Supporting Information
For

Palladium Catalyzed C–H Aminations of Anilides with *N*-Fluorobenzenesulfonimide

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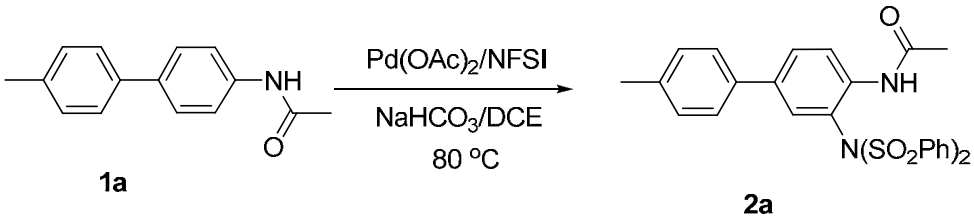
I. General Remarks:

All reagents were purchased from commercial sources and used without further treatment, unless otherwise indicated. All anilide amination reactions were run under air with no precautions taken to exclude moisture. ^{1}H NMR spectra were recorded at 25ºC on a Varian 500 MHz, ^{13}C NMR spectra were recorded at 25ºC on a Varian 125 MHz or Bruck 100 MBz, and TMS as internal standard. IR spectra (KBr) were recorded on a Magna-560 FTIR spectrophotometer in the range of 400~4000 cm^{-1}. Melting points were obtained with a micro melting point XT4A Beijing Keyi electrooptic apparatus and are uncorrected. High resolution mass spectra were recorded on Bruck microtof. All reactions were monitored by TLC with Taizhou GF254 silica gel coated plates. Flash column chromatography was carried out using 300-400 mesh silica gel at increased pressure.

II. Synthesis procedure

Substrates **1a-1r** and **3a-3i** were prepared by the reaction of corresponding anilines and acyl chlorides in CH_2Cl_2 at room temperature.[1,2]

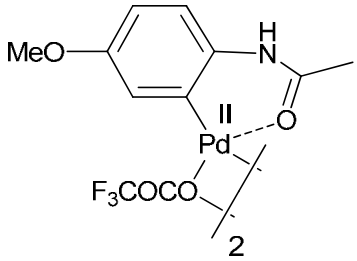
General procedure for the synthesis of 2 and 4 (**2a** as an example).



To a solution of *N*-(4'-methylbiphenyl-4-yl)acetamide (**1a**) (112.6 mg, 0.5 mmol) in DCE (5.0 mL) was added *N*-Fluorobenzenesulfonimide (315 mg, 1.0 mmol) and $NaHCO_3$ (84 mg, 1.0 mmol) and $Pd(OAC)_2$ (11.2 mg, 0.1 mmol). The mixture was stirred at 80 ^{o}C for 2.5 h (monitored by TLC), extracted with dichloromethane (5×3 mL), and dried over anhydrous Na_2SO_4. The solvent was removed under reduced pressure, and the residue was purified by a shot flash silica gel column chromatography (EtOAc/petro ether=1:6) to give compound **2a** as a yellow solid (226.5 mg, 78%).

III. Synthesis and characterization of bimetallic Pd complex G [3]

Palladium complex G



In a one-dram vial was added *N*-(4-methoxyphenyl)acetamide (**2m**) (49.5 mg, 0.3 mmol), $Pd(OAc)_2$ (67.2 mg, 0.3 mmol), and dichloromethane (3 mL). Trifluoroacetic acid (34.2 mg, 0.3 mmol) was subsequently added into the vial and the resulting solution was heated to 40 °C for 6 h.

After cooling to ambient temperature, the reaction mixture was concentrated *in vacuo* and the resulting residue was redissolved in petro ether (6 mL). Then the precipitation of the desired complex occurred. The suspension was filtered through Celite and washed with 4 x 2 mL (20% ether/petro ether). The residue was evaporated *in vacuo* to afford the bimetallic palladacycle **G** as a yellow solid (151.4 mg, 71%). ^{1}H NMR (500 MHz; CD_3COCD_3): δ = 2.09 (s, 3H), 3.89 (s, 3H), 6.61 (d, J = 8.5 Hz, 1H), 6.82 (d, J = 8.5 Hz, 2H), 9.92 (s, 1H). ^{13}C NMR (125 MHz; CD_3COCD_3): δ = 20.3, 56.3, 108.2, 115.1, 117.4, 117.6, 120.9, 123.5, 125.1, 146.7, 167.8.

[1] Xiong, T.; Li, Y.; Lv, Y.; Zhang, Q. *Chem. Commun.* **2010**, *46*, 6831.

[2] Phipps, R. J.; Gaunt, M. J. *Science* **2009**, *323*, 1593.

[3] Zhao, X.; Yeung, C. S.; Dong, V. M. *J. Am. Chem. Soc.* **2010**, *132*, 5837.

IV. X-Ray Crystallography of 2a and 4b.

X-Ray Crystallography of 2a

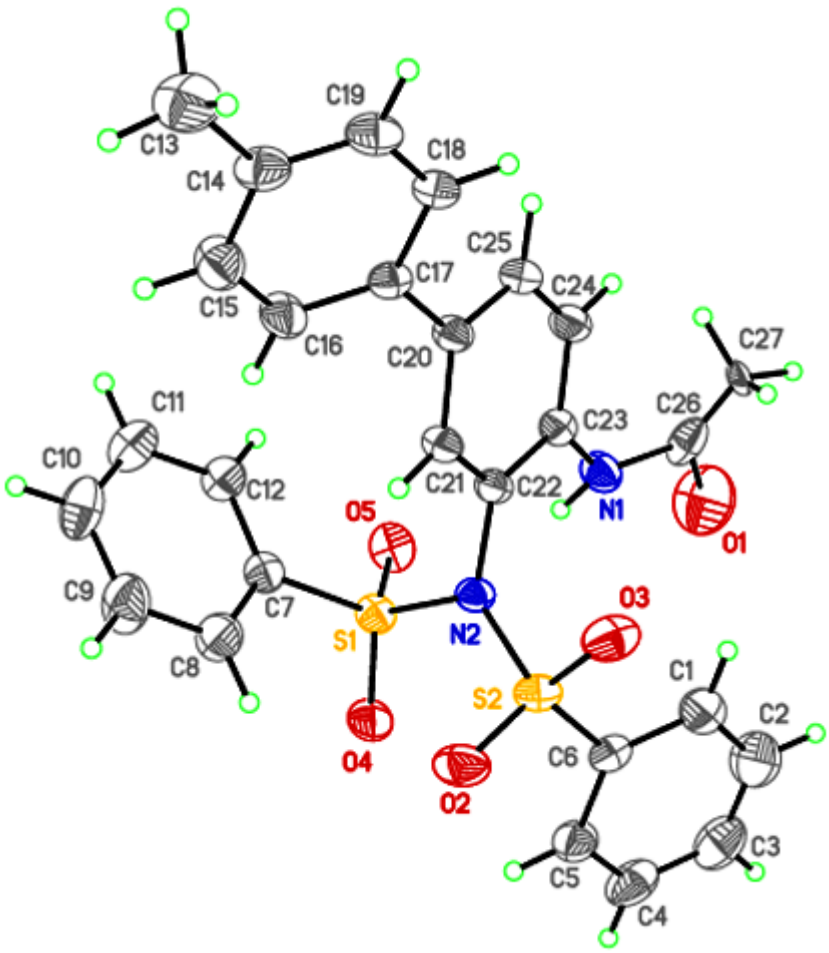


Table 1. Crystal data and structure refinement for 2a.

Identification code	**2a**

Empirical formula	**C27 H24 N2 O5 S2**
Formula weight	**520.60**
Temperature	**293(2) K**
Wavelength	**0.71069 A**
Crystal system, space group	**triclinic, p -1**
Unit cell dimensions	**a = 9.889(5) A alpha = 99.648(5) deg.** **b = 11.320(5) A beta = 105.586(5) deg.** **c = 12.066(5) A gamma = 100.964(5) deg.**
Volume	**1242.7(10) A^3**
Z, Calculated density	**2, 1.391 Mg/m^3**
Absorption coefficient	**0.256 mm^-1**
F(000)	**544**
Crystal size	**0.50 x 0.20 x 0.07 mm**
Theta range for data collection	**1.80 to 26.01 deg.**
Limiting indices	**-12<=h<=12, -13<=k<=9, -14<=l<=14**
Reflections collected / unique	**6780 / 4770 [R(int) = 0.0220]**
Completeness to theta = 25.00	**98.4 %**
Refinement method	**Full-matrix least-squares on F^2**
Data / restraints / parameters	**4770 / 1 / 325**
Goodness-of-fit on F^2	**1.025**
Final R indices [I>2sigma(I)]	**R1 = 0.0748, wR2 = 0.1947**
R indices (all data)	**R1 = 0.1100, wR2 = 0.2208**
Largest diff. peak and hole	**0.798 and -0.520 e.A^-3**

Table 2. Bond lengths [A] and angles [deg] for 2a.

C(1)-C(2)	1.386(9)
C(1)-C(6)	1.389(7)
C(1)-H(1)	0.9300
C(2)-C(3)	1.358(9)
C(2)-H(2)	0.9300
C(3)-C(4)	1.346(9)
C(3)-H(3)	0.9300
C(4)-C(5)	1.395(8)
C(4)-H(4)	0.9300
C(5)-C(6)	1.374(6)
C(5)-H(5)	0.9300
C(6)-S(2)	1.761(5)
C(7)-C(12)	1.369(7)
C(7)-C(8)	1.374(7)
C(7)-S(1)	1.766(5)
C(8)-C(9)	1.374(8)
C(8)-H(8)	0.9300
C(9)-C(10)	1.366(9)
C(9)-H(9)	0.9300
C(10)-C(11)	1.379(8)
C(10)-H(10)	0.9300
C(11)-C(12)	1.378(7)
C(11)-H(11)	0.9300
C(12)-H(12)	0.9300
C(13)-C(14)	1.505(7)
C(13)-H(13A)	0.9600
C(13)-H(13B)	0.9600
C(13)-H(13C)	0.9600
C(14)-C(19)	1.372(7)
C(14)-C(15)	1.399(7)
C(15)-C(16)	1.368(7)
C(15)-H(15)	0.9300
C(16)-C(17)	1.382(7)
C(16)-H(16)	0.9300
C(17)-C(18)	1.408(6)
C(17)-C(20)	1.480(6)
C(18)-C(19)	1.381(7)
C(18)-H(18)	0.9300
C(19)-H(19)	0.9300
C(20)-C(25)	1.395(6)

C(20)-C(21)	**1.410(6)**
C(21)-C(22)	**1.370(6)**
C(21)-H(21)	**0.9300**
C(22)-C(23)	**1.399(6)**
C(22)-N(2)	**1.464(5)**
C(23)-C(24)	**1.396(6)**
C(23)-N(1)	**1.405(6)**
C(24)-C(25)	**1.372(6)**
C(24)-H(24)	**0.9300**
C(25)-H(25)	**0.9300**
C(26)-C(27)	**1.261(6)**
C(26)-N(1)	**1.349(6)**
C(26)-O(1)	**1.495(7)**
C(27)-H(27A)	**0.9600**
C(27)-H(27B)	**0.9600**
C(27)-H(27C)	**0.9600**
N(1)-H(1')	**0.8221**
N(2)-S(1)	**1.676(4)**
N(2)-S(2)	**1.697(4)**
O(2)-S(2)	**1.414(4)**
O(3)-S(2)	**1.424(4)**
O(4)-S(1)	**1.427(3)**
O(5)-S(1)	**1.417(3)**

C(2)-C(1)-C(6)	**118.4(6)**
C(2)-C(1)-H(1)	**120.8**
C(6)-C(1)-H(1)	**120.8**
C(3)-C(2)-C(1)	**120.6(6)**
C(3)-C(2)-H(2)	**119.7**
C(1)-C(2)-H(2)	**119.7**
C(4)-C(3)-C(2)	**121.1(6)**
C(4)-C(3)-H(3)	**119.5**
C(2)-C(3)-H(3)	**119.5**
C(3)-C(4)-C(5)	**120.3(6)**
C(3)-C(4)-H(4)	**119.9**
C(5)-C(4)-H(4)	**119.9**
C(6)-C(5)-C(4)	**118.9(6)**
C(6)-C(5)-H(5)	**120.6**
C(4)-C(5)-H(5)	**120.6**
C(5)-C(6)-C(1)	**120.8(5)**
C(5)-C(6)-S(2)	**120.3(4)**
C(1)-C(6)-S(2)	**118.9(4)**
C(12)-C(7)-C(8)	**122.0(5)**
C(12)-C(7)-S(1)	**119.6(4)**

