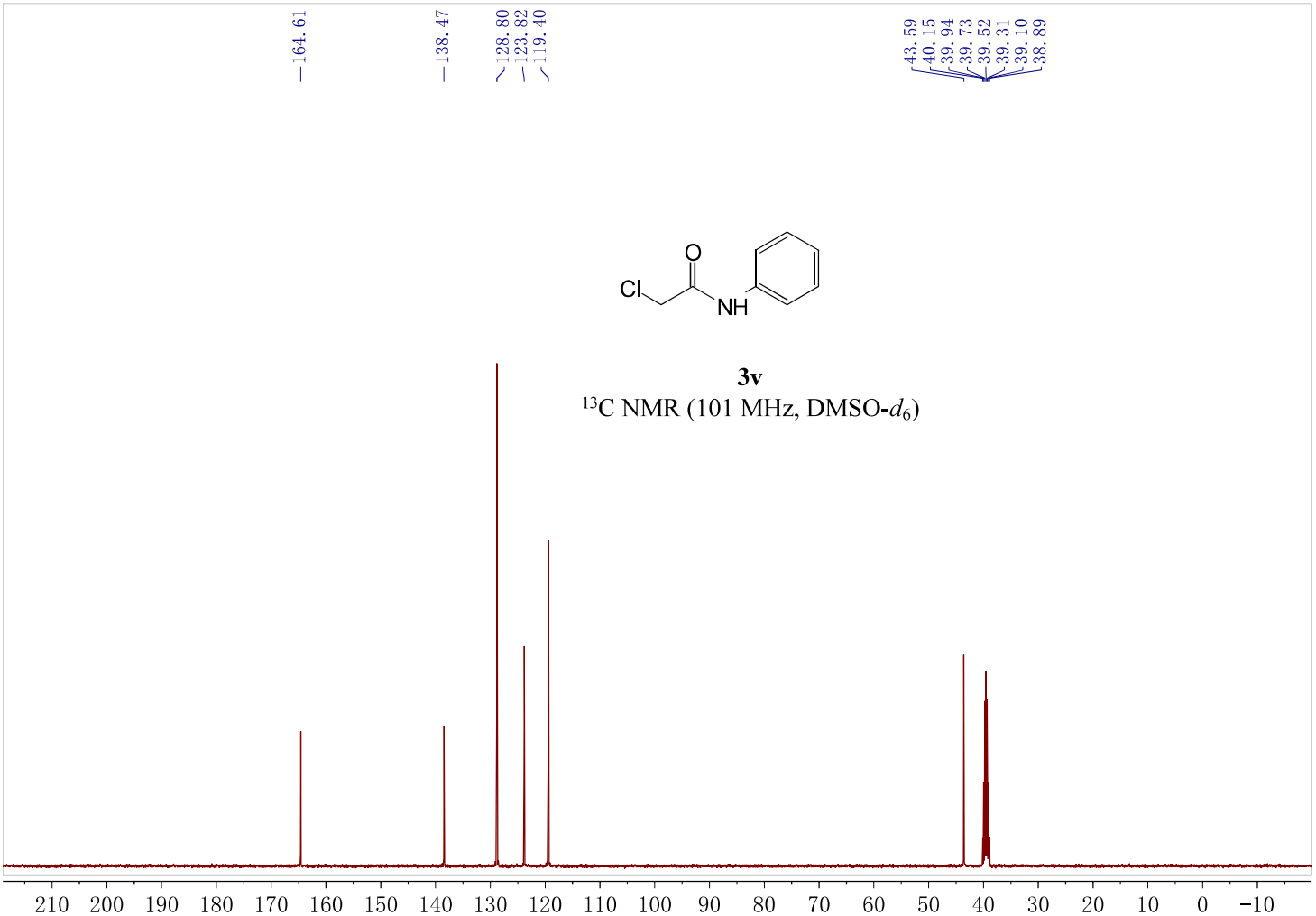

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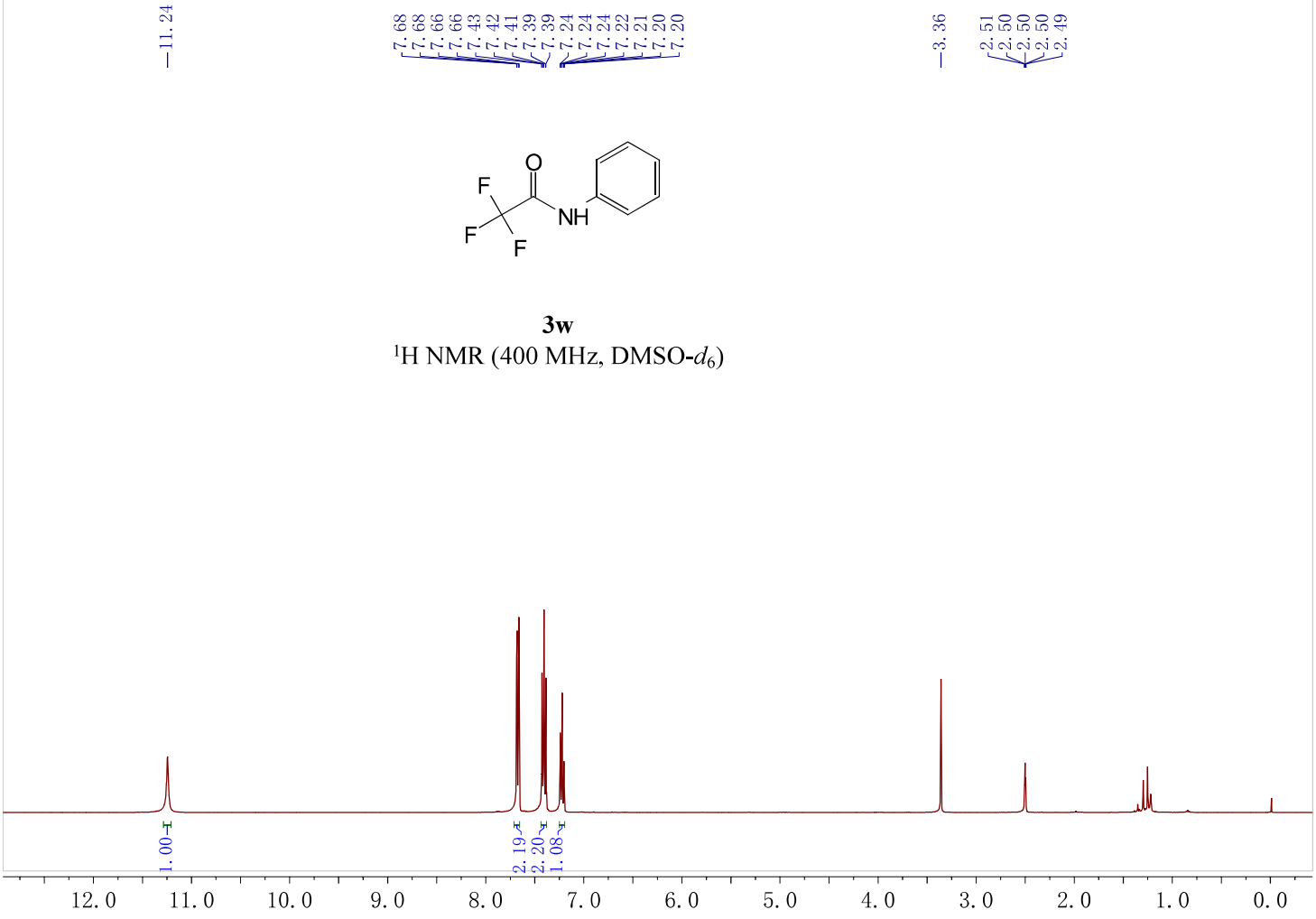

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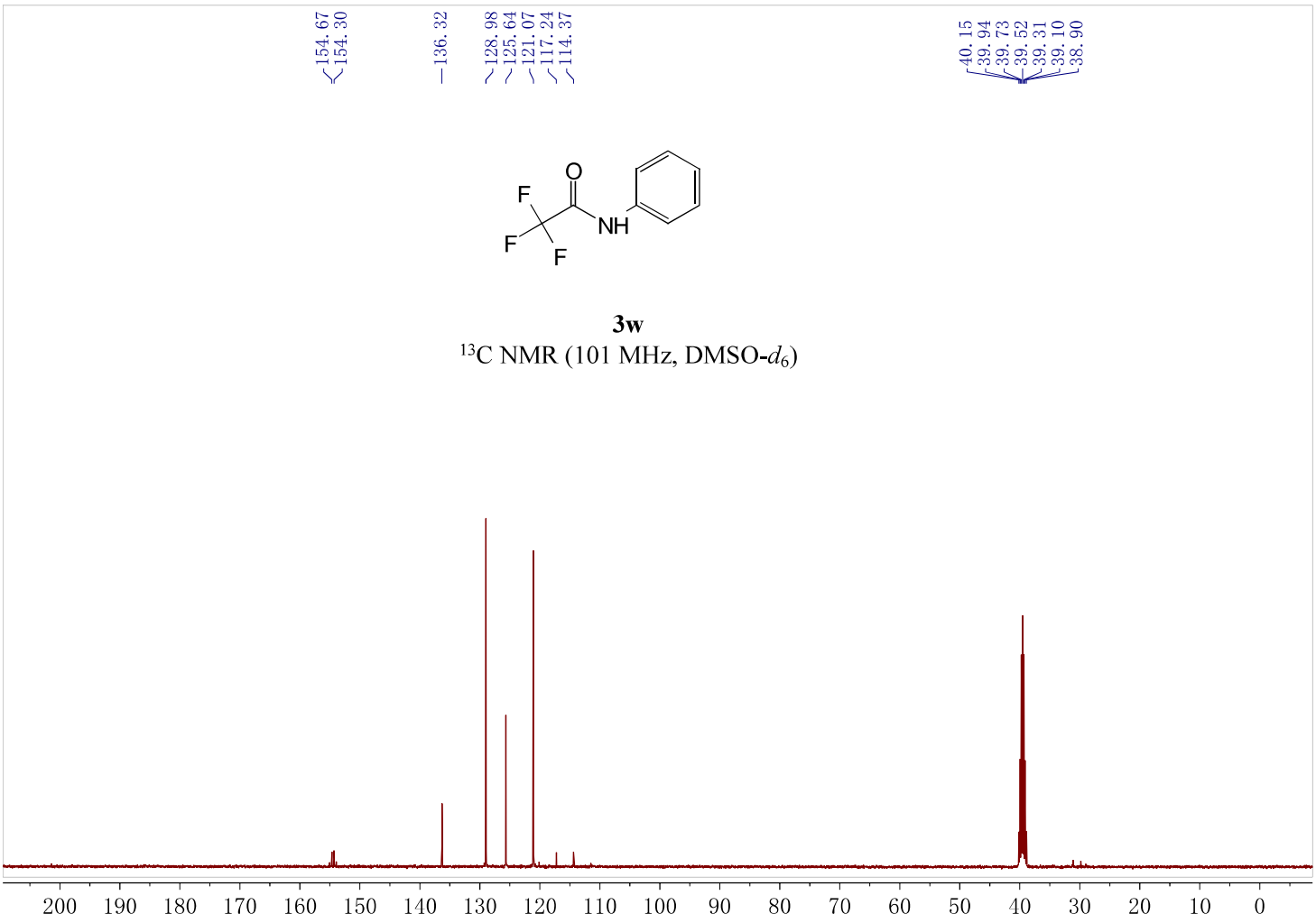
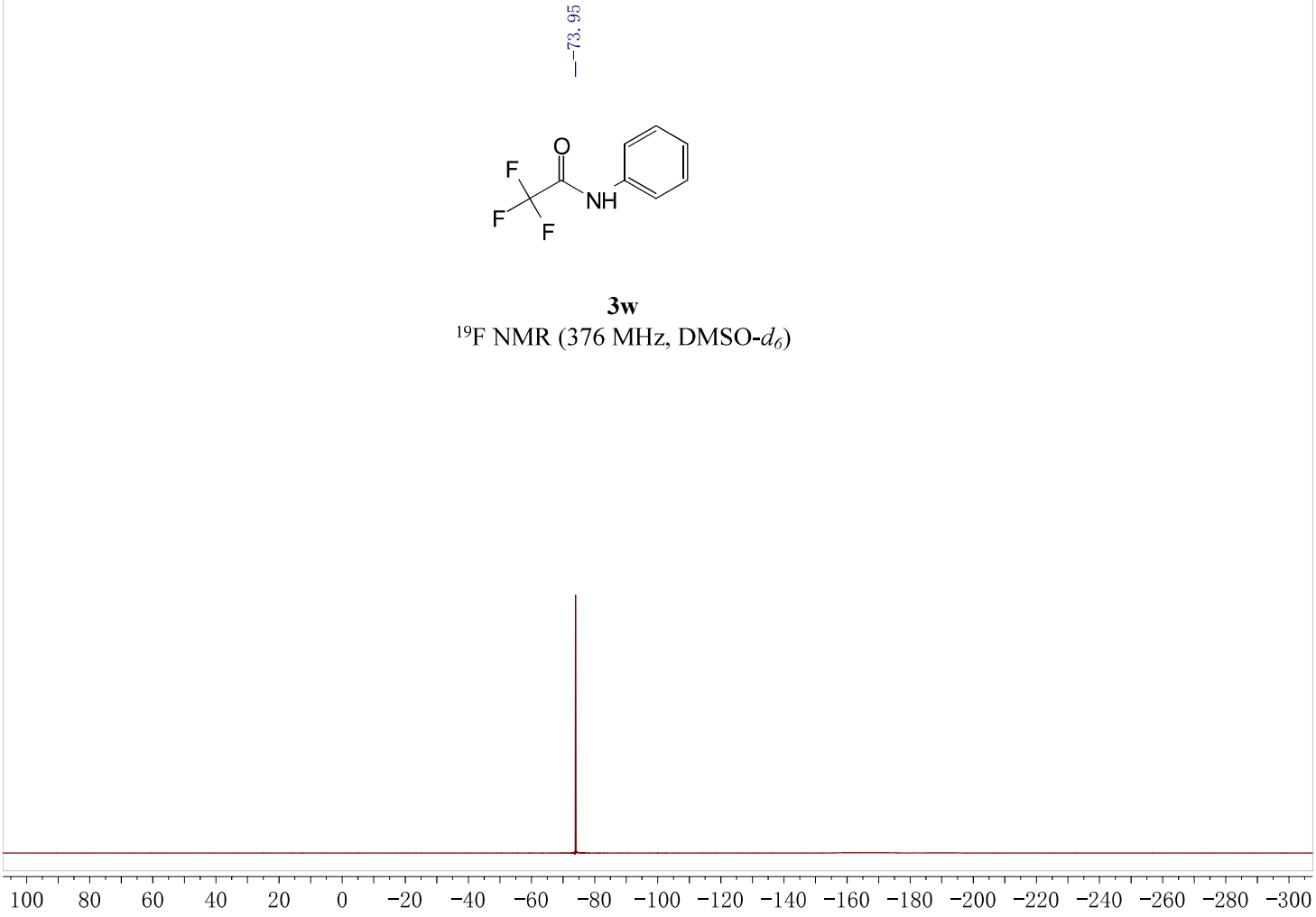


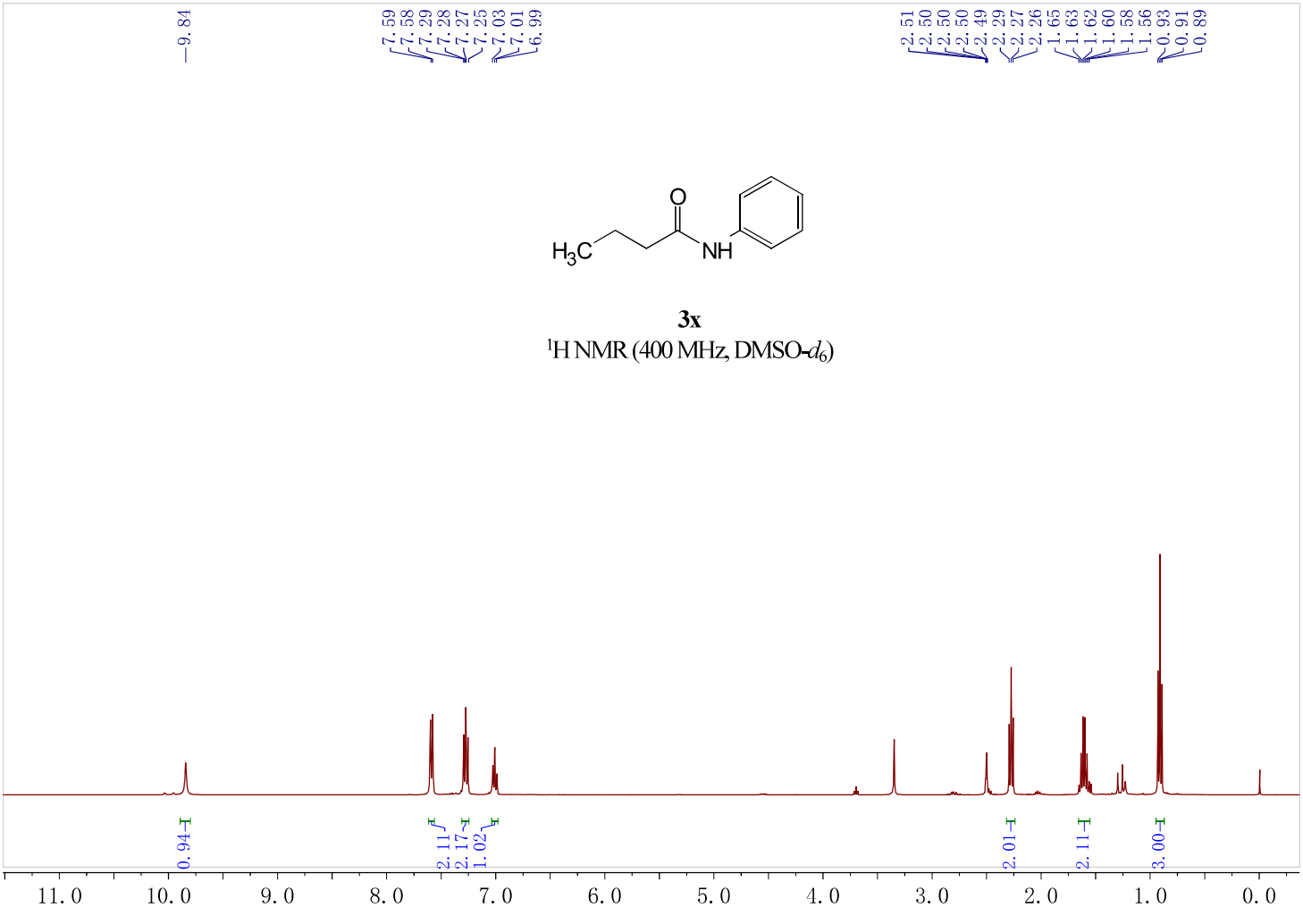
3w

^{13}C NMR (101 MHz, DMSO-d_6)



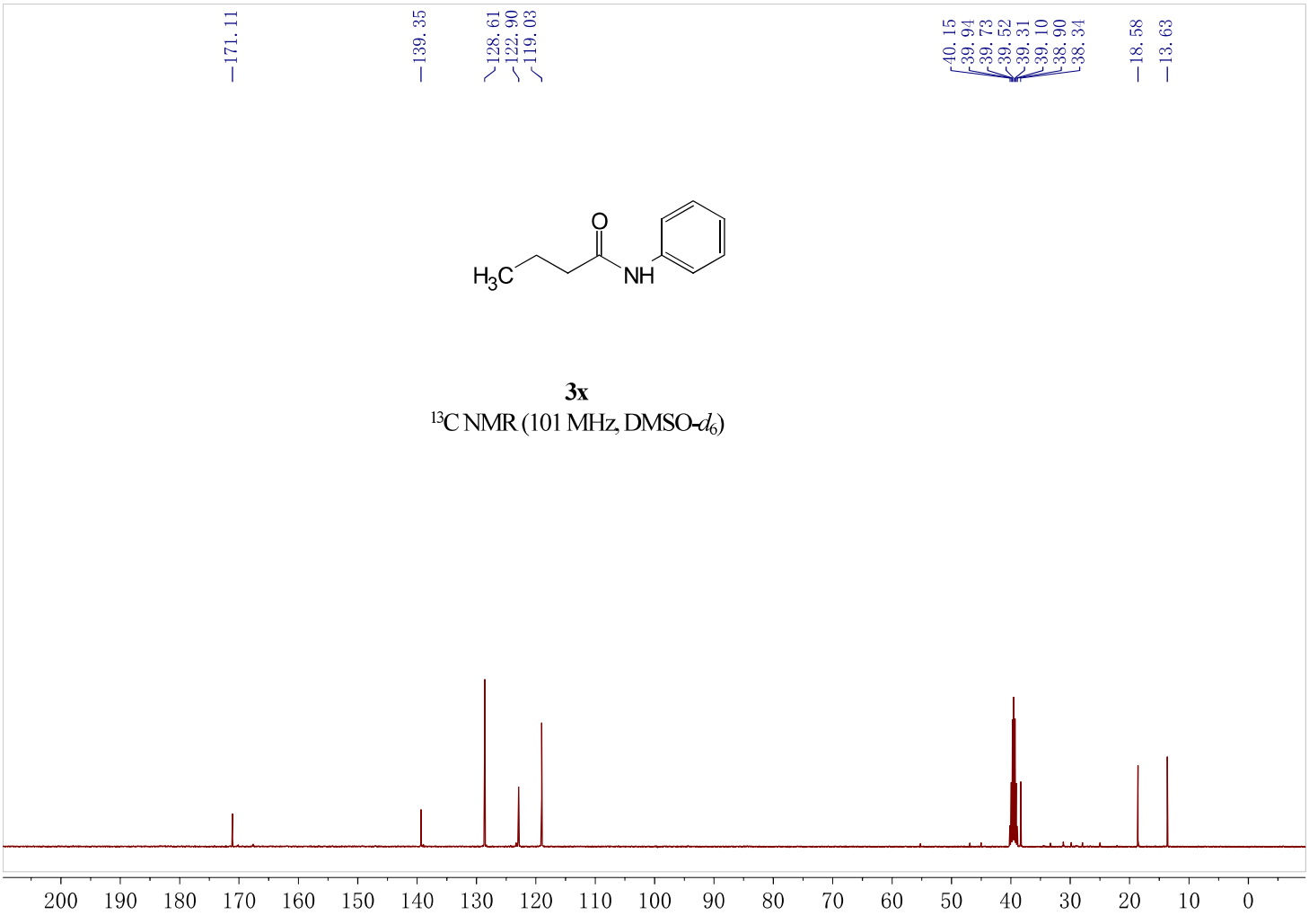
3w

^{19}F NMR (376 MHz, DMSO-d_6)



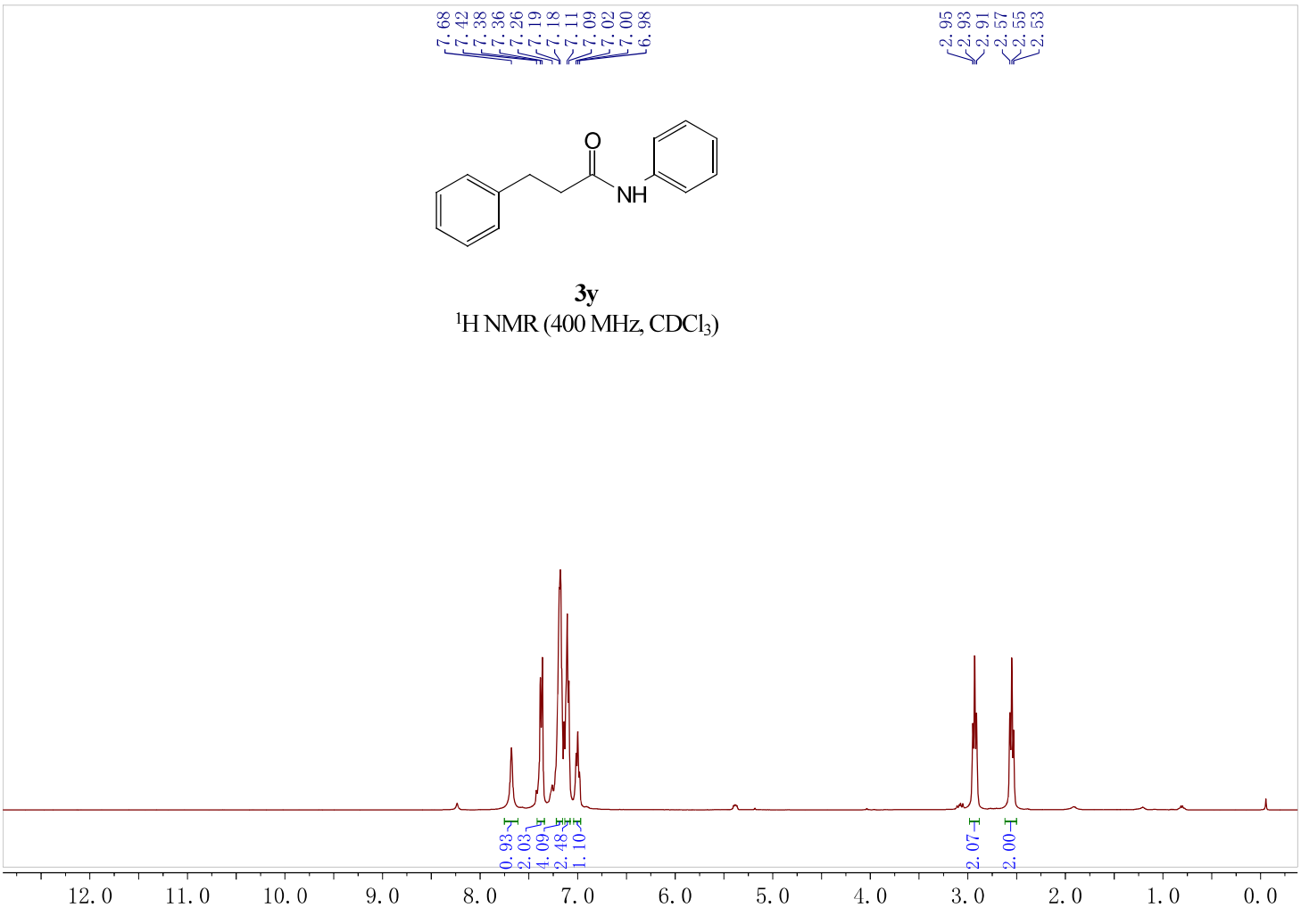
3x

^{1}H NMR (400 MHz, DMSO-d_6)



