Supporting Information

Organocatalytic Asymmetric Formal Oxidative Coupling for the Construction of All-Aryl Quaternary Stereocenters

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Table of Contents

I. General Information S-2

II. Synthesis of the Triarylmethane Substrates S-3

III. Catalytic Asymmetric Oxidative Synthesis of Tetraarylmethanes . S-19

IV. Mechanistic Study S-40

V. Product Derivatizations S-45

VI. Biological Study S-51

V. Determination of the Product Structure S-54

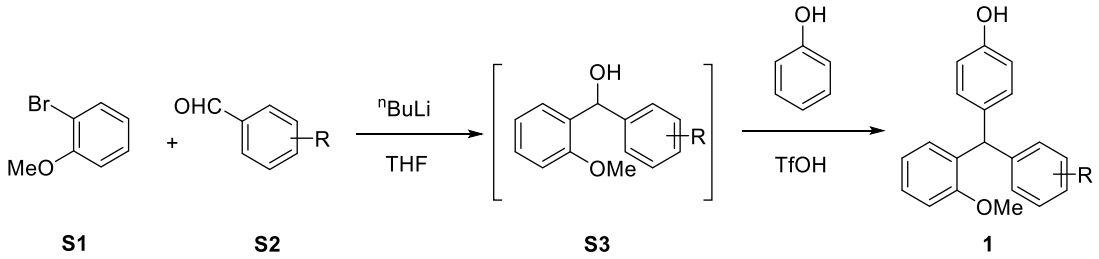
NMR Spectra and HPLC Traces

I. General Information

Flash column chromatography was performed over silica gel (200-300 mesh) purchased from Qindao Haiyang Co., China. All air or moisture sensitive reactions were conducted in oven-dried glassware under nitrogen atmosphere using anhydrous solvents. Anhydrous dichloromethane, toluene, diethyl ether, and tetrahydrofuran were purified by the Innovative® solvent purification system. Chemicals were purchased from commercial suppliers and used without further purification unless otherwise stated. ^{1}H, ^{13}C, ^{19}F NMR spectra were collected on a Bruker AV 400 MHz NMR spectrometer using residue solvent peaks as an internal standard (^{1}H NMR: $CDCl_3$ at 7.26 ppm, CD_2Cl_2 at 5.32 ppm, acetone-d_6 at 2.05 ppm; ^{13}C NMR: $CDCl_3$ at 77.23 ppm, CD_2Cl_2 at 53.84 ppm, acetone-d_6 at 29.84 ppm). Data for ^{1}H NMR are recorded as follows: chemical shift (δ, ppm), multiplicity (s = singlet; d = doublet; t = triplet; q = quarter; p = pentet; sept = septet; m = multiplet; br = broad), coupling constant (Hz), integration. Mass spectra were collected on an Agilent GC/MS 5975C system, a MALDI Micro MX mass spectrometer, or an API QSTAR XL System. IR spectra were recorded on Bruker TENSOR 27 spectrometer and reported in terms of frequency of absorption (cm^{-1}). Optical rotations were measured on JASCO P-2000 polarimeter with $[\alpha]_D$ values reported in degrees; concentration (c) is in 10 mg/mL. The enantiomeric excess values were determined by chiral HPLC using an Agilent 1200 LC instrument with Daicel CHIRALPAK® AD-H, IC, AS-H, or CHIRALCEL® OD-H columns.

II. Synthesis of the Triarylmethane Substrates

General Procedure A.

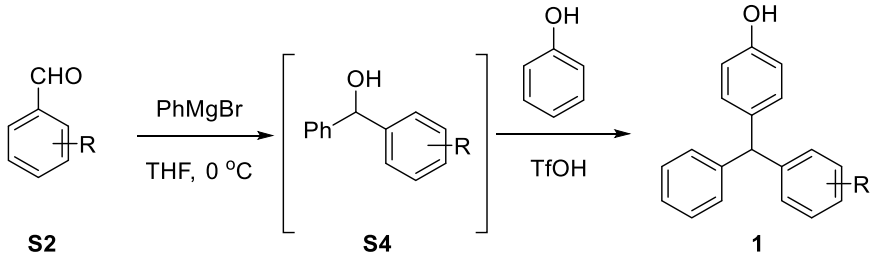


S1 **S2** **S3** **1**

At –78 °C, to a solution of 1-bromo-2-methoxybenzene **S1** (0.5 mL, 4.0 mmol) in THF (30 mL) was added dropwise *n*-butyllithium (2.5 M in pentane, 6.3 mL, 14.9 mmol). The mixture was kept stirring at the same temperature for 2 h. Then a solution of aldehyde **S2** (4.0 mmol) in THF (10 mL) was slowly added. The mixture was stirred at room temperature for 20 h before it was quenched with water (20 mL). The resulting mixture was extracted with DCM (30 mL × 3). The combined organic layers were dried over anhydrous Na_2SO_4, filtered, and concentrated. The crude mixture was purified by flash silica gel column chromatography (eluent: hexanes/EtOAc = 10:1) to give the diarylmethanol **S3**.

In a separate flask, to a solution of phenol (846 mg, 9.0 mmol,) and TfOH (0.05 mL, 0.57 mmol) in DCM (10 mL) was added a solution of the diarylmethanol **S3** in DCM (10 mL). The mixture was stirred for 10 min and concentrated. The residue was purified by silica gel flash column chromatography to afford the pure triarylmethane substrate **1**.

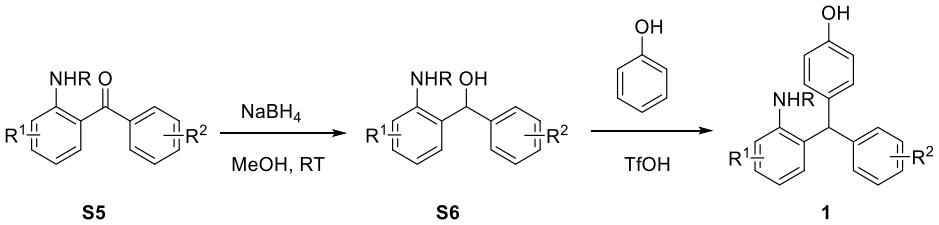
General Procedure B.



At 0 °C, to a solution of **S2** (4.0 mmol) in THF (30 mL) was added PhMgBr (2.5 M in pentane, 6.3 mL, 14.9 mmol) dropwise. The mixture was kept stirring at the same temperature for 10 min. Next, the reaction was quenched with a saturated aqueous solution of NH_4Cl (20 mL). The mixture was extracted with DCM (30 mL × 3). The combined organic layers were dried over anhydrous Na_2SO_4, filtered, and concentrated. The crude mixture was purified by flash silica gel column chromatography (eluent: hexanes/EtOAc = 10:1) to give alcohol **S4**.

In a separate flask, to a solution of phenol (846 mg, 9.0 mmol) and TfOH (0.05 mL, 0.57 mmol) in DCM (10 mL) was slowly added a solution of the alcohol **S4** in DCM (10 mL). The mixture was stirred for 10 min and concentrated. The residue was purified by silica gel flash column chromatography to afford the pure triarylmethane substrate **1**.

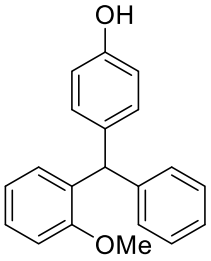
General Procedure C.



At 0 °C, to a solution of **S5** (4.0 mmol) in MeOH (40 mL) was added $NaBH_4$ (908 mg, 24.0 mmol, 6 equiv) portionwise. The mixture was stirred at the same temperature for 1 h and concentrated. The residue was treated with a saturated

aqueous solution of NH_4Cl (30 mL), and extracted with DCM (40 mL × 3). The combined organic layers were dried over anhydrous Na_2SO_4, filtered, and concentrated to give the crude ketone **S6**.

In a separate flask, to a solution of phenol (846 mg, 9.0 mmol) and TfOH (0.05 mL, 0.57 mmol) in DCM (10 mL) was slowly added a solution of the crude ketone **S6** in DCM (10 mL). The mixture was stirred for 10 min and concentrated. The residue was purified by silica gel flash column chromatography to afford the pure triarylmethane substrate **1**.



1a

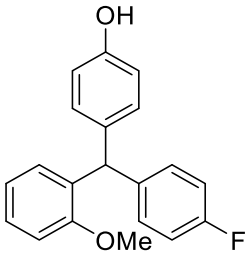
4-((2-Methoxyphenyl)(phenyl)methyl)phenol (1a) was prepared as a white solid from benzaldehyde (4.0 mmol) according to the General Procedure A (eluent: hexanes/EtOAc = 30:1 → 10:1) in 62% yield (over two steps)

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.28 – 7.19 (m, 4H), 7.08 (d, J = 7.2 Hz, 2H), 6.95 (d, J = 8.4 Hz, 2H), 6.88 – 6.85 (m, 3H), 6.72 (d, J = 8.4 Hz, 2H), 5.86 (s, 1H), 3.72 (s, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 157.2, 153.8, 144.3, 136.3, 133.0, 130.7, 130.4, 129.5, 128.2, 127.6, 126.1, 120.4, 115.1, 110.8, 55.7, 48.8.

IR (thin film) 3353, 3023, 2836, 1597, 1499, 1237, 1170, 748 cm^{-1}.

HRMS (CI+) Calcd for $C_{20}H_{18}O_2$ (M^+): 290.1307, Found: 290.1308.



1b

4-((4-Fluorophenyl)(2-methoxyphenyl)methyl)phenol (1b) was prepared as a white solid from 4-fluorobenzaldehyde (4.0 mmol) according to the General Procedure A (eluent: hexanes/EtOAc = 30:1 → 10:1) in 27% yield (over two steps).

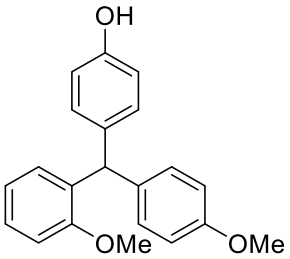
^{1}H NMR (400 MHz, $CDCl_3$) δ 7.22 (t, J = 7.4 Hz, 1H), 7.04 – 7.01 (m, 2H), 6.94 (t, J = 8.0 Hz, 4H), 6.88 – 6.81 (m, 3H), 6.73 (d, J = 8.4 Hz, 2H), 5.82 (s, 1H), 3.71 (s, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 161.5 (d, J = 242.5 Hz), 157.2, 154.0, 140.1 (d, J = 3.2 Hz), 136.2, 132.9, 130.9 (d, J = 7.6 Hz), 130.7, 130.3, 127.8, 120.5, 115.3, 115.0 (d, J = 21.0 Hz), 110.9, 55.8, 48.2.

^{19}F NMR (376 MHz, $CDCl_3$) δ –117.4.

IR (thin film) 3356, 3016, 2836, 1500, 1451, 1229, 1163, 752, 704 cm^{-1}.

HRMS (CI+) Calcd for $C_{20}H_{17}FO_2$ (M^+): 308.1213, Found: 278.1223.



1c

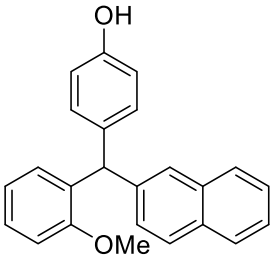
4-((2-Methoxyphenyl)(4-methoxyphenyl)methyl)phenol (1c) was prepared as a light yellow solid from 4-methoxybenzaldehyde (4.0 mmol) according to the General Procedure A (eluent: hexanes/EtOAc = 30:1 → 10:1) in 80% yield (over two steps).

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.24 – 7.19 (m, 1H), 7.01 (d, J = 8.4, 2H), 6.94 (d, J = 8.4 Hz, 2H), 6.90 – 6.86 (m, 3H), 6.82 (d, J = 8.6 Hz, 2H), 6.72 (d, J = 8.4 Hz, 2H), 5.81 (s, 1H), 3.79 (s, 3H), 3.72 (s, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 157.9, 157.2, 153.8, 136.7, 136.5, 133.4, 130.6, 130.4, 130.3, 127.6, 120.4, 115.1, 113.6, 110.9, 55.8, 55.4, 48.0.

IR (thin film) 3381, 2955, 2835, 1502, 1452, 1027, 824, 733, 574 cm^{-1}.

HRMS (CI+) Calcd for $C_{21}H_{20}O_3$ (M^+): 320.1412, Found: 320.1407.



1d

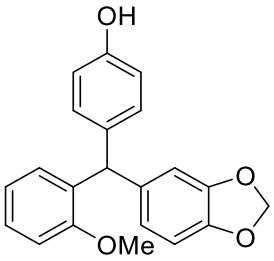
4-((2-Methoxyphenyl)(naphthalen-2-yl)methyl)phenol (1d) was prepared as a white solid from 2-naphthaldehyde (4.0 mmol) according to the General Procedure A (eluent: hexanes/EtOAc = 30:1 → 10:1) in 68% yield (over two steps).

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.81 – 7.69 (m, 3H), 7.42 (d, J = 2.6 Hz, 3H), 7.30 – 7.22 (m, 2H), 7.00 (d, J = 7.6 Hz, 2H), 6.91– 6.86 (m, 3H), 6.74 (d, J = 8.5 Hz, 2H), 6.02 (s, 1H), 3.74 (s, 3H), 2.19 (s, 1H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 157.3, 154.0, 142.1, 136.1, 133.6, 132.9, 132.3, 130.9, 130.6, 128.6, 128.0, 127.8, 127.7, 127.6, 126.0, 125.6, 120.5, 115.2, 110.9, 55.8, 49.0.

IR (thin film) 3391, 3054, 2836, 1598, 1502, 1451, 1239, 1171, 822, 747 cm^{-1}.

HRMS (CI+) Calcd for $C_{24}H_{20}O_2$ (M^+): 340.1463, Found: 340.1451.



1e

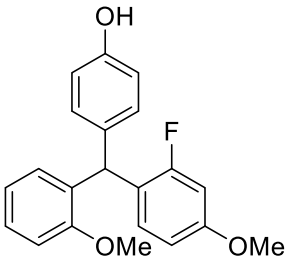
4-(Benzo[*d*][1,3]dioxol-5-yl(2-methoxyphenyl)methyl)phenol (1e) was prepared as a yellow solid from benzo[*d*][1,3]dioxole-5-carbaldehyde (4.0 mmol) according to the General Procedure A (eluent: hexanes/EtOAc = 30:1 → 10:1) in 70% yield (over two steps).

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.24 – 7.19 (m, 1H), 6.94 (d, J = 8.3 Hz, 2H), 6.88 – 6.87 (m, 3H), 6.74 – 6.70 (m, 3H), 6.60 – 6.53 (m, 2H), 5.91 (s, 2H), 5.78 (s, 1H), 4.81 (s, 1H), 3.73 (s, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 157.2, 153.9, 147.6, 145.9, 138.4, 136.5, 133.1, 130.6, 130.3, 127.7, 122.5, 120.5, 115.2, 110.9, 110.2, 108.0, 101.0, 55.8, 48.5.

IR (thin film) 3383, 2891, 1598, 1485, 1437, 1234, 1033, 746 cm^{-1}.

HRMS (CI+) Calcd for $C_{21}H_{18}O_4$ (M^+): 334.1205, Found: 334.1204



1f

4-((2-Fluoro-4-methoxyphenyl)(2-methoxyphenyl)methyl)phenol (1f) was prepared as a white solid from 2-fluoro-4-methoxybenzaldehyde (4.0 mmol) according to the General Procedure A (eluent: hexanes/EtOAc = 30:1 → 10:1) in 52% yield (over two steps).

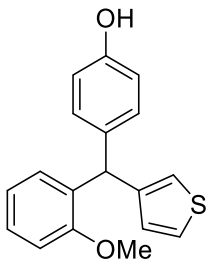
^{1}H NMR (400 MHz, $CDCl_3$) δ 7.26 – 7.22 (m, 1H), 6.95 (d, J = 8.4 Hz, 2H), 6.88 – 6.72 (m, 6H), 6.62 – 6.56 (m, 2H), 6.00 (s, 1H), 3.77 (s, 3H), 3.71 (s, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 161.3 (d, J = 245.0 Hz), 159.5 (d, J = 10.5 Hz), 157.2, 154.0, 135.3, 132.1, 131.0 (d, J = 5.9 Hz), 130.5, 130.0, 127.8, 123.5 (d, J = 15.3 Hz), 120.4, 115.2, 110.9, 109.3 (d, J = 2.9 Hz), 101.8 (d, J = 26.0 Hz), 55.8, 55.7, 41.6 (d, J = 2.7 Hz).

^{19}F NMR (376 MHz, $CDCl_3$) δ –114.2.

IR (thin film) 3353, 2836, 1617, 1587, 1500, 1451, 1241, 1098, 1025, 753 cm^{-1}.

HRMS (CI+) Calcd for $C_{21}H_{19}FO_3$ (M^+): 338.1318, Found: 338.1321.



1g

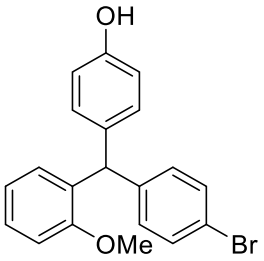
4-((2-Methoxyphenyl)(thiophen-3-yl)methyl)phenol (1g) was prepared as a yellow solid from thiophene-3-carbaldehyde (4.0 mmol) according to the General Procedure A (eluent: hexanes/EtOAc = 30:1 → 10:1) in 31% yield (over two steps).

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.27 – 7.21 (m, 2H), 7.03 (d, J = 8.4 Hz, 2H), 6.96 (d, J = 7.0 Hz, 1H), 6.92 – 6.87 (m, 3H), 6.74 – 6.70 (m, 3H), 5.87 (s, 1H), 3.75 (s, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 157.0, 153.9, 145.4, 136.3, 132.9, 130.3, 129.8, 129.1, 127.7, 125.3, 122.5, 120.6, 115.2, 110.9, 55.8, 44.5.

IR (thin film) 3395, 2834, 1597, 1497, 1447, 1232m 1169, 1100, 1021, 746 cm^{-1}.

HRMS (CI+) Calcd for $C_{18}H_{16}O_2S$ (M^+): 296.0871, Found: 296.0874.



1h

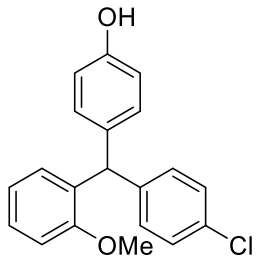
4-((4-Bromophenyl)(2-methoxyphenyl)methyl)phenol (1h) was prepared as a white solid from 4-bromobenzaldehyde (4.0 mmol) according to the General Procedure A (eluent: hexanes/EtOAc = 30:1 → 10:1) in 30% yield (over two steps).

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.37 (d, J = 8.4 Hz, 2H), 7.03 (td, J_1 = 7.7 Hz, J_2 = 1.5 Hz, 1H), 6.96 – 6.82 (m, 7H), 6.73 (d, J = 8.4 Hz, 2H), 5.79 (s, 1H), 4.76 (br, 1H), 3.72 (s, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 157.2, 154.1, 143.5, 135.7, 132.5, 131.4, 131.3, 130.7, 130.3, 127.9, 120.5, 120.0, 115.3, 110.9, 55.8, 48.5.

IR (thin film) 3360, 2835, 1597, 1510, 1485, 1240, 1173, 823, 754 cm^{-1}.

HRMS (CI+) Calcd for $C_{20}H_{17}O_2Br$ (M^+): 368.0412, Found: 368.0411.



1i

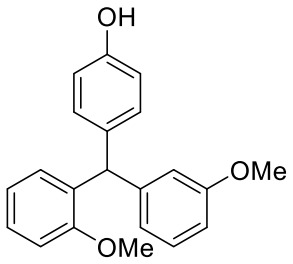
4-((4-Chlorophenyl)(2-methoxyphenyl)methyl)phenol (1i) was prepared as a white solid from 4-chlorobenzaldehyde (4.0 mmol) according to the General Procedure A (eluent: hexanes/EtOAc = 30:1 → 10:1) in 42% yield (over two steps).

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.26 – 7.21 (m, 3H), 6.99 – 6.80 (m, 7H), 6.81 (d, J = 7.2 Hz, 2H), 5.80 (s, 1H), 3.71 (s, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 157.2, 154.1, 143.0, 135.8, 132.6, 131.9, 130.8, 130.7, 130.3, 128.4, 127.9, 120.5, 115.3, 110.9, 55.8, 48.4.

IR (thin film) 3352, 3028, 1596, 1486, 1453, 1239, 1172, 822, 750 cm^{-1}.

HRMS (CI+) Calcd for $C_{20}H_{17}O_2Cl$ (M^+): 324.0917, Found: 324.0924.



1j

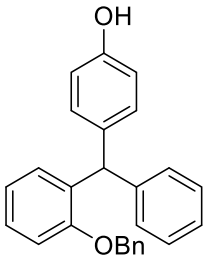
4-((2-Methoxyphenyl)(3-methoxyphenyl)methyl)phenol (1j) was prepared as a light yellow oil from 3-methoxybenzaldehyde (4.0 mmol) according to the General Procedure A (eluent: hexanes/EtOAc = 30:1 → 10:1) in 40% yield (over two steps).

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.21 – 7.17 (m, 2H), 6.95 (d, J = 8.4 Hz, 2H), 6.88 – 6.86 (m, 3H), 6.76 – 6.66 (m, 5H), 5.84 (s, 1H), 3.74 (s, 3H), 3.72 (s, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 159.6, 157.2, 153.9, 146.1, 136.2, 132.9, 130.7, 130.4, 129.2, 127.7, 122.2, 120.5, 115.7, 115.2, 111.2, 110.9, 55.8, 55.3, 48.8.

IR (thin film) 3383, 3026, 2889, 1690, 1603, 1506, 1452, 1249, 1053, 930, 703 cm^{-1}.

HRMS (CI+) Calcd for $C_{21}H_{20}O_3$ (M^+): 320.1412, Found: 320.1407.



1k

4-((2-(Benzyloxy)phenyl)(phenyl)methyl)phenol (1k) was prepared as a white solid from 2-(benzyloxy)benzaldehyde (4.0 mmol) according to the

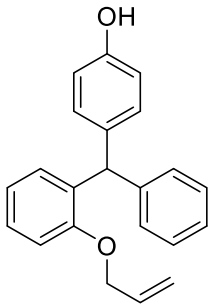
General Procedure B (eluent: hexanes/EtOAc = 30:1 → 10:1) in 55% yield (over two steps).

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.29 – 7.17 (m, 7H), 7.09 – 7.03 (m, 4H), 6.97 – 6.83 (m, 5H), 6.76 – 6.72 (m, 2H), 5.88 (s, 1H), 4.96 (s, 2H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 156.3, 154.0, 144.3, 137.3, 136.3, 133.6, 130.9, 130.5, 129.6, 128.5, 128.3, 127.8, 127.7, 127.3, 126.2, 120.7, 115.2, 112.0, 70.1, 49.5.

IR (thin film) 3381, 3028, 1703, 1595, 1556, 1232, 1171, 743, 698 cm^{-1}.

HRMS (CI+) Calcd for $C_{26}H_{22}O_2$ (M^+): 366.1620, Found: 366.1634.



1l

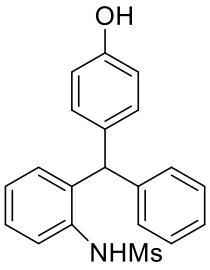
4-((2-(Allyloxy)phenyl)(phenyl)methyl)phenol (1l) was prepared as a white solid from 2-(allyloxy)benzaldehyde (4.0 mmol) according to the General Procedure B (eluent: hexanes/EtOAc = 30:1 → 10:1) in 30% yield (over two steps).

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.31 – 7.20 (m, 4H), 7.13 (d, J = 7.3 Hz, 2H), 6.99 (d, J = 8.4 Hz, 2H), 6.90 – 6.87 (m, 3H), 6.74 (d, J = 8.4 Hz, 2H), 5.92 (s, 1H), 5.89 – 5.80 (m, 1H), 5.26 – 5.15 (m, 2H), 5.05 (s, 1H), 4.48 – 4.42 (m, 2H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 156.1, 153.8, 144.3, 136.1, 133.6, 133.4, 130.7, 130.4, 129.5, 128.3, 127.6, 126.1, 120.7, 116.9, 115.2, 112.3, 69.1, 49.3.

IR (thin film) 3524, 3025, 1597, 1497, 1447, 1229, 1170, 993, 738, 700 cm^{-1}.

HRMS (CI+) Calcd for $C_{22}H_{20}O_2$ (M^+): 316.1463, Found: 316.1470.



1m

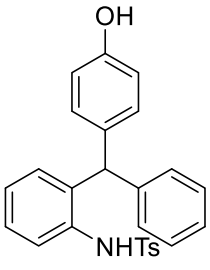
***N*-(2-(Hydroxy(4-hydroxyphenyl)(phenyl)methyl)phenyl)methane sulfonamide (1m)** was prepared as a white solid from *N*-(2-benzoylphenyl)methanesulfonamide (4.0 mmol) according to the General Procedure C (eluent: hexanes/EtOAc = 20:1 → 3:1) in 40% yield (over two steps).

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.54 – 7.52 (m, 1H), 7.34 – 7.26 (m, 4H), 7.15 – 7.07 (m, 3H), 6.96 – 6.94 (m, 2H), 6.88 – 6.85 (m, 1H), 6.80 – 6.78 (m, 2H), 6.10 (s, 1H), 5.58 (s, 1H), 4.98 (br, 1H), 2.73 (s, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 154.9, 142.0, 136.9, 134.8, 133.6, 130.83, 130.77, 129.6, 129.1, 128.2, 127.3, 126.1, 123.0, 116.0, 51.7, 40.0.

IR (thin film) 3315, 1603, 1502, 1447, 1318, 1228, 1144, 972, 742, 701 cm^{-1}.

HRMS (CI+) Calcd for $C_{20}H_{19}NO_3S$ (M^+): 353.1086, Found: 353.1049.



1n

***N*-(2-(Hydroxy(4-hydroxyphenyl)(phenyl)methyl)phenyl)-4-methylbenzene sulfonamide (1n)** was prepared as a white solid from *N*-(2-benzoylphenyl)-4-methylbenzenesulfonamide (4.0 mmol) according to the General Procedure C (eluent: hexanes/EtOAc = 20:1 → 3:1) in 90% yield (over two steps).

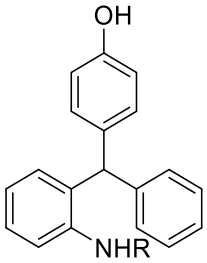
^{1}H NMR (400 MHz, $CDCl_3$) δ 7.58 (d, J = 8.2 Hz, 2H), 7.47 (dd, J_1 = 8.2 Hz, J_2 =

1.0 Hz, 1H), 7.30 – 7.20 (m, 5H), 7.09 – 7.05 (m, 1H), 6.74 – 6.71 (m, 4H), 6.63 – 6.61 (m, 3H), 6.09 (s, 1H), 4.91 (s, 1H), 4.82 (s, 1H), 2.45 (s, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 154.8, 144.2, 141.8, 138.2, 137.2, 134.3, 133.5, 130.7, 130.1, 130.0, 129.4, 129.0, 127.9, 127.3, 127.2, 126.5, 126.2, 115.9, 51.2, 21.8.

IR (thin film) 3322, 3059, 3029, 1601, 1505, 1446, 1264, 1221, 1156, 1090, 752, 558 cm^{-1}.

HRMS (CI+) Calcd for $C_{26}H_{23}NO_3S$ (M^+): 429.1399, Found: 429.1286.



1o

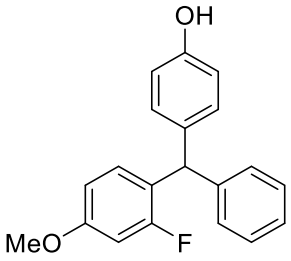
***N*-(2-(Hydroxy(4-hydroxyphenyl)(phenyl)methyl)phenyl)naphthalene-1-sulfonamide (1o)** was prepared as a light yellow solid from *N*-(2-benzoylphenyl)naphthalene-1-sulfonamide (4.0 mmol) according to the General Procedure C (eluent: hexanes/EtOAc = 20:1 → 3:1) in 68% yield (over two steps).

^{1}H NMR (400 MHz, $CDCl_3$) δ 8.56 – 8.53 (m, 1H), 8.19 (d, J = 7.4 Hz, 1H), 8.10 (d, J = 8.1 Hz, 1H), 7.99 – 7.97 (m, 1H), 7.62 – 7.60 (m, 2H), 7.51 (t, J = 7.8 Hz, 1H), 7.41 (d, J = 8.0 Hz, 1H), 7.18 – 7.15 (m, 4H), 7.01 (t, J = 7.6 Hz, 1H), 6.66 (d, J = 8.4 Hz, 2H), 6.51 – 6.49 (m, 3H), 6.41 (d, J = 8.4 Hz, 2H), 6.30 (s, 1H), 4.78 (s, 1H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 154.7, 141.8, 138.3, 135.3, 134.8, 134.6, 134.3, 133.6, 130.6, 130.3, 130.0, 129.4, 129.3, 128.8, 128.4, 127.6, 127.3, 127.1, 126.5, 126.1, 124.7, 124.6, 115.8, 50.8.

IR (thin film) 3444, 3343, 1602, 1505, 1325, 1263, 1160, 758 cm^{-1}.

HRMS (CI+) Calcd for $C_{29}H_{23}NO_3S$ (M^+): 465.1399, Found: 465.1424.



1p

4-((2-Fluoro-4-methoxyphenyl)(phenyl)methyl)phenol (1p) was prepared as a white solid from 2-fluoro-4-methoxybenzaldehyde (4.0 mmol) according to the General Procedure B (eluent: hexanes/EtOAc = 30:1 → 10:1) in 40% yield (over two steps).

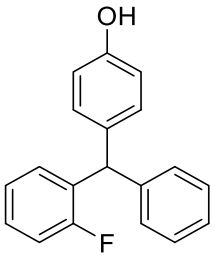
^{1}H NMR (400 MHz, $CDCl_3$) δ 7.31 – 7.20 (m, 3H), 7.10 (d, J = 7.5 Hz, 2H), 6.97 (d, J = 8.4 Hz, 2H), 6.82 (t, J = 8.7 Hz, 1H), 6.75 (d, J = 8.4 Hz, 2H), 6.64 – 6.60 (m, 2H), 5.69 (s, 1H), 3.78 (s, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 161.2 (d, J = 245.0 Hz), 159.6 (d, J = 10.9 Hz), 154.2, 143.4, 135.4, 131.2 (d, J = 5.8 Hz), 130.6, 129.3, 128.5, 126.6, 123.5 (d, J = 15.0 Hz), 115.4, 109.6 (d, J = 3.0 Hz), 101.8 (d, J = 25.7 Hz), 55.7, 48.2 (d, J = 2.3 Hz).

^{19}F NMR (376 MHz, $CDCl_3$) δ –114.4.

IR (thin film) 3377, 3021, 2837, 1617, 1586, 1502, 1441, 1252, 1156, 1096, 1027, 731, 699 cm^{-1}.

HRMS (CI+) Calcd for $C_{20}H_{17}FO_2$ (M^+): 308.1213, Found: 308.1202.



1q

4-((2-Fluorophenyl)(phenyl)methyl)phenol (1q) was prepared as a white solid from 2-fluorobenzaldehyde (4.0 mmol) according to the General Procedure B (eluent: hexanes/EtOAc = 30:1 → 10:1) in 77% yield (over two steps).

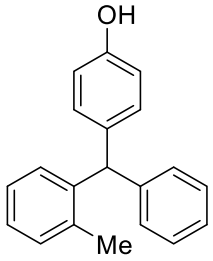
^{1}H NMR (400 MHz, $CDCl_3$) δ 7.30 – 7.18 (m, 4H), 7.10 – 6.91 (m, 7H), 6.75 (d, J = 8.5 Hz, 2H), 5.77 (s, 1H), 4.87 (s, 1H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 160.9 (d, J = 245.3 Hz), 154.3, 143.1, 135.1, 131.6 (d, J = 14.3 Hz), 131.0 (d, J = 3.9 Hz), 130.6, 129.4, 128.5, 128.3 (d, J = 8.4 Hz), 126.7, 124.0 (d, J = 3.5 Hz), 115.6, 115.4, 48.7 (d, J = 3.3 Hz).

^{19}F NMR (376 MHz, $CDCl_3$) δ –116.5.

IR (thin film) 3298, 3026, 1600, 1485, 1446, 1223, 1172, 1095, 748, 698 cm^{-1}.

HRMS (CI+) Calcd for $C_{19}H_{15}FO$ (M^+): 278.1107, Found: 278.1103.



1r

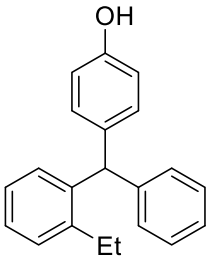
4-(Phenyl(*o*-tolyl)methyl)phenol (1r) was prepared as a white solid from 2-methylbenzaldehyde (3.3 mmol) according to the General Procedure B (eluent: hexanes/EtOAc = 30:1 → 10:1) in 35% yield (over two steps).

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.30 – 7.28 (m, 1H), 7.23 – 7.05 (m, 6H), 6.94 – 6.91 (m, 2H), 6.83 – 6.80 (m, 1H), 6.76 – 6.74 (m, 2H), 5.61 (s, 1H), 4.74 (s, 1H), 2.22 (s, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 154.1, 143.9, 142.8, 136.8, 135.9, 130.9, 130.6, 129.7, 129.5, 128.5, 126.5, 126.4, 125.9, 115.3, 52.9, 20.1.

IR (thin film) 3348, 3057, 3021, 2955, 1603, 1504, 1446, 1226, 1171, 828, 740, 701 cm^{-1}.

HRMS (CI+) Calcd for $C_{20}H_{18}O$ (M^+): 274.1358, Found: 274.1360.



1s

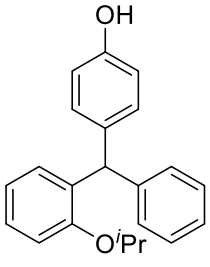
4-((2-Ethylphenyl)(phenyl)methyl)phenol (1s) was prepared as a colorless oil from 2-ethylbenzaldehyde (3.3 mmol) according to the General Procedure B (eluent: hexanes/EtOAc = 30:1 → 10:1) in 72% yield (over two steps).

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.36 – 7.25 (m, 5H), 7.22 – 7.15 (m, 3H), 7.02 – 6.94 (m, 3H), 6.80 – 6.77 (m, 2H), 5.81 (s, 1H), 5.36 (br, 1H), 2.70 (q, J = 7.5 Hz, 2H), 1.23 (s, J = 7.5 Hz, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 153.8, 144.3, 142.4, 141.9, 136.3, 130.9, 129.9, 129.7, 128.7, 128.4, 126.7, 126.3, 125.8, 115.3, 51.9, 25.7, 15.2.

IR (thin film) 3357, 2362, 1604, 1507, 1446, 1257, 1233, 1171, 1101, 1029, 829, 734, 701 cm^{-1}.

HRMS (ES-) Calcd for $C_{21}H_{19}O^-$ ($M-H^{+)}$: 287.1441, Found: 287.1431.



1t

4-((2-Isopropoxyphenyl)(phenyl)methyl)phenol (1t) was prepared as a colorless oil by the following procedure. To the solution of 4-(hydroxy(2-isopropoxy-phenyl)(phenyl)methyl)phenol (136.6 mg, 0.47 mmol) in DCM (3 mL) were added 2-(naphthalen-2-yl)-2,3-dihydrobenzo[d]thiazole (245.0 mg, 0.94 mmol, 2.0 equiv.) and 4-hydroxydinaphtho[2,1-d:1',2'-f][1,3,2]dioxaphos-phepine 4-oxide (16.6 mg, 47 μmmol). The mixture was stirred for 16 h until

full conversion of the substrate. Then, the mixture was directly subjected to silica gel column chromatography (eluent: hexanes/ethyl acetate = 30:1 → 10:1) to afford the desired product **1t** in 85% yield.

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.28 – 7.25 (m, 2H), 7.21 – 7.14 (m, 2H), 7.11 – 7.10 (m, 2H), 7.00 – 6.96 (m, 2H), 6.87 – 6.81 (m, 3H), 6.76 – 6.72 (m, 2H), 5.81 (s, 1H), 4.69 (s, 1H), 4.49 – 6.43 (m, 1H), 1.11 – 1.07 (m, 6H).

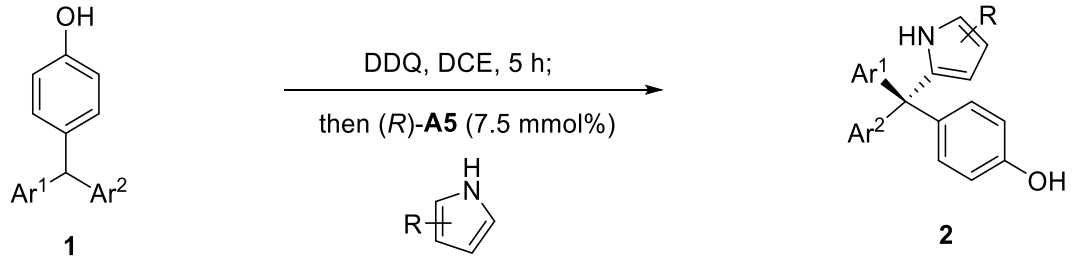
^{13}C NMR (100 MHz, $CDCl_3$) δ 155.5, 153.8, 144.4, 136.4, 134.4, 130.9, 130.4, 129.6, 128.2, 127.4, 126.0, 120.0, 115.1, 113.1, 70.1, 49.5, 22.1, 22.0.

IR (thin film) 3358, 2976, 2360, 1707, 1508, 1483, 1446, 1336, 1233, 1171, 1111, 740, 700 cm^{-1}.

HRMS (ES-) Calcd for $C_{22}H_{21}O_2^-$ ($M-H^+$): 317.1547, Found: 317.1541.

III. Catalytic Asymmetric Oxidative Synthesis of Tetraarylmethanes

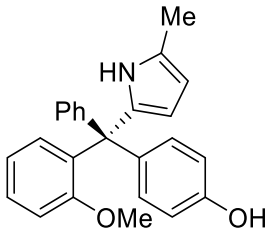
General Procedure D.



At room temperature, to an oven-dried 10-mL vial charged with a solution of the triarylmethane **1** (0.25 mmol) and DDQ (57.0 mg, 0.25 mmol, 1 equiv) in DCE (5 mL). The mixture was stirred for 5 h and then cooled to 0 °C. The catalyst (*R*)-**A5** (18.6 mg, 18.8 μmmol, 7.5 mol%) and the nucleophile pyrrole (0.5 mmol, 2 equiv) were added. The mixture was stirred at 0 °C for 3 h. Then, Na_2CO_3 (212 mg, 2.0 mmol) was added. The mixture was stirred for additional 10 min before it was concentrated under reduced pressure. The residue was purified by silica gel column chromatography to afford the desired product **2**.

General Procedure E.

At room temperature, to an oven-dried 10-mL vial charged with a solution of the triarylmethane **1** (0.25 mmol) and DDQ (57.0 mg, 0.25 mmol, 1 equiv) in DCE (5 mL). The mixture was stirred for 12 h and then cooled to –20 °C. The catalyst (*R*)-**A5** (18.6 mg, 18.8 μmmol, 7.5 mol%) and the nucleophile pyrrole (0.5 mmol, 2 equiv) were added. The mixture was stirred at –20 °C for 12 h. Then, Na_2CO_3 (212 mg, 2.0 mmol) was added. The mixture was stirred for additional 10 min before it was concentrated under reduced pressure. The residue was purified by silica gel column chromatography to afford the desired product **2**.



2a

(*R*)-4-((2-Methoxyphenyl)(5-methyl-1*H*-pyrrol-2-yl)(phenyl)-methyl)phenol (2a) was prepared as a light yellow foam from 4-((2-methoxyphenyl)(phenyl)methyl)phenol (72.5 mg, 0.25 mmol) and 2-methylpyrrole (40.6 mg, 0.5 mmol) according to the General Procedure D (eluent: hexanes/EtOAc = 20:1→ 10:1) in 95% yield (92.0 mg, 96% ee).

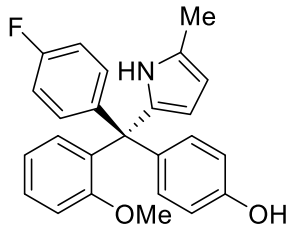
$[\alpha]_D^{22}$: +4.5 (*c* = 1.0, $CHCl_3$). HPLC analysis of the product: Daicel CHIRALPAK IC column; 3% *i*-PrOH in hexanes; 1.0 mL/min; retention times: 10.8 min (major), 12.4 min (minor).

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.59 (s, 1H), 7.30 – 7.13 (m, 7H), 7.00 – 6.87 (m, 5H), 6.68 (d, *J* = 8.6 Hz, 2H), 5.76 (s, 1H), 5.70 (t, *J* = 2.9 Hz, 1H), 3.20 (s, 3H), 2.17 (s, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 158.1, 153.8, 145.7, 137.4, 136.8, 135.9, 131.5, 130.3, 129.9, 128.7, 127.4, 127.1, 126.0, 120.8, 114.2, 113.8, 110.4, 105.1, 58.5, 55.8, 13.4.

IR (thin film) 3446, 3384, 3056, 2983, 2839, 1588, 1247, 1039, 733, 700 cm^{-1}.

HRMS (CI+) Calcd for $C_{25}H_{23}NO_2$ (M^+): 369.1729, Found: 369.1725.



2b

(*S*)-4-((4-Fluorophenyl)(2-methoxyphenyl)(5-methyl-1*H*-pyrrol-2-yl)methyl) phenol (2b) was prepared as a light yellow foam from 4-((4-fluorophenyl)(2-methoxyphenyl)methyl)phenol (77.7 mg, 0.25 mmol) and 2-methylpyrrole (40.6

mg, 0.5 mmol) according to the General Procedure D (eluent: hexanes/EtOAc = 20:1 → 10:1) in 61% yield (59.5 mg, 97% ee).

$[\alpha]_D^{22}$: +8.7 (*c* = 1.0, $CHCl_3$). HPLC analysis of the product: Daicel CHIRALPAK IC column; 3% *i*-PrOH in hexanes; 1.0 mL/min; retention times: 9.0 min (major), 10.1 min (minor).

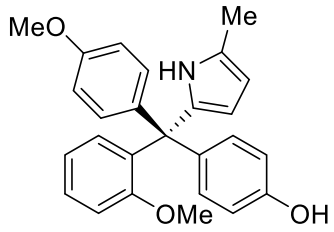
^{1}H NMR (400 MHz, acetone-d_6) δ 8.84 (s, 1H), 8.26 (s, 1H), 7.28 (t, *J* = 7.6 Hz, 1H), 7.15 – 7.12 (m, 2H), 6.98 – 6.87 (m, 7H), 6.70 (d, *J* = 8.6 Hz, 2H), 5.63 (s, 1H), 5.55 (t, *J* = 2.9 Hz, 1H), 3.22 (s, 3H), 2.13 (s, 3H).

^{13}C NMR (100 MHz, acetone-d_6) δ 161.6 (d, *J* = 241.0 Hz), 158.7, 156.2, 142.9 (d, *J* = 3.0 Hz), 137.4, 136.4 (d, *J* = 6.0 Hz), 132.1 (d, *J* = 7.6 Hz), 131.9 (2C), 130.7, 129.3, 128.0, 121.0, 114.6, 114.1, 113.9 (d, *J* = 21.1 Hz), 110.4, 105.4, 58.6, 55.4, 13.1.

^{19}F NMR (376 MHz, acetone-d_6) δ –119.8.

IR (thin film) 3447, 3053, 2980, 2936, 1593, 1476, 1261, 1020, 733 cm^{-1}.

HRMS (CI+) Calcd for $C_{25}H_{22}NFO_2$ (M^+): 387.1635, Found: 387.1638.



2c

(*S*)-4-((2-Methoxyphenyl)(4-methoxyphenyl)(5-methyl-1*H*-pyrrol-2-yl)methyl)phenol (2c) was prepared as a light yellow foam from 4-((2-methoxyphenyl)(4-methoxyphenyl)methyl)phenol (80.0 mg, 0.25 mmol) and 2-methylpyrrole (40.6 mg, 0.5 mmol) according to the General Procedure D (eluent: hexanes/EtOAc = 20:1 → 10:1) in 95% yield (94.4 mg, 90% ee).

$[\alpha]_D^{22}$: +5.6 (*c* = 1.0, $CHCl_3$). HPLC analysis of the product: Daicel CHIRALPAK IC column; 5% *i*-PrOH in hexanes; 1.0 mL/min; retention times: 8.9 min (major), 10.3 min (minor).

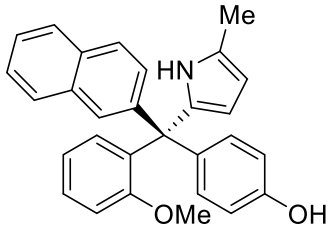
^{1}H NMR (400 MHz, $CDCl_3$) δ 7.60 (s, 1H), 7.29 – 7.26 (m, 1H), 7.05 (d, *J* = 8.8 Hz,

2H), 6.99 (d, *J* = 8.6 Hz, 2H), 6.94 – 6.87 (m, 3H), 6.77 (d, *J* = 8.8 Hz, 2H), 6.68 (d, *J* = 8.6 Hz, 2H), 5.76 (s, 1H), 5.69 (t, *J* = 2.9 Hz, 1H), 5.08 (s, 1H), 3.79 (s, 3H), 3.23 (s, 3H), 2.17 (s, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 158.1, 157.7, 153.7, 137.9, 137.8, 137.0, 136.2, 131.2, 131.1, 130.3, 128.6, 126.9, 120.8, 114.1, 113.8, 112.6, 110.2, 105.1, 57.8, 55.9, 55.4, 13.4.

IR (thin film) 3445, 3389, 3050, 2838, 1590, 1249, 1176, 1031, 821, 735 cm^{-1}.

HRMS (LD+) Calcd for $C_{26}H_{25}NO_3$ (M^+): 399.1834, Found: 399.1827.



2d

(*S*)-4-((2-Methoxyphenyl)(5-methyl-1*H*-pyrrol-2-yl)(naphthalen-2-yl)methyl) phenol (2d) was prepared as a light yellow foam from 4-((2-methoxyphenyl)(naphthalen-2-yl)methyl)phenol (85.1 mg, 0.25 mmol) and 2-methylpyrrole (40.6 mg, 0.5 mmol) according to the General Procedure D (eluent: hexanes/EtOAc = 20:1 → 10:1) in 95% yield (99.1 mg, 94% ee).

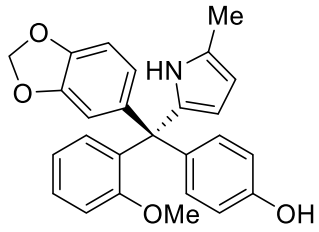
$[\alpha]_D^{22}$: +22.3 (*c* = 1.0, $CHCl_3$). HPLC analysis of the product: Daicel CHIRALPAK IC column; 3% *i*-PrOH in hexanes; 1.0 mL/min; retention times: 11.4 min (major), 12.9 min (minor).

^{1}H NMR (400 MHz, acetone-d_6) δ 8.89 (s, 1H), 8.27 (s, 1H), 7.83 (d, *J* = 7.4 Hz, 1H), 7.72 – 7.60 (m, 3H), 7.45 – 7.28 (m, 4H), 7.09 – 6.90 (m, 5H), 6.73 (d, *J* = 8.4 Hz, 2H), 5.69 (s, 2H), 3.16 (s, 3H), 2.13 (s, 3H).

^{13}C NMR (100 MHz, acetone-d_6) δ 159.0, 156.1, 144.1, 137.4, 136.8, 136.3, 133.9, 132.8, 132.0, 130.9, 130.4, 129.3, 128.9, 128.4, 128.1, 128.0, 126.4, 126.3, 126.2, 121.1, 114.5, 114.0, 110.5, 105.5, 59.2, 55.5, 13.1.

IR (thin film) 3441, 3380, 3052, 2836, 1588, 1243, 734, 698 cm^{-1}.

HRMS (LD+) Calcd for $C_{29}H_{25}NO_2$ (M^+): 419.1885, Found: 419.1883.



2e

(*S*)-4-(Benzo[d][1,3]dioxol-5-yl(2-methoxyphenyl)(5-methyl-1*H*-pyrrol-2-yl)methyl)phenol (2e) was prepared as a light yellow foam from 4-(benzo[d][1,3]dioxol-5-yl(2-methoxyphenyl)methyl)phenol (83.5 mg, 0.25 mmol) and 2-methylpyrrole (40.6 mg, 0.5 mmol) according to the General Procedure D (eluent: hexanes/EtOAc = 20:1 → 10:1) in 90% yield (92.7 mg, 92% ee).

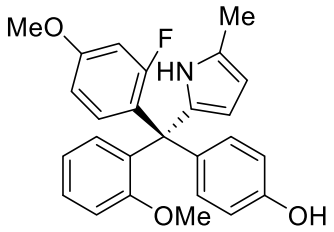
$[\alpha]_D^{22}$: +9.2 (*c* = 1.0, $CHCl_3$). HPLC analysis of the product: Daicel CHIRALPAK IC column; 5% *i*-PrOH in hexanes; 1.0 mL/min; retention times: 10.1 min (major), 14.1 min (minor).

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.61 (s, 1H), 7.30 – 7.28 (m, 1H), 7.00 (d, *J* = 8.6 Hz, 2H), 6.95 – 6.86 (m, 3H), 6.70 – 6.67 (m, 4H), 6.60 (d, *J* = 8.2 Hz, 1H), 5.92 (s, 2H), 5.76 (s, 1H), 5.70 (t, *J* = 2.7 Hz, 1H), 3.27 (s, 3H), 2.18 (s, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 158.0, 153.8, 146.9, 145.6, 139.9, 137.6, 136.7, 135.8, 131.4, 130.3, 128.7, 127.0, 123.1, 120.8, 114.1, 113.7, 111.0, 110.3, 107.0, 105.2, 101.0, 58.3, 55.8, 13.4.

IR (thin film) 3442, 3403, 3057, 2837, 1587, 1236, 734 cm^{-1}.

HRMS (LD+) Calcd for $C_{26}H_{23}NO_4$ (M^+): 413.1627, Found: 413.1637.



2f

(*R*)-4-((2-Fluoro-4-methoxyphenyl)(2-methoxyphenyl)(5-methyl-1*H*-pyrrol-2-yl)methyl)phenol (2f) was prepared as a light yellow foam from 4-((2-fluoro-4-methoxyphenyl)(2-methoxyphenyl)methyl)phenol (84.6 mg, 0.25 mmol) and 2-methylpyrrole (40.6 mg, 0.5 mmol) according to the General Procedure D (eluent: hexanes/EtOAc = 20:1 → 10:1) in 87% yield (90.5 mg, 89% ee).

$[\alpha]_D^{22}$: -5.1 (*c* = 1.0, $CHCl_3$). HPLC analysis of the product: Daicel CHIRALPAK IC column; 10% *i*-PrOH in hexanes; 1.0 mL/min; retention times: 6.6 min (major), 9.2 min (minor).

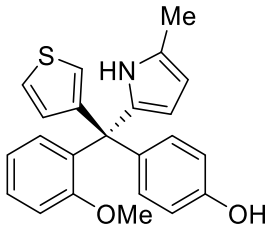
^{1}H NMR (400 MHz, $CDCl_3$) δ 7.76 (s, 1H), 7.30 – 7.26 (m, 1H), 7.03 – 6.85 (m, 6H), 6.67 (d, *J* = 8.7 Hz, 2H), 6.58 – 6.55 (m, 2H), 5.77 (s, 1H), 5.66 (s, 1H), 3.78 (s, 3H), 3.25 (s, 3H), 2.18 (s, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 161.5 (d, *J* = 247.8 Hz), 159.8 (d, *J* = 11.1 Hz), 157.9, 153.7, 136.6, 135.3, 134.2, 131.5 (d, *J* = 5.4 Hz), 131.0, 130.2, 128.7, 126.4, 125.7 (d, *J* = 11.5 Hz), 120.9, 114.0 (d, *J* = 37.4 Hz), 109.6, 108.7, 105.4, 102.6, 102.3, 55.93, 55.90, 55.7, 13.5.

^{19}F NMR (376 MHz, $CDCl_3$) δ –99.6.

IR (thin film) 3446, 3391, 3053, 2839, 1616, 1256, 734 cm^{-1}.

HRMS (CI+) Calcd for $C_{26}H_{24}FNO_3$ (M^+): 417.1740, Found: 417.1727.



2g

(*R*)-4-((2-Methoxyphenyl)(5-methyl-1*H*-pyrrol-2-yl)(thiophen-3-yl)methyl)-phenol (2g) was prepared as a light yellow foam from 4-((2-methoxyphenyl)(thiophen-3-yl)methyl)phenol (74.2 mg, 0.25 mmol) and 2-methylpyrrole (40.6 mg, 0.5 mmol) according to the General Procedure D (eluent: hexanes/EtOAc = 20:1 → 10:1) in 94% yield (88.4 mg, 84% ee).

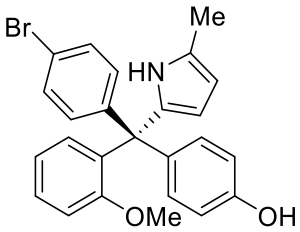
$[\alpha]_D^{22}$: +8.7 (*c* = 1.0, $CHCl_3$). HPLC analysis of the product: Daicel CHIRALPAK AD-H column; 5% *i*-PrOH in hexanes; 1.0 mL/min; retention times: 13.3 min (major), 15.0 min (minor).

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.84 (s, 1H), 7.28 – 7.26 (m, 1H), 7.21 – 7.19 (m, 1H), 6.99 (d, *J* = 8.6 Hz, 2H), 6.93 – 6.87 (m, 4H), 6.78 – 6.77 (m, 1H), 6.69 – 6.67 (m, 2H), 5.78 (s, 1H), 5.70 – 5.69 (m, 1H), 3.29 (s, 3H), 2.20 (s, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 157.9, 153.8, 147.0, 138.4, 136.6, 135.2, 130.8, 130.2, 130.0, 128.7, 126.9, 123.7, 123.4, 120.9, 114.3, 113.9, 109.8, 105.3, 56.0, 55.5, 13.4.

IR (thin film) 3443, 3393, 3049, 2837, 1587, 1251, 1175, 733, 703 cm^{-1}.

HRMS (LD+) Calcd for $C_{23}H_{21}NO_2S$ (M^+): 375.1298, Found: 375.1311.



2h

(*S*)-4-((4-Bromophenyl)(2-methoxyphenyl)(5-methyl-1*H*-pyrrol-2-yl)methyl)phenol (2h) was prepared as a light yellow foam from 4-((4-bromophenyl)(2-methoxyphenyl)methyl)phenol (92.0 mg, 0.25 mmol) and 2-

methylpyrrole (40.6 mg, 0.5 mmol) according to the General Procedure D (eluent: hexanes/EtOAc = 20:1 → 10:1) in 90% yield (100.3 mg, 94% ee).

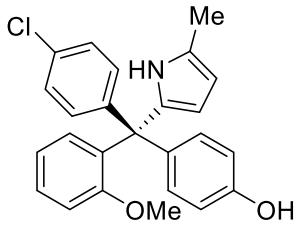
$[\alpha]_D^{22}$: +7.7 (*c* = 1.0, $CHCl_3$). HPLC analysis of the product: Daicel CHIRALPAK IC column; 3% *i*-PrOH in hexanes; 1.0 mL/min; retention times: 11.0 min (major), 12.2 min (minor).

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.53 (s, 1H), 7.35 – 7.26 (m, 3H), 7.05 – 6.86 (m, 7H), 6.70 (d, *J* = 8.6 Hz, 2H), 5.76 (s, 1H), 5.68 (t, *J* = 2.9 Hz, 1H), 3.24 (s, 3H), 2.17 (s, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 157.8, 153.9, 144.9, 136.8, 136.1, 135.3, 131.6, 131.5, 130.3, 130.2, 128.9, 127.4, 120.9, 119.9, 114.3, 113.5, 110.5, 105.3, 58.1, 55.6, 13.4.

IR (thin film) 3436, 1589, 1483, 1435, 1245, 1177, 1015, 820, 747 cm^{-1}.

HRMS (LD+) Calcd for $C_{25}H_{22}BrNO_2$ (M^+): 447.0834, Found: 447.0829.



2i

(*S*)-4-((4-Chlorophenyl)(2-methoxyphenyl)(5-methyl-1*H*-pyrrol-2-yl)methyl)phenol (2i) was prepared as a light yellow foam from 4-((4-chlorophenyl)(2-methoxyphenyl)methyl)phenol (81.0 mg, 0.25 mmol) and 2-methylpyrrole (40.6 mg, 0.5 mmol) according to the General Procedure D (eluent: hexanes/EtOAc = 15:1 → 10:1) in 89% yield (89.6 mg, 95% ee).

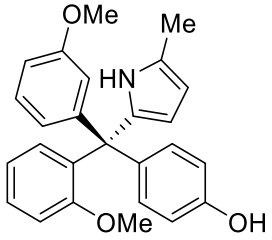
$[\alpha]_D^{22}$: +2.6 (*c* = 1.0, $CHCl_3$). HPLC analysis of the product: Daicel CHIRALPAK IC column; 3% *i*-PrOH in hexanes; 1.0 mL/min; retention times: 8.8 min (major), 9.7 min (minor).

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.51 (s, 1H), 7.31-7.27 (m, 1H), 7.19 (d, *J* = 8.6 Hz, 2H), 7.08 (d, *J* = 8.6 Hz, 2H), 6.94 – 6.86 (m, 5H), 6.66 (d, *J* = 8.6 Hz, 2H), 5.76 (s, 1H), 5.68 – 5.67 (m, 1H), 3.24 (s, 2H), 2.18 (s, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 157.8, 153.9, 144.4, 136.8, 136.2, 135.4, 131.6, 131.5, 131.2, 130.2, 128.9, 127.4, 120.9, 114.3, 113.5, 110.5, 105.3, 58.1, 55.6, 13.4.

IR (thin film) 3400, 3019, 2941, 1597, 1486, 1453, 1240, 1172, 1098, 823, 753 cm^{-1}.

HRMS (LD+) Calcd for $C_{25}H_{22}ClNO_2$ (M^+): 403.1339, Found: 403.1336.



2j

(*S*)-4-((2-Methoxyphenyl)(3-methoxyphenyl)(5-methyl-1*H*-pyrrol-2-yl)methyl)phenol (2j) was prepared as a light yellow foam from 4-((2-methoxyphenyl)(3-methoxyphenyl)methyl)phenol (80.0 mg, 0.25 mmol) and 2-methylpyrrole (40.6 mg, 0.5 mmol) according to the General Procedure D (eluent: hexanes/EtOAc = 20:1 → 10:1) in 97% yield (96.8 mg, 96% ee).

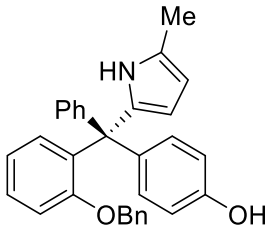
$[\alpha]_D^{22}$: +10.1 (c = 1.0, $CHCl_3$). HPLC analysis of the product: Daicel CHIRALPAK IC column; 5% *i*-PrOH in hexanes; 1.0 mL/min; retention times: 8.4 min (major), 10.4 min (minor).

^{1}H NMR (400 MHz, acetone-d_6) δ 8.82 (s, 1H), 8.18 (s, 1H), 7.27 (t, J = 7.8 Hz, 1H), 7.12 (t, J = 7.8 Hz, 1H), 6.97 – 6.93 (m, 4H), 6.87 (t, J = 7.6 Hz, 1H), 6.74 – 6.68 (m, 5H), 5.64 – 5.62 (m, 1H), 5.58 (t, J = 2.9 Hz, 1H), 3.66 (s, 3H), 3.21 (s, 3H), 2.13 (s, 3H).

^{13}C NMR (100 MHz, acetone-d_6) δ 159.7, 159.0, 156.2, 148.7, 137.7, 136.8, 136.4, 132.1, 130.9, 129.2, 128.3, 127.8, 123.4, 121.1, 117.4, 114.5, 114.1, 110.8, 110.4, 105.4, 59.2, 55.6, 55.2, 13.1.

IR (thin film) 3445, 3384, 3053, 2931, 2839, 1590, 1375, 1042, 735, 700 cm^{-1}.

HRMS (CI+) Calcd for $C_{26}H_{25}NO_3$ (M^+): 399.1834, Found: 399.1828.



2k

(*R*)-4-((2-(Benzyloxy)phenyl)(5-methyl-1*H*-pyrrol-2-yl)(phenyl)methyl) phenol (2k) was prepared as a yellow foam from 4-((2-(benzyloxy)phenyl)(phenyl)methyl)phenol (91.6 mg, 0.25 mmol) and 2-methylpyrrole (40.6 mg, 0.5 mmol) according to the General Procedure D (eluent: hexanes/EtOAc = 20:1 → 10:1) in 91% yield (101.1 mg, 97% ee).

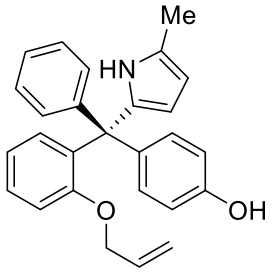
$[\alpha]_D^{22}$: +5.2 (*c* = 1.0, $CHCl_3$). HPLC analysis of the product: Daicel CHIRALPAK AD-H column; 5% *i*-PrOH in hexanes; 1.0 mL/min; retention times: 13.4 min (major), 14.4 min (minor).

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.94 (s, 1H), 7.30-7.17 (m, 9H), 7.08 – 7.03 (m, 3H), 6.95 – 6.91 (m, 2H), 6.79-6.77 (m, 2H), 6.66 (d, *J* = 8.6 Hz, 2H), 5.77 – 5.73 (m, 2H), 4.64 (s, 2H), 2.07 (s, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 156.7, 153.7, 145.6, 137.4, 136.9, 136.3, 135.6, 131.6, 130.7, 130.0, 128.6, 128.2, 127.6, 127.4, 127.2, 127.0, 126.0, 120.8, 114.1, 113.6, 110.7, 104.9, 70.1, 58.6, 13.2.

IR (thin film) 3445, 3386, 3056, 2856, 1588, 1253, 1230, 731, 696 cm^{-1}.

HRMS (CI+) Calcd for $C_{31}H_{27}NO_2$ (M^+): 445.2042, Found: 445.2058.



2l

(*R*)-4-((2-(Allyloxy)phenyl)(5-methyl-1*H*-pyrrol-2-yl)(phenyl)methyl)phenol

(2l) was prepared as a red foam from 4-((2-(allyloxy)phenyl)(phenyl)methyl)phenol (79.0 mg, 0.25 mmol) and 2-methylpyrrole (40.6 mg, 0.5 mmol) according to the General Procedure D (eluent: hexanes/EtOAc = 15:1 → 10:1) in 93% yield (91.9 mg, 93% ee).

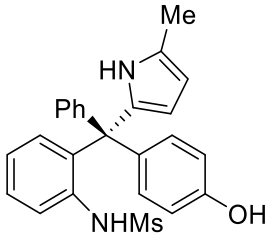
$[\alpha]_D^{22}$: –1.5 (c = 1.0, $CHCl_3$). HPLC analysis of the product derivative[1] after deallylation: Daicel CHIRALPAK IC column; 3% *i*-PrOH in hexanes; 1.0 mL/min; retention times: 14.6 min (minor), 20.0 min (major).

^{1}H NMR (400 MHz, acetone-d_6) δ 8.83 (s, 1H), 8.19 (s, 1H), 7.27 – 7.12 (m, 6H), 7.00 – 6.85 (m, 5H), 6.71 – 6.67 (m, 2H), 5.64 – 5.62 (m, 1H), 5.58 – 5.56 (m, 1H), 5.41 – 5.32 (m, 1H), 4.91 – 4.84 (m, 2H), 4.08 – 3.98 (m, 2H), 2.12 (s, 3H).

^{13}C NMR (100 MHz, acetone-d_6) δ 157.8, 156.1, 146.9, 137.5, 136.6, 136.5, 134.5, 132.2, 131.0, 130.6, 129.1, 127.7, 127.6, 126.2, 121.1, 116.3, 114.6, 114.4, 110.5, 105.4, 69.6, 59.2, 13.1.

IR (thin film) 3400, 3019, 2941, 1597, 1486, 1453, 1240, 1172, 1098, 823, 753 cm^{-1}.

HRMS (CI+) Calcd for $C_{27}H_{25}NO_2$ (M^+): 395.1885, Found: 395.1871.



2m

(*R*)-*N*-(2-((4-Hydroxyphenyl)(5-methyl-1*H*-pyrrol-2yl)(phenyl)methyl)phenyl)methanesulfon-amide (2m) was prepared as a light yellow foam from *N*-(2-((4-hydroxyphenyl)(phenyl)methyl)phenyl)methanesulfonamide (88.3 mg, 0.25 mmol) and 2-methylpyrrole (40.6 mg, 0.5 mmol) according to the General Procedure E (eluent: hexanes/EtOAc = 15:1 → 10:1) in 85% yield (91.7 mg, 87%

(1) D. R. Vutukuri, P. Bharathi, Z. Yu, K. Rajasekaran, M.-H. Tran and S. Thayumanavan, *J. Org. Chem.*, 2003, **68**, 1146–1149.

ee).

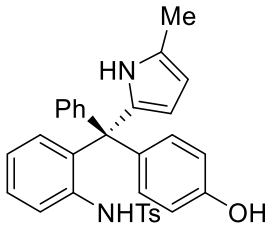
$[\alpha]_D^{22}$: +3.8 (c = 1.0, acetone). HPLC analysis of the product: Daicel CHIRALPAK IC column; 30% *i*-PrOH in hexanes; 1.0 mL/min; retention times: 11.7 min (minor), 13.0 min (major).

^{1}H NMR (400 MHz, acetone-d_6) δ 9.38 (s, 1H), 8.48 (s, 1H), 7.73 (d, J = 8.1 Hz, 1H), 7.35 – 7.25 (m, 4H), 7.10 (d, J = 7.4 Hz, 2H), 7.02 – 6.90 (m, 4H), 6.84 (s, 1H), 6.77 (d, J = 8.6 Hz, 2H), 6.03 – 6.02 (m, 1H), 5.82 (s, 1H), 2.41 (s, 3H), 2.16 (s, 3H).

^{13}C NMR (100 MHz, acetone-d_6) δ 157.0, 146.1, 138.8, 135.9, 134.6, 133.0, 132.2, 131.9, 130.9, 130.4, 129.3, 128.7, 127.5, 123.7, 117.9, 115.5, 110.8, 106.4, 58.9, 38.1, 13.0.

IR (thin film) 3433, 3361, 3021, 2926, 2852, 1588, 1265, 1149, 750, 701 cm^{-1}.

HRMS (LD+) Calcd for $C_{25}H_{24}N_2O_3S$ (M^+): 432.1508, Found: 432.1507.



2n

(*R*)-*N*-(2-((4-Hydroxyphenyl)(5-methyl-1*H*-pyrrol-2-yl)(phenyl)methyl)-phenyl)-4-methylbenzene-sulfonamide (2n) was prepared as a light yellow foam from *N*-(2-((4-hydroxyphenyl)(phenyl)methyl)phenyl)-4-methylbenzene-sulfonamide (107.3 mg, 0.25 mmol) and 2-methylpyrrole (40.6 mg, 0.5 mmol) according to the General Procedure E (eluent: hexanes/EtOAc = 20:1 → 10:1) in 82% yield (105.1 mg, 88% ee).

$[\alpha]_D^{22}$: +2.1 (c = 1.0, acetone). HPLC analysis of the product: Daicel CHIRALPAK IC column; 15% *i*-PrOH in hexanes; 1.0 mL/min; retention times: 18.6 min (minor), 20.9 min (major).

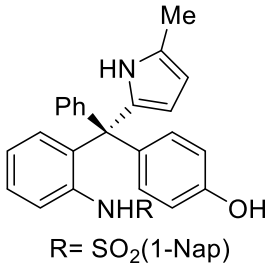
^{1}H NMR (400 MHz, acetone-d_6) δ 9.35 (s, 1H), 8.48 (s, 1H), 7.45 – 7.40 (m, 3H), 7.37 – 7.26 (m, 6H), 7.21 – 7.16 (m, 1H), 7.08 – 7.06 (m, 2H), 6.90 – 6.86 (m, 4H),

6.76 – 6.74 (m, 2H), 6.06 (s, 1H), 5.87 (m, 1H), 2.39 (s, 3H), 2.19 (s, 3H).

^{13}C NMR (100 MHz, acetone-d_6) δ 157.0, 146.0, 144.6, 138.3, 138.2, 136.1, 133.4, 133.0, 132.2, 131.8, 131.0, 130.8, 130.4, 128.8, 128.5, 128.3, 127.4, 122.8, 117.0, 115.4, 111.0, 106.3, 58.9, 21.4, 13.2.

IR (thin film) 3435, 3341, 3054, 2924, 2853, 1590, 1153, 739, 698 cm^{-1}.

HRMS (LD+) Calcd for $C_{31}H_{28}N_2O_3S$ (M^+): 508.1821, Found: 508.1802.



2o

(*R*)-*N*-(2-((4-Hydroxyphenyl)(5-methyl-1*H*-pyrrol-2-yl)(phenyl)methyl)phenyl)-naphthalene-1-sulfonamide (2o) was prepared as a light yellow foam from *N*-(2-((4-hydroxyphenyl)(phenyl)methyl)phenyl)-naphthalene-1-sulfonamide (116.3mg, 0.25 mmol) and 2-methylpyrrole (40.6 mg, 0.5 mmol) according to the General Procedure E (eluent: hexanes/EtOAc = 20:1 → 10:1) in 49% yield (66.9 mg, 98% ee).

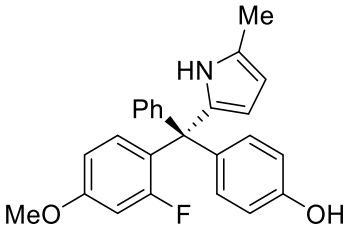
$[\alpha]_D^{22}$: +1.4 (c = 1.0, acetone). HPLC analysis of the product: Daicel CHIRALPAK IC column; 30% *i*-PrOH in hexanes; 1.0 mL/min; retention times: 12.3 min (major), 15.0 min (minor).

^{1}H NMR (400 MHz, acetone-d_6) δ 9.44 (s, 1H), 8.48 (s, 1H), 8.24 – 8.21 (m, 2H), 8.05 – 7.99 (m, 2H), 7.69 – 7.62 (m, 3H), 7.45 (s, 1H), 7.29 – 7.25 (m, 3H), 7.14 – 7.01 (m, 4H), 6.95 – 6.87 (m, 4H), 6.76 (d, J = 8.6 Hz, 2H), 6.14 – 6.13 (m, 1H), 5.98 – 5.93 (m, 1H), 2.12 (s, 3H).

^{13}C NMR (100 MHz, acetone-d_6) δ 157.0, 146.0, 139.0, 138.3, 136.3, 135.3, 135.2, 134.5, 133.3, 132.3, 131.8, 131.2, 130.9, 129.7, 129.3, 129.1, 128.8, 128.7, 128.5, 127.8, 127.5, 125.39, 125.30, 123.3, 119.0, 115.4, 111.0, 106.4, 59.0, 13.2.

IR (thin film) 3435, 3376, 3057, 2925, 2851, 1589, 1264, 743, 700 cm^{-1}.

HRMS (LD+) Calcd for $C_{34}H_{28}N_2O_3S$ (M^+): 544.1821, Found: 544.1840.



2p

(*R*)-4-((2-Fluoro-4-methoxyphenyl)(5-methyl-1*H*-pyrrol-2-yl)(phenyl)methy)phenol (2p) was prepared as a light yellow foam from 4-((2-fluoro-4-methoxyphenyl)(phenyl)methyl)phenol (77.0 mg, 0.25 mmol) and 2-methylpyrrole (40.6 mg, 0.5 mmol) according to the General Procedure D (eluent: hexanes/EtOAc = 20:1 → 10:1) in 94% yield (90.6 mg, 94% ee).

$[\alpha]_D^{22}$: +1.4 (*c* = 1.0, $CHCl_3$). HPLC analysis of the product: Daicel CHIRALCEL OD-H column; 5% *i*-PrOH in hexanes; 1.0 mL/min; retention times: 19.5 min (major), 24.4 min (minor).

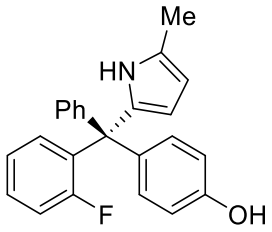
^{1}H NMR (400 MHz, $CDCl_3$) δ 7.37 (s, 1H), 7.29 – 7.15 (m, 6H), 7.01 (d, *J* = 8.5 Hz, 2H), 6.89 – 6.84 (m, 1H), 6.73 (d, *J* = 8.7 Hz, 2H), 6.60 – 6.55 (m, 2H), 5.79 – 5.77 (m, 2H), 3.79 (s, 3H), 2.18 (s, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 161.4 (d, *J* = 247.8 Hz), 160.3 (d, *J* = 11.0 Hz), 154.2, 145.1, 137.0, 134.6, 131.2, 131.0 (d, *J* = 5.5 Hz), 129.7, 127.8, 127.4, 127.0 (d, *J* = 12.1 Hz), 126.6, 114.6, 110.3, 108.9 (d, *J* = 2.7 Hz), 105.5, 102.9 (d, *J* = 26.5 Hz), 57.2, 55.7, 13.4.

^{19}F NMR (376 MHz, $CDCl_3$) δ –99.3.

IR (thin film) 3446, 3054, 2932, 1616, 1261, 824, 733 cm^{-1}.

HRMS (CI+) Calcd for $C_{25}H_{22}FNO_2$ (M^+): 387.1635, Found: 387.1624.



2q

(*R*)-4-((2-Fluorophenyl)(5-methyl-1*H*-pyrrol-2-yl)(phenyl)methyl)phenol (2q) was prepared as a light yellow foam from 4-((2-fluorophenyl)(phenyl)methyl)phenol (69.5 mg, 0.25 mmol) and 2-methylpyrrole (40.6 mg, 0.5 mmol) according to the General Procedure E (eluent: hexanes/EtOAc = 20:1 → 10:1) in 74% yield (66.2 mg, 83% ee).

$[\alpha]_D^{22}$: +6.9 (*c* = 1.0, $CHCl_3$). HPLC analysis of the product: Daicel CHIRALPAK AD-H column; 5% *i*-PrOH in hexanes; 1.0 mL/min; retention times: 12.4 min (major), 13.4 min (minor).

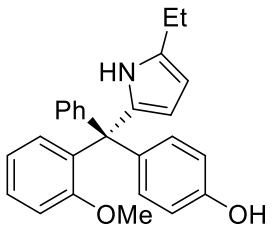
^{1}H NMR (400 MHz, $CDCl_3$) δ 7.38 (s, 1H), 7.32 – 7.17 (m, 6H), 7.09 – 6.97 (m, 5H), 6.75 – 6.71 (m, 2H), 5.81 – 5.79 (m, 2H), 4.95 (s, 1H), 2.19 (s, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 161.0 (d, *J* = 248.0 Hz), 154.2, 144.7, 136.7, 134.9 (d, *J* = 11.5 Hz), 134.3, 131.3, 130.6 (d, *J* = 3.4 Hz), 129.8, 129.3 (d, *J* = 8.4 Hz), 127.9, 127.6, 126.7, 124.0 (d, *J* = 3.0 Hz), 116.6 (d, *J* = 22.8 Hz), 114.7, 110.5, 105.5, 57.8, 13.4.

^{19}F NMR (376 MHz, $CDCl_3$) δ –101.3.

IR (thin film) 3440, 3057, 2854, 1586, 1484, 1443, 1262, 1220, 1177, 753 cm^{-1}.

HRMS (CI+) Calcd for $C_{24}H_{20}FNO$ (M^+): 357.1529, Found: 357.1527.



2r

(*R*)-4-((5-Ethyl-1*H*-pyrrol-2-yl)(2-methoxyphenyl)(phenyl)methyl)phenol (2r)

was prepared as a light yellow foam from 4-((2-methoxyphenyl) (phenyl)methyl)phenol (72.5 mg, 0.25 mmol)and 2-ethylpyrrole (47.5 mg, 0.5 mmol) according to the General Procedure D (eluent: hexanes/EtOAc = 20:1→ 10:1) in 98% yield (94.1 mg, 81% ee).

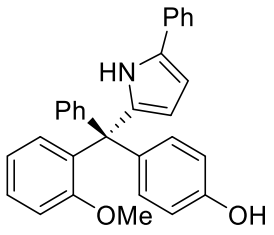
$[\alpha]_D^{22}$: –10.6 (*c* = 1.0, $CHCl_3$). HPLC analysis of the product: Daicel CHIRALPAK IC column; 3% *i*-PrOH in hexanes; 1.0 mL/min; retention times: 9.3 min (major), 10.1 min (minor).

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.65 (s, 1H), 7.31 – 7.19 (m, 6H), 7.03 – 7.00 (m, 2H),), 6.97 – 6.94 (m, 1H), 6.92 – 6.88 (m, 2H), 6.70 – 6.68 (m, 2H), 5.81 – 5.79 (m, 1H), 5.74 - 5.72 (m, 1H), 3.21 (s, 3H), 2.52 (q, *J* = 7.5 Hz, 2H), 1.16 (t, *J* = 7.5 Hz, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 158.1, 153.7, 145.8, 137.5, 136.8, 135.7, 133.8, 131.6, 130.4, 129.9, 128.7, 127.4, 126.1, 120.9, 114.2, 113.8, 110.2, 103.3, 58.6, 55.8, 21.1, 13.8.

IR (thin film) 3444, 3384, 3055, 2836, 1587, 1241, 1117, 1024, 734, 697 cm^{-1}.

HRMS (LD+) Calcd for $C_{26}H_{25}NO_2$ (M^+): 383.1885, Found: 383.1898.



2s

(*R*)-4-((2-Methoxyphenyl)(phenyl)(5-phenyl-1*H*-pyrrol-2-yl)methyl)phenol (2s) was prepared as a colorless foam from 4-((2-methoxyphenyl) (phenyl)methyl)phenol (72.5 mg, 0.25 mmol) and 2-phenylpyrrole (71.5 mg, 0.5 mmol) according to the General Procedure E (eluent: hexanes/EtOAc = 20:1→ 10:1) in 94% yield (101.5 mg, 82% ee).

$[\alpha]_D^{22}$: +2.7 (*c* = 1.0, $CHCl_3$). HPLC analysis of the product: Daicel CHIRALCEL OD-H column; 5% *i*-PrOH in hexanes; 1.0 mL/min; retention times: 11.2 min

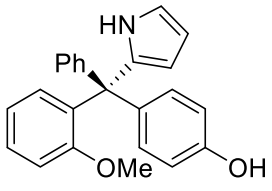
(minor), 12.2 min (major).

^{1}H NMR (400 MHz, acetone-d_6) δ 9.48 (s, 1H), 8.26 (s, 1H), 7.48 (d, J = 7.7 Hz, 2H), 7.31 (t, J = 6.9 Hz, 1H), 7.27 – 7.16 (m, 7H), 7.10 – 7.06 (m, 2H), 7.02 – 6.96 (m, 3H), 6.90 (t, J = 7.5 Hz, 1H), 6.74 (d, J = 8.7 Hz, 2H), 6.43 (t, J = 3.1 Hz, 1H), 5.82 (t, J = 3.0 Hz, 1H), 3.26 (s, 3H).

^{13}C NMR (100 MHz, acetone-d_6) δ 158.9, 156.4, 146.8, 139.9, 137.0, 136.5, 134.2, 132.4, 132.2, 131.1, 130.6, 129.4, 129.3, 127.8, 126.5, 126.2, 124.4, 121.3, 114.7, 114.4, 112.6, 105.8, 59.4, 55.7.

IR (thin film) 3449, 3366, 3054, 2836, 1600, 1254, 732, 697 cm^{-1}.

HRMS (LD+) Calcd for $C_{30}H_{25}NO_2$ (M^+): 431.1885, Found: 431.1876.



2t

(*R*)-4-((2-Methoxyphenyl)(phenyl)(1*H*-pyrrol-2-yl)methyl)phenol (2t) was prepared as a light yellow foam from 4-((2-methoxyphenyl) (phenyl)methyl)phenol (72.5 mg, 0.25 mmol) and pyrrole (83.75 mg, 1.25 mmol, 5 equiv) according to the General Procedure E (eluent: hexanes/EtOAc = 20:1→ 10:1) in 99% yield (89.0 mg, 99% ee).

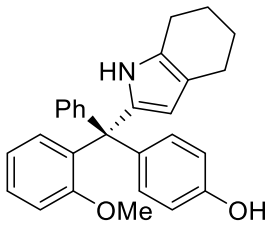
$[\alpha]_D^{22}$: +1.1 (c = 1.0, $CHCl_3$). HPLC analysis of the product: Daicel CHIRALPAK IC column; 2% *i*-PrOH in hexanes; 1.0 mL/min; retention times: 13.6 min (major >99%).

^{1}H NMR (400 MHz, acetone-d_6) δ 9.04 (s, 1H), 8.27 (s, 1H), 7.30 – 7.14 (m, 6H), 6.96 – 6.85 (m, 5H), 6.74 – 6.69 (m, 3H), 6.01 – 5.99 (m, 1H), 5.78 (s, 1H), 3.19 (s, 3H).

^{13}C NMR (100 MHz, acetone-d_6) δ 158.8, 156.1, 146.9, 137.8, 137.4, 136.7, 132.0, 130.7, 130.4, 129.2, 127.6, 126.3, 121.0, 118.0, 114.5, 114.0, 110.1, 107.3, 59.0, 55.5.

IR (thin film) 3447, 3055, 2835, 1598, 1241, 1176, 731 cm^{-1}.

HRMS (LD+) Calcd for $C_{24}H_{21}NO_2$ (M^+): 355.1572, Found: 355.1556.



2u

(*R*)-4-((2-Methoxyphenyl)(phenyl)(4,5,6,7-tetrahydro-1*H*-indol-2-yl)methyl)phenol (3u) was prepared as a colorless foam from 4-((2-methoxyphenyl)(phenyl)methyl)phenol (72.5 mg, 0.25 mmol) and 4,5,6,7-tetrahydro-1*H*-indole (60.5 mg, 0.5 mmol) according to the General Procedure E (eluent: hexanes/EtOAc = 15:1 → 10:1) in 95% yield (97.1 mg, 95% ee).

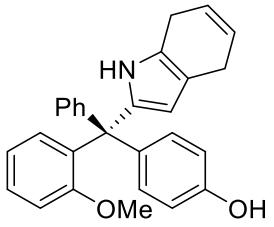
$[\alpha]_D^{22}$: –0.5 (*c* = 1.0, $CHCl_3$). HPLC analysis of the product: Daicel CHIRALPAK IC column; 3% *i*-PrOH in hexanes; 1.0 mL/min; retention times: 9.0 min (major), 10.1 min (minor).

^{1}H NMR (400 MHz, acetone-d_6) δ 8.48 (s, 1H), 8.20 (s, 1H), 7.28 – 7.21 (m, 6H), 7.02 – 6.85 (m, 5H), 6.69 (d, *J* = 8.6 Hz, 2H), 5.44 – 5.43 (m, 1H), 3.16 (s, 3H), 2.45 (t, *J* = 5.7 Hz, 2H), 2.39 (t, *J* = 5.5 Hz, 2H), 1.72 – 1.67 (m, 4H).

^{13}C NMR (100 MHz, acetone-d_6) δ 158.9, 156.1, 147.0, 137.9, 136.7, 136.1, 132.1, 130.9, 130.5, 129.1, 127.5, 127.1, 126.2, 121.0, 115.5, 114.4, 114.0, 109.7, 59.2, 55.5, 24.8, 24.4, 23.7, 23.4.

IR (thin film) 3447, 3402, 3054, 2844, 1598, 1241, 1174, 733, 700 cm^{-1}.

HRMS (LD+) Calcd for $C_{28}H_{27}NO_2$ (M^+): 409.2042, Found: 409.2054.



2v

(*R*)-4-((4,7-Dihydro-1*H*-indol-2-yl)(2-methoxyphenyl)(phenyl)methyl) phenol (2v) was prepared as a colorless foam from 4-((2-methoxyphenyl)(phenyl)methyl)phenol (72.5 mg, 0.25 mmol) and 4,7-dihydro-1*H*-indole (59.5 mg, 0.5 mmol) according to the General Procedure E (eluent: hexanes/EtOAc = 15:1 → 10:1) in 80% yield (81.4 mg, 86% ee).

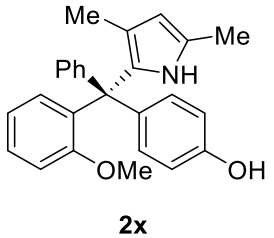
$[\alpha]_D^{22}$: –0.5 (*c* = 1.0, $CHCl_3$). HPLC analysis of the product: Daicel CHIRALPAK IC column; 3% *i*-PrOH in hexanes; 1.0 mL/min; retention times: 9.8 min (major), 11.9 min (minor).

^{1}H NMR (400 MHz, acetone-d_6) δ 8.65 (s, 1H), 8.25 (s, 1H), 7.29 – 7.12 (m, 6H), 7.02 – 6.86 (m, 5H), 6.72 – 6.69 (m, 2H), 5.85 – 5.83 (m, 1H), 5.79 – 5.76 (m, 1H), 5.53 – 5.52 (m, 1H), 3.17 (s, 3H), 3.15 – 3.10 (m, 4H).

^{13}C NMR (100 MHz, acetone-d_6) δ 158.9, 156.1, 146.9, 137.7, 137.0, 136.6, 132.1, 130.8, 130.5, 129.2, 127.6, 126.5, 126.2, 124.31, 124.27, 121.0, 114.5, 114.0, 112.7, 108.9, 59.2, 55.5, 25.6, 24.7.

IR (thin film) 3447, 3405, 2831, 1696, 1599, 1255, 1175, 1108, 820, 731 cm^{-1}.

HRMS (CI+) Calcd for $C_{28}H_{25}NO_2$ (M^+): 407.1885, Found: 407.1888.



2x

4-((3,5-Dimethyl-1H-pyrrol-2-yl)(2-methoxyphenyl)(phenyl)methyl)phenol (2x) was prepared as a colorless foam from 4-((2-methoxyphenyl) (phenyl)methyl)phenol (72.5 mg, 0.25 mmol) and 2,4-dimethyl-1H-pyrrole

(47.6 mg, 0.5 mmol) according to the General Procedure D (eluent: hexanes/EtOAc = 10:1 → 3:1) in 76% yield (73.2 mg, 94% ee).

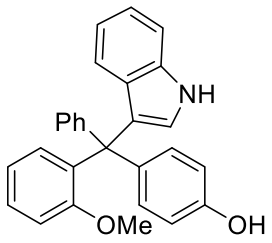
$[\alpha]_D^{22}$: +3.2 (c = 1.0, CH_2Cl_2). HPLC analysis of the product: Daicel CHIRALPAK AD-H column; 2% *i*-PrOH in hexanes; 1.0 mL/min; retention times: 16.0 min (minor), 17.9 min (major).

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.49 (s, 1H), 7.34 – 7.30 (m, 1H), 7.22 (d, J = 8.7 Hz, 3H), 7.12 (d, J = 8.6 Hz, 2H), 7.01 (d, J = 8.6 Hz, 2H), 6.96 – 6.90 (m, 2H), 6.70 (d, J = 8.7 Hz, 2H), 5.721-5.715 (m, 1H), 5.17 (br, 1H), 3.22 (s, 3H), 2.18 (s, 3H), 1.30 (s, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 158.1, 153.6, 143.8, 137.1, 134.4, 131.6, 131.5, 131.4, 130.7, 129.6, 128.8, 127.5, 124.0, 120.7, 116.9, 114.4, 113.6, 109.9, 57.9, 55.6, 13.2, 13.0.

IR (thin film) 3451, 1589, 1484, 1432, 1259, 1177, 1099, 824, 734 cm^{-1}.

HRMS (ES-) Calcd for $C_{26}H_{24}NO_2^-$ ($M-H^+$): 382.1813, Found: 382.1810.



2y

4-((*1H*-indol-3-yl)(2-methoxyphenyl)(phenyl)methyl)phenol (2y) was prepared as a colorless foam from 4-((2-methoxyphenyl)(phenyl)methyl)phenol (72.5 mg, 0.25 mmol) and indole (58.6 mg, 0.5 mmol) according to the General Procedure D (24 h for step 2 at room temperature, eluent: hexanes/EtOAc = 10:1 → 3:1) in 99% yield (101.1 mg, 21% ee).

HPLC analysis of the product: Daicel CHIRALPAK IC column; 3% *i*-PrOH in hexanes; 1.0 mL/min; retention times: 29.9 min (minor), 38.2 min (major).

^{1}H NMR (400 MHz, acetone-d_6) δ 10.02 (s, 1H), 8.15 (s, 1H), 7.36 – 7.34 (m, 1H),

7.29 – 7.10 (m, 7H), 7.04 – 7.01 (m, 2H), 6.98 – 6.93 (m, 2H), 6.82 – 6.78 (m, 2H), 6.70 – 6.62 (m, 4H), 3.15 (s, 3H).

^{13}C NMR (100 MHz, acetone-d_6) δ 159.3, 155.8, 147.4, 138.3, 137.2, 137.0, 132.2, 131.2, 130.8, 129.0, 128.6, 127.5, 126.5, 126.0, 123.8, 122.8, 121.6, 120.7, 119.1, 114.4, 114.1, 112.1, 58.2, 55.4.

IR (thin film) 3411, 3054, 1706, 1594, 1484, 1449, 1334, 1238, 1175, 1104, 821, 735, 703 cm^{-1}.

HRMS (ES+) Calcd for $C_{28}H_{23}NO_2$ (M^+): 405.1729, Found: 405.1717.

IV. Mechanistic Study

1a **QM**

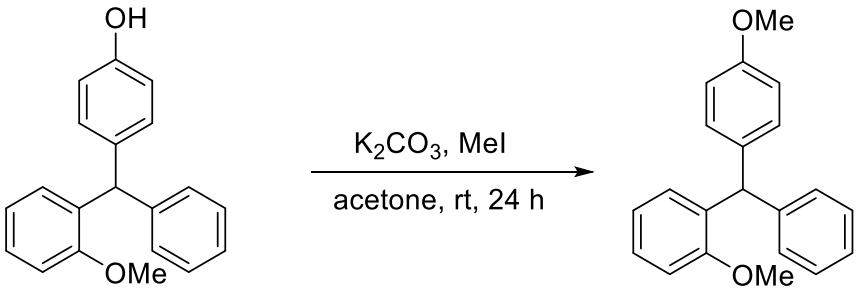
4-((2-Methoxyphenyl)(phenyl)methylene)cyclohexa-2,5-dien-1-one (QM). At room temperature, to a solution of triarylmethane **1a** (72.5 mg, 0.25 mmol) in DCM (5 mL) were added DDQ (57 mg, 0.25 mmol, 1 equiv) and 4Å molecular sieves (50 mg). Then the mixture was stirred for 5 h and concentrated. The residue was purified by silica gel flash column chromatography to afford the quinone methide as a yellow foam in 49% yield (35.0 mg). The reaction is clean. The low yield was due to instability of this quinone methide.

1H NMR (400 MHz, $CDCl_3$) δ 7.47 – 7.35 (m, 5H), 7.26 – 7.25 (m, 2H), 7.19 (dd, J_1 = 10 Hz, J_2 = 2.4 Hz, 1H), 7.12 (d, J = 7.6 Hz, 1H), 7.03 (t, J = 7.4 Hz, 1H), 6.95 (d, J = 8.0 Hz, 1H), 6.44 (dd, J_1 = 10 Hz, J_2 = 1.6 Hz, 1H), 6.37 (dd, J_1 = 10 Hz, J_2 = 1.6 Hz, 1H), 3.59 (s, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 187.6, 158.1, 157.6, 140.1, 139.8, 139.1, 132.6, 131.4, 131.1, 130.4, 129.6, 129.3, 128.9, 128.5, 128.2, 120.6, 112.0, 55.8.

IR (thin film) 3513, 2940, 1620, 1487, 1232, 1165, 1017, 699 cm^{-1}.

HRMS (CI+) Calcd for $C_{20}H_{16}O_2$ (M^+): 288.1150, Found: 288.1152.



1a **1a-Me**

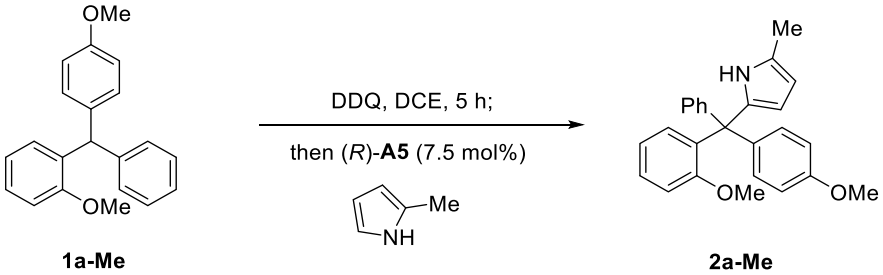
1-Methoxy-2-((4-methoxyphenyl)(phenyl)methyl)benzene (1a-Me). At room temperature, to a solution of **1a** (290 mg, 1 mmol) in acetone (10 mL) were sequentially added MeI (0.3 mL, 3 mmol) and K_2CO_3 (649 mg, 5 mmol). The reaction mixture was stirred for 24 h before it was filtered and concentrated. The residue was purified by silica gel flash chromatography to afford the desired product (eluent: hexanes/EtOAc = 30:1 → 20:1) as white foam in 69% yield (211 mg).

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.28 – 7.19 (m, 4H), 7.09 (d, J = 7.2 Hz, 2H), 7.02 – 7.00 (m, 2H), 6.89 – 6.80 (m, 5H), 5.88 (s, 1H), 3.79 (s, 3H), 3.72 (s, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 158.0, 157.2, 144.5, 136.2, 133.1, 130.5, 130.4, 129.5, 128.3, 127.6, 126.1, 120.4, 113.7, 110.8, 55.8, 55.3, 48.9.

IR (thin film) 3027, 2835, 1596, 1333, 1293, 1240, 1029, 734, 701 cm^{-1}.

HRMS (CI+) Calcd for $C_{21}H_{20}O_2$ (M^+): 304.1463, Found: 304.1469.



1a-Me **2a-Me**

2-((2-Methoxyphenyl)(4-methoxyphenyl)(phenyl)methyl)-5-methyl-1*H*-pyrrole (2a-Me) was prepared as a colorless foam from 1-methoxy-2-((4-methoxyphenyl)(phenyl)methyl)benzene (72.5 mg, 0.25 mmol) and 2-methylpyrrole (40.6 mg, 0.5 mmol) according to the General Procedure D

(eluent: hexanes/DCM = 30:1 → 10:1) in 58% yield (55.6 mg).

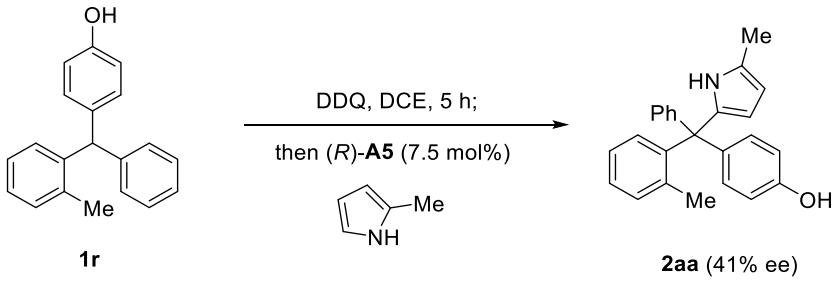
HPLC analysis of the product: Daicel CHIRALCEL OD-H column; 0.7% *i*-PrOH in hexanes; 1.0 mL/min; retention times: 9.0 min, 11.6 min.

1H NMR (400 MHz, $CDCl_3$) δ 7.59 (s, 1H), 7.31 – 7.15 (m, 6H), 7.10 – 7.06 (m, 2H), 6.98 – 6.96 (m, 1H), 6.92 – 6.88 (m, 2H), 6.81 – 6.77 (m, 2H), 5.78 – 5.76 (m, 1H), 5.72 – 5.70 (m, 1H), 3.80 (s, 3H), 3.21 (s, 3H), 2.18 (s, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 158.1, 157.8, 145.8, 137.3, 136.9, 135.9, 131.4, 130.3, 129.9, 128.7, 127.3, 127.0, 125.9, 120.8, 113.8, 112.6, 110.4, 105.2, 58.5, 55.8, 55.4, 13.4.

IR (thin film) 3460, 239, 1589, 1501, 1246, 1180, 1113, 1031, 907, 729 cm^{-1}.

HRMS (CI+) Calcd for $C_{26}H_{25}NO_2$ (M^+): 383.1885, Found: 383.1880.



1r **2aa** (41% ee)

4-((5-Methyl-1*H*-pyrrol-2-yl)(phenyl)(*o*-tolyl)methyl)phenol (2aa) was prepared as a yellow foam from 4-(phenyl(*o*-tolyl)methyl)phenol (68.5 mg, 0.25 mmol) and 2-methylpyrrole (40.6 mg, 0.5 mmol) according to the General Procedure D (eluent: hexanes/DCM = 30:1 → 10:1) in 99% yield (87 mg, 41% ee).

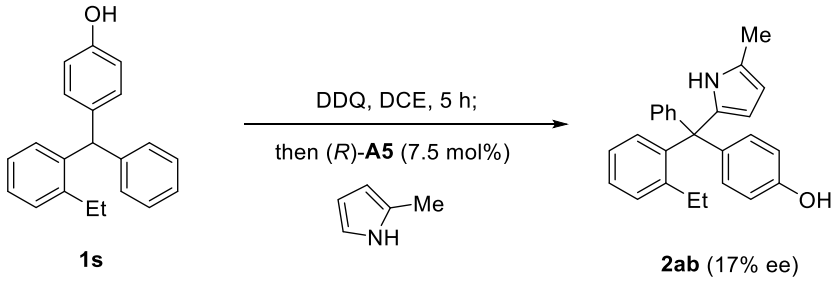
HPLC analysis of the product: Daicel CHIRALPAK AD-H column; 2% *i*-PrOH in hexanes; 1.0 mL/min; retention times: 20.5 min (minor), 24.6 min (major).

1H NMR (400 MHz, $CDCl_3$) δ 7.27 – 7.08 (m, 9H), 6.98 – 6.94 (m, 2H), 6.84 – 6.82 (m, 1H), 6.69 – 6.65 (m, 2H), 5.83 – 5.80 (m, 2H), 5.03 (br, 1H), 2.19 (s, 3H), 1.66 (s, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 153.9, 145.8, 145.3, 139.5, 137.9, 135.5, 132.4, 131.8, 130.3, 130.0, 127.8, 127.23, 127.22, 126.4, 125.7, 114.6, 110.2, 105.4, 59.8, 22.7, 13.4.

IR (thin film) 3441, 3056, 2921, 2857, 1590, 1504, 1441, 1259, 1176, 1040, 824, 740, 700 cm^{-1}.

HRMS (CI+) Calcd for $C_{25}H_{23}NO_2$ (M^+): 353.1780, Found: 353.1744.



4-((2-Ethylphenyl)(5-methyl-1*H*-pyrrol-2-yl)(phenyl)methyl)phenol (2ab) was prepared as a yellow foam from 4-((2-ethylphenyl)(phenyl)methyl)phenol (72.0 mg, 0.25 mmol) and 2-methylpyrrole (40.6 mg, 0.5 mmol) according to the General Procedure D (eluent: hexanes/DCM = 10:1 → 5:1) in 99% yield (90.5 mg, 17% ee).

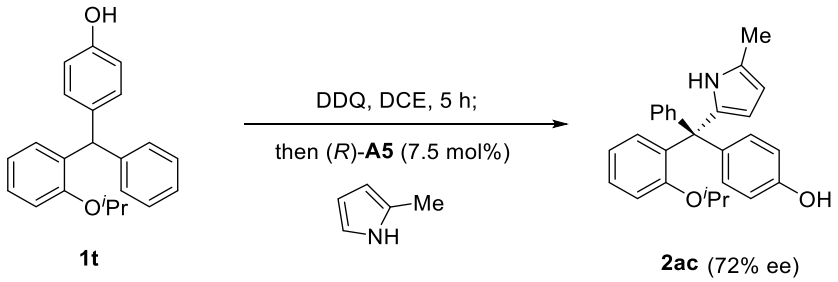
HPLC analysis of the product: Daicel CHIRALPAK AD-H column; 3% *i*-PrOH in hexanes; 1.0 mL/min; retention times: 14.7 min (minor), 16.0 min (major).

1H NMR (400 MHz, $CDCl_3$) δ 7.33 – 7.24 (m, 8H), 7.17 – 7.07 (m, 3H), 6.91 (d, J = 7.9 Hz, 1H), 6.73 (d, J = 8.6 Hz, 2H), 5.90 – 5.86 (m, 2H), 5.28 (br, 1H), 2.28 – 2.21 (m, 5H), 0.52 (t, J = 7.4 Hz, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 153.8, 146.0, 145.0, 144.6, 138.0, 136.0, 131.8, 130.45, 130.37, 129.6, 127.7, 127.4, 127.3, 126.3, 125.5, 114.5, 109.9, 105.4, 59.6, 27.8, 14.2, 13.3.

IR (thin film) 3446, 2361, 1601, 1506, 1438, 1263, 1176, 825, 734 cm^{-1}.

HRMS (ES-) Calcd for $C_{26}H_{24}NO^-$ ($M\text{-}H^+$): 366.1863, Found: 366.1861.



4-((2-Isopropoxyphenyl)(5-methyl-1H-pyrrol-2-yl)(phenyl)methyl)phenol (2ac) was prepared as a white foam from 4-((2-isopropoxyphenyl)(phenyl)methyl)phenol (79.5 mg, 0.25 mmol) and 2-methylpyrrole (40.6 mg, 0.5 mmol) according to the General Procedure D (eluent: hexanes/DCM = 10:1 → 5:1) in 75% yield (74 mg, 72% ee).

HPLC analysis of the product: Daicel CHIRALPAK IC column; 2% *i*-PrOH in hexanes; 1.0 mL/min; retention times: 9.2 min (major), 10.4 min (minor).

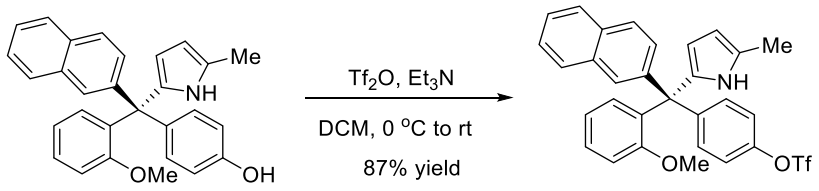
1H NMR (400 MHz, $CDCl_3$) δ 7.88 (s, 1H), 7.30 – 7.18 (m, 6H), 7.06 – 7.02 (m, 3H), 6.87 – 6.82 (m, 2H), 6.69 (d, J = 8.7 Hz, 2H), 5.81 – 5.79 (m, 1H), 5.72 – 5.70 (m, 1H), 5.06 (br, 1H), 4.40 – 4.34 (m, 1H), 2.21 (s, 3H), 0.80 – 0.77 (m, 6H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 155.2, 153.6, 145.7, 137.3, 136.2, 135.9, 131.9, 130.9, 130.2, 128.4, 127.1, 126.8, 125.8, 119.4, 113.9, 112.1, 110.6, 104.9, 68.3, 58.6, 21.13, 21.07, 13.4.

IR (thin film) 3446, 3055, 2978, 2928, 1589, 1508, 1443, 1254, 1176, 1116, 732, 699 cm^{-1}.

HRMS (ES-) Calcd for $C_{27}H_{26}NO_2^-$ ($M-H^+$): 396.1969, Found: 396.1968.

V. Product Derivatizations



2d (94% ee) **3** (94% ee)

(*S*)-4-((2-Methoxyphenyl)(5-methyl-1*H*-pyrrol-2-yl)(naphthalen-2-yl)methyl) phenyl trifluoromethanesulfonate (3). At 0 °C, to a solution of **2d** (210 mg, 0.5 mmol) and Et_3N (0.16 mL, 1.0 mmol) in DCM (12 mL) was slowly added Tf_2O (0.1 mL, 0.6 mmol) over 1 min. The reaction mixture was stirred at 0 °C for 30 min and then at room temperature for 1 h. Next, water (8 mL) was added, and the reaction mixture was extracted with DCM (16 mL x 2). The combined organic layers were dried over anhydrous Na_2SO_4 and concentrated. The residue was purified by silica gel flash chromatography to afford the desired product (eluent: hexanes/EtOAc = 30:1 → 20:1) as a colorless foam in 87% yield (239 mg, 94% ee).

$[\alpha]_D^{22}$: –7.4 (*c* = 1.0, $CHCl_3$). HPLC analysis of the product: Daicel CHIRALPAK AD-H column; 1% *i*-PrOH in hexanes; 0.6 mL/min; retention times: 5.5 min (major), 6.4 min (minor).

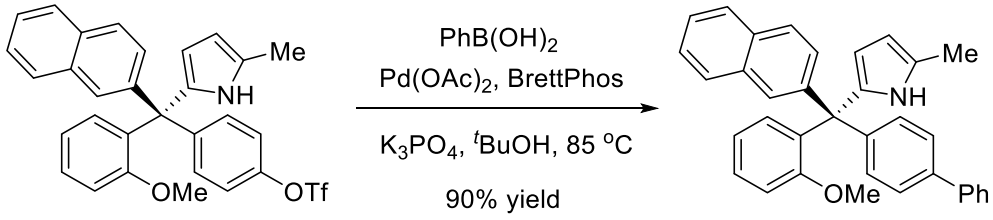
^{1}H NMR (400 MHz, $CDCl_3$) δ 7.84 (d, *J* = 7.8 Hz, 1H), 7.76 – 7.70 (m, 2H), 7.55 – 7.43 (m, 4H), 7.38 – 7.31 (m, 4H), 7.15 (d, *J* = 8.8 Hz, 2H), 7.05 (d, *J* = 7.2 Hz, 1H), 6.97 – 6.91 (m, 2H), 5.80 (s, 1H), 5.75 – 5.74 (s, 1H), 3.20 (s, 3H), 2.17 (s, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 157.8, 147.7, 146.5, 141.4, 135.6, 134.4, 133.1, 132.3, 131.6, 130.3, 129.6, 129.3, 128.5, 128.3, 127.9, 127.5, 126.7, 126.2, 126.1, 121.1, 120.0, 119.0 (q, *J* = 332 Hz), 113.6, 110.9, 105.5, 58.9, 55.4, 13.4.

^{19}F NMR (376 MHz, $CDCl_3$) δ –72.9.

IR (thin film) 3442, 3057, 1590, 1491, 1420, 1212, 1139, 1021, 889, 756, 571 cm^{-1}.

HRMS (CI+) Calcd for $C_{30}H_{24}F_3NO_4S$ (M^+): 551.1378, Found: 551.1354.



3 (94% ee) **4** (94% ee)

(*S*)-2-([1,1'-Biphenyl]-4-yl(2-methoxyphenyl)(naphthalen-2-yl)methyl)-5-methyl-1*H*-pyrrole (4) was prepared by a modified literature procedure.[2] Under N_2, to an oven-dried 4-mL vial were added triflate **3a** (110.2 mg, 0.2 mmol), phenylboronic acid (73.2 mg, 0.6 mmol), $Pd(OAc)_2$ (1.1 mg, 10 μmol, 5 mol%), BrettPhos (5.7 mg, 20 μmol, 10 mol%), K_3PO_4 (127.2 mg, 0.6 mmol, 3.0 equiv), and *tert*-butanol (2 mL). The mixture was stirring at 85 °C for 12 h. After that, the mixture was cooled to room temperature, concentrated and then purified by silica gel flash chromatography (eluent: hexanes/EtOAc = 40:1 → 30:1) to afford the desired product as a colorless foam in 90% yield (86.3 mg, 94% ee).

$[\alpha]_D^{22}$: +4.4 (*c* = 1.0, $CHCl_3$). HPLC analysis of the product: Daicel CHIRALPAK AD-H column; 1% *i*-PrOH in hexanes; 0.6 mL/min; retention times: 7.1 min (minor), 8.8 min (major).

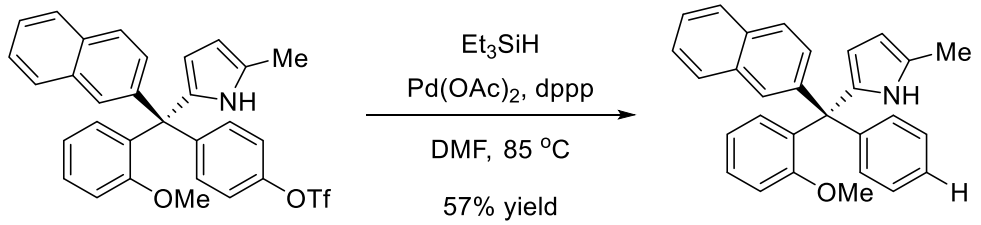
^{1}H NMR (400 MHz, $CDCl_3$) δ 7.82 (d, *J* = 7.8 Hz, 1H), 7.32 (d, *J* = 7.8 Hz, 2H), 7.64 – 7.62 (m, 4H), 7.52 – 7.28 (m, 11H), 7.08 – 7.07 (m, 1H), 6.96 – 6.91 (m, 2H), 5.81 (s, 2H), 3.19 (s, 3H), 2.18 (s, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 158.2, 144.5, 142.7, 141.0, 138.6, 136.3, 135.2, 133.2, 132.2, 130.6, 130.5, 129.7, 128.94, 128.92, 128.6, 128.0, 127.5, 127.32, 127.30, 127.1, 126.5, 126.0, 125.9, 125.8, 120.9, 113.8, 110.7, 105.4, 59.0, 55.7, 13.5.

IR (thin film) 3446, 1589, 1512, 1255, 1111, 1021, 735 cm^{-1}.

HRMS (CI+) Calcd for $C_{35}H_{29}NO$ (M^+): 479.2249, Found: 479.2256.

(2) B. Bhayana, B. P. Fors and S. L. Buchwald, *Org. Lett.,* 2009, **11**, 3954–3957.



3 (94% ee) **5** (90% ee)

(*S*)-2-((2-Methoxyphenyl)(naphthalen-2-yl)(phenyl)methyl)-5-methyl-1*H*-pyrrole (5) was prepared by a modified literature procedure.[3] Under N_2, an oven-dried 4-mL vial equipped with magnetic stir bar was charged with triflate **3a** (110.2 mg, 0.2 mmol), $Pd(OAc)_2$ (1.1 mg, 5 μmol, 2.5 mol%), dppp (2.1 mg, 5 μmol, 2.5 mol%), and DMF (1 mL). The vial was sealed and kept stirring at 60 °C for 15 min. Then Et_3SiH (80 μL, 0.5 mmol, 2.5 equiv) was added and kept stirring for 48 h. After that, the mixture was cooled to room temperature and Et_2O was added. The solution was washed by water, saturated aqueous $NaHCO_3$ solution and NaCl solution, respectively. Next, the organic layer was dried over Na_2SO_4 and concentrated. The residue was purified by silica gel flash chromatography to afford the desired product (eluent: hexanes → hexanes/EtOAc = 50:1) as a colorless foam in 57% yield (45.5 mg, 90% ee).

$[\alpha]_D^{22}$: +13.8 (*c* = 1.0, $CHCl_3$). HPLC analysis of the product: Daicel CHIRALPAK AD-H column; 0.7% *i*-PrOH in hexanes; 0.6 mL/min; retention times: 8.0 min (minor), 9.1 min (major).

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.85 (d, *J* = 7.6 Hz, 1H), 7.75 (d, *J* = 8.4 Hz, 2H), 7.63 (s, 2H), 7.53 – 7.23 (m, 9H), 7.10 (d, *J* = 7.6 Hz, 1H), 6.99 – 6.93 (m, 2H), 5.84 (s, 2H), 3.20 (s, 3H), 2.20 (s, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 158.2, 145.3, 142.6, 136.3, 135.2, 133.1, 132.1, 130.5, 130.1, 129.8, 128.8, 128.5, 128.0, 127.42, 127.35, 127.2, 126.3, 126.1, 125.8, 125.7, 120.8, 113.7, 110.6, 105.3, 59.2, 55.6, 13.4.

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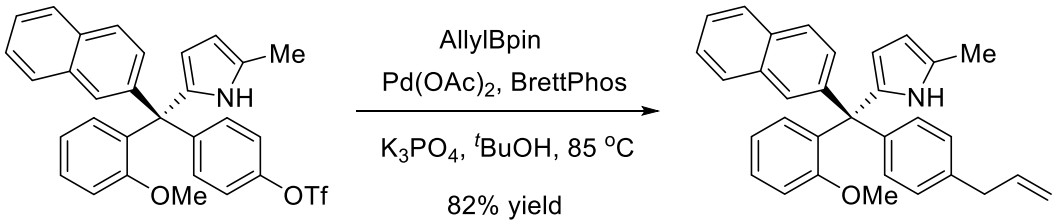
(3) G. L. Larson and J. L. Fry, *Org. React.*, 2008, 1–737.

IR (thin film) 3447. 3055, 2928, 1589, 1487, 1247, 1024, 700 cm^{-1}.

HRMS (CI+) Calcd for $C_{29}H_{25}NO$ (M^+): 403.1936, Found: 403.1949.



3 (94% ee) **6** (93% ee)

(*S*)-2-([1,1'-Biphenyl]-4-yl(2-methoxyphenyl)(naphthalen-2-yl)methyl)-5-methyl-1*H*-pyrrole (6) was prepared by a modified literature procedure.[2] Under N_2, to an oven-dried 4-mL vial were added triflate **3a** (110.2 mg, 0.2 mmol), allylboronic acid pinacol ester (34.0 mg, 0.4 mmol), $Pd(OAc)_2$ (1.1 mg, 5 μmol, 2.5 mol%), BrettPhos (5.3 mg, 10 μmol, 5 mol%), K_3PO_4 (127.2 mg, 0.6 mmol, 3.0 equiv), and *tert*-butanol (2 mL). The mixture was stirring at 85 °C for 12 h. After that, the mixture was cooled to room temperature, concentrated and then purified by silica gel flash chromatography (eluent: hexanes/EtOAc = 40:1 → 30:1) to afford the desired product as a colorless foam in 82% yield (72.5 mg, 93% ee).

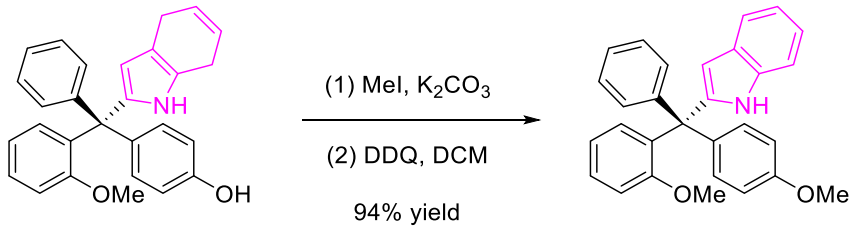
$[\alpha]_D^{22}$: +14.7 (*c* = 1.0, $CHCl_3$). HPLC analysis of the product: Daicel CHIRALPAK AD-H column; 0.7% *i*-PrOH in hexanes; 0.6 mL/min; retention times: 9.9 min (major), 10.9 min (minor).

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.83 (d, *J* = 7.6 Hz, 1H), 7.73 – 7.71 (m, 2H), 7.62 – 7.61 (m, 2H), 7.48 – 7.41 (m, 2H), 7.37 – 7.31 (m, 2H), 7.19 – 7.16 (m, 2H), 7.11 – 7.06 (m, 3H), 6.97 – 6.91 (m, 2H), 6.08 – 5.98 (m, 1H), 5.81 – 5.79 (m, 2H), 5.13 – 5.08 (m, 2H), 3.41 (d, *J* = 6.7 Hz, 2H), 3.19 (s, 3H), 2.19 (s, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 158.2, 143.0, 142.9, 137.8, 137.7, 136.5, 135.3, 133.2, 132.1, 130.5, 130.3, 129.6, 128.8, 128.5, 127.9, 127.6, 127.5, 127.1, 125.77, 125.73, 120.9, 115.81, 115.79, 113.7, 110.6, 105.3, 59.0, 55.7, 40.0, 13.4.

IR (thin film) 3447, 1636, 1588, 1490, 1253, 1113, 1025, 818, 739 cm^{-1}.

HRMS (CI+) Calcd for $C_{32}H_{29}NO$ (M^+): 443.2249, Found: 443.2267.



2v (86% ee) **2w** (86% ee)

(*R*)-2-((2-Methoxyphenyl)(4-methoxyphenyl)(phenyl)methyl)-1*H*-indole (2w).[4] At room temperature, to a solution of **2v** (50.0 mg, 0.12 mmol) in acetone (4 mL) were sequentially added MeI (52.7 mg, 0.37 mmol) and K_2CO_3 (85.1 mg, 0.61 mmol). The reaction mixture was stirred for 24 h and filtered through a short pad of silica gel, which was washed with Et_2O. The filtrate was concentrated under reduced pressure. The crude product was dissolved in anhydrous DCM (8 mL). Next, DDQ (31.0 mg, 0.143 mmol) was added in one portion. The reaction mixture was stirred at room temperature for 3 h and diluted with DCM (15 mL). Then it was washed with an aqueous solution of NaOH (15 mL, 10 wt%) and water (15 mL × 2), dried over Na_2SO_4, and filtered. The filtrate was concentrated. The residue was purified by silica gel flash chromatography to afford the desired product (eluent: hexanes/EtOAc = 15:1 → 10:1) in 96% yield for two steps (48.5 mg, 86% ee).

$[\alpha]_D^{22}$: –0.3 (*c* = 1.0, $CHCl_3$). HPLC analysis of the product: Daicel CHIRALPAK AD-H column; 3% *i*-PrOH in hexanes; 1.0 mL/min; retention times: 10.5 min (minor), 11.3 min (major).

^{1}H NMR (400 MHz, acetone-d_6) δ 9.46 (s, 1H), 7.46 (d, J = 7.7 Hz, 1H), 7.34 – 7.31 (m, 1H), 7.28 – 7.20 (m, 6H), 7.09 (d, J = 8.7 Hz, 2H), 7.01 – 6.90 (m, 5H), 6.82 (d, J = 8.8 Hz, 2H), 6.19 (s, 1H), 3.78 (s, 3H), 3.20 (s, 3H).

^{13}C NMR (100 MHz, acetone-d_6) δ 159.0, 158.8, 146.0, 145.5, 137.7, 137.2, 136.1,

(4) H. Çavdar and N. Saraçoğlu, *Tetrahedron*, 2005, **61**, 2401–2405.

132.2, 130.81, 130.75, 129.7, 128.7, 127.9, 126.7, 121.7, 121.2, 120.7, 119.8, 114.0, 113.2, 111.8, 104.3, 59.6, 55.5, 55.4.

IR (thin film) 3448, 3053, 2836, 1592, 1290, 1105, 799, 731 cm^{-1}.

HRMS (CI+) Calcd for $C_{29}H_{25}NO_2$ $(M)^+$: 419.1885, Found: 419.1886.

VI. Biological Study

Virus culture:[5]

Human rhabdomyosarcoma (RD) cells (ATCC #CCL-136) were cultured in Dulbecco's modified Eagle's medium (DMEM) with 10% fetal bovine serum (FBS), supplemented with 100 U/mL of penicillin and streptomycin. The cells were incubated at 37 ^{o}C in a tissue culture incubator supplied with 5% CO_2. Cells were cultured in 10-cm dishes and infected with enterovirus A71 (EV-A71, SHZH98 strain, GenBank accession number AF302996.1) at multiplicity of infection (MOI) of 1. EV-A71 virus was propagated on a 90% confluent cell monolayer in DMEM with 2% FBS. After incubation for 24 hours, the culture media were collected for preparation of virus stocks. The virus titre was determined by 50% tissue culture infective dose ($TCID_{50}$) assay or plaque assays (pfu). The virus stocks were aliquoted and stored in –80 ^{o}C until use.

Cytotoxicity assay:[6,7]

The cytotoxicity of compounds was measured by determining the cell viability using MTT [3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide] assays. Briefly, RD cells were set in 96-well plates (10^4 cells per well) overnight. The testing compound diluted in a 10-fold series was added in the culture media and incubated for another 48 hours. The media were then replaced with 0.5 mg/mL MTT medium and incubated for another 4 hours. The MTT solution was removed from the wells and the formazan crystals were dissolved in DMSO. Absorbances of the formazan products were measured at 550 nm with

(5) L. Lu, L. Yi, J. Zhao., J. Yu, Y. Chen, M. C. Lin, H. F. Kung and M. L. He, *J. Virol.,* 2012, **86**, 3767–3776.

