Supporting Information

Reductive Electrophilic C-H Alkylation of Quinolines by a Reusable Iridium Nanocatalyst

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1. General information

All the obtained products were characterized by melting points (m.p.), ^{1}H-NMR, ^{13}C-NMR and mass spectra (MS). Additionally, all the new compounds were further characterized by high resolution mass spectra (HRMS). Melting points were measured on an Electrothemal SGW-X4 microscopy digital melting point apparatus and are uncorrected; ^{1}H-NMR, ^{13}C-NMR spectra were obtained on Bruker-400 or Bruker-500; Mass spectra were recorded on Trace DSQ GC/MS，High-resolution mass spectra (HRMS) were recorded on a JEOL JMS-600 spectrometer. Chemical shifts are reported in parts per million (ppm, δ) downfield from tetramethylsilane. Proton coupling patterns are described as singlet (s), doublet (d), triplet (t), multiplet (m); TLC was performed using commercially prepared 100-400 mesh silica gel plates (GF254), and visualization was effected at 254 nm; All the reagents were purchased from commercial sources, and used without further purification.

X-ray diffraction (XRD) was used for crystal structure identification as used by a Bruker D8 advanced X-ray diffractometer. Micromeritics ASAP2460 used to measure the specific surface area and pore structure (BET) by N_2 adsorption. Transmission electron microscopy (TEM) and Energy Dispersive X-ray spectroscopy (EDX) using a Tecnai-G20 to observe the morphology of samples. The electronic states were measured by X-ray photoelectron spectroscopy (XPS) using a K-Alpha spectrometer with a monochromatized Al-Kα X-ray source (300W).

2. Procedure for the preparation of catalysts

In a 100 mL round bottom flask were added $IrCl_3 \cdot 3H_2O$ (15 mg) and 1,10-phenanthroline (23.4 mg) (Ir : phenanthroline = 1:3 molar ratio) and stirred in EtOH (30 mL) at 80 °C for 1 hour. Silica was then introduced into the above solution by *in situ* hydrolysis of added $Si(OC_2H_5)_4$ (TEOS) (0.8 mL) with aqueous ammonia (2.4 mL) and stirred for 2 hours at 80 °C. After that, the support TiO_2 powder (400 mg) was added to the solution and refluxed for 4 hours at 80 °C, then the mixture was cooled to room temperature, the solvent was evaporated in vacuo and the remaining soild was dried under vacuum at 60 °C overnight. The sample was then grinded to fine particles. The ground powder was subsequently pyrolyzed under argon at 500 °C for 3 hours. After the calcined catalyst was cooled to room temperature, a gray fine powder was obtained, which is named as Ir/N-SiO_2/TiO_2. Similarly, the materials prepared in absence of TEOS or TiO_2 or metal iridium were named as Ir/TiO_2, Ir/N-TiO_2, Ir/N-SiO_2, N-SiO_2/TiO_2, respectively. And the catalysts calcined at 400 °C, 700 °C and 900 °C , respectively.

3. Characterization of Ir/N-SiO_2/TiO_2

3.1. XRD Measurements and Data of Ir/N-SiO_2/TiO_2

The XRD Spectrum of the Ir/N-SiO_2/TiO_2 presents the characteristic peaks of titanium dioxide (PDF No. 71-1166 and PDF No. 21-1276) and silicon dioxide (PDF No. 86-1563) and no obvious peaks ascribed to the iridium species are found, showing that the iridium species are highly dispersed or amorphous in this material. Moreover, the XRD pattern of

catalyst that was reused ten times did not show much difference compared with the fresh catalyst. It means that structure of iridium nanocatalyst was maintained very well after ten consecutive runs.

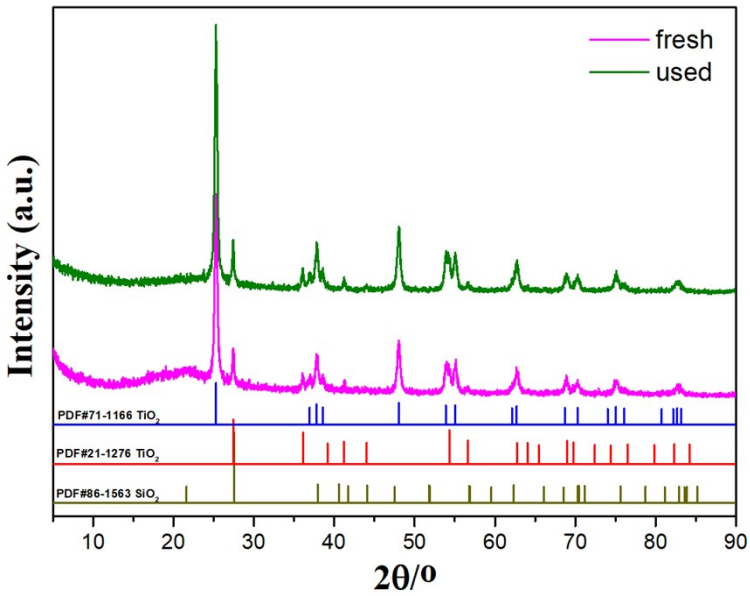


Figure S1. XRD Spectrum of Ir/N-SiO_2/TiO_2 Catalyst.

3.2 BET and Pore Diameter Tests of Ir/N-SiO_2/TiO_2

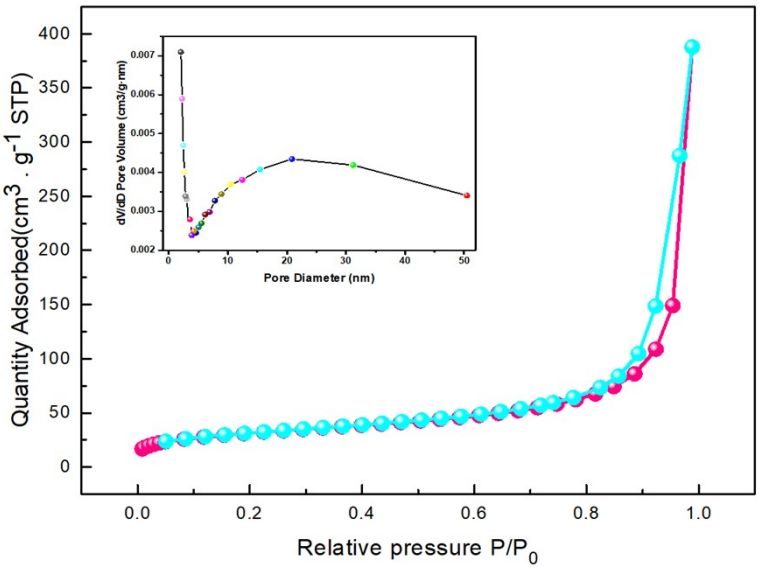


Figure S2. The adsorption-desorption curves and pore diameter distribution of Ir/N-SiO_2/TiO_2.

3.3 TEM and EDXS maps of image of Ir/N-SiO_2/TiO_2

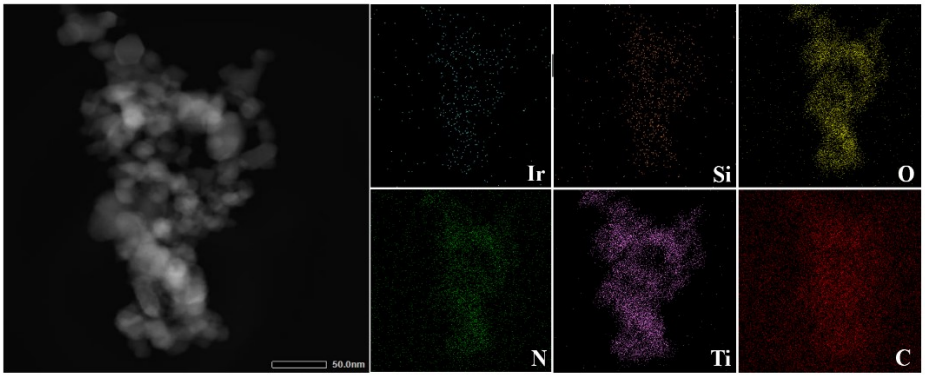
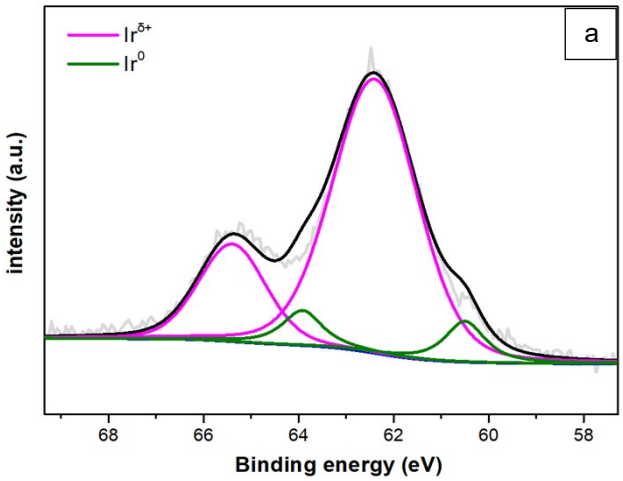
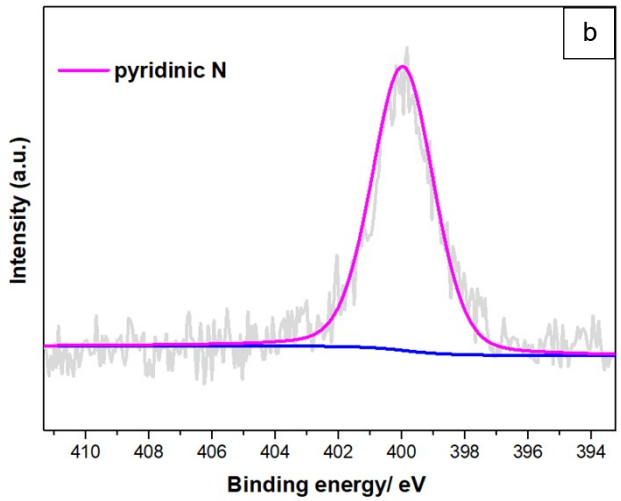


Figure S3. STEM image of Ir/N-SiO_2/TiO_2 and the corresponding elemental mapping images of Ir, Si, O, N, Ti, C.

3.4. XPS spectra of Ir/N-SiO_2/TiO_2

The X-ray photoelectron spectroscopy (XPS) characterization was implemented to further analyze the surface chemistry of Ir/N-SiO_2/TiO_2. A range of elements corresponding to Ir, N, Si, C, O and Ti on the sample surface were detected as 0.56%, 1.68%, 11.4%, 30.93%, 43.48% and 11.95%, respectively. The spectrum of Ir 4f (Figure S4a) shows four peaks, two typical characteristic peaks located at 62.4 eV and 65.4 eV are assigned to $Ir^{\delta+}$ species, while the binding energy of 60.5 eV and 63.9 eV belong to the peaks of metallic Ir. The N 1s XPS spectrum (Figure S4b) discloses almost one peak, corresponding to pyridinic N (399.9 eV), which derives from the Phen-ligand coordinated to iridium.





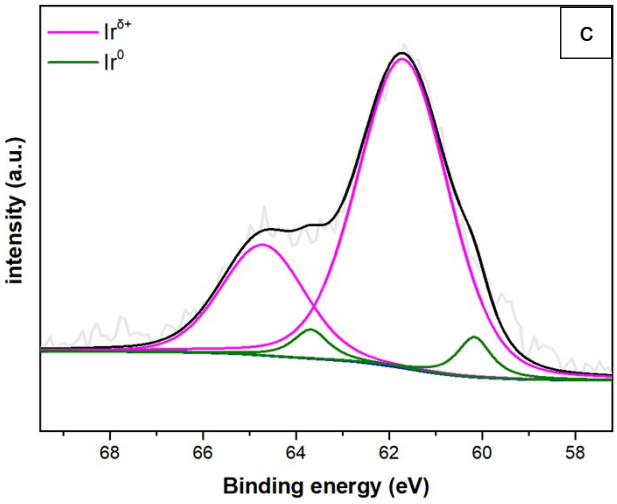
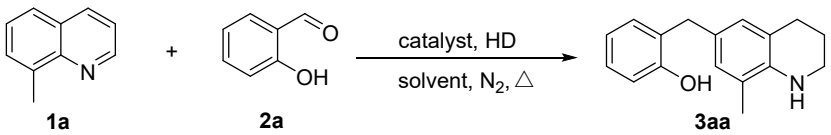


Figure S4. (a) XPS spectra for Ir 4f, (b) N 1s XPS spectra, (c) XPS spectra for Ir 4f of iridium nanomaterial after ten runs.

4. Experimental Procedure

To test the catalytic performance of the obtained Ir/N-SiO_2/TiO_2 material, we initially chose the reaction of 8-methylquinoline **1a** and salicylaldehyde **2a** as the benchmark reaction to screen various parameters. At first, the reaction was performed in different solvents at 115 °C for 24 h in the presence of 0.65 mol % of catalyst and 5 equivalents of formic acid as the hydrogen source (Table S1, entries 1-7). To our delight, the yield of desired **3aa** in water was as high as 80% (entry **1**). Then we tried to use water and 1,4-dioxane as a mixed solvent, and surprisingly obtained the target product with a yield of 94% (entry **8**). Based on the findings above, a series of explorations continued. The absence of HCOOH or catalyst (entries **9-10**) failed to give any product, indicating that both are required to obtain the target products. The use of non-nitrogen-silicon doped Ir/TiO_2 or unsupported Ir/N-SiO_2 material or non-silicon doped Ir/N-TiO_2 or N-SiO_2/TiO_2 without Ir showed no or relatively weak activity (entries **11-14**). The product yield decreased slightly when the reaction temperature was lowered or the amount of HCOOH was reduced (entry **15-16**). Moreover, the catalysts pyrolyzed at 400 °C, 700 °C and 900 °C gave lower yields than the one pyrolyzed at 500 °C (entry **17**). Therefore, the optimal conditions are as depicted in entry **8**.

4.1 Table S1. Screening of reaction conditions.



1a **2a** **3aa**

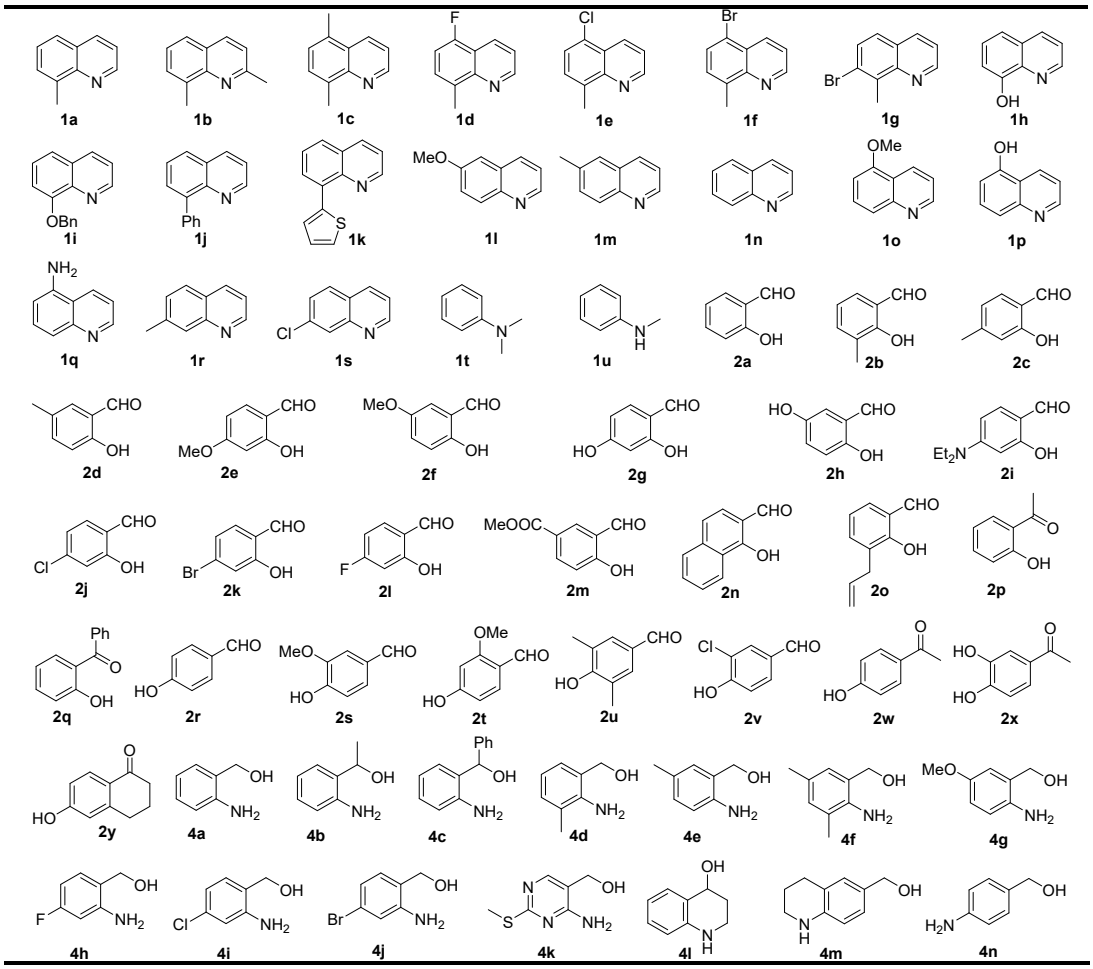
Entry	Catalyst	Hydrogen source	Sovlent	**3aa** Yield %[b]
1	Ir/N-SiO_2/TiO_2	HCOOH	H_2O	80
2	Ir/N-SiO_2/TiO_2	HCOOH	*t*-amyl alcohol	8
3	Ir/N-SiO_2/TiO_2	HCOOH	EtOH	25
4	Ir/N-SiO_2/TiO_2	HCOOH	dioxane	12
5	Ir/N-SiO_2/TiO_2	HCOOH	THF	trace
6	Ir/N-SiO_2/TiO_2	HCOOH	EA	trace
7	Ir/N-SiO_2/TiO_2	HCOOH	EAA	0
8	Ir/N-SiO_2/TiO_2	HCOOH	H_2O/dioxane	94
9	Ir/N-SiO_2/TiO_2	-	H_2O/dioxane	0
10	-	HCOOH	H_2O/dioxane	0
11	Ir/TiO_2	HCOOH	H_2O/dioxane	70
12	Ir/N-SiO_2	HCOOH	H_2O/dioxane	32
13	Ir/N-TiO_2	HCOOH	H_2O/dioxane	75
14	N-SiO_2/TiO_2	HCOOH	H_2O/dioxane	0

15	Ir/N-SiO_2/TiO_2	HCOOH	H_2O/dioxane	86[c]
16	Ir/N-SiO_2/TiO_2	HCOOH	H_2O/dioxane	[66, 84][d]
17	Ir/N-SiO_2/TiO_2	HCOOH	H_2O/dioxane	[79, 77, 24][e]

[a] Reaction conditions: Unless otherwise specified, all reactions were performed at 115 °C for 24 h under N_2 protection by using **1a** (0.25 mmol), **2a** (0.3 mmol), catalyst (0.65 mol %, 55.5 mg), HCOOH (1.25 mmol), solvent (1.3 mL), Ir/N-SiO_2/TiO_2 pyrolyzed at 500 °C. [b] GC yield using hexadecane as an internal standard. [c] Temperature: 110 °C. [d] Yields are with respect to use of 0.75 and 1.0 mmol of HCOOH, respectively. [e] Ir/N-Si-TiO_2 pyrolyzed at 400 °C, 700 °C, 900 °C, respectively. EA: Ethyl acetate, EAA: Ethyl acetoacetate, H_2O/dioxane = 8/1.

Scheme S1. Substrates employed for the reaction.

The part of quinolines[1] and *o*-aminobenzyl alcohols[2] were prepared according to the reported procedures.



4.2. The General experimental procedure for the synthesis of 3aa

Under nitrogen atmosphere, Ir/N-SiO_2/TiO_2 (55.5 mg, 0.65 mol %), HCOOH (1.25 mmol), 8-methylquinoline **1a** (0.25 mmol), salicylaldehyde **2a** (0.3 mmol) and H_2O/dioxane (8/1) were introduced in a 50 mL Schlenk tube with a stir bar, the Schlenk tube was then closed and the resulting reaction mixture was heated at 115 °C for 24 h. After cooling to room temperature, the resulting mixture was washed with 10% Na_2CO_3 solution, and then extracted with ethyl acetate, dried with anhydrous Na_2SO_4, and further concentrated by removing the solvent under vacuum. Finally, the residue was purified by TLC on silica gel to afford 2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol **3aa**.

4.3. Details of catalyst recyle experiment

Under nitrogen atmosphere，8-methylquinoline (0.25 mmol), salicylaldehyde (0.3 mmol), Ir/N-SiO_2/TiO_2 (55.5 mg),

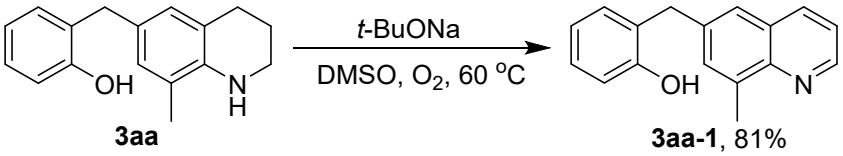
HCOOH (1.25 mmol) and H_2O/dioxane (8/1) were added to a Schlenk tube (50 mL) containing a stir bar, the sealed Schlenk tube filled with N_2 was then heated at 115 °C for 24 h. After cooling to room temperature, *n*-cetane was added to the mixed solution and the yield was measured by GC-MS. The catalyst was separated by centrifugation, washed with EA and ethanol for three times, then dried under vacuum at 60 °C for 4 h. After that, the separated catalyst was reused for the next cycle experiment.

4.4. Poisoning Experiment

Under nitrogen atmosphere, the mixture of Ir/N-SiO_2/TiO_2 (55.5 mg, 0.65 mol%), HCOOH (1.25 mmol), 8-methylquinoline (**1a**; 0.25 mmol), salicylaldehyde (**2a**, 0.3 mmol), KSCN (25 mol %) and H_2O/dioxane (8/1) was added successively to a Schlenk tube (50 mL) equipped with a magnetic stirrer bar, the Schlenk tube was then closed and the resulting reaction mixture was heated at 115 °C for 24 h. After cooling to room temperature, *n*-hexadecane was added to the solution and the yield was determined by GC-MS analysis.

4.5. Synthetic utility

(1) 2-((8-methylquinolin-6-yl)methyl)phenol (**3aa-1**)

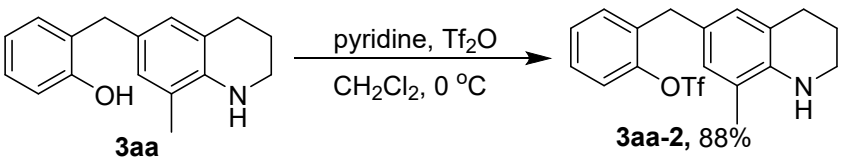


3aa **3aa-1**, 81%

To a Schlenk tube (50 mL) was sequentially added substrates **3aa** (0.1 mmol) and *t*-BuONa (3 equiv.), DMSO (0.5 mL). The headspace was then filled with O_2 at a pressure of 1 atm (using O_2 balloon). The mixture was allowed to stir at 60 °C in an oil bath for 5 h. After the stirring stopped, the reaction mixture was allowed to cool to room temperature. O_2 pressure was released, and the resulting mixture solution was washed with water and then extracted with ethyl acetate. The combined organic layers were dried over Na_2SO_4, filtered and evaporated in a vacuum, and the residue was purified by TLC to give product **3aa-1** as a white soild.

The analytic data of compound (**3aa-1**): white soild (20.1 mg, 81%), m.p.: 148-149 °C; ^{1}H NMR (500 MHz, DMSO) δ 9.45 (s, 1H), 8.83 (d, *J* = 5.0 Hz, 1H), 8.21 (d, *J* = 5.0 Hz, 1H), 7.55 (s, 1H), 7.51 (s, 1H), 7.46 (dd, *J* = 10.0, 5.0 Hz, 1H), 7.09 (d, *J* = 5.0 Hz, 1H), 7.03 (t, *J* = 10.0 Hz, 1H), 6.83 (d, *J* = 5.0 Hz, 1H), 6.73 (t, *J* = 7.4 Hz, 1H), 4.01 (s, 2H), 2.66 (s, 3H); ^{13}C NMR (126 MHz, DMSO) δ 155.05, 148.73, 145.53, 139.32, 136.02, 135.78, 131.20, 130.48, 127.86, 127.39, 126.96, 124.54, 121.26, 119.06, 115.12, 35.26, 17.77. HRMS (ESI): Calcd. for $C_{17}H_{15}NO$ $[M+H]^+$ 250.12264; found: 250.12253.

(2) 2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenyl trifluoromethanesulfonate (**3aa-2**)

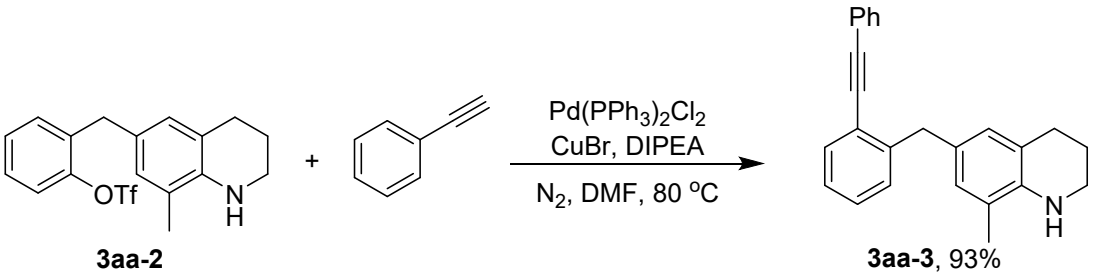


3aa **3aa-2,** 88%

The Schlenk tube was charged with **3aa** (0.30 mmol) and pyridine (0.45 mmol, 1.5 equiv.) in CH_2Cl_2 (1.5 mL) was added. After the resulting solution was cooled to 0 ºC with an ice water bath, a solution of Tf_2O (0.45 mmol, 1.5 equiv.) in CH_2Cl_2 (1 mL) was slowly added. After addition of Tf_2O, the ice-water bath was removed and the reaction mixture was stirred for 6 h. After the reaction, the resulting mixture concentrated under vacuum. The residue was directly purified by TLC to give product **3aa-2** as a yellow oil liquid.

The analytic data of compound (**3aa-2**): yellow oil liquid (101.6 mg, 88%); ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.34 – 7.27 (m, 4H), 6.77 (s, 1H), 6.74 (s, 1H), 3.97 (s, 2H), 3.43 – 3.40 (m, 2H), 2.82 – 2.79 (m, 2H), 2.10 (s, 3H), 2.01 – 1.95 (m, 2H); ^{13}C NMR (101 MHz, $CDCl_3$) δ 148.02, 141.45, 135.33, 131.89, 128.81, 128.41, 128.19, 127.79, 126.18, 121.63, 121.24, 118.78 (d, *J* = 321.18 Hz), 42.48, 34.95, 27.37, 22.29, 17.21; ^{19}F NMR (471 MHz, $CDCl_3$) δ -73.78. HRMS (ESI): Calcd. for $C_{18}H_{18}F_3NO_3S$ $[M+H]^+$ 386.10322; found: 386.10300.

(3) 8-methyl-6-(2-(phenylethynyl)benzyl)-1,2,3,4-tetrahydroquinoline (**3aa-3**)

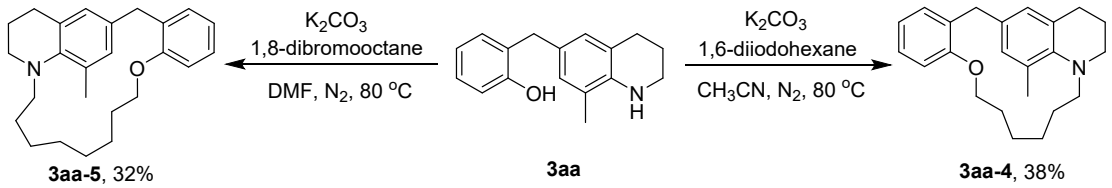


3aa-2 **3aa-3**, 93%

To a solution of **3aa-3** (0.1 mmol) in DMF (1 mL) was added phenylacetylene (0.3 mmol), $Pd(PPh_3)_2Cl_2$ (10.0 mol %), CuBr (5.0 mol %), DIPEA (0.3 mmol) under nitrogen atmosphere and the reaction mixture was allowed to stir at 80 °C for 5 h. After that, the reaction mixtures was extracted with ethyl acetate. The combined organic layers were dried over anhydrous Na_2SO_4, filtered and concentrated in vacuum. The crude product was purified by TLC to afford the desired product **3aa-3** as a yellow oil liquid.

The analytic data of compound (**3aa-3**): yellow oil liquid (31.2 mg, 93%); ^{1}H NMR (500 MHz, $CDCl_3$) δ 7.54 – 7.52 (m, 3H), 7.36 – 7.34 (m, 3H), 7.24 (d, *J* = 5.0 Hz, 1H), 7.21 (d, *J* = 5.0 Hz, 1H), 7.18 (t, *J* = 10.0 Hz, 1H), 6.82 (s, 1H), 6.80 (s, 1H), 4.09 (s, 2H), 3.34 (t, *J* = 5.0 Hz, 2H), 2.73 (t, *J* = 5.0 Hz, 2H), 2.04 (s, 3H), 1.95 – 1.89 (m, 2H); ^{13}C NMR (126 MHz, $CDCl_3$) δ 144.49, 140.99, 132.27, 131.65, 129.39, 128.76, 128.66, 128.60, 128.44, 128.24, 128.11, 125.88, 123.72, 122.71, 121.55, 121.13, 93.32, 88.89, 42.54, 39.64, 27.37, 22.39, 17.31. HRMS (ESI): Calcd. for $C_{25}H_{23}N$ $[M+H]^+$ 338.19032; found: 338.18994.

(4) 1^8-methyl-1^1,1^2,1^3,1^4-tetrahydro-4-oxa-1(6,1)-quinolina-3(1,2)-benzenacyclodecaphane (**3aa-4**) and 1^8-methyl-1^1,1^2,1^3,1^4-tetrahydro-4-oxa-1(6,1)-quinolina-3(1,2)-benzenacyclododecaphane (**3aa-5**)



3aa-5, 32% **3aa** **3aa-4**, 38%

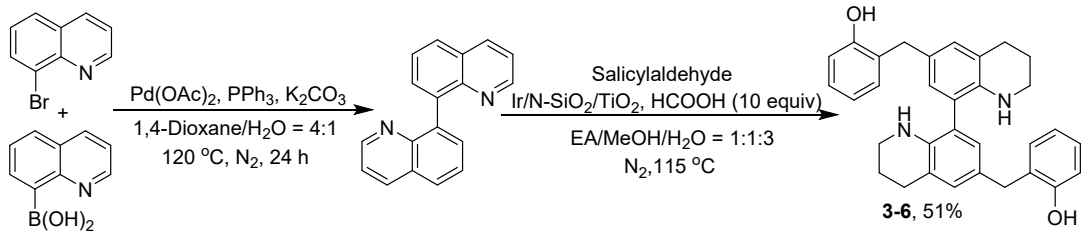
The Schlenk tube was charged with **3aa** (0.10 mmol), dihalogenated alkane (1, 6-diiodihexane and 1, 8-dibromooctane) (0.2 mmol) and K_2CO_3 (0.11 mmol) in DMF was added. The mixture was allowed to reflux at 80 °C in an oil bath for 28

h. After the stirring stopped, the reaction mixtures was extracted with ethyl acetate. The combined organic layers were dried over anhydrous Na_2SO_4, filtered and concentrated in vacuum. The crude product was purified by TLC to afford the desired product **3aa-4** and **3aa-5** as the colorless oil liquid.

The analytic data of compound (**3aa-4**): colorless oil liquid (12.7 mg, 38%); ^{1}H NMR (500 MHz, $CDCl_3$) δ 7.26 (d, *J* = 10.0 Hz, 1H), 7.20 (t, *J* = 10.0, 1H), 6.92 (t, *J* = 10.0, 1H), 6.77 (d, *J* = 10.0 Hz, 1H), 6.65 (s, 1H), 6.56 (s, 1H), 3.68 – 3.65 (m, 1H), 3.58 – 3.55 (m, 1H), 3.40 – 3.35 (m, 1H), 3.32 – 3.27 (m, 1H), 3.19 – 3.14 (m, 1H), 3.00 – 2.95 (m, 1H), 2.75 – 2.62 (m, 2H), 2.17 (s, 3H), 2.05 – 1.96 (m, 1H), 1.77 – 1.71 (m, 1H), 1.70 – 1.63 (m, 2H), 1.38 – 1.29 (m, 1H), 1.08 – 0.86 (m, 4H), 0.67 – 0.59 (m, 1H), 0.58 – 0.50 (m, 1H); ^{13}C NMR (126 MHz, $CDCl_3$) δ 157.95, 143.82, 134.06, 131.70, 130.74, 130.14, 128.74, 128.41, 127.65, 125.67, 120.24, 112.95, 68.55, 52.41, 50.30, 38.53, 29.12, 28.49, 27.60, 27.04, 24.96, 22.66, 19.62. HRMS (ESI): Calcd. for $C_{23}H_{29}NO$ $[M+H]^+$ 336.23219; found: 336.23184.

The analytic data of compound (**3aa-5**): colorless oil liquid (11.6 mg, 32%); ^{1}H NMR (500 MHz, $CDCl_3$) δ 7.23 (t, *J* = 10.0 Hz, 2H), 6.93 (t, *J* = 10.0 Hz, 1H), 6.81 (d, *J* = 8.4 Hz, 1H), 6.70 (s, 1H), 6.35 (s, 1H), 3.98 – 3.92 (m, 2H), 3.75 – 3.71 (m, 1H), 3.62 – 3.56 (m, 1H), 3.27 – 3.17 (m, 2H), 2.65 – 2.55 (m, 2H), 2.20 (s, 3H), 2.00 – 1.93 (m, 1H), 1.75 – 1.63 (m, 4H), 1.58 – 1.41 (m, 3H), 1.06 – 0.96 (m, 3H), 0.95 – 0.90 (m, 3H), 0.81 – 0.74 (m, 2H); ^{13}C NMR (126 MHz, $CDCl_3$) δ 157.61, 143.86, 132.51, 131.90, 129.26, 129.03, 127.70, 127.65, 125.39, 119.90, 110.88, 66.96, 51.83, 50.53, 36.76, 29.46, 28.72, 28.29, 28.25, 25.55, 25.08, 23.47, 20.47. HRMS (ESI): Calcd. for $C_{25}H_{33}NO$ $[M+H]^+$ 364.26349; found: 364.26300.

(5) 2,2'-((1,1',2,2',3,3',4,4'-octahydro-[8,8'-biquinoline]-6,6'-diyl)bis(methylene))diphenol (**3-6**)

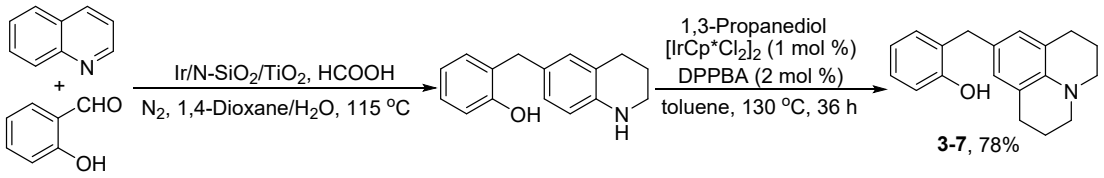


Under N_2 atmosphere, 8-bromoquinoline (1 mmol), 8-quinolineboronic acid (1.2 mmol), $Pd(OAc)_2$ (5 mol %), PPh_3 (10 mol %), K_2CO_3 (2 equiv) and 1,4-dioxane/H_2O (4/1) were introduced in a Schlenk tube, successively. The mixture was stirred at 120 °C for 24 hours and cooled to room temperature. The resulting mixture concentrated under vacuum. The residue was directly purified by TLC to give compound 8,8'-biquinoline as a yellow soild. And then compound 8,8'-biquinoline (0.25 mmol), salicylaldehyde (0.6 mmol), Ir/N-SiO_2/TiO_2 (55.5 mg), HCOOH (10 equiv) and EA/MeOH/H_2O (1:1:3) were introduced in a Schlenk tube, successively. The Schlenk tube was closed and the resulting mixture was stirred at 115 °C for 24 h. After cooling down to room temperature and the resulting mixture washed with 10% Na_2CO_3 solution, and then extracted with ethyl acetate, dried with anhydrous Na_2SO_4, and further concentrated by removing the solvent under vacuum. Finally, the residue was purified by TLC on silica gel to afford 2,2'-((1,1',2,2',3,3',4,4'-octahydro-[8,8'-biquinoline]-6,6'-diyl)bis(methylene))diphenol **3-6**.

The analytic data of compound (**3-6**): yellow oil liquid (60.6 mg, 51%); ^{1}H NMR (500 MHz, $CDCl_3$) δ 7.15 (d, *J* = 7.4 Hz, 2H), 7.11 (t, *J* = 7.8 Hz, 2H), 6.88 (t, *J* = 7.4 Hz, 2H), 6.81 (s, 2H), 6.80 (s, 2H), 6.75 (d, *J* = 8.0 Hz, 2H), 3.86 (s, 4H),

3.24 – 3.16 (m, 4H), 2.75 (t, J = 6.4 Hz, 4H), 1.91 – 1.87 (m, 4H); ^{13}C NMR (126 MHz, $CDCl_3$) δ 154.23, 140.97, 130.97, 129.11, 129.02, 127.75, 127.64, 127.42, 123.90, 122.25, 120.79, 115.99, 42.09, 36.03, 27.50, 22.09. HRMS (ESI): Calcd. for $C_{32}H_{32}N_2O_2$ $[M+H]^+$ 477.25365; found: 477.25302.

(6) 2-((2,3,6,7-tetrahydro-1*H*,5*H*-pyrido[3,2,1-*ij*]quinolin-9-yl)methyl)phenol (**3-7**)



First, the C_6-alkylated compound 2-((1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol was prepared under standard conditions. And then under N_2 atmosphere, 1,3-propanediol (0.15 mmol), 2-((1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (2.0 equiv), $[IrCp^*Cl_2]_2$ (1 mol %), DPPBA (2 mol %) and toluene were introduced in a Schlenk tube, successively. The mixture was stirred at 130 °C for 36 h and cooled to room temperature. The resulting mixture concentrated under vacuum. The residue was directly purified by TLC to give compound **3-7** as a yellow oil liquid.[3]

The analytic data of compound (**3-7**): yellow oil liquid (32.5 mg, 78%); ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.19 – 7.14 (m, 2H), 6.93 (t, J = 7.4 Hz, 1H), 6.81 (d, J = 8.0 Hz, 1H), 6.70 (s, 2H), 5.17 (s, 1H), 3.86 (s, 2H), 3.15 – 3.12 (m, 4H), 2.76 – 2.73 (m, 4H), 2.02 – 1.96 (m, 4H); ^{13}C NMR (101 MHz, $CDCl_3$) δ 154.34, 141.86, 130.87, 127.72, 127.66, 127.16, 126.21, 122.33, 120.70, 116.04, 50.16, 36.16, 27.66, 22.20. HRMS (ESI): Calcd. for $C_{19}H_{21}NO$ $[M+H]^+$ 280.16959; found: 280.16931.

References

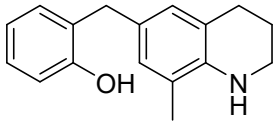
(1) a) Liu, B.; Hu, P.; Zhou, X.; Bai, D.; Chang, J.; Li, X. *Org. Lett.* **2017**, *19*, 2086−2089. b) He, Y.; Huang, L.; Xie, L.; Liu, P.; Wei, Q.; Mao, F.; Zhang, X.; Huang, J.; Chen, S.; Huang, C. *J. Org. Chem.* **2019**, *84*, 10088−10101. c) Brodnik, H.; Pozgan, F.; Stefane, B. *Org. Biomol. Chem.* **2016**, *14*, 1969–1981.

(2) a) Jia, M.-Q.; You, S.-L. *ACS Catal.* **2013**, *3*, 622−624. b) Mei, G.-J.; Bian, C.-Y.; Li, G.-H.; Xu, S.-L.; Zheng, W.-Q.; Shi, F. *Org. Lett.* **2017**, *19*, 3219−3222.

(3) Labed, A.; Jiang, F.; Labed, I.; Lator, A.; Peters, M.; Achard, M.; Kabouche, A.; Kabouche, Z.; Sharma, G. V. M.; Bruneau, C. *ChemCatChem* **2015**, *7*, 1090–1096.

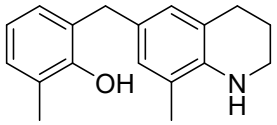
5. NMR spectra of the obtained products

2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (**3aa**)



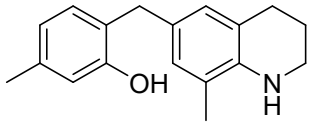
White solid, m.p.: 103 – 104 °C; ^{1}H NMR (400 MHz, DMSO) δ 9.24 (s, 1H), 6.96 (t, *J* = 7.9 Hz, 2H), 6.78 (d, *J* = 7.8 Hz, 1H), 6.67 (t, *J* = 7.2 Hz, 1H), 6.63 (s, 1H), 6.57 (s, 1H), 4.74 (s, 1H), 3.64 (s, 2H), 3.20 (s, 2H), 2.61 (t, *J* = 5.8 Hz, 2H), 1.95 (s, 3H), 1.79 – 1.71 (m, 2H); ^{13}C NMR (101 MHz, DMSO) δ 154.80, 141.07, 130.13, 128.70, 128.17, 127.47, 127.22, 126.67, 120.61, 119.58, 118.86, 114.93, 41.70, 34.36, 27.24, 21.83, 17.43; HRMS (ESI): Calcd. for $C_{17}H_{19}NO$ $[M+H]^+$: 254.15394; found: 254.15393.

2-methyl-6-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (**3ab**)



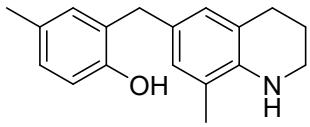
Yellow solid, m.p.: 81 – 82 °C; ^{1}H NMR (400 MHz, DMSO) δ 8.13 (s, 1H), 6.88 (d, *J* = 8.0 Hz, 1H), 6.80 (d, *J* = 8.0 Hz, 1H), 6.63 (t, *J* = 8.0 Hz, 2H), 6.57 (s, 1H), 4.75 (s, 1H), 3.68 (s, 2H), 3.20 (s, 2H), 2.61 (s, 2H), 2.16 (s, 3H), 1.95 (s, 3H), 1.78 – 1.72 (m, 2H); ^{13}C NMR (101 MHz, DMSO) δ 152.52, 141.04, 129.22, 128.16, 127.75, 127.30, 127.20, 124.29, 120.54, 119.49, 119.17, 41.64, 34.69, 27.20, 21.78, 17.39, 16.73; HRMS (ESI): Calcd. for $C_{18}H_{21}NO$ $[M+H]^+$: 268.16959; found: 268.16943.

5-methyl-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (**3ac**)



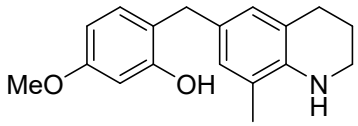
Yellow solid, m.p.: 122 – 123 °C; ^{1}H NMR (400 MHz, DMSO) δ 9.09 (s, 1H), 6.83 (d, *J* = 8.0 Hz, 1H), 6.61 (s, 2H), 6.56 (s, 1H), 6.49 (d, *J* = 7.4 Hz, 1H), 4.72 (s, 1H), 3.60 (s, 2H), 3.42 (d, *J* = 4.0 Hz, 2H), 2.61 (t, *J* = 5.8 Hz, 2H), 2.17 (s, 3H), 1.95 (s, 3H), 1.80 – 1.72 (m, 2H); ^{13}C NMR (101 MHz, DMSO) δ 154.62, 140.97, 135.67, 129.96, 128.08, 127.73, 127.12, 125.62, 120.54, 119.51, 115.57, 41.69, 34.03, 27.23, 21.83, 20.75, 17.39; HRMS (ESI): Calcd. for $C_{18}H_{21}NO$ $[M+H]^+$: 268.16959; found: 268.16946.

4-methyl-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (**3ad**)



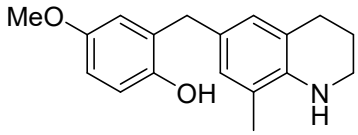
Yellow solid, m.p.: 122 – 123 °C; ^{1}H NMR (400 MHz, DMSO) δ 8.97 (s, 1H), 6.76 (d, *J* = 6.6 Hz, 2H), 6.67 (d, *J* = 8.0 Hz, 1H), 6.63 (s, 1H), 6.57 (s, 1H), 4.73 (s, 1H), 3.61 (s, 2H), 3.20 (t, *J* = 4.0 Hz, 2H), 2.61 (t, *J* = 6.0 Hz, 2H), 2.13 (s, 3H), 1.95 (s, 3H), 1.78 – 1.73 (m, 2H); ^{13}C NMR (101 MHz, DMSO) δ 152.47, 140.98, 130.60, 128.36, 128.09, 127.66, 127.12, 127.03, 126.94, 120.55, 119.52, 114.81, 41.67, 34.33, 27.21, 21.80, 20.23, 17.38; HRMS (ESI): Calcd. for $C_{18}H_{21}NO$ $[M+H]^+$: 268.16959; found: 268.16949.

5-methoxy-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (**3ae**)



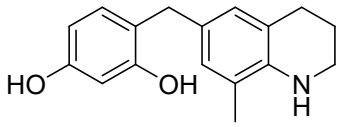
Yellow solid, m.p.: 158 – 159 °C; ^{1}H NMR (500 MHz, DMSO) δ 9.25 (s, 1H), 6.83 (d, *J* = 8.4 Hz, 1H), 6.59 (s, 1H), 6.53 (s, 1H), 6.36 (d, *J* = 2.4 Hz, 1H), 6.27 (dd, *J* = 8.2, 2.4 Hz, 1H), 4.73 (s, 1H), 3.64 (s, 3H), 3.55 (s, 2H), 2.60 (t, *J* = 6.2 Hz, 2H), 1.94 (s, 3H), 1.77 – 1.72 (m, 2H); ^{13}C NMR (126 MHz, DMSO) δ 158.24, 155.51, 140.91, 130.43, 127.98, 127.83, 127.00, 121.03, 120.48, 119.44, 103.99, 101.12, 54.77, 41.63, 33.65, 27.18, 21.78, 17.36; HRMS (ESI): Calcd. for $C_{18}H_{21}NO_2$ $[M+H]^+$: 284.16450; found: 284.16443.

4-methoxy-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (**3af**)



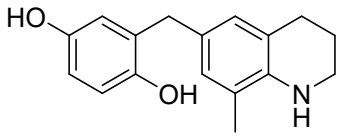
Yellow solid, m.p.: 157 – 158 °C; ^{1}H NMR (400 MHz, DMSO) δ 8.78 (s, 1H), 6.70 (d, *J* = 8.4 Hz, 1H), 6.63 (s, 1H), 6.58 – 6.55 (m, 3H), 4.75 (s, 1H), 3.61 (s, 5H), 3.20 (s, 2H), 2.62 (t, *J* = 5.8 Hz, 2H), 1.96 (s, 3H), 1.80 – 1.72 (m, 2H); ^{13}C NMR (101 MHz, DMSO) δ 152.01, 148.65, 141.06, 129.67, 128.12, 127.25, 127.16, 120.56, 119.53, 116.15, 115.26, 111.04, 55.19, 41.66, 34.54, 27.21, 21.7, 17.38; HRMS (ESI): Calcd. for $C_{18}H_{21}NO_2$ $[M+H]^+$: 284.16450; found: 284.16440.

4-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)benzene-1,3-diol (**3ag**)



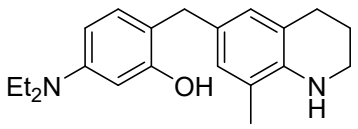
Yellow solid, m.p.: 117 – 118 °C; ^{1}H NMR (400 MHz, DMSO) δ 9.05 (s, 1H), 8.93 (s, 1H), 6.71 (d, *J* = 8.0 Hz, 1H), 6.58 (s, 1H), 6.53 (s, 1H), 6.26 (s, 1H), 6.11 (d, *J* = 8.0 Hz, 1H), 4.74 (s, 1H), 3.51 (s, 2H), 3.19 (s, 2H), 2.60 (s, 2H), 1.94 (s, 3H), 1.75 (s, 2H); ^{13}C NMR (101 MHz, DMSO) δ 156.18, 155.44, 140.87, 130.43, 128.26, 128.04, 127.07, 120.51, 119.46, 119.20, 105.92, 102.35, 41.70, 33.75, 27.24, 21.84, 17.45; HRMS (ESI): Calcd. for $C_{17}H_{19}NO_2$ $[M+H]^+$: 270.14885; found: 270.14874.

2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)benzene-1,4-diol (**3ah**)



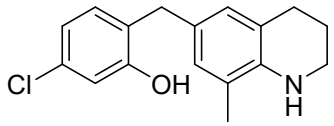
Yellow solid, m.p.: 86 – 87 °C; ^{1}H NMR (400 MHz, DMSO) δ 8.50 (s, 1H), 8.45 (s, 1H), 6.62 (s, 1H), 6.58 (d, *J* = 8.0 Hz, 2H), 6.38 (d, *J* = 8.0 Hz, 2H), 4.76 (s, 1H), 3.57 (s, 2H), 3.21 (s, 2H), 2.63 (t, *J* = 5.8 Hz, 2H), 1.96 (s, 3H), 1.76 (s, 2H); ^{13}C NMR (101 MHz, DMSO) δ 149.6, 147.18, 141.04, 129.39, 128.24, 127.40, 127.29, 120.59, 119.56, 116.63, 115.41, 112.8, 41.67, 34.36, 27.21, 21.80, 17.39; HRMS (ESI): Calcd. for $C_{17}H_{19}NO_2$ $[M+H]^+$: 270.14885; found: 270.14868.

