SUPPORTING INFORMATION

An Expedient Synthesis of Sulfinamides from Sulfonyl Chlorides

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General Information

All reactions were carried out under an atmosphere of nitrogen or argon in a flamed-dried glassware. Dichloromethane was distilled from CaH before use. Chromatographic separations were carried out using Sorbent ultra pure silica gel (230-400 mesh). Analytical thin chromatography was performed on Sigma-Aldrich silica gel TLC plates with UV indicator.

Melting points were measured with a Fisher-Johns melting point apparatus. Infrared spectra were recorded on a Perkin Elmer 1600 series FT-IR spectrometer. HRMS was carried out using Bruker Apex-120Q FTMS instrument in Old Dominion University. ^1H -NMR were recorded on a Bruker ARX-250 (250 MHz), DRX-300 (300 MHz), DRX-500 (500 MHz) spectrometer and are reported in ppm (δ) from tetramethylsilane (TMS: δ 0.0 ppm). Data are reported as follows: chemical shift, multiplicity (s = singlet, d = doublet, t = triplet, q = quartet, m = multiplet, dd = doublet of doublet, ddd = doublet of doublet of doublet), coupling constants (Hz) and integration. ^{13}C -NMR spectra were recorded on a Bruker ARX-250 (62.5 MHz), DRX-300 (75 MHz), DRX-500 (125 MHz) spectrometer with complete proton decoupling. Chemical shifts are reported in ppm from tetramethylsilane with solvent resonance as the internal standard (CDCl_3 : δ 77.0 ppm).

General procedures for the preparation of sulfinamides

Method B: To a solution of *p*-toluenesulfonyl chloride (190 mg, 1 mmol) and triethylamine (1.4 ml, 10 mmol) in CH_2Cl_2 (3.0 ml) solution at 0 °C was added a solution of triphenylphosphine (262 mg, 1 mmol) and benzylic amine (109 μl , 1 mmol) in CH_2Cl_2 (3.0 ml) solution using syringe pump over a period of 1 h. After addition, TLC showed all of the sulfonyl chloride was consumed. The reaction mixture was concentrated by

rotavap. Crude mixture was purified by column chromatography (20% EtOAc) to give the desired sulfinamide 152 mg (62%).

Method D: To a solution of *p*-toluensulfonyl chloride (190 mg, 1 mmol) in CH₂Cl₂ (3.0 ml) solution at 0 °C was added a mixture of triphenylphosphine (262 mg, 1 mmol), benzylic amine (109 µl, 1 mmol) and triethylamine (278.7 µl, 2.0 mmol) in CH₂Cl₂ (3.0 ml) solution using syringe pump over a period of 1 h. After addition, TLC showed all of the sulfonyl chloride was consumed. The reaction mixture was concentrated by rotavap. Crude mixture was purified by column chromatography (20% EtOAc) to give the desired sulfonamide 35 mg (13%) and sulfinamide 161 mg (66%).

Method E: To 25 ml round bottomed flask at 0 °C, was added a solution of trifluorosulfonyl chloride (106 µl, 1 mmol) in CH₂Cl₂ (3.0 ml) solution and a mixture of triphenylphosphine (262 mg, 1 mmol), benzylic amine (109 µl, 1 mmol) and triethylamine (278.7 µl, 2.0 mmol) in CH₂Cl₂ (3.0 ml) solution using syringe pump at the same rate over a period of 1 h. After addition, TLC showed all of the sulfonyl chloride was consumed. The reaction mixture was concentrated by rotavap. Crude mixture was purified by column chromatography (20% EtOAc) to give the desired sulfinamide 109.2 mg (47%).

***N*-Benzyl-*p*-toluenesulfinamide 5.** White Solid, yiled: 62% (**Method B**); 66% (**Method D**). ¹H-NMR and ¹³C-NMR matched with Literature report.¹ ¹H-NMR (250 MHz, CDCl₃): δ 7.64-7.68 (m, 2H), 7.27-7.34 (m, 7H), 4.22-4.28 (m, 2H), 3.91 (dd, *J*= 14.6, 8.5 Hz, 1H), 2.42 (s, 3H); ¹³C-NMR (62.5 MHz, CDCl₃): δ 141.2, 140.8, 137.8, 129.5, 128.5, 128.2, 127.5, 125.9, 44.2, 21.2.

***N*-Benzyl-*p*-toluenesulfonamide 6.** Solid, **Method D**, 13% yield. ¹H-NMR matched with Literature report.² ¹H-NMR (250 MHz, CDCl₃): δ 7.76 (d, *J*= 7.5 Hz, 2H), 7.18-7.33 (m, 7H), 4.78 (t, *J*= 6.0 Hz, 1H), 4.12 (d, *J*= 6.2 Hz, 2H), 2.44 (s, 3H).

N-Propylbenzenesulfinamide 9a. Yellow liquid, **Method B**, 62% yield. IR (neat): ν 3207.2, 2963.0, 2872.2, 1442.0, 1086.5, 1053.8 cm^{-1} ; $^1\text{H-NMR}$ (250 MHz, CDCl_3): δ 7.68-7.72 (m, 2H), 7.45-7.51 (m, 3H), 4.41 (s, 1H), 3.02-3.10 (m, 1H), 2.72-2.80 (m, 1H), 1.52 (dq, J = 14.5, 7.4 Hz, 2H), 0.88 (t, J = 7.3 Hz, 3H); $^{13}\text{C-NMR}$ (62.5 MHz, CDCl_3): δ 144.2, 130.5, 128.5, 125.8, 42.7, 23.6, 11.2; HRMS calcd for $\text{C}_9\text{H}_{13}\text{N OSNa}^+$ 206.061006, found 206.061211.

N-cyclopentylbenzenesulfinamide 9b: White solid, **Method B**, 59% yield. m.p. 88-89 $^{\circ}\text{C}$. IR (CHCl_3): ν 3353, 3300, 3066, 3002, 2965, 1476, 1089, 1054 cm^{-1} ; $^1\text{H-NMR}$ (250MHz, CDCl_3): δ 7.64-7.72 (m, 2H), 7.42-7.50 (m, 3H), 4.12 (d, 1H, J = 5.9 Hz), 3.69 (m, 1H), 1.91-2.04 (m, 1H), 1.29-1.82 (m, 7H); $^{13}\text{C-NMR}$ (62.5 MHz, CDCl_3): δ 145.1, 130.6, 128.7, 125.8, 54.9, 34.5, 34.1, 23.3, 23.2; HRMS calcd for $\text{C}_{11}\text{H}_{15}\text{NOSNa}^+$: 232.0766, found: 232.0769

N-cyclopentylbenzenesulfonamide 10b: Yellow oil, **Method B**, 13% yield. IR (CHCl_3): ν 3377, 3275, 3027, 2965, 2874, 1447, 1094, 1025 cm^{-1} ; $^1\text{H-NMR}$ (250MHz, CDCl_3): δ 7.88-7.93 (m, 2H), 7.47-7.61 (m, 3H), 4.82 (d, 1H, J = 7.0 Hz), 3.60 (sextet, J = 6.8 Hz, 1H), 1.29-1.83 (m, 8H); $^{13}\text{C-NMR}$ (62.5 MHz, CDCl_3): δ 140.7, 132.4, 129.0, 127.0, 55.1, 33.3, 23.0; HRMS calculated for $\text{C}_{11}\text{H}_{15}\text{NO}_2\text{SNa}^+$: 248.0715, found: 248.0719.

N-cycloheptyl-4-methylbenzenesulfinamide 9c: White solid, **Method B**, 65% yield; mp 75-76 $^{\circ}\text{C}$, IR (neat): ν 3209, 2929, 2853, 1491, 1457, 1056, 1017 cm^{-1} ; $^1\text{H-NMR}$ (250 MHz, CDCl_3): δ 7.61-7.57 (d, 8.2 Hz, 2H), 7.31-7.27 (d, 8.2 Hz, 2H), 3.86-3.83 (d, 6.0 Hz, 1H), 3.31-3.25 (m, 1H), 2.41 (s, 3H), 2.3-2.1 (m, 1H), 1.83-1.56 (m, 5H), 1.36-1.11 (m, 5H); $^{13}\text{C NMR}$ (62.5 MHz, CDCl_3) δ 142.4, 141.1, 129.4, 125.7, 53.0, 35.2, 34.9, 25.4, 24.8, 24.7, 21.3; HRMS calculated for $\text{C}_{13}\text{H}_{19}\text{NOSNa}^+$ 260.107956, found 260.108408.

N-cycloheptyl-4-methylbenzenesulfonamide 10c: White solid, **Method B**, 12% yield; mp 84-85 $^{\circ}\text{C}$; IR (CHCl_3): ν 3381, 3277,

3028, 2937, 2858, 1599, 1452, 1417, 1325, 1152 cm^{-1} ; ^1H -NMR (250 MHz, CDCl_3): δ 7.79-7.76 (d, J = 8.30 Hz, 2H), 7.31-7.27 (d, J = 8.5 Hz, 2H), 4.68 (d, J = 7.47 Hz, 1H), 3.14-3.10 (m, 1H), 2.43 (s, 3H), 1.76-1.07 (m, 10H); ^{13}C NMR (63 MHz, CDCl_3): δ 143.06, 138.46, 129.59, 126.90, 52.53, 33.87, 25.11, 24.59, 21.48.

***N*-Cyclohexylbenzenesulfinamide 9d:** White solid, **Method B**, 70% yield; mp 116-118 $^{\circ}\text{C}$, IR (neat): ν 3197, 2929, 2853, 1445, 1086, 1070, 1052, 751, 698 cm^{-1} ; ^1H -NMR (300 MHz, CDCl_3): δ 7.74-7.68 (m, 2H), 7.5-7.43 (m, 3H), 3.97-3.95 (d, 7.4 Hz, 1H), 3.30-3.22 (m, 1H), 2.13-2.07 (m, 1H), 1.79-1.59 (m, 4H), 1.36-1.19 (m, 5H); ^{13}C NMR (75 MHz, CDCl_3): δ 145.5, 130.6, 128.7, 125.7, 53.0, 35.2, 34.8, 25.3, 24.8, 24.6; HRMS calculated for $\text{C}_{12}\text{H}_{17}\text{NOSNa}^+$ 246.092306, found 246.092989.

***N*-cycloheptyl-4-methylbenzenesulfinamide 9e:** Colorless oil, **Method B**, 48% yield; IR (neat): ν 3186, 2924, 2852, 1462, 1048, 1025 cm^{-1} ; ^1H NMR (300 MHz, CDCl_3): δ 7.59 (d, J = 8.2 Hz, 2H), 7.29 (d, J = 8.4 Hz, 2H), 3.90 (d, J = 6.0 Hz, 1H), 3.51-3.47 (m, 1H), 2.41 (s, 3H), 2.14-2.06 (m, 1H), 1.88-1.84 (m, 1H), 1.69-1.37 (m, 10H); ^{13}C NMR (75 MHz, CDCl_3): 142.4, 141.0, 129.4, 125.7, 55.0, 37.1, 36.4, 28.0, 27.9, 23.7, 23.6, 21.3; HRMS calcd for $\text{C}_{14}\text{H}_{21}\text{NOSNa} [\text{M}+\text{Na}]^+$ 274.1236; Found 274.1241.

***N*-cycloheptyl-4-methylbenzenesulfonamide 10e:** colorless solid, **Method B**, 19% yield; mp: 55-56 $^{\circ}\text{C}$; IR (neat): ν 3267, 2917, 2852, 1417, 1321, 1157, 1094 cm^{-1} ; ^1H NMR (300 MHz, CDCl_3): δ 7.77 (d, J = 8.1 Hz, 2H), 7.29 (d, J = 8.1 Hz, 2H), 4.79 (b, 1H), 3.35-3.30 (m, 1H), 2.42 (s, 3H), 1.78-1.71 (m, 2H), 1.54-1.26 (m, 10H); ^{13}C NMR (75 MHz, CDCl_3): δ 143.0, 138.2, 129.6, 126.9, 54.7, 35.8, 27.9, 23.4, 21.5; HRMS calcd for $\text{C}_{14}\text{H}_{21}\text{NO}_2\text{SNa} [\text{M}+\text{Na}]^+$ 290.1185; Found 290.1187.

N-Cyclododecylbenzenesulfinamide 9f: White solid, **Method B**, 47% yield. mp: 91-2 °C. IR (neat): ν 3317.5, 2904.8, 2835.4, 1433.8, 1319.4, 1147.7, 1086.5 cm^{-1} ; ^1H -NMR (250 MHz, CDCl_3): 7.65-7.70 (m, 2H), 7.43-7.47 (m, 3H), 3.95 (d, J = 7.4 Hz, 1H), 3.35-3.40 (m, 1H), 1.08-1.67 (m, 22H); ^{13}C -NMR (62.5 MHz, CDCl_3): δ 145.2, 130.5, 128.5, 125.6, 51.4, 31.7, 31.6, 24.0, 23.8, 23.6, 23.2, 23.1, 23.1, 22.9, 20.9; HRMS calcd for $\text{C}_{18}\text{H}_{29}\text{NOSNa}^+$ 330.186206, found 330.186872.

N-Cyclododecylbenzenesulfonamide 10f: White solid, **Method B**, 10% yield. mp: 142-3 °C; IR: ν 3219.5, 2929.4, 2843.6, 1437.9, 1090.5, 1033.3 cm^{-1} ; ^1H -NMR (250 MHz, CDCl_3): 7.88-7.92 (m, 2H), 7.47-7.57 (m, 3H), 4.44 (d, J = 8.3 Hz, 1H), 3.23-3.34 (m, 1H), 1.10-1.56 (m, 22H); ^{13}C -NMR (62.5 MHz, CDCl_3): δ 141.1, 132.3, 128.9, 126.9, 50.5, 30.9, 23.4, 23.3, 23.2, 23.1, 21.0; HRMS calcd for $\text{C}_{18}\text{H}_{29}\text{NO}_2\text{SNa}^+$ 346.18112, found 346.18180.

N-tert-Butylbenzenesulfinamide 9g: White solid, **Method D**, 92% yield. mp: 75-6 °C; IR (neat): ν 3182.7, 2970.2, 1360.2, 1221.3, 1045.6, 812.7 cm^{-1} ; ^1H -NMR (300 MHz, CDCl_3): 7.55 (d, J = 8.4 Hz, 2H), 7.26 (d, J = 7.8 Hz, 2H), 3.87 (s, 1H), 2.39 (s, 3H), 1.40 (s, 9H); ^{13}C -NMR (75.0 MHz, CDCl_3): δ 143.4, 140.7, 129.2, 125.4, 54.0, 31.0, 21.8.

