Electronic Supplementary Material (ESI) for Organic & Biomolecular Chemistry

Hypoiodous acid initiated rearrangement of tertiary propargylic alcohols to α-iodoenones

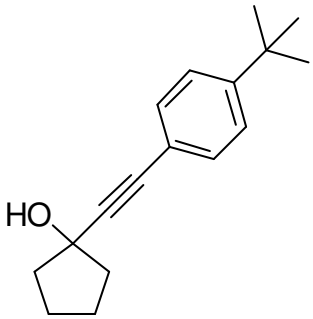
Wesley J. Moran* and Arantxa Rodríguez*

Department of Chemical & Biological Sciences, University of Huddersfield, Huddersfield HD1 3DH (UK)

E-mail: w.j.moran@hud.ac.uk, a.r.menendez@hud.ac.uk

General. ^{1}H NMR spectra were recorded at either 400 or 500 MHz. Chemical shifts are reported in ppm from tetramethylsilane with the solvent resonance as the internal standard ($CDCl_3$: 7.26 ppm). Data are reported as follows: chemical shift, integration, multiplicity (s = singlet, d = doublet, t = triplet, q = quartet, br = broad, m = multiplet), and coupling constants (Hz). ^{13}C NMR were recorded with complete proton decoupling. Chemical shifts are reported in ppm from tetramethylsilane with the solvent as the internal standard ($CDCl_3$: 77.4 ppm). Mass spectrometry (m/z) was performed in ESI mode, with only molecular ions being reported. Infrared (IR) spectra ν_{max} are reported in cm^{-1}. Bands are characterized as broad (br), strong (s), medium (m) and weak (w). All purchased reagents were used as received without further purification. THF was dried with 3Å molecular sieves then distilled from sodium benzophenone ketyl. Petroleum ether refers to the fraction boiling at 40-60 ^{o}C. **2o**[1] is a known compound and its analytical data matched that in the literature.

Representative procedure for the preparation of the starting materials: Synthesis of 1-((4-*tert*-butylphenyl)ethynyl)cyclopentanol, 2d



[1] T. Ishikawa, T. Mizuta, K. Hagiwara, T. Aikawa, T. Kudo and S. Saito, *J. Org. Chem.*, 2003, **68**, 3702.

4-*tert*-Butylphenylacetylene (0.88 mL, 4.9 mmol) was dissolved in THF (20 mL) at -78 ^{o}C under a N_2 atmosphere. *n*-BuLi (2.2 M, 2.2 mL, 4.9 mmol) was added dropwise. After 0.5 hours, the resulting mixture was added *via* cannula to a solution of cyclopentanone (0.43 mL, 4.9 mmol) in THF (20 mL) and stirred at -78 ^{o}C for a further 2 hours. The reaction was quenched by addition of water, extracted with EtOAc, dried ($MgSO_4$), filtered and concentrated. The residue was purified by flash chromatography (silica gel; 20:1 petroleum ether/EtOAc) to provide a white solid (1.06 g, 89%).

Mp: 65-67 ^{o}C

IR (neat): 997 (s), 2958 (m), 3267 (br) cm^{-1}.

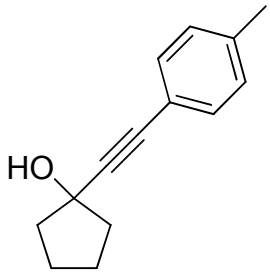
^{1}H NMR (500 MHz, $CDCl_3$): δ 1.30 (9H, s), 1.72-2.11 (9H, m), 7.32 (2H, d, *J* = 9.5 Hz), 7.36 (2H, d, *J* = 9.5 Hz).

^{13}C NMR (126 MHz, $CDCl_3$): δ 22.9 (2C), 30.6 (3C), 34.1, 42.0 (2C), 74.4, 82.6, 91.6, 119.2, 124.6 (2C), 130.7 (2C), 150.8.

MS: m/z (M+23) 265.2

HRMS: m/z calc'd for $C_{17}H_{22}NaO$ 265.1563, found 265.1560

Data for 1-(*p*-tolylethynyl)cyclopentanol 2e



Mp: 55-57 ^{o}C

IR (neat): 990 (s), 2963 (m), 3283 (br) cm^{-1}.

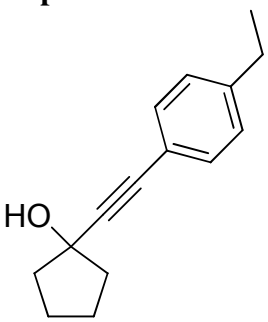
^{1}H NMR (500 MHz, $CDCl_3$): δ 1.72-1.92 (5H, m), 1.96-2.11 (4H, m), 2.34 (3H, s), 7.10 (2H, d, *J* = 7.9 Hz), 7.31 (2H, d, *J* = 8.1 Hz).

^{13}C NMR (126 MHz, $CDCl_3$): δ 21.8, 23.9 (2C), 43.0 (2C), 75.4, 83.6, 92.5, 120.1, 129.4 (2C), 131.9 (2C), 138.6.

MS: m/z (M+23) 223.1

HRMS: m/z calc'd for $C_{14}H_{16}NaO$ 223.1093, found 223.1089

Data for 1-((4-ethylphenyl)ethynyl)cyclopentanol 2f



Mp: 50-52 ^{o}C

IR (neat): 991 (s), 3966 (m), 3276 (br) cm^{-1}.

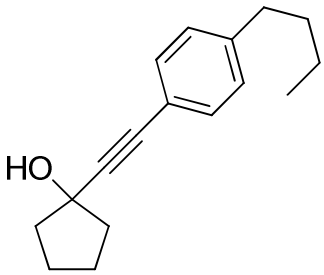
^{1}H NMR (500 MHz, $CDCl_3$): δ 1.22 (3H, t, *J* = 7.6 Hz), 1.72-1.94 (5H, m), 1.96-2.12 (4H, m), 2.63 (2H, q, *J* = 7.6 Hz), 7.13 (2H, d, *J* = 8.2 Hz), 7.34 (2H, d, *J* = 8.2 Hz).

^{13}C NMR (126 MHz, $CDCl_3$): δ 15.7, 23.9 (2C), 29.2, 43.0 (2C), 75.4, 83.7, 92.5, 120.4, 128.2 (2C), 132.0 (2C), 145.0.

MS: m/z (M+23) 237.1

HRMS: m/z calc'd for $C_{15}H_{18}NaO$ 237.1250, found 237.1255

Data for 1-((4-butylphenyl)ethynyl)cyclopentanol 2g



Oil

IR (neat): 992 (s), 2929 (m), 2956 (m), 3341 (br) cm^{-1}.

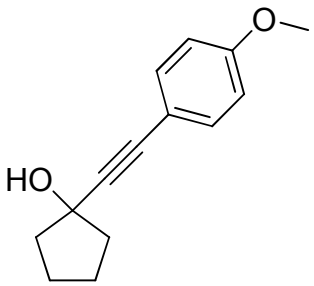
^{1}H NMR (500 MHz, $CDCl_3$): δ 0.92 (3H, t, *J* = 7.4 Hz), 1.34 (2H, hextet, *J* = 7.6 Hz), 1.53-1.62 (2H, m), 1.72-1.92 (4H, m), 1.97-2.11 (5H, m), 2.59 (2H, t, *J* = 7.8 Hz), 7.11 (2H, d, *J* = 8.2 Hz), 7.33 (2H, d, *J* = 8.2 Hz).

^{13}C NMR (126 MHz, $CDCl_3$): δ 14.3, 22.7, 23.9 (2C), 33.8, 35.9, 43.0 (2C), 75.4, 83.7, 92.6, 120.3, 128.7 (2C), 131.9 (2C), 143.7.

MS: m/z (M+23) 265.2

HRMS: m/z calc'd for $C_{17}H_{22}NaO$ 265.1563, found 265.1550

Data for 1-((4-methoxyphenyl)ethynyl)cyclopentanol 2h



Oil

IR (neat): 988 (s), 1170 (s), 1247 (s), 1509 (s), 1608 (m), 2954 (w), 3297 (br) cm^{-1}.

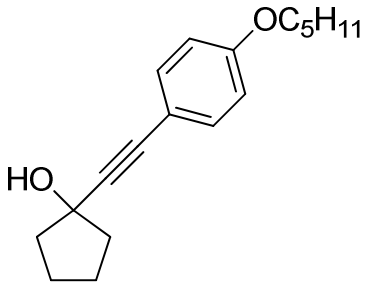
^{1}H NMR (500 MHz, $CDCl_3$): δ 1.71-1.91 (4H, m), 1.96-2.10 (5H, m), 3.80 (3H, s), 6.82 (2H, d, *J* = 8.8 Hz), 7.35 (2H, d, *J* = 8.8 Hz).

^{13}C NMR (126 MHz, $CDCl_3$): δ 23.9 (2C), 42.9 (2C), 55.6, 75.3, 83.3, 91.8, 114.2 (2C), 115.4, 133.4 (2C), 159.8.

MS: m/z (M+23) 239.1

HRMS: m/z calc'd for $C_{14}H_{16}NaO_2$ 239.1043, found 239.1046

Data for 1-((4-(pentyloxy)phenyl)ethynyl)cyclopentanol 2i



Oil

IR (neat): 1244 (s), 1508 (s), 1606 (m), 2955 (m), 3380 (br) cm^{-1}.

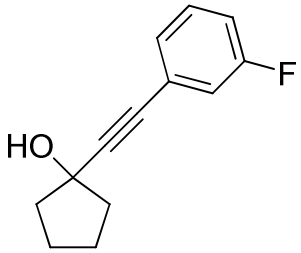
^{1}H NMR (500 MHz, $CDCl_3$): δ 0.93 (3H, t, *J* = 7.2 Hz), 1.32-1.47 (4H, m), 1.71-1.91 (6H, m), 1.96-2.10 (5H, m), 3.93 (2H, t, *J* = 6.6 Hz), 6.81 (2H, d, *J* = 8.9 Hz), 7.33 (2H, d, *J* = 8.9 Hz).

^{13}C NMR (126 MHz, $CDCl_3$): δ 14.4, 22.8, 23.9 (2C), 28.5, 29.3, 42.9 (2C), 68.4, 75.3, 82.4, 91.7, 114.8 (2C), 115.1, 133.4 (2C), 159.5.

MS: m/z (M+23) 295.2

HRMS: m/z calc'd for $C_{18}H_{24}NaO_2$ 295.1669, found 295.1662

Data for 1-((3-fluorophenyl)ethynyl)cyclopentanol 2j



Oil

IR (neat): 992 (s), 1579 (s) 1608 (m), 2965 (w), 3332 (br) cm^{-1}.

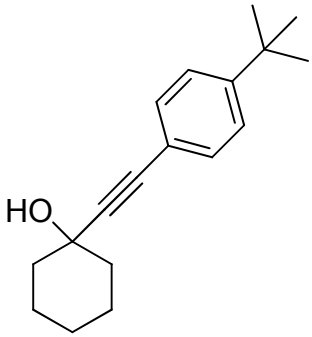
^{1}H NMR (500 MHz, $CDCl_3$): δ 1.75-1.96 (4H, m), 1.99-2.13 (5H, m), 7.03 (1H, tdd, *J* = 8.5, 2.6, 1.2 Hz), 7.14 (1H, ddd, *J* = 9.6, 2.6, 1.4 Hz), 7.22 (1H, dt, *J* = 7.7, 1.3 Hz), 7.25-7.31 (1H, m).

^{13}C NMR (126 MHz, $CDCl_3$): δ 23.9 (2C), 42.9 (2C), 75.2, 82.3 (d, *J* = 3.0 Hz), 94.2, 115.9 (d, *J* = 20 Hz), 118.8 (d, *J* = 23 Hz), 125.1 (d, *J* = 9.6 Hz), 127.9 (d, *J* = 2.6 Hz), 130.2 (d, *J* = 9.6 Hz), 162.6 (d, *J* = 247 Hz).

MS: m/z (M+23) 227.1

HRMS: m/z calc'd for $C_{13}H_{13}FNaO$ 227.0843, found 227.0840

Data for 1-((4-*tert*-butylphenyl)ethynyl)cyclohexanol 2k



Mp: 120-122 °C

IR (neat): 962 (s)m 1069 (m), 2930 (m), 3248 (br) cm^{-1}.

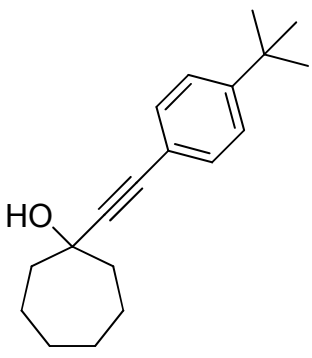
^{1}H NMR (500 MHz, $CDCl_3$): δ 1.30 (9H, s), 1.51-1.78 (8H, m), 1.95-2.08 (3H, m), 7.32 (2H, d, *J* = 8.7 Hz), 7.37 (2H, d, *J* = 8.6 Hz).

^{13}C NMR (126 MHz, $CDCl_3$): δ 23.8 (2C), 25.6, 31.5 (3C), 35.1, 40.5 (2C), 69.5, 84.9, 92.5, 120.2, 125.6 (2C), 131.8 (2C), 151.9.

MS: m/z (M+23) 279.2

HRMS: m/z calc'd for $C_{18}H_{24}NaO$ 279.1719, found 279.1720

Data for 1-((4-*tert*-butylphenyl)ethynyl)cycloheptanol 2m



Mp: 89-90 ^{o}C

IR (neat): 1028 (s), 2923 (m), 3243 (br) cm^{-1}.

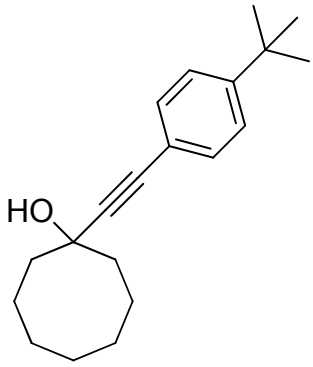
^{1}H NMR (500 MHz, $CDCl_3$): δ 1.35 (9H, s), 1.55-1.82 (8H, m), 1.94-2.04 (2H, m), 2.14-2.23 (2H, m), 2.92 (1H, br), 7.35 (2H, *d*, J = 8.4 Hz), 7.44 (2H, *d*, J = 8.4 Hz).

^{13}C NMR (126 MHz, $CDCl_3$): δ 22.6 (2C), 28.1 (2C), 31.4 (3C), 34.9, 43.4 (2C), 72.4, 83.9, 93.6, 120.3, 125.4 (2C), 131.6 (2C), 151.4.

MS: m/z (M+23) 293.2

HRMS: m/z calc'd for $C_{19}H_{26}NaO$ 293.1876, found 293.1876

Data for 1-((4-*tert*-butylphenyl)ethynyl)cyclooctanol 2n



Mp: 115-116 ^{o}C

IR (neat): 980.1 (s), 2916 (m), 3264 (br) cm^{-1}.

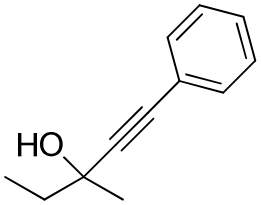
^{1}H NMR (500 MHz, $CDCl_3$): δ 1.34 (9H, s), 1.49-1.60 (3H, m), 1.62-1.81 (7H, m), 2.00-2.14 (4H, m), 2.45 (1H, br), 7.34 (2H, *d*, J = 8.5 Hz), 7.41 (2H, *d*, J = 8.4 Hz).

^{13}C NMR (126 MHz, $CDCl_3$): δ 22.5 (2C), 24.8, 28.3 (2C), 31.4 (3C), 34.9, 38.7 (2C), 72.0, 83.6, 93.5, 120.3, 125.5 (2C), 131.7 (2C), 151.5.

MS: m/z (M+23) 307.2

HRMS: m/z calc'd for $C_{20}H_{28}NaO$ 307.2032, found 307.2036

Data for 3-methyl-1-phenylpent-1-yn-3-ol 2p



Colourless oil

IR (neat): 1124 (m), 1153 (m), 2971 (m), 3362 (br) cm^{-1}.

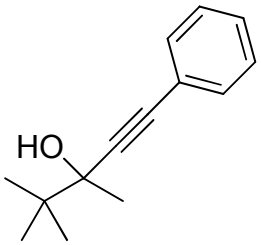
^{1}H NMR (400 MHz, $CDCl_3$): δ 1.11 (3H, t, *J* = 7.4 Hz), 1.57 (3H, s), 1.79 (2H, qd, *J* = 7.3, 2.9 Hz), 2.13 (1H, br), 7.27-7.33 (3H, m), 7.38-7.46 (2H, m).

^{13}C NMR (100 MHz, $CDCl_3$): δ 9.5, 29.7, 37.0, 69.5, 83.7, 93.0, 123.1, 128.6 (3C), 132.0 (2C.

MS: m/z (M+23) 197.1

HRMS: m/z calc'd for $C_{12}H_{14}NaO$ 197.0937, found 197.0941

Data for 3,4,4-trimethyl-1-phenylpent-1-yn-3-ol 2q



Colourless oil

IR (neat): 901 (m), 1070 (m), 2968 (m), 3453 (br) cm^{-1}.

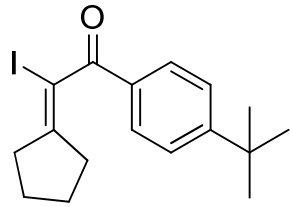
^{1}H NMR (400 MHz, $CDCl_3$): δ 1.12 (9H, s), 1.54 (3H, s), 1.99 (1H, s), 7.27-7.34 (3H, m), 7.38-7.47 (2H, m).

^{13}C NMR (100 MHz, $CDCl_3$): δ 25.1, 25.6 (3C), 38.9, 74.7, 84.2, 93.2, 123.3, 128.5, 128.6 (2C), 134.0 (2C).

MS: m/z (M+23) 225.1

HRMS: m/z calc'd for $C_{14}H_{18}NaO$ 225.1250, found 225.1253

General procedure for the oxidative rearrangement to α-iodoenones 4: Synthesis of 1-(4-*tert*-butylphenyl)-2-cyclopentylidene-2-iodoethanone 4d.



1-((4-*tert*-Butylphenyl)ethynyl)cyclopentanol **2d** (0.21 mmol), *m*-CPBA (109 mg, 0.63 mmol), sodium iodide (31 mg, 0.21 mmol) and trichloroacetic acid (51 mg, 0.31 mmol) were dissolved in acetonitrile (1 mL) at room temperature under a nitrogen atmosphere and stirred overnight. The reaction mixture was quenched with saturated aqueous sodium thiosulfate solution and extracted with CH_2Cl_2. The organic layer was washed with saturated aqueous sodium bicarbonate solution, dried over $MgSO_4$, filtered and concentrated under reduced pressure. The residue was purified by flash chromatography (silica gel; 9:1 petroleum ether/ethyl acetate) to afford 1-(4-*tert*-butylphenyl)-2-cyclopentylidene-2-iodoethanone **4d** as a pale yellow oil (58 mg, 75%).

IR (neat): 1108 (m), 1187 (m), 1255 (s), 1602 (s), 1656 (s), 2959 (w) cm^{-1}.

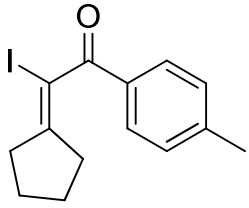
^1H NMR (400 MHz, $CDCl_3$): δ 1.35 (9H, s), 1.72-1.86 (4H, m), 2.26 (2H, t, *J* = 6.6 Hz), 2.53 (2H, t, *J* = 7.3 Hz), 7.47 (2H, d, *J* = 8.6 Hz), 7.86 (2H, d, *J* = 8.6 Hz).

^{13}C NMR (100 MHz, $CDCl_3$): δ 25.8, 29.0, 31.4 (3C), 34.3, 35.6, 41.1, 85.8, 126.1 (2C), 130.3 (2C), 132.1, 157.8, 158.2, 193.1.

MS: m/z (M+23) 391.1

HRMS: m/z calc'd for $C_{17}H_{21}INaO$ 391.0529, found 391.0542.

Data for 2-cyclopentylidene-2-iodo-1-*p*-tolylethanone 4e



Oil

IR (neat): 1175 (s), 1243 (s), 1601 (s), 1652 (s), 2952 (w) cm^{-1}.

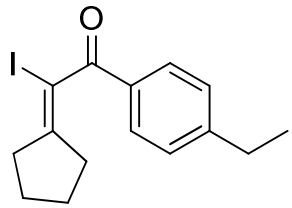
^{1}H NMR (400 MHz, $CDCl_3$): δ 1.71-1.86 (4H, m), 2.21-2.28 (2H, m), 2.42 (3H, s), 2.49-2.56 (2H, m), 7.26 (2H, d, *J* = 7.9 Hz), 7.82 (2H, d, *J* = 8.2 Hz).

^{13}C NMR (100 MHz, $CDCl_3$): δ 22.3, 25.9, 29.1, 34.5, 41.2, 86.1, 129.8 (2C), 130.5 (2C), 132.5, 144.8, 158.5, 193.1.

MS: m/z (M+23) 349.0

HRMS: m/z calc'd for $C_{14}H_{15}INaO$ 349.0060, found 349.0065.

Data for 2-cyclopentylidene-1-(4-ethylphenyl)-2-iodoethanone 4f



Oil

IR (neat): 1060 (m), 1177 (m), 1253 (s), 1602 (s), 1655 (s), 2869 (w), 2961 (w) cm^{-1}.

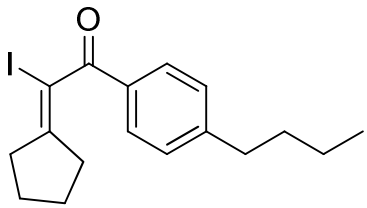
^{1}H NMR (400 MHz, $CDCl_3$): δ 1.26 (3H, t, *J* = 7.6 Hz), 1.77-1.87 (4H, m), 2.25 (2H, t, *J* = 6.3 Hz), 2.53 (2H, t, *J* = 7.1 Hz), 2.67-2.77 (2H, m), 7.28 (2H, d, *J* = 8.1 Hz), 7.85 (2H, d, *J* = 8.2 Hz).

^{13}C NMR (100 MHz, $CDCl_3$): δ 15.5, 25.8, 29.0, 29.4, 34.4, 41.1, 85.9, 128.6 (2C), 130.5 (2C), 132.4, 151.0, 158.4, 193.2.

MS: m/z (M+23) 363.0

HRMS: m/z calc'd for $C_{15}H_{17}INaO$ 363.0216, found 363.0220.

Data for 1-(4-butylphenyl)-2-cyclopentylidene-2-iodoethanone 4g



Oil

IR (neat): 1177 (m), 1248 (m), 1603 (s), 1656 (s), 2954 (m) cm^{-1}.

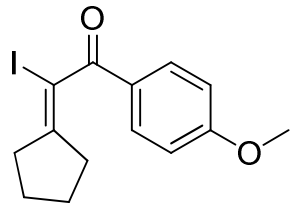
^1H NMR (400 MHz, $CDCl_3$): δ 0.93 (3H, t, *J* = 7.3 Hz), 1.31-1.42 (2H, m), 1.56-1.70 (2H, m), 1.72-1.85 (4H, m), 2.25 (2H, t, *J* = 6.1 Hz), 2.52 (2H, t, *J* = 7.2 Hz), 2.67 (2H, t, *J* = 7.7 Hz), 7.26 (2H, d, *J* = 8.3 Hz), 7.83 (2H, d, *J* = 8.3 Hz)..

^{13}C NMR (100 MHz, $CDCl_3$): δ 14.3, 22.8, 25.8, 29.1, 33.6, 34.4, 36.2, 41.1, 85.9, 129.2 (2C), 130.5 (2C), 132.4, 149.8, 158.4, 193.2.

MS: m/z (M+23) 391.0

HRMS: m/z calc'd for $C_{17}H_{21}INaO$ 391.0529, found 391.0535

Data for 2-cyclopentylidene-2-iodo-1-(4-methoxyphenyl)ethanone 4h



Oil

IR (neat): 1022 (m), 1158 (s), 1247 (s), 1454 (m), 1592 (s), 1650 (m), 2956 (w) cm^{-1}.

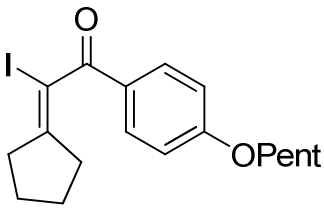
^1H NMR (400 MHz, $CDCl_3$): δ 1.72-1.86 (4H, m), 2.25 (2H, t, *J* = 6.1 Hz), 2.51 (2H, t, *J* = 7.2 Hz), 3.87 (3H, s), 6.94 (2H, d, *J* = 8.9 Hz), 7.91 (2H, d, *J* = 9.0 Hz).

^{13}C NMR (100 MHz, $CDCl_3$): δ 25.8, 29.0, 34.2, 40.9, 55.9, 85.7, 114.4 (2C), 127.4, 132.8 (2C), 157.6, 164.3, 192.2.

MS: m/z (M+23) 365.0

HRMS: m/z calc'd for $C_{14}H_{15}INaO_2$ 365.0009, found 365.0009.

Data for 2-cyclopentylidene-2-iodo-1-(4-(pentyloxy)phenyl)ethanone 4i



Oil

IR (neat): 1158 (s), 1246 (s), 1595 (s), 1650 (m), 2954 (w) cm^{-1}.

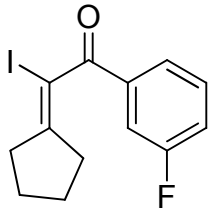
^{1}H NMR (400 MHz, $CDCl_3$): δ 0.93 (3H, t, *J* = 7.0 Hz), 1.32-1.50 (4H, m), 1.72-1.85 (6H, m), 2.25 (2H, t, *J* = 7.0 Hz), 2.51 (2H, t, *J* = 7.2 Hz), 4.02 (2H, t, *J* = 6.5 Hz), 6.92 (2H, d, *J* = 8.9 Hz), 7.89 (2H, d, *J* = 8.9 Hz).

^{13}C NMR (100 MHz, $CDCl_3$): δ 14.4, 22.8, 25.9, 28.5, 29.0, 29.1, 34.2, 40.9, 68.7, 85.7, 114.8 (2C), 127.1, 132.8 (2C), 157.4, 164.0, 192.2.

MS: m/z (M+23) 421.1

HRMS: m/z calc'd for $C_{18}H_{23}INaO_2$ 421.0635, found 421.0650.

Data for 2-cyclopentylidene-1-(3-fluorophenyl)-2-iodoethanone 4j



Oil

IR (neat): 1257 (s), 1440 (m), 1587 (m), 1663 (m), 2959 (w) cm^{-1}.

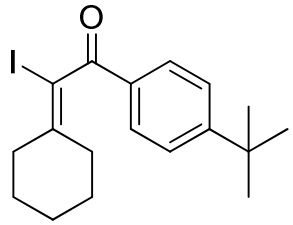
^{1}H NMR (400 MHz, $CDCl_3$): δ 1.73-1.88 (4H, m), 2.26 (2H, t, *J* = 6.0 Hz), 2.53 (2H, t, *J* = 7.4 Hz), 7.23-7.29 (1H, m), 7.40-7.47 (1H, m), 7.55-7.60 (1H, m), 7.66-7.70 (1H, m).

^{13}C NMR (100 MHz, $CDCl_3$): δ 25.7, 29.0, 34.6, 41.4, 85.2, 116.7 (d, *J* = 22 Hz), 120.8 (d, *J* = 21 Hz), 125.9 (d, *J* = 3.0 Hz), 130.7 (d, *J* = 7.8 Hz), 137.3 (d, *J* = 6.2 Hz), 160.4, 163.1 (d, *J* = 248 Hz), 192.1.

MS: m/z (M+23) 353.0

HRMS: m/z calc'd for $C_{13}H_{12}FINaO$ 352.9809, found 352.9812.

Data for 1-(4-*tert*-butylphenyl)-2-cyclohexylidene-2-iodoethanone 4k



Oil

IR (neat): 1184 (s), 1245 (s), 1264 (s), 1602 (s), 1659 (s), 2929 (w) cm^{-1}.

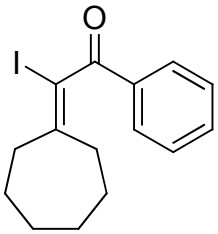
^{1}H NMR (400 MHz, $CDCl_3$): δ 1.34 (9H, s), 1.40-1.48 (2H, m), 1.52-1.60 (2H, m), 1.66-1.75 (2H, m), 2.18-2.25 (2H, m), 2.49-2.58 (2H, m), 7.48 (2H, d, *J* = 8.6 Hz), 7.91 (2H, d, *J* = 8.6 Hz).

^{13}C NMR (100 MHz, $CDCl_3$): δ 26.2, 27.8, 28.0, 31.4 (3C), 33.6, 35.6, 39.2, 88.3, 126.2 (2C), 130.4 (2C), 131.6, 149.4, 158.0, 193.3.

MS: m/z (M+23) 405.1

HRMS: m/z calc'd for $C_{18}H_{23}INaO$ 405.0686, found 405.0689.

Data for 2-cycloheptylidene-2-iodo-1-phenylethanone 4l



Oil

IR (neat): 1172 (m), 1235 (s), 1447 (m), 1659 (s), 2921 (w) cm^{-1}.

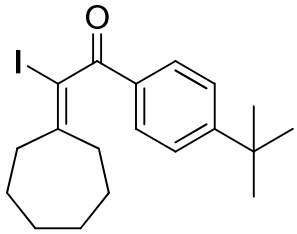
^{1}H NMR (400 MHz, $CDCl_3$): δ 1.46-1.56 (4H, m), 1.57-1.65 (2H, m), 1.70-1.79 (2H, m), 2.31-2.39 (2H, m), 2.56-2.64 (2H, m), 7.47 (2H, t, *J* = 7.7 Hz), 7.55-7.61 (1H, m), 7.95-7.99 (2H, m).

^{13}C NMR (100 MHz, $CDCl_3$): δ 26.8, 27.9, 29.0, 29.9, 33.9, 40.8, 91.5, 129.1 (2C), 130.4 (2C), 134.0, 134.3, 151.6, 193.5.

MS: m/z (M+23) 363.0

HRMS: m/z calc'd for $C_{15}H_{17}INaO$ 363.0216, found 363.0217

Data for 1-(4-*tert*-butylphenyl)-2-cycloheptylidene-2-iodoethanone 4m



Oil

IR (neat): 1108 (m), 1183 (s), 1252 (s), 1602 (s), 1658 (s), 2924 (w) cm^{-1}.

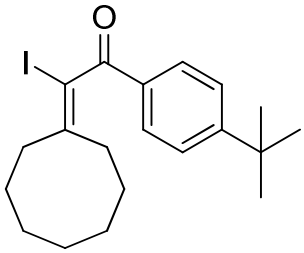
^{1}H NMR (400 MHz, $CDCl_3$): δ 1.35 (9H, s), 1.48-1.55 (4H, m), 1.58-1.65 (2H, m), 1.70-1.77 (2H, m), 2.33-2.38 (2H, m), 2.57-2.62 (2H, m), 7.48 (2H, d, *J* = 8.6 Hz), 7.91 (2H, d, *J* = 8.6 Hz).

^{13}C NMR (100 MHz, $CDCl_3$): δ 26.8, 28.0, 29.0, 30.0, 31.4 (3C), 33.8, 35.6, 40.8, 91.7, 126.1 (2C), 130.4 (2C), 131.5, 151.0, 157.9, 193.2.

MS: m/z (M+23) 419.1

HRMS: m/z calc'd for $C_{19}H_{25}INaO$ 419.0842, found 419.0851.

Data for 1-(4-*tert*-butylphenyl)-2-cyclooctylidene-2-iodoethanone 4n



Oil

IR (neat): 1105 (m), 1183 (m), 1253 (s), 1602 (s), 1658 (s), 2923 (w) cm^{-1}.

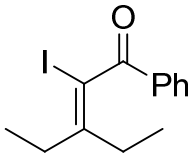
^{1}H NMR (400 MHz, $CDCl_3$): δ 1.35 (9H, s), 1.41-1.50 (2H, m), 1.52-1.68 (6H, m), 1.81-1.88 (2H, m), 2.25-2.31 (2H, m), 2.53-2.58 (2H, m), 7.48 (2H, d, *J* = 8.6 Hz), 7.90 (2H, d, *J* = 8.5 Hz).

^{13}C NMR (100 MHz, $CDCl_3$): δ 25.6, 26.1, 26.5, 26.8, 27.6, 31.5 (3C), 34.1, 35.6, 38.6, 91.1, 126.1 (2C), 130.4 (2C), 131.6, 151.6, 157.9, 193.3.

MS: m/z (M+23) 433.1

HRMS: m/z calc'd for $C_{20}H_{27}INaO$ 433.0999, found 433.1005.

Data for 3-ethyl-2-iodo-1-phenylpent-2-en-1-one 4o



Oil

IR (neat): 1233 (s), 1448 (m), 1662 (s), 2968 (w) cm^{-1}.

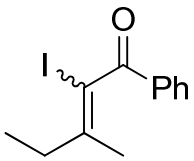
^{1}H NMR (400 MHz, $CDCl_3$): δ 0.97 (3H, t, *J* = 7.7 Hz), 1.16 (3H, t, *J* = 7.5 Hz), 2.20 (2H, q, *J* = 7.5 Hz), 2.48 (2H, q, *J* = 7.5 Hz), 7.47 (2H, t, *J* = 7.7 Hz), 7.55-7.59 (1H, m), 7.94-7.97 (2H, m).

^{13}C NMR (100 MHz, $CDCl_3$): δ 12.3, 13.5, 27.0, 32.6, 90.8, 129.1 (2C), 130.4 (2C), 134.1, 134.4, 153.2, 193.3.

MS: m/z (M+23) 337.0

HRMS: m/z calc'd for $C_{13}H_{15}INaO$ 337.0060, found 337.0060.

Data for (*E*)- and (*Z*)-2-iodo-3-methyl-1-phenylpent-2-en-1-one 4p



Formed as a 1:1 mixture of alkene geometrical isomers which can be partially separated.

Oil

IR (neat): 1238 (s), 1448 (m), 1661 (s), 2970 (w) cm^{-1}.

NMR data for (*E*)-isomer (determined by NOESY experiments):

^{1}H NMR (400 MHz, $CDCl_3$): δ 0.98 (3H, t, *J* = 7.5 Hz), 2.12 (3H, s), 2.19 (2H, q, *J* = 7.5 Hz), 7.47 (2H, t, *J* = 7.7 Hz), 7.58 (1H, t, *J* = 7.7 Hz), 7.97 (2H, d, *J* = 7.7 Hz).

^{13}C NMR (100 MHz, $CDCl_3$): δ 13.1, 26.4, 29.5, 91.3, 129.1 (2C), 130.4 (2C), 134.1, 134.2, 148.6, 193.5.

NMR data for (*Z*)-isomer:

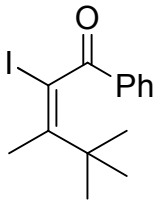
^{1}H NMR (400 MHz, $CDCl_3$): δ 1.14 (3H, t, *J* = 7.6 Hz), 1.81 (3H, s), 2.47 (2H, q, *J* = 7.6 Hz), 7.47 (2H, t, *J* = 7.6 Hz), 7.58 (1H, t, *J* = 7.4 Hz), 7.94 (2H, d, *J* = 7.4 Hz).

^{13}C NMR (100 MHz, $CDCl_3$): δ 11.8, 19.6, 35.8, 89.8, 129.1 (2C), 130.3 (2C), 134.1 (2C), 147.9, 193.6.

MS: m/z (M+23) 323.0

HRMS: m/z calc'd for $C_{12}H_{13}INaO$ 322.9904, found 322.9903.

Data for (*E*)-2-iodo-3,4,4-trimethyl-1-phenylpent-2-en-1-one 4q



Alkene geometry determined by NOESY experiments.

Oil

IR (neat): 1231 (s), 1451 (m), 1661 (s), 2969 (w) cm^{-1}.

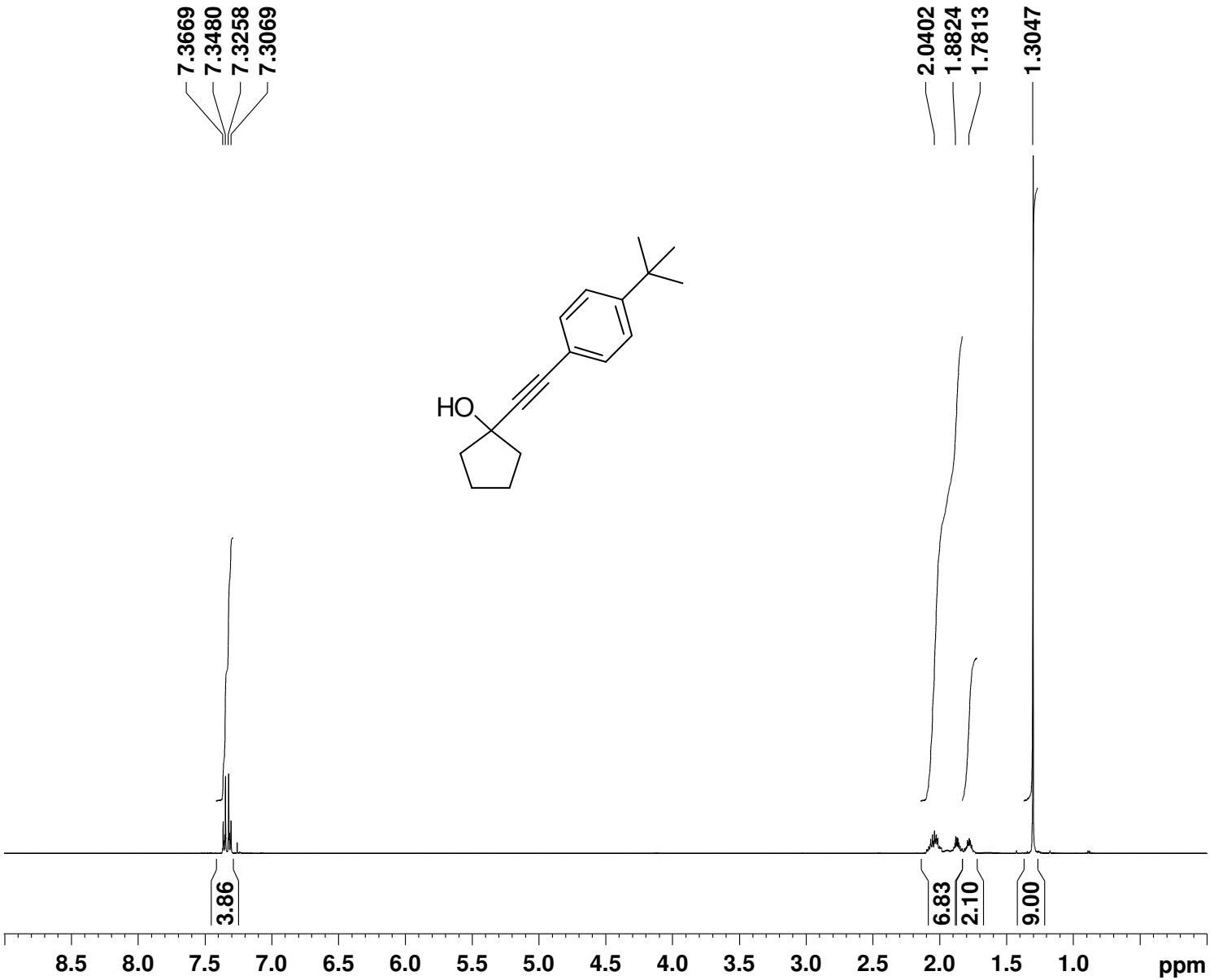
^{1}H NMR (400 MHz, $CDCl_3$): δ 1.10 (9H, s), 2.25 (3H, s), 7.47 (2H, t, *J* = 7.4 Hz), 7.55 (1H, t, *J* = 7.2 Hz), 7.99 (2H, d, *J* = 7.5 Hz).

