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SUPPORTING INFORMATION

Title: Intermolecular [4+2] Cycloadditions of a Reactive Cyclopentadienone
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Ref. No.: O200600173

General Information:

All reactions were carried out in oven dried nitrogen stream cooled glassware. Toluene was distilled over CaH_2 and stored over 4A° molecular sieves and used for a month. THF was freshly distilled over sodium-benzophenone and methylene chloride was over CaH_2.

Chromatographic separation was performed on Silicycle ultra pure silica gel (230-400 mesh) and also on 60 A° mesh from Aldrich. Analytical thin layer chromatography was done on silica gel with UV indicator from Sigma-Aldrich.

Melting points were determined with a Fisher-Johns melting point apparatus and are uncorrected. Infrared spectra were recorded on a Perkin Elmer 1600 series FT-IR spectrometer. ^{1}H-NMR were recorded on a Bruker ARS-250 (250 MHz), DRX-300 (300 MHz), and DRX-500 (500 MHz) spectrometer and are reported in ppm (δ) from tetramehtylsilane (TMS: δ= 0.0ppm). Data are reported according to the following sequence: chemical shift, multiplicity (s =singlet, d =doublet, t =triplet, q= quartet, m= multiplet, dd= doublet of doublet, ddd= doublet of doublet of doublet, bm= broad multiplet), coupling constants in Hz, and integration. ^{13}C-NMR spectra were performed on a Bruker ARS-250 (62.5 MHz), DRX-300 (75 MHz), and DRX-500 (125 MHz) spectrometer with complete proton decoupling. Chemical shifts are reported in ppm from tetramethylsilane with solvent resonance as the internal standard ($CDCl_3$: δ 77 ppm).

Compounds **DA-17**[1] and **DA-18**[1] are reported in the literature.

Experimental : General procedure

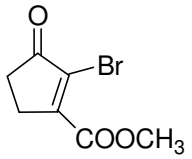
Diels-Alder reactions in THF: Bromo-enone ester **11** was taken into a 10mL flask equipped with a stir bar and a condenser. A solution of this compound was made in THF in 0.10-0.04 M concentration. Desired amount of diene and triethylamine were added into this solution and heated to gentle reflux under nitrogen atmosphere. Reaction was monitored by TLC. Usually a pale yellow color reaction mixture was obtained when the reaction was complete. After completion of the reaction, THF was removed under vacuum. The crude product was dissolved in dichloromethane, washed with 1×5mL 1M HCl, 1×5mL water, 1×5mL brine, dried over $MgSO_4$ and concentrated. Purification of

this crude product by flash chromatography on silica gel with 15-25% EtOAC/hexanes gave the desired Diels-Alder adduct.

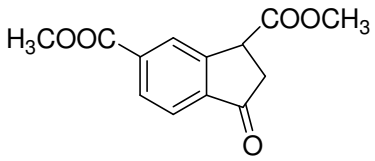
Diels-Alder reactions in toluene: Reactions were usually carried out in 20-40mg scale of compound **11** and reproducible**.** Into a 10mL flask enone ester **11** was taken and a solution of this was made in toluene in 0.04 M concentration. Desired amount of diene and triethylamine were added into this solution and heated to reflux under nitrogen atmosphere at bath temperature 120-130°C. Reaction was monitored by TLC. A nice light yellow color was an indicative of a successful reaction. After completion of the reaction, toluene was removed under vacuum. Purification of this crude product by flash chromatography on silica gel with 15-20% EtOAC/hexanes provided the desired product.

Diels-Alder reaction with Danishefsky diene: A solution of Bromo-enone-ester **11** (8.1mg, 0.037mmol) and $Et_3N.HBr$ (0.007 mmol, 20 mol%) was made in d_6-benzene under nitrogen atmosphere. Denishefsky diene (0.185mmol) and Et_3N (0.111 mmol) were added to the reaction mixture and transferred to an NMR tube. The reaction was monitored by ^{1}H-NMR at 80 °C. After 5.5 hours all the SM (**11**) was consumed. The reaction mixture was cooled down to room tempreture and poured into 5% HCl. The aqueous medium was extracted with EtOAC (3 × 10mL). The combined organic layers was washed with $NaHCO_3$ solution, brine, dried over Na_2SO_4 and concentrated. Purification by flash chromatography on silica gel with Hexanes/Et_2O (1: 2) provided 53% of the DA adduct.

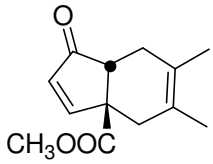
Analytical Data section:



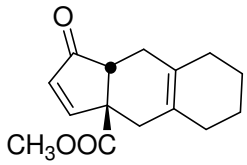
(**11**) White solid, mp 66-67 °C, IR (neat) 3000, 2970, 2361, 2333, 1718 cm^{-1}; ^{1}H-NMR (300 MHz, $CDCl_3$): δ 2.63-2.66 (m, 2H), 2.88-2.91 (m, 2H), 3.92 (s, 3H); ^{13}C NMR (75 MHz, $CDCl_3$) δ 28.3, 32.6, 52.4, 130.9, 157.5, 163.8, 201.3; HRMS calculated for $C_7H_7BrO_3^+$ 217.957307 amu, found 217.9597 amu.



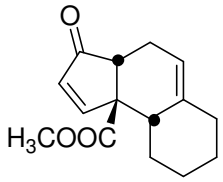
(**14**) Solid, mp 98-99°C, IR (neat) 3020, 2400, 1724, 1615, 1523, 1437, 1301, 1255, 1210 cm^{-1}; ^{1}H-NMR (500 MHz, $CDCl_3$): δ 2.94-3.00 (dd, *J*= 19.1, 8.2 Hz, 1H), 3.20-3.26 (dd, *J*= 19.2, 3.7 Hz, 1H), 3.82 (s, 3H), 3.97 (s, 3H), 4.36-4.39 (dd, *J*= 8.1, 3.6, 1H), 7.80-7.81 (d, *J*=8.1 Hz, 1H), 8.31-8.34 (dd, *J*= 8.1, 1.6, 1H), 8.4 (d, *J*=1.5Hz, 1H), 8.34-; ^{13}C NMR (125 MHz, $CDCl_3$) δ 39.7, 43.5, 52.5, 52.9, 125.4, 126.8, 131.2, 135.7, 136.6, 155.0, 165.9, 171.5, 202.9; HRMS calculated for $C_{13}H_{12}O_5Na^+$ 271.057693 amu, found 271.05614 amu.



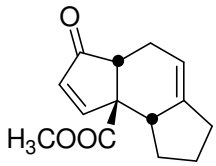
(**DA-15**) White solid, mp 60-61 °C, 73% yield, IR (neat) 2987, 2952, 2858, 1715, 1437, 1294, 1220, 1132 cm^{-1}; ^{1}H-NMR (500 MHz, $CDCl_3$) δ: 1.59 (s, 3H), 1.64 (s, 3H), 2.17-2.20 (d, *J*= 14.7 Hz, 1H), 2.22-2.28 (bm, 1H), 2.34-2.40 (dd, *J*= 14.7, 3.1 Hz, 1H), 2.3-2.6 (bd, J= 14.7 Hz, 1H), 2.85-2.90 (dd, *J*= 6.1, 3.1, 1H), 3.75 (s, 3H), 6.14-6.14 (d, *J*=5.6 Hz, 1H), 7.44-7.45 (d, *J*= 5.6 Hz, 1H); ^{13}C NMR (125 MHz, $CDCl_3$) δ 19.18, 19.22, 31.0, 37.5, 48.3, 52.6, 56.9, 124.0, 128.2, 134.4, 163.4, 174.2, 210.1; HRMS calculated for $C_{13}H_{16}O_3Na^+$ 234.099163 amu, observed mass 243.09964 amu



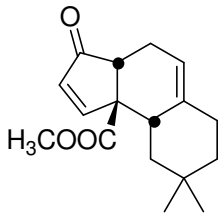
(**DA-16**) Oil, 82% yield, IR (neat) 2930, 715, 1436, 1252 cm^{-1}; ^{1}H-NMR (500 MHz, $CDCl_3$): δ 1.45-1.55 (m, 4H), 1.67-2.50 (m, 4H), 2.25-2.35 (m, 2H), 2.86-2.90 (dd, *J*= 12, 6.6Hz, 1H), 3.75 (s, 3H), 6.13-6.15 (d, *J*= 5.6 Hz, 1H), 7.44-7.46 (d, *J*= 5.6 Hz, 1H) ; ^{13}C -NMR (125 MHz, $CDCl_3$) δ 22.8, 22.9, 29.63, 30.3, 30.2, 36.4, 48.2, 52.6, 56.8, 126.6, 130.7, 134.1, 163.5, 174.2, 210.1; HRMS calculated for ($C_{15}H_{18}O_3$ + O_2 + Na^+) 301.104643 amu, found 301.10599 amu.



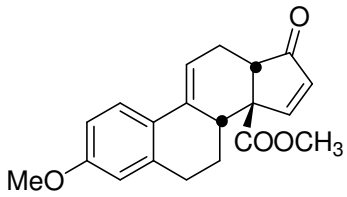
(DA-19) Oil, 77% yield in Toluene, 63% in THF , IR (neat) 2936, 2867, 1717, 1435, 1236, cm^{-1}; ^{1}H-NMR (500 MHz, $CDCl_3$): δ 1.35-1.27 (m, 1H), 1.50-1.40 (m, 2H), 1.61-1.53 (m, 1H), 1.83-1.71(m, 2H), 2.15-2.02 (m, 2H), 2.29-2.22 (m, 1H), 2.65-2.60 (ddd, J= 17.0, 6.5, 2.0 Hz, 1H), 2.73-2.68 (m, 1H), 2.76-2.73 (dd, J= 7.2, 2.1 Hz, 1H), 3.79 (s, 3H), 5.51-5.47 (m, 1H), 6.25-6.24 (d, *J*= 5.8Hz, 1H), 7.70-7.69 (d, *J*= 5.8Hz, 1H); ^{13}C-NMR (62.5 MHz, $CDCl_3$) δ 23.0, 23.1, 26.1, 30.9, 42.1, 49.3, 52.6, 58.6, 118.8, 134.2, 138.8, 162.1, 174.6, 209.0; HRMS calculated for $C_{15}H_{18}O_3Na^+$ 301.104643 amu, found 301.10412 amu.



(**DA-20**) Oil, 56% yield in Toluene, 33% yield in THF, IR (neat) 2952, 1715, 1434, 1233 cm^{-1}; ^{1}H-NMR (500 MHz, $CDCl_3$): δ 2.02-1.96 (m, 1H), 2.24-2.08 (m, 3H), 2.68-2.63 (ddd, 14.7, 7.3, 1.9Hz, 1H), 2.83-2.82 (dd, J= 6.2, 2.0 Hz, 1H), 3.77 (s, 3H), 6.00-5.78 (m, 1H), 6.22-6.21 (d, *J*= 5.8Hz, 1H), 7.60-7.59 (d, *J*=5.8Hz, 1H); ^{13}C NMR (62.5 MHz, $CDCl_3$) δ25.1, 26.2, 28.1, 31.6, 45.3, 50.0, 52.6, 59.4, 116.5, 135.6, 144.7, 161.6, 174.5, 209.9; HRMS calculated for $C_{14}H_{16}O_3Na^+$ 255.099163amu, found 287.08989 amu.



(**DA-21**) Oil, 80% yield, IR (neat), 2953, 2927, 2863, 1717, 1237 cm^{-1}; ^{1}H-NMR (500 MHz, $CDCl_3$): δ 0.96 (s, 3H), 0.97 (s, 3H), 1.28-1.16 (m, 2H), 1.43-1.32 (m, 2H), 2.10-1.98 (m, 2H), 2.25-2.16 (m, 1H), 2.65-2.59 (ddd, J= 15.7, 7.9, 1.9 Hz, 1H), 2.73-2.70 (dd, J=6.8, 2.0 Hz, 1H), 2.86-2.80 (m, 1H), 3.77(s, 3H), 5.50-5.49 (b, 1H), 6.24-6.23 (5.8 Hz), 7.66-7.64 (d, J= 5.9 Hz, 1H); ^{13}C –NMR (75 MHz, $CDCl_3$) δ 23.5, 27.5, 28.5, 30.1, 37.3, 38.4, 38.9, 49.7, 52.6, 58.8, 118.8, 134.7, 138.9, 162.1, 174.6, 209.3,



(**DA-22**) White semi solid, 80% yield, IR (neat) 3020, 2949, 2839, 1713, 1607, 1572, 1496, 1435, 1248 cm^{-1}; ^{1}H-NMR (500 MHz, $CDCl_3$): δ 1.64-1.56 (m, 1H), 2.07-2.02 (m, 1H), 2.41-2.36 (m, 1H), 2.73-2.62 (m 2H), 2.85-2.80 (m, 2H), 3.14-3.09 (m, 1H), 3.77 (s, 3H), 3.81(s, 3H), 6.18-6.16 (m, 1H), 6.22-6.20 (d, *J*=5.8 Hz, 1H), 6.61 (dd, *J*= 2.61 Hz, 1H), 6.71-6.68 (dd, *J*= 8.6, 2.7 Hz, 1H), 7.40-7.39 (d, *J*= 5.7 Hz, 1H), 7.62-7.61 (d, *J*= 5.8 Hz, 1H); ^{13}C -NMR (75 MHz, $CDCl_3$) δ 23.8, 25.0, 30.0, 41.5, 50.7, 52.7, 55.2, 60.0, 112.66, 112.72, 119.0, 125.0, 126.9, 135.1, 136.0, 138.7, 158.7, 161.5, 174.3, 209.6; HRMS calculated 347.125378 amu, found 347.12457 amu.

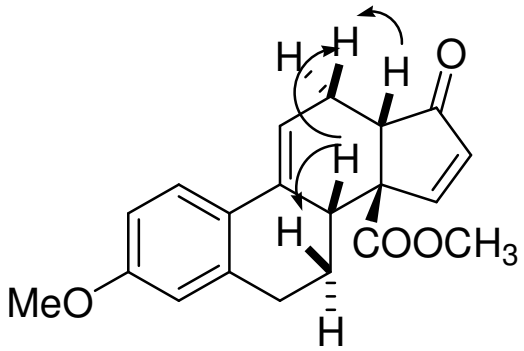
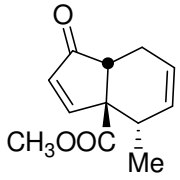
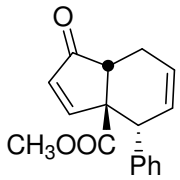


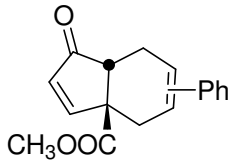
Figure 1: The nOe effect in Diels-Alder adduct **22**



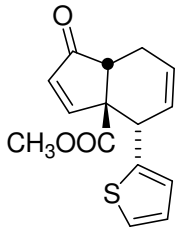
(**DA-23)** Oil, 13% yield; IR (neat): 3036, 2954, 2879, 2848, 1715, 1595, 1457, 1436, 1254, 1231 cm^{-1}; ^{1}H-NMR (500 MHz, $CDCl_3$): δ 1.18 (d, *J* =9.0 Hz, 3H), 2.19-2.25 (m, 1H), 2.64-2.69 (ddd, J= 15.0, 7.5, 2.2 Hz, 1H), 2.75-2.77 (dd, J= 7.5, 2.0 Hz, 1H), 2.80-2.85 (m, 1H), 3.77 (s, 3H), 5.42-5.45 (m, 1H), 5.81-5.86 (m, 1H), 6.25-6.26 (d, *J*= 5.5 Hz, 1H), 7.63-7.65 (d, *J*= 5.5 Hz, 1H); ^{13}C NMR (75 MHz, $CDCl_3$) δ- 15.9, 24.4, 35.5, 50.1, 52.6, 60.3, 128.0, 132.5, 135.7, 161.5, 174.4, 209.4; Elemental analysis: Expt C, 69.83%; H, 6.59% Calculated C 69.88%, H, 6.84%.



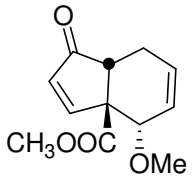
(**DA-24)** Oil, 66% yield; IR (neat): 3032, 2952, 2847, 1717, 1598, 1454, 1254, 1230 cm^{-1}; ^{1}H-NMR (250 MHz, $CDCl_3$): δ 2.10-2.40 (m, 1H), 2.75-2.87 (m, 2H), 3.68 (s, 3H), 4.05-4.09 (q, *J*= 2.9Hz, 1H), 5.87-5.93 (m, 1H), 5.99-6.04 (m, 1H), 6.20-6.23 (d, *J*= 5.9 Hz, 1H), 7.09-7.15 (m, 2H), 7.18-7.21(d, *J*= 5.9 Hz, 1H), 7.29-7.40 (m, 3H); ^{13}C NMR (75 MHz, $CDCl_3$) δ24.2, 47.0, 49.5, 52.4, 61.5, 127.4, 128.5, 129.0, 129.1, 130.7, 134.8, 139.1, 162.2, 174.0, 209.0; Elemental analysis: Expt C, 75.97%; H, 6.23% Calculated C 76.10%, H, 6.01%



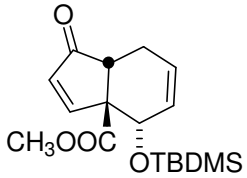
(**DA-25**) Oil, 80% yield, 1:1 mixture of two regeoisomers; IR (neat): 3032, 2952, 2900, 2844, 1714, 1593, 1495, 1436, 1249, 1220 cm^{-1}; ^{1}H-NMR (250 MHz, $CDCl_3$): δ 2.35-3.15 (m, 5H, from each regeoisomers), 3.79 (s, 3H, from each regeoisomers), 5.9-5.97 (m, 1H from one regioisomer), 6.15-6.23 (3H, from both isomers), 7.17-7.37 (m ,5H, from each regeoisomers), 7.47-7.52 (d, 2H, *J*= 5.6Hz, from each regeoisomers) ; ^{13}C NMR (62.5 MHz, $CDCl_3$): δ 25.4, 27.8, 31.7, 33.7, 47.5, 48.4, 52.78, 52.83, 56.4, 56.97, 120.6, 124.3, 125.2, 125.5, 127.26, 127.3, 128.35, 128.40, 134.63, 134.9, 140.18, 140.54, 163.4, 163.9, 173.9, 173.9, 209.28, 209.8, from both the regeoisomers; HRMS calculated for C17H16O3Na+ to be 291.099163 amu, found 291.09932 amu.



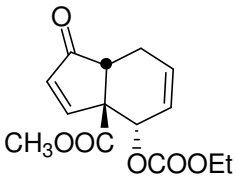
(**DA-26**) Oil, 78% yield; IR (neat): 3044, 2952, 2902, 2361, 2329, 1716, 1435, 1297, 1231 cm^{-1}; ^{1}H-NMR (300 MHz, $CDCl_3$): δ 2.98-2.40 (m, 1H), 2.74-2.85 (m, 2H), 3.75 (s, 3H), 4.47-4.44 (dd, *J*= 5.7, 3.0 Hz, 1H), 5.89-6.06 (m, 2H), 6.26-6.24 (d, *J*= 5.6Hz, 1H), 6.85-6.82 (d, *J*= 3.6, 1H), 7.02-6.99 (q, *J*= 3.6Hz, 1H), 7.25-7.23 (dd, J= 5.1, 1.2 Hz, 1H), 7.32-7.29 (d, J= 5.6 Hz, 1H) ; ^{13}C NMR (75 MHz, $CDCl_3$): δ 24.5, 42.0, 49.6, 52.7, 61.8, 124.8, 126.1, 127.1, 129.1, 130.7, 135.47, 142.06, 162.0, 173.9, 208.8; Elemental analysis: Expt C, 65.72%; H, 4.99% Calculated C 65.67%, H, 5.14%



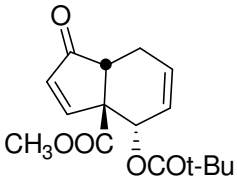
(**DA-27**) Oil, 84 % yield in Toluene, 52% yield in THF, IR (neat): 3046, 2952, 2829, 1716, 1593, 1437, 1256 cm^{-1}; ^{1}H-NMR ($CDCl_3$) δ 2.22-2.17 (m, 1H), 2.69-2.63 (m, 2H), 3.47 (s, 3H), 3.81 (s, 3H), 4.48-4.47 (dd, *J*= 4.3, 2.2 Hz, 1H), 5.84-5.76 (m, 2H), 6.33-6.32 (d, *J*= 5.8 Hz, 1H), 7.73-7.72 (d, *J*=5.8 Hz, 1H); ^{13}C-NMR (75 MHz, $CDCl_3$) δ 24.3, 48.4, 52.8, 58.1, 61.1, 80.0, 126.8, 129.6, 135.9, 162.4, 173.9, 208.8; HRMS (EI) calculated for $C_{12}H_{14}O_4^+$ 222.08921 amu, found 222.0779 amu.



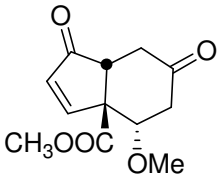
(**DA-28**) Oil, 79% Yield, IR (neat): 2953, 2856, 1718, 1254, 1119 cm^{-1}; ^{1}H-NMR (500 MHz, $CDCl_3$): δ 0.08 (s, 3H), 0.10 (s, 3H), 0.92 (s, 9H), 2.23-2.18 (m, 1H), 2.67-2.62 (m, 2H), 3.77 (s, 3H), 4.85-4.84 (q, *J*= 4.72, 2.32 Hz, 1H), 5.61-5.58 (m, 1H), 5.76-5.71(m, 1H), 6.32-6. 31 (d, *J*= 5.8 Hz, 1H), 7.80-7.79 (d, *J*= 5.8 Hz 1H). ^{13}C NMR (75 MHz, $CDCl_3$) δ-5.4, -4.6, 17.9, 24.3, 25.6, 30.9, 48.1, 52.6, 62.5, 72.3, 125.9, 133.1, 135.8, 162.9, 174.0, 207.0; HRMS calculated for $C_{17}H_{26}O_4SiNa^+$ 345.149255 amu, found 345.14820 amu.



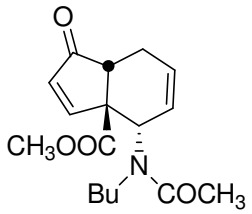
(**DA-29**) Oil, 72% yield; IR (neat): 2956, 2361, 1750, 1718, 1437, 1472, 1257cm^{-1}; ^{1}H-NMR (300 MHz, $CDCl_3$): δ 1.31-1.36 (t, *J*= 7.2Hz, 3H), 2.20-2.34 (m, 1H), 2.66-2.74 (ddd, *J*= 16.7, 6.9, 2.1Hz, 1H), 2.79-2.83(dd, *J*= 6.9, 2.1Hz, 1H), 3.78(s, 3H), 4.20-4.28 (q, *J*= 7.2 Hz, 2H), 5.63-5.68 (dt, *J*= 9.6, 2.7 Hz, 1H), 5.83-5.92 (m, 1H), 6.34 (d, *J*=5.7Hz, 1H), 7.72 (d, *J*= 5.7 Hz, 1H) ; ^{13}C NMR (125 MHz, $CDCl_3$) δ 14.2, 23.9, 47.4, 53.1, 60.0, 64.6, 75.4, 127.8, 128.1, 136.4, 154.4, 160.6, 172.4, 208.0; Elemental analysis: Expt C, 60.16%; H, 5.57% Calculated C 59.99%, H, 5.75%.



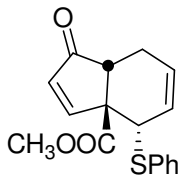
(**DA-30**) White Solid, mp °C, 61% yield; IR (neat): 2974, 1736, 1716, 1480, 1485, 1437, 1255, 1279, 1234, 1147 cm^{-1}; ^{1}H-NMR (500 MHz, $CDCl_3$): δ 1.23 (s, 9H), 2.36-2.28(m, 1H), 2.72-2.66 (ddd, *J*= 15.6, 7.5, 2.5Hz, 1H), 2.91-2.88(dd, *J*= 7.0, 2.5Hz, 1H), 3.76 (s, 3H), 5.60-5.56 (dt, *J*= 10.0, 2.5Hz, 1H), 5.78-5.76 (q, *J*= 2.5Hz, 1H), 5.91-5.86 (m, 1H), 6.34 (d, *J*=6.0Hz, 1H), 7.66 (d, *J*= 6.0Hz, 1H); ^{13}C NMR (125 MHz, $CDCl_3$); 23.9, 27.0, 38.9, 47.1, 53.0, 60.2, 71.4, 128.0, 128.4, 136.1, 160.6, 172.4, 177.2, 208.1; Elemental analysis: Expt C, 65.57%; H, 6.85% Calculated C 65.74%, H, 6.90%



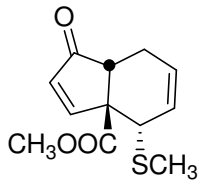
(**DA-31**) Oil, 53% yield, IR (neat): 3076, 2955, 2836, 1792, 1718, 1457, 1437, 1232, 1100 cm^{-1}; ^{1}H-NMR (500MHz, $CDCl_3$): δ 2.18 (dd, J= 18, 10 Hz, 1H), 2.55-2.67 (m 2H), 2.78-2.95 (m, 2H), 3.42 (s, 3H), 3.83 (s, 3H), 4.34-4.28 (dd, J= 8.0, 3.4 Hz, 1H), 6.44-6.41 (d, *J*=5.8 Hz, 1H), 7.76-7.74 (d, *J*= 5.8 Hz, 1H); ^{13}C NMR (125 MHz, $CDCl_3$) δ 37.8, 39.8, 45.7, 53.2, 57.7, 59.0, 77.8, 134.6, 161.0, 173.0, 205.8, 206.5;



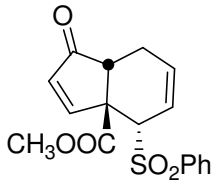
(**DA-32**) Oil, 84% yield, IR (neat liq) 2957, 2874, 2362, 1718, 1653, 1413, 1239 cm^{-1}; 1H-NMR (250 MHz, $CDCl_3$): δ 0.95-0.90 (t, *J*= 7.3Hz, 3H), 1.33-1.24 (m, 2H), 1.68-1.40 (m, 2H), 2.14 (s, 3H), 2.38-2.34 (m, 1H), 2.91-2.72 (m, 3H), 3.17-3.11 (m, 1H), 3.78 (s, 3H), 5.43-5.40 (q, *J*=2.7 Hz, 1H), 5.71-5.64 (dt, *J*= 9.8, 3.0 Hz, 1H), 6.03-5.96 (m, 1H), 6.23-6.21 (d, *J*= 5.9Hz, 1H), 7.57-7.54 (d, *J*=5.9 Hz, 1H).^{13}C NMR (62.5 MHz, $CDCl_3$) δ 13.6, 20.2, 21.9, 22.4, 33.4, 48.26, 48.35, 52.9, 56.6, 60.0, 125.6, 129.5, 133.5, 162.0, 171.6, 173.5, 207.9. HRMS calculated for ($C_{17}H_{23}NO_4^-$ Na^+) 328.151927amu, found 328.15191 amu.



(**DA-33**) Oil, 84% yield; IR (neat) 3053, 2952, 2847, 1717, 1585, 1479, 1438, 1300, 1233 cm^{-1}; ^{1}H-NMR (300 MHz, $CDCl_3$): δ 2.42-2.27 (m, 1H) , 2.73-2.63 (m, 1H), 2.81-2.76 (dd, =5.3, 2.9, 1H), 3.63 (s, 3H), 4.47-4.44 (m, 1H), 5.83-5.77 (m, 1H), 5.94-5.88 (m, 1H), 6.33-6. 32 (d, *J*= 5.8 Hz, 1H), 7.46-7.25 (m, 5H), 7.77-7.74 (d, *J*= 5.8 Hz, 1H); ^{13}C NMR (125 MHz, $CDCl_3$) δ 23.8, 49.7, 49.9, 52.8, 60.6, 127.5, 129.3, 129.9, 130.2, 131.9, 134.4, 135.9, 139.1, 161.5, 173.2, 208.2; HRMS calculated for ($C_{17}H_{16}O_3S$ + O + Na) $^+$ 339.066148 amu, observed 339.06514 amu.



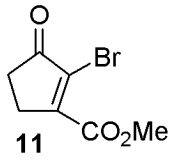
(**DA-34)** Oil 67% yield; IR (neat): 30.42, 2953, 2920, 2847, 1716, 1594, 1435, 1232 cm^{-1}; ^{1}H-NMR (500 MHz, $CDCl_3$): δ 2.16 (s, 3H), 2.26-2.33 (m, 1H), 2.62-267(ddd, *J*= 19.2, 6.5, 3.0 Hz, 1H) 2.76-2.78 (dd, *J* =7.5, 3.0 Hz, 1H), 3.79(s, 3H), 3.92-3.94(m, 1H), 5.74-5.77 (m, 1H), 5.89-5.92 (m, 1H), 6.3 (d, *J*= 5.5Hz, 1H), 7.72 (d, *J*= 5.5 Hz, 1H) ; ^{13}C NMR (125 MHz, $CDCl_3$) δ 16.1, 23.8, 47.6, 49.8, 52.9, 60.8, 129.0, 130.1, 135.5, 161.7, 173.55, 208.3; Elemental analysis: Expt C, 60.27%; H, 5.76% Calculated C 60.48%, H, 5.92%.



White solid, mp 160-161°C, 74% Yield, IR (neat) cm^{-1}; ^{1}H-NMR (300 MHz, $CDCl_3$): δ 2.15-2.05 (m, 1H), 2.81-2.67 (m, 2H), 5.84-5.78 (dt, *J*= 3.1 Hz, 1H), 6.09-6.00 (m, 1H), 6.42-6.39 (d, *J*= 5.8 Hz, 1H), 7.73-7.56 (m, 3H), 7.96-7.92 (m, 2H), 7.96-7.92 (m, 2H), 8.13-8.01 (d, *J*= 5.8 Hz, 1H); ^{13}C NMR (62.5 MHz, $CDCl_3$) δ 23.9, 50.1, 53.6, 57.6, 65.5, 121.4, 128.4, 129.5, 131.9, 134.2, 135.9, 139.0, 160.6, 173.1, 206.7. X-Ray crystallography data on this compound in provided.