1-(p-tolylsulfinyl)pyrrolidine 9h: Yellow oil, **Method B**, ^1H -NMR (250 MHz, CDCl_3): δ 7.54 (d, J = 8.00 Hz, 2H), 7.27 (d, J = 8.00 Hz, 2H), 3.35-3.29 (m, 2H), 3.02-2.98 (m, 2H), 2.40 (s, 3H), 1.87-1.81 (m, 4H); ^{13}C -NMR (62.5 MHz, CDCl_3): δ 141.4, 140.7, 129.4, 125.6, 45.8, 25.9, 21.2. IR (CHCl_3 , cm^{-1}): 3001, 2878, 1600, 1491, 1265, 1209, 1219, 1214, 1085, 1051, 813, 783, 775, 771, 767, 759, 706. HRMS: Calculated $\text{C}_{11}\text{H}_{15}\text{NOSNa}^+$: 232.076656, Observed 232.077209.

1-tosylpyrrolidine 10h: White solid, **Method B**,. Mp: 116 °C. ^1H -NMR (250 MHz, CDCl_3): δ 7.71 (d, J = 8.25 Hz, 2H), 7.33 (d, J = 8.50 Hz, 2H), 3.25-3.19 (m, 4H), 2.43 (s, 3H), 1.76-1.71 (m, 4H); ^{13}C -NMR (62.5 MHz, CDCl_3): δ 143.1, 133.5, 129.4, 127.3, 47.7, 24.9, 21.3. IR (CHCl_3 , cm^{-1}): 3026, 2980, 2877, 1598, 1343, 1220, 1206, 1158, 1095, 815, 725, 680, 662, 591, 548. HRMS: Calculated $\text{C}_{11}\text{H}_{15}\text{NO}_2\text{SNa}^+$: 248.071571, Observed 248.071801.

***N,N*-diethyl-4-methylbenzenesulfinamide 9i:** Colorless oil, **Method B**, 59%; IR (neat): 2975, 2935, 2871, 1495, 1458, 1380, 1172 cm^{-1} ; ^1H NMR (250 MHz, CDCl_3): δ 7.54 (d, J = 8.2 Hz, 2H), 7.25 (d, J = 8.2 Hz, 2H), 3.12 (q, J = 7.1 Hz, 4H), 2.40 (s, 3H), 1.12 (t, J = 7.1 Hz, 6H); ^{13}C NMR (62.5 MHz, CDCl_3): 140.9, 140.6, 129.2, 126.0, 41.6, 21.1, 14.2; HRMS calcd for $\text{C}_{11}\text{H}_{17}\text{NOSNa}$ $[\text{M}+\text{Na}]^+$ 234.0923; Found 234.0929.

***N,N*-diethyl-4-methylbenzenesulfonamide 10i:** A white solid, **Method B**, 37%; mp; 48-49°C; IR (film): 2975, 2935, 1598, 1493, 1467, 1331, 1306, 1200, 1157, 1089, 1015 cm^{-1} ; ^1H NMR (300 MHz, CDCl_3): δ 7.69 (d, J = 8.1 Hz, 2H), 7.28 (d, J = 8.1 Hz, 2H), 3.22 (q, J = 7.2 Hz, 4H), 2.41 (s, 3H), 1.12 (t, J = 7.2 Hz, 6H); ^{13}C NMR (75 MHz, CDCl_3): 142.9, 137.3, 129.5, 126.9, 41.9, 21.4, 14.1; HRMS calcd for $\text{C}_{11}\text{H}_{17}\text{NO}_2\text{SNa}$ $[\text{M}+\text{Na}]^+$ 250.0872; Found 250.0879.

***N,N*-diisopropylbenzenesulfinamide 9j:** Colorless liquid, yield: 90%. ^1H -NMR (300MHz, CDCl_3): δ 7.63-7.67 (m, 2H), 7.43-7.51 (m, 3H), 3.55 (septet, 2H, J =6.9 Hz), 1.41 (d, 6H, J = 6.9 Hz), 1.11 (d, 6H, J =6.9 Hz); ^{13}C -NMR (75 MHz, CDCl_3): δ 144.5, 130.0, 128.5, 126.5, 46.5, 23.7, 23.6. IR (neat): 3056, 2969, 2932, 1471, 1390, 1086, 1057 cm^{-1} .

***N,N*-diallylbenzenesulfinamide 9k:** oil, **Method B**, yiled: 73%; IR: ν 3076.5, 2913.0, 1638.1, 1442.0, 1086.5, 914.9 cm^{-1} ; ^1H -NMR (500

MHz, CDCl₃): 7.668-7.692(m, 2H), 7.442-7.509(m, 3H), 5.705-5.785(m, 2H), 5.165(s, 2H), 5.130-5.144(m, 2H), 3.599-3.696(m, 4H); ¹³C-NMR (125.7 MHz, CDCl₃): δ 144.0, 133.9, 130.7, 128.7, 126.1, 118.6, 50.2; HRMS calcd for C₁₂H₁₅N OSNa⁺ 244.076656, found 244.077105.

N-(3,4-dimethoxybenzyl)benzenesulfinamide 9l: oil, yield: 77%; IR: ν 3276.7, 3199.1, 2933.5, 2831.3, 1511.6, 1262.2, 1021.1 cm⁻¹; ¹H-NMR (500 MHz, CDCl₃): 7.748-7.765(m, 2H), 7.482-7.529(m, 3H), 6.762-6.805(m, 3H), 4.549-4.572(t, 1H), 4.147-4.184(q, 1H), 3.802-3.839(m, 7H); ¹³C-NMR (125.7 MHz, CDCl₃): δ 148.9, 148.4, 130.8, 130.2, 128.8, 126.0, 120.5, 111.5, 110.5, 55.8, 55.7, 44.3; HRMS calcd for C₁₅H₁₇N O₃SNa⁺ 314.082135, found 314.082264.

4-methyl-N-((S)-1-phenylethyl)benzenesulfinamide 9m: White semi-solid, **Method B**, (39%, 1:1 mixture of inseparable diastereomers). ¹H-NMR (300 MHz, CDCl₃): δ 7.57 (d, *J* = 8.10 Hz, 2H), 7.52 (d, *J* = 8.10 Hz, 2H), 7.43-7.33 (m, 4H), 7.29-7.17 (m, 10H), 4.65 (p, *J* = 6.60 Hz, 1H), 4.53 (p, *J* = 6.60 Hz, 1H), 4.43 (s, broad, 1H), 4.32 (s, broad, 1H), 2.39 (s, 3H), 2.35 (s, 3H), 1.59 (d, *J* = 6.60 Hz, 3H), 1.44 (d, *J* = 6.60 Hz, 3H); ¹³C-NMR (75.5 MHz, CDCl₃): δ 143.7, 143.2, 142.3, 141.3, 141.1, 141.0, 129.4, 129.2, 128.5, 128.3, 127.4, 127.2, 126.8, 126.3, 125.7, 125.4, 53.3, 52.1, 24.5, 23.7, 21.2, 21.1.

4-Methyl-N-phenethylbenzenesulfinamide 9n: pale yellow oil, **Method B**, yield 44%; IR: 3420, 3023, 2917, 2868, 1650, 1454; ¹H NMR (300 MHz, CDCl₃): δ 7.55-7.50 (d, *J*=8.4 Hz, 2H), 7.32-7.20 (m, 5H), 7.17-7.12 (d, *J*=8.4 Hz, 2H), 3.30-3.43 (m, 1H), 3.16-3.02 (m, 1H), 2.87-2.74 (t, *J*=6 Hz, 2H); ¹³C NMR (300MHz,CDCl₃): δ 141.14, 141.03, 138.38, 129.49, 128.80, 128.56, 126.52, 125.89.

4-Methyl-N-phenethyl-benzenesulfonamide 10n: pale yellow solid, **Method B**, yield 6%, IR: 3436, 3285, 3068,

3027, 2917, 2868, 1654, 1597, 1495, 1450, 1417, 1319, 1156, 1090; ^1H NMR (300MHz, CDCl_3): δ 7.73-7.65 (q, $J=1.8$ Hz, 2H), 7.34-1.17(m, 5H), 7.11-7.04(t, 2H), 4.55-4.45 (t, $J=6$ Hz, 1H), 3.25-3.15 (m, 2H), 2.70-2.60 (t, $J=6.9$ Hz, 2H), 2.42 (s, 3H); ^{13}C NMR (300MHz, CDCl_3): δ 143.39, 137.62, 136.80, 129.68, 128.70, 127.04, 126.75, 44.16, 35.73, 21.49.

N-phenethylbenzenesulfinamide 9o: Yellow oil, **Method B**, Yield 53%; IR: 3428, 3215, 3060, 3023, 2929, 2864, 1610, 1495, 1475, 1442, 1283, 1136, 1091, 1050 cm^{-1} ; ^1H NMR (300 MHz, CDCl_3): δ 7.68-7.61 (m, 2H), 7.52-7.44 (m, 3H), 7.33-7.18 (m, 3H), 7.13-7.11(m, 2H), 4.2-4.0 (t, $J=6$ Hz, 1H), 3.44-3.32 (m, 1H), 3.15-3.02 (m, 1H), 2.84-2.77 (t, $J=6.9$ Hz, 2H); ^{13}C NMR (300 MHz, CDCl_3): δ 144.12, 138.32, 130.77, 128.80, 128.78, 128.59, 126.55, 125.95, 44.22, 36.80; HRMS calcd for $\text{C}_{14}\text{H}_{15}\text{NOS Na}$ $[\text{M} + \text{Na}]^+$ 268.0767, Found: 268.0765.

N-(Prop-2-ynyl)benzenesulfinamide 9p: White solid, **Method B**, Yield 32%; m.p. 43-45 $^{\circ}\text{C}$, IR: 3444, 3289, 3220, 3056, 2913, 2852, 1614, 1475, 1438, 1091, 1050 cm^{-1} ; ^1H NMR (300 MHz, CDCl_3): δ 7.76-7.68 (m, 2H), 7.55-7.45 (m, 3H), 4.94-4.81 (t, $J=5.1$ Hz, 1H), 3.90-3.78 (ddd, $J=16.8, 4.8, 2.4$ Hz, 1H), 3.56-3.43 (ddd, $J=16.8, 6.9, 2.7$ Hz, 1H), 2.31-2.23 (t, $J=2.6$ Hz, 1H); ^{13}C NMR (300 MHz, CDCl_3): δ 142.99, 130.97, 128.78, 125.88, 79.63, 72.62, 29.60.

N-(Prop-2-ynyl)benzenesulfonamide 10p: White solid, **Method B**, Yield 15%; m.p. 42-44 $^{\circ}\text{C}$, IR: 3285, 3068, 2974, 2921, 2856, 1450, 1323, 1156, 1091, 1066 cm^{-1} ; ^1H NMR (300 MHz, CDCl_3): δ 7.94-7.86 (m, 2H), 7.65-7.45 (m, 3H), 4.96 (s, 1H), 3.85 (s, 2H), 2.10-2.05 (t, $J=2.6$ Hz, 1H); ^{13}C NMR (300 MHz, CDCl_3): δ 139.52, 132.95, 129.06, 127.32, 77.82, 72.98; HRMS calcd for $\text{C}_9\text{H}_9\text{NO}_2\text{S Na}$ $[\text{M} + \text{Na}]^+$ 218.0246, Found: 218.0247.

(R)-(-)-N-Toluenesulfonyl-S-methyl-S-phenylsulphoximine 9q:

White crystal, **Method B**, 44% yield (53% based on recovered starting material), *dr*: 1.2:1.0. mp: 147-8 °C; IR: ν 2904.8, 1433.8, 1217.2, 1098.7, 1029.2, 1008.8, 726.9 cm^{-1} ; ^1H -NMR (300 MHz, CDCl_3): 8.12-8.15 (m, 2H), 8.02-8.04 (m, 2H), 7.56-7.77 (m, 10H), 7.26-7.32 (m, 4H), 3.46 (s, 3H), 3.29 (s, 3H), 2.40 (s, 3H), 2.39(s, 3H); ^{13}C -NMR (75.0 MHz, CDCl_3): δ 145.5, 145.3, 141.1, 140.9, 139.0, 138.3, 134.3, 134.0, 129.7, 129.5, 129.5, 128.6, 127.7, 124.7, 124.6, 46.6, 45.7, 21.3, 21.2; HRMS calcd for $\text{C}_{14}\text{H}_{15}\text{NO}_2\text{S}_2\text{Na}^+$ 316.044457, found 316.043641.

N-Phenylbenzenesulfinamide 9r: White solid, **Method B**, yield:

38%. m.p: 100-103 °C [Lit. 108-111 °C]³. ^1H -NMR and ^{13}C -NMR matched with Literature report.³ ^1H -NMR (250MHz, CDCl_3): δ 7.73-7.77 (m, 2H), 7.47-7.53 (m, 3H), 7.22-7.29 (m, 2H), 7.00-7.10 (m, 3H), 6.41 (s, 1H); ^{13}C -NMR (62.5 MHz, CDCl_3): δ 144.5, 140.6, 131.3, 129.4, 129.0, 125.5, 123.5, 118.8. IR (in CHCl_3): 3331 (br), 3070, 3012, 1598, 1497, 1094, 1062 cm^{-1} .

N-Phenylbenzenesulfonamide 10r: White solid, **Method B**, yield:

8%. ^1H -NMR and ^{13}C -NMR matched with Literature report.⁴ ^1H -NMR (250MHz, CDCl_3): δ 7.77-7.80 (m, 2H), 7.40-7.57 (m, 3H), 7.21-7.27 (m, 2H), 7.07-7.14 (m, 3H), 6.99 (s, 1H); ^{13}C -NMR (62.5 MHz, CDCl_3): δ 138.9, 136.3, 132.9, 129.2, 128.9, 127.2, 125.4, 121.7.

N-(2-bromophenyl)-4-methylbenzenesulfinamide 9s: White

solid, m.p. 81-84 °C, **Method B**, yield 35%; IR: 3047, 2913, 2860, 2766, 1475, 1046 cm^{-1} ; ^1H NMR (300MHz, CDCl_3): δ 7.66-7.33 (d, J =8.1 Hz, 2H), 7.54-7.45 (m, 2H), 7.39-7.32 (d, J =6.9 Hz, 2H), 7.29-7.22 (dt, J =6.9, 1.5 Hz, 1H), 6.96-6.84 (dt, J =6.9, 1.5 Hz, 1H), 6.19 (s, 1H), 2.44 (s, 3H); ^{13}C NMR (300 MHz, CDCl_3): δ 142.19, 141.08, 138.09, 132.81, 129.93, 128.54, 125.41, 124.16, 118.33, 113.58, 21.41; HRMS calcd for $\text{C}_{13}\text{H}_{12}\text{NOS Na}$ [M + Na]⁺ 331.9715, Found: 331.9714.

N-(4-Chloro-2-methylphenyl)-4-methylbenzene

sulfonamide 9t: White solid, **Method B**, 35% (59% based on recovered starting material); $^1\text{H-NMR}$ (300 MHz, CDCl_3): δ 7.65-7.62 (d, J = 8.2 Hz, 2H), 7.32-7.30 (d, J = 8.1 Hz, 2H), 7.26-7.25 (d, J = 8.4 Hz, 1H), 7.11-7.06 (m, 2H), 6.07 (s, 1H), 2.42 (s, 3H), 2.20 (s, 3H); $^{13}\text{C NMR}$ (75 MHz, CDCl_3) δ : 141.95, 141.41, 137.45, 130.65, 130.52, 129.76, 129.23, 126.82, 125.38, 121.65, 21.34, 17.77.