(6) Q. Dong, R. Men, X. Dan, Y. Chen, H. Li, G. Chen, B. Zee and M. H. T. Wang, M. L. He, *Antiviral Res.,* 2018, **150**, 39–46.

(7) F. Zhou, Q. Wan, J. Lu, Y. Chen, G. Lu and M. L. He, *iScience,* 2019, **19**, 715–727.

the reference wavelength at 690 nm. The cell viability assay was carried out in triplicates by three independent experiments. The CC_{50} (50% cytotoxic concentration) value was calculated.

Cytopathic effects (CPE) assay:[6,7]

RD cells were set in 24-well plates and incubated overnight. The culture media were replaced with DMEM containing 2% FBS, and then infected with nil (mock) or EV-A71 at MOI of 0.1. After adsorption for 1 hour, 0.4 mL of DMEM medium containing 10% FBS was added to each well. The cells were cultured for 24 hours. The cell morphology was monitored and recorded using a phase-contrast microscope associated with a CCD camera and computer at different time points.

Viral RNA isolation:[5,7]

RD cells were cultured in 48-well plates overnight. The cells were treated with serial diluted testing compounds for 2 hours, then infected with EV-A71 at MOI of 0.1 and cultured for 24 hours. Four duplicates were set for each concentration of the testing compound. 100 μL of culture media were collected to isolate viral RNA. The viral RNA was isolated with TRIzol reagent (Ambion, Life, Technologies), and 2 μL of total RNA was used to synthesize cDNA using ImProm-II™ Reverse Transcriptase (Promega) according to the manufacturer's instructions. To set up the standard curve of infectious viruses, the viral titres were first determined by TCID50 or plaque assay; then the viral RNA was extracted from the tittered infectious EV-A71 viruses and used as the standard.

Quantitative reverse-transcription polymerase chain reaction (RT-qPCR):[5,7]

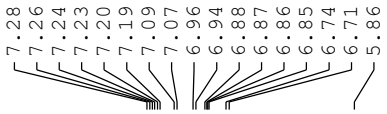
Quantitative Real-time PCR (RT-qPCR) was performed using SYBR Green Mix (Life Technologies) on Applied Biosystems QuantStudio™ 3 Real-Time PCR Systems. The RT-qPCR was performed by using the following primer pairs:

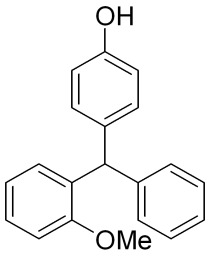
EV-A71, 5′-GCAGCCCAAAAGAACTTCAC-3′ (forward) and 5′-ATTTCAGCAGCTTGGAGTGC-3′(reverse). The target fragment amplification was carried out as follows: reverse transcription at 50 °C for 30 min; initial activation of HotStar Taq DNA Polymerase at 95 °C for 15 min; 45 cycles in four steps: 94 °C for 10 s, 56 °C for 30 s, and 72 °C for 30 s. At the end of the amplification cycles, melting temperature analysis was carried out by a slow increase in temperature (0.1 °C/s) up to 95 °C. The copy number of virions was used to calculate the testing compound's IC_{50} (half maximal inhibitory concentration).

V. Determination of the Product Structure

The structure and absolute stereochemistry of the products were determined by comparison with the literature report.[8]

(8) X. Li, M. Duan, Z. Deng, Q. Shao, M. Chen, G. Zhu, K. N. Houk and J. Sun, *Nat. Catal.*, 2020, **3**, 1010–1019.





1a

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RG                     912
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TE                  294.9 K
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TD0                      1

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PL1                  -1.00 dB
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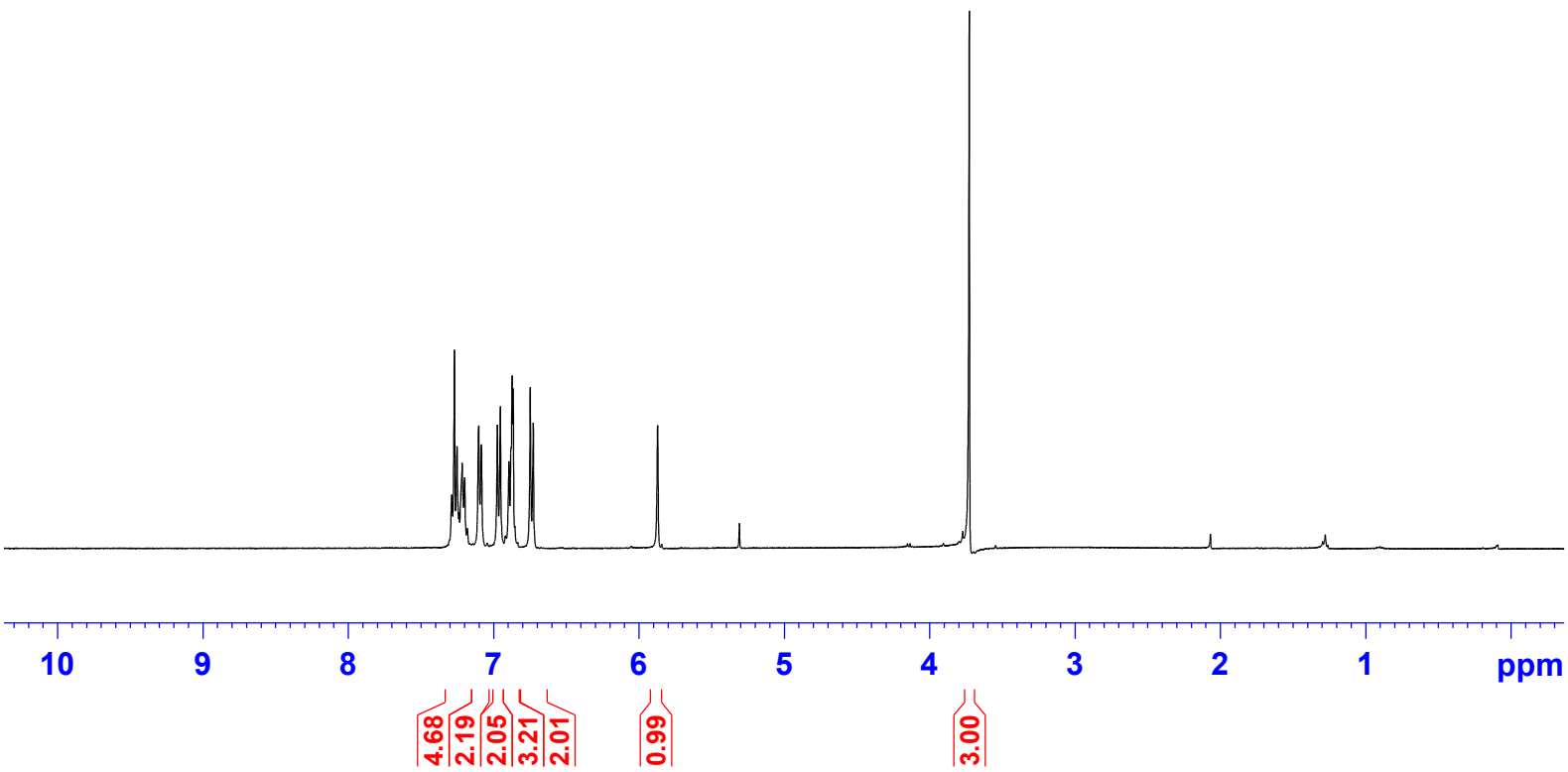

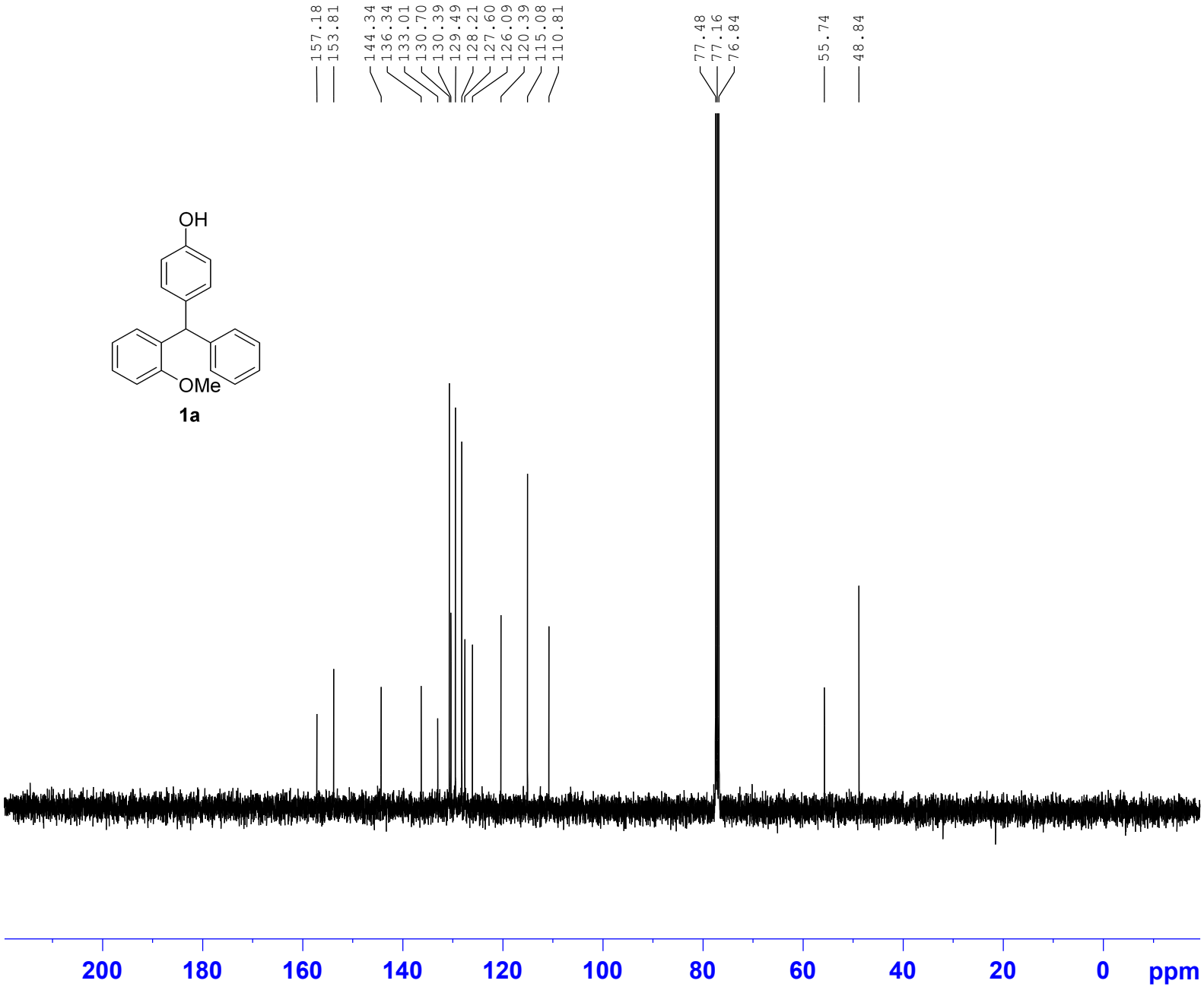

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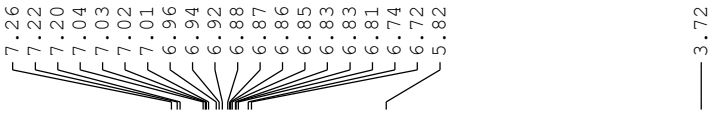
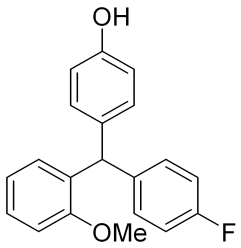
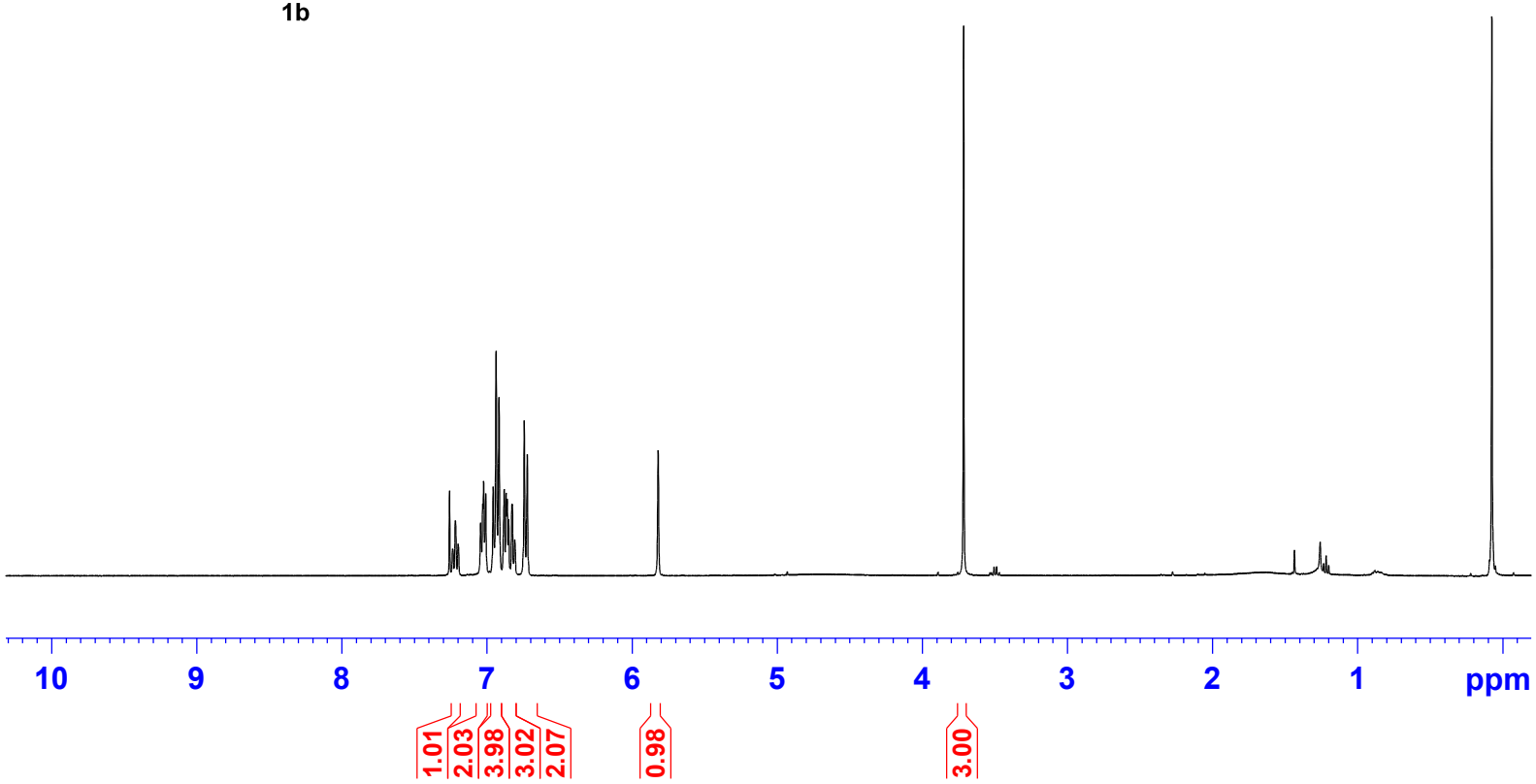
NS	300
DS	2
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	128
DW	20.800 usec
DE	6.00 usec
TE	295.1 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.60 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6127568 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

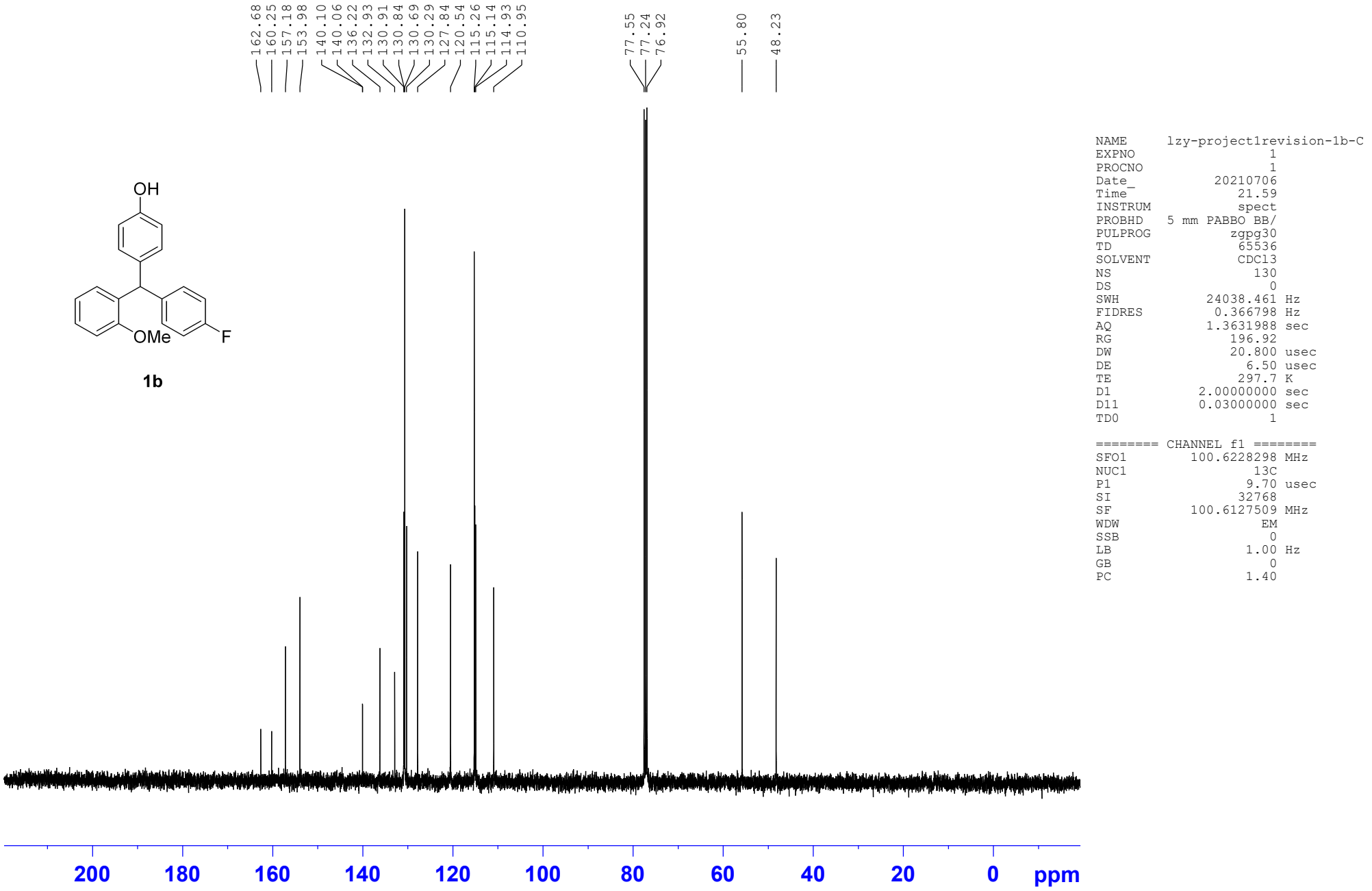




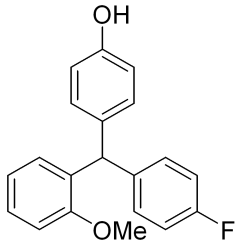
1b

```
NAME                Lzy-1b
EXPNO                    1
PROCNO                   1
Date_             20200116
Time                 19.31
INSTRUM              spect
PROBHD    5 mm PABBO BB-
PULPROG               zg30
TD                   65536
SOLVENT              CDCl3
NS                      12
DS                       2
SWH               8223.685 Hz
FIDRES            0.125483 Hz
AQ               3.9846387 sec
RG                     406
DW                  60.800 usec
DE                   6.00 usec
TE                  294.9 K
D1              1.00000000 sec
TD0                      1

======== CHANNEL f1 ========
NUC1                    1H
P1                   15.80 usec
PL1                  -1.00 dB
PL1W          12.17476940 W
SFO1          400.1324710 MHz
SI                   32768
SF            400.1300101 MHz
WDW                     EM
SSB                      0
LB                    0.30 Hz
GB                       0
PC                    1.00
```





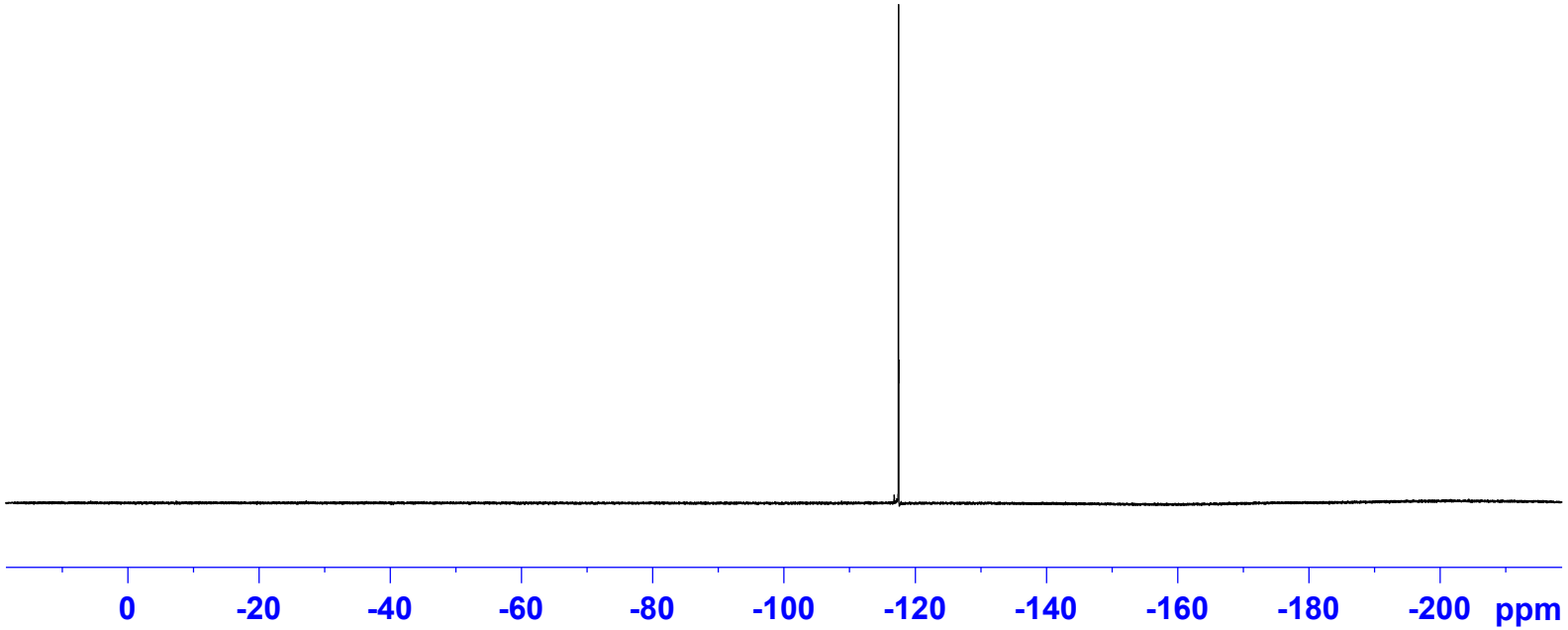

```
NAME      lzy-project1revision-1b-C
EXPNO                 1
PROCNO                1
Date_          20210706
Time_             21.59
INSTRUM           spect
PROBHD   5 mm PABBO BB/
PULPROG          zgpg30
TD                65536
SOLVENT           CDCl3
NS                  130
DS                    0
SWH           24038.461 Hz
FIDRES         0.366798 Hz
AQ             1.3631988 sec
RG                196.92
DW                20.800 usec
DE                 6.50 usec
TE                297.7 K
D1            2.00000000 sec
D11           0.03000000 sec
TD0                   1

======== CHANNEL f1 ========
SFO1        100.6228298 MHz
NUC1                13C
P1                 9.70 usec
SI                32768
SF          100.6127509 MHz
WDW                  EM
SSB                   0
LB                 1.00 Hz
GB                    0
PC                 1.40
```

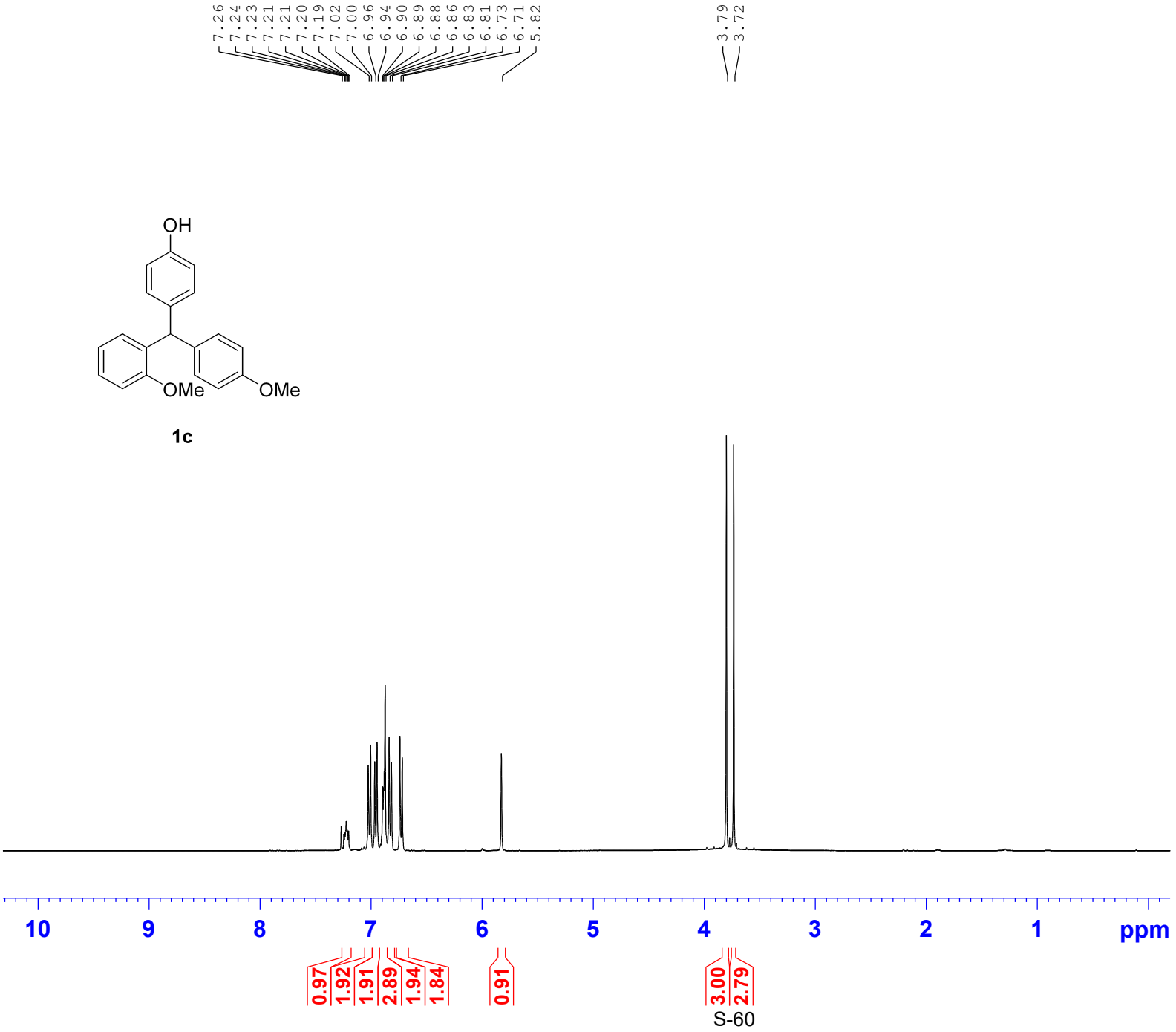


1b

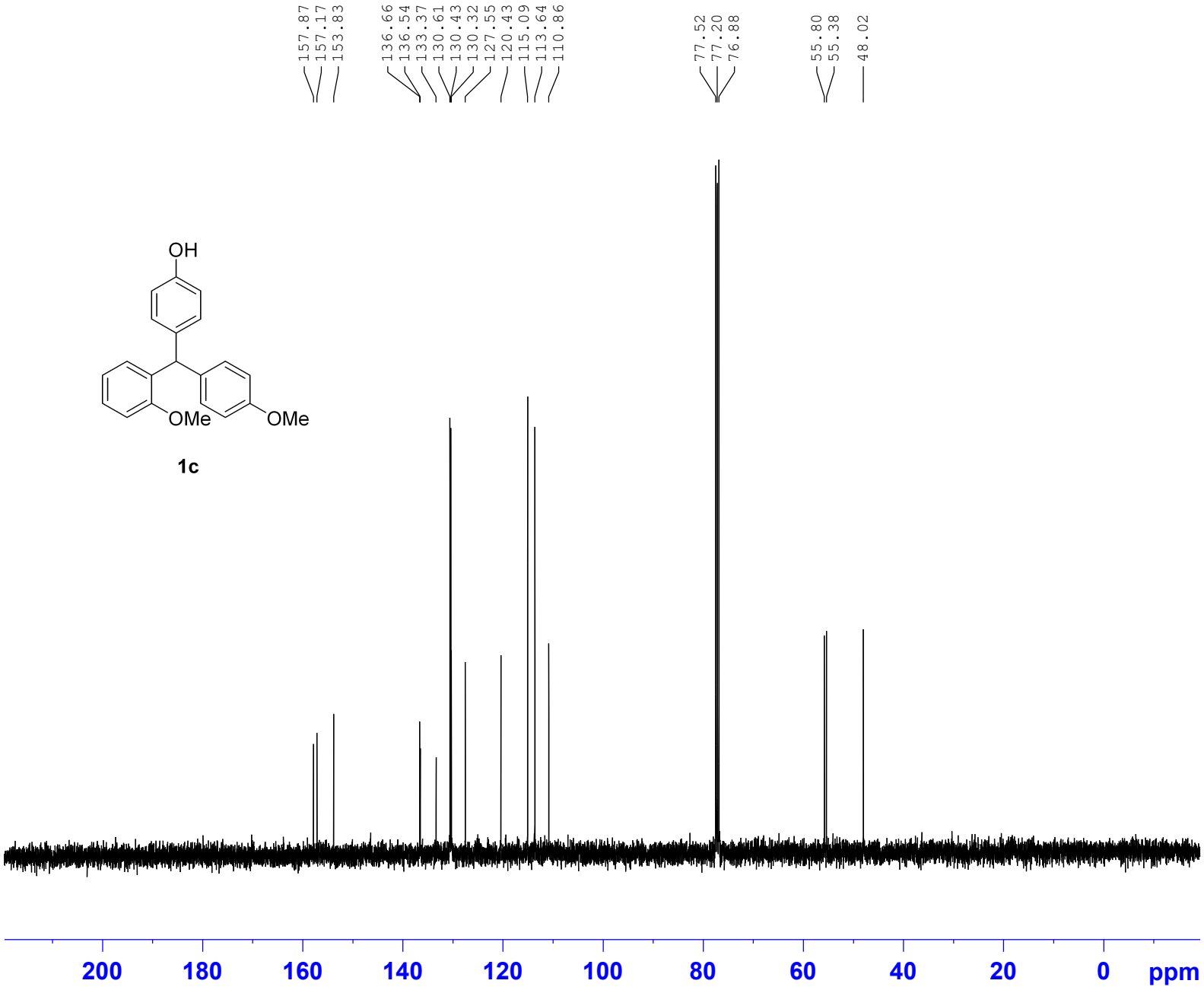
-117.45

```
NAME      lzy-project1revision-1b-F
EXPNO                 1
PROCNO                1
Date_          20210706
Time               22.02
INSTRUM            spect
PROBHD   5 mm PABBO BB/
PULPROG           zgflqn
TD                131072
SOLVENT             CDCl3
NS                    2
DS                    0
SWH           89285.711 Hz
FIDRES         0.681196 Hz
AQ            0.7340532 sec
RG               196.92
DW                 5.600 usec
DE                 6.50 usec
TE                297.1 K
D1           1.00000000 sec
TD0                   1

======== CHANNEL f1 ========
SFO1        376.4607164 MHz
NUC1                19F
P1                14.70 usec
SI                65536
SF          376.4983660 MHz
WDW                  EM
SSB                   0
LB                 0.30 Hz
GB                    0
PC                 1.00
```

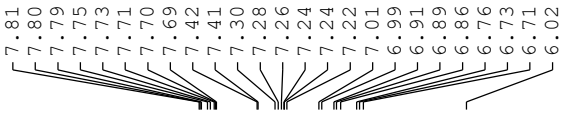


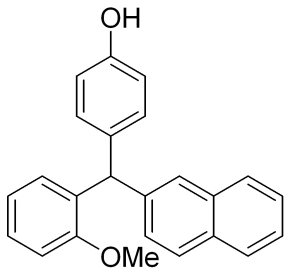


NAME	Lzy-1c
EXPNO	1
PROCNO	1
Date_	20200204
Time	19.08
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zg30
TD	65536
SOLVENT	CDCl3
NS	16
DS	2
SWH	8223.685 Hz
FIDRES	0.125483 Hz
AQ	3.9846387 sec
RG	228
DW	60.800 usec
DE	6.00 usec
TE	294.9 K
D1	1.00000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	1H
P1	15.80 usec
PL1	-1.00 dB
PL1W	12.17476940 W
SFO1	400.1324710 MHz
SI	32768
SF	400.1300054 MHz
WDW	EM
SSB	0
LB	0.30 Hz
GB	0
PC	1.00



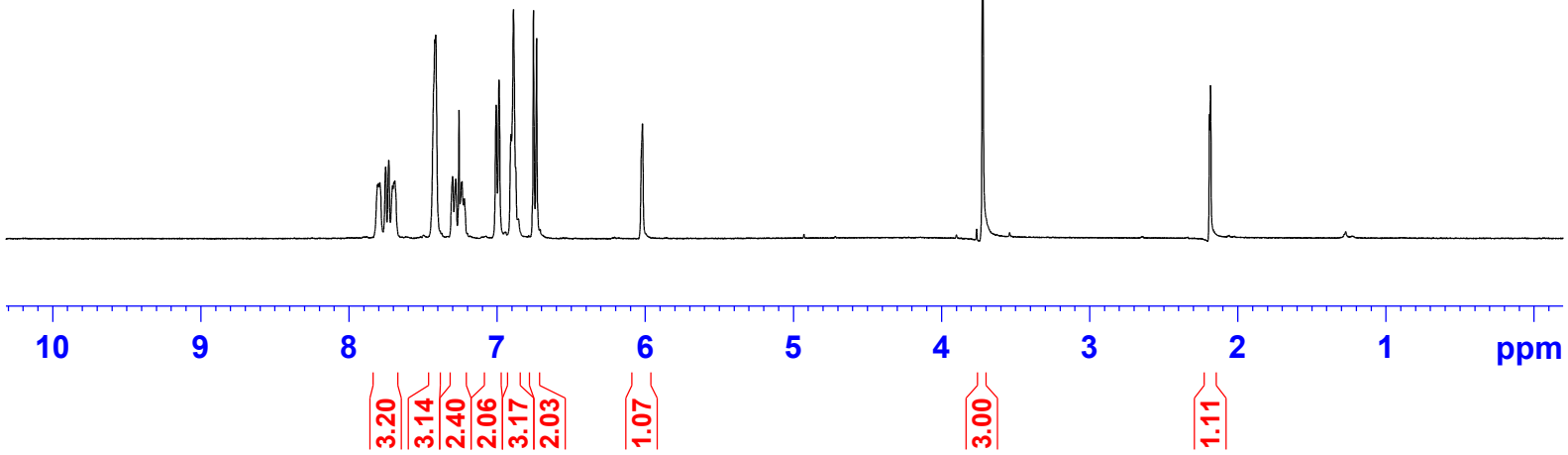
NAME	Lzy-1c-C
EXPNO	1
PROCNO	1
Date_	20200204
Time	19.14
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	66
DS	2
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	114
DW	20.800 usec
DE	6.00 usec
TE	295.4 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.60 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6127555 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

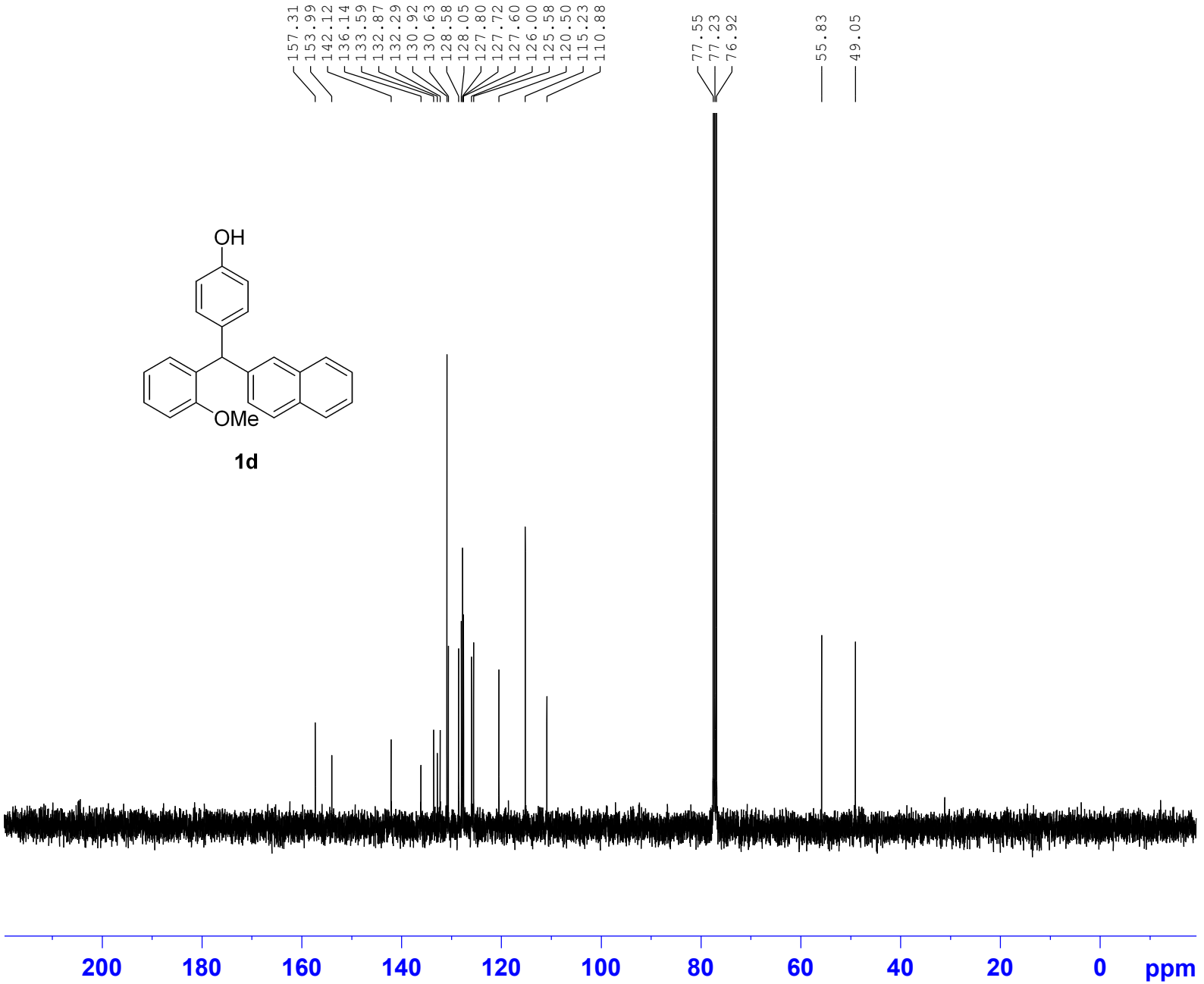




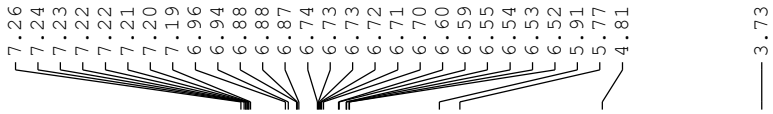
1d

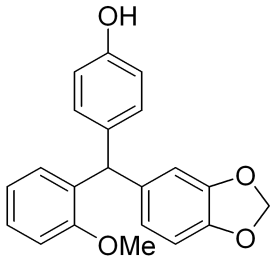
NAME	Lzy-1d
EXPNO	1
PROCNO	1
Date_	20200114
Time	18.31
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zg30
TD	65536
SOLVENT	CDCl3
NS	6
DS	2
SWH	8223.685 Hz
FIDRES	0.125483 Hz
AQ	3.9846387 sec
RG	724
DW	60.800 usec
DE	6.00 usec
TE	294.8 K
D1	1.00000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	1H
P1	15.80 usec
PL1	-1.00 dB
PL1W	12.17476940 W
SFO1	400.1324710 MHz
SI	32768
SF	400.1300105 MHz
WDW	EM
SSB	0
LB	0.30 Hz
GB	0
PC	1.00





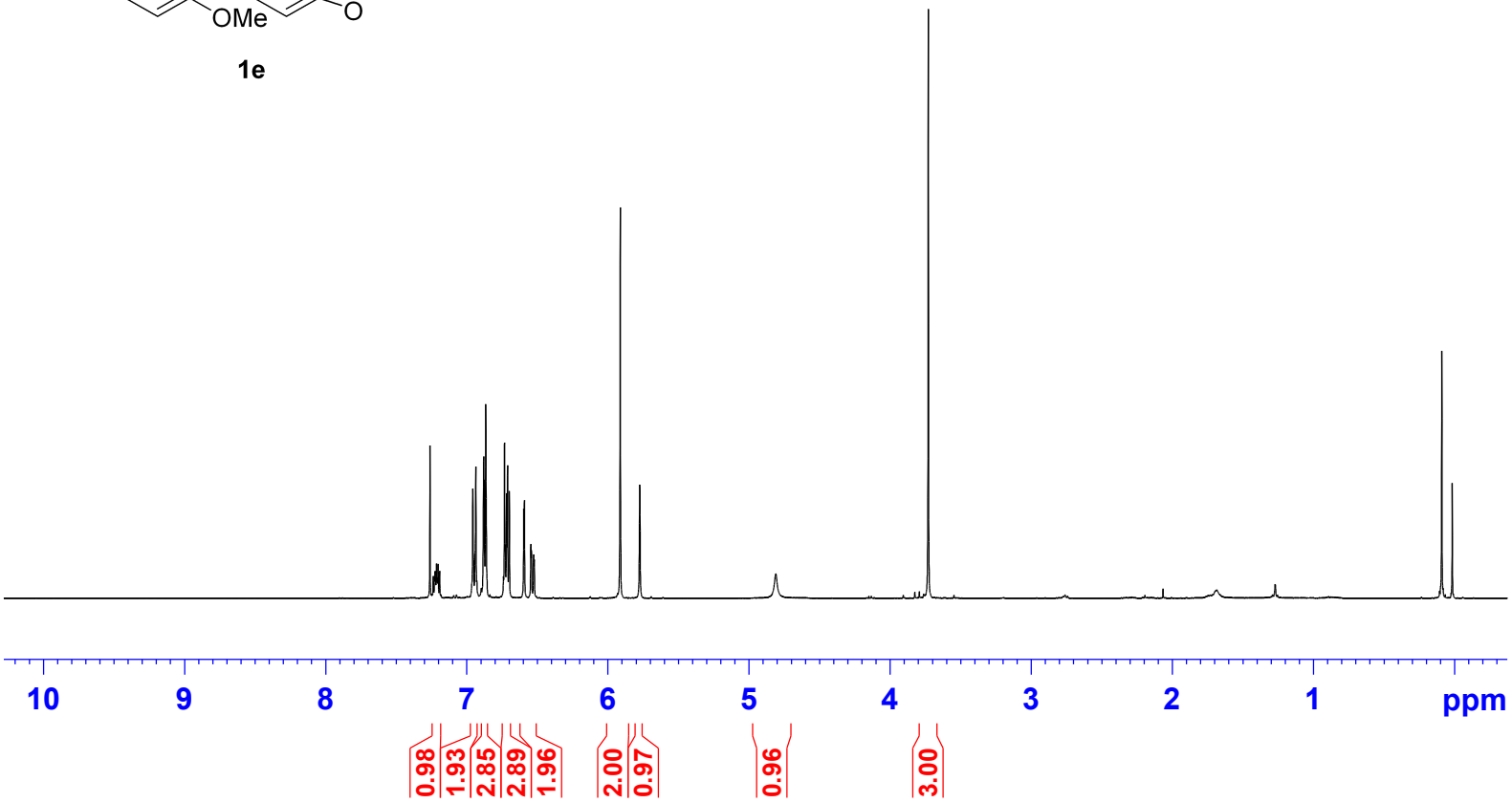
NAME	Lzy-1d-C
EXPNO	1
PROCNO	1
Date_	20200114
Time	18.44
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	174
DS	2
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	128
DW	20.800 usec
DE	6.00 usec
TE	295.5 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.60 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6127498 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

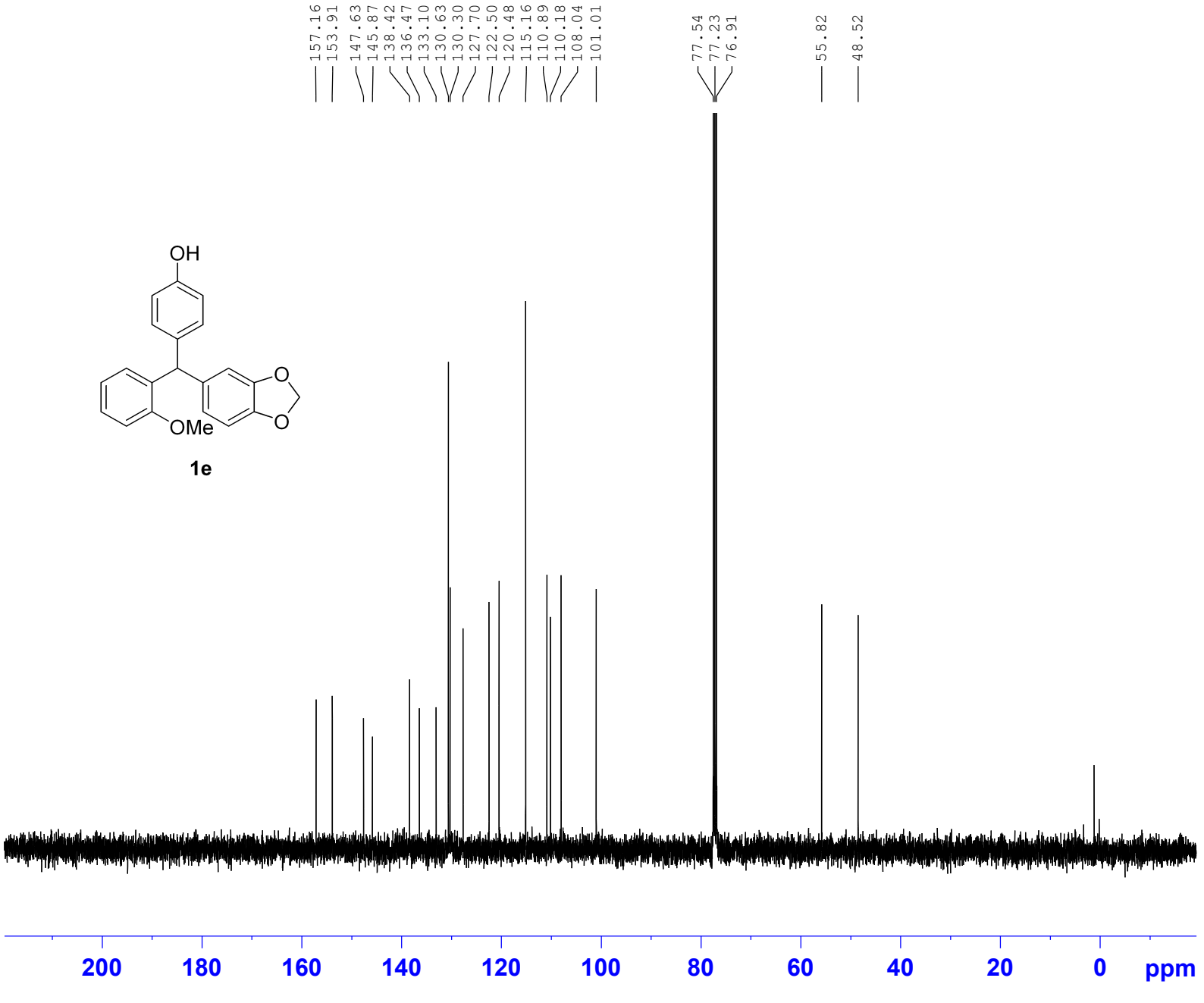




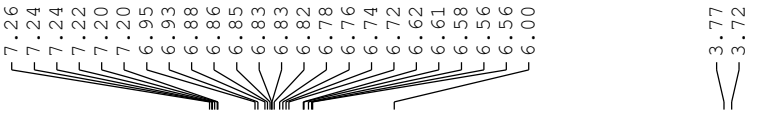
1e

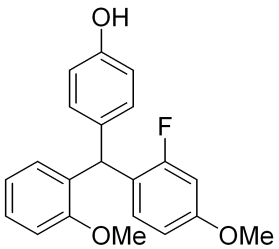
```
NAME                Lzy-1e
EXPNO                    1
PROCNO                   1
Date_             20200901
Time                 20.06
INSTRUM              spect
PROBHD    5 mm PABBO BB-
PULPROG               zg30
TD                   65536
SOLVENT              CDCl3
NS                       3
DS                       0
SWH               8223.685 Hz
FIDRES            0.125483 Hz
AQ               3.9846387 sec
RG                     256
DW                  60.800 usec
DE                   6.00 usec
TE                  294.9 K
D1              1.00000000 sec
TD0                      1

======== CHANNEL f1 ========
NUC1                    1H
P1                   15.80 usec
PL1                  -1.00 dB
PL1W          12.17476940 W
SFO1          400.1324710 MHz
SI                   32768
SF            400.1300096 MHz
WDW                     EM
SSB                      0
LB                    0.30 Hz
GB                       0
PC                    1.00
```





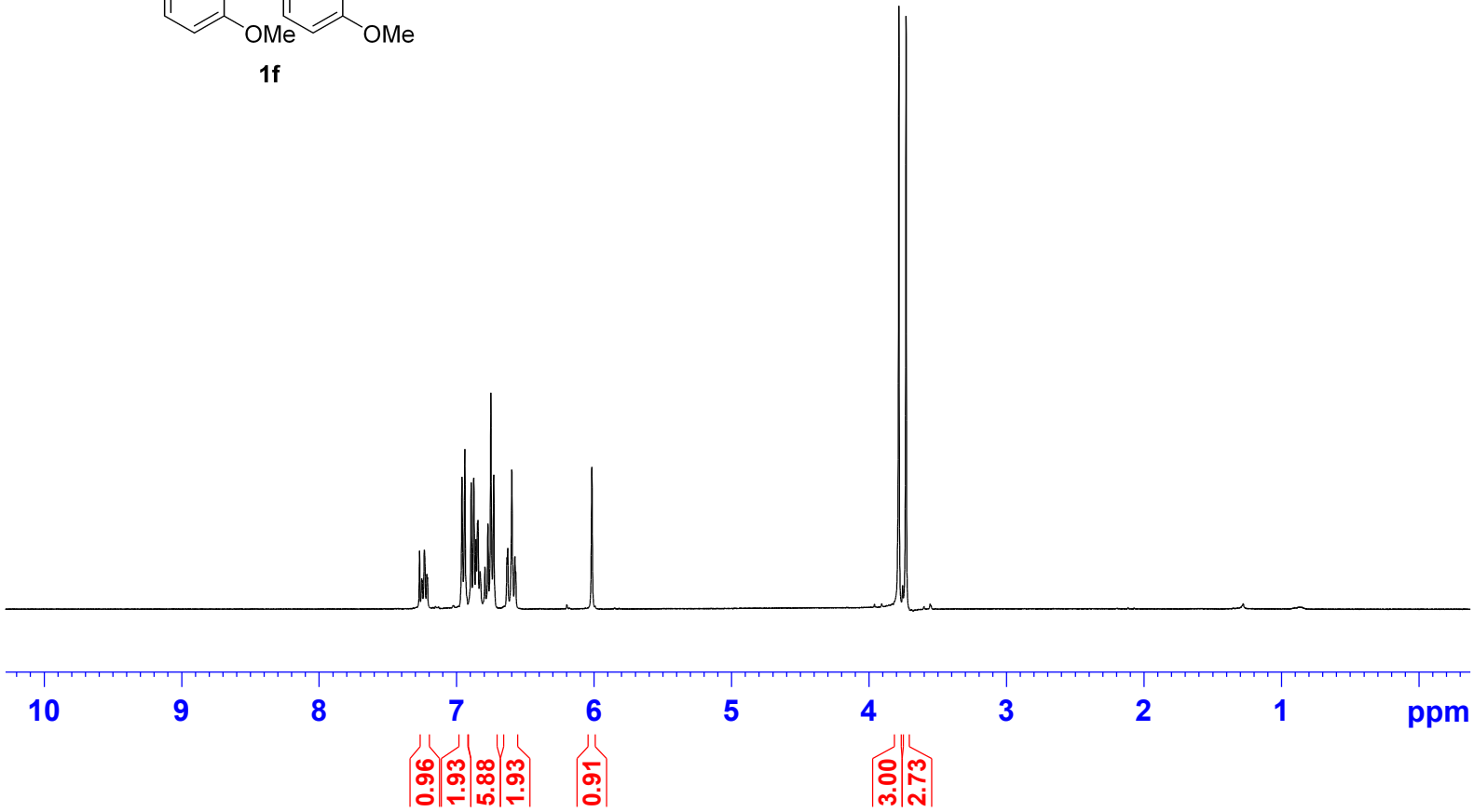
NAME	Lzy-1e-C
EXPNO	1
PROCNO	1
Date_	20200901
Time	20.08
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	80
DS	0
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	144
DW	20.800 usec
DE	6.00 usec
TE	295.3 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.60 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6127513 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

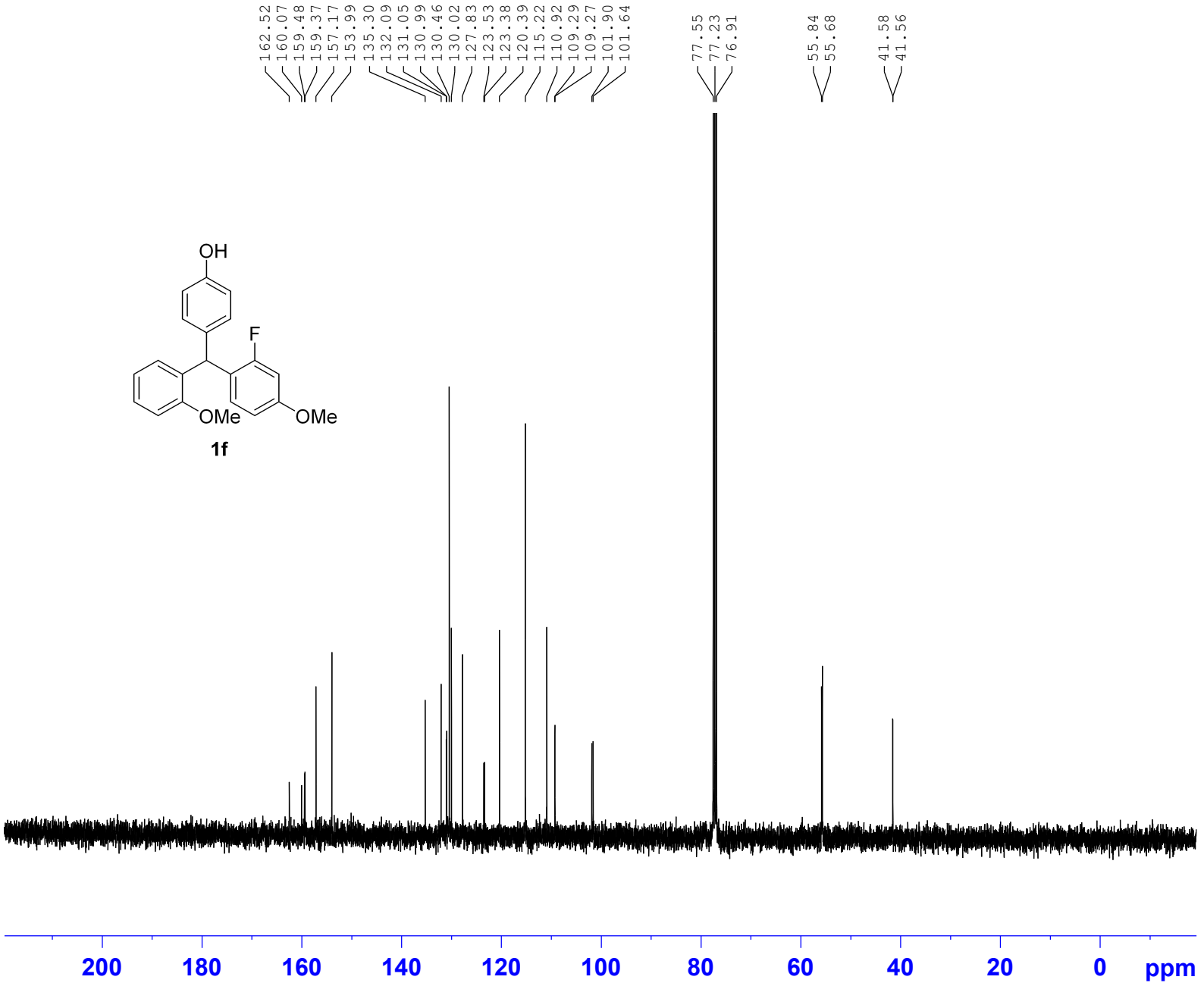




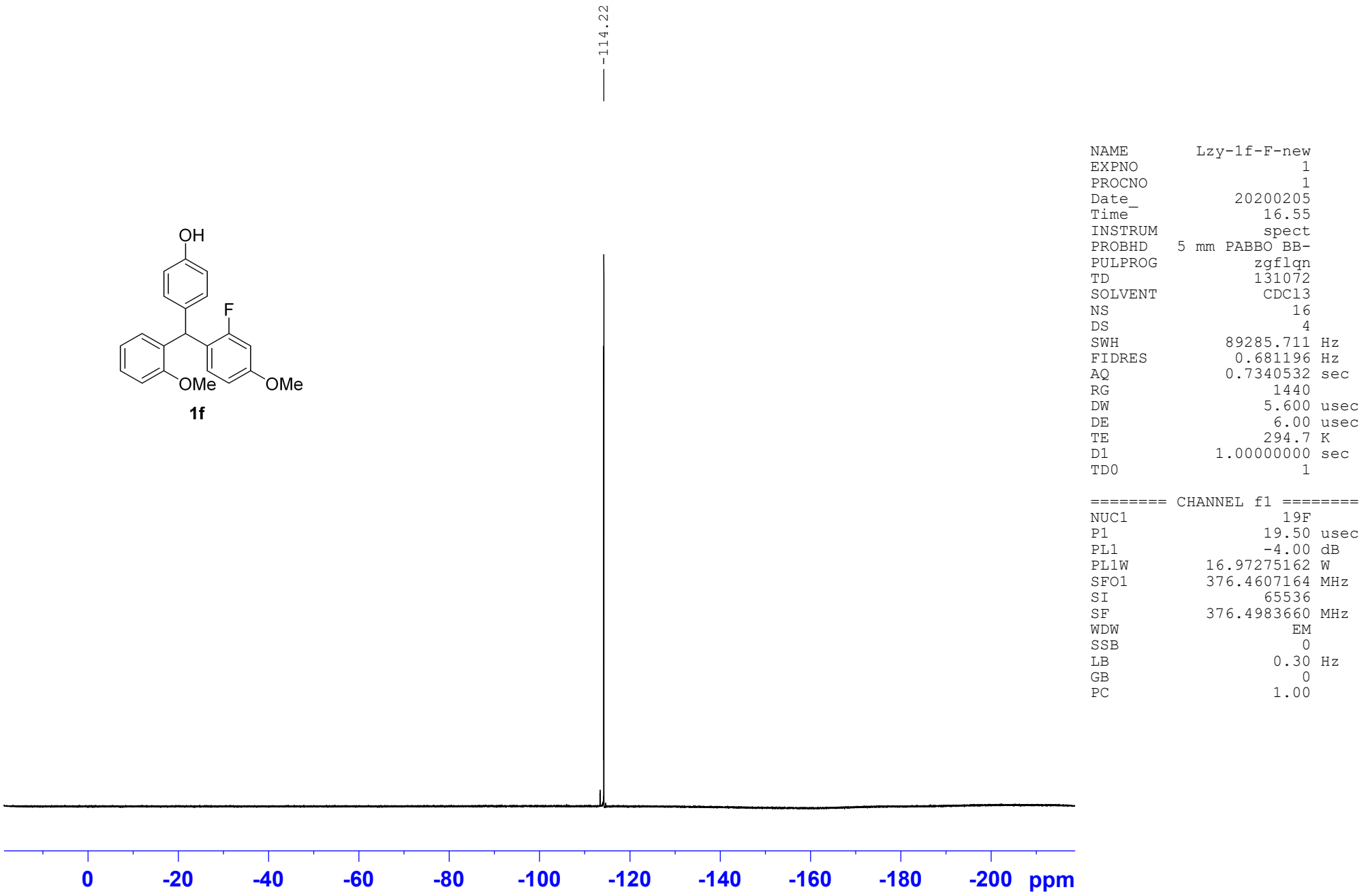
1f

```
NAME                Lzy-1f
EXPNO                    1
PROCNO                   1
Date_             20200205
Time                 15.51
INSTRUM              spect
PROBHD    5 mm PABBO BB-
PULPROG               zg30
TD                   65536
SOLVENT              CDCl3
NS                      16
DS                       2
SWH               8223.685 Hz
FIDRES            0.125483 Hz
AQ               3.9846387 sec
RG                     645
DW                  60.800 usec
DE                   6.00 usec
TE                  294.7 K
D1              1.00000000 sec
TD0                      1

======== CHANNEL f1 ========
NUC1                    1H
P1                   15.80 usec
PL1                  -1.00 dB
PL1W          12.17476940 W
SFO1          400.1324710 MHz
SI                   32768
SF            400.1300054 MHz
WDW                     EM
SSB                      0
LB                    0.30 Hz
GB                       0
PC                    1.00
```

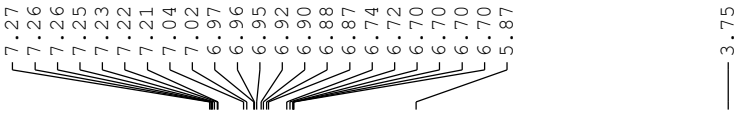


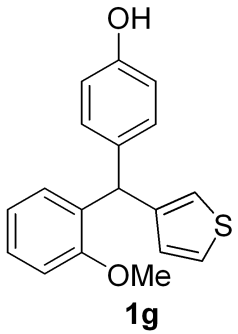



```
NAME            Lzy-1f-C
EXPNO                  1
PROCNO                 1
Date_           20200205
Time               15.59
INSTRUM            spect
PROBHD   5 mm PABBO BB-
PULPROG          zgpg30
TD                 65536
SOLVENT             CDCl3
NS                   206
DS                     2
SWH            24038.461 Hz
FIDRES          0.366798 Hz
AQ             1.3631988 sec
RG                   114
DW                20.800 usec
DE                 6.00 usec
TE                294.9 K
D1           2.00000000 sec
D11          0.03000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                 13C
P1                  8.60 usec
PL1                -3.00 dB
PL1W        60.64365387 W
SFO1       100.6228298 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                 1H
PCPD2              80.00 usec
PL2                -1.00 dB
PL12               14.39 dB
PL13               18.00 dB
PL2W        12.17476940 W
PL12W        0.35193357 W
PL13W        0.15327126 W
SFO2       400.1316005 MHz
SI                 32768
SF         100.6127505 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  1.40
```



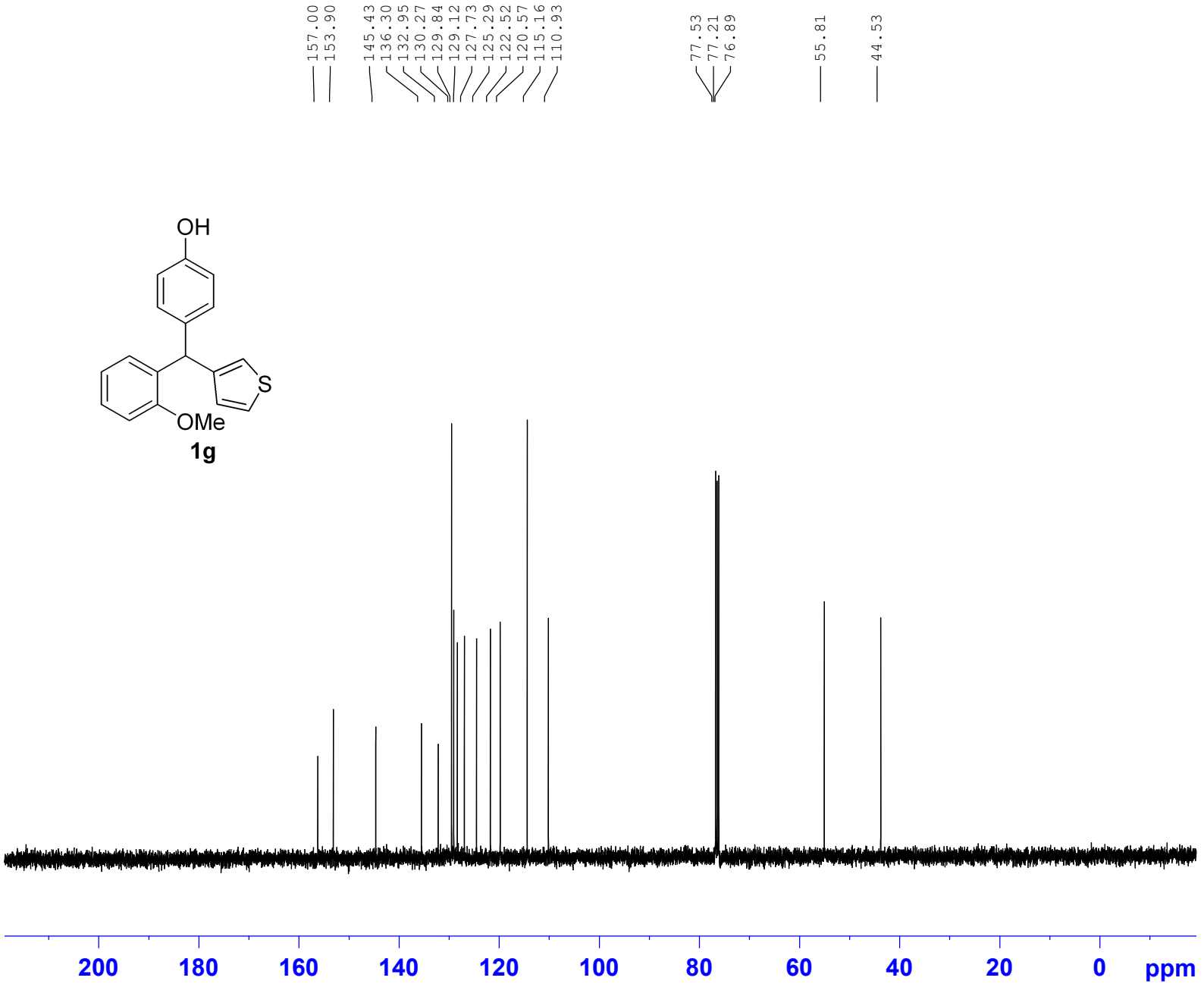
NAME	Lzy-1f-F-new
EXPNO	1
PROCNO	1
Date_	20200205
Time	16.55
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgflqn
TD	131072
SOLVENT	CDCl3
NS	16
DS	4
SWH	89285.711 Hz
FIDRES	0.681196 Hz
AQ	0.7340532 sec
RG	1440
DW	5.600 usec
DE	6.00 usec
TE	294.7 K
D1	1.00000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	19F
P1	19.50 usec
PL1	-4.00 dB
PL1W	16.97275162 W
SFO1	376.4607164 MHz
SI	65536
SF	376.4983660 MHz
WDW	EM
SSB	0
LB	0.30 Hz
GB	0
PC	1.00



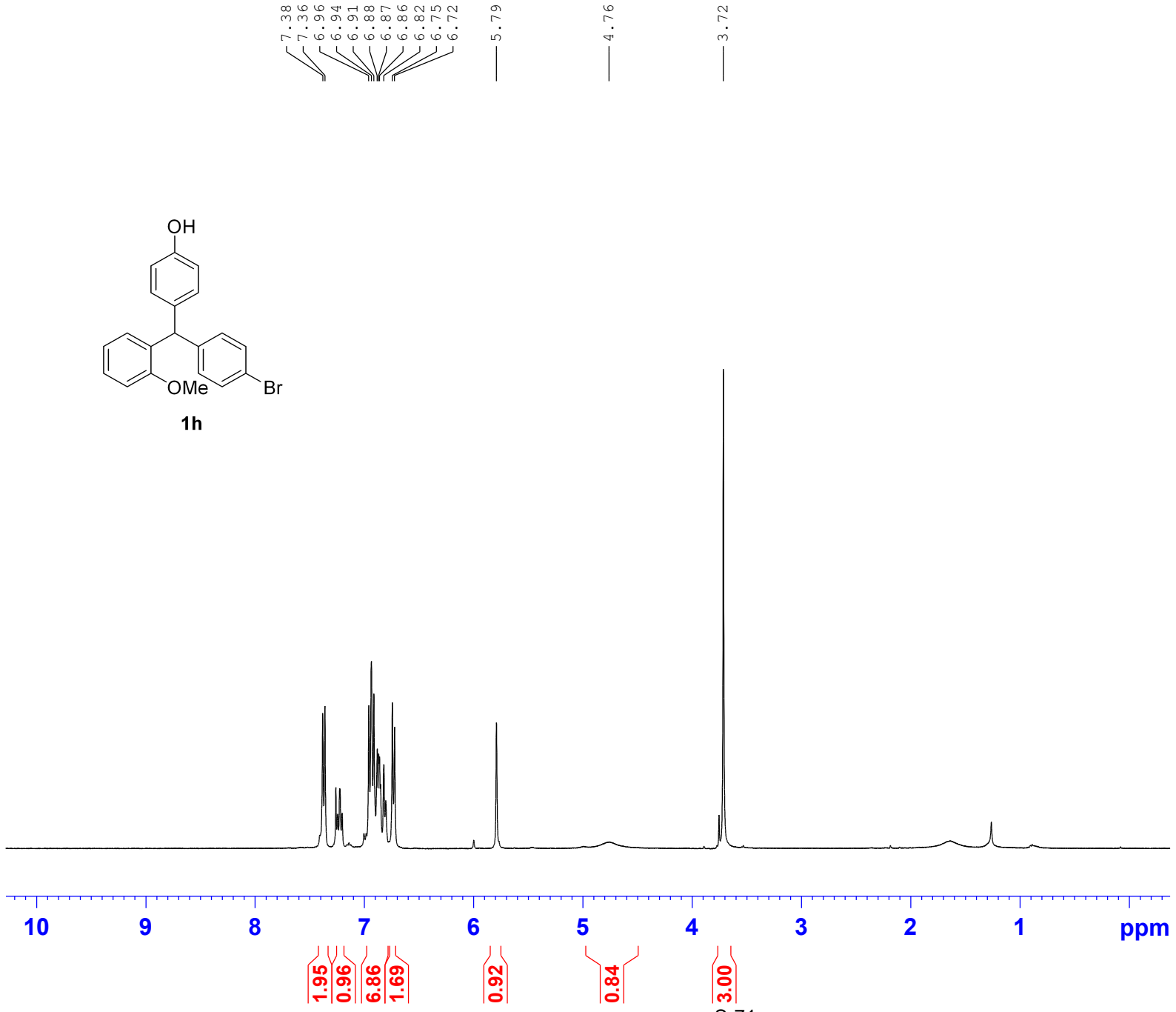


1g

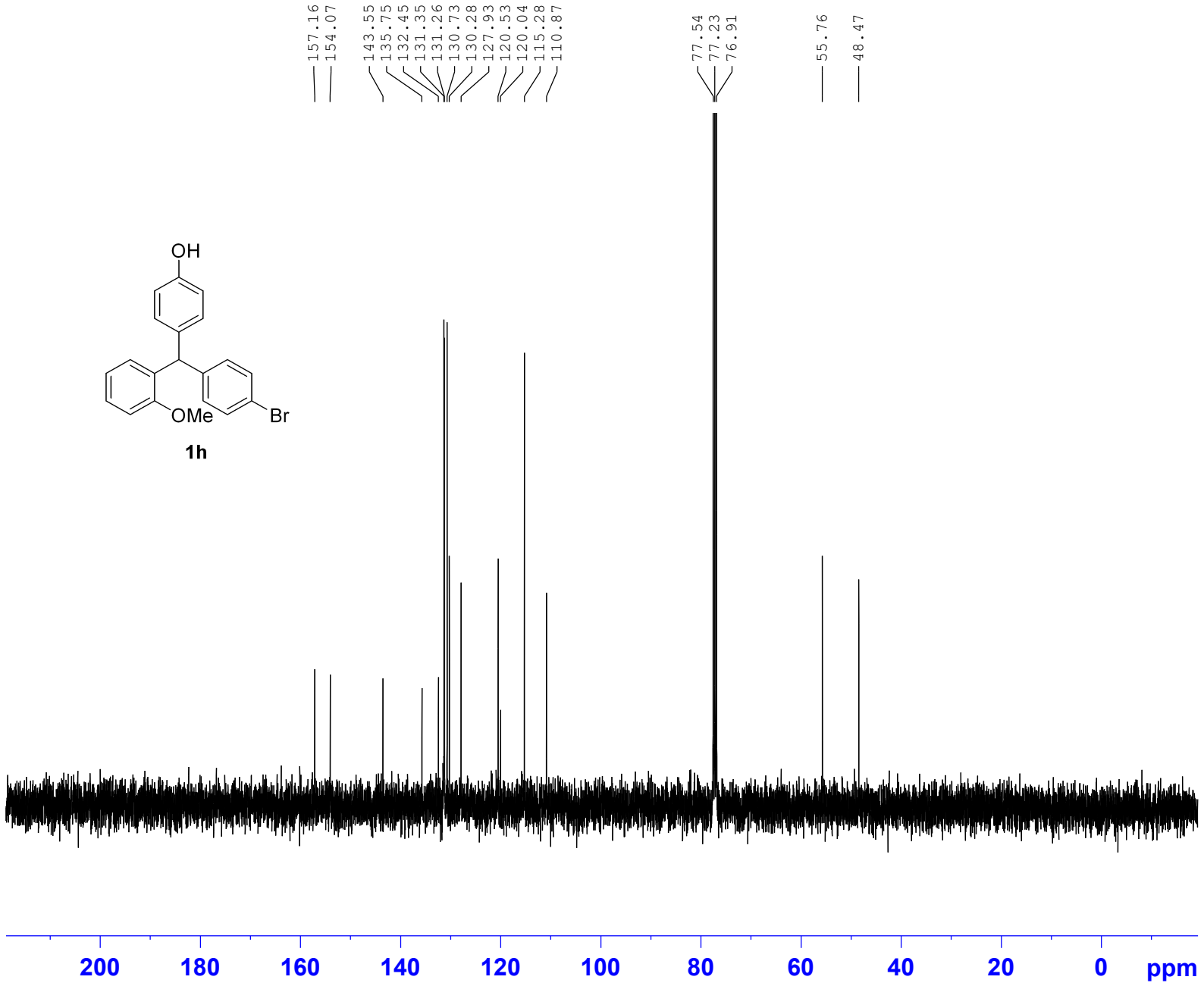

```
NAME                Lzy-1g
EXPNO                    1
PROCNO                   1
Date_             20200207
Time                  0.27
INSTRUM              spect
PROBHD    5 mm PABBO BB-
PULPROG               zg30
TD                   65536
SOLVENT              CDCl3
NS                      16
DS                       2
SWH               8223.685 Hz
FIDRES            0.125483 Hz
AQ                3.9846387 sec
RG                     161
DW                  60.800 usec
DE                   6.00 usec
TE                  295.9 K
D1              1.00000000 sec
TD0                      1

======== CHANNEL f1 ========
NUC1                    1H
P1                   15.80 usec
PL1                  -1.00 dB
PL1W          12.17476940 W
SFO1          400.1324710 MHz
SI                   32768
SF            400.1300054 MHz
WDW                     EM
SSB                      0
LB                    0.30 Hz
GB                       0
PC                    1.00
```



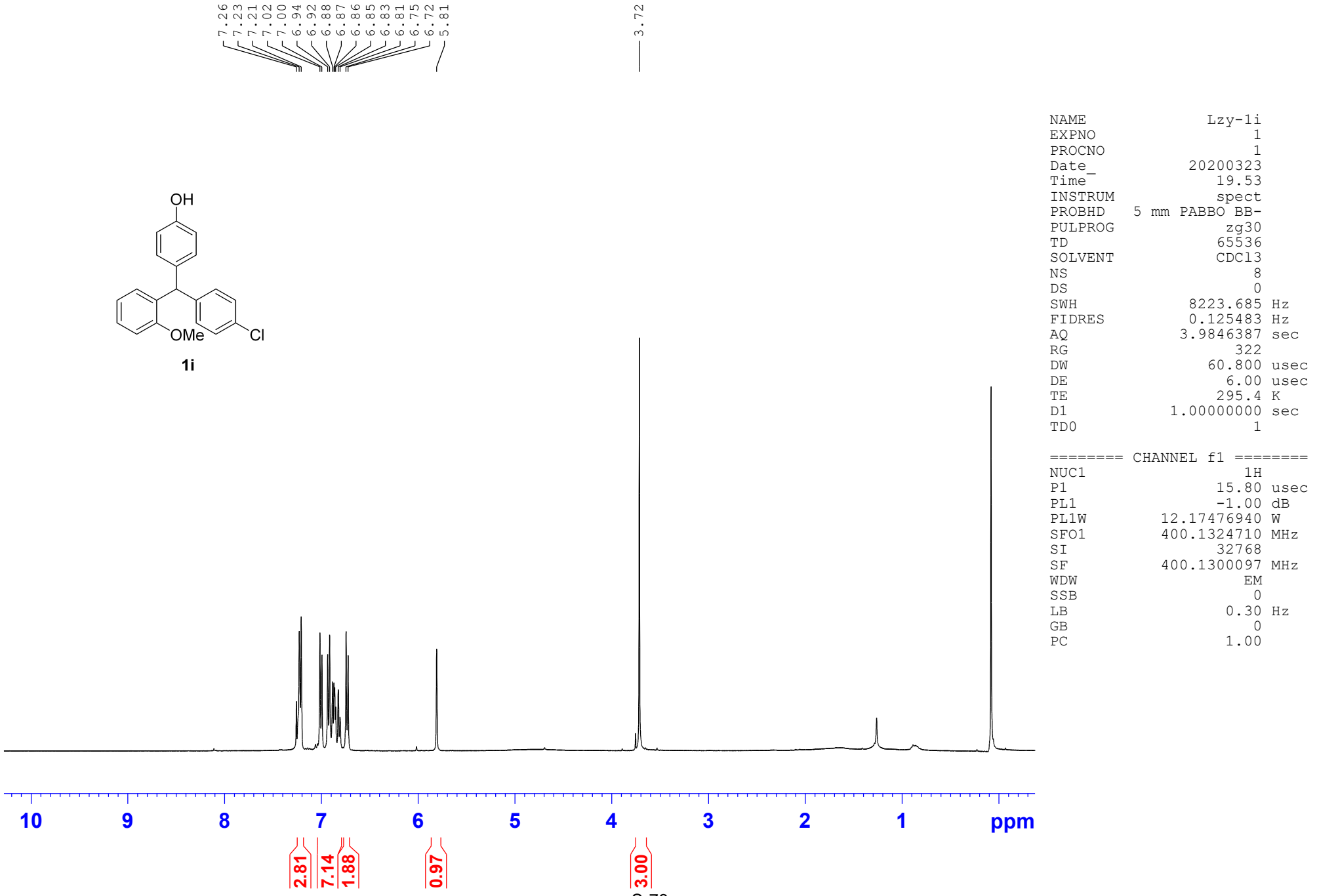
NAME	Lzy-1g-C
EXPNO	1
PROCNO	1
Date_	20200207
Time	0.33
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	38
DS	2
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	114
DW	20.800 usec
DE	6.00 usec
TE	296.4 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.60 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6128330 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40



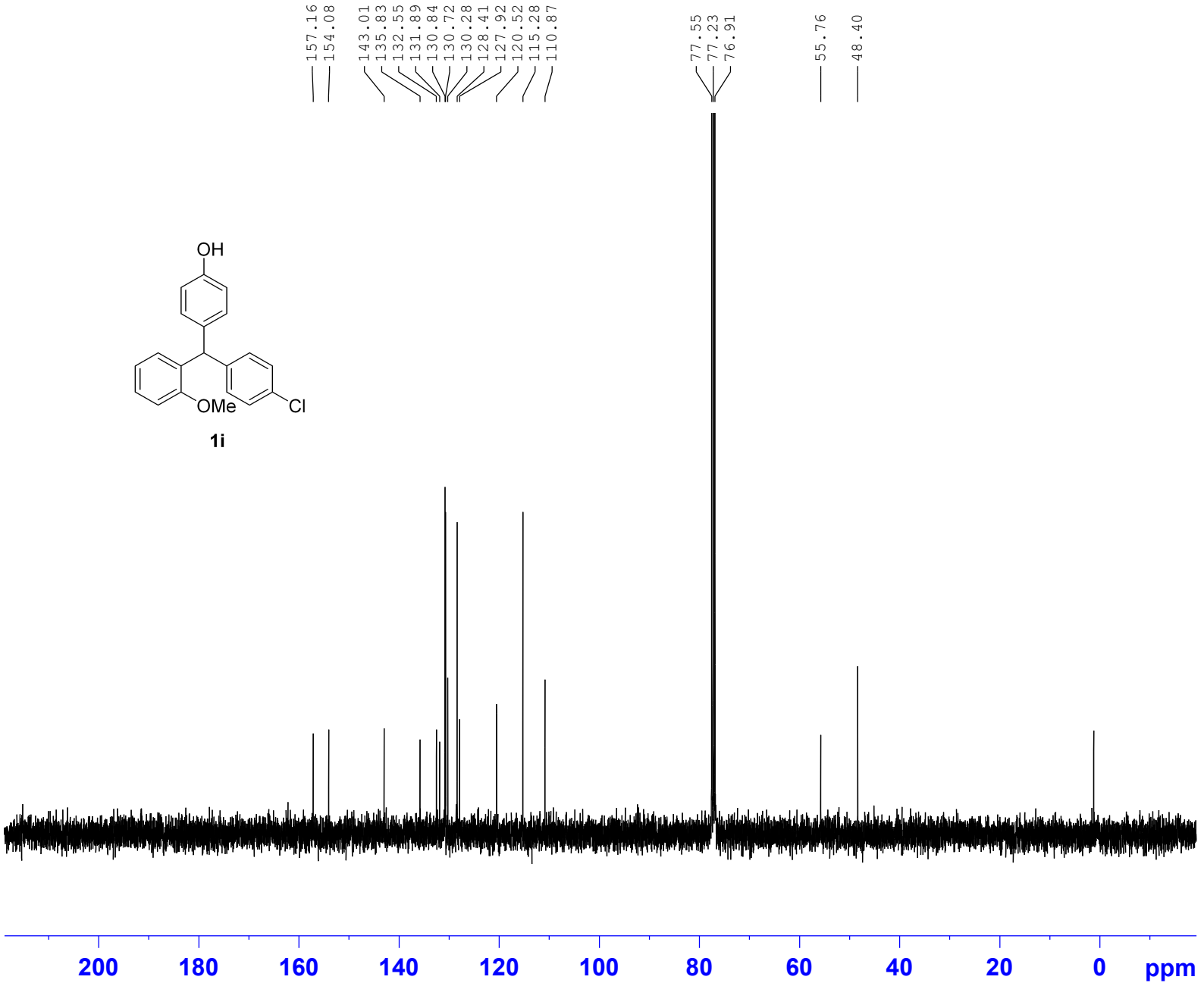

```
NAME                Lzy-1h
EXPNO                    1
PROCNO                   1
Date_             20200421
Time                 10.47
INSTRUM              spect
PROBHD    5 mm PABBO BB-
PULPROG               zg30
TD                   65536
SOLVENT              CDCl3
NS                       8
DS                       0
SWH               8223.685 Hz
FIDRES            0.125483 Hz
AQ               3.9846387 sec
RG                     322
DW                  60.800 usec
DE                   6.00 usec
TE                  295.0 K
D1              1.00000000 sec
TD0                      1

======== CHANNEL f1 ========
NUC1                    1H
P1                   15.80 usec
PL1                  -1.00 dB
PL1W          12.17476940 W
SFO1          400.1324710 MHz
SI                   32768
SF            400.1300097 MHz
WDW                     EM
SSB                      0
LB                    0.30 Hz
GB                       0
PC                    1.00
```



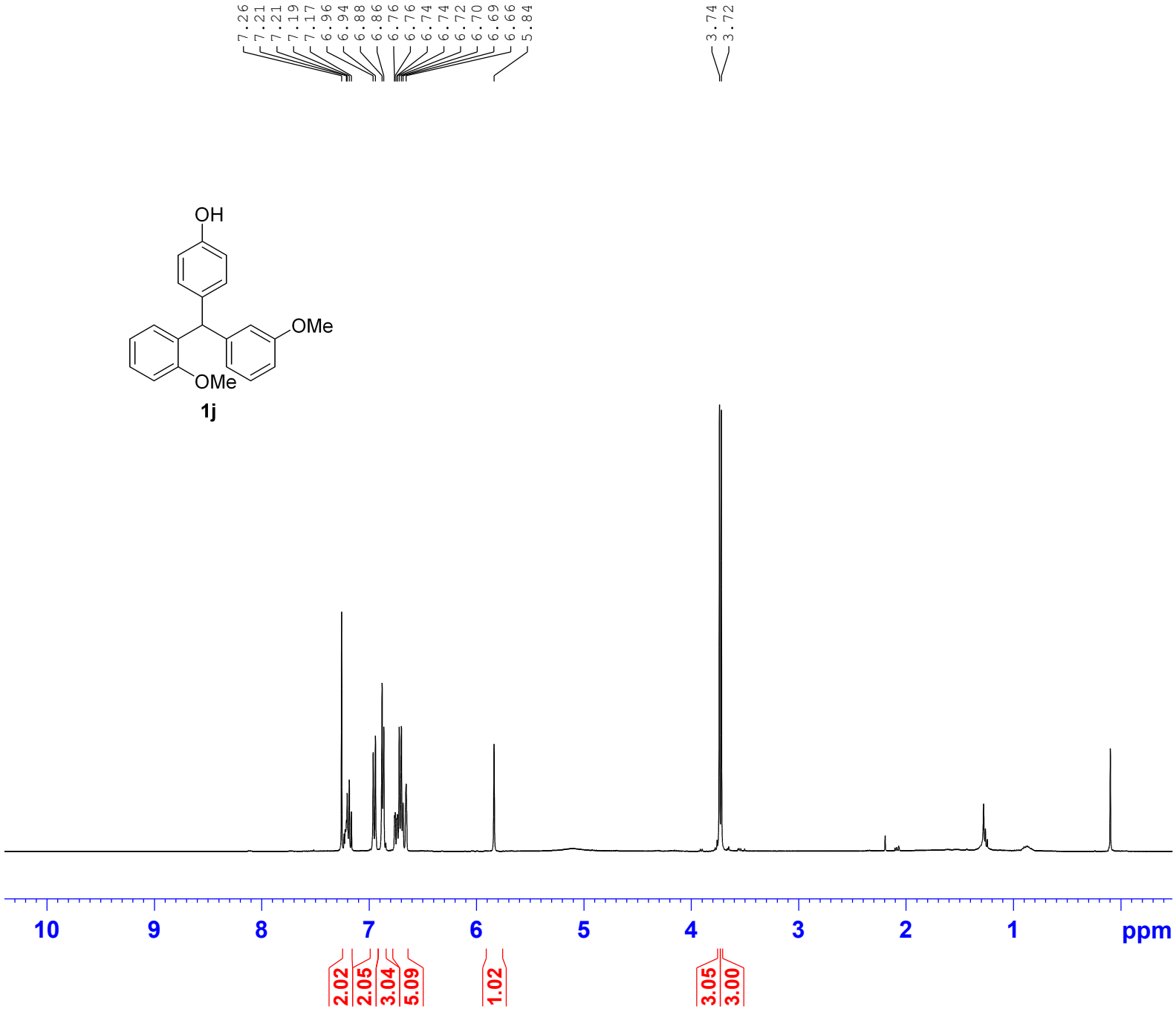
NAME	Lzy-1h-C
EXPNO	1
PROCNO	1
Date_	20200421
Time	10.53
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	114
DS	2
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	161
DW	20.800 usec
DE	6.00 usec
TE	295.5 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.60 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6127498 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40



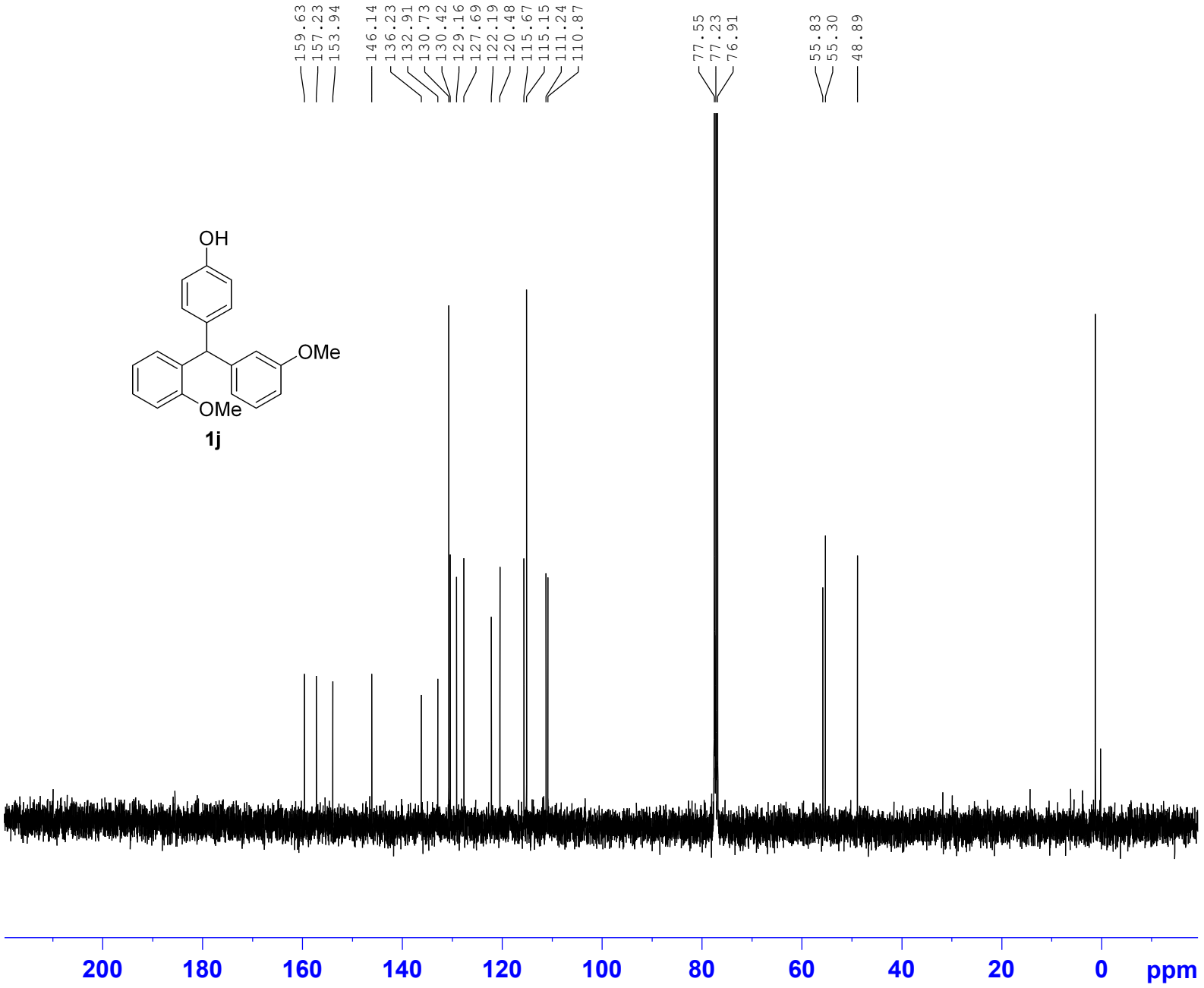
NAME	Lzy-1i
EXPNO	1
PROCNO	1
Date_	20200323
Time	19.53
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zg30
TD	65536
SOLVENT	CDCl3
NS	8
DS	0
SWH	8223.685 Hz
FIDRES	0.125483 Hz
AQ	3.9846387 sec
RG	322
DW	60.800 usec
DE	6.00 usec
TE	295.4 K
D1	1.00000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	1H
P1	15.80 usec
PL1	-1.00 dB
PL1W	12.17476940 W
SFO1	400.1324710 MHz
SI	32768
SF	400.1300097 MHz
WDW	EM
SSB	0
LB	0.30 Hz
GB	0
PC	1.00



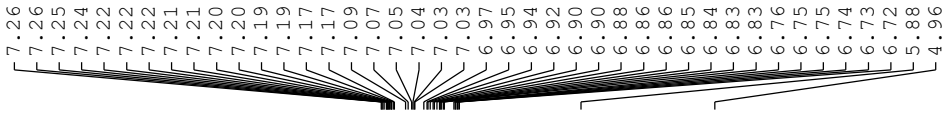
NAME	Lzy-1i-C
EXPNO	3
PROCNO	1
Date_	20200323
Time	15.13
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	87
DS	0
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	362
DW	20.800 usec
DE	6.00 usec
TE	295.0 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.60 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6127498 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

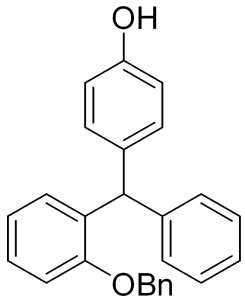


NAME	Lzy-1j
EXPNO	1
PROCNO	1
Date_	20200220
Time	19.46
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zg30
TD	65536
SOLVENT	CDCl3
NS	6
DS	2
SWH	8223.685 Hz
FIDRES	0.125483 Hz
AQ	3.9846387 sec
RG	161
DW	60.800 usec
DE	6.00 usec
TE	294.7 K
D1	1.00000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	1H
P1	15.80 usec
PL1	-1.00 dB
PL1W	12.17476940 W
SFO1	400.1324710 MHz
SI	32768
SF	400.1300104 MHz
WDW	EM
SSB	0
LB	0.30 Hz
GB	0
PC	1.00



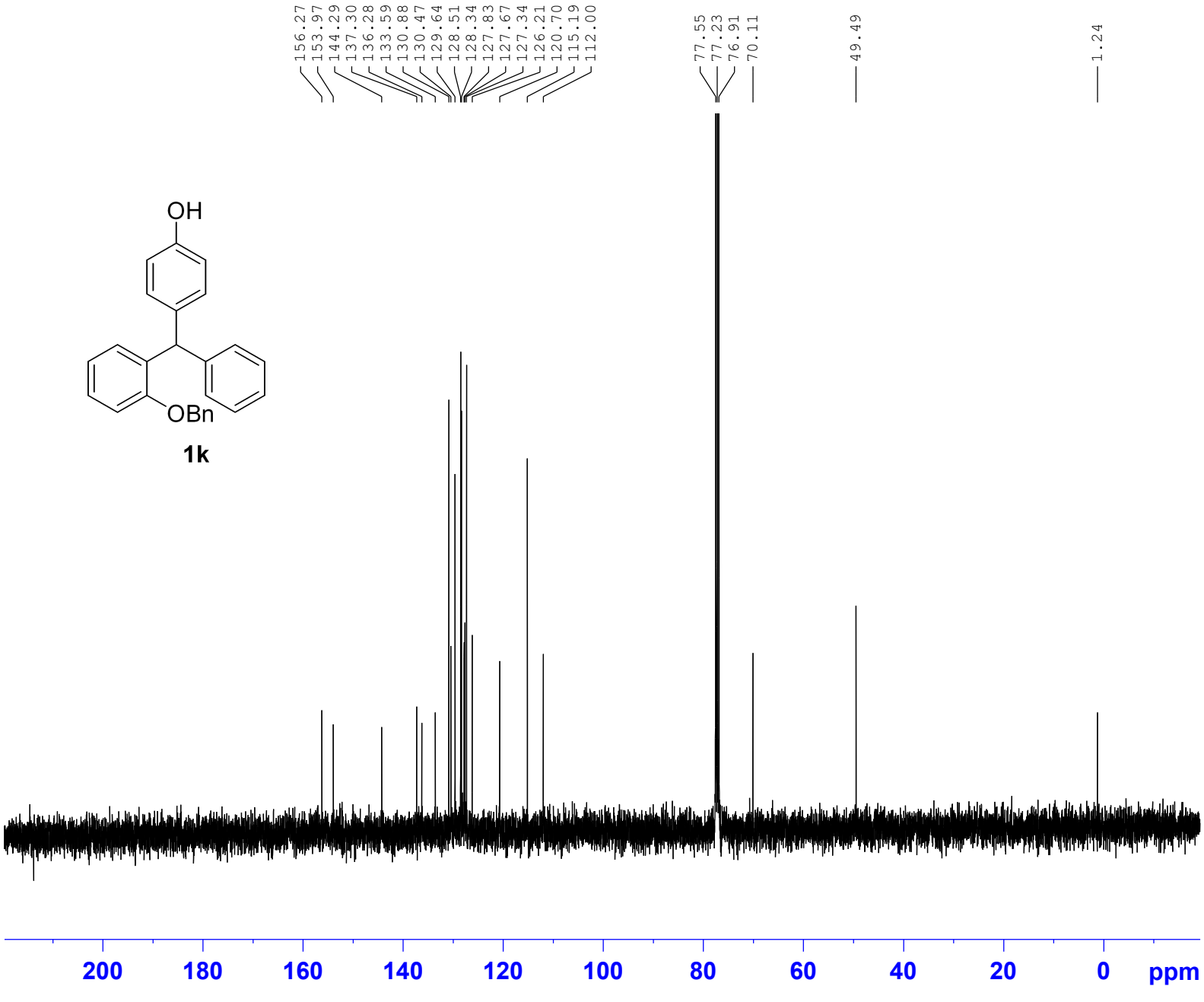

```
NAME            Lzy-1j-C
EXPNO                  1
PROCNO                 1
Date_           20200901
Time               12.17
INSTRUM            spect
PROBHD   5 mm PABBO BB-
PULPROG          zgpg30
TD                 65536
SOLVENT            CDCl3
NS                   266
DS                     2
SWH            24038.461 Hz
FIDRES          0.366798 Hz
AQ             1.3631988 sec
RG                  90.5
DW                20.800 usec
DE                 6.00 usec
TE                295.3 K
D1           2.00000000 sec
D11          0.03000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                  13C
P1                   8.60 usec
PL1                 -3.00 dB
PL1W         60.64365387 W
SFO1        100.6228298 MHz

======== CHANNEL f2 ========
CPDPRG2           waltz16
NUC2                  1H
PCPD2              80.00 usec
PL2                -1.00 dB
PL12               14.39 dB
PL13               18.00 dB
PL2W         12.17476940 W
PL12W         0.35193357 W
PL13W         0.15327126 W
SFO2        400.1316005 MHz
SI                 32768
SF          100.6127490 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  1.40
```



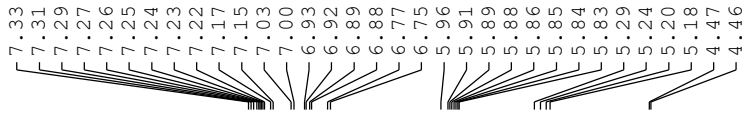


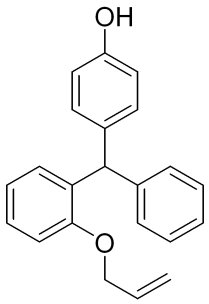
1k

```
NAME      lzy-project1-OBn-SM-H
EXPNO                     1
PROCNO                    1
Date_              20210512
Time                 10.14
INSTRUM              spect
PROBHD    5 mm DUL 13C-1
PULPROG               zg30
TD                   65536
SOLVENT              CDCl3
NS                      16
DS                       0
SWH               8223.685 Hz
FIDRES            0.125483 Hz
AQ                3.9846387 sec
RG                     645
DW                  60.800 usec
DE                   6.00 usec
TE                  294.2 K
D1             1.00000000 sec
TD0                      1

======== CHANNEL f1 ========
NUC1                    1H
P1                   15.80 usec
PL1                  -1.00 dB
PL1W          12.17476940 W
SFO1          400.1324710 MHz
SI                   32768
SF            400.1300099 MHz
WDW                     EM
SSB                      0
LB                    0.30 Hz
GB                       0
PC                    1.00
```



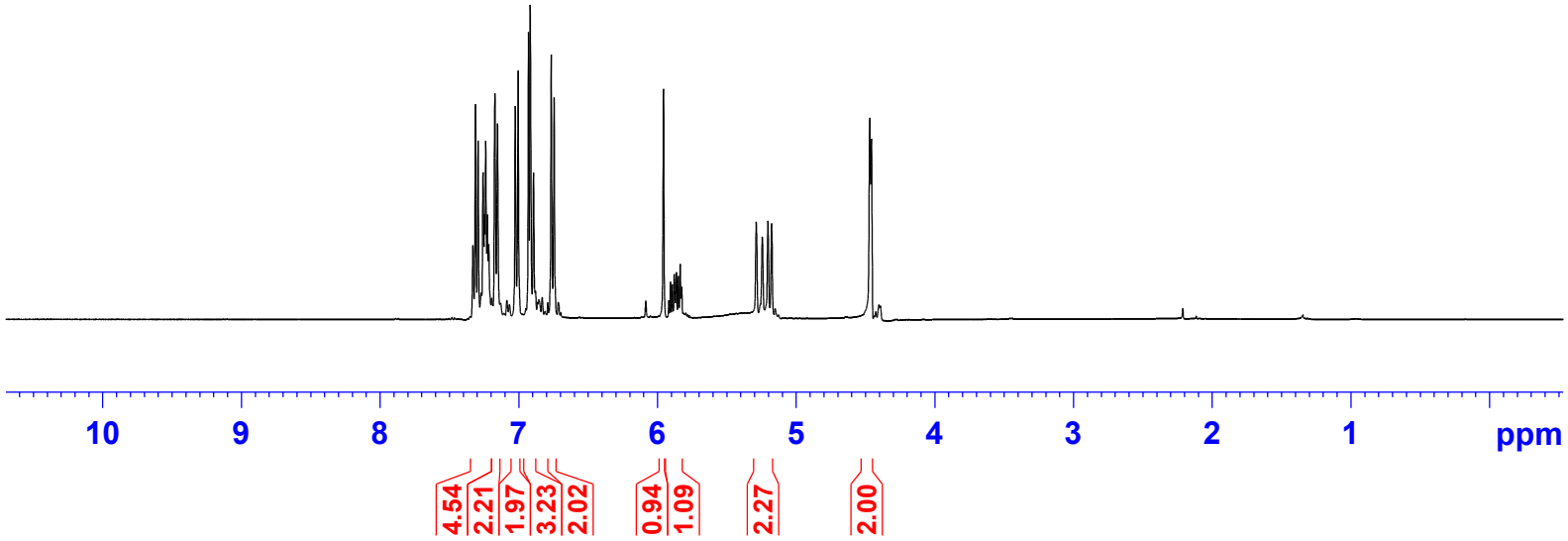
NAME	Lzy-1k-C
EXPNO	1
PROCNO	1
Date_	20200207
Time	11.26
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	270
DS	2
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	203
DW	20.800 usec
DE	6.00 usec
TE	295.3 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.60 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6127491 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

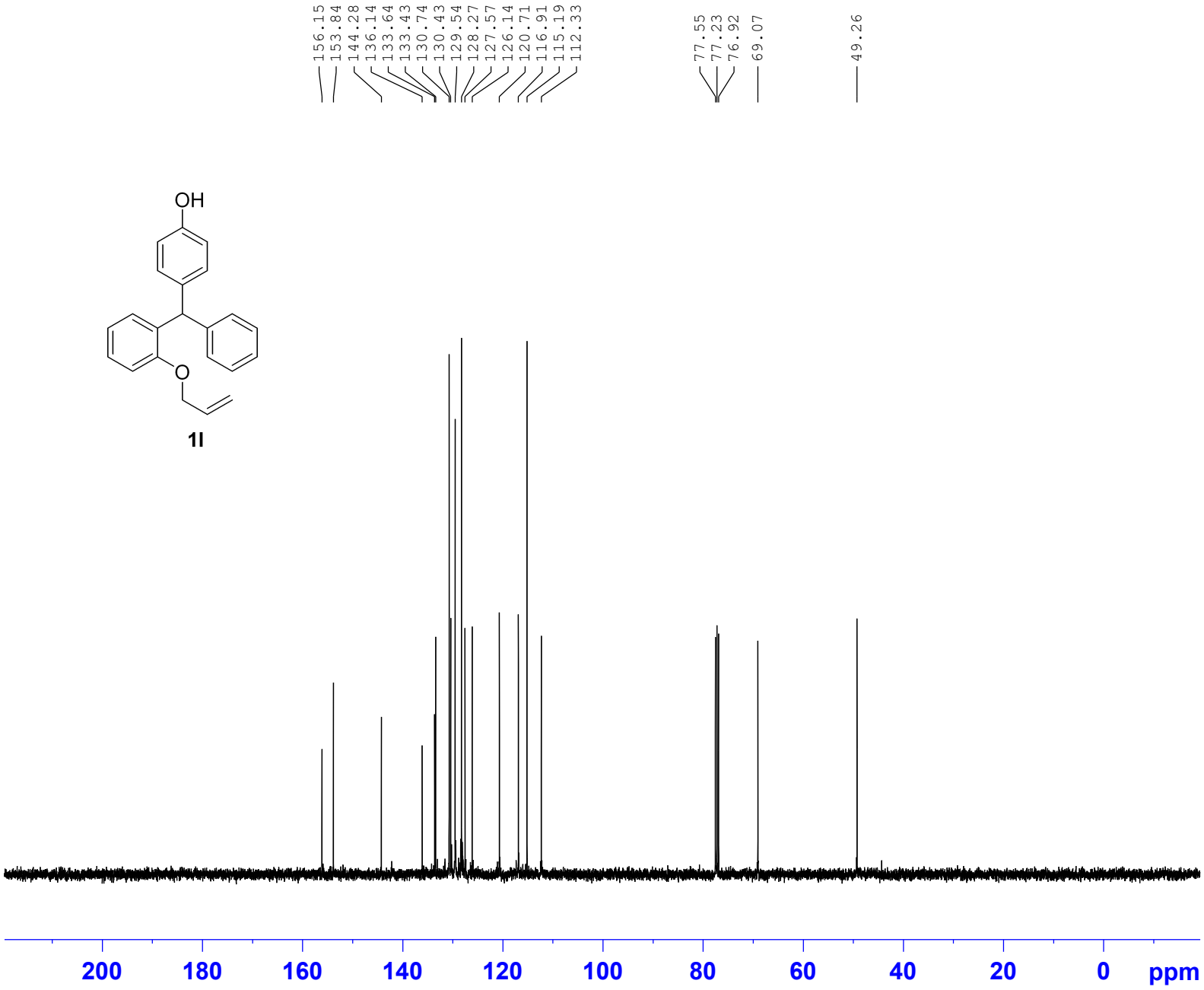




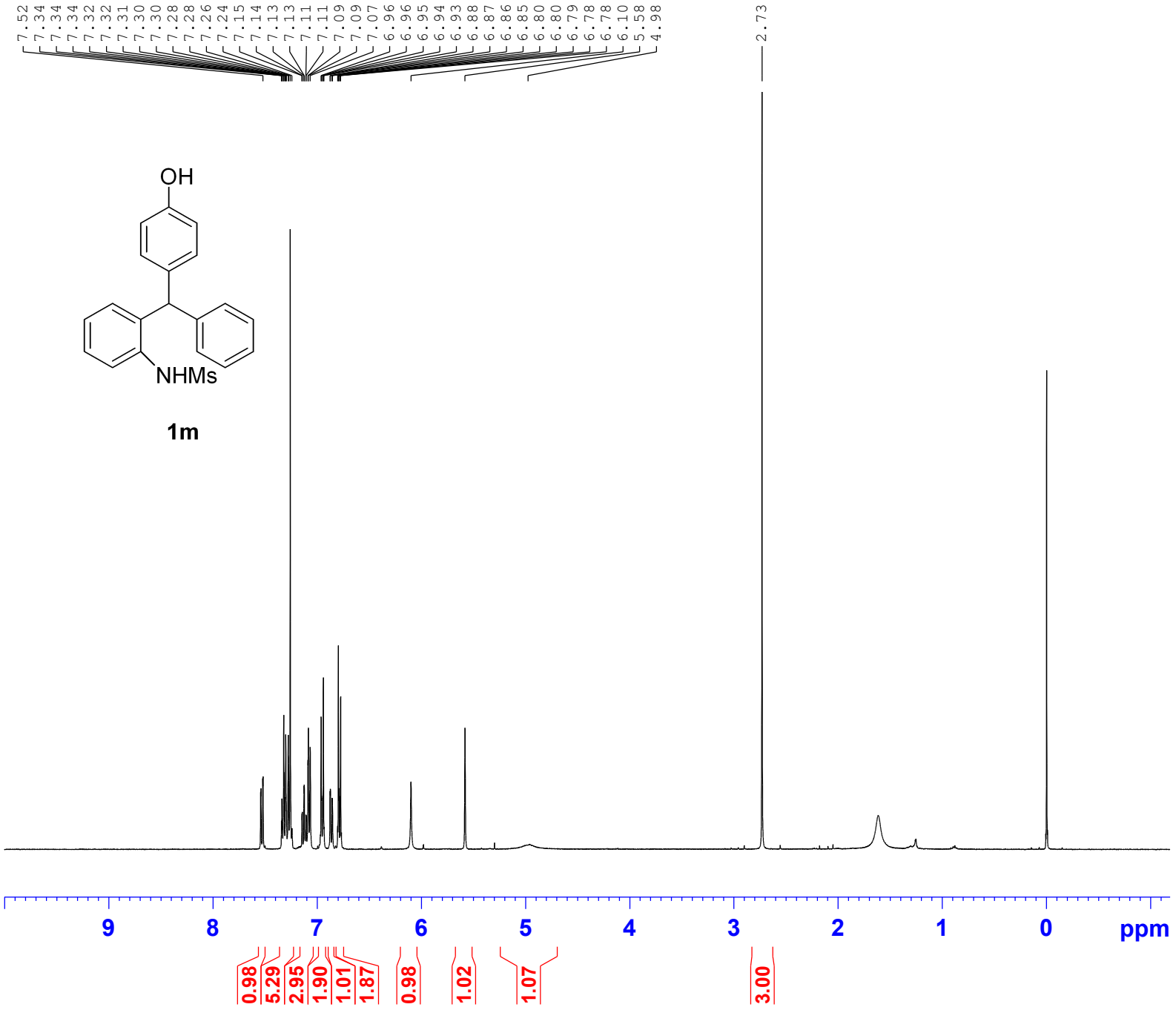
1l

```
NAME                Lzy-1l
EXPNO                    2
PROCNO                   1
Date_             20200115
Time                 18.41
INSTRUM              spect
PROBHD    5 mm PABBO BB-
PULPROG               zg30
TD                   65536
SOLVENT              CDCl3
NS                      16
DS                       2
SWH               8223.685 Hz
FIDRES            0.125483 Hz
AQ               3.9846387 sec
RG                      64
DW                 60.800 usec
DE                  6.00 usec
TE                 294.7 K
D1              1.00000000 sec
TD0                      1

======== CHANNEL f1 ========
NUC1                    1H
P1                  15.80 usec
PL1                 -1.00 dB
PL1W          12.17476940 W
SFO1          400.1324710 MHz
SI                   32768
SF            400.1300091 MHz
WDW                     EM
SSB                      0
LB                  0.30 Hz
GB                       0
PC                  1.00
```

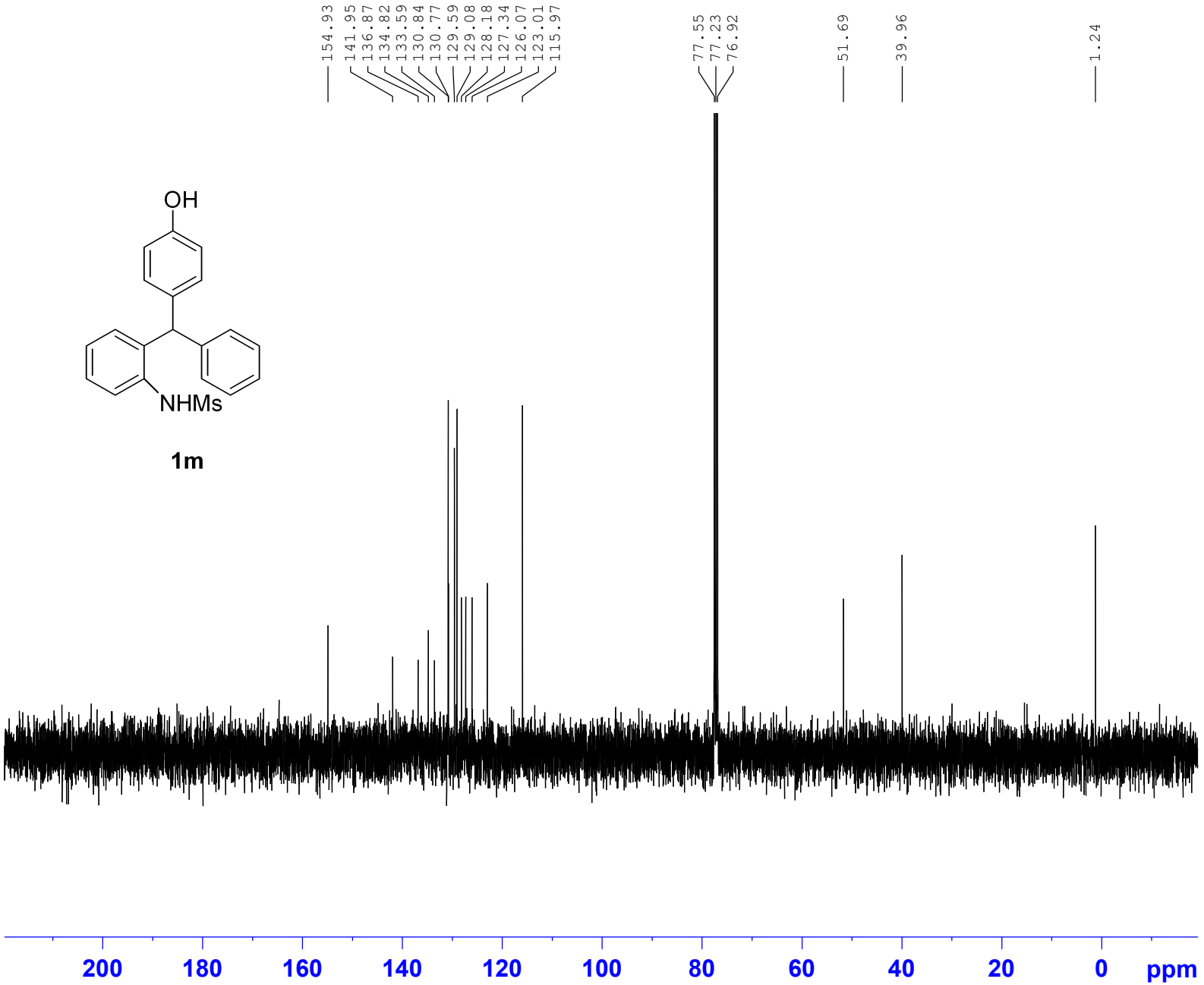




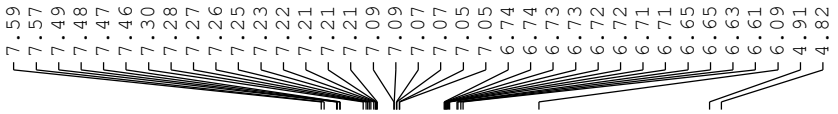
NAME	Lzy-1l-C
EXPNO	2
PROCNO	1
Date_	20200115
Time	18.47
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	73
DS	2
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	144
DW	20.800 usec
DE	6.00 usec
TE	295.2 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.60 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6127617 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

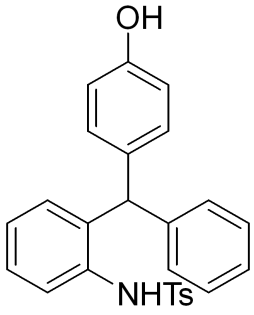


NAME	lzy-project1-1m-old
EXPNO	1
PROCNO	1
Date_	20210512
Time	13.57
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zg30
TD	65536
SOLVENT	CDCl3
NS	8
DS	0
SWH	8223.685 Hz
FIDRES	0.125483 Hz
AQ	3.9846387 sec
RG	575
DW	60.800 usec
DE	6.00 usec
TE	293.6 K
D1	1.00000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	1H
P1	15.80 usec
PL1	-1.00 dB
PL1W	12.17476940 W
SFO1	400.1324710 MHz
SI	32768
SF	400.1300099 MHz
WDW	EM
SSB	0
LB	0.30 Hz
GB	0
PC	1.00



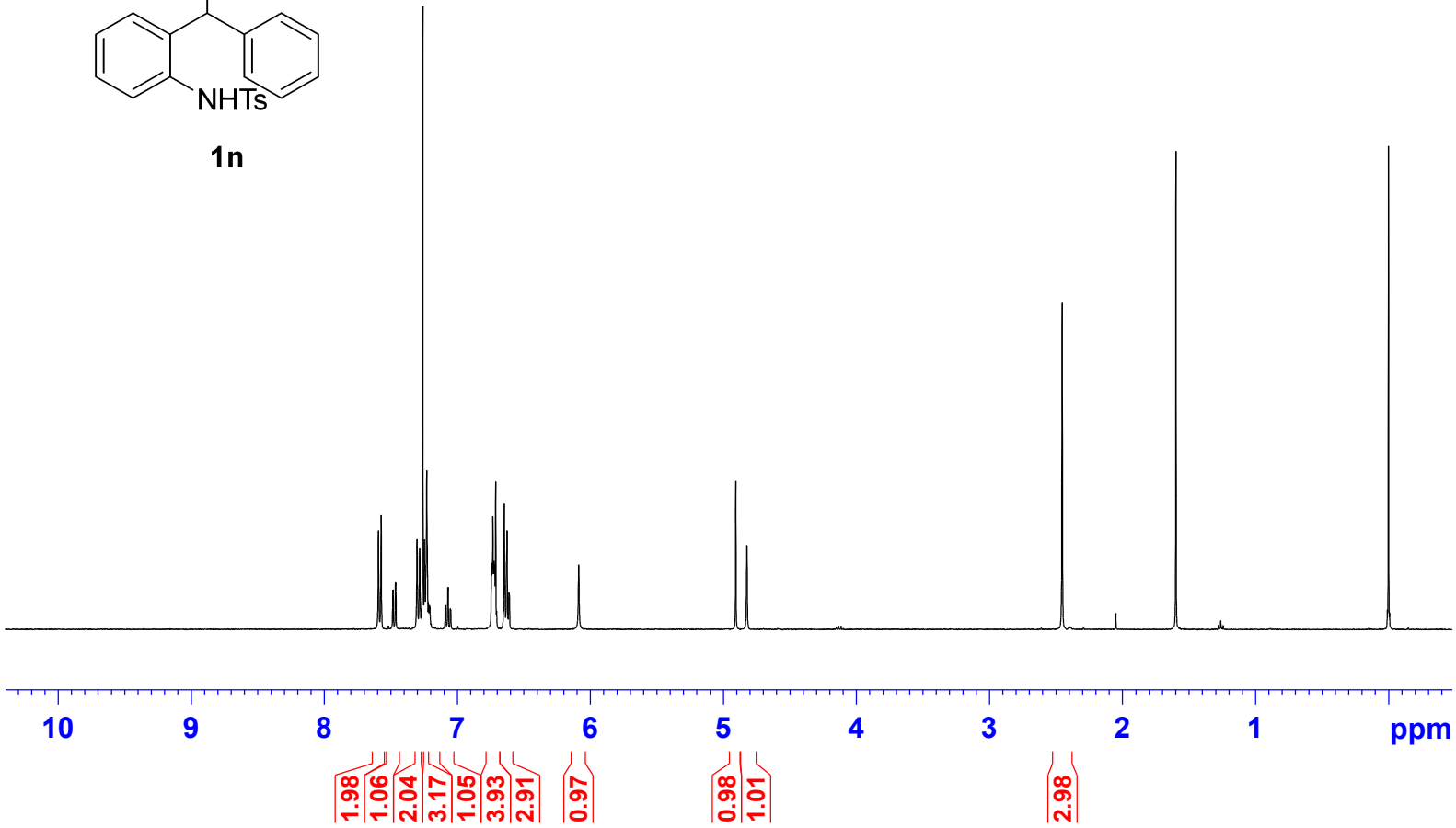

```
NAME            Lzy-1m-C
EXPNO                  1
PROCNO                 1
Date_           20200116
Time                19.24
INSTRUM             spect
PROBHD    5 mm PABBO BB-
PULPROG           zgpg30
TD                 65536
SOLVENT            CDCl3
NS                   124
DS                     2
SWH            24038.461 Hz
FIDRES          0.366798 Hz
AQ             1.3631988 sec
RG                   144
DW                20.800 usec
DE                 6.00 usec
TE                295.3 K
D1             2.00000000 sec
D11            0.03000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                 13C
P1                  8.60 usec
PL1                -3.00 dB
PL1W         60.64365387 W
SFO1         100.6228298 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                 1H
PCPD2              80.00 usec
PL2                -1.00 dB
PL12               14.39 dB
PL13               18.00 dB
PL2W         12.17476940 W
PL12W         0.35193357 W
PL13W         0.15327126 W
SFO2         400.1316005 MHz
SI                 32768
SF           100.6127483 MHz
WDW                  EM
SSB                  0
LB                1.00 Hz
GB                   0
PC                1.40
```