Reference:

1. Hirao, K; Yamashita, A; Ando, A.; Ijima, H.; Yamamoto, Y.; Hamada, T. and Yonemitsu, O *J. Chem. Research (S)*, **1987**, 162-163.



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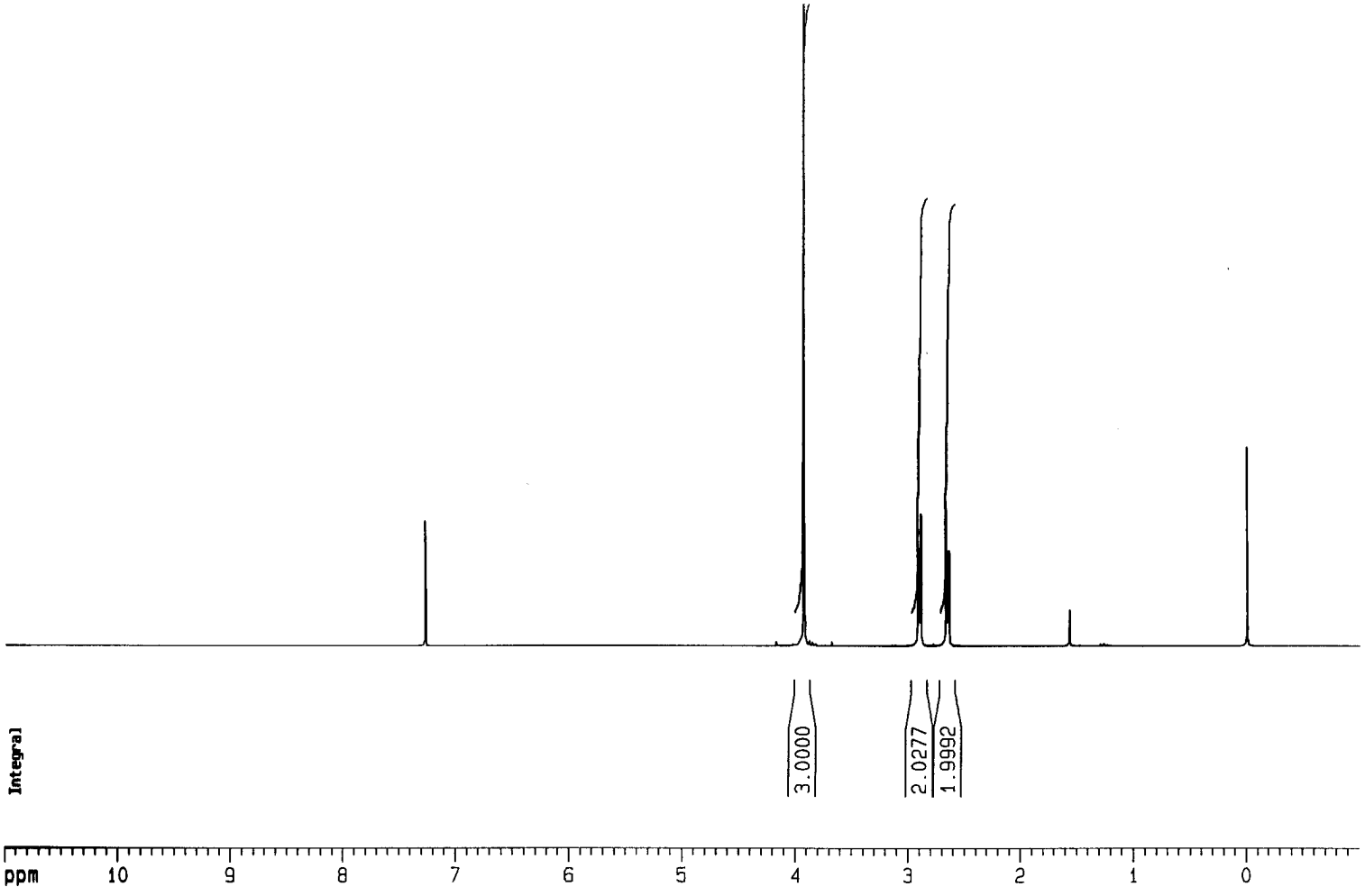

Current Data Parameters

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PROCNO	1

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PULPROG	zg30
TD	32768
SOLVENT	CDCl3
NS	16
DS	2
SWH	6172.839 Hz
FIDRES	0.188380 Hz
AQ	2.6542580 sec
RG	1024
DW	81.000 usec
DE	6.00 usec
TE	300.0 K
D1	1.00000000 sec
D31	0.00000000 sec

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

NUC1	1H
P1	7.05 usec
PL1	0.00 dB
SFO1	300.1318534 MHz

F2 - Processing parameters

SI	32768
SF	300.1300047 MHz
WDW	EM
SSB	0
LB	0.30 Hz
GB	0
PC	1.30

1D NMR plot parameters

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CY	12.50 cm
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F2P	-1.000 ppm
F2	-300.13 Hz
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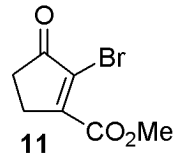
HZCM	180.07799 Hz/cm



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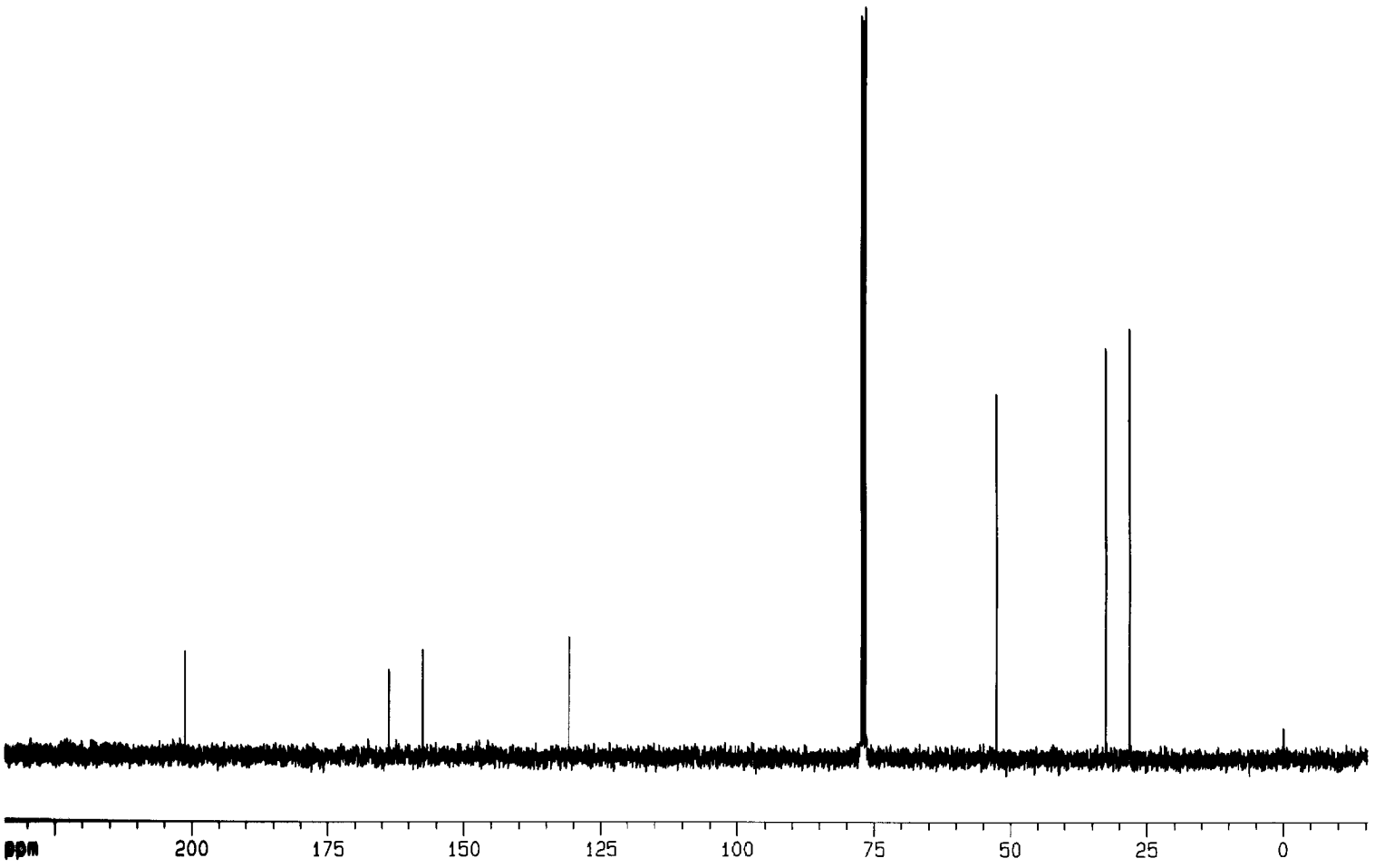


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Current Data Parameters
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EXPNO                  2
PROCNO                 1

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INSTRUM          drx300
PROBHD   5 mm Multinucl
PULPROG          zgdc30
TD                65536
SOLVENT           CDCl3
NS                  572
DS                    4
SWH           18832.393 Hz
FIDRES         0.287360 Hz
AQ             1.7400308 sec
RG                22528
DW               26.550 usec
DE                6.00 usec
TE                297.1 K
D1            1.29999995 sec
d11           0.03000000 sec
D31           0.00000000 sec

======== CHANNEL f1 ========
NUC1                13C
P1                 8.50 usec
PL1                5.00 dB
SFO1         75.4760107 MHz

======== CHANNEL f2 ========
CPDPRG2         waltz16
NUC2                1H
PCPD2            100.00 usec
PL2              120.00 dB
PL12              25.60 dB
SFO2        300.1312005 MHz

F2 - Processing parameters
SI                 32768
SF           75.4677514 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  1.40

1D NMR plot parameters
CX                 20.00 cm
CY                 11.00 cm
F1P               234.213 ppm
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F2              -1156.88 Hz
PPMCM            12.47711 ppm/cm
HZCM            941.61957 Hz/cm
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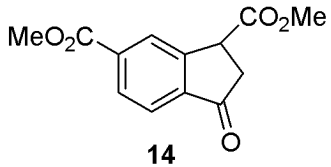
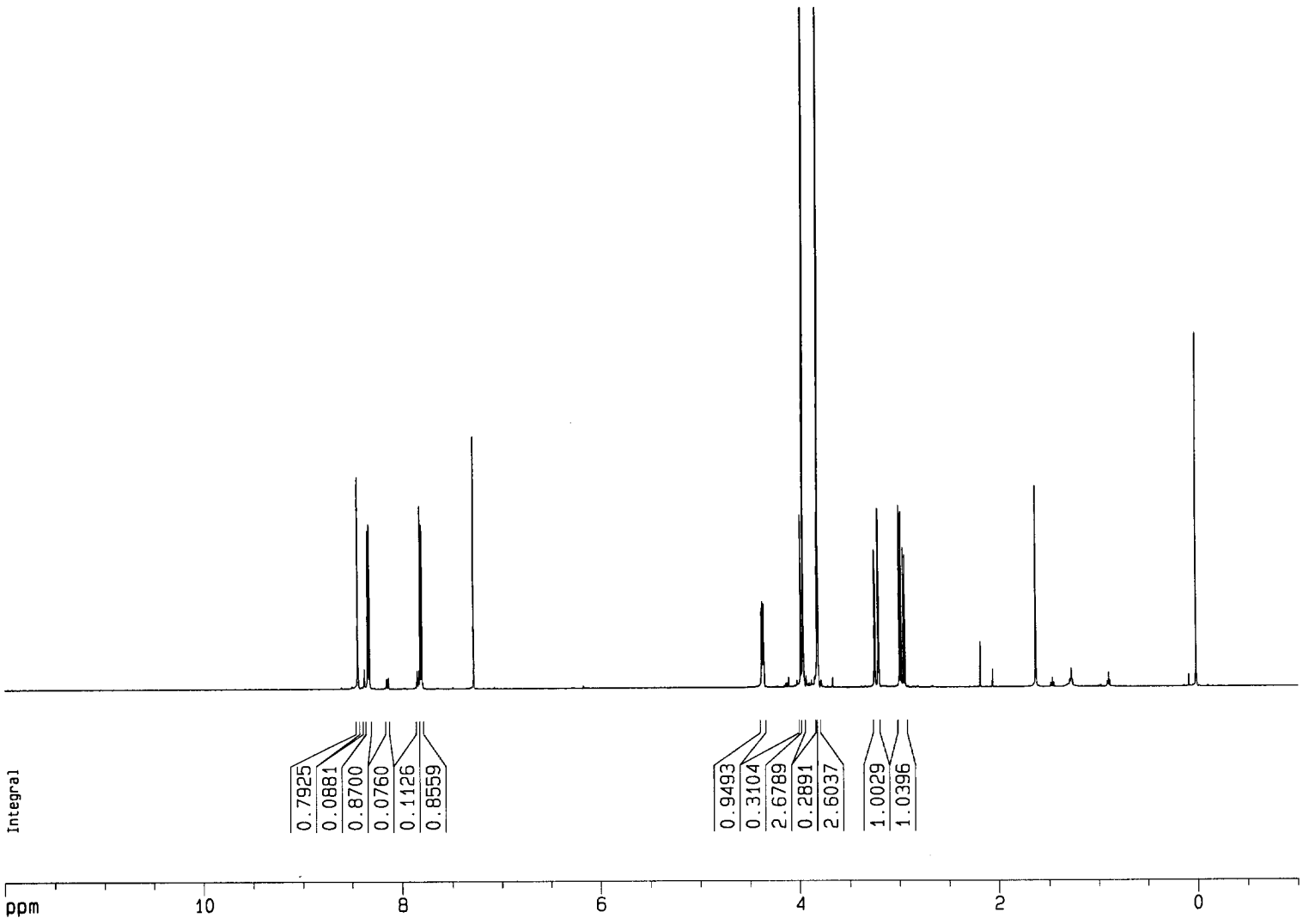


14



Current Data Parameters

NAME	MG-IV-048b-500
EXPNO	1
PROCNO	1

F2 - Acquisition Parameters

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Time	17.09
INSTRUM	DRX500
PROBHD	5 mm Multinucl
PULPROG	zg30
TD	57344
SOLVENT	CDCl3
NS	16
DS	2
SWH	10330.578 Hz
FIDRES	0.180151 Hz
AQ	2.7754996 sec
RG	161.3
DW	48.400 usec
DE	6.00 usec
TE	296.7 K
D1	1.00000000 sec

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

NUC1	1H
P1	13.25 usec
PL1	-3.00 dB
SFO1	500.1330885 MHz

F2 - Processing parameters

SI	32768
SF	500.1300000 MHz
WDW	EM
SSB	0
LB	0.20 Hz
GB	0
PC	1.40

1D NMR plot parameters

CX	20.00 cm
CY	30.00 cm
F1P	12.000 ppm
F1	6001.56 Hz
F2P	-1.000 ppm
F2	-500.13 Hz
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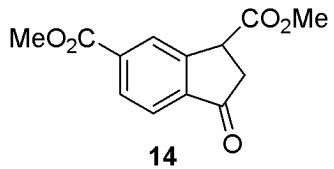
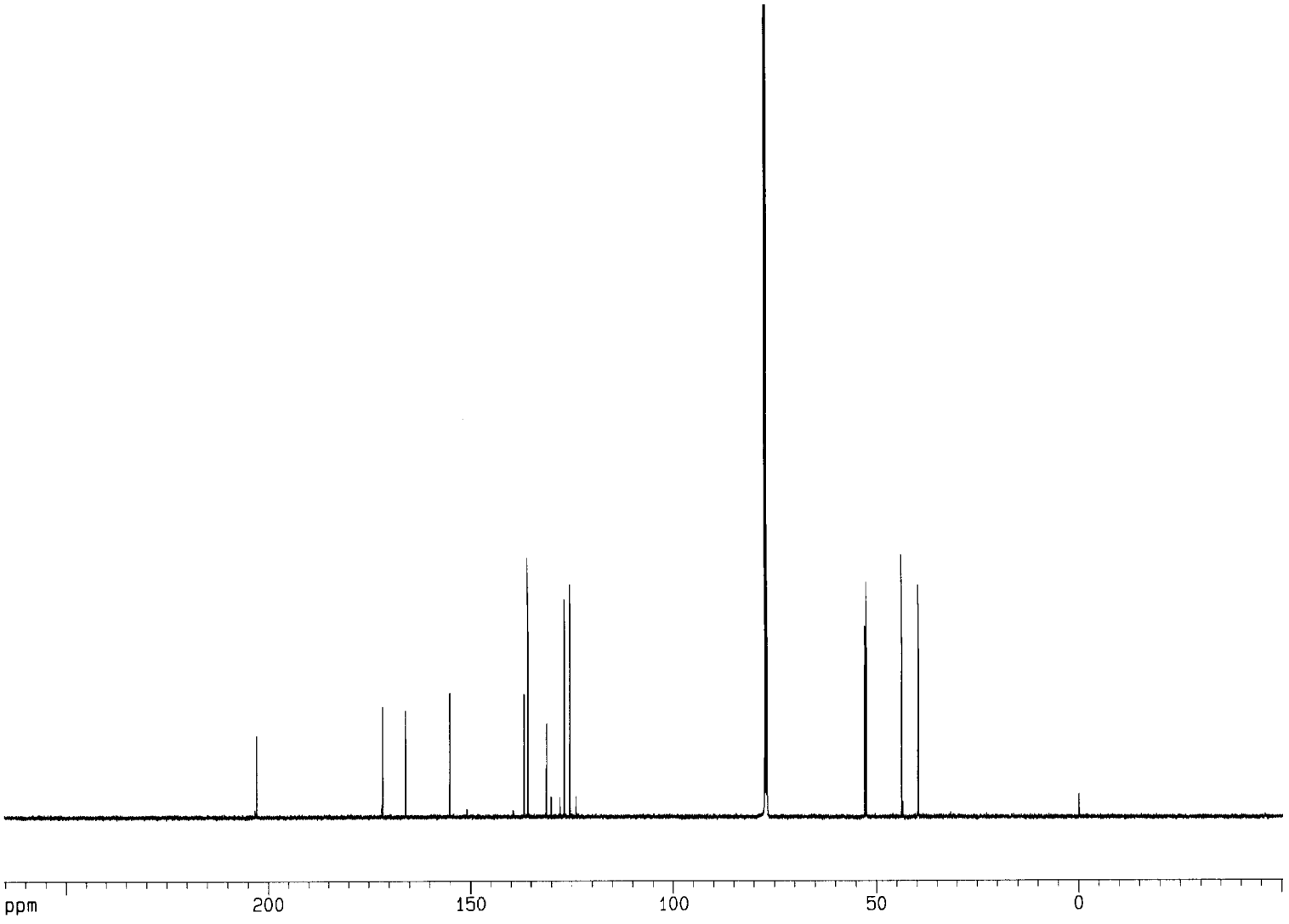
HZCM	325.08450 Hz/cm



14

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Current Data Parameters
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EXPNO                  2
PROCNO                 1

F2 - Acquisition Parameters
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Time               17.12
INSTRUM          DRX500
PROBHD   5 mm Multinucl
PULPROG          zgdc30
TD                65536
SOLVENT           CDCl3
NS                 8310
DS                    4
SWH           39681.812 Hz
FIDRES         0.605496 Hz
AQ            0.8258188 sec
RG                16384
DW               12.600 usec
DE                6.00 usec
TE                298.0 K
D1           2.00000000 sec
d11          0.03000000 sec

======== CHANNEL f1 ========
NUC1                13C
P1                 8.10 usec
PL1                3.00 dB
SFO1        125.7713108 MHz

======== CHANNEL f2 ========
CPDPRG2         waltz16
NUC2                1H
PCPD2             88.00 usec
PL2                0.00 dB
PL12              21.00 dB
SFO2        500.1320005 MHz

F2 - Processing parameters
SI                 32768
SF          125.7577935 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  1.40

1D NMR plot parameters
CX                 20.00 cm
CY                 24.00 cm
F1P               265.258 ppm
F1              33358.26 Hz
F2P               -50.284 ppm
F2              -6323.55 Hz
PPMCM            15.77708 ppm/cm
HZCM          1984.09045 Hz/cm
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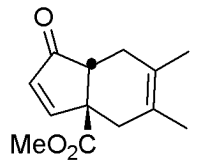
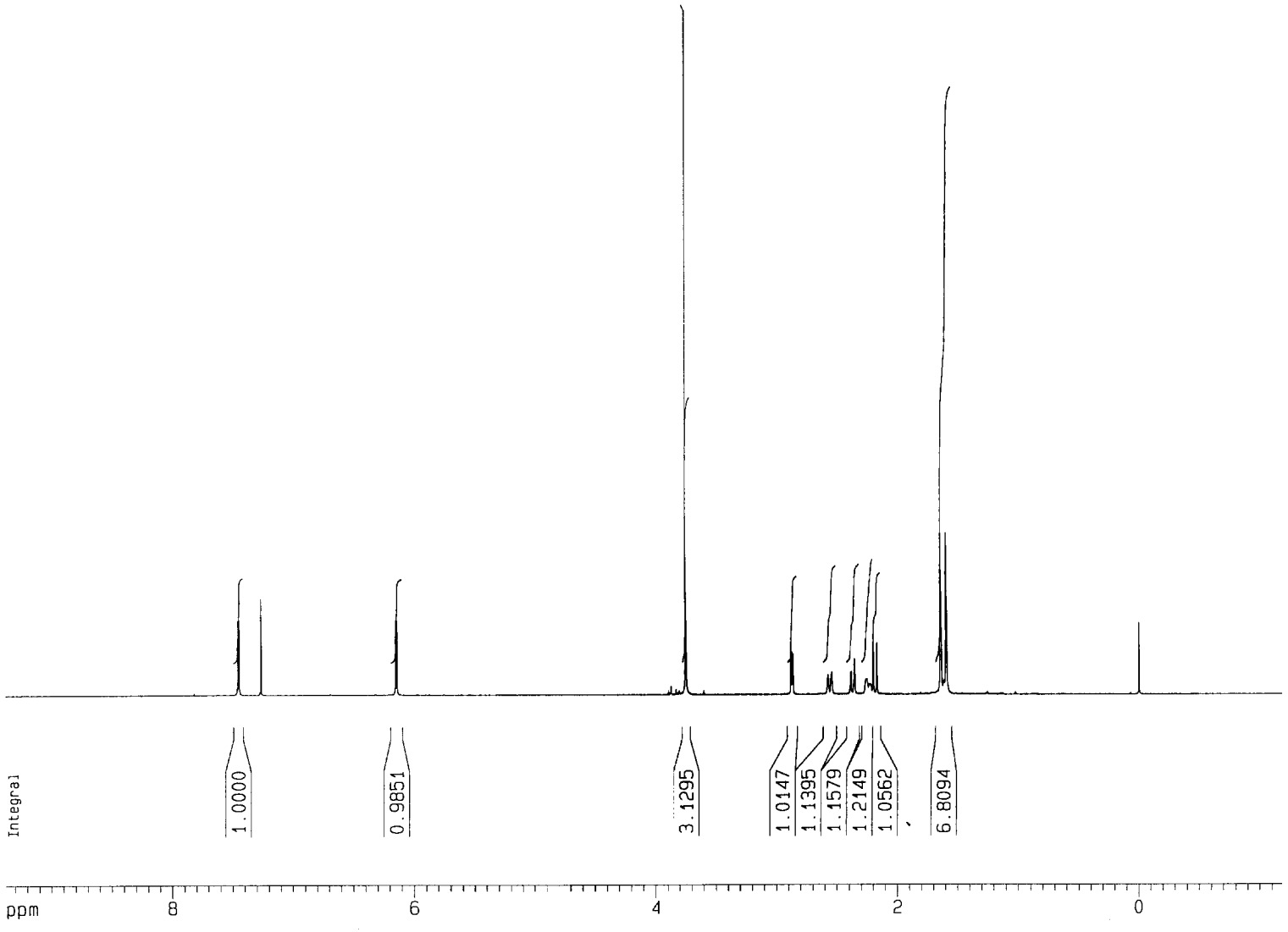


DA-15



Current Data Parameters

NAME	MG-2-034a-500
EXPNO	1
PROCNO	1

F2 - Acquisition Parameters

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Time	12.05
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PULPROG	zg30
TD	57344
SOLVENT	CDCl3
NS	16
DS	2
SWH	10330.578 Hz
FIDRES	0.180151 Hz
AQ	2.7754996 sec
RG	114
DW	48.400 usec
DE	6.00 usec
TE	296.7 K
D1	1.00000000 sec

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

NUC1	1H
P1	13.25 usec
PL1	-3.00 dB
SFO1	500.1330885 MHz

F2 - Processing parameters

SI	32768
SF	500.1300093 MHz
WDW	EM
SSB	0
LB	0.20 Hz
GB	0
PC	1.40

1D NMR plot parameters

CX	20.00 cm
CY	12.50 cm
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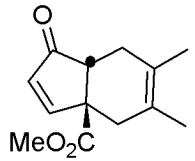
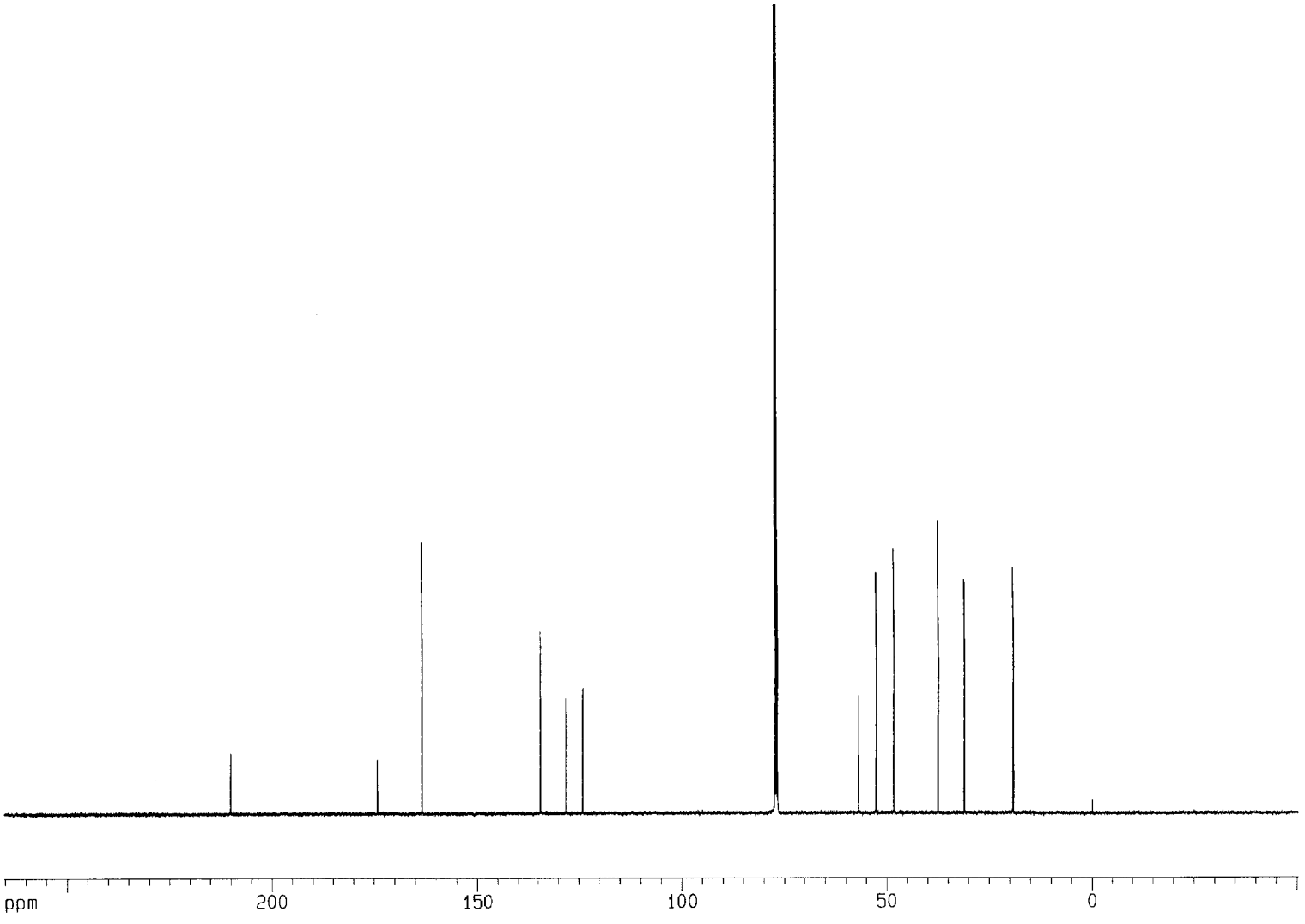
HZCM	264.08994 Hz/cm



DA-15



Current Data Parameters

NAME	MG-2-034a-500
EXPNO	2
PROCNO	1

F2 - Acquisition Parameters

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Time	12.07
INSTRUM	DRX500
PROBHD	5 mm Multinucl
PULPROG	zgdc30
TD	65536
SOLVENT	CDCl3
NS	4994
DS	4
SWH	39681.812 Hz
FIDRES	0.605496 Hz
AQ	0.8258188 sec
RG	16384
DW	12.600 usec
DE	6.00 usec
TE	298.0 K
D1	2.00000000 sec
d11	0.03000000 sec