^{13}C NMR (100 MHz, $CDCl_3$): δ 28.8, 30.5 (3C), 40.6, 96.0, 129.0 (2C), 130.4 (2C), 133.7, 134.2, 151.2, 193.2.

MS: m/z (M+23) 351.0

HRMS: m/z calc'd for $C_{14}H_{17}INaO$ 351.0216, found 351.0219.

^{1}H NMR spectrum for 1-((4-*tert*-butylphenyl)ethynyl)cyclopentanol, 2d

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EXPNO                 10
PROCNO                 1

F2 - Acquisition Parameters
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Time               13.20
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PULPROG             zg30
TD                 65536
SOLVENT            CDCl3
NS                    16
DS                     2
SWH           10330.578 Hz
FIDRES         0.157632 Hz
AQ             3.1719923 sec
RG                   144
DW                48.400 usec
DE                 6.00 usec
TE                295.9 K
D1            1.00000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                  1H
P1                 9.70 usec
PL1                0.10 dB
PL1W        22.82879257 W
SFO1        500.1330885 MHz

F2 - Processing parameters
SI                 32768
SF          500.1300134 MHz
WDW                   EM
SSB                    0
LB                 0.30 Hz
GB                     0
PC                 1.00
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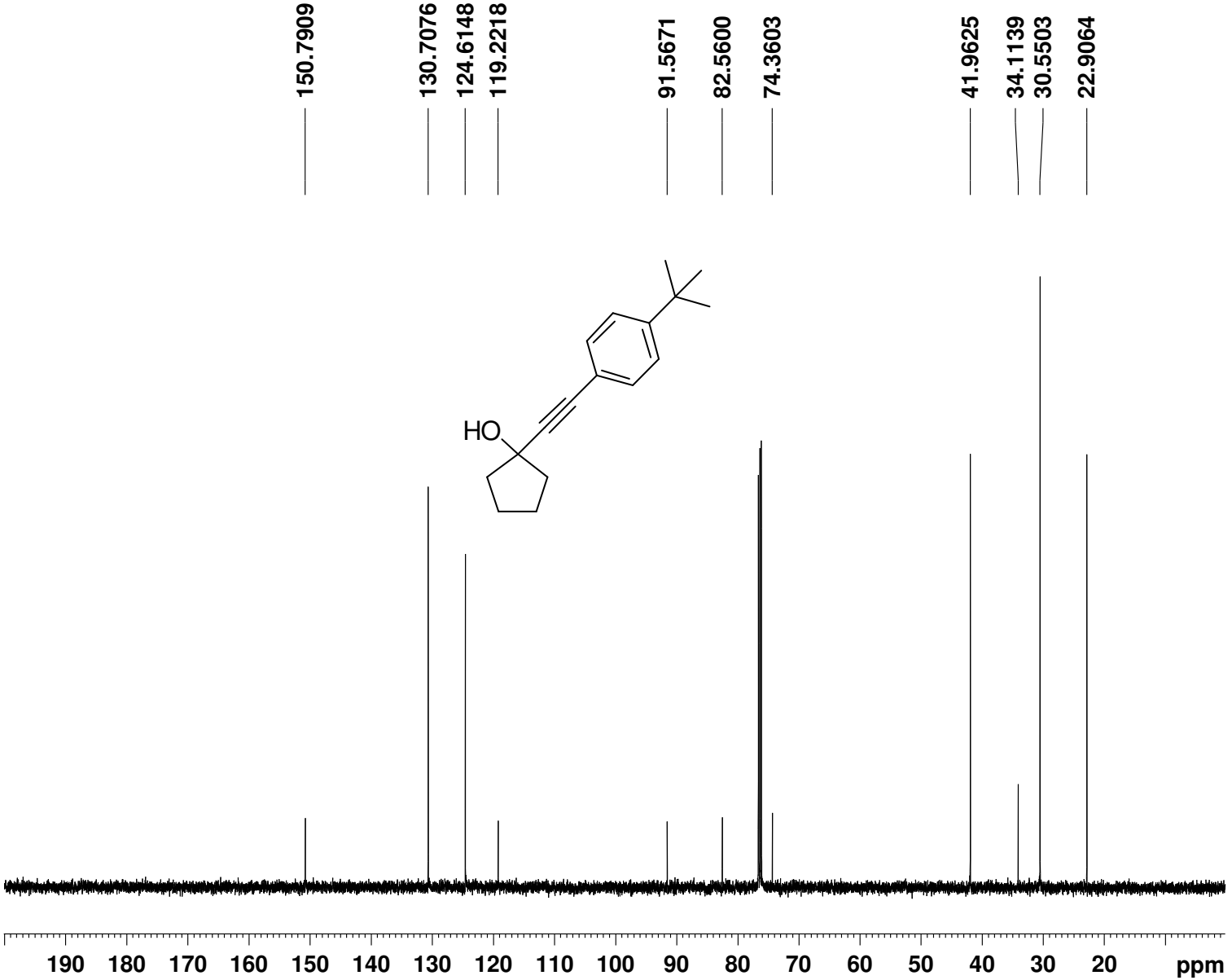
^{13}C NMR spectrum for 1-((4-*tert*-butylphenyl)ethynyl)cyclopentanol, 2d

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Current Data Parameters
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PROCNO                 1

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PROBHD   5 mm PABBO BB-
PULPROG          zgpg30
TD                65536
SOLVENT           CDCl3
NS                   81
DS                    4
SWH           30030.029 Hz
FIDRES         0.458222 Hz
AQ            1.0912244 sec
RG                13000
DW              16.650 usec
DE               6.00 usec
TE              297.0 K
D1           2.00000000 sec
D11          0.03000000 sec
TD0                   8

======== CHANNEL f1 ========
NUC1                 13C
P1                 9.00 usec
PL1                0.00 dB
SFO1        125.7703637 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                 1H
PCPD2             80.00 usec
PL2                0.00 dB
PL12              18.00 dB
PL13              18.00 dB
PL2W        23.36054420 W
PL12W        0.37023968 W
PL13W        0.37023968 W
SFO2        500.1320005 MHz

F2 - Processing parameters
SI                32768
SF          125.7578687 MHz
WDW                  EM
SSB                   0
LB                 1.00 Hz
GB                    0
PC                 1.40
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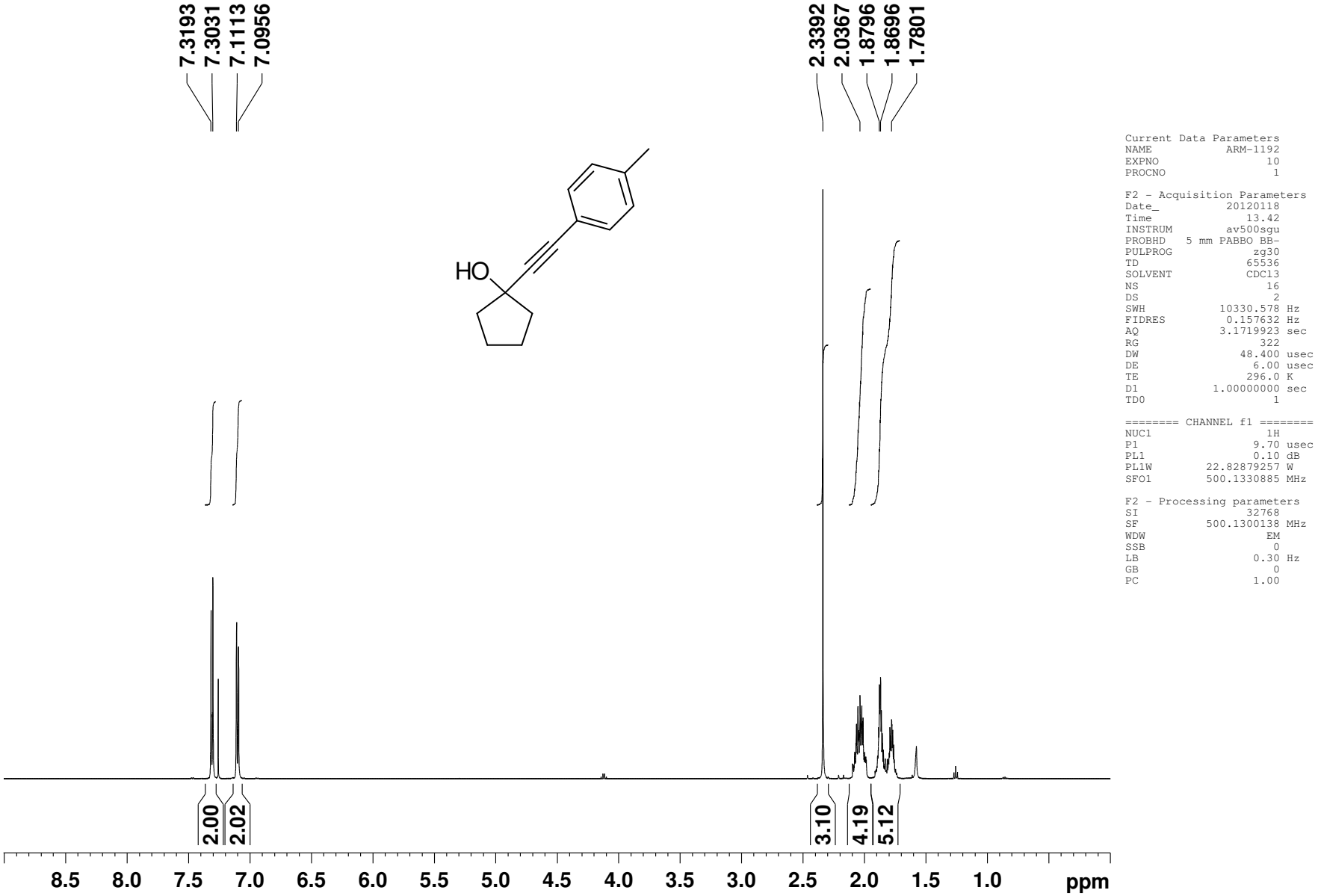
^{1}H NMR spectrum for 1-(*p*-tolylethynyl)cyclopentanol 2e

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Current Data Parameters
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EXPNO                 10
PROCNO                 1

F2 - Acquisition Parameters
Date_           20120118
Time               13.42
INSTRUM         av500sgu
PROBHD    5 mm PABBO BB-
PULPROG             zg30
TD                 65536
SOLVENT            CDCl3
NS                    16
DS                     2
SWH           10330.578 Hz
FIDRES         0.157632 Hz
AQ             3.1719923 sec
RG                   322
DW                48.400 usec
DE                 6.00 usec
TE                296.0 K
D1            1.00000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                  1H
P1                  9.70 usec
PL1                 0.10 dB
PL1W         22.82879257 W
SFO1         500.1330885 MHz

F2 - Processing parameters
SI                 32768
SF           500.1300138 MHz
WDW                   EM
SSB                    0
LB                  0.30 Hz
GB                     0
PC                  1.00
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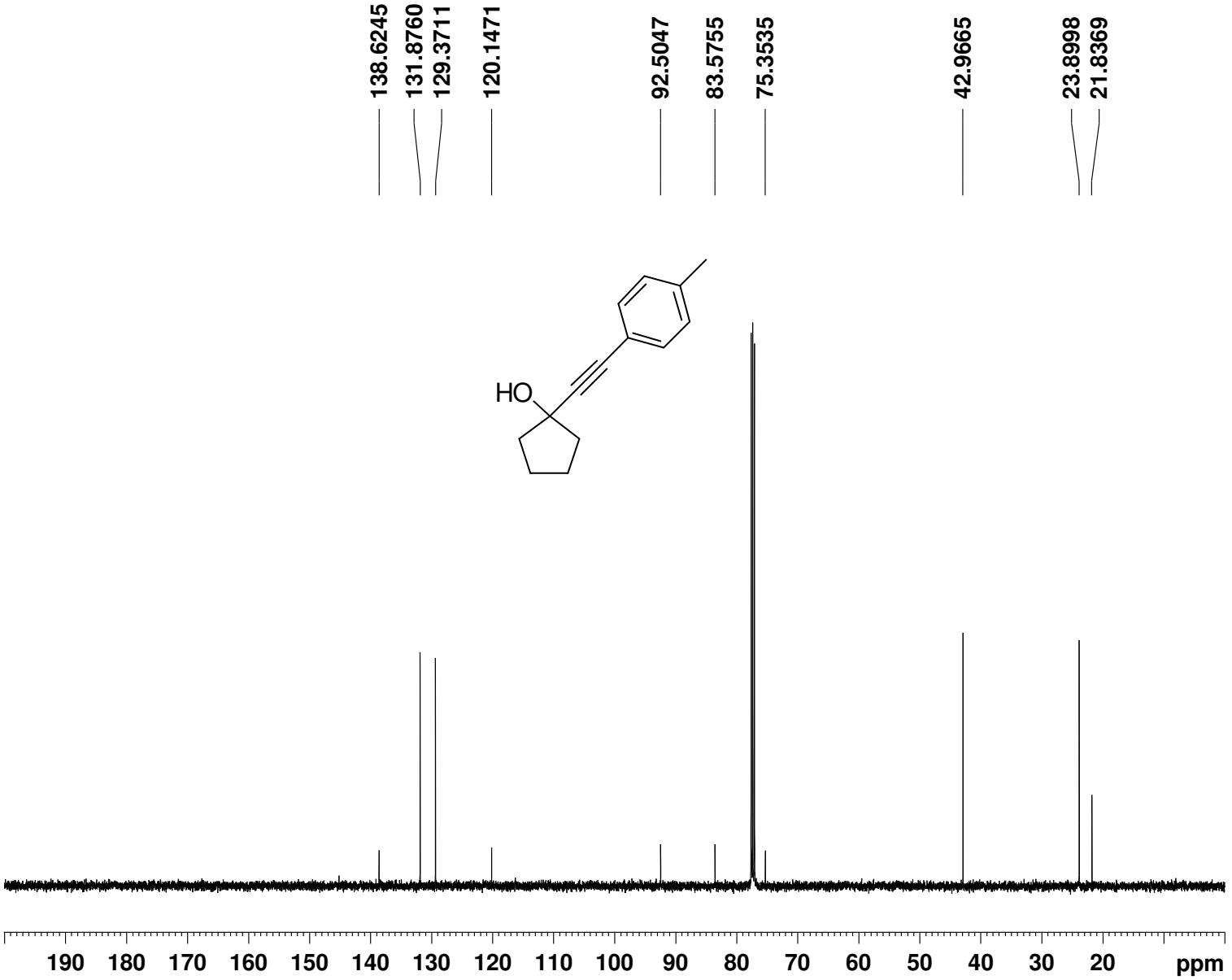
^{13}C NMR spectrum for 1-(*p*-tolylethynyl)cyclopentanol 2e

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Current Data Parameters
NAME            ARM-1192
EXPNO                 11
PROCNO                 1

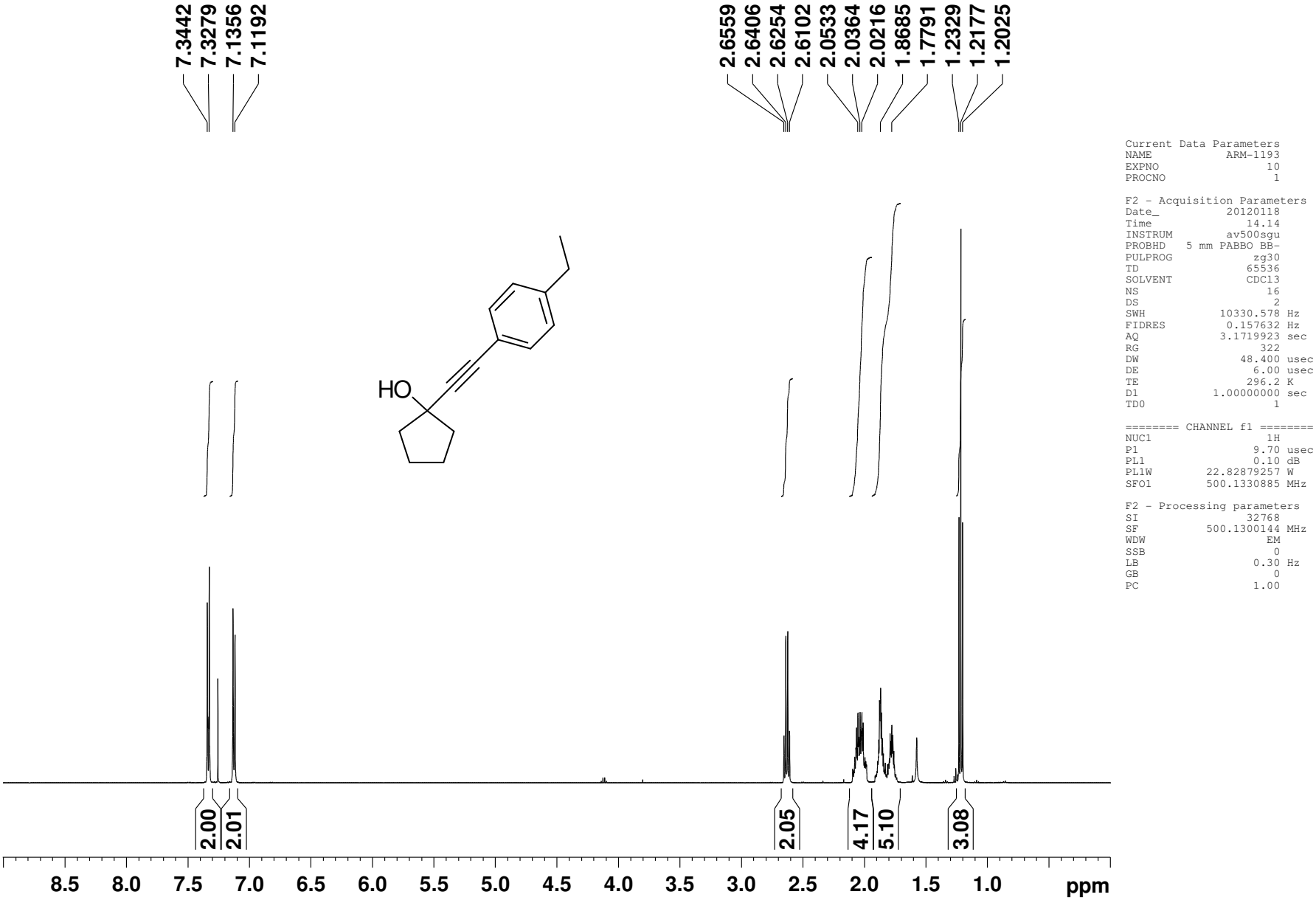
F2 - Acquisition Parameters
Date_           20120118
Time               13.45
INSTRUM         av500sgu
PROBHD   5 mm PABBO BB-
PULPROG          zgpg30
TD                65536
SOLVENT            CDC13
NS                   256
DS                     4
SWH            30030.029 Hz
FIDRES          0.458222 Hz
AQ             1.0912244 sec
RG                 14600
DW                16.650 usec
DE                 6.00 usec
TE                297.1 K
D1            2.00000000 sec
D11           0.03000000 sec
TD0                    8

======== CHANNEL f1 ========
NUC1                13C
P1                 9.00 usec
PL1                0.00 dB
SFO1        125.7703637 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                1H
PCPD2              80.00 usec
PL2                0.00 dB
PL12              18.00 dB
PL13              18.00 dB
PL2W         23.36054420 W
PL12W         0.37023968 W
PL13W         0.37023968 W
SFO2        500.1320005 MHz

F2 - Processing parameters
SI                 32768
SF          125.7577435 MHz
WDW                   EM
SSB                    0
LB                 1.00 Hz
GB                     0
PC                 1.40
```

^{1}H NMR spectrum for 1-((4-ethylphenyl)ethynyl)cyclopentanol 2f

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Current Data Parameters
NAME            ARM-1193
EXPNO                 10
PROCNO                 1

F2 - Acquisition Parameters
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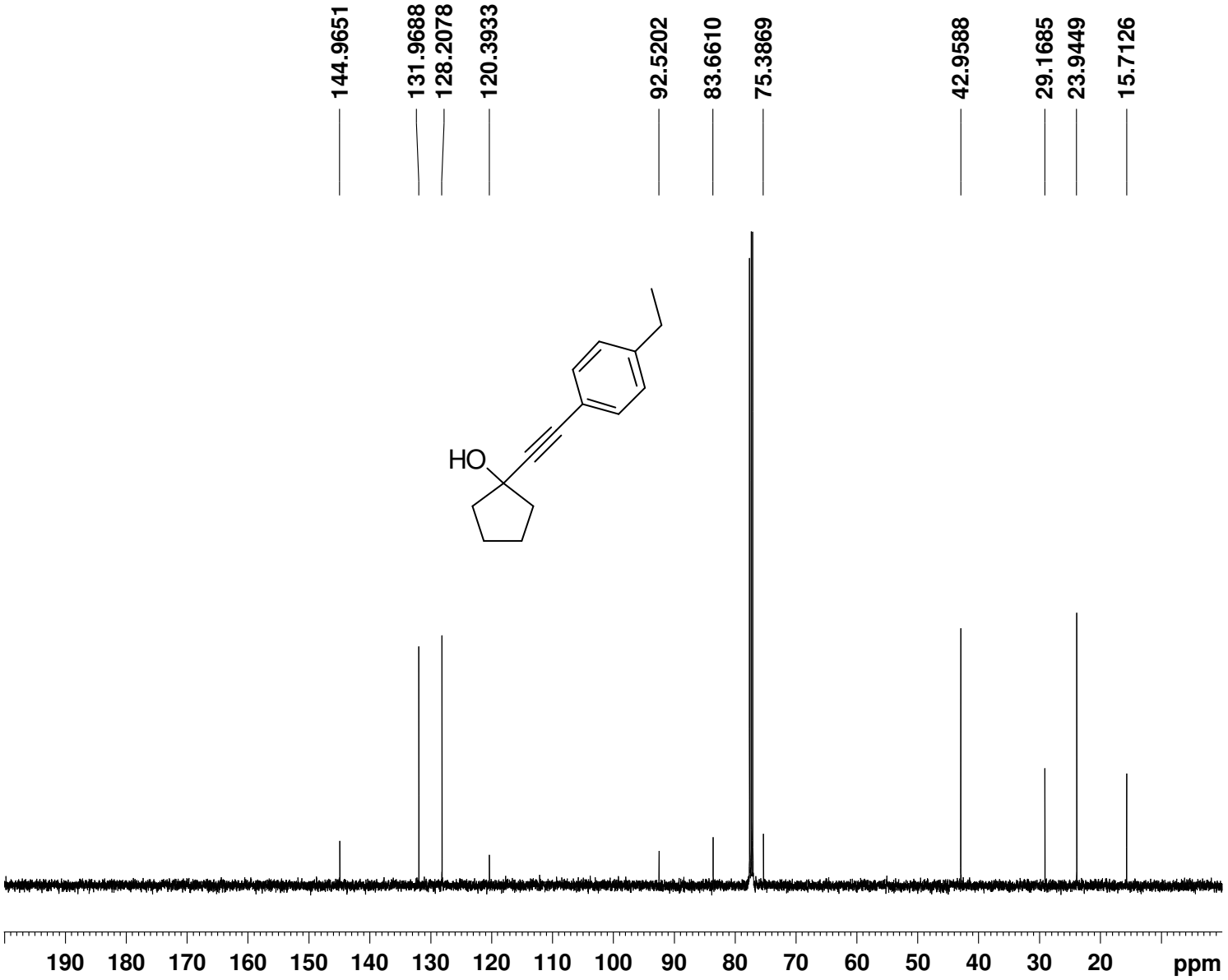
Time               14.14
INSTRUM         av500sgu
PROBHD    5 mm PABBO BB-
PULPROG             zg30
TD                 65536
SOLVENT            CDC13
NS                    16
DS                     2
SWH            10330.578 Hz
FIDRES          0.157632 Hz
AQ              3.1719923 sec
RG                   322
DW                48.400 usec
DE                 6.00 usec
TE                296.2 K
D1           1.00000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                  1H
P1                 9.70 usec
PL1                0.10 dB
PL1W        22.82879257 W
SFO1       500.1330885 MHz

F2 - Processing parameters
SI                 32768
SF          500.1300144 MHz
WDW                   EM
SSB                    0
LB                 0.30 Hz
GB                     0
PC                 1.00
```

^{13}C NMR spectrum for 1-((4-ethylphenyl)ethynyl)cyclopentanol 2f

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Current Data Parameters
NAME            ARM-1193
EXPNO                 11
PROCNO                 1

F2 - Acquisition Parameters
Date_           20120118
Time                14.17
INSTRUM         av500sgu
PROBHD   5 mm PABBO BB-
PULPROG          zgpg30
TD                65536
SOLVENT           CDCl3
NS                  256
DS                    4
SWH           30030.029 Hz
FIDRES         0.458222 Hz
AQ            1.0912244 sec
RG                14600
DW               16.650 usec
DE                6.00 usec
TE                297.3 K
D1           2.00000000 sec
D11          0.03000000 sec
TD0                   8

======== CHANNEL f1 ========
NUC1                 13C
P1                  9.00 usec
PL1                 0.00 dB
SFO1        125.7703637 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                 1H
PCPD2              80.00 usec
PL2                 0.00 dB
PL12               18.00 dB
PL13               18.00 dB
PL2W        23.36054420 W
PL12W        0.37023968 W
PL13W        0.37023968 W
SFO2        500.1320005 MHz

F2 - Processing parameters
SI                 32768
SF          125.7577420 MHz
WDW                   EM
SSB                   0
LB                 1.00 Hz
GB                    0
PC                 1.40
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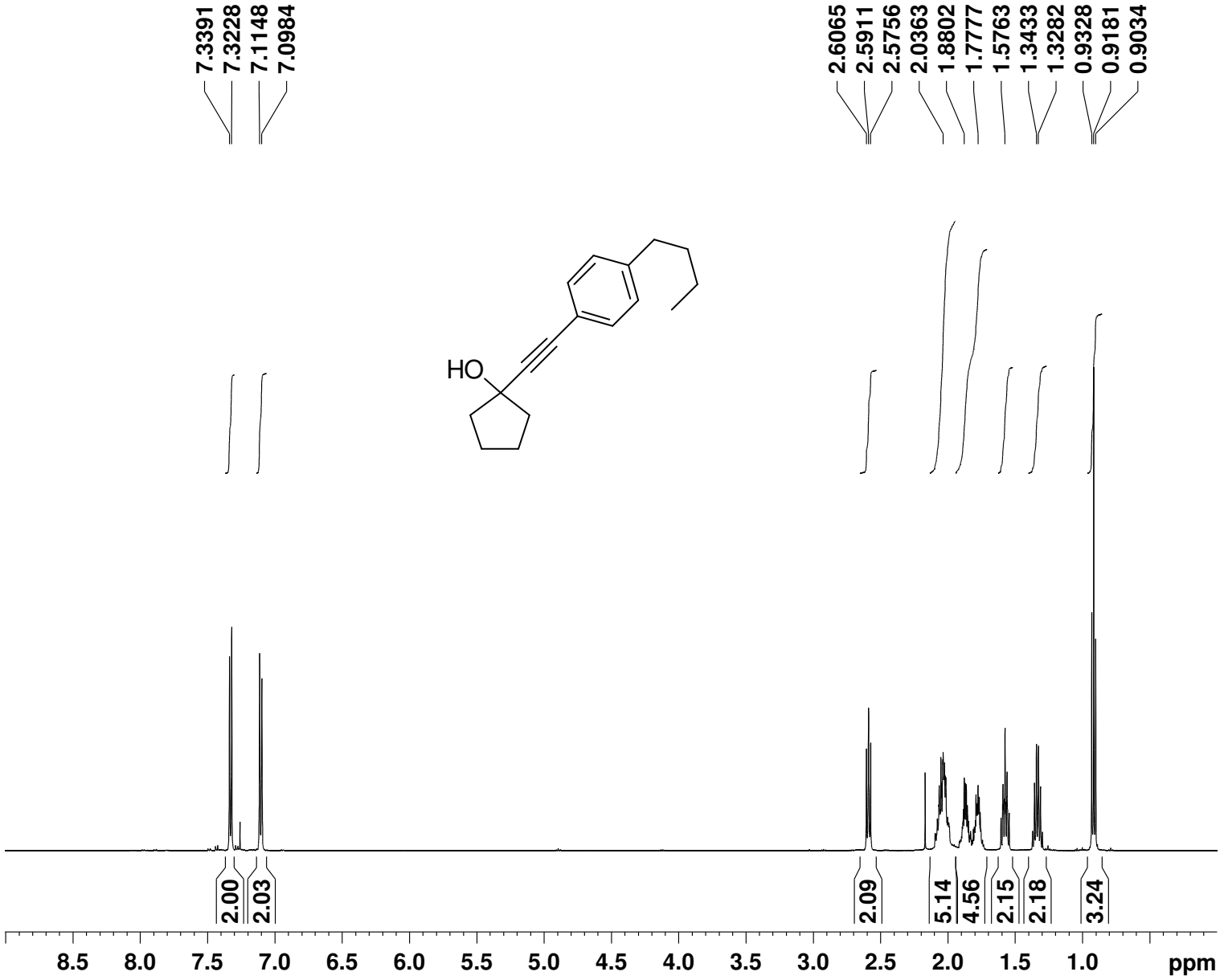
^{1}H NMR spectrum for 1-((4-butylphenyl)ethynyl)cyclopentanol 2g

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Current Data Parameters
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EXPNO                 10
PROCNO                 1

F2 - Acquisition Parameters
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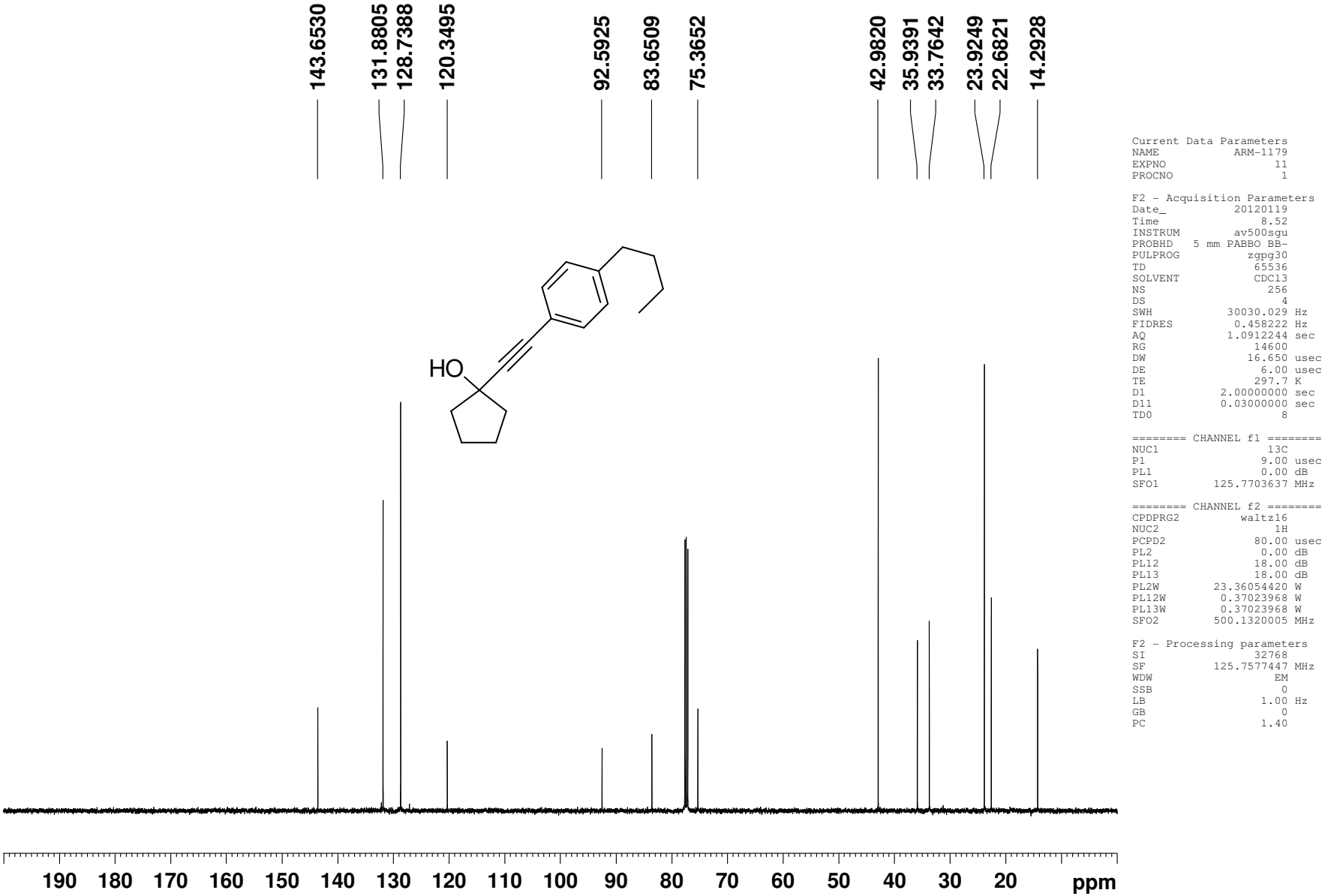
Time                8.49
INSTRUM         av500sgu
PROBHD    5 mm PABBO BB-
PULPROG             zg30
TD                 65536
SOLVENT            CDCl3
NS                    16
DS                     2
SWH            10330.578 Hz
FIDRES          0.157632 Hz
AQ             3.1719923 sec
RG                    64
DW                48.400 usec
DE                 6.00 usec
TE                296.5 K
D1             1.00000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                  1H
P1                 9.70 usec
PL1                0.10 dB
PL1W         22.82879257 W
SFO1         500.1330885 MHz

F2 - Processing parameters
SI                 32768
SF           500.1300130 MHz
WDW                   EM
SSB                    0
LB                 0.30 Hz
GB                     0
PC                 1.00
```

^{13}C NMR spectrum for 1-((4-butylphenyl)ethynyl)cyclopentanol 2g




```
Current Data Parameters
NAME            ARM-1179
EXPNO                 11
PROCNO                 1

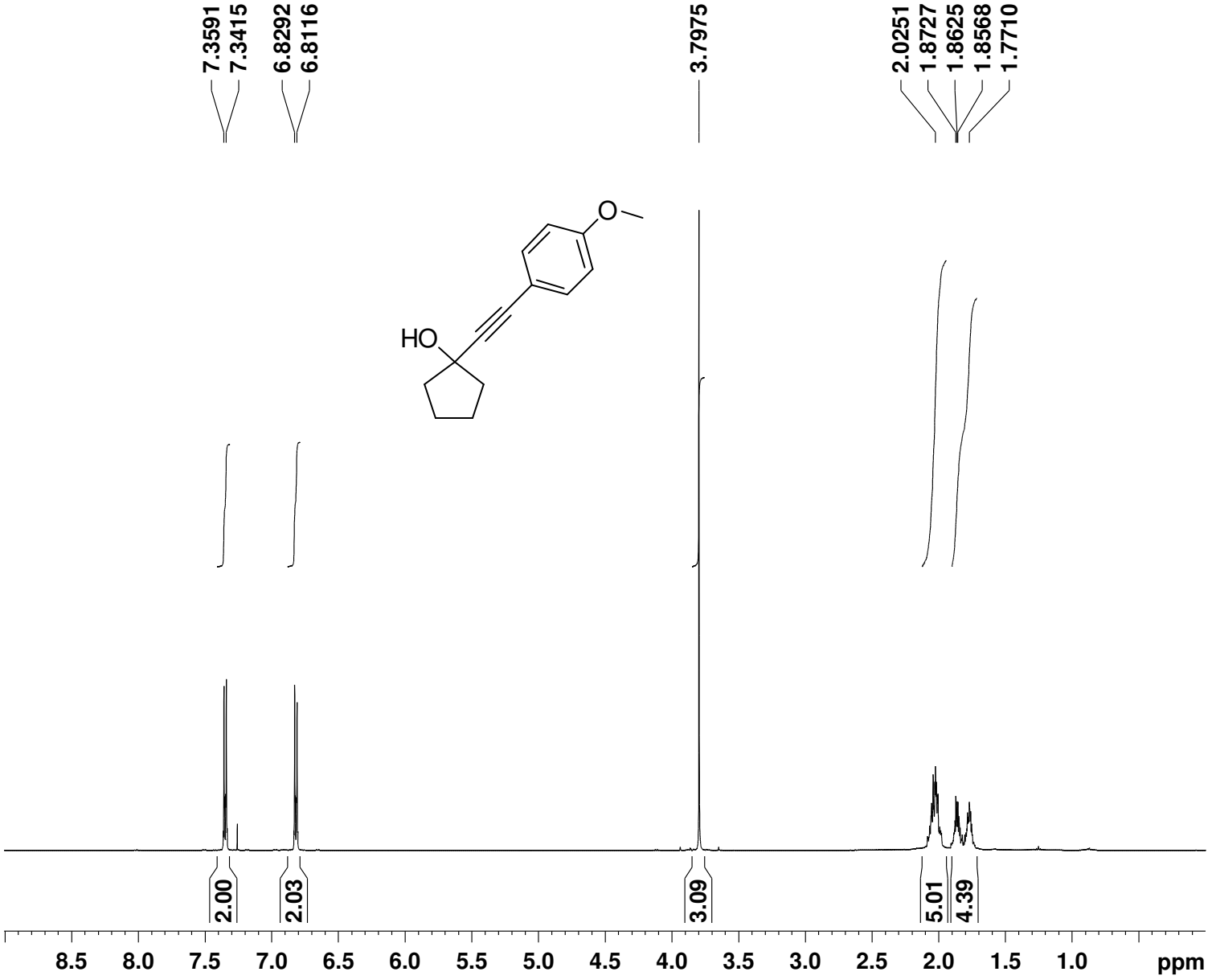
F2 - Acquisition Parameters
Date_           20120119
Time                8.52
INSTRUM         av500sgu
PROBHD   5 mm PABBO BB-
PULPROG          zgpg30
TD                65536
SOLVENT           CDCl3
NS                  256
DS                    4
SWH           30030.029 Hz
FIDRES         0.458222 Hz
AQ            1.0912244 sec
RG                14600
DW               16.650 usec
DE                6.00 usec
TE                297.7 K
D1           2.00000000 sec
D11          0.03000000 sec
TD0                   8