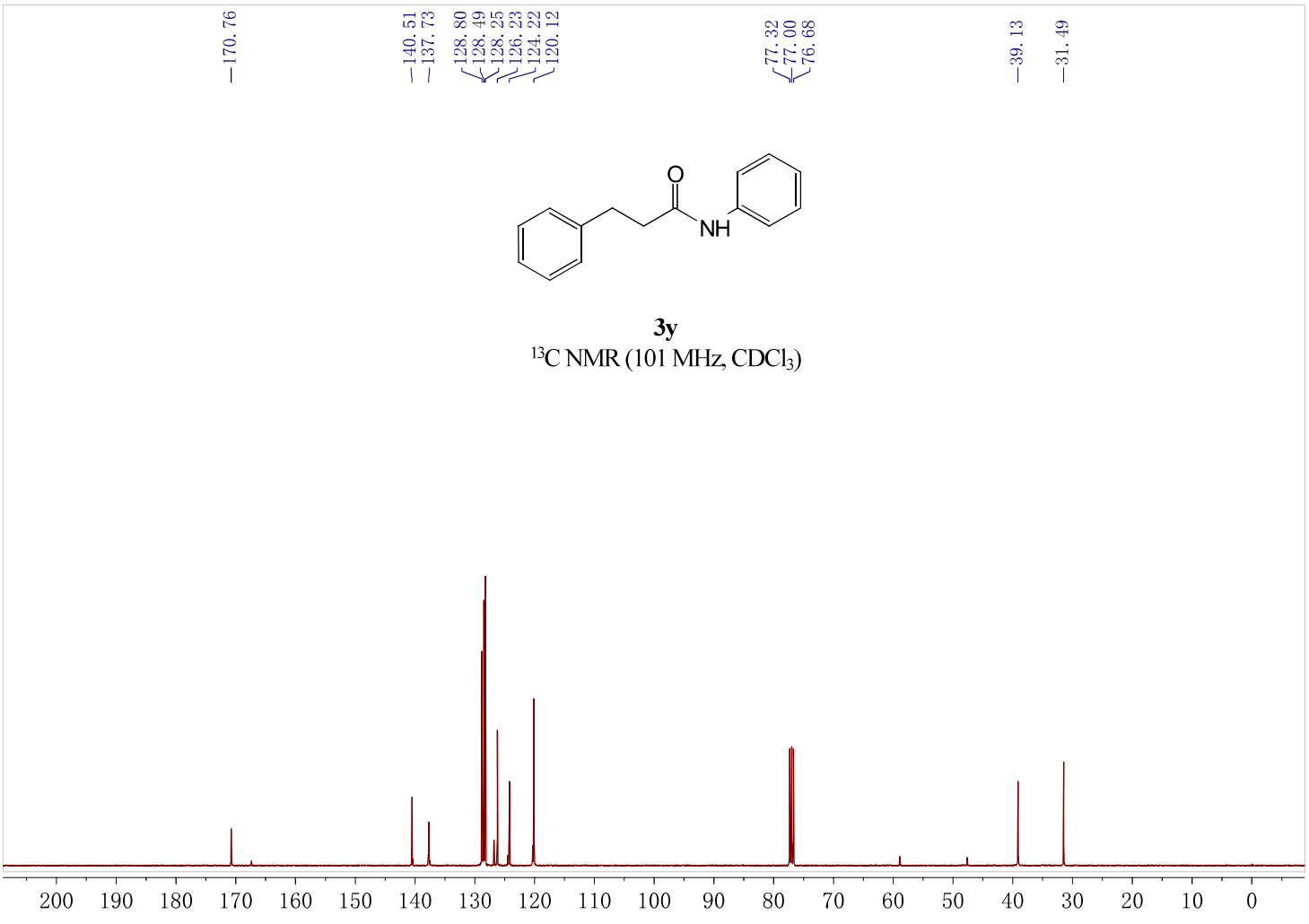
3x

^{13}C NMR (101 MHz, DMSO-d_6)



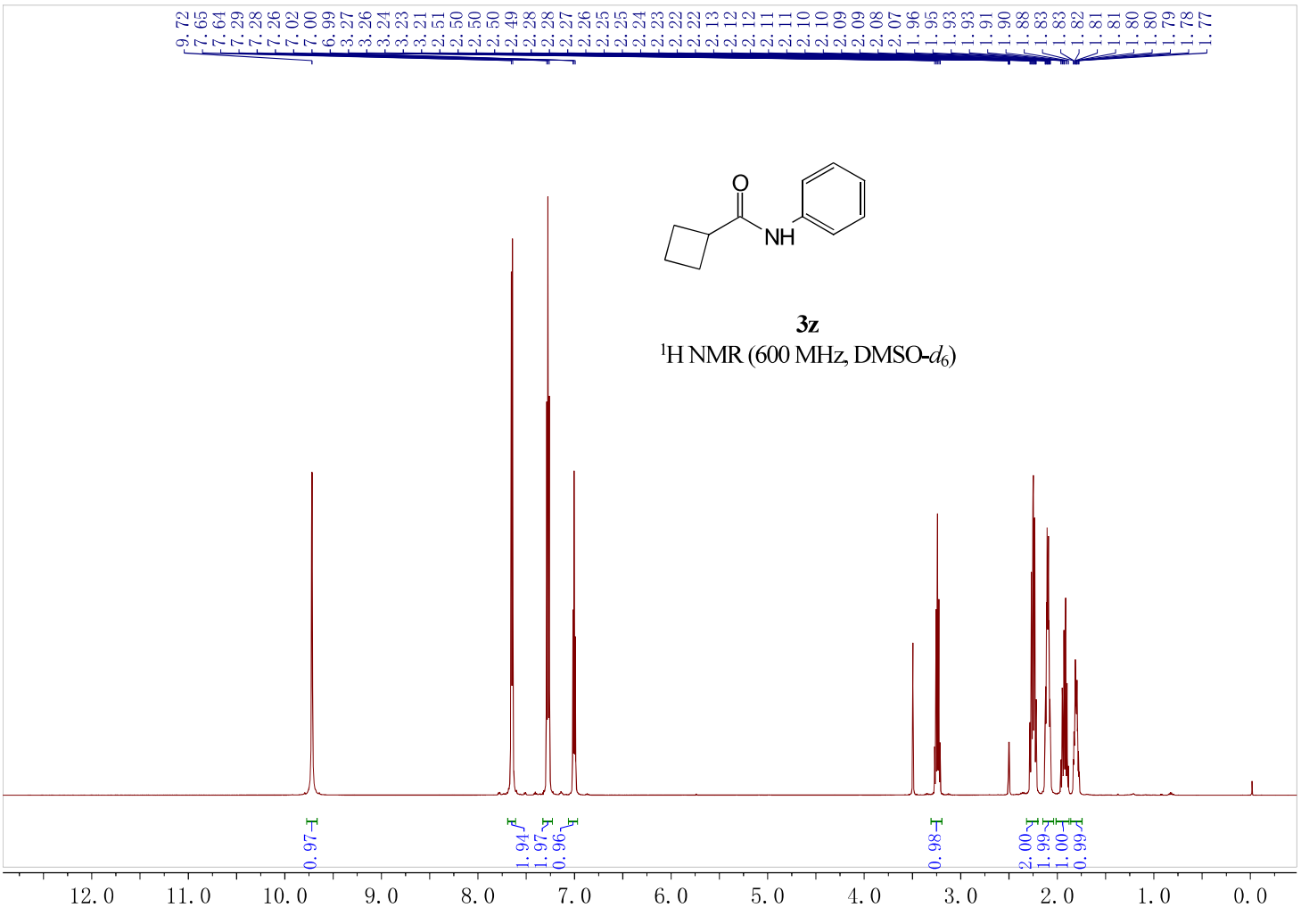
3y

^{1}H NMR (400 MHz, $CDCl_3$)



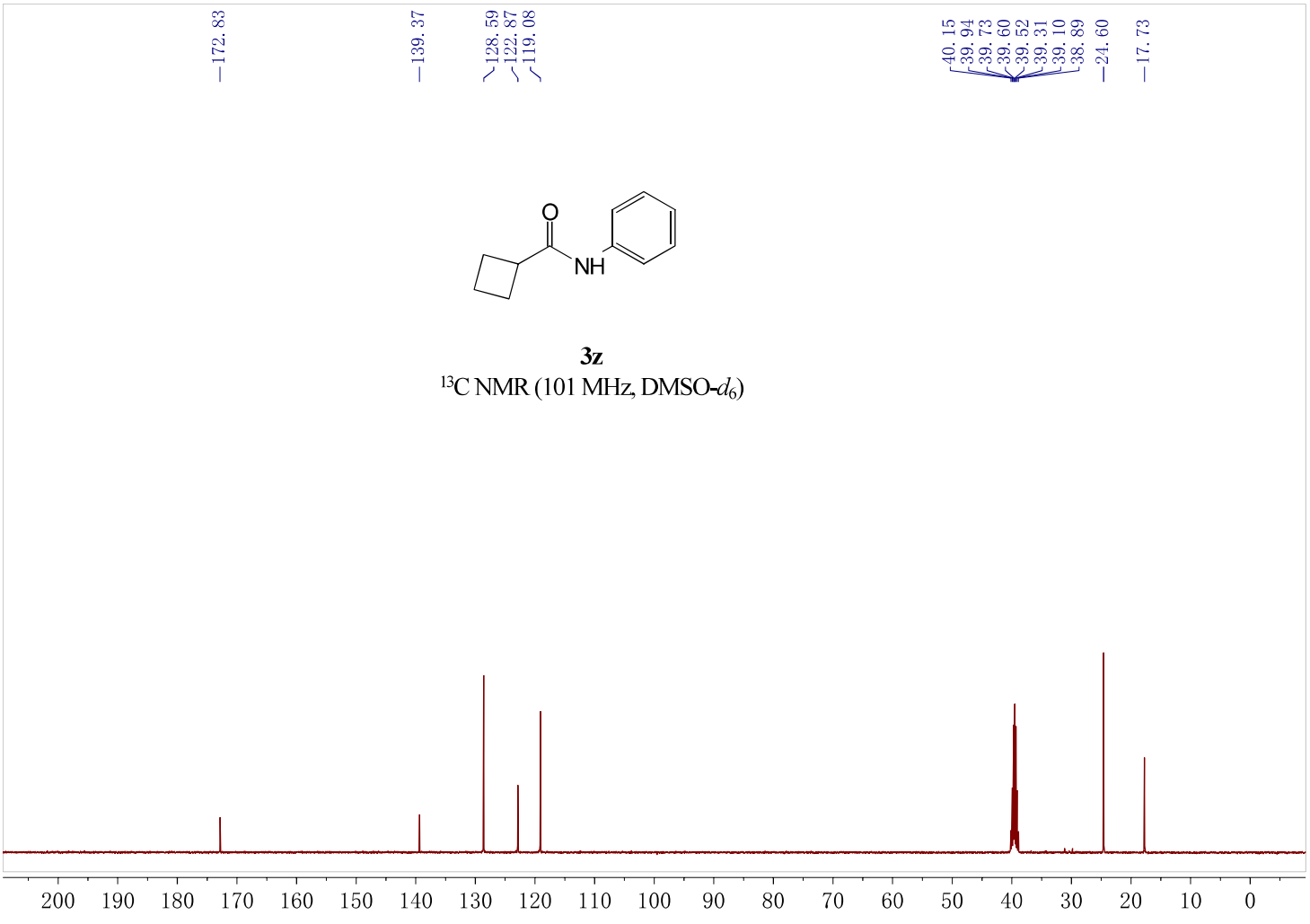
3y

^{13}C NMR (101 MHz, $CDCl_3$)



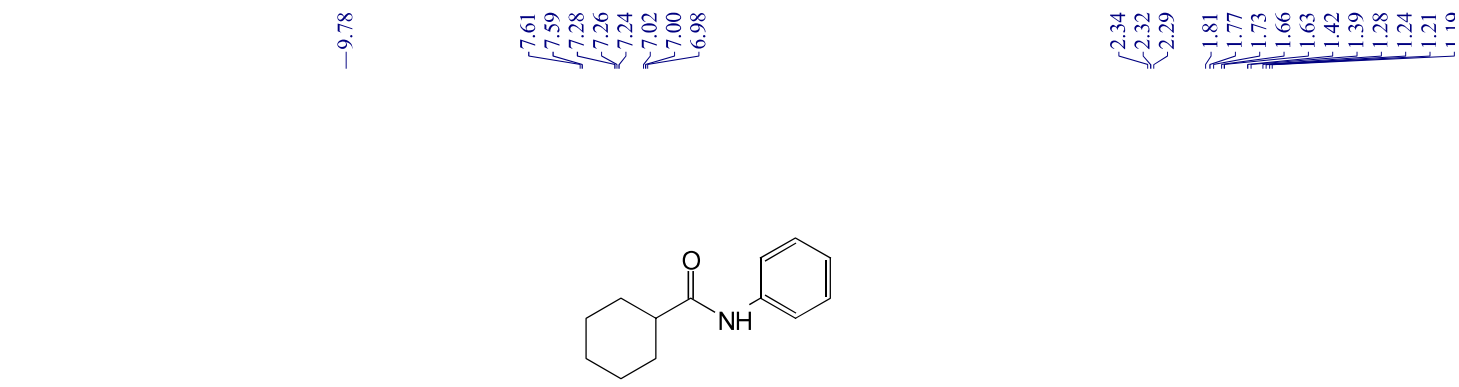
3z

^{1}H NMR (600 MHz, DMSO-d_6)



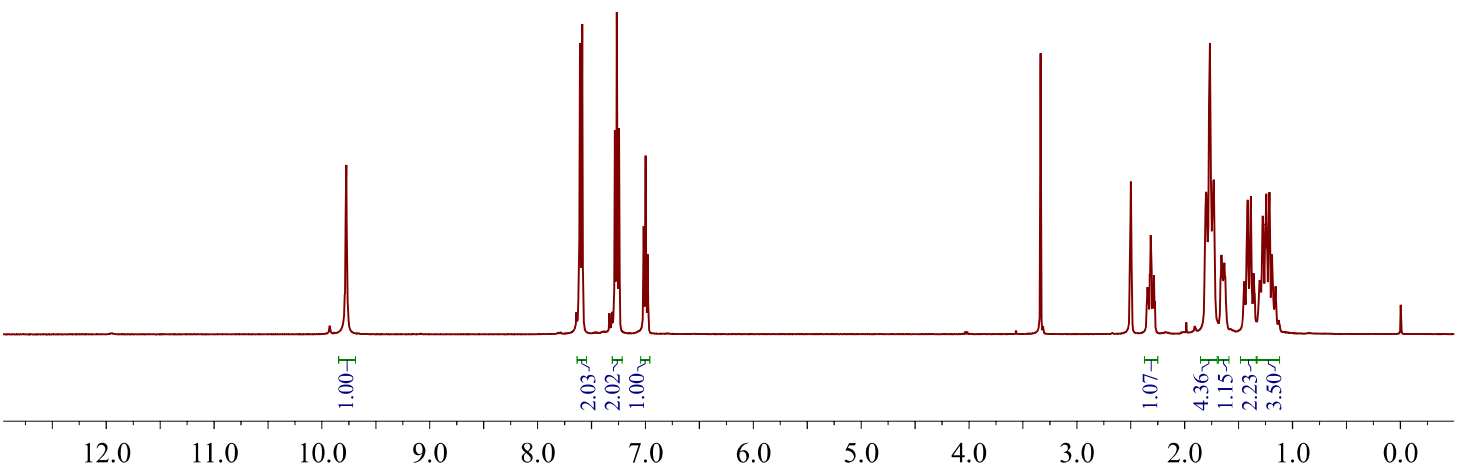
3z

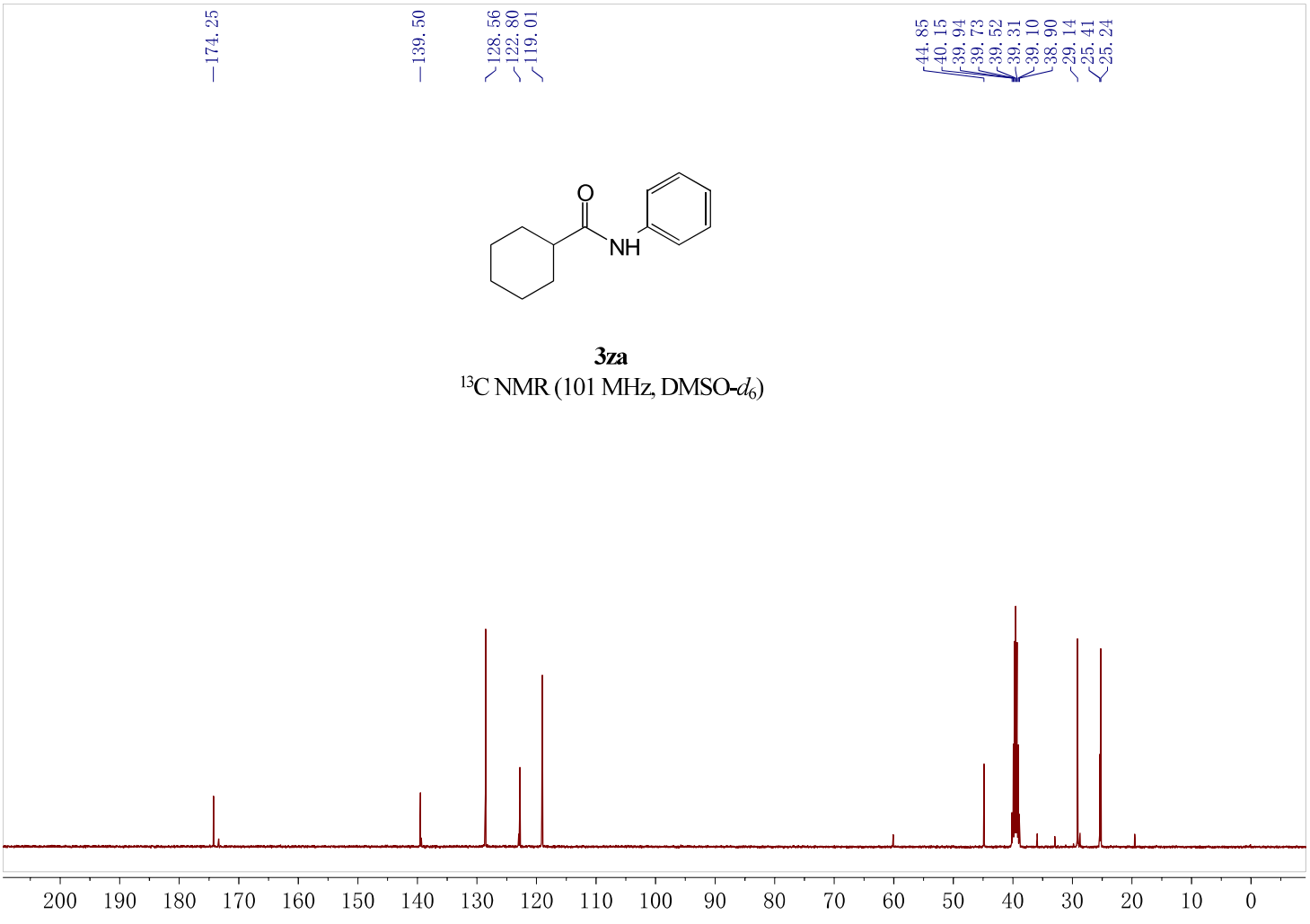
^{13}C NMR (101 MHz, DMSO-d_6)



3za

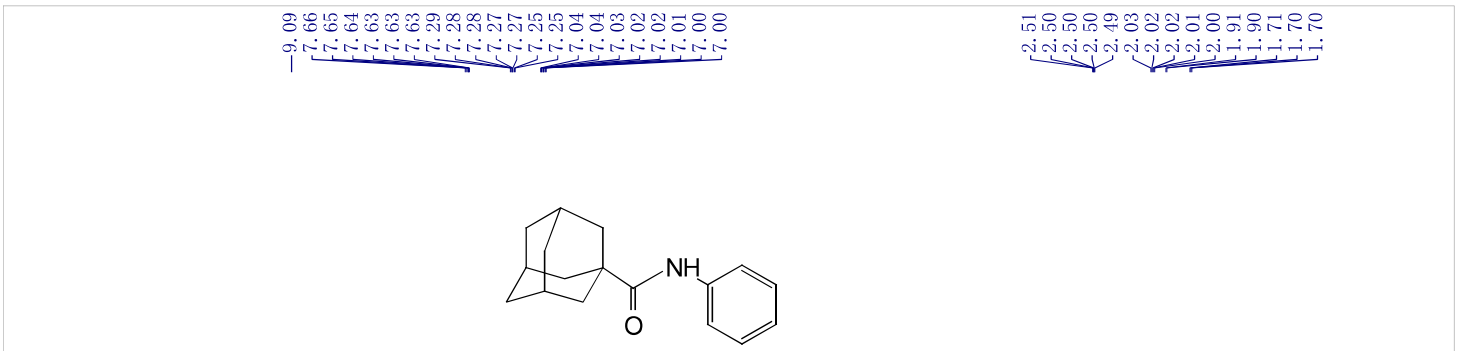
^{1}H NMR (400 MHz, DMSO-d_6)





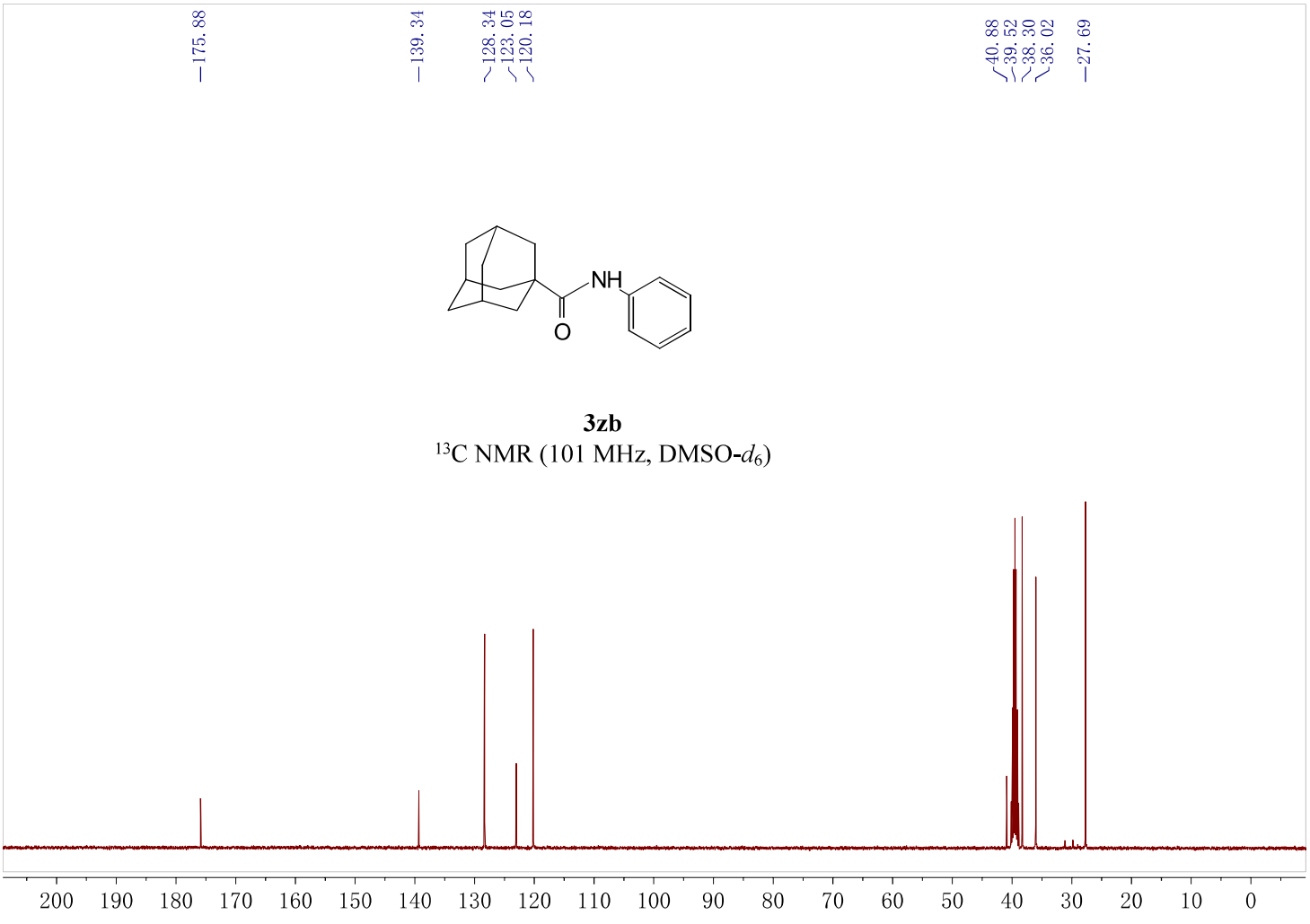
3za

^{13}C NMR (101 MHz, DMSO-d_6)