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

NUC1	13C
P1	8.10 usec
PL1	3.00 dB
SFO1	125.7713108 MHz

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

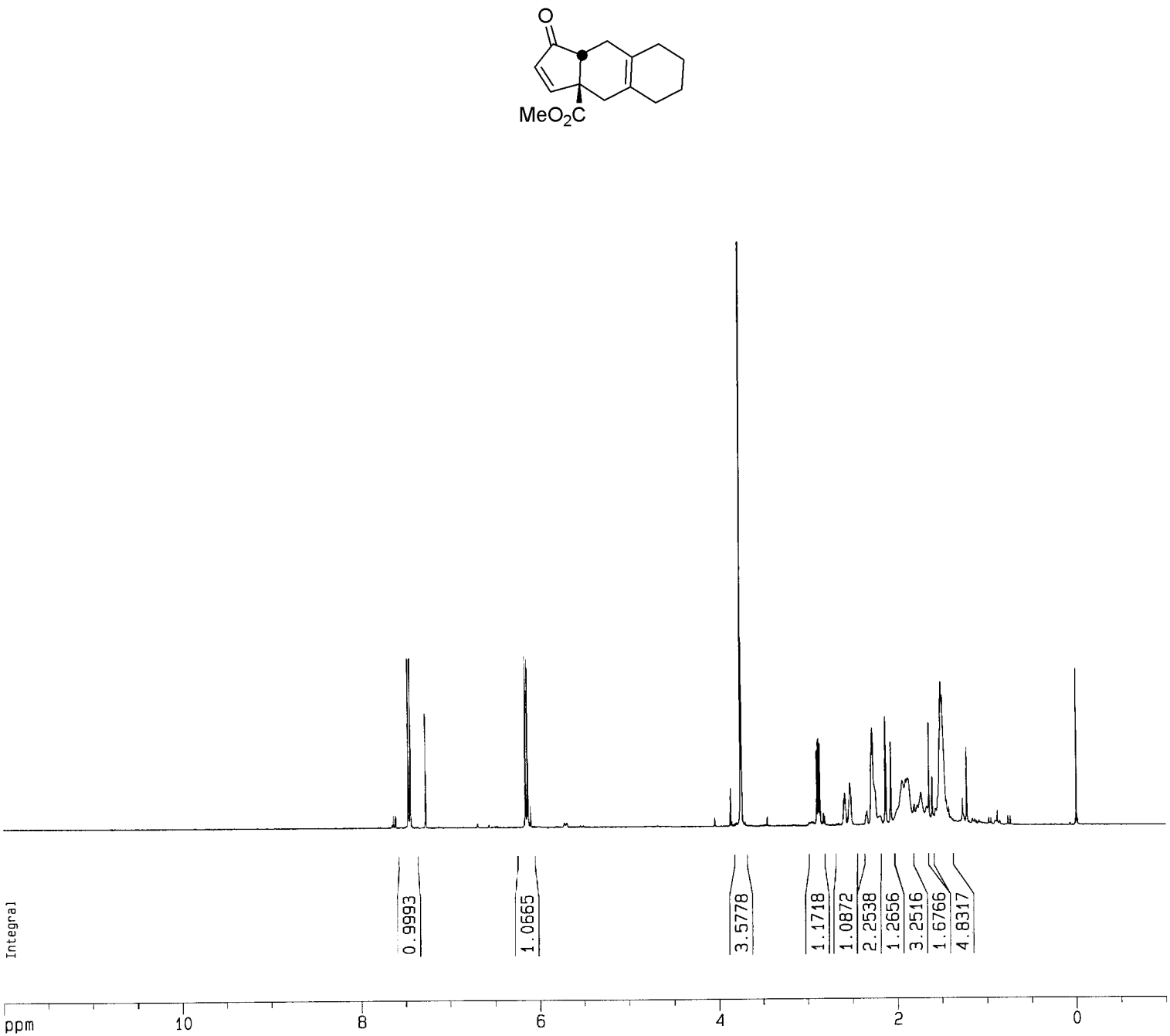
CPDPRG2	waltz16
NUC2	1H
PCPD2	88.00 usec
PL2	0.00 dB
PL12	21.00 dB
SFO2	500.1320005 MHz

F2 - Processing parameters

SI	32768
SF	125.7577935 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

1D NMR plot parameters

CX	20.00 cm
CY	15.00 cm
F1P	265.258 ppm
F1	33358.26 Hz
F2P	-50.284 ppm
F2	-6323.55 Hz
PPMCM	15.77708 ppm/cm
HZCM	1984.09045 Hz/cm



Current Data Parameters

NAME	MG-4-018a-250
EXPNO	1
PROCNO	1

F2 - Acquisition Parameters

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PULPROG	zg30
TD	32768
SOLVENT	CDCl3
NS	16
DS	2
SWH	5208.333 Hz
FIDRES	0.158946 Hz
AQ	3.1457779 sec
RG	715
DW	96.000 use
DE	137.14 use
TE	300.0 K
D1	1.00000000 sec
P1	8.70 use
SFO1	250.1315321 MHz
NUCLEUS	1H

F2 - Processing parameters

SI	16384
SF	250.1300043 MHz
WDW	EM
SSB	0
LB	0.20 Hz
GB	0
PC	1.50

1D NMR plot parameters

CX	20.00 cm
CY	30.00 cm
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F2	-250.13 Hz
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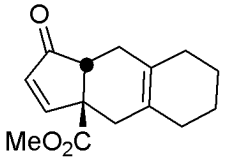
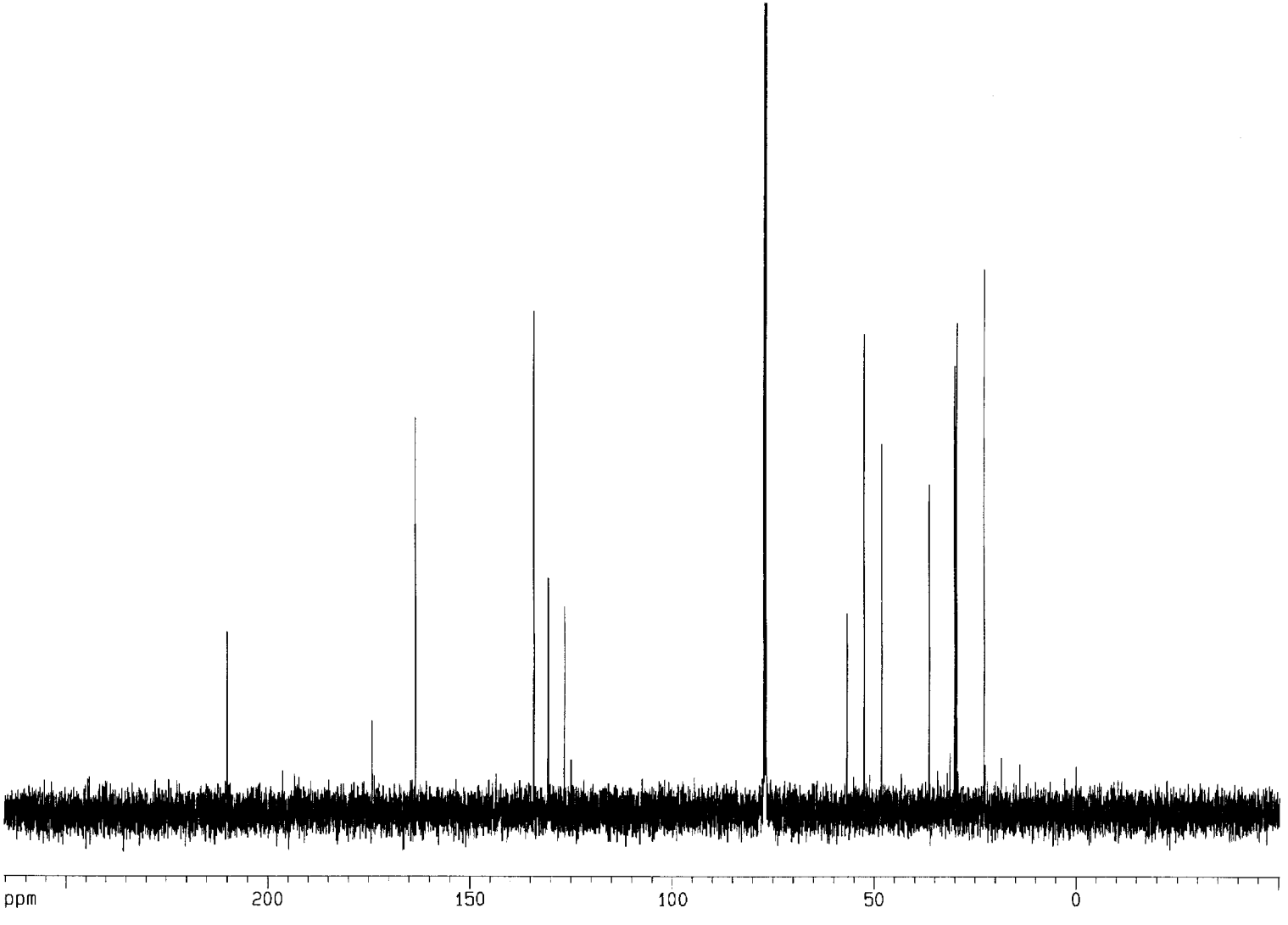
HZCM	162.58450 Hz/



DA-16



Current Data Parameters		
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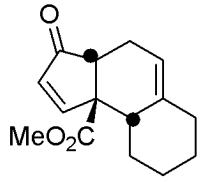
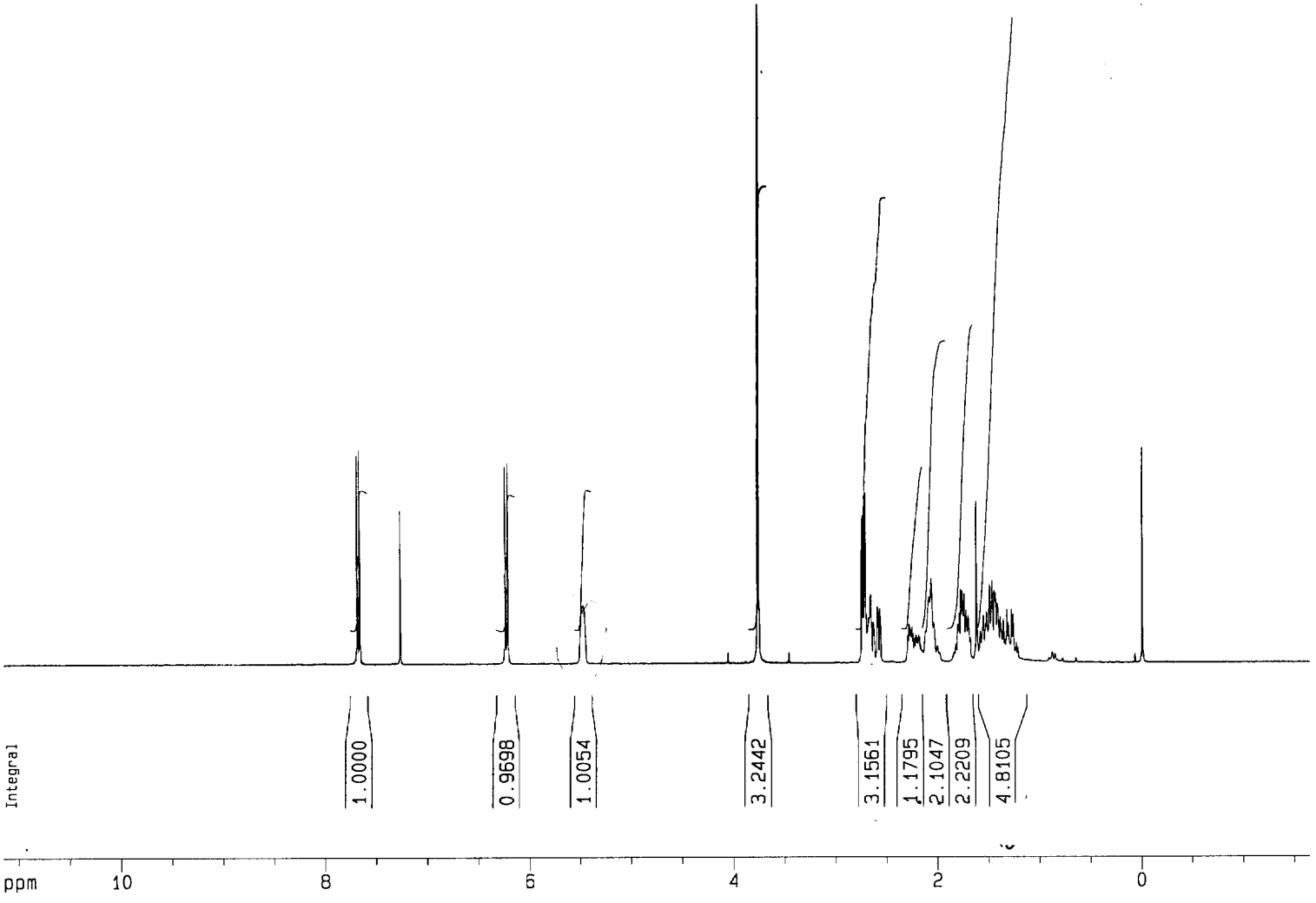
EXPNO	2	
PROCNO	1	
F2 - Acquisition Parameters		
Date_	20050329	
Time	1.25	
INSTRUM	DRX500	
PROBHD	5 mm Multinucl	
PULPROG	zgdc30	
TD	65536	
SOLVENT	CDCl3	
NS	182	
DS	4	
SWH	39681.812	Hz
FIDRES	0.605496	Hz
AQ	0.8258188	sec
RG	16384	
DW	12.600	usec
DE	6.00	usec
TE	298.0	K
D1	2.00000000	sec
d11	0.03000000	sec
======== CHANNEL f1 ========		
NUC1	13C	
P1	8.10	usec
PL1	3.00	dB
SFO1	125.7713108	MHz
======== CHANNEL f2 ========		
CPDPRG2	waltz16	
NUC2	1H	
PCPD2	88.00	usec
PL2	0.00	dB
PL12	21.00	dB
SFO2	500.1320005	MHz
F2 - Processing parameters		
SI	32768	
SF	125.7577922	MHz
WDW	EM	
SSB	0	
LB	1.00	Hz
GB	0	
PC	1.40	
1D NMR plot parameters		
CX	20.00	cm
CY	35.00	cm
F1P	265.268	ppm
F1	33359.46	Hz
F2P	-50.274	ppm
F2	-6322.34	Hz
PPMCM	15.77708	ppm/cm
HZCM	1984.09033	Hz/cm



DA-19



Current Data Parameters

NAME	MG-2-110a-250
EXPNO	1
PROCNO	1

F2 - Acquisition Parameters

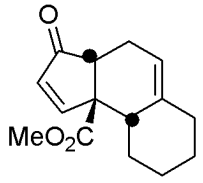
Date_	20040528
Time	17.18
INSTRUM	arx250
PROBHD	5 mm QNP 1H
PULPROG	zg30
TD	32768
SOLVENT	CDCl3
NS	16
DS	2
SWH	5208.333 Hz
FIDRES	0.158946 Hz
AQ	3.1457779 sec
RG	1430
DW	96.000 use
DE	137.14 use
TE	300.0 K
D1	1.00000000 sec
P1	8.70 use
SFO1	250.1315321 MHz
NUCLEUS	1H

F2 - Processing parameters

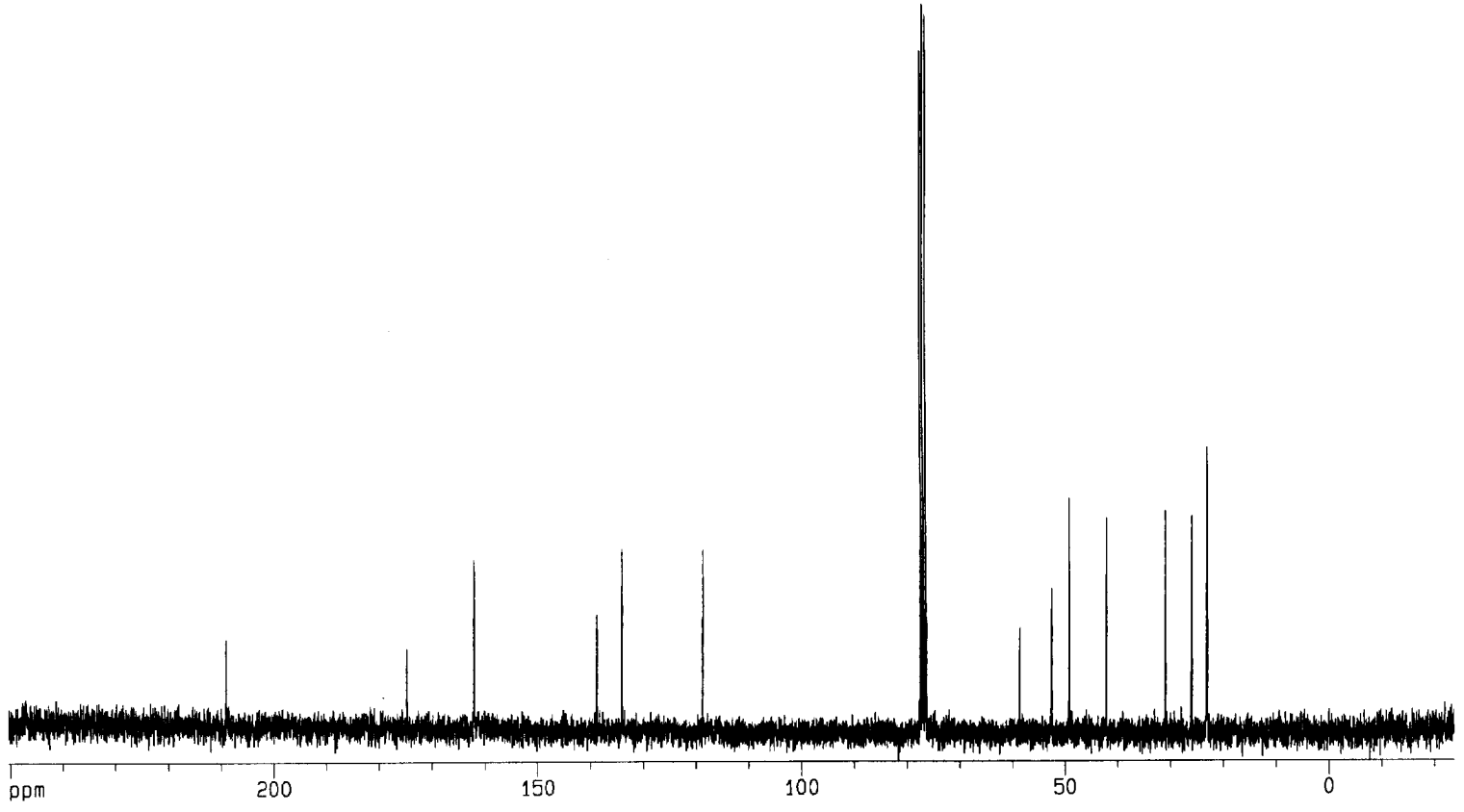
SI	16384
SF	250.1300055 MHz
WDW	EM
SSB	0
LB	0.20 Hz
GB	0
PC	1.50

1D NMR plot parameters

CX	20.00 cm
CY	30.00 cm
F1P	11.155 ppm
F1	2790.11 Hz
F2P	-1.647 ppm
F2	-412.05 Hz
PPMCM	0.64010 ppm
HZCM	160.10803 Hz/



DA-19



Current Data Parameters

NAME	MG-2-110a-250
EXPNO	2
PROCNO	1

F2 - Acquisition Parameters

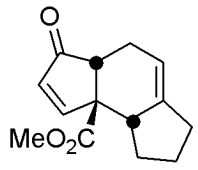
Date_	20040528
Time	17.22
INSTRUM	arx250
PROBHD	5 mm QNP 1H
PULPROG	zgdc30
TD	36864
SOLVENT	CDCl3
NS	722
DS	4
SWH	17241.379 Hz
FIDRES	0.467702 Hz
AQ	1.0691060 sec
RG	22800
DW	29.000 use
DE	41.43 use
TE	300.0 K
D12	0.00002000 sec
DL5	23.00 dB
CPDPRG	waltz16
P31	103.00 use
D1	1.00000000 sec
P1	5.35 use
SFO1	62.9023694 MHz
NUCLEUS	13C
D11	0.03000000 sec

F2 - Processing parameters

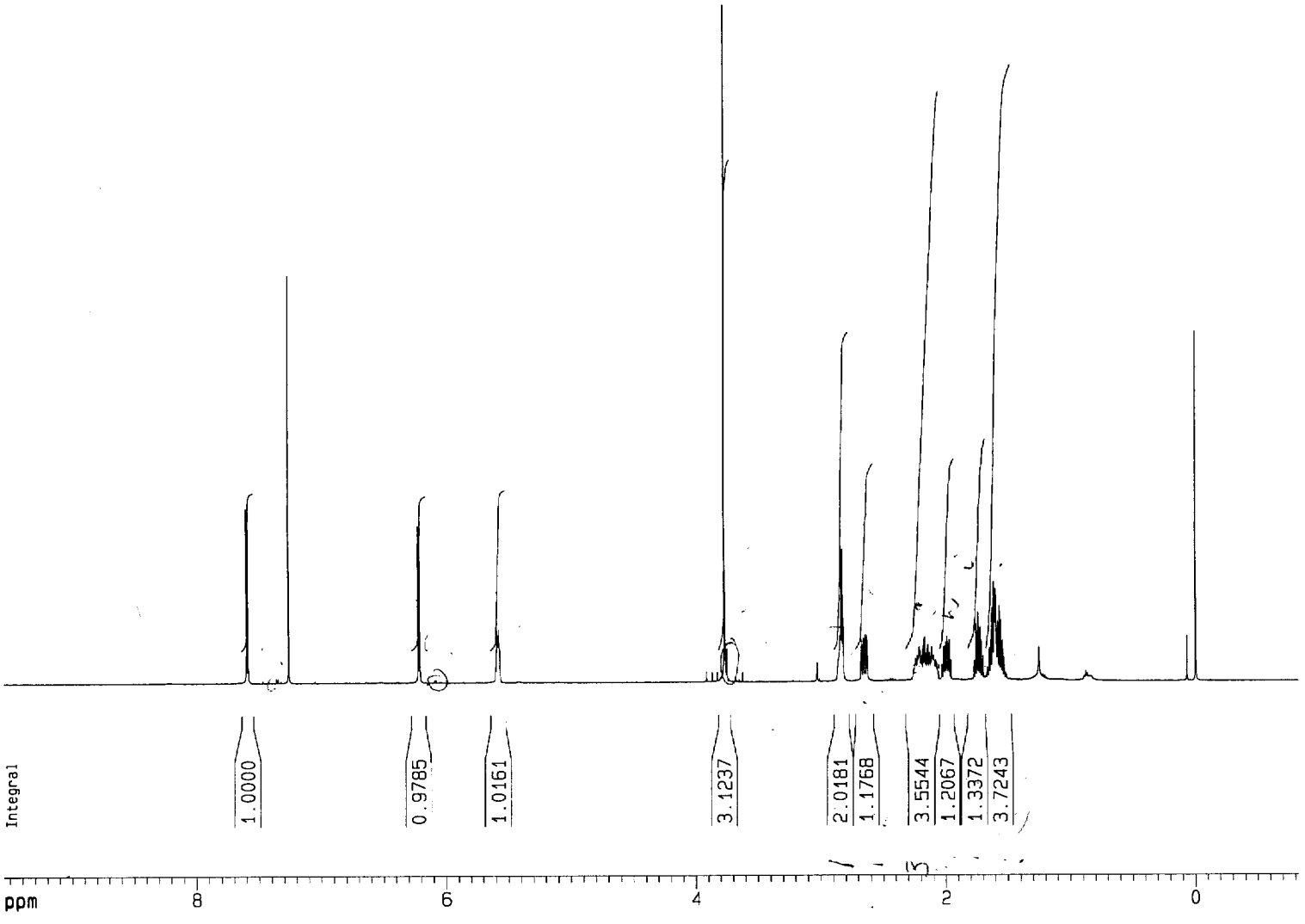
SI	32768
SF	62.8952408 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

1D NMR plot parameters

CX	20.00 cm
CY	10.00 cm
F1P	250.405 ppm
F1	15749.28 Hz
F2P	-23.724 ppm
F2	-1492.10 Hz
PPMCM	13.70643 ppm
HZCM	862.06891 Hz/



DA-20



Current Data Parameters

NAME	MG-2-111a-500
EXPNO	1
PROCNO	1

F2 - Acquisition Parameters

Date_	20040606
Time	12.51
INSTRUM	DRX500
PROBHD	5 mm Multinucl
PULPROG	zg30
TD	57344
SOLVENT	CDCl3
NS	16
DS	2
SWH	10330.578 Hz
FIDRES	0.180151 Hz
AQ	2.7754996 sec
RG	161.3
DW	48.400 usec
DE	6.00 usec
TE	296.7 K
D1	1.00000000 sec

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

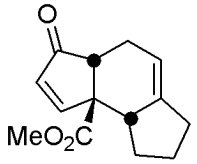
NUC1	1H
P1	13.25 usec
PL1	-3.00 dB
SFO1	500.1330885 MHz

F2 - Processing parameters

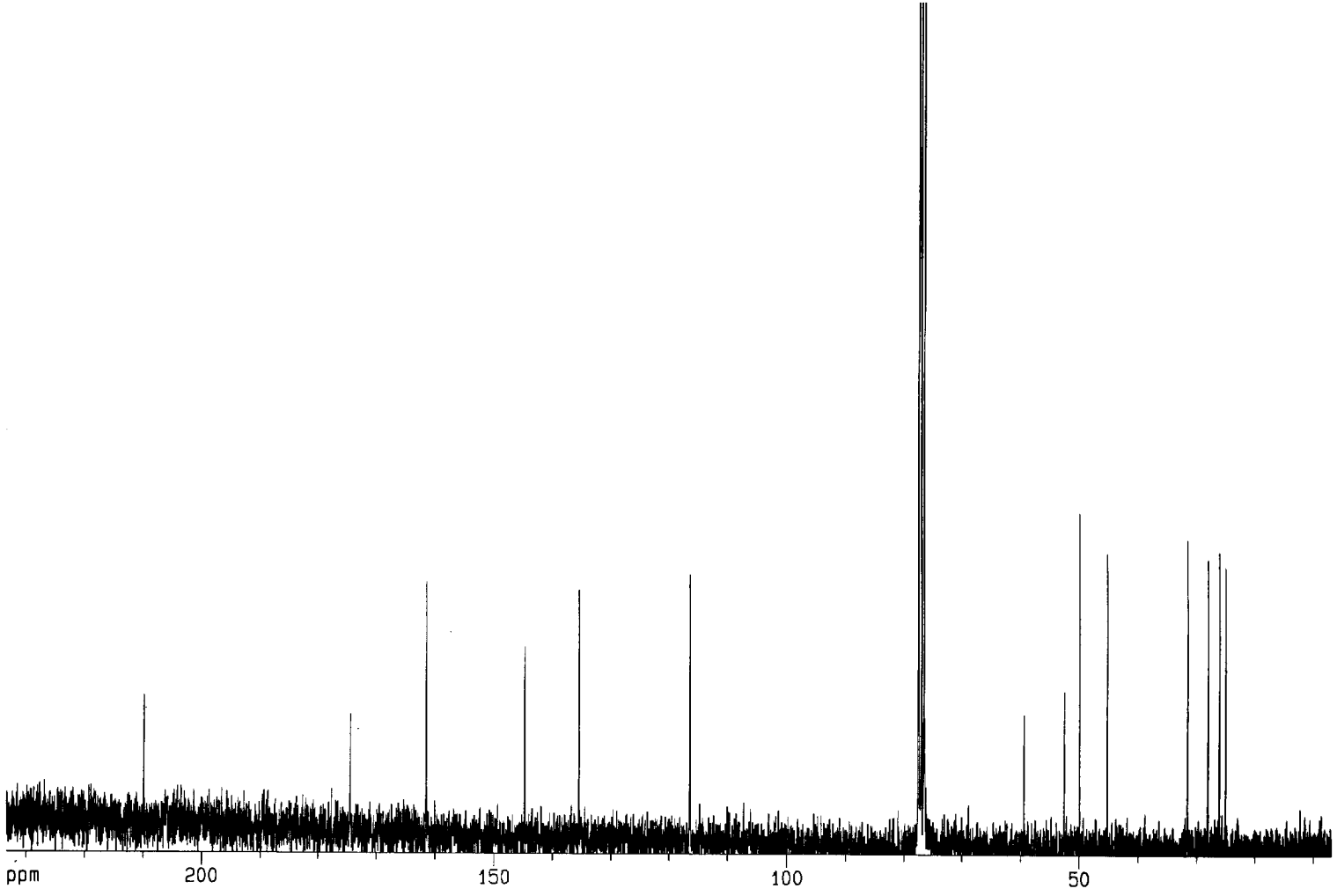
SI	32768
SF	500.1300109 MHz
WDW	EM
SSB	0
LB	0.20 Hz
GB	0
PC	1.40

1D NMR plot parameters

CX	20.00 cm
CY	30.00 cm
F1P	9.549 ppm
F1	4775.63 Hz
F2P	-0.820 ppm
F2	-410.00 Hz
PPMCM	0.51843 ppm/cr
HZCM	259.28125 Hz/cm



DA-20



3

Current Data Parameters

NAME	MG-2-111a-250
EXPNO	2
PROCNO	1

F2 - Acquisition Parameters

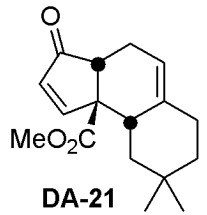
Date_	20040601
Time	13.19
INSTRUM	arx250
PROBHD	5 mm QNP 1H
PULPROG	zgdc30
TD	36864
SOLVENT	CDCl3
NS	2007
DS	4
SWH	17241.379 Hz
FIDRES	0.467702 Hz
AQ	1.0691060 sec
RG	22800
DW	29.000 usec
DE	41.43 usec
TE	300.0 K
D12	0.00002000 sec
DL5	23.00 dB
CPDPRG	waltz16
P31	103.00 usec
D1	1.00000000 sec
P1	5.35 usec
SFO1	62.9023694 MHz
NUCLEUS	13C
D11	0.03000000 sec