C(8)-C(7)-S(1)	**118.4(4)**
C(9)-C(8)-C(7)	**118.1(5)**
C(9)-C(8)-H(8)	**120.9**
C(7)-C(8)-H(8)	**120.9**
C(10)-C(9)-C(8)	**121.3(6)**
C(10)-C(9)-H(9)	**119.4**
C(8)-C(9)-H(9)	**119.4**
C(9)-C(10)-C(11)	**119.6(5)**
C(9)-C(10)-H(10)	**120.2**
C(11)-C(10)-H(10)	**120.2**
C(12)-C(11)-C(10)	**120.3(6)**
C(12)-C(11)-H(11)	**119.8**
C(10)-C(11)-H(11)	**119.8**
C(7)-C(12)-C(11)	**118.7(5)**
C(7)-C(12)-H(12)	**120.7**
C(11)-C(12)-H(12)	**120.7**
C(14)-C(13)-H(13A)	**109.5**
C(14)-C(13)-H(13B)	**109.5**
H(13A)-C(13)-H(13B)	**109.5**
C(14)-C(13)-H(13C)	**109.5**
H(13A)-C(13)-H(13C)	**109.5**
H(13B)-C(13)-H(13C)	**109.5**
C(19)-C(14)-C(15)	**117.3(4)**
C(19)-C(14)-C(13)	**121.2(5)**
C(15)-C(14)-C(13)	**121.5(5)**
C(16)-C(15)-C(14)	**121.5(5)**
C(16)-C(15)-H(15)	**119.2**
C(14)-C(15)-H(15)	**119.2**
C(15)-C(16)-C(17)	**121.3(4)**
C(15)-C(16)-H(16)	**119.3**
C(17)-C(16)-H(16)	**119.3**
C(16)-C(17)-C(18)	**117.5(4)**
C(16)-C(17)-C(20)	**122.0(4)**
C(18)-C(17)-C(20)	**120.5(4)**
C(19)-C(18)-C(17)	**120.3(5)**
C(19)-C(18)-H(18)	**119.8**
C(17)-C(18)-H(18)	**119.8**
C(14)-C(19)-C(18)	**121.9(4)**
C(14)-C(19)-H(19)	**119.0**
C(18)-C(19)-H(19)	**119.0**
C(25)-C(20)-C(21)	**116.7(4)**
C(25)-C(20)-C(17)	**122.4(4)**
C(21)-C(20)-C(17)	**120.9(4)**
C(22)-C(21)-C(20)	**120.6(4)**

C(22)-C(21)-H(21)	119.7
C(20)-C(21)-H(21)	119.7
C(21)-C(22)-C(23)	122.5(4)
C(21)-C(22)-N(2)	118.5(4)
C(23)-C(22)-N(2)	118.9(4)
C(24)-C(23)-C(22)	116.7(4)
C(24)-C(23)-N(1)	123.1(4)
C(22)-C(23)-N(1)	120.1(4)
C(25)-C(24)-C(23)	121.2(4)
C(25)-C(24)-H(24)	119.4
C(23)-C(24)-H(24)	119.4
C(24)-C(25)-C(20)	122.3(4)
C(24)-C(25)-H(25)	118.9
C(20)-C(25)-H(25)	118.9
C(27)-C(26)-N(1)	121.0(5)
C(27)-C(26)-O(1)	121.9(5)
N(1)-C(26)-O(1)	117.1(5)
C(26)-C(27)-H(27A)	109.5
C(26)-C(27)-H(27B)	109.5
H(27A)-C(27)-H(27B)	109.5
C(26)-C(27)-H(27C)	109.5
H(27A)-C(27)-H(27C)	109.5
H(27B)-C(27)-H(27C)	109.5
C(26)-N(1)-C(23)	128.4(4)
C(26)-N(1)-H(1')	119.8
C(23)-N(1)-H(1')	110.5
C(22)-N(2)-S(1)	115.6(3)
C(22)-N(2)-S(2)	119.0(3)
S(1)-N(2)-S(2)	123.8(2)
O(5)-S(1)-O(4)	120.8(2)
O(5)-S(1)-N(2)	105.16(19)
O(4)-S(1)-N(2)	106.4(2)
O(5)-S(1)-C(7)	107.9(2)
O(4)-S(1)-C(7)	109.7(2)
N(2)-S(1)-C(7)	105.90(19)
O(2)-S(2)-O(3)	120.7(2)
O(2)-S(2)-N(2)	109.1(2)
O(3)-S(2)-N(2)	103.5(2)
O(2)-S(2)-C(6)	109.7(2)
O(3)-S(2)-C(6)	107.9(2)
N(2)-S(2)-C(6)	104.6(2)

Table 3. Torsion angles [deg] for 2a.

C(6)-C(1)-C(2)-C(3)	**0.7(11)**
C(1)-C(2)-C(3)-C(4)	**0.5(12)**
C(2)-C(3)-C(4)-C(5)	**-2.2(11)**
C(3)-C(4)-C(5)-C(6)	**2.6(9)**
C(4)-C(5)-C(6)-C(1)	**-1.4(8)**
C(4)-C(5)-C(6)-S(2)	**-179.7(4)**
C(2)-C(1)-C(6)-C(5)	**-0.2(9)**
C(2)-C(1)-C(6)-S(2)	**178.1(5)**
C(12)-C(7)-C(8)-C(9)	**1.1(9)**
S(1)-C(7)-C(8)-C(9)	**-179.5(5)**
C(7)-C(8)-C(9)-C(10)	**0.5(10)**
C(8)-C(9)-C(10)-C(11)	**-1.4(10)**
C(9)-C(10)-C(11)-C(12)	**0.9(10)**
C(8)-C(7)-C(12)-C(11)	**-1.6(8)**
S(1)-C(7)-C(12)-C(11)	**179.0(4)**
C(10)-C(11)-C(12)-C(7)	**0.6(9)**
C(19)-C(14)-C(15)-C(16)	**-0.4(9)**
C(13)-C(14)-C(15)-C(16)	**179.1(6)**
C(14)-C(15)-C(16)-C(17)	**-0.3(9)**
C(15)-C(16)-C(17)-C(18)	**0.5(8)**
C(15)-C(16)-C(17)-C(20)	**-179.9(5)**
C(16)-C(17)-C(18)-C(19)	**0.0(7)**
C(20)-C(17)-C(18)-C(19)	**-179.7(4)**
C(15)-C(14)-C(19)-C(18)	**0.8(8)**
C(13)-C(14)-C(19)-C(18)	**-178.6(5)**
C(17)-C(18)-C(19)-C(14)	**-0.6(8)**
C(16)-C(17)-C(20)-C(25)	**145.4(5)**
C(18)-C(17)-C(20)-C(25)	**-35.0(7)**
C(16)-C(17)-C(20)-C(21)	**-33.5(7)**
C(18)-C(17)-C(20)-C(21)	**146.1(5)**
C(25)-C(20)-C(21)-C(22)	**-2.1(7)**
C(17)-C(20)-C(21)-C(22)	**176.8(4)**
C(20)-C(21)-C(22)-C(23)	**1.5(7)**
C(20)-C(21)-C(22)-N(2)	**-176.4(4)**
C(21)-C(22)-C(23)-C(24)	**-0.3(7)**
N(2)-C(22)-C(23)-C(24)	**177.6(4)**
C(21)-C(22)-C(23)-N(1)	**-177.7(4)**
N(2)-C(22)-C(23)-N(1)	**0.2(6)**
C(22)-C(23)-C(24)-C(25)	**-0.3(7)**
N(1)-C(23)-C(24)-C(25)	**177.0(5)**
C(23)-C(24)-C(25)-C(20)	**-0.4(8)**
C(21)-C(20)-C(25)-C(24)	**1.6(7)**
C(17)-C(20)-C(25)-C(24)	**-177.3(4)**

C(27)-C(26)-N(1)-C(23)	**4.1(8)**
O(1)-C(26)-N(1)-C(23)	**-176.4(5)**
C(24)-C(23)-N(1)-C(26)	**28.7(8)**
C(22)-C(23)-N(1)-C(26)	**-154.1(5)**
C(21)-C(22)-N(2)-S(1)	**87.2(4)**
C(23)-C(22)-N(2)-S(1)	**-90.8(4)**
C(21)-C(22)-N(2)-S(2)	**-78.6(5)**
C(23)-C(22)-N(2)-S(2)	**103.4(4)**
C(22)-N(2)-S(1)-O(5)	**52.9(3)**
S(2)-N(2)-S(1)-O(5)	**-142.0(3)**
C(22)-N(2)-S(1)-O(4)	**-177.8(3)**
S(2)-N(2)-S(1)-O(4)	**-12.8(3)**
C(22)-N(2)-S(1)-C(7)	**-61.2(3)**
S(2)-N(2)-S(1)-C(7)	**103.8(3)**
C(12)-C(7)-S(1)-O(5)	**-10.9(5)**
C(8)-C(7)-S(1)-O(5)	**169.7(4)**
C(12)-C(7)-S(1)-O(4)	**-144.3(4)**
C(8)-C(7)-S(1)-O(4)	**36.2(5)**
C(12)-C(7)-S(1)-N(2)	**101.3(4)**
C(8)-C(7)-S(1)-N(2)	**-78.1(4)**
C(22)-N(2)-S(2)-O(2)	**123.0(3)**
S(1)-N(2)-S(2)-O(2)	**-41.6(3)**
C(22)-N(2)-S(2)-O(3)	**-6.7(4)**
S(1)-N(2)-S(2)-O(3)	**-171.3(3)**
C(22)-N(2)-S(2)-C(6)	**-119.7(3)**
S(1)-N(2)-S(2)-C(6)	**75.7(3)**
C(5)-C(6)-S(2)-O(2)	**16.7(5)**
C(1)-C(6)-S(2)-O(2)	**-161.6(4)**
C(5)-C(6)-S(2)-O(3)	**150.0(4)**
C(1)-C(6)-S(2)-O(3)	**-28.3(5)**
C(5)-C(6)-S(2)-N(2)	**-100.2(4)**
C(1)-C(6)-S(2)-N(2)	**81.5(5)**

X -Ray Crystallography of 4b

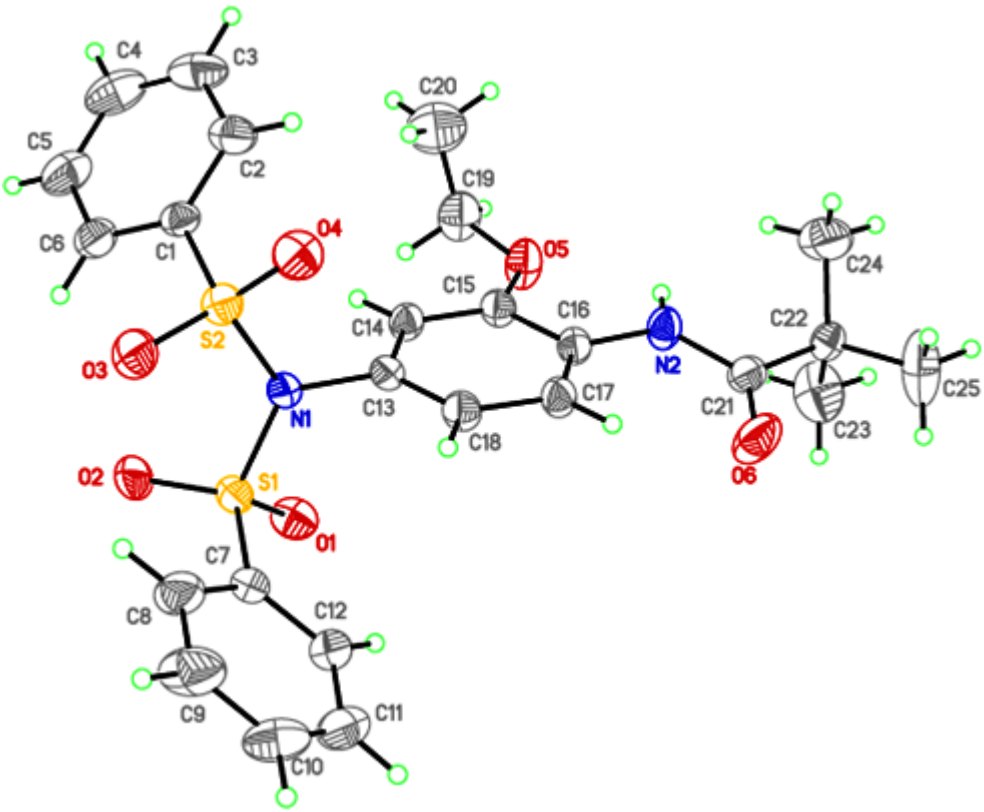


Table 1. Crystal data and structure refinement for 4b.

