Electronic Supplementary Material (ESI) for Organic Chemistry Frontiers.

Supporting Information

Asymmetric addition of hydrazones as alkyl carbanion equivalents with aryl imines in water

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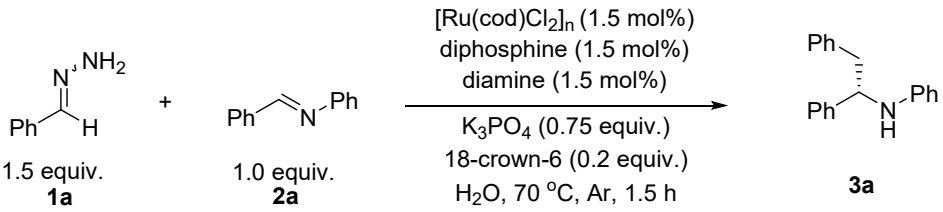
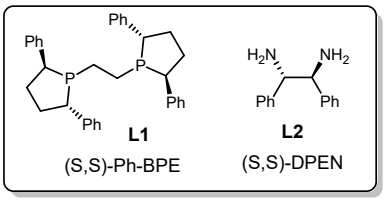
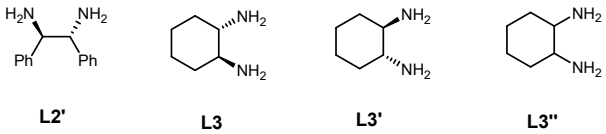
I. General information

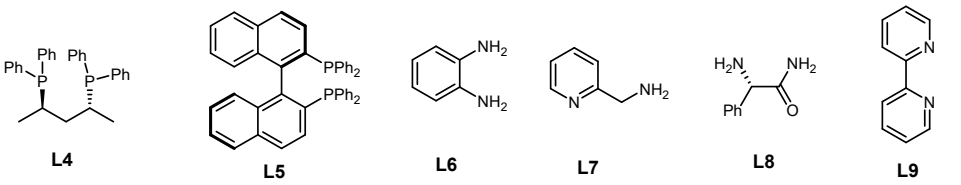
All reagents and solvents were purchased from commercial sources (Energy Chemical, TCI, Acros, Alfa and J&K) and used without further purification unless otherwise stated. The ^{1}H and ^{13}C NMR spectra were recorded on Bruker Avance 300 (^{1}H, 300 MHz), Bruker Avance 400 (^{1}H, 400 MHz; ^{13}C, 101 MHz) and Bruker Avance III HD 500MHz (^{1}H, 500 MHz; ^{13}C, 126 MHz) spectrometers. All chemical shifts (d) were given in ppm. Data were reported as follows: chemical shift, integration, multiplicity (s = single, d = doublet, t = triplet, q = quartet, m = multiplet) and coupling constants (Hz). Flash column chromatography was performed using H silica gel. For thin-layer chromatography (TLC), silica gel plates (HSGF 254) were used and compounds were visualized by irradiation with UV light. Infrared (IR) spectra were recorded on Nicolet 6700 instrument. High-resolution mass spectra (HRMS) were recorded by a Thermo Fisher Scientific Exactive Orbitrap mass spectrometer. HPLC analysis was carried out on an Agilent 1260 Infinity system with Daicel CHIRALPAK® or Daicel CHIRALCEL® columns. Organic solutions were concentrated under reduced pressure on the Heidolph rotary evaporator. Optical rotations were measured on a Rudolph Autopol VI polarimeter.

II. Table S1. Optimization of conditions for the model reaction of 1a with 2a





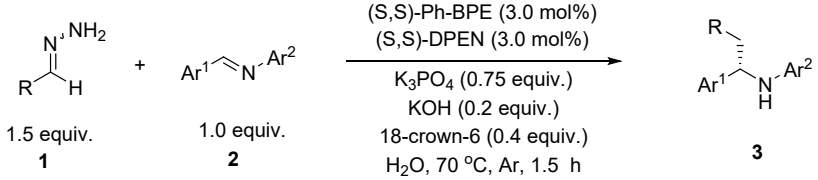




Entry	Diphosphine	Diamine	Yield	e.e.
1	**L1**	**L2**	54%	78%
2	**L1**	-	14%	8%
3	-	**L2**	17%	10%
4	**L1**	**L2'**	33%	50%
5	**L1**	**L3**	56%	72%
6	**L1**	**L3'**	34%	26%
7	**L1**	**L3''**	33%	46%
8	**L1**	**L6**	45%	15%
9	**L1**	**L7**	26%	66%
10	**L1**	**L8**	24%	11%
11	**L1**	**L9**	35%	20%
12	**L4**	**L2**	29%	17%
13	**L5**	**L2**	17%	14%

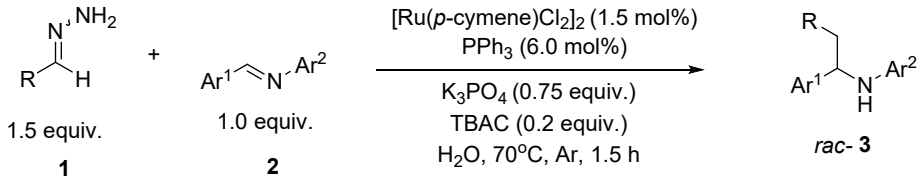
III. Experimental Procedure

i. General procedure A (asymmetric addition reaction)



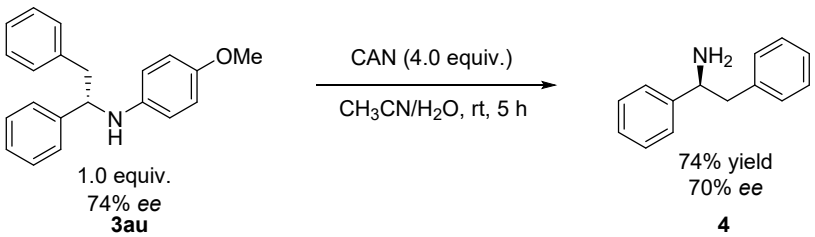
A Schlenk tube (10 mL) equipped with a magnetic stir bar was charged with $[Ru(cod)Cl_2]_n$ (1.7 mg, 0.006 mmol, 3.0 mol%), (S,S)-Ph-BPE (3.1 mg, 0.006 mmol, 3.0 mol%), (S,S)-DPEN (1.3 mg, 0.006 mmol, 3.0 mol%), K_3PO_4 (31.8 mg, 0.15 mmol, 0.75 equiv.), 18-crown-6 (21.1 mg, 0.08 mmol, 0.4 equiv.), KOH (2.24 mg, 0.04 mmol, 0.2 equiv.), imine (0.2 mmol, 1.0 equiv.) and hydrazone (0.3 mmol, 1.5 equiv.). The reaction system was then protected with argon atmosphere. Then, distilled water (0.2 mL) was added to the reaction system and heated to 70 °C. The reaction mixture was stirred at 70 °C for 1.5 hours. After cooling to room temperature, 3 mL water was added. The reaction mixture was extracted with ethyl acetate (3x5 mL). The combined organic layers were washed with water (5 mL) and then dried over Na_2SO_4. The organic layers were concentrated and the resulting residue was purified by preparative TLC on silica gel to afford the product.

ii. General procedure B (Racemic addition reaction) [1]



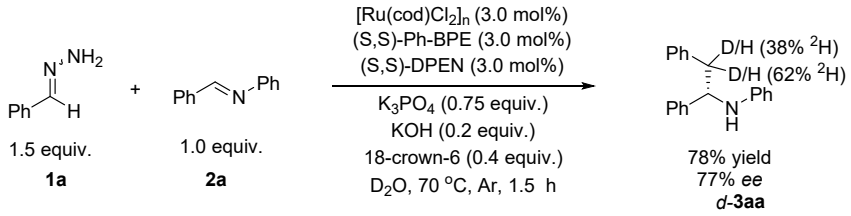
A Schlenk tube (10 mL) equipped with a magnetic stir bar was charged with $[Ru(p\text{-cymene})Cl_2]_2$ (1.8 mg, 0.003 mmol, 1.5 mol%), PPh_3 (3.1 mg, 0.012 mmol, 6.0 mol%), K_3PO_4 (31.8 mg, 0.15 mmol, 0.75 equiv.), TBAC (11.1 mg, 0.04 mmol, 0.2 equiv.), imine (0.2 mmol, 1.0 equiv.) and hydrazone (0.3 mmol, 1.5 equiv.). The reaction system was then protected with argon atmosphere. Then, distilled water (0.2 mL) was added. The mixture was heated to 70 °C, and stirred for 1.5 hours. After cooling to room temperature, 3 mL water was added. The reaction mixture was extracted with ethyl acetate (3x5 mL). The combined organic layers were washed with water (5 mL) and then dried over Na_2SO_4. The organic layers were concentrated and the resulting residue was purified by preparative TLC on silica gel to afford the racemic product.

iii. Derivatization reaction: Removal of protective groups in 3au [2]



A solution of CAN (0.4 mmol) in H_20 (0.125 mL) was added to a stirred solution of the corresponding protected amine **3au** or *rac*-**3au** (0.1 mmol) in CH_3CN/H_2O (0.5 mL). The reaction mixture was stirred for 2 h. Afterwards CH_2Cl_2 (1 mL) was added and the organic phase separated. A 10% solution of NaOH (2 mL) was added to the aqueous phase which was then extracted with EtOAc (2 x 25 mL). The combined organic phases were dried ($MgSO_4$) and the solvent removed under reduced pressure. The residue was purified by preparative TLC on silica gel to afford the corresponding pure amine.[3]

iv. Procedure of deuterium labelling study



A Schlenk tube (10 mL) equipped with a magnetic stir bar was charged with $[Ru(cod)Cl_2]_n$ (1.7 mg, 0.006 mmol, 3.0 mol%), (S,S)-Ph-BPE (3.1 mg, 0.006 mmol, 3.0 mol%), (S,S)-DPEN (1.3 mg, 0.006 mmol, 3.0 mol%), K_3PO_4 (31.8 mg, 0.15 mmol, 0.75 equiv.), 18-crown-6 (21.1 mg, 0.08 mmol, 0.4 equiv.), KOH (2.24 mg, 0.04 mmol, 0.2 equiv.), N-benzylideneaniline (36.2 mg, 0.2 mmol, 1.0 equiv.) and benzylidenehydrazine (34 µL, 0.3 mmol, 1.5 equiv.). The reaction system was then protected with argon atmosphere. Then, deuterium oxide (0.2 mL) was added and heated to 70 °C. The reaction mixture was stirred at 70 °C for 1.5 hours. After cooling to room temperature, 3 mL water was added. The reaction mixture was extracted with ethyl acetate (3x5 mL). The combined organic layers were washed with water (5 mL) and then dried over Na_2SO_4. The organic layers were concentrated and the resulting residue was purified by preparative TLC on silica gel to afford the product.

v. Preparation of Hydrazones

A mixture of carbonyl compounds (5.0 mmol, 1 equiv) and hydrazine monohydrate (0.34 mL, 6.0 mmol, 85 wt. %, 1.2 equiv) in THF (11 mL) solution was stirred at room temperature for 30 min. The solvent was removed *in vacuo* to provide the desired hydrazone. The crude hydrazone was used directly without further purification.[4]

vi. Preparation of imines

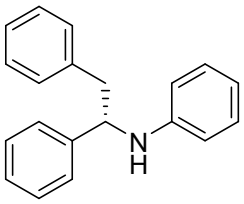
A mixture of the aromatic aldehyde (3.0 mmol, 1.0 equiv), aniline (3.0 mmol, 1.0 equiv) and $MgSO_4$ (0.84 mmol, 0.28 equiv) in THF (1 mL) solution was stirred at room temperature for 5 h. The mixture was dissolved in dichloromethane, then filtered through a pad of celite and rinsed with dichloromethane. The solid hydrated $MgSO_4$ was filtered off and the filtrate was concentrated under reduce pressure. The crude imine was used directly without further purification.[5]

vii. Preparation of cyclic imine

To the argon purged glass vial containing 2-amino phenol (119.9 mg, 1.1 mmol) in polyethylene glycol (400 MW, 2.0 mL) were added potassium carbonate (138.2 mg, 1.0 mmol) and 2- fluorobenzaldehyde (124.1 mg, 1.0 mmol), and stirred at 100 ◦C for 13 h during which the reaction was monitored by means of Thin Layer Chromatography. The reaction mixture was extracted with ether (3x6 mL). The combined ether layers were washed with water and brine, dried over anhydrous sodium sulfate, and concentrated under reduced pressure. The crude cyclic imine was used directly without further purification.[6]

IV. Characterization Data

(*S*)-*N*-(1,2-diphenylethyl)aniline (3aa)



Following the general reaction procedure A, **3aa** was obtained from the benzaldehyde hydrazone (**1a,** 34 μL, 0.3 mmol, 1.5 equiv.) and *N*-benzylideneaniline (**2a**, 36.2 mg, 0.2 mmol, 1.0 equiv.), as a colorless solid (44.7 mg, 82%, 91:9 er), mp. 58-60 °C.

R_f= 0.71 (Petroleum ether/Dichloromethane = 1:1).

FT-IR (neat, cm^{-1}) 3026, 1601, 1508, 1317, 1275, 750, 699.

^{1}H NMR (300 MHz, $CDCl_3$) δ 7.37-7.16 (m, 8H), 7.16-7.08 (m, 2H), 7.04 (dd, *J* = 8.4, 7.4 Hz, 2H), 6.62 (t, *J* = 7.3 Hz, 1H), 6.51-6.38 (m, 2H), 4.58 (t, *J* = 8.5 Hz, 1H), 4.11 (s, 1H), 3.13 (dd, *J* = 13.9, 5.7 Hz, 1H), 3.01 (dd, *J* = 14.0, 8.2 Hz, 1H).

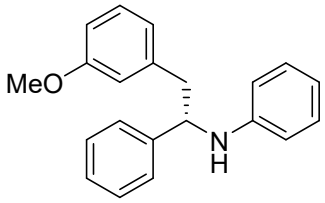
^{13}C NMR (101 MHz, $CDCl_3$) δ 147.4, 143.6, 137.8, 129.4, 129.2, 128.71, 128.67, 127.2, 126.9, 126.6, 117.6, 113.8, 59.4, 45.3.

HRMS(ESI, *m/z*), calcd for $C_{20}H_{20}N^+$ $[M+H]^+$, 274.1590; found, 274.1586.

HPLC analysis: Chiracel OD-H, *n*-Hexane:*i*-PrOH = 98:2, 1.0 mL/min, UV = 254 nm. Retention time (min): 8.8 (minor) and 11.2 (major).

$[\alpha]_D^{20}$ = -35.33 (c = 1.0, $CHCl_3$, 91:9 er).

(*S*)-*N*-(2-(3-methoxyphenyl)-1-phenylethyl)aniline (3ba)



Following the general reaction procedure A, **3ba** was obtained from the (3-methoxybenzylidene)hydrazine (**1e,** 45.0 mg, 0.3 mmol, 1.5 equiv.) and *N*-benzylideneaniline (**2a**, 36.2 mg, 0.2 mmol, 1.0 equiv.), as a yellow oil (39.8 mg, 66%, 87:13 er).

R_f= 0.61 (Petroleum ether/Dichloromethane = 1:1).

FT-IR (neat, cm^{-1}) 3406, 3053, 3027, 2919, 1600, 1506, 1262, 1153, 1052, 750, 692.

^{1}H NMR (300 MHz, $CDCl_3$) δ 7.37-7.25 (m, 4H), 7.25-7.13 (m, 2H), 7.04 (t, *J* = 7.9 Hz, 2H), 6.75 (dd, *J* = 12.4, 4.5 Hz, 2H), 6.66-6.57 (m, 2H), 6.45 (d, *J* = 7.7 Hz, 2H), 4.57 (dd, *J* = 7.7, 6.0 Hz, 1H), 4.12 (s, 1H), 3.71 (s, 3H), 3.11 (dd, *J* = 13.9, 5.7 Hz, 1H), 2.98 (dd, *J* = 13.9, 8.1 Hz, 1H).

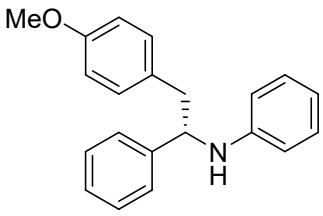
^{13}C NMR (101 MHz, $CDCl_3$) δ 159.8, 147.4, 143.6, 139.3, 129.6, 129.1, 128.7, 127.2, 126.6, 121.7, 117.6, 115.0, 113.8, 112.4, 59.3, 55.3, 45.3.

HRMS(ESI, *m/z*), calcd for $C_{21}H_{22}ON^+$ $[M+H]^+$, 304.1696; found, 304.1693.

HPLC analysis: Chiracel OD-H, *n*-Hexane:*i*-PrOH = 98:2, 1.0 mL/min, UV = 254 nm. Retention time (min): 11.1 (minor) and 24.9 (major).

$[\alpha]_D^{20}$ = -47.75 (c = 1.0, $CHCl_3$, 87:13 er).

(*S*)-*N*-(2-(4-methoxyphenyl)-1-phenylethyl)aniline (3ca)



Following the general reaction procedure A, **3ca** was obtained from the (4-methoxybenzylidene)hydrazine (**1d,** 45.0 mg, 0.3 mmol, 1.5 equiv.) and *N*-benzylideneaniline (**2a**, 36.2 mg, 0.2 mmol, 1.0 equiv.), as a white solid (28.5 mg, 47%, 86:14 er), mp. 125-127 °C.

R_f= 0.54 (Petroleum ether/Dichloromethane = 1:1).

FT-IR (neat, cm^{-1}) 3042, 2919, 1603, 1507, 1248, 1178, 1301, 750, 700.

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.35-7.16 (m, 5H), 7.03 (dd, *J* = 14.6, 8.0 Hz, 4H), 6.80 (d, *J* = 8.5 Hz, 2H), 6.62 (t, *J* = 7.3 Hz, 1H), 6.45 (d, *J* = 7.9 Hz, 2H), 4.53 (dd, *J* = 7.8, 6.0 Hz, 1H), 4.13 (s, 1H), 3.78 (s, 3H), 3.07 (dd, *J* = 14.0, 5.8 Hz, 1H), 2.95 (dd, *J* = 14.0, 8.0 Hz, 1H).

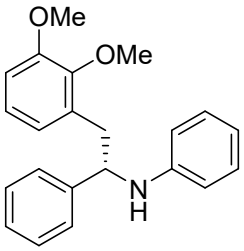
^{13}C NMR (101 MHz, $CDCl_3$) δ 158.6, 147.4, 143.6, 130.3, 129.8, 129.1, 128.7, 127.2, 126.6, 117.6, 114.1, 113.9, 59.5, 55.4, 44.4.

HRMS(ESI, *m/z*), calcd for $C_{21}H_{22}ON^+$ $[M+H]^+$, 304.1696; found, 304.1692.

HPLC analysis: Chiracel OD-H, *n*-Hexane:*i*-PrOH = 98:2, 1.0 mL/min, UV = 254 nm. Retention time (min): 11.5 (minor) and 14.6 (major).

$[\alpha]_D^{20}$ = -45.99 (c = 1.0, $CHCl_3$, 86:14 er).

(*S*)-*N*-(2-(2,3-dimethoxyphenyl)-1-phenylethyl)aniline (3da)



Following the general reaction procedure A, **3da** was obtained from the (2,3-dimethoxybenzylidene)hydrazine (**1i,** 54.0 mg, 0.3 mmol, 1.5 equiv.) and *N*-benzylideneaniline (**2a**, 36.2 mg, 0.2 mmol, 1.0 equiv.), as a yellow oil (54.6 mg, 82%, 91:9 er).

R_f= 0.58 (Petroleum ether/Dichloromethane = 1:1).

FT-IR (neat, cm^{-1}) 3393, 3025, 2933, 1601, 1507, 1481, 1267, 1078, 1006, 748, 692.

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.40 (d, *J* = 7.4 Hz, 2H), 7.31 (t, *J* = 7.5 Hz, 2H), 7.23 (dd, *J* = 12.2, 4.9 Hz, 1H), 7.01 (t, *J* = 7.9 Hz, 2H), 6.93 (t, *J* = 7.9 Hz, 1H), 6.84-6.75 (m, 1H), 6.67 (d, *J* = 7.6 Hz, 1H), 6.56 (t, *J* = 7.3 Hz, 1H), 6.44 (d, *J* = 7.8 Hz, 2H), 4.88 (s, 1H), 4.51 (dd, *J* = 9.1, 4.6 Hz, 1H), 3.86 (s, 6H), 3.09 (dd, *J* = 13.6, 9.1 Hz, 1H), 2.99 (dd, *J* = 13.7, 4.6 Hz, 1H).

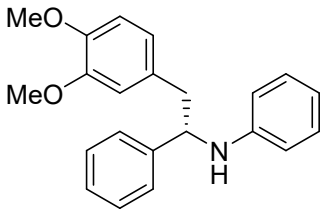
^{13}C NMR (101 MHz, $CDCl_3$) δ 152.9, 147.8, 147.5, 144.3, 132.3, 129.0, 128.7, 127.1, 126.5, 124.2, 122.9, 116.9, 113.4, 111.3, 60.8, 60.1, 55.9, 39.9.

HRMS(ESI, *m/z*), calcd for $C_{22}H_{24}O_2N^+$ $[M+H]^+$, 334.1802; found, 334.1796.

HPLC analysis: Chiracel OD-H, *n*-Hexane:*i*-PrOH = 99:1, 1.0 mL/min, UV = 254 nm. Retention time (min): 9.8 (minor) and 11.1 (major).

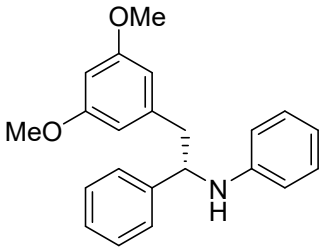
$[\alpha]_D^{20}$ = -42.16 (c = 1.0, $CHCl_3$, 91:9 er).

(*S*)-*N*-(2-(3,4-dimethoxyphenyl)-1-phenylethyl)aniline (3ea)



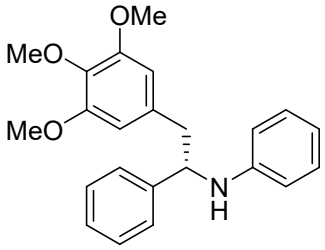
Following the general reaction procedure A, **3ea** was obtained from the (3,4-dimethoxybenzylidene)hydrazine (**1j,** 54.0 mg, 0.3 mmol, 1.5 equiv.) and *N*-benzylideneaniline (**2a**, 36.2 mg, 0.2 mmol, 1.0 equiv.), as a yellow oil (34.7 mg, 52%, 89:11 er).
R_f= 0.39 (Petroleum ether/Dichloromethane = 1:1).
FT-IR (neat, cm^{-1}) 3390, 2933, 1602, 1516, 1261, 1028, 750.
^{1}H NMR (300 MHz, $CDCl_3$) δ 7.28 (t, *J* = 6.0 Hz, 4H), 7.26-7.20 (m, 1H), 7.05 (t, *J* = 7.9 Hz, 2H), 6.77 (d, *J* = 8.1 Hz, 1H), 6.73-6.57 (m, 2H), 6.51-6.38 (m, 3H), 4.55 (t, *J* = 6.7 Hz, 1H), 4.13 (s, 1H), 3.85 (s, 3H), 3.71 (s, 3H), 3.07 (dd, *J* = 13.9, 6.0 Hz, 1H), 2.98 (dd, *J* = 13.8, 7.5 Hz, 1H).
^{13}C NMR (101 MHz, $CDCl_3$) δ 148.9, 148.0, 147.4, 143.5, 130.1, 129.2, 128.7, 127.1, 126.7, 121.5, 117.6, 113.8, 112.6, 111.3, 59.3, 56.0, 55.8, 44.7.
HRMS(ESI, *m/z*), calcd for $C_{22}H_{24}O_2N^+$ $[M+H]^+$, 334.1802; found, 334.1800.
HPLC analysis: Chiracel OD-H, *n*-Hexane:*i*-PrOH = 98:2, 1.0 mL/min, UV = 254 nm. Retention time (min): 21.8 (minor) and 36.5 (major).
$[\alpha]_D^{20}$ = -46.20 (c = 1.0, $CHCl_3$, 89:11 er).

(*S*)-*N*-(2-(3,5-dimethoxyphenyl)-1-phenylethyl)aniline (3fa)



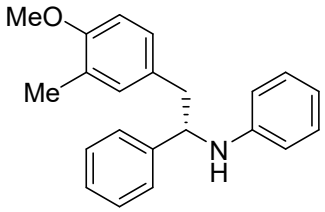
Following the general reaction procedure A, **3fa** was obtained from the (3,5-dimethoxybenzylidene)hydrazine (**1h,** 54.0 mg, 0.3 mmol, 1.5 equiv.) and *N*-benzylideneaniline (**2a**, 36.2 mg, 0.2 mmol, 1.0 equiv.), as a yellow oil (43.9 mg, 66%, 88:12 er).
R_f= 0.58 (Petroleum ether/Dichloromethane = 1:1).
FT-IR (neat, cm^{-1}) 3735, 2933, 1603, 1507, 1205, 1150, 1068, 832, 750, 700.
^{1}H NMR (300 MHz, $CDCl_3$) δ 7.39-7.17 (m, 5H), 7.04 (t, *J* = 7.9 Hz, 2H), 6.62 (t, *J* = 7.3 Hz, 1H), 6.46 (d, *J* = 7.7 Hz, 2H), 6.32 (t, *J* = 2.1 Hz, 1H), 6.25 (d, *J* = 2.1 Hz, 2H), 4.63-4.49 (m, 1H), 4.14 (s, 1H), 3.71 (s, 6H), 3.07 (dd, *J* = 13.8, 5.6 Hz, 1H), 2.94 (dd, *J* = 13.8, 8.1 Hz, 1H).
^{13}C NMR (126 MHz, $CDCl_3$) δ 161.0, 147.4, 143.5, 140.0, 129.1, 128.7, 127.2, 126.6, 117.6, 113.8, 107.4, 98.9, 59.2, 55.4, 45.6.
HRMS(ESI, *m/z*), calcd for $C_{22}H_{24}O_2N^+$ $[M+H]^+$, 334.1802; found, 334.1798.
HPLC analysis: Chiracel OD-H, *n*-Hexane:*i*-PrOH = 95:5, 1.0 mL/min, UV = 254 nm. Retention time (min): 8.5 (minor) and 22.3 (major).
$[\alpha]_D^{20}$ = -33.56 (c = 1.0, $CHCl_3$, 88:12 er).

(*S*)-*N*-(1-phenyl-2-(3,4,5-trimethoxyphenyl)ethyl)aniline (3ga)



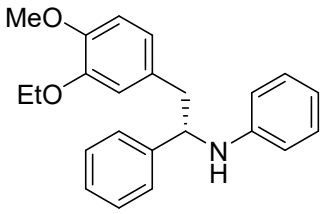
Following the general reaction procedure A, **3ga** was obtained from the (3,4,5-trimethoxybenzylidene)hydrazine (**1l,** 63.0 mg, 0.3 mmol, 1.5 equiv.) and *N*-benzylideneaniline (**2a**, 36.2 mg, 0.2 mmol, 1.0 equiv.), as a brown oil (44.4 mg, 61%, 89:11 er).
R_f= 0.29 (Petroleum ether/Dichloromethane = 1:1).
FT-IR (neat, cm^{-1}) 3389, 3001, 2937, 2838, 1601, 1506, 1454, 1423, 1322, 1242, 1128, 1007, 750, 701.
^{1}H NMR (300 MHz, $CDCl_3$) δ 7.30 (d, *J* = 4.3 Hz, 4H), 7.26-7.20 (m, 1H), 7.06 (t, *J* = 7.9 Hz, 2H), 6.64 (t, *J* = 7.3 Hz, 1H), 6.48 (d, *J* = 7.8 Hz, 2H), 6.24 (s, 2H), 4.57 (t, *J* = 6.6 Hz, 1H), 4.14 (s, 1H), 3.82 (s, 3H), 3.74 (s, 6H), 3.07 (dd, *J* = 13.8, 6.0 Hz, 1H), 2.97 (dd, *J* = 13.7, 7.4 Hz, 1H).
^{13}C NMR (101 MHz, $CDCl_3$) δ 153.2, 147.3, 143.3, 136.9, 133.2, 129.2, 128.7, 127.2, 126.7, 117.7, 113.8, 106.5, 61.0, 59.2, 56.2, 45.4.
HRMS(ESI, *m/z*), calcd for $C_{23}H_{26}O_3N^+$ $[M+H]^+$, 364.1907; found, 364.1901.
HPLC analysis: Chiracel OD-H, *n*-Hexane:*i*-PrOH = 98:2, 1.0 mL/min, UV = 254 nm. Retention time (min): 23.3 (minor) and 48.9 (major).
$[\alpha]_D^{20}$ = -30.22 (c = 1.0, $CHCl_3$, 89:11 er).

(*S*)-*N*-(2-(4-methoxy-3-methylphenyl)-1-phenylethyl)aniline (3ha)



Following the general reaction procedure A, **3ha** was obtained from the (4-methoxy-3-methylbenzylidene)hydrazine (**1p,** 49.2 mg, 0.3 mmol, 1.5 equiv.) and *N*-benzylideneaniline (**2a**, 36.2 mg, 0.2 mmol, 1.0 equiv.), as a brown oil (25.3 mg, 40%, 90:10 er).
R_f= 0.67 (Petroleum ether/Dichloromethane = 1:1).
FT-IR (neat, cm^{-1}) 3412, 2918, 2853, 2369, 1602, 1506, 1255, 1134, 1031, 749, 699.
^{1}H NMR (400 MHz, $CDCl_3$) δ 7.37-7.26 (m, 4H), 7.22 (d, *J* = 6.6 Hz, 1H), 7.03 (t, *J* = 7.8 Hz, 2H), 6.90 (d, *J* = 7.4 Hz, 2H), 6.71 (d, *J* = 8.2 Hz, 1H), 6.61 (t, *J* = 7.3 Hz, 1H), 6.44 (d, *J* = 8.0 Hz, 2H), 4.51 (dd, *J* = 8.2, 5.6 Hz, 1H), 4.06 (d, *J* = 66.8 Hz, 1H), 3.80 (s, 3H), 3.05 (dd, *J* = 14.0, 5.4 Hz, 1H), 2.88 (dd, *J* = 14.0, 8.5 Hz, 1H), 2.16 (s, 3H).
^{13}C NMR (101 MHz, $CDCl_3$) δ 156.8, 147.5, 143.8, 131.7, 129.3, 129.1, 128.7, 127.5, 127.1, 126.8, 126.6, 117.6, 113.9, 110.1, 59.5, 55.5, 44.6, 16.3.
HRMS(ESI, *m/z*), calcd for $C_{22}H_{24}ON^+$ $[M+H]^+$, 318.1852; found, 318.1850.
HPLC analysis: Chiracel OD-H, *n*-Hexane:*i*-PrOH = 97:3, 1.0 mL/min, UV = 254 nm. Retention time (min): 7.2 (minor) and 9.4 (major).
$[\alpha]_D^{20}$ = -69.16 (c = 1.0, $CHCl_3$, 90:10 er).

(*S*)-*N*-(2-(3-ethoxy-4-methoxyphenyl)-1-phenylethyl)aniline (3ia)



Following the general reaction procedure A, **3ia** was obtained from the (3-ethoxy-4-methoxybenzylidene)hydrazine (**1n,** 58.2 mg, 0.3 mmol, 1.5 equiv.) and *N*-benzylideneaniline (**2a**, 36.2 mg, 0.2 mmol, 1.0 equiv.), as a white solid (55.5 mg, 80%, 90:10 er), mp. 116-119 °C.

R_f= 0.48 (Petroleum ether/Dichloromethane = 1:1).

FT-IR (neat, cm^{-1}) 3389, 2918, 1602, 1506, 1260, 1139, 1029, 750, 700.

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.29 (d, *J* = 4.3 Hz, 4H), 7.22 (dd, *J* = 8.5, 4.2 Hz, 1H), 7.04 (dd, *J* = 8.3, 7.5 Hz, 2H), 6.77 (d, *J* = 8.1 Hz, 1H), 6.67 (dd, *J* = 8.1, 1.8 Hz, 1H), 6.62 (t, *J* = 7.3 Hz, 1H), 6.47 (dd, *J* = 11.0, 4.8 Hz, 3H), 4.54 (t, *J* = 6.7 Hz, 1H), 4.12 (s, 1H), 3.97-3.88 (m, 2H), 3.84 (s, 3H), 3.06 (dd, *J* = 13.9, 6.0 Hz, 1H), 2.96 (dd, *J* = 13.9, 7.6 Hz, 1H), 1.38 (t, *J* = 7.0 Hz, 3H).

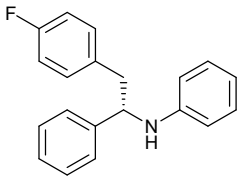
^{13}C NMR (101 MHz, $CDCl_3$) δ 148.3, 148.3, 147.5, 143.5, 130.1, 129.2, 128.7, 127.1, 126.7, 121.5, 117.6, 114.2, 113.8, 111.6, 64.3, 59.3, 56.1, 44.7, 14.9.

HRMS(ESI, *m/z*), calcd for $C_{23}H_{26}O_2N^+$ $[M+H]^+$, 348.1958; found, 348.1952.

HPLC analysis: Chiracel OD-H, *n*-Hexane:*i*-PrOH = 94:6, 1.0 mL/min, UV = 254 nm. Retention time (min): 10.4 (minor) and 15.3 (major).

$[\alpha]_D^{20}$ = -48.64 (c = 1.0, $CHCl_3$, 90:10 er).

(*S*)-N-(2-(4-fluorophenyl)-1-phenylethyl)aniline (3ja)



Following the general reaction procedure A, **3ja** was obtained from the (3-ethoxy-4-methoxybenzylidene)hydrazine (**1n,** 41.4 mg, 0.3 mmol, 1.5 equiv.) and *N*-benzylideneaniline (**2a**, 36.2 mg, 0.2 mmol, 1.0 equiv.), as a yellow oil (7.4 mg, 13%, 77:23 er).

R_f= 0.69 (Petroleum ether/Dichloromethane = 1:1).

FT-IR (neat, cm^{-1}) 3410, 3048, 2851, 1598, 1506, 1316, 1152, 844, 700.

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.33-7.20 (m, 5H), 7.16-6.99 (m, 4H), 6.94 (t, *J* = 8.6 Hz, 2H), 6.63 (t, *J* = 7.3 Hz, 1H), 6.47 (d, *J* = 7.7 Hz, 2H), 4.55 (t, *J* = 6.9 Hz, 1H), 4.08 (s, 1H), 3.05 (qd, *J* = 14.0, 7.0 Hz, 2H).

^{13}C NMR (126 MHz, $CDCl_3$) δ 161.9 (d, $J_{C\text{-}F}$ = 245.7 Hz), 147.3, 143.2, 133.5, 130.8 (d, $J_{C\text{-}F}$ = 7.7 Hz), 129.2, 128.7, 127.3, 126.7, 117.8, 115.4 (d, $J_{C\text{-}F}$ = 21.2 Hz), 113.8, 59.5, 44.3.

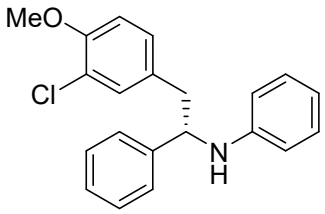
^{19}F NMR (377 MHz, $CDCl_3$) δ -116.2.

HRMS(ESI, *m/z*), calcd for $C_{20}H_{19}NF^+$ $[M+H]^+$, 292.1496; found, 292.1507.

HPLC analysis: Chiracel OD-H, *n*-Hexane:*i*-PrOH = 98:2, 1.0 mL/min, UV = 254 nm. Retention time (min): 13.4 (minor) and 14.7 (major).

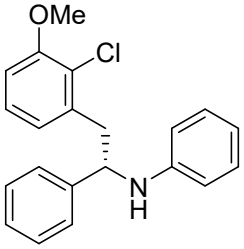
$[\alpha]_D^{20}$ = -32.04 (c = 1.0, $CHCl_3$, 77:23 er).

(*S*)-*N*-(2-(3-chloro-4-methoxyphenyl)-1-phenylethyl)aniline (3ka)



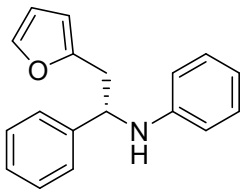
Following the general reaction procedure A, **3ka** was obtained from the (3-chloro-4-methoxybenzylidene)hydrazine (**1f,** 55.2 mg, 0.3 mmol, 1.5 equiv.) and *N*-benzylideneaniline (**2a**, 36.2 mg, 0.2 mmol, 1.0 equiv.), as a colorless oil (14.8 mg, 22%, 92:8 er).
R_f= 0.58 (Petroleum ether/Dichloromethane = 1:1).
FT-IR (neat, cm^{-1}) 3566, 2335, 1603, 1507, 1265, 745.
^{1}H NMR (500 MHz, $CDCl_3$) δ 7.37-7.26 (m, 4H), 7.26-7.19 (m, 1H), 7.10 (d, *J* = 1.6 Hz, 1H), 7.06 (t, *J* = 7.8 Hz, 2H), 6.93 (dd, *J* = 8.3, 1.5 Hz, 1H), 6.80 (d, *J* = 8.4 Hz, 1H), 6.63 (t, *J* = 7.3 Hz, 1H), 6.47 (d, *J* = 8.0 Hz, 2H), 4.60-4.44 (m, 1H), 4.07 (s, 1H), 3.87 (s, 3H), 3.03 (dd, *J* = 14.0, 5.9 Hz, 1H), 2.94 (dd, *J* = 14.0, 7.9 Hz, 1H).
^{13}C NMR (126 MHz, $CDCl_3$) δ 153.9, 147.2, 143.1, 131.1, 130.9, 129.2, 128.8, 128.5, 127.3, 126.6, 122.4, 117.8, 113.8, 112.2, 59.3, 56.3, 44.0.
HRMS(ESI, *m/z*), calcd for $C_{21}H_{21}ONCl^+$ $[M+H]^+$, 338.1306; found, 338.1302.
HPLC analysis: Chiracel OD-H, *n*-Hexane:*i*-PrOH = 95:5, 1.0 mL/min, UV = 254 nm. Retention time (min): 11.9 (minor) and 16.8 (major).
$[\alpha]_D^{20}$ = -87.36 (c = 1.0, $CHCl_3$, 92:8 er).

(*S*)-*N*-(2-(2-chloro-3-methoxyphenyl)-1-phenylethyl)aniline (3la)



Following the general reaction procedure A, **3la** was obtained from the (2-chloro-3-methoxybenzylidene)hydrazine (**1g,** 55.2 mg, 0.3 mmol, 1.5 equiv.) and *N*-benzylideneaniline (**2a**, 36.2 mg, 0.2 mmol, 1.0 equiv.), as a yellow oil (34.4 mg, 51%, 90:10 er).
R_f= 0.57 (Petroleum ether/Dichloromethane = 1:1).
FT-IR (neat, cm^{-1}) 3421, 3051, 1602, 1503, 1265, 1074, 744, 701.
^{1}H NMR (400 MHz, $CDCl_3$) δ 7.39 (d, *J* = 7.4 Hz, 2H), 7.31 (t, *J* = 7.5 Hz, 2H), 7.26-7.20 (m, 1H), 7.11 (t, *J* = 7.9 Hz, 1H), 7.02 (t, *J* = 7.8 Hz, 2H), 6.81 (d, *J* = 8.0 Hz, 1H), 6.75 (d, *J* = 7.6 Hz, 1H), 6.60 (t, *J* = 7.3 Hz, 1H), 6.45 (d, *J* = 8.2 Hz, 2H), 4.69 (dd, *J* = 8.6, 5.6 Hz, 1H), 4.27 (s, 1H), 3.89 (s, 3H), 3.22 (dd, *J* = 14.4, 5.8 Hz, 1H), 3.19-3.12 (m, 1H).
^{13}C NMR (101 MHz, $CDCl_3$) δ 155.4, 147.3, 143.7, 137.6, 129.0, 128.6, 127.2, 127.0, 126.3, 123.1, 122.8, 117.4, 113.6, 110.5, 58.1, 56.3, 43.1.
HRMS(ESI, *m/z*), calcd for $C_{21}H_{21}ONCl^+$ $[M+H]^+$, 338.1306; found, 338.1300.
HPLC analysis: Chiracel OD-H, *n*-Hexane:*i*-PrOH = 98:2, 1.0 mL/min, UV = 254 nm. Retention time (min): 13.4 (minor) and 17.6 (major).
$[\alpha]_D^{20}$ = -50.76 (c = 1.0, $CHCl_3$, 90:10 er).

(*S*)-*N*-(2-(furan-2-yl)-1-phenylethyl)aniline (3ma)



Following the general reaction procedure A, **3ma** was obtained from the (furan-2-ylmethylene)hydrazine (**1s,** 33.0 mg, 0.3 mmol, 1.5 equiv.) and *N*-benzylideneaniline (**2a**, 36.2 mg, 0.2 mmol, 1.0 equiv.), as a colorless oil (20.6 mg, 39%, 87:13 er).

R_f= 0.67 (Petroleum ether/Dichloromethane = 1:1).

FT-IR (neat, cm^{-1}) 3412, 3027, 2919, 2851, 1602, 1504, 1317, 1007, 750, 699.

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.43-7.26 (m, 5H), 7.23 (s, 1H), 7.10-7.01 (m, 2H), 6.64 (t, *J* = 7.3 Hz, 1H), 6.49 (d, *J* = 7.7 Hz, 2H), 6.31-6.22 (m, 1H), 6.02 (d, *J* = 3.0 Hz, 1H), 4.63 (dd, *J* = 8.4, 5.2 Hz, 1H), 4.30 (s, 1H), 3.13 (dd, *J* = 15.2, 5.1 Hz, 1H), 3.04 (dd, *J* = 15.2, 8.4 Hz, 1H).

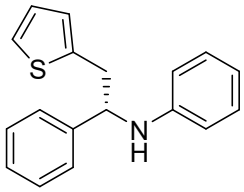
^{13}C NMR (101 MHz, $CDCl_3$) δ 152.2, 147.4, 143.3, 142.0, 129.2, 128.8, 127.3, 126.4, 117.7, 113.8, 110.5, 107.6, 57.7, 37.5.

HRMS(ESI, *m/z*), calcd for $C_{18}H_{18}ON^+$ $[M+H]^+$, 264.1383; found, 264.1379.

HPLC analysis: Chiracel OD-H, *n*-Hexane:*i*-PrOH = 98:2, 1.0 mL/min, UV = 254 nm. Retention time (min): 7.7 (minor) and 8.8 (major).

$[\alpha]_D^{20}$ = -22.24 (c = 1.0, $CHCl_3$, 87:13 er).

(*S*)-*N*-(1-phenyl-2-(thiophen-2-yl)ethyl)aniline (3na)



Following the general reaction procedure A, **3na** was obtained from the (thiophen-2-ylmethylene)hydrazine (**1r,** 37.8 mg, 0.3 mmol, 1.5 equiv.) and *N*-benzylideneaniline (**2a**, 36.2 mg, 0.2 mmol, 1.0 equiv.), as a yellow oil (19.4 mg, 35%, 86:14 er).

R_f= 0.76 (Petroleum ether/Dichloromethane = 1:1).

FT-IR (neat, cm^{-1}) 3403, 2922, 2851, 1601, 1504, 1317, 750, 692.

^{1}H NMR (300 MHz, $CDCl_3$) δ 7.40-7.22 (m, 5H), 7.14 (d, *J* = 4.4 Hz, 1H), 7.07 (t, *J* = 7.9 Hz, 2H), 6.91 (dd, *J* = 5.0, 3.5 Hz, 1H), 6.78 (d, *J* = 2.9 Hz, 1H), 6.65 (t, *J* = 7.3 Hz, 1H), 6.49 (d, *J* = 7.8 Hz, 2H), 4.59 (dd, *J* = 7.8, 5.6 Hz, 1H), 4.17 (s, 1H), 3.34 (dd, *J* = 14.9, 5.4 Hz, 1H), 3.25 (dd, *J* = 15.0, 8.1 Hz, 1H).

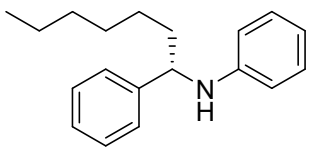
^{13}C NMR (101 MHz, $CDCl_3$) δ 147.3, 143.1, 140.2, 129.2, 128.8, 127.4, 127.0, 126.6, 126.3, 124.6, 117.8, 113.8, 59.5, 39.1.

HRMS(ESI, *m/z*), calcd for $C_{18}H_{18}NS^+$ $[M+H]^+$, 280.1155; found, 280.1152.

HPLC analysis: Chiracel OD-H, *n*-Hexane:*i*-PrOH = 98:2, 1.0 mL/min, UV = 254 nm. Retention time (min): 9.1 (minor) and 11.0 (major).

$[\alpha]_D^{20}$ = -25.58 (c = 1.0, $CHCl_3$, 86:14 er).

(*S*)-*N*-(1-phenylheptyl)aniline (3oa)



Following the general reaction procedure A, **3oa** was obtained from the pentylidenehydrazine (**1y,** 30.0 mg, 0.3 mmol, 1.5 equiv.) and *N*-benzylideneaniline (**2a**, 36.2 mg, 0.2 mmol, 1.0 equiv.), as a colorless oil (4.7 mg, 9%, 66:34 er).

R_f= 0.65 (Petroleum ether/Dichloromethane = 1:1).

FT-IR (neat, cm^{-1}) 3595, 2922, 2357, 1622, 1276, 1260, 750.

^{1}H NMR (500 MHz, $CDCl_3$) δ 7.31 (dt, *J* = 15.0, 7.4 Hz, 4H), 7.21 (t, *J* = 6.9 Hz, 1H), 7.07 (t, *J* = 7.8 Hz, 2H), 6.62 (t, *J* = 7.2 Hz, 1H), 6.50 (d, *J* = 7.9 Hz, 2H), 4.28 (t, *J* = 6.8 Hz, 1H), 4.06 (s, 1H), 1.83-1.72 (m, 2H), 1.39 (d, *J* = 14.0 Hz, 1H), 1.32-1.23 (m, 7H), 0.86 (t, *J* = 6.8 Hz, 4H).

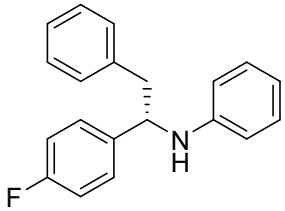
^{13}C NMR (126 MHz, $CDCl_3$) δ 147.7, 144.5, 129.2, 128.7, 127.0, 126.5, 117.2, 113.4, 58.4, 39.2, 31.9, 29.3, 26.5, 22.7, 14.2.

HRMS(ESI, *m/z*), calcd for $C_{19}H_{24}N^+$ $[M-H]^+$, 266.1903; found, 266.1898.

HPLC analysis: Chiracel OD-H, *n*-Hexane:*i*-PrOH = 98:2, 1.0 mL/min, UV = 254 nm. Retention time (min): 5.4 (minor) and 6.3 (major).

$[\alpha]_D^{20}$ = -42.35 (c = 1.0, $CHCl_3$, 66:34 er).

(*S*)-*N*-(1-(4-fluorophenyl)-2-phenylethyl)aniline (3ab)



Following the general reaction procedure A, **3ab** was obtained from the benzaldehyde hydrazone (**1a,** 34 μL, 0.3 mmol, 1.5 equiv.) and 1-(4-fluorophenyl)-*N*-phenylmethanimine (**2f**, 39.8 mg, 0.2 mmol, 1.0 equiv.), as a yellow oil (47.1 mg, 81%, 90:10 er).

R_f= 0.79 (Petroleum ether/Dichloromethane = 1:1).

FT-IR (neat, cm^{-1}) 3412, 3052, 3027, 2922, 2851, 1600, 1506, 1316, 1265, 1220, 1154, 832, 750, 692.

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.31-7.17 (m, 5H), 7.11-7.01 (m, 4H), 6.97 (t, *J* = 8.7 Hz, 2H), 6.63 (t, *J* = 7.3 Hz, 1H), 6.43 (d, *J* = 7.8 Hz, 2H), 4.56 (t, *J* = 6.9 Hz, 1H), 4.10 (s, 1H), 3.07 (dd, *J* = 13.9, 6.1 Hz, 1H), 3.00 (dd, *J* = 13.9, 7.9 Hz, 1H).

^{13}C NMR(101 MHz, $CDCl_3$) δ 162.0 (d, J_{C-F} = 244.7 Hz), 147.2, 139.1 (d, J_{C-F} = 3.0 Hz), 137.5, 129.3 (d, J_{C-F} = 17.8 Hz), 128.7, 128.1, 128.0, 127.0, 117.8, 115.5 (d, J_{C-F} = 21.4 Hz), 113.8, 58.8, 45.4.

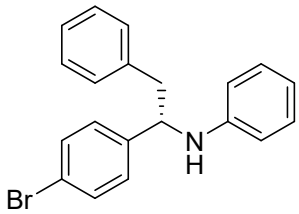
^{19}F NMR (377 MHz, $CDCl_3$) δ -115.9.

HRMS(ESI, *m/z*), calcd for $C_{20}H_{19}NF^+$ $[M+H]^+$, 292.1496; found, 292.1495.

HPLC analysis: Chiracel OD-H, *n*-Hexane:*i*-PrOH = 97:3, 1.0 mL/min, UV = 254 nm. Retention time (min): 9.7 (minor) and 13.5 (major).

$[\alpha]_D^{20}$ = -57.12 (c = 1.0, $CHCl_3$, 90:10 er).

(*S*)-*N*-(1-(4-bromophenyl)-2-phenylethyl)aniline (3ac)



Following the general reaction procedure A, **3ac** was obtained from the benzaldehyde hydrazone (**1a,** 34 μL, 0.3 mmol, 1.5 equiv.) and 1-(4-bromophenyl)-*N*-phenylmethanimine (**2h**, 51.8 mg, 0.2 mmol, 1.0 equiv.), as a yellowish oil (61.8 mg, 88%, 90:10 er).

R_f= 0.67 (Petroleum ether/Dichloromethane = 1:1).

FT-IR (neat, cm^{-1}) 3412, 3052, 3026, 2919, 1601, 1506, 1029, 749, 692.

^{1}H NMR (500 MHz, $CDCl_3$) δ 7.41 (d, *J* = 8.1 Hz, 2H), 7.25 (dq, *J* = 14.9, 7.3 Hz, 3H), 7.17 (d, *J* = 8.1 Hz, 2H), 7.09 (d, *J* = 7.2 Hz, 2H), 7.05 (t, *J* = 7.6 Hz, 2H), 6.64 (t, *J* = 7.3 Hz, 1H), 6.41 (d, *J* = 7.8 Hz, 2H), 4.53 (t, *J* = 6.1 Hz, 1H), 4.09 (s, 1H), 3.08 (dd, *J* = 13.9, 5.8 Hz, 1H), 2.99 (dd, *J* = 13.8, 8.0 Hz, 1H).

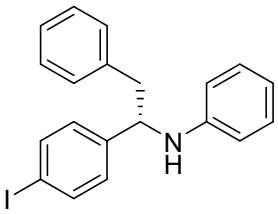
^{13}C NMR (126 MHz, $CDCl_3$) δ 147.1, 142.6, 137.3, 131.8, 129.3, 129.2, 128.8, 128.4, 127.0, 120.9, 117.9, 113.8, 58.9, 45.2.

HRMS(ESI, *m/z*), calcd for $C_{20}H_{19}NBr^+$ $[M+H]^+$, 352.0695; found, 352.0694.

HPLC analysis: Chiracel OD-H, *n*-Hexane:*i*-PrOH = 97:3, 1.0 mL/min, UV = 254 nm. Retention time (min): 10.9 (minor) and 14.7 (major).

$[\alpha]_D^{20}$ = -44.98 (c = 1.0, $CHCl_3$, 90:10 er).

(*S*)-*N*-(1-(4-iodophenyl)-2-phenylethyl)aniline (3ad)



Following the general reaction procedure A, **3ad** was obtained from the benzaldehyde hydrazone (**1a,** 34 μL, 0.3 mmol, 1.5 equiv.) and 1-(4-iodophenyl)-*N*-phenylmethanimine (**2i**, 61.4 mg, 0.2 mmol, 1.0 equiv.), as a yellowish oil (50.3 mg, 63%, 86:14 er).

R_f= 0.63 (Petroleum ether/Dichloromethane = 1:1).

FT-IR (neat, cm^{-1}) 3407, 3051, 3025, 2922, 1601, 1506, 1318, 1265, 1005, 749, 692.

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.61 (d, *J* = 8.3 Hz, 2H), 7.26 (dt, *J* = 10.5, 6.9 Hz, 3H), 7.16-6.95 (m, 6H), 6.64 (t, *J* = 7.3 Hz, 1H), 6.41 (d, *J* = 7.8 Hz, 2H), 4.58-4.44 (m, 1H), 4.09 (s, 1H), 3.08 (dd, *J* = 13.9, 5.9 Hz, 1H), 2.98 (dd, *J* = 13.9, 8.1 Hz, 1H).

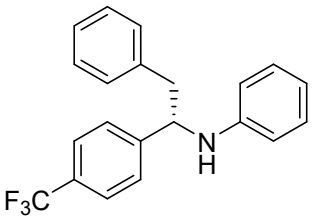
^{13}C NMR (101 MHz, $CDCl_3$) δ 147.1, 143.4, 137.8, 137.3, 129.3, 129.2, 128.8, 128.7, 127.0, 117.9, 113.8, 92.4, 59.0, 45.2.

HRMS(ESI, *m/z*), calcd for $C_{20}H_{19}NI^+$ $[M+H]^+$, 400.0557; found, 400.0556.

HPLC analysis: Chiracel OD-H, *n*-Hexane:*i*-PrOH = 95:5, 1.0 mL/min, UV = 254 nm. Retention time (min): 10.5 (minor) and 13.8 (major).

$[\alpha]_D^{20}$ = -37.48 (c = 1.0, $CHCl_3$, 86:14 er).

(*S*)-*N*-(2-phenyl-1-(4-(trifluoromethyl)phenyl)ethyl)aniline (3ae)



Following the general reaction procedure A, **3ae** was obtained from the benzaldehyde hydrazone (**1a,** 34 μL, 0.3 mmol, 1.5 equiv.) and *N*-phenyl-1-(4-(trifluoromethyl)phenyl)methanimine (**2p**, 49.8 mg, 0.2 mmol, 1.0 equiv.), as a colorless oil (57.2 mg, 84%, 91:9 er).

R_f= 0.80 (Petroleum ether/Dichloromethane = 1:1).

FT-IR (neat, cm^{-1}) 3412, 3027, 2921, 1602, 1506, 1419, 1325, 1121, 1066, 749, 692.

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.55 (d, *J* = 8.1 Hz, 2H), 7.43 (d, *J* = 8.1 Hz, 2H), 7.26 (dt, *J* = 6.8, 6.0 Hz, 3H), 7.10 (d, *J* = 6.9 Hz, 2H), 7.05 (t, *J* = 7.9 Hz, 2H), 6.65 (t, *J* = 7.3 Hz, 1H), 6.41 (d, *J* = 7.9 Hz, 2H), 4.63 (t, *J* = 6.7 Hz, 1H), 4.14 (s, 1H), 3.12 (dd, *J* = 14.0, 5.8 Hz, 1H), 3.01 (dd, *J* = 13.9, 8.2 Hz, 1H).

^{13}C NMR (101 MHz, $CDCl_3$) δ 147.8, 147.0, 137.1, 129.7, 129.3, 129.2, 128.9, 127.2, 127.0, 125.73 (q, $J_{C\text{-}F}$ = 3.8 Hz), 123.0, 118.1, 113.8, 59.1, 45.1.

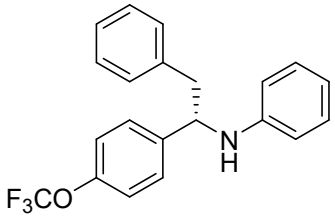
^{19}F NMR (377 MHz, $CDCl_3$) δ -62.3.

HRMS(ESI, *m/z*), calcd for $C_{21}H_{19}NF_3^+$ $[M+H]^+$, 342.1464; found, 342.1461.

HPLC analysis: Chiracel OD-H, *n*-Hexane:*i*-PrOH = 98:2, 1.0 mL/min, UV = 254 nm. Retention time (min): 13.8 (minor) and 19.4 (major).

$[\alpha]_D^{20}$ = -57.75 (c = 1.0, $CHCl_3$, 91:9 er).

(*S*)-*N*-(2-phenyl-1-(4-(trifluoromethoxy)phenyl)ethyl)aniline (3af)



Following the general reaction procedure A, **3af** was obtained from the benzaldehyde hydrazone (**1a,** 34 μL, 0.3 mmol, 1.5 equiv.) and *N*-phenyl-1-(4-(trifluoromethoxy)phenyl)methanimine (**2q**, 53.0 mg, 0.2 mmol, 1.0 equiv.), as a yellow oil (57.8 mg, 81%, 89:11 er).

R_f= 0.76 (Petroleum ether/Dichloromethane = 1:1).

FT-IR (neat, cm^{-1}) 3412, 3053, 1602, 1506, 1260, 1164, 749, 692.

