Electronic Supporting Information

N-Alkylation of Substituted Alcohols through a Self-Supported Mesoporous $CuMn_2O_4$

Lanyan Shou, [a] Xue Yang, [a] Xueting Feng, [a] Yanqiong Wang, [a] Kejie Chai, * [a] and Weiming Xu * [a]

[a.] College of Material, Chemistry and Chemical Engineering, Hangzhou Normal University, Hangzhou 311121, China.

E-mail: wmxu@zju.edu.cn (W.M. Xu)

E-mail: kjchai@foxmail.com (K.J. Chai)

Figure S1. (a) Small angle XRD pattern, (b) TEM image, (c) Nitrogen sorption isotherms, and (c inset) its corresponding pore size distribution curve of the mesoporous silica KIT-6.

Figure S2. (a) Wide-angle XRD pattern of self-supported $CuMn_2O_4$, (b) Wide-angle XRD patterns of $CuMn_2O_4$ without using KIT-6, (c) TEM image of $CuMn_2O_4$ without using KIT-6.

Figure S3. Pore size distribution curve of mesoporous $CuMn_2O_4$.

Figure S4. The ^1H NMR spectrum of mixtures containing 4-methyl-*N*-(4-methylbenzyl)-benzenesulfonamide and *N*-benzyl-4-methylbenzenesulfonamide.

Figure S5. Wide-angle XRD pattern of self-supported $CuMn_2O_4$ after 5 cycle experiments.

Figure S6. TEM image of self-supported $CuMn_2O_4$ after 5 cycle experiments.

Table S1. Optimization of reaction conditions.

Table S2. Comparison of the *N*-alkylation of *p*-toluenesulfonamide and benzyl alcohol for mesoporous $CuMn_2O_4$ in our study and some catalysts reported in the literature with the optimized conditions.

Characterization of the products

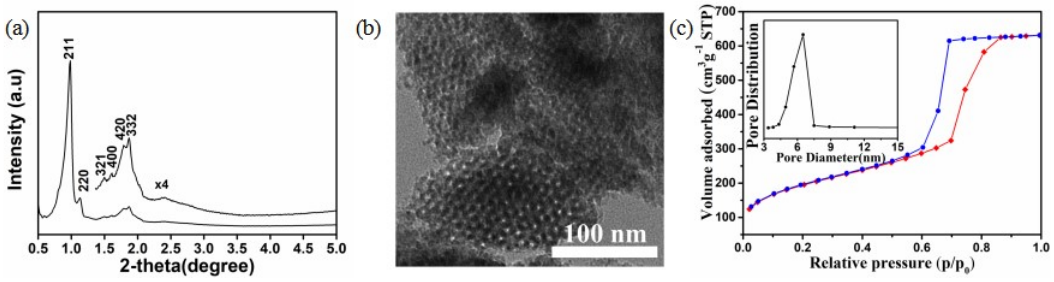
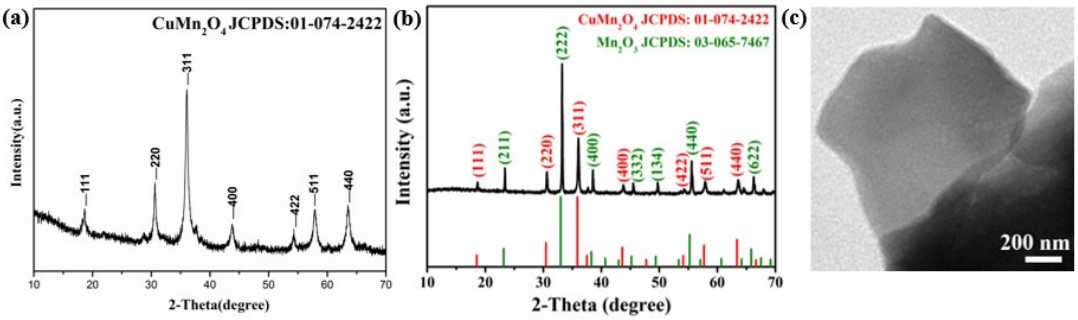


Figure S1. (a) Small angle XRD pattern, (b) TEM image, (c) Nitrogen sorption isotherms, and (c inset) its corresponding pore size distribution curve of the mesoporous silica KIT-6.



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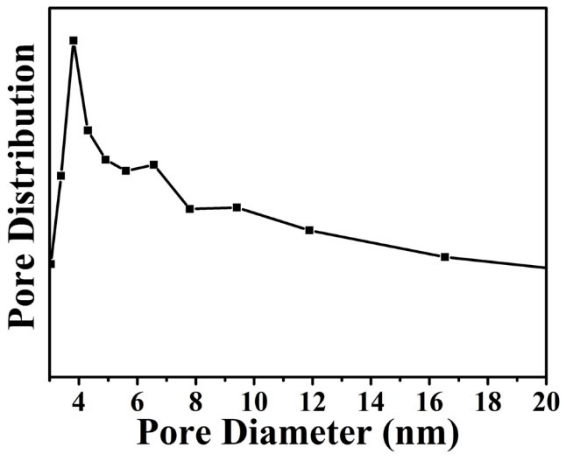


Figure S3. Pore size distribution curve of mesoporous $CuMn_2O_4$.

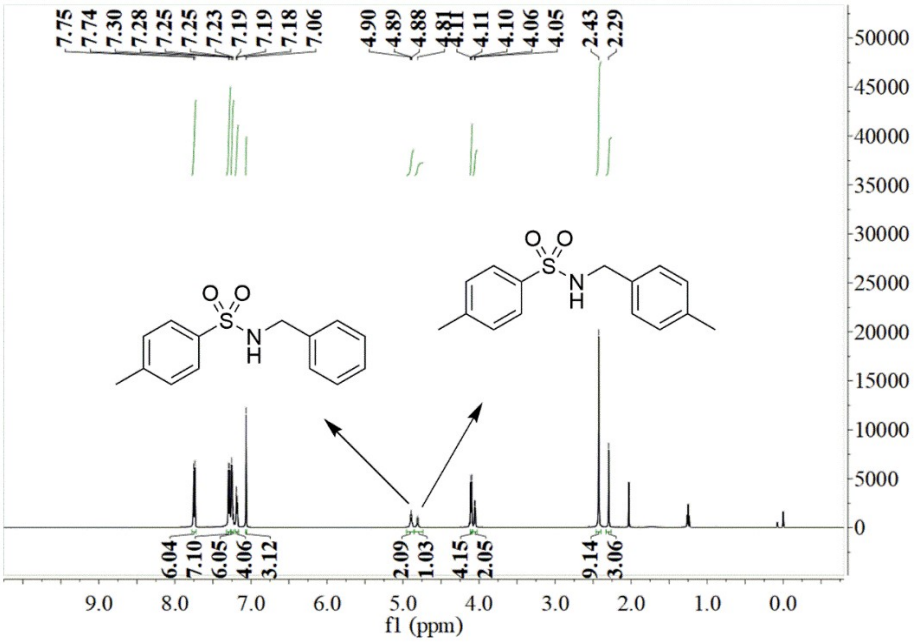


Figure S4. The ^{1}H NMR spectrum of mixtures containing 4-methyl-*N*-(4-methylbenzyl)-benzenesulfonamide and *N*-benzyl-4-methylbenzenesulfonamide.

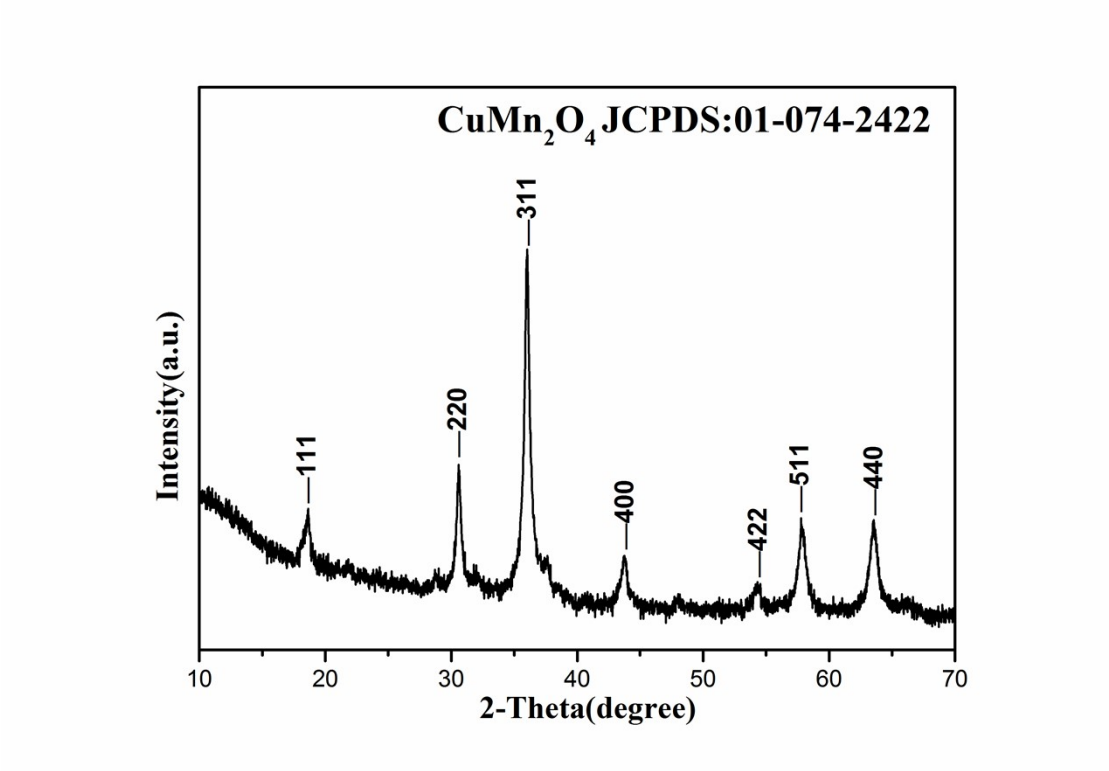


Figure S5. Wide-angle XRD pattern of self-supported $CuMn_2O_4$ after 5 cycle experiments.

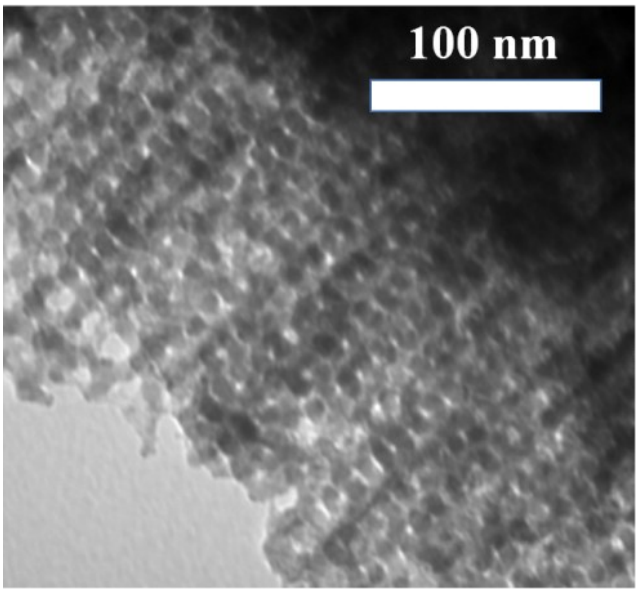
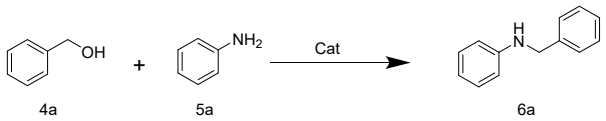


Figure S6. TEM image of self-supported $CuMn_2O_4$ after 5 cycle experiments.

Table S1. Optimization of reaction conditions.



4a 5a 6a

Entry[a]	a(mmol)	b(mmol)	Temperature (°C)	Time (h)	*t*-BuOK (mol%)	$CuMn_2O_4$ (mol%)	Yield (%)
1	0.6	0.4	100	2	10	3	80
2	0.4	0.4	100	2	10	3	65
3	0.4	0.6	100	2	10	3	44
4	0.6	0.4	120	2	10	3	86
5	0.6	0.4	140	2	10	3	85
6	0.6	0.4	120	4	10	3	93
7	0.6	0.4	120	6	10	3	92
8	0.6	0.4	120	4	0	3	<5%
9[b]	0.6	0.4	120	4	20	3	99
10	0.6	0.4	120	8	20	0	trace
11	0.6	0.4	120	4	20	2	85

[a]The yields were determined by high performance liquid chromatography (HPLC).

[b]The isolated yield was 95%.

Table S2. Comparison of the *N*-alkylation of *p*-toluenesulfonamide and benzyl alcohol for mesoporous $CuMn_2O_4$ in our study and some catalysts reported in the literature with the optimized conditions.

Entry	Cat.	Cat. (mol%)	base	Temperature (°C)	Time (h)	Yield (%)	Ref.
1	$Pd(OAc)_2$	0.01	K_2CO_3	150	8	88	[1]
2	$FeCl_2$	5	K_2CO_3	135	20	98	[2]
3	$FeCl_3·6H_2O$	1	K_2CO_3	135	12	10 (con.)	[2]
4	$Fe_3(CO)_{12}$	1	K_2CO_3	135	12	19 (con.)	[2]
5	$Fe(acac)_3$	1	K_2CO_3	135	12	25 (con.)	[2]
6	Ru/Fe_3O_4	40 mg	K_2CO_3	150	12	97	[3]
7	$Pd(COD)ClSnCl_3$	3	*o*-xylene	140	24	75	[4]
8	AgOTf	5	-	100	8	74	[5]
9	Ni/SiO_2-Al_2O_3	10	K_2CO_3	175	60	63	[6]
10	$Cu(AcO)_2$	1	*t*-BuOK	150	6	40	[7]
11	**$CuMn_2O_4$**	**2.5**	**K_2CO_3**	**135**	**5**	**99**	**This work**

Characterization of the products

***N*-Benzyl-4-methylbenzenesulfonamide** (3a)[8], ^{1}H NMR (500 MHz, $CDCl_3$) δ 7.73 (d, *J* = 8.2 Hz, 2H), 7.36 – 7.20 (m, 5H), 7.20 – 7.09 (m, 2H), 5.06 (s, 1H), 4.09 (d, *J* = 6.2 Hz, 2H), 2.41 (s, 3H); ^{13}C NMR (126 MHz, $CDCl_3$) δ 143.50 (s), 136.88 (s), 136.40 (s), 129.75 (s), 128.66 (s), 127.90 (s), 127.83 (s), 127.20 (s), 47.23 (s), 21.56 (s).

***N*-(3-Chlorobenzyl)-4-methylbenzenesulfonamide** (3b)[9], ^{1}H NMR (500 MHz, $CDCl_3$) δ 7.71 (d, *J* = 8.2 Hz, 2H), 7.27 (d, *J* = 8.0 Hz, 2H), 7.22 – 7.14 (m, 2H), 7.12 (s, 1H), 7.08 (dd, *J* = 4.8, 0.8 Hz, 1H), 5.29 (t, 1H), 4.07 (d, *J* = 6.4 Hz, 2H), 2.42 (s, 3H); ^{13}C NMR (126 MHz, $CDCl_3$) δ 143.72 (s), 138.48 (s), 136.73 (s), 134.41 (s), 129.90 (s), 129.80 (s), 127.92 (d, *J* = 3.0 Hz), 127.13 (s), 125.98 (s), 46.58 (s), 21.57 (s).

4-Methyl-*N*-(4-methylbenzyl)benzenesulfonamide (3c)[10], ^{1}H NMR (500 MHz, $CDCl_3$) δ 7.73 (d, *J* = 8.3 Hz, 2H), 7.27 (d, *J* = 8.1 Hz, 2H), 7.08 – 7.02 (m, 4H), 5.02 (d, *J* = 5.7 Hz, 1H), 4.03 (d, *J* = 6.2 Hz, 2H), 2.41 (s, 3H), 2.28 (s, 3H); ^{13}C NMR (126 MHz, $CDCl_3$) δ 143.44 (s), 137.56 (s), 136.87 (s), 133.34 (s), 129.73 (s), 129.32 (s), 127.90 (s), 127.22 (s), 47.01 (s), 21.57 (s), 21.12 (s).

***N*-(2-Methoxybenzyl)-4-methylbenzenesulfonamide** (3d)[10], ^{1}H NMR (500 MHz, $CDCl_3$) δ 7.66 (d, *J* = 8.2 Hz, 2H), 7.22 – 7.16 (m, 3H), 7.06 (dd, 1H), 6.79 (t, *J* = 7.4 Hz, 1H), 6.72 (d, *J* = 8.2 Hz, 1H), 5.17 (t, *J* = 5.9 Hz, 1H), 4.13 (d, *J* = 6.3 Hz, 2H), 3.73 (s, 3H), 2.38 (s, 3H); ^{13}C NMR (126 MHz, $CDCl_3$) δ 157.22 (s), 143.05 (s), 137.25 (s), 129.79 (s), 129.40 (s), 129.22 (s), 127.08 (s), 124.33 (s), 120.54 (s), 110.11 (s), 55.18 (s), 43.99 (s), 21.49 (s).

***N*-(4-Methoxybenzyl)-4-methylbenzenesulfonamide** (3e)[9], ^{1}H NMR (500 MHz, $CDCl_3$) δ 7.74 (d, *J* = 8.2 Hz, 2H), 7.29 (d, *J* = 8.1 Hz, 2H), 7.09 (d, *J* = 8.6 Hz, 2H), 6.78 (d, *J* = 8.6 Hz, 2H), 4.85 (t, *J* = 5.8 Hz, 1H), 4.03 (d, *J* = 6.1 Hz, 2H), 3.76 (s, 3H), 2.43 (s, 3H); ^{13}C NMR (126 MHz, $CDCl_3$) δ 159.26 (s), 143.46 (s), 136.89 (s), 129.74 (s), 129.29 (s), 128.33 (s), 127.20 (s), 114.04 (s), 55.30 (s), 46.77 (s), 21.56 (s).

***N*-(3-Bromobenzyl)-4-methylbenzenesulfonamide** (3f)[11], ^{1}H NMR (500 MHz, $CDCl_3$) δ 7.70 (d, *J* = 8.2 Hz, 2H), 7.32 (d, *J* = 7.2 Hz, 1H), 7.26 (d, *J* = 8.5 Hz, 3H), 7.13 – 7.08 (m, 2H), 5.32 (t, *J* = 6.3 Hz, 1H), 4.07 (d, *J* = 6.4 Hz, 2H), 2.42 (s, 3H); ^{13}C NMR (126 MHz, $CDCl_3$) δ 143.72 (s), 138.76 (s), 136.73 (s), 130.83 (d, *J* = 2.4 Hz), 130.18 (s), 129.82 (s), 127.12 (s), 126.47 (s), 122.59 (s), 46.53 (s), 21.60 (s).

***N*-(4-Bromobenzyl)-4-methylbenzenesulfonamide** (3g)[10], ^{1}H NMR (500 MHz, $CDCl_3$) δ 7.70 (d, *J* = 7.8 Hz, 2H), 7.36 (d, *J* = 7.9 Hz, 2H), 7.27 (d, *J* = 8.0 Hz, 2H), 7.06 (d, *J* = 8.0 Hz, 2H), 5.19 (t, *J* = 6.2 Hz, 1H), 4.05 (d, *J* = 6.3 Hz, 2H), 2.43 (s, 3H); ^{13}C NMR (126 MHz, $CDCl_3$) δ 143.70 (s), 136.74 (s), 135.47 (s), 131.71 (s), 129.79 (s), 129.58 (s), 127.13 (s), 121.75 (s), 46.57 (s), 21.59 (s).

***N*-Benzyl-4-bromobenzenesulfonamide** (3h)[10], ^{1}H NMR (500 MHz, $CDCl_3$) δ 7.67 (d, *J* = 8.6 Hz, 2H), 7.59 (d, *J* = 8.6 Hz, 2H), 7.30 – 7.22 (m, 3H), 7.16 (dd, *J* = 6.8, 2.5 Hz, 2H), 5.17 (t, *J* = 6.1 Hz, 1H), 4.12 (d, *J* = 6.2 Hz, 2H); ^{13}C NMR (126 MHz, $CDCl_3$) δ 139.02 (s), 135.96 (s), 132.38 (s), 128.75 (s), 128.67 (s), 128.02 (s), 127.91 (s), 127.64 (s), 47.26 (s).

4-Bromo-*N*-(3-chlorobenzyl)benzenesulfonamide (3i)[12], ^{1}H NMR (500 MHz, $CDCl_3$) δ 7.67 (d, *J* = 8.6 Hz, 2H), 7.62 (d, *J* = 8.5 Hz, 2H), 7.25 – 7.17 (m, 2H), 7.14 (s, 1H), 7.07 (d, *J* = 7.0 Hz, 1H), 5.15 (t, *J* = 6.1 Hz, 1H), 4.12 (d, *J* = 6.3 Hz, 2H); ^{13}C NMR (126 MHz, $CDCl_3$) δ 138.93 (s), 137.99 (s), 134.60 (s), 132.46 (s), 130.03 (s), 128.60 (s), 128.17 (s), 127.98 (s), 127.89 (s), 125.95 (s), 46.66 (s).

4-Bromo-*N*-(4-methylbenzyl)benzenesulfonamide (3j)[11], ^{1}H NMR (500 MHz, $CDCl_3$) δ 7.67 (d, *J* = 8.6 Hz, 2H), 7.59 (d, *J* = 8.6 Hz, 2H), 7.09 – 7.02 (m, 4H), 5.02 (t, *J* = 6.0 Hz, 1H), 4.08 (d, *J* = 6.1 Hz, 2H), 2.30 (s, 3H); ^{13}C NMR (126 MHz, $CDCl_3$) δ 139.10 (s), 137.85 (s), 132.87 (s), 132.34 (s), 129.40 (s), 128.69 (s), 127.89 (s), 127.57 (s), 47.07 (s), 21.11 (s).