Identification code	**4b**
Empirical formula	**C2.94 H3.29 N0.24 O0.71 S0.24**
Formula weight	**60.78**
Temperature	**293(2) K**
Wavelength	**0.71073 A**
Crystal system, space group	**triclinic, p -1**
Unit cell dimensions	**a = 10.0399(6) A alpha = 109.146(4) deg.** **b = 10.9768(5) A beta = 92.134(4) deg.** **c = 13.4457(6) A gamma = 110.320(5) deg.**
Volume	**1293.47(11) A^3**
Z, Calculated density	**17, 1.326 Mg/m^3**

Absorption coefficient	**0.248 mm^-1**
F(000)	**544**
Crystal size	**0.40 x 0.30 x 0.06 mm**
Theta range for data collection	**3.11 to 29.23 deg.**
Limiting indices	**-12<=h<=13, -14<=k<=13, -12<=l<=18**
Reflections collected / unique	**9683 / 5879 [R(int) = 0.0286]**
Completeness to theta = 25.00	**99.2 %**
Refinement method	**Full-matrix least-squares on F^2**
Data / restraints / parameters	**5879 / 0 / 316**
Goodness-of-fit on F^2	**0.759**
Final R indices [I>2sigma(I)]	**R1 = 0.0429, wR2 = 0.0875**
R indices (all data)	**R1 = 0.1075, wR2 = 0.0957**
Largest diff. peak and hole	**0.378 and -0.212 e.A^-3**

Table 2. Bond lengths [A] and angles [deg] for 4b.

C(1)-C(6)	**1.372(3)**
C(1)-C(2)	**1.375(3)**
C(1)-S(2)	**1.759(2)**
C(2)-C(3)	**1.381(4)**
C(2)-H(2)	**0.9300**
C(3)-C(4)	**1.372(4)**
C(3)-H(3)	**0.9300**
C(4)-C(5)	**1.356(4)**
C(4)-H(4)	**0.9300**
C(5)-C(6)	**1.379(3)**
C(5)-H(5)	**0.9300**
C(6)-H(6)	**0.9300**
C(7)-C(8)	**1.372(3)**
C(7)-C(12)	**1.378(3)**
C(7)-S(1)	**1.752(2)**
C(8)-C(9)	**1.377(4)**

C(8)-H(8)	**0.9300**
C(9)-C(10)	**1.366(4)**
C(9)-H(9)	**0.9300**
C(10)-C(11)	**1.339(4)**
C(10)-H(10)	**0.9300**
C(11)-C(12)	**1.390(3)**
C(11)-H(11)	**0.9300**
C(12)-H(12)	**0.9300**
C(13)-C(18)	**1.366(3)**
C(13)-C(14)	**1.380(3)**
C(13)-N(1)	**1.456(2)**
C(14)-C(15)	**1.378(3)**
C(14)-H(14)	**0.9300**
C(15)-O(5)	**1.369(2)**
C(15)-C(16)	**1.397(3)**
C(16)-C(17)	**1.374(3)**
C(16)-N(2)	**1.414(2)**
C(17)-C(18)	**1.393(3)**
C(17)-H(17)	**0.9300**
C(18)-H(18)	**0.9300**
C(19)-O(5)	**1.420(3)**
C(19)-C(20)	**1.450(4)**
C(19)-H(19A)	**0.9700**
C(19)-H(19B)	**0.9700**
C(20)-H(20A)	**0.9600**
C(20)-H(20B)	**0.9600**
C(20)-H(20C)	**0.9600**
C(21)-O(6)	**1.209(3)**
C(21)-N(2)	**1.349(3)**
C(21)-C(22)	**1.531(3)**
C(22)-C(25)	**1.501(3)**
C(22)-C(24)	**1.513(3)**
C(22)-C(23)	**1.517(4)**
C(23)-H(23A)	**0.9600**
C(23)-H(23B)	**0.9600**
C(23)-H(23C)	**0.9600**
C(24)-H(24A)	**0.9600**
C(24)-H(24B)	**0.9600**
C(24)-H(24C)	**0.9600**
C(25)-H(25A)	**0.9600**
C(25)-H(25B)	**0.9600**
C(25)-H(25C)	**0.9600**
N(1)-S(1)	**1.6823(18)**
N(1)-S(2)	**1.6839(18)**

N(2)-H(2')	**0.7582**
O(1)-S(1)	**1.4291(16)**
O(2)-S(1)	**1.4168(15)**
O(3)-S(2)	**1.4246(15)**
O(4)-S(2)	**1.4231(17)**

C(6)-C(1)-C(2)	**121.5(2)**
C(6)-C(1)-S(2)	**119.51(17)**
C(2)-C(1)-S(2)	**119.0(2)**
C(1)-C(2)-C(3)	**119.0(3)**
C(1)-C(2)-H(2)	**120.5**
C(3)-C(2)-H(2)	**120.5**
C(4)-C(3)-C(2)	**119.5(3)**
C(4)-C(3)-H(3)	**120.3**
C(2)-C(3)-H(3)	**120.3**
C(5)-C(4)-C(3)	**121.0(3)**
C(5)-C(4)-H(4)	**119.5**
C(3)-C(4)-H(4)	**119.5**
C(4)-C(5)-C(6)	**120.4(3)**
C(4)-C(5)-H(5)	**119.8**
C(6)-C(5)-H(5)	**119.8**
C(1)-C(6)-C(5)	**118.6(2)**
C(1)-C(6)-H(6)	**120.7**
C(5)-C(6)-H(6)	**120.7**
C(8)-C(7)-C(12)	**120.6(2)**
C(8)-C(7)-S(1)	**119.70(18)**
C(12)-C(7)-S(1)	**119.74(18)**
C(7)-C(8)-C(9)	**119.3(3)**
C(7)-C(8)-H(8)	**120.4**
C(9)-C(8)-H(8)	**120.4**
C(10)-C(9)-C(8)	**120.3(3)**
C(10)-C(9)-H(9)	**119.8**
C(8)-C(9)-H(9)	**119.8**
C(11)-C(10)-C(9)	**120.3(3)**
C(11)-C(10)-H(10)	**119.8**
C(9)-C(10)-H(10)	**119.8**
C(10)-C(11)-C(12)	**121.2(3)**
C(10)-C(11)-H(11)	**119.4**
C(12)-C(11)-H(11)	**119.4**
C(7)-C(12)-C(11)	**118.3(2)**
C(7)-C(12)-H(12)	**120.8**
C(11)-C(12)-H(12)	**120.8**
C(18)-C(13)-C(14)	**121.57(19)**
C(18)-C(13)-N(1)	**119.89(19)**

C(14)-C(13)-N(1)	**118.53(19)**
C(15)-C(14)-C(13)	**119.0(2)**
C(15)-C(14)-H(14)	**120.5**
C(13)-C(14)-H(14)	**120.5**
O(5)-C(15)-C(14)	**125.47(19)**
O(5)-C(15)-C(16)	**114.31(17)**
C(14)-C(15)-C(16)	**120.2(2)**
C(17)-C(16)-C(15)	**119.93(18)**
C(17)-C(16)-N(2)	**124.32(19)**
C(15)-C(16)-N(2)	**115.73(19)**
C(16)-C(17)-C(18)	**119.7(2)**
C(16)-C(17)-H(17)	**120.1**
C(18)-C(17)-H(17)	**120.1**
C(13)-C(18)-C(17)	**119.6(2)**
C(13)-C(18)-H(18)	**120.2**
C(17)-C(18)-H(18)	**120.2**
O(5)-C(19)-C(20)	**112.5(3)**
O(5)-C(19)-H(19A)	**109.1**
C(20)-C(19)-H(19A)	**109.1**
O(5)-C(19)-H(19B)	**109.1**
C(20)-C(19)-H(19B)	**109.1**
H(19A)-C(19)-H(19B)	**107.8**
C(19)-C(20)-H(20A)	**109.5**
C(19)-C(20)-H(20B)	**109.5**
H(20A)-C(20)-H(20B)	**109.5**
C(19)-C(20)-H(20C)	**109.5**
H(20A)-C(20)-H(20C)	**109.5**
H(20B)-C(20)-H(20C)	**109.5**
O(6)-C(21)-N(2)	**122.0(2)**
O(6)-C(21)-C(22)	**121.8(2)**
N(2)-C(21)-C(22)	**116.2(2)**
C(25)-C(22)-C(24)	**110.4(3)**
C(25)-C(22)-C(23)	**108.7(2)**
C(24)-C(22)-C(23)	**108.7(3)**
C(25)-C(22)-C(21)	**107.8(2)**
C(24)-C(22)-C(21)	**113.21(18)**
C(23)-C(22)-C(21)	**108.0(2)**
C(22)-C(23)-H(23A)	**109.5**
C(22)-C(23)-H(23B)	**109.5**
H(23A)-C(23)-H(23B)	**109.5**
C(22)-C(23)-H(23C)	**109.5**
H(23A)-C(23)-H(23C)	**109.5**
H(23B)-C(23)-H(23C)	**109.5**
C(22)-C(24)-H(24A)	**109.5**

C(22)-C(24)-H(24B)	109.5
H(24A)-C(24)-H(24B)	109.5
C(22)-C(24)-H(24C)	109.5
H(24A)-C(24)-H(24C)	109.5
H(24B)-C(24)-H(24C)	109.5
C(22)-C(25)-H(25A)	109.5
C(22)-C(25)-H(25B)	109.5
H(25A)-C(25)-H(25B)	109.5
C(22)-C(25)-H(25C)	109.5
H(25A)-C(25)-H(25C)	109.5
H(25B)-C(25)-H(25C)	109.5
C(13)-N(1)-S(1)	117.37(13)
C(13)-N(1)-S(2)	118.17(14)
S(1)-N(1)-S(2)	124.43(9)
C(21)-N(2)-C(16)	128.37(19)
C(21)-N(2)-H(2')	118.6
C(16)-N(2)-H(2')	112.5
C(15)-O(5)-C(19)	120.55(17)
O(2)-S(1)-O(1)	120.17(11)
O(2)-S(1)-N(1)	107.62(9)
O(1)-S(1)-N(1)	104.91(9)
O(2)-S(1)-C(7)	109.20(10)
O(1)-S(1)-C(7)	108.99(10)
N(1)-S(1)-C(7)	104.82(10)
O(4)-S(2)-O(3)	120.08(10)
O(4)-S(2)-N(1)	105.83(9)
O(3)-S(2)-N(1)	107.20(9)
O(4)-S(2)-C(1)	108.80(11)
O(3)-S(2)-C(1)	108.90(10)
N(1)-S(2)-C(1)	104.99(10)

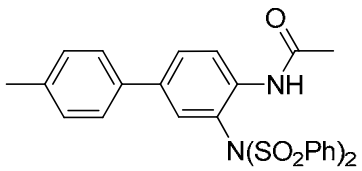
Table 3. Torsion angles [deg] for 4b.

C(6)-C(1)-C(2)-C(3)	0.7(4)
S(2)-C(1)-C(2)-C(3)	-177.16(19)
C(1)-C(2)-C(3)-C(4)	-0.8(4)
C(2)-C(3)-C(4)-C(5)	-0.1(5)
C(3)-C(4)-C(5)-C(6)	1.1(5)
C(2)-C(1)-C(6)-C(5)	0.3(4)
S(2)-C(1)-C(6)-C(5)	178.12(19)
C(4)-C(5)-C(6)-C(1)	-1.2(4)
C(12)-C(7)-C(8)-C(9)	0.7(4)
S(1)-C(7)-C(8)-C(9)	-179.2(2)
C(7)-C(8)-C(9)-C(10)	-1.5(5)

C(8)-C(9)-C(10)-C(11)	**0.6(5)**
C(9)-C(10)-C(11)-C(12)	**1.0(5)**
C(8)-C(7)-C(12)-C(11)	**0.9(3)**
S(1)-C(7)-C(12)-C(11)	**-179.27(19)**
C(10)-C(11)-C(12)-C(7)	**-1.7(4)**
C(18)-C(13)-C(14)-C(15)	**-0.1(3)**
N(1)-C(13)-C(14)-C(15)	**-178.5(2)**
C(13)-C(14)-C(15)-O(5)	**179.1(2)**
C(13)-C(14)-C(15)-C(16)	**1.8(3)**
O(5)-C(15)-C(16)-C(17)	**-179.7(2)**
C(14)-C(15)-C(16)-C(17)	**-2.1(4)**
O(5)-C(15)-C(16)-N(2)	**1.7(3)**
C(14)-C(15)-C(16)-N(2)	**179.3(2)**
C(15)-C(16)-C(17)-C(18)	**0.8(3)**
N(2)-C(16)-C(17)-C(18)	**179.3(2)**
C(14)-C(13)-C(18)-C(17)	**-1.2(4)**
N(1)-C(13)-C(18)-C(17)	**177.22(19)**
C(16)-C(17)-C(18)-C(13)	**0.8(3)**
O(6)-C(21)-C(22)-C(25)	**-22.6(4)**
N(2)-C(21)-C(22)-C(25)	**156.4(3)**
O(6)-C(21)-C(22)-C(24)	**-145.0(3)**
N(2)-C(21)-C(22)-C(24)	**34.0(3)**
O(6)-C(21)-C(22)-C(23)	**94.7(3)**
N(2)-C(21)-C(22)-C(23)	**-86.4(3)**
C(18)-C(13)-N(1)-S(1)	**-85.3(2)**
C(14)-C(13)-N(1)-S(1)	**93.2(2)**
C(18)-C(13)-N(1)-S(2)	**92.5(2)**
C(14)-C(13)-N(1)-S(2)	**-89.0(2)**
O(6)-C(21)-N(2)-C(16)	**-4.0(4)**
C(22)-C(21)-N(2)-C(16)	**177.0(2)**
C(17)-C(16)-N(2)-C(21)	**20.0(4)**
C(15)-C(16)-N(2)-C(21)	**-161.4(2)**
C(14)-C(15)-O(5)-C(19)	**10.2(4)**
C(16)-C(15)-O(5)-C(19)	**-172.4(2)**
C(20)-C(19)-O(5)-C(15)	**76.5(3)**
C(13)-N(1)-S(1)-O(2)	**-152.39(16)**
S(2)-N(1)-S(1)-O(2)	**29.97(16)**
C(13)-N(1)-S(1)-O(1)	**-23.32(18)**
S(2)-N(1)-S(1)-O(1)	**159.04(12)**
C(13)-N(1)-S(1)-C(7)	**91.44(17)**
S(2)-N(1)-S(1)-C(7)	**-86.20(14)**
C(8)-C(7)-S(1)-O(2)	**-32.4(2)**
C(12)-C(7)-S(1)-O(2)	**147.81(18)**
C(8)-C(7)-S(1)-O(1)	**-165.41(19)**