^{1}H NMR (500 MHz, $CDCl_3$) δ 7.33 (d, *J* = 8.4 Hz, 2H), 7.30-7.20 (m, 3H), 7.14 (d, *J* = 8.2 Hz, 2H), 7.11-7.01 (m, 4H), 6.65 (t, *J* = 7.2 Hz, 1H), 6.43 (d, *J* = 8.1 Hz, 2H), 4.58 (s, 1H), 4.11 (s, 1H), 3.09 (dd, *J* = 13.9, 5.7 Hz, 1H), 3.00 (dd, *J* = 13.9, 8.2 Hz, 1H).

^{13}C NMR (126 MHz, $CDCl_3$) δ 148.3, 147.1, 142.3, 137.3, 129.3, 129.2, 128.8, 127.9, 127.1, 121.2, 120.6 (d, $J_{C\text{-}F}$ = 256.8 Hz), 118.0, 113.8, 58.8, 45.3.

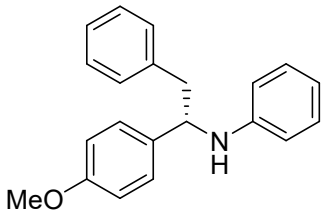
^{19}F NMR (377 MHz, $CDCl_3$) δ -57.8.

HRMS(ESI, *m/z*), calcd for $C_{21}H_{19}ONF_3^+$ $[M+H]^+$, 358.1413; found, 358.1410.

HPLC analysis: Chiracel OD-H, *n*-Hexane:*i*-PrOH = 98:2, 1.0 mL/min, UV = 254 nm. Retention time (min): 10.8 (minor) and 15.6 (major).

$[\alpha]_D^{20}$ = -54.50 (c = 1.0, $CHCl_3$, 89:11 er).

(*S*)-*N*-(1-(4-methoxyphenyl)-2-phenylethyl)aniline (3ag)



Following the general reaction procedure A, **3ag** was obtained from the benzaldehyde hydrazone (**1a,** 34 μL, 0.3 mmol, 1.5 equiv.) and 1-(4-methoxyphenyl)-*N*-phenylmethanimine (**2b**, 42.2 mg, 0.2 mmol, 1.0 equiv.), as a colorless oil (26.7 mg, 44%, 88:12 er).

R_f= 0.64 (Petroleum ether/Dichloromethane = 1:1).

FT-IR (neat, cm^{-1}) 3404, 2922, 2834, 1601, 1507, 1245, 1178, 1031, 828, 749, 692.

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.29-7.14 (m, 5H), 7.10 (d, *J* = 7.0 Hz, 2H), 7.05 (t, *J* = 7.9 Hz, 2H), 6.83 (d, *J* = 8.6 Hz, 2H), 6.62 (t, *J* = 7.3 Hz, 1H), 6.46 (d, *J* = 7.9 Hz, 2H), 4.60-4.46 (m, 1H), 4.08 (s, 1H), 3.78 (s, 3H), 3.09 (dd, *J* = 13.9, 5.9 Hz, 1H), 3.00 (dd, *J* = 13.9, 7.9 Hz, 1H).

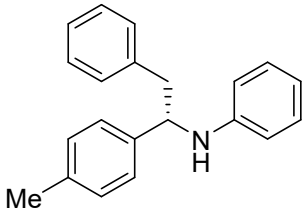
^{13}C NMR (101 MHz, $CDCl_3$) δ 158.7, 147.5, 137.9, 135.5, 129.4, 129.1, 128.6, 127.6, 126.8, 117.6, 114.1, 113.8, 58.8, 55.4, 45.4.

HRMS(ESI, *m/z*), calcd for $C_{21}H_{22}ON^+$ $[M+H]^+$, 304.1696; found, 304.1695.

HPLC analysis: Chiracel OD-H, *n*-Hexane:*i*-PrOH = 96:4, 1.0 mL/min, UV = 254 nm. Retention time (min): 8.7 (minor) and 11.1 (major).

$[\alpha]_D^{20}$ = -60.82 (c = 1.0, $CHCl_3$, 88:12 er).

(*S*)-*N*-(2-phenyl-1-(*p*-tolyl)ethyl)aniline (3ah)



Following the general reaction procedure A, **3ah** was obtained from the benzaldehyde hydrazone (**1a,** 34 μL, 0.3 mmol, 1.5 equiv.) and *N*-phenyl-1-(*p*-tolyl)methanimine (**2c**, 39.0 mg, 0.2 mmol, 1.0 equiv.), as a colorless oil (21.3 mg, 37%, 86:14 er).

R_f= 0.71 (Petroleum ether/Dichloromethane = 1:1).

FT-IR (neat, cm^{-1}) 3027, 2918, 1602, 1506, 749.

^{1}H NMR (300 MHz, $CDCl_3$) δ 7.30-7.18 (m, 5H), 7.12 (dd, *J* = 10.1, 4.5 Hz, 4H), 7.04 (dd, *J* = 8.4, 7.5 Hz, 2H), 6.61 (t, *J* = 7.3 Hz, 1H), 6.45 (d, *J* = 7.7 Hz, 2H), 4.62-4.46 (m, 1H), 4.08 (s, 1H), 3.12 (dd, *J* = 14.0, 5.6 Hz, 1H), 2.99 (dd, *J* = 14.0, 8.2 Hz, 1H), 2.32 (s, 3H).

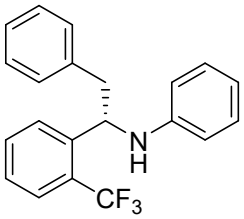
^{13}C NMR (126 MHz, $CDCl_3$) δ 147.5, 140.6, 138.0, 136.7, 129.4, 129.3, 129.1, 128.7, 126.8, 126.5, 117.5, 113.8, 59.1, 45.3, 21.2.

HRMS(ESI, *m/z*), calcd for $C_{21}H_{22}N^+$ $[M+H]^+$, 288.1747; found, 288.1746.

HPLC analysis: Chiracel OD-H, *n*-Hexane:*i*-PrOH = 98:2, 1.0 mL/min, UV = 254 nm. Retention time (min): 7.2 (minor) and 8.9 (major).

$[\alpha]_D^{20}$ = -43.08 (c = 1.0, $CHCl_3$, 86:14 er).

(*S*)-*N*-(2-phenyl-1-(2-(trifluoromethyl)phenyl)ethyl)aniline (3ai)



Following the general reaction procedure A, **3ai** was obtained from the benzaldehyde hydrazone (**1a,** 34 μL, 0.3 mmol, 1.5 equiv.) and *N*-phenyl-1-(2-(trifluoromethyl)phenyl)methanimine (**2o**, 49.8 mg, 0.2 mmol, 1.0 equiv.), as a yellow oil (16.6 mg, 24%, 84:16 er).

R_f= 0.78 (Petroleum ether/Dichloromethane = 1:1).

FT-IR (neat, cm^{-1}) 2922, 2325, 1647, 1539, 1312, 750.

^{1}H NMR (500 MHz, $CDCl_3$) δ 7.74 (t, *J* = 8.3 Hz, 2H), 7.48 (t, *J* = 7.5 Hz, 1H), 7.40-7.29 (m, 3H), 7.29-7.19 (m, 3H), 7.00 (t, *J* = 7.8 Hz, 2H), 6.61 (t, *J* = 7.3 Hz, 1H), 6.39 (d, *J* = 7.8 Hz, 2H), 5.03 (d, *J* = 9.6 Hz, 1H), 4.12 (s, 1H), 3.30 (d, *J* = 14.4 Hz, 1H), 2.70 (dd, *J* = 14.3, 10.2 Hz, 1H).

^{13}C NMR (126 MHz, $CDCl_3$) δ 146.9, 143.5, 137.7, 132.7, 129.2, 129.1, 129.0, 127.6, 127.3 (dd, $J_{C\text{-}F}$ = 24.0, 5.8 Hz), 126.4 (q, $J_{C\text{-}F}$ = 6.0 Hz), 126.1, 123.9, 121.7, 118.0, 113.7, 55.1, 45.2.

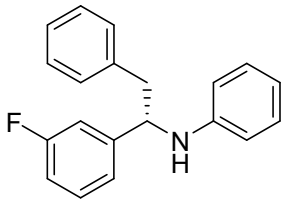
^{19}F NMR (377 MHz, $CDCl_3$) δ -58.1.

HRMS(ESI, *m/z*), calcd for $C_{21}H_{19}NF_3^+$ $[M+H]^+$, 342.1464; found, 342.1464.

HPLC analysis: Chiracel OD-H, *n*-Hexane:*i*-PrOH = 99.3:0.7, 1.0 mL/min, UV = 254 nm. Retention time (min): 6.0 (minor) and 7.0 (major).

$[\alpha]_D^{20}$ = -66.38 (c = 1.0, $CHCl_3$, 84:16 er).

(*S*)-*N*-(1-(3-fluorophenyl)-2-phenylethyl)aniline (3aj)



Following the general reaction procedure A, **3aj** was obtained from the benzaldehyde hydrazone (**1a,** 34 μL, 0.3 mmol, 1.5 equiv.) and 1-(3-fluorophenyl)-*N*-phenylmethanimine (**2j**, 39.8 mg, 0.2 mmol, 1.0 equiv.), as a yellow oil (38.7 mg, 66%, 82:18 er).

R_f= 0.75 (Petroleum ether/Dichloromethane = 1:1).

FT-IR (neat, cm^{-1}) 3412, 3053, 3027, 2921, 2851, 1602, 1506, 1316, 1263, 750, 692.

^{1}H NMR (300 MHz, $CDCl_3$) δ 7.26 (dt, *J* = 9.5, 6.8 Hz, 4H), 7.15-6.98 (m, 6H), 6.91 (td, *J* = 8.4, 2.0 Hz, 1H), 6.64 (t, *J* = 7.3 Hz, 1H), 6.44 (d, *J* = 7.9 Hz, 2H), 4.57 (t, *J* = 6.6 Hz, 1H), 4.10 (s, 1H), 3.11 (dd, *J* = 13.9, 5.7 Hz, 1H), 3.00 (dd, *J* = 13.9, 8.2 Hz, 1H).

^{13}C NMR (126 MHz, $CDCl_3$) δ 163.3 (d, $J_{C\text{-}F}$ = 245.8 Hz), 147.1, 146.6 (d, $J_{C\text{-}F}$ = 6.4 Hz), 137.3, 130.2 (d, $J_{C\text{-}F}$ = 8.1 Hz), 129.3 (d, $J_{C\text{-}F}$ = 13.2 Hz), 128.8, 127.0, 122.3, 122.2, 117.9, 114.1 (d, $J_{C\text{-}F}$ = 21.3 Hz), 113.8, 113.4 (d, $J_{C\text{-}F}$ = 21.8 Hz), 59.0 (d, $J_{C\text{-}F}$ = 1.5 Hz), 45.2.

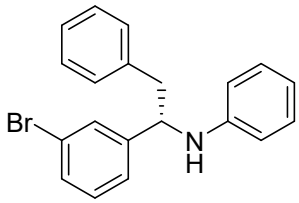
^{19}F NMR (377 MHz, $CDCl_3$) δ -112.9.

HRMS(ESI, *m/z*), calcd for $C_{20}H_{19}NF^+$ $[M+H]^+$, 292.1496; found, 292.1494.

HPLC analysis: Chiracel OD-H, *n*-Hexane:*i*-PrOH = 97:3, 1.0 mL/min, UV = 254 nm. Retention time (min): 10.2 (minor) and 14.2 (major).

$[\alpha]_D^{20}$ = -47.66 (c = 1.0, $CHCl_3$, 82:18 er).

(*S*)-*N*-(1-(3-bromophenyl)-2-phenylethyl)aniline (3ak)



Following the general reaction procedure A, **3ak** was obtained from the benzaldehyde hydrazone (**1a,** 34 μL, 0.3 mmol, 1.5 equiv.) and 1-(3-bromophenyl)-*N*-phenylmethanimine (**2k**, 51.8 mg, 0.2 mmol, 1.0 equiv.), as a yellowish oil (52.6 mg, 75%, 83:17 er).

R_f= 0.69 (Petroleum ether/Dichloromethane = 1:1).

FT-IR (neat, cm^{-1}) 3420, 3052, 3026, 1601, 1506, 1264, 749, 693.

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.49 (s, 1H), 7.36 (d, *J* = 7.8 Hz, 1H), 7.32-7.20 (m, 4H), 7.16 (t, *J* = 7.7 Hz, 1H), 7.11 (d, *J* = 7.0 Hz, 2H), 7.06 (t, *J* = 7.9 Hz, 2H), 6.65 (t, *J* = 7.3 Hz, 1H), 6.43 (d, *J* = 8.0 Hz, 2H), 4.51 (d, *J* = 8.3 Hz, 1H), 4.09 (s, 1H), 3.10 (dd, *J* = 14.0, 5.6 Hz, 1H), 2.98 (dd, *J* = 14.0, 8.4 Hz, 1H).

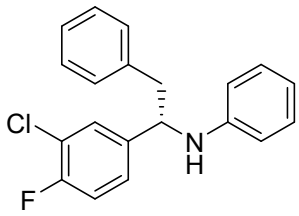
^{13}C NMR (101 MHz, $CDCl_3$) δ 147.1, 146.3, 137.3, 130.4, 130.3, 129.6, 129.3, 129.2, 128.8, 127.1, 125.3, 122.9, 118.0, 113.8, 59.1, 45.3.

HRMS(ESI, *m/z*), calcd for $C_{20}H_{19}NBr^+$ $[M+H]^+$, 352.0695; found, 352.0694.

HPLC analysis: Chiracel OD-H, *n*-Hexane:*i*-PrOH = 95:5, 1.0 mL/min, UV = 254 nm. Retention time (min): 9.2 (minor) and 12.2 (major).

$[\alpha]_D^{20}$ = -49.36 (c = 1.0, $CHCl_3$, 83:17 er).

(*S*)-*N*-(1-(3-chloro-4-fluorophenyl)-2-phenylethyl)aniline (3al)



Following the general reaction procedure A, **3al** was obtained from the benzaldehyde hydrazone (**1a,** 34 μL, 0.3 mmol, 1.5 equiv.) and 1-(3-chloro-4-fluorophenyl)-*N*-phenylmethanimine (**2l**, 46.6 mg, 0.2 mmol, 1.0 equiv.), as a yellow oil (46.8 mg, 72%, 86:14 er).

R_f= 0.71 (Petroleum ether/Dichloromethane = 1:1).

FT-IR (neat, cm^{-1}) 3411, 3027, 2919, 1602, 1506, 1317, 1260, 749, 692.

^{1}H NMR (300 MHz, $CDCl_3$) δ 7.35 (dd, *J* = 7.0, 2.0 Hz, 1H), 7.32-7.20 (m, 3H), 7.16-6.98 (m, 6H), 6.66 (t, *J* = 7.3 Hz, 1H), 6.41 (d, *J* = 7.7 Hz, 2H), 4.51 (t, *J* = 6.7 Hz, 1H), 4.09 (s, 1H), 3.06 (dd, *J* = 13.9, 6.0 Hz, 1H), 2.98 (dd, *J* = 13.9, 8.0 Hz, 1H).

^{13}C NMR (126 MHz, $CDCl_3$) δ 157.2 (d, $J_{C\text{-}F}$ = 247.8 Hz), 146.9, 140.8 (d, $J_{C\text{-}F}$ = 3.6 Hz), 137.0, 129.1, 129.2, 128.8, 128.6, 127.2, 126.2 (d, $J_{C\text{-}F}$ = 7.1 Hz), 121.2 (d, $J_{C\text{-}F}$ = 17.8 Hz), 118.1, 116.7 (d, $J_{C\text{-}F}$ = 21.1 Hz), 113.8, 58.6, 45.3.

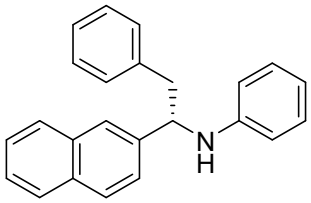
^{19}F NMR (377 MHz, $CDCl_3$) δ -117.9.

HRMS(ESI, *m/z*), calcd for $C_{20}H_{18}NClF^+$ $[M+H]^+$, 326.1106; found, 326.1105.

HPLC analysis: Chiracel OD-H, *n*-Hexane:*i*-PrOH = 97:3, 1.0 mL/min, UV = 254 nm. Retention time (min): 14.5 (minor) and 19.4 (major).

$[\alpha]_D^{20}$ = -67.72 (c = 1.0, $CHCl_3$, 86:14 er).

(*S*)-*N*-(1-(naphthalen-2-yl)-2-phenylethyl)aniline (3am)



Following the general reaction procedure A, **3am** was obtained from the benzaldehyde hydrazone (**1a,** 34 μL, 0.3 mmol, 1.5 equiv.) and 1-(naphthalen-2-yl)-*N*-phenylmethanimine (**2w**, 46.2 mg, 0.2 mmol, 1.0 equiv.), as a yellowish green solid (47.1 mg, 73%, 92:8 er), mp. 99-101 °C.

R_f= 0.68 (Petroleum ether/Dichloromethane = 1:1).

FT-IR (neat, cm^{-1}) 3408, 3051, 2918, 2851, 1601, 1506, 1316, 1265, 815, 747, 692, 478.

^{1}H NMR (300 MHz, $CDCl_3$) δ 7.78 (dd, *J* = 14.7, 7.1 Hz, 4H), 7.54-7.36 (m, 3H), 7.32-7.18 (m, 3H), 7.18-7.08 (m, 2H), 7.02 (t, *J* = 7.9 Hz, 2H), 6.60 (t, *J* = 7.3 Hz, 1H), 6.48 (d, *J* = 7.7 Hz, 2H), 4.82-4.66 (m, 1H), 4.20 (s, 1H), 3.22 (dd, *J* = 14.0, 5.6 Hz, 1H), 3.07 (dd, *J* = 14.0, 8.3 Hz, 1H).

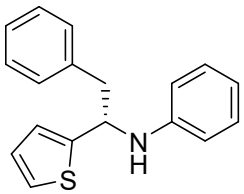
^{13}C NMR (126 MHz, $CDCl_3$) δ 147.4, 141.2, 137.7, 133.7, 133.0, 129.4, 129.2, 128.7, 128.5, 128.0, 127.8, 126.9, 126.1, 125.7, 125.3, 124.9, 117.7, 113.9, 59.6, 45.3.

HRMS(ESI, *m/z*), calcd for $C_{24}H_{22}N^+$ $[M+H]^+$, 324.1747; found, 324.1745.

HPLC analysis: Chiracel OD-H, *n*-Hexane:*i*-PrOH = 98:2, 1.0 mL/min, UV = 254 nm. Retention time (min): 12.2 (minor) and 16.2 (major).

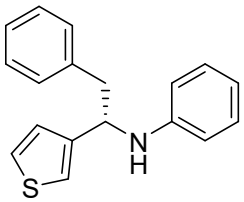
$[\alpha]_D^{20}$ = -61.42 (c = 1.0, $CHCl_3$, 92:8 er).

(*S*)-*N*-(2-phenyl-1-(thiophen-2-yl)ethyl)aniline (3an)



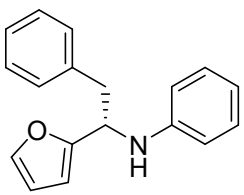
Following the general reaction procedure A, **3an** was obtained from the benzaldehyde hydrazone (**1a,** 34 μL, 0.3 mmol, 1.5 equiv.) and *N*-phenyl-1-(thiophen-2-yl)methanimine (**2r**, 37.4 mg, 0.2 mmol, 1.0 equiv.), as a yellowish oil (42.7 mg, 77%, 91:9 er).
R_f= 0.75 (Petroleum ether/Dichloromethane = 1:1).
FT-IR (neat, cm^{-1}) 3403, 3026, 2921, 2851, 1601, 1506, 1312, 1265, 749, 692.
^{1}H NMR (400 MHz, $CDCl_3$) δ 7.24 (dd, *J* = 16.6, 5.1 Hz, 4H), 7.11 (dd, *J* = 18.2, 7.7 Hz, 4H), 6.90 (dd, *J* = 4.7, 3.4 Hz, 1H), 6.85 (s, 1H), 6.68 (t, *J* = 6.8 Hz, 1H), 6.57 (d, *J* = 6.9 Hz, 2H), 4.90 (s, 1H), 4.10 (s, 1H), 3.19 (s, 1H), 3.18 (s, 1H).
^{13}C NMR (101 MHz, $CDCl_3$) δ 148.6, 147.1, 137.5, 129.4, 129.3, 128.7, 127.0, 126.9, 123.94, 123.90, 118.2, 113.9, 55.6, 45.3.
HRMS(ESI, *m/z*), calcd for $C_{18}H_{18}NS^+$ $[M+H]^+$, 280.1155; found, 280.1155.
HPLC analysis: Chiracel OD-H, *n*-Hexane:*i*-PrOH = 98:2, 1.0 mL/min, UV = 254 nm. Retention time (min): 10.8 (minor) and 12.2 (major).
$[\alpha]_D^{20}$ = -39.20 (c = 1.0, $CHCl_3$, 91:9 er).

(*S*)-*N*-(2-phenyl-1-(thiophen-3-yl)ethyl)aniline (3ao)



Following the general reaction procedure A, **3ao** was obtained from the benzaldehyde hydrazone (**1a,** 34 μL, 0.3 mmol, 1.5 equiv.) and *N*-phenyl-1-(thiophen-3-yl)methanimine (**2s**, 37.4 mg, 0.2 mmol, 1.0 equiv.), as a colorless oil (39.1 mg, 70%, 89:11 er).
R_f= 0.70 (Petroleum ether/Dichloromethane = 1:1).
FT-IR (neat, cm^{-1}) 3406, 3051, 3025, 2922, 1601, 1503, 1316, 1264, 844, 827, 749, 692.
^{1}H NMR (500 MHz, $CDCl_3$) δ 7.30-7.18 (m, 4H), 7.08 (d, *J* = 6.1 Hz, 4H), 7.06-6.97 (m, 2H), 6.65 (t, *J* = 7.2 Hz, 1H), 6.52 (d, *J* = 7.9 Hz, 2H), 4.73 (t, *J* = 6.5 Hz, 1H), 4.03 (s, 1H), 3.14 (dd, *J* = 14.8, 7.2 Hz, 1H), 3.12-3.05 (m, 1H).
^{13}C NMR (126 MHz, $CDCl_3$) δ 147.4, 144.8, 137.7, 129.4, 129.2, 128.6, 126.8, 126.3, 126.1, 121.1, 117.8, 113.7, 55.4, 44.0.
HRMS(ESI, *m/z*), calcd for $C_{18}H_{18}NS^+$ $[M+H]^+$, 280.1155; found, 280.1155.
HPLC analysis: Chiracel OD-H, *n*-Hexane:*i*-PrOH = 96:4, 1.0 mL/min, UV = 254 nm. Retention time (min): 8.8 (minor) and 10.7 (major).
$[\alpha]_D^{20}$ = -9.49 (c = 1.0, $CHCl_3$, 89:11 er).

(*S*)-*N*-(1-(furan-2-yl)-2-phenylethyl)aniline (3ap)



Following the general reaction procedure A, **3ap** was obtained from the benzaldehyde hydrazone (**1a,** 34 μL, 0.3 mmol, 1.5 equiv.) and 1-(furan-2-yl)-*N*-phenylmethanimine (**2t**, 34.2 mg, 0.2 mmol, 1.0 equiv.), as a yellow oil (36.2 mg, 69%, 91:9 er).
R_f= 0.65 (Petroleum ether/Dichloromethane = 1:1).
FT-IR (neat, cm^{-1}) 3027, 1602, 1507, 1264, 1010, 749, 691.

^{1}H NMR (500 MHz, $CDCl_3$) δ 7.36 (s, 1H), 7.22 (dq, *J* = 14.4, 7.1 Hz, 3H), 7.12 (t, *J* = 7.9 Hz, 2H), 7.05 (d, *J* = 7.1 Hz, 2H), 6.69 (t, *J* = 7.3 Hz, 1H), 6.58 (d, *J* = 7.8 Hz, 2H), 6.30-6.18 (m, 1H), 6.03 (d, *J* = 2.4 Hz, 1H), 4.75 (t, *J* = 5.9 Hz, 1H), 3.95 (s, 1H), 3.24-3.19 (m, 1H), 3.17 (dd, *J* = 12.8, 5.6 Hz, 1H).

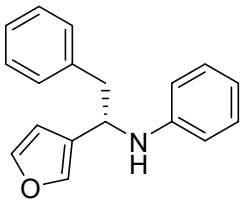
^{13}C NMR (126 MHz, $CDCl_3$) δ 155.3, 147.0, 141.6, 137.4, 129.4, 129.3, 128.5, 126.8, 118.1, 113.8, 110.4, 106.9, 53.2, 41.0.

HRMS(ESI, *m/z*), calcd for $C_{18}H_{18}ON^+$ $[M+H]^+$, 264.1383; found, 264.1383.

HPLC analysis: Chiracel OD-H, *n*-Hexane:*i*-PrOH = 99:1, 1.0 mL/min, UV = 254 nm. Retention time (min): 8.8 (minor) and 9.9 (major).

$[\alpha]_D^{20}$ = -33.03 (c = 1.0, $CHCl_3$, 91:9 er).

(*S*)-*N*-(1-(furan-3-yl)-2-phenylethyl)aniline (3aq)



Following the general reaction procedure A, **3aq** was obtained from the benzaldehyde hydrazone (**1a,** 34 μL, 0.3 mmol, 1.5 equiv.) and 1-(furan-3-yl)-*N*-phenylmethanimine (**2u**, 34.2 mg, 0.2 mmol, 1.0 equiv.), as a yellow oil (32.6 mg, 62%, 91:9 er).

R_f= 0.64 (Petroleum ether/Dichloromethane = 1:1).

FT-IR (neat, cm^{-1}) 3419, 3027, 2923, 1602, 1506, 1312, 1267, 749, 692.

^{1}H NMR (500 MHz, $CDCl_3$) δ 7.34 (d, *J* = 1.1 Hz, 1H), 7.26 (t, *J* = 7.3 Hz, 2H), 7.23-7.16 (m, 2H), 7.12 (t, *J* = 8.1 Hz, 4H), 6.68 (t, *J* = 7.2 Hz, 1H), 6.57 (d, *J* = 8.0 Hz, 2H), 6.30 (s, 1H), 4.63 (t, *J* = 6.4 Hz, 1H), 3.88 (s, 1H), 3.10 (dd, *J* = 13.5, 6.6 Hz, 1H), 3.08-3.02 (m, 1H).

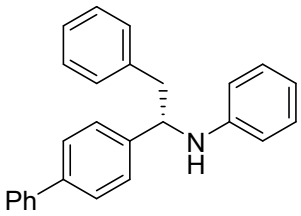
^{13}C NMR (126 MHz, $CDCl_3$) δ 147.3, 143.3, 139.8, 137.7, 129.5, 129.3, 128.6, 127.6, 126.8, 117.8, 113.8, 109.2, 51.4, 43.1.

HRMS(ESI, *m/z*), calcd for $C_{18}H_{18}ON^+$ $[M+H]^+$, 264.1383; found, 264.1383.

HPLC analysis: Chiracel OD-H, *n*-Hexane:*i*-PrOH = 96:4, 1.0 mL/min, UV = 254 nm. Retention time (min): 8.6 (minor) and 10.0 (major).

$[\alpha]_D^{20}$ = -12.57 (c = 1.0, $CHCl_3$, 91:9 er).

(*S*)-*N*-(1-([1,1'-biphenyl]-4-yl)-2-phenylethyl)aniline (3ar)



Following the general reaction procedure A, **3ar** was obtained from the benzaldehyde hydrazone (**1a,** 34 μL, 0.3 mmol, 1.5 equiv.) and 1-([1,1'-biphenyl]-4-yl)-*N*-phenylmethanimine (**2x**, 51.4 mg, 0.2 mmol, 1.0 equiv.), as a white solid (39.1 mg, 56%, 93:7 er), mp. 173-174 °C.

R_f= 0.75 (Petroleum ether/Dichloromethane = 1:1).

FT-IR (neat, cm^{-1}) 3415, 3053, 3026, 2922, 1600, 1506, 1318, 1274, 764, 749, 694.

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.58 (d, *J* = 7.7 Hz, 2H), 7.54 (d, *J* = 8.2 Hz, 2H), 7.41 (dd, *J* = 16.5, 7.9 Hz, 4H), 7.35-7.25 (m, 3H), 7.25-7.19 (m, 1H), 7.15 (d, *J* = 7.0 Hz, 2H), 7.06 (t, *J* = 7.9 Hz, 2H), 6.63 (t, *J* = 7.3 Hz, 1H), 6.48 (d, *J* = 7.8 Hz, 2H), 4.63 (dd, *J* = 7.9, 5.9 Hz, 1H), 4.14 (s, 1H), 3.17 (dd, *J* = 14.0, 5.6 Hz, 1H), 3.04 (dd, *J* = 14.0, 8.3 Hz, 1H).

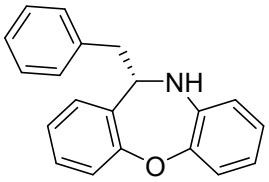
^{13}C NMR (101 MHz, $CDCl_3$) δ 147.4, 142.7, 141.0, 140.0, 137.8, 129.4, 129.2, 128.9, 128.7, 127.4, 127.3, 127.2, 127.0, 126.9, 117.7, 113.8, 59.1, 45.3.

HRMS(ESI, *m/z*), calcd for $C_{26}H_{24}N^+$ $[M+H]^+$, 350.1903; found, 350.1901.

HPLC analysis: Chiracel OD-H, *n*-Hexane:*i*-PrOH = 97:3, 1.0 mL/min, UV = 254 nm. Retention time (min): 11.0 (minor) and 13.7 (major).

$[\alpha]_D^{20}$ = -36.88 (c = 1.0, $CHCl_3$, 93:7 er).

(*S*)-11-benzyl-10,11-dihydrodibenzo[*b*,*f*][1,4]oxazepine (3as)



Following the general reaction procedure A, **3as** was obtained from the benzaldehyde hydrazone (**1a,** 34 μL, 0.3 mmol, 1.5 equiv.) and dibenzo[*b*,*f*][1,4]oxazepine (**2aa**, 39.0 mg, 0.2 mmol, 1.0 equiv.), as a white solid (18.9 mg, 33%, 83:17 er), mp. 176-177 °C.

R_f= 0.56 (Petroleum ether/Dichloromethane = 1:1).

FT-IR (neat, cm^{-1}) 2919, 1506, 1490, 1266, 745.

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.35-7.27 (m, 2H), 7.27-7.22 (m, 2H), 7.22-7.15 (m, 3H), 7.15-7.09 (m, 2H), 7.05 (td, *J* = 7.4, 1.2 Hz, 1H), 6.88-6.79 (m, 1H), 6.73-6.64 (m, 1H), 6.45 (dd, *J* = 7.9, 1.4 Hz, 1H), 4.56 (dd, *J* = 9.9, 4.9 Hz, 1H), 3.95 (s, 1H), 3.42 (dd, *J* = 13.5, 10.0 Hz, 1H), 3.30 (dd, *J* = 13.5, 5.0 Hz, 1H).

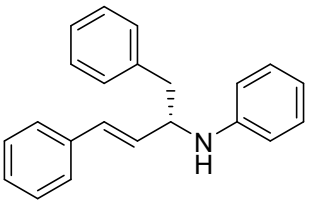
^{13}C NMR (101 MHz, $CDCl_3$) δ 157.3, 144.1, 138.9, 137.5, 133.7, 129.5, 129.2, 128.8, 127.6, 126.7, 124.6, 124.4, 121.9, 121.3, 119.2, 118.9, 59.5, 41.7.

HRMS(ESI, *m/z*), calcd for $C_{20}H_{18}ON^+$ $[M+H]^+$, 288.1383; found, 288.1380.

HPLC analysis: Chiracel OD-H, *n*-Hexane:*i*-PrOH = 97:3, 1.0 mL/min, UV = 254 nm. Retention time (min): 9.2 (minor) and 10.5 (major).

$[\alpha]_D^{20}$ = -117.33 (c = 1.0, $CHCl_3$, 83:17 er).[7]

(*S*,*E*)-*N*-(1,4-diphenylbut-3-en-2-yl)aniline (3at)



Following the general reaction procedure A, **3at** was obtained from the benzaldehyde hydrazone (**1a,** 34 μL, 0.3 mmol, 1.5 equiv.) and *N*,3-diphenylprop-2-en-1-imine (**2y**, 41.4 mg, 0.2 mmol, 1.0 equiv.), as a yellow oil (18.5 mg, 31%, 78:22 er).

R_f= 0.58 (Petroleum ether/Dichloromethane = 1:1).

FT-IR (neat, cm^{-1}) 3566, 1601, 1502, 1265, 745, 692.

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.30 (dd, *J* = 12.3, 5.0 Hz, 6H), 7.24-7.18 (m, 4H), 7.14 (t, *J* = 7.9 Hz, 2H), 6.68 (t, *J* = 7.3 Hz, 1H), 6.63 (d, *J* = 7.8 Hz, 2H), 6.54 (d, *J* = 16.0 Hz, 1H), 6.19 (dd, *J* = 15.9, 6.0 Hz, 1H), 4.28 (q, *J* = 6.2 Hz, 1H), 3.80 (s, 1H), 3.03 (dd, *J* = 11.7, 4.4 Hz, 1H), 2.98 (dd, *J* = 11.7, 4.8 Hz, 1H).

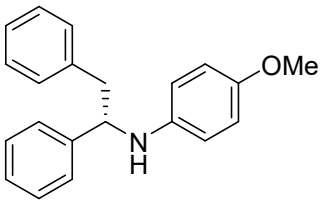
^{13}C NMR (101 MHz, $CDCl_3$) δ 147.5, 137.7, 137.1, 131.5, 130.6, 129.6, 129.3, 128.67, 128.65, 127.5, 126.8, 126.5, 117.7, 113.8, 56.6, 42.5.

HRMS(ESI, *m/z*), calcd for $C_{22}H_{22}N^+$ $[M+H]^+$, 300.1747; found, 300.1745.

HPLC analysis: Chiracel OD-H, *n*-Hexane:*i*-PrOH = 97:3, 1.0 mL/min, UV = 254 nm. Retention time (min): 11.7 (minor) and 14.5 (major).

$[\alpha]_D^{20}$ = -10.48 (c = 1.0, $CHCl_3$, 78:22 er).

(*S*)-*N*-(1,2-diphenylethyl)-4-methoxyaniline (3au)



Following the general reaction procedure A, **3au** was obtained from the benzaldehyde hydrazone (**1a,** 34 μL, 0.3 mmol, 1.5 equiv.) and *N*-(4-methoxyphenyl)-1-phenylmethanimine (**2z**, 42.2 mg, 0.2 mmol, 1.0 equiv.), as a yellow oil (9.7 mg, 16%, 87:13 er).

R_f= 0.45 (Petroleum ether/Ethyl acetate = 5:1).

FT-IR (neat, cm^{-1}) 2918, 2322, 1714, 1507, 1260, 750.

^{1}H NMR (500 MHz, $CDCl_3$) δ 7.35-7.16 (m, 8H), 7.12 (d, *J* = 7.1 Hz, 2H), 6.63 (d, *J* = 8.9 Hz, 2H), 6.40 (d, *J* = 8.9 Hz, 2H), 4.50 (dd, *J* = 7.9, 5.9 Hz, 1H), 3.87 (s, 1H), 3.65 (s, 3H), 3.11 (dd, *J* = 13.9, 5.5 Hz, 1H), 2.98 (dd, *J* = 13.9, 8.3 Hz, 1H).

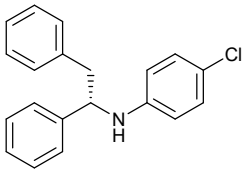
^{13}C NMR (126 MHz, $CDCl_3$) δ 152.2, 143.8, 141.7, 138.0, 129.3, 128.67, 128.65, 127.1, 126.8, 126.6, 115.0, 114.8, 60.2, 55.8, 45.4.

HRMS(ESI, *m/z*), calcd for $C_{21}H_{22}ON^+$ $[M+H]^+$, 304.1696; found, 304.1691.

HPLC analysis: Chiracel OD-H, *n*-Hexane:*i*-PrOH = 90:10, 1.0 mL/min, UV = 254 nm. Retention time (min): 7.1 (major) and 9.4 (minor).

$[\alpha]_D^{20}$ = -69.64 (c = 1.0, $CHCl_3$, 87:13 er).

(*S*)-4-chloro-N-(1,2-diphenylethyl)aniline (3av)



Following the general reaction procedure A, **3av** was obtained from the benzaldehyde hydrazone (**1a,** 34 μL, 0.3 mmol, 1.5 equiv.) and *N*-(4-methoxyphenyl)-1-phenylmethanimine (**2z**, 43.0 mg, 0.2 mmol, 1.0 equiv.), as a yellow oil (25.8 mg, 42%, 88:12 er).

R_f= 0.76 (Petroleum ether/Dichloromethane = 1:1).

FT-IR (neat, cm^{-1}) 3410, 3026, 2918, 1601, 1512, 1265, 750, 699.

^{1}H NMR (500 MHz, $CDCl_3$) δ 7.26 (dt, *J* = 8.8, 6.2 Hz, 8H), 7.16-7.04 (m, 2H), 7.04-6.89 (m, 2H), 6.43-6.25 (m, 2H), 4.54 (dd, *J* = 7.8, 5.9 Hz, 1H), 4.12 (s, 1H), 3.13 (dd, *J* = 14.0, 5.7 Hz, 1H), 2.99 (dd, *J* = 14.0, 8.2 Hz, 1H).

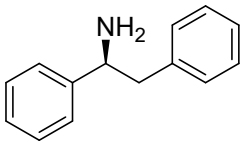
^{13}C NMR (126 MHz, $CDCl_3$) δ 145.88, 142.99, 137.57, 129.31, 128.98, 128.79, 128.73, 127.38, 126.96, 126.55, 122.35, 114.92, 59.49, 45.17.

HRMS(ESI, *m/z*), calcd for $C_{20}H_{19}NCl^+$ $[M+H]^+$, 308.1201; found, 308.1199.

HPLC analysis: Chiracel OD-H, *n*-Hexane:*i*-PrOH = 98:2, 1.0 mL/min, UV = 254 nm. Retention time (min): 10.2 (major) and 12.8 (minor).

$[\alpha]_D^{20}$ = -59.04 (c = 1.0, $CHCl_3$, 88:12 er).

(*S*)-1,2-diphenylethan-1-amine (4)



Following the general reaction procedure of Removal of protective groups in **3au**, 4 was obtained from the (*S*)-*N*-(1,2-diphenylethyl)-4-methoxyaniline (**3au,** 30.3 mg, 0.1 mmol, 1.0 equiv.), as a yellow oil (14.5 mg, 74%, 85:15 er).

R_f= 0.17 (Petroleum ether/Ethyl acetate = 1:1).

FT-IR (neat, cm^{-1}) 2367, 2328, 1942, 1265, 744, 699.

^{1}H NMR (500 MHz, $CDCl_3$) δ 7.34 (q, *J* = 7.6 Hz, 4H), 7.26 (dt, *J* = 19.4, 7.5 Hz, 4H), 7.17 (d, *J* = 7.3 Hz, 2H), 4.19 (dd, *J* = 8.4, 5.1 Hz, 1H), 3.01 (dd, *J* = 13.3, 4.7 Hz, 1H), 2.84 (dd, *J* = 13.1, 9.0 Hz, 1H).

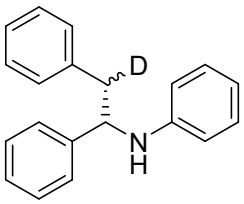
^{13}C NMR (126 MHz, $CDCl_3$) δ 145.6, 139.2, 129.5, 128.6, 127.3, 126.59, 126.53, 57.7, 46.6.

HRMS(ESI, *m/z*), calcd for $C_{14}H_{16}N^+$ $[M+H]^+$, 198.1277; found, 198.1276.

HPLC analysis: Chiracel OD-H, *n*-Hexane:*i*-PrOH:Diethylamine = 89.9:10:0.1, 1.0 mL/min, UV = 220 nm. Retention time (min): 8.3 (major) and 11.9 (minor).

$[\alpha]_D^{20}$ = +7.06 (c = 1.0, $CHCl_3$, 85:15 er).

(*S*)-*N*-(1,2-diphenylethyl-2-*d*)aniline (*d*-3aa)



Following the general reaction procedure of deuterium labeling study, ***d*-3a** was obtained from the benzaldehyde hydrazone (**1a,** 34 μL, 0.3 mmol, 1.5 equiv.) and *N*-benzylideneaniline (**2a**, 36.2 mg, 0.2 mmol, 1.0 equiv.), as a colorless solid (42.5 mg, 78%, 89:11 er), mp. 58-60 °C.

R_f = 0.71 (Petroleum ether/Dichloromethane = 1:1).

FT-IR (neat, cm^{-1}) 3420, 3052, 3027, 1602, 1506, 1317, 1265, 749, 699.

^{1}H NMR (300 MHz, $CDCl_3$) δ 7.31 (dd, *J* = 7.0, 4.7 Hz, 4H), 7.28-7.18 (m, 4H), 7.15-7.08 (m, 2H), 7.08-6.98 (m, 2H), 6.62 (t, *J* = 7.3 Hz, 1H), 6.52-6.40 (m, 2H), 4.57 (d, *J* = 7.9 Hz, 1H), 4.17 (s, 1H), 3.11 (d, *J* = 5.7 Hz, 0.38H), 3.00 (d, *J* = 8.2 Hz, 0.62H).

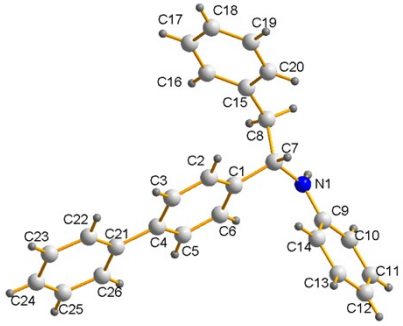
^{13}C NMR (126 MHz, $CDCl_3$) δ 147.4, 143.5, 143.3, 140.4, 129.2, 128.7, 127.3, 126.6, 120.9, 117.7, 113.7, 111.3, 58.0, 34.3.

HRMS(ESI, *m/z*), calcd for $C_{20}H_{19}DN^+$ $[M+H]^+$, 275.1653; found, 275.1649.

HPLC analysis: Chiracel OD-H, *n*-Hexane:*i*-PrOH = 98:2, 1.0 mL/min, UV = 254 nm. Retention time (min): 8.3 (minor) and 10.5 (major).

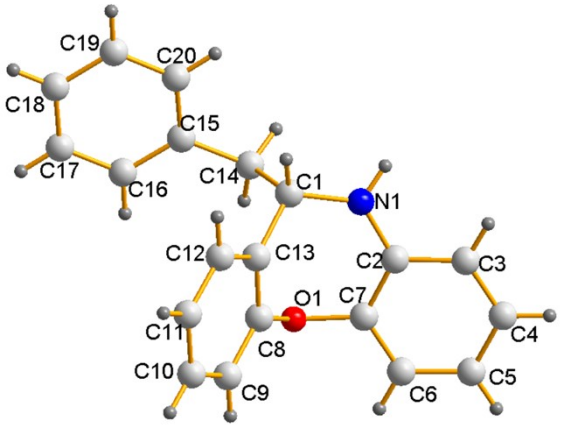
$[\alpha]_D^{20}$ = -32.86 (c = 1.0, $CHCl_3$, 89:11 er).

V. Assignment of Absolute Configuration



Crystal data and structure refinement for **3ar** (CCDC: 2122656)

Identification code **3ar**
Empirical formula C26 H23 N
Formula weight 349.450
Temperature 169.99 K
Wavelength 1.54184 Å
Crystal system Orthorhombic
Space group P 21 21 21
Unit cell dimensions a = 5.7298(1) Å α= 90.000° .
b = 17.2063(3) Å β= 90.000° .
c = 19.1047(4) Å γ= 90.000° .
Volume 1883.51(6) $Å^3$
Z 4
Density (calculated) 1.233 Mg/m3
Absorption coefficient 0.000 mm-1
F(000) 744.00
Crystal size 0.300 x 0.200 x 0.100 mm^3
Theta range for data collection 2.3127 to 75.2141° .
Index ranges -6<=h<=5, -21<=k<=21, -23<=l<=23
Reflections collected 10768
Independent reflections 3711 [R(int) = 0.0420]
Completeness to theta = 66.97° 100.00 %
Absorption correction spherical harmonics
Max. and min. transmission 1.00000 and 0.54811
Refinement method Full-matrix least-squares on F^2
Data / restraints / parameters 3711 / 0 / 244
Goodness-of-fit on F^2 0.535(999)
Final R indices [I>4sigma(I)] R1 = 0.0419, wR2 = 0.1073
R indices (all data) R1 = 0.0474, wR2 = 0.1066
Absolute structure parameter 0.00
Extinction coefficient n/a
Largest diff. peak and hole 0.14 and -0.18 e.$Å^{-3}$

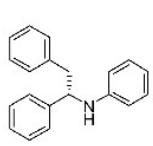


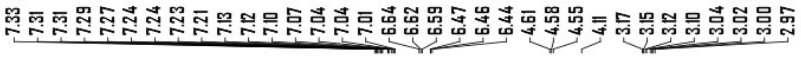
Crystal data and structure refinement for **3as** (CCDC: 2122657)

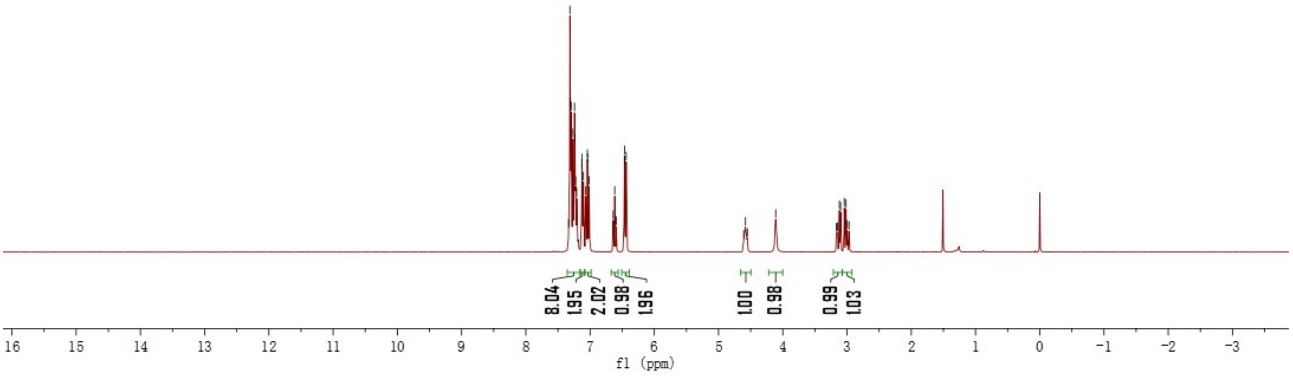
Identification code **3as**
Empirical formula C20 H17 N O
Formula weight 287.350
Temperature 169.97(13) K
Wavelength 1.54184 Å
Crystal system Monoclinic
Space group P 1 21/c 1
Unit cell dimensions a = 14.4749(4) Å α= 90.000° .
b = 5.5880(1) Å β= 103.172(3)° .
c = 18.3790(5) Å γ= 90.000° .
Volume 1447.5(1) $Å^3$
Z 4
Density (calculated) 1.319 Mg/m3
Absorption coefficient 0.000 mm-1
F(000) 608.0
Crystal size 0.300 x 0.100 x 0.050 mm^3
Theta range for data collection 2.4690 to 75.3063° .
Index ranges -17<=h<=17, -6<=k<=6, -22<=l<=22
Reflections collected 17557
Independent reflections 2904 [R(int) = 0.0381]
Completeness to theta = 66.97° 99.93 %
Absorption correction spherical harmonics
Max. and min. transmission 1.00000 and 0.68492
Refinement method Full-matrix least-squares on F^2
Data / restraints / parameters 2904 / 0 / 199
Goodness-of-fit on F^2 0.535(999)
Final R indices [I>4sigma(I)] R1 = 0.0471, wR2 = 0.1239
R indices (all data) R1 = 0.0550, wR2 = 0.1239
Absolute structure parameter 0.02
Extinction coefficient n/a
Largest diff. peak and hole 0.42 and -0.23 e.$Å^{-3}$

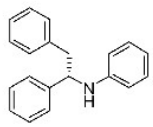
VI. NMR Spectra

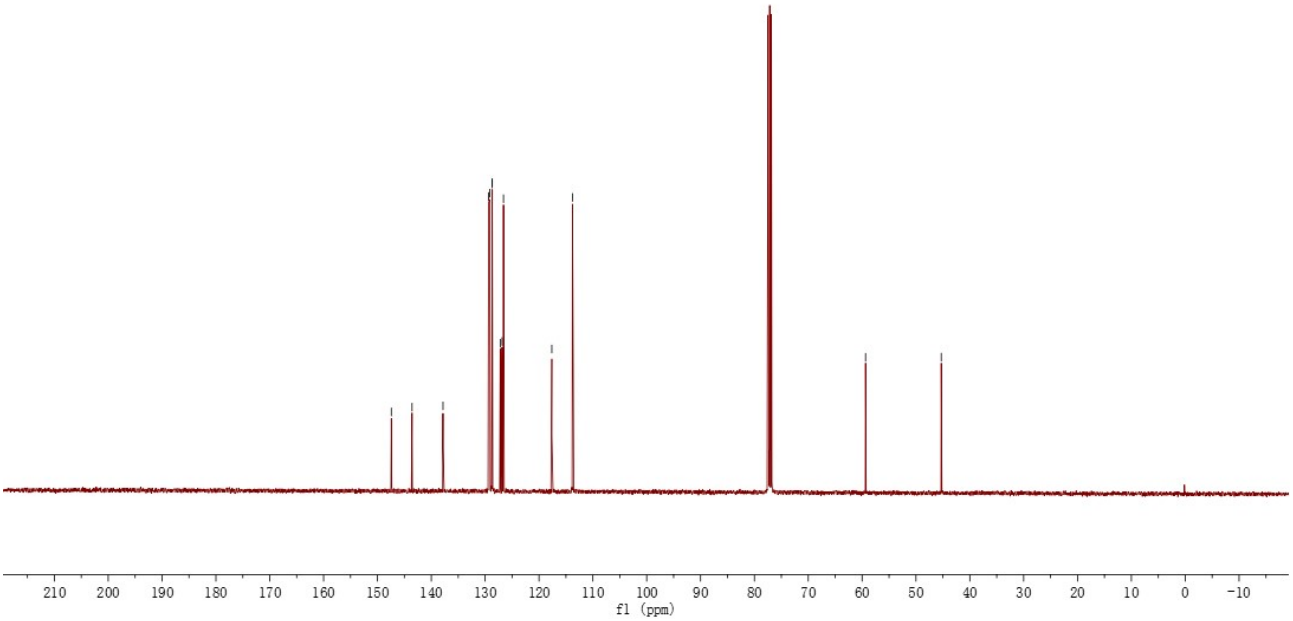
(S) -*N*-(1,2-diphenylethyl)aniline (3aa)



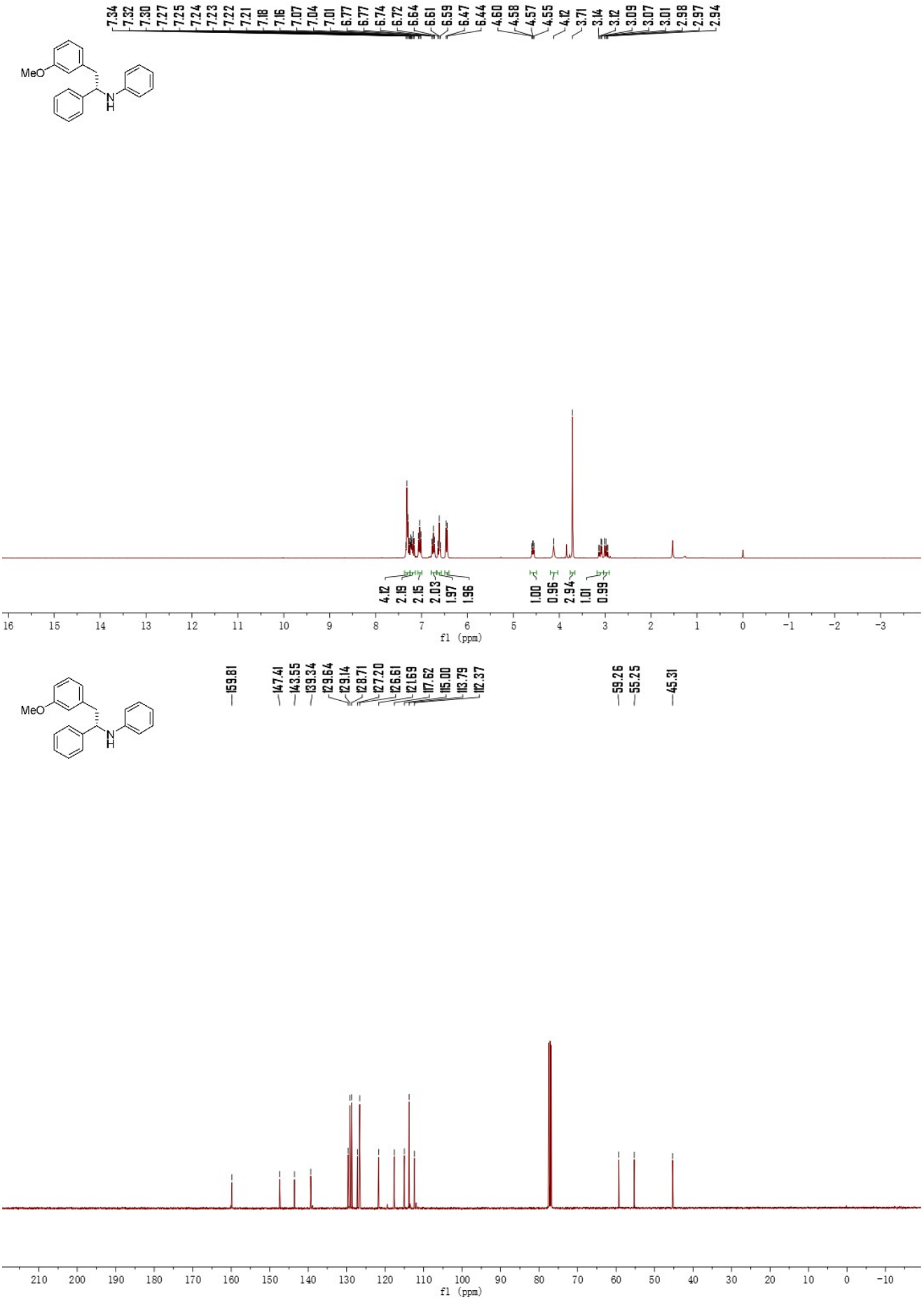




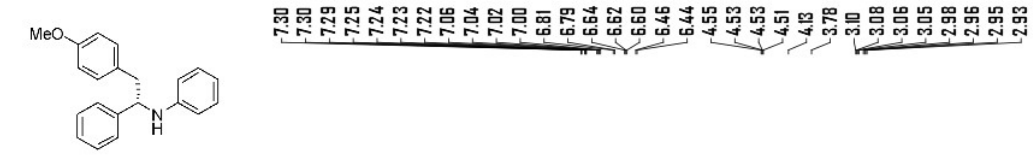


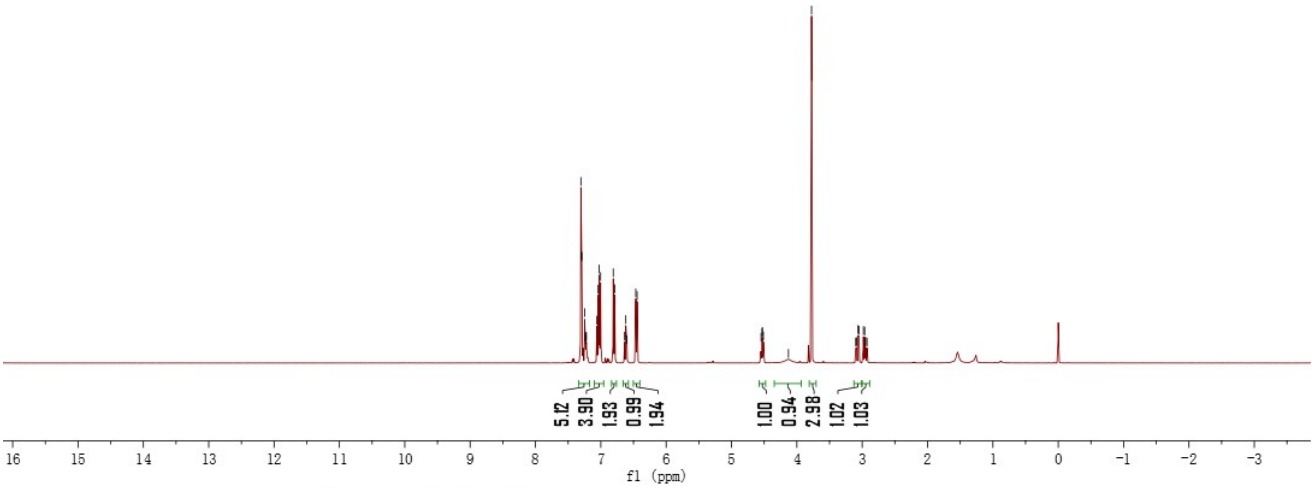


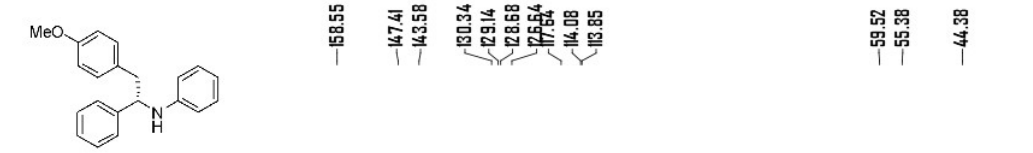
(*S*)-*N*-(2-(3-methoxyphenyl)-1-phenylethyl)aniline (3ba)