5-(diethylamino)-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (**3ai**)



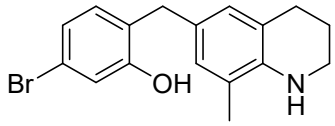
Pink liquid, ^{1}H NMR (400 MHz, DMSO) δ 8.78 (s, 1H), 6.71 (d, *J* = 8.0 Hz, 1H), 6.59 (s, 1H), 6.54 (s, 1H), 6.14 (s, 1H), 6.03 (d, *J* = 8.0 Hz, 1H), 4.71 (s, 1H), 3.49 (s, 2H), 3.24 – 3.19 (m, 6H), 2.60 (t, *J* = 5.8 Hz, 2H), 1.94 (s, 3H), 1.79 – 1.70 (m, 2H), 1.05 (t, *J* = 6.8 Hz, 6H); ^{13}C NMR (101 MHz, DMSO) δ 155.41, 146.83, 140.77, 130.53, 128.59, 127.98, 126.99, 120.41, 119.37, 115.81, 103.14, 99.02, 43.75, 41.66, 33.62, 27.21, 21.83, 17.39, 12.56; HRMS (ESI): Calcd. for $C_{21}H_{28}N_2O$ $[M+H]^+$: 325.22744; found: 325.22729.

5-chloro-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (**3aj**)



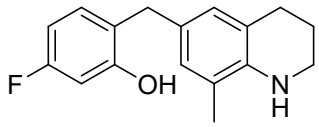
White solid, m.p.: 143 – 144 °C; ^{1}H NMR (500 MHz, DMSO) δ 9.90 (s, 1H), 6.93 (d, *J* = 5.0 Hz, 1H), 6.80 (d, *J* = 5.0 Hz, 1H), 6.72 (dd, *J* = 10.0, 5.0 Hz, 1H), 6.59 (s, 1H), 6.54 (s, 1H), 4.77 (s, 1H), 3.59 (s, 2H), 2.60 (t, *J* = 6.2 Hz, 2H), 1.94 (s, 3H), 1.77 – 1.72 (m, 2H); ^{13}C NMR (126 MHz, DMSO) δ 155.86, 141.14, 131.23, 130.23, 128.05, 127.98, 127.11, 126.66, 120.60, 119.53, 118.48, 114.57, 41.59, 33.72, 27.14, 21.71, 17.35; HRMS (ESI): Calcd. for $C_{17}H_{18}ClNO$ $[M+H]^+$: 288.11496; found: 288.11475.

5-bromo-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (**3ak**)



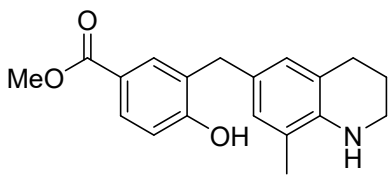
White solid, m.p.: 145 – 146 °C; ^{1}H NMR (500 MHz, DMSO) δ 9.78 (s, 1H), 6.94 (d, *J* = 5.0 Hz, 1H), 6.89 – 6.84 (m, 2H), 6.59 (s, 1H), 6.54 (s, 1H), 4.78 (s, 1H), 3.58 (s, 2H), 3.19 (s, 2H), 2.60 (t, *J* = 6.2 Hz, 2H), 1.94 (s, 3H), 1.77 – 1.72 (m, 2H); ^{13}C NMR (126 MHz, DMSO) δ 155.97, 141.16, 131.69, 128.41, 128.06, 127.12, 126.55, 121.49, 120.60, 119.54, 118.47, 117.39, 41.59, 33.78, 27.15, 21.71, 17.36; HRMS (ESI): Calcd. for $C_{17}H_{18}BrNO$ $[M+H]^+$: 332.06445; found: 332.06427.

5-fluoro-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (**3al**)



White solid, m.p.: 134 – 135 °C; ^{1}H NMR (500 MHz, DMSO) δ 9.76 (s, 1H), 6.94 (t, *J* = 10.0 Hz, 1H), 6.60 (s, 1H), 6.58 – 6.55 (m, 2H), 6.51 – 6.47 (m, 1H), 4.76 (s, 1H), 3.59 (s, 2H), 3.20 (s, 2H), 2.61 (t, *J* = 5.0 Hz, 2H), 1.94 (s, 3H), 1.77 – 1.73 (m, 2H); ^{13}C NMR (126 MHz, DMSO) δ 160.89 (d, *J* = 240.6 Hz), 155.91 (d, *J* = 11.4 Hz), 141.10, 130.80 (d, J = 10.0 Hz), 128.05, 127.08 (d, *J* = 3.8 Hz), 125.01, 120.59, 119.53, 105.00 (d, *J* = 20.2 Hz), 101.91 (d, *J* = 22.6 Hz), 41.62, 33.67, 27.17, 21.75, 17.37; ^{19}F NMR (471 MHz, DMSO) δ -116.29; HRMS (ESI): Calcd. for $C_{17}H_{18}FNO$ $[M+H]^+$: 272.14451; found: 272.14432.

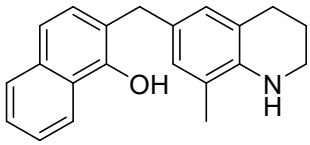
methyl 4-hydroxy-3-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)benzoate (**3am**)



Yellow liquid, ^{1}H NMR (400 MHz, DMSO) δ 10.29 (s, 1H), 7.66 (d, *J* = 8.0 Hz, 1H), 7.62 (s, 1H), 6.88 (d, *J* = 8.0 Hz, 1H), 6.62 (s, 1H), 6.57 (s, 1H), 4.83 (s, 1H), 3.75 (s, 3H), 3.68 (s, 2H), 3.20 (s, 2H), 2.61 (s, 2H), 1.95 (s, 3H), 1.75 (s,

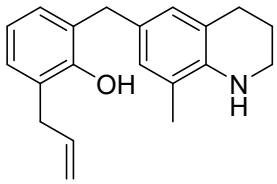
2H); ^{13}C NMR (101 MHz, DMSO) δ 166.70, 160.05, 141.64, 131.98, 129.49, 129.28, 128.57, 127.64, 127.12, 121.15, 120.56, 120.08, 115.28, 52.00, 42.07, 34.52, 27.63, 22.17, 17.87; HRMS (ESI): Calcd. for $C_{19}H_{21}NO_3$ $[M+H]^+$: 312.15942; found: 312.15933.

2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)naphthalen-1-ol (**3an**)



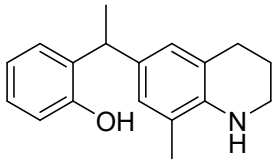
Brown liquid, ^{1}H NMR (400 MHz, DMSO) δ 9.12 (s, 1H), 8.22 (d, *J* = 8.0 Hz, 1H), 7.76 (d, *J* = 8.0 Hz, 1H), 7.46 – 7.38 (m, 2H), 7.31 (d, *J* = 8.0 Hz, 1H), 7.18 (d, *J* = 12.0 Hz, 1H), 6.67 (s, 1H), 6.61 (s, 1H), 4.79 (s, 1H), 3.91 (s, 2H), 3.21 – 3.18 (m, 2H), 2.60 (t, *J* = 6.2 Hz, 2H), 1.95 (s, 3H), 1.77 – 1.71 (m, 2H); ^{13}C NMR (101 MHz, DMSO) δ 148.94, 141.09, 132.91, 128.97, 128.09, 127.52, 127.41, 127.14, 125.44, 125.09, 124.67, 123.15, 121.97, 120.65, 119.59, 119.10, 41.61, 34.35, 27.18, 21.74, 17.40; HRMS (ESI): Calcd. for $C_{21}H_{21}NO$ $[M+H]^+$: 304.16959; found: 304.16953.

2-allyl-6-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (**3ao**)



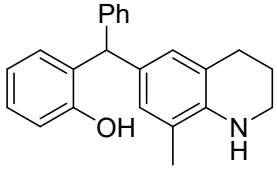
Yellow liquid, ^{1}H NMR (400 MHz, DMSO) δ 8.20 (s, 1H), 6.87 (d, *J* = 8.0 Hz, 1H), 6.83 (d, *J* = 8.0 Hz, 1H), 6.68 (t, *J* = 8.0 Hz, 1H), 6.62 (s, 1H), 6.57 (s, 1H), 6.00 – 5.90 (m, 1H), 5.01 (d, *J* = 8.0 Hz, 1H), 4.75 (s, 1H), 3.71 (s, 2H), 3.39 – 3.37 (m, 2H), 3.21 (s, 2H), 2.62 (t, *J* = 5.8 Hz, 2H), 1.96 (s, 3H), 1.77 – 1.71 (m, 2H); ^{13}C NMR (101 MHz, DMSO) δ 152.04, 141.08, 137.22, 129.53, 128.19, 128.13, 127.24, 127.11, 126.67, 120.57, 119.53, 119.41, 115.28, 41.65, 34.70, 34.14, 27.20, 21.78, 17.38; HRMS (ESI): Calcd. for $C_{20}H_{23}NO$ $[M+H]^+$: 294.18524; found: 294.18521.

2-(1-(8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)ethyl)phenol (**3ap**)



Yellow liquid, ^{1}H NMR (400 MHz, DMSO) δ 9.17 (s, 1H), 7.02 (d, *J* = 8.0 Hz, 1H), 6.94 (t, *J* = 7.2 Hz, 1H), 6.74 (d, *J* = 7.8 Hz, 1H), 6.69 (t, *J* = 7.2 Hz, 1H), 6.64 (s, 1H), 6.59 (s, 1H), 4.74 (s, 1H), 4.26 (d, *J* = 4.0 Hz, 1H), 3.20 (s, 2H), 2.62 (s, 2H), 1.95 (s, 3H), 1.75 (s, 2H), 1.41 (d, *J* = 8.0 Hz, 3H); ^{13}C NMR (101 MHz, DMSO) δ 154.14, 140.97, 133.63, 132.54, 127.33, 126.84, 126.18, 125.79, 120.35, 119.26 118.79, 114.86, 41.63, 35.70, 27.26, 21.79, 21.07, 17.46; HRMS (ESI): Calcd. for $C_{18}H_{21}NO$ $[M+H]^+$: 268.16959; found: 268.16946.

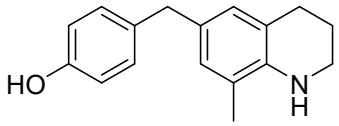
2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)(phenyl)methyl)phenol (**3aq**)



White solid, m.p.: 158 – 159 °C; ^{1}H NMR (500 MHz, $CDCl_3$) δ 7.30 – 7.27 (m, 2H), 7.22 (d, *J* = 5.0 Hz, 1H), 7.15 – 7.10 (m, 3H), 6.84 – 6.78 (m, 3H), 6.65 (s, 1H), 6.61 (s, 1H), 5.48 (s, 1H), 3.33 (t, *J* = 5.0 Hz, 2H), 2.68 (t, *J* = 5.0 Hz, 2H), 1.99 (s, 3H), 1.91 – 1.86 (m, 2H). ^{13}C NMR (126 MHz, $CDCl_3$) δ 153.89, 143.20, 141.70, 131.09, 130.46, 129.46, 128.85,

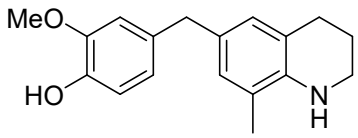
128.55, 128.19, 127.82, 126.93, 126.52, 121.74, 121.34, 120.62, 116.38, 50.88, 42.43, 27.39, 22.17, 17.37; HRMS (ESI): Calcd. for $C_{23}H_{23}NO$ $[M+H]^+$: 330.18524; found: 330.18466.

4-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (**3ar**)



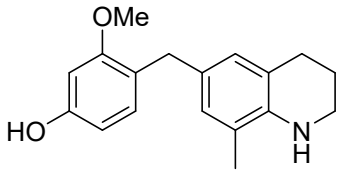
Yellow solid, m.p.: 133 – 134 °C; ^{1}H NMR (500 MHz, $CDCl_3$) δ 6.99 (s, 2H), 6.75 (s, 1H), 6.72 (s, 1H), 6.60 (s, 2H), 4.93 (s, 1H), 3.78 (s, 2H), 3.37 (s, 2H), 2.77 (s, 2H), 2.08 (s, 3H), 1.96 (s, 2H); ^{13}C NMR (126 MHz, $CDCl_3$) δ 153.94, 140.34, 134.14, 130.61, 129.83, 128.79, 128.11, 122.54, 122.14, 115.23, 42.66, 40.25, 27.19, 22.27, 17.32; HRMS (ESI): Calcd. for $C_{17}H_{19}NO$ $[M+H]^+$: 254.15394; found: 254.15379.

2-methoxy-4-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol（**3as**）



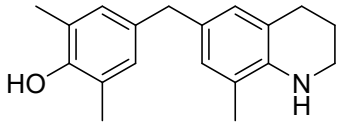
White solid, m.p.: 156 – 157 °C; ^{1}H NMR (500 MHz, $CDCl_3$) δ 6.85 (d, *J* = 5.0 Hz, 1H), 6.71 (d, *J* = 5.0 Hz, 3H), 6.68 (s, 1H), 3.86 (s, 3H), 3.77 (s, 2H), 3.36 (t, *J* = 5.0 Hz, 2H), 2.76 (t, *J* = 5.0 Hz, 2H), 2.07 (s, 3H), 1.97 – 1.92 (m, 2H). ^{13}C NMR (126 MHz, $CDCl_3$) δ 146.51, 143.79, 140.97, 134.21, 129.58, 128.36, 127.65, 121.63, 121.19, 114.25, 111.57, 55.98, 42.54, 40.89, 27.37, 22.40, 17.29; HRMS (ESI): Calcd. for $C_{18}H_{21}NO_2$ $[M+H]^+$: 284.16450; found: 284.16403.

3-methoxy-4-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol（**3at**）



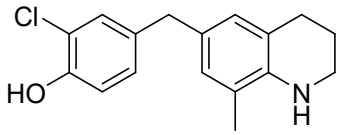
Yellow solid, m.p.: 181 – 182 °C; ^{1}H NMR (500 MHz, $CDCl_3$) δ 6.75 (d, *J* = 10.0 Hz, 1H), 6.72 (s, 1H), 6.68 (s, 1H), 6.35 (s, 1H), 6.11 (d, *J* = 10.0 Hz, 1H), 3.74 (s, 3H), 3.70 (s, 2H), 3.33 (t, *J* = 5.0 Hz, 2H), 2.73 (t, *J* = 5.0 Hz, 2H), 2.04 (s, 3H), 1.94 – 1.90 (m, 2H). ^{13}C NMR (126 MHz, $CDCl_3$) δ 158.33, 155.24, 140.31, 130.43, 130.07, 128.86, 128.17, 122.73, 122.27, 121.90, 106.54, 98.91, 55.47, 42.70, 34.11, 27.27, 22.39, 17.36; HRMS (ESI): Calcd. for $C_{18}H_{21}NO_2$ $[M+H]^+$: 284.16450; found: 284.16406.

2,6-dimethyl-4-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol（**3au**）



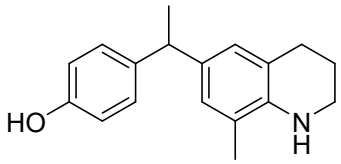
White solid, m.p.: 131 – 132 °C; ^{1}H NMR (500 MHz, $CDCl_3$) δ 6.85 (s, 2H), 6.74 (s, 1H), 6.71 (s, 1H), 3.72 (s, 2H), 3.38 (t, *J* = 5.0 Hz, 2H), 2.79 (t, *J* = 5.0 Hz, 2H), 2.24 (s, 6H), 2.08 (s, 3H), 1.98 – 1.95 (m, 2H). ^{13}C NMR (126 MHz, $CDCl_3$) δ 150.34, 140.88, 133.94, 129.95, 129.00, 128.40, 127.70, 122.94, 121.60, 121.18, 42.55, 40.43, 27.36, 22.41, 17.29, 16.03; HRMS (ESI): Calcd. for $C_{19}H_{23}NO$ $[M+H]^+$: 282.18524; found: 282.18478.

2-chloro-4-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol（**3av**）



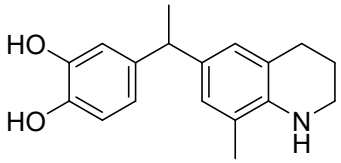
White solid, m.p.: 113 – 114 °C; ^{1}H NMR (500 MHz, DMSO) δ 9.86 (s, 1H), 7.07 (s, 1H), 6.92 (d, *J* = 5.0 Hz, 1H), 6.85 (d, *J* = 5.0 Hz, 1H), 6.59 (s, 1H), 6.54 (s, 1H), 4.81 (s, 1H), 3.57 (s, 2H), 3.20 (s, 2H), 2.62 (t, *J* = 5.0 Hz, 2H), 1.95 (s, 3H), 1.75 (s, 2H). ^{13}C NMR (126 MHz, DMSO) δ 150.89, 141.30, 134.49, 129.45, 127.98, 127.95, 127.44, 127.02, 120.78, 119.69, 119.21, 116.47, 41.59, 27.14, 21.69, 17.37; HRMS (ESI): Calcd. for $C_{17}H_{18}ClNO$ $[M+H]^+$: 288.11496; found: 288.11456.

4-(1-(8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)ethyl)phenol（**3aw**）



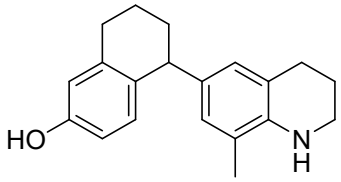
White solid, m.p.: 156 – 157 °C; ^{1}H NMR (500 MHz, $CDCl_3$) δ 7.04 (s, 1H), 7.02 (s, 1H), 6.76 (s, 1H), 6.73 (s, 1H), 6.62 (s, 1H), 6.60 (s, 1H), 4.73 (s, 1H), 3.97 – 3.93 (m, 1H), 3.36 (t, *J* = 5.0 Hz, 2H), 2.77 (t, *J* = 5.0 Hz, 2H), 2.07 (s, 3H), 1.97 – 1.92 (m, 2H), 1.56 (d, *J* = 10.0 Hz, 3H). ^{13}C NMR (126 MHz, $CDCl_3$) δ 153.78, 140.36, 139.41, 135.85, 128.65, 127.39, 126.67, 122.26, 121.85, 115.10, 43.14, 42.63, 27.29, 22.50, 22.30, 17.43; HRMS (ESI): Calcd. for $C_{18}H_{21}NO$ $[M+H]^+$: 268.16959; found: 268.16934.

4-(1-(8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)ethyl)benzene-1,2-diol (**3ax**)



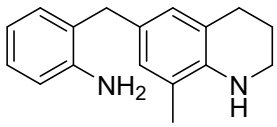
Red solid, m.p.: 136 – 137 °C; ^{1}H NMR (500 MHz, $CDCl_3$) δ 6.71 (s, 1H), 6.69 (s, 1H), 6.66 (s, 1H), 6.61 – 6.56 (m, 2H), 3.85 (q, *J* = 5.0 Hz, 1H), 3.33 (t, *J* = 5.0 Hz, 2H), 2.74 (t, *J* = 5.0 Hz, 2H), 2.04 (s, 3H), 1.95 – 1.90 (m, 2H), 1.49 (d, *J* = 5.0 Hz, 3H). ^{13}C NMR (126 MHz, $CDCl_3$) δ 143.55, 141.69, 140.43, 140.36, 135.82, 127.32, 126.59, 122.30, 121.88, 119.86, 115.08, 114.71, 43.36, 42.65, 27.30, 22.37, 22.31, 17.43; HRMS (ESI): Calcd. for $C_{18}H_{21}NO_2$ $[M+H]^+$: 284.16450; found: 284.16412.

5-(8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)-5,6,7,8-tetrahydronaphthalen-2-ol (**3ay**)



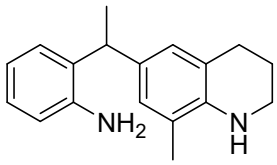
White solid, m.p.: 205 – 206 °C; ^{1}H NMR (500 MHz, $CDCl_3$) δ 6.66 (d, *J* = 5.0 Hz, 1H), 6.64 (s, 1H), 6.61 (s, 1H), 6.58 (s, 1H), 6.25 (d, *J* = 5.0 Hz, 1H), 3.84 – 3.81 (m, 1H), 3.37 – 3.35 (m, 2H), 2.88 – 2.82 (m, 1H), 2.78 – 2.73 (m, 3H), 2.08 – 2.05 (m, 4H), 1.96 – 1.88 (m, 3H), 1.82 – 1.70 (m, 2H). ^{13}C NMR (126 MHz, $CDCl_3$) δ 153.54, 140.47, 138.99, 136.70, 132.60, 131.33, 128.46, 127.89, 122.07, 121.69, 114.91, 112.99, 44.57, 42.65, 33.90, 30.21, 27.28, 22.35, 21.70, 17.40; HRMS (ESI): Calcd. for $C_{20}H_{23}NO$ $[M+H]^+$: 294.18524; found: 294.18488.

2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)aniline (**5aa**)



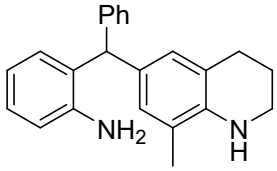
Yellow solid, m.p.: 91 – 92 °C; ^{1}H NMR (400 MHz, DMSO) δ 6.88 (t, *J* = 8.0 Hz, 1H), 6.82 (d, *J* = 8.0 Hz, 1H), 6.59 (d, *J* = 8.0 Hz, 2H), 6.55 (s, 1H), 6.48 (t, *J* = 7.2 Hz, 1H), 4.72 (s, 3H), 3.54 (s, 2H), 3.21 (t, *J* = 8.0 Hz, 2H), 2.61 (t, *J* = 8.0 Hz, 2H), 1.95 (s, 3H), 1.79 – 1.72 (m, 2H); ^{13}C NMR (101 MHz, DMSO) δ 145.93, 141.21, 129.65, 128.08, 127.14, 126.50, 126.02, 125.45, 120.70, 119.62, 116.18, 114.57, 41.61, 36.02, 27.18, 21.71, 17.43; HRMS (ESI): Calcd. for $C_{17}H_{20}N_2$ $[M+H]^+$: 253.16992; found: 253.16986.

2-(1-(8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)ethyl)aniline (**5ab**)



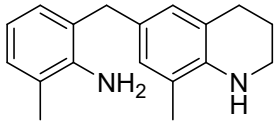
Red solid, m.p.: 82 – 83 °C; ^{1}H NMR (400 MHz, DMSO) δ 7.04 (d, *J* = 8.0 Hz, 1H), 6.90 (t, *J* = 8.0 Hz, 1H), 6.63 (s, 1H), 6.60 – 6.55 (m, 3H), 4.77 (s, 1H), 4.55 (s, 2H), 3.91 – 3.86 (m, 1H), 3.21 (t, *J* = 8.0 Hz, 2H), 2.62 (t, *J* = 8.0 Hz, 2H), 1.96 (s, 3H), 1.79 – 1.73 (m, 2H), 1.42 (d, *J* = 4.0 Hz, 3H); ^{13}C NMR (101 MHz, DMSO) δ 145.36, 141.25, 131.88, 130.00, 126.71, 126.49, 126.16, 125.68, 120.62, 119.51, 116.39, 114.94, 41.60, 37.60, 27.24, 21.72, 21.66, 17.48; HRMS (ESI): Calcd. for $C_{18}H_{22}N_2$ $[M+H]^+$: 267.18557; found: 267.18552.

2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)(phenyl)methyl)aniline (**5ac**)



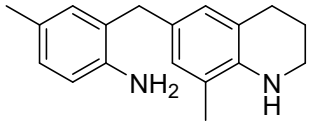
Red solid, m.p.: 81 – 82 °C; ^{1}H NMR (400 MHz, DMSO) δ 7.26 (t, *J* = 8.0 Hz, 2H), 7.17 (t, *J* = 8.0 Hz, 2H), 7.08 (*d*, J = 8.0 Hz, 2H), 6.92 (t, *J* = 8.0 Hz, 1H), 6.65 (d, *J* = 8.0 Hz, 1H), 6.58 (d, *J* = 8.0 Hz, 1H), 6.53 (s, 1H), 6.50 – 6.47 (m, 2H), 5.28 (s, 1H), 4.55 (s, 2H), 3.22 (s, 2H), 2.58 (t, *J* = 5.8 Hz, 2H), 1.94 (s, 3H), 1.76 – 1.73 (m, 2H); ^{13}C NMR (101 MHz, DMSO) δ 145.55, 144.03, 141.53, 129.13, 128.81, 128.45, 128.31, 128.05, 127.50, 126.57, 125.85, 120.56, 119.43, 116.08, 115.04, 50.06, 41.55, 27.21, 21.62, 17.52; HRMS (ESI): Calcd. for $C_{23}H_{24}N_2$ $[M+H]^+$: 329.20122; found: 329.20123.

2-methyl-6-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)aniline (**5ad**)



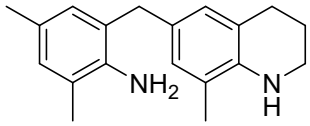
Yellow liquid, ^{1}H NMR (400 MHz, $CDCl_3$) δ 6.99 (t, *J* = 8.0 Hz, 2H), 6.72 – 6.69 (m, 3H), 3.77 (s, 2H), 3.57 (s, 3H), 3.37 – 3.34 (m, 2H), 2.75 – 2.72 (m, 2H), 2.16 (s, 3H), 2.04 (s, 3H), 1.95 – 1.89 (m, 2H); ^{13}C NMR (101 MHz, $CDCl_3$) δ 143.15, 141.24, 128.85, 128.71, 128.10, 127.41, 127.14, 125.59, 122.39, 121.75, 121.32, 117.96, 42.50, 37.86, 27.37, 22.33, 17.70, 17.29; HRMS (ESI): Calcd. for $C_{18}H_{22}N_2$ $[M+H]^+$: 267.18557; found: 267.18555.

4-methyl-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)aniline (**5ae**)



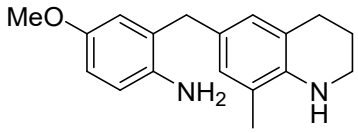
Yellow solid, m.p.: 117 – 118 °C; ^{1}H NMR (400 MHz, DMSO) δ 6.71 (d, *J* = 8.0 Hz, 1H), 6.69 (s, 1H), 6.61 (s, 1H), 6.56 (s, 1H), 6.52 (d, *J* = 7.8 Hz, 1H), 4.81 (s, 1H), 4.43 (s, 2H), 3.53 (s, 2H), 3.22 (s, 2H), 2.62 (t, *J* = 8.0 Hz, 2H), 2.12 (s, 3H), 1.96 (s, 3H), 1.80 – 1.72 (m, 2H); ^{13}C NMR (101 MHz, DMSO) δ 143.46, 141.22, 130.32, 128.00, 127.05, 127.02, 126.18, 125.54, 124.46, 120.69, 119.62, 114.87, 41.63, 36.18, 27.20, 21.74, 20.27, 17.42; HRMS (ESI): Calcd. for $C_{18}H_{22}N_2$ $[M+H]^+$: 267.18557; found: 267.18552.

2,4-dimethyl-6-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)aniline (**5af**)



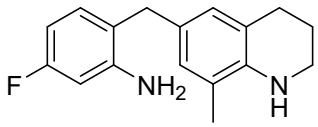
Yellow solid, m.p.: 115 – 116 °C; ^{1}H NMR (400 MHz, $CDCl_3$) δ 6.86 (s, 2H), 6.77 (s, 1H), 6.74 (s, 1H), 3.79 (s, 2H), 3.52 (s, 3H), 3.41 – 3.38 (m, 2H), 2.79 (t, *J* = 8.0 Hz, 2H), 2.31 (s, 3H), 2.18 (s, 3H), 2.08 (s, 3H), 2.01 – 1.94 (m, 2H); ^{13}C NMR (101 MHz, $CDCl_3$) δ 141.16, 140.57, 129.41, 129.33, 128.04, 127.34, 127.29, 126.97, 125.68, 122.46, 121.68, 121.26, 42.47, 37.86, 27.34, 22.31, 20.56, 17.62, 17.25; HRMS (ESI): Calcd. for $C_{19}H_{24}N_2$ $[M+H]^+$: 281.20122; found: 281.20123.

4-methoxy-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)aniline (**5ag**)



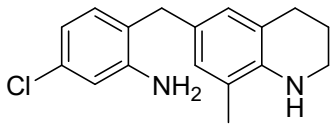
Yellow solid, m.p.: 111 – 112 °C; ^{1}H NMR (400 MHz, $CDCl_3$) δ 6.73 (s, 2H), 6.69 (d, *J* = 8.0 Hz, 2H), 6.62 (d, *J* = 8.4 Hz, 1H), 3.78 (s, 3H), 3.75 (s, 2H), 3.38 – 3.35 (m, 2H), 2.75 (s, 2H), 2.05 (s, 3H), 1.98 – 1.90 (m, 2H); ^{13}C NMR (101 MHz, $CDCl_3$) δ 152.76, 141.24, 138.57, 128.07, 128.01, 127.37, 126.76, 121.70, 121.27, 116.96, 116.85, 112.21, 55.77, 42.46, 37.76, 27.34, 22.29, 17.25; HRMS (ESI): Calcd. for $C_{18}H_{22}N_2O$ $[M+H]^+$: 283.18048; found: 283.18039.

5-fluoro-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)aniline (**5ah**)



Yellow solid, m.p.: 127 – 128 °C; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.02 (t, *J* = 8.0 Hz, 1H), 6.71 (s, 1H), 6.68 (s, 1H), 6.46 (t, *J* = 8.0 Hz, 1H), 6.37 (d, *J* = 8.0 Hz, 1H), 3.72 (s, 2H), 3.67 (s, 2H), 3.39 – 3.36 (m, 2H), 2.76 (t, *J* = 6.0 Hz, 2H), 2.06 (s, 3H), 1.99 – 1.91 (m, 2H); ^{13}C NMR (101 MHz, $CDCl_3$) δ 162.59 (d, *J* = 242.4 Hz), 146.36 (d, *J* = 11.1 Hz), 141.33, 131.71 (d, *J* = 10.1 Hz), 127.94, 127.25, 126.65, 121.75, 121.71, 121.32, 104.69 (d, *J* = 21.2 Hz), 102.48 (d, *J* = 24.2 Hz), 42.44, 36.86, 27.34, 22.25, 17.25; ^{19}F NMR (376 MHz, $CDCl_3$) δ -116.57; HRMS (ESI): Calcd. for $C_{17}H_{19}FN_2$ $[M+H]^+$: 271.16050; found: 271.16028.

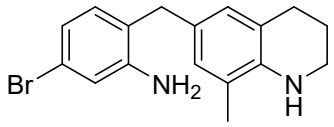
5-chloro-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)aniline (**5ai**)



Yellow solid, m.p.: 119 – 120 °C; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.00 (d, *J* = 8.0 Hz, 1H), 6.74 (d, *J* = 8.0 Hz, 1H), 6.70

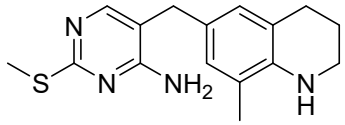
(s, 1H), 6.66 (s, 1H), 6.64 (s, 1H), 3.72 (s, 2H), 3.63 (s, 3H), 3.39 – 3.36 (m, 2H), 2.75 (t, *J* = 6.2 Hz, 2H), 2.06 (s, 3H), 1.97 – 1.91 (m, 2H); ^{13}C NMR (101 MHz, $CDCl_3$) δ 146.11, 141.38, 132.57, 131.81, 127.96, 127.28, 126.22, 124.56, 121.75, 121.32, 118.30, 115.43, 42.44, 37.01, 27.34, 22.24, 17.26; HRMS (ESI): Calcd. for $C_{17}H_{19}ClN_2$ $[M+H]^+$: 287.13095; found: 287.13095.

5-bromo-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)aniline (**5aj**)



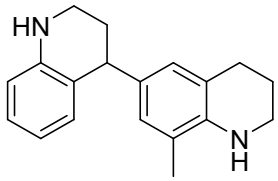
Yellow solid, m.p.: 129 – 130 °C; ^{1}H NMR (400 MHz, $CDCl_3$) δ 6.94 (d, *J* = 8.0 Hz, 1H), 6.88 (dd, *J* = 8.0, 4.0 Hz, 1H), 6.79 (s, 1H), 6.69 (s, 1H), 6.66 (s, 1H), 3.70 (s, 2H), 3.62 (s, 3H), 3.37 (t, *J* = 4.0 Hz, 2H), 2.75 (t, *J* = 6.4 Hz, 2H), 2.05 (s, 3H), 1.97 – 1.91 (m, 2H); ^{13}C NMR (101 MHz, $CDCl_3$) δ 146.39, 141.38, 132.16, 127.97, 127.28, 126.10, 125.06, 121.75, 121.33, 121.24, 120.61, 118.29, 42.44, 37.08, 27.34, 22.24, 17.24; HRMS (ESI): Calcd. for $C_{17}H_{19}BrN_2$ $[M+H]^+$: 331.08043; found: 331.08054.

5-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)-2-(methylthio)pyrimidin-4-amine (**5ak**)



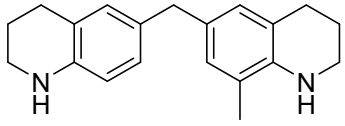
Yellow solid, m.p.: 149 – 150 °C; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.96 (s, 1H), 6.65 (s, 1H), 6.62 (s, 1H), 4.78 (s, 2H), 3.58 (s, 2H), 3.35 (t, *J* = 4.0 Hz, 2H), 2.71 (t, *J* = 4.0 Hz, 2H), 2.51 (s, 3H), 2.02 (s, 3H), 1.94 – 1.88 (m, 2H); ^{13}C NMR (101 MHz, $CDCl_3$) δ 169.65, 161.76, 155.46, 141.81, 127.78, 127.11, 124.40, 121.95, 121.55, 112.55, 42.42, 33.95, 27.36, 22.15, 17.25, 14.06; HRMS (ESI): Calcd. for $C_{16}H_{20}N_4S$ $[M+H]^+$: 301.14814; found: 301.14798.

8'-methyl-1,1',2,2',3,3',4,4'-octahydro-4,6'-biquinoline (**5al**)



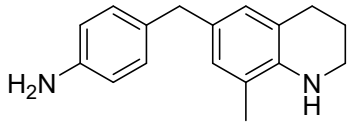
Yellow liquid, ^{1}H NMR (500 MHz, $CDCl_3$) δ 7.00 (t, *J* = 7.6 Hz, 1H), 6.83 (d, *J* = 5.0 Hz, 1H), 6.68 (s, 1H), 6.64 (s, 1H), 6.59 – 6.54 (m, 2H), 3.98 (t, *J* = 5.0 Hz, 1H), 3.37 (t, *J* = 5.0 Hz, 2H), 3.29 (*t*, J = 5.0 Hz, 2H), 2.76 (t, *J* = 5.0 Hz, 2H), 2.19 – 2.13 (m, 1H), 2.06 (s, 3H), 2.04 – 2.00 (m, 1H), 1.97 – 1.92 (m, 2H). ^{13}C NMR (126 MHz, $CDCl_3$) δ 145.04, 141.05, 134.79, 130.69, 128.21, 127.68, 127.02, 124.63, 121.32, 120.88, 117.05, 114.17, 42.52, 42.20, 39.64, 31.51, 27.42, 22.39, 17.37; HRMS (ESI): Calcd. for $C_{19}H_{22}N_2$ $[M+H]^+$: 279.18557; found: 279.18500.

8-methyl-6-((1,2,3,4-tetrahydroquinolin-6-yl)methyl)-1,2,3,4-tetrahydroquinoline (**5am**)



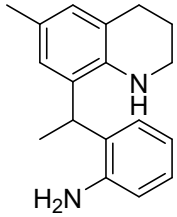
Yellow solid, m.p.: 119 – 120 °C; ^{1}H NMR (500 MHz, $CDCl_3$) δ 6.81 (d, *J* = 10.0 Hz, 2H), 6.73 (s, 1H), 6.70 (s, 1H), 6.42 (d, *J* = 5.0 Hz, 1H), 3.69 (s, 2H), 3.36 (t, *J* = 5.0 Hz, 2H), 3.28 (d, *J* = 5.0 Hz, 2H), 2.77 – 2.73 (m, 4H), 2.06 (s, 3H), 1.97 – 1.91 (m, 4H). ^{13}C NMR (126 MHz, $CDCl_3$) δ 142.85, 140.81, 130.98, 130.28, 129.95, 128.45, 127.73, 127.21, 121.68, 121.54, 121.12, 114.51, 42.58, 42.26, 40.44, 27.38, 27.06, 22.50, 22.47, 17.30; HRMS (ESI): Calcd. for $C_{20}H_{24}N_2$ $[M+H]^+$: 293.20122; found: 293.20087.

4-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)aniline (**5an**)



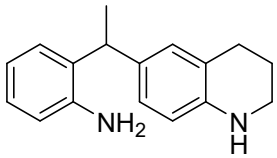
Yellow solid, m.p.: 109 – 110 °C; ^{1}H NMR (500 MHz, $CDCl_3$) δ 7.00 (d, *J* = 5.0 Hz, 2H), 6.71 (s, 1H), 6.68 (s, 1H), 6.63 (d, *J* = 10.0 Hz, 2H), 3.73 (s, 2H), 3.35 (t, *J* = 5.0 Hz, 2H), 2.76 (t, *J* = 5.0 Hz, 2H), 2.05 (s, 3H), 1.96 – 1.91 (m, 2H). ^{13}C NMR (126 MHz, $CDCl_3$) δ 144.25, 140.85, 132.48, 129.99, 129.73, 128.41, 127.70, 121.54, 121.11, 115.39, 42.54, 40.34, 27.35, 22.42, 17.27; HRMS (ESI): Calcd. for $C_{17}H_{20}N_2$ $[M+H]^+$: 253.16992; found: 253.16951.

2-(1-(6-methyl-1,2,3,4-tetrahydroquinolin-8-yl)ethyl)aniline (**5mb**)



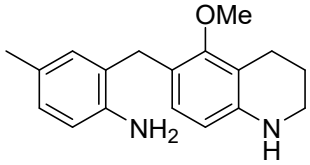
Yellow liquid, ^{1}H NMR (500 MHz, $CDCl_3$) δ 7.17 (d, *J* = 5.0 Hz, 1H), 7.06 (t, *J* = 10.0 Hz, 1H), 6.79 (t, *J* = 10.0 Hz, 1H), 6.75 (s, 1H), 6.71 (s, 1H), 6.65 (d, *J* = 10.0 Hz, 1H), 3.96 – 3.92 (m, 1H), 3.68 (s, 2H), 3.30 – 3.25 (m, 1H), 3.23 – 3.18 (m, 1H), 2.75 (t, *J* = 5.0 Hz, 2H), 2.19 (s, 3H), 1.89 – 1.84 (m, 2H), 1.58 (d, *J* = 10.0 Hz, 3H). ^{13}C NMR (126 MHz, $CDCl_3$) δ 144.17, 139.62, 129.83, 128.98, 128.50, 127.20, 127.12, 126.18, 125.53, 122.28, 118.94, 116.17, 42.57, 34.12, 27.60, 22.25, 20.65, 19.49; HRMS (ESI): Calcd. for $C_{18}H_{22}N_2$ $[M+H]^+$: 267.18557; found: 267.18515.

2-(1-(1,2,3,4-tetrahydroquinolin-6-yl)ethyl)aniline (**5nb-1**)



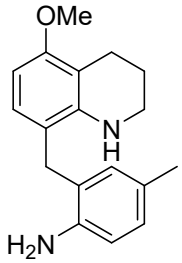
Yellow liquid, ^{1}H NMR (500 MHz, $CDCl_3$) δ 7.30 (d, *J* = 7.4 Hz, 1H), 7.09 (t, *J* = 7.4 Hz, 1H), 6.85 (t, *J* = 7.4 Hz, 1H), 6.79 (d, *J* = 6.6 Hz, 2H), 6.64 (d, *J* = 10.0 Hz, 1H), 6.40 (d, *J* = 10.0 Hz, 1H), 3.94 (dd, *J* = 13.8, 6.8 Hz, 1H), 3.49 (s, 2H), 3.27 (t, *J* = 6.2 Hz, 2H), 2.71 (t, J = 6.2 Hz, 2H), 1.96 – 1.90 (m, 2H), 1.59 (d, *J* = 5.0 Hz, 3H); ^{13}C NMR (126 MHz, $CDCl_3$) δ 144.55, 143.30, 133.93, 130.69, 128.55, 127.07, 125.81, 121.85, 118.61, 116.18, 114.65, 42.11, 39.61, 27.08, 22.30, 22.11; HRMS (ESI): Calcd. for $C_{17}H_{20}N_2$ $[M+H]^+$: 253.16992; found: 253.16954.

2-((5-methoxy-1,2,3,4-tetrahydroquinolin-6-yl)methyl)-4-methylaniline (**5oe-1**)



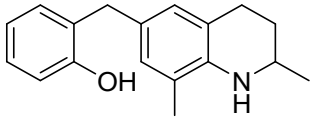
Yellow liquid, ^{1}H NMR (500 MHz, $CDCl_3$) δ 6.90 (s, 1H), 6.83 (d, *J* = 10.0 Hz, 1H), 6.69 (d, *J* = 10.0 Hz, 1H), 6.53 (d, *J* = 10.0 Hz, 1H), 6.19 (d, *J* = 10.0 Hz, 1H), 3.73 (s, 5H), 3.24 (t, *J* = 5.0 Hz, 2H), 2.77 (t, *J* = 5.0 Hz, 2H), 2.22 (s, 3H), 1.93 – 1.88 (m, 2H); ^{13}C NMR (126 MHz, $CDCl_3$) δ 156.33, 144.72, 142.27, 131.30, 127.94, 127.75, 127.53, 126.22, 120.24, 115.81, 114.80, 110.87, 60.52, 41.74, 31.19, 21.94, 21.46, 20.63; HRMS (ESI): Calcd. for $C_{18}H_{22}N_2O$ $[M+H]^+$: 283.18048; found: 283.18005.

2-((5-methoxy-1,2,3,4-tetrahydroquinolin-8-yl)methyl)-4-methylaniline (**5oe-2**)



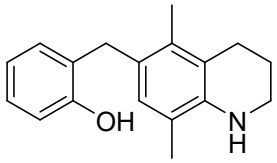
Yellow liquid, ^{1}H NMR (500 MHz, $CDCl_3$) δ 6.90 (d, *J* = 5.0 Hz, 1H), 6.82 (s, 1H), 6.72 (d, *J* = 8.2 Hz, 1H), 6.62 (d, *J* = 5.0 Hz, 1H), 6.19 (d, *J* = 5.0 Hz, 1H), 3.79 (s, 3H), 3.57 (s, 2H), 3.26 (t, *J* = 5.0 Hz, 2H), 2.71 (t, *J* = 5.0 Hz, 2H), 2.23 (s, 3H), 1.93 – 1.88 (m, 2H); ^{13}C NMR (126 MHz, $CDCl_3$) δ 156.77, 143.84, 142.37, 130.67, 128.35, 128.10, 126.87, 124.26, 116.16, 115.50, 110.06, 98.87, 55.34, 41.83, 33.05, 21.74, 21.11, 20.66; HRMS (ESI): Calcd. for $C_{18}H_{22}N_2O$ $[M+H]^+$: 283.18048; found: 283.18005.

2-((2,8-dimethyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (**3ba**)



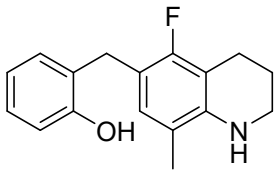
Yellow liquid, ^{1}H NMR (400 MHz, DMSO) δ 9.24 (s, 1H), 6.99 – 6.96 (m, 2H), 6.79 (d, *J* = 4.0 Hz, 1H), 6.68 (t, *J* = 8.0 Hz, 1H), 6.65 (s, 1H), 6.61 (s, 1H), 4.47 (s, 1H), 3.66 (s, 2H), 3.32 – 3.29 (m, 1H), 2.75 – 2.64 (m, 1H), 2.60 – 2.54 (m, 1H), 1.99 (s, 3H), 1.83 – 1.80 (m, 1H), 1.47 – 1.38 (m, 1H), 1.18 (d, *J* = 4.0 Hz, 3H); ^{13}C NMR (101 MHz, DMSO) δ 154.80, 141.02, 130.10, 128.64, 128.19, 127.77, 127.00, 126.63, 120.59, 119.46, 118.82, 114.91, 46.85, 34.35, 29.75, 26.45, 22.39, 17.43; HRMS (ESI): Calcd. for $C_{18}H_{21}NO$ $[M+H]^+$: 268.16959; found: 268.16934.

2-((5,8-dimethyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (**3ca**)



White solid, m.p.: 108 – 109 °C; ^{1}H NMR (400 MHz, DMSO) δ 9.31 (s, 1H), 6.98 – 6.94 (m, 1H), 6.82 (d, *J* = 7.8 Hz, 1H), 6.67 (d, *J* = 4.0 Hz, 1H), 6.63 (t, *J* = 7.2 Hz, 1H), 6.58 (s, 1H), 4.69 (s, 1H), 3.72 (s, 2H), 3.19 – 3.16 (m, 2H), 2.57 (t, *J* = 6.4 Hz, 2H), 1.97 (s, 3H), 1.93 (s, 3H), 1.86 – 1.80 (m, 2H); ^{13}C NMR (101 MHz, DMSO) δ 154.70, 141.65, 131.91, 129.34, 129.17, 127.97, 126.34, 125.13, 118.87, 118.73, 118.19, 114.59, 40.96, 32.35, 24.81, 22.32, 17.29, 14.46; HRMS (ESI): Calcd. for $C_{18}H_{21}NO$ $[M+H]^+$: 268.16959; found: 268.16949.

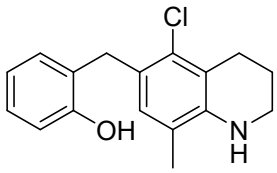
2-((5-fluoro-8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (**3da**)



Yellow liquid, ^{1}H NMR (400 MHz, DMSO) δ 9.29 (s, 1H), 6.98 (t, *J* = 8.0 Hz, 1H), 6.87 (d, *J* = 8.0 Hz, 1H), 6.79 (d, *J* = 8.0 Hz, 1H), 6.67 (t, *J* = 8.0 Hz, 1H), 6.59 (d, *J* = 8.0 Hz, 1H), 5.08 (s, 1H), 3.68 (s, 2H), 3.19 (s, 2H), 2.61 (t, *J* = 6.0 Hz, 2H), 1.92 (s, 3H), 1.81 – 1.73 (m, 2H); ^{13}C NMR (101 MHz, DMSO) δ 157.24 (d, *J* = 237.4 Hz), 154.87, 142.65 (d, *J* = 8.1 Hz), 129.62, 128.89 (d, *J* = 6.0 Hz), 127.18, 126.75, 118.77, 115.92, 114.77, 112.20 (d, *J* = 17.2 Hz), 106.56 (d, *J* = 22.2 Hz), 79.18, 40.79, 27.56, 20.67, 19.97, 16.84; ^{19}F NMR (376 MHz, DMSO) δ -127.41; HRMS (ESI): Calcd. for

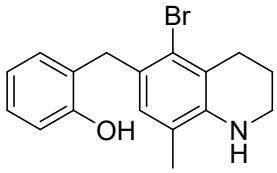
$C_{17}H_{18}FNO$ $[M+H]^+$: 272.14451; found: 272.14438.

2-((5-chloro-8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (**3ea**)



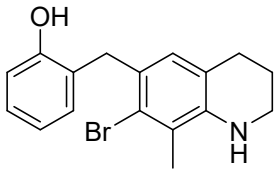
Yellow liquid, ^{1}H NMR (400 MHz, DMSO) δ 9.32 (s, 1H), 6.99 (t, *J* = 8.0 Hz, 1H), 6.81 (d, *J* = 8.0 Hz, 1H), 6.78 (d, *J* = 8.0 Hz, 1H), 6.68 – 6.65 (m, 2H), 5.11 (s, 1H), 3.81 (s, 2H), 3.19 (s, 2H), 2.70 (t, *J* = 6.4 Hz, 2H), 1.95 (s, 3H), 1.86 – 1.78 (m, 2H); ^{13}C NMR (101 MHz, DMSO) δ 154.97, 143.04, 131.24, 129.50, 129.44, 126.79, 123.76, 119.48, 118.74, 117.22, 114.72, 40.68, 32.32, 25.47, 21.48, 17.19; HRMS (ESI): Calcd. for $C_{17}H_{18}ClNO$ $[M+H]^+$: 288.11496; found: 288.11487.

2-((5-bromo-8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (**3fa**)



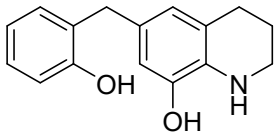
Yellow liquid, ^{1}H NMR (500 MHz, $CDCl_3$) δ 7.14 (t, *J* = 5.0 Hz, 1H), 7.06 (d, *J* = 5.0 Hz, 1H), 6.87 (t, *J* = 10.0 Hz, 1H), 6.82 (d, *J* = 10.0 Hz, 1H), 6.65 (s, 1H), 4.01 (s, 2H), 3.31 (t, *J* = 5.0 Hz, 2H), 2.83 (t, *J* = 5.0 Hz, 2H), 1.99 – 1.95 (m, 5H); ^{13}C NMR (126 MHz, $CDCl_3$) δ 154.02, 143.13, 130.93, 129.32, 127.76, 126.55, 126.21, 125.89, 120.89, 120.81, 115.76, 41.72, 36.42, 28.97, 22.54, 17.15; HRMS (ESI): Calcd. for $C_{17}H_{18}BrNO$ $[M+H]^+$: 332.06445; found: 332.06430.

2-((7-bromo-8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (**3ga**)



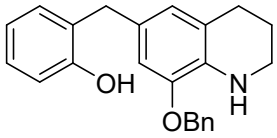
Yellow solid, m.p.: 115 – 116 °C; ^{1}H NMR (500 MHz, $CDCl_3$) δ 7.14 (t, *J* = 5.0 Hz, 1H), 7.06 (d, *J* = 10.0 Hz, 1H), 6.88 (t, *J* = 10.0 Hz, 1H), 6.82 (d, *J* = 10.0 Hz, 1H), 6.60 (s, 1H), 4.02 (s, 2H), 3.35 (t, *J* = 5.0 Hz, 2H), 2.65 (t, *J* = 5.0 Hz, 2H), 2.25 (s, 3H), 1.91 – 1.86 (m, 2H); ^{13}C NMR (126 MHz, $CDCl_3$) δ 154.00, 142.43, 130.95, 128.67, 127.77, 126.56, 126.32, 125.41, 121.22, 120.91, 120.49, 115.76, 42.46, 36.91, 27.20, 21.85, 17.43; HRMS (ESI): Calcd. for $C_{17}H_{18}BrNO$ $[M+H]^+$: 332.06445; found: 332.06427.