N-(4-tert-butylphenyl)-4-methylbenzenesulfonamide 9u:

Red solid, **Method B**, 22%; mp: 128 °C. $^1\text{H-NMR}$ (250 MHz, CDCl_3): δ 7.63 (d, J = 8.25 Hz, 2H), 7.32-7.25 (m, 4H), 7.01 (d, J = 8.66 Hz, 2H), 6.14 (s, broad, 1H), 2.42 (s, 3H), 1.29 (s, 9H); $^{13}\text{C-NMR}$ (62.5 MHz, CDCl_3): δ 146.6, 141.8, 141.7, 138.0, 129.7, 126.3, 125.4, 118.9, 34.2, 31.3, 21.3. IR (CHCl_3 , cm^{-1}): 3345, 3009, 2966, 2869, 1610, 1513, 1222, 1091, 1068, 789, 731. HRMS: Calculated $\text{C}_{17}\text{H}_{21}\text{NOSNa}^+$: 310.123606, Observed 310.123939.

N-(4-tert-butylphenyl)-4-methylbenzenesulfonamide

10u: Red solid, **Method B**, 35%; mp: 164 °C. $^1\text{H-NMR}$ (250 MHz, CDCl_3): δ 7.66 (d, J = 8.30 Hz, 2H), 7.26-7.21 (m, 4H), 6.97 (d, J = 8.64 Hz, 2H), 6.76 (s, broad, 1H), 2.39 (s, 3H), 1.29 (s, 9H); $^{13}\text{C-NMR}$ (62.5 MHz, CDCl_3): δ 148.4, 143.7, 136.4, 133.7, 129.6, 127.2, 126.1, 121.6, 34.3, 31.2, 21.5. IR (CHCl_3 , cm^{-1}): 3370, 3029, 2965, 1599, 1514, 1222, 1161, 778, 771, 755, 759, 747, 730, 671, 666. HRMS: Calculated $\text{C}_{17}\text{H}_{21}\text{NO}_2\text{SNa}^+$: 326.118521, Observed 326.119728.

N-(4-Methoxyphenyl)benzenesulfonamide 9v: white solid,

mp: 105-6 °C; **Method B**, yiled: 8%; IR: ν 3056.1, 2949.8, 2835.4, 1511.5, 1437.9, 1241.8, 1029.3, 816.8 cm^{-1} ; $^1\text{H-NMR}$ (500 MHz, CDCl_3): 7.683-7.702(m, 2H), 7.421-7.450(m, 3H), 6.952-6.970(m, 2H), 6.727-6.752(m, 2H), 5.945(s, 1H), 3.695(s, 3H); $^{13}\text{C-NMR}$ (125.7

MHz, CDCl₃): δ 138.8, 137.6, 133.7, 131.9, 129.2, 128.6, 128.4, 128.2, 127.5, 126.8, 126.5, 124.9, 124.1, 123.1, 45.4; HRMS calcd for C₁₃H₁₃N O₂SNa⁺ 270.061006, found 270.056532.

N-Benzyl-4-(trifluoromethyl)benzenesulfinamide 12a:

white solid, mp : 83-4 °C ; **Method D**, yiled: 25%; IR: ν 3264.5, 3064.2, 2870.2, 1454.3, 1401.1, 1156.0, 1062.0, 731.0 cm⁻¹; ¹H-NMR (500 MHz, CDCl₃): 7.881-7.898 (d, 2H), 7.759-7.776 (d, 2H), 7.234-7.326 (m, 5H), 4.547-4.570 (t, 1H), 4.225-4.262 (q, 1H), 3.840-3.881(q, 1H); ¹³C-NMR (125.7 MHz, CDCl₃): δ 144.0, 137.2, 133.1, 132.8, 128.7, 128.2, 127.8, 126.7, 125.9, 125.8, 124.6, 122.4, 44.6.

N-Benzyl-4-(trifluoromethyl)benzenesulfonamide 13a:

White Solid, mp : 113-4 °C; **Method D**, yiled: 25%; IR: ν 3190.1, 2925.5, 2872.2, 1601.4, 1397.0, 1319.4, 1160.0, 1053.8 cm⁻¹; ¹H-NMR (500 MHz, CDCl₃): 7.925-7.942 (d, 2H), 7.708-7.725 (d, 2H), 7.218-7.264 (m, 3H), 7.137-7.173 (m, 2H), 5.160-5.184 (t, 1H), 4.172-4.184 (d, 2H); ¹³C-NMR (125.7 MHz, CDCl₃): δ 143.6, 135.6, 134.4, 134.1, 128.7, 128.0, 127.8, 127.5, 126.2, 126.2, 126.1, 124.2, 122.0, 47.2.

N-Benzyl-2-nitrobenzenesulfinamide 12b: Pale yellow solid,

Method D, m.p. 88-89 °C, Yield 55%; IR: 3211, 3089, 3060, 3027, 2921, 2856, 1524, 1352, 1078, 1037 cm⁻¹; ¹H NMR (300 MHz,CDCl₃): δ 8.30-8.20 (dd, *J*= 7.8, 1.2 Hz, 1H), 8.13-8.02 (dd, *J*= 8.1 1.2 Hz, 1H), 7.88-7.75 (dd, *J*= 7.8, 1.2 Hz, 1H), 7.70-7.55(dd, *J*= 7.8, 1.2 Hz, 1H), 7.27-7.15 (m, 3H), 7.15-7.05 (m, 2H), 4.60-4.40 (t, *J*= 6 Hz, 1H), 4.20-4.10 (dd, *J*= 13.5, 6.3 Hz, 1H), 4.20-4.10 (dd, *J*= 13.5, 6.3 Hz, 1H), 3.88-3.72 (dd, *J*= 13.5, 6.3 Hz, 1H); ¹³C NMR (300 MHz,CDCl₃): δ 146.33, 140.63, 137.19, 133.73, 131.74, 128.46, 128.05, 127.57, 127.31, 125.11, 44.98.

N-Benzyl-2-nitrobenzenesulfonamide 13b: White solid,

Method D, m.p. 43-45 °C, Yield 21%; IR: 3444, 3289, 3220, 3056, 2913, 2852, 1614, 1475, 1438, 1091, 1050 cm⁻¹; ¹H NMR

(300 MHz, CDCl₃): δ 7.76-7.68 (m, 2H), 7.55-7.45 (m, 3H), 4.94-4.81 (t, *J*=5.1 Hz, 1H), 3.90-3.78 (ddd, *J*= 16.8, 4.8, 2.4 Hz, 1H), 3.56-3.43 (ddd, *J*= 16.8, 6.9, 2.7 Hz, 1H), 2.31-2.23 (t, *J*= 2.6 Hz, 1H); ¹³C NMR (300 MHz, CDCl₃): δ 142.99, 130.97, 128.78, 125.88, 79.63, 72.62, 29.60.

N-benzyl-1-naphthalenesulfonamide 12c: White solid,

Method D, yield: 70%. IR (in CHCl₃): 3340 (br), 3062, 3006, 2927, 1493, 1385, 1072, 1024 cm⁻¹; ¹H-NMR (300MHz, CDCl₃):

δ 8.36 (s, 1H), 7.87-7.97 (m, 3H), 7.68 (dd, *J*= 8.4, 1.5 Hz, 1H), 7.53-7.60 (m, 2H), 7.19-7.31 (m, 5H), 4.50 (br s, 1H), 4.25 (dd, *J*= 13.2, 4.9 Hz, 1H), 3.86 (dd, *J*= 13.5, 7.2 Hz, 1H); ¹³C-NMR (75 MHz, CDCl₃): δ 140.8, 137.6, 134.3, 132.7, 128.9, 128.7, 128.6, 128.2, 127.83, 127.80, 127.6, 127.0, 126.8, 122.0, 44.5.

N-benzyl-2-naphthalenesulfonamide 13c: Cream solid,

Method D, yield: 11%. IR (in CHCl₃): 3380, 3058, 3018, 1405, 1334, 1155, 1076 cm⁻¹; ¹H-NMR (300MHz, CDCl₃): δ 8.43 (s,

1H), 7.81-7.95 (m, 4H), 7.56-7.67 (m, 2H), 7.19-7.25 (m, 5H), 4.98 (br s, 1H), 4.16 (d, *J*= 6 Hz, 2H); ¹³C-NMR (75 MHz, CDCl₃): δ 136.6, 136.1, 134.7, 132.1, 129.5, 129.2, 128.8, 128.6, 128.5, 127.8, 127.5, 122.2, 47.3.

N-benzyl-2-fluorobenzenesulfonamide 12d: White solid,

Method D, 63%; Mp: 93 °C. ¹H-NMR (300 MHz, CDCl₃):

δ 7.88 (t, *J* = 6.00 Hz, 1H), 7.49-7.41 (m, 1H), 7.31-7.17 (m, 6H), 7.07 (t, *J* = 7.50 Hz, 1H), 4.64 (t, *J* = 6.00 Hz, 1H), 4.22 (dd, *J* = 15.01, 5.70 Hz, 1H), 3.93 (dd, *J* = 15.01, 6.60 Hz, 1H); ¹³C-NMR (75.5 MHz, CDCl₃): δ 160.2, 156.9, 137.5, 133.1 (d, *J* = 8.30 Hz), 131.0 (d, *J* = 15.10 Hz), 128.4, 128.0, 127.7, 127.4, 126.9 (d, *J* = 1.51 Hz), 124.3 (d, *J* = 3.02 Hz), 44.8. ¹⁹F-NMR (235.4 MHz, CDCl₃, CFCl₃ at 0 ppm): δ -113.2 (d, *J* = 2.35 Hz). IR (CHCl₃, cm⁻¹): 3348, 3006, 1598, 1472, 1448, 1259, 1083, 1057, 1027, 822, 699.

N-benzyl-2-fluorobenzenesulfonamide 13d: White semi-solid, **Method D**, 9%; $^1\text{H-NMR}$ (300 MHz, CDCl_3): δ 7.86 (t, $J = 6.00$ Hz, 1H), 7.55-7.52 (m, 1H), 7.25-7.10 (m, 7H), 5.22 (s, broad, 1H), 4.22 (d, $J = 6.00$ Hz, 2H); $^{13}\text{C-NMR}$ (75.5 MHz, CDCl_3): δ 160.3, 156.9, 135.9, 134.8 (d, $J = 8.30$ Hz), 130.2, 128.6, 127.9 (d, $J = 13.59$ Hz), 127.8, 127.7, 124.3 (d, $J = 21.13$ Hz), 47.3. $^{19}\text{F-NMR}$ (235.4 MHz, CDCl_3 , CFCl_3 at 0 ppm): δ -110.8 (d, $J = 4.70$ Hz). IR (CHCl_3 , cm^{-1}): 3383, 3005, 1601, 1476, 1453, 1410, 1343, 1266, 1169, 1156, 1076, 827, 651, 585.

N-benzyl-2-chlorobenzenesulfonamide 12e: Colorless liquid, **Method D**, yield: 80%. $^1\text{H-NMR}$ (250MHz, CDCl_3): δ 7.99-8.02 (m, 1H), 7.38-7.47 (m, 3H), 7.18-7.29 (m, 5H), 4.38 (br s, 1H), 4.23 (dd, $J = 13.5, 5.7$ Hz, 1H), 3.92 (dd, $J = 13.5, 6.1$ Hz, 1H); $^{13}\text{C-NMR}$ (62.5 MHz, CDCl_3): δ 141.2, 137.5, 132.2, 131.8, 130.2, 128.4, 128.1, 127.5, 126.9, 126.7, 45.0. IR (in CHCl_3): 3360 (br), 3066, 3010, 2927, 1580, 1493, 1449, 1103, 1084, 1032 cm^{-1} .

N-benzyl-2-chlorobenzenesulfonamide 13e: White solid, **Method D**, yield: 12%. $^1\text{H-NMR}$ (250MHz, CDCl_3): δ 8.09 (m, 1H), 7.35-7.49 (m, 3H), 7.15-7.25 (m, 5H), 5.30 (br s, 1H), 4.12 (d, $J = 6.1$ Hz, 2H); $^{13}\text{C-NMR}$ (62.5 MHz, CDCl_3): δ 137.2, 135.6, 133.6, 121.4, 131.3, 128.6, 127.98, 127.90, 127.1, 47.5. IR (in CHCl_3): 3372.3 (br), 3030, 3006, 1576, 1457, 1409, 1163, 1040 cm^{-1} .

N-Benzyl-2-bromobenzenesulfonamide 12f: White solid, **Method D**, 46%; mp 57-58 $^{\circ}\text{C}$; IR (neat) cm^{-1} 3210, 3061, 3029, 2917, 2862, 2357, 2349, 1447, 1436, 1097, 1068; $^1\text{H-NMR}$ (300 MHz, CDCl_3): δ 8.00-7.97 (dd, 7.5, 1.5 Hz, 1H), 7.58-7.55 (dd, 7.8, 1.2 Hz, 1H), 7.50-7.44 (td, 7.5, 1.2 Hz, 1H), 7.35-7.28 (td, 7.8, 1.8 Hz, 1H), 7.26-7.17 (m, 5H), 4.45-4.41 (t, 6.0Hz, 1H), 4.25-4.18 (dd, 13.5, 6.0 Hz, 1H), 3.94-3.86 (dd, 13.5, 6.0 Hz, 1H); $^{13}\text{C-NMR}$ (75 MHz, CDCl_3) δ 142.8, 137.5, 133.5, 132.4, 128.4, 128.1, 127.5, 127.5, 127.0, 120.6, 45.0.

N-Benzyl-2-bromobenzenesulfonamide 13f: White solid, **Method D**, 20%; mp 91-92 °C; IR (neat) cm^{-1} 3226, 3085, 3064, 3036, 2365, 2333, 1457, 1448, 1436, 1337; ^1H -NMR (300 MHz, CDCl_3): δ 8.132-8.10 (dd, 735, 2.1 Hz, 1H), 7.70-7.66 (dd, 7.5, 1.5 Hz, 1H), 7.47-7.35 (m, 2H), 7.28-7.16 (m, 5H), 5.56-5.41 (t, 6.0 Hz, 1H), 4.12 (s, 3H), 4.09 (s, 3H); ^{13}C -NMR (75 MHz, CDCl_3) δ : 138.8, 135.6, 134.9, 133.7, 131.6, 128.6, 127.96, 127.94, 127.78, 119.7, 47.5.