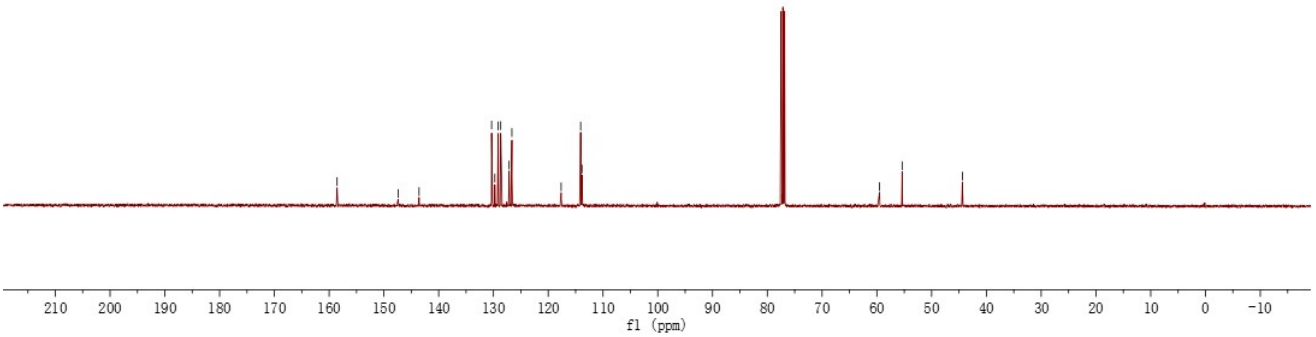


(*S*)-*N*-(2-(4-methoxyphenyl)-1-phenylethyl)aniline (3ca)

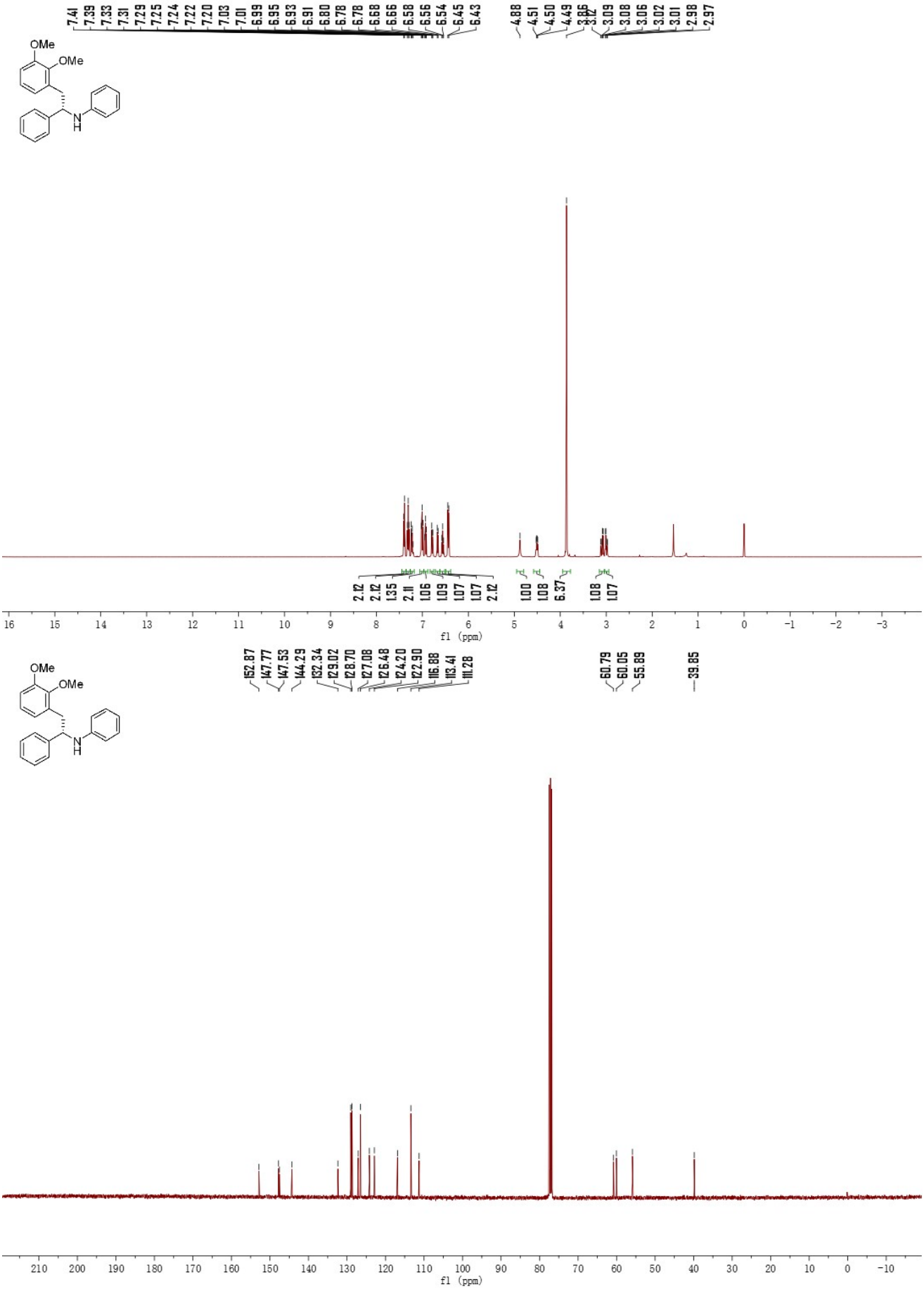




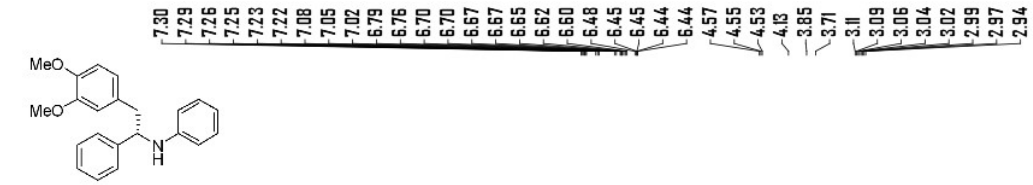


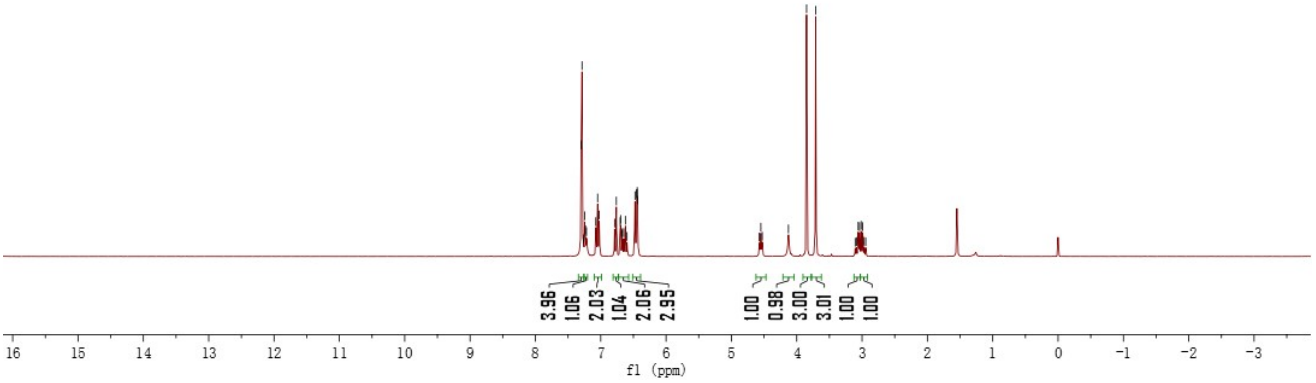


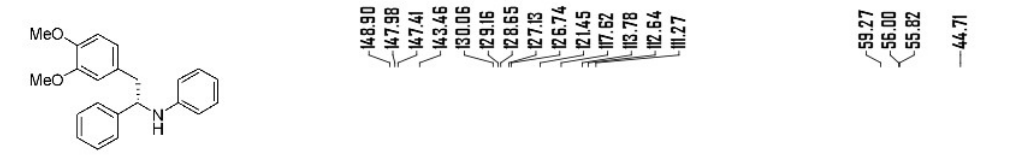
(*S*)-*N*-(2-(2,3-dimethoxyphenyl)-1-phenylethyl)aniline (3da)

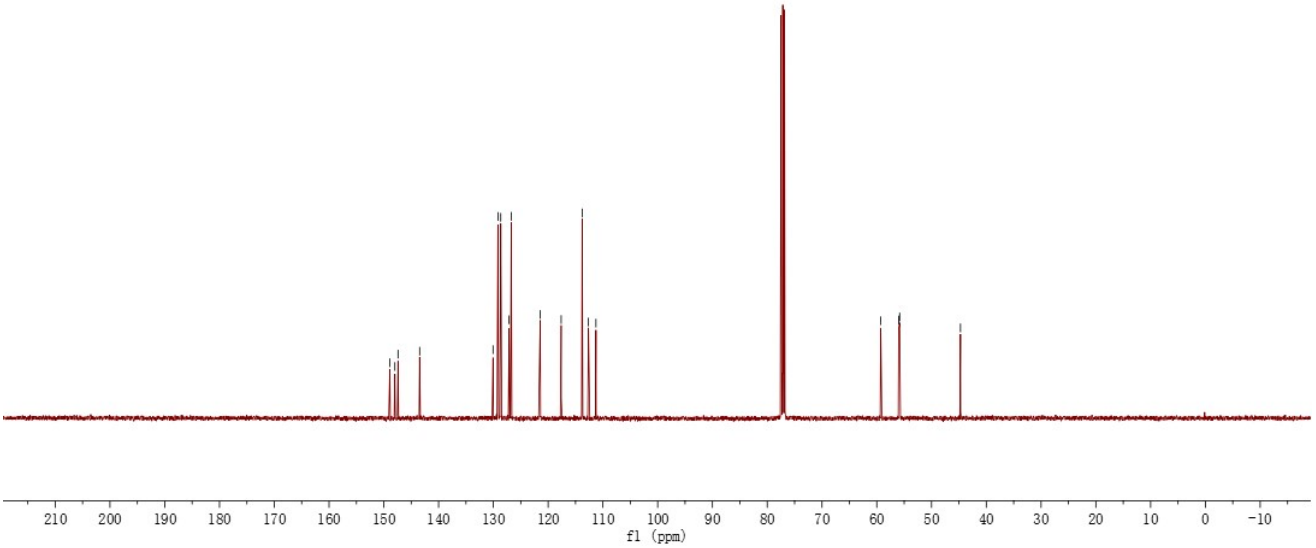


(*S*)-*N*-(2-(3,4-dimethoxyphenyl)-1-phenylethyl)aniline (3ea)

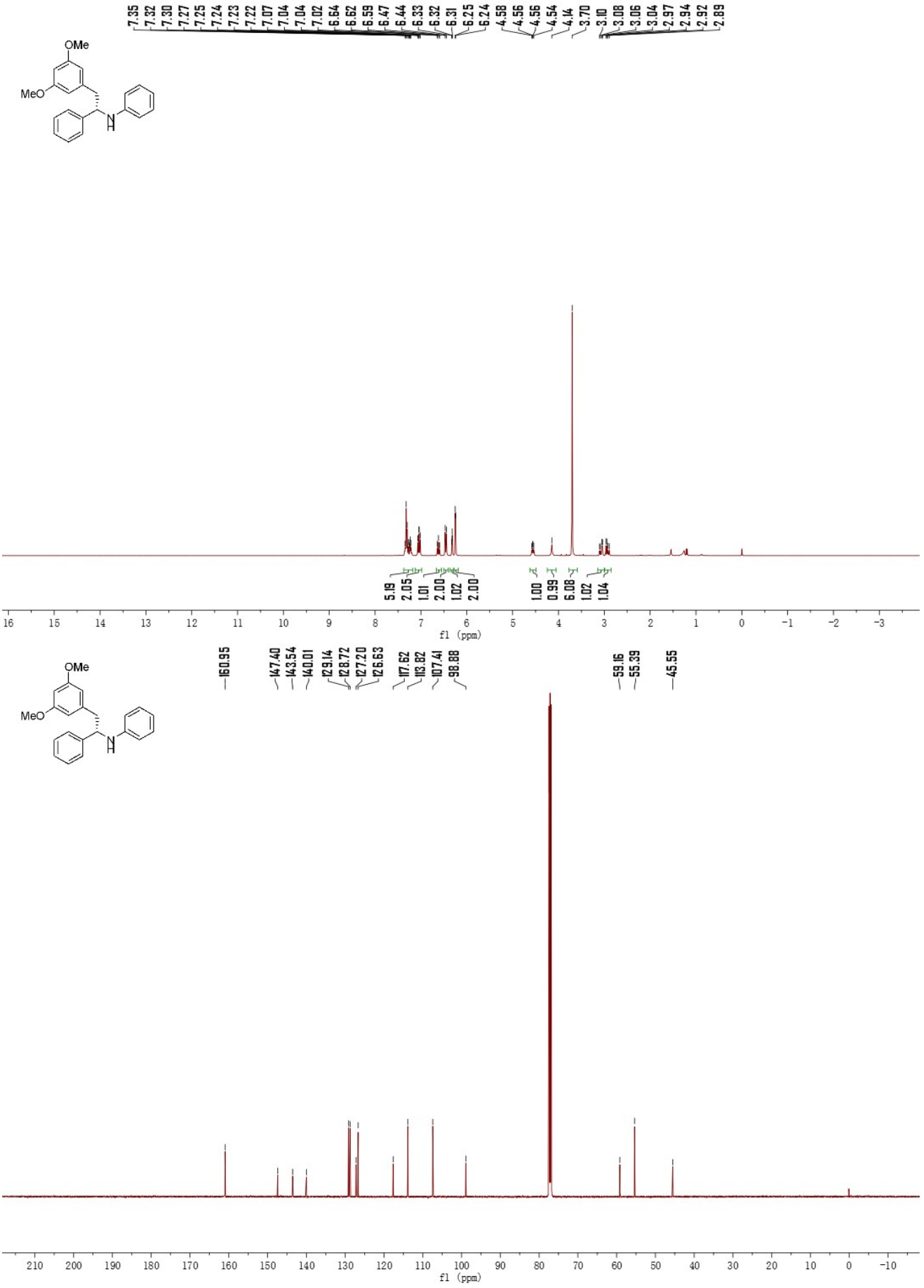




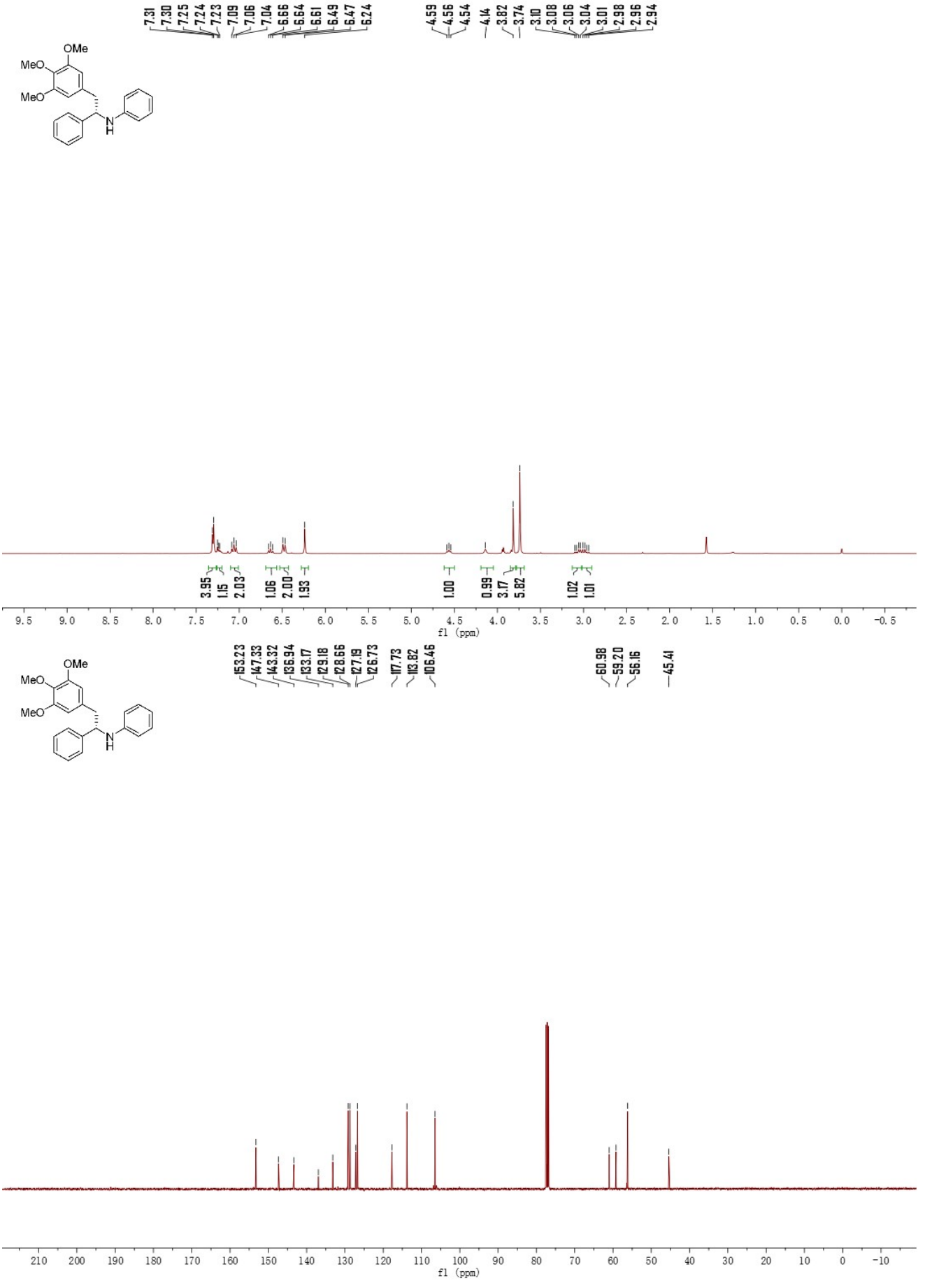




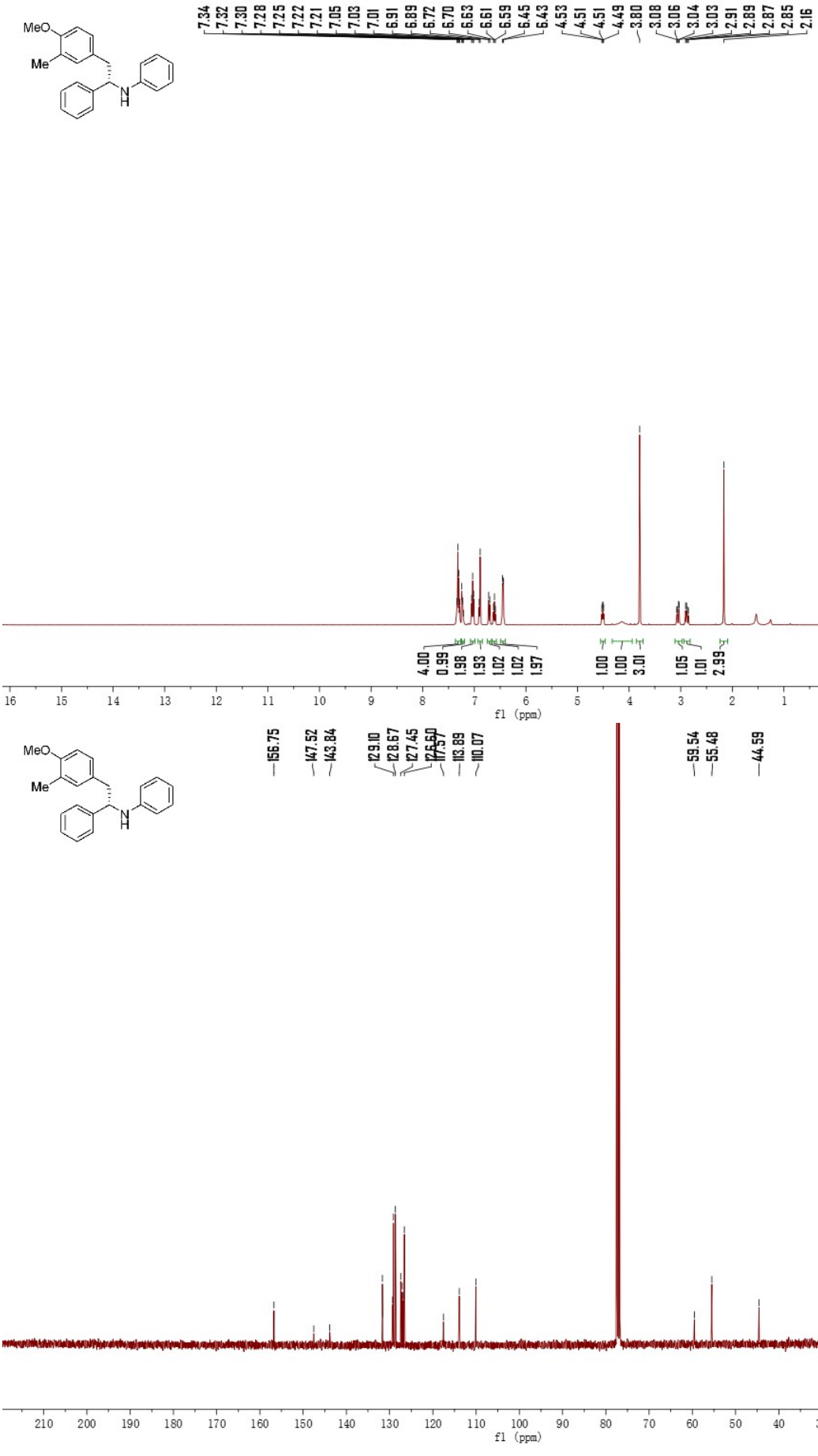
(*S*)-*N*-(2-(3,5-dimethoxyphenyl)-1-phenylethyl)aniline (3fa)



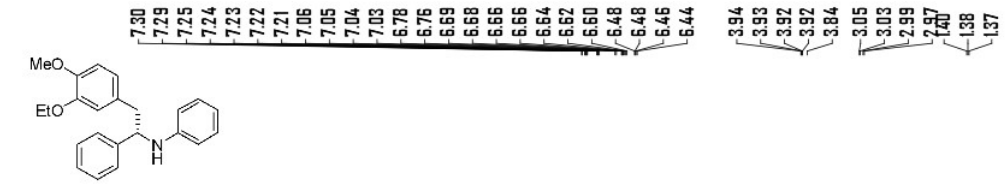
(*S*)-*N*-(1-phenyl-2-(3,4,5-trimethoxyphenyl)ethyl)aniline (3ga)

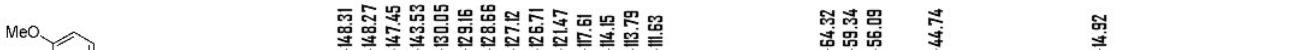


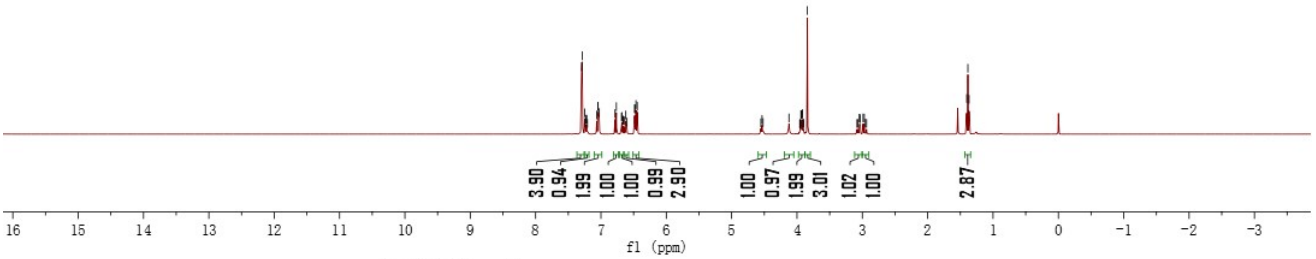
(*S*)-*N*-(2-(4-methoxy-3-methylphenyl)-1-phenylethyl)aniline (3ha)



(*S*)-*N*-(2-(3-ethoxy-4-methoxyphenyl)-1-phenylethyl)aniline (3ia)


7.30
7.29
7.25
7.24
7.23
7.22
7.21
7.06
7.05
7.04
7.03
6.78
6.76
6.69
6.68
6.66
6.66
6.64
6.62
6.60
6.48
6.46
6.44
3.94
3.93
3.92
3.92
3.84
3.05
3.03
2.99
2.97
1.40
1.38
1.37


MeO
EtO
N
H


3.90
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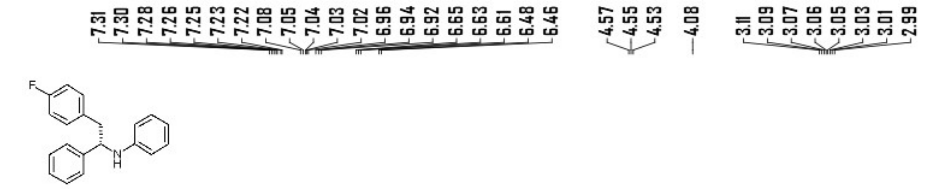
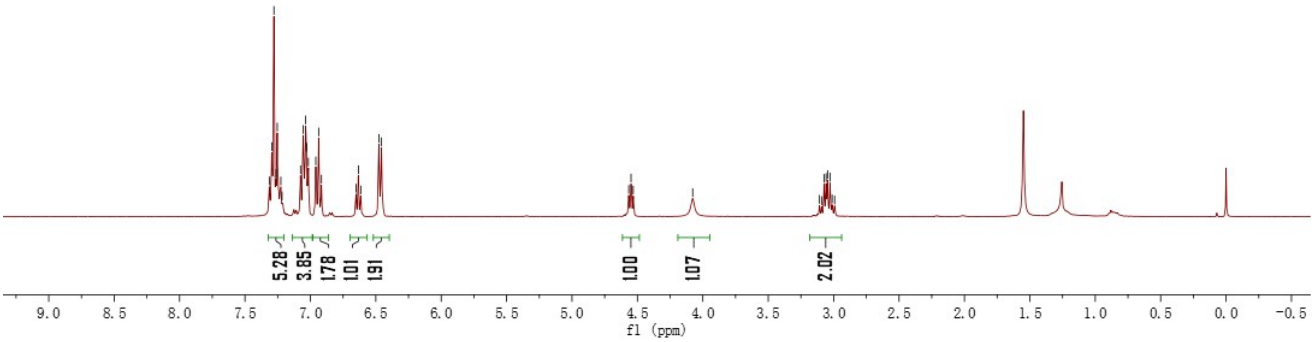
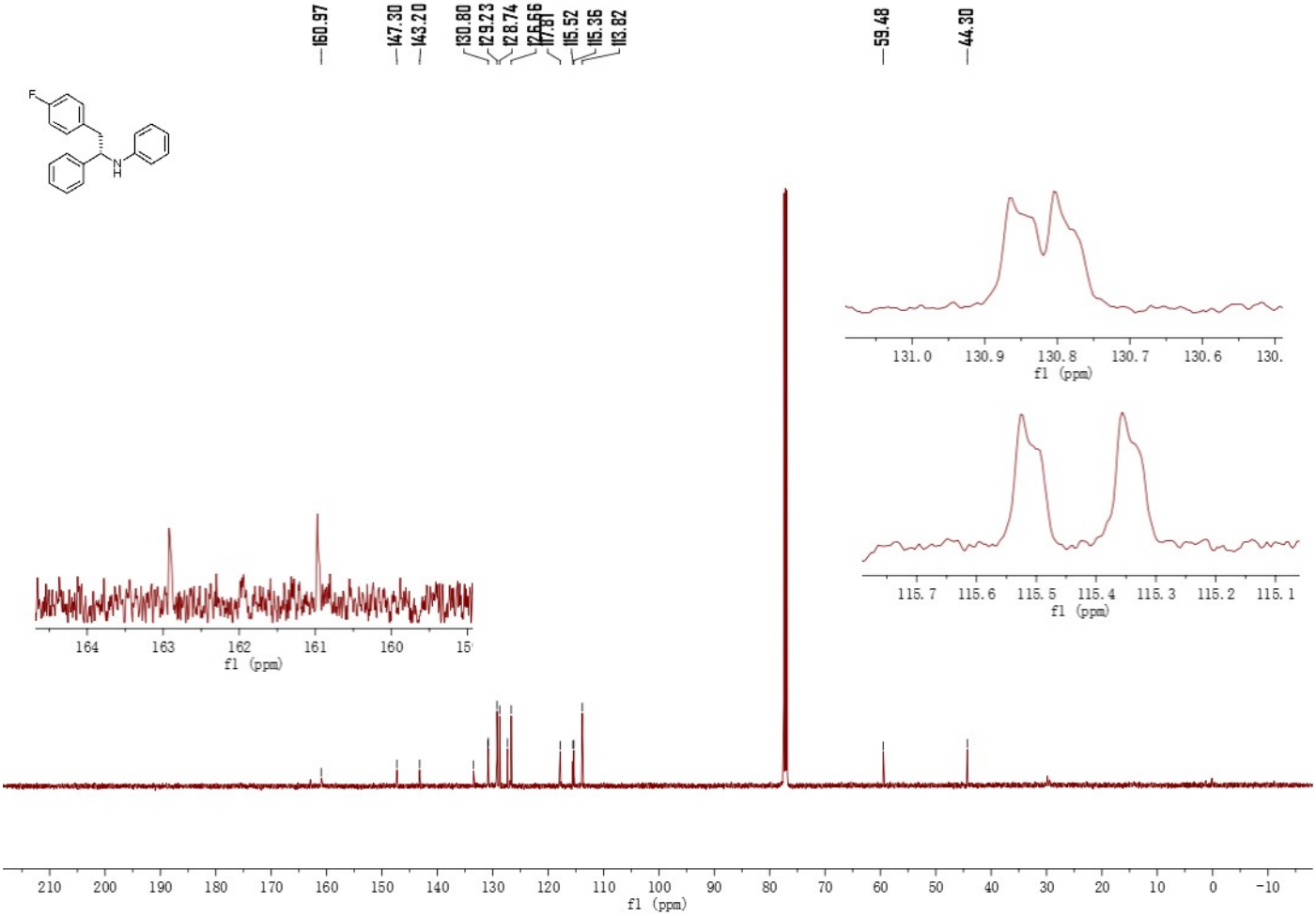
1.99
1.00
1.00
0.99
2.90
1.00
0.97
1.93
3.01
1.02
1.00
2.87
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
−1
−2
−3
f1 (ppm)

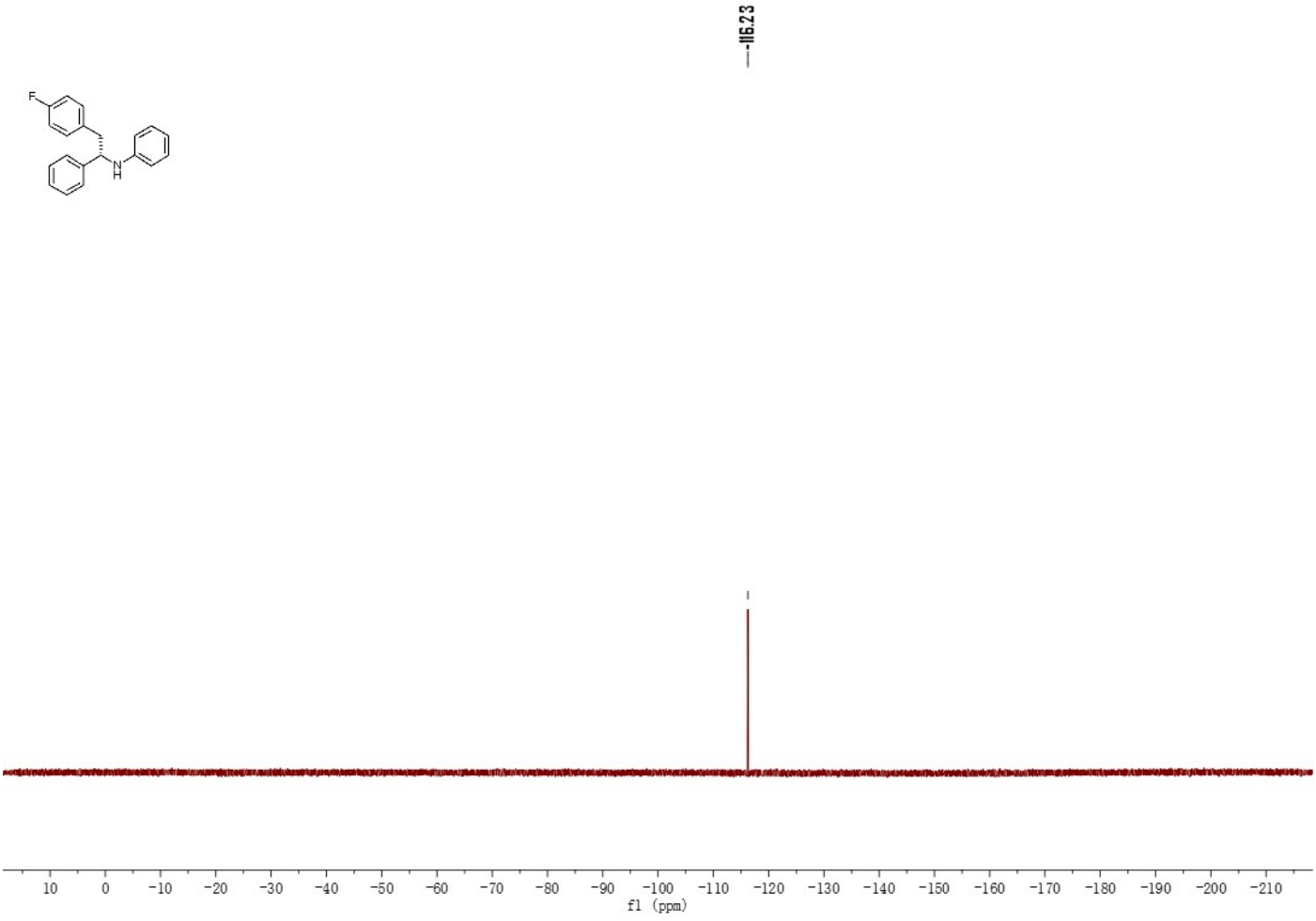
148.31
148.27
147.45
143.53
130.05
129.16
128.66
127.12
126.71
121.47
117.61
114.15
113.79
111.63
64.32
59.34
56.09
44.74
14.92
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
−10
f1 (ppm)

(*S*)-N-(2-(4-fluorophenyl)-1-phenylethyl)aniline (3ja)

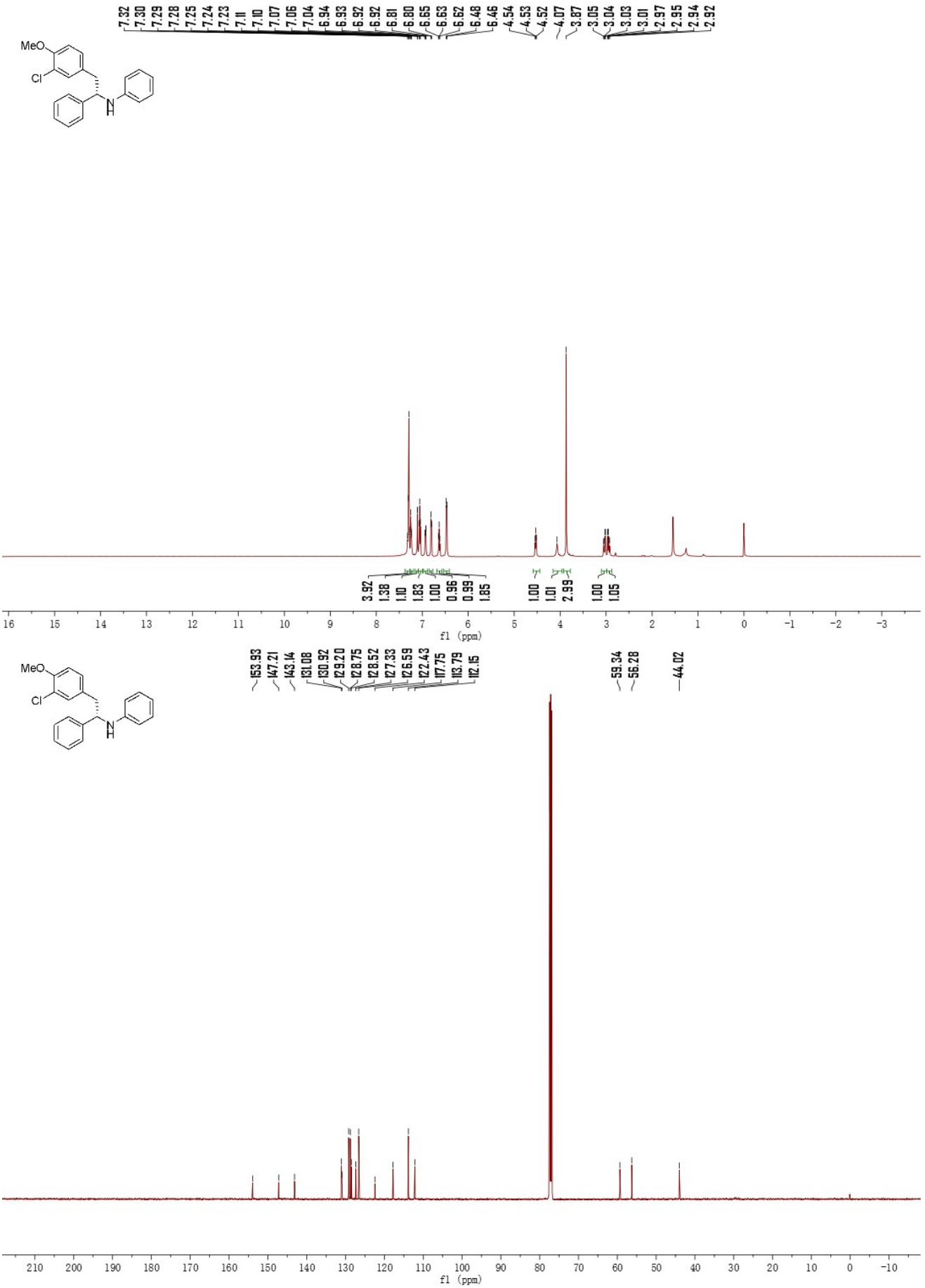




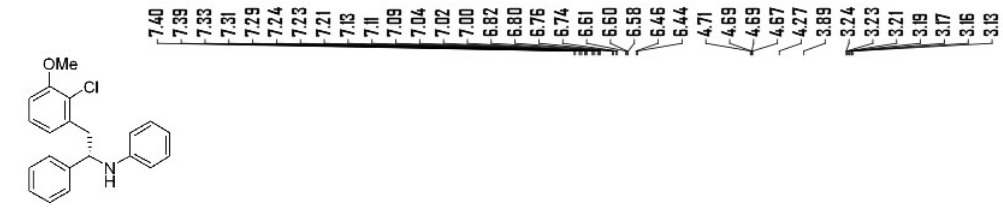


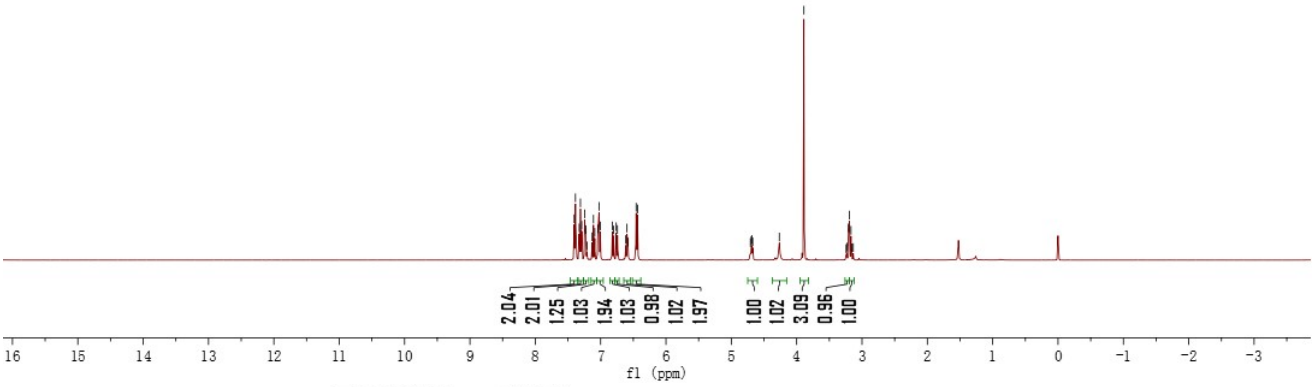


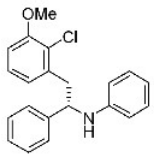
(*S*)-*N*-(2-(3-chloro-4-methoxyphenyl)-1-phenylethyl)aniline (3ka)

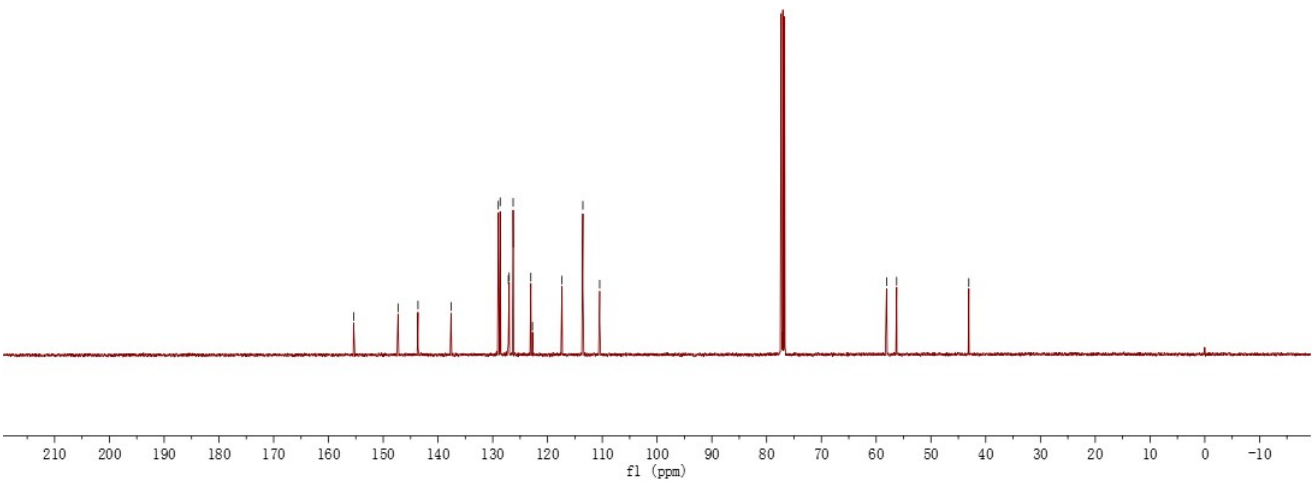


(*S*)-*N*-(2-(2-chloro-3-methoxyphenyl)-1-phenylethyl)aniline (3la)

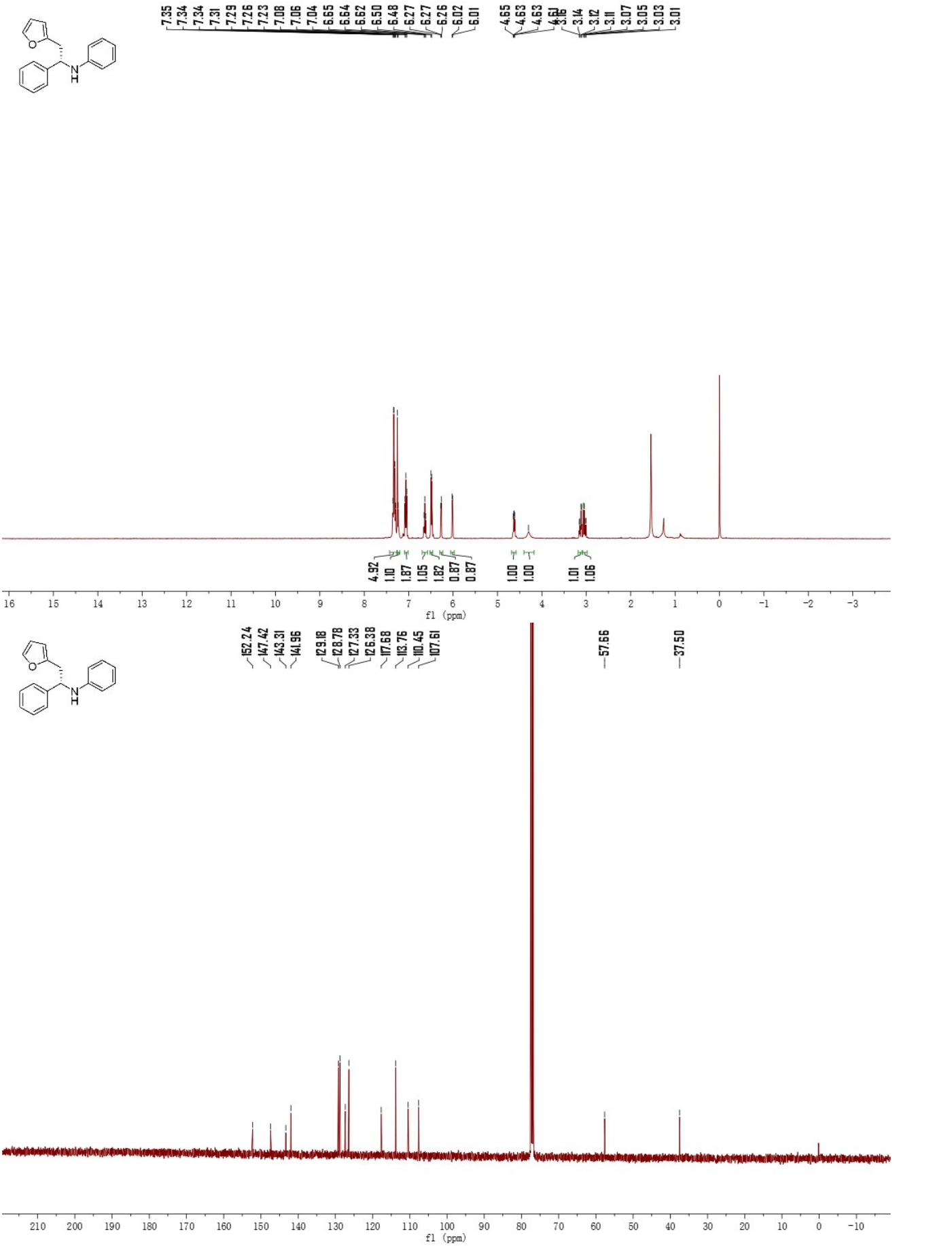




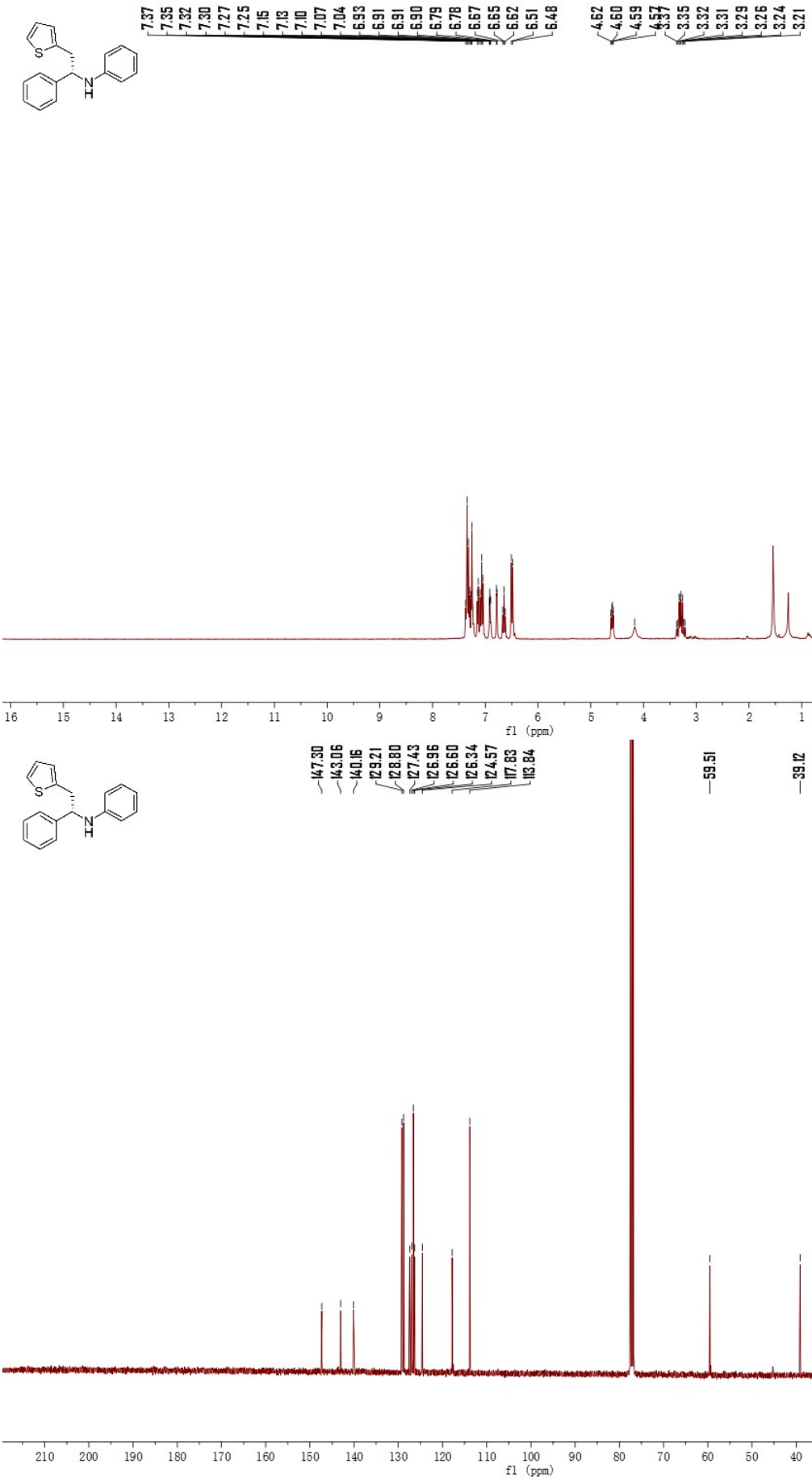




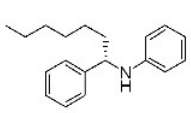
(*S*)-*N*-(2-(furan-2-yl)-1-phenylethyl)aniline (3ma)

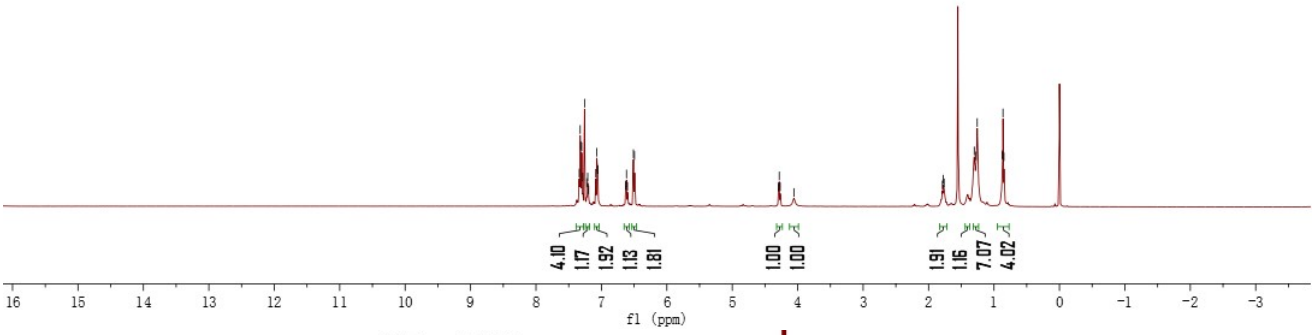


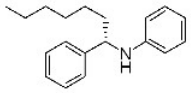
(*S*)-*N*-(1-phenyl-2-(thiophen-2-yl)ethyl)aniline (3na)



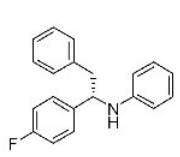
(*S*)-*N*-(1-phenylheptyl)aniline (3oa)







(*S*)-*N*-(1-(4-fluorophenyl)-2-phenylethyl)aniline (3ab)




7.28
7.26
7.24
7.23
7.21
7.21
7.19
7.09
7.07
7.07
7.05
7.03
6.99
6.97
6.95
6.65
6.63
6.62
6.44
6.42
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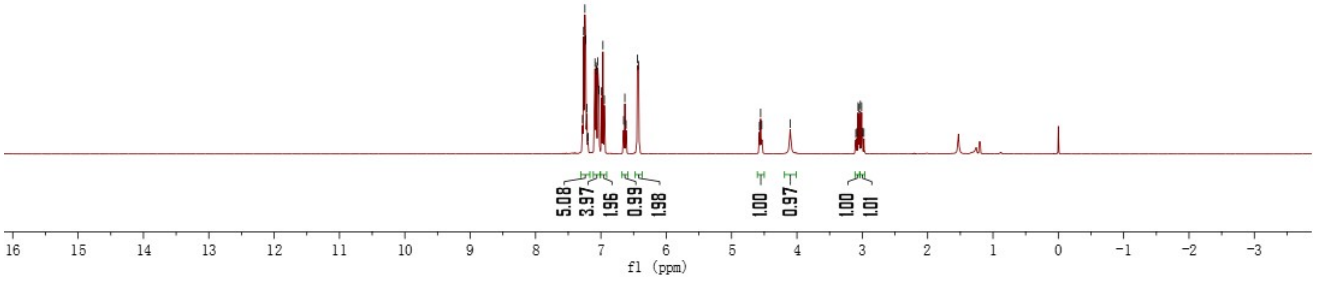
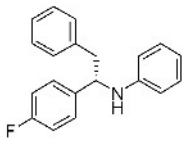
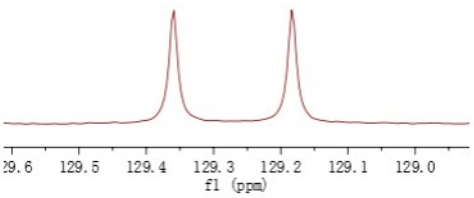
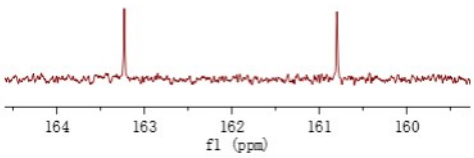
3.06
3.05
3.03
3.01
2.99
2.98

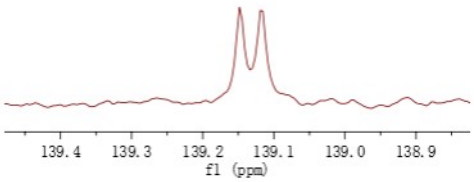

5.08
3.97
1.96
0.99
1.98
1.00
0.97
1.00
1.01
f1 (ppm)

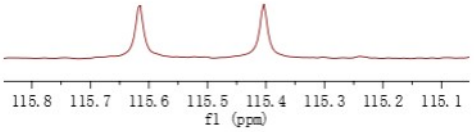

163.23
160.80
147.19
137.49
129.36
129.18
128.71
128.13
128.05
117.62
115.62
115.40
113.80
58.78
45.37