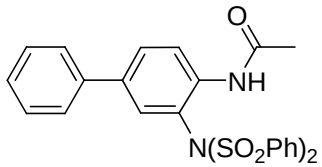
C(12)-C(7)-S(1)-O(1)	**14.8(2)**
C(8)-C(7)-S(1)-N(1)	**82.7(2)**
C(12)-C(7)-S(1)-N(1)	**-97.12(19)**
C(13)-N(1)-S(2)-O(4)	**-27.89(18)**
S(1)-N(1)-S(2)-O(4)	**149.73(12)**
C(13)-N(1)-S(2)-O(3)	**-157.18(16)**
S(1)-N(1)-S(2)-O(3)	**20.44(16)**
C(13)-N(1)-S(2)-C(1)	**87.11(18)**
S(1)-N(1)-S(2)-C(1)	**-95.27(14)**
C(6)-C(1)-S(2)-O(4)	**-163.26(18)**
C(2)-C(1)-S(2)-O(4)	**14.6(2)**
C(6)-C(1)-S(2)-O(3)	**-30.7(2)**
C(2)-C(1)-S(2)-O(3)	**147.17(19)**
C(6)-C(1)-S(2)-N(1)	**83.82(19)**
C(2)-C(1)-S(2)-N(1)	**-98.29(19)**

V. Analytical data of compounds 2, 4 and 5



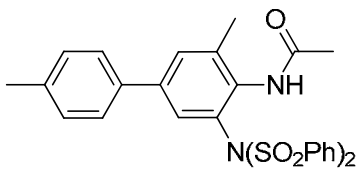
***N*-(4'-methyl-3-(*N*-(phenylsulfonyl)phenylsulfonamido)biphenyl-4-yl)acetamide (2a)**

White solid. Mp: 271 ^{o}C; ^{1}H NMR (500 MHz; $CDCl_3$): δ = 1.81 (s, 3H), 2.37 (s, 3H), 6.91 (s, 1H), 7.17-7.19 (m, 4H), 7.45 (s, 1H), 7.60 (t, *J*= 8.0 Hz, 4H). 7.65 (d, *J*= 8.5 Hz, 1H), 7.73 (t, *J*= 8.0 Hz, 2H), 7.98 (d, *J*=7.5 Hz, 4H), 8.18 (d, *J*= 8.5 Hz, 1H). ^{13}C NMR (125 MHz; $CDCl_3$): δ = 21.1, 24.4, 124.2, 124.6, 126.5, 128.8, 129.3, 129.5, 129.7, 130.5, 134.5, 135.9, 136.1, 137.5, 138.9, 168.1. IR (KBr, cm^{-1}): 3399, 1687, 1506, 1383, 1165, 552. HRMS (ESI-TOF) Calcd for $C_{27}H_{25}N_2O_5S_2$, $[M+H]^+$ 521.1199; Found 521.1191.



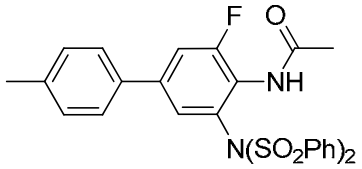
***N*-(3-(*N*-(phenylsulfonyl)phenylsulfonamido)biphenyl-4-yl)acetamide (2b)**

White solid. Mp: 222 ^{o}C; ^{1}H NMR (500 MHz; $CDCl_3$): δ = 1.82 (s, 3H), 6.93 (s, 1H), 7.28-7.40 (m, 5H), 7.46 (s, 1H), 7.61 (t, *J*= 8.0 Hz, 4H), 7.68 (d, *J*= 8.5 Hz, 1H), 7.74 (t, *J*=7.5 Hz, 2H), 7.99 (d, *J*=7.5 Hz, 4H), 8.21 (d, *J*= 8.5 Hz, 1H). ^{13}C NMR (125 MHz; $CDCl_3$): δ = 24.4, 124.2, 126.7, 127.7, 128.7, 128.8, 129.3, 130.0, 130.7, 134.5, 136.4, 137.6, 138.8, 168.1. IR (KBr, cm^{-1}): 3399, 1685, 1506, 1383, 1165, 551. HRMS (ESI-TOF) Calcd for $C_{26}H_{23}N_2O_5S_2$, $[M+H]^+$ 507.1043; Found 507.1040.



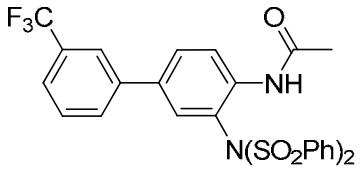
***N*-(3,4'-dimethyl-5-(*N*-(phenylsulfonyl)phenylsulfonamido)biphenyl-4-yl)acetamide (2c)**

White solid. Mp: 251 ^{o}C; ^{1}H NMR (500 MHz; $CDCl_3$): δ = 1.80 (s, 3H), 2.33 (s, 3H), 2.37 (s, 3H), 6.76 (s, 1H), 7.17 (m, 4H), 7.55-7.59 (m, 6H), 7.72 (t, *J*= 7.5 Hz, 2H), 7. 96 (d, *J*=7.5 Hz, 4H). ^{13}C NMR (125 MHz; $CDCl_3$): δ =19.4, 21.1, 23.3, 126.7, 128.7, 128.9, 129.1, 129.5, 130.1, 131.8, 134.2, 134.4, 136.0, 137.6, 138.7, 138.8, 139.9, 168.0. IR (KBr, cm^{-1}): 3413, 1688, 1489, 1379, 1170, 922, 560. HRMS (ESI-TOF) Calcd for $C_{28}H_{27}N_2O_5S_2$, $[M+H]^+$ 535.1356; Found 535.1362.



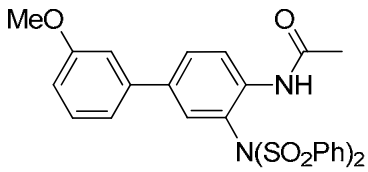
***N*-(3-fluoro-4'-methyl-5-(*N*-(phenylsulfonyl)phenylsulfonamido)biphenyl-4-yl)acetamide (2d)**

White solid. Mp: 226 ^{o}C; ^{1}H NMR (500 MHz; $CDCl_3$): δ = 1.80 (s, 3H), 2.38 (s, 3H), 6.80 (s, 1H), 7.17-7.24 (m, 5H), 7.47 (d, *J*=10.5 Hz, 1H), 7.59 (t, *J*=8.0 Hz, 4H), 7.73 (t, *J*=7.5 Hz, 2H), 7.97 (d, *J*=8.0 Hz, 4H). ^{13}C NMR (125 MHz; $CDCl_3$): δ = 21.1, 23.1, 117.1, 117.3, 126.6, 128.8, 129.2, 129.7, 130.9, 134.4, 135.0, 138.5, 138.8, 140.7, 157.2, 159.7, 167.7. IR (KBr, cm^{-1}): 3368, 1696, 1504, 1383, 1167, 579. HRMS (ESI-TOF) Calcd for $C_{27}H_{24}FN_2O_5S_2$, $[M+H]^+$ 539.1105; Found 539.1110.



***N*-(3-(*N*-(phenylsulfonyl)phenylsulfonamido)-3'-(trifluoromethyl)biphenyl-4-yl)acetamide (2e)**

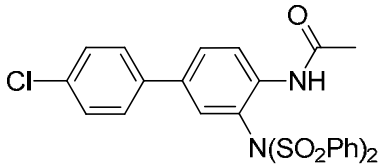
White solid. Mp: 182 ^{o}C; ^{1}H NMR (500 MHz; $CDCl_3$): δ = 1.85 (s, 3H), 6.81 (s, 1H), 7.29 (s, 1H), 7.51-7.67 (m, 9H), 7.77 (t, *J*= 7.5 Hz, 2H), 8.00 (d, *J*=7.0 Hz, 4H), 8.30 (d, *J*=8.0 Hz, 1H). ^{13}C NMR (125 MHz; $CDCl_3$): δ =24.4, 123.4, 123.5, 124.2, 124.3, 124.6, 128.8, 129.3, 129.4, 130.0, 130.8, 131.0, 134.7, 135.8, 137.2, 138.6, 139.6, 168.2. IR (KBr, cm^{-1}): 3402, 2924, 1704, 1520, 1334, 1124, 546. HRMS (ESI-TOF) Calcd for $C_{27}H_{22}F_3N_2O_5S_2$, $[M+H]^+$ 575.0917; Found 575.0889.



***N*-(3'-methoxy-3-(*N*-(phenylsulfonyl)phenylsulfonamido)biphenyl-4-yl)acetamide (2f)**

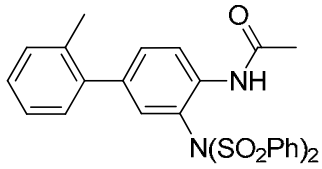
White solid. Mp: 234 ^{o}C; ^{1}H NMR (500 MHz; $CDCl_3$): δ = 1.82 (s, 3H), 3.83 (s, 3H), 6.81 (s, 1H), 6.86-6.87 (m, 2H), 6.91 (s, 1H), 7.27-7.30 (m, 1H), 7.48 (s, 1H), 7.60 (t, *J*= 8.0 Hz, 4H), 7.

65-7.67 (m, 1H), 7.73 (t, *J*=7.5 Hz, 2H), 7.98 (d, *J*= 7.5 Hz, 4H), 8.20 (d, *J*= 8.5 Hz, 1H). ^{13}C NMR (125 MHz; $CDCl_3$): δ = 24.3, 55.3, 112.6, 113.0, 119.2, 124.1, 124.6, 128.8, 129.3, 129.8, 130.0, 130.8, 134.5, 136.6, 137.5, 138.9, 140.3, 160.0, 168.1. IR (KBr, cm^{-1}): 3402, 1696, 1519, 1383, 1168, 926, 722, 564. HRMS (ESI-TOF) Calcd for $C_{27}H_{25}N_2O_6S_2$, $[M+H]^+$ 537.1149; Found 537.1146.



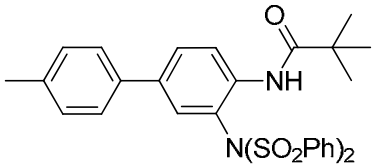
***N*-(4'-chloro-3-(*N*-(phenylsulfonyl)phenylsulfonamido)biphenyl-4-yl)acetamide (2g)**

White solid. Mp: 267 ^{o}C; ^{1}H NMR (500 MHz; $CDCl_3$): δ = 1.81 (s, 3H), 6.88 (s, 1H), 7.21 (d, *J*= 8.5 Hz, 2H), 7.35 (d, *J*=8.5 Hz, 2H), 7.45 (s, 1H), 7.59-7.64 (m, 5H), 7.75 (t, *J*= 7.5 Hz, 2H), 7.98 (d, *J*=8.0 Hz, 4H), 8.22 (d, *J*=8.5 Hz, 1H). ^{13}C NMR (125 MHz; $CDCl_3$): δ =24.4, 124.2, 124.6, 127.9, 128.8, 129.0, 129.3, 129.7, 130.6, 133.9, 134.5, 136.8, 137.3, 138.9, 168.1. IR (KBr, cm^{-1}): 3400, 1690, 1383, 1165, 550. HRMS (ESI-TOF) Calcd for $C_{26}H_{22}ClN_2O_5S_2$, $[M+K]^+$ 579.0211; Found 579.0206.