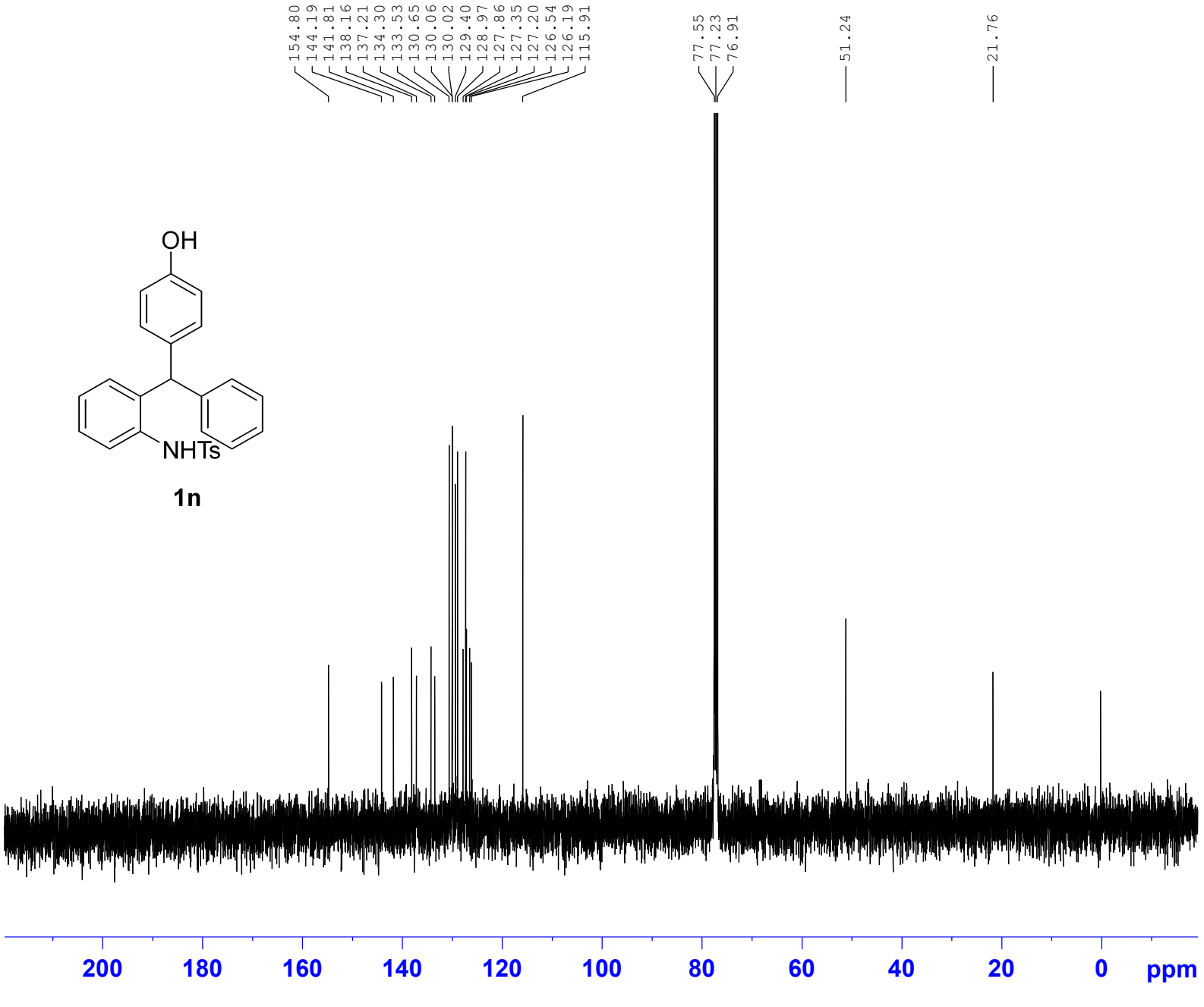




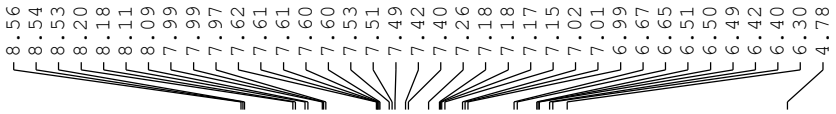
1n

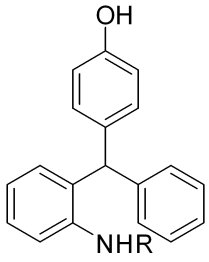
```
NAME                Lzy-1n
EXPNO                    1
PROCNO                   1
Date_             20200901
Time                 22.02
INSTRUM              spect
PROBHD    5 mm PABBO BB-
PULPROG               zg30
TD                   65536
SOLVENT              CDCl3
NS                       3
DS                       0
SWH               8223.685 Hz
FIDRES            0.125483 Hz
AQ               3.9846387 sec
RG                     912
DW                  60.800 usec
DE                   6.00 usec
TE                  295.3 K
D1             1.00000000 sec
TD0                      1

======== CHANNEL f1 ========
NUC1                    1H
P1                   15.80 usec
PL1                  -1.00 dB
PL1W          12.17476940 W
SFO1          400.1324710 MHz
SI                   32768
SF            400.1300097 MHz
WDW                     EM
SSB                      0
LB                   0.30 Hz
GB                       0
PC                   1.00
```






```
NAME            Lzy-1n-C
EXPNO                  1
PROCNO                 1
Date_           20200901
Time               22.17
INSTRUM            spect
PROBHD   5 mm PABBO BB-
PULPROG          zgpg30
TD                65536
SOLVENT            CDCl3
NS                   400
DS                     2
SWH            24038.461 Hz
FIDRES          0.366798 Hz
AQ             1.3631988 sec
RG                   114
DW                20.800 usec
DE                 6.00 usec
TE                295.7 K
D1            2.00000000 sec
D11           0.03000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                 13C
P1                  8.60 usec
PL1                -3.00 dB
PL1W         60.64365387 W
SFO1        100.6228298 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                 1H
PCPD2              80.00 usec
PL2                -1.00 dB
PL12               14.39 dB
PL13               18.00 dB
PL2W         12.17476940 W
PL12W         0.35193357 W
PL13W         0.15327126 W
SFO2        400.1316005 MHz
SI                 32768
SF          100.6127483 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  1.40
```

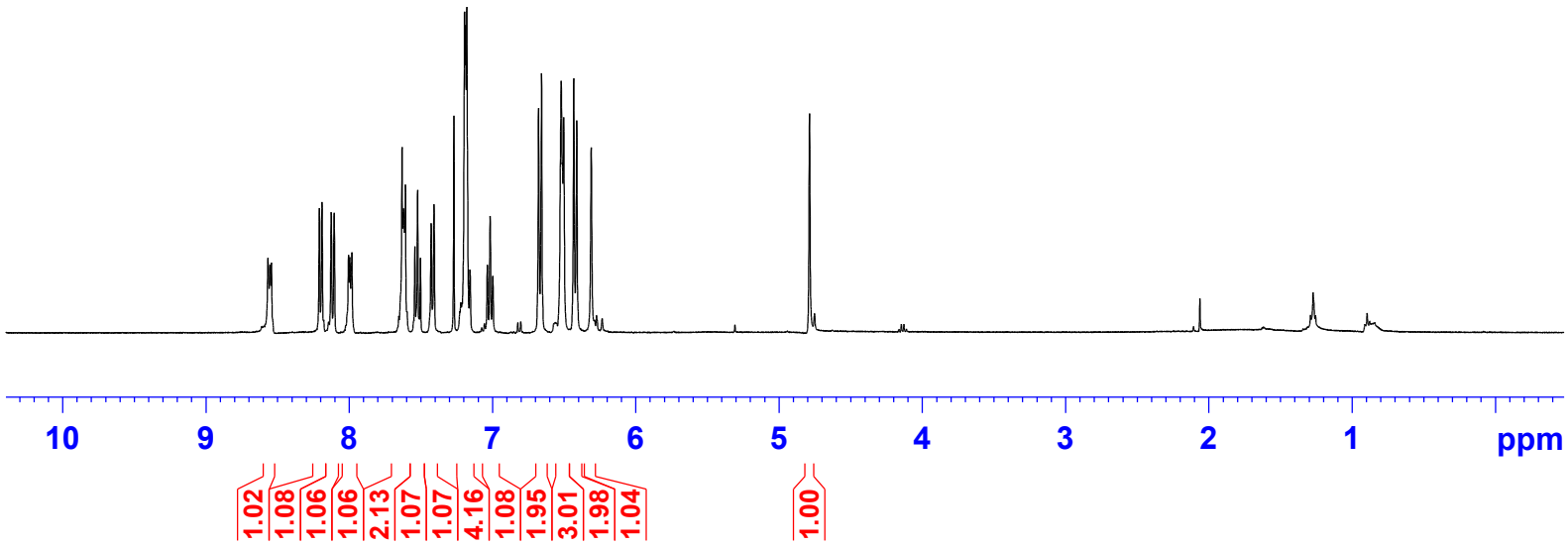


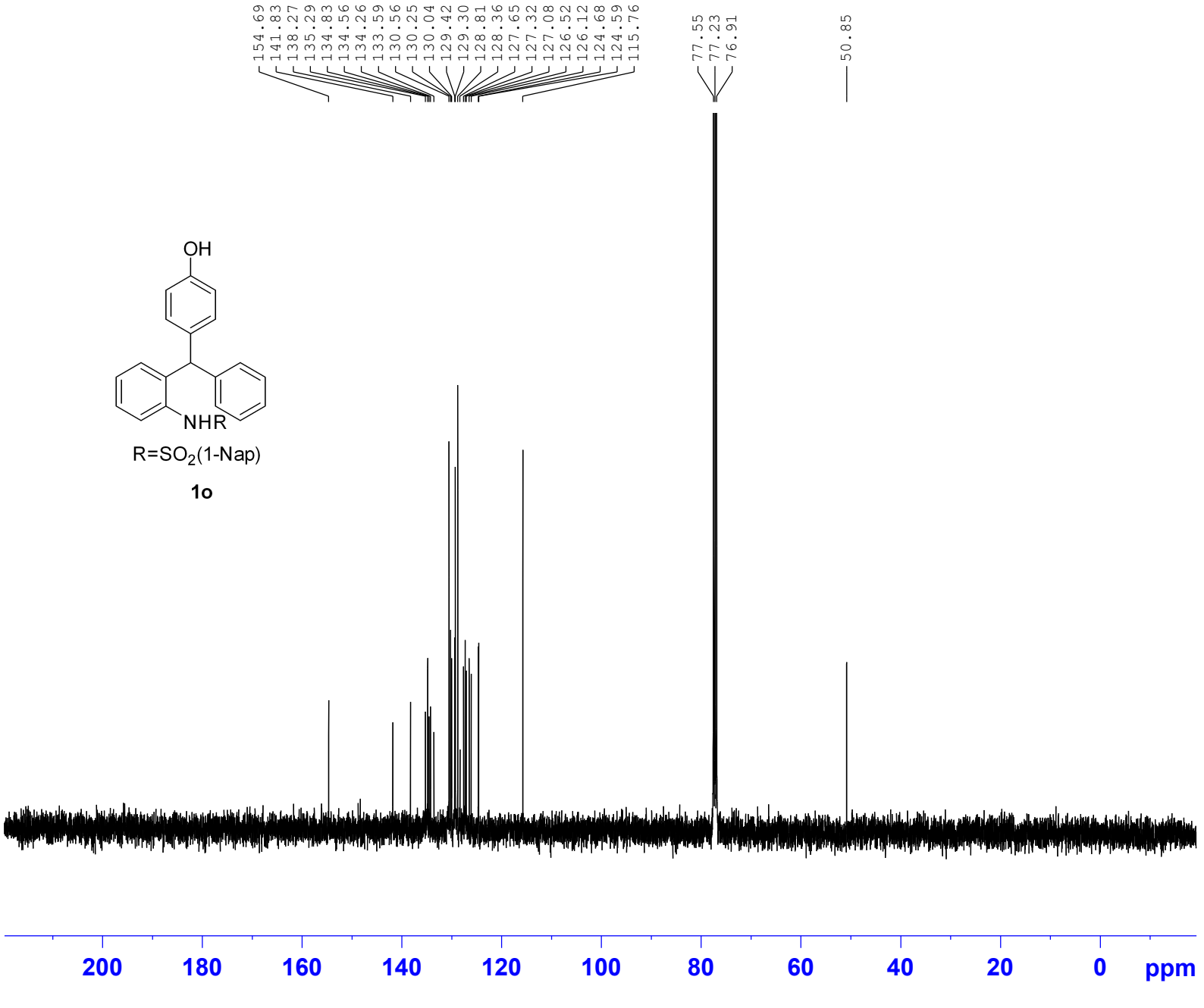


R=SO_2(1-Nap)

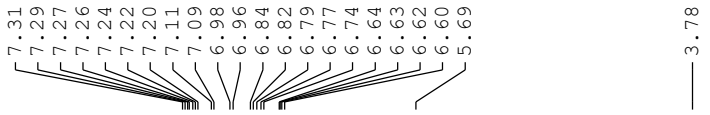
1o

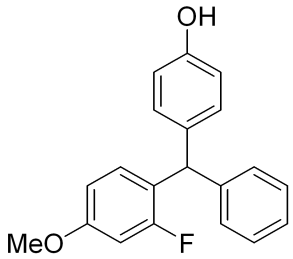
NAME	Lzy-1o
EXPNO	1
PROCNO	1
Date_	20200205
Time	16.11
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zg30
TD	65536
SOLVENT	CDCl3
NS	12
DS	2
SWH	8223.685 Hz
FIDRES	0.125483 Hz
AQ	3.9846387 sec
RG	512
DW	60.800 usec
DE	6.00 usec
TE	294.7 K
D1	1.00000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	1H
P1	15.80 usec
PL1	-1.00 dB
PL1W	12.17476940 W
SFO1	400.1324710 MHz
SI	32768
SF	400.1300054 MHz
WDW	EM
SSB	0
LB	0.30 Hz
GB	0
PC	1.00





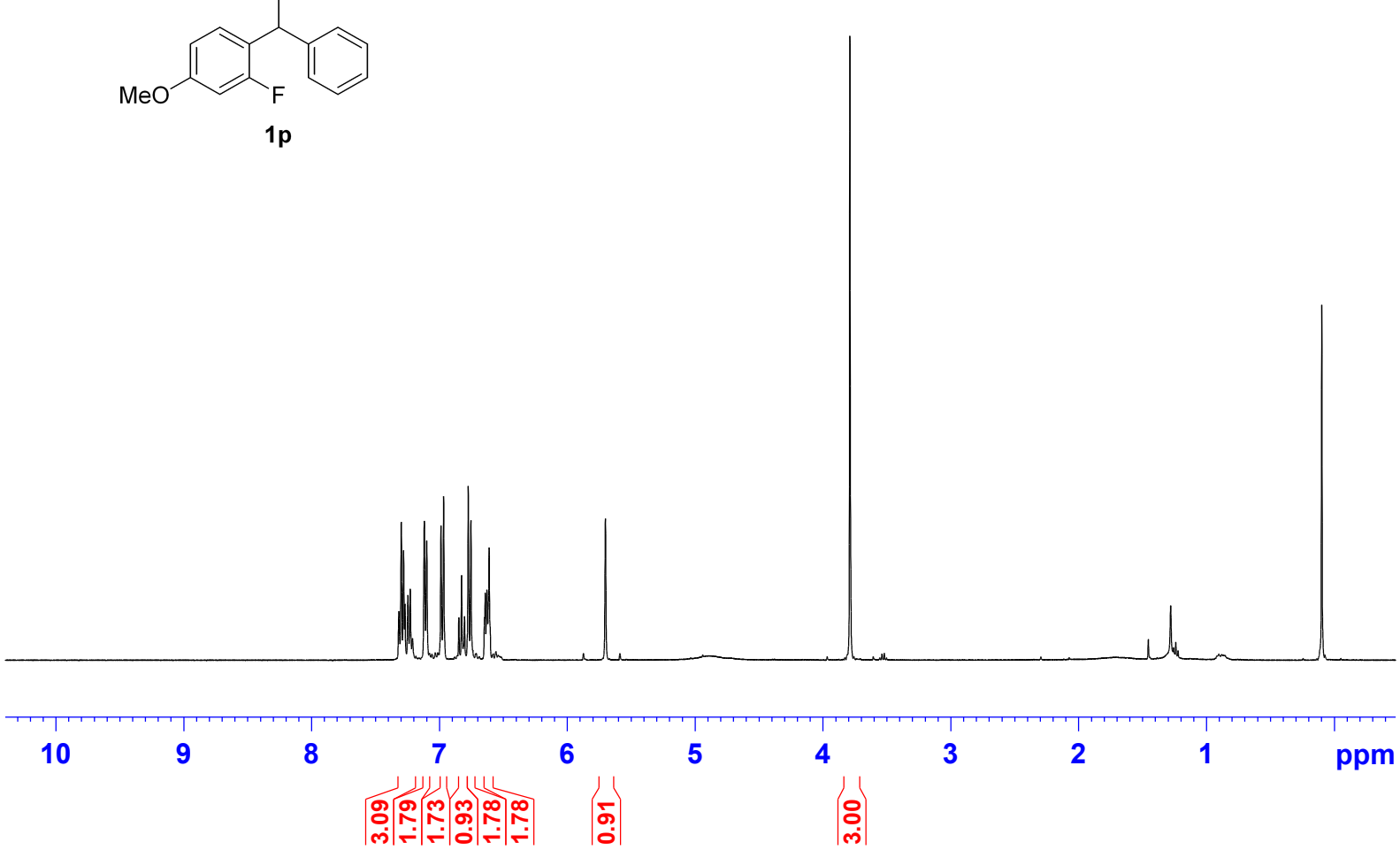
NAME	Lzy-1o-C
EXPNO	1
PROCNO	1
Date_	20200205
Time	16.21
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	400
DS	2
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	80.6
DW	20.800 usec
DE	6.00 usec
TE	295.3 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.60 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6127490 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

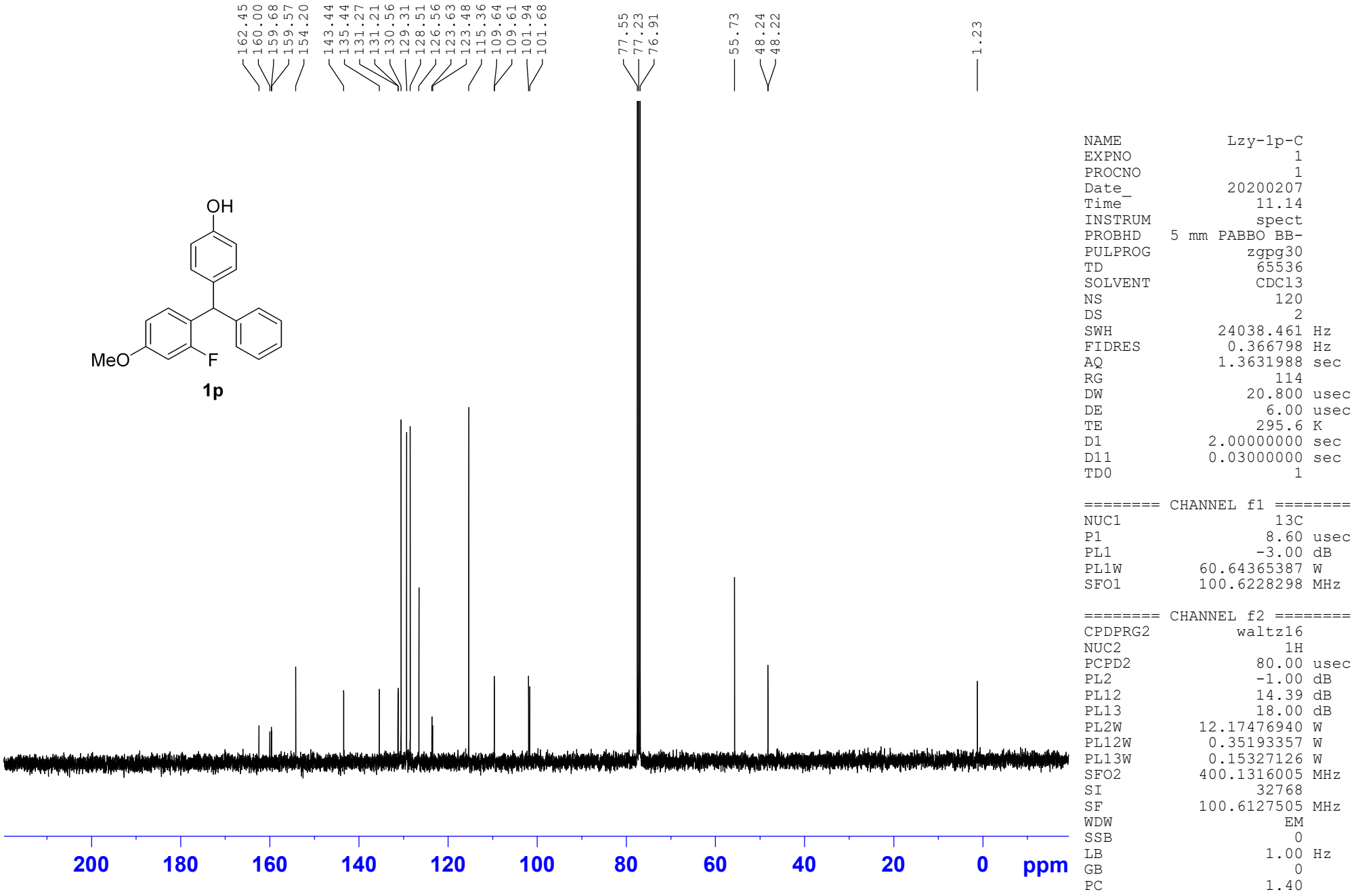




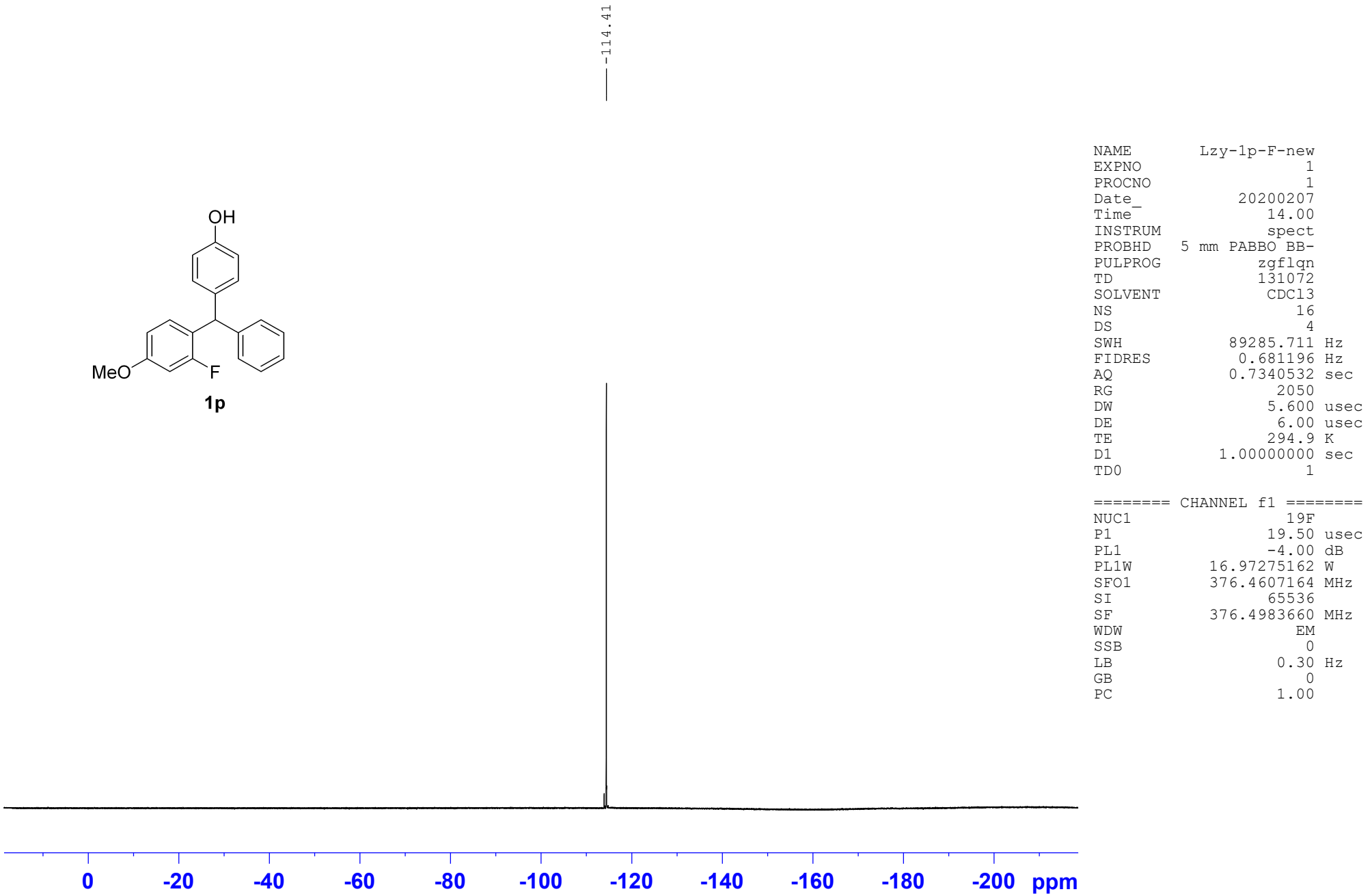
1p

```
NAME                Lzy-1p
EXPNO                    1
PROCNO                   1
Date_             20200207
Time                 11.08
INSTRUM              spect
PROBHD    5 mm PABBO BB-
PULPROG               zg30
TD                   65536
SOLVENT              CDCl3
NS                       6
DS                       2
SWH               8223.685 Hz
FIDRES            0.125483 Hz
AQ               3.9846387 sec
RG                     256
DW                  60.800 usec
DE                   6.00 usec
TE                  294.9 K
D1             1.00000000 sec
TD0                      1

======== CHANNEL f1 ========
NUC1                    1H
P1                   15.80 usec
PL1                  -1.00 dB
PL1W          12.17476940 W
SFO1          400.1324710 MHz
SI                   32768
SF            400.1300054 MHz
WDW                     EM
SSB                      0
LB                    0.30 Hz
GB                       0
PC                    1.00
```

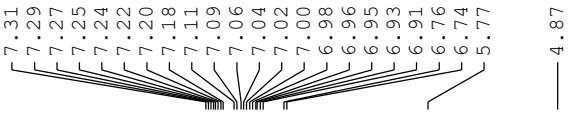


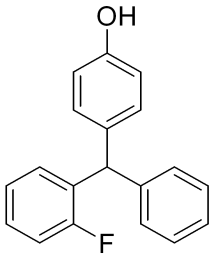


NAME	Lzy-1p-C
EXPNO	1
PROCNO	1
Date_	20200207
Time	11.14
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	120
DS	2
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	114
DW	20.800 usec
DE	6.00 usec
TE	295.6 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.60 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6127505 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40



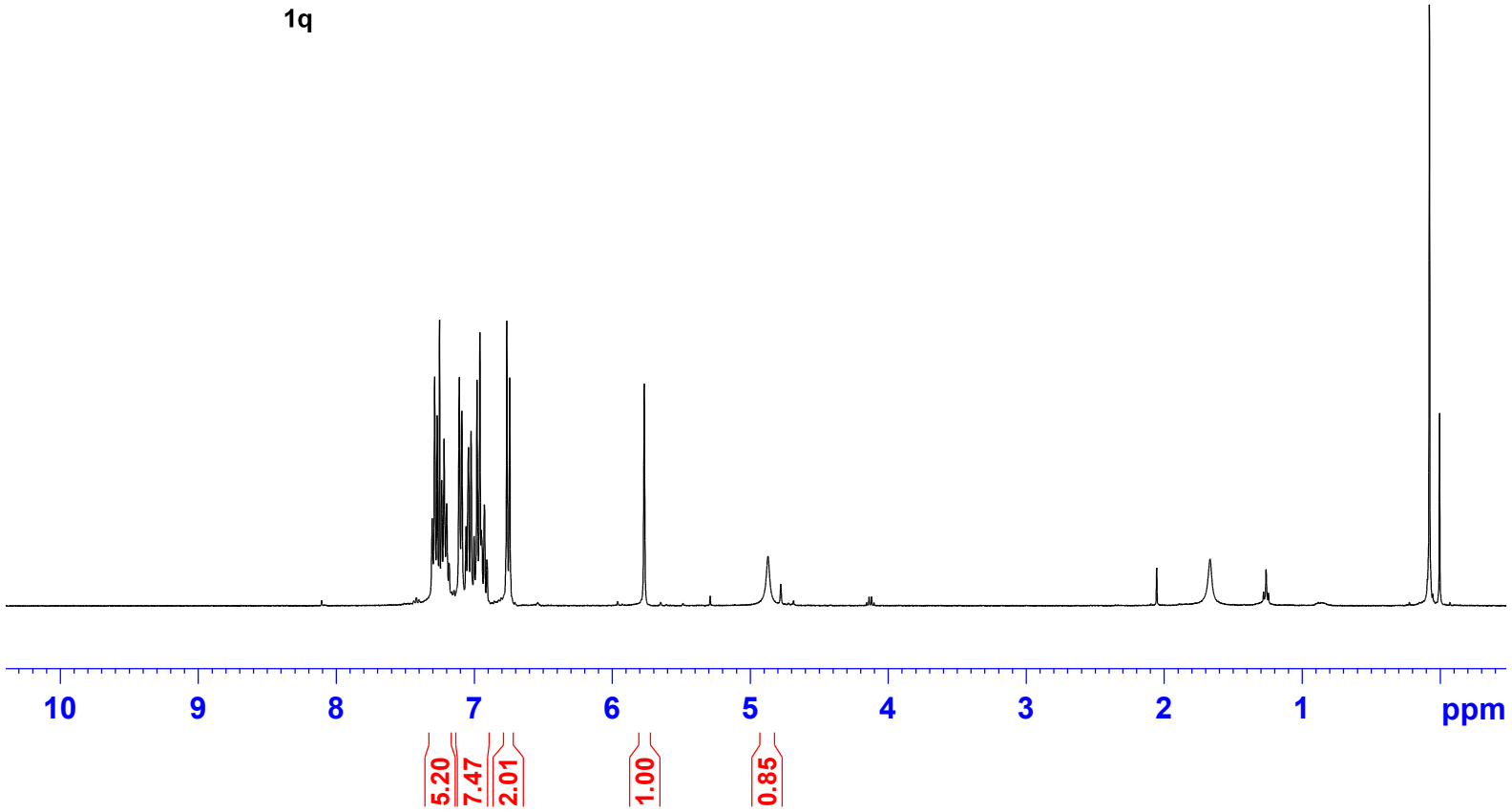

```
NAME          Lzy-1p-F-new
EXPNO                    1
PROCNO                   1
Date_             20200207
Time                 14.00
INSTRUM              spect
PROBHD    5 mm PABBO BB-
PULPROG           zgflqn
TD                131072
SOLVENT             CDCl3
NS                     16
DS                      4
SWH             89285.711 Hz
FIDRES          0.681196 Hz
AQ              0.7340532 sec
RG                   2050
DW                5.600 usec
DE                6.00 usec
TE                294.9 K
D1             1.00000000 sec
TD0                      1

======== CHANNEL f1 ========
NUC1                   19F
P1                 19.50 usec
PL1                -4.00 dB
PL1W         16.97275162 W
SFO1         376.4607164 MHz
SI                   65536
SF           376.4983660 MHz
WDW                    EM
SSB                     0
LB                 0.30 Hz
GB                      0
PC                 1.00
```

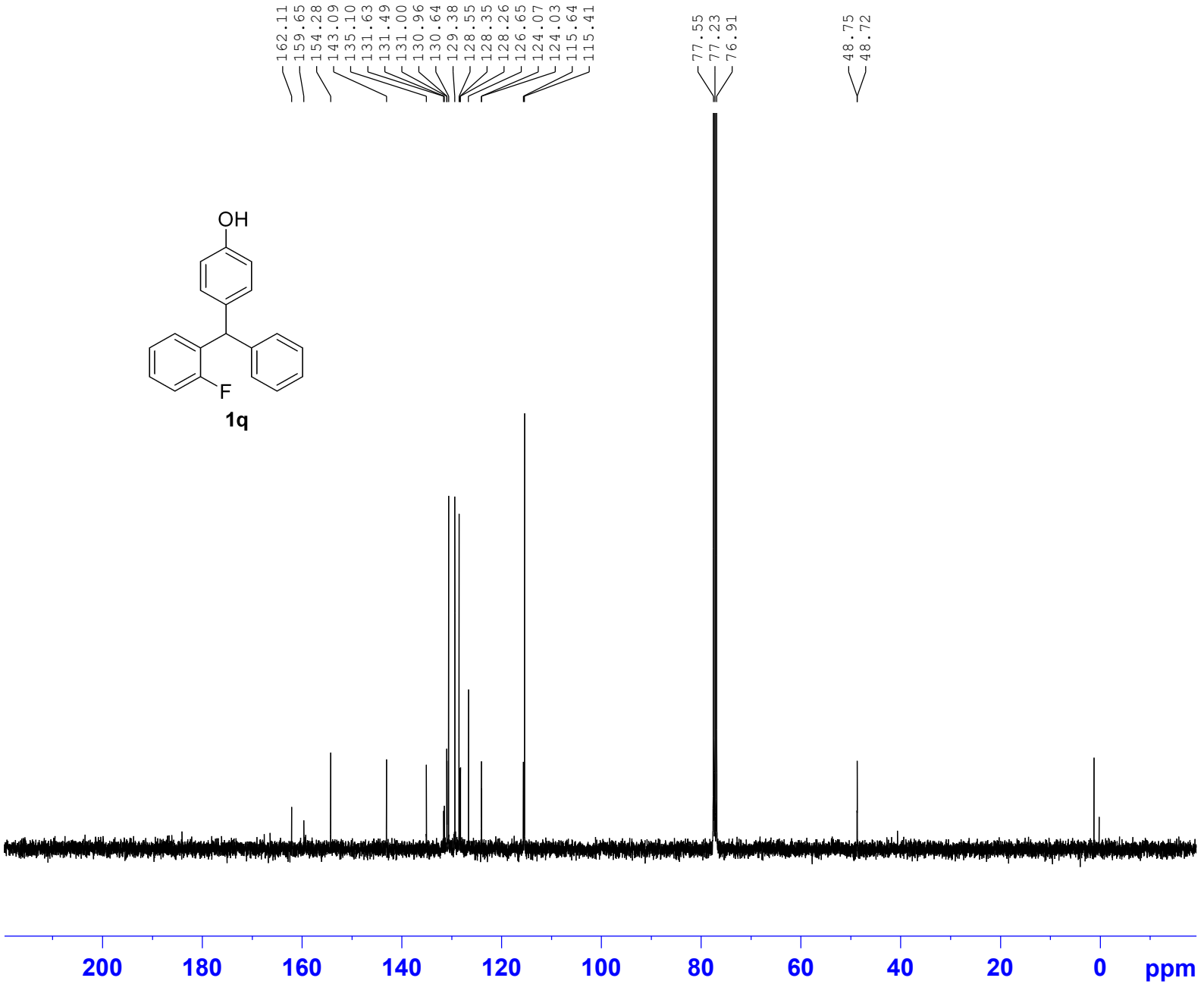




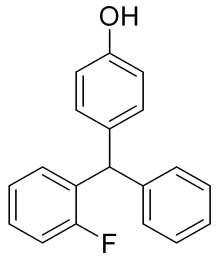
1q

```
NAME                Lzy-1q
EXPNO                    2
PROCNO                   1
Date_             20200315
Time                 17.16
INSTRUM              spect
PROBHD    5 mm PABBO BB-
PULPROG               zg30
TD                   65536
SOLVENT              CDCl3
NS                       8
DS                       2
SWH               8223.685 Hz
FIDRES            0.125483 Hz
AQ               3.9846387 sec
RG                     322
DW                  60.800 usec
DE                   6.00 usec
TE                  295.0 K
D1              1.00000000 sec
TD0                      1

======== CHANNEL f1 ========
NUC1                    1H
P1                   15.80 usec
PL1                  -1.00 dB
PL1W          12.17476940 W
SFO1          400.1324710 MHz
SI                   32768
SF            400.1300126 MHz
WDW                     EM
SSB                      0
LB                    0.30 Hz
GB                       0
PC                    1.00
```



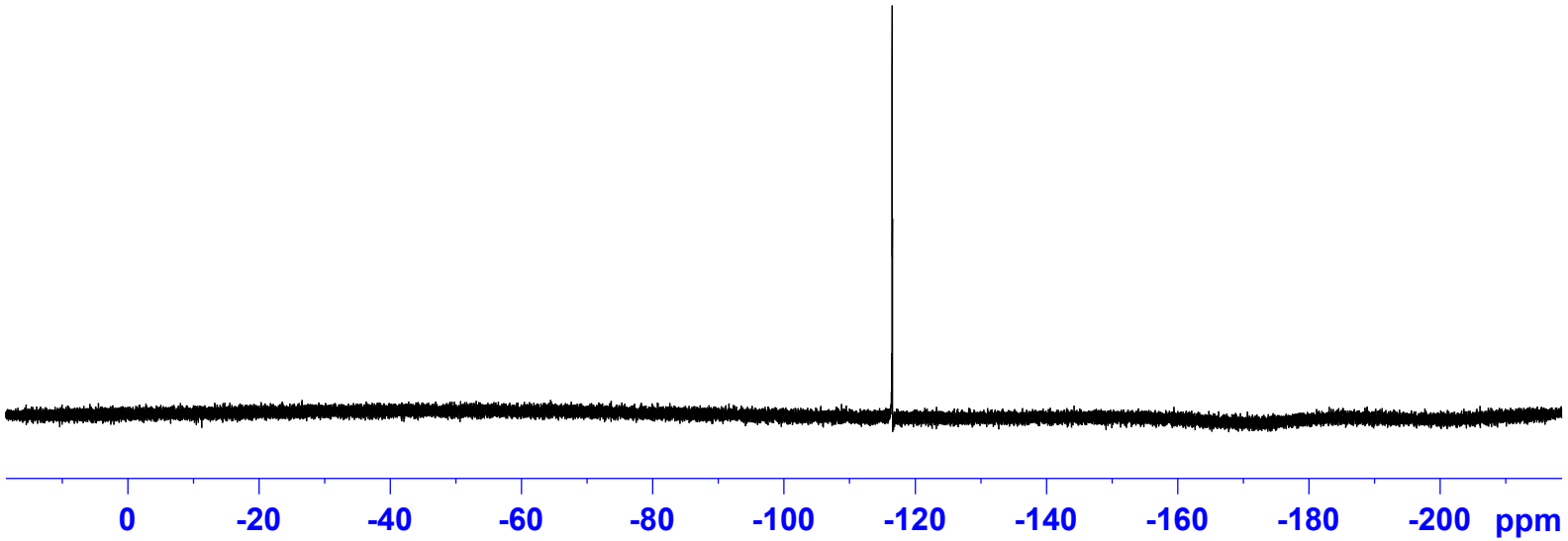


NAME	Lzy-1q-C
EXPNO	2
PROCNO	1
Date_	20200315
Time	17.23
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	200
DS	2
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	203
DW	20.800 usec
DE	6.00 usec
TE	295.5 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.60 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6127497 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

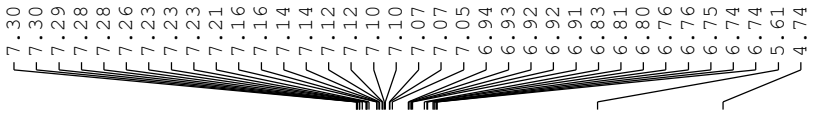


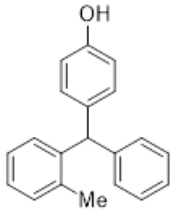
1q

-116.48



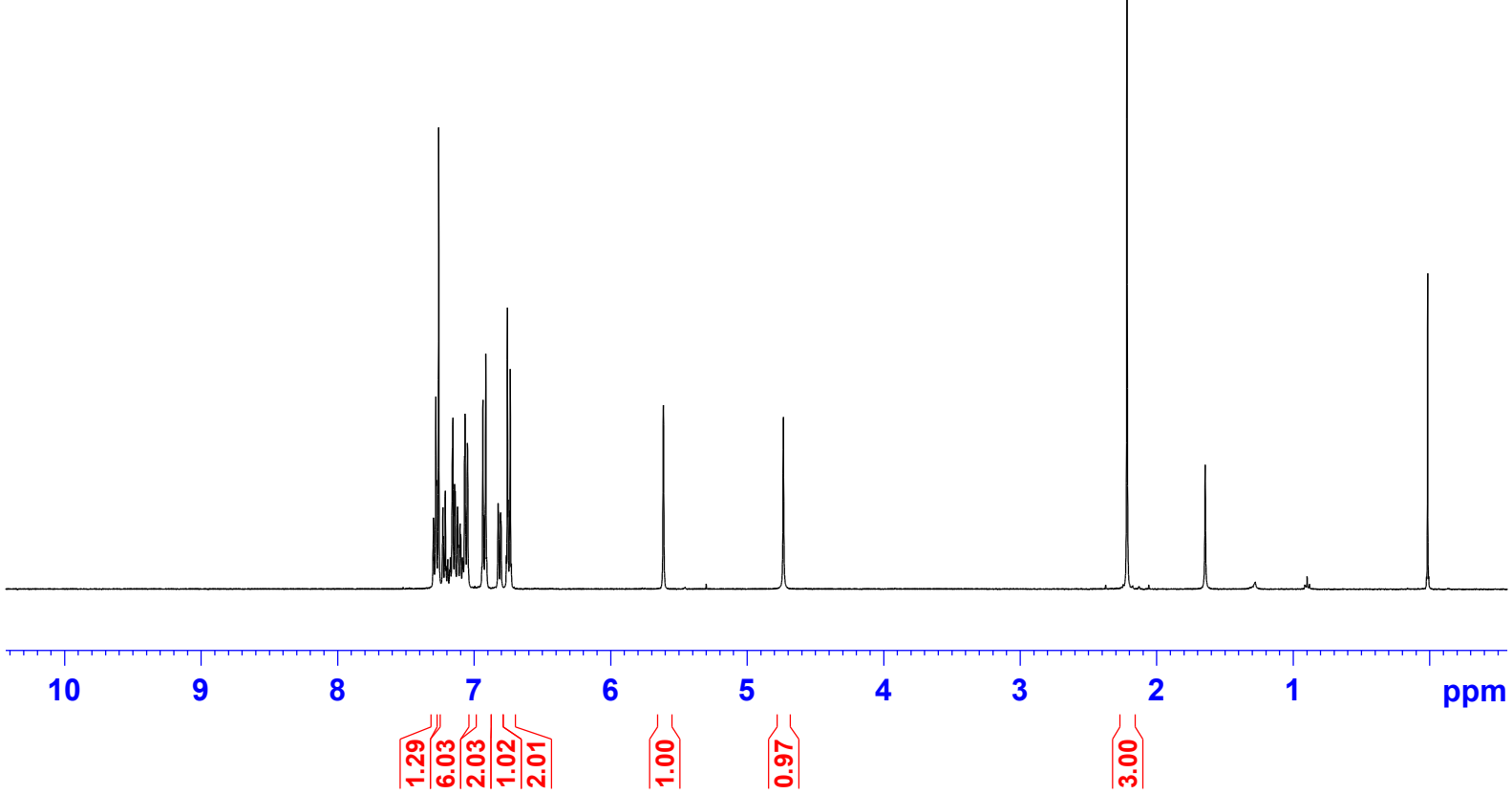

```
NAME      lzy-project1-1q-F
EXPNO                    3
PROCNO                   1
Date_             20210717
Time                 20.57
INSTRUM              spect
PROBHD    5 mm PABBO BB/
PULPROG           zgflqn
TD                131072
SOLVENT             CDCl3
NS                       5
DS                       4
SWH              89285.711 Hz
FIDRES            0.681196 Hz
AQ               0.7340532 sec
RG                  196.92
DW                   5.600 usec
DE                   6.50 usec
TE                  296.7 K
D1             1.00000000 sec
TD0                      1

======== CHANNEL f1 ========
SFO1          376.4607164 MHz
NUC1                   19F
P1                   14.70 usec
SI                   65536
SF            376.4983660 MHz
WDW                    EM
SSB                     0
LB                   0.30 Hz
GB                      0
PC                   1.00
```

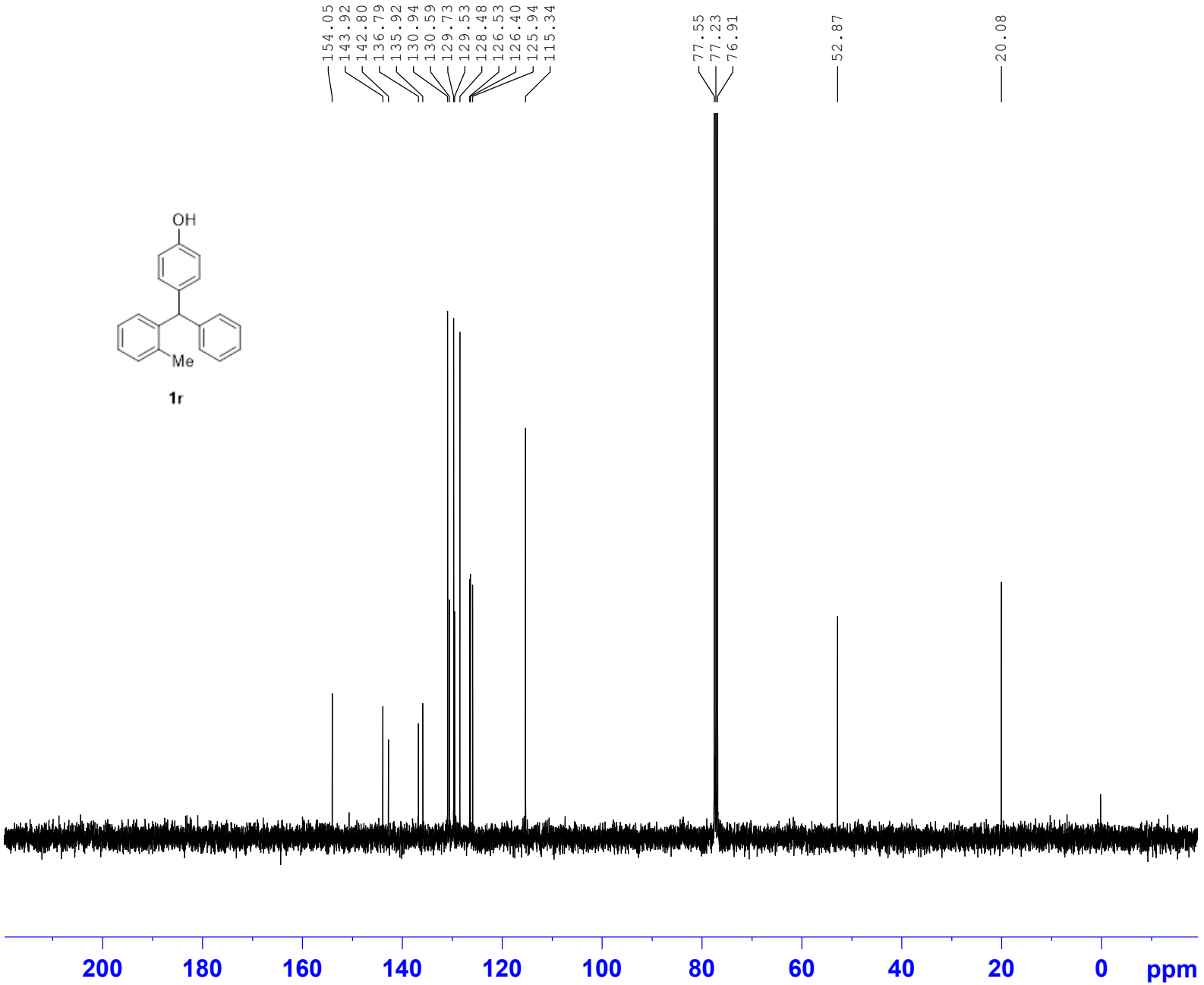




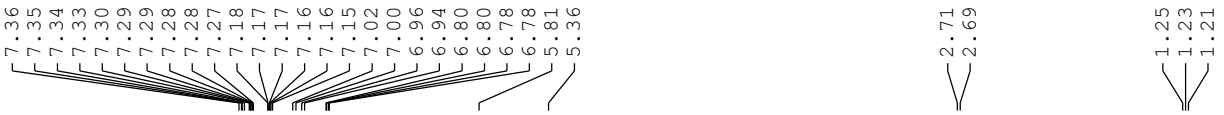
1r

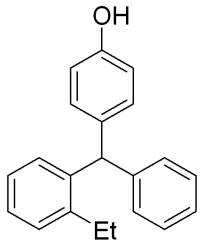
```
NAME            lzy-05-34
EXPNO                   1
PROCNO                  1
Date_            20201121
Time                19.17
INSTRUM             spect
PROBHD    5 mm PABBO BB-
PULPROG              zg30
TD                  65536
SOLVENT             CDCl3
NS                      4
DS                      0
SWH              8223.685 Hz
FIDRES           0.125483 Hz
AQ               3.9846387 sec
RG                    456
DW                 60.800 usec
DE                  6.00 usec
TE                 295.6 K
D1              1.00000000 sec
TD0                     1

======== CHANNEL f1 ========
NUC1                   1H
P1                  15.80 usec
PL1                 -1.00 dB
PL1W         12.17476940 W
SFO1         400.1324710 MHz
SI                  32768
SF           400.1300096 MHz
WDW                    EM
SSB                     0
LB                  0.30 Hz
GB                      0
PC                  1.00
```





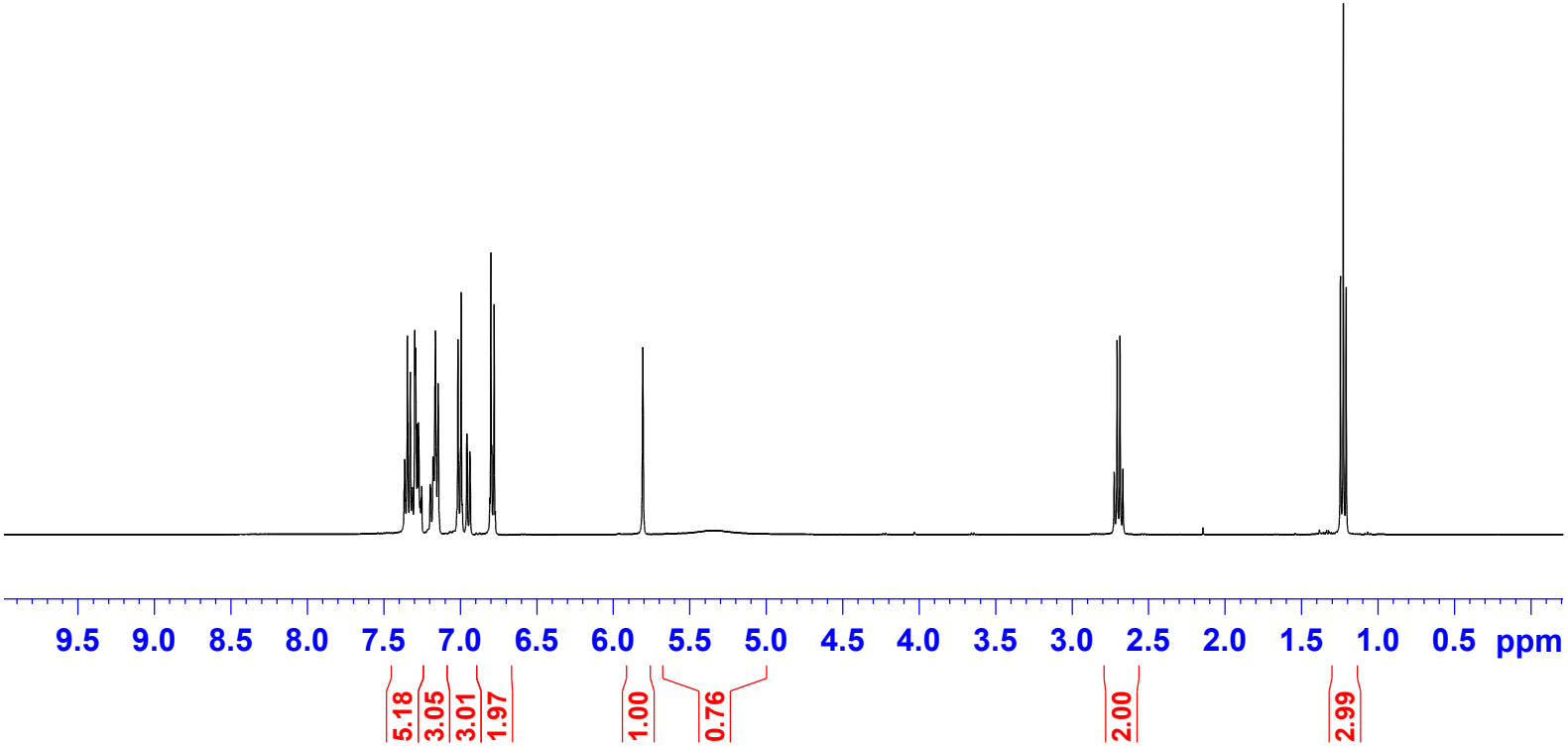
NAME	lzy-05-34-C
EXPNO	1
PROCNO	1
Date_	20201121
Time	19.24
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	140
DS	0
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	90.5
DW	20.800 usec
DE	6.00 usec
TE	296.2 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.60 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6127498 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

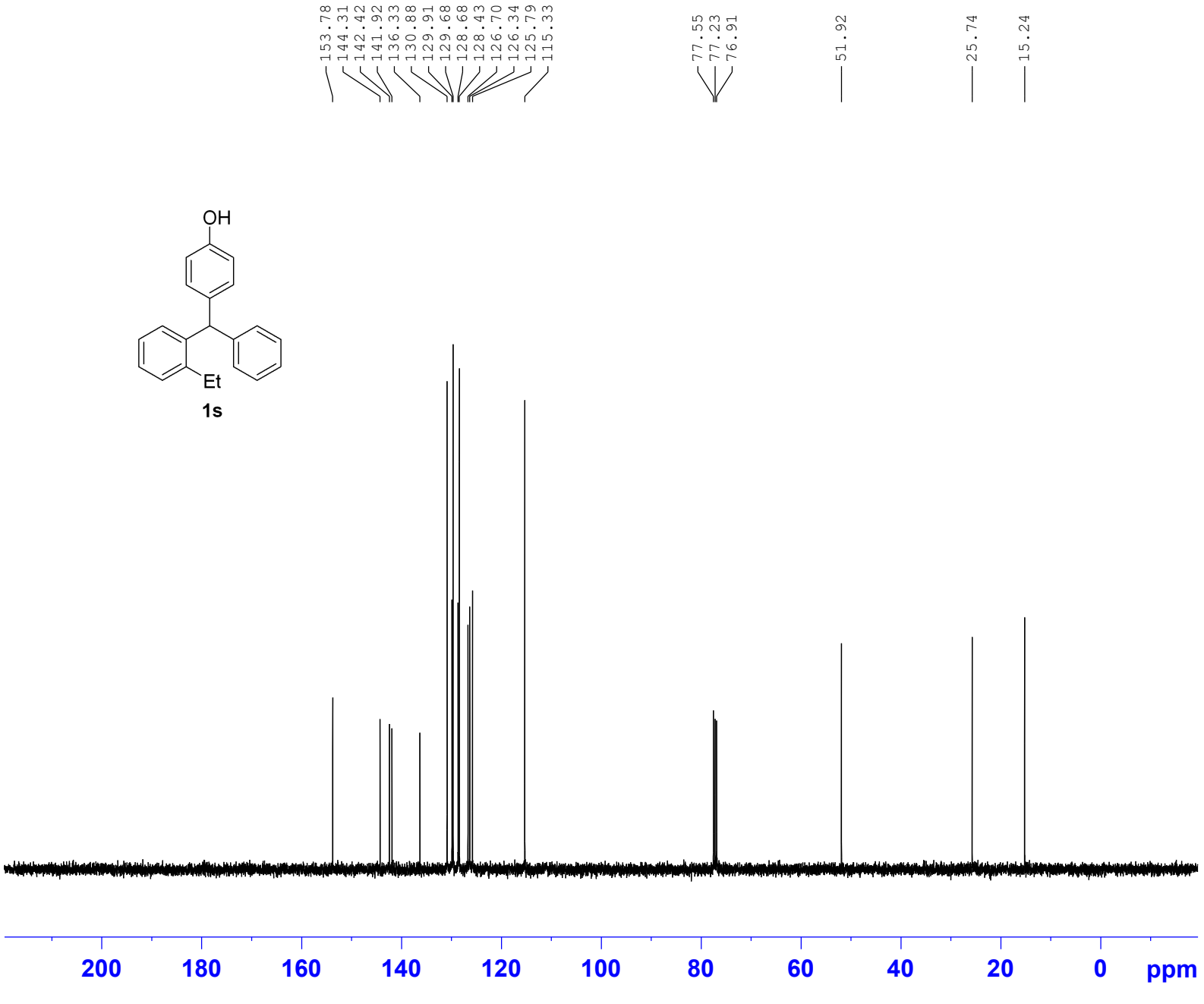




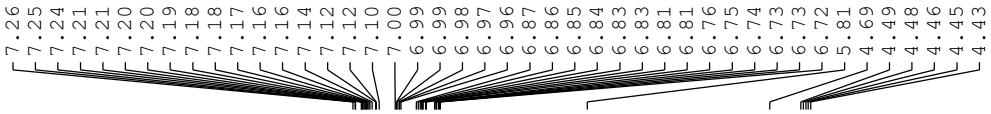
1s

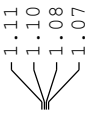
```
NAME          lzy-07-56-sm
EXPNO                    1
PROCNO                   1
Date_             20210719
Time                 16.55
INSTRUM              spect
PROBHD    5 mm DUL 13C-1
PULPROG               zg30
TD                   65536
SOLVENT              CDCl3
NS                       4
DS                       0
SWH               8223.685 Hz
FIDRES            0.125483 Hz
AQ               3.9846387 sec
RG                      64
DW                  60.800 usec
DE                   6.00 usec
TE                  300.0 K
D1              1.00000000 sec
TD0                      1

======== CHANNEL f1 ========
NUC1                    1H
P1                   15.80 usec
PL1                  -1.00 dB
PL1W          12.17476940 W
SFO1          400.1324710 MHz
SI                   32768
SF            400.1300124 MHz
WDW                     EM
SSB                      0
LB                    0.30 Hz
GB                       0
PC                    1.00
```

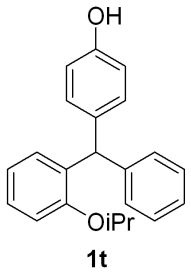




NAME	lzy-07-56-sm-C
EXPNO	1
PROCNO	1
Date_	20210719
Time	16.57
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	29
DS	0
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	2050
DW	20.800 usec
DE	6.00 usec
TE	300.0 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	40.00 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6127670 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

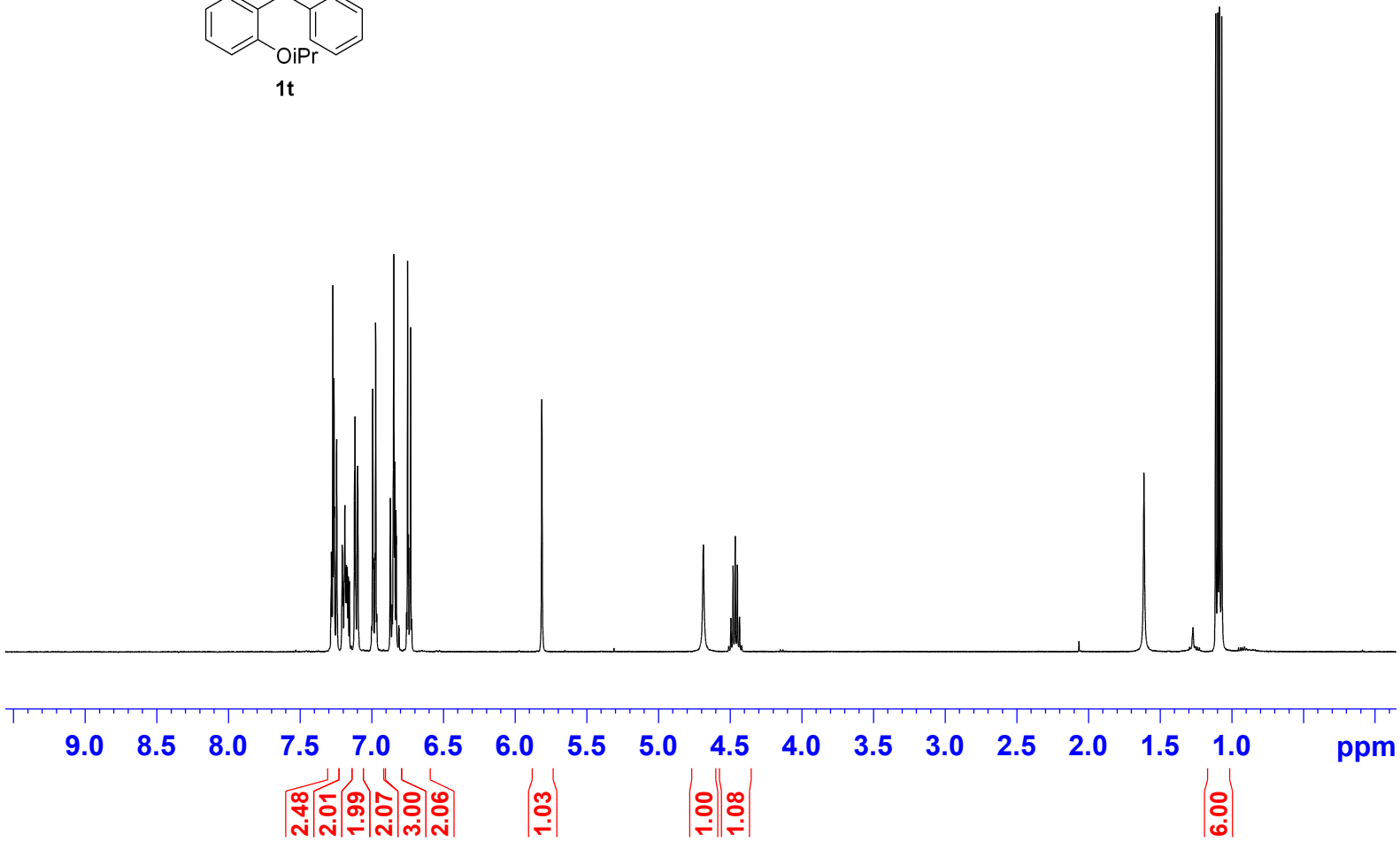


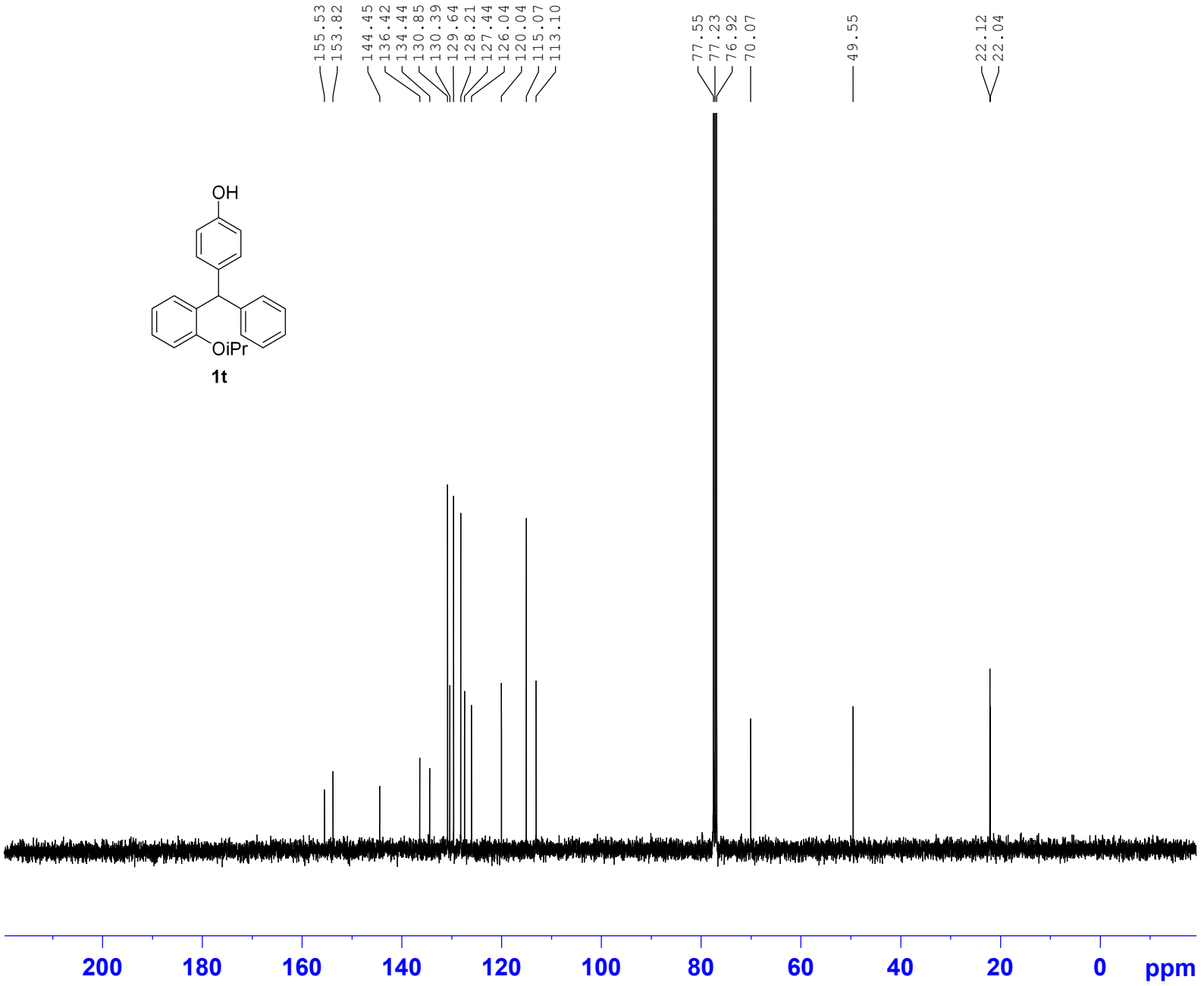




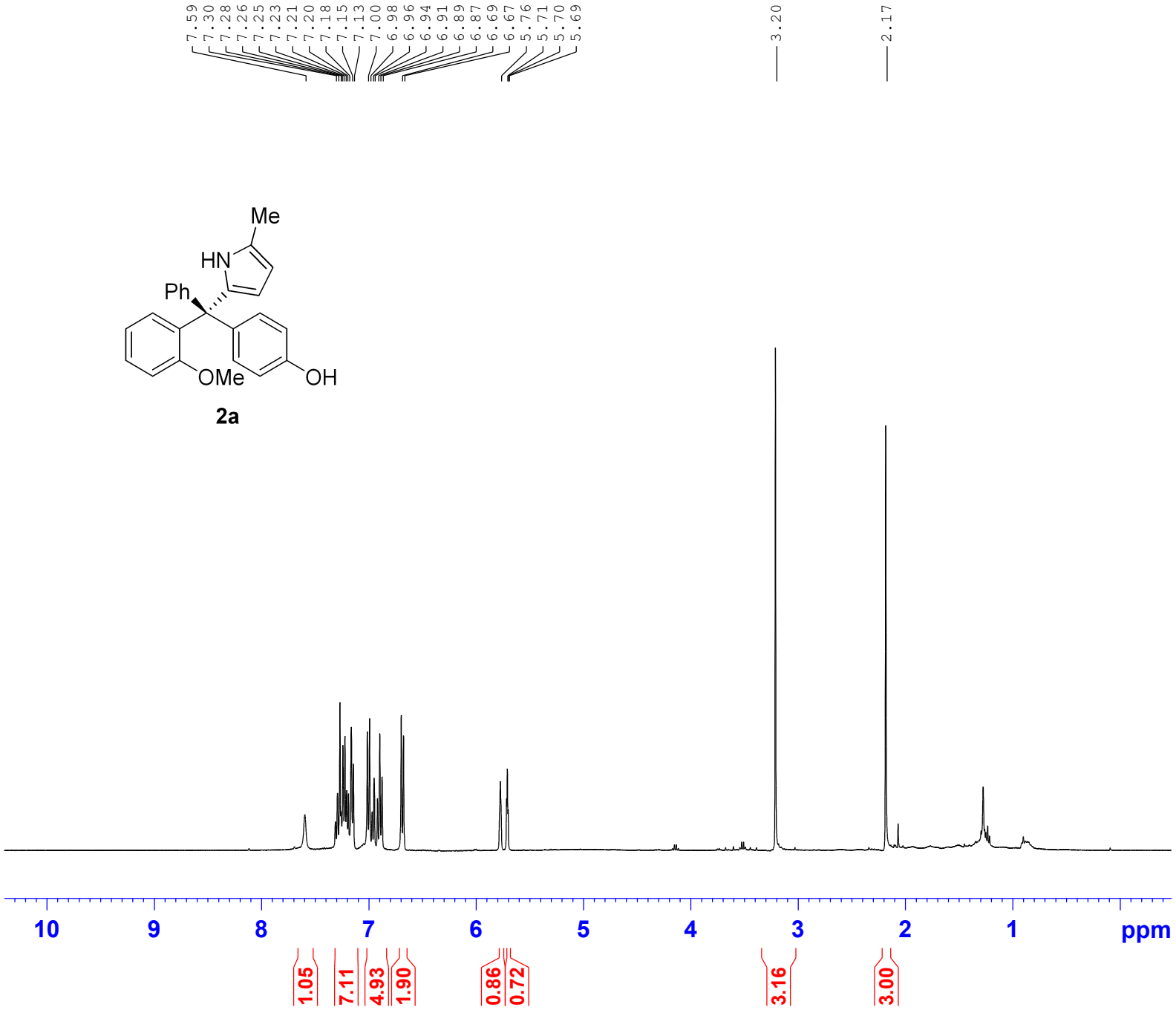
1t

NAME	lzy-07-59-2
EXPNO	3
PROCNO	1
Date_	20210715
Time	21.22
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zg30
TD	65536
SOLVENT	CDCl3
NS	6
DS	0
SWH	8223.685 Hz
FIDRES	0.125483 Hz
AQ	3.9846387 sec
RG	512
DW	60.800 usec
DE	6.00 usec
TE	293.8 K
D1	1.00000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	1H
P1	15.80 usec
PL1	-1.00 dB
PL1W	12.17476940 W
SFO1	400.1324710 MHz
SI	32768
SF	400.1300054 MHz
WDW	EM
SSB	0
LB	0.30 Hz
GB	0
PC	1.00

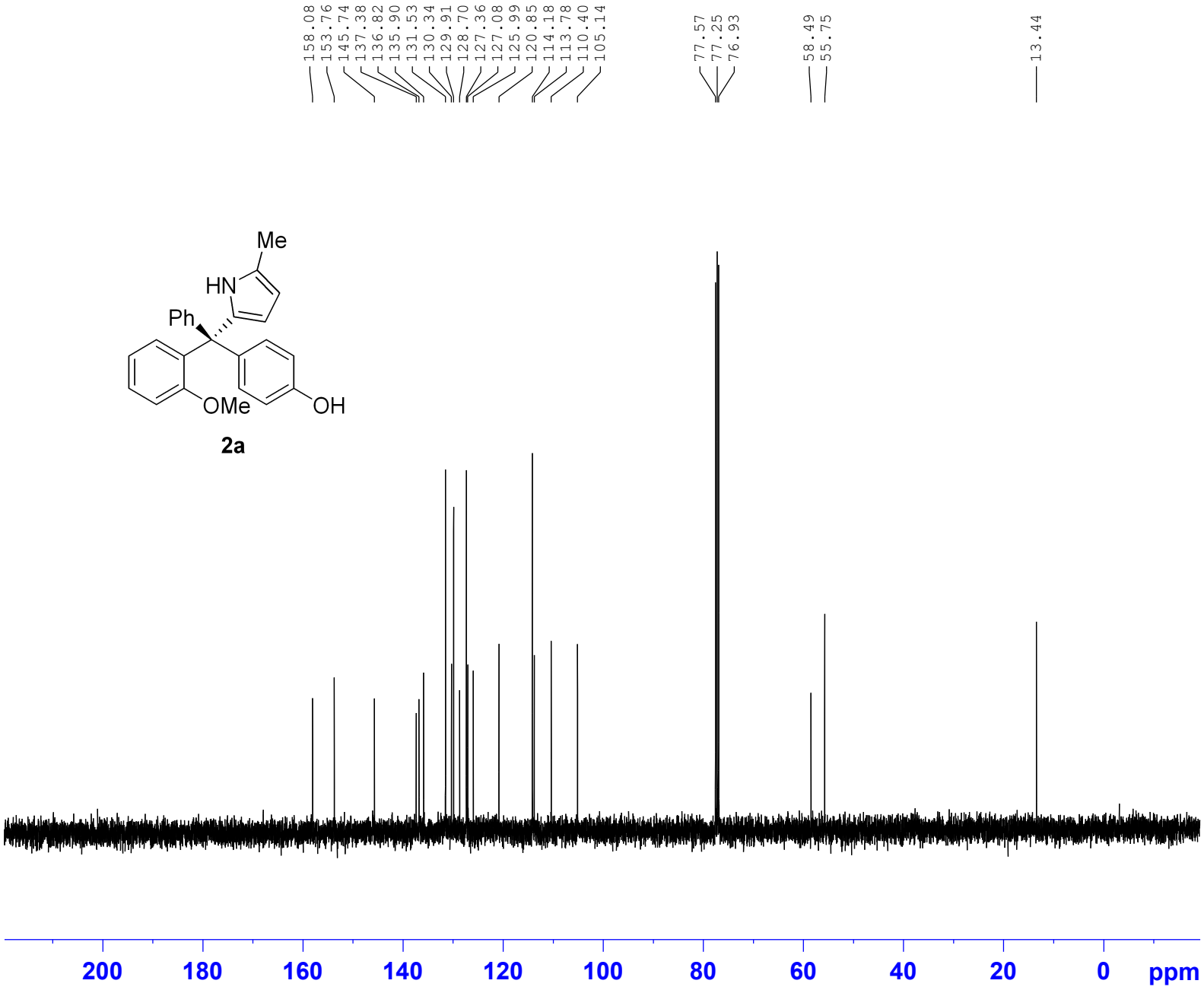




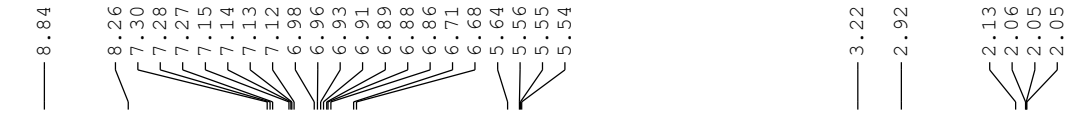
NAME	lzy-07-59-2-C
EXPNO	2
PROCNO	1
Date_	20210715
Time	20.23
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	800
DS	1
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	2050
DW	20.800 usec
DE	6.00 usec
TE	294.0 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	40.00 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6127489 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

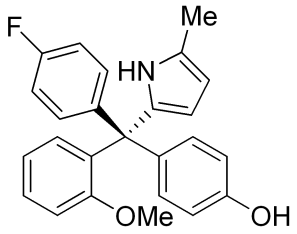


NAME	Lzy-2a
EXPNO	2
PROCNO	1
Date_	20200226
Time	17.02
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zg30
TD	65536
SOLVENT	CDCl3
NS	9
DS	2
SWH	8223.685 Hz
FIDRES	0.125483 Hz
AQ	3.9846387 sec
RG	256
DW	60.800 usec
DE	6.00 usec
TE	294.6 K
D1	1.00000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	1H
P1	15.80 usec
PL1	-1.00 dB
PL1W	12.17476940 W
SFO1	400.1324710 MHz
SI	32768
SF	400.1300054 MHz
WDW	EM
SSB	0
LB	0.30 Hz
GB	0
PC	1.00



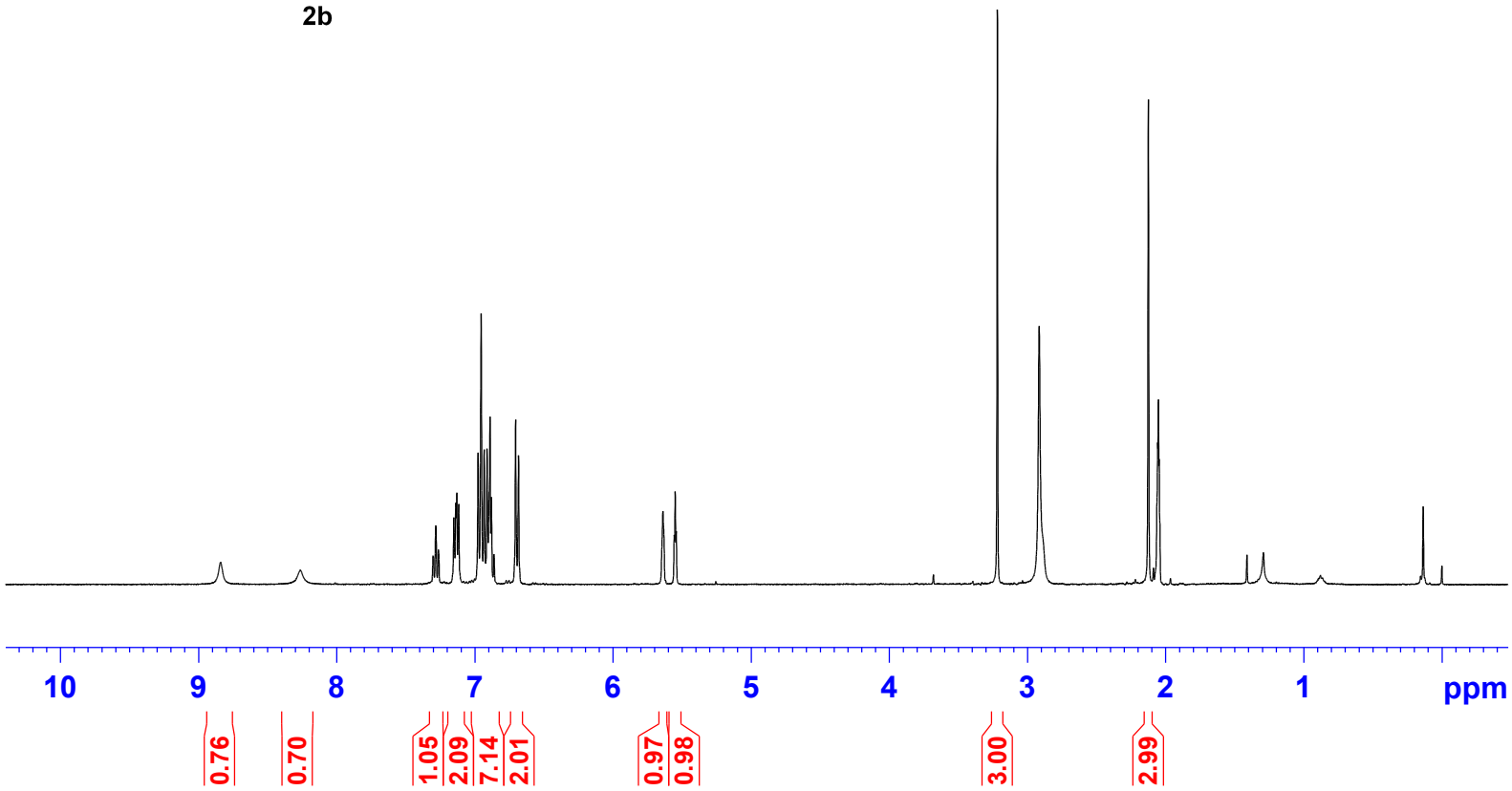
NAME	Lzy-2a-C
EXPNO	1
PROCNO	1
Date_	20200420
Time	18.52
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	32
DS	0
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	128
DW	20.800 usec
DE	6.00 usec
TE	295.4 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.60 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6127519 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

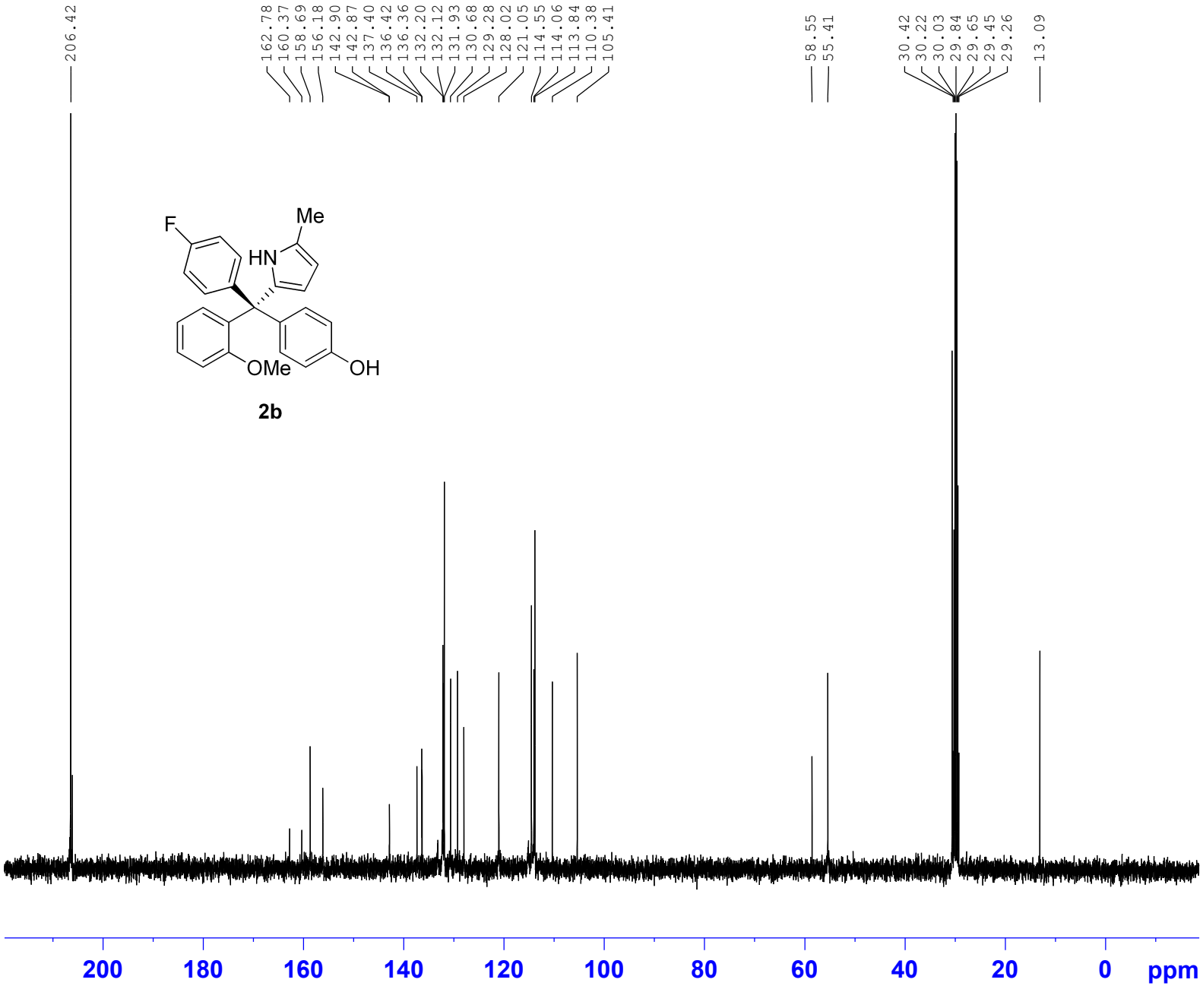




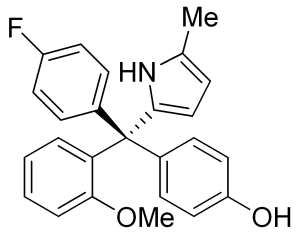
2b

```
NAME                Lzy-2b
EXPNO                    1
PROCNO                   1
Date_             20200207
Time                 11.45
INSTRUM              spect
PROBHD    5 mm PABBO BB-
PULPROG               zg30
TD                   65536
SOLVENT            Acetone
NS                       15
DS                        2
SWH                8223.685 Hz
FIDRES            0.125483 Hz
AQ                3.9846387 sec
RG                      575
DW                   60.800 usec
DE                    6.00 usec
TE                   295.0 K
D1              1.00000000 sec
TD0                      1

======== CHANNEL f1 ========
NUC1                    1H
P1                   15.80 usec
PL1                  -1.00 dB
PL1W          12.17476940 W
SFO1          400.1324710 MHz
SI                   32768
SF            400.1300054 MHz
WDW                     EM
SSB                      0
LB                    0.30 Hz
GB                       0
PC                    1.00
```



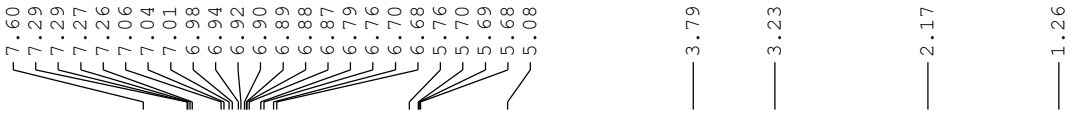


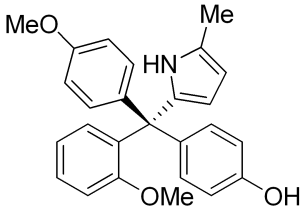
NAME	Lzy-2b-C
EXPNO	1
PROCNO	1
Date_	20200420
Time	18.37
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgpg30
TD	65536
SOLVENT	Acetone
NS	30
DS	2
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	203
DW	20.800 usec
DE	6.00 usec
TE	295.9 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.60 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6126899 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40



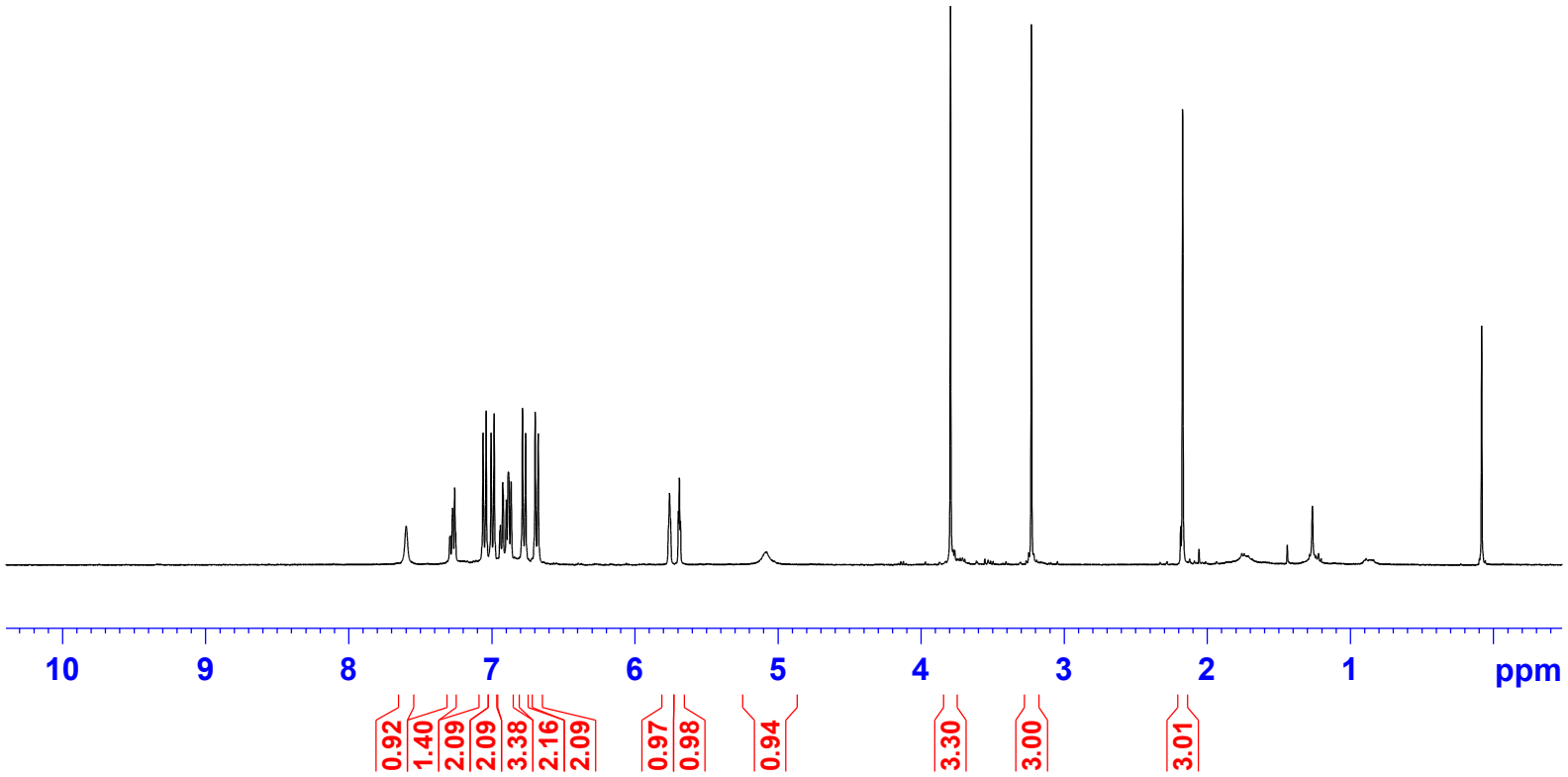
2b

NAME	Lzy-2b-F	
EXPNO	1	
PROCNO	1	
Date_	20200207	
Time	11.59	
INSTRUM	spect	
PROBHD	5 mm PABBO BB-	
PULPROG	zgflqn	
TD	131072	
SOLVENT	Acetone	
NS	7	
DS	4	
SWH	89285.711	Hz
FIDRES	0.681196	Hz
AQ	0.7340532	sec
RG	1290	
DW	5.600	usec
DE	6.00	usec
TE	294.9	K
D1	1.00000000	sec
TD0	1	
======== CHANNEL f1 ========		
NUC1	19F	
P1	19.50	usec
PL1	-4.00	dB
PL1W	16.97275162	W
SFO1	376.4607164	MHz
SI	65536	
SF	376.4983660	MHz
WDW	EM	
SSB	5	
LB	0.30	Hz
GB	0.05	
PC	1.00	

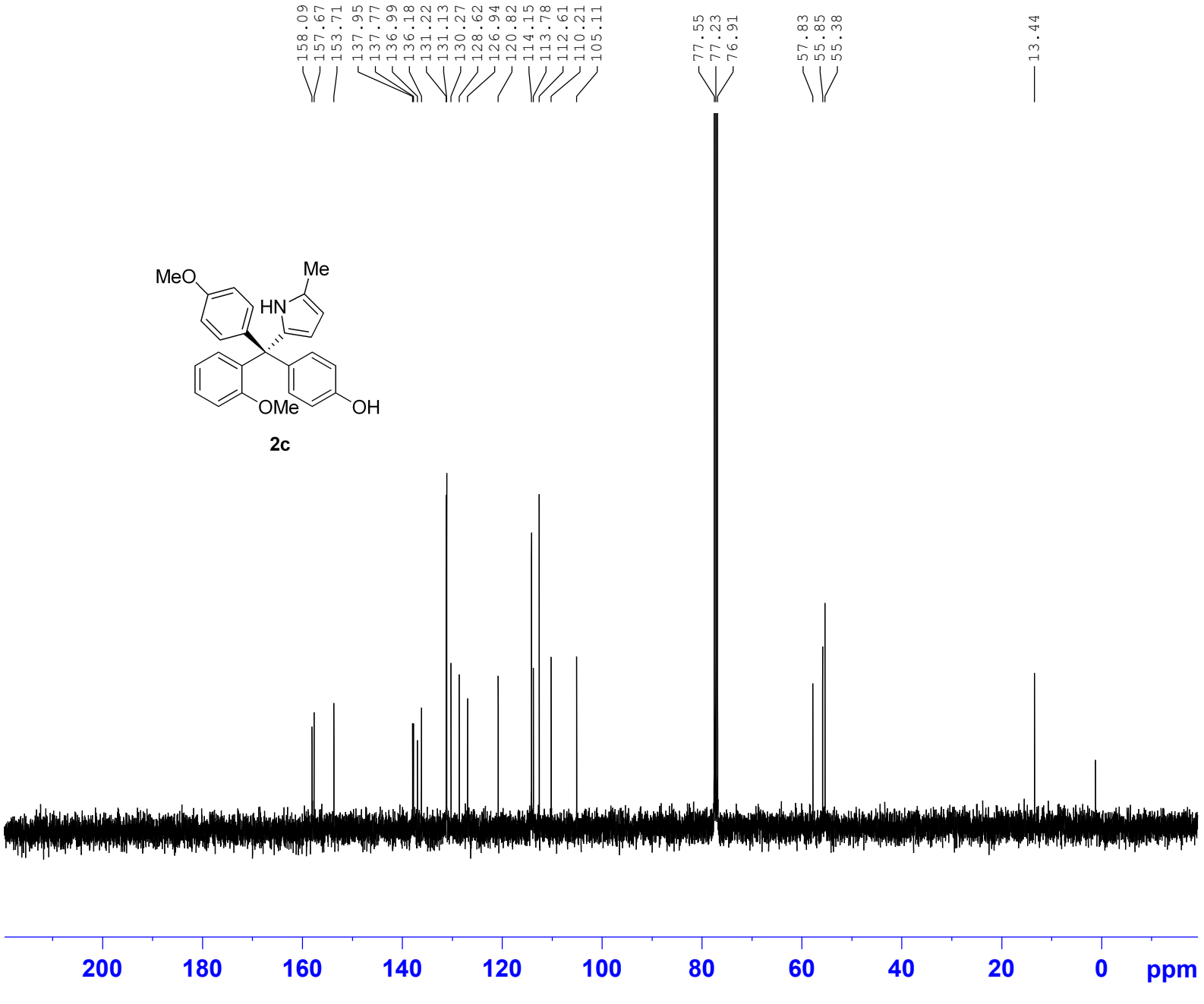




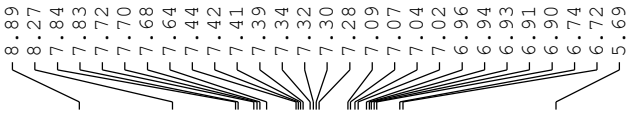
2c

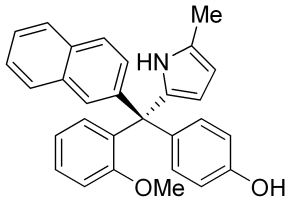



```
NAME                Lzy-2c
EXPNO                    1
PROCNO                   1
Date_             20200420
Time                 18.57
INSTRUM              spect
PROBHD    5 mm PABBO BB-
PULPROG               zg30
TD                   65536
SOLVENT              CDCl3
NS                       6
DS                       0
SWH               8223.685 Hz
FIDRES            0.125483 Hz
AQ               3.9846387 sec
RG                     256
DW                  60.800 usec
DE                   6.00 usec
TE                  295.1 K
D1              1.00000000 sec
TD0                      1

======== CHANNEL f1 ========
NUC1                    1H
P1                   15.80 usec
PL1                  -1.00 dB
PL1W          12.17476940 W
SFO1          400.1324710 MHz
SI                   32768
SF            400.1300093 MHz
WDW                     EM
SSB                      0
LB                    0.30 Hz
GB                       0
PC                    1.00
```



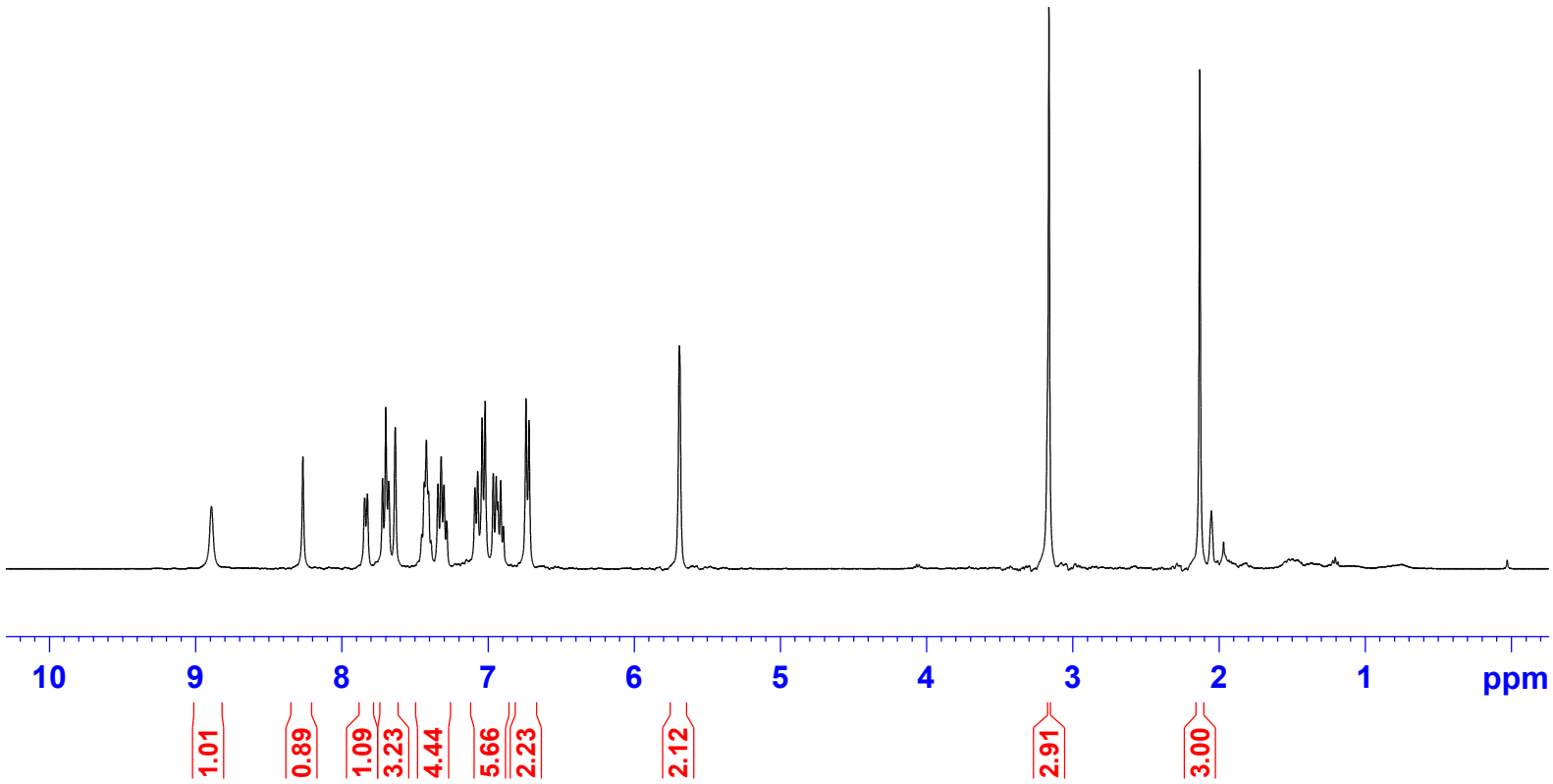
NAME	Lzy-2c-C
EXPNO	1
PROCNO	1
Date_	20200420
Time	19.01
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	90
DS	0
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	181
DW	20.800 usec
DE	6.00 usec
TE	295.5 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.60 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6127505 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

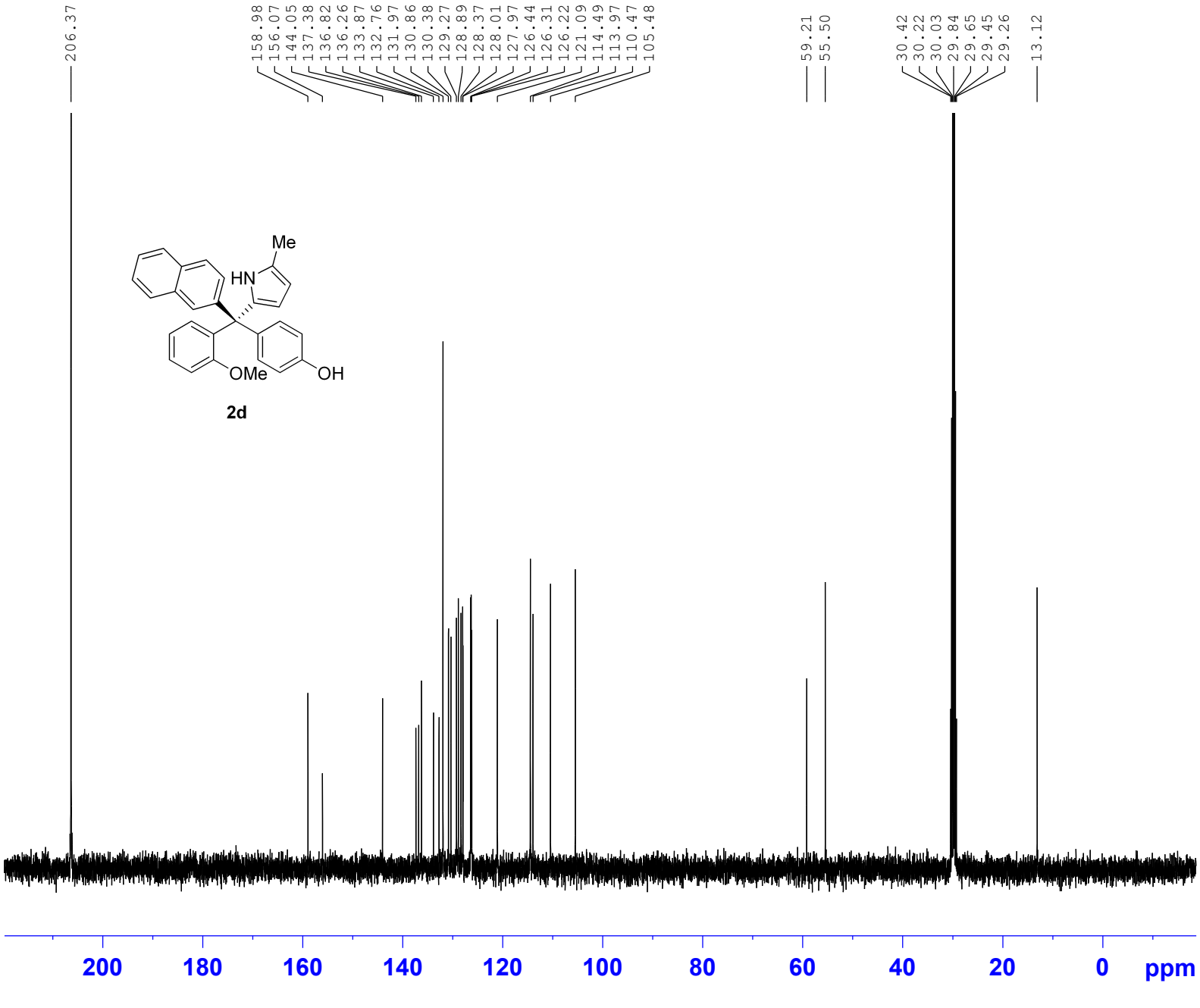




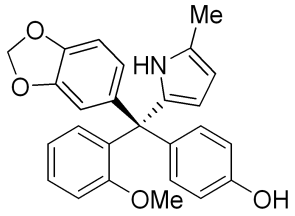
2d

```
NAME                Lzy-2d
EXPNO                    1
PROCNO                   1
Date_             20200321
Time                 16.58
INSTRUM              spect
PROBHD    5 mm PABBO BB-
PULPROG               zg30
TD                   65536
SOLVENT            Acetone
NS                       1
DS                       0
SWH               8223.685 Hz
FIDRES            0.125483 Hz
AQ               3.9846387 sec
RG                      64
DW                 60.800 usec
DE                  6.00 usec
TE                 295.2 K
D1              1.00000000 sec
TD0                      1

======== CHANNEL f1 ========
NUC1                    1H
P1                  15.80 usec
PL1                 -1.00 dB
PL1W          12.17476940 W
SFO1          400.1324710 MHz
SI                   32768
SF            400.1300054 MHz
WDW                    EM
SSB                     0
LB                   0.30 Hz
GB                      0
PC                   1.00
```





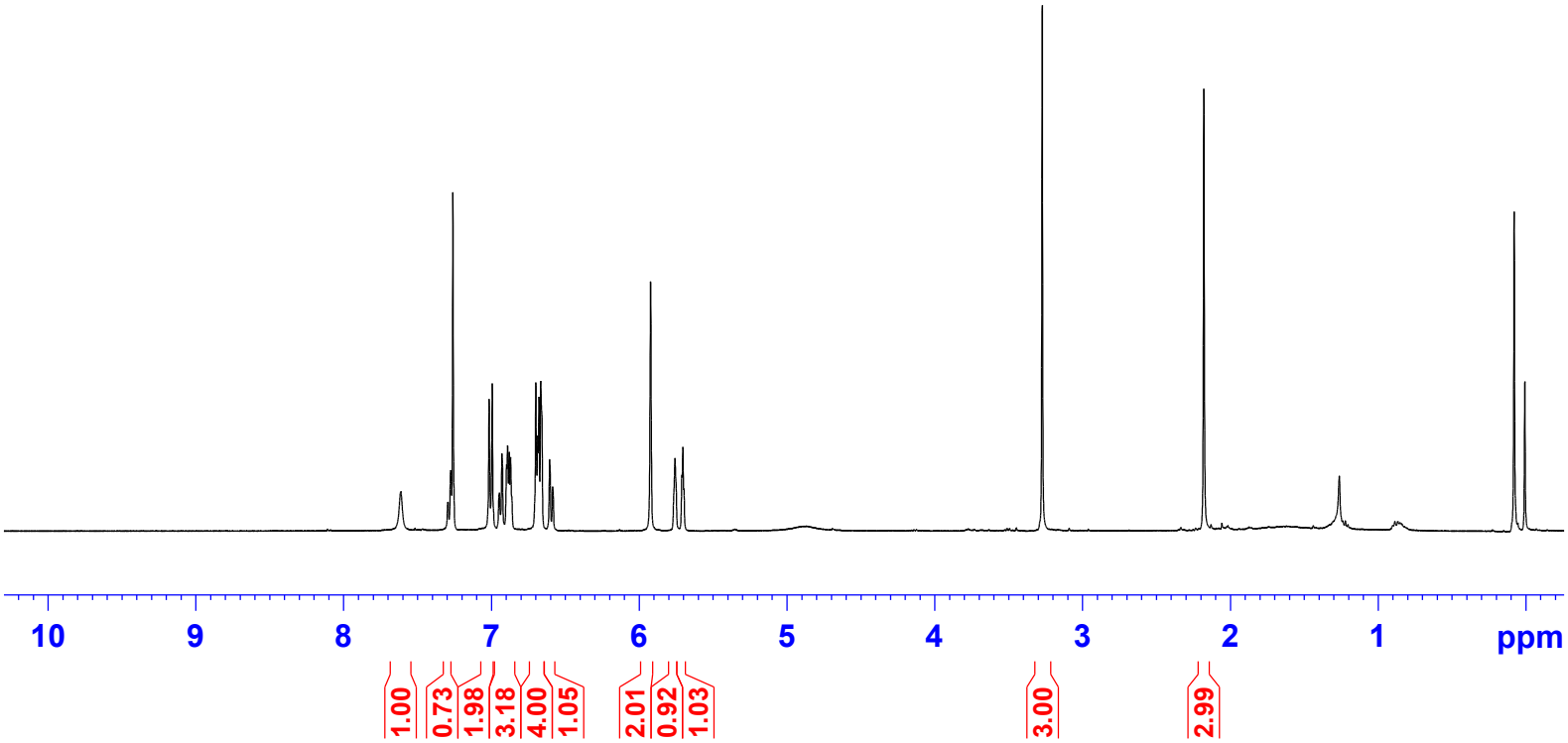
NAME	Lzy-2d-C
EXPNO	1
PROCNO	1
Date_	20200321
Time	17.04
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgpg30
TD	65536
SOLVENT	Acetone
NS	23
DS	0
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	161
DW	20.800 usec
DE	6.00 usec
TE	295.6 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.60 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6126907 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

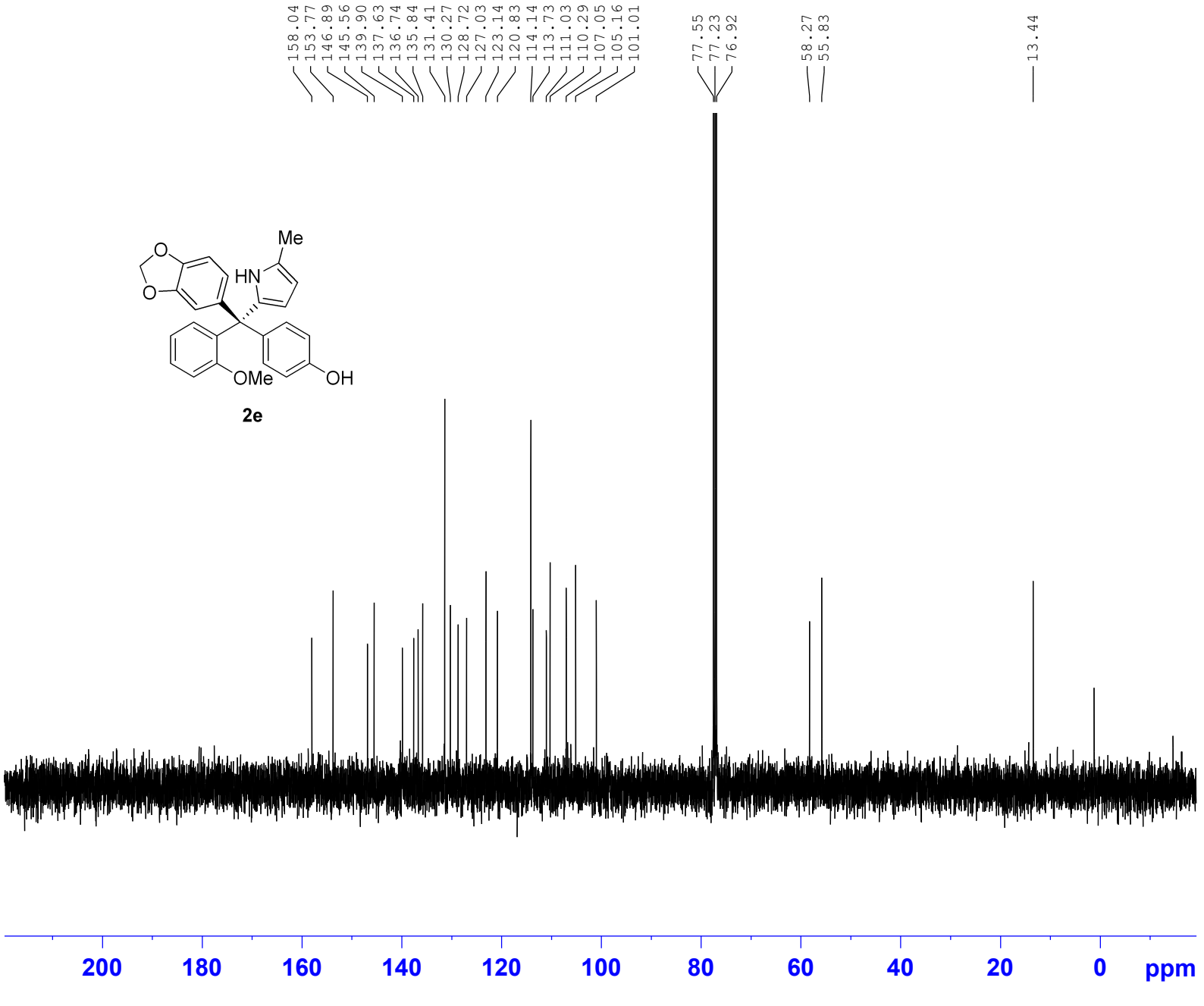


2e

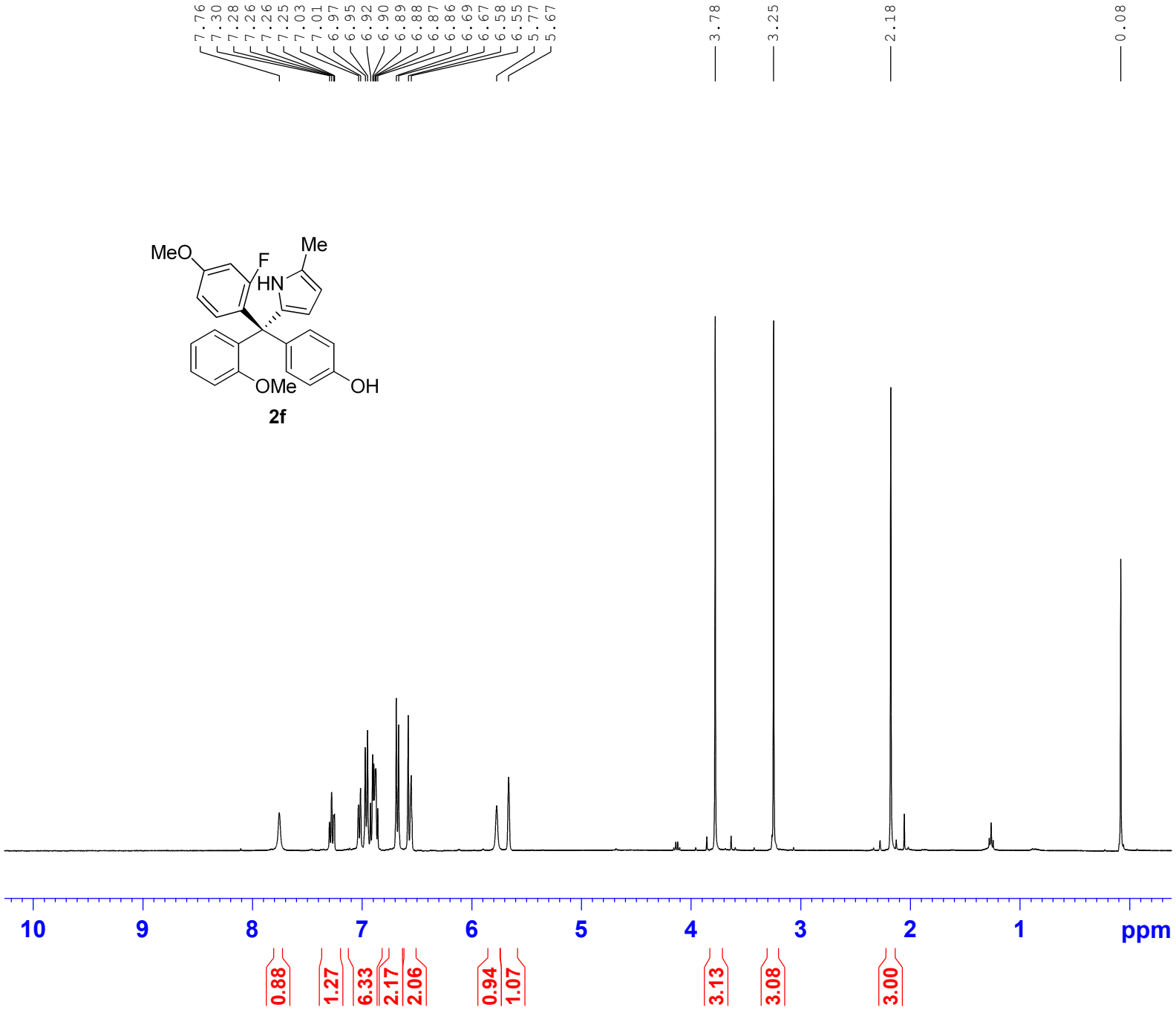
NAME	Lzy-2e
EXPNO	6
PROCNO	1
Date_	20200304
Time	15.48
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zg30
TD	65536
SOLVENT	CDCl3
NS	16
DS	2
SWH	8223.685 Hz
FIDRES	0.125483 Hz
AQ	3.9846387 sec
RG	287
DW	60.800 usec
DE	6.00 usec
TE	294.7 K
D1	1.00000000 sec
TD0	1

======== CHANNEL f1 ========	
NUC1	1H
P1	15.80 usec
PL1	-1.00 dB
PL1W	12.17476940 W
SFO1	400.1324710 MHz
SI	32768
SF	400.1300090 MHz
WDW	EM
SSB	0
LB	0.30 Hz
GB	0
PC	1.00