======== CHANNEL f1 ========
NUC1                 13C
P1                9.00 usec
PL1               0.00 dB
SFO1        125.7703637 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                 1H
PCPD2            80.00 usec
PL2               0.00 dB
PL12              18.00 dB
PL13              18.00 dB
PL2W        23.36054420 W
PL12W        0.37023968 W
PL13W        0.37023968 W
SFO2        500.1320005 MHz

F2 - Processing parameters
SI                32768
SF          125.7577447 MHz
WDW                  EM
SSB                   0
LB                1.00 Hz
GB                    0
PC                1.40
```

^{1}H NMR spectrum for 1-((4-methoxyphenyl)ethynyl)cyclopentanol 2h



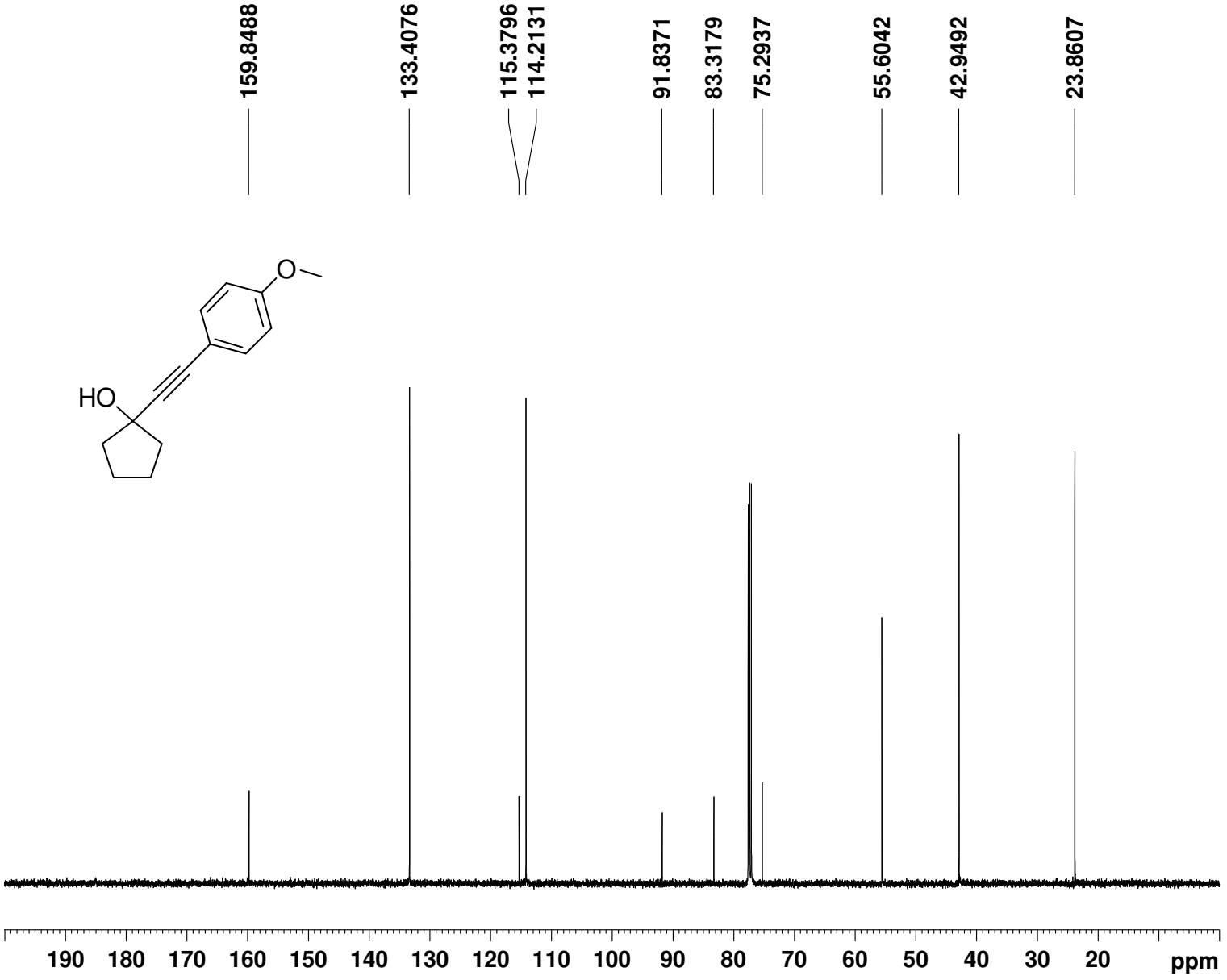

```
Current Data Parameters
NAME                  ARM-1188
EXPNO                       10
PROCNO                       1

F2 - Acquisition Parameters
Date_                 20120119
Time                     12.58
INSTRUM                av500sgu
PROBHD    5 mm PABBO BB-
PULPROG                  zg30
TD                      65536
SOLVENT                 CDC13
NS                         16
DS                          2
SWH                10330.578 Hz
FIDRES             0.157632 Hz
AQ                 3.1719923 sec
RG                        144
DW                     48.400 usec
DE                      6.00 usec
TE                     296.4 K
D1                1.00000000 sec
TD0                         1

======== CHANNEL f1 ========
NUC1                       1H
P1                       9.70 usec
PL1                      0.10 dB
PL1W             22.82879257 W
SFO1             500.1330885 MHz

F2 - Processing parameters
SI                      32768
SF               500.1300134 MHz
WDW                        EM
SSB                         0
LB                       0.30 Hz
GB                          0
PC                       1.00
```

^{13}C NMR spectrum for 1-((4-methoxyphenyl)ethynyl)cyclopentanol 2h




```
Current Data Parameters
NAME            ARM-1188
EXPNO                 11
PROCNO                 1

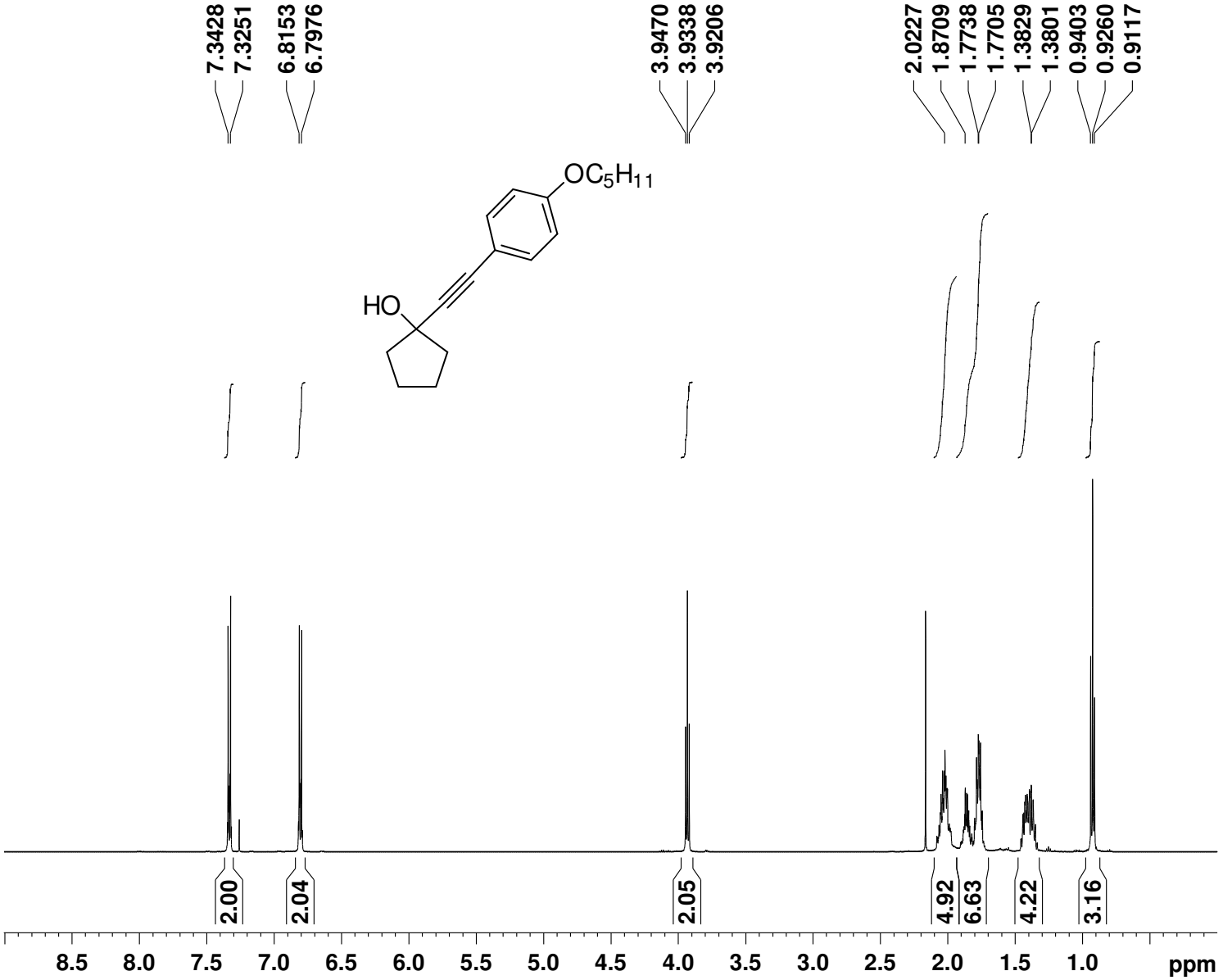
F2 - Acquisition Parameters
Date_           20120119
Time               13.00
INSTRUM         av500sgu
PROBHD   5 mm PABBO BB-
PULPROG          zgpg30
TD                65536
SOLVENT           CDCl3
NS                  256
DS                    4
SWH           30030.029 Hz
FIDRES            0.458222 Hz
AQ             1.0912244 sec
RG                14600
DW               16.650 usec
DE                6.00 usec
TE                297.5 K
D1           2.00000000 sec
D11          0.03000000 sec
TD0                   8

======== CHANNEL f1 ========
NUC1                 13C
P1                  9.00 usec
PL1                 0.00 dB
SFO1        125.7703637 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                 1H
PCPD2              80.00 usec
PL2                 0.00 dB
PL12               18.00 dB
PL13               18.00 dB
PL2W        23.36054420 W
PL12W        0.37023968 W
PL13W        0.37023968 W
SFO2        500.1320005 MHz

F2 - Processing parameters
SI                32768
SF          125.7577482 MHz
WDW                  EM
SSB                   0
LB                 1.00 Hz
GB                    0
PC                 1.40
```

^{1}H NMR spectrum for 1-((4-(pentyloxy)phenyl)ethynyl)cyclopentanol 2i



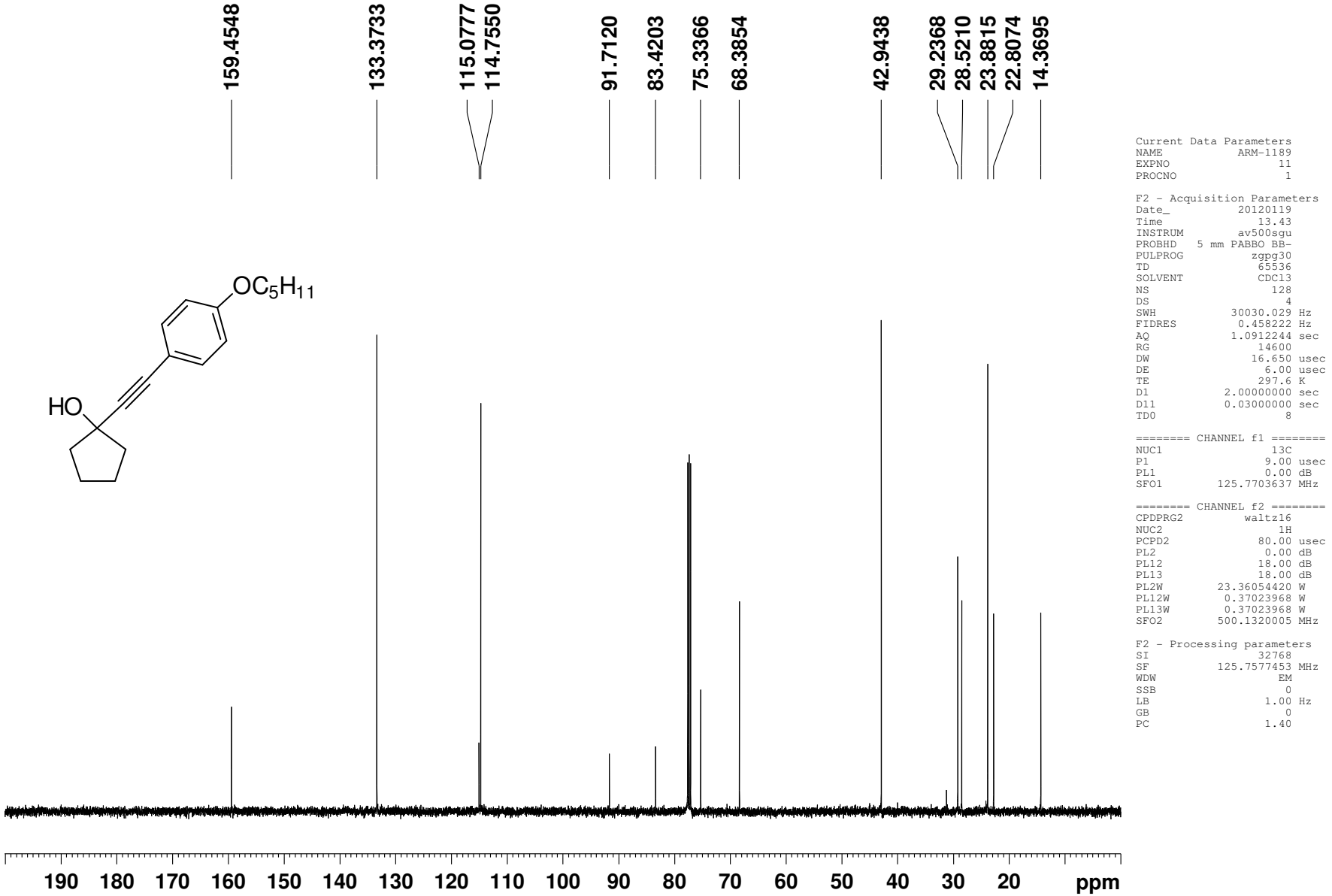

```
Current Data Parameters
NAME                  ARM-1189
EXPNO                       10
PROCNO                       1

F2 - Acquisition Parameters
Date_                 20120119
Time                     13.41
INSTRUM               av500squ
PROBHD    5 mm PABBO BB-
PULPROG                  zg30
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 usec
DE                      6.00 usec
TE                     296.5 K
D1                  1.00000000 sec
TD0                         1

======== CHANNEL f1 ========
NUC1                       1H
P1                      9.70 usec
PL1                     0.10 dB
PL1W               22.82879257 W
SFO1               500.1330885 MHz

F2 - Processing parameters
SI                      32768
SF                 500.1300133 MHz
WDW                        EM
SSB                         0
LB                     0.30 Hz
GB                          0
PC                     1.00
```

^{13}C NMR spectrum for 1-((4-(pentyloxy)phenyl)ethynyl)cyclopentanol 2i




```
Current Data Parameters
NAME            ARM-1189
EXPNO                 11
PROCNO                 1

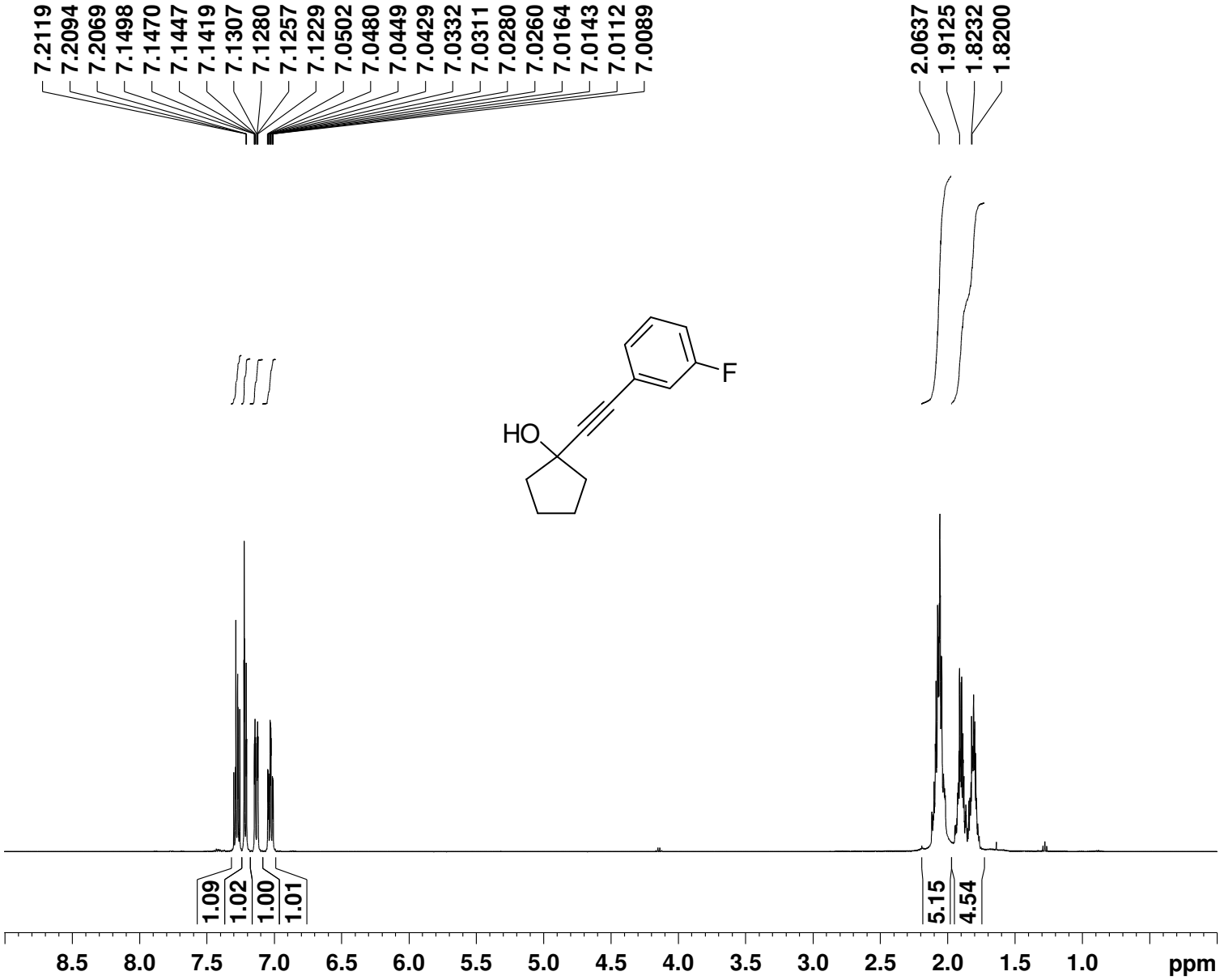
F2 - Acquisition Parameters
Date_           20120119
Time               13.43
INSTRUM         av500sgu
PROBHD   5 mm PABBO BB-
PULPROG          zgpg30
TD                65536
SOLVENT           CDCl3
NS                  128
DS                    4
SWH           30030.029 Hz
FIDRES         0.458222 Hz
AQ            1.0912244 sec
RG                14600
DW               16.650 usec
DE                6.00 usec
TE                297.6 K
D1           2.00000000 sec
D11          0.03000000 sec
TD0                   8

======== CHANNEL f1 ========
NUC1                 13C
P1                9.00 usec
PL1               0.00 dB
SFO1        125.7703637 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                 1H
PCPD2            80.00 usec
PL2               0.00 dB
PL12              18.00 dB
PL13              18.00 dB
PL2W        23.36054420 W
PL12W        0.37023968 W
PL13W        0.37023968 W
SFO2        500.1320005 MHz

F2 - Processing parameters
SI                32768
SF          125.7577453 MHz
WDW                  EM
SSB                   0
LB                 1.00 Hz
GB                    0
PC                 1.40
```

^{1}H NMR spectrum for 1-((3-fluorophenyl)ethynyl)cyclopentanol 2j



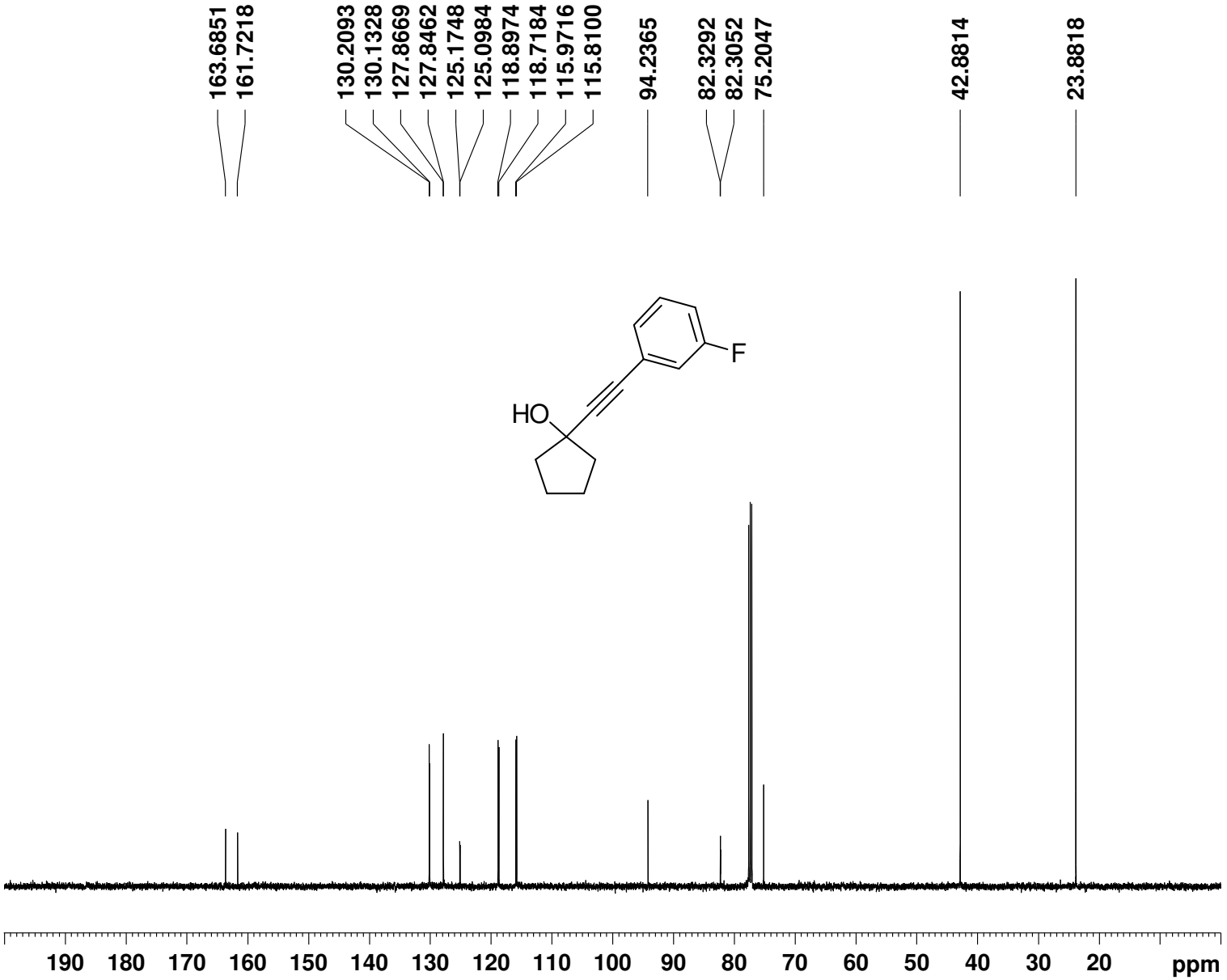

```
Current Data Parameters
NAME            ARM-1204
EXPNO                 10
PROCNO                 1

F2 - Acquisition Parameters
Date_           20120119
Time                9.22
INSTRUM         av500sgu
PROBHD    5 mm PABBO BB-
PULPROG             zg30
TD                 65536
SOLVENT            CDCl3
NS                    16
DS                     2
SWH            10330.578 Hz
FIDRES          0.157632 Hz
AQ             3.1719923 sec
RG                   144
DW                48.400 usec
DE                 6.00 usec
TE                296.7 K
D1            1.00000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                  1H
P1                 9.70 usec
PL1                0.10 dB
PL1W        22.82879257 W
SFO1        500.1330885 MHz

F2 - Processing parameters
SI                 32768
SF          500.1300000 MHz
WDW                   EM
SSB                    0
LB                 0.30 Hz
GB                     0
PC                 1.00
```

^{13}C NMR spectrum for 1-((3-fluorophenyl)ethynyl)cyclopentanol 2j




```
Current Data Parameters
NAME            ARM-1204
EXPNO                 11
PROCNO                 1

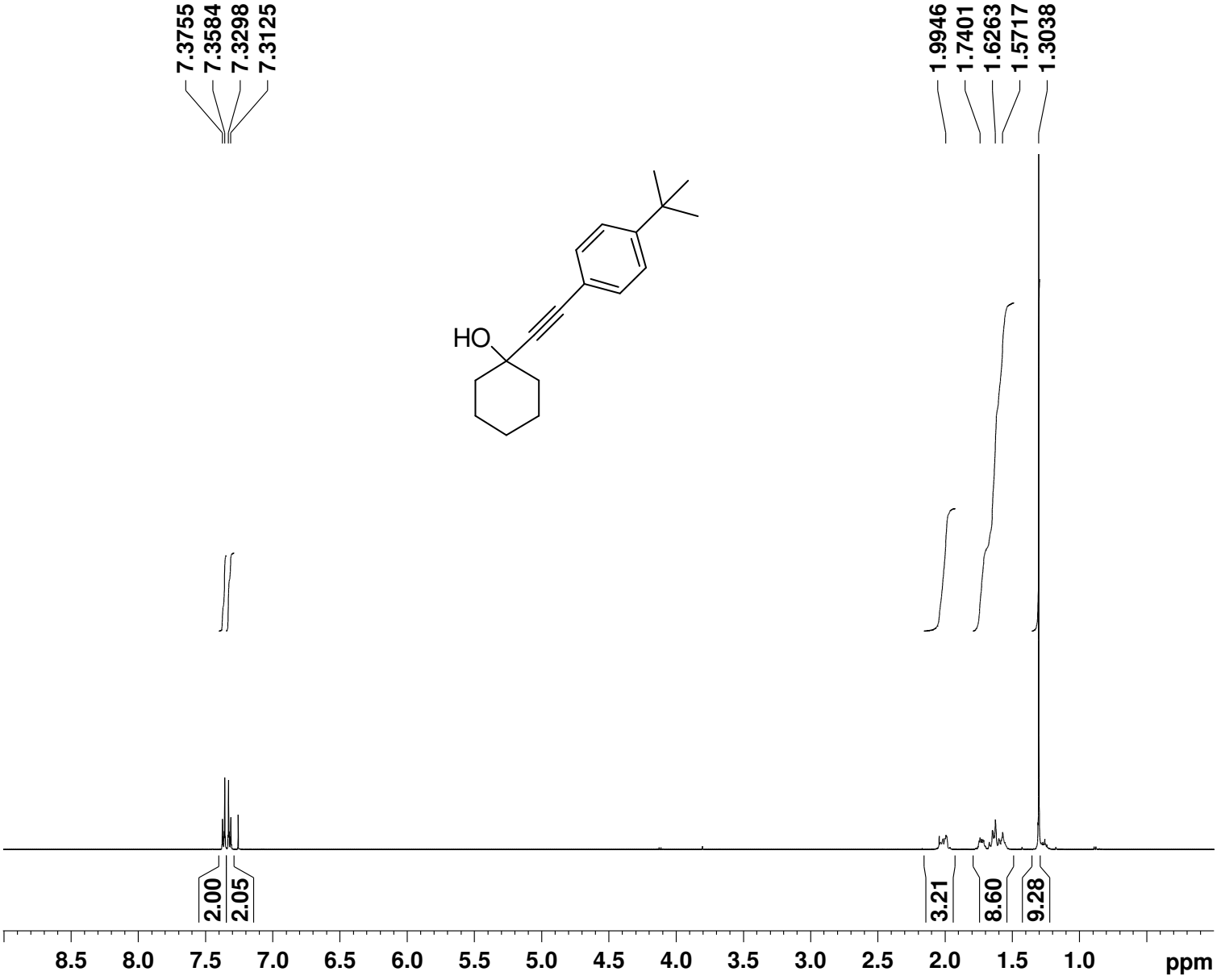
F2 - Acquisition Parameters
Date_           20120119
Time                9.24
INSTRUM         av500sgu
PROBHD   5 mm PABBO BB-
PULPROG          zgpg30
TD                65536
SOLVENT           CDCl3
NS                  256
DS                    4
SWH           30030.029 Hz
FIDRES         0.458222 Hz
AQ            1.0912244 sec
RG                14600
DW               16.650 usec
DE                6.00 usec
TE                297.7 K
D1           2.00000000 sec
D11          0.03000000 sec
TD0                   8

======== CHANNEL f1 ========
NUC1                 13C
P1                  9.00 usec
PL1                 0.00 dB
SFO1        125.7703637 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                 1H
PCPD2              80.00 usec
PL2                 0.00 dB
PL12               18.00 dB
PL13               18.00 dB
PL2W        23.36054420 W
PL12W        0.37023968 W
PL13W        0.37023968 W
SFO2        500.1320005 MHz

F2 - Processing parameters
SI                32768
SF          125.7577434 MHz
WDW                  EM
SSB                   0
LB                 1.00 Hz
GB                    0
PC                 1.40
```

^{1}H NMR spectrum for 1-((4-*tert*-butylphenyl)ethynyl)cyclohexanol 2k



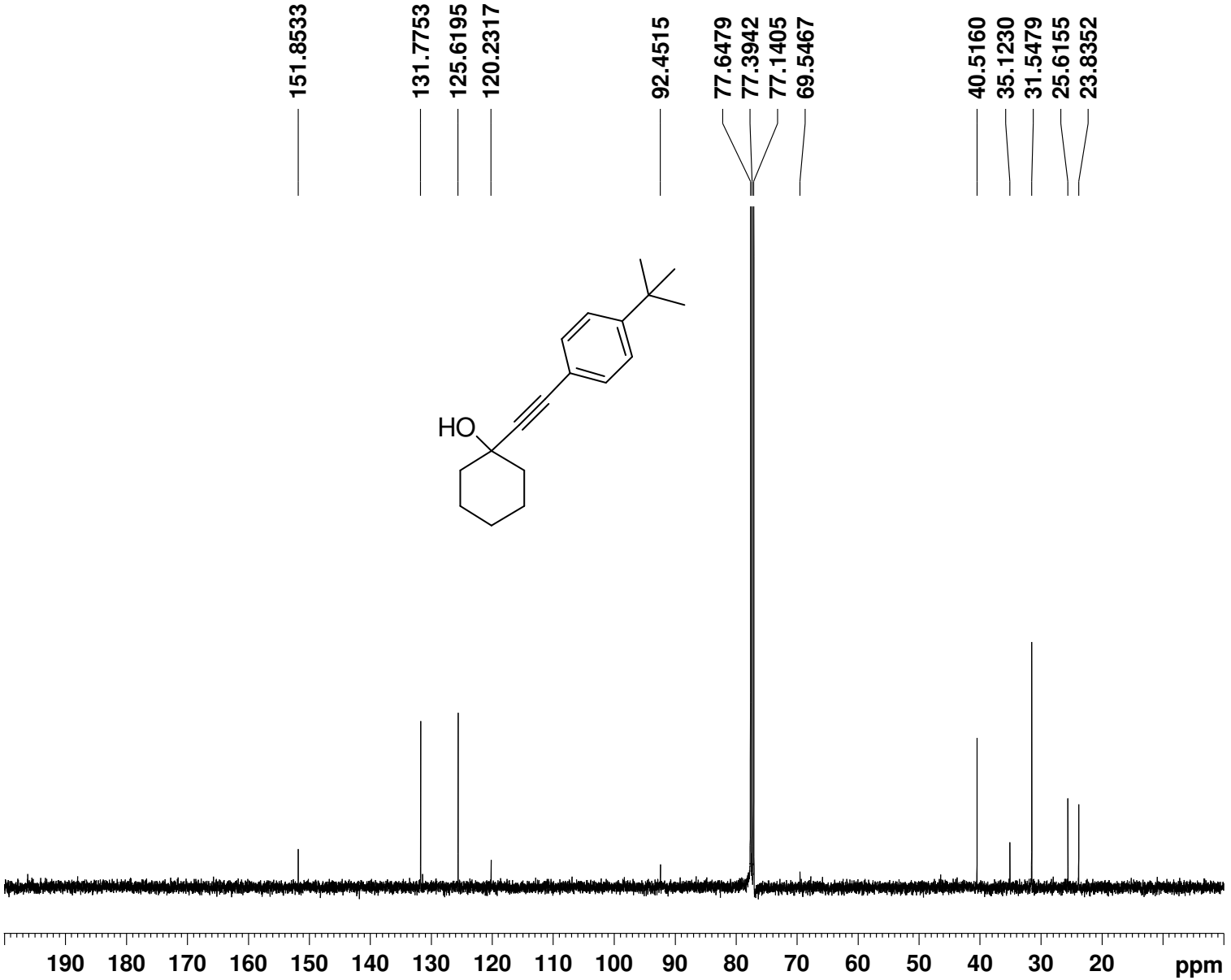

```
Current Data Parameters
NAME            ARM-1178
EXPNO                 10
PROCNO                 1

F2 - Acquisition Parameters
Date_           20120119
Time               14.09
INSTRUM         av500sgu
PROBHD    5 mm PABBO BB-
PULPROG             zg30
TD                 65536
SOLVENT            CDC13
NS                    16
DS                     2
SWH            10330.578 Hz
FIDRES          0.157632 Hz
AQ             3.1719923 sec
RG                   406
DW                48.400 usec
DE                 6.00 usec
TE                296.5 K
D1            1.00000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                  1H
P1                 9.70 usec
PL1                0.10 dB
PL1W        22.82879257 W
SFO1        500.1330885 MHz

F2 - Processing parameters
SI                 32768
SF          500.1300140 MHz
WDW                   EM
SSB                    0
LB                 0.30 Hz
GB                     0
PC                 1.00
```

^{13}C NMR spectrum for 1-((4-*tert*-butylphenyl)ethynyl)cyclohexanol 2k




```
Current Data Parameters
NAME            ARM-1178
EXPNO                 11
PROCNO                 1

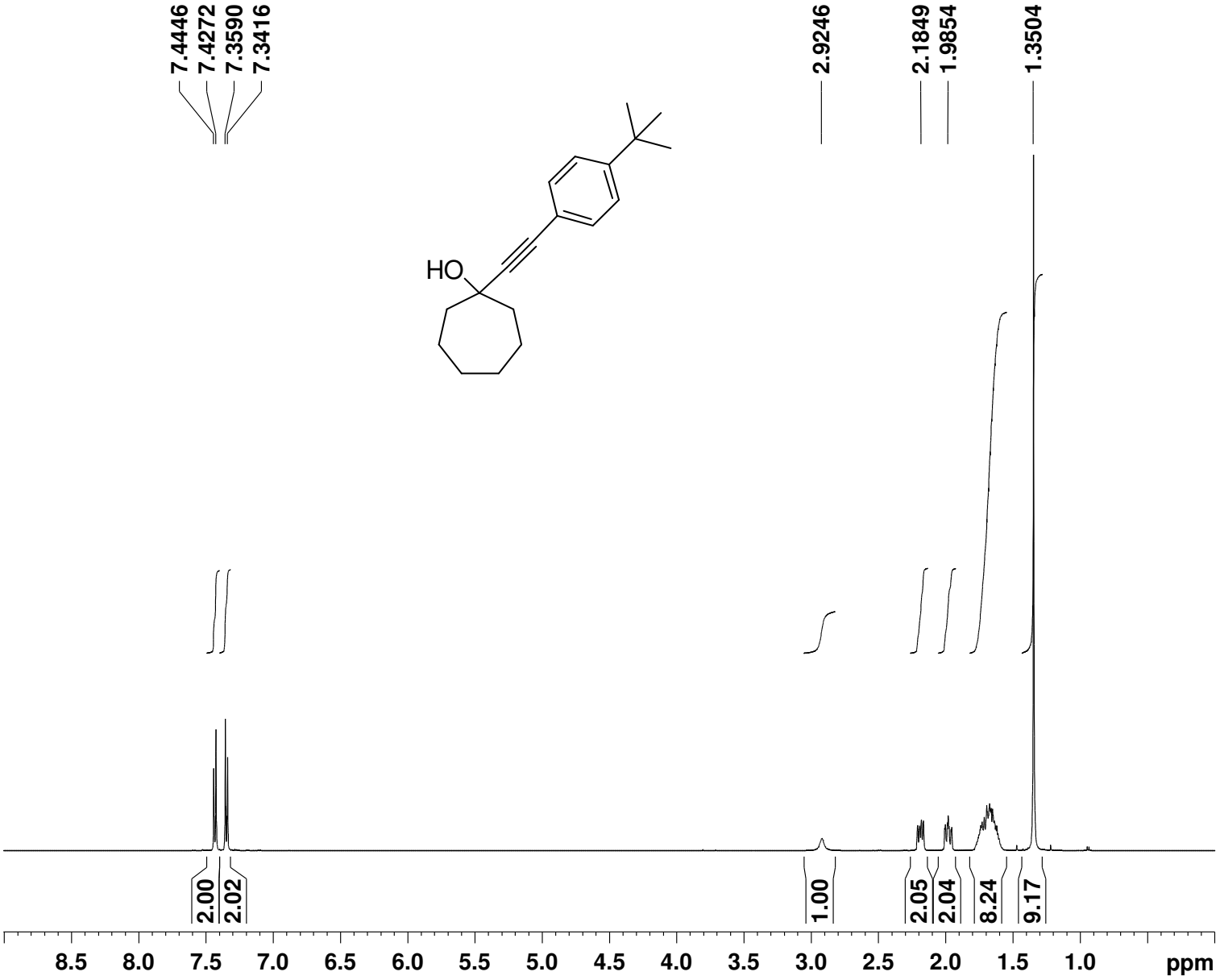
F2 - Acquisition Parameters
Date_           20120119
Time               14.11
INSTRUM         av500sgu
PROBHD   5 mm PABBO BB-
PULPROG          zgpg30
TD                65536
SOLVENT           CDCl3
NS                  256
DS                    4
SWH           30030.029 Hz
FIDRES         0.458222 Hz
AQ             1.0912244 sec
RG                14600
DW               16.650 usec
DE                6.00 usec
TE                297.6 K
D1            2.00000000 sec
D11           0.03000000 sec
TD0                   8

