

Organocatalytic synthesis of densely functionalized oxa-bridged 2,6- epoxybenzo[b][1,5]oxazocine heterocycles

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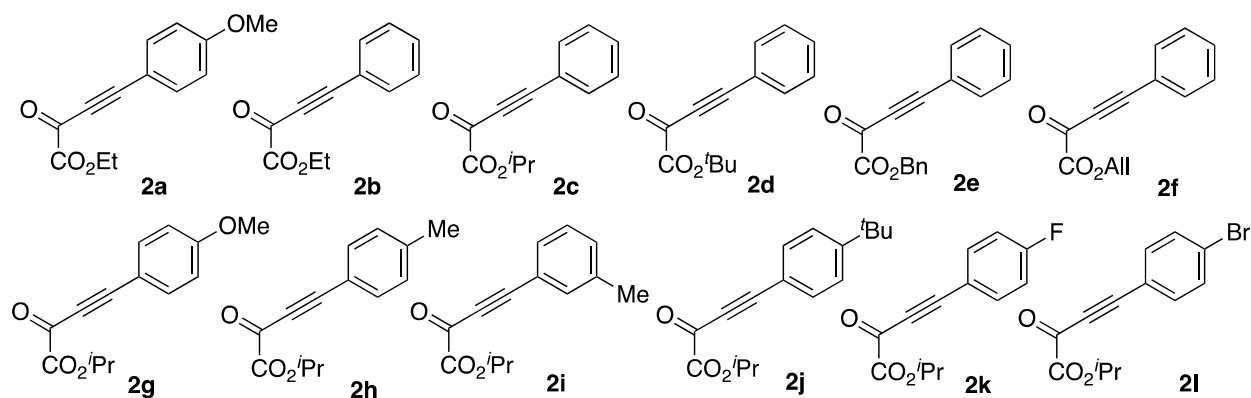
General Information:

Infrared (IR) spectra were recorded on a Perkin Elmer 500 spectrometer. All NMR spectra were recorded on Bruker Avance 400 MHz NMR spectrometer in chloroform-d solvent, running at 400 MHz for ^1H and 100 MHz for ^{13}C , respectively. Chemical shifts are reported in δ ppm with reference to TMS an internal standard. Chemical shifts (δ) are reported in ppm relative to residual solvent signals (CHCl_3 , 7.26 ppm for ^1H NMR, CDCl_3 , 77.0 ppm for ^{13}C NMR). The following abbreviations are used to indicate the multiplicity in NMR spectra: s, singlet; d, doublet; t, triplet; q, quartet; m, multiplet; bs, broad signal. HRMS spectra were recorded on JEOL SX-102A. The X-ray diffraction measurements were carried out at 298 K on a KAPPA APEX II CCD area detector system equipped with a graphite monochromator and a Mo-K α fine-focus sealed tube ($k = 0.71073 \text{ \AA}$). Analytical thin layer chromatography (TLC) was performed using pre-coated aluminium-backed plates (Merck Kieselgel 60 F254) and visualized by ultraviolet irradiation (254 nm) or KMnO_4 stain. Analytical grade solvents and commercially available reagents were used without further purification. For flash chromatography (FC) silica gel (Silica gel 60, 230-400 mesh, Fluka) was used. Starting materials; 2-oxo-3-butynoates¹ and salicylhydrazones,² which were not commercially available were prepared by following the literature methods.

2. Preparation of starting materials

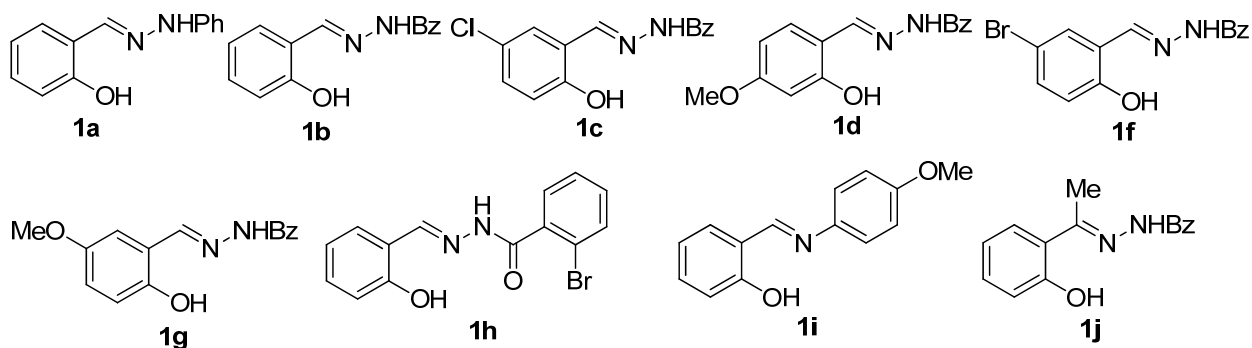
2.1. Typical procedure for preparation of 2-oxo-3-butynoates¹

An oven-dried two neck round bottom flask equipped with a magnetic stirrer bar was allowed to cool under nitrogen. The flask was charged in sequence with CuI (10.1 mg, 0.05 mmol), triethylamine (0.28 mL, 2 mmol), and THF (5 mL). Once a colourless clear solution formed, the alkyne (1 mmol) and monooxalyl chloride (2 mmol) were added and the reaction was allowed to proceed at room temperature. When the reaction was completed, saturated aqueous NaHCO_3 (5 mL) and diethyl ether (20 mL) were added. The reaction system was allowed to partition, and the organic phase was dried with Na_2SO_4 , filtered, and concentrated on a rotary evaporator. The residue was purified by silica gel chromatography to give the cross-coupling product.

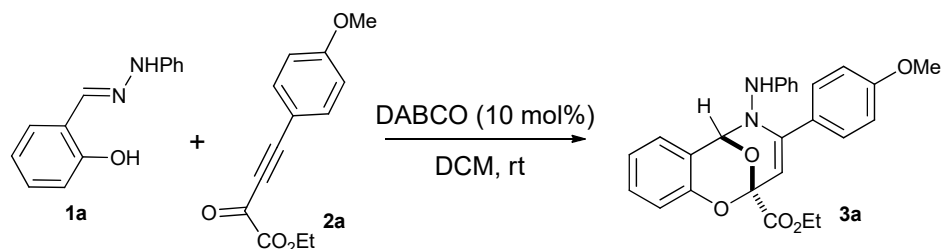


2.2. Typical procedure for preparation of salicylhydrazones²

A methanol mixture of benzohydrazide (1 equiv) and salicylaldehyde (1 equiv) was refluxed for 4 h. The solvent was removed under reduced pressure till it yields a white solid residue and the crude material was mixed with minimum amount of ether and sonicated for 10 min. The suspension was left at room temperature for 30 min. An insoluble white precipitate was separated by filtration, washed with ether and dried on air to give pure product.

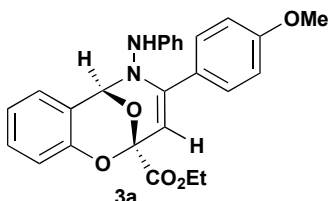


3. General procedure for the organocascade reaction:

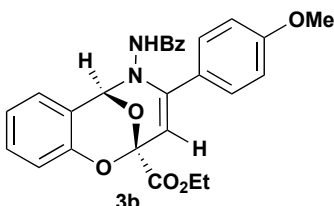


A capped glass vial equipped with magnetic stir bar was charged with salicylhydrazide **1** (0.2 mmol, 1.0 equiv.) and 2-oxo-3-butynoates **2** (0.3 mmol, 1.5 equiv.) in dichloromethane (0.4 mL, 0.5 M). Then, DABCO (2.2 mg, 10 mol%) was added and the reaction mixture was allowed to stir at given temperature (either at 25 or 40 °C). The reaction progress was monitored through TLC analysis. The crude samples were subjected directly to silica gel (230-400 mesh) flash column chromatographic purification and gradient mixture ethylacetate : hexanes (1:9) was used to elute the desired product **3**.

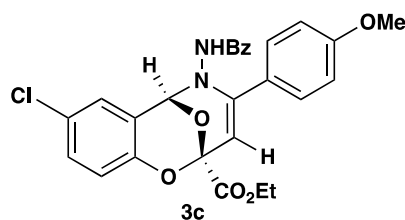
4. Analytical data for products **3a-3z**



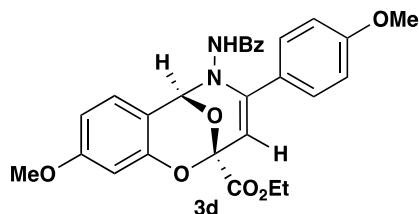
Light yellow solid. 85 mg (95% yield). m.p. = 131.2-132.3 °C. **¹H NMR** (400 MHz, CDCl₃): δ 7.45 (d, *J* = 8.7 Hz, 2H), 7.41 (d, *J* = 7.7 Hz, 1H), 7.36 (t, *J* = 7.8 Hz, 2H), 7.30-7.28 (m, 1H), 7.15 (d, *J* = 7.8 Hz, 2H), 7.05 (t, *J* = 7.5 Hz, 1H), 6.97-6.93 (m, 2H), 6.79 (d, *J* = 8.8 Hz, 2H), 5.96 (s, 1H), 5.92 (s, 1H), 5.58 (s, 1H), 4.53-4.44 (m, 2H), 3.7 (s, 3H), 1.47 (t, *J* = 7.1 Hz, 3H). **¹³C NMR** (100 MHz, CDCl₃): δ 166.1, 160.8, 150.4, 146.8, 146.4, 130.2, 129.5, 128.2, 127.0, 126.7, 121.5, 120.6, 120.0, 116.9, 114.0, 113.8, 104.2, 93.2, 85.4, 62.9, 55.2, 14.2. **HRMS** (ESI) calcd for C₂₆H₂₄N₂O₅Na, [M+Na]⁺ 467.1585, found: 467.1583. **IR** (KBr) $\tilde{\nu}$ (cm⁻¹): 3292, 1754, 1667, 1483, 1377, 1261, 1138, 1084, 974, 754, 695.



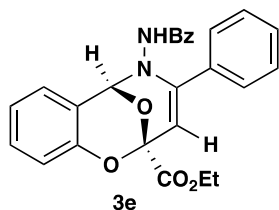
White solid. 90 mg (95% yield). m.p. = 171.7-172.2 °C. **¹H NMR** (400 MHz, CDCl₃): δ 8.23 (s, 1H), 7.80 (d, *J* = 7.6 Hz, 1H), 7.65 (d, *J* = 7.7 Hz, 2H), 7.50-7.46 (m, 3H), 7.36 (t, *J* = 7.5 Hz, 2H), 7.29-7.25 (m, 1H), 7.09 (t, *J* = 7.5 Hz, 1H), 6.93 (d, *J* = 8.2 Hz, 1H), 6.79 (d, *J* = 8.7 Hz, 2H), 6.03 (s, 1H), 5.55 (s, 1H), 4.53-4.40 (m, 2H), 3.73 (s, 3H), 1.46 (t, *J* = 7.1 Hz, 3H). **¹³C NMR** (100 MHz, CDCl₃): δ 166.29, 166.26, 161.1, 150.2, 145.5, 132.3, 132.1, 130.2, 128.64, 128.61, 128.3, 127.2, 125.6, 121.8, 119.7, 116.3, 113.9, 104.0, 93.1, 87.1, 63.0, 14.1. **HRMS** (ESI) calcd for C₂₇H₂₄N₂O₅Na, [M+Na]⁺ 495.1533, found: 495.1532. **IR** (KBr) $\tilde{\nu}$ (cm⁻¹): 3266, 1748, 1665, 1487, 1383, 1268, 1139, 1081, 977, 759, 694.



White solid. 99 mg (98% yield). m.p. = 191.8-192.0 °C. **¹H NMR** (400 MHz, CDCl₃): δ 8.24 (s, 1H), 7.83 (d, *J* = 2.0 Hz, 1H), 7.64 (d, *J* = 7.5 Hz, 2H), 7.50-7.45 (m, 3H), 7.36 (t, *J* = 7.5 Hz, 2H), 7.22 (dd, *J* = 8.7, 2.4 Hz, 1H), 6.87 (d, *J* = 8.8 Hz, 1H), 6.81 (d, *J* = 8.7 Hz, 2H), 6.00 (s, 1H), 5.52 (s, 1H), 4.50-4.41 (m, 2H), 3.74 (s, 3H), 1.45 (t, *J* = 7.1 Hz, 3H). **¹³C NMR** (100 MHz, CDCl₃): δ 166.3, 166.0, 161.3, 148.8, 145.6, 132.2, 132.1, 130.4, 128.7, 128.6, 127.8, 127.2, 126.8, 125.3, 121.1, 117.8, 114.0, 103.5, 93.2, 86.4, 63.1, 55.2, 14.1. **HRMS** (ESI) calcd for C₂₇H₂₃ClN₂O₆Na, [M+Na]⁺ 529.1143, found: 529.1143. **IR** (KBr) $\tilde{\nu}$ (cm⁻¹): 3267, 1743, 1664, 1477, 1366, 1251, 1127, 1084, 964, 746, 695.

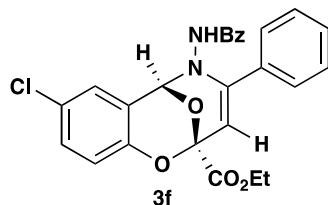


White solid. 88 mg (88% yield). m.p. = 160.3-160.8 °C. **¹H NMR** (400 MHz, CDCl₃): δ 8.29 (s, 1H), 7.70-7.64 (m, 3H), 7.50-7.45 (m, 3H), 7.36 (t, *J* = 7.6 Hz, 2H), 6.69 (d, *J* = 8.8 Hz, 2H), 6.63 (dd, *J* = 8.5, 2.4 Hz, 1H), 6.47 (d, *J* = 2.3 Hz, 1H), 5.98 (s, 1H), 5.55 (s, 1H), 4.52-4.39 (m, 2H), 3.75 (s, 3H), 3.73 (s, 3H), 1.45 (t, *J* = 7.1 Hz, 3H). **¹³C NMR** (100 MHz, CDCl₃): δ 166.3, 166.2, 161.1, 161.0, 151.1, 145.2, 132.3, 132.1, 128.9, 128.6, 128.5, 127.1, 125.6, 113.8, 112.0, 109.0, 103.8, 100.8, 93.1, 87.0, 63.0, 55.3, 55.2, 14.1. **HRMS** (ESI) calcd for C₂₈H₂₆N₂O₇Na, [M+Na]⁺ 525.1638, found: 525.1640. **IR** (KBr) $\tilde{\nu}$ (cm⁻¹): 3421, 1748, 1628, 1506, 1445, 1373, 1255, 1131, 1086, 972, 736, 697.

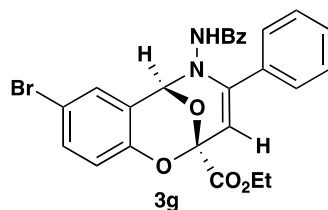


White solid. 90 mg (95% yield). m.p. = 171.7-172.2 °C. **¹H NMR** (400 MHz, CDCl₃): δ 8.21 (s, 1H), 7.83 (d, *J* = 7.6 Hz, 2H), 7.64 (m, 1H), 7.57-7.55 (m, 2H), 7.48 (t, *J* = 7.3 Hz, 1H), 7.37 (t, *J* = 7.6 Hz, 2H), 7.30-7.26 (m, 4H), 7.08 (t, *J* = 7.5 Hz, 1H), 6.94 (d, *J* =

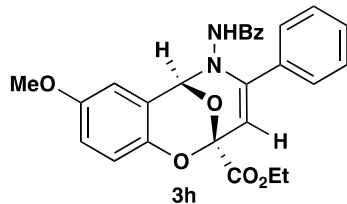
8.2 Hz, 1H), 6.05 (s, 1H), 5.66 (s, 1H), 4.54-4.42 (m, 2H), 1.47 (t, $J = 6.9$ Hz, 3H). **^{13}C NMR** (100 MHz, CDCl_3): δ 166.3, 166.2, 150.2, 145.8, 133.2, 132.3, 132.2, 130.3, 130.1, 128.7, 128.5, 128.3, 127.2, 127.1, 121.9, 119.6, 116.3, 105.7, 92.9, 87.1, 63.1, 14.1. **HRMS** (ESI) calcd for $\text{C}_{26}\text{H}_{22}\text{N}_2\text{O}_5\text{Na}$, $[\text{M}+\text{Na}]^+$ 465.1429, found: 465.1427. **IR** (KBr) $\tilde{\nu}$ (cm^{-1}): 3296, 1756, 1666, 1481, 1369, 1267, 1141, 1081, 972, 757, 696.



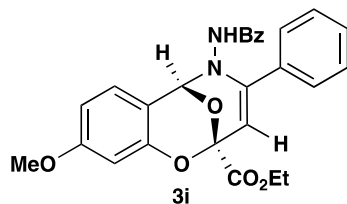
White solid. 71.3 mg (68% yield). m.p. = 171.7-172.2 °C. **^1H NMR** (400 MHz, CDCl_3): δ 8.09 (s, 1H), 7.86 (d, $J = 2.2$ Hz, 1H), 7.62 (d, $J = 7.5$ Hz, 2H), 7.57-7.55 (m, 2H), 7.48 (t, $J = 7.3$ Hz, 1H), 7.37 (t, $J = 7.6$ Hz, 2H), 7.33-7.28 (m, 3H), 7.24 (dd, $J = 8.7$, 2.5 Hz, 1H), 6.88 (d, $J = 8.7$ Hz, 1H), 6.02 (s, 1H), 5.64 (s, 1H), 4.53-4.41 (m, 2H), 1.46 (t, $J = 7.1$ Hz, 3H). **^{13}C NMR** (100 MHz, CDCl_3): δ 166.3, 165.8, 148.8, 145.9, 132.9, 132.3, 132.1, 130.5, 130.3, 128.7, 128.6, 127.9, 127.3, 127.1, 126.9, 121.0, 117.8, 105.3, 93.0, 86.5, 63.1, 14.1. **HRMS** (ESI) calcd for $\text{C}_{26}\text{H}_{21}\text{ClN}_2\text{O}_5\text{Na}$, $[\text{M}+\text{Na}]^+$ 499.1035, found: 499.1037. **IR** (KBr) $\tilde{\nu}$ (cm^{-1}): 3286, 1754, 1668, 1481, 1367, 1271, 1142, 1081, 982, 758, 696.



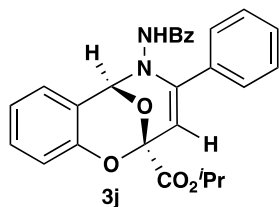
White solid. 77 mg (74% yield). m.p. = 189.3-190.1 °C. **^1H NMR** (400 MHz, CDCl_3): δ 8.27 (s, 1H), 7.99 (d, $J = 2.4$ Hz, 1H), 7.62 (d, $J = 7.4$ Hz, 2H), 7.57-7.55 (m, 2H), 7.46 (t, $J = 7.4$ Hz, 1H), 7.39-7.35 (m, 3H), 7.33-7.30 (m, 3H), 6.83 (d, $J = 8.8$ Hz, 1H), 6.02 (s, 1H), 5.63 (s, 1H), 4.52-4.40 (m, 2H), 1.45 (t, $J = 7.2$ Hz, 3H). **^{13}C NMR** (100 MHz, CDCl_3): δ 166.3, 165.8, 149.3, 145.9, 133.4, 132.9, 132.2, 132.0, 130.7, 130.3, 128.6, 128.5, 127.2, 127.1, 121.5, 118.2, 114.1, 105.2, 93.0, 86.3, 63.1, 14.1. **HRMS** (ESI) calcd for $\text{C}_{26}\text{H}_{21}\text{BrN}_2\text{O}_5\text{Na}$, $[\text{M}+\text{Na}]^+$ 543.0533, found: 543.0532. **IR** (KBr) $\tilde{\nu}$ (cm^{-1}): 3279, 1757, 1664, 1471, 1371, 1276, 1147, 1088, 991, 751, 689.



White solid. 58 mg (62% yield). m.p. = 137.7-138.5 °C. **¹H NMR** (400 MHz, CDCl₃): δ 8.24 (s, 1H), 7.64 (d, *J* = 7.4 Hz, 2H), 7.57 (dd, *J* = 7.8, 2.2 Hz, 2H) 7.48 (t, *J* = 7.4 Hz, 1H), 7.39-7.35 (m, 3H), 7.32 (m, 3H), 6.86 (d, *J* = 1.1 Hz, 2H), 6.02 (s, 1H), 5.64 (s, 1H), 4.54-4.41 (m, 2H), 3.86 (s, 3H), 1.46 (t, *J* = 7.1 Hz, 3H). **¹³C NMR** (100 MHz, CDCl₃): δ 166.4, 166.3, 154.4, 145.7, 144.0, 133.2, 132.3, 132.2, 130.1, 128.7, 128.5, 127.2, 127.1, 119.9, 117.7, 117.2, 111.5, 105.7, 92.9, 87.2, 63.1, 55.8, 14.1. **HRMS** (ESI) calcd for C₂₇H₂₄N₂O₆Na, [M+Na]⁺ 495.1530, found: 495.1532. **IR** (KBr) $\tilde{\nu}$ (cm⁻¹): 3231, 1752, 1764, 1513, 1487, 1378, 1258, 1128, 1035, 957, 748, 698.

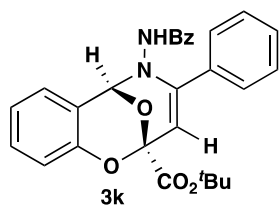


White solid. 54.8 mg (58% yield). m.p. = 156.3-157.2 °C. **¹H NMR** (400 MHz, CDCl₃): δ 8.27 (s, 1H), 7.71 (d, *J* = 8.6 Hz, 1H), 7.64 (d, *J* = 7.4 Hz, 2H), 7.57-7.54 (m, 2H), 7.48 (t, *J* = 7.4 Hz, 1H), 7.37 (t, *J* = 7.6 Hz, 2H) 7.33-7.27 (m, 3H), 6.65 (dd, *J* = 8.5, 2.4 Hz, 1H), 6.49 (d, *J* = 2.4 Hz, 1H), 6.02 (s, 1H), 5.65 (s, 1H), 4.55-4.42 (m, 2H), 3.76 (s, 3H), 1.47 (t, *J* = 7.1 Hz, 3H). **¹³C NMR** (100 MHz, CDCl₃): δ 166.3, 166.2, 161.2, 151.1, 145.6, 133.3, 132.3, 132.1, 130.0, 129.0, 128.6, 128.5, 127.2, 127.1, 112.0, 109.1, 105.6, 100.8, 92.9, 87.1, 63.0, 55.3, 14.1. **HRMS** (ESI) calcd for C₂₇H₂₄N₂O₆Na, [M+Na]⁺ 495.1536, found: 495.1532. **IR** (KBr) $\tilde{\nu}$ (cm⁻¹): 3276, 1751, 1663, 1477, 1371, 1263, 1135, 1087, 978, 751, 692.

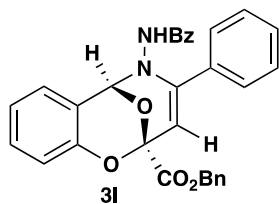


White solid. 84 mg (91% yield). m.p. = 168.9-169.8 °C. **¹H NMR** (400

MHz, CDCl₃): δ 8.20 (s, 1H), 7.81 (d, J = 7.6 Hz, 1H), 7.61 (d, J = 7.7 Hz, 2H), 7.56-7.54 (m, 2H), 7.42 (t, J = 7.3 Hz, 1H), 7.33-7.24 (m, 6H), 7.05 (t, J = 7.5 Hz, 1H), 6.92 (d, J = 8.2 Hz, 1H), 6.02 (s, 1H), 5.67 (s, 1H), 5.28 (sept, J = 6.3 Hz, 1H), 1.43 (d, J = 6.3 Hz, 6H). **¹³C NMR** (100 MHz, CDCl₃): δ 166.3, 165.5, 150.2, 145.6, 133.3, 132.2, 132.1, 130.1, 130.0, 128.5, 128.4, 128.3, 127.13, 127.10, 121.7, 119.6, 116.3, 105.8, 92.8, 87.0, 70.9, 21.6, 21.5. **HRMS** (ESI) calcd for C₂₇H₂₄N₂O₅Na, [M+Na]⁺ 479.1585, found: 479.1583. **IR** (KBr) $\tilde{\nu}$ (cm⁻¹): 3284, 1747, 1666, 1487, 1376, 1257, 1130, 1086, 961, 736, 698.

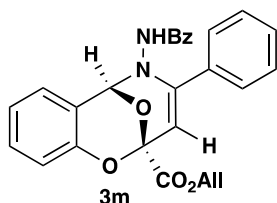


White solid. 78 mg (83% yield). m.p. = 186.2-186.6 °C. **¹H NMR** (400 MHz, CDCl₃): δ 8.21 (s, 1H), 7.82 (d, J = 7.6 Hz, 1H), 7.64 (d, J = 7.5 Hz, 2H), 7.56-7.54 (m, 2H), 7.47 (t, J = 7.3 Hz, 1H), 7.36 (t, J = 7.7 Hz, 2H), 7.30-7.25 (m, 4H), 7.06 (t, J = 7.4 Hz, 1H), 6.92 (d, J = 8.2 Hz, 1H), 6.02 (s, 1H), 5.64 (s, 1H), 1.66 (s, 9H). **¹³C NMR** (100 MHz, CDCl₃): δ 166.3, 165.1, 150.4, 145.5, 133.4, 132.3, 132.1, 130.1, 130.0, 128.6, 128.5, 128.3, 127.2, 127.1, 121.6, 119.7, 116.3, 106.2, 92.8, 87.1, 84.2, 27.9. **HRMS** (ESI) calcd for C₂₈H₂₆N₂O₅Na, [M+Na]⁺ 493.1743, found: 493.1740. **IR** (KBr) $\tilde{\nu}$ (cm⁻¹): 3291, 1755, 1674, 1490, 1387, 1267, 1125, 1080, 957, 724.

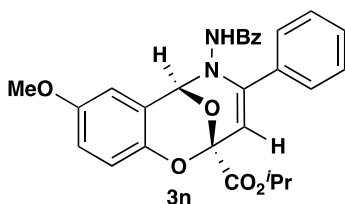


White solid. 68 mg (68% yield). m.p. = 131.5-132.2 °C. **¹H NMR** (400 MHz, CDCl₃): δ 8.25 (s, 1H), 7.82 (d, J = 7.3 Hz, 1H), 7.60 (d, J = 7.4 Hz, 2H), 7.50-7.46 (m, 4H), 7.44-7.37 (m, 4H), 7.33 (t, J = 7.6 Hz, 2H), 7.29-7.27 (m, 2H), 7.25-7.23 (m, 2H), 7.07 (t, J = 7.4 Hz, 1H), 6.92 (d, J = 8.2 Hz, 1H), 6.03 (s, 1H), 5.62 (s, 1H), 5.43 (q, J = 12.0 Hz, 2H). **¹³C NMR** (100 MHz, CDCl₃): δ 166.3, 166.0, 150.1, 145.9, 134.8, 133.1, 132.2, 132.1, 130.3, 130.1, 128.68, 128.66, 128.60, 128.46, 128.43, 128.38, 128.30, 127.2, 127.1, 121.8, 119.6, 116.3, 105.4,

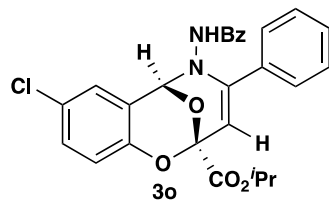
93.0, 87.1, 68.2. **HRMS** (ESI) calcd for $C_{31}H_{24}N_2O_5Na$, $[M+Na]^+$ 527.1585, found: 527.1583. **IR** (KBr) $\tilde{\nu}$ (cm^{-1}): 3291, 1755, 1674, 1490, 1387, 1267, 1125, 1080, 957, 724.



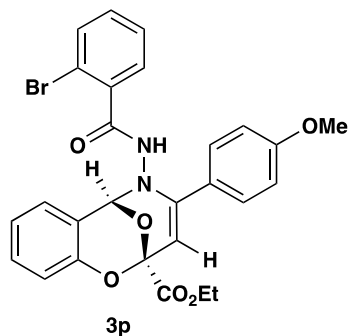
White solid. 57 mg (63% yield). m.p. = 172.2-172.8 °C. **1H NMR** (400 MHz, $CDCl_3$): δ 8.24 (s, 1H), 7.82 (d, J = 7.6 Hz, 1H), 7.63 (d, J = 7.6 Hz, 2H), 7.55 (d, J = 7.4 Hz, 2H), 7.45 (t, J = 7.4 Hz, 1H), 7.34 (t, J = 7.6 Hz, 2H), 7.30-7.25 (m, 4H), 7.07 (t, J = 7.4 Hz, 1H), 6.93 (d, J = 8.2 Hz, 1H), 6.11-6.01 (m, 2H), 5.67 (s, 1H), 5.48 (d, J = 17.2 Hz, 1H), 5.37 (d, J = 10.3 Hz, 1H), 4.94-4.84 (m, 2H). **^{13}C NMR** (100 MHz, $CDCl_3$): δ 166.3, 165.8, 150.1, 145.9, 133.2, 132.2, 132.21, 130.9, 130.3, 130.1, 128.6, 128.5, 128.3, 127.2, 127.1, 121.8, 119.7, 119.6, 116.3, 105.5, 93.0, 87.1, 67.2. **HRMS** (ESI) calcd for $C_{27}H_{22}N_2O_5Na$, $[M+Na]^+$ 477.1426, found: 477.1427. **IR** (KBr) $\tilde{\nu}$ (cm^{-1}): 3308, 1756, 1667, 1487, 1373, 1251, 1125, 1087, 943, 760, 698.



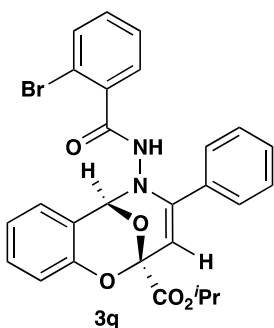
White solid. 78 mg (80% yield). m.p. = 175.7-176.4 °C. **1H NMR** (400 MHz, $CDCl_3$): δ 8.25 (s, 1H), 7.62 (d, J = 7.5 Hz, 2H), 7.56-7.54 (m, 2H), 7.45 (t, J = 7.3 Hz, 1H), 7.37-7.27 (m, 6H), 6.80 (d, J = 0.6 Hz, 2H), 6.00 (s, 1H), 5.63 (s, 1H), 5.28 (sept, J = 6.2 Hz, 1H), 3.84 (s, 3H), 1.43 (d, J = 6.2 Hz, 6H). **^{13}C NMR** (100 MHz, $CDCl_3$): δ = 166.4, 165.7, 154.3, 145.6, 144.2, 133.3, 132.3, 132.1, 130.0, 128.6, 128.4, 127.2, 127.1, 119.9, 117.6, 117.1, 111.5, 105.8, 92.8, 87.1, 71.0, 55.8, 21.6, 21.5. **HRMS** (ESI) calcd for $C_{28}H_{26}N_2O_6Na$, $[M+Na]^+$ 509.1686, found: 509.1689. **IR** (KBr) $\tilde{\nu}$ (cm^{-1}): 3292, 1747, 1668, 1496, 1376, 1256, 1085, 1034, 965, 733, 697.



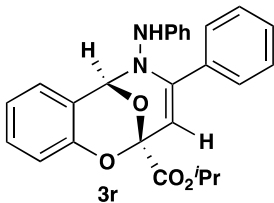
White solid. 90 mg (99% yield). m.p. = 181.4-182.2 °C. **¹H NMR** (400 MHz, CDCl₃): δ 8.22 (s, 1H), 7.85 (d, *J* = 2.1 Hz, 1H), 7.61 (d, *J* = 7.6 Hz, 2H), 7.56-7.54 (m, 2H), 7.44 (t, *J* = 7.4 Hz, 1H), 7.35-7.28 (m, 5H), 7.22 (dd, *J* = 8.7, 2.4 Hz, 1H), 6.87 (d, *J* = 8.8 Hz, 1H), 6.00 (s, 1H), 5.63 (s, 1H), 5.28 (sept, *J* = 6.3 Hz, 1H), 1.43 (d, *J* = 6.3 Hz, 6H). **¹³C NMR** (100 MHz, CDCl₃): δ 166.3, 165.2, 148.9, 145.8, 133.0, 132.2, 132.1, 130.4, 130.2, 128.6, 128.5, 127.8, 127.2, 127.1, 126.7, 121.0, 117.8, 105.3, 92.9, 86.4, 71.1, 21.6, 21.5. **HRMS** (ESI) calcd for C₂₇H₂₃ClN₂O₅Na, [M+Na]⁺ 513.1195, found: 513.1193. **IR** (KBr) $\tilde{\nu}$ (cm⁻¹): 3436, 1748, 1668, 1481, 1376, 1260, 1083, 961, 733, 695.



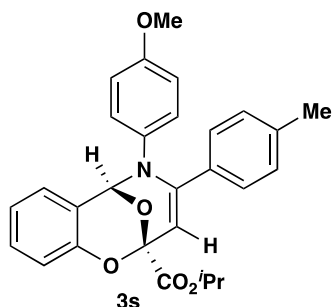
White solid. 102 mg (93% yield). m.p. = 132.3-132.8 °C. **¹H NMR** (400 MHz, CDCl₃): δ 7.85 (s, 1H), 7.79 (d, *J* = 7.4 Hz, 1H), 7.54-7.49 (m, 3H), 7.30-7.23 (m, 4H), 7.07 (t, *J* = 7.3 Hz, 1H), 6.93 (d, *J* = 8.1 Hz, 1H), 6.85 (d, *J* = 8.5 Hz, 2H), 6.10 (s, 1H), 5.55 (s, 1H), 4.48-4.42 (m, 2H), 3.78 (s, 3H), 1.44 (t, *J* = 7.0 Hz, 3H). **¹³C NMR** (100 MHz, CDCl₃): δ 166.15, 166.11, 161.3, 150.2, 145.3, 135.5, 133.4, 131.8, 130.3, 129.4, 128.9, 128.3, 127.4, 125.7, 121.8, 119.7, 119.6, 116.4, 113.9, 104.4, 93.0, 87.1, 63.0, 55.4, 14.2. **HRMS** (ESI) calcd for C₂₇H₂₃BrN₂O₅Na, [M+Na]⁺ 573.0637, found: 573.0637. **IR** (KBr) $\tilde{\nu}$ (cm⁻¹): 3239, 1756, 1668, 1487, 1383, 1255, 1124, 1087, 960, 749, 697.