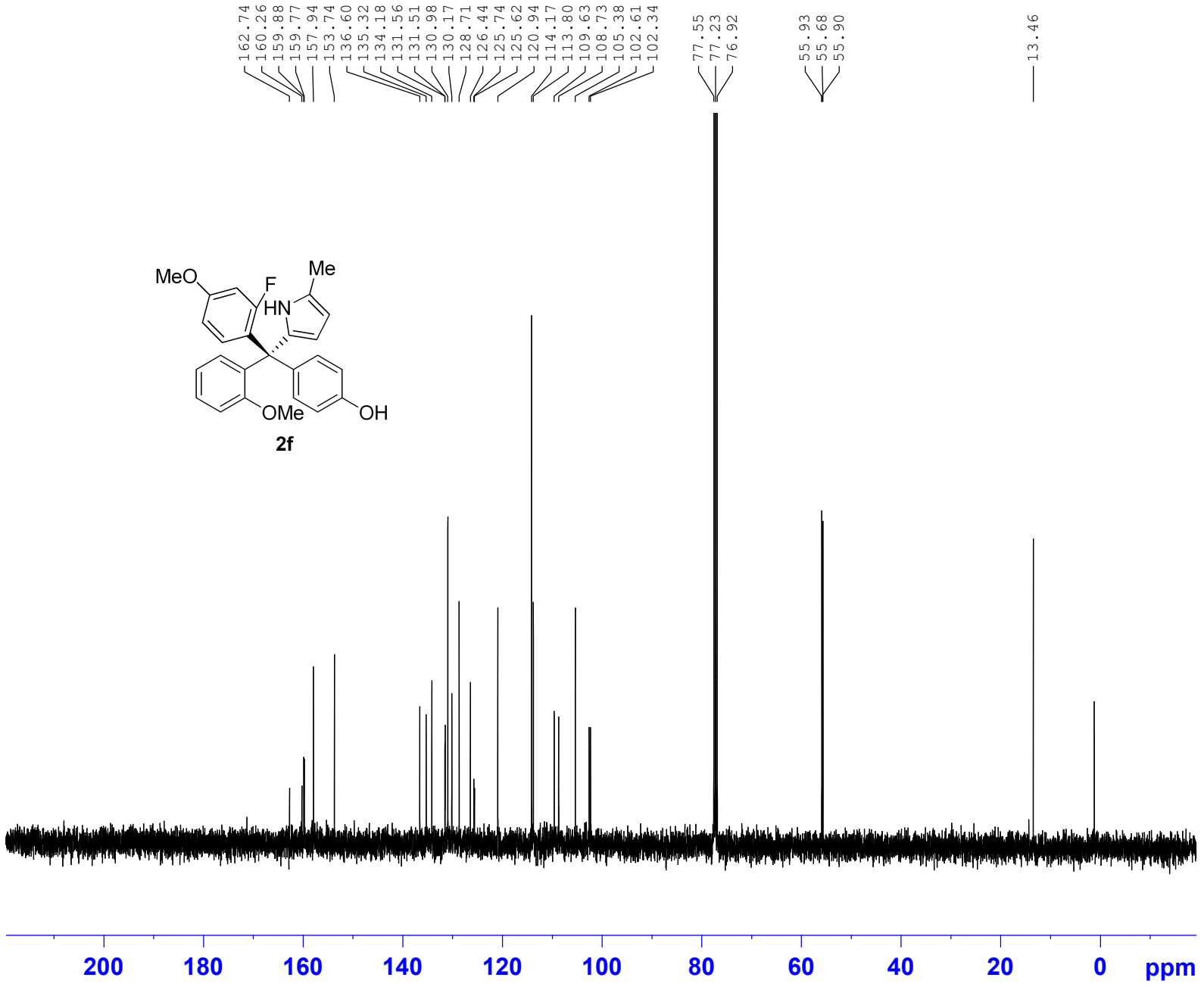



```
NAME            Lzy-2e-C
EXPNO                  1
PROCNO                 1
Date_           20200320
Time               19.38
INSTRUM            spect
PROBHD   5 mm PABBO BB-
PULPROG          zgpg30
TD                 65536
SOLVENT            CDCl3
NS                    38
DS                     2
SWH            24038.461 Hz
FIDRES          0.366798 Hz
AQ             1.3631988 sec
RG                   128
DW                20.800 usec
DE                 6.00 usec
TE                294.9 K
D1           2.00000000 sec
D11          0.03000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                  13C
P1                   8.60 usec
PL1                 -3.00 dB
PL1W         60.64365387 W
SFO1        100.6228298 MHz

======== CHANNEL f2 ========
CPDPRG2           waltz16
NUC2                  1H
PCPD2              80.00 usec
PL2                -1.00 dB
PL12               14.39 dB
PL13               18.00 dB
PL2W         12.17476940 W
PL12W         0.35193357 W
PL13W         0.15327126 W
SFO2        400.1316005 MHz
SI                 32768
SF          100.6127510 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  1.40
```

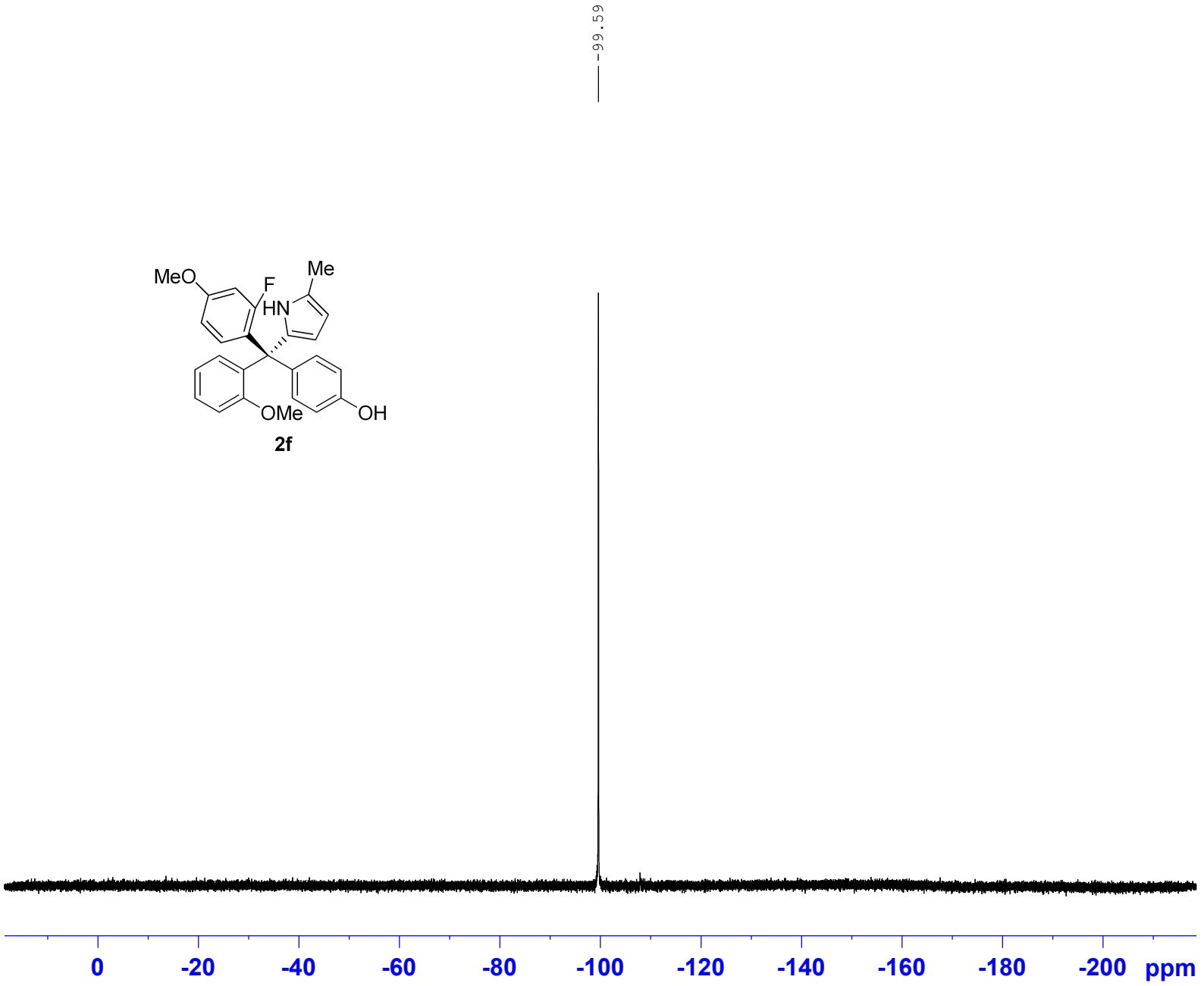


NAME	Lzy-2f
EXPNO	1
PROCNO	1
Date_	20200320
Time	19.44
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zg30
TD	65536
SOLVENT	CDCl3
NS	6
DS	0
SWH	8223.685 Hz
FIDRES	0.125483 Hz
AQ	3.9846387 sec
RG	203
DW	60.800 usec
DE	6.00 usec
TE	294.7 K
D1	1.00000000 sec
TD0	1

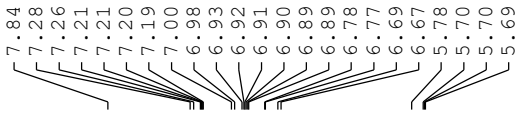
======== CHANNEL f1 ========	
NUC1	1H
P1	15.80 usec
PL1	-1.00 dB
PL1W	12.17476940 W
SFO1	400.1324710 MHz
SI	32768
SF	400.1300128 MHz
WDW	EM
SSB	0
LB	0.30 Hz
GB	0
PC	1.00

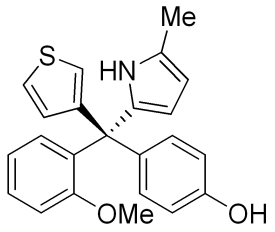


NAME	Lzy-2f-C
EXPNO	1
PROCNO	1
Date_	20200320
Time	19.46
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	81
DS	2
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	161
DW	20.800 usec
DE	6.00 usec
TE	295.1 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.60 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6127519 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40



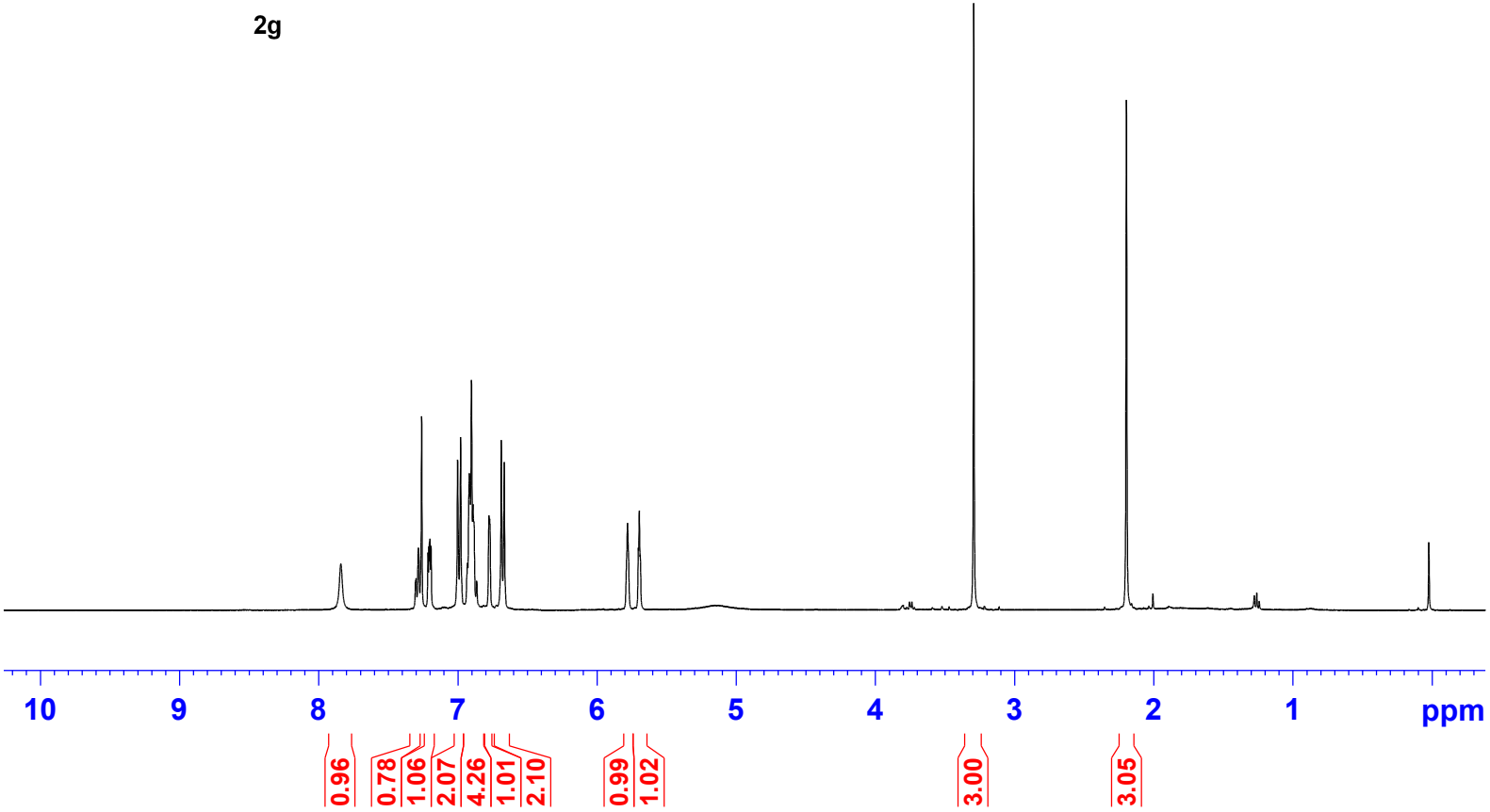
NAME	Lzy-2f-F
EXPNO	1
PROCNO	1
Date_	20200320
Time	19.53
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgflqn
TD	131072
SOLVENT	CDCl3
NS	2
DS	0
SWH	89285.711 Hz
FIDRES	0.681196 Hz
AQ	0.7340532 sec
RG	1620
DW	5.600 usec
DE	6.00 usec
TE	294.8 K
D1	1.00000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	19F
P1	19.50 usec
PL1	-4.00 dB
PL1W	16.97275162 W
SFO1	376.4607164 MHz
SI	65536
SF	376.4983660 MHz
WDW	EM
SSB	0
LB	0.30 Hz
GB	0
PC	1.00

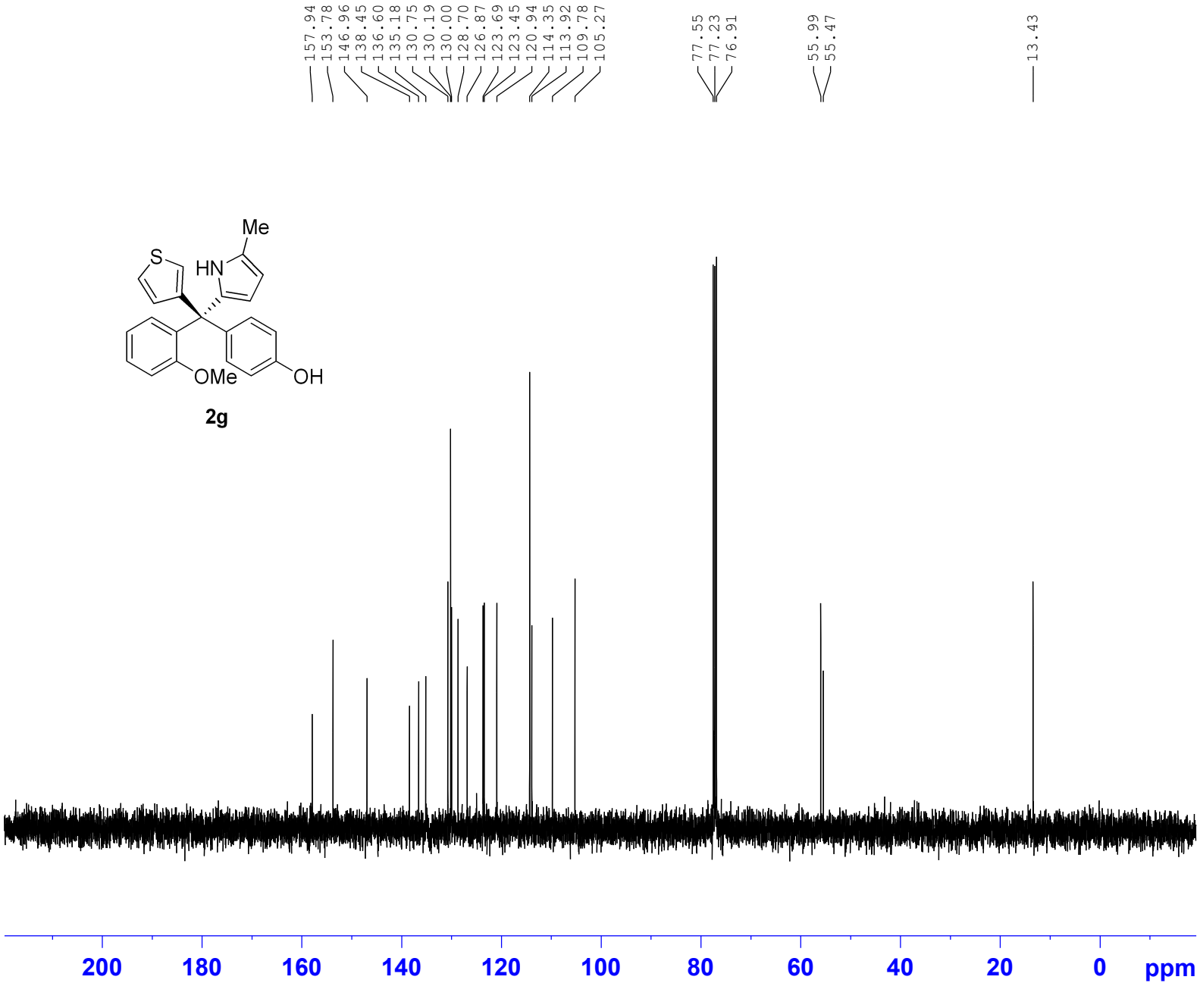




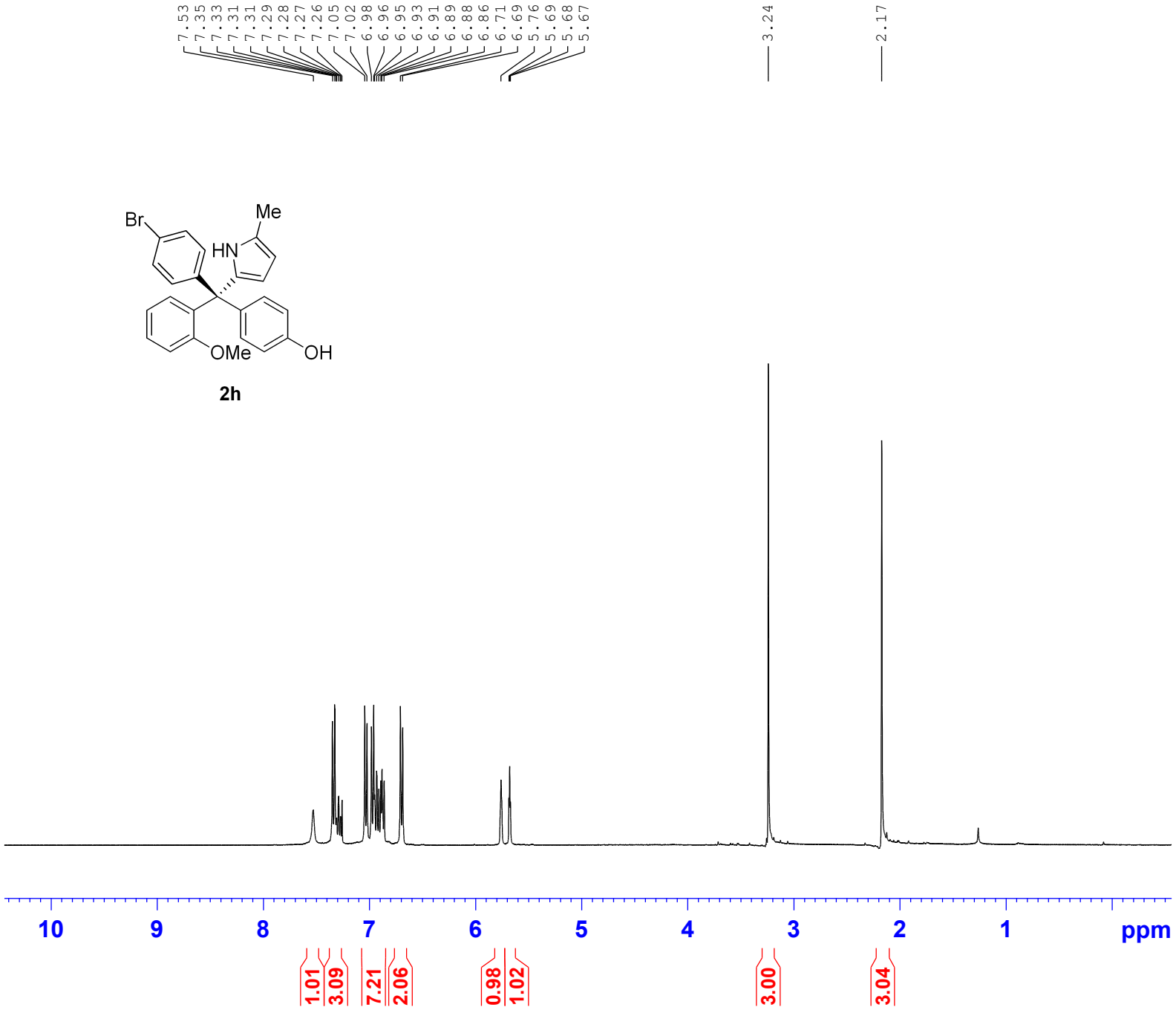
2g

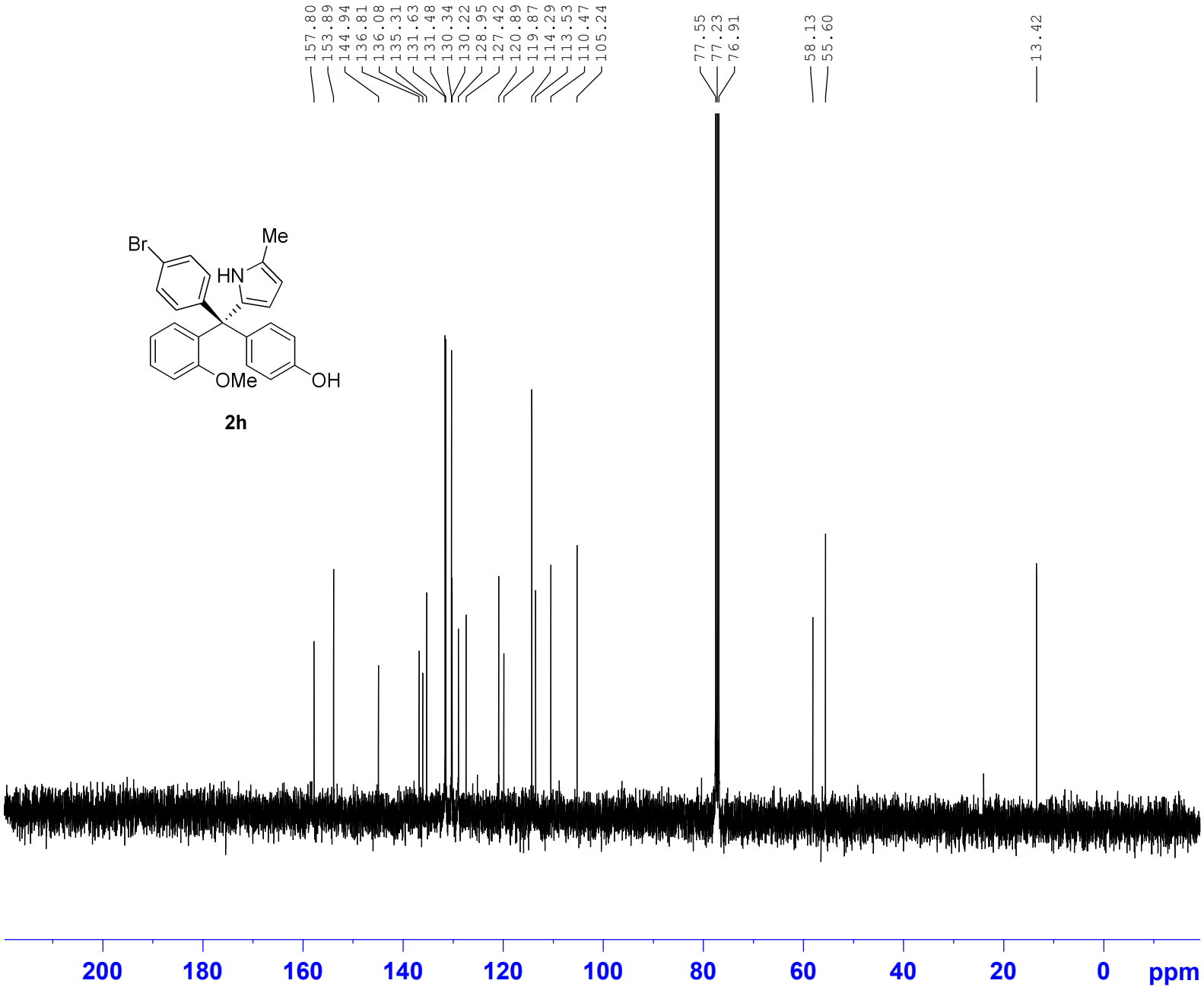
```
NAME                Lzy-2g
EXPNO                    1
PROCNO                   1
Date_             20200301
Time                 19.22
INSTRUM              spect
PROBHD    5 mm PABBO BB-
PULPROG               zg30
TD                   65536
SOLVENT              CDCl3
NS                       3
DS                       2
SWH               8223.685 Hz
FIDRES            0.125483 Hz
AQ               3.9846387 sec
RG                     161
DW                  60.800 usec
DE                   6.00 usec
TE                  295.7 K
D1              1.00000000 sec
TD0                      1

======== CHANNEL f1 ========
NUC1                    1H
P1                   15.80 usec
PL1                  -1.00 dB
PL1W          12.17476940 W
SFO1          400.1324710 MHz
SI                   32768
SF            400.1300099 MHz
WDW                    EM
SSB                     0
LB                   0.30 Hz
GB                      0
PC                   1.00
```



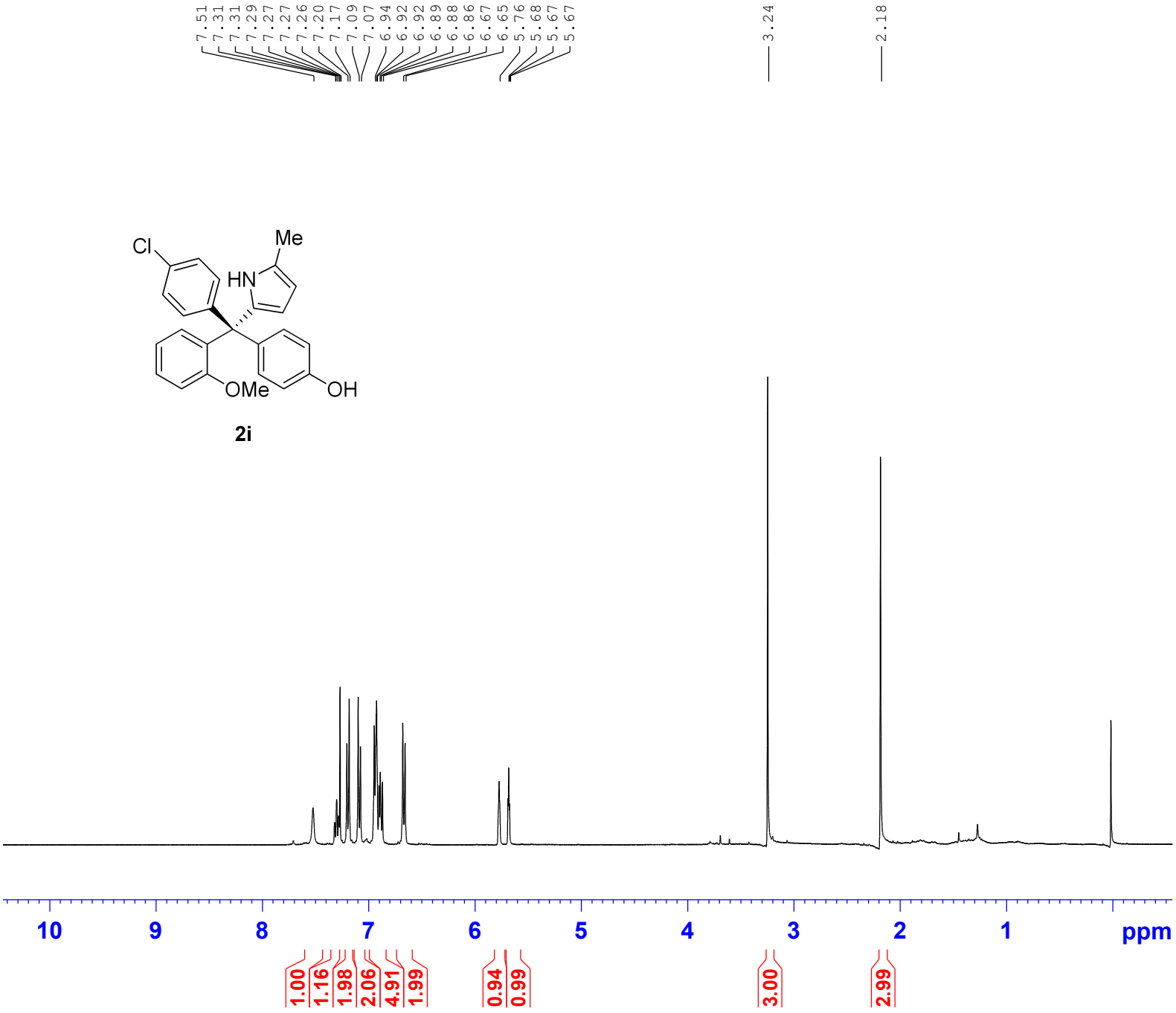


NAME	Lzy-2g-C
EXPNO	1
PROCNO	1
Date_	20200301
Time_	19.25
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	20
DS	2
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	128
DW	20.800 usec
DE	6.00 usec
TE	296.2 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.60 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6127539 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

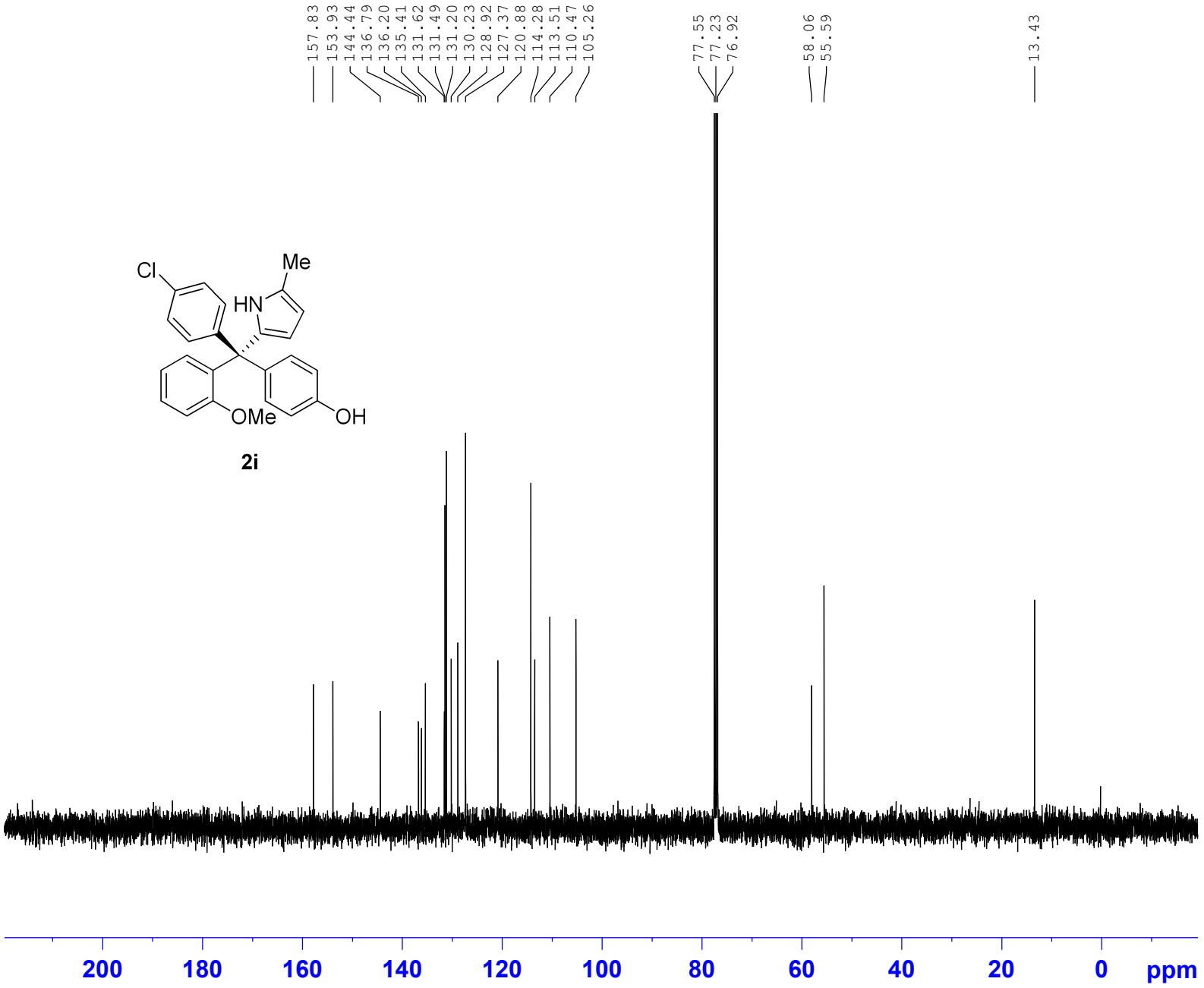

7.53
7.35
7.33
7.31
7.31
7.29
7.28
7.27
7.26
7.05
7.02
6.98
6.96
6.95
6.93
6.91
6.89
6.88
6.86
6.71
6.69
5.76
5.69
5.68
5.67
3.24
2.17
Br
Me
HN
OMe
OH
2h
NAME Lzy-2h
EXPNO 3
PROCNO 1
Date_ 20200421
Time 10.33
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 3
DS 0
SWH 8223.685 Hz
FIDRES 0.125483 Hz
AQ 3.9846387 sec
RG 287
DW 60.800 usec
DE 6.00 usec
TE 294.9 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 1H
P1 15.80 usec
PL1 -1.00 dB
PL1W 12.17476940 W
SFO1 400.1324710 MHz
SI 32768
SF 400.1300099 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
10
9
8
7
6
5
4
3
2
1
ppm
1.01
3.09
7.21
2.06
0.98
1.02
3.00
3.04



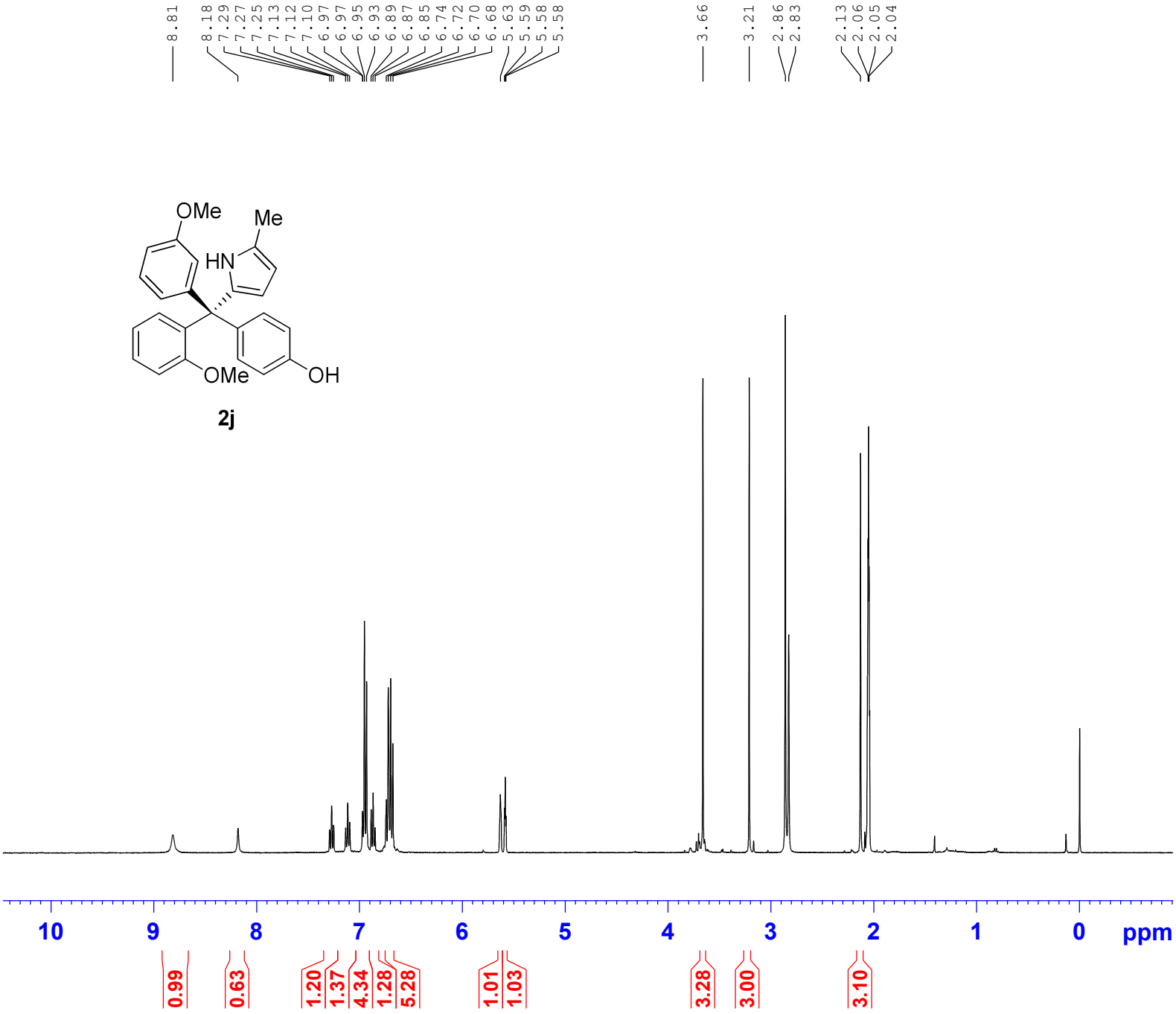
NAME	Lzy-2h-C
EXPNO	3
PROCNO	1
Date_	20200421
Time	10.40
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	101
DS	0
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	161
DW	20.800 usec
DE	6.00 usec
TE	295.2 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.60 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6127510 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40



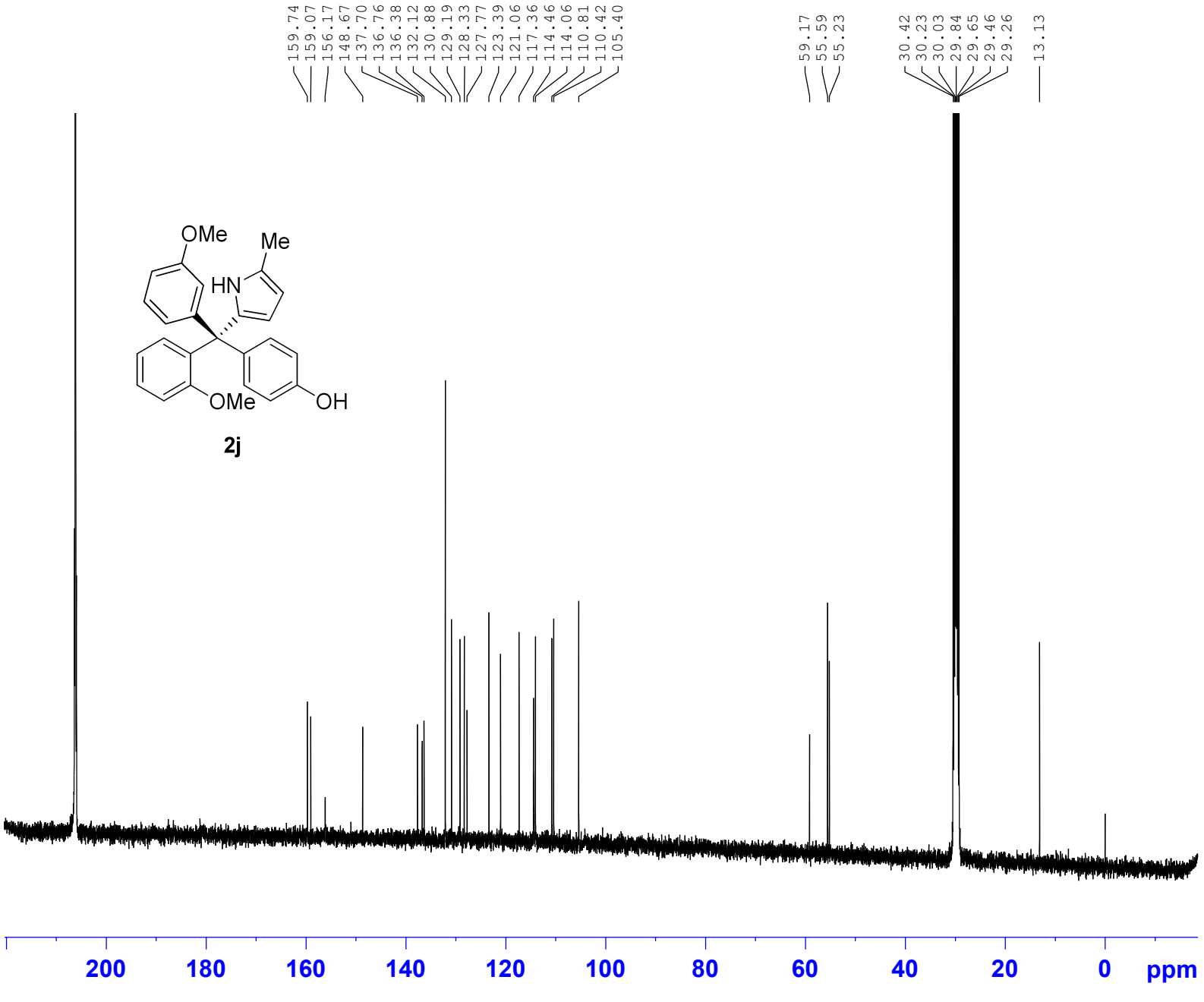
NAME	Lzy-2i
EXPNO	1
PROCNO	1
Date_	20200314
Time	15.53
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zg30
TD	65536
SOLVENT	CDCl3
NS	8
DS	2
SWH	8223.685 Hz
FIDRES	0.125483 Hz
AQ	3.9846387 sec
RG	287
DW	60.800 usec
DE	6.00 usec
TE	294.7 K
D1	1.00000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	1H
P1	15.80 usec
PL1	-1.00 dB
PL1W	12.17476940 W
SFO1	400.1324710 MHz
SI	32768
SF	400.1300054 MHz
WDW	EM
SSB	0
LB	0.30 Hz
GB	0
PC	1.00



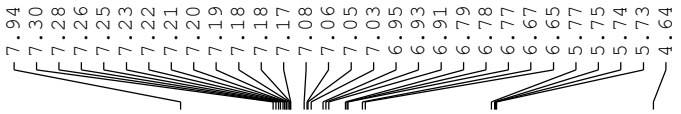
NAME	Lzy-2i-C
EXPNO	1
PROCNO	1
Date_	20200314
Time	16.01
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	124
DS	2
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	80.6
DW	20.800 usec
DE	6.00 usec
TE	295.1 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.60 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6127498 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

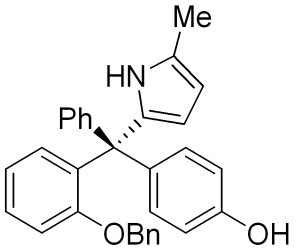



```
NAME                Lzy-2j
EXPNO                    1
PROCNO                   1
Date_             20200203
Time                 19.48
INSTRUM              spect
PROBHD    5 mm PABBO BB-
PULPROG                zg30
TD                    65536
SOLVENT             Acetone
NS                       16
DS                        2
SWH                8223.685 Hz
FIDRES            0.125483 Hz
AQ                3.9846387 sec
RG                      456
DW                 60.800 usec
DE                  6.00 usec
TE                  294.7 K
D1              1.00000000 sec
TD0                      1

======== CHANNEL f1 ========
NUC1                    1H
P1                  15.80 usec
PL1                 -1.00 dB
PL1W          12.17476940 W
SFO1          400.1324710 MHz
SI                   32768
SF            400.1300062 MHz
WDW                     EM
SSB                      0
LB                  0.30 Hz
GB                       0
PC                    1.00
```



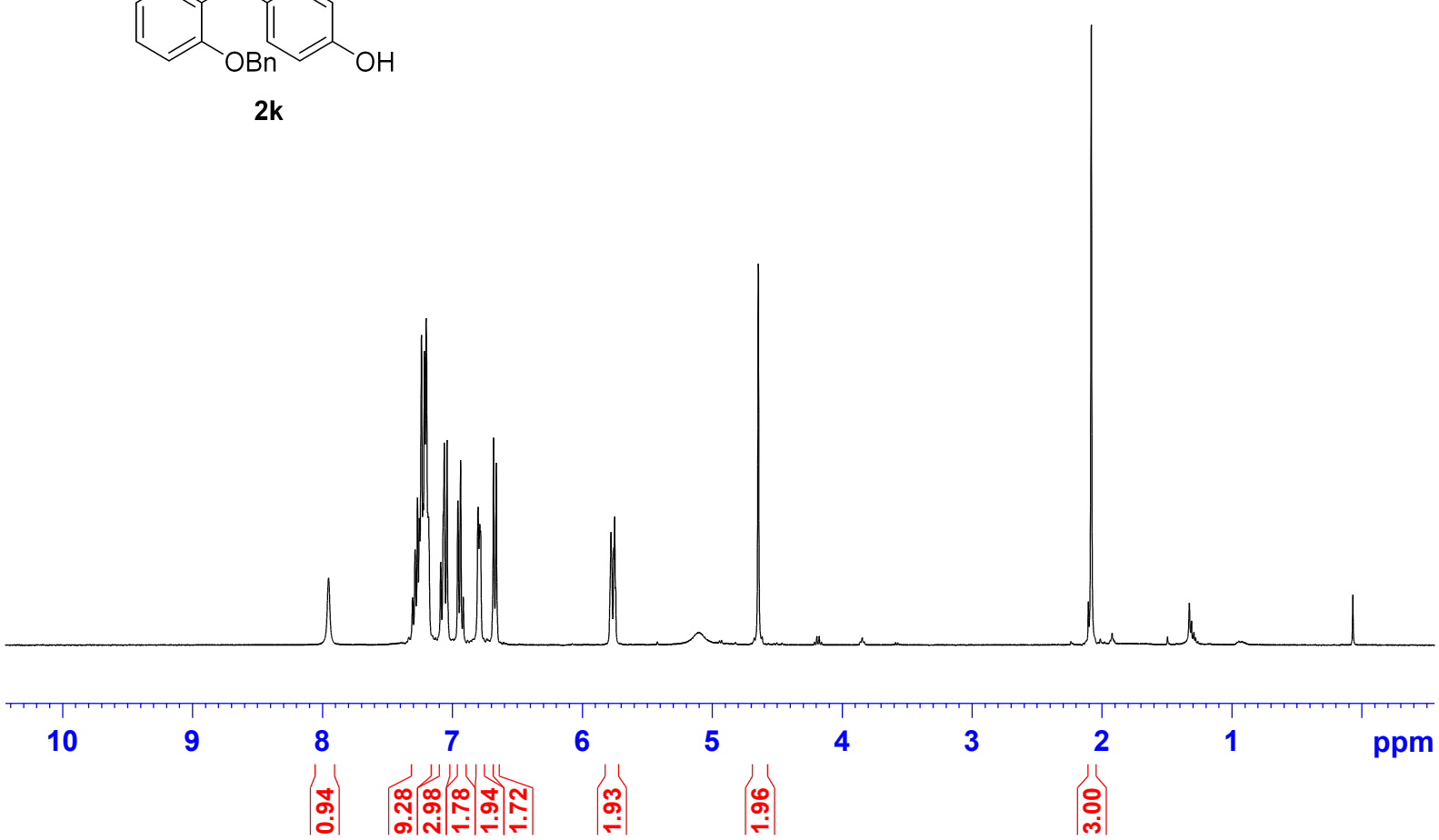
NAME	Lzy-2j-C-new
EXPNO	1
PROCNO	1
Date_	20200207
Time	9.38
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgpg30
TD	65536
SOLVENT	Acetone
NS	9539
DS	2
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	114
DW	20.800 usec
DE	6.00 usec
TE	296.1 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.60 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6126782 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

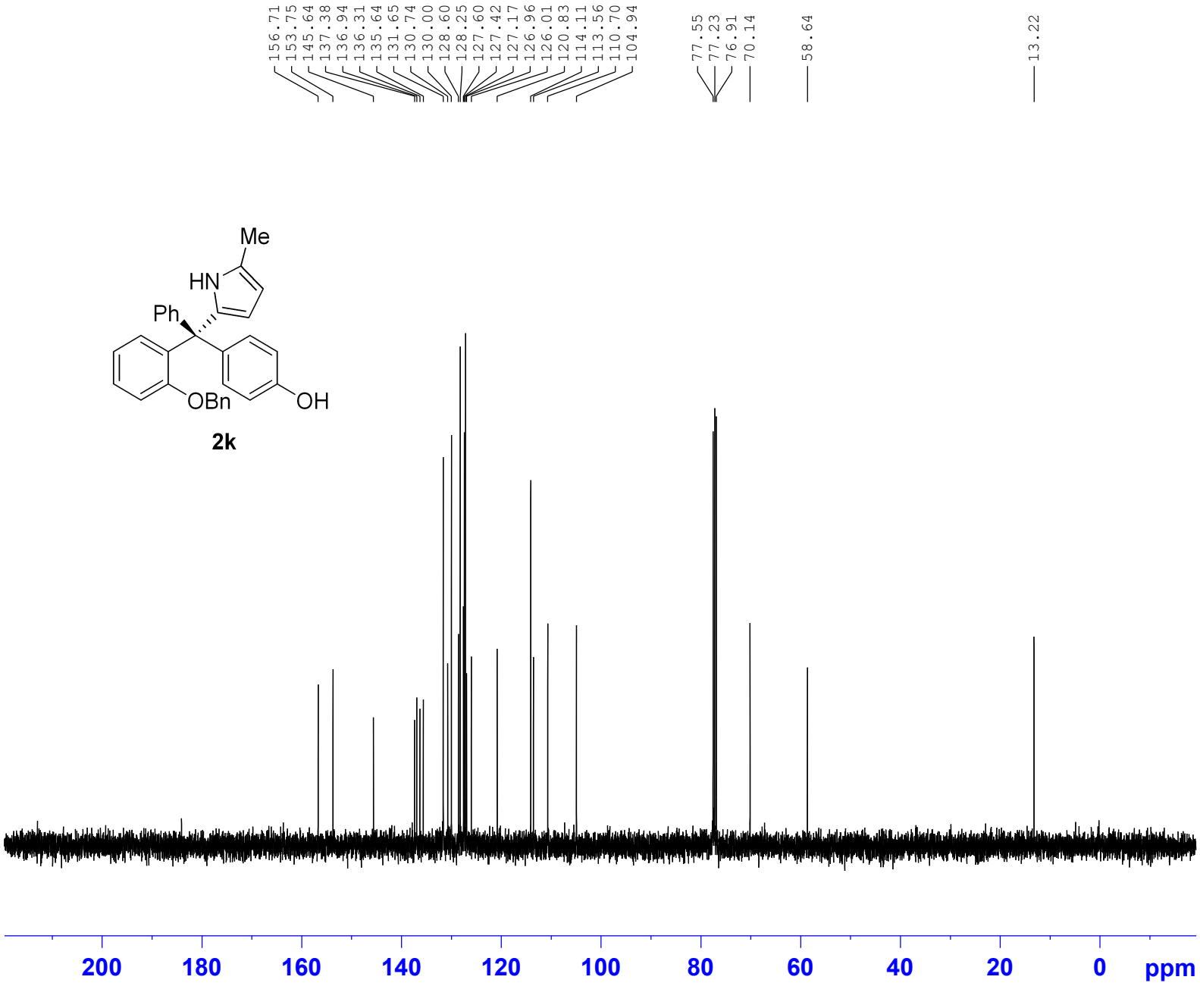




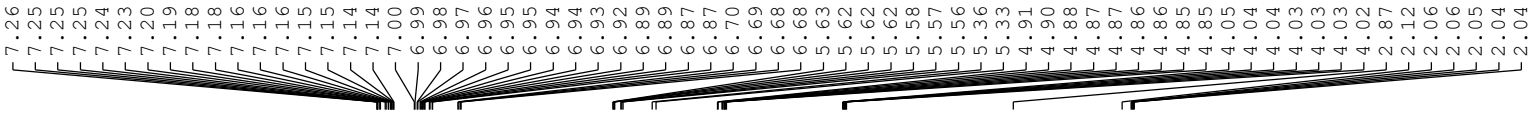
2k

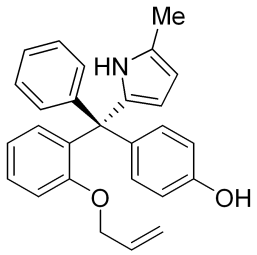
```
NAME                Lzy-2k
EXPNO                    2
PROCNO                   1
Date_             20200312
Time                 21.20
INSTRUM              spect
PROBHD    5 mm PABBO BB-
PULPROG               zg30
TD                   65536
SOLVENT              CDCl3
NS                       2
DS                       2
SWH               8223.685 Hz
FIDRES            0.125483 Hz
AQ               3.9846387 sec
RG                     101
DW                  60.800 usec
DE                   6.00 usec
TE                  295.2 K
D1             1.00000000 sec
TD0                      1

======== CHANNEL f1 ========
NUC1                    1H
P1                   15.80 usec
PL1                  -1.00 dB
PL1W          12.17476940 W
SFO1          400.1324710 MHz
SI                   32768
SF            400.1300054 MHz
WDW                    EM
SSB                     0
LB                   0.30 Hz
GB                      0
PC                   1.00
```





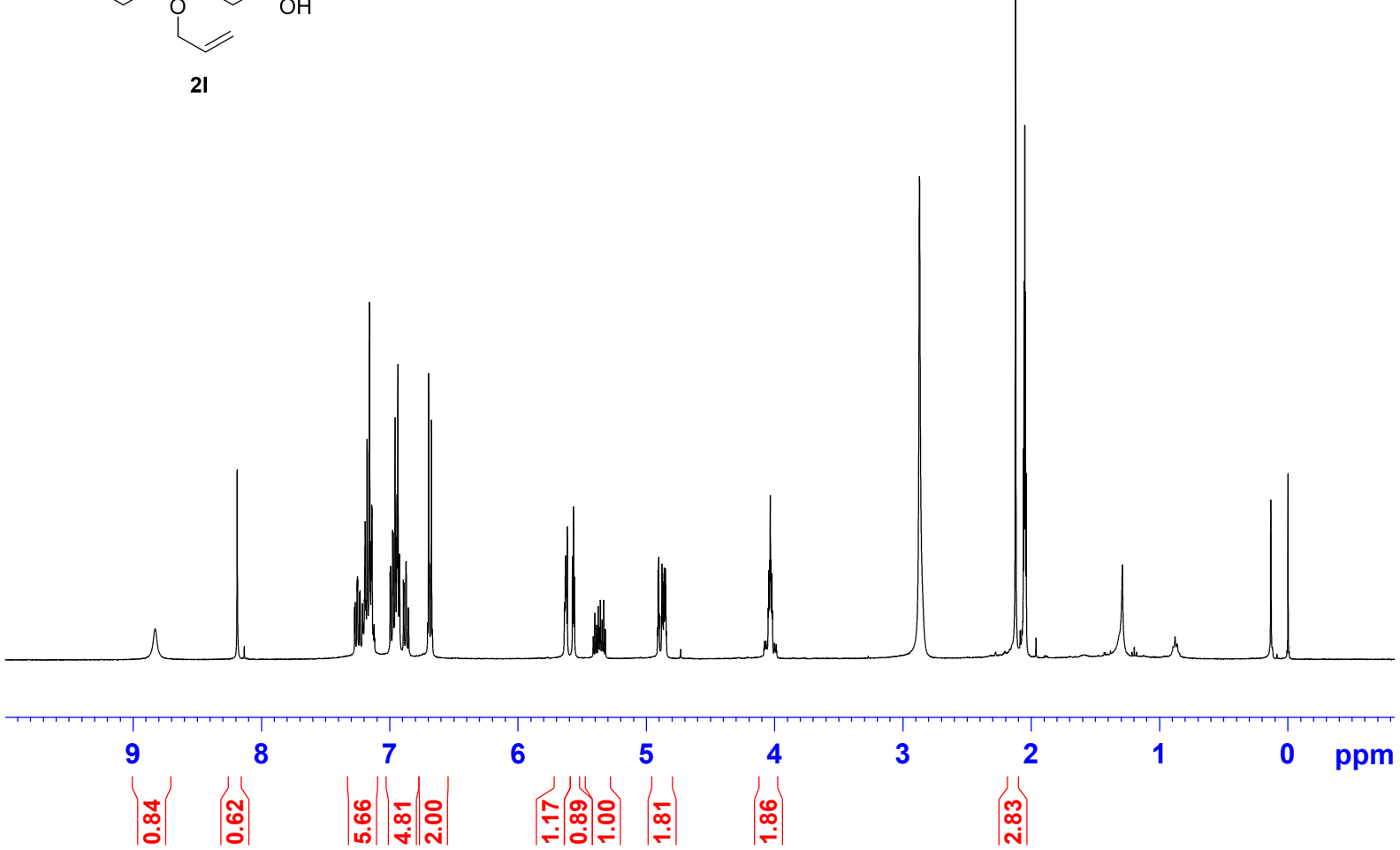
NAME	Lzy-2k-C
EXPNO	1
PROCNO	1
Date_	20200312
Time	21.17
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	19
DS	2
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	181
DW	20.800 usec
DE	6.00 usec
TE	295.4 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.60 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6127586 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

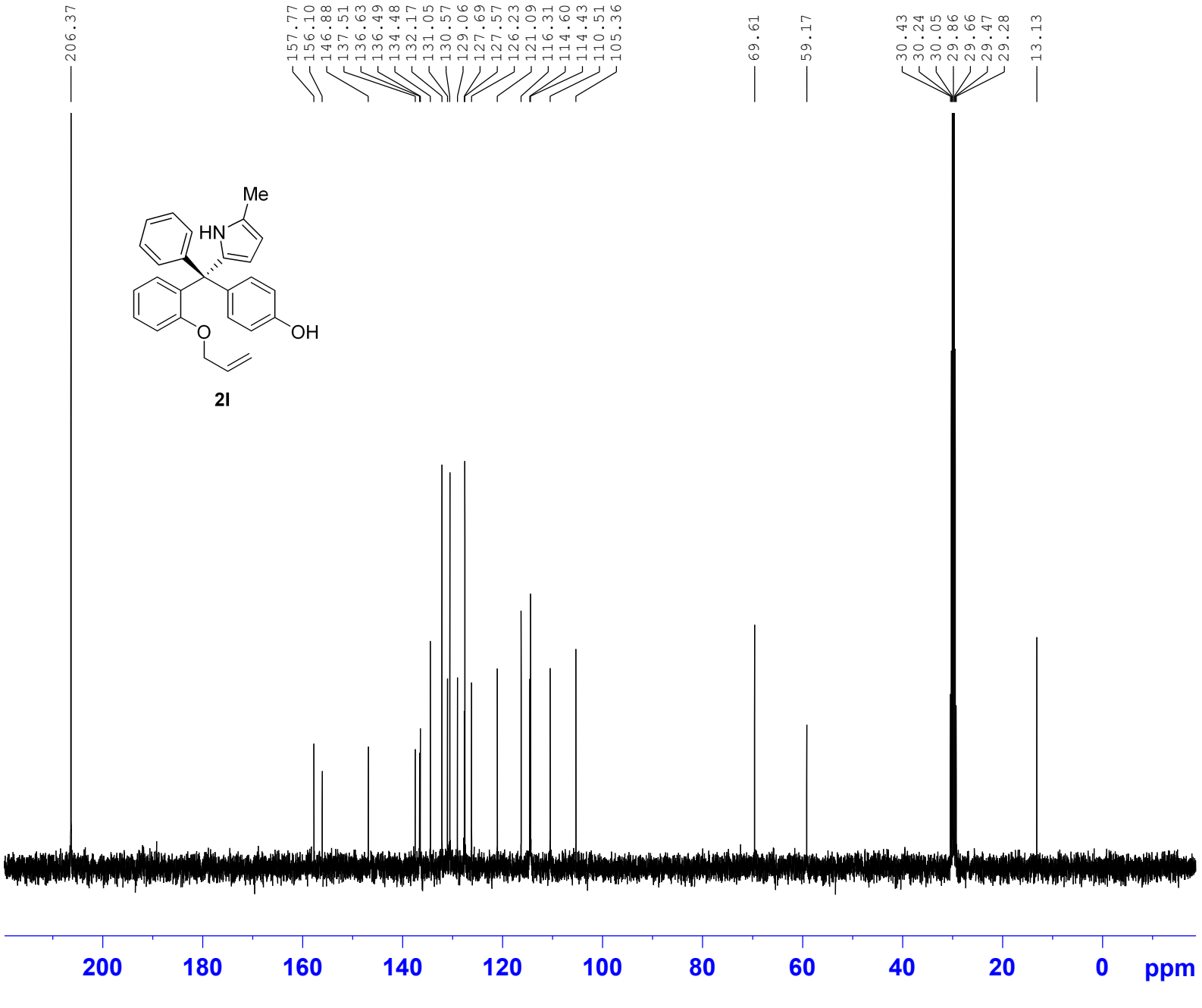




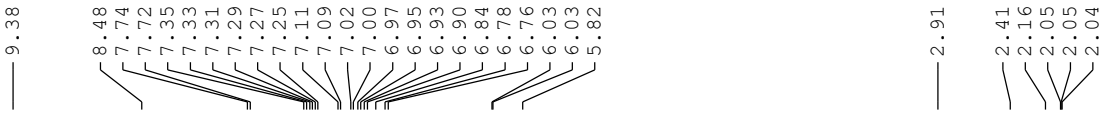
2l

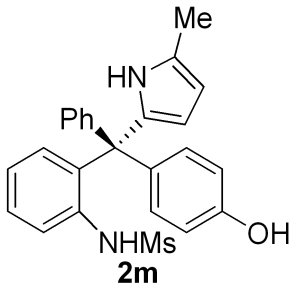
```
NAME      lzy-project1-1l-H-1
EXPNO                       1
PROCNO                      1
Date_            20210509
Time                  19.32
INSTRUM               spect
PROBHD    5 mm PABBO BB/
PULPROG                zg30
TD                    65536
SOLVENT           Acetone
NS                          4
DS                          0
SWH                8012.820 Hz
FIDRES             0.122266 Hz
AQ                4.0894966 sec
RG                   126.97
DW                   62.400 usec
DE                    6.50 usec
TE                   298.2 K
D1               1.00000000 sec
TD0                         1

======== CHANNEL f1 ========
SFO1           400.1324710 MHz
NUC1                     1H
P1                    14.50 usec
SI                    65536
SF               400.1300069 MHz
WDW                      EM
SSB                         0
LB                    0.30 Hz
GB                          0
PC                    1.00
```





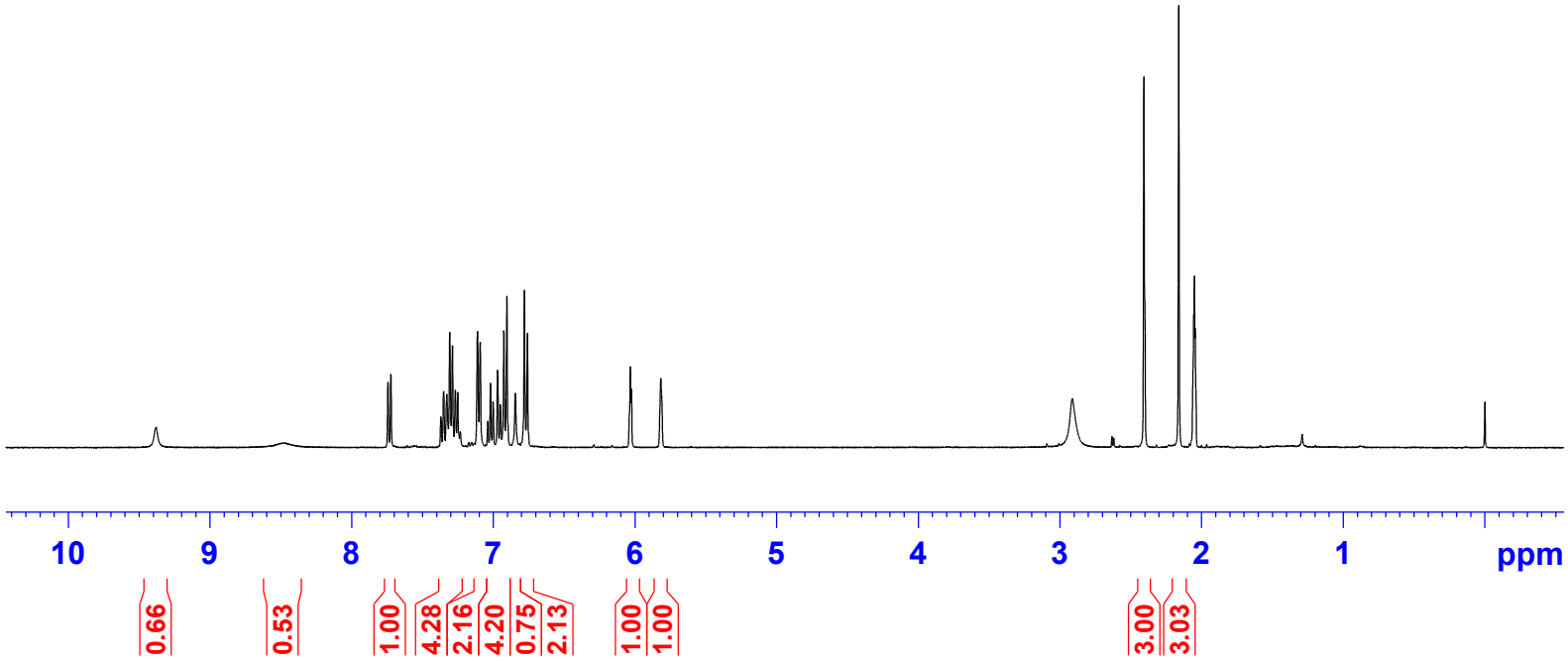
NAME	Lzy-2l-C
EXPNO	2
PROCNO	1
Date_	20200321
Time	11.14
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgpg30
TD	65536
SOLVENT	Acetone
NS	14
DS	0
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	322
DW	20.800 usec
DE	6.00 usec
TE	295.3 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.60 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6126894 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

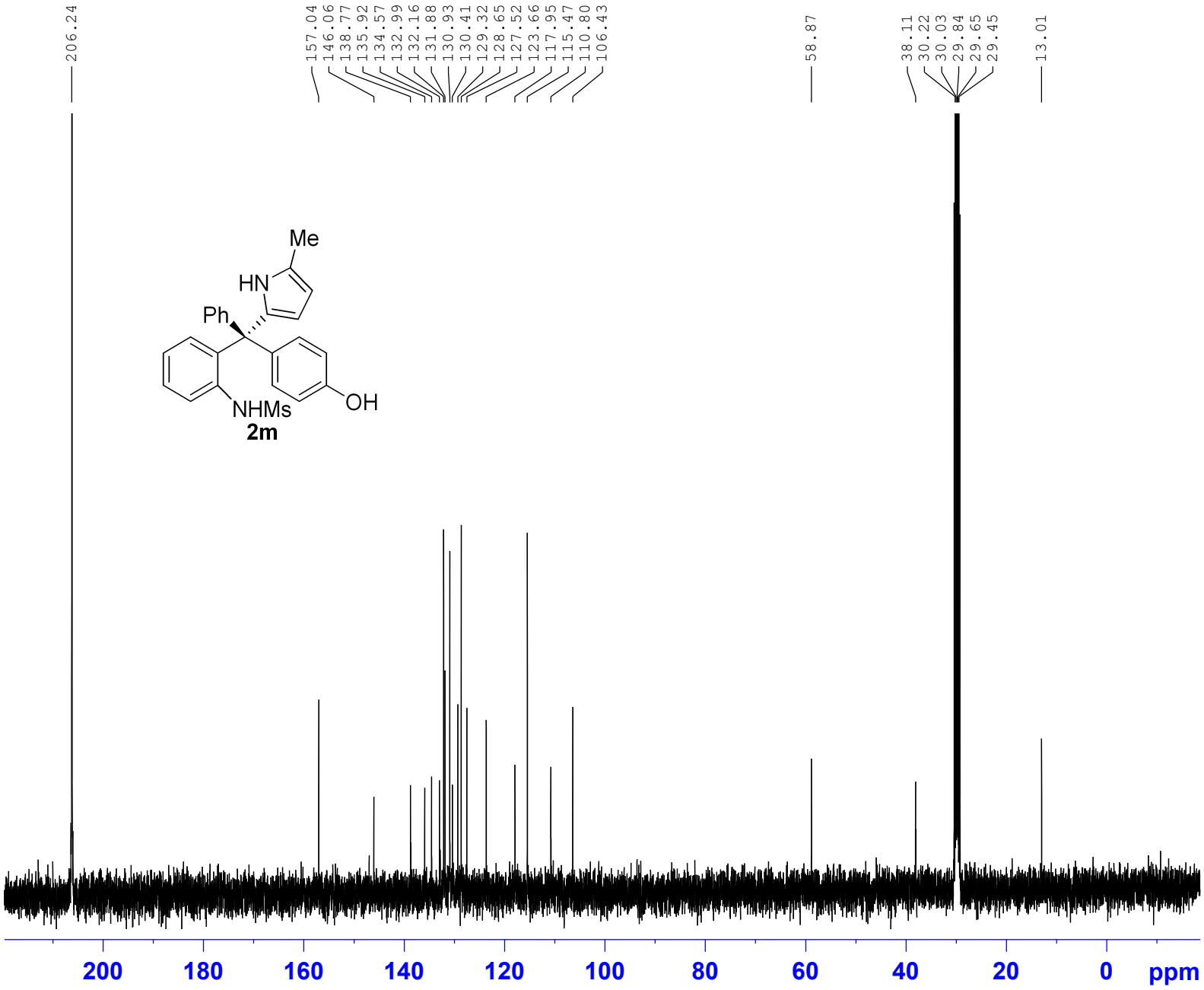




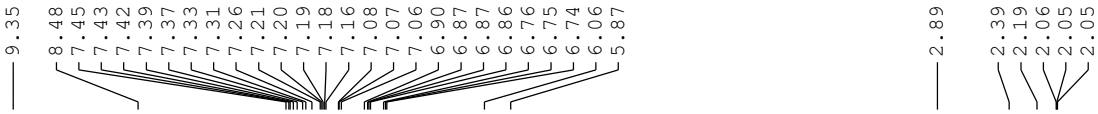
2m

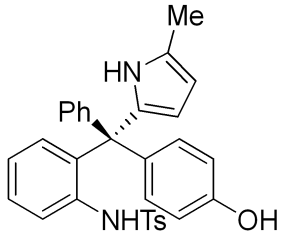
```
NAME                Lzy-2m
EXPNO                    3
PROCNO                   1
Date_             20200320
Time                 19.22
INSTRUM              spect
PROBHD    5 mm PABBO BB-
PULPROG               zg30
TD                   65536
SOLVENT            Acetone
NS                       6
DS                       0
SWH               8223.685 Hz
FIDRES            0.125483 Hz
AQ               3.9846387 sec
RG                     575
DW                  60.800 usec
DE                   6.00 usec
TE                  294.7 K
D1              1.00000000 sec
TD0                      1

======== CHANNEL f1 ========
NUC1                    1H
P1                   15.80 usec
PL1                  -1.00 dB
PL1W          12.17476940 W
SFO1          400.1324710 MHz
SI                   32768
SF            400.1300063 MHz
WDW                     EM
SSB                      0
LB                    0.30 Hz
GB                       0
PC                    1.00
```





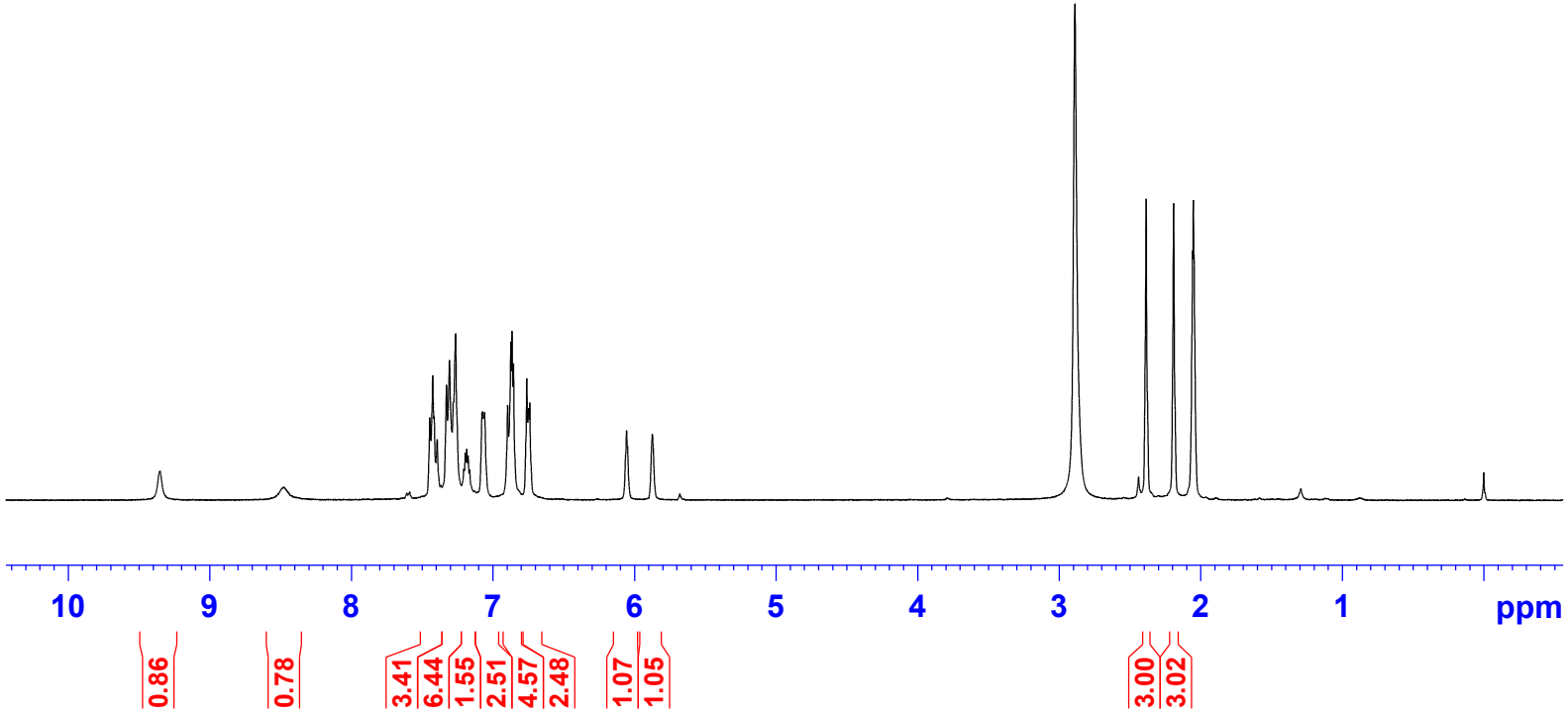
NAME	Lzy-2m-C
EXPNO	3
PROCNO	1
Date_	20200320
Time	19.24
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgpg30
TD	65536
SOLVENT	Acetone
NS	121
DS	2
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	161
DW	20.800 usec
DE	6.00 usec
TE	294.9 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.60 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6126819 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

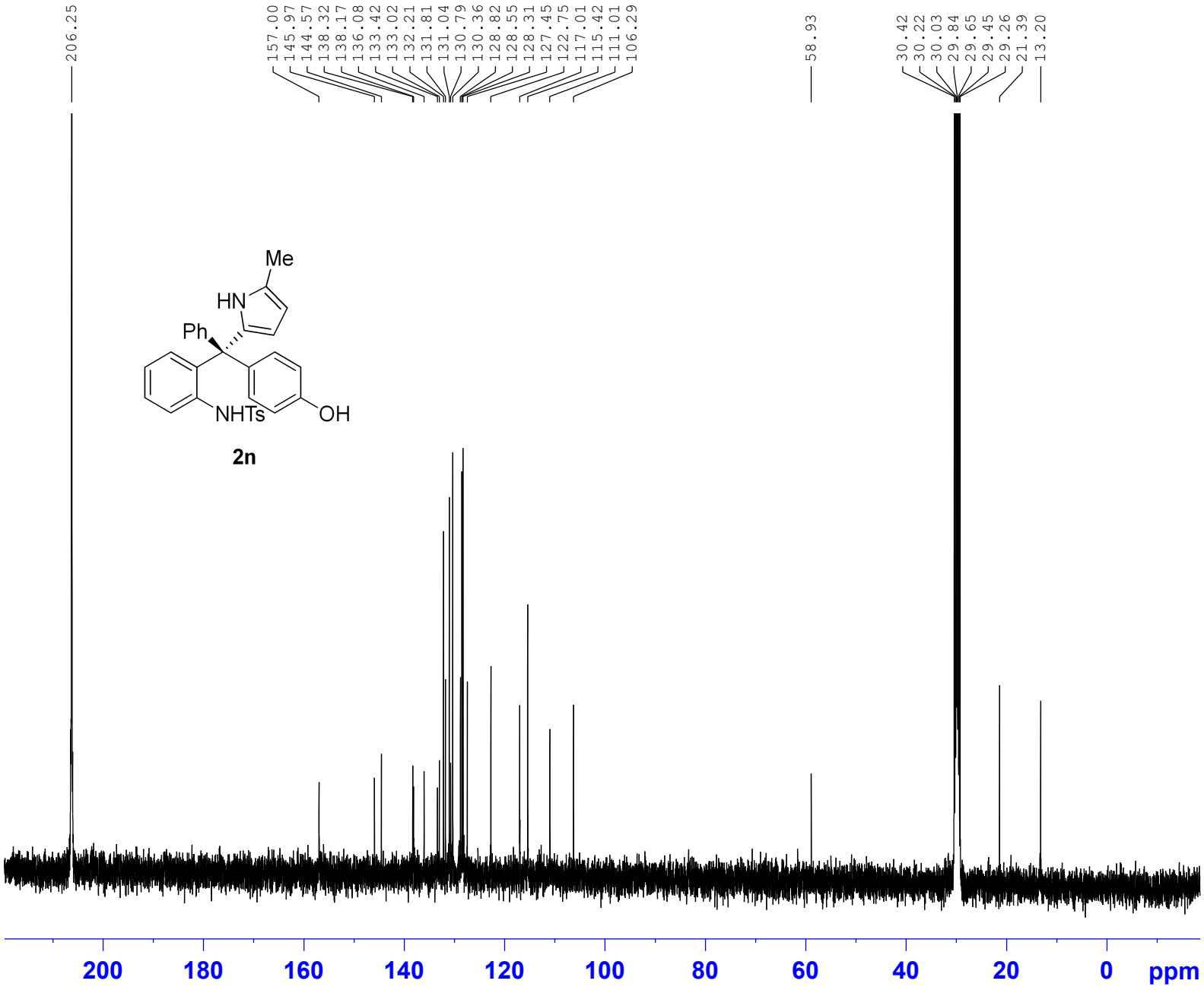




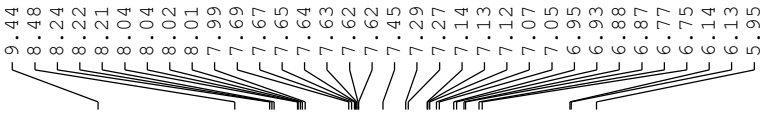
2n

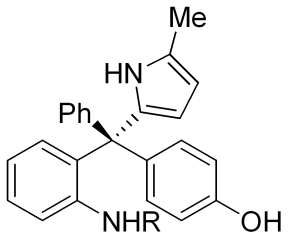
```
NAME                Lzy-2n
EXPNO                    1
PROCNO                   1
Date_             20200322
Time                 19.11
INSTRUM              spect
PROBHD    5 mm PABBO BB-
PULPROG                zg30
TD                    65536
SOLVENT             Acetone
NS                       16
DS                        0
SWH                8223.685 Hz
FIDRES            0.125483 Hz
AQ                3.9846387 sec
RG                      812
DW                   60.800 usec
DE                    6.00 usec
TE                   298.6 K
D1              1.00000000 sec
TD0                      1

======== CHANNEL f1 ========
NUC1                    1H
P1                   15.80 usec
PL1                  -1.00 dB
PL1W          12.17476940 W
SFO1          400.1324710 MHz
SI                    32768
SF            400.1300054 MHz
WDW                     EM
SSB                      0
LB                    0.30 Hz
GB                       0
PC                    1.00
```





NAME	Lzy-2n-C	
EXPNO	1	
PROCNO	1	
Date_	20200322	
Time	19.29	
INSTRUM	spect	
PROBHD	5 mm PABBO BB-	
PULPROG	zgpg30	
TD	65536	
SOLVENT	Acetone	
NS	390	
DS	2	
SWH	24038.461	Hz
FIDRES	0.366798	Hz
AQ	1.3631988	sec
RG	128	
DW	20.800	usec
DE	6.00	usec
TE	298.9	K
D1	2.00000000	sec
D11	0.03000000	sec
TD0	1	
======== CHANNEL f1 ========		
NUC1	13C	
P1	8.60	usec
PL1	-3.00	dB
PL1W	60.64365387	W
SFO1	100.6228298	MHz
======== CHANNEL f2 ========		
CPDPRG2	waltz16	
NUC2	1H	
PCPD2	80.00	usec
PL2	-1.00	dB
PL12	14.39	dB
PL13	18.00	dB
PL2W	12.17476940	W
PL12W	0.35193357	W
PL13W	0.15327126	W
SFO2	400.1316005	MHz
SI	32768	
SF	100.6126790	MHz
WDW	EM	
SSB	0	
LB	1.00	Hz
GB	0	
PC	1.40	

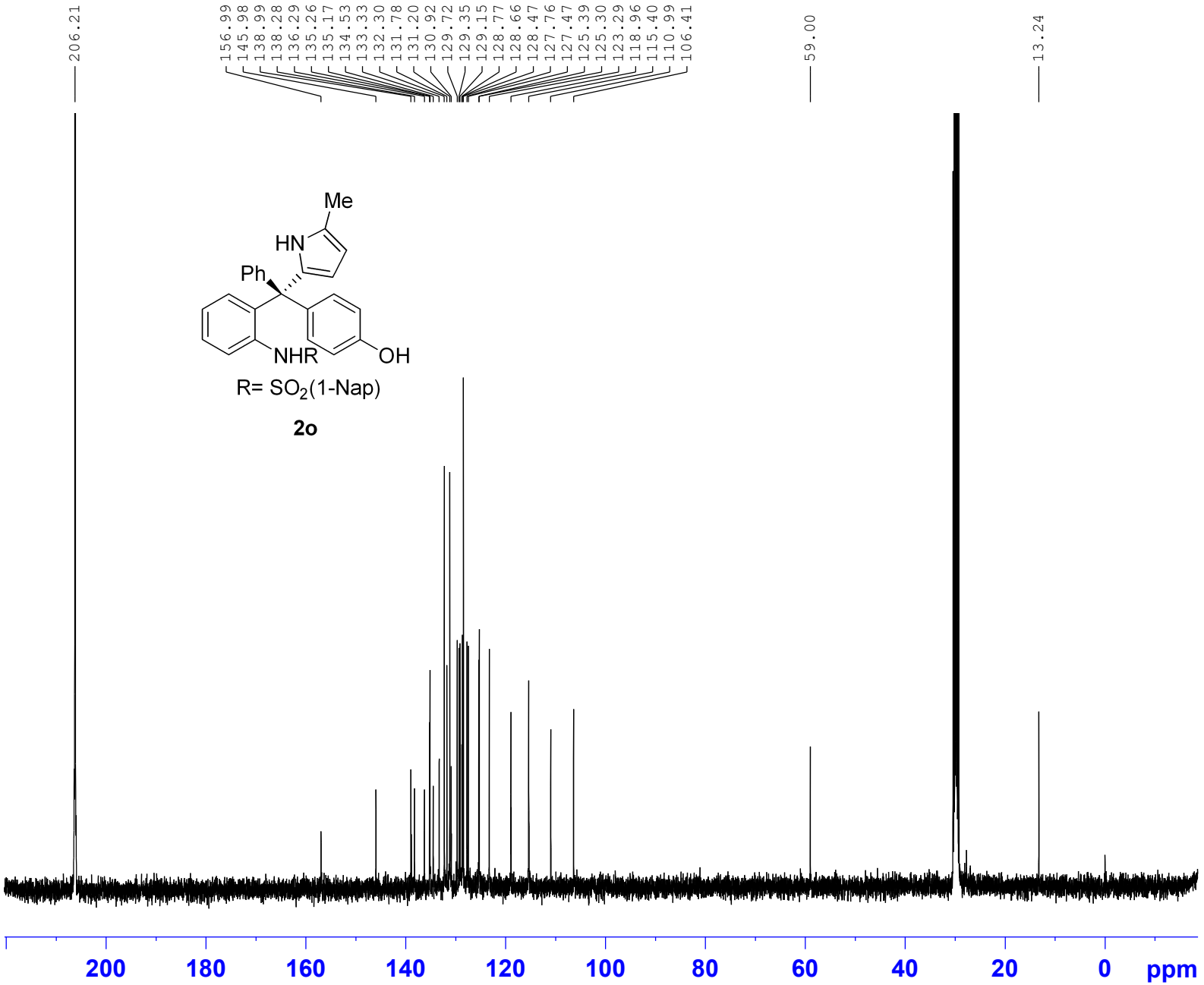




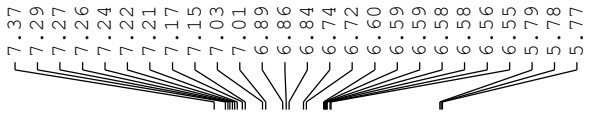
R= SO_2(1-Nap)

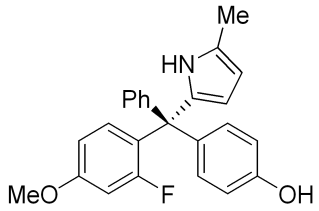
2o

```
NAME                Lzy-2o
EXPNO                    2
PROCNO                   1
Date_             20200319
Time                 19.45
INSTRUM              spect
PROBHD    5 mm PABBO BB-
PULPROG               zg30
TD                   65536
SOLVENT            Acetone
NS                       6
DS                       0
SWH               8223.685 Hz
FIDRES            0.125483 Hz
AQ               3.9846387 sec
RG                     322
DW                  60.800 usec
DE                   6.00 usec
TE                  294.8 K
D1              1.00000000 sec
TD0                      1

======== CHANNEL f1 ========
NUC1                    1H
P1                   15.80 usec
PL1                  -1.00 dB
PL1W          12.17476940 W
SFO1          400.1324710 MHz
SI                   32768
SF            400.1300054 MHz
WDW                     EM
SSB                      0
LB                    0.30 Hz
GB                       0
PC                    1.00
```



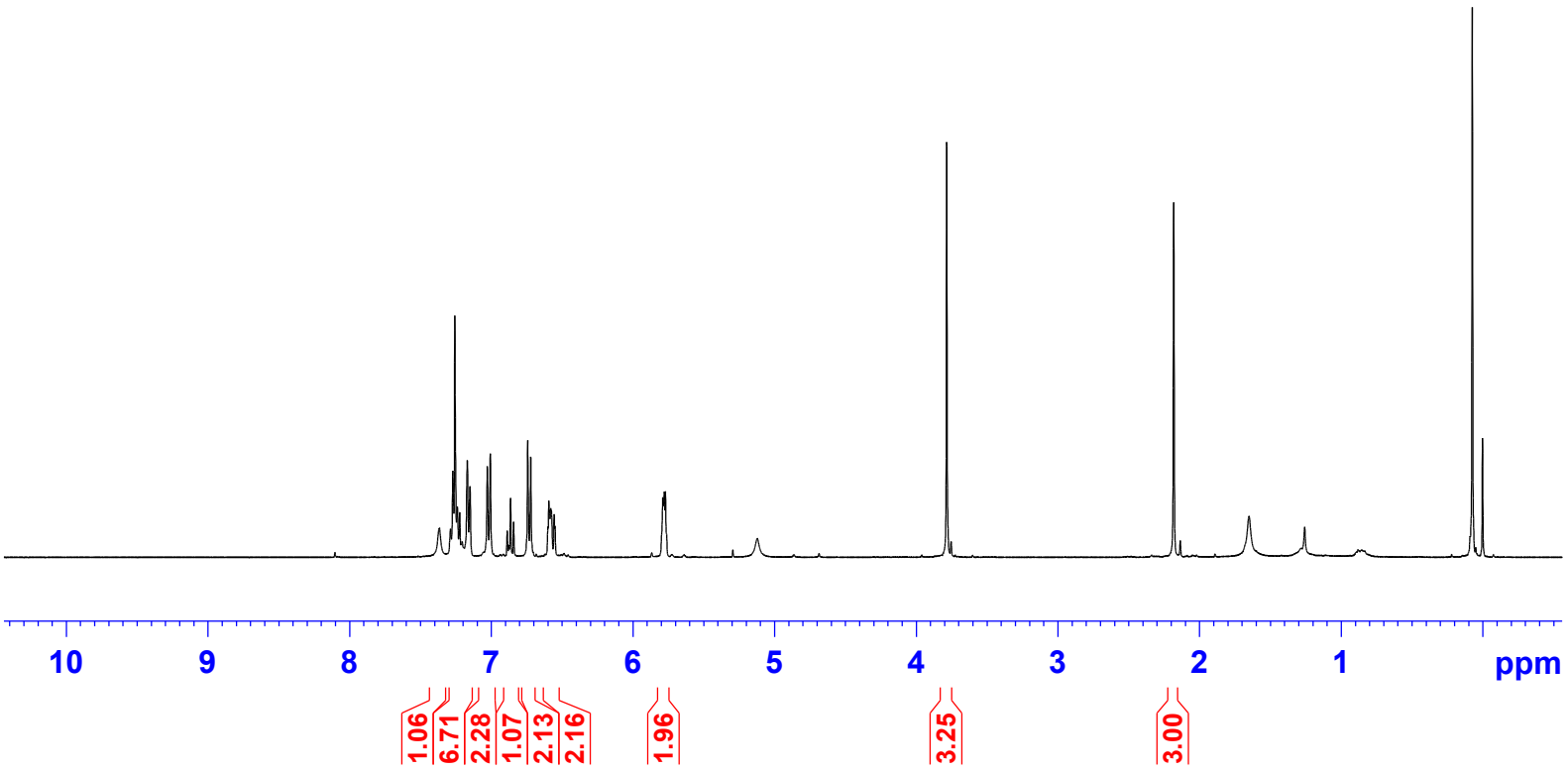

```
NAME      lzy-project1-2o-C-0711
EXPNO                      2
PROCNO                     1
Date_               20210711
Time                   17.58
INSTRUM                spect
PROBHD    5 mm DUL 13C-1
PULPROG             zgpg30
TD                     65536
SOLVENT             Acetone
NS                      2951
DS                         0
SWH                24038.461 Hz
FIDRES             0.366798 Hz
AQ                 1.3631988 sec
RG                      2050
DW                    20.800 usec
DE                     6.00 usec
TE                    293.6 K
D1                 2.00000000 sec
D11                0.03000000 sec
TD0                        1

======== CHANNEL f1 ========
NUC1                     13C
P1                     40.00 usec
PL1                    -3.00 dB
PL1W            60.64365387 W
SFO1           100.6228298 MHz

======== CHANNEL f2 ========
CPDPRG2              waltz16
NUC2                     1H
PCPD2                  80.00 usec
PL2                    -1.00 dB
PL12                   14.39 dB
PL13                   18.00 dB
PL2W            12.17476940 W
PL12W            0.35193357 W
PL13W            0.15327126 W
SFO2           400.1316005 MHz
SI                      32768
SF             100.6126807 MHz
WDW                       EM
SSB                        0
LB                      1.00 Hz
GB                         0
PC                      1.40
```

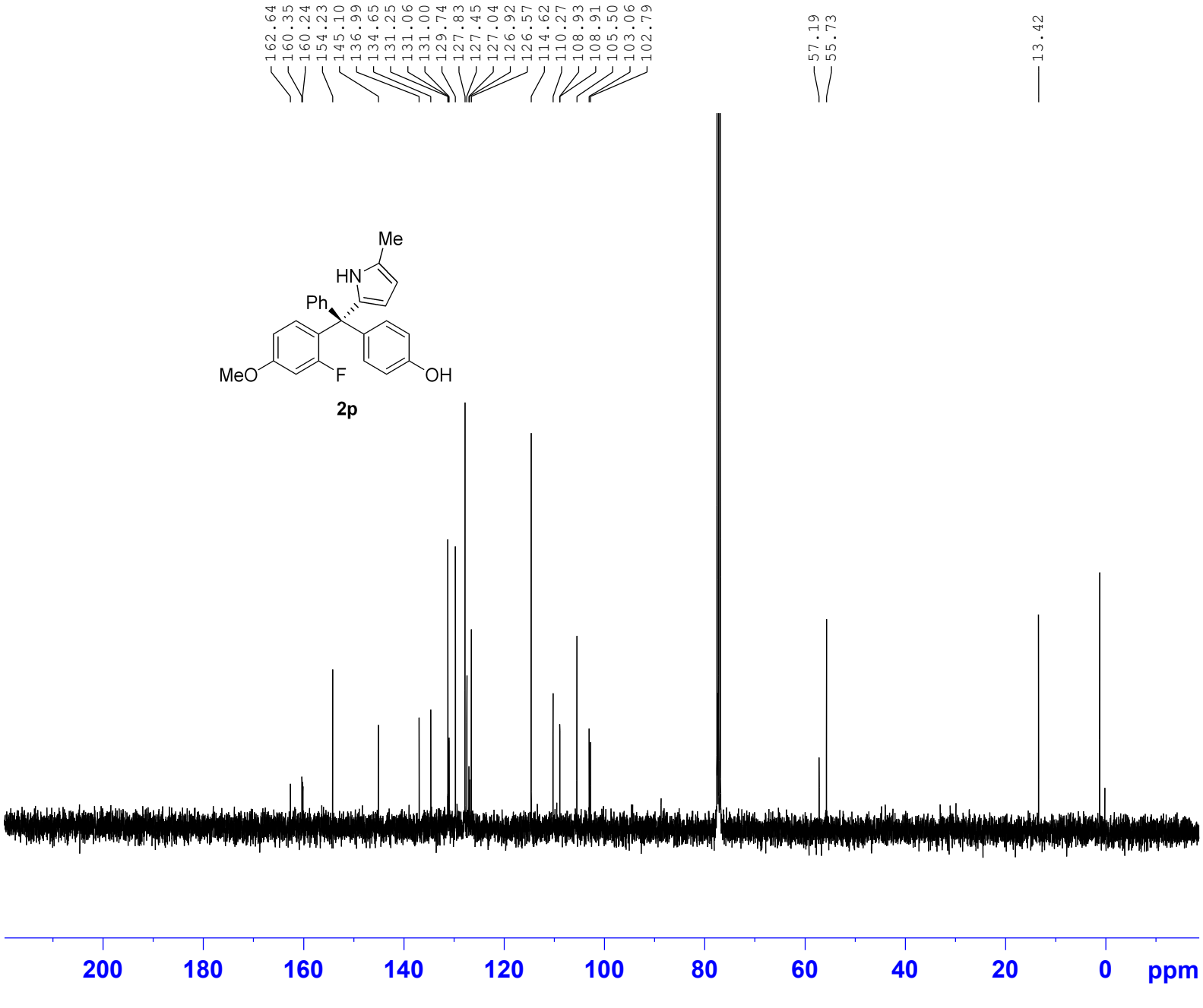




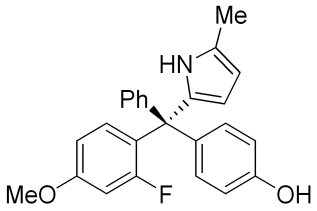
2p

```
NAME                Lzy-2p
EXPNO                    2
PROCNO                   1
Date_             20200320
Time                 11.02
INSTRUM              spect
PROBHD    5 mm PABBO BB-
PULPROG               zg30
TD                   65536
SOLVENT              CDCl3
NS                      14
DS                       0
SWH               8223.685 Hz
FIDRES            0.125483 Hz
AQ               3.9846387 sec
RG                     322
DW                  60.800 usec
DE                   6.00 usec
TE                  295.0 K
D1             1.00000000 sec
TD0                      1

======== CHANNEL f1 ========
NUC1                    1H
P1                   15.80 usec
PL1                  -1.00 dB
PL1W          12.17476940 W
SFO1          400.1324710 MHz
SI                   32768
SF            400.1300103 MHz
WDW                     EM
SSB                      0
LB                    0.30 Hz
GB                       0
PC                    1.00
```



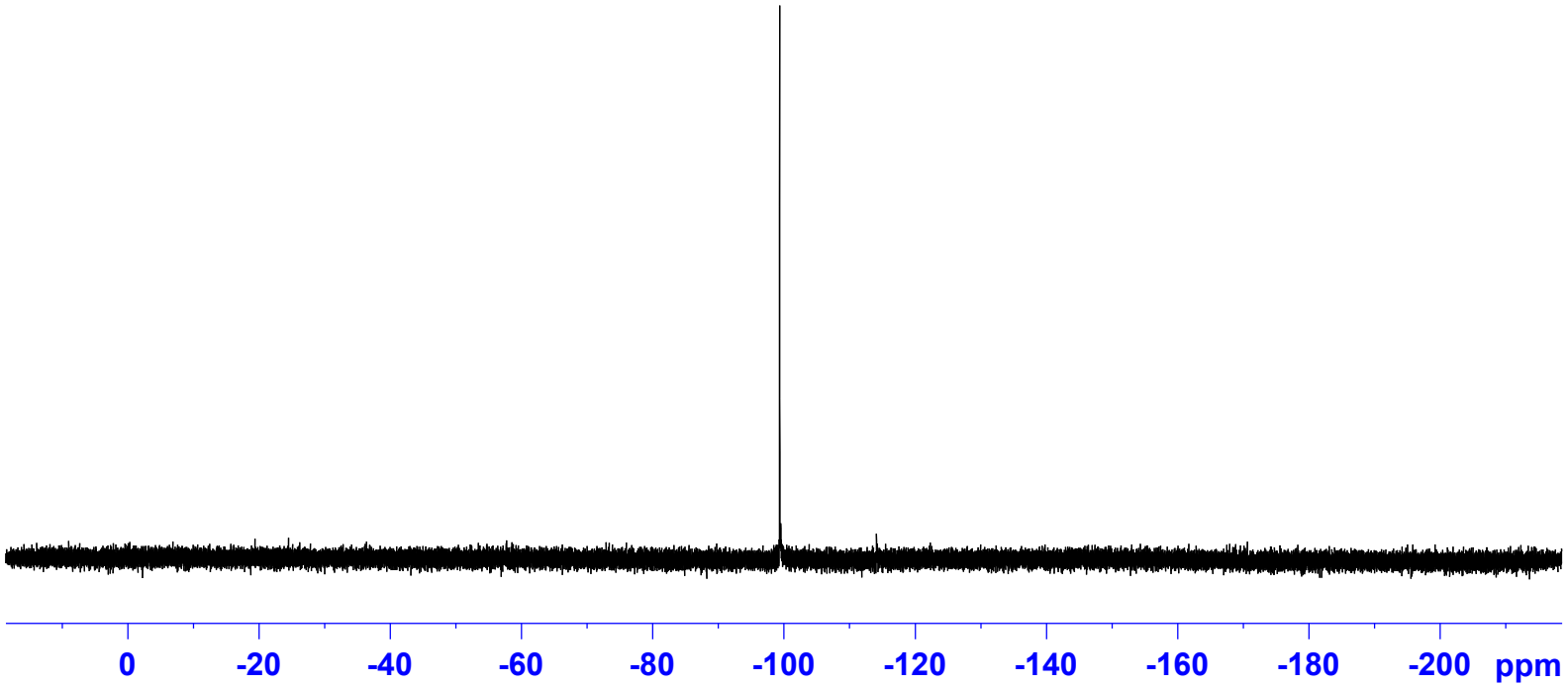


NAME	Lzy-2p-C
EXPNO	2
PROCNO	1
Date_	20200320
Time	11.08
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	282
DS	0
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	144
DW	20.800 usec
DE	6.00 usec
TE	295.5 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.60 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6127496 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

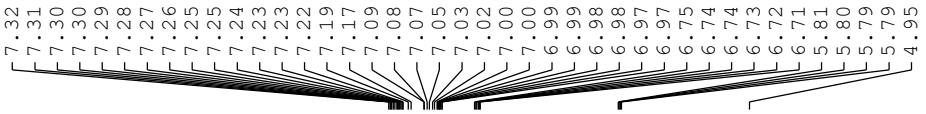


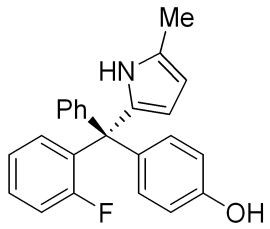
2p

-99.34



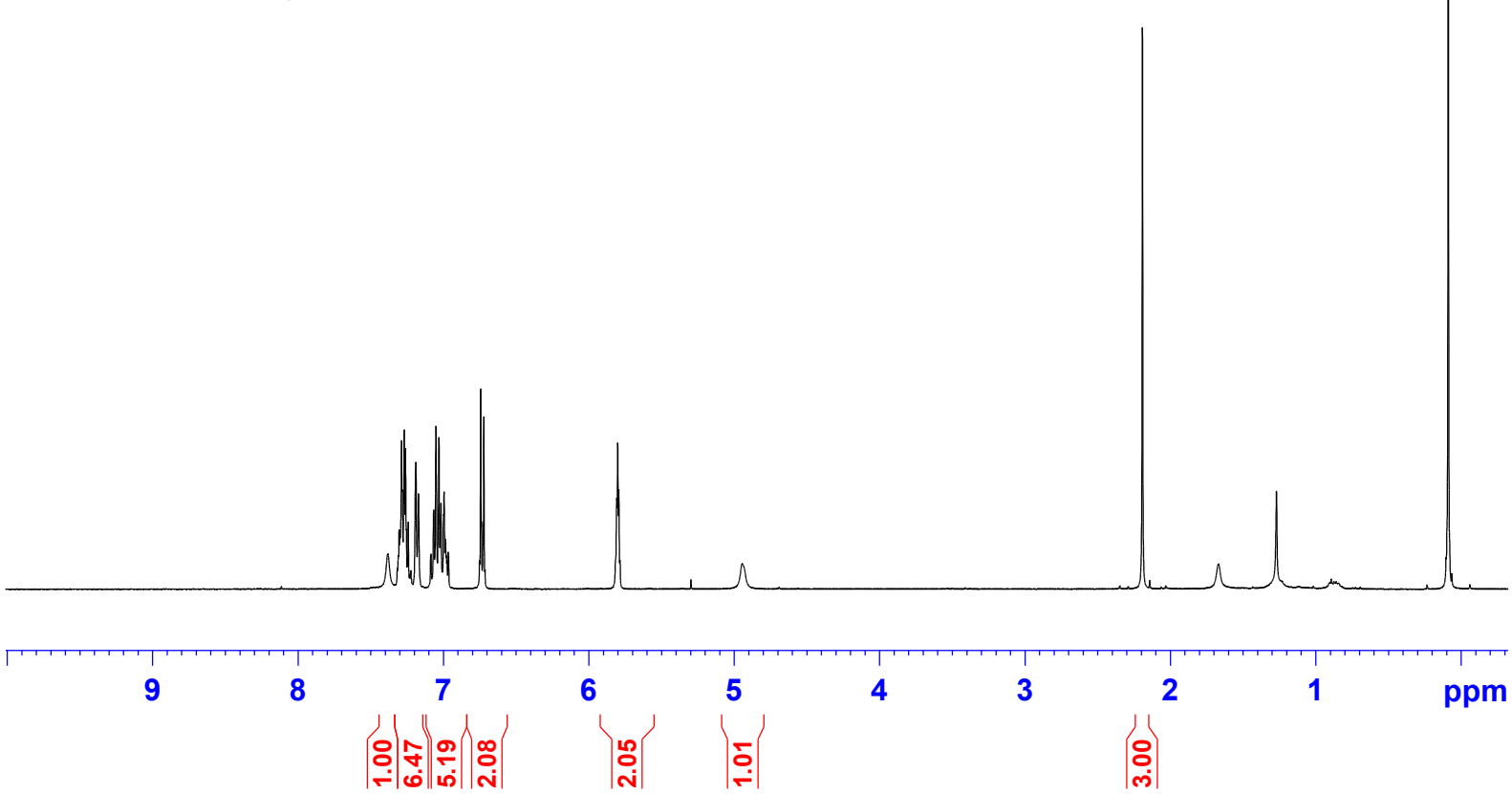
NAME	Lzy-2p-F
EXPNO	1
PROCNO	1
Date_	20200322
Time	18.57
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgflqn
TD	131072
SOLVENT	CDCl3
NS	1
DS	4
SWH	89285.711 Hz
FIDRES	0.681196 Hz
AQ	0.7340532 sec
RG	1440
DW	5.600 usec
DE	6.00 usec
TE	296.5 K
D1	1.00000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	19F
P1	19.50 usec
PL1	-4.00 dB
PL1W	16.97275162 W
SFO1	376.4607164 MHz
SI	65536
SF	376.4983660 MHz
WDW	EM
SSB	0
LB	0.30 Hz
GB	0
PC	1.00

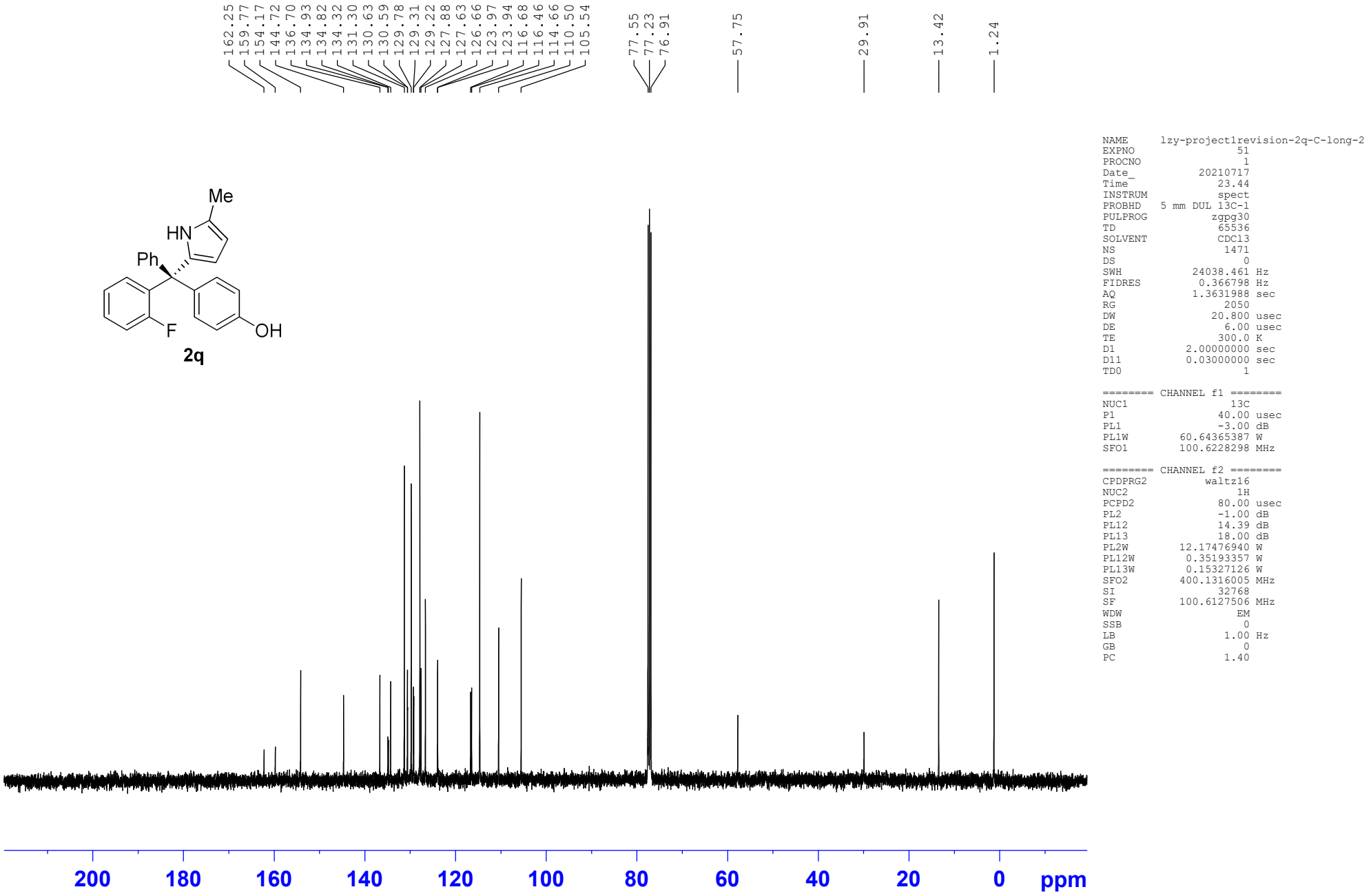




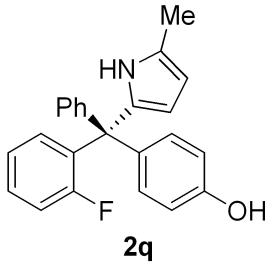
2q

```
NAME      lzy-project1revision-2q-H
EXPNO                 3
PROCNO                1
Date_          20210717
Time               20.29
INSTRUM            spect
PROBHD   5 mm DUL 13C-1
PULPROG             zg30
TD                 65536
SOLVENT            CDCl3
NS                     4
DS                     0
SWH             8223.685 Hz
FIDRES          0.125483 Hz
AQ             3.9846387 sec
RG                   287
DW                60.800 usec
DE                 6.00 usec
TE                300.0 K
D1           1.00000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                  1H
P1                 15.80 usec
PL1                -1.00 dB
PL1W        12.17476940 W
SFO1        400.1324710 MHz
SI                 32768
SF          400.1300099 MHz
WDW                   EM
SSB                    0
LB                  0.30 Hz
GB                     0
PC                  1.00
```





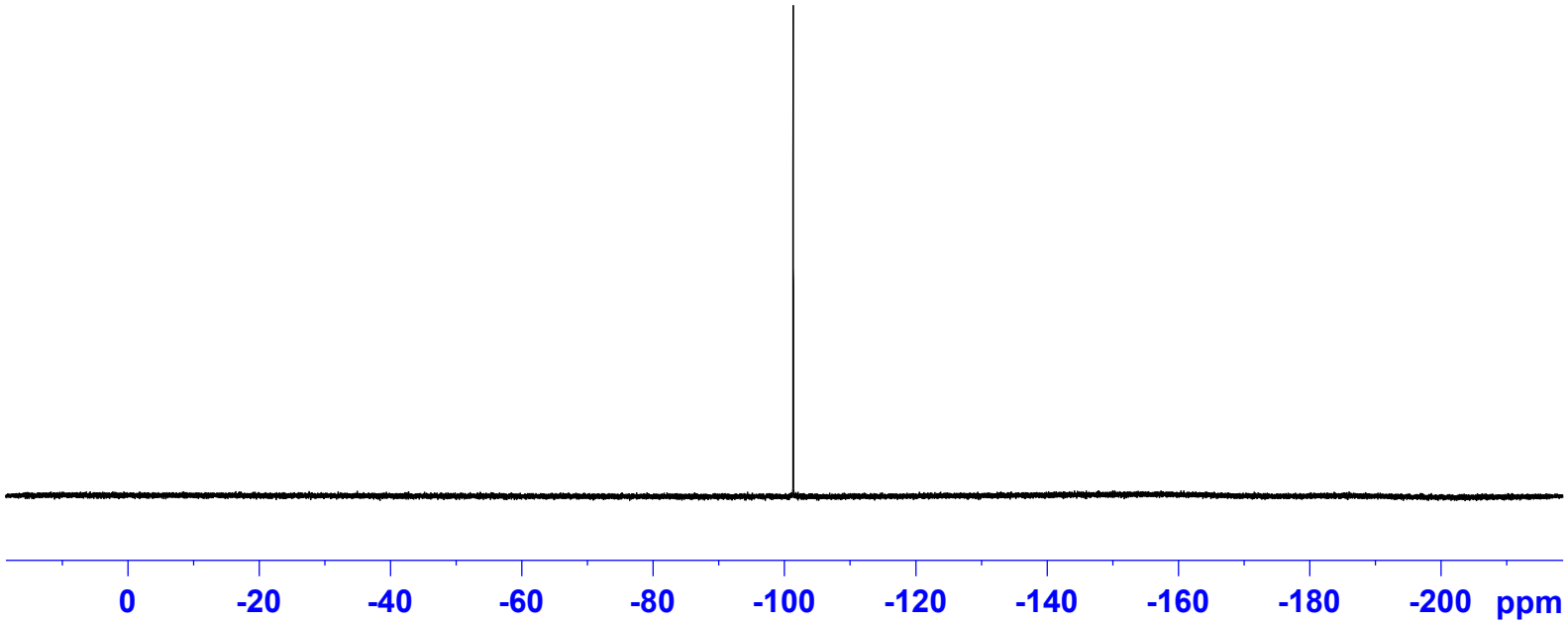

```
NAME      lzy-project1revision-2q-C-long-2
EXPNO                 51
PROCNO                 1
Date_           20210717
Time                23.44
INSTRUM             spect
PROBHD   5 mm DUL 13C-1
PULPROG           zgpg30
TD                 65536
SOLVENT            CDCl3
NS                  1471
DS                     0
SWH            24038.461 Hz
FIDRES          0.366798 Hz
AQ              1.3631988 sec
RG                  2050
DW                20.800 usec
DE                 6.00 usec
TE                300.0 K
D1           2.00000000 sec
D11          0.03000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                13C
P1                40.00 usec
PL1               -3.00 dB
PL1W        60.64365387 W
SFO1        100.6228298 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                1H
PCPD2             80.00 usec
PL2               -1.00 dB
PL12              14.39 dB
PL13              18.00 dB
PL2W        12.17476940 W
PL12W        0.35193357 W
PL13W        0.15327126 W
SFO2        400.1316005 MHz
SI                32768
SF          100.6127506 MHz
WDW                  EM
SSB                   0
LB                 1.00 Hz
GB                    0
PC                 1.40
```

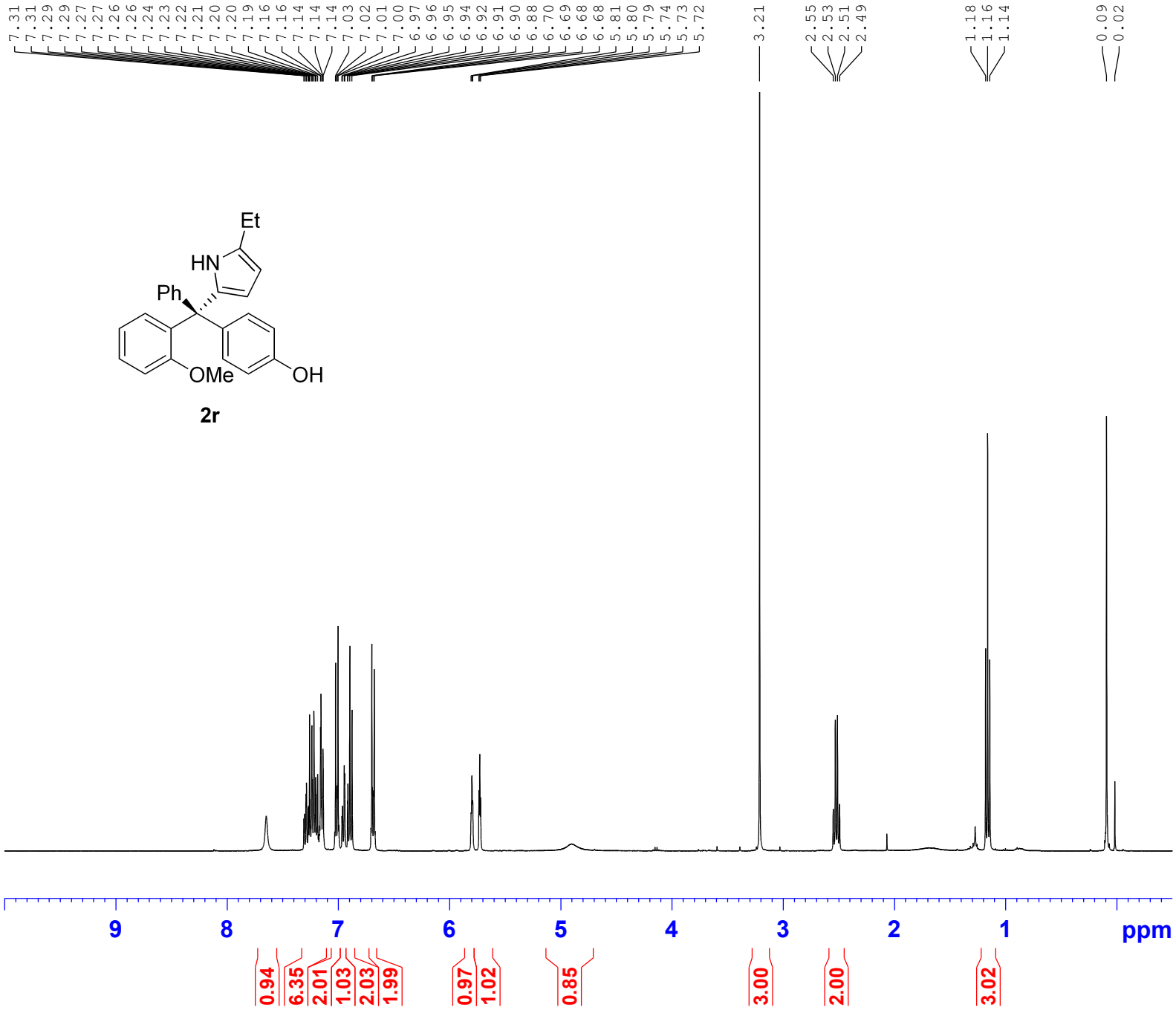


2q

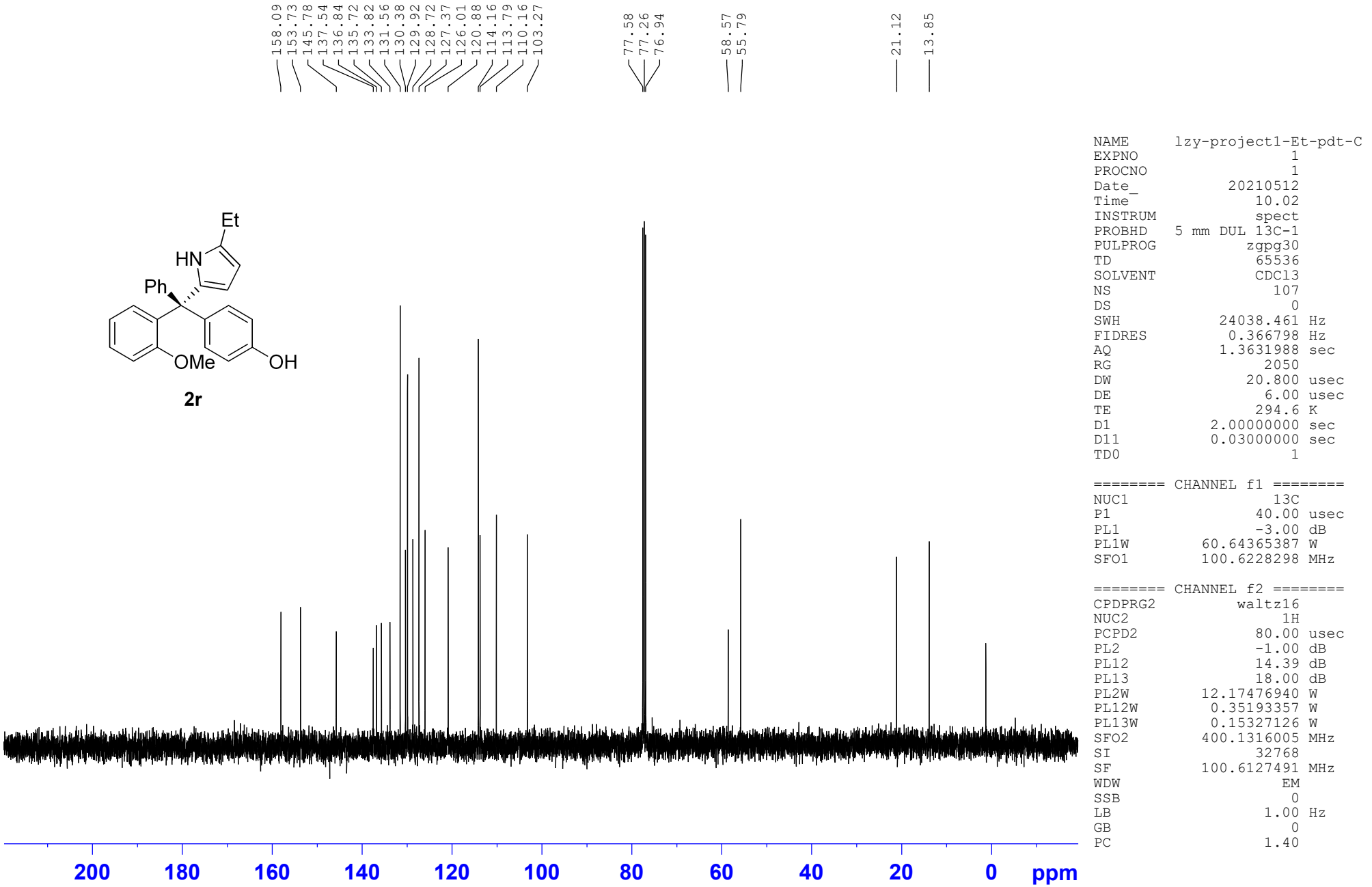
-101.32

```
NAME      lzy-07-project1revision-2q-F
EXPNO                1
PROCNO               1
Date_         20210707
Time             18.05
INSTRUM          spect
PROBHD   5 mm PABBO BB/
PULPROG          zgflqn
TD               131072
SOLVENT          CDCl3
NS                   2
DS                   4
SWH           89285.711 Hz
FIDRES         0.681196 Hz
AQ             0.7340532 sec
RG               196.92
DW                5.600 usec
DE                6.50 usec
TE               296.8 K
D1           1.00000000 sec
TD0                  1

======== CHANNEL f1 ========
SFO1        376.4607164 MHz
NUC1               19F
P1               14.70 usec
SI               65536
SF          376.4983660 MHz
WDW                EM
SSB                 0
LB               0.30 Hz
GB                  0
PC               1.00
```