======== CHANNEL f1 ========
NUC1                 13C
P1                  9.00 usec
PL1                 0.00 dB
SFO1        125.7703637 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                 1H
PCPD2              80.00 usec
PL2                 0.00 dB
PL12               18.00 dB
PL13               18.00 dB
PL2W        23.36054420 W
PL12W        0.37023968 W
PL13W        0.37023968 W
SFO2        500.1320005 MHz

F2 - Processing parameters
SI                 32768
SF          125.7577426 MHz
WDW                   EM
SSB                   0
LB                 1.00 Hz
GB                    0
PC                 1.40
```

^{1}H NMR spectrum for 1-((4-*tert*-butylphenyl)ethynyl)cycloheptanol 2m



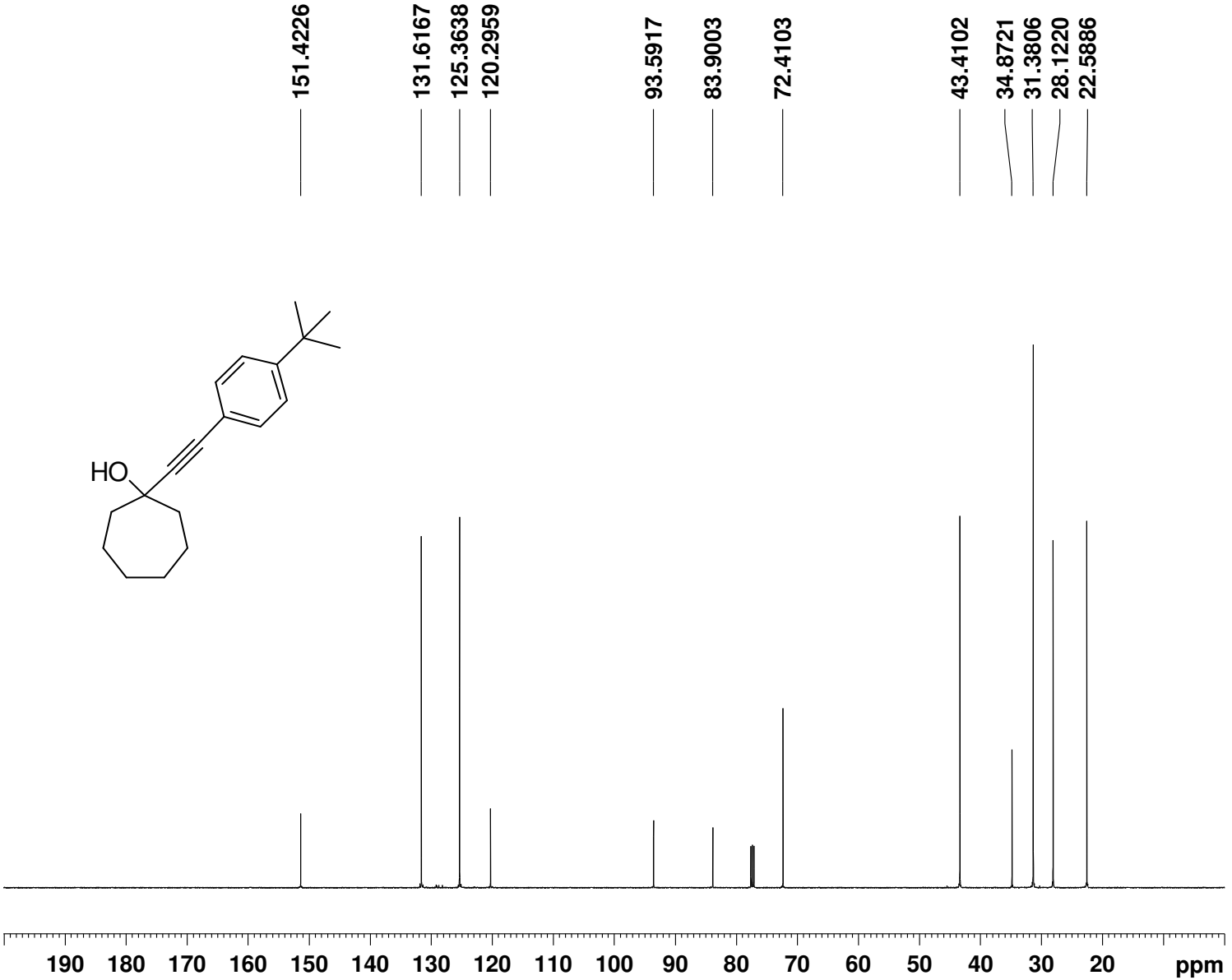

```
Current Data Parameters
NAME          ARM-1205_3
EXPNO                 10
PROCNO                 1

F2 - Acquisition Parameters
Date_           20120130
Time               11.23
INSTRUM         av500sgu
PROBHD   5 mm PABBO BB-
PULPROG             zg30
TD                 65536
SOLVENT            CDCl3
NS                    16
DS                     2
SWH           10330.578 Hz
FIDRES         0.157632 Hz
AQ            3.1719923 sec
RG                  12.7
DW                48.400 usec
DE                 6.00 usec
TE                296.4 K
D1            1.00000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                  1H
P1                 9.70 usec
PL1                0.10 dB
PL1W        22.82879257 W
SFO1        500.1330885 MHz

F2 - Processing parameters
SI                 32768
SF          500.1300000 MHz
WDW                   EM
SSB                    0
LB                 0.30 Hz
GB                     0
PC                 1.00
```

^{13}C NMR spectrum for 1-((4-*tert*-butylphenyl)ethynyl)cycloheptanol 2m




```
Current Data Parameters
NAME          ARM-1205_3
EXPNO                 11
PROCNO                 1

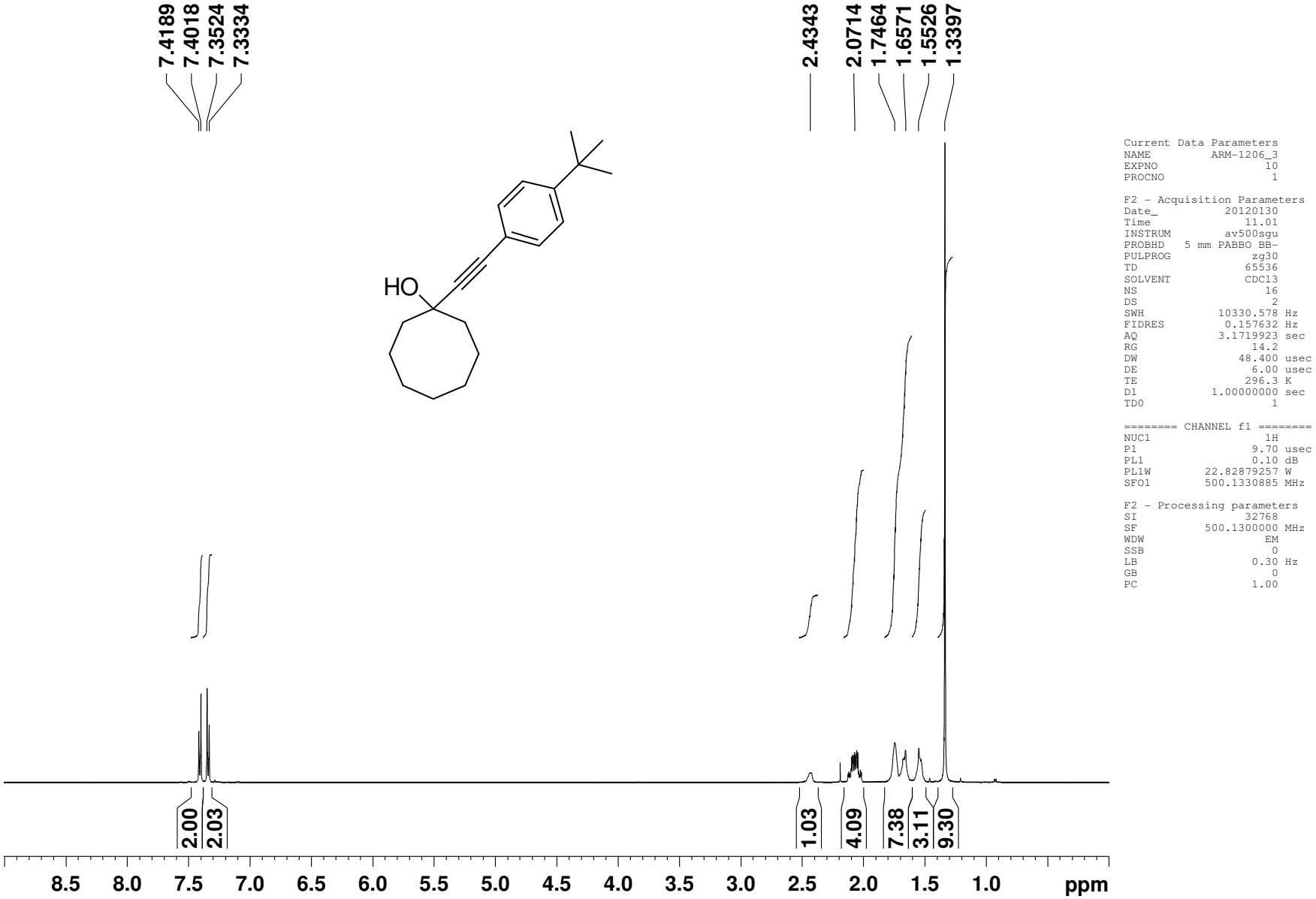
F2 - Acquisition Parameters
Date_           20120130
Time              11.26
INSTRUM         av500sgu
PROBHD   5 mm PABBO BB-
PULPROG          zgpg30
TD                65536
SOLVENT           CDCl3
NS                  256
DS                    4
SWH           30030.029 Hz
FIDRES         0.458222 Hz
AQ            1.0912244 sec
RG                11500
DW               16.650 usec
DE                6.00 usec
TE                297.4 K
D1           2.00000000 sec
D11          0.03000000 sec
TD0                   8

======== CHANNEL f1 ========
NUC1                 13C
P1                 9.00 usec
PL1                0.00 dB
SFO1        125.7703637 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                 1H
PCPD2             80.00 usec
PL2                0.00 dB
PL12              18.00 dB
PL13              18.00 dB
PL2W        23.36054420 W
PL12W        0.37023968 W
PL13W        0.37023968 W
SFO2        500.1320005 MHz

F2 - Processing parameters
SI                32768
SF          125.7577722 MHz
WDW                  EM
SSB                   0
LB                 1.00 Hz
GB                    0
PC                 1.40
```

^{1}H NMR spectrum for 1-((4-*tert*-butylphenyl)ethynyl)cyclooctanol 2n



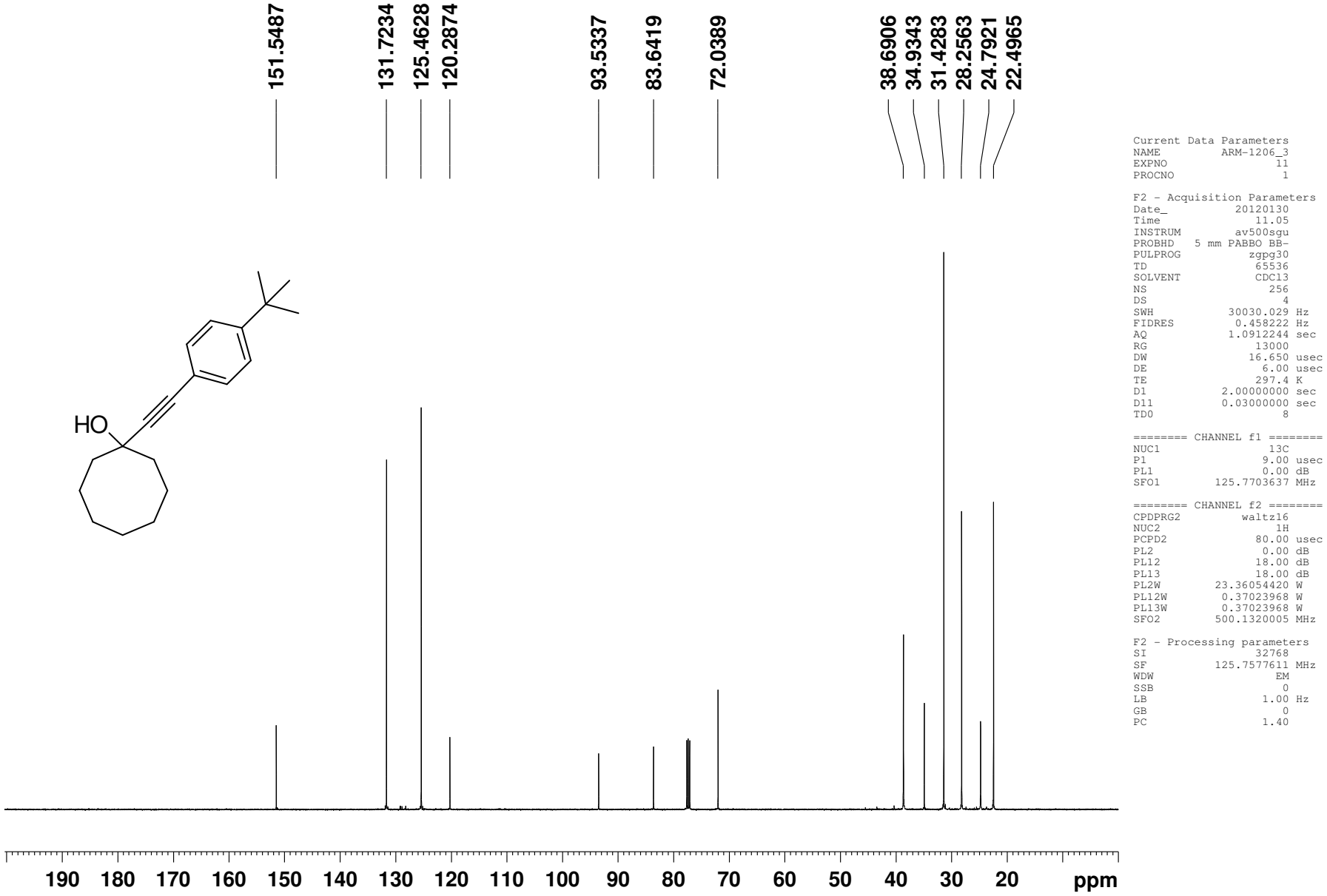

```
Current Data Parameters
NAME          ARM-1206_3
EXPNO                 10
PROCNO                 1

F2 - Acquisition Parameters
Date_           20120130
Time               11.01
INSTRUM         av500sgu
PROBHD   5 mm PABBO BB-
PULPROG             zg30
TD                 65536
SOLVENT            CDCl3
NS                    16
DS                     2
SWH           10330.578 Hz
FIDRES         0.157632 Hz
AQ            3.1719923 sec
RG                  14.2
DW                48.400 usec
DE                 6.00 usec
TE                296.3 K
D1           1.00000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                  1H
P1                 9.70 usec
PL1                0.10 dB
PL1W        22.82879257 W
SFO1        500.1330885 MHz

F2 - Processing parameters
SI                 32768
SF          500.1300000 MHz
WDW                   EM
SSB                    0
LB                0.30 Hz
GB                     0
PC                 1.00
```

^{13}C NMR spectrum for 1-((4-*tert*-butylphenyl)ethynyl)cyclooctanol 2n




```
Current Data Parameters
NAME          ARM-1206_3
EXPNO                 11
PROCNO                 1

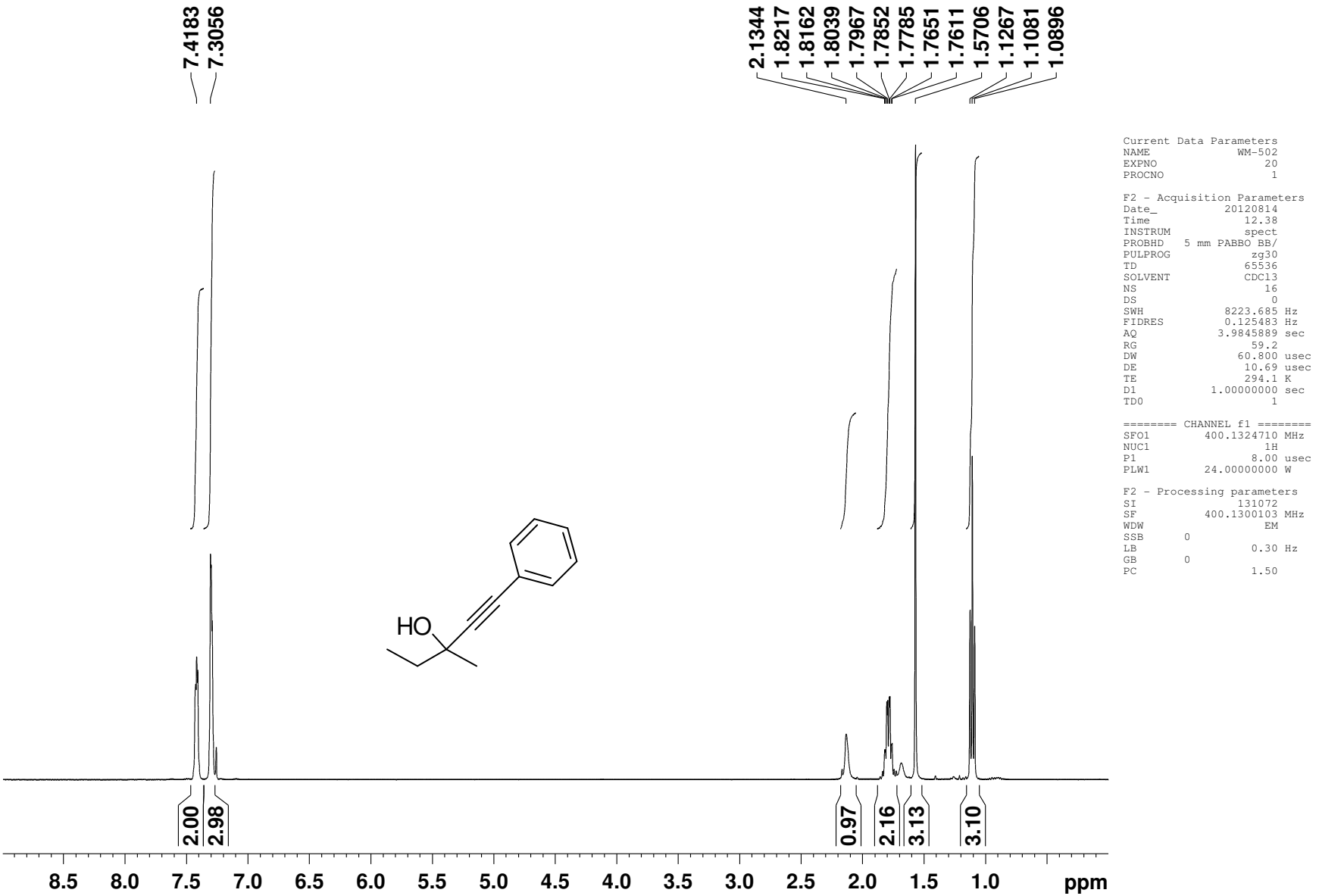
F2 - Acquisition Parameters
Date_           20120130
Time               11.05
INSTRUM         av500sgu
PROBHD   5 mm PABBO BB-
PULPROG          zgpg30
TD                65536
SOLVENT           CDCl3
NS                  256
DS                    4
SWH           30030.029 Hz
FIDRES            0.458222 Hz
AQ             1.0912244 sec
RG                13000
DW               16.650 usec
DE                6.00 usec
TE                297.4 K
D1            2.00000000 sec
D11           0.03000000 sec
TD0                   8

======== CHANNEL f1 ========
NUC1                 13C
P1                  9.00 usec
PL1                 0.00 dB
SFO1        125.7703637 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                 1H
PCPD2              80.00 usec
PL2                 0.00 dB
PL12               18.00 dB
PL13               18.00 dB
PL2W        23.36054420 W
PL12W        0.37023968 W
PL13W        0.37023968 W
SFO2        500.1320005 MHz

F2 - Processing parameters
SI                32768
SF          125.7577611 MHz
WDW                  EM
SSB                   0
LB                 1.00 Hz
GB                    0
PC                 1.40
```

^{1}H NMR spectrum for 3-methyl-1-phenylpent-1-yn-3-ol 2p



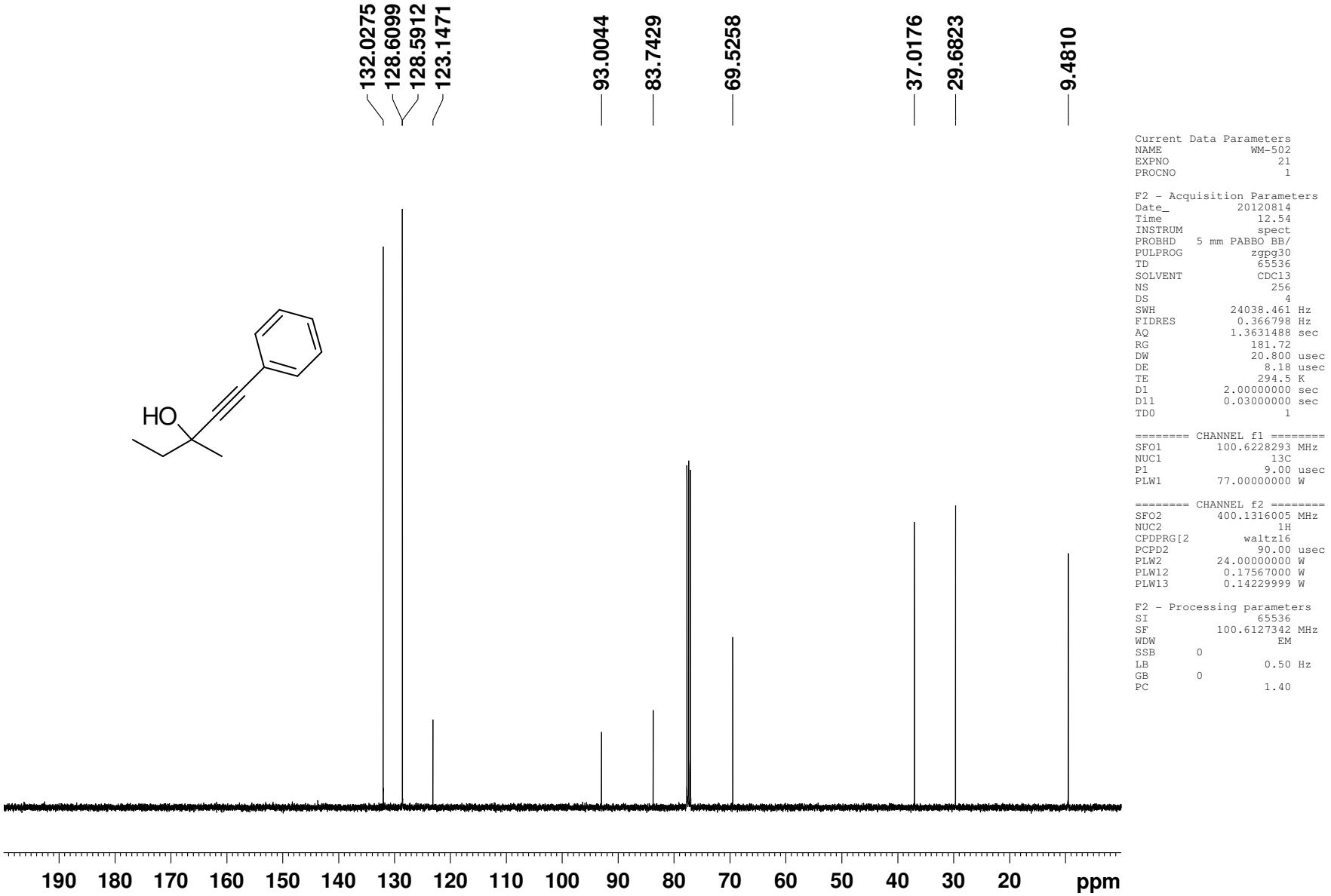

```
Current Data Parameters
NAME              WM-502
EXPNO                 20
PROCNO                 1

F2 - Acquisition Parameters
Date_           20120814
Time               12.38
INSTRUM            spect
PROBHD   5 mm PABBO BB/
PULPROG            zg30
TD                65536
SOLVENT           CDCl3
NS                   16
DS                    0
SWH             8223.685 Hz
FIDRES          0.125483 Hz
AQ              3.9845889 sec
RG                 59.2
DW                60.800 usec
DE                10.69 usec
TE                294.1 K
D1            1.00000000 sec
TD0                    1

======== CHANNEL f1 ========
SFO1         400.1324710 MHz
NUC1                   1H
P1                   8.00 usec
PLW1        24.00000000 W

F2 - Processing parameters
SI                131072
SF           400.1300103 MHz
WDW                  EM
SSB       0
LB                 0.30 Hz
GB        0
PC                 1.50
```

^{13}C NMR spectrum for 3-methyl-1-phenylpent-1-yn-3-ol 2p




```
Current Data Parameters
NAME              WM-502
EXPNO                 21
PROCNO                 1

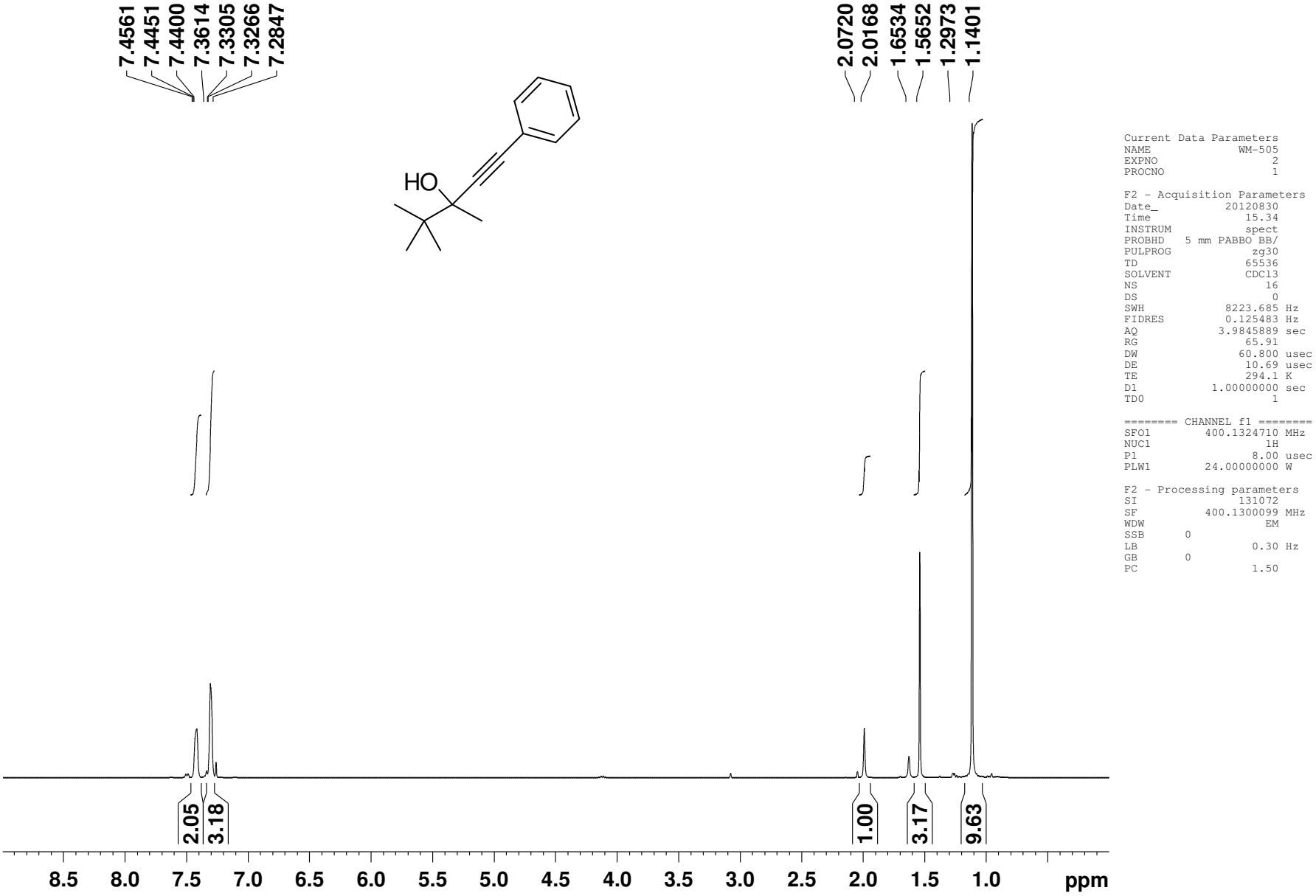
F2 - Acquisition Parameters
Date_           20120814
Time               12.54
INSTRUM             spect
PROBHD   5 mm PABBO BB/
PULPROG          zgpg30
TD                65536
SOLVENT           CDCl3
NS                  256
DS                    4
SWH           24038.461 Hz
FIDRES         0.366798 Hz
AQ             1.3631488 sec
RG                181.72
DW                20.800 usec
DE                 8.18 usec
TE                294.5 K
D1            2.00000000 sec
D11           0.03000000 sec
TD0                   1

======== CHANNEL f1 ========
SFO1         100.6228293 MHz
NUC1                13C
P1                 9.00 usec
PLW1         77.00000000 W

======== CHANNEL f2 ========
SFO2         400.1316005 MHz
NUC2                1H
CPDPRG[2         waltz16
PCPD2             90.00 usec
PLW2         24.00000000 W
PLW12         0.17567000 W
PLW13         0.14229999 W

F2 - Processing parameters
SI                 65536
SF           100.6127342 MHz
WDW                  EM
SSB       0
LB                 0.50 Hz
GB        0
PC                 1.40
```

^{1}H NMR spectrum for 3,4,4-trimethyl-1-phenylpent-1-yn-3-ol 2q



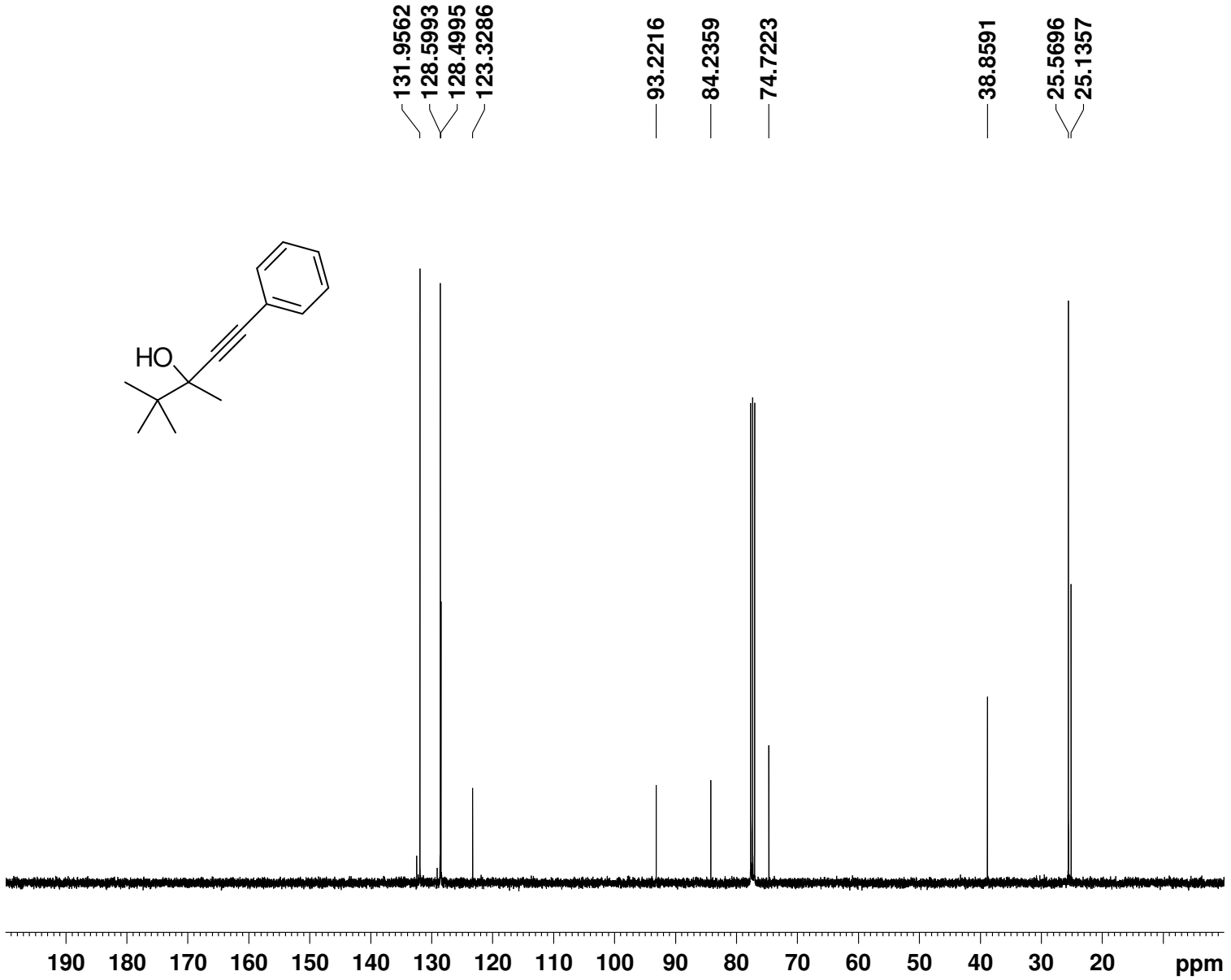

```
Current Data Parameters
NAME                  WM-505
EXPNO                      2
PROCNO                     1

F2 - Acquisition Parameters
Date_              20120830
Time                  15.34
INSTRUM               spect
PROBHD    5 mm PABBO BB/
PULPROG                zg30
TD                    65536
SOLVENT               CDC13
NS                       16
DS                        0
SWH                8223.685 Hz
FIDRES             0.125483 Hz
AQ                 3.9845889 sec
RG                     65.91
DW                    60.800 usec
DE                    10.69 usec
TE                    294.1 K
D1                 1.00000000 sec
TD0                        1

======== CHANNEL f1 ========
SFO1             400.1324710 MHz
NUC1                       1H
P1                      8.00 usec
PLW1            24.00000000 W

F2 - Processing parameters
SI                    131072
SF               400.1300099 MHz
WDW                       EM
SSB          0
LB                     0.30 Hz
GB           0
PC                     1.50
```

^{13}C NMR spectrum for 3,4,4-trimethyl-1-phenylpent-1-yn-3-ol 2q




```
Current Data Parameters
NAME                  WM-505
EXPNO                     20
PROCNO                     1

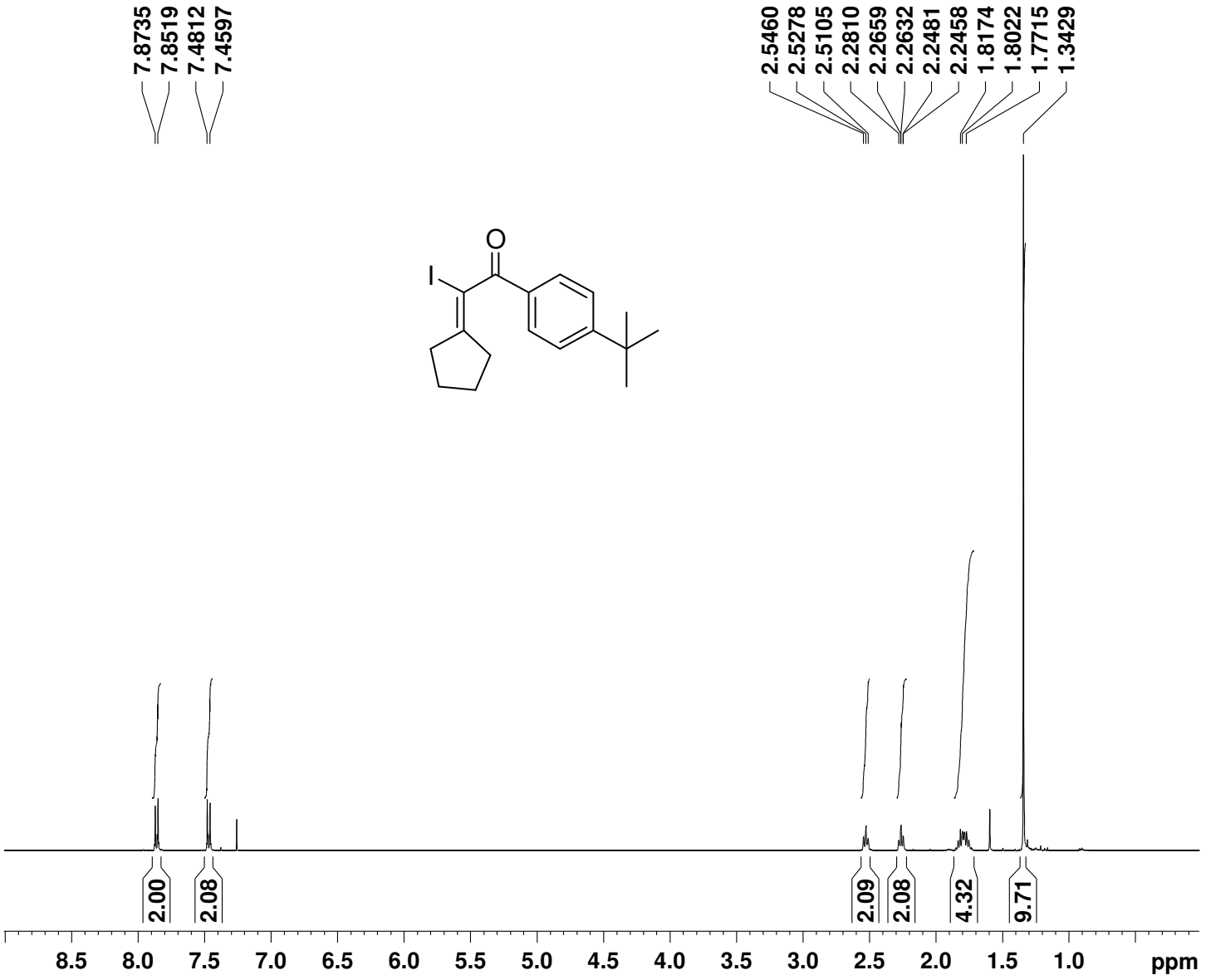
F2 - Acquisition Parameters
Date_              20120830
Time                  16.52
INSTRUM               spect
PROBHD   5 mm PABBO BB/
PULPROG               zgpg30
TD                     65536
SOLVENT                CDCl3
NS                       256
DS                         4
SWH               24038.461 Hz
FIDRES             0.366798 Hz
AQ                1.3631488 sec
RG                    181.72
DW                    20.800 usec
DE                     8.18 usec
TE                    294.5 K
D1               2.00000000 sec
D11              0.03000000 sec
TD0                        1