4-Bromo-*N*-(2-methoxybenzyl)benzenesulfonamide (3k), ^{1}H NMR (500 MHz, $CDCl_3$) δ 7.58 (d, *J* = 8.5 Hz, 2H), 7.48 (d, *J* = 8.5 Hz, 2H), 7.20 (td, *J* = 8.1, 1.5 Hz, 1H), 7.03 (dd, *J* = 7.3, 1.2 Hz, 1H), 6.79 (t, *J* = 7.4 Hz, 1H), 6.70 (d, *J* = 8.2 Hz, 1H), 5.35 (t, *J* = 6.3 Hz, 1H), 4.16 (d, *J* = 6.4 Hz, 2H), 3.72 (s, 3H); ^{13}C NMR (126 MHz, $CDCl_3$) δ 157.15 (s), 139.47 (s), 131.92 (s), 129.87 (s), 129.46 (s), 128.55 (s), 127.13 (s), 123.89 (s), 120.56 (s), 110.15 (s), 55.19 (s), 44.16 (s).

4-Bromo-*N*-(4-methoxybenzyl)benzenesulfonamide (3l)[13], ^{1}H NMR (500 MHz, $CDCl_3$) δ 7.68 (d, *J* = 8.6 Hz, 2H), 7.61 (d, *J* = 8.6 Hz, 2H), 7.08 (d, *J* = 8.6 Hz, 2H), 6.78 (d, *J* = 8.6 Hz, 2H), 4.90 (t, *J* = 5.8 Hz, 1H), 4.07 (d, *J* = 6.0 Hz, 2H), 3.77 (s, 3H); ^{13}C NMR (126 MHz, $CDCl_3$) δ 159.42 (s), 139.19 (s), 132.34 (s), 129.29 (s), 128.68 (s), 127.92 (s), 127.55 (s), 114.13 (s), 55.32 (s), 46.83 (s).

4-Bromo-*N*-(3-bromobenzyl)benzenesulfonamide (3m), ^{1}H NMR (500 MHz, $CDCl_3$) δ 7.65 (d, *J* = 8.6 Hz, 2H), 7.60 (d, *J* = 8.6 Hz, 2H), 7.36 (dd, *J* = 3.8, 2.5 Hz, 1H), 7.27 (s, 1H), 7.16 – 7.08 (m, 2H), 5.33 (t, *J* = 6.2 Hz, 1H), 4.11 (d, *J* = 6.3 Hz, 2H); ^{13}C NMR (126 MHz, $CDCl_3$) δ 138.90 (s), 138.28 (s), 132.46 (s), 131.04 (s), 130.89 (s), 130.28 (s), 128.58 (s), 127.90 (s), 126.45 (s), 122.71 (s), 46.57 (s).

***N*-Benzylidene-*p*-toluenesulfonamide** (product of **Scheme 4b**)[11], ^{1}H NMR (500 MHz, $CDCl_3$) δ 9.03 (s, 1H), 7.91 (dd, *J* = 17.2, 8.0 Hz, 4H), 7.61 (t, *J* = 7.4 Hz, 1H), 7.49 (t, *J* = 7.6 Hz, 2H), 7.35 (d, *J* = 8.0 Hz, 2H), 2.44 (s, 3H); ^{13}C NMR (126 MHz, $CDCl_3$) δ 170.15 (s), 144.63 (s), 135.16 (s), 134.95 (s), 132.41 (s), 131.33 (s), 129.83 (s), 129.16 (s), 128.12 (s), 21.67 (s).

***N*-Benzylaniline** (6a)[14], ^{1}H NMR (500 MHz, DMSO) δ 7.35 (d, *J* = 7.5 Hz, 2H), 7.31 (t, *J* = 7.5 Hz, 2H), 7.22 (d, *J* = 7.2 Hz, 1H), 7.02 (t, *J* = 7.8 Hz, 2H), 6.56 (d, *J* = 7.9 Hz, 2H), 6.50 (t, *J* = 7.2 Hz, 1H), 6.20 (s, 1H), 4.25 (d, *J* = 6.0 Hz, 2H); ^{13}C NMR (126 MHz, DMSO) δ 149.14 (s), 140.79 (s), 129.27 (s), 128.73 (s), 127.64 (s), 127.05 (s), 116.18 (s), 112.74 (s), 46.92 (s).

***N*-Benzyl-4-bromoaniline** (6b)[15], ^{1}H NMR (500 MHz, DMSO) δ 7.37 – 7.28 (m, 4H), 7.22 (t, *J* = 6.6 Hz, 1H), 7.16 (d, *J* = 8.8 Hz, 2H), 6.53 (d, *J* = 8.8 Hz, 2H), 4.24 (s, 2H); ^{13}C NMR (126 MHz, DMSO) δ 148.29 (s), 140.17 (s), 131.79 (s), 128.79 (s), 127.64 (s), 127.19 (s), 114.74 (s), 106.89 (s), 46.82 (s).

***N*-Benzyl-3-chloroaniline** (6c)[16], ^{1}H NMR (500 MHz, DMSO) δ 7.38 – 7.28 (m, 4H), 7.26 – 7.21 (m, 1H), 7.03 (t, *J* = 8.0 Hz, 1H), 6.57 (t, *J* = 2.0 Hz, 2H), 6.54 – 6.48 (m, 2H), 4.26 (d, *J* = 5.5 Hz, 2H); ^{13}C NMR (126 MHz, DMSO) δ 150.63 (s), 140.12 (s), 134.02 (s), 130.78 (s), 128.82 (s), 127.64 (s), 127.23 (s), 115.57 (s), 111.85 (s), 111.43 (s), 46.64 (s).

***N*-Benzyl-3-methylaniline** (6d)[16], ^{1}H NMR (500 MHz, DMSO) δ 7.36 – 7.28 (m, 4H), 7.21 (t, *J* = 7.2 Hz, 1H), 6.90 (t, *J* = 7.7 Hz, 1H), 6.40 (s, 1H), 6.34 (q, *J* = 15.7, 7.7 Hz, 2H), 6.10 (t, *J* = 6.0 Hz, 1H), 4.24 (d, *J* = 6.1 Hz, 2H), 2.14 (s, 3H); ^{13}C NMR (126 MHz, DMSO) δ 149.16 (s), 140.91 (s), 138.18 (s), 129.15 (s), 128.70 (s), 127.61 (s), 127.01 (s), 117.16 (s), 113.44 (s), 109.97 (s), 46.91 (s), 21.84 (s).

***N*-Benzyl-3-methoxyaniline** (6e)[15], ^{1}H NMR (500 MHz, DMSO) δ 7.44 – 7.27 (m, 4H), 7.21 (t, *J* = 7.1 Hz, 1H), 6.92 (t, *J* = 8.0 Hz, 1H), 6.23 (s, 1H), 6.17 (dd, *J* = 8.1, 1.4 Hz, 1H), 6.13 – 6.05 (m, 2H), 4.23 (d, *J* = 4.2 Hz, 2H), 3.62 (s, 3H); ^{13}C NMR (126 MHz, DMSO) δ 160.71 (s), 150.47 (s), 140.78 (s), 129.96 (s), 128.72 (s), 127.62 (s), 127.05 (s), 105.92 (s), 101.63 (s), 98.57 (s), 55.02 (s), 46.94 (s).

***N*-Phenyl-4-methoxybenzylamine** (6f)[17], ^{1}H NMR (500 MHz, DMSO) δ 7.27 (d, *J* = 8.7 Hz, 2H), 7.02 (dd, *J* = 8.4, 7.3 Hz, 2H), 6.87 (d, *J* = 8.7 Hz, 2H), 6.56 (dd, *J* = 8.5, 0.8 Hz, 2H), 6.49 (t, *J* = 7.3 Hz, 1H), 6.10 (t, *J* = 5.9 Hz, 1H), 4.17 (d, *J* = 6.0 Hz, 2H), 3.71 (s, 3H); ^{13}C NMR (126 MHz, DMSO) δ 158.55 (s), 149.17 (s), 132.51 (s), 129.24 (s), 128.87 (s), 116.11 (s), 114.15 (s), 112.77 (s), 55.47 (s), 46.38 (s).

***N*-Benzyl-4-methoxyanilne** (6g)[14], ^{1}H NMR (500 MHz, DMSO) δ 7.37 (d, *J* = 7.1 Hz, 2H), 7.32 (t, *J* = 7.6 Hz, 2H), 7.22 (t, *J* = 7.3 Hz, 1H), 6.70 (d, *J* = 8.9 Hz, 2H), 6.56 (d, *J* = 8.9 Hz, 2H), 5.80 (s, 1H), 4.22 (s, 2H), 3.62 (s, 3H); ^{13}C NMR (126 MHz, DMSO) δ 151.19 (s), 143.39 (s), 141.04 (s), 128.68 (s), 127.70 (s), 127.00 (s), 115.01 (s), 113.81 (s), 55.73 (s), 47.79 (s).

4-*N*-[(4-Fluorophenyl)methyl]-2-nitrobenzene-1,4-diamine (6h), ^{1}H NMR (500 MHz, DMSO) δ 7.40 (t, *J* = 8.0, 5.8 Hz, 2H), 7.15 (t, *J* = 8.7 Hz, 2H), 7.07 – 6.96 (m, 3H), 6.93 (d, *J* = 2.3 Hz, 1H), 6.88 (d, *J* = 9.0 Hz, 1H), 6.04 (s, 1H), 4.20 (d, *J* = 5.7 Hz, 2H);^{13}C NMR (126 MHz, DMSO) δ 140.24 (s), 139.42 (s), 130.48 (s), 129.63 (d, *J* = 8.1 Hz), 127.21 (s), 120.75 (s), 115.56 (s), 115.39 (s), 102.84 (s), 46.83 (s);^{19}F NMR (471 MHz, DMSO) δ -116.34 (s).

***N*-Benzyl-2-nitroaniline** (6i)[18], ^{1}H NMR (500 MHz, DMSO) δ 8.66 (s, 1H), 8.09 (d, 1H), 7.44 (t, *J* = 7.7 Hz, 1H), 7.36 (dt, *J* = 15.0, 7.5 Hz, 4H), 7.27 (t, *J* = 7.0 Hz, 1H), 6.92 (d, *J* = 8.7 Hz, 1H), 6.68 (t, 1H), 4.64 (d, *J* = 6.1 Hz, 2H);^{13}C NMR (126 MHz, DMSO) δ 145.39 (s), 138.99 (s), 136.87 (s), 131.79 (s), 129.06 (s), 127.48 (d, *J* = 16.3 Hz), 126.69 (s), 115.90 (s), 115.39 (s), 46.18 (s).

***N*-Benzylanthranilic Acid** (6j)[19], ^{1}H NMR (500 MHz, DMSO) δ 7.80 (d, *J* = 7.9 Hz, 1H), 7.31 (M, 6H), 6.67 (d, *J* = 8.5 Hz, 1H), 6.56 (S, 1H), 4.46 (s, 2H); ^{13}C NMR (126 MHz, DMSO) δ 170.46 (s), 151.13 (s), 139.84 (s), 134.84 (s), 132.15 (s), 129.00 (s), 127.45 (d, *J* = 15.8 Hz), 114.97 (s), 112.15 (s), 110.75 (s), 46.31 (s).

1*H*-Indole (8)[20], ^{1}H NMR (500 MHz, DMSO) δ 11.06 (s, 1H), 7.53 (d, *J* = 7.8 Hz, 1H), 7.39 (dd, *J* = 8.1, 0.7 Hz, 1H), 7.32 (t, *J* = 2.7 Hz, 1H), 7.10 – 6.94 (m, 2H), 6.43 – 6.37 (m, 1H); ^{13}C NMR (126 MHz, DMSO) δ 136.32 (s), 128.08 (s), 125.64 (s), 121.33 (s), 120.46 (s), 119.21 (s), 111.84 (s), 101.43 (s).

Indoline (9)[20], ^{1}H NMR (500 MHz, DMSO) δ 7.00 (d, *J* = 7.2 Hz, 1H), 6.88 (t, 1H), 6.53 – 6.47 (m, 2H), 5.40 (s, 1H), 3.38 (t, *J* = 8.4 Hz, 2H), 2.87 (t, *J* = 8.5 Hz, 2H);^{13}C NMR (126 MHz, DMSO) δ 153.01 (s), 129.14 (s), 127.34 (s), 124.63 (s), 117.27 (s), 108.82 (s), 46.89 (s), 29.72 (s).

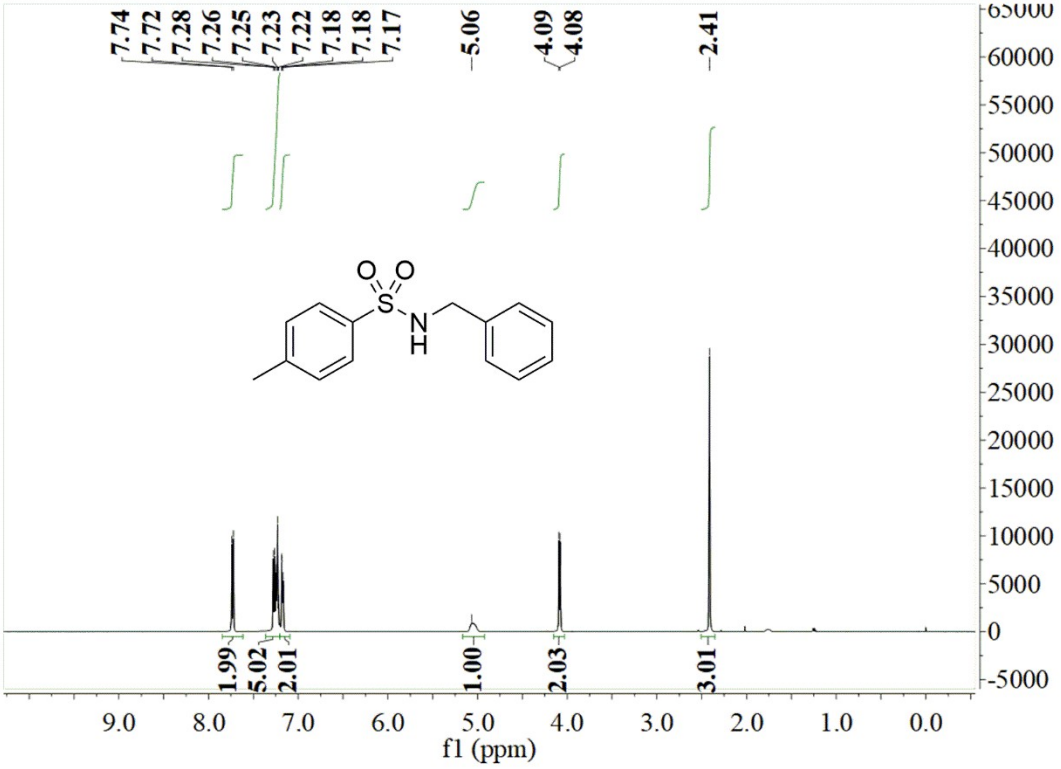


Figure ^{1}H NMR spectrum of *N*-benzyl-4-methylbenzenesulfonamide (3a).

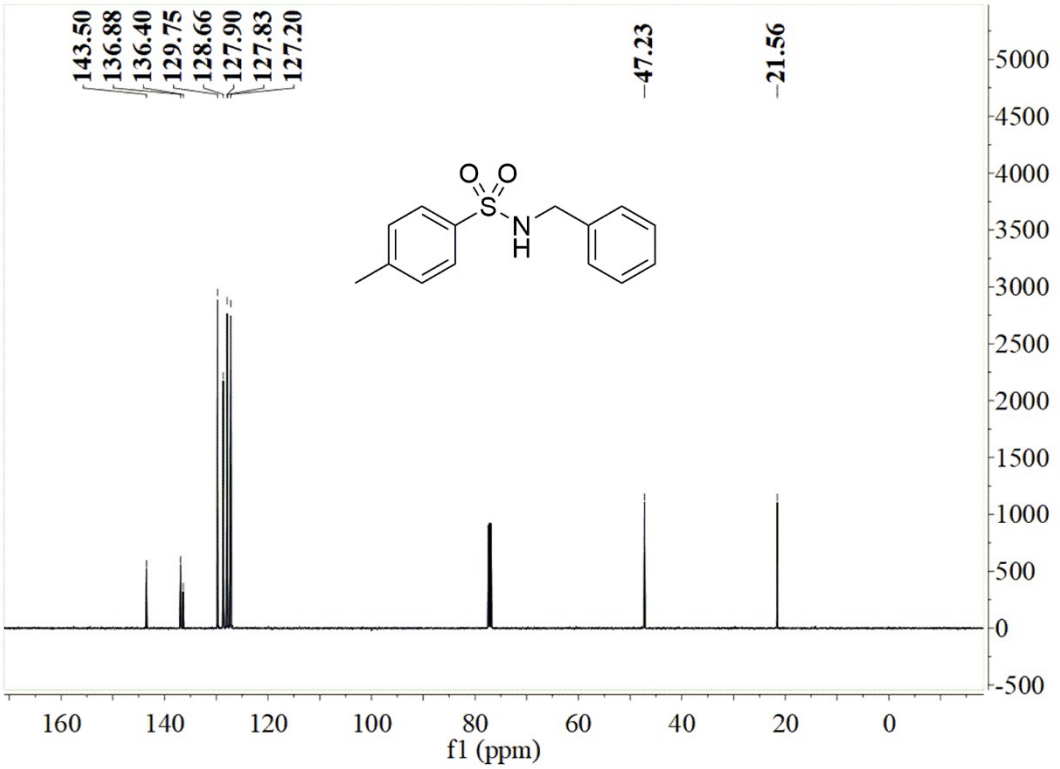


Figure ^{13}C NMR spectrum of *N*-benzyl-4-methylbenzenesulfonamide (3a).

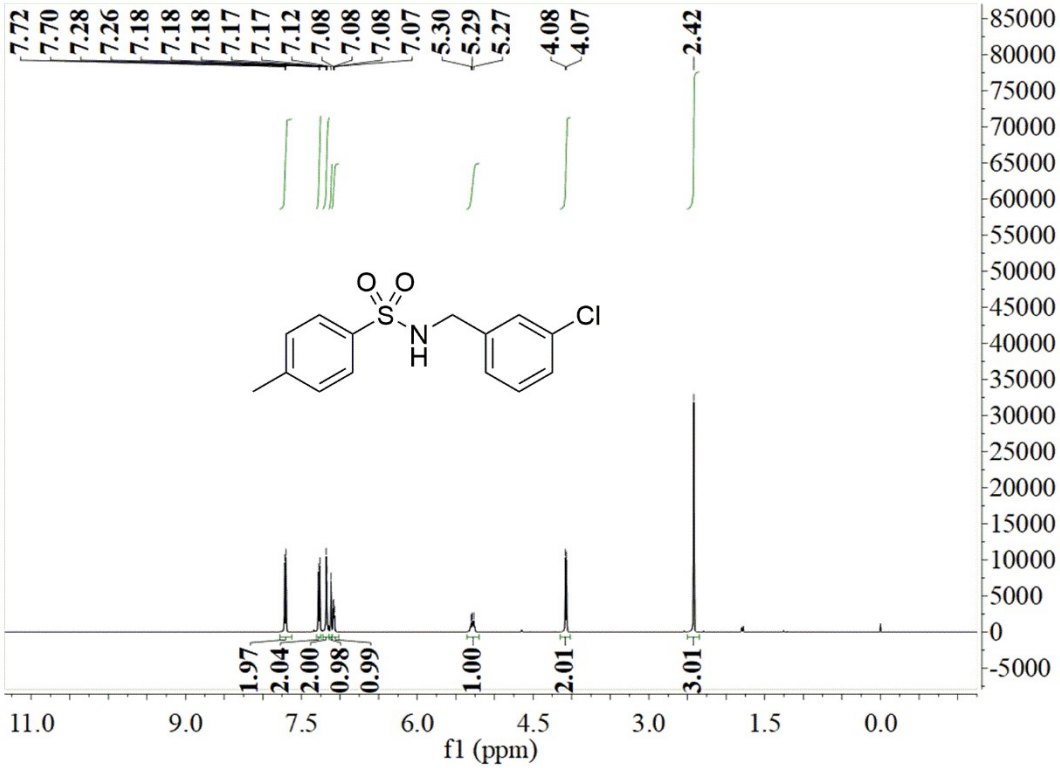


Figure ^{1}H NMR spectrum of *N*-(3-chlorobenzyl)-4-methylbenzenesulfonamide (3b).

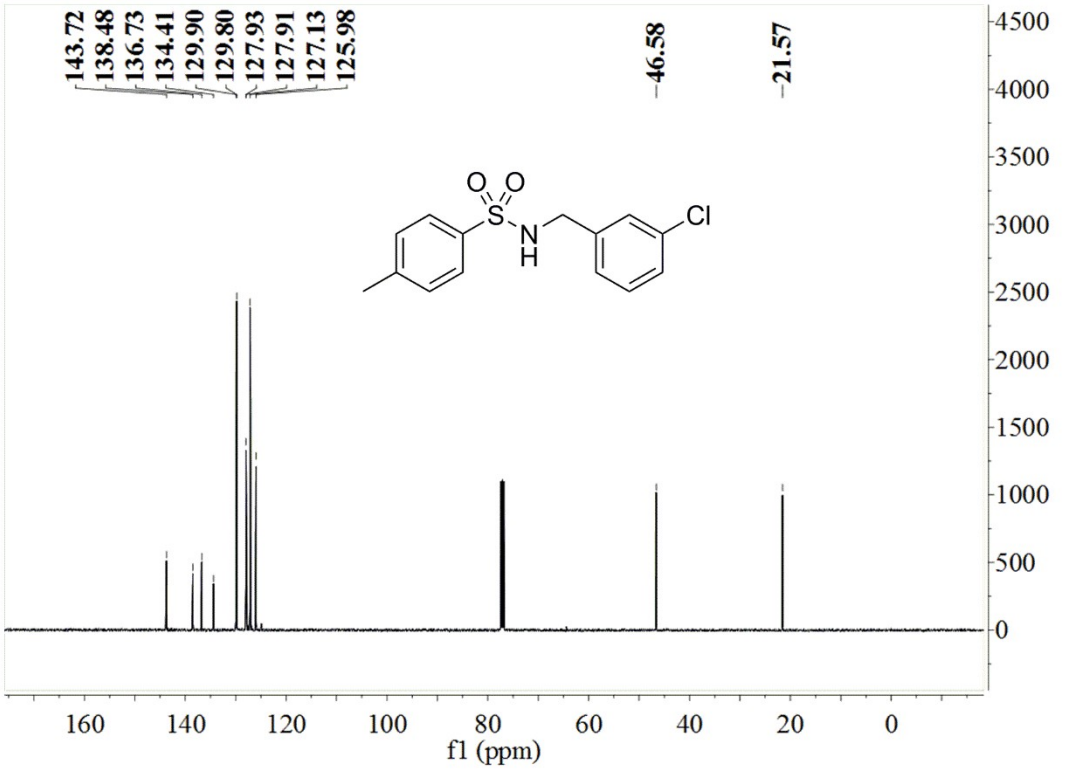


Figure ^{13}C NMR spectrum of *N*-(3-chlorobenzyl)-4-methylbenzenesulfonamide (3b).