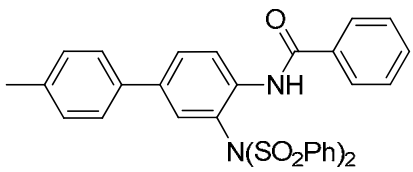
***N*-(2'-methyl-3-(*N*-(phenylsulfonyl)phenylsulfonamido)biphenyl-4-yl)acetamide (2h)**

White solid. Mp: 246 ^{o}C; ^{1}H NMR (500 MHz; $CDCl_3$): δ = 1.81 (s, 3H), 2.15 (s, 3H), 6.77 (d, *J*= 2.0 Hz, 1H), 7.03 (d, *J*=7.5 Hz, 1H), 7.17-7.24 (m, 3H), 7.40 (dd, J_1= 1.5 Hz, J_2= 8.0 Hz, 1H), 7.52 (s, 1H), 7.57 (t, *J*=8.0 Hz, 4H), 7.70 (t, *J*=7.5 Hz, 2H), 7.98 (d, *J*=8.0 Hz, 4H), 8.14 (d, *J*= 8.5 Hz, 1H). ^{13}C NMR (125 MHz; $CDCl_3$): δ = 20.3, 24.2, 123.7, 124.0, 125.7, 127.6, 128.6, 129.2, 129.5, 130.3, 132.1, 133.0, 134.4, 135.3, 136.0, 138.4, 138.9, 139.5, 168.1. IR (KBr, cm^{-1}): 3432, 1699, 1488, 1382, 919, 550. HRMS (ESI-TOF) Calcd for $C_{27}H_{25}N_2O_5S_2$, $[M+H]^+$ 521.1199; Found 521.1191.



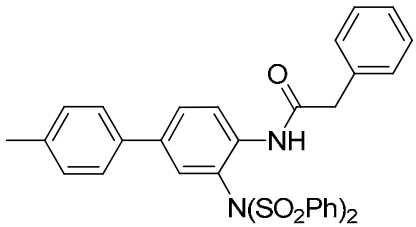
***N*-(4'-methyl-3-(*N*-(phenylsulfonyl)phenylsulfonamido)biphenyl-4-yl)pivalamide (2i)**

White solid. Mp: 227 ^{o}C; ^{1}H NMR (500 MHz; $CDCl_3$): δ = 1.12 (s, 9H), 2.36 (s, 3H), 6.79 (s, 1H), 7.13-7.18 (m, 4H), 7.56 (t, *J* = 8.5 Hz, 4H), 7.64 (dd, J_1 = 2.0 Hz, J_2 = 8.5 Hz, 1H), 7.71 (t, *J*=7.5 Hz, 2H), 7.93 (m, 4H), 8.09 (s, 1H), 8.37 (d, *J*=8.5 Hz, 1H). ^{13}C NMR (125 MHz; $CDCl_3$): δ = 21.0, 27.2, 39.8, 123.4, 124.2, 126.4, 128.9, 129.2, 129.4, 129.6, 130.3, 134.3, 136.0, 136.8, 137.0, 137.3, 138.7, 176.7. IR (KBr, cm^{-1}): 3403, 1683, 1506, 1170, 550. HRMS (ESI-TOF) Calcd for $C_{30}H_{31}N_2O_5S_2$, $[M+H]^+$ 563.1669; Found 563.1666.



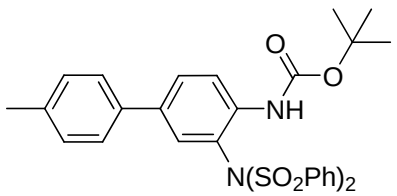
_N_-(4'-methyl-3-(_N_-(phenylsulfonyl)phenylsulfonamido)biphenyl-4-yl)benzamide (2j)

White solid. Mp: 239 ^{o}C; ^{1}H NMR (500 MHz; $CDCl_3$): δ = 2.38 (s, 3H), 6.96 (s, 1H), 7.18-7.22 (m, 4H), 7.39-7.43 (m, 6H), 7.49-7.54 (m, 3H), 7.64 (d, J = 7.5 Hz, 2H), 7.71 (dd, J_1=2.5 Hz, J_2=8.5 Hz, 1H), 8.39 (s, 1H), 8.42 (d, J=8.5 Hz, 1H). ^{13}C NMR (125 MHz; $CDCl_3$): δ = 21.1, 123.9, 124.8, 126.5, 127.0, 128.6, 129.1, 129.5, 129.8, 130.7, 132.0, 133.7, 134.3, 136.0, 136.3, 137.5, 137.6, 138.7, 164.6. IR (KBr, cm^{-1}): 3308, 1672, 1376, 720. HRMS (ESI-TOF) Calcd for $C_{32}H_{27}N_2O_5S_2$, $[M+H]^+$ 583.1356; Found 583.1352.



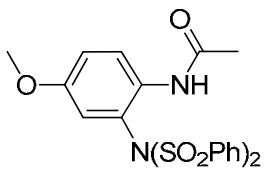
_N_-(4'-methyl-3-(_N_-(phenylsulfonyl)phenylsulfonamido)biphenyl-4-yl)-2-phenylacetamide (2k)

White solid. Mp: 147 ^{o}C; ^{1}H NMR (500 MHz; $CDCl_3$): δ = 2.36 (s, 3H), 3.38 (s, 2H), 6.82 (d, J = 2.5 Hz, 1H), 7.00 (d, J = 2.0 Hz, 2H), 7.15-7.16 (m, 4H), 7.31-7.33 (m, 3H), 7.57-7.65 (m, 6H), 7.72 (t, J = 7.5 Hz, 2H), 7.93 (d, J = 7.5 Hz, 4H), 8.11 (d, J = 8.5 Hz, 1H). ^{13}C NMR (125 MHz; $CDCl_3$): δ = 21.0, 44.5, 124.7, 125.3, 126.4, 127.5, 128.9, 129.1, 129.2, 129.4, 129.5, 130.5, 133.4, 134.3, 135.9, 136.0, 137.5, 137.7, 138.9, 169.1. IR (KBr, cm^{-1}): 3380, 3029, 1695, 1505, 1382, 1172, 917, 725, 548. HRMS (ESI-TOF) Calcd for $C_{33}H_{28}N_2O_5S_2$, $[M+Na]^+$ 619.1331; Found 619.1338.



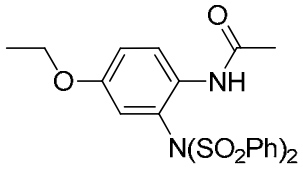
tert-butyl 4'-methyl-3-(_N_-(phenylsulfonyl)phenylsulfonamido)biphenyl-4-ylcarbamate (2l)

White solid. Mp: 252 ^{o}C; ^{1}H NMR (500 MHz; $CDCl_3$): δ = 1.48 (s, 9H), 2.36 (s, 3H), 6.74 (s, 1H), 6.80 (d, J = 2.0 Hz, 1H), 7.12-7.17 (m, 4H), 7.56-7.62 (m, 5H), 7.71-7.74 (m, 2H), 8.01 (dd, J_1 = 1.0 Hz, J_2 = 7.5 Hz, 4H), 8.17 (d, J = 8.5 Hz, 1H). ^{13}C NMR (125 MHz; $CDCl_3$): δ = 21.1, 28.3, 80.9, 121.4, 122.9, 126.3, 128.9, 129.2, 129.5, 129.7, 130.3, 134.4, 135.7, 136.0, 137.2, 138.8, 152.0. IR (KBr, cm^{-1}): 2923, 1729, 1506, 1159, 730. HRMS (ESI-TOF) Calcd for $C_{30}H_{30}N_2NaO_6S_2$, $[M+Na]^+$ 601.1437; Found 601.1426.



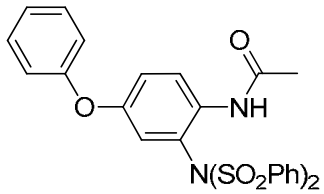
***N*-(4-methoxy-2-(*N*-(phenylsulfonyl)phenylsulfonamido)phenyl)acetamide (2m)**

White solid. Mp: 218 ^{o}C; ^{1}H NMR (500 MHz; $CDCl_3$): δ = 1.74 (s, 3H), 3.62 (s, 1H), 6.26 (d, J = 2.5 Hz, 1H), 7.01 (dd, J_1 = 2.5 Hz, J_2 = 9.0 Hz, 1H), 7.28 (s, 1H), 7.58 (t, J = 9.0 Hz, 4H), 7.71 (t, J=9.0 Hz, 2H), 7.91 (d, J = 9.0 Hz, 1H), 7.96 (d, J=8.0 Hz, 4H). ^{13}C NMR (125 MHz; $CDCl_3$): δ = 24.0, 55.5, 117.2, 117.3, 125.7, 125.9, 128.7, 129.2, 130.5, 134.4, 138.9, 156.1, 168.0. IR (KBr, cm^{-1}): 3410, 1695, 1518, 1372, 902, 547. HRMS (ESI-TOF) Calcd for $C_{21}H_{21}N_2O_6S_2$, $[M+H]^+$ 461.0835; Found 461.0816.



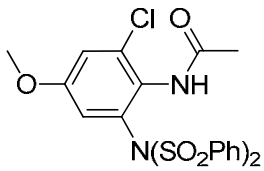
***N*-(4-ethoxy-2-(*N*-(phenylsulfonyl)phenylsulfonamido)phenyl)acetamide (2n)**

Red solid. Mp: 154 ^{o}C; ^{1}H NMR (500 MHz; $CDCl_3$): δ = 1.32 (t, J = 6.5 Hz, 3H), 1.73 (s, 3H), 3.80 (dd, J_1 = 6.5 Hz, J_2 = 13.5 Hz, 2H), 6.28 (d, J = 2.5 Hz, 1H), 6.99 (dd, J_1 = 2.5 Hz, J_2 = 9.0 Hz, 1H), 7.28 (s, 1H) 7.58 (t, J=9.0 Hz, 4H), 7.71 (t, J=9.0 Hz, 2H) 7.88 (d, J = 9.0 Hz, 1H), 7.96 (d, J = 8.5 Hz, 4H). ^{13}C NMR (125 MHz; $CDCl_3$): δ =14.6, 24.0, 63.9, 117.7, 117.9, 125.8, 125.9, 128.7, 128.8, 129.2, 129.6, 130.3, 134.3, 139.0, 155.6, 168.0. IR (KBr, cm^{-1}): 2981, 1698, 1515, 1380, 1171, 909, 548. HRMS (ESI-TOF) Calcd for $C_{22}H_{23}N_2O_6S_2$, $[M+H]^+$ 475.0992; Found 475.0988.



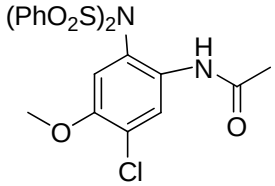
***N*-(4-phenoxy-2-(*N*-(phenylsulfonyl)phenylsulfonamido)phenyl)acetamide (2o)**

Red solid. Mp: 234 ^{o}C; ^{1}H NMR (500 MHz; $CDCl_3$): δ =1.75 (s, 3H), 6.41 (d, J=3.0 Hz, 1H), 6.91 (d, J=8.5, 2H), 7.10-7.14 (m, 2H), 7.30-7.33 (m, 2H), 7.38 (s, 1H), 7.54 (t, J=8.0 Hz, 4H), 7.68 (t, J=7.5 Hz, 2H), 7.93 (d, J=7.5 Hz, 4H), 8.02 (d, J=9.0 Hz, 1H). ^{13}C NMR (125 MHz; $CDCl_3$): δ=24.1, 118.8, 121.9, 122.3, 123.7, 125.5, 125.7, 128.6, 129.2, 129.8, 132.9, 134.5, 138.8, 153.4, 156.5, 168.1. IR (KBr, cm^{-1}): 3413, 1691, 1511, 1376, 1218, 756, 563. HRMS (ESI-TOF) Calcd for $C_{26}H_{23}N_2O_6S_2$, $[M+H]^+$ 523.0992; Found 523.0999.



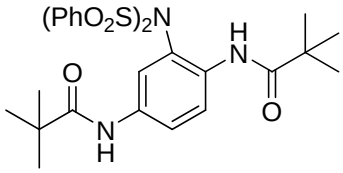
***N*-(2-chloro-4-methoxy-6-(*N*-(phenylsulfonyl)phenylsulfonamido)phenyl)acetamide (2p)**

White solid. Mp: 208 ^{o}C; ^{1}H NMR (500 MHz; $CDCl_3$): δ =1.74 (s, 3H), 3.64 (s, 3H), 6.27 (d, *J*=2.5 Hz, 1H), 7.12 (d, *J*=2.5 Hz, 1H), 7.21 (s, 1H), 7.58 (t, *J*=7.5 Hz, 4H), 7.71 (t, *J*=7.5 Hz, 2H)), 7.96 (d, *J*=8.0, 4H). ^{13}C NMR (125 MHz; $CDCl_3$): δ=23.0, 55.8, 117.5, 118.2, 128.2, 129.0, 129.1, 132.5, 134.3, 135.4, 138.6, 157.8, 170.0. IR (KBr, cm^{-1}): 3925, 1712, 1362, 1170, 912, 733. HRMS (ESI-TOF) Calcd for $C_{21}H_{20}N_2ClO_6S_2$, $[M+H]^+$ 495.0446; Found 495.0445.