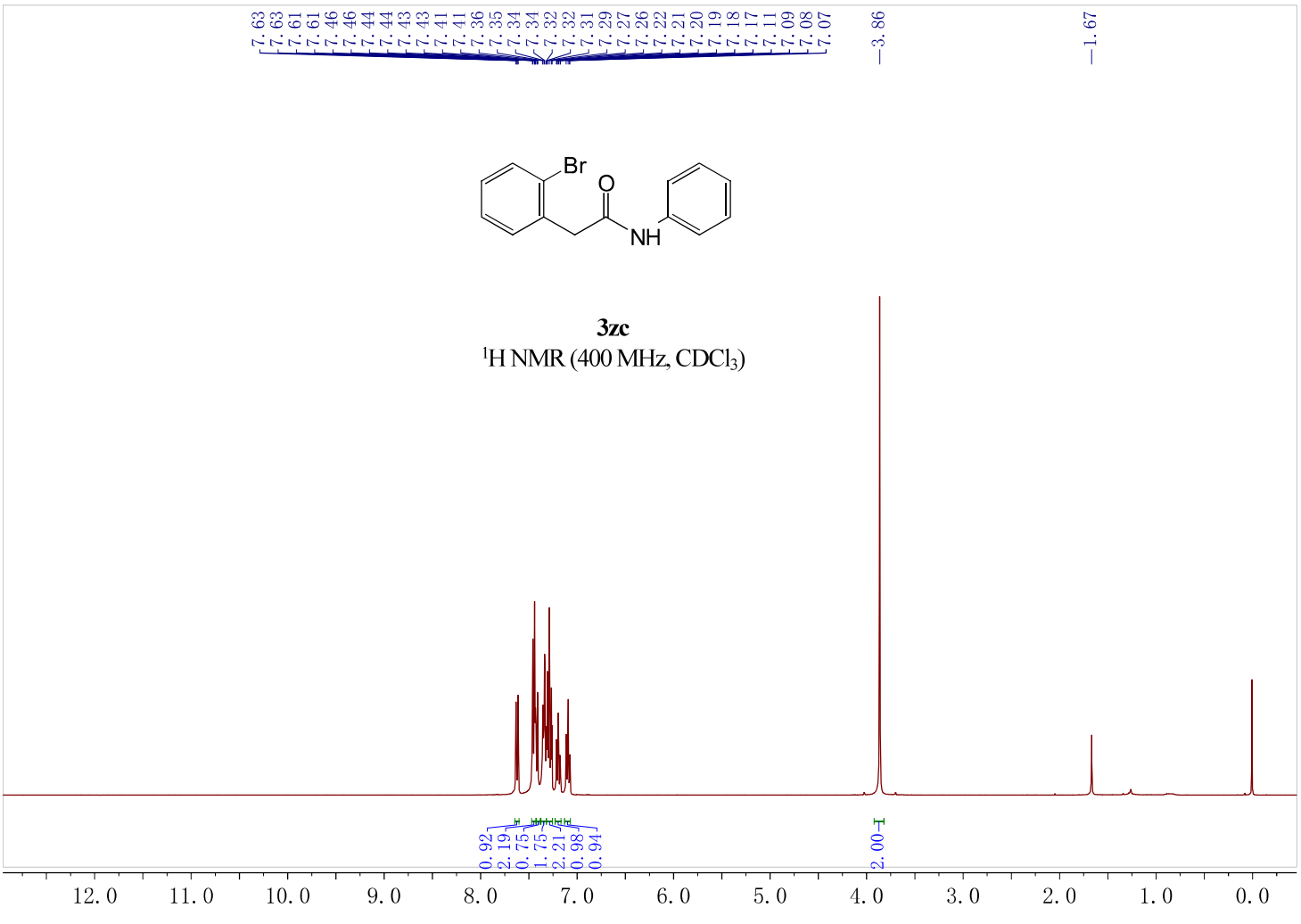
3zb

^{1}H NMR (400 MHz, DMSO-d_6)



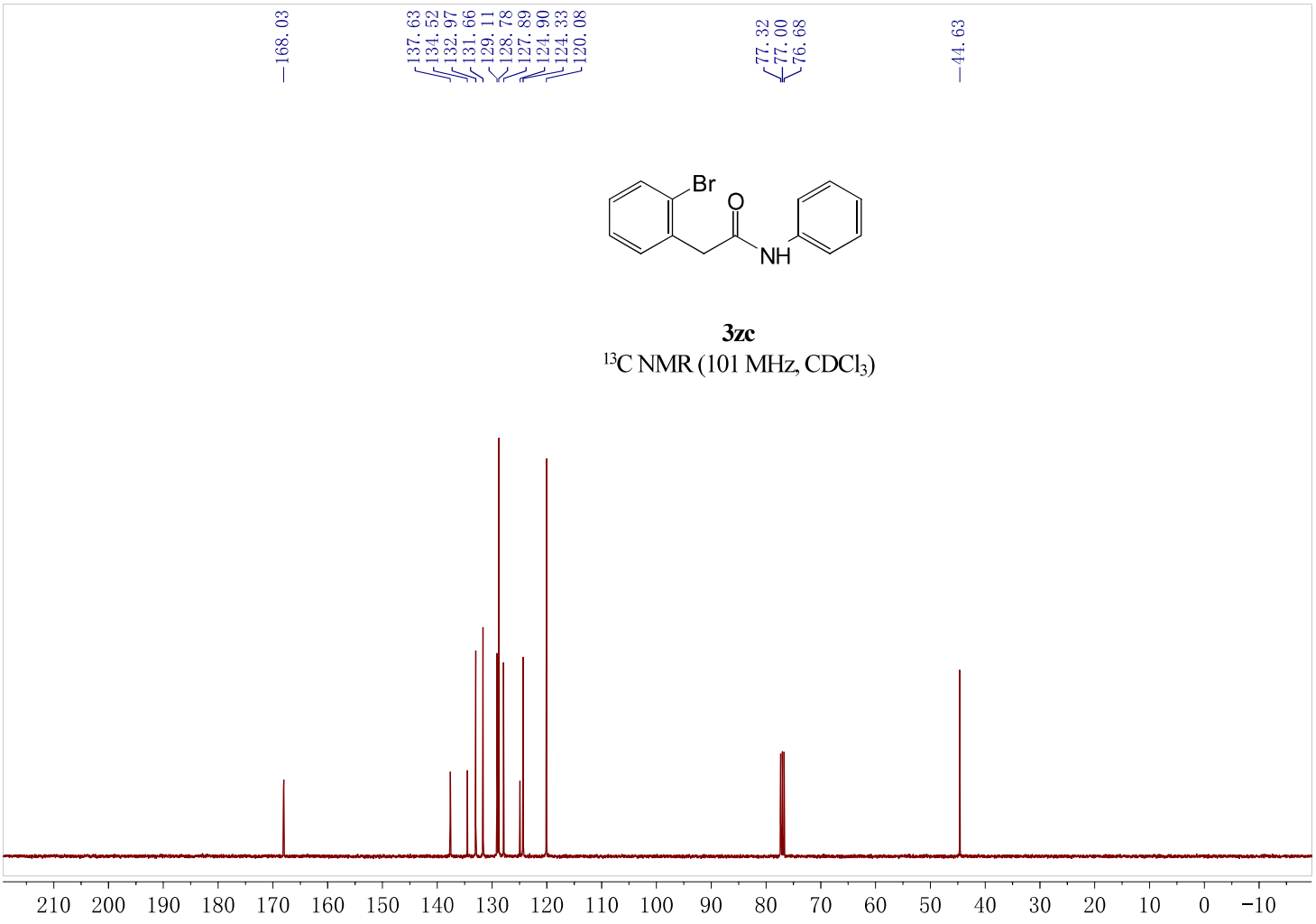
3zb

^{13}C NMR (101 MHz, DMSO-d_6)



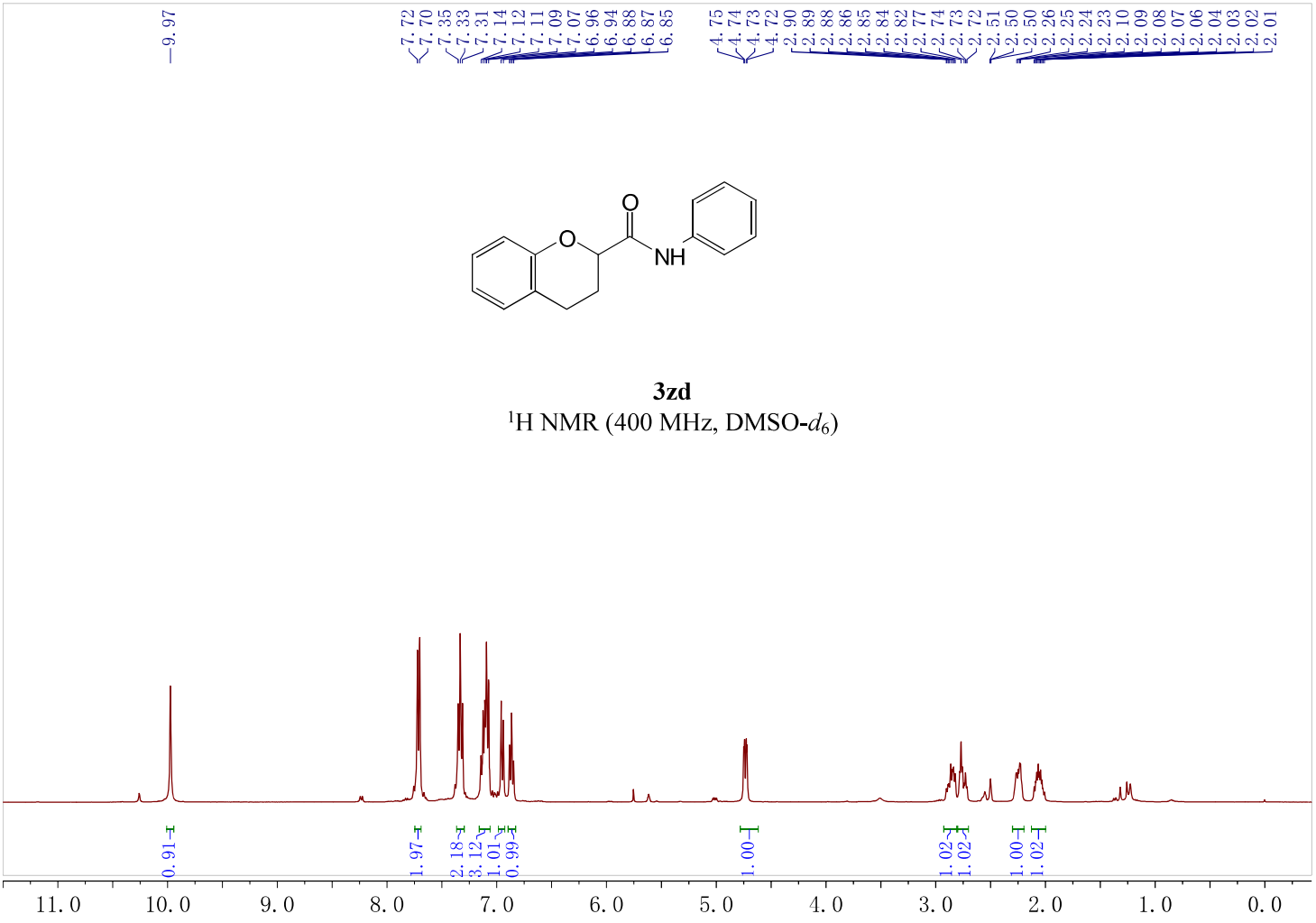
3zc

^{1}H NMR (400 MHz, $CDCl_3$)



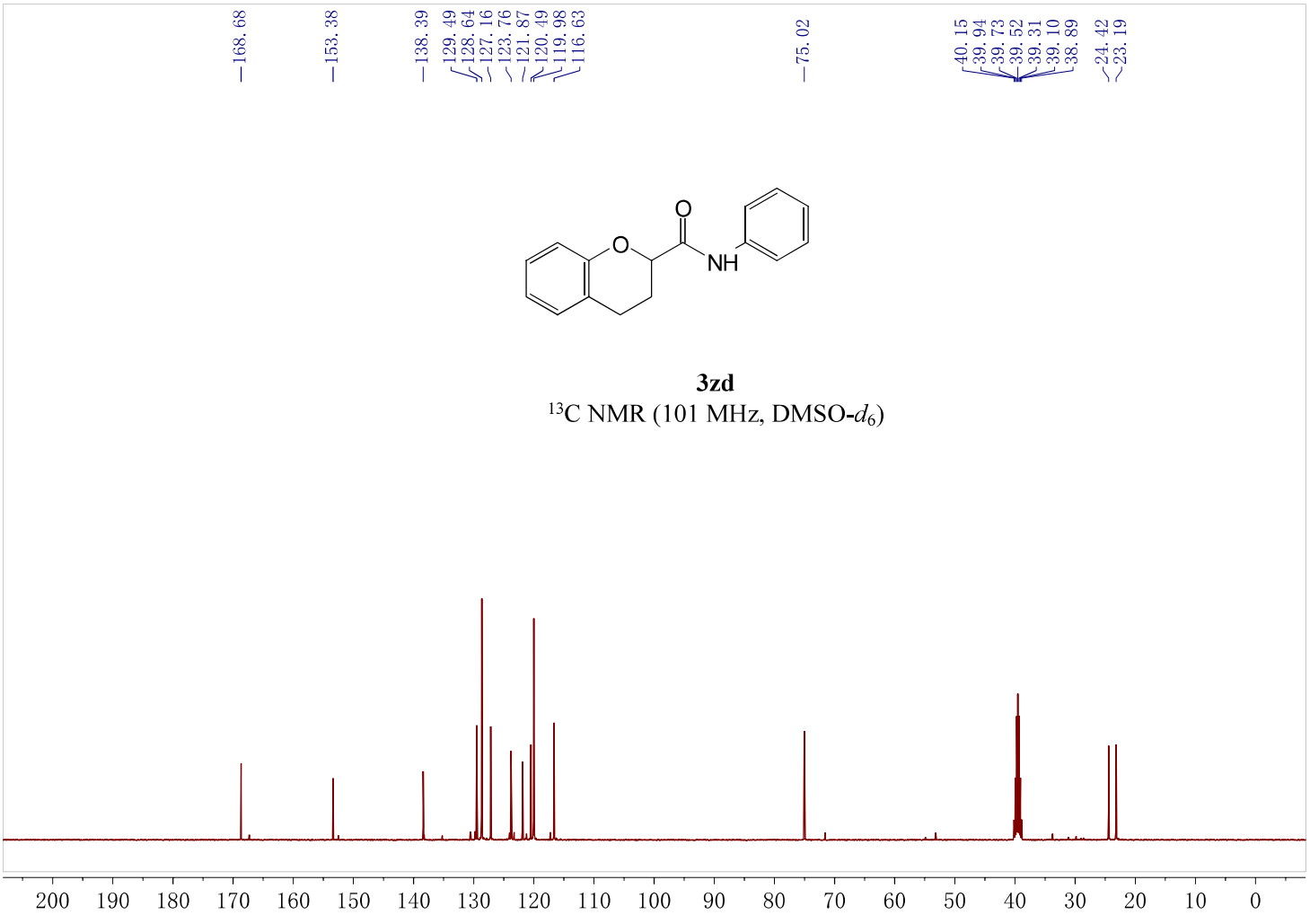
3zc

^{13}C NMR (101 MHz, $CDCl_3$)



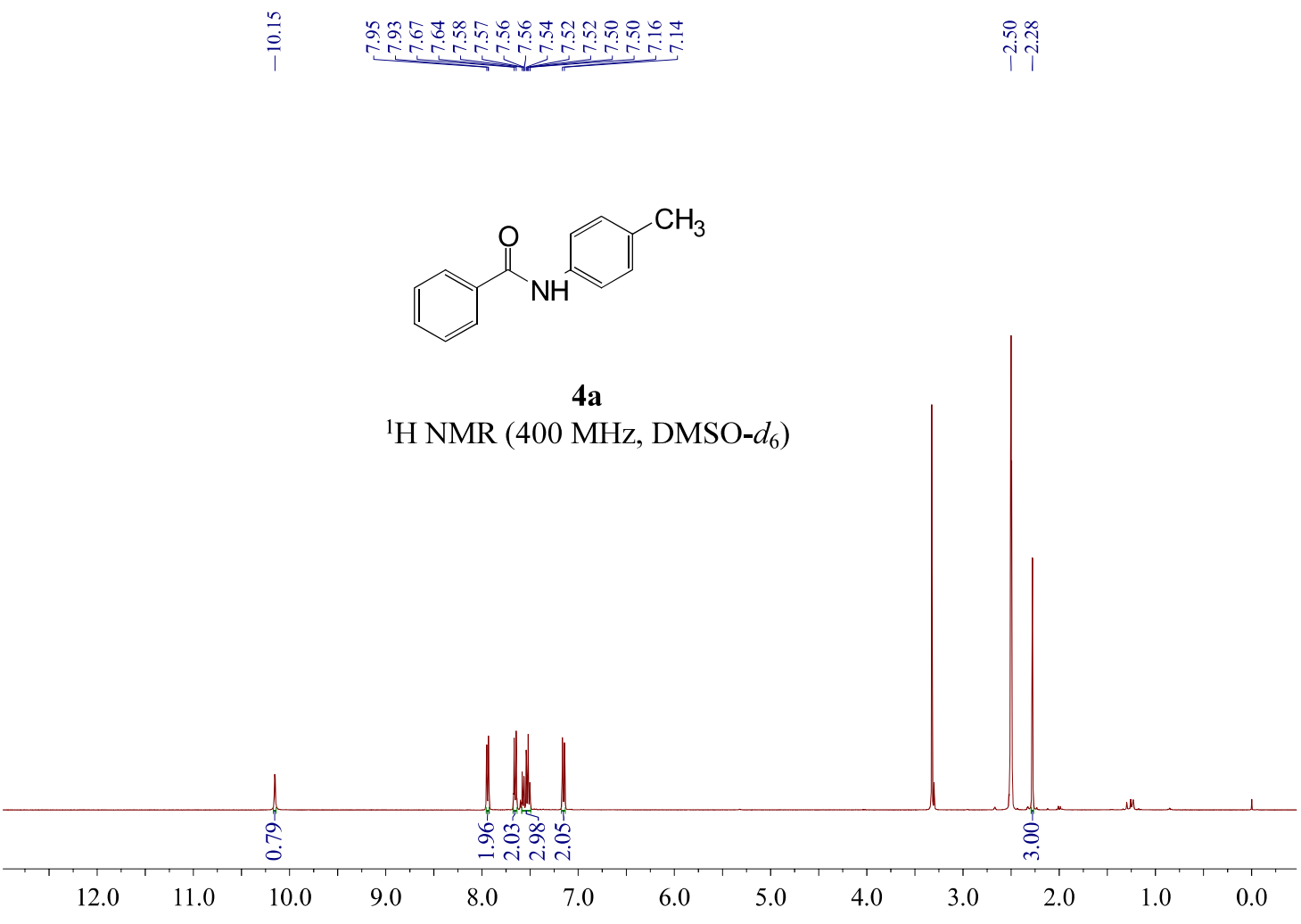
3zd

^{1}H NMR (400 MHz, DMSO-d_6)



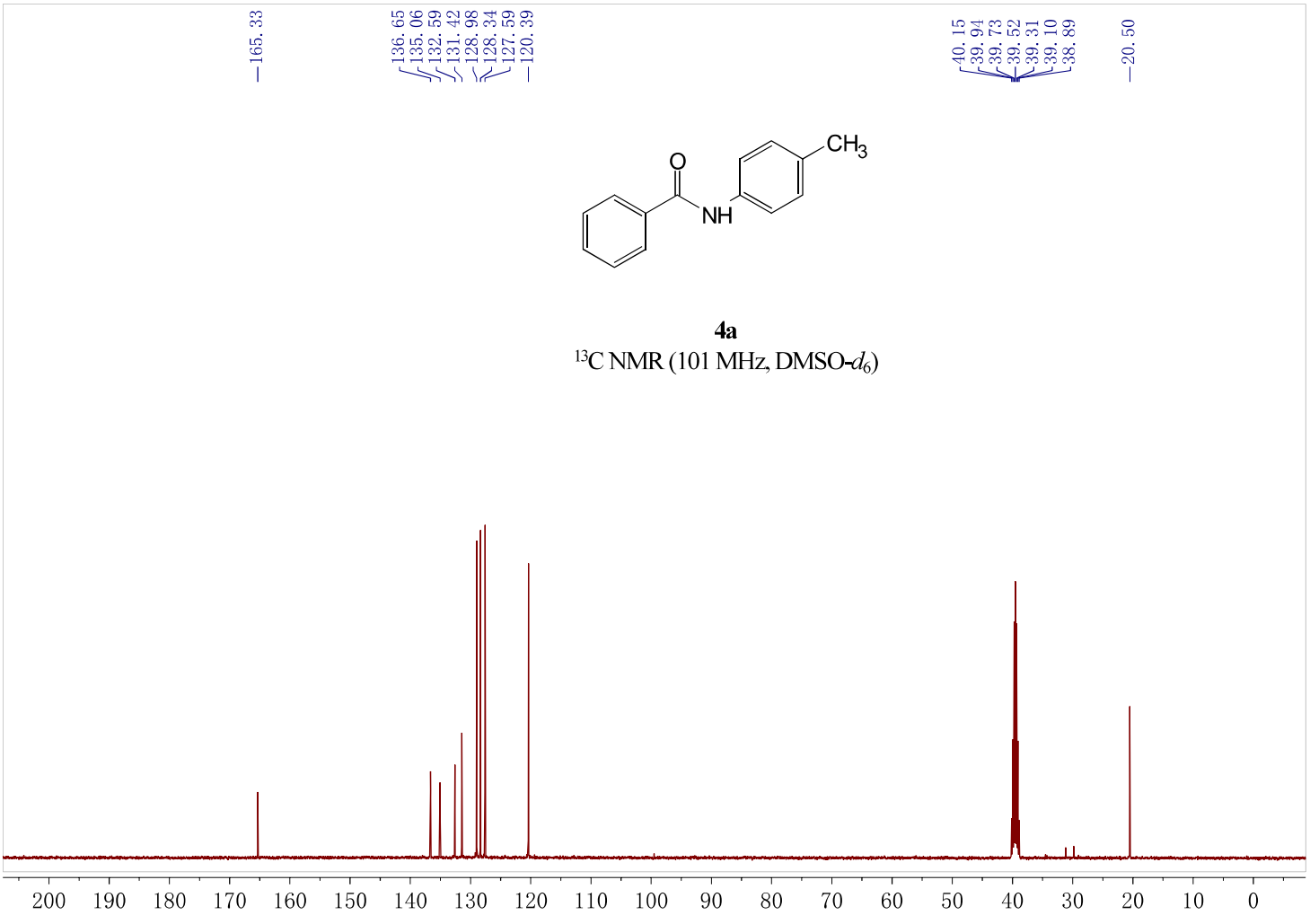
3zd

^{13}C NMR (101 MHz, DMSO-d_6)



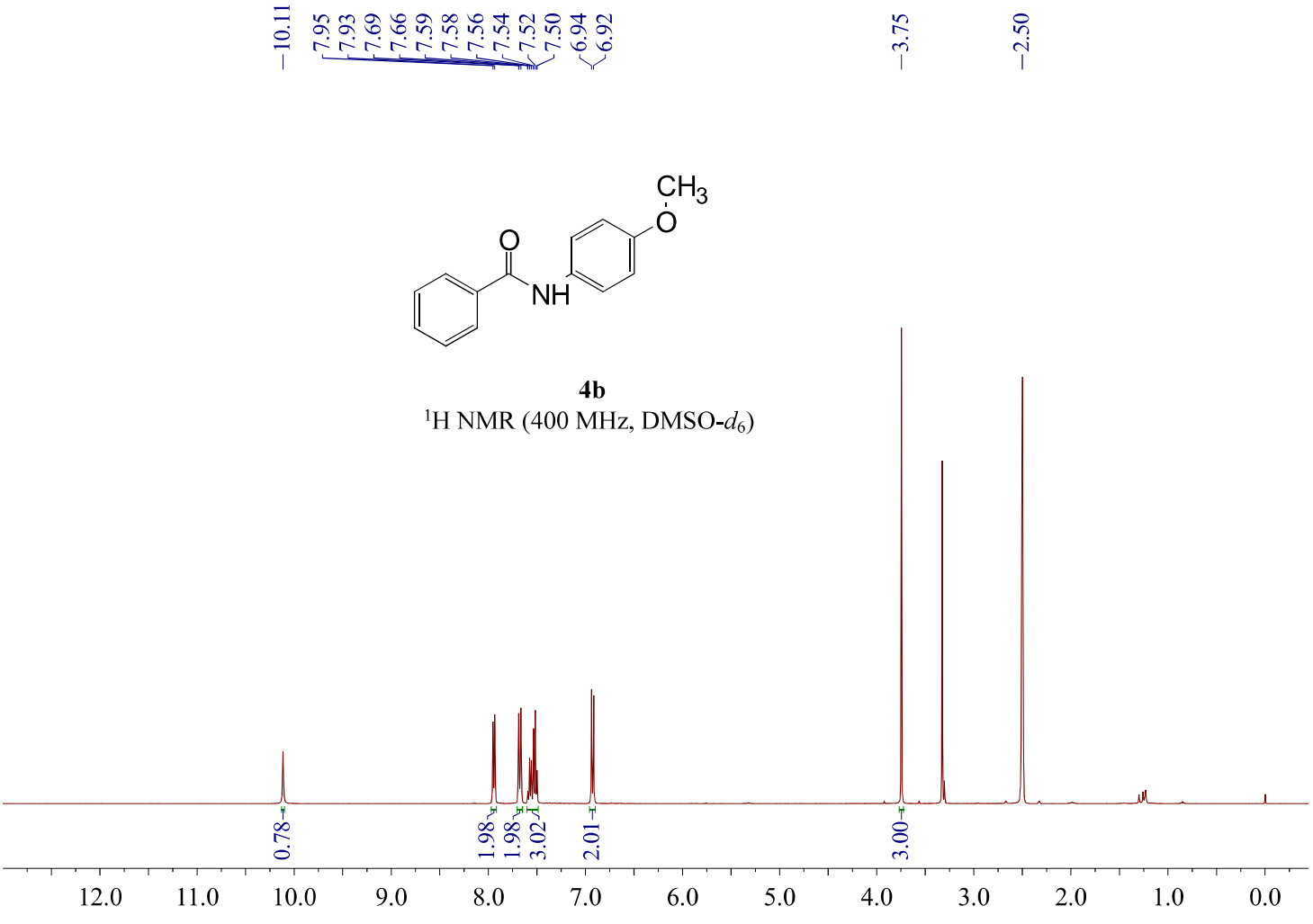
4a

^{1}H NMR (400 MHz, DMSO-d_6)