N-Benzyl-propane-2-sulfinamide 12g: White solid, **Method D**, 3.1%; mp: 67-8 °C; IR: ν 3215.4, 1493.3, 1115.1, 1061.9 cm^{-1} ; ^1H -NMR (500 MHz, CDCl_3): 7.29-7.37 (m, 5H), 4.42 (dd, J = 14.0, 5.0 Hz, 1H), 4.35 (dd, J = 14.0, 7.5 Hz, 1H), 4.133 (s, 1H), 1.83 (s, 3H), 1.78 (s, 3H), 1.58 (s, 1H); ^{13}C -NMR (125 MHz, CDCl_3): δ 137.8, 128.7, 128.0, 127.8, 84.4, 48.6, 27.5, 27.3.

N-Benzyl-propane-2-sulfonamide 13g: White solid, **Method D**, 4.7%; mp: 73-4 °C; IR: ν 3284.9, 1450.1, 1311.2, 1143.7, 1123.2, 1053.8 cm^{-1} ; ^1H -NMR (500 MHz, CDCl_3): 7.32-7.41 (m, 5H), 4.32-4.35 (m, 3H), 3.13 (qq, J = 7.0, 7.0 Hz, 1H), 1.39 (d, J = 6.5 Hz, 6H); ^{13}C -NMR (125 MHz, CDCl_3): δ 137.1, 128.7, 127.9, 127.7, 53.8, 47.5, 16.5.

N-Benzyl-1,1,1-trifluoromethanesulfinamide 12h: Liquid, **Method E**, 47% yield. NMR matched with literature reported.⁵ ^1H -NMR (250 MHz, CDCl_3): 7.31-7.41 (m, 5H), 4.97 (s, 1H), 4.24-4.48 (m, 2H); ^{13}C -NMR (62.5 MHz, CDCl_3): δ 136.5, 128.8, 128.1, 128.0, 123.6 (q, J = 334.5 Hz), 46.1; ^{19}F -NMR: -76.9.

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¹H NMR
PZ-VII-06-A2

Current Data Parameters
NAME PZ-VII-06-A2
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
Date_ 20060602
Time 10.02
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PROBHD 5 mm QNP 1H
PULPROG zg30
TD 32768
SOLVENT CDC13
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SWH 5208.333 Hz
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RG 256
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NUCLEUS 1H

F2 - Processing parameters
SI 16384
SF 250.1299944 MHz
WDW EM
SSB 0
LB 0.20 Hz
GB 0
PC 1.50

1D NMR plot parameters
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CY 5.00 cm
F1P 10.000 ppm
F1 2501.30 Hz
F2P -1.000 ppm
F2 -250.13 Hz
PPMCM 0.55000 ppm
HZCM 137.57149 Hz/

¹³C NMR
PZ-VII-06-A2

Current Data Parameters
NAME PZ-VII-06-A2
EXPNO 2
PROCNO 1

F2 - Acquisition Parameters
Date_ 20060602
Time 10.05
INSTRUM arx250
PROBHD 5 mm QNP 1H
PULPROG zgpg30
TD 36864
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DS 4
SWH 17241.379 Hz
FIDRES 0.467702 Hz
AQ 1.0691060 sec
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DL5 23.00 dB
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NUCLEUS ¹³C
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F2 - Processing parameters
SI 32768
SF 62.8952492 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

1D NMR plot parameters
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CY 10.00 cm
F1P 220.000 ppm
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F2P -10.000 ppm
F2 -628.95 Hz
PPMCM 11.50000 ppm
HZCM 723.29535 Hz/

1H NMR
PZ-VII-31-A1

Current Data Parameters
NAME PZ-VII-31-A1
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
Date_ 20060702
Time 12.31
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PROBHD 5 mm QNP 1H
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DS 2
SWH 5208.333 Hz
FIDRES 0.158946 Hz
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RG 360
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NUCLEUS 1H

F2 - Processing parameters
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LB 0.20 Hz
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¹³C NMR
PZ-VII-31-A1

9b

Current Data Parameters
NAME PZ-VII-31-A1
EXNO 2
PROCNO 1

F2 - Acquisition Parameters
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Time 12.32
INSTRUM arx250
PROBHD 5 mm QNP 1H
PULPROG zgpg30
TD 36864
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SWH 17241.379 Hz
FIDRES 0.467702 Hz
AQ 1.0691060 sec
RG 22800
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DE 41.43 usec
TE 300.0 K
D12 0.00002000 sec
DL5 23.00 dB
CPDPRG waltz16
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D1 2.00000000 sec
F1 8.00 usec
SF01 62.9023694 MHz
NUCLEUS 13C
D11 0.03000000 sec

F2 - Processing parameters
SI 32768
SF 62.8952440 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

1H NMR
PZ-VII-31-A0

Current Data Parameters
NAME PZ-VII-31-A0
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
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PULPROG zg30
TD 32768
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FIDRES 0.158946 Hz
AQ 3.1457779 sec
RG 1024
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DE 137.14 usec
TE 300.0 K
D1 1.00000000 sec
P1 9.50 usec
SFO1 250.1315321 MHz
NUCLEUS 1H

F2 - Processing parameters
SI 16384
SF 250.1300049 MHz
WDW EM
SSB 0
LB 0.20 Hz
GB 0
PC 1.50

¹³C NMR
PZ-VII-31-A0

Current Data Parameters
NAME PZ-VII-31-A0
EXPNO 2
PROCNO 1

F2 - Acquisition Parameters
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Time 18.17
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PROBHD 5 mm QNP 1H
PULPROG zgpg30
TD 36864
SOLVENT CDCl3
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DS 4
SWH 17241.379 Hz
FIDRES 0.467702 Hz
AQ 1.0691080 sec
RG 22800
DE 29.000 usec
TE 41.43 usec
300.0 K
D12 0.00002000 sec
DL5 23.00 dB
CPDPRG waltz16
P31 103.00 usec
D1 2.00000000 sec
P1 8.00 usec
SFO1 62.9023694 MHz
NUCLEUS 13C
D11 0.03000000 sec

F2 - Processing parameters
SI 32768
SF 62.8952440 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

Current Data Parameters
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 EXPNO 1
 PROCNO 1

F2 - Acquisition Parameters

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 SOLVENT CDCl3
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 DS 2
 SWH 5208.333 Hz
 FIDRES 0.158946 Hz
 AQ 3.1457779 sec
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 DW 96.000 use
 DE 137.14 use
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 P1 9.50 use
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 NUCLEUS 1H

F2 - Processing parameters

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

1D NMR plot parameters

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

¹³C NMR

9c

Current Data Parameters
NAME MG-VI-5c-A1
EXPNO 2
PROCNO 1

F2 - Acquisition Parameters
Date_ 20060603
Time 13.33
INSTRUM arx250
PROBHD 5 mm QNP 1H
PULPROG zgpg30
TD 36864
SOLVENT CDCl3
NS 4309
DS 4
SWH 17241.379 Hz
FIDRES 0.467702 Hz
AQ 1.0691060 sec
RG 22800
DW 29.000 use
DE 41.43 use
TE 300.0 K
D12 0.0002000 sec
DL5 23.00 dB
CPDPRG waltz16
P31 103.00 use
D1 2.0000000 sec
P1 8.00 use
SF01 62.9023694 MHz
NUCLEUS 13C
D11 0.0300000 sec

F2 - Processing parameters
SI 32768
SF 62.8952408 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

1D NMR plot parameters
CX 20.00 cm
CY 20.00 cm
F1P 250.405 ppm
F1 15749.26 Hz
F2P -23.724 ppm
F2 -1492.10 Hz
PPMCM 13.70643 ppm
HZCM 862.08903 Hz/

Current Data Parameters
 NAME MG-VI-5b-A1
 EXPNO 1
 PROCNO 1

F2 - Acquisition Parameters

Date_ 20060603
 Time 13.19
 INSTRUM arx250
 PROBHD 5 mm QNP 1H
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 2
 SWH 5208.333 Hz
 FIDRES 0.158946 Hz
 AQ 3.145779 sec
 RG 715
 DW 96.000 use
 DE 137.14 use
 TE 300.0 K
 D1 1.0000000 sec
 P1 9.50 use
 SF01 250.1315321 MHz
 NUCLEUS 1H

F2 - Processing parameters

SI 16384
 SF 250.1300056 MHz
 WDW EM
 SSB 0
 LB 0.20 Hz
 GB 0
 PC 1.50

1D NMR plot parameters

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

13C NMR

Current Data Parameters
 NAME MG-VI-5b-A1
 EXPNO 2
 PROCNO 1

F2 - Acquisition Parameters

Date_ 20060603
 Time 13.24
 INSTRUM arx250
 PROBHD 5 mm QNP 1H
 PULPROG zgpg30
 TD 36864
 SOLVENT CDCl3
 NS 115
 DS 4
 SWH 17241.379 Hz
 FIDRES 0.467702 Hz
 AQ 1.0691060 sec
 RG 22800
 DW 29.000 use
 DE 41.43 use
 TE 300.0 K
 D12 0.00002000 sec
 DL5 23.00 dB
 CPDPRG waltz16
 P31 103.00 use
 D1 2.00000000 sec
 P1 8.00 use
 SF01 62.9023694 MHz
 NUCLEUS 13C
 D11 0.03000000 sec

F2 - Processing parameters

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

1D NMR plot parameters

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

143.059
 138.462
 129.586
 126.898
 77.508
 76.999
 76.491
 52.532
 33.868
 25.108
 24.587
 21.478

ppm

9d

Current Data Parameters
 NAME MG-VI-7d-A1
 EXPNO 1
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20060606
 Time 14.15
 INSTRUM arx250
 PROBD 5 mm QNP 1H
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 2
 SWH 5208.333 Hz
 FIDRES 0.158946 Hz
 AQ 3.1457779 sec
 RG 715
 DW 96.000 usec
 DE 137.14 usec
 TE 300.0 K
 D1 1.00000000 sec
 P1 9.50 usec
 SFO1 250.1315321 MHz
 NUCLEUS 1H

F2 - Processing parameters
 SI 16384
 SF 250.1300030 MHz
 WDW EM
 SSB 0
 LB 0.20 Hz
 GB 0
 PC 1.50

Current Data Parameters
 NAME MG-VI-7d-A1
 EXPNO 2
 PROCNO 1

F2 - Acquisition Parameters

Date_ 20060606
 Time 14.18
 INSTRUM arx250
 PROBHD 5 mm QNP 1H
 PULPROG zgpg30
 TD 36864
 SOLVENT CDCl3
 NS 362
 DS 4
 SWH 17241.379 Hz
 FIDRES 0.467702 Hz
 AQ 1.0691060 sec
 RG 22800
 DW 29.000 use
 DE 41.43 use
 TE 300.0 K
 D12 0.00002000 sec
 DL5 23.00 dB
 CPDPRG waltz16
 P31 103.00 use
 D1 2.00000000 sec
 P1 8.00 use
 SF01 62.9023694 MHz
 NUCLEUS 13C
 D11 0.03000000 sec

F2 - Processing parameters

SI 32768
 SF 62.8952434 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

1D NMR plot parameters

CX 20.00 cm
 CY 10.00 cm
 F1P 250.363 ppm
 F1 15746.66 Hz
 F2P -23.765 ppm
 F2 -1494.72 Hz
 PPMCH 13.70643 ppm
 HZCM 862.06897 Hz/

1H NMR

¹³C NMR

Current Data Parameters
 NAME KR-IX-116-A3
 EXPNO 2
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20060626
 Time 11.08
 INSTRUM DRX300
 PROBHD 5 mm Multinucl
 PULPROG zgdc30pad
 TD 65536
 SOLVENT CDCl3
 NS 70
 DS 4
 SMH 18832.393 Hz
 FIDRES 0.287360 Hz
 AQ 1.7400308 sec
 RG 22528
 DW 26.550 usec
 DE 6.00 usec
 TE 300.0 K
 D1 2.00000000 sec
 D11 0.03000000 sec
 D31 0.00000000 sec

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

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

F2 - Processing parameters
 SI 32768
 SF 75.4677531 MHz
 EM
 WDW 0
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ppm

Current Data Parameters
 NAME KR-IX-1116-A2
 EXPNO 1
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20060626
 Time 10.55
 INSTRUM DEX300
 PROBD 5 mm Multinucl
 PULPROG zg30pad
 TD 32768
 SOLVENT CDC13
 NS 16
 DS 2
 SWH 6172.839 Hz
 FIDRES 0.188380 Hz
 AQ 2.6542580 sec
 RG 128
 DW 81.000 usec
 DE 6.00 usec
 TE 300.0 K
 D1 1.00000000 sec
 D31 0.00000000 sec

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

F2 - Processing parameters
 SI 32768
 SF 300.1300033 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.40

10e

¹³C NMR

143.02
138.19
129.56
126.93

77.42
77.00
76.57

54.73

35.75

27.88
23.43
21.46

```

Current Data Parameters
NAME      KR-IX-116-A2
EXPNO     2
PROCNO    1

F2 - Acquisition Parameters
Date_     20060626
Time      10.56
INSTRUM   DRX300
PROBHD    5 mm Multinucl
PULPROG   zgdc30pad
TD         65536
SOLVENT   CDCl3
NS         73
DS         4
SWH        18832.393 Hz
FIDRES     0.287360 Hz
AQ          1.7400308 sec
RG          22528
DW          26.550 usec
DE          6.00 usec
TE          300.0 K
D1          2.00000000 sec
D11         0.03000000 sec
D31         0.00000000 sec

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

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

F2 - Processing parameters
SI          32768
SF          75.4677531 MHz
WDW          EM
SSB          0
LB           1.00 Hz
GB           0
PC           1.30
  
```

190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ppm

¹H NMR
PZ-VII-23-A1

Current Data Parameters
NAME PZ-VII-23-A1
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
Date_ 20060623
Time 15.41
INSTRUM arx250
PROBHD 5 mm QNP 1H
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 16
DS 2
SWH 5208.333 Hz
FIDRES 0.158946 Hz
AQ 3.1457779 sec
RG 128
DW 96.000 usec
DE 137.14 usec
TE 300.0 K
D1 1.0000000 sec
P1 9.50 usec
SF01 250.1315321 MHz
NUCLEUS 1H

F2 - Processing parameters
SI 16384
SF 250.1300051 MHz
WDW EM
SSB 0
LB 0.20 Hz
GB 0
PC 1.50

1D NMR plot parameters
CX 20.00 cm
CY 5.00 cm
F1P 10.000 ppm
F1 2501.30 Hz
F2P -1.000 ppm
F2 -250.13 Hz
PPMCM 0.55000 ppm/cm
HZCM 137.57150 Hz/cm

¹³C NMR
PZ-VII-23-A1

Current Data Parameters
NAME PZ-VII-23-A1
EXPNO 2
PROCNO 1

F2 - Acquisition Parameters
Date_ 20060623
Time 15.44
INSTRUM arx250
PROBHD 5 mm QNP 1H
PULPROG zgpg30
TD 36864
SOLVENT DMSO
NS 95
DS 4
SWH 17241.379 Hz
FIDRES 0.467702 Hz
AQ 1.0691060 sec
RG 22800
DW 29.000 usec
DE 41.43 usec
TE 300.0 K
D12 0.0002000 sec
DL5 23.00 dB
CPDPRG waltz16
P31 103.00 usec
D1 2.0000000 sec
P1 8.00 usec
SF01 62.9023694 MHz
NUCLEUS 13C
D11 0.0300000 sec