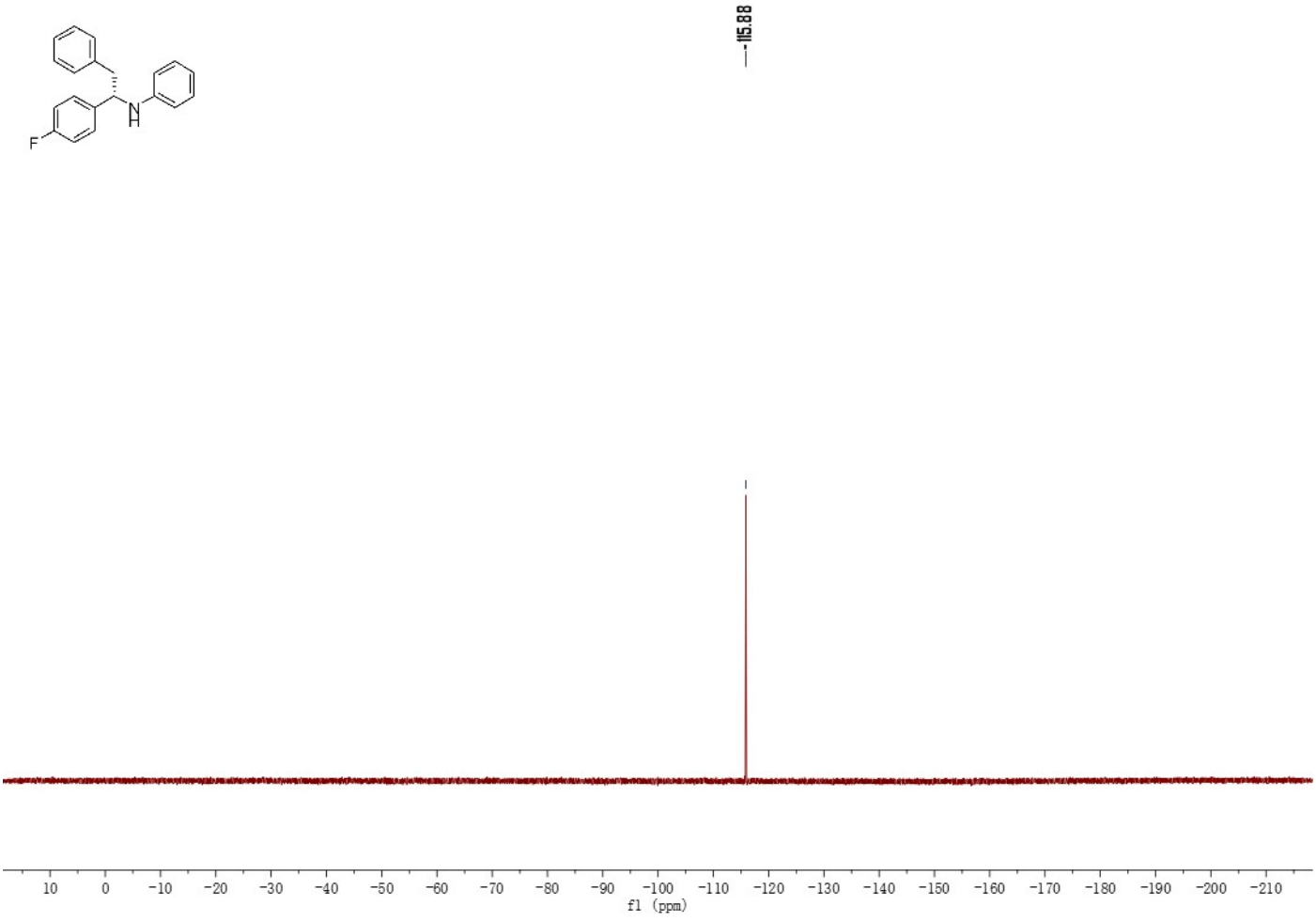

129.6
129.5
129.4
129.3
129.2
129.1
129.0
f1 (ppm)


164
163
162
161
160
f1 (ppm)

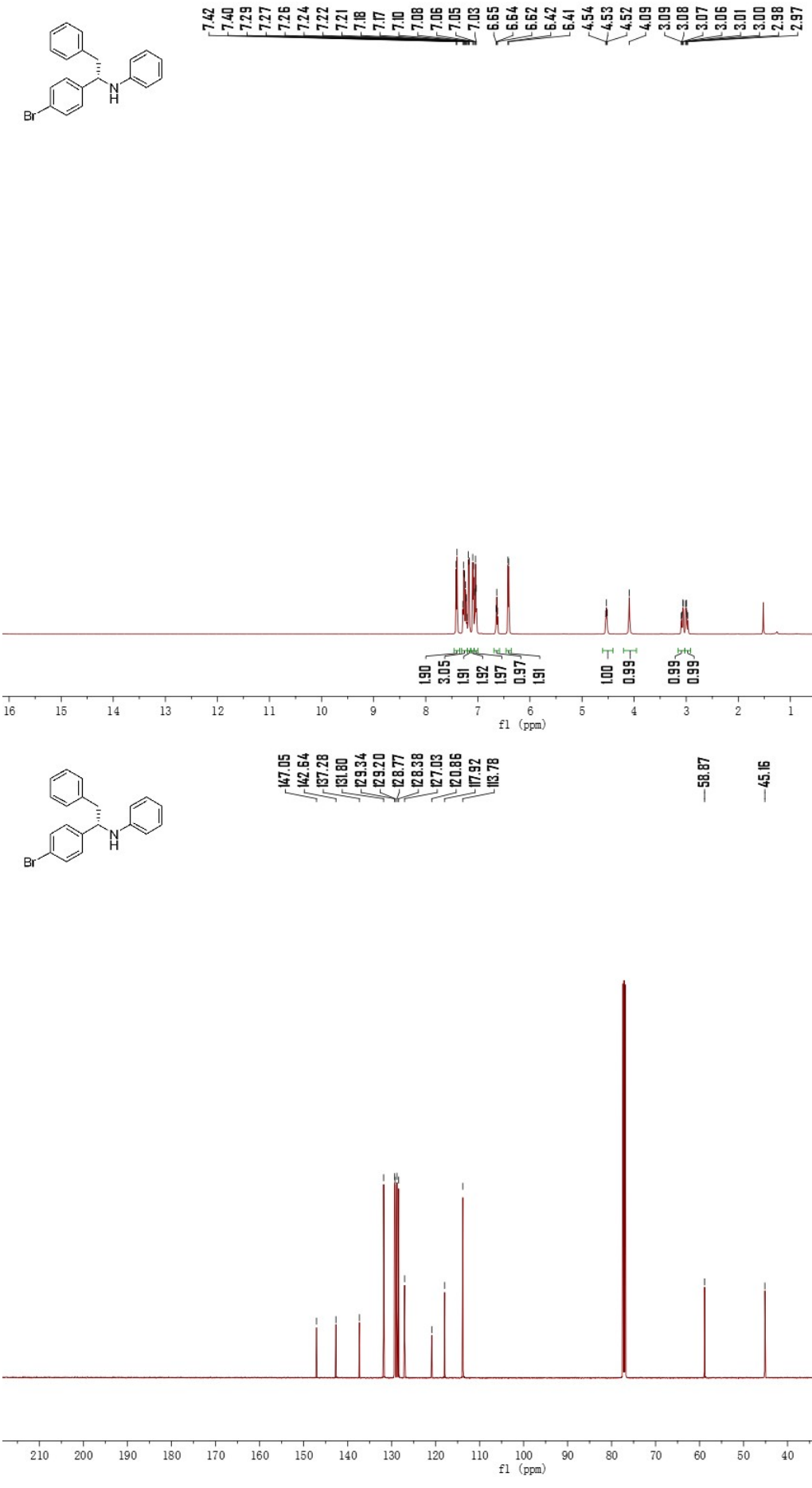

139.4
139.3
139.2
139.1
139.0
138.9
f1 (ppm)


115.8
115.7
115.6
115.5
115.4
115.3
115.2
115.1
f1 (ppm)

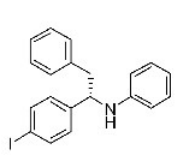
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
f1 (ppm)

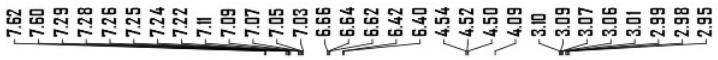


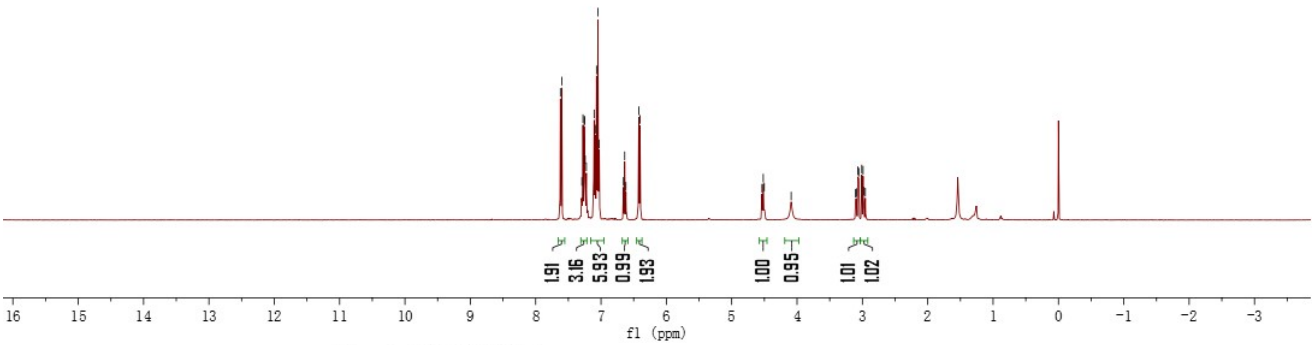
(*S*)-*N*-(1-(4-bromophenyl)-2-phenylethyl)aniline (3ac)

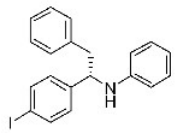


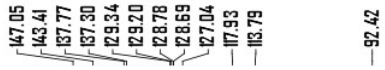
(*S*)-*N*-(1-(4-iodophenyl)-2-phenylethyl)aniline (3ad)

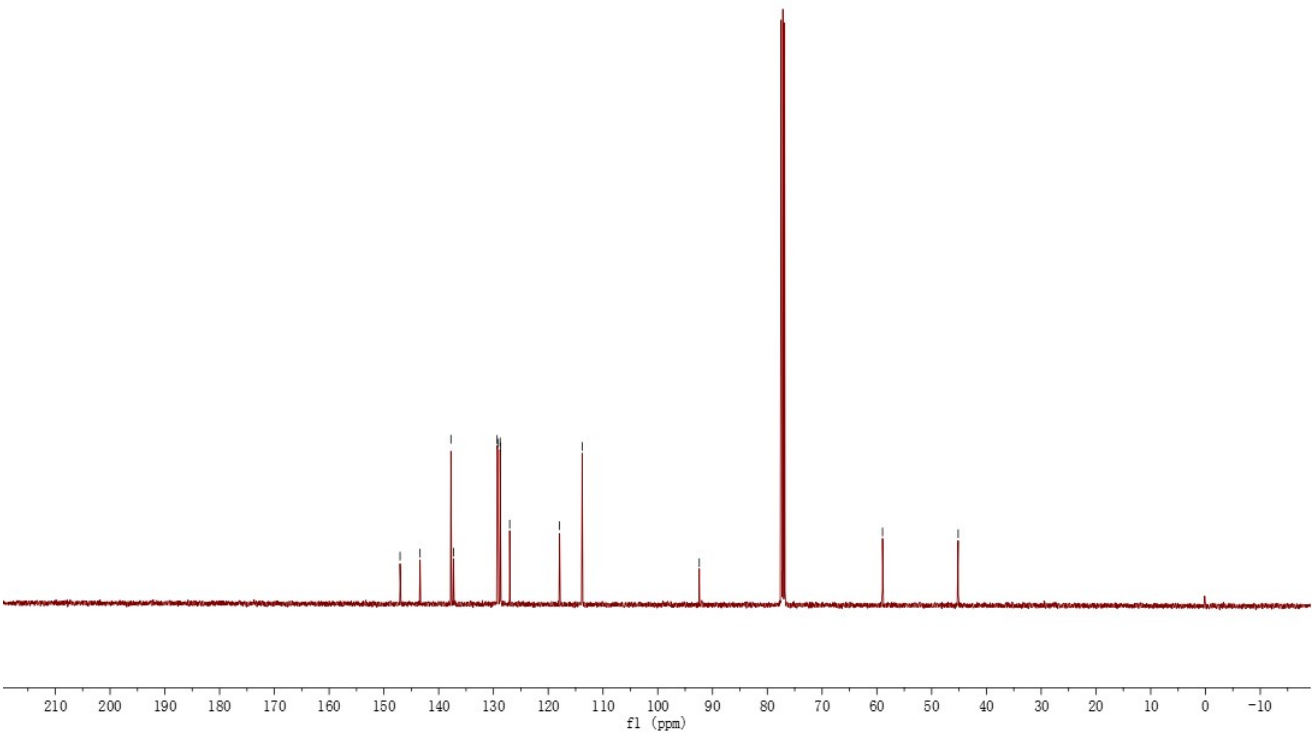




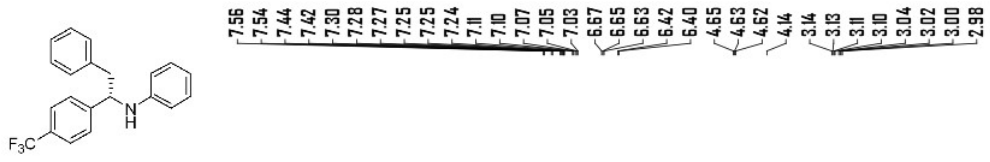


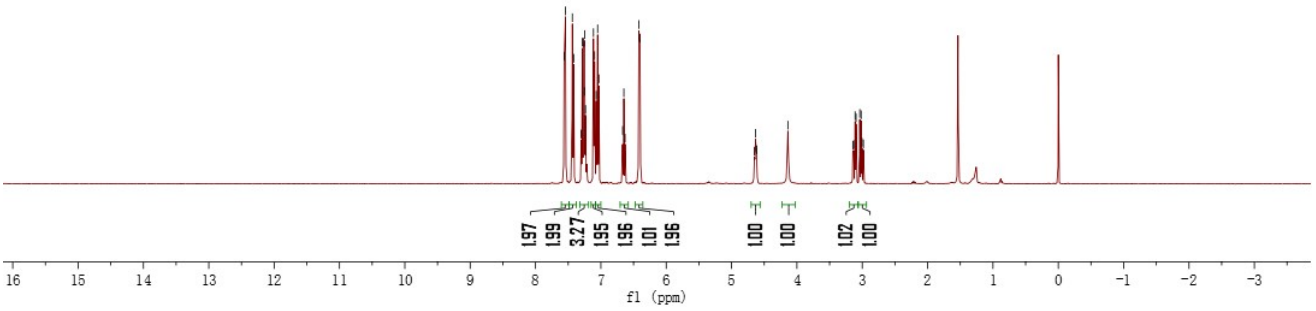


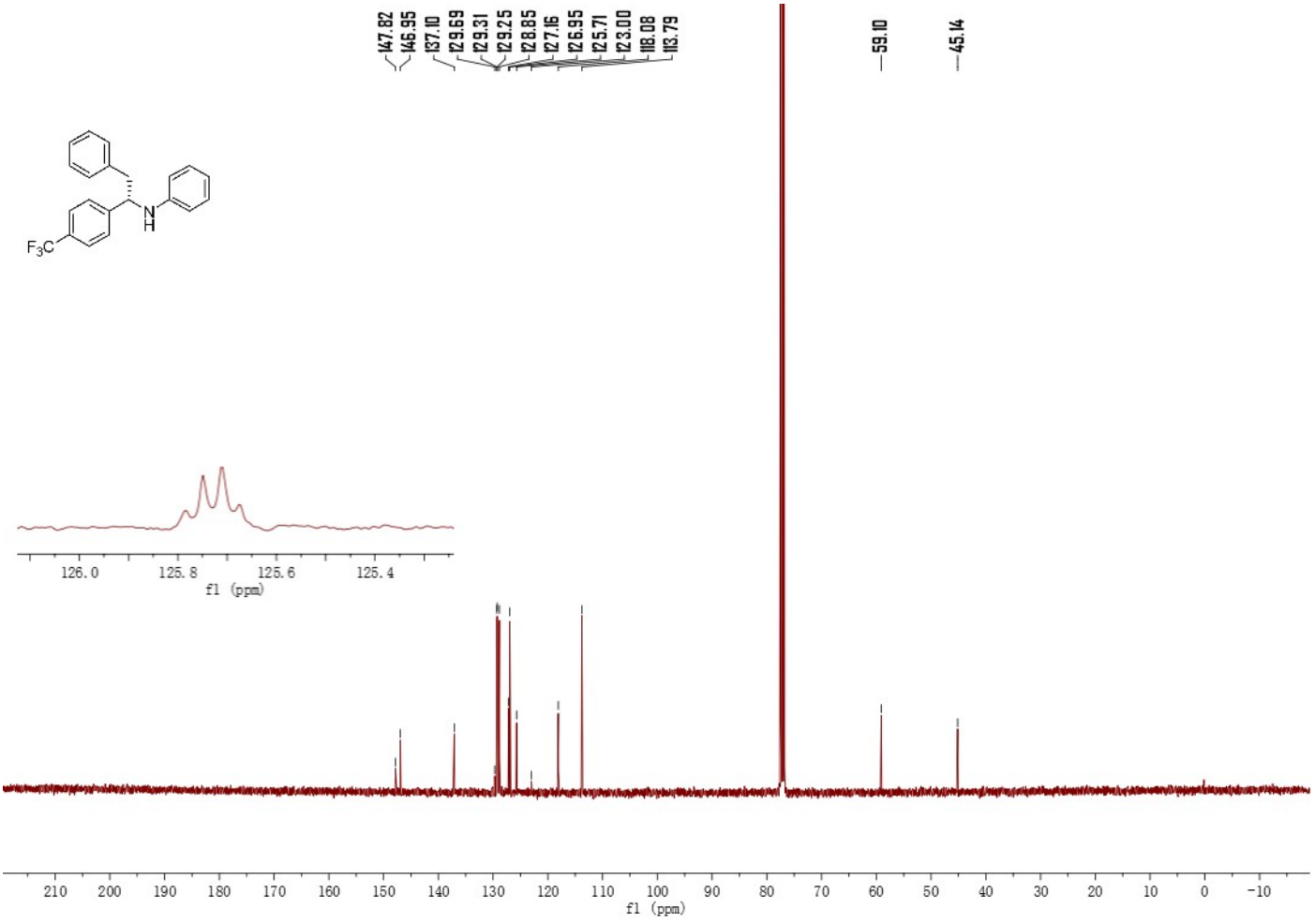


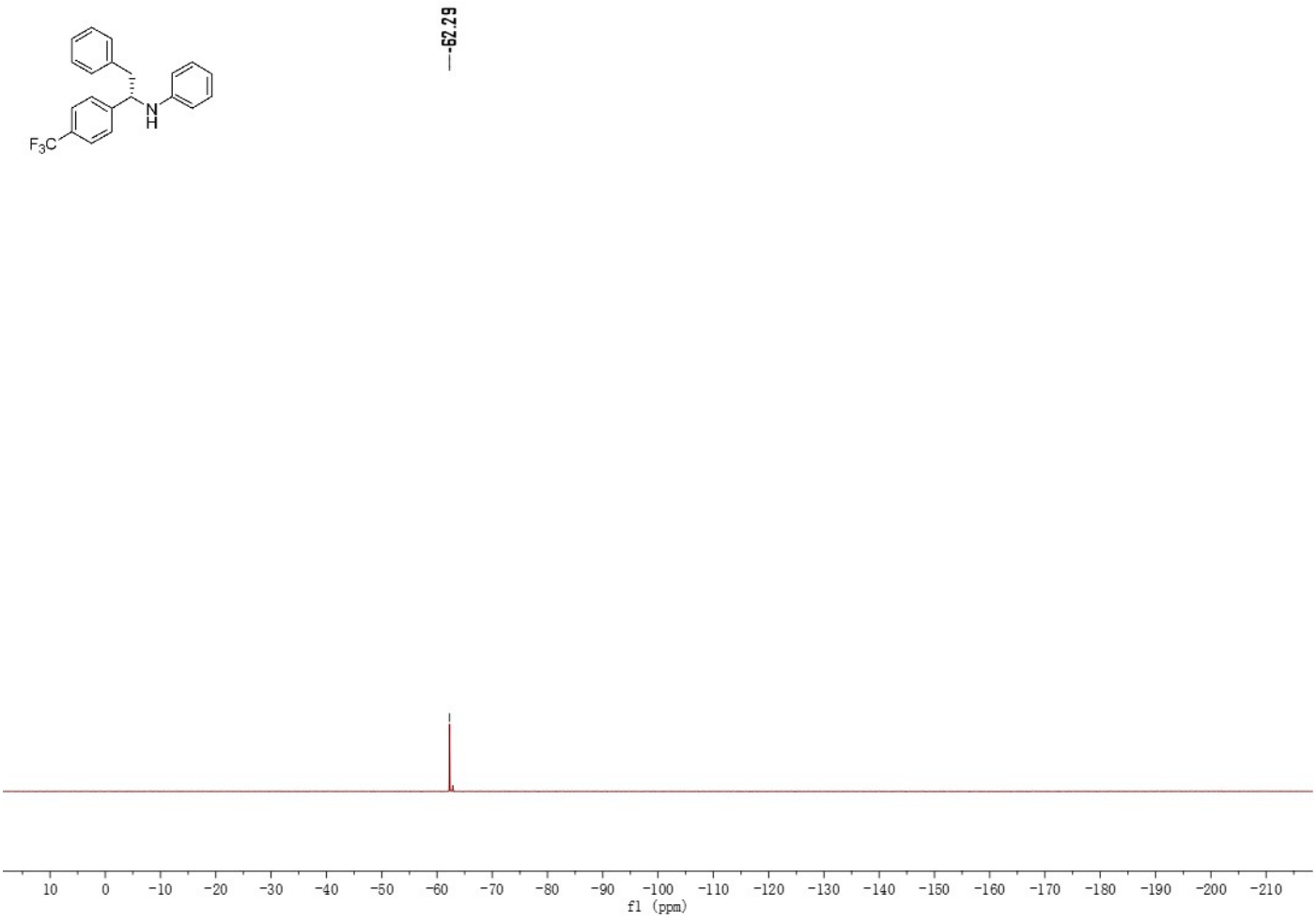


(*S*)-*N*-(2-phenyl-1-(4-(trifluoromethyl)phenyl)ethyl)aniline (3ae)


7.56
7.54
7.44
7.42
7.30
7.28
7.27
7.25
7.25
7.24
7.11
7.10
7.07
7.05
7.03
6.67
6.65
6.63
6.42
6.40
4.65
4.63
4.62
4.14
3.14
3.13
3.11
3.10
3.04
3.02
3.00
2.98

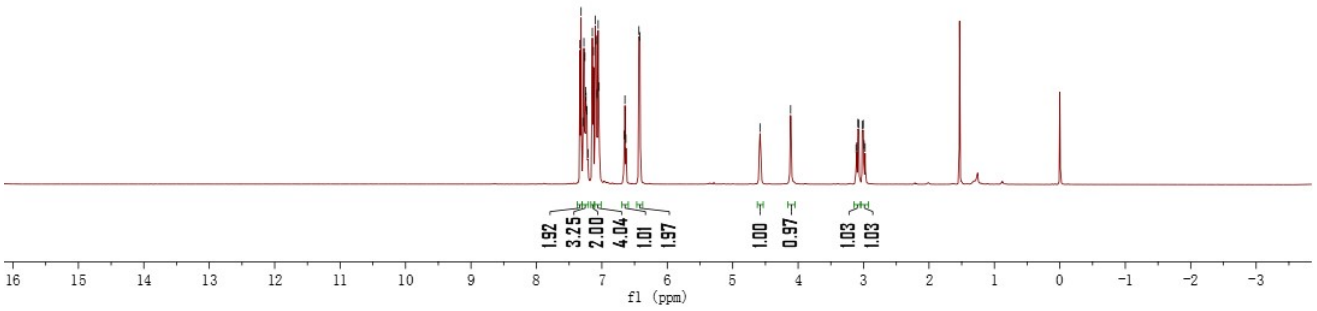

1.97
1.99
3.27
1.95
1.96
1.01
1.96
1.00
1.00
1.02
1.00
f1 (ppm)

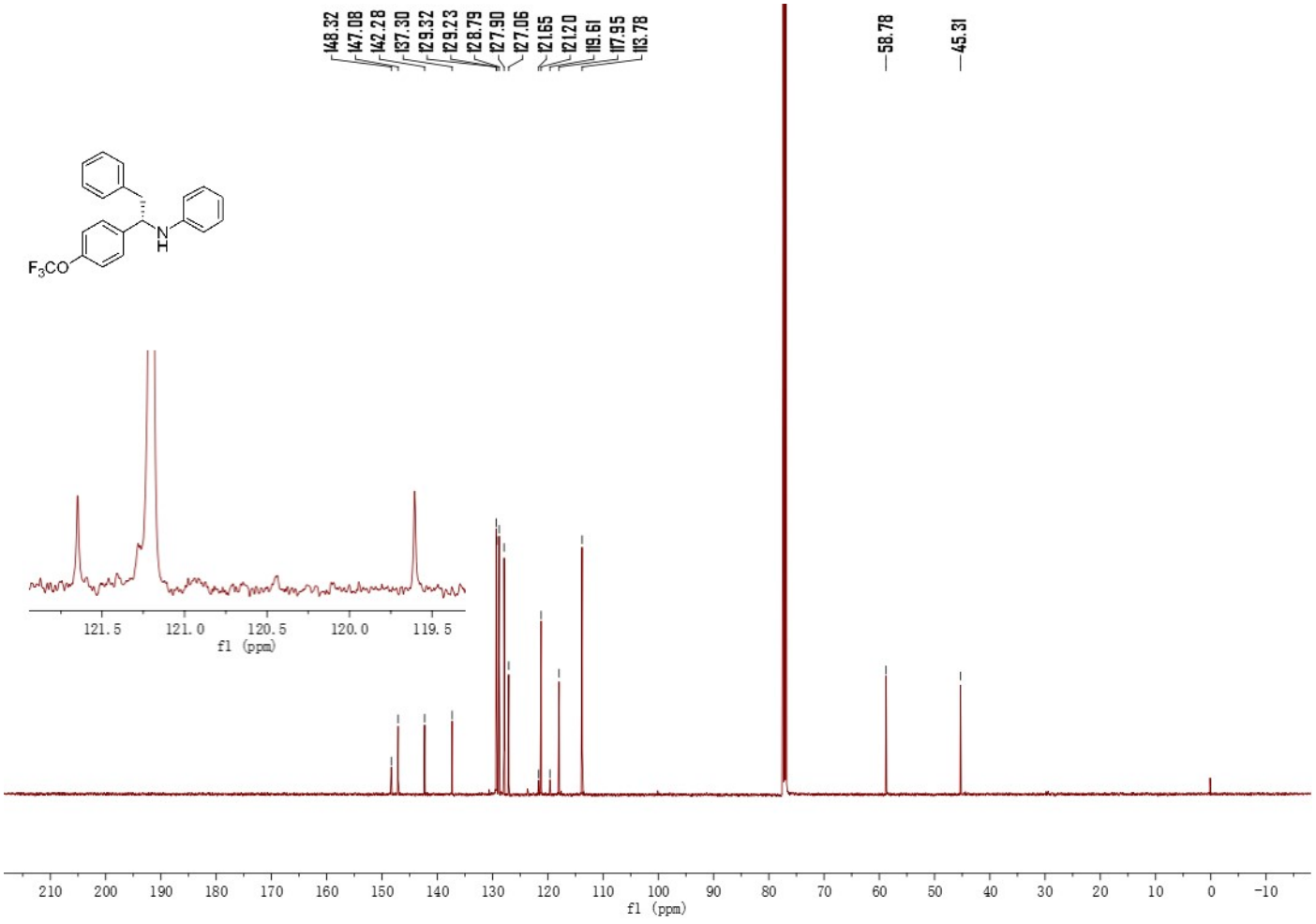

147.82
146.95
137.10
129.69
129.31
129.25
128.85
127.16
126.95
125.71
123.00
118.08
113.79
59.10
45.14
126.0
125.8
125.6
125.4
f1 (ppm)
f1 (ppm)

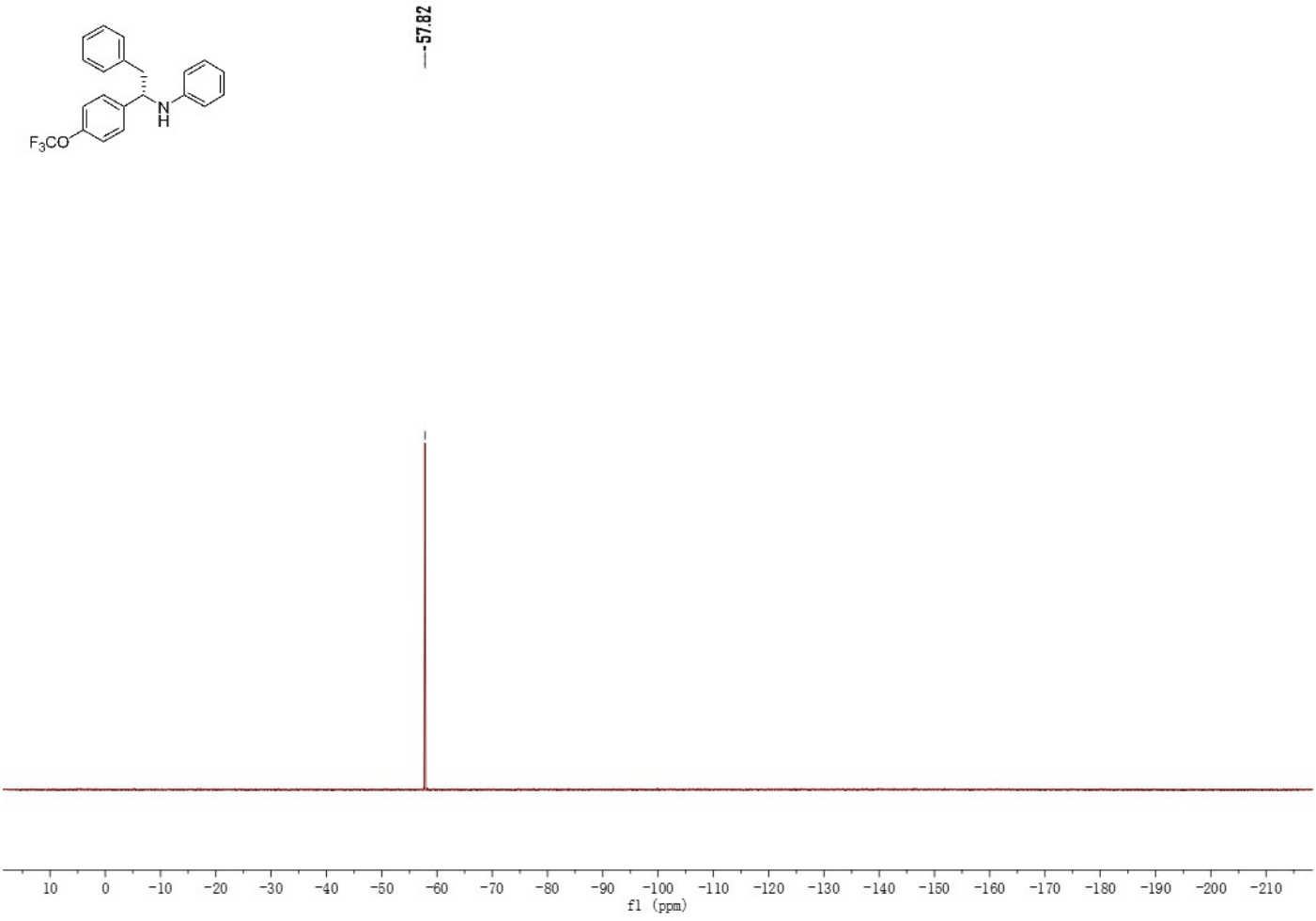


(*S*)-*N*-(2-phenyl-1-(4-(trifluoromethoxy)phenyl)ethyl)aniline (3af)

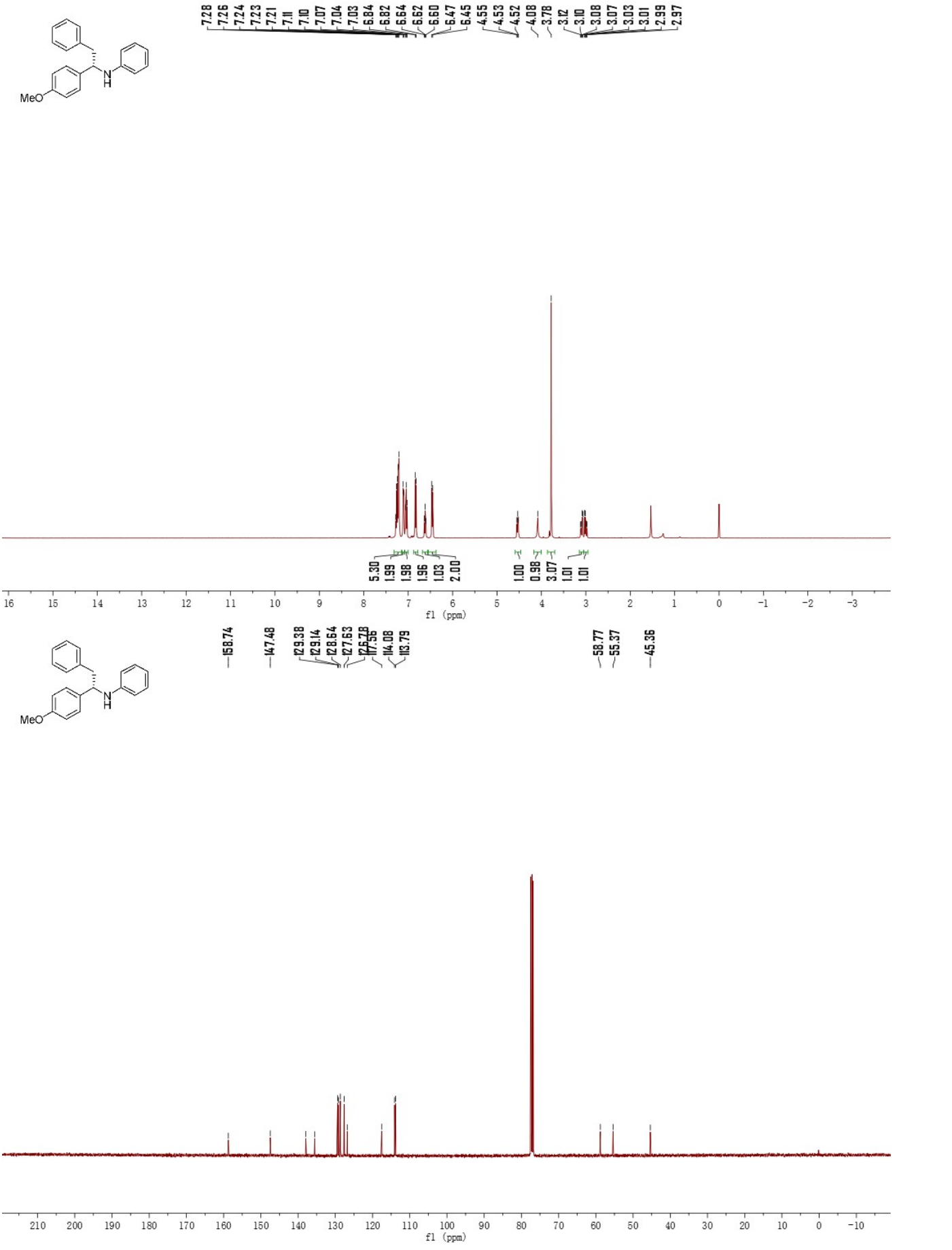

7.33
7.32
7.29
7.27
7.26
7.25
7.24
7.23
7.21
7.15
7.13
7.10
7.09
7.07
7.06
7.04
6.66
6.65
6.63
6.43
6.42
4.58
4.11
3.11
3.10
3.09
3.07
3.02
3.00
2.99
2.98
F3CO
N
H


1.92
3.25
2.00
4.04
1.01
1.97
1.00
0.97
1.03
1.03
f1 (ppm)

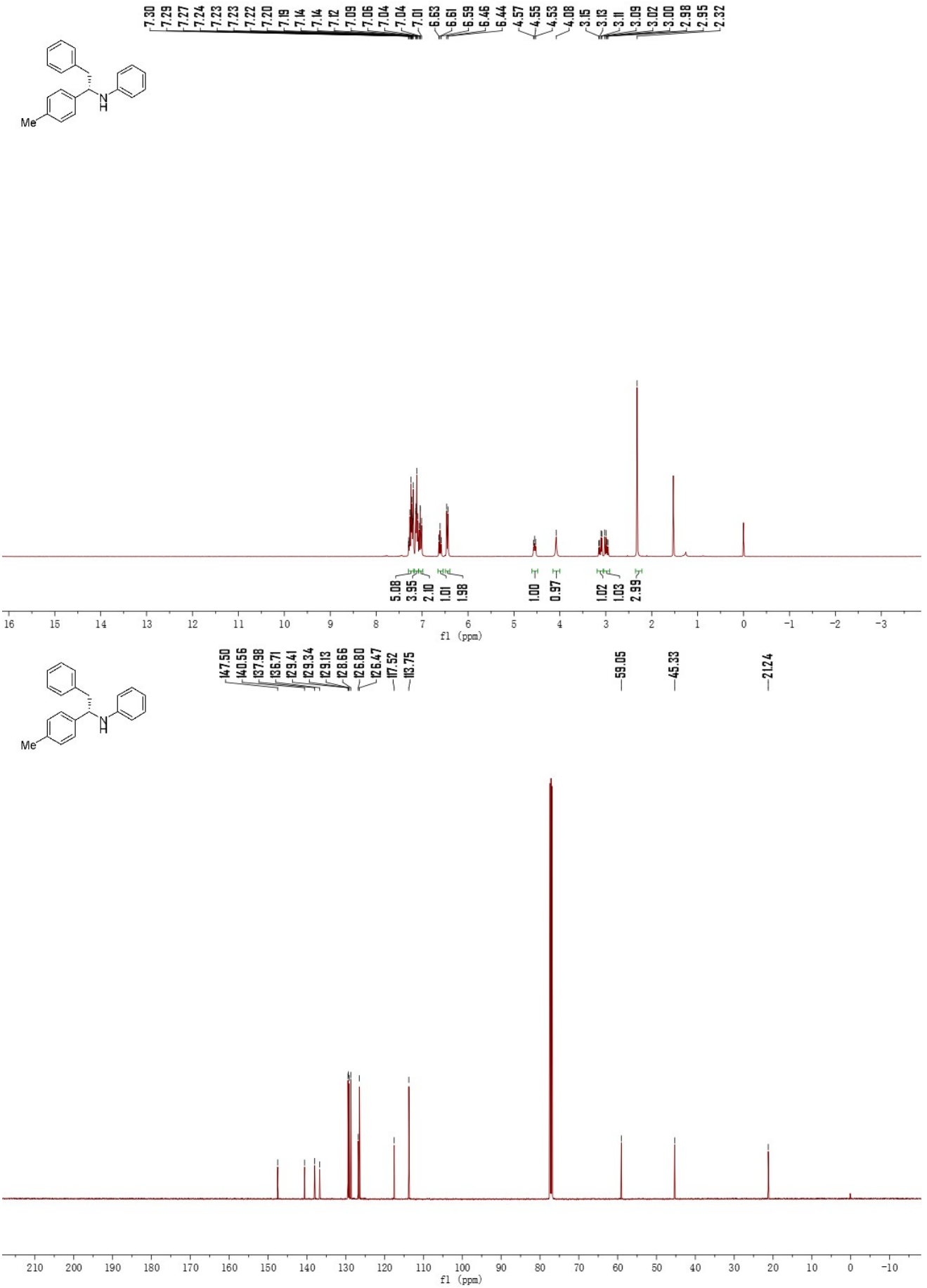

148.32
147.08
142.28
137.30
129.32
129.23
128.79
127.90
127.06
121.65
121.20
119.61
117.95
113.78
58.78
45.31
F3CO
N
H
121.5
121.0
120.5
120.0
119.5
f1 (ppm)
f1 (ppm)



(*S*)-*N*-(1-(4-methoxyphenyl)-2-phenylethyl)aniline (3ag)

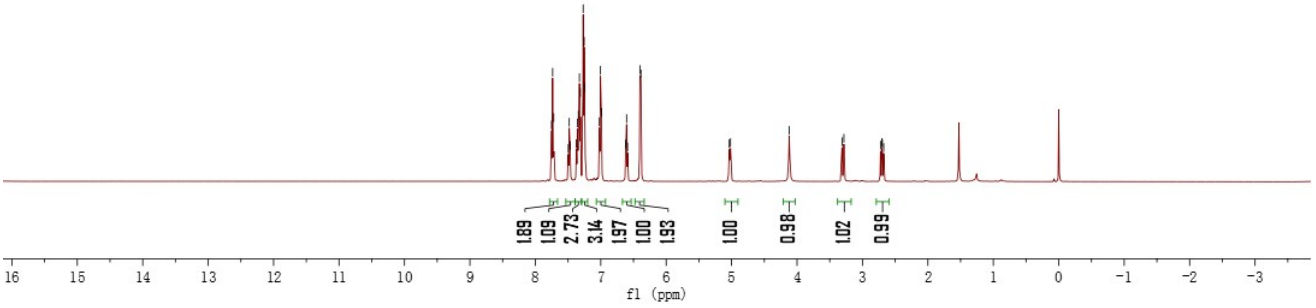


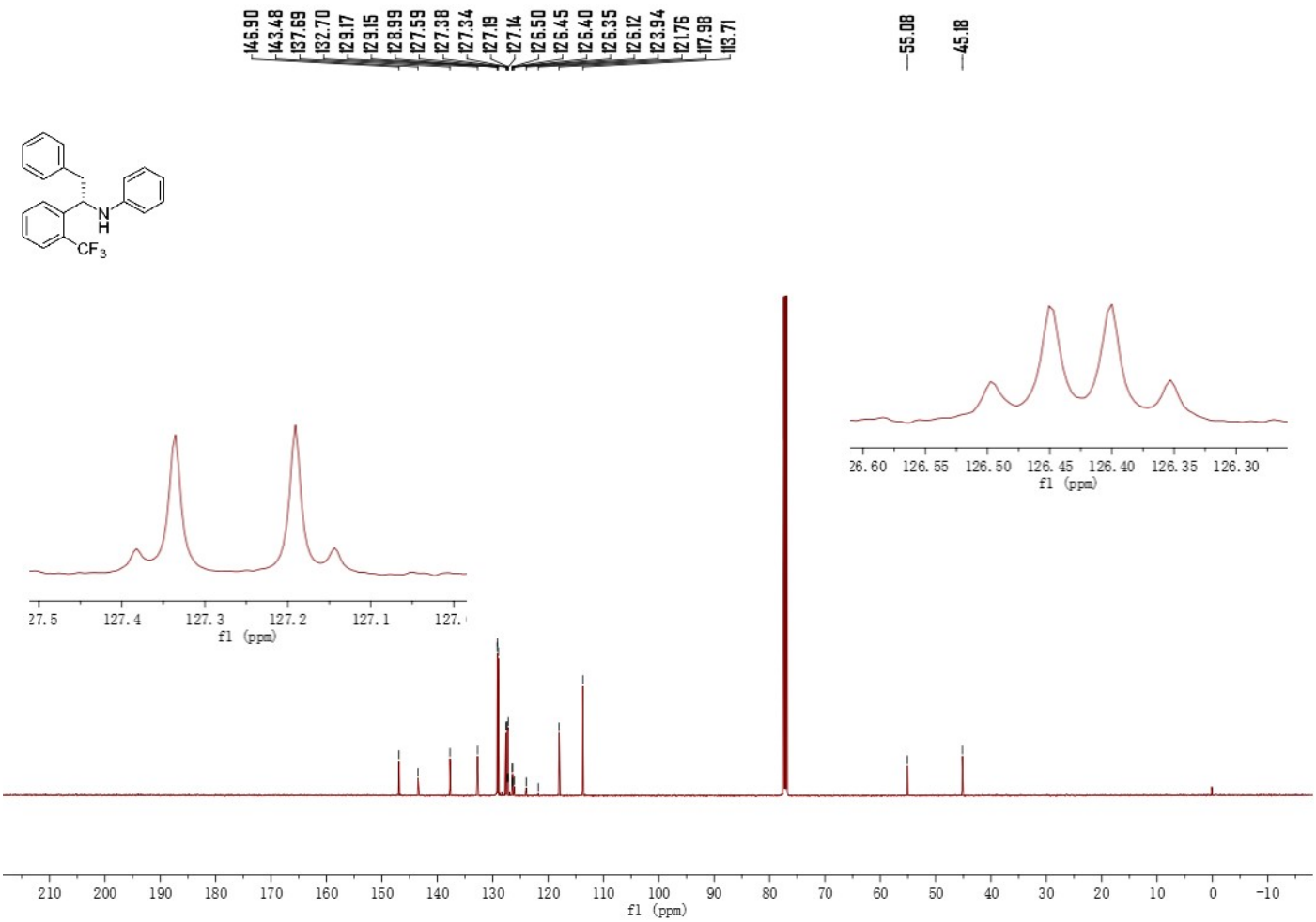
(*S*)-*N*-(2-phenyl-1-(*p*-tolyl)ethyl)aniline (3ah)

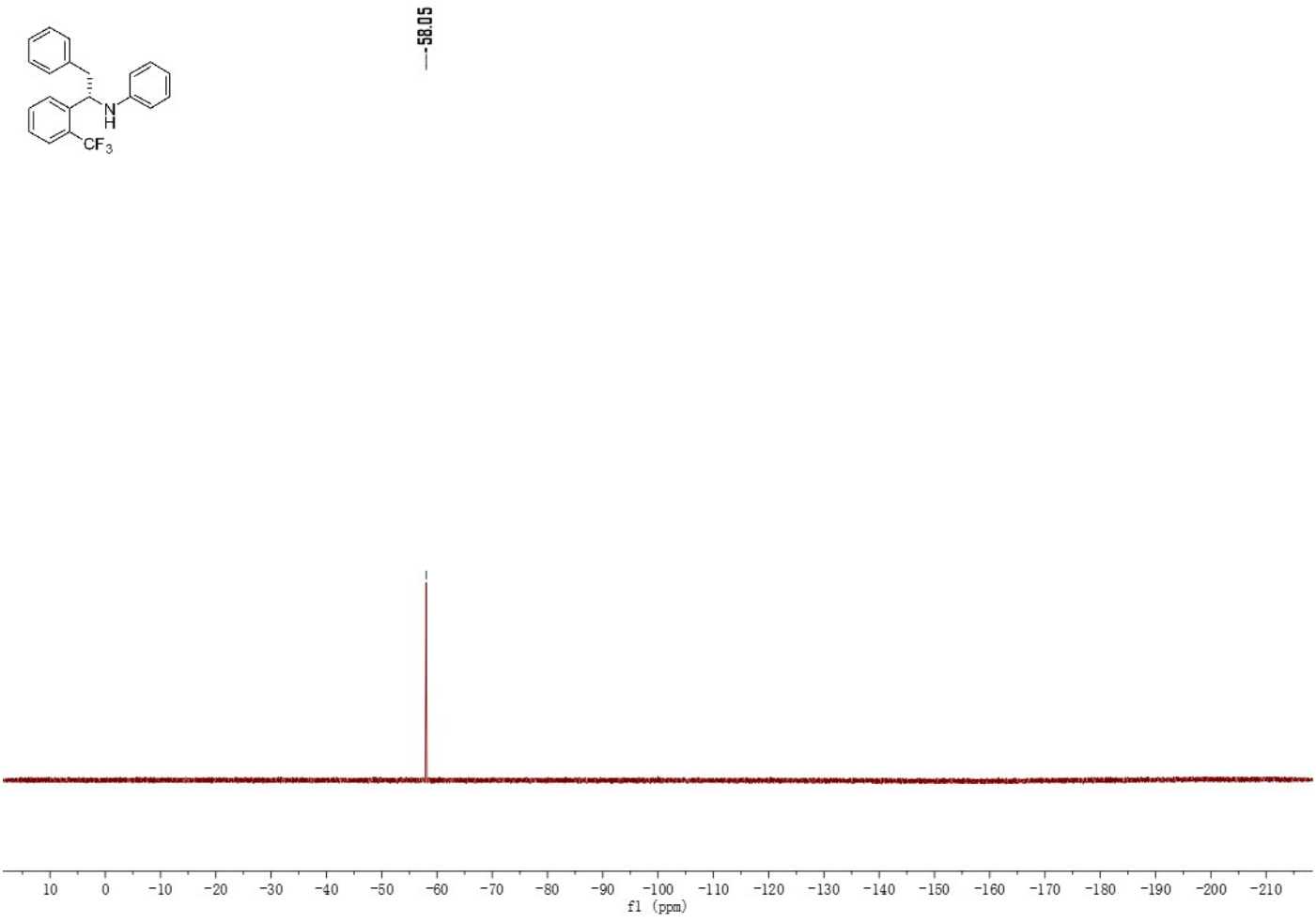


(*S*)-*N*-(2-phenyl-1-(2-(trifluoromethyl)phenyl)ethyl)aniline (3ai)

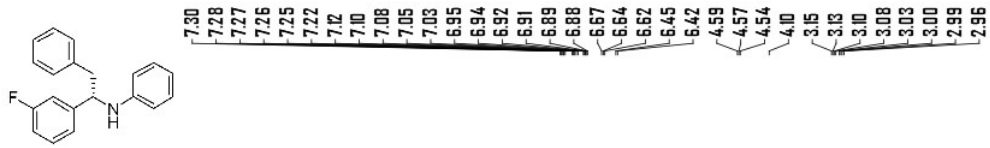

7.75
7.74
7.72
7.50
7.48
7.47
7.37
7.36
7.34
7.33
7.31
7.27
7.25
7.25
7.02
7.00
6.99
6.62
6.61
6.59
6.40
6.39
5.04
5.02
4.12
3.31
3.28
2.72
2.70
2.70
2.68
N
H
CF3

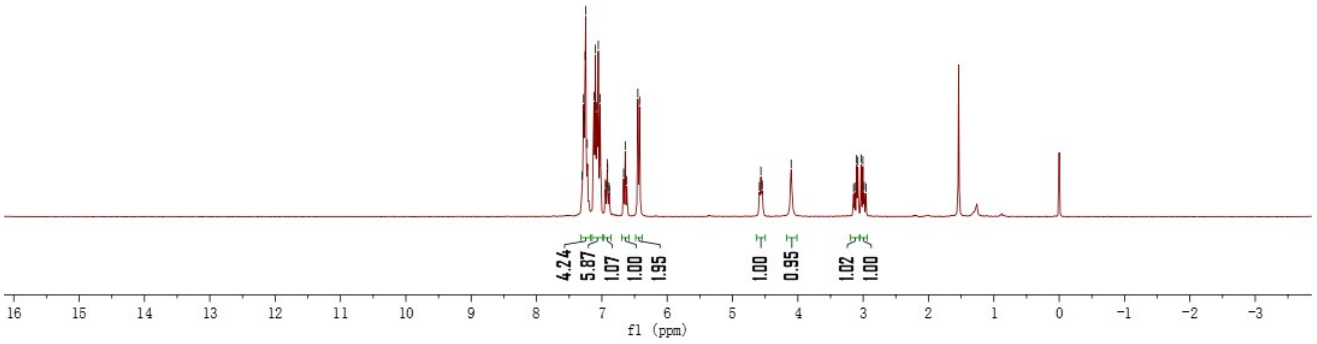

1.89
1.09
2.73
3.14
1.97
1.00
1.93
1.00
0.98
1.02
0.99
f1 (ppm)

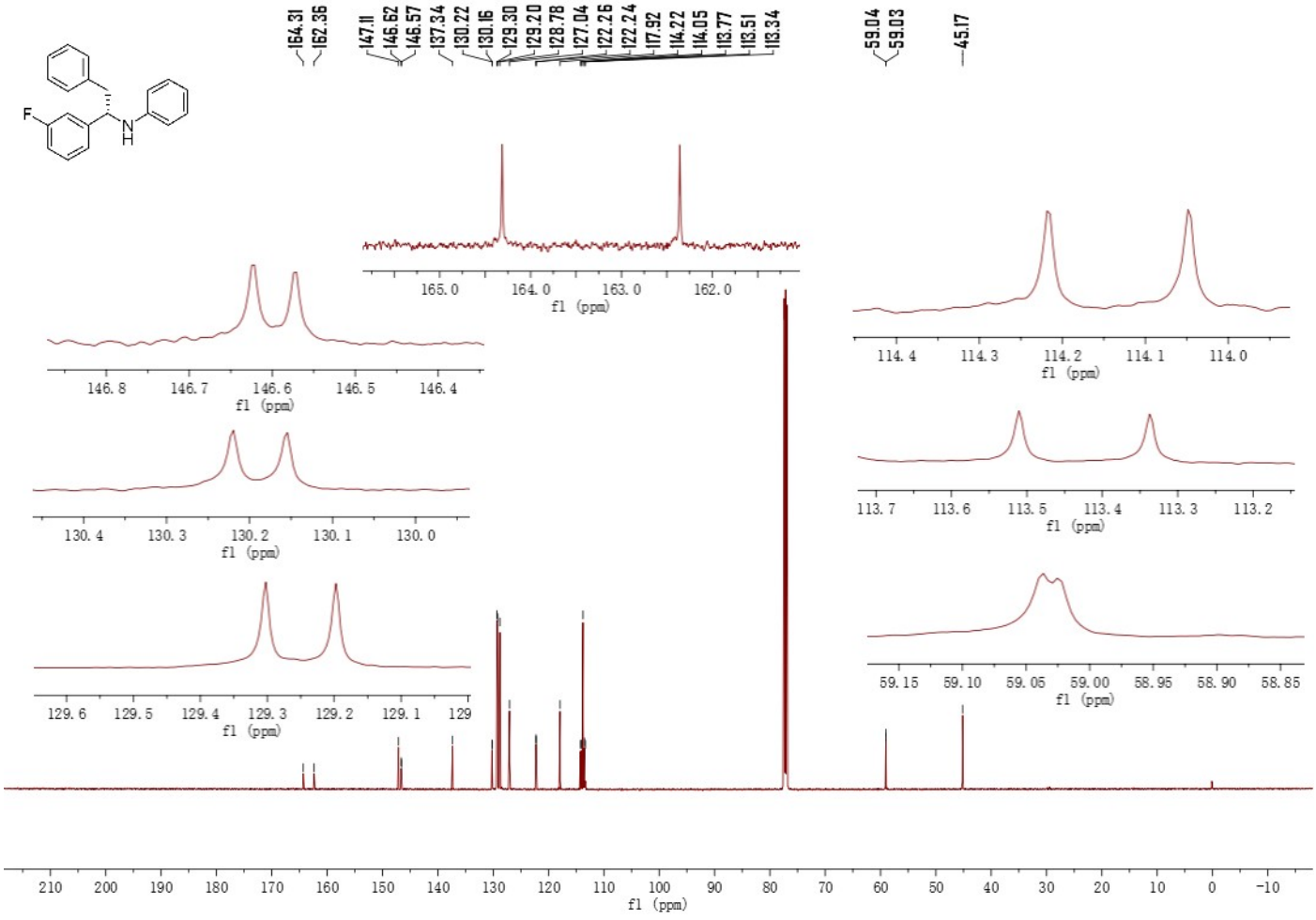

146.90
143.48
137.69
132.70
129.17
129.15
128.99
127.59
127.38
127.34
127.19
127.14
126.50
126.45
126.40
126.35
126.12
123.94
121.76
117.98
113.71
55.08
45.18
N
H
CF3
27.5
127.4
127.3
127.2
127.1
f1 (ppm)
26.60
126.55
126.50
126.45
126.40
126.35
126.30
f1 (ppm)
f1 (ppm)

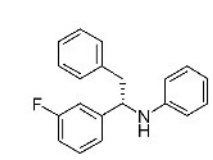


(*S*)-*N*-(1-(3-fluorophenyl)-2-phenylethyl)aniline (3aj)

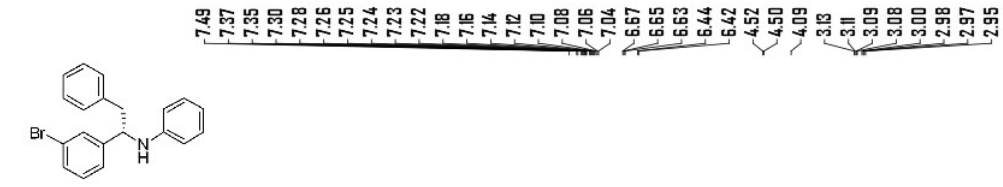

7.30
7.28
7.27
7.26
7.25
7.22
7.12
7.10
7.08
7.05
7.03
6.95
6.94
6.92
6.91
6.89
6.88
6.67
6.64
6.62
6.45
6.42
4.59
4.57
4.54
4.10
3.15
3.13
3.10
3.08
3.03
3.00
2.99
2.96

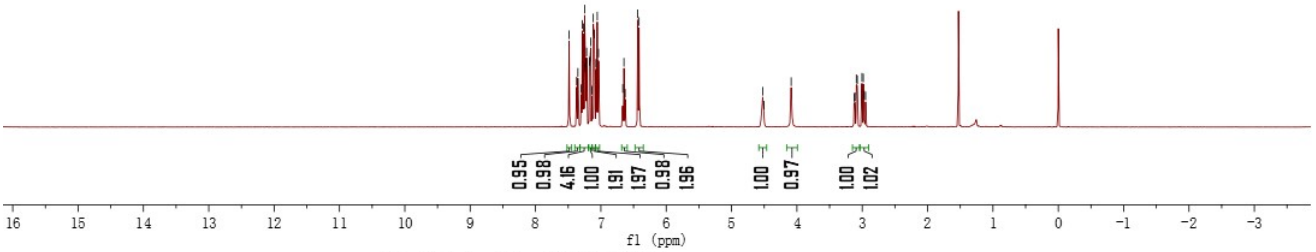

4.24
5.87
1.07
1.00
1.95
1.00
0.95
1.02
1.00
f1 (ppm)