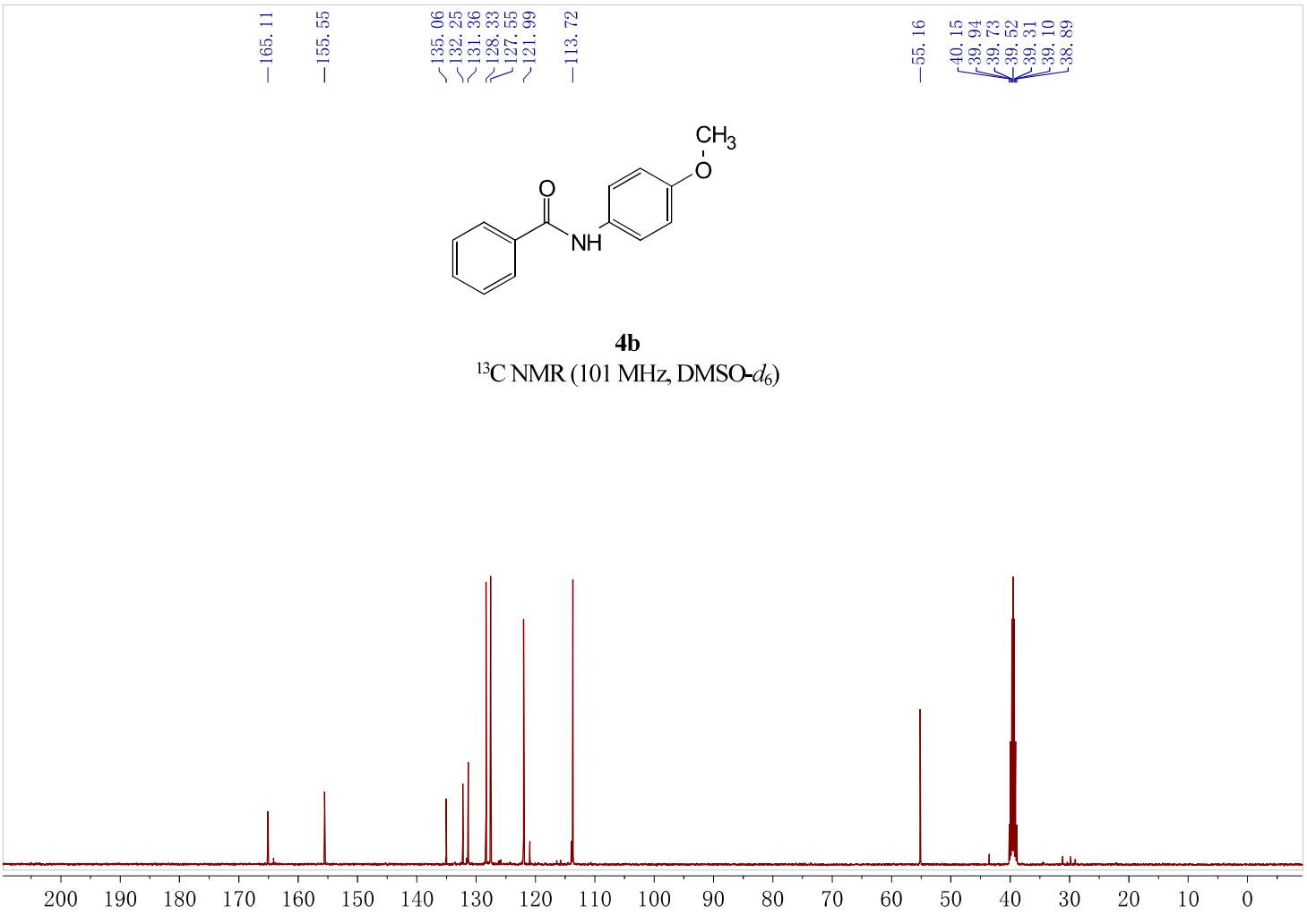
4a

^{13}C NMR (101 MHz, DMSO-d_6)



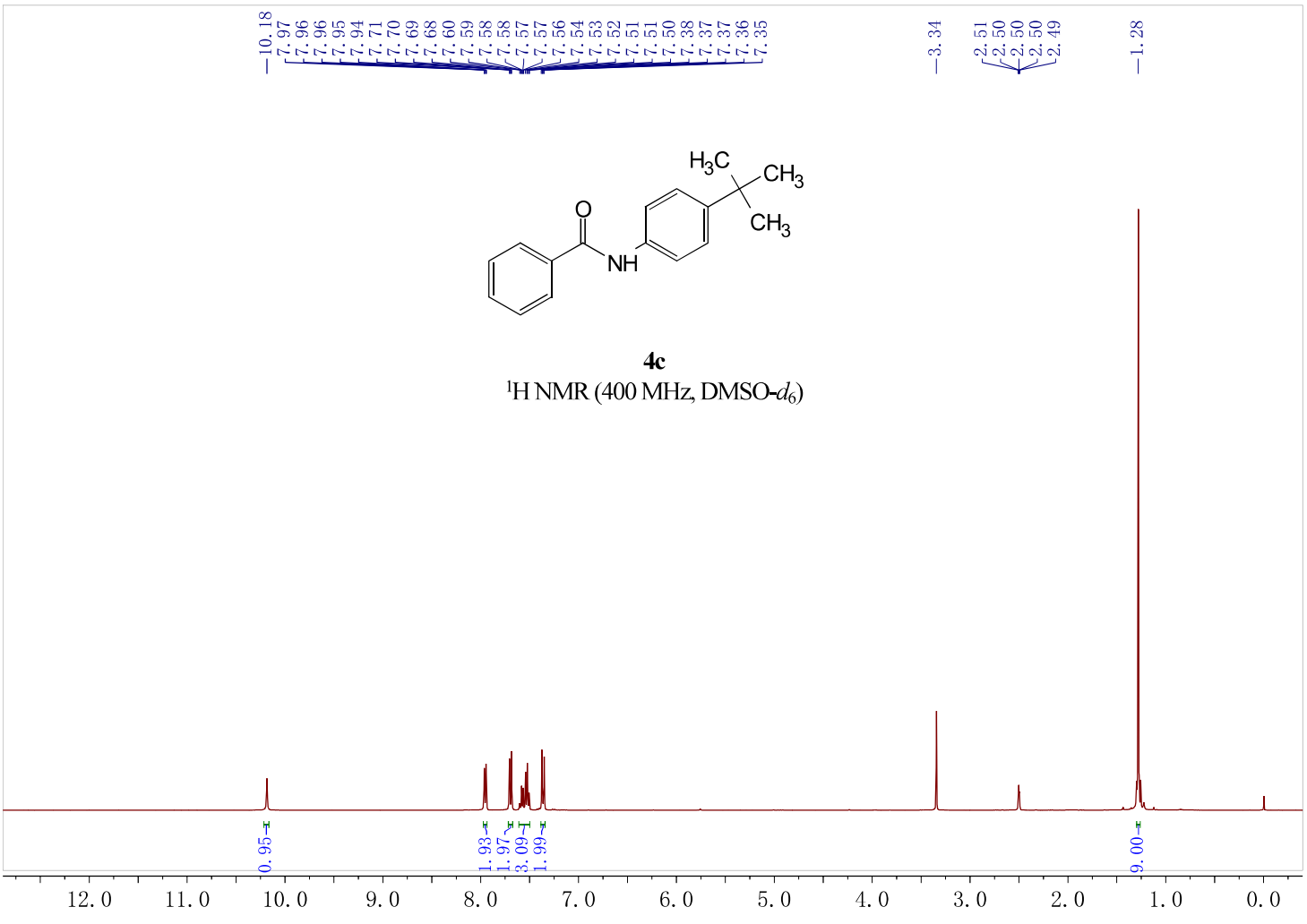
4b

^{1}H NMR (400 MHz, DMSO-d_6)



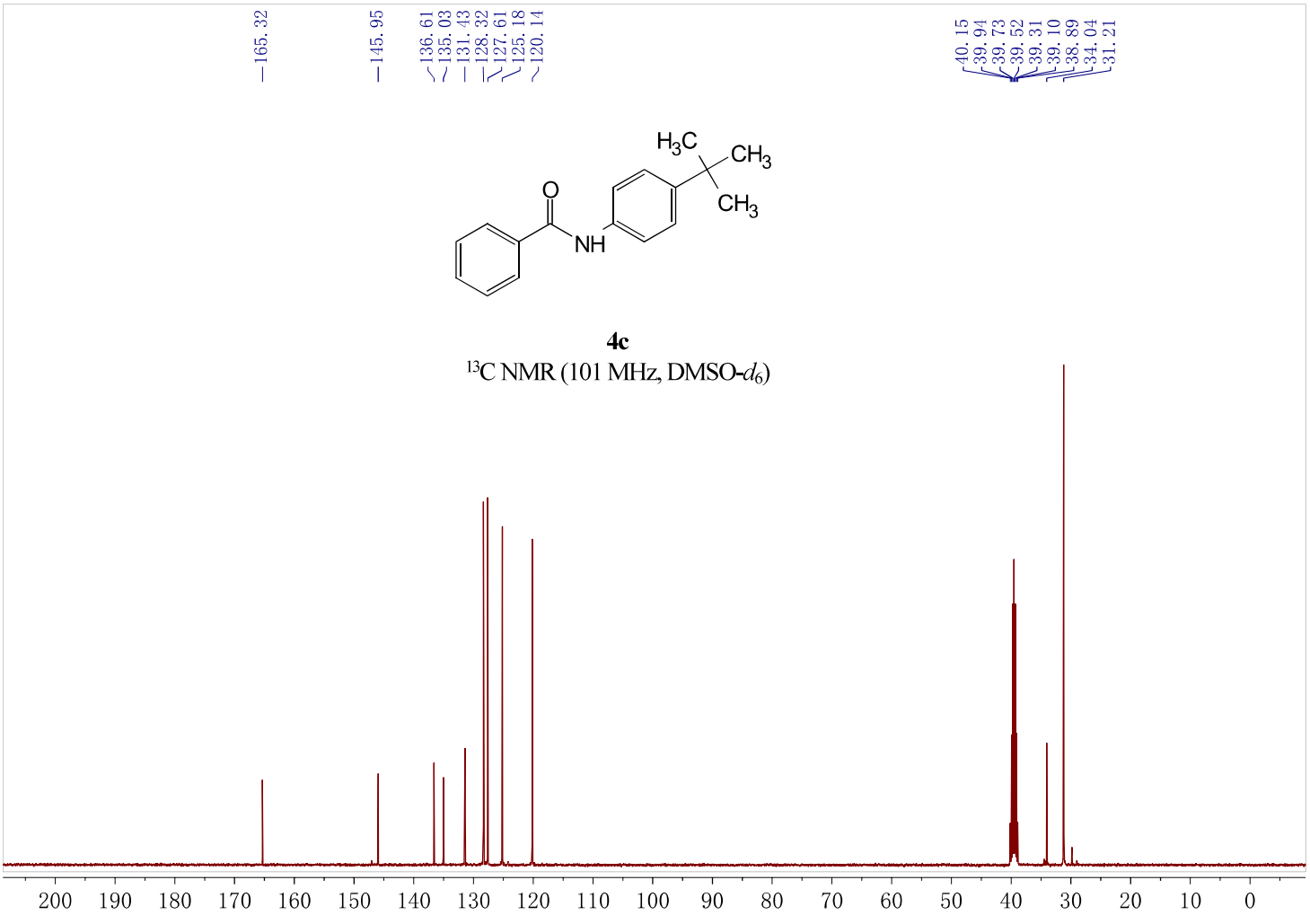
4b

^{13}C NMR (101 MHz, DMSO-d_6)



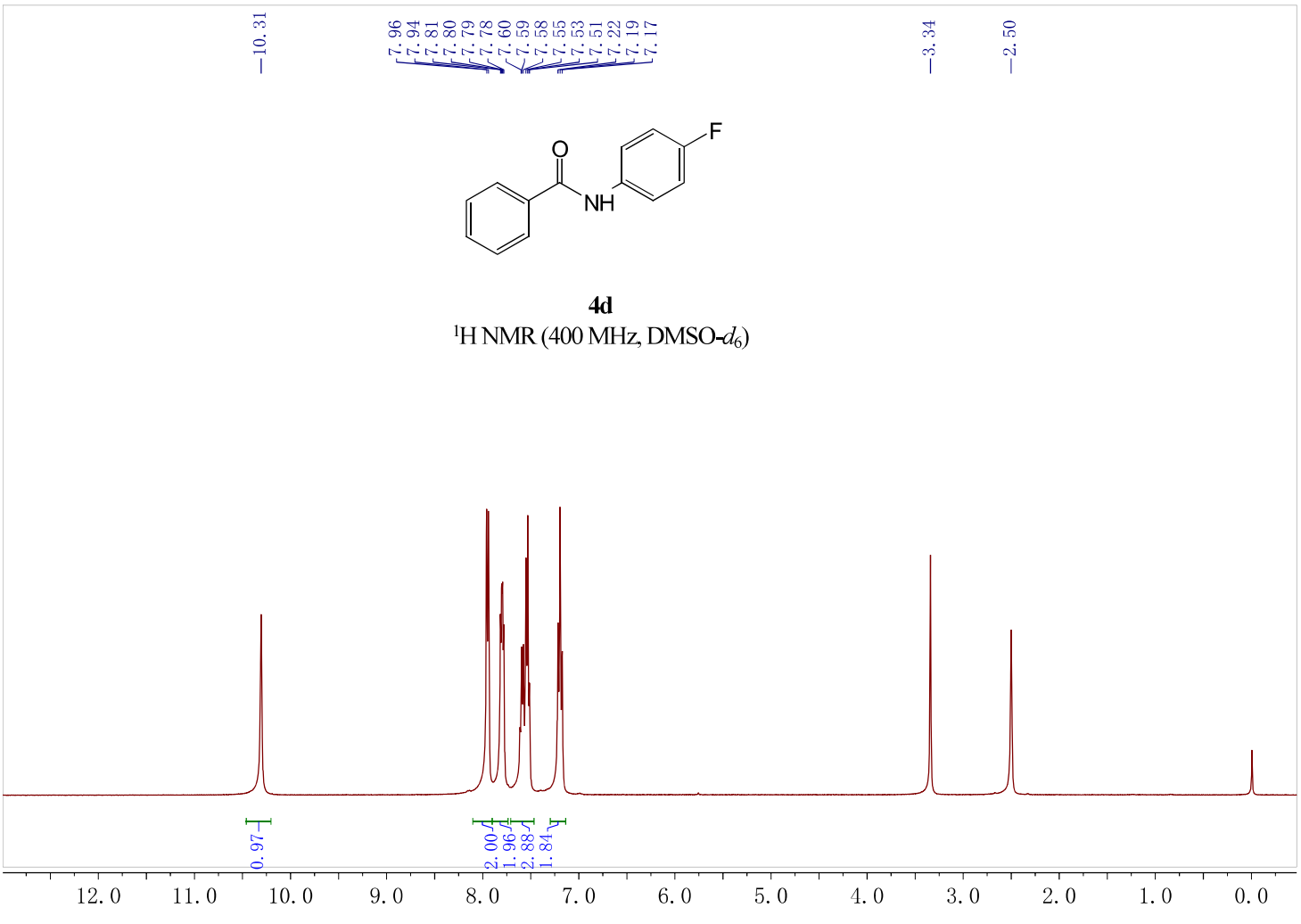
4c

^{1}H NMR (400 MHz, DMSO-d_6)



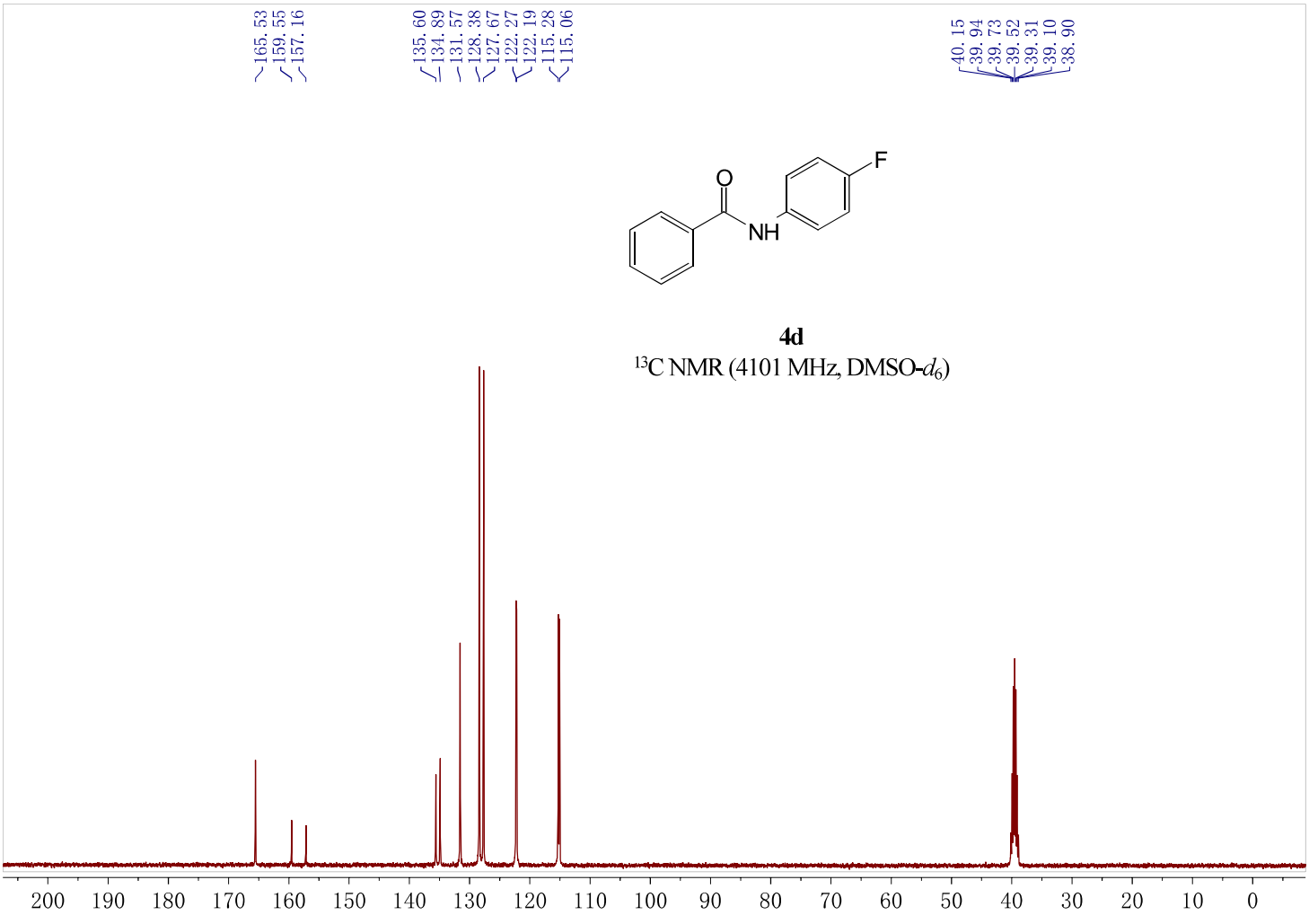
4c

^{13}C NMR (101 MHz, DMSO-d_6)



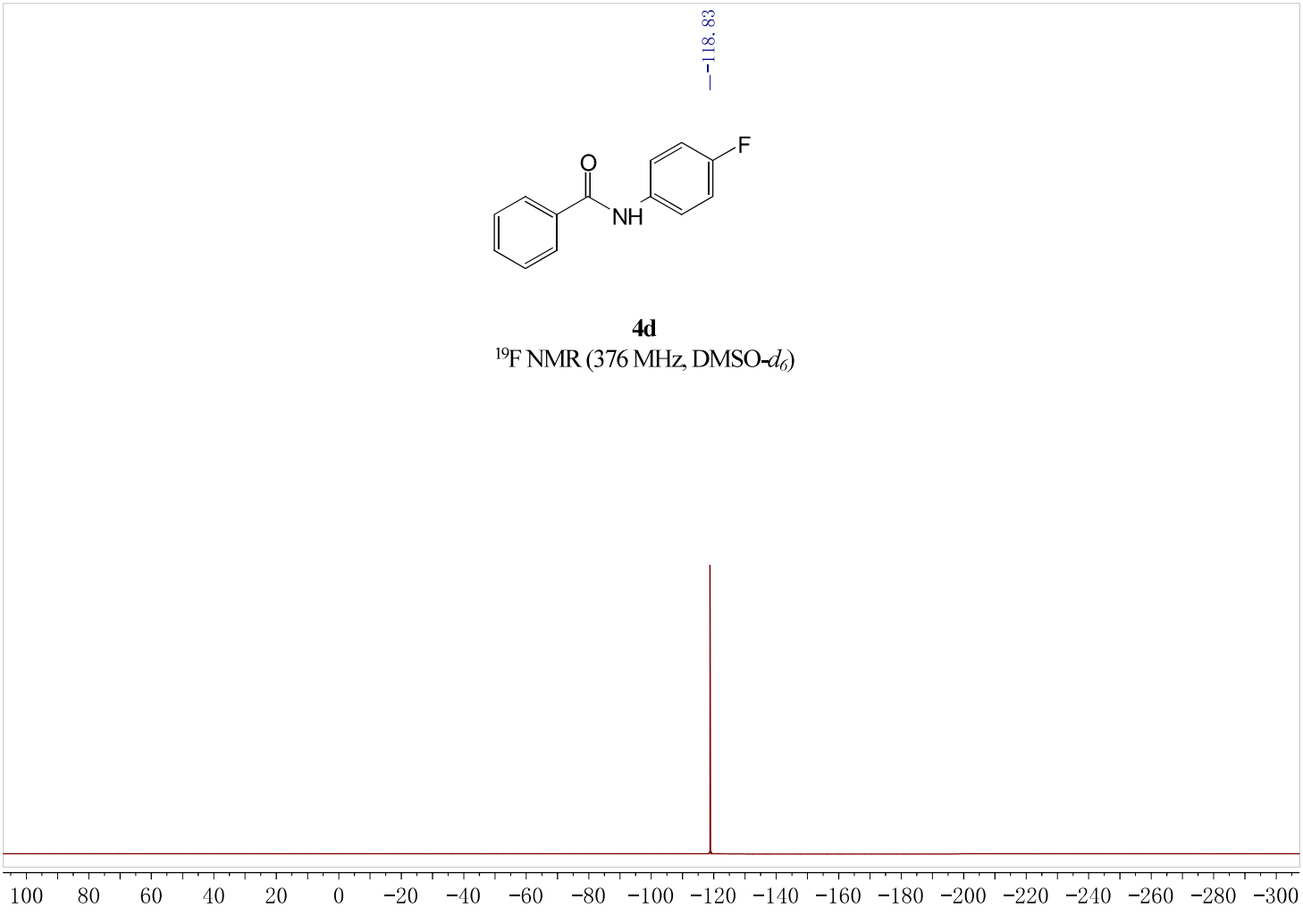
4d

^{1}H NMR (400 MHz, DMSO-d_6)



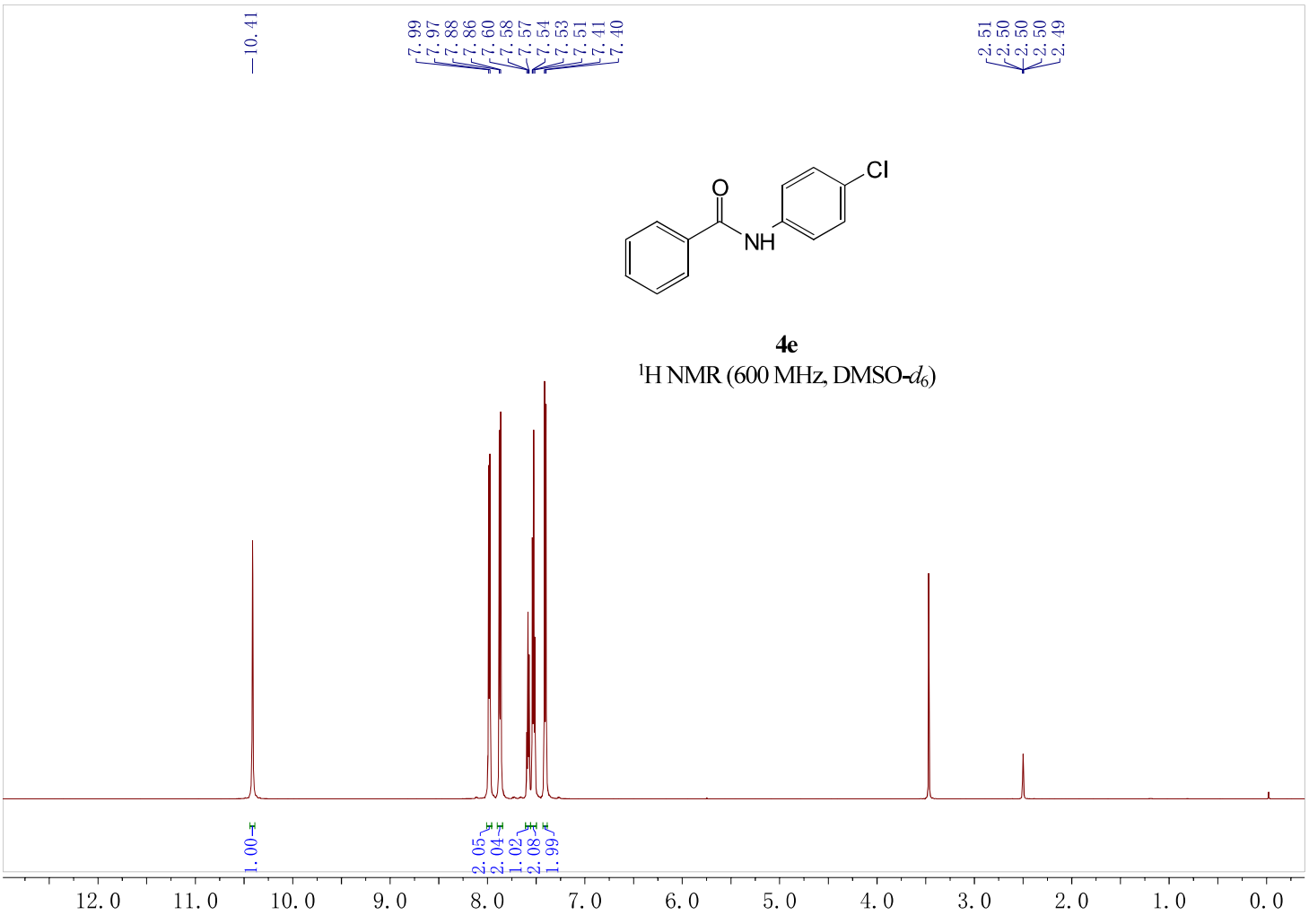
4d

^{13}C NMR (4101 MHz, DMSO-d_6)