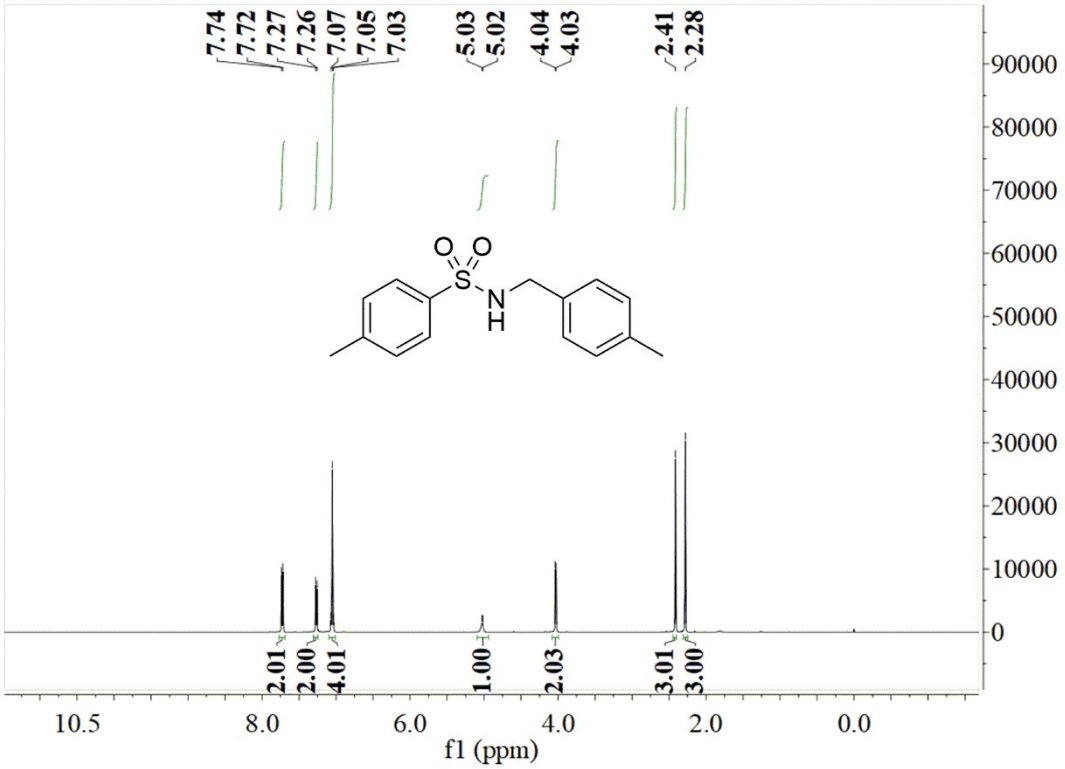


Figure ^{1}H NMR spectrum of 4-methyl-*N*-(4-methylbenzyl)benzenesulfonamide (3c).

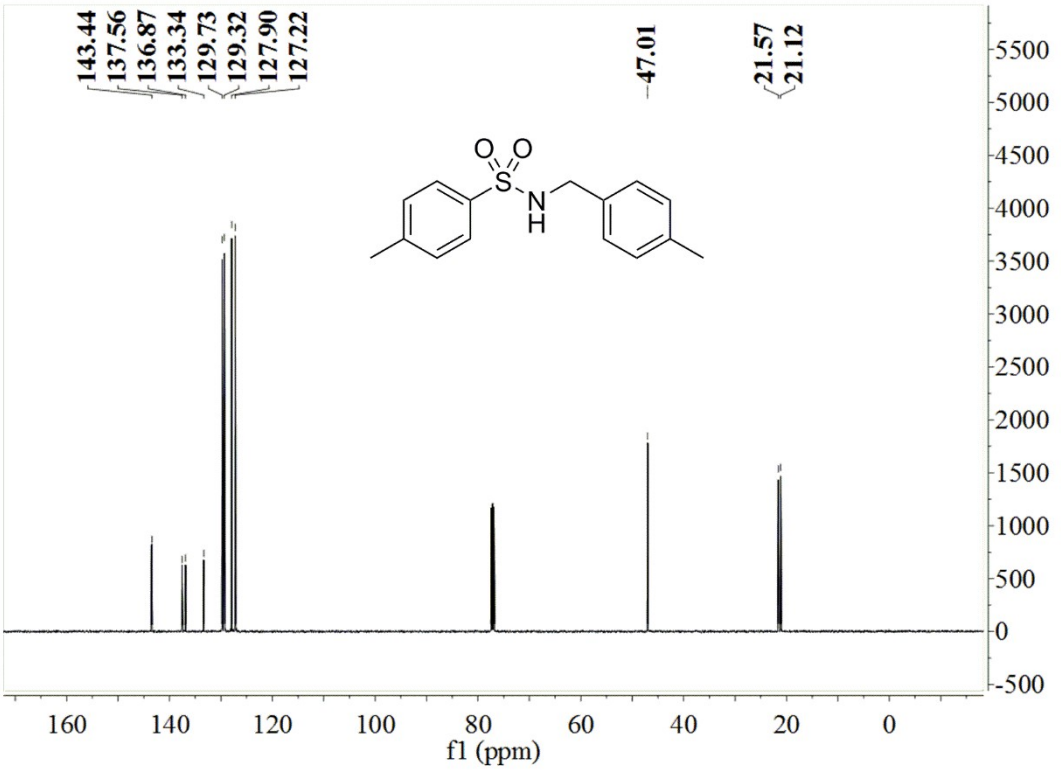


Figure ^{13}C NMR spectrum of 4-methyl-*N*-(4-methylbenzyl)benzenesulfonamide (3c).

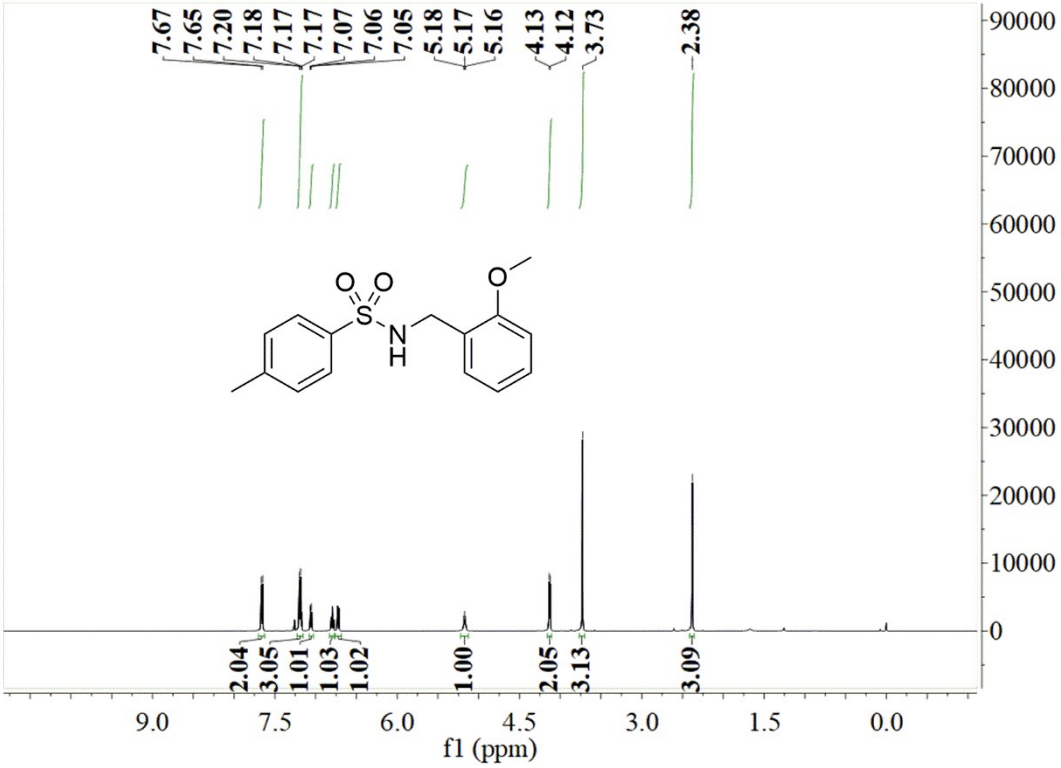


Figure ^{1}H NMR spectrum of *N*-(2-methoxybenzyl)-4-methylbenzenesulfonamide (3d).

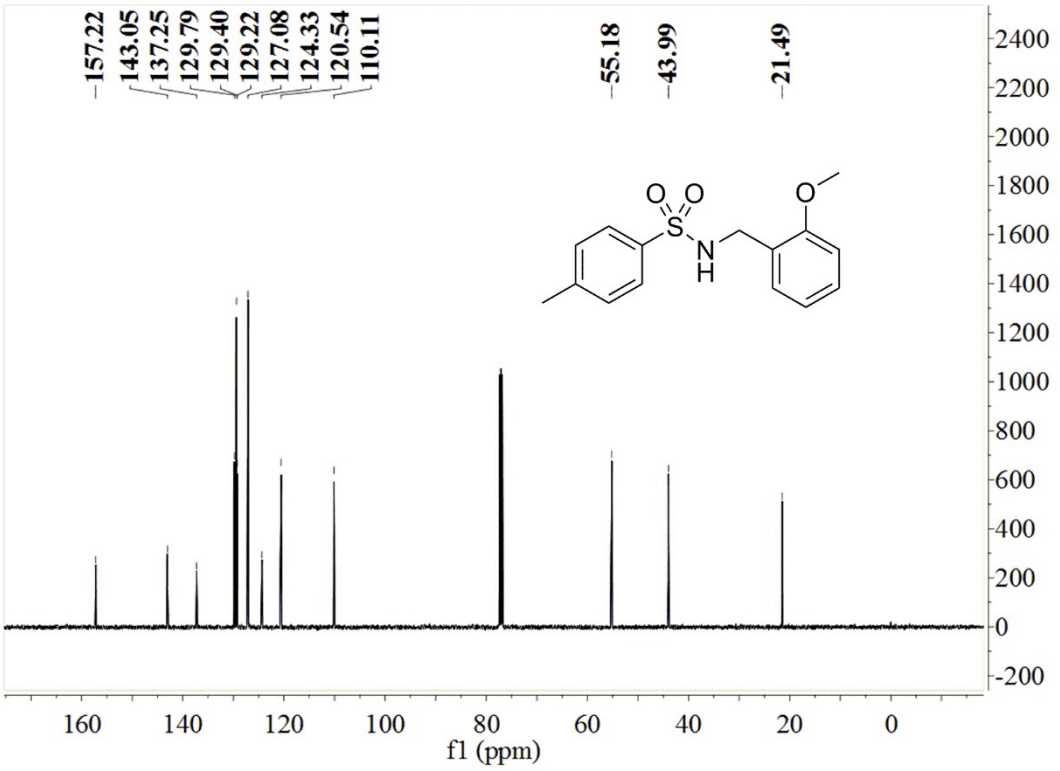


Figure ^{13}C NMR spectrum of *N*-(2-methoxybenzyl)-4-methylbenzenesulfonamide (3d).

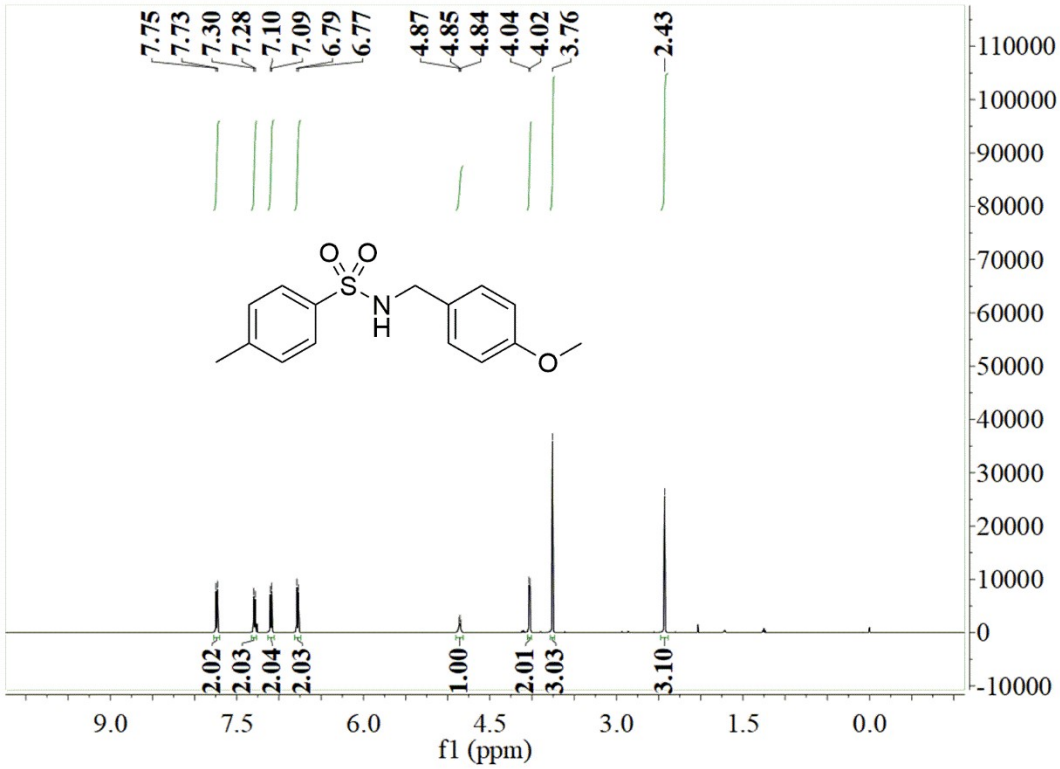


Figure ^{1}H NMR spectrum of *N*-(4-methoxybenzyl)-4-methylbenzenesulfonamide (3e).

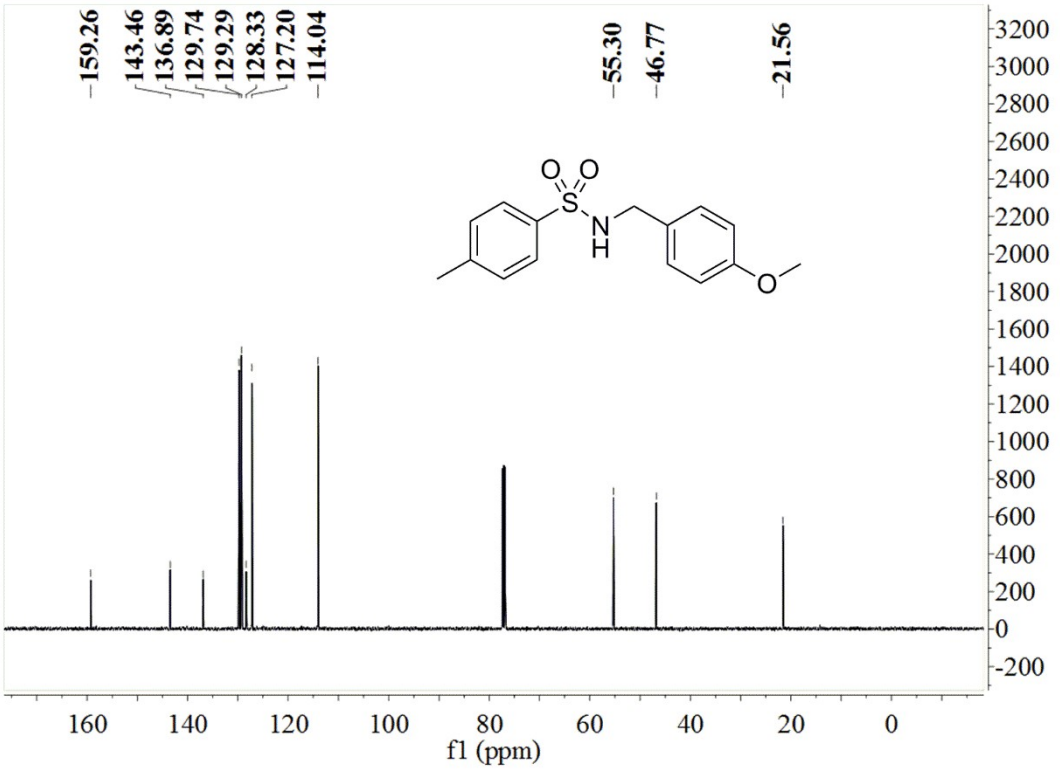


Figure ^{13}C NMR spectrum of *N*-(4-methoxybenzyl)-4-methylbenzenesulfonamide (3e).

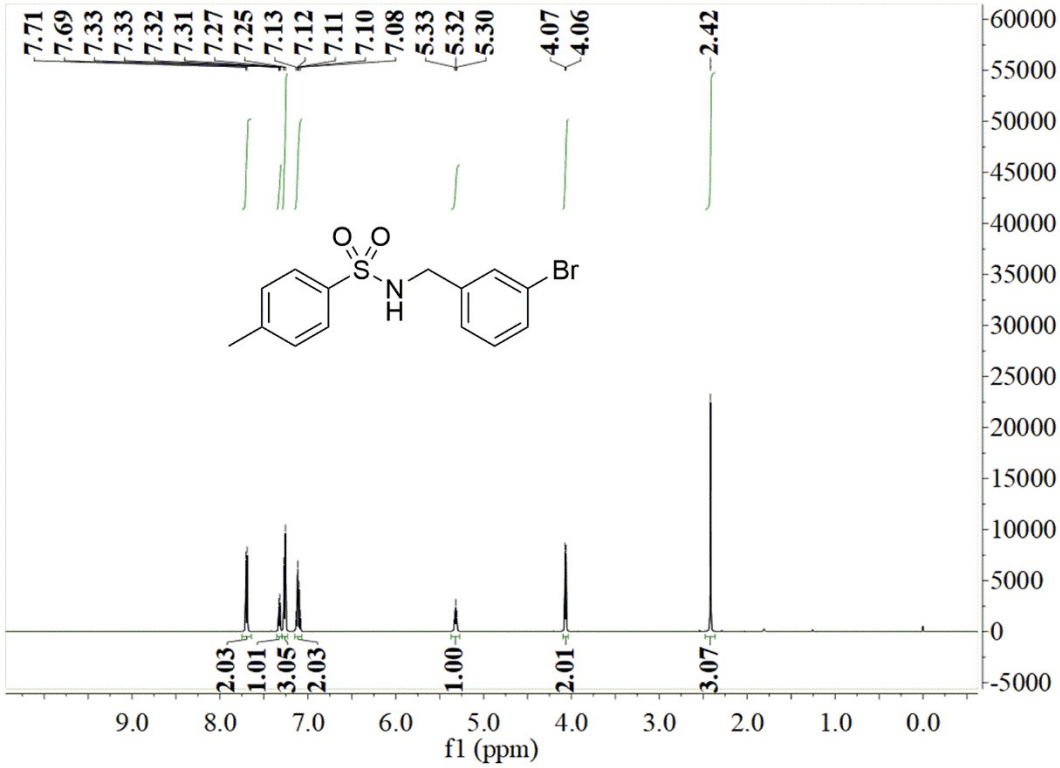


Figure ^{1}H NMR spectrum of *N*-(3-bromobenzyl)-4-methylbenzenesulfonamide (3f).

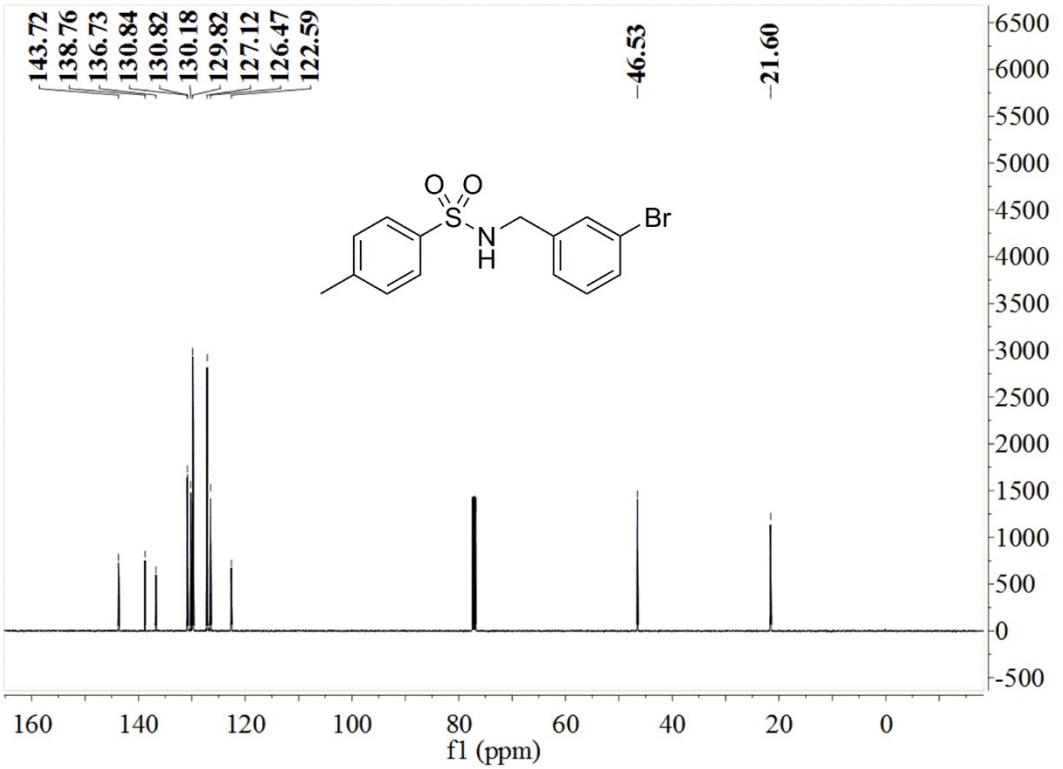


Figure ^{13}C NMR spectrum of *N*-(3-bromobenzyl)-4-methylbenzenesulfonamide (3f).