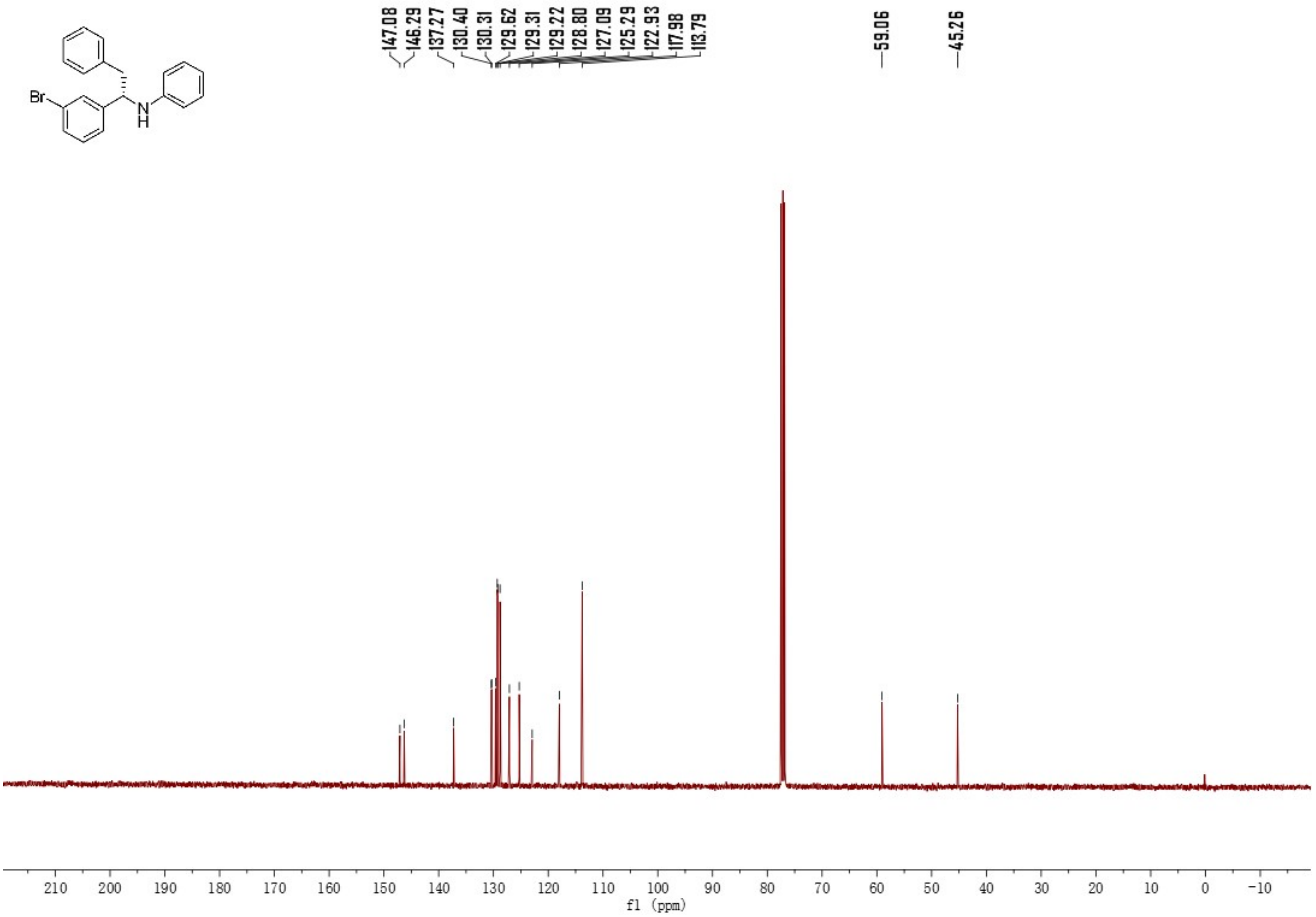

164.31
162.36
147.11
146.62
146.57
137.34
130.22
130.16
129.30
129.20
128.78
127.04
122.26
122.24
117.92
114.22
114.05
113.77
113.51
113.34
59.04
59.03
45.17
f1 (ppm)



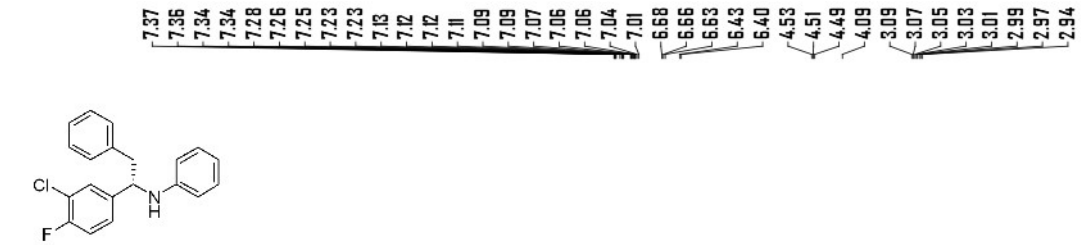
(*S*)-*N*-(1-(3-bromophenyl)-2-phenylethyl)aniline (3ak)



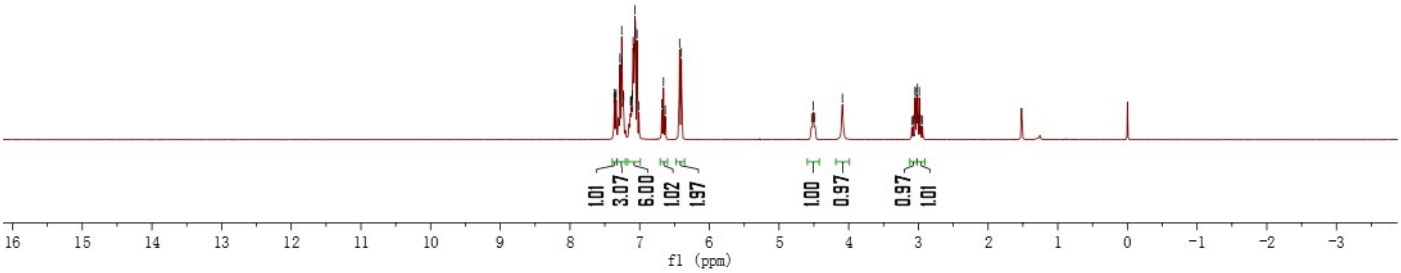




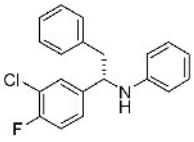
(*S*)-*N*-(1-(3-chloro-4-fluorophenyl)-2-phenylethyl)aniline (3al)

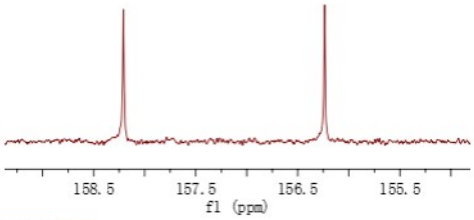

7.37
7.36
7.34
7.34
7.28
7.26
7.25
7.23
7.23
7.13
7.12
7.12
7.11
7.09
7.09
7.07
7.06
7.06
7.04
7.01
6.68
6.66
6.63
6.43
6.40
4.53
4.51
4.49
4.09
3.09
3.07
3.05
3.03
3.01
2.99
2.97
2.94

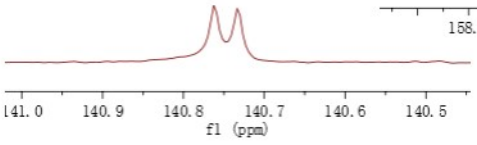
Cl
F
N
H

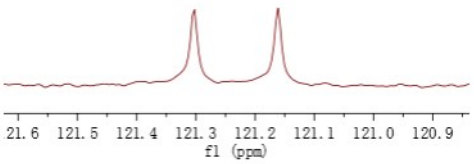

1.01
3.07
6.00
1.02
1.97
1.00
0.97
0.97
1.01
16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 −1 −2 −3
f1 (ppm)

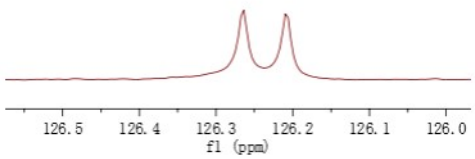

158.21
156.24
146.90
140.76
140.73
137.02
129.31
129.25
128.83
128.61
127.16
126.26
126.21
121.30
121.16
118.12
116.81
116.64
113.80
58.60
45.29

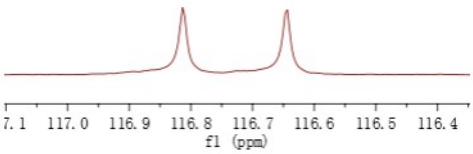

Cl
F
N
H


158.5 157.5 156.5 155.5
f1 (ppm)

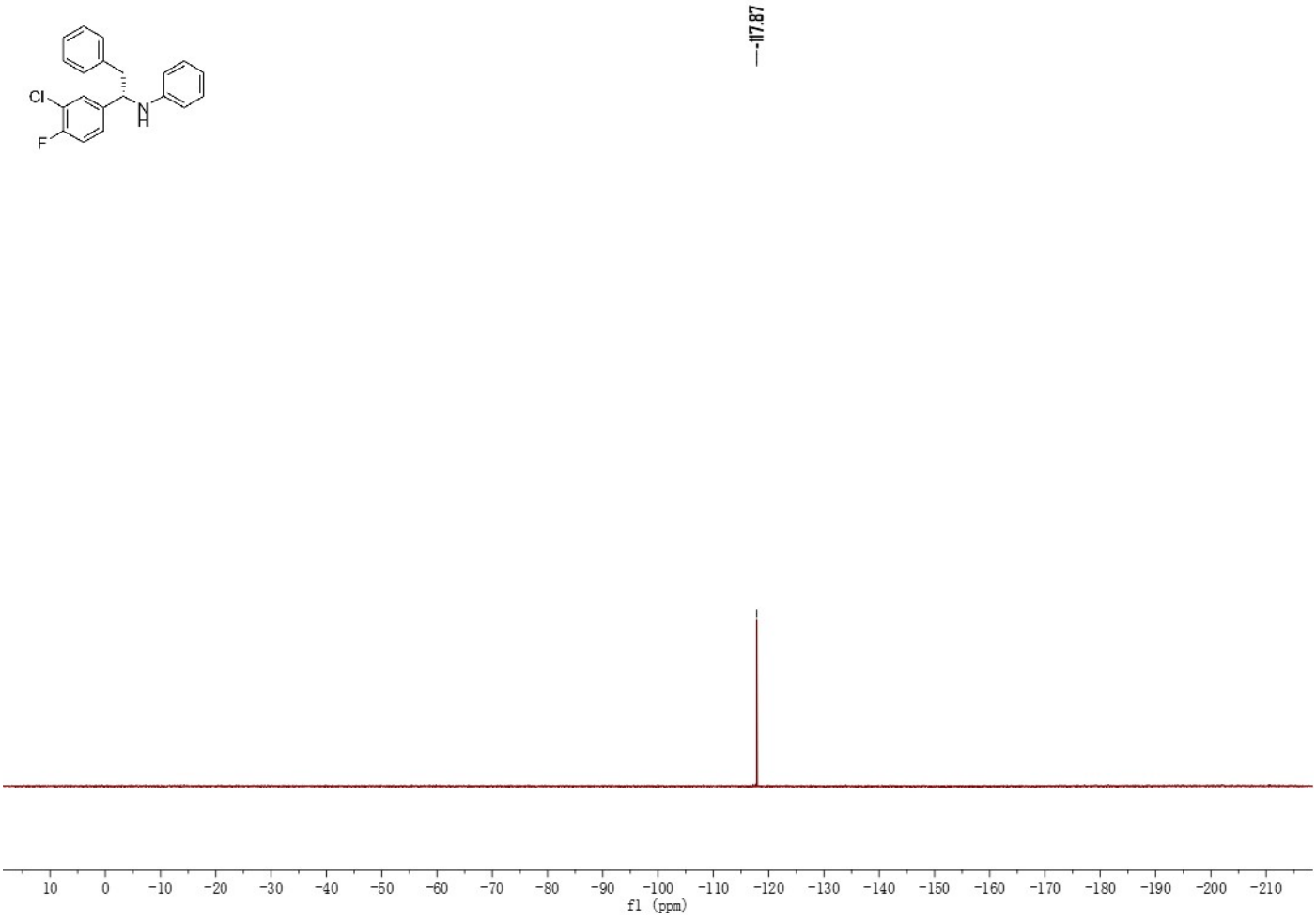

141.0 140.9 140.8 140.7 140.6 140.5
f1 (ppm)


21.6 121.5 121.4 121.3 121.2 121.1 121.0 120.9
f1 (ppm)

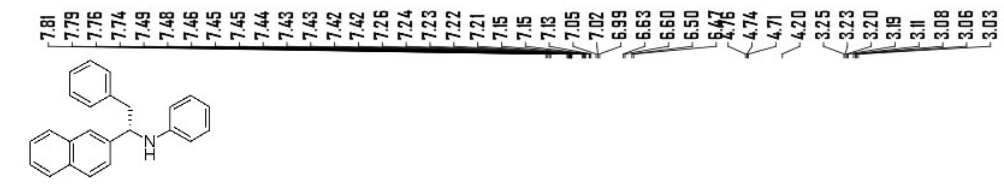

126.5 126.4 126.3 126.2 126.1 126.0
f1 (ppm)

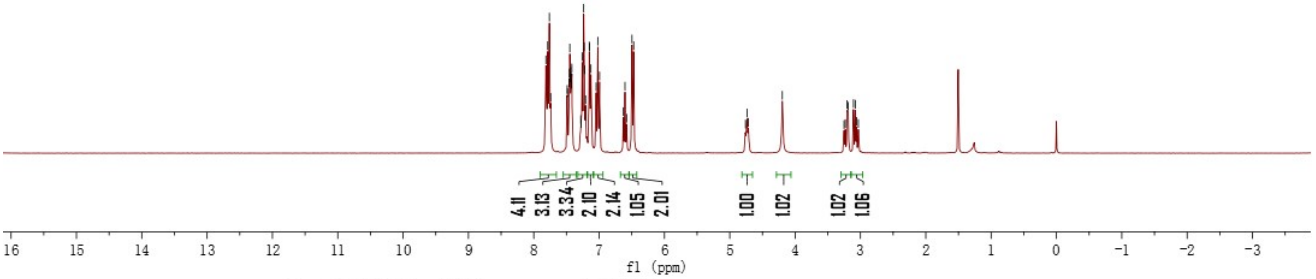

7.1 117.0 116.9 116.8 116.7 116.6 116.5 116.4
f1 (ppm)

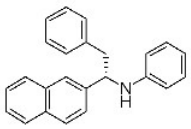
210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 −10
f1 (ppm)

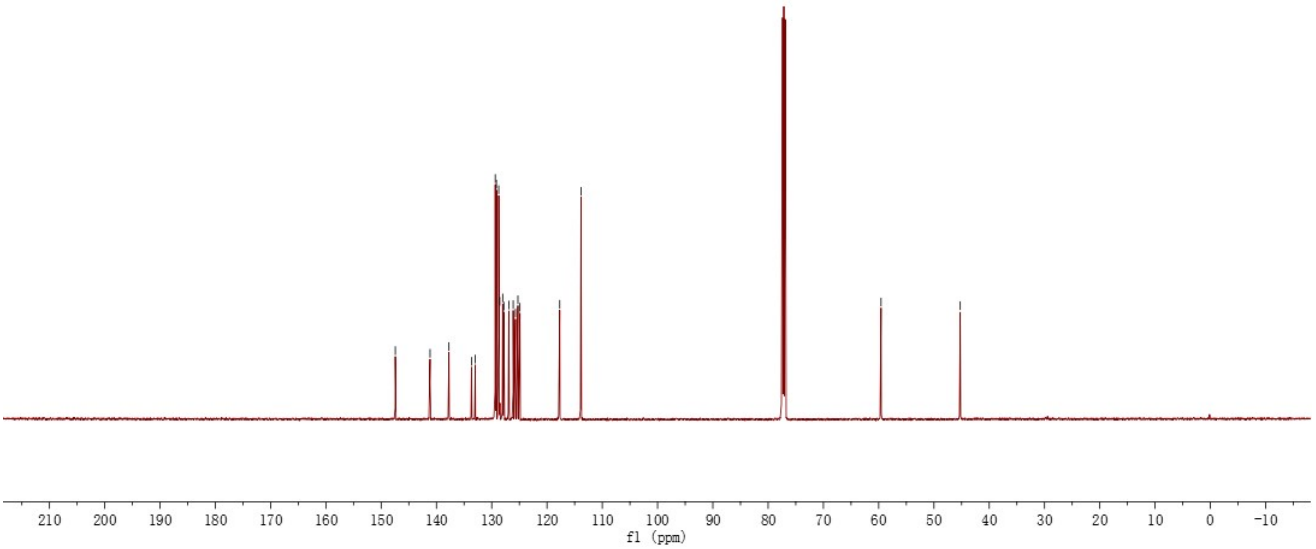


(*S*)-*N*-(1-(naphthalen-2-yl)-2-phenylethyl)aniline (3am)

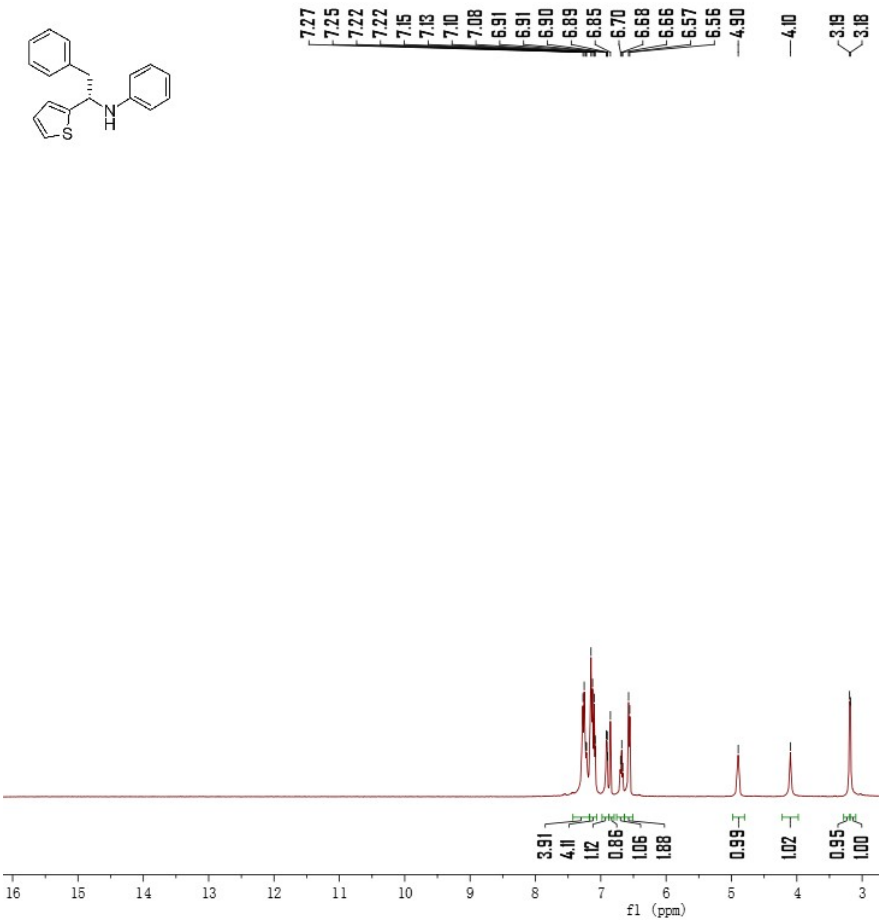


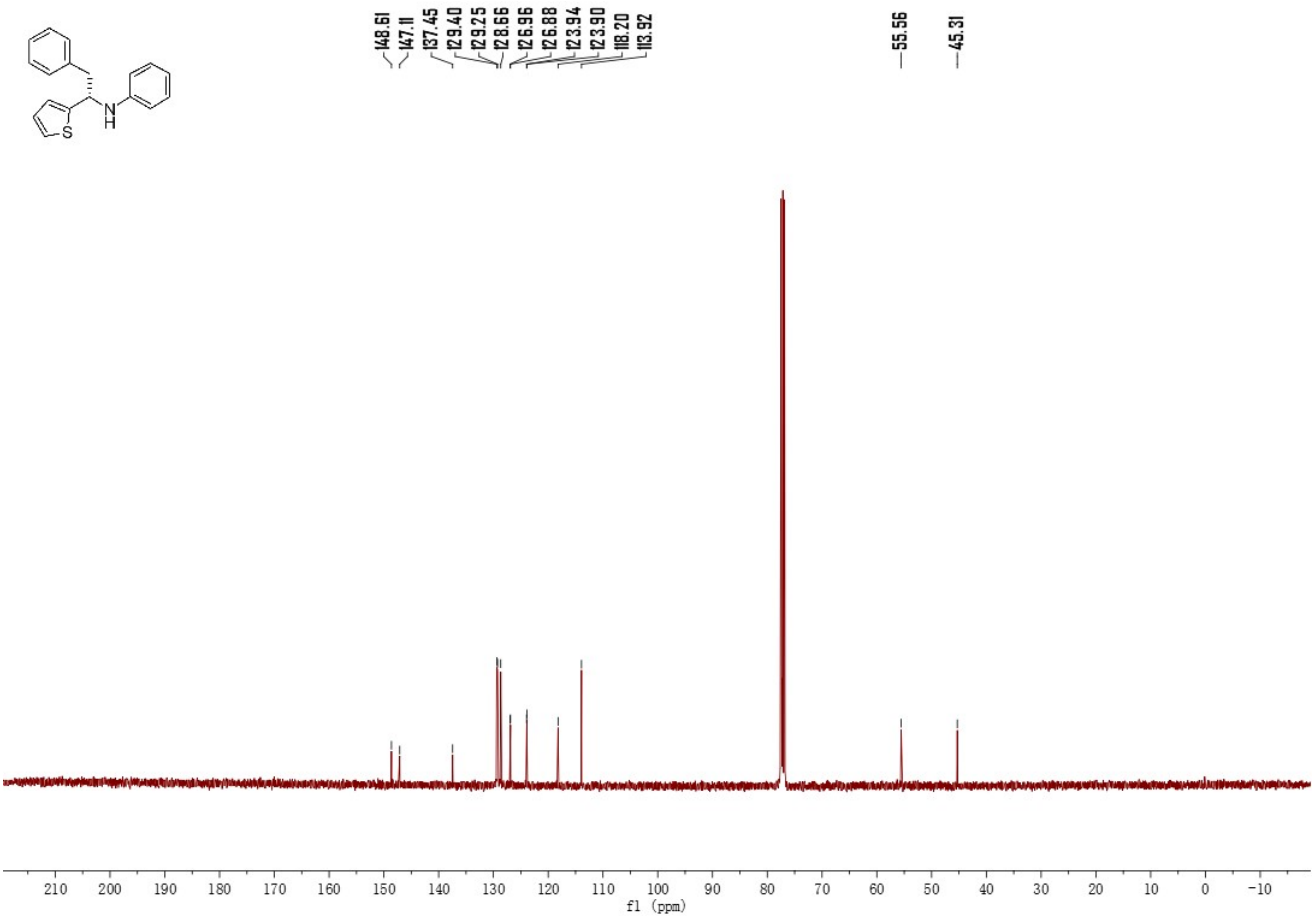




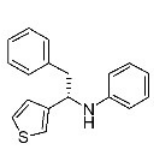


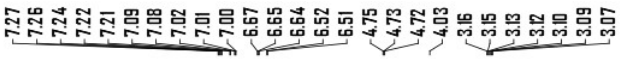
(*S*)-*N*-(2-phenyl-1-(thiophen-2-yl)ethyl)aniline (3an)

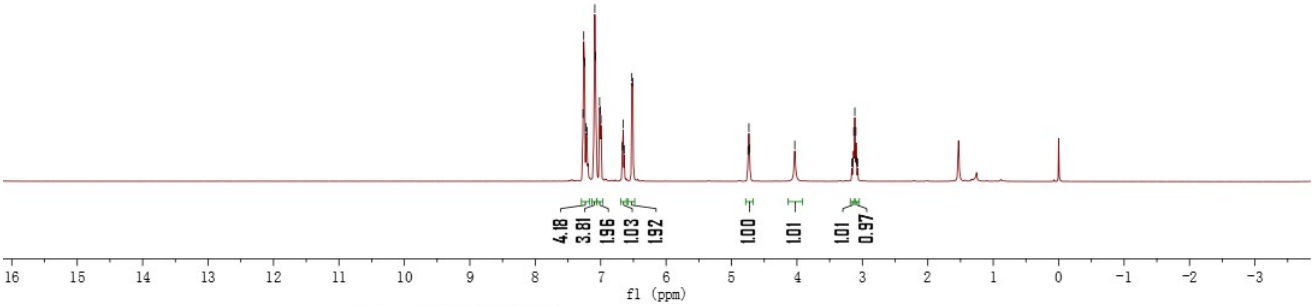


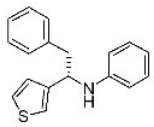


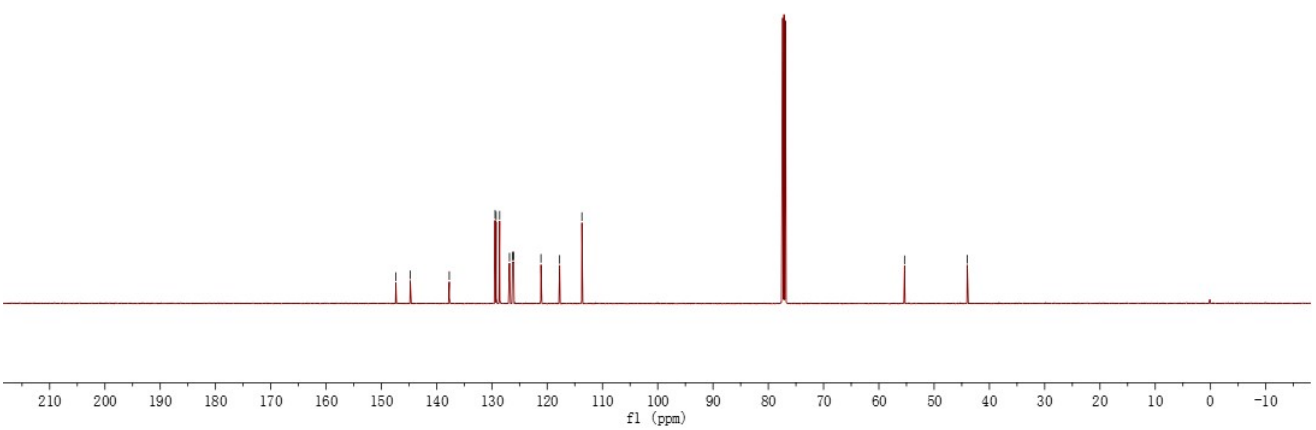
(*S*)-*N*-(2-phenyl-1-(thiophen-3-yl)ethyl)aniline (3ao)



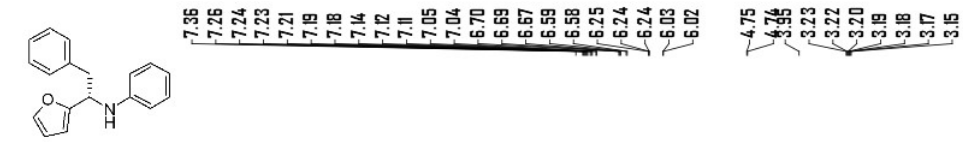


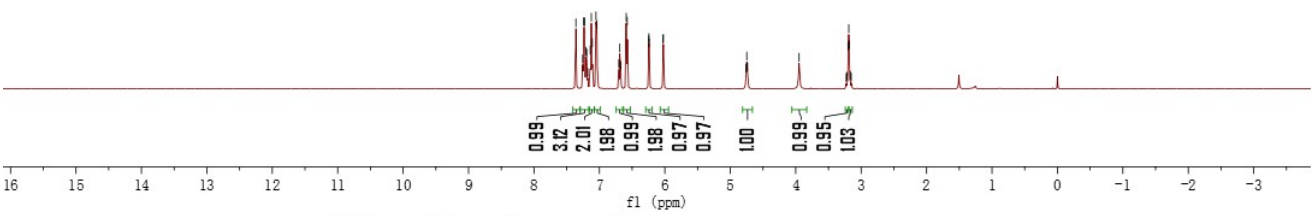


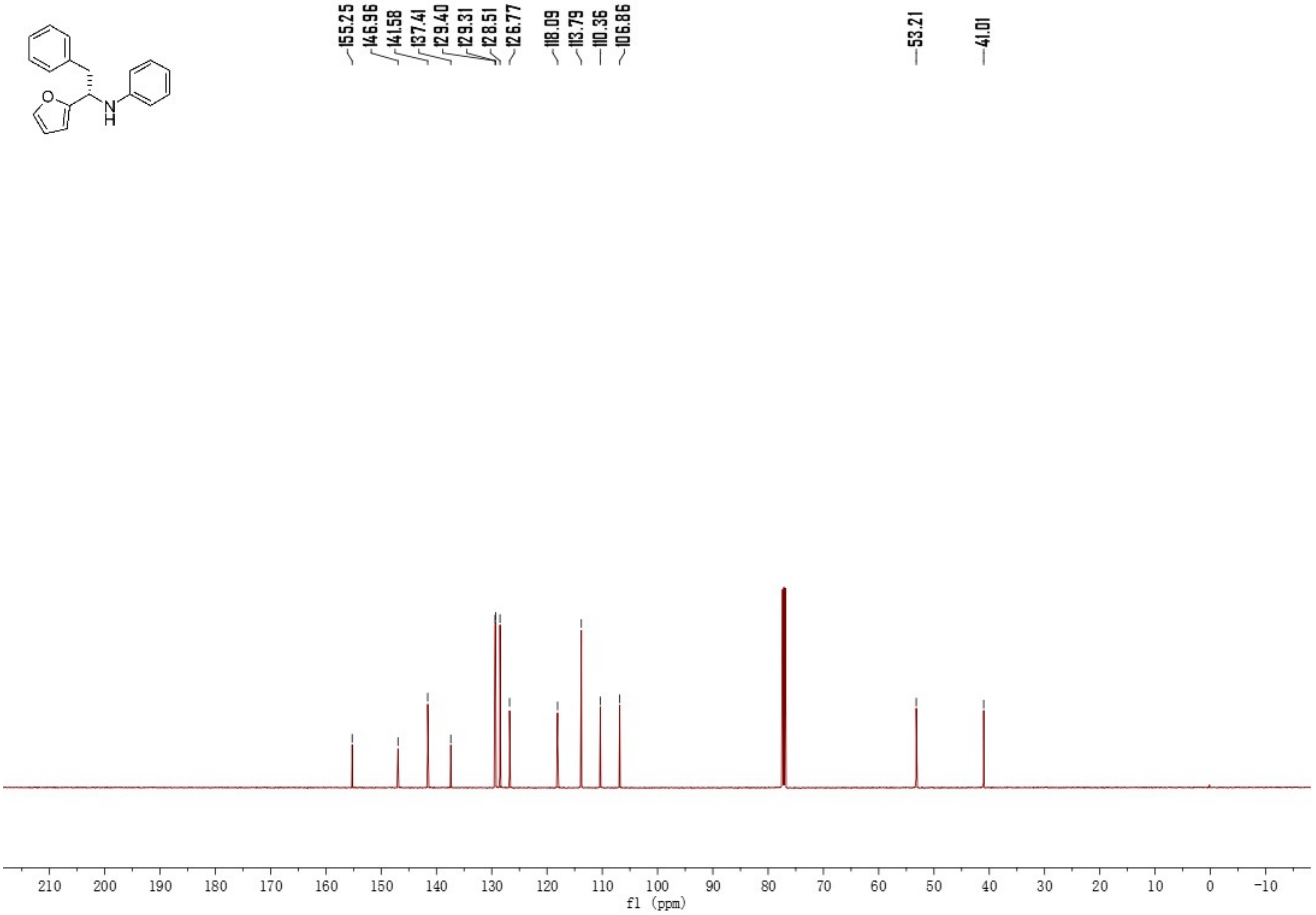




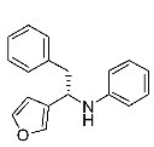
(*S*)-*N*-(1-(furan-2-yl)-2-phenylethyl)aniline (3ap)

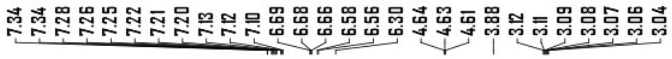


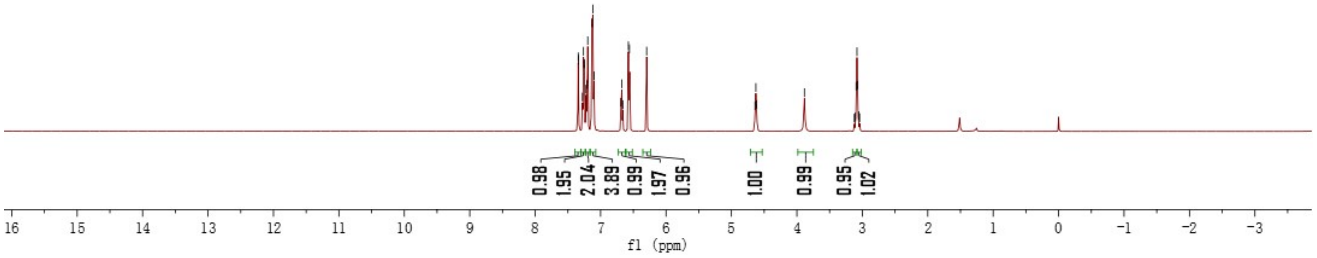


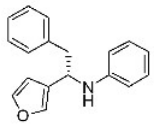


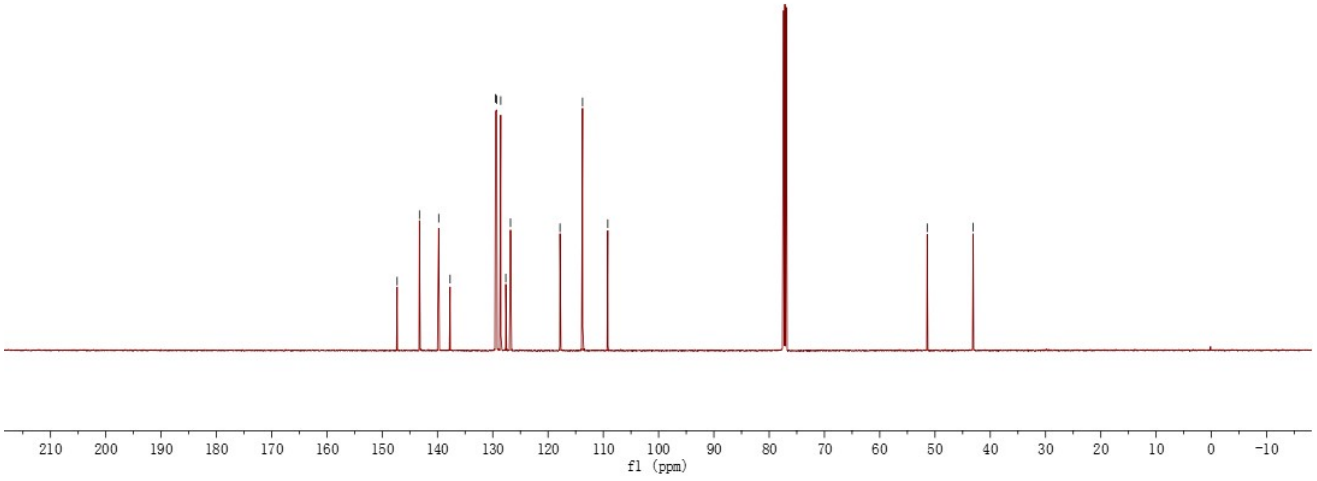
(*S*)-*N*-(1-(furan-3-yl)-2-phenylethyl)aniline (3aq)



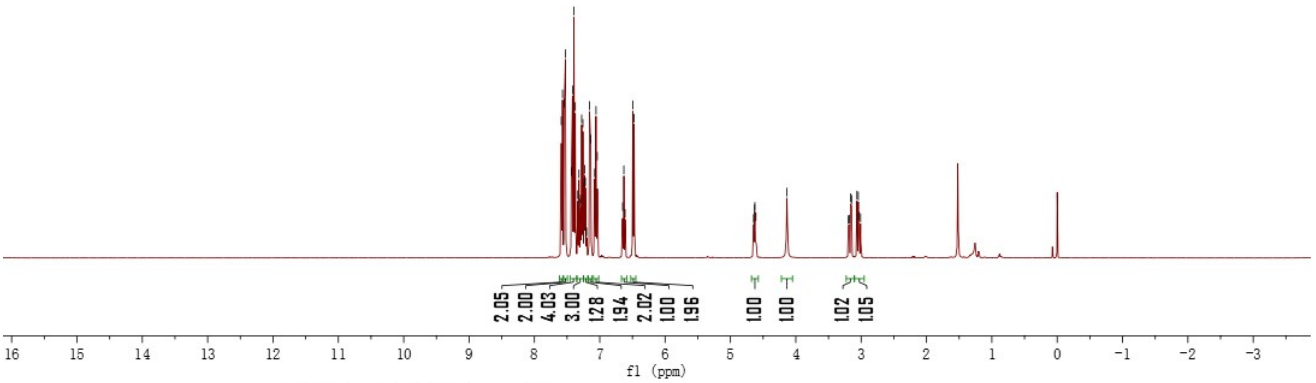


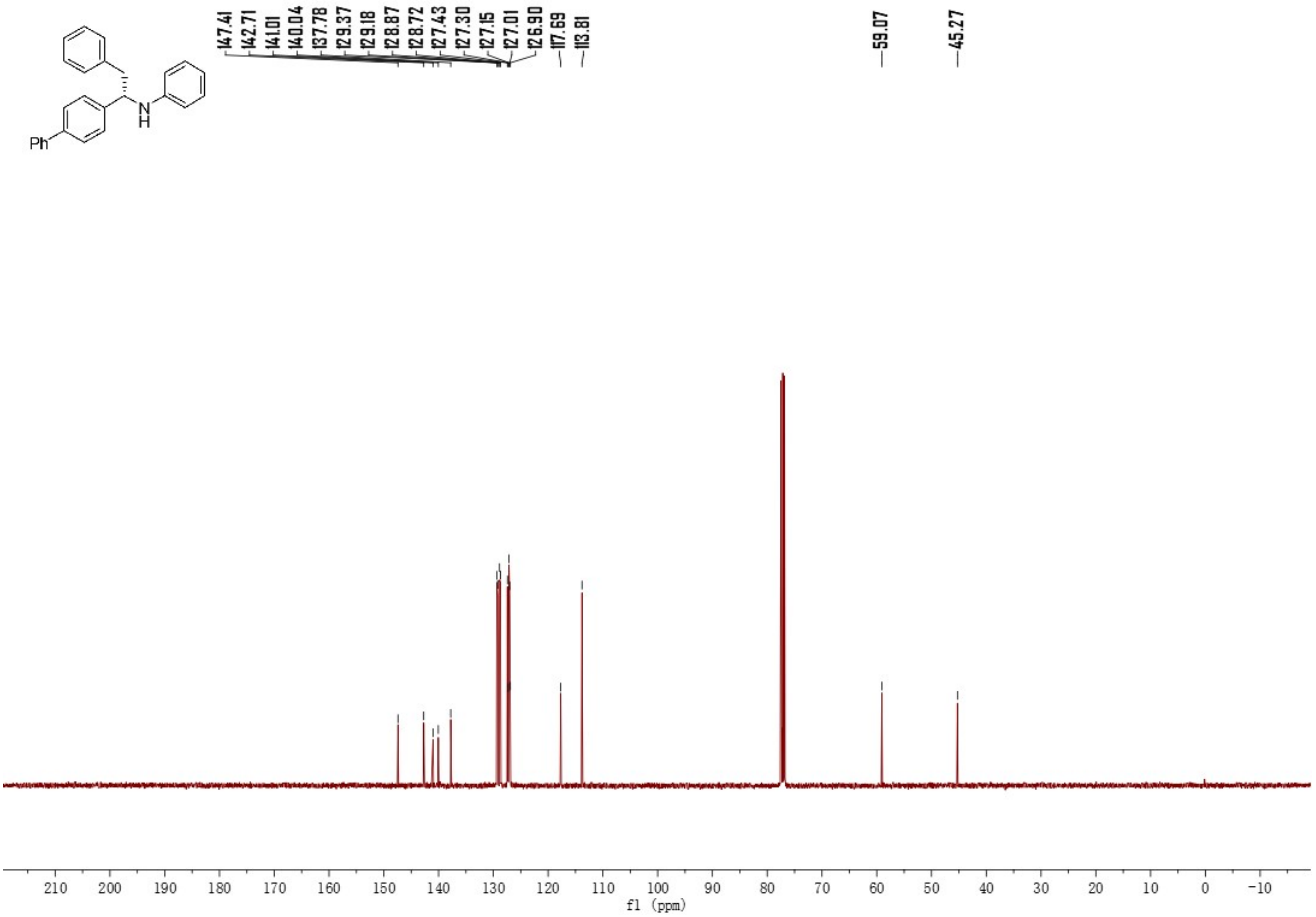




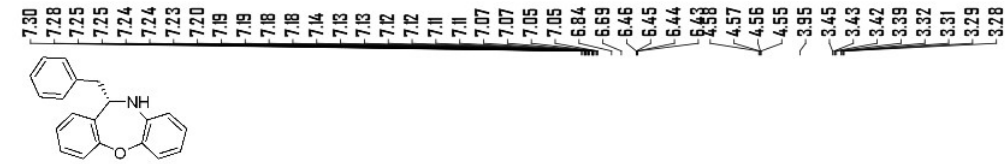


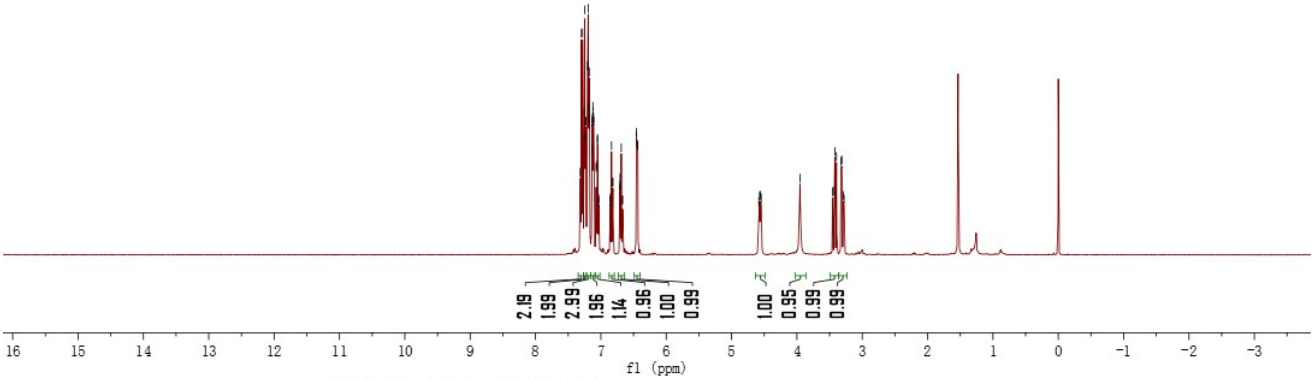
(*S*)-*N*-(1-([1,1'-biphenyl]-4-yl)-2-phenylethyl)aniline (3ar)

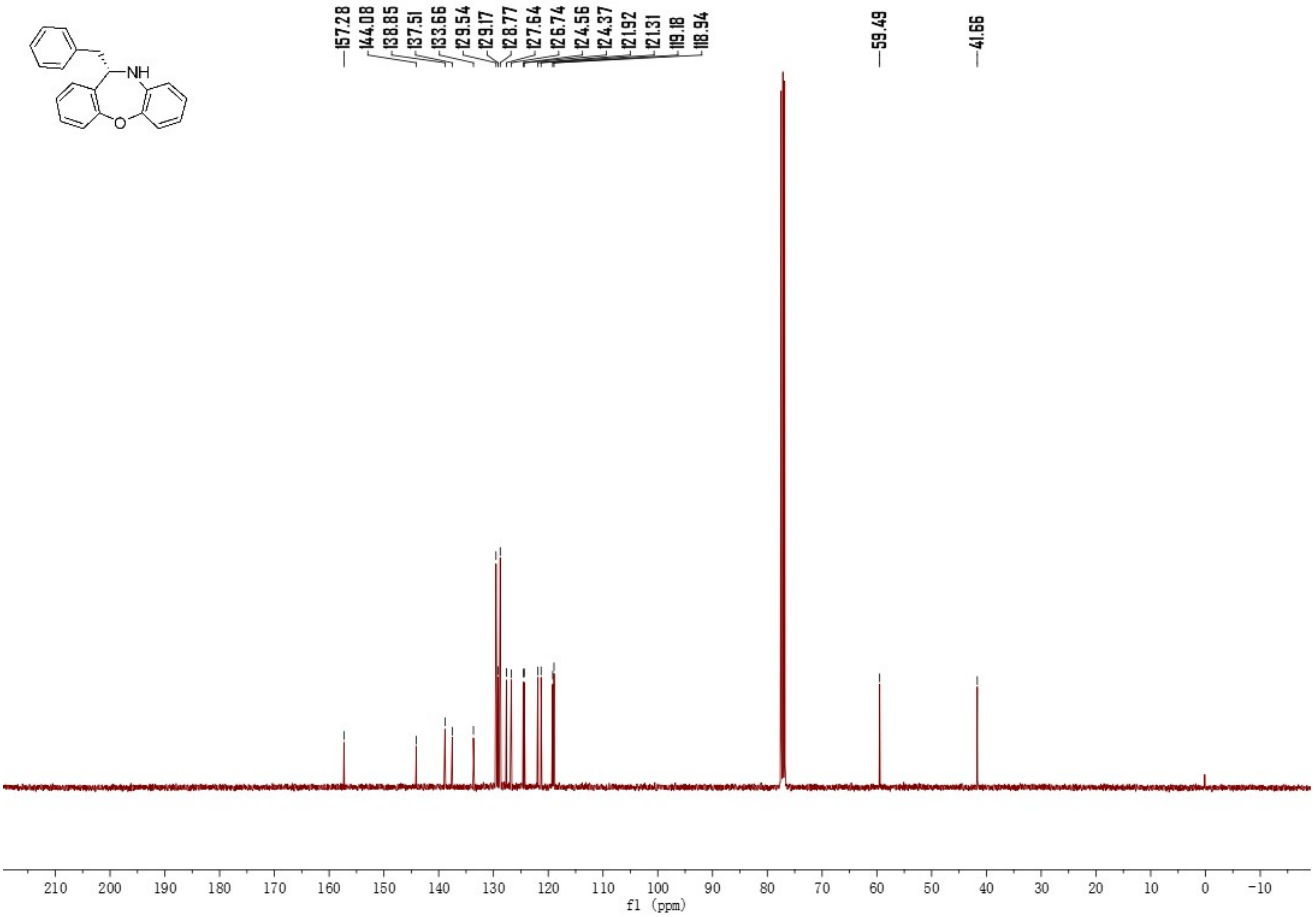




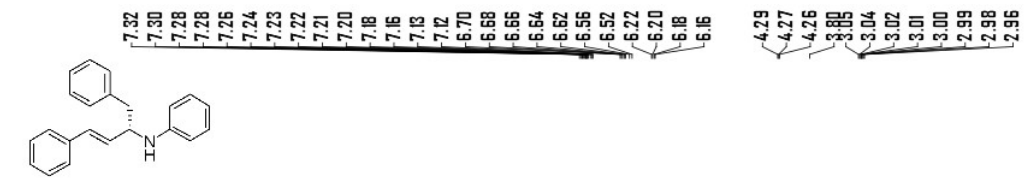
(*S*)-11-benzyl-10,11-dihydrodibenzo[*b*,*f*][1,4]oxazepine (3as)

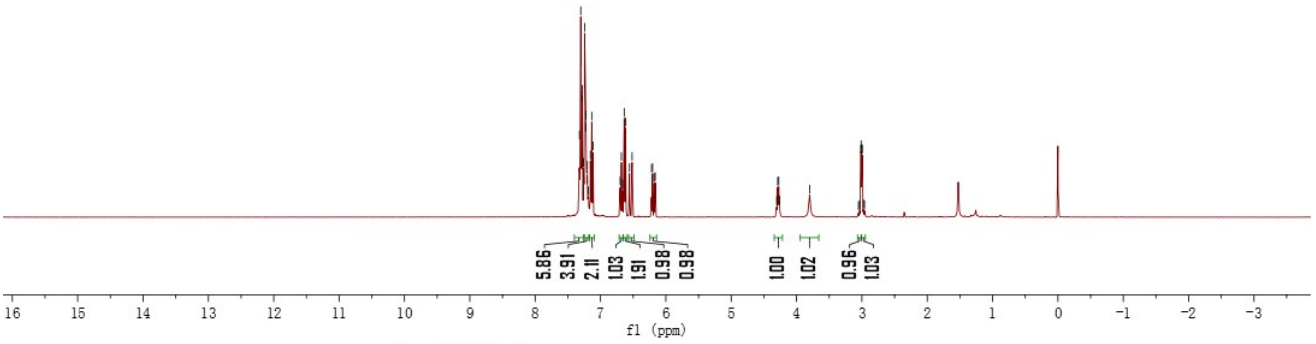


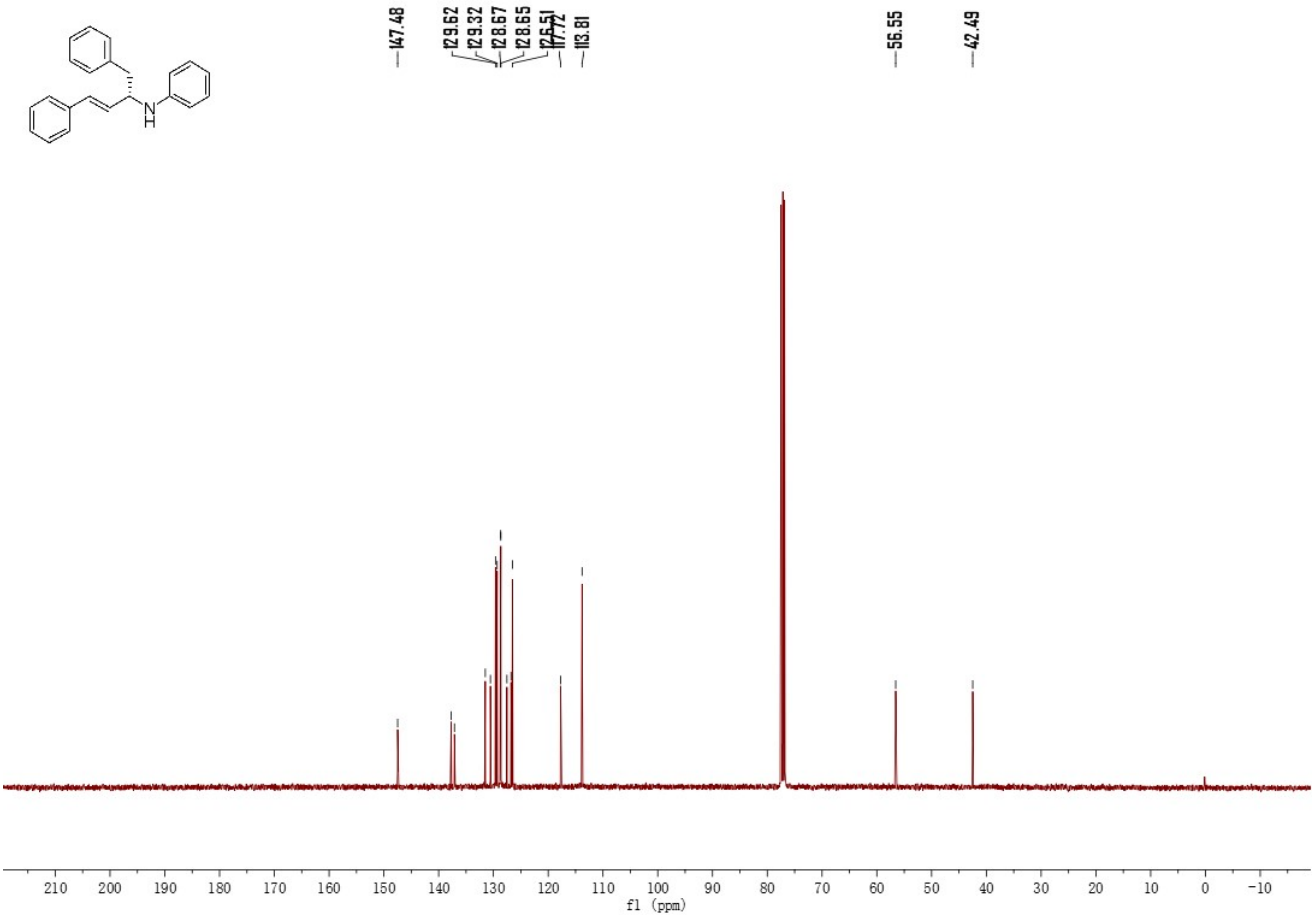




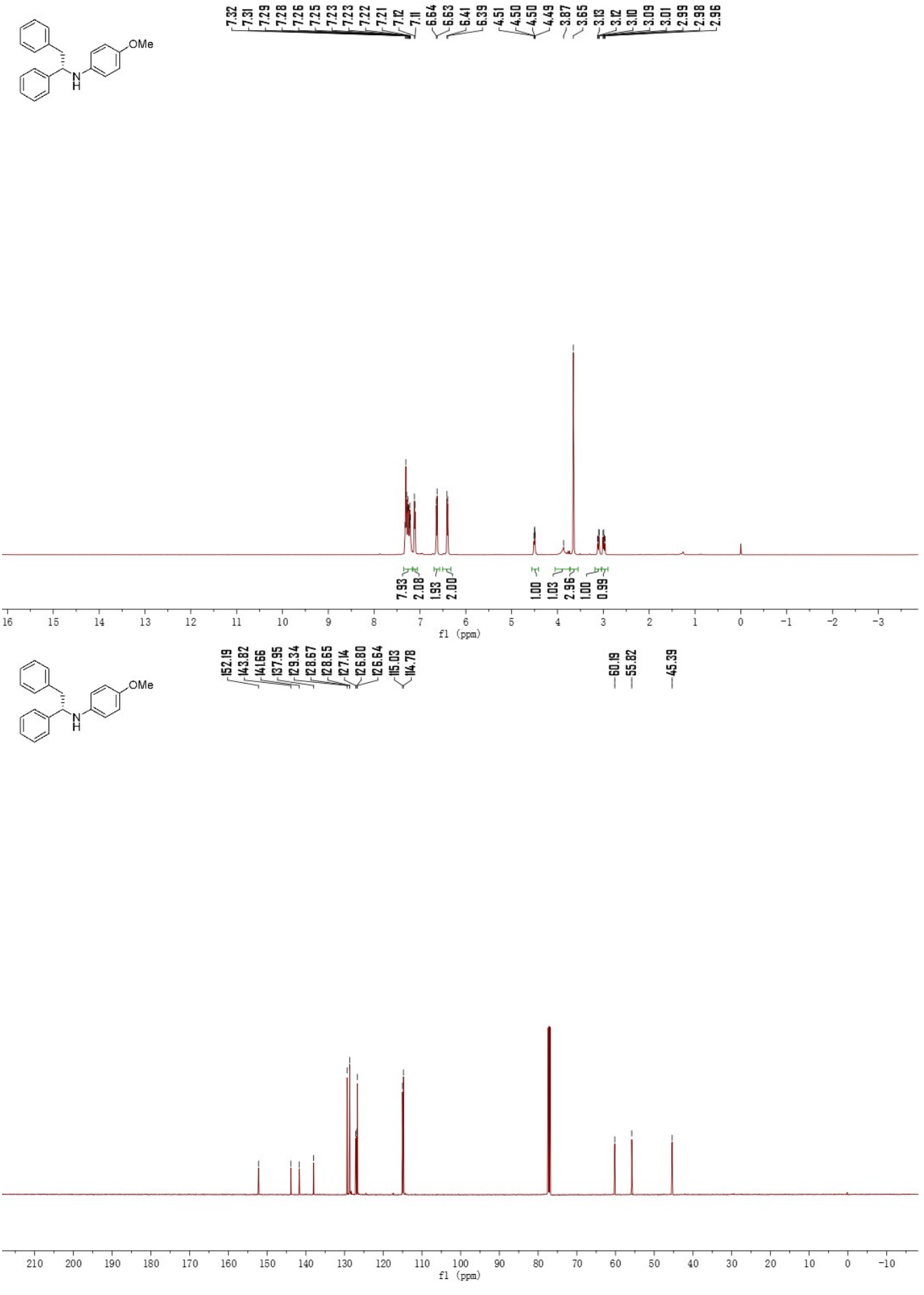
(*S*,*E*)-*N*-(1,4-diphenylbut-3-en-2-yl)aniline (3at)