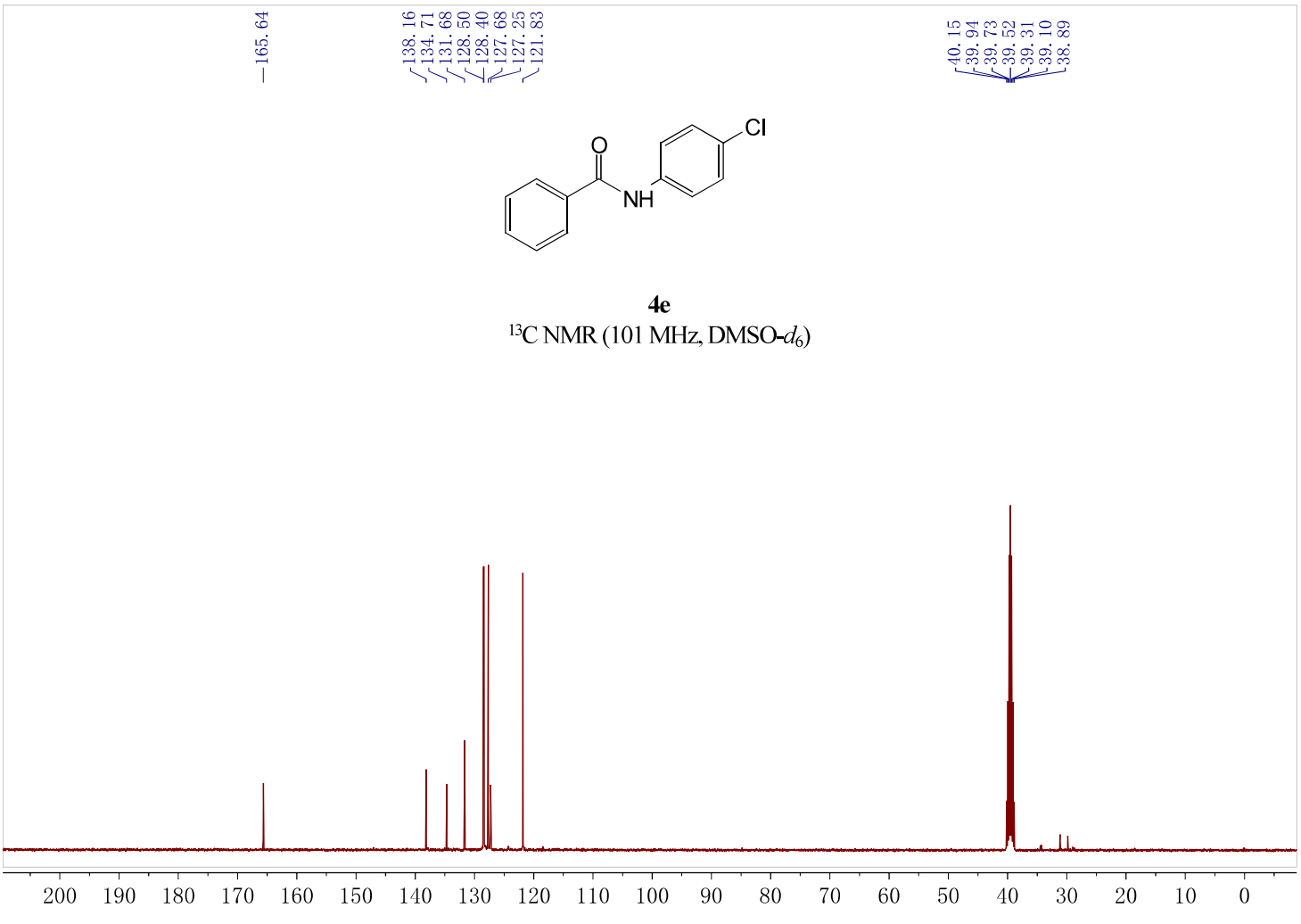
4d

^{19}F NMR (376 MHz, DMSO-d_6)



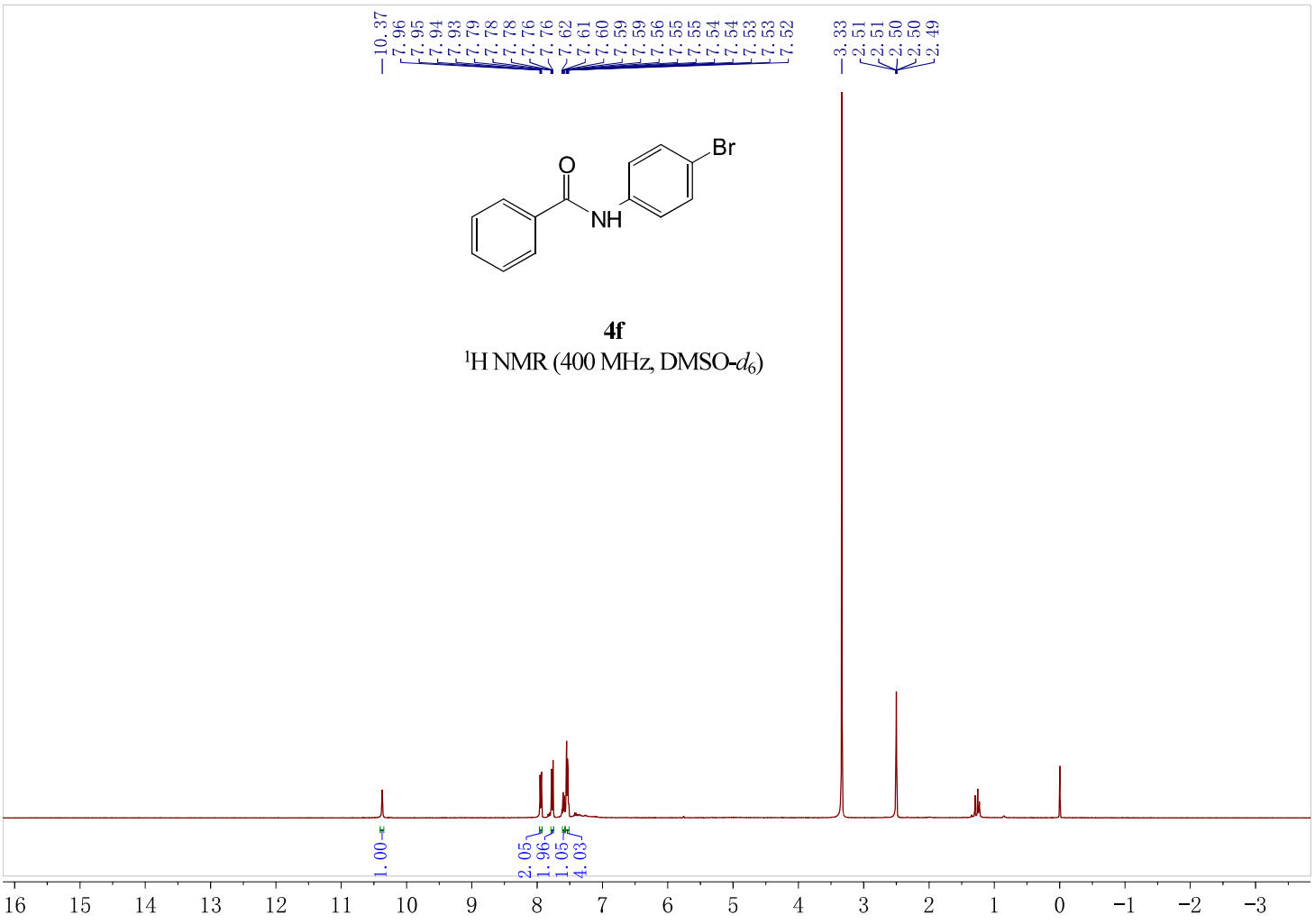
4e

^{1}H NMR (600 MHz, DMSO-d_6)



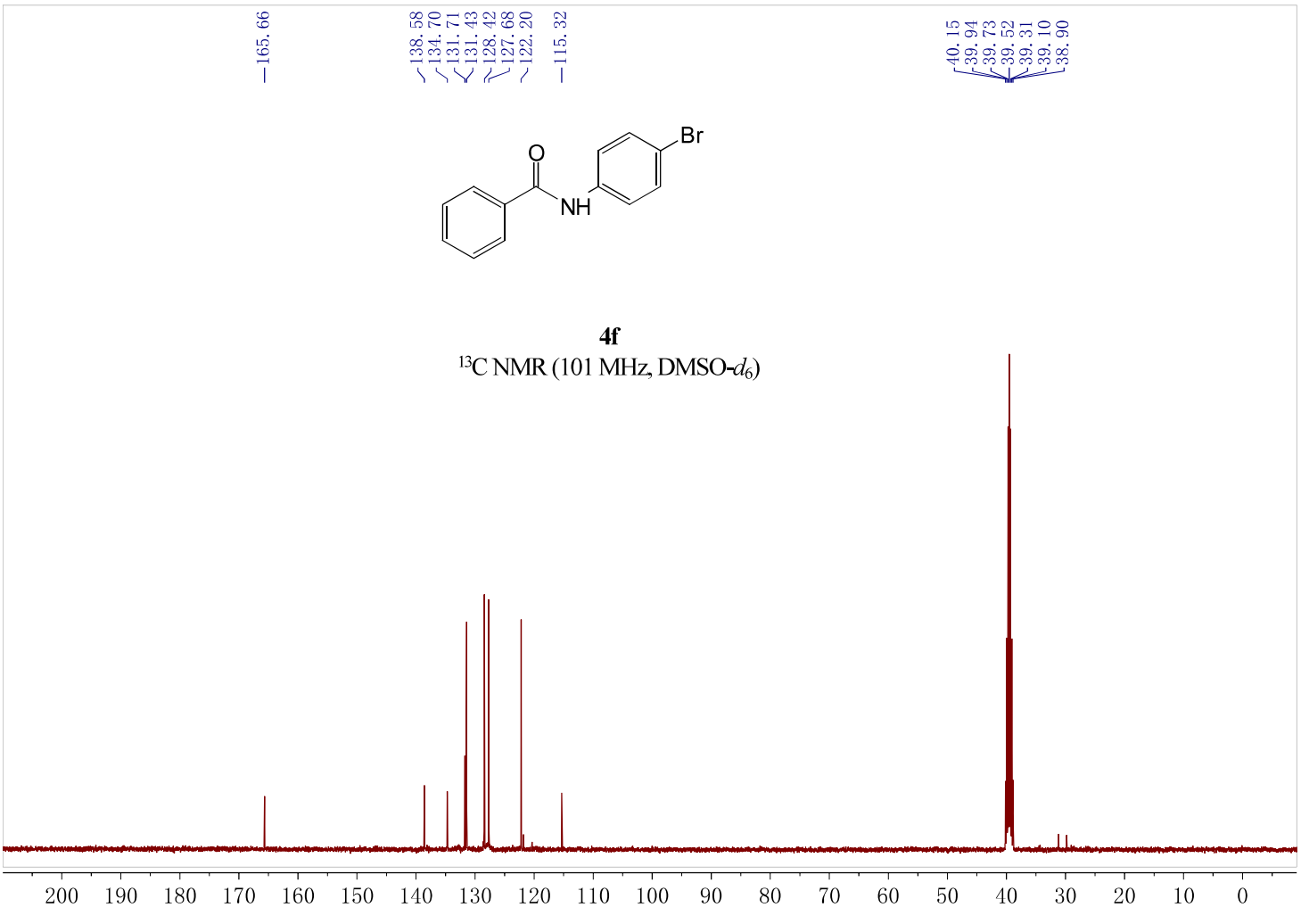
4e

^{13}C NMR (101 MHz, DMSO-d_6)



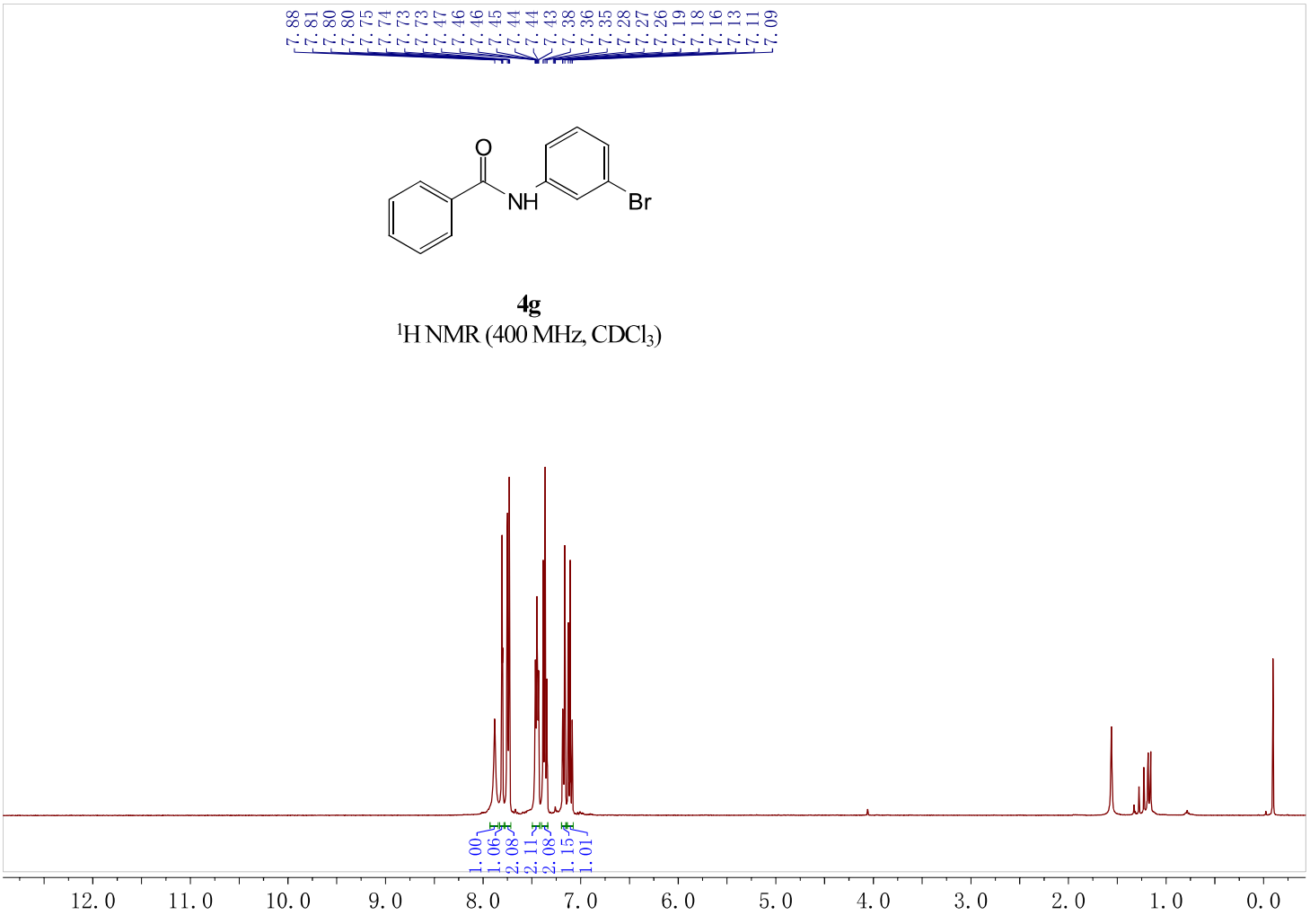
4f

^{1}H NMR (400 MHz, DMSO-d_6)



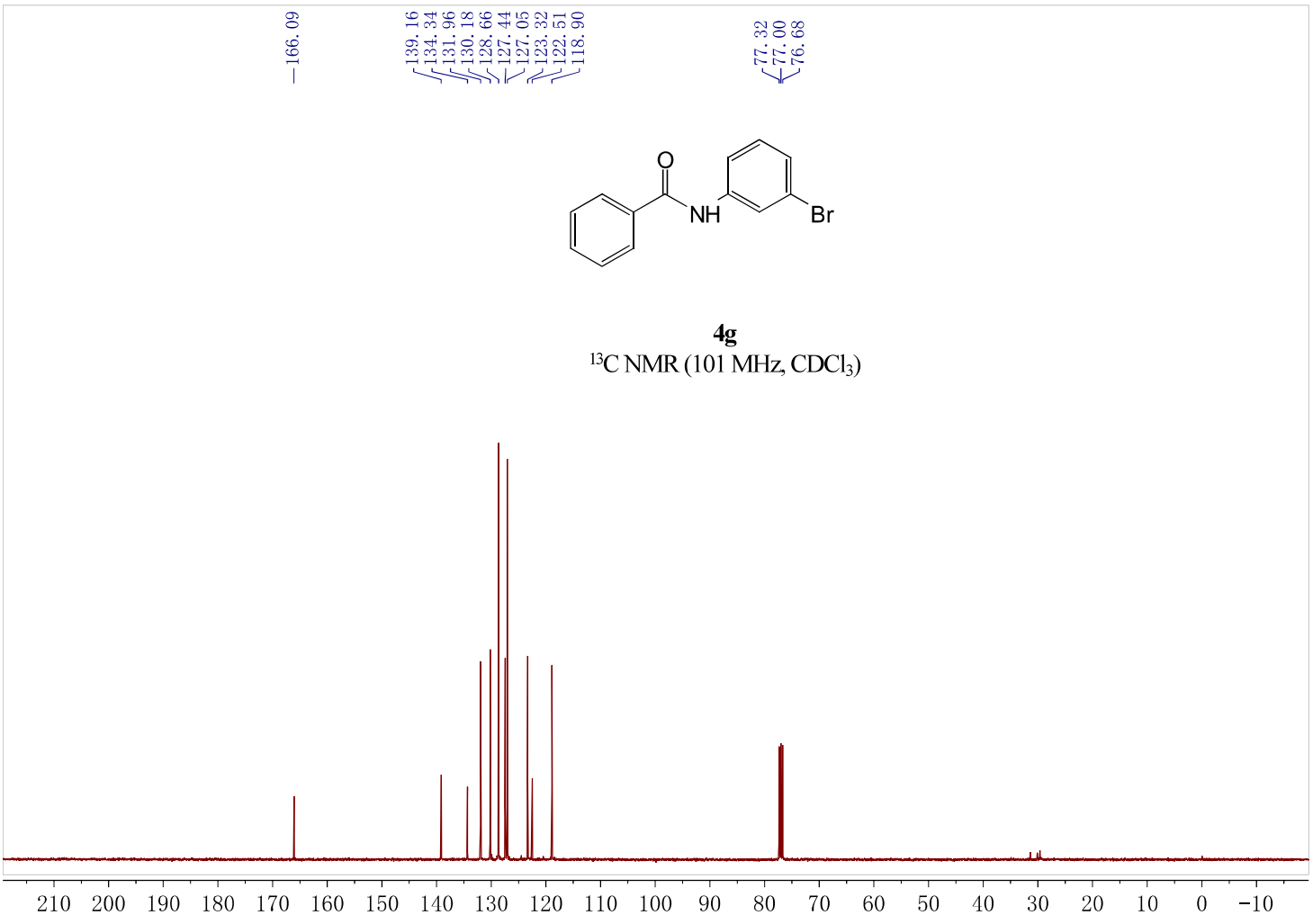
4f

^{13}C NMR (101 MHz, DMSO-d_6)



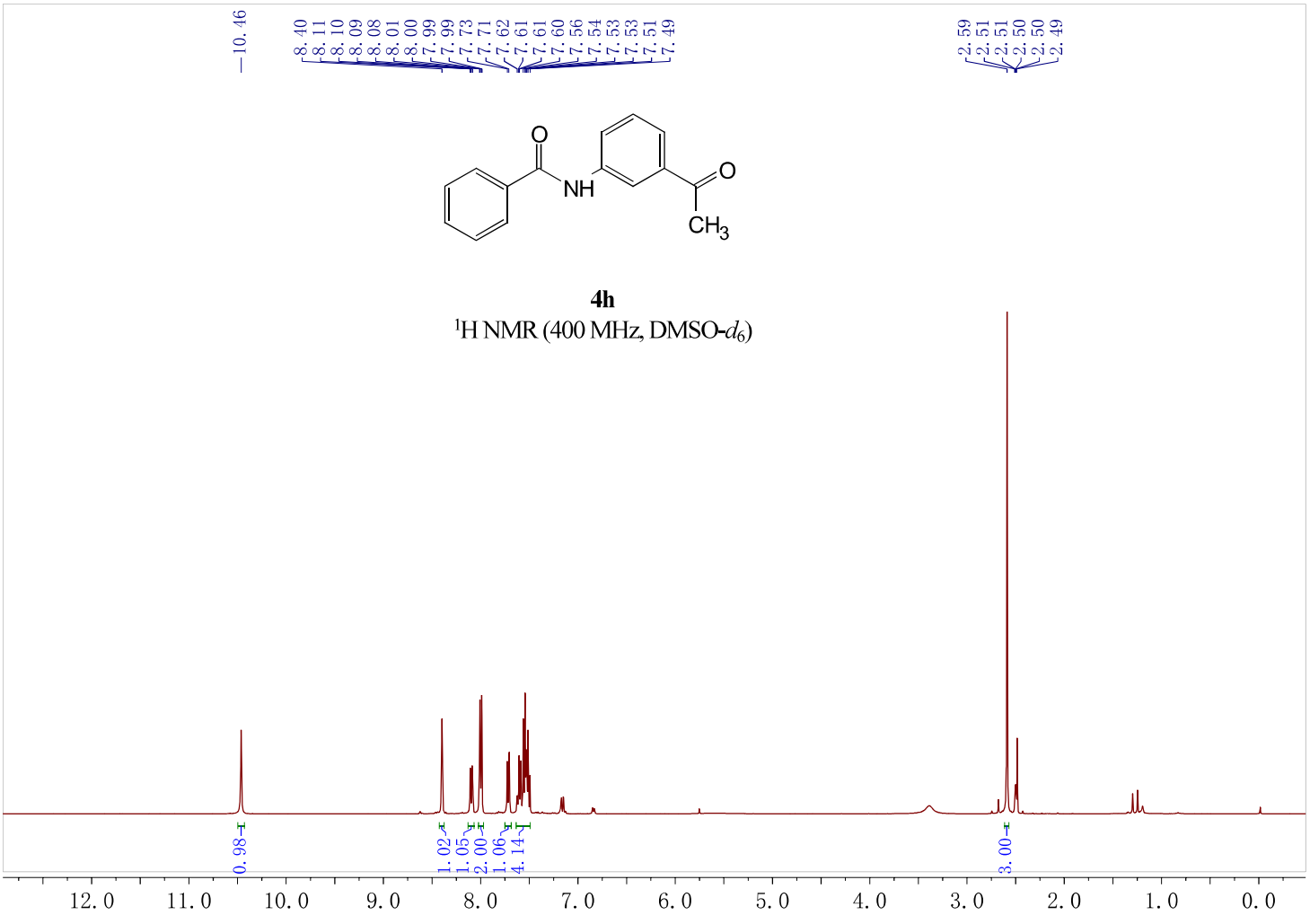
4g

^{1}H NMR (400 MHz, $CDCl_3$)



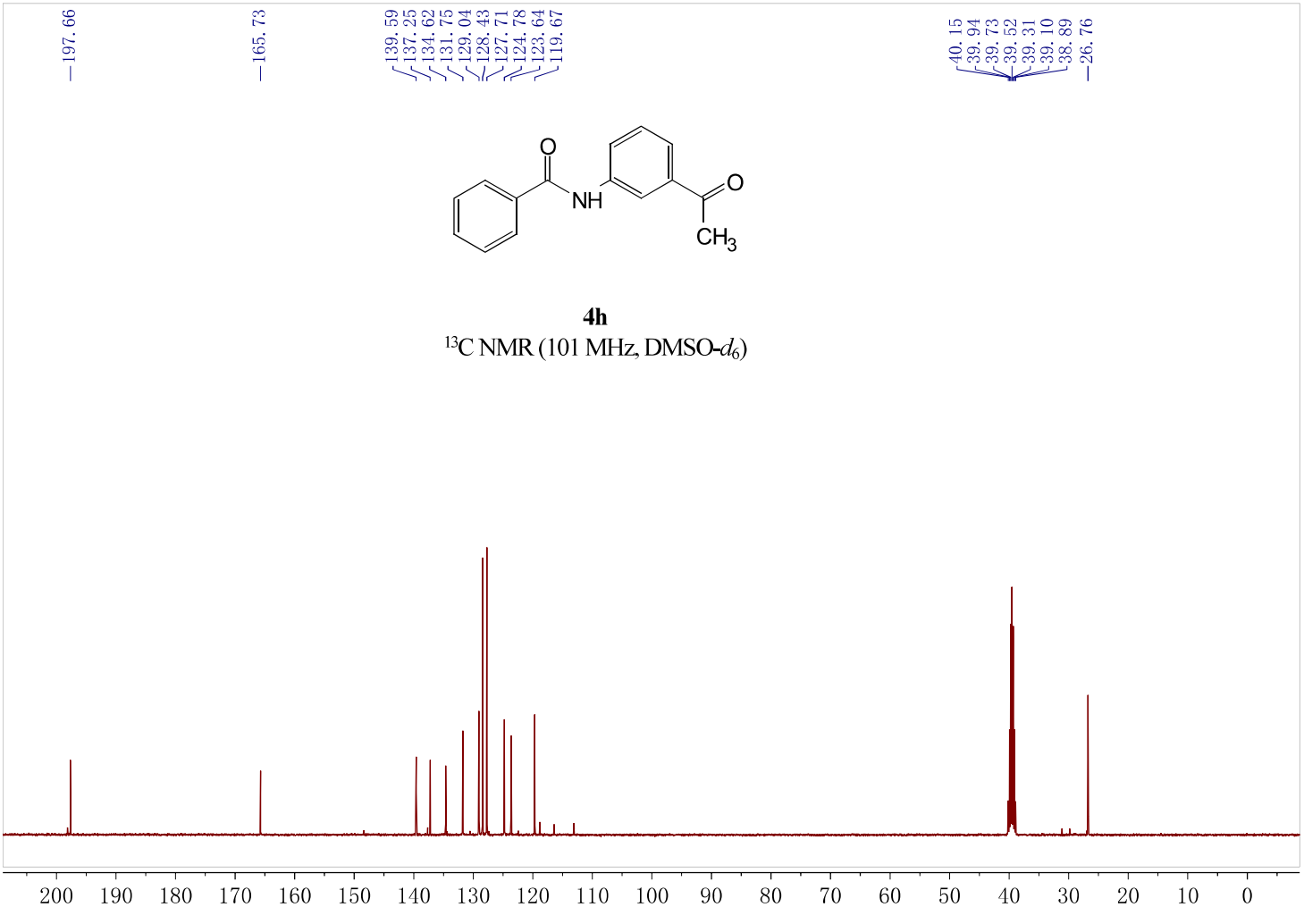
4g

^{13}C NMR (101 MHz, $CDCl_3$)