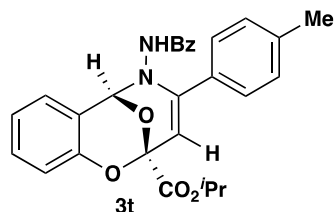
White solid. 82 mg (77% yield). m.p. = 174.0-174.6 °C. **¹H NMR** (400 MHz, CDCl₃): δ 7.99 (s, 1H), 7.80 (d, *J* = 7.5 Hz, 1H), 7.59-7.57 (m, 2H), 7.45 (d, *J* = 7.5 Hz, 1H), 7.35-7.32 (m, 3H), 7.31-7.27 (m, 1H), 7.24-7.16 (m, 3H), 7.07 (t, *J* = 7.5 Hz, 1H), 6.91 (d, *J* = 8.3 Hz, 1H), 6.10 (s, 1H), 5.64 (s, 1H), 5.25 (sept, *J* = 6.0 Hz, 1H), 1.42 (dd, *J* = 6.3, 2.5 Hz, 6H). **¹³C NMR** (100 MHz, CDCl₃): δ 166.1, 165.5, 150.2, 145.5, 135.4, 133.3, 131.6, 130.2, 130.1, 129.2, 128.5, 128.3, 127.5, 127.3, 121.7, 119.6, 119.4, 116.3, 106.0, 92.6, 87.0, 71.0, 21.59, 21.56. **HRMS** (ESI) calcd for C₂₇H₂₃BrN₂O₅Na, [M+Na]⁺ 557.0689, found: 557.0688. **IR** (KBr) $\tilde{\nu}$ (cm⁻¹): 3436, 1747, 1635, 1487, 1375, 1257, 1132, 1086, 963, 750, 698.



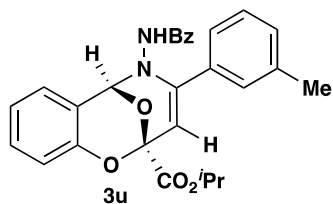
White solid. 62 mg (68% yield). m.p. = 132.6-133.4 °C. **¹H NMR** (400 MHz, CDCl₃): δ 7.51-7.49 (m, 2H), 7.41 (d, *J* = 7.6 Hz, 1H), 7.35 (d, *J* = 7.8 Hz, 2H), 7.28-7.23 (m, 4H), 7.14 (d, *J* = 7.9 Hz, 2H), 7.04 (t, *J* = 7.4 Hz, 1H), 6.96-6.92 (m, 2H), 5.98 (s, 1H), 5.93 (s, 1H), 5.67 (s, 1H), 5.32 (sept, *J* = 6.3 Hz, 1H), 1.45 (d, *J* = 6.3 Hz, 6H). **¹³C NMR** (100 MHz, CDCl₃): δ 165.5, 150.4, 147.1, 146.3, 134.6, 130.2, 129.6, 129.5, 128.3, 126.8, 126.7, 121.5, 120.6, 119.9, 116.9, 114.1, 105.9, 93.0, 85.3, 70.9, 21.7, 21.6. **HRMS** (ESI) calcd for C₂₆H₂₄N₂O₄Na, [M+Na]⁺ 451.1635, found: 451.1634. **IR** (KBr) $\tilde{\nu}$ (cm⁻¹): 3300, 1748, 1602, 1487, 1376, 1256, 1088, 960, 751, 696.



White solid. 37 mg (40% yield). m.p. = 128.2-129.1 °C. **¹H NMR** (400 MHz, CDCl₃): δ 7.48 (d, *J* = 7.4 Hz, 1H), 7.27-7.24 (m, 1H), 7.13-7.09 (m, 4H), 7.06-7.01 (m, 2H), 6.98 (t, *J* = 7.5 Hz, 2H), 6.77 (d, *J* = 8.8 Hz, 2H), 6.08 (s, 1H), 5.59 (s, 1H), 5.30 (sept, *J* = 6.3 Hz, 1H), 3.71 (s, 3H), 2.21 (s, 3H), 1.43 (d, *J* = 6.3 Hz, 6H). **¹³C NMR** (100 MHz, CDCl₃): δ 166.3, 157.1, 151.3, 146.0, 138.6, 137.7, 135.2, 129.9, 129.8, 128.1, 128.0, 126.8, 126.6, 124.8, 121.5, 121.2, 116.8, 114.4, 105.7, 93.4, 86.6, 70.4, 55.3, 21.7, 21.3. **HRMS** (ESI) calcd for C₂₈H₂₇N₂O₅Na, [M+Na]⁺ 480.1787, found: 480.1792. **IR** (KBr) $\tilde{\nu}$ (cm⁻¹): 3296, 1755, 1487, 1374, 1256, 1125, 1030, 958, 759, 694.

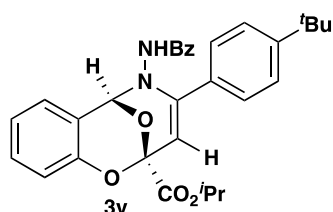


White solid. 89 mg (95% yield). m.p. = 192.1-192.8 °C. **¹H NMR** (400 MHz, CDCl₃): δ 8.26 (s, 1H), 7.81 (d, *J* = 7.6 Hz, 1H), 7.65 (d, *J* = 7.6 Hz, 2H), 7.47-7.42 (m, 3H), 7.34 (t, *J* = 7.5 Hz, 2H), 7.27-7.23 (m, 1H), 7.08-7.03 (m, 3H), 6.92 (d, *J* = 8.2 Hz, 1H), 6.02 (s, 1H), 5.60 (s, 1H), 5.29 (sept, *J* = 6.3 Hz, 1H), 2.27 (s, 3H), 1.44 (d, *J* = 6.3 Hz, 6H). **¹³C NMR** (100 MHz, CDCl₃): δ 166.2, 165.7, 150.3, 145.6, 140.2, 132.3, 132.1, 130.5, 130.1, 129.2, 128.6, 128.3, 127.2, 127.0, 121.7, 119.7, 116.3, 105.0, 92.9, 87.0, 70.9, 21.6, 21.5, 21.2. **HRMS** (ESI) calcd for C₂₈H₂₆N₂O₅Na, [M+Na]⁺ 493.1737, found: 493.1740. **IR** (KBr) $\tilde{\nu}$ (cm⁻¹): 3433, 1747, 1645, 1487, 1375, 1286, 1130, 1085, 959, 735, 685.

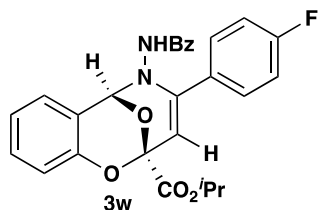


White solid. 93 mg (99% yield). m.p. = 104.3-104.9 °C. **¹H NMR**

(400 MHz, CDCl₃): δ 8.48 (s, 1H), 7.82 (d, J = 7.6 Hz, 1H), 7.65 (d, J = 7.6 Hz, 2H), 7.44 (t, J = 7.3 Hz, 1H), 7.35-7.31 (m, 4H), 7.28-7.24 (m, 1H), 7.16 (t, J = 7.8 Hz, 1H), 7.11-7.04 (m, 2H), 6.92 (d, J = 8.2 Hz, 1H), 6.03 (s, 1H), 5.61 (s, 1H), 5.28 (sept, J = 6.2 Hz, 1H), 2.26 (s, 3H), 1.44 (d, J = 6.2 Hz, 6H). **¹³C NMR** (100 MHz, CDCl₃): δ 166.3, 165.9, 150.3, 145.9, 138.1, 133.2, 132.4, 132.0, 130.8, 130.1, 128.5, 128.3, 127.7, 127.1, 124.3, 121.7, 119.7, 116.3, 105.4, 92.9, 87.1, 71.0, 21.59, 21.57, 21.3. **HRMS** (ESI) calcd for C₂₈H₂₆N₂O₅Na, [M+Na]⁺ 493.1738, found: 493.1740. **IR** (KBr) $\tilde{\nu}$ (cm⁻¹): 3301, 1748, 1668, 1487, 1376, 1269, 1086, 963, 759, 711.

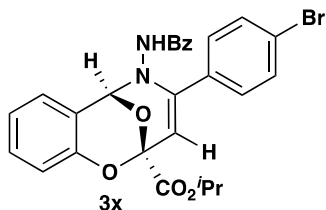


White solid. 84 mg (82% yield). m.p. = 104.8-105.8 °C. **¹H NMR** (400 MHz, CDCl₃): δ 8.30 (s, 1H), 7.81 (d, J = 7.6 Hz, 1H), 7.67 (d, J = 7.4 Hz, 2H), 7.49 (d, J = 8.3 Hz, 2H), 7.44 (d, J = 7.3 Hz, 1H), 7.37-7.29 (m, 4H), 7.26-7.22 (m, 1H), 7.04 (t, J = 7.4 Hz, 1H), 6.91 (d, J = 8.2 Hz, 1H), 6.02 (s, 1H), 5.62 (s, 1H), 5.29 (sept, J = 6.3 Hz, 1H), 1.44 (d, J = 6.3 Hz, 6H), 1.23 (s, 9H). **¹³C NMR** (100 MHz, CDCl₃): δ 166.2, 165.8, 153.4, 150.3, 145.5, 132.3, 132.0, 130.4, 130.1, 128.6, 128.2, 127.2, 126.8, 125.4, 121.7, 119.7, 116.3, 105.3, 92.9, 87.1, 71.0, 34.6, 31.1, 21.61, 21.60. **HRMS** (ESI) calcd for C₃₁H₃₂N₂O₅Na, [M+Na]⁺ 535.2213, found: 535.2209. **IR** (KBr) $\tilde{\nu}$ (cm⁻¹): 3287, 1748, 1668, 1488, 1364, 1260, 1085, 961, 753, 790.

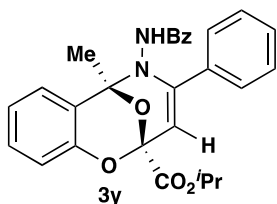


White solid. 70 mg (74% yield). m.p. = 191.8-192.0 °C. **¹H NMR** (400 MHz, CDCl₃): δ 8.27 (s, 1H), 7.79 (d, J = 7.6 Hz, 1H), 7.64 (d, J = 7.7 Hz, 2H), 7.56-7.52 (m, 2H), 7.47 (t, J = 7.4 Hz, 1H), 7.36 (t, J = 7.6 Hz, 2H), 7.28 (d, J = 7.6 Hz, 1H), 7.07 (t, J = 7.5 Hz, 1H), 6.99-6.92 (m, 3H), 6.01 (s, 1H), 5.60 (s, 1H), 5.28 (sept, J = 6.4 Hz, 1H), 1.44 (d, J = 6.3 Hz, 6H). **¹³C NMR** (100 MHz, CDCl₃): δ 166.3, 165.6, 165.1, 162.6 (d, ¹J_{C-F} = 248.5 Hz), 150.2, 144.9, 132.2, 132.1, 130.3, 129.4 (d, ⁴J_{C-F} = 3.1 Hz), 129.1 (d, ³J_{C-F} = 8.5 Hz), 128.7, 128.2, 127.1, 121.8, 119.5, 116.3, 115.4 (d, ²J_{C-F} = 21.8 Hz), 105.6, 92.8, 87.1, 71.1, 21.63,

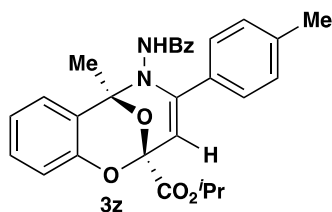
21.60. **HRMS** (ESI) calcd for C₂₇H₂₃N₂O₅Na, [M+Na]⁺ 497.1493, found: 497.1489. **IR** (KBr) $\tilde{\nu}$ (cm⁻¹): 3201, 1756, 1667, 1508, 1381, 1257, 1085, 975, 759, 697.



White solid. 82 mg (77% yield). m.p. = 177.5-178.0 °C. **¹H NMR** (400 MHz, CDCl₃): δ 8.43 (s, 1H), 7.77 (d, *J* = 7.6 Hz, 1H), 7.65 (d, *J* = 7.9 Hz, 2H), 7.46-7.38 (m, 5H), 7.34 (t, *J* = 7.6 Hz, 2H), 7.29-7.25 (m, 1H), 7.06 (t, *J* = 7.5 Hz, 1H), 6.92 (d, *J* = 8.2 Hz, 1H), 5.99 (s, 1H), 5.64 (s, 1H), 5.27 (sept, *J* = 6.4 Hz, 1H), 1.43 (d, *J* = 6.2 Hz, 6H). **¹³C NMR** (100 MHz, CDCl₃): δ 166.3, 165.5, 150.2, 144.9, 132.4, 132.2, 132.0, 131.6, 130.3, 128.7, 128.6, 128.2, 127.1, 124.3, 121.8, 119.4, 116.3, 106.2, 92.7, 87.0, 71.1, 21.6, 21.5. **HRMS** (ESI) calcd for C₂₇H₂₃N₂O₅Na, [M+Na]⁺ 557.0687, found: 557.0688. **IR** (KBr) $\tilde{\nu}$ (cm⁻¹): 3435, 1755, 1634, 1487, 1341, 1256, 1130, 1086, 898, 738, 675.



White solid. 41 mg (44% yield). m.p. = 182.5-183.3 °C. **¹H NMR** (400 MHz, CDCl₃): δ 7.98 (s, 1H), 7.75 (d, *J* = 7.7 Hz, 1H), 7.59-7.55 (m, 4H), 7.46 (t, *J* = 7.4 Hz, 1H), 7.35 (t, *J* = 7.5 Hz, 2H), 7.27-7.21 (m, 4H), 7.06 (t, *J* = 7.5 Hz, 1H), 6.91 (d, *J* = 8.1 Hz, 1H), 5.54 (s, 1H), 5.29 (sept, *J* = 6.4 Hz, 1H), 1.95 (s, 3H), 1.45 (d, *J* = 6.3 Hz, 6H). **¹³C NMR** (100 MHz, CDCl₃): δ 166.1, 165.0, 148.9, 147.7, 133.2, 131.6, 131.0, 128.8, 128.5, 127.6, 127.4, 126.1, 126.07, 126.03, 124.4, 121.0, 115.5, 104.9, 92.6, 88.3, 70.0, 22.0, 20.6. **HRMS** (ESI) calcd for C₂₈H₂₆N₂O₅Na, [M+Na]⁺ 493.1740, found: 493.1739. **IR** (KBr) $\tilde{\nu}$ (cm⁻¹): 3440, 1732, 1661, 1487, 1381, 1266, 1182, 1094, 1000, 737, 699.



White solid. 58.3 mg (60% yield). m.p. = 193.3-194.5 °C. **¹H NMR**

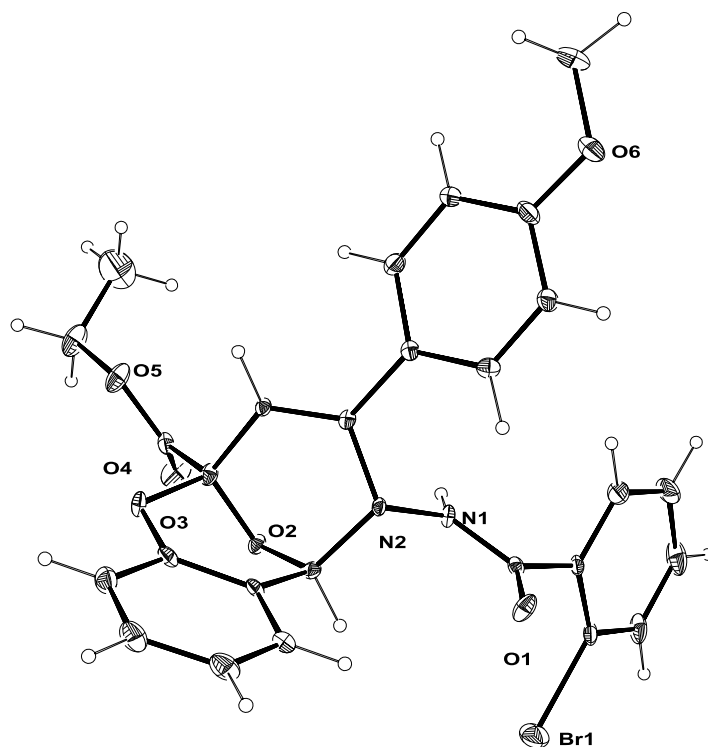
(400 MHz, CDCl₃): δ 8.09 (s, 1H), 7.74 (d, *J* = 7.7 Hz, 1H), 7.61 (d, *J* = 7.8 Hz, 2H), 7.48-7.44 (m, 3H), 7.36 (t, *J* = 7.5 Hz, 2H), 7.22 (t, *J* = 7.5 Hz, 1H), 7.06-7.03 (m, 3H), 6.90 (d, *J* = 8.1 Hz, 1H), 5.48 (s, 1H), 5.28 (sept, *J* = 6.4 Hz, 1H), 2.25 (s, 3H), 1.94 (s, 3H), 1.44 (d, *J* = 6.3 Hz, 6H).

¹³C NMR (100 MHz, CDCl₃): δ 167.0, 166.1, 149.9, 148.7, 139.8, 132.5, 131.8, 131.3, 129.4, 128.9, 128.5, 127.0, 126.96, 126.93, 125.4, 121.8, 116.3, 104.8, 93.6, 89.2, 70.9, 22.8, 21.53, 21.50, 21.1. **HRMS** (ESI) calcd for C₂₉H₂₈N₂O₅Na, [M+Na]⁺ 507.1896, found: 507.1898. **IR** (KBr) $\tilde{\nu}$ (cm⁻¹): 3461, 1745, 1665, 1486, 1379, 1287, 1127, 1094, 1001, 758, 698.

5. Crystal data and structure refinement for **3p**.

Identification code	d18675
Empirical formula	C ₂₇ H ₂₃ Br N ₂ O ₆
Formula weight	551.38
Temperature	200(2) K
Wavelength	0.71073 Å
Crystal system	Orthorhombic
Space group	P b c n
Unit cell dimensions	a = 16.1053(13) Å α = 90°.
	b = 20.5425(16) Å β = 90°.
	c = 16.5420(12) Å γ = 90°.
Volume	5472.8(7) Å ³
Z	8
Density (calculated)	1.338 Mg/m ³
Absorption coefficient	1.543 mm ⁻¹
F(000)	2256
Crystal size	0.16 x 0.04 x 0.02 mm ³

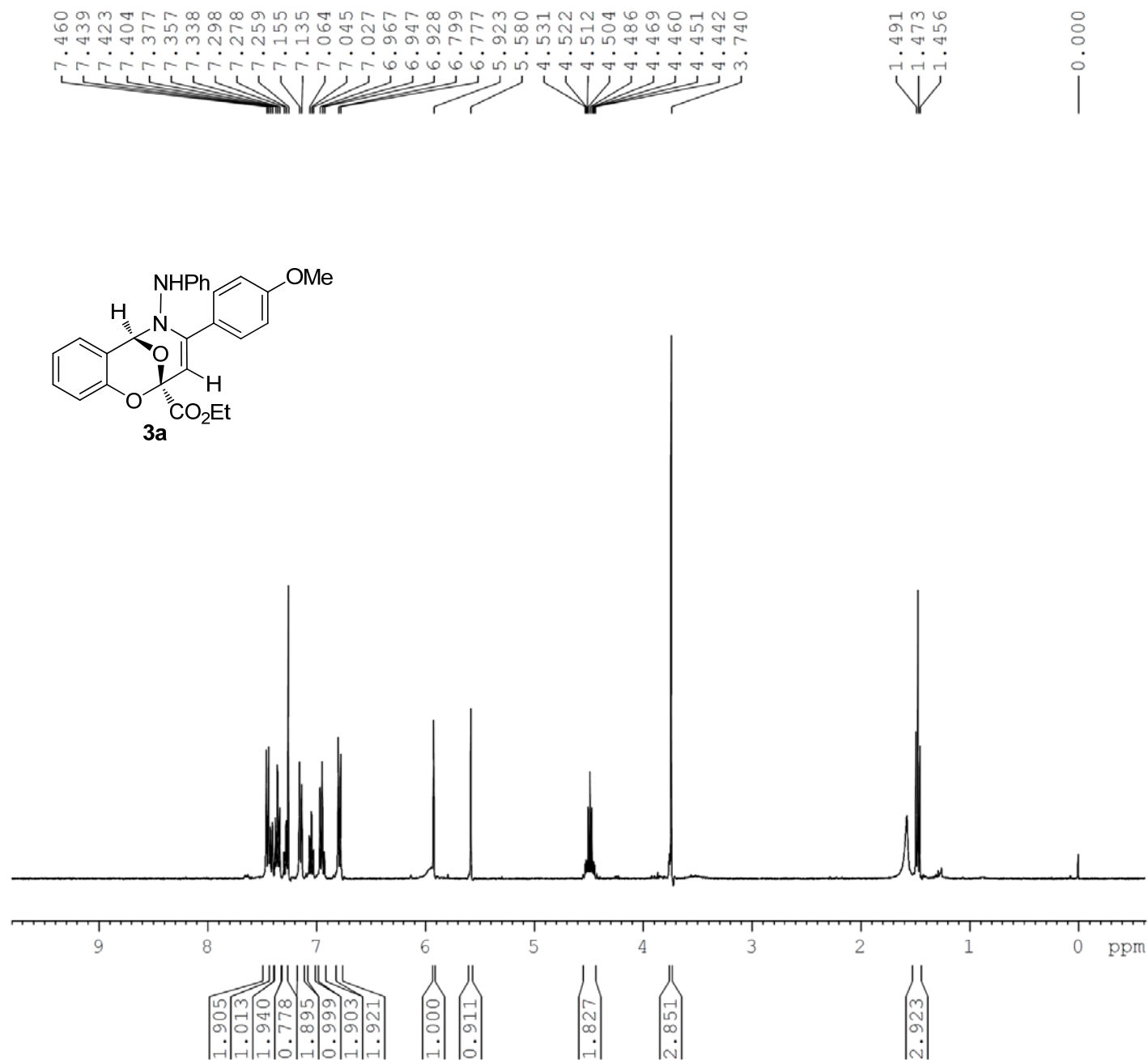
Theta range for data collection	2.33 to 25.03°.
Index ranges	-19<=h<=16, -24<=k<=21, -18<=l<=19
Reflections collected	35238
Independent reflections	4835 [R(int) = 0.1473]
Completeness to theta = 25.03°	99.8 %
Absorption correction	multi-scan
Max. and min. transmission	0.9698 and 0.7903
Refinement method	Full-matrix least-squares on F ²
Data / restraints / parameters	4835 / 0 / 327
Goodness-of-fit on F ²	1.119
Final R indices [I>2sigma(I)]	R1 = 0.0887, wR2 = 0.1406
R indices (all data)	R1 = 0.1358, wR2 = 0.1580
Largest diff. peak and hole	0.634 and -0.707 e.Å ⁻³



6. References

1. M. Guo, D. Li and Z. Zhang, *J. Org. Chem.*, 2003, **68**, 10172-10174.

2. G. L. Backes, D. M. Neumann and B. S. Jursic, *Bioorg. Med. Chem*, 2014, **22**, 4629-4636.

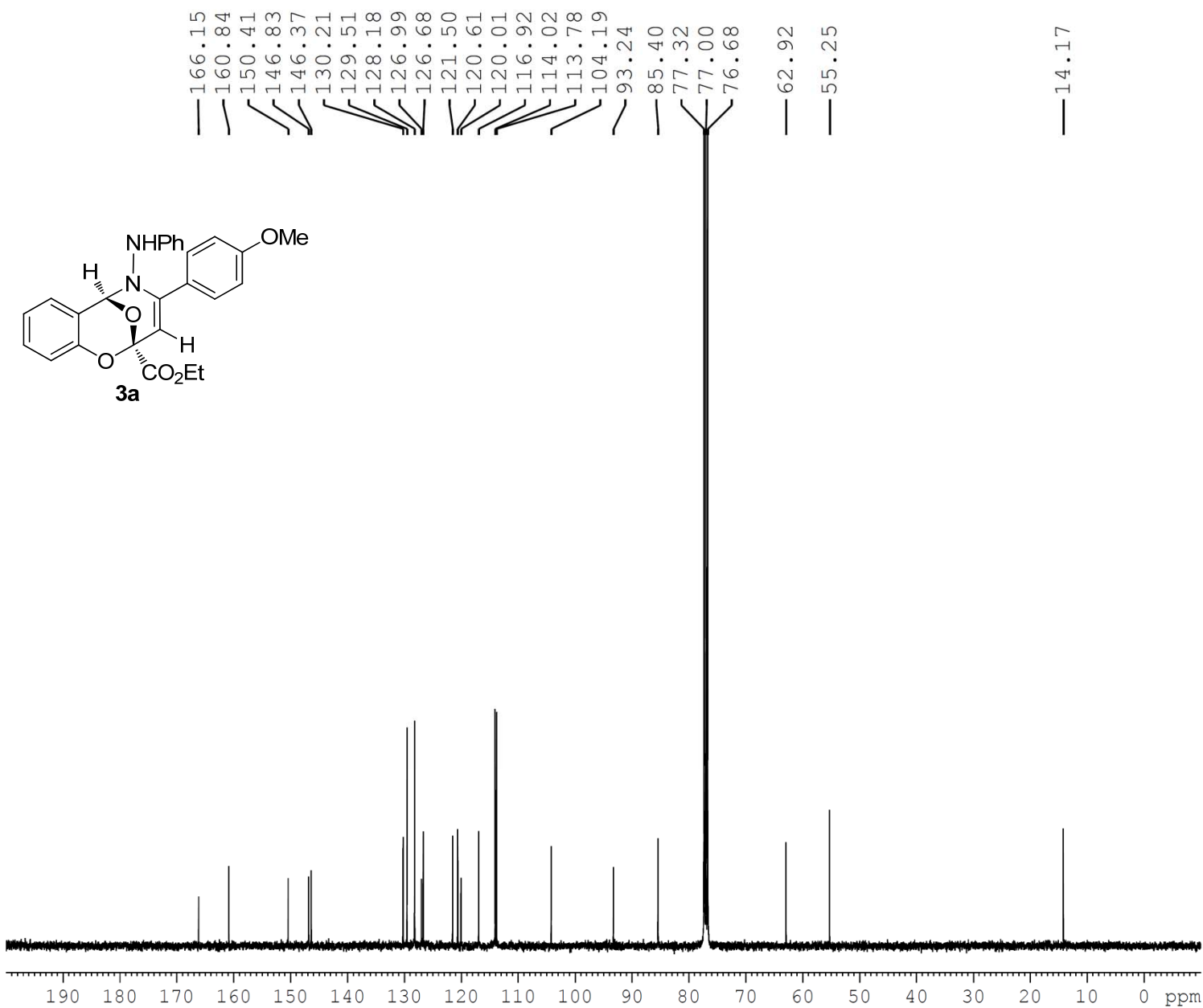


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 PROCNO 1

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 DW 69.000 usec
 DE 6.50 usec
 TE 297.9 K
 D1 2.00000000 sec
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 PL1 1.80 dB
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F2 - Processing parameters
 SI 16384
 SF 400.1300101 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00



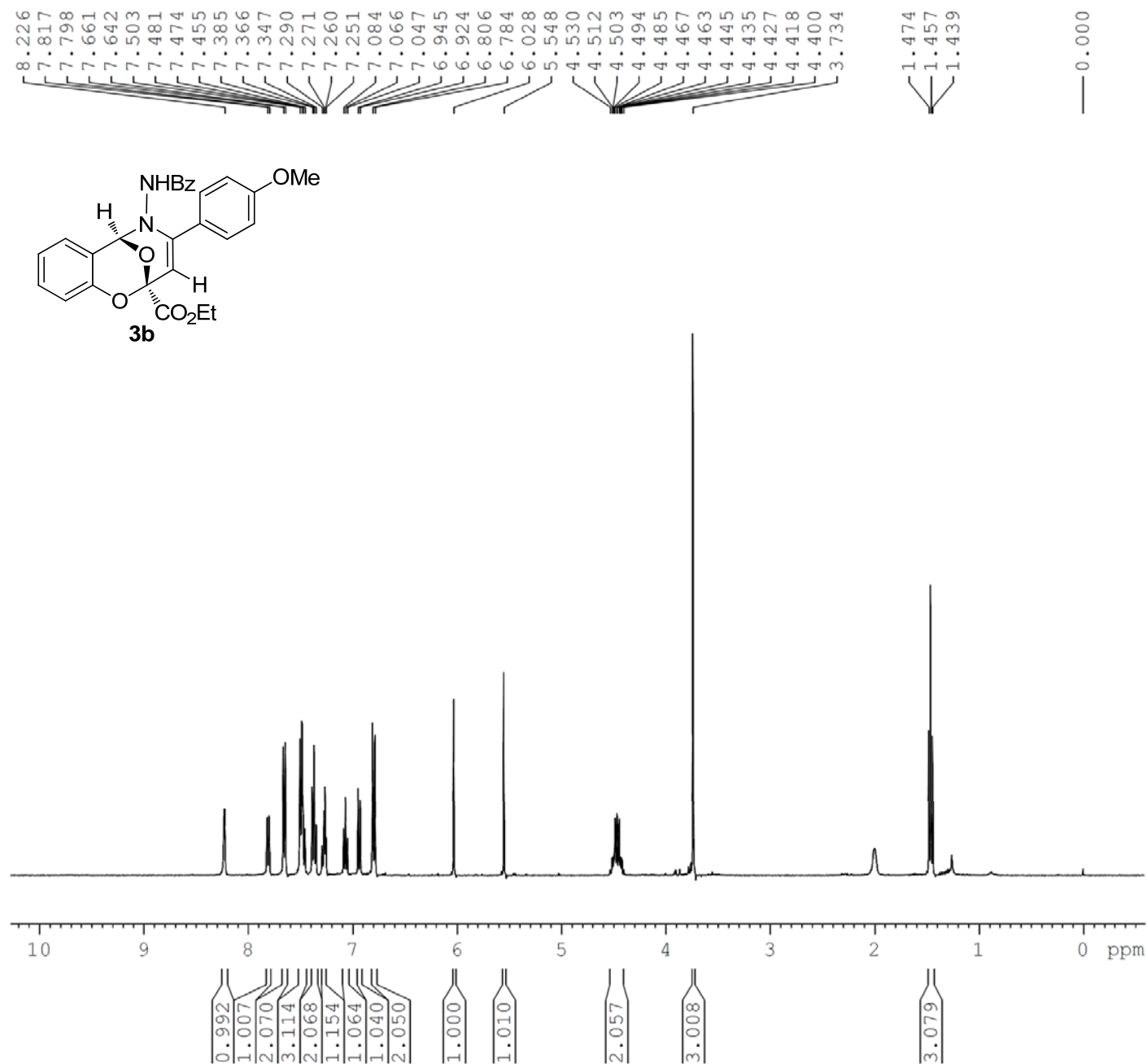
Current Data Parameters
 NAME KNR Ynones Salens 4F
 EXPNO 34
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20170407
 Time 13.04
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl3
 NS 2240
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 5792.6
 DW 20.800 usec
 DE 6.50 usec
 TE 297.9 K
 D1 2.00000000 sec
 D11 0.03000000 sec
 TD0 1

===== CHANNEL f1 =====
 NUC1 ¹³C
 P1 9.00 usec
 PL1 7.00 dB
 SFO1 100.6233325 MHz

===== CHANNEL f2 =====
 CPDPRG[2] waltz16
 NUC2 ¹H
 PCPD2 90.00 usec
 PL2 1.80 dB
 PL12 17.00 dB
 PL13 20.00 dB
 SFO2 400.1316005 MHz

F2 - Processing parameters
 SI 32768
 SF 100.6127716 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.00

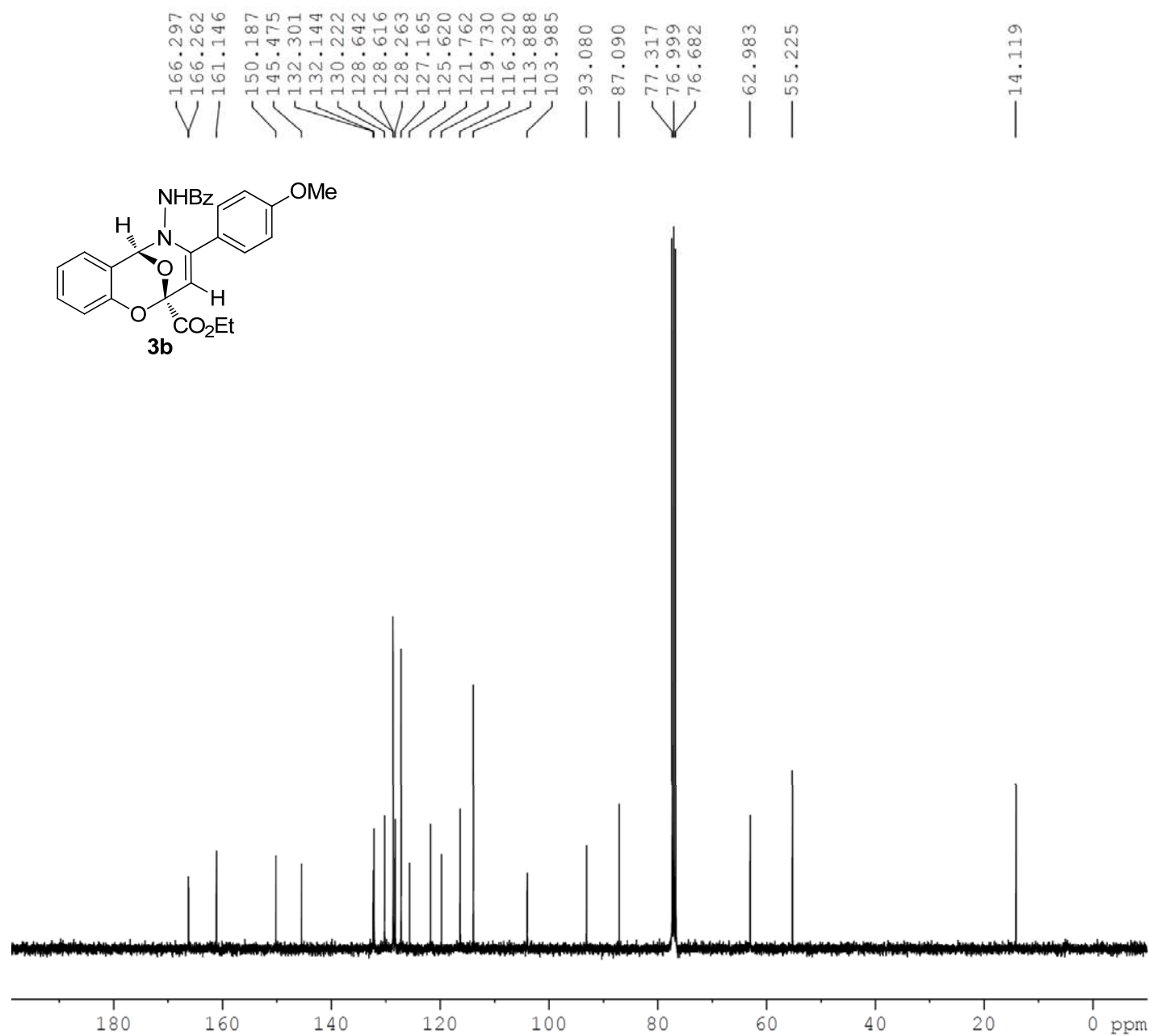


Current Data Parameters
NAME KNR Ynones Salens 4F
EXPNO 29
PROCNO 1

F2 - Acquisition Parameters
Date_ 20170407
Time 12.19
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 4
DS 0
SWH 7246.377 Hz
FIDRES 0.221142 Hz
AQ 2.2609921 sec
RG 114
DW 69.000 usec
DE 6.50 usec
TE 297.7 K
D1 2.00000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 1H
P1 14.40 usec
PL1 1.80 dB
SFO1 400.1324008 MHz

F2 - Processing parameters
SI 16384
SF 400.1300096 MHz
WDW EM
SSB 0
LB 0 Hz
GB 0
PC 1.00