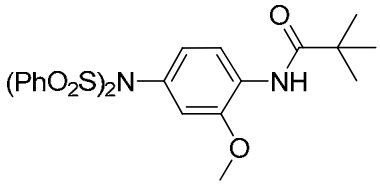
***N*-(5-chloro-4-methoxy-2-(*N*-(phenylsulfonyl)phenylsulfonamido)phenyl)acetamide (2q)**

White solid. Mp: 228 ^{o}C; ^{1}H NMR (500 MHz; $CDCl_3$): δ =1.76 (s, 3H), 3.56 (s, 3H), 6.17 (s, 1H), 7.26 (s, 1H), 7.60 (t, *J*=7.5 Hz, 4H), 7.73 (t, *J*=7.0 Hz, 2H)), 7.97 (d, *J*=8.0, 4H), 8.14 (s, 1H). ^{13}C NMR (125 MHz; $CDCl_3$): δ=24.1, 56.2, 115.1, 123.6, 125.7, 126.0, 128.7, 129.3, 131.0, 134.6, 138.7, 151.5, 167.9. IR (KBr, cm^{-1}): 2925, 1712, 1382, 1170, 912, 733, 566. HRMS (ESI-TOF) Calcd for $C_{21}H_{20}ClN_2O_6S_2$, $[M+H]^+$ 495.0446; Found 495.0445.



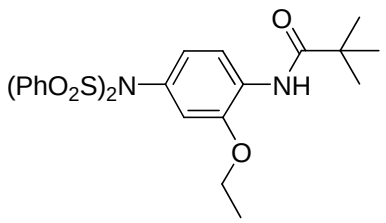
***N*,*N*'-(2-(*N*-(phenylsulfonyl)phenylsulfonamido)-1,4-phenylene)bis(2,2-dimethylpropanamide) (2r)**

White solid. Mp: 223 ^{o}C; ^{1}H NMR (500 MHz; $CDCl_3$): δ =1.06 (s, 9H), 1.27 (s, 9H), 7.05 (s, 1H), 7.19 (s, 1H), 7.55-7.58 (m, 5H), 7.70 (t, *J*=7.0 Hz, 2H), 7.91 (d, *J*=7.5 Hz, 4H), 7.95 (s, 1H), 8.22 (d, *J*=8.0 Hz, 1H). ^{13}C NMR (125 MHz; $CDCl_3$): δ= 27.2, 27.5, 39.5, 39.7, 123.0, 123.7, 123.9, 124.4, 128.8, 129.2, 134.0, 134.3, 134.4, 138.6, 176.1, 176.7. IR (KBr, cm^{-1}): 3415, 1676, 1511, 1373, 1166, 720, 548. HRMS (ESI-TOF) Calcd for $C_{28}H_{34}N_3O_6S_2$, $[M+H]^+$ 572.1884; Found 572.1884.



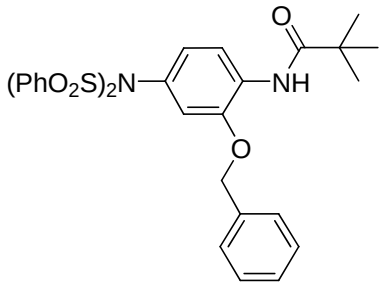
***N*-(2-methoxy-4-(*N*-(phenylsulfonyl)phenylsulfonamido)phenyl)pivalamide (4a)**

White solid. Mp: 196 ^{o}C; ^{1}H NMR (500 MHz; $CDCl_3$): δ =1.31 (s, 9H), 3.74 (s, 3H), 6.46 (d, *J*=2.0 Hz, 1H), 6.59 (dd, J_1=1.5 Hz, J_2=8.5 Hz, 1H), 7.56 (t, *J*=8.0 Hz, 4H), 7.68 (t, *J*=7.5 Hz, 2H), 7.95 (d, *J*=8.0 Hz, 4H), 8.17 (s, 1H), 8.43 (d, *J*=9.0 Hz, 1H). ^{13}C NMR (125 MHz; $CDCl_3$): δ=27.5, 40.1, 55.9, 112.9, 118.9, 124.5, 128.3, 128.5, 128.9, 129.8, 133.9, 139.2, 147.7, 176.7. IR (KBr, cm^{-1}): 3454, 1687, 1525, 1379, 1174, 579. HRMS (ESI-TOF) Calcd for $C_{24}H_{27}N_2O_6S_2$, $[M+H]^+$ 503.1305; Found 503.1304.



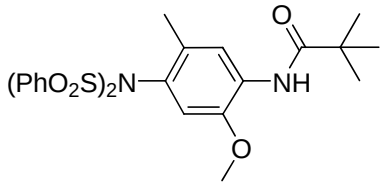
***N*-(2-ethoxy-4-(*N*-(phenylsulfonyl)phenylsulfonamido)phenyl)pivalamide (4b)**

White solid. Mp: 222 ^{o}C; ^{1}H NMR (500 MHz; $CDCl_3$): δ = 1.31 (s, 9H), 1.41 (t, J = 7.0 Hz, 3H), 3.92 (dd, J_1 = 7.0 Hz, J_2 = 13.5 Hz, 2H), 6.47 (s, 1H), 6.57 (d, J = 8.5 Hz, 1H), 7.55 (t, J=9.0 Hz, 4H) 7.67 (t, J=9.0 Hz, 2H), 7.94 (d, J=9.0 Hz, 4H), 8.25 (s, 1H), 8.41 (d, J=8.5Hz, 1H). ^{13}C NMR (125 MHz; $CDCl_3$): δ = 14.6, 27.5, 40.1, 64.4, 113.9, 118.8, 124.5, 128.3, 128.6, 129.0, 129.9, 133.9, 139.4, 147.2, 176.6. IR (KBr, cm^{-1}): 3309, 2966, 1682, 1522, 1381, 1158, 916, 549. HRMS (ESI-TOF) Calcd for $C_{25}H_{29}N_2O_6S_2$, $[M+H]^+$ 517.1462; Found 517.1459.



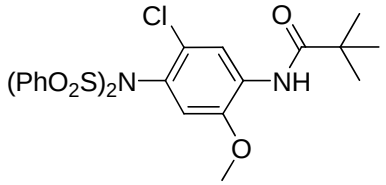
***N*-(2-(benzyloxy)-4-(*N*-(phenylsulfonyl)phenylsulfonamido)phenyl)pivalamide (4c)**

White solid. Mp: 190 ^{o}C; ^{1}H NMR (500 MHz; $CDCl_3$): δ = 1.25 (s, 9H), 4.94 (s, 2H), 6.60-6.62 (m, 2H), 7.36-7.43 (m, 5H), 7.54 (t, J=7.5 Hz, 4H), 7.67 (t, J=7.0 Hz, 2H), 7.92 (d, J = 8.0 Hz, 4H), 8.25 (s, 1H), 8.43 (d, J = 8.5 Hz, 1H). ^{13}C NMR (125 MHz; $CDCl_3$): δ = 27.4, 40.0, 71.1, 114.6, 119.1 125.1, 127.4, 128.4, 128.6, 128.9, 129.0, 130.3, 133.9, 135.6, 139.4, 147.1, 176.7. IR (KBr, cm^{-1}): 3311, 1677, 1392, 1167, 731. HRMS (ESI-TOF) Calcd for $C_{30}H_{31}N_2O_6S_2$, $[M+H]^+$ 579.1618; Found 579.1611.



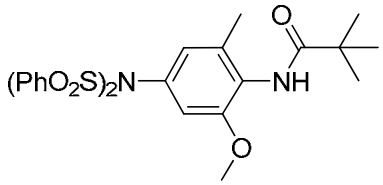
***N*-(2-methoxy-5-methyl-4-(*N*-(phenylsulfonyl)phenylsulfonamido)phenyl)pivalamide (4d)**

White solid. Mp: 211 ^{o}C; ^{1}H NMR (500 MHz; $CDCl_3$): δ = 1.31 (s, 9H), 1.78 (s, 3H), 3.67 (s, 3H), 6.32 (s, 1H), 7.55 (t, J = 8.0 Hz, 4H), 7.64 (t, J = 7.5 Hz, 2H), 7.97 (d, J=8.0 Hz, 4H), 8.13 (s, 1H), 8.36 (s, 1H). ^{13}C NMR (125 MHz; $CDCl_3$): δ = 17.5, 27.5, 40.1, 113.3, 121.1, 126.8, 128.9, 129.6, 133.7, 134.0, 139.6, 145.8, 176.8. IR (KBr, cm^{-1}): 3431, 2969, 1687, 1523, 1182, 755, 549. HRMS (ESI-TOF) Calcd for $C_{25}H_{29}N_2O_6S_2$, $[M+H]^+$ 517.1462; Found 517.1440.



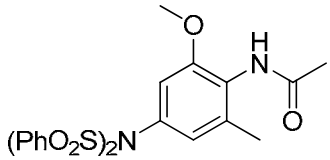
***N*-(5-chloro-2-methoxy-4-(*N*-(phenylsulfonyl)phenylsulfonamido)phenyl)pivalamide (4e)**

White solid. Mp: 153 ^{o}C; ^{1}H NMR (500 MHz; $CDCl_3$): δ = 1.31 (s, 9H), 3.74 (s, 3H), 6.52 (s, 1H), 7.55 (t, *J* =7.5 Hz, 4H), 7.68 (t, *J* =7.5 Hz, 2H), 8.00 (d, *J* =7.5 Hz, 4H), 8.15 (s, 1H), 8.62 (s, 1H). ^{13}C NMR (125 MHz; $CDCl_3$): δ = 27.4, 40.1, 56.2, 114.3, 120.2, 125.4, 128.8, 129.1, 129.3, 130.5, 134.1, 139.2, 146.2, 176.8. IR (KBr, cm^{-1}): 3434, 2964, 1152, 1385, 1173, 907, 549. HRMS (ESI-TOF) Calcd for $C_{24}H_{26}ClN_2O_6S_2$, $[M+H]^+$ 537.0915; Found 537.0928.



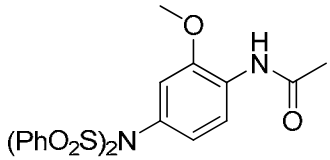
***N*-(2-methoxy-6-methyl-4-(*N*-(phenylsulfonyl)phenylsulfonamido)phenyl)pivalamide (4f)**

White solid. Mp: 249 ^{o}C; ^{1}H NMR (500 MHz; $CDCl_3$): δ = 1.34 (s, 9H), 2.13 (s, 3H), 3.62 (s, 3H), 6.29 (s, 1H), 6.49 (s, 1H), 7.12 (s, 1H), 7.56 (t, *J* =7.5 Hz, 4H), 7.68 (t, *J* =7.5 Hz, 2H), 7.97 (d, *J* =8.0 Hz, 4H). ^{13}C NMR (125 MHz; $CDCl_3$): δ = 18.6, 27.7, 39.6, 55.9, 113.3, 126.0, 126.9, 128.7, 128.9, 131.8, 133.9, 137.0, 139.4, 153.3, 178.6. IR (KBr, cm^{-1}): 3265, 2967, 1655, 1520, 1413, 1177, 916. HRMS (ESI-TOF) Calcd for $C_{25}H_{29}N_2O_6S_2$, $[M+H]^+$ 517.1462; Found 517.1470.



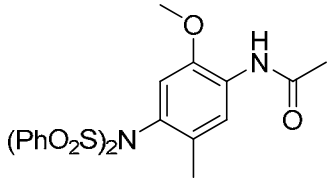
***N*-(2-methoxy-6-methyl-4-(N-(phenylsulfonyl)phenylsulfonamido)phenyl)acetamide(4g)**

Pink solid. Mp: 204 ^{o}C; ^{1}H NMR (500 MHz; $CDCl_3$): δ =2.18 (s, 3H), 2.22 (s, 3H), 3.61 (s, 3H), 6.27 (s, 1H), 6.53 (s, 1H), 6.87 (s, 1H), 7.56 (t, *J*=8.0 Hz, 4H), 7.69 (t, *J*=7.5 Hz, 2H), 7.98 (d, *J*=7.5 Hz, 4H). ^{13}C NMR (100 MHz; $CDCl_3$): δ=18.8, 23.6, 55.8, 111.4, 126.0, 126.6, 128.7, 128.9, 132.2, 134.0, 137.2, 139.4, 153.3, 168.3. IR (KBr, cm^{-1}): 3260,1676,1379,1171,921,547. HRMS (ESI-TOF) Calcd for $C_{22}H_{22}N_2NaO_6S_2$, $[M+Na]^+$ 497.0811; Found 497.0812.