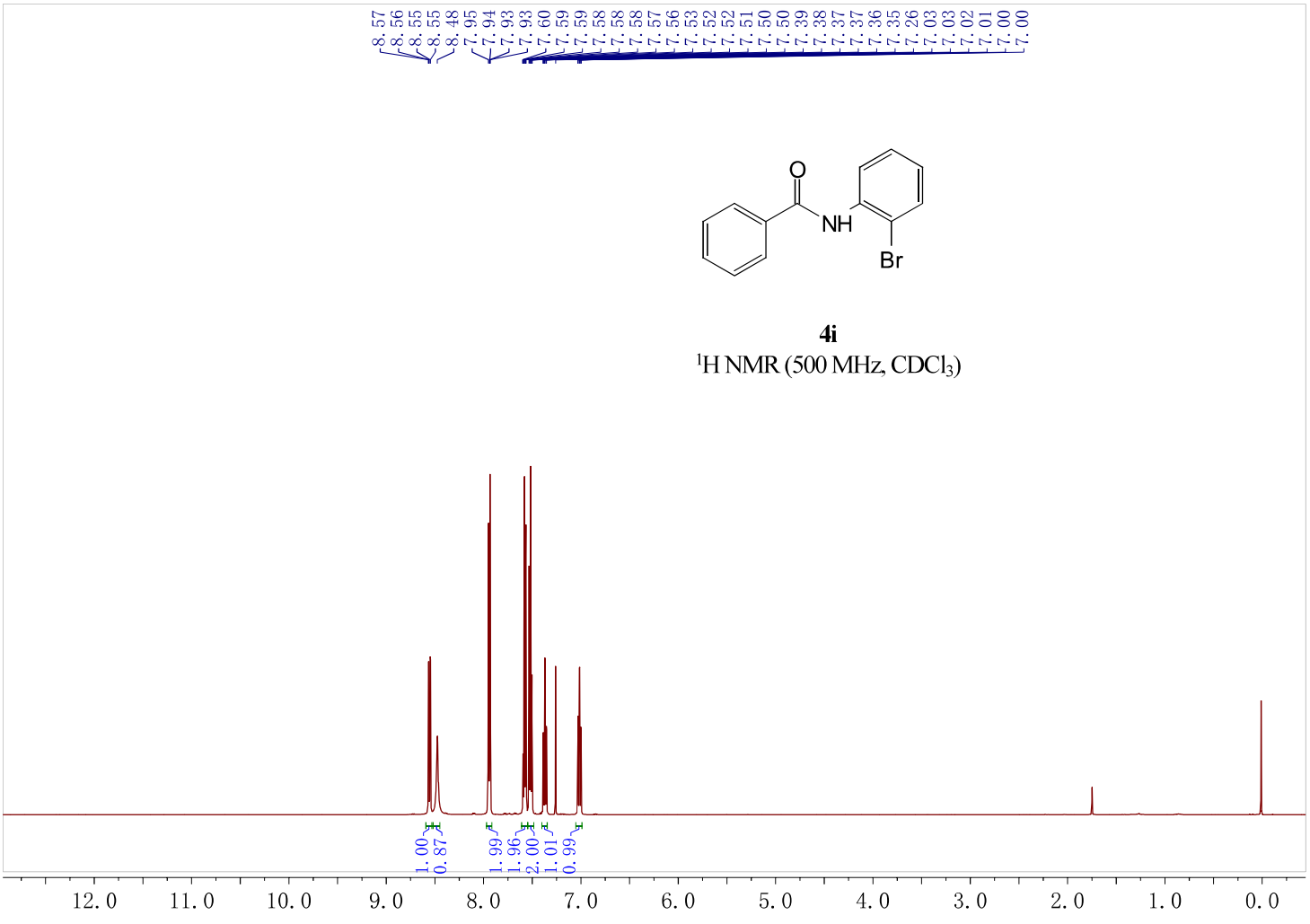
4h

^{1}H NMR (400 MHz, DMSO-d_6)



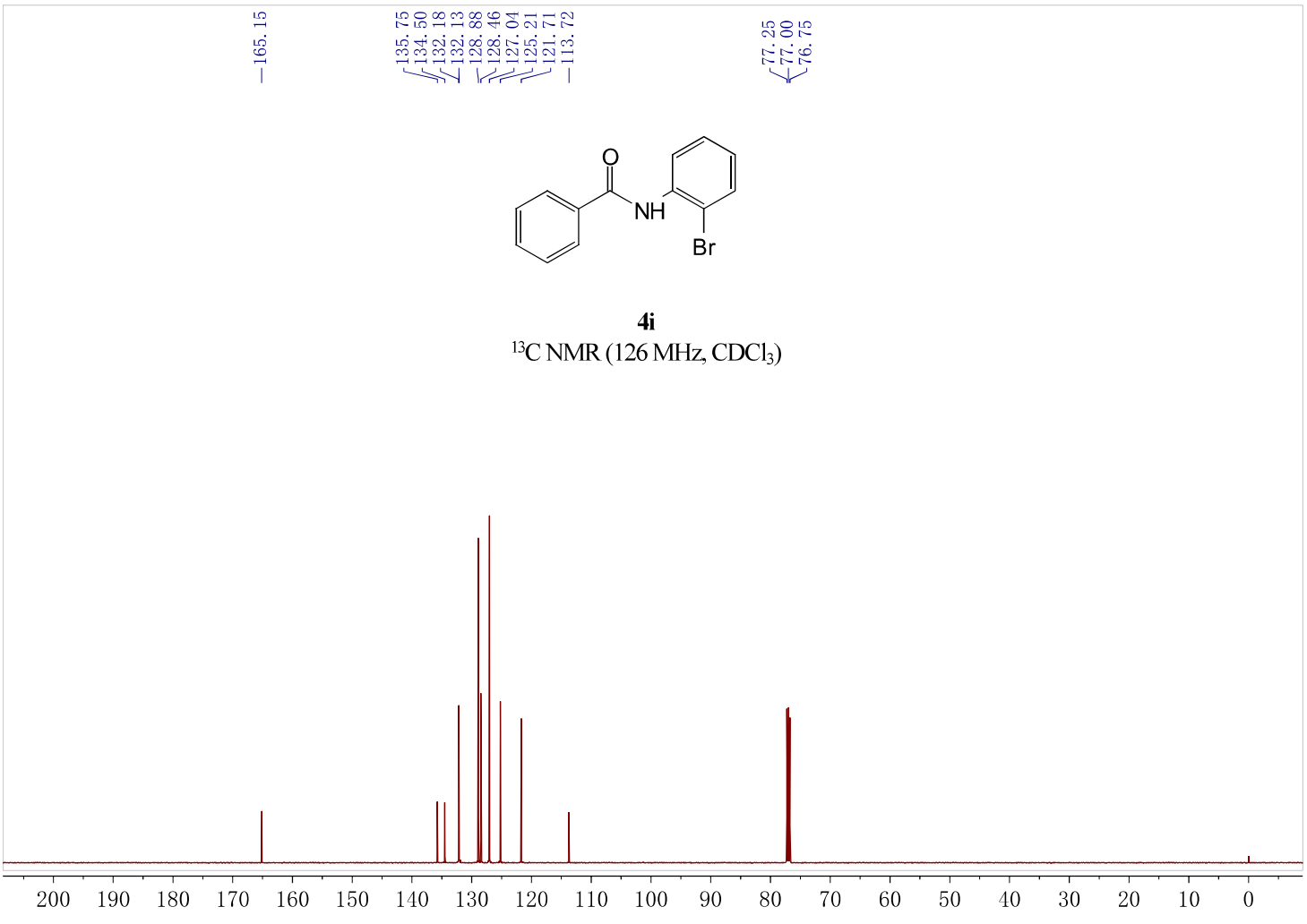
4h

^{13}C NMR (101 MHz, DMSO-d_6)



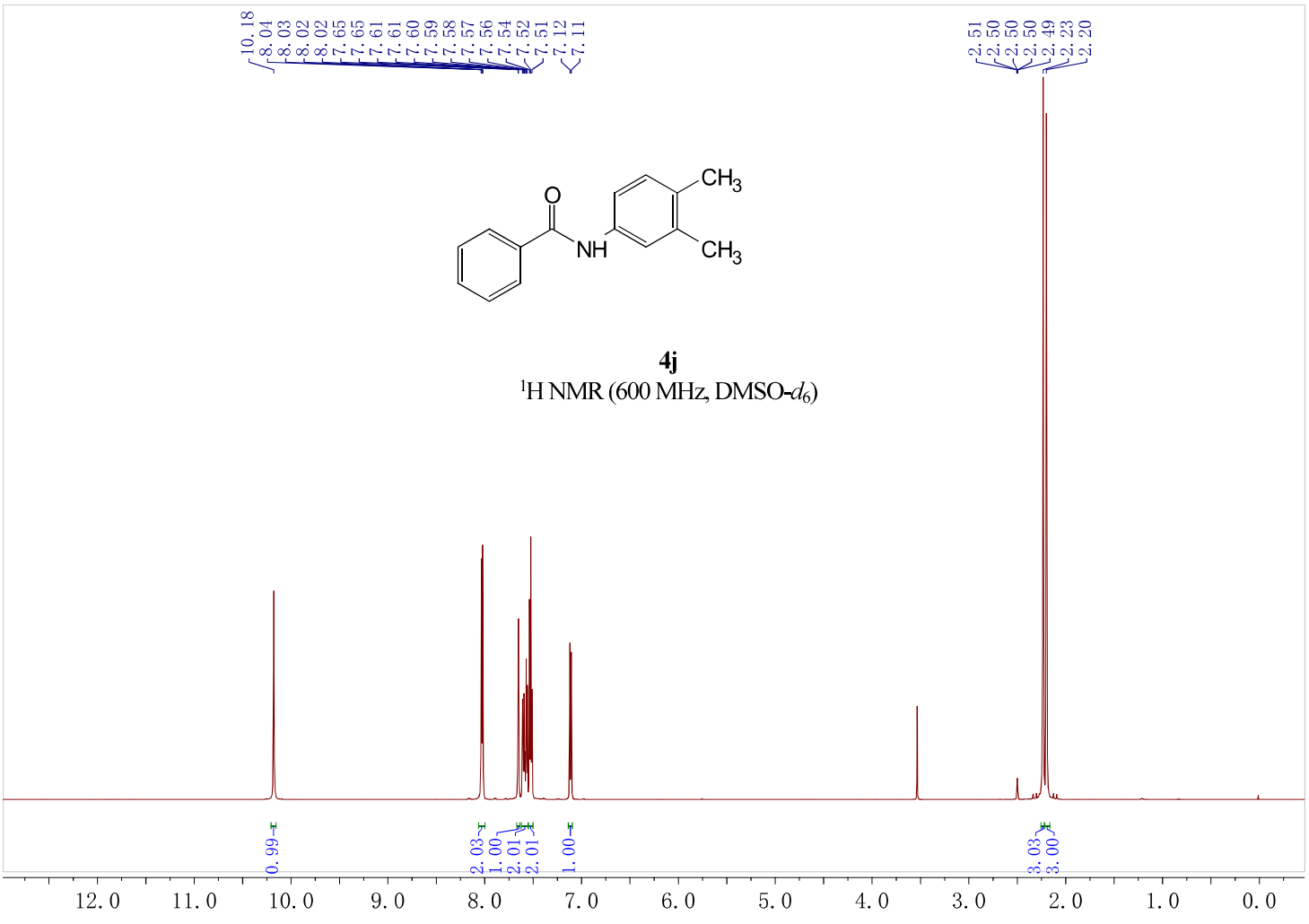
4i

^{1}H NMR (500 MHz, $CDCl_3$)



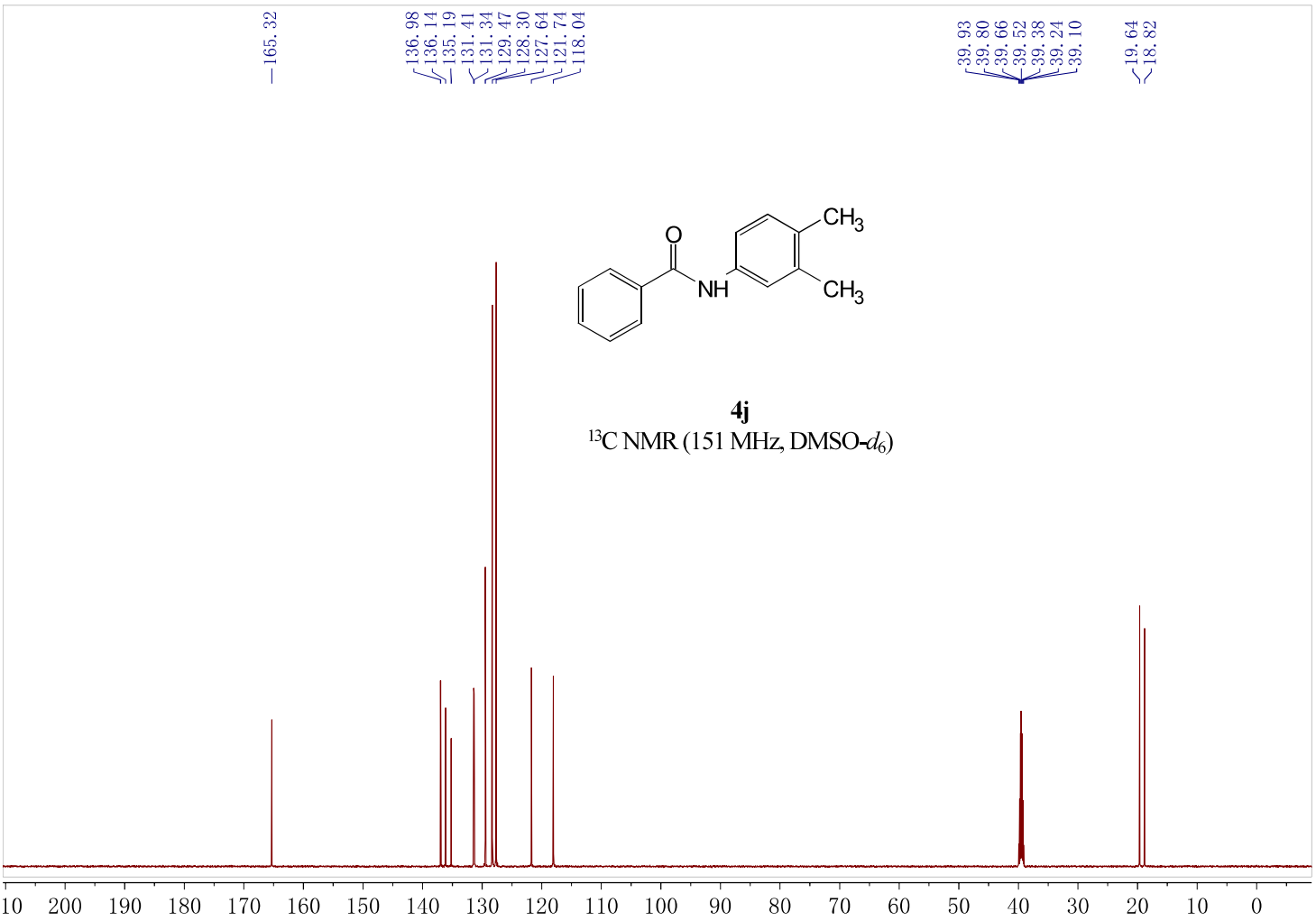
4i

^{13}C NMR (126 MHz, $CDCl_3$)



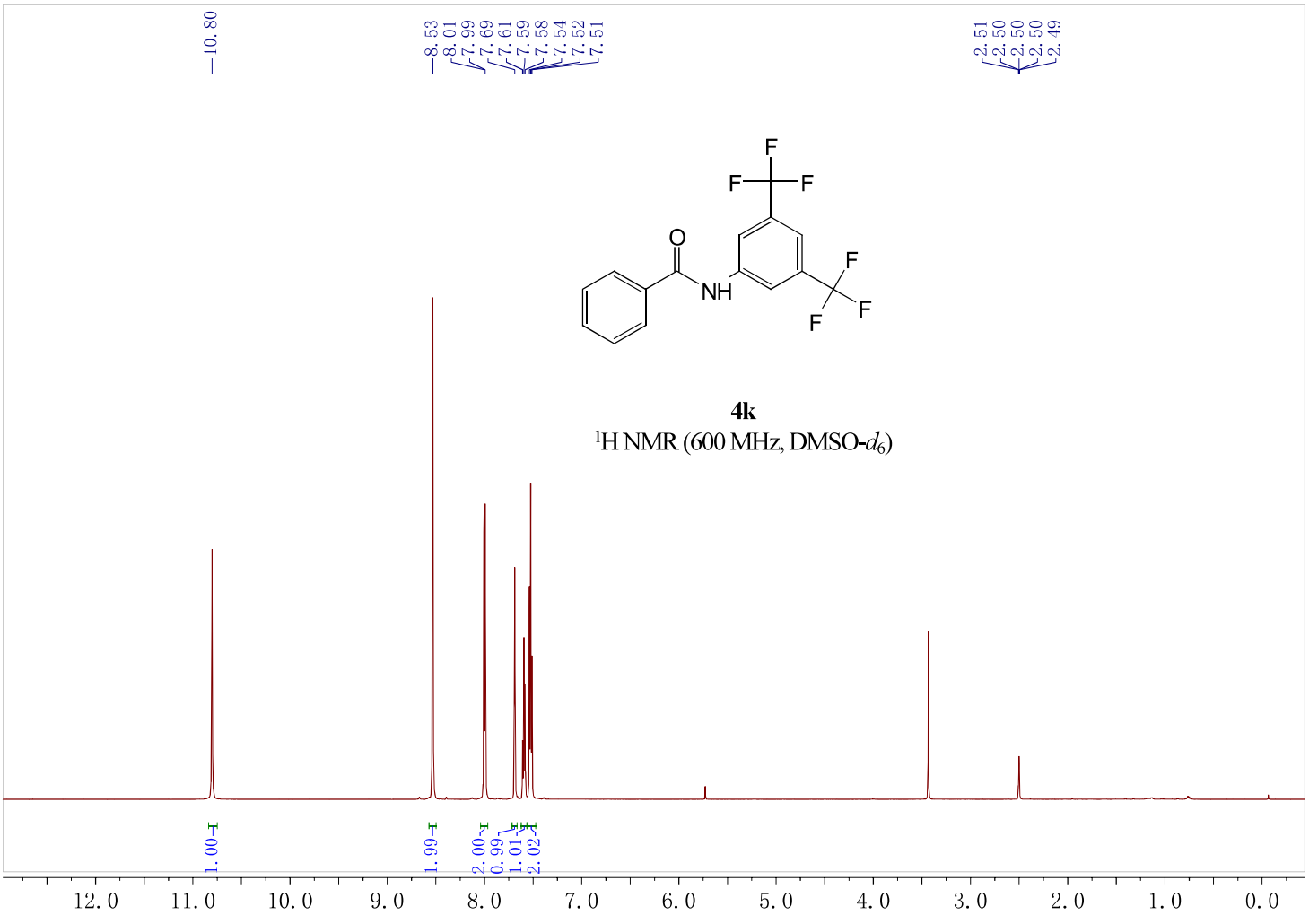
4j

^{1}H NMR (600 MHz, DMSO-d_6)



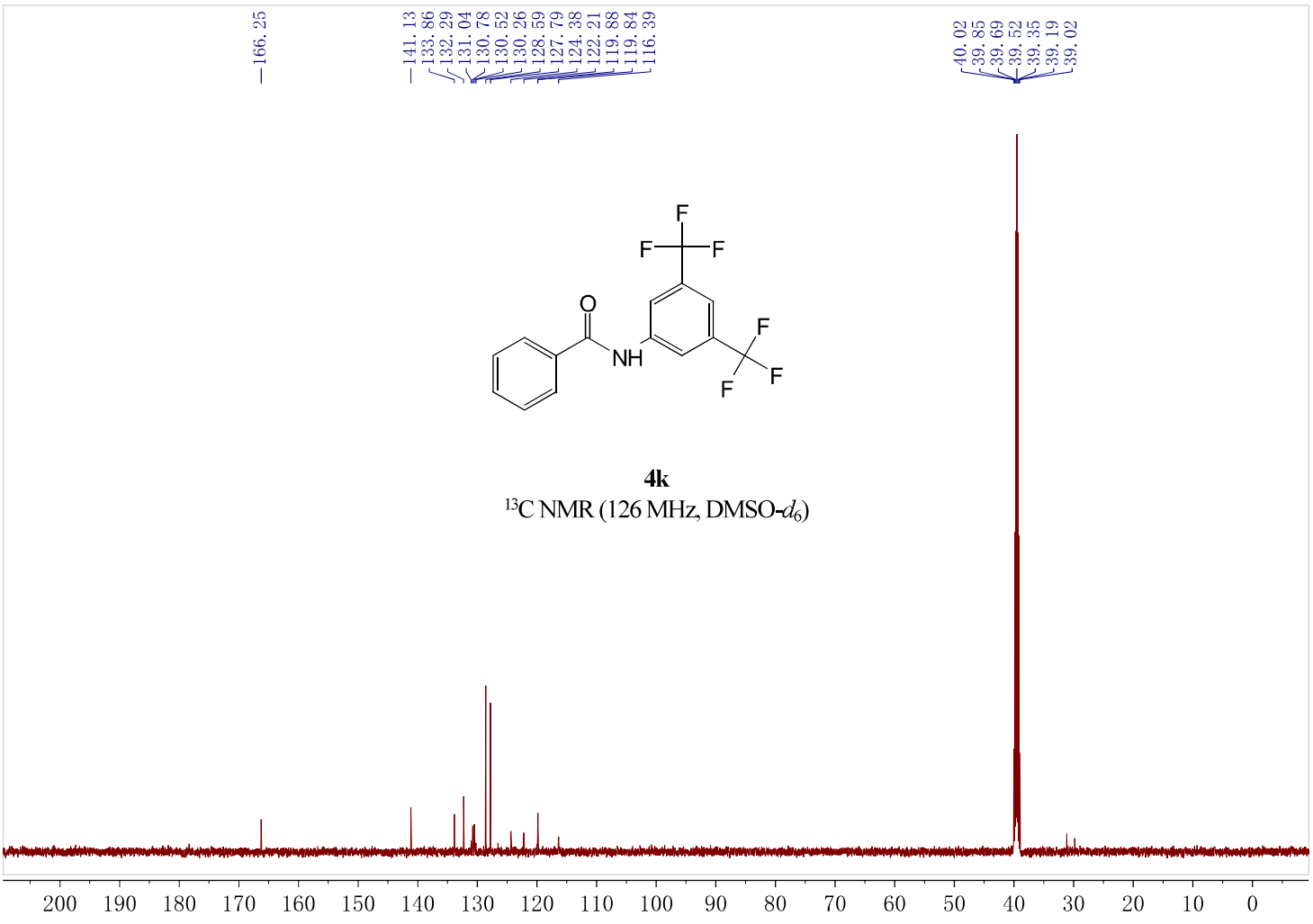
4j

^{13}C NMR (151 MHz, DMSO-d_6)