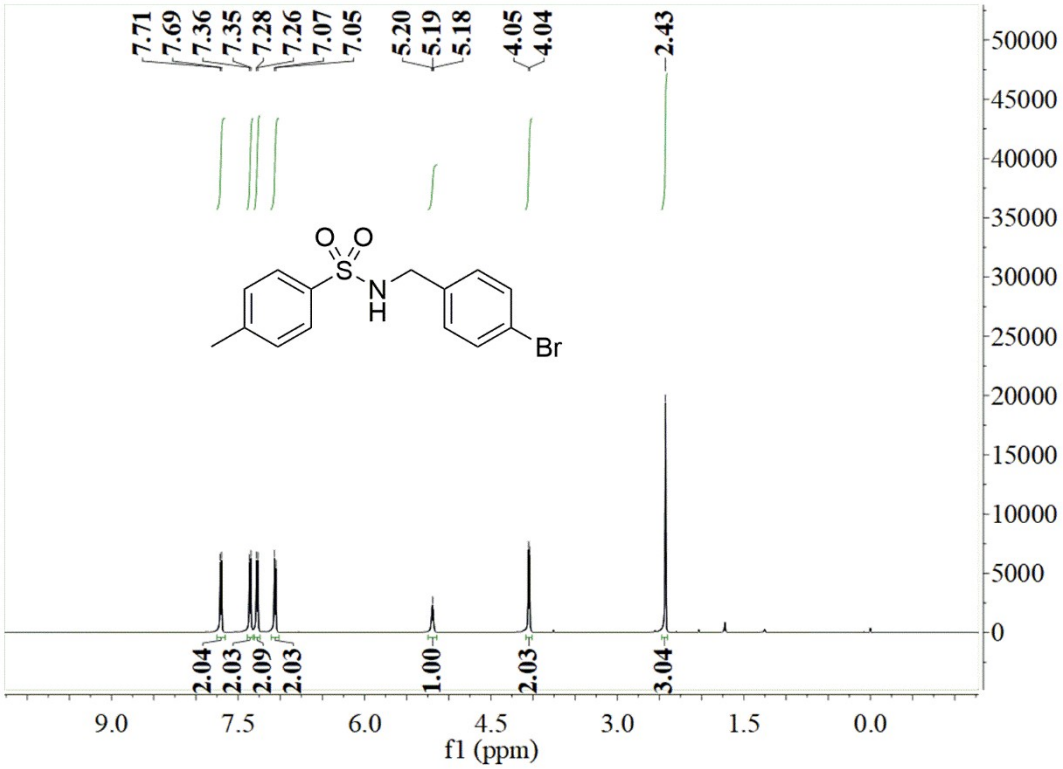


Figure ^{1}H NMR spectrum of *N*-(4-bromobenzyl)-4-methylbenzenesulfonamide (3g).

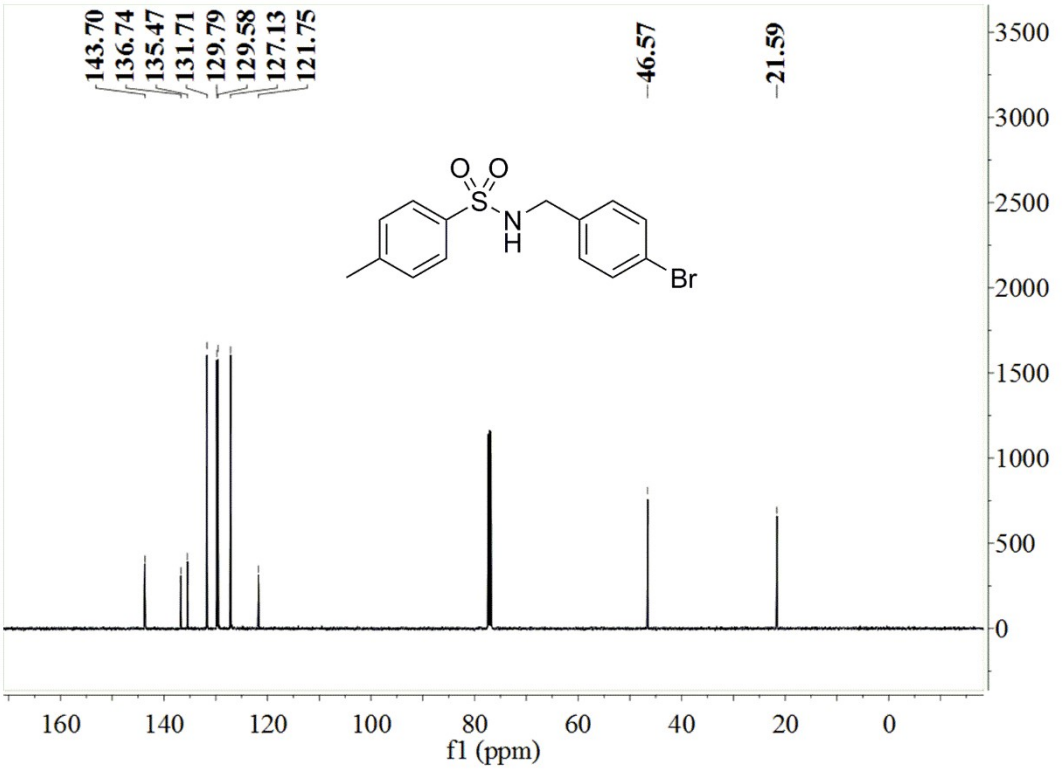


Figure ^{13}C NMR spectrum of *N*-(4-bromobenzyl)-4-methylbenzenesulfonamide (3g).

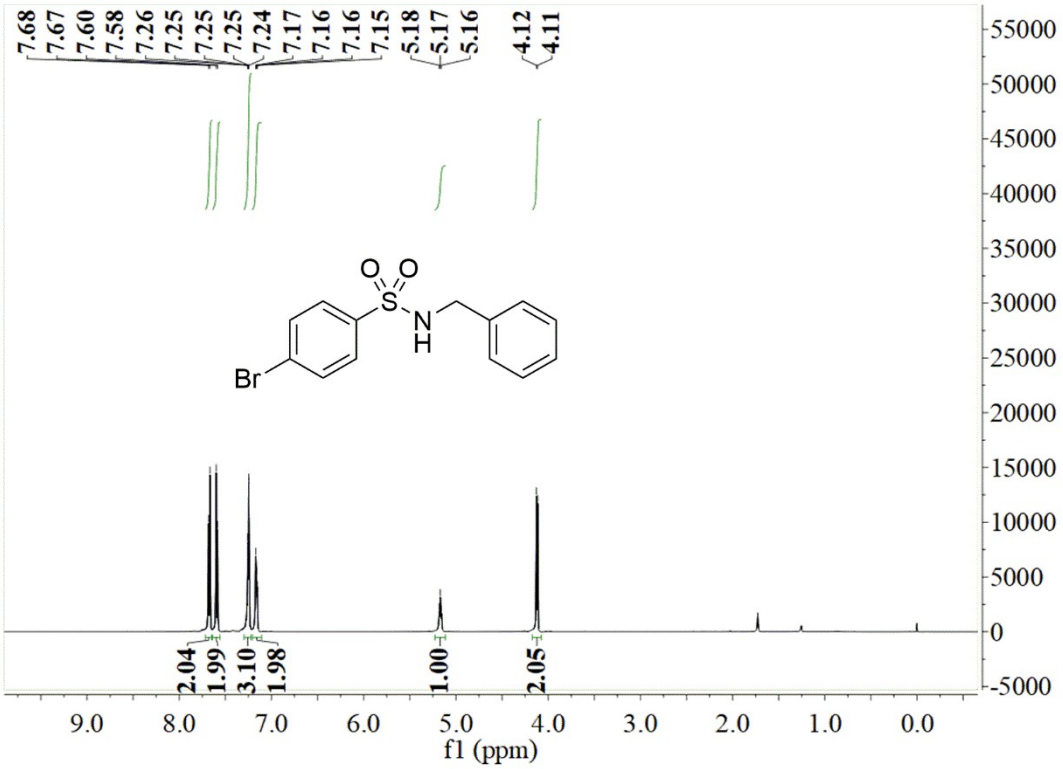


Figure ^{1}H NMR spectrum of *N*-benzyl-4-bromobenzenesulfonamide (3h).

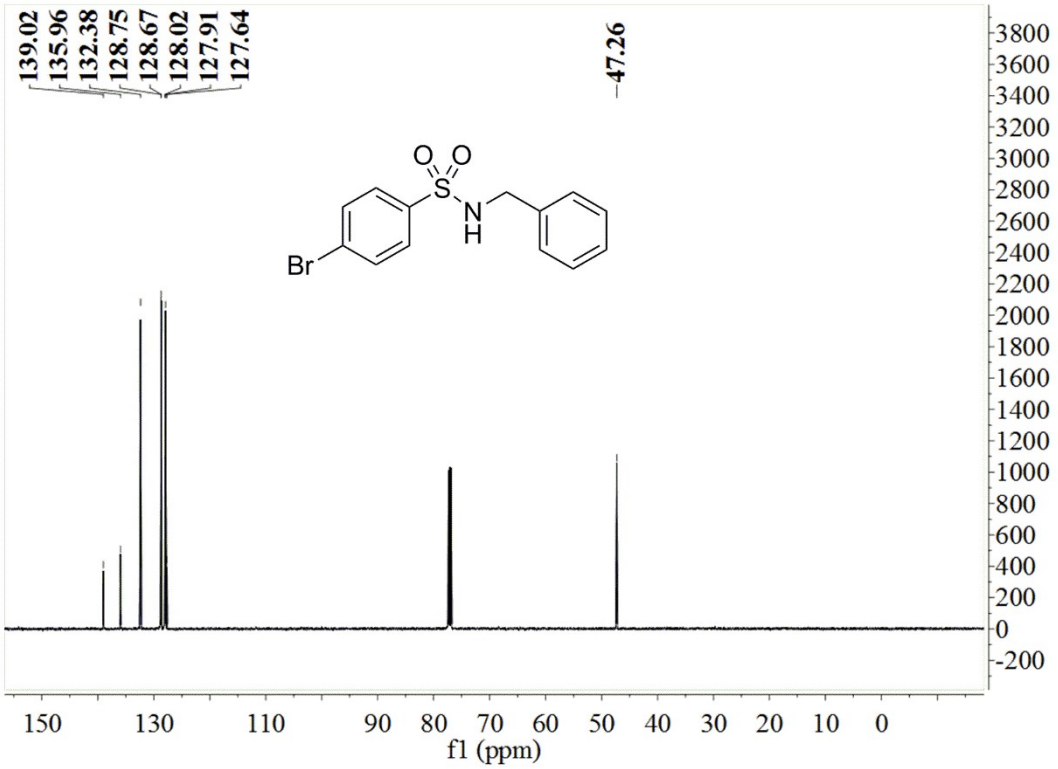


Figure ^{13}C NMR spectrum of *N*-benzyl-4-bromobenzenesulfonamide (3h).

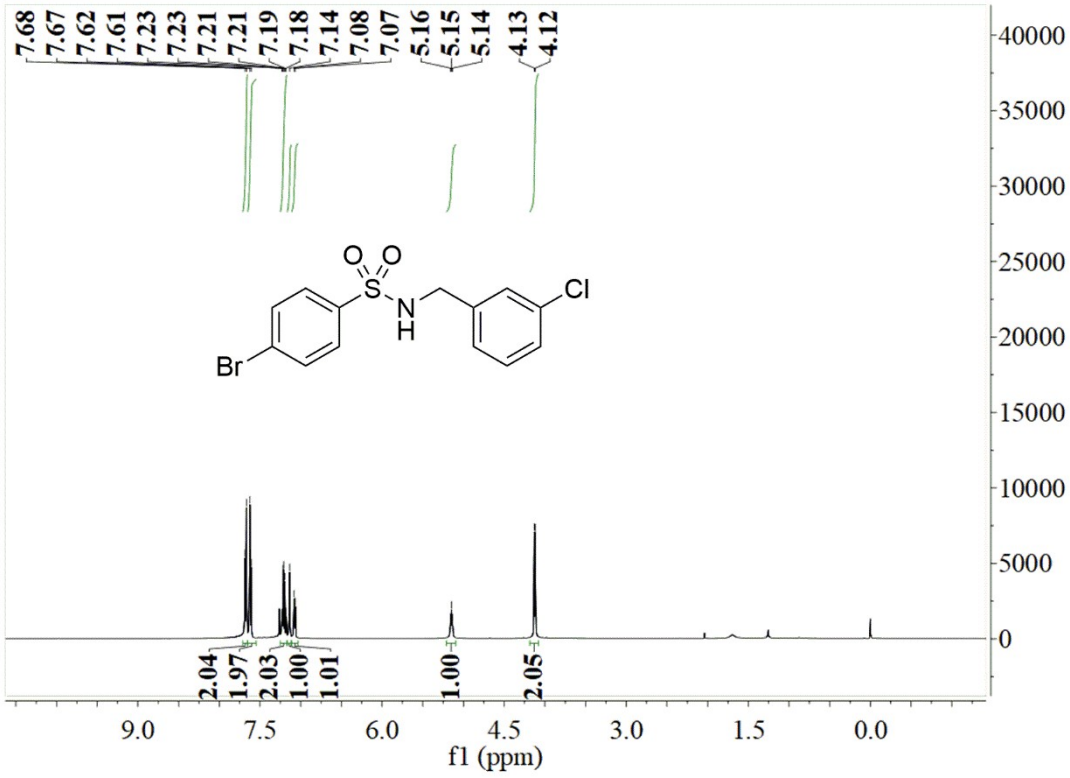


Figure ^{1}H NMR spectrum of 4-bromo-*N*-(3-chlorobenzyl)benzenesulfonamide (3i).

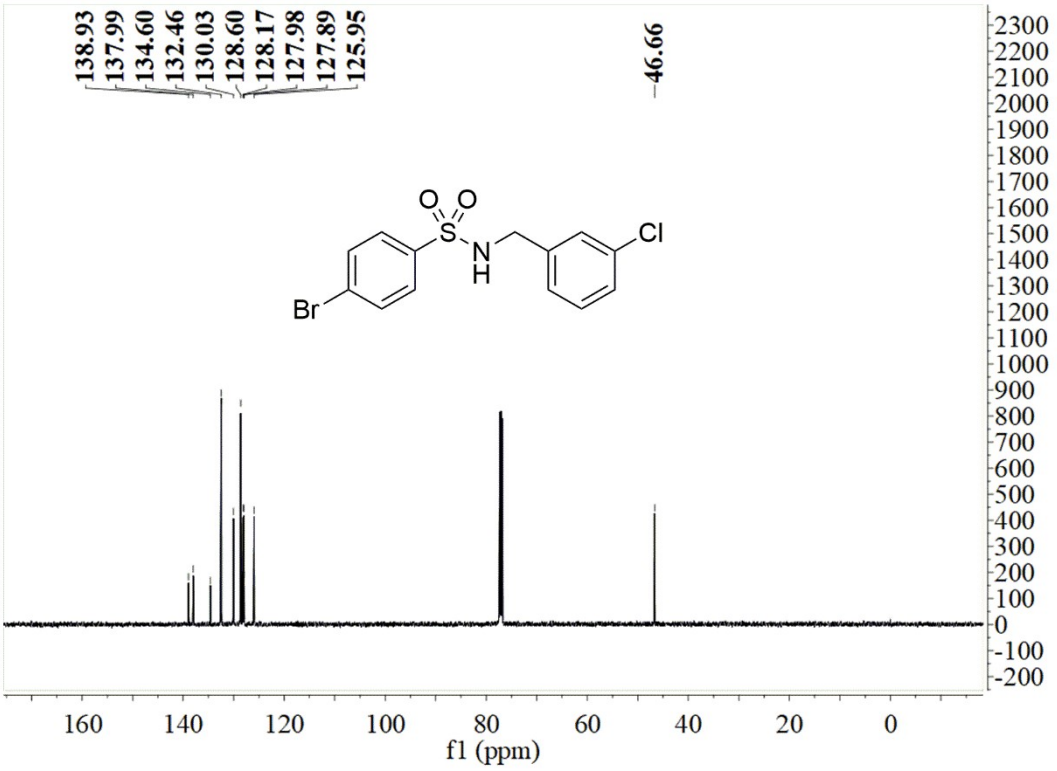


Figure ^{13}C NMR spectrum of 4-bromo-*N*-(3-chlorobenzyl)benzenesulfonamide (3i).

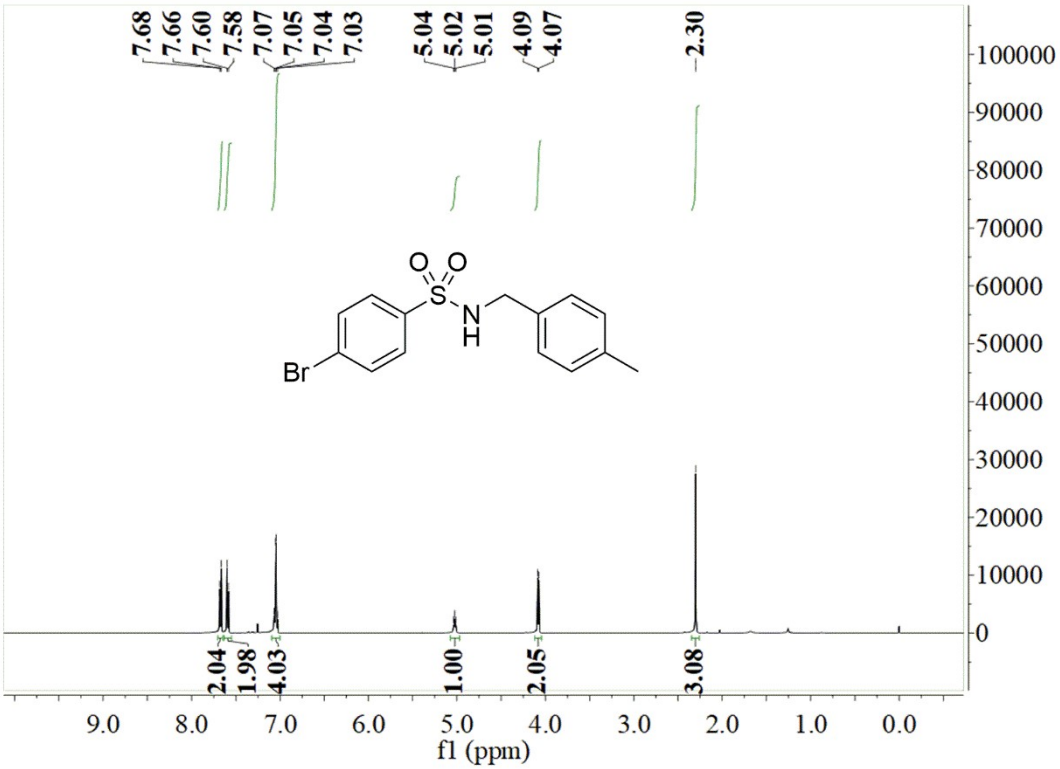


Figure ^{1}H NMR spectrum of 4-bromo-*N*-(4-methylbenzyl)benzenesulfonamide (3j).

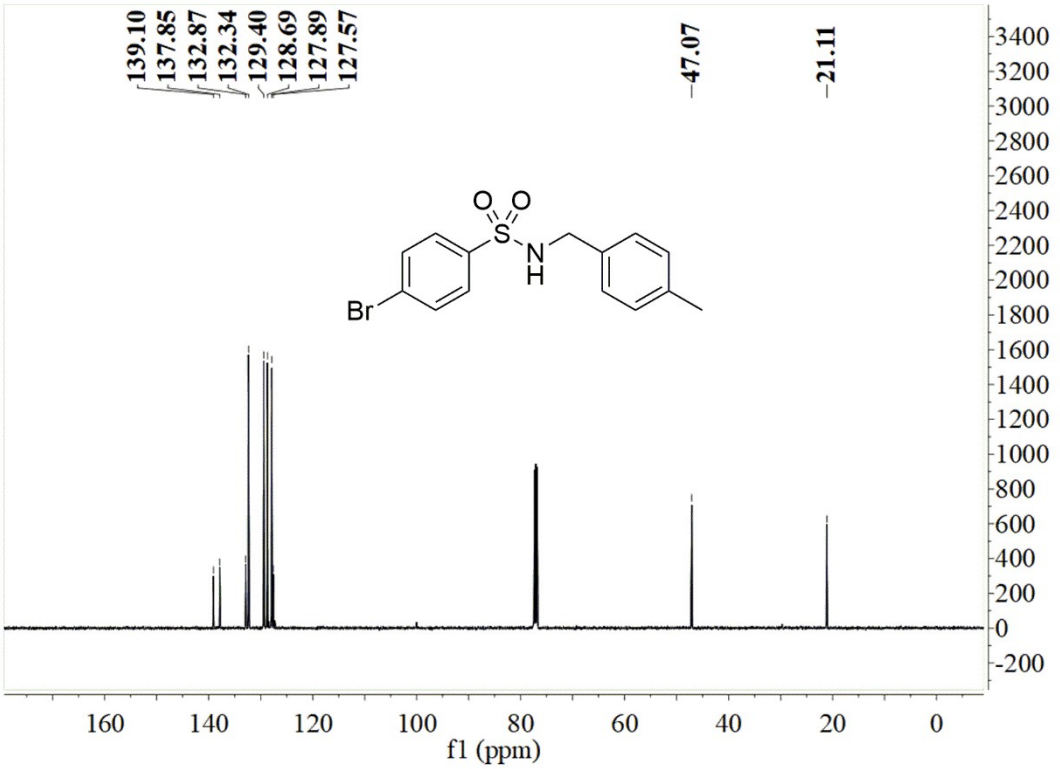


Figure ^{13}C NMR spectrum of 4-bromo-*N*-(4-methylbenzyl)benzenesulfonamide (3j).