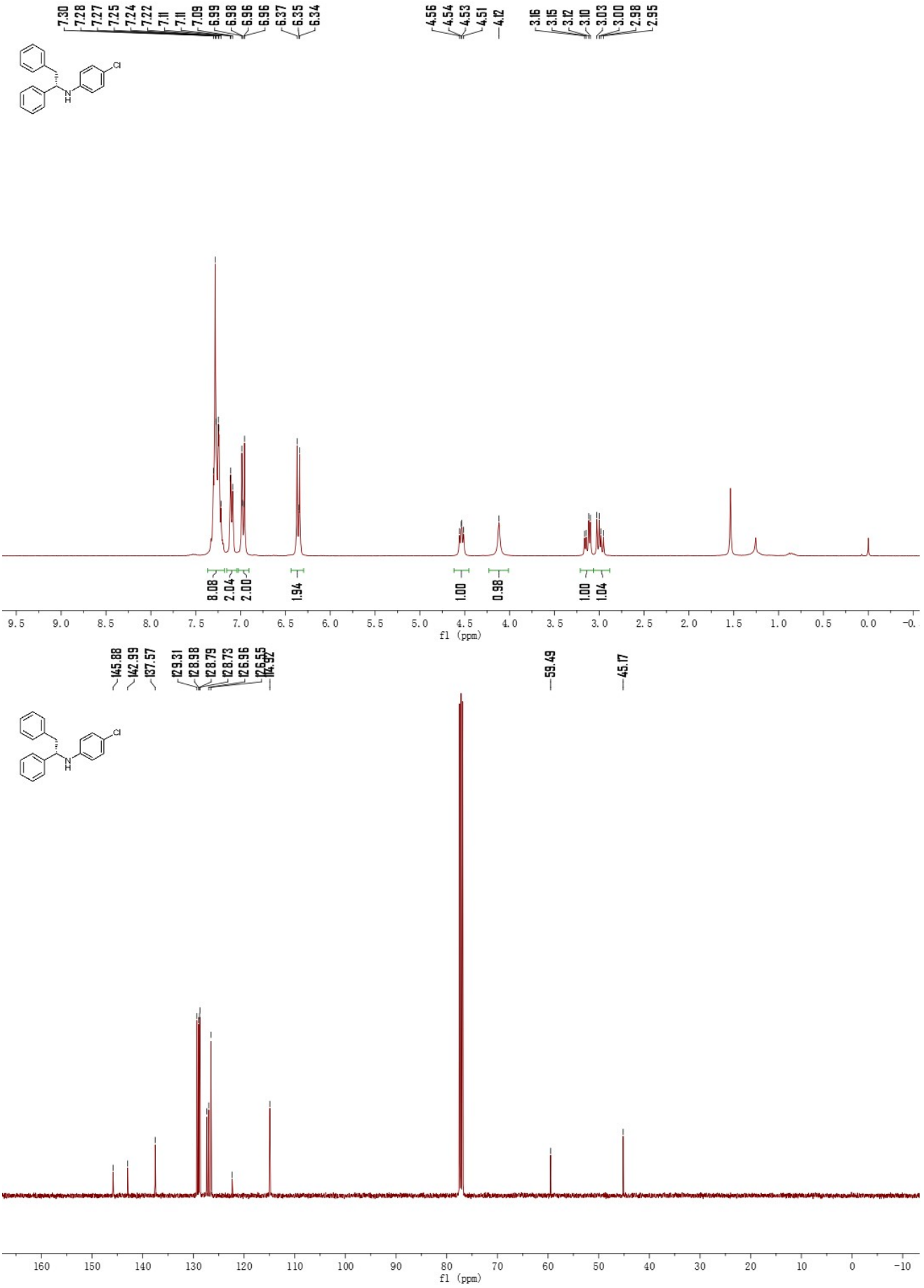




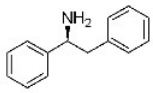
(*S*)-*N*-(1,2-diphenylethyl)-4-methoxyaniline (3au)

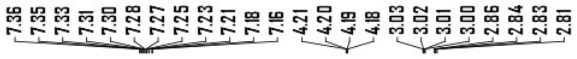


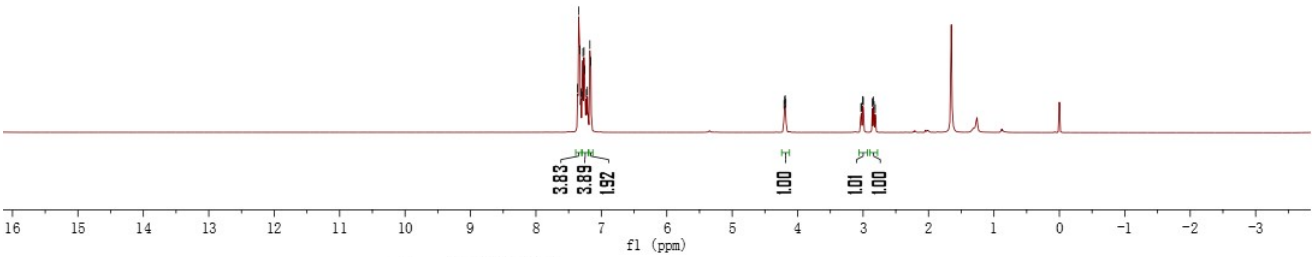
(*S*)-4-chloro-N-(1,2-diphenylethyl)aniline (3av)

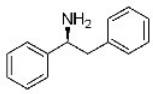


(*S*)-1,2-diphenylethan-1-amine (4)

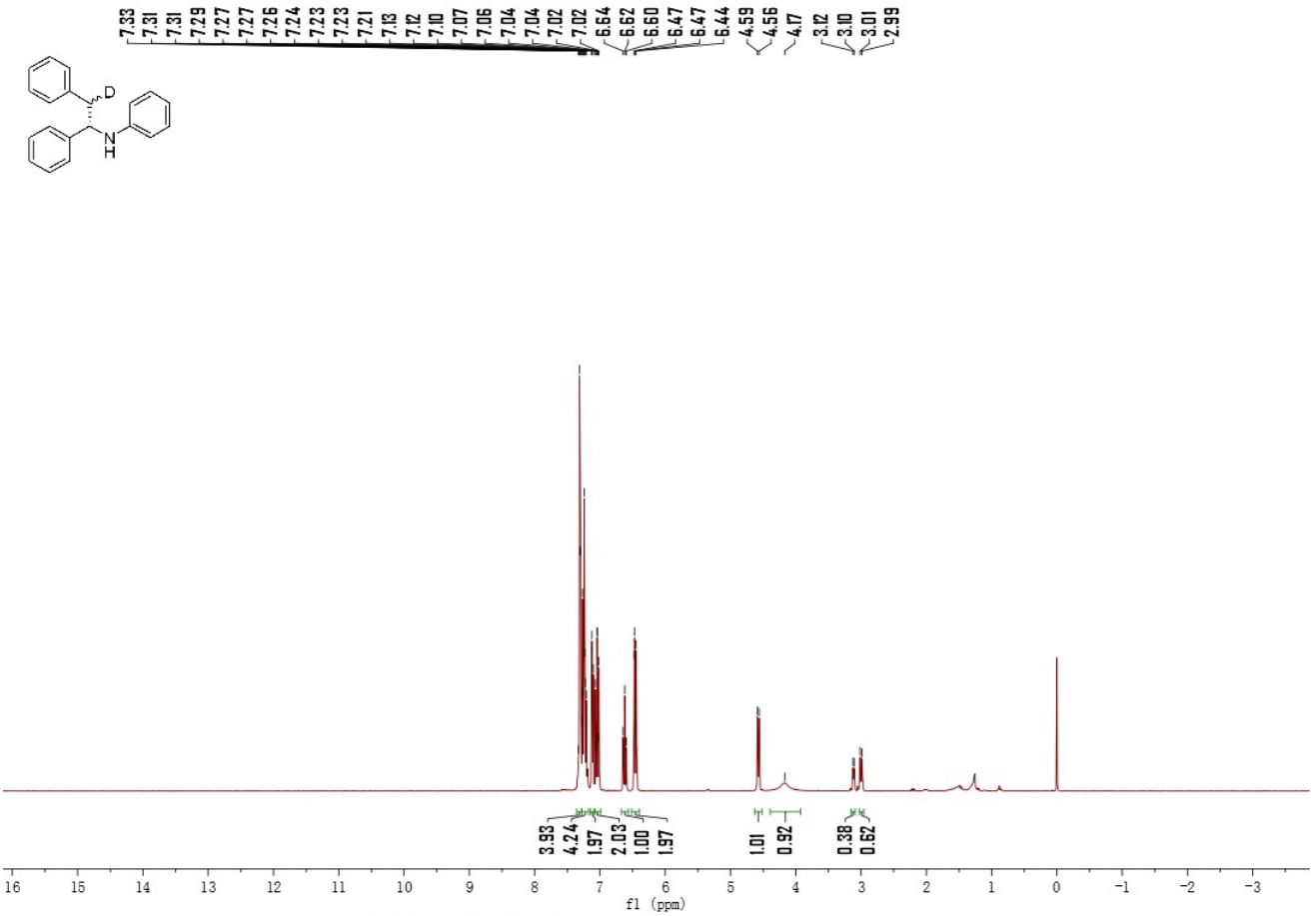


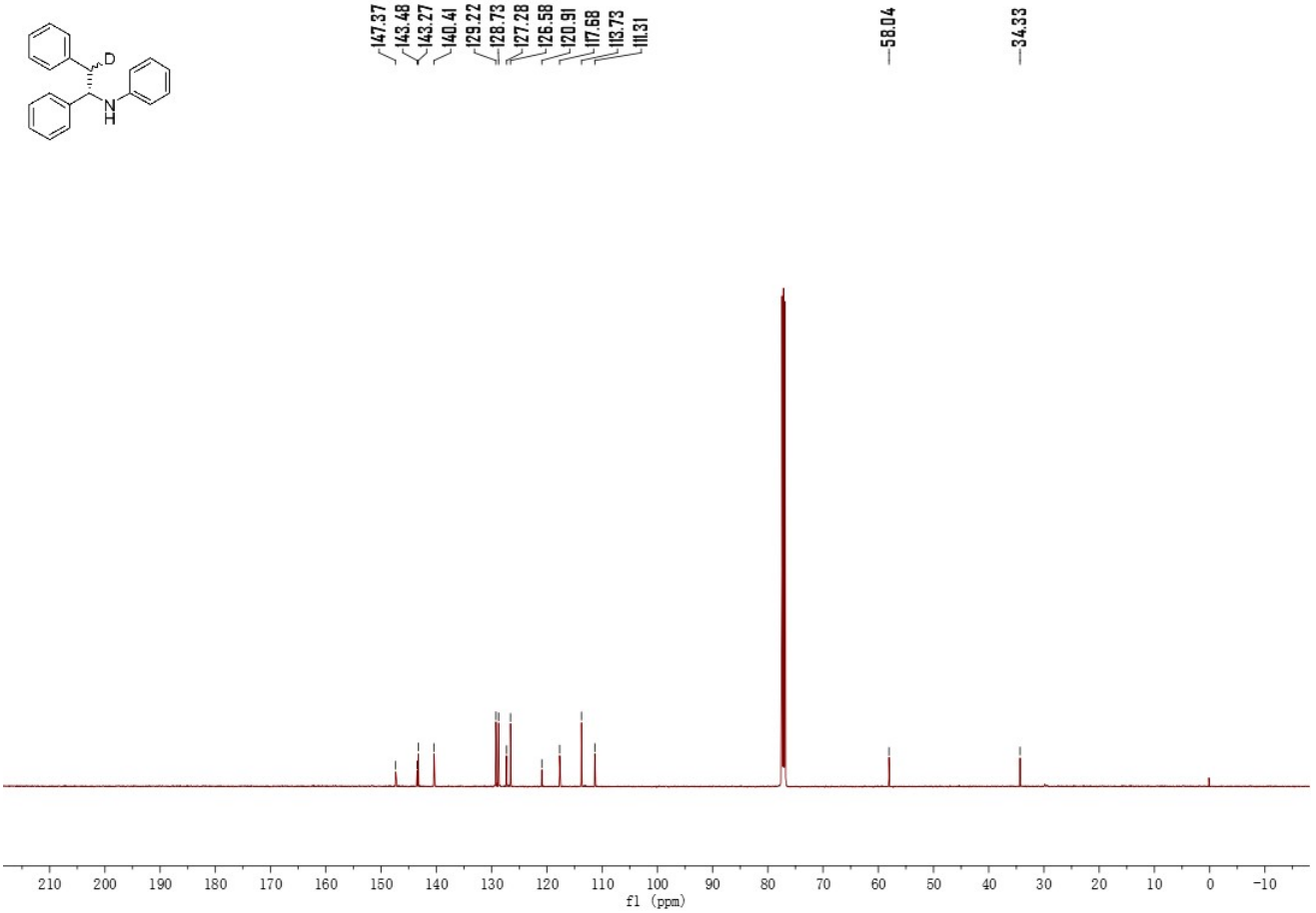






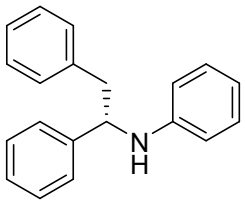
(*S*)-*N*-(1,2-diphenylethyl-2-*d*)aniline (*d*-3aa)


7.33
7.31
7.31
7.29
7.27
7.27
7.26
7.24
7.23
7.23
7.21
7.13
7.12
7.10
7.07
7.06
7.04
7.04
7.02
7.02
6.64
6.62
6.60
6.47
6.47
6.44
4.59
4.56
4.17
3.12
3.10
3.01
2.99
D
N
H
3.93
4.24
1.97
2.03
1.00
1.97
1.01
0.92
0.38
0.62
f1 (ppm)

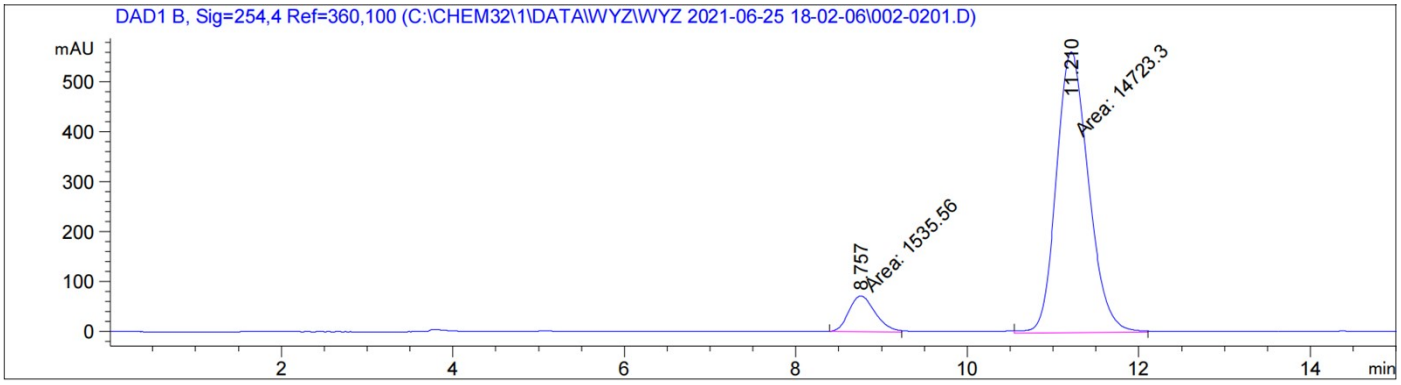

147.37
143.48
143.27
140.41
129.22
128.73
127.28
126.58
120.91
117.68
113.73
111.31
58.04
34.33
D
N
H
f1 (ppm)

VII. HPLC Spectra

(*S*)-*N*-(1,2-diphenylethyl)aniline (3aa)



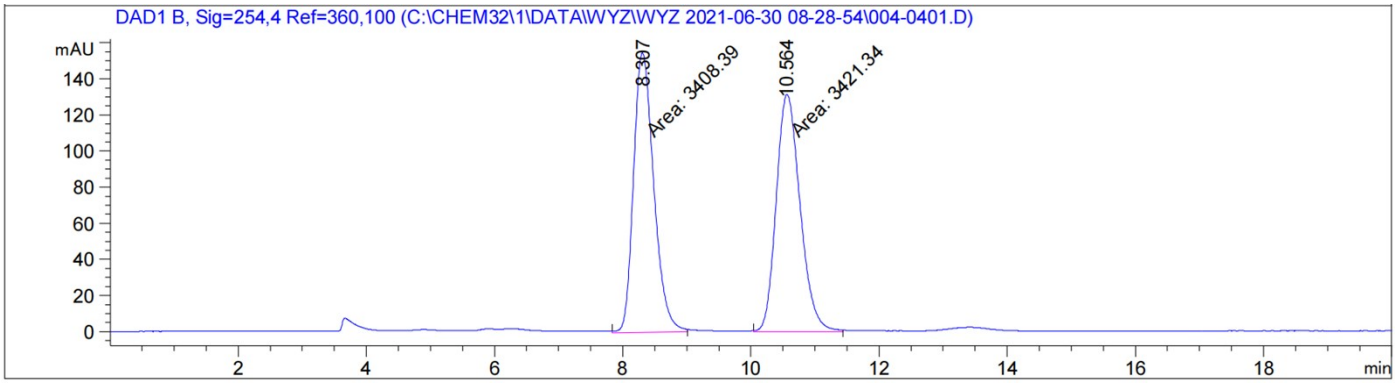
HPLC Spectra of Chiral **3aa**



Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	8.757	MM	0.3582	1535.55847	9.4445	?
2	11.210	MM	0.4359	1.47233e4	90.5555	?
Totals :				1.62588e4		

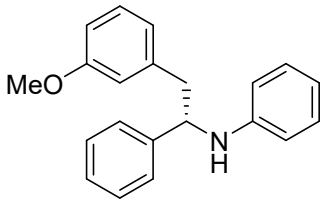
HPLC Spectra of Racemic **3aa**



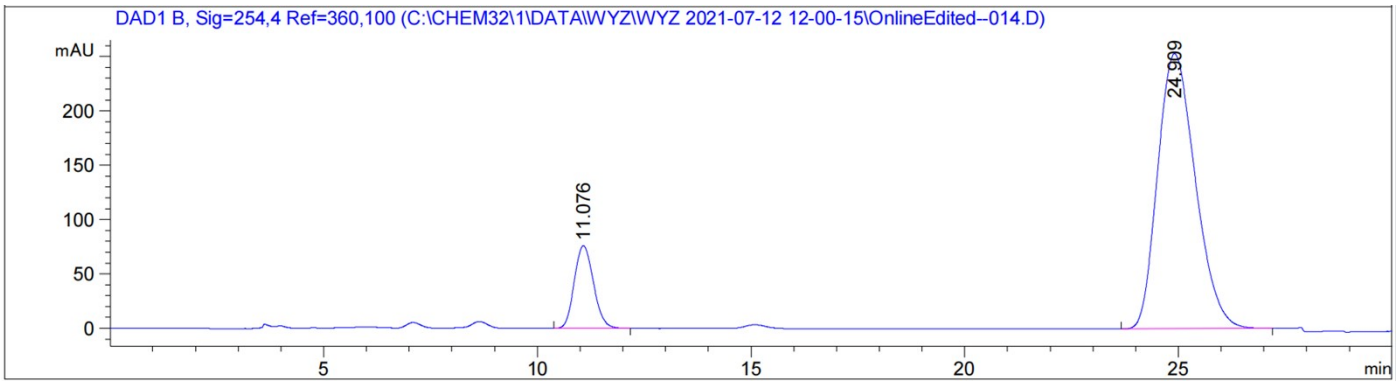
Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	8.307	MM	0.3664	3408.39185	49.9052	?
2	10.564	MM	0.4333	3421.33521	50.0948	?
Totals :				6829.72705		

(*S*)-*N*-(2-(3-methoxyphenyl)-1-phenylethyl)aniline (3ba)



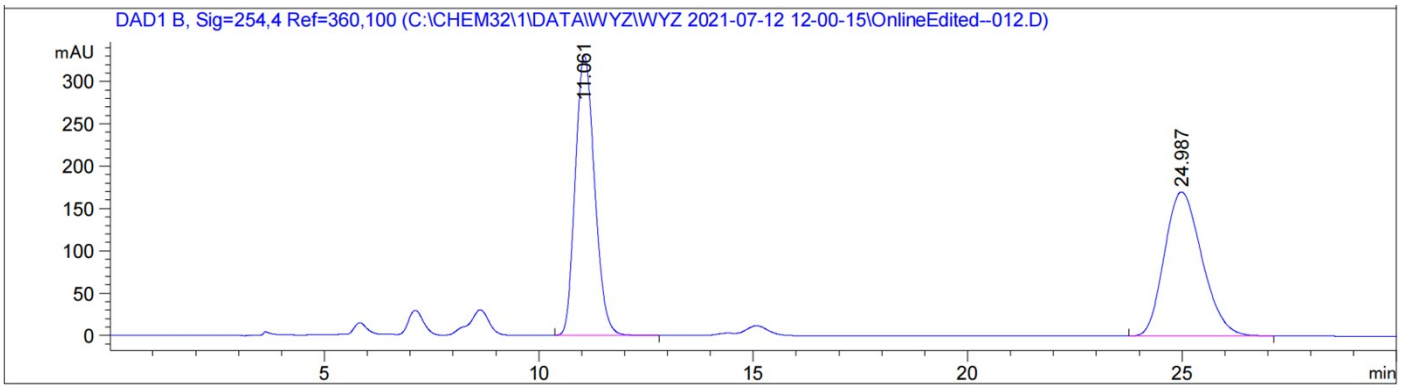
HPLC Spectra of Chiral **3ba**



Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	11.076	BB	0.4916	2372.69312	76.12232	13.2638
2	24.909	BB	0.9490	1.55158e4	253.16173	86.7362
Totals :				1.78884e4	329.28405	

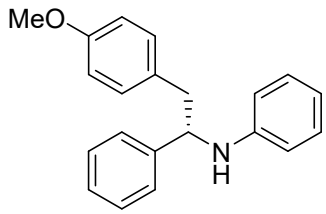
HPLC Spectra of Racemic **3ba**



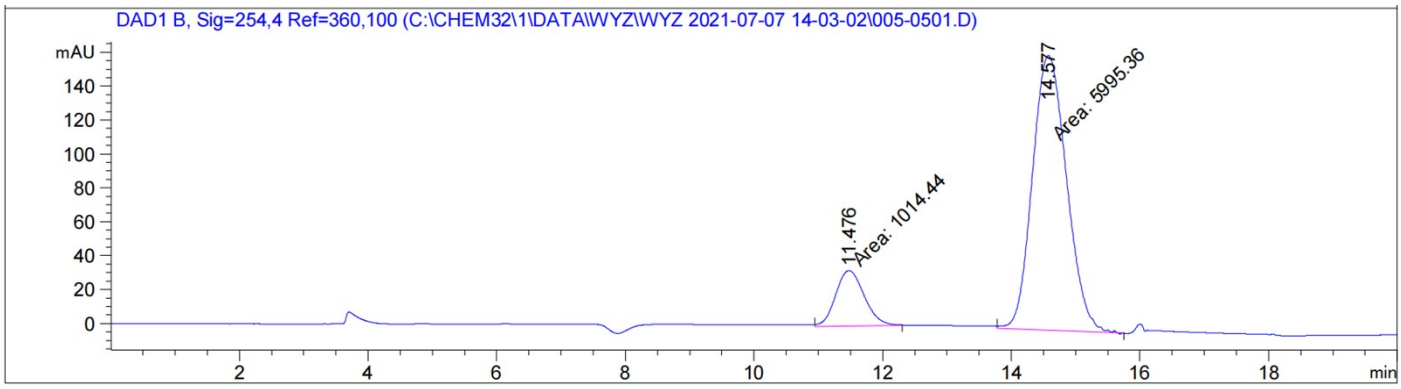
Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	11.061	BB	0.4955	1.03451e4	330.23853	49.9788
2	24.987	BB	0.9299	1.03539e4	170.16026	50.0212
Totals :				2.06990e4	500.39879	

(*S*)-*N*-(2-(4-methoxyphenyl)-1-phenylethyl)aniline (3ca)



HPLC Spectra of Chiral **3ca**

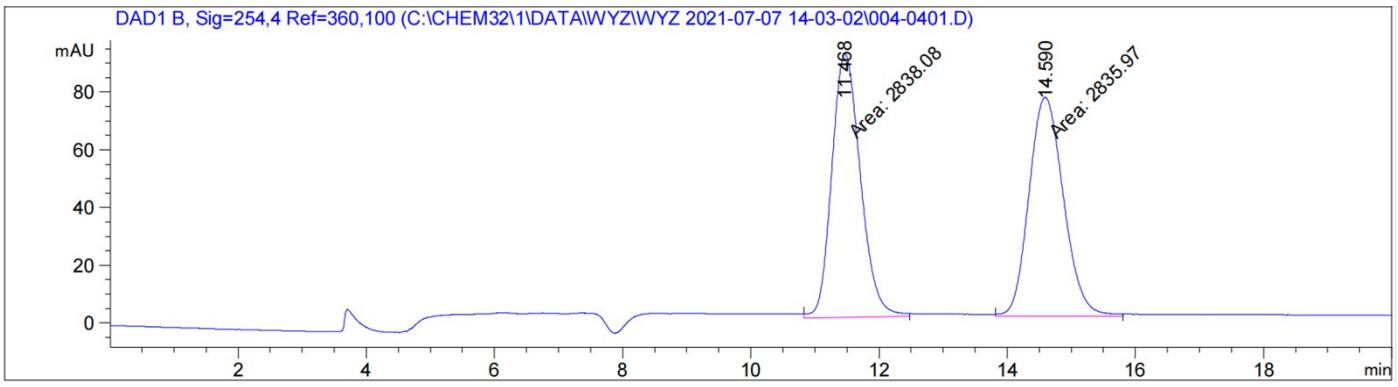


Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	11.476	MM	0.5160	1014.44080	14.4717	?
2	14.577	MM	0.6163	5995.36475	85.5283	?

Totals : 7009.80554

HPLC Spectra of Racemic **3ca**

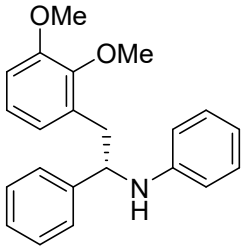


Signal 2: DAD1 B, Sig=254,4 Ref=360,100

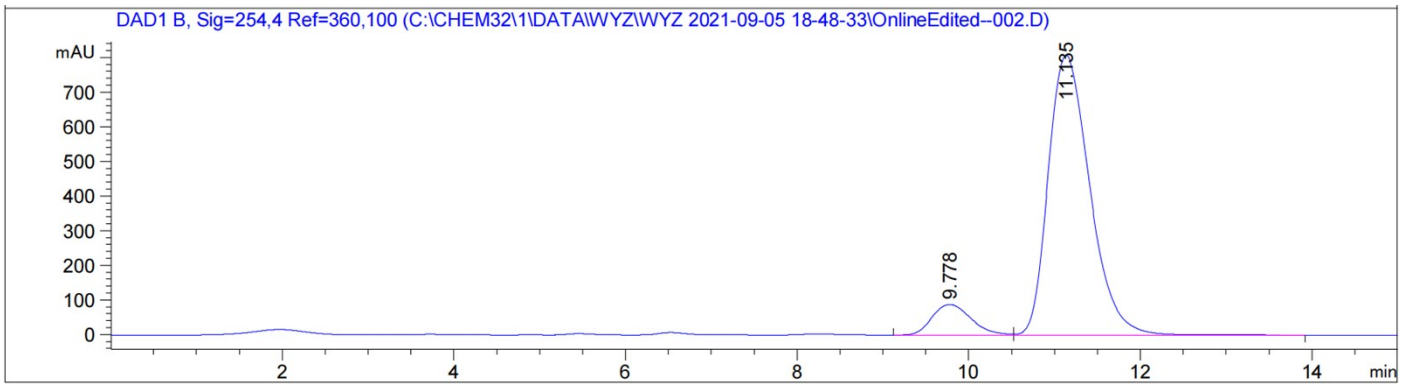
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	11.468	MM	0.5184	2838.08350	50.0186	?
2	14.590	MM	0.6237	2835.96802	49.9814	?

Totals : 5674.05151

(*S*)-*N*-(2-(2,3-dimethoxyphenyl)-1-phenylethyl)aniline (3da)



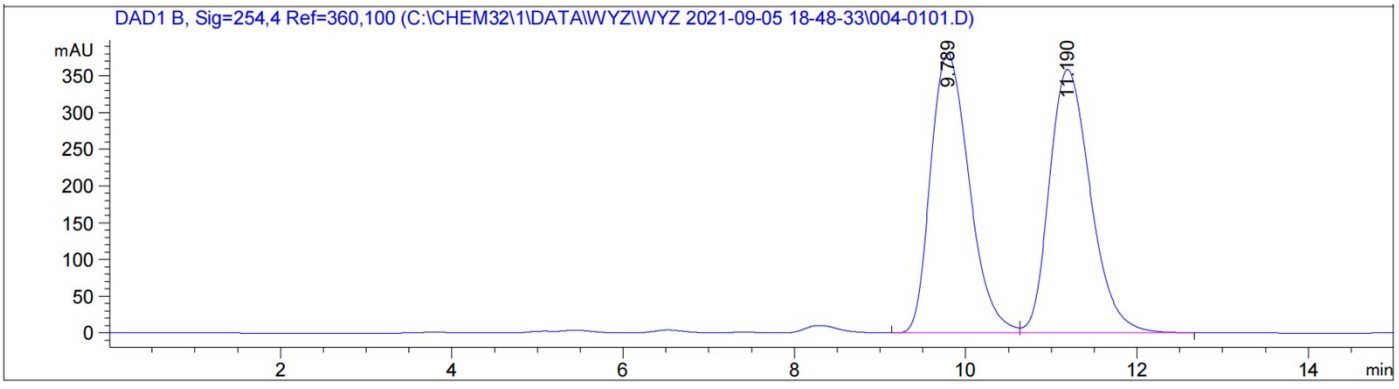
HPLC Spectra of Chiral **3da**



Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	9.778	BV	0.4968	2776.96265	9.2833	?
2	11.135	VB	0.5281	2.71367e4	90.7167	?
Totals :				2.99136e4		

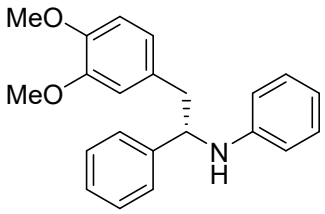
HPLC Spectra of Racemic **3da**



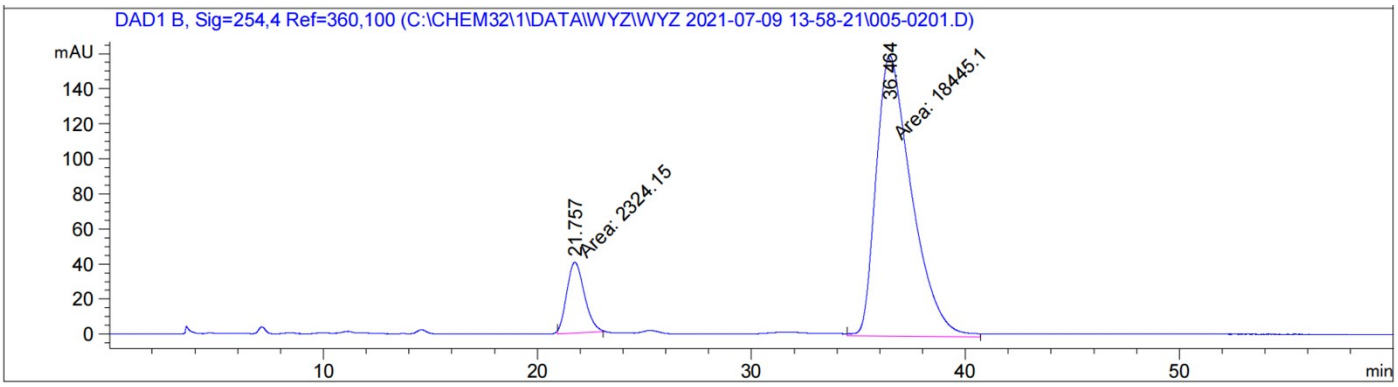
Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	9.789	BV	0.4949	1.18958e4	49.8943	?
2	11.190	VB	0.5226	1.19462e4	50.1057	?
Totals :				2.38420e4		

(*S*)-*N*-(2-(3,4-dimethoxyphenyl)-1-phenylethyl)aniline (3ea)



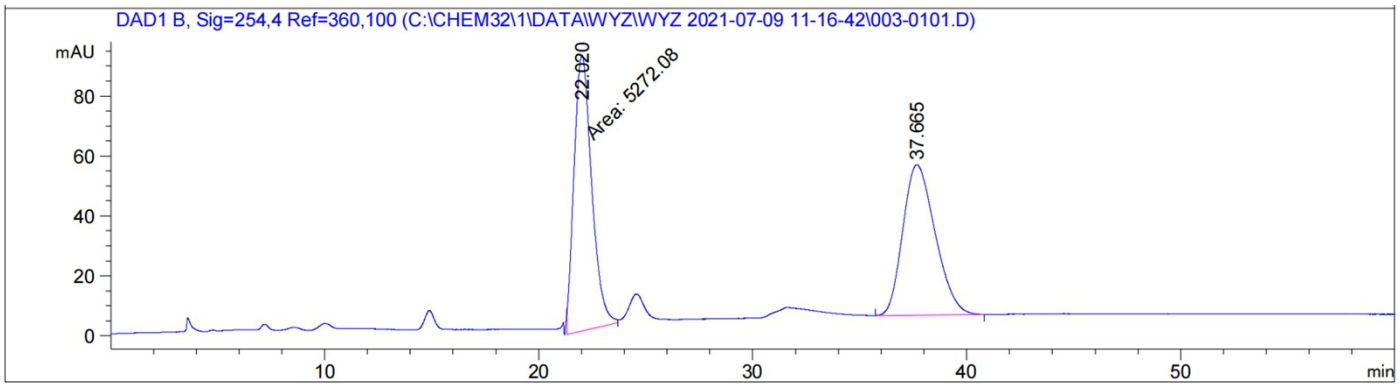
HPLC Spectra of Chiral **3ea**



Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	21.757	MM	0.9584	2324.15137	40.41644	11.1904
2	36.464	MM	1.9195	1.84451e4	160.15160	88.8096
Totals :				2.07692e4	200.56803	

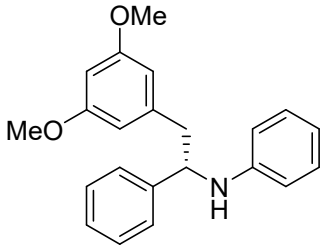
HPLC Spectra of Racemic **3ea**



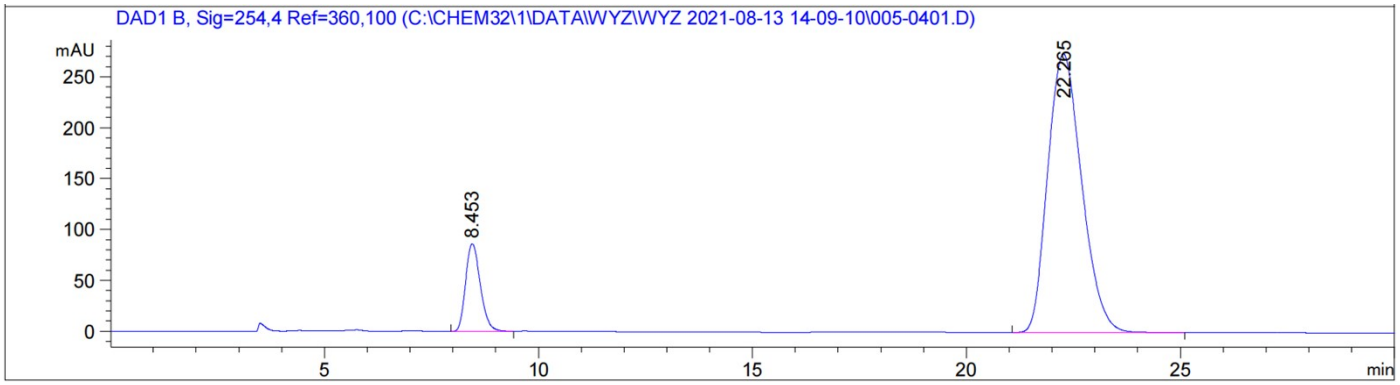
Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	22.020	MM	0.9562	5272.08496	91.89688	50.0251
2	37.665	BB	1.2310	5266.79541	50.16089	49.9749
Totals :				1.05389e4	142.05777	

(*S*)-*N*-(2-(3,5-dimethoxyphenyl)-1-phenylethyl)aniline (3fa)



HPLC Spectra of Chiral **3fa**

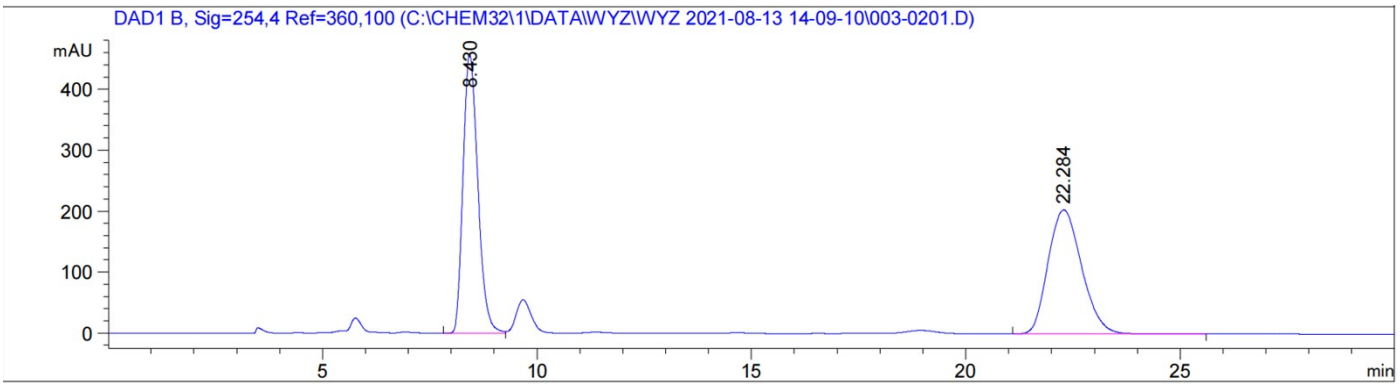


Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	8.453	BB	0.3734	2064.53491	12.0235	?
2	22.265	BB	0.8648	1.51063e4	87.9765	?

Totals : 1.71708e4

HPLC Spectra of Racemic **3fa**

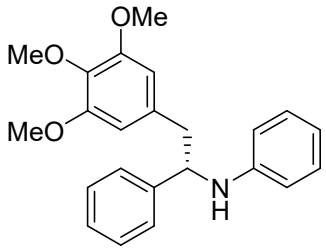


Signal 2: DAD1 B, Sig=254,4 Ref=360,100

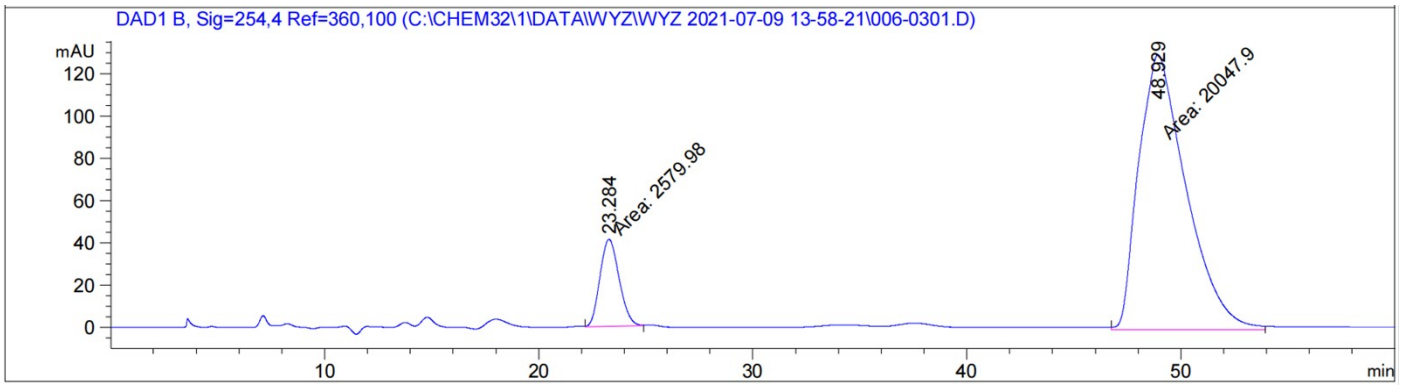
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	8.430	BV	0.3763	1.10084e4	49.9130	?
2	22.284	BB	0.8558	1.10467e4	50.0870	?

Totals : 2.20551e4

(*S*)-*N*-(1-phenyl-2-(3,4,5-trimethoxyphenyl)ethyl)aniline (3ga)



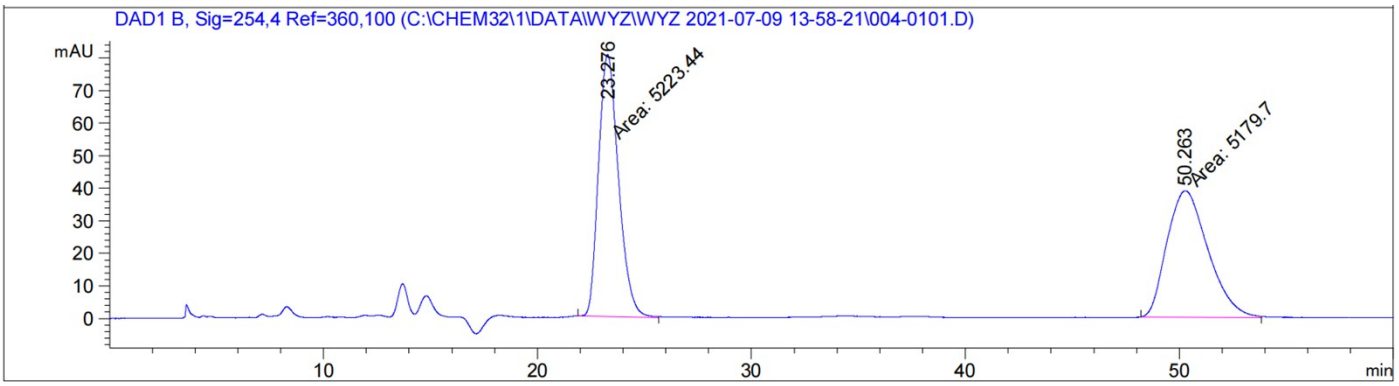
HPLC Spectra of Chiral **3ga**



Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	23.284	MM	1.0433	2579.98389	41.21444	11.4018
2	48.929	MM	2.5671	2.00479e4	130.15926	88.5982
Totals :				2.26279e4	171.37370	

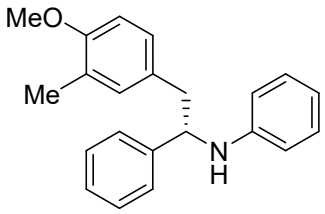
HPLC Spectra of Racemic **3ga**



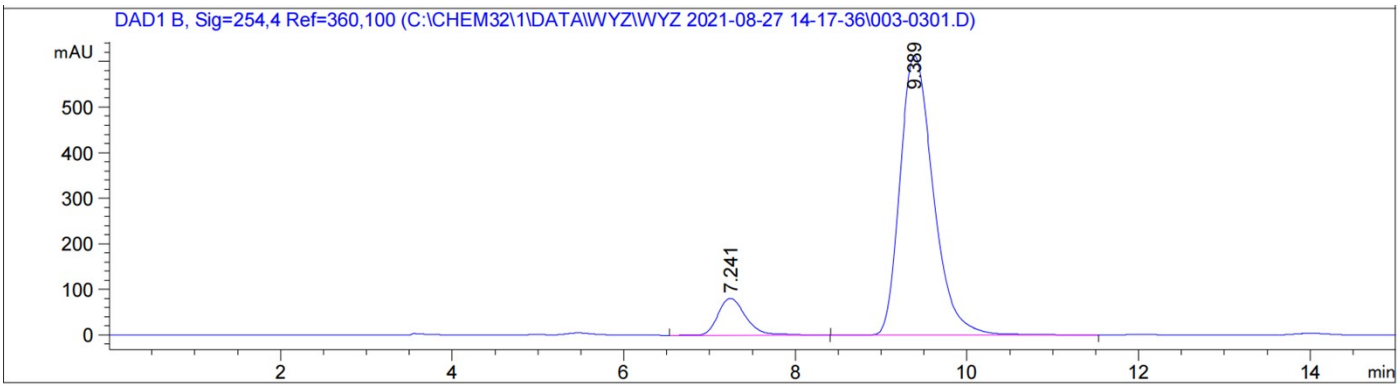
Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	23.276	MM	1.0823	5223.43848	80.43731	50.2102
2	50.263	MM	2.2234	5179.69775	38.82799	49.7898
Totals :				1.04031e4	119.26530	

(*S*)-*N*-(2-(4-methoxy-3-methylphenyl)-1-phenylethyl)aniline (3ha)



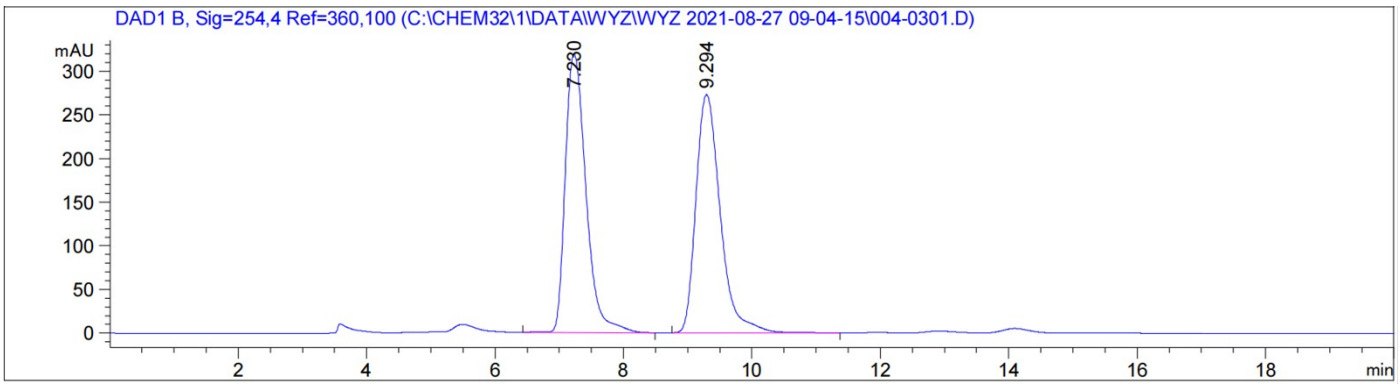
HPLC Spectra of Chiral **3ha**



Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	7.241	BB	0.3512	1842.16248	10.0346	?
2	9.389	BB	0.4202	1.65160e4	89.9654	?
Totals :				1.83582e4		

HPLC Spectra of Racemic **3ha**

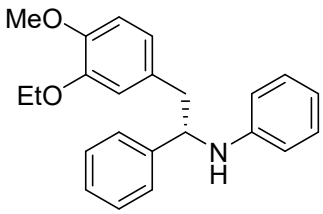


Signal 2: DAD1 B, Sig=254,4 Ref=360,100

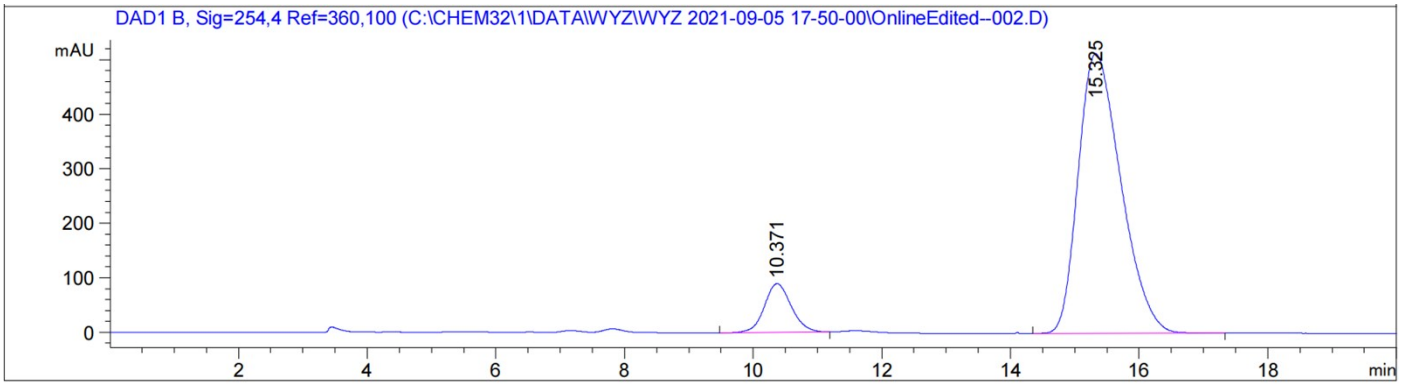
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	7.230	BB	0.3515	7151.96826	49.8730	?
2	9.294	BB	0.4094	7188.40674	50.1270	?

Totals : 1.43404e4

(*S*)-*N*-(2-(3-ethoxy-4-methoxyphenyl)-1-phenylethyl)aniline (3ia)



HPLC Spectra of Chiral **3ia**

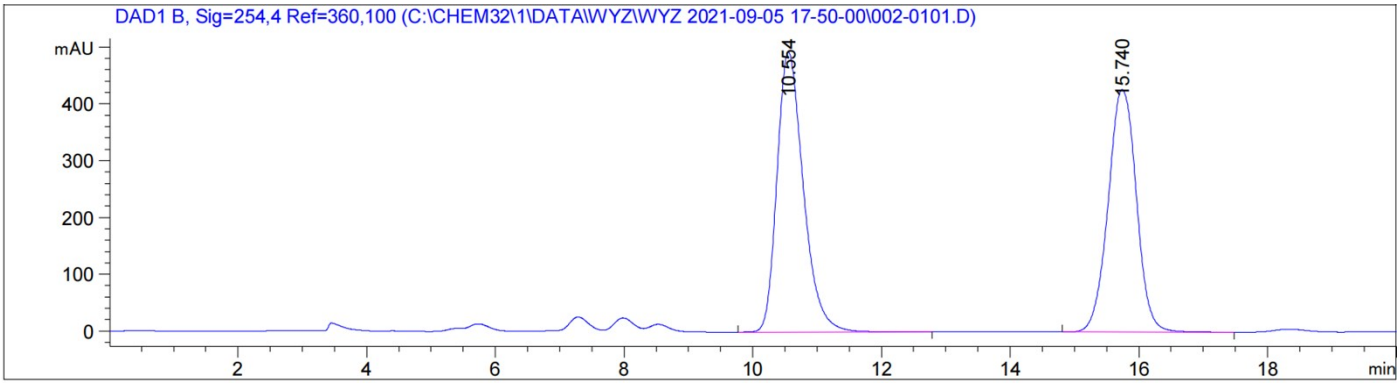


Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	10.371	BB	0.4488	2618.36621	9.9718	?
2	15.325	BB	0.7114	2.36392e4	90.0282	?

Totals : 2.62576e4

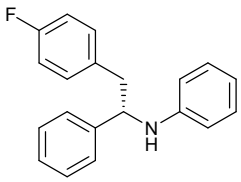
HPLC Spectra of Racemic **3ia**



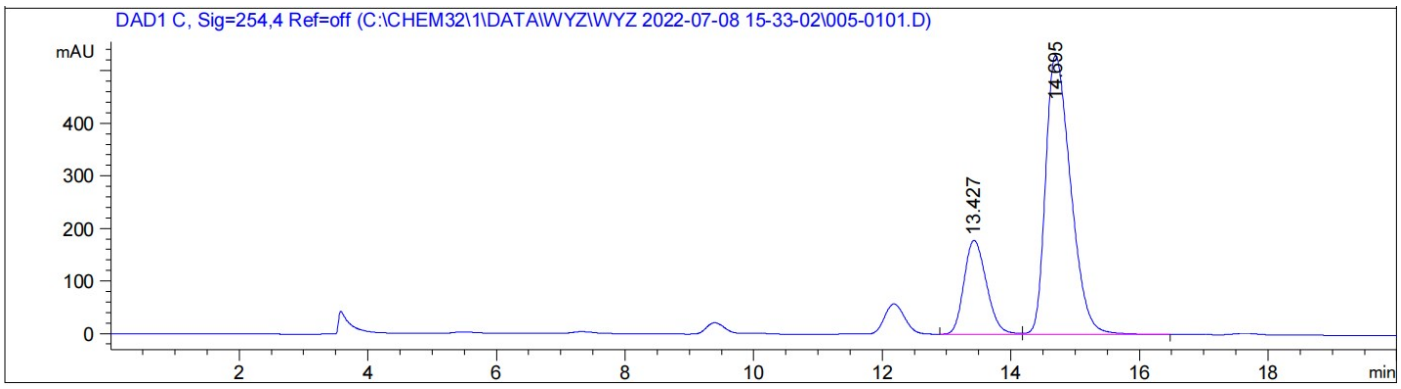
Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	10.554	BB	0.4379	1.40232e4	51.8272	?
2	15.740	BB	0.4724	1.30344e4	48.1728	?
Totals :				2.70577e4		

(*S*)-N-(2-(4-fluorophenyl)-1-phenylethyl)aniline (3ja)



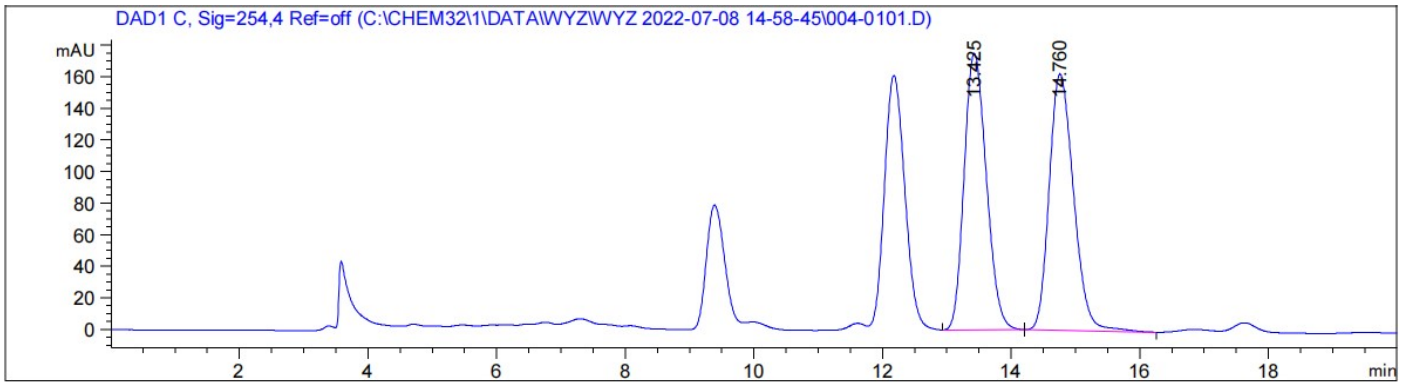
HPLC Spectra of Chiral **3ja**



Signal 2: DAD1 C, Sig=254,4 Ref=off

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	13.427	BV	0.3796	4338.53320	178.45332	23.1891
2	14.695	VB	0.4220	1.43708e4	530.54724	76.8109
Totals :				1.87094e4	709.00056	

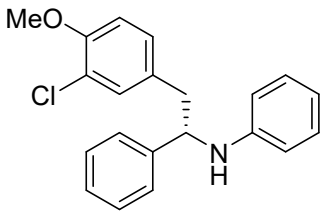
HPLC Spectra of Racemic **3ja**



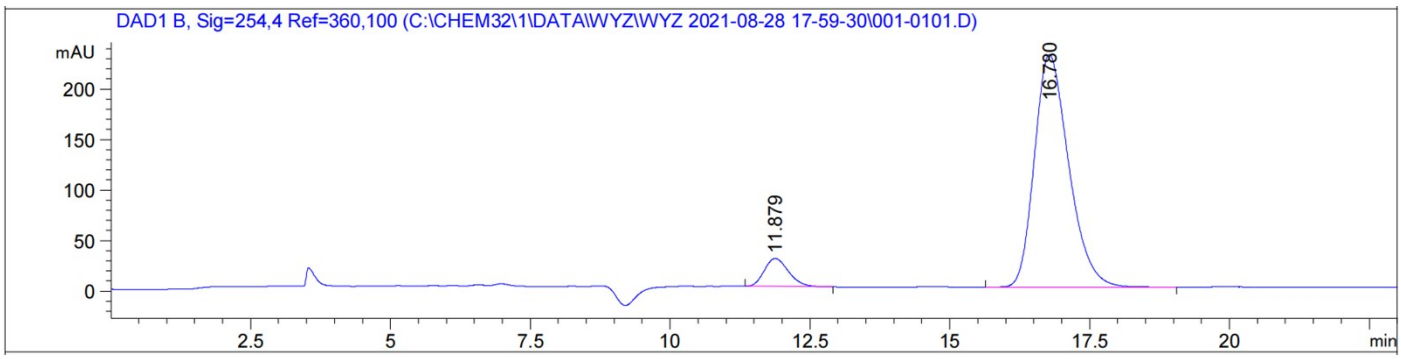
Signal 2: DAD1 C, Sig=254,4 Ref=off

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	13.425	BB	0.3761	4203.88086	175.08258	49.5717
2	14.760	BB	0.4113	4276.52197	162.33228	50.4283
Totals :				8480.40283	337.41486	

(*S*)-*N*-(2-(3-chloro-4-methoxyphenyl)-1-phenylethyl)aniline (3ka)



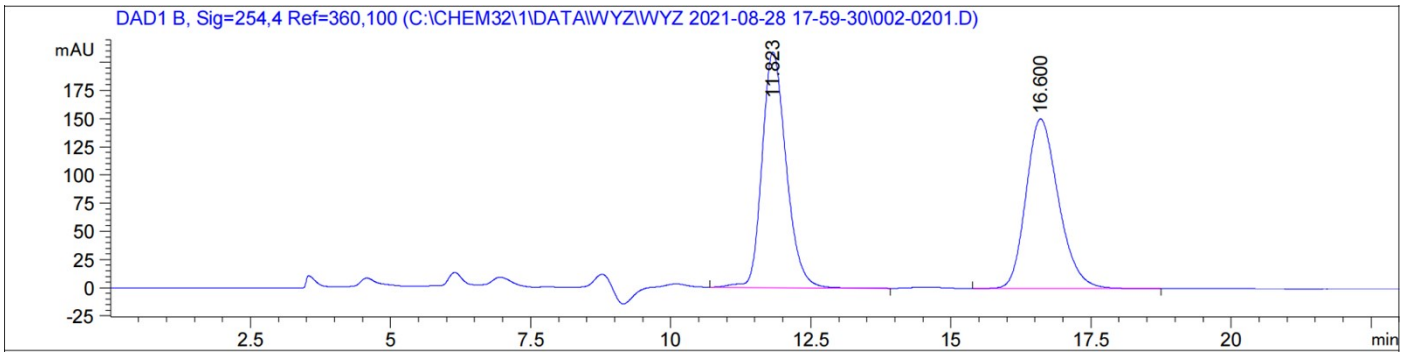
HPLC Spectra of Chiral **3ka**



Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	11.879	BB	0.4649	834.41772	7.8286	?
2	16.780	BB	0.6559	9824.21875	92.1714	?
Totals :				1.06586e4		

HPLC Spectra of Racemic **3ka**

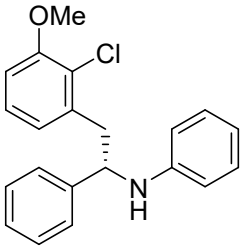


Signal 2: DAD1 B, Sig=254,4 Ref=360,100

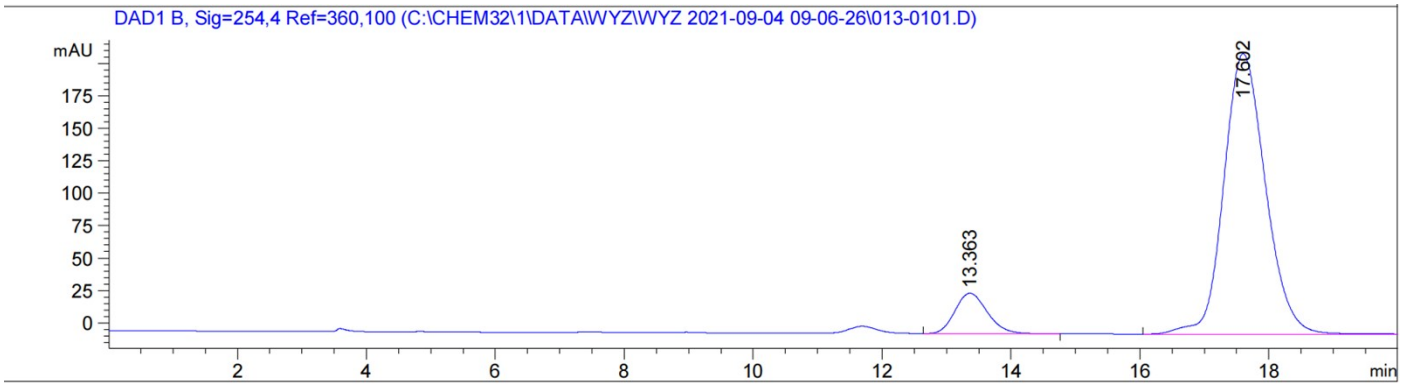
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	11.823	BB	0.4617	6261.45801	50.7255	?
2	16.600	BB	0.6217	6082.34424	49.2745	?