F2 - Processing parameters
SI 32768
SF 62.8952476 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

1D NMR plot parameters
CX 20.00 cm
CY 10.00 cm
F1P 220.000 ppm
F1 13836.95 Hz
F2P -10.000 ppm
F2 -628.95 Hz
P1P1 11.50000 ppm/cm
HZCM 723.29535 Hz/cm

1H NMR
PZ-VII-23-A0

10f

Current Data Parameters
NAME PZ-VII-23-A0
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
Date_ 20060623
Time 17.18
INSTRUM arx250
PROBHD 5 mm QNP 1H
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 16
DS 2
SWH 5208.333 Hz
FIDRES 0.158946 Hz
AQ 3.1457779 sec
RG 715
DW 96.000 usec
DE 137.14 usec
TE 300.0 K
D1 1.0000000 sec
P1 9.50 usec
SFO1 250.1315321 MHz
NUCLEUS 1H

F2 - Processing parameters
SI 16384
SF 250.1300049 MHz
WDW EM
SSB 0
LB 0.20 Hz
GB 0
PC 1.50

1D NMR plot parameters
CX 20.00 cm
CY 12.50 cm
F1P 10.000 ppm
F1 2501.30 Hz
F2P -1.000 ppm
F2 -250.13 Hz
PPMCM 0.55000 ppm/cm
HZCM 137.57150 Hz/cm

13C NMR
PZ-VII-23-A0

10f

132.375
128.941
126.973

77.475
76.967
76.459

30.947
23.437
23.340
23.274
23.187
21.064

50.594

Current Data Parameters
NAME PZ-VII-23-A0
EXPNO 2
PROCNO 1

F2 - Acquisition Parameters
Date_ 20060623
Time 17.20
INSTRUM arx250
PROBHD 5 mm QNP 1H
PULPROG zgdc30
TD 36864
SOLVENT CDCl3
NS 163
DS 4
SWH 17241.379 Hz
FIDRES 0.467702 Hz
AQ 1.0691060 sec
RG 22800
DW 29.000 usec
DE 41.43 usec
TE 300.0 K
D12 0.0002000 sec
DL5 23.00 dB
CPDPRG waltz16
P31 103.00 usec
D1 2.0000000 sec
P1 8.00 usec
SFO1 62.9023694 MHz
NUCLEUS 13C
D11 0.0300000 sec

F2 - Processing parameters
SI 32768
SF 62.8952440 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

1D NMR plot parameters
CX 20.00 cm
CY 10.00 cm
F1P 220.000 ppm
F1 13836.95 Hz
F2P -10.000 ppm
F2 -628.95 Hz
PPMCM 11.50000 ppm/cm
HZCM 723.29529 Hz/cm

1H-NMR
PZ-VII-45-A2

9g

7.574
7.546
7.279
7.253

3.870

2.394
2.156

1.400

Current Data Parameters
NAME PZ-VII-45-A2
EXPNO 1
PROCNO 1
F2 - Acquisition Parameters
Date_ 20060727
Time 17.04
INSTRUM DRX300
PROBHD 5 mm Multinucl
PULPROG zg30pad
TD 32768
SOLVENT CDCl3
NS 16
DS 2
SWH 6172.839 Hz
FIDRES 0.188380 Hz
AQ 2.6542580 sec
RG 80.6
DM 81.000 usec
DE 6.00 usec
TE 300.0 K
D1 1.00000000 sec
D31 0.00000000 sec
===== CHANNEL f1 =====
NUC1 1H
P1 7.05 usec
PL1 0.00 dB
SF01 300.1318534 MHz
F2 - Processing parameters
SI 32768
SF 300.1299975 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.30

96

¹³C NMR PZ-VII-45-A2

143.44
140.77
129.29
125.46

77.43
77.00
76.58

31.02
21.18

54.07

Current Data Parameters
NAME PZ-VII-45-A2
EXPNO 2
PROCNO 1

F2 - Acquisition Parameters
Date_ 20060727
Time 17.06
INSTRUM DRX300
PROBHD 5 mm Multinucl
PULPROG zgpg30pad
TD 65536
SOLVENT CDC13
NS 24
DS 4
SWH 18832.393 Hz
FIDRES 0.287360 Hz
AQ 1.7400308 sec
RG 22528
DE 26.550 usec
TE 300.0 K
D1 2.00000000 sec
D11 0.03000000 sec
D31 0.00000000 sec

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

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

F2 - Processing parameters
SI 32768
SF 75.4677565 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

200 180 160 140 120 100 80 60 40 20 ppm

1H NMR
NC-III-119C
pyrrolidine sulfonamide

3.35773
3.34531
3.32875
3.31804
3.29007
3.02067
3.01008
2.99528
2.98123
2.39812
1.86724
1.85380
1.84005
1.82689
1.81347

7.57172
7.53915
7.29838
7.26619

Current Data Parameters
NAME NC-III-119C
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
Date_ 20060614
Time 15.15
INSTRUM arx250
PROBHD 5 mm QNP 1H
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 16
DS 2
SWH 5208.333 Hz
FIDRES 0.158946 Hz
AQ 3.1457779 sec
RG 360
DW 96.000 usec
DE 137.14 usec
TE 300.0 K
D1 1.0000000 sec
P1 9.50 usec
SF01 250.1315321 MHz
NUCLEUS 1H

F2 - Processing parameters
SI 16384
SF 250.1299995 MHz
WDW EM
SSB 0
LB 0.20 Hz
GB 0
PC 1.50

1D NMR plot parameters
CX 20.00 cm
CY 8.00 cm
F1P 10.000 ppm
F1 2501.30 Hz
F2P -0.500 ppm
F2 -125.07 Hz
PPMCM 0.52500 ppm/cm
HZCM 131.31825 Hz/cm

ppm

63-S

Integral

ppm

13C NMR

Current Data Parameters
NAME NC-III-119C
EXPNO 2
PROCNO 1

F2 - Acquisition Parameters

Date_ 20060614
Time 15.19
INSTRUM arx250
PROBHD 5 mm QNP 1H
PULPROG zgpg30
TD 36864
SOLVENT CDCl3
NS 55
DS 4
SWH 17241.379 Hz
FIDRES 0.467702 Hz
AQ 1.0691060 sec
RG 22800
DW 29.000 usec
DE 41.43 usec
TE 300.0 K
D12 0.00002000 sec
DL5 23.00 dB
CPDPRG waltz16
P31 103.00 usec
D1 2.00000000 sec
P1 8.00 usec
SF01 62.9023694 MHz
NUCLEUS 13C
D11 0.03000000 sec

F2 - Processing parameters

SI 32768
SF 62.8952461 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

1D NMR plot parameters

CX 20.00 cm
CY 10.00 cm
F1P 220.000 ppm
F1 13836.95 Hz
F2P -10.000 ppm
F2 -628.95 Hz
P1P1CM 11.50000 ppm/cm
HZCM 723.29529 Hz/cm

141.351
140.661
129.385
125.636
77.511
77.002
76.492
45.832
25.856
21.209

1H NMR
NC-III-119B
pyrrolidine sulfonamide

Current Data Parameters
NAME NC-III-119B
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
Date_ 20060614
Time 15.02
INSTRUM arx250
PROBHD 5 mm QNP 1H
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 16
DS 2
SWH 5208.333 Hz
FIDRES 0.158946 Hz
AQ 3.1457779 sec
RG 256
DW 96.000 usec
DE 137.14 usec
TE 300.0 K
D1 1.00000000 sec
P1 9.50 usec
SFO1 250.1315321 MHz
NUCLEUS 1H

F2 - Processing parameters
SI 16384
SF 250.1299922 MHz
WDW EM
SSB 0
LB 0.20 Hz
GB 0
PC 1.50

1D NMR plot parameters
CX 20.00 cm
CY 8.00 cm
F1P 10.000 ppm
F1 2501.30 Hz
F2P -0.500 ppm
F2 -125.06 Hz
PPMCM 0.52500 ppm/cm
HZCM 131.31824 Hz/cm

13C NMR

Current Data Parameters
NAME NC-III-119B
EXPNO 2
PROCNO 1

F2 - Acquisition Parameters

Date_ 20060614
Time 15.07
INSTRUM arx250
PROBHD 5 mm QNP 1H
PULPROG zgpg30
TD 36864
SOLVENT CDCl3
NS 90
DS 4
SWH 17241.379 Hz
FIDRES 0.467702 Hz
AQ 1.0691060 sec
RG 22800
DW 29.000 usec
DE 41.43 usec
TE 300.0 K
D12 0.00002000 sec
DL5 23.00 dB
CPDPRG waltz16
P31 103.00 usec
D1 2.00000000 sec
P1 8.00 usec
SF01 62.9023694 MHz
NUCLEUS 13C
D11 0.03000000 sec

F2 - Processing parameters

SI 32768
SF 62.8952524 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

1D NMR plot parameters

CX 20.00 cm
CY 10.00 cm
F1P 220.000 ppm
F1 13836.95 Hz
F2P -10.000 ppm
F2 -628.95 Hz
PPMCM 11.50000 ppm/cm
HZCM 723.29541 Hz/cm

143.143
133.520
129.418
127.286
77.512
77.001
76.491
47.712
24.943
21.277

ppm

42-S

1H NMR

Current Data Parameters
NAME KR-IX-90-A3
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters

Date_ 20060531
Time 12.28
INSTRUM arx250
PROBHD 5 mm QNP 1H
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 16
DS 2
SWH 5208.333 Hz
FIDRES 0.158946 Hz
AQ 3.1457779 sec
RG 256
DE 96.000 use
TE 137.14 use
TE 300.0 K
D1 1.00000000 sec
P1 9.50 use
SF01 250.1315321 MHz
NUCLEUS 1H

F2 - Processing parameters

SI 16384
SF 250.1299878 MHz
WDW EM
SSB 0
LB 0.20 Hz
GB 0
PC 1.50

1D NMR plot parameters

CX 20.00 cm
CY 12.50 cm
F1P 10.000 ppm
F1 2501.30 Hz
F2P -0.500 ppm
F2 -125.06 Hz
PPMCM 0.52500 ppm
HZCM 131.31824 Hz/

13C NMR

Current Data Parameters
 NAME KR-IX-90-A3
 EXPNO 2
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20060531
 Time 12:29
 INSTRUM arx250
 PROBHD 5 mm QNP 1H
 PULPROG zgpg30
 TD 36864
 SOLVENT CDCl3
 NS 62
 DS 4
 SWH 17241.379 Hz
 FIDRES 0.467702 Hz
 AQ 1.0691060 sec
 RG 22800
 DW 29.000 use
 DE 41.43 use
 TE 300.0 K
 D12 0.0002000 sec
 DL5 23.00 dB
 CPDPRG waltz16
 P31 103.00 use
 D1 2.0000000 sec
 P1 8.00 use
 SF01 62.9023694 MHz
 NUCLEUS 13C
 D11 0.0300000 sec

F2 - Processing parameters
 SI 32768
 SF 62.8952513 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

1D NMR plot parameters
 CX 20.00 cm
 CY 10.00 cm
 F1P 200.000 ppm
 F1 12579.05 Hz
 F2P -10.000 ppm
 F2 -628.95 Hz
 PPMCM 10.50000 ppm
 HZCM 660.40015 Hz/

Current Data Parameters
 NAME KR-IX-90-A2
 EXPNO 1
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20060531
 Time 11.44
 INSTRUM DRX300
 PROBHD 5 mm Multinucl
 PULPROG zg30pad
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 2
 SWH 6172.839 Hz
 FIDRES 0.188380 Hz
 AQ 2.6542580 sec
 RG 101.6
 DW 81.000 usec
 DE 6.00 usec
 TE 300.0 K
 D1 1.00000000 sec
 D31 0.00000000 sec

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

F2 - Processing parameters
 SI 32768
 SF 300.1300001 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.30

¹³C NMR

Current Data Parameters
 NAME KR-IX-90-A2
 EXPNO 2
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20060531
 Time 11.45
 INSTRUM DRX300
 PROBD 5 mm Multinucl
 PULPROG zgpg30pad
 TD 65536
 SOLVENT CDCl3
 NS 34
 DS 4
 SWH 18832.393 Hz
 FIDRES 0.287360 Hz
 AQ 1.7400308 sec
 RG 22528
 DW 26.550 usec
 DE 6.00 usec
 TE 300.0 K
 D1 2.00000000 sec
 D11 0.03000000 sec
 D31 0.00000000 sec

==== CHANNEL f1 =====
 NUC1 13C
 P1 9.00 usec
 PL1 5.00 dB
 SF01 75.4760107 MHz

==== CHANNEL f2 =====
 CPDPRG2 waltz16
 NUC2 1H
 PCD2 100.00 usec
 PL2 120.00 dB
 PL12 25.60 dB
 SF02 300.1312005 MHz

F2 - Processing parameters
 SI 32768
 SF 75.4677554 MHz
 EM 0
 WDW 0
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.30

¹H NMR
GB-II-059-A2

Current Data Parameters
NAME GB-II-059-A2
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
Date_ 20060607
Time 14.48

INSTRUM arx250
PROBHD 5 mm GNP 1H
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 16
DS 2
SWH 5208.333 Hz
FIDRES 0.158946 Hz
AQ 3.1457779 sec
RG 512
DM 96.000 use
DE 137.14 use
TE 300.0 K
D1 1.00000000 sec
P1 9.50 use
SF01 250.1315321 MHz
NUCLEUS 1H

F2 - Processing parameters
SI 16384
SF 250.1300005 MHz
WDW EM
SSB 0
LB 0.20 Hz
GB 0
PC 1.50

1D NMR plot parameters
CX 20.00 cm
CY 10.00 cm
F1P 8.726 ppm
F1 2182.64 Hz
F2P -0.680 ppm
F2 -169.99 Hz
PPMCM 0.47028 ppm
HZCM 117.63139 Hz/

13C NMR
GB-II-059-A2

9j

1H NMR

Current Data Parameters
 NAME CH-II-121
 EXPNO 1
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20060925
 Time 9.23
 INSTRUM DRX500
 PROBHD 5 mm Multinucl
 PULPROG zg30pad
 TD 65536
 SOLVENT CDCl3
 NS 16
 DS 2
 SWH 10330.578 Hz
 FIDRES 0.157632 Hz
 AQ 3.1719923 sec
 RG 32
 DW 48.400 usec
 DE 6.00 usec
 TE 300.0 K
 D1 1.00000000 sec
 D31 0.00000000 sec

===== CHANNEL f1 =====
 NUC1 1H
 P1 11.50 usec
 PL1 0.00 dB
 SFO1 500.133085 MHz

F2 - Processing parameters
 SI 32768
 SF 500.1299702 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.40