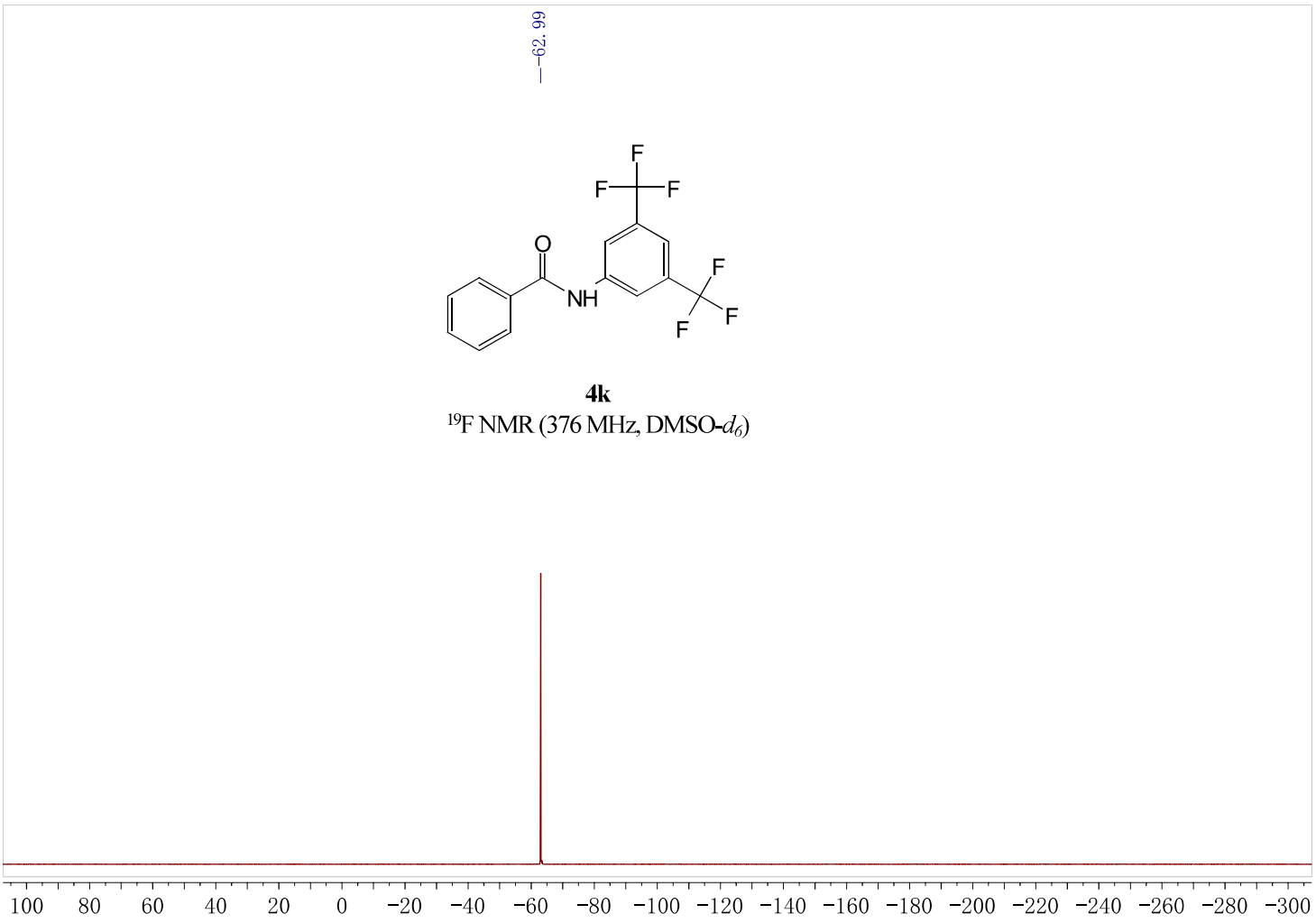
4k

^{1}H NMR (600 MHz, DMSO-d_6)



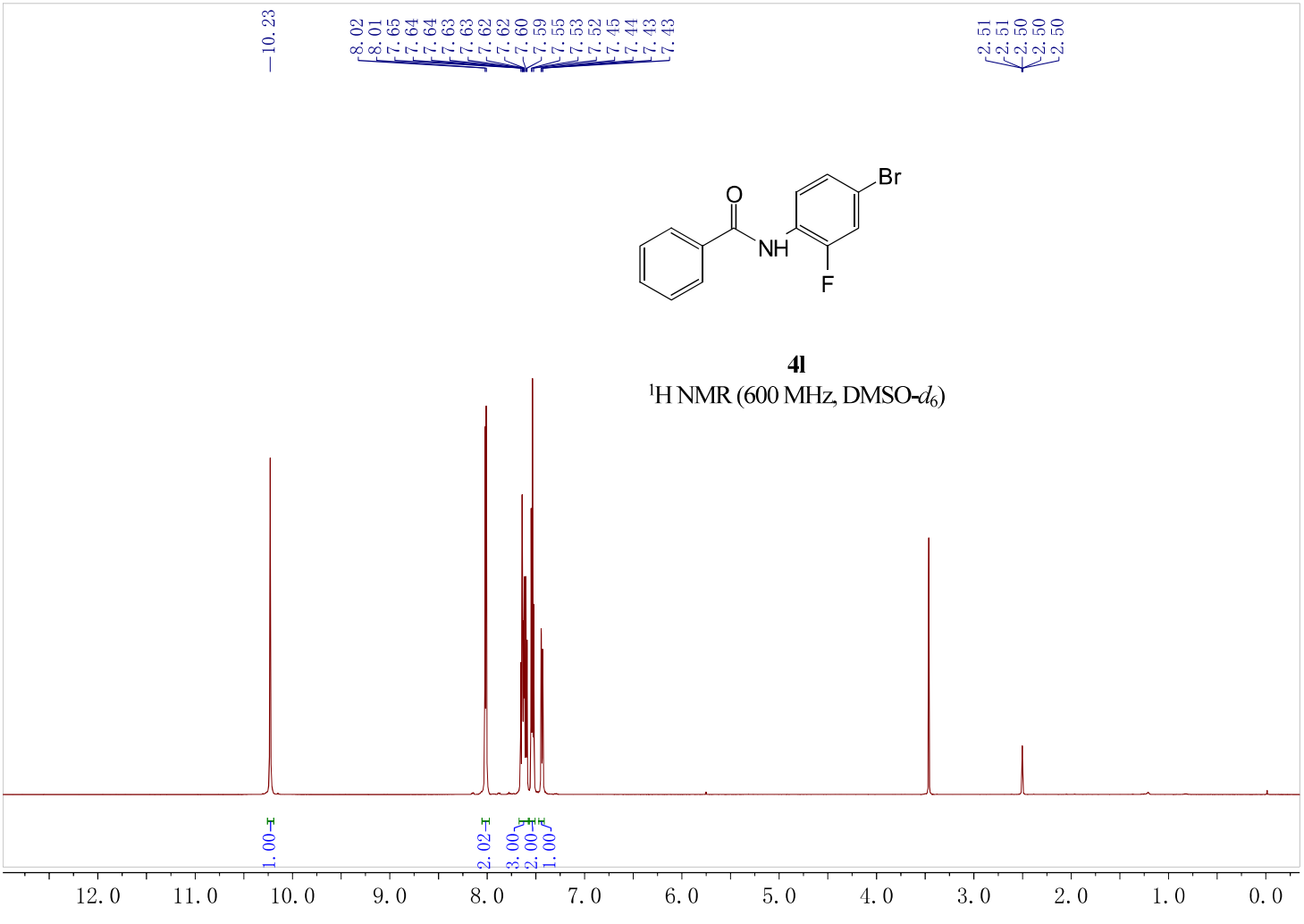
4k

^{13}C NMR (126 MHz, DMSO-d_6)



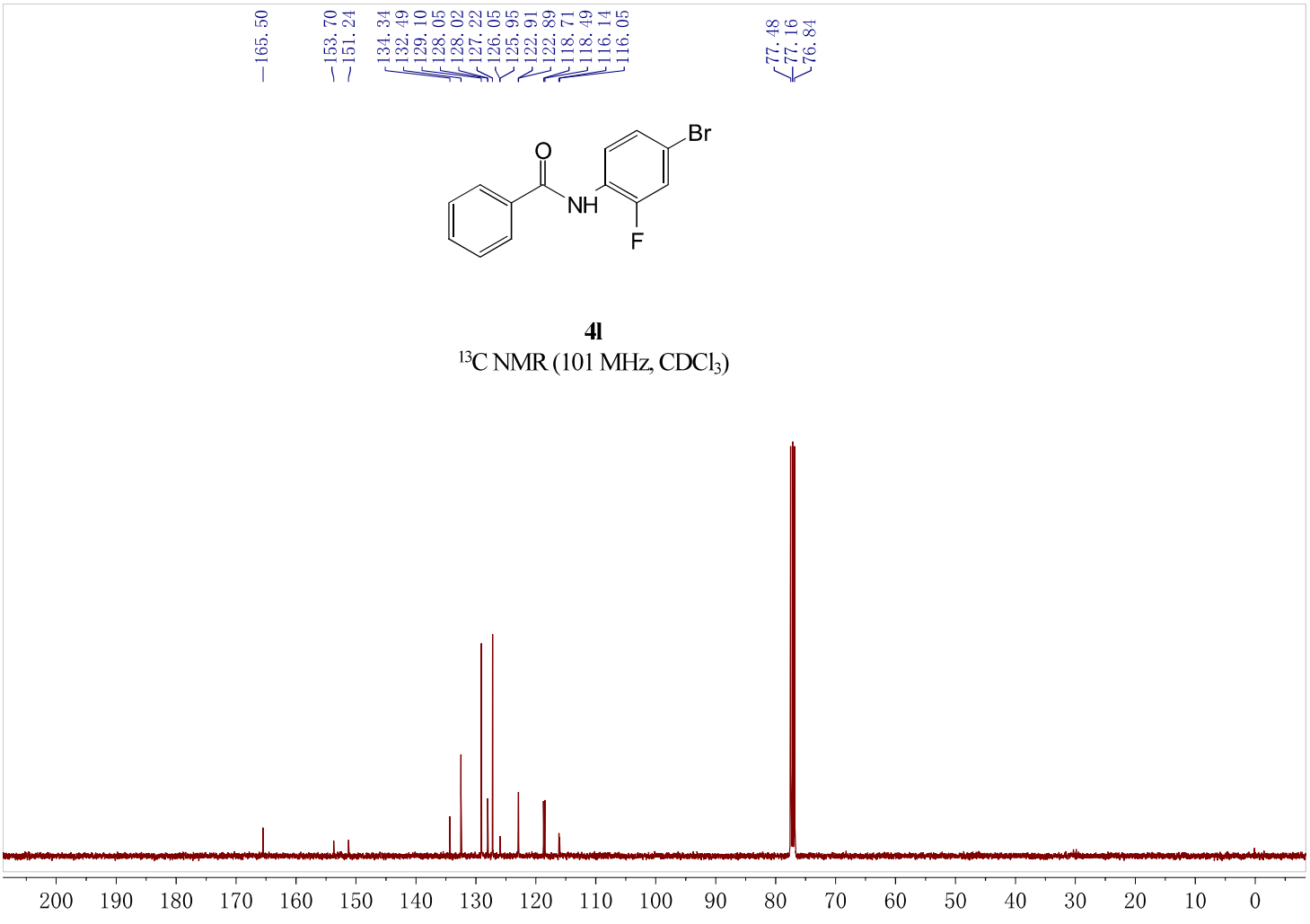
4k

^{19}F NMR (376 MHz, DMSO-d_6)



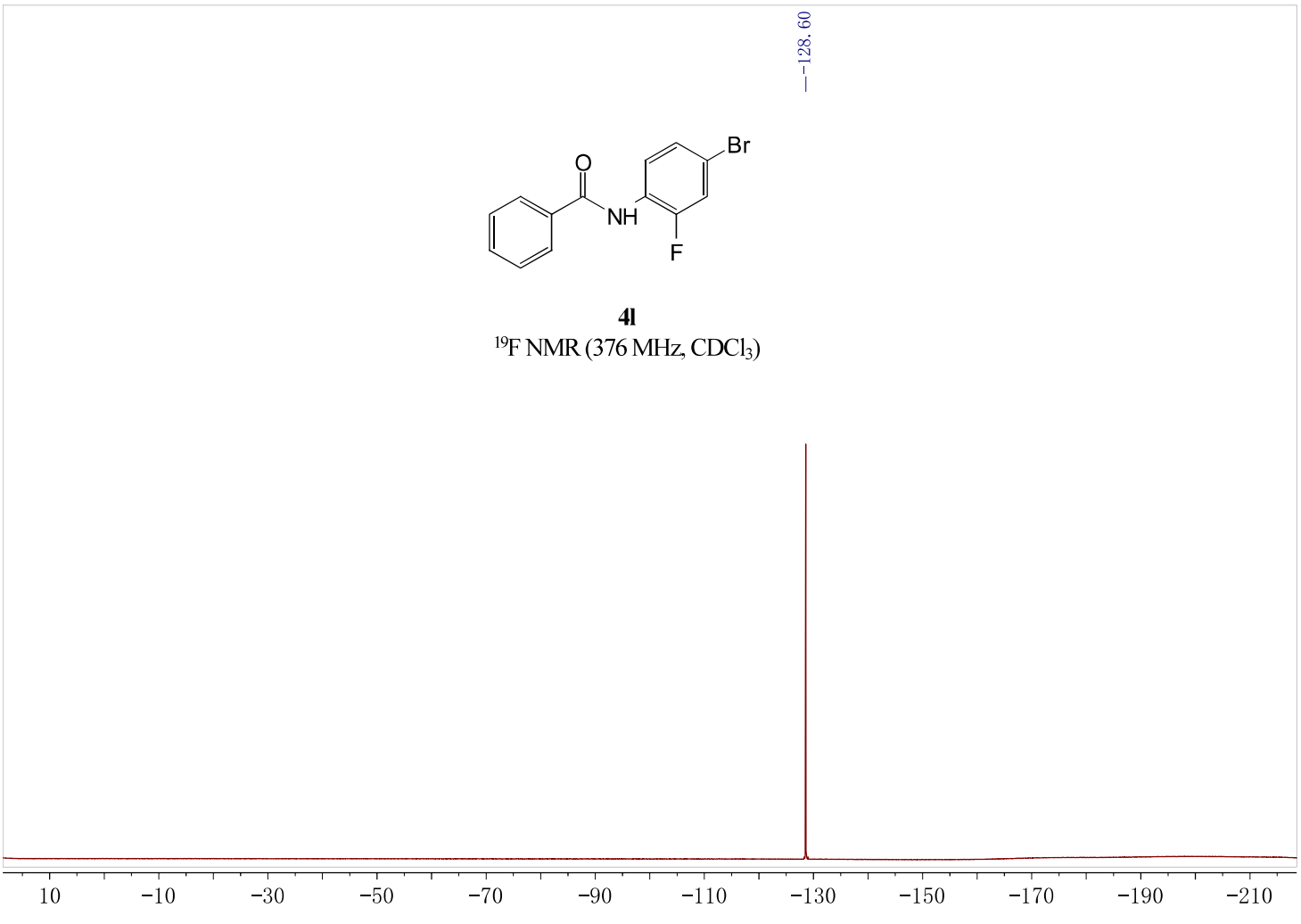
4l

^{1}H NMR (600 MHz, DMSO-d_6)



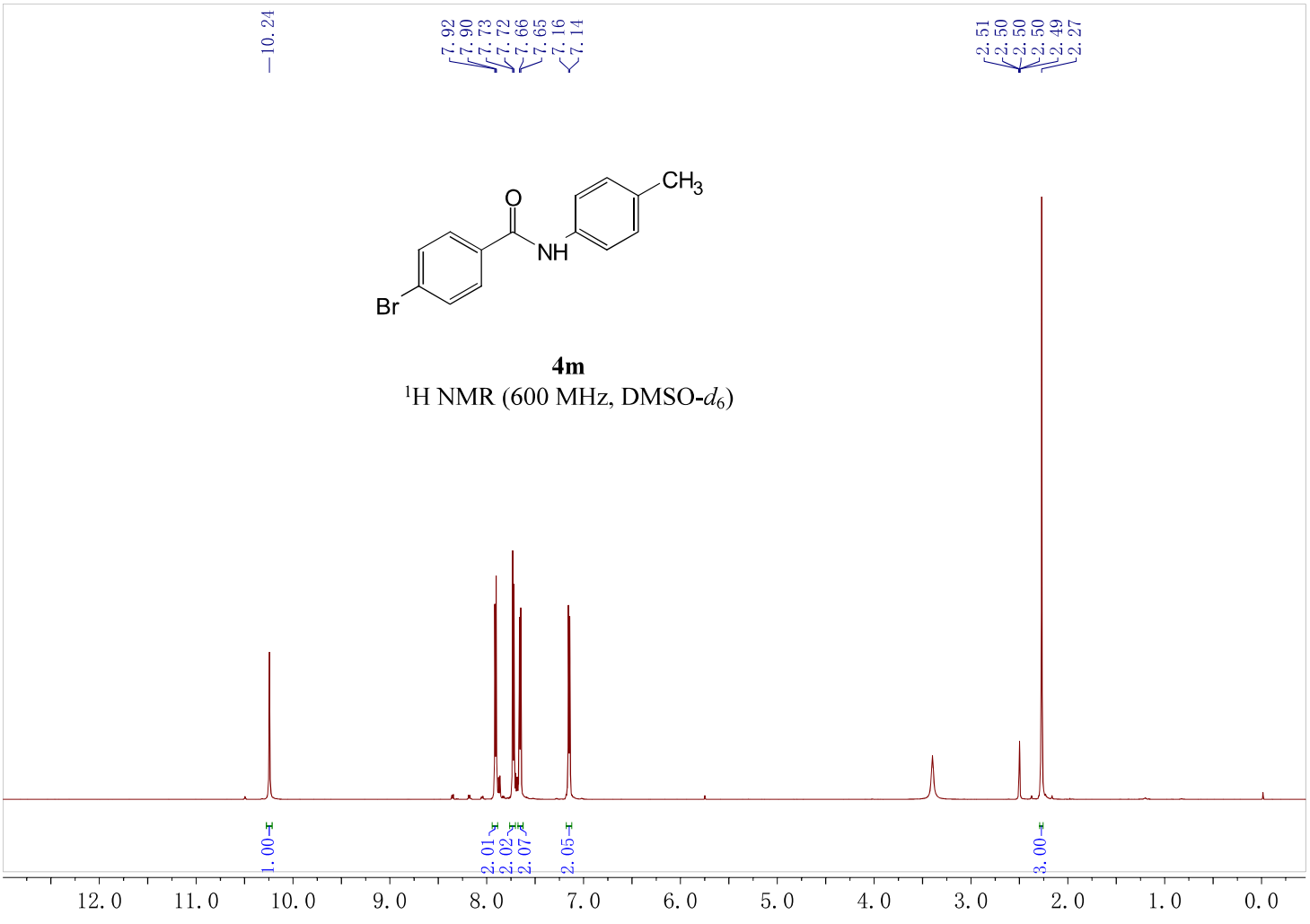
4l

^{13}C NMR (101 MHz, $CDCl_3$)



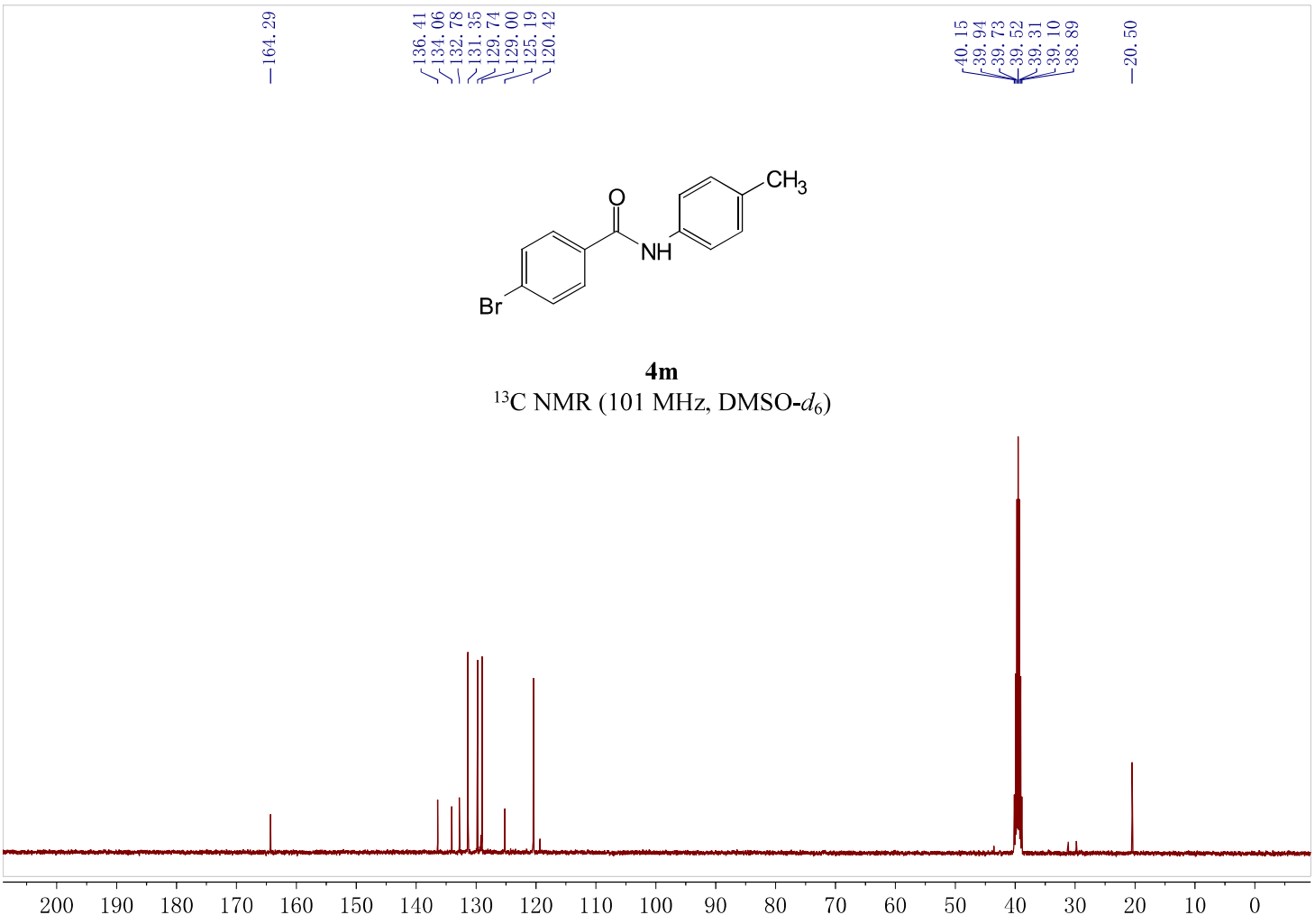
4l

^{19}F NMR (376 MHz, $CDCl_3$)



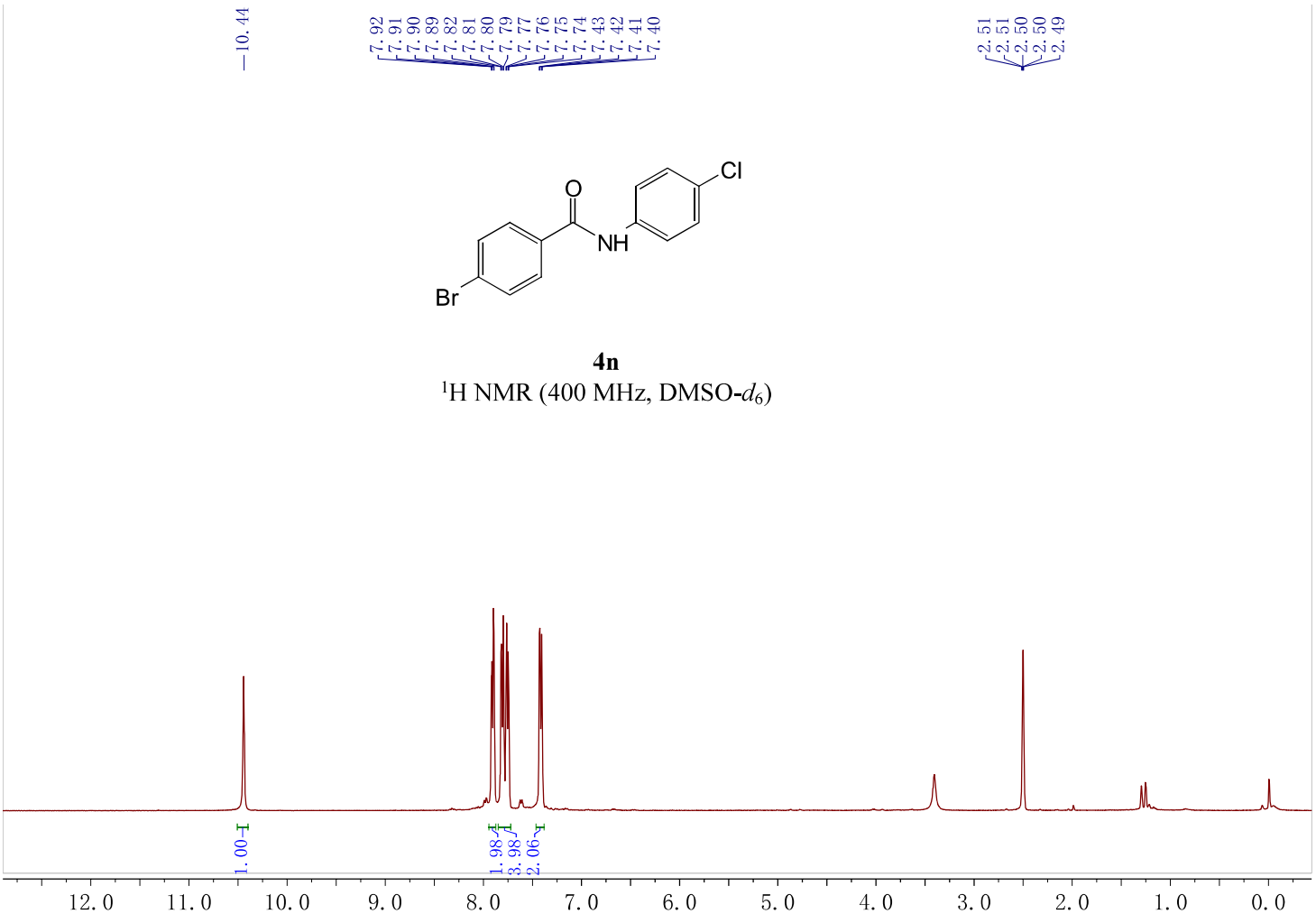
4m

^{1}H NMR (600 MHz, DMSO-d_6)