======== CHANNEL f1 ========
SFO1            100.6228293 MHz
NUC1                    13C
P1                     9.00 usec
PLW1           77.00000000 W

======== CHANNEL f2 ========
SFO2            400.1316005 MHz
NUC2                    1H
CPDPRG[2           waltz16
PCPD2                 90.00 usec
PLW2           24.00000000 W
PLW12           0.17567000 W
PLW13           0.14229999 W

F2 - Processing parameters
SI                     65536
SF              100.6127350 MHz
WDW                       EM
SSB       0
LB                     0.50 Hz
GB        0
PC                     1.40
```

^{1}H NMR spectrum for 1-(4-*tert*-butylphenyl)-2-cyclopentylidene-2-iodoethanone 4d



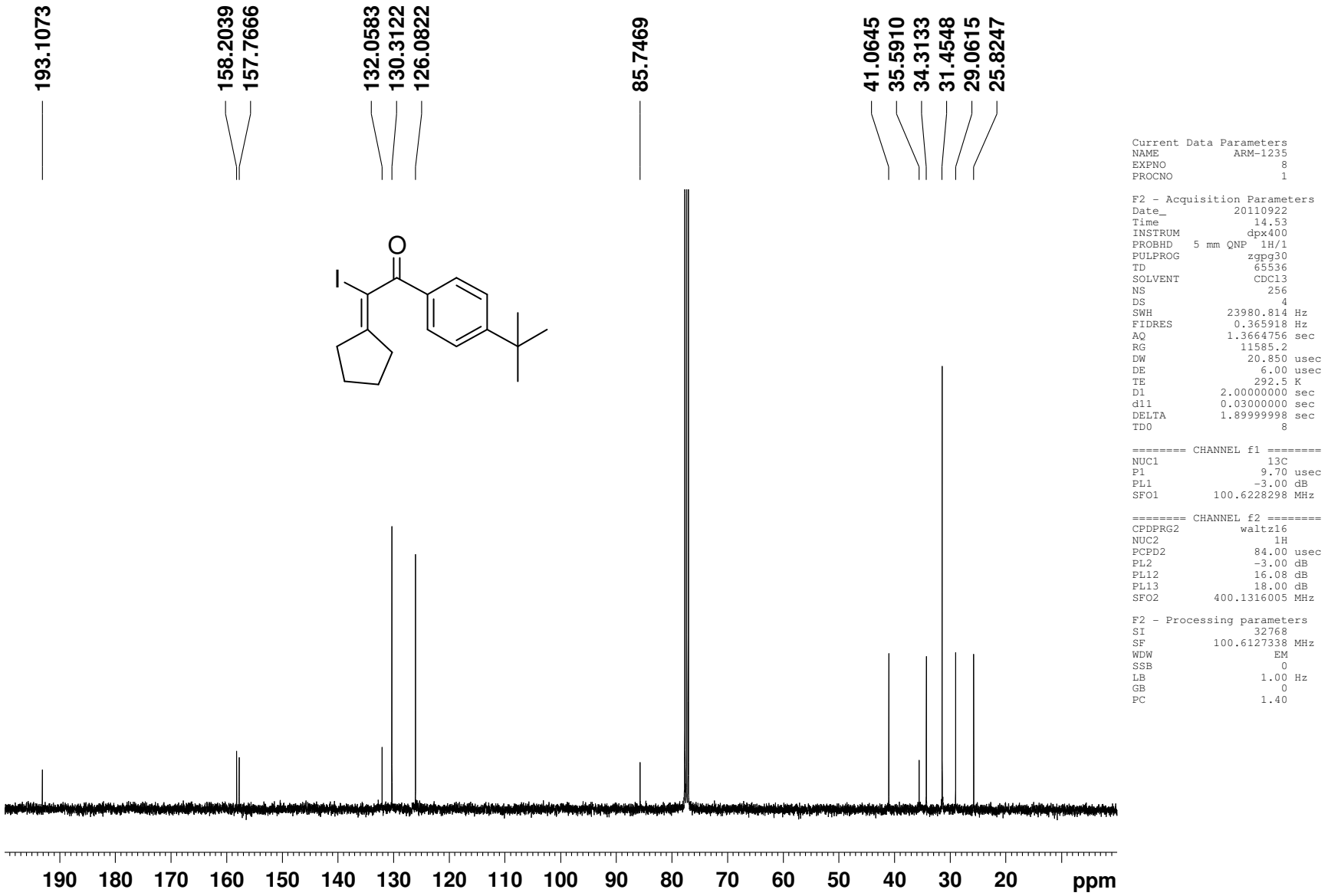

```
Current Data Parameters
NAME                  ARM-1235
EXPNO                        6
PROCNO                       1

F2 - Acquisition Parameters
Date_                 20110922
Time                     13.57
INSTRUM                dpx400
PROBHD   5 mm QNP  1H/1
PULPROG                  zg30
TD                      65536
SOLVENT                 CDCl3
NS                         16
DS                          2
SWH                  8278.146 Hz
FIDRES               0.126314 Hz
AQ                   3.9584243 sec
RG                       228.1
DW                     60.400 usec
DE                      6.00 usec
TE                      292.1 K
D1                 1.00000000 sec
TD0                          1

======== CHANNEL f1 ========
NUC1                        1H
P1                       8.40 usec
PL1                     -3.00 dB
SFO1               400.1324710 MHz

F2 - Processing parameters
SI                       32768
SF                 400.1300096 MHz
WDW                         EM
SSB                          0
LB                        0.30 Hz
GB                           0
PC                        1.00
```

^{13}C NMR spectrum for 1-(4-*tert*-butylphenyl)-2-cyclopentylidene-2-iodoethanone 4d




```
Current Data Parameters
NAME            ARM-1235
EXPNO                  8
PROCNO                 1

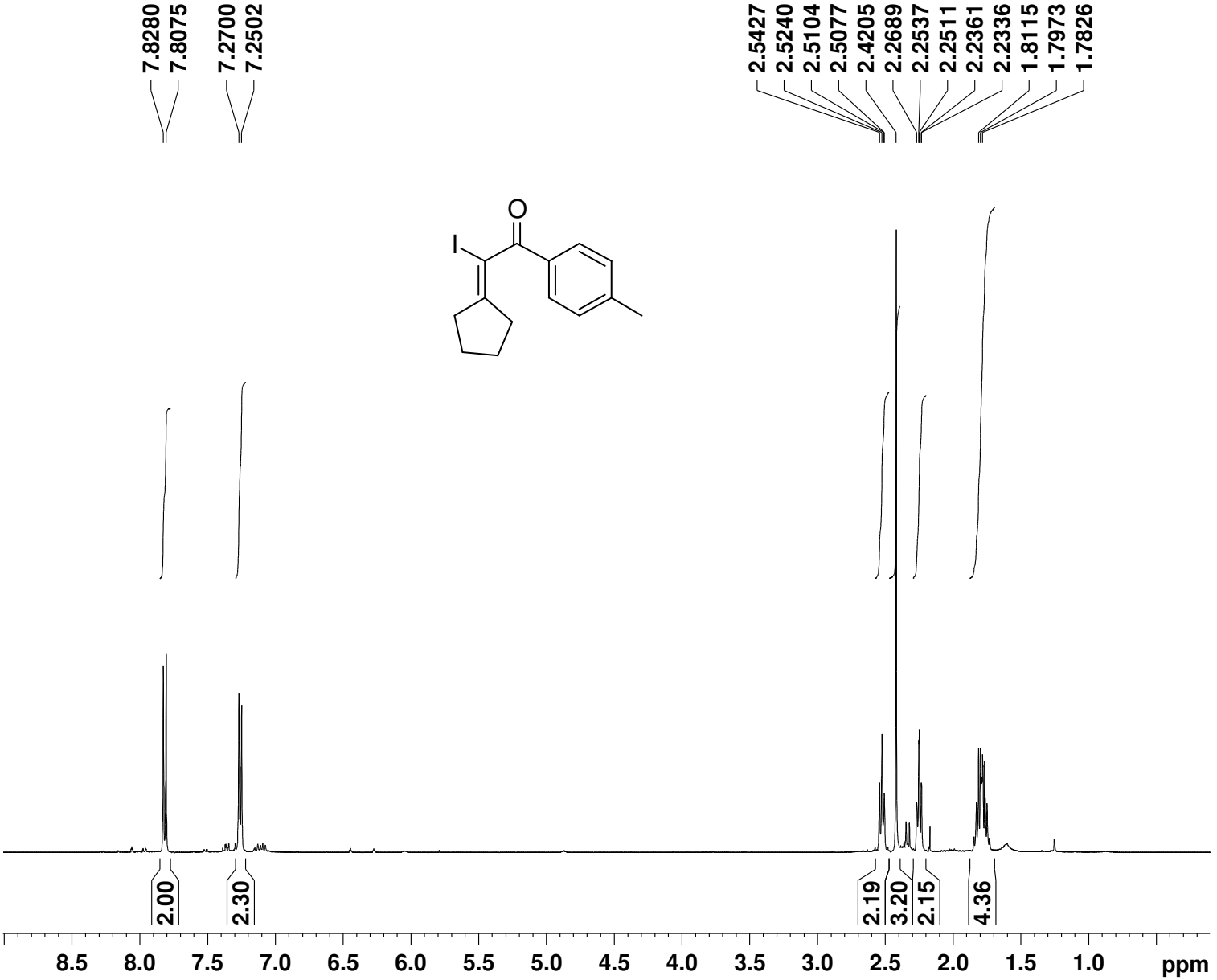
F2 - Acquisition Parameters
Date_           20110922
Time               14.53
INSTRUM          dpx400
PROBHD   5 mm QNP  1H/1
PULPROG          zgpg30
TD                65536
SOLVENT           CDCl3
NS                  256
DS                    4
SWH           23980.814 Hz
FIDRES         0.365918 Hz
AQ             1.3664756 sec
RG               11585.2
DW                20.850 usec
DE                 6.00 usec
TE                292.5 K
D1            2.00000000 sec
d11           0.03000000 sec
DELTA         1.89999998 sec
TD0                   8

======== CHANNEL f1 ========
NUC1                13C
P1                 9.70 usec
PL1               -3.00 dB
SFO1        100.6228298 MHz

======== CHANNEL f2 ========
CPDPRG2         waltz16
NUC2                1H
PCPD2             84.00 usec
PL2               -3.00 dB
PL12              16.08 dB
PL13              18.00 dB
SFO2        400.1316005 MHz

F2 - Processing parameters
SI                32768
SF          100.6127338 MHz
WDW                EM
SSB                 0
LB                1.00 Hz
GB                  0
PC                1.40
```

^{1}H NMR spectrum for 2-cyclopentylidene-2-iodo-1-*p*-tolylethanone 4e



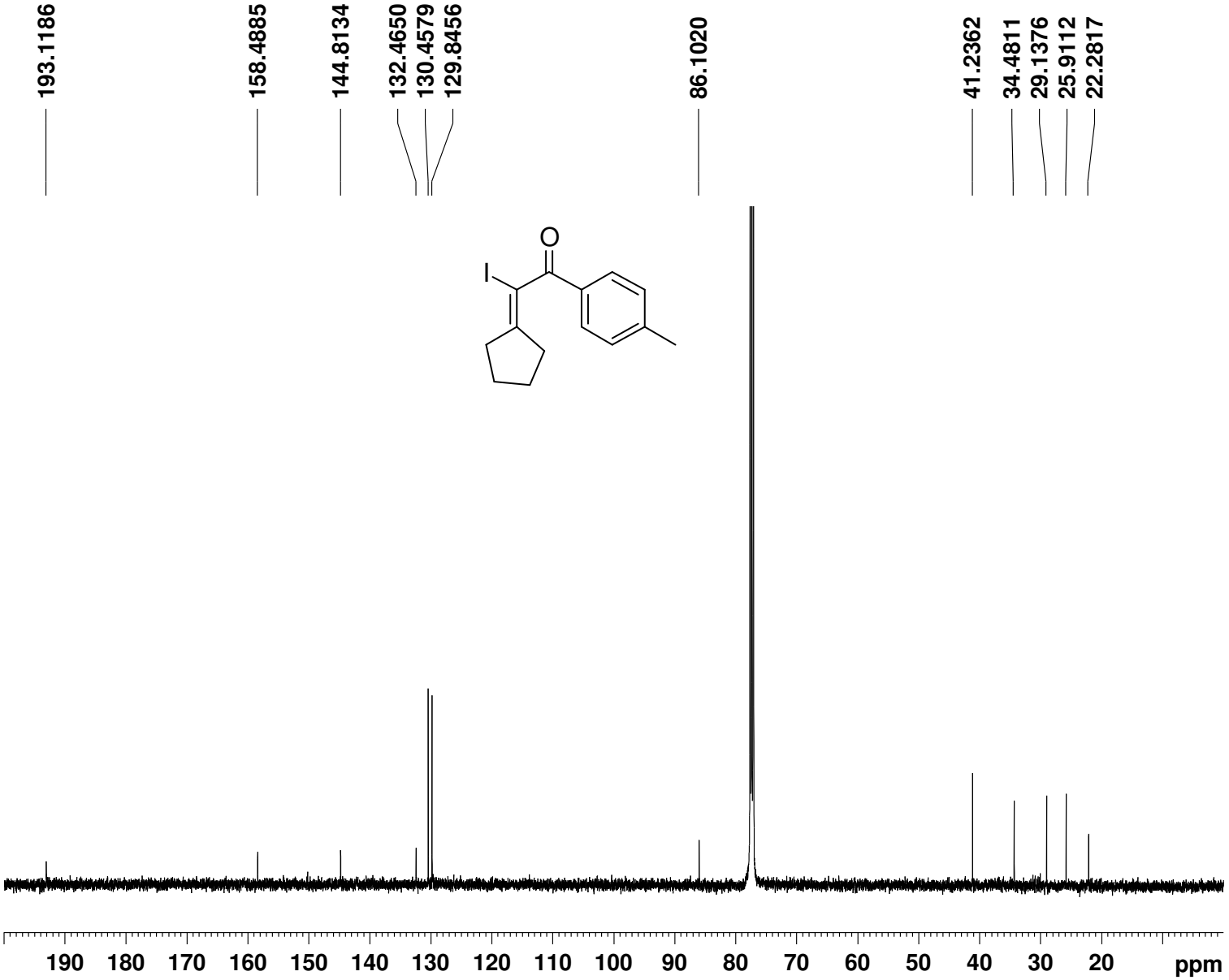

```
Current Data Parameters
NAME        ARM-1380_500
EXPNO                  2
PROCNO                 1

F2 - Acquisition Parameters
Date_           20111129
Time               13.19
INSTRUM          dpx400
PROBHD   5 mm QNP  1H/1
PULPROG            zg30
TD                65536
SOLVENT           CDCl3
NS                   16
DS                    2
SWH            8278.146 Hz
FIDRES        0.126314 Hz
AQ            3.9584243 sec
RG                228.1
DW               60.400 usec
DE                6.00 usec
TE               293.0 K
D1           1.00000000 sec
TD0                   1

======== CHANNEL f1 ========
NUC1                  1H
P1                 8.40 usec
PL1               -3.00 dB
SFO1        400.1324710 MHz

F2 - Processing parameters
SI                32768
SF          400.1300095 MHz
WDW                  EM
SSB                   0
LB                 0.30 Hz
GB                    0
PC                 1.00
```

^{13}C NMR spectrum for 2-cyclopentylidene-2-iodo-1-*p*-tolylethanone 4e




```
Current Data Parameters
NAME       ARM-1252_500
EXPNO                 3
PROCNO                1

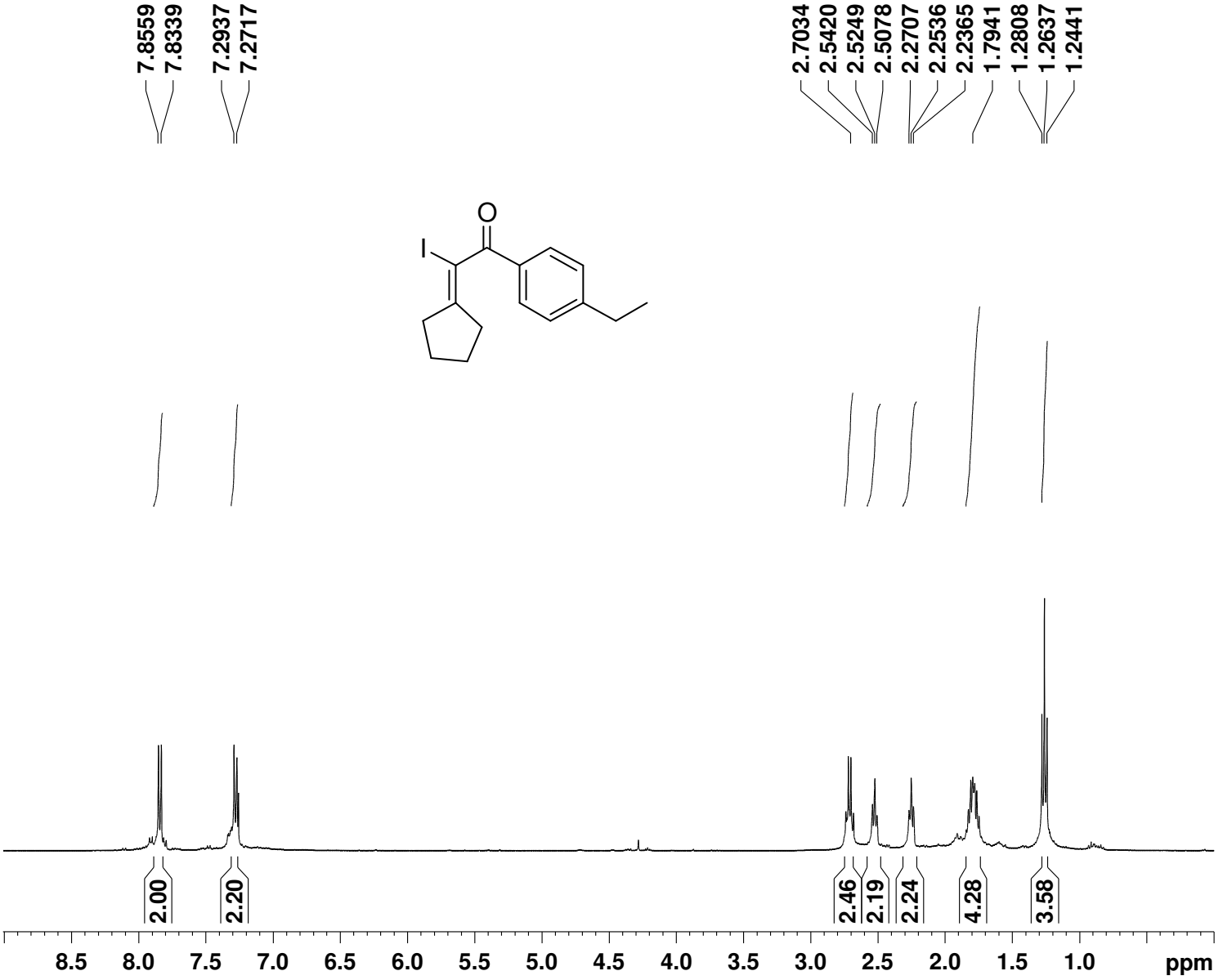
F2 - Acquisition Parameters
Date_          20111005
Time              18.07
INSTRUM           av500
PROBHD   5 mm PABBO BB-
PULPROG         zgpg30
TD                65536
SOLVENT           CDCl3
NS                 9600
DS                    4
SWH           30030.029 Hz
FIDRES         0.458222 Hz
AQ             1.0912244 sec
RG                16400
DW               16.650 usec
DE                6.00 usec
TE               303.6 K
D1            2.00000000 sec
d11           0.03000000 sec
DELTA         1.89999998 sec
TD0                300

======== CHANNEL f1 ========
NUC1               13C
P1                9.00 usec
PL1               0.00 dB
SFO1        125.7703637 MHz

======== CHANNEL f2 ========
CPDPRG2         waltz16
NUC2               1H
PCPD2            80.00 usec
PL2               0.00 dB
PL12              18.00 dB
PL13              18.00 dB
SFO2        500.1320005 MHz

F2 - Processing parameters
SI                32768
SF          125.7577384 MHz
WDW                EM
SSB                0
LB                1.00 Hz
GB                 0
PC                1.40
```

^{1}H NMR spectrum for 2-cyclopentylidene-1-(4-ethylphenyl)-2-iodoethanone 4f



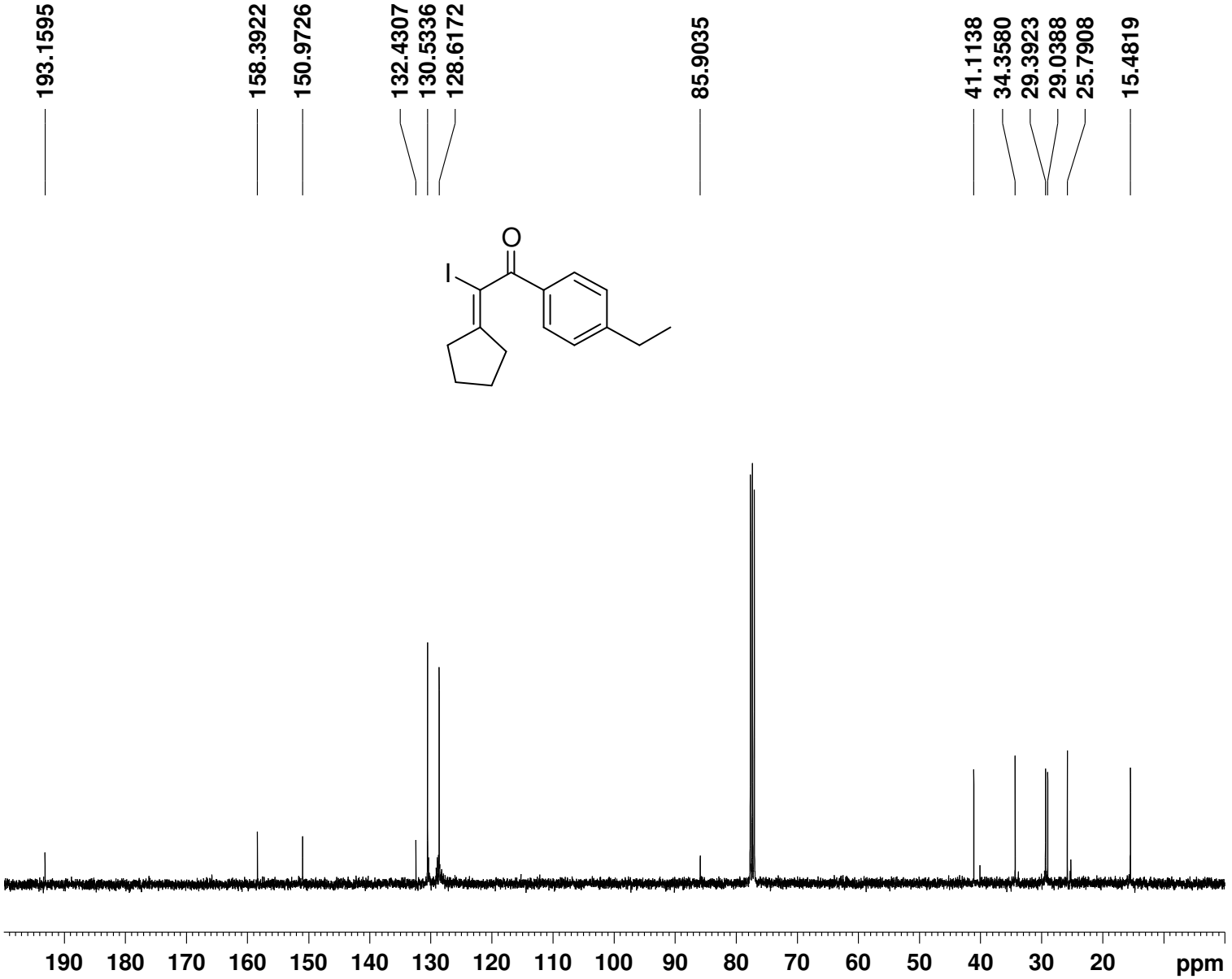

```
Current Data Parameters
NAME                  ARM-1376
EXPNO                        7
PROCNO                       1

F2 - Acquisition Parameters
Date_                 20111107
Time                      9.43
INSTRUM                 dpx400
PROBHD    5 mm QNP  1H/1
PULPROG                  zg30
TD                      65536
SOLVENT                  CDCl3
NS                          16
DS                           2
SWH                   8278.146 Hz
FIDRES                0.126314 Hz
AQ                    3.9584243 sec
RG                        161.3
DW                       60.400 usec
DE                        6.00 usec
TE                       291.2 K
D1                    1.00000000 sec
TD0                          1

======== CHANNEL f1 ========
NUC1                        1H
P1                        8.40 usec
PL1                      -3.00 dB
SFO1                400.1324710 MHz

F2 - Processing parameters
SI                       32768
SF                  400.1300099 MHz
WDW                         EM
SSB                          0
LB                        0.30 Hz
GB                           0
PC                        1.00
```

^{13}C NMR spectrum for 2-cyclopentylidene-1-(4-ethylphenyl)-2-iodoethanone 4f




```
Current Data Parameters
NAME            ARM-1376
EXPNO                  8
PROCNO                 1

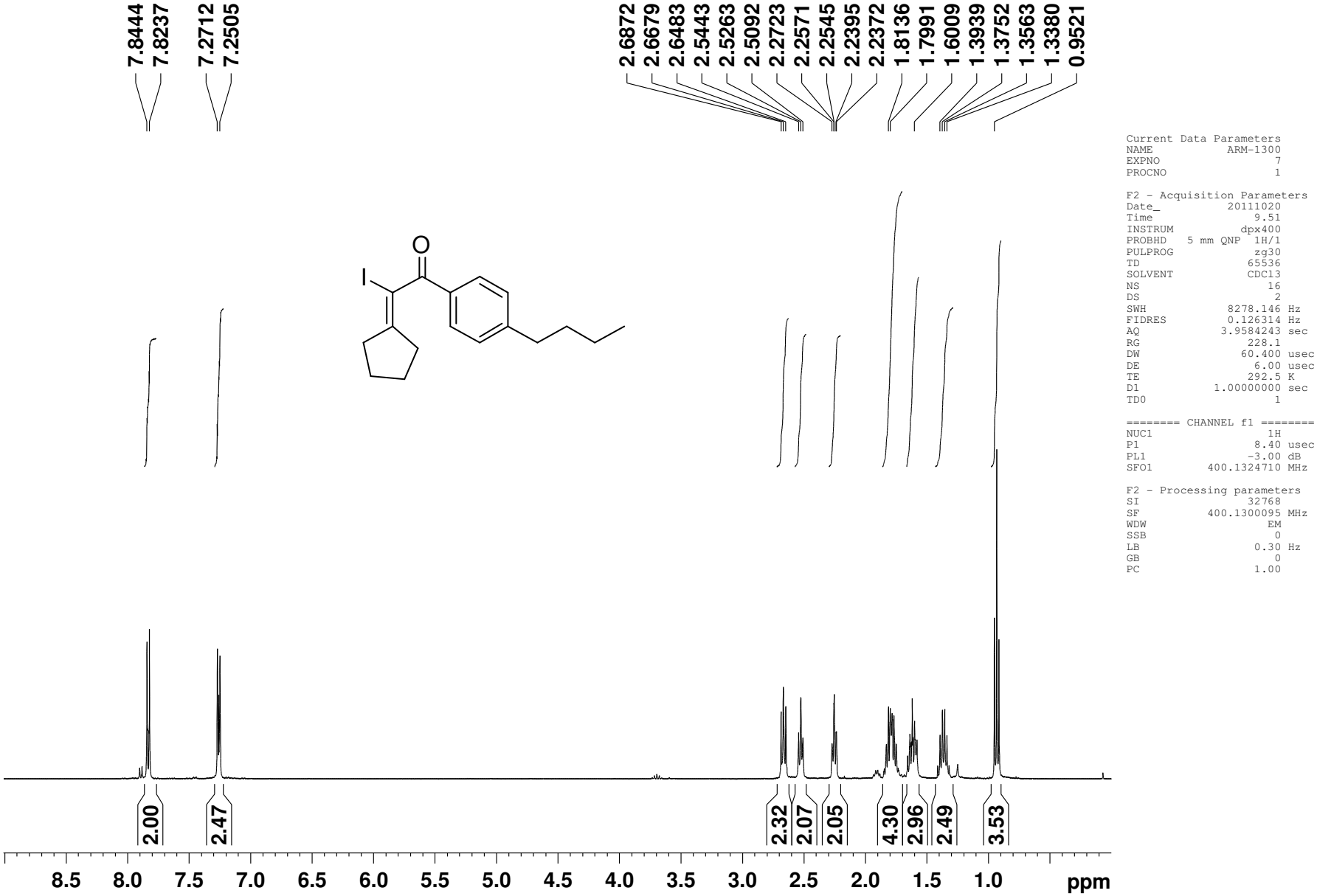
F2 - Acquisition Parameters
Date_           20111107
Time               10.26
INSTRUM           dpx400
PROBHD   5 mm QNP  1H/1
PULPROG          zgpg30
TD                65536
SOLVENT            CDC13
NS                   224
DS                     4
SWH            23980.814 Hz
FIDRES          0.365918 Hz
AQ              1.3664756 sec
RG                  6502
DW                20.850 usec
DE                 6.00 usec
TE                291.8 K
D1            2.00000000 sec
d11           0.03000000 sec
DELTA         1.89999998 sec
TD0                    8

======== CHANNEL f1 ========
NUC1                 13C
P1                  9.70 usec
PL1                -3.00 dB
SFO1         100.6228298 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                  1H
PCPD2              84.00 usec
PL2                -3.00 dB
PL12               16.08 dB
PL13               18.00 dB
SFO2         400.1316005 MHz

F2 - Processing parameters
SI                 32768
SF           100.6127359 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  1.40
```

^{1}H NMR spectrum for 1-(4-butylphenyl)-2-cyclopentylidene-2-iodoethanone 4g



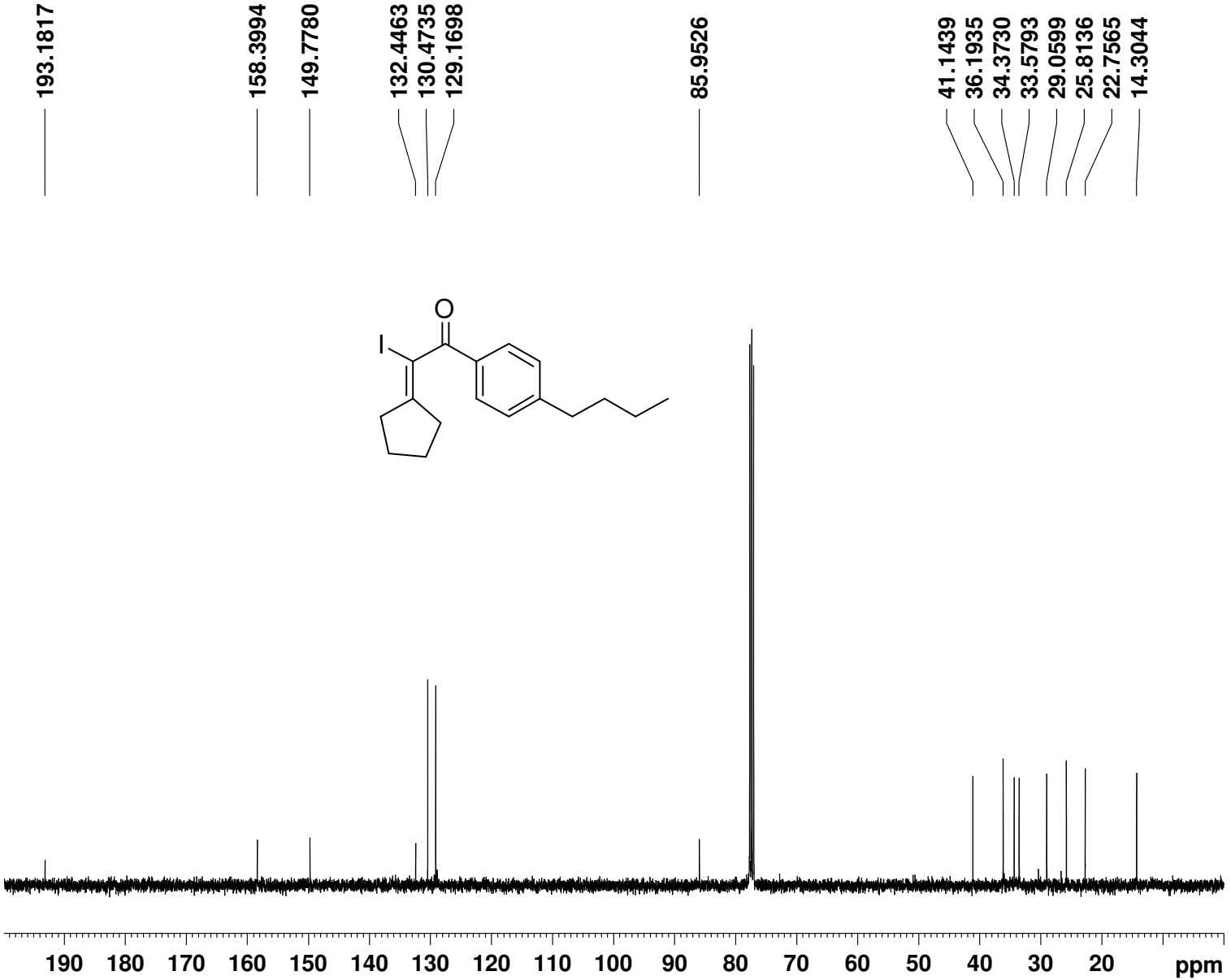

```
Current Data Parameters
NAME            ARM-1300
EXPNO                  7
PROCNO                 1

F2 - Acquisition Parameters
Date_           20111020
Time                9.51
INSTRUM           dpx400
PROBHD   5 mm QNP  1H/1
PULPROG             zg30
TD                 65536
SOLVENT            CDC13
NS                    16
DS                     2
SWH             8278.146 Hz
FIDRES          0.126314 Hz
AQ              3.9584243 sec
RG                 228.1
DW                60.400 usec
DE                 6.00 usec
TE                292.5 K
D1             1.00000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                  1H
P1                  8.40 usec
PL1                -3.00 dB
SFO1         400.1324710 MHz

F2 - Processing parameters
SI                 32768
SF           400.1300095 MHz
WDW                   EM
SSB                    0
LB                  0.30 Hz
GB                     0
PC                  1.00
```

^{13}C NMR spectrum for 1-(4-butylphenyl)-2-cyclopentylidene-2-iodoethanone 4g




```
Current Data Parameters
NAME            ARM-1300
EXPNO                  6
PROCNO                 1

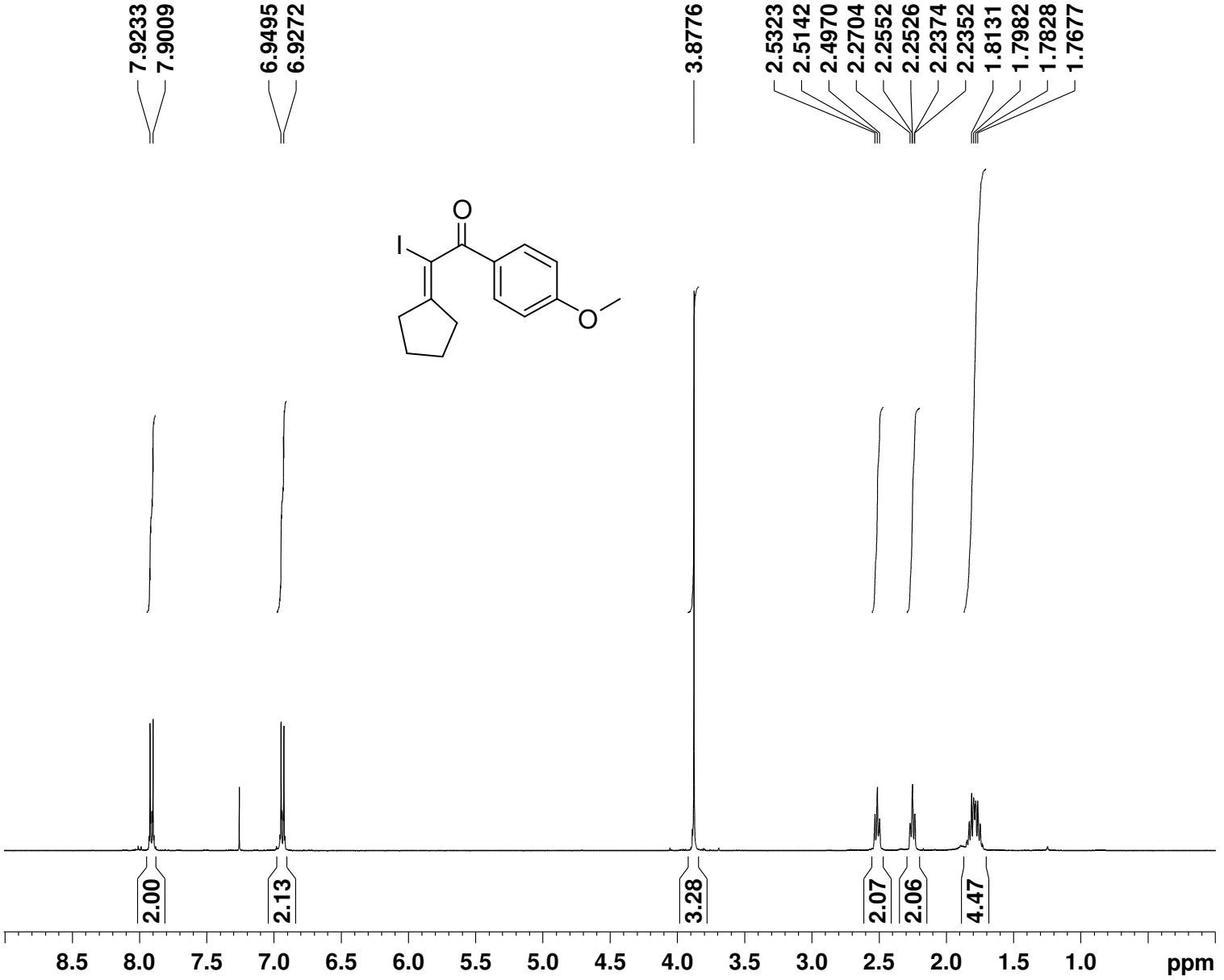
F2 - Acquisition Parameters
Date_           20110929
Time               15.18
INSTRUM          dpx400
PROBHD   5 mm QNP  1H/1
PULPROG          zgpg30
TD                65536
SOLVENT           CDCl3
NS                  256
DS                    4
SWH           23980.814 Hz
FIDRES         0.365918 Hz
AQ             1.3664756 sec
RG                 6502
DW                20.850 usec
DE                 6.00 usec
TE                292.6 K
D1            2.00000000 sec
d11           0.03000000 sec
DELTA         1.89999998 sec
TD0                   8