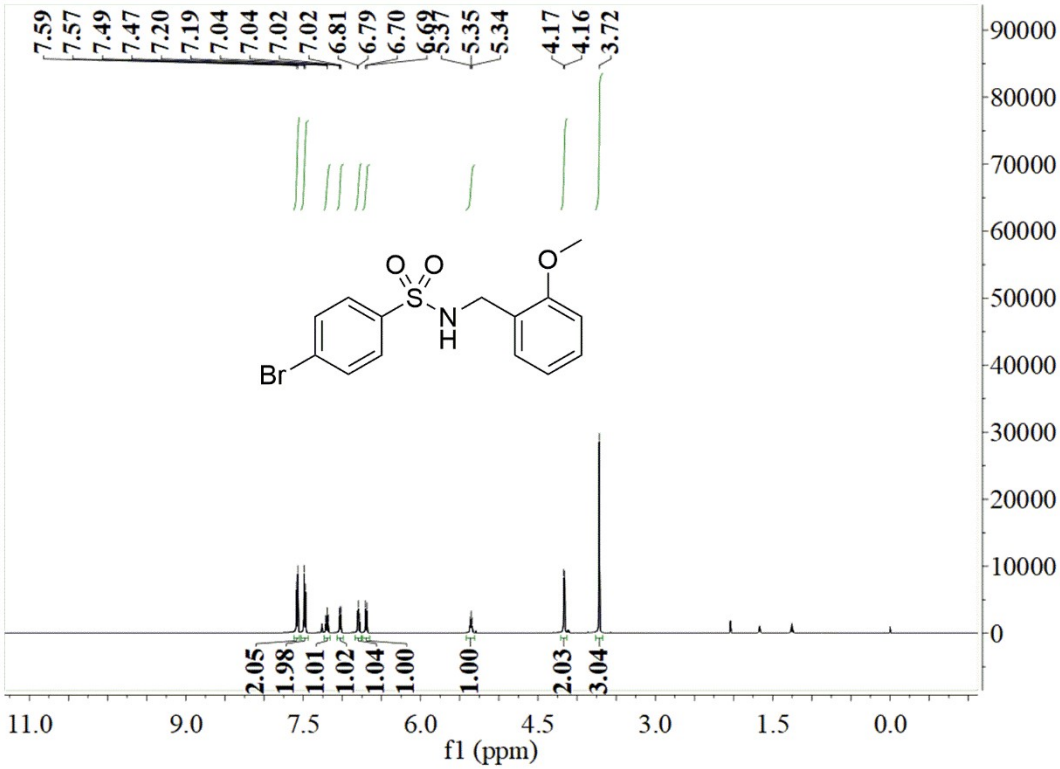


Figure ^{1}H NMR spectrum of 4-bromo-*N*-(2-methoxybenzyl)benzenesulfonamide (3k).

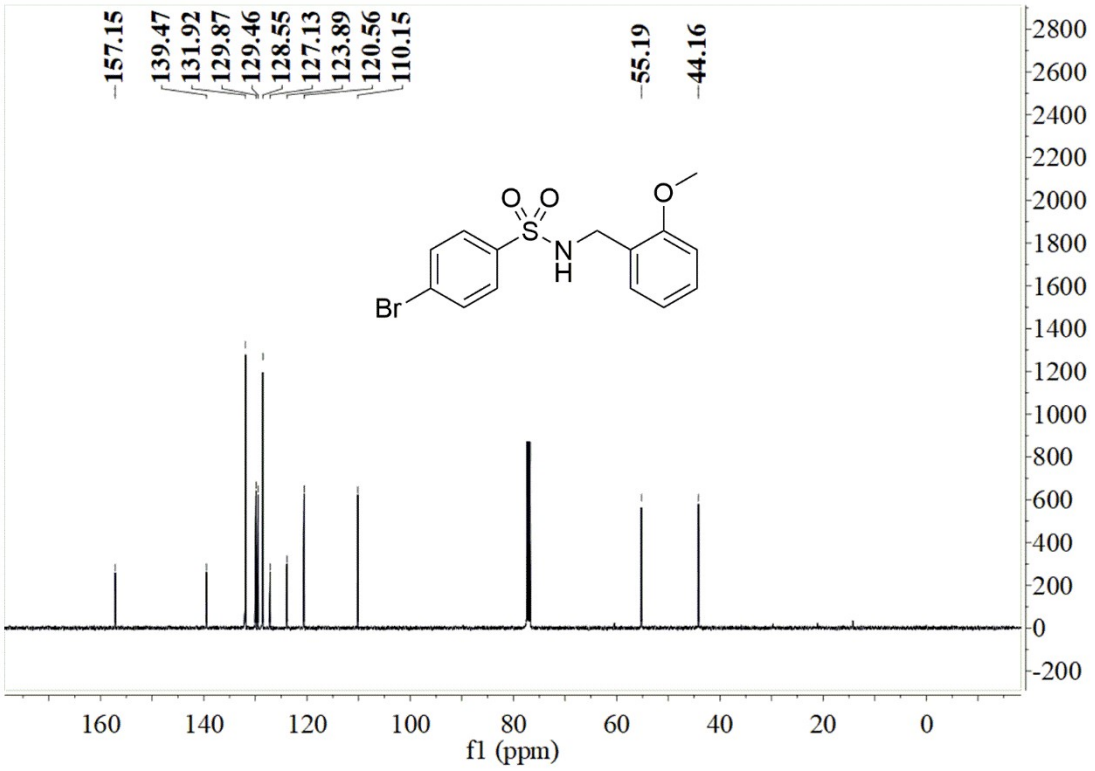


Figure [13]C NMR spectrum of 4-bromo-*N*-(2-methoxybenzyl)benzenesulfonamide (3k).

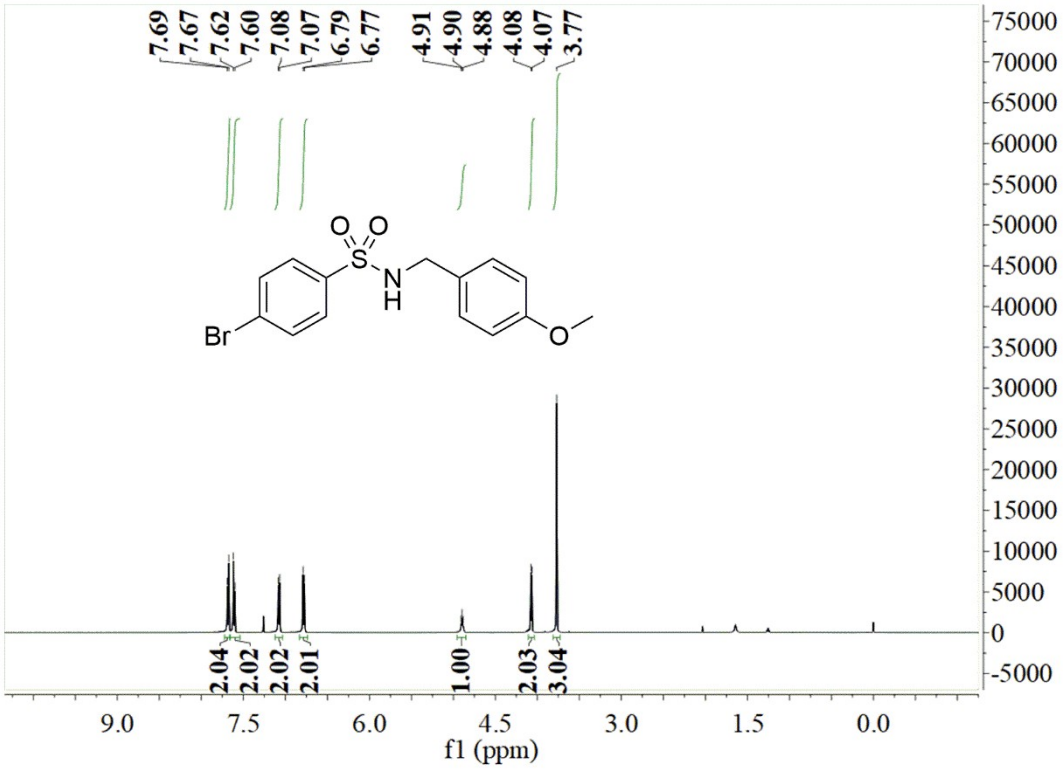


Figure [1]H NMR spectrum of 4-bromo-*N*-(4-methoxybenzyl)benzenesulfonamide (3l).

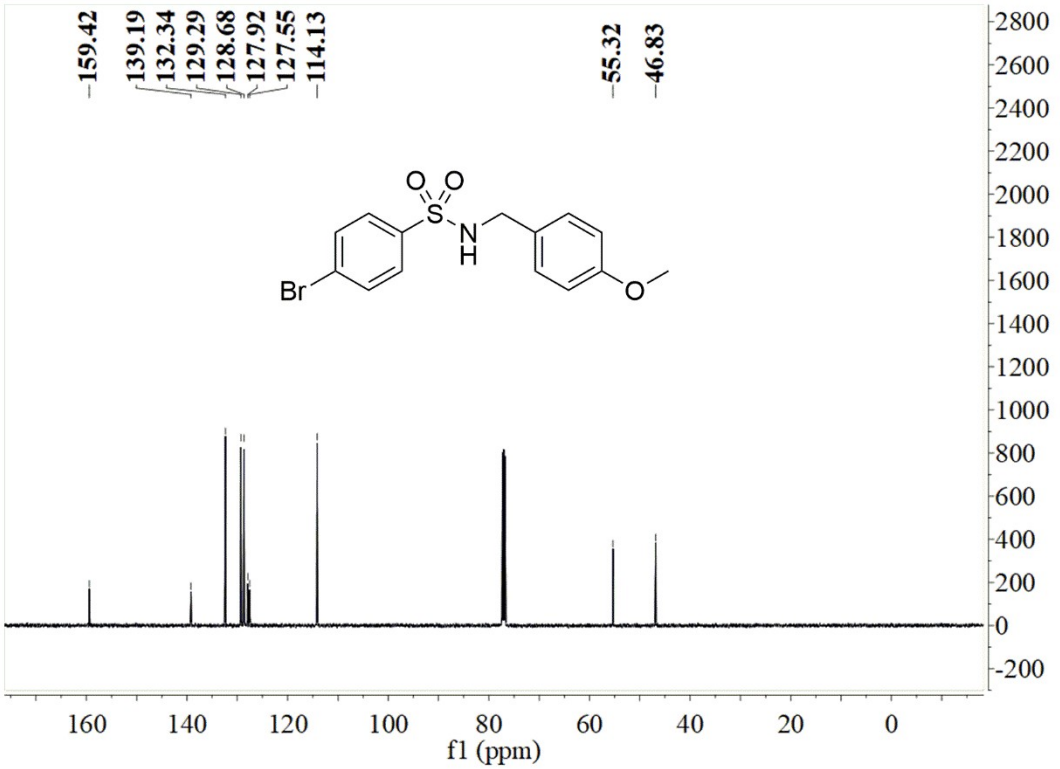


Figure ^{13}C NMR spectrum of 4-bromo-*N*-(4-methoxybenzyl)benzenesulfonamide (3l).

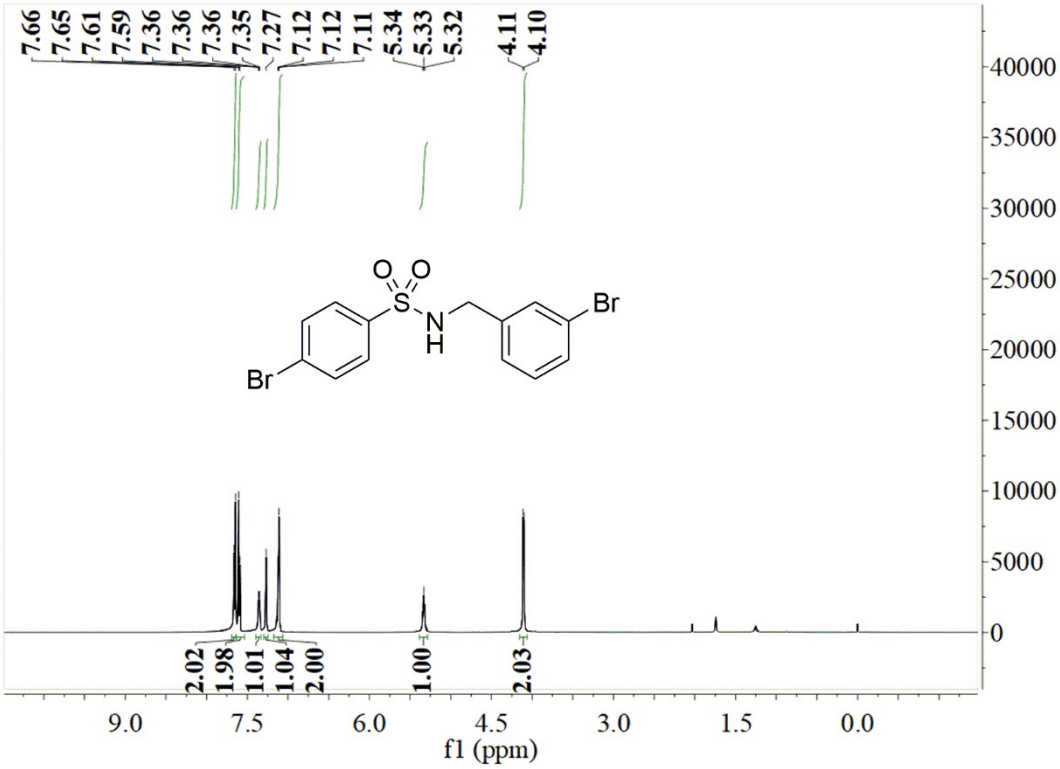


Figure ^{1}H NMR spectrum of 4-bromo-*N*-(3-bromobenzyl)benzenesulfonamide (3m).

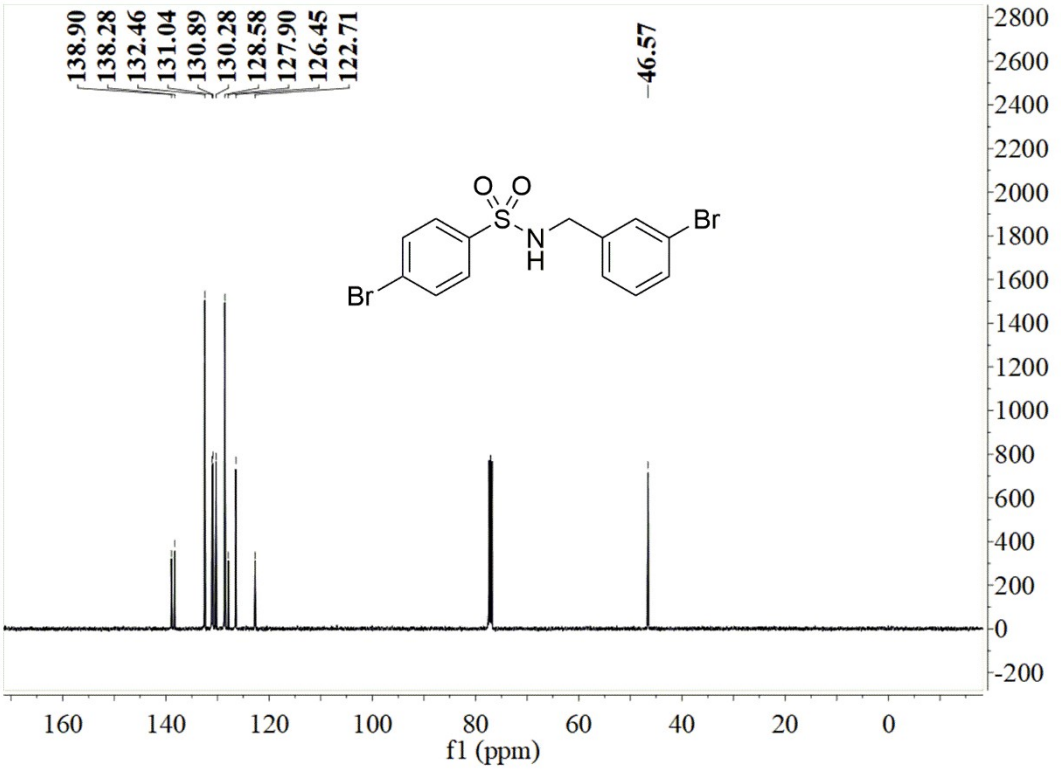


Figure ^{13}C NMR spectrum of 4-bromo-*N*-(3-bromobenzyl)benzenesulfonamide (3m).

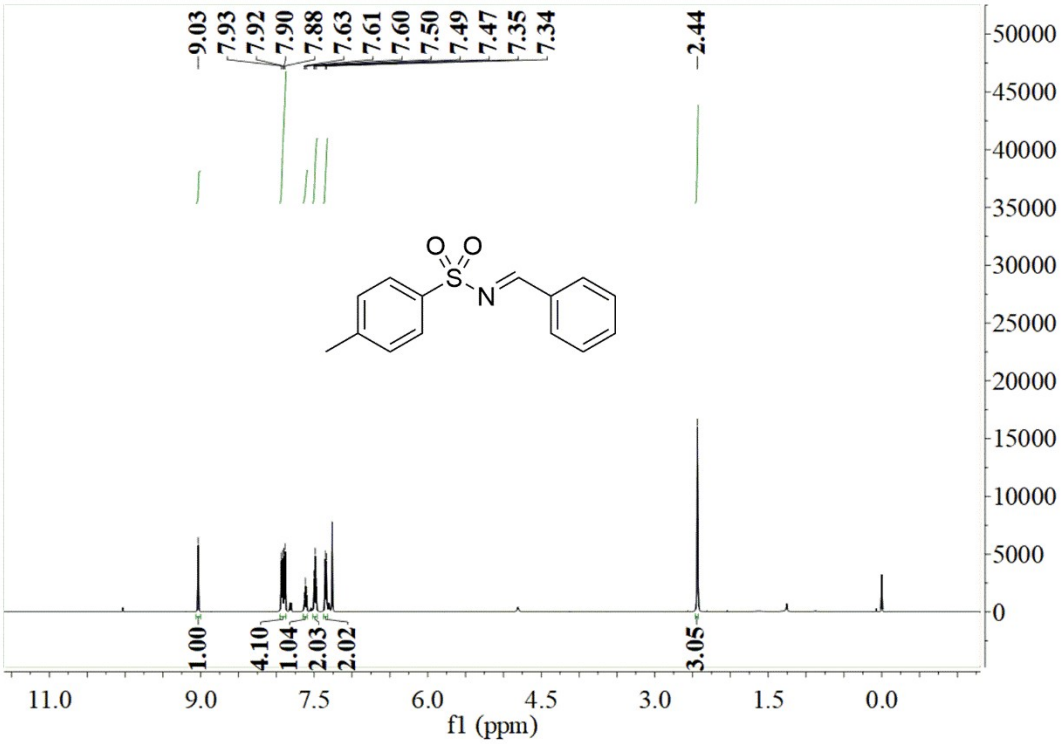


Figure ^{1}H NMR spectrum of *N*-benzylidene-*p*-toluenesulfonamide (product of **Scheme 4b**).

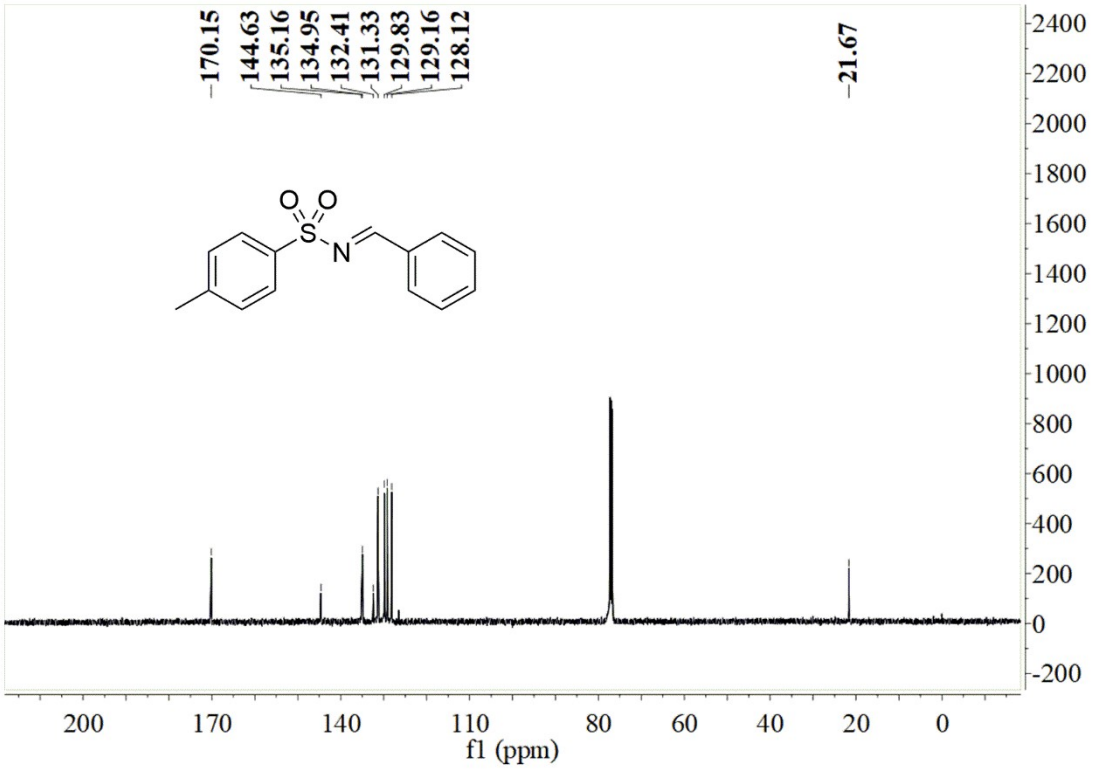


Figure ^{13}C NMR spectrum of *N*-benzylidene-*p*-toluenesulfonamide (product of **Scheme 4b**).