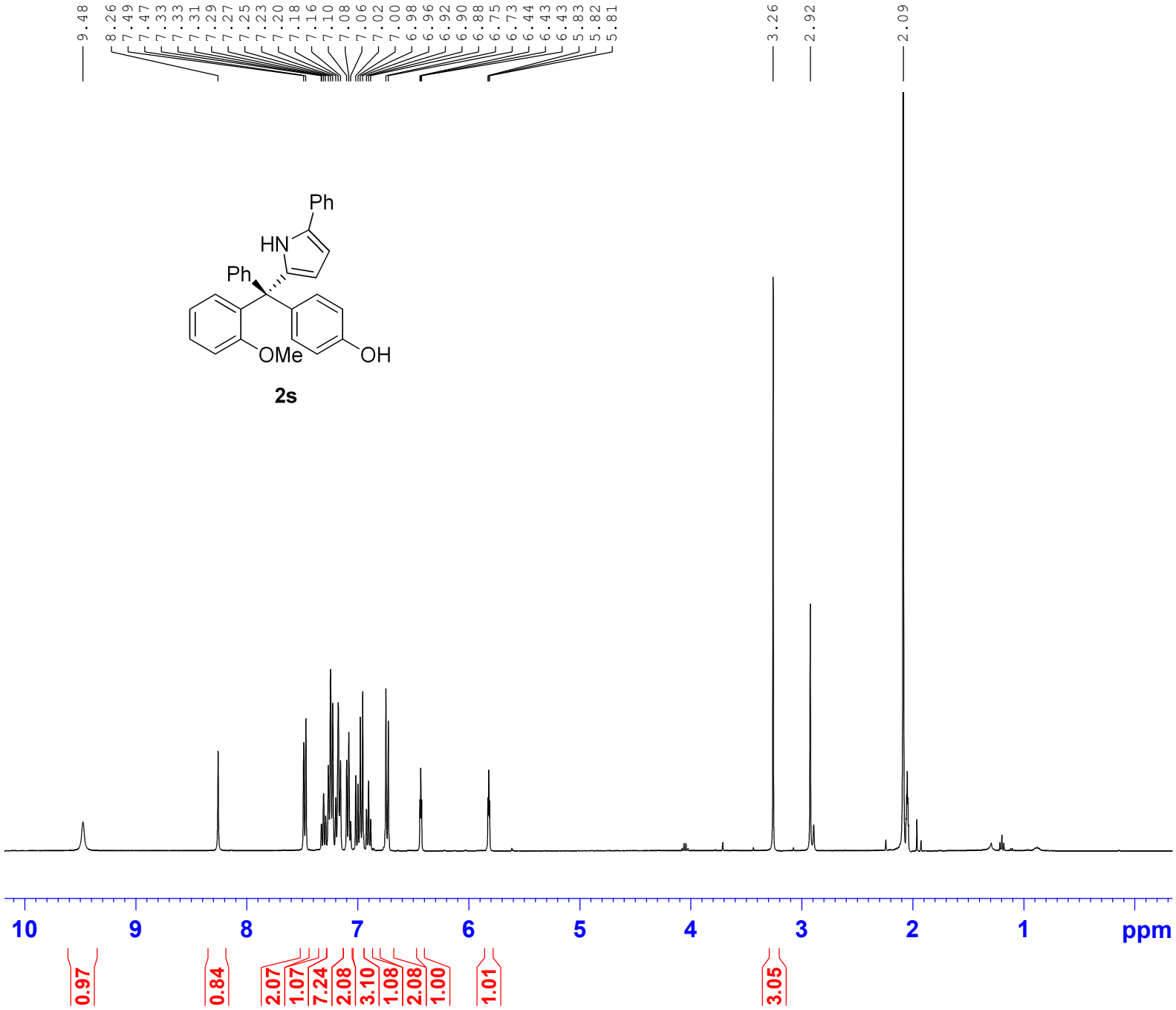




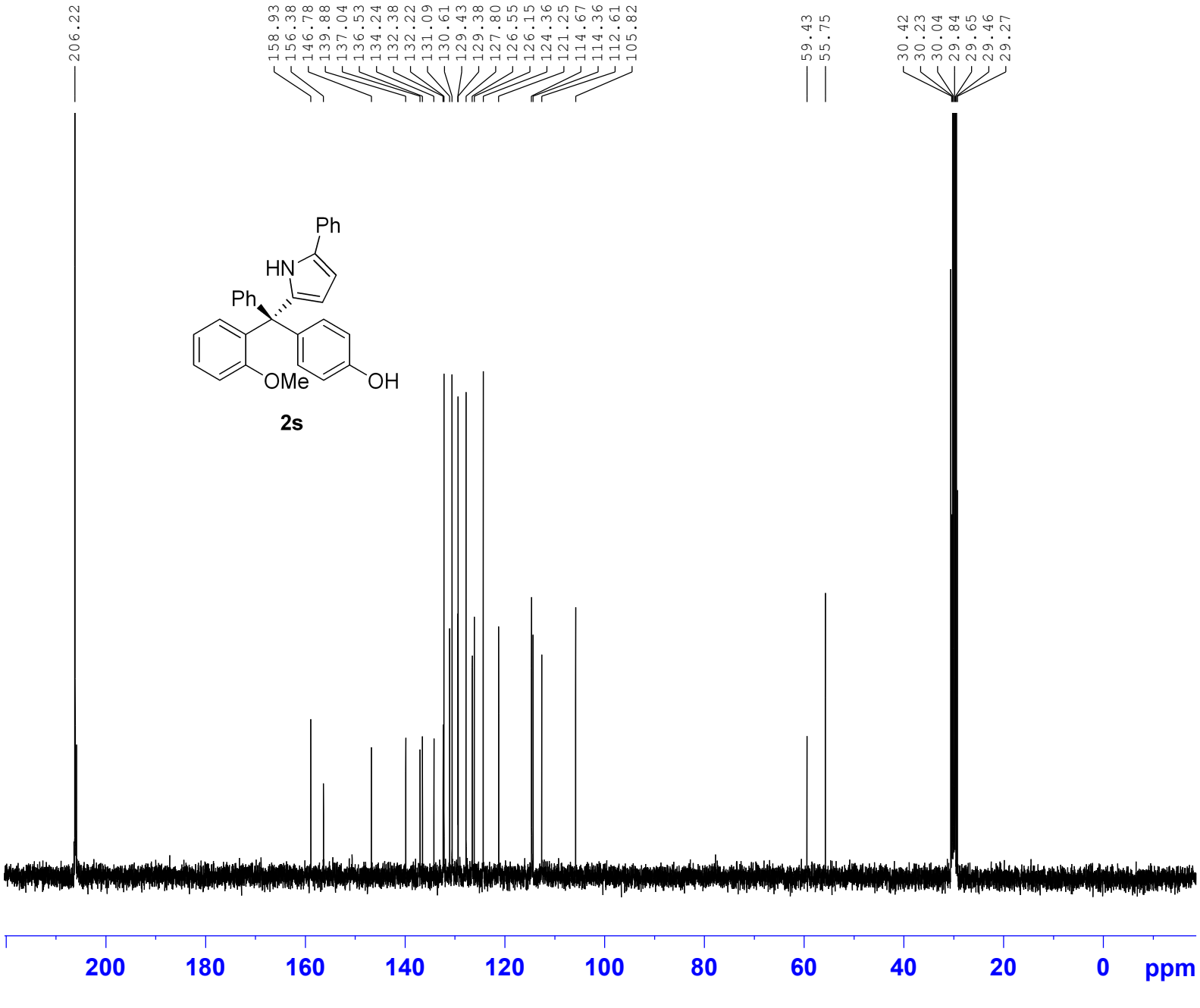
NAME	lzy-project1-Et-pdt
EXPNO	1
PROCNO	1
Date_	20210512
Time	10.00
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zg30
TD	65536
SOLVENT	CDCl3
NS	4
DS	0
SWH	8223.685 Hz
FIDRES	0.125483 Hz
AQ	3.9846387 sec
RG	203
DW	60.800 usec
DE	6.00 usec
TE	294.4 K
D1	1.00000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	1H
P1	15.80 usec
PL1	-1.00 dB
PL1W	12.17476940 W
SFO1	400.1324710 MHz
SI	32768
SF	400.1300099 MHz
WDW	EM
SSB	0
LB	0.30 Hz
GB	0
PC	1.00



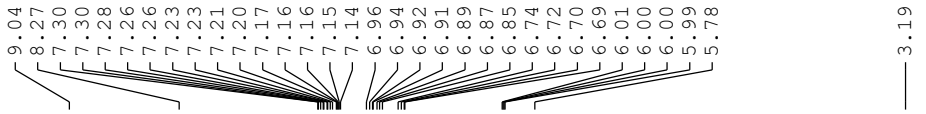
NAME	lzy-project1-Et-pdt-C
EXPNO	1
PROCNO	1
Date_	20210512
Time	10.02
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	107
DS	0
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	2050
DW	20.800 usec
DE	6.00 usec
TE	294.6 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	40.00 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6127491 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

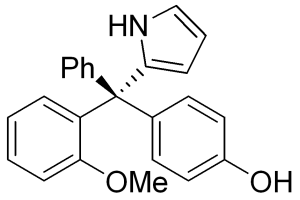



```
NAME                Lzy-2s
EXPNO                    2
PROCNO                   1
Date_             20200107
Time                 23.06
INSTRUM              spect
PROBHD    5 mm PABBO BB-
PULPROG                zg30
TD                    65536
SOLVENT             Acetone
NS                       16
DS                        2
SWH                8223.685 Hz
FIDRES            0.125483 Hz
AQ                3.9846387 sec
RG                      161
DW                   60.800 usec
DE                    6.00 usec
TE                   295.8 K
D1              1.00000000 sec
TD0                      1

======== CHANNEL f1 ========
NUC1                    1H
P1                   15.80 usec
PL1                  -1.00 dB
PL1W          12.17476940 W
SFO1          400.1324710 MHz
SI                   32768
SF            400.1300065 MHz
WDW                     EM
SSB                      0
LB                    0.30 Hz
GB                       0
PC                    1.00
```



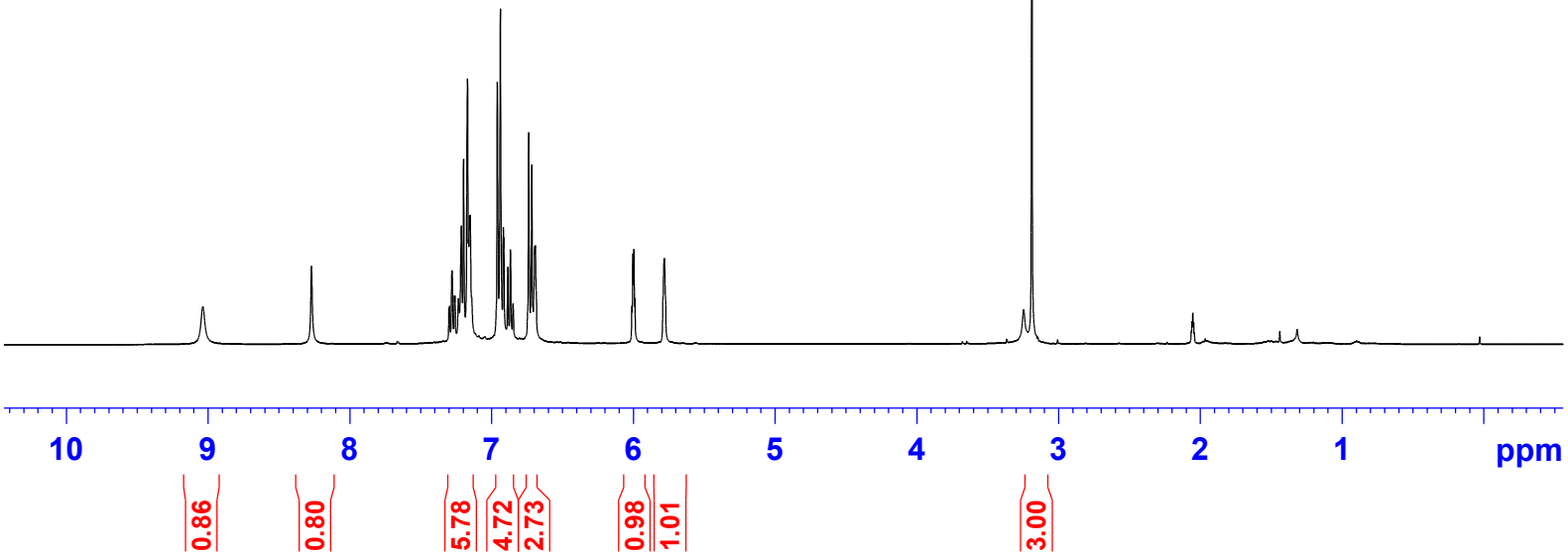
NAME	Lzy-2s-C
EXPNO	2
PROCNO	1
Date_	20200107
Time_	23.12
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgpg30
TD	65536
SOLVENT	Acetone
NS	112
DS	2
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	128
DW	20.800 usec
DE	6.00 usec
TE	296.4 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.60 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6126819 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

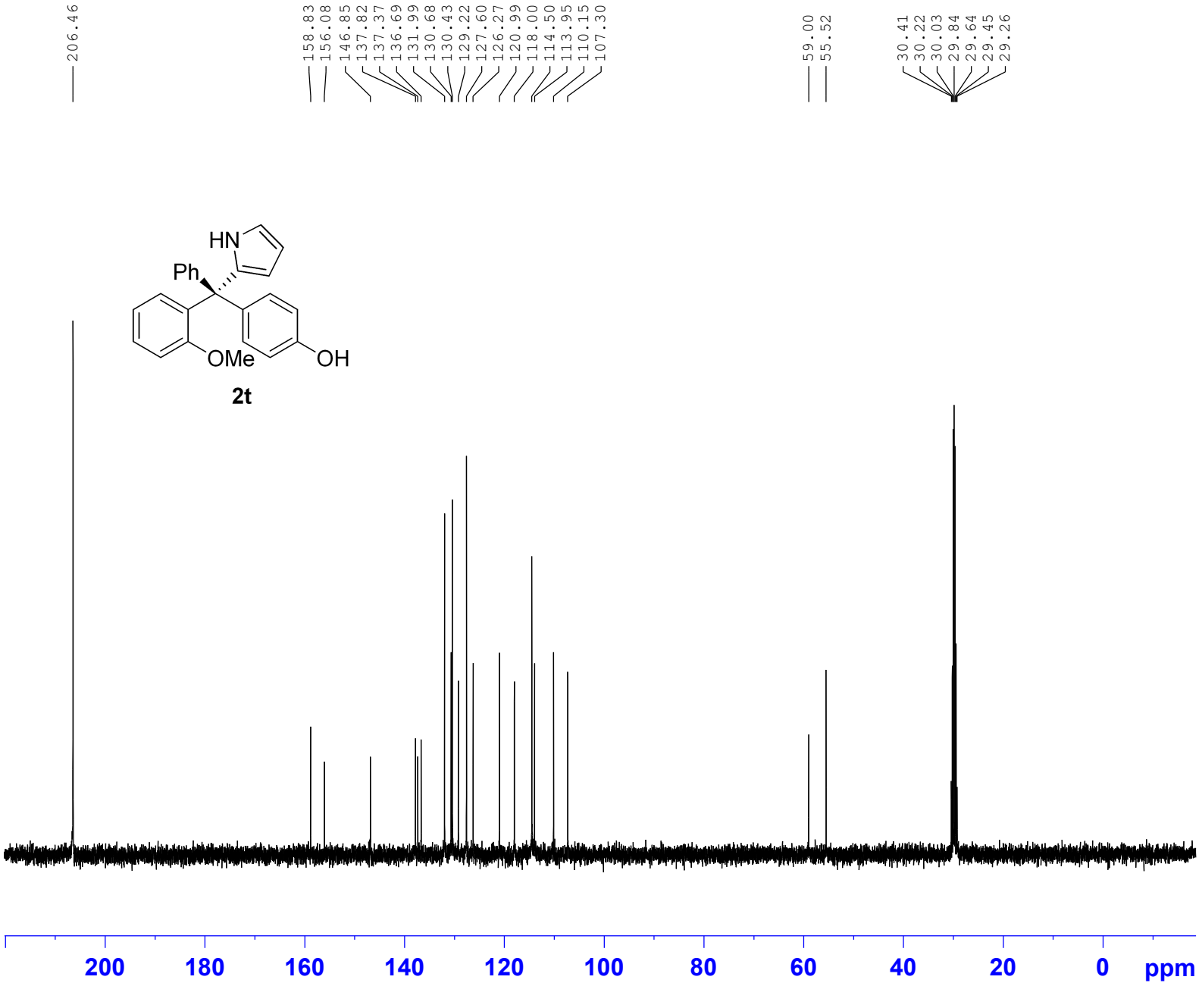




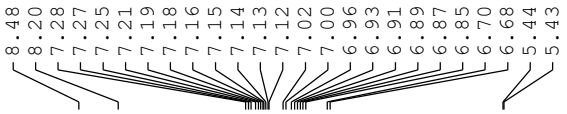
2t

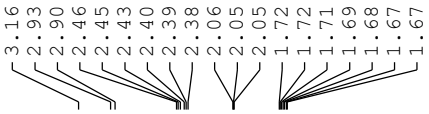
NAME	Lzy-2t
EXPNO	2
PROCNO	1
Date_	20200321
Time	11.18
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zg30
TD	65536
SOLVENT	Acetone
NS	4
DS	0
SWH	8223.685 Hz
FIDRES	0.125483 Hz
AQ	3.9846387 sec
RG	64
DW	60.800 usec
DE	6.00 usec
TE	295.2 K
D1	1.00000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	1H
P1	15.80 usec
PL1	-1.00 dB
PL1W	12.17476940 W
SFO1	400.1324710 MHz
SI	32768
SF	400.1300054 MHz
WDW	EM
SSB	0
LB	0.30 Hz
GB	0
PC	1.00

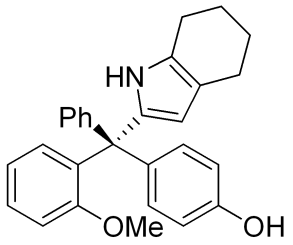





```
NAME            Lzy-2t-C
EXPNO                  2
PROCNO                 1
Date_           20200321
Time               11.20
INSTRUM            spect
PROBHD   5 mm PABBO BB-
PULPROG          zgpg30
TD                 65536
SOLVENT          Acetone
NS                    15
DS                     0
SWH            24038.461 Hz
FIDRES          0.366798 Hz
AQ             1.3631988 sec
RG                   181
DW                20.800 usec
DE                 6.00 usec
TE                295.8 K
D1           2.00000000 sec
D11          0.03000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                  13C
P1                   8.60 usec
PL1                 -3.00 dB
PL1W         60.64365387 W
SFO1        100.6228298 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                  1H
PCPD2              80.00 usec
PL2                -1.00 dB
PL12               14.39 dB
PL13               18.00 dB
PL2W         12.17476940 W
PL12W         0.35193357 W
PL13W         0.15327126 W
SFO2        400.1316005 MHz
SI                 32768
SF          100.6126966 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  1.40
```

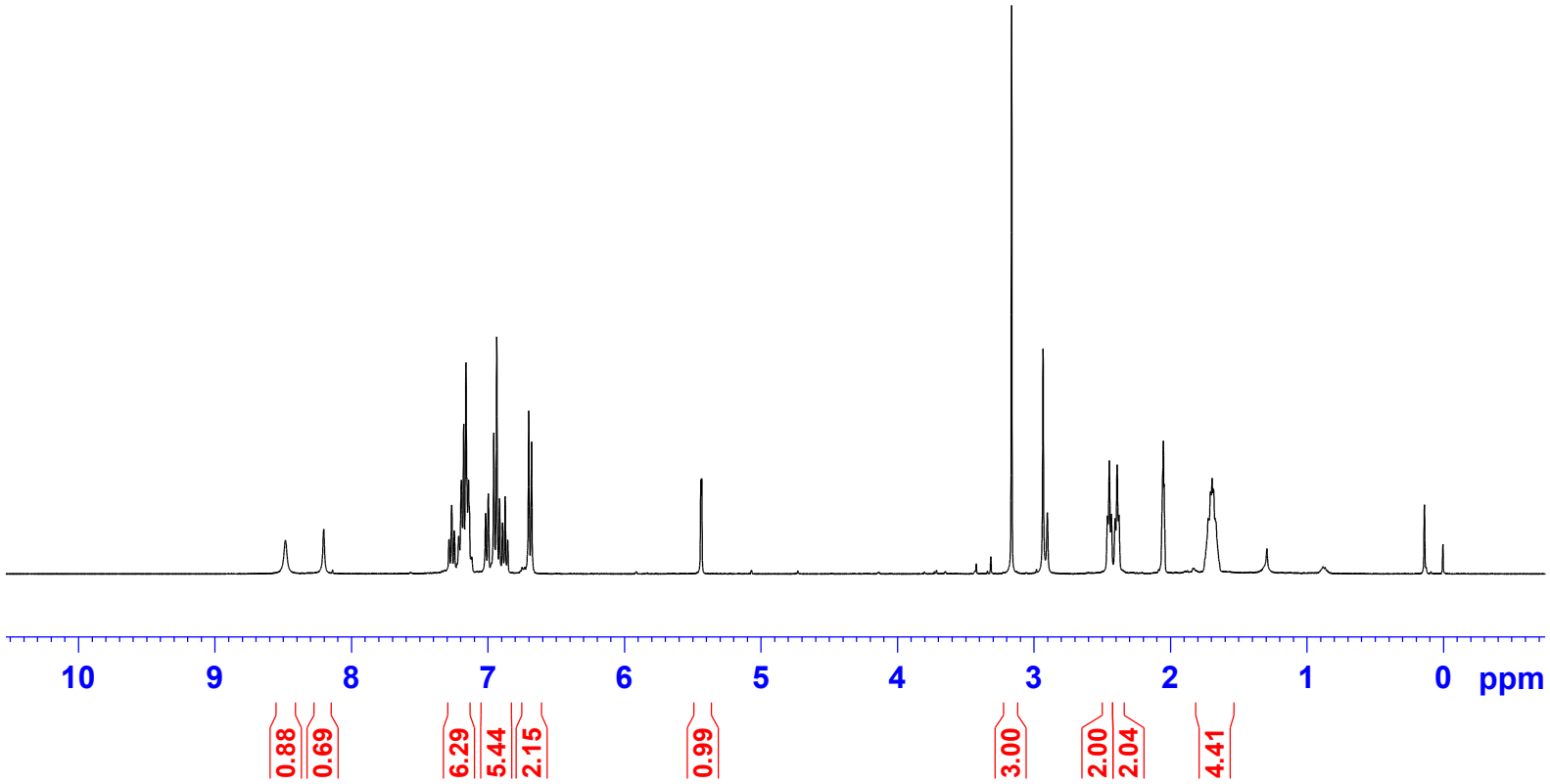


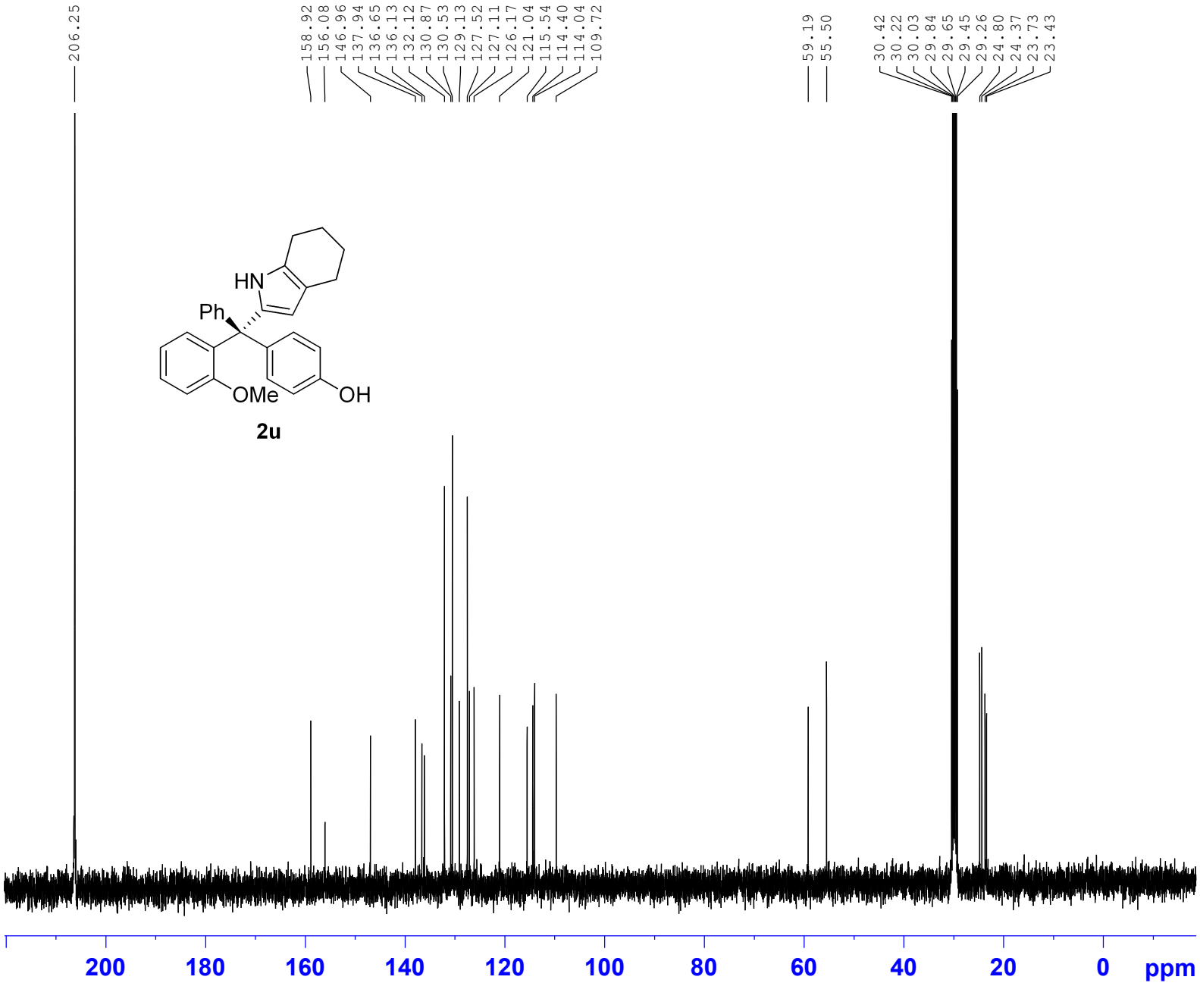




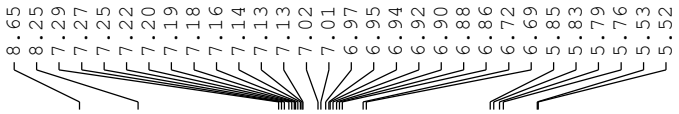
2u

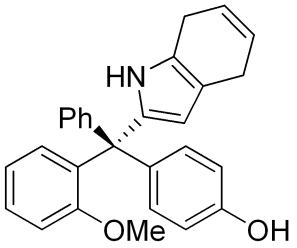
```
NAME                Lzy-2u
EXPNO                    1
PROCNO                   1
Date_             20200314
Time                 15.15
INSTRUM              spect
PROBHD    5 mm PABBO BB-
PULPROG                zg30
TD                    65536
SOLVENT             Acetone
NS                       12
DS                        0
SWH                8223.685 Hz
FIDRES            0.125483 Hz
AQ                3.9846387 sec
RG                      406
DW                   60.800 usec
DE                    6.00 usec
TE                   294.7 K
D1              1.00000000 sec
TD0                      1

======== CHANNEL f1 ========
NUC1                    1H
P1                   15.80 usec
PL1                  -1.00 dB
PL1W          12.17476940 W
SFO1          400.1324710 MHz
SI                    32768
SF            400.1300054 MHz
WDW                     EM
SSB                      0
LB                    0.30 Hz
GB                       0
PC                    1.00
```





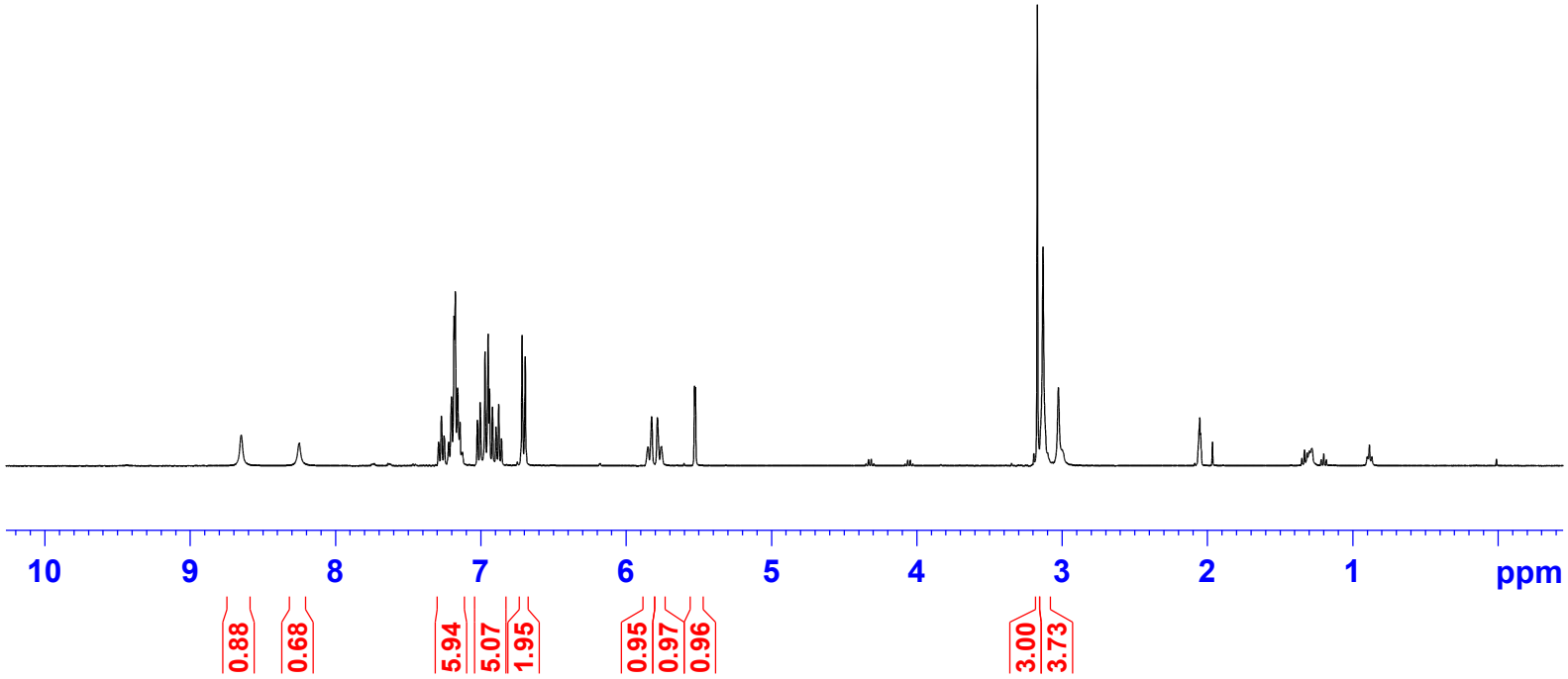
NAME	Lzy-2u-C
EXPNO	1
PROCNO	1
Date_	20200314
Time	15.17
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgpg30
TD	65536
SOLVENT	Acetone
NS	100
DS	2
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	128
DW	20.800 usec
DE	6.00 usec
TE	294.9 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.60 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6126827 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

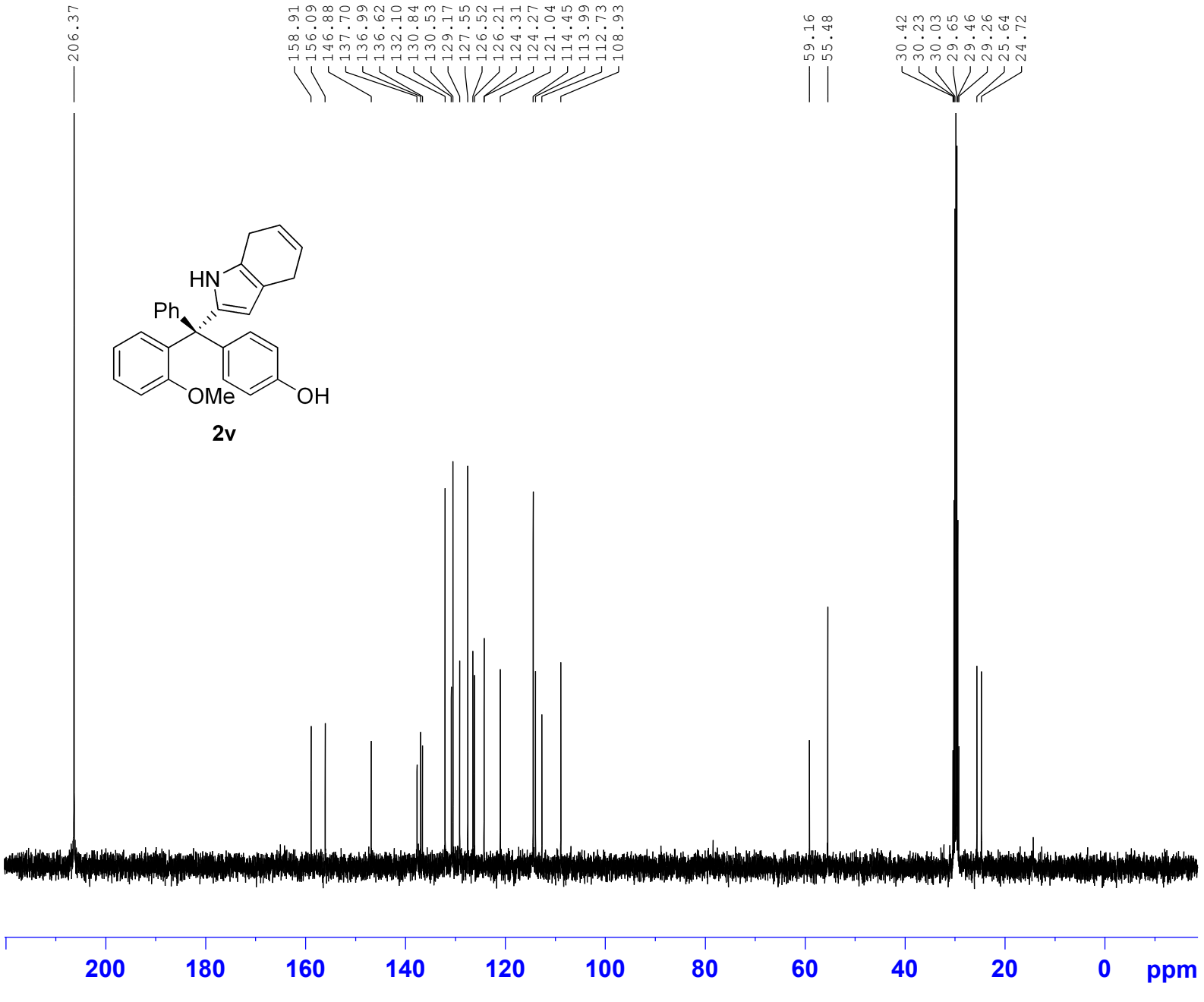




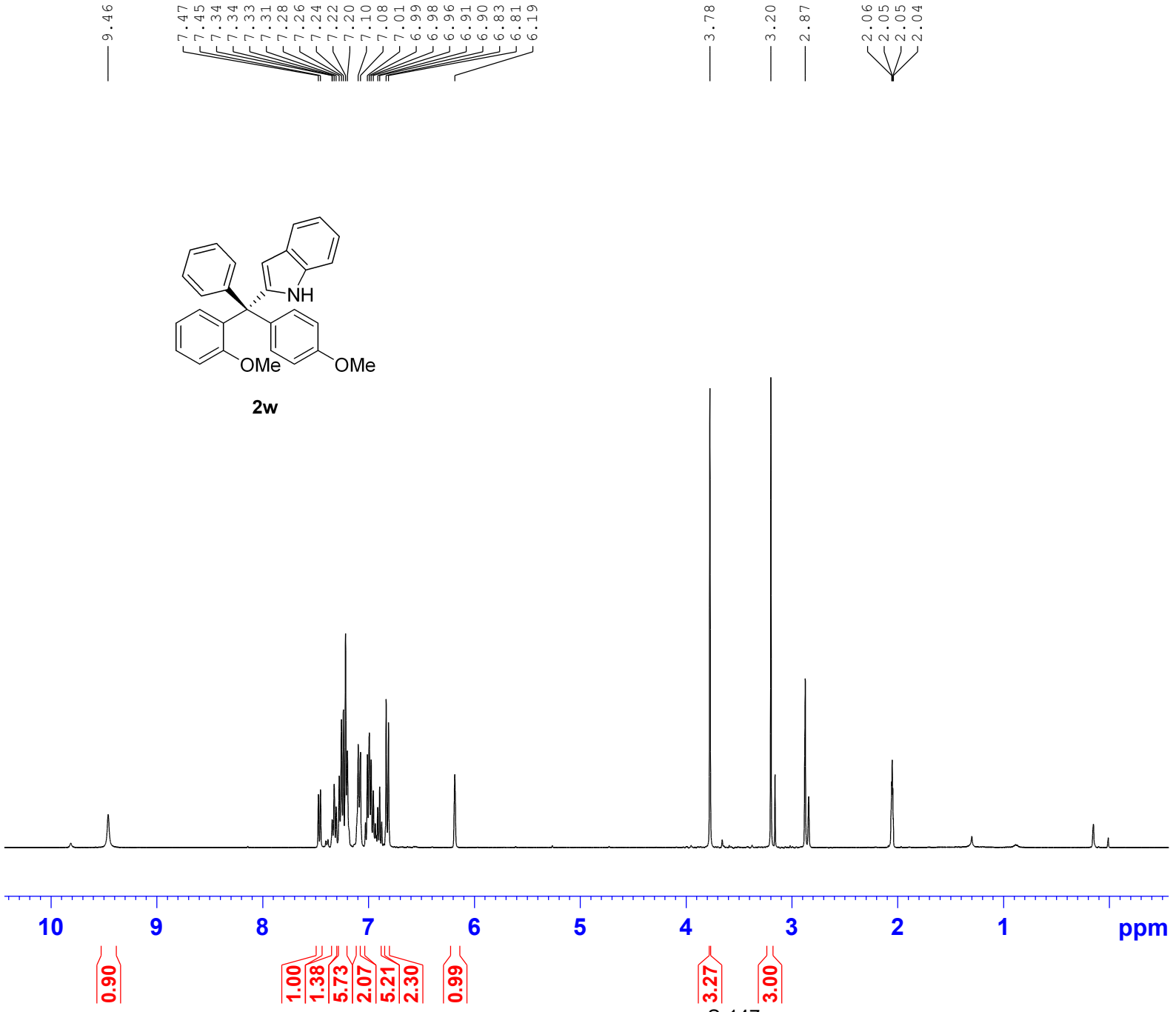
2v

```
NAME                Lzy-2v
EXPNO                    4
PROCNO                   1
Date_             20200318
Time                 20.08
INSTRUM              spect
PROBHD    5 mm PABBO BB-
PULPROG                zg30
TD                    65536
SOLVENT             Acetone
NS                       2
DS                       0
SWH               8223.685 Hz
FIDRES            0.125483 Hz
AQ               3.9846387 sec
RG                     114
DW                  60.800 usec
DE                   6.00 usec
TE                  295.0 K
D1              1.00000000 sec
TD0                      1

======== CHANNEL f1 ========
NUC1                    1H
P1                   15.80 usec
PL1                  -1.00 dB
PL1W          12.17476940 W
SFO1          400.1324710 MHz
SI                   32768
SF            400.1300054 MHz
WDW                     EM
SSB                      0
LB                    0.30 Hz
GB                       0
PC                    1.00
```

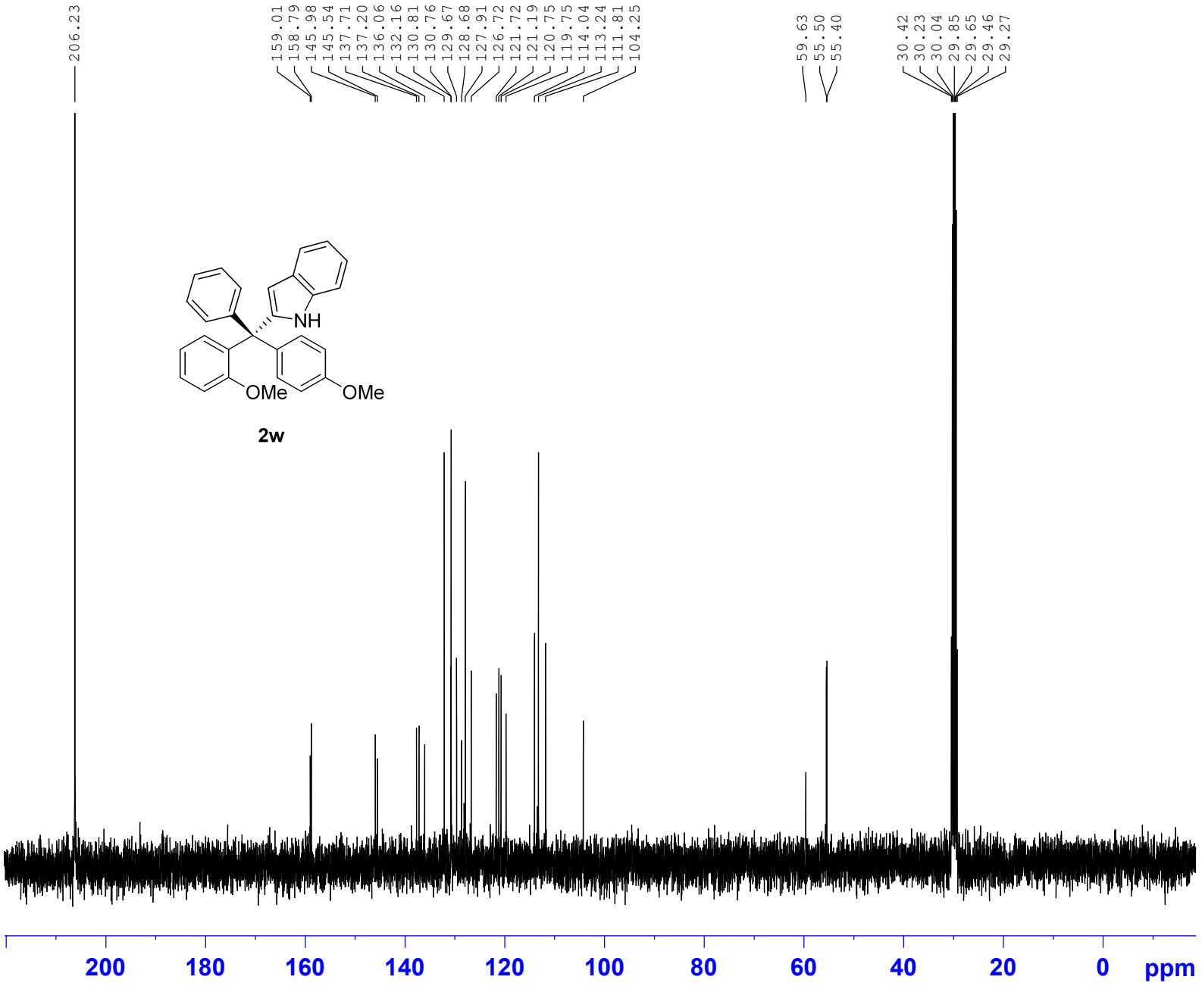




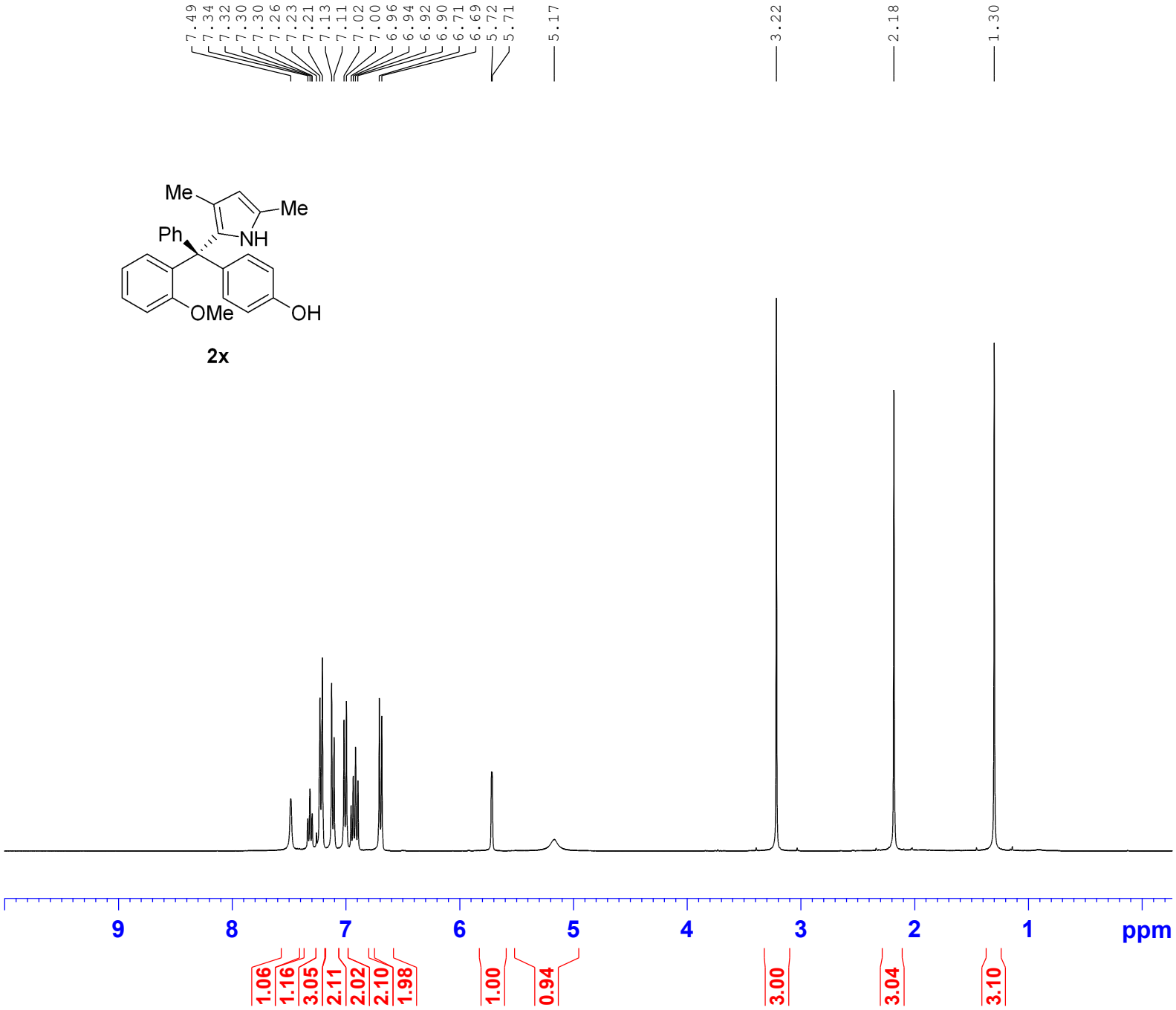
NAME	Lzy-2v-C
EXPNO	2
PROCNO	1
Date_	20200318
Time	15.42
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgpg30
TD	65536
SOLVENT	Acetone
NS	16
DS	2
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	161
DW	20.800 usec
DE	6.00 usec
TE	297.0 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.60 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6126878 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

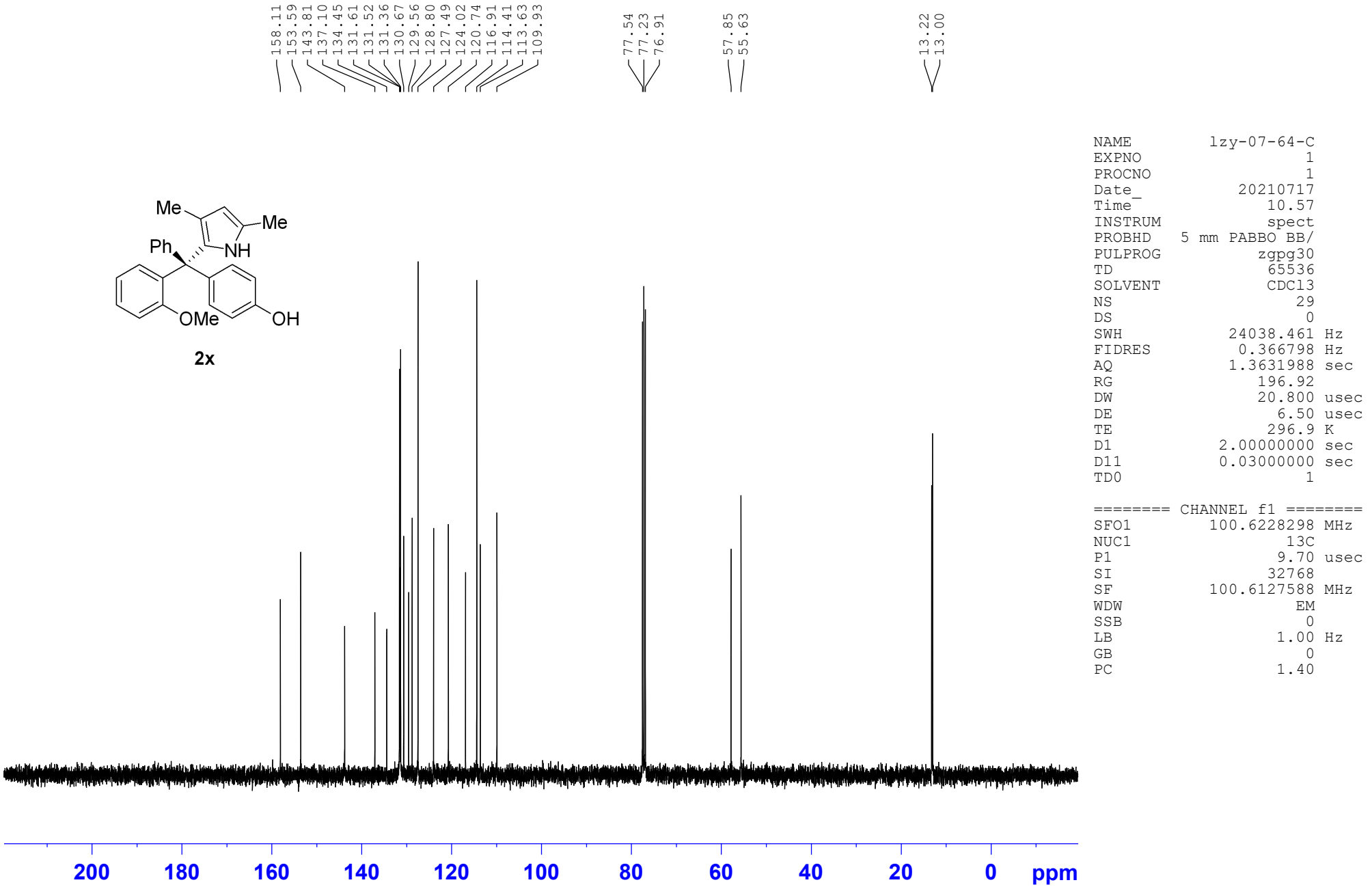


NAME	Lzy-2va
EXPNO	2
PROCNO	1
Date_	20200317
Time	22.12
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zg30
TD	65536
SOLVENT	Acetone
NS	4
DS	0
SWH	8223.685 Hz
FIDRES	0.125483 Hz
AQ	3.9846387 sec
RG	161
DW	60.800 usec
DE	6.00 usec
TE	295.3 K
D1	1.00000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	1H
P1	15.80 usec
PL1	-1.00 dB
PL1W	12.17476940 W
SFO1	400.1324710 MHz
SI	32768
SF	400.1300054 MHz
WDW	EM
SSB	0
LB	0.30 Hz
GB	0
PC	1.00

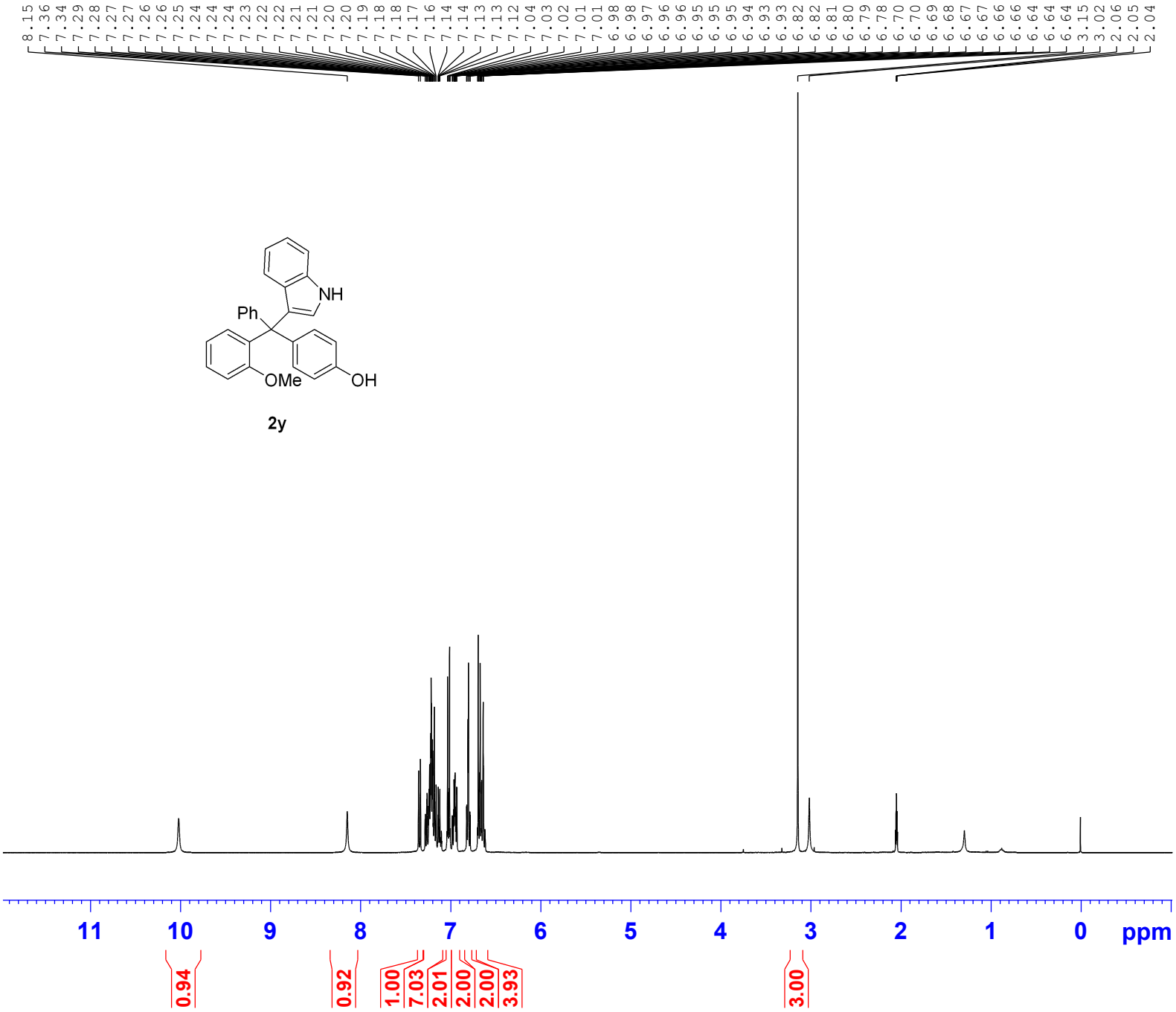


NAME	Lzy-2va-C
EXPNO	2
PROCNO	1
Date_	20200317
Time	22.15
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgpg30
TD	65536
SOLVENT	Acetone
NS	30
DS	2
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	203
DW	20.800 usec
DE	6.00 usec
TE	295.7 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.60 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6126826 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

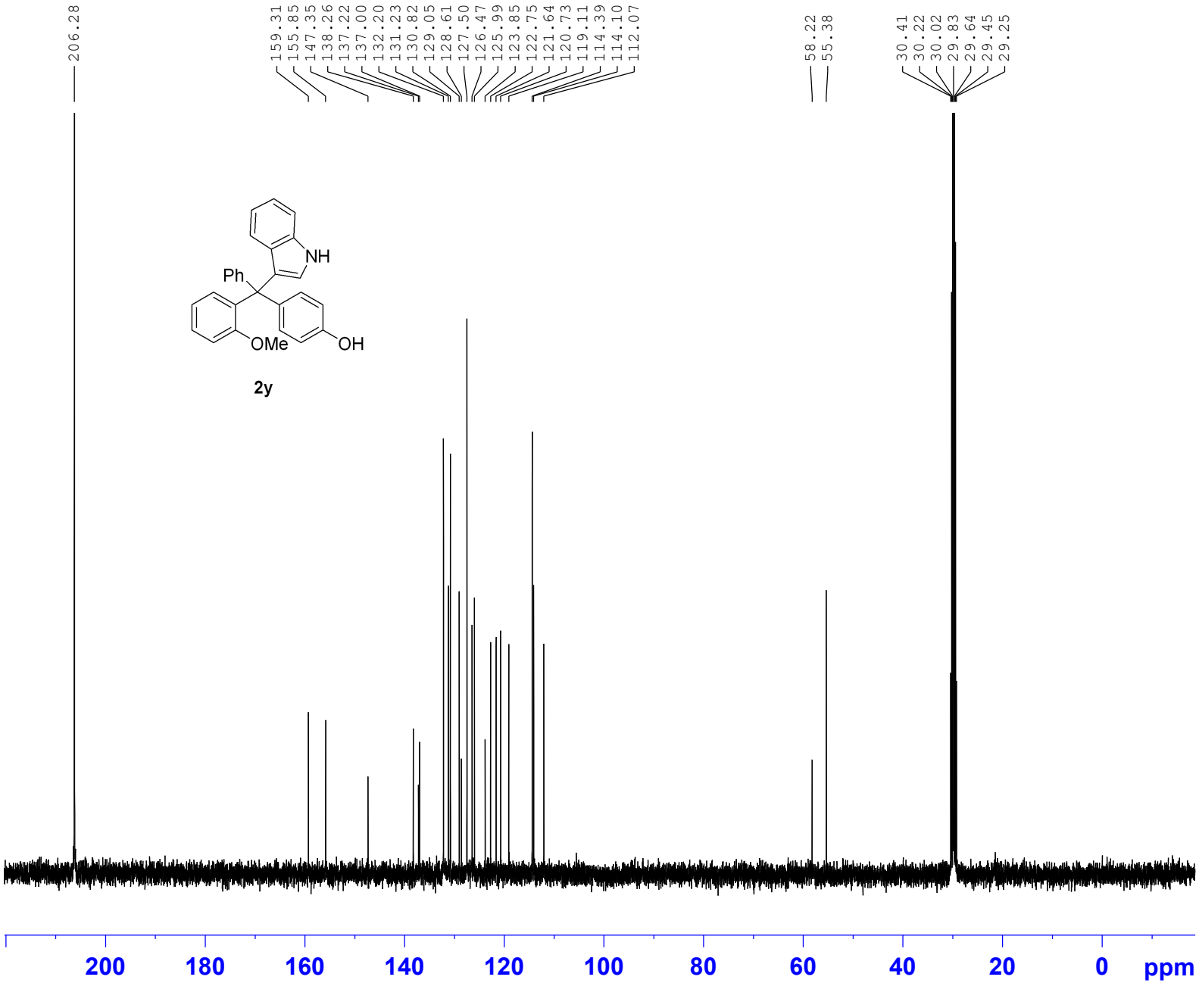

7.49
7.34
7.32
7.30
7.30
7.26
7.23
7.21
7.13
7.11
7.02
7.00
6.96
6.94
6.92
6.90
6.71
6.69
5.72
5.71
5.17
3.22
2.18
1.30
Me
Me
Ph
NH
OMe
OH
2x
NAME lzy-07-64
EXPNO 1
PROCNO 1
Date_ 20210717
Time 10.54
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 4
DS 0
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 27.78
DW 62.400 usec
DE 6.50 usec
TE 296.2 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 400.1324710 MHz
NUC1 1H
P1 14.50 usec
SI 65536
SF 400.1300100 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
9
8
7
6
5
4
3
2
1
ppm
1.06
1.16
3.05
2.11
2.02
2.10
1.98
1.00
0.94
3.00
3.04
3.10



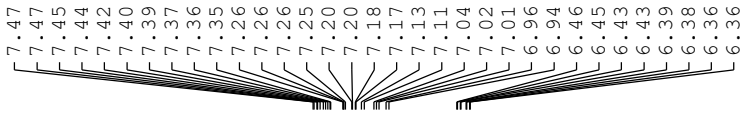
NAME	lzy-07-64-C
EXPNO	1
PROCNO	1
Date_	20210717
Time	10.57
INSTRUM	spect
PROBHD	5 mm PABBO BB/
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	29
DS	0
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	196.92
DW	20.800 usec
DE	6.50 usec
TE	296.9 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
SFO1	100.6228298 MHz
NUC1	13C
P1	9.70 usec
SI	32768
SF	100.6127588 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

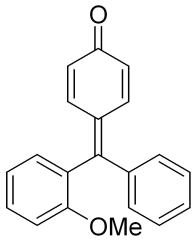



```
NAME      lzy-07-46-acetone-H
EXPNO                       1
PROCNO                      1
Date_              20210717
Time                   18.39
INSTRUM                spect
PROBHD    5 mm DUL 13C-1
PULPROG                 zg30
TD                     65536
SOLVENT          Acetone
NS                          3
DS                          0
SWH                 8223.685 Hz
FIDRES              0.125483 Hz
AQ                3.9846387 sec
RG                        181
DW                   60.800 usec
DE                    6.00 usec
TE                    300.0 K
D1                1.00000000 sec
TD0                         1

======== CHANNEL f1 ========
NUC1                       1H
P1                    15.80 usec
PL1                   -1.00 dB
PL1W            12.17476940 W
SFO1           400.1324710 MHz
SI                      32768
SF             400.1300070 MHz
WDW                        EM
SSB                         0
LB                    0.30 Hz
GB                          0
PC                    1.00
```



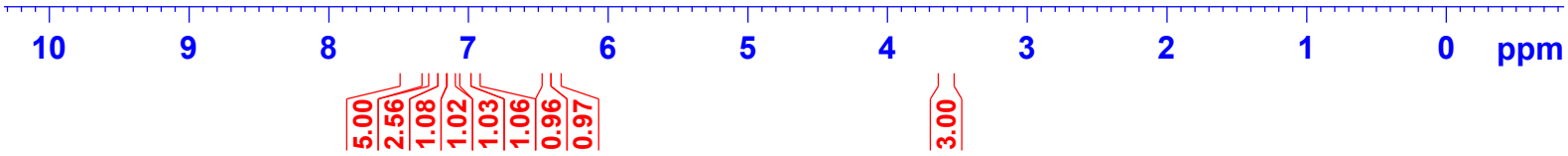

```
NAME      lzy-07-46-acetone-C
EXPNO                       2
PROCNO                      1
Date_              20210717
Time                   18.41
INSTRUM                spect
PROBHD    5 mm DUL 13C-1
PULPROG             zgpg30
TD                      65536
SOLVENT           Acetone
NS                        147
DS                          0
SWH               24038.461 Hz
FIDRES             0.366798 Hz
AQ                1.3631988 sec
RG                       2050
DW                     20.800 usec
DE                      6.00 usec
TE                     300.0 K
D1                2.00000000 sec
D11               0.03000000 sec
TD0                         1

======== CHANNEL f1 ========
NUC1                      13C
P1                     40.00 usec
PL1                    -3.00 dB
PL1W             60.64365387 W
SFO1            100.6228298 MHz

======== CHANNEL f2 ========
CPDPRG2              waltz16
NUC2                      1H
PCPD2                  80.00 usec
PL2                    -1.00 dB
PL12                   14.39 dB
PL13                   18.00 dB
PL2W             12.17476940 W
PL12W             0.35193357 W
PL13W             0.15327126 W
SFO2            400.1316005 MHz
SI                      32768
SF              100.6126861 MHz
WDW                        EM
SSB                         0
LB                      1.00 Hz
GB                          0
PC                      1.40
```

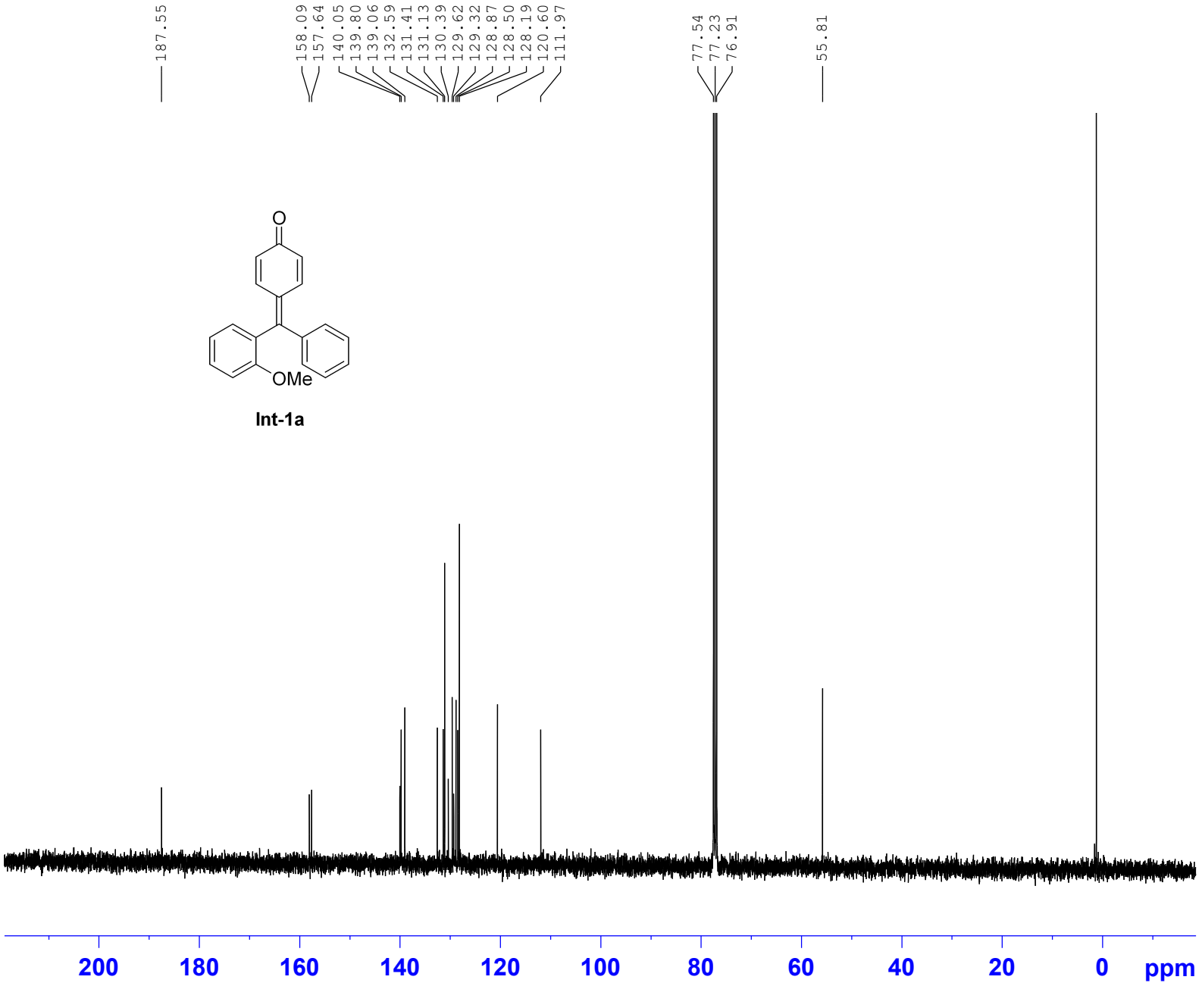




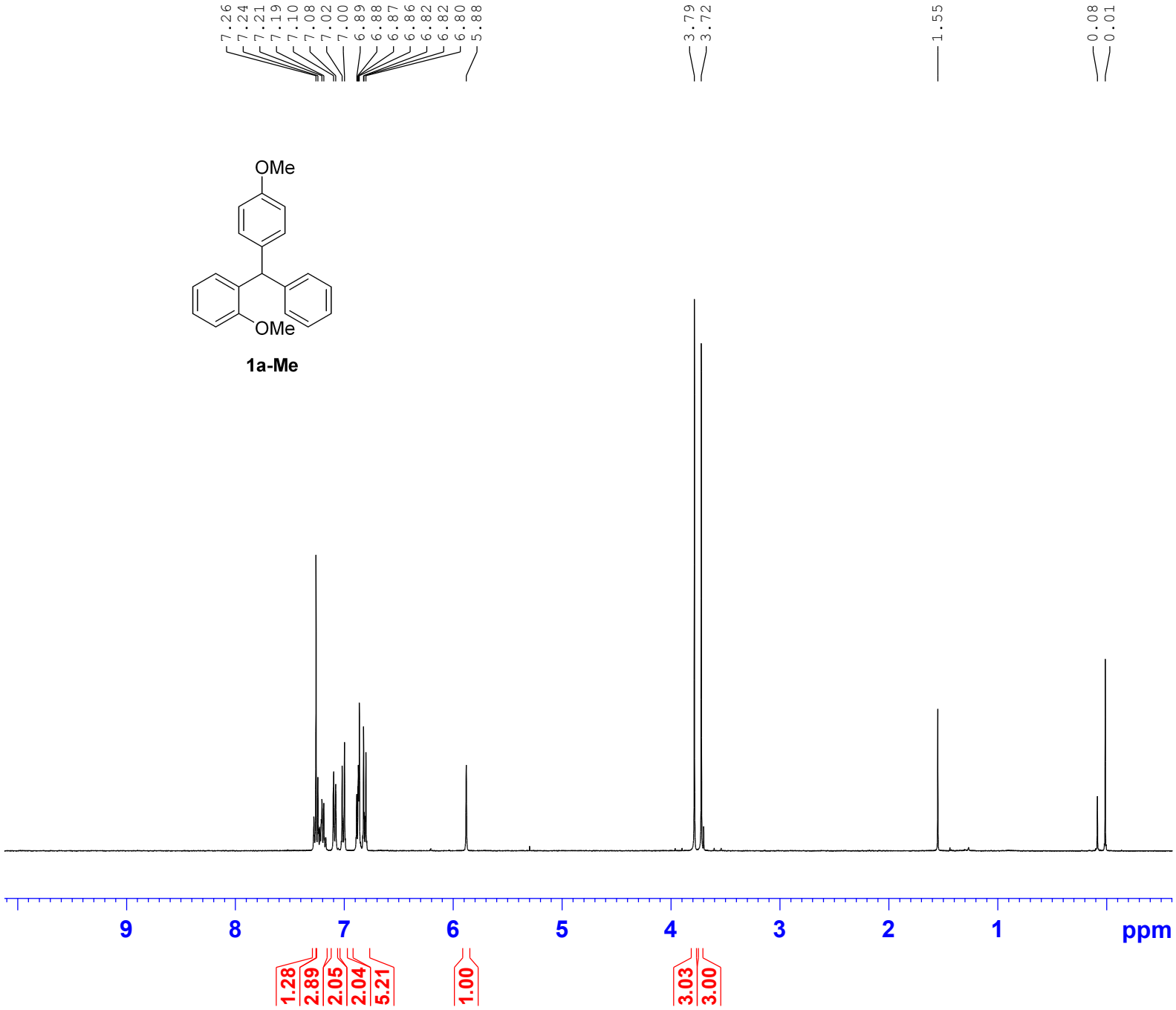
Int-1a

```
NAME          Lzy-Int-1a
EXPNO                  1
PROCNO                 1
Date_           20200325
Time               9.51
INSTRUM           spect
PROBHD   5 mm PABBO BB-
PULPROG             zg30
TD                 65536
SOLVENT            CDCl3
NS                    10
DS                     0
SWH             8223.685 Hz
FIDRES          0.125483 Hz
AQ             3.9846387 sec
RG                   287
DW                60.800 usec
DE                 6.00 usec
TE                295.6 K
D1           1.00000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                  1H
P1                 15.80 usec
PL1                -1.00 dB
PL1W        12.17476940 W
SFO1        400.1324710 MHz
SI                 32768
SF          400.1300108 MHz
WDW                   EM
SSB                    0
LB                  0.30 Hz
GB                     0
PC                  1.00
```





NAME	Lzy-Int-1a-C
EXPNO	1
PROCNO	1
Date_	20200325
Time	9.55
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	275
DS	0
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	144
DW	20.800 usec
DE	6.00 usec
TE	296.0 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.60 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6127492 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40


7.26
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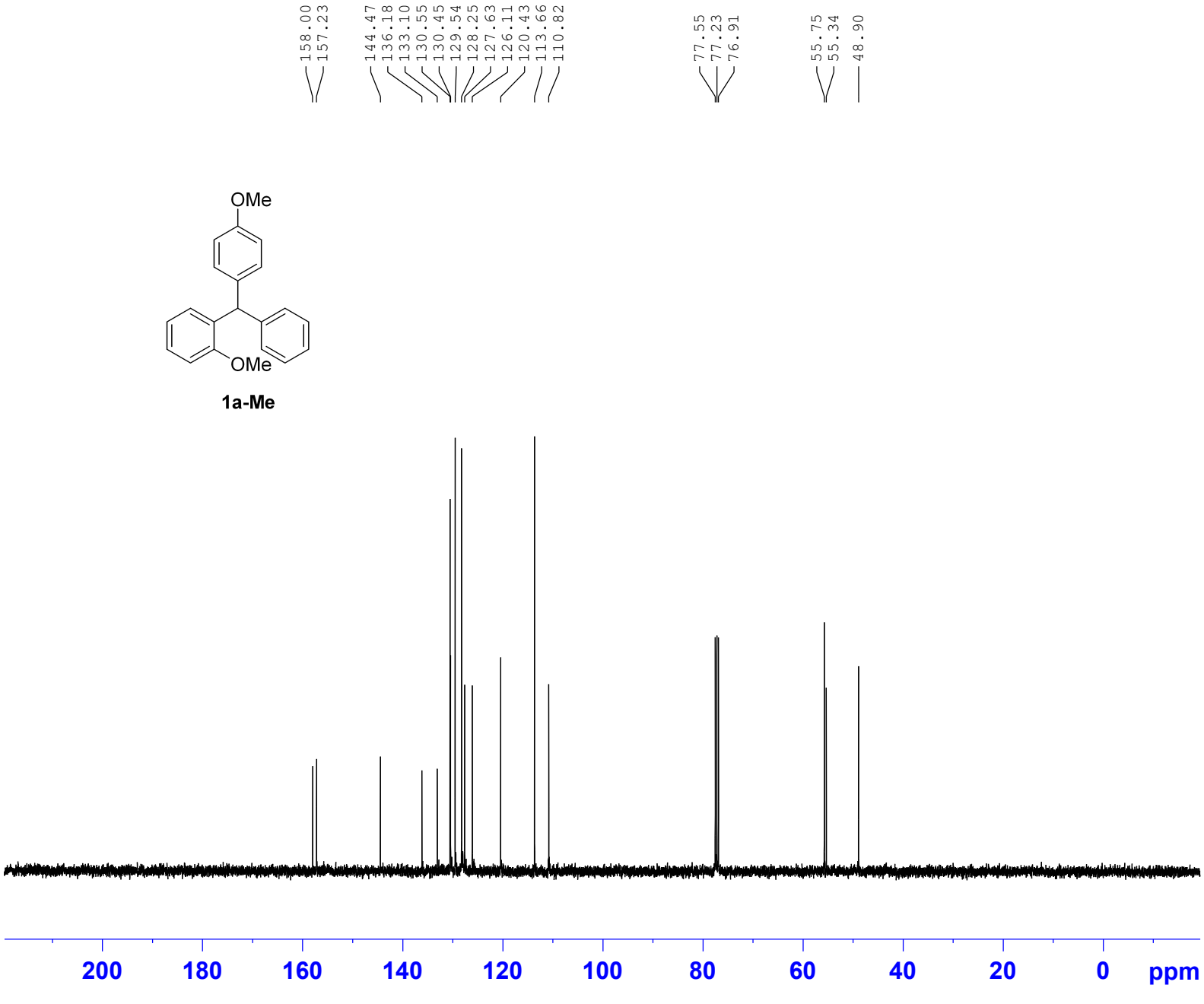
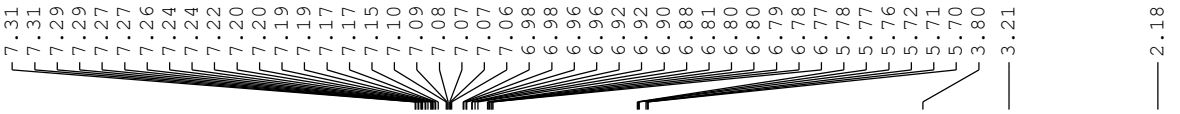
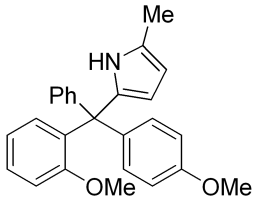
7.19
7.10
7.08
7.02
7.00
6.89
6.88
6.87
6.86
6.82
6.82
6.80
5.88
3.79
3.72
1.55
0.08
0.01
OMe
OMe
1a-Me
NAME Lzy-1a-Me
EXPNO 1
PROCNO 1
Date_ 20200905
Time 20.13
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 4
DS 0
SWH 8223.685 Hz
FIDRES 0.125483 Hz
AQ 3.9846387 sec
RG 456
DW 60.800 usec
DE 6.00 usec
TE 296.3 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 1H
P1 15.80 usec
PL1 -1.00 dB
PL1W 12.17476940 W
SFO1 400.1324710 MHz
SI 32768
SF 400.1300096 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
9
8
7
6
5
4
3
2
1
ppm
1.28
2.89
2.05
2.04
5.21
1.00
3.03
3.00



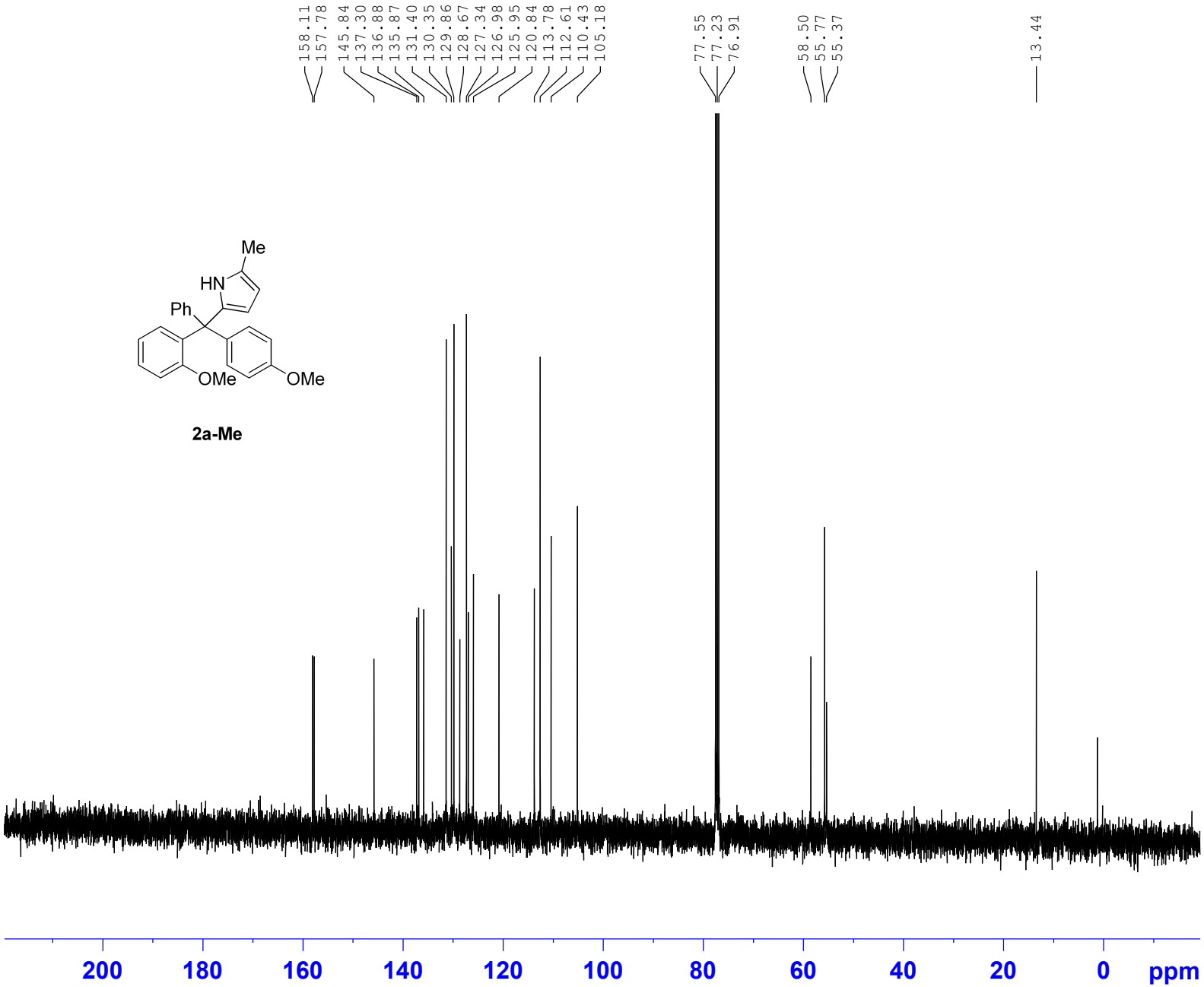
NAME	Lzy-1a-Me-C
EXPNO	1
PROCNO	1
Date_	20200905
Time	14.23
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	39
DS	0
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	144
DW	20.800 usec
DE	6.00 usec
TE	294.9 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.60 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6127578 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40



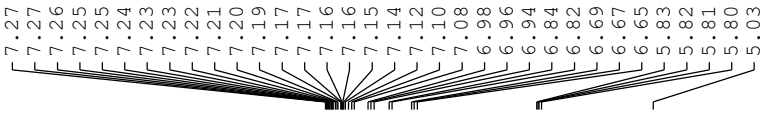


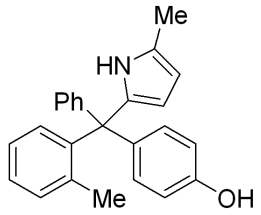
2a-Me

```
NAME            Lzy-2a-Me
EXPNO                   1
PROCNO                  1
Date_            20200912
Time                20.09
INSTRUM             spect
PROBHD    5 mm PABBO BB-
PULPROG              zg30
TD                  65536
SOLVENT             CDCl3
NS                      3
DS                      0
SWH              8223.685 Hz
FIDRES           0.125483 Hz
AQ               3.9846387 sec
RG                    512
DW                 60.800 usec
DE                  6.00 usec
TE                 296.0 K
D1              1.00000000 sec
TD0                     1

======== CHANNEL f1 ========
NUC1                   1H
P1                  15.80 usec
PL1                 -1.00 dB
PL1W         12.17476940 W
SFO1         400.1324710 MHz
SI                  32768
SF           400.1300097 MHz
WDW                    EM
SSB                     0
LB                  0.30 Hz
GB                      0
PC                  1.00
```

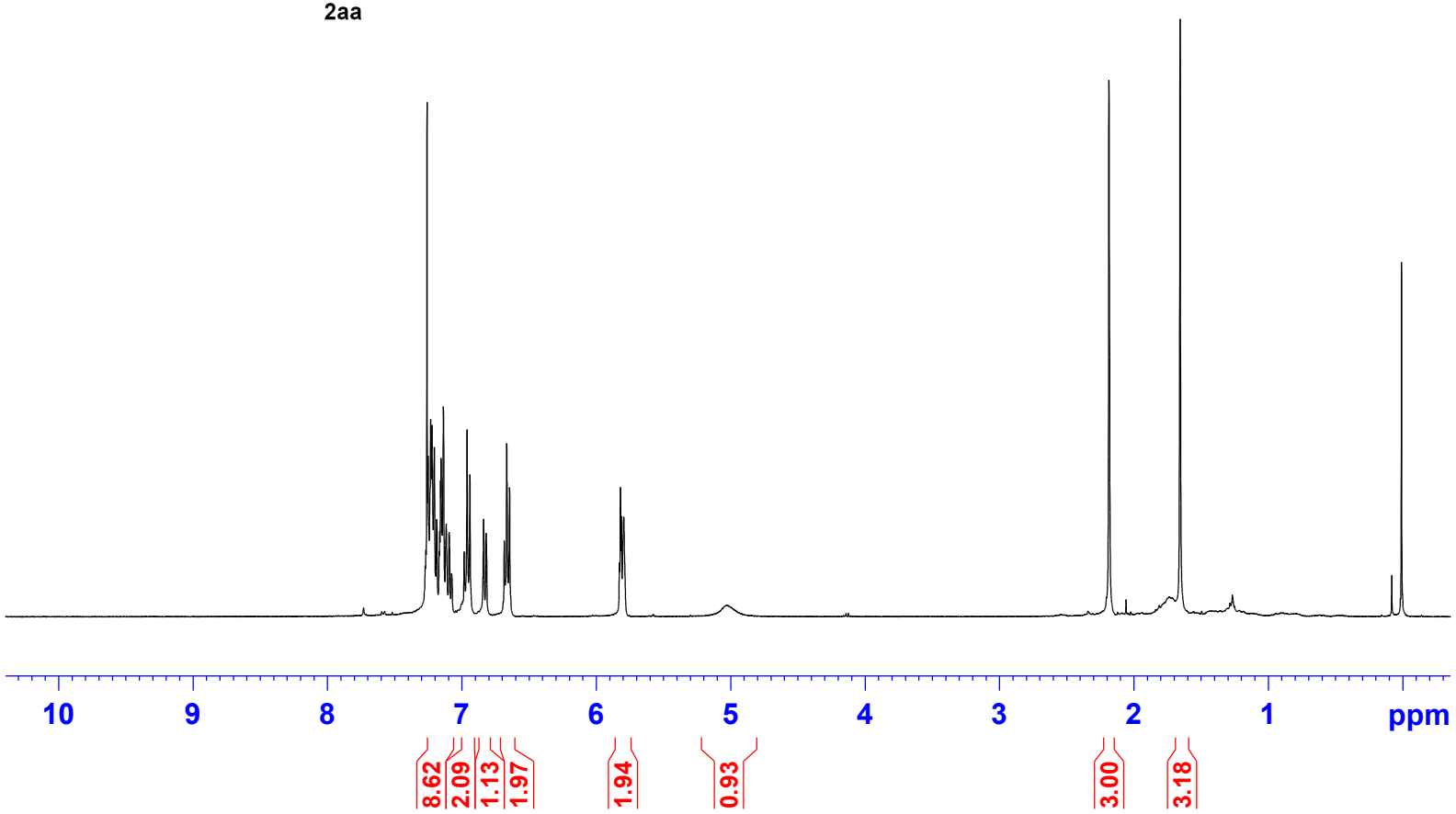


NAME	Lzy-2a-Me-C
EXPNO	1
PROCNO	1
Date_	20200912
Time	20.19
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	124
DS	0
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	90.5
DW	20.800 usec
DE	6.00 usec
TE	296.3 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.60 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6127505 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

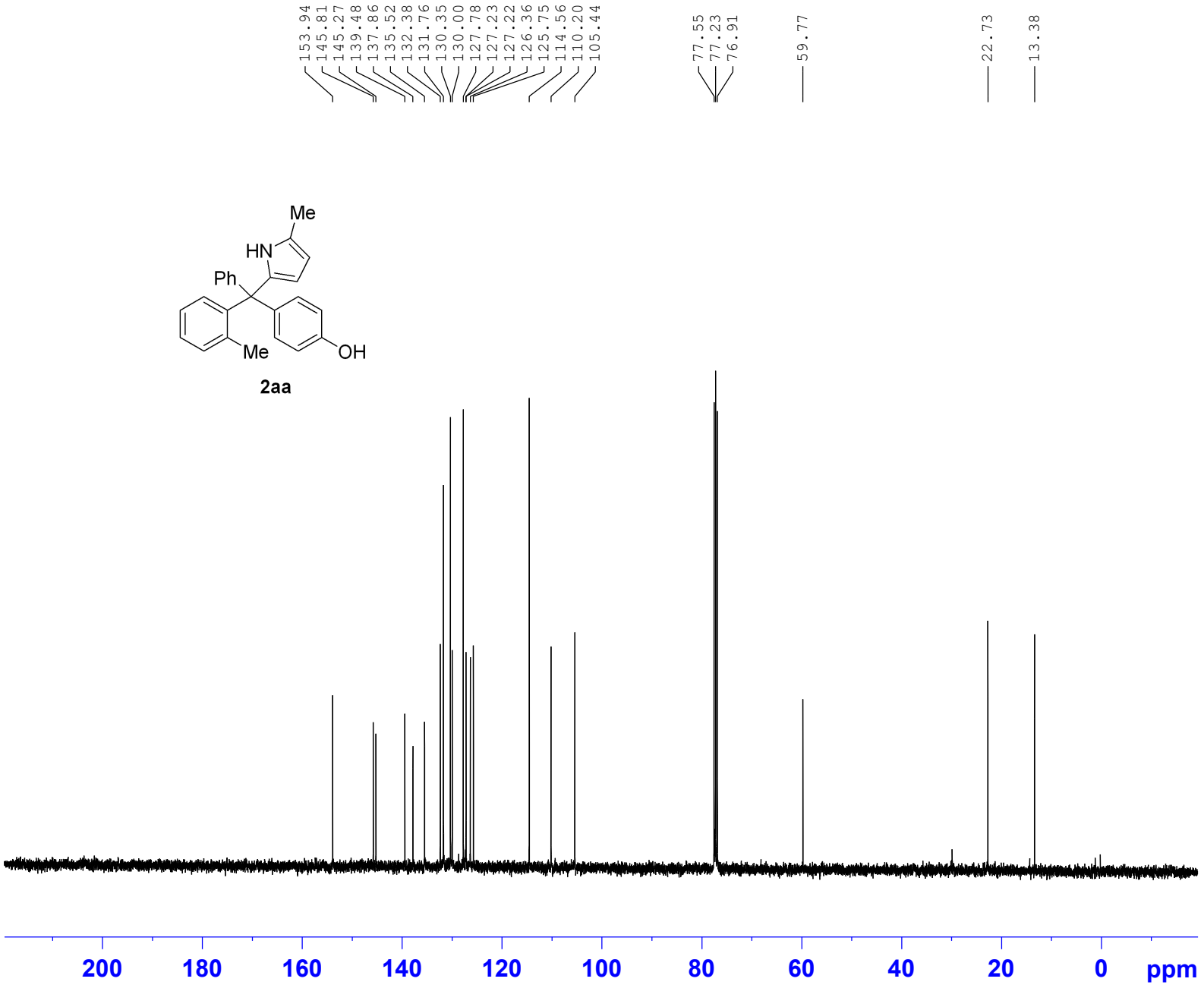




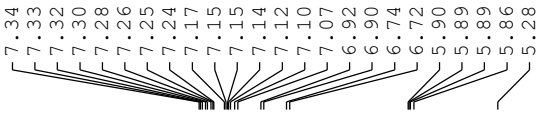
2aa

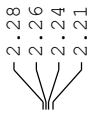


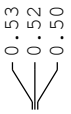

```
NAME                lzy-05-38
EXPNO                       1
PROCNO                      1
Date_                20201123
Time                    21.08
INSTRUM                 spect
PROBHD    5 mm PABBO BB-
PULPROG                 zg30
TD                     65536
SOLVENT                CDCl3
NS                        16
DS                         0
SWH                 8223.685 Hz
FIDRES              0.125483 Hz
AQ                3.9846387 sec
RG                       724
DW                  60.800 usec
DE                   6.00 usec
TE                   294.6 K
D1                1.00000000 sec
TD0                         1

======== CHANNEL f1 ========
NUC1                       1H
P1                      15.80 usec
PL1                     -1.00 dB
PL1W             12.17476940 W
SFO1             400.1324710 MHz
SI                       32768
SF               400.1300096 MHz
WDW                        EM
SSB                         0
LB                       0.30 Hz
GB                          0
PC                       1.00
```

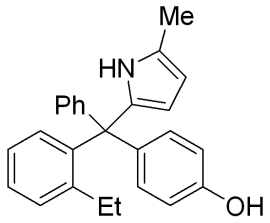


NAME	lzy-05-37-C
EXPNO	1
PROCNO	1
Date_	20201122
Time	21.43
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	148
DS	2
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	90.5
DW	20.800 usec
DE	6.00 usec
TE	296.7 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.60 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6127534 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40



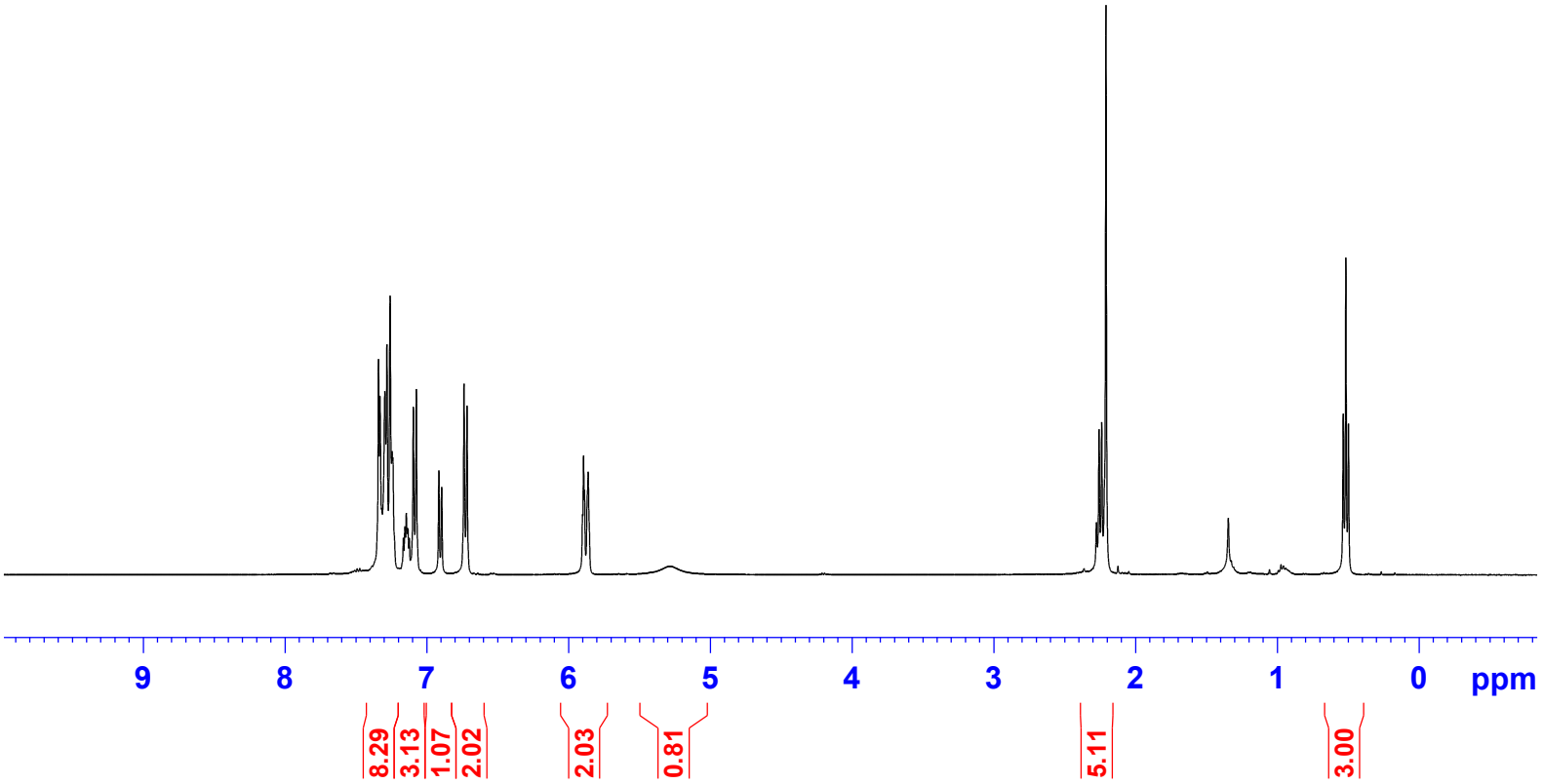


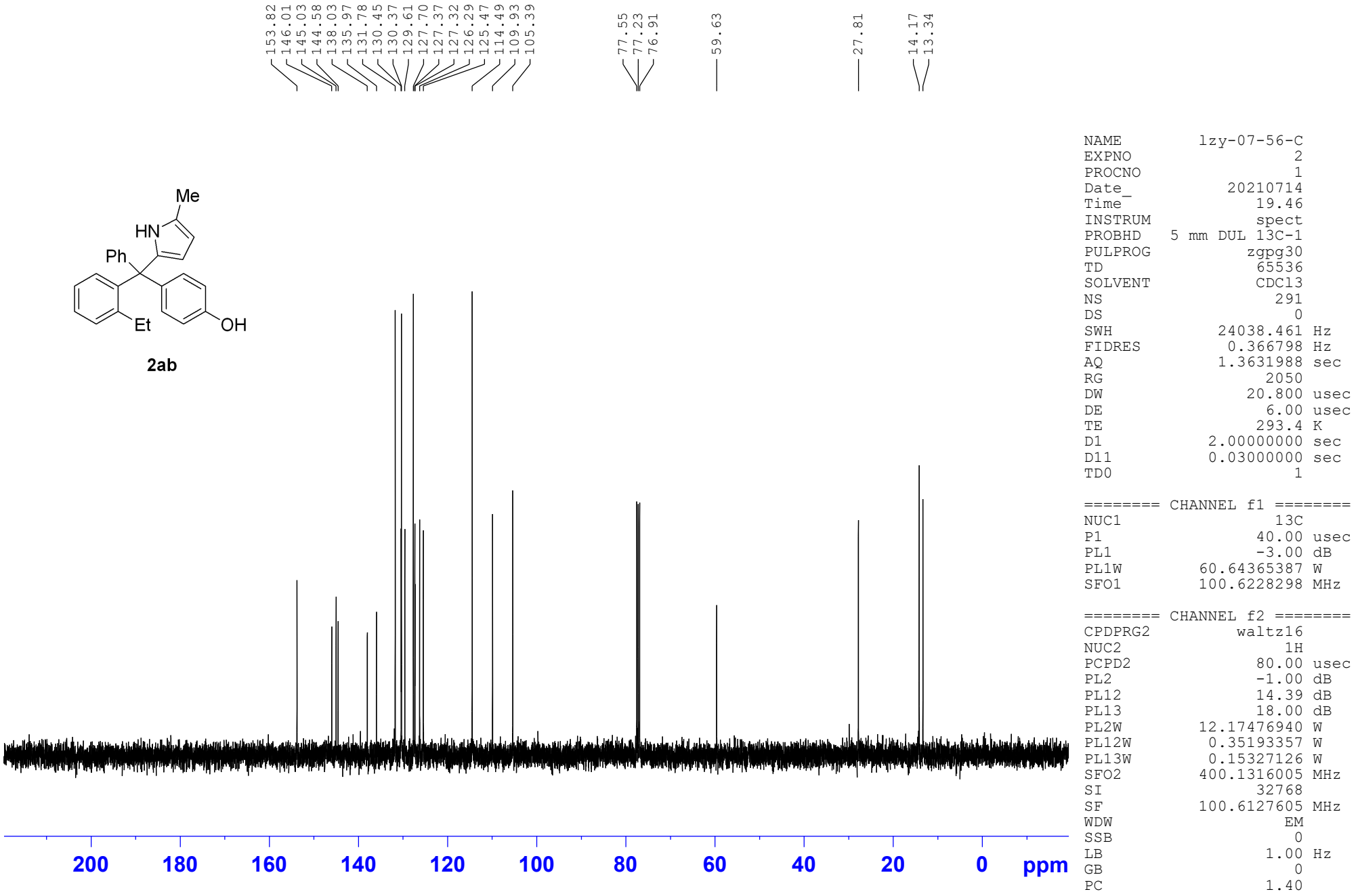




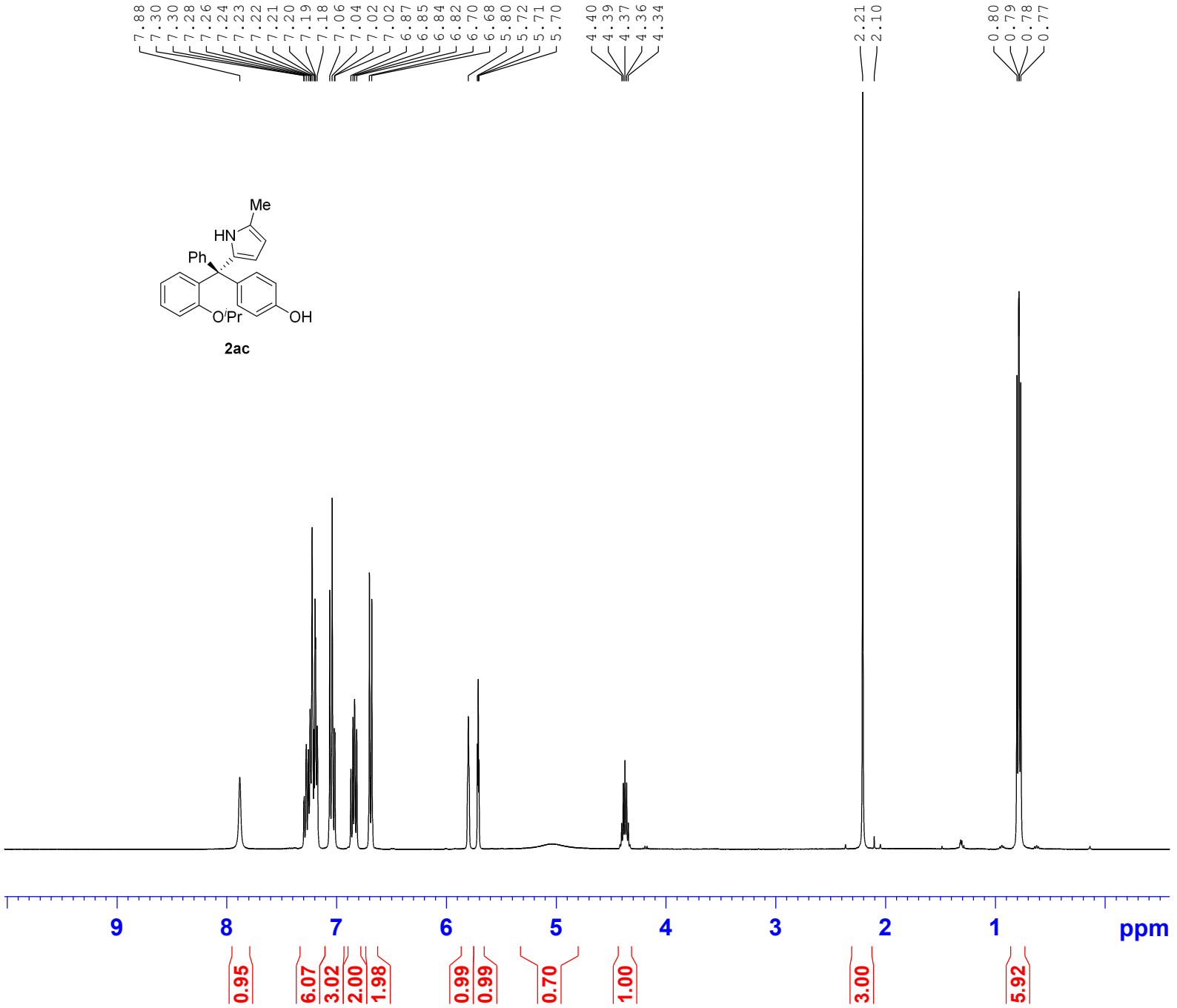
2ab

```
NAME      lzy-07-56-0715
EXPNO                  1
PROCNO                 1
Date_           20210715
Time               10.27
INSTRUM            spect
PROBHD   5 mm PABBO BB/
PULPROG             zg30
TD                 65536
SOLVENT            CDCl3
NS                     2
DS                     0
SWH             8012.820 Hz
FIDRES          0.122266 Hz
AQ             4.0894966 sec
RG                 17.38
DW                62.400 usec
DE                 6.50 usec
TE                296.4 K
D1           1.00000000 sec
TD0                    1

======== CHANNEL f1 ========
SFO1        400.1324710 MHz
NUC1                   1H
P1                 14.50 usec
SI                 65536
SF          400.1300031 MHz
WDW                   EM
SSB                    0
LB                 0.30 Hz
GB                     0
PC                 1.00
```

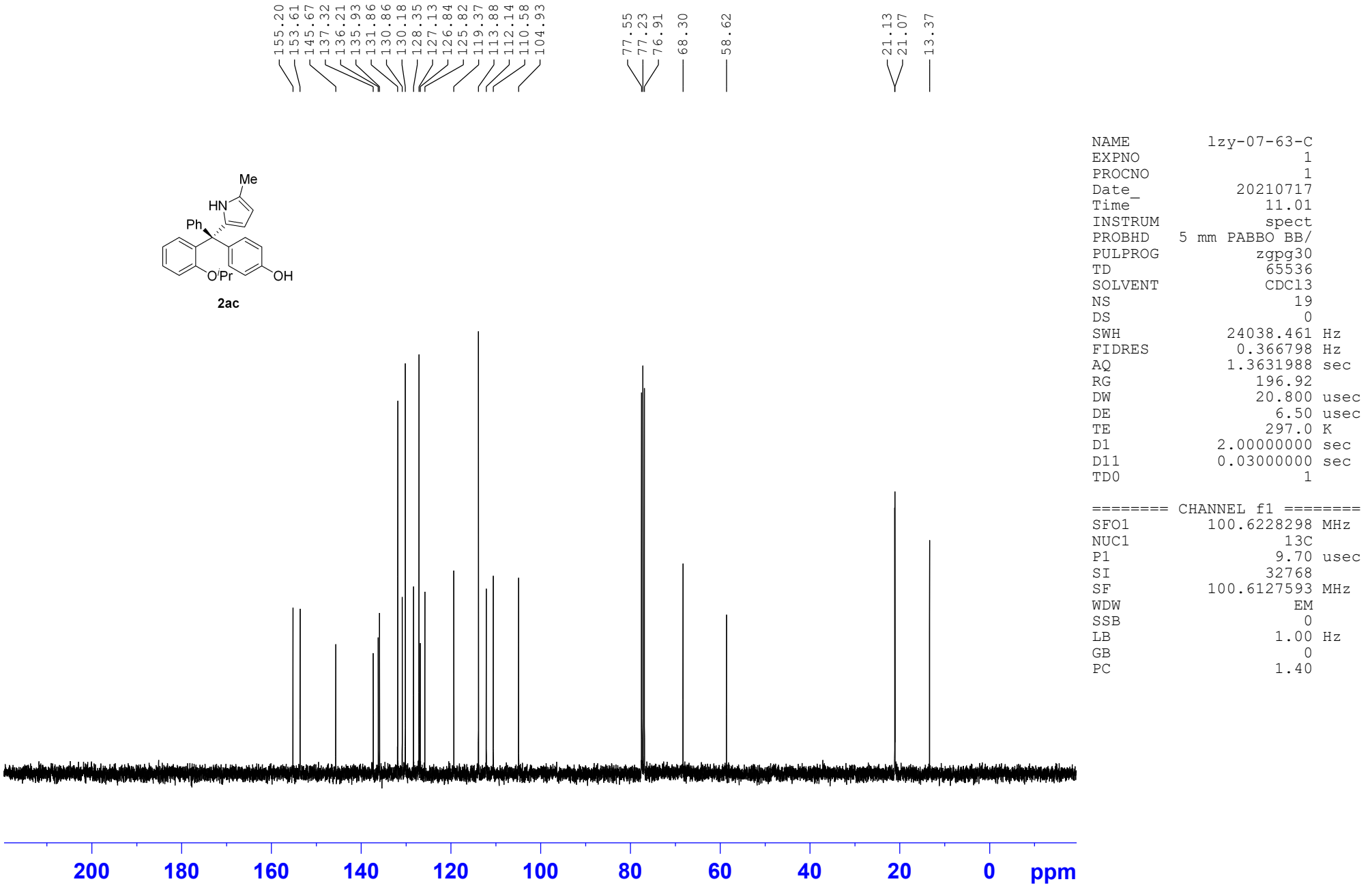


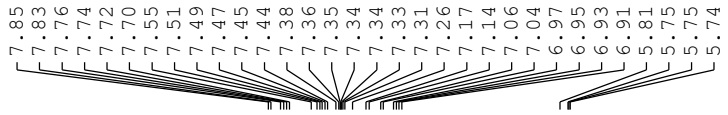


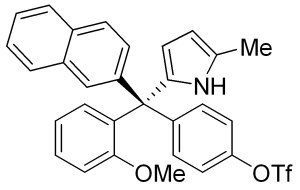
NAME	lzy-07-56-C
EXPNO	2
PROCNO	1
Date_	20210714
Time	19.46
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	291
DS	0
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	2050
DW	20.800 usec
DE	6.00 usec
TE	293.4 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	40.00 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6127605 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40




```
NAME          lzy-07-63-H
EXPNO                   2
PROCNO                  1
Date_            20210717
Time                15.33
INSTRUM             spect
PROBHD    5 mm PABBO BB/
PULPROG              zg30
TD                  65536
SOLVENT             CDCl3
NS                      4
DS                      0
SWH              8012.820 Hz
FIDRES           0.122266 Hz
AQ             4.0894966 sec
RG                  27.78
DW                62.400 usec
DE                 6.50 usec
TE                296.5 K
D1           1.00000000 sec
TD0                     1

======== CHANNEL f1 ========
SFO1         400.1324710 MHz
NUC1                   1H
P1                 14.50 usec
SI                  65536
SF           400.1300049 MHz
WDW                    EM
SSB                     0
LB                 0.30 Hz
GB                      0
PC                   1.00
```

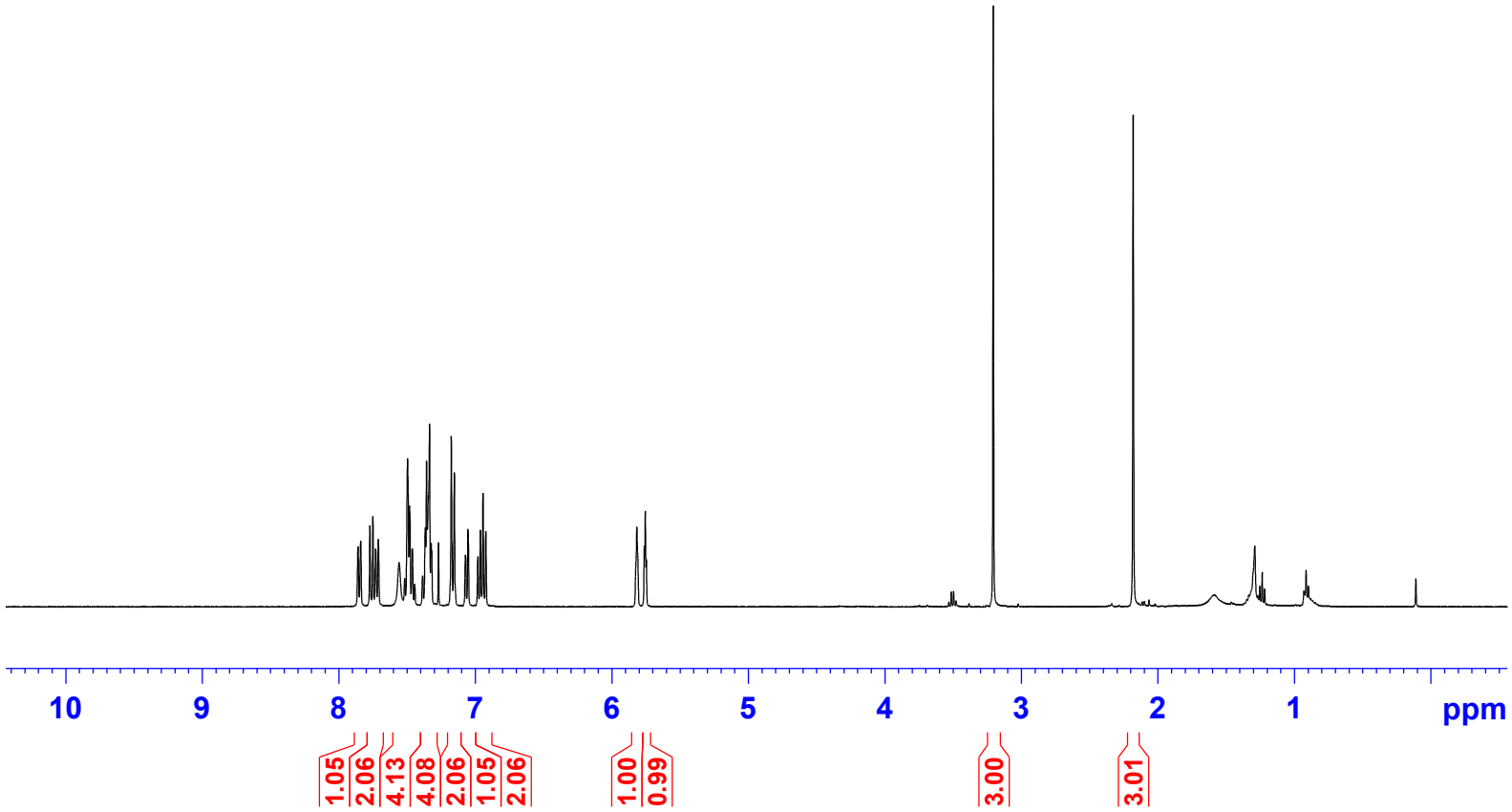

155.20
153.61
145.67
137.32
136.21
135.93
131.86
130.86
130.18
128.35
127.13
126.84
125.82
119.37
113.88
112.14
110.58
104.93
77.55
77.23
76.91
68.30
58.62
21.13
21.07
13.37
Me
HN
Ph
O'Pr
OH
2ac
NAME lzy-07-63-C
EXPNO 1
PROCNO 1
Date_ 20210717
Time 11.01
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 19
DS 0
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 196.92
DW 20.800 usec
DE 6.50 usec
TE 297.0 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 100.6228298 MHz
NUC1 13C
P1 9.70 usec
SI 32768
SF 100.6127593 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
200
180
160
140
120
100
80
60
40
20
0
ppm

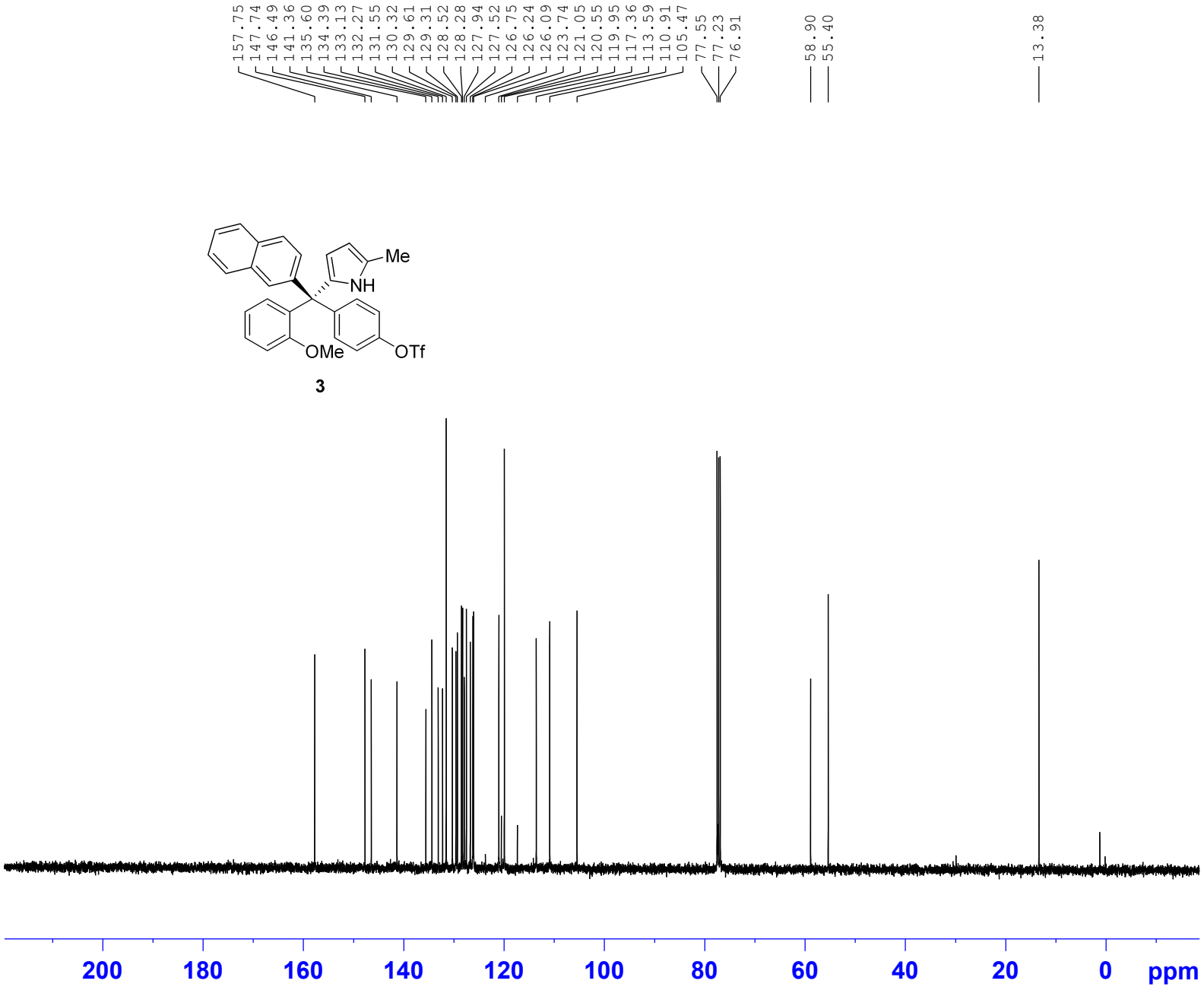




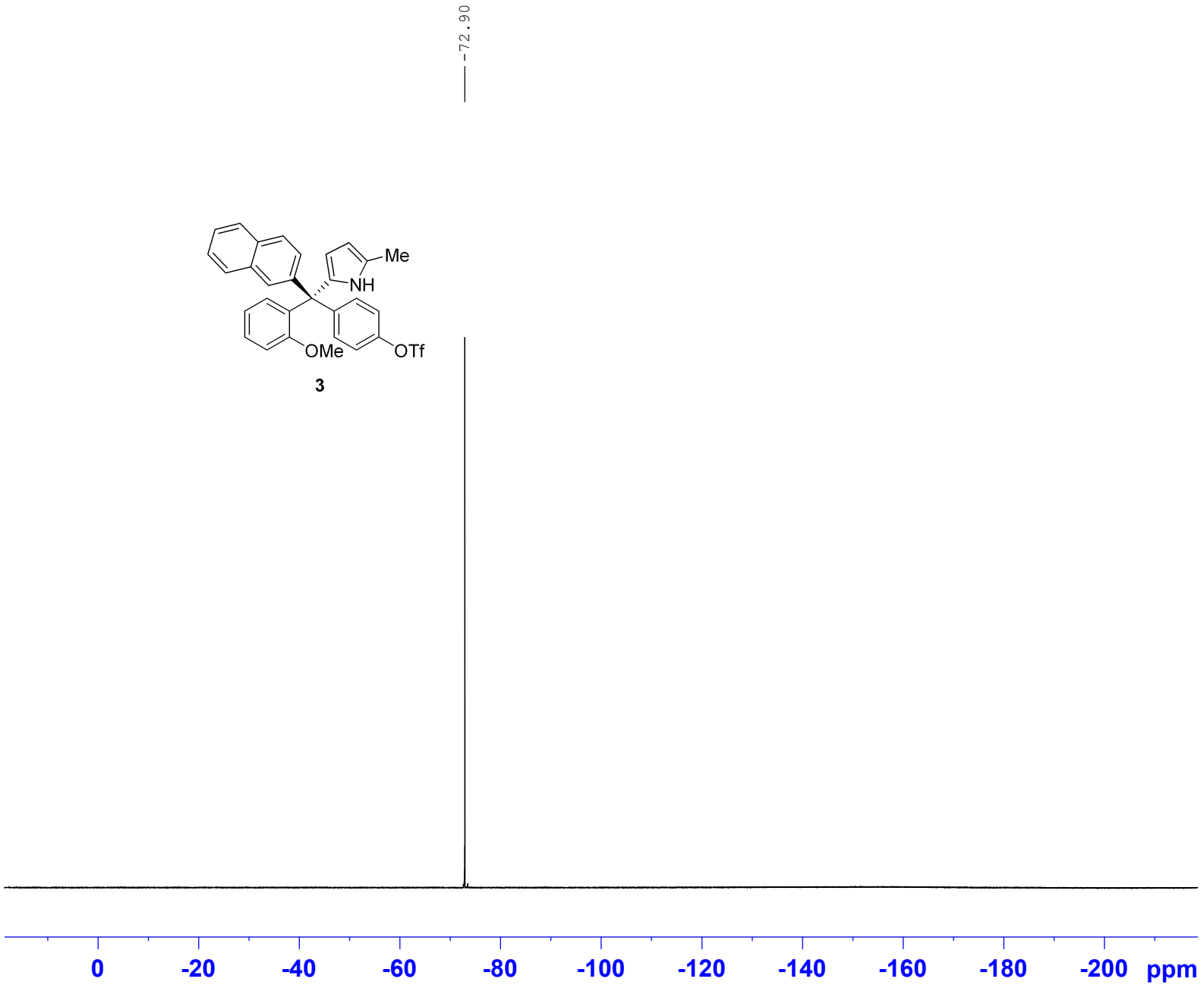
3

```
NAME                Lzy-3a
EXPNO                    1
PROCNO                   1
Date_             20200229
Time                 19.31
INSTRUM              spect
PROBHD    5 mm PABBO BB-
PULPROG               zg30
TD                   65536
SOLVENT              CDCl3
NS                       6
DS                       0
SWH               8223.685 Hz
FIDRES            0.125483 Hz
AQ               3.9846387 sec
RG                     456
DW                  60.800 usec
DE                   6.00 usec
TE                  295.8 K
D1              1.00000000 sec
TD0                      1

======== CHANNEL f1 ========
NUC1                    1H
P1                   15.80 usec
PL1                  -1.00 dB
PL1W          12.17476940 W
SFO1          400.1324710 MHz
SI                   32768
SF            400.1300054 MHz
WDW                     EM
SSB                      0
LB                    0.30 Hz
GB                       0
PC                    1.00
```