======== CHANNEL f1 ========
NUC1                 13C
P1                  9.70 usec
PL1                -3.00 dB
SFO1        100.6228298 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                  1H
PCPD2              84.00 usec
PL2                -3.00 dB
PL12               16.08 dB
PL13               18.00 dB
SFO2        400.1316005 MHz

F2 - Processing parameters
SI                 32768
SF          100.6127328 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  1.40
```

^{1}H NMR spectrum for 2-cyclopentylidene-2-iodo-1-(4-methoxyphenyl)ethanone 4h



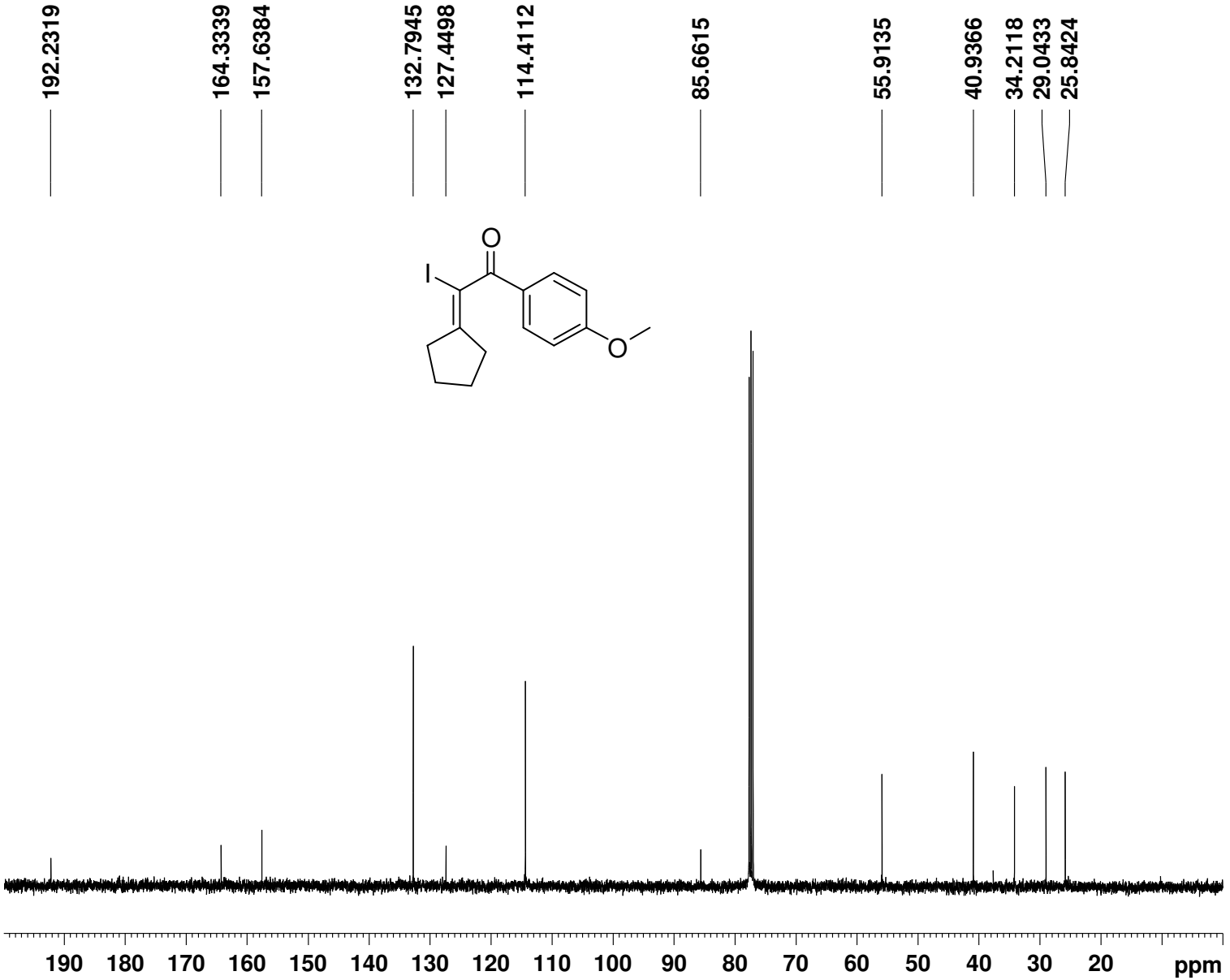

```
Current Data Parameters
NAME            ARM-1301
EXPNO                  7
PROCNO                 1

F2 - Acquisition Parameters
Date_           20111020
Time                9.44
INSTRUM           dpx400
PROBHD   5 mm QNP  1H/1
PULPROG             zg30
TD                 65536
SOLVENT            CDCl3
NS                    16
DS                     2
SWH             8278.146 Hz
FIDRES          0.126314 Hz
AQ              3.9584243 sec
RG                   362
DW                60.400 usec
DE                 6.00 usec
TE                292.5 K
D1             1.00000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                  1H
P1                  8.40 usec
PL1                -3.00 dB
SFO1         400.1324710 MHz

F2 - Processing parameters
SI                 32768
SF           400.1300097 MHz
WDW                   EM
SSB                    0
LB                  0.30 Hz
GB                     0
PC                  1.00
```

^{13}C NMR spectrum for 2-cyclopentylidene-2-iodo-1-(4-methoxyphenyl)ethanone 4h




```
Current Data Parameters
NAME            ARM-1301
EXPNO                  6
PROCNO                 1

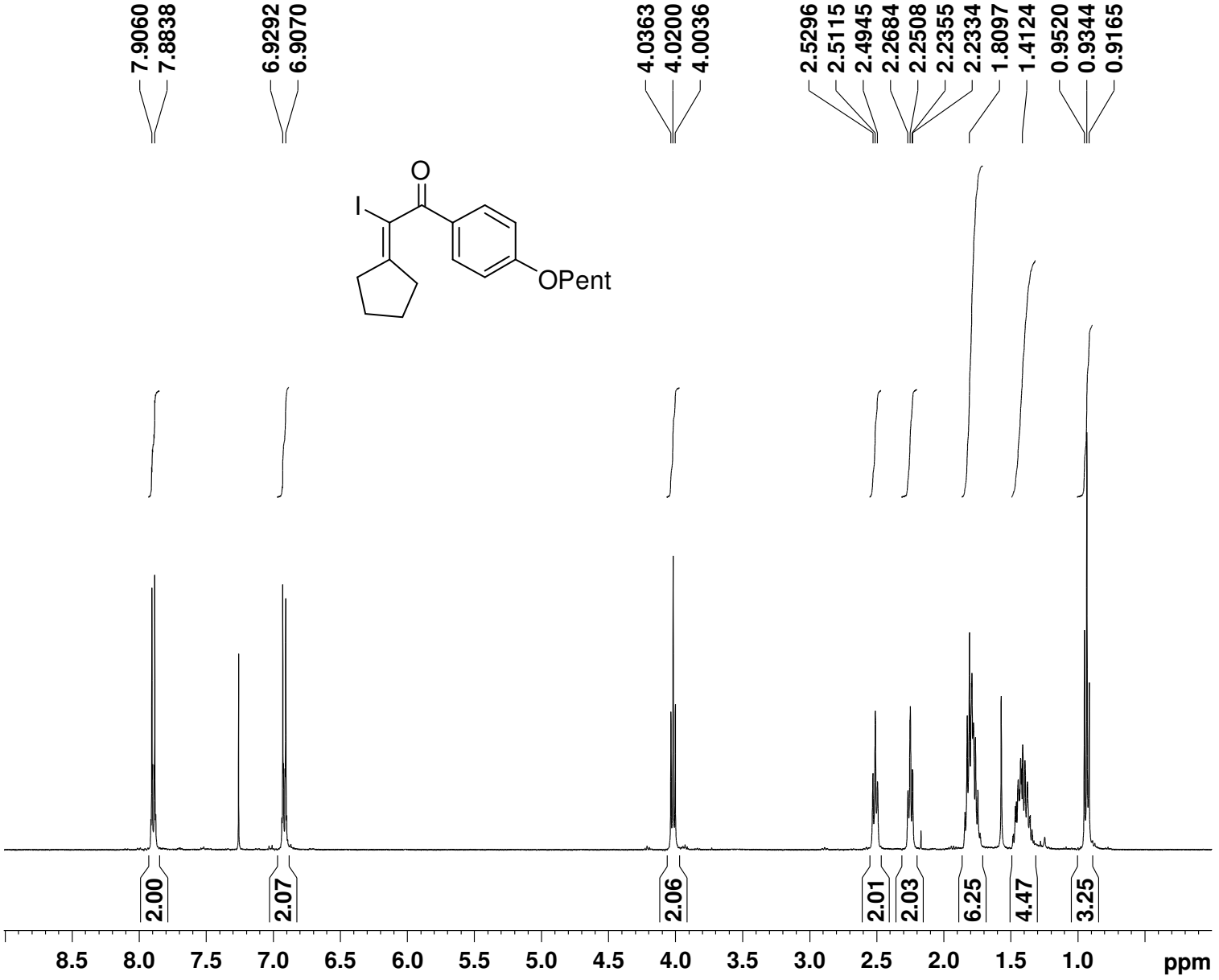
F2 - Acquisition Parameters
Date_           20110923
Time                9.57
INSTRUM           dpx400
PROBHD   5 mm QNP  1H/1
PULPROG          zgpg30
TD                65536
SOLVENT            CDCl3
NS                   256
DS                     4
SWH            23980.814 Hz
FIDRES          0.365918 Hz
AQ              1.3664756 sec
RG                18390.4
DW                20.850 usec
DE                 6.00 usec
TE                292.0 K
D1            2.00000000 sec
d11           0.03000000 sec
DELTA         1.89999998 sec
TD0                    8

======== CHANNEL f1 ========
NUC1                 13C
P1                  9.70 usec
PL1                -3.00 dB
SFO1        100.6228298 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                  1H
PCPD2              84.00 usec
PL2                -3.00 dB
PL12               16.08 dB
PL13               18.00 dB
SFO2        400.1316005 MHz

F2 - Processing parameters
SI                 32768
SF          100.6127329 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  1.40
```

^{1}H NMR spectrum for 2-cyclopentylidene-2-iodo-1-(4-(pentyloxy)phenyl)ethanone 4i



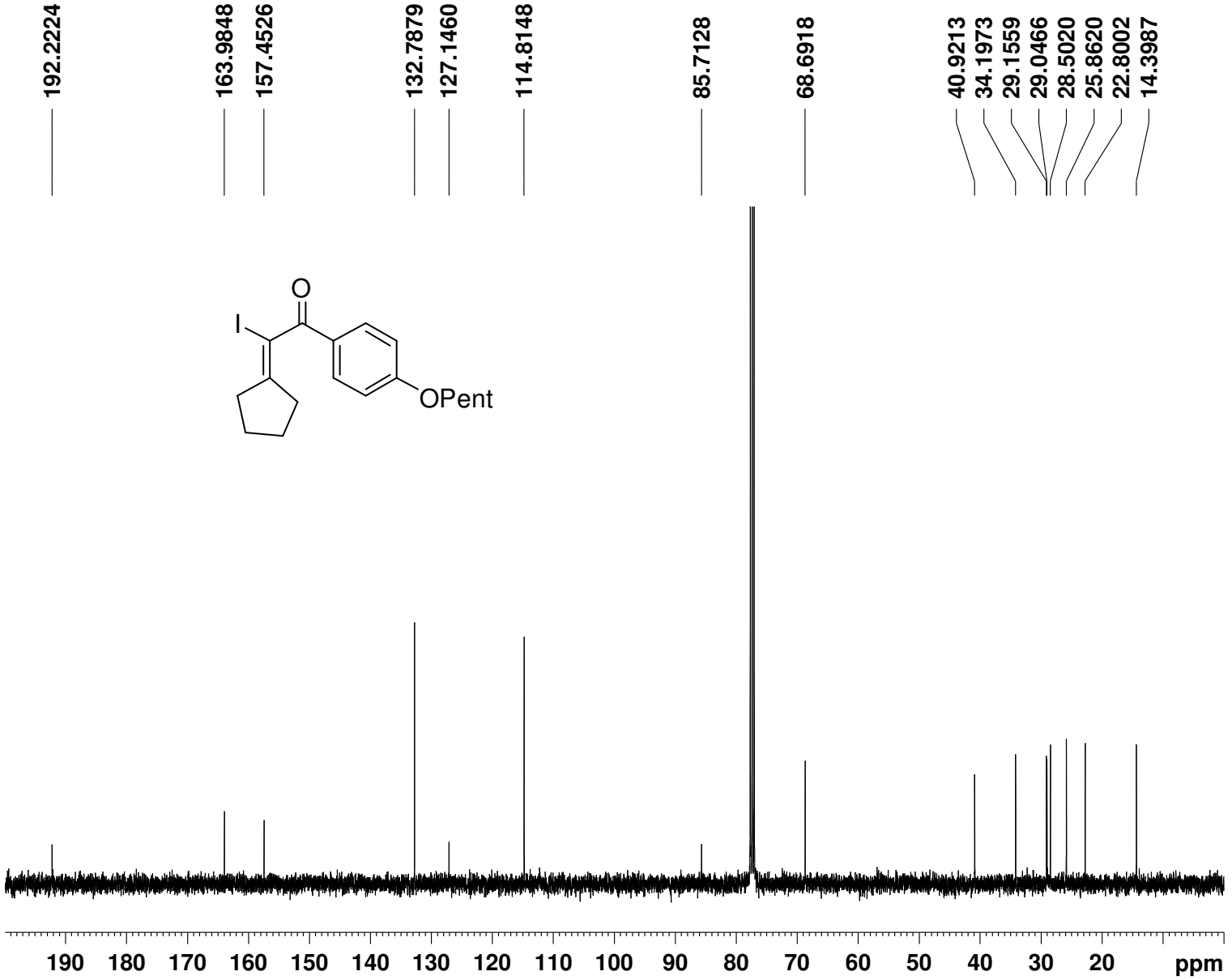

```
Current Data Parameters
NAME            ARM-1327
EXPNO                  4
PROCNO                 1

F2 - Acquisition Parameters
Date_           20111020
Time                9.56
INSTRUM           dpx400
PROBHD   5 mm QNP  1H/1
PULPROG             zg30
TD                 65536
SOLVENT            CDC13
NS                    16
DS                     2
SWH             8278.146 Hz
FIDRES          0.126314 Hz
AQ              3.9584243 sec
RG                 322.5
DW                60.400 usec
DE                 6.00 usec
TE                292.5 K
D1             1.00000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                  1H
P1                  8.40 usec
PL1                -3.00 dB
SFO1         400.1324710 MHz

F2 - Processing parameters
SI                 32768
SF           400.1300101 MHz
WDW                   EM
SSB                    0
LB                 0.30 Hz
GB                     0
PC                  1.00
```

^{13}C NMR spectrum for 2-cyclopentylidene-2-iodo-1-(4-(pentyloxy)phenyl)ethanone 4i




```
Current Data Parameters
NAME            ARM-1327
EXPNO                  5
PROCNO                 1

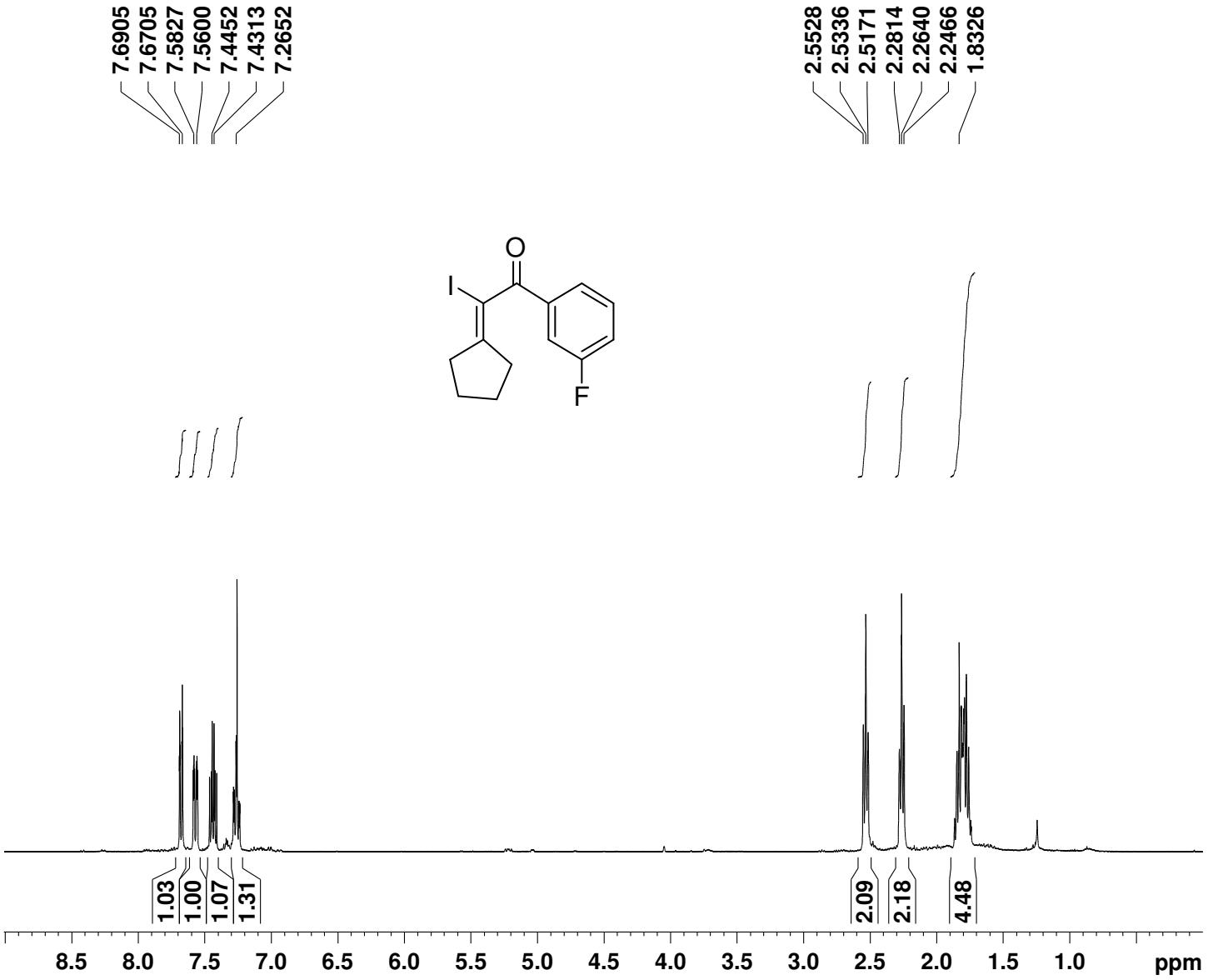
F2 - Acquisition Parameters
Date_           20111020
Time               11.14
INSTRUM          dpx400
PROBHD   5 mm QNP  1H/1
PULPROG          zgpg30
TD                65536
SOLVENT           CDCl3
NS                  256
DS                    4
SWH           23980.814 Hz
FIDRES            0.365918 Hz
AQ             1.3664756 sec
RG               11585.2
DW                20.850 usec
DE                 6.00 usec
TE                293.2 K
D1           2.00000000 sec
d11          0.03000000 sec
DELTA        1.89999998 sec
TD0                   8

======== CHANNEL f1 ========
NUC1                 13C
P1                  9.70 usec
PL1                -3.00 dB
SFO1        100.6228298 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                  1H
PCPD2              84.00 usec
PL2                -3.00 dB
PL12               16.08 dB
PL13               18.00 dB
SFO2        400.1316005 MHz

F2 - Processing parameters
SI                 32768
SF          100.6127323 MHz
WDW                   EM
SSB                   0
LB                 1.00 Hz
GB                    0
PC                 1.40
```

^{1}H NMR spectrum for 2-cyclopentylidene-1-(3-fluorophenyl)-2-iodoethanone 4j



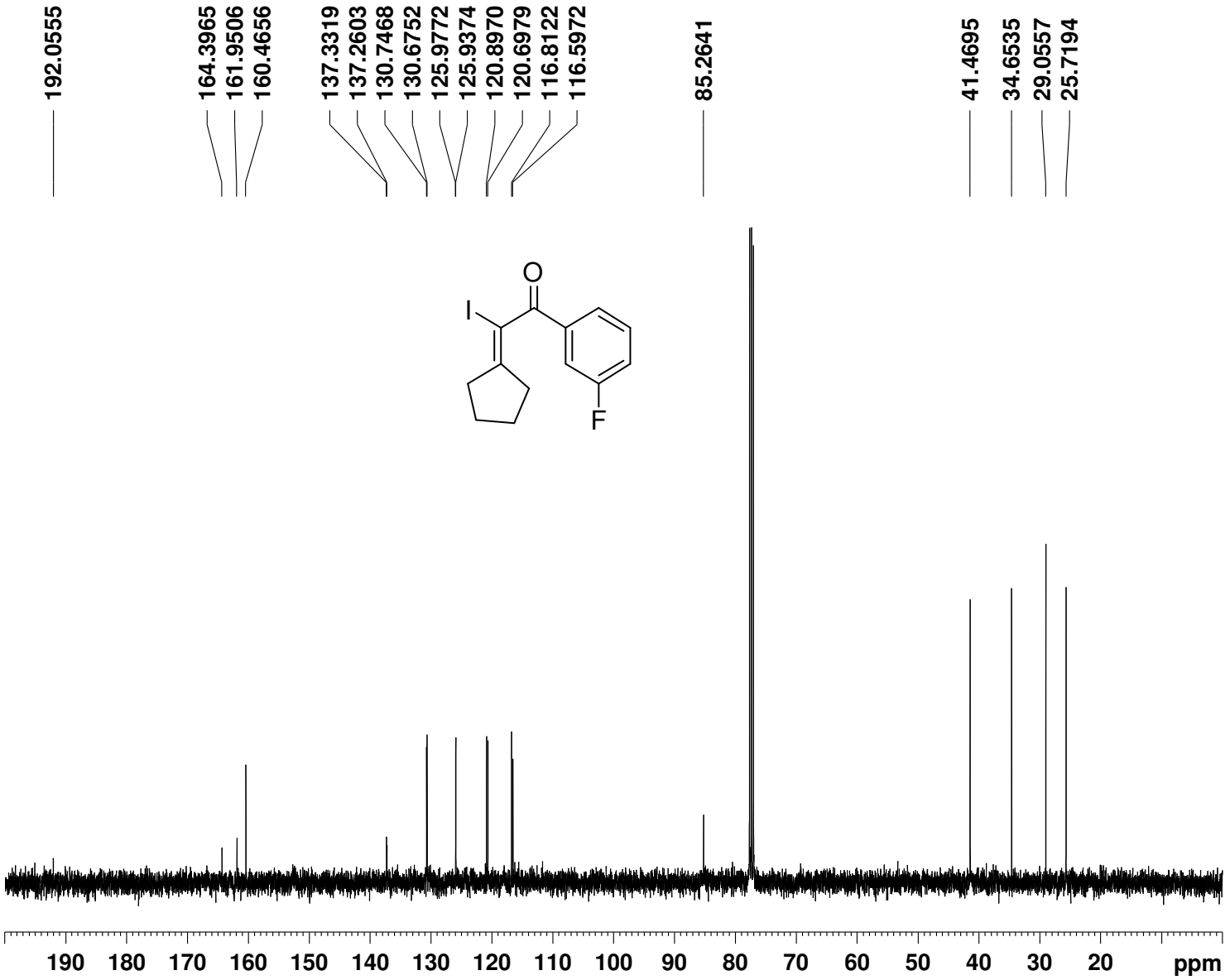

```
Current Data Parameters
NAME                 ARM-1369
EXPNO                       6
PROCNO                      1

F2 - Acquisition Parameters
Date_               20111027
Time                   16.13
INSTRUM                dpx400
PROBHD   5 mm QNP  1H/1
PULPROG                 zg30
TD                     65536
SOLVENT                CDCl3
NS                        16
DS                         2
SWH                 8278.146 Hz
FIDRES              0.126314 Hz
AQ                3.9584243 sec
RG                       256
DW                  60.400 usec
DE                   6.00 usec
TE                   292.6 K
D1                1.00000000 sec
TD0                         1

======== CHANNEL f1 ========
NUC1                       1H
P1                      8.40 usec
PL1                    -3.00 dB
SFO1             400.1324710 MHz

F2 - Processing parameters
SI                      32768
SF               400.1300103 MHz
WDW                        EM
SSB                         0
LB                   0.30 Hz
GB                          0
PC                       1.00
```

^{13}C NMR spectrum for 2-cyclopentylidene-1-(3-fluorophenyl)-2-iodoethanone 4j




```
Current Data Parameters
NAME            ARM-1369
EXPNO                  7
PROCNO                 1

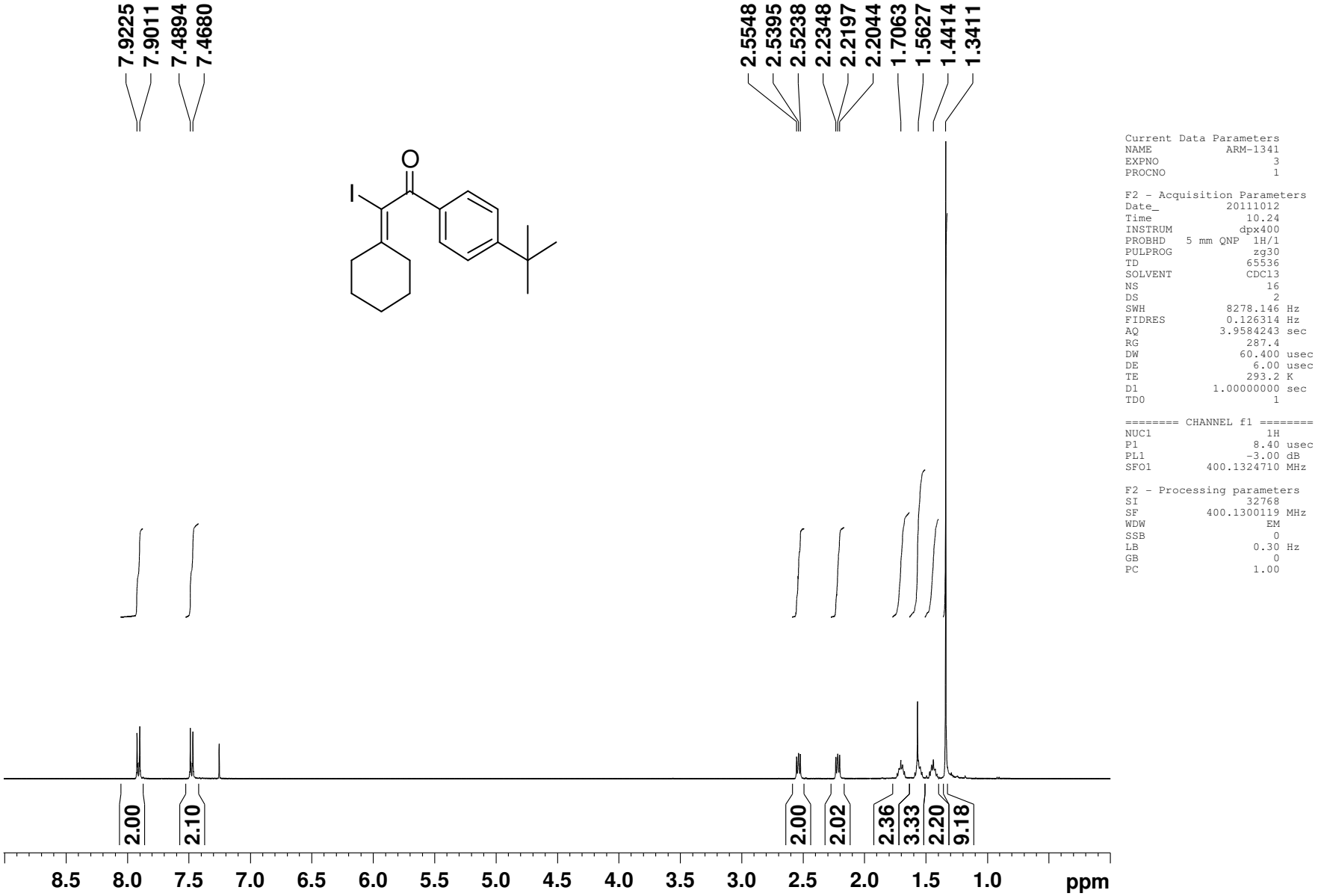
F2 - Acquisition Parameters
Date_           20111027
Time               16.16
INSTRUM          dpx400
PROBHD   5 mm QNP  1H/1
PULPROG          zgpg30
TD                65536
SOLVENT           CDCl3
NS                   96
DS                    4
SWH           23980.814 Hz
FIDRES         0.365918 Hz
AQ             1.3664756 sec
RG                 6502
DW                20.850 usec
DE                 6.00 usec
TE                293.1 K
D1            2.00000000 sec
d11           0.03000000 sec
DELTA         1.89999998 sec
TD0                   8

======== CHANNEL f1 ========
NUC1                13C
P1                 9.70 usec
PL1               -3.00 dB
SFO1        100.6228298 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                1H
PCPD2             84.00 usec
PL2               -3.00 dB
PL12              16.08 dB
PL13              18.00 dB
SFO2        400.1316005 MHz

F2 - Processing parameters
SI                 32768
SF          100.6127349 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  1.40
```

^{1}H NMR spectrum for 1-(4-*tert*-butylphenyl)-2-cyclohexylidene-2-iodoethanone 4k



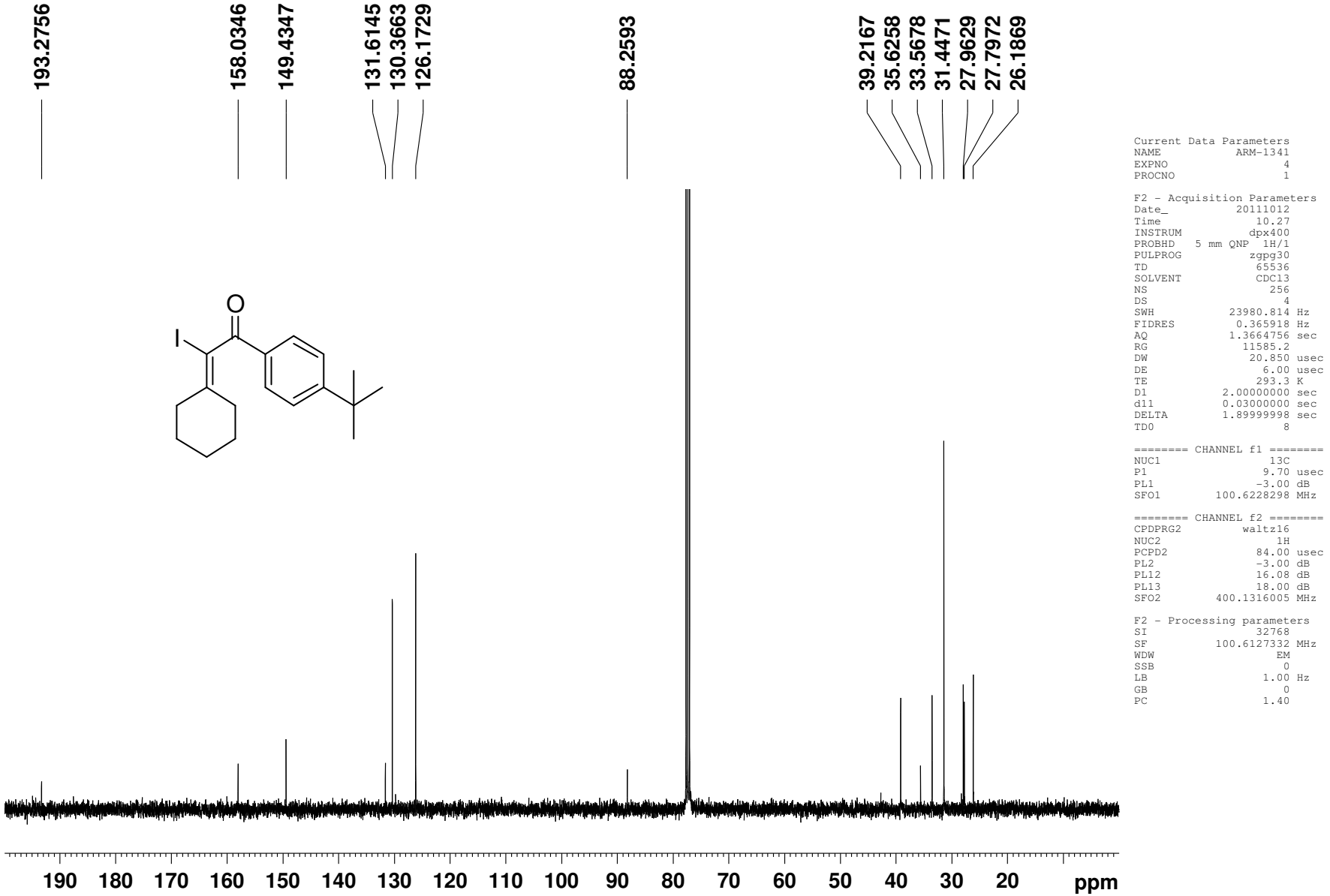

```
Current Data Parameters
NAME                  ARM-1341
EXPNO                        3
PROCNO                       1

F2 - Acquisition Parameters
Date_                 20111012
Time                     10.24
INSTRUM                  dpx400
PROBHD    5 mm QNP  1H/1
PULPROG                   zg30
TD                       65536
SOLVENT                  CDCl3
NS                          16
DS                           2
SWH                   8278.146 Hz
FIDRES                0.126314 Hz
AQ                    3.9584243 sec
RG                       287.4
DW                      60.400 usec
DE                       6.00 usec
TE                      293.2 K
D1                    1.00000000 sec
TD0                          1

======== CHANNEL f1 ========
NUC1                        1H
P1                       8.40 usec
PL1                     -3.00 dB
SFO1                400.1324710 MHz

F2 - Processing parameters
SI                       32768
SF                  400.1300119 MHz
WDW                         EM
SSB                          0
LB                       0.30 Hz
GB                           0
PC                       1.00
```

^{13}C NMR spectrum for 1-(4-*tert*-butylphenyl)-2-cyclohexylidene-2-iodoethanone 4k




```
Current Data Parameters
NAME            ARM-1341
EXPNO                  4
PROCNO                 1

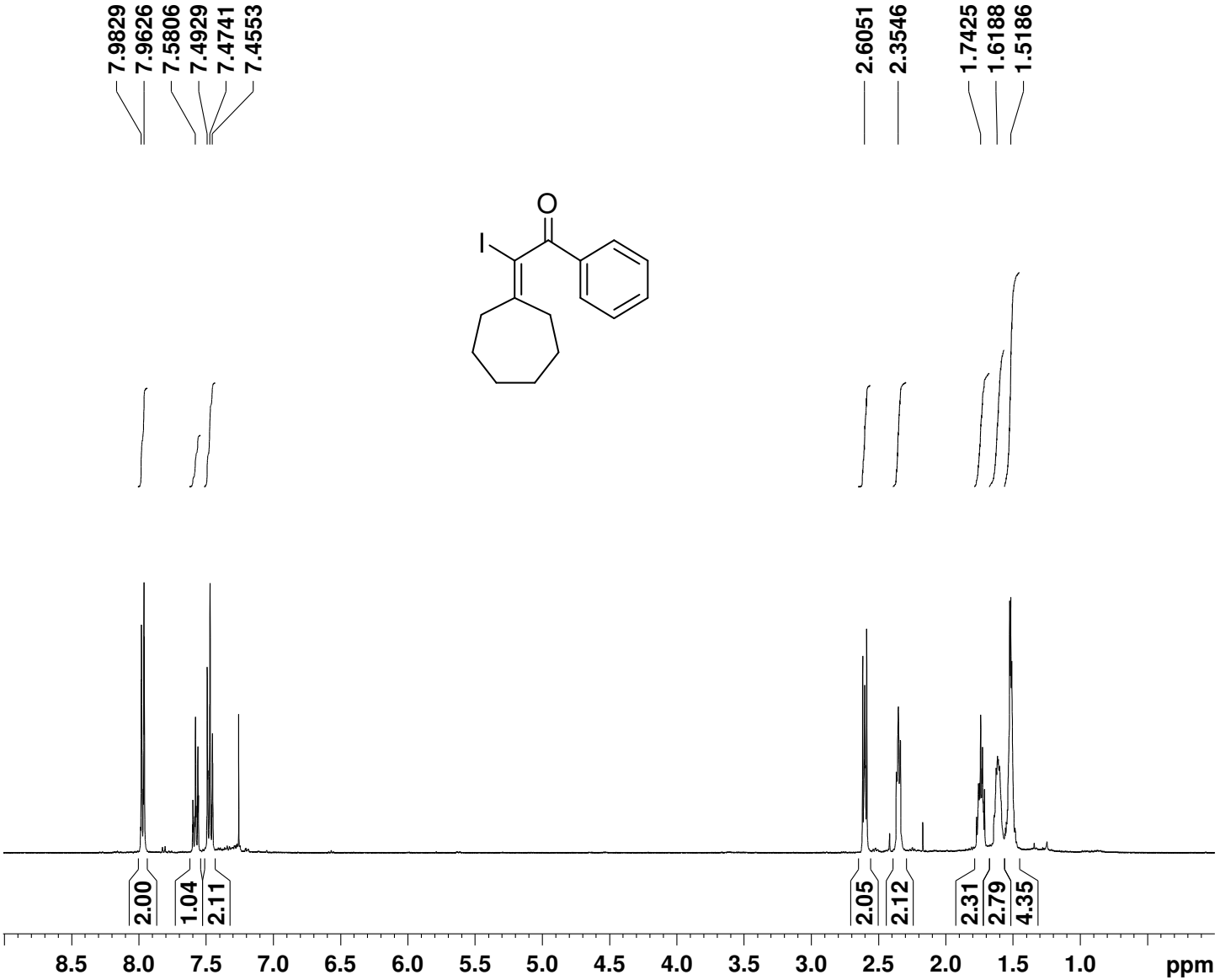
F2 - Acquisition Parameters
Date_           20111012
Time               10.27
INSTRUM          dpx400
PROBHD   5 mm QNP  1H/1
PULPROG          zgpg30
TD                65536
SOLVENT           CDCl3
NS                  256
DS                    4
SWH           23980.814 Hz
FIDRES         0.365918 Hz
AQ            1.3664756 sec
RG              11585.2
DW               20.850 usec
DE                6.00 usec
TE               293.3 K
D1           2.00000000 sec
d11          0.03000000 sec
DELTA        1.89999998 sec
TD0                   8