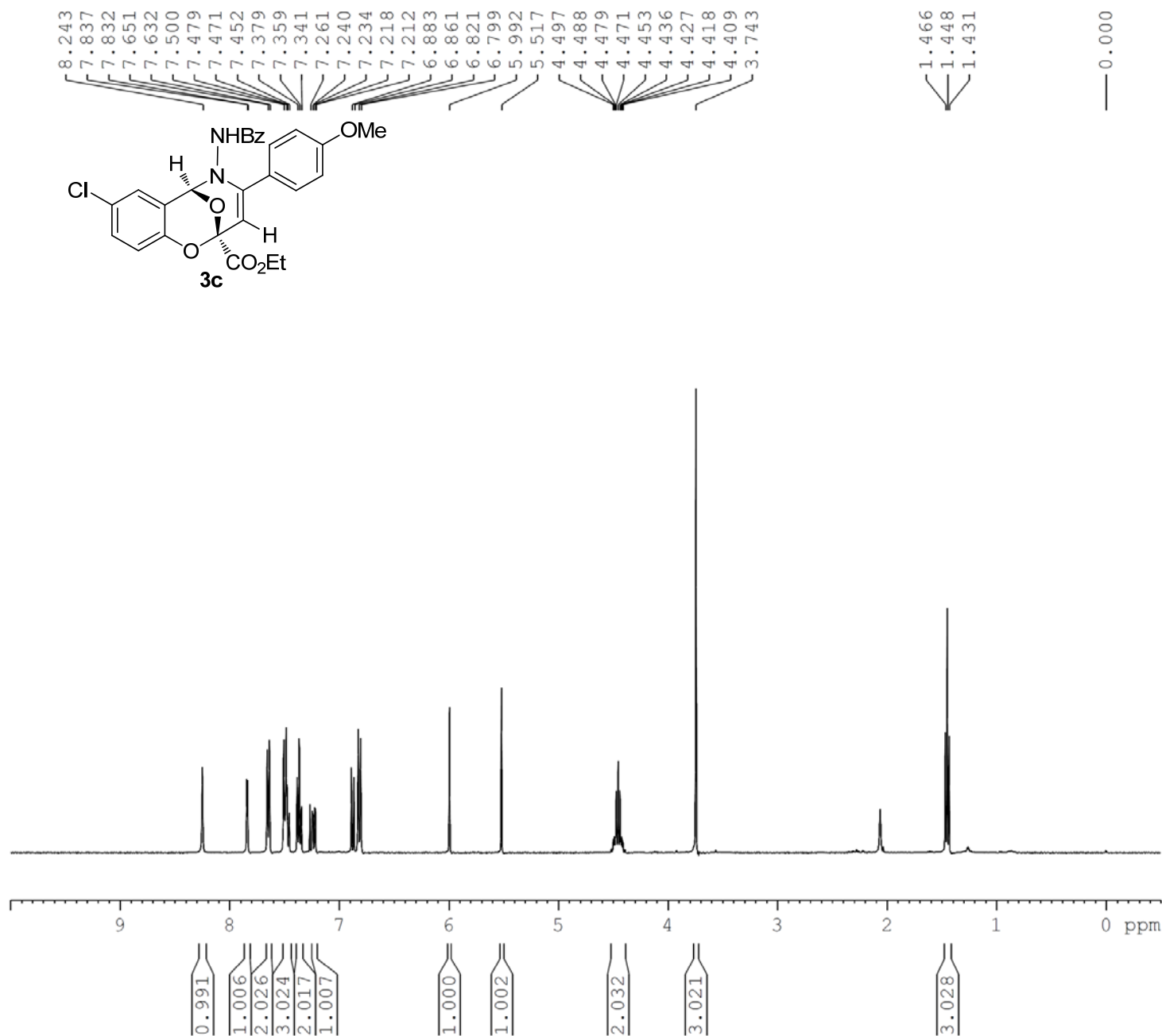
Current Data Parameters
NAME KNR Ynones Salens 4F
EXPNO 30
PROCNO 1

F2 - Acquisition Parameters
Date_ 20170407
Time 12.22
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zgpg30
TD 32768
SOLVENT CDCl3
NS 512
DS 0
SWH 24038.461 Hz
FIDRES 0.733596 Hz
AQ 0.6815744 sec
RG 4096
DW 20.800 usec
DE 6.50 usec
TE 297.7 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 13C
P1 9.00 usec
PL1 7.00 dB
SFO1 100.6233325 MHz

===== CHANNEL f2 =====
CPDPRG[2] waltz16
NUC2 1H
PCPD2 90.00 usec
PL2 1.80 dB
PL12 17.00 dB
PL13 20.00 dB
SFO2 400.1316005 MHz

F2 - Processing parameters
SI 32768
SF 100.6127740 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.00

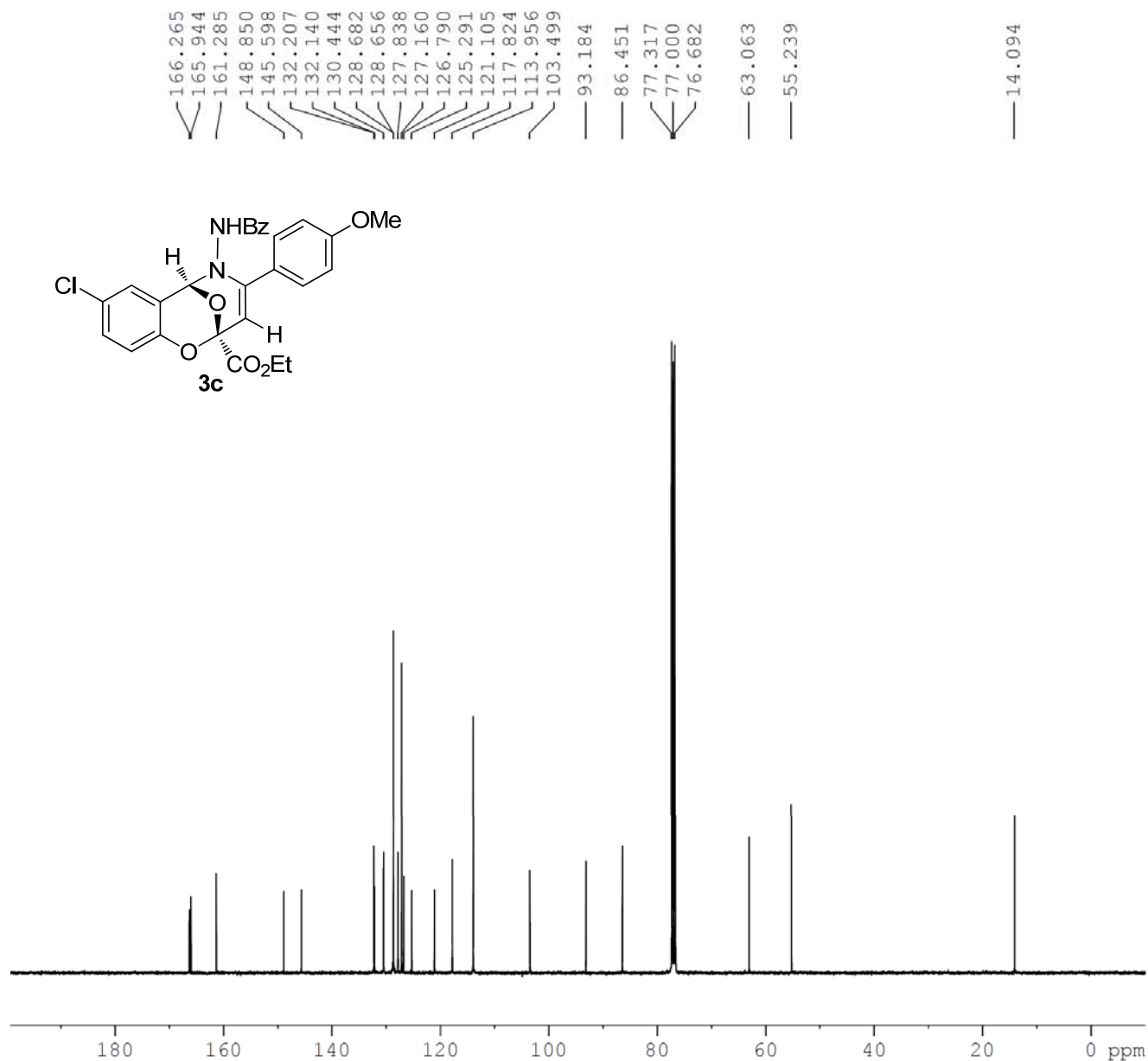
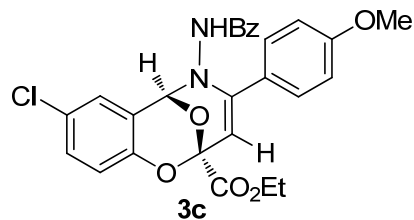


Current Data Parameters
NAME knraju ynones salens 4f
EXPNO 30
PROCNO 1

F2 - Acquisition Parameters
Date_ 20170429
Time 22.00
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 4
DS 0
SWH 7246.377 Hz
FIDRES 0.221142 Hz
AQ 2.2609921 sec
RG 114
DW 69.000 usec
DE 6.50 usec
TE 299.0 K
D1 2.00000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 1H
P1 14.40 usec
PL1 1.80 dB
SFO1 400.1324008 MHz

F2 - Processing parameters
SI 16384
SF 400.1300087 MHz
WDW EM
SSB 0
LB 0 Hz
GB 0
PC 1.00



Current Data Parameters
 NAME knraju ynoness salens 4f
 EXPNO 32
 PROCNO 1

F2 - Acquisition Parameters

Date_ 20170429
 Time 22.04
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl3
 NS 2341
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 4096
 DW 20.800 usec
 DE 6.50 usec
 TE 299.0 K
 D1 2.00000000 sec
 D11 0.03000000 sec
 TD0 1

===== CHANNEL f1 =====

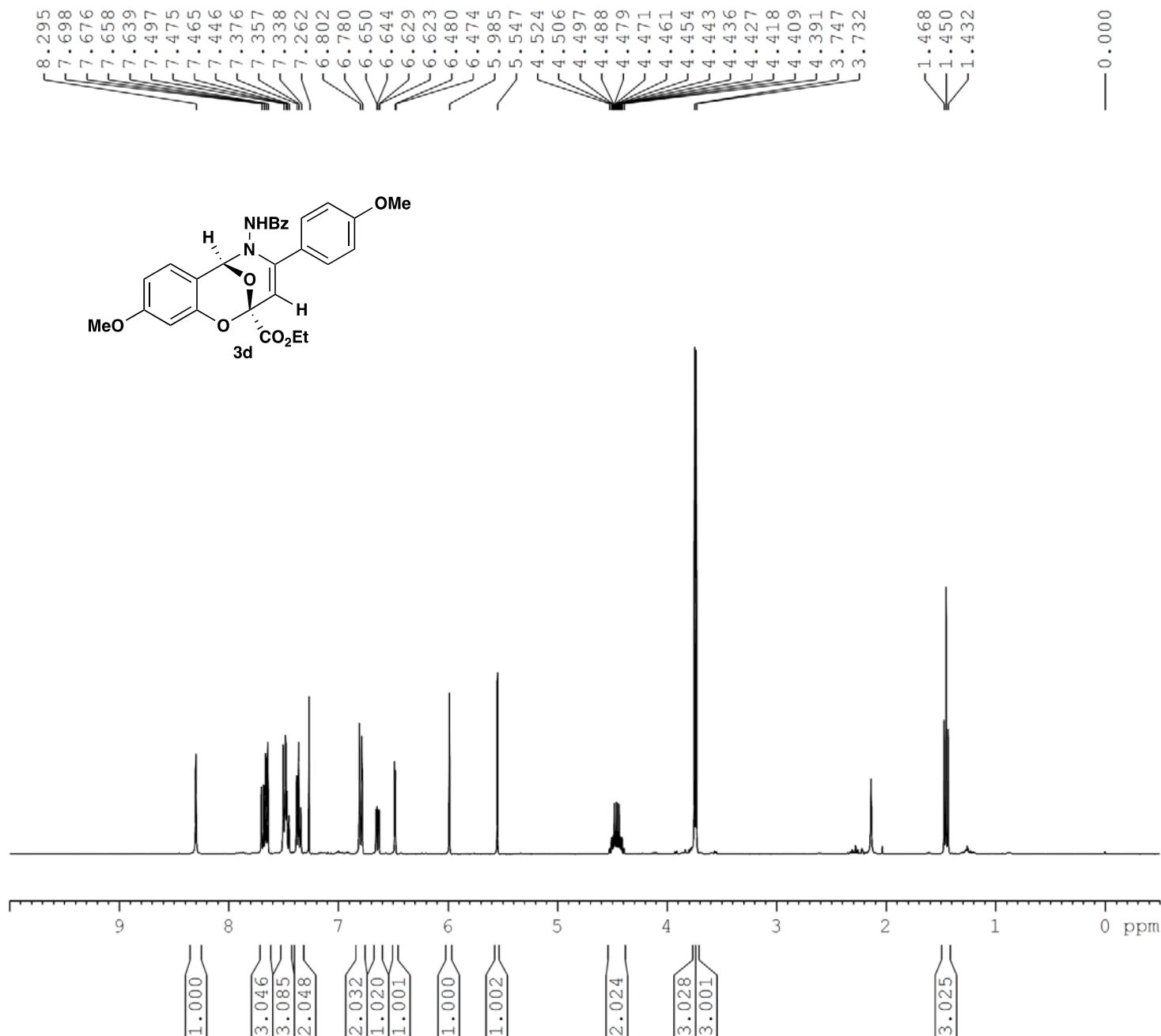
NUC1 13C
 P1 9.00 usec
 PL1 7.00 dB
 SFO1 100.6233325 MHz

===== CHANNEL f2 =====

CPDPRG[2] waltz16
 NUC2 1H
 PCPD2 90.00 usec
 PL2 1.80 dB
 PL12 17.00 dB
 PL13 20.00 dB
 SFO2 400.1316005 MHz

F2 - Processing parameters

SI 32768
 SF 100.6127741 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.00

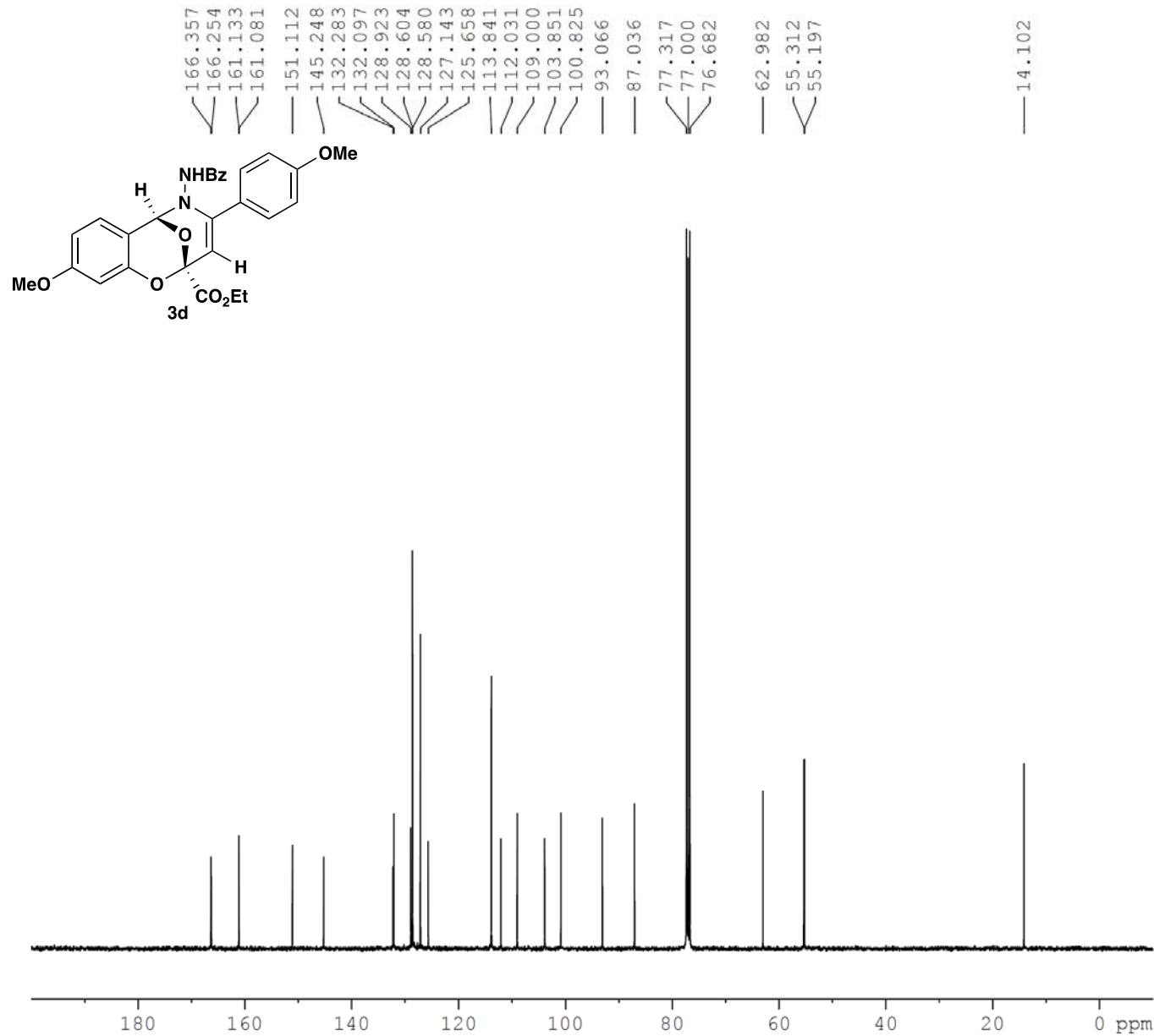


Current Data Parameters
NAME knraju ynones salens 4f
EXPNO 10
PROCNO 1

F2 - Acquisition Parameters
Date_ 20170421
Time_ 15.49
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 16
DS 0
SWH 7246.377 Hz
FIDRES 0.221142 Hz
AQ 2.2609921 sec
RG 114
DW 69.000 usec
DE 6.50 usec
TE 295.3 K
D1 2.00000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 1H
P1 14.40 usec
PL1 1.80 dB
SFO1 400.1324008 MHz

F2 - Processing parameters
SI 16384
SF 400.1300083 MHz
WDW EM
SSB 0
LB 0 Hz
GB 0
PC 1.00



Current Data Parameters
NAME knraju ynones salens 4f
EXPNO 14
PROCNO 1

F2 - Acquisition Parameters

Date 20170421
Time 22.19
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zgpg30
TD 32768
SOLVENT CDC13
NS 2030
DS 0
SWH 24038.461 Hz
FIDRES 0.733596 Hz
AQ 0.6815744 sec
RG 4096
DW 20.800 usec
DE 6.50 usec
TE 294.6 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

===== CHANNEL f1 =====

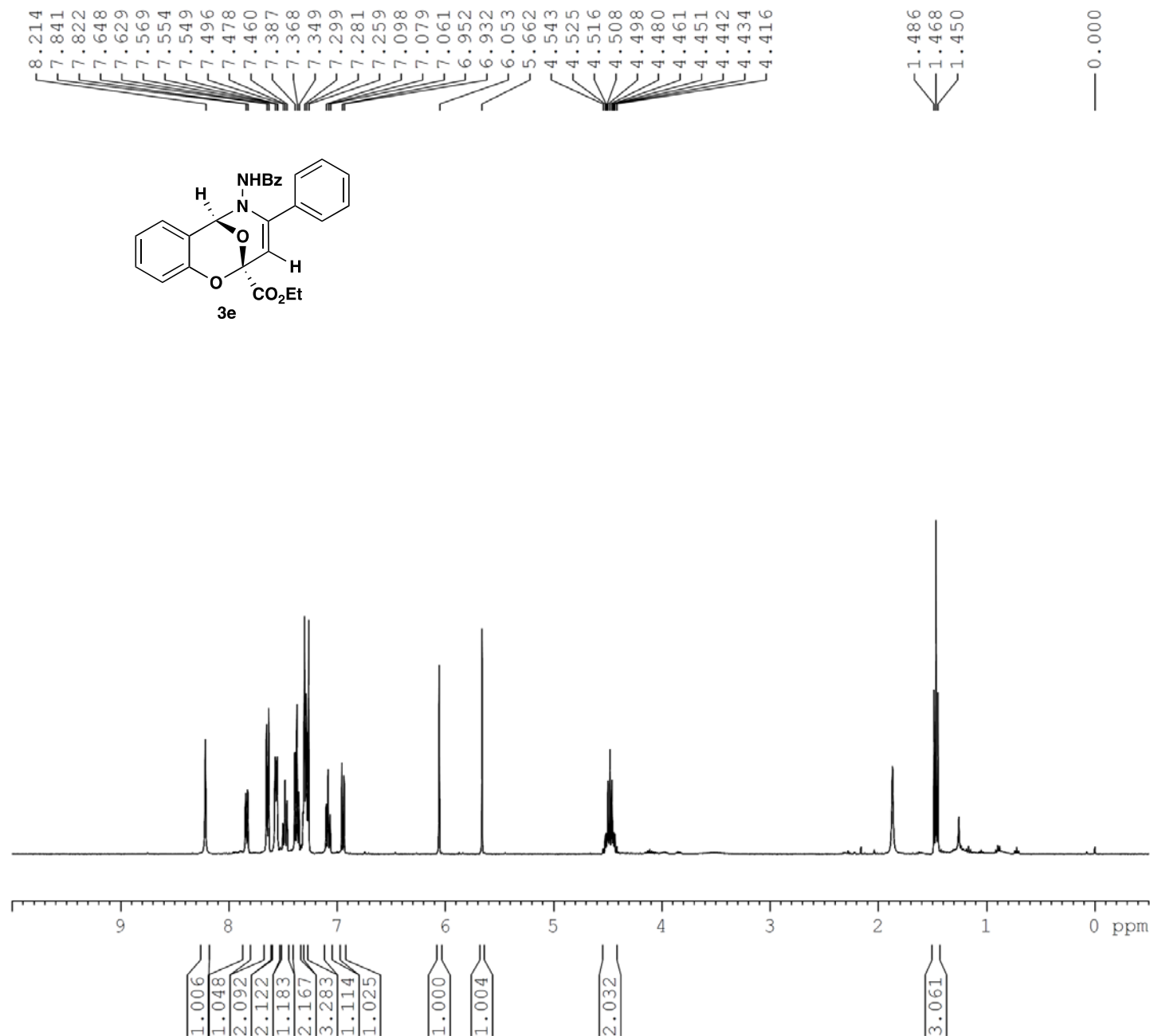
NUC1 13C
P1 9.00 usec
PL1 7.00 dB
SFO1 100.6233325 MHz

===== CHANNEL f2 =====

CPDPRG2 waltz16
NUC2 1H
PCPD2 90.00 usec
PL2 1.80 dB
PL12 17.00 dB
PL13 20.00 dB
SFO2 400.1316005 MHz

F2 - Processing parameters

SI 32768
SF 100.6127764 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.00

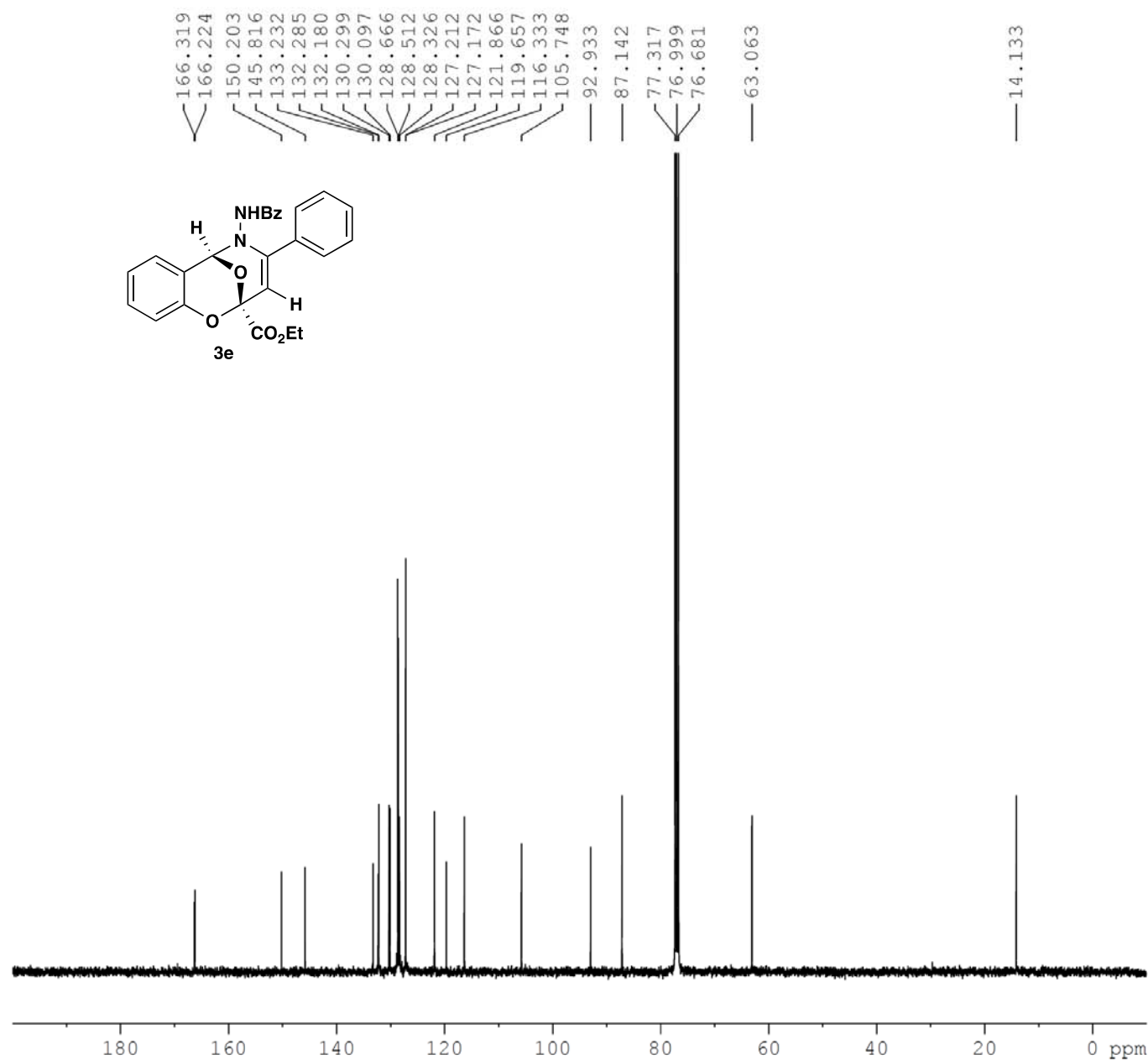
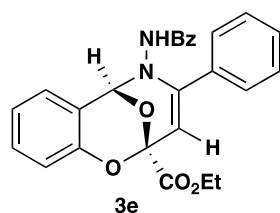


Current Data Parameters
 NAME KNR Ynones Salens 4F
 EXPNO 35
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20170407
 Time 14.52
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 0
 SWH 7246.377 Hz
 FIDRES 0.221142 Hz
 AQ 2.2609921 sec
 RG 114
 DW 69.000 usec
 DE 6.50 usec
 TE 298.0 K
 D1 2.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 NUC1 1H
 P1 14.40 usec
 PL1 1.80 dB
 SFO1 400.1324008 MHz

F2 - Processing parameters
 SI 16384
 SF 400.1300096 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00



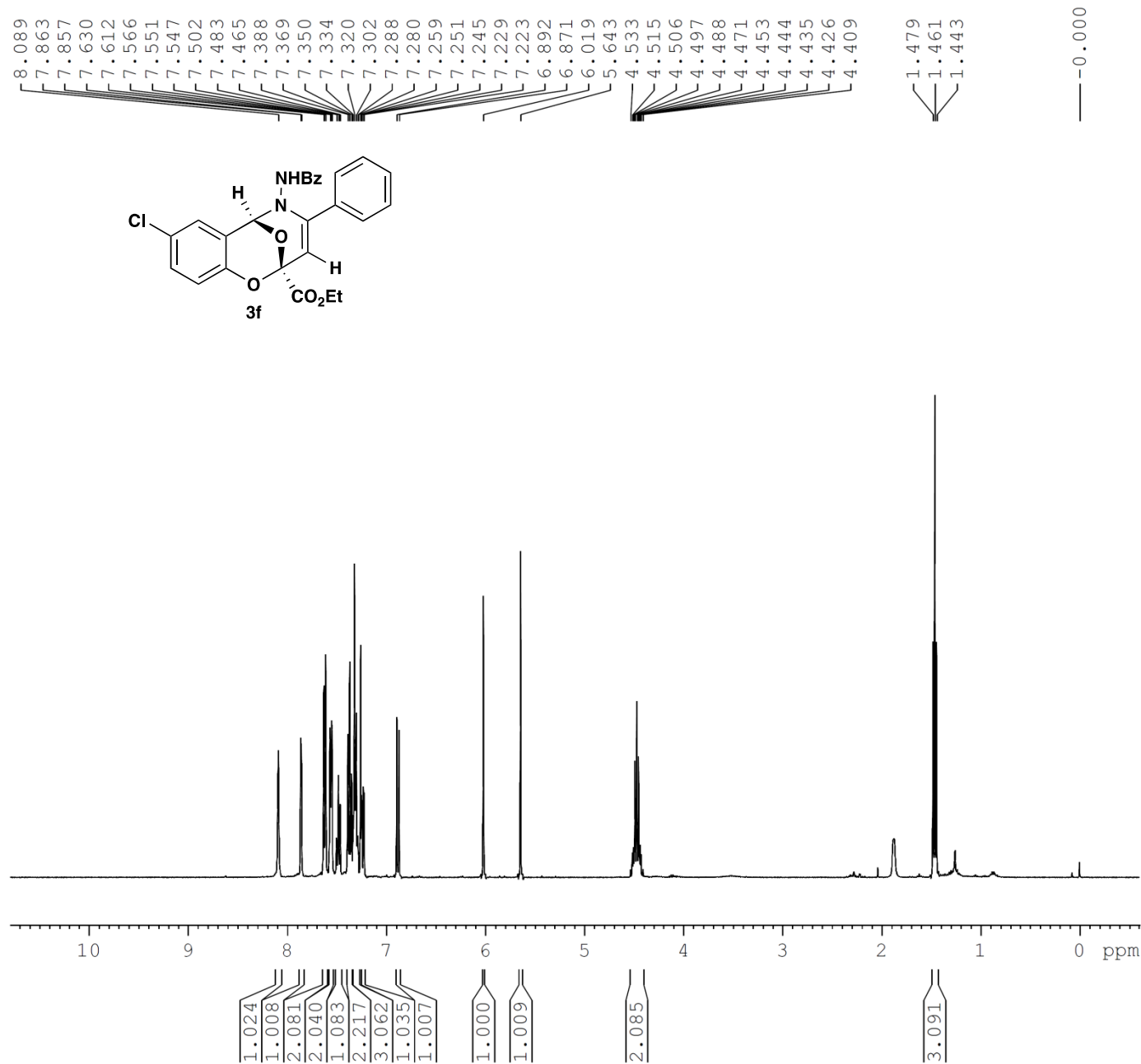
Current Data Parameters
NAME KNR Ynones Salens 4F
EXPNO 40
PROCNO 1

F2 - Acquisition Parameters
Date_ 20170408
Time 18.12
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zgpg30
TD 32768
SOLVENT CDCl₃
NS 2032
DS 0
SWH 24038.461 Hz
FIDRES 0.733596 Hz
AQ 0.6815744 sec
RG 4096
DW 20.800 usec
DE 6.50 usec
TE 298.8 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 13C
P1 9.00 usec
PL1 7.00 dB
SFO1 100.6233325 MHz

===== CHANNEL f2 =====
CPDPRG2 waltz16
NUC2 1H
PCPD2 90.00 usec
PL2 1.80 dB
PL12 17.00 dB
PL13 20.00 dB
SFO2 400.1316005 MHz

F2 - Processing parameters
SI 32768
SF 100.6127722 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.00

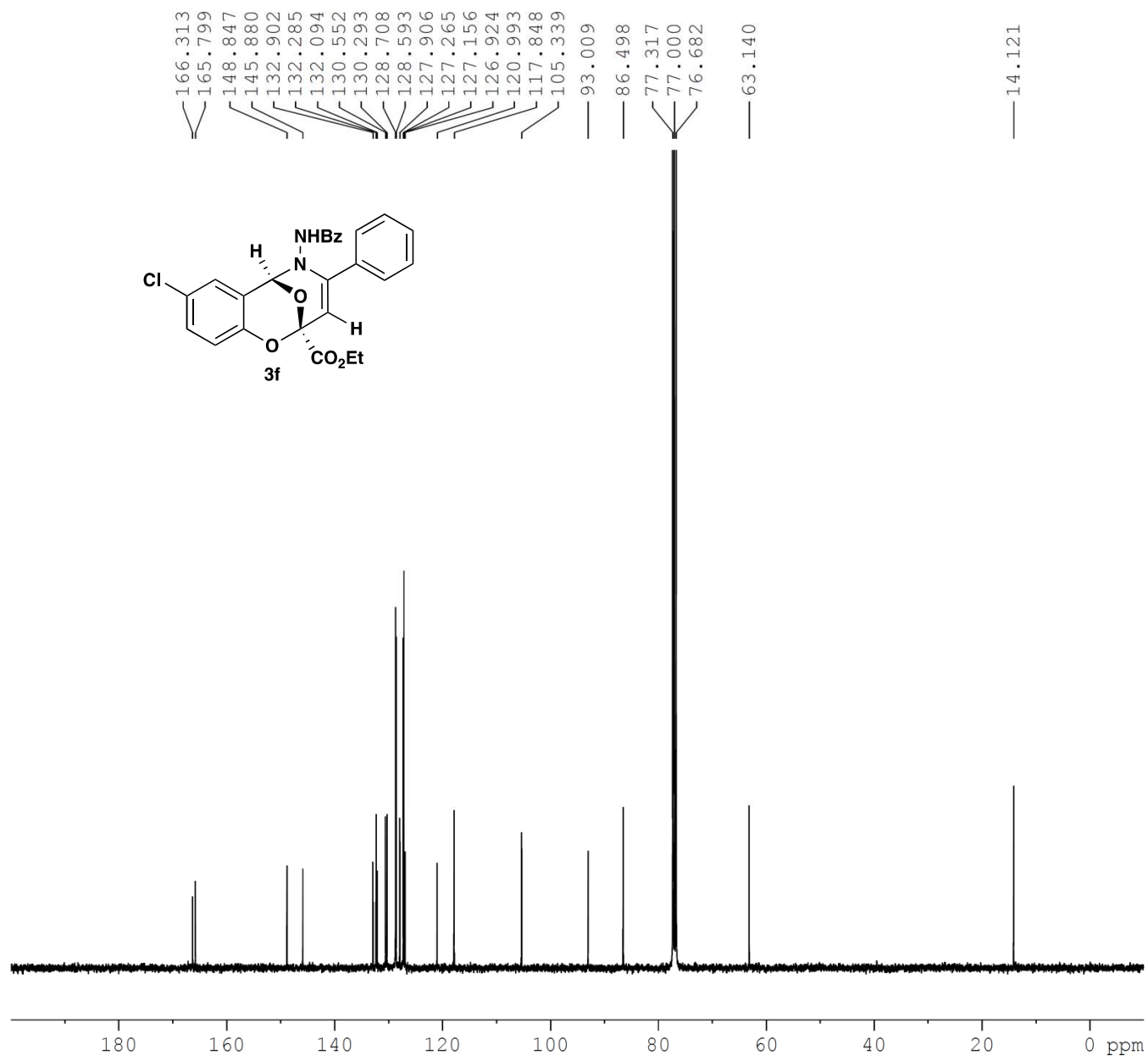
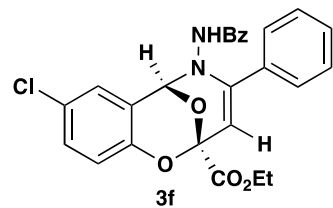