6-(2-hydroxybenzyl)-1,2,3,4-tetrahydroquinolin-8-ol (**3ha**)



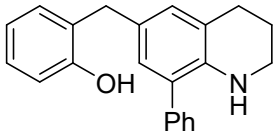
Red liquid, ^{1}H NMR (400 MHz, DMSO) δ 9.26 (s, 1H), 8.86 (s, 1H), 6.98 – 6.94 (m, 2H), 6.79 (d, *J* = 4.0 Hz, 1H), 6.68 (t, *J* = 7.2 Hz, 1H), 6.34 (s, 1H), 6.25 (s, 1H), 4.45 (s, 1H), 3.60 (s, 2H), 3.17 – 3.14 (m, 2H), 2.58 (t, *J* = 6.2 Hz, 2H), 1.79 – 1.73 (m, 2H); ^{13}C NMR (101 MHz, DMSO) δ 154.84, 143.26, 131.74, 130.17, 128.51, 127.65, 126.64, 120.18, 120.15, 118.76, 114.91, 112.30, 41.11, 34.51, 26.59, 22.08; HRMS (ESI): Calcd. for $C_{16}H_{17}NO_2$ $[M+H]^+$: 256.13320; found: 256.13306.

2-((8-(benzyloxy)-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (**3ia**)



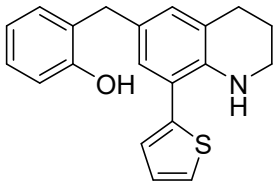
Yellow liquid, ^{1}H NMR (400 MHz, DMSO) δ 9.28 (s, 1H), 7.47 (d, *J* = 8.0 Hz, 2H), 7.37 (t, *J* = 8.0 Hz, 2H), 7.32 (d, *J* = 7.2 Hz, 1H), 6.97 (dd, *J* = 16.0, 8.0 Hz, 2H), 6.80 (d, *J* = 4.0 Hz, 1H), 6.69 (d, *J* = 8.0 Hz, 1H), 6.66 (s, 1H), 6.39 (s, 1H), 4.99 (s, 2H), 4.69 (s, 1H), 3.69 (s, 2H), 3.20 – 3.17 (m, 2H), 2.61 (t, *J* = 6.2 Hz, 2H), 1.80 – 1.74 (m, 2H); ^{13}C NMR (101 MHz, DMSO) δ 154.73, 144.61, 137.46, 132.78, 130.00, 128.41, 128.30, 127.61, 127.58, 127.34, 126.66, 121.83, 120.09, 118.81, 114.87, 110.34, 69.28, 41.00, 34.66, 26.57, 21.73; HRMS (ESI): Calcd. for $C_{23}H_{23}NO_2$ $[M+H]^+$: 346.18015; found: 346.18005.

2-((8-phenyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (**3ja**)



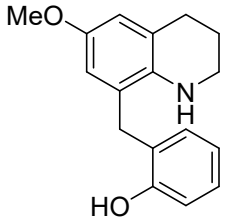
Yellow liquid, ^{1}H NMR (500 MHz, DMSO) δ 9.26 (s, 1H), 7.41 (t, *J* = 10.0 Hz, 2H), 7.34 – 7.29 (m, 3H), 7.03 (d, *J* = 5.0 Hz, 1H), 6.97 (t, *J* = 7.6 Hz, 1H), 6.77 (d, *J* = 10.0 Hz, 1H), 6.75 (s, 1H), 6.69 (d, *J* = 10.0 Hz, 1H), 6.68 (s, 1H), 4.52 (s, 1H), 3.70 (s, 2H), 3.11 (s, 2H), 2.68 (t, *J* = 10.0 Hz, 2H), 1.80 – 1.73 (m, 2H); ^{13}C (126 MHz, DMSO) δ 154.81, 139.70, 139.67, 130.16, 128.89, 128.66, 128.39, 128.28, 128.20, 126.76, 126.66, 125.62, 120.59, 118.88, 114.95, 41.56, 34.34, 27.34, 21.57; HRMS (ESI): Calcd. for $C_{22}H_{21}NO$ $[M+H]^+$: 316.16959; found: 316.16946.

2-((8-(thiophen-2-yl)-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (**3ka**)



Yellow liquid, ^{1}H NMR (500 MHz, $CDCl_3$) δ 7.32 (d, *J* = 5.0 Hz, 1H), 7.17 (d, *J* = 10.0 Hz, 1H), 7.15 – 7.12 (m, 2H), 7.11 – 7.07 (m, 1H), 6.98 (s, 1H), 6.90 (t, *J* = 10.0 Hz, 1H), 6.83 (s, 1H), 6.79 (d, *J* = 5.0 Hz, 1H), 3.88 (s, 2H), 3.28 (t, *J* = 5.0 Hz, 2H), 2.77 (t, *J* = 5.0 Hz, 2H), 1.96 – 1.91 (m, 2H); ^{13}C NMR (126 MHz, $CDCl_3$) δ 154.14, 141.06, 130.94, 129.78, 129.06, 127.82, 127.55, 127.47, 126.83, 126.07, 125.27, 122.25, 120.88, 119.10, 115.98, 42.10, 35.89, 27.57, 21.89; HRMS (ESI): Calcd. for $C_{20}H_{19}NOS$ $[M+H]^+$: 322.12601; found: 322.12573.

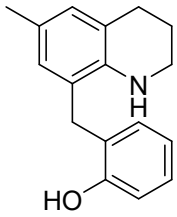
2-((6-methoxy-1,2,3,4-tetrahydroquinolin-8-yl)methyl)phenol (**3la**)



Yellow solid, m.p.: 86 – 87 °C; ^{1}H NMR (400 MHz, DMSO) δ 9.63 (s, 1H), 7.04 – 6.99 (m, 2H), 6.80 (d, *J* = 7.8 Hz, 1H), 6.71 (t, *J* = 8.0 Hz, 1H), 6.37 (s, 1H), 6.26 (s, 1H), 4.72 (s, 1H), 3.59 (s, 2H), 3.55 (s, 3H), 3.16 (s, 2H), 2.67 (t, *J* = 6.0 Hz, 2H), 1.79 – 1.73 (m, 2H); ^{13}C NMR (101 MHz, DMSO) δ 154.95, 150.41, 136.42, 130.42, 127.19, 126.48, 126.03, 121.63, 119.06, 115.02, 113.89, 111.71, 55.09, 41.75, 30.45, 27.40, 21.86; HRMS (ESI): Calcd. for $C_{17}H_{19}NO_2$ $[M+H]^+$:

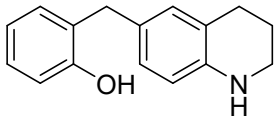
270.14885; found: 270.14862.

2-((6-methyl-1,2,3,4-tetrahydroquinolin-8-yl)methyl)phenol (**3ma**)



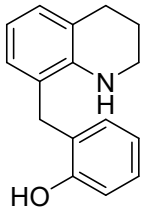
Yellow liquid, ^{1}H NMR (400 MHz, DMSO) δ 9.53 (s, 1H), 6.99 (t, *J* = 7.6 Hz, 1H), 6.94 (d, *J* = 4.0 Hz, 1H), 6.79 (d, *J* = 8.0 Hz, 1H), 6.68 (t, *J* = 7.2 Hz, 1H), 6.52 (s, 1H), 6.44 (s, 1H), 4.87 (s, 1H), 3.56 (s, 2H), 3.17 (s, 2H), 2.62 (t, *J* = 8.0 Hz, 2H), 2.02 (s, 3H), 1.78 – 1.69 (m, 2H); ^{13}C NMR (101 MHz, DMSO) δ 154.82, 140.14, 130.36, 127.64, 127.57, 126.96, 126.22, 124.42, 123.48, 120.32, 119.08, 114.96, 41.63, 30.22, 27.15, 21.75, 20.22; HRMS (ESI): Calcd. For $C_{17}H_{19}NO$ $[M+H]^+$: 254.15394; found: 254.15382.

2-((1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (**3na-1**)



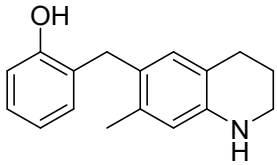
Yellow liquid, ^{1}H NMR (400 MHz, DMSO) δ 9.23 (s, 1H), 6.96 (t, *J* = 8.0 Hz, 2H), 6.77 (d, *J* = 7.8 Hz, 1H), 6.71 – 6.65 (m, 3H), 6.32 (d, *J* = 8.0 Hz, 1H), 3.64 (s, 2H), 3.12 (t, *J* = 4.0 Hz, 2H), 2.58 (t, *J* = 4.0 Hz, 2H), 1.77 – 1.72 (m, 2H); ^{13}C NMR (101 MHz, DMSO) δ 154.78, 143.22, 130.06, 129.29, 128.58, 127.75, 126.83, 126.66, 119.80, 118.81, 114.89, 113.46, 40.99, 34.35, 26.77, 21.79; HRMS (ESI): Calcd. For $C_{16}H_{17}NO$ $[M+H]^+$: 240.13829; found: 240.13811.

2-((1,2,3,4-tetrahydroquinolin-8-yl)methyl)phenol (**3na-2**)



Yellow liquid, ^{1}H NMR (400 MHz, DMSO) δ 9.51 (s, 1H), 7.01 (t, *J* = 8.0 Hz, 1H), 6.96 (d, *J* = 8.0 Hz, 1H), 6.81 (d, *J* = 8.0 Hz, 1H), 6.71 (t, *J* = 8.0 Hz, 2H), 6.58 (d, *J* = 8.0 Hz, 1H), 6.35 (t, *J* = 8.0 Hz, 1H), 5.10 (s, 1H), 3.59 (s, 2H), 3.23 (t, *J* = 4.0 Hz, 2H), 2.68 (t, *J* = 4.0 Hz, 2H), 1.80 – 1.75 (m, 2H); ^{13}C NMR (126 MHz, DMSO) δ 154.84, 142.52, 130.44, 127.02, 126.96, 126.88, 126.02, 123.99, 119.92, 119.10, 115.06, 114.94, 41.47, 30.23, 27.21, 21.50; HRMS (ESI): Calcd. For $C_{16}H_{17}NO$ $[M+H]^+$: 240.13829; found: 240.13818.

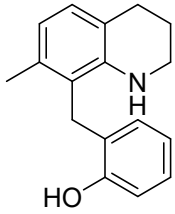
2-((7-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (**3ra-1**)



Yellow liquid, ^{1}H NMR (400 MHz, DMSO) δ 9.26 (s, 1H), 6.97 (t, *J* = 8.0 Hz, 1H), 6.79 (d, *J* = 7.8 Hz, 1H), 6.72 (d, *J* = 7.2 Hz, 1H), 6.65 (t, *J* = 7.2 Hz, 1H), 6.53 (s, 1H), 6.24 (s, 1H), 5.28 (s, 1H), 3.64 (s, 2H), 3.12 (t, *J* = 4.0 Hz, 2H), 2.55 (t, *J* = 4.0 Hz, 2H), 2.00 (s, 3H), 1.78 – 1.72 (m, 2H); ^{13}C NMR (101 MHz, DMSO) δ 154.85, 143.46, 133.67, 130.34, 129.32, 127.66, 126.47, 125.32, 118.73, 117.39, 115.20, 114.64, 40.99, 31.53, 26.34, 22.01, 18.97; HRMS (ESI): Calcd.

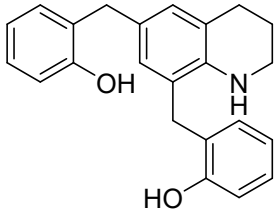
For $C_{17}H_{19}NO$ $[M+H]^+$: 254.15394; found: 254.15370.

2-((7-methyl-1,2,3,4-tetrahydroquinolin-8-yl)methyl)phenol (**3ra-2**)



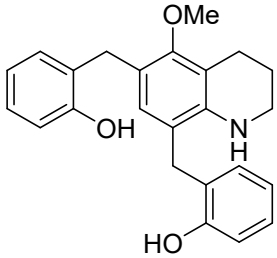
Yellow liquid, ^{1}H NMR (500 MHz, $CDCl_3$) δ 7.17 (d, *J* = 7.4 Hz, 1H), 7.08 (t, *J* = 7.4 Hz, 1H), 6.85 (d, *J* = 5.0 Hz, 1H), 6.81 – 6.78 (m, 2H), 6.70 (d, *J* = 5.0 Hz, 1H), 3.79 (s, 2H), 3.32 (t, *J* = 5.0 Hz, 2H), 2.79 (t, *J* = 5.0 Hz, 2H), 2.32 (s, 3H), 1.91 – 1.86 (m, 2H); ^{13}C NMR (126 MHz, $CDCl_3$) δ 156.04, 139.76, 135.91, 131.30, 128.11, 127.92, 126.57, 126.40, 124.57, 123.67, 123.61, 119.39, 116.59, 43.01, 29.51, 27.28, 22.35, 20.40; HRMS (ESI): Calcd. For $C_{17}H_{19}NO$ $[M+H]^+$: 254.15394; found: 254.15369.

2,2'-((1,2,3,4-tetrahydroquinoline-6,8-diyl)bis(methylene))diphenol (**3naa**)



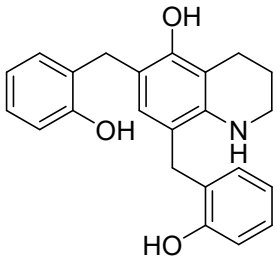
Yellow liquid, ^{1}H NMR (400 MHz, DMSO) δ 9.59 (s, 1H), 9.21 (s, 1H), 7.02 – 6.91 (m, 4H), 6.82 (d, *J* = 7.6 Hz, 1H), 6.77 (d, *J* = 8.0 Hz, 1H), 6.71 – 6.66 (m, 2H), 6.63 (s, 1H), 6.57 (s, 1H), 4.91 (s, 1H), 3.61 (d, *J* = 6.6 Hz, 4H), 3.18 (s, 2H), 2.62 (s, 2H), 1.75 (s, 2H); ^{13}C NMR (101 MHz, DMSO) δ 154.76, 154.69, 140.49, 130.14, 129.95, 128.47, 128.04, 127.65, 127.44, 126.89, 126.59, 126.20, 124.12, 120.15, 119.08, 118.76, 114.94, 114.84, 41.58, 34.32, 30.27, 27.24, 21.72; HRMS (ESI): Calcd. for $C_{23}H_{23}NO_2$ $[M+H]^+$: 346.18015; found: 346.17993.

2,2'-((5-methoxy-1,2,3,4-tetrahydroquinoline-6,8-diyl)bis(methylene))diphenol (**3oaa**)



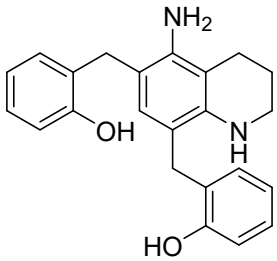
Yellow liquid, ^{1}H NMR (400 MHz, DMSO) δ 9.60 (s, 1H), 9.24 (s, 1H), 7.01 – 6.92 (m, 3H), 6.83 – 6.78 (m, 3H), 6.71 – 6.63 (m, 2H), 6.55 (s, 1H), 5.03 (s, 1H), 3.70 (s, 2H), 3.58 (s, 2H), 3.55 (s, 3H), 3.20 (s, 2H), 2.69 (s, 2H), 1.76 (s, 2H); ^{13}C NMR (101 MHz, DMSO) δ 154.90, 154.74, 154.68, 141.96, 130.16, 129.64, 129.37, 128.25, 126.93, 126.46, 126.28, 119.98, 119.16, 118.99, 118.67, 114.97, 114.64, 113.37, 59.63, 41.09, 30.09, 28.56, 21.49, 21.25; HRMS (ESI): Calcd. for $C_{24}H_{25}NO_3$ [M+H]+: 376.19072; found: 376.19061.

2,2'-((5-hydroxy-1,2,3,4-tetrahydroquinoline-6,8-diyl)bis(methylene))diphenol (**3paa**)



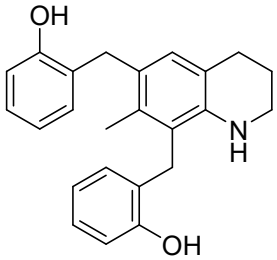
Yellow liquid, ^{1}H NMR (500 MHz, $CDCl_3$) δ 7.21 (d, *J* = 10.0 Hz, 1H), 7.19 (d, *J* = 5.0 Hz, 1H), 7.07 (t, *J* = 10.0 Hz, 1H), 7.00 (t, *J* = 10.0 Hz, 1H), 6.94 (s, 1H), 6.83 (t, *J* = 5.0 Hz, 1H), 6.82 – 6.79 (m, 2H), 6.78 (d, *J* = 10.0 Hz, 1H), 3.78 (s, 2H), 3.69 (s, 2H), 3.11 (t, *J* = 5.0 Hz, 2H), 2.59 (t, *J* = 5.0 Hz, 2H), 1.75 – 1.72 (m, 2H); ^{13}C NMR (126 MHz, $CDCl_3$) δ 154.91, 152.58, 150.64, 139.26, 130.67, 130.28, 129.05, 127.85, 127.71, 127.66, 127.40, 121.26, 121.12, 120.24, 119.63, 116.52, 115.67, 113.86, 42.07, 32.38, 30.92, 21.93, 21.45; HRMS (ESI): Calcd. for $C_{23}H_{23}NO_3$ $[M+H]^+$: 362.17507; found: 362.17474.

2,2'-((5-amino-1,2,3,4-tetrahydroquinoline-6,8-diyl)bis(methylene))diphenol (**3qaa**)



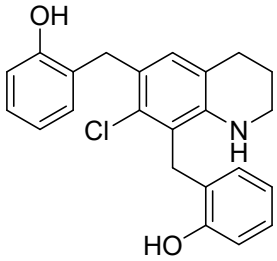
Yellow solid, m.p.: 105 – 106 °C; ^{1}H NMR (500 MHz, $CDCl_3$) δ 7.15 (d, *J* = 5.0 Hz, 1H), 7.12 (d, *J* = 5.0 Hz, 1H), 7.09 – 7.06 (m, 2H), 6.89 (s, 1H), 6.84 – 6.81 (m, 2H), 6.79 – 6.76 (m, 2H), 5.32 (s, 3H), 3.74 (s, 2H), 3.68 (s, 2H), 3.20 (t, *J* = 5.0 Hz, 2H), 2.48 (t, *J* = 10.0 Hz, 2H), 1.94 – 1.87 (m, 2H); ^{13}C NMR (126 MHz, $CDCl_3$) δ 155.11, 154.46, 140.12, 139.37, 130.38, 130.27, 129.38, 127.95, 127.25, 126.53, 120.80, 120.71, 120.27, 119.08, 116.60, 116.39, 112.84, 41.86, 32.89, 32.66, 22.55, 22.34; HRMS (ESI): Calcd. for $C_{23}H_{24}N_2O_2$ $[M+H]^+$: 361.19105; found: 361.19101.

2,2'-((7-methyl-1,2,3,4-tetrahydroquinoline-6,8-diyl)bis(methylene))diphenol (**3raa**)



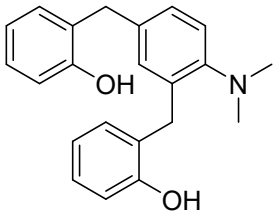
Yellow liquid, ^{1}H NMR (400 MHz, DMSO) δ 9.64 (s, 1H), 9.31 (s, 1H), 6.96 (d, *J* = 6.8 Hz, 2H), 6.84 –6.81 (m, 2H), 6.71 (d, *J* = 6.8 Hz, 1H), 6.67 – 6.64 (m, 3H), 6.59 (s, 1H), 4.69 (s, 1H), 3.74 (s, 4H), 3.15 (s, 2H), 2.64 (s, 2H), 1.94 (s, 3H), 1.74 (s, 2H); ^{13}C NMR (101 MHz, DMSO) δ 155.22, 154.81, 141.45, 132.86, 129.23, 129.14, 128.01, 127.76, 126.57, 126.48, 126.15, 125.76, 122.53, 118.91, 118.80, 118.20, 114.67, 114.64, 41.80, 32.72, 27.16, 26.15, 21.87, 15.25; HRMS (ESI): Calcd. for $C_{24}H_{25}NO_2$ $[M+H]^+$: 360.19580; found: 360.19568.

2,2'-((7-chloro-1,2,3,4-tetrahydroquinoline-6,8-diyl)bis(methylene))diphenol (**3saa**)



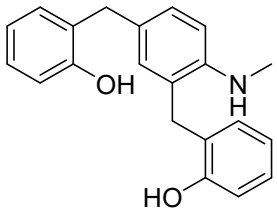
Yellow liquid, ^{1}H NMR (500 MHz, DMSO) δ 9.70 (s, 1H), 9.35 (s, 1H), 7.00 (d, *J* = 5.0 Hz, 2H), 6.84 – 6.80 (m, 3H), 6.72 (d, *J* = 5.0 Hz, 1H), 6.69 (d, *J* = 5.0 Hz, 1H), 6.66 – 6.62 (m, 2H), 5.14 (s, 1H), 3.91 (s, 2H), 3.83 (s, 2H), 3.15 (s, 2H), 2.60 (s, 2H), 1.72 (s, 2H); ^{13}C NMR (126 MHz, DMSO) δ 155.04, 154.90, 142.75, 131.98, 129.55, 129.43, 127.97, 126,87, 126.81, 126.70, 124.86, 124.29, 120.68, 119.06, 118.98, 118.82, 114.77, 114.73, 41.29, 32.80, 26.98, 21.17; HRMS (ESI): Calcd. for $C_{23}H_{22}ClNO_2$ $[M+H]^+$: 380.14118; found: 380.14151.

2,2'-((4-(dimethylamino)-1,3-phenylene)bis(methylene))diphenol (**3taa**)



Yellow solid, m.p.: 151 – 152 °C; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.22 (dd, *J* = 8.0, 4.0 Hz, 1H), 7.15 – 7.06 (m, 5H), 7.03 (dd, *J* = 8.2, 2.0 Hz, 1H), 6.90 – 6.88 (m, 1H), 6.86 – 6.84 (m 1H), 6.80 – 6.78 (m, 2H), 3.92 (s, 2H), 3.86 (s, 2H), 2.77 (s, 6H); ^{13}C NMR (101 MHz, $CDCl_3$) δ 155.58, 153.92, 147.58, 138.08, 136.62, 131.49, 131.03, 130.06, 128.15, 128.02, 127.96, 127.81, 126.98, 120.98, 120.36, 119.81, 117.08, 115.77, 46.06, 35.72, 33.71; HRMS (ESI): Calcd. for $C_{22}H_{23}NO_2$ $[M+H]^+$: 334.18015; found: 334.17996.

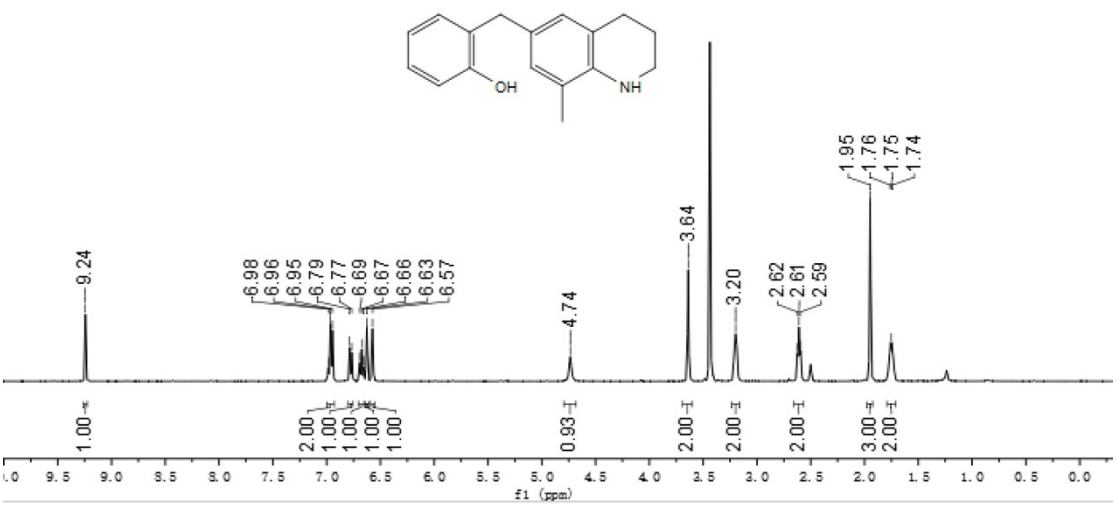
2,2'-((4-(methylamino)-1,3-phenylene)bis(methylene))diphenol (**3uaa**)



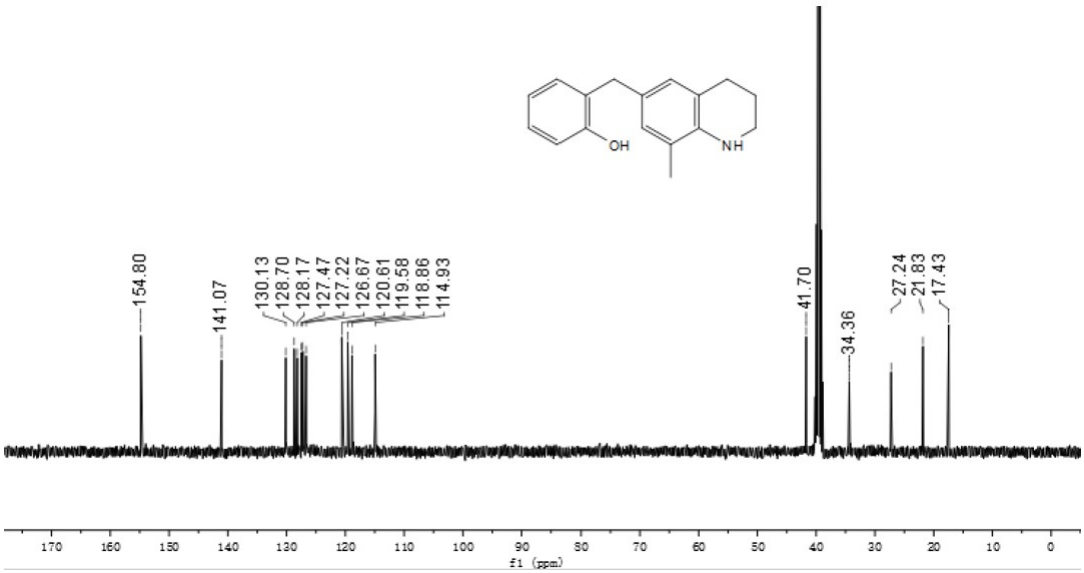
Yellow liquid, ^{1}H NMR (400 MHz, DMSO) δ 9.57 (s, 1H), 9.22 (s, 1H), 7.04 – 6.87 (m, 5H), 6.81 – 6.79 (m, 3H), 6.69 (s, 2H), 6.42 (d, *J* = 4.0 Hz, 1H), 4.92 (s, 1H), 3.68 (s, 4H), 2.69 (s, 3H); ^{13}C NMR (101 MHz, DMSO) δ 154.78, 154.65, 145.22, 130.09, 130.05, 129.88, 128.43, 127.98, 127.25, 126.93, 126.62, 126.02, 124.78, 119.09, 118.75, 114.91, 114.82, 109.01, 34.29, 30.39; HRMS (ESI): Calcd. for $C_{21}H_{21}NO_2$ $[M+H]^+$: 320.16450; found: 320.16452.

6. NMR spectra of the obtained compounds

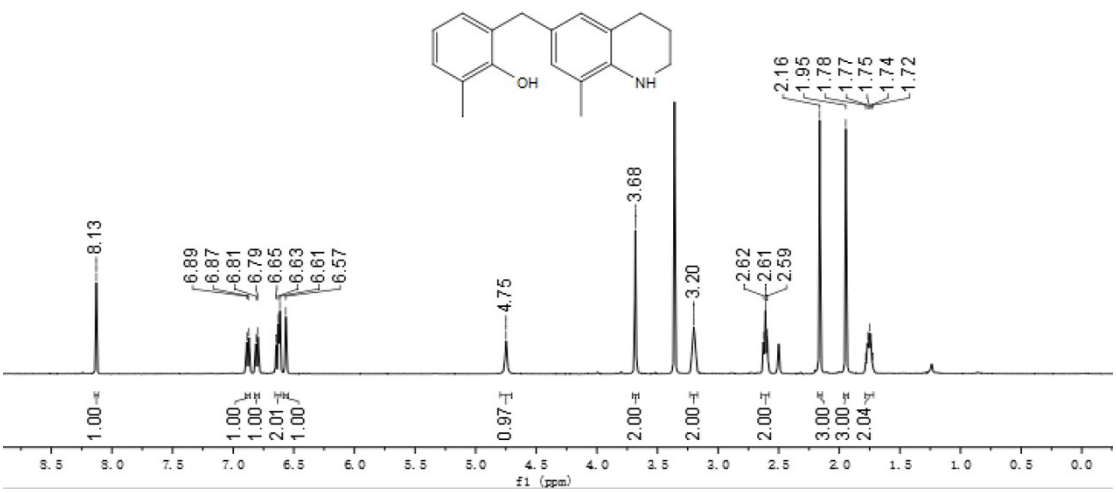
^{1}H- NMR spectrum of 2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3aa)



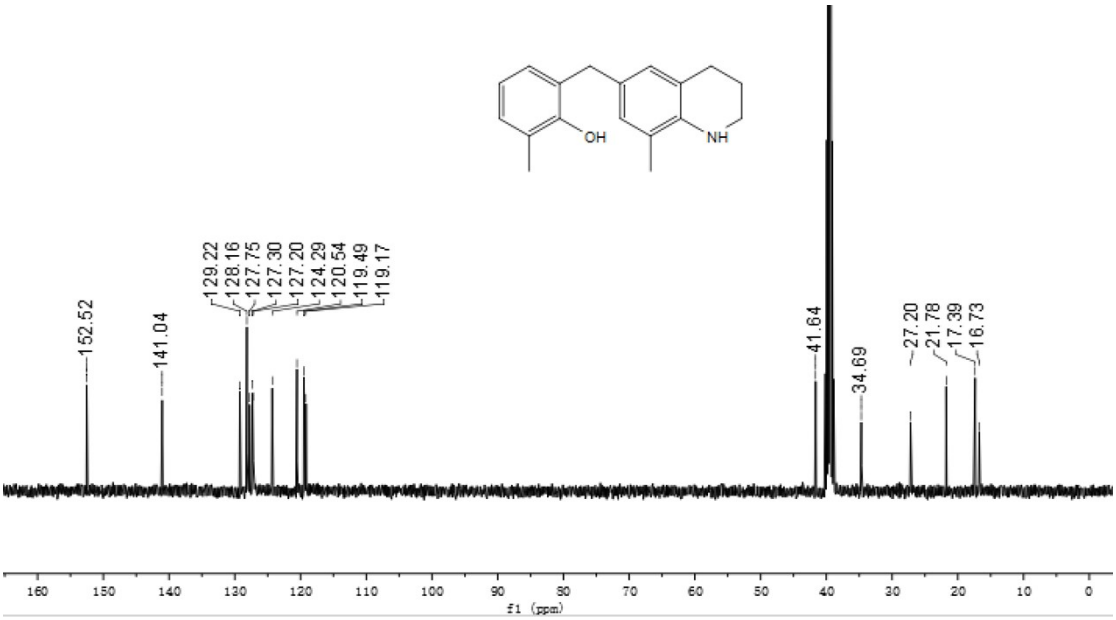
^{13}C-NMR spectrum of 2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3aa)



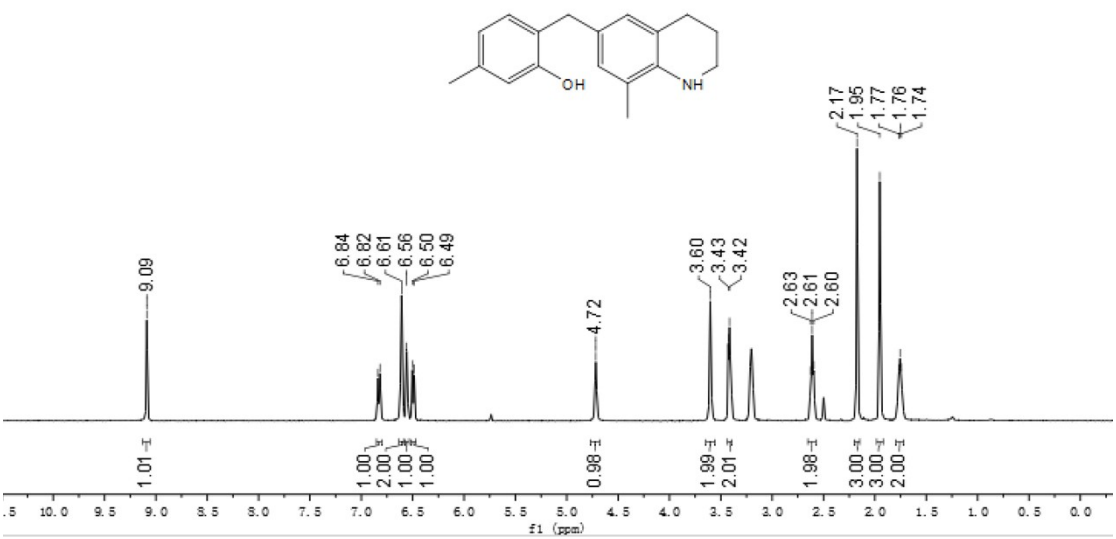
^{1}H- NMR spectrum of 2-methyl-6-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3ab)



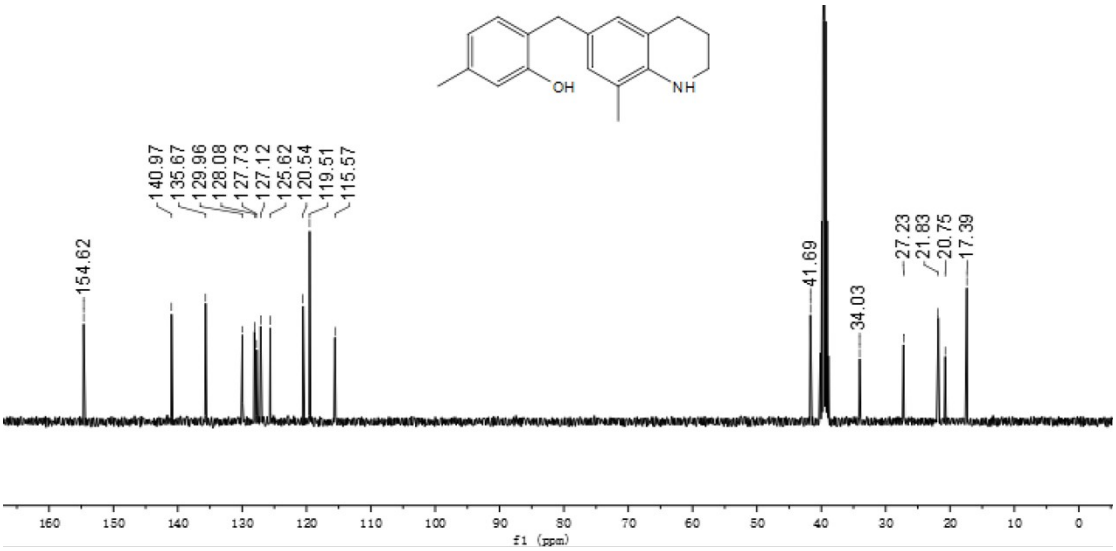
^{13}C-NMR spectrum of 2-methyl-6-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3ab)



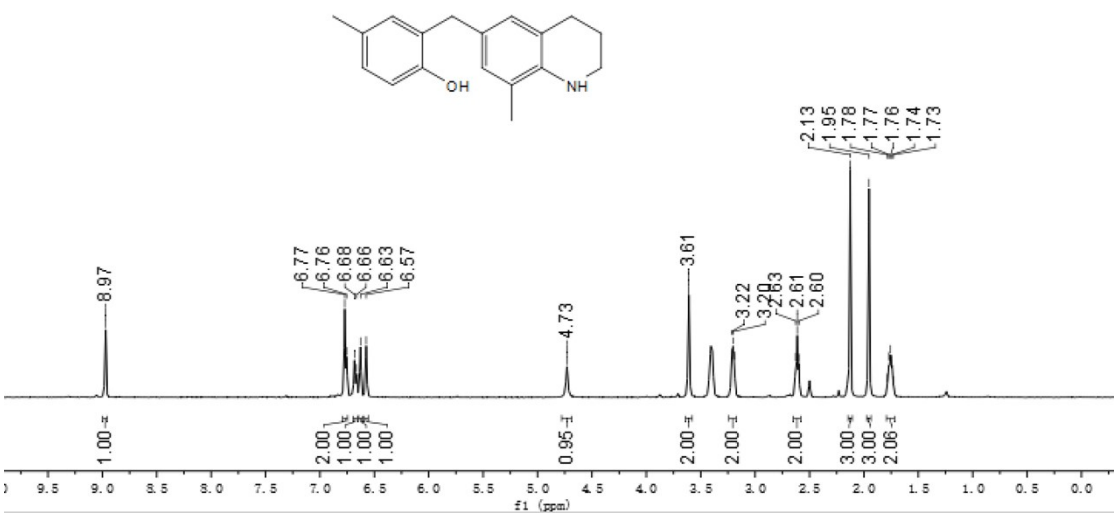
^{1}H- NMR spectrum of 5-methyl-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3ac)



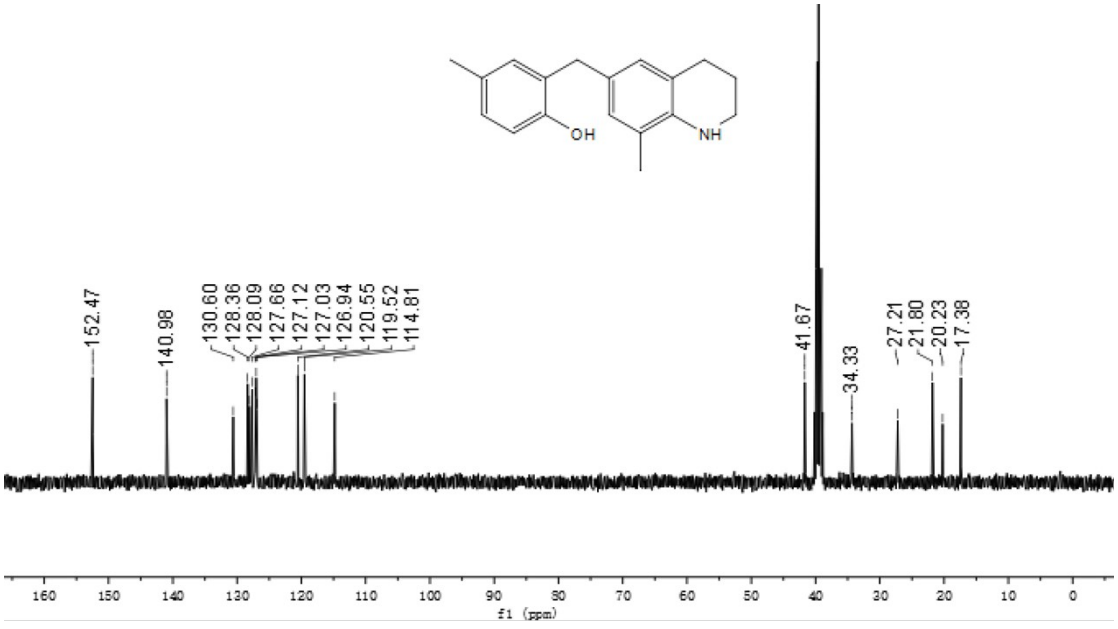
^{13}C-NMR spectrum of 5-methyl-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3ac)



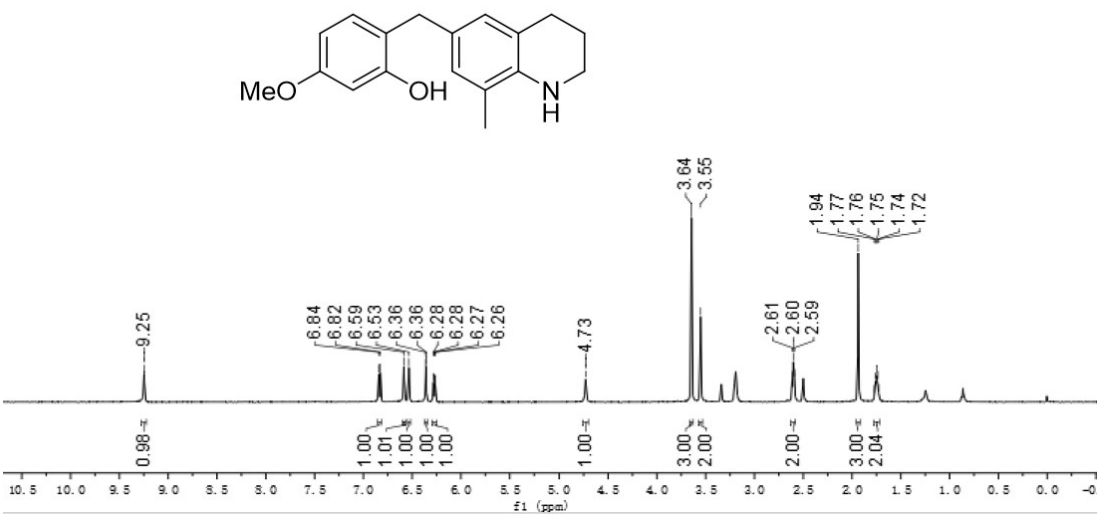
^{1}H- NMR spectrum of 4-methyl-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3ad)



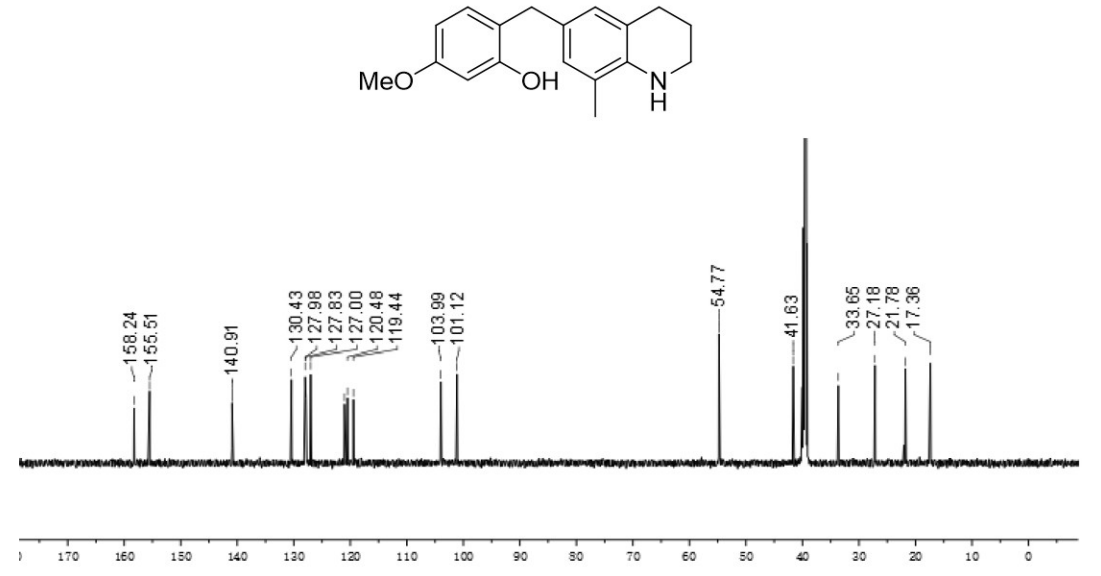
^{13}C-NMR spectrum of 4-methyl-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3ad)



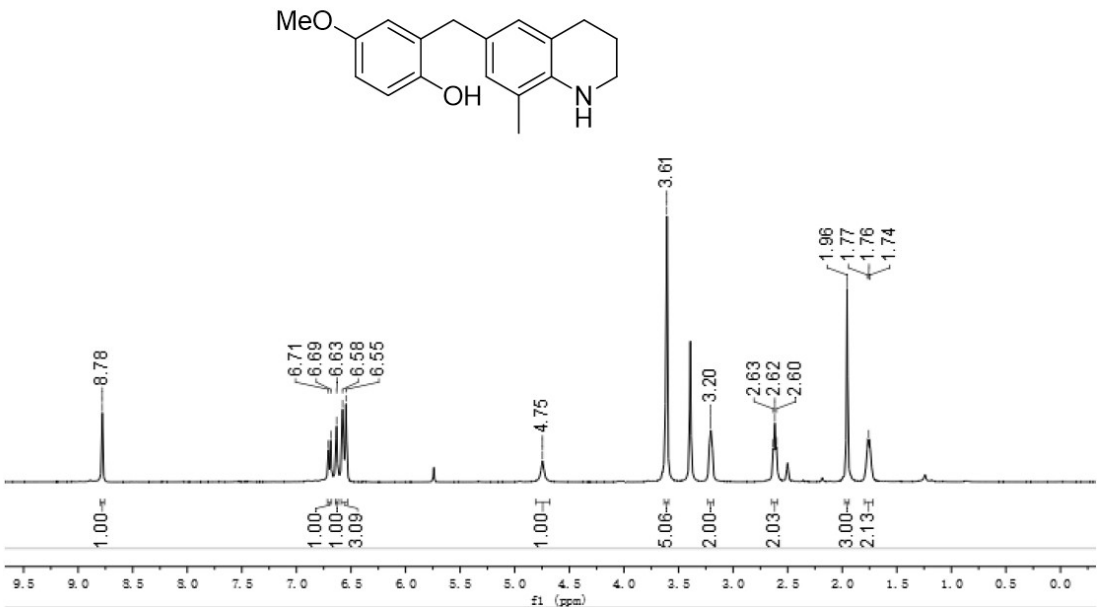
^{1}H- NMR spectrum of 5-methoxy-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3ae)



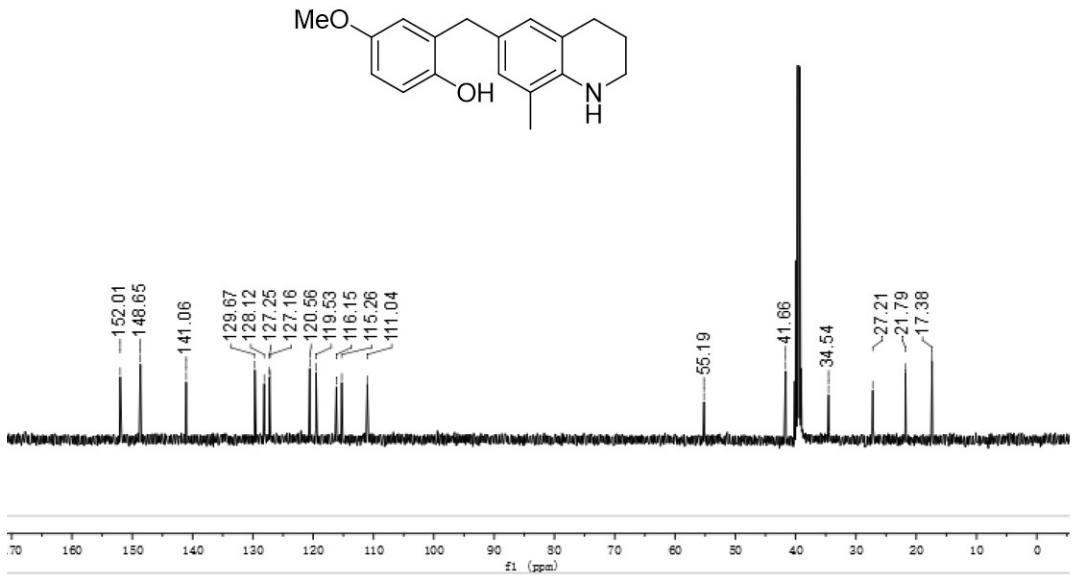
^{13}C-NMR spectrum of 5-methoxy-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3ae)



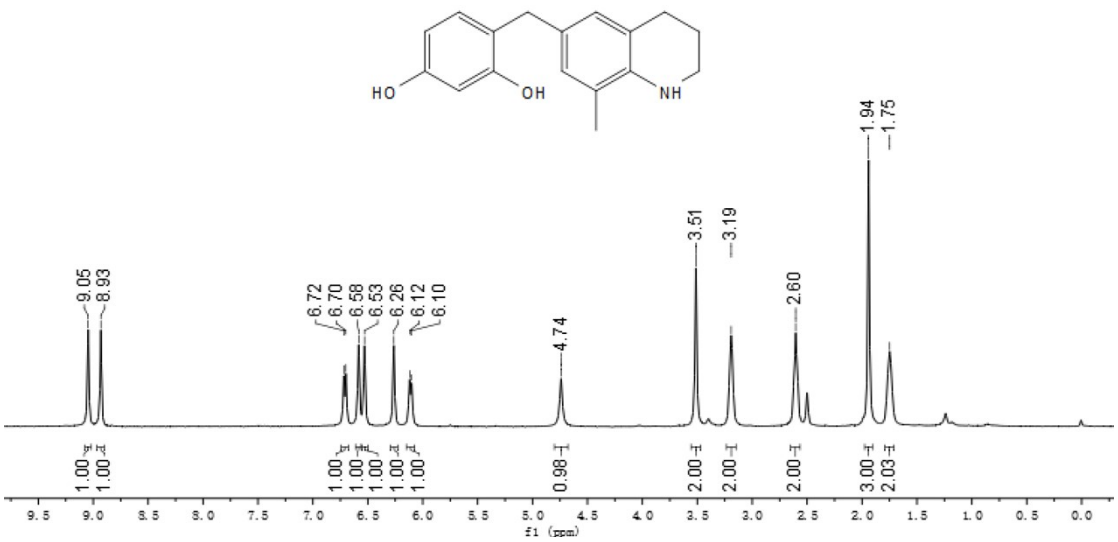
^{1}H- NMR spectrum of 4-methoxy-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3af)