F2 - Processing parameters

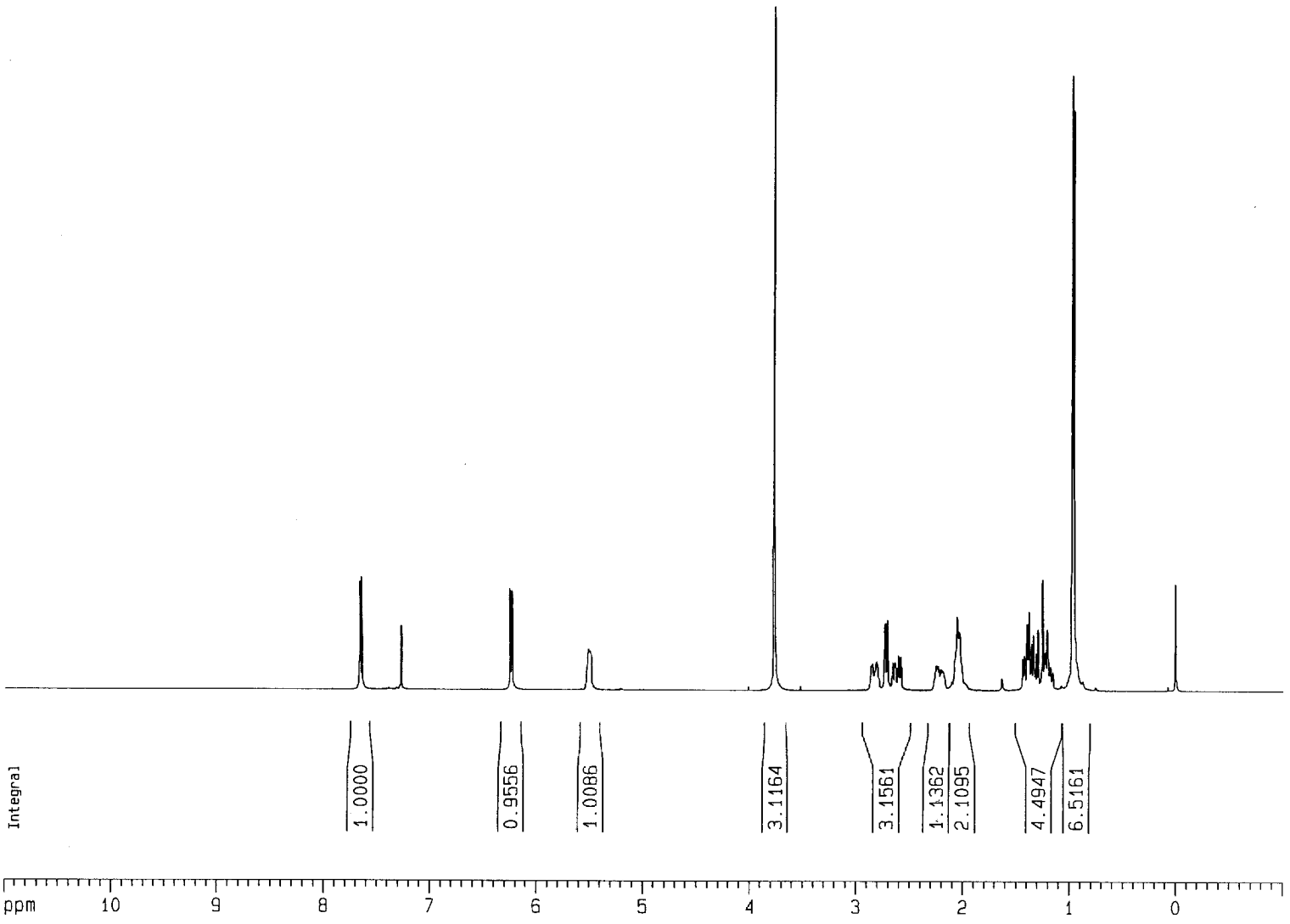
SI	32768
SF	62.8952403 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

1D NMR plot parameters

CX	20.00 cm
CY	30.00 cm
F1P	233.411 ppm
F1	14680.45 Hz
F2P	6.889 ppm
F2	433.28 Hz
PPMCM	11.32611 ppm
HZCM	712.35852 Hz/



DA-21



Current Data Parameters

NAME	MG-3-073a-300
EXPNO	1
PROCNO	1

F2 - Acquisition Parameters

Date_	20050124
Time	15.56
INSTRUM	drx300
PROBHD	5 mm Multinucl
PULPROG	zg30
TD	32768
SOLVENT	CDCl3
NS	16
DS	2
SWH	6172.839 Hz
FIDRES	0.188380 Hz
AQ	2.6542580 sec
RG	228.1
DW	81.000 usec
DE	6.00 usec
TE	300.0 K
D1	1.00000000 sec
D31	0.00000000 sec

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

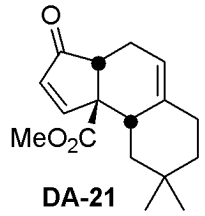
NUC1	1H
P1	7.05 usec
PL1	0.00 dB
SFO1	300.1318534 MHz

F2 - Processing parameters

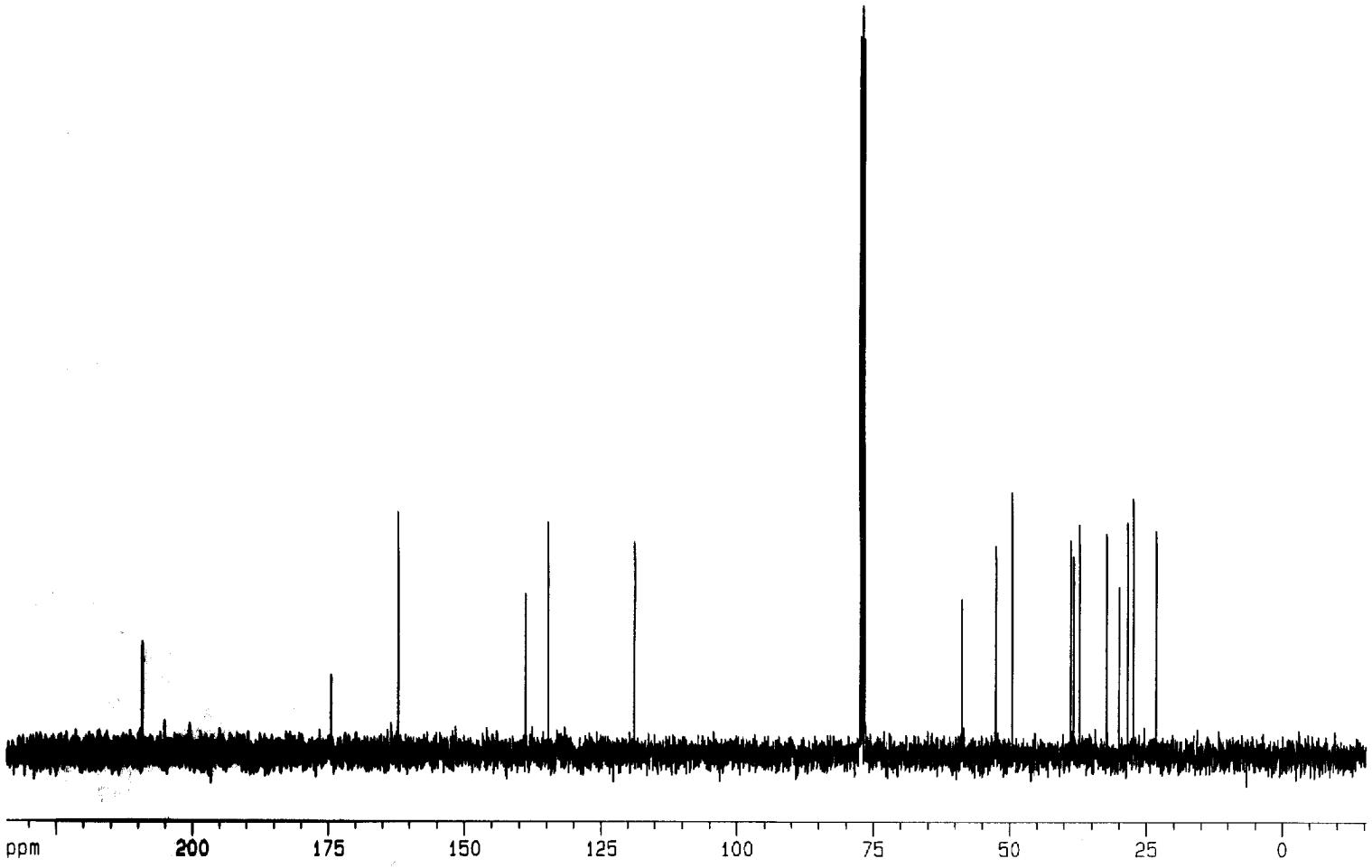
SI	32768
SF	300.1300022 MHz
WDW	EM
SSB	0
LB	0.30 Hz
GB	0
PC	1.30

1D NMR plot parameters

CX	20.00 cm
CY	12.50 cm
F1P	11.000 ppm
F1	3301.43 Hz
F2P	-1.000 ppm
F2	-300.13 Hz
PPMCM	0.60000 ppm/cm
HZCM	180.07800 Hz/cm



DA-21



Current Data Parameters

NAME	MG-3-073a-300
EXPNO	2
PROCNO	1

F2 - Acquisition Parameters

Date_	20050124
Time	15.58
INSTRUM	drx300
PROBHD	5 mm Multinucl
PULPROG	zgdc30
TD	65536
SOLVENT	CDCl3
NS	158
DS	4
SWH	18832.393 Hz
FIDRES	0.287360 Hz
AQ	1.7400308 sec
RG	22528
DW	26.550 usec
DE	6.00 usec
TE	297.1 K
D1	1.29999995 sec
d11	0.03000000 sec
D31	0.00000000 sec

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

NUC1	13C
P1	8.50 usec
PL1	5.00 dB
SFO1	75.4760107 MHz

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

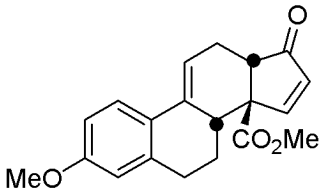
CPDPRG2	waltz16
NUC2	1H
PCPD2	100.00 usec
PL2	120.00 dB
PL12	25.60 dB
SFO2	300.1312005 MHz

F2 - Processing parameters

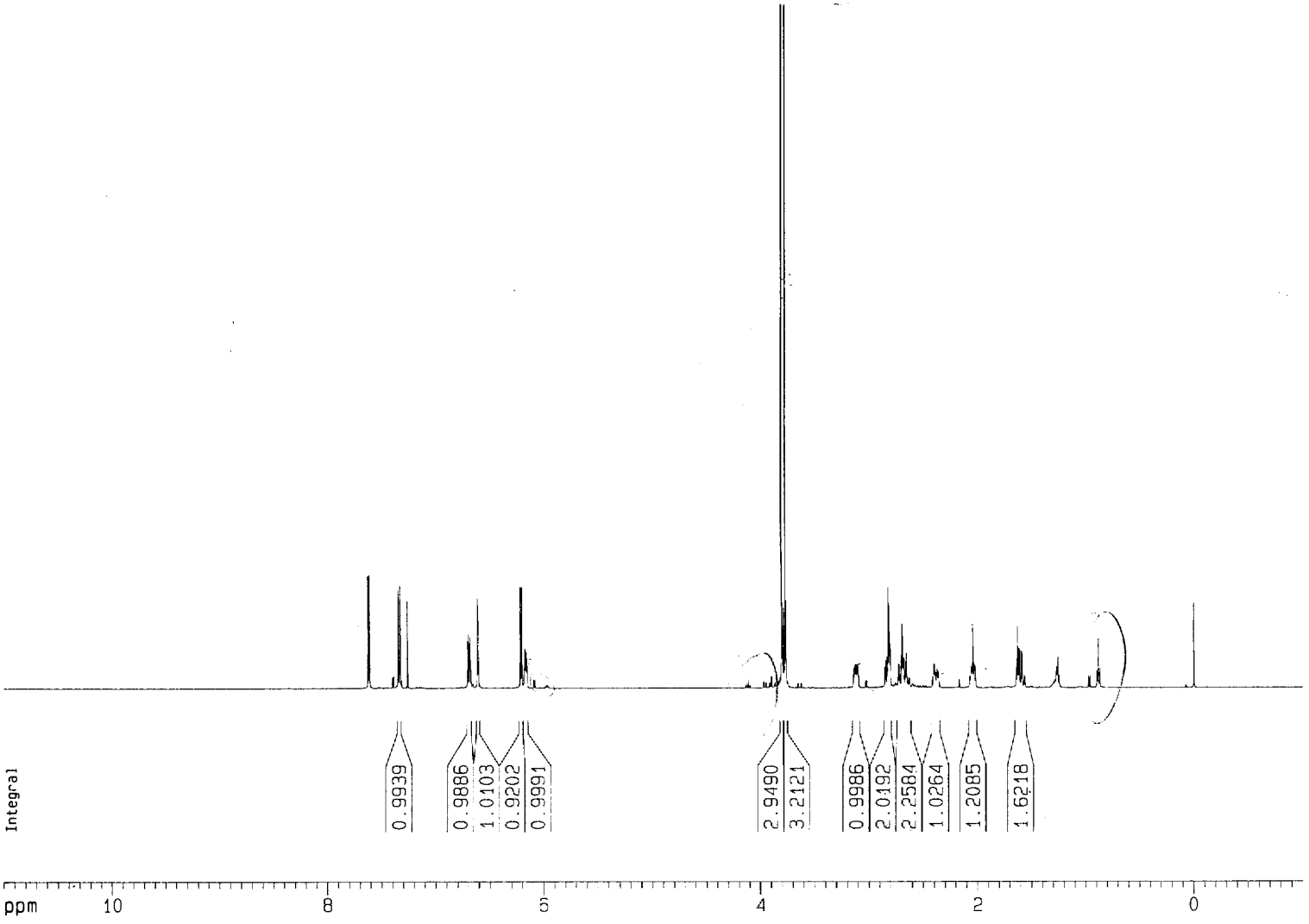
SI	32768
SF	75.4677508 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

1D NMR plot parameters

CX	20.00 cm
CY	11.00 cm
F1P	234.220 ppm
F1	17676.09 Hz
F2P	-15.322 ppm
F2	-1156.30 Hz
PPMCM	12.47711 ppm/cm
HZCM	941.61957 Hz/cm



DA-22



Current Data Parameters

NAME	MG-3-061a-500
EXPNO	1
PROCNO	1

F2 - Acquisition Parameters

Date_	20041102
Time	20.39
INSTRUM	DRX500
PROBHD	5 mm Multinucl
PULPROG	zg30
TD	57344
SOLVENT	CDCl3
NS	16
DS	2
SWH	10330.578 Hz
FIDRES	0.180151 Hz
AQ	2.7754996 sec
RG	101.6
DW	48.400 usec
DE	6.00 usec
TE	296.7 K
D1	1.00000000 sec

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

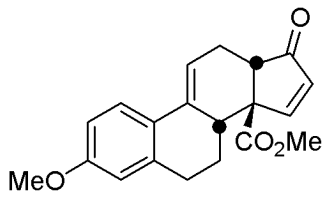
NUC1	1H
P1	13.25 usec
PL1	-3.00 dB
SFO1	500.1330885 MHz

F2 - Processing parameters

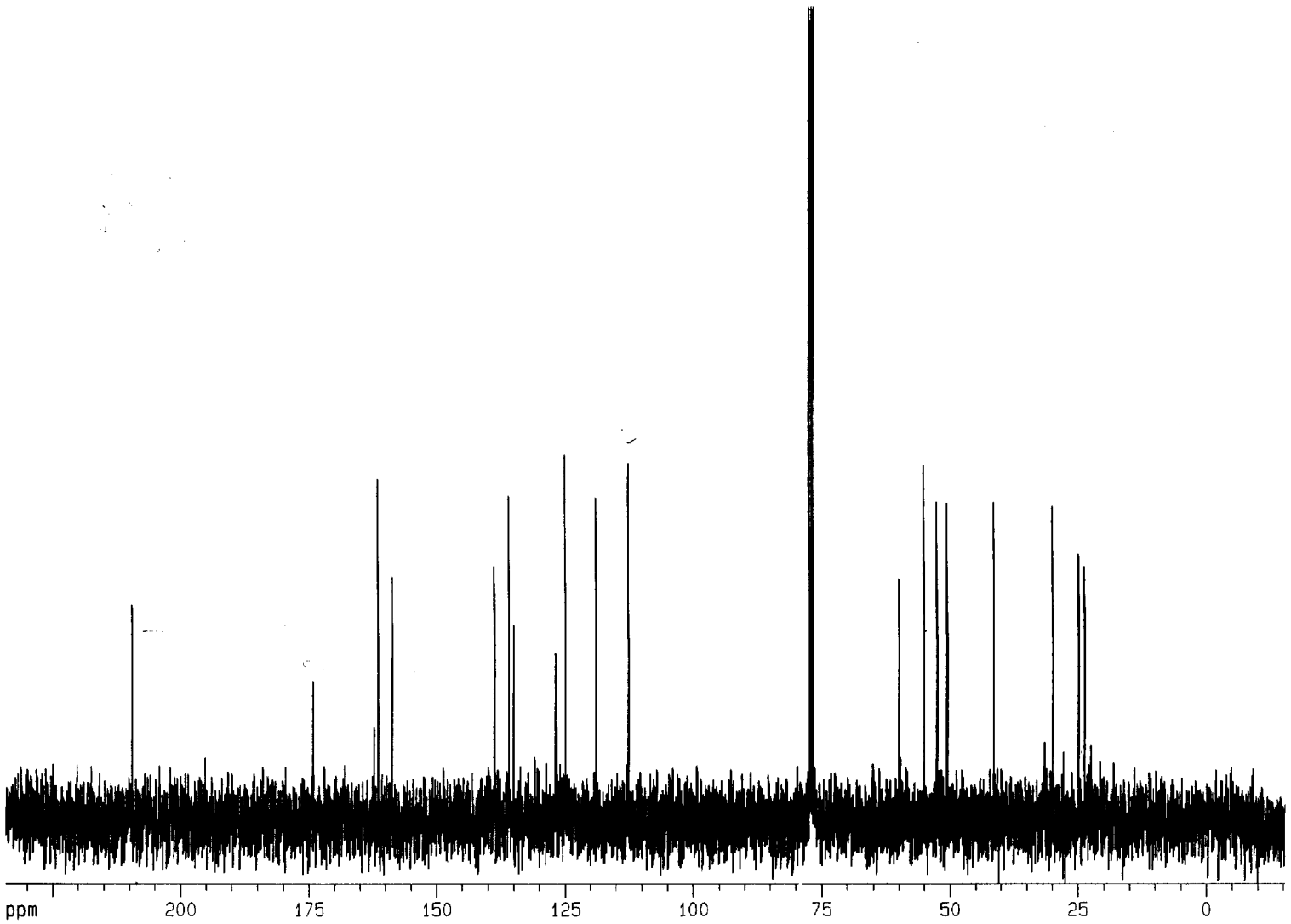
SI	32768
SF	500.1300125 MHz
WDW	EM
SSB	0
LB	0.20 Hz
GB	0
PC	1.40

1D NMR plot parameters

CX	20.00 cm
CY	15.00 cm
F1P	11.000 ppm
F1	5501.43 Hz
F2P	-1.000 ppm
F2	-500.13 Hz
PPMCM	0.60000 ppm/cr
HZCM	300.07800 Hz/cm



DA-22



Current Data Parameters

NAME	MG-3-050a-300
EXPNO	2
PROCNO	1

F2 - Acquisition Parameters

Date_	20041101
Time	22.58
INSTRUM	drx300
PROBHD	5 mm Multinucl
PULPROG	zgdc30
TD	65536
SOLVENT	CDCl3
NS	78
DS	4
SWH	18832.393 Hz
FIDRES	0.287360 Hz
AQ	1.7400308 sec
RG	22528
DW	26.550 usec
DE	6.00 usec
TE	297.1 K
D1	1.29999995 sec
d11	0.03000000 sec
D31	0.00000000 sec

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

NUC1	13C
P1	8.50 usec
PL1	5.00 dB
SFO1	75.4760107 MHz

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

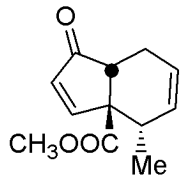
CPDPRG2	waltz16
NUC2	1H
PCPD2	100.00 usec
PL2	120.00 dB
PL12	25.60 dB
SFO2	300.1312005 MHz

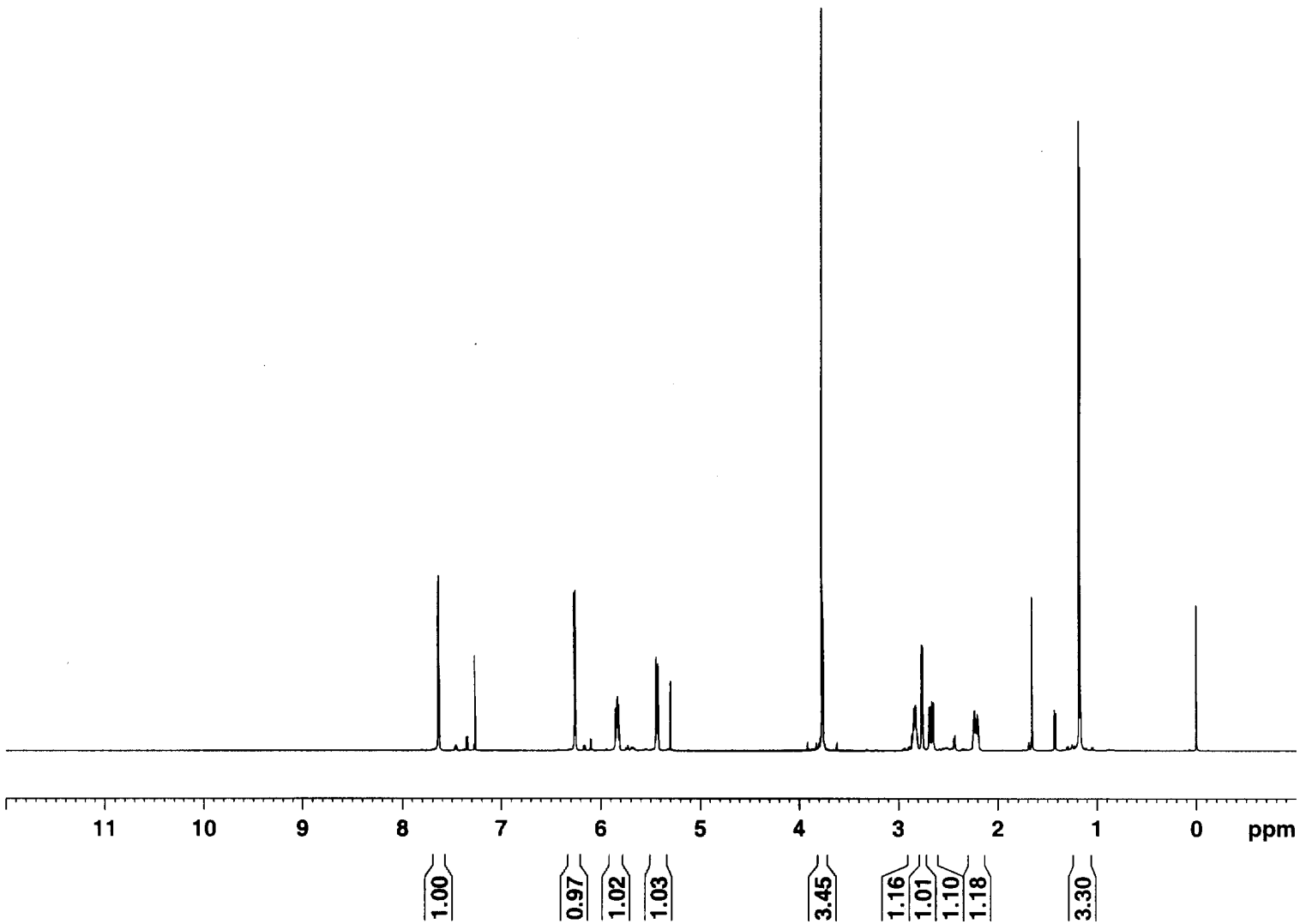
F2 - Processing parameters

SI	32768
SF	75.4677514 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

1D NMR plot parameters

CX	20.00 cm
CY	20.00 cm
F1P	234.213 ppm
F1	17675.51 Hz
F2P	-15.329 ppm
F2	-1156.88 Hz
PPMCM	12.47711 ppm/cm
HZCM	941.61957 Hz/cm






```
Current Data Parameters
NAME          MG-V-84a-A3
EXPNO                   1
PROCNO                  1

F2 - Acquisition Parameters
Date_            20060210
Time                22.43
INSTRUM           DRX500
PROBHD   5 mm Multinucl
PULPROG          zg30pad
TD                 65536
SOLVENT            CDCl3
NS                    16
DS                     2
SWH           10330.578 Hz
FIDRES         0.157632 Hz
AQ            3.1719923 sec
RG                   114
DW                48.400 use
DE                 6.00 use
TE                300.0 K
D1           1.00000000 sec
D31          0.00000000 sec

======== CHANNEL f1 =======
NUC1                   1H
P1                 11.50 use
PL1                 0.00 dB
SFO1         500.1330885 MHz

F2 - Processing parameters
SI                 32768
SF          500.1300071 MHz
WDW                   EM
SSB                    0
LB                 0.30 Hz
GB                     0
PC                  1.40
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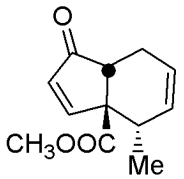
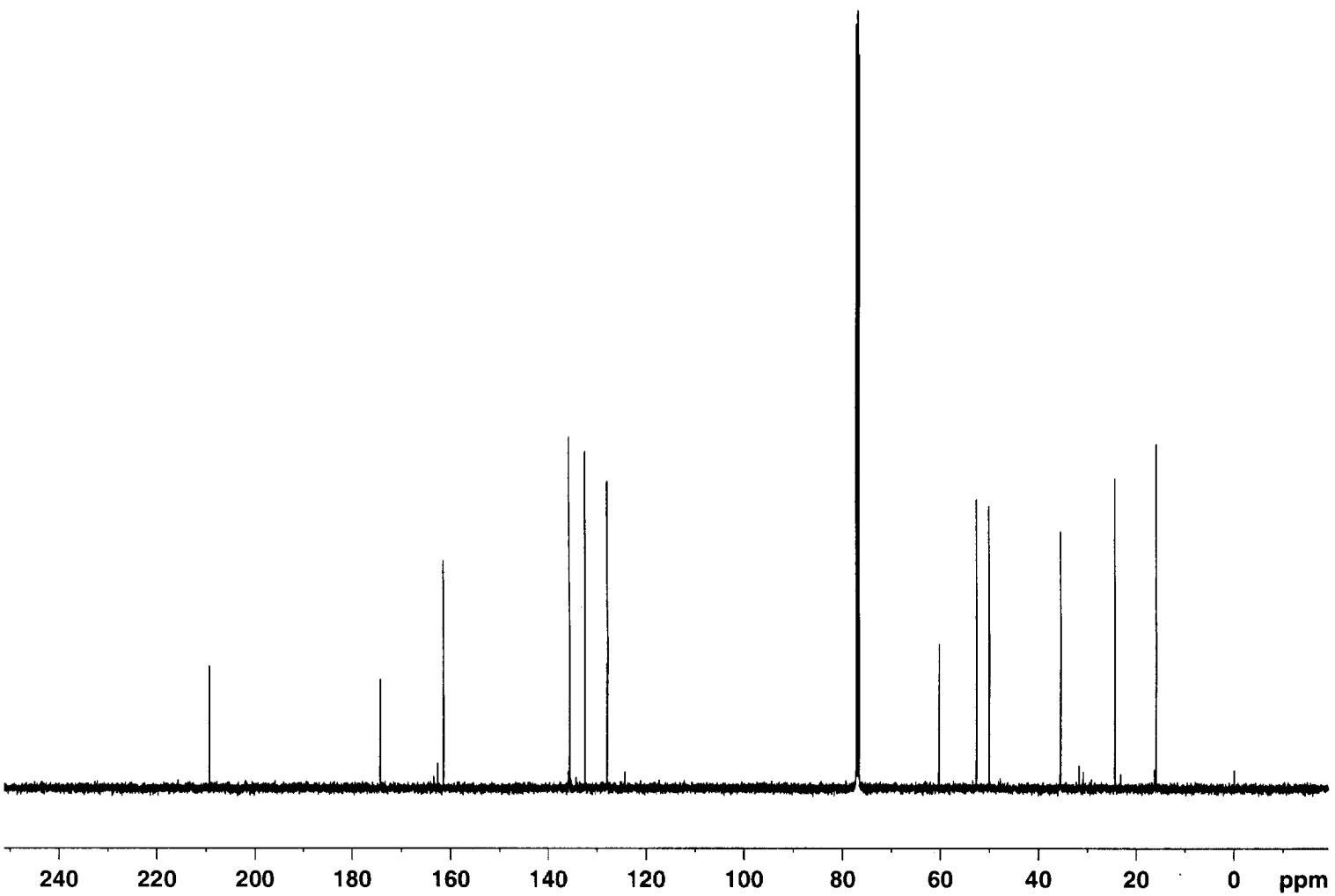




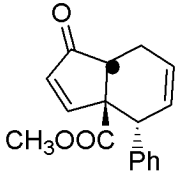
Current Data Parameters
NAME MG-V-84a-A3
EXPNO 2
PROCNO 1

F2 - Acquisition Parameters
Date_ 20060210
Time 23.07
INSTRUM DRX500
PROBHD 5 mm Multinucl
PULPROG zgdc30
TD 65536
SOLVENT CDCl3
NS 428
DS 4
SWH 34013.605 Hz
FIDRES 0.519006 Hz
AQ 0.9634292 sec
RG 32768
DW 14.700 usec
DE 6.00 usec
TE 300.0 K
D1 2.00000000 sec
d11 0.03000000 sec
D31 0.00000000 sec

======== CHANNEL f1 ========
NUC1 13C
P1 8.10 usec
PL1 3.00 dB
SFO1 125.7723786 MHz

======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 88.00 usec
PL2 0.00 dB
PL12 21.00 dB
SFO2 500.1320005 MHz

F2 - Processing parameters
SI 32768
SF 125.7577938 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40



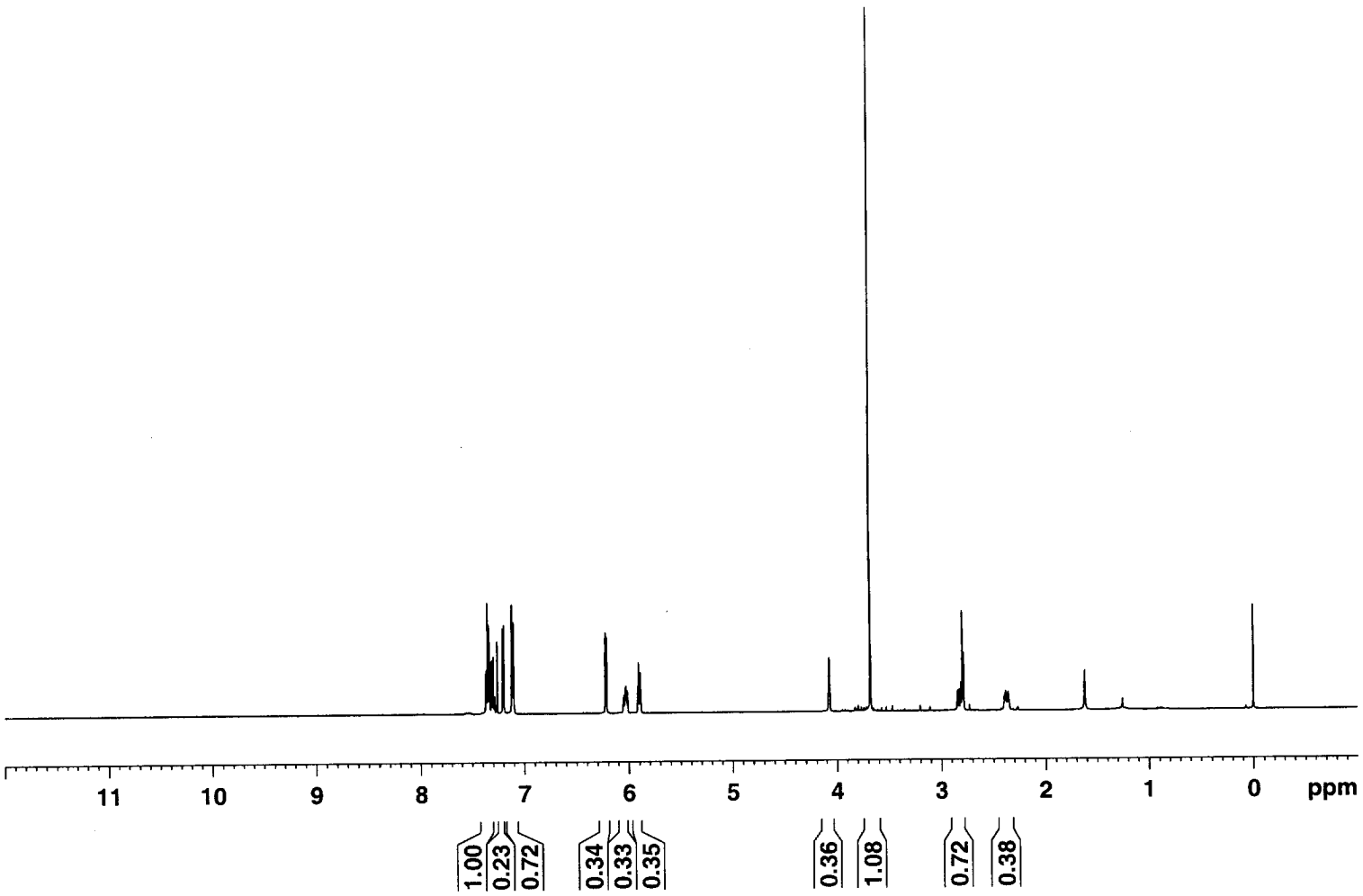
DA-24

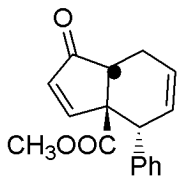
```
Current Data Parameters
NAME          MG-IV-77a-A3
EXPNO                    1
PROCNO                   1