Totals : 1.23438e4

(*S*)-*N*-(2-(2-chloro-3-methoxyphenyl)-1-phenylethyl)aniline (3la)



HPLC Spectra of Chiral **3la**

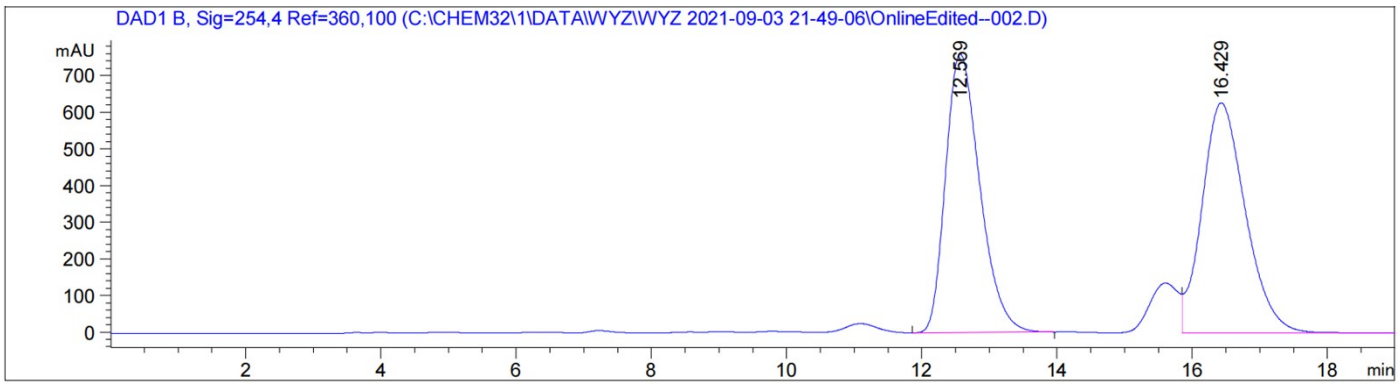


Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	13.363	BB	0.5420	1090.99097	10.0955	?
2	17.602	BBA	0.6962	9715.75098	89.9045	?

Totals : 1.08067e4

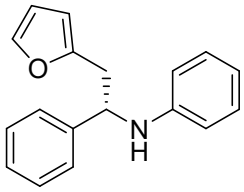
HPLC Spectra of Racemic **3la**



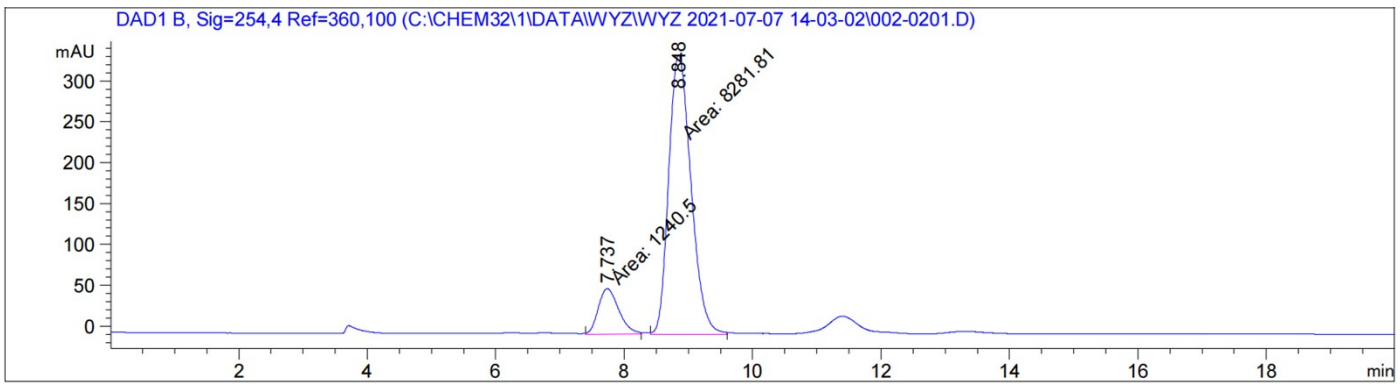
Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	12.569	BB	0.5448	2.67851e4	48.8066	?
2	16.429	VBA	0.6856	2.80950e4	51.1934	?
Totals :				5.48801e4		

(*S*)-*N*-(2-(furan-2-yl)-1-phenylethyl)aniline (3ma)



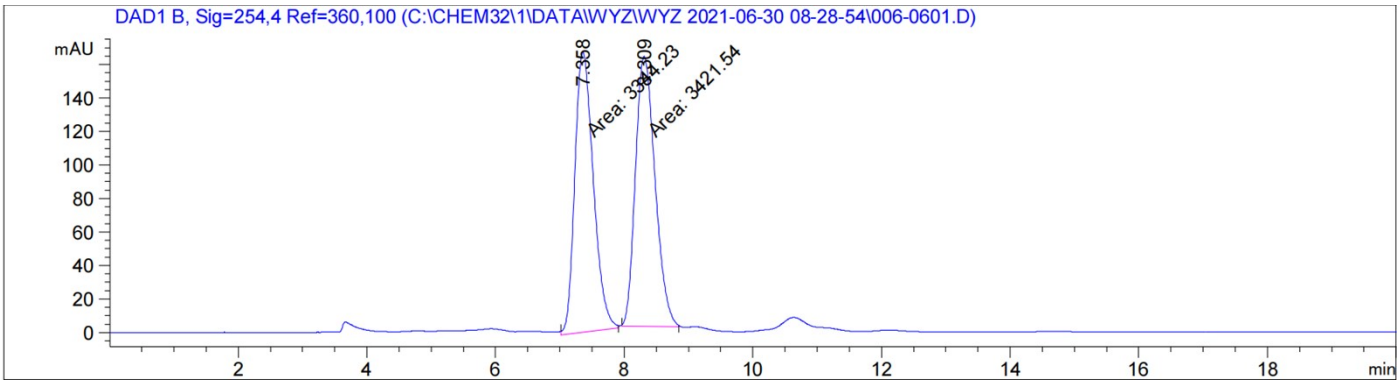
HPLC Spectra of Chiral **3ma**



Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	7.737	MM	0.3708	1240.49646	13.0273	?
2	8.848	MM	0.4031	8281.80957	86.9727	?
Totals :				9522.30603		

HPLC Spectra of Racemic **3ma**

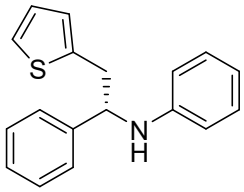


Signal 2: DAD1 B, Sig=254,4 Ref=360,100

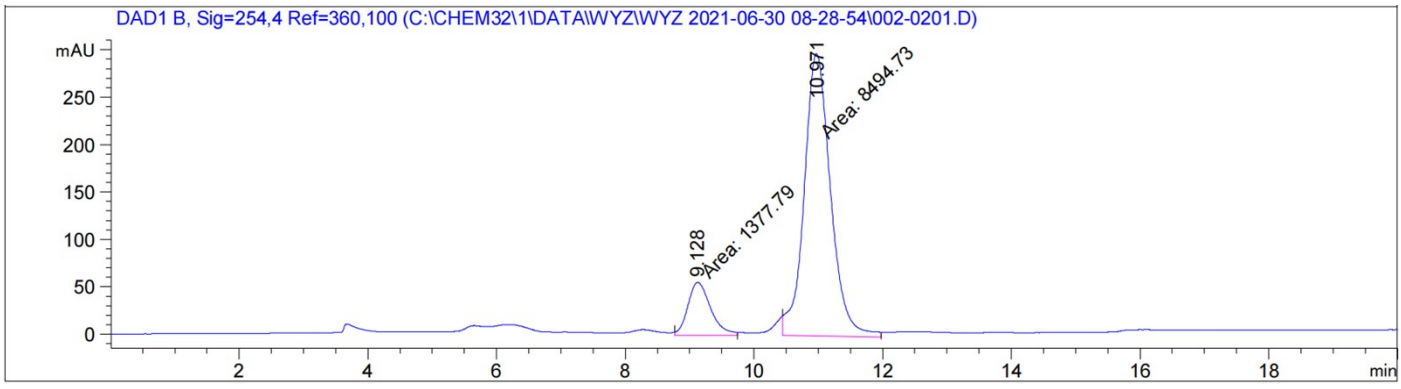
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	7.358	MM	0.3334	3344.22607	49.4287	?
2	8.309	MM	0.3537	3421.53662	50.5713	?

Totals : 6765.76270

(*S*)-*N*-(1-phenyl-2-(thiophen-2-yl)ethyl)aniline (3na)



HPLC Spectra of Chiral **3na**

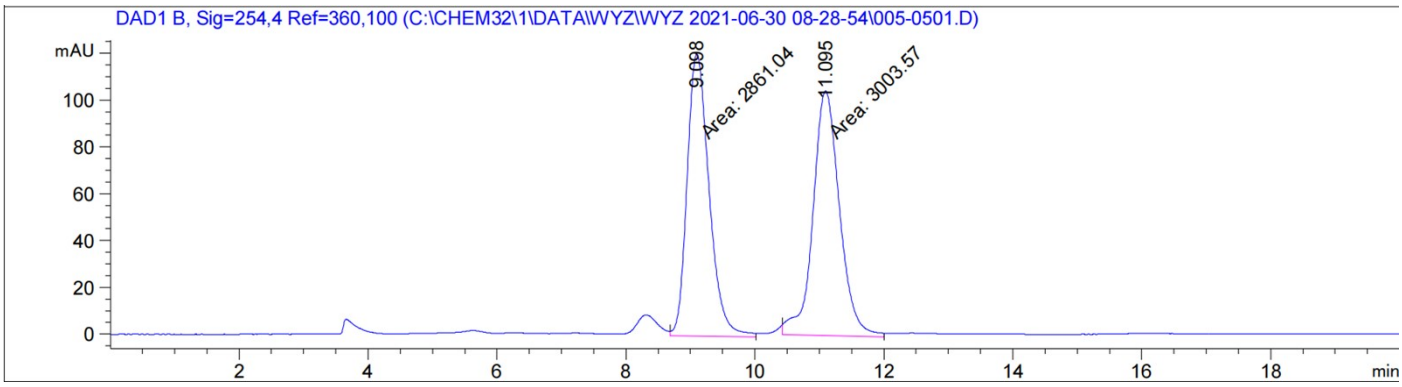


Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	9.128	MM	0.4107	1377.79016	13.9558	?
2	10.971	MM	0.4758	8494.73145	86.0442	?

Totals : 9872.52161

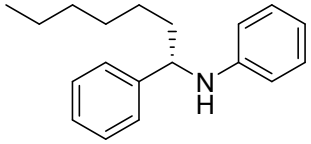
HPLC Spectra of Racemic **3na**



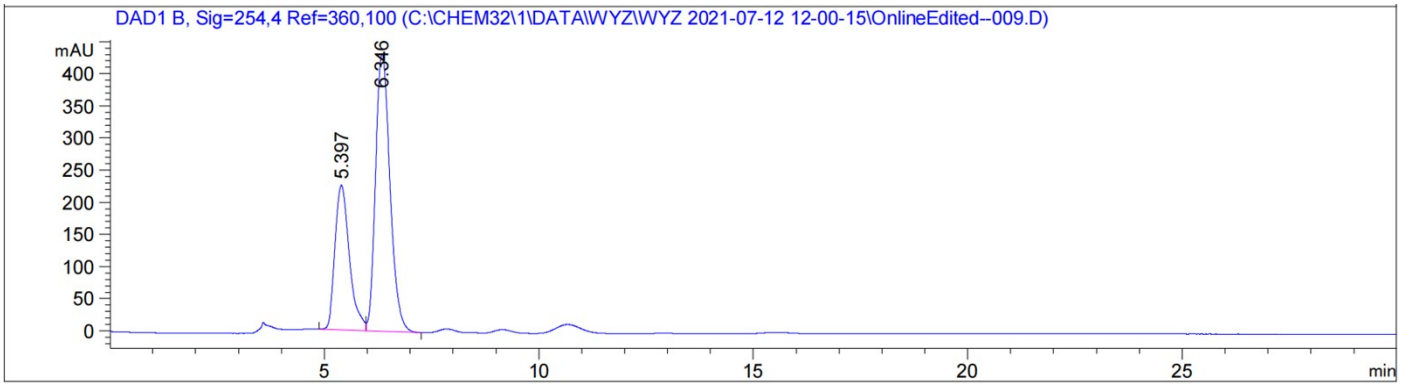
Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	9.098	MM	0.3955	2861.04370	48.7849	?
2	11.095	MM	0.4783	3003.56982	51.2151	?
Totals :				5864.61353		

(*S*)-*N*-(1-phenylheptyl)aniline (3oa)



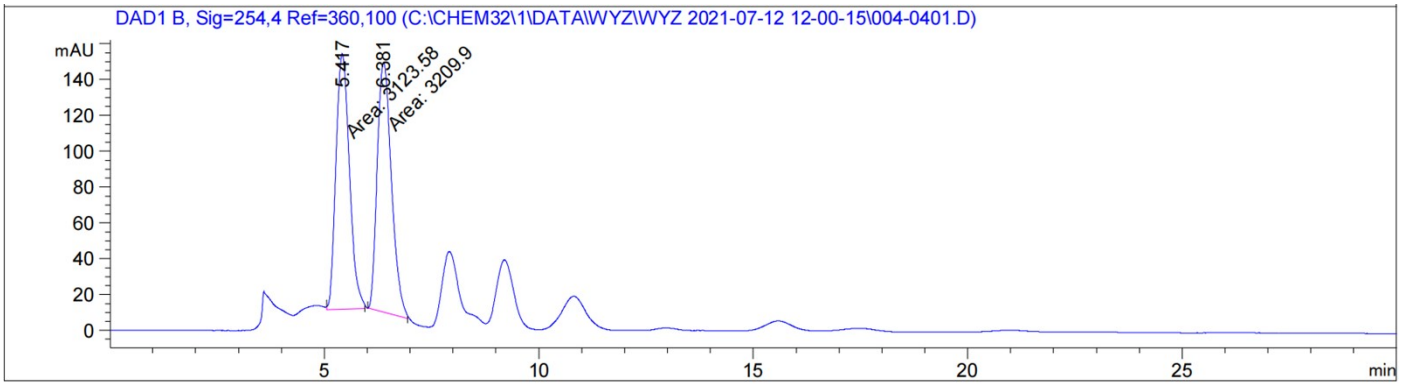
HPLC Spectra of Chiral **3oa**



Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	5.397	BV	0.3657	5288.68164	225.47072	34.3003
2	6.346	VB	0.3696	1.01301e4	431.90103	65.6997
Totals :				1.54188e4	657.37175	

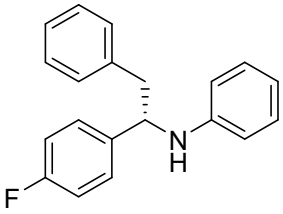
HPLC Spectra of Racemic **3oa**



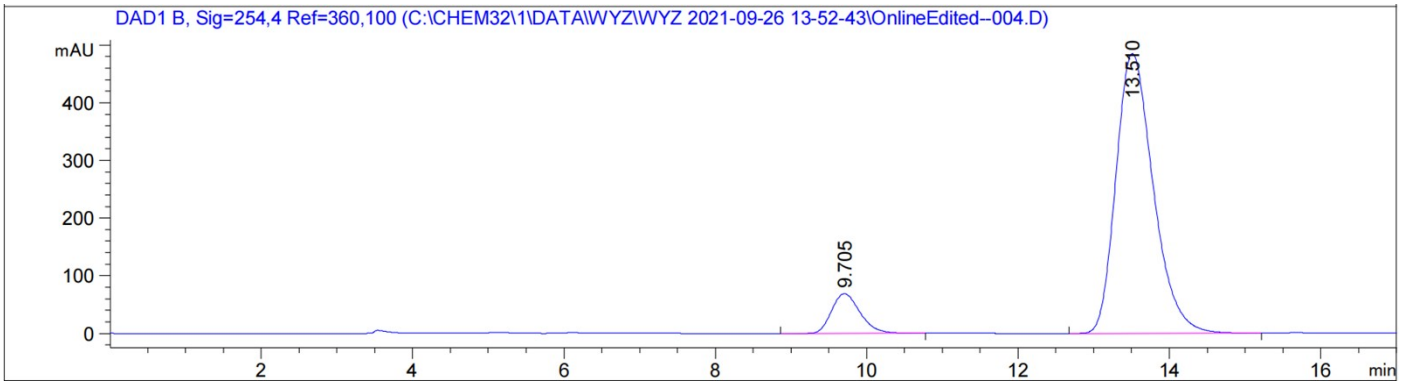
Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	5.417	MM	0.3648	3123.58154	142.71191	49.3185
2	6.381	MM	0.3841	3209.90308	139.29749	50.6815
Totals :				6333.48462	282.00940	

(*S*)-*N*-(1-(4-fluorophenyl)-2-phenylethyl)aniline (3ab)



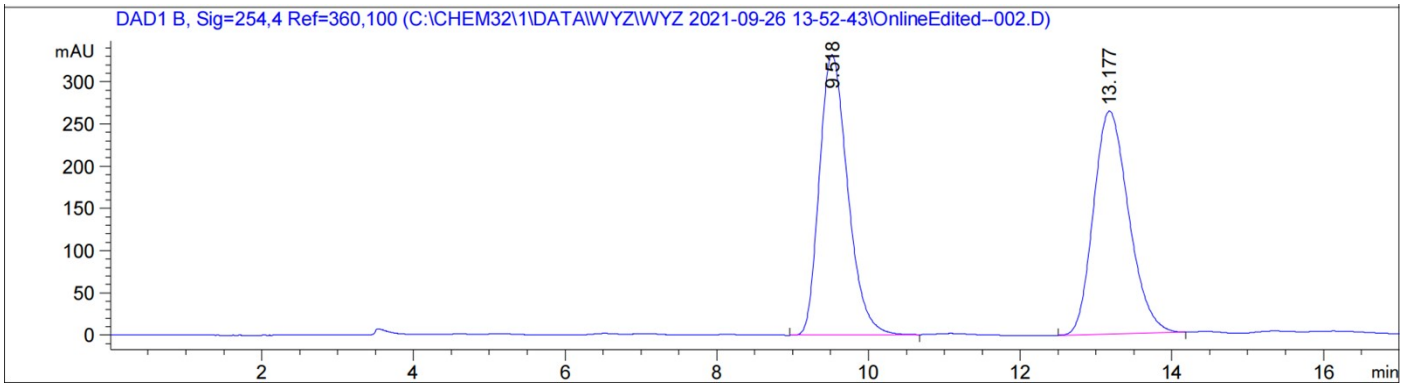
HPLC Spectra of Chiral **3ab**



Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	9.705	BB	0.4079	1805.39014	9.8013	?
2	13.510	BB	0.5296	1.66144e4	90.1987	?
Totals :				1.84198e4		

HPLC Spectra of Racemic **3ab**

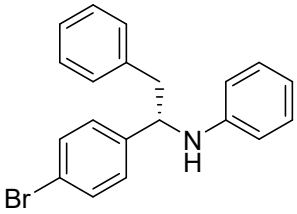


Signal 2: DAD1 B, Sig=254,4 Ref=360,100

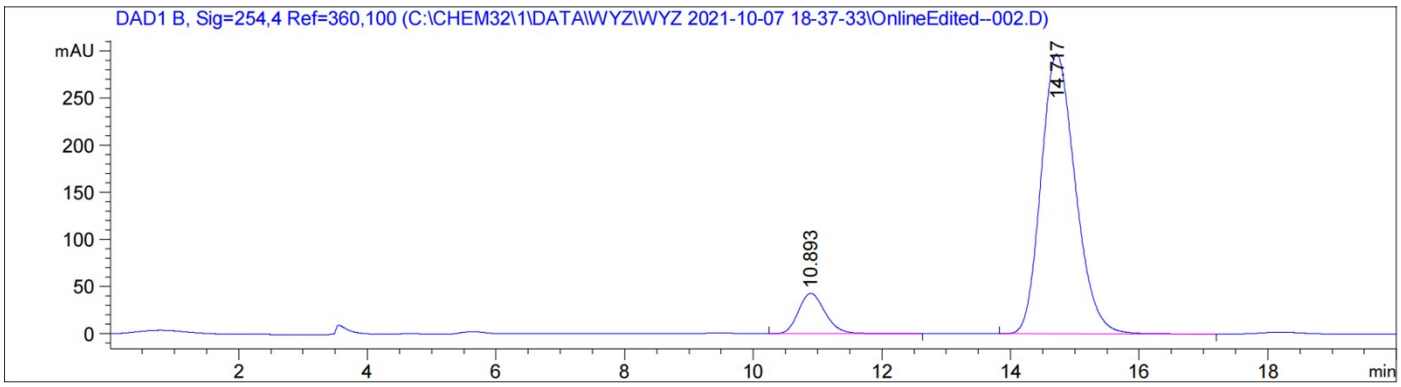
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	9.518	BB	0.4044	8603.94336	50.2281	?
2	13.177	BB	0.5029	8525.80371	49.7719	?

Totals : 1.71297e4

(*S*)-*N*-(1-(4-bromophenyl)-2-phenylethyl)aniline (3ac)



HPLC Spectra of Chiral **3ac**

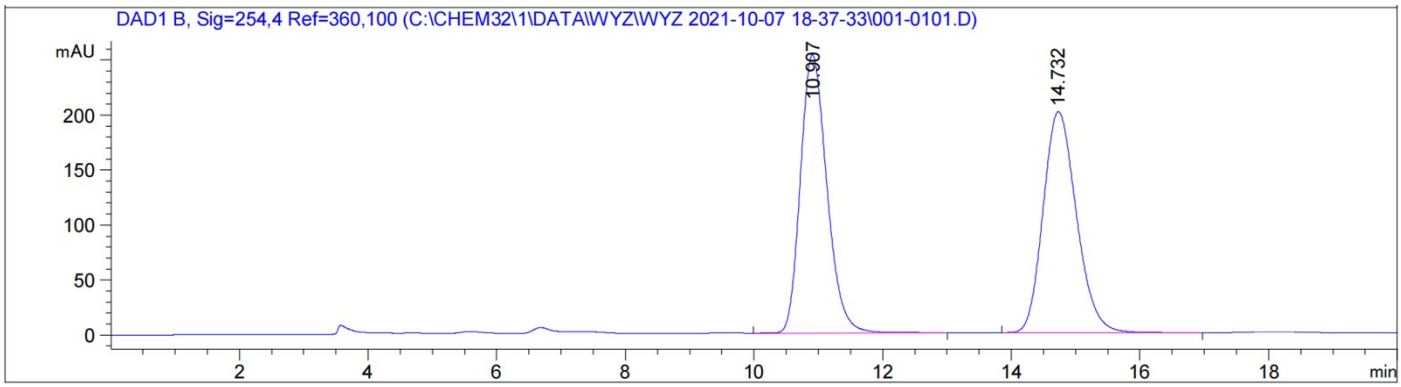


Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	10.893	BB	0.4457	1234.72742	10.0766	?
2	14.717	BB	0.5743	1.10186e4	89.9234	?

Totals : 1.22534e4

HPLC Spectra of Racemic **3ac**

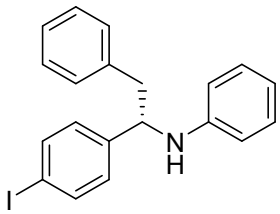


Signal 2: DAD1 B, Sig=254,4 Ref=360,100

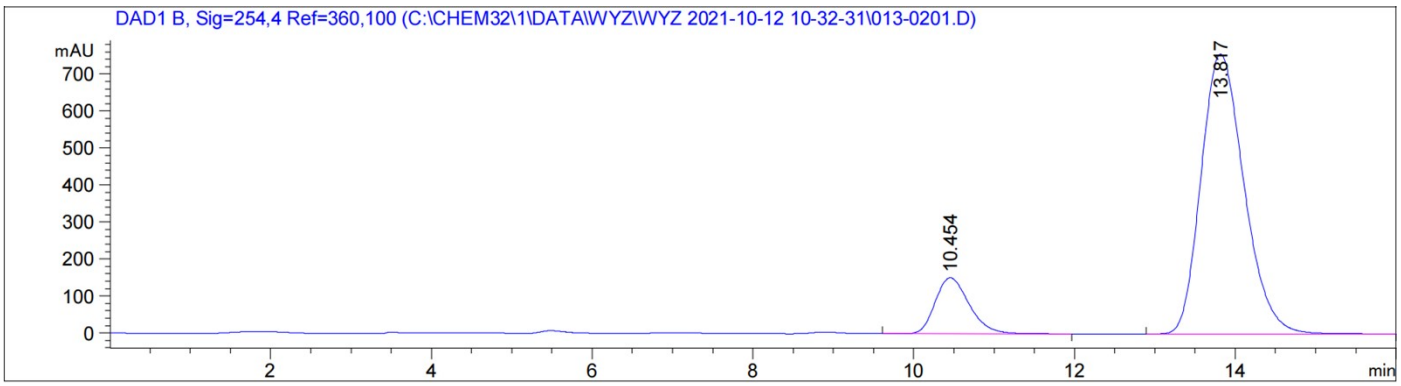
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	10.907	BB	0.4435	7234.68457	50.0203	?
2	14.732	BB	0.5574	7228.80859	49.9797	?

Totals : 1.44635e4

(*S*)-*N*-(1-(4-iodophenyl)-2-phenylethyl)aniline (3ad)



HPLC Spectra of Chiral **3ad**

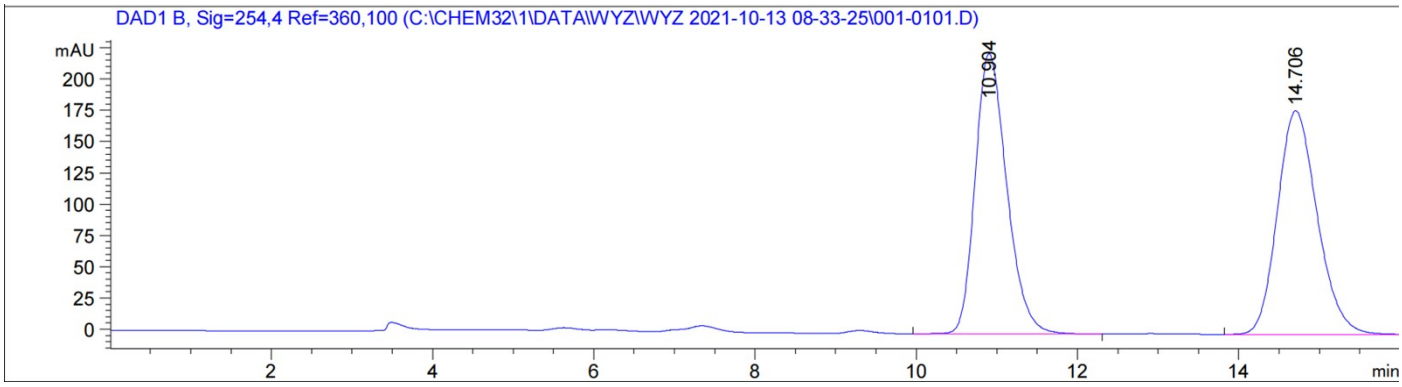


Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	10.454	BB	0.4561	4436.89844	151.31656	13.6369
2	13.817	BBA	0.5793	2.80991e4	756.57672	86.3631

Totals : 3.25360e4 907.89328

HPLC Spectra of Racemic **3ad**

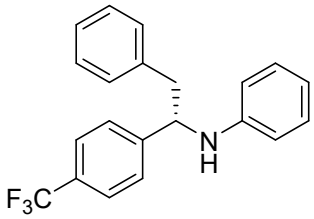


Signal 2: DAD1 B, Sig=254,4 Ref=360,100

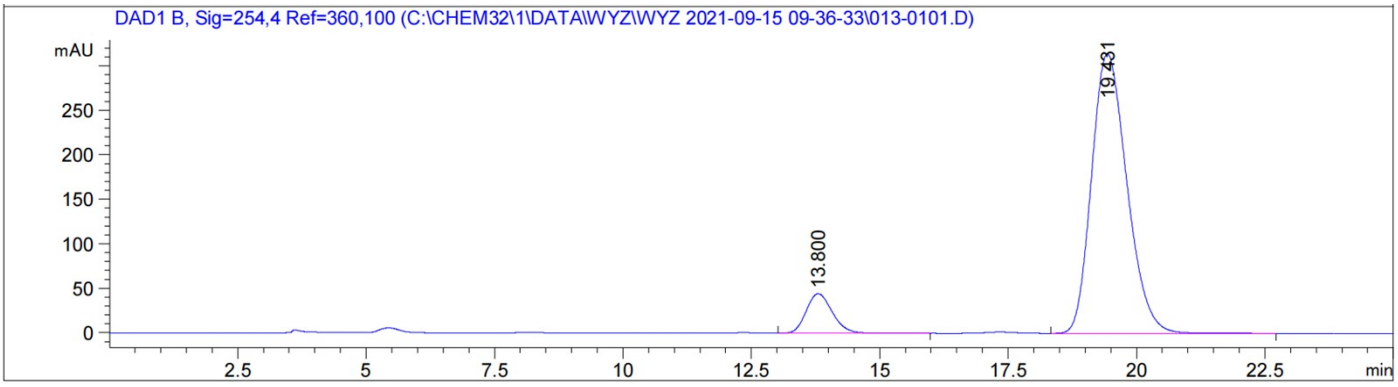
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	10.904	BB	0.4208	6122.90723	49.9847	?
2	14.706	BBA	0.5299	6126.65527	50.0153	?

Totals : 1.22496e4

(*S*)-*N*-(2-phenyl-1-(4-(trifluoromethyl)phenyl)ethyl)aniline (3ae)



HPLC Spectra of Chiral **3ae**

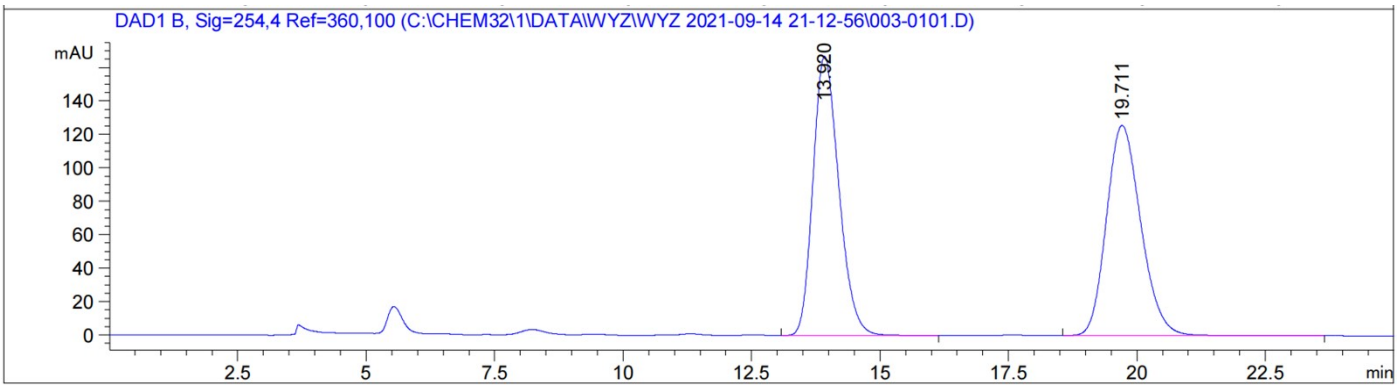


Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	13.800	BB	0.5450	1566.49207	9.4383	?
2	19.431	BB	0.7437	1.50307e4	90.5617	?

Totals : 1.65972e4

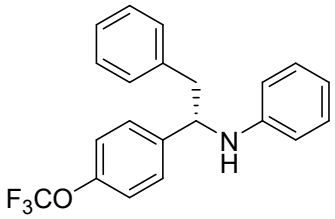
HPLC Spectra of Racemic **3ae**



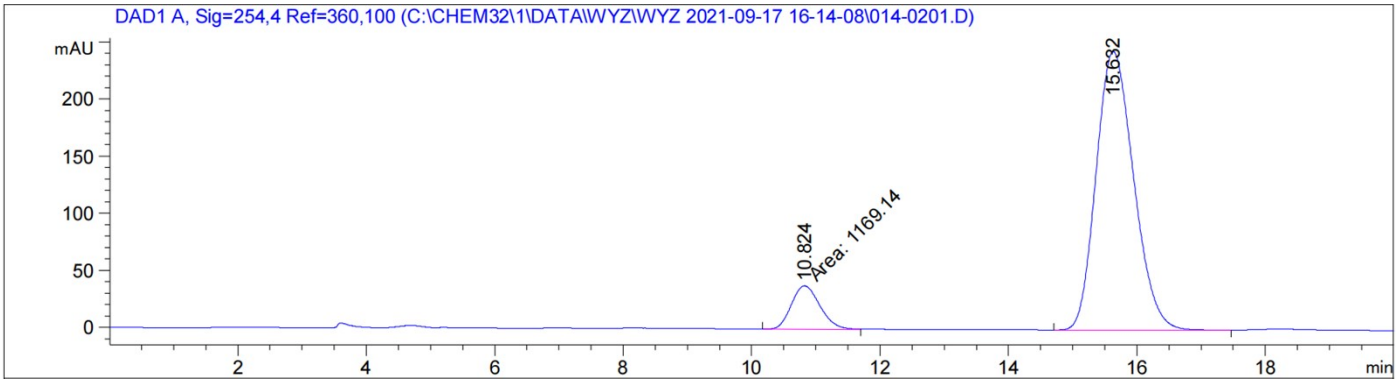
Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	13.920	BB	0.5424	5846.78613	50.0027	?
2	19.711	BB	0.7166	5846.15430	49.9973	?
Totals :				1.16929e4		

(*S*)-*N*-(2-phenyl-1-(4-(trifluoromethoxy)phenyl)ethyl)aniline (3af)



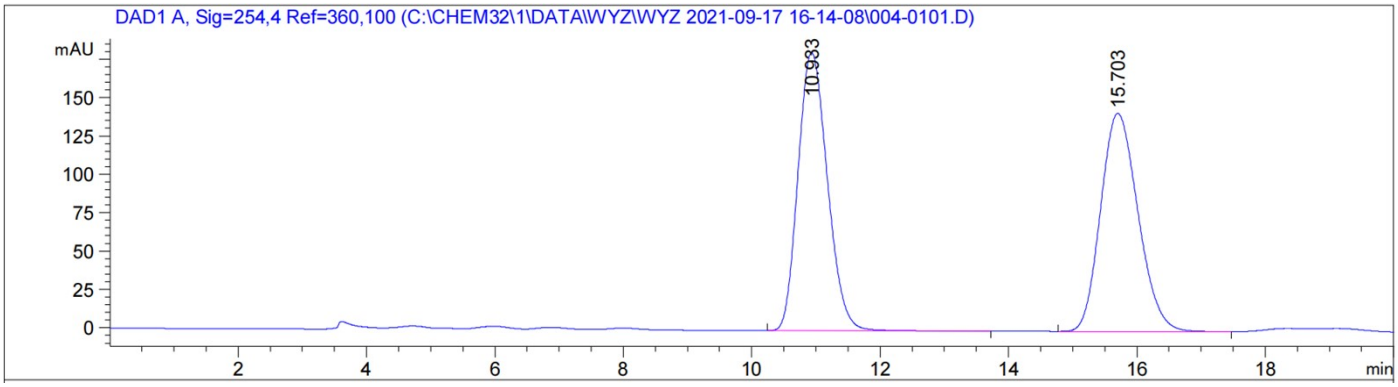
HPLC Spectra of Chiral **3af**



Signal 1: DAD1 A, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	10.824	MF	0.5142	1169.14233	37.89658	10.5588
2	15.632	BB	0.6363	9903.50586	243.62817	89.4412
Totals :				1.10726e4	281.52476	

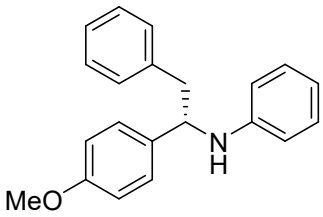
HPLC Spectra of Racemic **3af**



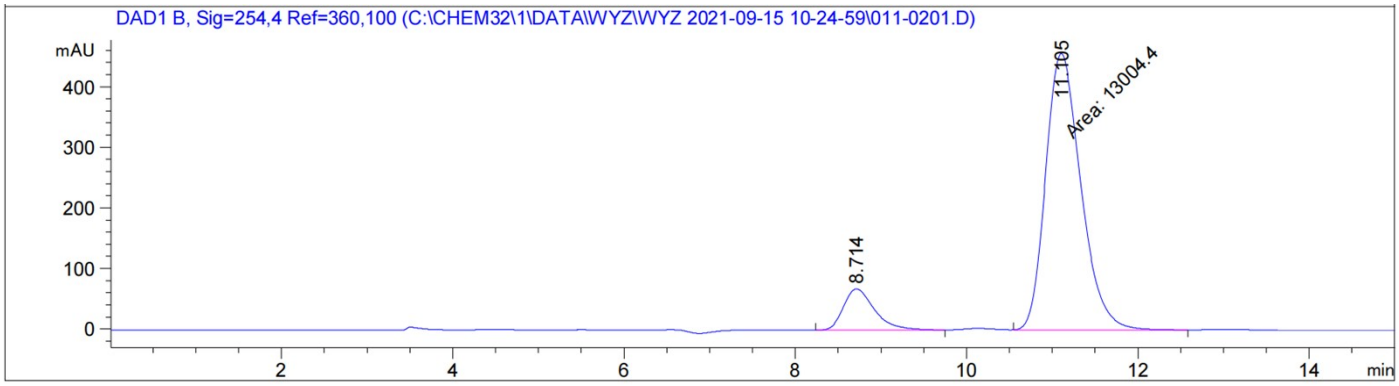
Signal 1: DAD1 A, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	10.933	BB	0.4967	5760.39990	181.27107	50.0311
2	15.703	BB	0.6342	5753.24414	142.15414	49.9689
Totals :				1.15136e4	323.42522	

(*S*)-*N*-(1-(4-methoxyphenyl)-2-phenylethyl)aniline (3ag)



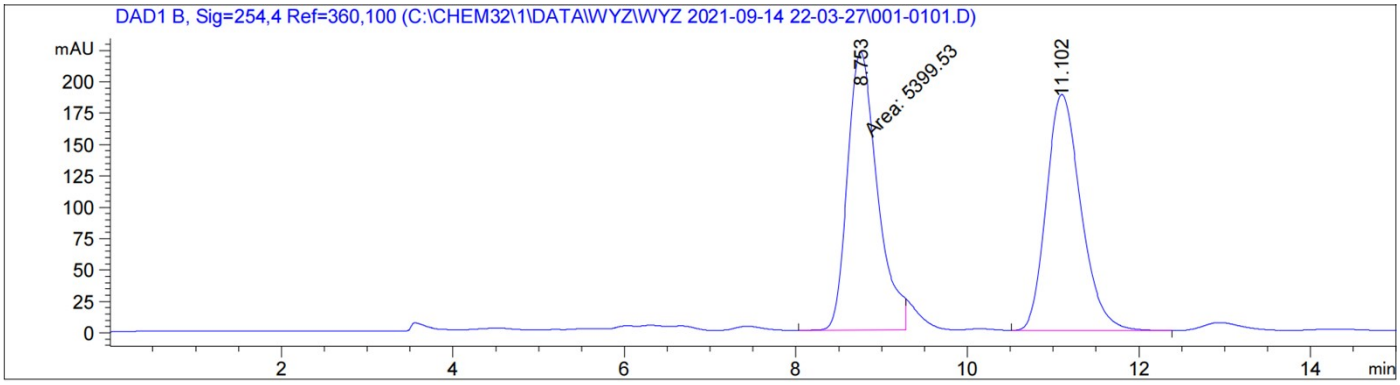
HPLC Spectra of Chiral **3ag**



Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	8.714	BB	0.3811	1695.64783	11.5349	?
2	11.105	FM	0.4753	1.30044e4	88.4651	?
Totals :				1.47001e4		

HPLC Spectra of Racemic **3ag**

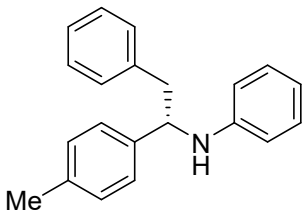


Signal 2: DAD1 B, Sig=254,4 Ref=360,100

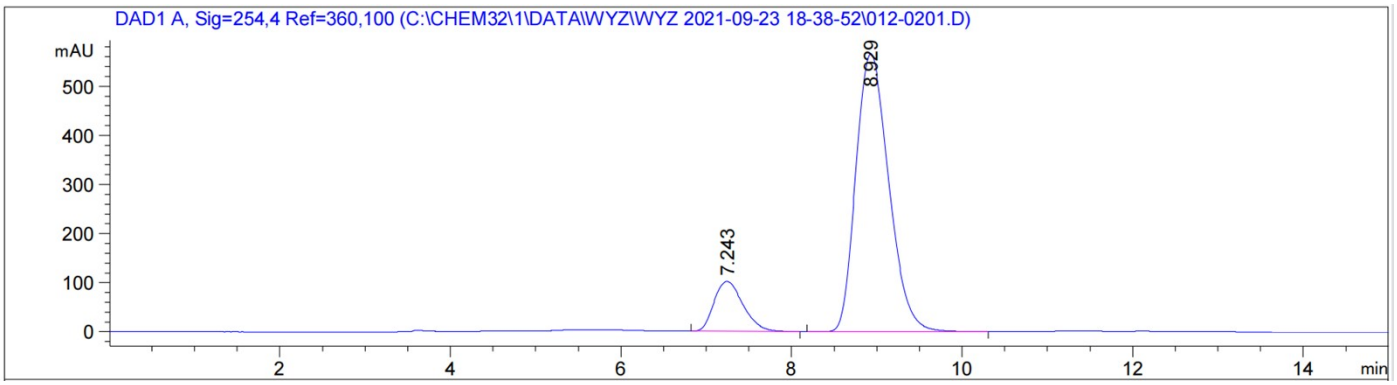
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	8.753	MF	0.4057	5399.52588	50.5932	?
2	11.102	BB	0.4329	5272.90576	49.4068	?

Totals : 1.06724e4

(*S*)-*N*-(2-phenyl-1-(*p*-tolyl)ethyl)aniline (3ah)



HPLC Spectra of Chiral **3ah**

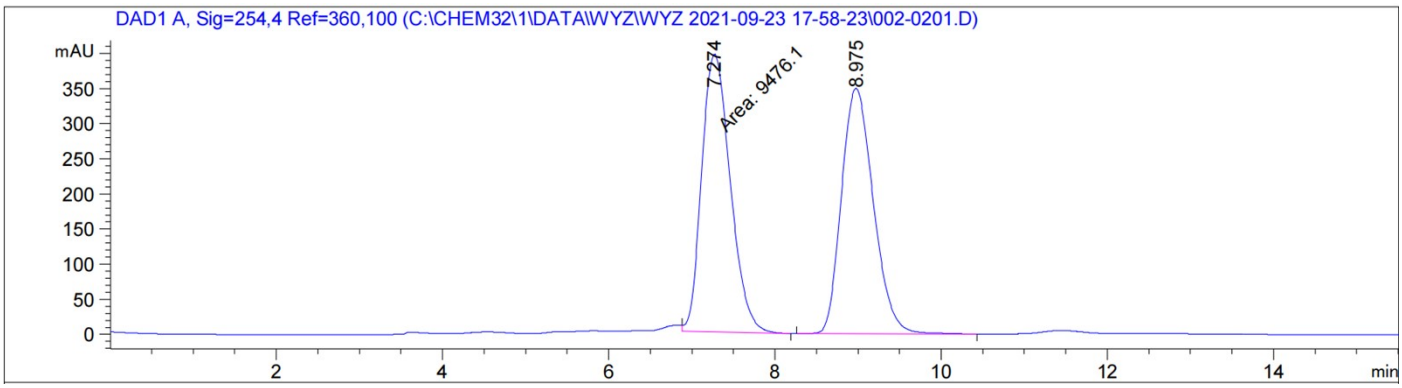


Signal 1: DAD1 A, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	7.243	BB	0.3723	2402.28442	13.6834	?
2	8.929	BB	0.4206	1.51539e4	86.3166	?

Totals : 1.75562e4

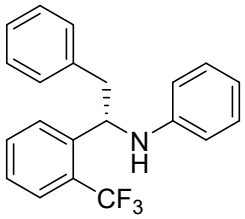
HPLC Spectra of Racemic **3ah**



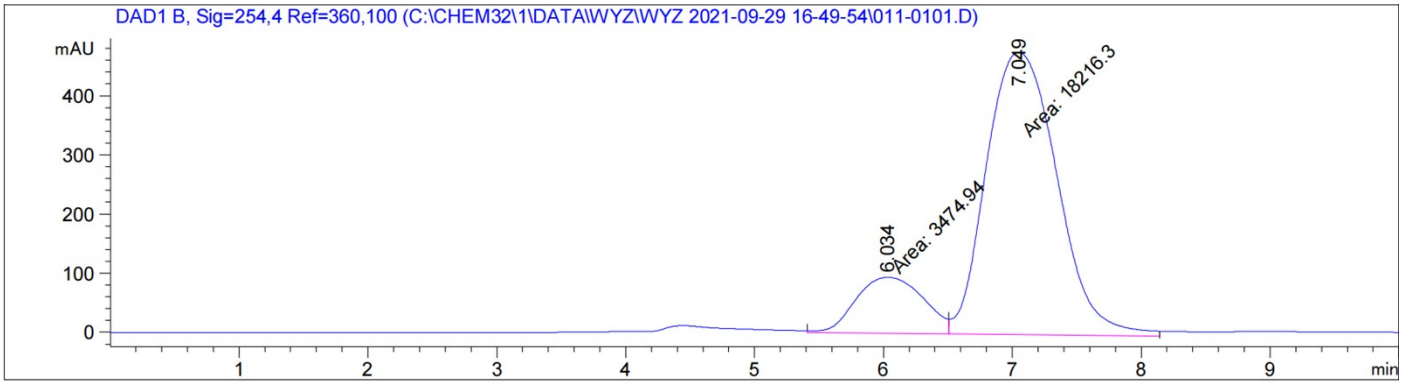
Signal 1: DAD1 A, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	7.274	FM	0.3992	9476.09668	50.4104	?
2	8.975	BB	0.4175	9321.81836	49.5896	?
Totals :				1.87979e4		

(*S*)-*N*-(2-phenyl-1-(2-(trifluoromethyl)phenyl)ethyl)aniline (3ai)



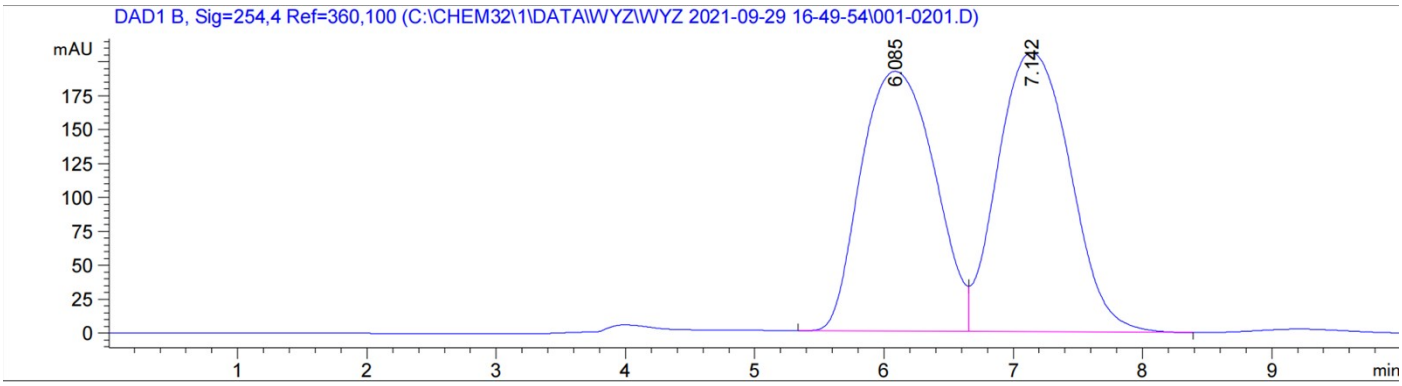
HPLC Spectra of Chiral **3ai**



Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	6.034	MF	0.6089	3474.93555	16.0200	?
2	7.049	FM	0.6353	1.82163e4	83.9800	?
Totals :				2.16912e4		

HPLC Spectra of Racemic **3ai**

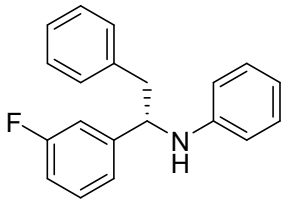


Signal 2: DAD1 B, Sig=254,4 Ref=360,100

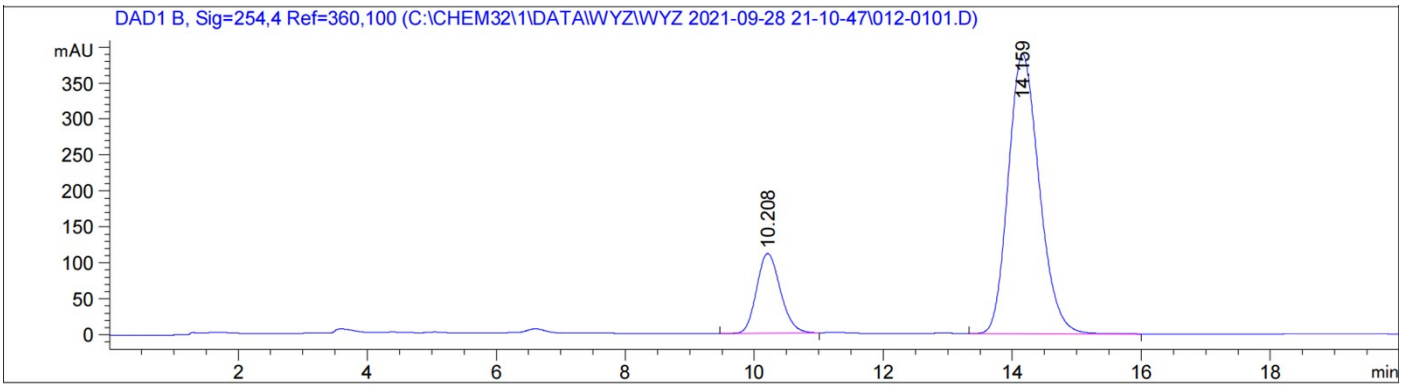
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	6.085	BV	0.6597	7578.36621	48.5481	?
2	7.142	VB	0.6351	8031.65576	51.4519	?