***N*-(2-methoxy-4-(N-(phenylsulfonyl)phenylsulfonamido)phenyl)acetamide(4h)**

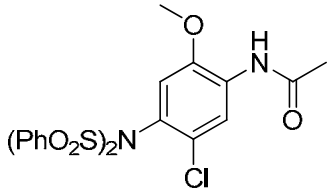
Pink solid. Mp: 231 ^{o}C; ^{1}H NMR (500 MHz; $CDCl_3$): δ =2.21 (s, 3H), 3.72 (s, 3H), 6.46 (s, 1H), 6.59 (dd, J_1=2.5 Hz, J_2=8.5 Hz, 1H), 7.55 (t, *J*=8.0 Hz, 4H), 7.68 (t, *J*=7.5 Hz, 2H), 7.69 (s, 1H), 7.94 (d, *J*=8.0 Hz, 4H), 8.37 (d, *J*=8.5 Hz, 1H). ^{13}C NMR (125 MHz; $CDCl_3$): δ=25.0, 55.9, 113.2, 119.2, 124.6, 129.0, 129.7, 133.9, 139.4, 168.3. IR (KBr, cm^{-1}): 3423, 2971, 1675, 1526, 1374, 1171, 605 ,548. HRMS (ESI-TOF) Calcd for $C_{24}H_{27}N_2O_6S_2$, $[M+H]^+$ 461.0836; Found 461.0836.



***N*-(2-methoxy-5-methyl-4-(N-(phenylsulfonyl)phenylsulfonamido)phenyl)acetamide(4i)**

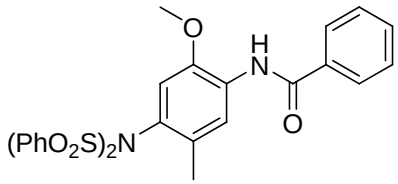
Pink solid. Mp: 248 ^{o}C; ^{1}H NMR (500 MHz; $CDCl_3$): δ =1.79 (s, 3H), 2.21 (s, 3H), 3.65 (s, 3H),

6.32 (s, 1H), 7.56 (t, *J*=8.0 Hz, 4H), 7.68 (t, *J*=7.5 Hz, 2H), 7.75 (s, 1H), 7.97 (d, *J*=7.5 Hz, 4H), 8.29 (s, 1H). ^{13}C NMR (100 MHz; $CDCl_3$): δ=17.6, 25.0, 55.7, 113.4, 121.2, 127.0, 128.2, 128.9, 129.5, 133.7, 134.0, 139.6, 145.4, 168.2. IR (KBr, cm^{-1}): 3286, 1673, 1530, 1375, 1170, 913, 577. HRMS (ESI-TOF) Calcd for $C_{22}H_{22}N_2NaO_6S_2$, [M+ Na]$^+$ 497.0811; Found 497.0818.



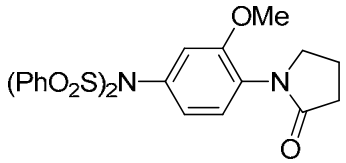
***N*-(5-chloro-2-methoxy-4-(N-(phenylsulfonyl)phenylsulfonamido)phenyl)acetamide(4j)**

Pink solid. Mp: 210 ^{o}C; ^{1}H NMR (500 MHz; $CDCl_3$): δ =2.22 (s, 3H), 3.71(s, 3H), 6.52 (s, 1H), 7.55 (t, *J*=8.0 Hz, 4H), 7.67 (d, *J*=7.5 Hz, 2H), 7.78 (s, 1H), 8.00 (d, *J*=8.0 Hz, 4H), 8.55 (s, 1H). ^{13}C NMR (100 MHz; $CDCl_3$): δ=24.9, 56.1, 114.5, 120.3, 125.7, 128.9, 129.1, 130.4, 134.1, 139.3,145.9, 168.3. IR (KBr, cm^{-1}): 3265, 1672, 1513, 1380, 1173, 914, 572. HRMS (ESI-TOF) Calcd for $C_{21}H_{20}ClN_2O_6S_2$, [M+H]$^+$ 495.0446; Found 495.0442.



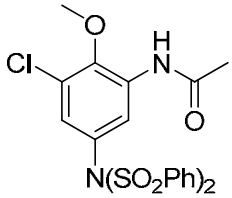
***N*-(2-methoxy-5-methyl-4-(N-(phenylsulfonyl)phenylsulfonamido)phenyl)benzamide(4k)**

White solid. Mp: 141 ^{o}C; ^{1}H NMR (500 MHz; $CDCl_3$): δ =1.84 (s, 3H), 3.70 (s, 3H), 6.37 (s, 1H), 7.52-7.59, (m, 7H), 7.70 (t, *J*=7.5 Hz, 2H), 7.88 (d, *J*=8.0 Hz, 2H), 8.00 (d, *J*=7.5 Hz, 4H), 8.48 (s, 1H), 8.56 (s, 1H). ^{13}C NMR (100 MHz; $CDCl_3$): δ=17.6, 56.0, 113.5, 121.4, 127.0, 127.3,128.9 129.0,129.6,132.0,133.8,134.0,134.9,139.6,146.0,165.3.IR(KBr,cm^{-1}):3065,1679,1528,1380,1171, 911,549. HRMS (ESI-TOF) Calcd for $C_{27}H_{24}N_2NaO_6S_2$, [M+Na]$^+$ 559.0968; Found 559.0965.



***N*-(3-methoxy-4-(2-oxopyrrolidin-1-yl)phenyl)-*N*-(phenylsulfonyl)benzenesulfonamide (4l)**

White solid. Mp: 145 ^{o}C; ^{1}H NMR (500 MHz; $CDCl_3$): δ =2.14 (t, *J* = 7.5 Hz, 2H), 2.50 (t, *J* = 8.0 Hz, 2H), 3.72 (t, *J* = 7.0 Hz, 2H), 3.87 (s, 3H), 6.90 (d, *J* =8.5 Hz, 1H), 6.96 (d, *J* =9.0 Hz, 2H), 7.57 (t, *J* =7.5 Hz, 4H), 7.68 (t, *J* =7.5 Hz, 2H), 7.97 (d, *J* =7.5 Hz, 4H). ^{13}C NMR (125 MHz; $CDCl_3$) : δ = 18.9, 31.0, 49.5, 55.8, 111.8, 126.2, 127.6, 128.5, 128.8, 129.1, 131.5, 131.7, 133.9, 139.3, 156.1, 174.7. IR (KBr, cm^{-1}): 3669, 3338, 1697, 1507, 1378, 1171, 915, 548. HRMS (ESI-TOF) Calcd for $C_{23}H_{23}N_2O_6S_2$, [M+H]$^+$ 487.0992; Found 487.0971.

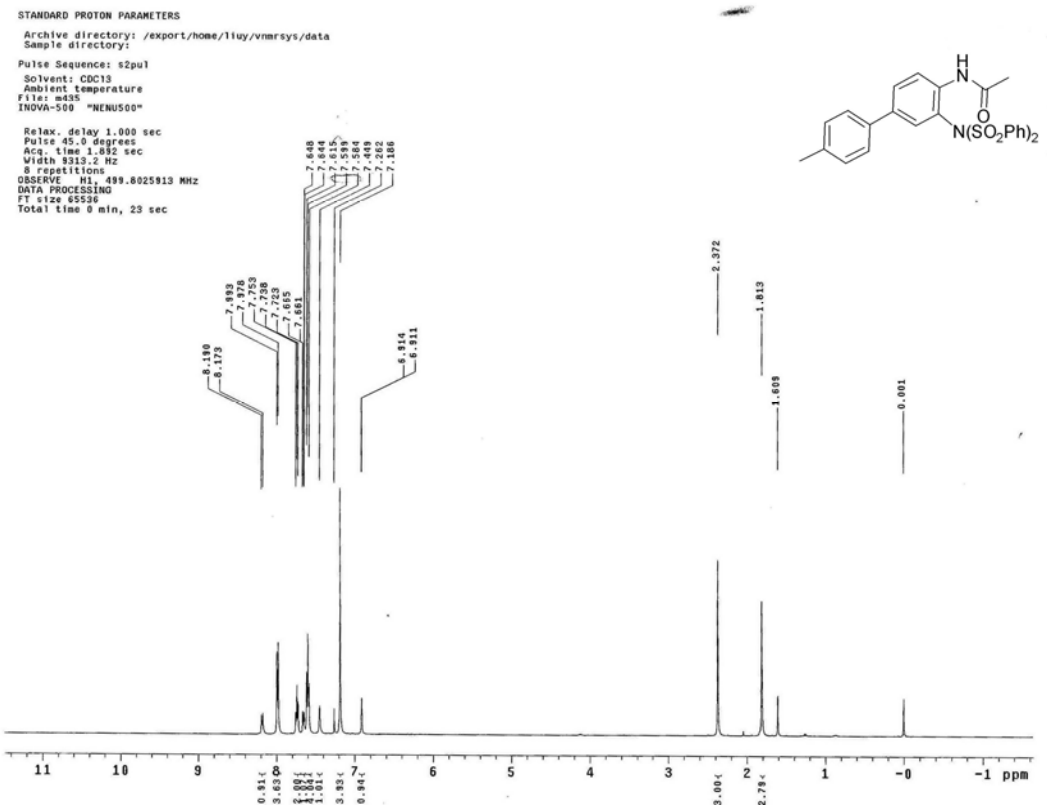


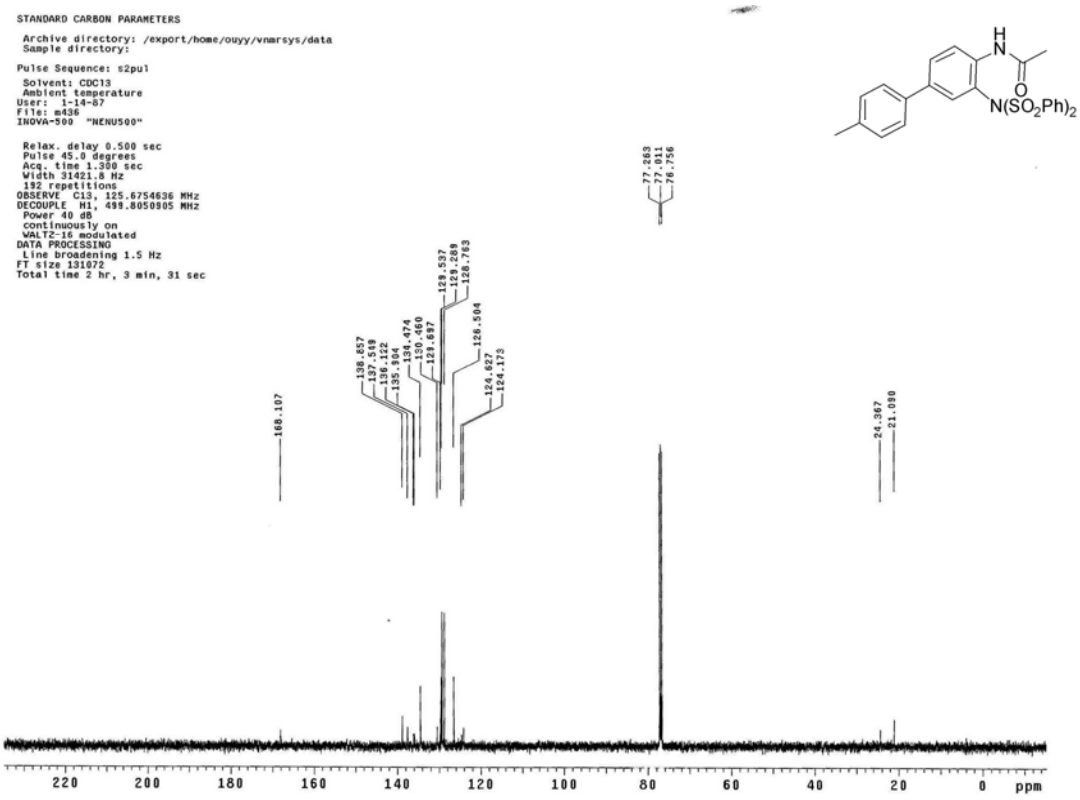
***N*-(3-chloro-2-methoxy-5-(N-(phenylsulfonyl)phenylsulfonamido)phenyl)acetamide (5q)**

Pink solid. Mp: 299 ^{o}C; ^{1}H NMR (500 MHz; $CDCl_3$): δ =2.19 (s, 3H), 3.96 (s, 3H), 6.75 (s, 1H), 7.59 (t, *J*=8.0 Hz, 4H), 7.70 (m, 3H), 7.98 (d, *J*=7.5 Hz, 4H), 8.09 (s, 1H). ^{1}H NMR (500 MHz; DMSO-d_6): δ =2.13 (s, 3H), 3.82 (s, 3H), 6.76 (s, 1H), 7.69 (s, 1H), 7.83-7.89 (m, 7H), 9.65 (s, 1H). ^{13}C NMR (100 MHz; DMSO-d_6): δ=23.9, 60.9, 123.5, 126.8, 128.1, 129.3, 129.6, 134.0, 134.9, 138.2, 147.2, 169.4. IR (KBr, cm^{-1}): 3420, 2918, 1692, 1510, 1372, 1166, 922, 543. HRMS (ESI-TOF) Calcd for $C_{21}H_{19}ClN_2NaO_6S_2$, $[M+Na]^+$ 517.0265; Found 517.0277.