F2 - Acquisition Parameters
Date_             20060208
Time                 14.38
INSTRUM             DRX500
PROBHD   5 mm Multinucl
PULPROG           zg30pad
TD                  65536
SOLVENT             CDCl3
NS                     16
DS                      2
SWH           10330.578 Hz
FIDRES         0.157632 Hz
AQ            3.1719923 sec
RG                    128
DW                48.400 use
DE                 6.00 use
TE                300.0 K
D1           1.00000000 sec
D31          0.00000000 sec

======== CHANNEL f1 =======
NUC1                   1H
P1                 11.50 use
PL1                 0.00 dB
SFO1        500.1330885 MHz

F2 - Processing parameters
SI                  32768
SF          500.1300115 MHz
WDW                    EM
SSB                     0
LB                 0.30 Hz
GB                      0
PC                  1.40
```





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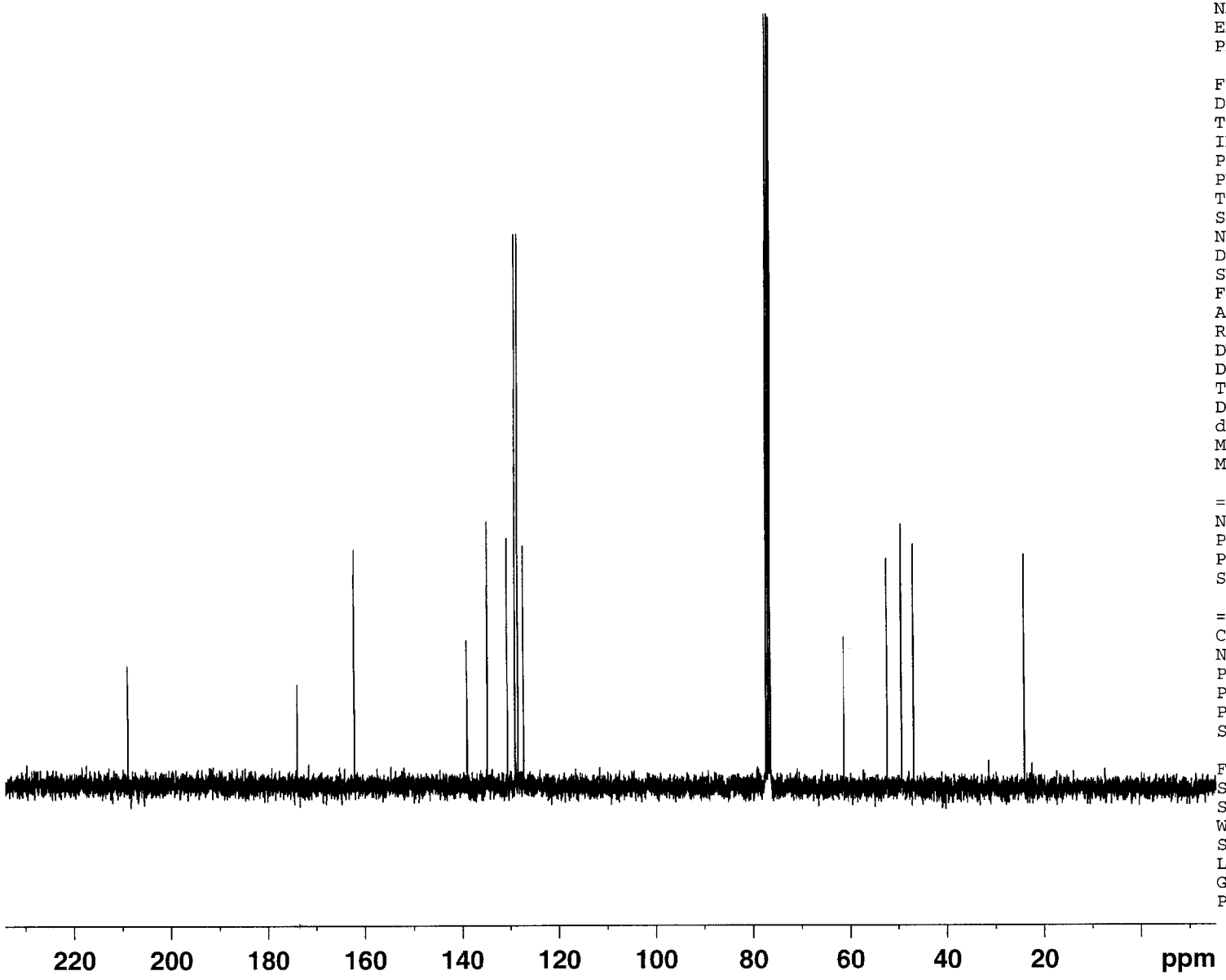


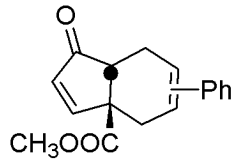

```
Current Data Parameters
NAME      MG-IV-077b-300
EXPNO                   2
PROCNO                  1

F2 - Acquisition Parameters
Date_            20050628
Time                22.26
INSTRUM           DRX300
PROBHD   5 mm Multinucl
PULPROG           zgdc30
TD                65536
SOLVENT           CDCl3
NS                   13
DS                    4
SWH           18832.393 Hz
FIDRES         0.287360 Hz
AQ             1.7400308 sec
RG                22528
DW               26.550 usec
DE                6.00 usec
TE               300.0 K
D1            2.00000000 sec
d11           0.03000000 sec
MCREST        0.00000000 sec
MCWRK         0.01500000 sec

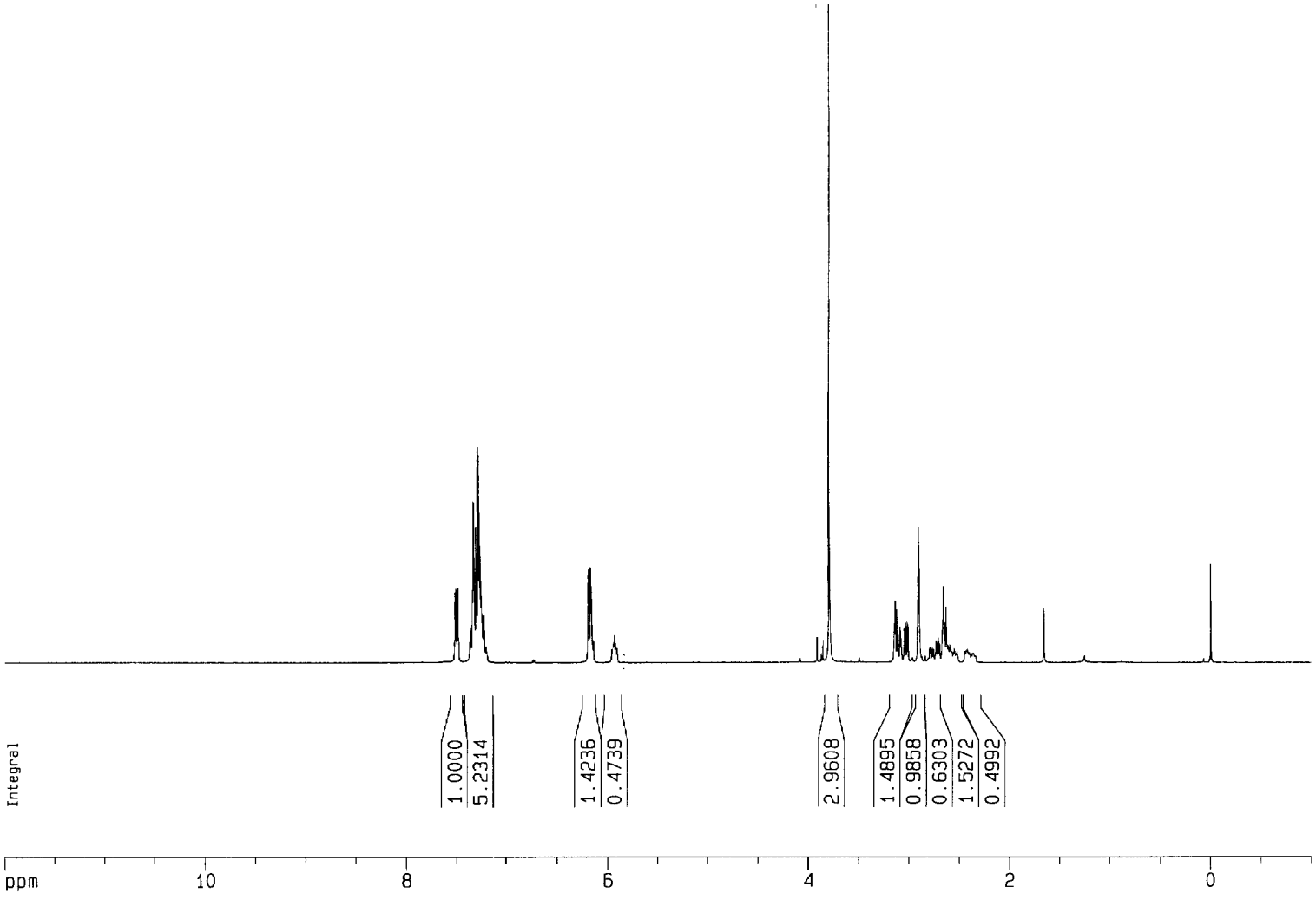
======== CHANNEL f1 ========
NUC1                 13C
P1                 9.00 usec
PL1                5.00 dB
SFO1         75.4760107 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                 1H
PCPD2            100.00 usec
PL2              120.00 dB
PL12              25.60 dB
SFO2        300.1312005 MHz

F2 - Processing parameters
SI                32768
SF           75.4677514 MHz
WDW                  EM
SSB                   0
LB                 1.00 Hz
GB                    0
PC                 1.40
```



DA-25



Current Data Parameters

NAME	MG-4-062a-250
EXPNO	1
PROCNO	1

F2 - Acquisition Parameters

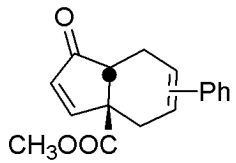
Date_	20050525
Time	23.48
INSTRUM	arx250
PROBHD	5 mm QNP 1H
PULPROG	zg30
TD	32768
SOLVENT	CDCl3
NS	16
DS	2
SWH	5208.333 Hz
FIDRES	0.158946 Hz
AQ	3.1457779 sec
RG	1024
DW	96.000 use
DE	137.14 use
TE	300.0 K
D1	1.00000000 sec
P1	8.70 use
SFO1	250.1315321 MHz
NUCLEUS	1H

F2 - Processing parameters

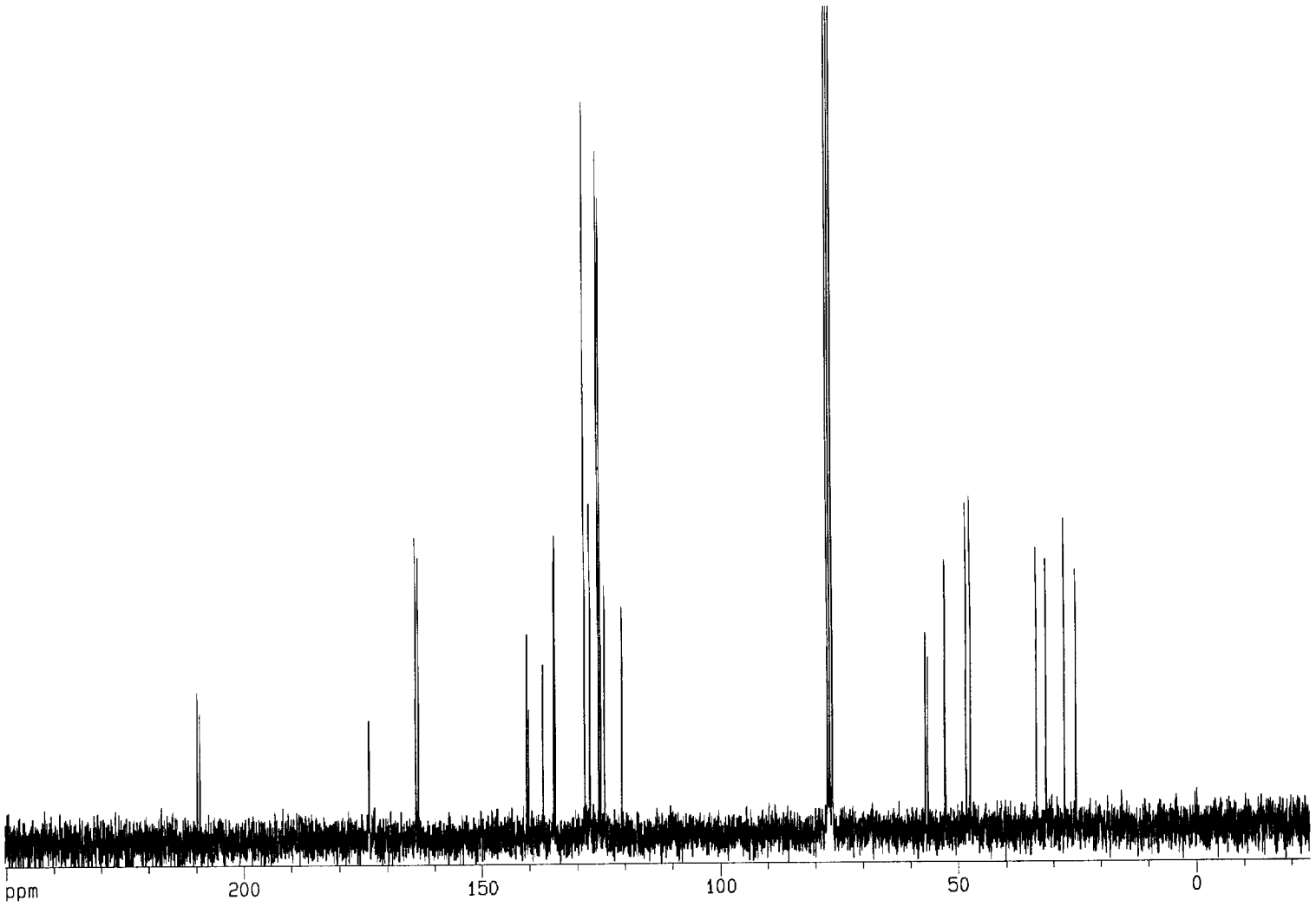
SI	16384
SF	250.1300075 MHz
WDW	EM
SSB	0
LB	0.20 Hz
GB	0
PC	1.50

1D NMR plot parameters

CX	20.00 cm
CY	12.50 cm
F1P	12.000 ppm
F1	3001.56 Hz
F2P	-1.000 ppm
F2	-250.13 Hz
PPMCM	0.65000 ppm
HZCM	162.58450 Hz/



DA-25

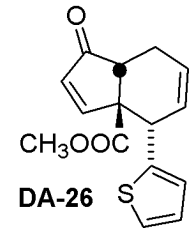


Current Data Parameters	
NAME	MG-4-062a-250
EXPNO	2
PROCNO	1

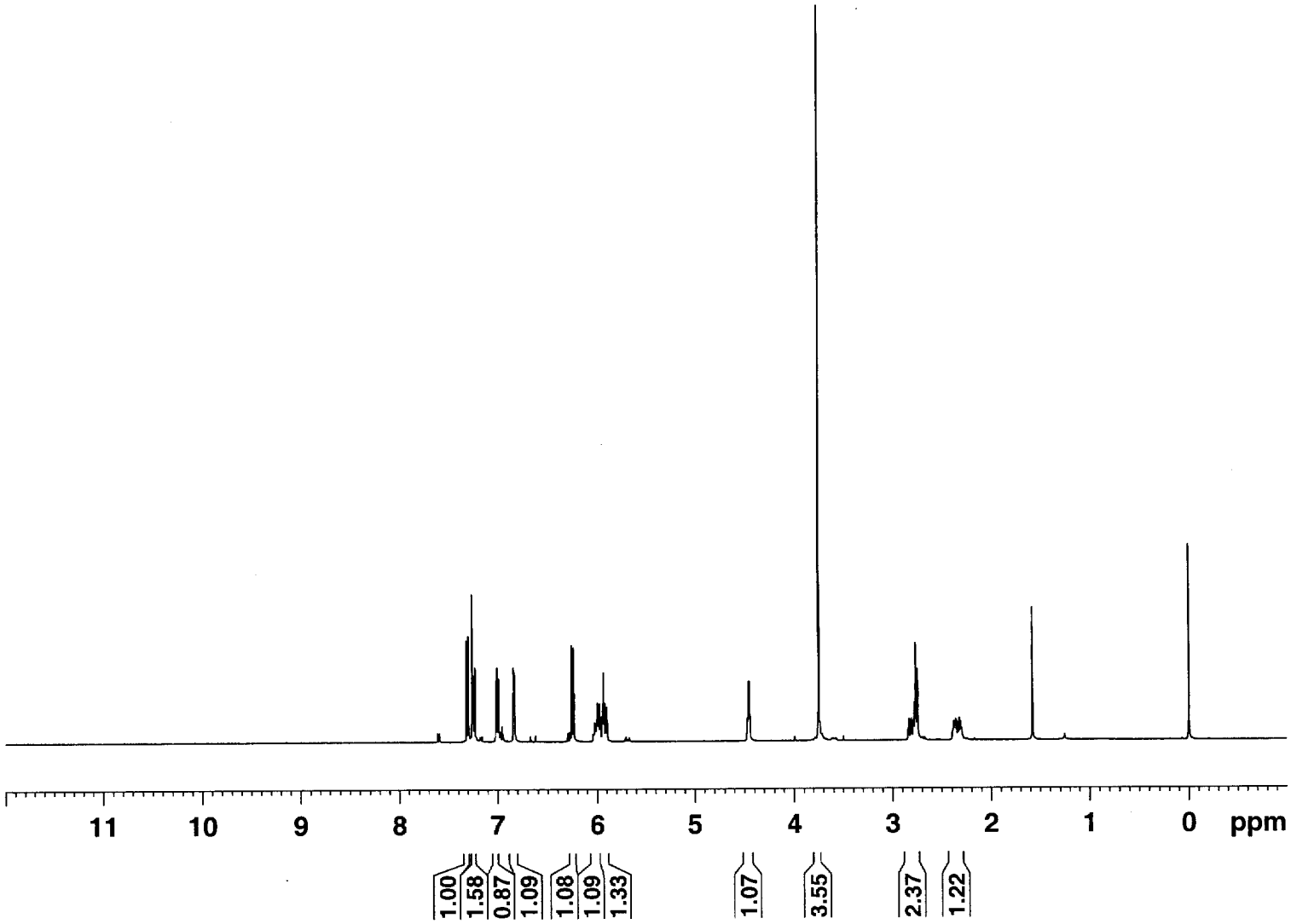
F2 - Acquisition Parameters	
Date_	20050525
Time	23.52
INSTRUM	arx250
PROBHD	5 mm QNP 1H
PULPROG	zgdc30
TD	36864
SOLVENT	CDCl3
NS	536
DS	4
SWH	17241.379 Hz
FIDRES	0.467702 Hz
AQ	1.0691060 sec
RG	22800
DW	29.000 use
DE	41.43 use
TE	300.0 K
D12	0.00002000 sec
DL5	23.00 dB
CPDPRG	waltz16
P31	103.00 use
D1	2.00000000 sec
P1	6.00 use
SFO1	62.9023694 MHz
NUCLEUS	13C
D11	0.03000000 sec

F2 - Processing parameters	
SI	32768
SF	62.8952434 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

1D NMR plot parameters	
CX	20.00 cm
CY	20.00 cm
F1P	250.363 ppm
F1	15746.65 Hz
F2P	-23.765 ppm
F2	-1494.73 Hz
PPMCM	13.70643 ppm
HZCM	862.06897 Hz/



DA-26

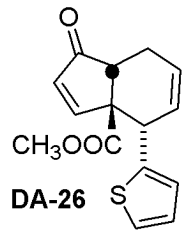



```
Current Data Parameters
NAME      MG-IV-142ba-A2
EXPNO                  1
PROCNO                 1

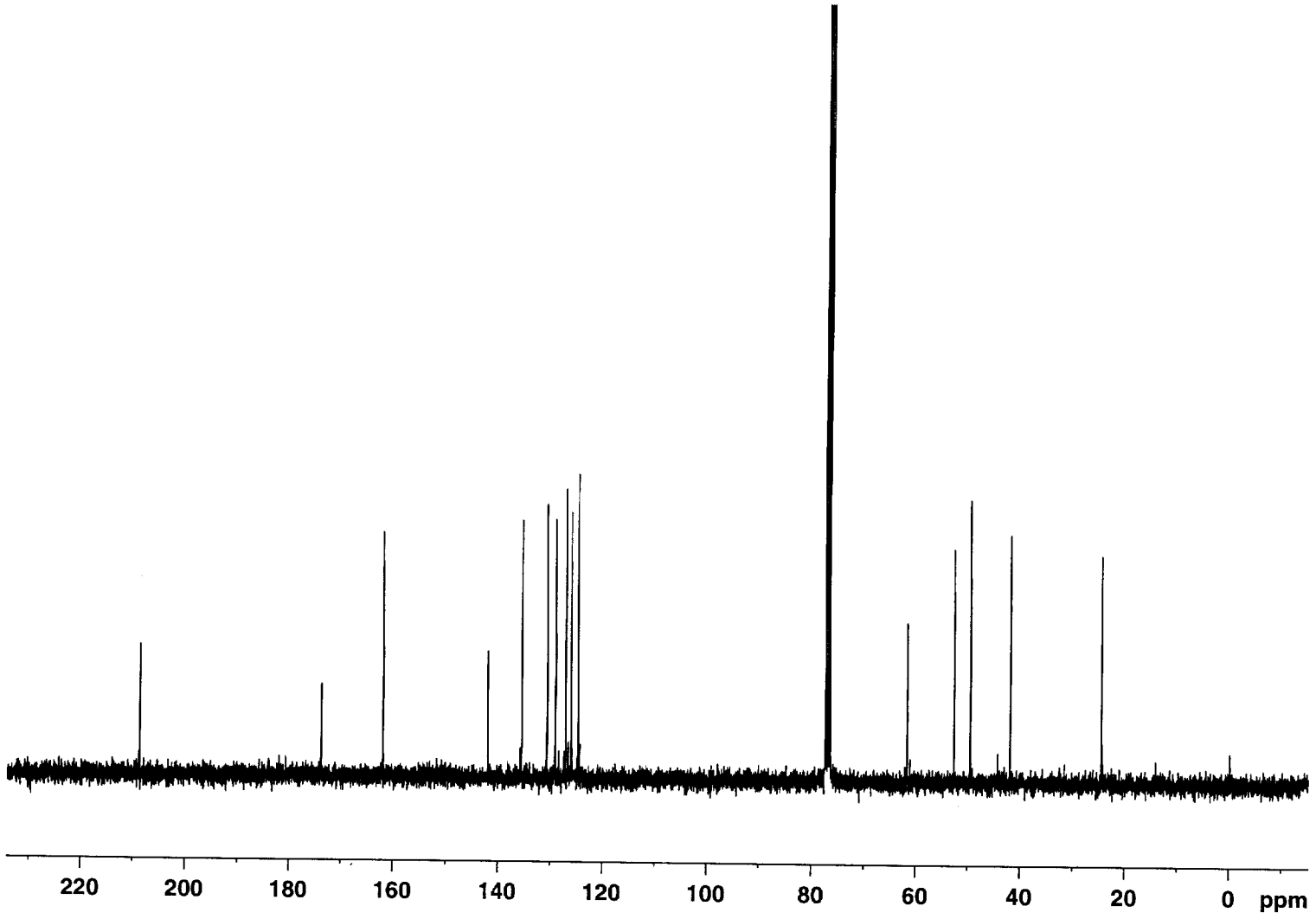
F2 - Acquisition Parameters
Date_           20050908
Time               10.58
INSTRUM           DRX300
PROBHD   5 mm Multinucl
PULPROG         zg30pad
TD                32768
SOLVENT           CDCl3
NS                   16
DS                    2
SWH            6172.839 Hz
FIDRES         0.188380 Hz
AQ             2.6542580 sec
RG                645.1
DW               81.000 use
DE                6.00 use
TE               300.0 K
D1          1.00000000 sec
D31         0.00000000 sec

======== CHANNEL f1 =======
NUC1                  1H
P1                 7.05 use
PL1                0.00 dB
SFO1       300.1318534 MHz

F2 - Processing parameters
SI                32768
SF         300.1300054 MHz
WDW                  EM
SSB                   0
LB                 0.30 Hz
GB                    0
PC                 1.30
```



DA-26



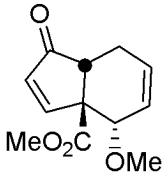

```
Current Data Parameters
NAME                  MG-IV-142b-A2
EXPNO                             2
PROCNO                            1

F2 - Acquisition Parameters
Date_                      20050907
Time                          12.11
INSTRUM                     DRX300
PROBHD          5 mm Multinucl
PULPROG                 zgdc30pad
TD                            65536
SOLVENT                       CDC13
NS                              561
DS                                4
SWH                   18832.393 Hz
FIDRES                 0.287360 Hz
AQ                     1.7400308 sec
RG                            22528
DW                        26.550 usec
DE                         6.00 usec
TE                         300.0 K
D1                    2.00000000 sec
D11                   0.03000000 sec
D31                   0.00000000 sec