Current Data Parameters
 NAME knraju ynonens salens 4f
 EXPNO 27
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20170429
 Time_ 8.14
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 0
 SWH 7246.377 Hz
 FIDRES 0.221142 Hz
 AQ 2.2609921 sec
 RG 161.3
 DW 69.000 usec
 DE 6.50 usec
 TE 298.6 K
 D1 2.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 NUC1 1H
 P1 14.40 usec
 PL1 1.80 dB
 SFO1 400.1324008 MHz

F2 - Processing parameters
 SI 16384
 SF 400.1300096 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00



Current Data Parameters
NAME knraju ynonos salens 4f
EXPNO 28
PROCNO 1

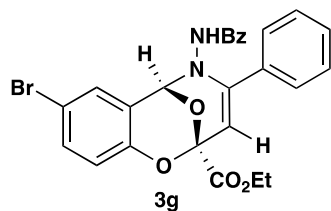
F2 - Acquisition Parameters
Date_ 20170429
Time 8.17
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zgpg30
TD 32768
SOLVENT CDCl3
NS 1886
DS 0
SWH 24038.461 Hz
FIDRES 0.733596 Hz
AQ 0.6815744 sec
RG 4096
DW 20.800 usec
DE 6.50 usec
TE 298.7 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 13C
P1 9.00 usec
PL1 7.00 dB
SFO1 100.6233325 MHz

===== CHANNEL f2 =====
CPDPRG[2] waltz16
NUC2 1H
PCPD2 90.00 usec
PL2 1.80 dB
PL12 17.00 dB
PL13 20.00 dB
SFO2 400.1316005 MHz

F2 - Processing parameters
SI 32768
SF 100.6127723 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.00

8.270
7.989
7.984
7.983
7.633
7.615
7.572
7.568
7.553
7.548
7.481
7.462
7.443
7.387
7.381
7.366
7.359
7.347
7.329
7.316
7.298
7.260
6.837
6.816
6.020
5.633
4.519
4.501
4.492
4.483
4.475
4.461
4.457
4.443
4.439
4.434
4.426
4.416
4.398
1.471
1.453
1.435
0.000

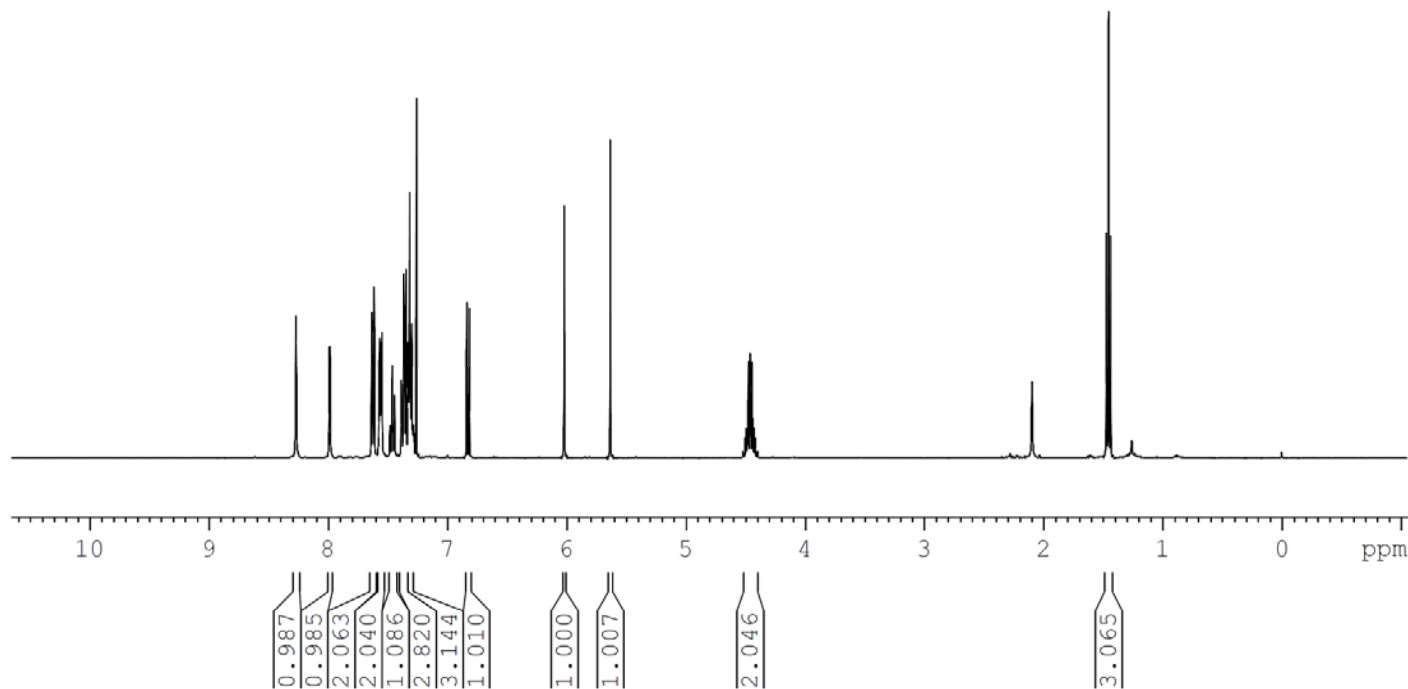


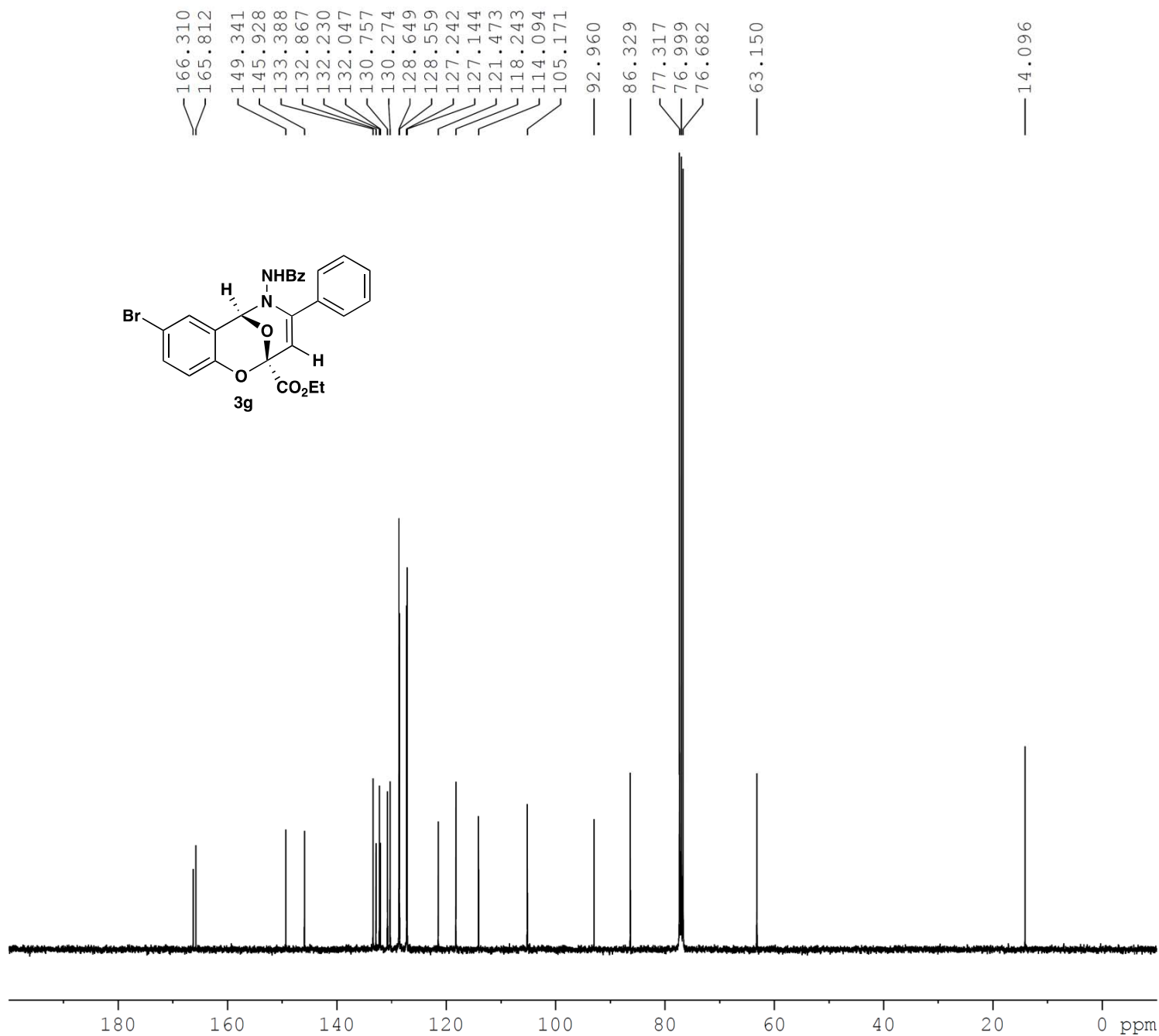
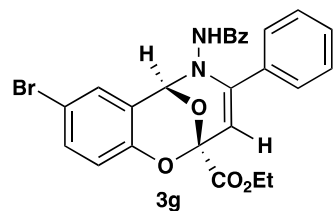
Current Data Parameters
NAME Raju0
EXPNO 3
PROCNO 1

F2 - Acquisition Parameters
Date_ 20170413
Time_ 21.44
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zg30
TD 32768
SOLVENT CDC13
NS 16
DS 0
SWH 7246.377 Hz
FIDRES 0.221142 Hz
AQ 2.2609921 sec
RG 114
DW 69.000 usec
DE 6.50 usec
TE 295.3 K
D1 2.00000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 1H
P1 14.40 usec
PL1 1.80 dB
SFO1 400.1324008 MHz

F2 - Processing parameters
SI 16384
SF 400.1300092 MHz
WDW EM
SSB 0
LB 0 Hz
GB 0
PC 1.00





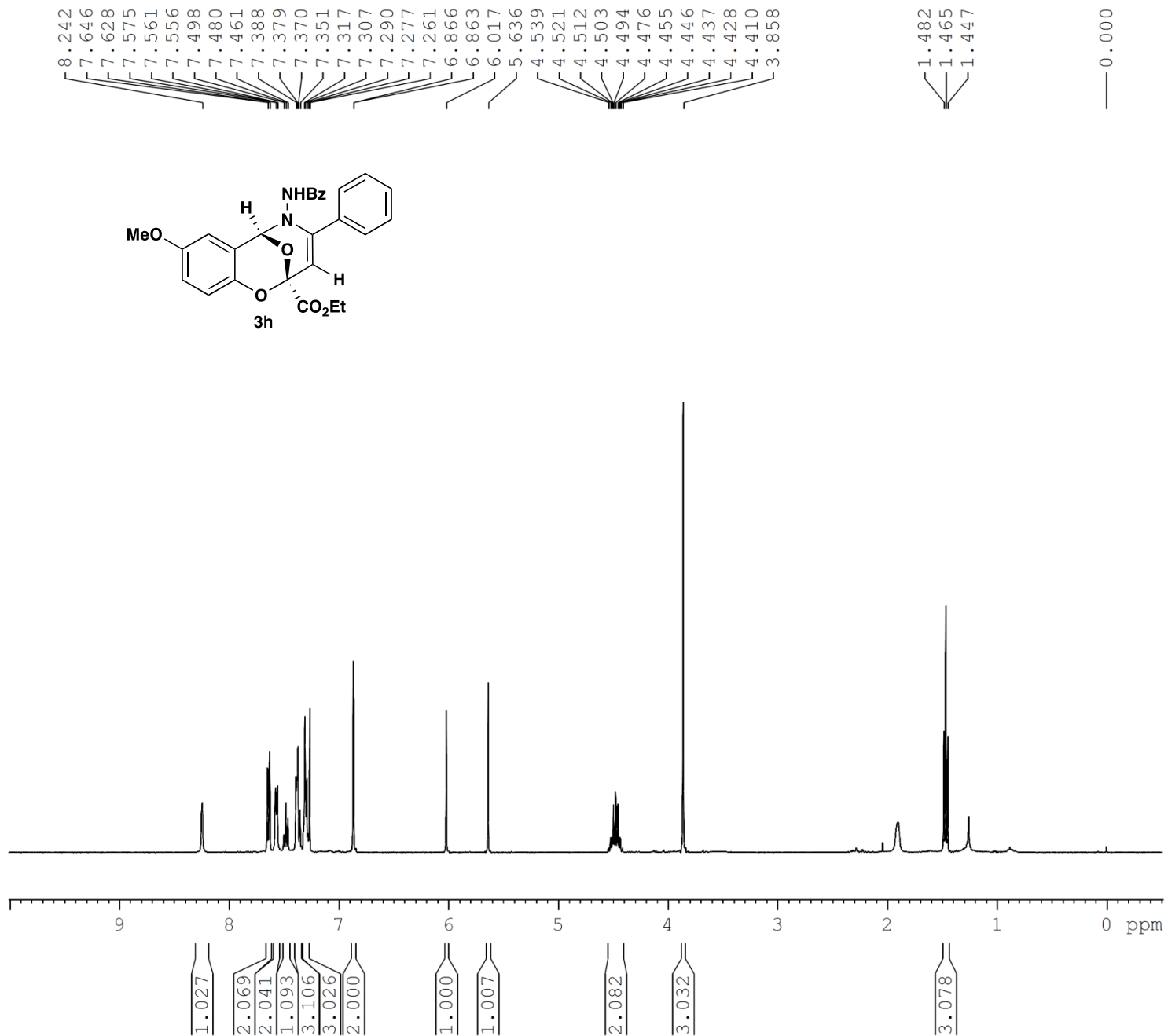
Current Data Parameters
NAME Raju0
EXPNO 4
PROCNO 1

F2 - Acquisition Parameters
Date_ 20170413
Time 21.48
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zgpg30
TD 32768
SOLVENT CDCl3
NS 2061
DS 0
SWH 24038.461 Hz
FIDRES 0.733596 Hz
AQ 0.6815744 sec
RG 11585.2
DW 20.800 usec
DE 6.50 usec
TE 295.3 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 13C
P1 9.00 usec
PL1 7.00 dB
SFO1 100.6233325 MHz

===== CHANNEL f2 =====
CPDPRG[2] waltz16
NUC2 1H
PCPD2 90.00 usec
PL2 1.80 dB
PL12 17.00 dB
PL13 20.00 dB
SFO2 400.1316005 MHz

F2 - Processing parameters
SI 32768
SF 100.6127756 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.00

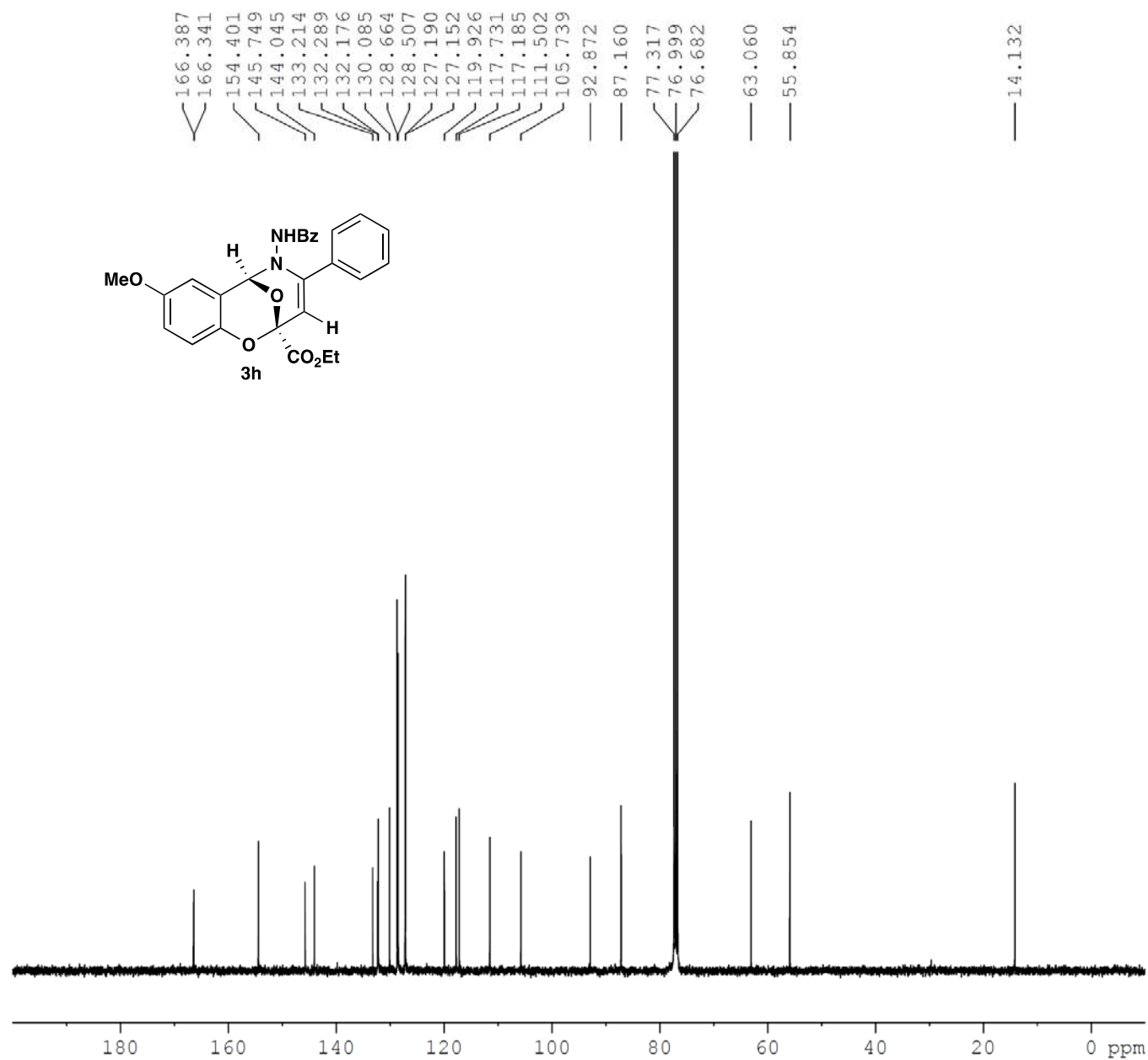


Current Data Parameters
 NAME knraju ynones salens 4f
 EXPNO 18
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20170423
 Time_ 6.21
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 0
 SWH 7246.377 Hz
 FIDRES 0.221142 Hz
 AQ 2.2609921 sec
 RG 114
 DW 69.000 usec
 DE 6.50 usec
 TE 295.4 K
 D1 2.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 NUC1 1H
 P1 14.40 usec
 PL1 1.80 dB
 SFO1 400.1324008 MHz

F2 - Processing parameters
 SI 16384
 SF 400.1300087 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00



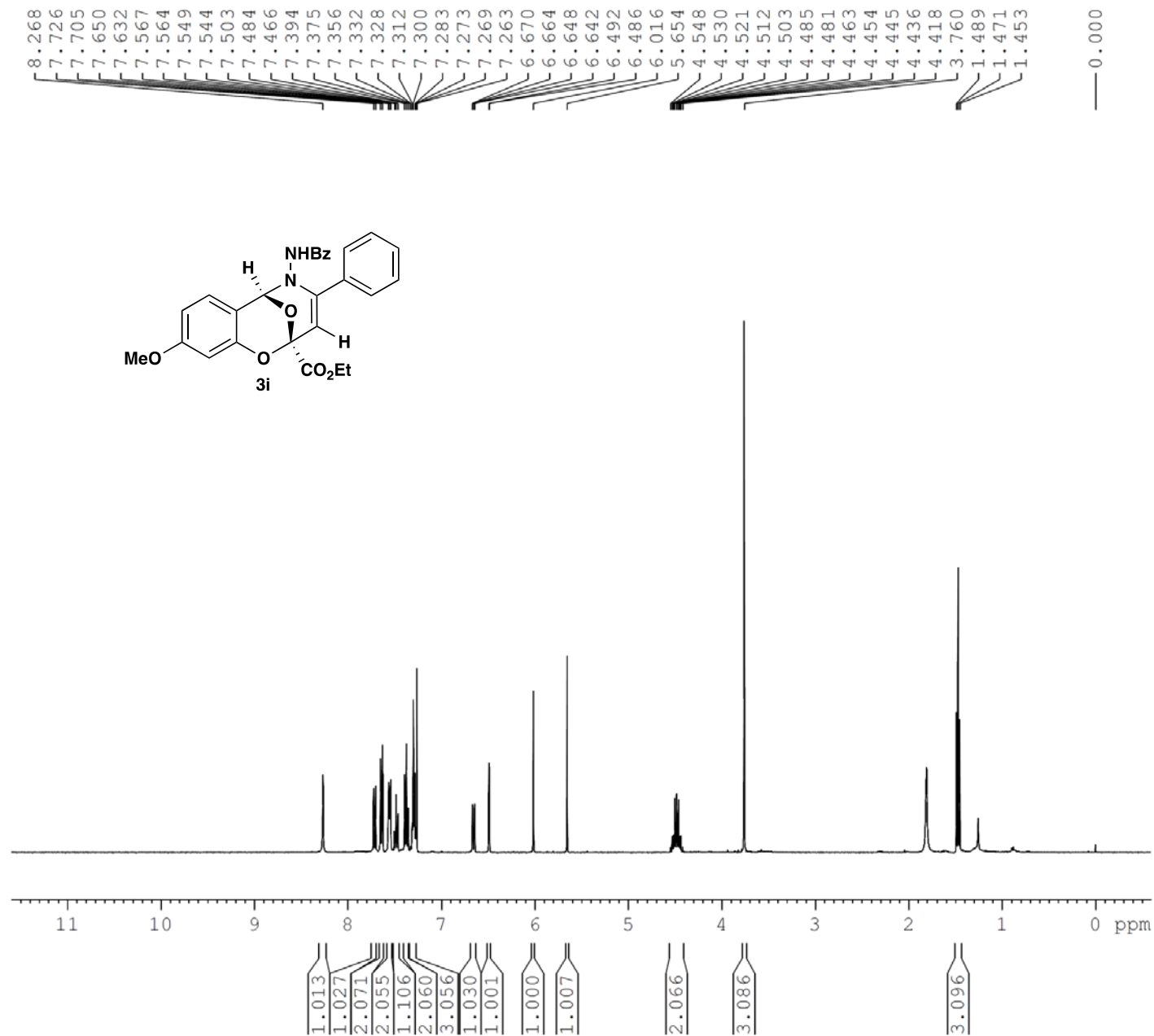
Current Data Parameters
NAME knraju ynones salens 4f
EXPNO 19
PROCNO 1

F2 - Acquisition Parameters
Date_ 20170423
Time 6.24
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zgpg30
TD 32768
SOLVENT CDCl3
NS 2034
DS 0
SWH 24038.461 Hz
FIDRES 0.733596 Hz
AQ 0.6815744 sec
RG 4096
DW 20.800 usec
DE 6.50 usec
TE 295.4 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 13C
P1 9.00 usec
PL1 7.00 dB
SFO1 100.6233325 MHz

===== CHANNEL f2 =====
CPDPRG[2] waltz16
NUC2 1H
PCPD2 90.00 usec
PL2 1.80 dB
PL12 17.00 dB
PL13 20.00 dB
SFO2 400.1316005 MHz

F2 - Processing parameters
SI 32768
SF 100.6127734 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.00



Current Data Parameters
NAME knraju ynonenes salens 4f
EXPNO 5
PROCNO 1

F2 - Acquisition Parameters

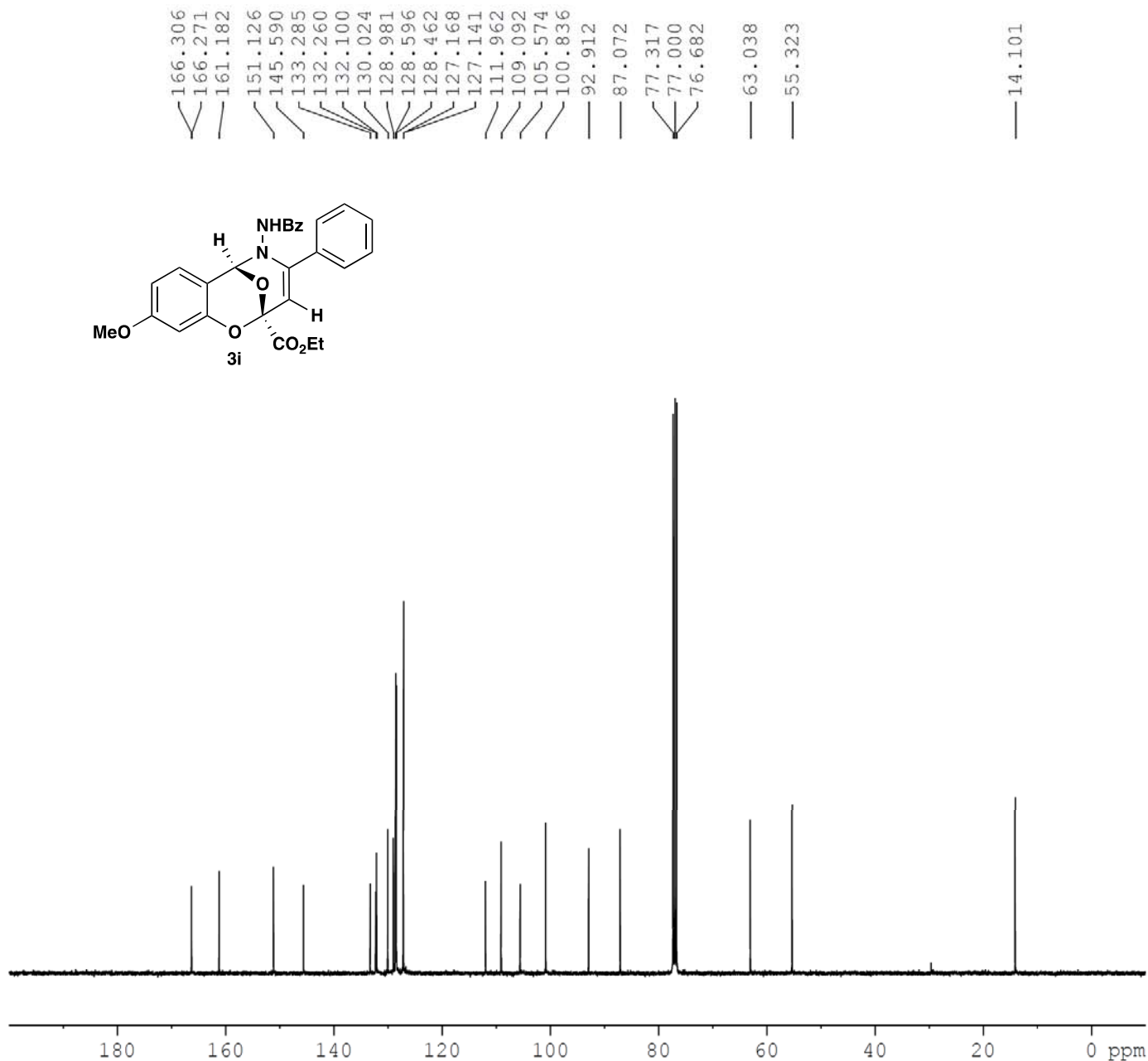
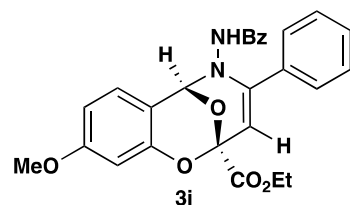
Date_ 20170420
Time 17.12
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 16
DS 0
SWH 7246.377 Hz
FIDRES 0.221142 Hz
AQ 2.2609921 sec
RG 181
DW 69.000 usec
DE 6.50 usec
TE 294.8 K
D1 2.00000000 sec
TD0 1

===== CHANNEL f1 =====

NUC1 1H
P1 14.40 usec
PL1 1.80 dB
SFO1 400.1324008 MHz

F2 - Processing parameters

SI 16384
SF 400.1300083 MHz
WDW EM
SSB 0
LB 0 Hz
GB 0
PC 1.00



Current Data Parameters
 NAME knraju ynonex salens 4f
 EXPNO 43
 PROCNO 1

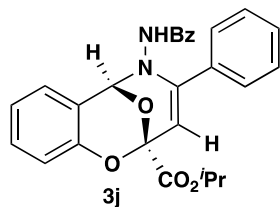
F2 - Acquisition Parameters
 Date 20170511
 Time 17.59
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl₃
 NS 2235
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 4096
 DW 20.800 usec
 DE 6.50 usec
 TE 297.2 K
 D1 2.00000000 sec
 D11 0.03000000 sec
 TD0 1

===== CHANNEL f1 =====
 NUC1 13C
 P1 9.00 usec
 PL1 7.00 dB
 SFO1 100.6233325 MHz

===== CHANNEL f2 =====
 CPDPRG[2] waltz16
 NUC2 1H
 PCPD2 90.00 usec
 PL2 1.80 dB
 PL12 17.00 dB
 PL13 20.00 dB
 SFO2 400.1316005 MHz

F2 - Processing parameters
 SI 32768
 SF 100.6127758 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.00

8.196
7.824
7.805
7.623
7.604
7.560
7.546
7.540
7.442
7.423
7.406
7.332
7.314
7.287
7.270
7.258
7.250
7.239
7.073
7.055
7.036
6.932
6.911
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5.325
5.310
5.294
5.278
5.263
5.247
5.231



1.442
1.426

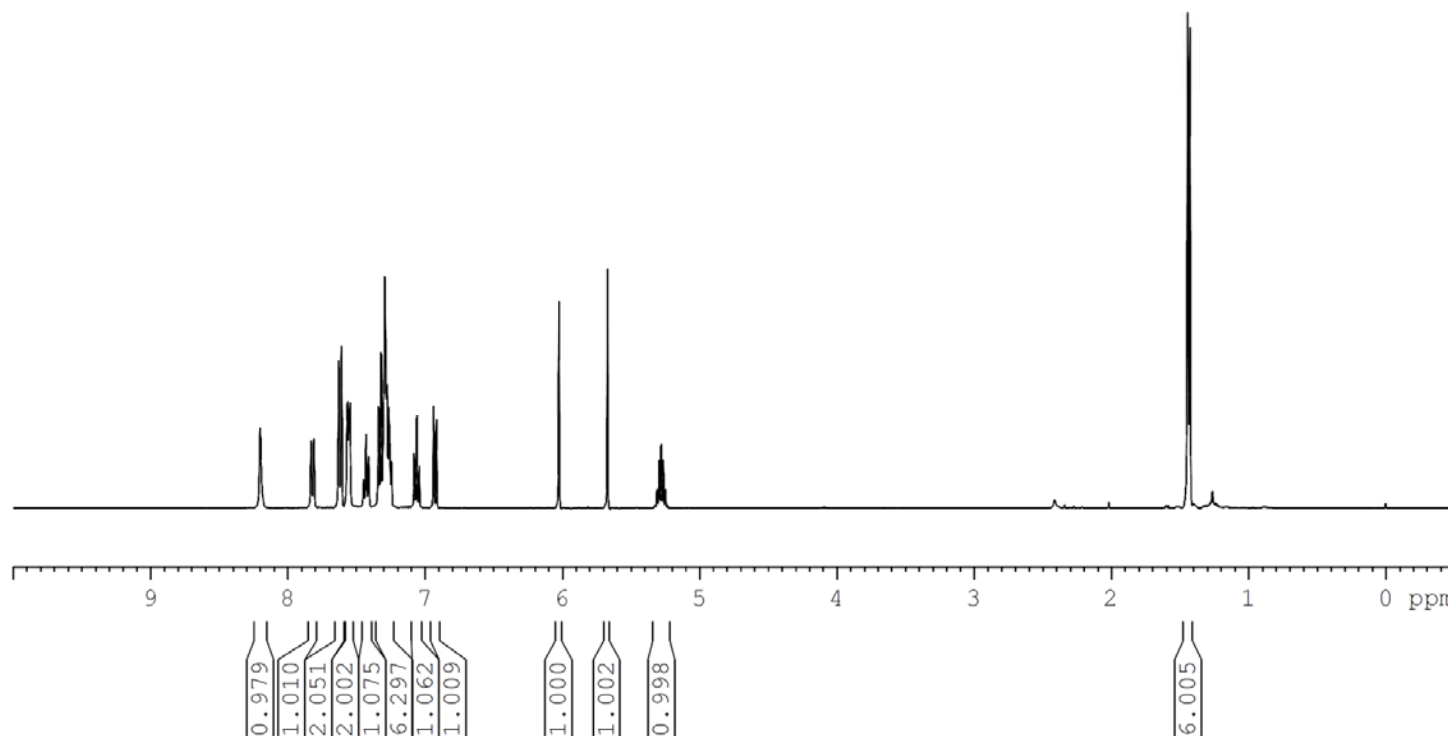
— 0.000

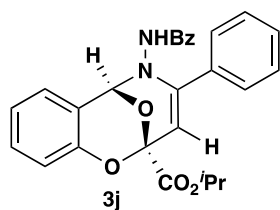
Current Data Parameters
NAME knraju ynones salens 4f
EXPNO 45
PROCNO 1

F2 - Acquisition Parameters
Date_ 20170512
Time 17.50
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 4
DS 0
SWH 7246.377 Hz
FIDRES 0.221142 Hz
AQ 2.2609921 sec
RG 45.3
DW 69.000 usec
DE 6.50 usec
TE 296.1 K
D1 2.00000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 1H
P1 14.40 usec
PL1 1.80 dB
SFO1 400.1324008 MHz