======== CHANNEL f1 ========
NUC1                 13C
P1                  9.70 usec
PL1                -3.00 dB
SFO1        100.6228298 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                 1H
PCPD2              84.00 usec
PL2                -3.00 dB
PL12               16.08 dB
PL13               18.00 dB
SFO2        400.1316005 MHz

F2 - Processing parameters
SI                32768
SF          100.6127332 MHz
WDW                  EM
SSB                   0
LB                 1.00 Hz
GB                    0
PC                 1.40
```

^{1}H NMR spectrum for 2-cycloheptylidene-2-iodo-1-phenylethanone 4l



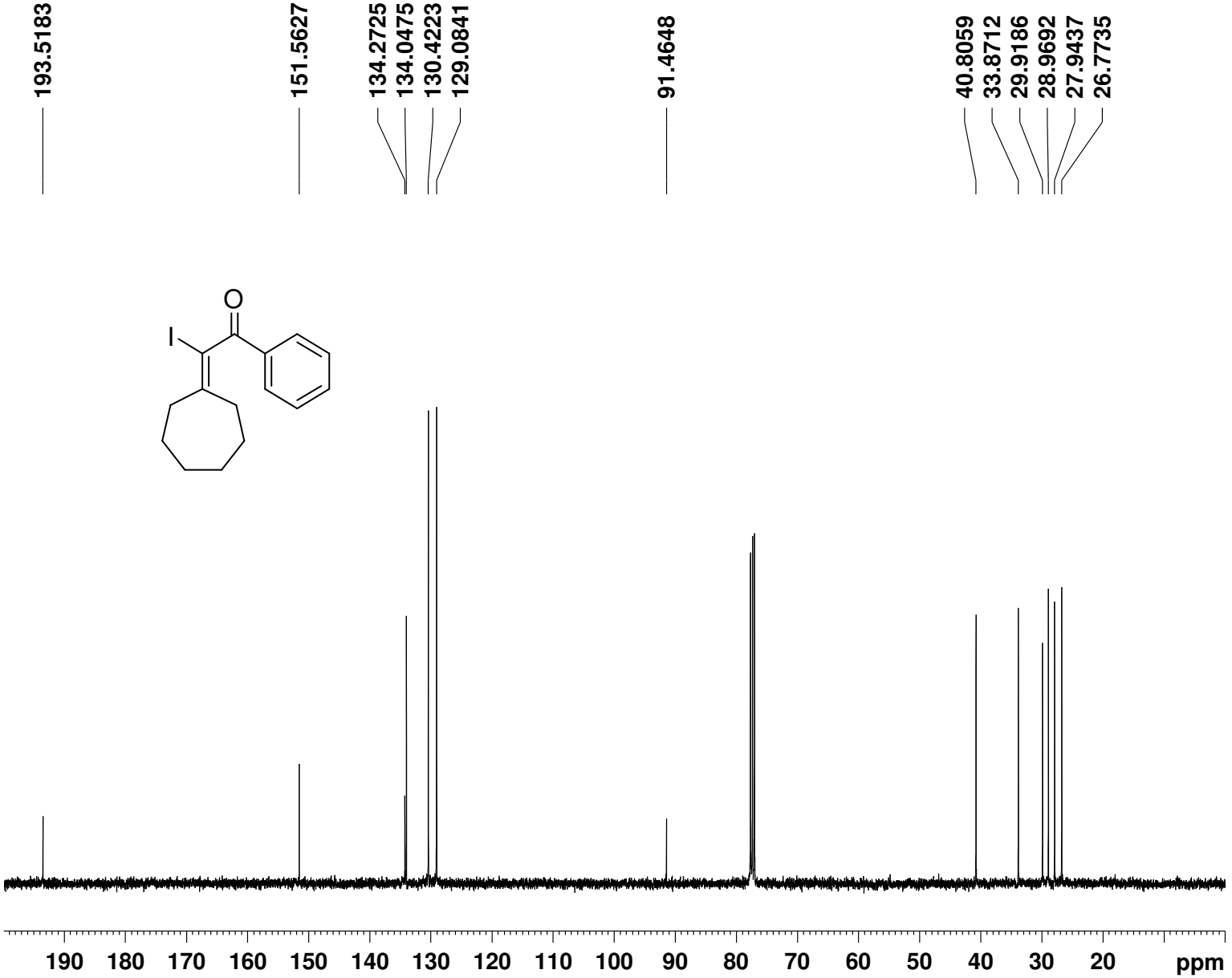

```
Current Data Parameters
NAME        ARM-1381_500
EXPNO                 50
PROCNO                 1

F2 - Acquisition Parameters
Date_           20111128
Time               15.06
INSTRUM          dpx400
PROBHD   5 mm QNP  1H/1
PULPROG            zg30
TD                65536
SOLVENT           CDCl3
NS                   16
DS                    2
SWH            8278.146 Hz
FIDRES        0.126314 Hz
AQ            3.9584243 sec
RG                228.1
DW               60.400 usec
DE                6.00 usec
TE                291.9 K
D1           1.00000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                  1H
P1                 8.40 usec
PL1               -3.00 dB
SFO1        400.1324710 MHz

F2 - Processing parameters
SI                 32768
SF          400.1300100 MHz
WDW                   EM
SSB                    0
LB                0.30 Hz
GB                     0
PC                1.00
```

^{13}C NMR spectrum for 2-cycloheptylidene-2-iodo-1-phenylethanone 4l




```
Current Data Parameters
NAME            ARM-1329
EXPNO                  5
PROCNO                 1

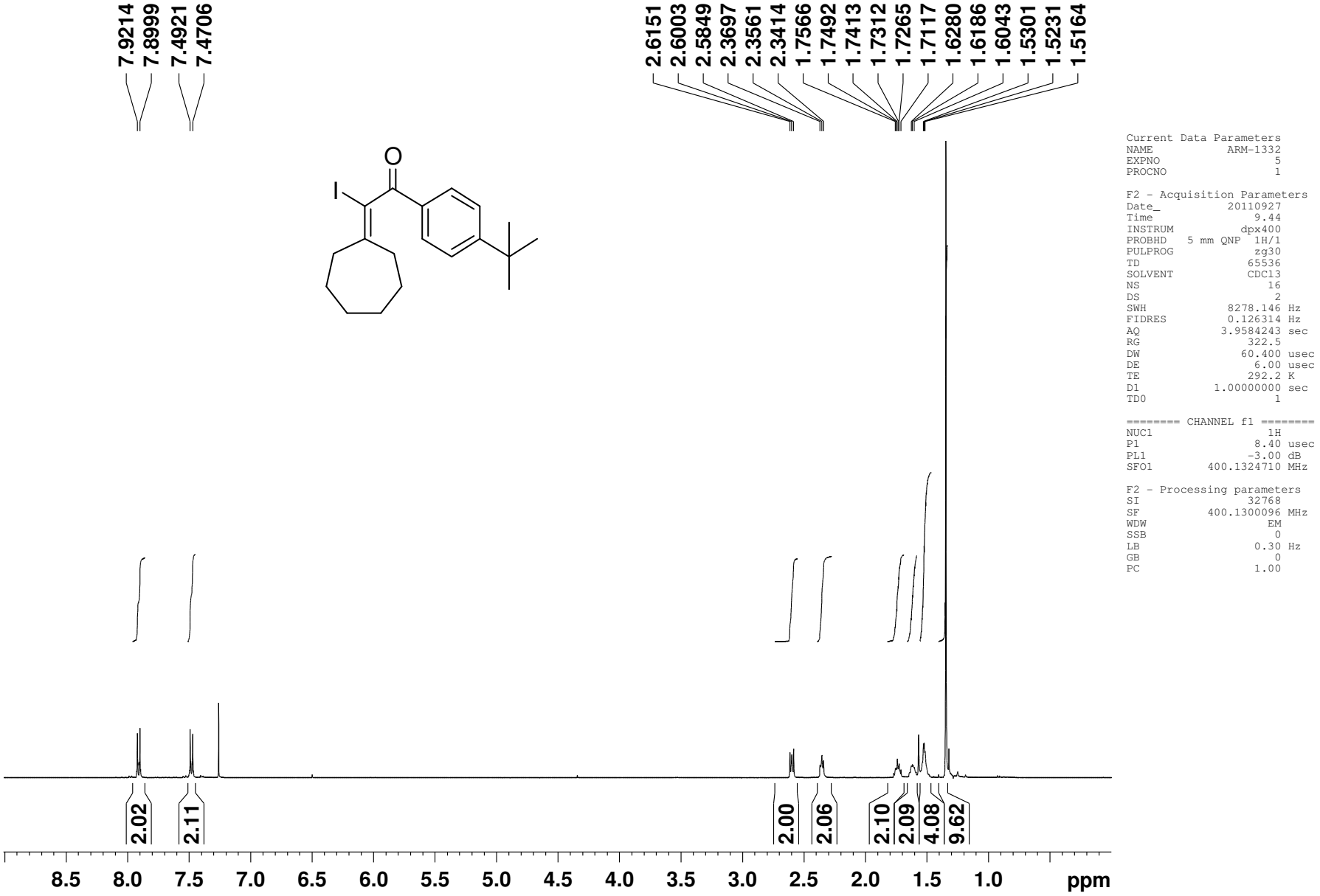
F2 - Acquisition Parameters
Date_           20110923
Time               13.57
INSTRUM            dpx400
PROBHD   5 mm QNP  1H/1
PULPROG          zgpg30
TD                 65536
SOLVENT            CDC13
NS                   256
DS                     4
SWH            23980.814 Hz
FIDRES             0.365918 Hz
AQ              1.3664756 sec
RG                 16384
DW                20.850 usec
DE                 6.00 usec
TE                292.7 K
D1             2.00000000 sec
d11            0.03000000 sec
DELTA          1.89999998 sec
TD0                    8

======== CHANNEL f1 ========
NUC1                  13C
P1                   9.70 usec
PL1                 -3.00 dB
SFO1         100.6228298 MHz

======== CHANNEL f2 ========
CPDPRG2           waltz16
NUC2                   1H
PCPD2               84.00 usec
PL2                 -3.00 dB
PL12                16.08 dB
PL13                18.00 dB
SFO2         400.1316005 MHz

F2 - Processing parameters
SI                 32768
SF           100.6127365 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  1.40
```

^{1}H NMR spectrum for 1-(4-*tert*-butylphenyl)-2-cycloheptylidene-2-iodoethanone 4m



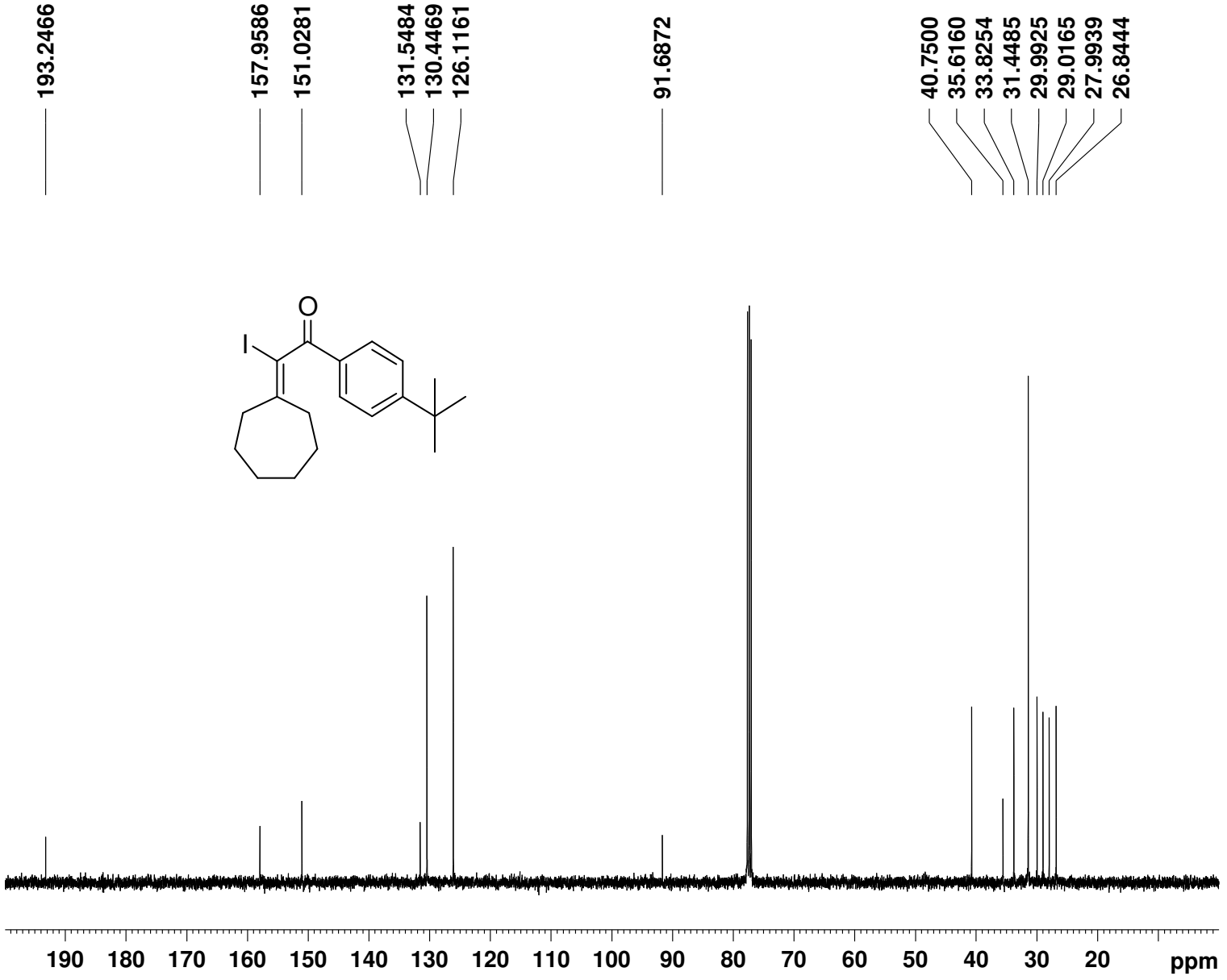

```
Current Data Parameters
NAME            ARM-1332
EXPNO                  5
PROCNO                 1

F2 - Acquisition Parameters
Date_           20110927
Time                9.44
INSTRUM           dpx400
PROBHD   5 mm QNP  1H/1
PULPROG             zg30
TD                 65536
SOLVENT            CDCl3
NS                    16
DS                     2
SWH             8278.146 Hz
FIDRES          0.126314 Hz
AQ            3.9584243 sec
RG                 322.5
DW                60.400 usec
DE                 6.00 usec
TE                292.2 K
D1           1.00000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                  1H
P1                 8.40 usec
PL1               -3.00 dB
SFO1        400.1324710 MHz

F2 - Processing parameters
SI                 32768
SF          400.1300096 MHz
WDW                   EM
SSB                    0
LB                0.30 Hz
GB                     0
PC                1.00
```

^{13}C NMR spectrum for 1-(4-*tert*-butylphenyl)-2-cycloheptylidene-2-iodoethanone 4m




```
Current Data Parameters
NAME            ARM-1307
EXPNO                  4
PROCNO                 1

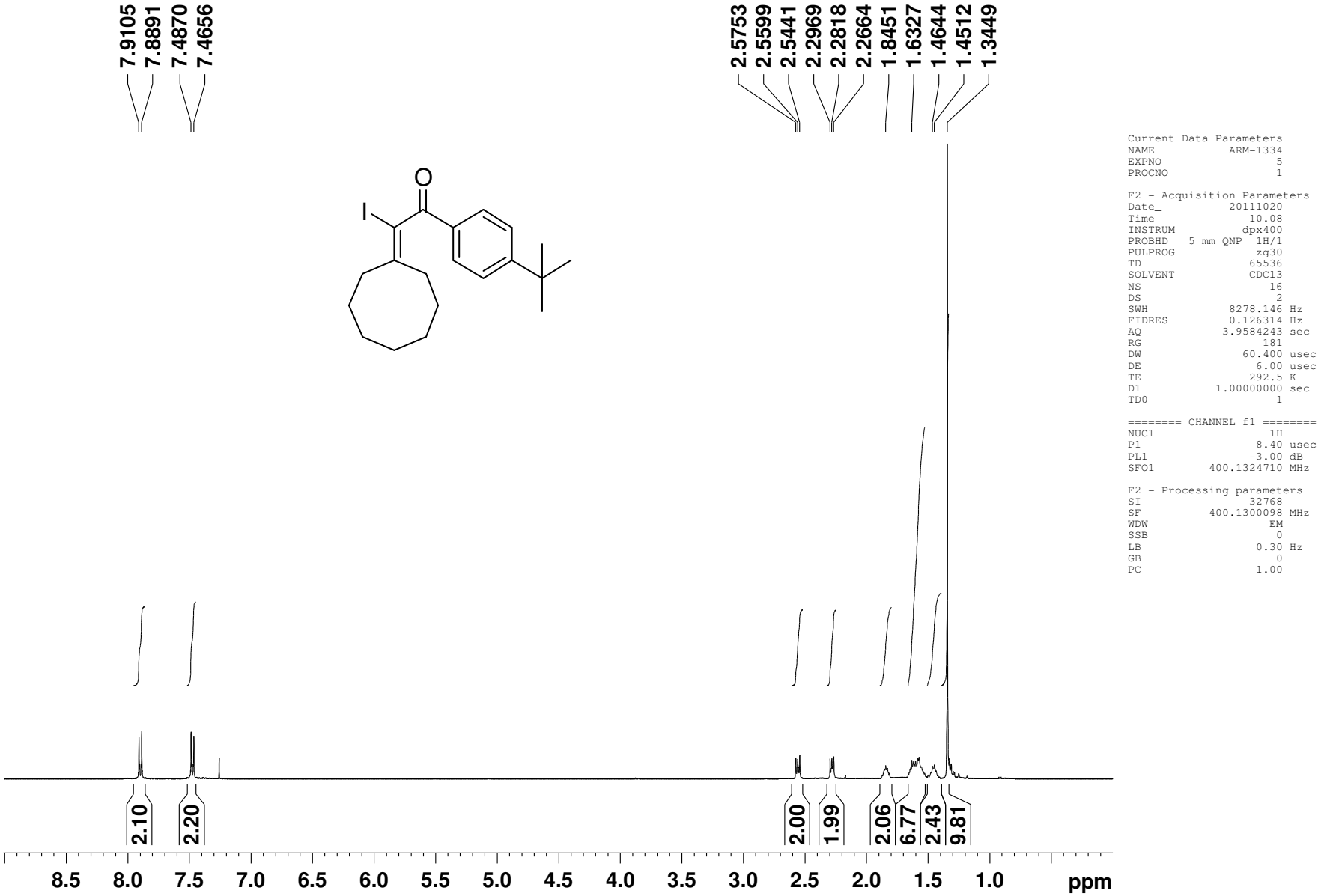
F2 - Acquisition Parameters
Date_           20111021
Time               12.01
INSTRUM           dpx400
PROBHD   5 mm QNP  1H/1
PULPROG          zgpg30
TD                65536
SOLVENT           CDCl3
NS                  256
DS                    4
SWH           23980.814 Hz
FIDRES        0.365918 Hz
AQ            1.3664756 sec
RG              20642.5
DW               20.850 usec
DE                6.00 usec
TE                293.5 K
D1           2.00000000 sec
d11          0.03000000 sec
DELTA        1.89999998 sec
TD0                   8

======== CHANNEL f1 ========
NUC1                 13C
P1                  9.70 usec
PL1                -3.00 dB
SFO1        100.6228298 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                  1H
PCPD2              84.00 usec
PL2                -3.00 dB
PL12               16.08 dB
PL13               18.00 dB
SFO2        400.1316005 MHz

F2 - Processing parameters
SI                32768
SF          100.6127338 MHz
WDW                  EM
SSB                   0
LB                 1.00 Hz
GB                    0
PC                 1.40
```

^{1}H NMR spectrum for 1-(4-*tert*-butylphenyl)-2-cyclooctylidene-2-iodoethanone 4n



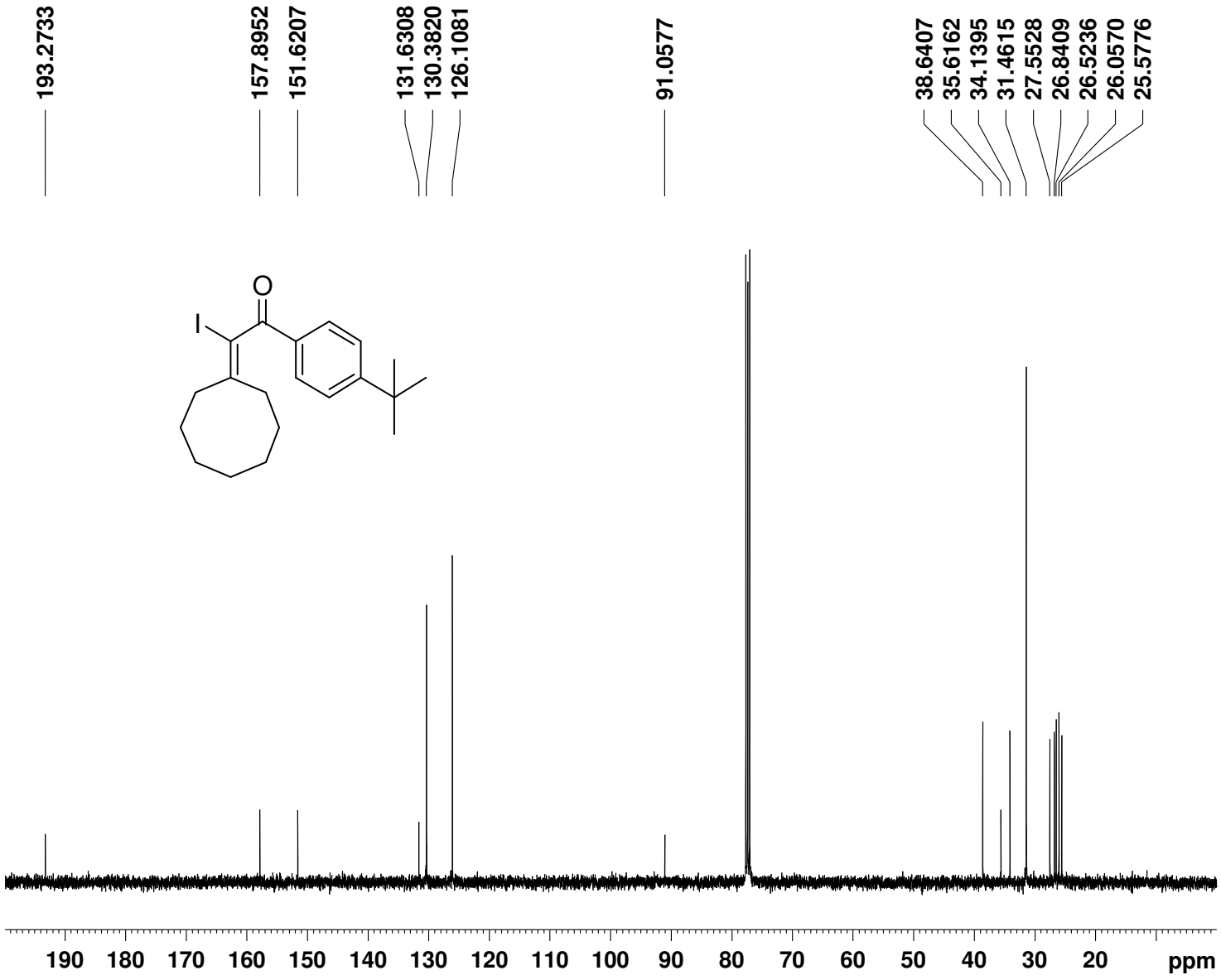

```
Current Data Parameters
NAME            ARM-1334
EXPNO                  5
PROCNO                 1

F2 - Acquisition Parameters
Date_           20111020
Time               10.08
INSTRUM          dpx400
PROBHD   5 mm QNP  1H/1
PULPROG            zg30
TD                65536
SOLVENT           CDCl3
NS                   16
DS                    2
SWH            8278.146 Hz
FIDRES         0.126314 Hz
AQ             3.9584243 sec
RG                  181
DW                60.400 usec
DE                 6.00 usec
TE                292.5 K
D1           1.00000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                  1H
P1                 8.40 usec
PL1               -3.00 dB
SFO1        400.1324710 MHz

F2 - Processing parameters
SI                 32768
SF          400.1300098 MHz
WDW                   EM
SSB                    0
LB                0.30 Hz
GB                     0
PC                1.00
```

^{13}C NMR spectrum for 1-(4-*tert*-butylphenyl)-2-cyclooctylidene-2-iodoethanone 4n




```
Current Data Parameters
NAME            ARM-1334
EXPNO                  6
PROCNO                 1

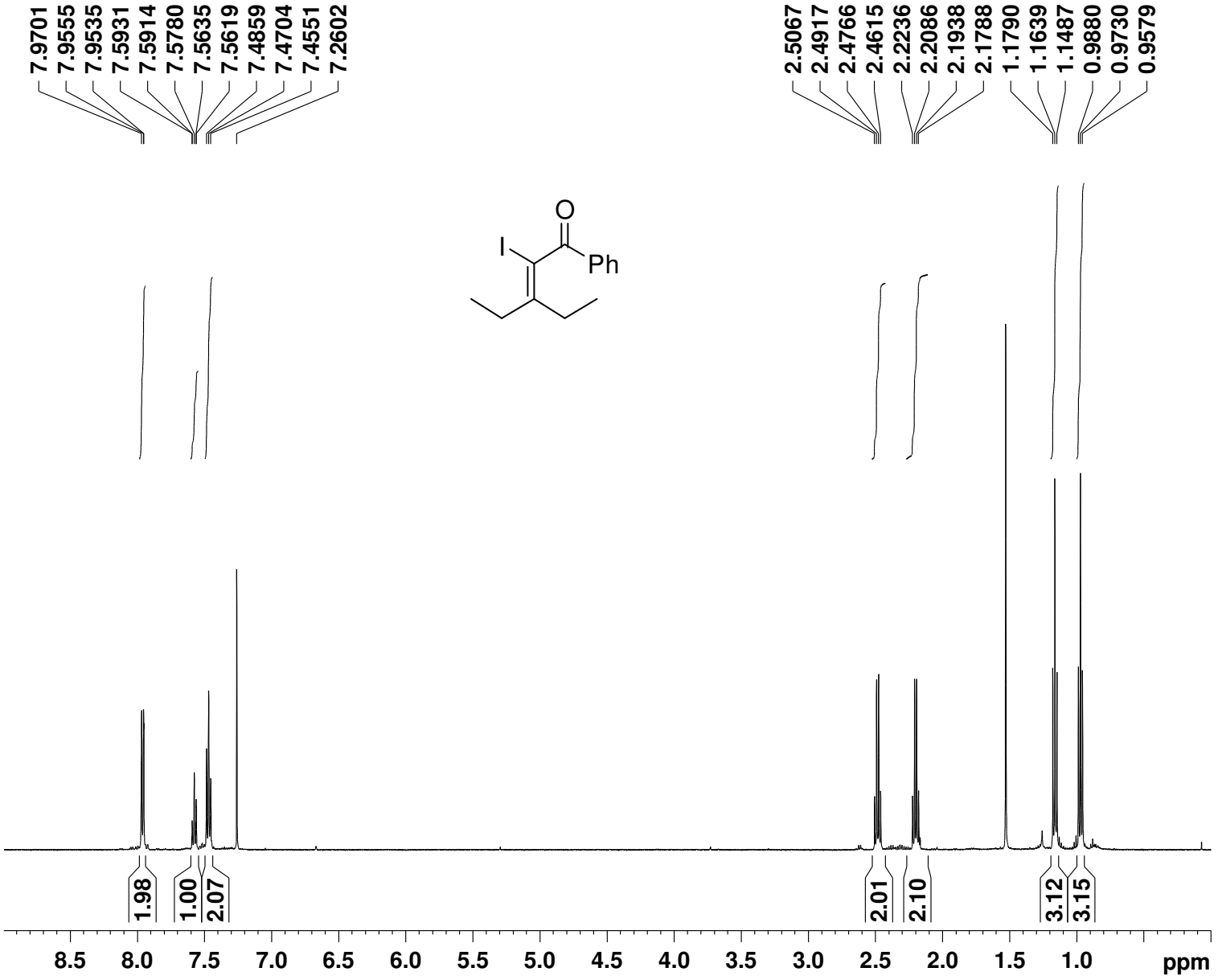
F2 - Acquisition Parameters
Date_           20111020
Time               10.11
INSTRUM          dpx400
PROBHD   5 mm QNP  1H/1
PULPROG          zgpg30
TD                65536
SOLVENT           CDCl3
NS                  256
DS                    4
SWH           23980.814 Hz
FIDRES         0.365918 Hz
AQ            1.3664756 sec
RG               9195.2
DW               20.850 usec
DE                6.00 usec
TE               292.9 K
D1           2.00000000 sec
d11          0.03000000 sec
DELTA        1.89999998 sec
TD0                   8

======== CHANNEL f1 ========
NUC1                 13C
P1                  9.70 usec
PL1                -3.00 dB
SFO1        100.6228298 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                  1H
PCPD2              84.00 usec
PL2                -3.00 dB
PL12               16.08 dB
PL13               18.00 dB
SFO2        400.1316005 MHz

F2 - Processing parameters
SI                 32768
SF          100.6127331 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  1.40
```

^{1}H NMR spectrum for 3-ethyl-2-iodo-1-phenylpent-2-en-1-one 4o



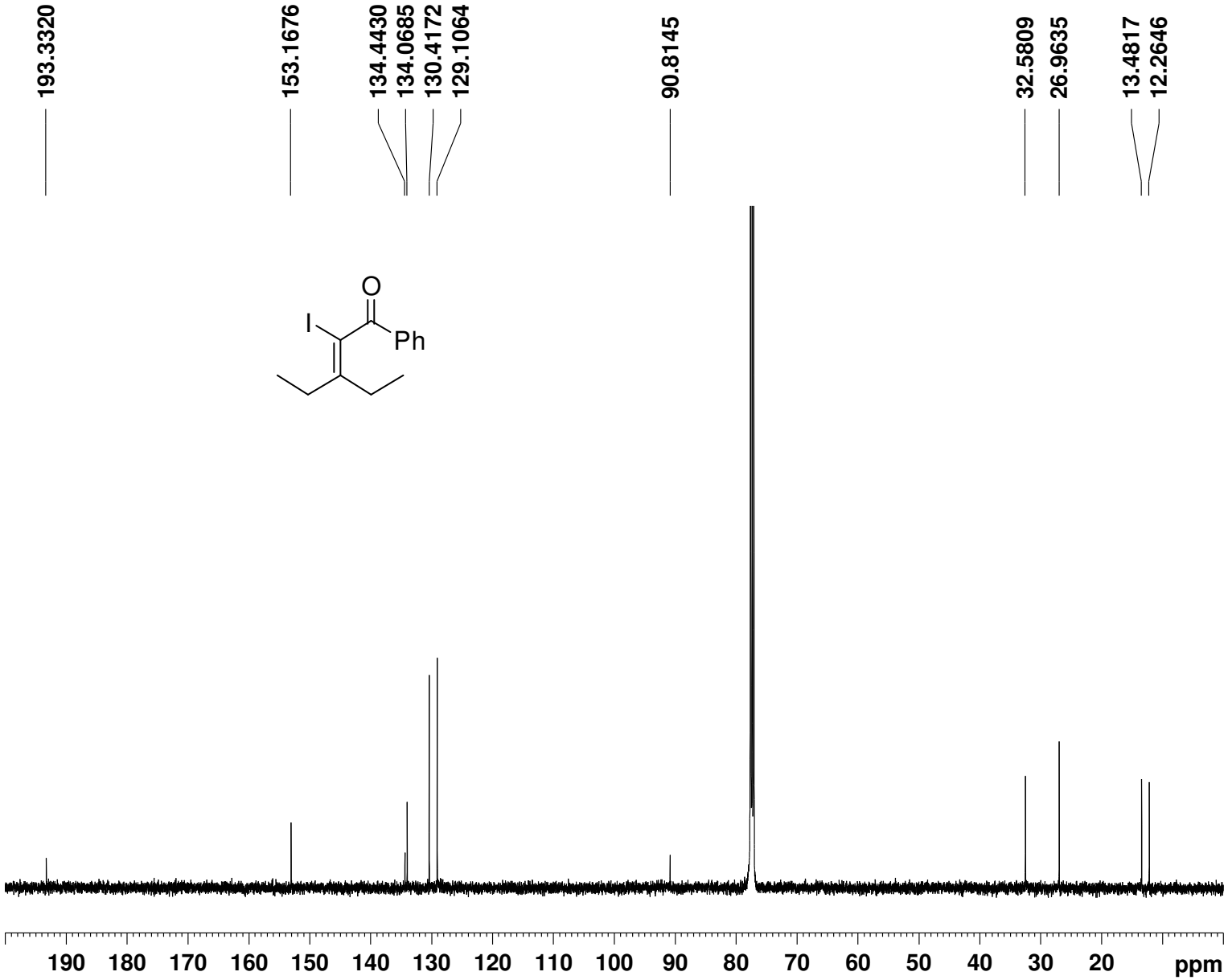

```
Current Data Parameters
NAME       ARM-1330_500
EXPNO                 1
PROCNO                1

F2 - Acquisition Parameters
Date_          20111018
Time              16.39
INSTRUM           av500
PROBHD   5 mm PABBO BB-
PULPROG            zg30
TD                65536
SOLVENT           CDCl3
NS                   16
DS                    2
SWH           10330.578 Hz
FIDRES         0.157632 Hz
AQ             3.1719923 sec
RG                 1150
DW                48.400 usec
DE                 6.00 usec
TE                303.9 K
D1            2.00000000 sec
TD0                   1

======== CHANNEL f1 ========
NUC1                 1H
P1                 9.70 usec
PL1                0.10 dB
SFO1        500.1330885 MHz

F2 - Processing parameters
SI                32768
SF          500.1300138 MHz
WDW                  EM
SSB                   0
LB                 0.30 Hz
GB                    0
PC                 1.00
```

^{13}C NMR spectrum for 3-ethyl-2-iodo-1-phenylpent-2-en-1-one 4o




```
Current Data Parameters
NAME        ARM-1330_500
EXPNO                  2
PROCNO                 1

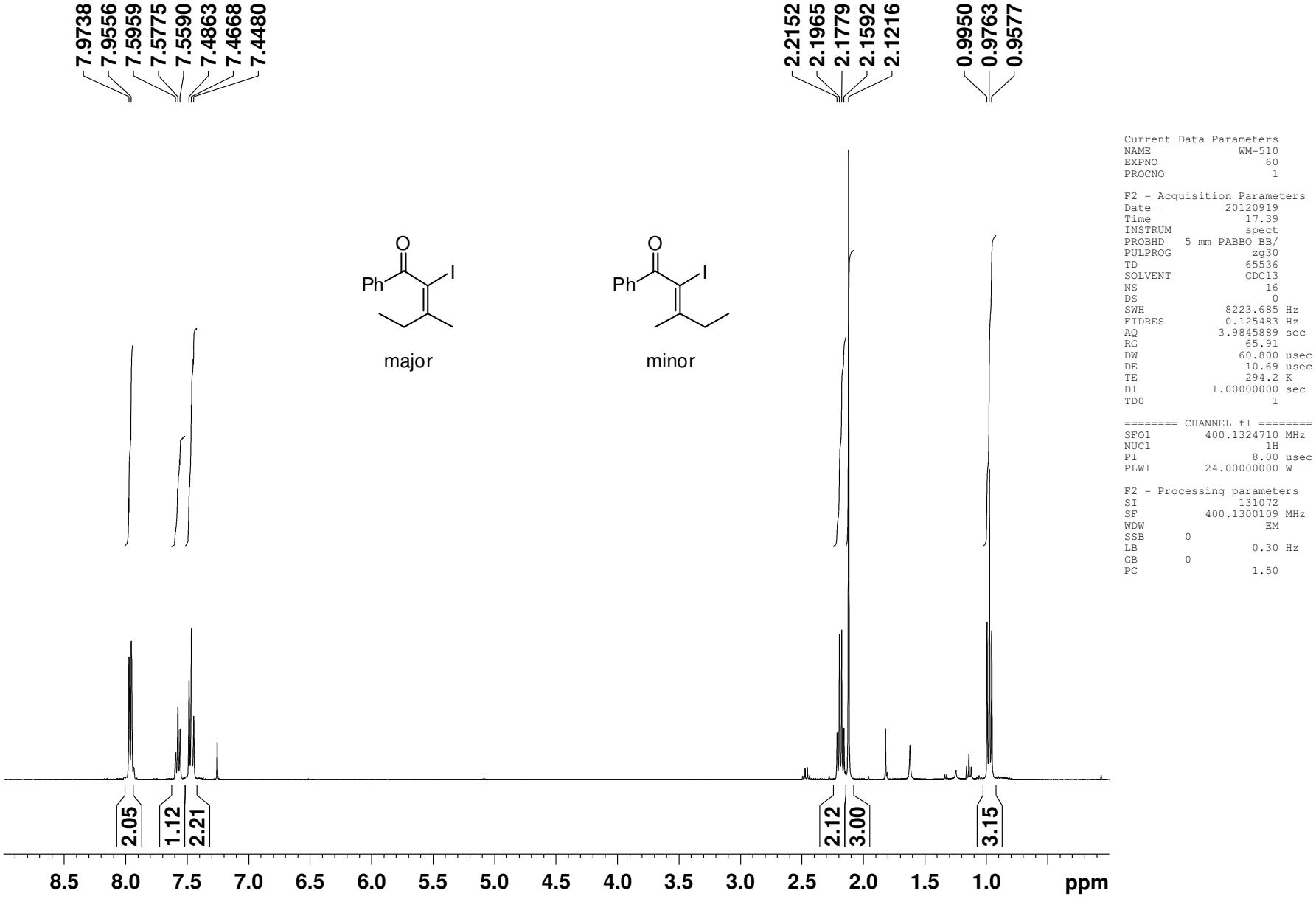
F2 - Acquisition Parameters
Date_           20111018
Time               16.48
INSTRUM            av500
PROBHD   5 mm PABBO BB-
PULPROG          zgpg30
TD                65536
SOLVENT           CDCl3
NS                 8192
DS                    4
SWH           30030.029 Hz
FIDRES         0.458222 Hz
AQ             1.0912244 sec
RG                16400
DW               16.650 usec
DE                6.00 usec
TE               308.3 K
D1            2.00000000 sec
d11           0.03000000 sec
DELTA         1.89999998 sec
TD0                  256