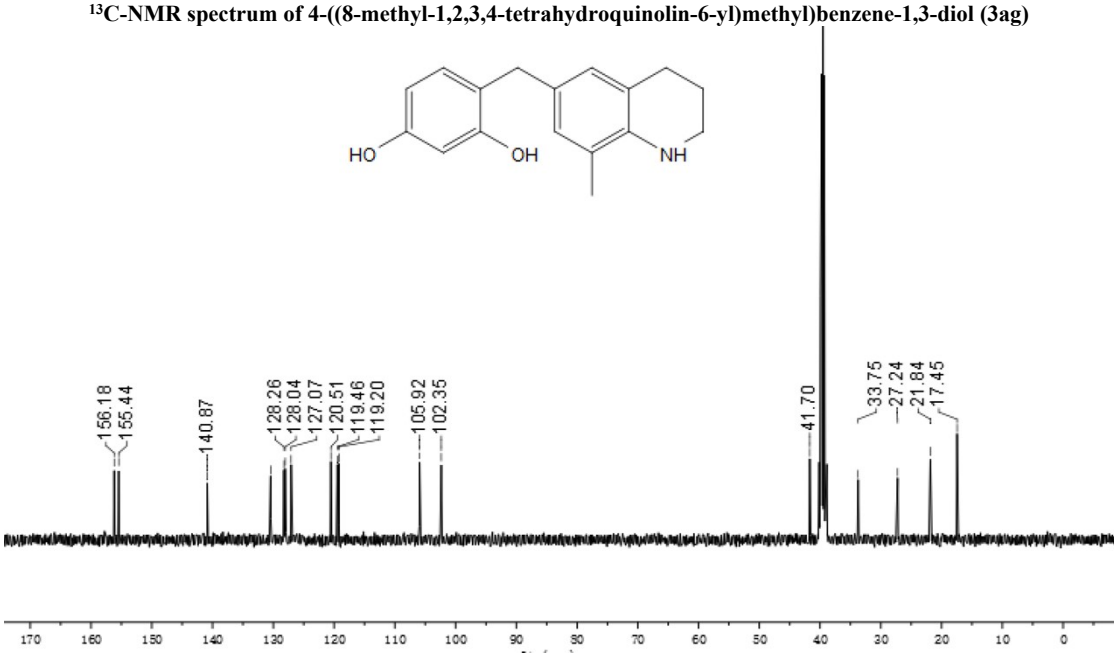
^{13}C-NMR spectrum of 4-methoxy-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3af)



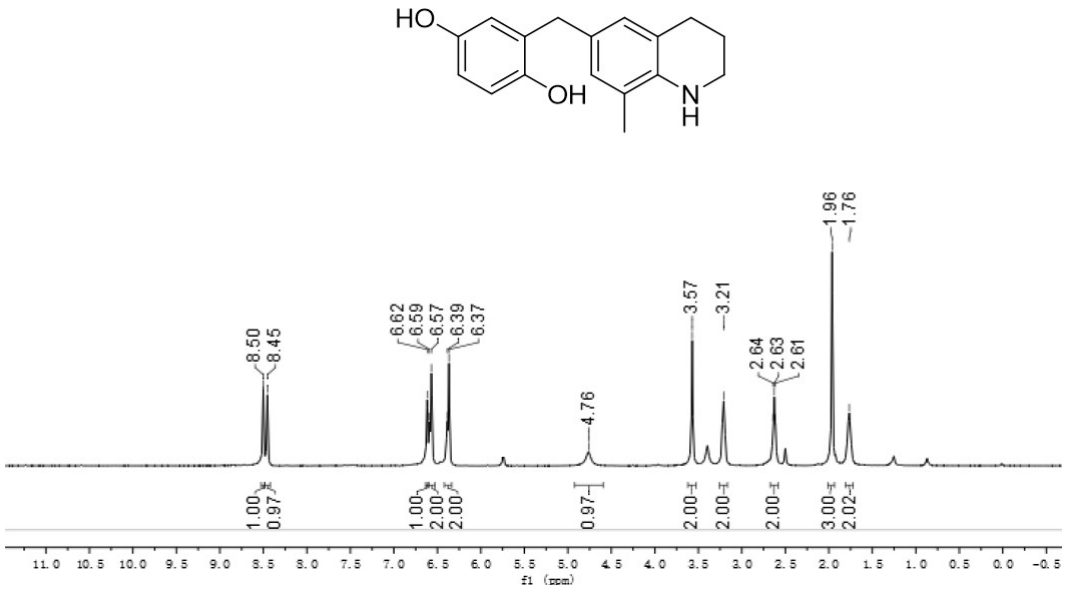
^{1}H- NMR spectrum of 4-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)benzene-1,3-diol (3ag)



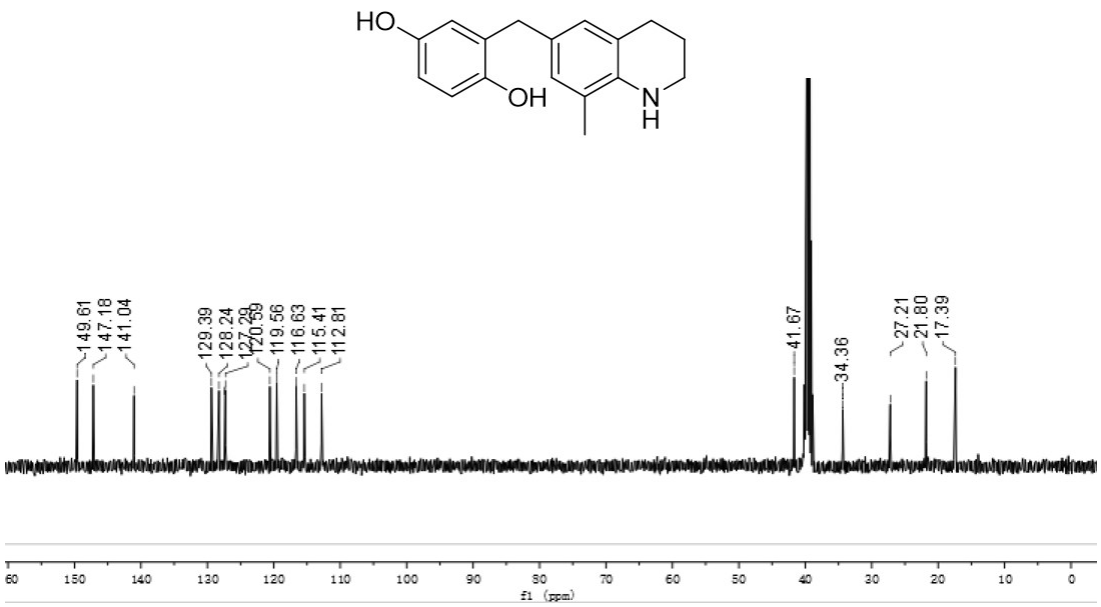
^{13}C-NMR spectrum of 4-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)benzene-1,3-diol (3ag)



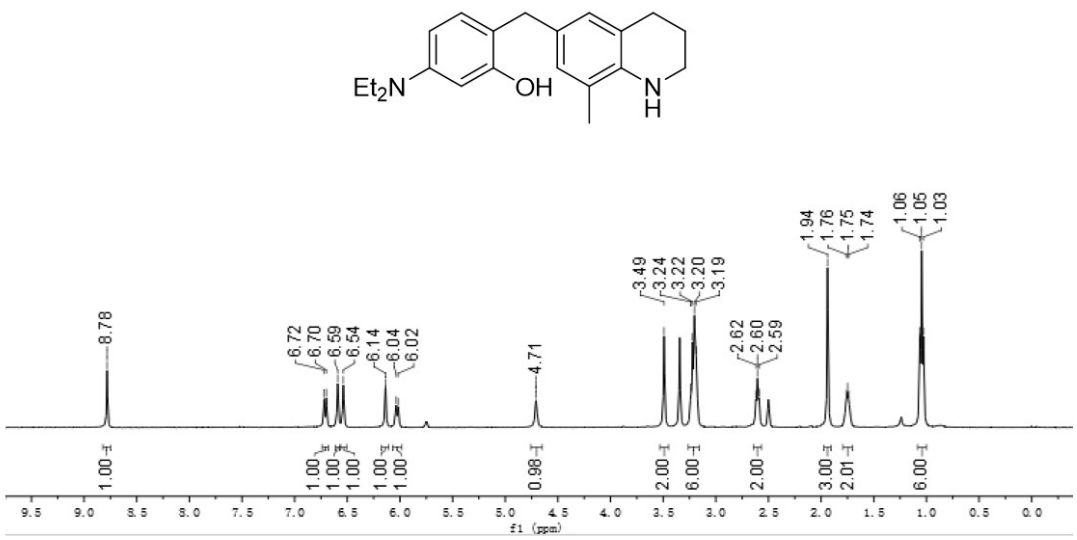
^{1}H- NMR spectrum of 2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)benzene-1,4-diol (3ah)



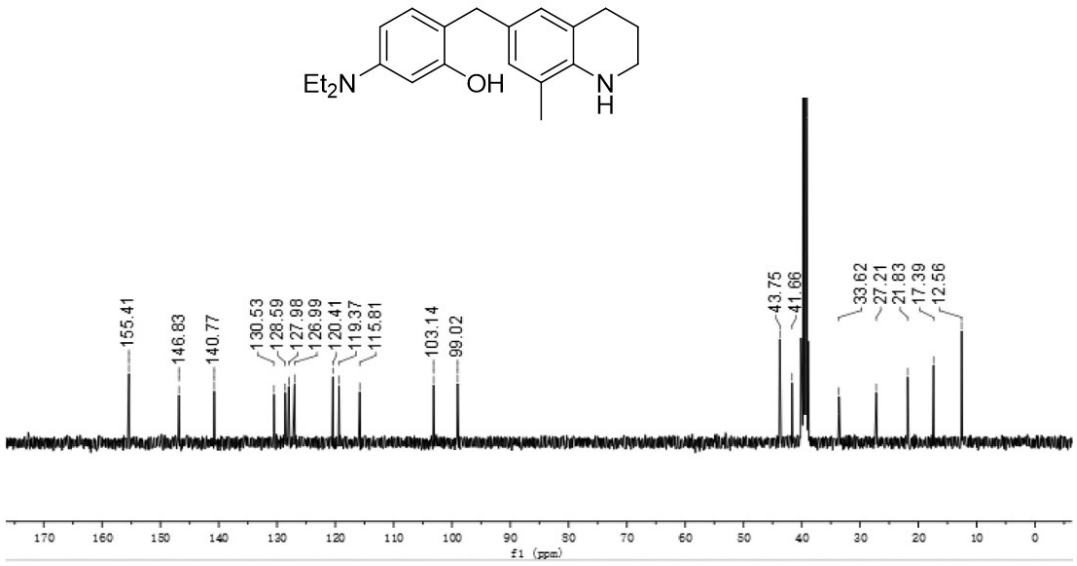
^{13}C-NMR spectrum of 2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)benzene-1,4-diol (3ah)



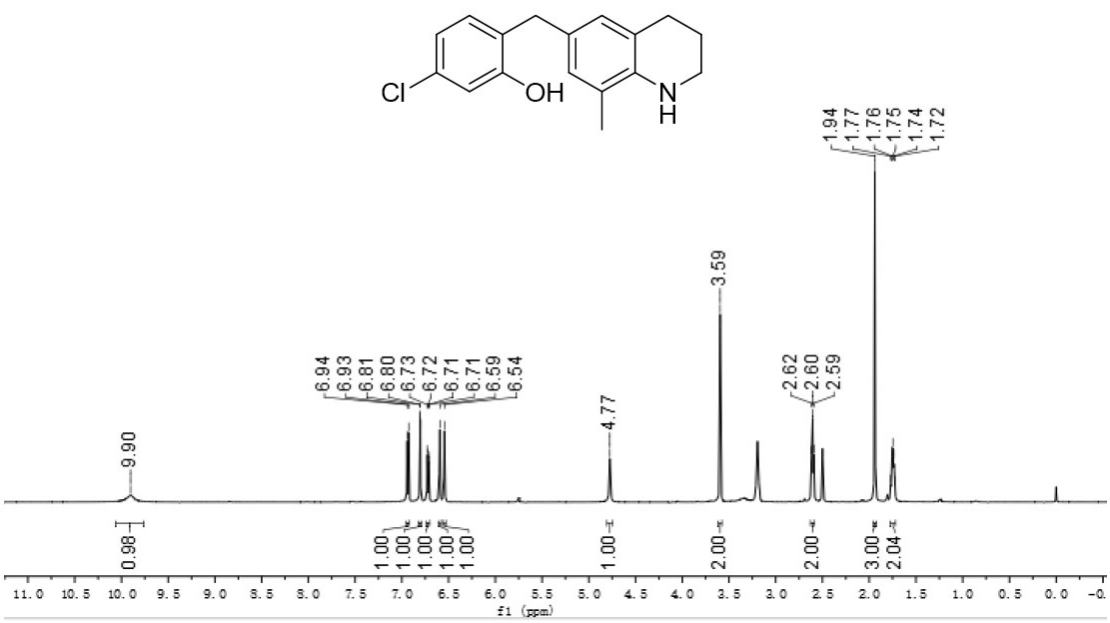
^{1}H- NMR spectrum of 5-(diethylamino)-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3ai)



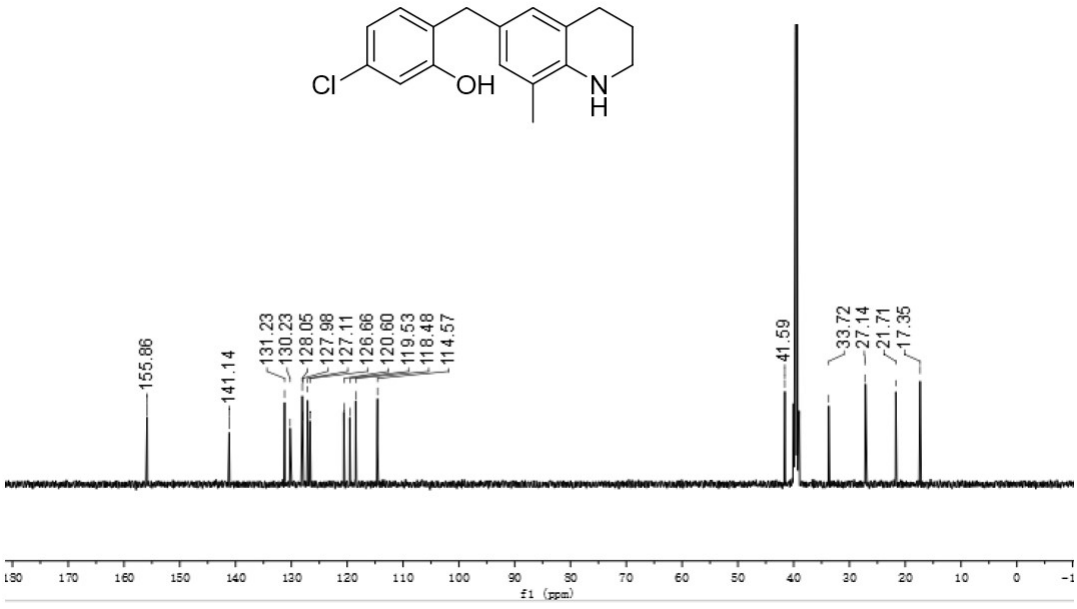
^{13}C-NMR spectrum of 5-(diethylamino)-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3ai)



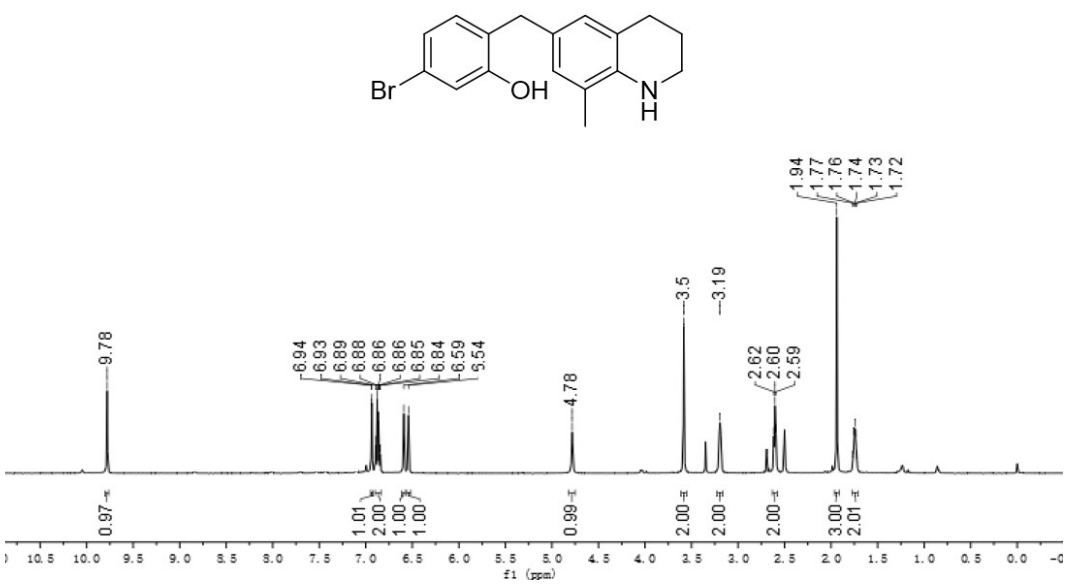
^{1}H-NMR spectrum of 5-chloro-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3aj)



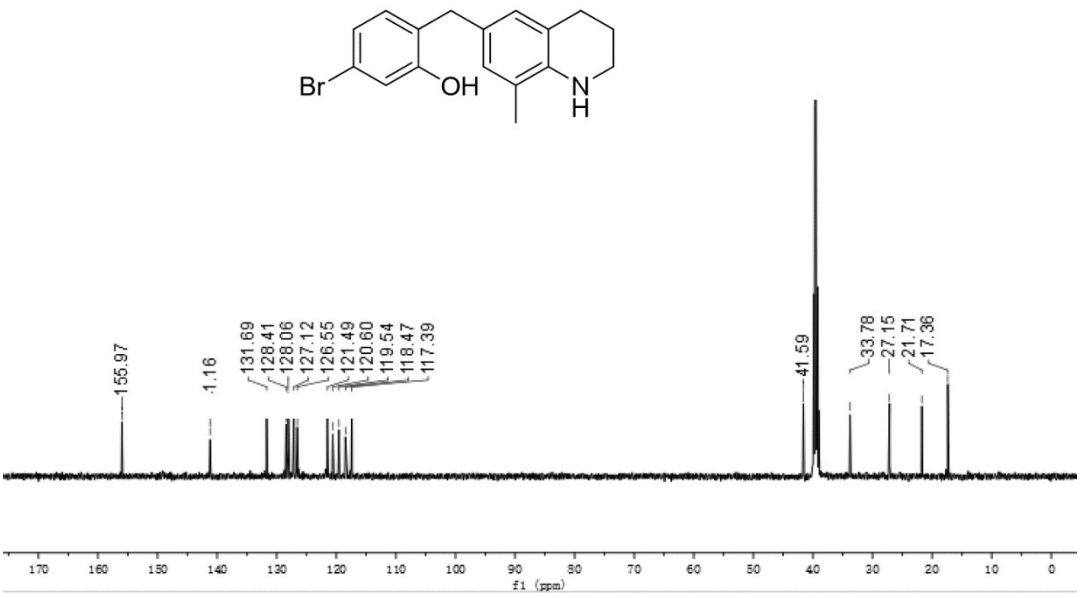
^{13}C-NMR spectrum of 5-chloro-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3aj)



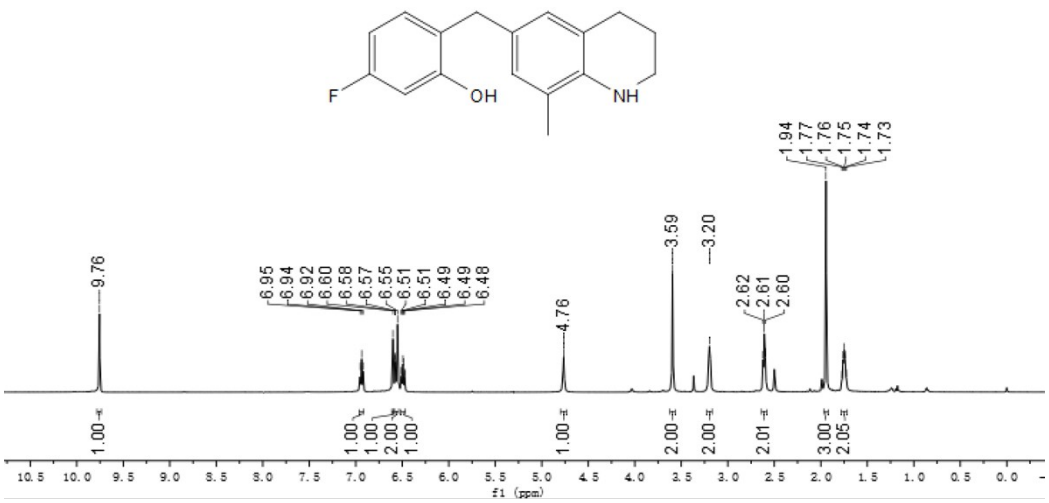
^{1}H- NMR spectrum of 5-bromo-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3ak)



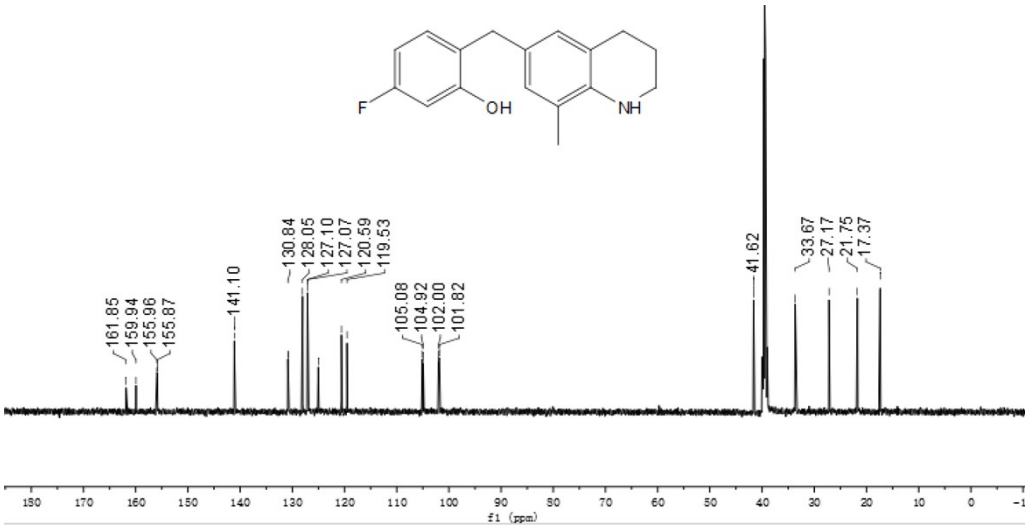
^{13}C-NMR spectrum of 5-bromo-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3ak)



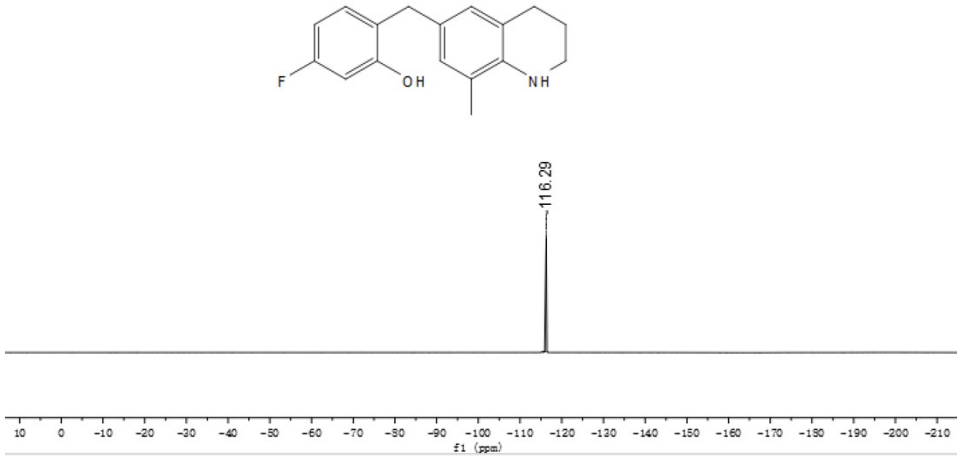
[1]H-NMR spectrum of 5-fluoro-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3al)



[13]C-NMR spectrum of 5-fluoro-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3al)

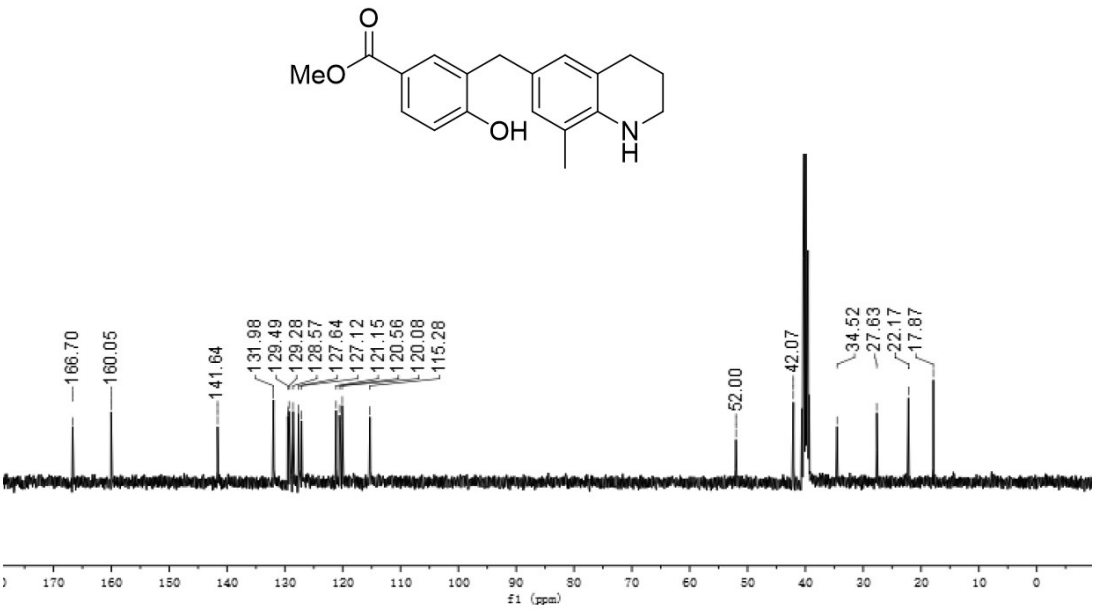


[19]F-NMR spectrum of 5-fluoro-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3al)

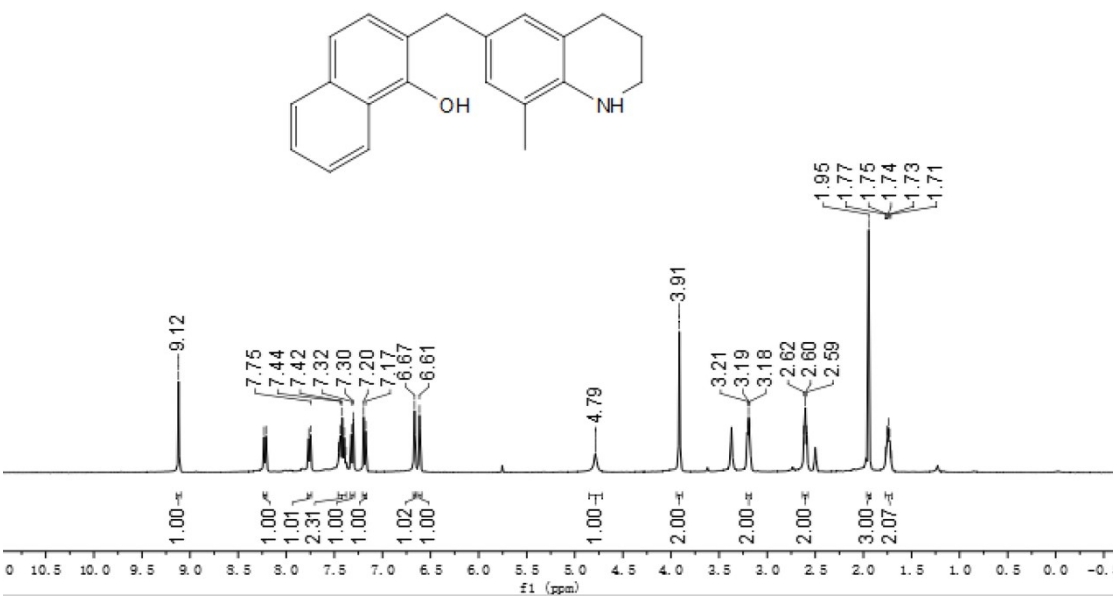


^{1}H-NMR spectrum of methyl 4-hydroxy-3-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)benzoate (3am)

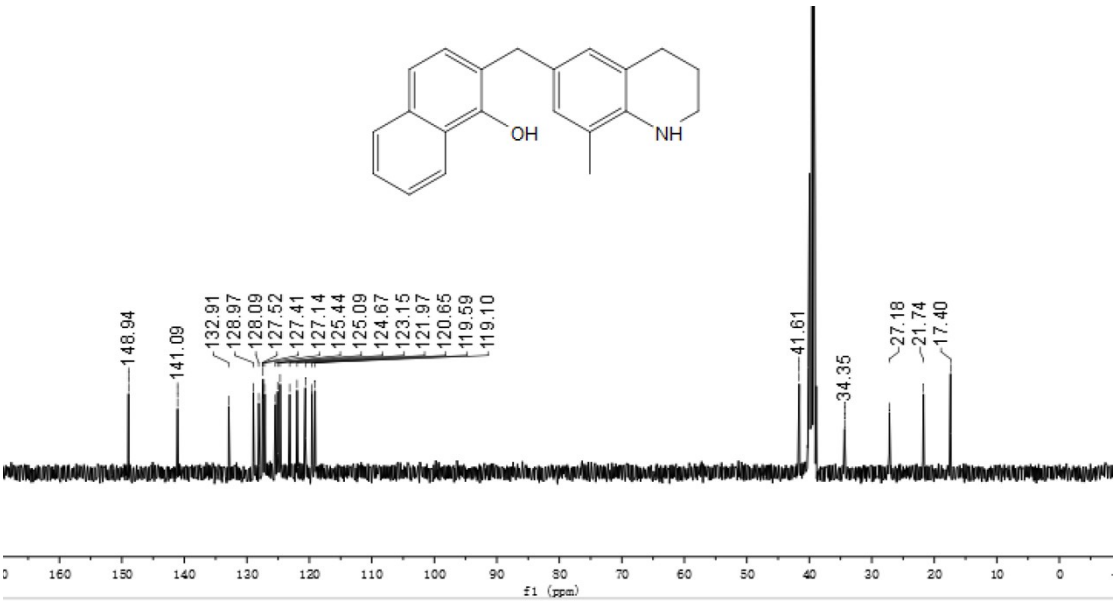
^{13}C-NMR spectrum of methyl 4-hydroxy-3-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)benzoate (3am)



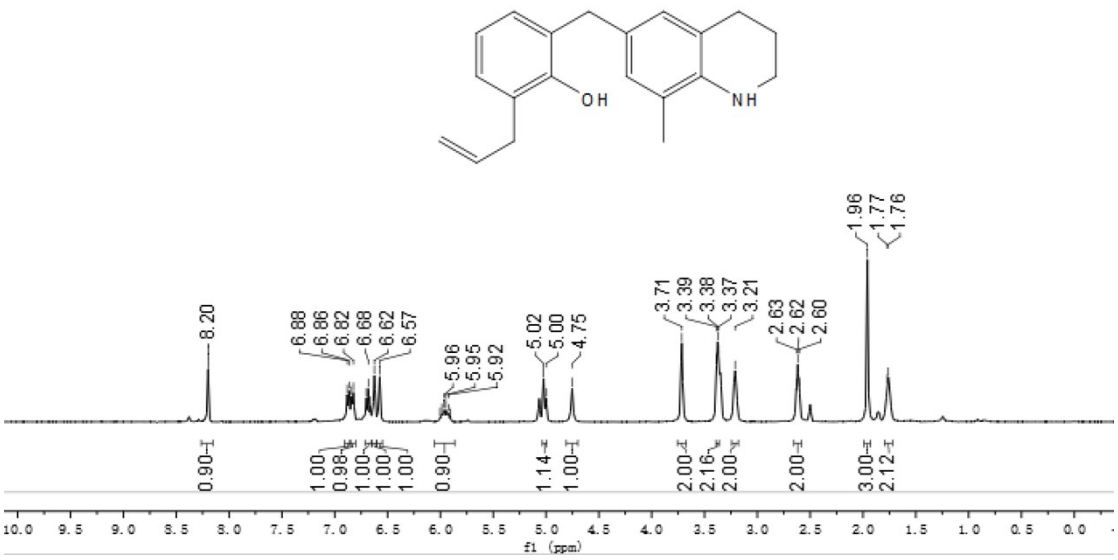
^{1}H-NMR spectrum of 2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)naphthalen-1-ol (3an)



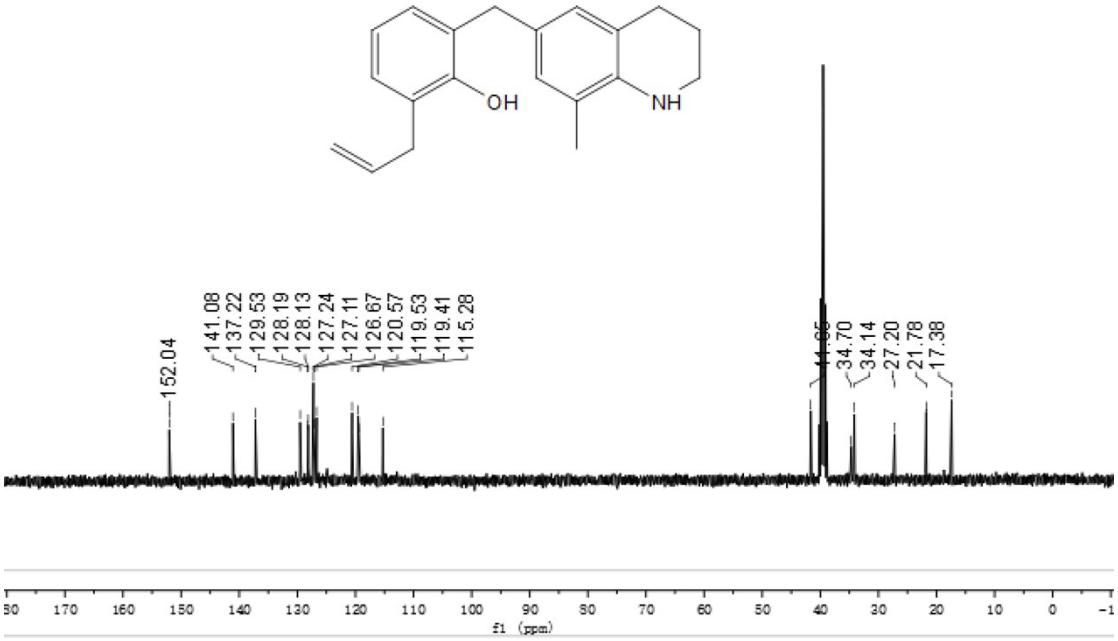
^{13}C-NMR spectrum of 2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)naphthalen-1-ol (3an)



^{1}H- NMR spectrum of 2-allyl-6-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3ao)

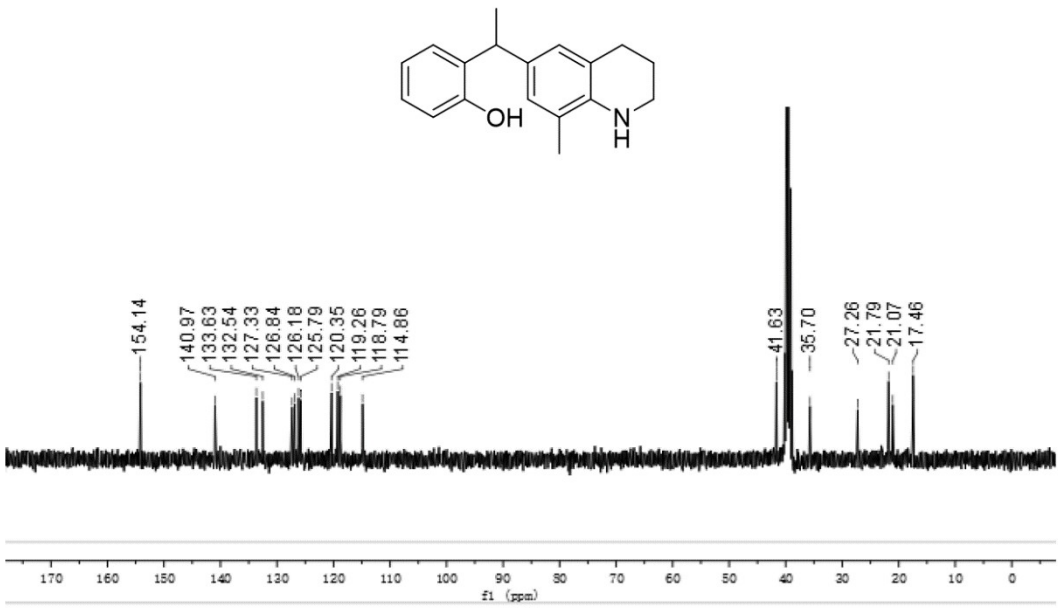


^{13}C-NMR spectrum of 2-allyl-6-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3ao)

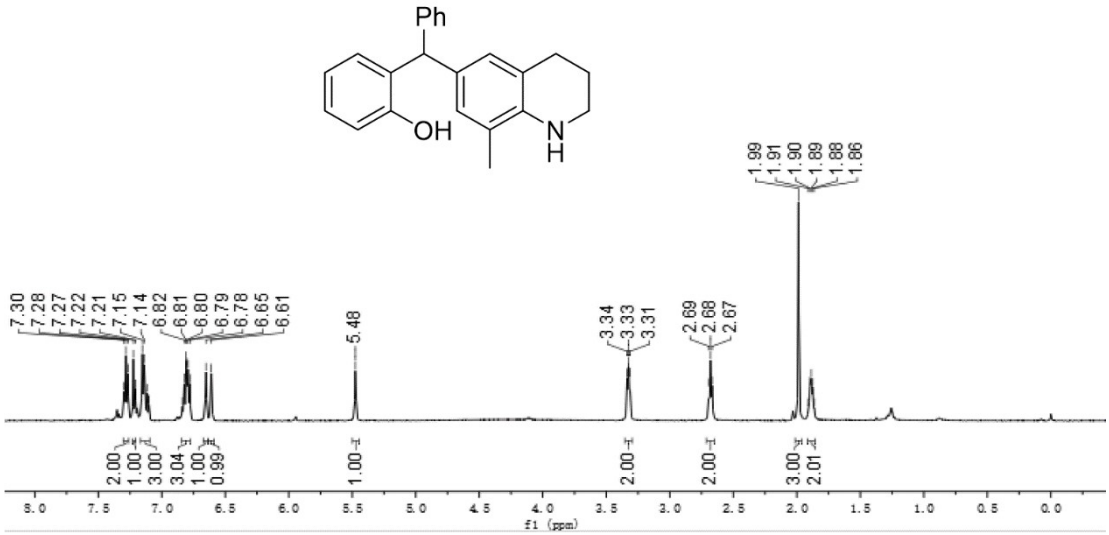


^{1}H-NMR spectrum of 2-(1-(8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)ethyl)phenol (3ap)

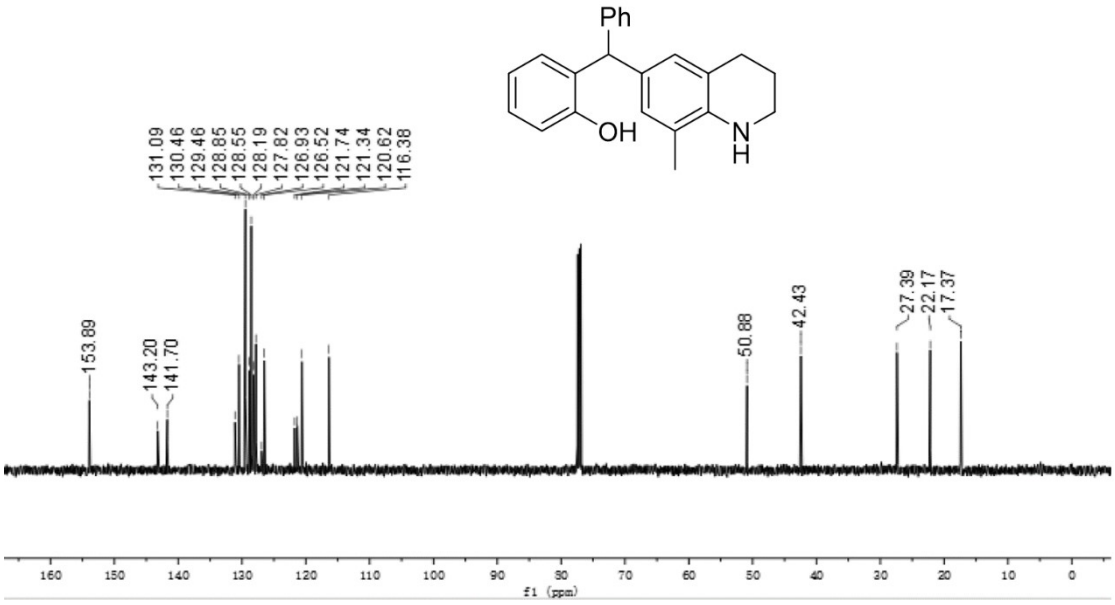
^{13}C-NMR spectrum of 2-(1-(8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)ethyl)phenol (3ap)



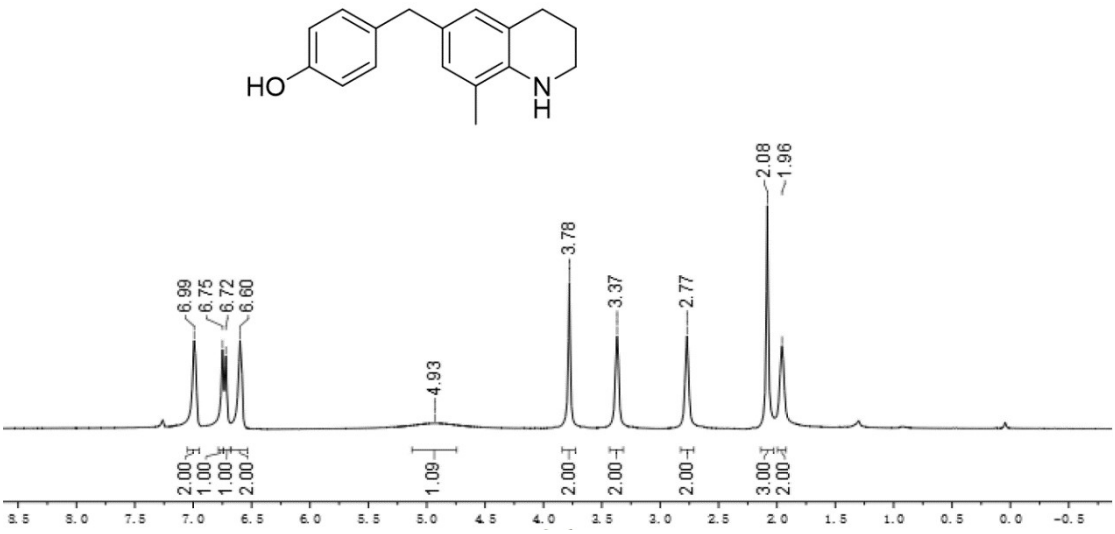
^{1}H-NMR spectrum of 2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)(phenyl)methyl)phenol (3aq)



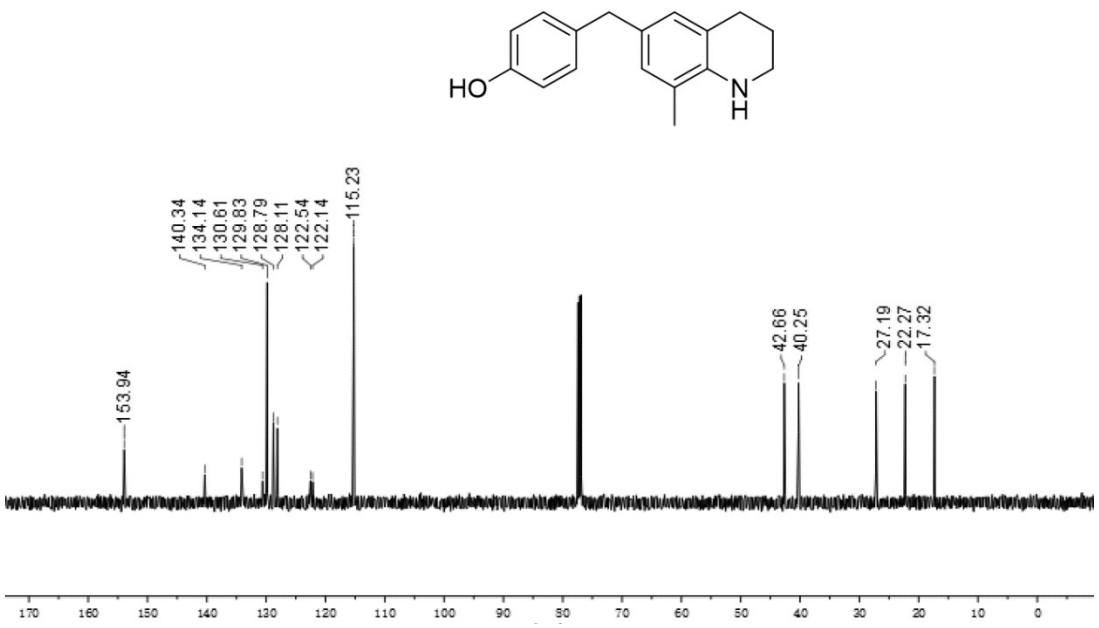
^{13}C-NMR spectrum of 2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)(phenyl)methyl)phenol (3aq)



^{1}H-NMR spectrum of 4-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3ar)

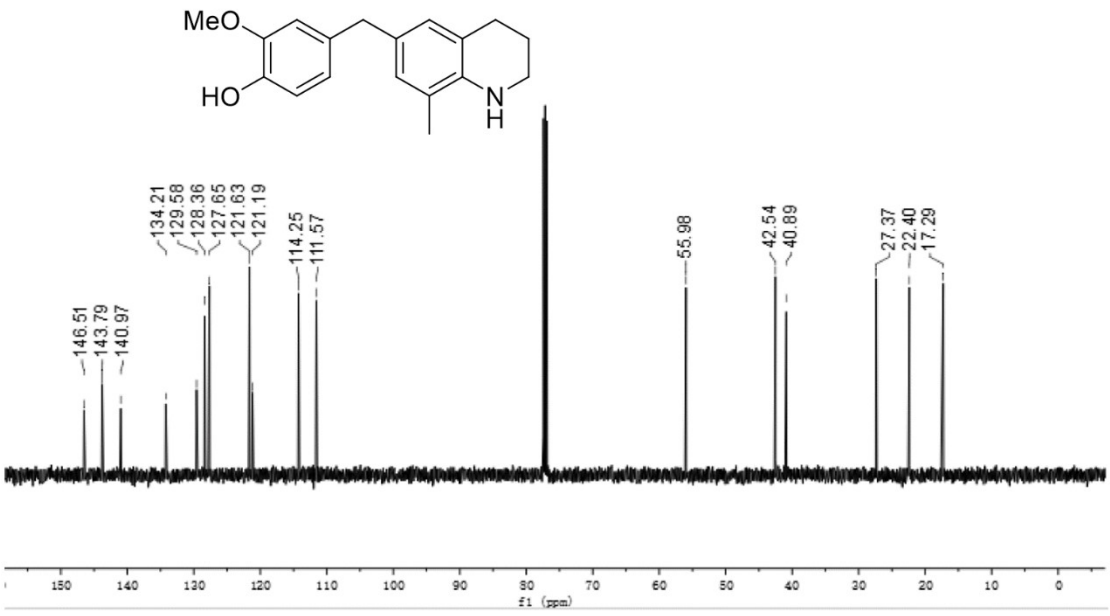


^{13}C-NMR spectrum of 4-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3ar)



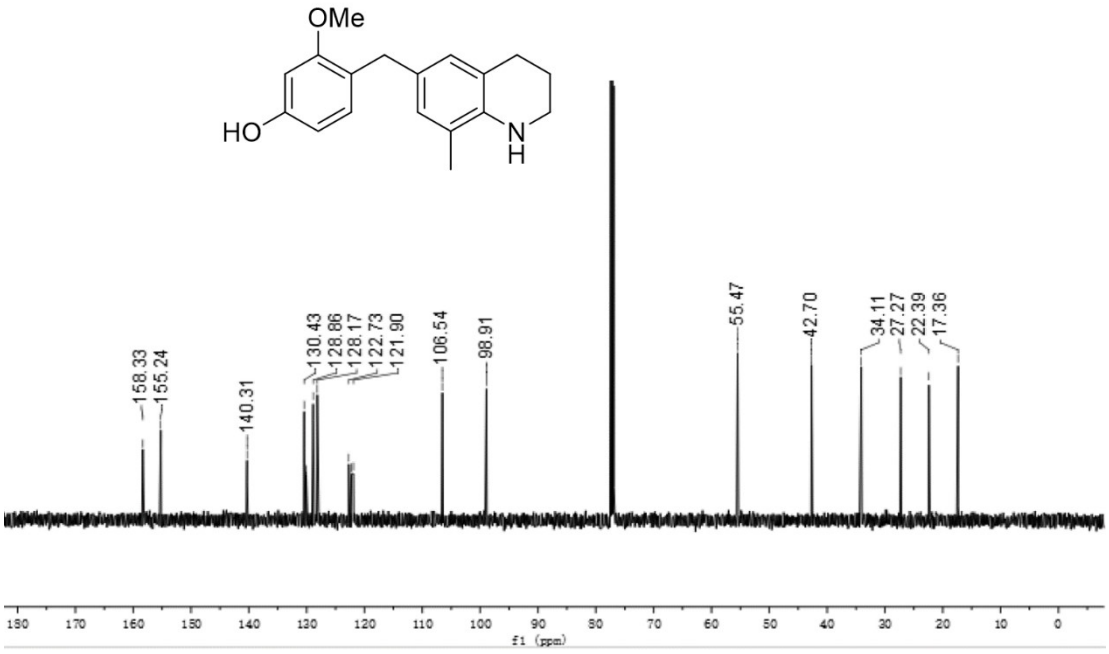
^{1}H-NMR spectrum of 2-methoxy-4-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3as)