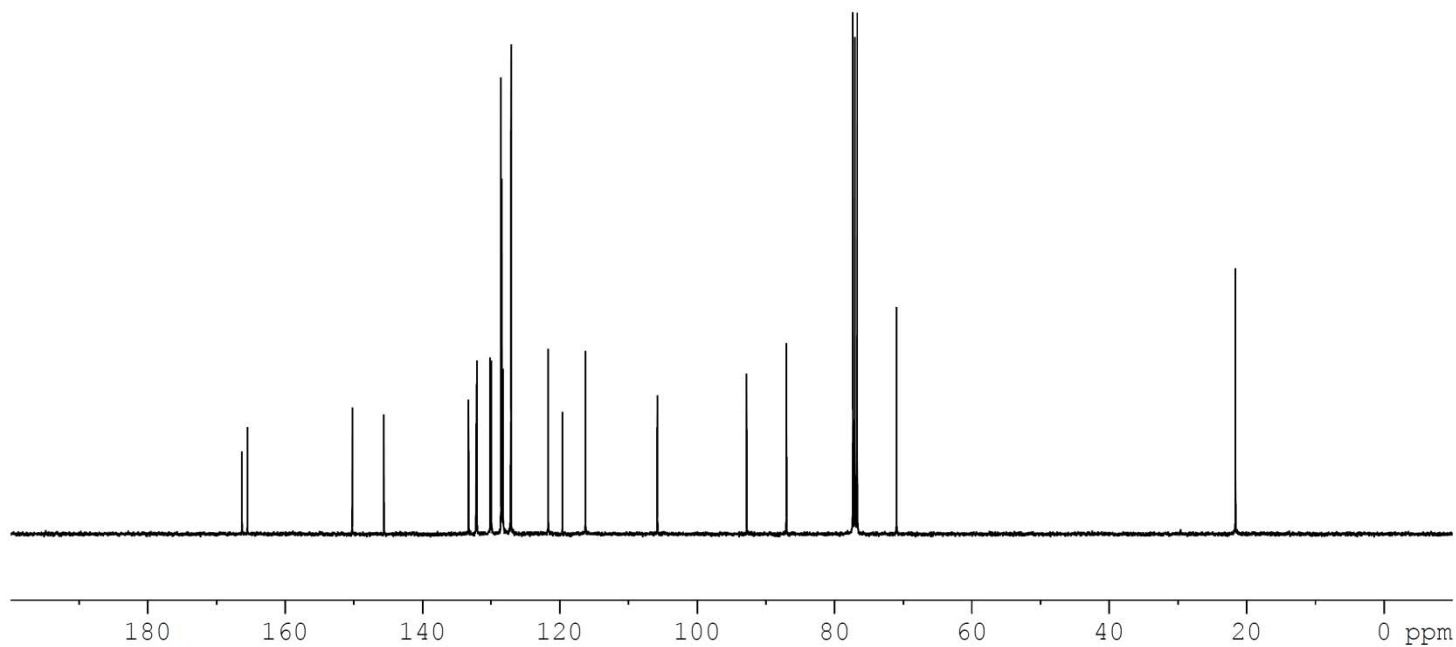
F2 - Processing parameters
SI 16384
SF 400.1300131 MHz
WDW EM
SSB 0
LB 0 Hz
GB 0
PC 1.00





166.294
165.503
150.224
145.614
133.277
132.193
132.069
130.159
129.980
128.553
128.427
128.260
127.138
127.109
121.684
119.618
116.268
105.789
— 92.774
— 86.991
77.318
77.000
76.682
70.945

21.603
21.569



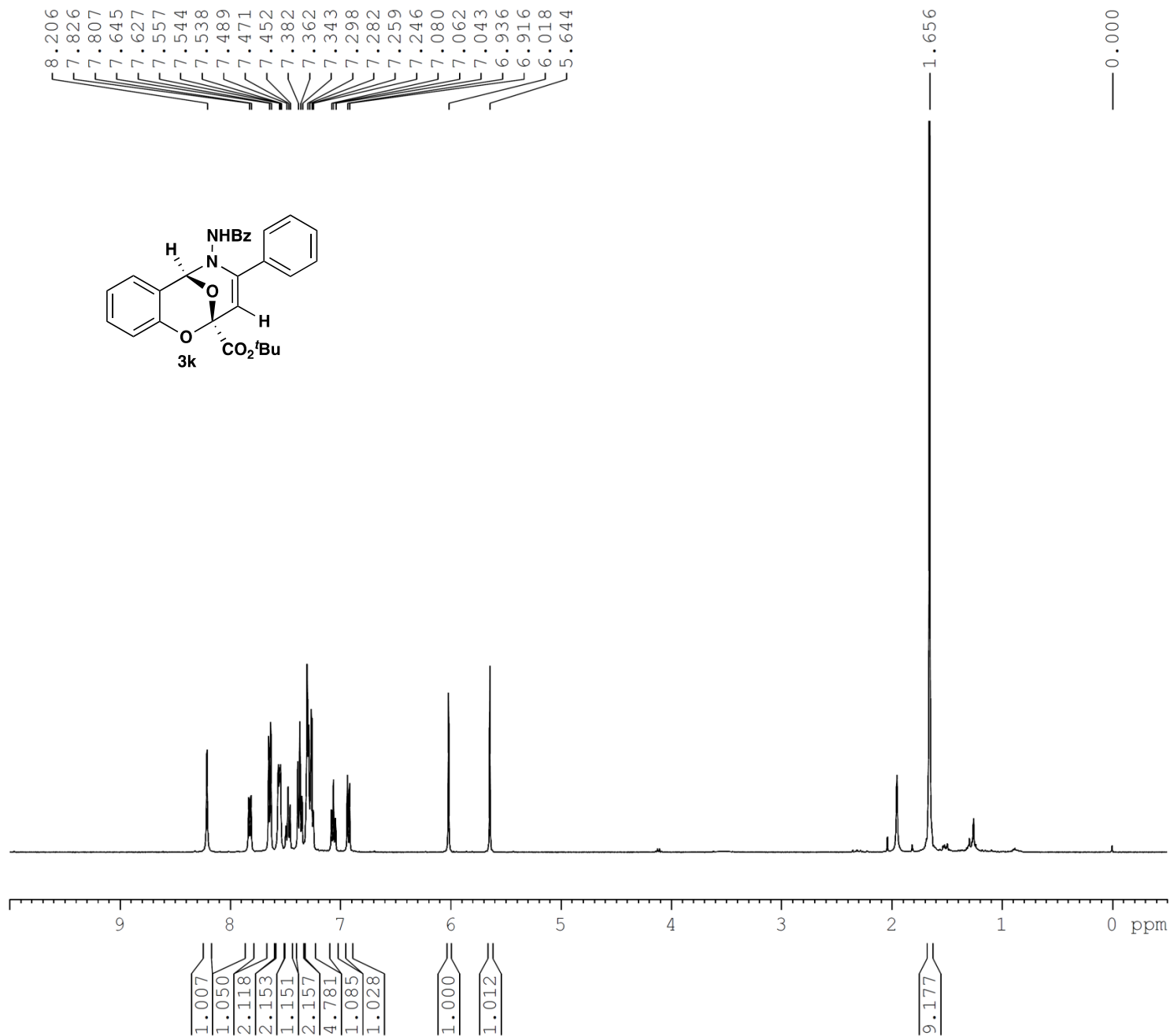
Current Data Parameters
NAME knraju ynoness salens 4f
EXPNO 47
PROCNO 1

F2 - Acquisition Parameters
Date_ 20170512
Time 18.12
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zgpg30
TD 32768
SOLVENT CDC13
NS 1264
DS 0
SWH 24038.461 Hz
FIDRES 0.733596 Hz
AQ 0.6815744 sec
RG 4096
DW 20.800 usec
DE 6.50 usec
TE 296.4 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 13C
P1 9.00 usec
PL1 7.00 dB
SFO1 100.6233325 MHz

===== CHANNEL f2 =====
CPDPRG[2] waltz16
NUC2 1H
PCPD2 90.00 usec
PL2 1.80 dB
PL12 17.00 dB
PL13 20.00 dB
SFO2 400.1316005 MHz

F2 - Processing parameters
SI 32768
SF 100.6127793 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.00



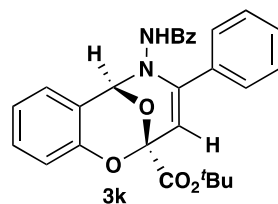
Current Data Parameters
NAME knraju ynones salens 4f
EXPNO 50
PROCNO 1

F2 - Acquisition Parameters
Date_ 20170513
Time 6.51
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 16
DS 0
SWH 7246.377 Hz
FIDRES 0.221142 Hz
AQ 2.2609921 sec
RG 114
DW 69.000 usec
DE 6.50 usec
TE 295.2 K
D1 2.00000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 1H
P1 14.40 usec
PL1 1.80 dB
SFO1 400.1324008 MHz

F2 - Processing parameters
SI 16384
SF 400.1300100 MHz
WDW EM
SSB 0
LB 0 Hz
GB 0
PC 1.00

166.292
165.053
150.442
145.527
133.382
132.320
132.133
130.155
129.983
128.638
128.478
128.285
127.168
127.145
121.659
119.698
116.334
106.214
92.845
87.096
84.203
77.317
76.999
76.682



— 27.935

Current Data Parameters
NAME knraju ynones salens 4f
EXPNO 51
PROCNO 1

F2 - Acquisition Parameters
Date_ 20170513
Time_ 6.56
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zgpg30
TD 32768
SOLVENT CDC13
NS 1221
DS 0
SWH 24038.461 Hz
FIDRES 0.733596 Hz
AQ 0.6815744 sec
RG 4096
DW 20.800 usec
DE 6.50 usec
TE 295.5 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

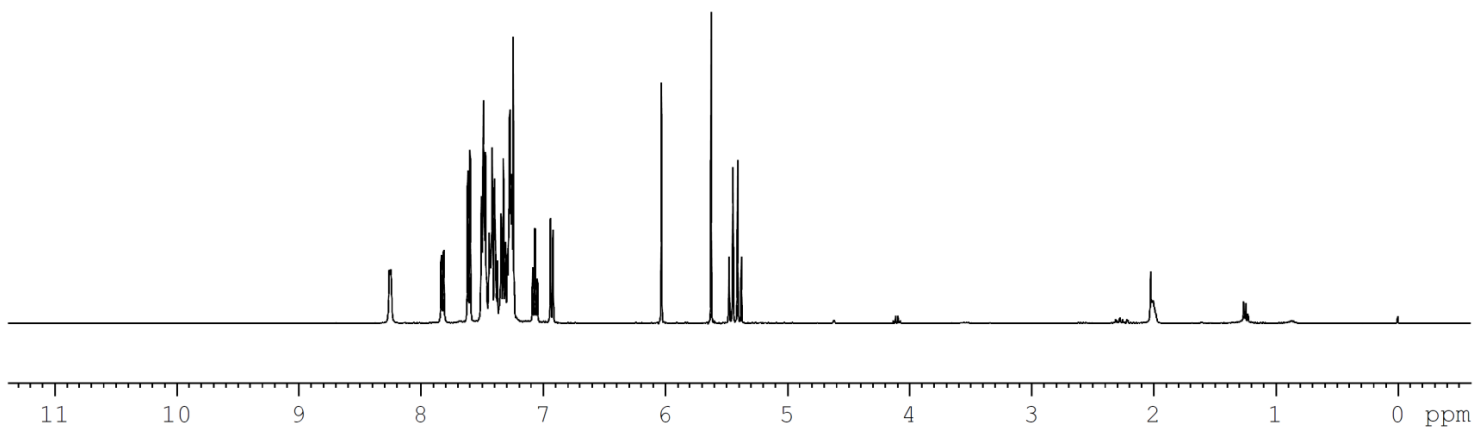
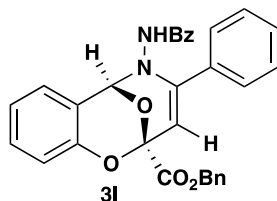
===== CHANNEL f1 =====
NUC1 13C
P1 9.00 usec
PL1 7.00 dB
SFO1 100.6233325 MHz

===== CHANNEL f2 =====
CPDPRG[2] waltz16
NUC2 1H
PCPD2 90.00 usec
PL2 1.80 dB
PL12 17.00 dB
PL13 20.00 dB
SFO2 400.1316005 MHz

F2 - Processing parameters
SI 32768
SF 100.6127735 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.00

180 160 140 120 100 80 60 40 20 0 ppm

8.249
7.833
7.815
7.616
7.598
7.505
7.489
7.473
7.463
7.442
7.438
7.432
7.416
7.397
7.391
7.382
7.374
7.345
7.325
7.306
7.292
7.285
7.281
7.273
7.263
7.255
7.245
7.233
7.085
7.066
7.048
6.940
6.919
6.031
5.623
5.476
5.446
5.406
5.376



1.008
1.042
2.070
4.203
4.045
2.360
2.232
2.079
1.076
1.025
1.000
1.010
2.064

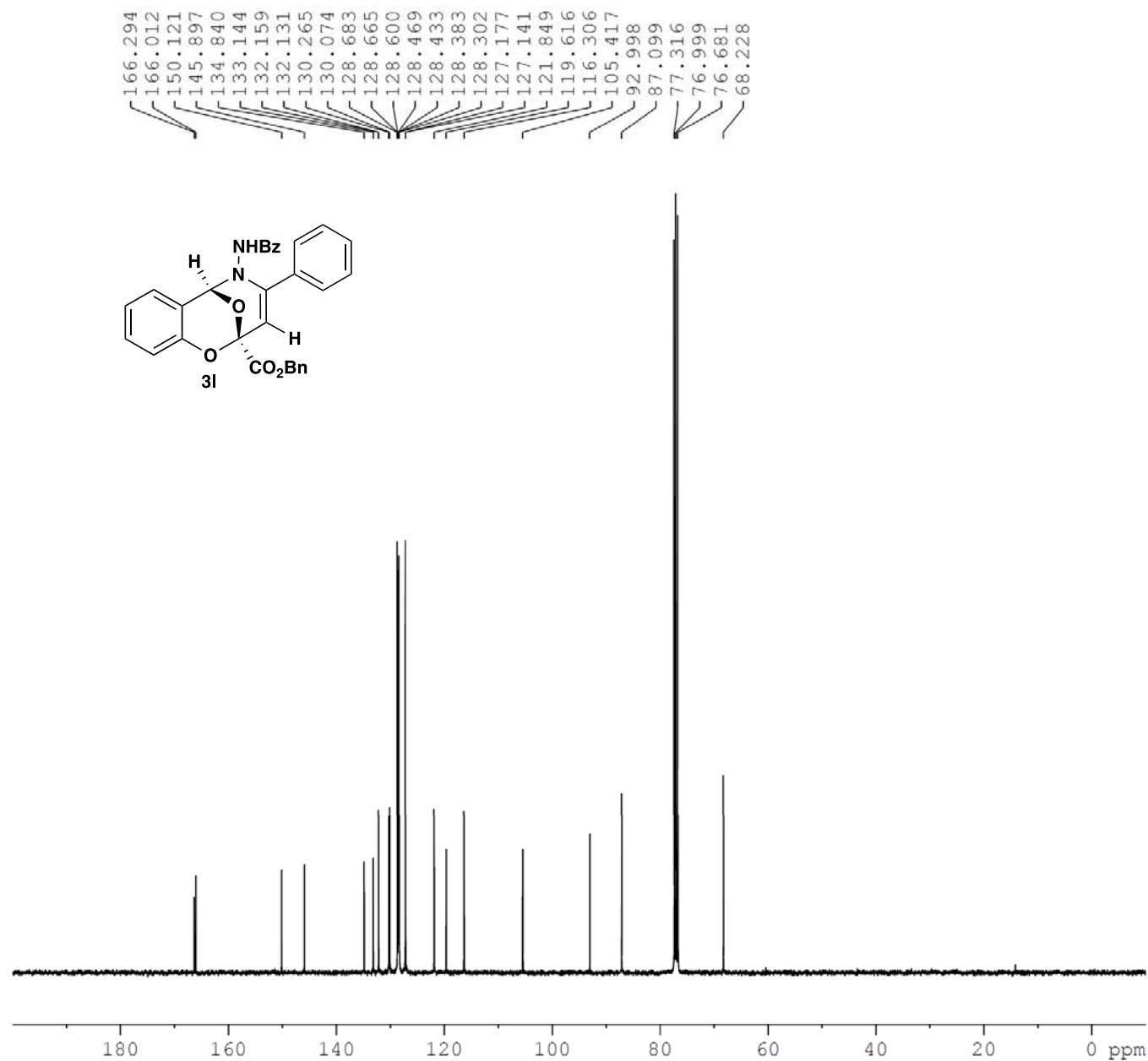
0.000

Current Data Parameters
NAME knraju ynones salens 4f
EXPNO 60
PROCNO 1

F2 - Acquisition Parameters
Date_ 20170519
Time_ 18.13
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 8
DS 0
SWH 7246.377 Hz
FIDRES 0.221142 Hz
AQ 2.2609921 sec
RG 114
DW 69.000 usec
DE 6.50 usec
TE 294.9 K
D1 2.00000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 1H
P1 14.40 usec
PL1 1.80 dB
SFO1 400.1324008 MHz

F2 - Processing parameters
SI 16384
SF 400.1300153 MHz
WDW EM
SSB 0
LB 0 Hz
GB 0
PC 1.00



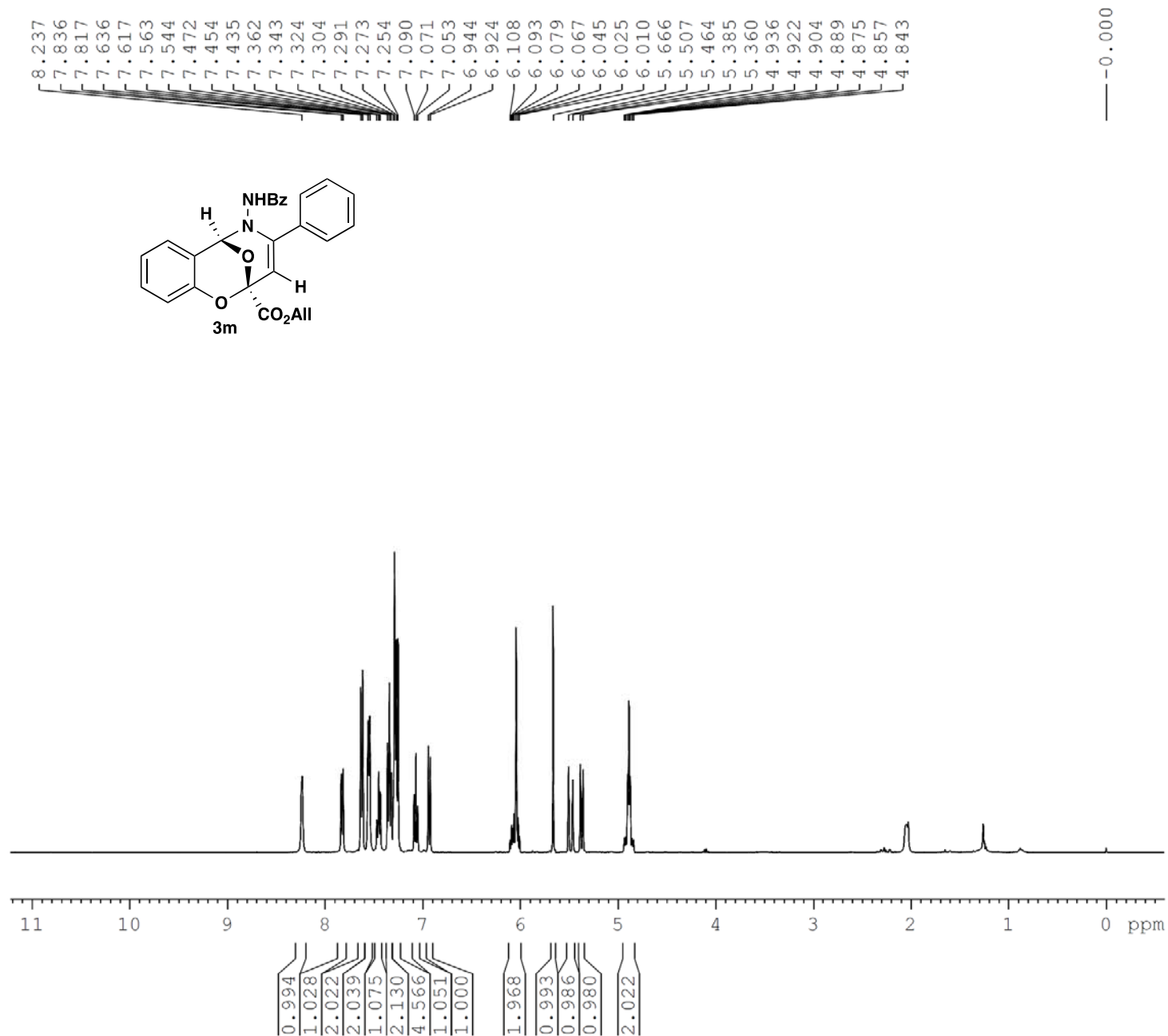
Current Data Parameters
 NAME knraju ynones salens 4f
 EXPNO 61
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20170519
 Time 18.21
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl3
 NS 2075
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 4096
 DW 20.800 usec
 DE 6.50 usec
 TE 295.4 K
 D1 2.00000000 sec
 D11 0.03000000 sec
 TD0 1

===== CHANNEL f1 =====
 NUC1 13C
 P1 9.00 usec
 PL1 7.00 dB
 SFO1 100.6233325 MHz

===== CHANNEL f2 =====
 CPDPRG[2] waltz16
 NUC2 1H
 PCPD2 90.00 usec
 PL2 1.80 dB
 PL12 17.00 dB
 PL13 20.00 dB
 SFO2 400.1316005 MHz

F2 - Processing parameters
 SI 32768
 SF 100.6127775 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.00



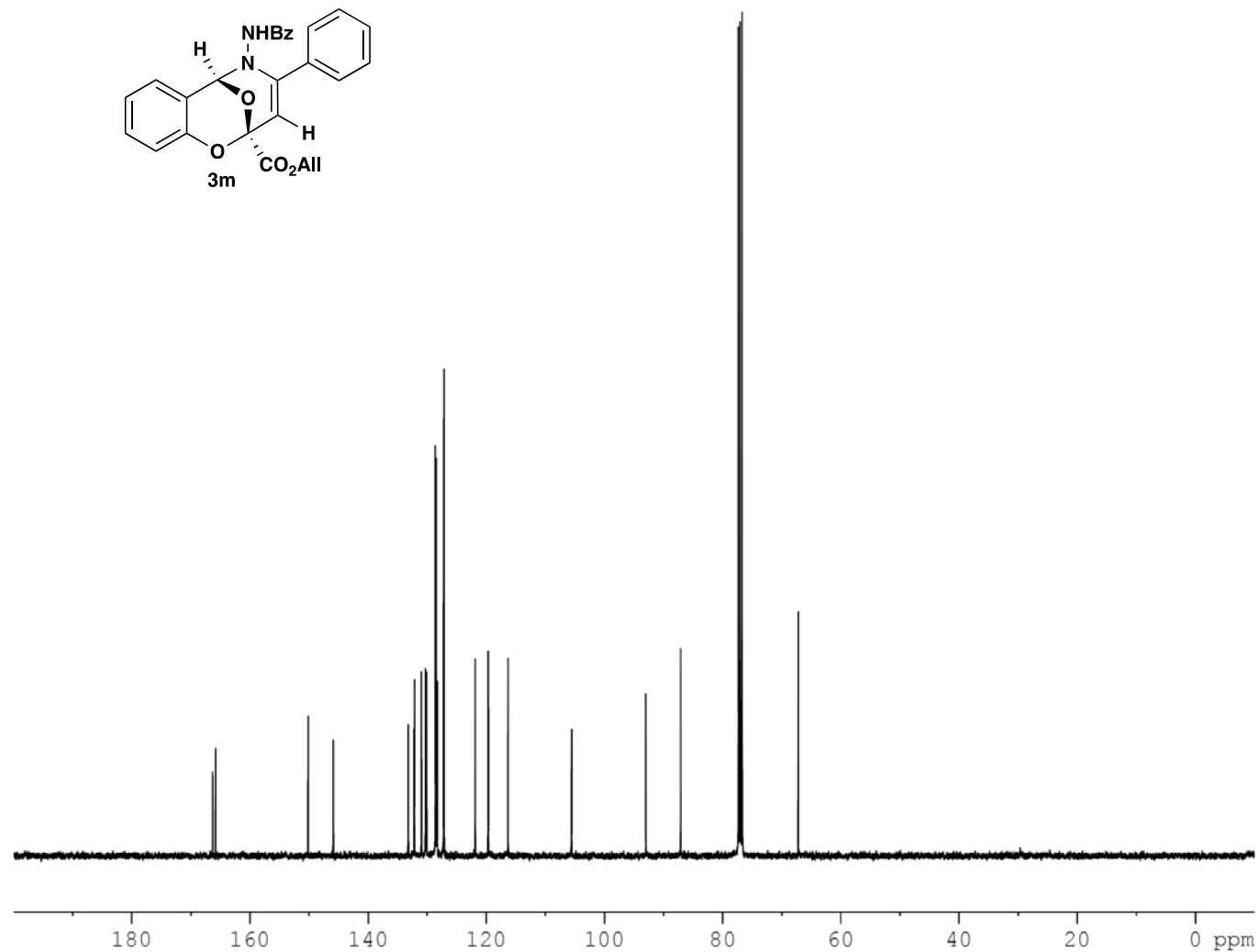
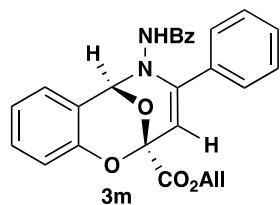
Current Data Parameters
 NAME knraju ynones salens 4f
 EXPNO 54
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20170516
 Time 17.32
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zg30
 TD 32768
 SOLVENT CDCl₃
 NS 16
 DS 0
 SWH 7246.377 Hz
 FIDRES 0.221142 Hz
 AQ 2.2609921 sec
 RG 114
 DW 69.000 usec
 DE 6.50 usec
 TE 299.5 K
 D1 2.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 NUC1 1H
 P1 14.40 usec
 PL1 1.80 dB
 SFO1 400.1324008 MHz

F2 - Processing parameters
 SI 16384
 SF 400.1300120 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

166.317
165.843
150.140
145.894
133.203
132.225
132.140
130.965
130.281
130.092
128.616
128.490
128.307
127.201
127.152
121.857
119.665
119.628
116.308
105.554
92.983
87.099
77.316
76.999
76.681
67.186



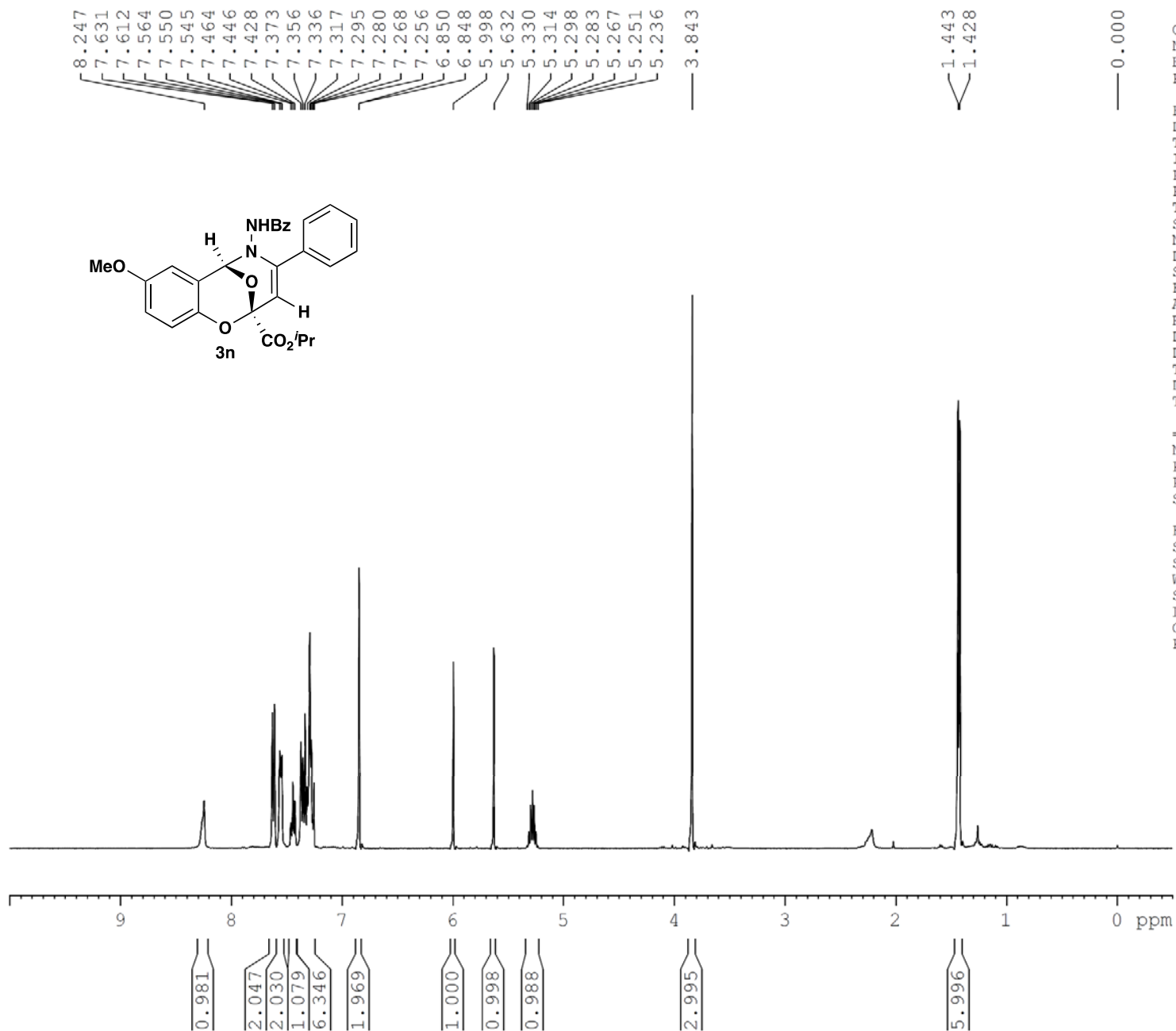
Current Data Parameters
NAME knraju ynones salens 4f
EXPNO 56
PROCNO 1

F2 - Acquisition Parameters
Date_ 20170516
Time_ 18.01
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zgpg30
TD 32768
SOLVENT CDCl3
NS 1559
DS 0
SWH 24038.461 Hz
FIDRES 0.733596 Hz
AQ 0.6815744 sec
RG 4096
DW 20.800 usec
DE 6.50 usec
TE 299.7 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 13C
P1 9.00 usec
PL1 7.00 dB
SFO1 100.623325 MHz

===== CHANNEL f2 =====
CPDPRG[2] waltz16
NUC2 1H
PCPD2 90.00 usec
PL2 1.80 dB
PL12 17.00 dB
PL13 20.00 dB
SFO2 400.1316005 MHz

F2 - Processing parameters
SI 32768
SF 100.6127752 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.00

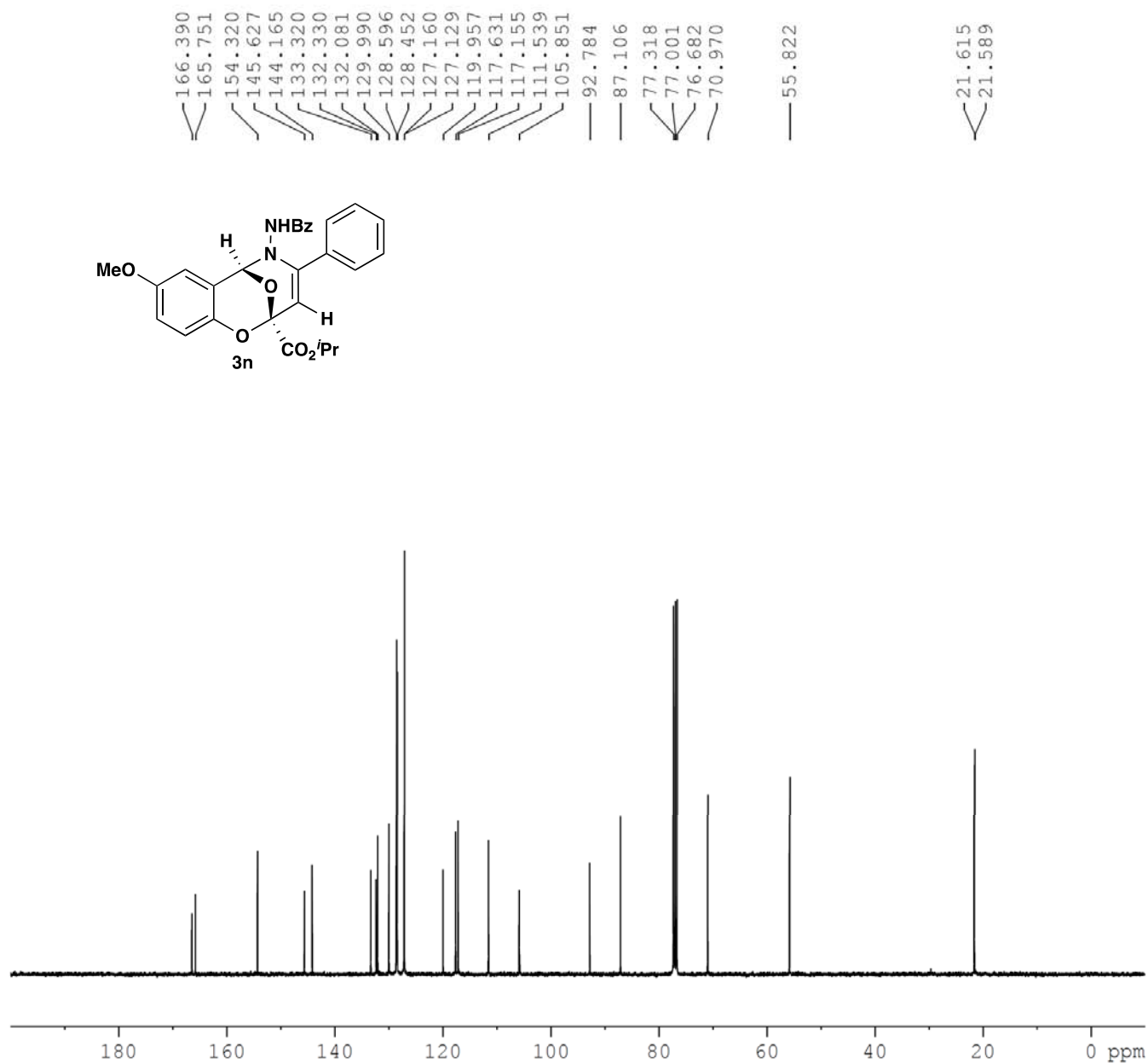
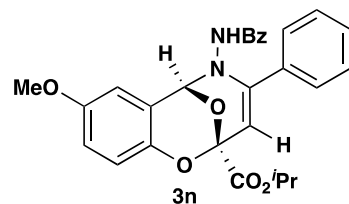


Current Data Parameters
NAME knraju ynones salens 4f
EXPNO 68
PROCNO 1

F2 - Acquisition Parameters
Date_ 20170525
Time 12.03
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 4
DS 0
SWH 7246.377 Hz
FIDRES 0.221142 Hz
AQ 2.2609921 sec
RG 57
DW 69.000 usec
DE 6.50 usec
TE 300.0 K
D1 2.00000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 1H
P1 14.40 usec
PL1 1.80 dB
SFO1 400.1324008 MHz

F2 - Processing parameters
SI 16384
SF 400.1300112 MHz
WDW EM
SSB 0
LB 0 Hz
GB 0
PC 1.00