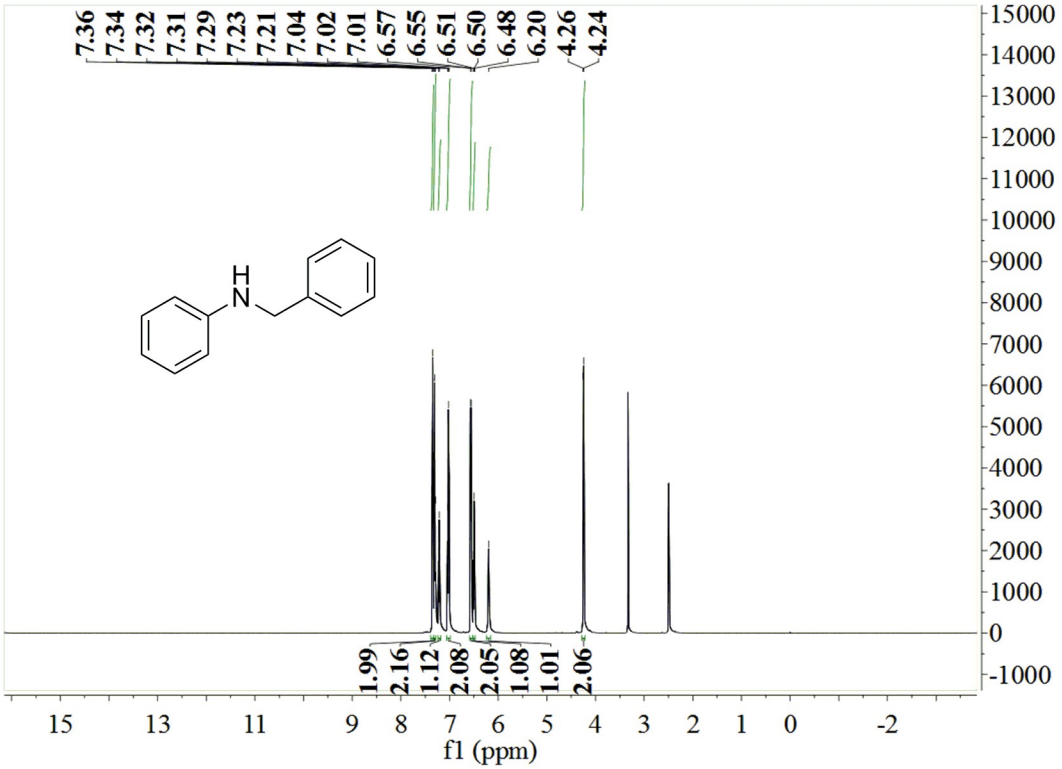


Figure ^{1}H NMR spectrum of *N*-benzylaniline (6a).

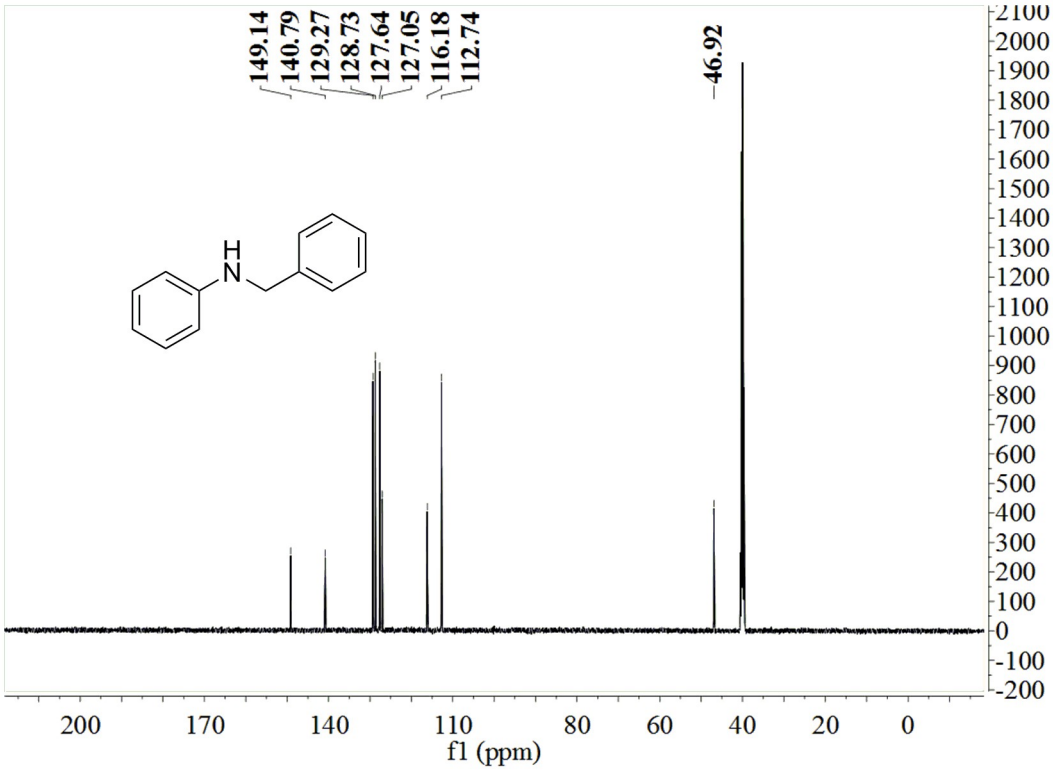


Figure ^{13}C NMR spectrum of *N*-benzylaniline (6a).

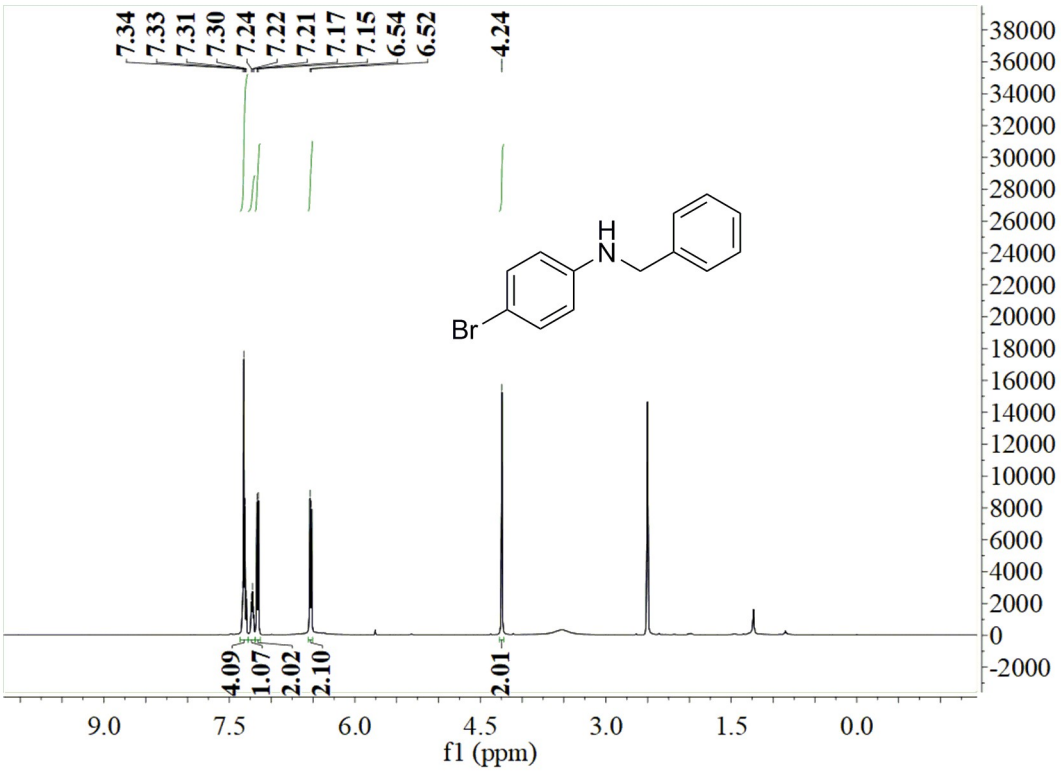


Figure [1]H NMR spectrum of *N*-benzyl-4-bromoaniline (6b).

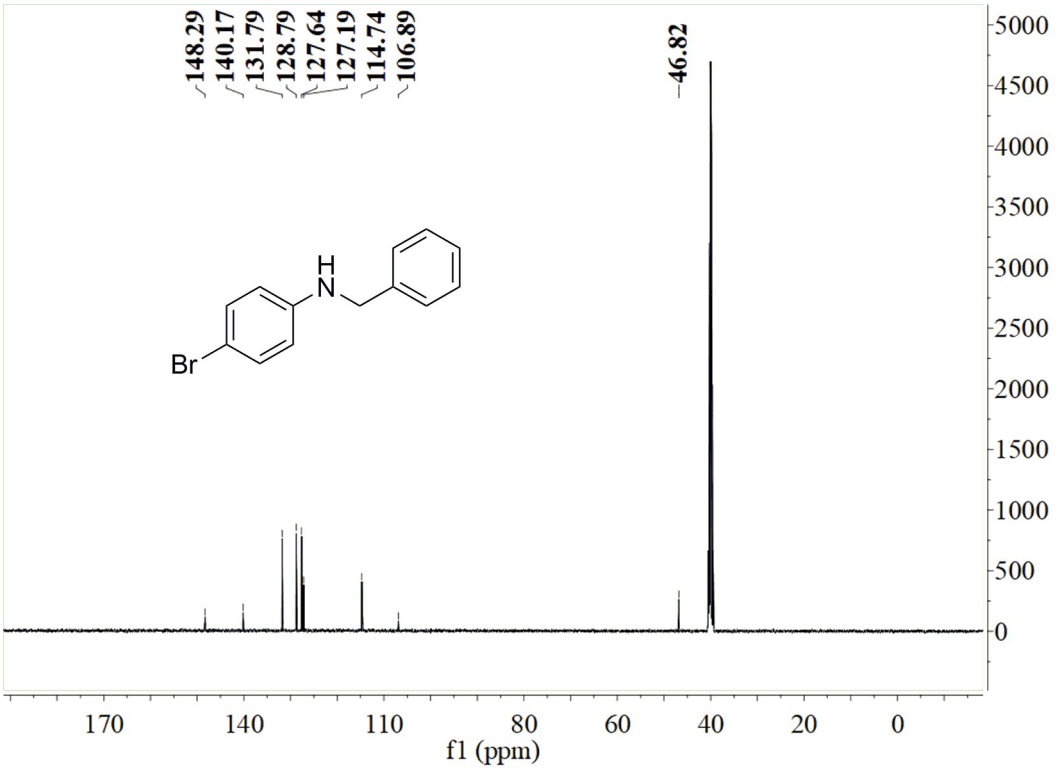


Figure [13]C NMR spectrum of *N*-benzyl-4-bromoaniline (6b).

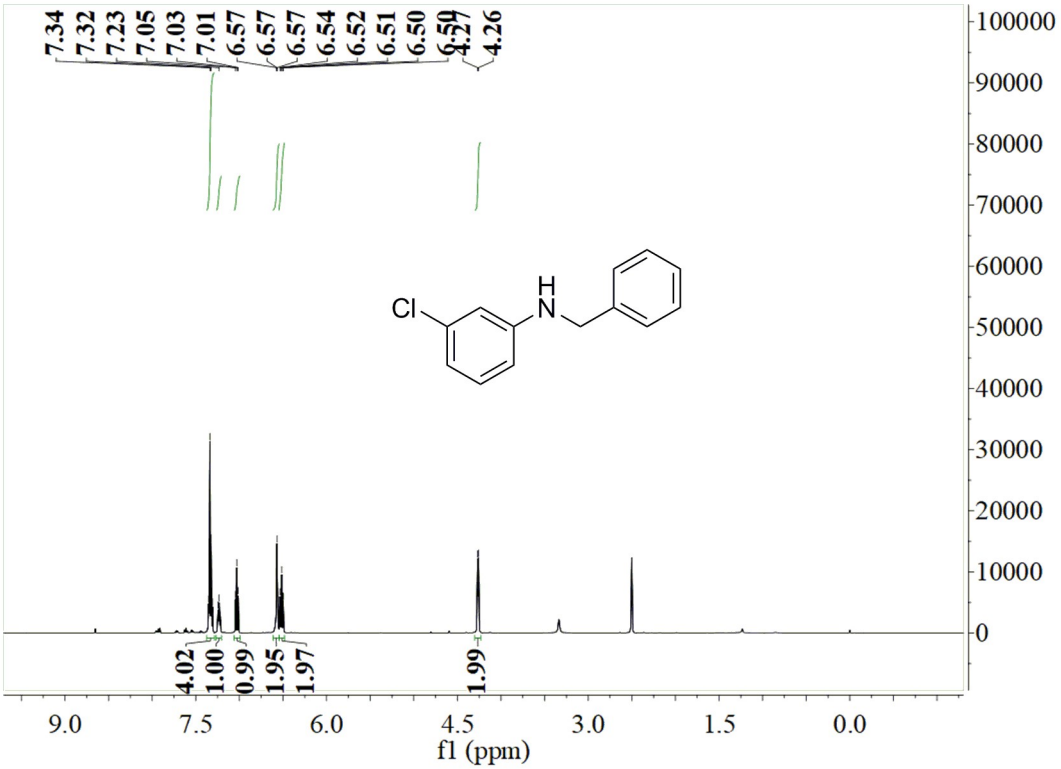


Figure ^{1}H NMR spectrum of *N*-benzyl-3-chloroaniline (6c).

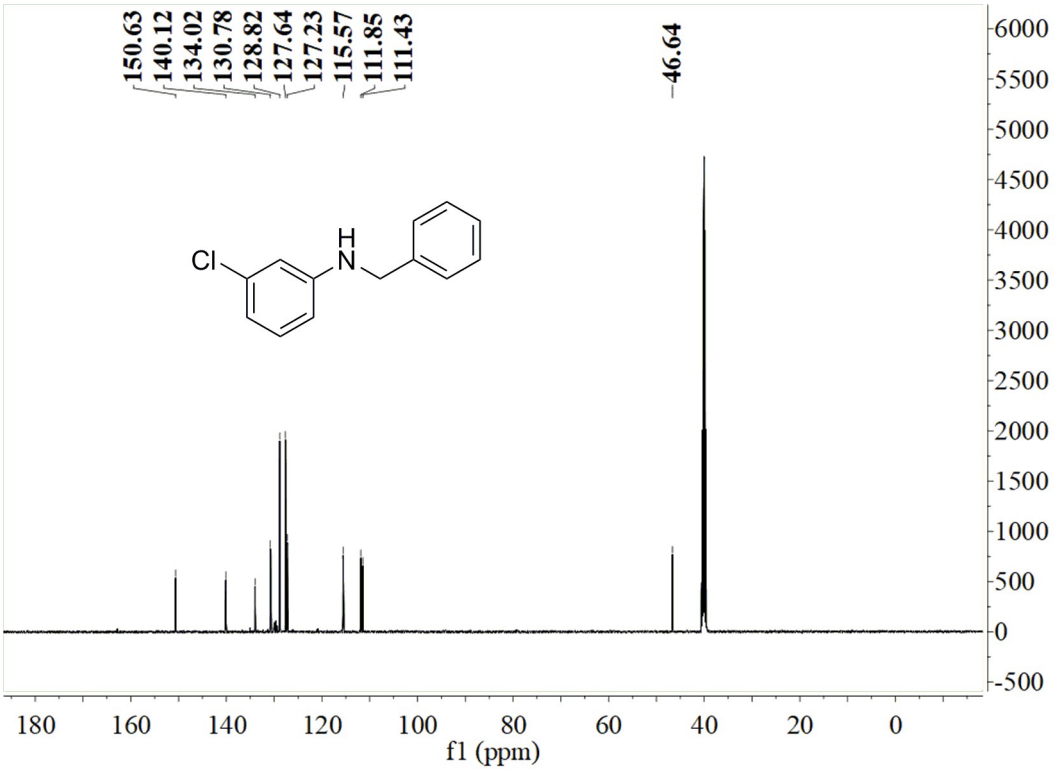


Figure ^{13}C NMR spectrum of *N*-benzyl-3-chloroaniline (6c).

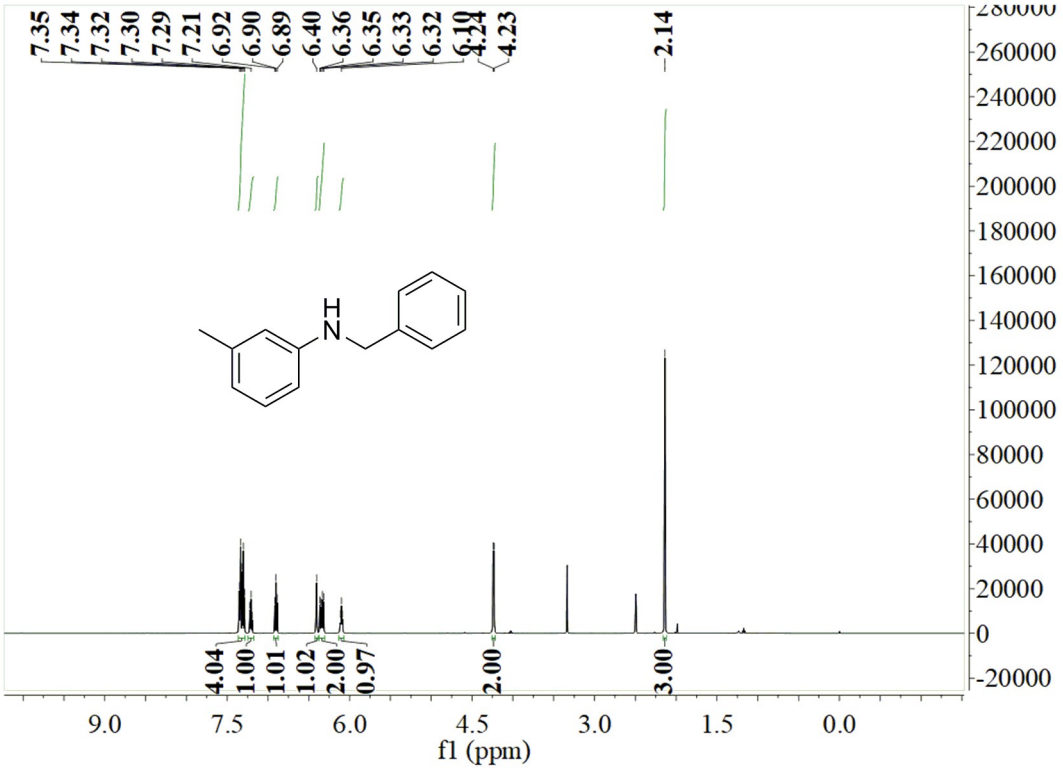


Figure ^{1}H NMR spectrum of *N*-benzyl-3-methylaniline (6d).

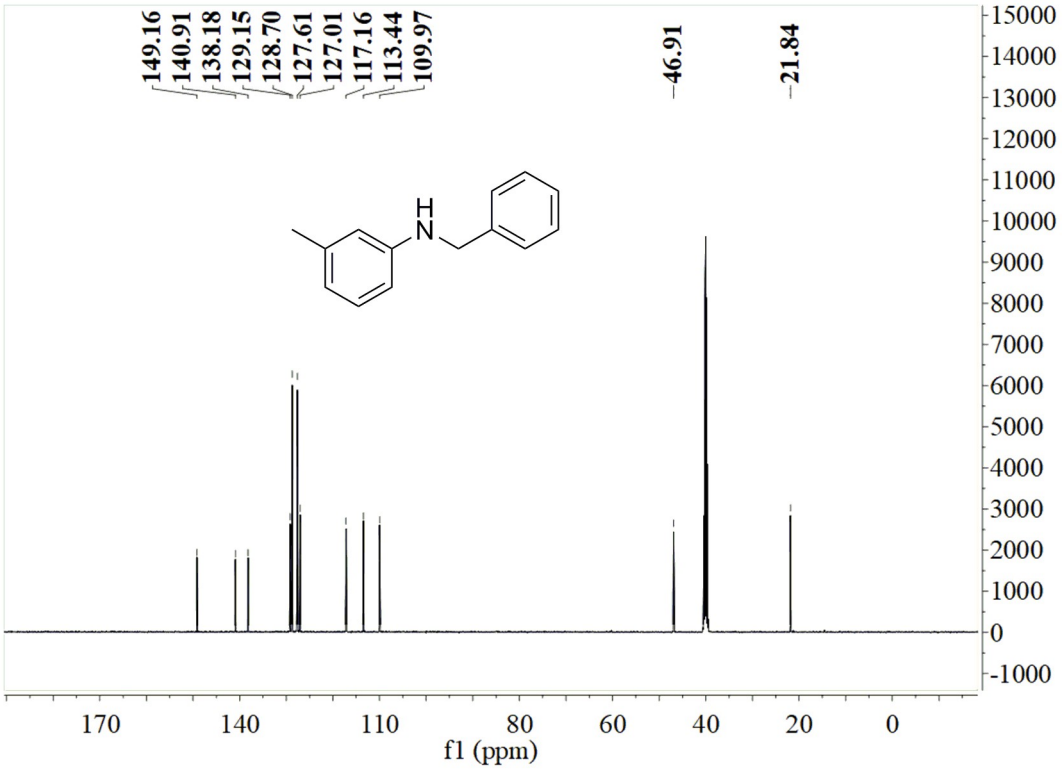


Figure ^{13}C NMR spectrum of *N*-benzyl-3-methylaniline (6d).

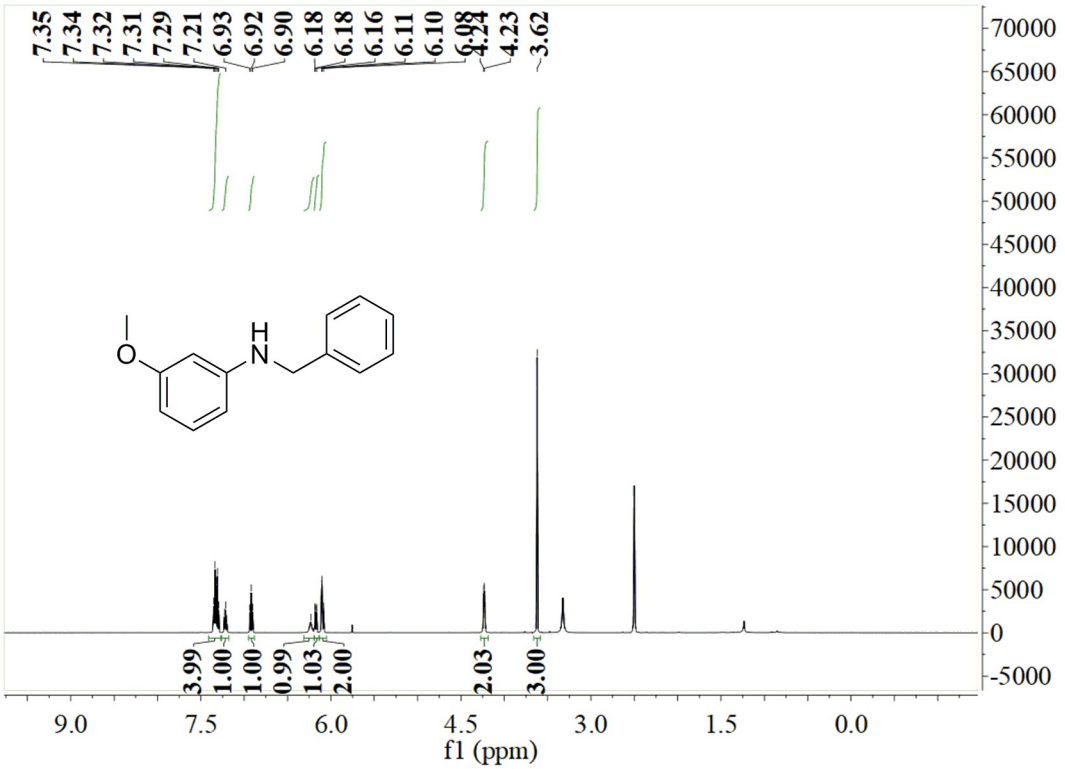


Figure [1]H NMR spectrum of *N*-benzyl-3-methoxyaniline (6e).