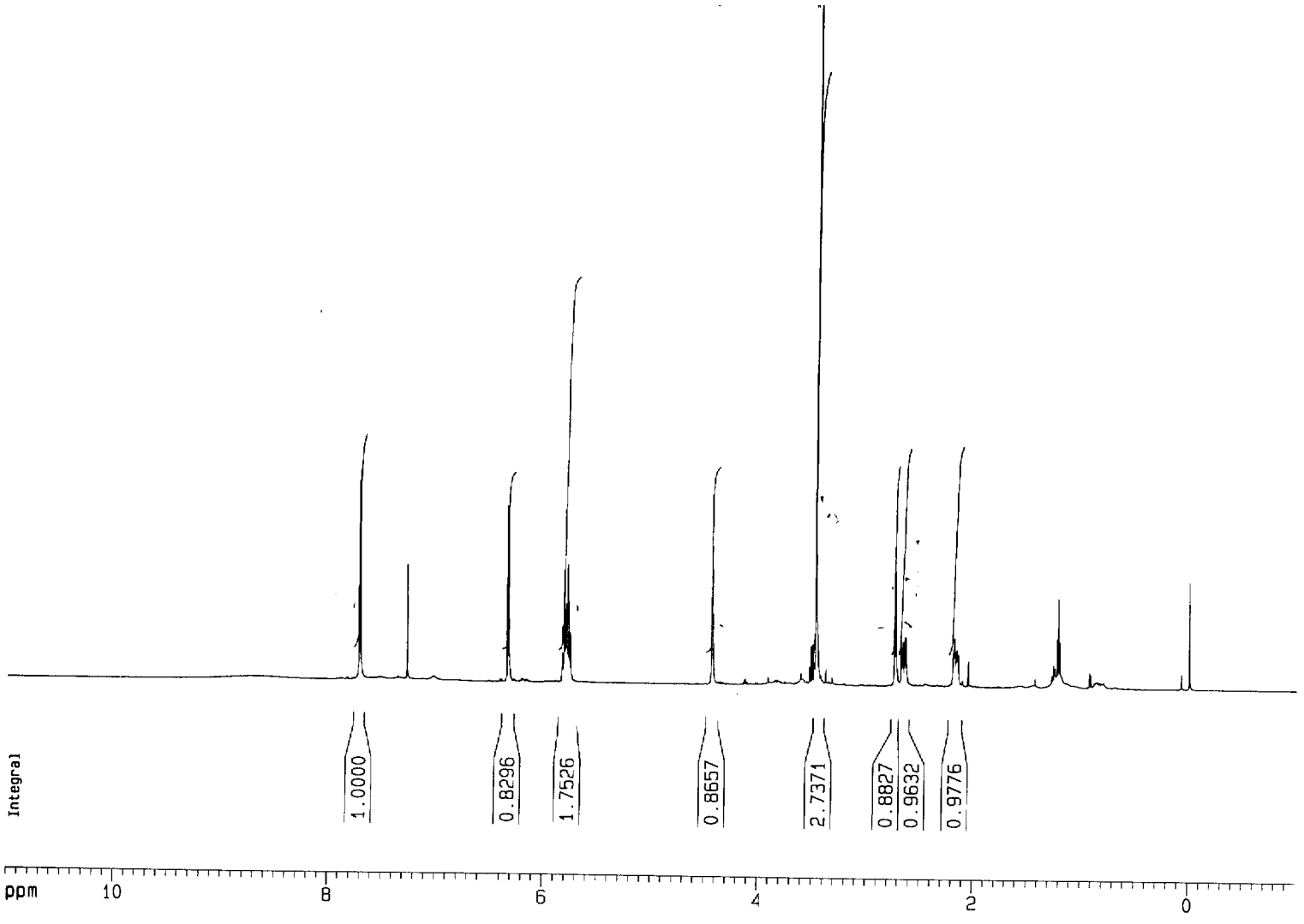
======== CHANNEL f1 ========
NUC1                          13C
P1                         9.00 usec
PL1                        5.00 dB
SFO1                 75.4760107 MHz

======== CHANNEL f2 ========
CPDPRG2                  waltz16
NUC2                          1H
PCPD2                    100.00 usec
PL2                      120.00 dB
PL12                      25.60 dB
SFO2                300.1312005 MHz

F2 - Processing parameters
SI                            32768
SF                   75.4677508 MHz
WDW                              EM
SSB                               0
LB                         1.00 Hz
GB                                0
PC                             1.40
```



DA-27



Current Data Parameters

NAME	MG-3-025a-500
EXPNO	1
PROCNO	1

F2 - Acquisition Parameters

Date_	20040902
Time	22.56
INSTRUM	DRX500
PROBHD	5 mm Multinucl
PULPROG	zg30
TD	57344
SOLVENT	CDCl3
NS	16
DS	2
SWH	10330.578 Hz
FIDRES	0.180151 Hz
AQ	2.7754996 sec
RG	128
DW	48.400 usec
DE	6.00 usec
TE	296.7 K
D1	1.00000000 sec

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

NUC1	1H
P1	13.25 usec
PL1	-3.00 dB
SFO1	500.1330885 MHz

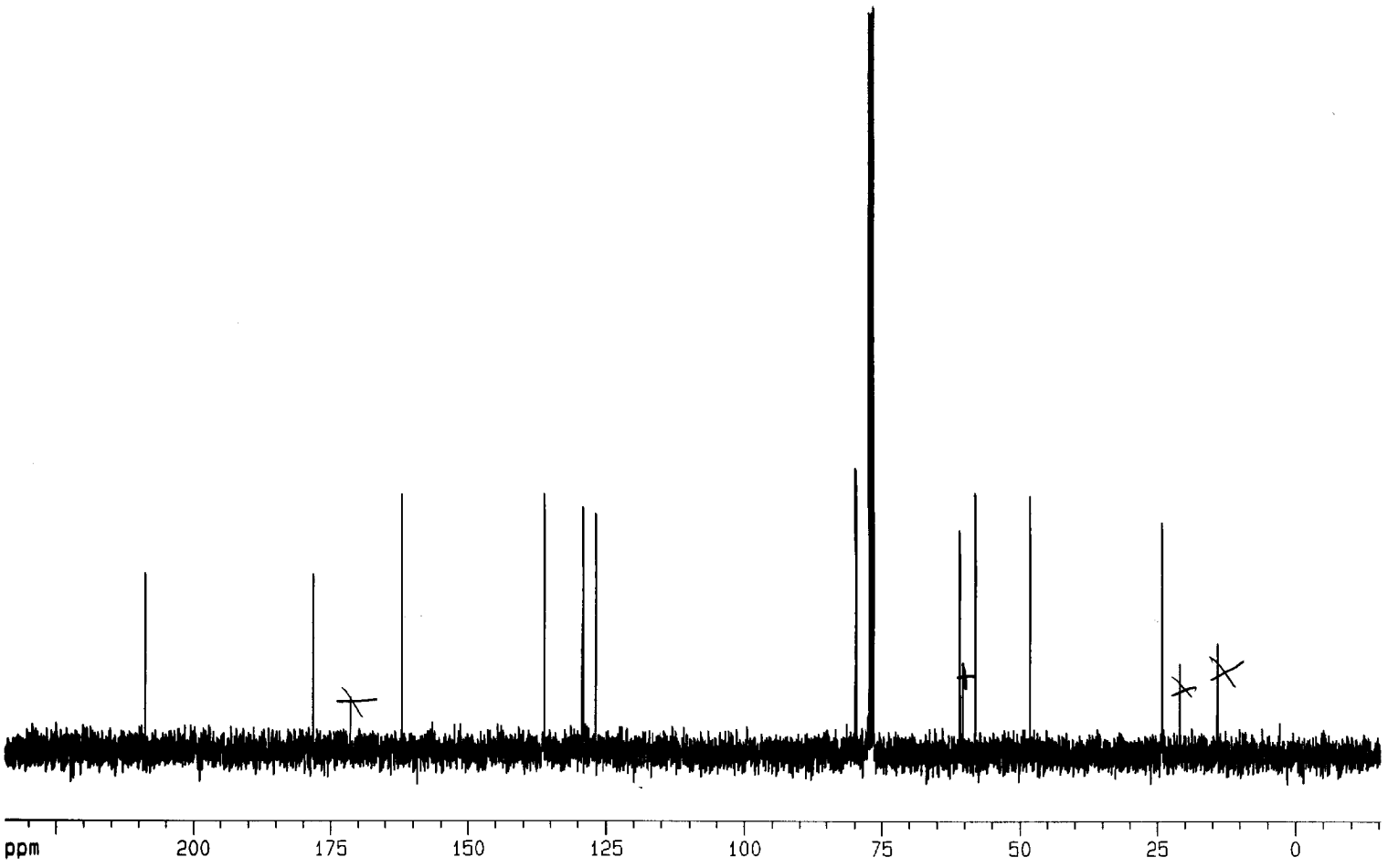
F2 - Processing parameters

SI	32768
SF	500.1300081 MHz
WDW	EM
SSB	0
LB	0.20 Hz
GB	0
PC	1.40

1D NMR plot parameters

CX	20.00 cm
CY	20.00 cm
F1P	11.000 ppm
F1	5501.43 Hz
F2P	-1.000 ppm
F2	-500.13 Hz
PPMCM	0.60000 ppm/cr
HZCM	300.07800 Hz/cm

DA-27



Current Data Parameters

NAME	MG-3-025-300
EXPNO	2
PROCNO	1

F2 - Acquisition Parameters

Date_	20040902
Time	13.20
INSTRUM	drx300
PROBHD	5 mm Multinucl
PULPROG	zgdc30
TD	65536
SOLVENT	CDCl3
NS	121
DS	4
SWH	18832.393 Hz
FIDRES	0.287360 Hz
AQ	1.7400308 sec
RG	22528
DW	26.550 usec
DE	6.00 usec
TE	297.1 K
D1	1.29999995 sec
d11	0.03000000 sec
D31	0.00000000 sec

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

NUC1	13C
P1	8.50 usec
PL1	5.00 dB
SFO1	75.4760107 MHz

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

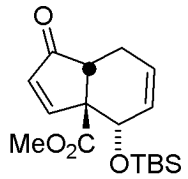
CPDPRG2	waltz16
NUC2	1H
PCPD2	100.00 usec
PL2	120.00 dB
PL12	25.60 dB
SFO2	300.1312005 MHz

F2 - Processing parameters

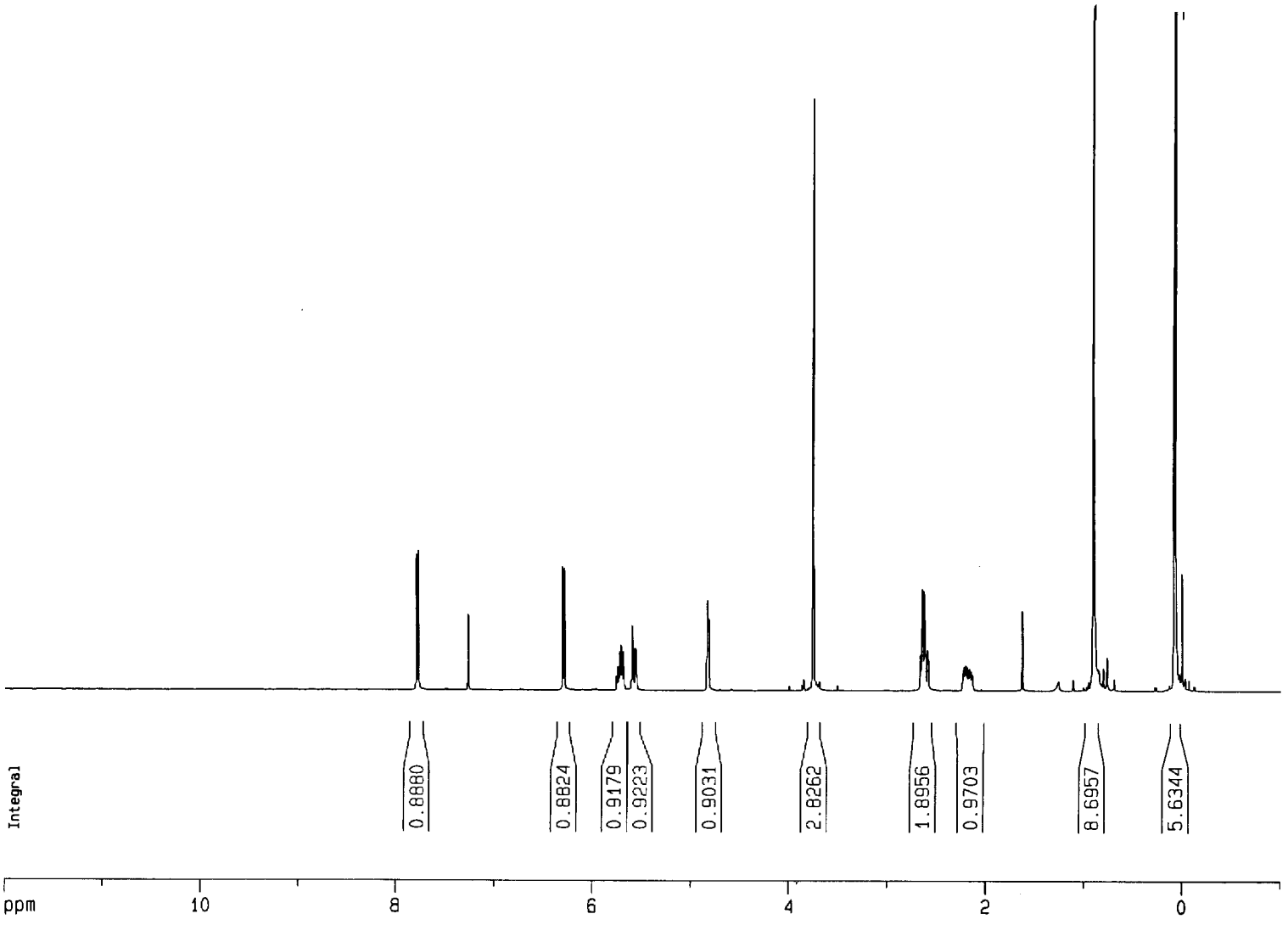
SI	32768
SF	75.4677520 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

1D NMR plot parameters

CX	20.00 cm
CY	11.00 cm
F1P	234.205 ppm
F1	17674.94 Hz
F2P	-15.337 ppm
F2	-1157.45 Hz
PPMCM	12.47711 ppm/cm
HZCM	941.61957 Hz/cm



DA-28



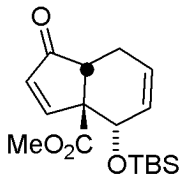

```
Current Data Parameters
NAME        MG-4-024a-300
EXPNO                   1
PROCNO                  1

F2 - Acquisition Parameters
Date_            20050406
Time                12.38
INSTRUM           drx300
PROBHD   5 mm Multinucl
PULPROG             zg30
TD                 32768
SOLVENT            CDCl3
NS                    16
DS                     2
SWH             6172.839 Hz
FIDRES          0.188380 Hz
AQ              2.6542580 sec
RG                 203.2
DW                81.000 usec
DE                 6.00 usec
TE                300.0 K
D1           1.00000000 sec
D31          0.00000000 sec

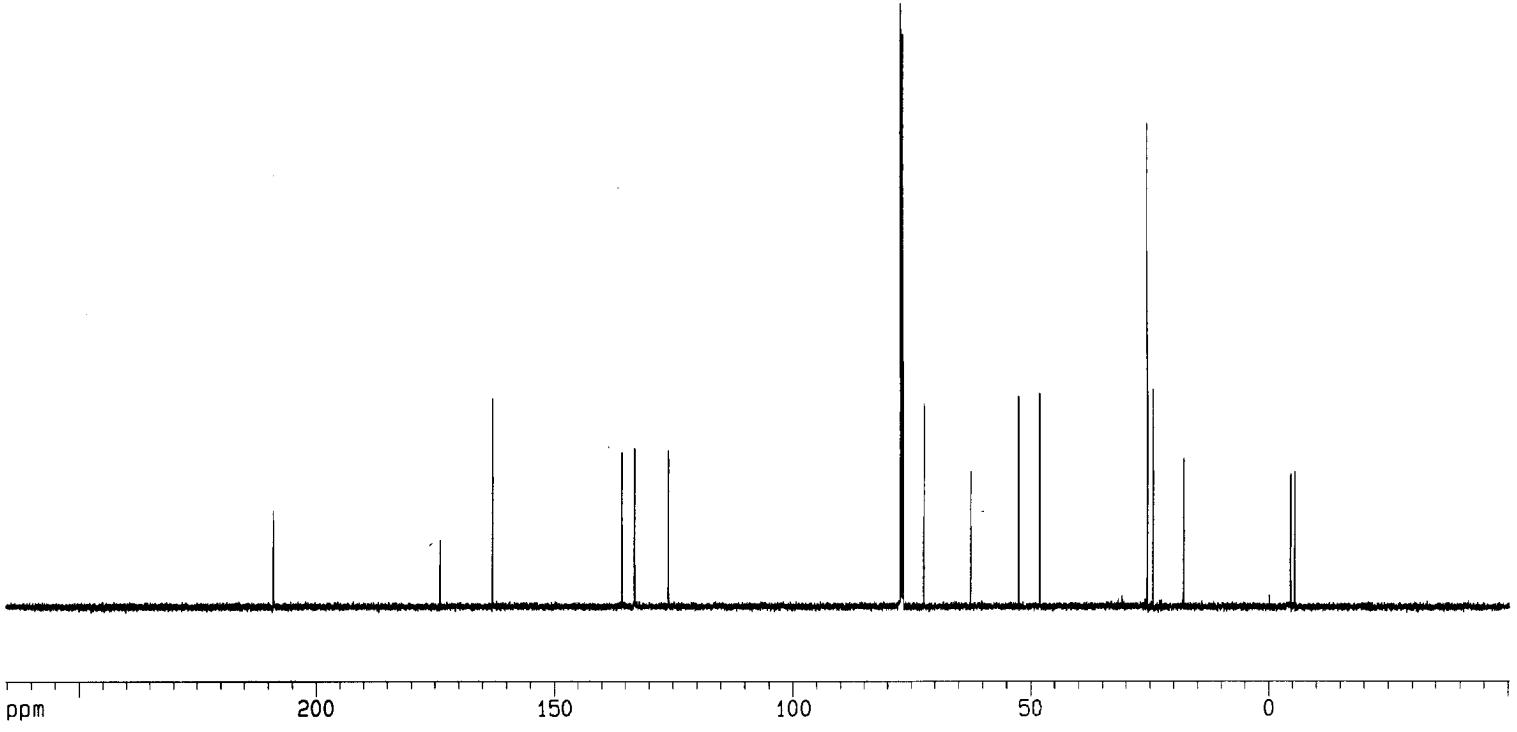
======== CHANNEL f1 ========
NUC1                   1H
P1                  7.05 usec
PL1                 0.00 dB
SFO1         300.1318534 MHz

F2 - Processing parameters
SI                 32768
SF          300.1300037 MHz
WDW                   EM
SSB                    0
LB                  0.30 Hz
GB                     0
PC                  1.30

1D NMR plot parameters
CX                 20.00 cm
CY                 40.00 cm
F1P                12.000 ppm
F1               3601.56 Hz
F2P                -1.000 ppm
F2               -300.13 Hz
PPMCM              0.65000 ppm/cm
HZCM             195.08450 Hz/cm
```



DA-28




```
Current Data Parameters
NAME       MG-4-024a-500
EXPNO                  2
PROCNO                 1

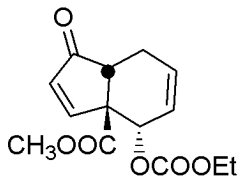
F2 - Acquisition Parameters
Date_           20050407
Time               20.41
INSTRUM           DRX500
PROBHD   5 mm Multinucl
PULPROG          zgdc30
TD                65536
SOLVENT           CDCl3
NS                  495
DS                    4
SWH           39681.812 Hz
FIDRES         0.605496 Hz
AQ             0.8258188 sec
RG                16384
DW                12.600 usec
DE                 6.00 usec
TE                298.0 K
D1             2.00000000 sec
d11            0.03000000 sec

======== CHANNEL f1 ========
NUC1                  13C
P1                   8.10 usec
PL1                  3.00 dB
SFO1         125.7713108 MHz

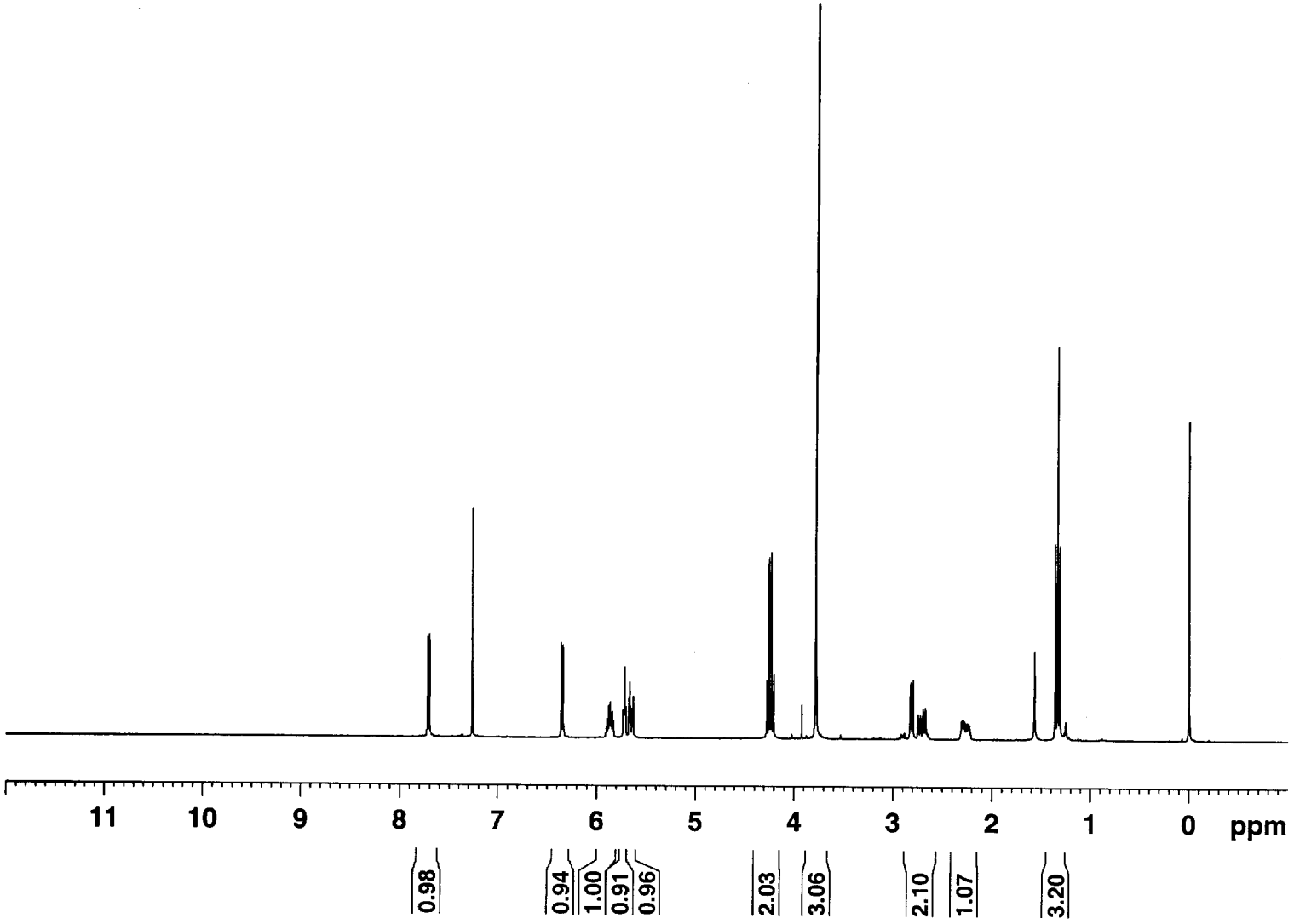
======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                  1H
PCPD2               88.00 usec
PL2                  0.00 dB
PL12                21.00 dB
SFO2         500.1320005 MHz

F2 - Processing parameters
SI                 32768
SF          125.7577935 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  1.40

1D NMR plot parameters
CX                 20.00 cm
CY                  8.00 cm
F1P               265.258 ppm
F1              33358.26 Hz
F2P               -50.284 ppm
F2              -6323.55 Hz
PPMCM            15.77708 ppm/cm
HZCM           1984.09045 Hz/cm
```



DA-29

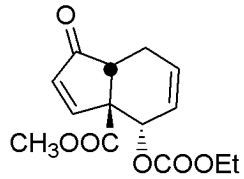



```
Current Data Parameters
NAME       MG-IV-135b-A2
EXPNO                 1
PROCNO                1

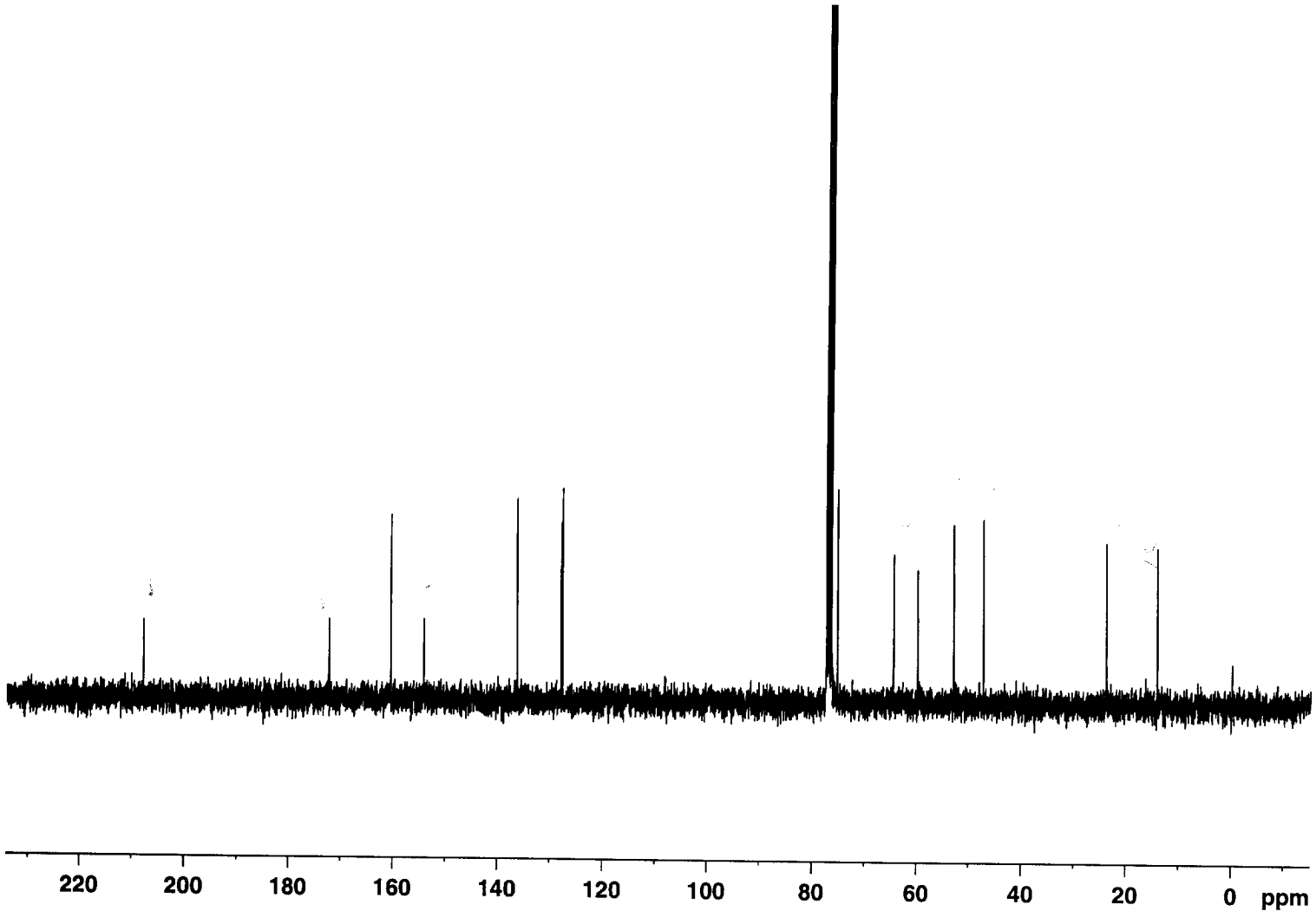
F2 - Acquisition Parameters
Date_          20050830
Time              14.24
INSTRUM          DRX300
PROBHD   5 mm Multinucl
PULPROG         zg30pad
TD                32768
SOLVENT           CDCl3
NS                   16
DS                    2
SWH            6172.839 Hz
FIDRES         0.188380 Hz
AQ             2.6542580 sec
RG                812.7
DW               81.000 use
DE                6.00 use
TE               300.0 K
D1          1.00000000 sec
D31         0.00000000 sec

======== CHANNEL f1 =======
NUC1                  1H
P1                7.05 use
PL1               0.00 dB
SFO1        300.1318534 MHz

F2 - Processing parameters
SI                32768
SF          300.1300045 MHz
WDW                  EM
SSB                   0
LB               0.30 Hz
GB                    0
PC                1.30
```



DA-29



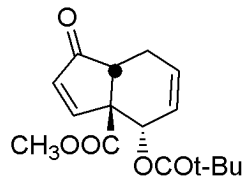

```
Current Data Parameters
NAME       MG-IV-135b-A2
EXPNO                 2
PROCNO                1

F2 - Acquisition Parameters
Date_          20050830
Time              14.29
INSTRUM          DRX300
PROBHD   5 mm Multinucl
PULPROG       zgdc30pad
TD                65536
SOLVENT           CDCl3
NS                  923
DS                    4
SWH           18832.393 Hz
FIDRES         0.287360 Hz
AQ             1.7400308 sec
RG                22528
DW               26.550 usec
DE                6.00 usec
TE               300.0 K
D1            2.00000000 sec
D11           0.03000000 sec
D31           0.00000000 sec