Current Data Parameters
 NAME knraju ynones salens 4f
 EXPNO 69
 PROCNO 1

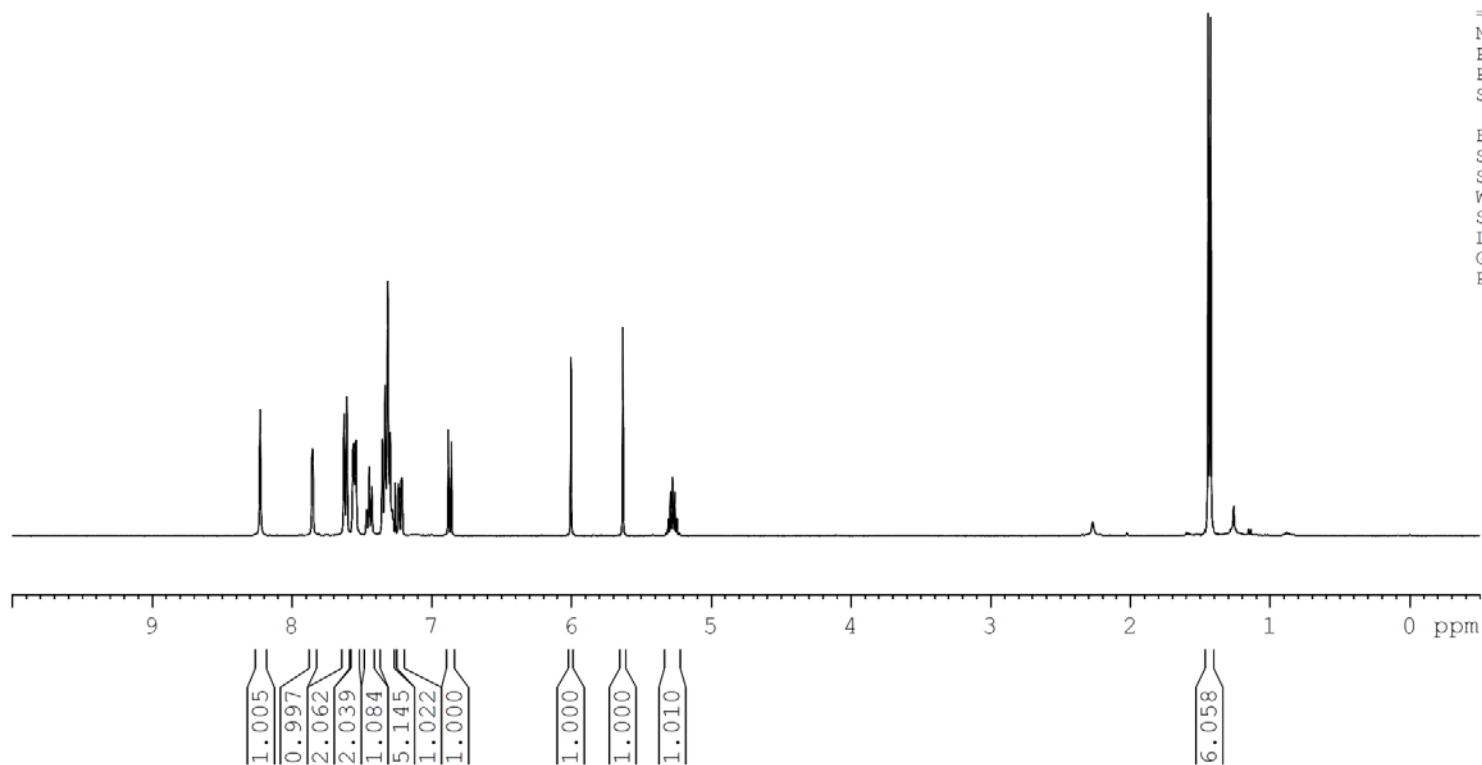
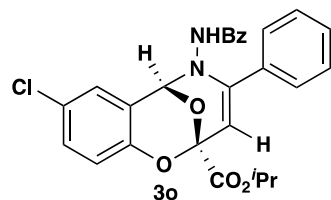
F2 - Acquisition Parameters
 Date 20170525
 Time 12.04
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl3
 NS 2000
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 4096
 DW 20.800 usec
 DE 6.50 usec
 TE 300.0 K
 D1 2.00000000 sec
 D11 0.03000000 sec
 TD0 1

===== CHANNEL f1 =====
 NUC1 13C
 P1 9.00 usec
 PL1 7.00 dB
 SFO1 100.6233325 MHz

===== CHANNEL f2 =====
 CPDPRG[2] waltz16
 NUC2 1H
 PCPD2 90.00 usec
 PL2 1.80 dB
 PL12 17.00 dB
 PL13 20.00 dB
 SFO2 400.1316005 MHz

F2 - Processing parameters
 SI 32768
 SF 100.6127758 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.00

8.223
7.852
7.846
7.623
7.604
7.558
7.542
7.538
7.462
7.444
7.425
7.349
7.330
7.311
7.294
7.280
7.258
7.234
7.228
7.213
7.207
6.878
6.856
6.004
5.633
5.324
5.308
5.292
5.277
5.261
5.245
5.230



1.442
1.426

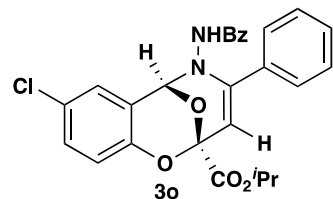
0.000

Current Data Parameters
NAME knraju ynones salens 4f
EXPNO 80
PROCNO 1

F2 - Acquisition Parameters
Date_ 20170601
Time 12.03
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 4
DS 0
SWH 7246.377 Hz
FIDRES 0.221142 Hz
AQ 2.2609921 sec
RG 57
DW 69.000 usec
DE 6.50 usec
TE 295.8 K
D1 2.00000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 1H
P1 14.40 usec
PL1 1.80 dB
SFO1 400.1324008 MHz

F2 - Processing parameters
SI 16384
SF 400.1300100 MHz
WDW EM
SSB 0
LB 0 Hz
GB 0
PC 1.00



166.326
165.231
148.902
145.790
132.967
132.181
132.066
130.421
130.198
128.614
128.523
127.849
127.211
127.133
126.737
121.010
117.815
105.314
92.892
86.395
77.317
77.000
76.682
71.146

21.601
21.576

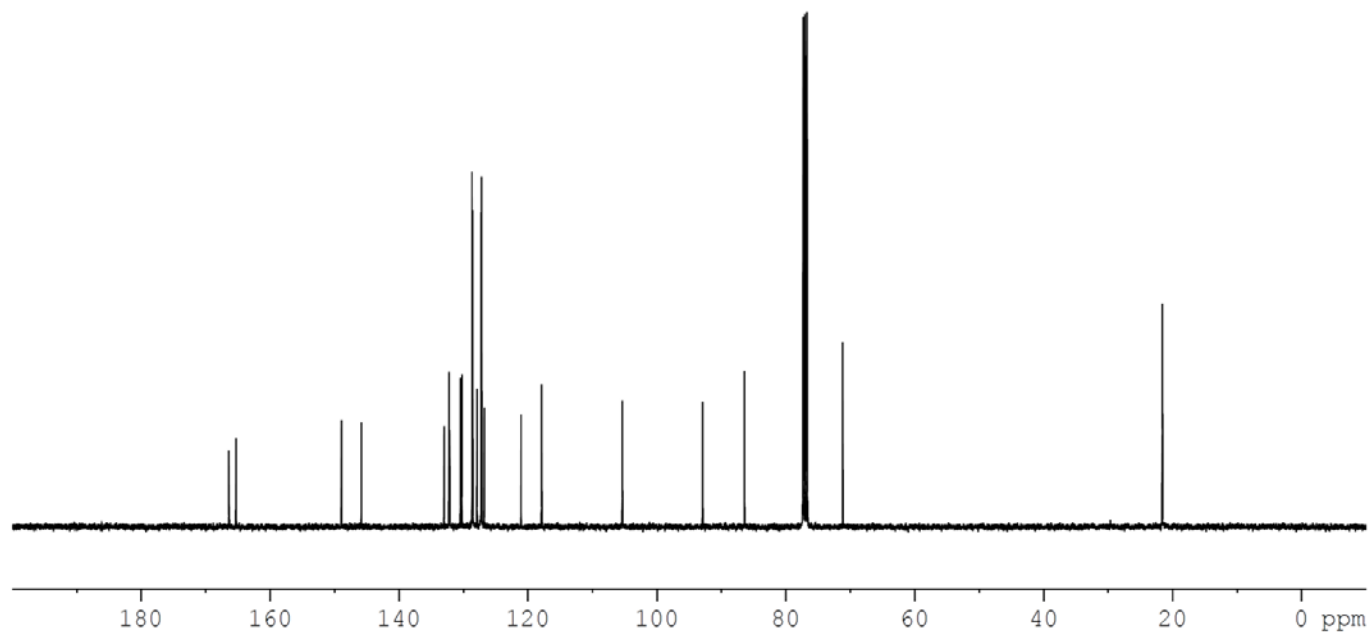
Current Data Parameters
NAME knraju ynonas salens 4f
EXPNO 81
PROCNO 1

F2 - Acquisition Parameters
Date_ 20170601
Time_ 12.08
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zgpg30
TD 32768
SOLVENT CDCl₃
NS 554
DS 0
SWH 24038.461 Hz
FIDRES 0.733596 Hz
AQ 0.6815744 sec
RG 4096
DW 20.800 usec
DE 6.50 usec
TE 296.1 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 13C
P1 9.00 usec
PL1 7.00 dB
SFO1 100.6233325 MHz

===== CHANNEL f2 =====
CPDPRG[2] waltz16
NUC2 1H
PCPD2 90.00 usec
PL2 1.80 dB
PL12 17.00 dB
PL13 20.00 dB
SFO2 400.1316005 MHz

F2 - Processing parameters
SI 32768
SF 100.6127765 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.00

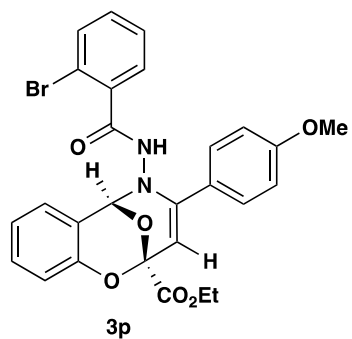


7.85
7.80
7.78
7.54
7.52
7.49
7.30
7.28
7.26
7.25
7.23
7.09
7.08
7.06
6.94
6.92
6.86
6.84
6.10
5.55

4.46
4.44
4.42

3.78

1.45
1.44
1.42

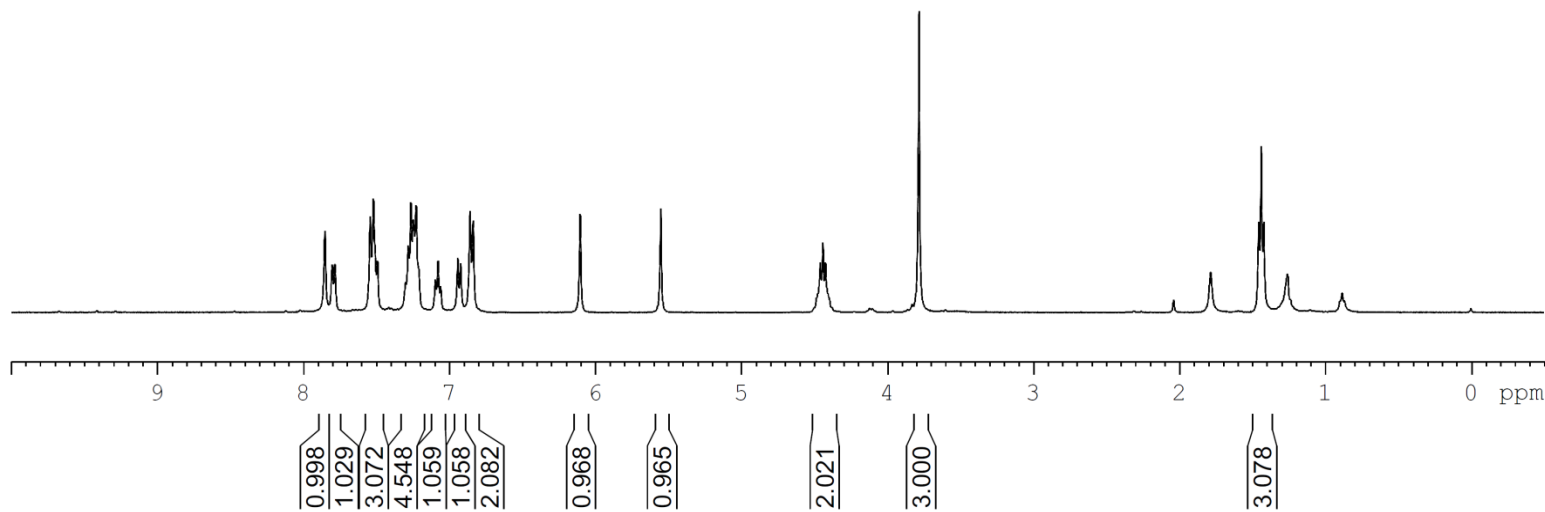


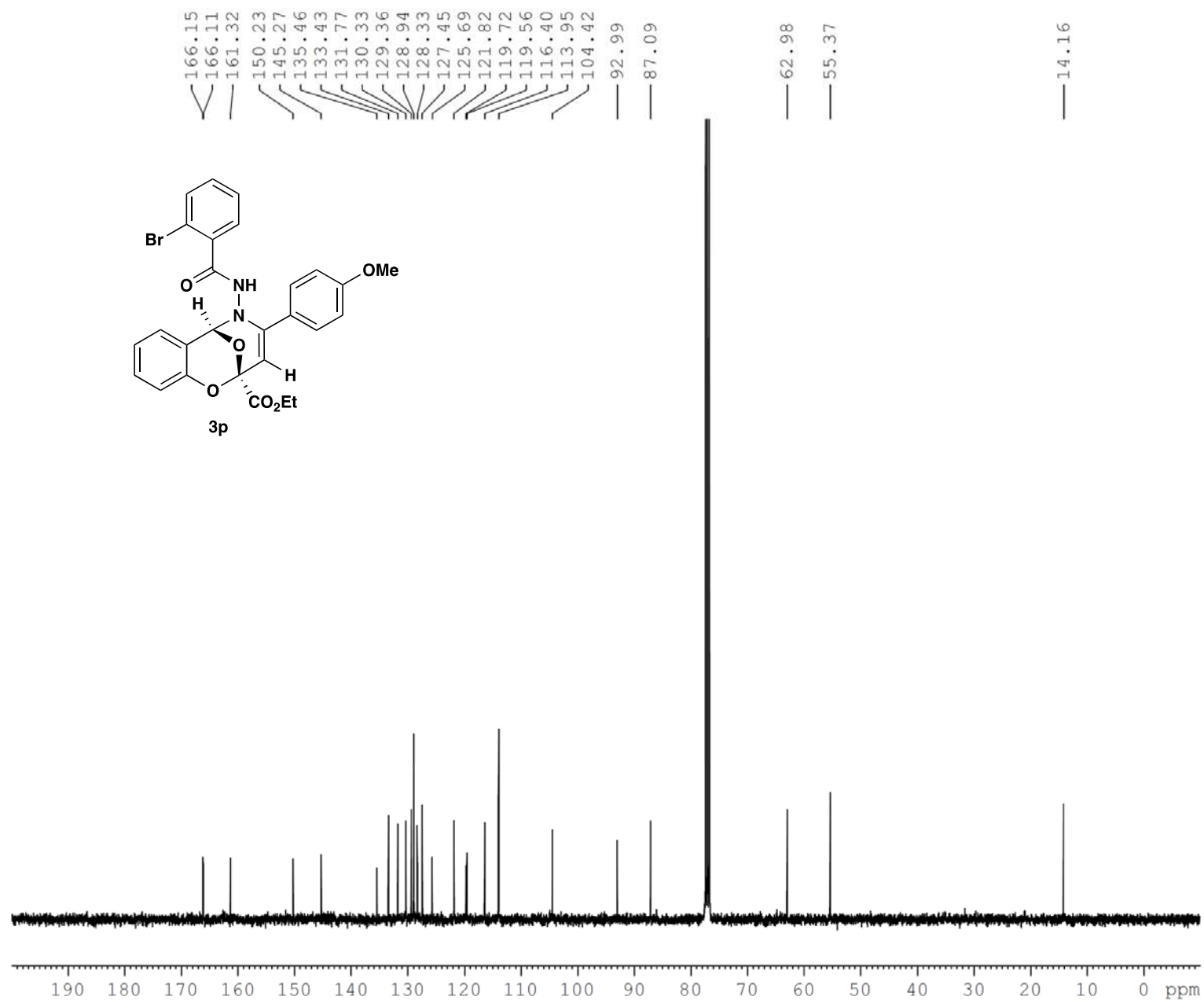
Current Data Parameters
NAME Ynones 4F
EXPNO 79
PROCNO 1

F2 - Acquisition Parameters
Date_ 20170112
Time 12.11
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 16
DS 0
SWH 7246.377 Hz
FIDRES 0.221142 Hz
AQ 2.2609921 sec
RG 181
DW 69.000 usec
DE 6.50 usec
TE 296.5 K
D1 2.00000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 1H
P1 14.40 usec
PL1 1.80 dB
SFO1 400.1324008 MHz

F2 - Processing parameters
SI 16384
SF 400.1300084 MHz
WDW EM
SSB 0
LB 0 Hz
GB 0
PC 1.00





Current Data Parameters
NAME Ynones 4F
EXPNO 80
PROCNO 1

F2 - Acquisition Parameters
Date_ 20170112
Time 12.19
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zgpg30
TD 32768
SOLVENT CDCl3
NS 759
DS 0
SWH 24038.461 Hz
FIDRES 0.733596 Hz
AQ 0.6815744 sec
RG 32768
DW 20.800 usec
DE 6.50 usec
TE 296.7 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 13C
P1 9.00 usec
PL1 7.00 dB
SFO1 100.6233325 MHz

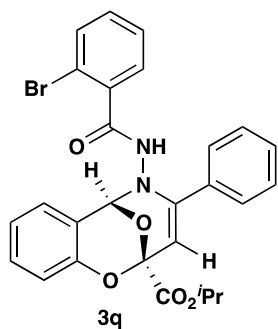
===== CHANNEL f2 =====
CPDPRG2 waltz16
NUC2 1H
PCPD2 90.00 usec
PL2 1.80 dB
PL12 17.00 dB
PL13 20.00 dB
SFO2 400.1316005 MHz

F2 - Processing parameters
SI 32768
SF 100.6127690 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.00

7.991
7.811
7.792
7.791
7.577
7.572
7.461
7.452
7.442
7.351
7.339
7.322
7.308
7.299
7.293
7.273
7.258
7.239
7.222
7.202
7.195
7.182
7.169
7.163
7.092
7.073
7.055
6.927
6.907
6.099
5.636
5.300
5.285
5.269
5.253
5.238
5.222
5.207

1.429
1.423
1.414
1.408

0.000

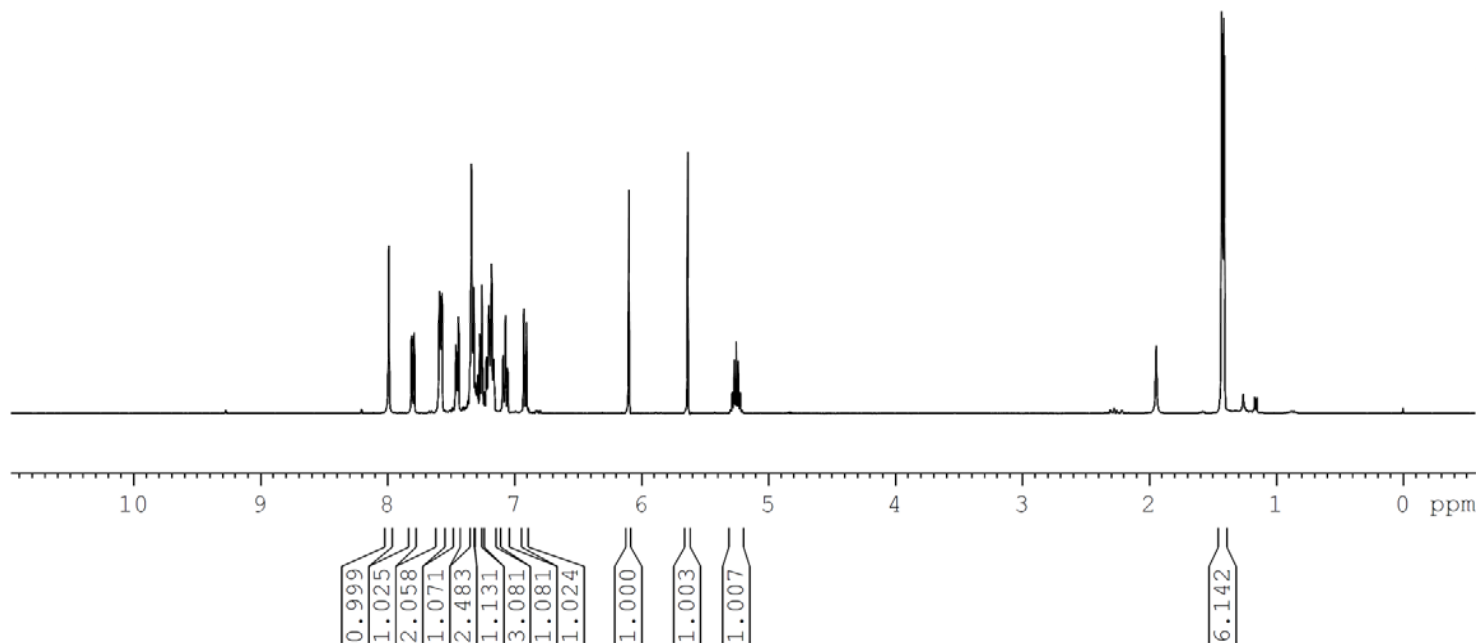


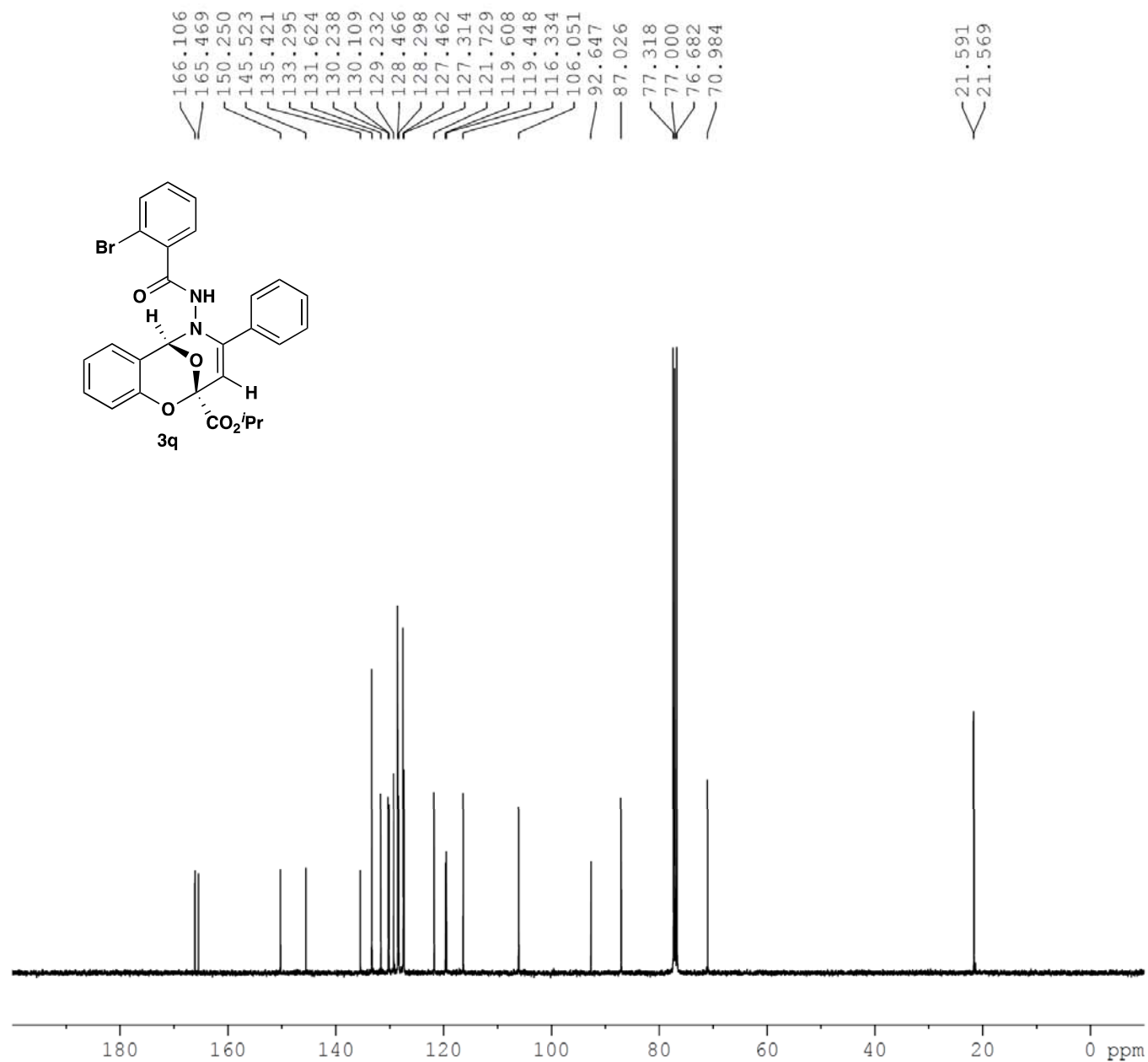
Current Data Parameters
NAME knraju ynones salens 4f
EXPNO 117
PROCNO 1

F2 - Acquisition Parameters
Date_ 20170625
Time 9.29
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 16
DS 0
SWH 7246.377 Hz
FIDRES 0.221142 Hz
AQ 2.2609921 sec
RG 57
DW 69.000 usec
DE 6.50 usec
TE 296.3 K
D1 2.00000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 1H
P1 16.80 usec
PL1 1.80 dB
SFO1 400.1324008 MHz

F2 - Processing parameters
SI 16384
SF 400.1300100 MHz
WDW EM
SSB 0
LB 0 Hz
GB 0
PC 1.00





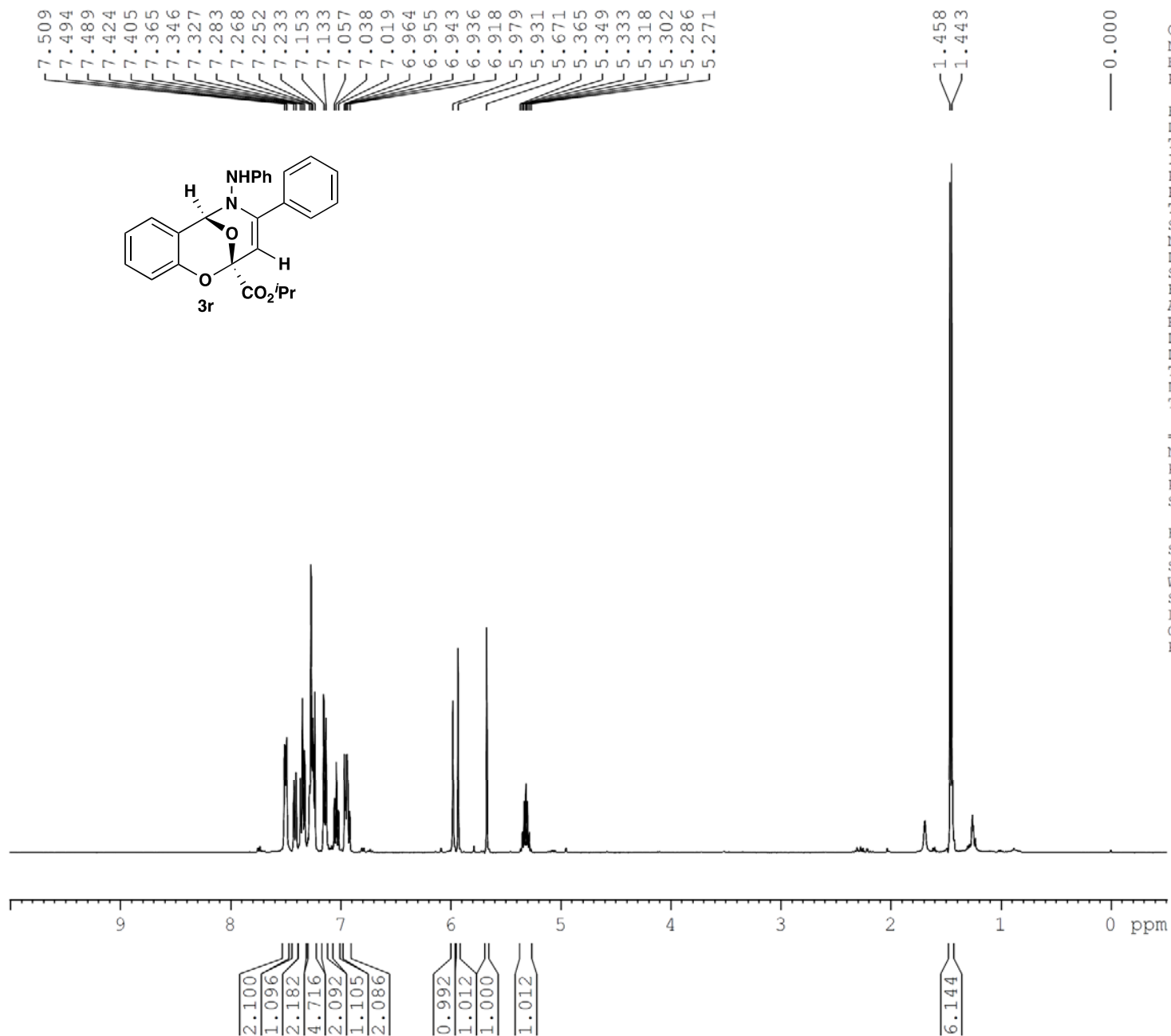
Current Data Parameters
NAME knraju ynones salens 4f
EXPNO 118
PROCNO 1

F2 - Acquisition Parameters
Date_ 20170625
Time_ 9.38
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zgpg30
TD 32768
SOLVENT CDC13
NS 1036
DS 0
SWH 24038.461 Hz
FIDRES 0.733596 Hz
AQ 0.6815744 sec
RG 4096
DW 20.800 usec
DE 6.50 usec
TE 296.8 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 13C
P1 10.45 usec
PL1 7.00 dB
SFO1 100.6233325 MHz

===== CHANNEL f2 =====
CPDPRG[2] waltz16
NUC2 1H
PCPD2 90.00 usec
PL2 1.80 dB
PL12 15.68 dB
PL13 20.00 dB
SFO2 400.1316005 MHz

F2 - Processing parameters
SI 32768
SF 100.6127763 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.00

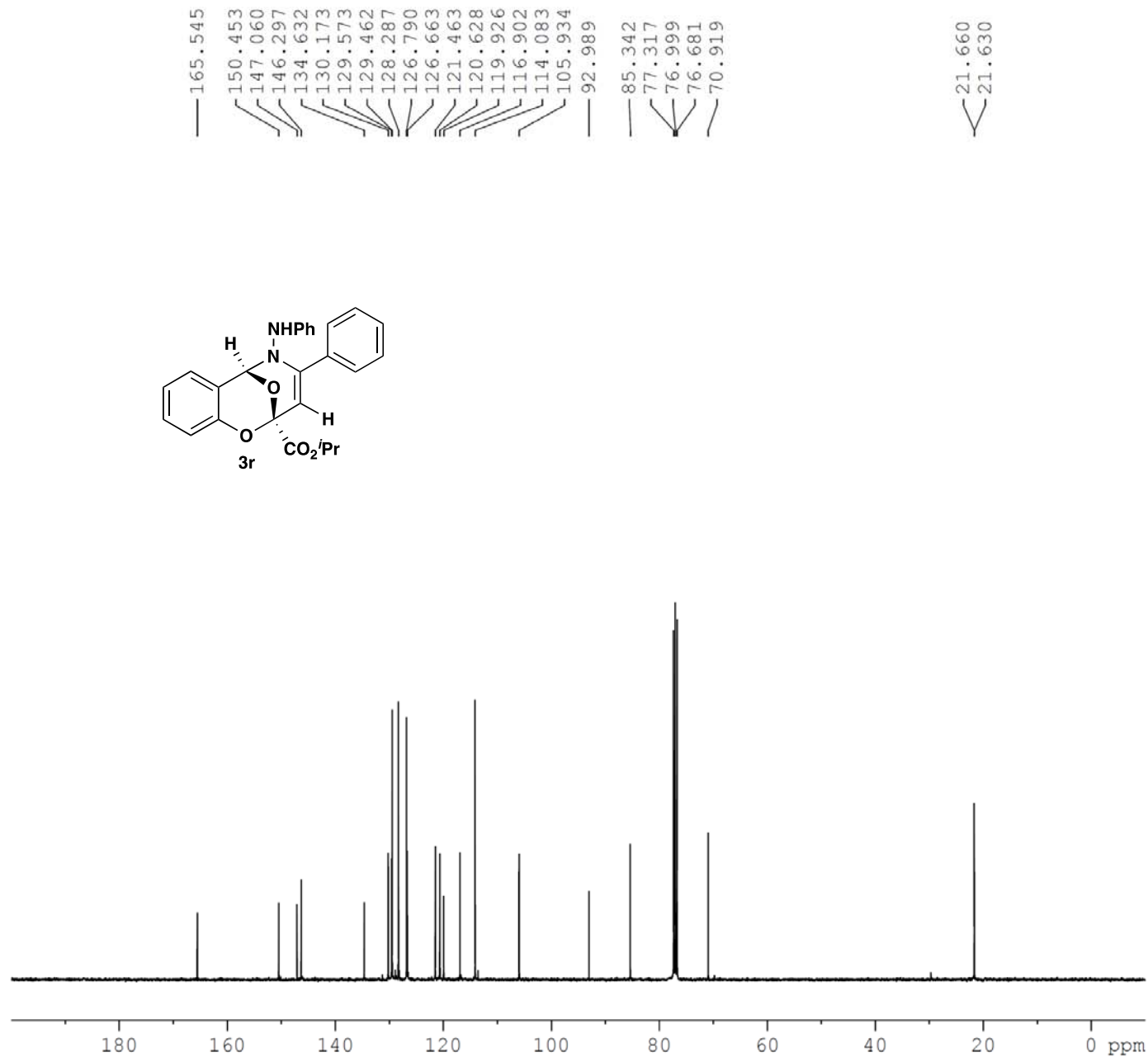
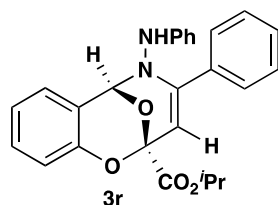


Current Data Parameters
NAME knraju ynones salens 4f
EXPNO 87
PROCNO 1

F2 - Acquisition Parameters
Date_ 20170614
Time 11.47
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 16
DS 0
SWH 7246.377 Hz
FIDRES 0.221142 Hz
AQ 2.2609921 sec
RG 57
DW 69.000 usec
DE 6.50 usec
TE 296.5 K
D1 2.00000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 1H
P1 16.80 usec
PL1 1.80 dB
SFO1 400.1324008 MHz

F2 - Processing parameters
SI 16384
SF 400.1300202 MHz
WDW EM
SSB 0
LB 0 Hz
GB 0
PC 1.00