¹³C NMR

143.99
133.94
130.70
128.66
126.08
118.58
77.40
77.15
76.89
50.19

```

Current Data Parameters
NAME      CH-II-121
EXPNO     2
PROCNO    1

F2 - Acquisition Parameters
Date_     20060925
Time      9.26
INSTRUM   DRX500
PROBHD    5 mm Multinucl
PULPROG   zgpg30
TD         65536
SOLVENT   CDCl3
NS         26
DS         4
SWH        34013.605 Hz
FIDRES     0.519006 Hz
AQ         0.9634292 sec
RG         32768
DE         14.700 usec
TE         300.0 K
D1         2.00000000 sec
d11        0.03000000 sec
D31        0.00000000 sec

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

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

F2 - Processing parameters
SI         32768
SF         125.7578011 MHz
WDW        EM
SSB        0
LB         1.00 Hz
GB         0
PC         1.40
    
```

Current Data Parameters	
NAME	CH-II-120
EXPNO	1
PROCNO	1
F2 - Acquisition Parameters	
Date_	20060925
Time	9.13
INSTRUM	DRX500
PROBHD	5 mm Multinuc1
PULPROG	zg30pad
TD	65536
SOLVENT	CDCl3
NS	16
DS	2
SWH	10330.578 Hz
FIDRES	0.157632 Hz
AQ	3.1719923 sec
RG	71.8
DW	48.400 usec
DE	6.00 usec
TE	300.0 K
D1	1.00000000 sec
D31	0.00000000 sec
===== CHANNEL f1 =====	
NUC1	1H
P1	11.50 usec
PL1	0.00 dB
SFO1	500.1330885 MHz
F2 - Processing parameters	
SI	32768
SF	500.1299986 MHz
WDW	EM
SSB	0
LB	0.30 Hz
GB	0
PC	1.40

13C NMR

148.93
148.43
143.95
130.83
130.22
128.80
125.96
120.52
111.49
110.98
77.31
77.05
76.80
55.80
55.75
44.34

Current Data Parameters
NAME CH-II-120
EXPNO 2
PROCNO 1

F2 - Acquisition Parameters
Date_ 20060925
Time 9.16
INSTRUM DRX500
PROBHD 5 mm Multinucl
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 14
DS 4
SWH 34013.605 Hz
FIDRES 0.519006 Hz
AQ 0.9634292 sec
RG 6502
DW 14.700 usec
DE 6.00 usec
TE 300.0 K
D1 2.00000000 sec
d11 0.03000000 sec
D31 0.00000000 sec

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

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

F2 - Processing parameters
SI 32768
SF 125.7578011 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

240 220 200 180 160 140 120 100 80 60 40 20 0 ppm

H NMR
NC-III-120C-2

7.599
7.572
7.550
7.523
7.431
7.407
7.383
7.358
7.332
7.295
7.277
7.251
7.237
7.231
7.211
7.184
7.163

4.673
4.657
4.652
4.635
4.613
4.545
4.527
4.506
4.484
4.435
4.318

2.385
2.350
1.616
1.594
1.462
1.440
1.323
1.261
0.921
0.896

Current Data Parameters
NAME NC-III-120C-2
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
Date_ 20060612
Time 10.56
INSTRUM DRX300
PROBHD 5 mm Multinucl
PULPROG zg30pad
TD 32768
SOLVENT CDCl3
NS 16
DS 2
SWH 6172.839 Hz
FIDRES 0.188380 Hz
AQ 2.6542580 sec
RG 64
DW 81.000 usec
DE 6.00 usec
TE 300.0 K
D1 1.00000000 sec
D31 0.00000000 sec

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

F2 - Processing parameters
SI 32768
SF 300.1300077 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

¹³C NMR

```

Current Data Parameters
NAME      NC-III-120C-2
EXPNO     2
PROCNO    1

F2 - Acquisition Parameters
Date_     20060612
Time      11.03
INSTRUM   DRX300
PROBHD    5 mm Multinucl
PULPROG   zgdc30pad
TD         65536
SOLVENT   CDCl3
NS         91
DS         4
SWH        18832.393 Hz
FIDRES     0.287360 Hz
AQ          1.7400308 sec
RG          22528
DW          26.550 usec
DE          6.00 usec
TE          300.0 K
D1          2.00000000 sec
D11         0.03000000 sec
D31         0.00000000 sec

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

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

F2 - Processing parameters
SI          32768
SF          75.4677617 MHz
WDW         EM
SSB         0
LB          1.00 Hz
GB          0
PC          1.40
  
```

wy-III-23-2A3
check it again

Current Data Parameters
NAME wy-III-23-2A3
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
Date_ 20060811
Time 16.11
INSTRUM DRX300
PROBHD 5 mm Multinucl
PULPROG zg30pad
TD 32768
SOLVENT CDCl3
NS 16
DS 2
SWH 6172.839 Hz
FIDRES 0.188380 Hz
AQ 2.6542580 sec
RG 228.1
DW 81.000 usec
DE 6.00 usec
TE 300.0 K
D1 1.00000000 sec
D31 0.00000000 sec

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

F2 - Processing parameters
SI 32768
SF 300.1300065 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.30

wy-III-23-2A3 13C NMR

Current Data Parameters
 NAME wy-III-23-2A3
 EXPNO 2
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20060811
 Time 16.14
 INSTRUM DRX300
 PROBHD 5 mm Multinucl
 PULPROG zgdc30pad
 TD 65536
 SOLVENT CDCl3
 NS 53
 DS 4
 SWH 18832.393 Hz
 FIDRES 0.287360 Hz
 AQ 1.7400308 sec
 RG 22528
 DW 26.550 usec
 DE 6.00 usec
 TE 300.0 K
 D1 2.00000000 sec
 D11 0.03000000 sec
 D31 0.00000000 sec

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

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

F2 - Processing parameters
 SI 32768
 SF 75.4677531 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

7.707
7.701
7.685
7.679
7.296
7.290
7.281
7.267
7.261
7.257
7.247
7.242
7.232
7.226
7.219
7.209
7.195
7.190
7.185
7.092
7.086
7.065

4.526
4.506
4.485

3.240
3.216
3.195
3.172
2.778
2.755
2.732
2.422

1.624

-0.000

Current Data Parameters
NAME wy-III-23-A2
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
Date_ 20060601
Time 16.31
INSTRUM DRX300
PROBHD 5 mm Multinucl
PULPROG zg30pad
TD 32768
SOLVENT CDCl3
NS 16
DS 2
SWH 6172.839 Hz
FIDRES 0.188380 Hz
AQ 2.6542580 sec
RG 28.5
DE 81.000 usec
TE 300.0 K
D1 1.00000000 sec
D31 0.00000000 sec

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

F2 - Processing parameters
SI 32768
SF 300.1300073 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.30

¹³C NMR

Current Data Parameters
 NAME wy-III-23-A2
 EXNO 2
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20060601
 Time 16.35
 INSTRUM DRX300
 PROBD 5 mm Multinucl
 PULPROG zgpg30pad
 TD 65536
 SOLVENT CDCl3
 NS 217
 DS 4
 SWH 18832.393 Hz
 FIDRES 0.287360 Hz
 AQ 1.7400308 sec
 RG 22528
 DW 26.550 usec
 DE 6.00 usec
 TE 300.0 K
 D1 2.00000000 sec
 D11 0.03000000 sec
 D31 0.00000000 sec

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

===== CHANNEL f2 =====
 CPDPRG2 waltz16
 NUC2 ¹H
 P2 100.00 usec
 PL2 120.00 dB
 PL12 25.60 dB
 SFO2 300.1312005 MHz

F2 - Processing parameters
 SI 32768
 SF 75.4677537 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

wy-III-25-A3

90

Current Data Parameters
 NAME wy-III-25-A3-01
 EXPNO 1
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20060605
 Time 21.51
 INSTRUM DRX300
 PROBHD 5 mm Multinucl
 PULPROG zg30pad
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 2
 SWH 6172.839 Hz
 FIDRES 0.188380 Hz
 AQ 2.6542580 sec
 RG 322.5
 DW 81.000 usec
 DE 6.00 usec
 TE 300.0 K
 D1 1.00000000 sec
 D31 0.00000000 sec

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

F2 - Processing parameters
 SI 32768
 SF 300.1300065 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.30

wy-III-25-A3 13C NMR

90

144.12
138.32
130.77
128.80
128.78
128.59
126.55
125.95

77.42
77.00
76.57

42.22
36.80

Current Data Parameters
NAME wy-III-25-A3-01
EXPNO 2
PROCNO 1

F2 - Acquisition Parameters
Date_ 20060605
Time 18.50
INSTRUM DRX300
PROBHD 5 mm Multinucl
PULPROG zgdc30pad
TD 65536
SOLVENT CDCl3
NS 172
DS 4
SWH 18832.393 Hz
FIDRES 0.287360 Hz
AQ 1.7400308 sec
RG 22528
DW 26.550 usec
DE 6.00 usec
TE 300.0 K
D1 2.00000000 sec
D11 0.03000000 sec
D31 0.00000000 sec

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

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

F2 - Processing parameters
SI 32768
SF 75.4677531 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

wY-III-47-A3

0.000

Current Data Parameters
 NAME wy-III-47-A302
 EXPNO 1
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20060622
 Time 14.46
 INSTRUM DRX300
 PROBHD 5 mm Multinucl
 PULPROG zg30pad
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 2
 SWH 6172.839 Hz
 FIDRES 0.188380 Hz
 AQ 2.6542580 sec
 RG 80.6
 DW 81.000 usec
 DE 6.00 usec
 TE 300.0 K
 D1 1.00000000 sec
 D31 0.00000000 sec

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

F2 - Processing parameters
 SI 32768
 SF 300.129924 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.30

Current Data Parameters
 NAME wy-III-47-A302
 EXPNO 2
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20060622
 Time 14:50
 INSTRUM DRX300
 PROBD 5 mm Multinucl
 PULPROG zgdc30pad
 TD 65536
 SOLVENT CDC13
 NS 47
 DS 4
 SWH 18832.393 Hz
 FIDRES 0.287360 Hz
 AQ 1.7400308 sec
 RG 22528
 DW 26.550 usec
 DE 6.00 usec
 TE 300.0 K
 D1 2.00000000 sec
 D11 0.03000000 sec
 D31 0.00000000 sec

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

===== CHANNEL f2 =====
 CPDPRG2 waltz16
 NUC2 1H
 PCD2 100.00 usec
 PL2 120.00 dB
 PL12 25.60 dB
 SFO2 300.1312005 MHz

F2 - Processing parameters
 SI 32768
 SF 75.4677623 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.30

Current Data Parameters
 NAME WY-III-47-A202
 EXPNO 1
 PROCNO 1
 F2 - Acquisition Parameters
 Date_ 20060222
 Time 14.19
 INSTRUM DRX300
 PROBD 5 mm Multinucl
 PULPROG zg30pad
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 2
 SWH 6172.839 Hz
 FIDRES 0.188380 Hz
 AQ 2.6542580 sec
 RG 287.4
 DW 81.000 usec
 DE 6.00 usec
 TE 300.0 K
 D1 1.00000000 sec
 D31 0.00000000 sec
 ===== CHANNEL f1 =====
 NUC1 1H
 P1 7.05 usec
 PL1 0.00 dB
 SFO1 300.1318534 MHz
 F2 - Processing parameters
 SI 32768
 SF 300.1300039 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.30

10p

¹³C NMR

139.52
132.95
129.06
127.32

77.82
77.43
77.00
76.58
72.98

32.82

```

Current Data Parameters
NAME      wy-III-47-A202
EXPNO     2
PROCNO    1

F2 - Acquisition Parameters
Date_     20060622
Time      14.22
INSTRUM   DRX300
PROBHD    5 mm Multinucl
PULPROG   zgpg30pad
TD        65536
SOLVENT   CDCl3
NS        41
DS        4
SWH       18832.393 Hz
FIDRES    0.287360 Hz
AQ        1.7400308 sec
RG        22528
DE        26.550 usec
TE        300.0 K
D1        2.00000000 sec
D11       0.03000000 sec
D31       0.00000000 sec

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

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

F2 - Processing parameters
SI        32768
SF        75.4677525 MHz
WDW       EM
SSB       0
LB        1.00 Hz
GB        0
PC        1.30
  
```

1H-NMR
PZ-VI-152-C3

9q

Current Data Parameters
NAME PZ-VI-152-C3
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
Date_ 20060606
Time 21:52
INSTRUM DRX300
PROBHD 5 mm Multinucl
PULPROG zg30pad
TD 32768
SOLVENT CDCl3
NS 16
DS 2
SWH 6172.839 Hz
FIDRES 0.188380 Hz
AQ 2.6542580 sec
RG 912.3
DW 81.000 usec
DE 6.00 usec
TE 300.0 K
D1 1.00000000 sec
D31 0.00000000 sec

==== CHANNEL f1 =====
NUC1 1H
P1 7.05 usec
PL1 0.00 dB
SF01 300.1318534 MHz

F2 - Processing parameters
SI 32768
SF 300.1300056 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.30

¹³C NMR
PZ-VI-152-C3

Current Data Parameters
NAME PZ-VI-152-C3
EXPNO 2
PROCNO 1

F2 - Acquisition Parameters
Date_ 20060607
Time 9.01
INSTRUM DRX300
PROBHD 5 mm Multinuc1
PULPROG zgdc30pad
TD 65536
SOLVENT CDCl3
NS 10166
DS 4
SMH 18832.393 Hz
FIDRES 0.287360 Hz
AQ 1.7400308 sec
RG 22528
DW 26.550 usec
DE 6.00 usec
TE 300.0 K
D1 2.00000000 sec
D11 0.03000000 sec
D31 0.00000000 sec

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

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

F2 - Processing parameters
SI 32768
SF 75.4677525 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.30

Current Data Parameters
 NAME wy-III-24-A4
 EXPNO 1
 PROCNO 1
 F2 - Acquisition Parameters
 Date_ 20060601
 Time 21.18
 INSTRUM DRX300
 PROBHD 5 mm Multinucl
 PULPROG zg30pad
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 2
 SWH 6172.839 Hz
 FIDRES 0.188380 Hz
 AQ 2.6542580 sec
 RG 362
 DW 81.000 usec
 DE 6.00 usec
 TE 300.0 K
 D1 1.00000000 sec
 D31 0.00000000 sec
 ===== CHANNEL f1 =====
 NUC1 1H
 P1 7.05 usec
 PL1 0.00 dB
 SFO1 300.1318534 MHz
 F2 - Processing parameters
 SI 32768
 SF 300.1300060 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.30

wy-III-24-A4 13C NMR

Current Data Parameters
 NAME wy-III-24-A4
 EXPNO 2
 PROCNO 1
 F2 - Acquisition Parameters
 Date_ 20060601
 Time 21.22
 INSTRUM DRX300
 PROBD 5 mm Multinucl
 PULPROG zgpg30pad
 TD 65536
 SOLVENT CDCl3
 NS 104
 DS 4
 SWH 18832.393 Hz
 FIDRES 0.287360 Hz
 AQ 1.7400308 sec
 RG 22528
 DW 26.550 usec
 DE 6.00 usec
 TE 300.0 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 D31 0.0000000 sec
 ===== CHANNEL f1 =====
 NUC1 13C
 P1 9.00 usec
 PL1 5.00 dB
 SFO1 75.4760107 MHz
 ===== CHANNEL f2 =====
 CPDPRG2 waltz16
 NUC2 1H
 PCPD2 100.00 usec
 PL2 120.00 dB
 PL12 25.60 dB
 SFO2 300.1312005 MHz
 F2 - Processing parameters
 SI 32768
 SF 75.4677531 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