^{13}C-NMR spectrum of 2-methoxy-4-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3as)

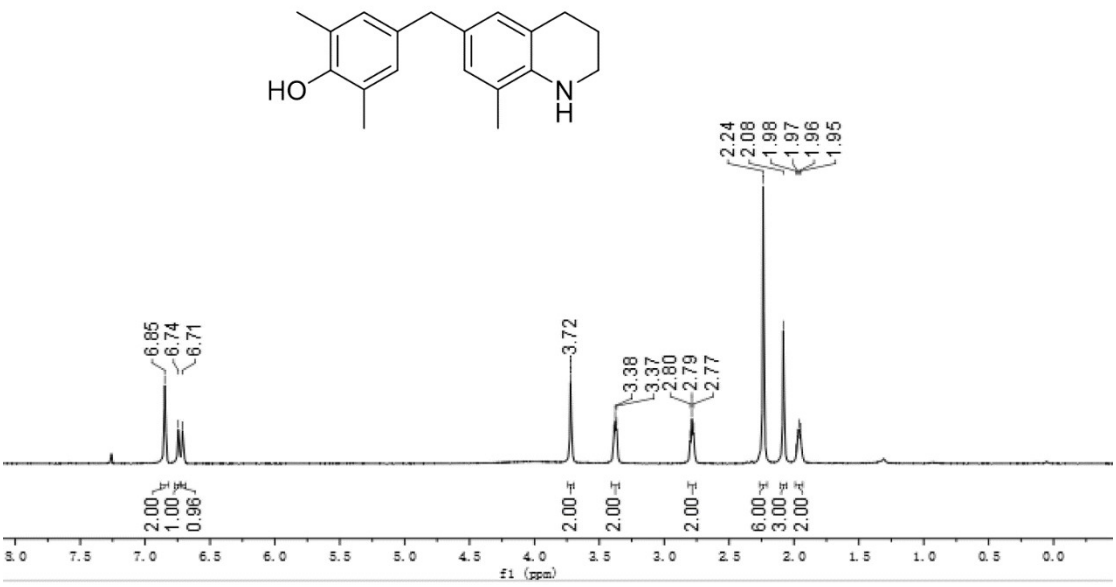


^{1}H-NMR spectrum of 3-methoxy-4-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3at)

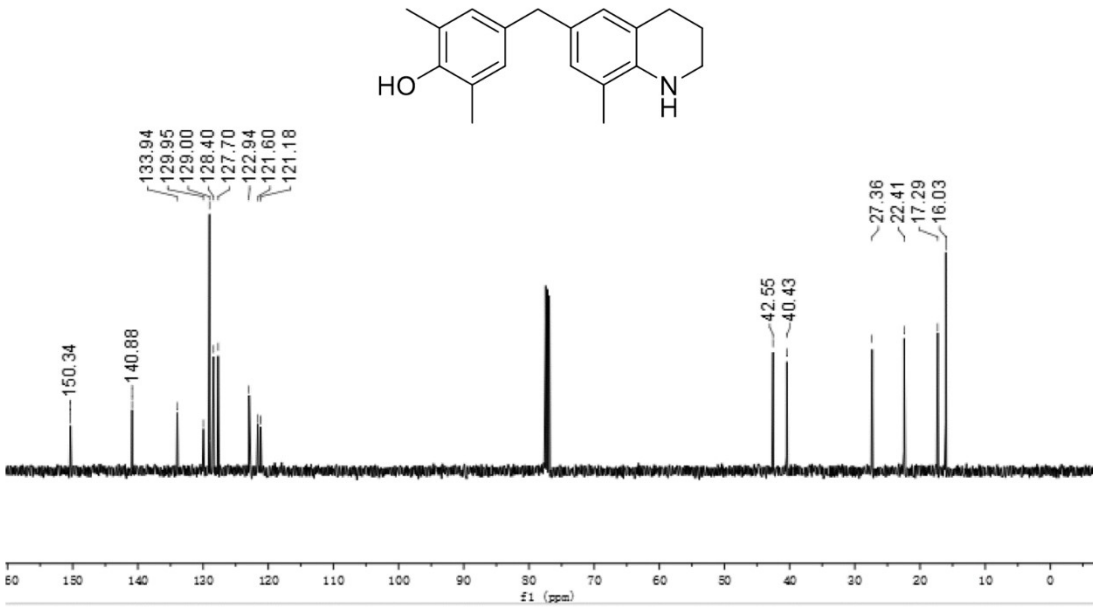
^{13}C-NMR spectrum of 3-methoxy-4-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3at)



^{1}H-NMR spectrum of 2,6-dimethyl-4-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3au)

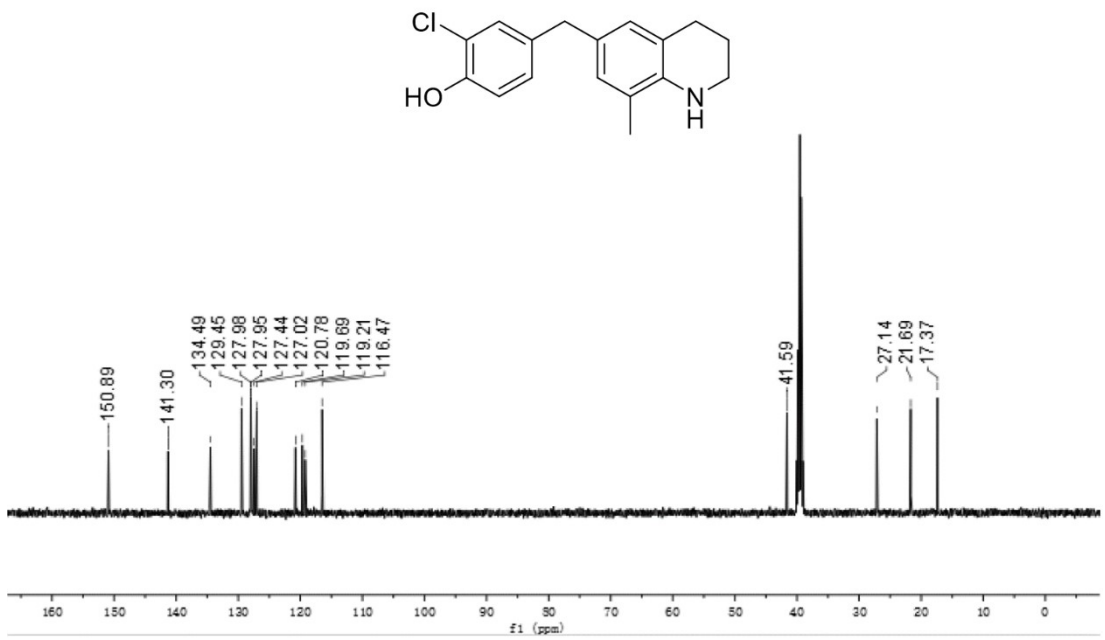


^{13}C-NMR spectrum of 2,6-dimethyl-4-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3au)

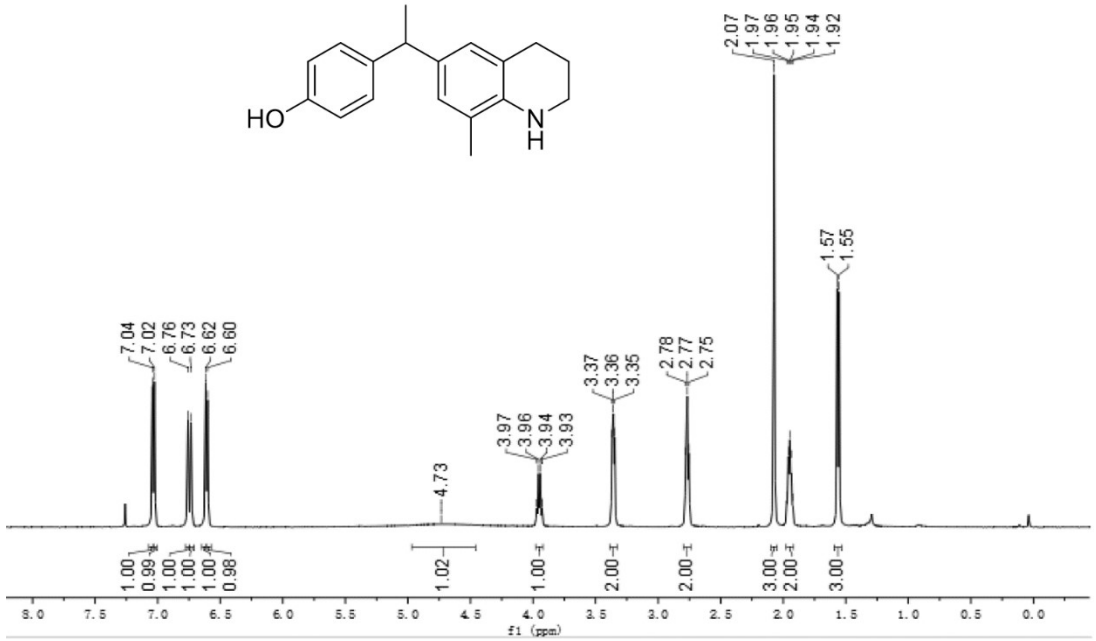


^{1}H-NMR spectrum of 2-chloro-4-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3av)

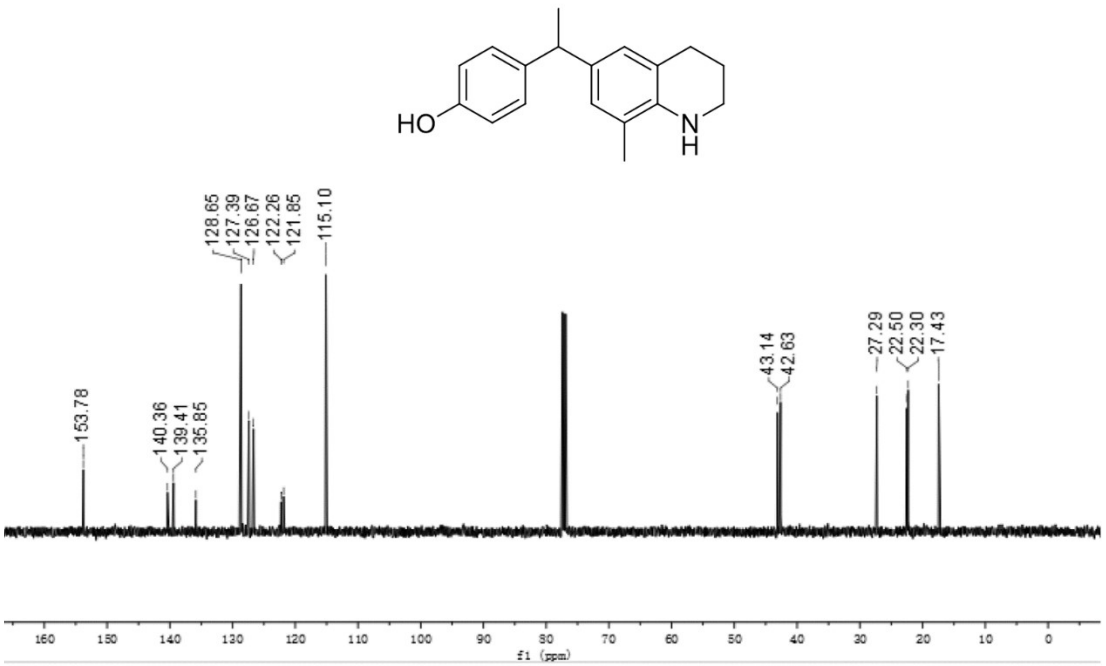
^{13}C-NMR spectrum of 2-chloro-4-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3av)



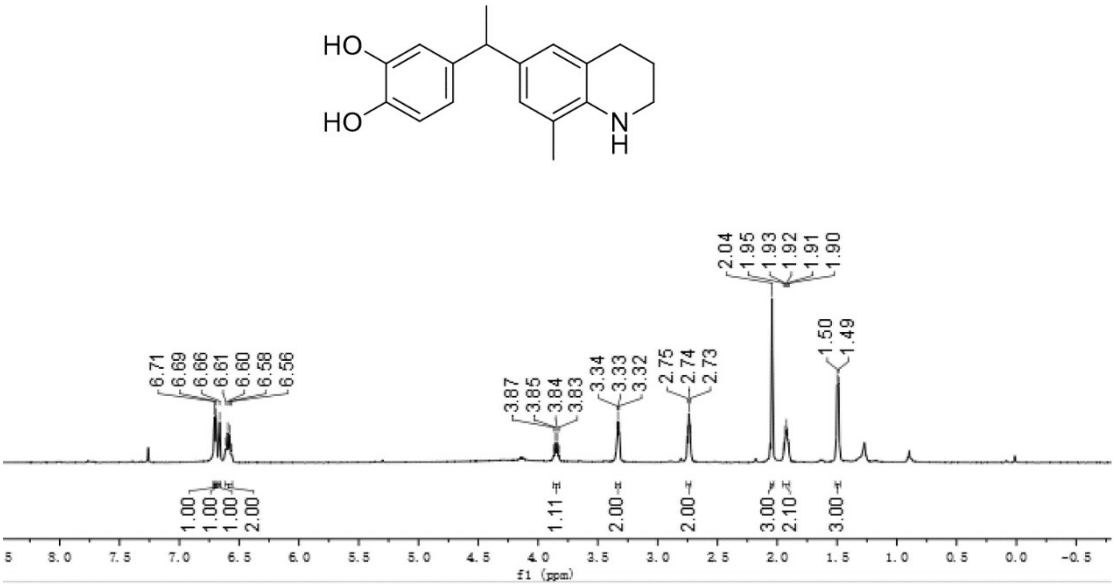
^{1}H-NMR spectrum of 4-(1-(8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)ethyl)phenol (3aw)



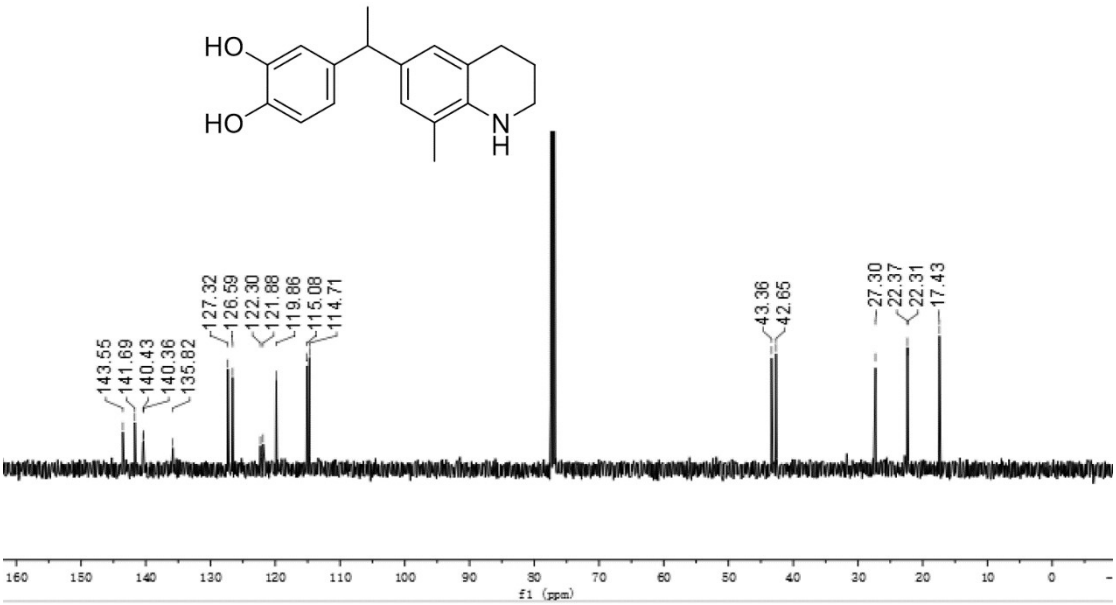
^{13}C-NMR spectrum of 4-(1-(8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)ethyl)phenol (3aw)



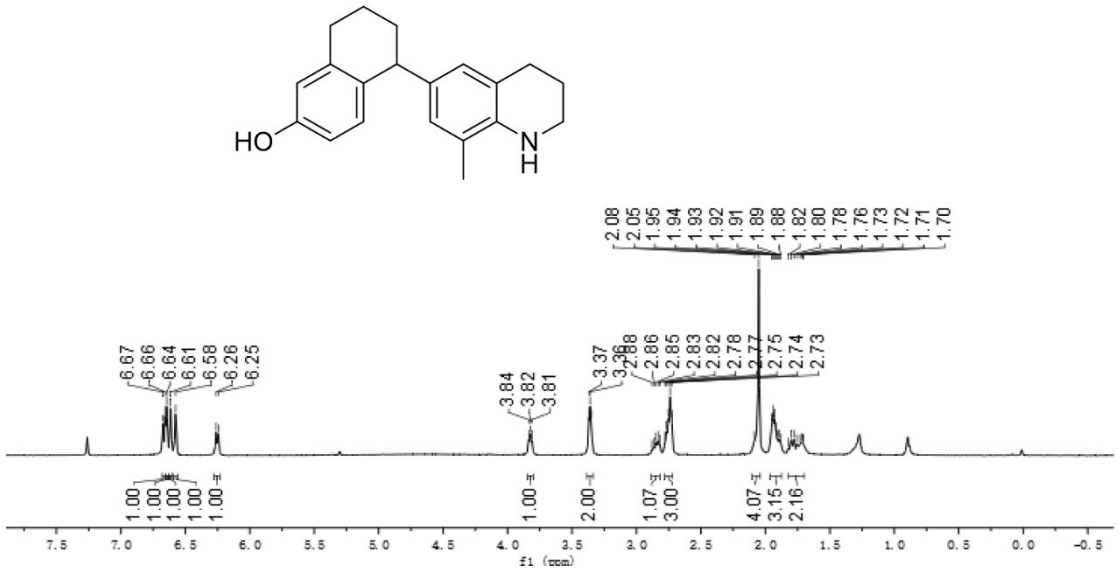
^{1}H-NMR spectrum of 4-(1-(8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)ethyl)benzene-1,2-diol (3ax)



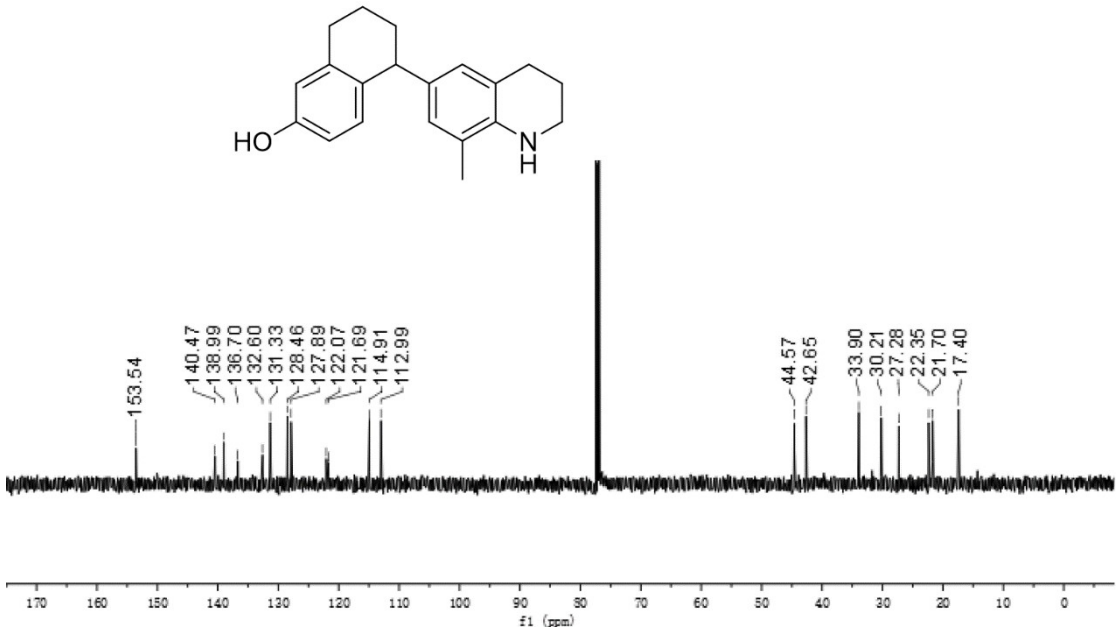
^{13}C-NMR spectrum of 4-(1-(8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)ethyl)benzene-1,2-diol (3ax)



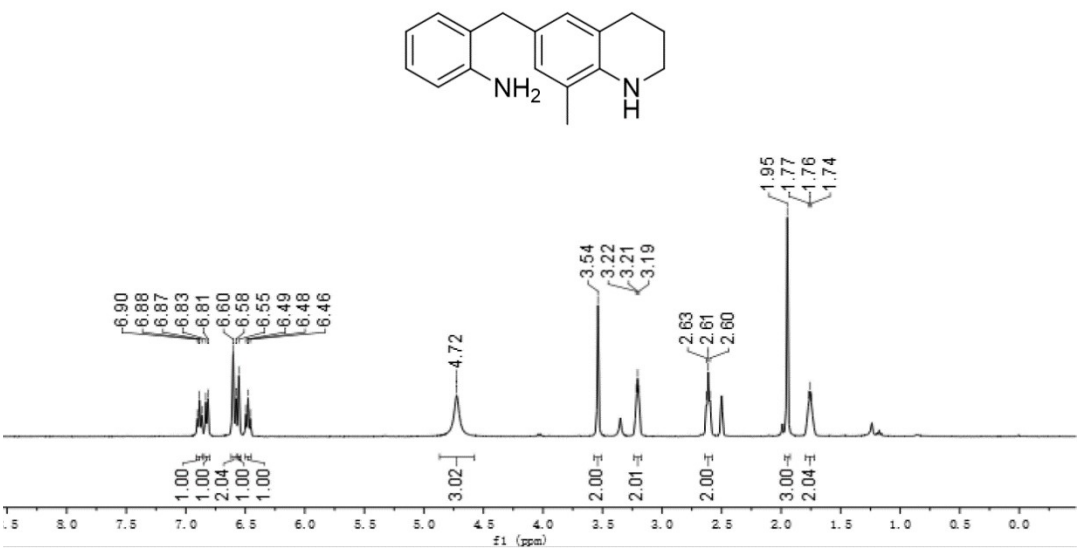
^{1}H-NMR spectrum of 5-(8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)-5,6,7,8-tetrahydronaphthalen-2-ol (3ay)



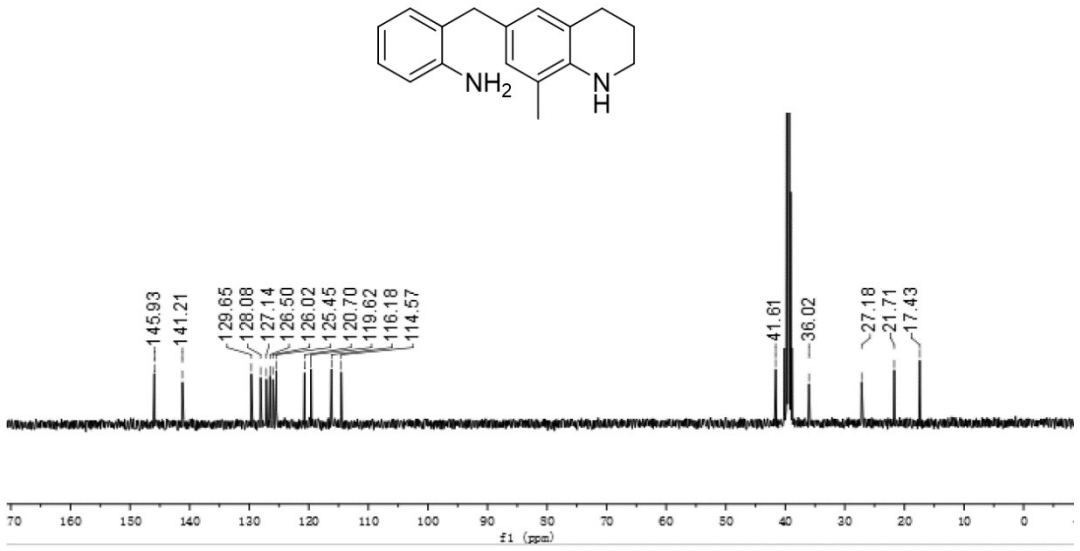
^{13}C-NMR spectrum of 5-(8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)-5,6,7,8-tetrahydronaphthalen-2-ol (3ay)



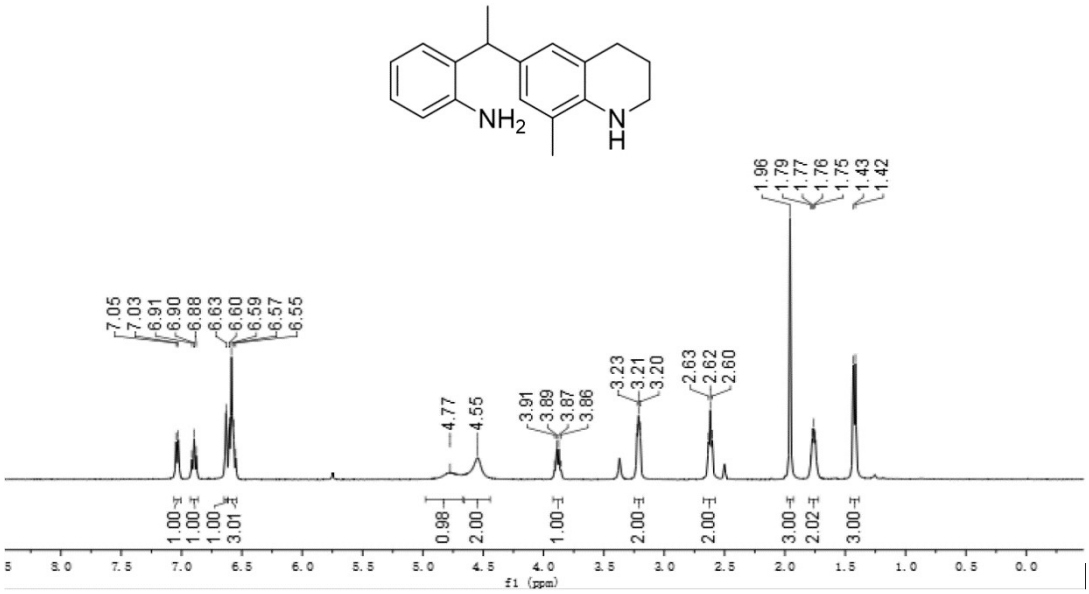
^{1}H-NMR spectrum of 2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)aniline (5aa)



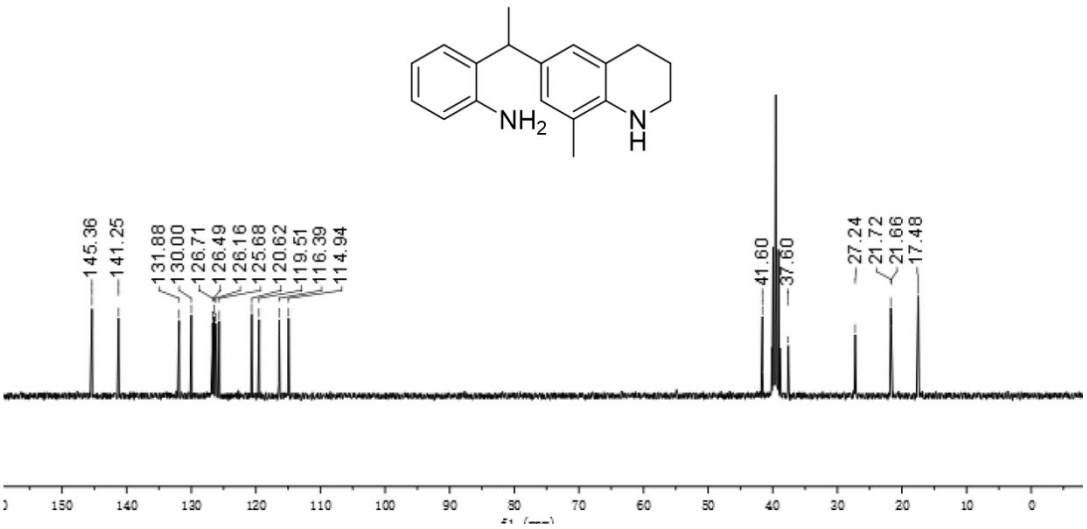
^{13}C-NMR spectrum of 2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)aniline (5aa)



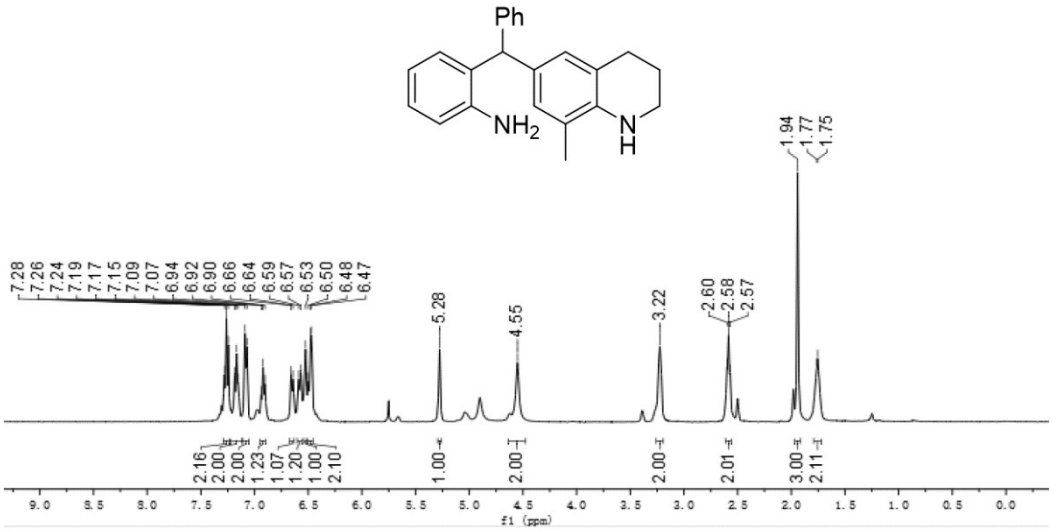
^{1}H-NMR spectrum of 2-(1-(8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)ethyl)aniline (5ab)



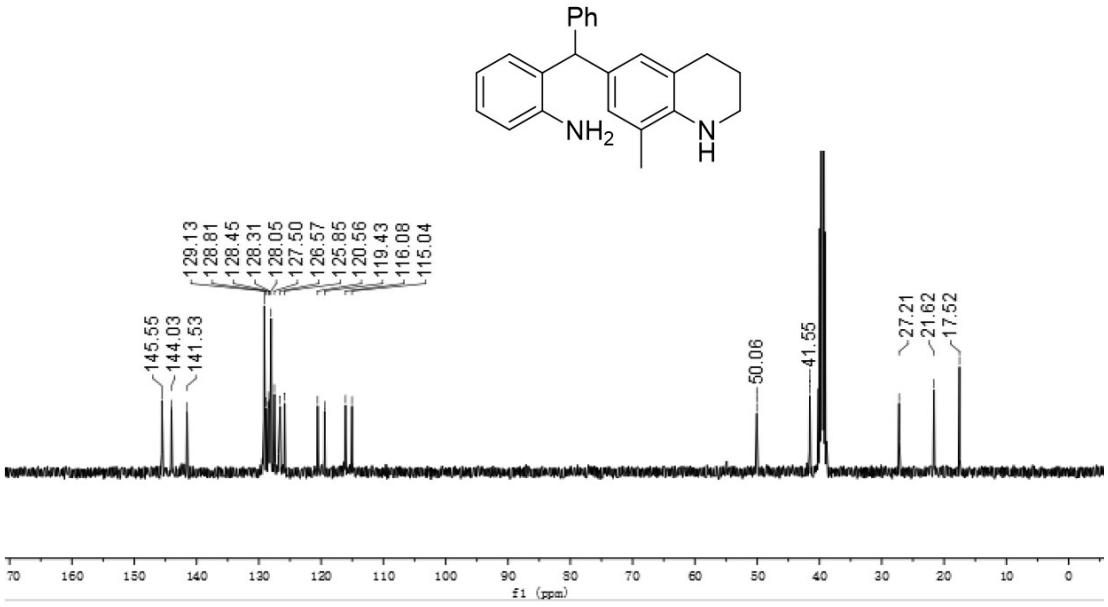
^{13}C-NMR spectrum of 2-(1-(8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)ethyl)aniline (5ab)



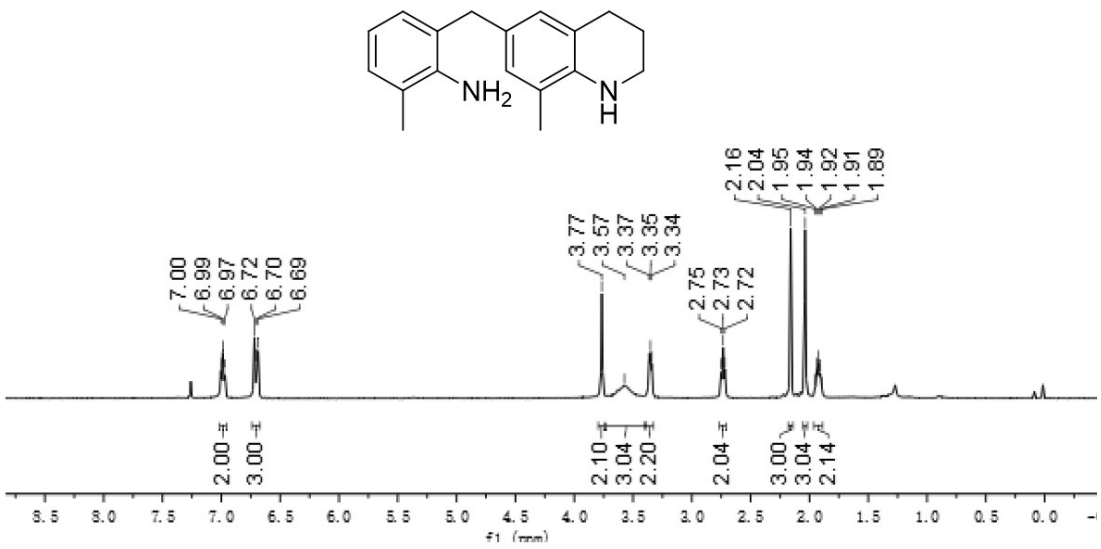
^{1}H-NMR spectrum of 2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)(phenyl)methyl)aniline (5ac)



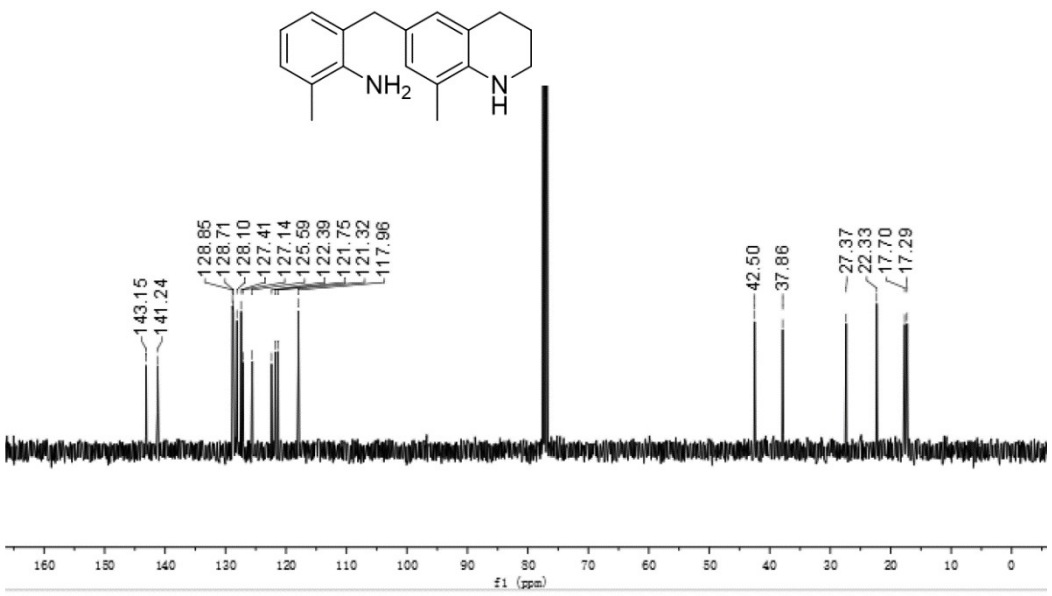
^{13}C-NMR spectrum of 2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)(phenyl)methyl)aniline (5ac)



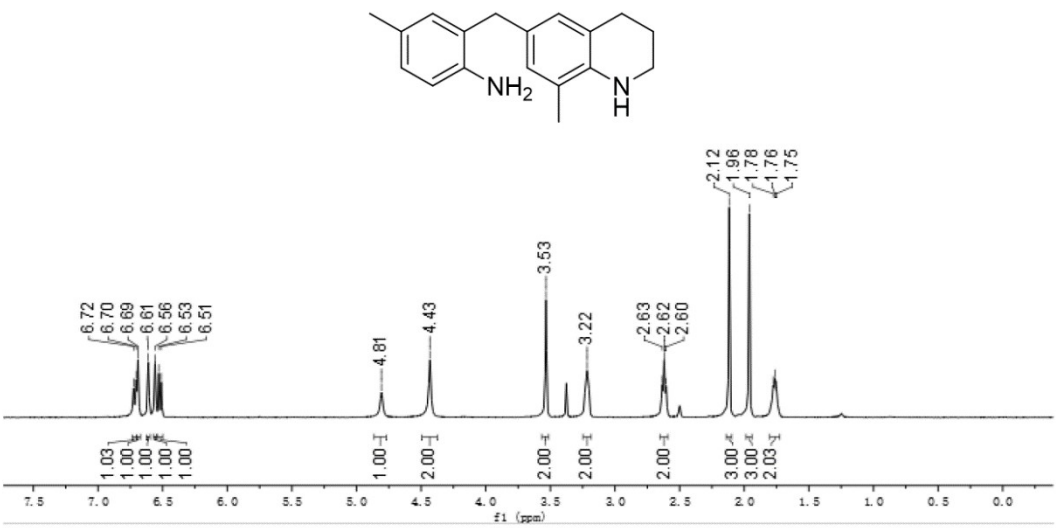
^{1}H-NMR spectrum of 2-methyl-6-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)aniline (5ad)



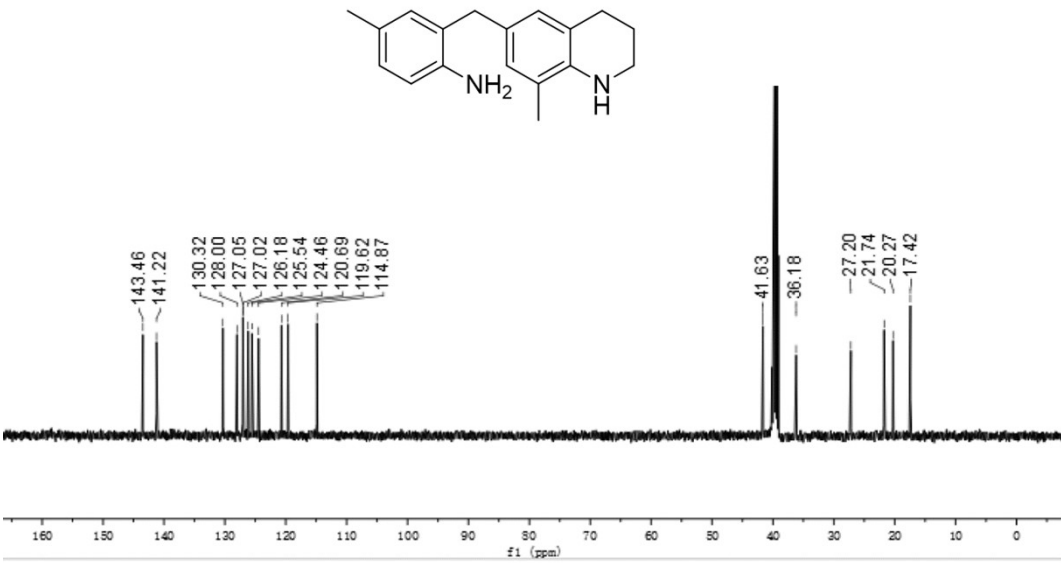
^{13}C-NMR spectrum of 2-methyl-6-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)aniline (5ad)



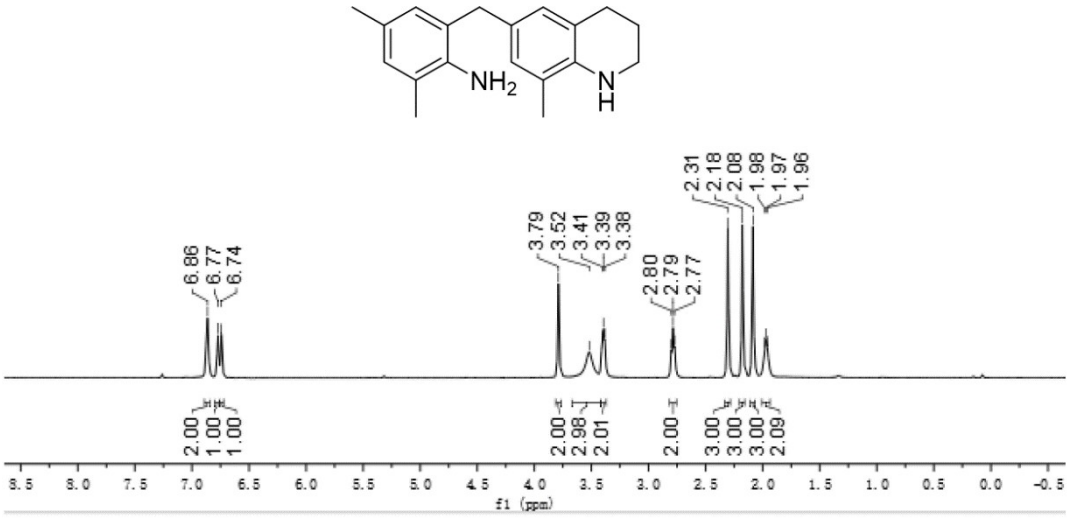
^{1}H-NMR spectrum of 4-methyl-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)aniline (5ae)



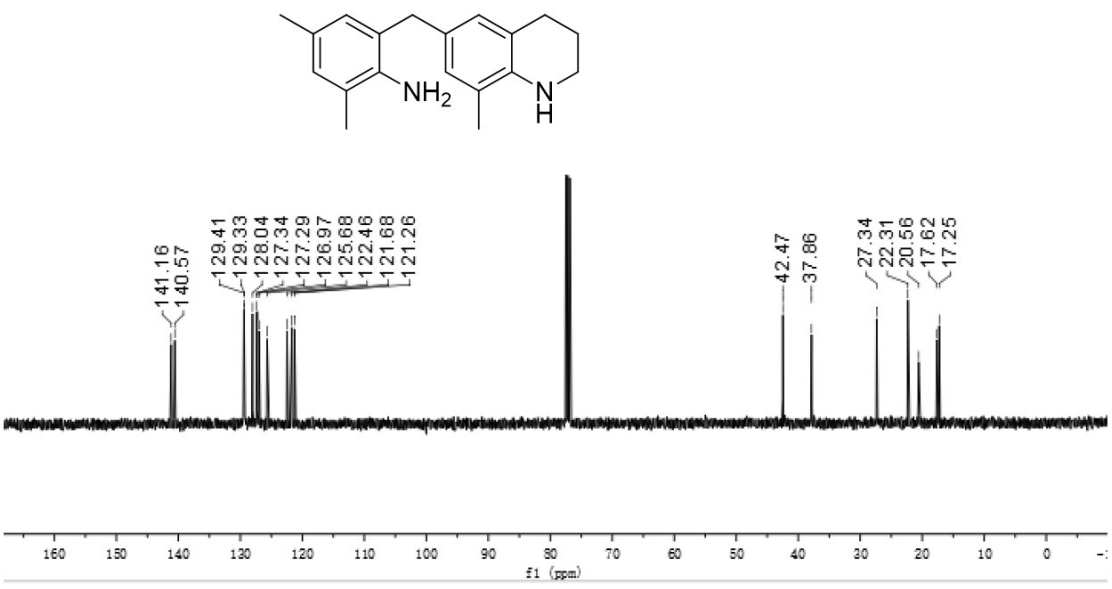
^{13}C-NMR spectrum of 4-methyl-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)aniline (5ae)



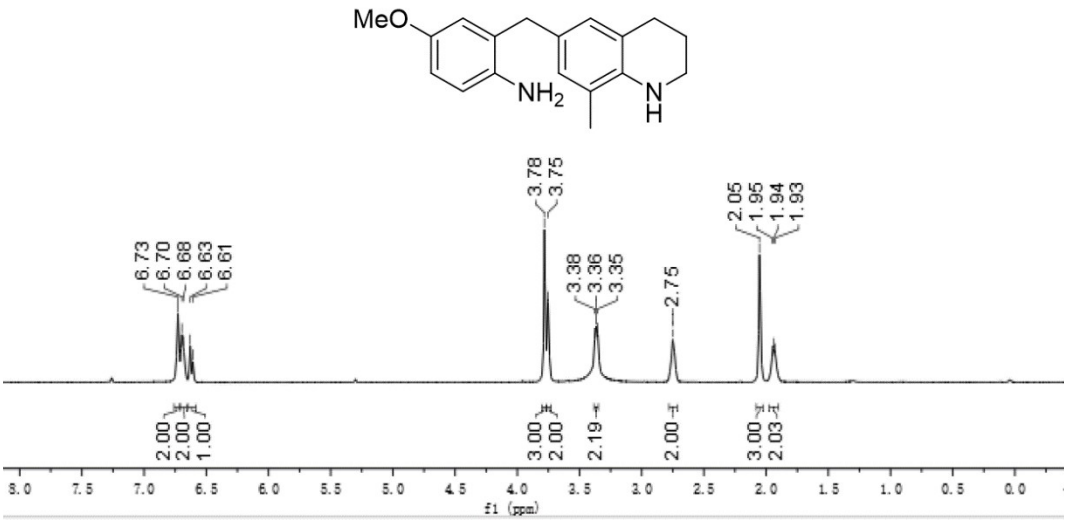
^{1}H-NMR spectrum of 2,4-dimethyl-6-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)aniline (5af)



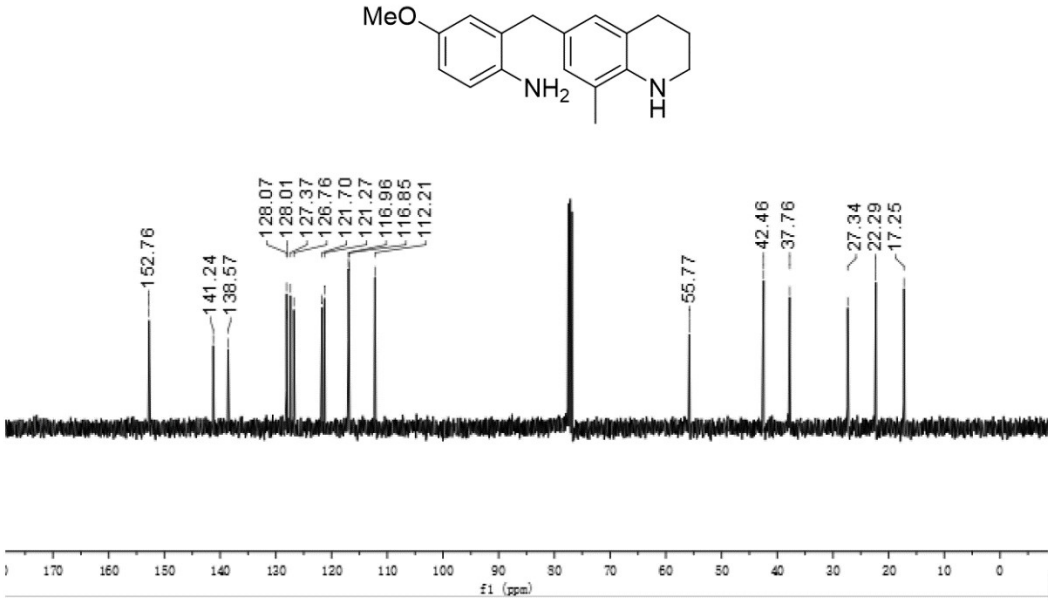
^{13}C-NMR spectrum of 2,4-dimethyl-6-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)aniline (5af)



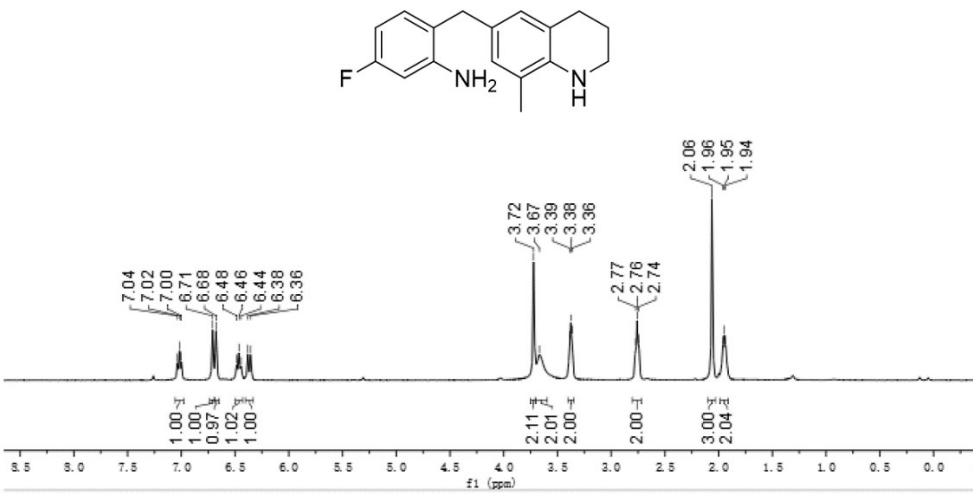
^{1}H-NMR spectrum of 4-methoxy-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)aniline (5ag)