Totals : 1.56100e4

(*S*)-*N*-(1-(3-fluorophenyl)-2-phenylethyl)aniline (3aj)



HPLC Spectra of Chiral **3aj**

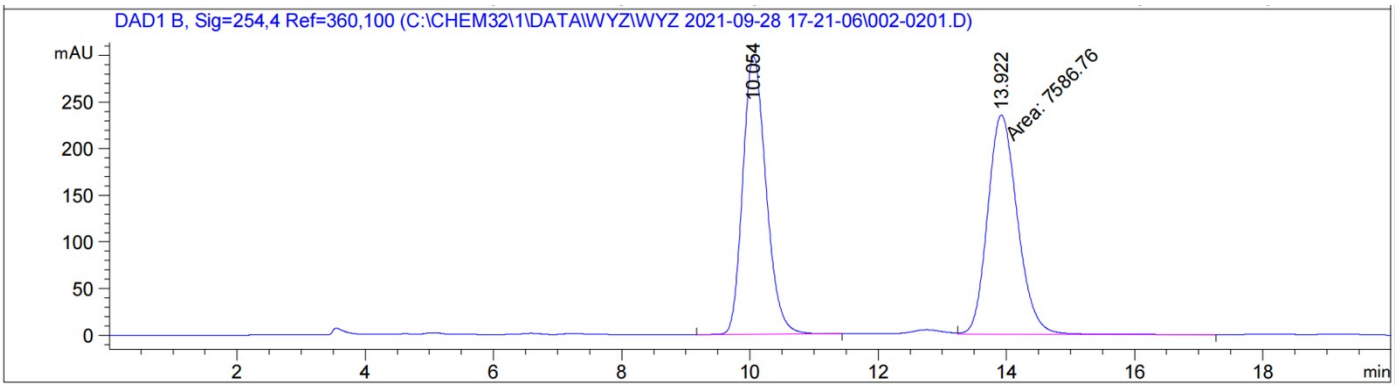


Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	10.208	BB	0.3981	2828.20239	110.69870	17.9193
2	14.159	BB	0.5189	1.29548e4	388.65002	82.0807

Totals : 1.57830e4 499.34872

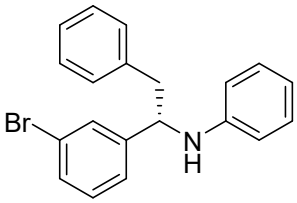
HPLC Spectra of Racemic **3aj**



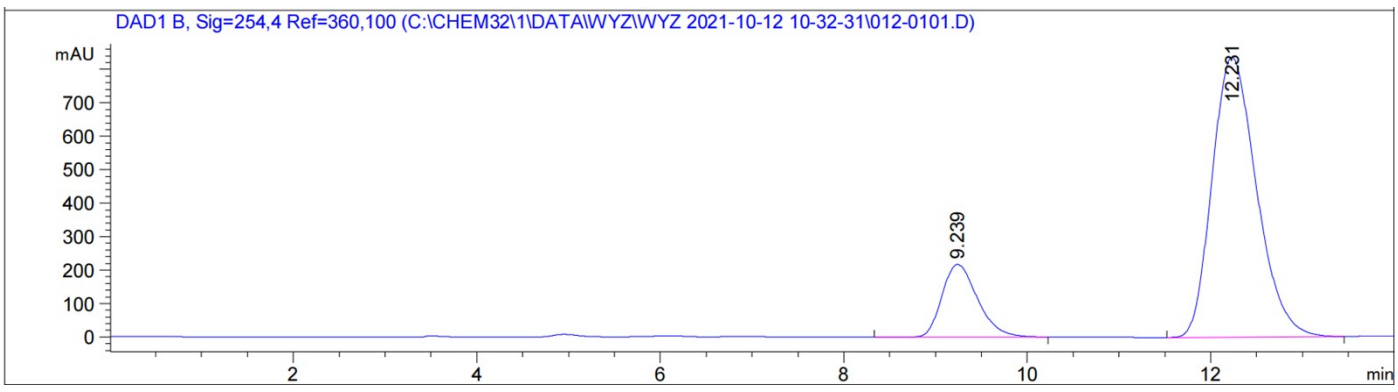
Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	10.054	BB	0.3928	7541.97363	298.50449	49.8520
2	13.922	FM	0.5377	7586.76465	235.17218	50.1480
Totals :				1.51287e4	533.67667	

(*S*)-*N*-(1-(3-bromophenyl)-2-phenylethyl)aniline (3ak)



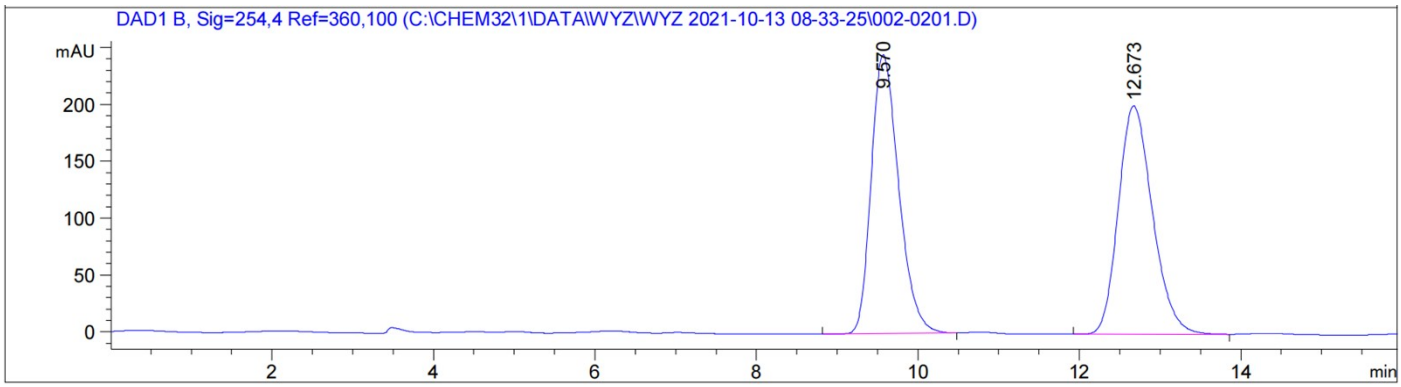
HPLC Spectra of Chiral **3ak**



Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	9.239	BB	0.4187	5863.01025	217.36635	17.2579
2	12.231	BB	0.5264	2.81099e4	835.72778	82.7421
Totals :				3.39729e4	1053.09413	

HPLC Spectra of Racemic **3ak**

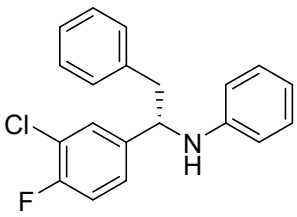


Signal 2: DAD1 B, Sig=254,4 Ref=360,100

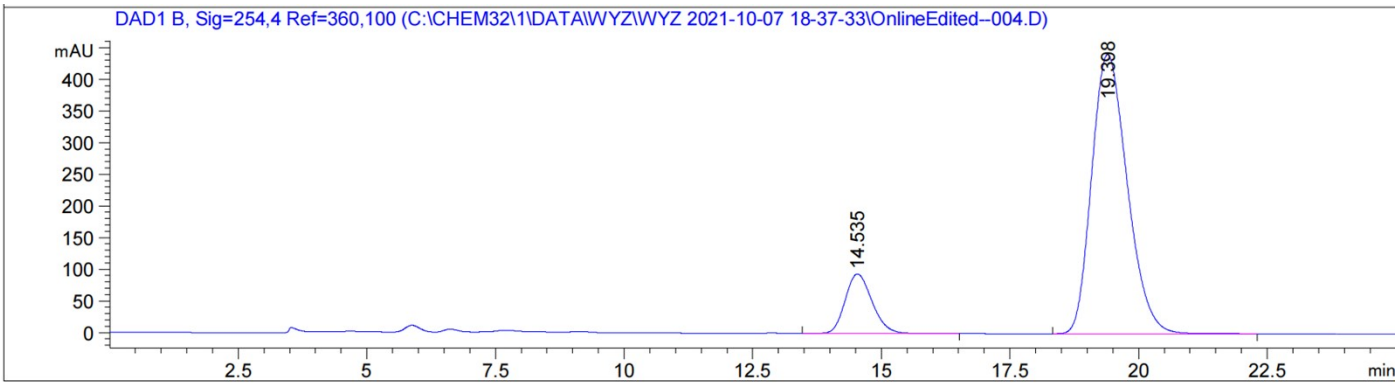
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	9.570	BB	0.3665	5809.09570	49.5891	?
2	12.673	BB	0.4532	5905.37402	50.4109	?

Totals : 1.17145e4

(*S*)-*N*-(1-(3-chloro-4-fluorophenyl)-2-phenylethyl)aniline (3al)



HPLC Spectra of Chiral **3al**

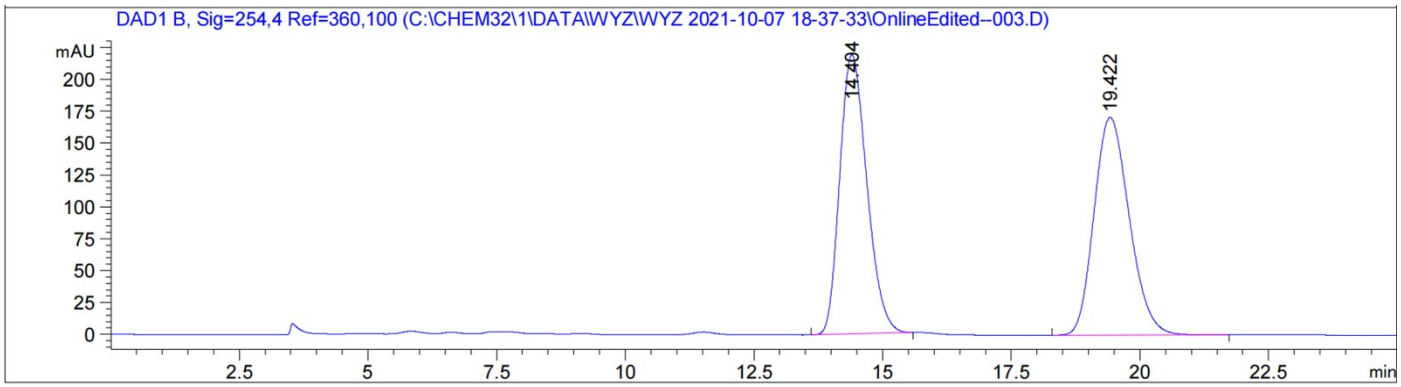


Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	14.535	BB	0.5651	3430.31201	13.9267	?
2	19.398	BB	0.7506	2.12008e4	86.0733	?

Totals : 2.46311e4

HPLC Spectra of Racemic **3al**

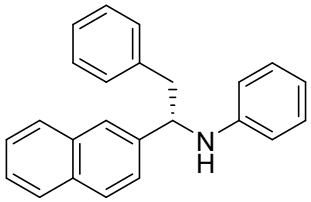


Signal 2: DAD1 B, Sig=254,4 Ref=360,100

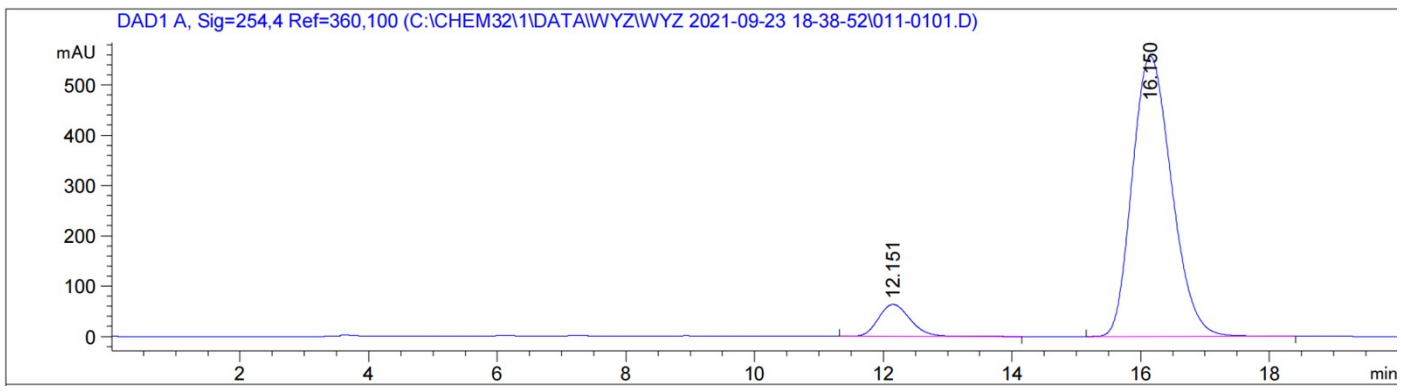
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	14.404	BB	0.5710	8019.70117	49.6328	?
2	19.422	BB	0.7437	8138.36865	50.3672	?

Totals : 1.61581e4

(*S*)-*N*-(1-(naphthalen-2-yl)-2-phenylethyl)aniline (3am)



HPLC Spectra of Chiral **3am**

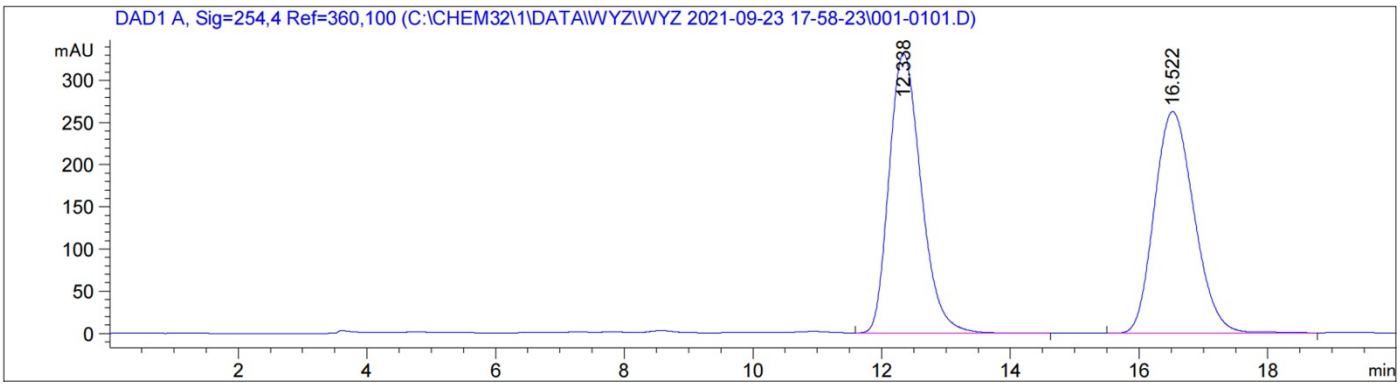


Signal 1: DAD1 A, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	12.151	BB	0.5358	2179.75806	8.4419	?
2	16.150	BB	0.6672	2.36409e4	91.5581	

Totals : 2.58207e4

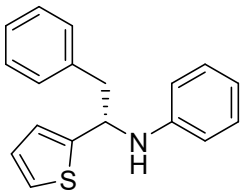
HPLC Spectra of Racemic **3am**



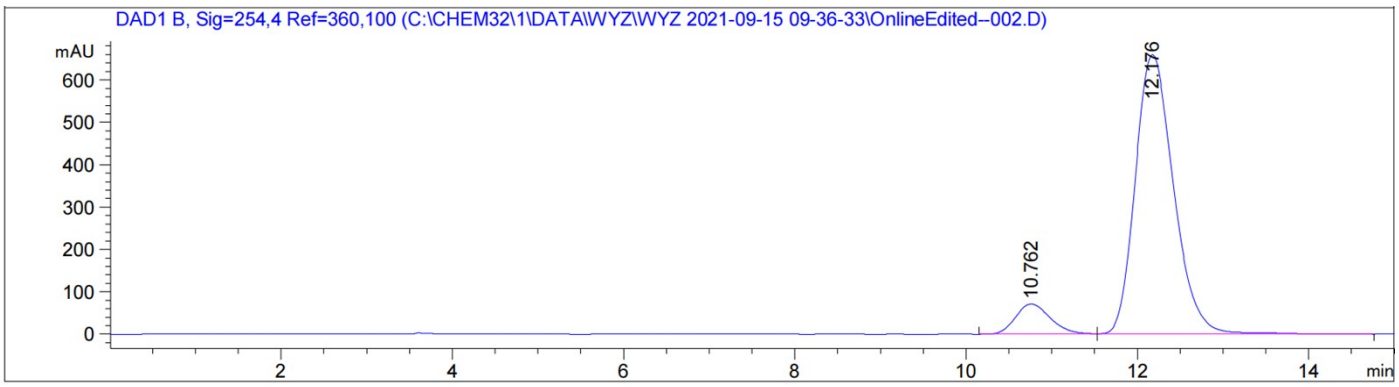
Signal 1: DAD1 A, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	12.338	BB	0.5397	1.14677e4	50.4349	?
2	16.522	BB	0.6742	1.12699e4	49.5651	?
Totals :				2.27375e4		

(*S*)-*N*-(2-phenyl-1-(thiophen-2-yl)ethyl)aniline (3an)



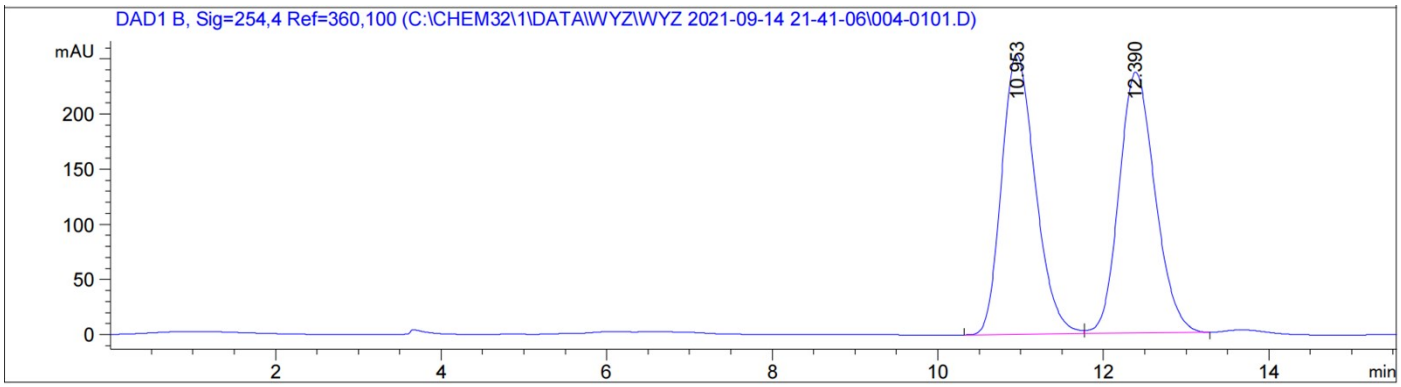
HPLC Spectra of Chiral **3an**



Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	10.762	BV	0.4415	2020.25610	8.9618	?
2	12.176	VB	0.4830	2.05228e4	91.0382	?
Totals :				2.25430e4		

HPLC Spectra of Racemic **3an**

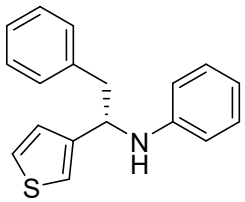


Signal 2: DAD1 B, Sig=254,4 Ref=360,100

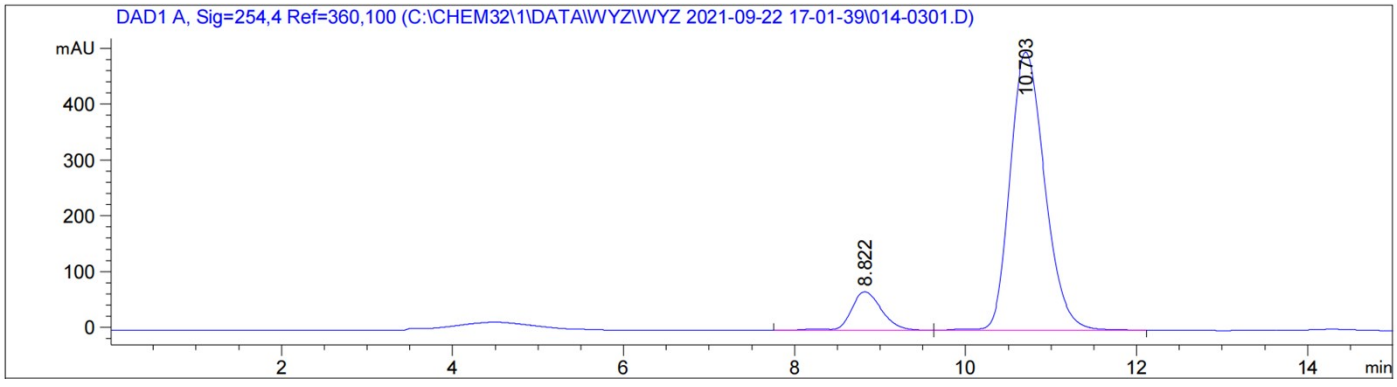
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	10.953	BV	0.4405	7180.03174	50.1043	?
2	12.390	VB	0.4687	7150.12500	49.8957	?

Totals : 1.43302e4

(*S*)-*N*-(2-phenyl-1-(thiophen-3-yl)ethyl)aniline (3ao)



HPLC Spectra of Chiral **3ao**

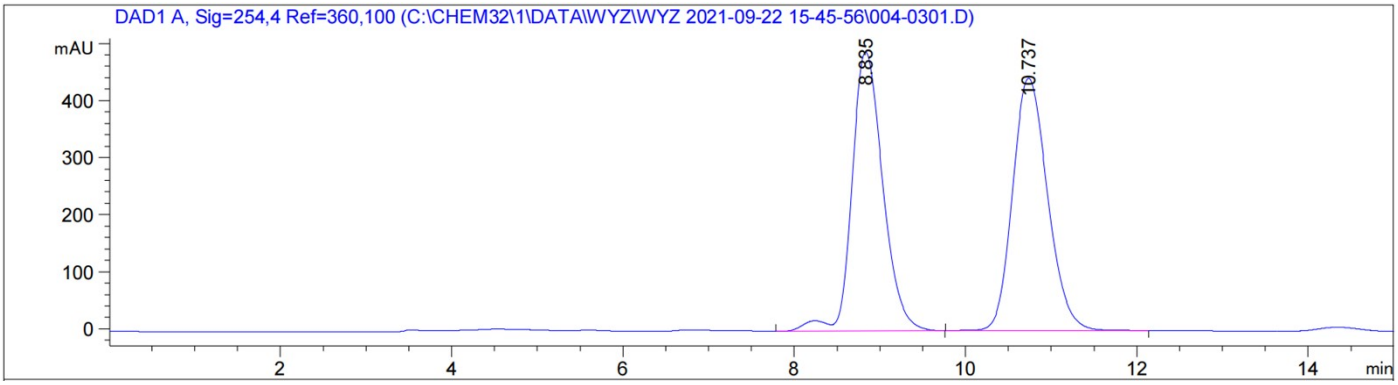


Signal 1: DAD1 A, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	8.822	VB R	0.3765	1721.36646	10.9314	?
2	10.703	BB	0.4403	1.40256e4	89.0686	?

Totals : 1.57470e4

HPLC Spectra of Racemic **3ao**

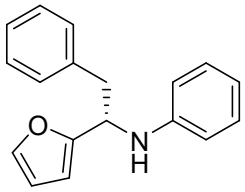


Signal 1: DAD1 A, Sig=254,4 Ref=360,100

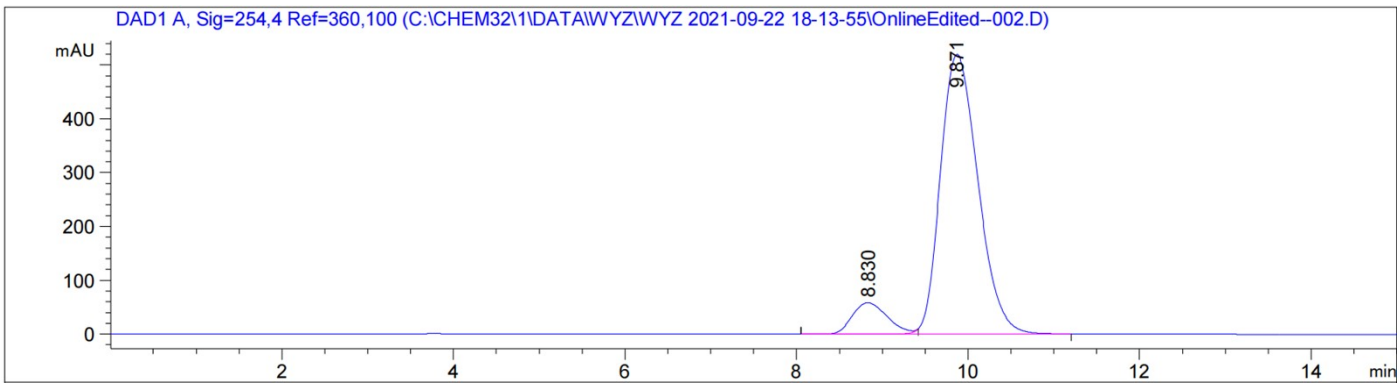
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	8.835	VB R	0.3814	1.23111e4	49.3784	?
2	10.737	BB	0.4446	1.26210e4	50.6216	?

Totals : 2.49321e4

(*S*)-*N*-(1-(furan-2-yl)-2-phenylethyl)aniline (3ap)



HPLC Spectra of Chiral **3ap**

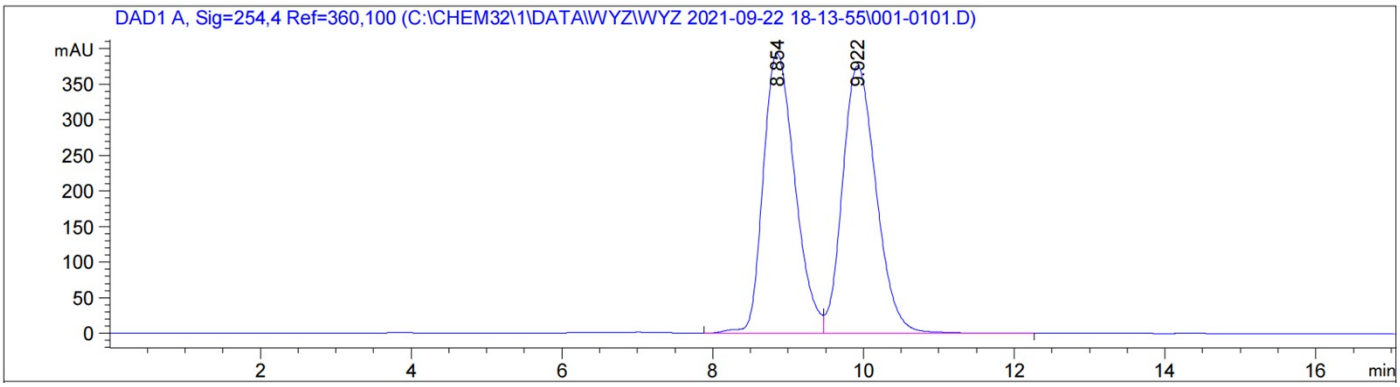


Signal 1: DAD1 A, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	8.830	BV E	0.4469	1649.48486	9.4489	?
2	9.871	VB R	0.4808	1.58075e4	90.5511	?

Totals : 1.74570e4

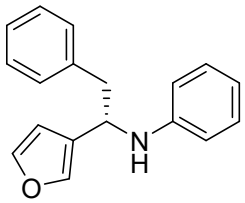
HPLC Spectra of Racemic **3ap**



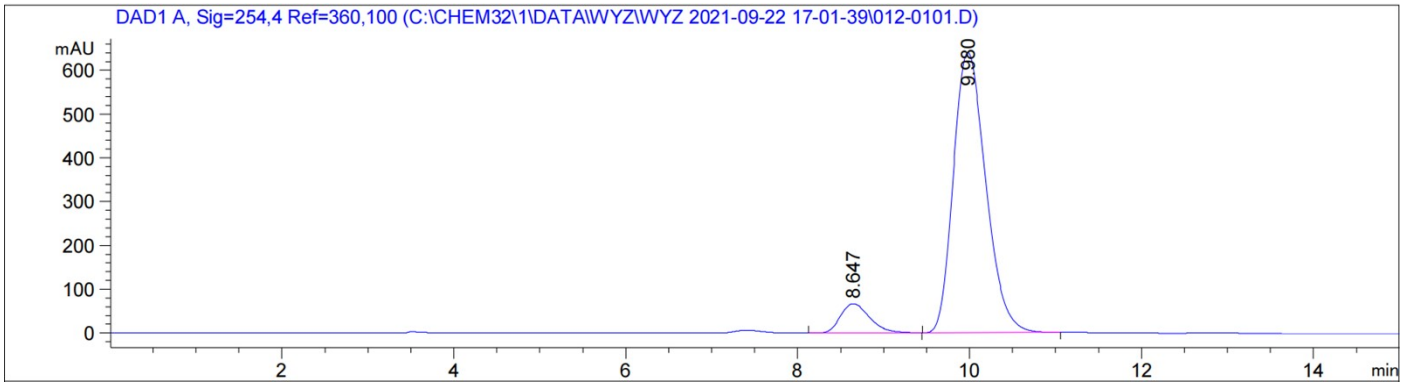
Signal 1: DAD1 A, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	8.854	BV	0.4607	1.14902e4	49.6399	?
2	9.922	VB	0.4859	1.16569e4	50.3601	?
Totals :				2.31471e4		

(*S*)-*N*-(1-(furan-3-yl)-2-phenylethyl)aniline (3aq)



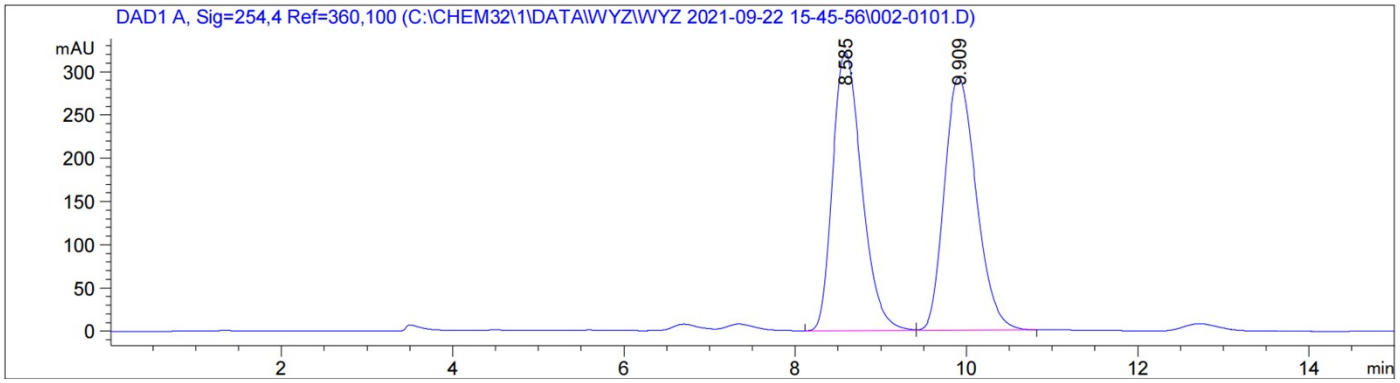
HPLC Spectra of Chiral **3aq**



Signal 1: DAD1 A, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	8.647	BB	0.3677	1577.39795	8.5907	?
2	9.980	BB	0.4119	1.67843e4	91.4093	?
Totals :				1.83616e4		

HPLC Spectra of Racemic **3aq**

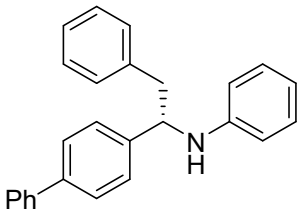


Signal 1: DAD1 A, Sig=254,4 Ref=360,100

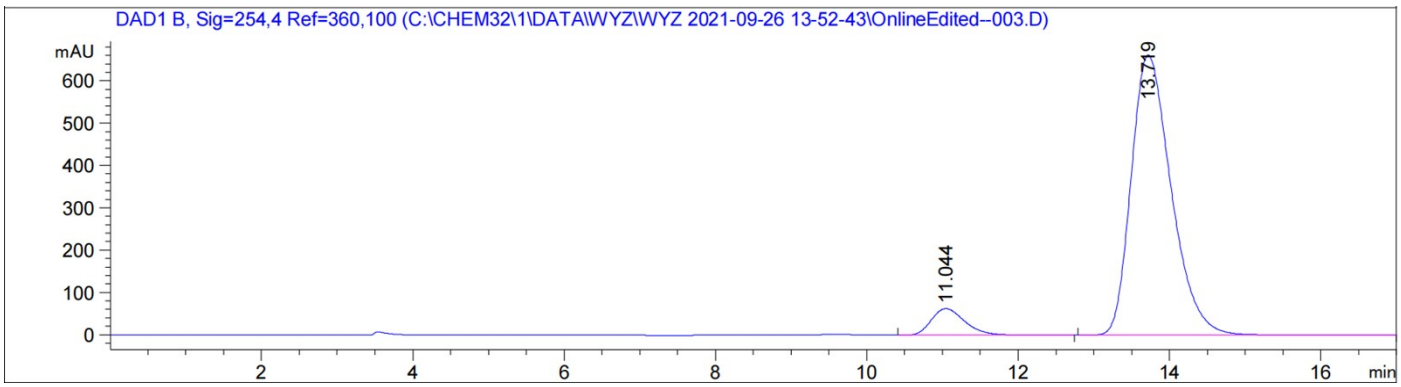
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	8.585	BV	0.3687	7580.08838	50.0014	?
2	9.909	VB	0.4065	7579.66260	49.9986	?

Totals : 1.51598e4

(*S*)-*N*-(1-([1,1'-biphenyl]-4-yl)-2-phenylethyl)aniline (3ar)



HPLC Spectra of Chiral **3ar**

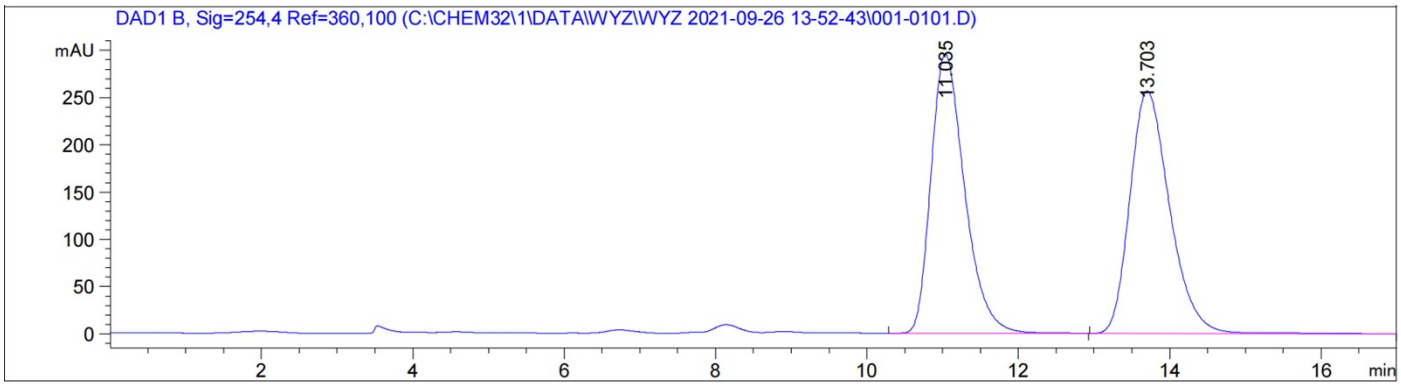


Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	11.044	BB	0.4744	1943.83862	7.3954	
2	13.719	BBA	0.5647	2.43405e4	92.6046	?

Totals : 2.62843e4

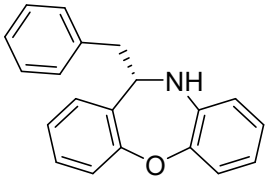
HPLC Spectra of Racemic **3ar**



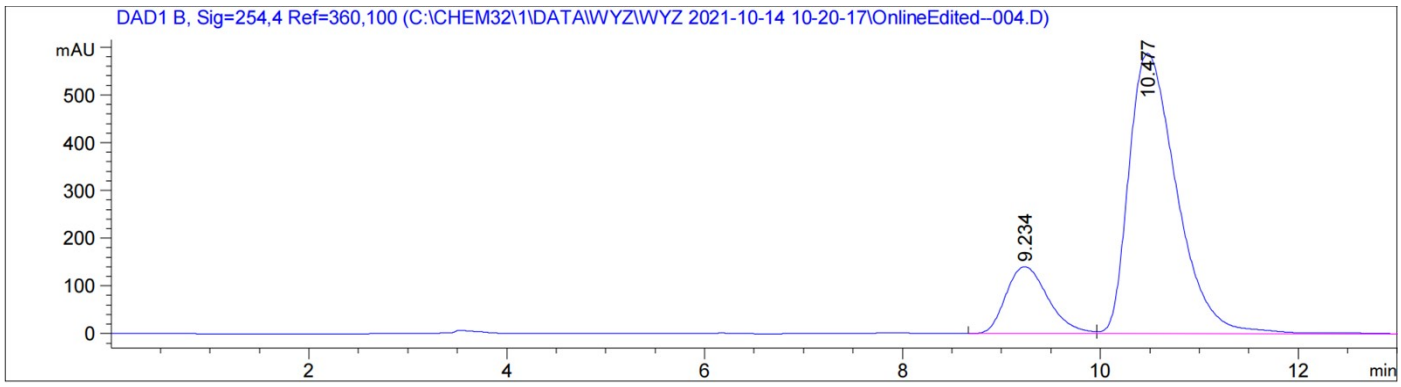
Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	11.035	BB	0.4771	9154.16895	49.3942	
2	13.703	BBA	0.5622	9378.70703	50.6058	?
Totals :				1.85329e4		

(*S*)-11-benzyl-10,11-dihydrodibenzo[*b*,*f*][1,4]oxazepine (3as)



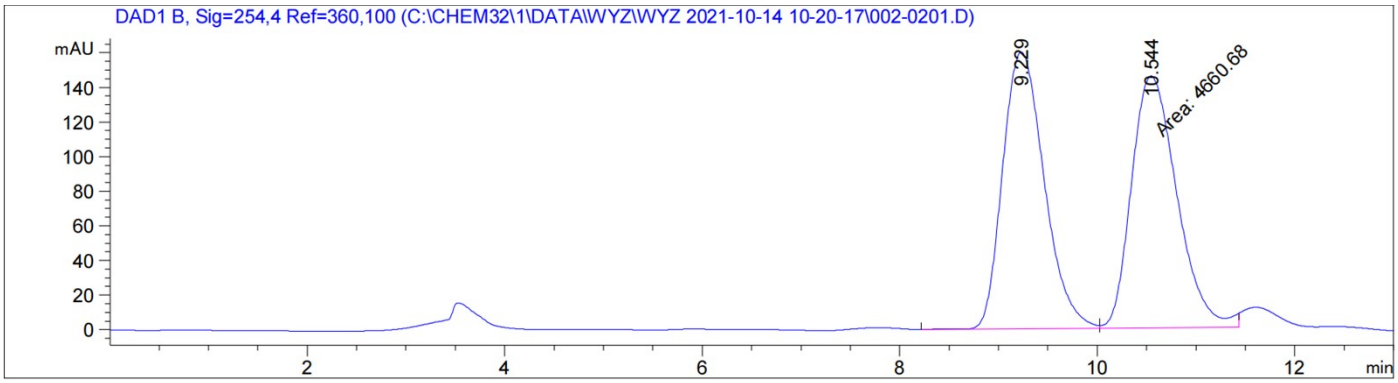
HPLC Spectra of Chiral **3as**



Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	9.234	BV	0.4644	4131.66016	139.95602	17.3211
2	10.477	VV R	0.5229	1.97217e4	587.13428	82.6789
Totals :				2.38534e4	727.09030	

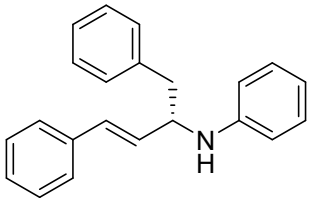
HPLC Spectra of Racemic **3as**



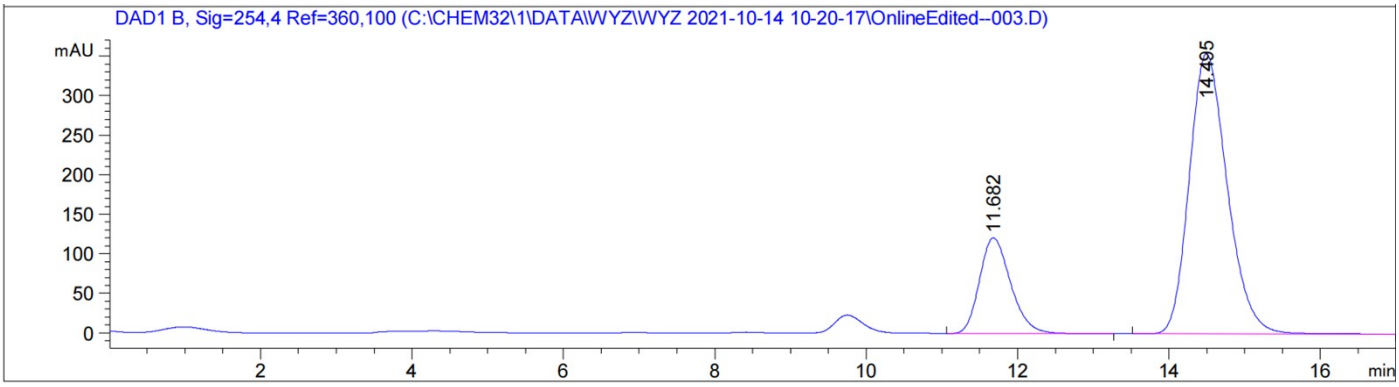
Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	9.229	BV	0.4617	4681.77100	159.83073	50.1129
2	10.544	MF	0.5337	4660.67871	145.54997	49.8871
Totals :				9342.44971	305.38071	

(*S*,*E*)-*N*-(1,4-diphenylbut-3-en-2-yl)aniline (3at)



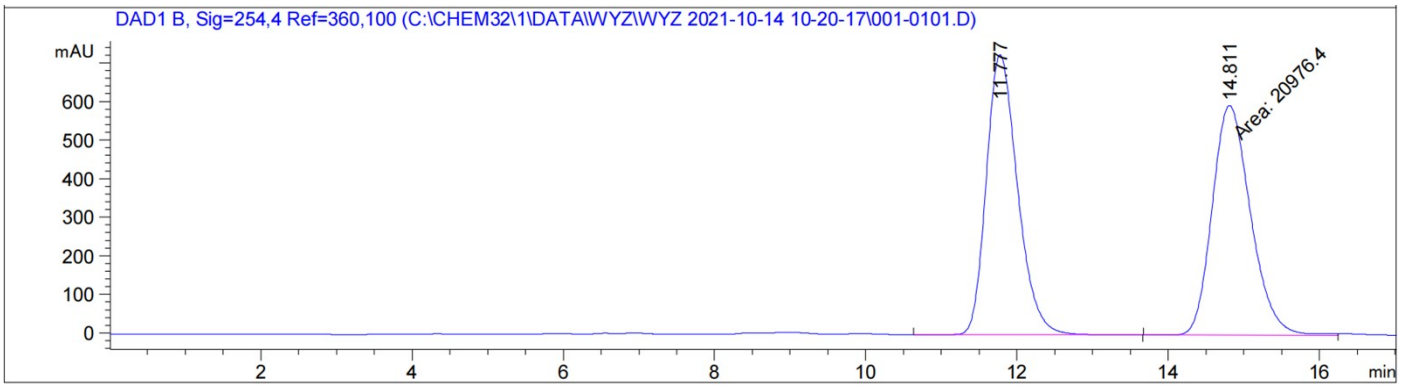
HPLC Spectra of Chiral **3at**



Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	11.682	BB	0.4420	3466.85352	121.09499	21.9196
2	14.495	BBA	0.5387	1.23494e4	354.27261	78.0804
Totals :				1.58162e4	475.36760	

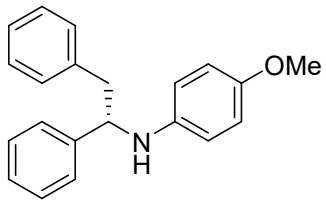
HPLC Spectra of Racemic **3at**



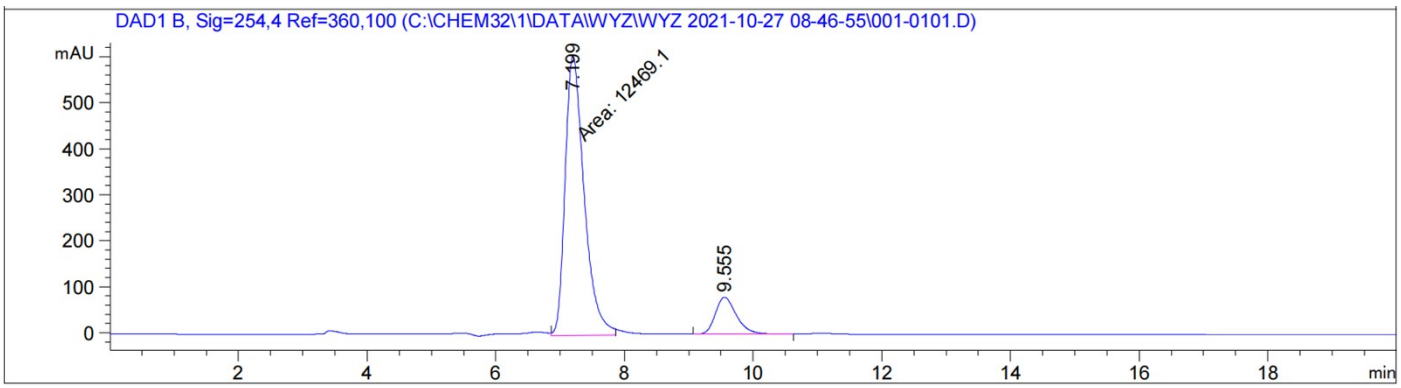
Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	11.777	BB	0.4440	2.08993e4	725.72937	49.9080
2	14.811	MF	0.5878	2.09764e4	594.75940	50.0920
Totals :				4.18758e4	1320.48877	

(*S*)-*N*-(1,2-diphenylethyl)-4-methoxyaniline (3au)



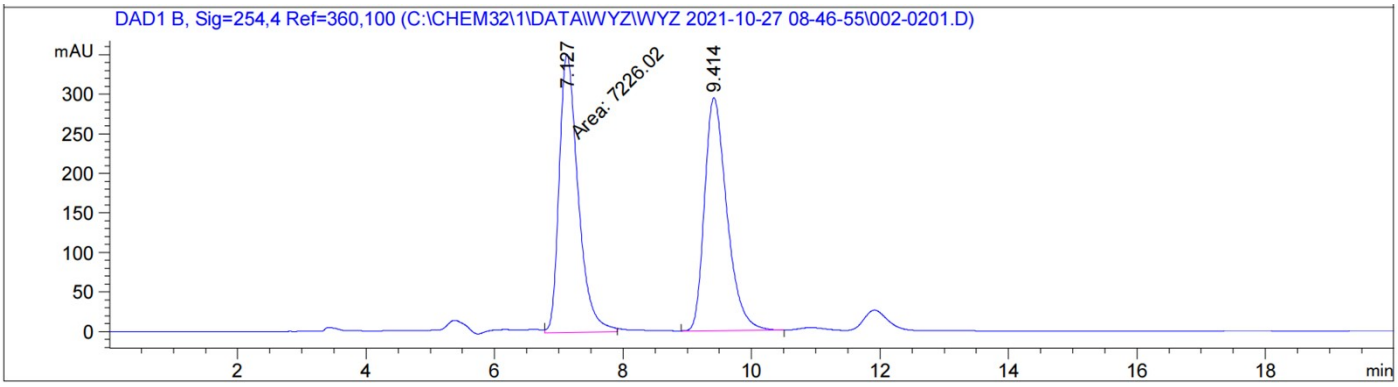
HPLC Spectra of Chiral **3au**



Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	7.199	MF	0.3430	1.24691e4	87.2290	?
2	9.555	BB	0.3457	1825.56482	12.7710	?
Totals :				1.42947e4		

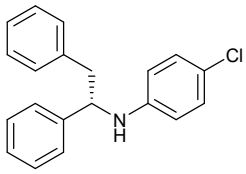
HPLC Spectra of Racemic **3au**



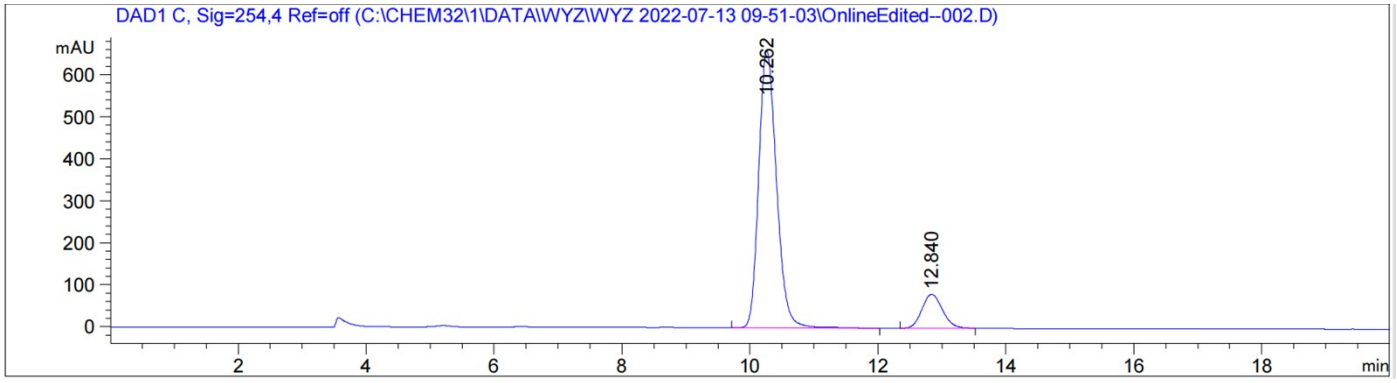
Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	7.127	MF	0.3425	7226.02490	50.3448	?
2	9.414	BB	0.3705	7127.05078	49.6552	?
Totals :				1.43531e4		

(*S*)-4-chloro-N-(1,2-diphenylethyl)aniline (3av)



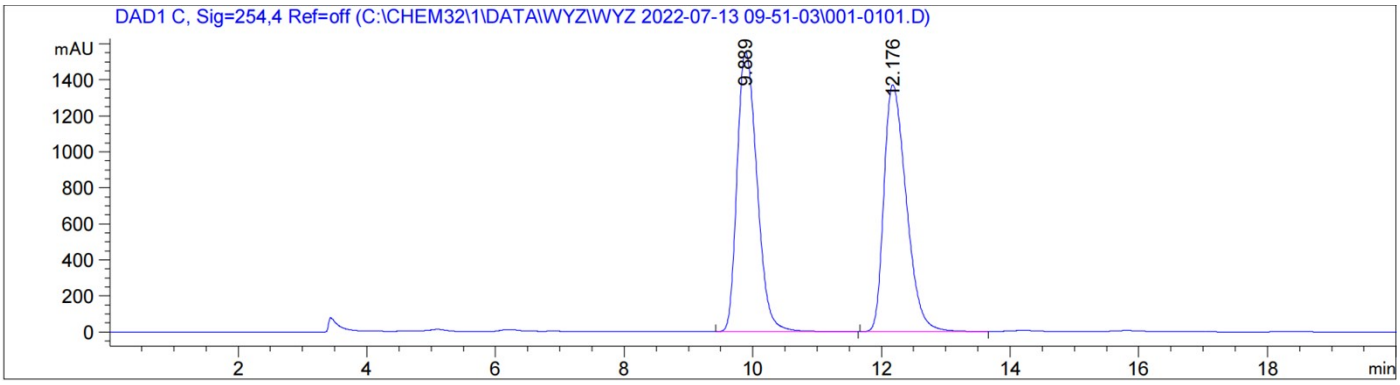
HPLC Spectra of Chiral **3av**



Signal 2: DAD1 C, Sig=254,4 Ref=off

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	10.262	BB	0.3006	1.26932e4	659.35785	87.6786
2	12.840	BB	0.3465	1783.76685	80.51026	12.3214
Totals :				1.44770e4	739.86811	

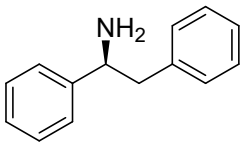
HPLC Spectra of Racemic **3av**



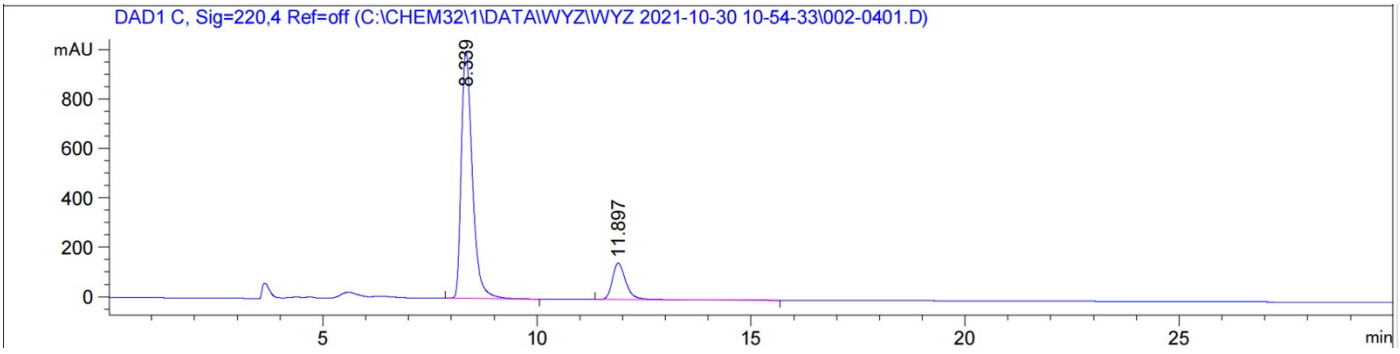
Signal 2: DAD1 C, Sig=254,4 Ref=off

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	9.889	BB	0.3405	3.33078e4	1551.36316	50.2134
2	12.176	BB	0.3772	3.30246e4	1370.14331	49.7866
Totals :				6.63324e4	2921.50647	

(*S*)-1,2-diphenylethan-1-amine (4)



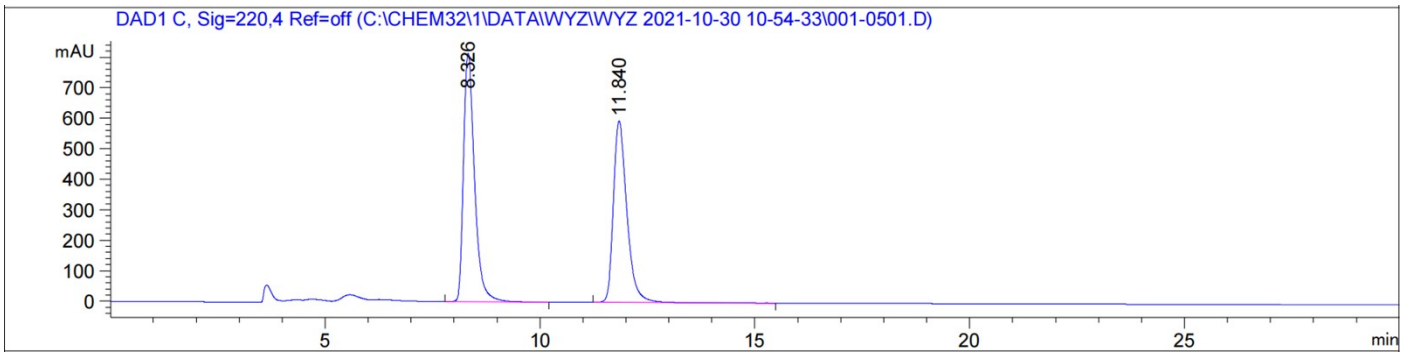
HPLC Spectra of Chiral 4



Signal 3: DAD1 C, Sig=220,4 Ref=off

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	8.339	BB	0.2779	1.80125e4	84.9133	?
2	11.897	BB	0.3300	3200.30469	15.0867	?
Totals :				2.12128e4		

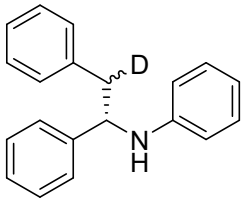
HPLC Spectra of Racemic 4



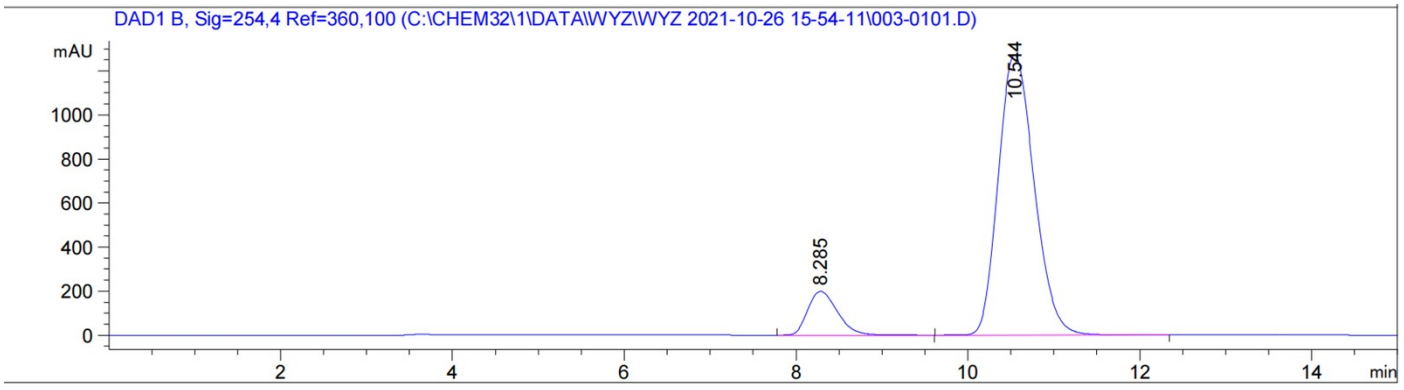
Signal 3: DAD1 C, Sig=220,4 Ref=off

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	8.326	BB	0.2763	1.45434e4	52.8268	?
2	11.840	BV R	0.3326	1.29869e4	47.1732	?
Totals :				2.75303e4		

(*S*)-*N*-(1,2-diphenylethyl-2-*d*)aniline (*d*-3aa)



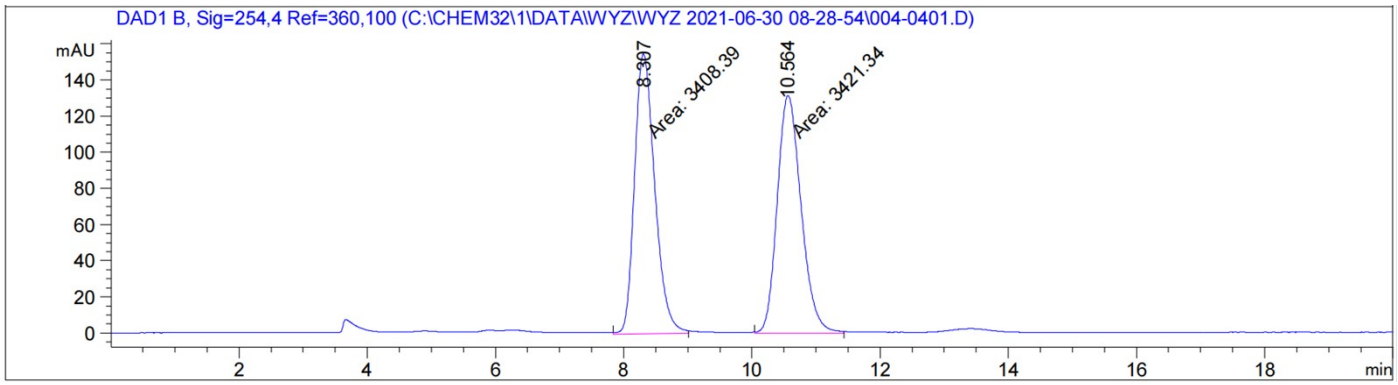
HPLC Spectra of Chiral *d*-**3aa**



Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	8.285	BB	0.3750	4756.96826	11.4173	?
2	10.544	BB	0.4541	3.69077e4	88.5827	?
Totals :				4.16646e4		

HPLC Spectra of Racemic *d*-**3aa**



Signal 2: DAD1 B, Sig=254,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	8.307	MM	0.3664	3408.39185	49.9052	?
2	10.564	MM	0.4333	3421.33521	50.0948	?

Totals : 6829.72705

VIII. References

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5. D. Blanco-Ania, P. H.H. Hermkens, L. A.J.M. Sliedregt, H. W. Scheeren and F. P.J.T. Rutjes, *Tetrahedron* 2009, **65**, 5393.
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