======== CHANNEL f1 ========
NUC1                 13C
P1                 9.00 usec
PL1                5.00 dB
SFO1          75.4760107 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                 1H
PCPD2            100.00 usec
PL2              120.00 dB
PL12              25.60 dB
SFO2         300.1312005 MHz

F2 - Processing parameters
SI                32768
SF          75.4677497 MHz
WDW                  EM
SSB                   0
LB                 1.00 Hz
GB                    0
PC                 1.40
```



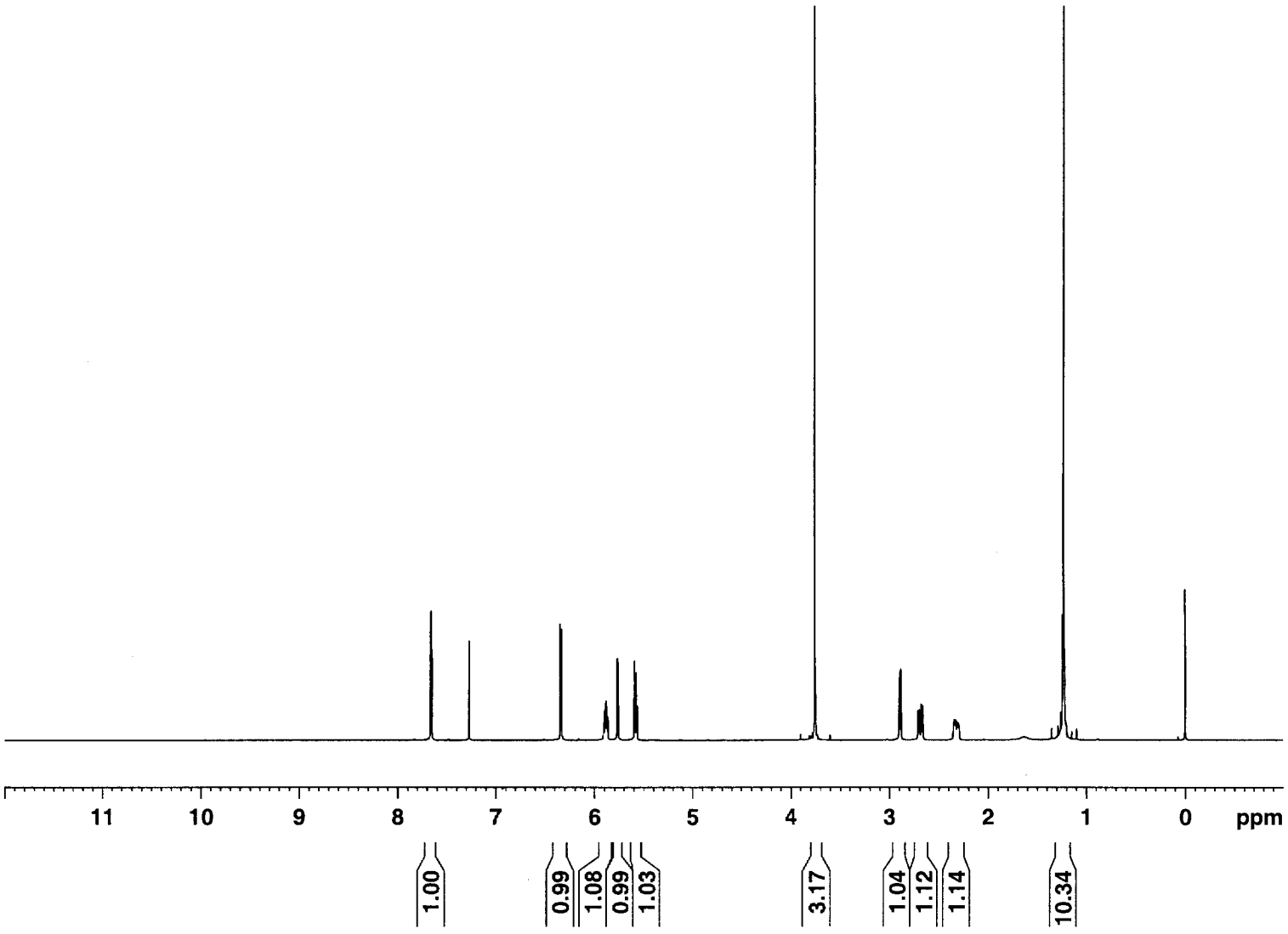
DA-30

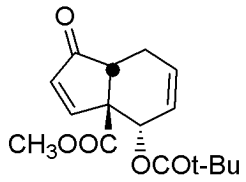
```
Current Data Parameters
NAME       MG-IV-136b-A3
EXPNO                 1
PROCNO                1

F2 - Acquisition Parameters
Date_          20050830
Time              21.33
INSTRUM          DRX500
PROBHD   5 mm Multinucl
PULPROG        zg30pad
TD               65536
SOLVENT          CDCl3
NS                  16
DS                   2
SWH          10330.578 Hz
FIDRES        0.157632 Hz
AQ            3.1719923 sec
RG                71.8
DW               48.400 use
DE                6.00 use
TE               300.0 K
D1          1.00000000 sec
D31         0.00000000 sec

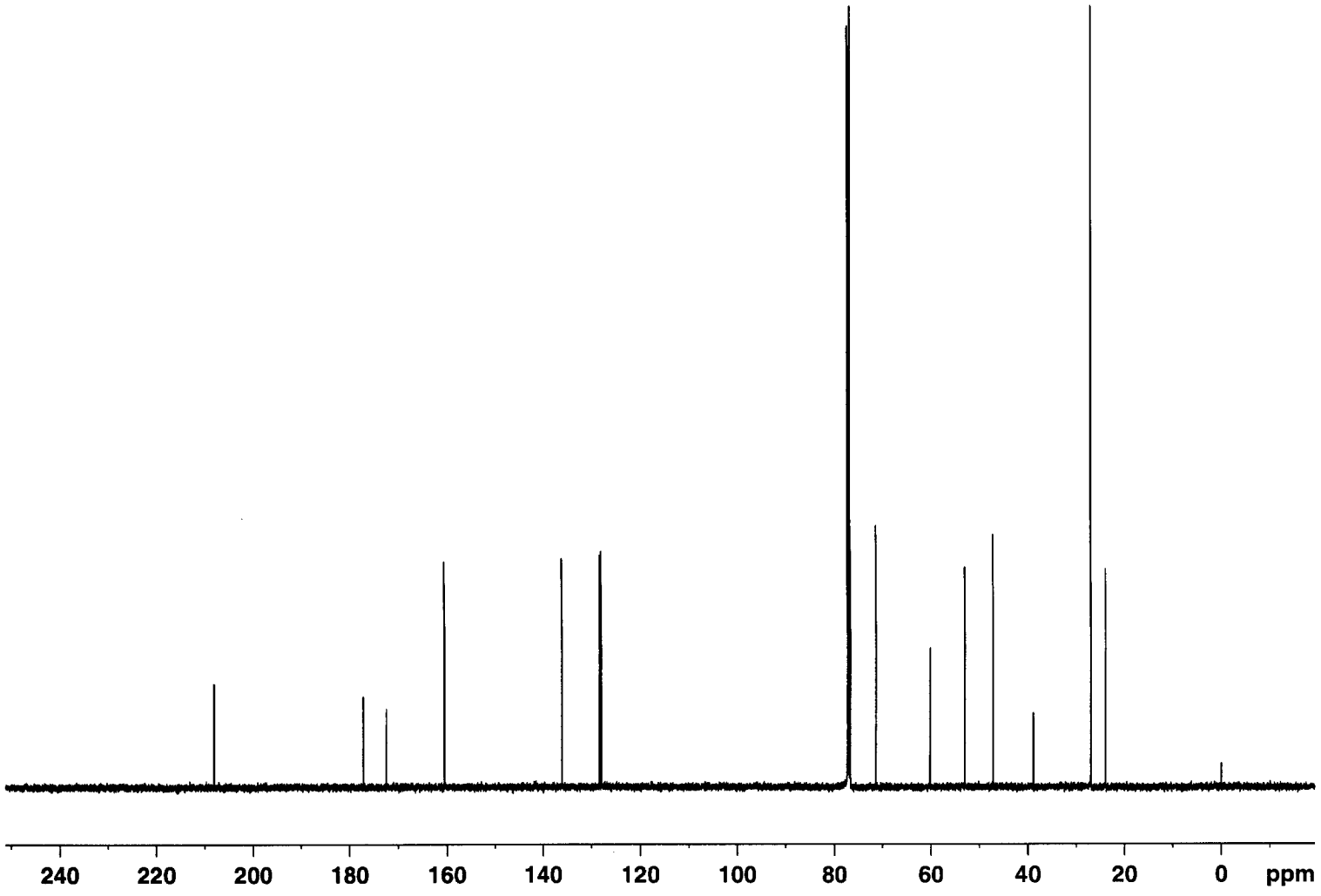
======== CHANNEL f1 ========
NUC1                 1H
P1                13.25 use
PL1               -3.00 dB
SFO1        500.1330885 MHz

F2 - Processing parameters
SI                32768
SF          500.1300087 MHz
WDW                  EM
SSB                   0
LB                 0.30 Hz
GB                    0
PC                 1.40
```





DA-30



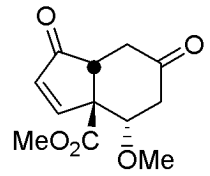

```
Current Data Parameters
NAME       MG-IV-136b-A3
EXPNO                  2
PROCNO                 1

F2 - Acquisition Parameters
Date_           20050830
Time               21.40
INSTRUM           DRX500
PROBHD   5 mm Multinucl
PULPROG           zgdc30
TD                65536
SOLVENT           CDCl3
NS                  831
DS                    4
SWH           34013.605 Hz
FIDRES         0.519006 Hz
AQ            0.9634292 sec
RG                32768
DW               14.700 usec
DE                6.00 usec
TE               300.0 K
D1           2.00000000 sec
d11          0.03000000 sec
D31          0.00000000 sec

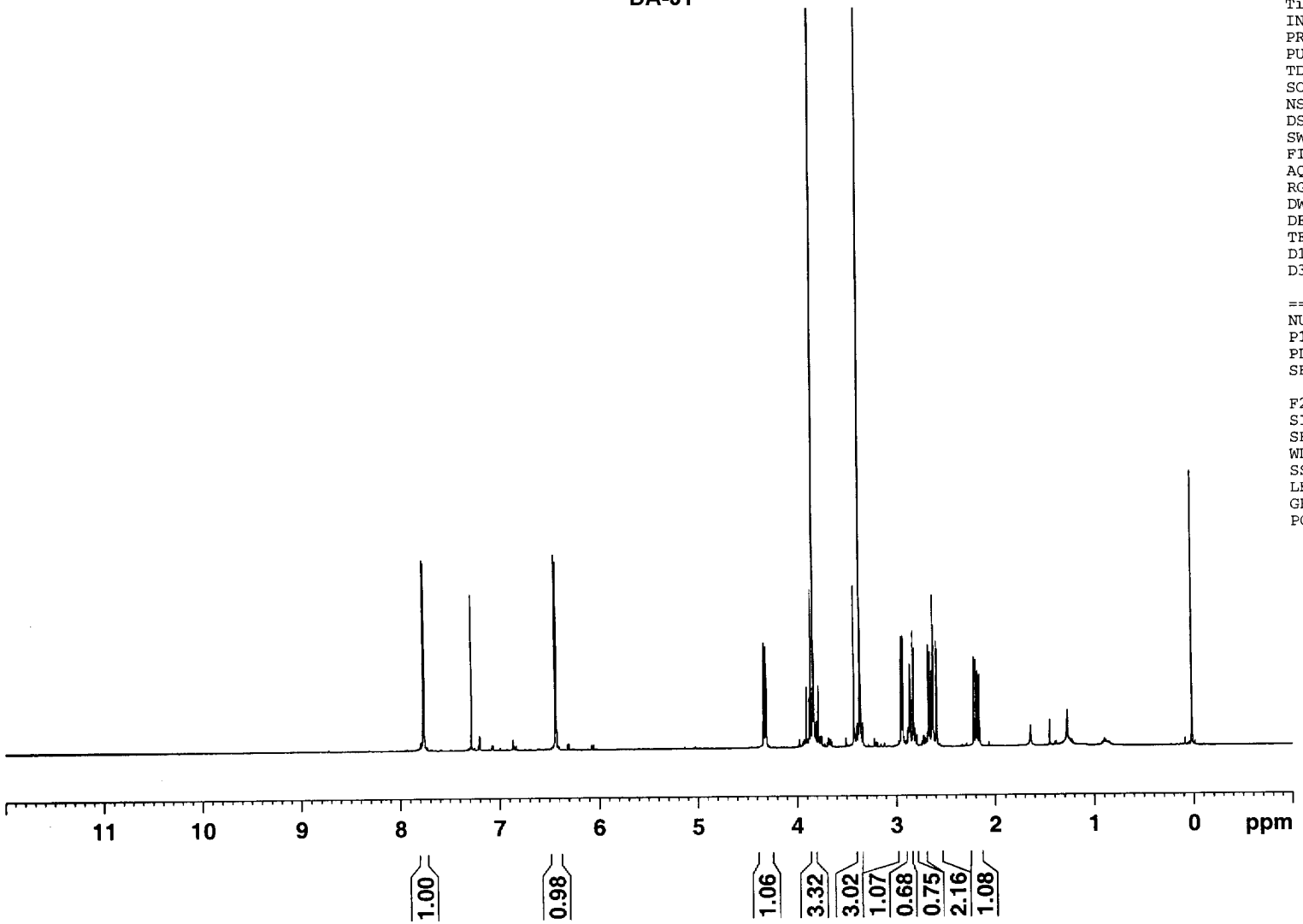
======== CHANNEL f1 ========
NUC1                 13C
P1                8.10 usec
PL1               3.00 dB
SFO1        125.7723786 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                 1H
PCPD2            88.00 usec
PL2               0.00 dB
PL12             21.00 dB
SFO2        500.1320005 MHz

F2 - Processing parameters
SI                32768
SF          125.7577938 MHz
WDW                  EM
SSB                   0
LB                1.00 Hz
GB                    0
PC                1.40
```



DA-31

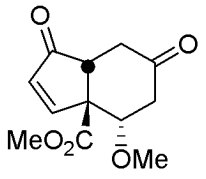



```
Current Data Parameters
NAME                  MG-V-93b-A3
EXPNO                           1
PROCNO                          1

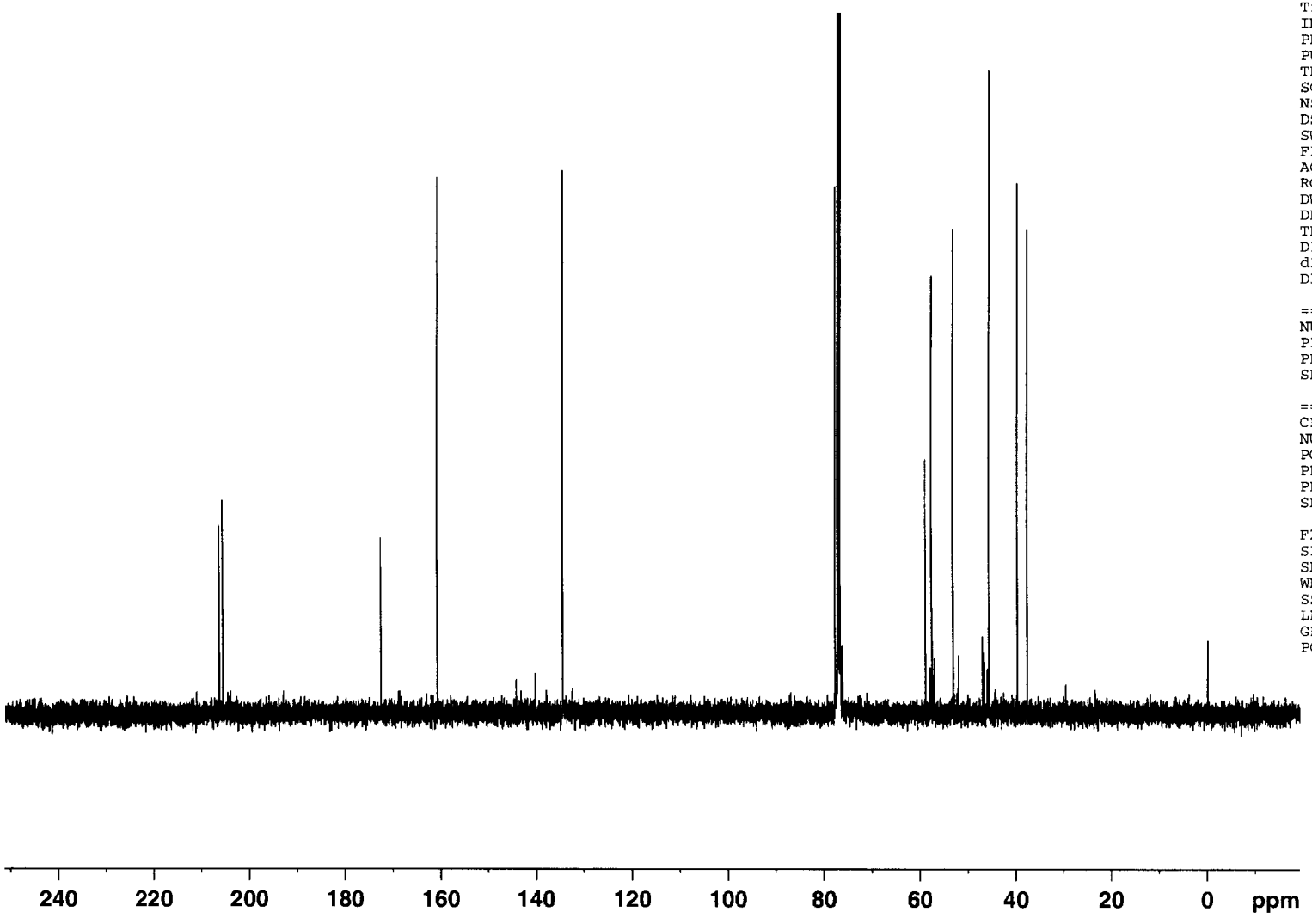
F2 - Acquisition Parameters
Date_                    20060227
Time                        14.51
INSTRUM                   DRX500
PROBHD    5 mm Multinucl
PULPROG                   zg30pad
TD                          65536
SOLVENT                     CDCl3
NS                              6
DS                              2
SWH                  10330.578 Hz
FIDRES                0.157632 Hz
AQ                   3.1719923 sec
RG                          143.7
DW                       48.400 usec
DE                        6.00 usec
TE                        300.0 K
D1                   1.00000000 sec
D31                  0.00000000 sec

======== CHANNEL f1 ========
NUC1                          1H
P1                       11.50 usec
PL1                       0.00 dB
SFO1                500.1330885 MHz

F2 - Processing parameters
SI                          32768
SF                500.1300000 MHz
WDW                           EM
SSB                            0
LB                        0.30 Hz
GB                             0
PC                         1.40
```



DA-31



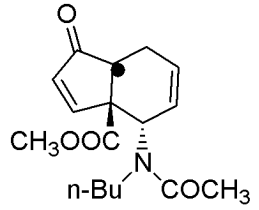

```
Current Data Parameters
NAME          MG-V-93b-A3
EXPNO                   2
PROCNO                  1

F2 - Acquisition Parameters
Date_            20060227
Time                14.53
INSTRUM           DRX500
PROBHD   5 mm Multinucl
PULPROG           zgdc30
TD                 65536
SOLVENT            CDC13
NS                   669
DS                     4
SWH           34013.605 Hz
FIDRES         0.519006 Hz
AQ             0.9634292 sec
RG                 32768
DW                14.700 usec
DE                 6.00 usec
TE                300.0 K
D1           2.00000000 sec
d11          0.03000000 sec
D31          0.00000000 sec

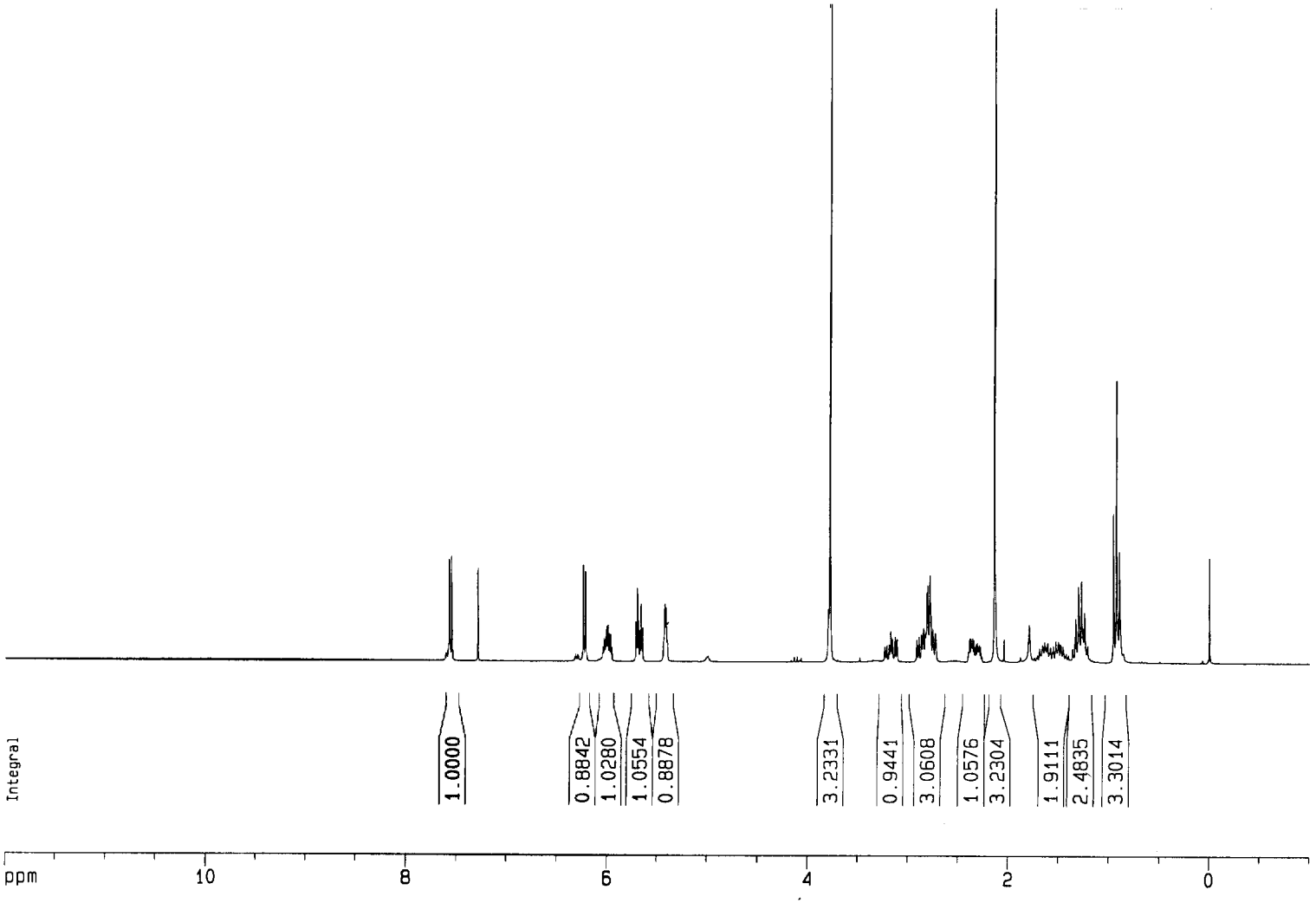
======== CHANNEL f1 ========
NUC1                13C
P1                 8.10 usec
PL1                3.00 dB
SFO1        125.7723786 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                1H
PCPD2             88.00 usec
PL2                0.00 dB
PL12              21.00 dB
SFO2        500.1320005 MHz