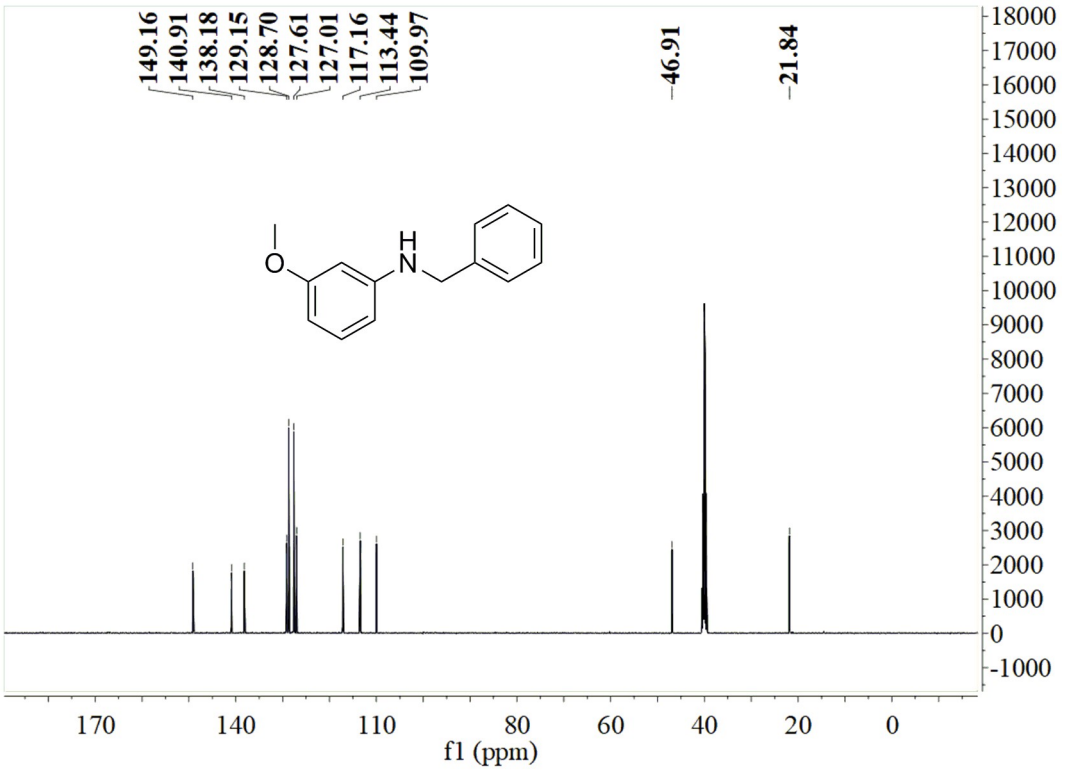


Figure [13]C NMR spectrum of *N*-benzyl-3-methoxyaniline (6e).

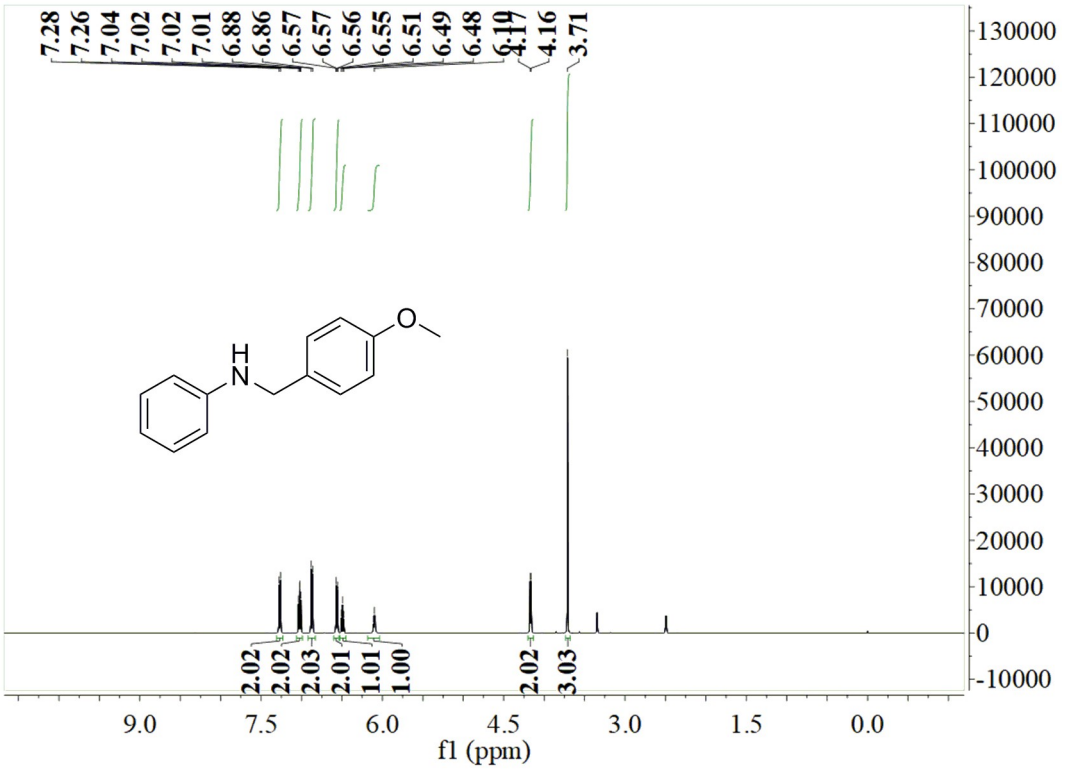


Figure [1]H NMR spectrum of *N*-phenyl-4-methoxybenzylamine (6f).

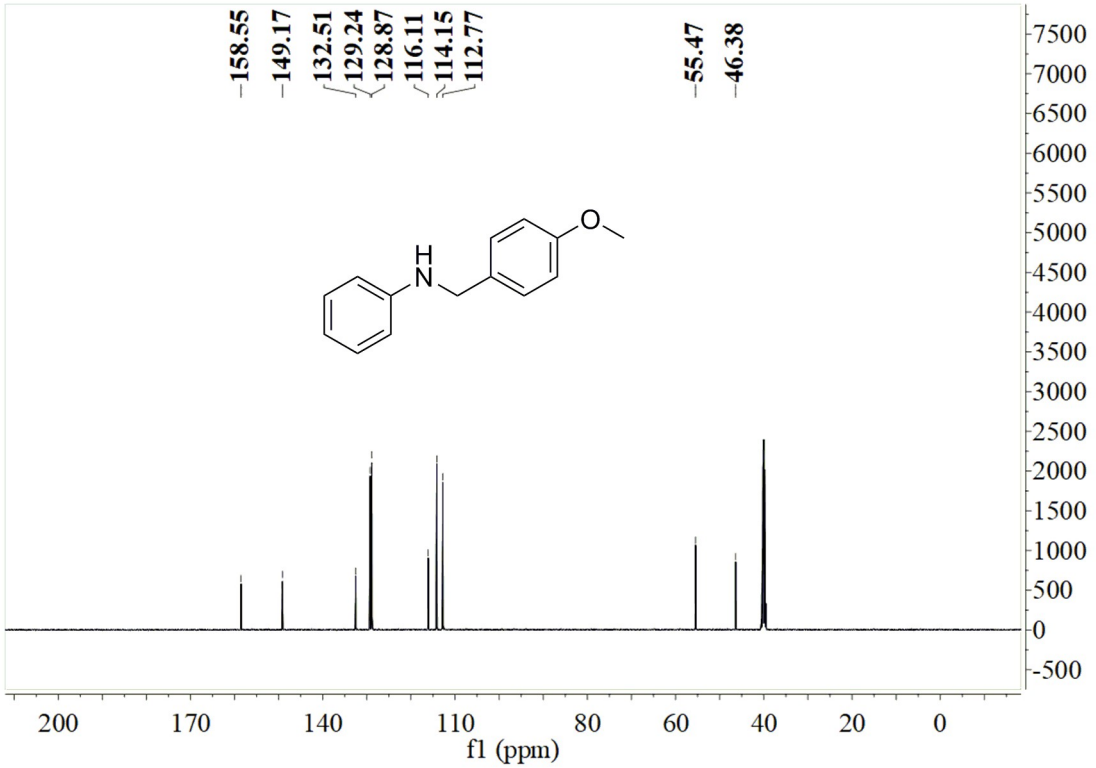


Figure [13]C NMR spectrum of *N*-phenyl-4-methoxybenzylamine (6f).

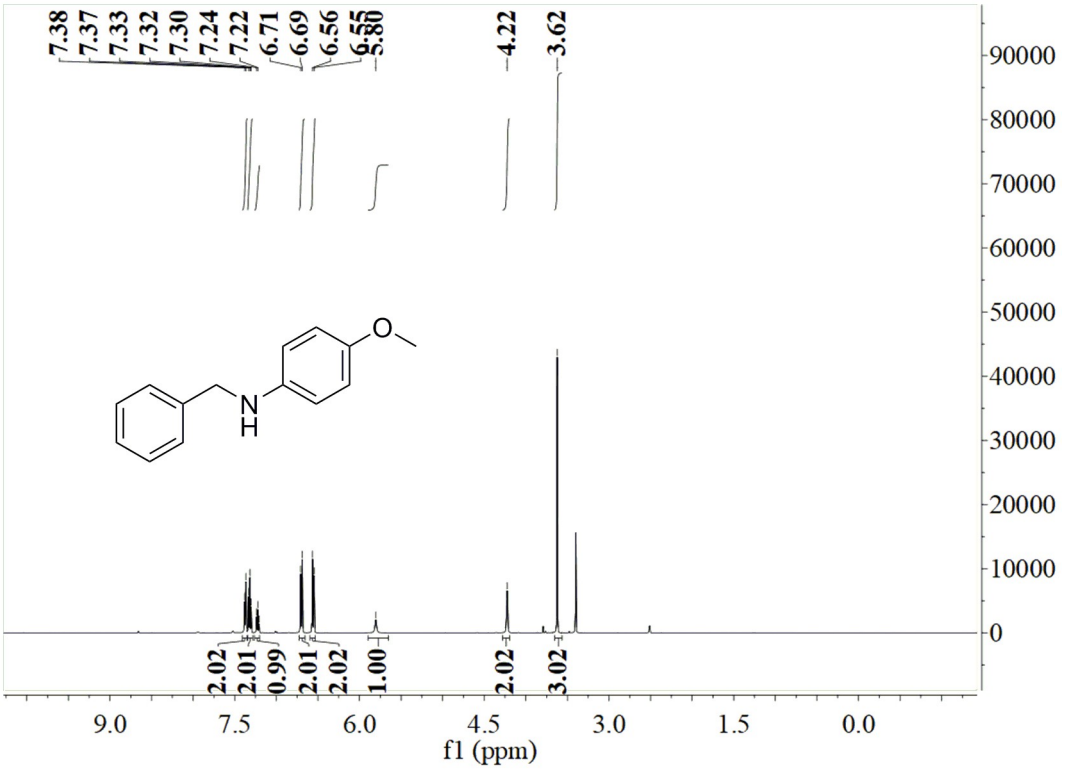


Figure [1]H NMR spectrum of *N*-benzyl-4-methoxyanilne (6g).

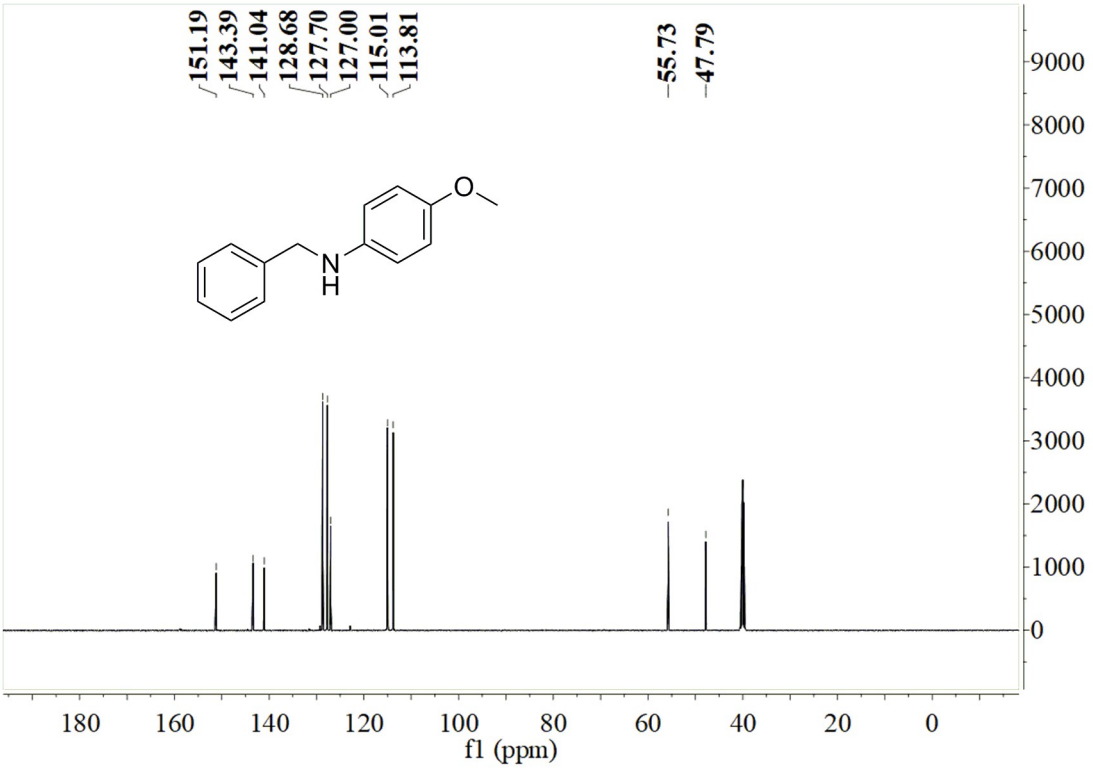


Figure [13]C NMR spectrum of *N*-benzyl-4-methoxyanilne (6g).

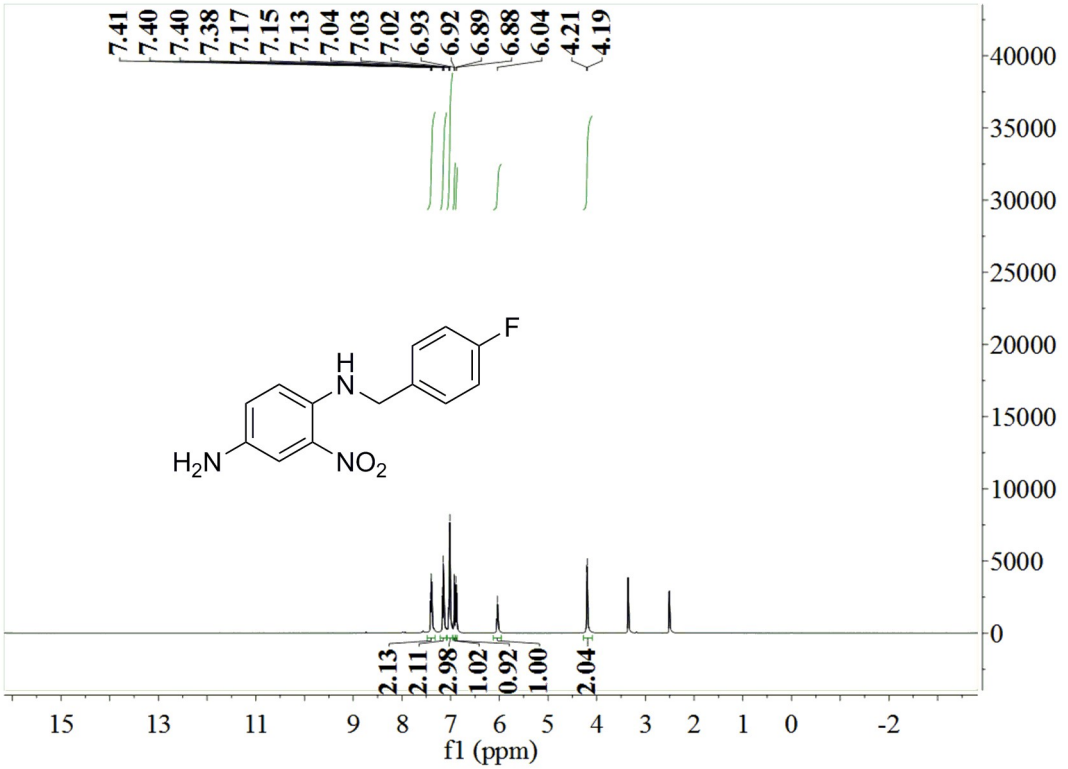


Figure [1]H NMR spectrum of 4-*N*-[(4-fluorophenyl)methyl]-2-nitrobenzene-1,4-diamine (6h).

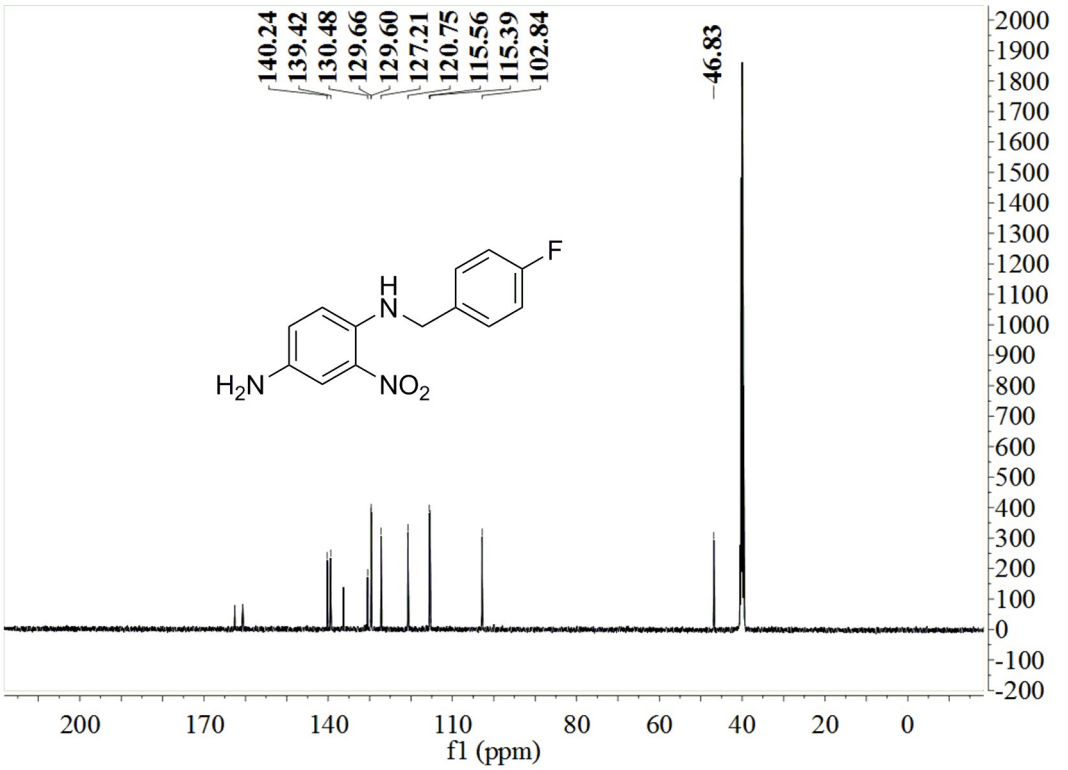


Figure [13]C NMR spectrum of 4-*N*-[(4-fluorophenyl)methyl]-2-nitrobenzene-1,4-diamine (6h).

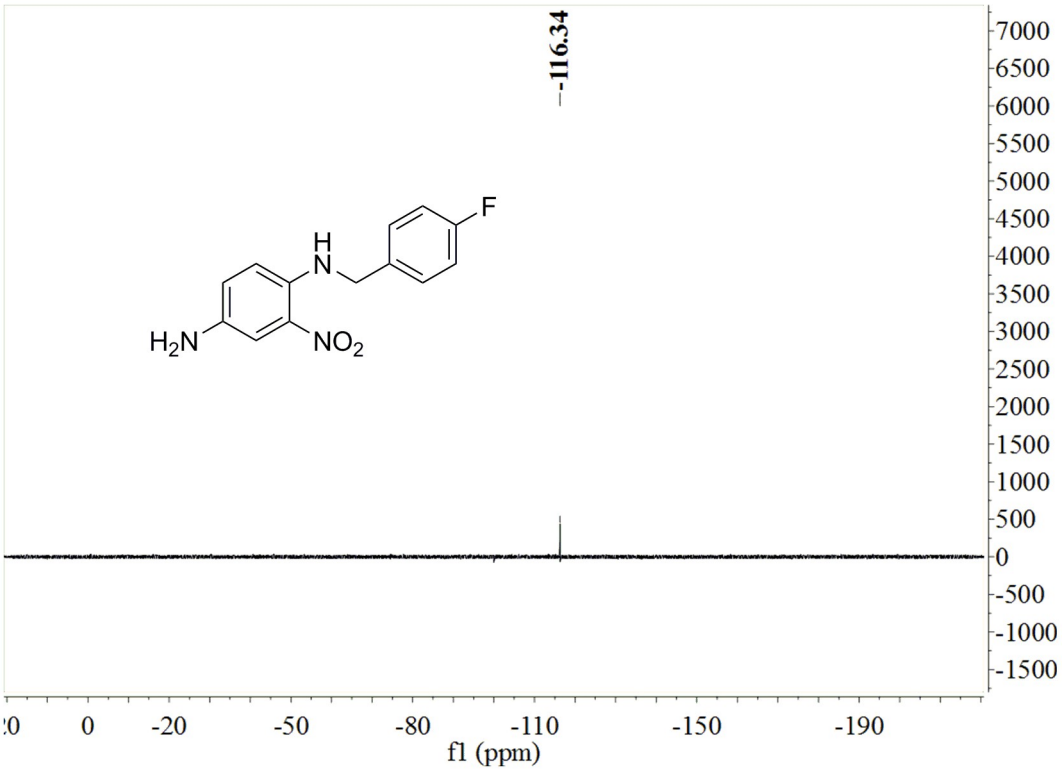


Figure ^{19}F NMR spectrum of 4-*N*-[(4-fluorophenyl)methyl]-2-nitrobenzene-1,4-diamine (6h).