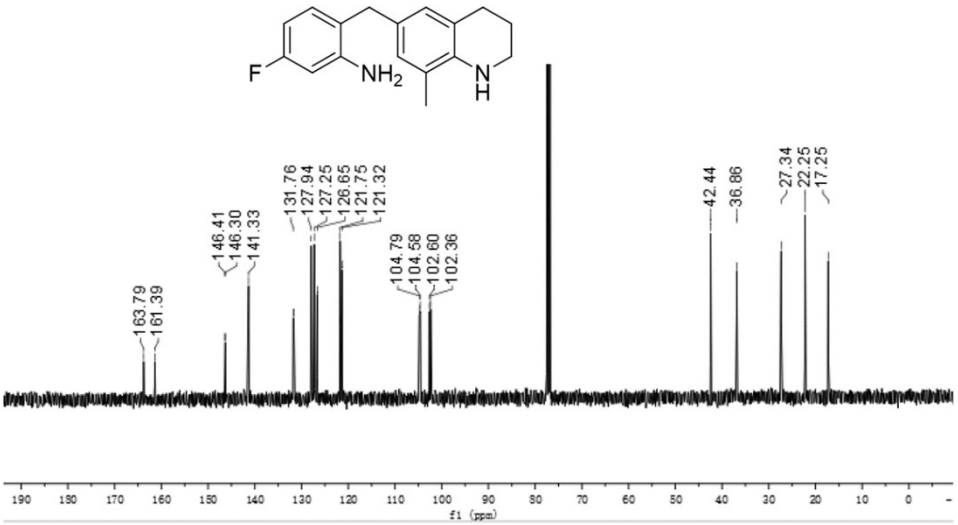
^{13}C-NMR spectrum of 4-methoxy-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)aniline (5ag)



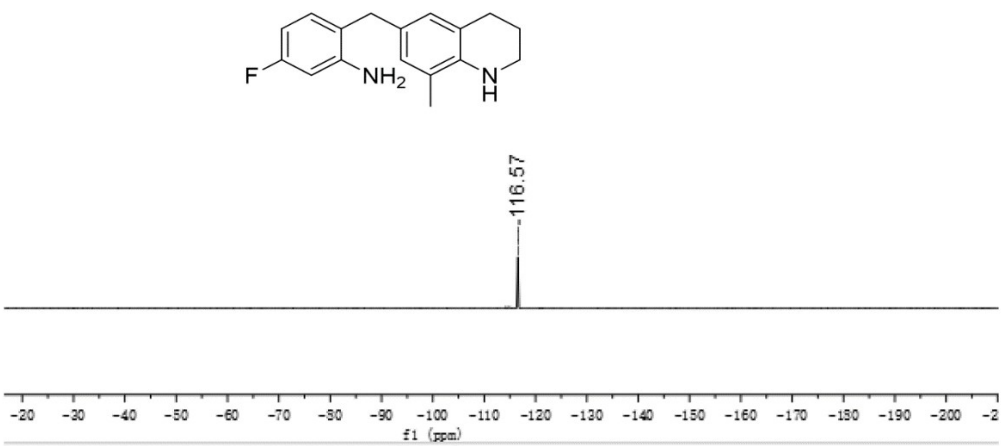
^{1}H-NMR spectrum of 5-fluoro-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)aniline (5ah)



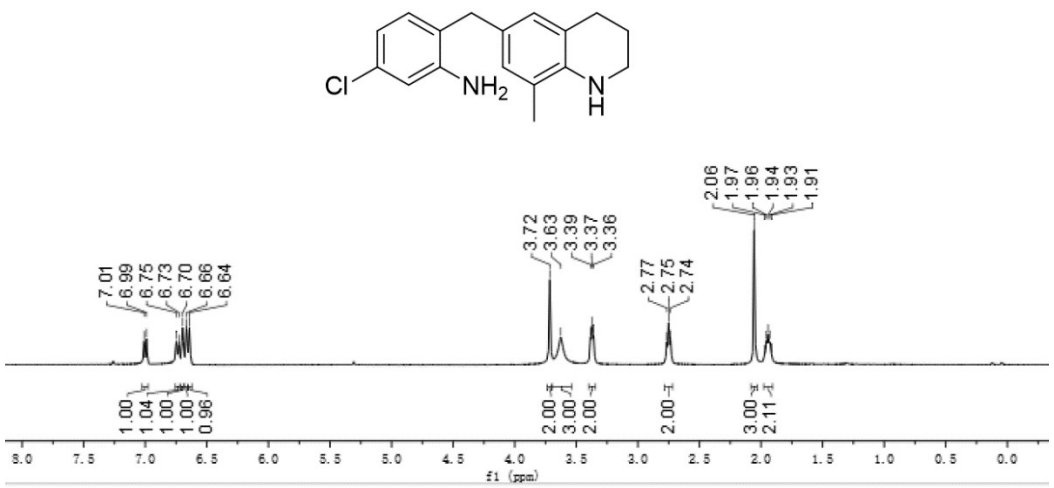
^{13}C-NMR spectrum of 5-fluoro-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)aniline (5ah)



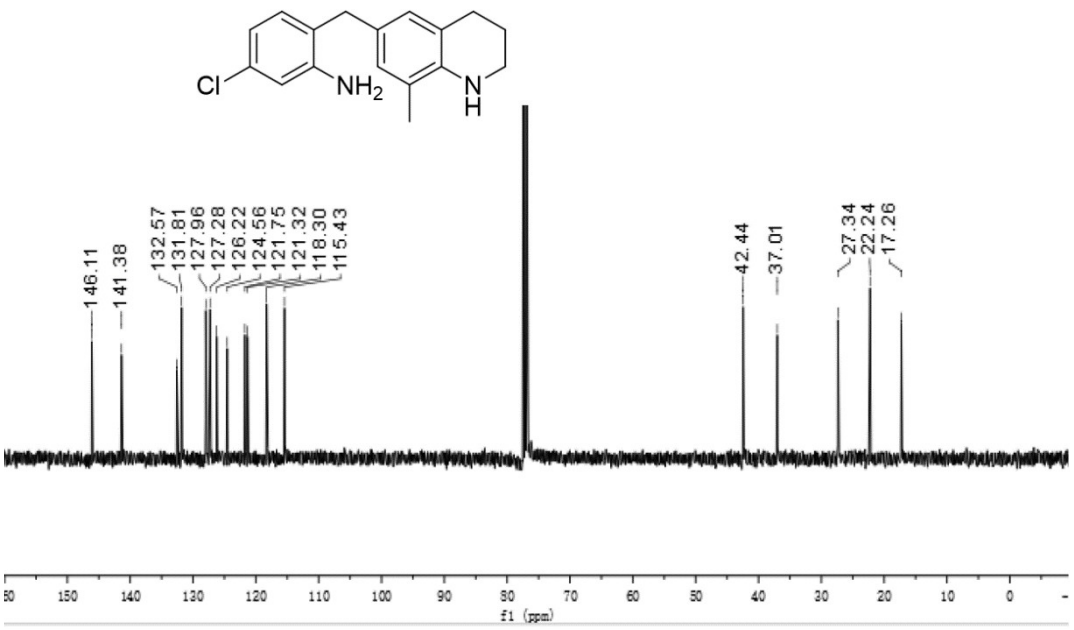
^{19}F-NMR spectrum of 5-fluoro-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)aniline (5ah)



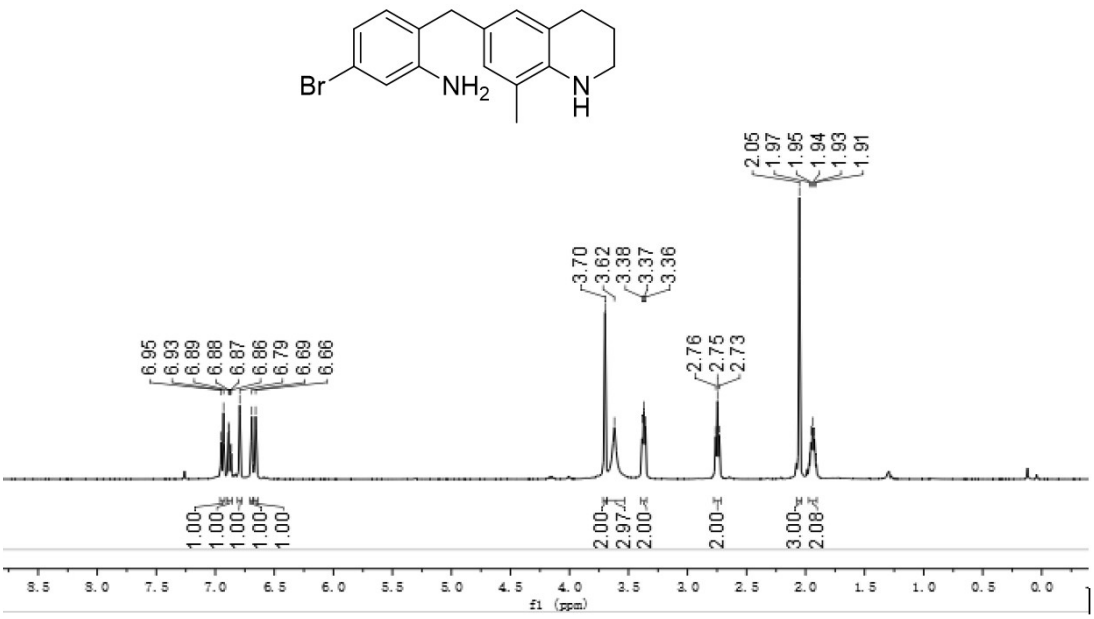
^{1}H-NMR spectrum of 5-chloro-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)aniline (5ai)



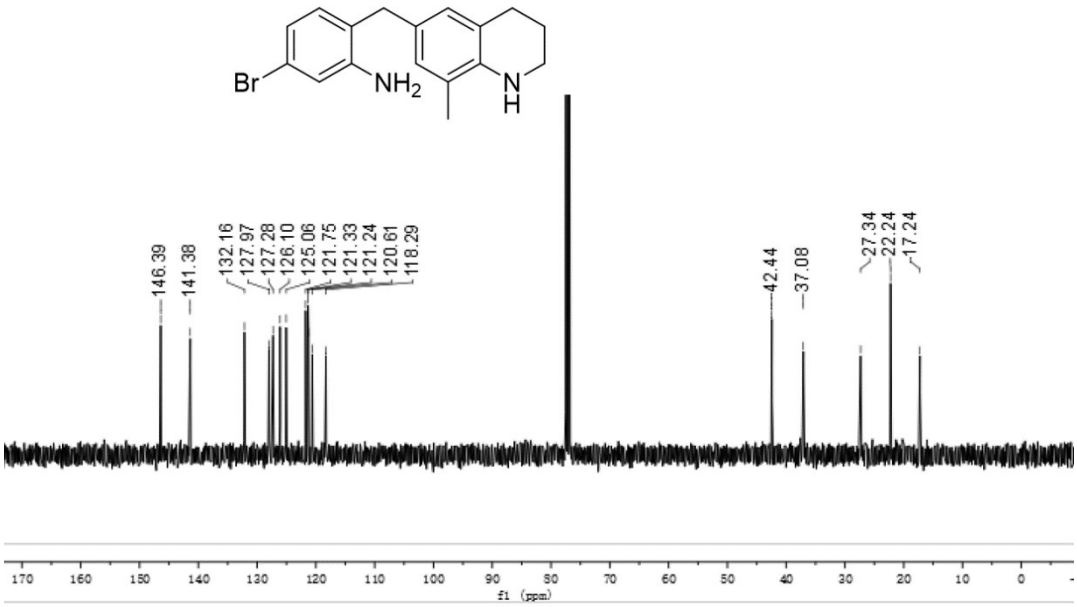
^{13}C-NMR spectrum of 5-chloro-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)aniline (5ai)



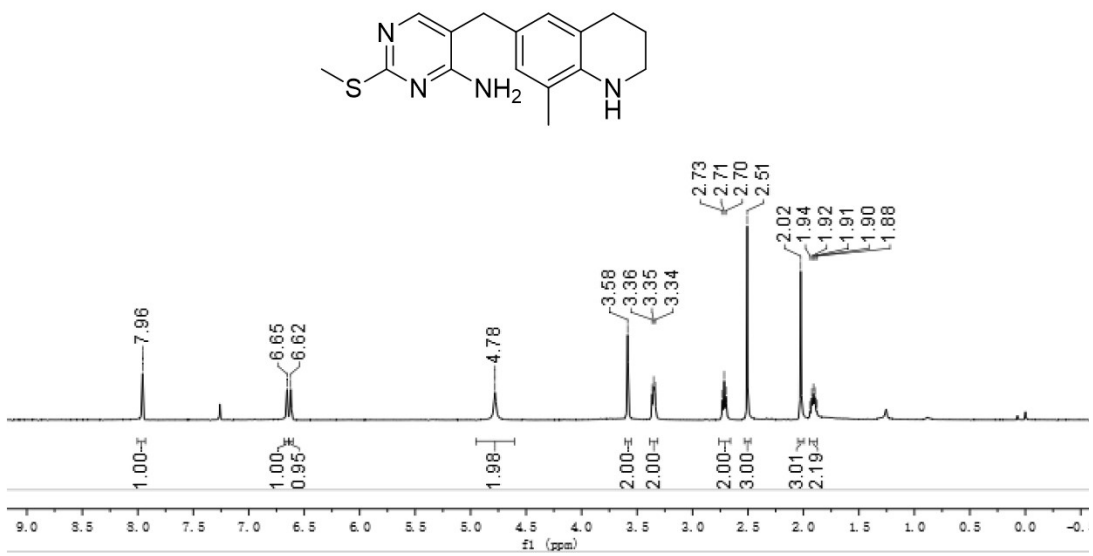
^{1}H-NMR spectrum of 5-bromo-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)aniline (5aj)



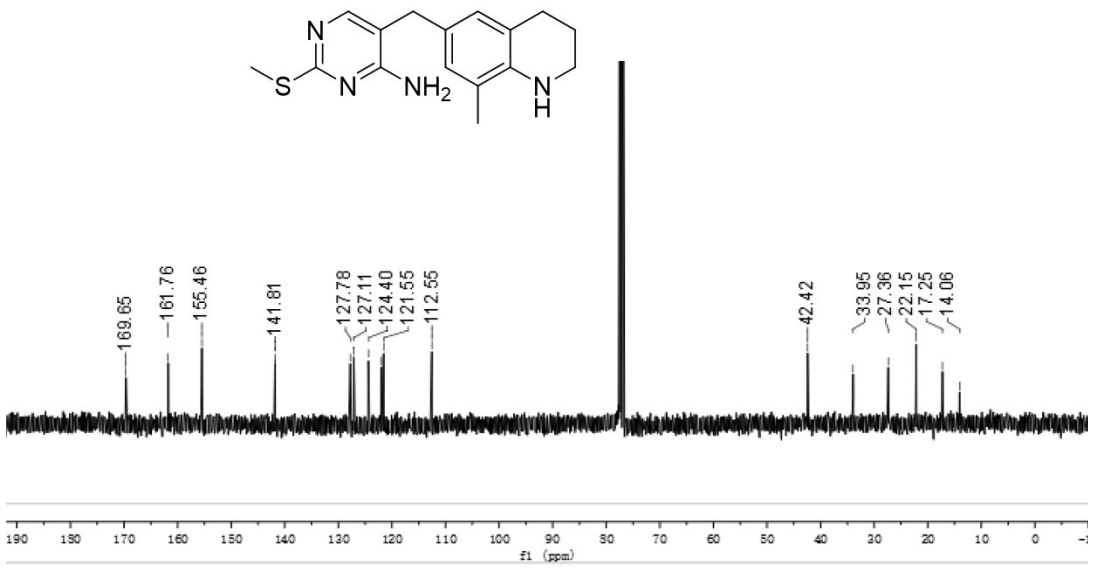
^{13}C-NMR spectrum of 5-bromo-2-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)aniline (5aj)



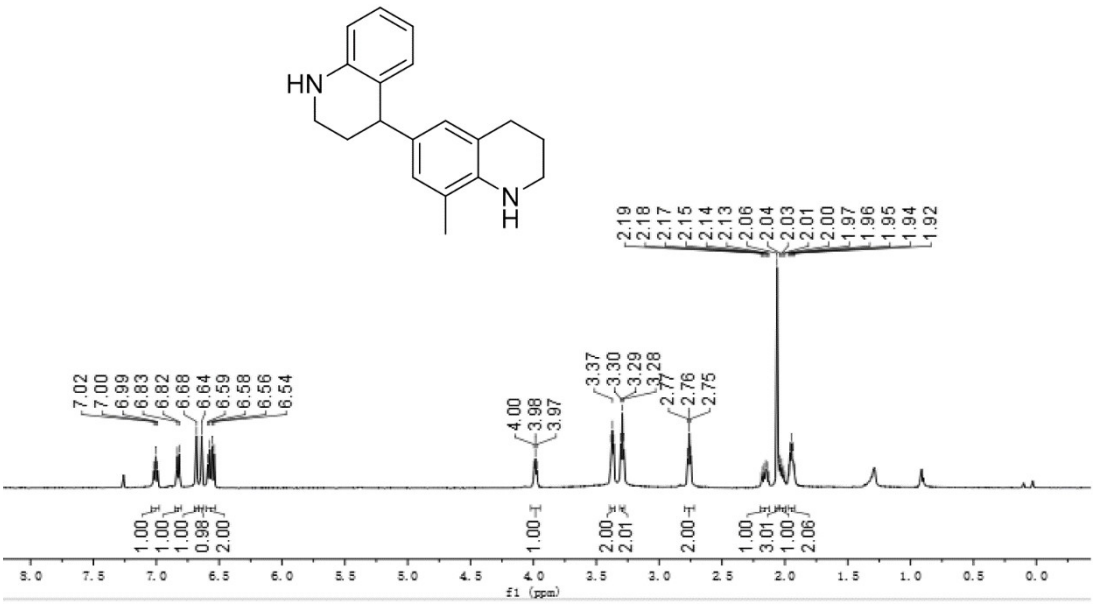
[1]H-NMR spectrum of 5-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)-2-(methylthio)pyrimidin-4-amine (5ak)



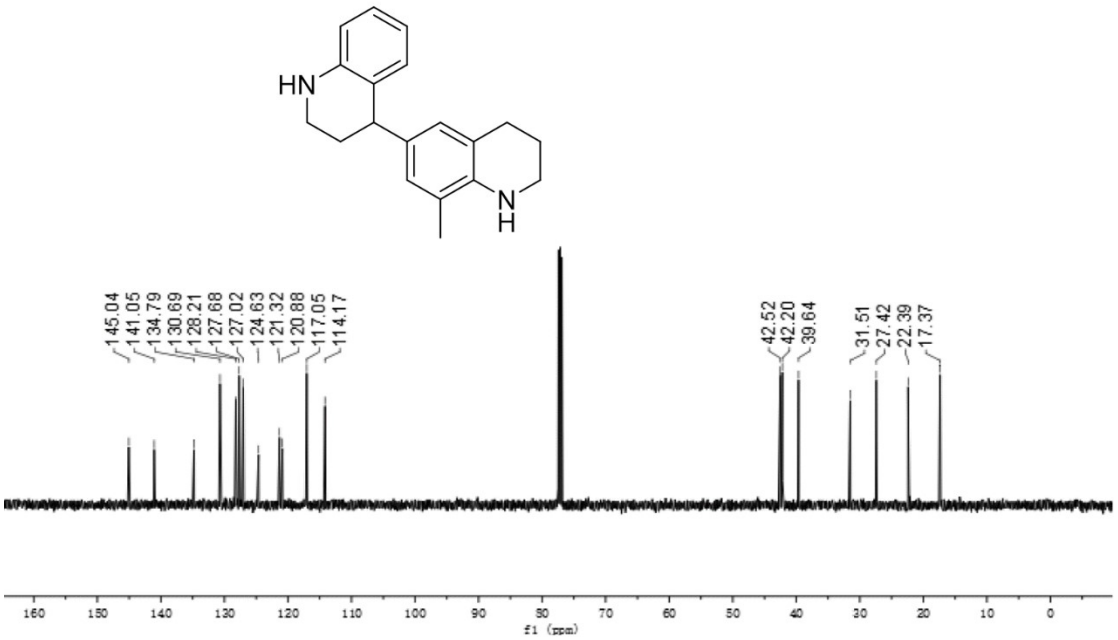
[13]C-NMR spectrum of 5-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)-2-(methylthio)pyrimidin-4-amine(5ak)



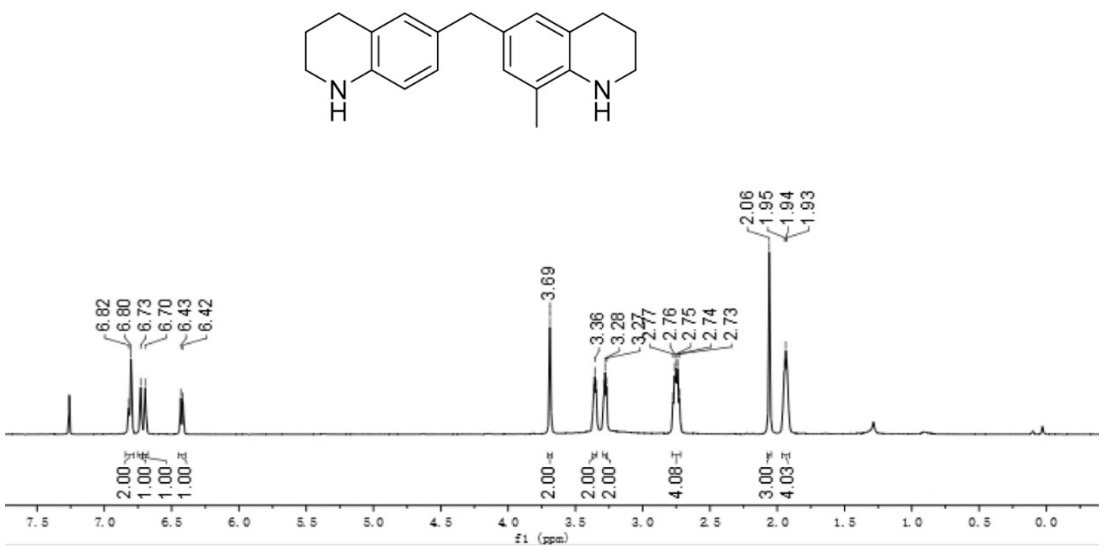
^{1}H-NMR spectrum of 8'-methyl-1,1',2,2',3,3',4,4'-octahydro-4,6'-biquinoline (5al)



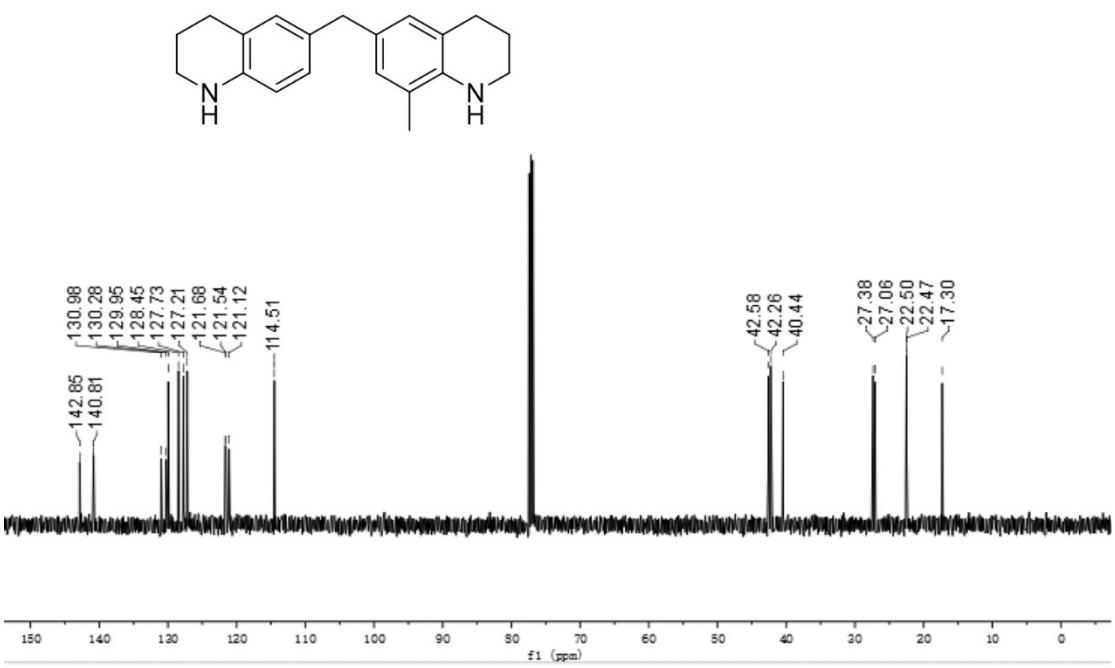
^{13}C-NMR spectrum of 8'-methyl-1,1',2,2',3,3',4,4'-octahydro-4,6'-biquinoline (5al)



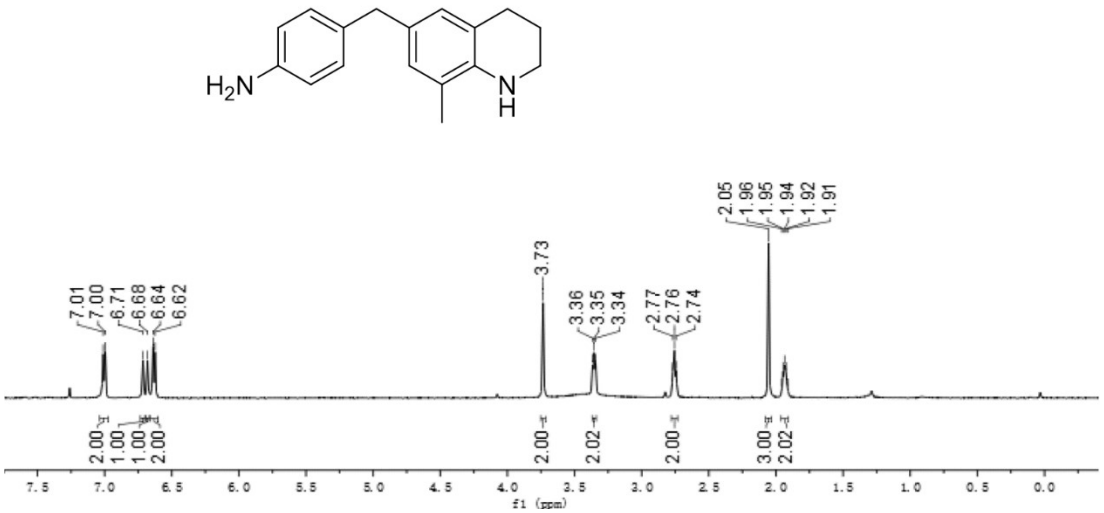
[1]H-NMR spectrum of 8-methyl-6-((1,2,3,4-tetrahydroquinolin-6-yl)methyl)-1,2,3,4-tetrahydroquinoline (5am)



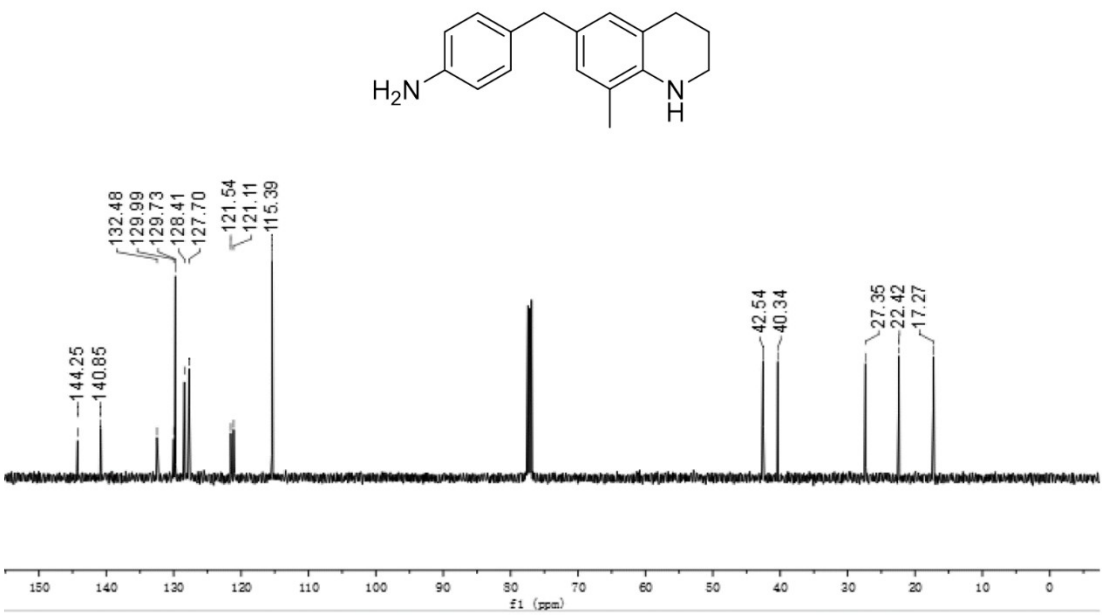
[13]C-NMR spectrum of 8-methyl-6-((1,2,3,4-tetrahydroquinolin-6-yl)methyl)-1,2,3,4-tetrahydroquinoline (5am)



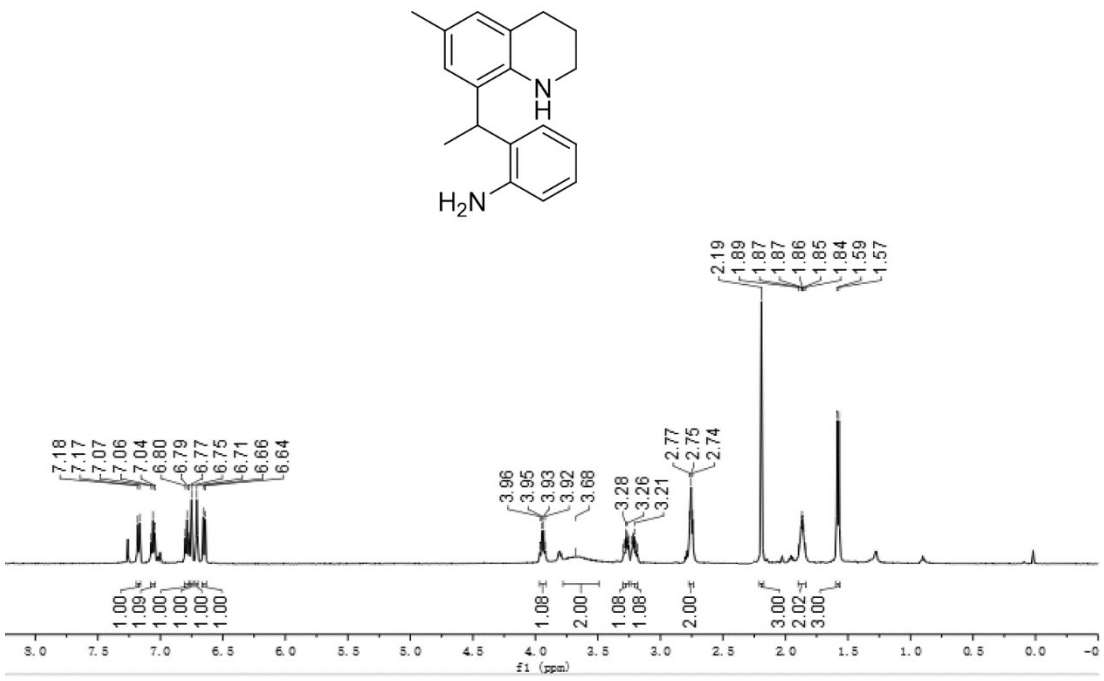
^{1}H-NMR spectrum of 4-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)aniline (5an)



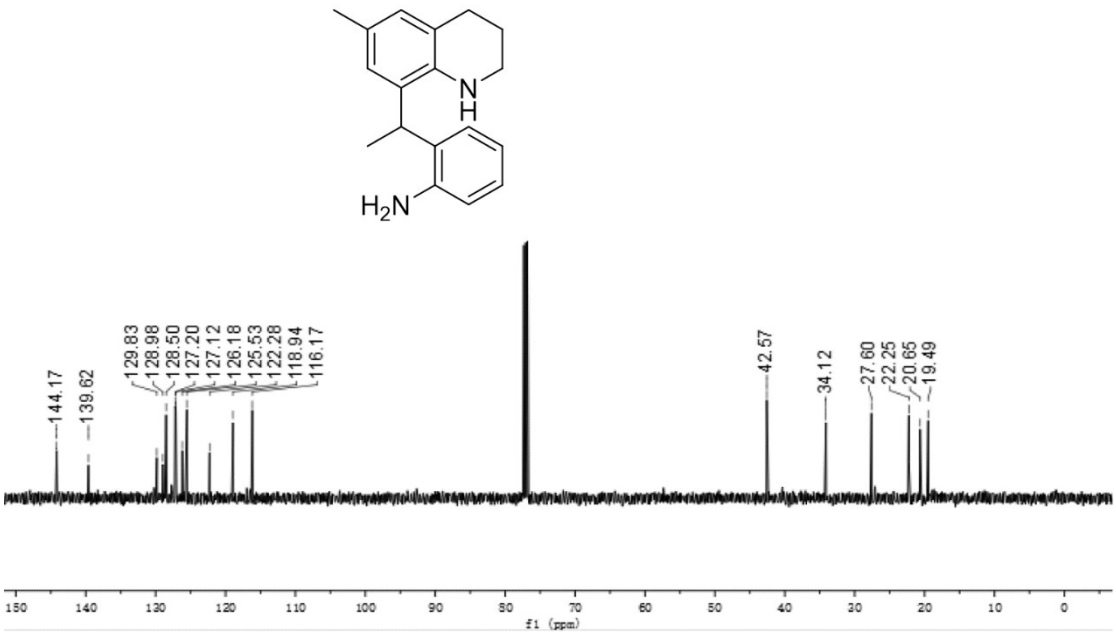
^{13}C-NMR spectrum of 4-((8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)aniline (5an)



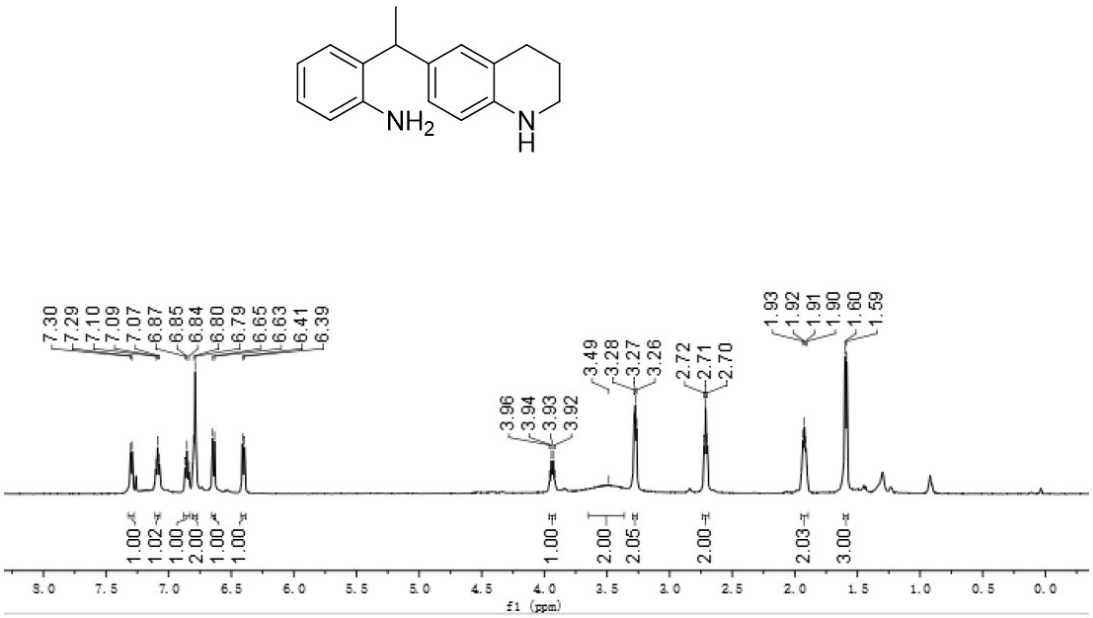
^{1}H-NMR spectrum of 2-(1-(6-methyl-1,2,3,4-tetrahydroquinolin-8-yl)ethyl)aniline (5mb)



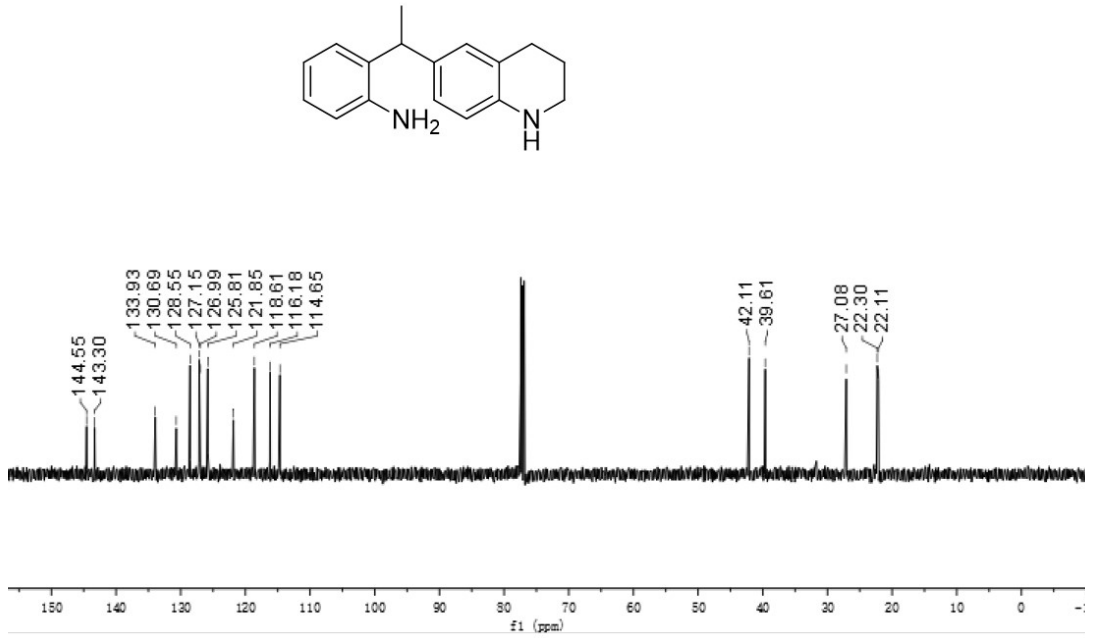
^{13}C-NMR spectrum of 2-(1-(6-methyl-1,2,3,4-tetrahydroquinolin-8-yl)ethyl)aniline (5mb)



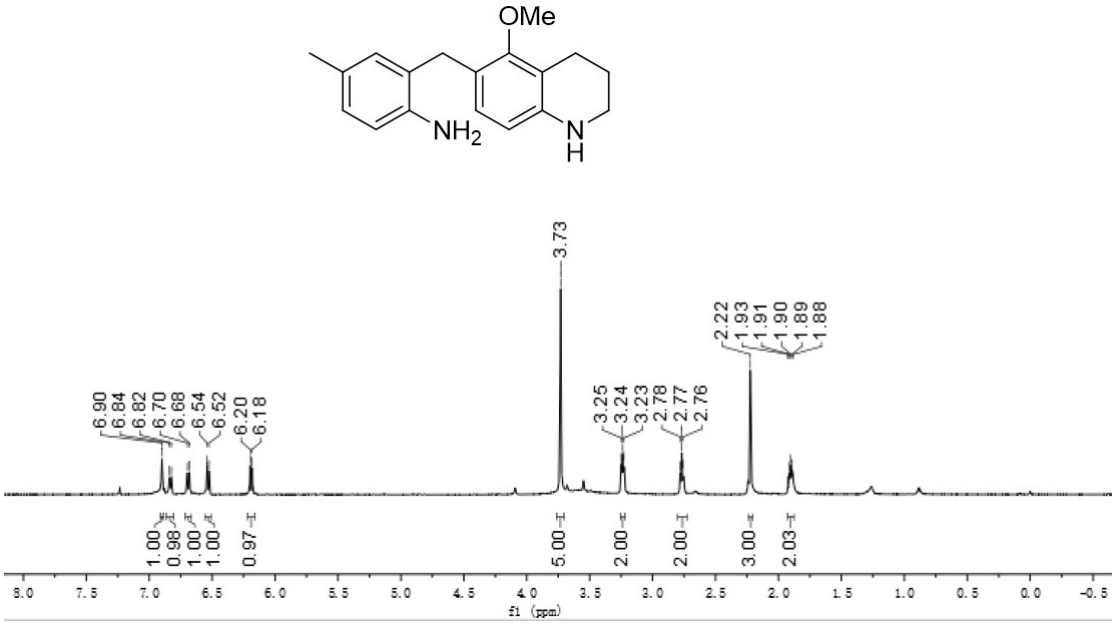
^{1}H-NMR spectrum of 2-(1-(1,2,3,4-tetrahydroquinolin-6-yl)ethyl)aniline (5nb-1)



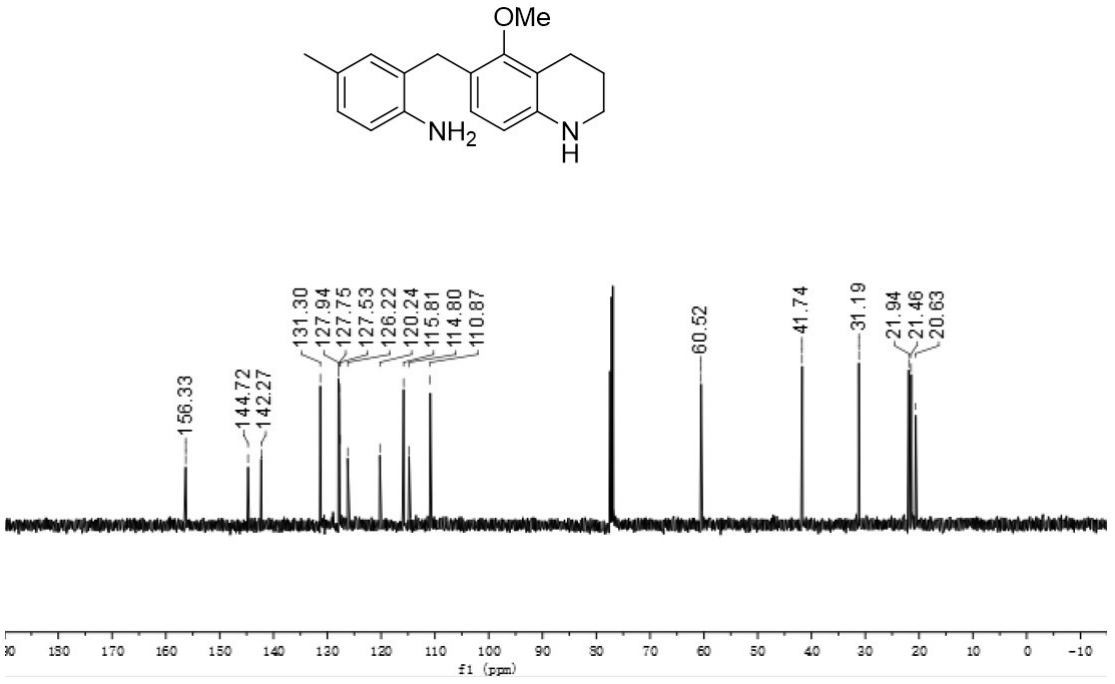
^{13}C-NMR spectrum of 2-(1-(1,2,3,4-tetrahydroquinolin-6-yl)ethyl)aniline (5nb-1)



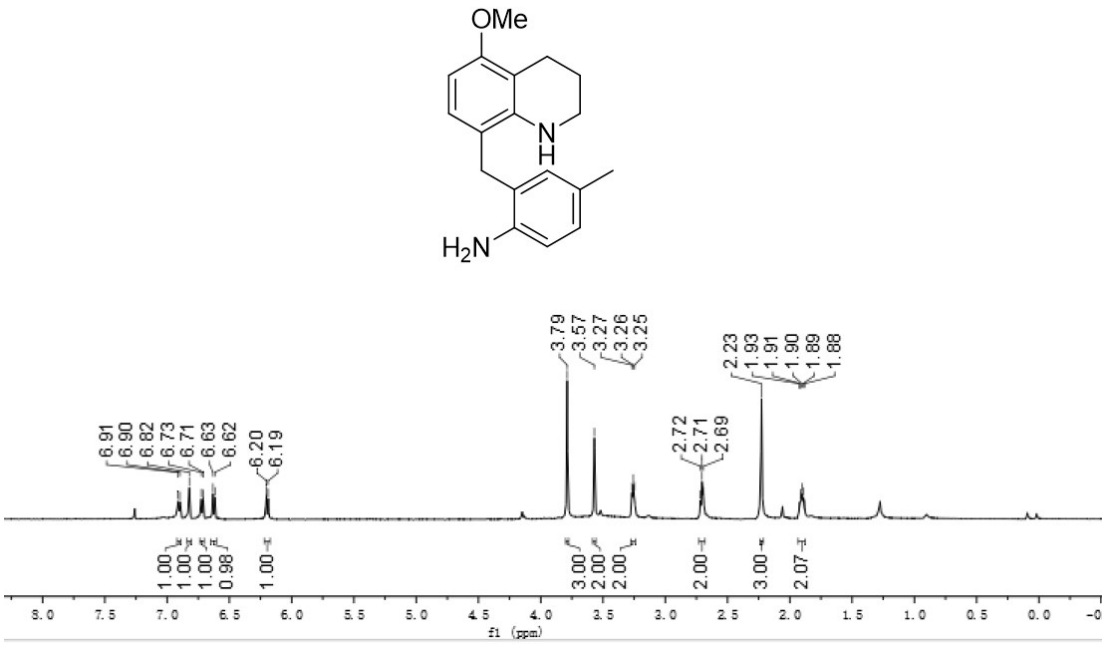
^{1}H-NMR spectrum of 2-((5-methoxy-1,2,3,4-tetrahydroquinolin-6-yl)methyl)-4-methylaniline (5oe-1)



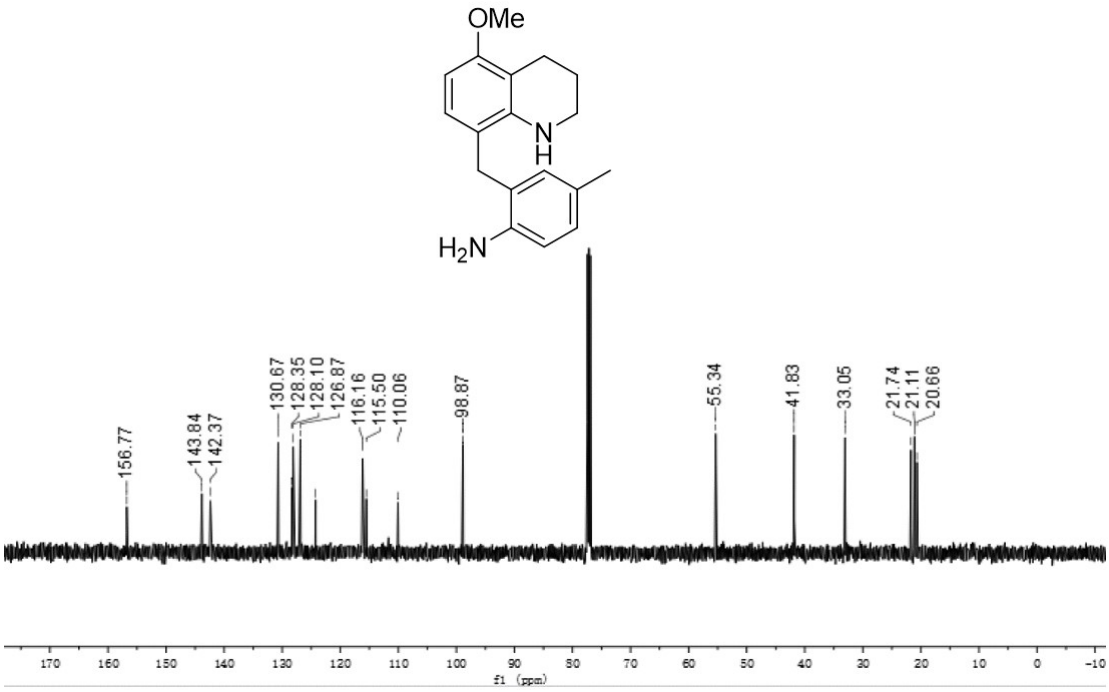
^{13}C-NMR spectrum of 2-((5-methoxy-1,2,3,4-tetrahydroquinolin-6-yl)methyl)-4-methylaniline (5oe-1)



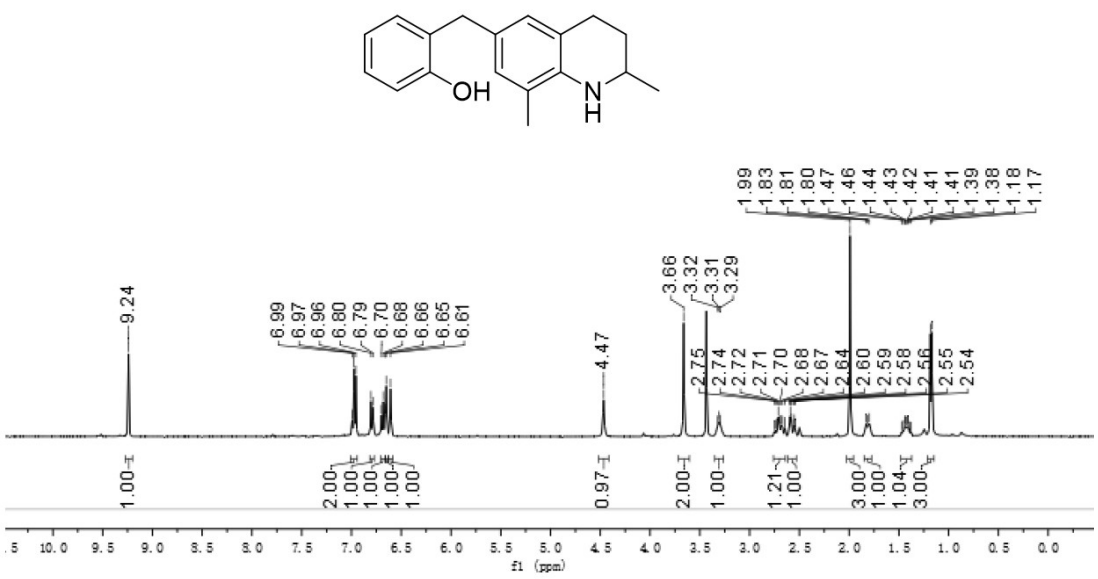
^{1}H-NMR spectrum of 2-((5-methoxy-1,2,3,4-tetrahydroquinolin-8-yl)methyl)-4-methylaniline (5oe-2)