F2 - Processing parameters
SI                 32768
SF          125.7577938 MHz
WDW                   EM
SSB                    0
LB                 1.00 Hz
GB                     0
PC                 1.40
```



DA-32



Current Data Parameters

NAME	MG-4-066b-250
EXPNO	1
PROCNO	1

F2 - Acquisition Parameters

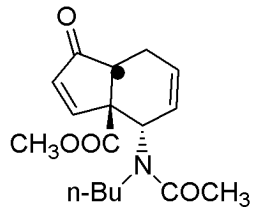
Date_	20050530
Time	23.03
INSTRUM	arx250
PROBHD	5 mm QNP 1H
PULPROG	zg30
TD	32768
SOLVENT	CDCl3
NS	16
DS	2
SWH	5208.333 Hz
FIDRES	0.158946 Hz
AQ	3.1457779 sec
RG	715
DW	96.000 use
DE	137.14 use
TE	300.0 K
D1	1.00000000 sec
P1	8.70 use
SFO1	250.1315321 MHz
NUCLEUS	1H

F2 - Processing parameters

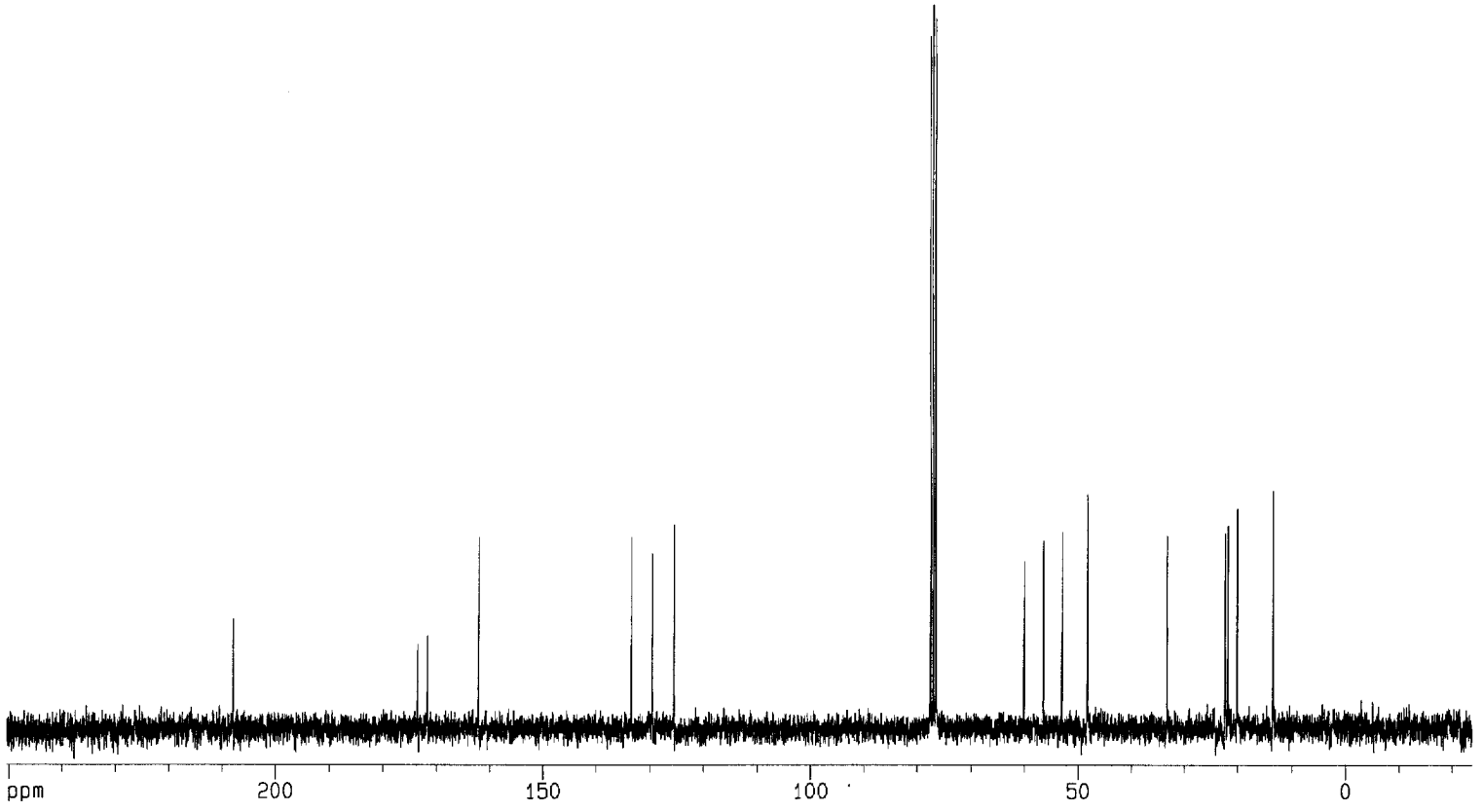
SI	16384
SF	250.1300024 MHz
WDW	EM
SSB	0
LB	0.20 Hz
GB	0
PC	1.50

1D NMR plot parameters

CX	20.00 cm
CY	12.50 cm
F1P	12.000 ppm
F1	3001.56 Hz
F2P	-1.000 ppm
F2	-250.13 Hz
PPMCM	0.65000 ppm
HZCM	162.58450 Hz/



DA-32



Current Data Parameters

NAME	MG-4-066b-250
EXPNO	2
PROCNO	1

F2 - Acquisition Parameters

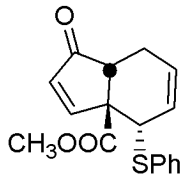
Date_	20050530
Time	23.07
INSTRUM	arx250
PROBHD	5 mm QNP 1H
PULPROG	zgdc30
TD	36864
SOLVENT	CDCl3
NS	450
DS	4
SWH	17241.379 Hz
FIDRES	0.467702 Hz
AQ	1.0691060 sec
RG	22800
DW	29.000 use
DE	41.43 use
TE	300.0 K
D12	0.00002000 sec
DL5	23.00 dB
CPDPRG	waltz16
P31	103.00 use
D1	2.00000000 sec
P1	6.00 use
SFO1	62.9023694 MHz
NUCLEUS	13C
D11	0.03000000 sec

F2 - Processing parameters

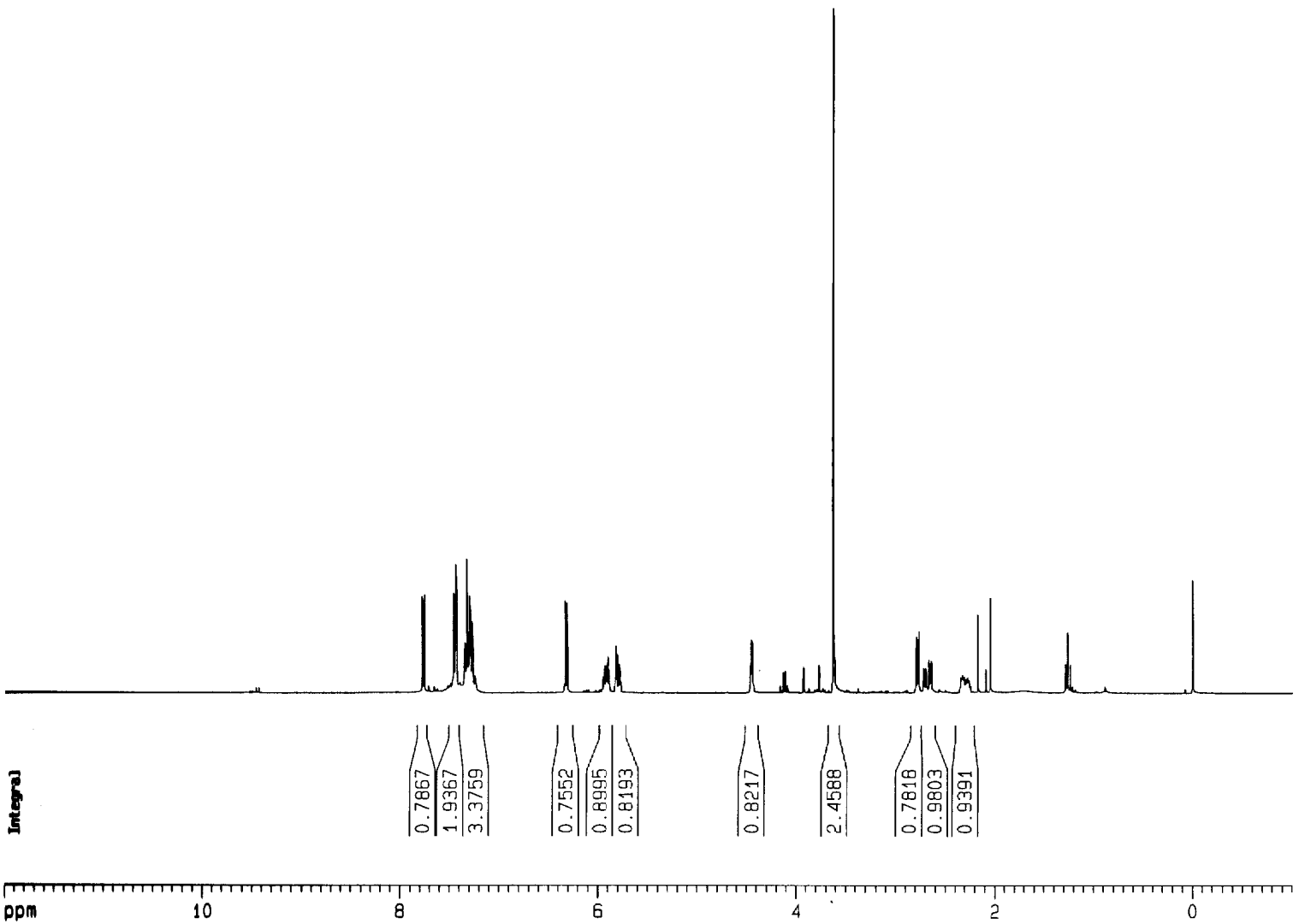
SI	32768
SF	62.8952419 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

1D NMR plot parameters

CX	20.00 cm
CY	10.00 cm
F1P	250.388 ppm
F1	15748.23 Hz
F2P	-23.740 ppm
F2	-1493.15 Hz
PPMCM	13.70643 ppm
HZCM	862.06903 Hz/



DA-33



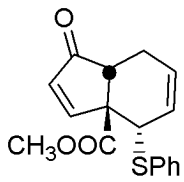
Current Data Parameters
NAME MG-4-035a-300
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
Date_ 20050429
Time 14.42
INSTRUM drx300
PROBHD 5 mm Multinucl
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 16
DS 2
SWH 6172.839 Hz
FIDRES 0.188380 Hz
AQ 2.6542580 sec
RG 256
DW 81.000 usec
DE 6.00 usec
TE 300.0 K
D1 1.00000000 sec
D31 0.00000000 sec

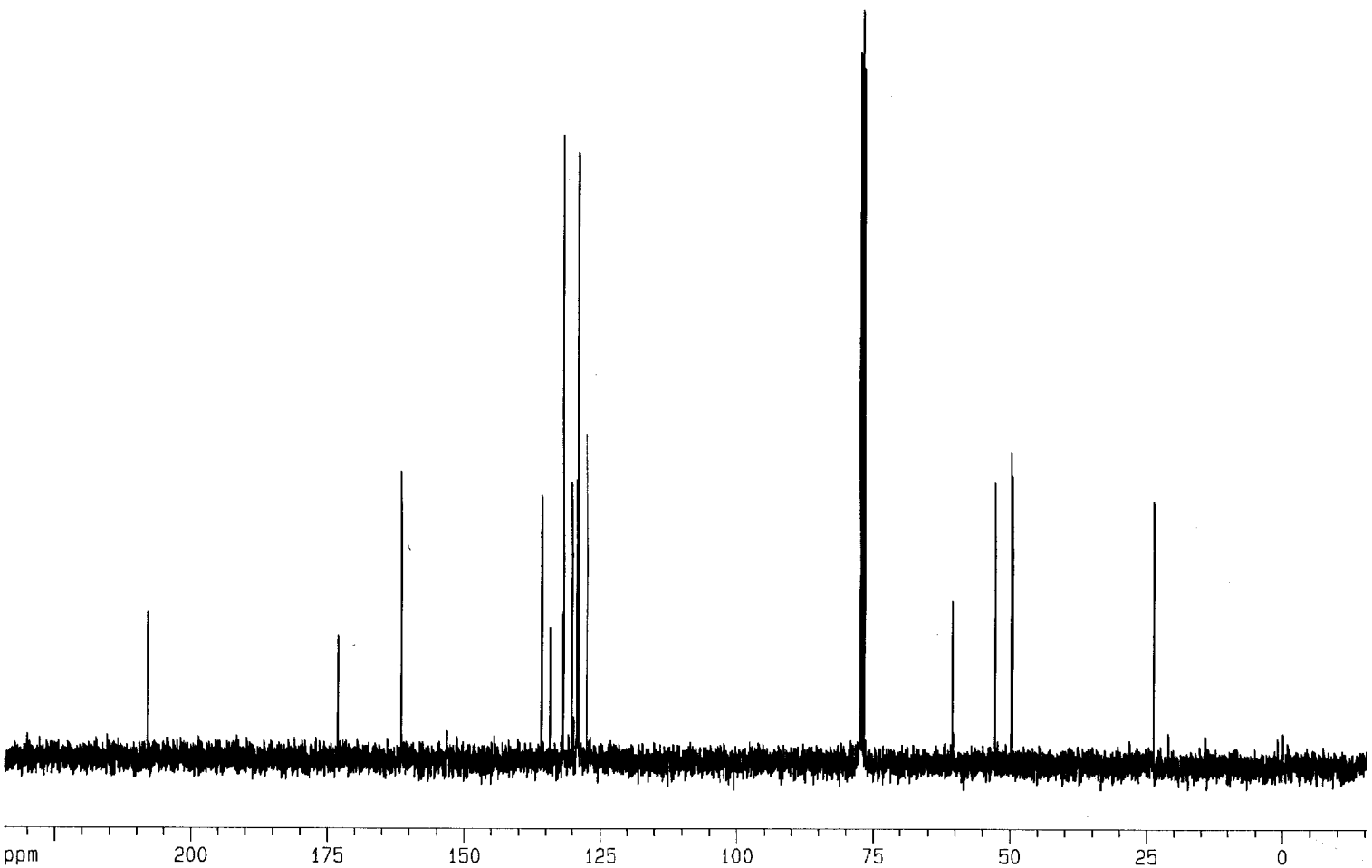
======== CHANNEL f1 ========
NUC1 1H
P1 7.05 usec
PL1 0.00 dB
SFO1 300.1318534 MHz

F2 - Processing parameters
SI 32768
SF 300.1300022 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.30

1D NMR plot parameters
CX 20.00 cm
CY 12.50 cm
F1P 12.000 ppm
F1 3601.56 Hz
F2P -1.000 ppm
F2 -300.13 Hz
PPMCM 0.65000 ppm/cm
HZCM 195.08450 Hz/cm



DA-33




```
Current Data Parameters
NAME        MG-4-35a-300
EXPNO                  2
PROCNO                 1

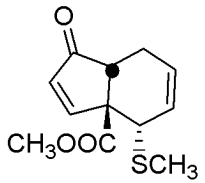
F2 - Acquisition Parameters
Date_           20050422
Time               22.49
INSTRUM          drx300
PROBHD   5 mm Multinucl
PULPROG          zgdc30
TD                65536
SOLVENT           CDCl3
NS                  321
DS                    4
SWH           18832.393 Hz
FIDRES        0.287360 Hz
AQ            1.7400308 sec
RG                22528
DW               26.550 usec
DE                6.00 usec
TE               297.1 K
D1            1.79999995 sec
d11           0.03000000 sec
D31           0.00000000 sec

======== CHANNEL f1 ========
NUC1                 13C
P1                 8.50 usec
PL1                5.00 dB
SFO1         75.4760107 MHz

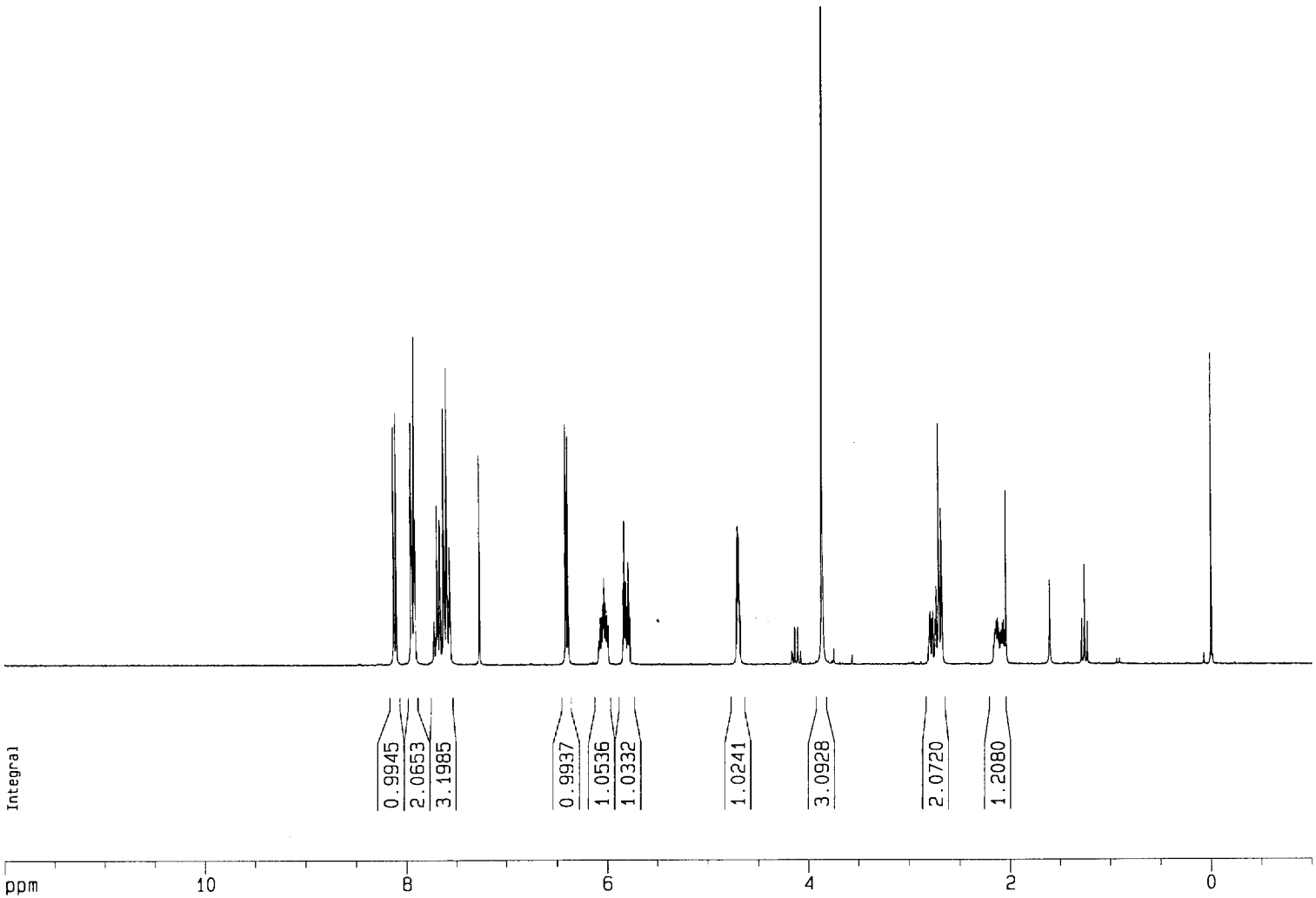
======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                 1H
PCPD2            100.00 usec
PL2              120.00 dB
PL12              25.60 dB
SFO2        300.1312005 MHz

F2 - Processing parameters
SI                 32768
SF           75.4677508 MHz
WDW                   EM
SSB                    0
LB                1.00 Hz
GB                     0
PC                  1.40

1D NMR plot parameters
CX                20.00 cm
CY                11.00 cm
F1P              234.220 ppm
F1              17676.09 Hz
F2P              -15.322 ppm
F2              -1156.30 Hz
PPMCM            12.47711 ppm/cm
HZCM            941.61957 Hz/cm
```



DA-34



Current Data Parameters

NAME	MG-IV-046a-250
EXPNO	1
PROCNO	1

F2 - Acquisition Parameters

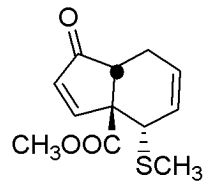
Date_	20050505
Time	0.35
INSTRUM	arx250
PROBHD	5 mm GNP 1H
PULPROG	zg30
TD	32768
SOLVENT	CDCl3
NS	16
DS	2
SWH	5208.333 Hz
FIDRES	0.158946 Hz
AQ	3.1457779 sec
RG	2048
DW	96.000 use
DE	137.14 use
TE	300.0 K
D1	1.00000000 sec
P1	8.70 use
SFO1	250.1315321 MHz
NUCLEUS	1H

F2 - Processing parameters

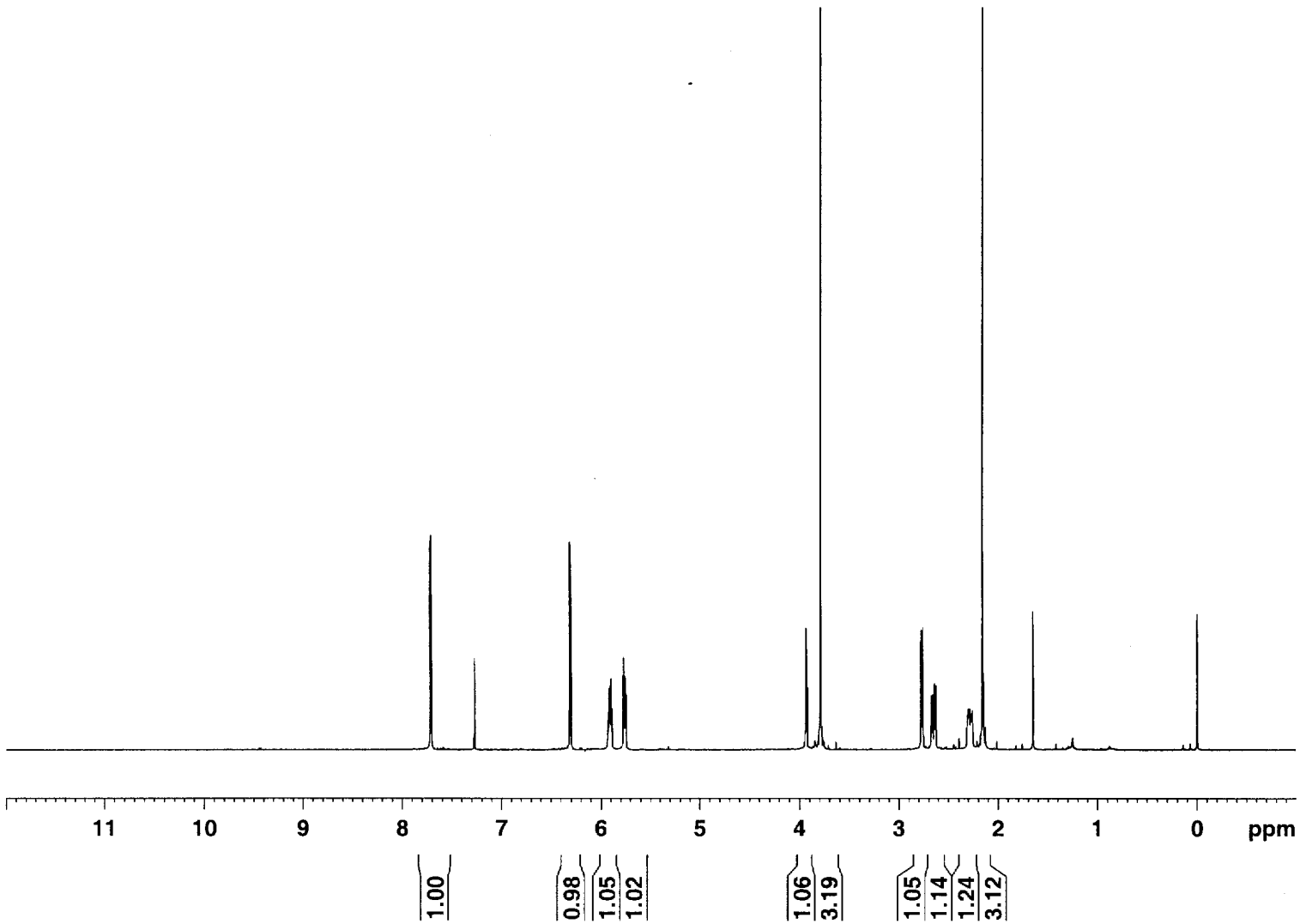
SI	16384
SF	250.1300049 MHz
WDW	EM
SSB	0
LB	0.20 Hz
GB	0
PC	1.50

1D NMR plot parameters

CX	20.00 cm
CY	30.00 cm
F1P	12.000 ppm
F1	3001.56 Hz
F2P	-1.000 ppm
F2	-250.13 Hz
PPMCM	0.65000 ppm
HZCM	162.58452 Hz/



DA-34

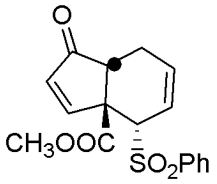


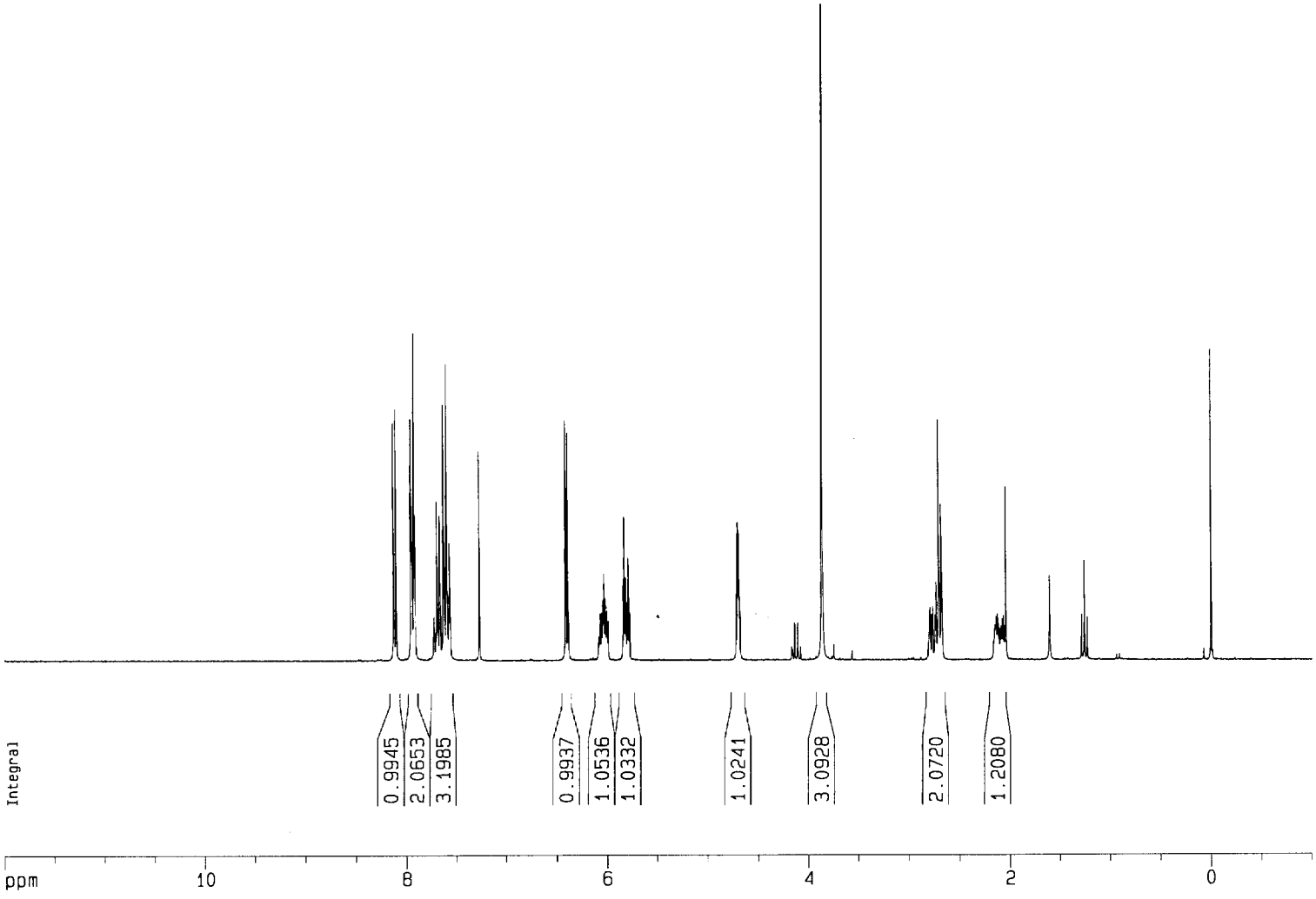

```
Current Data Parameters
NAME          MG-V-83a-A3
EXPNO                   1
PROCNO                  1

F2 - Acquisition Parameters
Date_           20060210
Time               14.09
INSTRUM           DRX500
PROBHD   5 mm Multinucl
PULPROG         zg30pad
TD                65536
SOLVENT           CDCl3
NS                   16
DS                    2
SWH           10330.578 Hz
FIDRES         0.157632 Hz
AQ            3.1719923 sec
RG                  114
DW                48.400 use
DE                 6.00 use
TE                300.0 K
D1           1.00000000 sec
D31          0.00000000 sec

======== CHANNEL f1 =======
NUC1                  1H
P1                11.50 use
PL1                0.00 dB
SFO1        500.1330885 MHz

F2 - Processing parameters
SI                 32768
SF          500.1300068 MHz
WDW                   EM
SSB                    0
LB                0.30 Hz
GB                     0
PC                 1.40
```





Current Data Parameters

NAME	MG-IV-046a-250
EXPNO	1
PROCNO	1

F2 - Acquisition Parameters

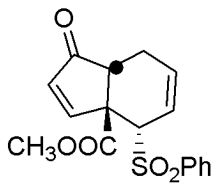
Date_	20050505
Time	0.35
INSTRUM	arx250
PROBHD	5 mm GNP 1H
PULPROG	zg30
TD	32768
SOLVENT	CDCl3
NS	16
DS	2
SWH	5208.333 Hz
FIDRES	0.158946 Hz
AQ	3.1457779 sec
RG	2048
DW	96.000 use
DE	137.14 use
TE	300.0 K
D1	1.00000000 sec
P1	8.70 use
SFO1	250.1315321 MHz
NUCLEUS	1H

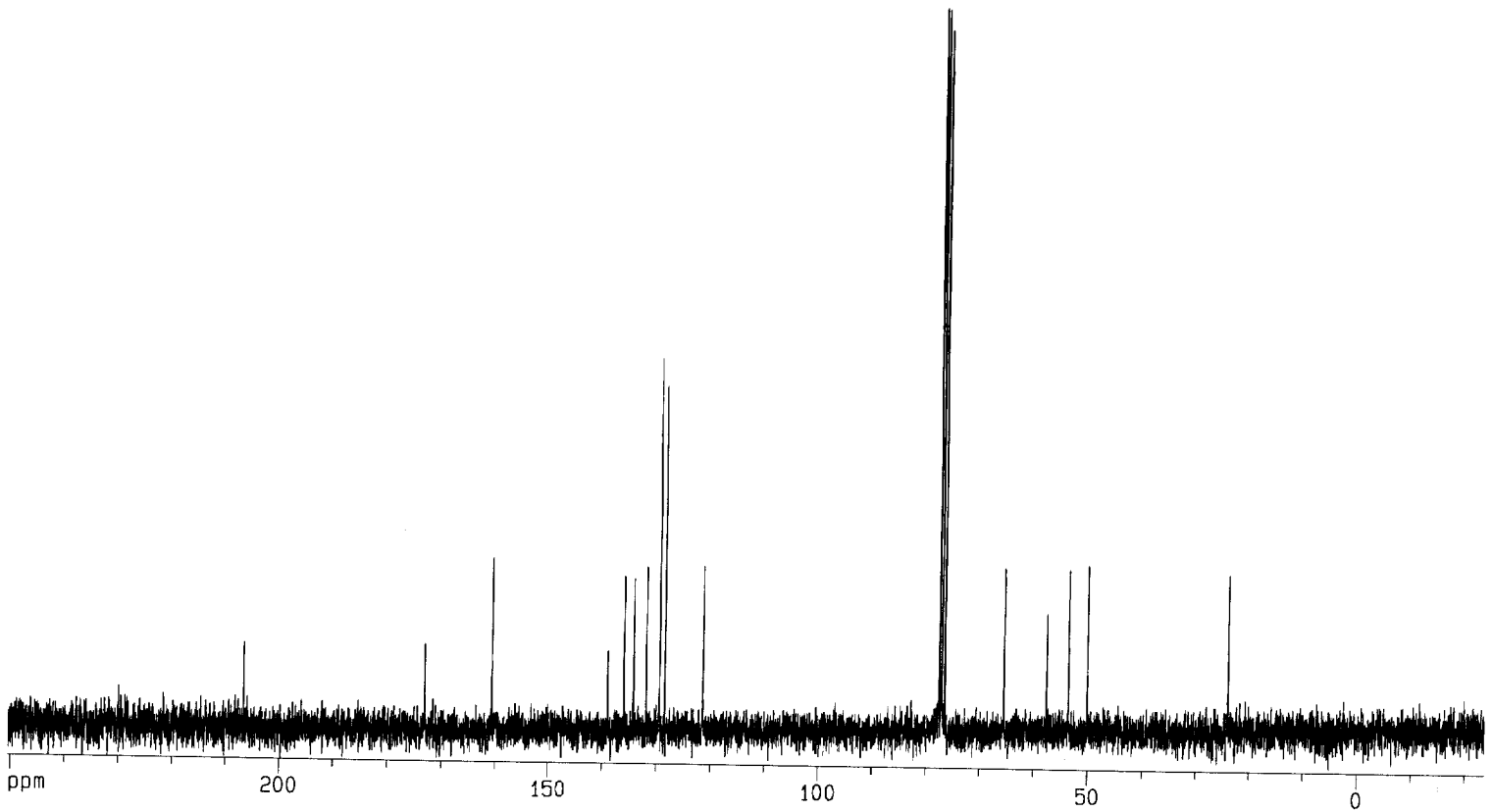
F2 - Processing parameters

SI	16384
SF	250.1300049 MHz
WDW	EM
SSB	0
LB	0.20 Hz
GB	0
PC	1.50

1D NMR plot parameters

CX	20.00 cm
CY	30.00 cm
F1P	12.000 ppm
F1	3001.56 Hz
F2P	-1.000 ppm
F2	-250.13 Hz
PPMCM	0.65000 ppm
HZCM	162.58452 Hz/





Current Data Parameters

NAME	MG-IV-046a-250
EXPNO	2
PROCNO	1

F2 - Acquisition Parameters

Date_	20050505
Time	0.39
INSTRUM	arx250
PROBHD	5 mm QNP 1H
PULPROG	zgdc30
TD	36864
SOLVENT	CDCl3
NS	209
DS	4
SWH	17241.379 Hz
FIDRES	0.467702 Hz
AQ	1.0691060 sec
RG	22800
DW	29.000 use
DE	41.43 use
TE	300.0 K
D12	0.00002000 sec
DL5	23.00 dB
CPDPRG	waltz16
P31	103.00 use
D1	2.00000000 sec
P1	6.00 use
SF01	62.9023694 MHz
NUCLEUS	13C
D11	0.03000000 sec

F2 - Processing parameters

SI	32768
SF	62.8952408 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

1D NMR plot parameters

CX	20.00 cm
CY	10.00 cm
F1P	250.405 ppm
F1	15749.28 Hz
F2P	-23.724 ppm
F2	-1492.10 Hz
PPMCM	13.70643 ppm
HZCM	862.06891 Hz/