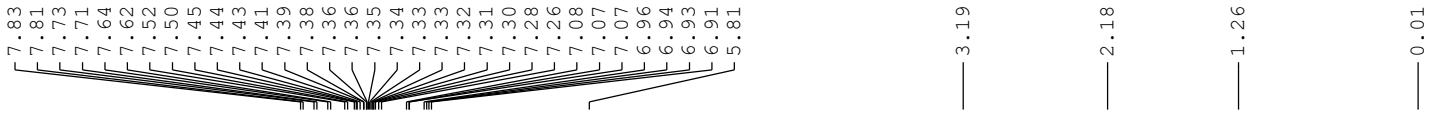


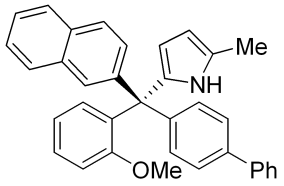



```
NAME            Lzy-3a-C
EXPNO                  1
PROCNO                 1
Date_           20200904
Time               15.30
INSTRUM            spect
PROBHD   5 mm PABBO BB-
PULPROG          zgpg30
TD                 65536
SOLVENT            CDCl3
NS                   123
DS                     2
SWH            24038.461 Hz
FIDRES          0.366798 Hz
AQ              1.3631988 sec
RG                  90.5
DW                20.800 usec
DE                 6.00 usec
TE                295.1 K
D1           2.00000000 sec
D11          0.03000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                  13C
P1                   8.60 usec
PL1                 -3.00 dB
PL1W         60.64365387 W
SFO1        100.6228298 MHz

======== CHANNEL f2 ========
CPDPRG2           waltz16
NUC2                  1H
PCPD2              80.00 usec
PL2                -1.00 dB
PL12               14.39 dB
PL13               18.00 dB
PL2W         12.17476940 W
PL12W         0.35193357 W
PL13W         0.15327126 W
SFO2        400.1316005 MHz
SI                 32768
SF          100.6127571 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  1.40
```



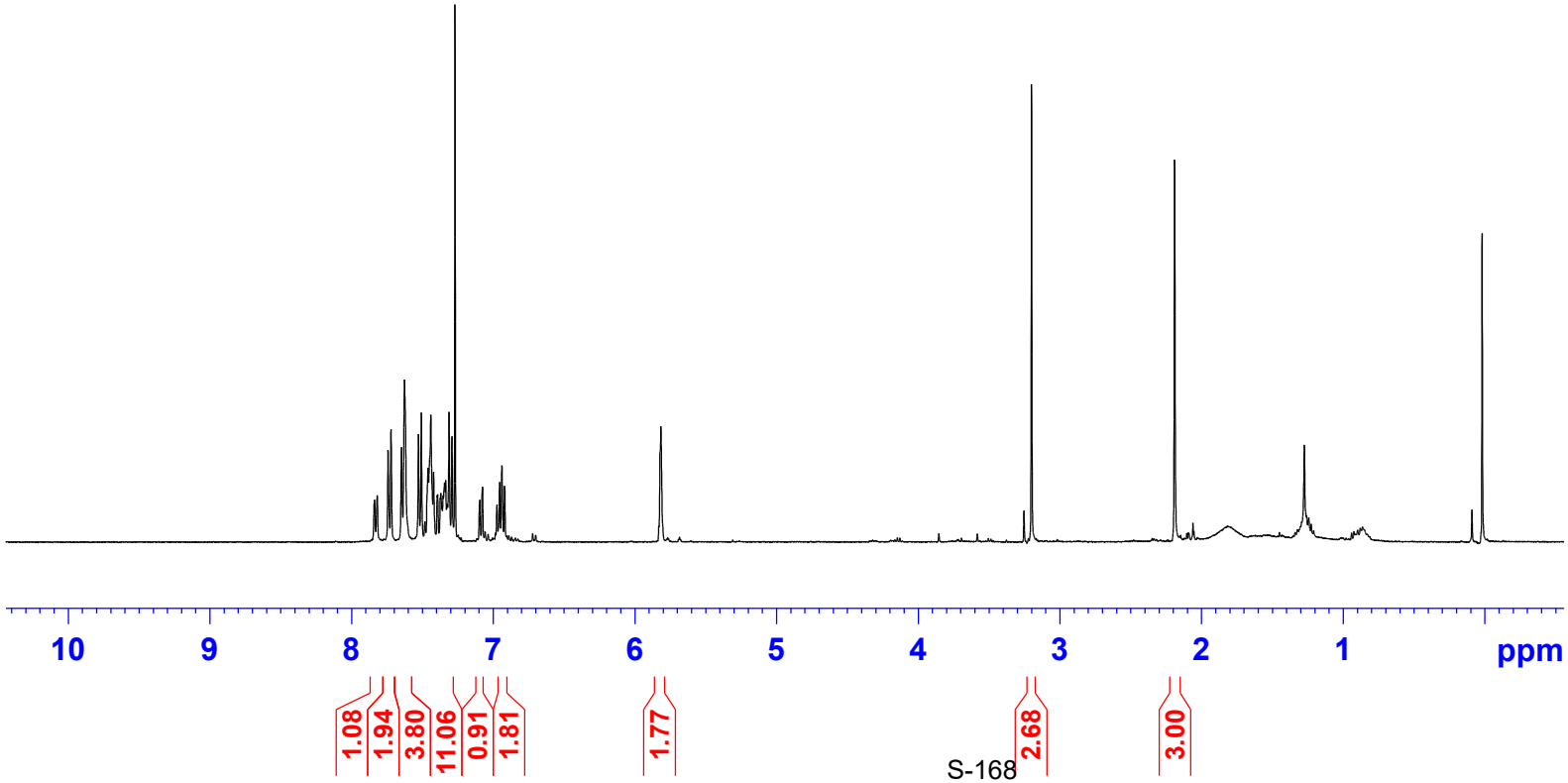
NAME	Lzy-3a-F	
EXPNO	1	
PROCNO	1	
Date_	20200304	
Time	17.36	
INSTRUM	spect	
PROBHD	5 mm PABBO BB-	
PULPROG	zgflqn	
TD	131072	
SOLVENT	CDCl3	
NS	6	
DS	4	
SWH	89285.711	Hz
FIDRES	0.681196	Hz
AQ	0.7340532	sec
RG	1820	
DW	5.600	usec
DE	6.00	usec
TE	294.7	K
D1	1.00000000	sec
TD0	1	
======== CHANNEL f1 ========		
NUC1	19F	
P1	19.50	usec
PL1	-4.00	dB
PL1W	16.97275162	W
SFO1	376.4607164	MHz
SI	65536	
SF	376.4983660	MHz
WDW	EM	
SSB	5	
LB	0.30	Hz
GB	0.05	
PC	1.00	

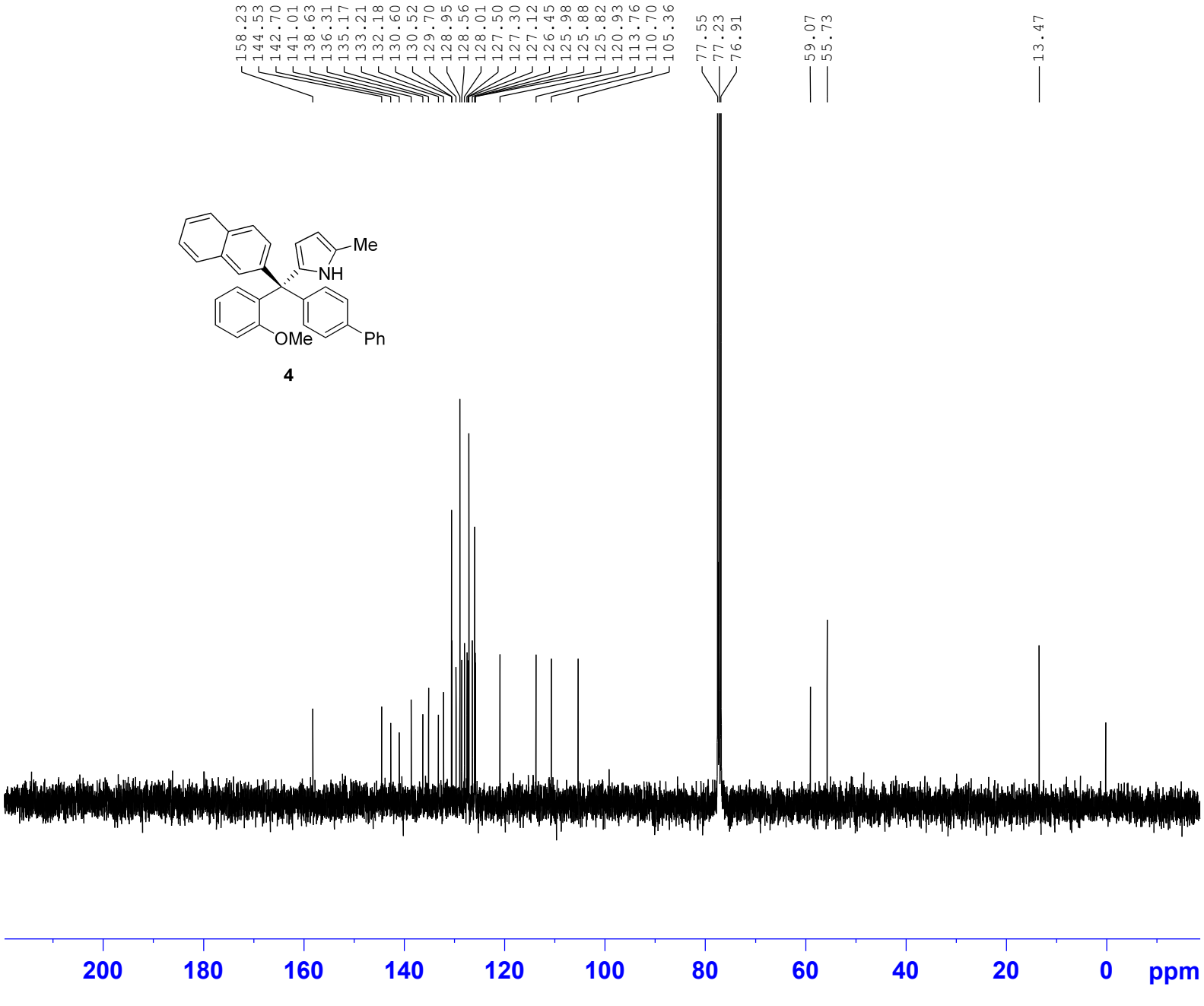




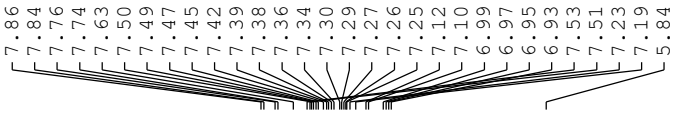
4

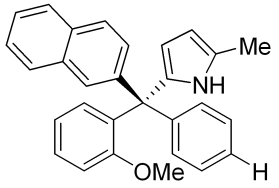
```
NAME                Lzy-3b
EXPNO                    1
PROCNO                   1
Date_             20200229
Time                 21.12
INSTRUM              spect
PROBHD    5 mm PABBO BB-
PULPROG               zg30
TD                   65536
SOLVENT              CDCl3
NS                       6
DS                       2
SWH               8223.685 Hz
FIDRES            0.125483 Hz
AQ               3.9846387 sec
RG                     406
DW                  60.800 usec
DE                   6.00 usec
TE                  296.9 K
D1             1.00000000 sec
TD0                      1

======== CHANNEL f1 ========
NUC1                    1H
P1                   15.80 usec
PL1                  -1.00 dB
PL1W          12.17476940 W
SFO1          400.1324710 MHz
SI                   32768
SF            400.1300054 MHz
WDW                     EM
SSB                      0
LB                    0.30 Hz
GB                       0
PC                    1.00
```





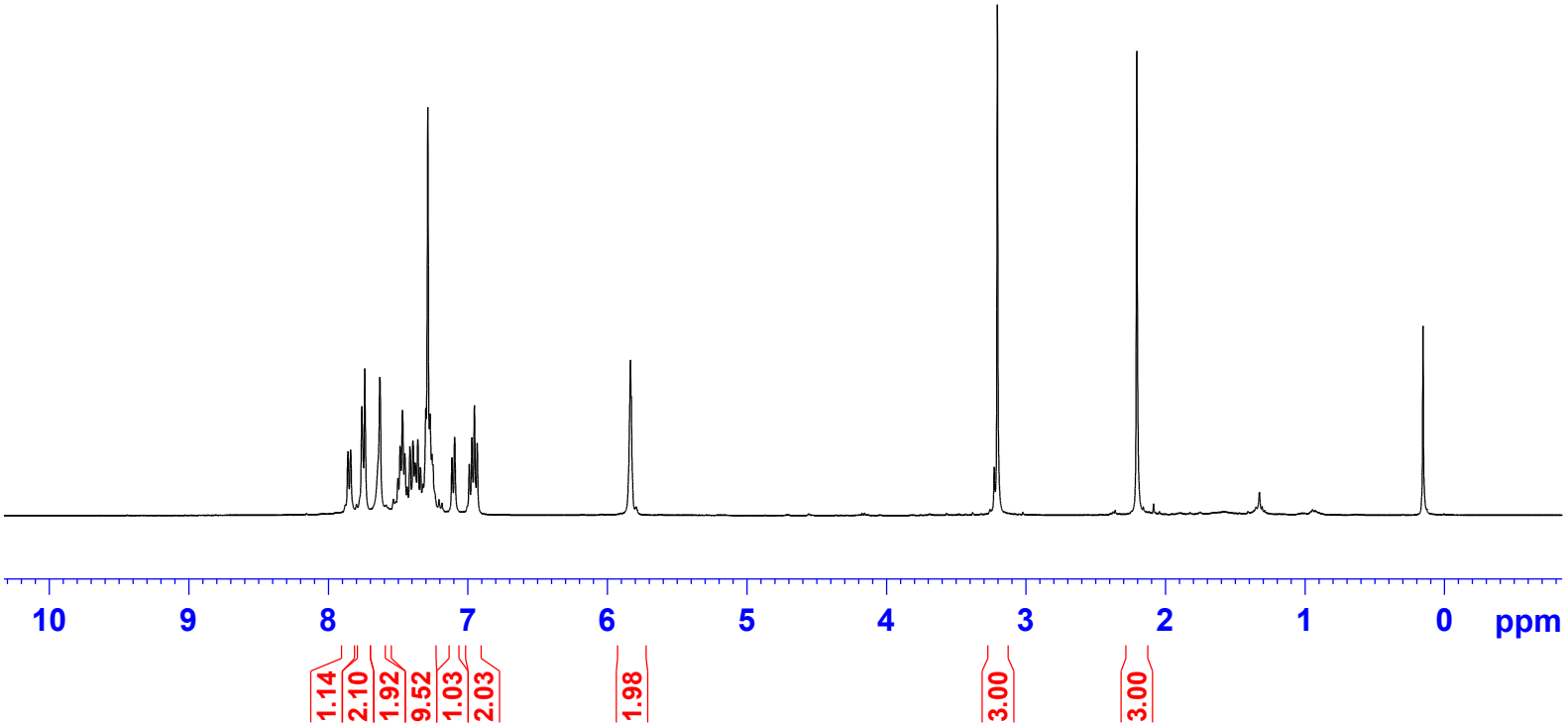
NAME	Lzy-3b-C
EXPNO	1
PROCNO	1
Date_	20200229
Time	21.18
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	400
DS	2
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	161
DW	20.800 usec
DE	6.00 usec
TE	297.4 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.60 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6127483 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

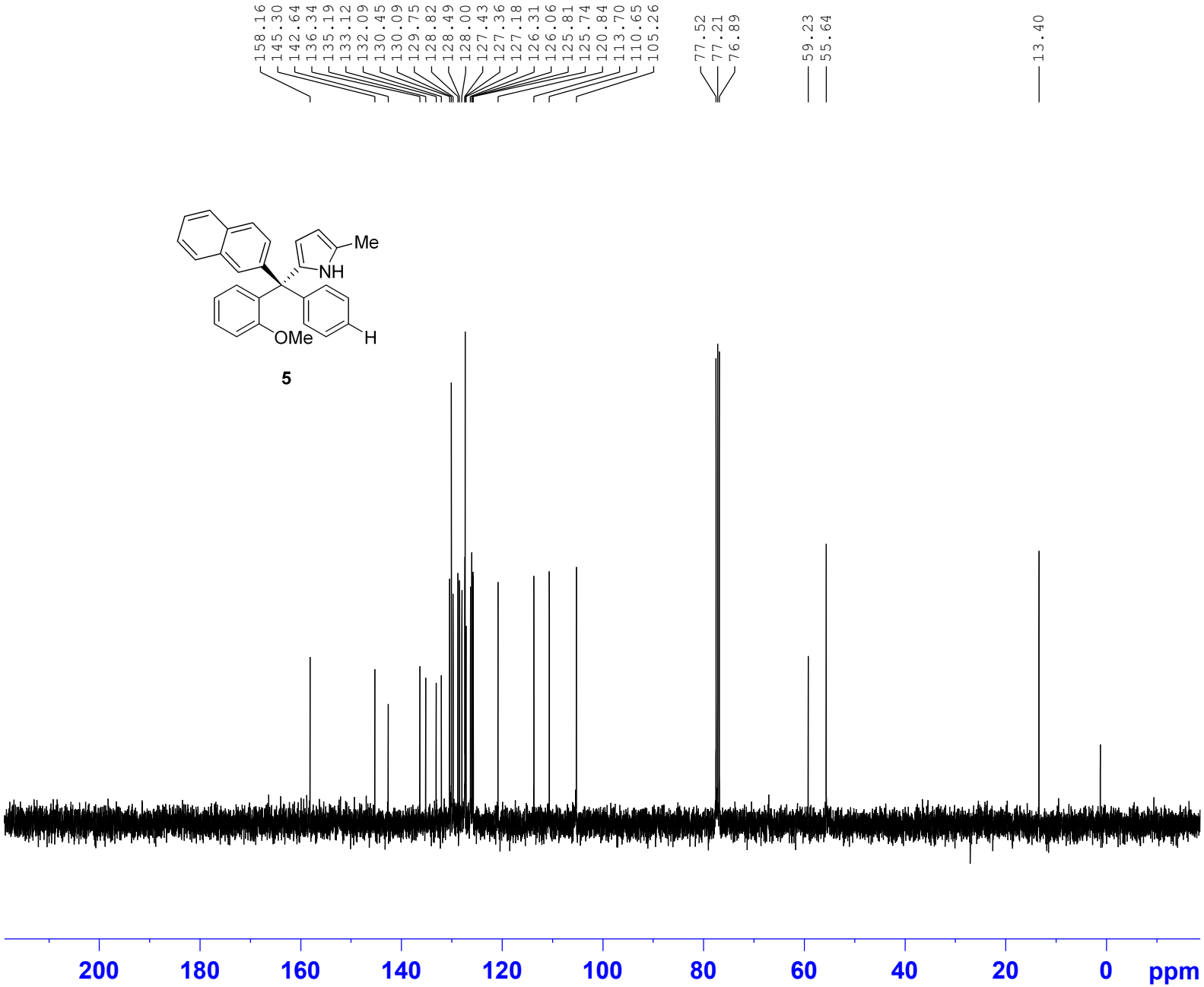




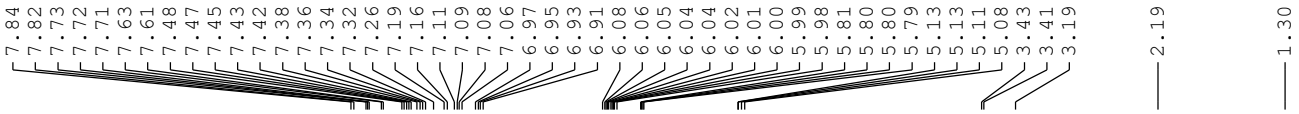
5

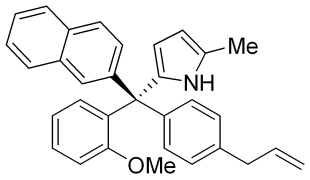
```
NAME                Lzy-3d
EXPNO                    1
PROCNO                   1
Date_             20200330
Time                 17.18
INSTRUM              spect
PROBHD    5 mm PABBO BB-
PULPROG               zg30
TD                   65536
SOLVENT              CDCl3
NS                      16
DS                       0
SWH               8223.685 Hz
FIDRES            0.125483 Hz
AQ               3.9846387 sec
RG                     256
DW                  60.800 usec
DE                   6.00 usec
TE                  294.9 K
D1             1.00000000 sec
TD0                      1

======== CHANNEL f1 ========
NUC1                    1H
P1                   15.80 usec
PL1                  -1.00 dB
PL1W          12.17476940 W
SFO1          400.1324710 MHz
SI                   32768
SF            400.1300100 MHz
WDW                     EM
SSB                      0
LB                    0.30 Hz
GB                       0
PC                    1.00
```





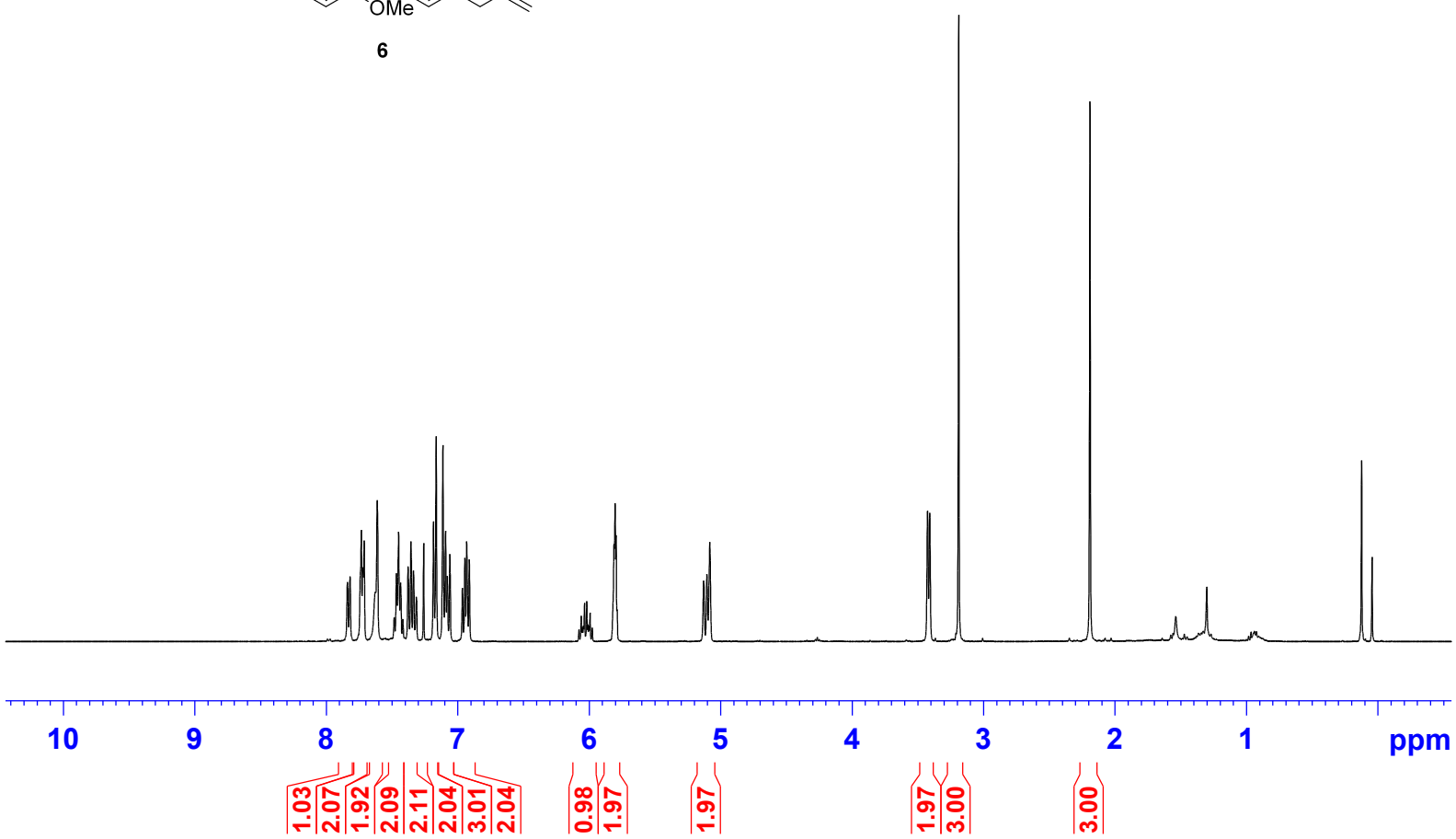
NAME	Lzy-3d-C
EXPNO	3
PROCNO	1
Date_	20200330
Time	20.11
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	25
DS	0
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	128
DW	20.800 usec
DE	6.00 usec
TE	295.2 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.60 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6127607 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

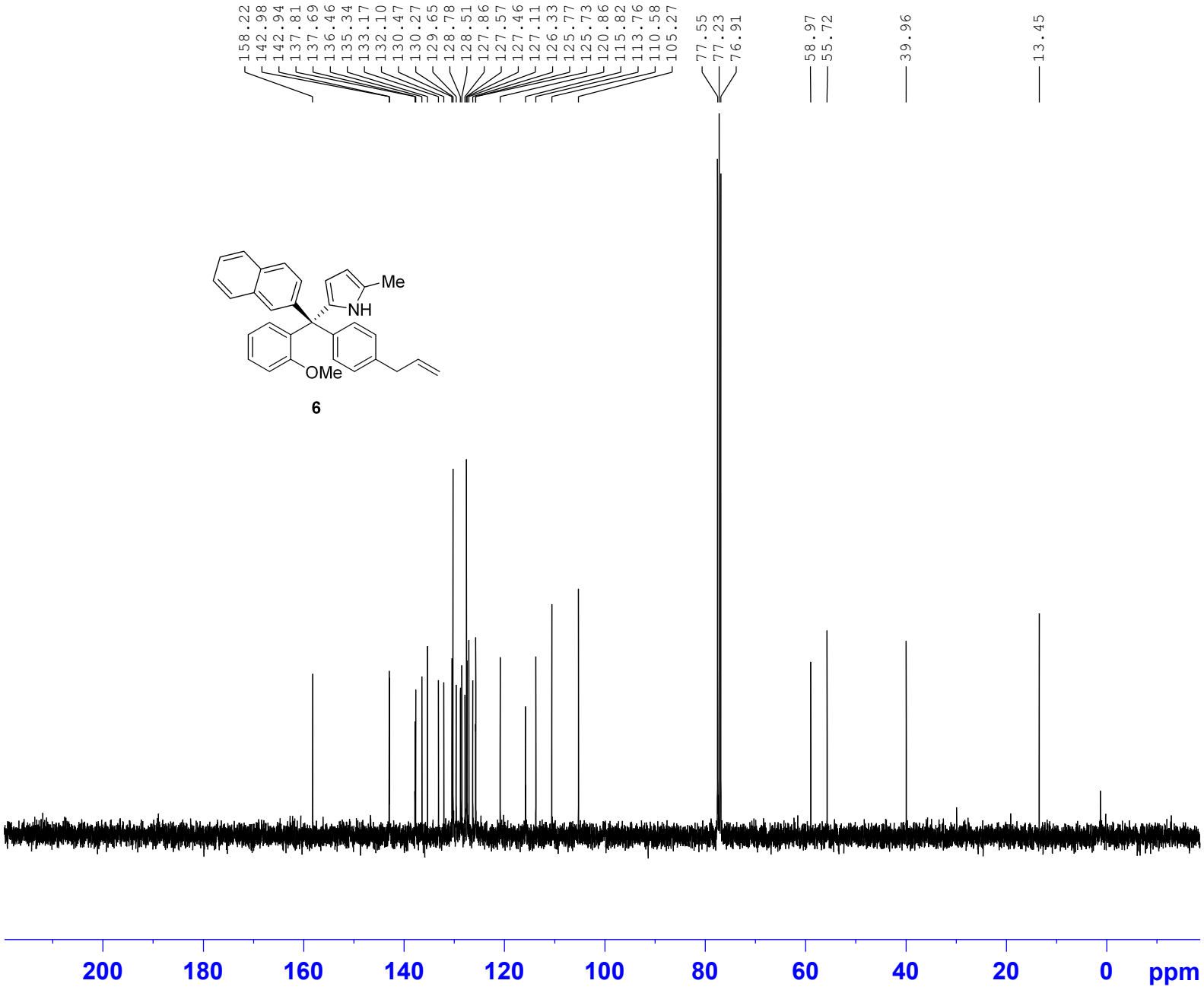




6

```
NAME                Lzy-3c
EXPNO                    1
PROCNO                   1
Date_             20200312
Time                 19.50
INSTRUM              spect
PROBHD    5 mm PABBO BB-
PULPROG               zg30
TD                   65536
SOLVENT              CDCl3
NS                      16
DS                       2
SWH               8223.685 Hz
FIDRES            0.125483 Hz
AQ               3.9846387 sec
RG                     322
DW                  60.800 usec
DE                   6.00 usec
TE                  295.5 K
D1             1.00000000 sec
TD0                      1

======== CHANNEL f1 ========
NUC1                    1H
P1                   15.80 usec
PL1                  -1.00 dB
PL1W          12.17476940 W
SFO1          400.1324710 MHz
SI                   32768
SF            400.1300093 MHz
WDW                     EM
SSB                      0
LB                    0.30 Hz
GB                       0
PC                    1.00
```

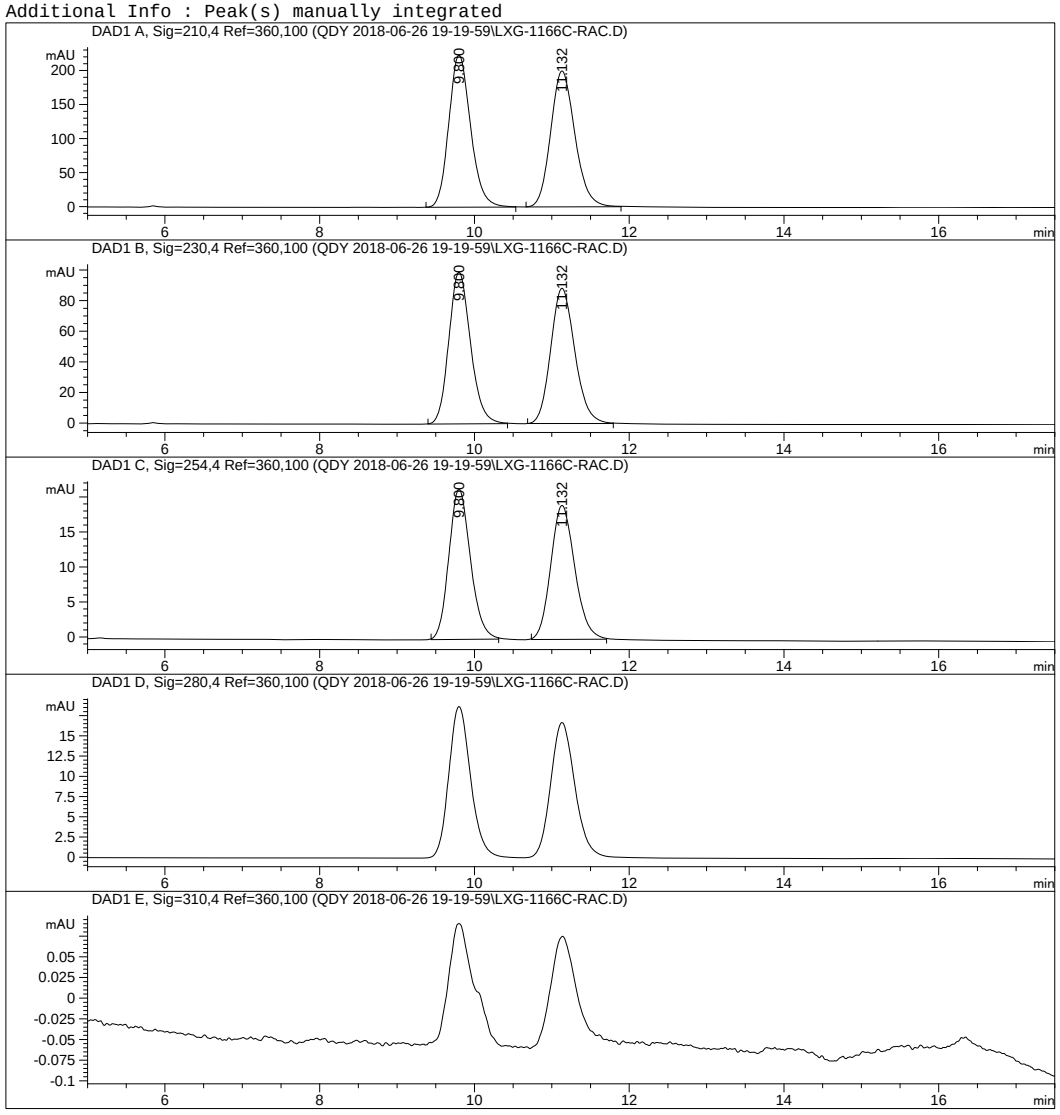




NAME	Lzy-3c-C
EXPNO	1
PROCNO	1
Date_	20200312
Time	19.53
INSTRUM	spect
PROBHD	5 mm PABBO BB-
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	68
DS	2
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	181
DW	20.800 usec
DE	6.00 usec
TE	295.6 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.60 usec
PL1	-3.00 dB
PL1W	60.64365387 W
SFO1	100.6228298 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	-1.00 dB
PL12	14.39 dB
PL13	18.00 dB
PL2W	12.17476940 W
PL12W	0.35193357 W
PL13W	0.15327126 W
SFO2	400.1316005 MHz
SI	32768
SF	100.6127542 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

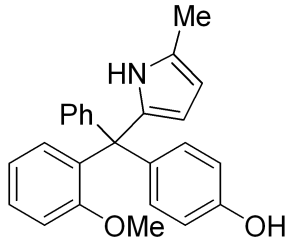
Data File C:\CHEM32\1\DATA\QDY 2018-06-26 19-19-59\LXG-1166C-RAC.D
Sample Name:

```
==========================================================================
Acq. Operator   :                              Seq. Line :   5
Acq. Instrument : Instrument 1                  Location : Vial 62
Injection Date  : 6/26/2018 8:47:00 PM               Inj :   1
                                              Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 2.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2018-06-26 19-19-59\IC-03-20.M
Last changed    : 6/26/2018 8:46:07 PM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 3:16:16 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2018-06-26 19-19-59\LXG-1166C-RAC.D
Sample Name:

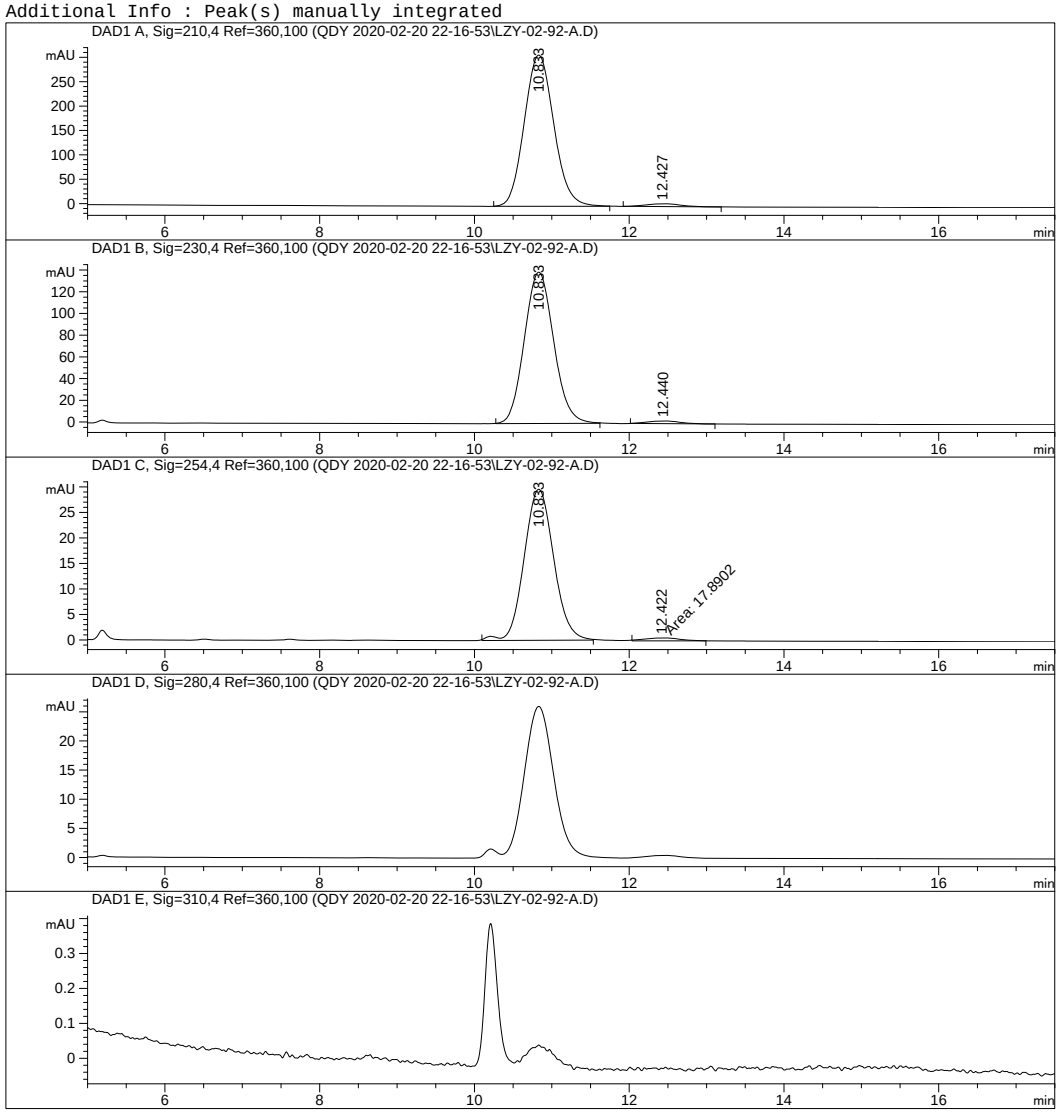
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   9.800 BB    0.3023 4374.23193  223.54536  50.1048
   2  11.132 BB    0.3385 4355.92871  199.66124  49.8952

Totals :                  8730.16064  423.20660



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   9.800 BB    0.3012 1931.31421   99.15396  50.2023
   2  11.132 BB    0.3369 1915.74731   88.36066  49.7977

Totals :                  3847.06152  187.51462



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   9.800 BB    0.3003  416.10309   21.45372  50.1396
   2  11.132 BB    0.3341  413.78525   19.14697  49.8604

Totals :                   829.88834   40.60069



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2a-Rac

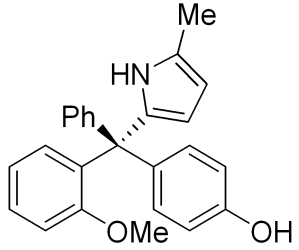
Data File C:\CHEM32\1\DATA\QDY 2020-02-20 22-16-53\LZY-02-92-A.D
Sample Name:

```
==========================================================================
Acq. Operator   :                                Seq. Line :   2
Acq. Instrument : Instrument 1                    Location : Vial 81
Injection Date  : 2/20/2020 10:30:17 PM               Inj :   1
                                                 Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 3.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2020-02-20 22-16-53\IC-03-20.M
Last changed    : 2/20/2020 10:29:24 PM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 3:16:16 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2020-02-20 22-16-53\LZY-02-92-A.D
Sample Name:

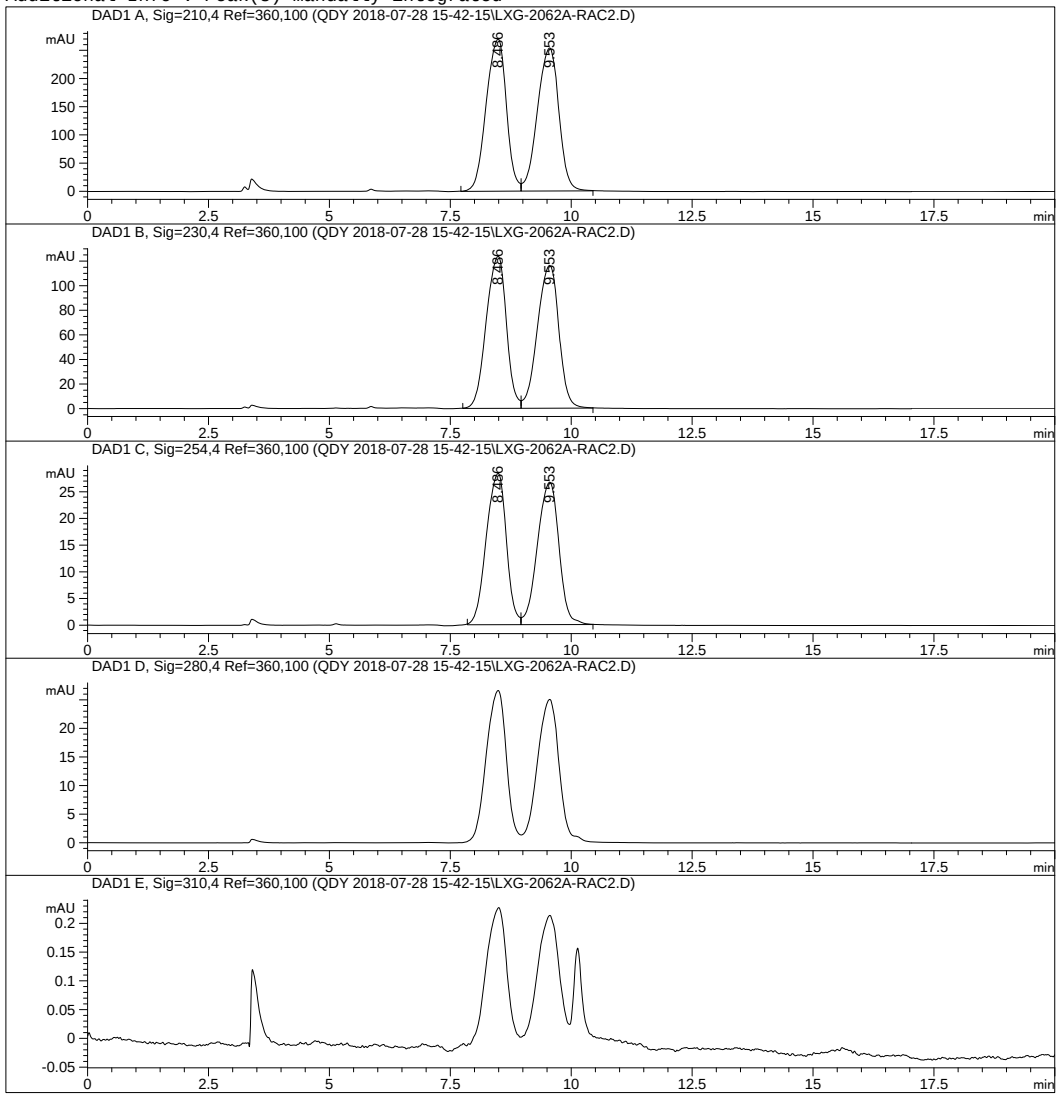
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  10.833 BB    0.4149 8212.09082  310.16901  97.9796
   2  12.427 BB    0.4284  169.33453    5.87353   2.0204

Totals :                  8381.42535  316.04254



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  10.833 BB    0.4110 3668.44141  139.42035  98.1103
   2  12.440 BB    0.4167   70.65849    2.55482   1.8897

Totals :                  3739.09990  141.97517



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  10.833 BB    0.4135  785.15674   29.59425  97.7722
   2  12.422 MM    0.5004   17.89020 5.95917e-1   2.2278

Totals :                   803.04694   30.19017



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                      *** End of Report ***
```



2a

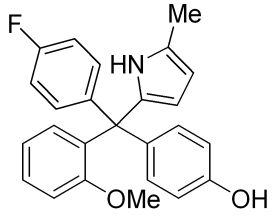
Data File C:\CHEM32\1\DATA\QDY 2018-07-28 15-42-15\LXG-2062A-RAC2.D
Sample Name:

```
==========================================================================
Acq. Operator   :                              Seq. Line :   6
Acq. Instrument : Instrument 1                  Location : Vial 67
Injection Date  : 7/28/2018 5:12:39 PM               Inj :   1
                                              Inj Volume : 5.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2018-07-28 15-42-15\IC-03-20.M
Last changed    : 7/28/2018 5:11:47 PM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 10/29/2018 7:27:37 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2018-07-28 15-42-15\LXG-2062A-RAC2.D
Sample Name:

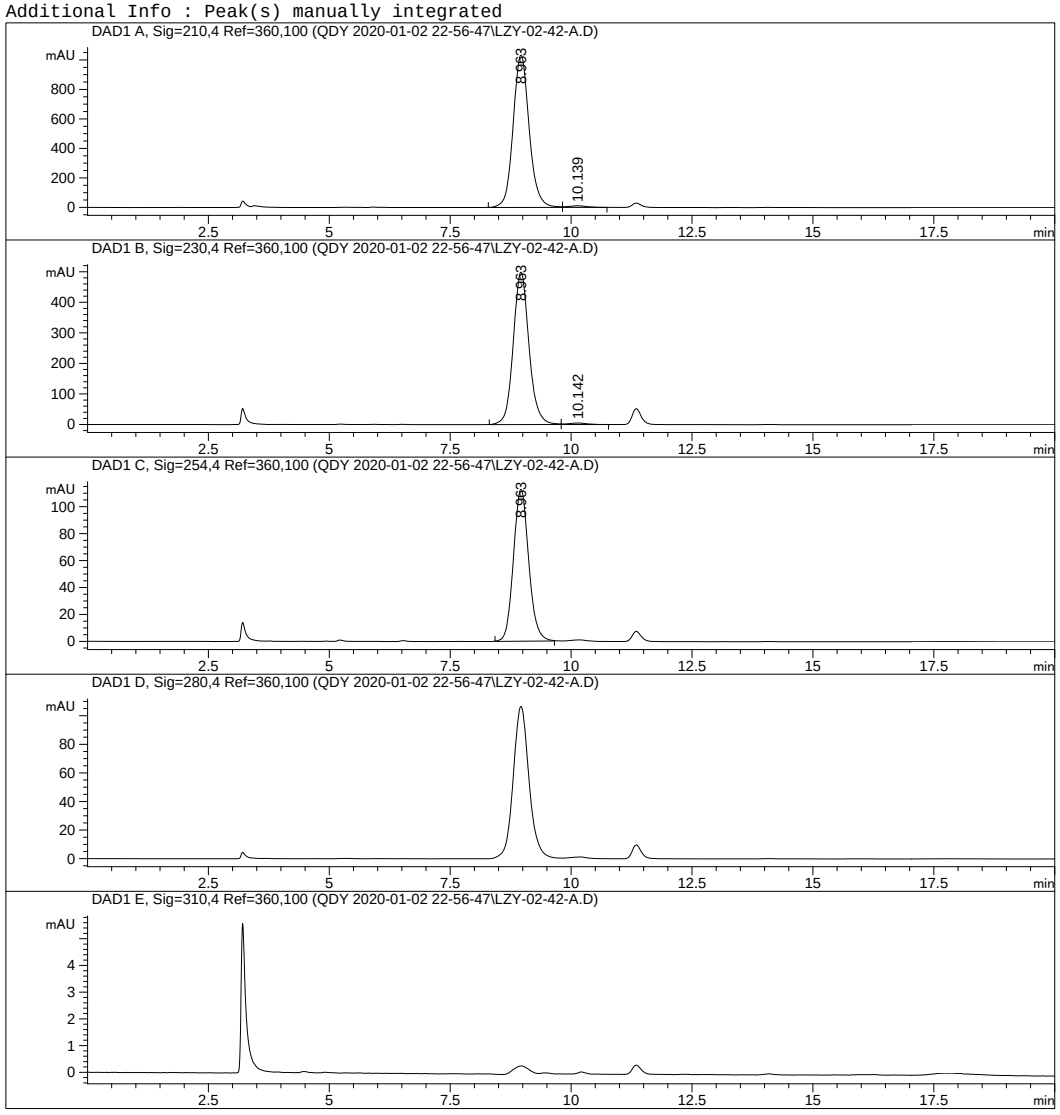
```
==========================================================================
                          Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   8.486 BV    0.4663 7820.67480  269.73096  50.0394
   2   9.553 VB    0.4933 7808.35107  253.52272  49.9606

Totals :                  1.56290e4   523.25368



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   8.486 BV    0.4654 3579.20850  123.75388  50.0570
   2   9.553 VB    0.4926 3571.05396  116.18679  49.9430

Totals :                  7150.26245  239.94067



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   8.486 BV    0.4638  816.48468   28.36868  49.8220
   2   9.553 VB    0.4936  822.31885   26.67982  50.1780

Totals :                  1638.80353   55.04851



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2b-Rac

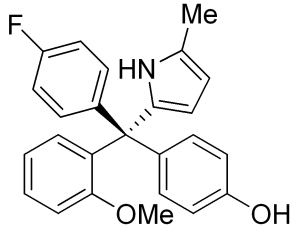
Data File C:\CHEM32\1\DATA\QDY 2020-01-02 22-56-47\LZY-02-42-A.D
Sample Name:

```
==========================================================================
Acq. Operator   :                              Seq. Line :  17
Acq. Instrument : Instrument 1                  Location : Vial 91
Injection Date  : 1/3/2020 6:37:36 AM                Inj :   1
                                              Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 3.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2020-01-02 22-56-47\IC-03-20.M
Last changed    : 1/3/2020 6:36:43 AM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-10-10.M
Last changed    : 9/9/2020 9:55:03 AM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2020-01-02 22-56-47\LZY-02-42-A.D
Sample Name:

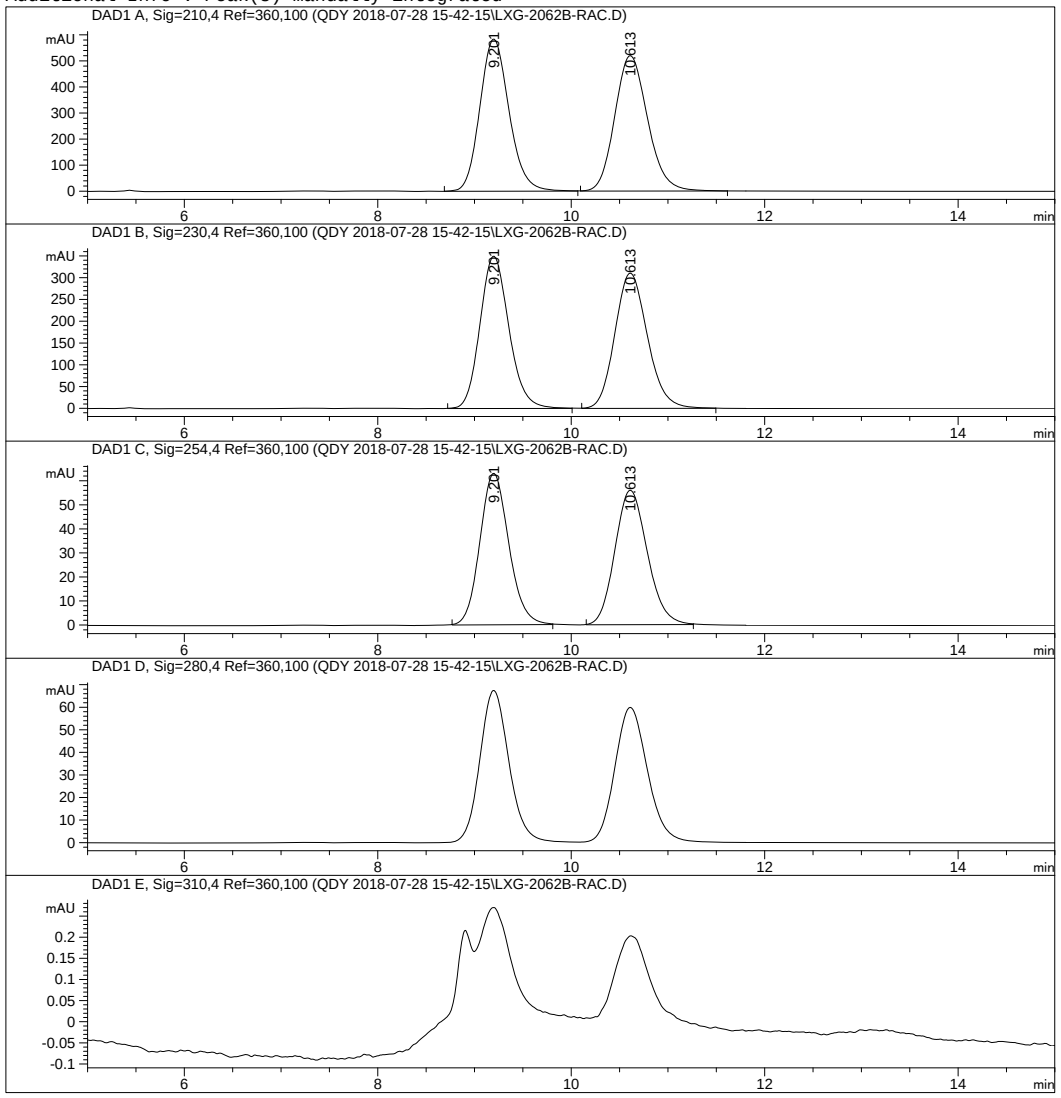
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   8.963 BB    0.3580 2.39175e4  1033.63550  98.7632
   2  10.139 BB    0.4029  299.51294   11.16648   1.2368

Totals :                  2.42170e4  1044.80198



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   8.963 BB    0.3507 1.13165e4   498.77319  98.8202
   2  10.142 BB    0.4064  135.10916    4.98238   1.1798

Totals :                  1.14516e4   503.75557



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   8.963 BB    0.3423 2478.50781  112.81509 100.0000

Totals :                  2478.50781  112.81509



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2b

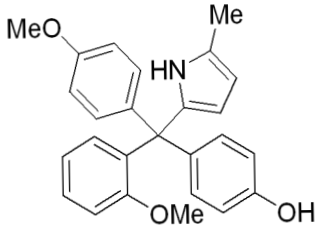
Data File C:\CHEM32\1\DATA\QDY 2018-07-28 15-42-15\LXG-2062B-RAC.D
Sample Name:

```
==========================================================================
Acq. Operator   :                              Seq. Line :   3
Acq. Instrument : Instrument 1                  Location : Vial 68
Injection Date  : 7/28/2018 4:17:04 PM               Inj :   1
                                            Inj Volume : 5.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2018-07-28 15-42-15\IC-05-20.M
Last changed    : 6/25/2018 1:35:20 AM
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 3:21:46 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2018-07-28 15-42-15\LXG-2062B-RAC.D
Sample Name:

```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   9.201 BB    0.3245 1.22368e4   583.89270  49.9836
   2  10.613 BB    0.3668 1.22448e4   519.77472  50.0164

Totals :                  2.44816e4  1103.66742



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   9.201 BB    0.3226 7273.56543  349.71793  50.0562
   2  10.613 BB    0.3606 7257.22803  310.55371  49.9438

Totals :                  1.45308e4   660.27164



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   9.201 BB    0.3225 1310.82092   63.05332  50.2282
   2  10.613 BB    0.3610 1298.91028   55.91644  49.7718

Totals :                  2609.73120  118.96976



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```

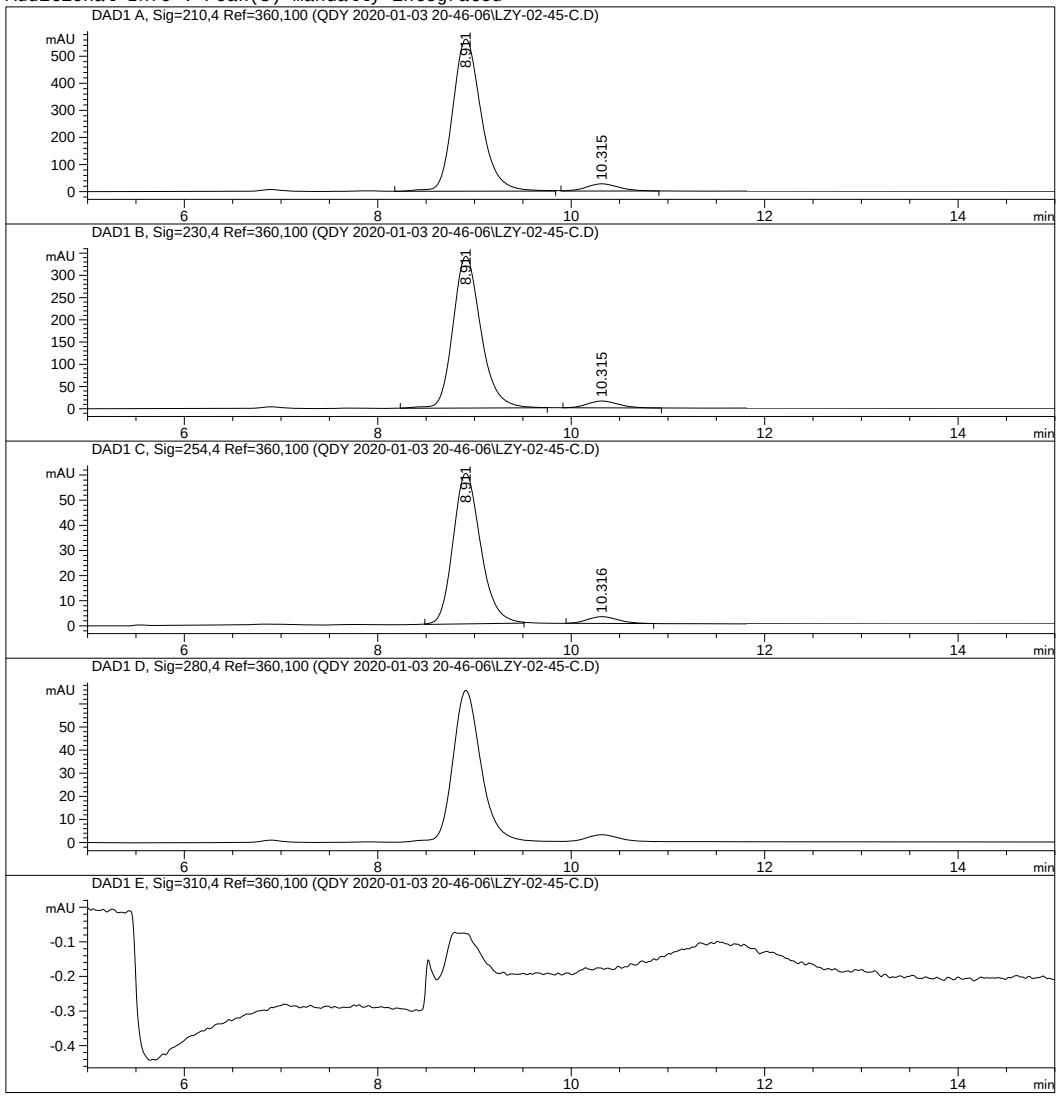


2c-Rac

Instrument 1 11/24/2020 3:22:06 PM

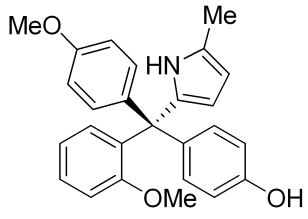
Data File C:\CHEM32\1\DATA\QDY 2020-01-03 20-46-06\LZY-02-45-C.D
Sample Name:

```
==========================================================================
Acq. Operator   :                              Seq. Line :  18
Acq. Instrument : Instrument 1                  Location : Vial 84
Injection Date  : 1/4/2020 2:37:46 AM                Inj :   1
                                              Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 4.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2020-01-03 20-46-06\IC-05-20.M
Last changed    : 6/25/2018 1:35:20 AM
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 3:21:46 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2020-01-03 20-46-06\LZY-02-45-C.D
Sample Name:

```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   8.911 VB    0.3109 1.14110e4   561.88049  94.7741
   2  10.315 BB    0.3607  629.21075   26.91560   5.2259

Totals :                  1.20402e4   588.79610



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   8.911 BB    0.3075 6835.92041  341.57336  95.2597
   2  10.315 BB    0.3438  340.16577   15.39702   4.7403

Totals :                  7176.08618  356.97038



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   8.911 BB    0.3044 1183.26990   59.91114  95.2574
   2  10.316 BB    0.3351   58.91190    2.69437   4.7426

Totals :                  1242.18180   62.60551



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```

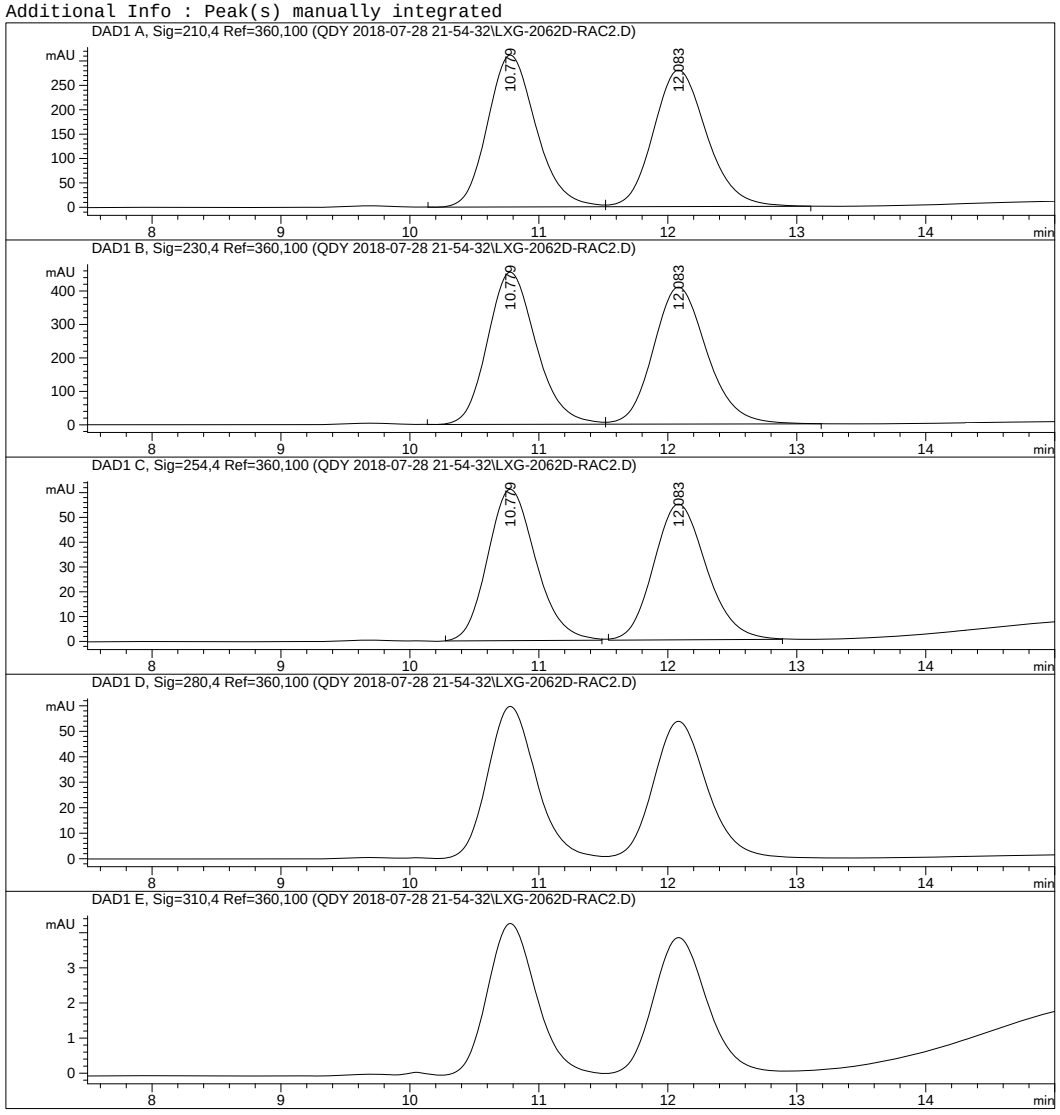


2c

Instrument 1 11/24/2020 3:22:51 PM

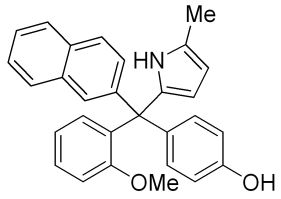
Data File C:\CHEM32\1\DATA\QDY 2018-07-28 21-54-32\LXG-2062D-RAC2.D
Sample Name:

```
==========================================================================
Acq. Operator   :                                Seq. Line :   4
Acq. Instrument : Instrument 1                    Location : Vial 70
Injection Date  : 7/28/2018 10:40:28 PM               Inj :   1
                                                 Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 3.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2018-07-28 21-54-32\IC-03-30.M
Last changed    : 7/28/2018 10:39:35 PM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 4:51:53 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2018-07-28 21-54-32\LXG-2062D-RAC2.D
Sample Name:

```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  10.779 VV    0.4014 8103.85645  311.56830  50.1858
   2  12.083 VB    0.4451 8043.84814  280.02228  49.8142

Totals :                  1.61477e4   591.59058



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  10.779 VV    0.4023 1.18681e4   454.95987  50.0875
   2  12.083 VB    0.4469 1.18267e4   409.59912  49.9125

Totals :                  2.36948e4   864.55899



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  10.779 BB    0.3996 1578.74353   61.07904  50.3709
   2  12.083 BB    0.4413 1555.49561   54.78296  49.6291

Totals :                  3134.23914  115.86200



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```

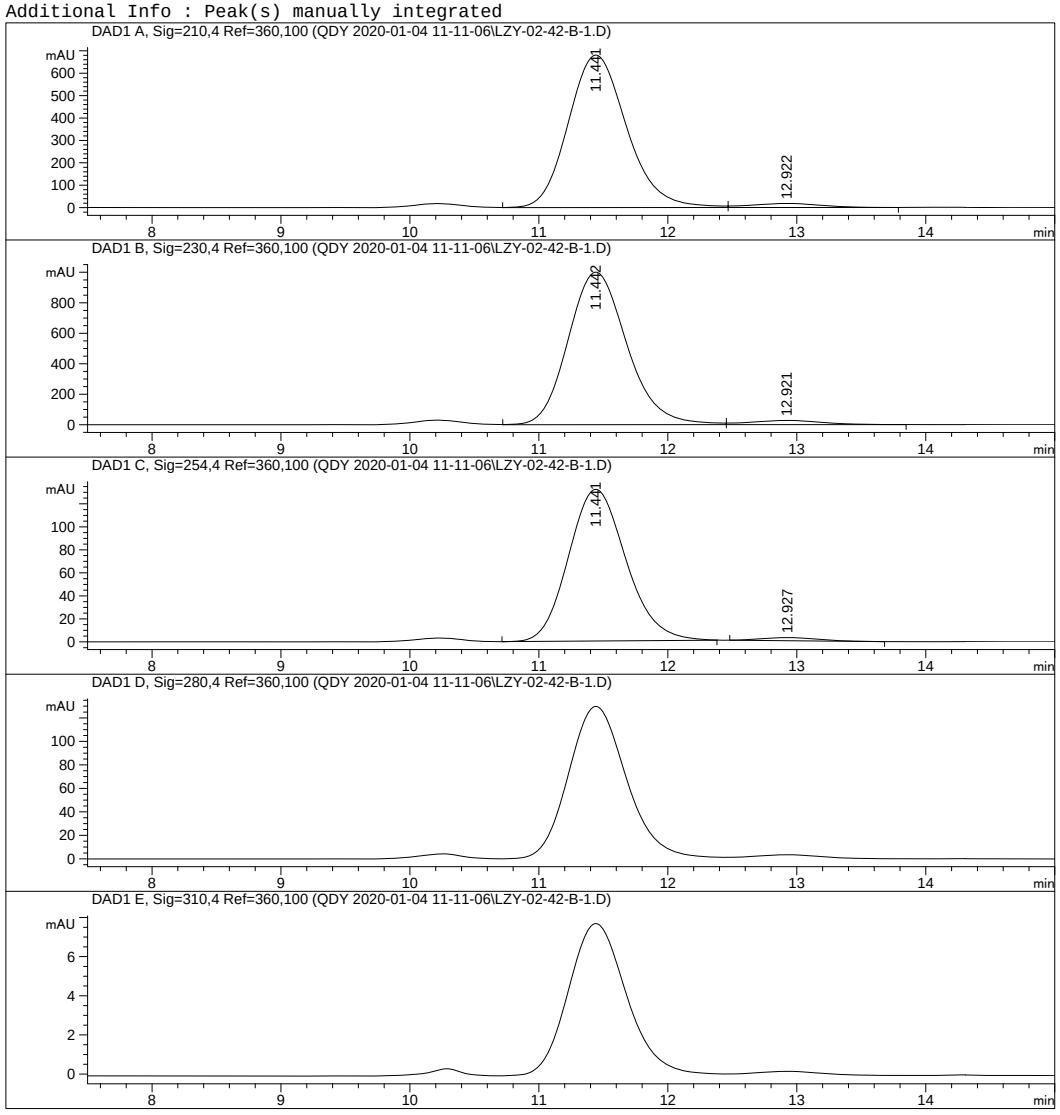


2d-Rac

Instrument 1 11/24/2020 4:52:16 PM

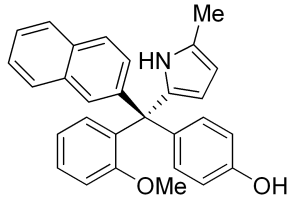
Data File C:\CHEM32\1\DATA\QDY 2020-01-04 11-11-06\LZY-02-42-B-1.D
Sample Name:

```
==========================================================================
Acq. Operator   :                              Seq. Line :   2
Acq. Instrument : Instrument 1                  Location : Vial 81
Injection Date  : 1/4/2020 11:24:02 AM               Inj :   1
                                              Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 4.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2020-01-04 11-11-06\IC-03-30.M
Last changed    : 1/4/2020 11:23:09 AM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 4:58:53 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2020-01-04 11-11-06\LZY-02-42-B-1.D
Sample Name:

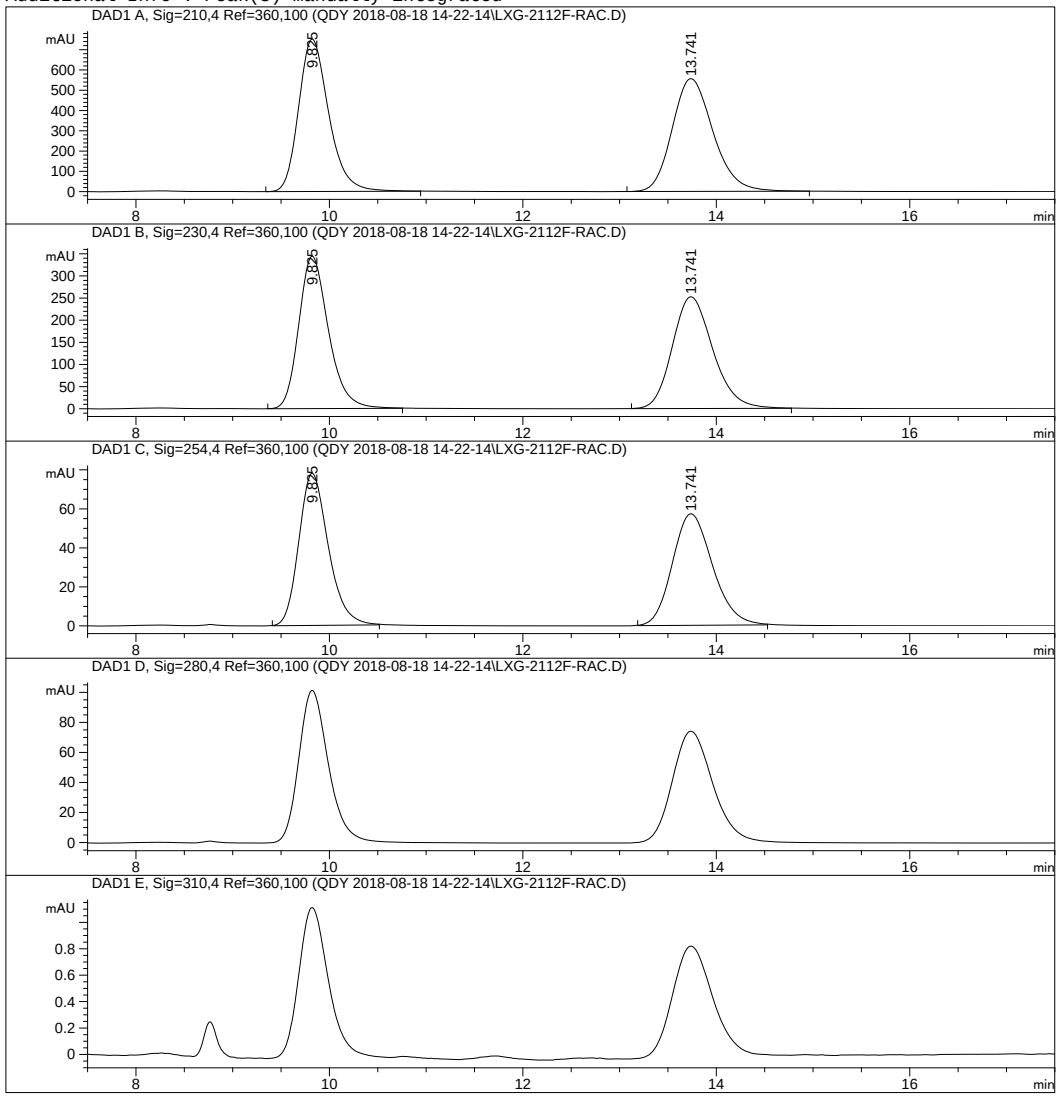
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  11.441 VB    0.4889 2.14076e4   680.77356  96.9799
   2  12.922 BB    0.5514  666.66748   18.11265   3.0201

Totals :                  2.20743e4   698.88621



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  11.442 VV    0.4930 3.16293e4  1000.15277  96.7740
   2  12.921 VB    0.5688 1054.37415   27.65328   3.2260

Totals :                  3.26837e4  1027.80605



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  11.441 VB    0.4829 4081.43433  131.92607  98.0331
   2  12.927 BB    0.4493   81.88832    2.71925   1.9669

Totals :                  4163.32265  134.64532



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2d

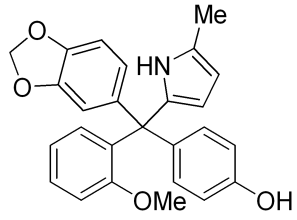
Data File C:\CHEM32\1\DATA\QDY 2018-08-18 14-22-14\LXG-2112F-RAC.D
Sample Name:

```
==========================================================================
Acq. Operator   :                                 Seq. Line :  18
Acq. Instrument : Instrument 1                     Location : Vial 67
Injection Date  : 8/18/2018 8:15:50 PM                  Inj :   1
                                                  Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 3.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2018-08-18 14-22-14\IC-05-20.M
Last changed    : 6/25/2018 1:35:20 AM
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 5:00:30 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2018-08-18 14-22-14\LXG-2112F-RAC.D
Sample Name:

```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   9.825 BB    0.3304 1.62644e4   751.89240  49.8544
   2  13.741 BB    0.4551 1.63594e4   556.24500  50.1456

Totals :                  3.26238e4  1308.13739



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   9.825 BB    0.3268 7339.66406  344.20276  49.9939
   2  13.741 BB    0.4495 7341.46680  252.26933  50.0061

Totals :                  1.46811e4   596.47209



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   9.825 BB    0.3253 1652.97595   77.99519  49.9956
   2  13.741 BB    0.4472 1653.26514   57.20220  50.0044

Totals :                  3306.24109  135.19738



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```

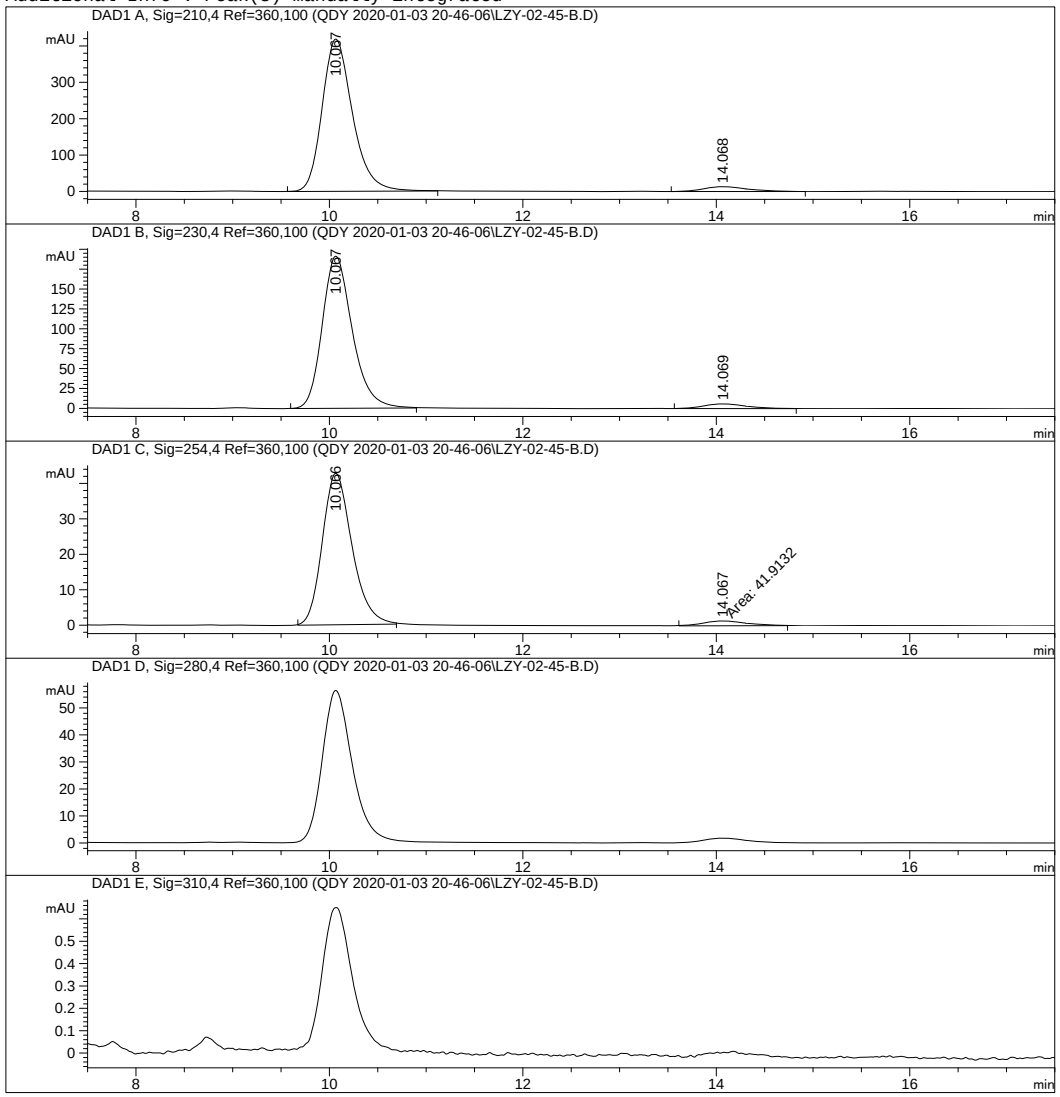


2e-Rac

Instrument 1 11/24/2020 5:01:52 PM

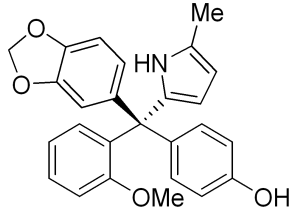
Data File C:\CHEM32\1\DATA\QDY 2020-01-03 20-46-06\LZY-02-45-B.D
Sample Name:

```
==========================================================================
Acq. Operator   :                                Seq. Line :  17
Acq. Instrument : Instrument 1                    Location : Vial 83
Injection Date  : 1/4/2020 2:16:31 AM                  Inj :   1
                                                 Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 3.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2020-01-03 20-46-06\IC-05-20.M
Last changed    : 6/25/2018 1:35:20 AM
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 5:00:30 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2020-01-03 20-46-06\LZY-02-45-B.D
Sample Name:

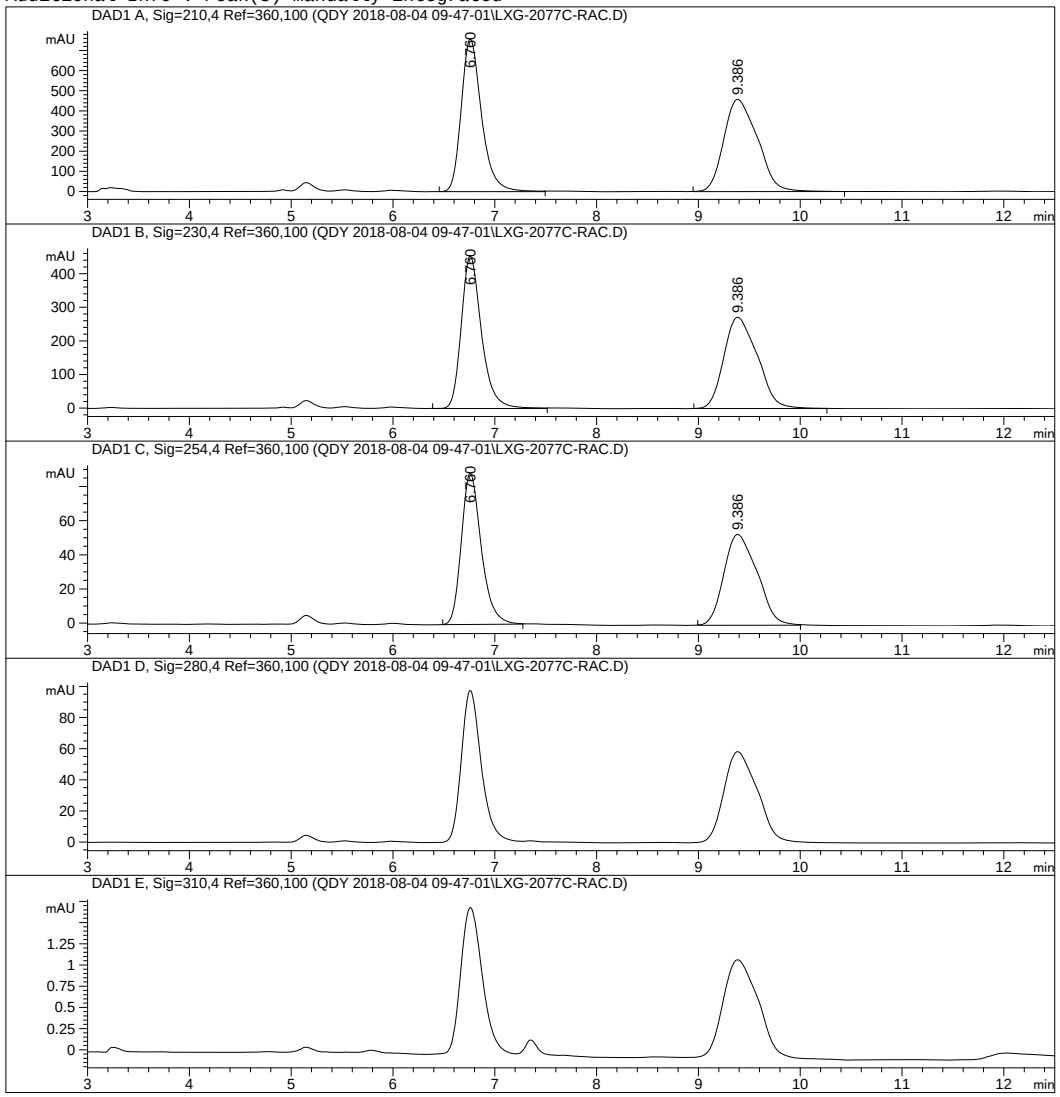
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  10.067 BB    0.3325 9129.89355  418.59555  95.7750
   2  14.068 BB    0.4503  402.75327   13.33718   4.2250

Totals :                  9532.64682  431.93273



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  10.067 BB    0.3298 4127.84521  191.22440  95.8873
   2  14.069 BB    0.4608  177.04517    5.88723   4.1127

Totals :                  4304.89038  197.11163



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  10.066 BB    0.3270  912.89362   42.76598  95.6103
   2  14.067 MM    0.5100   41.91323    1.36984   4.3897

Totals :                   954.80684   44.13582



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2e

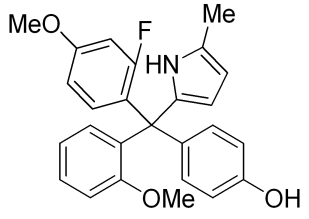
Data File C:\CHEM32\1\DATA\QDY 2018-08-04 09-47-01\LXG-2077C-RAC.D
Sample Name:

```
==========================================================================
Acq. Operator   :                              Seq. Line :   2
Acq. Instrument : Instrument 1                  Location : Vial 65
Injection Date  : 8/4/2018 10:00:32 AM               Inj :   1
                                               Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 3.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2018-08-04 09-47-01\IC-10-20.M
Last changed    : 6/25/2018 2:45:05 PM
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 5:05:20 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2018-08-04 09-47-01\LXG-2077C-RAC.D
Sample Name:

```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   6.760 BB    0.2119 1.05081e4   757.44958  49.9888
   2   9.386 BB    0.3400 1.05128e4   457.72897  50.0112

Totals :                  2.10209e4  1215.17856



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   6.760 VB    0.2090 6253.97754  453.15485  50.1874
   2   9.386 BB    0.3386 6207.27100  271.59845  49.8126

Totals :                  1.24612e4   724.75330



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   6.760 BB    0.2068 1206.07825   88.58540  50.0098
   2   9.386 BB    0.3364 1205.60706   53.18979  49.9902

Totals :                  2411.68530  141.77519



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```

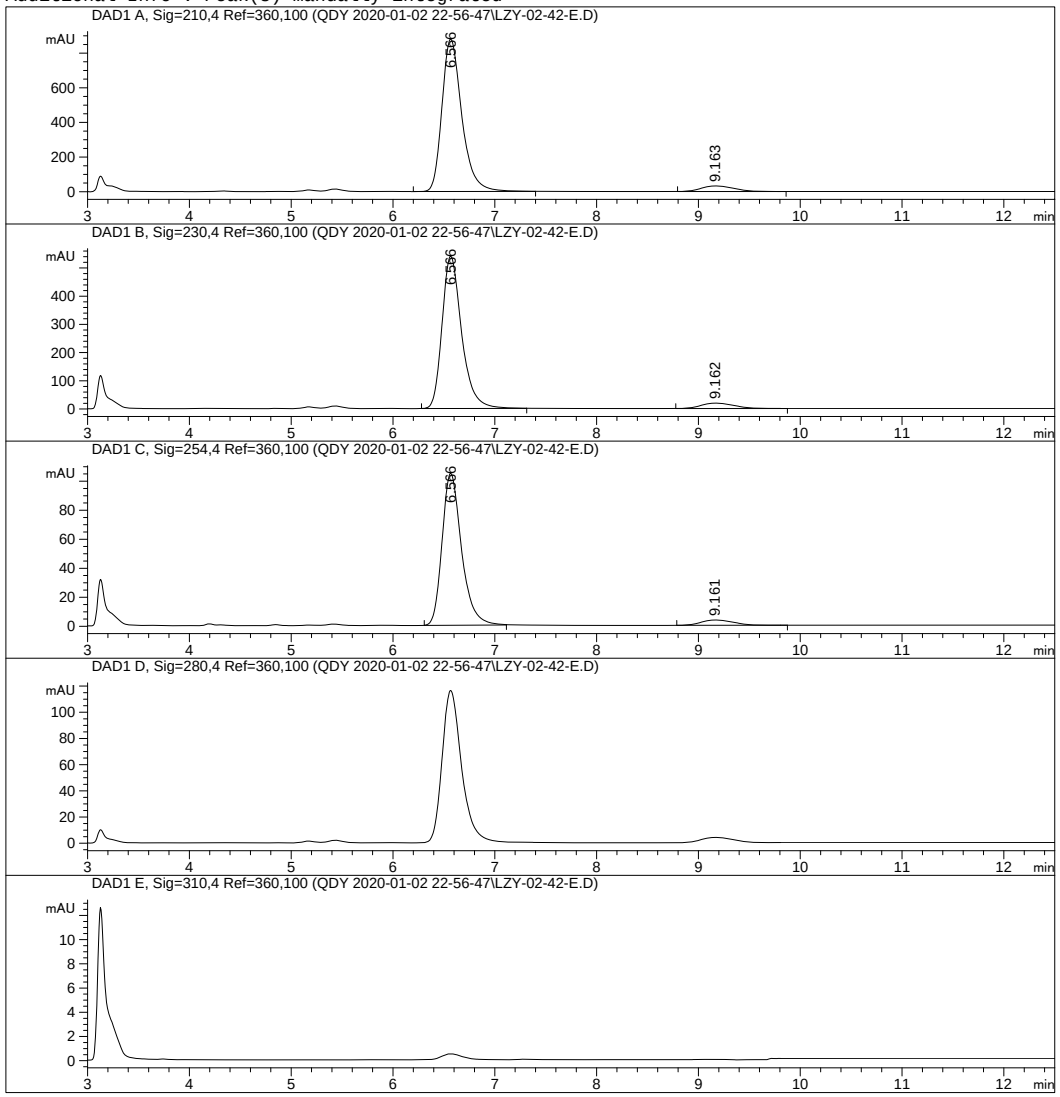


2f-Rac

Instrument 1 11/24/2020 5:05:51 PM

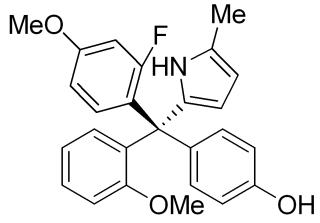
Data File C:\CHEM32\1\DATA\QDY 2020-01-02 22-56-47\LZY-02-42-E.D
Sample Name:

```
==========================================================================
Acq. Operator   :                              Seq. Line :  19
Acq. Instrument : Instrument 1                  Location : Vial 93
Injection Date  : 1/3/2020 7:09:51 AM                Inj :   1
                                              Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 3.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2020-01-02 22-56-47\IC-10-20.M
Last changed    : 6/25/2018 2:45:05 PM
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 5:05:20 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2020-01-02 22-56-47\LZY-02-42-E.D
Sample Name:

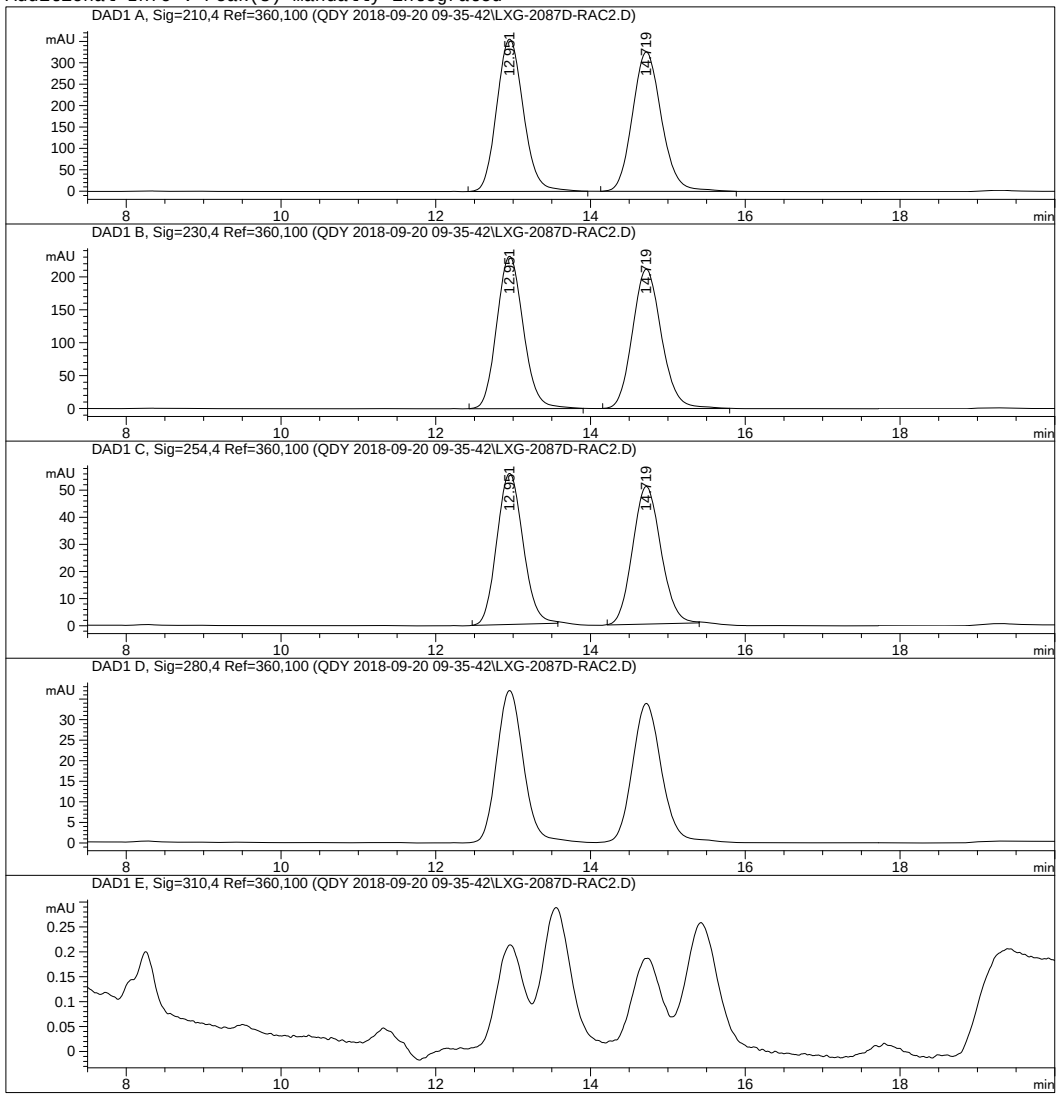
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   6.566 VB    0.2083 1.19365e4   879.94104  94.2529
   2   9.163 BB    0.3637  727.83667   32.69982   5.7471

Totals :                  1.26644e4   912.64086



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   6.566 BB    0.2040 7221.55176  540.07068  94.3915
   2   9.162 BB    0.3651  429.08340   19.31783   5.6085

Totals :                  7650.63516  559.38850



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   6.566 BB    0.2029 1390.37463  104.74338  94.4932
   2   9.161 BB    0.3611   81.02735    3.70638   5.5068

Totals :                  1471.40199  108.44976



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2f

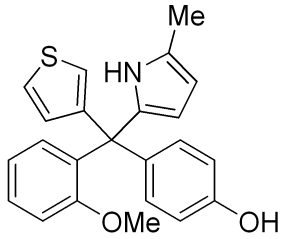
Data File C:\CHEM32\1\DATA\QDY 2018-09-20 09-35-42\LXG-2087D-RAC2.D
Sample Name:

```
==========================================================================
Acq. Operator   :                                Seq. Line :   7
Acq. Instrument : Instrument 1                    Location : Vial 63
Injection Date  : 9/20/2018 12:26:06 PM              Inj :   1
                                                 Inj Volume : 5.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2018-09-20 09-35-42\AD-05-20.M
Last changed    : 9/20/2018 12:25:13 PM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 5:10:49 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2018-09-20 09-35-42\LXG-2087D-RAC2.D
Sample Name:

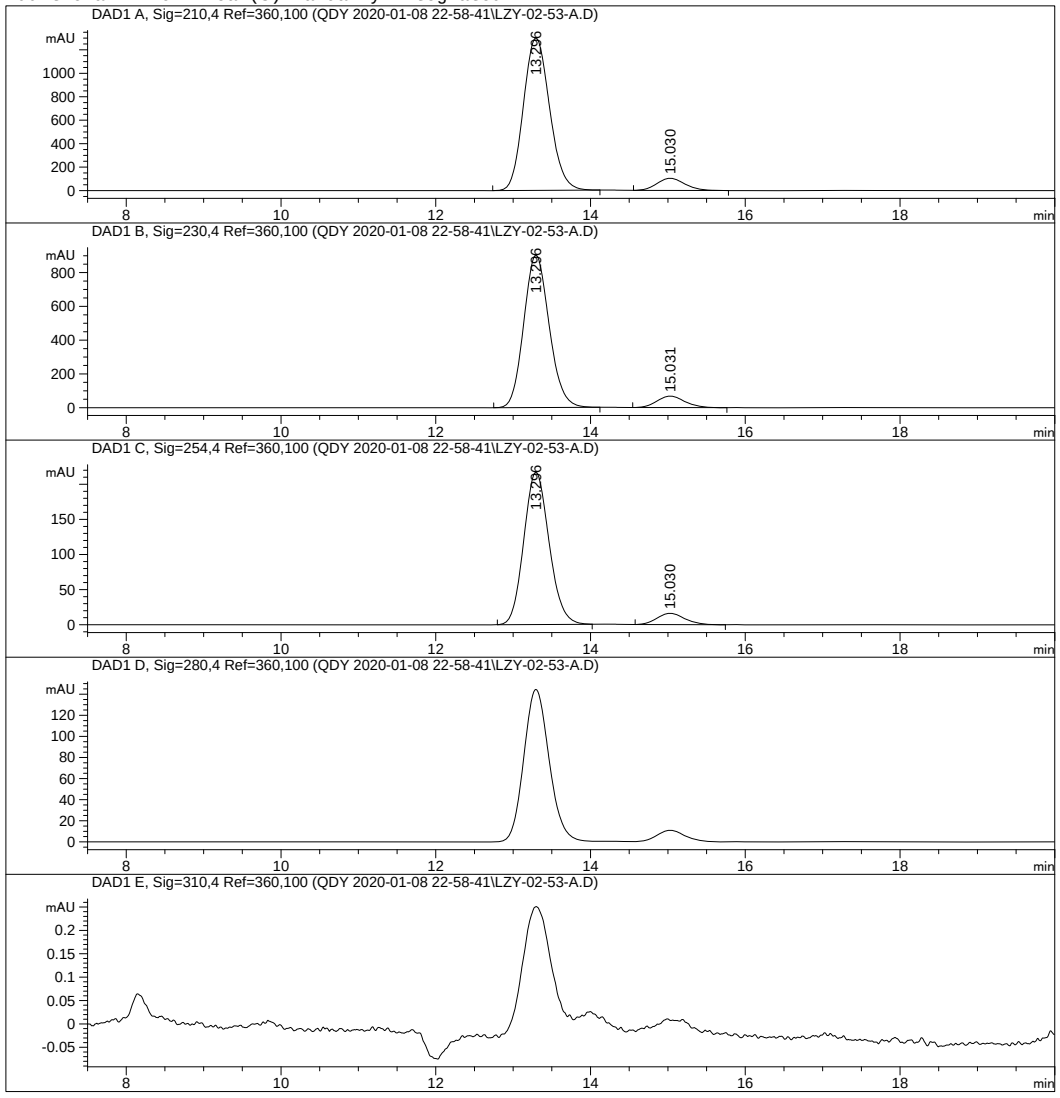
```
==========================================================================
                          Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  12.951 BB    0.3743 8495.08398  356.08966  49.9916
   2  14.719 BB    0.4046 8497.92188  325.53262  50.0084

Totals :                  1.69930e4   681.62228



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  12.951 BB    0.3692 5503.25586  231.59538  50.0357
   2  14.719 BB    0.4031 5495.40234  211.55399  49.9643

Totals :                  1.09987e4   443.14937



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  12.951 BB    0.3671 1304.67407   55.73872  50.2787
   2  14.719 BB    0.3966 1290.21057   50.75733  49.7213

Totals :                  2594.88464  106.49606



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2g-Rac

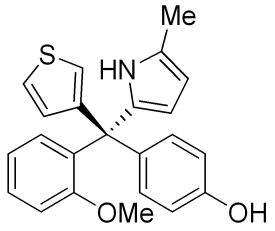
Data File C:\CHEM32\1\DATA\QDY 2020-01-08 22-58-41\LZY-02-53-A.D
Sample Name:

```
======================================================================
Acq. Operator   :                          Seq. Line :   9
Acq. Instrument : Instrument 1              Location : Vial 94
Injection Date  : 1/9/2020 1:09:11 AM            Inj :   1
                                          Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 4.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2020-01-08 22-58-41\AD-05-20.M
Last changed    : 1/9/2020 1:08:18 AM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 5:17:00 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2020-01-08 22-58-41\LZY-02-53-A.D
Sample Name:

```
======================================================================
                        Area Percent Report
======================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  13.296 BB    0.3672 3.04301e4  1299.27332  92.1366
   2  15.030 BB    0.3860 2597.06372  103.75465   7.8634

Totals :                  3.30272e4  1403.02796



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  13.296 BB    0.3541 2.05805e4   902.40430  92.3592
   2  15.031 BB    0.3883 1702.60925   67.95928   7.6408

Totals :                  2.22831e4   970.36358



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  13.296 BB    0.3530 4924.81836  216.78227  92.4727
   2  15.030 BB    0.3889  400.88251   16.07955   7.5273

Totals :                  5325.70087  232.86182



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

======================================================================
                        *** End of Report ***
```

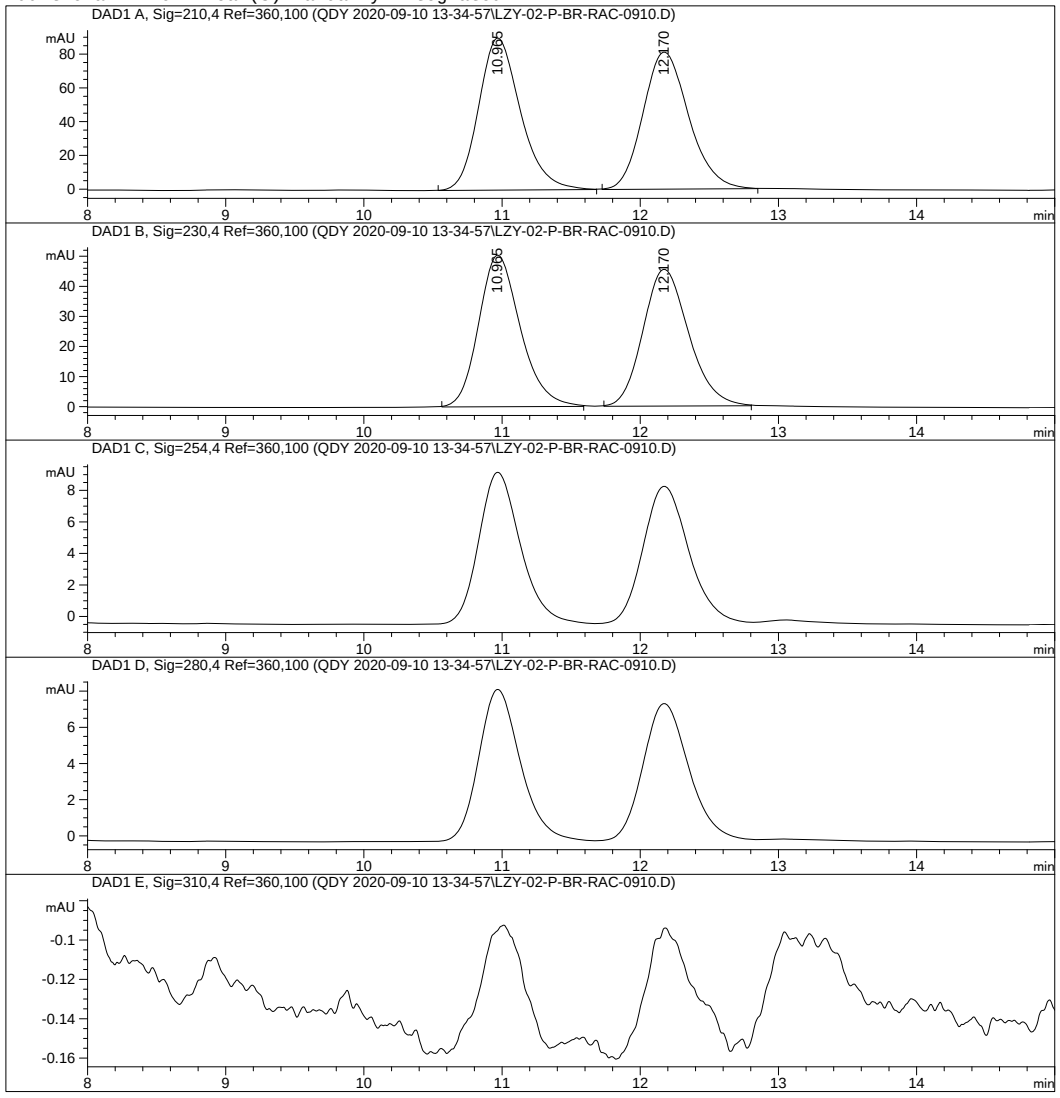


2g

Instrument 1 11/24/2020 5:17:14 PM

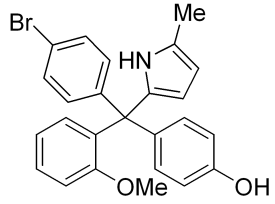
Data File C:\CHEM32\1\DATA\QDY 2020-09-10 13-34-57\LZY-02-P-BR-RAC-0910.D
Sample Name:

```
==========================================================================
Acq. Operator   :                              Seq. Line :  30
Acq. Instrument : Instrument 1                  Location : Vial 92
Injection Date  : 9/10/2020 10:47:37 PM              Inj :   1
                                              Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 3.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2020-09-10 13-34-57\IC-02-20.M
Last changed    : 9/10/2020 10:46:45 PM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 2:43:12 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2020-09-10 13-34-57\LZY-02-P-BR-RAC-0910.D
Sample Name:

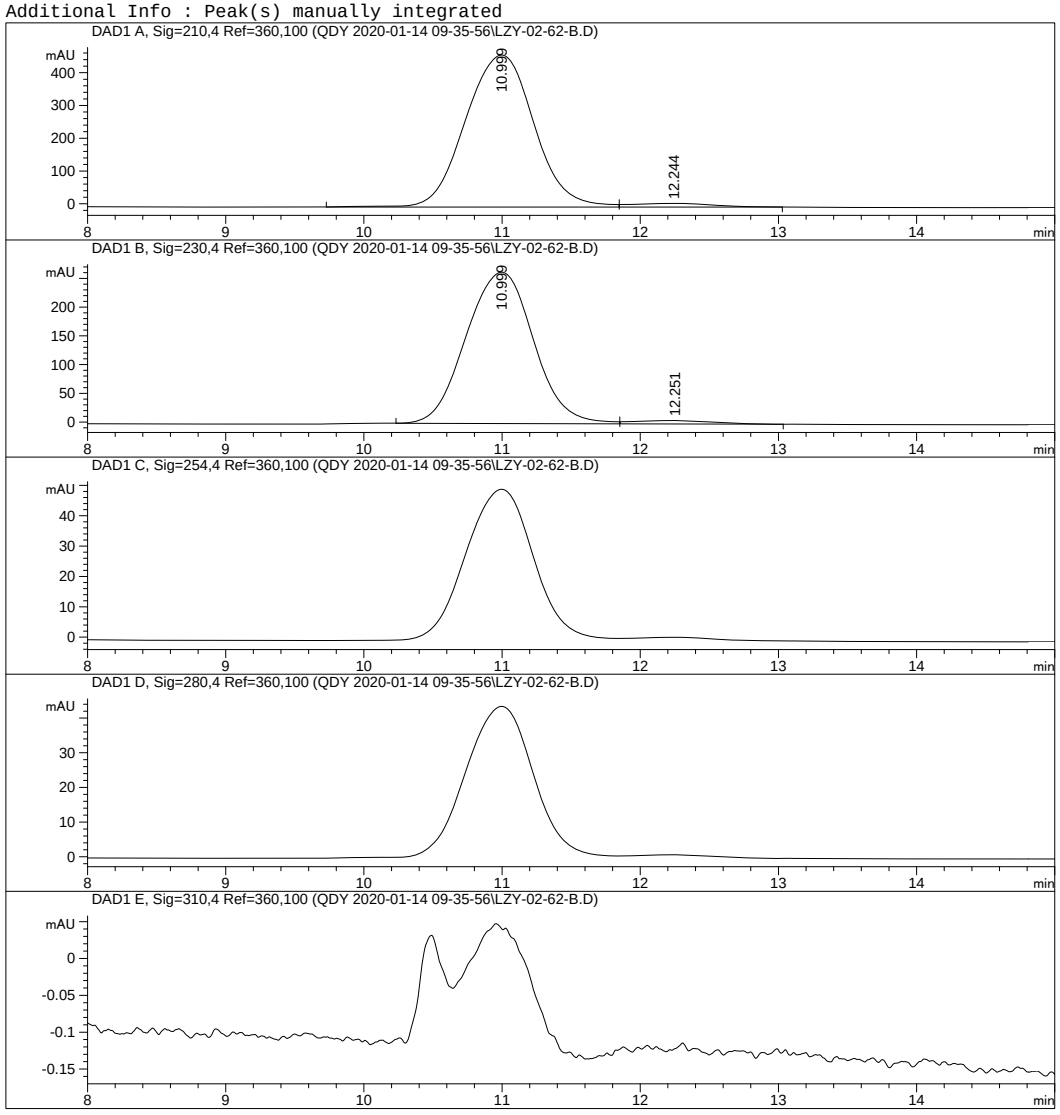
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  10.965 BB    0.3233 1893.90601   90.08872  50.3472
   2  12.170 BB    0.3542 1867.78394   81.24993  49.6528

Totals :                  3761.68994  171.33865



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  10.965 BB    0.3202 1054.73108   50.38411  50.2401
   2  12.170 BB    0.3540 1044.65027   45.48300  49.7599

Totals :                  2099.38135   95.86711



Signal 3: DAD1 C, Sig=254,4 Ref=360,100


Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2h-Rac

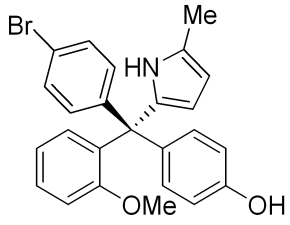
Data File C:\CHEM32\1\DATA\QDY 2020-01-14 09-35-56\LZY-02-62-B.D
Sample Name:

```
==================================================================
Acq. Operator   :                          Seq. Line :   3
Acq. Instrument : Instrument 1              Location : Vial 92
Injection Date  : 1/14/2020 10:20:16 AM          Inj :   1
                                          Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 4.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2020-01-14 09-35-56\IC-02-30.M
Last changed    : 1/14/2020 9:48:23 AM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 2:43:12 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2020-01-14 09-35-56\LZY-02-62-B.D
Sample Name:

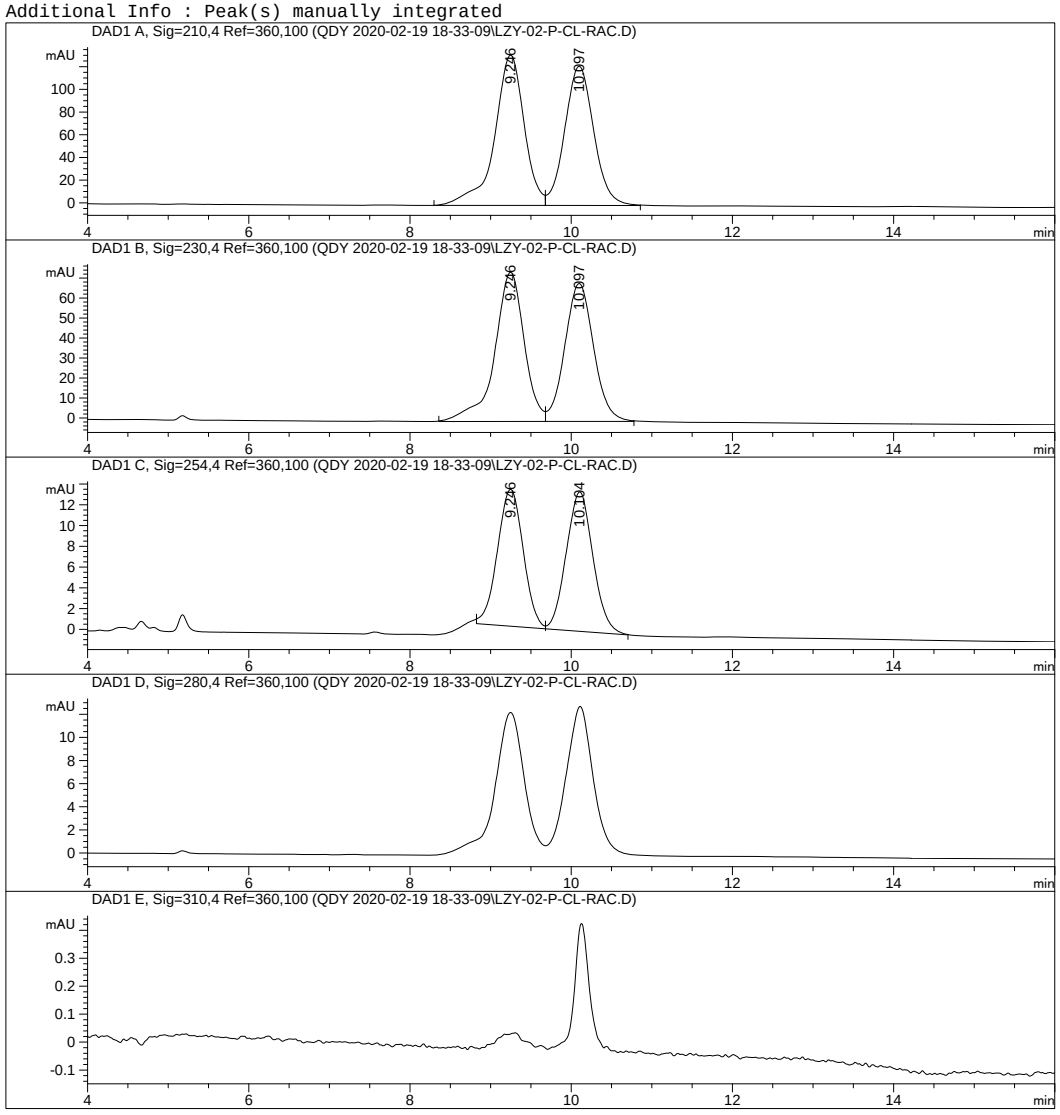
```
==================================================================
                      Area Percent Report
==================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  10.999 BV    0.5506 1.60090e4   463.92984  97.2556
   2  12.244 VB    0.5797  451.74054   11.26800   2.7444

Totals :                  1.64607e4   475.19784



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  10.999 BV    0.5418 8935.40234  263.35187  97.4918
   2  12.251 VB    0.5462  229.88318    5.93145   2.5082

Totals :                  9165.28552  269.28331



Signal 3: DAD1 C, Sig=254,4 Ref=360,100


Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==================================================================
                      *** End of Report ***
```



2h

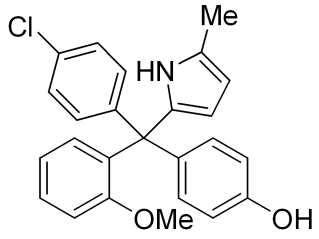
Data File C:\CHEM32\1\DATA\QDY 2020-02-19 18-33-09\LZY-02-P-CL-RAC.D
Sample Name:

```
==========================================================================
Acq. Operator   :                              Seq. Line :  17
Acq. Instrument : Instrument 1                  Location : Vial 98
Injection Date  : 2/20/2020 12:03:49 AM              Inj :   1
                                              Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 3.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2020-02-19 18-33-09\IC-03-20.M
Last changed    : 2/19/2020 11:41:56 PM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 2:48:22 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2020-02-19 18-33-09\LZY-02-P-CL-RAC.D
Sample Name:

```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   9.246 BV    0.3879 3384.03345  132.54121  52.5468
   2  10.097 VB    0.3846 3056.00171  122.70458  47.4532

Totals :                  6440.03516  255.24580



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   9.246 BV    0.3848 1900.14783   74.68499  52.6616
   2  10.097 VB    0.3847 1708.07288   69.03443  47.3384

Totals :                  3608.22070  143.71942



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   9.246 BV    0.3505  292.29184   13.19219  48.5612
   2  10.104 VB    0.3568  309.61221   13.43825  51.4388