7.649
7.622
7.322
7.295
7.260
7.253
7.225
7.119
7.105
7.098
7.077
7.069
6.073

9t

S-69

Current Data Parameters
NAME MG-VI-6d-A2
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
Date_ 20060605
Time 23.20
INSTRUM DRX300
PROBHD 5 mm Multinucl
PULPROG zg30pad
TD 32768
SOLVENT CDCl3
NS 16
DS 2
SWH 6172.839 Hz
FIDRES 0.188380 Hz
AQ 2.6542580 sec
RG 161.3
DM 81.000 usec
DE 6.00 usec
TE 300.0 K
D1 1.00000000 sec
D31 0.00000000 sec

===== CHANNEL f1 =====
NUC1 1H
P1 7.05 usec
PL1 0.00 dB
SF01 300.1318534 MHz

F2 - Processing parameters
SI 32768
SF 300.1300062 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.30

141.95
141.41
137.45
130.65
130.52
129.76
129.23
126.82
125.38
121.65

77.42
77.00
76.58

21.34
17.77

```

Current Data Parameters
NAME      MG-VI-6d-A2
EXPNO     2
PROCNO    1

F2 - Acquisition Parameters
Date_     20060605
Time      23.24
INSTRUM   DRX300
PROBHD    5 mm Multinucl
PULPROG   zgdc30pad
TD         65536
SOLVENT    CDC13
NS         45
DS         4
SWH        18832.393 Hz
FIDRES     0.287360 Hz
AQ         1.7400308 sec
RG         22528
DW         26.550 usec
DE         6.00 usec
TE         300.0 K
D1         2.00000000 sec
D11        0.03000000 sec
D31        0.00000000 sec

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

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

F2 - Processing parameters
SI          32768
SF          75.4677542 MHz
WDW         EM
SSB         0
LB          1.00 Hz
GB          0
PC          1.30

```

1H NMR
NC-III-118C
tosyl p-t-butyl-N-sulfonamide

ppm

7.67052
7.63751
7.32367
7.31231
7.30369
7.29139
7.27751
7.04318
7.03473
7.00855
6.14470

2.42020
1.29096
0.00149

Current Data Parameters
NAME NC-III-118C
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters

Date_ 20060607
Time 16.44
INSTRUM arx250
PROBHD 5 mm QNP 1H
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 16
DS 2
SWH 5208.333 Hz
FIDRES 0.158946 Hz
AQ 3.1457779 sec
RG 715
DW 96.000 use
DE 137.14 use
TE 300.0 K
D1 1.00000000 sec
P1 9.50 use
SF01 250.1315321 MHz
NUCLEUS 1H

F2 - Processing parameters

SI 16384
SF 250.1300087 MHz
WDW EM
SSB 0
LB 0.20 Hz
GB 0
PC 1.50

1D NMR plot parameters

CX 20.00 cm
CY 12.50 cm
F1P 10.000 ppm
F1 2501.30 Hz
F2P -0.500 ppm
F2 -125.07 Hz
PPMCM 0.52500 ppm
HZCM 131.31825 Hz/

2.0000
4.2424
2.0642
1.0107
3.0823
9.2243

Integral

ppm

¹³C NMR

9u

Current Data Parameters
 NAME NC-III-118C
 EXPNO 2
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20060607
 Time 16.49
 INSTRUM arx250
 PROBHD 5 mm QNP 1H
 PULPROG zgdc30
 TD 36864
 SOLVENT DMSO
 NS 83
 DS 4
 SWH 17241.379 Hz
 FIDRES 0.467702 Hz
 AQ 1.0691060 sec
 RG 22800
 DM 29.000 use
 DE 41.43 use
 TE 300.0 K
 D12 0.0002000 sec
 DL5 23.00 dB
 CPDPRG waltz16
 P31 103.00 use
 D1 2.0000000 sec
 P1 8.00 use
 SF01 62.9023694 MHz
 NUCLEUS ¹³C
 D11 0.0300000 sec

F2 - Processing parameters
 SI 32768
 SF 62.8952429 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

1D NMR plot parameters
 CX 20.00 cm
 CY 12.00 cm
 F1P 220.000 ppm
 F1 13836.95 Hz
 F2P -10.000 ppm
 F2 -628.95 Hz
 PPMCM 11.50000 ppm
 HZCM 723.29529 Hz/

1H NMR

7.702
7.699
7.695
7.694
7.691
7.688
7.683
7.450
7.442
7.437
7.436
7.429
7.421
7.189
6.970
6.965
6.956
6.952
6.752
6.745
6.741
6.731
6.727
5.945

1.183
0.000
-0.072

Current Data Parameters
NAME CH-II-124c
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
Date_ 20060925
Time 9.33
INSTRUM DRX500
PROBHD 5 mm Multinucl
PULPROG zg30pad
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 10330.578 Hz
FIDRES 0.157632 Hz
AQ 3.1719923 sec
RG 114
DW 48.400 usec
DE 6.00 usec
TE 300.0 K
D1 1.00000000 sec
D31 0.00000000 sec

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

F2 - Processing parameters
SI 32768
SF 500.1300490 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.40

13C NMR

156.81
144.53
132.70
131.20
128.89
125.54
122.93
114.52
77.21
76.95
76.70
55.42

Current Data Parameters
NAME CH-II-124C
EXPNO 2
PROCNO 1

F2 - Acquisition Parameters
Date_ 20060925
Time 9.36
INSTRUM DRX500
PROBHD 5 mm Multinucl
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 25
DS 4
SWH 34013.605 Hz
FIDRES 0.519006 Hz
AQ 0.9634292 sec
RG 10321.3
DW 14.700 usec
DE 6.00 usec
TE 300.0 K
D1 2.00000000 sec
d11 0.03000000 sec
D31 0.00000000 sec

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

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

F2 - Processing parameters
SI 32768
SF 125.7578011 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

240 220 200 180 160 140 120 100 80 60 40 20 0 ppm

¹H NMR

Current Data Parameters
 NAME CH-III-27b
 EXPNO 1
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20060801
 Time 15.48
 INSTRUM DRX500
 PROBD 5 mm Multinucl
 PULPROG zg30pad
 TD 65536
 SOLVENT CDC13
 NS 16
 DS 2
 SWH 10330.578 Hz
 FIDRES 0.157632 Hz
 AQ 3.171923 sec
 RG 128
 DW 48.400 usec
 DE 6.00 usec
 TE 300.0 K
 D1 1.00000000 sec
 D31 0.00000000 sec

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

F2 - Processing parameters
 SI 32768
 SF 500.1300128 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.40

S-75

¹³C NMR

```

Current Data Parameters
NAME      CH-III-27b
EXPNO     4
PROCNO    1

F2 - Acquisition Parameters
Date_     20060925
Time      8.41
INSTRUM   DRX500
PROBHD    5 mm Multinucl
PULPROG   zgpg30
TD         65536
SOLVENT   CDCl3
NS         36
DS         4
SWH        34013.605 Hz
FIDRES     0.519006 Hz
AQ         0.9634292 sec
RG         32768
DW         14.700 usec
DE         6.00 usec
TE         300.0 K
D1         2.00000000 sec
d11        0.03000000 sec
D31        0.00000000 sec

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

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

F2 - Processing parameters
SI         32768
SF         125.7578011 MHz
WDW        EM
SSB        0
LB         1.00 Hz
GB         0
PC         1.40
  
```

¹H NMR

13a

Current Data Parameters
 NAME CH-III-27a
 EXPNO 3
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20060925
 Time 8.21
 INSTRUM DRX500
 PROBHD 5 mm Multinucl
 PULPROG zg30pad
 TD 65536
 SOLVENT CDC13
 NS 16
 DS 2
 SWH 10330.578 Hz
 FIDRES 0.157632 Hz
 AQ 3.1719923 sec
 RG 101.6
 DW 48.400 usec
 DE 6.00 usec
 TE 300.0 K
 D1 1.00000000 sec
 D31 0.00000000 sec

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

F2 - Processing parameters
 SI 32768
 SF 500.1300153 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.40

13C NMR

143.59
135.62
134.37
134.10
128.67
128.01
127.80
127.51
126.16
126.13

77.21
76.96
76.70

47.24

13a

```

Current Data Parameters
NAME      CH-III-27a
EXPNO     4
PROCNO    1

F2 - Acquisition Parameters
Date_     20060925
Time      8.23
INSTRUM   DRX500
PROBHD    5 mm Multinucl
PULPROG   zgpg30
TD         65536
SOLVENT   CDCl3
NS         32
DS         4
SWH        34013.605 Hz
FIDRES     0.519006 Hz
AQ         0.9634292 sec
RG         32768
DW         14.700 usec
DE         6.00 usec
TE         300.0 K
D1         2.00000000 sec
d11        0.03000000 sec
D31        0.00000000 sec

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

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

F2 - Processing parameters
SI         32768
SF         125.7578011 MHz
WDW        EM
SSB        0
LB         1.00 Hz
GB         0
PC         1.40
    
```

240 220 200 180 160 140 120 100 80 60 40 20 0 ppm

12b

0.000

1.913

Current Data Parameters
 NAME wy-III-84-A4-02
 EXPNO 1
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20060801
 Time 17.19
 INSTRUM DRX300
 PROBHD 5 mm Multinucl
 PULPROG zg30pad
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 2
 SWH 6172.839 Hz
 FIDRES 0.188380 Hz
 AQ 2.6542580 sec
 RG 114
 DW 81.000 usec
 DE 6.00 usec
 TE 300.0 K
 D1 1.00000000 sec
 D31 0.00000000 sec

==== CHANNEL f1 =====
 NUC1 1H
 P1 7.05 usec
 PL1 0.00 dB
 SF01 300.1318534 MHz

F2 - Processing parameters
 SI 32768
 SF 300.1300035 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.30

WY-III-84-A4 13C NMR

12b

146.33
140.63
137.19
133.73
131.74
128.46
128.05
127.57
127.31
125.11

77.43
77.00
76.58

44.98

Current Data Parameters
NAME WY-III-84-A4-02
EXPNO 2
PROCNO 1

F2 - Acquisition Parameters
Date_ 20060801
Time 17.21
INSTRUM DRX300
PROBHD 5 mm Multinucl
PULPROG zgdc30pad
TD 65536
SOLVENT CDCl3
NS 50
DS 4
SWH 18832.393 Hz
FIDRES 0.287360 Hz
AQ 1.7400308 sec
RG 22528
DE 26.550 usec
TE 300.0 K
D1 2.0000000 sec
D11 0.0300000 sec
D31 0.0000000 sec

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

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

F2 - Processing parameters
SI 32768
SF 75.4677588 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.30

190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ppm

Current Data Parameters

NAME	wy-III-84-A3
EXPNO	1
PROCNO	1

F2 - Acquisition Parameters

Date_	20060801
Time	17.05
INSTRUM	DRX300
PROBHD	5 mm Multinucl
PULPROG	zg30pad
TD	32768
SOLVENT	CDC13
NS	16
DS	2
SWH	6172.839 Hz
FIDRES	0.188380 Hz
AQ	2.6542580 sec
RG	203.2
DW	81.000 usec
DE	6.00 usec
TE	300.0 K
D1	1.00000000 sec
D31	0.00000000 sec

==== CHANNEL f1 =====

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

F2 - Processing parameters

SI	32768
SF	300.1300069 MHz
WDW	EM
SSB	0
LB	0.30 Hz
GB	0
PC	1.30

wy-III-84-A3 13C NMR

13b

135.62
133.89
133.43
132.73
130.98
128.65
128.00
127.83
125.22

77.45
77.03
76.61

47.85

Current Data Parameters
NAME wy-III-84-A3
EXPNO 2
PROCNO 1

F2 - Acquisition Parameters
Date_ 20060801
Time 17.09
INSTRUM DRX300
PROBHD 5 mm Multinucl
PULPROG zgpg30pad
TD 65536
SOLVENT CDCl3
NS 51
DS 4
SWH 18832.393 Hz
FIDRES 0.287360 Hz
AQ 1.7400308 sec
RG 22528
DW 26.550 usec
DE 6.00 usec
TE 300.0 K
D1 2.00000000 sec
D11 0.03000000 sec
D31 0.00000000 sec

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

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

F2 - Processing parameters
SI 32768
SF 75.4677525 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.30

GB-II-091-A3

0.001

Current Data Parameters
 NAME GB-II-091-A3
 EXPNO 1
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20060804
 Time 8.58
 INSTRUM DRX300
 PROBHD 5 mm Multinucl
 PULPROG zg30pad
 TD 32768
 SOLVENT CDC13
 NS 16
 DS 2
 SWH 6172.839 Hz
 FIDRES 0.188380 Hz
 AQ 2.6542580 sec
 RG 161.3
 DW 81.000 usec
 DE 6.00 usec
 TE 300.0 K
 D1 1.00000000 sec
 D31 0.00000000 sec

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

F2 - Processing parameters
 SI 32768
 SF 300.1300097 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.30

¹³C NMR
GB-II-091-A3

Current Data Parameters
NAME GB-II-091-A3
EXPNO 2
PROCNO 1

F2 - Acquisition Parameters
Date_ 20060804
Time 9.04
INSTRUM DRX300
PROBHD 5 mm Multinucl
PULPROG zgdc30pad
TD 65536
SOLVENT CDCl3
NS 84
DS 4
SWH 18832.393 Hz
FIDRES 0.287360 Hz
AQ 1.7400308 sec
RG 22528
DW 26.550 usec
DE 6.00 usec
TE 300.0 K
D1 2.00000000 sec
D11 0.03000000 sec
D31 0.00000000 sec

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

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

F2 - Processing parameters
SI 32768
SF 75.4677548 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

13c

8.435
8.282
7.956
7.928
7.891
7.848
7.843
7.819
7.813
7.675
7.670
7.652
7.647
7.628
7.622
7.603
7.599
7.580
7.575
7.562
7.250
7.242
7.202
7.190