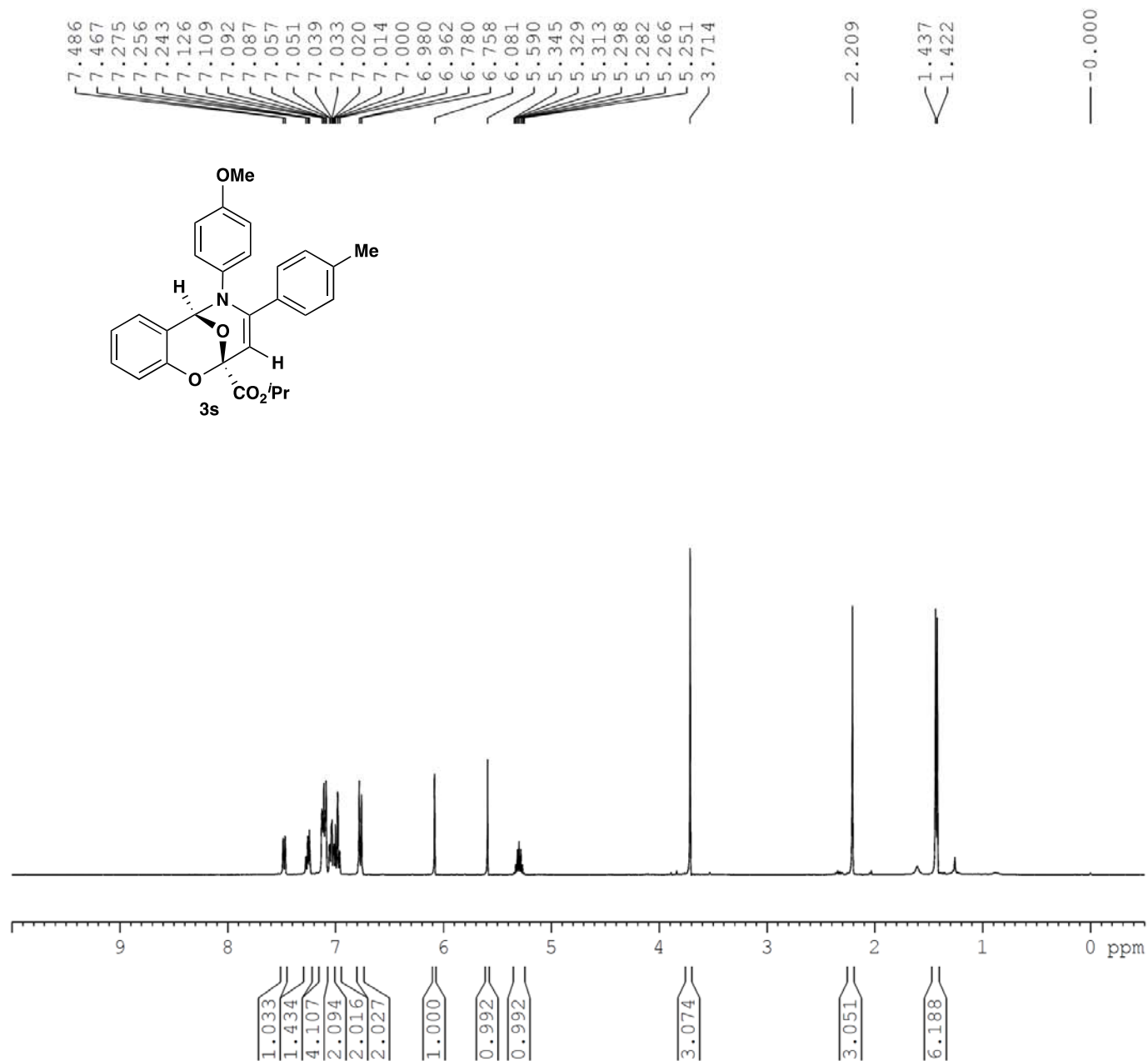
Current Data Parameters
NAME knraju ynones salens 4f
EXPNO 88
PROCNO 1

F2 - Acquisition Parameters
Date_ 20170614
Time_ 11.52
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zgpg30
TD 32768
SOLVENT CDC13
NS 1500
DS 0
SWH 24038.461 Hz
FIDRES 0.733596 Hz
AQ 0.6815744 sec
RG 4096
DW 20.800 usec
DE 6.50 usec
TE 296.6 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 13C
P1 10.45 usec
PL1 7.00 dB
SFO1 100.6233325 MHz

===== CHANNEL f2 =====
CPDPRG[2] waltz16
NUC2 1H
PCPD2 90.00 usec
PL2 1.80 dB
PL12 15.68 dB
PL13 20.00 dB
SFO2 400.1316005 MHz

F2 - Processing parameters
SI 32768
SF 100.6127775 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.00

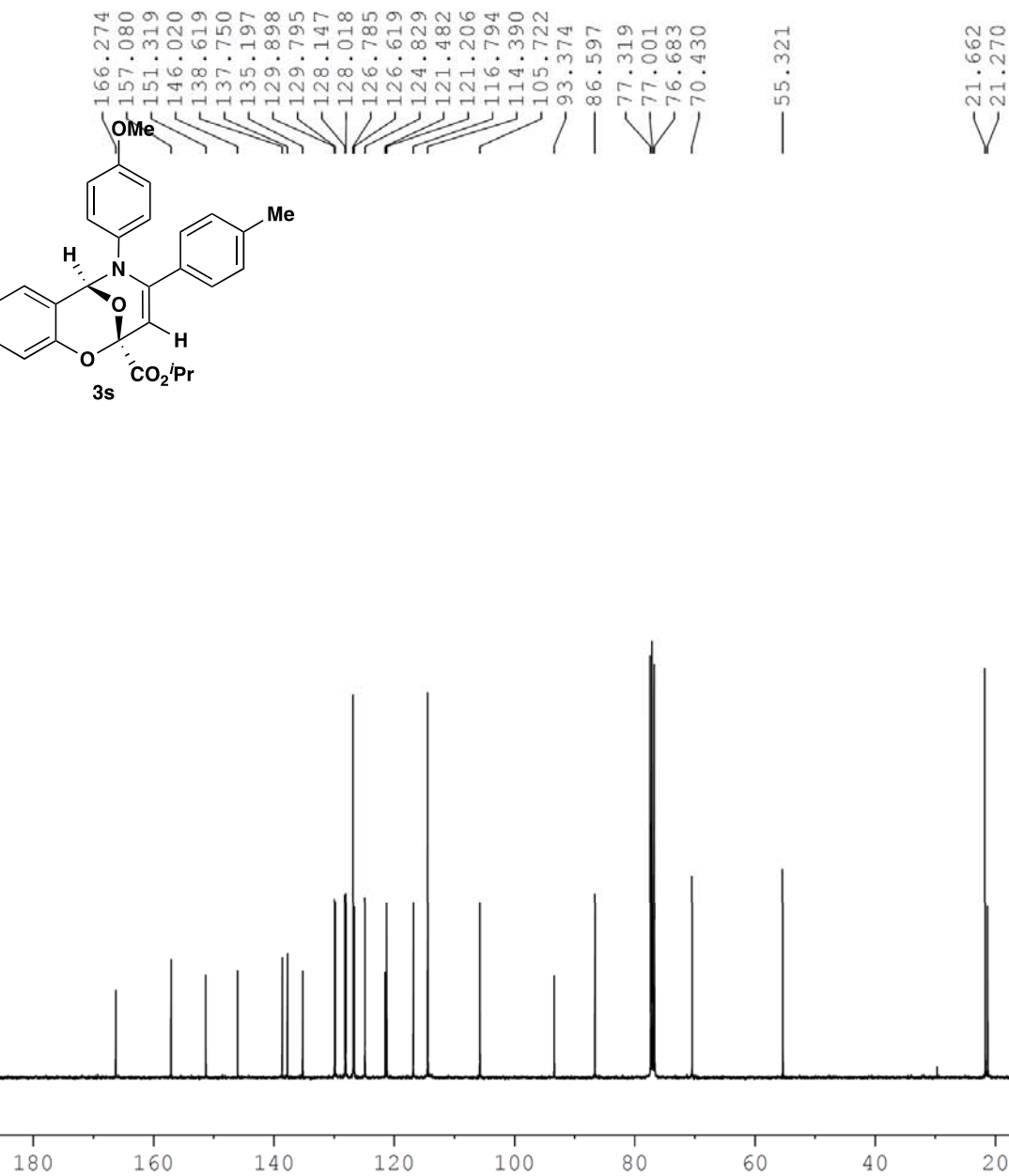
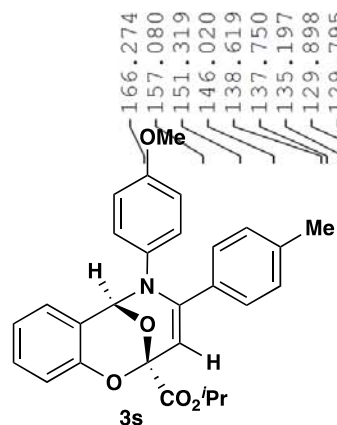


Current Data Parameters
NAME knraju ynonenes salens 4f
EXPNO 151
PROCNO 1

F2 - Acquisition Parameters
Date_ 20170911
Time_ 15.48
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 16
DS 0
SWH 7246.377 Hz
FIDRES 0.221142 Hz
AQ 2.2609921 sec
RG 64
DW 69.000 usec
DE 6.50 usec
TE 297.8 K
D1 2.00000000 sec
TD0 1

----- CHANNEL f1 -----
NUC1 1H
P1 15.00 usec
PL1 0 dB
SFO1 400.1324008 MHz

F2 - Processing parameters
SI 16384
SF 400.1300161 MHz
WDW EM
SSB 0
LB 0 Hz
GB 0
PC 1.00



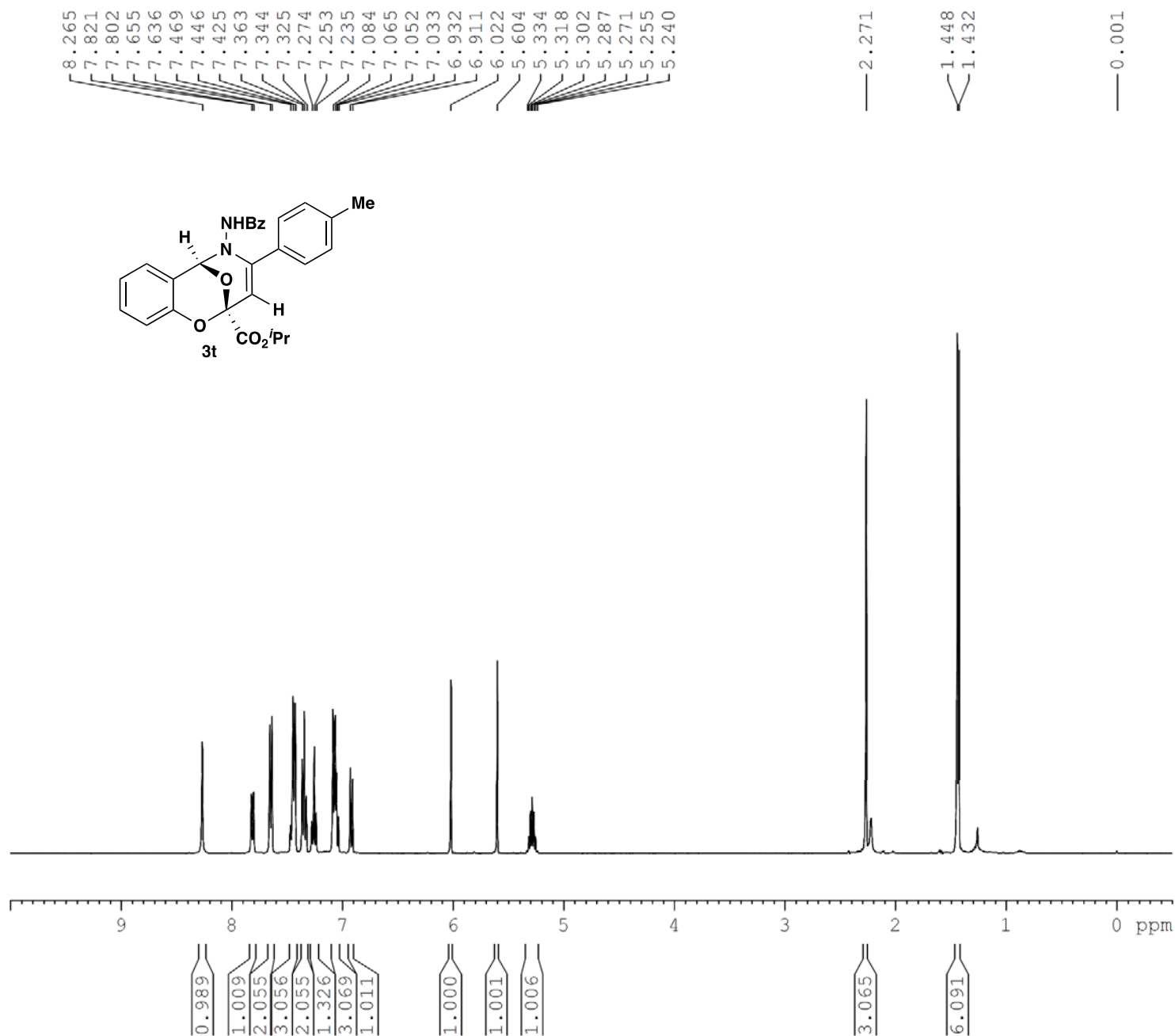
Current Data Parameters
 NAME knraju ynones salens 4f
 EXPNO 153
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20170911
 Time 18.09
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl₃
 NS 2000
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 4096
 DW 20.800 usec
 DE 6.50 usec
 TE 297.8 K
 D1 2.00000000 sec
 D11 0.03000000 sec
 TD0 1

===== CHANNEL f1 =====
 NUC1 13C
 P1 10.45 usec
 PL1 7.00 dB
 SFO1 100.6233325 MHz

===== CHANNEL f2 =====
 CPDPRG[2] waltz16
 NUC2 1H
 PCPD2 90.00 usec
 PL2 0 dB
 PL12 15.00 dB
 PL13 20.00 dB
 SFO2 400.1316005 MHz

F2 - Processing parameters
 SI 32768
 SF 100.6127753 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.00

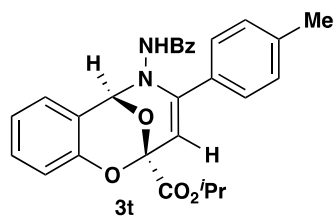


Current Data Parameters
NAME knraju ynones salens 4f
EXPNO 115
PROCNO 1

F2 - Acquisition Parameters
Date_ 20170623
Time_ 12.35
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 8
DS 0
SWH 7246.377 Hz
FIDRES 0.221142 Hz
AQ 2.2609921 sec
RG 45.3
DW 69.000 usec
DE 6.50 usec
TE 298.8 K
D1 2.00000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 1H
P1 16.80 usec
PL1 1.80 dB
SFO1 400.1324008 MHz

F2 - Processing parameters
SI 16384
SF 400.1300122 MHz
WDW EM
SSB 0
LB 0 Hz
GB 0
PC 1.00



166.218
165.734
150.278
145.657
140.175
132.304
132.060
130.461
130.121
129.161
128.572
128.263
127.160
127.051
121.661
119.734
116.284
104.977
— 92.918
— 87.050
77.318
77.000
76.682
70.959

21.614
21.590
21.211

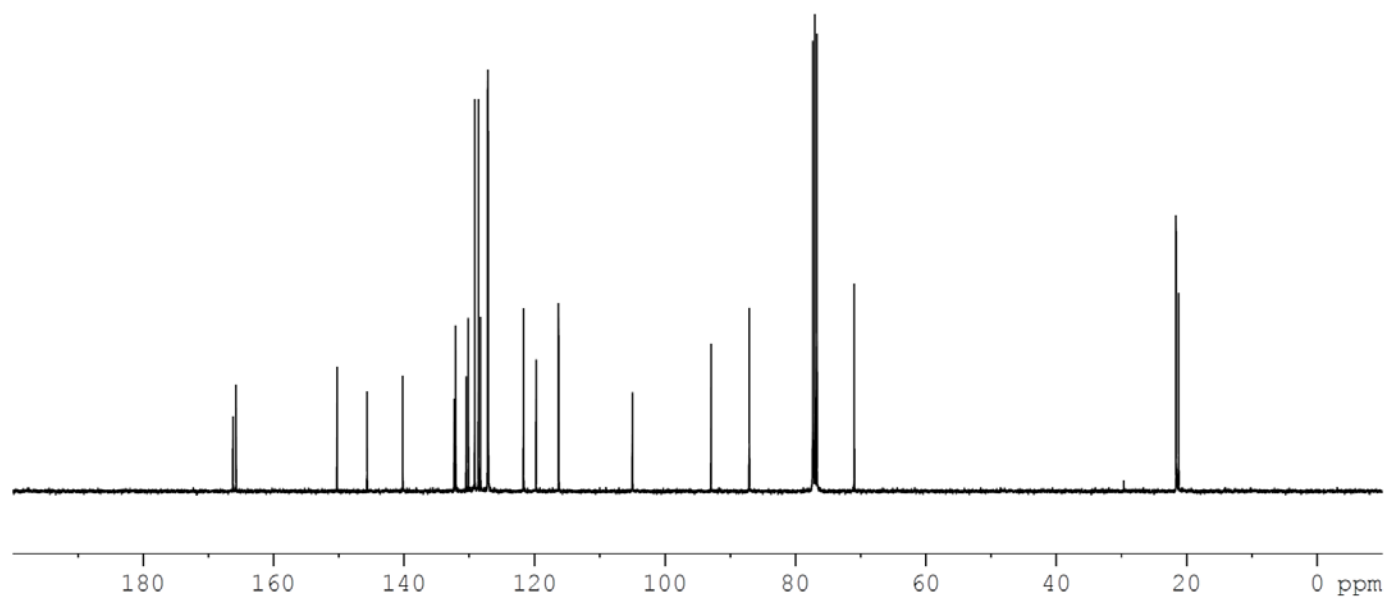
Current Data Parameters
NAME knraju ynones salens 4f
EXPNO 116
PROCNO 1

F2 - Acquisition Parameters
Date_ 20170623
Time 12.41
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zgpg30
TD 32768
SOLVENT CDCl3
NS 1200
DS 0
SWH 24038.461 Hz
FIDRES 0.733596 Hz
AQ 0.6815744 sec
RG 4096
DW 20.800 usec
DE 6.50 usec
TE 299.2 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

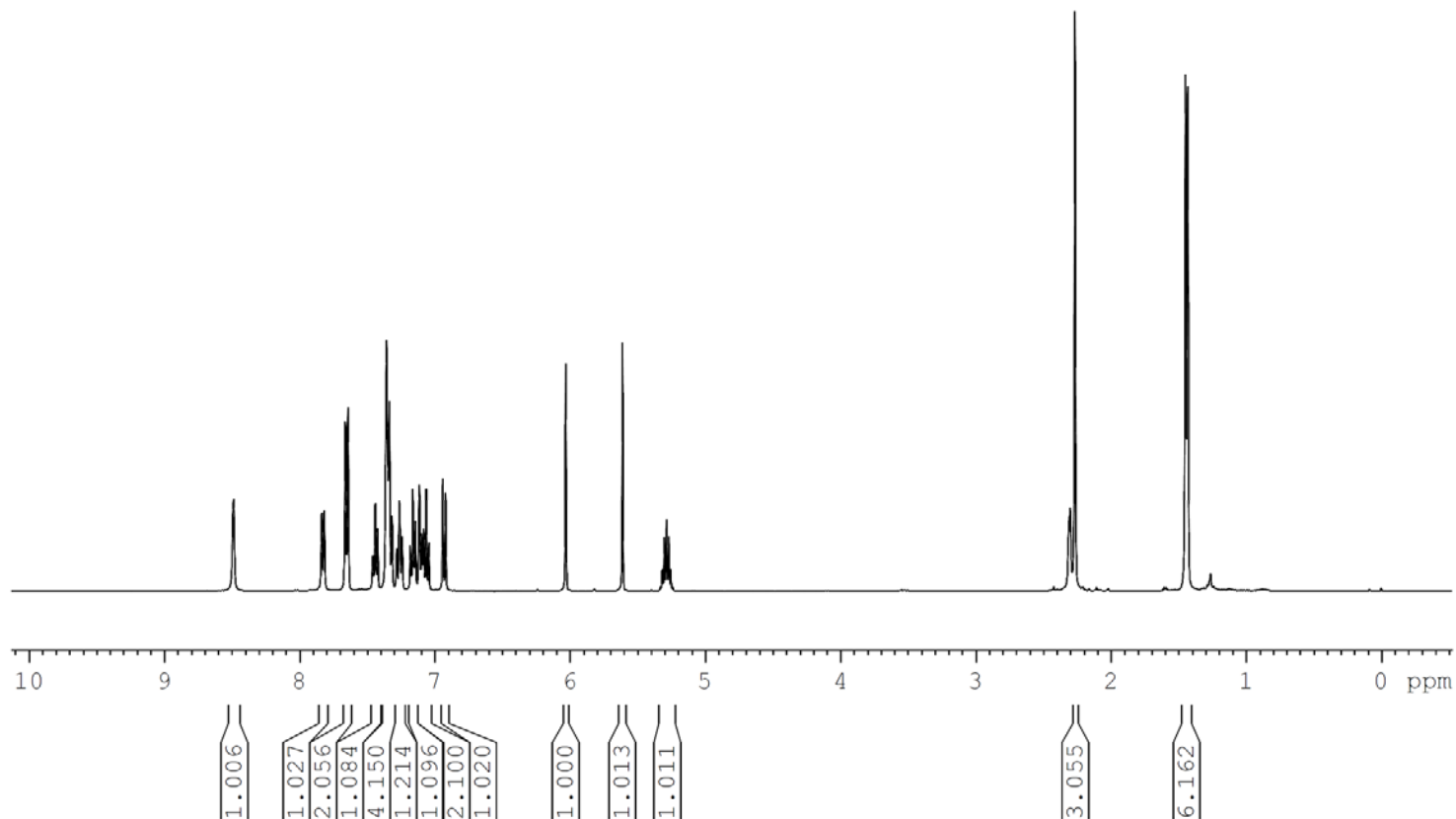
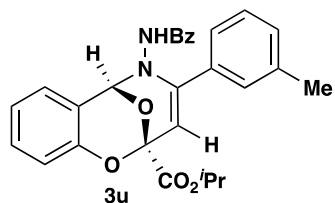
===== CHANNEL f1 =====
NUC1 13C
P1 10.45 usec
PL1 7.00 dB
SFO1 100.6233325 MHz

===== CHANNEL f2 =====
CPDPRG[2] waltz16
NUC2 1H
PCPD2 90.00 usec
PL2 1.80 dB
PL12 15.68 dB
PL13 20.00 dB
SFO2 400.1316005 MHz

F2 - Processing parameters
SI 32768
SF 100.6127767 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.00



8.483
7.832
7.813
7.657
7.638
7.454
7.436
7.417
7.351
7.331
7.312
7.276
7.257
7.238
7.177
7.158
7.138
7.109
7.091
7.077
7.058
7.040
6.936
6.915
6.031
5.611
5.332
5.316
5.301
5.285
5.269
5.254
5.239



— 2.265

1.447
1.432

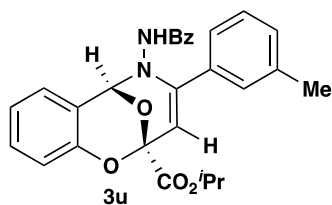
— 0.000

Current Data Parameters
NAME knraju ynones salens 4f
EXPNO 97
PROCNO 1

F2 - Acquisition Parameters
Date_ 20170617
Time_ 12.02
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zg30
TD 32768
SOLVENT CDC13
NS 8
DS 0
SWH 7246.377 Hz
FIDRES 0.221142 Hz
AQ 2.2609921 sec
RG 35.9
DW 69.000 usec
DE 6.50 usec
TE 298.1 K
D1 2.00000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 1H
P1 16.80 usec
PL1 1.80 dB
SFO1 400.1324008 MHz

F2 - Processing parameters
SI 16384
SF 400.1300131 MHz
WDW EM
SSB 0
LB 0 Hz
GB 0
PC 1.00



166.273
165.882
150.261
145.882
138.078
133.253
132.368
131.994
130.794
130.128
128.541
128.300
127.683
127.129
124.338
121.689
119.724
116.267
105.410
92.875
87.066
77.318
76.999
76.682
71.054

21.595
21.569
21.230

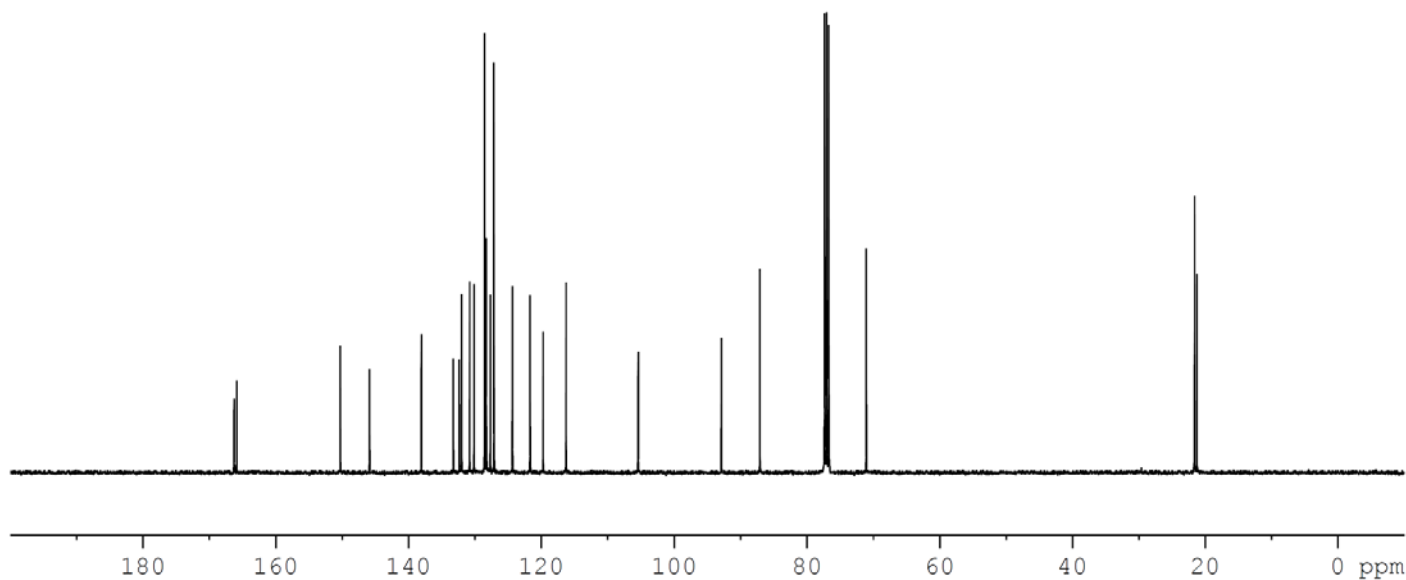
Current Data Parameters
NAME knraju ynones salens 4f
EXPNO 98
PROCNO 1

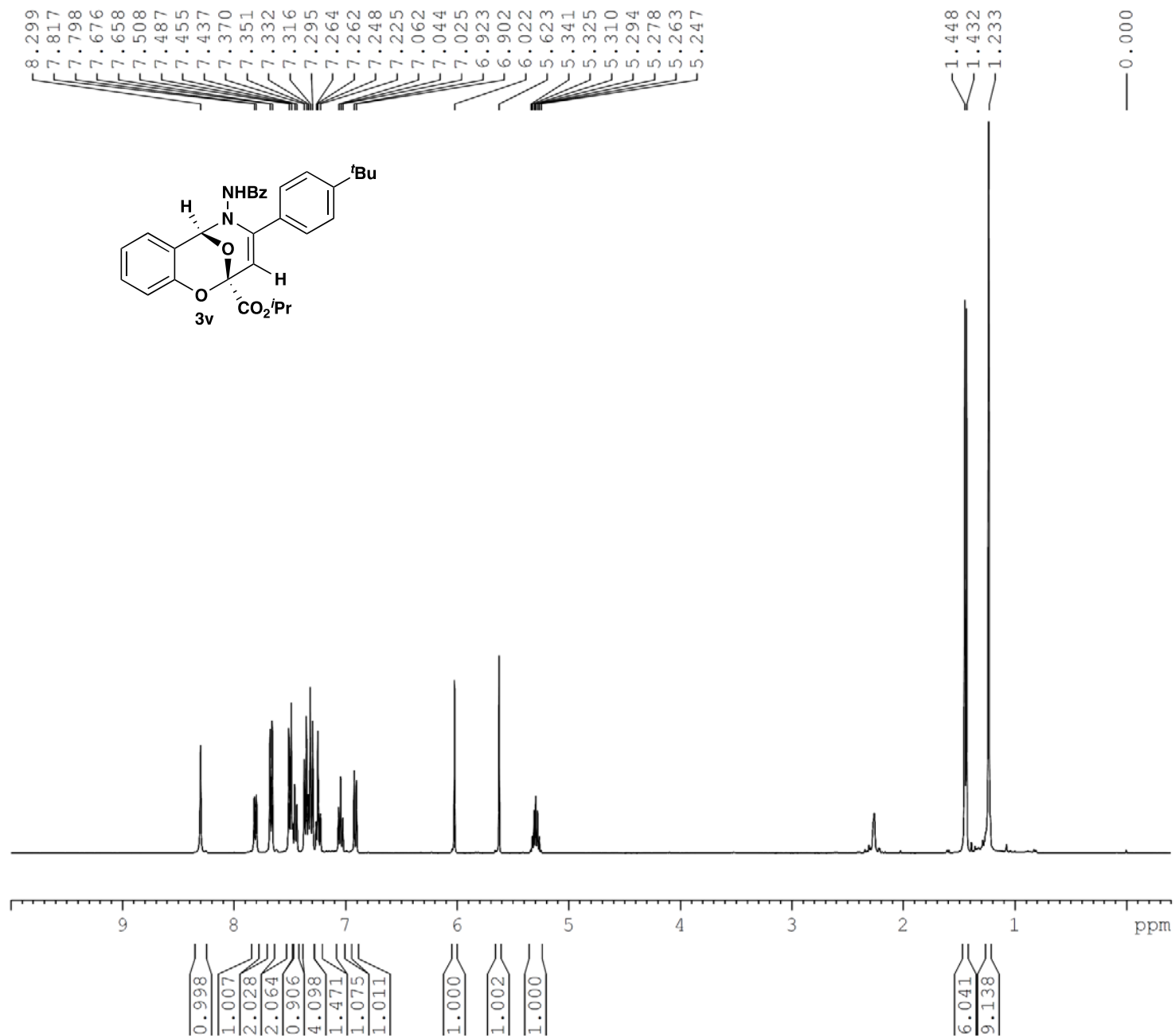
F2 - Acquisition Parameters
Date_ 20170617
Time 12.04
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zgpg30
TD 32768
SOLVENT CDCl3
NS 1379
DS 0
SWH 24038.461 Hz
FIDRES 0.733596 Hz
AQ 0.6815744 sec
RG 4096
DW 20.800 usec
DE 6.50 usec
TE 298.1 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 13C
P1 10.45 usec
PL1 7.00 dB
SFO1 100.6233325 MHz

===== CHANNEL f2 =====
CPDPRG[2] waltz16
NUC2 1H
PCPD2 90.00 usec
PL2 1.80 dB
PL12 15.68 dB
PL13 20.00 dB
SFO2 400.1316005 MHz

F2 - Processing parameters
SI 32768
SF 100.6127785 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.00



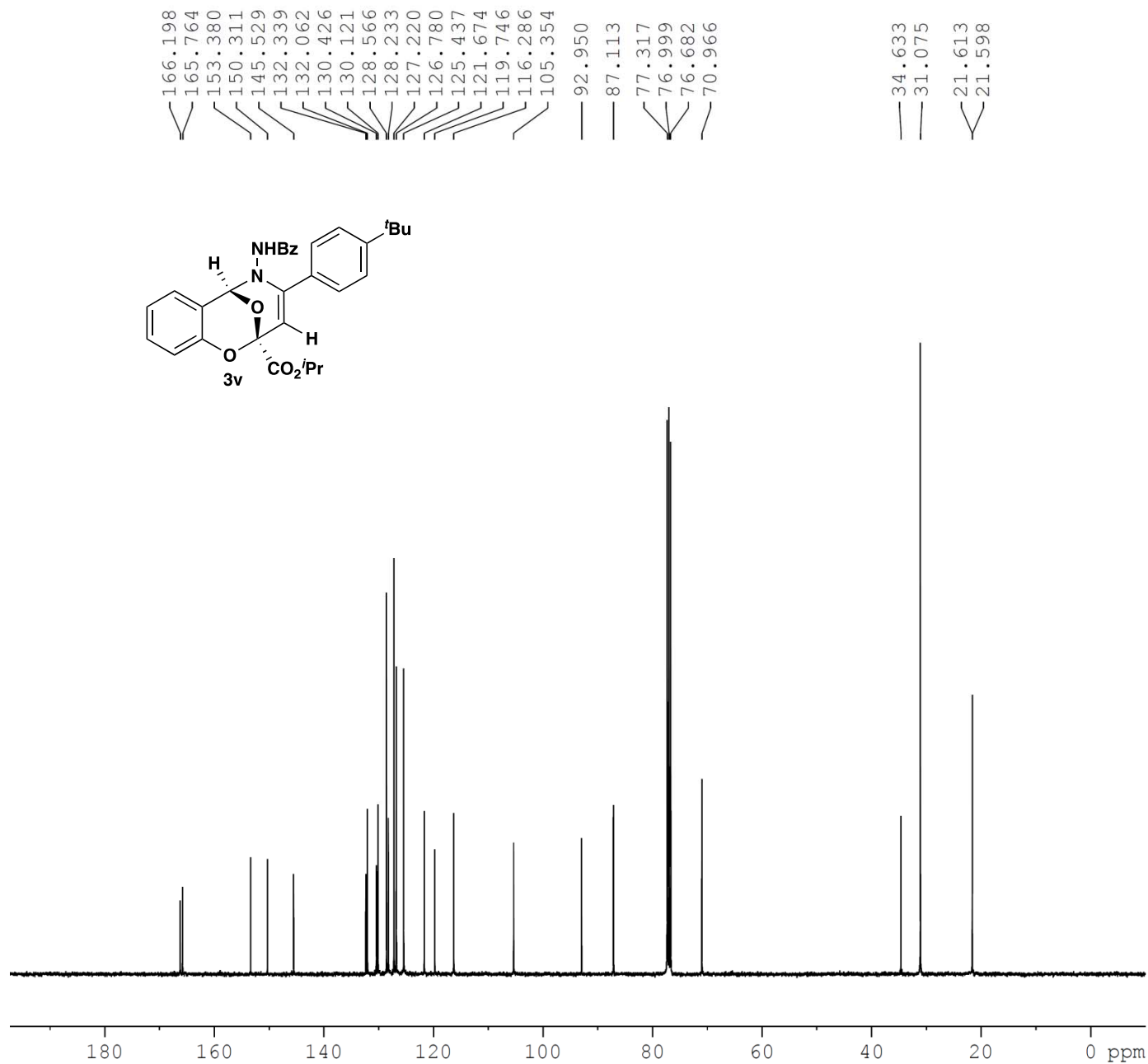
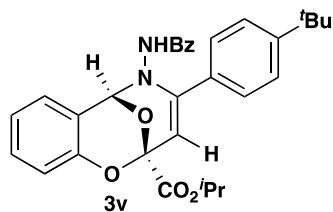