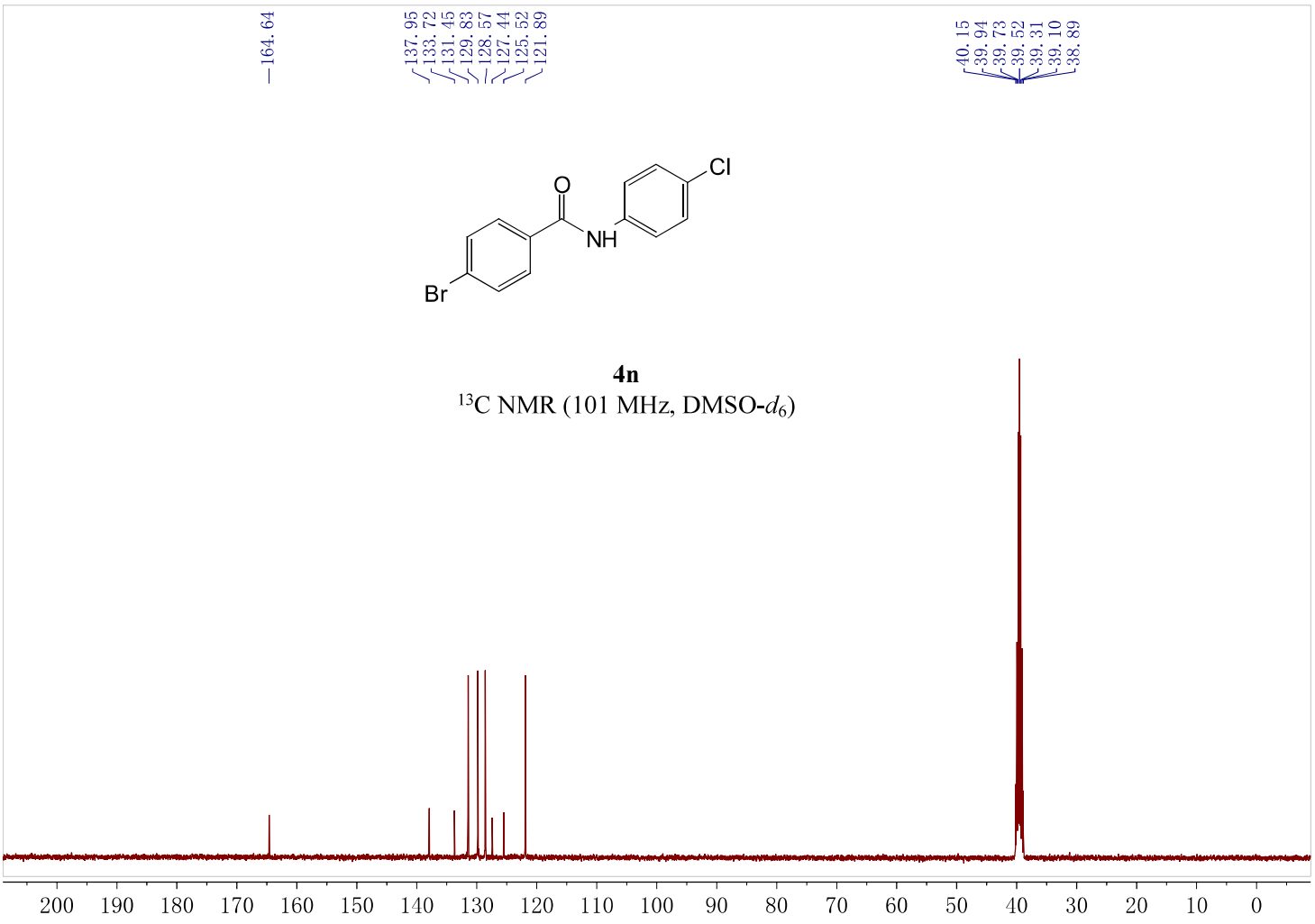
4m

^{13}C NMR (101 MHz, DMSO-d_6)



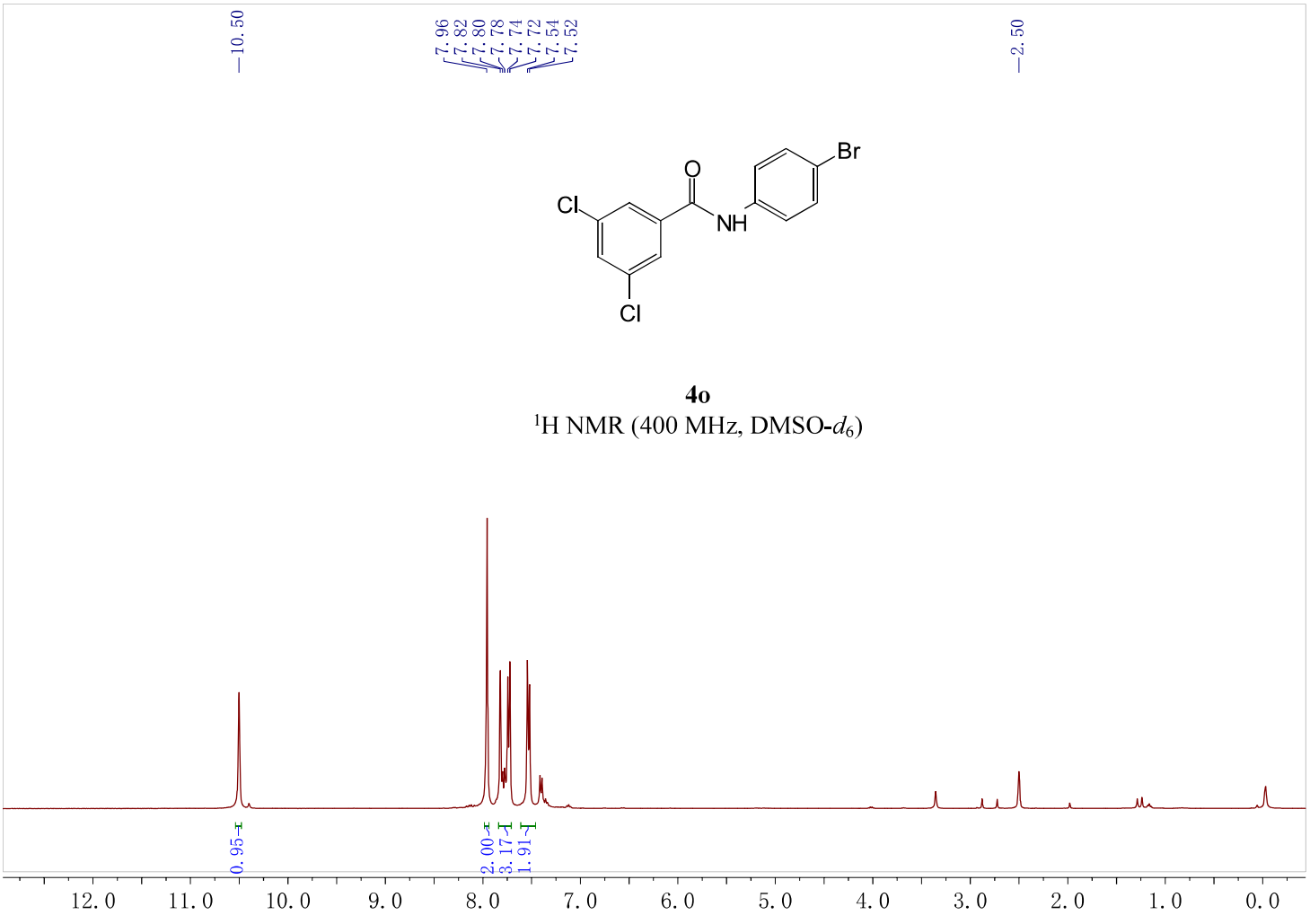
4n

^{1}H NMR (400 MHz, DMSO-d_6)



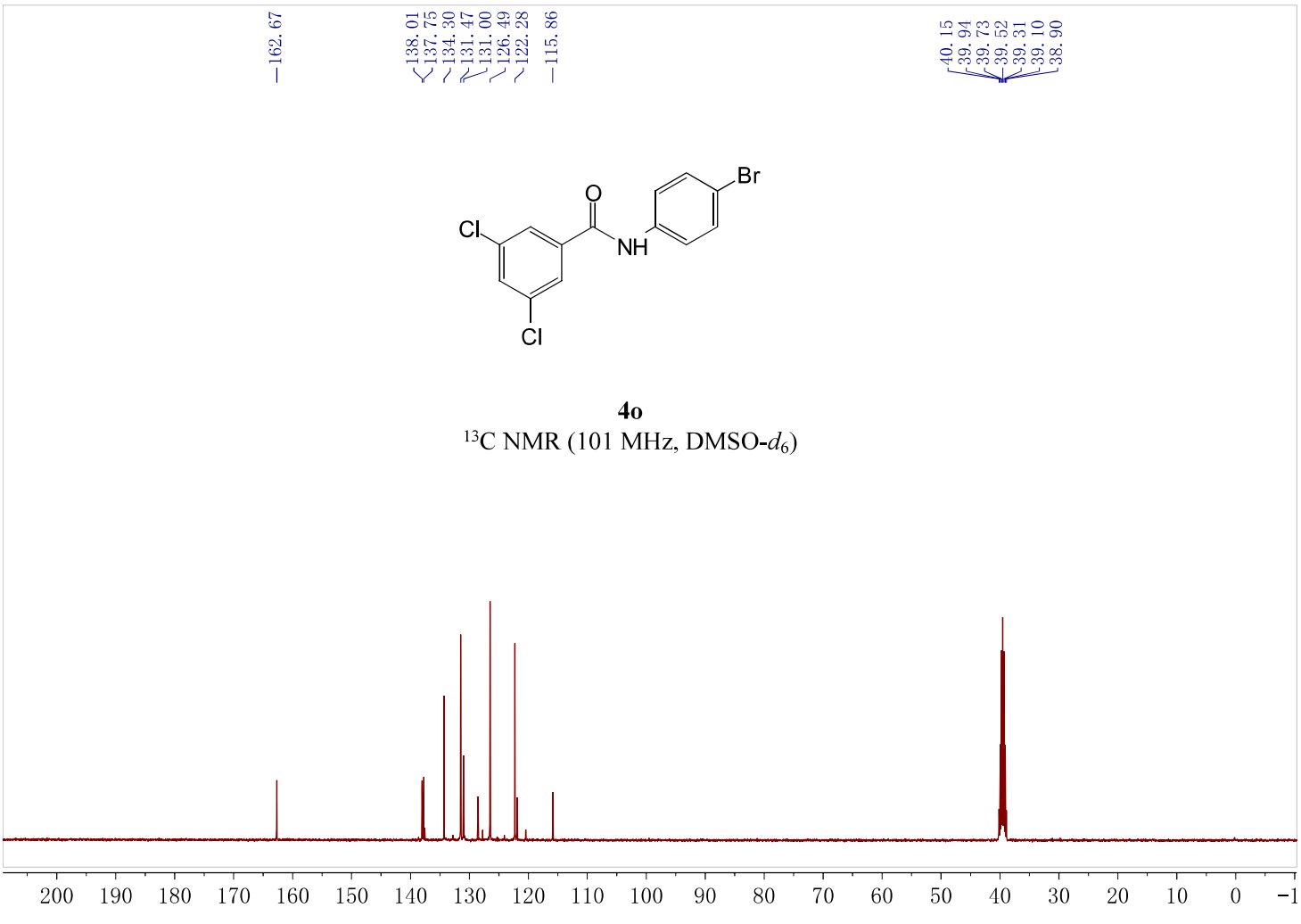
4n

^{13}C NMR (101 MHz, DMSO-d_6)



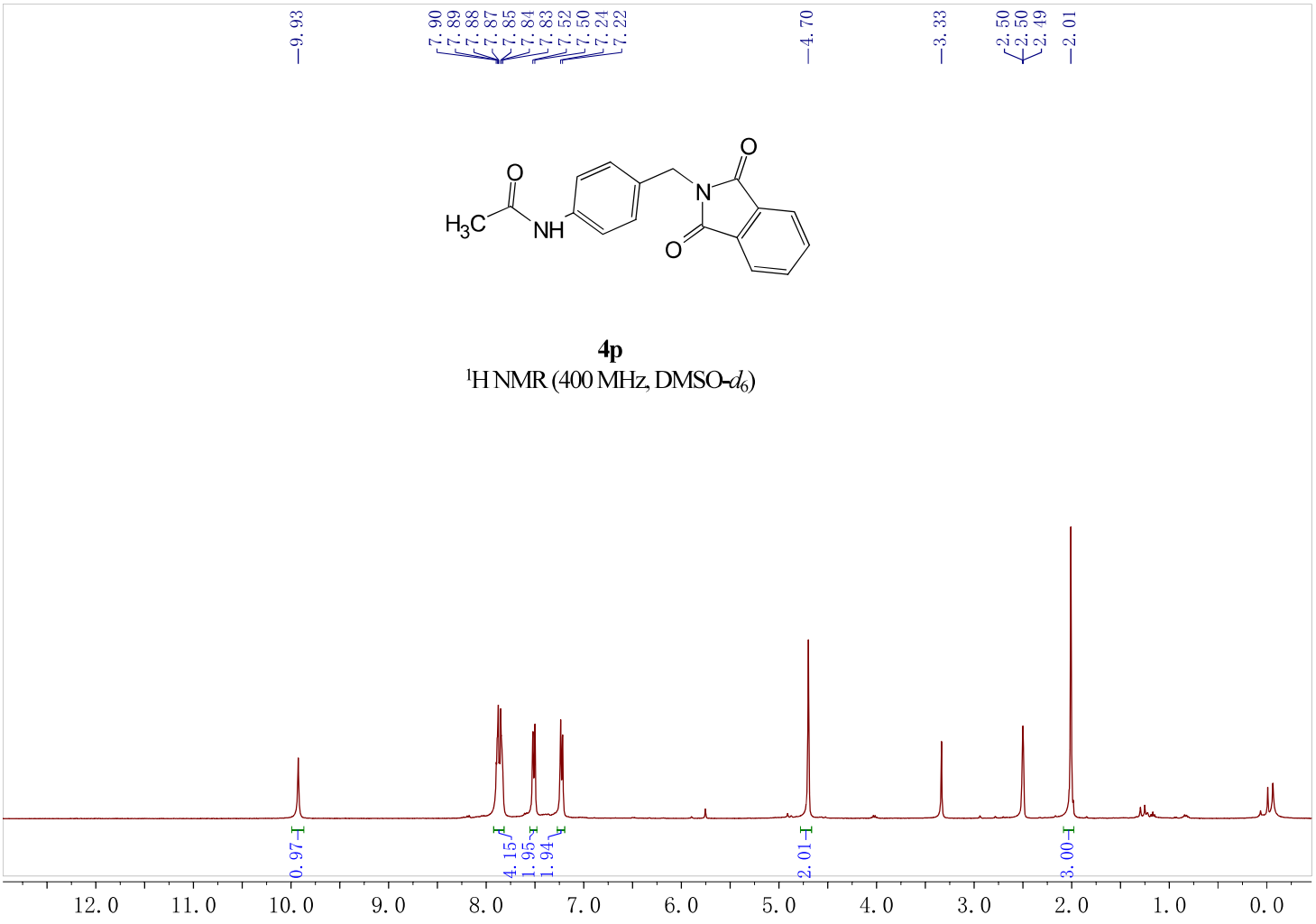
4o

^{1}H NMR (400 MHz, DMSO-d_6)



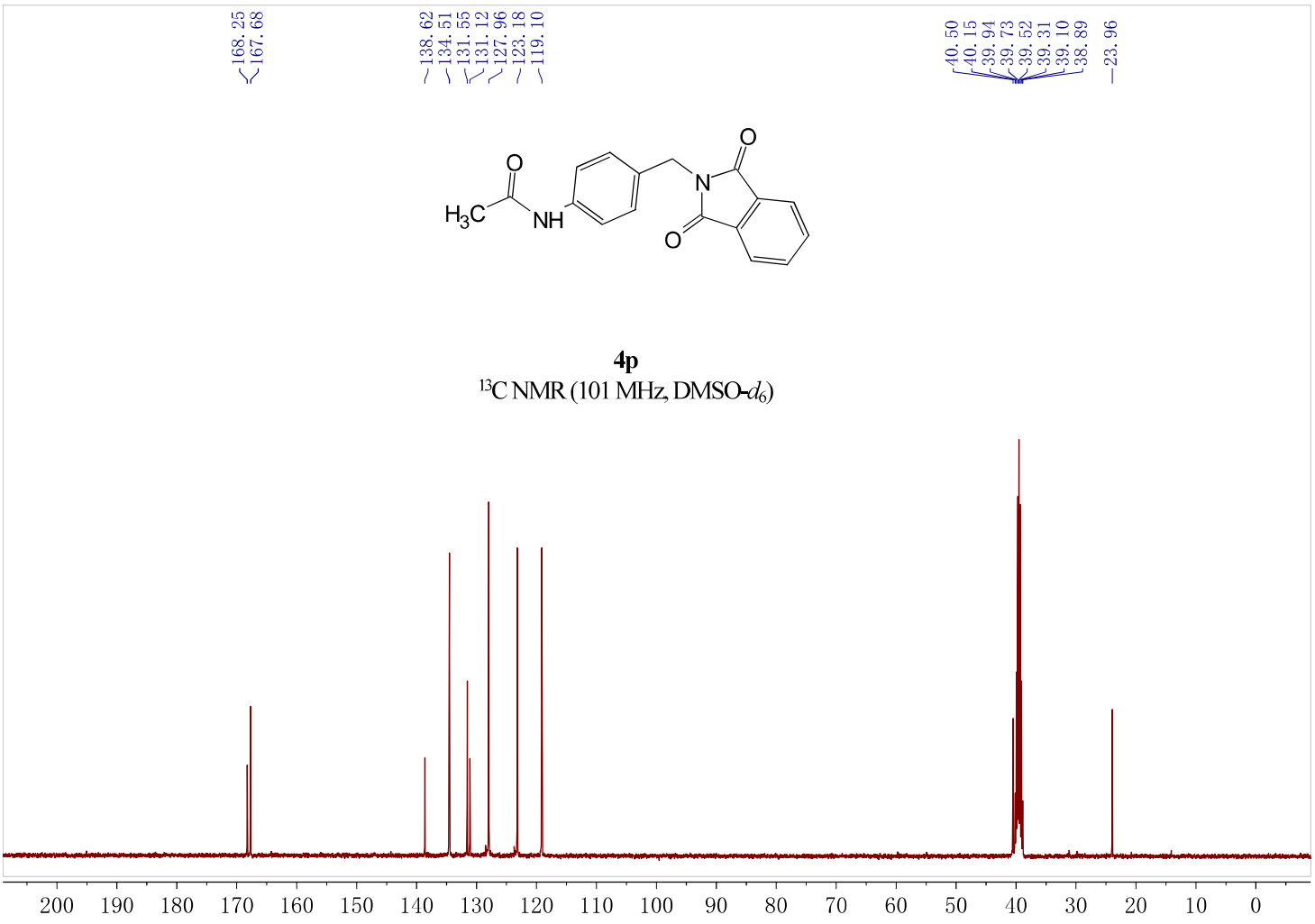
4o

^{13}C NMR (101 MHz, DMSO-d_6)



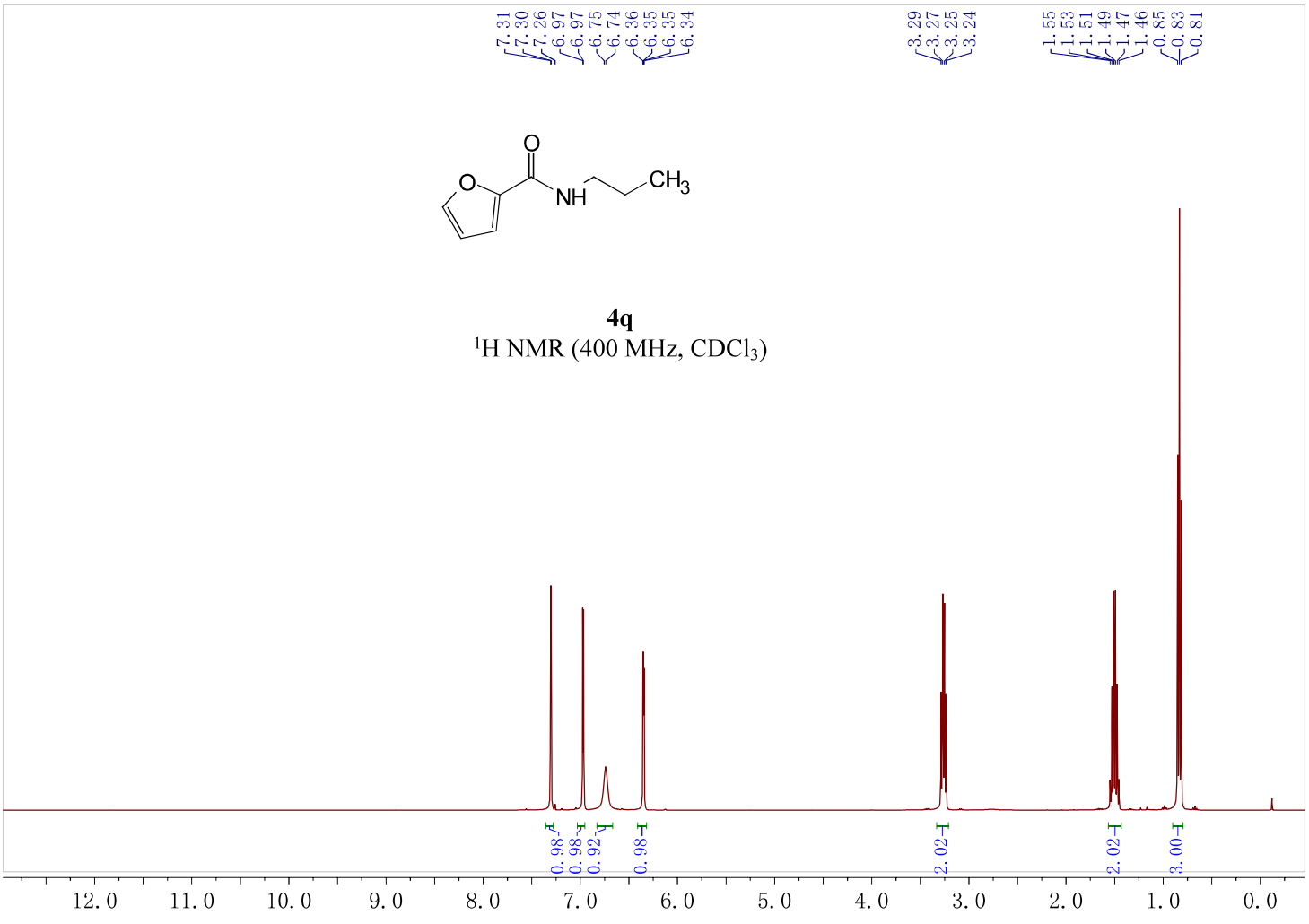
4p

^{1}H NMR (400 MHz, DMSO-d_6)



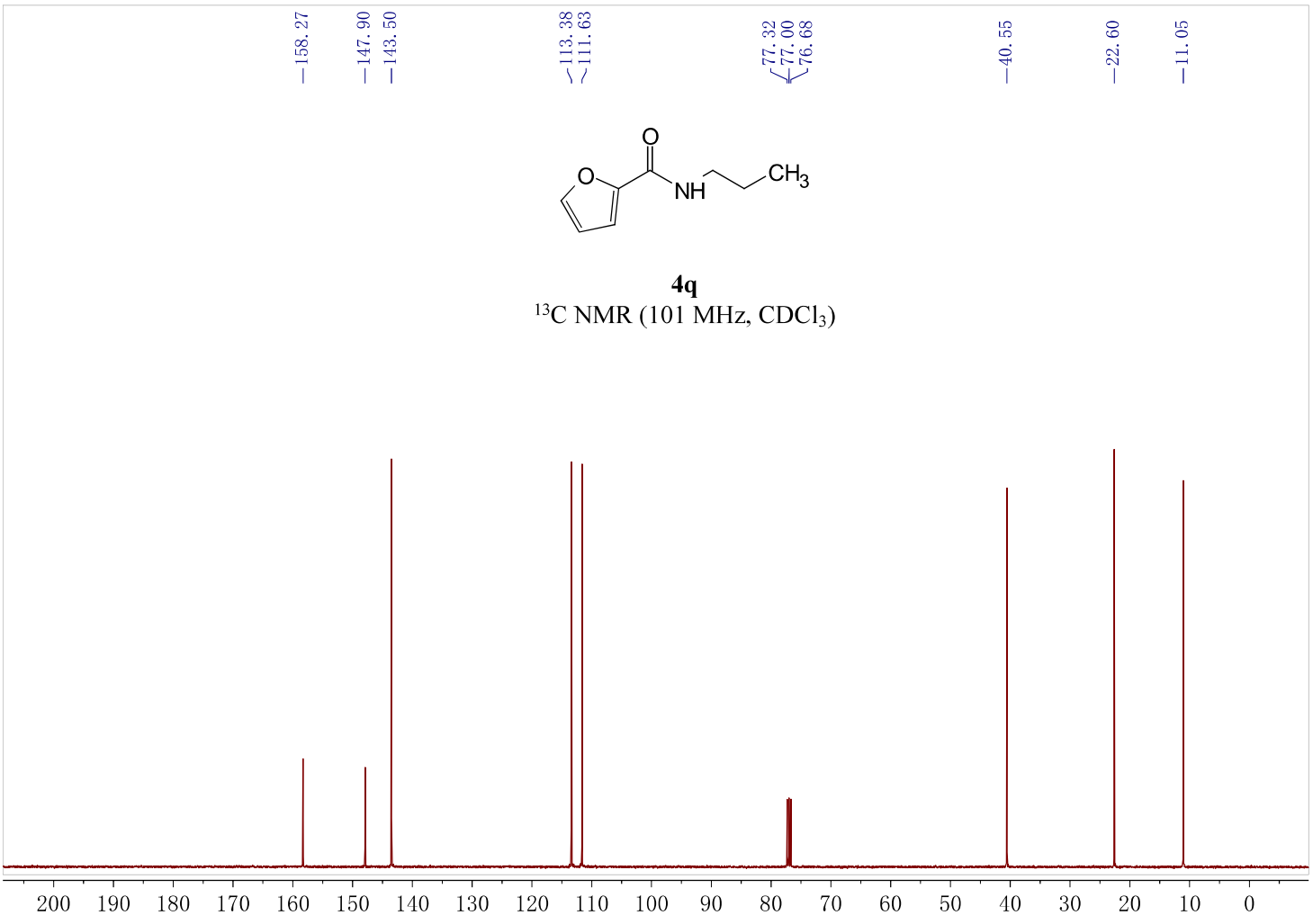
4p

^{13}C NMR (101 MHz, DMSO-d_6)



4q

^{1}H NMR (400 MHz, $CDCl_3$)



4q

^{13}C NMR (101 MHz, $CDCl_3$)