Totals :                   601.90405   26.63044



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```

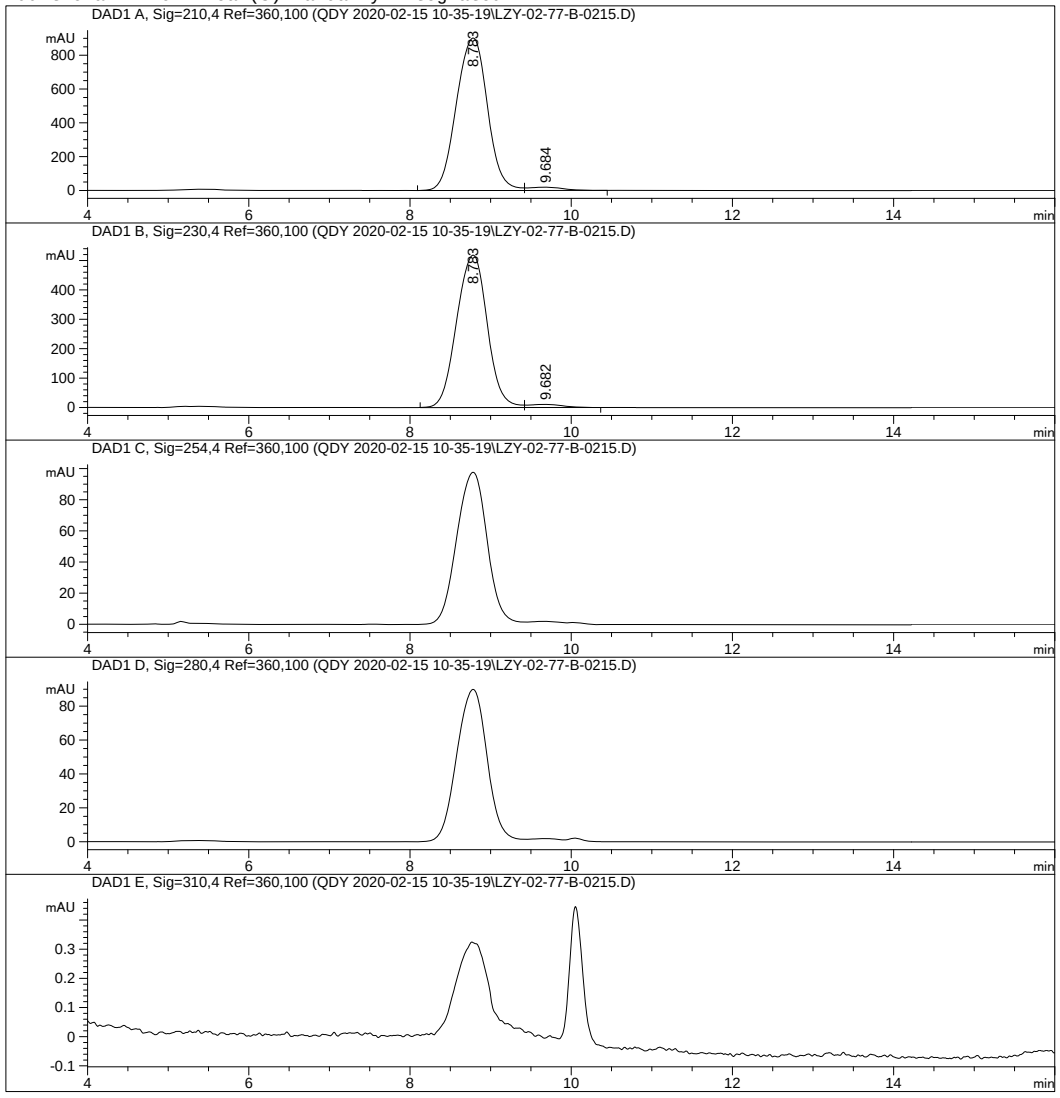


2i-Rac

Instrument 1 11/24/2020 2:48:24 PM

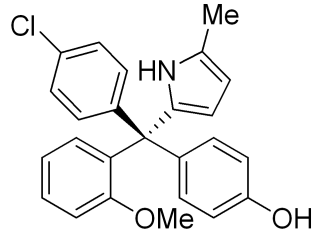
Data File C:\CHEM32\1\DATA\QDY 2020-02-15 10-35-19\LZY-02-77-B-0215.D
Sample Name:

```
======================================================================
Acq. Operator   :                          Seq. Line :   3
Acq. Instrument : Instrument 1              Location : Vial 92
Injection Date  : 2/15/2020 11:21:29 AM          Inj :   1
                                          Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 4.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2020-02-15 10-35-19\IC-03-20.M
Last changed    : 2/15/2020 11:20:39 AM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 8:38:09 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2020-02-15 10-35-19\LZY-02-77-B-0215.D
Sample Name:

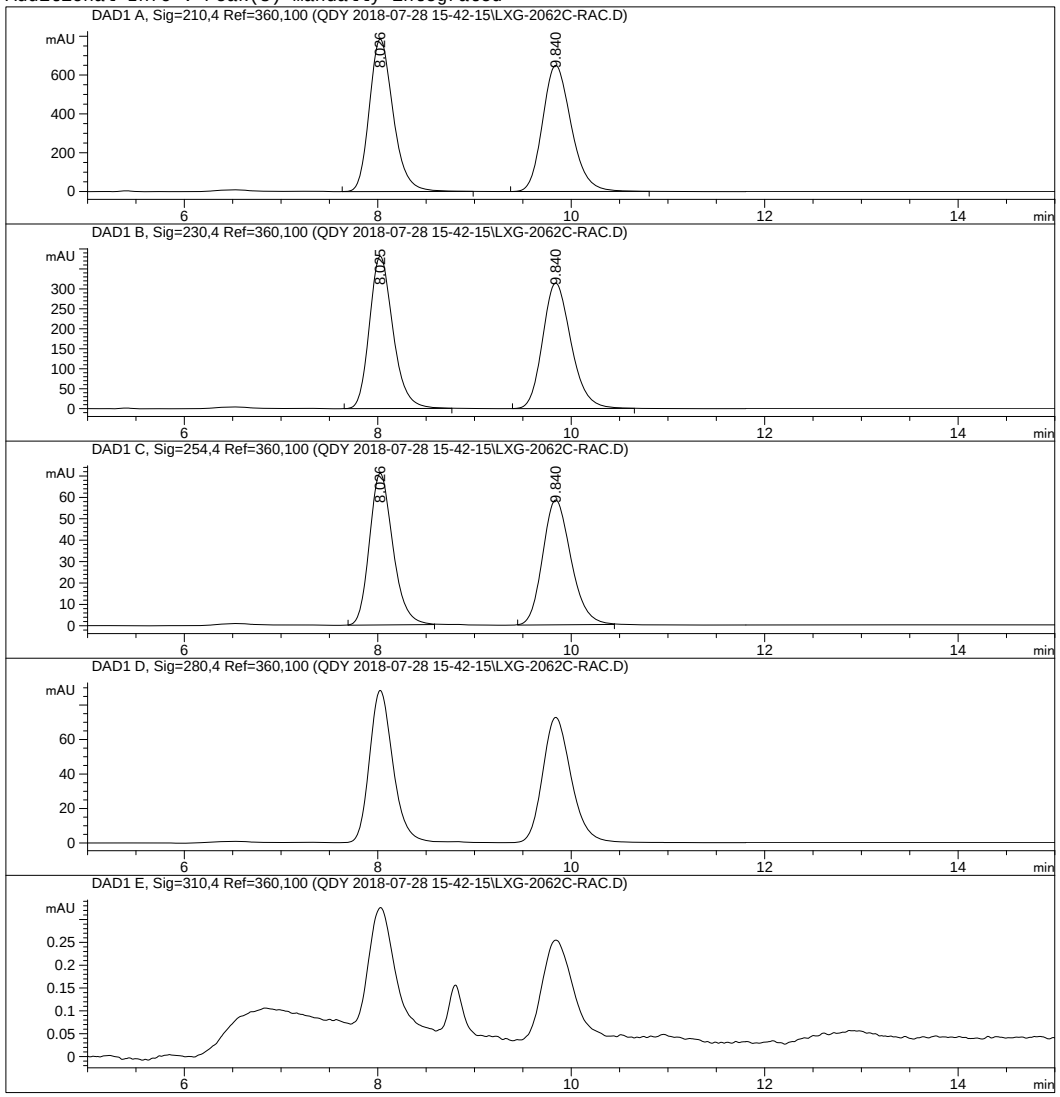
```
======================================================================
                        Area Percent Report
======================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   8.783 BV    0.4250 2.40417e4   901.99292  97.6987
   2   9.684 VB    0.4423  566.31244   19.41345   2.3013

Totals :                  2.46080e4   921.40637



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   8.783 BV    0.4207 1.36287e4   518.34625  97.7838
   2   9.682 VB    0.4400  308.88916   10.66089   2.2162

Totals :                  1.39376e4   529.00714



Signal 3: DAD1 C, Sig=254,4 Ref=360,100


Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

======================================================================
                        *** End of Report ***
```



2i

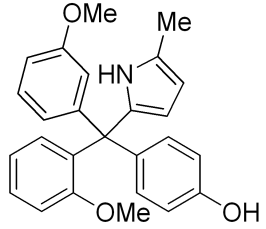
Data File C:\CHEM32\1\DATA\QDY 2018-07-28 15-42-15\LXG-2062C-RAC.D
Sample Name:

```
==========================================================================
Acq. Operator   :                                Seq. Line :   4
Acq. Instrument : Instrument 1                    Location : Vial 69
Injection Date  : 7/28/2018 4:38:09 PM                 Inj :   1
                                                 Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 3.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2018-07-28 15-42-15\IC-05-20.M
Last changed    : 6/25/2018 1:35:20 AM
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 3:21:46 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2018-07-28 15-42-15\LXG-2062C-RAC.D
Sample Name:

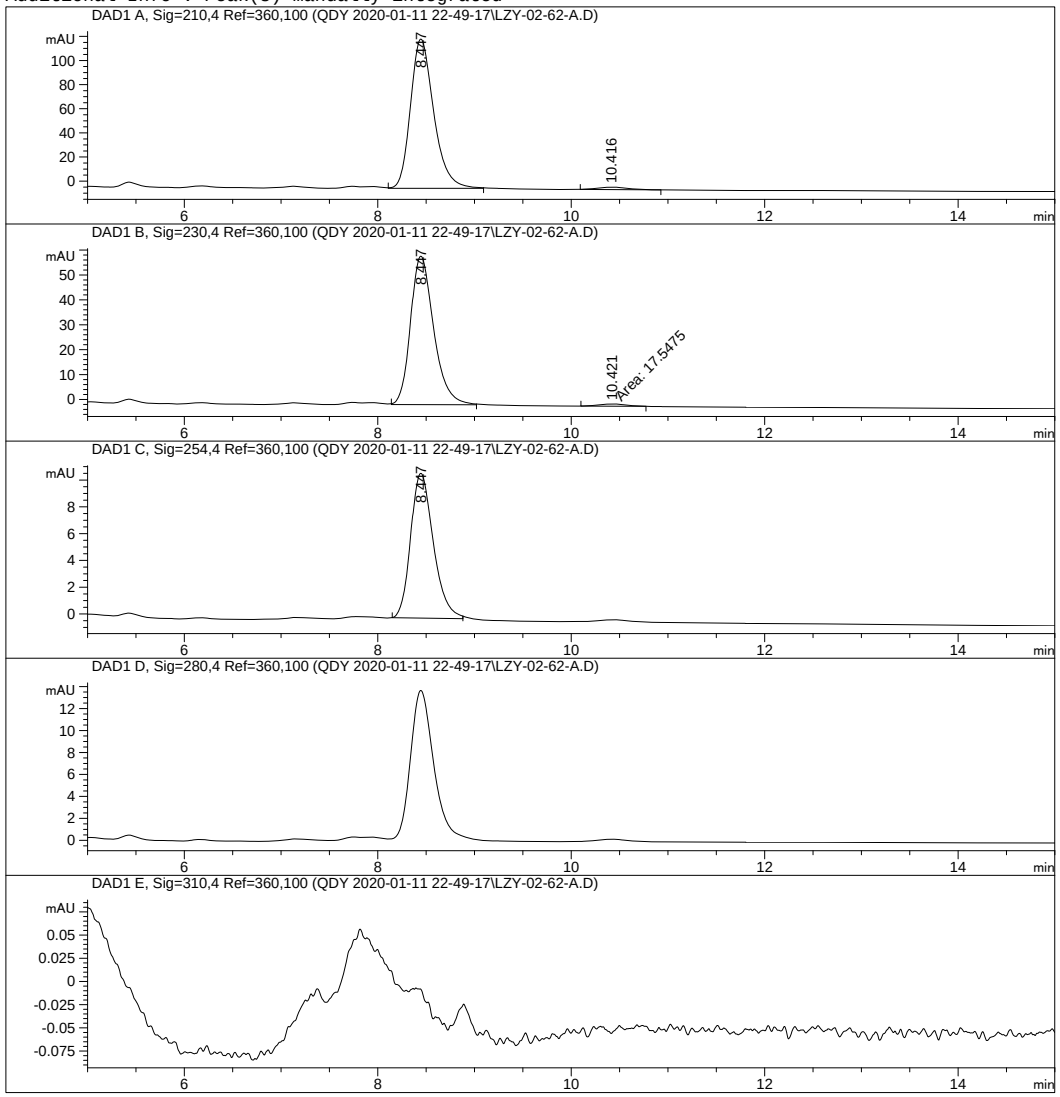
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   8.026 BB    0.2630 1.33934e4   785.38489  50.0026
   2   9.840 BB    0.3185 1.33920e4   649.64520  49.9974

Totals :                  2.67854e4  1435.03009



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   8.025 BB    0.2608 6438.29688  381.67386  50.0475
   2   9.840 BB    0.3165 6426.07471  314.29382  49.9525

Totals :                  1.28644e4   695.96768



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   8.026 BB    0.2597 1188.85413   70.86761  50.0373
   2   9.840 BB    0.3153 1187.08093   58.36302  49.9627

Totals :                  2375.93506  129.23063



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2j-Rac

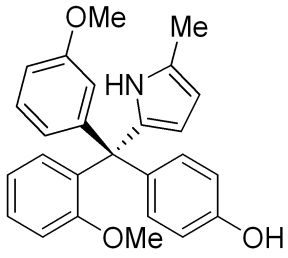
Data File C:\CHEM32\1\DATA\QDY 2020-01-11 22-49-17\LZY-02-62-A.D
Sample Name:

```
==========================================================================
Acq. Operator   :                                Seq. Line :   2
Acq. Instrument : Instrument 1                    Location : Vial 81
Injection Date  : 1/11/2020 11:02:30 PM               Inj :   1
                                                 Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 1.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2020-01-11 22-49-17\IC-05-20.M
Last changed    : 6/25/2018 1:35:20 AM
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 4:45:25 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2020-01-11 22-49-17\LZY-02-62-A.D
Sample Name:

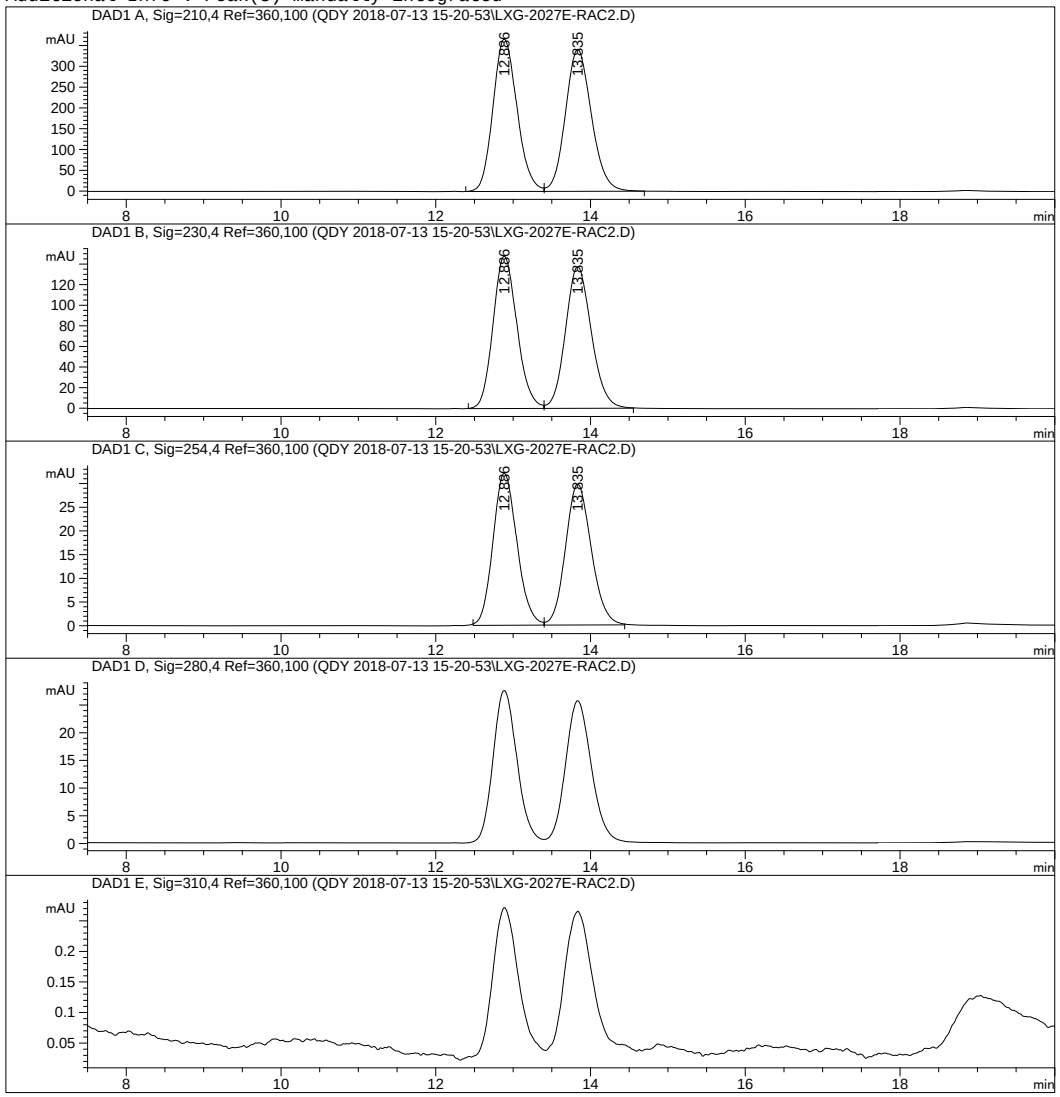
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   8.447 VB    0.2545 2062.70898  123.73442  97.9110
   2  10.416 BB    0.2953   44.00969    2.04281   2.0890

Totals :                  2106.71867  125.77723



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   8.447 BB    0.2537  989.99640   59.61902  98.2584
   2  10.421 MM    0.3280   17.54748 8.91600e-1   1.7416

Totals :                  1007.54388   60.51062



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   8.447 BB    0.2520  176.08235   10.81169 100.0000

Totals :                   176.08235   10.81169



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2j

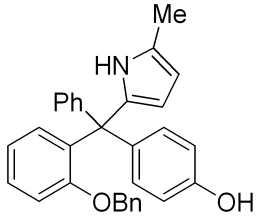
Data File C:\CHEM32\1\DATA\QDY 2018-07-13 15-20-53\LXG-2027E-RAC2.D
Sample Name:

```
==========================================================================
Acq. Operator   :                              Seq. Line :   7
Acq. Instrument : Instrument 1                  Location : Vial 67
Injection Date  : 7/13/2018 5:00:32 PM               Inj :   1
                                              Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 3.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2018-07-13 15-20-53\AD-05-30.M
Last changed    : 7/17/2016 12:02:24 PM
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 5:17:00 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2018-07-13 15-20-53\LXG-2027E-RAC2.D
Sample Name:

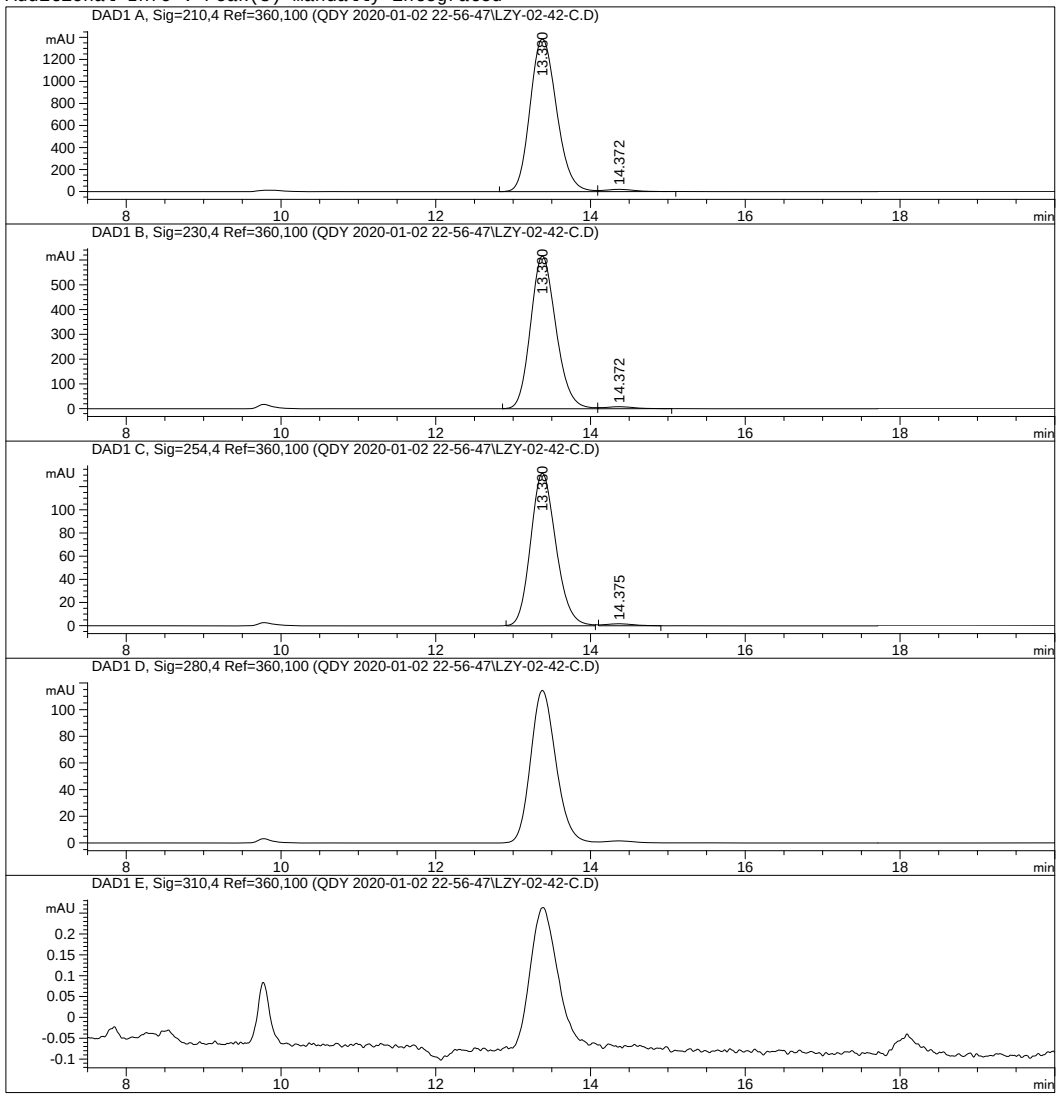
```
==========================================================================
                          Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  12.886 BV    0.3340 7914.43408  366.33969  49.7959
   2  13.835 VB    0.3628 7979.30078  341.21024  50.2041

Totals :                  1.58937e4   707.54993



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  12.886 BV    0.3330 3183.48584  147.96762  49.8640
   2  13.835 VB    0.3592 3200.85205  137.67828  50.1360

Totals :                  6384.33789  285.64590



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  12.886 BV    0.3330  689.41772   32.04320  50.0482
   2  13.835 VB    0.3580  688.09100   29.73436  49.9518

Totals :                  1377.50873   61.77756



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2k-Rac

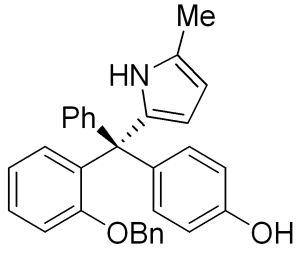
Data File C:\CHEM32\1\DATA\QDY 2020-01-02 22-56-47\LZY-02-42-C.D
Sample Name:

```
==========================================================================
Acq. Operator   :                              Seq. Line :  12
Acq. Instrument : Instrument 1                  Location : Vial 92
Injection Date  : 1/3/2020 4:21:26 AM                Inj :   1
                                              Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 3.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2020-01-02 22-56-47\AD-05-30.M
Last changed    : 7/17/2016 12:02:24 PM
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 8:39:23 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2020-01-02 22-56-47\LZY-02-42-C.D
Sample Name:

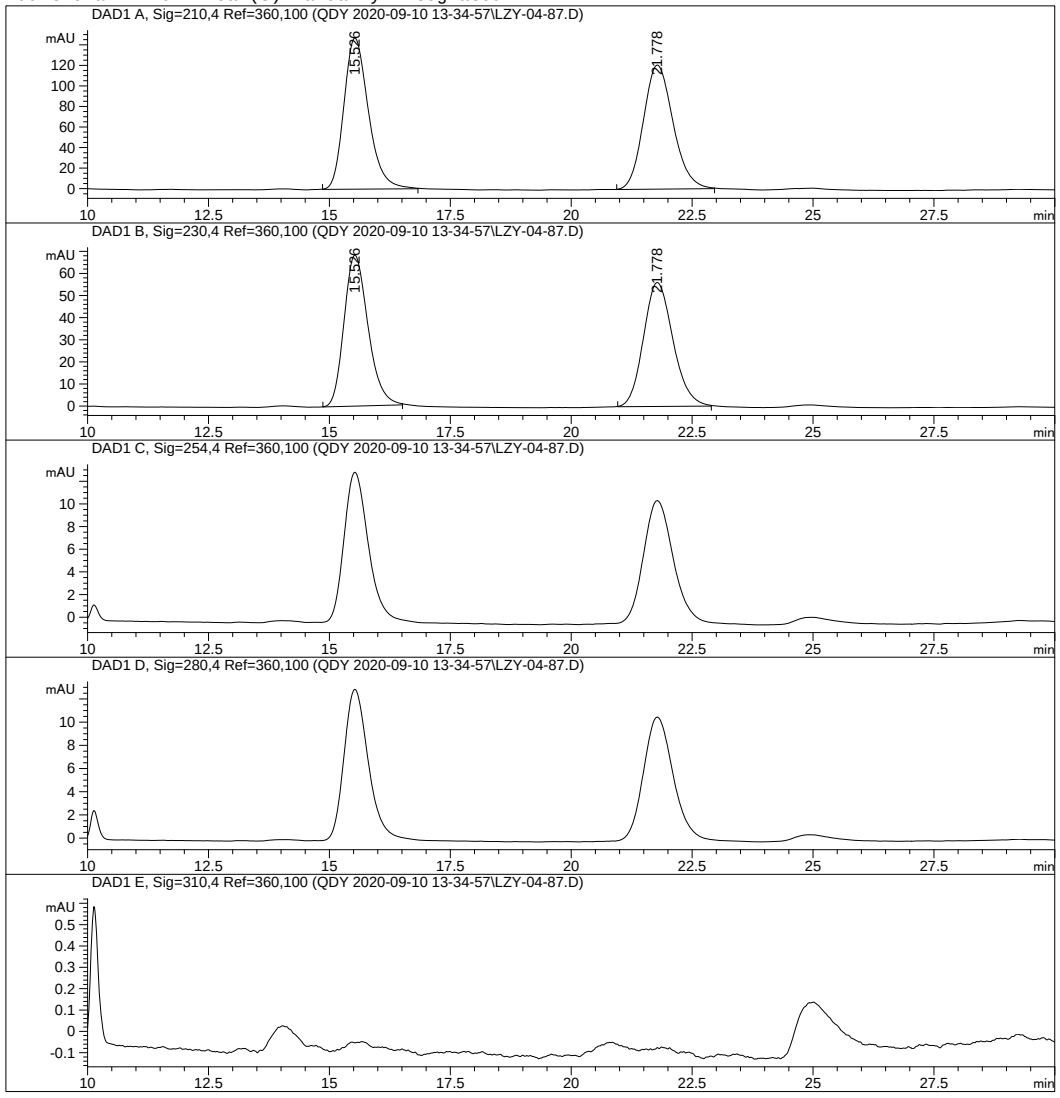
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  13.380 BV    0.3707 3.28630e4  1385.41077  98.4422
   2  14.372 VB    0.3881  520.05066   20.35078   1.5578

Totals :                  3.33830e4  1405.76155



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  13.380 BV    0.3536 1.40167e4   615.71234  98.5424
   2  14.372 VB    0.3918  207.32739    8.12356   1.4576

Totals :                  1.42240e4   623.83590



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  13.380 BB    0.3508 2988.84521  131.66220  98.5785
   2  14.375 BB    0.3519   43.10011    1.72278   1.4215

Totals :                  3031.94532  133.38498



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2k

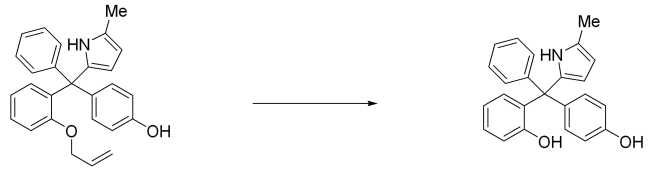
Data File C:\CHEM32\1\DATA\QDY 2020-09-10 13-34-57\LZY-04-87.D
Sample Name:

```
==========================================================================
Acq. Operator   :                              Seq. Line :  11
Acq. Instrument : Instrument 1                  Location : Vial 91
Injection Date  : 9/10/2020 5:12:31 PM               Inj :   1
                                              Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 2.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2020-09-10 13-34-57\IC-03-40.M
Last changed    : 9/10/2020 5:11:38 PM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 2:52:38 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2020-09-10 13-34-57\LZY-04-87.D
Sample Name:

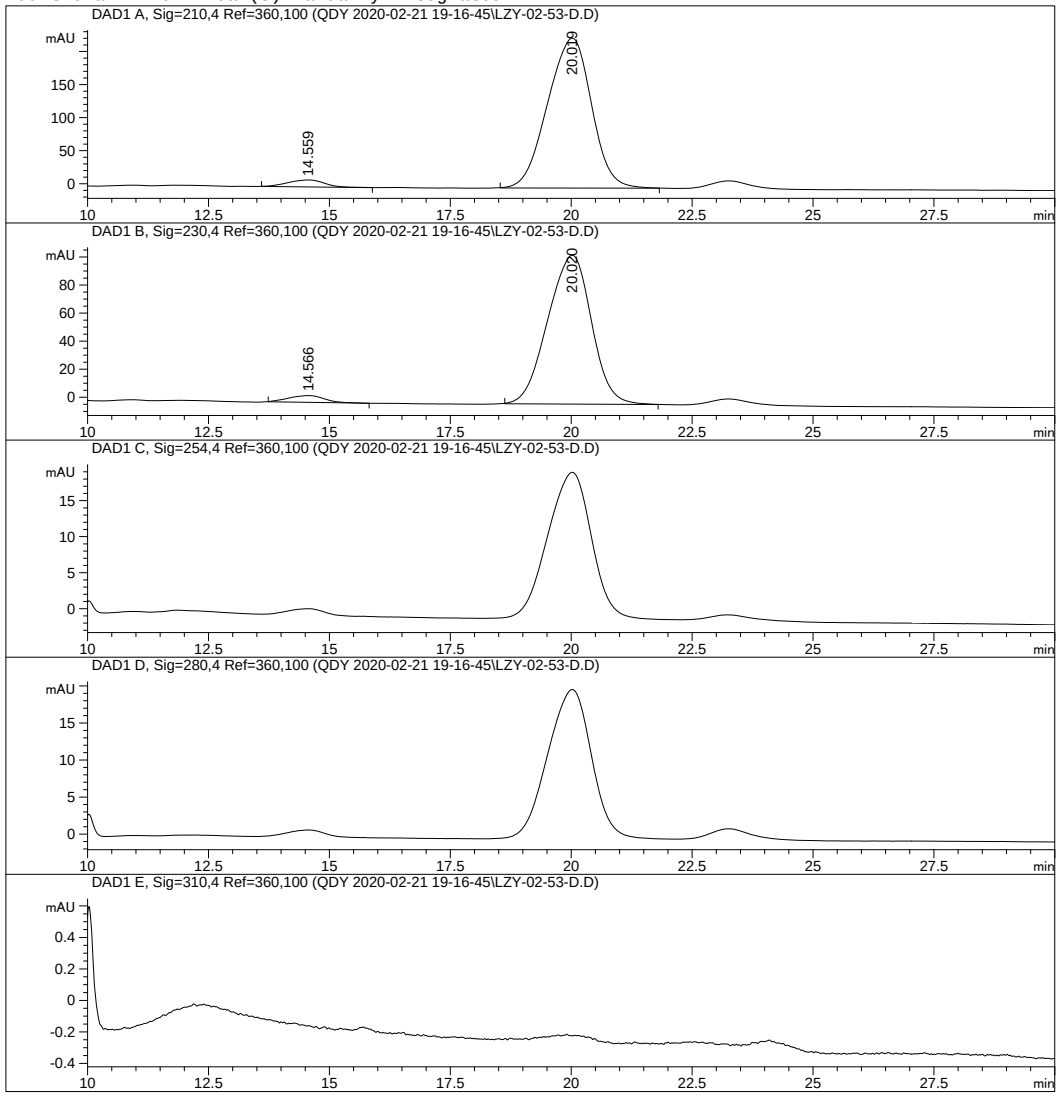
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  15.526 BB    0.5420 5167.96240  147.07161  50.1571
   2  21.778 BB    0.6683 5135.58691  120.71682  49.8429

Totals :                  1.03035e4   267.78843



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  15.526 BB    0.5343 2353.96167   68.27108  49.7489
   2  21.778 BB    0.6587 2377.72070   56.07371  50.2511

Totals :                  4731.68237  124.34479



Signal 3: DAD1 C, Sig=254,4 Ref=360,100


Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2l-Rac **2l-deallyl-Rac**

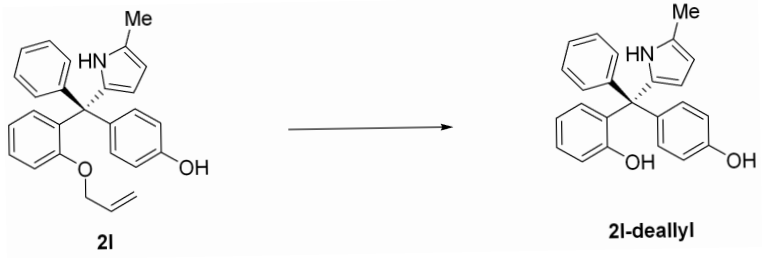
Data File C:\CHEM32\1\DATA\QDY 2020-02-21 19-16-45\LZY-02-53-D.D
Sample Name:

```
==========================================================================
Acq. Operator   :                                Seq. Line :   2
Acq. Instrument : Instrument 1                    Location : Vial 89
Injection Date  : 2/21/2020 7:30:02 PM                 Inj :   1
                                                 Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 6.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2020-02-21 19-16-45\IC-03-30.M
Last changed    : 2/21/2020 7:29:10 PM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 2:52:38 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2020-02-21 19-16-45\LZY-02-53-D.D
Sample Name:

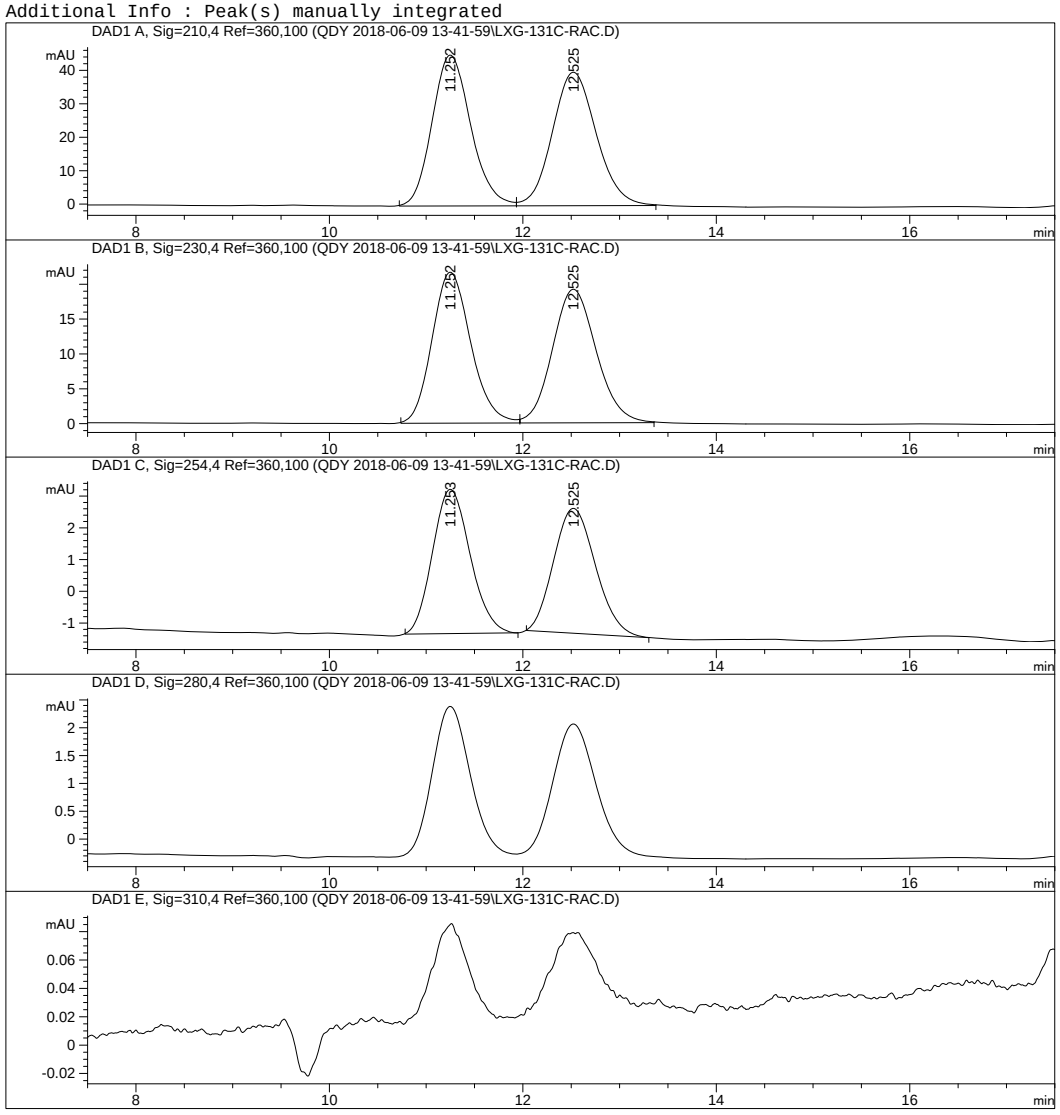
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  14.559 BB    0.6502  544.63507   10.51568   3.6713
   2  20.019 BB    1.0048 1.42902e4   226.88597  96.3287

Totals :                  1.48348e4   237.40165



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  14.566 BB    0.7005  243.73860    4.81535   3.5336
   2  20.020 BB    0.9974 6653.98584  106.14471  96.4664

Totals :                  6897.72444  110.96005



Signal 3: DAD1 C, Sig=254,4 Ref=360,100


Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2l **2l-deallyl**

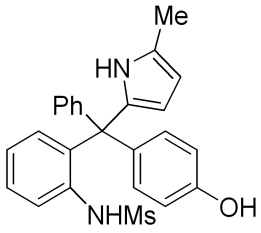
Data File C:\CHEM32\1\DATA\QDY 2018-06-09 13-41-59\LXG-131C-RAC.D
Sample Name:

```
==========================================================================
Acq. Operator   :                              Seq. Line :   2
Acq. Instrument : Instrument 1                  Location : Vial 62
Injection Date  : 6/9/2018 1:55:33 PM               Inj :   1
                                               Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 2.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2018-06-09 13-41-59\IC-30-30.M
Last changed    : 6/9/2018 1:54:41 PM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 6:15:03 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2018-06-09 13-41-59\LXG-131C-RAC.D
Sample Name:

```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  11.252 BV    0.4298 1252.26025   45.12457  49.8303
   2  12.525 VB    0.4924 1260.78906   39.93031  50.1697

Totals :                  2513.04932   85.05489



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  11.252 BB    0.4300  601.50604   21.65733  49.9837
   2  12.525 BB    0.4905  601.89801   19.15991  50.0163

Totals :                  1203.40405   40.81724



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  11.253 BB    0.4190  122.72398    4.54591  50.8898
   2  12.525 BB    0.4671  118.43242    3.93561  49.1102

Totals :                   241.15640    8.48152



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```

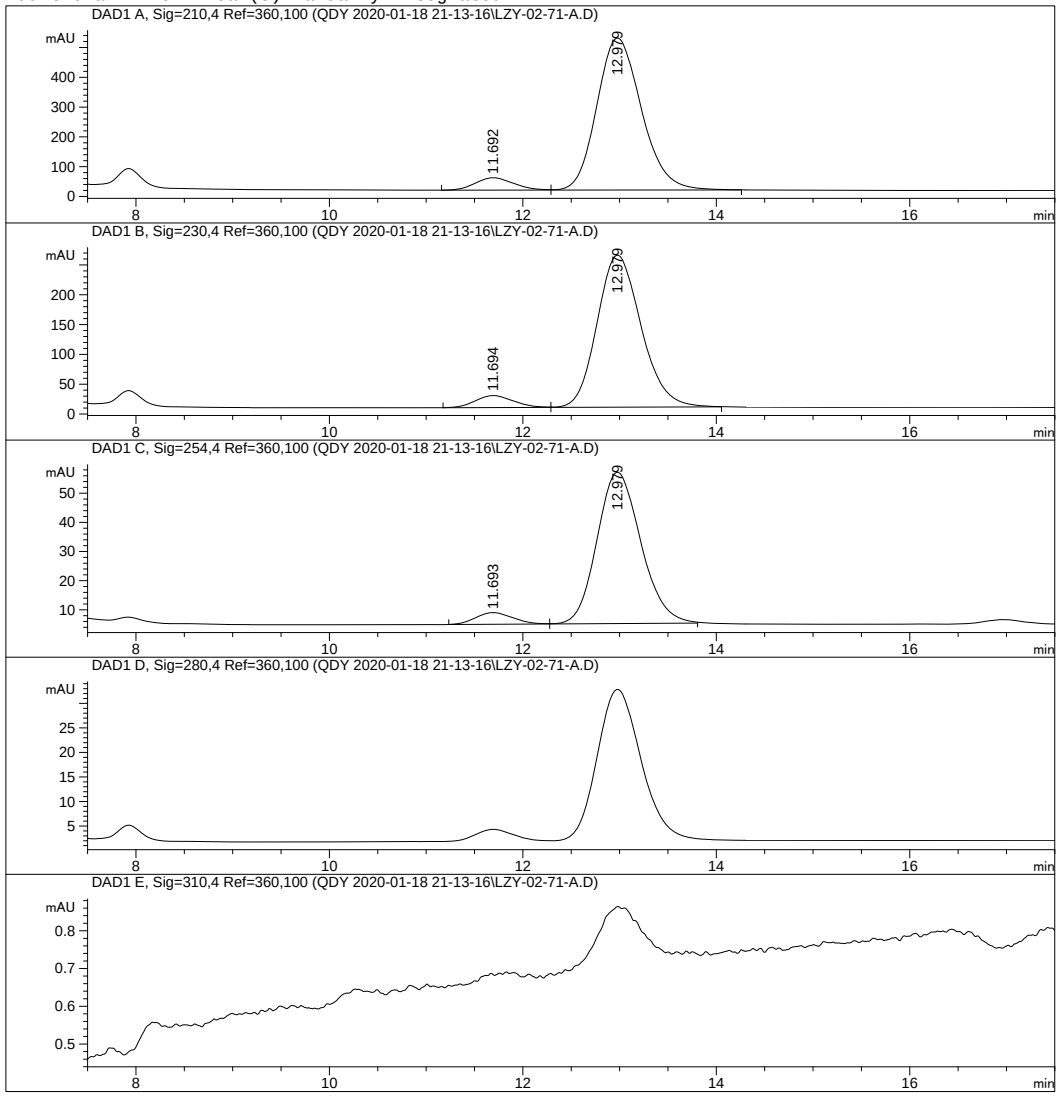


2m-Rac

Instrument 1 11/24/2020 6:19:03 PM

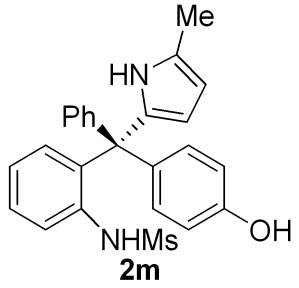
Data File C:\CHEM32\1\DATA\QDY 2020-01-18 21-13-16\LZY-02-71-A.D
Sample Name:

```
==========================================================================
Acq. Operator   :                                Seq. Line :   3
Acq. Instrument : Instrument 1                    Location : Vial 94
Injection Date  : 1/18/2020 9:57:32 PM                 Inj :   1
                                                 Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 3.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2020-01-18 21-13-16\IC-30-30.M
Last changed    : 1/18/2020 9:56:41 PM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 6:15:03 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2020-01-18 21-13-16\LZY-02-71-A.D
Sample Name:

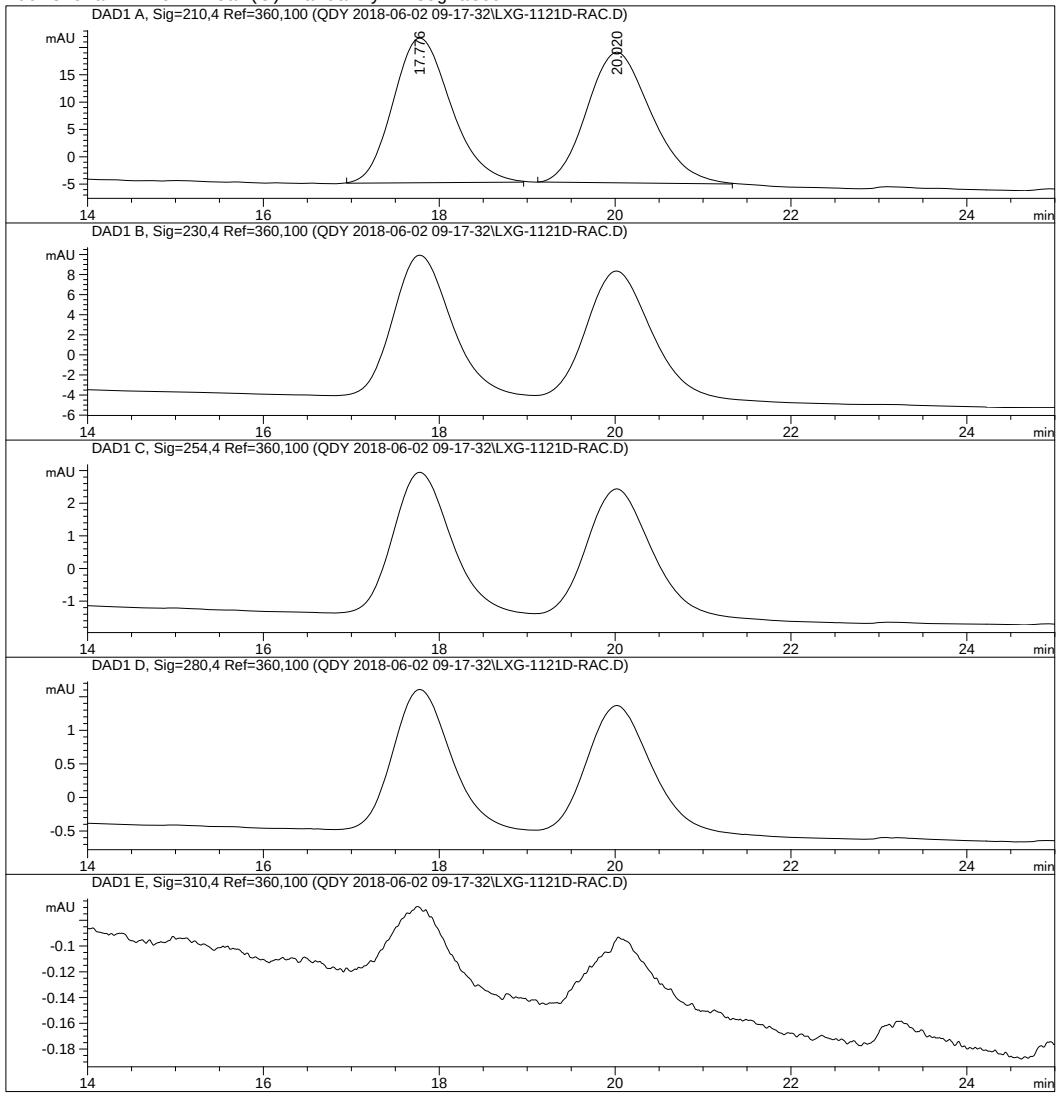
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  11.692 BV    0.4255 1137.97705   41.55007   6.5206
   2  12.979 VB    0.4973 1.63141e4   509.80856  93.4794

Totals :                  1.74521e4   551.35863



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  11.694 BV    0.4218  547.47168   20.09611   6.3694
   2  12.979 VB    0.4884 8047.87207  254.83559  93.6306

Totals :                  8595.34375  274.93169



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  11.693 BV    0.4161  105.81114    4.00634   6.0913
   2  12.979 VB    0.4868 1631.28723   51.89074  93.9087

Totals :                  1737.09837   55.89708



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2m

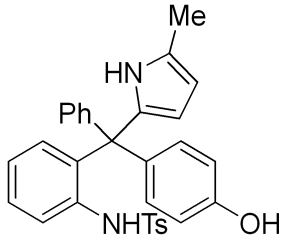
Data File C:\CHEM32\1\DATA\QDY 2018-06-02 09-17-32\LXG-1121D-RAC.D
Sample Name:

```
==========================================================================
Acq. Operator   :                              Seq. Line :   6
Acq. Instrument : Instrument 1                  Location : Vial 51
Injection Date  : 6/2/2018 10:41:01 AM               Inj :   1
                                              Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 2.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2018-06-02 09-17-32\IC-15-30.M
Last changed    : 6/2/2018 10:40:10 AM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 6:25:15 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2018-06-02 09-17-32\LXG-1121D-RAC.D
Sample Name:

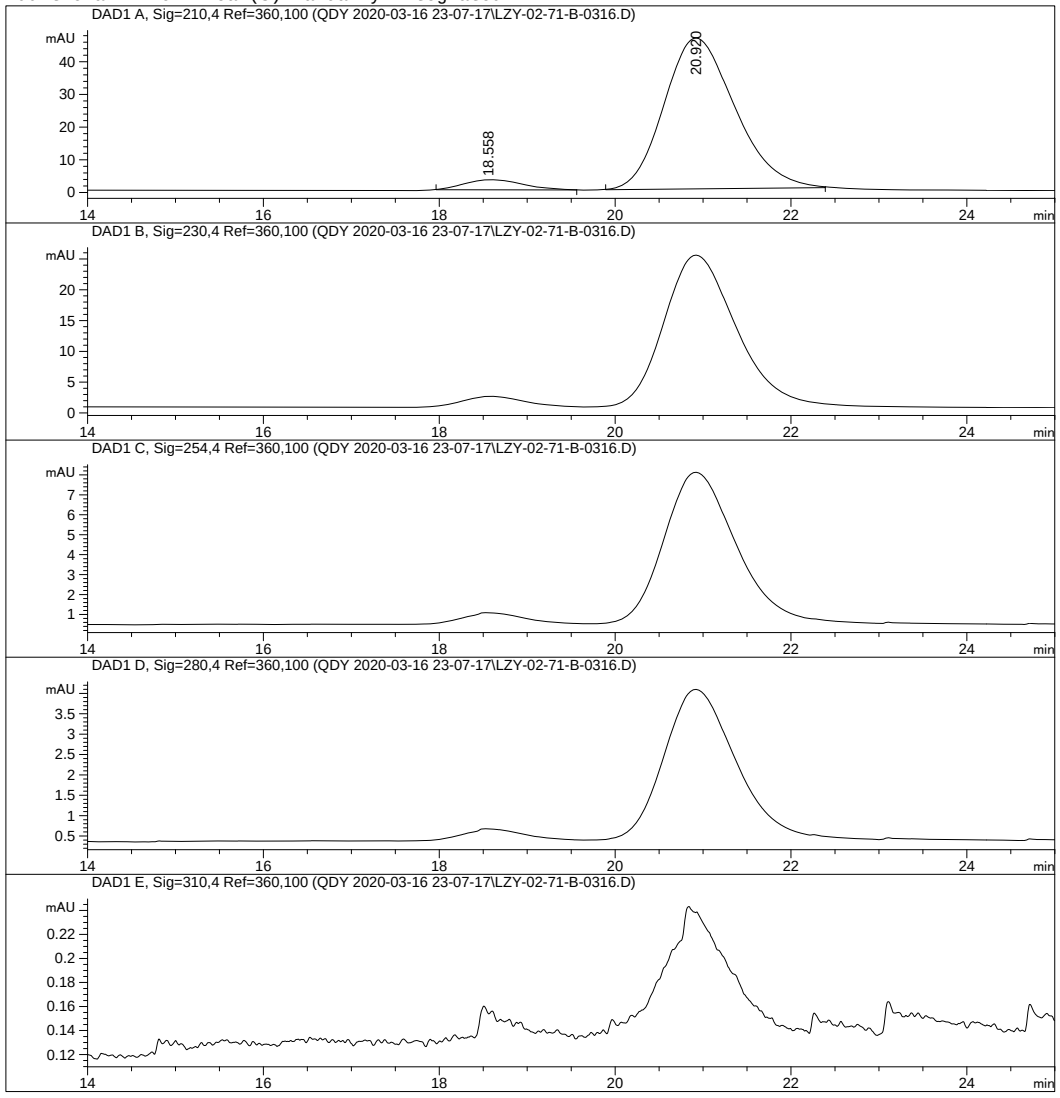
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  17.776 BB    0.7033 1210.11121   26.47231  50.0003
   2  20.020 BB    0.7725 1210.09485   23.90942  49.9997

Totals :                  2420.20605   50.38173



Signal 2: DAD1 B, Sig=230,4 Ref=360,100


Signal 3: DAD1 C, Sig=254,4 Ref=360,100


Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2n-Rac

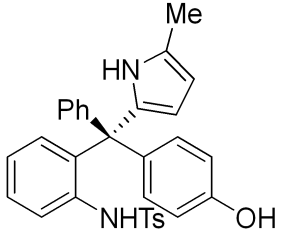
Data File C:\CHEM32\1\DATA\QDY 2020-03-16 23-07-17\LZY-02-71-B-0316.D
Sample Name:

```
==========================================================================
Acq. Operator   :                                Seq. Line :   9
Acq. Instrument : Instrument 1                    Location : Vial 93
Injection Date  : 3/17/2020 1:08:41 AM                 Inj :   1
                                                 Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 8.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2020-03-16 23-07-17\IC-15-30.M
Last changed    : 3/17/2020 1:07:47 AM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 6:25:15 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2020-03-16 23-07-17\LZY-02-71-B-0316.D
Sample Name:

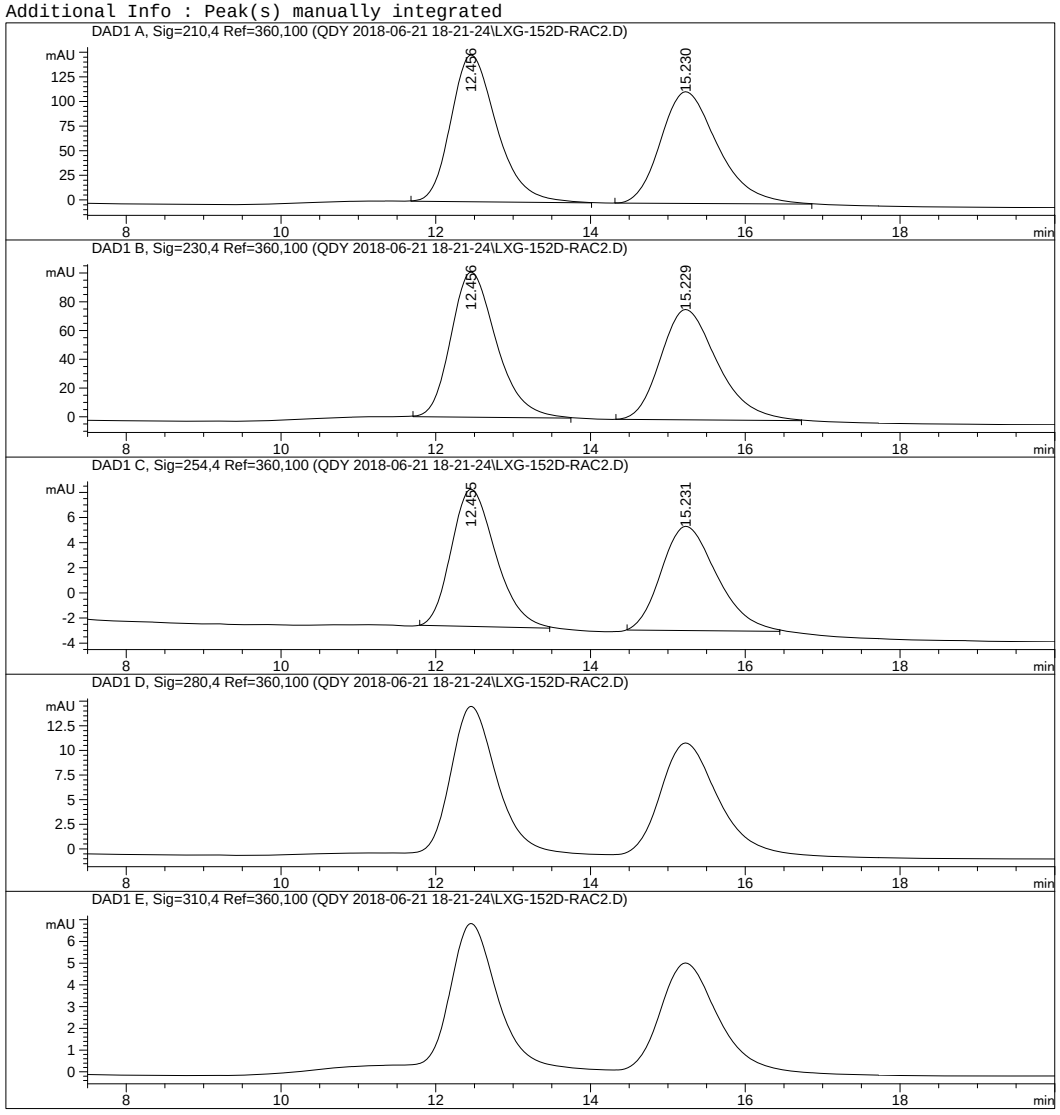
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  18.558 BB    0.5665  143.21919    3.06842   5.2412
   2  20.920 BB    0.8648 2589.35400   46.13736  94.7588

Totals :                  2732.57320   49.20577



Signal 2: DAD1 B, Sig=230,4 Ref=360,100


Signal 3: DAD1 C, Sig=254,4 Ref=360,100


Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2n

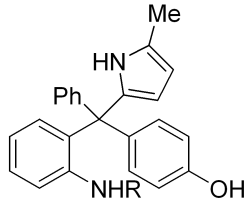
Data File C:\CHEM32\1\DATA\QDY 2018-06-21 18-21-24\LXG-152D-RAC2.D
Sample Name:

```
==========================================================================
Acq. Operator   :                                Seq. Line :   2
Acq. Instrument : Instrument 1                    Location : Vial 67
Injection Date  : 6/21/2018 6:34:26 PM                 Inj :   1
                                                 Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 3.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2018-06-21 18-21-24\IC-30-30.M
Last changed    : 6/21/2018 6:33:33 PM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 6:33:55 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2018-06-21 18-21-24\LXG-152D-RAC2.D
Sample Name:

```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  12.456 BB    0.6317 6126.23535  149.00308  51.1842
   2  15.230 BB    0.7913 5842.75342  113.36085  48.8158

Totals :                  1.19690e4   262.36393



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  12.456 BB    0.6277 4113.04004  100.86504  51.1741
   2  15.229 BB    0.7851 3924.30298   76.67237  48.8259

Totals :                  8037.34302  177.53741



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  12.455 BB    0.6158  433.83267   10.91284  51.1764
   2  15.231 BB    0.7643  413.88727    8.29309  48.8236

Totals :                   847.71994   19.20593



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



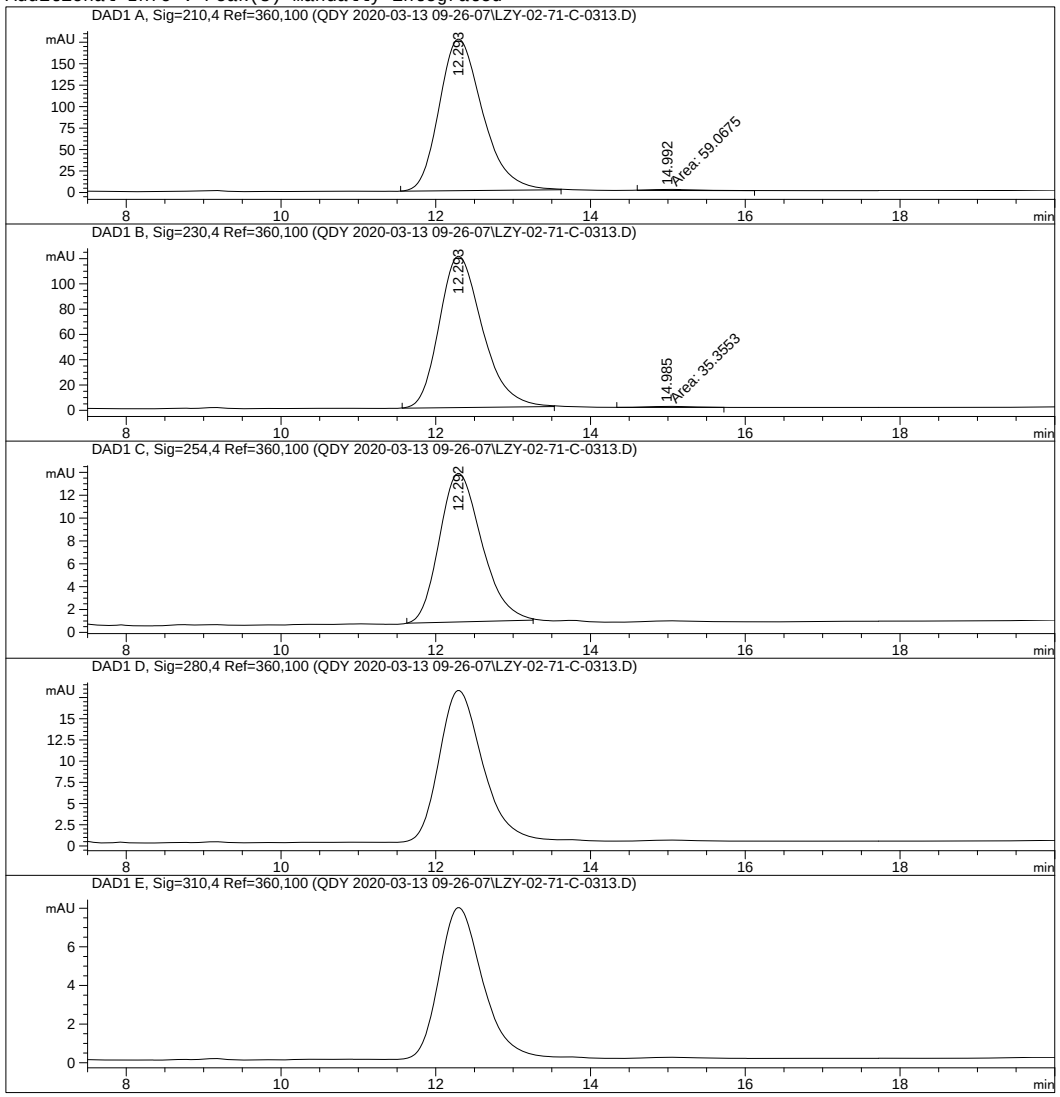
R= SO_2(1-Nap)

2o-Rac

Instrument 1 11/24/2020 6:35:12 PM

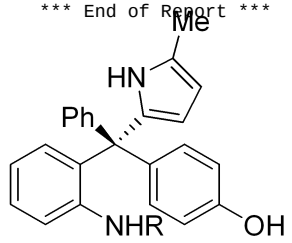
Data File C:\CHEM32\1\DATA\QDY 2020-03-13 09-26-07\LZY-02-71-C-0313.D
Sample Name:

```
==========================================================================
Acq. Operator   :                                Seq. Line :  23
Acq. Instrument : Instrument 1                    Location : Vial 84
Injection Date  : 3/13/2020 4:34:57 PM                 Inj :   1
                                                 Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 1.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2020-03-13 09-26-07\IC-30-20.M
Last changed    : 3/13/2020 9:34:34 AM
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 8:39:23 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2020-03-13 09-26-07\LZY-02-71-C-0313.D
Sample Name:

```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  12.293 BB    0.5978 6870.16016  176.63481  99.1476
   2  14.992 MM    0.7524   59.06746    1.30838   0.8524

Totals :                  6929.22762  177.94319



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  12.293 BB    0.5963 4645.24121  119.82249  99.2446
   2  14.985 MM    0.7220   35.35526 8.16122e-1   0.7554

Totals :                  4680.59647  120.63861



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  12.292 BB    0.5851  493.85947   13.00298 100.0000

Totals :                   493.85947   13.00298



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```

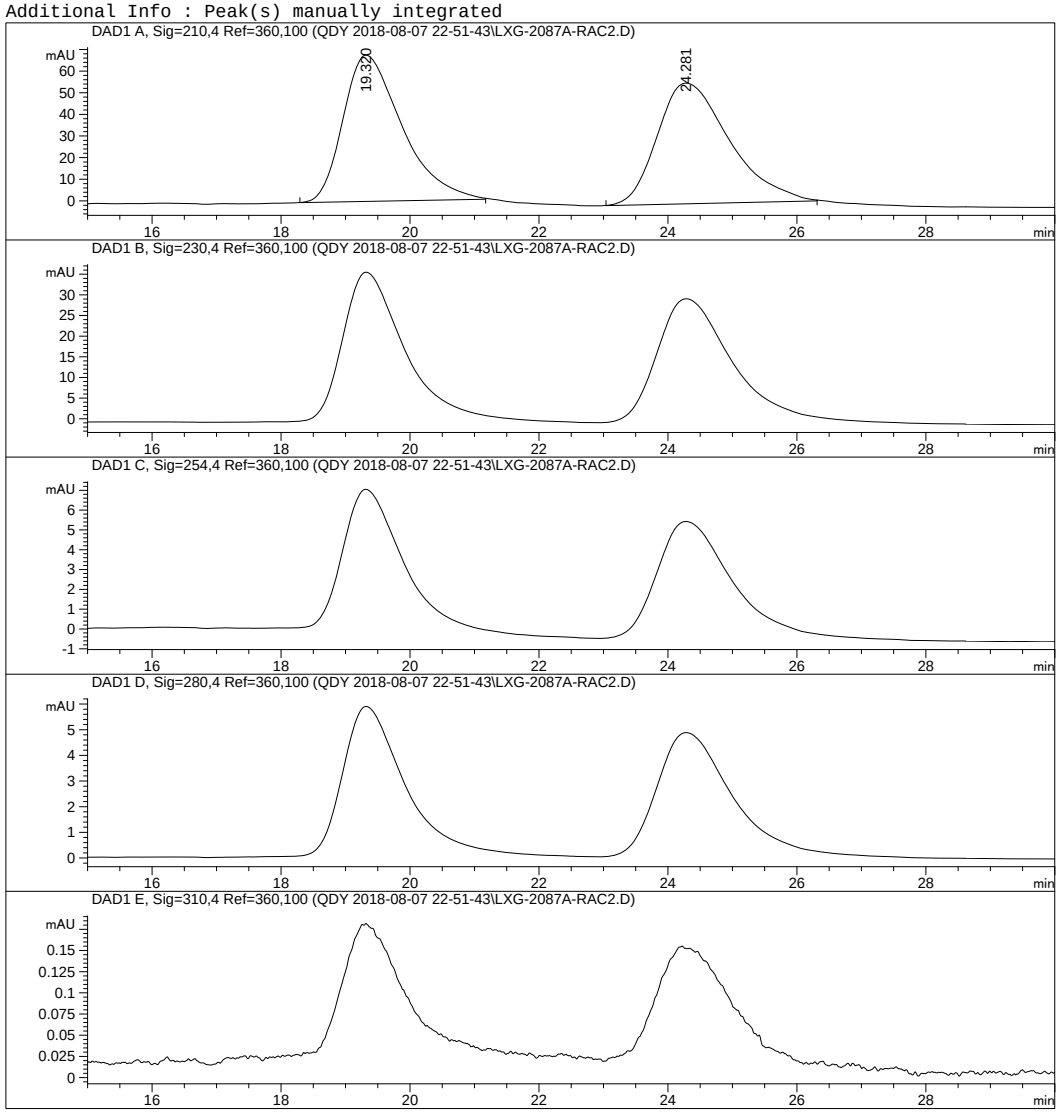


R= SO_2(1-Nap)

2o

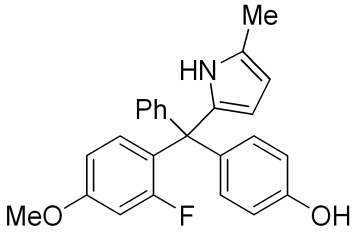
Data File C:\CHEM32\1\DATA\QDY 2018-08-07 22-51-43\LXG-2087A-RAC2.D
Sample Name:

```
==========================================================================
Acq. Operator   :                              Seq. Line :   6
Acq. Instrument : Instrument 1                  Location : Vial 68
Injection Date  : 8/8/2018 12:12:24 AM               Inj :   1
                                              Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 3.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2018-08-07 22-51-43\OD-05-30.M
Last changed    : 8/8/2018 12:11:31 AM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 6:37:01 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2018-08-07 22-51-43\LXG-2087A-RAC2.D
Sample Name:

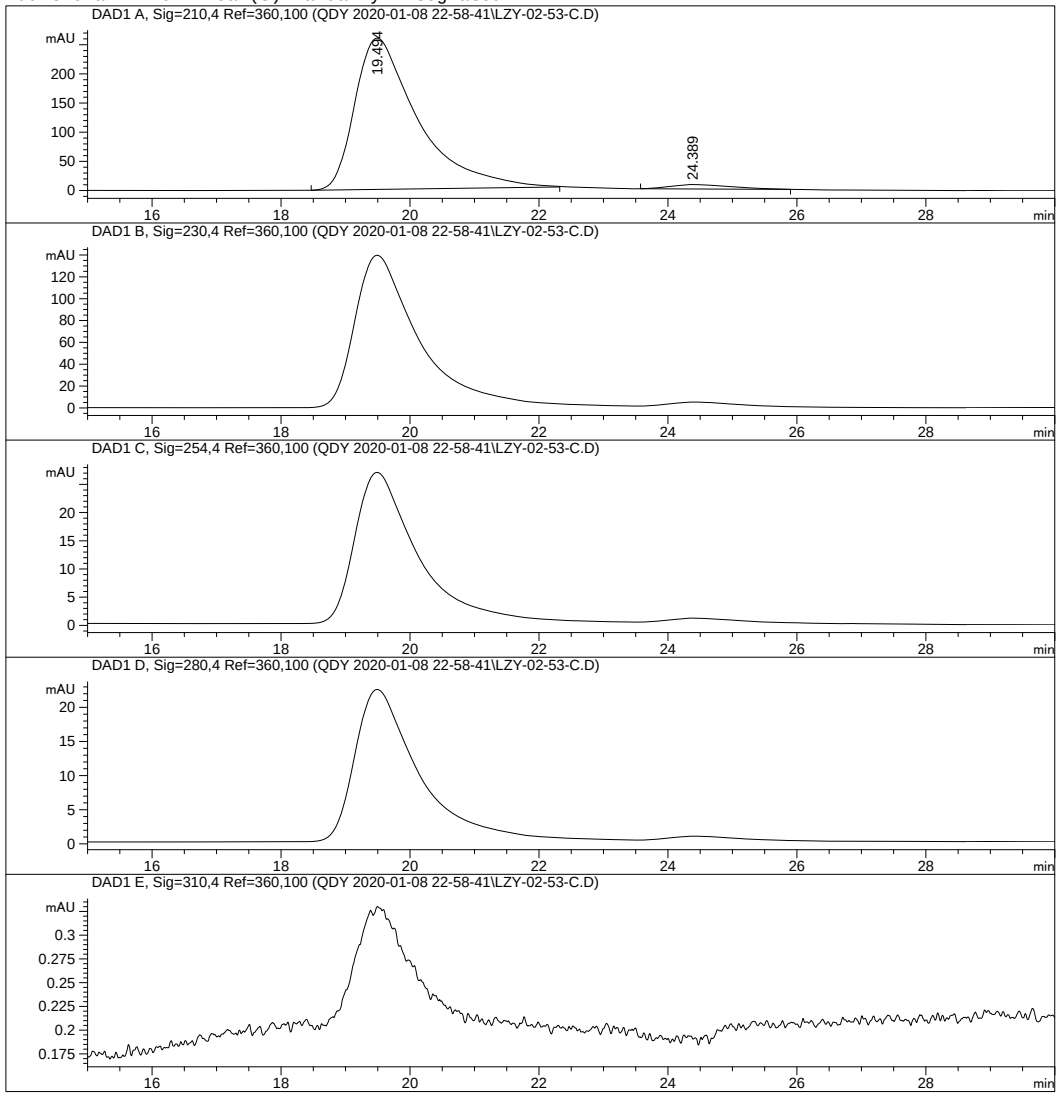
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  19.320 BB    0.9428 4283.52246   67.63930  49.7465
   2  24.281 BB    1.1572 4327.17969   55.77165  50.2535

Totals :                  8610.70215  123.41095



Signal 2: DAD1 B, Sig=230,4 Ref=360,100


Signal 3: DAD1 C, Sig=254,4 Ref=360,100


Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2p-Rac

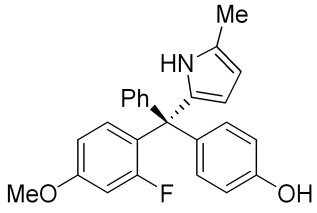
Data File C:\CHEM32\1\DATA\QDY 2020-01-08 22-58-41\LZY-02-53-C.D
Sample Name:

```
==========================================================================
Acq. Operator   :                              Seq. Line :  15
Acq. Instrument : Instrument 1                  Location : Vial 96
Injection Date  : 1/9/2020 2:36:31 AM                Inj :   1
                                              Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 4.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2020-01-08 22-58-41\OD-05-30.M
Last changed    : 1/9/2020 2:35:39 AM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 6:37:01 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2020-01-08 22-58-41\LZY-02-53-C.D
Sample Name:

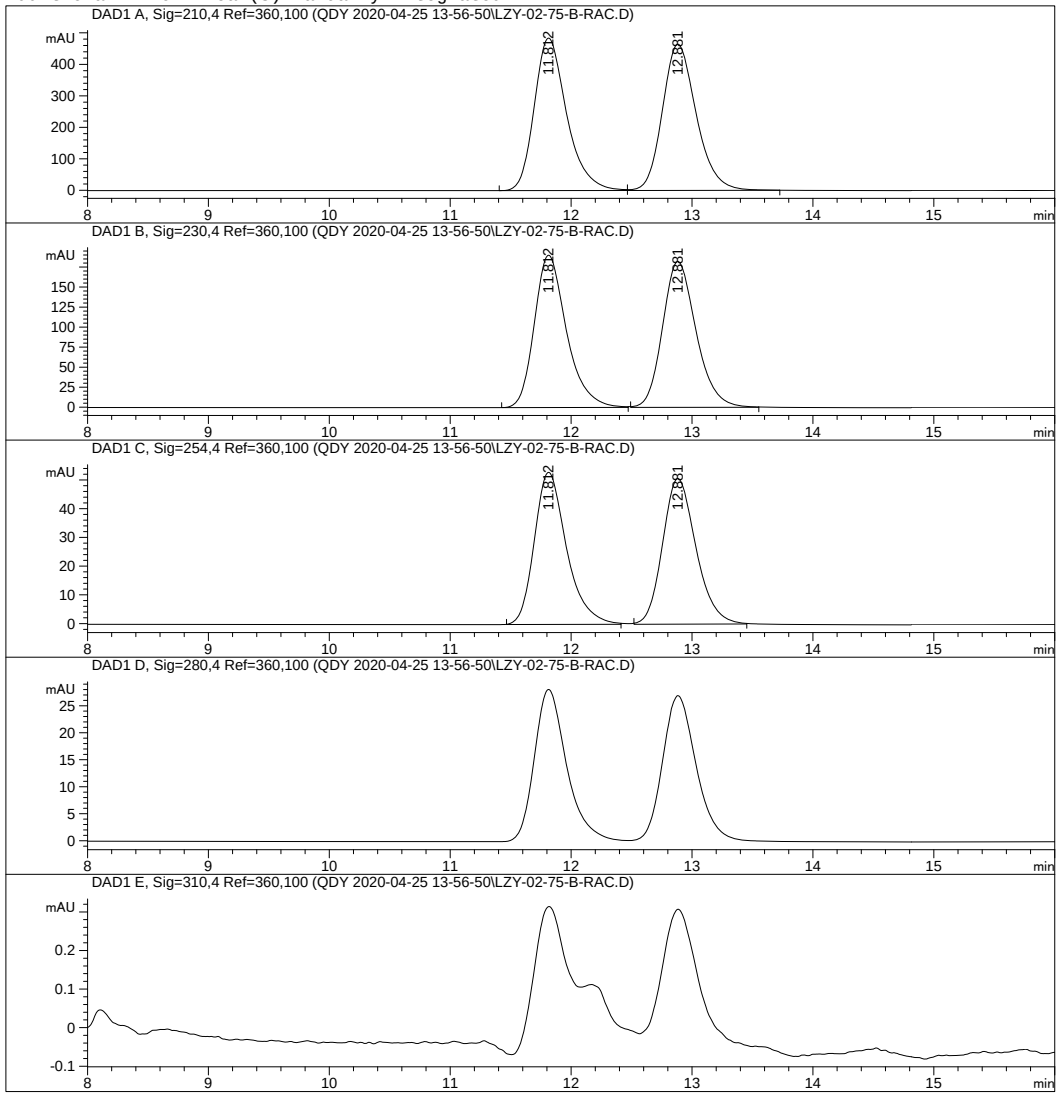
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  19.494 BB    0.9786 1.75318e4   259.38416  97.2576
   2  24.389 BB    0.7989  494.34113    7.57937   2.7424

Totals :                  1.80262e4   266.96353



Signal 2: DAD1 B, Sig=230,4 Ref=360,100


Signal 3: DAD1 C, Sig=254,4 Ref=360,100


Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2p

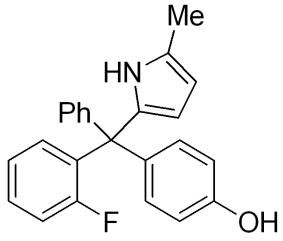
Data File C:\CHEM32\1\DATA\QDY 2020-04-25 13-56-50\LZY-02-75-B-RAC.D
Sample Name:

```
==========================================================================
Acq. Operator   :                              Seq. Line :  25
Acq. Instrument : Instrument 1                  Location : Vial 81
Injection Date  : 4/25/2020 9:18:37 PM               Inj :   1
                                               Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 3.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2020-04-25 13-56-50\AD-05-20.M
Last changed    : 4/25/2020 9:17:45 PM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 2:55:56 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2020-04-25 13-56-50\LZY-02-75-B-RAC.D
Sample Name:

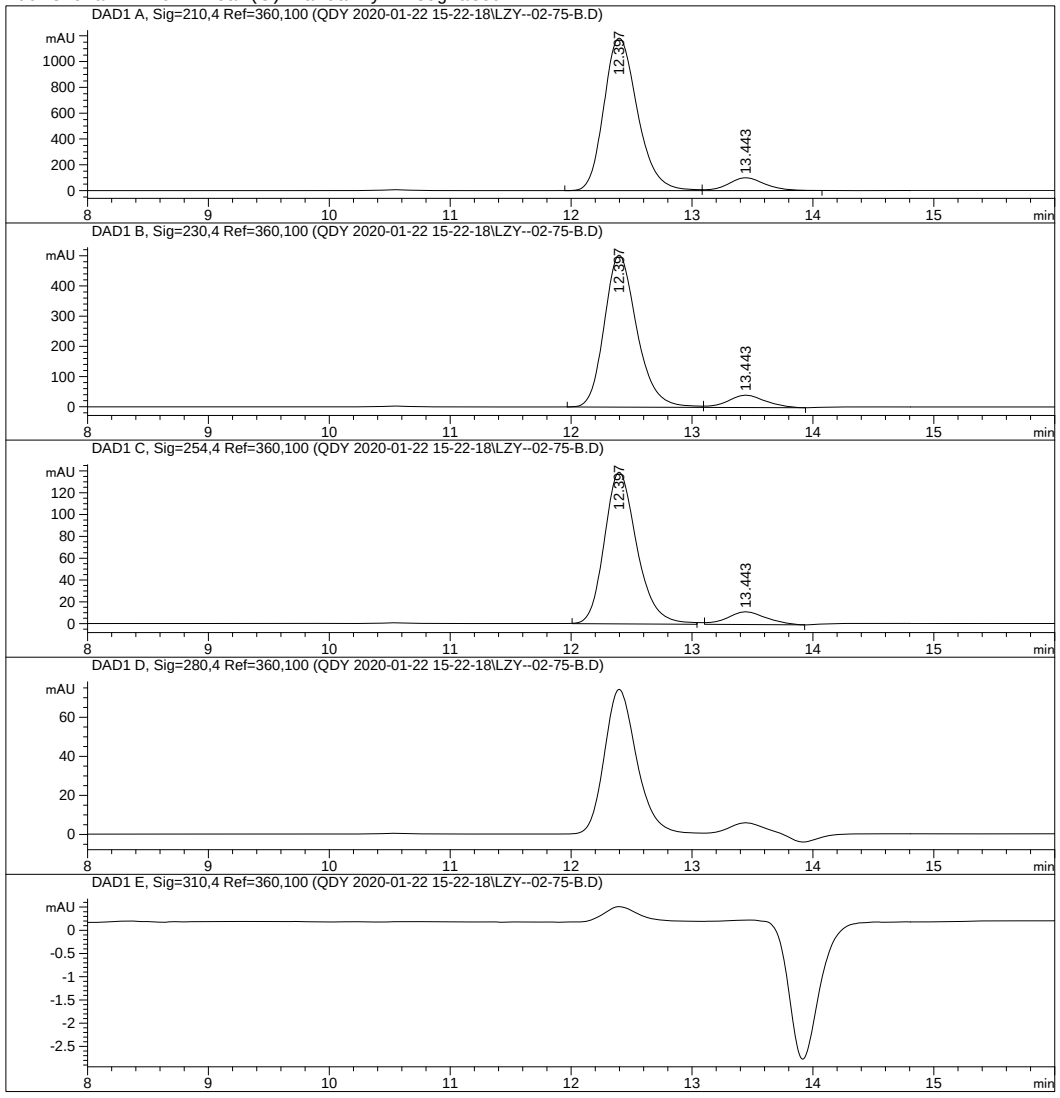
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  11.812 BV    0.2826 8987.99902  484.12137  49.9256
   2  12.881 VB    0.2985 9014.78516  464.31113  50.0744

Totals :                  1.80028e4   948.43250



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  11.812 BB    0.2794 3512.41675  190.20287  50.0723
   2  12.881 BB    0.2943 3502.27344  182.13647  49.9277

Totals :                  7014.69019  372.33934



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  11.812 BB    0.2818  979.65533   52.96997  50.2141
   2  12.881 BB    0.2935  971.30011   50.69146  49.7859

Totals :                  1950.95544  103.66143



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2q-Rac

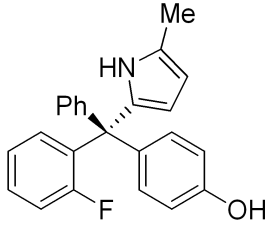
Data File C:\CHEM32\1\DATA\QDY 2020-01-22 15-22-18\LZY--02-75-B.D
Sample Name:

```
==========================================================================
Acq. Operator   :                              Seq. Line :   3
Acq. Instrument : Instrument 1                  Location : Vial 88
Injection Date  : 1/22/2020 3:56:25 PM               Inj :   1
                                              Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 2.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2020-01-22 15-22-18\AD-05-20.M
Last changed    : 1/22/2020 3:34:31 PM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 2:55:56 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2020-01-22 15-22-18\LZY--02-75-B.D
Sample Name:

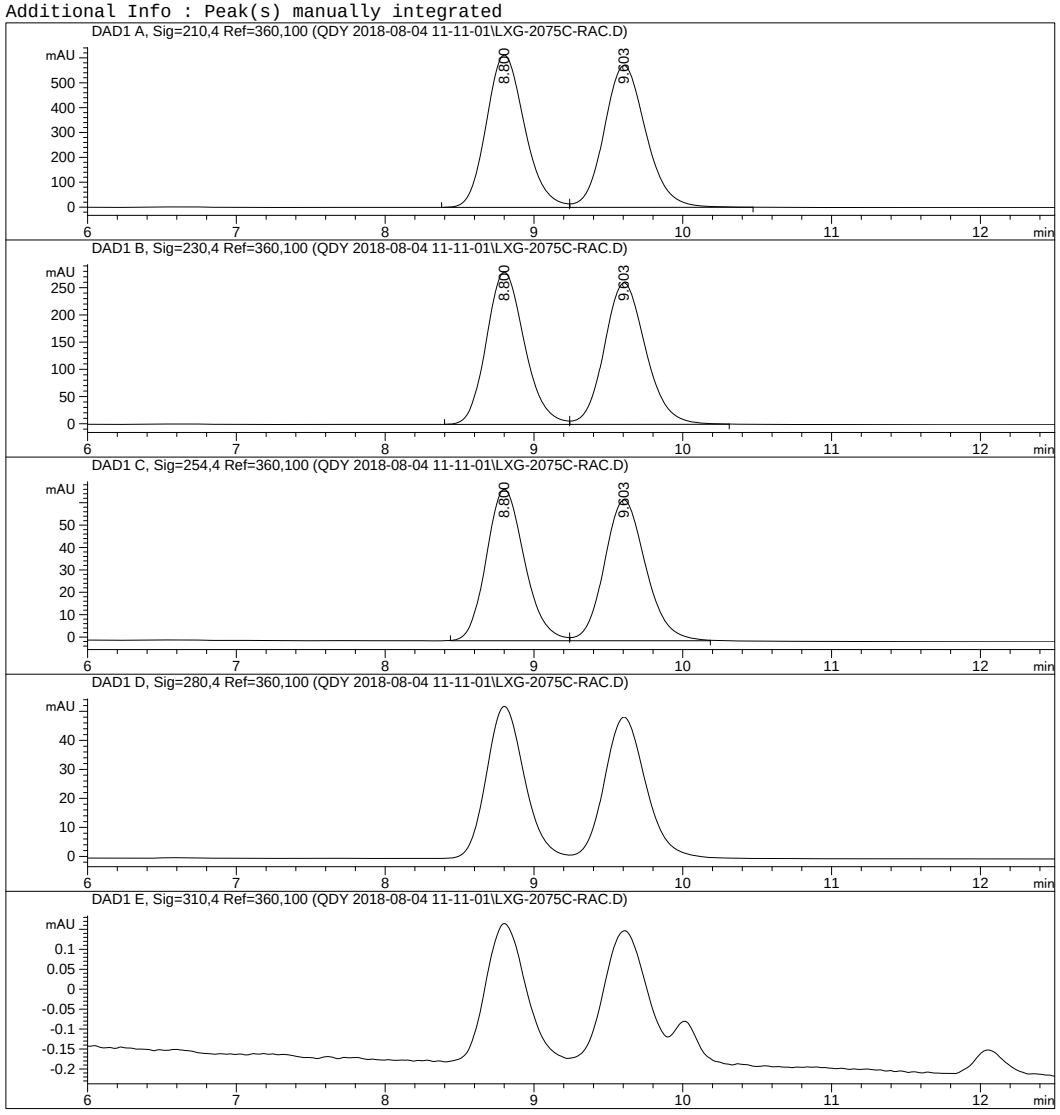
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  12.397 BV    0.2966 2.27745e4  1182.88330  91.6953
   2  13.443 VB    0.3183 2062.66333   99.32850   8.3047

Totals :                  2.48372e4  1282.21180



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  12.397 BB    0.2860 9405.17676  503.36429  91.3841
   2  13.443 BV    0.3262  886.74402   41.02750   8.6159

Totals :                  1.02919e4   544.39179



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  12.397 BB    0.2861 2597.93774  138.97246  90.8687
   2  13.443 BV    0.3361  261.06342   11.71148   9.1313

Totals :                  2859.00116  150.68394



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2q

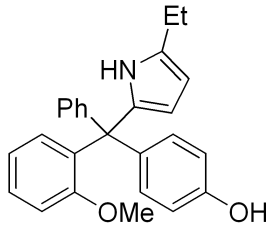
Data File C:\CHEM32\1\DATA\QDY 2018-08-04 11-11-01\LXG-2075C-RAC.D
Sample Name:

```
==========================================================================
Acq. Operator   :                                Seq. Line :   2
Acq. Instrument : Instrument 1                    Location : Vial 66
Injection Date  : 8/4/2018 11:24:41 AM                 Inj :   1
                                                 Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 2.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2018-08-04 11-11-01\IC-03-20.M
Last changed    : 8/4/2018 11:23:49 AM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 6:40:50 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2018-08-04 11-11-01\LXG-2075C-RAC.D
Sample Name:

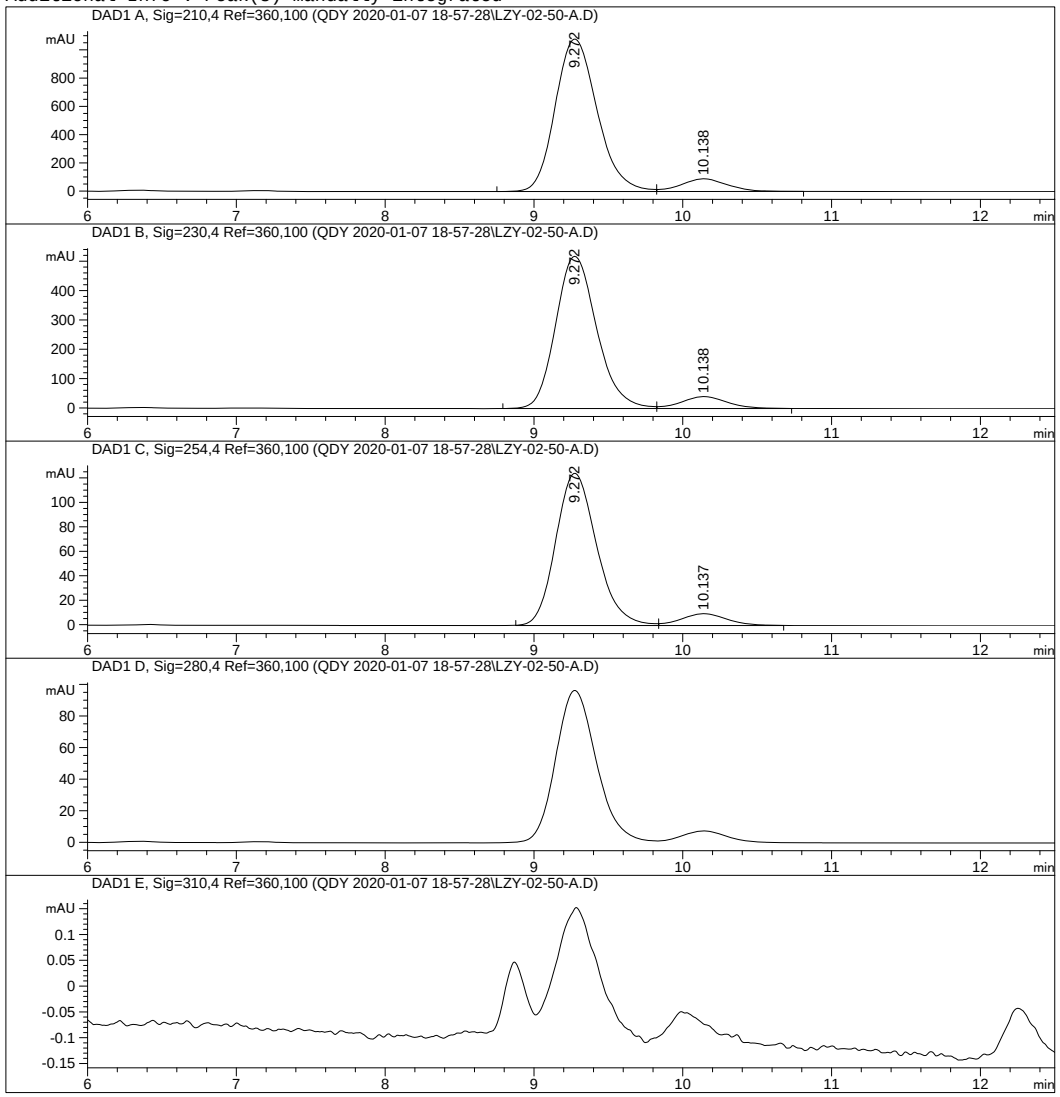
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   8.800 BV    0.2782 1.09314e4   612.50708  49.6216
   2   9.603 VB    0.2988 1.10981e4   570.79449  50.3784

Totals :                  2.20296e4  1183.30157



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   8.800 BV    0.2749 4960.99951  279.71667  49.7215
   2   9.603 VB    0.2969 5016.57324  260.20297  50.2785

Totals :                  9977.57275  539.91965



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   8.800 BV    0.2747 1199.28052   67.67670  49.7427
   2   9.603 VB    0.2965 1211.68494   62.96595  50.2573

Totals :                  2410.96545  130.64266



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2r-Rac

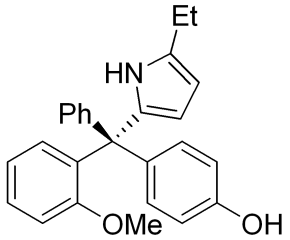
Data File C:\CHEM32\1\DATA\QDY 2020-01-07 18-57-28\LZY-02-50-A.D
Sample Name:

```
==========================================================================
Acq. Operator   :                                Seq. Line :   8
Acq. Instrument : Instrument 1                    Location : Vial 91
Injection Date  : 1/7/2020 10:09:07 PM                 Inj :   1
                                                 Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 2.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2020-01-07 18-57-28\IC-03-20.M
Last changed    : 9/18/2012 8:18:47 PM
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 6:40:50 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2020-01-07 18-57-28\LZY-02-50-A.D
Sample Name:

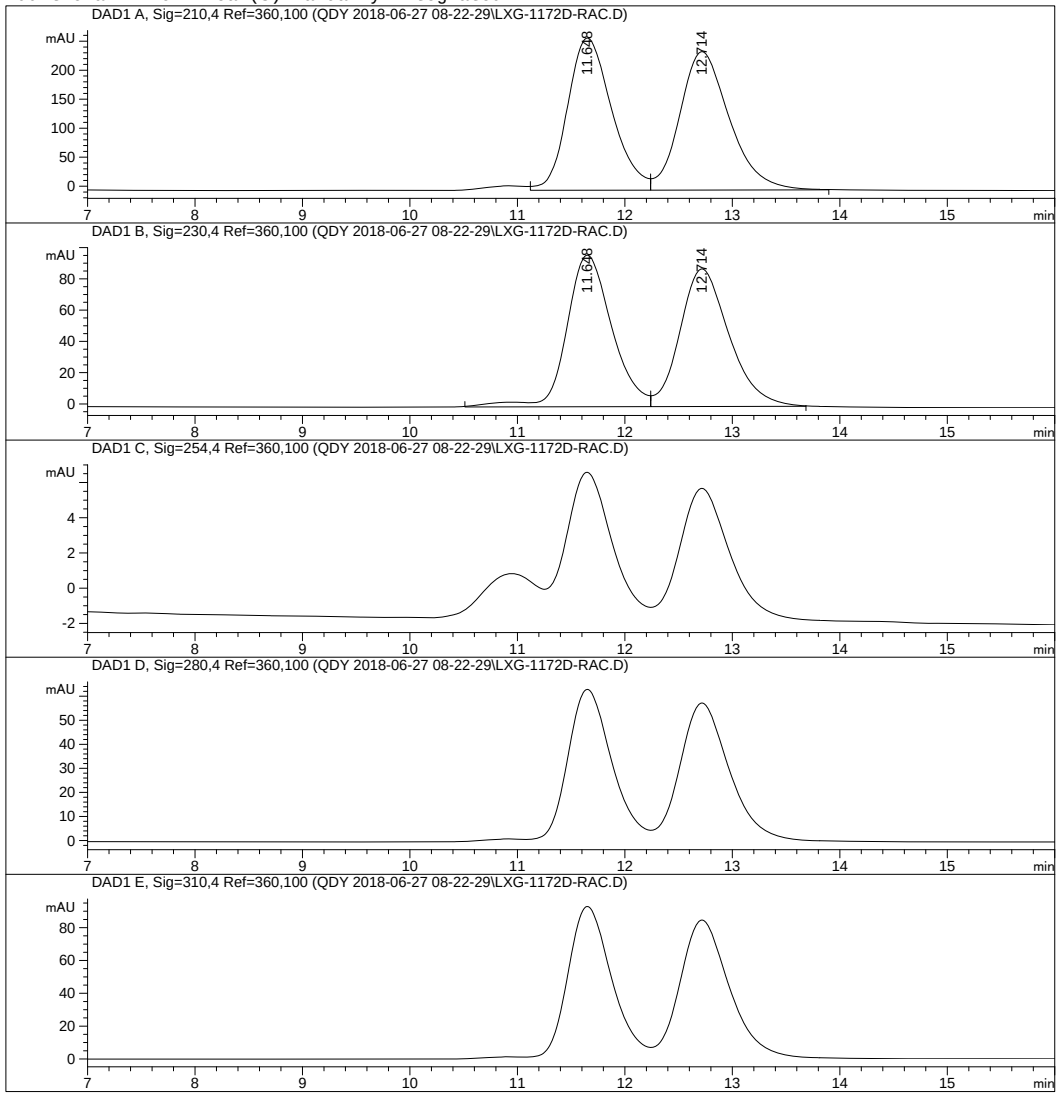
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   9.272 BV    0.3058 2.10641e4  1078.78027  91.6011
   2  10.138 VB    0.3294 1931.35620   89.62775   8.3989

Totals :                  2.29954e4  1168.40803



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   9.272 BV    0.2968 9913.86035  519.22614  91.9132
   2  10.138 VB    0.3283  872.24756   40.65038   8.0868

Totals :                  1.07861e4   559.87651



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   9.272 BB    0.2941 2369.02222  124.46080  91.9652
   2  10.137 BB    0.3247  206.97551    9.70764   8.0348

Totals :                  2575.99773  134.16844



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2r

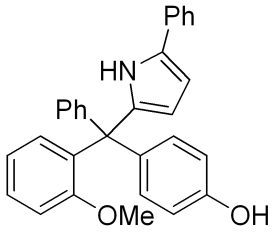
Data File C:\CHEM32\1\DATA\QDY 2018-06-27 08-22-29\LXG-1172D-RAC.D
Sample Name:

```
==================================================================
Acq. Operator   :                          Seq. Line :   2
Acq. Instrument : Instrument 1              Location : Vial 63
Injection Date  : 6/27/2018 8:36:04 AM           Inj :   1
                                          Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 2.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2018-06-27 08-22-29\OD-05-20.M
Last changed    : 6/27/2018 8:35:12 AM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 6:43:47 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2018-06-27 08-22-29\LXG-1172D-RAC.D
Sample Name:

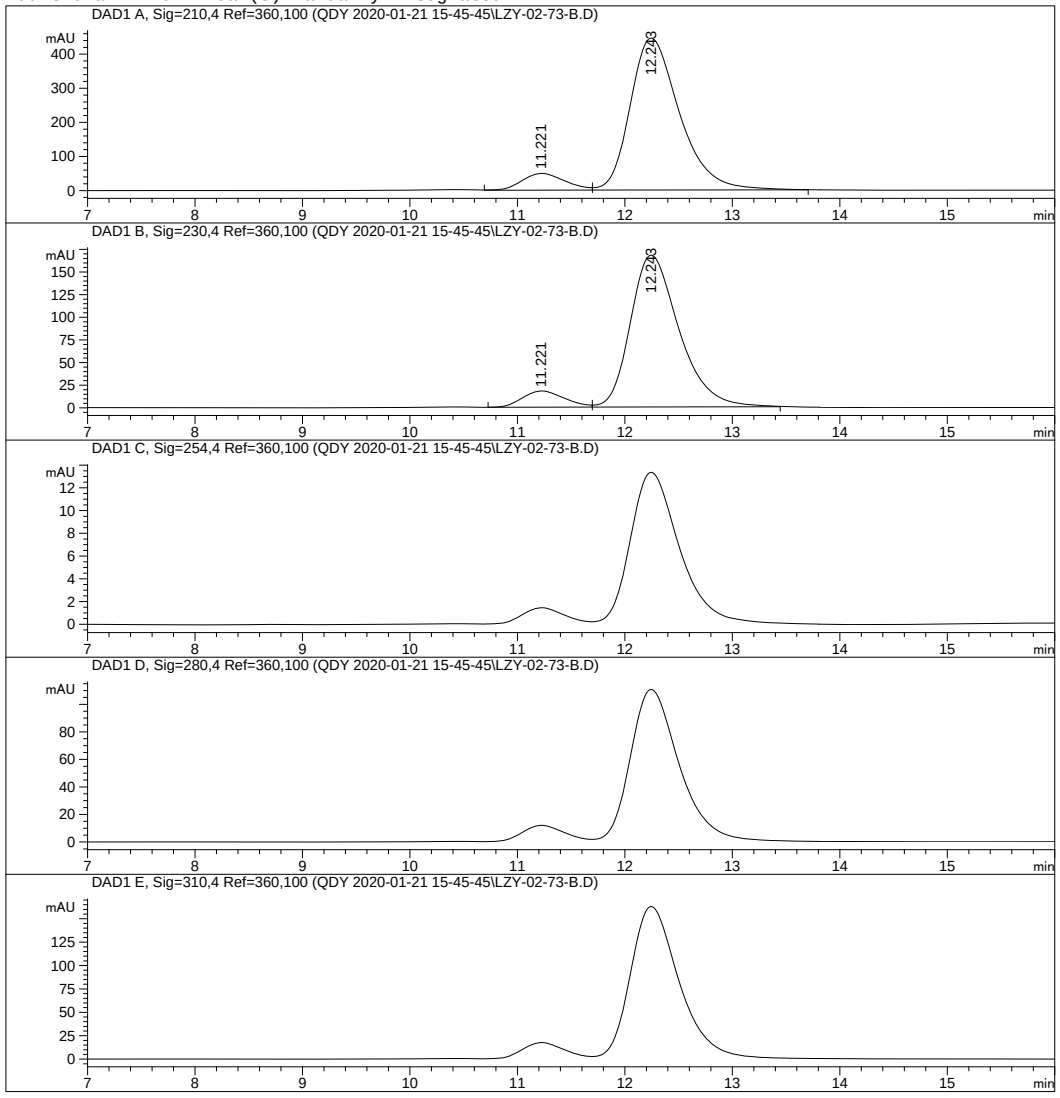
```
======================================================================
                        Area Percent Report
======================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  11.648 VV    0.4399 7463.65869  262.36359  49.4228
   2  12.714 VB    0.4895 7637.99951  238.55977  50.5772

Totals :                  1.51017e4   500.92336



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  11.648 BV    0.4462 2826.79395   96.93911  50.3677
   2  12.714 VB    0.4854 2785.52222   87.98379  49.6323

Totals :                  5612.31616  184.92290



Signal 3: DAD1 C, Sig=254,4 Ref=360,100


Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

======================================================================
                        *** End of Report ***
```



2s-Rac

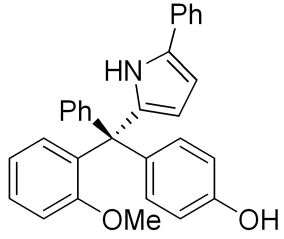
Data File C:\CHEM32\1\DATA\QDY 2020-01-21 15-45-45\LZY-02-73-B.D
Sample Name:

```
==========================================================================
Acq. Operator   :                              Seq. Line :  17
Acq. Instrument : Instrument 1                  Location : Vial 85
Injection Date  : 1/21/2020 9:47:23 PM               Inj :   1
                                              Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 2.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2020-01-21 15-45-45\OD-05-20.M
Last changed    : 1/21/2020 9:46:30 PM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 6:43:47 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2020-01-21 15-45-45\LZY-02-73-B.D
Sample Name:

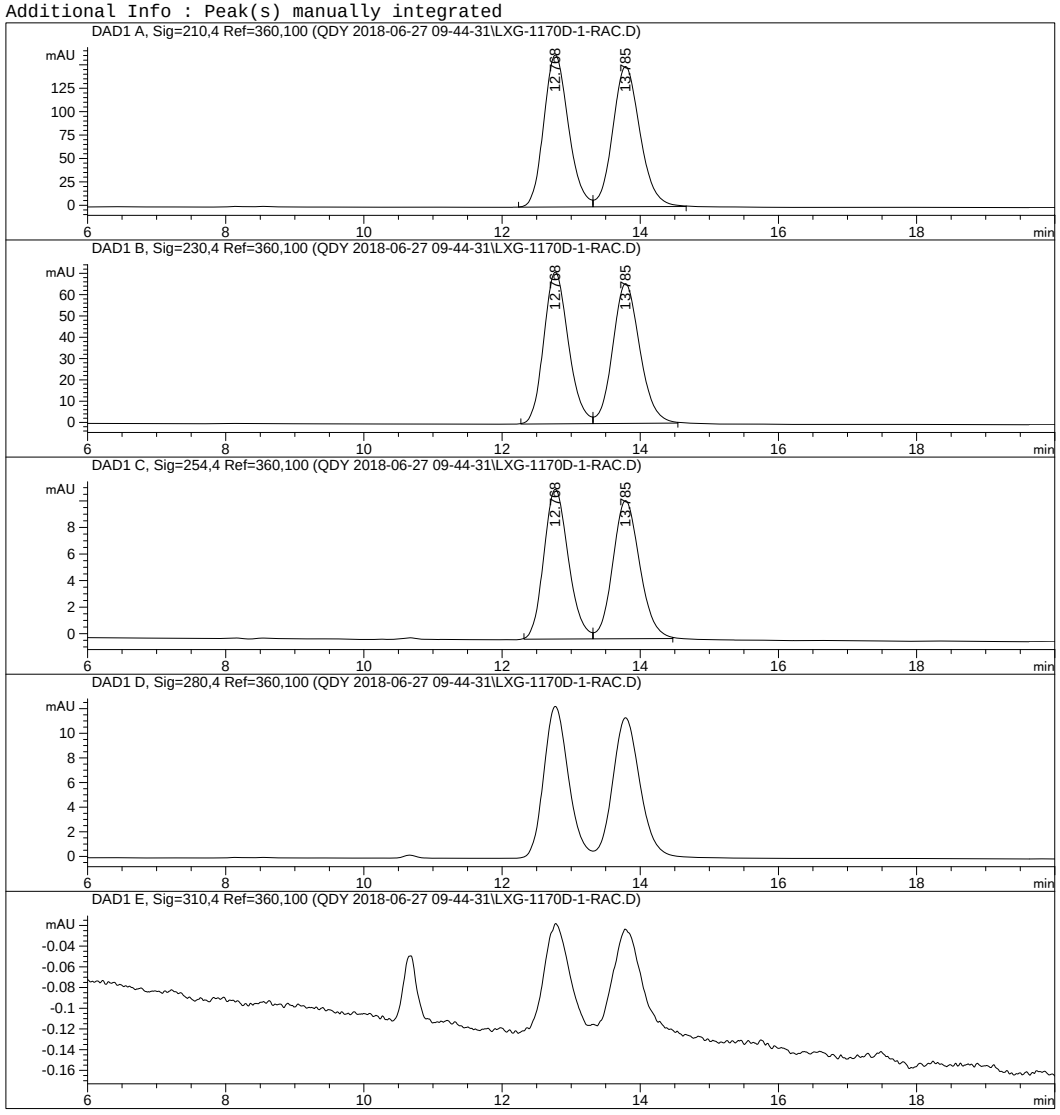
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  11.221 VV    0.4256 1362.21912   49.41045   8.7555
   2  12.243 VB    0.4876 1.41963e4   445.65451  91.2445

Totals :                  1.55585e4   495.06496



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  11.221 BV    0.4203  484.59872   17.99050   8.4364
   2  12.243 VB    0.4800 5259.56787  167.64790  91.5636

Totals :                  5744.16660  185.63840



Signal 3: DAD1 C, Sig=254,4 Ref=360,100


Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2s

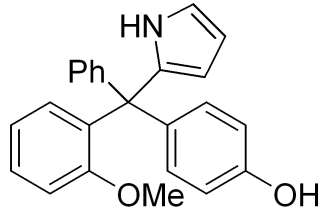
Data File C:\CHEM32\1\DATA\QDY 2018-06-27 09-44-31\LXG-1170D-1-RAC.D
Sample Name:

```
======================================================================
Acq. Operator   :                          Seq. Line :  45
Acq. Instrument : Instrument 1              Location : Vial 56
Injection Date  : 6/27/2018 11:02:49 PM          Inj :   1
                                          Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 2.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2018-06-27 09-44-31\IC-02-30.M
Last changed    : 6/27/2018 11:01:56 PM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 9:08:48 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2018-06-27 09-44-31\LXG-1170D-1-RAC.D
Sample Name:

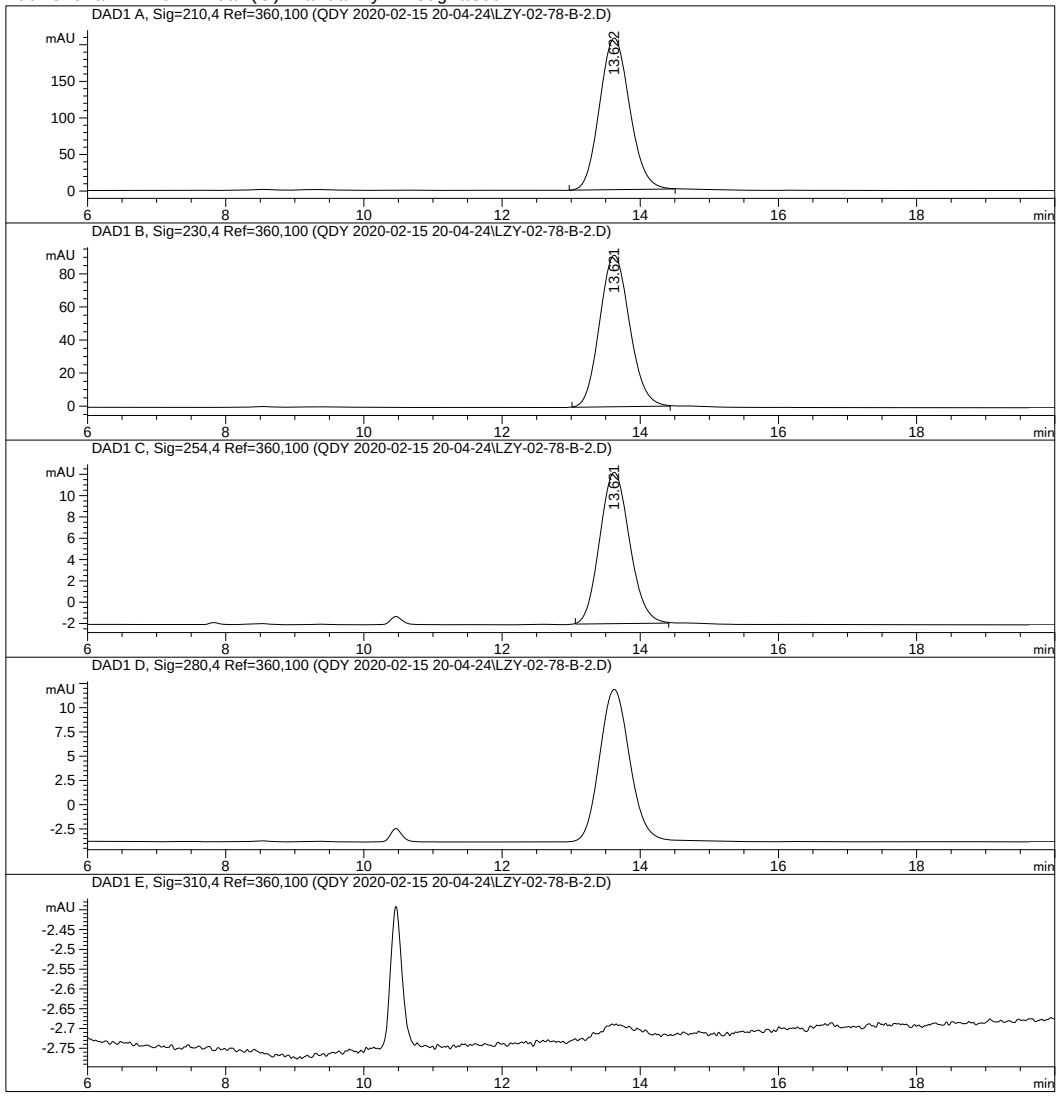
```
======================================================================
                        Area Percent Report
======================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  12.768 BV    0.3839 4035.83545  162.42874  49.5455
   2  13.785 VB    0.4220 4109.88281  149.84027  50.4545

Totals :                  8145.71826  312.26901



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  12.768 BV    0.3832 1765.27112   71.21311  49.7066
   2  13.785 VB    0.4196 1786.11365   65.61869  50.2934

Totals :                  3551.38477  136.83180



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  12.768 BV    0.3801  278.57065   11.27951  49.7152
   2  13.785 VB    0.4180  281.76282   10.40222  50.2848

Totals :                   560.33347   21.68172



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

======================================================================
                        *** End of Report ***
```



2t-Rac

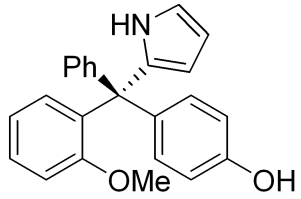
Data File C:\CHEM32\1\DATA\QDY 2020-02-15 20-04-24\LZY-02-78-B-2.D
Sample Name:

```
==========================================================================
Acq. Operator   :                              Seq. Line :   1
Acq. Instrument : Instrument 1                  Location : Vial 94
Injection Date  : 2/15/2020 8:06:16 PM               Inj :   1
                                              Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 3.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2020-02-15 20-04-24\IC-02-20.M
Last changed    : 2/15/2020 8:04:36 PM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 6:49:19 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2020-02-15 20-04-24\LZY-02-78-B-2.D
Sample Name:

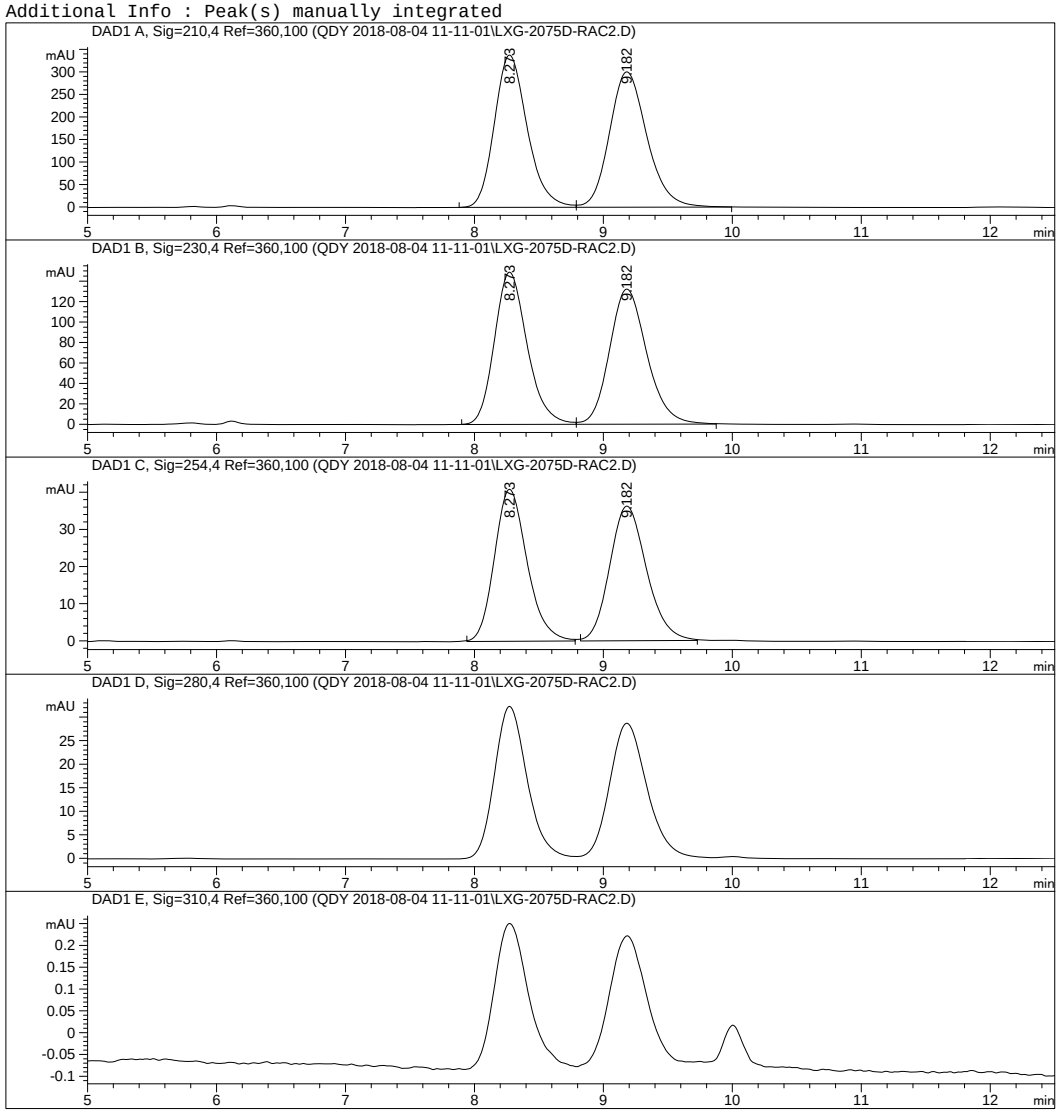
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  13.622 BB    0.4725 6260.75342  207.19859 100.0000

Totals :                  6260.75342  207.19859



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  13.621 BB    0.4694 2761.62769   91.70020 100.0000

Totals :                  2761.62769   91.70020



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  13.621 BB    0.4684  426.49472   14.19864 100.0000

Totals :                   426.49472   14.19864



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2t

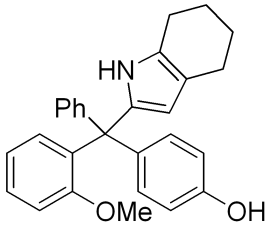
Data File C:\CHEM32\1\DATA\QDY 2018-08-04 11-11-01\LXG-2075D-RAC2.D
Sample Name:

```
==========================================================================
Acq. Operator   :                                Seq. Line :   7
Acq. Instrument : Instrument 1                    Location : Vial 67
Injection Date  : 8/4/2018 12:40:42 PM                 Inj :   1
                                                 Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 2.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2018-08-04 11-11-01\IC-03-30.M
Last changed    : 8/4/2018 12:39:51 PM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 6:53:05 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2018-08-04 11-11-01\LXG-2075D-RAC2.D
Sample Name:

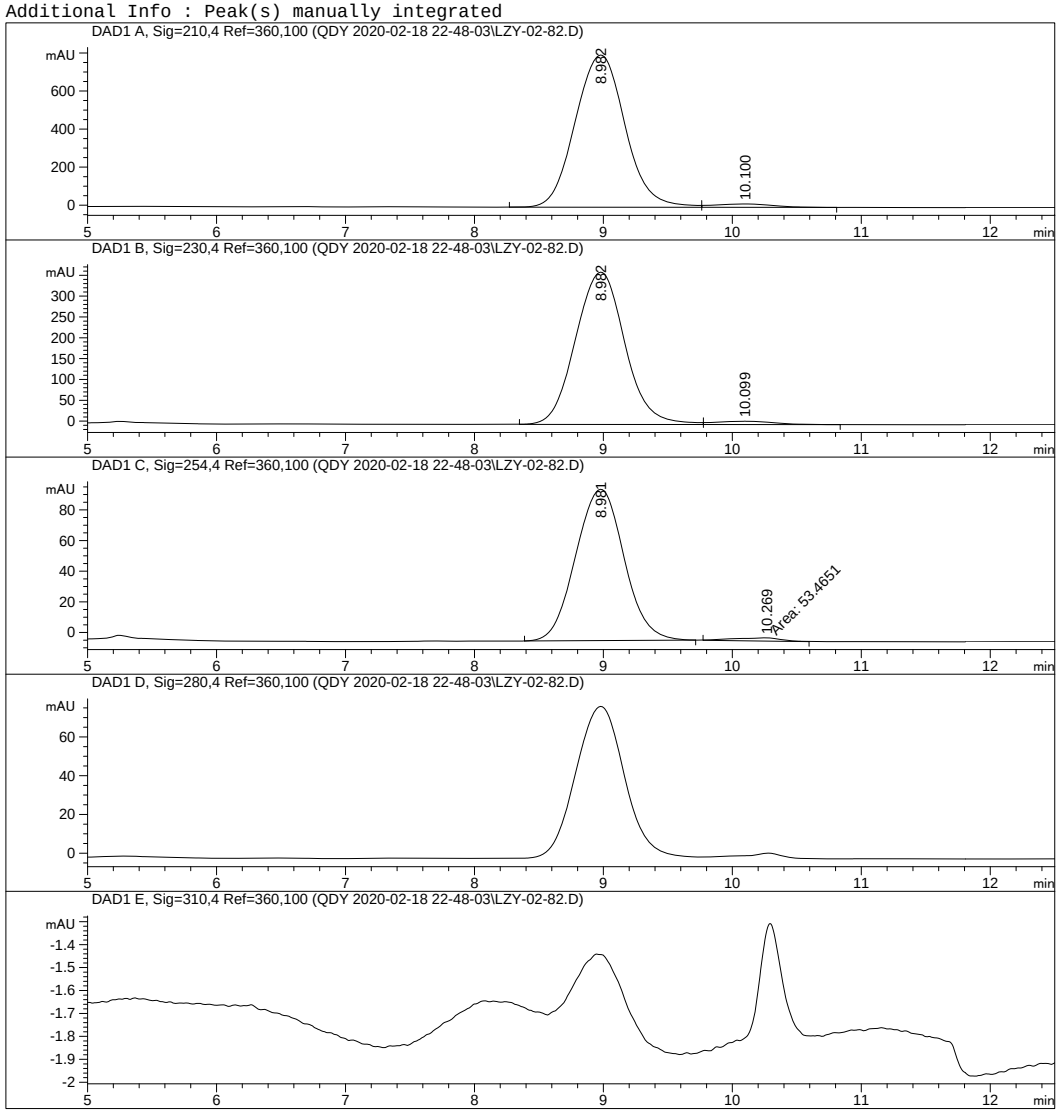
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   8.273 BV    0.2723 5981.02783  338.28845  49.6196
   2   9.182 VB    0.3096 6072.72754  300.65823  50.3804

Totals :                  1.20538e4   638.94669



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   8.273 BV    0.2696 2624.16455  148.91055  49.7284
   2   9.182 VB    0.3082 2652.83350  132.15411  50.2716

Totals :                  5276.99805  281.06467



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   8.273 BB    0.2690  719.12695   40.92221  49.9726
   2   9.182 BB    0.3057  719.91656   36.24767  50.0274

Totals :                  1439.04352   77.16987



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2u-Rac

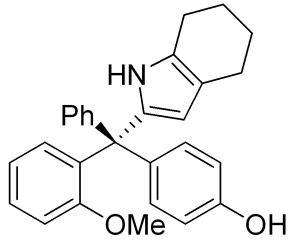
Data File C:\CHEM32\1\DATA\QDY 2020-02-18 22-48-03\LZY-02-82.D
Sample Name:

```
==========================================================================
Acq. Operator   :                                Seq. Line :   2
Acq. Instrument : Instrument 1                    Location : Vial 81
Injection Date  : 2/18/2020 11:01:16 PM               Inj :   1
                                                 Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 4.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2020-02-18 22-48-03\IC-03-20.M
Last changed    : 2/18/2020 11:00:23 PM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 6:53:05 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2020-02-18 22-48-03\LZY-02-82.D
Sample Name:

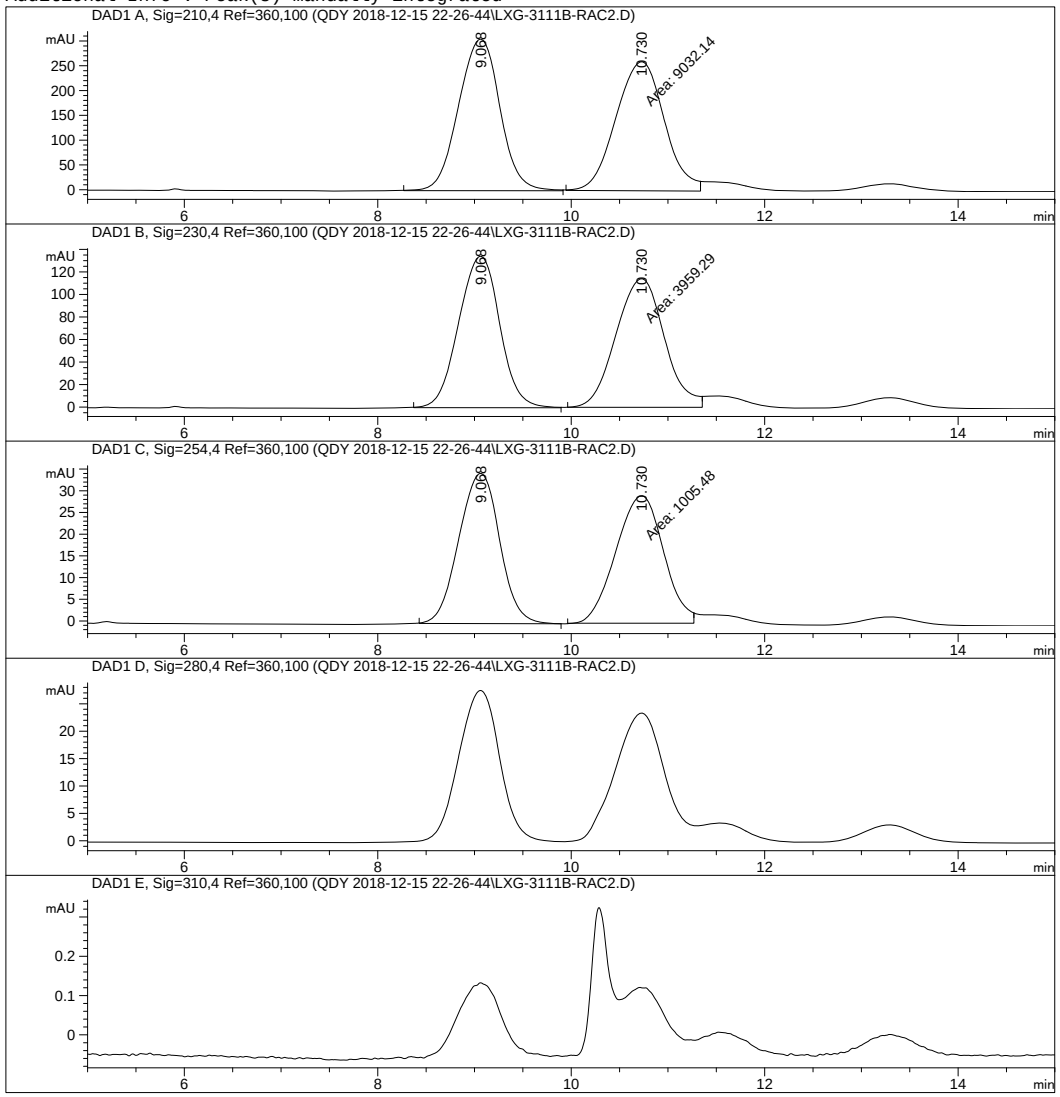
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   8.982 VV    0.4233 2.14795e4   799.94556  97.4914
   2  10.100 VB    0.4687  552.70178   17.77789   2.5086

Totals :                  2.20322e4   817.72345



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   8.982 BB    0.4199 9706.77539  365.40839  97.5331
   2  10.099 BB    0.4697  245.51053    7.87633   2.4669

Totals :                  9952.28592  373.28471



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   8.981 BB    0.4133 2565.37451   98.69510  97.9584
   2  10.269 MM    0.4166   53.46511    2.13881   2.0416

Totals :                  2618.83963  100.83391



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2u

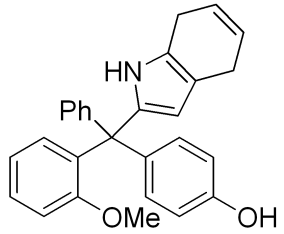
Data File C:\CHEM32\1\DATA\QDY 2018-12-15 22-26-44\LXG-3111B-RAC2.D
Sample Name:

```
==========================================================================
Acq. Operator   :                                Seq. Line :   2
Acq. Instrument : Instrument 1                    Location : Vial 70
Injection Date  : 12/15/2018 10:40:33 PM               Inj :   1
                                                 Inj Volume : 5.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2018-12-15 22-26-44\IC-03-20.M
Last changed    : 12/15/2018 10:39:38 PM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 6:54:52 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2018-12-15 22-26-44\LXG-3111B-RAC2.D
Sample Name:

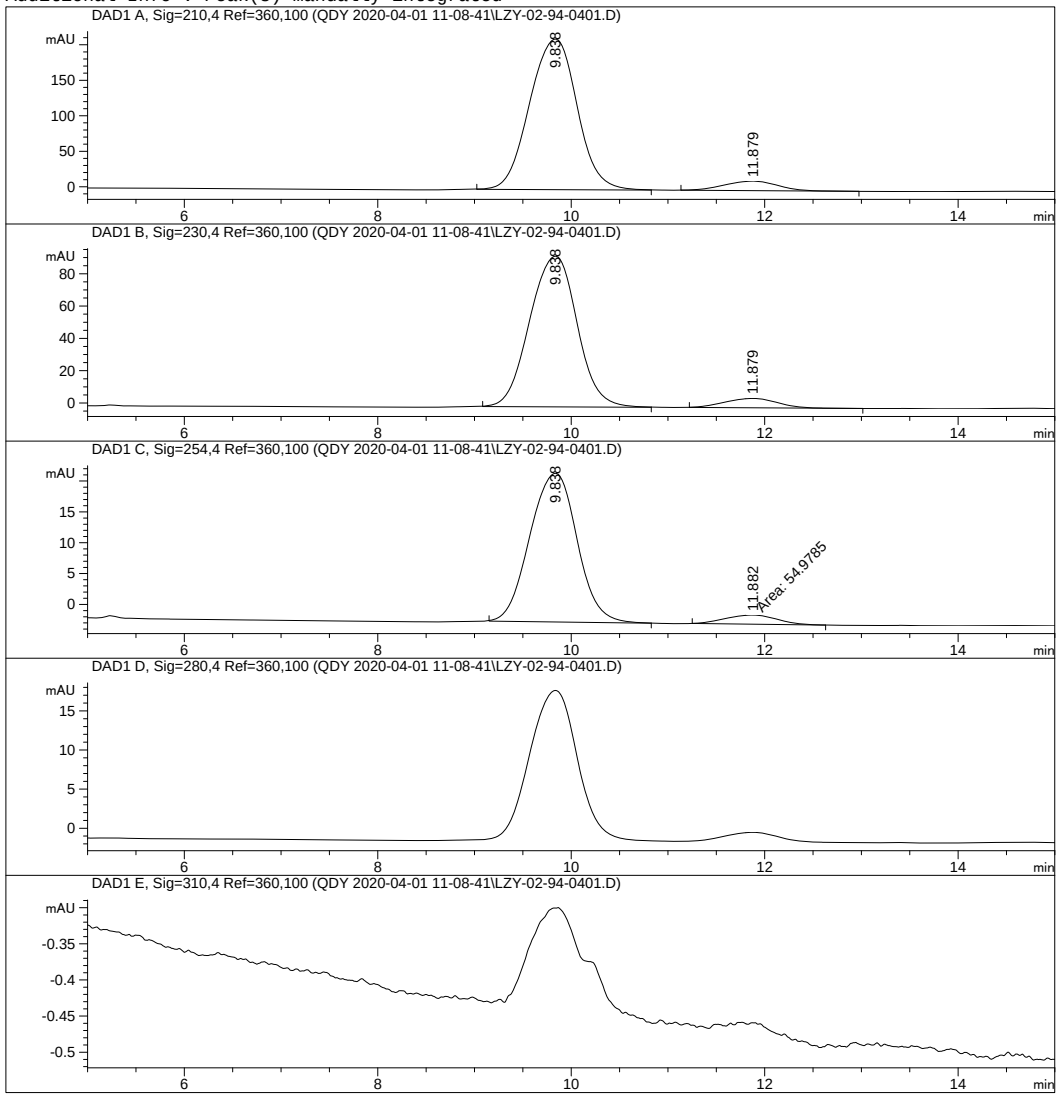
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   9.068 BB    0.4701 9071.71387  305.83694  50.1093
   2  10.730 MM    0.5784 9032.13965  260.24973  49.8907

Totals :                  1.81039e4   566.08667



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   9.068 BB    0.4673 3956.71411  134.47079  49.9838
   2  10.730 MM    0.5783 3959.28564  114.11115  50.0162

Totals :                  7915.99976  248.58194



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   9.068 BB    0.4649 1011.59222   34.62283  50.1515
   2  10.730 MM    0.5703 1005.48236   29.38600  49.8485

Totals :                  2017.07458   64.00883



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2v-Rac

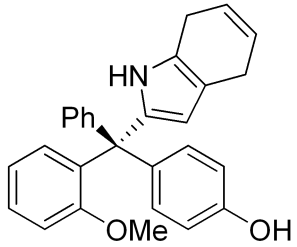
Data File C:\CHEM32\1\DATA\QDY 2020-04-01 11-08-41\LZY-02-94-0401.D
Sample Name:

```
==========================================================================
Acq. Operator   :                              Seq. Line :   2
Acq. Instrument : Instrument 1                  Location : Vial 85
Injection Date  : 4/1/2020 11:22:08 AM               Inj :   1
                                              Inj Volume : 5.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2020-04-01 11-08-41\IC-03-20.M
Last changed    : 4/1/2020 11:21:15 AM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 6:54:52 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2020-04-01 11-08-41\LZY-02-94-0401.D
Sample Name:

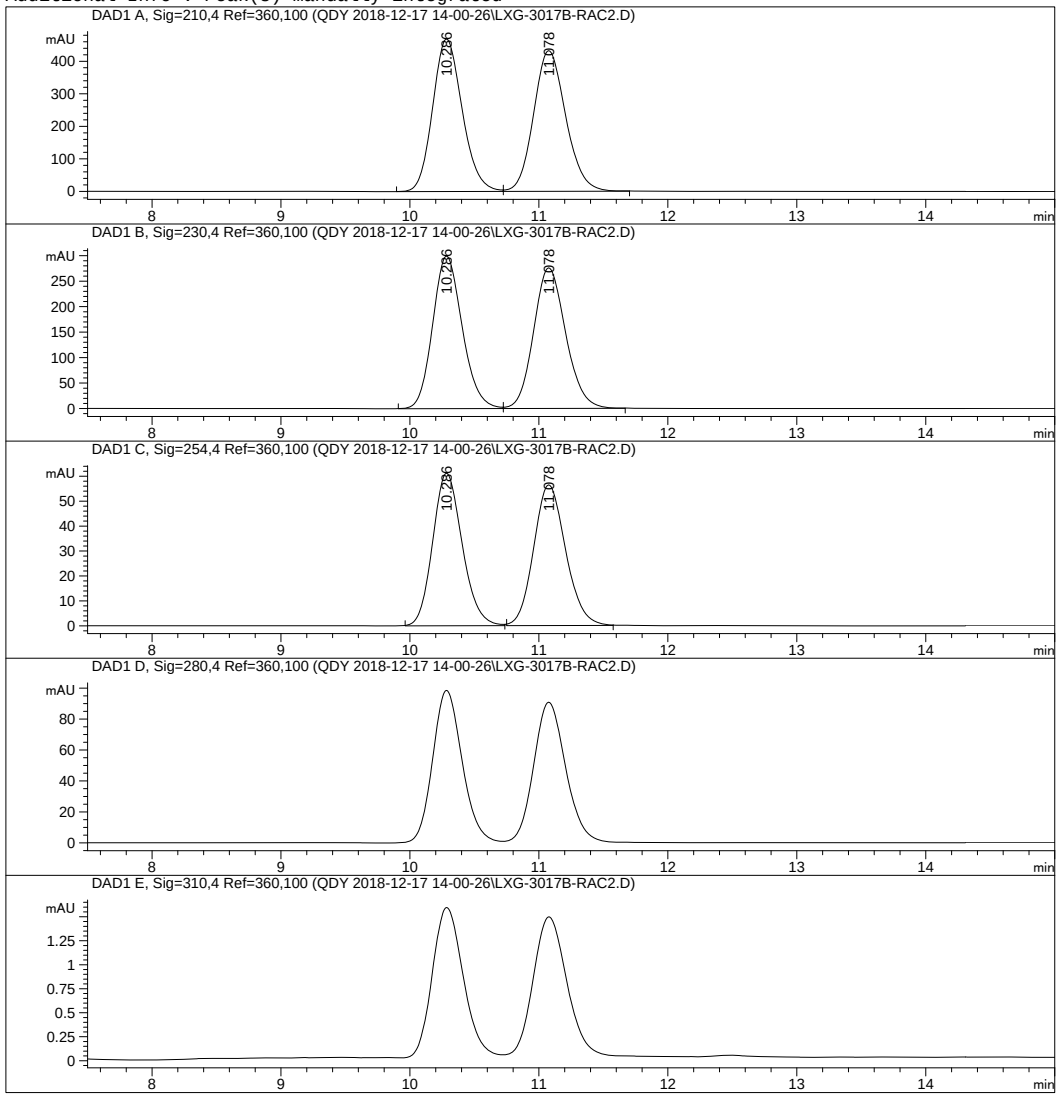
```
==========================================================================
                          Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   9.838 BB    0.5457 7230.84375  212.11845  93.4383
   2  11.879 BB    0.6092  507.78485   13.30731   6.5617

Totals :                  7738.62860  225.42577



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   9.838 BB    0.5450 3174.27417   93.29274  93.5923
   2  11.879 BB    0.6091  217.32181    5.77410   6.4077

Totals :                  3391.59598   99.06684



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   9.838 BB    0.5440  817.92877   24.09974  93.7017
   2  11.882 MM    0.6185   54.97850    1.48138   6.2983

Totals :                   872.90727   25.58113



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2v

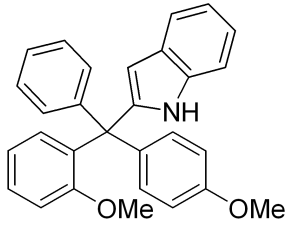
Data File C:\CHEM32\1\DATA\QDY 2018-12-17 14-00-26\LXG-3017B-RAC2.D
Sample Name:

```
==========================================================================
Acq. Operator   :                              Seq. Line :   5
Acq. Instrument : Instrument 1                  Location : Vial 61
Injection Date  : 12/17/2018 2:57:29 PM              Inj :   1
                                              Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 4.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2018-12-17 14-00-26\AD-03-20.M
Last changed    : 7/2/2016 3:26:02 PM
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 6:58:51 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2018-12-17 14-00-26\LXG-3017B-RAC2.D
Sample Name:

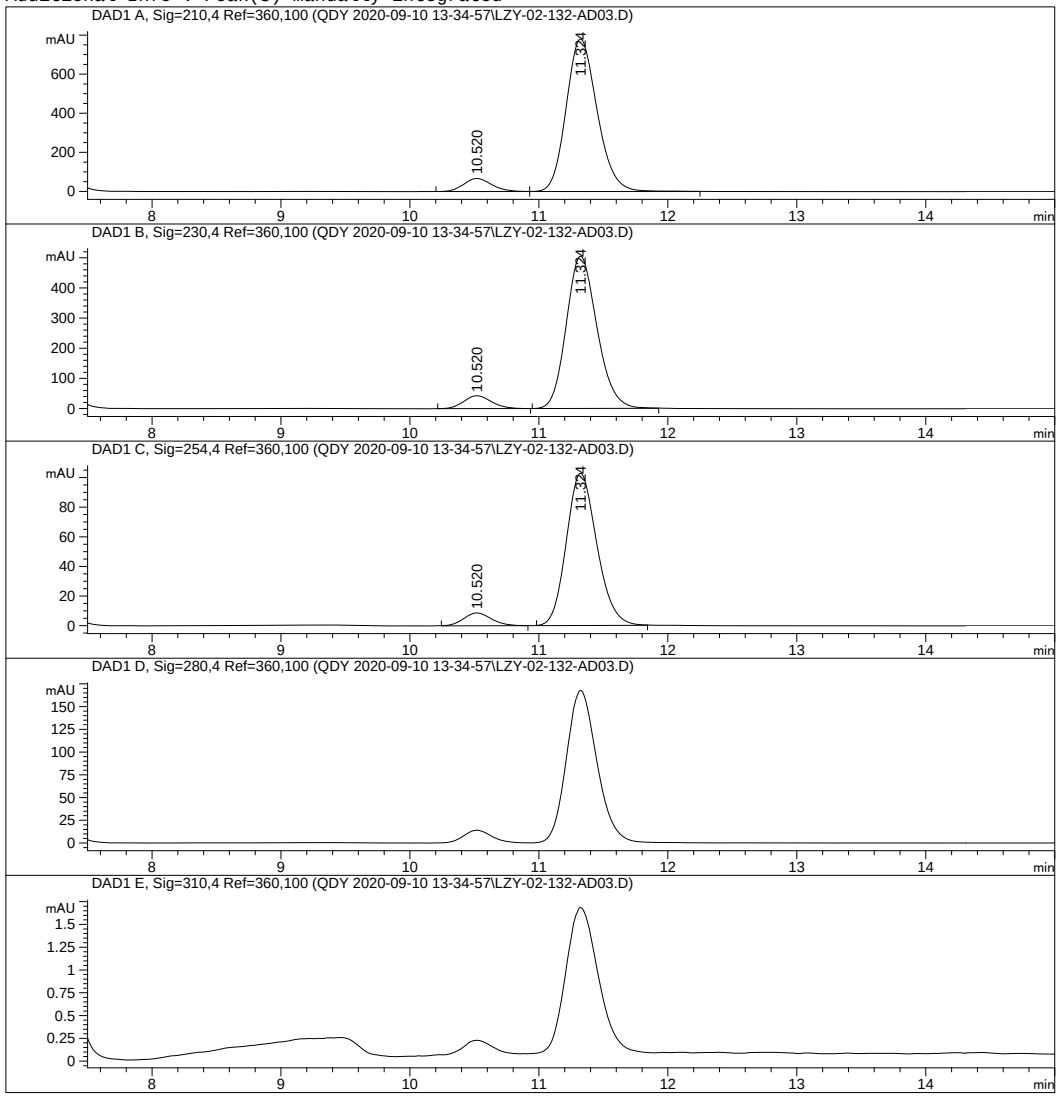
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  10.286 BV    0.2457 7460.69238  468.72238  49.9435
   2  11.078 VB    0.2678 7477.58594  432.23337  50.0565

Totals :                  1.49383e4   900.95575



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  10.286 BV    0.2455 4760.53760  299.33954  49.9784
   2  11.078 VB    0.2675 4764.64502  275.89572  50.0216

Totals :                  9525.18262  575.23526



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  10.286 BB    0.2452  970.58643   61.14531  50.0038
   2  11.078 BB    0.2669  970.43921   56.36258  49.9962

Totals :                  1941.02563  117.50788



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2w-Rac

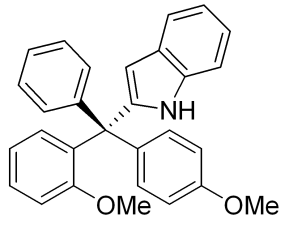
Data File C:\CHEM32\1\DATA\QDY 2020-09-10 13-34-57\LZY-02-132-AD03.D
Sample Name:

```
==========================================================================
Acq. Operator   :                                Seq. Line :  33
Acq. Instrument : Instrument 1                    Location : Vial 93
Injection Date  : 9/10/2020 11:30:53 PM              Inj :   1
                                                 Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 3.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2020-09-10 13-34-57\AD-03-20.M
Last changed    : 7/2/2016 3:26:02 PM
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 6:58:51 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2020-09-10 13-34-57\LZY-02-132-AD03.D
Sample Name:

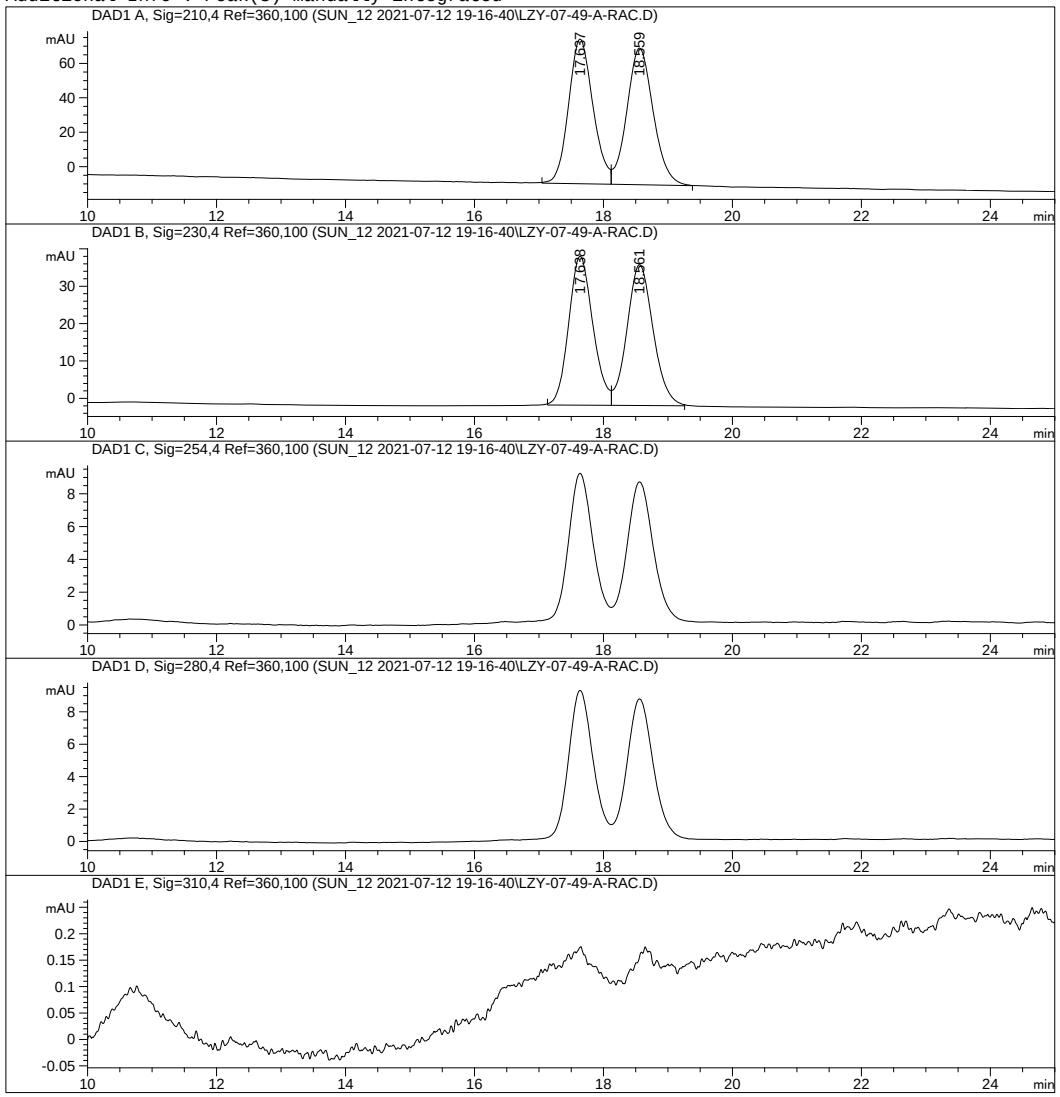
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  10.520 BV    0.2322 1011.62958   66.99722   7.2128
   2  11.324 VB    0.2586 1.30139e4   780.21997  92.7872

Totals :                  1.40256e4   847.21719



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  10.520 BB    0.2305  640.46625   42.81888   7.1278
   2  11.324 BB    0.2546 8345.02441  505.40024  92.8722

Totals :                  8985.49066  548.21912



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  10.520 BB    0.2304  129.39140    8.65633   7.1097
   2  11.324 BB    0.2538 1690.52771  102.83469  92.8903

Totals :                  1819.91911  111.49102



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2w

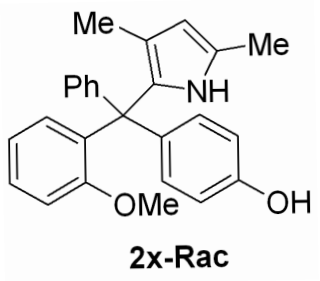
Data File C:\CHEM32\1\DATA\SUN_12 2021-07-12 19-16-40\LZY-07-49-A-RAC.D
Sample Name:

```
==========================================================================
Acq. Operator   :                                Seq. Line :   2
Acq. Instrument : Instrument 1                    Location : Vial 81
Injection Date  : 7/12/2021 7:29:58 PM                 Inj :   1
                                                Inj Volume : 5.000 µl
Acq. Method     : C:\CHEM32\1\DATA\SUN_12 2021-07-12 19-16-40\AD-02-30.M
Last changed    : 7/12/2021 7:29:05 PM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\AS-18-45-0.3.M
Last changed    : 7/19/2021 6:21:35 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\SUN_12 2021-07-12 19-16-40\LZY-07-49-A-RAC.D
Sample Name:

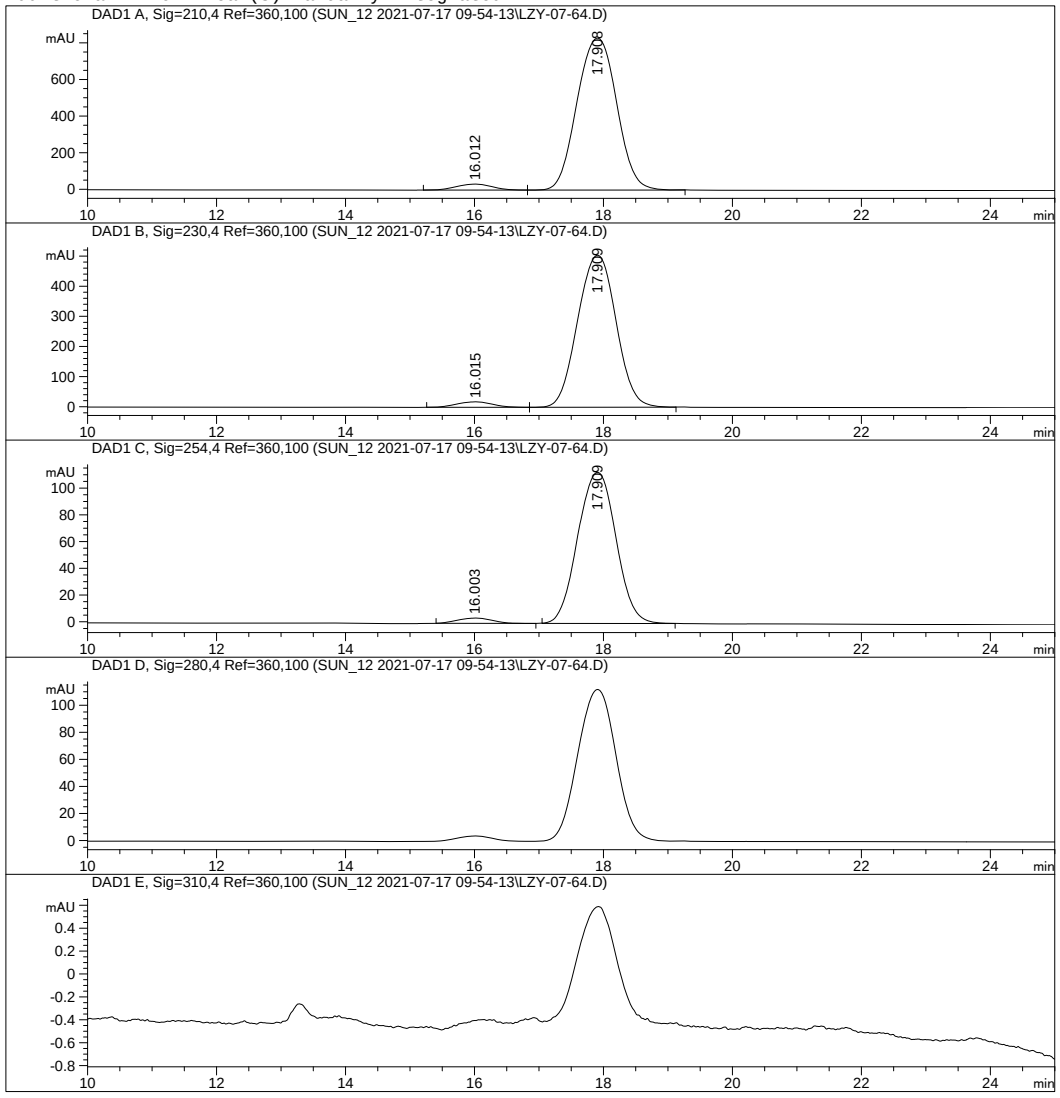
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  17.637 BV    0.4044 2207.37720   84.05779  49.4282
   2  18.559 VB    0.4398 2258.44849   79.41764  50.5718

Totals :                  4465.82568  163.47543



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  17.638 BV    0.4022 1039.56750   39.86308  49.4553
   2  18.561 VB    0.4308 1062.46765   37.70211  50.5447

Totals :                  2102.03516   77.56519



Signal 3: DAD1 C, Sig=254,4 Ref=360,100


Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2x-Rac

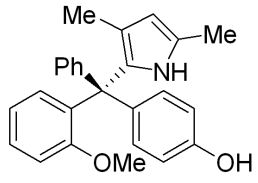
Data File C:\CHEM32\1\DATA\SUN_12 2021-07-17 09-54-13\LZY-07-64.D
Sample Name:

```
==========================================================================
Acq. Operator   :                              Seq. Line :  33
Acq. Instrument : Instrument 1                  Location : Vial 82
Injection Date  : 7/17/2021 7:37:34 PM               Inj :   1
                                              Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 4.000 µl
Acq. Method     : C:\CHEM32\1\DATA\SUN_12 2021-07-17 09-54-13\AD-02-30.M
Last changed    : 7/17/2021 7:36:41 PM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\AS-18-45-0.3.M
Last changed    : 7/19/2021 6:21:35 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\SUN_12 2021-07-17 09-54-13\LZY-07-64.D
Sample Name:

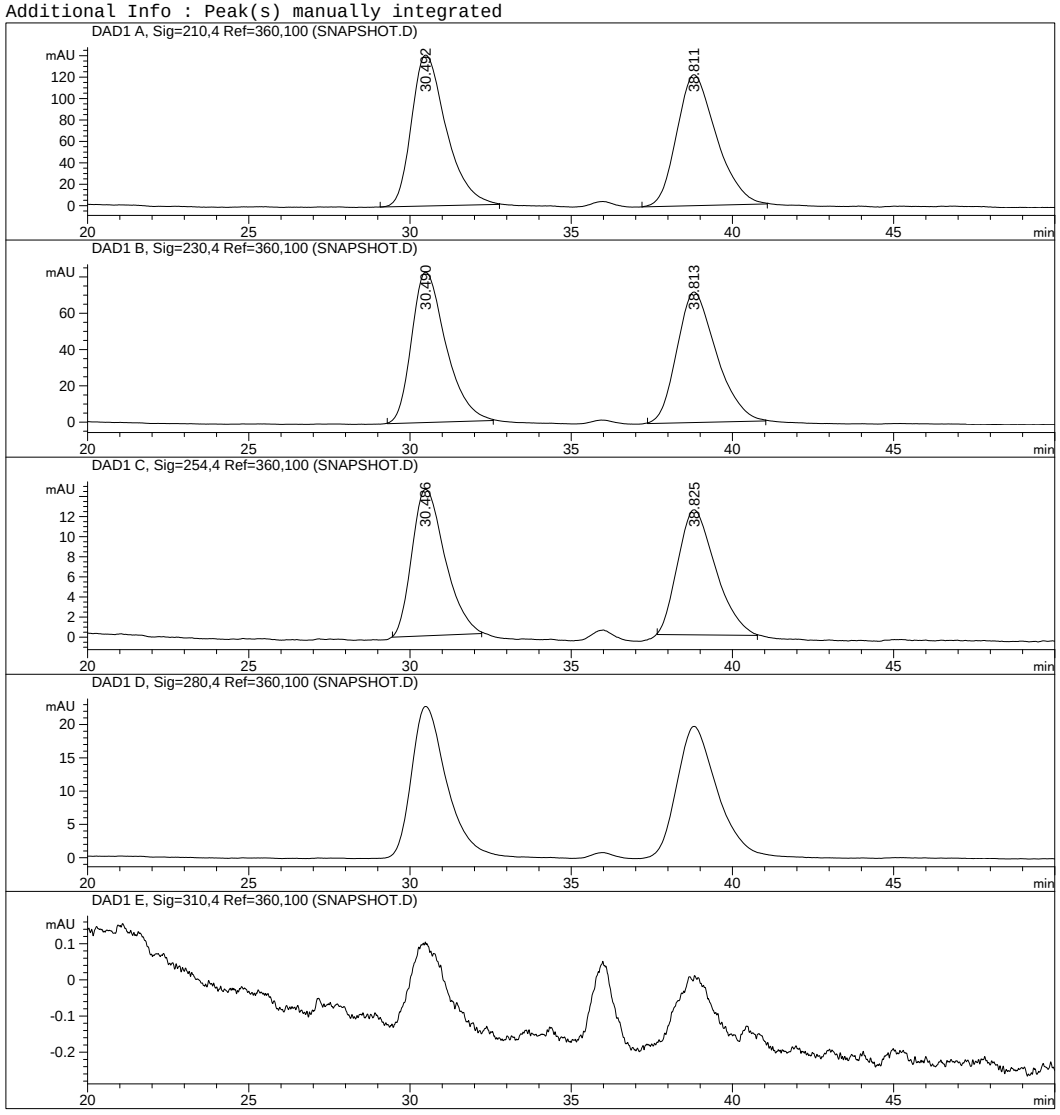
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  16.012 BV    0.5067 1255.66016   32.50308   3.4268
   2  17.908 VB    0.6832 3.53865e4   830.29260  96.5732

Totals :                  3.66422e4   862.79568



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  16.015 BV    0.6106  695.39563   18.08652   3.2334
   2  17.909 VB    0.6631 2.08113e4   504.65451  96.7666

Totals :                  2.15067e4   522.74103



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  16.003 BB    0.4995  147.08163    3.92190   3.0667
   2  17.909 BB    0.6596 4648.98389  113.09949  96.9333

Totals :                  4796.06552  117.02139



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2x

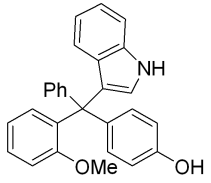
Data File C:\CHEM32\1\DATA\SNAPSHOT.D
Sample Name:

```
======================================================================
Acq. Operator   :                          Seq. Line :  11
                                            Location : Vial 83
Injection Date  : 7/19/2021 10:05:41 PM          Inj :   1
Acq. Method     : IC-03-60.M
Analysis Method : C:\CHEM32\1\METHODS\IC-07-10.M
Last changed    : 7/19/2021 10:50:43 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\SNAPSHOT.D
Sample Name:

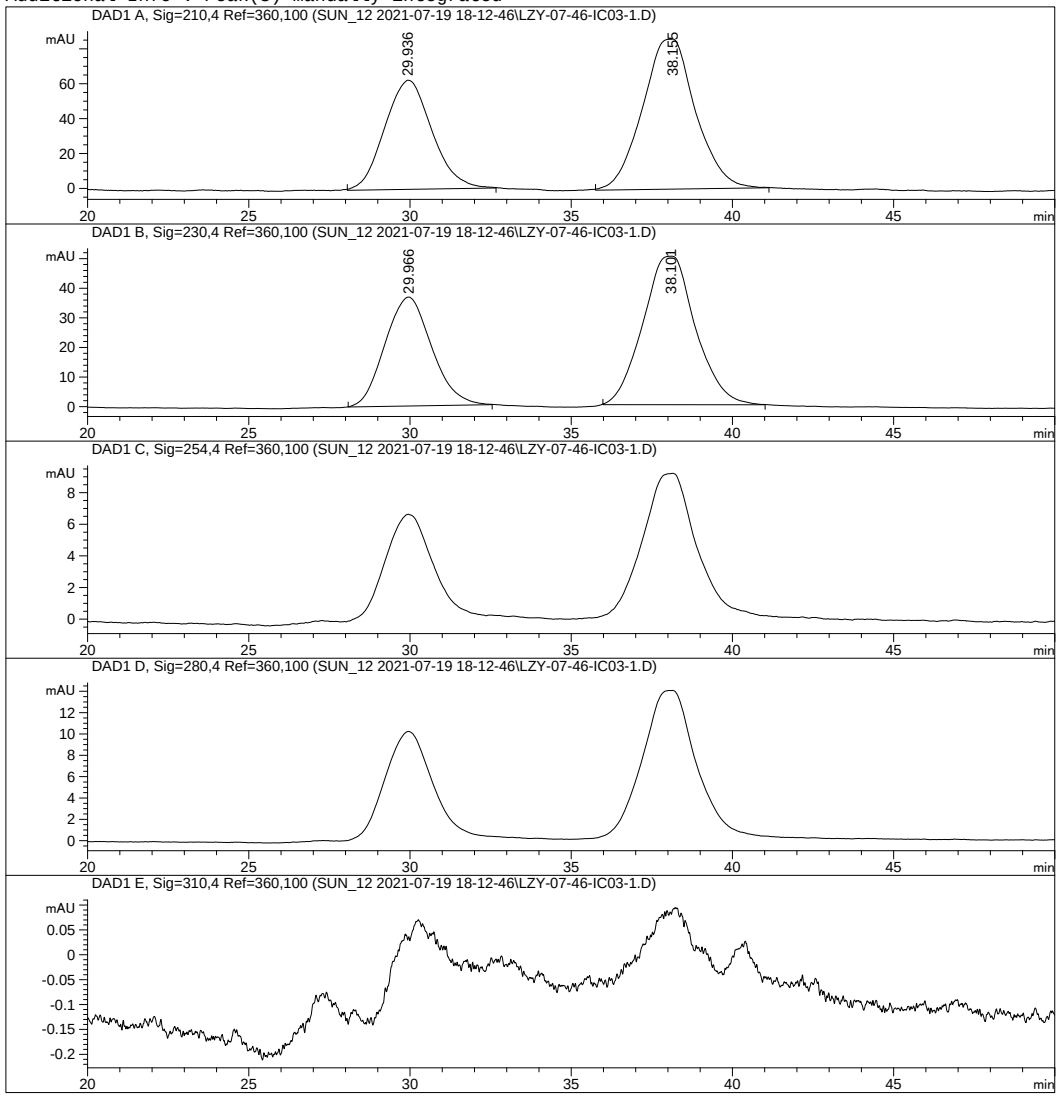
```
======================================================================
                        Area Percent Report
======================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  30.492 BB    0.9897 1.05487e4   140.85474  50.2662
   2  38.811 BB    1.0483 1.04370e4   122.21844  49.7338

Totals :                  2.09856e4   263.07318



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  30.490 BB    1.0987 6123.68701   82.81453  50.0182
   2  38.813 BB    1.2227 6119.22803   71.91388  49.9818

Totals :                  1.22429e4   154.72841



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  30.486 BB    0.9396 1038.62061   14.57118  50.6285
   2  38.825 BB    0.9698 1012.83453   12.44062  49.3715

Totals :                  2051.45514   27.01181



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

======================================================================
                        *** End of Report ***
```



2y-Rac

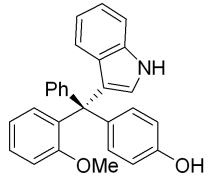
Data File C:\CHEM32\1\DATA\SUN_12 2021-07-19 18-12-46\LZY-07-46-IC03-1.D
Sample Name:

```
==================================================================
Acq. Operator   :                          Seq. Line :  10
Acq. Instrument : Instrument 1              Location : Vial 83
Injection Date  : 7/19/2021 9:04:34 PM           Inj :   1
                                          Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 4.000 µl
Acq. Method     : C:\CHEM32\1\DATA\SUN_12 2021-07-19 18-12-46\IC-03-60.M
Last changed    : 5/7/2019 10:27:30 AM
Analysis Method : C:\CHEM32\1\METHODS\IC-07-10.M
Last changed    : 7/19/2021 10:50:43 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\SUN_12 2021-07-19 18-12-46\LZY-07-46-IC03-1.D
Sample Name:

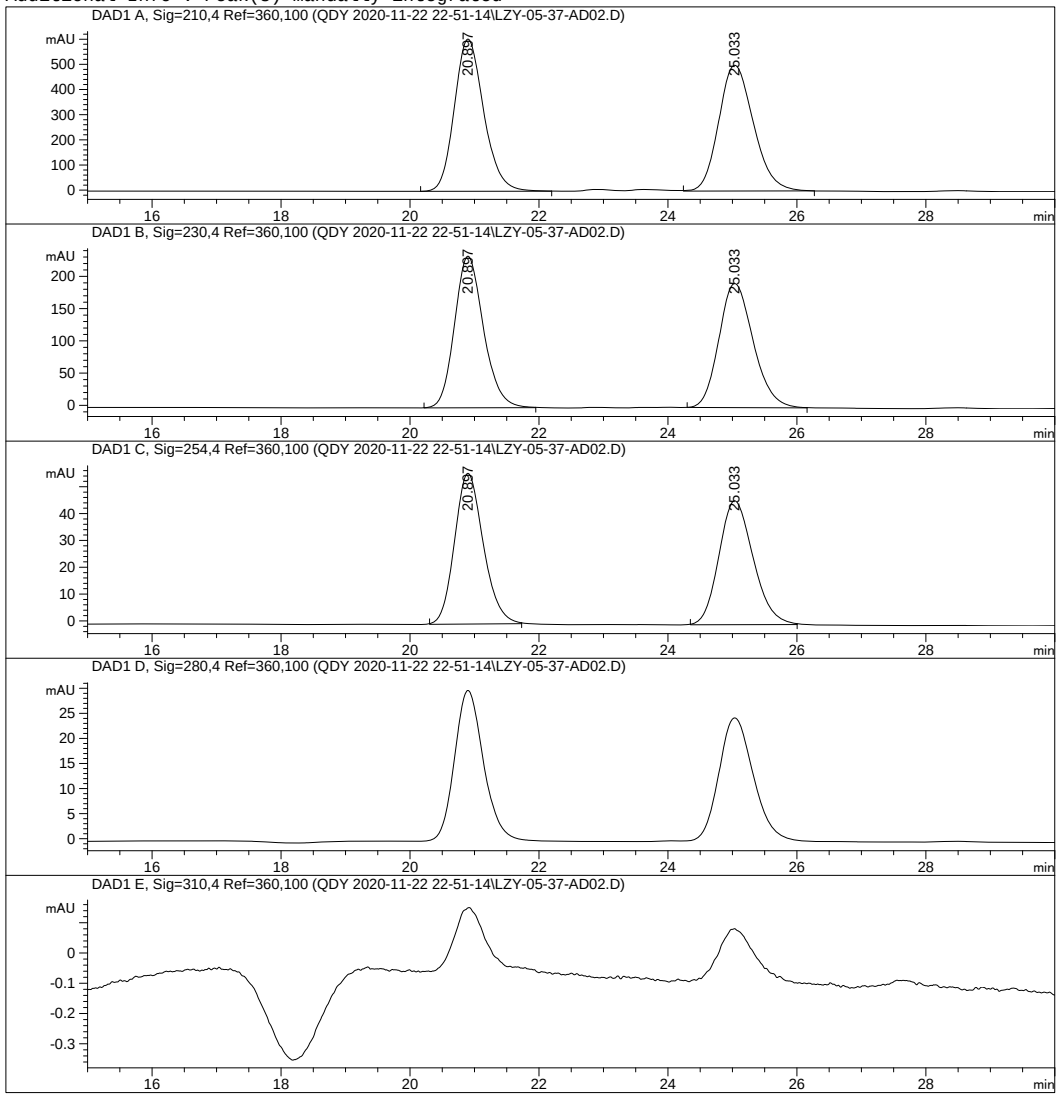
```
==================================================================
                        Area Percent Report
==================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  29.936 BB    1.2006 6361.79541   62.54972  39.3273
   2  38.155 BB    1.3440 9814.74414   85.96726  60.6727

Totals :                  1.61765e4   148.51698



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  29.966 BB    1.2606 3699.13989   36.80454  39.4746
   2  38.101 BB    1.3249 5671.80713   50.17292  60.5254

Totals :                  9370.94702   86.97746



Signal 3: DAD1 C, Sig=254,4 Ref=360,100


Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==================================================================
                      *** End of Report ***
```



2y

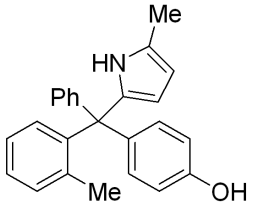
Data File C:\CHEM32\1\DATA\QDY 2020-11-22 22-51-14\LZY-05-37-AD02.D
Sample Name:

```
==========================================================================
Acq. Operator   :                                Seq. Line :   5
Acq. Instrument : Instrument 1                    Location : Vial 83
Injection Date  : 11/23/2020 12:02:15 AM               Inj :   1
                                                 Inj Volume : 5.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2020-11-22 22-51-14\AD-02-60.M
Last changed    : 9/23/2020 10:59:45 PM
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 7:37:31 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2020-11-22 22-51-14\LZY-05-37-AD02.D
Sample Name:

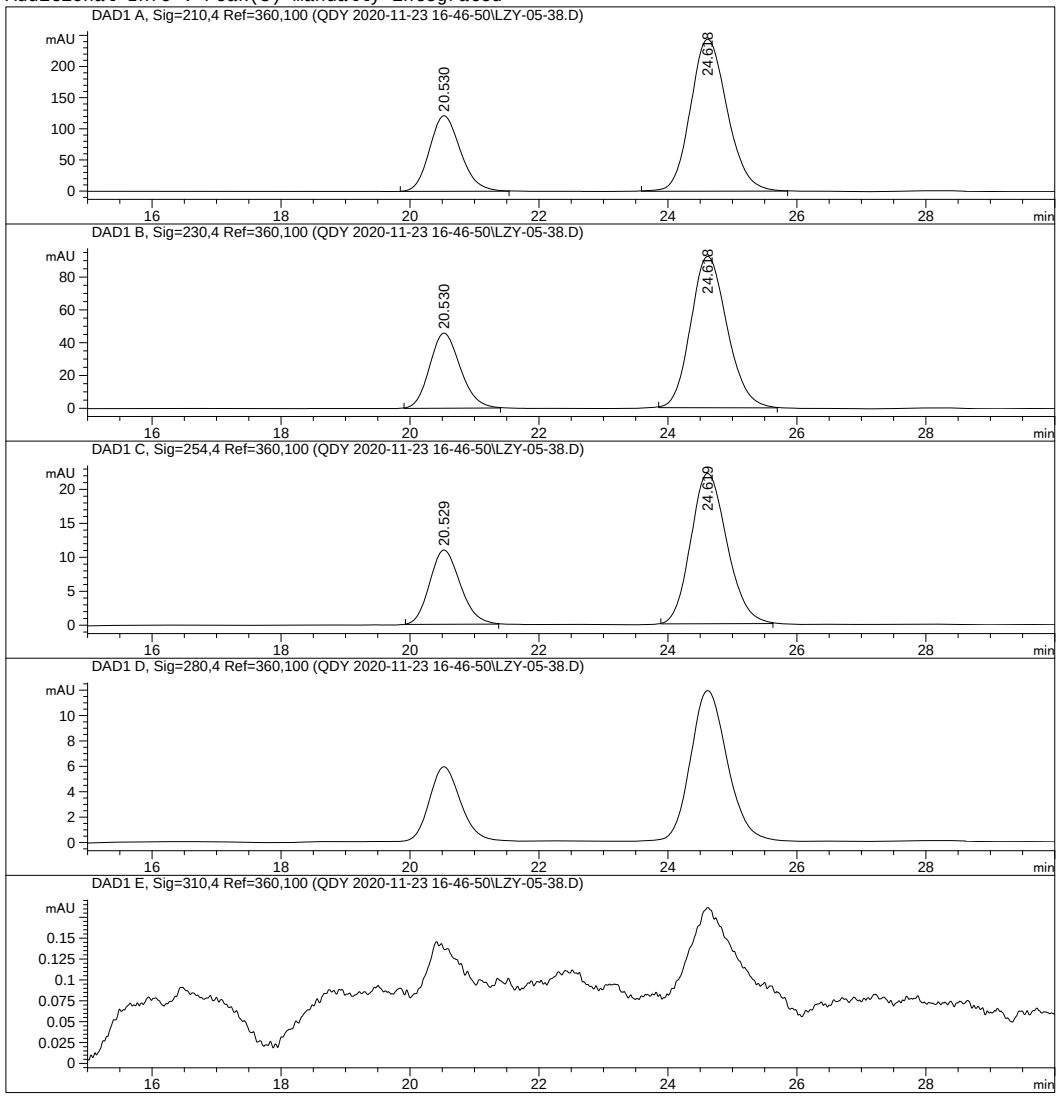
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  20.897 BB    0.4891 1.91413e4   604.95667  50.6223
   2  25.033 VB    0.5794 1.86707e4   500.23126  49.3777

Totals :                  3.78119e4  1105.18793



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  20.897 BB    0.4797 7327.97266  235.03383  50.7969
   2  25.033 BB    0.5702 7098.05029  192.51373  49.2031

Totals :                  1.44260e4   427.54756



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  20.897 BB    0.4770 1737.50293   56.15725  50.5272
   2  25.033 BB    0.5701 1701.24512   46.15036  49.4728

Totals :                  3438.74805  102.30761



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2aa-Rac

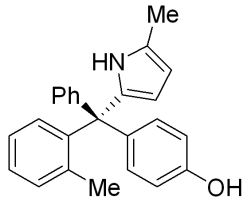
Data File C:\CHEM32\1\DATA\QDY 2020-11-23 16-46-50\LZY-05-38.D
Sample Name:

```
==========================================================================
Acq. Operator   :                                Seq. Line :  19
Acq. Instrument : Instrument 1                    Location : Vial 84
Injection Date  : 11/23/2020 10:47:28 PM               Inj :   1
                                                 Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 2.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2020-11-23 16-46-50\AD-02-60.M
Last changed    : 9/23/2020 10:59:45 PM
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 7:37:31 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2020-11-23 16-46-50\LZY-05-38.D
Sample Name:

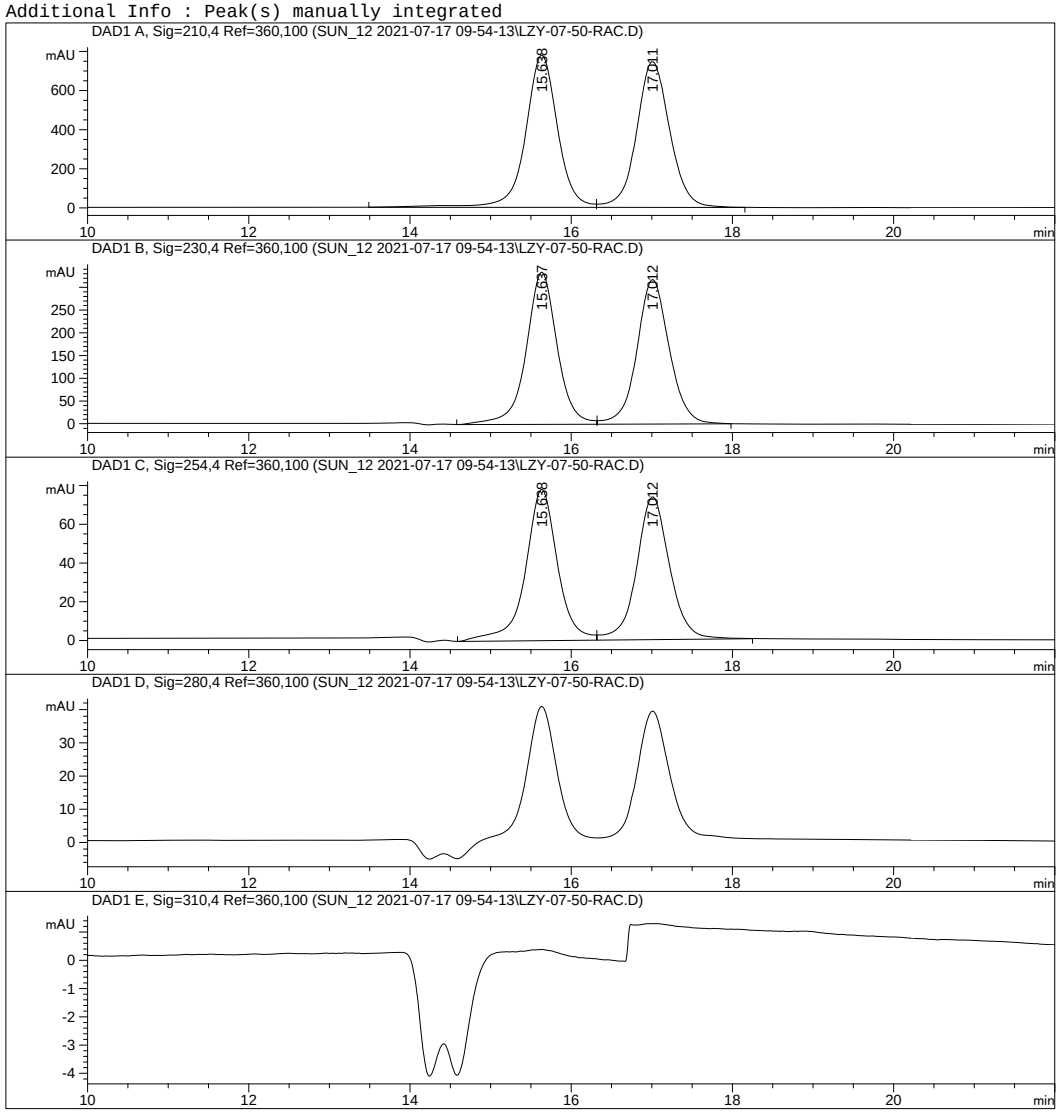
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  20.530 BB    0.5201 4059.53271  121.40965  29.5948
   2  24.618 BB    0.6154 9657.50586  244.19589  70.4052

Totals :                  1.37170e4   365.60554



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  20.530 BB    0.5127 1517.53760   45.78773  29.6057
   2  24.618 BB    0.6058 3608.29224   92.36298  70.3943

Totals :                  5125.82983  138.15071



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  20.529 BB    0.5065  360.24033   10.92999  29.4489
   2  24.619 BB    0.6046  863.03198   22.14850  70.5511

Totals :                  1223.27231   33.07850



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2aa

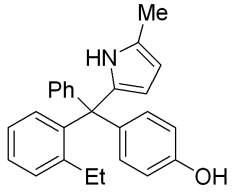
Data File C:\CHEM32\1\DATA\SUN_12 2021-07-17 09-54-13\LZY-07-50-RAC.D
Sample Name:

```
======================================================================
Acq. Operator   :                          Seq. Line :  34
                                           Location : Vial 84
Injection Date  : 7/17/2021 8:08:41 PM          Inj :   1
Acq. Method     : AD-03-30.M
Analysis Method : C:\CHEM32\1\METHODS\IC-07-10.M
Last changed    : 7/19/2021 10:26:00 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\SUN_12 2021-07-17 09-54-13\LZY-07-50-RAC.D
Sample Name:

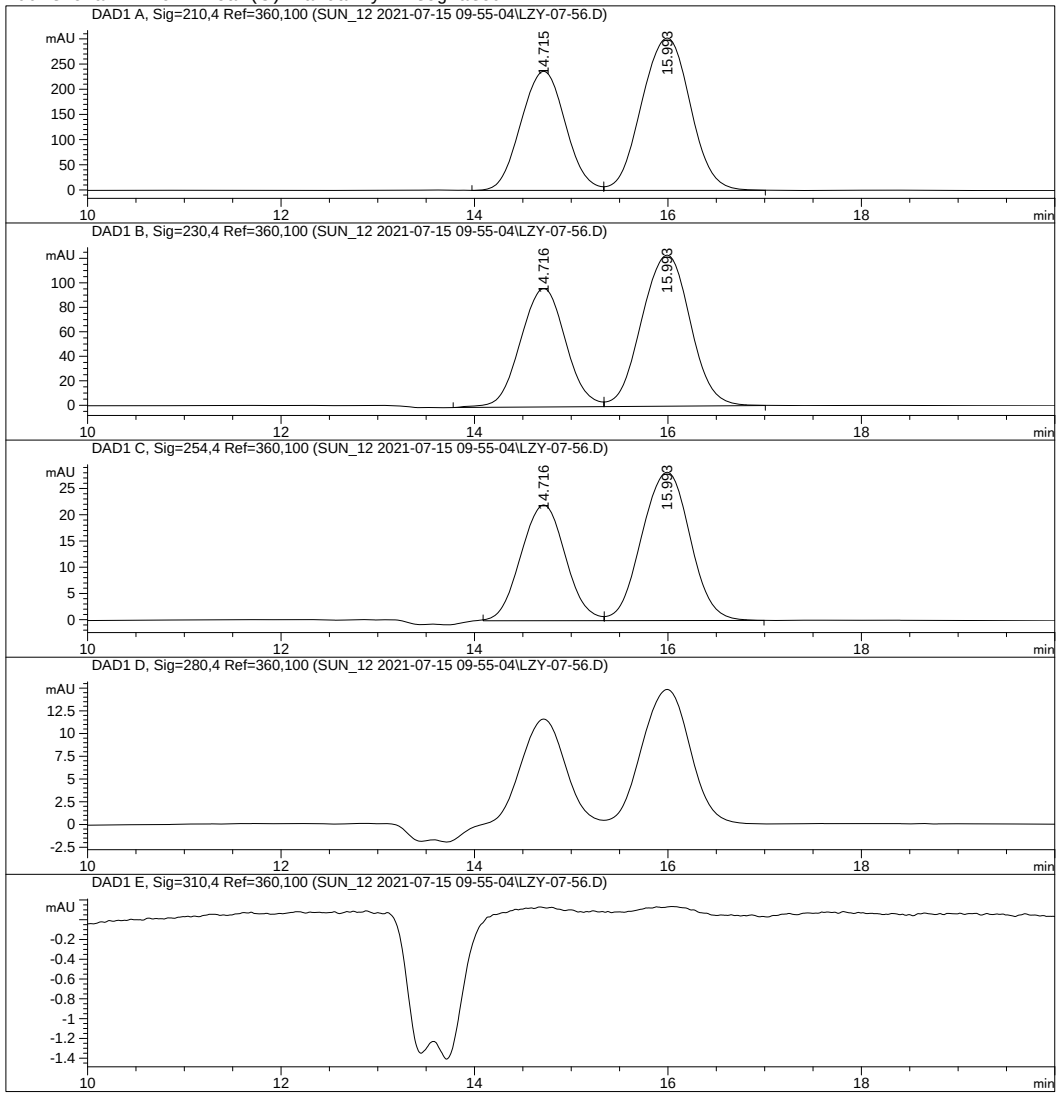
```
======================================================================
                        Area Percent Report
======================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  15.638 BV    0.4196 2.15957e4   778.59137  50.3315
   2  17.011 VB    0.4356 2.13113e4   745.19684  49.6685

Totals :                  4.29070e4  1523.78821



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  15.637 VV    0.4015 8933.09766  334.55411  50.2286
   2  17.012 VB    0.4231 8851.79395  317.68359  49.7714

Totals :                  1.77849e4   652.23770



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  15.638 VV    0.4128 2161.18896   78.11736  50.7231
   2  17.012 VB    0.4282 2099.57007   73.72577  49.2769

Totals :                  4260.75903  151.84312



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

======================================================================
                        *** End of Report ***
```



2ab-Rac

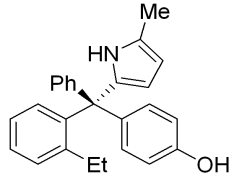
Data File C:\CHEM32\1\DATA\SUN_12 2021-07-15 09-55-04\LZY-07-56.D
Sample Name:

```
==========================================================================
Acq. Operator   :                          Seq. Line :  25
Acq. Instrument : Instrument 1              Location : Vial 81
Injection Date  : 7/15/2021 4:55:09 PM           Inj :   1
                                          Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 4.000 µl
Acq. Method     : C:\CHEM32\1\DATA\SUN_12 2021-07-15 09-55-04\AD-03-30.M
Last changed    : 7/15/2021 4:54:16 PM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\AS-15-15.M
Last changed    : 7/17/2021 9:58:58 AM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\SUN_12 2021-07-15 09-55-04\LZY-07-56.D
Sample Name:

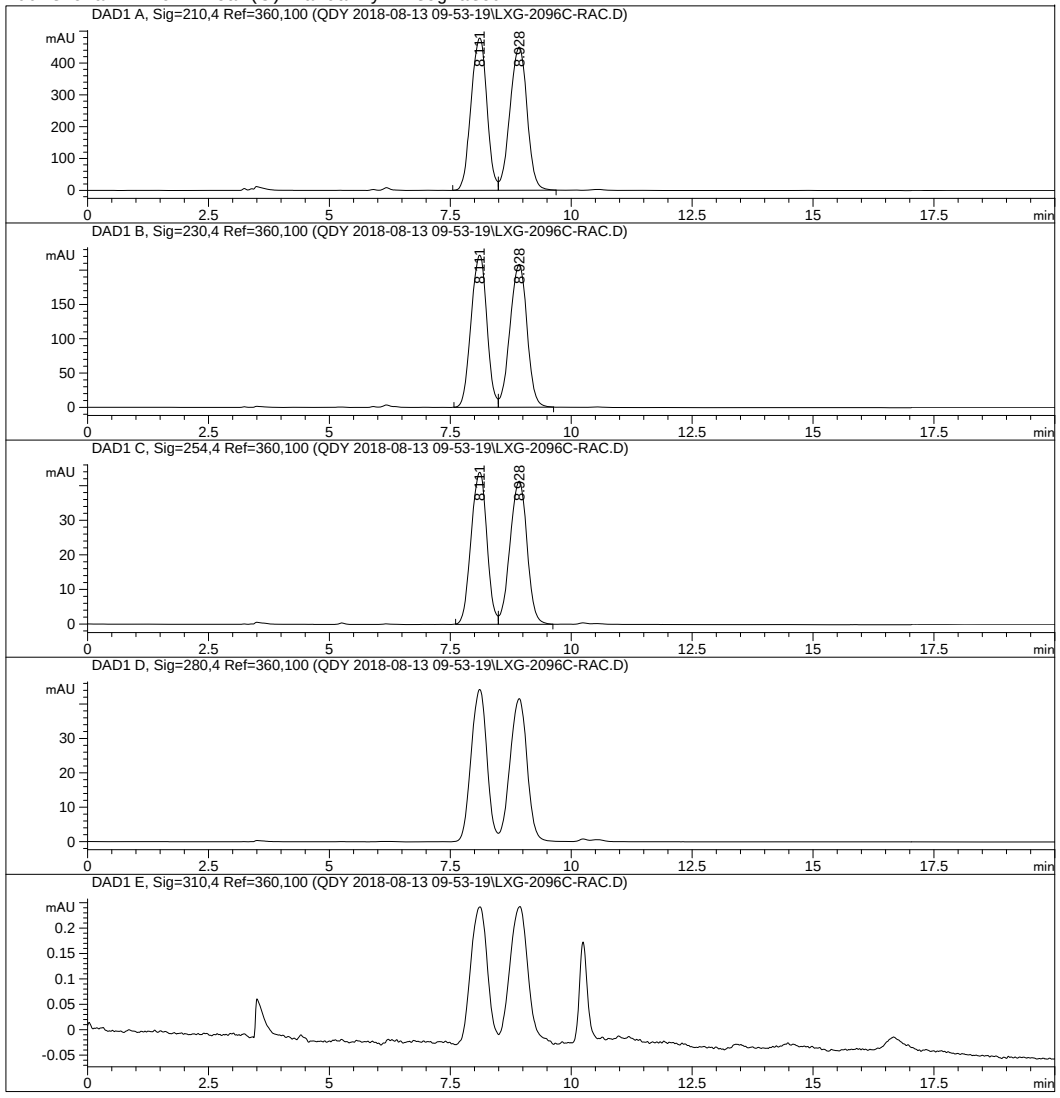
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  14.715 BV    0.5034 7521.92773  236.28804  41.6410
   2  15.993 VB    0.5588 1.05418e4   302.36267  58.3590

Totals :                  1.80637e4   538.65071



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  14.716 BV    0.5115 3131.12671   96.77523  42.1442
   2  15.993 VB    0.5587 4298.43506  123.29113  57.8558

Totals :                  7429.56177  220.06636



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  14.716 BV    0.5022  703.77405   22.05937  41.7689
   2  15.993 VB    0.5550  981.14893   28.26350  58.2311

Totals :                  1684.92297   50.32287



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2ab

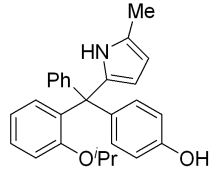
Data File C:\CHEM32\1\DATA\QDY 2018-08-13 09-53-19\LXG-2096C-RAC.D
Sample Name:

```
==========================================================================
Acq. Operator   :                              Seq. Line :  12
Acq. Instrument : Instrument 1                  Location : Vial 56
Injection Date  : 8/13/2018 2:39:53 PM               Inj :   1
                                              Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 3.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2018-08-13 09-53-19\IC-02-20.M
Last changed    : 8/13/2018 2:39:01 PM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\AD-10-10.M
Last changed    : 1/16/2020 9:52:19 AM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2018-08-13 09-53-19\LXG-2096C-RAC.D
Sample Name:

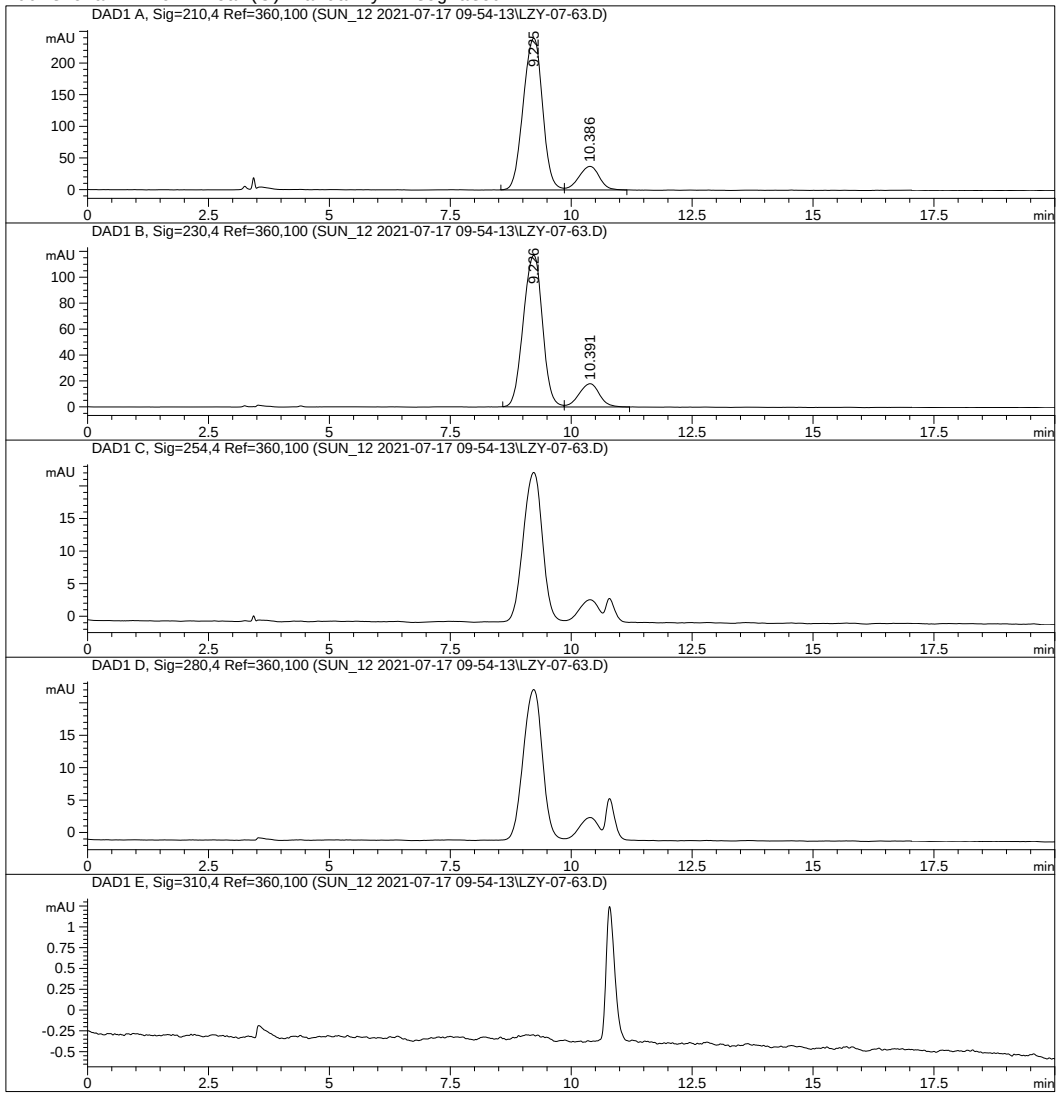
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   8.111 BV    0.3655 1.08839e4   478.20779  49.6404
   2   8.928 VB    0.3945 1.10416e4   449.64343  50.3596

Totals :                  2.19255e4   927.85123



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   8.111 BV    0.3645 5026.81592  221.75375  49.6977
   2   8.928 VB    0.3910 5087.97168  208.26950  50.3023

Totals :                  1.01148e4   430.02325



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   8.111 BV    0.3646  997.15350   43.95827  49.6376
   2   8.928 VB    0.3893 1011.71417   41.37379  50.3624

Totals :                  2008.86768   85.33206



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2ac-Rac

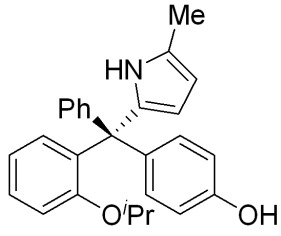
Data File C:\CHEM32\1\DATA\SUN_12 2021-07-17 09-54-13\LZY-07-63.D
Sample Name:

```
==========================================================================
Acq. Operator   :                              Seq. Line :  29
Acq. Instrument : Instrument 1                  Location : Vial 81
Injection Date  : 7/17/2021 6:37:47 PM               Inj :   1
                                              Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 3.000 µl
Acq. Method     : C:\CHEM32\1\DATA\SUN_12 2021-07-17 09-54-13\IC-02-20.M
Last changed    : 7/17/2021 6:36:54 PM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\AS-18-45-0.3.M
Last changed    : 7/19/2021 6:28:40 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\SUN_12 2021-07-17 09-54-13\LZY-07-63.D
Sample Name:

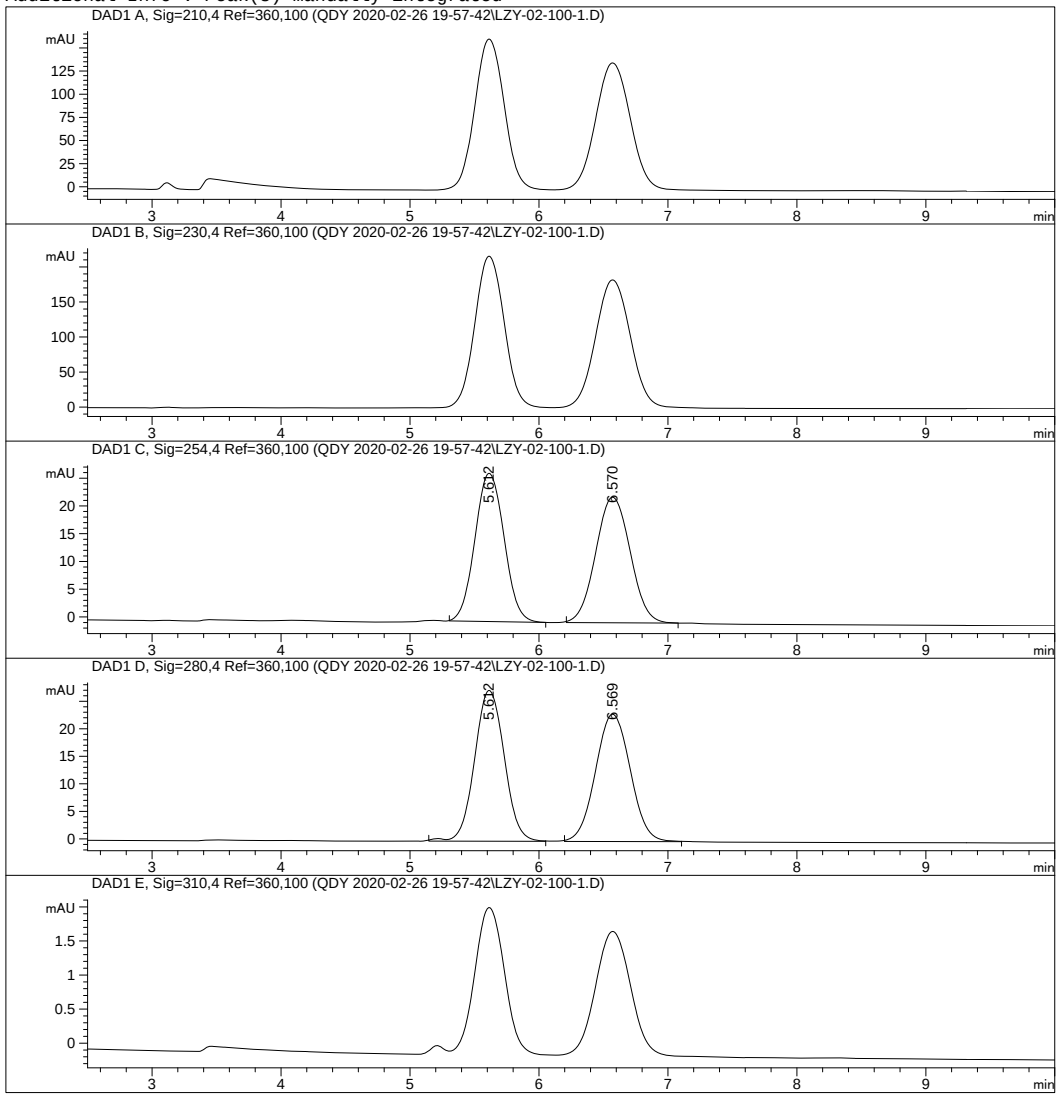
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   9.225 BV    0.4423 6631.34863  240.00844  85.8247
   2  10.386 VB    0.4203 1095.27039   37.33301  14.1753

Totals :                  7726.61902  277.34145



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   9.226 BV    0.4385 3216.06519  117.06415  85.9157
   2  10.391 VB    0.4650  527.21429   17.92997  14.0843

Totals :                  3743.27948  134.99412



Signal 3: DAD1 C, Sig=254,4 Ref=360,100


Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2ac

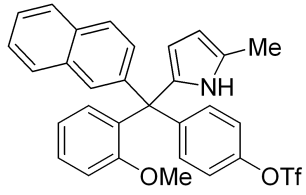
Data File C:\CHEM32\1\DATA\QDY 2020-02-26 19-57-42\LZY-02-100-1.D
Sample Name:

```
==========================================================================
Acq. Operator   :                              Seq. Line :   2
Acq. Instrument : Instrument 1                  Location : Vial 81
Injection Date  : 2/26/2020 8:11:05 PM               Inj :   1
                                              Inj Volume : 5.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2020-02-26 19-57-42\AD-01-30.M
Last changed    : 2/26/2020 8:10:10 PM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 2:57:57 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2020-02-26 19-57-42\LZY-02-100-1.D
Sample Name:

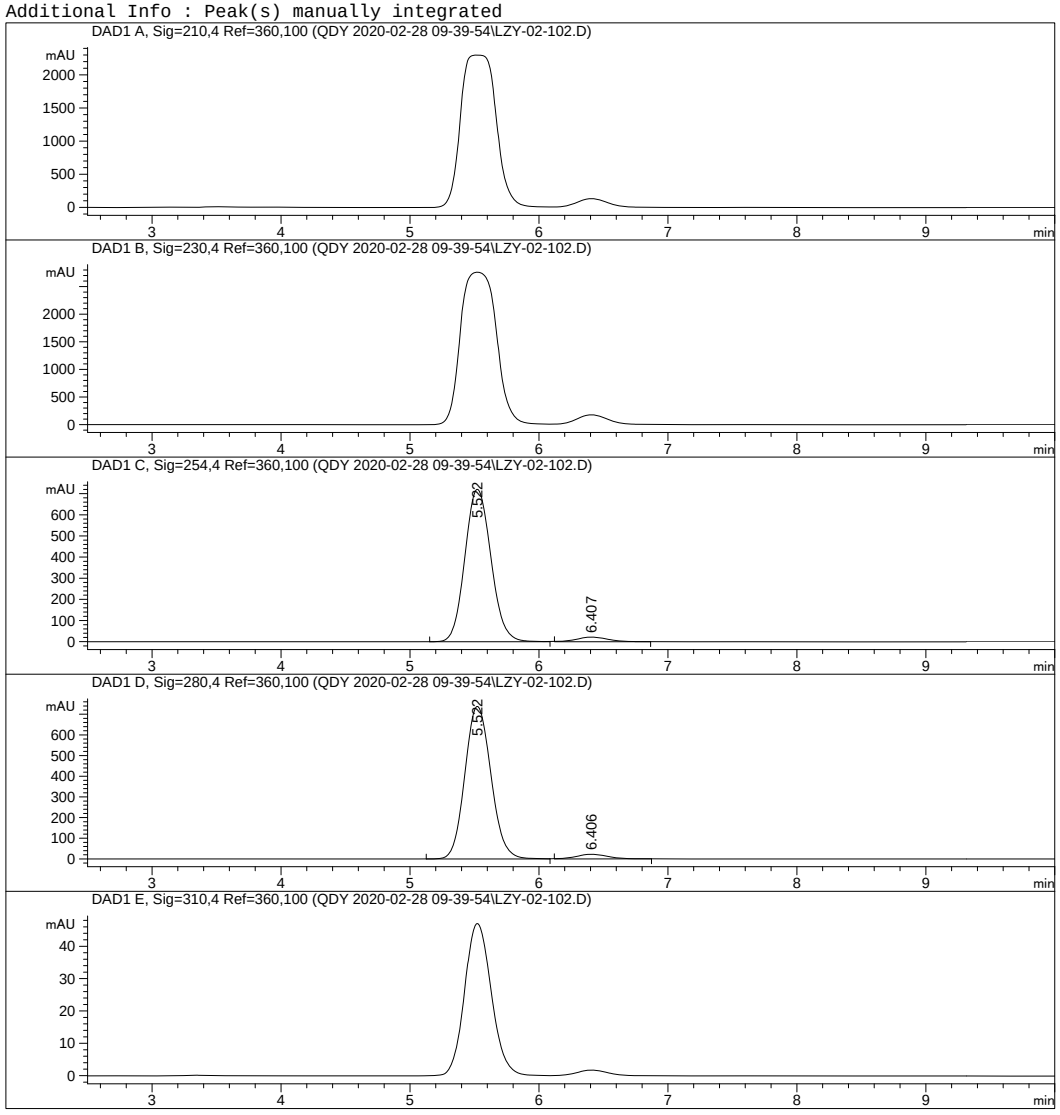
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100


Signal 2: DAD1 B, Sig=230,4 Ref=360,100


Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   5.612 BB    0.2492  419.41470   26.70506  49.9197
   2   6.570 BB    0.2930  420.76358   22.61930  50.0803

Totals :                   840.17828   49.32436


Signal 4: DAD1 D, Sig=280,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   5.612 BB    0.2525  437.83301   27.39108  50.2826
   2   6.569 BB    0.2984  432.91190   23.12917  49.7174

Totals :                   870.74490   50.52024


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



3-Rac

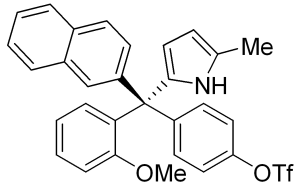
Data File C:\CHEM32\1\DATA\QDY 2020-02-28 09-39-54\LZY-02-102.D
Sample Name:

```
==========================================================================
Acq. Operator   :                                Seq. Line :   6
Acq. Instrument : Instrument 1                    Location : Vial 81
Injection Date  : 2/28/2020 10:57:41 AM               Inj :   1
                                                 Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 4.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2020-02-28 09-39-54\AD-01-20.M
Last changed    : 2/28/2020 10:56:49 AM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 2:57:57 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2020-02-28 09-39-54\LZY-02-102.D
Sample Name:

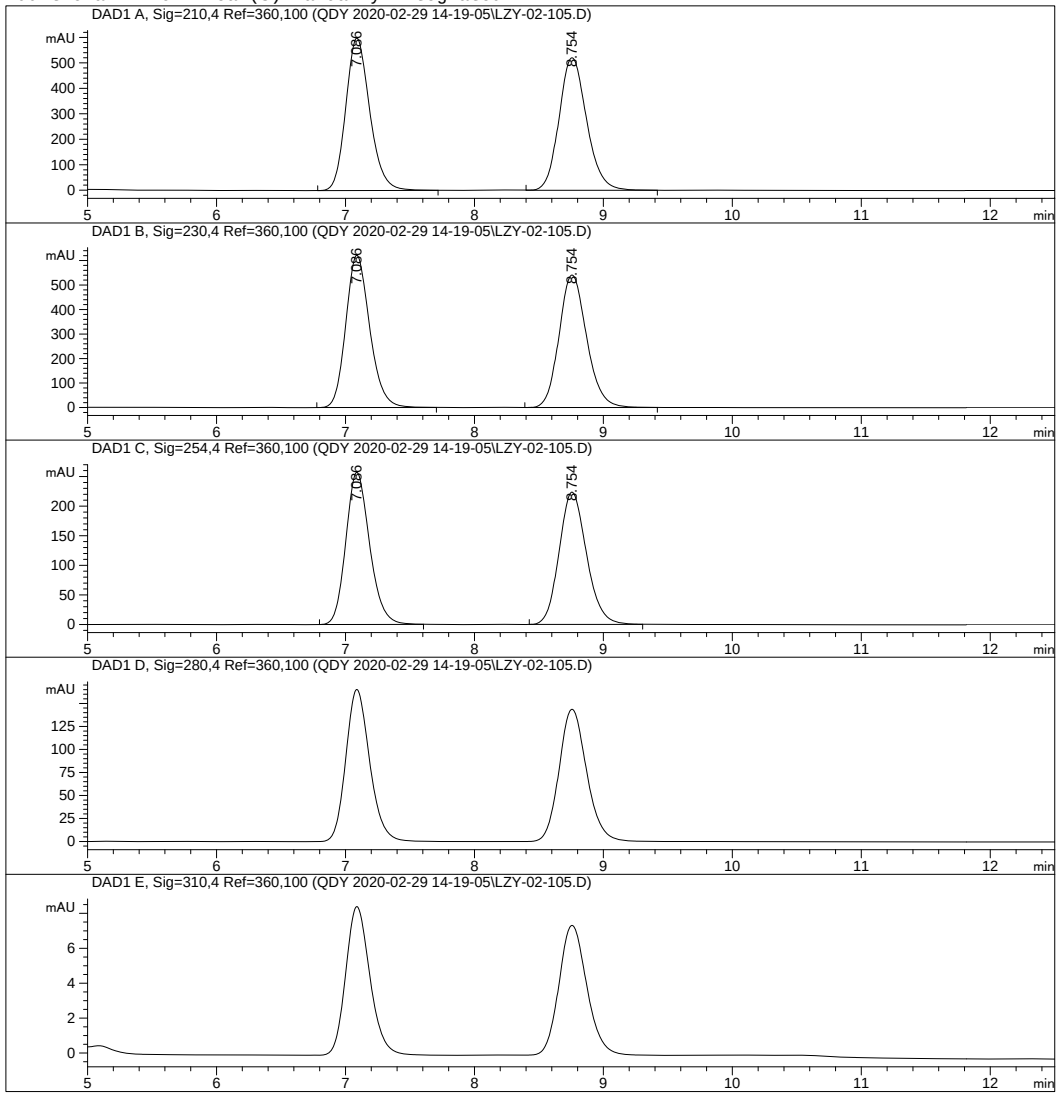
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100


Signal 2: DAD1 B, Sig=230,4 Ref=360,100


Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   5.522 BB    0.2219 1.01315e4   721.28223  96.4846
   2   6.407 BB    0.2647  369.14151   21.89908   3.5154

Totals :                  1.05007e4   743.18131


Signal 4: DAD1 D, Sig=280,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   5.522 BB    0.2220 1.03741e4   738.08148  96.5137
   2   6.406 BB    0.2639  374.73767   22.31883   3.4863

Totals :                  1.07488e4   760.40031


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



3

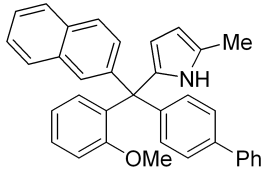
Data File C:\CHEM32\1\DATA\QDY 2020-02-29 14-19-05\LZY-02-105.D
Sample Name:

```
==========================================================================
Acq. Operator   :                                Seq. Line :  17
Acq. Instrument : Instrument 1                    Location : Vial 91
Injection Date  : 2/29/2020 7:35:51 PM                 Inj :   1
                                                 Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 3.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2020-02-29 14-19-05\AD-01-20.M
Last changed    : 2/29/2020 7:34:58 PM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 8:50:44 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2020-02-29 14-19-05\LZY-02-105.D
Sample Name:

```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   7.086 BB    0.1983 7712.21045  598.72394  49.9275
   2   8.754 VB    0.2291 7734.60010  521.38654  50.0725

Totals :                  1.54468e4  1120.11047



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   7.086 BB    0.1982 8002.52881  621.77722  49.9326
   2   8.754 VB    0.2289 8024.14697  541.38800  50.0674

Totals :                  1.60267e4  1163.16522



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   7.086 BB    0.1975 3297.33911  257.24408  49.9841
   2   8.754 BB    0.2282 3299.43335  223.58458  50.0159

Totals :                  6596.77246  480.82866



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```

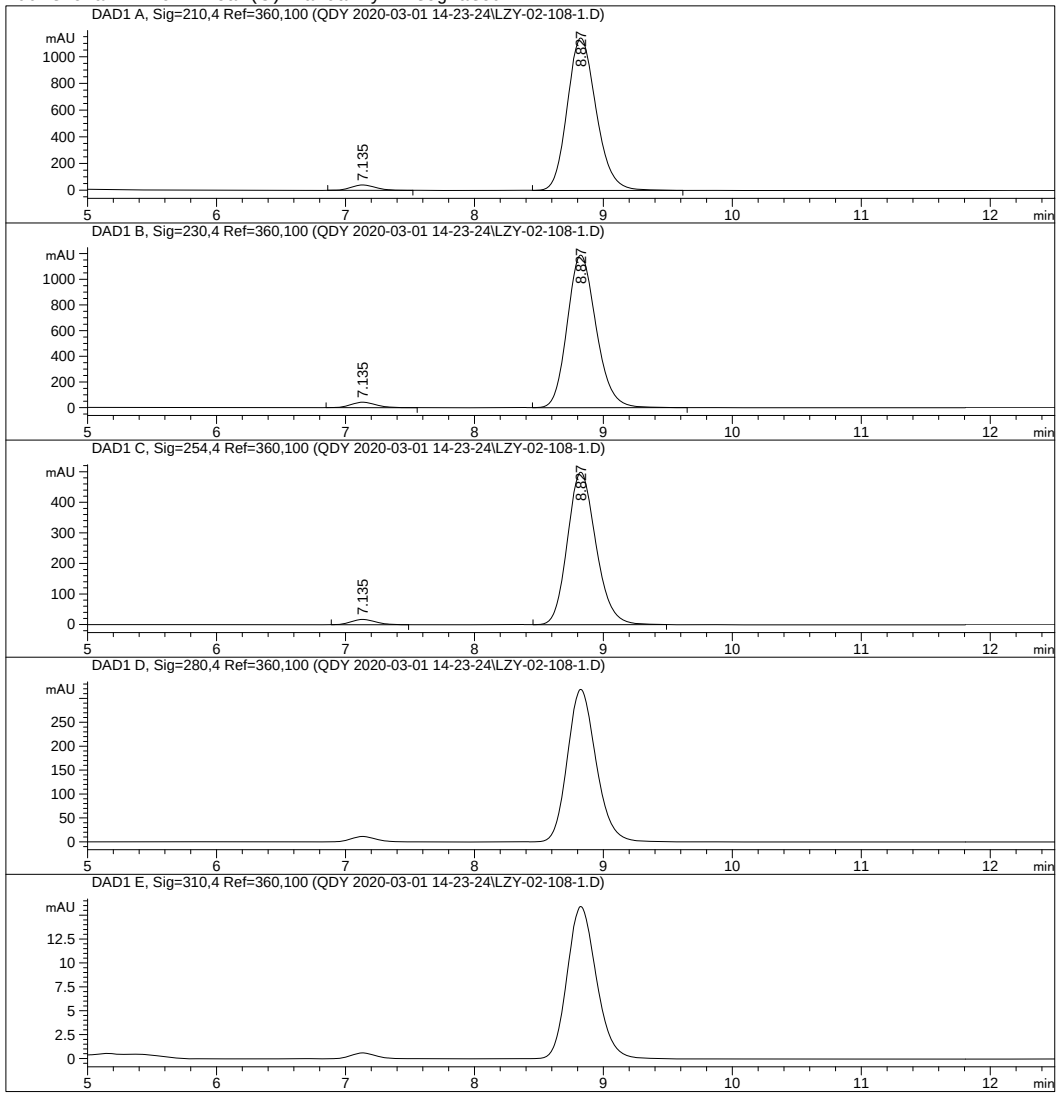


4-Rac

Instrument 1 11/24/2020 8:50:45 PM

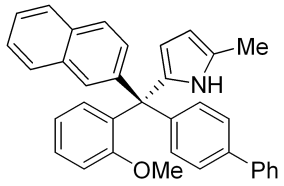
Data File C:\CHEM32\1\DATA\QDY 2020-03-01 14-23-24\LZY-02-108-1.D
Sample Name:

```
==========================================================================
Acq. Operator   :                              Seq. Line :   2
Acq. Instrument : Instrument 1                  Location : Vial 82
Injection Date  : 3/1/2020 2:36:27 PM               Inj :   1
                                               Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 3.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2020-03-01 14-23-24\AD-01-20.M
Last changed    : 3/1/2020 2:35:34 PM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 3:01:11 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2020-03-01 14-23-24\LZY-02-108-1.D
Sample Name:

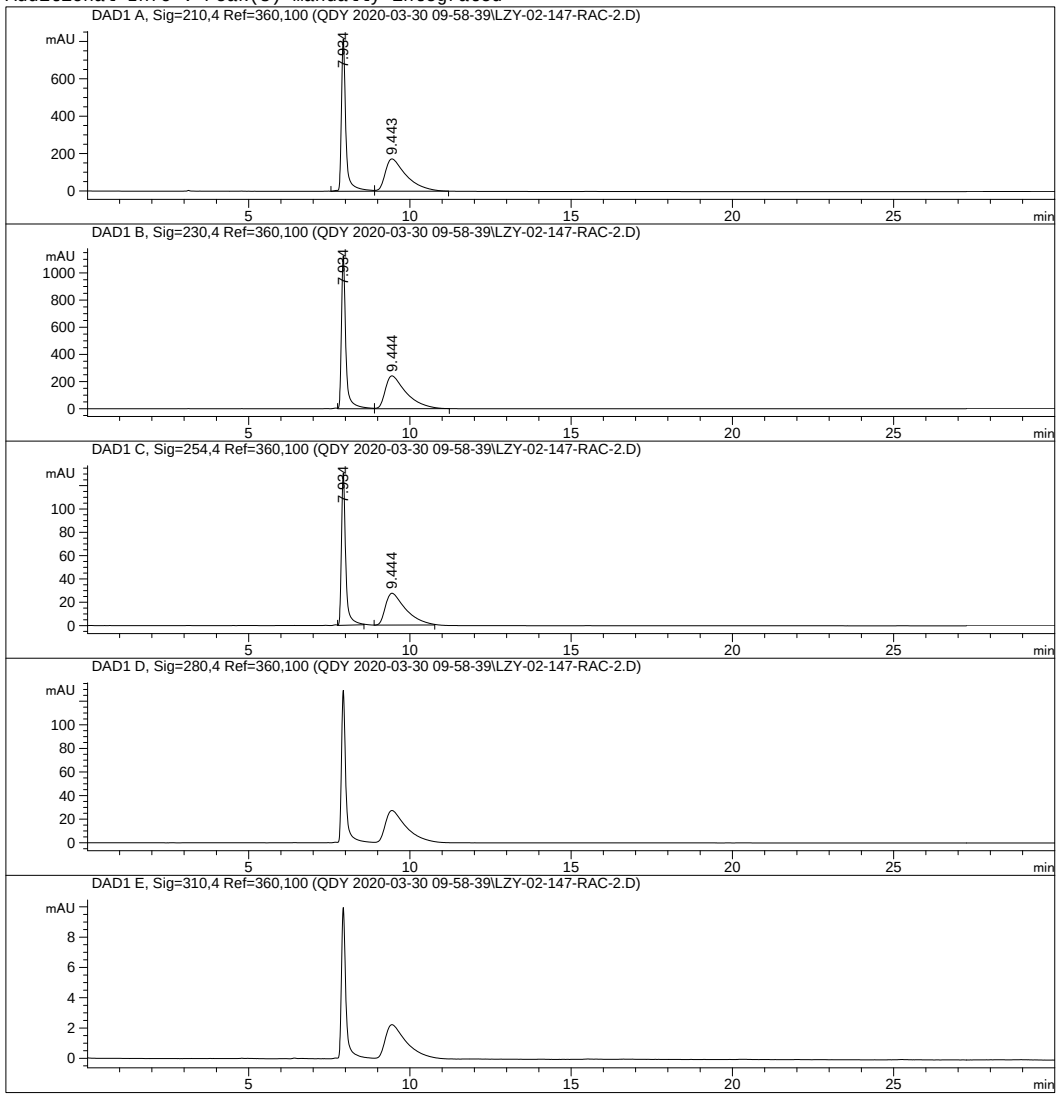
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   7.135 BB    0.2037  535.52502   40.65454   2.9252
   2   8.827 VB    0.2415 1.77716e4  1142.56104  97.0748

Totals :                   1.83072e4  1183.21558



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   7.135 BB    0.2060  573.54810   42.88038   3.0125
   2   8.827 VB    0.2412 1.84655e4  1188.60522  96.9875

Totals :                   1.90391e4  1231.48561



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   7.135 BB    0.2040  230.95700   17.49571   2.9220
   2   8.827 VB    0.2354 7673.16943  498.90271  97.0780

Totals :                   7904.12643  516.39842



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



4

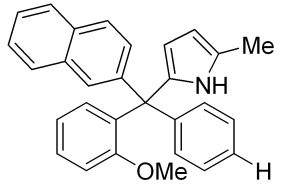
Data File C:\CHEM32\1\DATA\QDY 2020-03-30 09-58-39\LZY-02-147-RAC-2.D
Sample Name:

```
==========================================================================
Acq. Operator   :                              Seq. Line :  19
Acq. Instrument : Instrument 1                  Location : Vial 91
Injection Date  : 3/30/2020 4:17:45 PM               Inj :   1
                                              Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 2.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2020-03-30 09-58-39\AD-007-30.M
Last changed    : 3/30/2020 4:16:53 PM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-10-10.M
Last changed    : 6/25/2018 2:48:18 PM
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2020-03-30 09-58-39\LZY-02-147-RAC-2.D
Sample Name:

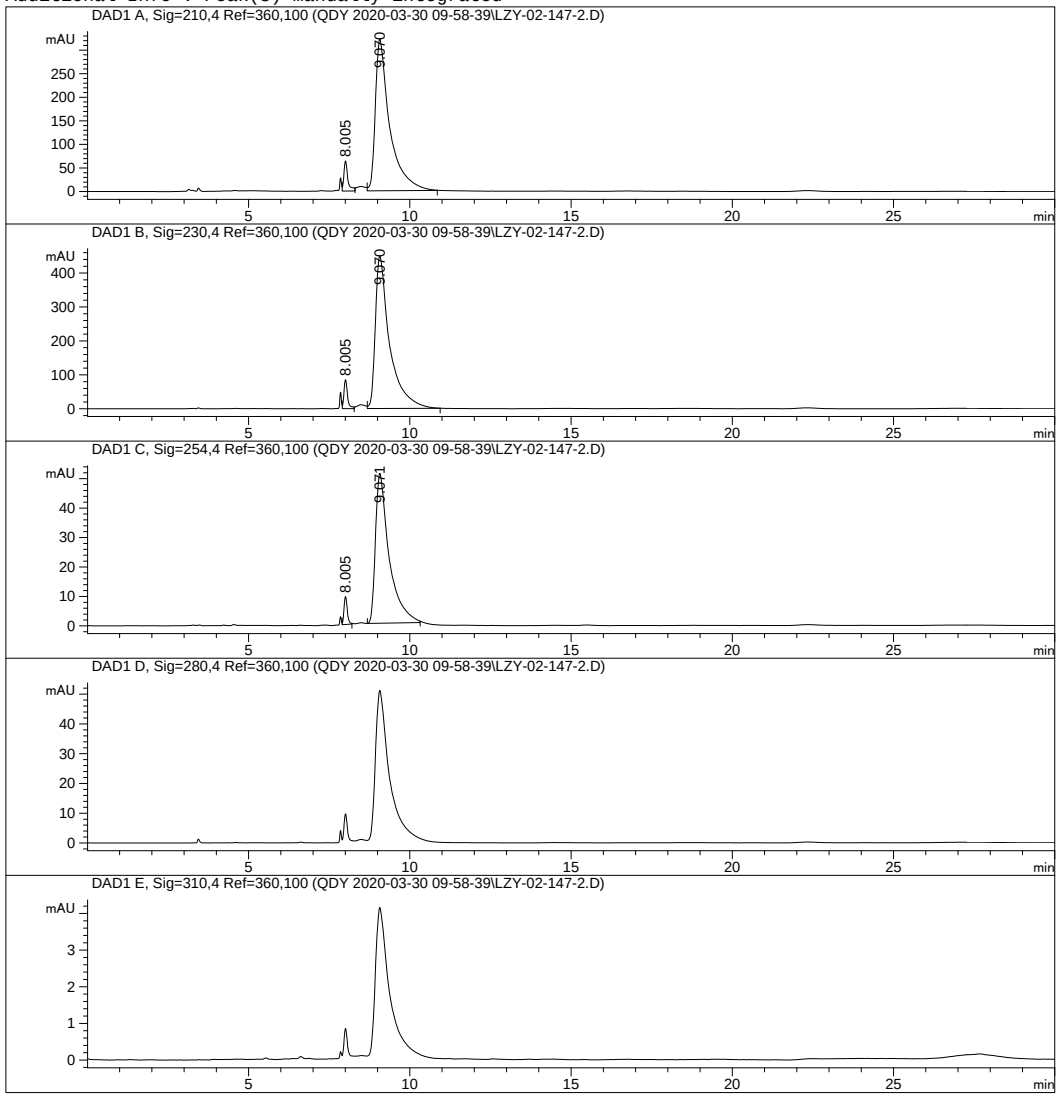
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   7.934 VV    0.1418 7815.05322  815.45728  49.8456
   2   9.443 VB    0.6602 7863.45947  173.02028  50.1544

Totals :                  1.56785e4   988.47755



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   7.934 VV    0.1420 1.06001e4  1124.64417  49.3228
   2   9.444 VB    0.6535 1.08912e4   241.77637  50.6772

Totals :                  2.14912e4  1366.42053



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   7.934 VB    0.1365 1190.39087  130.45436  49.9835
   2   9.444 BB    0.6411 1191.17749   27.29478  50.0165

Totals :                  2381.56836  157.74914



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



5-Rac

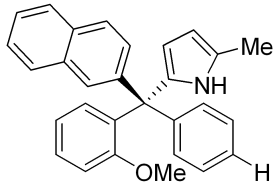
Data File C:\CHEM32\1\DATA\QDY 2020-03-30 09-58-39\LZY-02-147-2.D
Sample Name:

```
==========================================================================
Acq. Operator   :                              Seq. Line :  20
Acq. Instrument : Instrument 1                  Location : Vial 92
Injection Date  : 3/30/2020 4:49:03 PM               Inj :   1
                                              Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 2.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2020-03-30 09-58-39\AD-007-30.M
Last changed    : 3/30/2020 4:16:53 PM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-10-10.M
Last changed    : 6/25/2018 2:48:18 PM
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2020-03-30 09-58-39\LZY-02-147-2.D
Sample Name:

```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   8.005 VB    0.1259  546.06274   63.76646   5.2021
   2   9.070 VB    0.4406 9950.96387  321.95505  94.7979

Totals :                  1.04970e4   385.72150



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   8.005 VV    0.1155  655.39935   85.40343   4.5344
   2   9.070 VB    0.4366 1.37987e4   448.97861  95.4656

Totals :                  1.44541e4   534.38204



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   8.005 VB    0.1078   66.51704    9.48703   4.2567
   2   9.071 BB    0.4228 1496.14343   50.92101  95.7433

Totals :                  1562.66047   60.40804



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```

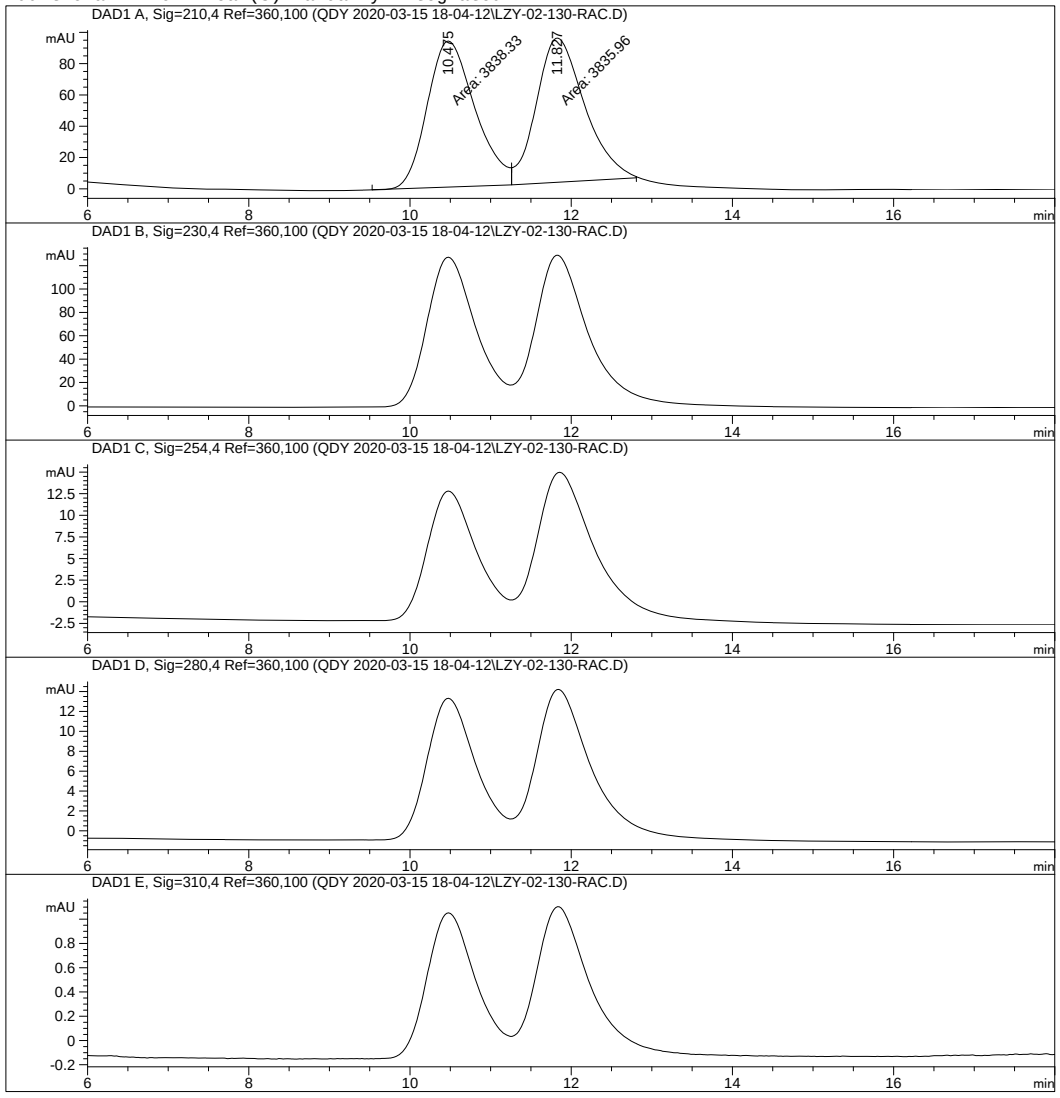


5

Instrument 1 9/7/2020 9:32:23 PM

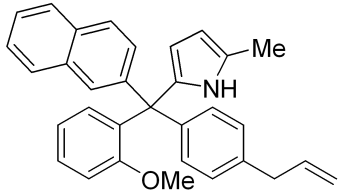
Data File C:\CHEM32\1\DATA\QDY 2020-03-15 18-04-12\LZY-02-130-RAC.D
Sample Name:

```
==================================================================
Acq. Operator   :                          Seq. Line :   2
Acq. Instrument : Instrument 1              Location : Vial 81
Injection Date  : 3/15/2020 6:17:25 PM           Inj :   1
                                          Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 2.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2020-03-15 18-04-12\OD-007-30.M
Last changed    : 3/15/2020 6:16:32 PM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 7:28:44 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2020-03-15 18-04-12\LZY-02-130-RAC.D
Sample Name:

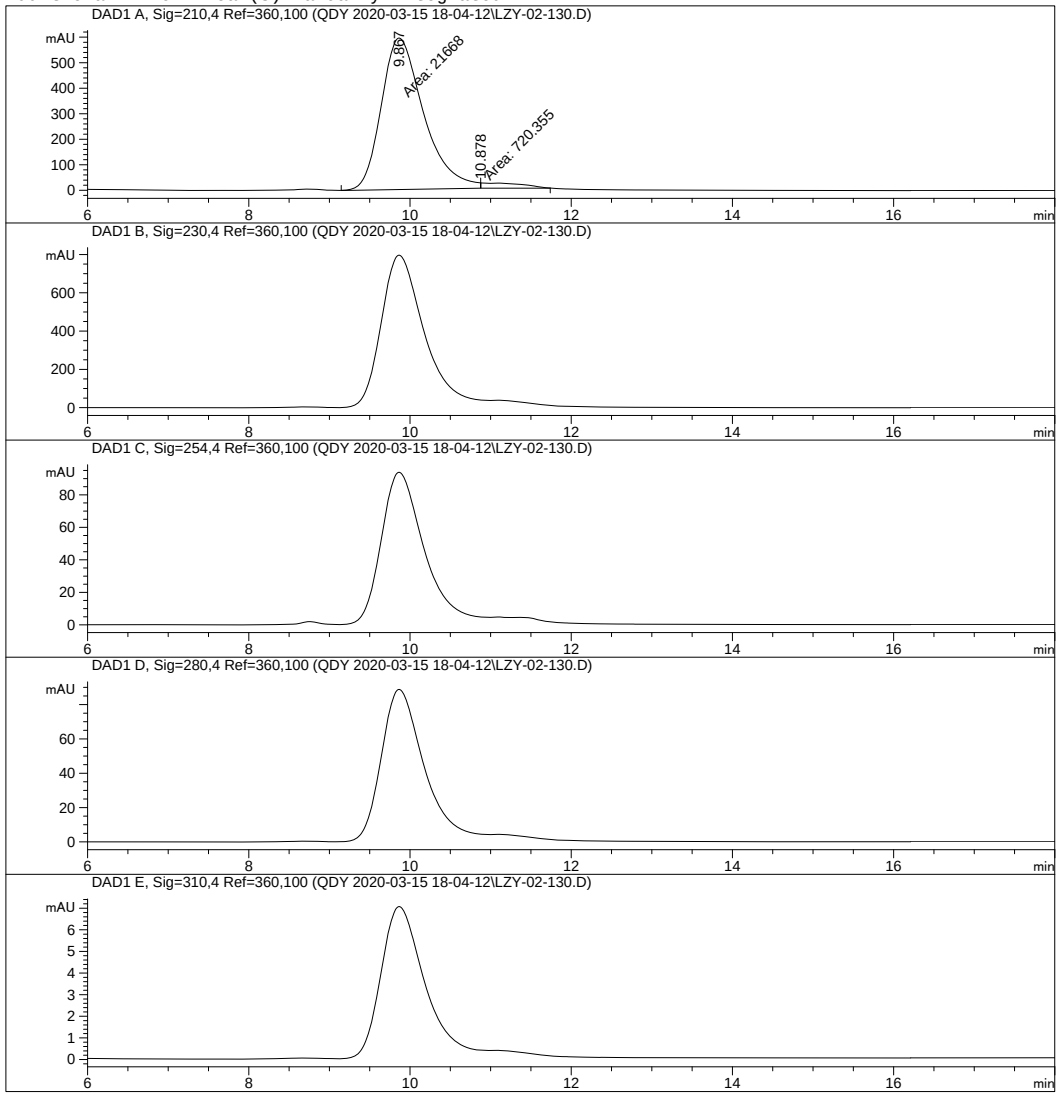
```
======================================================================
                        Area Percent Report
======================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1  10.475 MM    0.6854 3838.33325   93.34061  50.0154
   2  11.827 MM    0.6933 3835.96191   92.21267  49.9846

Totals :                  7674.29517  185.55328



Signal 2: DAD1 B, Sig=230,4 Ref=360,100


Signal 3: DAD1 C, Sig=254,4 Ref=360,100


Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

======================================================================
                        *** End of Report ***
```



6-Rac

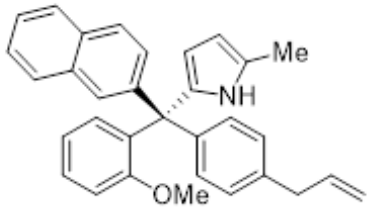
Data File C:\CHEM32\1\DATA\QDY 2020-03-15 18-04-12\LZY-02-130.D
Sample Name:

```
==========================================================================
Acq. Operator   :                                Seq. Line :   3
Acq. Instrument : Instrument 1                    Location : Vial 82
Injection Date  : 3/15/2020 6:48:27 PM                 Inj :   1
                                                 Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 2.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2020-03-15 18-04-12\OD-007-30.M
Last changed    : 3/15/2020 6:16:32 PM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 7:28:44 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2020-03-15 18-04-12\LZY-02-130.D
Sample Name:

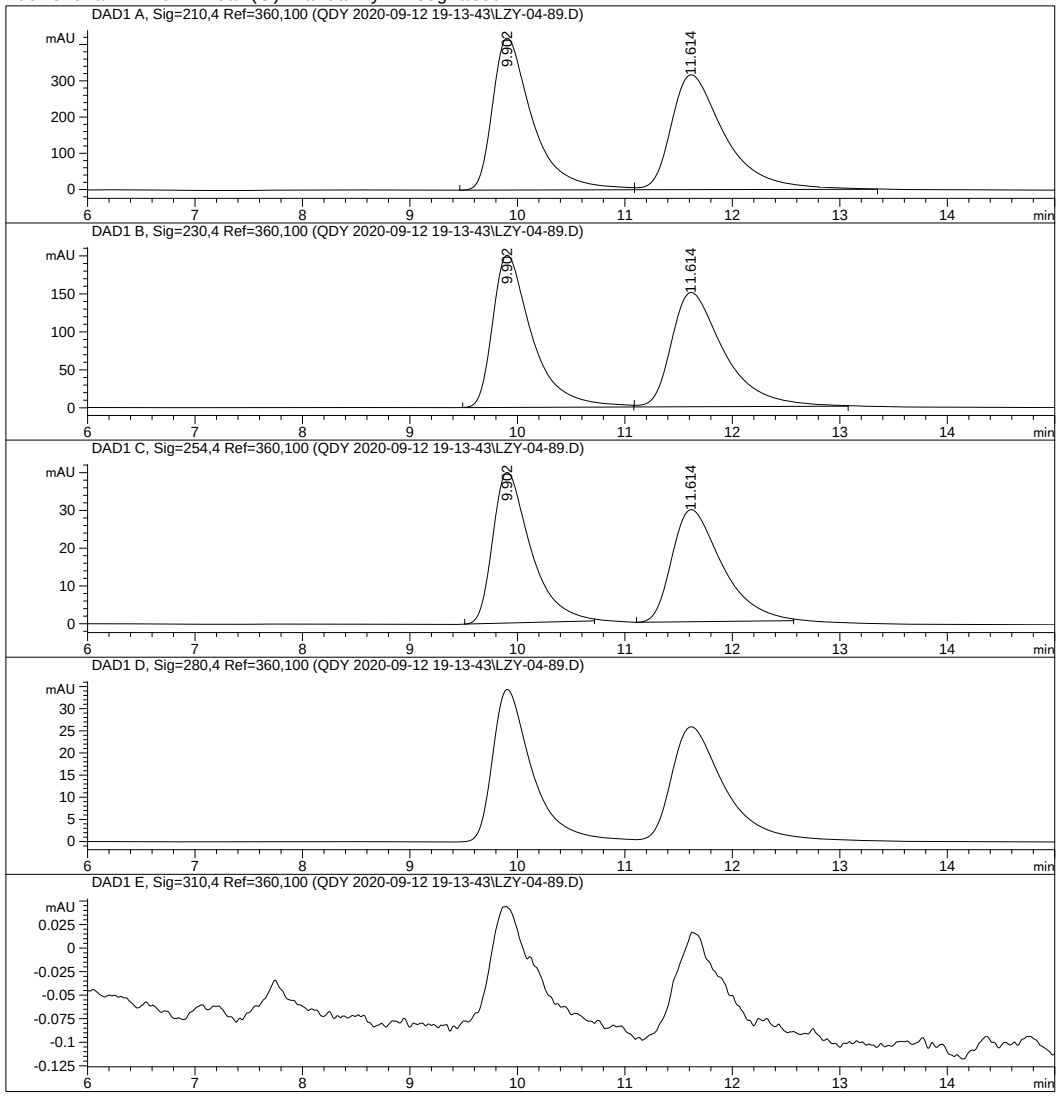
```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   9.867 MM    0.6083 2.16680e4   593.68268  96.7825
   2  10.878 MM    0.4773  720.35461   20.78572   3.2175

Totals :                  2.23884e4   614.46840



Signal 2: DAD1 B, Sig=230,4 Ref=360,100


Signal 3: DAD1 C, Sig=254,4 Ref=360,100


Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



6

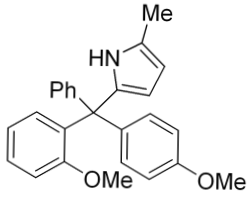
Data File C:\CHEM32\1\DATA\QDY 2020-09-12 19-13-43\LZY-04-89.D
Sample Name:

```
==========================================================================
Acq. Operator   :                                Seq. Line :   6
Acq. Instrument : Instrument 1                    Location : Vial 92
Injection Date  : 9/12/2020 9:11:20 PM                 Inj :   1
                                                 Inj Volume : 5.000 µl
Different Inj Volume from Sequence !     Actual Inj Volume : 2.000 µl
Acq. Method     : C:\CHEM32\1\DATA\QDY 2020-09-12 19-13-43\OD-007-15.M
Last changed    : 9/12/2020 9:10:28 PM
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\IC-007-90.M
Last changed    : 11/24/2020 9:09:57 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
```



Data File C:\CHEM32\1\DATA\QDY 2020-09-12 19-13-43\LZY-04-89.D
Sample Name:

```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=210,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   9.902 BV    0.3826 1.08027e4   419.20486  49.5885
   2  11.614 VB    0.5184 1.09819e4   316.84763  50.4115

Totals :                  2.17846e4   736.05249



Signal 2: DAD1 B, Sig=230,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   9.902 BB    0.3798 5116.91504  200.43622  49.9390
   2  11.614 BB    0.5097 5129.41602  150.46278  50.0610

Totals :                  1.02463e4   350.89900



Signal 3: DAD1 C, Sig=254,4 Ref=360,100

Peak RetTime Type  Width     Area      Height     Area
  #   [min]       [min]   [mAU*s]     [mAU]       %
----|-------|----|-------|----------|----------|--------|
   1   9.902 BB    0.3681  978.92847   39.92512  50.4088
   2  11.614 BB    0.4906  963.04956   29.67351  49.5912

Totals :                  1941.97803   69.59863



Signal 4: DAD1 D, Sig=280,4 Ref=360,100


Signal 5: DAD1 E, Sig=310,4 Ref=360,100

==========================================================================
                        *** End of Report ***
```



2a-Me

Instrument 1 11/24/2020 9:09:59 PM