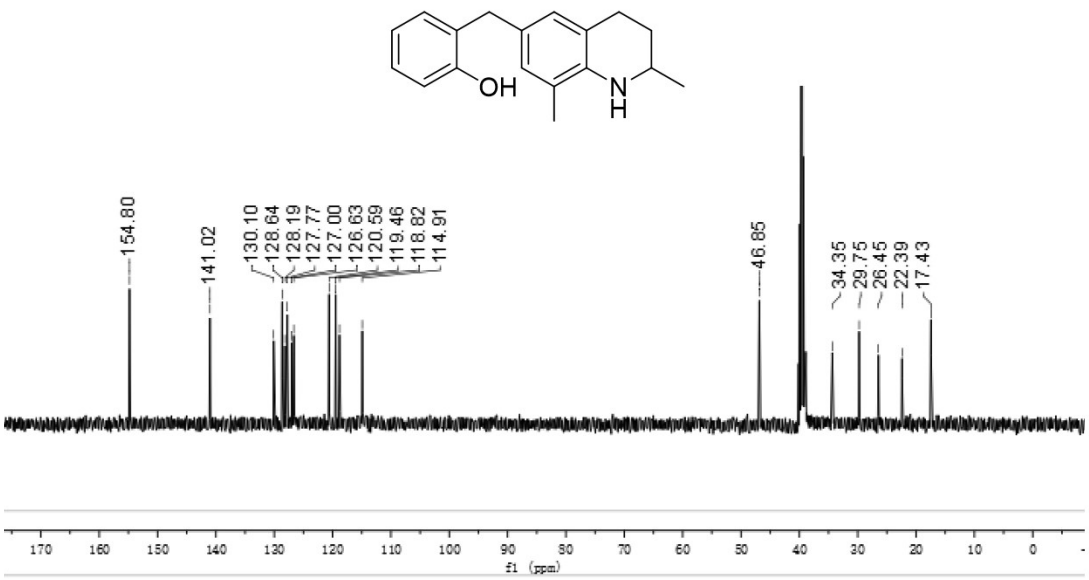
^{13}C-NMR spectrum of 2-((5-methoxy-1,2,3,4-tetrahydroquinolin-8-yl)methyl)-4-methylaniline (5oe-2)



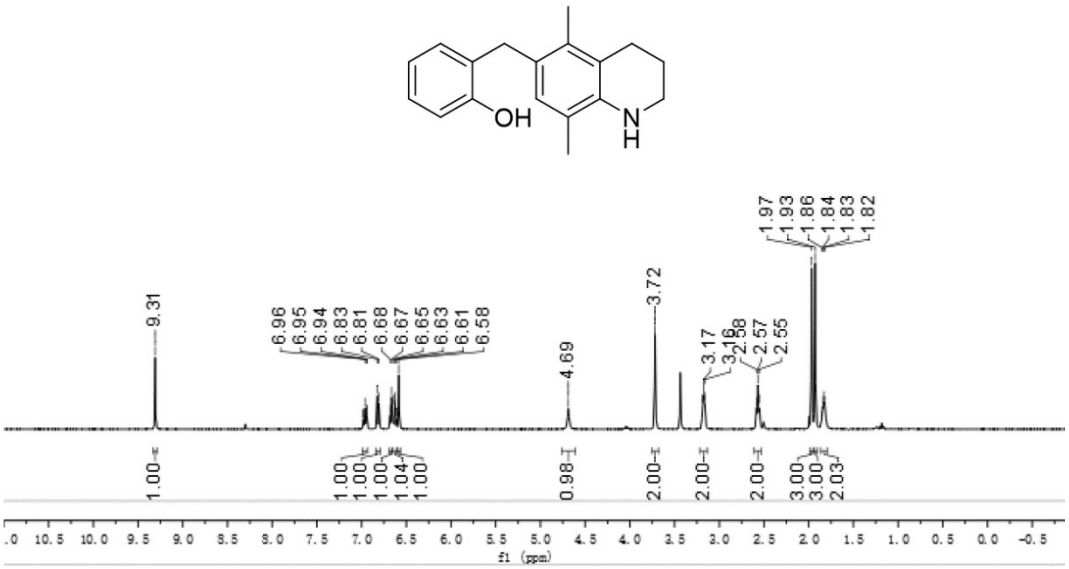
^{1}H-NMR spectrum of 2-((2,8-dimethyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3ba)



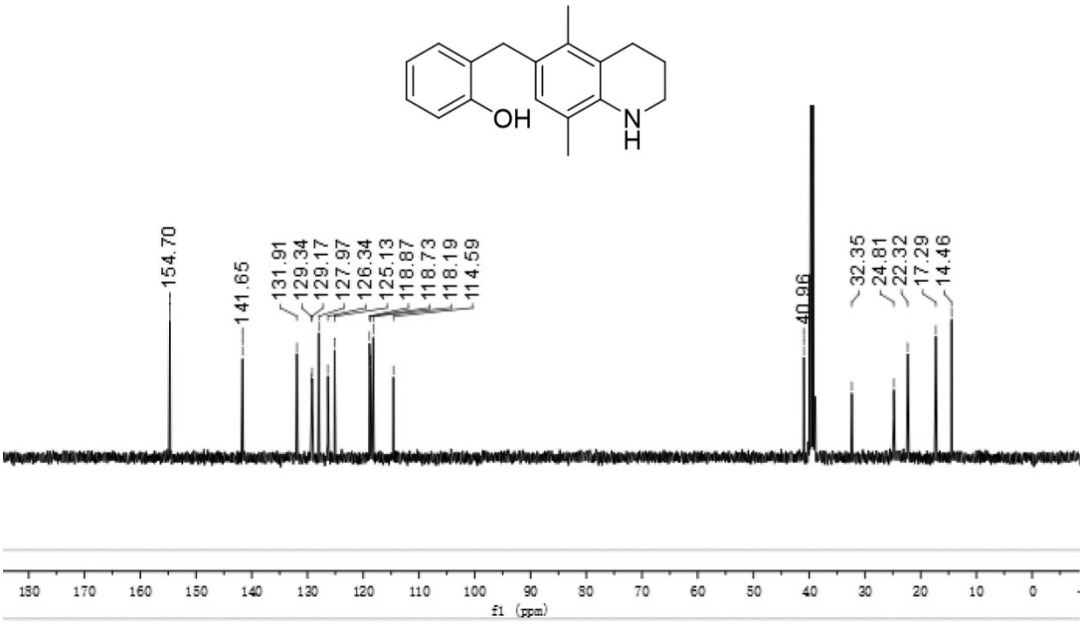
^{13}C-NMR spectrum of 2-((2,8-dimethyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3ba)



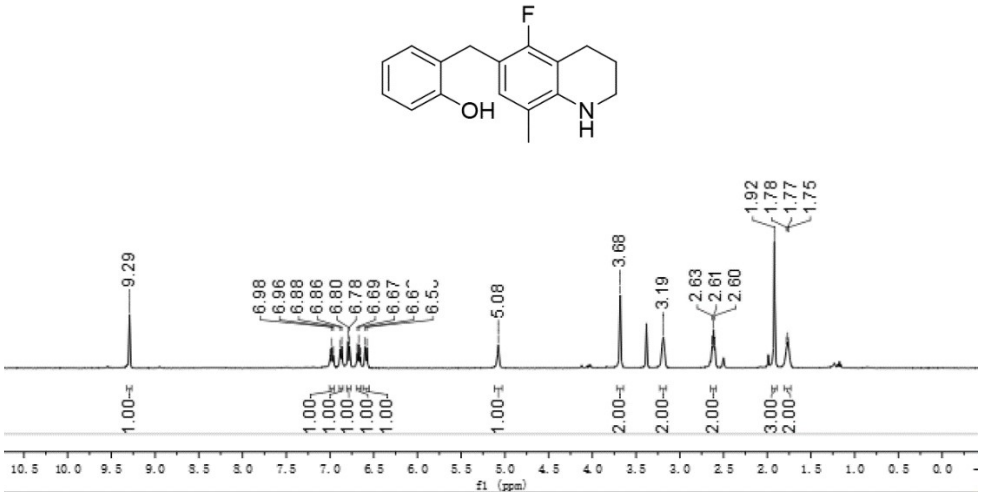
^{1}H-NMR spectrum of 2-((5,8-dimethyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3ca)



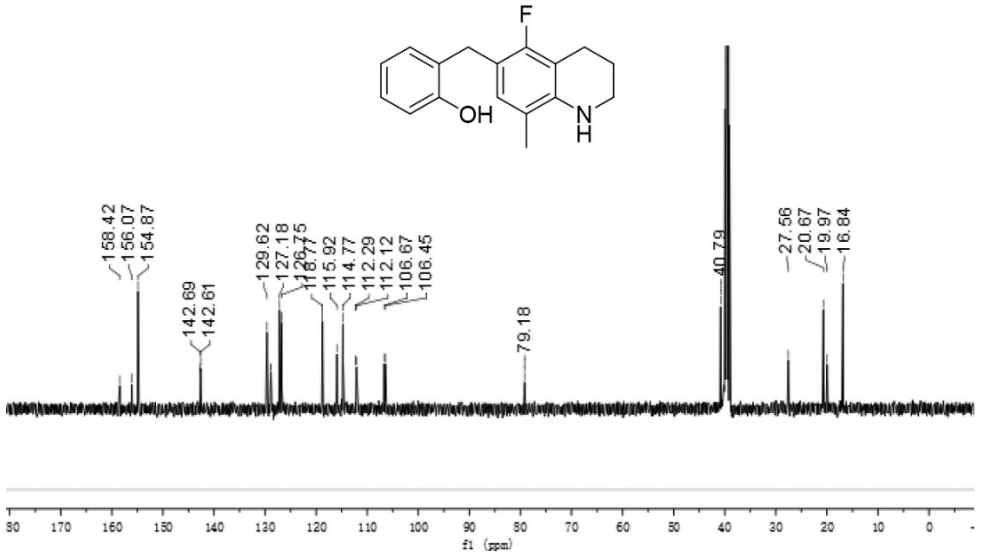
^{13}C-NMR spectrum of 2-((5,8-dimethyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3ca)



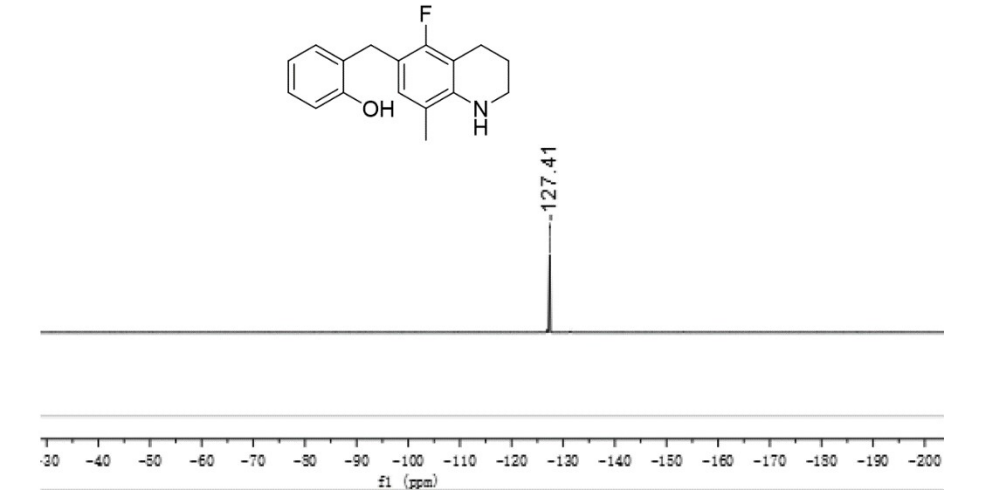
^{1}H-NMR spectrum of 2-((5-fluoro-8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3da)



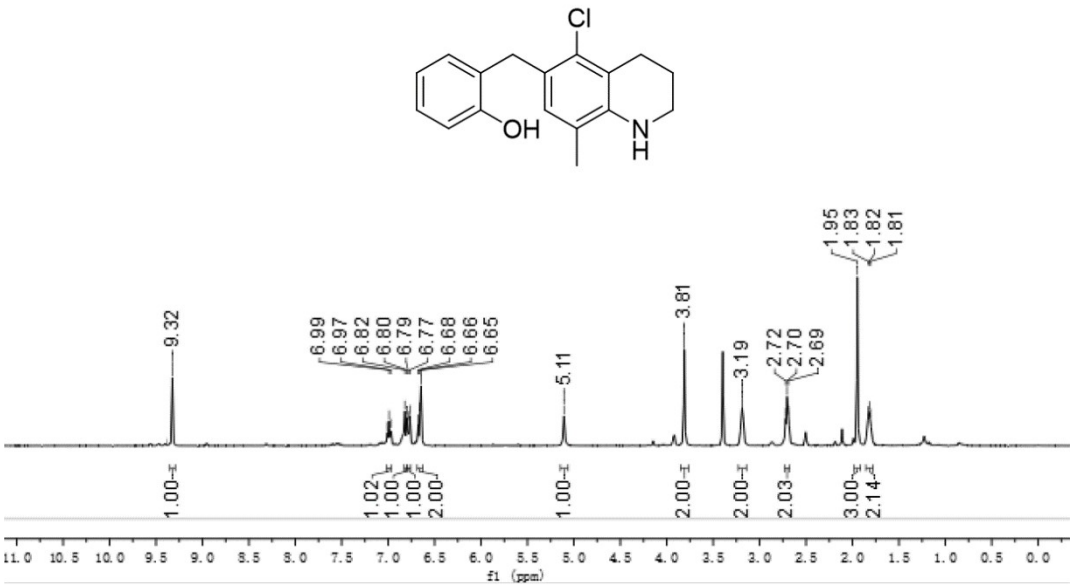
^{13}C-NMR spectrum of 2-((5-fluoro-8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3da)



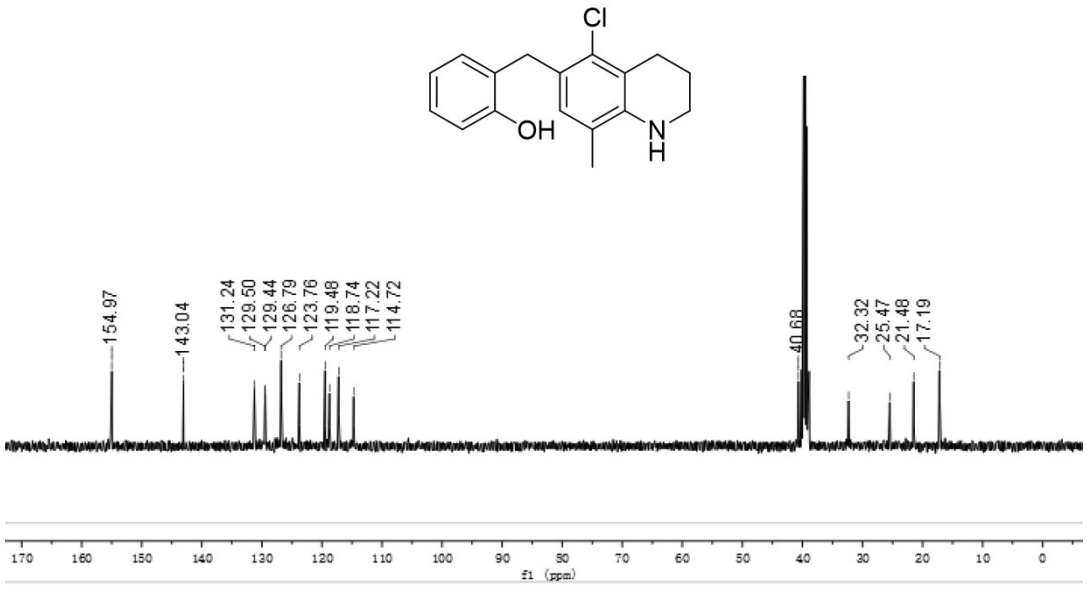
^{19}F-NMR spectrum of 2-((5-fluoro-8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3da)



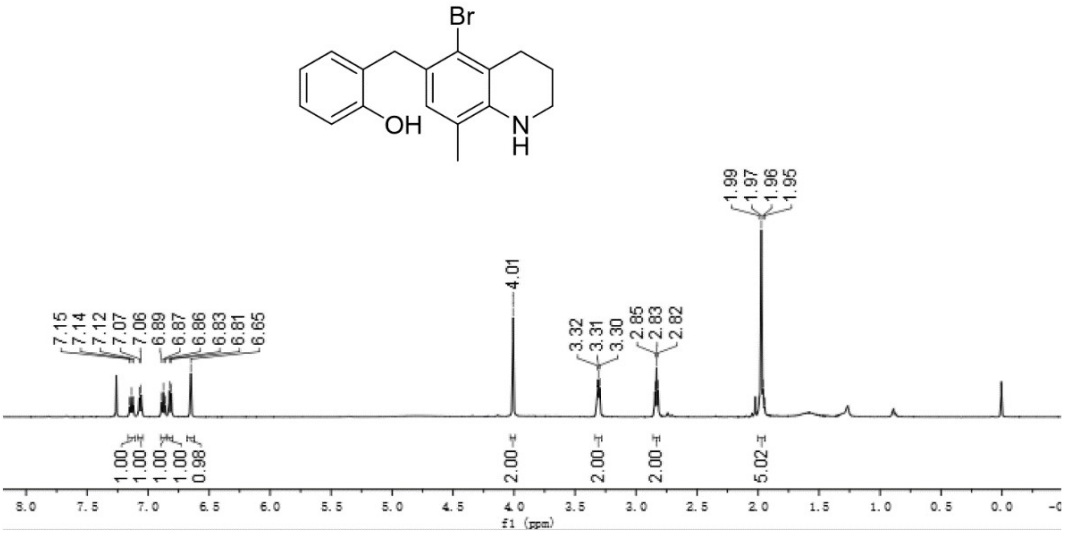
^{1}H-NMR spectrum of 2-((5-chloro-8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3ea)



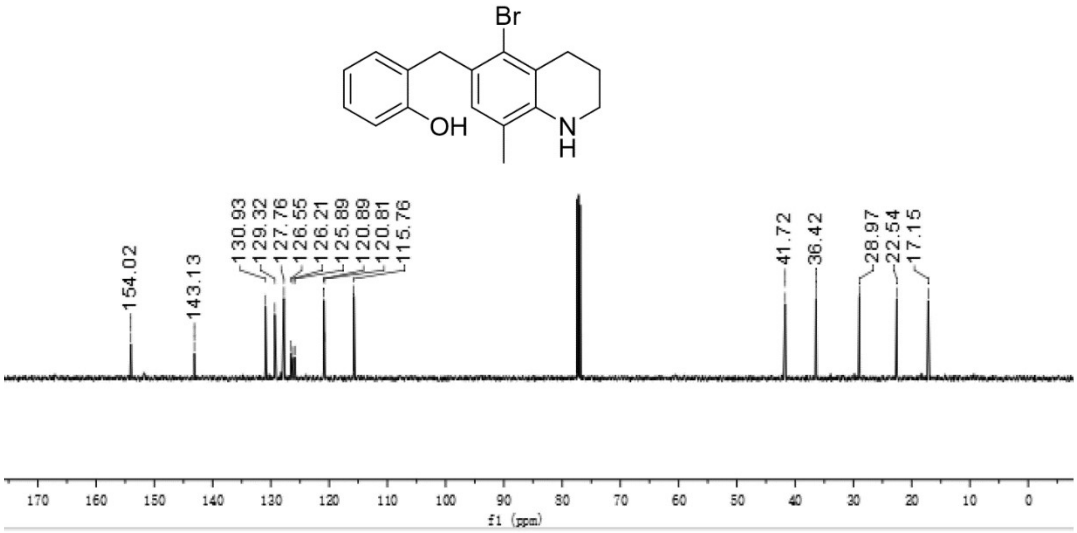
^{13}C-NMR spectrum of 2-((5-chloro-8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3ea)



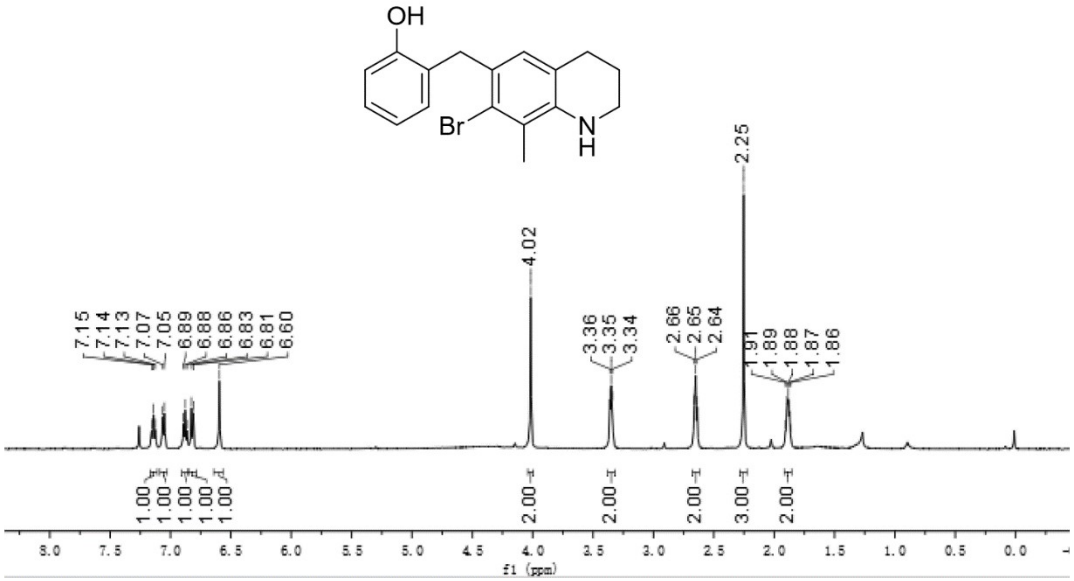
^{1}H-NMR spectrum of 2-((5-bromo-8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3fa)



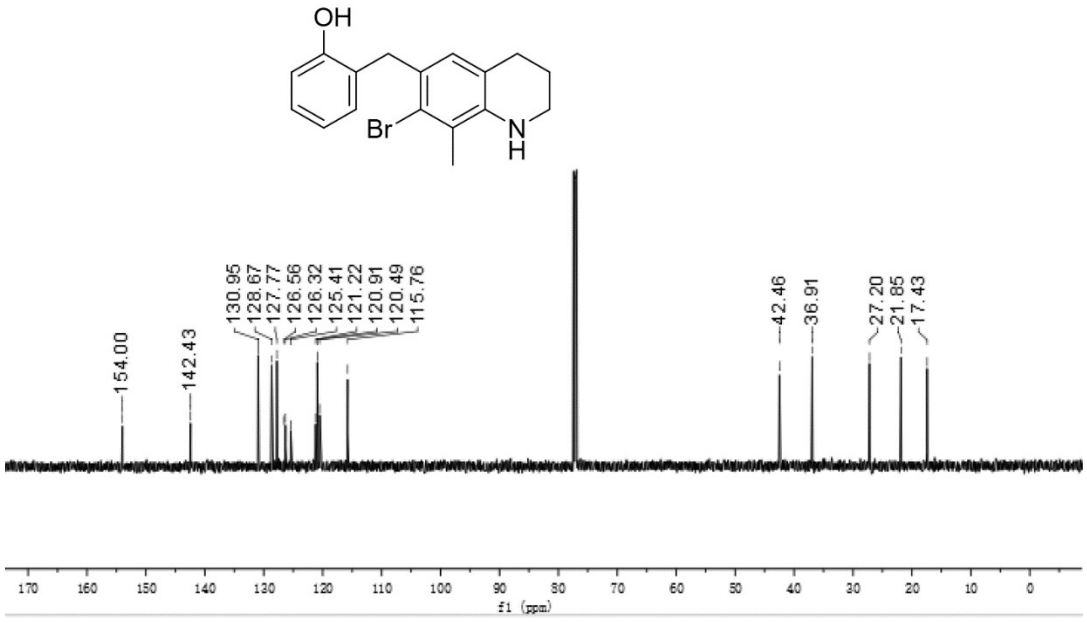
^{13}C-NMR spectrum of 2-((5-bromo-8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3fa)



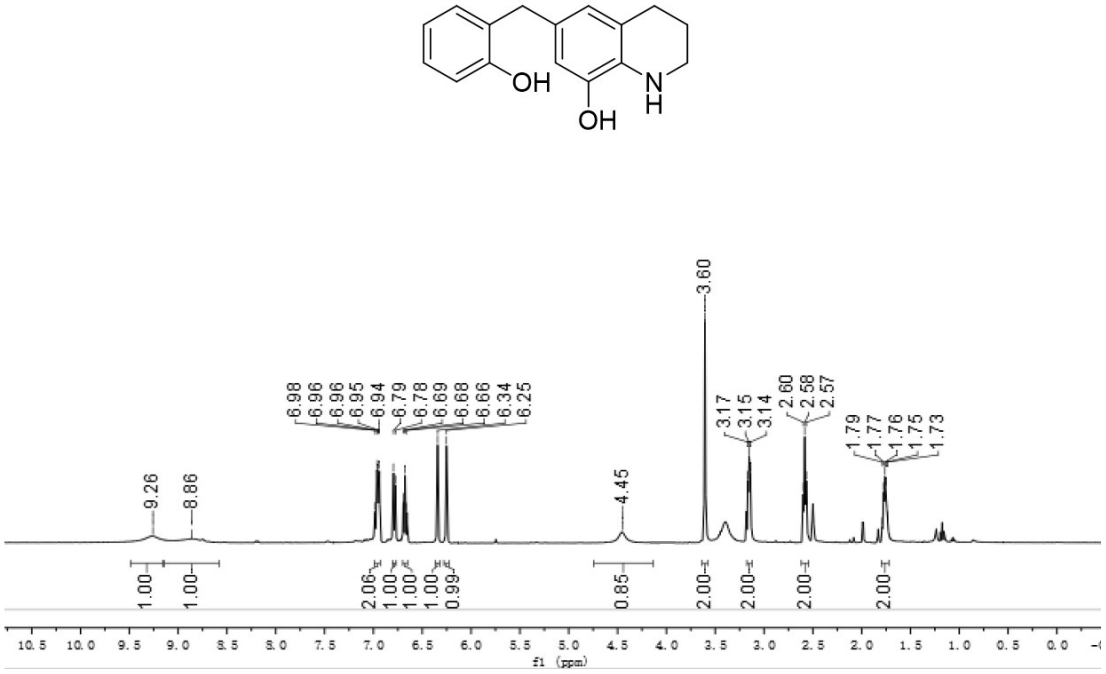
^{1}H-NMR spectrum of 2-((7-bromo-8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3ga)



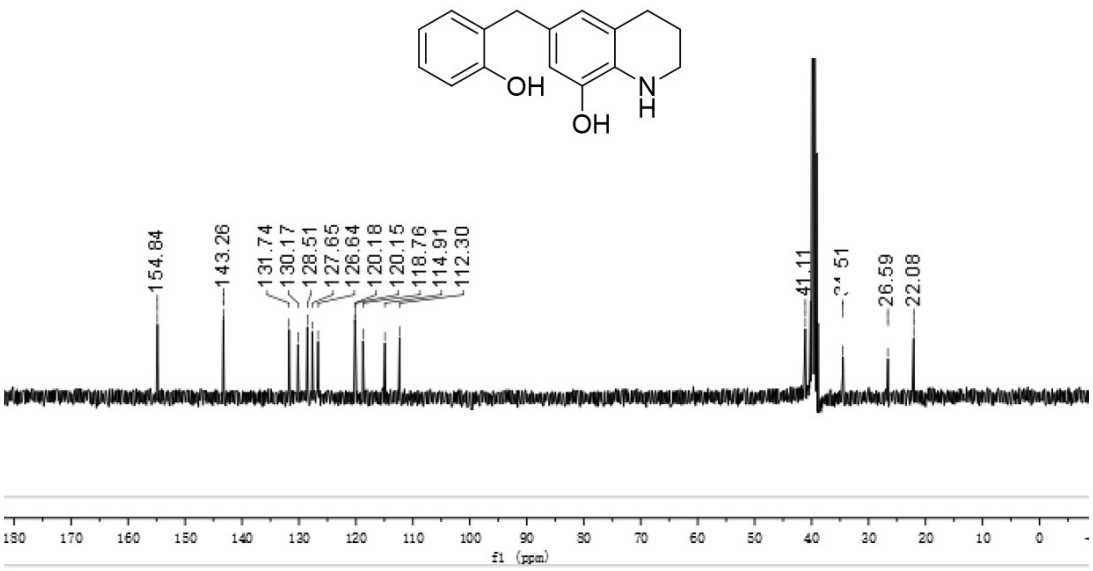
^{13}C-NMR spectrum of 2-((7-bromo-8-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3ga)



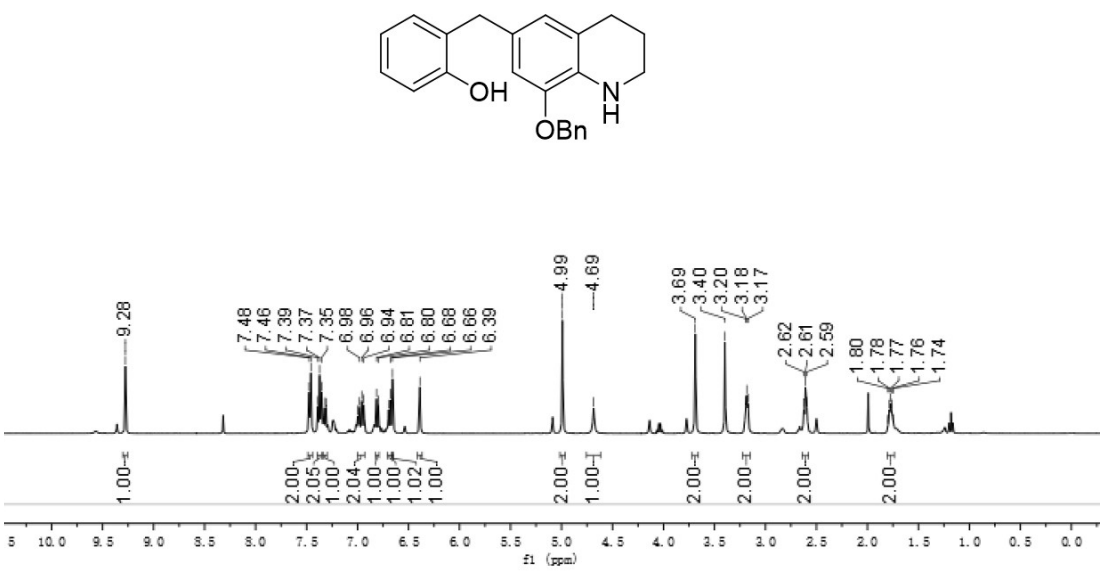
^{1}H-NMR spectrum of 6-(2-hydroxybenzyl)-1,2,3,4-tetrahydroquinolin-8-ol (3ha)



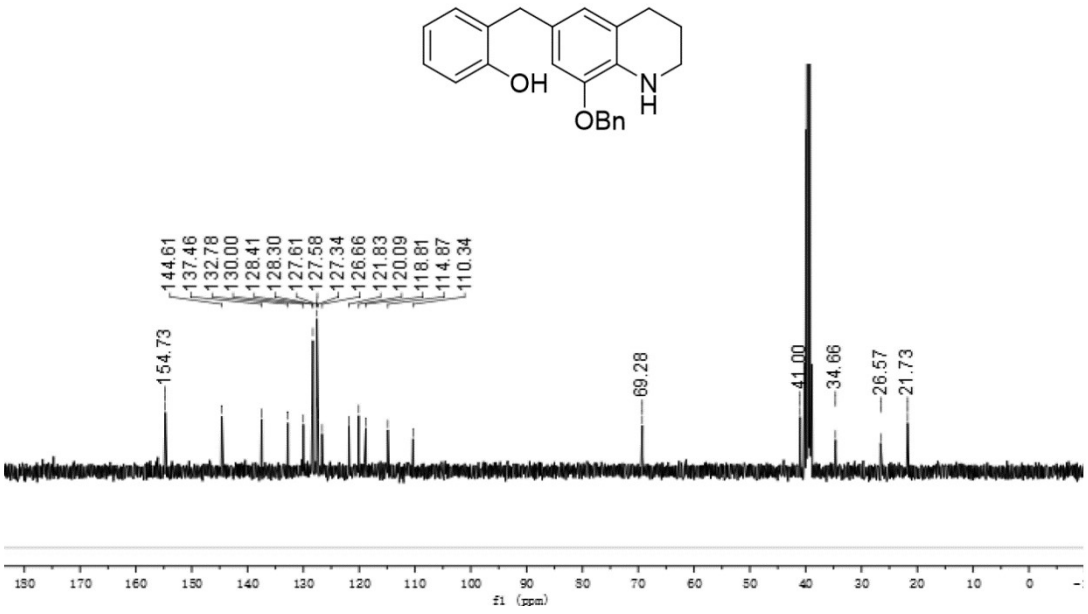
^{13}C-NMR spectrum of 6-(2-hydroxybenzyl)-1,2,3,4-tetrahydroquinolin-8-ol (3ha)



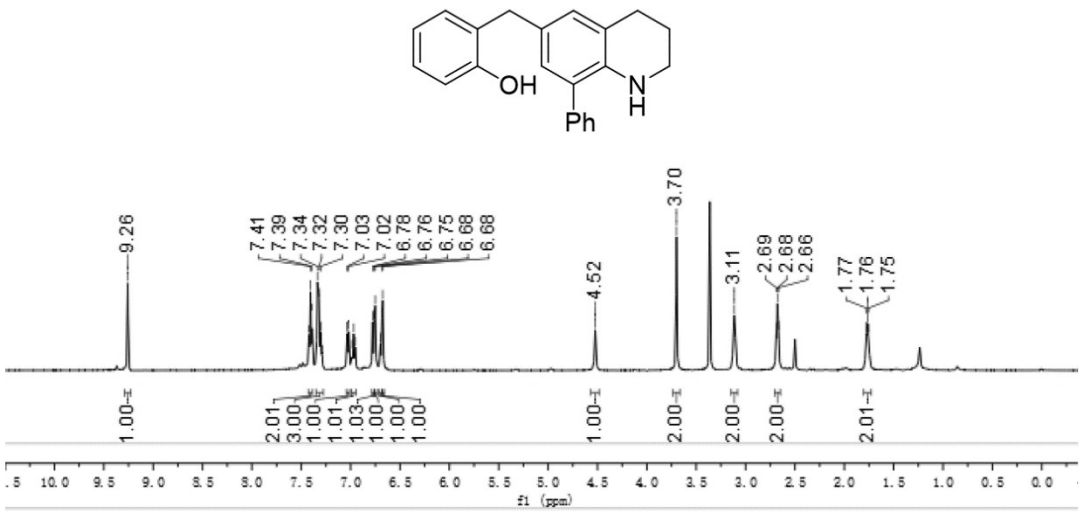
^{1}H-NMR spectrum of 2-((8-(benzyloxy)-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3ia)



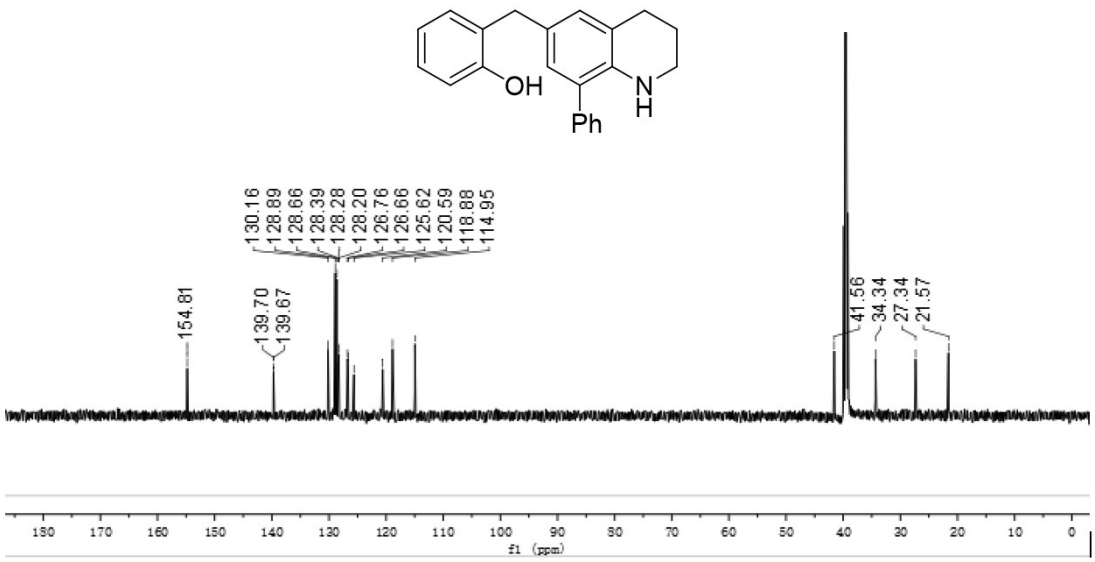
^{13}C-NMR spectrum of 2-((8-(benzyloxy)-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3ia)



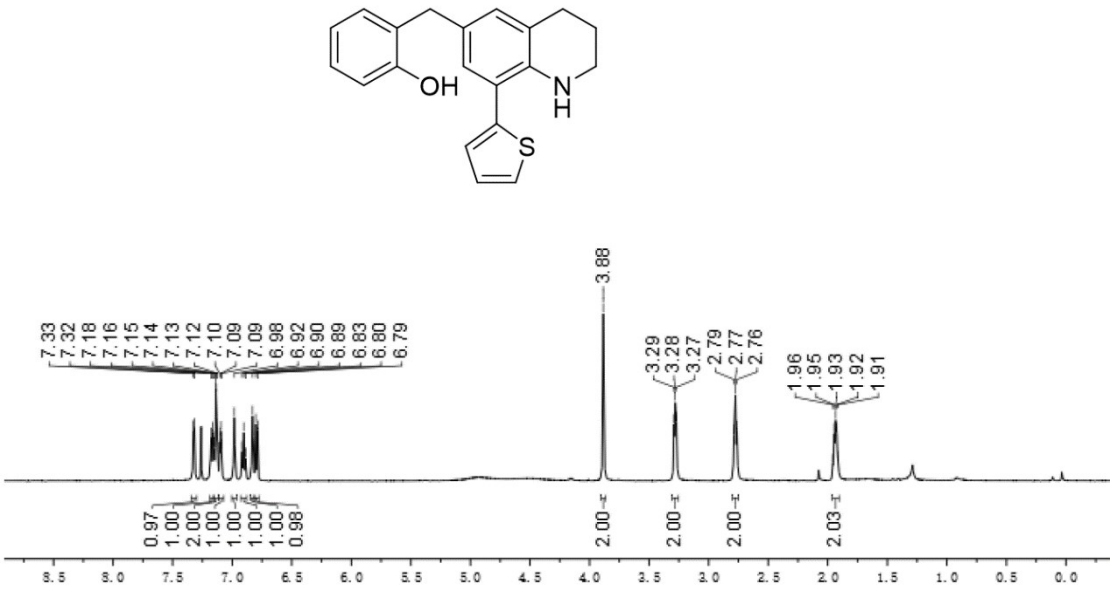
^{1}H-NMR spectrum of 2-((8-phenyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3ja)



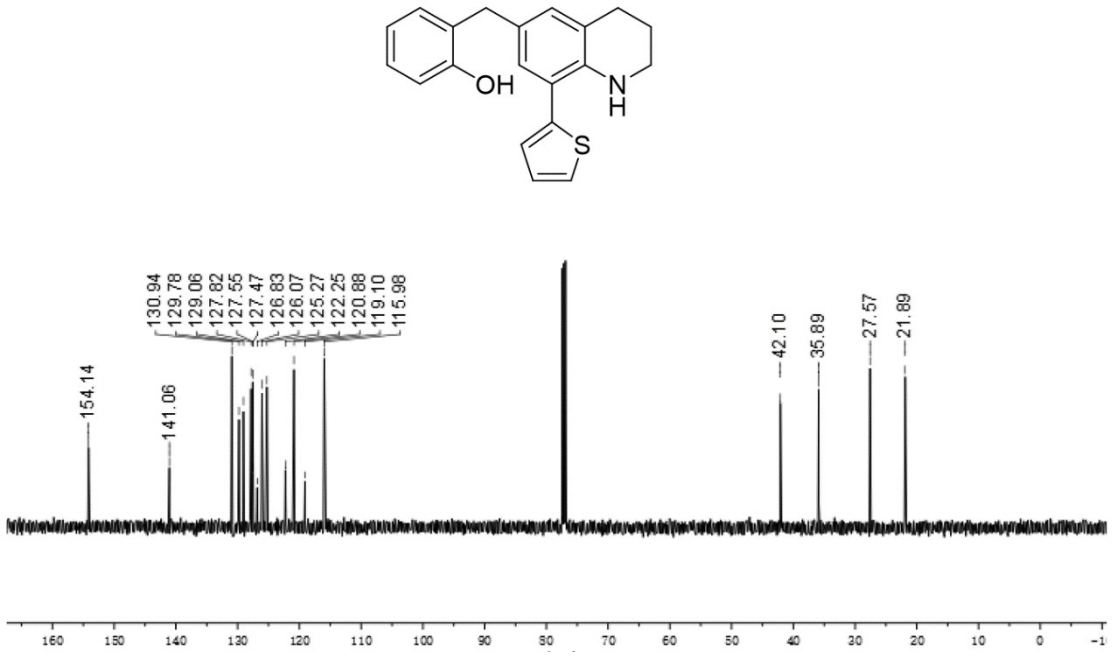
^{13}C-NMR spectrum of 2-((8-phenyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3ja)



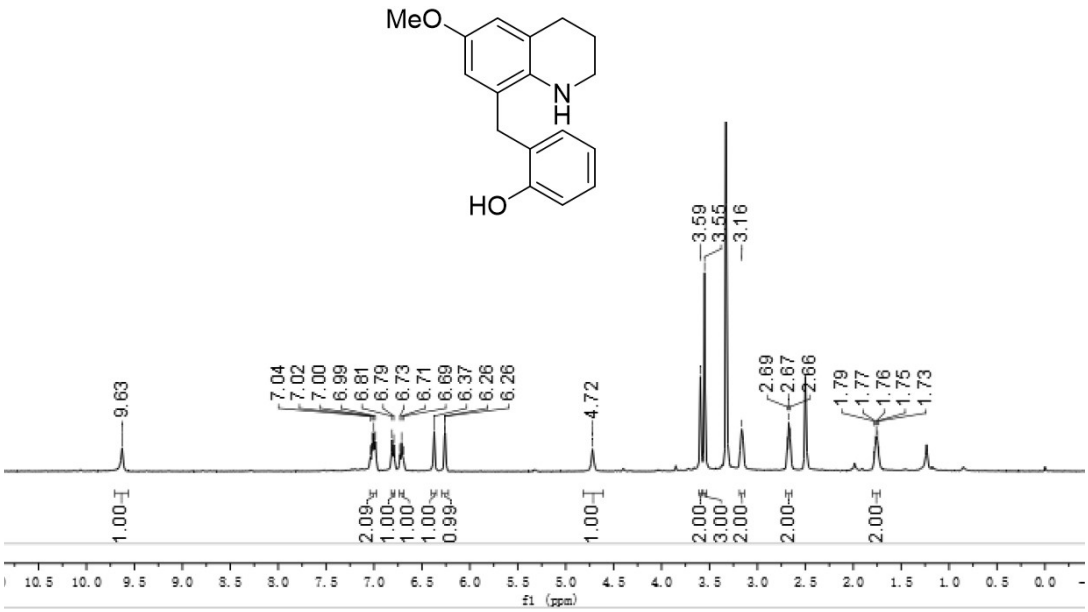
^{1}H-NMR spectrum of 2-((8-(thiophen-2-yl)-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3ka)



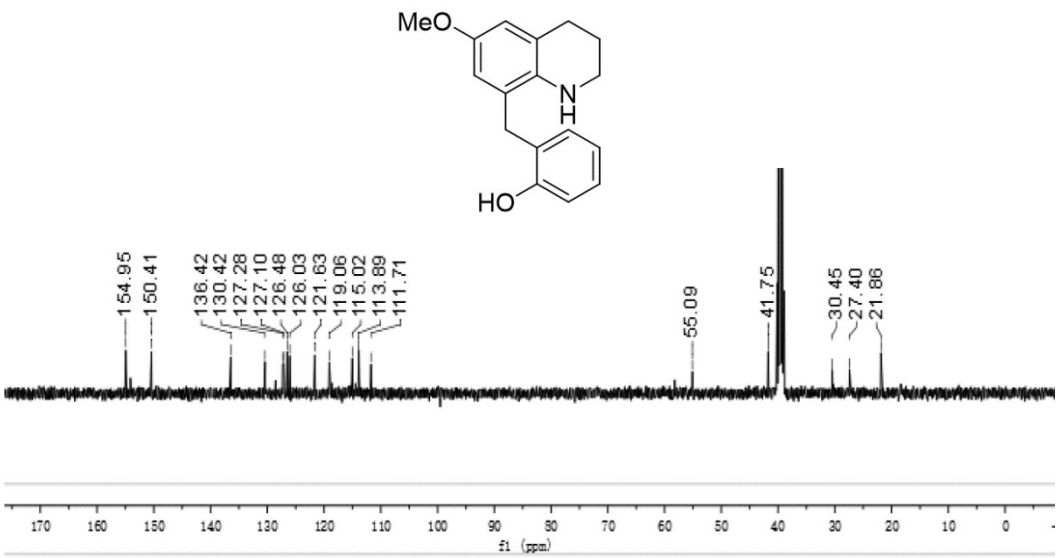
^{13}C-NMR spectrum of 2-((8-(thiophen-2-yl)-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3ka)



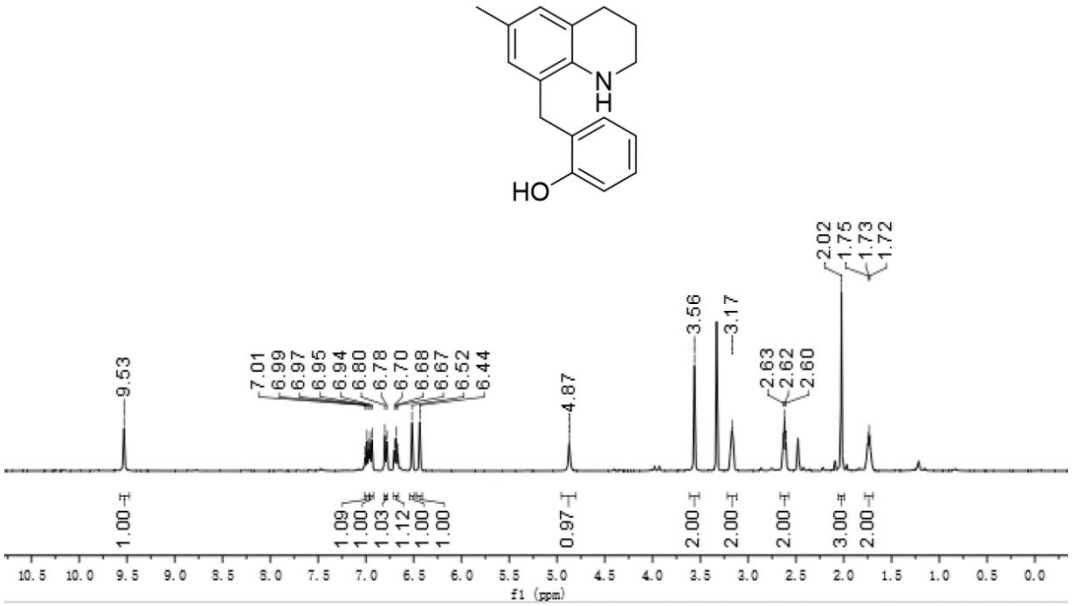
^{1}H-NMR spectrum of 2-((6-methoxy-1,2,3,4-tetrahydroquinolin-8-yl)methyl)phenol (3la)



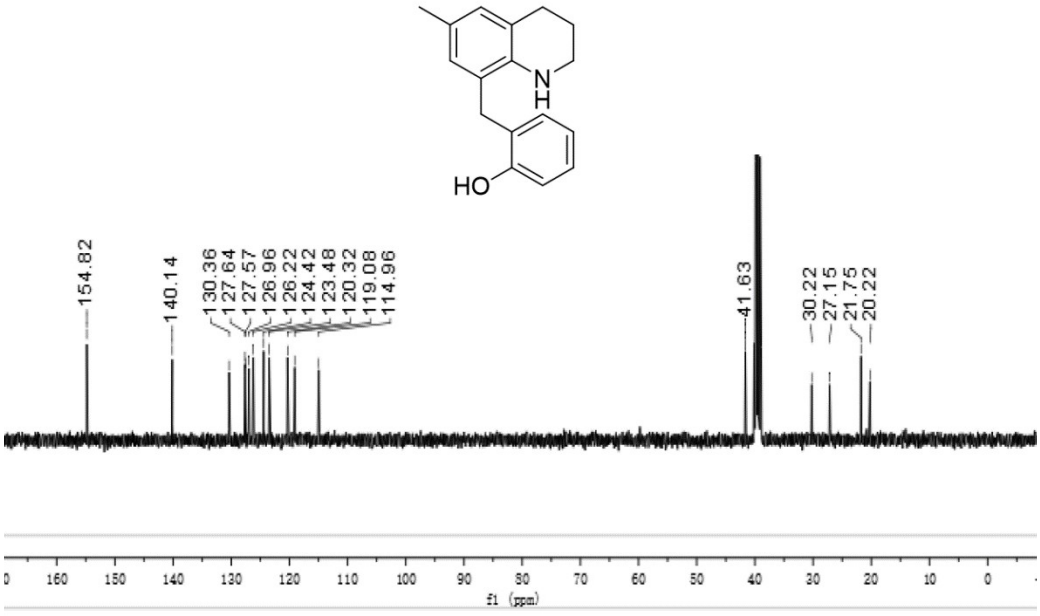
^{13}C-NMR spectrum of 2-((6-methoxy-1,2,3,4-tetrahydroquinolin-8-yl)methyl)phenol (3la)