4.996
4.978

4.171
4.151

3.169
3.144

1.650
1.256
1.147
1.123
1.099

-0.001

Current Data Parameters
NAME GB-II-091-A2
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
Date_ 20060804
Time 9.15
INSTRUM DRX300
PROBHD 5 mm Multinucl
PULPROG zg30pad
TD 32768
SOLVENT CDCl3
NS 16
DS 2
SWH 6172.839 Hz
FIDRES 0.188380 Hz
AQ 2.6542580 sec
RG 256
DW 81.000 usec
DE 6.00 usec
TE 300.0 K
D1 1.00000000 sec
D31 0.00000000 sec

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

F2 - Processing parameters
SI 32768
SF 300.1300092 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.30

13C NMR
GB-II-091-A2

13c

136.61
136.13
134.79
132.11
129.52
129.23
128.80
128.63
128.58
127.86
127.53
122.26

77.43
77.01
76.59

47.31

Current Data Parameters
NAME GB-II-091-A2
EXNO 2
PROCNO 1

F2 - Acquisition Parameters
Date_ 20060804
Time_ 9.23
INSTRUM DRX300
PROBHD 5 mm Multinucl
PULPROG zgdc30pad
TD 65536
SOLVENT CDCl3
NS 34
DS 4
SWH 18832.393 Hz
FIDRES 0.287360 Hz
AQ 1.7400308 sec
RG 22528
DW 26.550 usec
DE 6.00 usec
TE 300.0 K
D1 2.00000000 sec
D11 0.03000000 sec
D31 0.00000000 sec

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

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

F2 - Processing parameters
SI 32768
SF 75.4677525 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

H NMR

NC-IV-28C

N-benzyl-o-F-benzenesulfonamide

12d

Current Data Parameters
 NAME NC-IV-28C
 EXPNO 1
 PROCNO 1
 F2 - Acquisition Parameters
 Date_ 20060906
 Time 13.34
 INSTRUM DRX300
 PROBHD 5 mm Multinucl
 PULPROG zg30pad
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 2
 SWH 6172.839 Hz
 FIDRES 0.188380 Hz
 AQ 2.6542580 sec
 RG 64
 DW 81.000 usec
 DE 6.00 usec
 TE 300.0 K
 D1 1.00000000 sec
 D31 0.00000000 sec
 ===== CHANNEL f1 =====
 NUC1 1H
 P1 7.05 usec
 PL1 0.00 dB
 SFO1 300.1318534 MHz
 F2 - Processing parameters
 SI 32768
 SF 300.1300081 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.30

12d

¹³C NMR

160.25
156.92
137.51
133.16
133.05
131.12
130.92
128.37
127.98
127.74
127.42
126.95
126.93
124.29
124.25
116.09
115.82

77.42
77.00
76.57

44.82

```

Current Data Parameters
NAME      NC-IV-28C
EXPNO     2
PROCNO    1

F2 - Acquisition Parameters
Date_     20060906
Time      13.38
INSTRUM   DRX300
PROBHD    5 mm Multinucl
PULPROG   zgdc30pad
TD        65536
SOLVENT   CDCl3
NS        97
DS        4
SWH        18832.393 Hz
FIDRES     0.287360 Hz
AQ         1.7400308 sec
RG         22528
DW         26.550 usec
DE         6.00 usec
TE         300.0 K
D1         2.00000000 sec
D11        0.03000000 sec
D31        0.00000000 sec

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

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

F2 - Processing parameters
SI         32768
SF         75.4677634 MHz
WDW        EM
SSB        0
LB         1.00 Hz
GB         0
PC         1.40
  
```

H NMR
NC-IV-28B
N-benzyl-o-fluorobenzenesulfonamide

Current Data Parameters
NAME NC-IV-28B
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
Date_ 20060912
Time 14.25
INSTRUM DRX300
PROBHD 5 mm Multinuc
PULPROG zg30pad
TD 32768
SOLVENT CDCl3
NS 16
DS 2
SWH 6172.839 Hz
FIDRES 0.188380 Hz
AQ 2.6542580 sec
RG 101.6
DW 81.000 usec
DE 6.00 usec
TE 300.0 K
D1 1.00000000 sec
D31 0.00000000 sec

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

F2 - Processing parameters
SI 32768
SF 300.1300084 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.30

13C NMR

160.30
156.93
135.87
134.94
134.83
130.19
128.56
128.08
127.90
127.82
127.76
124.39
124.34
116.92
116.64

77.43
77.00
76.58

47.26

Current Data Parameters
NAME NC-IV-28B
EXPNO 2
PROCNO 1

F2 - Acquisition Parameters
Date_ 20060912
Time 14.31
INSTRUM DRX300
PROBHD 5 mm Multinucl
PULPROG zgpg30pad
TD 65536
SOLVENT CDCl3
NS 98
DS 4
SWH 18832.393 Hz
FIDRES 0.287360 Hz
AQ 1.7400308 sec
RG 22528
DW 26.550 usec
DE 6.00 usec
TE 300.0 K
D1 2.00000000 sec
D11 0.03000000 sec
D31 0.00000000 sec

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

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

F2 - Processing parameters
SI 32768
SF 75.4677577 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

¹H NMR
GB-II-093-A3

12e

Current Data Parameters
NAME GB-II-093-A3
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
Date_ 20060804
Time 9.09
INSTRUM arx250
PROBHD 5 mm QNP 1H
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 16
DS 2
SWH 5208.333 Hz
FIDRES 0.158946 Hz
AQ 3.1457779 sec
RG 512
DW 96.000 usec
DE 137.14 usec
TE 300.0 K
D1 1.00000000 sec
P1 9.50 usec
SFO1 250.1315321 MHz
NUCLEUS 1H

F2 - Processing parameters
SI 16384
SF 250.1300078 MHz
WDW EM
SSB 0
LB 0.20 Hz
GB 0
PC 1.50

13C NMR

GB-II-093-A3

12e

141.234
137.507
137.220
131.887
130.265
128.431
128.111
127.527
126.995
126.716

77.510
77.004
76.493

45.011

ppm

Current Data Parameters
NAME GB-II-093-A3
EXPNO 2
PROCNO 1

F2 - Acquisition Parameters
Date_ 20060804
Time 9.15
INSTRUM arx250
PROBHD 5 mm QNP 1H
PULPROG zgpg30
TD 36864
SOLVENT CDCl3
NS 71
DS 4
SWH 17241.379 Hz
FIDRES 0.467702 Hz
AQ 1.0691060 sec
RG 22800
DW 29.000 usec
DE 41.43 usec
TE 300.0 K
D12 0.0002000 sec
DL5 23.00 dB
CPDPRG waltz16
P31 103.00 usec
D1 2.0000000 sec
P1 8.00 usec
SF01 62.9023694 MHz
NUCLEUS 13C
D11 0.0300000 sec

F2 - Processing parameters
SI 32768
SF 62.8952471 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

1D NMR plot parameters
CX 20.00 cm
CY 10.00 cm
F1P 182.563 ppm
F1 11482.36 Hz
F2P 12.551 ppm
F2 789.39 Hz
PPMCM 8.50062 ppm/cm
HZCM 534.64856 Hz/cm

¹H NMR
GB-II-093-A2

13e

Current Data Parameters
NAME GB-II-093-A2
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
Date_ 20060804
Time 9.27
INSTRUM arrx250
PROBHD 5 mm QNP 1H
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 16
DS 2
SWH 5208.333 Hz
FIDRES 0.158946 Hz
AQ 3.1457779 sec
RG 1024
DW 96.000 usec
DE 137.14 usec
TE 300.0 K
D1 1.00000000 sec
P1 9.50 usec
SF01 250.1315321 MHz
NUCLEUS 1H

F2 - Processing parameters
SI 16384
SF 250.1300081 MHz
WDW EM
SSB 0
LB 0.20 Hz
GB 0
PC 1.50

¹³C NMR

GB-II-093-A2

13e

Current Data Parameters
NAME GB-II-093-A2
EXPNO 2
PROCNO 1

F2 - Acquisition Parameters

Date_ 20060804
Time 9.37
INSTRUM airx250
PROBHD 5 mm QNP 1H
PULPROG zgdc30
TD 36864
SOLVENT CDCl3
NS 151
DS 4
SWH 17241.379 Hz
FIDRES 0.467702 Hz
AQ 1.0691060 sec
RG 22800
DW 29.000 usec
DE 41.43 usec
TE 300.0 K
D12 0.0002000 sec
DL5 23.00 dB
CPDPRG waltz16
P31 103.00 usec
D1 2.0000000 sec
P1 8.00 usec
SF01 62.9023694 MHz
NUCLEUS 13C
D11 0.0300000 sec

F2 - Processing parameters

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

1D NMR plot parameters

CX 20.00 cm
CY 10.00 cm
F1P 165.514 ppm
F1 10410.04 Hz
F2P -8.189 ppm
F2 -515.03 Hz
PPMCM 8.68513 ppm/cm
HZCM 546.25330 Hz/cm

Current Data Parameters
 NAME MG-VI-50c-A2
 EXPNO 1
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20060802
 Time 12.38
 INSTRUM DRX300
 PROBHD 5 mm Multinucl
 PULPROG zg30pad
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 2
 SWH 6172.839 Hz
 FIDRES 0.188380 Hz
 AQ 2.6542580 sec
 RG 90.5
 DW 81.000 usec
 DE 6.00 usec
 TE 300.0 K
 D1 1.00000000 sec
 D31 0.00000000 sec

===== CHANNEL f1 =====
 NUC1 1H
 P1 7.05 usec
 PL1 0.00 dB
 SF01 300.1318534 MHz

F2 - Processing parameters
 SI 32768
 SF 300.1300081 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.30

```

Current Data Parameters
NAME      MG-VI-50c-A2
EXPNO     2
PROCNO    1

F2 - Acquisition Parameters
Date_     20060802
Time      12.41
INSTRUM   DRX300
PROBHD    5 mm Multinucl
PULPROG   zgdc30pad
TD         65536
SOLVENT   CDCl3
NS         76
DS         4
SWH        18832.393 Hz
FIDRES     0.287360 Hz
AQ         1.7400308 sec
RG         22528
DW         26.550 usec
DE         6.00 usec
TE         300.0 K
D1         2.00000000 sec
D11        0.03000000 sec
D31        0.00000000 sec

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

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

F2 - Processing parameters
SI         32768
SF         75.4677617 MHz
WDW        EM
SSB        0
LB         1.00 Hz
GB         0
PC         1.30
  
```


Current Data Parameters
 NAME MG-VI-50b-A2
 EXPNO 1
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20060802
 Time 12.24
 INSTRUM DRX300
 PROBHD 5 mm Multinucl
 PULPROG zg30pad
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 2
 SWH 6172.839 Hz
 FIDRES 0.188380 Hz
 AQ 2.6542580 sec
 RG 228.1
 DW 81.000 usec
 DE 6.00 usec
 TE 300.0 K
 D1 1.00000000 sec
 D31 0.00000000 sec

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

F2 - Processing parameters
 SI 32768
 SF 300.1300075 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.30

13C NMR

138.75
135.60
134.92
133.65
131.61
128.62
127.96
127.94
127.78
119.67

77.42
77.00
76.58

47.46

13f

Current Data Parameters
NAME MG-VI-50b-A2
EXPNO 2
PROCNO 1

F2 - Acquisition Parameters
Date_ 20060802
Time 12:27
INSTRUM DRX300
PROBHD 5 mm Multinucl
PULPROG zgpg30pad
TD 65536
SOLVENT CDCl3
NS 102
DS 4
SWH 18832.393 Hz
FIDRES 0.287360 Hz
AQ 1.7400308 sec
RG 22528
DW 26.550 usec
DE 6.00 usec
TE 300.0 K
D1 2.00000000 sec
D11 0.03000000 sec
D31 0.00000000 sec

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

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

F2 - Processing parameters
SI 32768
SF 75.4677542 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

220 200 180 160 140 120 100 80 60 40 20 0 ppm

12g

Current Data Parameters
NAME PZ-VII-62-A2
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
Date_ 20060824
Time 12.29
INSTRUM DRX500
PROBHD 5 mm Multinucl
PULPROG zg30pad
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 10330.578 Hz
FIDRES 0.157632 Hz
AQ 3.1719923 sec
RG 161.3
DW 48.400 usec
DE 6.00 usec
TE 300.0 K
D1 1.00000000 sec
D31 0.00000000 sec

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

F2 - Processing parameters
SI 32768
SF 500.1300131 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.40

¹³C NMR
PZ-VII-62-A2

137.83
128.72
128.06
127.89

84.40
77.25
77.00
76.74

48.65
27.54
27.36

Current Data Parameters
NAME PZ-VII-62-A2
EXPNO 2
PROCNO 1

F2 - Acquisition Parameters
Date_ 20060824
Time 12.32
INSTRUM DRX500
PROBHD 5 mm Multinucl
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 1792
DS 4
SWH 34013.605 Hz
FIDRES 0.519006 Hz
AQ 0.9634292 sec
RG 32768
DW 14.700 usec
DE 6.00 usec
TE 300.0 K
D1 2.00000000 sec
d11 0.03000000 sec
D31 0.00000000 sec

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

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

F2 - Processing parameters
SI 32768
SF 125.7577928 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

200 180 160 140 120 100 80 60 40 20 ppm

¹H NMR
PZ-VII-92-A1

7.397
7.393
7.391
7.379
7.377
7.368
7.365
7.361
7.354
7.350
7.348
7.343
7.336
7.287

4.351
4.336
4.324

3.148
3.135
3.121

1.599
1.401
1.388

0.026

Current Data Parameters
NAME PZ-VII-92-A1
EXPNO 1
PROCNO 1
F2 - Acquisition Parameters
Date_ 20060928
Time 20.28
INSTRUM DRX500
PROBHD 5 mm Multinucl
PULPROG zg30pad
TD 65536
SOLVENT CDC13
NS 16
DS 2
SWH 10330.578 Hz
FIDRES 0.157632 Hz
AQ 3.1719923 sec
RG 256
DE 48.400 usec
TE 300.0 K
D1 1.00000000 sec
D31 0.00000000 sec
===== CHANNEL f1 =====
NUC1 1H
P1 11.50 usec
PL1 0.00 dB
SFO1 500.1330885 MHz
F2 - Processing parameters
SI 32768
SF 500.1300000 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.40

13C NMR
PZ-VII-92-A1

```

Current Data Parameters
NAME      PZ-VII-92-A1
EXPNO     2
PROCNO    1

F2 - Acquisition Parameters
Date_     20060928
Time      20.30
INSTRUM   DRX500
PROBHD    5 mm Multinuel
PULPROG   zgpg30
TD         65536
SOLVENT   CDCl3
NS         938
DS         4
SWH        34013.605 Hz
FIDRES     0.519006 Hz
AQ          0.9634292 sec
RG          32768
DE          14.700 usec
TE          300.0 K
D1          2.00000000 sec
d11         0.03000000 sec
D31         0.00000000 sec

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

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

F2 - Processing parameters
SI          32768
SF         125.7578011 MHz
WDW         EM
SSB         0
LB          1.00 Hz
GB          0
PC          1.40
  
```