Current Data Parameters
NAME knraju ynones salens 4f
EXPNO 101
PROCNO 1

F2 - Acquisition Parameters
Date_ 20170619
Time 10.34
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 16
DS 0
SWH 7246.377 Hz
FIDRES 0.221142 Hz
AQ 2.2609921 sec
RG 40.3
DW 69.000 usec
DE 6.50 usec
TE 298.1 K
D1 2.00000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 1H
P1 16.80 usec
PL1 1.80 dB
SFO1 400.1324008 MHz

F2 - Processing parameters
SI 16384
SF 400.1300138 MHz
WDW EM
SSB 0
LB 0 Hz
GB 0
PC 1.00



Current Data Parameters
NAME knraju ynones salens 4f
EXPNO 102
PROCNO 1

F2 - Acquisition Parameters

Date_ 20170619
Time 10.36
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zgpg30
TD 32768
SOLVENT CDCl₃
NS 1585
DS 0
SWH 24038.461 Hz
FIDRES 0.733596 Hz
AQ 0.6815744 sec
RG 4096
DW 20.800 usec
DE 6.50 usec
TE 298.1 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

===== CHANNEL f1 =====

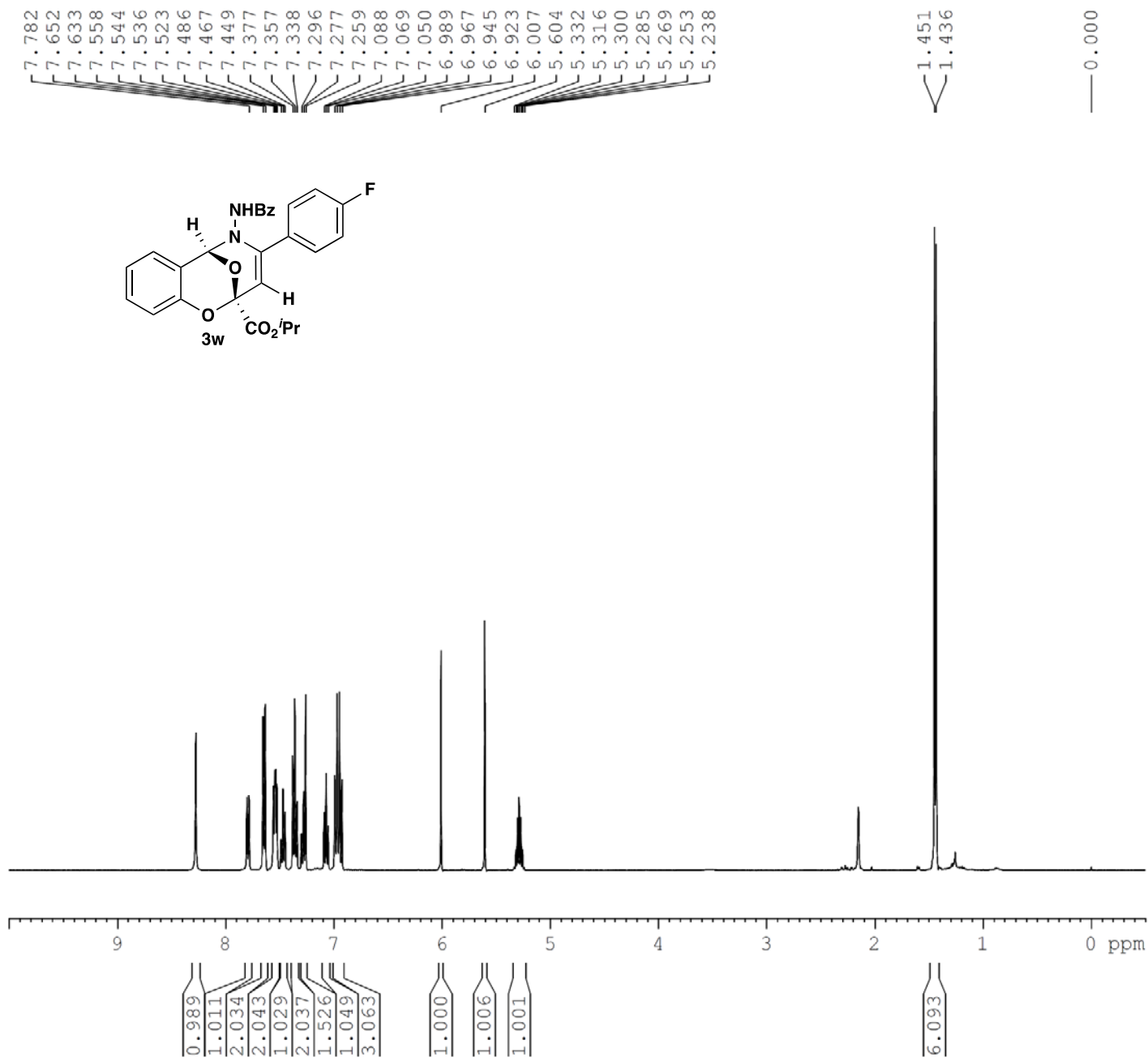
NUC1 13C
P1 10.45 usec
PL1 7.00 dB
SFO1 100.6233325 MHz

===== CHANNEL f2 =====

CPDPRG[2] waltz16
NUC2 1H
PCPD2 90.00 usec
PL2 1.80 dB
PL12 15.68 dB
PL13 20.00 dB
SFO2 400.1316005 MHz

F2 - Processing parameters

SI 32768
SF 100.6127770 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.00

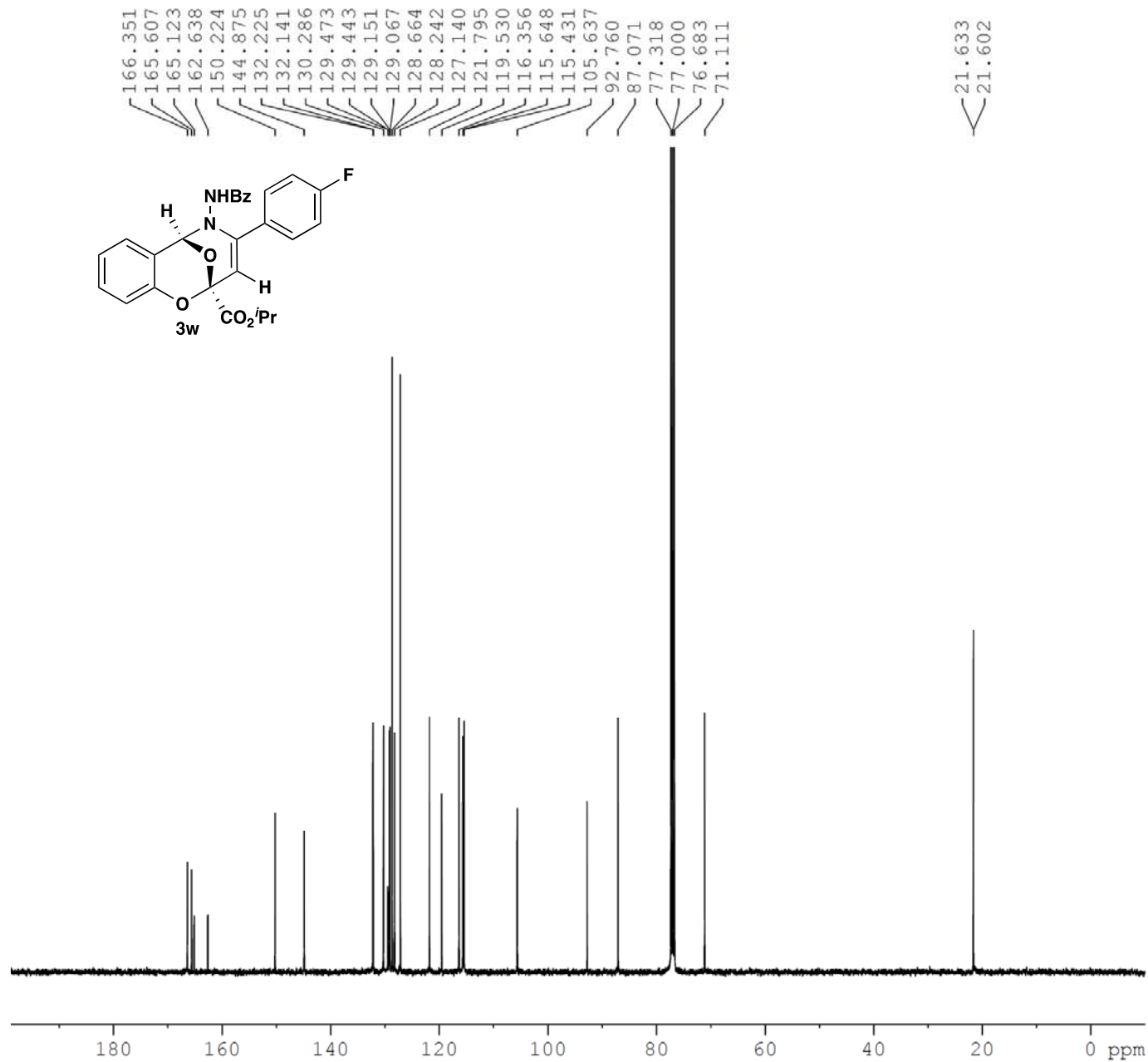


Current Data Parameters
 NAME knraju ynones salens 4f
 EXPNO 99
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20170617
 Time_ 16.11
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 0
 SWH 7246.377 Hz
 FIDRES 0.221142 Hz
 AQ 2.2609921 sec
 RG 71.8
 DW 69.000 usec
 DE 6.50 usec
 TE 298.0 K
 D1 2.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 NUC1 1H
 P1 16.80 usec
 PL1 1.80 dB
 SFO1 400.1324008 MHz

F2 - Processing parameters
 SI 16384
 SF 400.1300096 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00



Current Data Parameters
NAME knraju ynones salens 4f
EXPNO 100
PROCNO 1

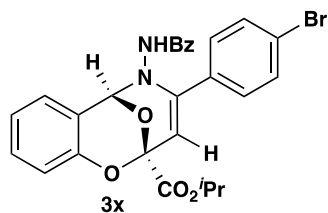
F2 - Acquisition Parameters
Date_ 20170617
Time 16.18
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zgpg30
TD 32768
SOLVENT CDCl3
NS 2602
DS 0
SWH 24038.461 Hz
FIDRES 0.733596 Hz
AQ 0.6815744 sec
RG 4096
DW 20.800 usec
DE 6.50 usec
TE 298.5 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 13C
P1 10.45 usec
PL1 7.00 dB
SFO1 100.6233325 MHz

===== CHANNEL f2 =====
CPDPRG[2] waltz16
NUC2 1H
PCPD2 90.00 usec
PL2 1.80 dB
PL12 15.68 dB
PL13 20.00 dB
SFO2 400.1316005 MHz

F2 - Processing parameters
SI 32768
SF 100.6127739 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.00

8.429
7.785
7.765
7.660
7.640
7.465
7.447
7.429
7.410
7.403
7.381
7.356
7.337
7.318
7.289
7.270
7.258
7.254
7.078
7.059
7.040
6.936
6.915
5.989
5.643
5.314
5.299
5.283
5.268
5.252
5.236
5.221



1.443
1.427

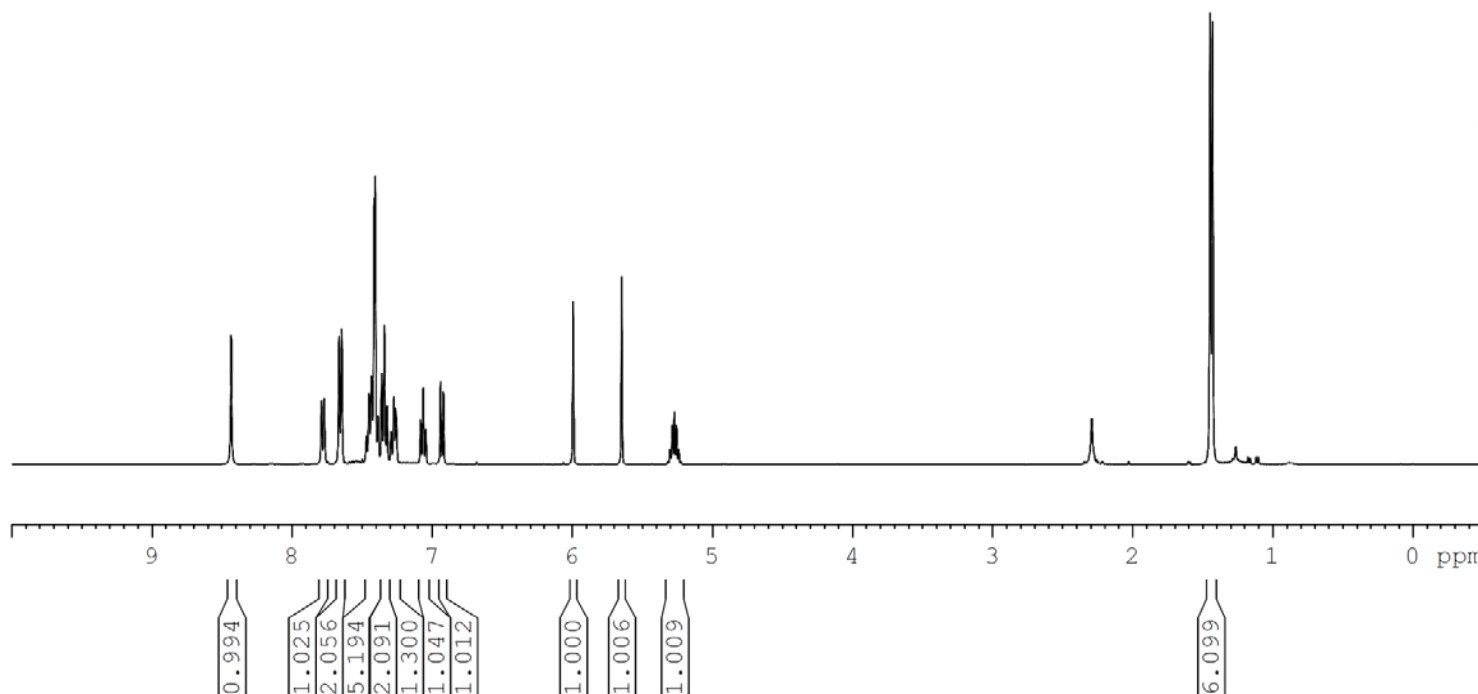
0.000

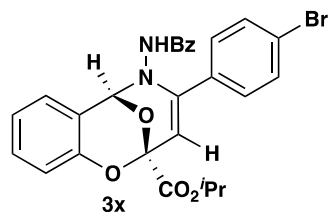
Current Data Parameters
NAME knraju yrones salens 4f
EXPNO 113
PROCNO 1

F2 - Acquisition Parameters
Date_ 20170623
Time 11.41
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zg30
TD 32768
SOLVENT CDC13
NS 8
DS 0
SWH 7246.377 Hz
FIDRES 0.221142 Hz
AQ 2.2609921 sec
RG 45.3
DW 69.000 usec
DE 6.50 usec
TE 298.4 K
D1 2.00000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 1H
P1 16.80 usec
PL1 1.80 dB
SFO1 400.1324008 MHz

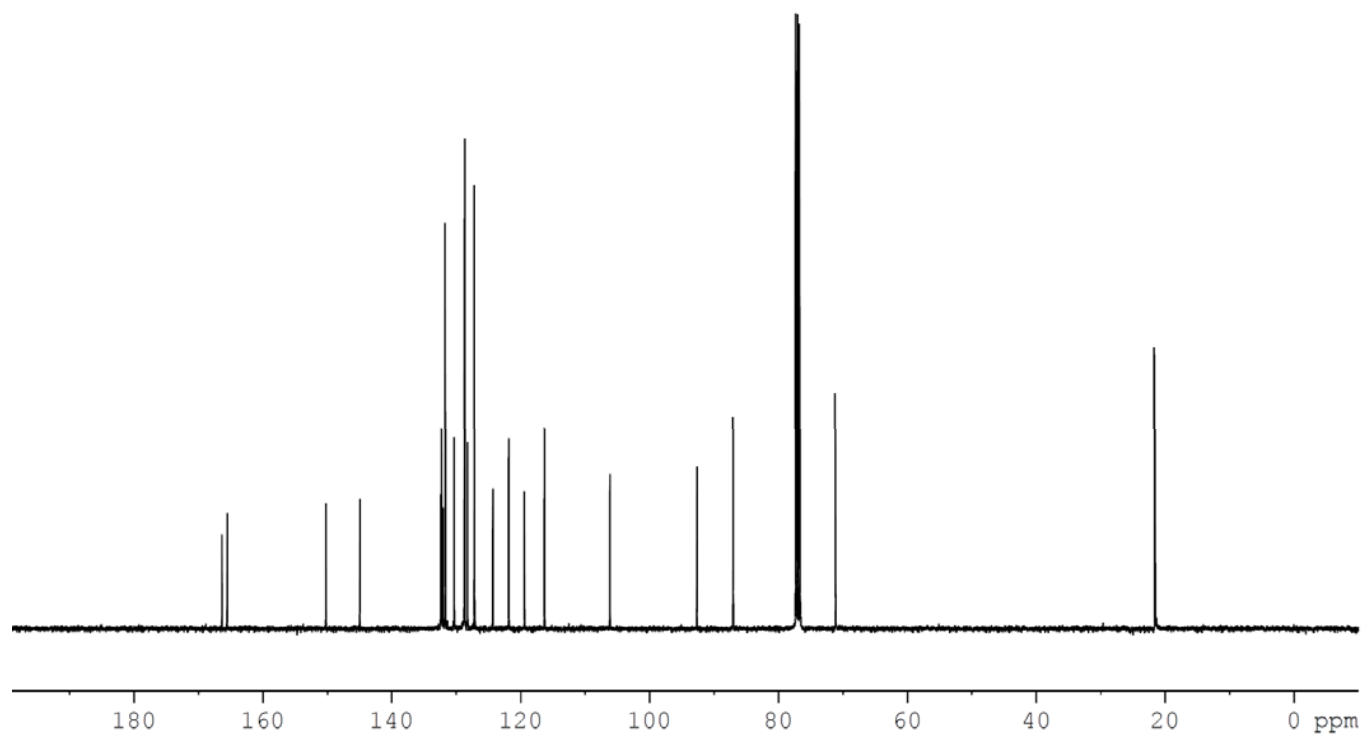
F2 - Processing parameters
SI 16384
SF 400.1300105 MHz
WDW EM
SSB 0
LB 0 Hz
GB 0
PC 1.00





166.320
165.507
150.174
144.921
132.365
132.213
132.010
131.654
130.291
128.684
128.618
128.224
127.150
124.304
121.812
119.427
116.318
106.164
92.674
87.038
77.317
76.999
76.682
71.156

21.613
21.578



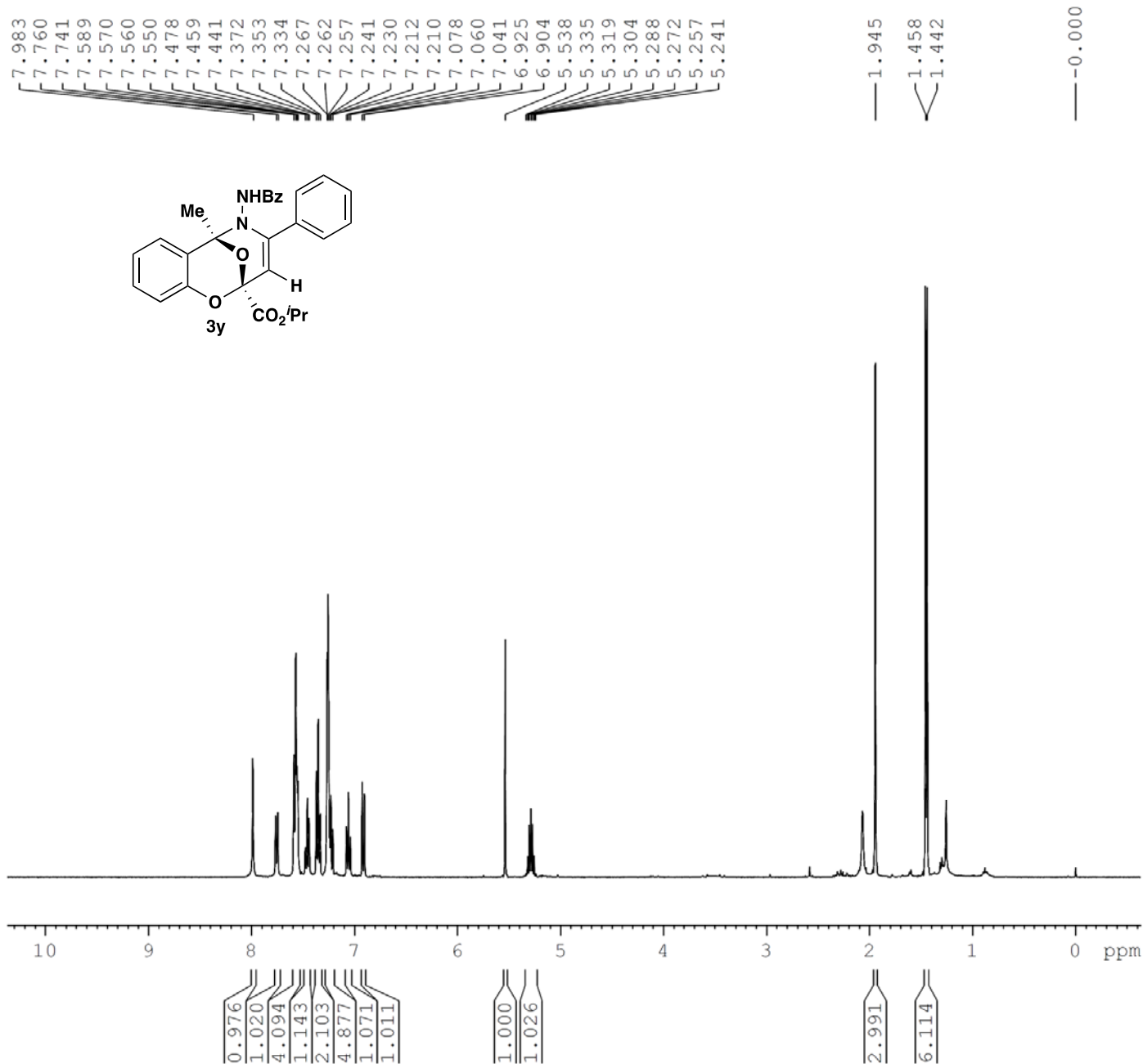
Current Data Parameters
NAME knraju ynonnes salens 4f
EXPNO 114
PROCNO 1

F2 - Acquisition Parameters
Date 20170623
Time 11.44
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zgpg30
TD 32768
SOLVENT CDCl3
NS 1000
DS 0
SWH 24038.461 Hz
FIDRES 0.733596 Hz
AQ 0.6815744 sec
RG 4096
DW 20.800 usec
DE 6.50 usec
TE 298.5 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

----- CHANNEL f1 -----
NUC1 13C
P1 10.45 usec
PL1 7.00 dB
SFO1 100.6233325 MHz

----- CHANNEL f2 -----
CPDPRG[2] waltz16
NUC2 1H
PCPD2 90.00 usec
PL2 1.80 dB
PL12 15.68 dB
PL13 20.00 dB
SFO2 400.1316005 MHz

F2 - Processing parameters
SI 32768
SF 100.6127763 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.00



Current Data Parameters
 NAME knraju ynones salens 4f
 EXPNO 124
 PROCNO 1

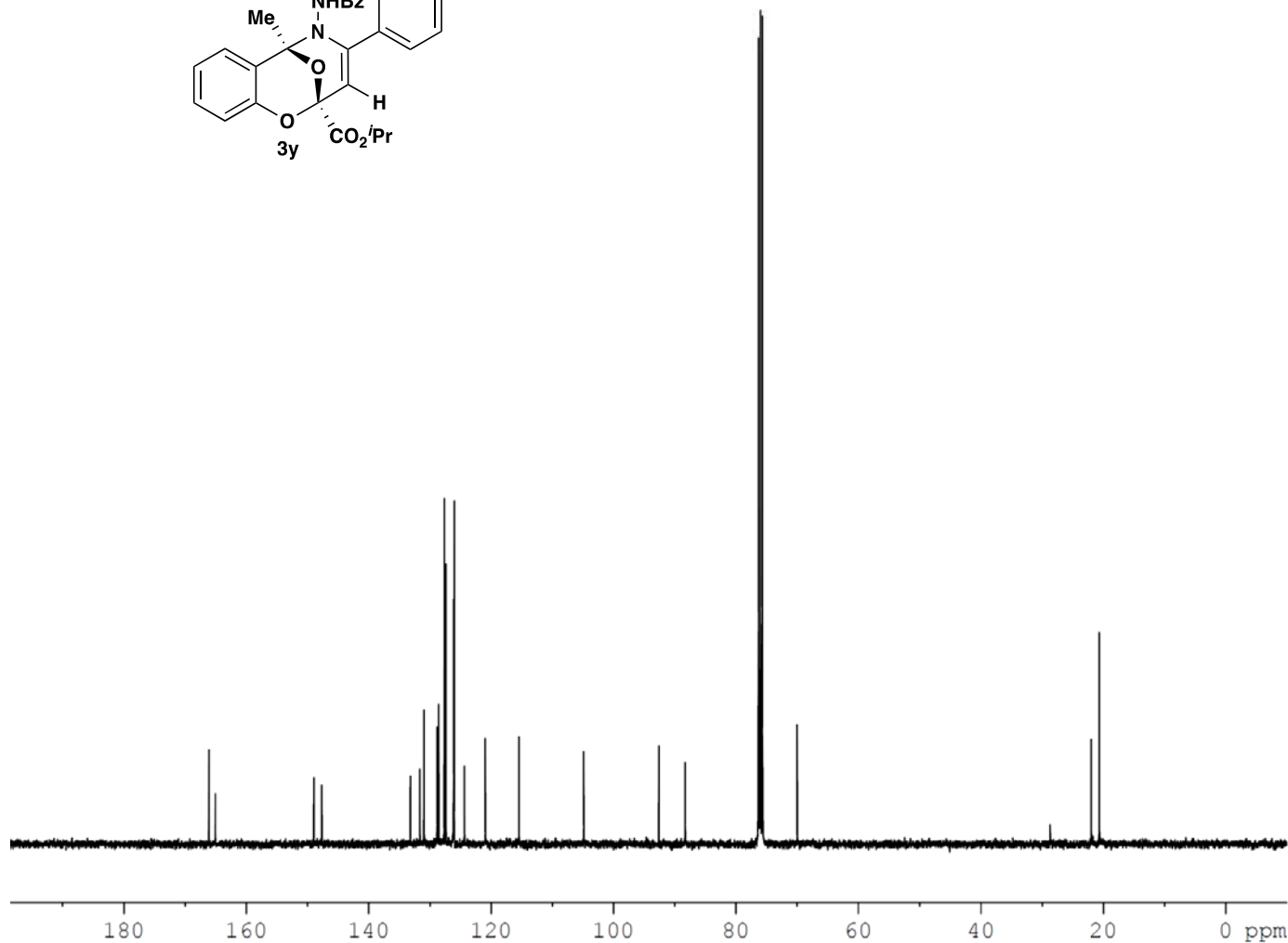
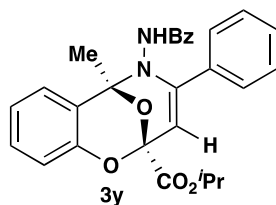
F2 - Acquisition Parameters
 Date_ 20170703
 Time_ 16.23
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zg30
 TD 32768
 SOLVENT CDC13
 NS 16
 DS 0
 SWH 7246.377 Hz
 FIDRES 0.221142 Hz
 AQ 2.2609921 sec
 RG 114
 DW 69.000 usec
 DE 6.50 usec
 TE 297.1 K
 D1 2.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 NUC1 1H
 P1 16.80 usec
 PL1 1.80 dB
 SFO1 400.1324008 MHz

F2 - Processing parameters
 SI 16384
 SF 400.1300107 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

166.078
165.058
148.948
147.669
133.195
131.649
130.969
128.833
128.550
127.659
127.384
126.122
126.074
126.034
124.371
120.949
115.468
104.874
92.602
88.300
76.316
75.999
75.680
69.989

21.965
20.640



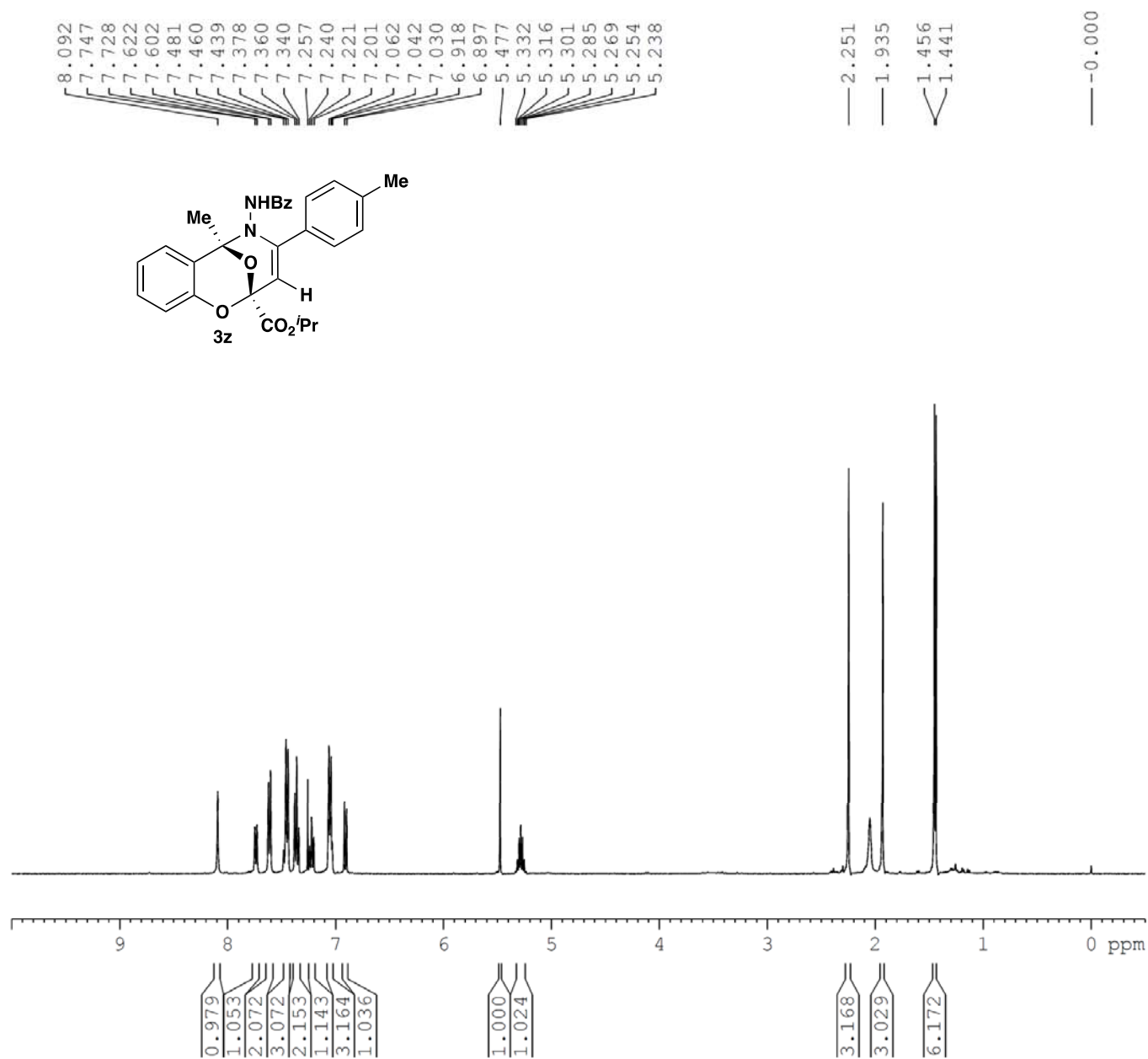
Current Data Parameters
NAME knraju ynones salens 4f
EXPNO 125
PROCNO 1

F2 - Acquisition Parameters
Date_ 20170703
Time 16.25
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zgpg30
TD 32768
SOLVENT CDCl3
NS 911
DS 0
SWH 24038.461 Hz
FIDRES 0.733596 Hz
AQ 0.6815744 sec
RG 4096
DW 20.800 usec
DE 6.50 usec
TE 297.2 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 13C
P1 10.45 usec
PL1 7.00 dB
SFO1 100.6233325 MHz

===== CHANNEL f2 =====
CPDPRG[2] waltz16
NUC2 1H
PCPD2 90.00 usec
PL2 1.80 dB
PL12 15.68 dB
PL13 20.00 dB
SFO2 400.1316005 MHz

F2 - Processing parameters
SI 32768
SF 100.6128736 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.00

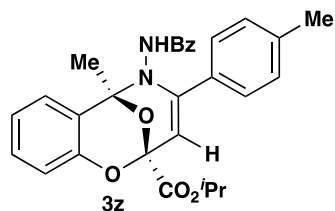


Current Data Parameters
NAME knraju ynones salens 4f
EXPNO 127
PROCNO 1

F2 - Acquisition Parameters
Date_ 20170816
Time_ 11.17
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 16
DS 0
SWH 7246.377 Hz
FIDRES 0.221142 Hz
AQ 2.2609921 sec
RG 114
DW 69.000 usec
DE 6.50 usec
TE 297.5 K
D1 2.00000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 1H
P1 15.00 usec
PL1 0 dB
SFO1 400.1324008 MHz

F2 - Processing parameters
SI 16384
SF 400.1300105 MHz
WDW EM
SSB 0
LB 0 Hz
GB 0
PC 1.00



166.975
166.156
149.871
148.696
139.787
132.515
131.779
131.356
129.387
128.957
128.469
127.018
126.966
126.930
125.435
121.796
116.335
104.821
93.630
89.207
77.318
76.999
76.681
70.872

22.850
21.530
21.499
21.091

Current Data Parameters
NAME knraju ynones salens 4f
EXPNO 131
PROCNO 1

F2 - Acquisition Parameters
Date_ 20170816
Time_ 13.39
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zgpg30
TD 32768
SOLVENT CDC13
NS 303
DS 0
SWH 24038.461 Hz
FIDRES 0.733596 Hz
AQ 0.6815744 sec
RG 4096
DW 20.800 usec
DE 6.50 usec
TE 297.8 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 13C
P1 10.45 usec
PL1 7.00 dB
SFO1 100.6233325 MHz

===== CHANNEL f2 =====
CPDPRG[2] waltz16
NUC2 1H
PCPD2 90.00 usec
PL2 0 dB
PL12 15.00 dB
PL13 20.00 dB
SFO2 400.1316005 MHz

F2 - Processing parameters
SI 32768
SF 100.6127855 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.00