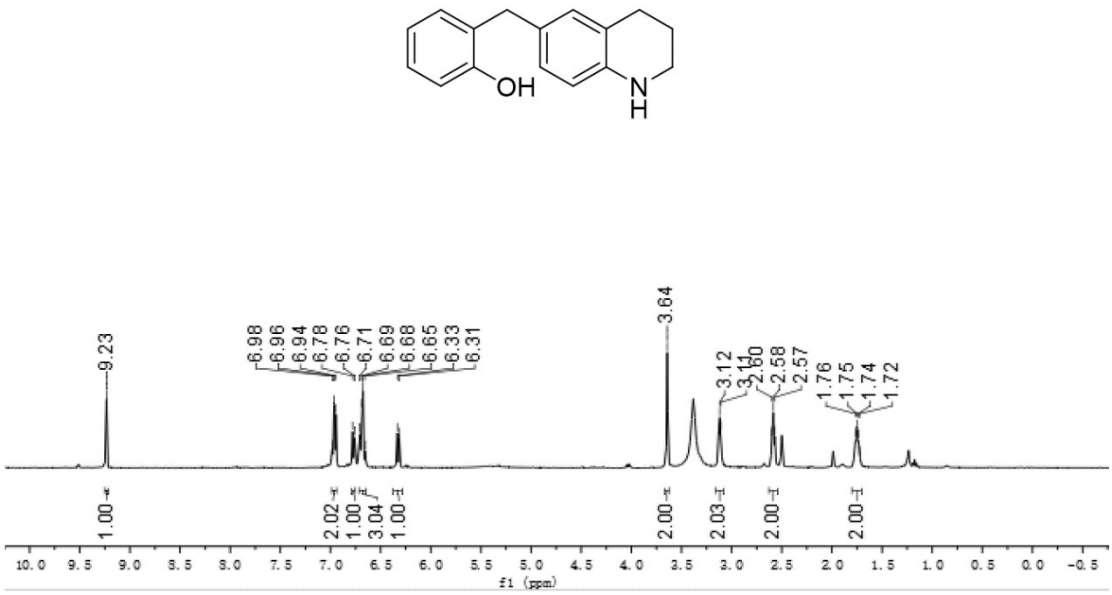
^{1}H-NMR spectrum of 2-((6-methyl-1,2,3,4-tetrahydroquinolin-8-yl)methyl)phenol (3ma)



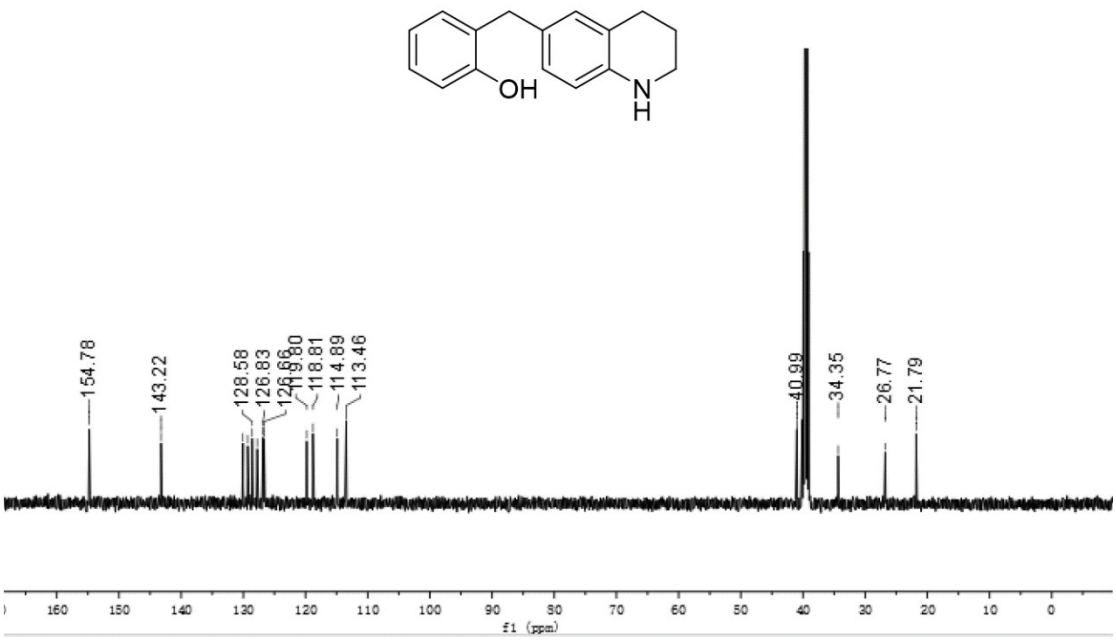
^{13}C-NMR spectrum of 2-((6-methyl-1,2,3,4-tetrahydroquinolin-8-yl)methyl)phenol (3ma)



[1]H-NMR spectrum of 2-((1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3na-1)

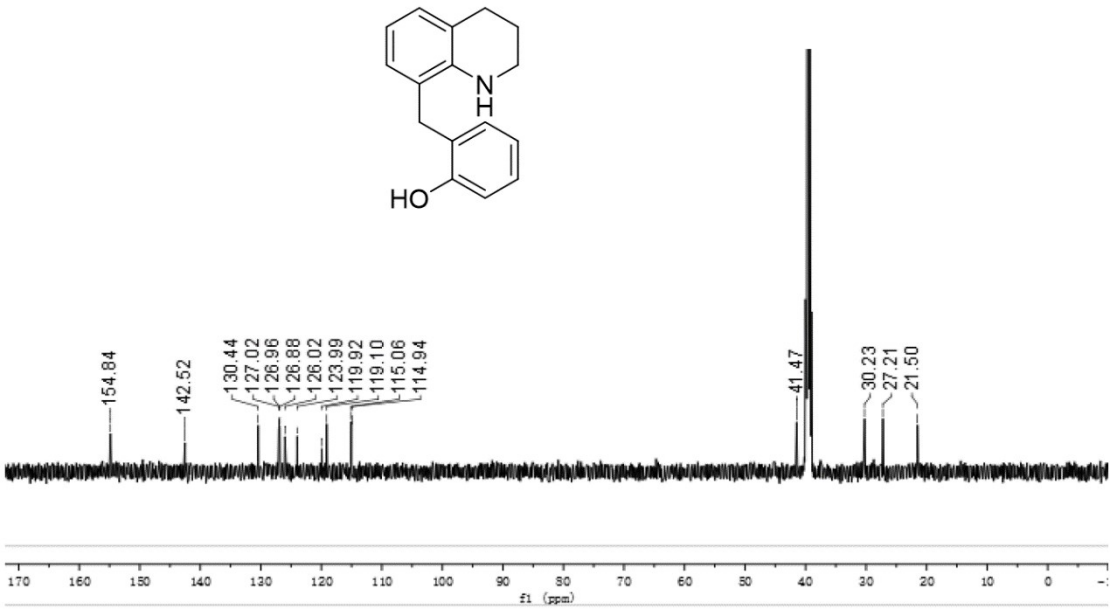


[13]C-NMR spectrum of 2-((1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3na-1)

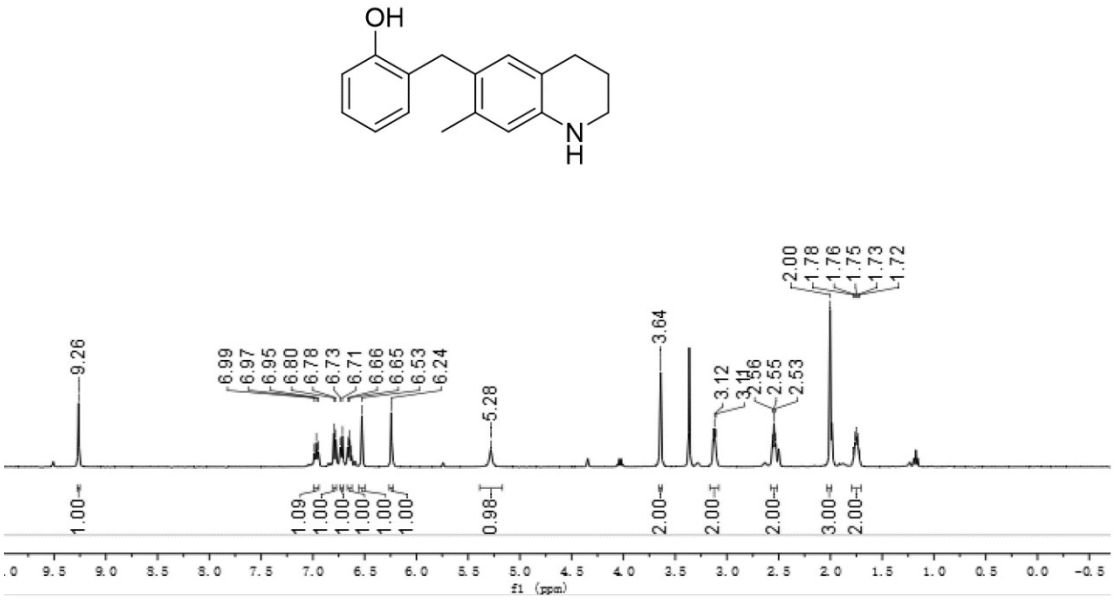


^{1}H-NMR spectrum of 2-((1,2,3,4-tetrahydroquinolin-8-yl)methyl)phenol (3na-2)

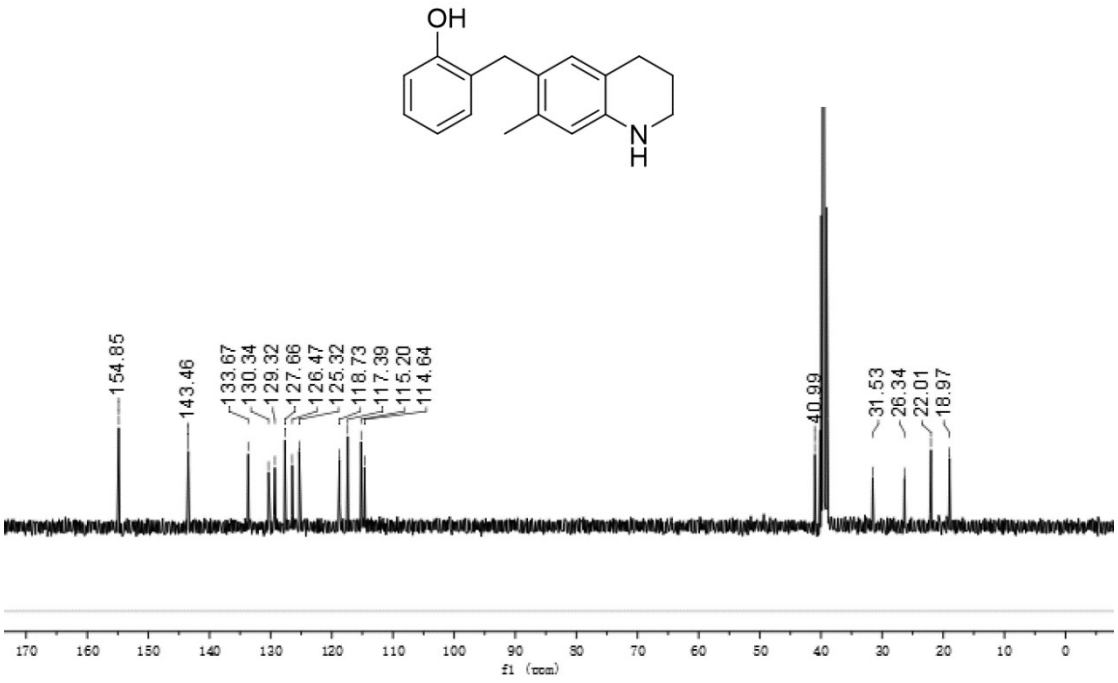
^{13}C-NMR spectrum of 2-((1,2,3,4-tetrahydroquinolin-8-yl)methyl)phenol (3na-2)



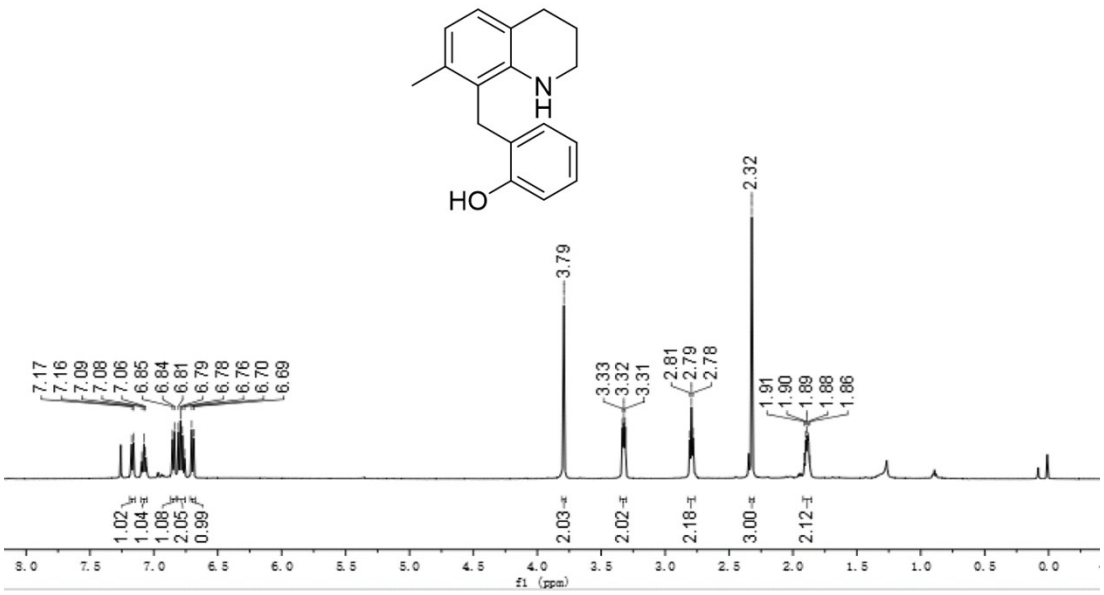
^{1}H-NMR spectrum of 2-((7-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3ra-1)



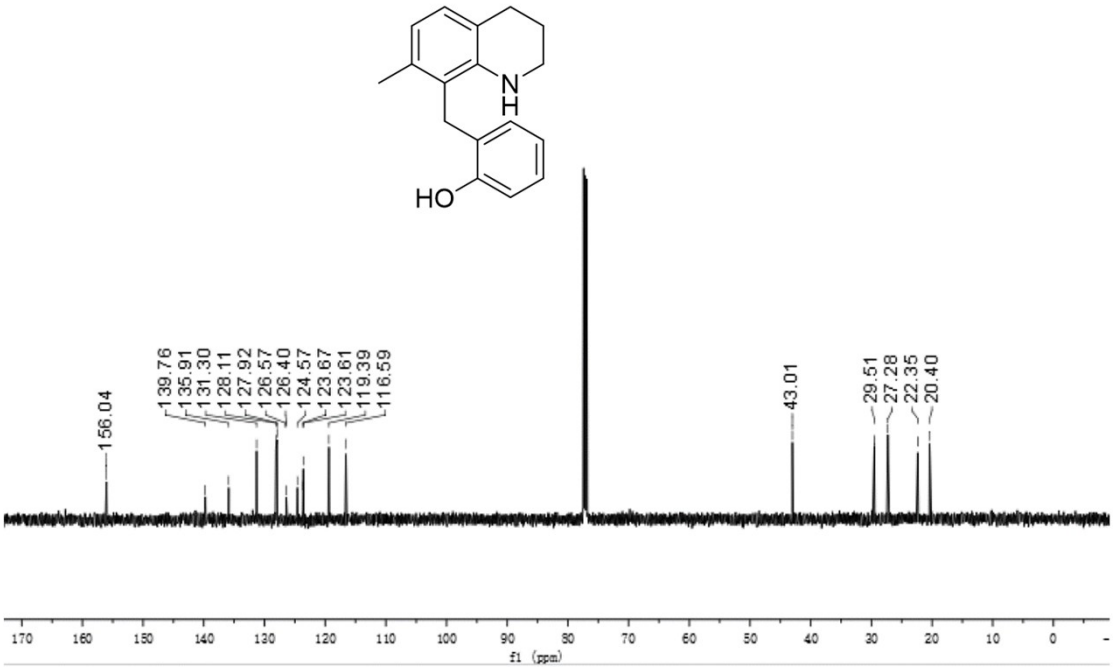
^{13}C-NMR spectrum of 2-((7-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)phenol (3ra-1)



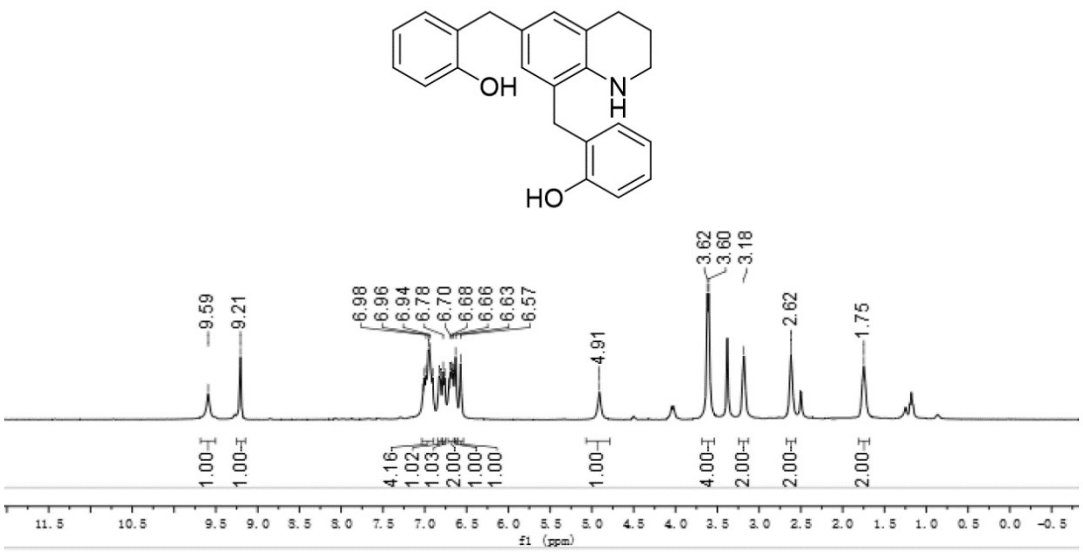
^{1}H-NMR spectrum of 2-((7-methyl-1,2,3,4-tetrahydroquinolin-8-yl)methyl)phenol (3ra-2)



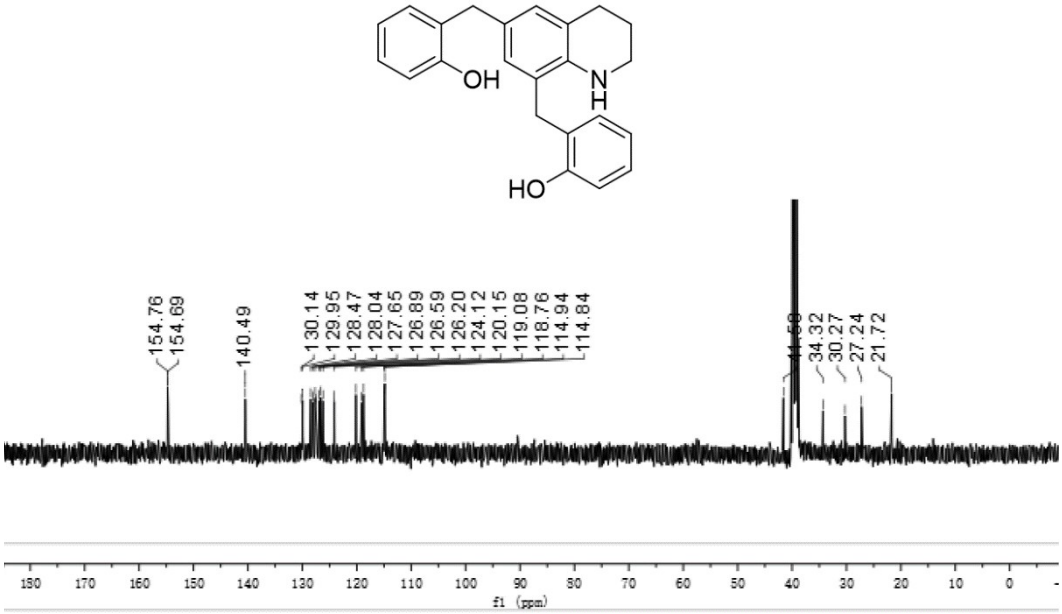
^{13}C-NMR spectrum of 2-((7-methyl-1,2,3,4-tetrahydroquinolin-8-yl)methyl)phenol (3ra-2)



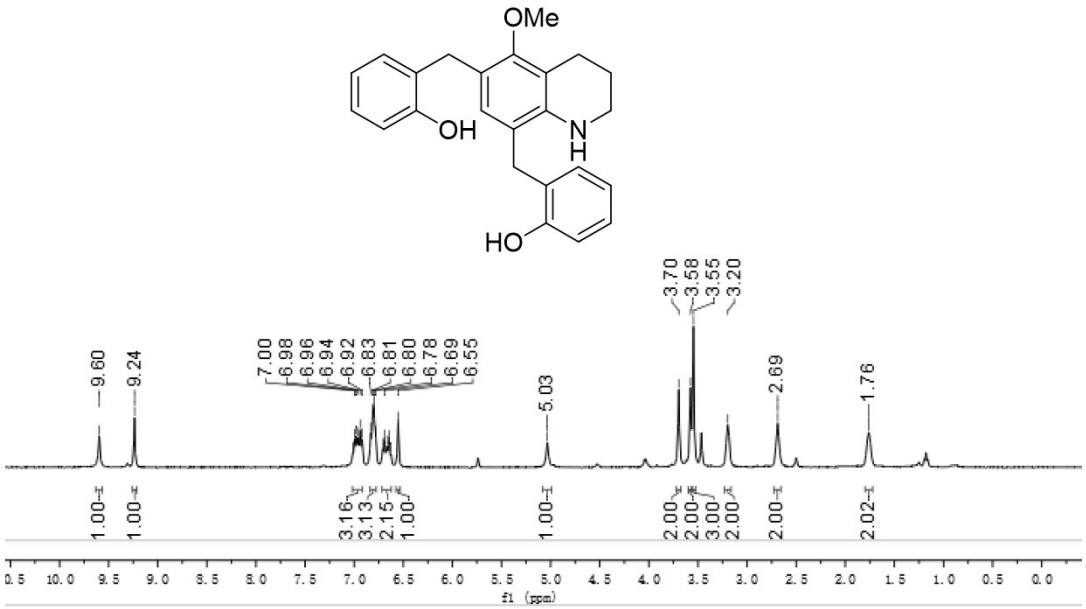
^{1}H-NMR spectrum of 2,2'-((1,2,3,4-tetrahydroquinoline-6,8-diyl)bis(methylene))diphenol (3naa)



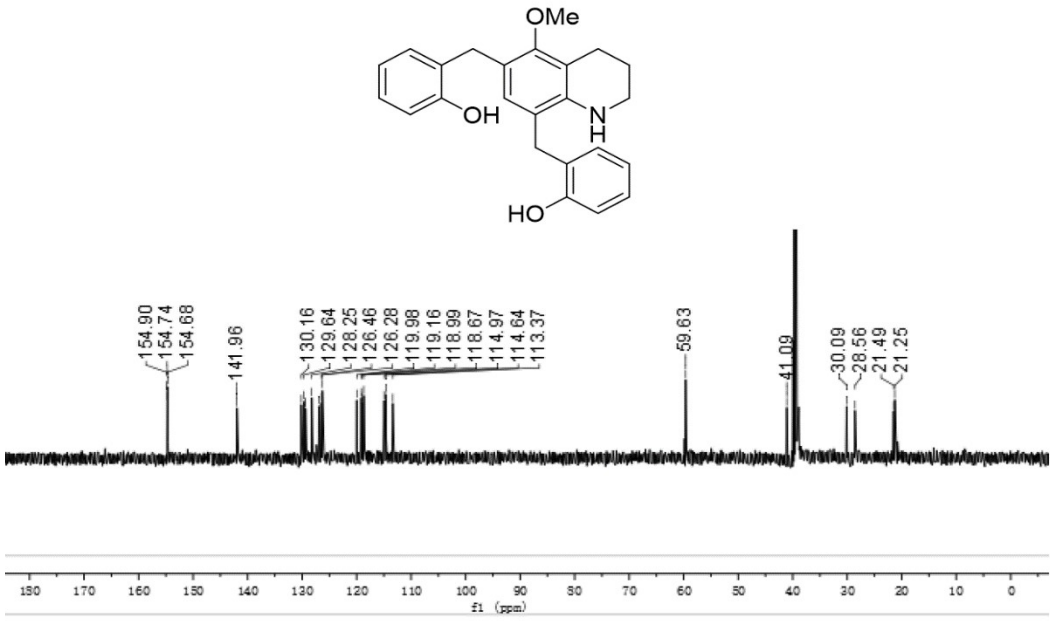
^{13}C-NMR spectrum of 2,2'-((1,2,3,4-tetrahydroquinoline-6,8-diyl)bis(methylene))diphenol (3naa)



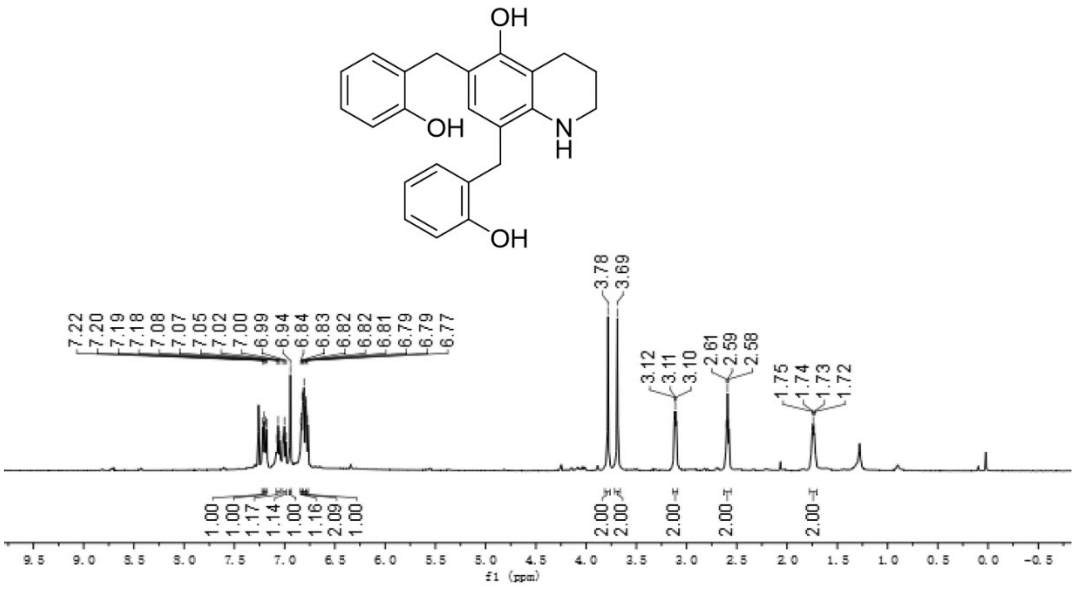
^{1}H-NMR spectrum of 2,2'-((5-methoxy-1,2,3,4-tetrahydroquinoline-6,8-diyl)bis(methylene))diphenol (3oaa)



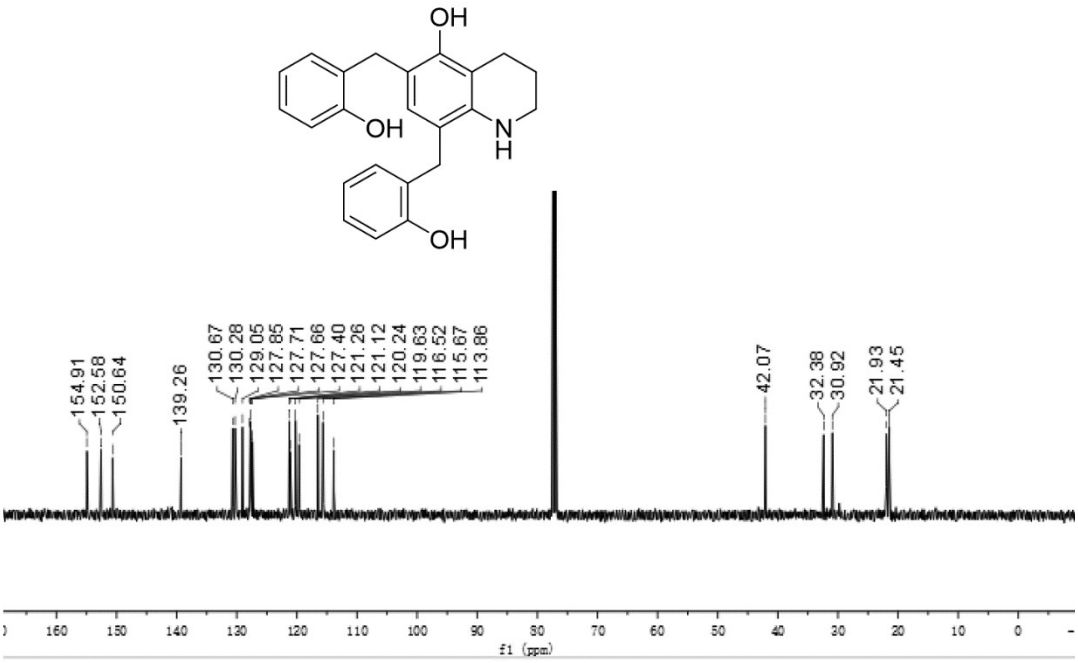
^{13}C-NMR spectrum of 2,2'-((5-methoxy-1,2,3,4-tetrahydroquinoline-6,8-diyl)bis(methylene))diphenol (3oaa)



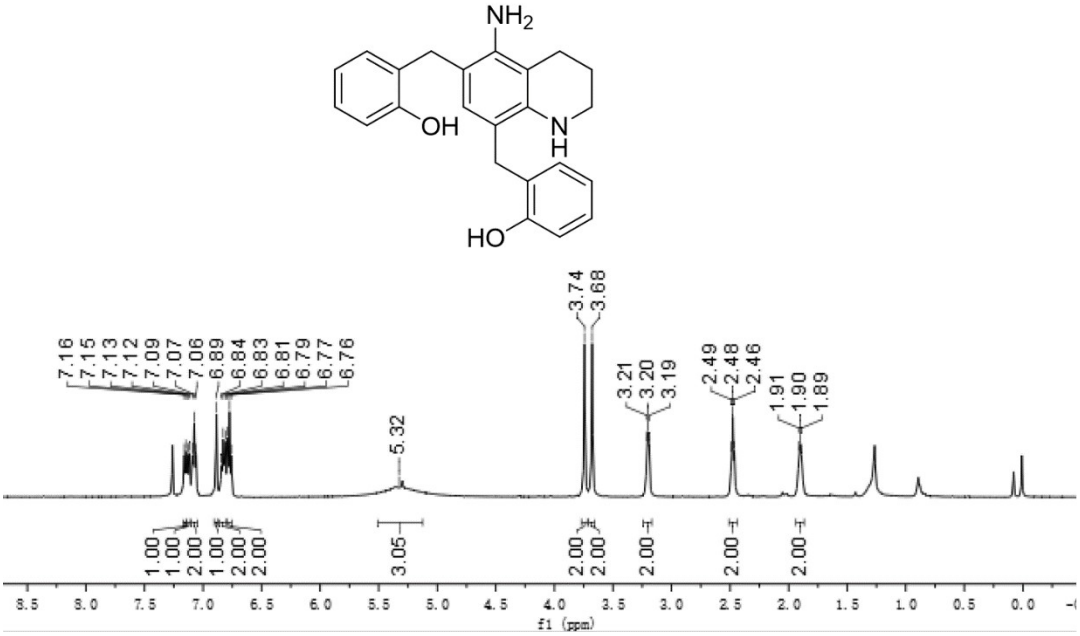
^{1}H-NMR spectrum of 2,2'-((5-hydroxy-1,2,3,4-tetrahydroquinoline-6,8-diyl)bis(methylene))diphenol (3paa)



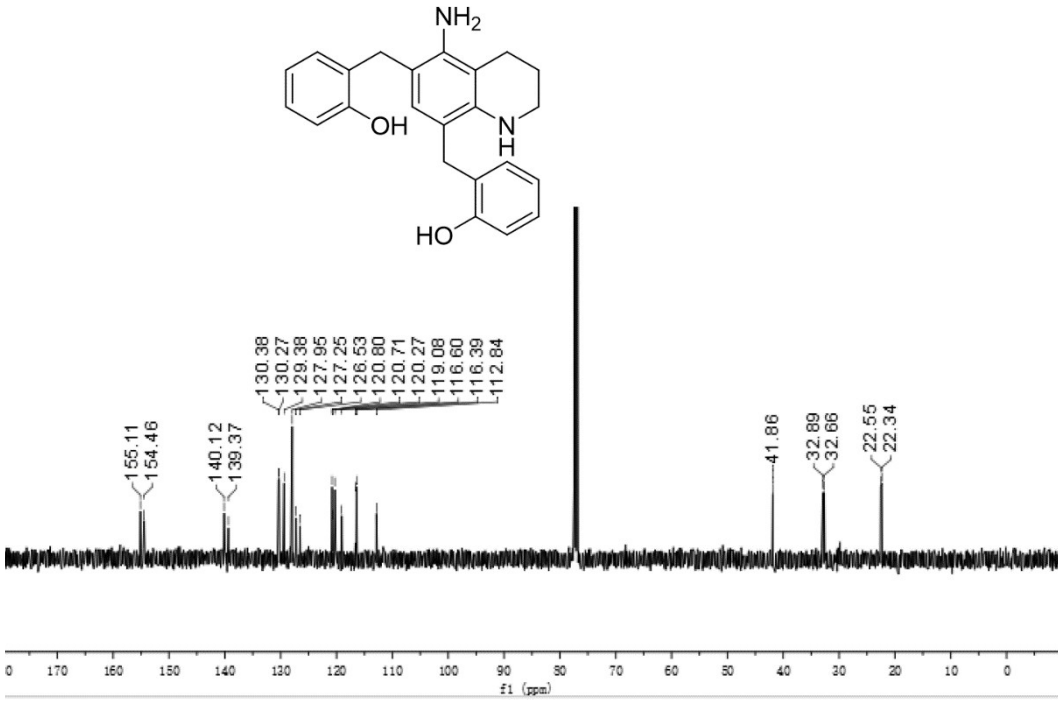
^{13}C-NMR spectrum of 2,2'-((5-hydroxy-1,2,3,4-tetrahydroquinoline-6,8-diyl)bis(methylene))diphenol (3paa)



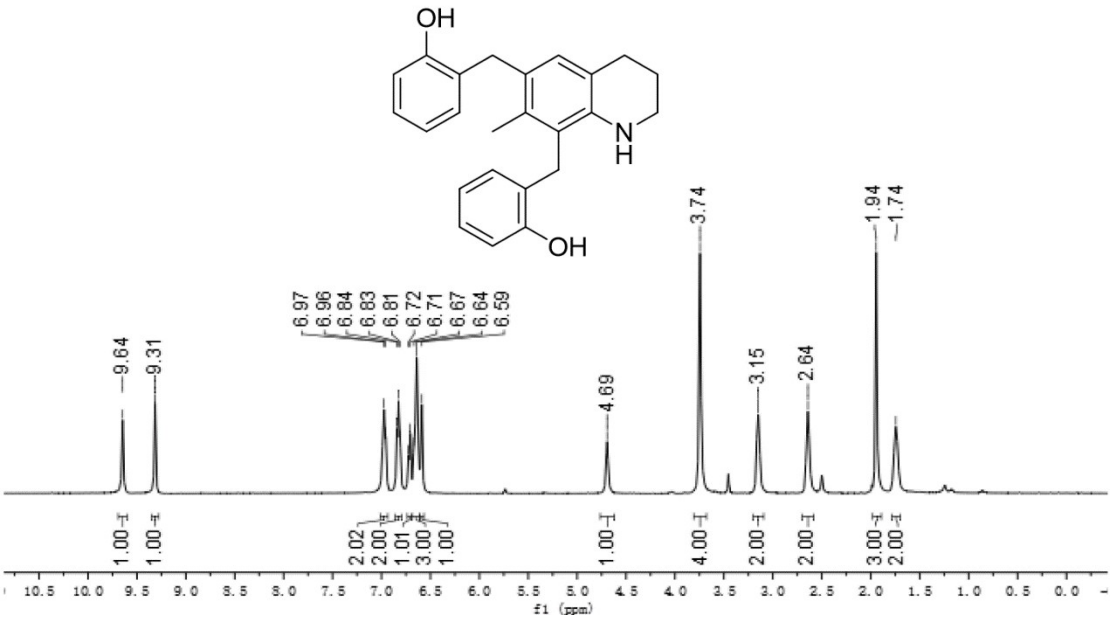
^{1}H-NMR spectrum of 2,2'-((5-amino-1,2,3,4-tetrahydroquinoline-6,8-diyl)bis(methylene))diphenol (3qaa)



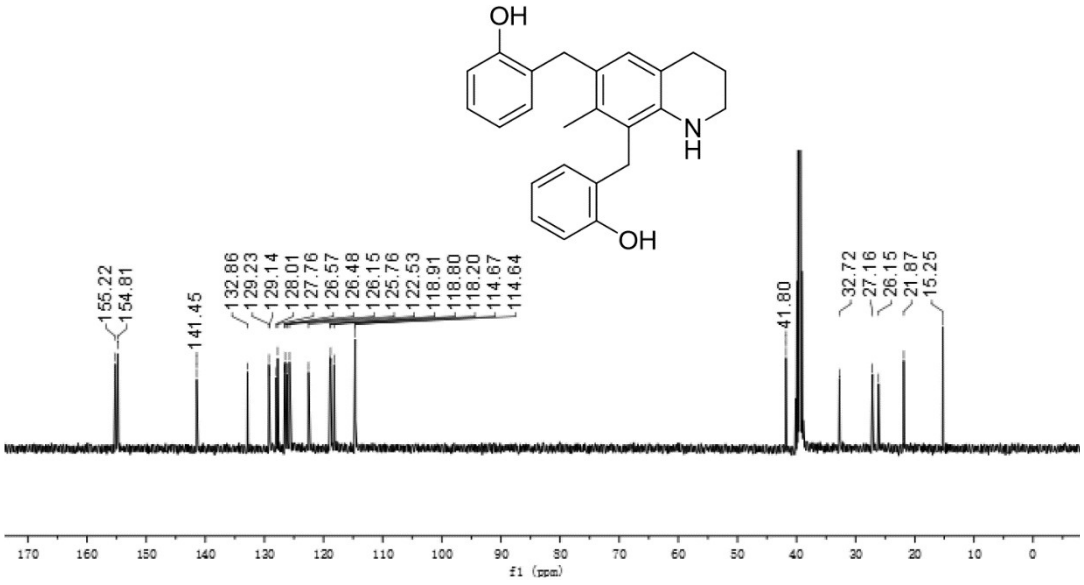
^{13}C-NMR spectrum of 2,2'-((5-amino-1,2,3,4-tetrahydroquinoline-6,8-diyl)bis(methylene))diphenol (3qaa)



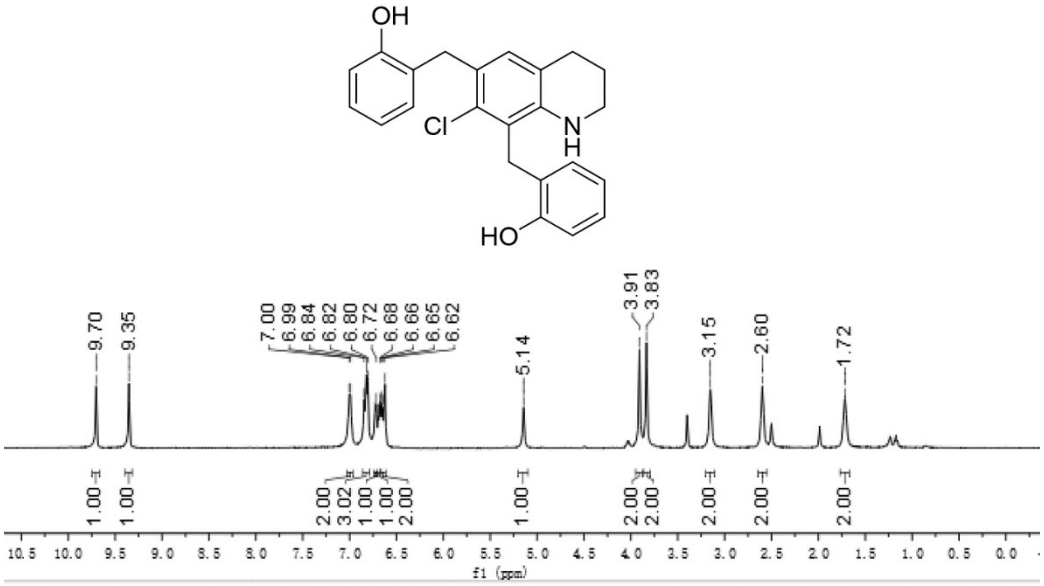
^{1}H-NMR spectrum of 2,2'-((7-methyl-1,2,3,4-tetrahydroquinoline-6,8-diyl)bis(methylene))diphenol (3raa)



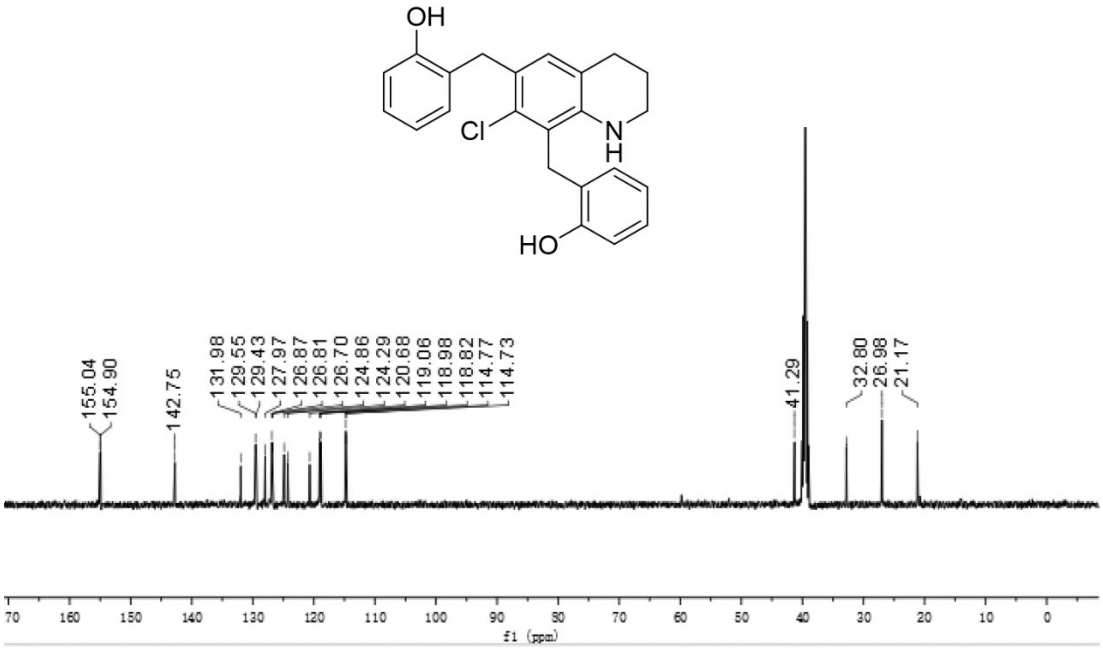
^{13}C-NMR spectrum of 2,2'-((7-methyl-1,2,3,4-tetrahydroquinoline-6,8-diyl)bis(methylene))diphenol (3raa)



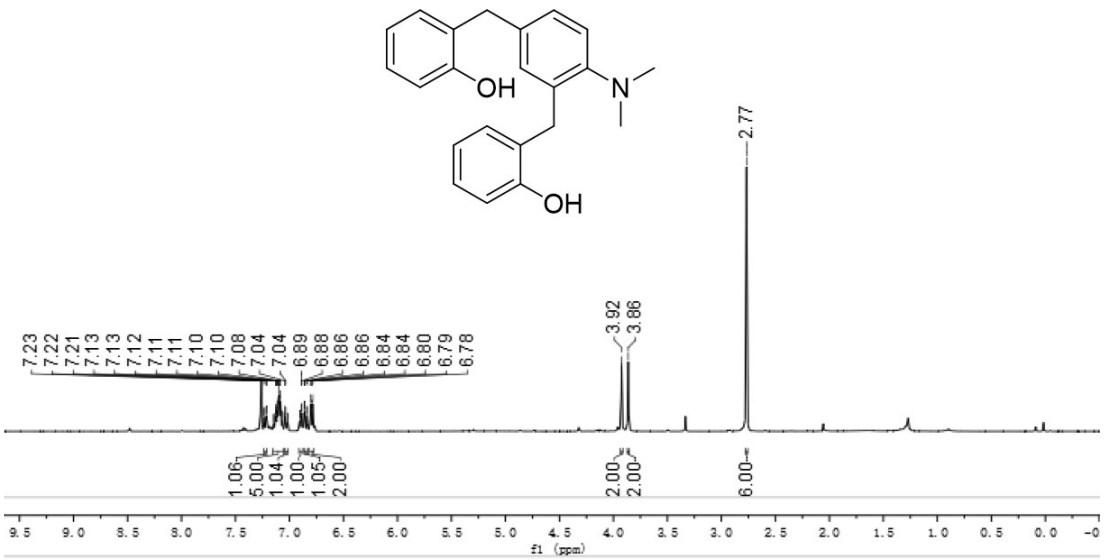
^{1}H-NMR spectrum of 2,2'-((7-chloro-1,2,3,4-tetrahydroquinoline-6,8-diyl)bis(methylene))diphenol (3saa)



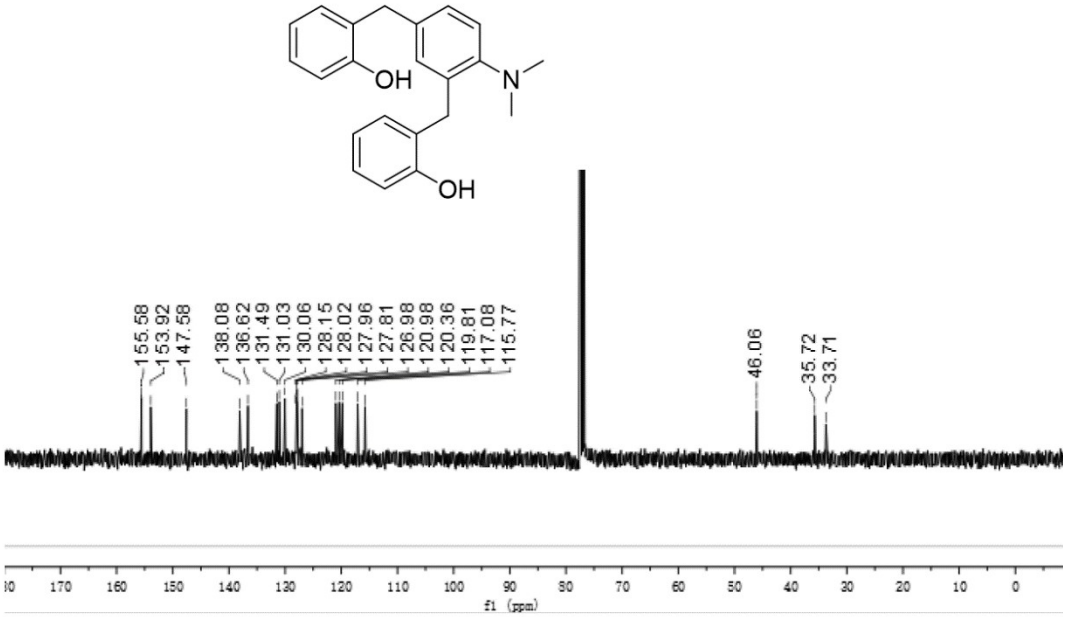
^{13}C-NMR spectrum of 2,2'-((7-chloro-1,2,3,4-tetrahydroquinoline-6,8-diyl)bis(methylene))diphenol (3saa)



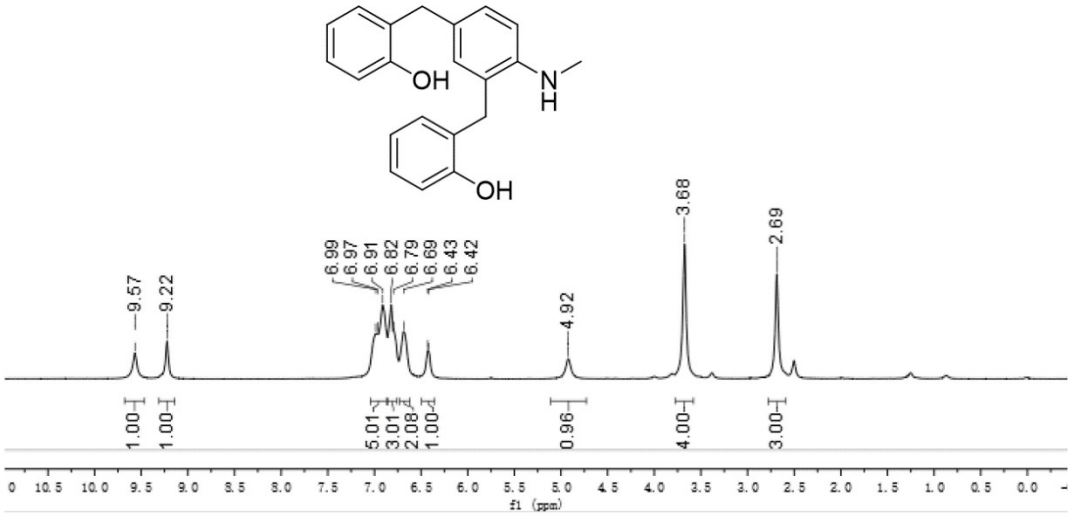
^{1}H-NMR spectrum of 2,2'-((4-(dimethylamino)-1,3-phenylene)bis(methylene))diphenol (3taa)



^{13}C-NMR spectrum of 2,2'-((4-(dimethylamino)-1,3-phenylene)bis(methylene))diphenol (3taa)



^{1}H-NMR spectrum of 2,2'-((4-(methylamino)-1,3-phenylene)bis(methylene))diphenol (3uaa)



^{13}C-NMR spectrum of 2,2'-((4-(methylamino)-1,3-phenylene)bis(methylene))diphenol (3uaa)