======== CHANNEL f1 ========
NUC1                 13C
P1                9.00 usec
PL1               0.00 dB
SFO1        125.7703637 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                 1H
PCPD2            80.00 usec
PL2               0.00 dB
PL12             18.00 dB
PL13             18.00 dB
SFO2        500.1320005 MHz

F2 - Processing parameters
SI                32768
SF          125.7577364 MHz
WDW                  EM
SSB                   0
LB                1.00 Hz
GB                    0
PC                1.40
```

^{1}H NMR spectrum for (*E*)-2-iodo-3-methyl-1-phenylpent-2-en-1-one 4p



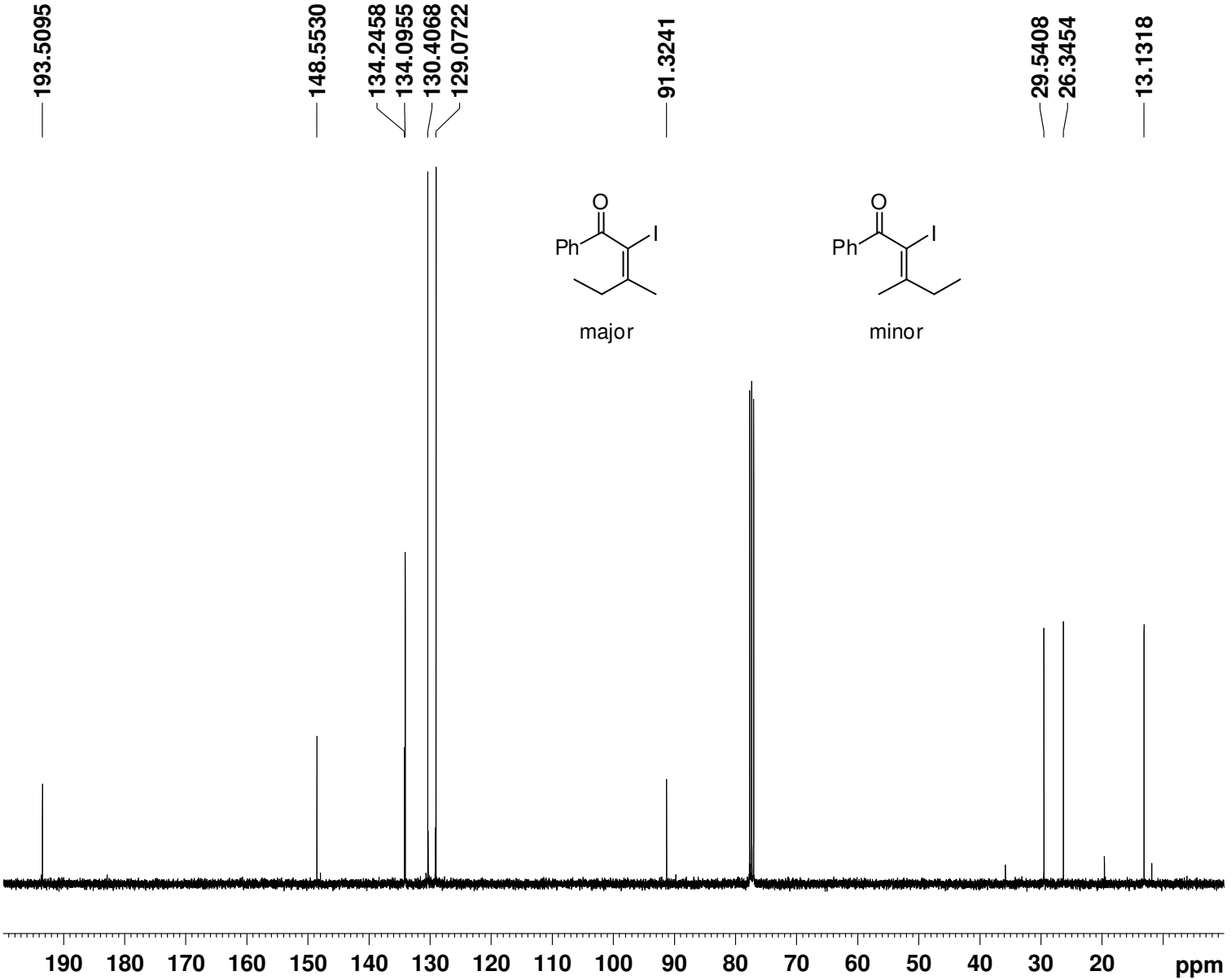

```
Current Data Parameters
NAME                  WM-510
EXPNO                     60
PROCNO                     1

F2 - Acquisition Parameters
Date_               20120919
Time                   17.39
INSTRUM                spect
PROBHD    5 mm PABBO BB/
PULPROG                zg30
TD                    65536
SOLVENT               CDCl3
NS                       16
DS                        0
SWH                8223.685 Hz
FIDRES             0.125483 Hz
AQ                 3.9845889 sec
RG                     65.91
DW                    60.800 usec
DE                    10.69 usec
TE                    294.2 K
D1                1.00000000 sec
TD0                        1

======== CHANNEL f1 ========
SFO1             400.1324710 MHz
NUC1                       1H
P1                       8.00 usec
PLW1            24.00000000 W

F2 - Processing parameters
SI                    131072
SF               400.1300109 MHz
WDW                       EM
SSB          0
LB                     0.30 Hz
GB           0
PC                     1.50
```

^{13}C NMR spectrum for (*E*)-2-iodo-3-methyl-1-phenylpent-2-en-1-one 4p




```
Current Data Parameters
NAME                 WM-510
EXPNO                    61
PROCNO                    1

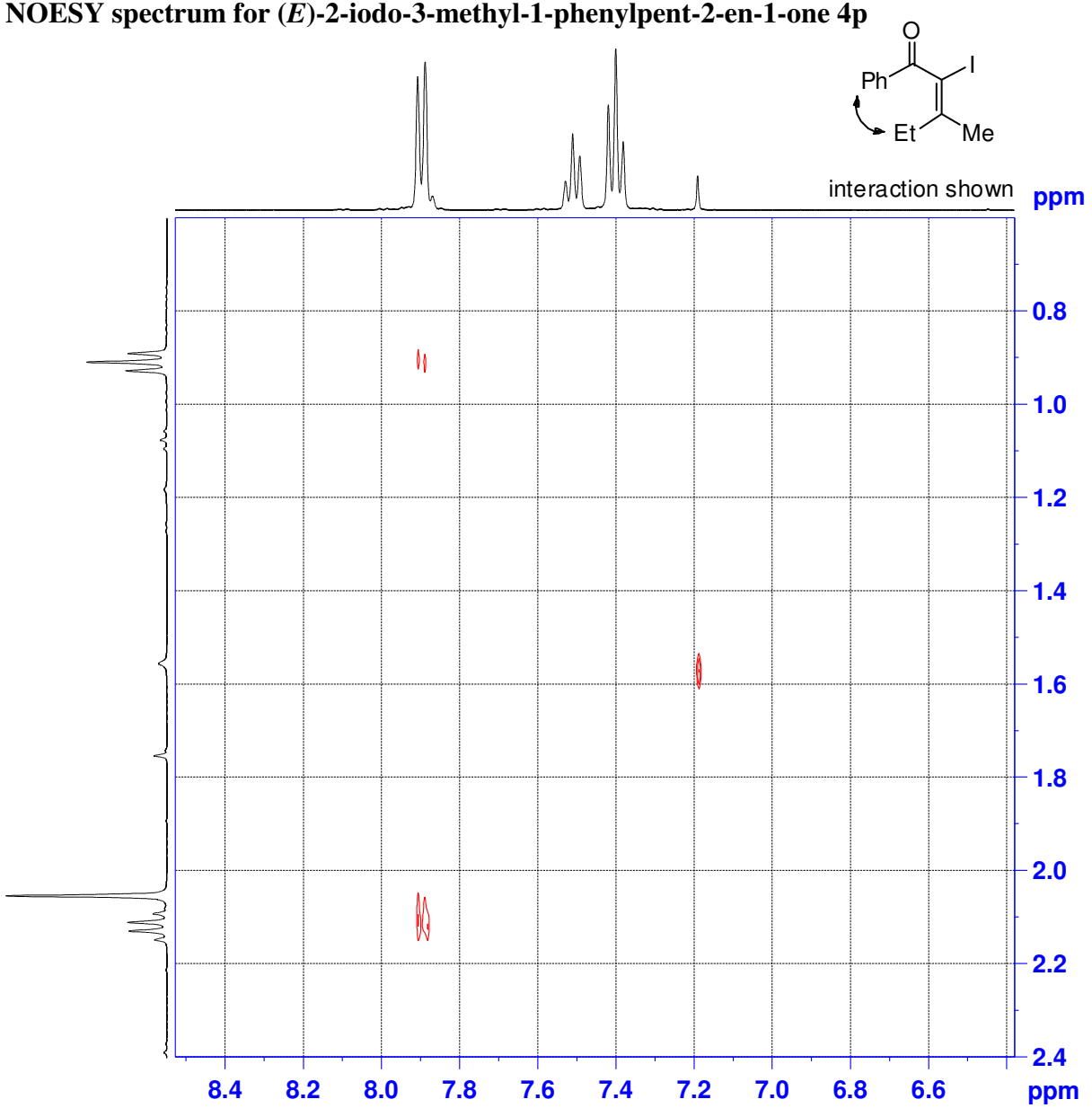
F2 - Acquisition Parameters
Date_              20120919
Time                  17.54
INSTRUM               spect
PROBHD    5 mm PABBO BB/
PULPROG              zgpg30
TD                    65536
SOLVENT               CDC13
NS                      256
DS                        4
SWH               24038.461 Hz
FIDRES             0.366798 Hz
AQ                1.3631488 sec
RG                   181.72
DW                   20.800 usec
DE                    8.18 usec
TE                   294.5 K
D1               2.00000000 sec
D11              0.03000000 sec
TD0                       1

======== CHANNEL f1 ========
SFO1            100.6228293 MHz
NUC1                    13C
P1                    9.00 usec
PLW1           77.00000000 W

======== CHANNEL f2 ========
SFO2            400.1316005 MHz
NUC2                    1H
CPDPRG[2           waltz16
PCPD2                90.00 usec
PLW2           24.00000000 W
PLW12           0.17567000 W
PLW13           0.14229999 W

F2 - Processing parameters
SI                    65536
SF              100.6127354 MHz
WDW                      EM
SSB          0
LB                    0.50 Hz
GB           0
PC                    1.40
```

NOESY spectrum for (*E*)-2-iodo-3-methyl-1-phenylpent-2-en-1-one 4p




```
Current Data Parameters
NAME              WM-510
EXPNO                101
PROCNO                 1

F2 - Acquisition Parameters
Date_           20120920
Time               12.23
INSTRUM             spect
PROBHD    5 mm PABBO BB/
PULPROG      noesygpphpp
TD                  2048
SOLVENT             CDC13
NS                      2
DS                     32
SWH              3424.657 Hz
FIDRES           1.672196 Hz
AQ               0.2990080 sec
RG                     25
DW                146.000 usec
DE                 23.49 usec
TE                 294.1 K
D0             0.00013581 sec
D1             1.93364406 sec
D8             0.50000000 sec
D11            0.03000000 sec
D12            0.00002000 sec
D16            0.00020000 sec
IN0            0.00029200 sec

======== CHANNEL f1 ========
SFO1          400.1317910 MHz
NUC1                  1H
P1                  8.00 usec
P2                 16.00 usec
P17              2500.00 usec
PLW1          24.00000000 W
PLW10          2.27220011 W

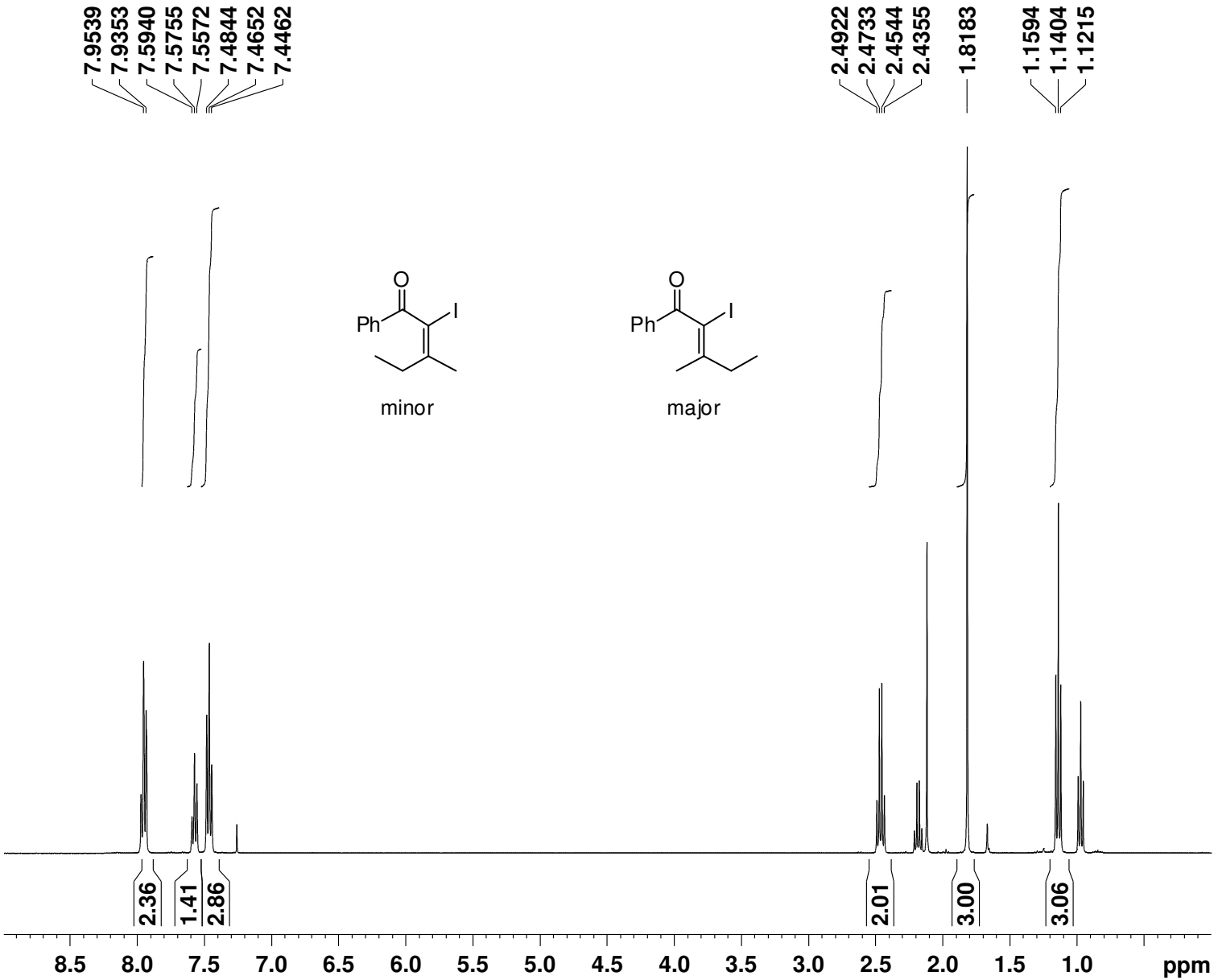
====== GRADIENT CHANNEL =====
GPNAM[1]       SMSQ10.100
GPZ1                40.00 %
P16               1000.00 usec

F1 - Acquisition parameters
TD                    256
SFO1             400.1318 MHz
FIDRES          13.377568 Hz
SW                 8.559 ppm
FnMODE        States-TPPI

F2 - Processing parameters
SI                   1024
SF            400.1300376 MHz
WDW                 QSINE
SSB                     2
LB         0 Hz
GB         0
PC                   1.00

F1 - Processing parameters
SI                   1024
MC2           States-TPPI
SF            400.1300376 MHz
WDW                 QSINE
SSB                     2
LB         0 Hz
GB         0
```

^{1}H NMR spectrum for (*Z*)-2-iodo-3-methyl-1-phenylpent-2-en-1-one 4p



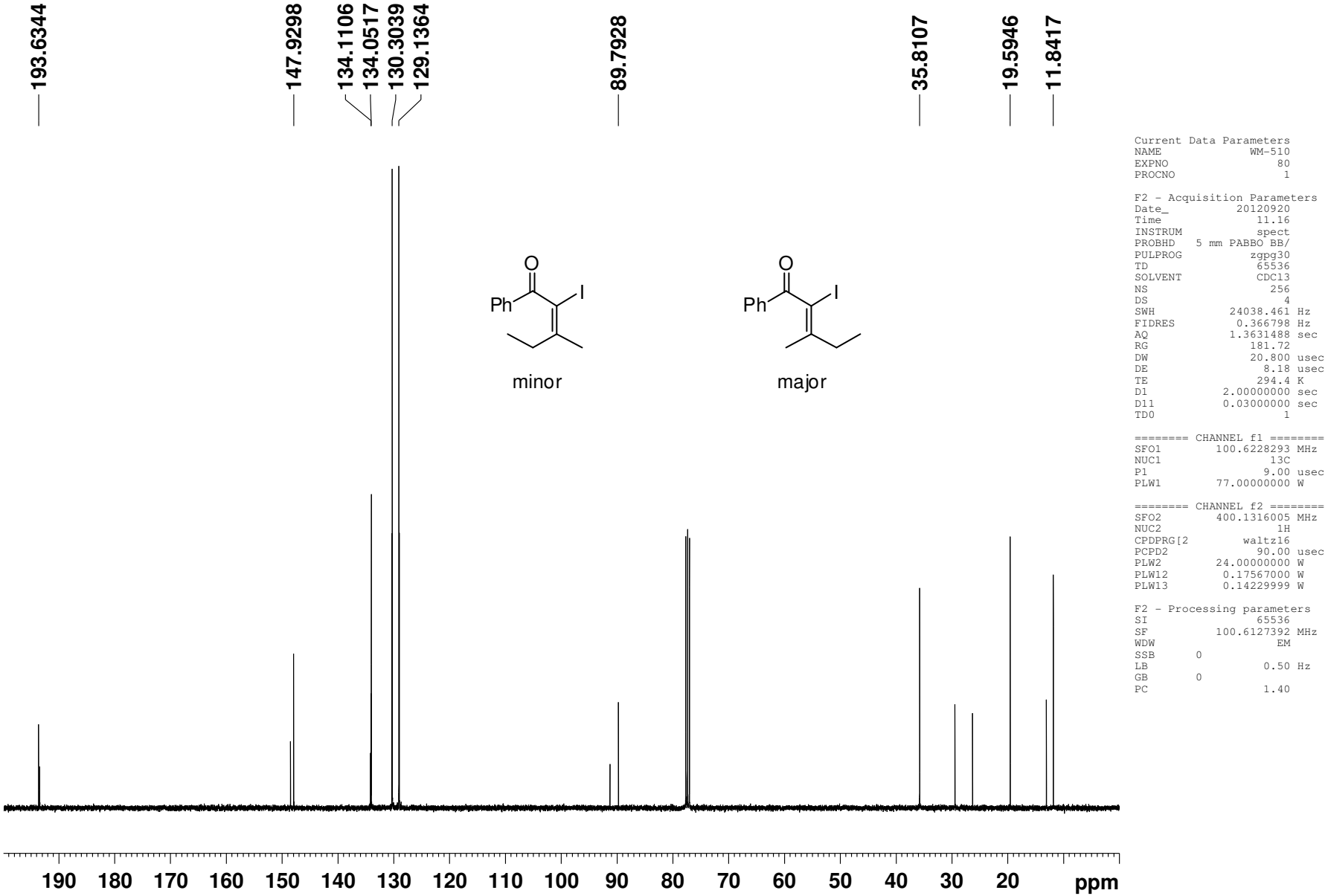

```
Current Data Parameters
NAME                 WM-510
EXPNO                    40
PROCNO                    1

F2 - Acquisition Parameters
Date_              20120919
Time                  12.03
INSTRUM               spect
PROBHD    5 mm PABBO BB/
PULPROG               zg30
TD                   65536
SOLVENT              CDCl3
NS                      16
DS                       0
SWH               8223.685 Hz
FIDRES            0.125483 Hz
AQ                3.9845889 sec
RG                    46.39
DW                  60.800 usec
DE                  10.69 usec
TE                  294.1 K
D1              1.00000000 sec
TD0                       1

======== CHANNEL f1 ========
SFO1           400.1324710 MHz
NUC1                   1H
P1                   8.00 usec
PLW1           24.00000000 W

F2 - Processing parameters
SI                   131072
SF             400.1300101 MHz
WDW                    EM
SSB       0
LB                   0.30 Hz
GB        0
PC                   1.50
```

^{13}C NMR spectrum for (*Z*)-2-iodo-3-methyl-1-phenylpent-2-en-1-one 4p




```
Current Data Parameters
NAME              WM-510
EXPNO                 80
PROCNO                 1

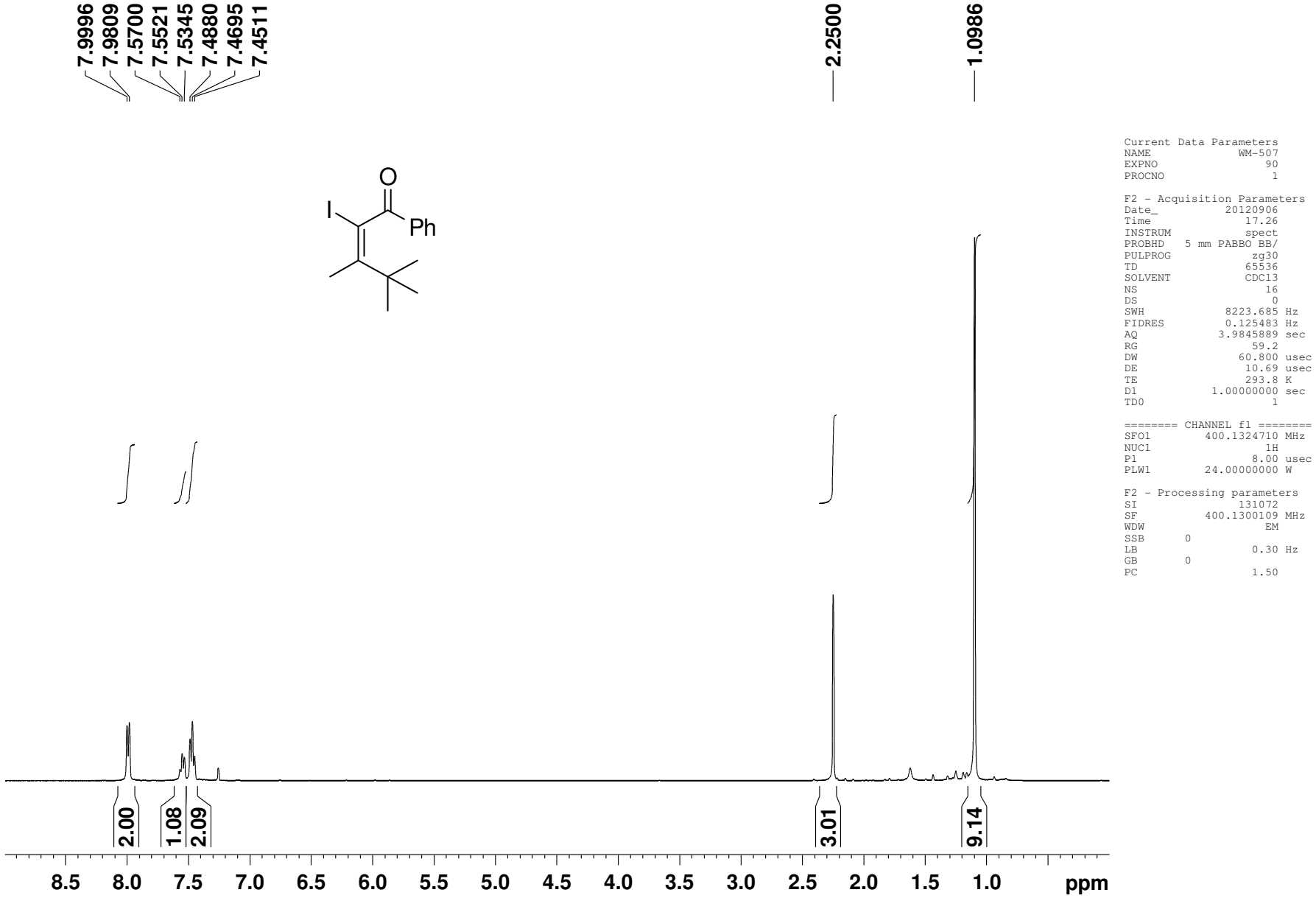
F2 - Acquisition Parameters
Date_           20120920
Time               11.16
INSTRUM            spect
PROBHD   5 mm PABBO BB/
PULPROG          zgpg30
TD                65536
SOLVENT           CDCl3
NS                  256
DS                    4
SWH           24038.461 Hz
FIDRES         0.366798 Hz
AQ             1.3631488 sec
RG                181.72
DW                20.800 usec
DE                 8.18 usec
TE                294.4 K
D1            2.00000000 sec
D11           0.03000000 sec
TD0                    1

======== CHANNEL f1 ========
SFO1         100.6228293 MHz
NUC1                 13C
P1                 9.00 usec
PLW1         77.00000000 W

======== CHANNEL f2 ========
SFO2         400.1316005 MHz
NUC2                 1H
CPDPRG[2         waltz16
PCPD2              90.00 usec
PLW2         24.00000000 W
PLW12         0.17567000 W
PLW13         0.14229999 W

F2 - Processing parameters
SI                65536
SF           100.6127392 MHz
WDW                  EM
SSB       0
LB                 0.50 Hz
GB        0
PC                 1.40
```

^{1}H NMR spectrum for (*E*)-2-iodo-3,4,4-trimethyl-1-phenylpent-2-en-1-one 4q



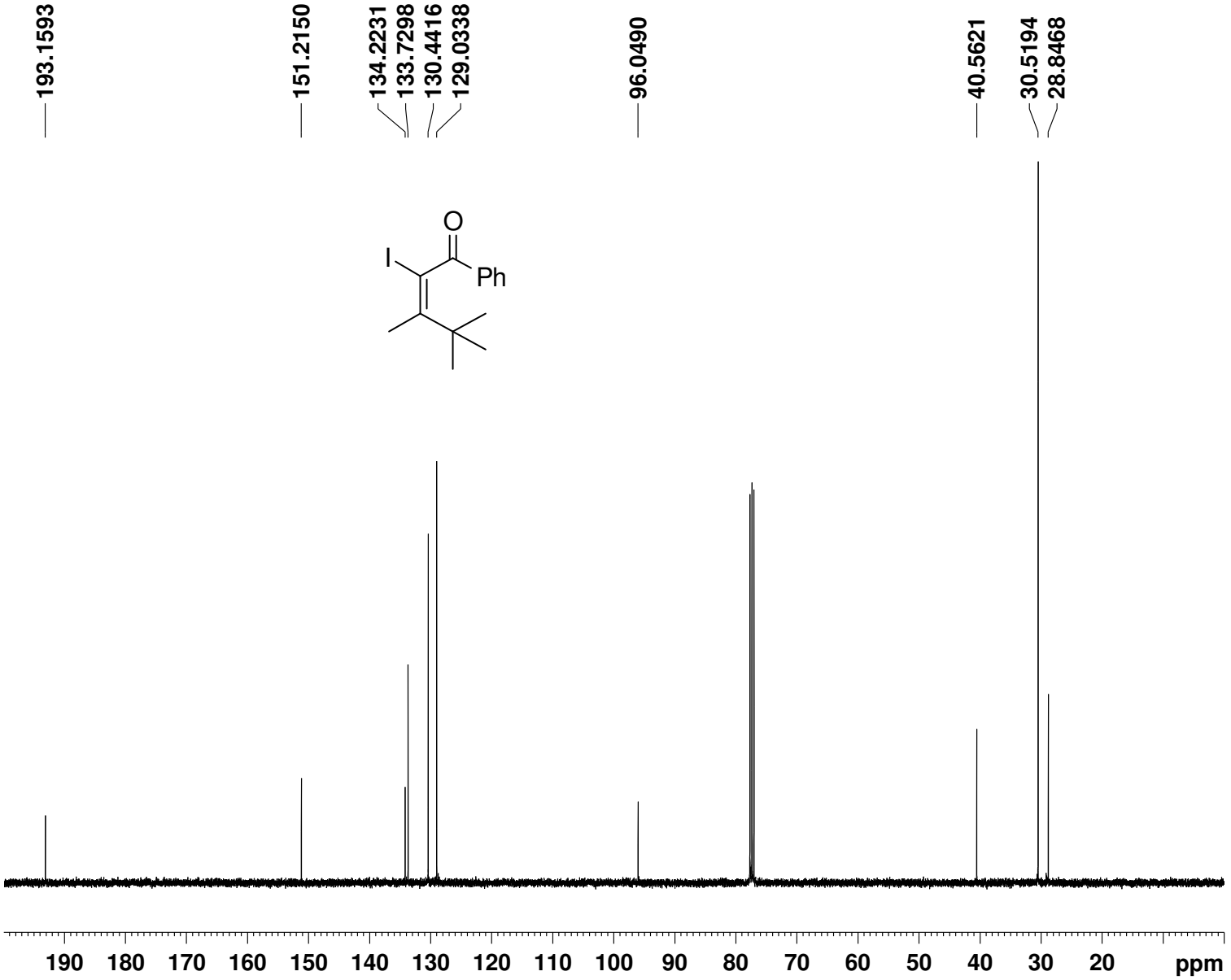

```
Current Data Parameters
NAME                  WM-507
EXPNO                     90
PROCNO                     1

F2 - Acquisition Parameters
Date_              20120906
Time                  17.26
INSTRUM               spect
PROBHD    5 mm PABBO BB/
PULPROG                zg30
TD                    65536
SOLVENT               CDC13
NS                       16
DS                        0
SWH                8223.685 Hz
FIDRES            0.125483 Hz
AQ                3.9845889 sec
RG                     59.2
DW                   60.800 usec
DE                   10.69 usec
TE                   293.8 K
D1              1.00000000 sec
TD0                       1

======== CHANNEL f1 ========
SFO1           400.1324710 MHz
NUC1                     1H
P1                    8.00 usec
PLW1          24.00000000 W

F2 - Processing parameters
SI                   131072
SF             400.1300109 MHz
WDW                      EM
SSB         0
LB                    0.30 Hz
GB          0
PC                    1.50
```

^{13}C NMR spectrum for (*E*)-2-iodo-3,4,4-trimethyl-1-phenylpent-2-en-1-one 4q




```
Current Data Parameters
NAME                  WM-507
EXPNO                     91
PROCNO                     1

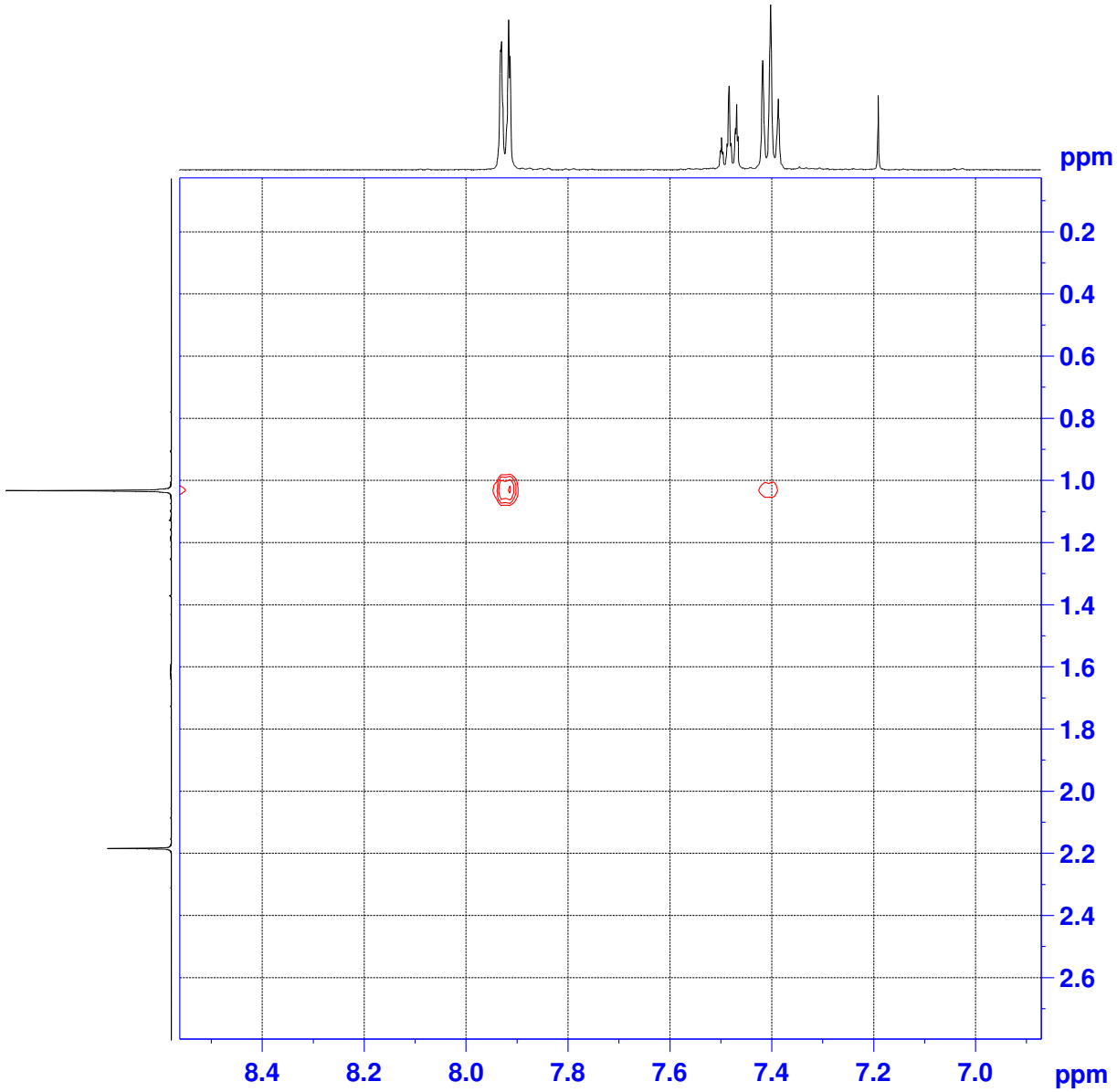
F2 - Acquisition Parameters
Date_              20120906
Time                  17.42
INSTRUM               spect
PROBHD   5 mm PABBO BB/
PULPROG               zgpg30
TD                     65536
SOLVENT                CDCl3
NS                       256
DS                         4
SWH               24038.461 Hz
FIDRES             0.366798 Hz
AQ                1.3631488 sec
RG                    181.72
DW                    20.800 usec
DE                     8.18 usec
TE                    294.4 K
D1                2.00000000 sec
D11               0.03000000 sec
TD0                        1

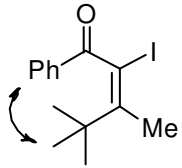
======== CHANNEL f1 ========
SFO1             100.6228293 MHz
NUC1                     13C
P1                      9.00 usec
PLW1             77.00000000 W

======== CHANNEL f2 ========
SFO2             400.1316005 MHz
NUC2                     1H
CPDPRG[2              waltz16
PCPD2                  90.00 usec
PLW2             24.00000000 W
PLW12             0.17567000 W
PLW13             0.14229999 W

F2 - Processing parameters
SI                     65536
SF               100.6127344 MHz
WDW                       EM
SSB          0
LB                      0.50 Hz
GB           0
PC                      1.40
```

NOESY spectrum for (*E*)-2-iodo-3,4,4-trimethyl-1-phenylpent-2-en-1-one 4q





interaction shown

```
Current Data Parameters
NAME          WM507_500
EXPNO                 5
PROCNO                1

F2 - Acquisition Parameters
Date_          20120910
Time              23.11
INSTRUM        av500sgu
PROBHD   5 mm PABBO BB-
PULPROG         noesyph
TD                2048
SOLVENT           CDCl3
NS                  16
DS                   4
SWH            4340.278 Hz
FIDRES         2.119276 Hz
AQ             0.2360448 sec
RG                  64
DW              115.200 usec
DE                6.00 usec
TE               296.8 K
D0           0.00010285 sec
D1           1.96436501 sec
D8           0.69999999 sec
IN0          0.00023040 sec

======== CHANNEL f1 ========
NUC1                1H
P1                9.70 usec
PL1               0.10 dB
PL1W       22.82879257 W
SFO1       500.1322275 MHz

F1 - Acquisition parameters
TD                  256
SFO1           500.1322 MHz
FIDRES        16.954210 Hz
SW                8.678 ppm
FnMODE      States-TPPI

F2 - Processing parameters
SI                 1024
SF          500.1300480 MHz
WDW                QSINE
SSB                    2
LB        0 Hz
GB        0
PC                 1.00

F1 - Processing parameters
SI                 1024
MC2         States-TPPI
SF          500.1300480 MHz
WDW                QSINE
SSB                    2
LB        0 Hz
GB        0
```