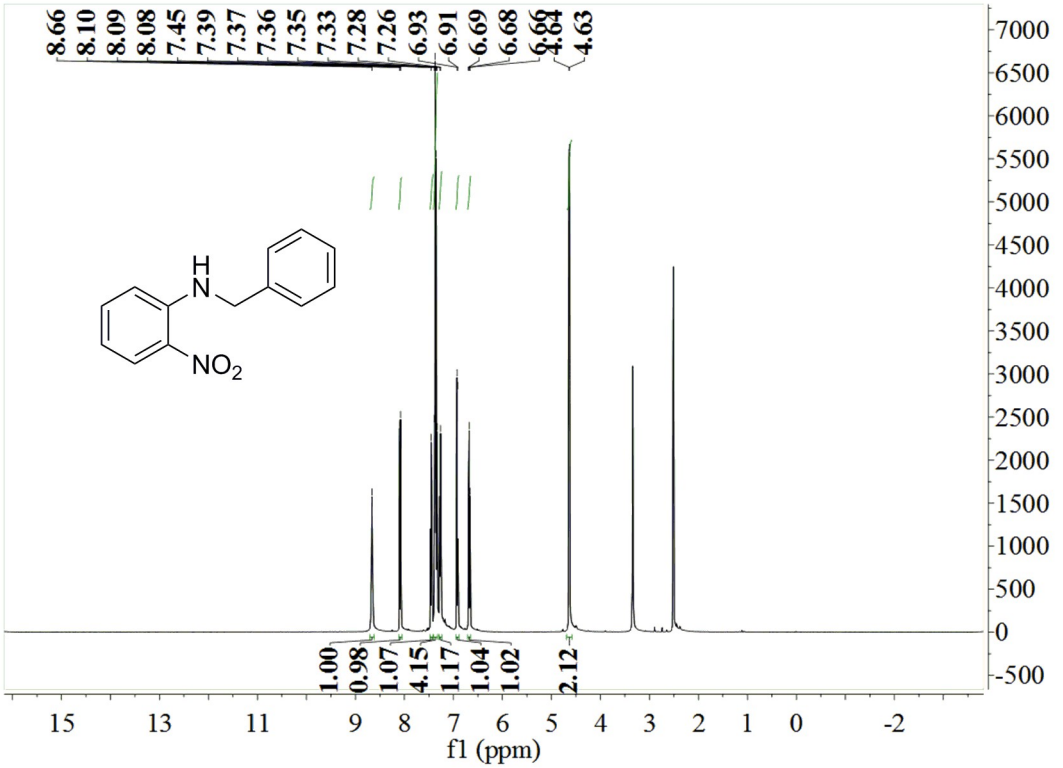


Figure ^{1}H NMR spectrum of *N*-benzyl-2-nitroaniline (6i).

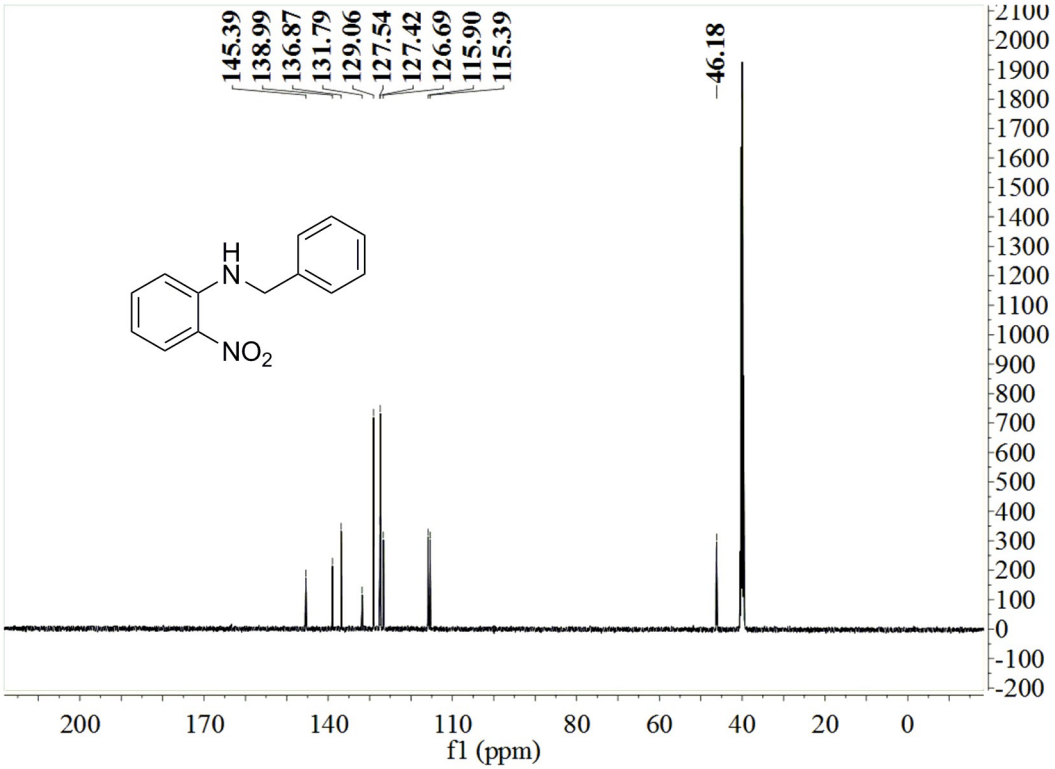


Figure ^{13}C NMR spectrum of *N*-benzyl-2-nitroaniline (6i).

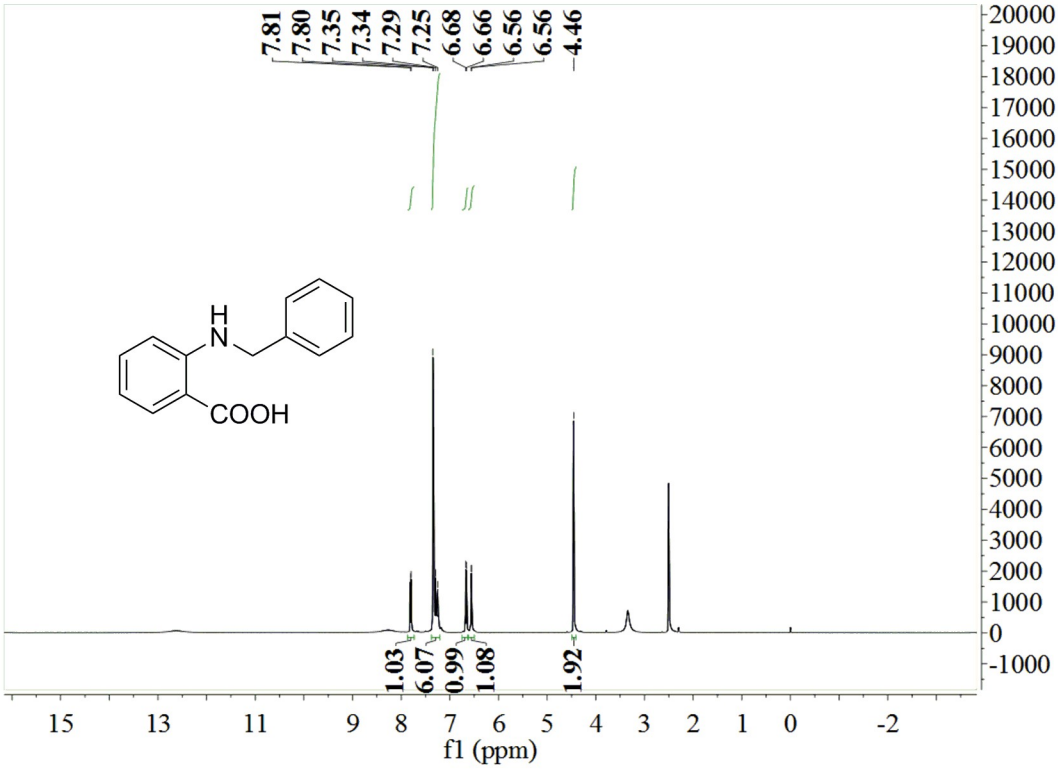


Figure ^{1}H NMR spectrum of *N*-benzylanthranilic Acid (6j).

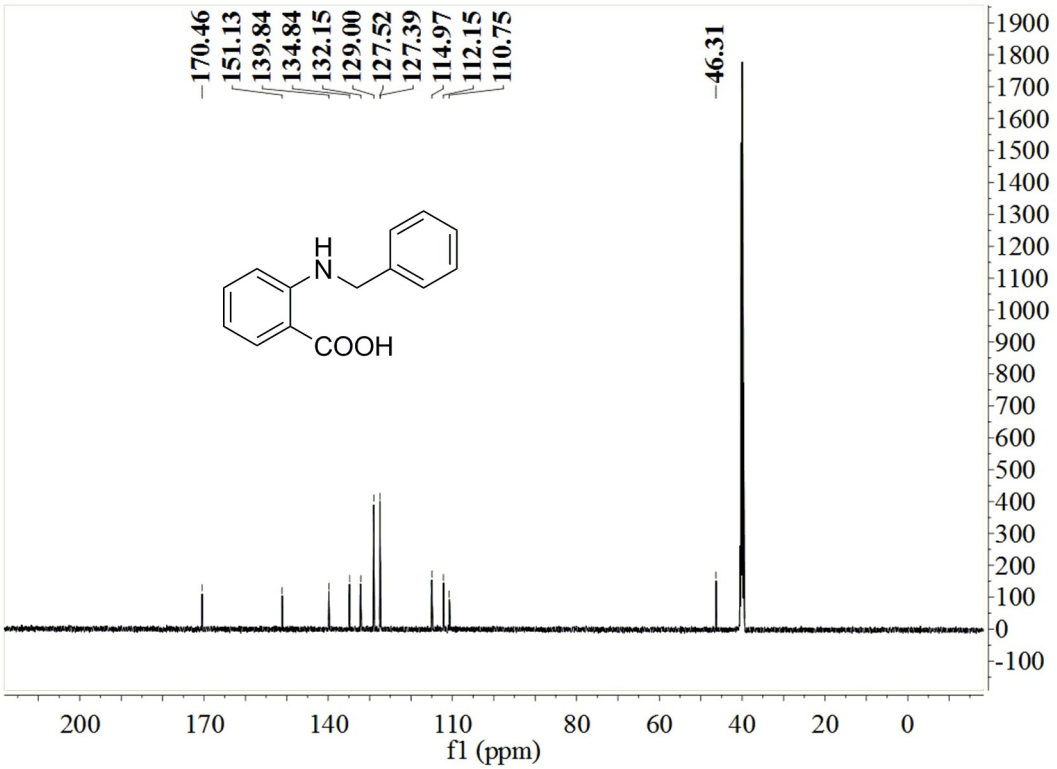


Figure ^{13}C NMR spectrum of *N*-benzylanthranilic Acid (6j).

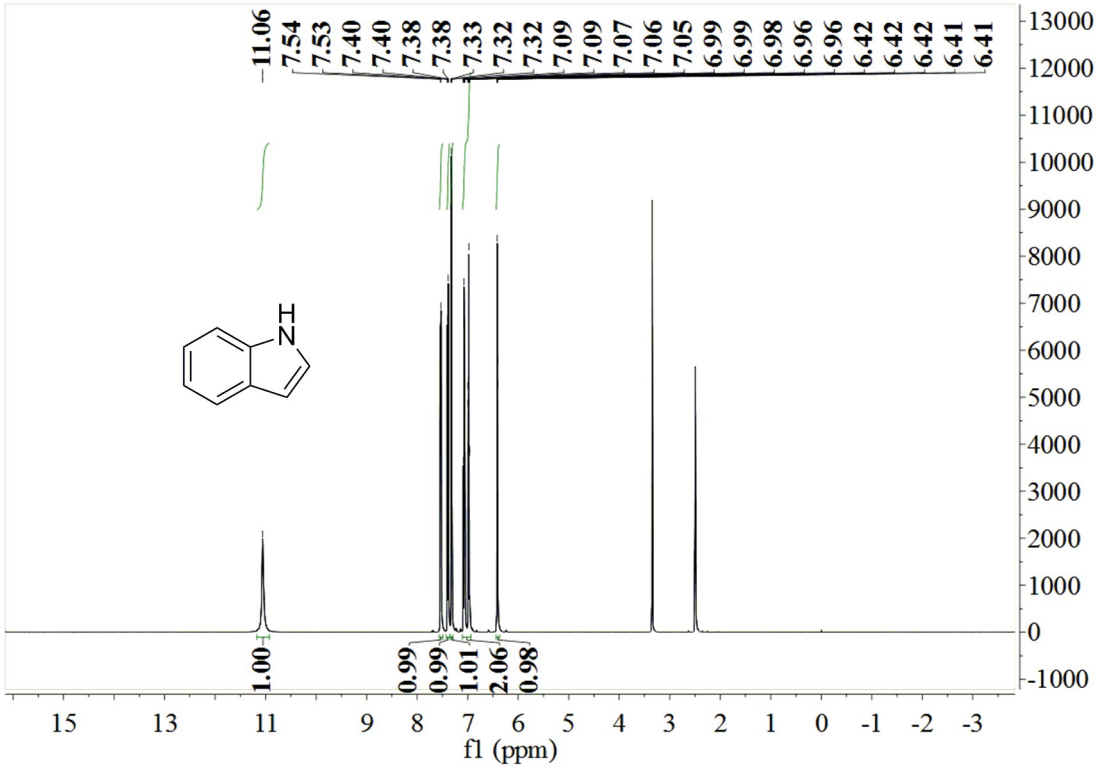


Figure ^{1}H NMR spectrum of 1*H*-indole (8).

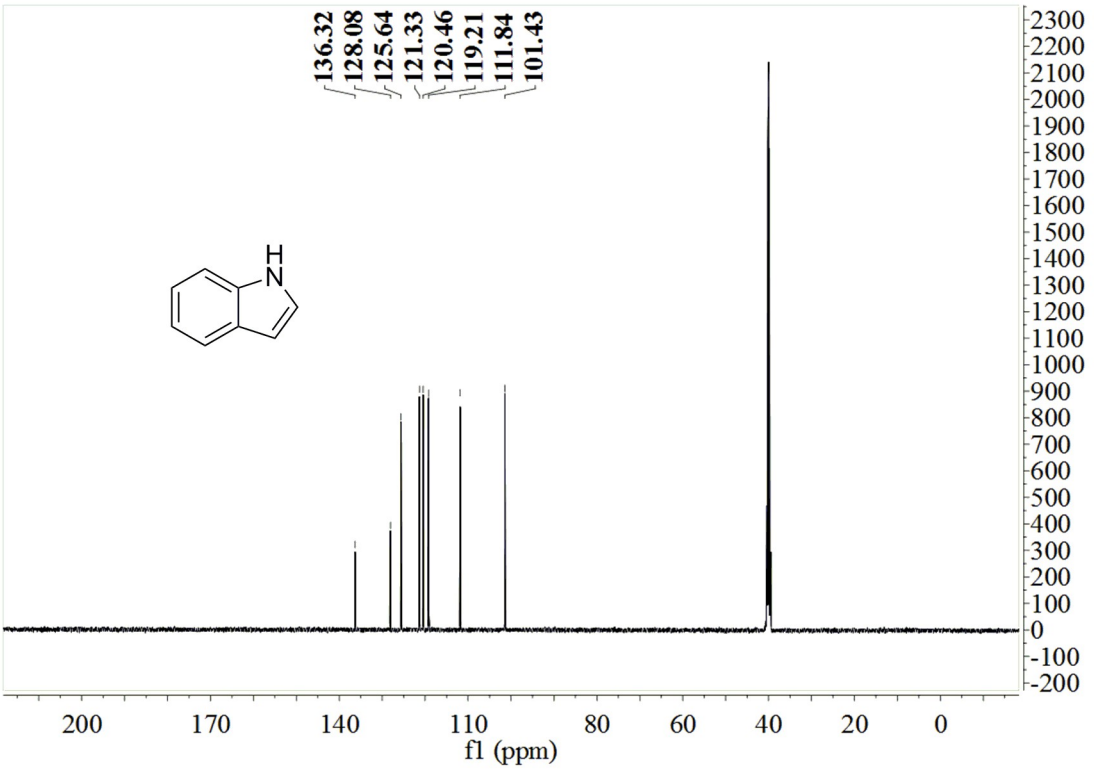


Figure ^{13}C NMR spectrum of 1*H*-indole (8).

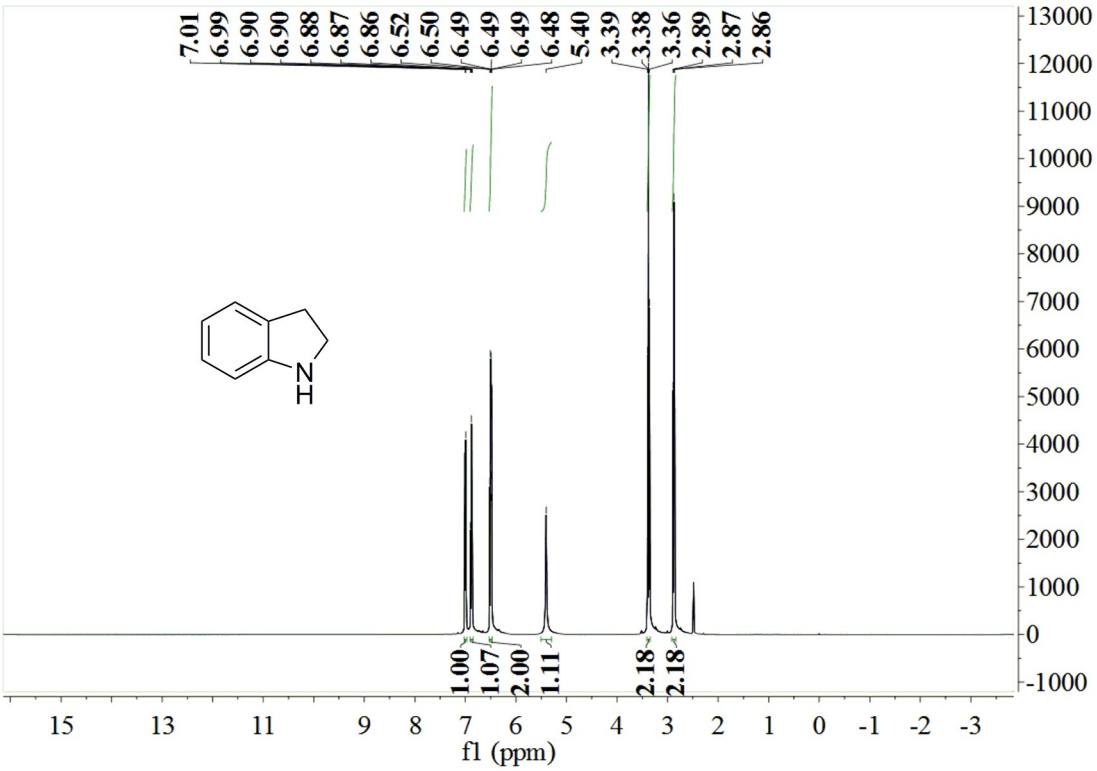


Figure ^{1}H NMR spectrum of indoline (9).

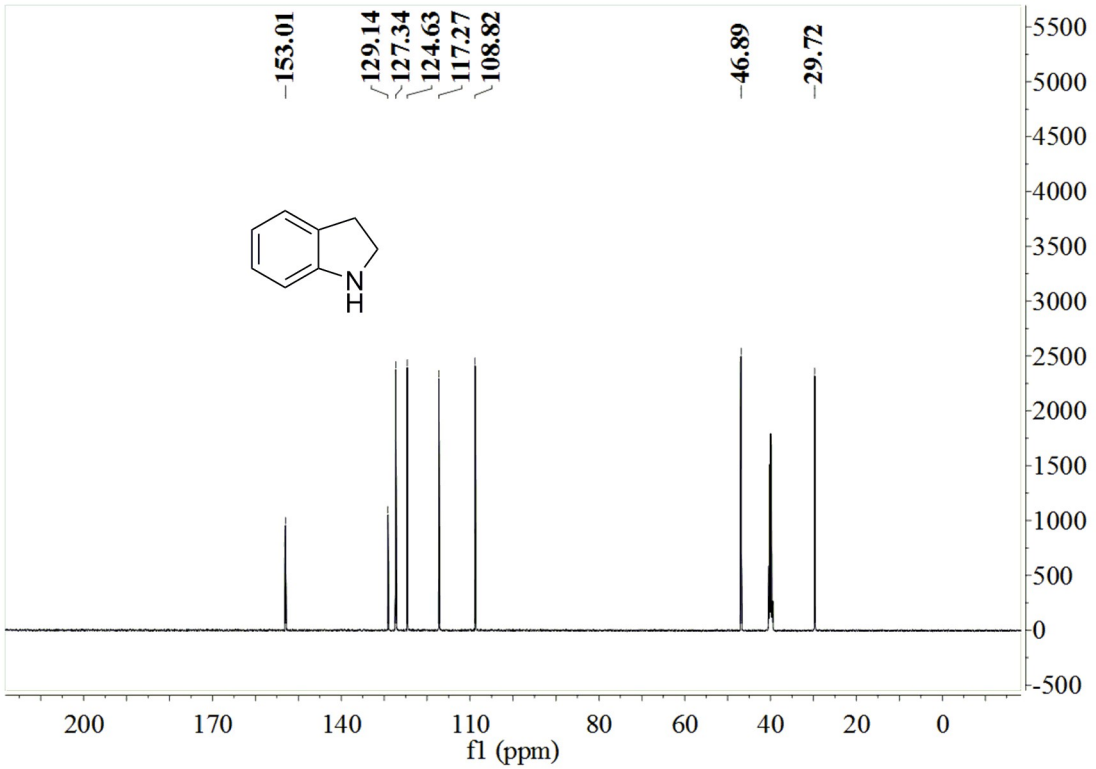


Figure ^{13}C NMR spectrum of indoline (9).

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