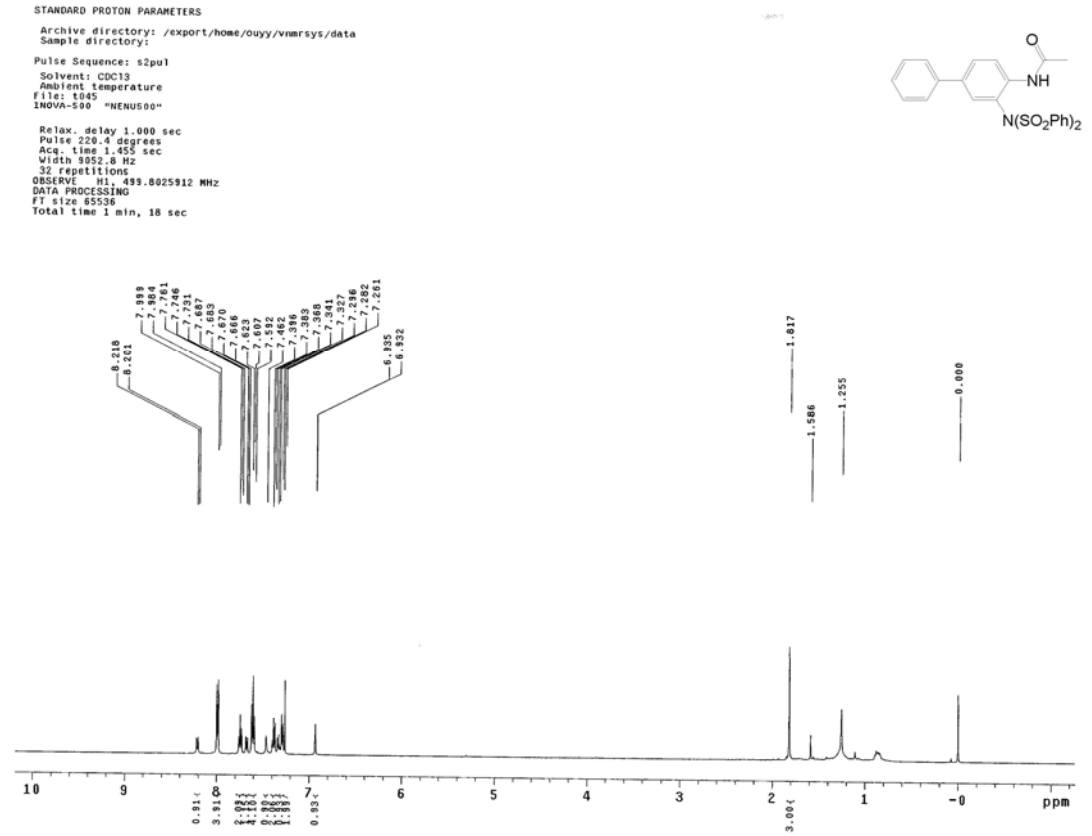
VI. ^{1}H NMR and ^{13}C NMR spectra copies of compounds 2, 4, 5 and G.

Compound 2a





Compound 2b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Pulse 220.4 degrees
Acq. time 1.455 sec
Width 5052.8 Hz
32 repetitions
OBSERVE H1, 499.8025912 MHz
DATA PROCESSING
FT size 65536
Total time 1 min, 18 sec
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8.261
7.989
7.984
7.761
7.746
7.731
7.687
7.683
7.670
7.666
7.623
7.607
7.582
7.462
7.386
7.383
7.368
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6.932
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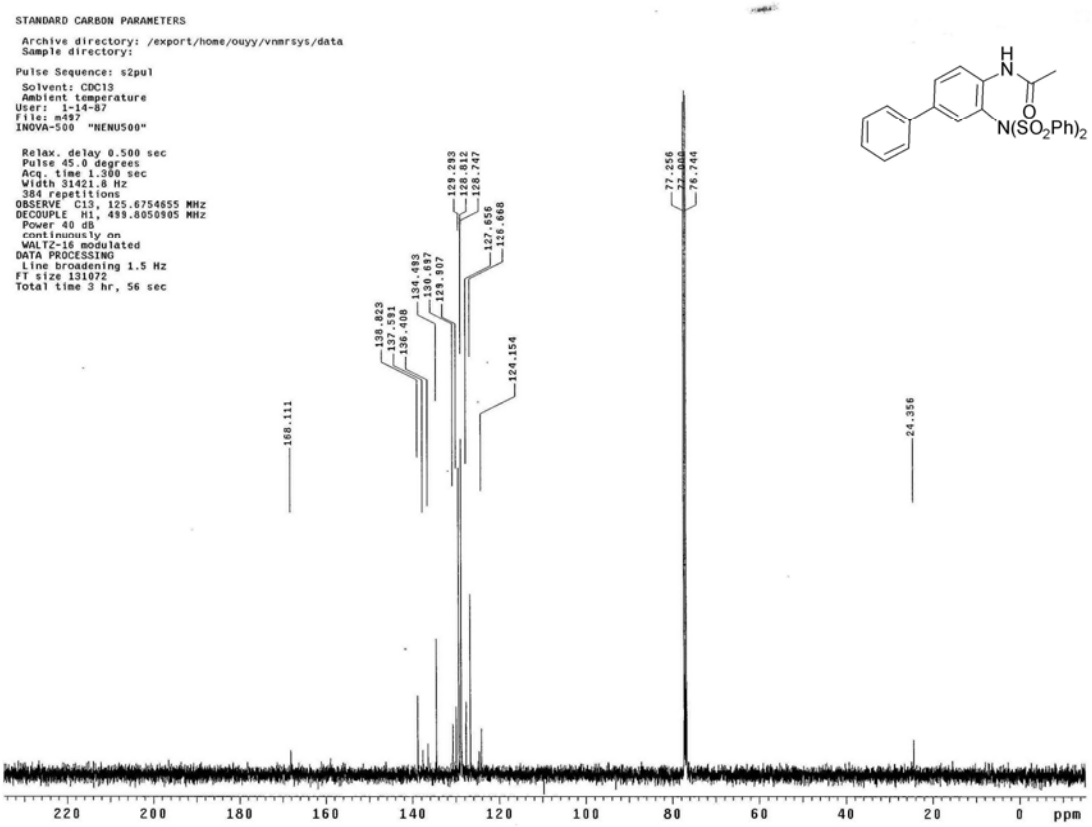
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Ambient temperature
User: 1-14-07
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Pulse 45.0 degrees
Acq. time 1.300 sec
Width 31421.8 Hz
384 repetitions
OBSERVE C13, 125.6754655 MHz
DECOUPLE H1, 499.8050905 MHz
Power 40 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 3 hr, 56 sec
H
N
O
N(SO2Ph)2
168.111
138.823
137.511
136.408
134.493
130.697
129.907
129.293
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127.656
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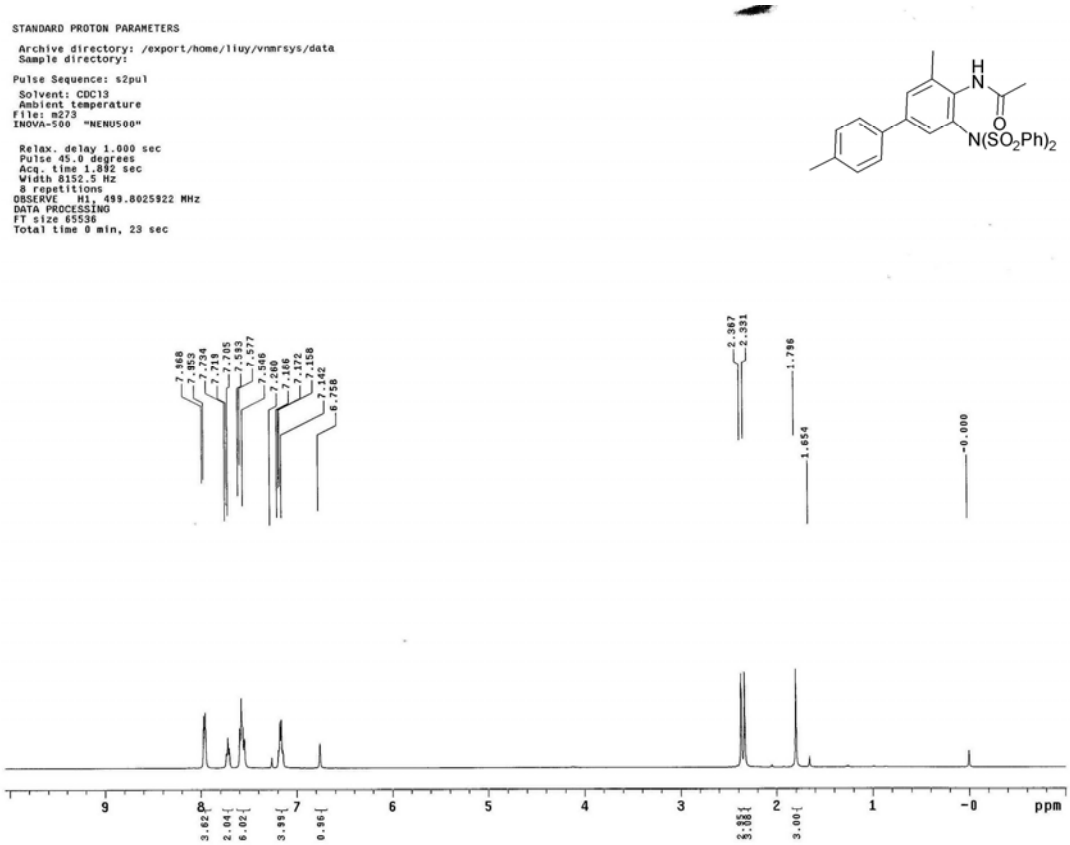
77.000
76.744
24.356
ppm

Compound 2c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Ambient temperature
File: m273
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Pulse 45.0 degrees
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8 repetitions
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DATA PROCESSING
FT size 65536
Total time 0 min, 23 sec
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7.734
7.718
7.705
7.593
7.577
7.546
7.260
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7.172
7.158
7.142
6.758
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2.331
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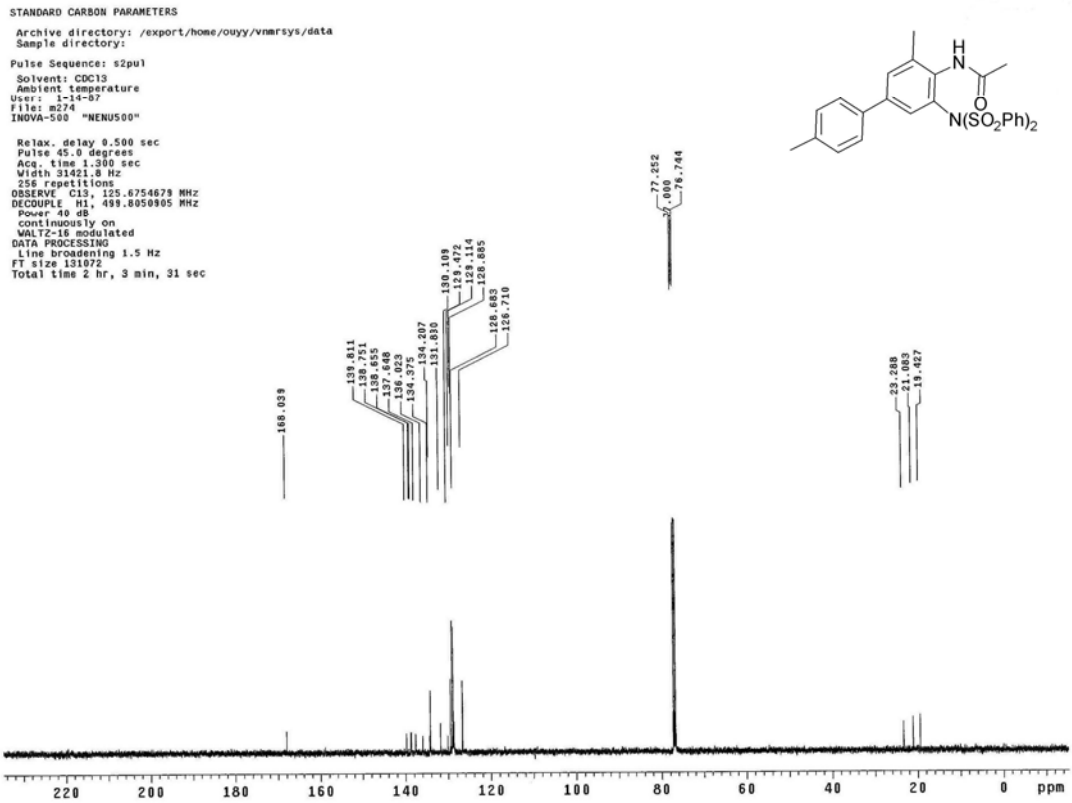
1.654
-0.000
ppm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Ambient temperature
User: 1-14-07
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Pulse 45.0 degrees
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Width 31421.8 Hz
256 repetitions
OBSERVE C13, 125.6754679 MHz
DECOUPLE H1, 499.8050905 MHz
Power 40 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 2 hr, 3 min, 31 sec
N(SO2Ph)2
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77.000
76.744
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139.811
138.751
138.655
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135.325
134.375
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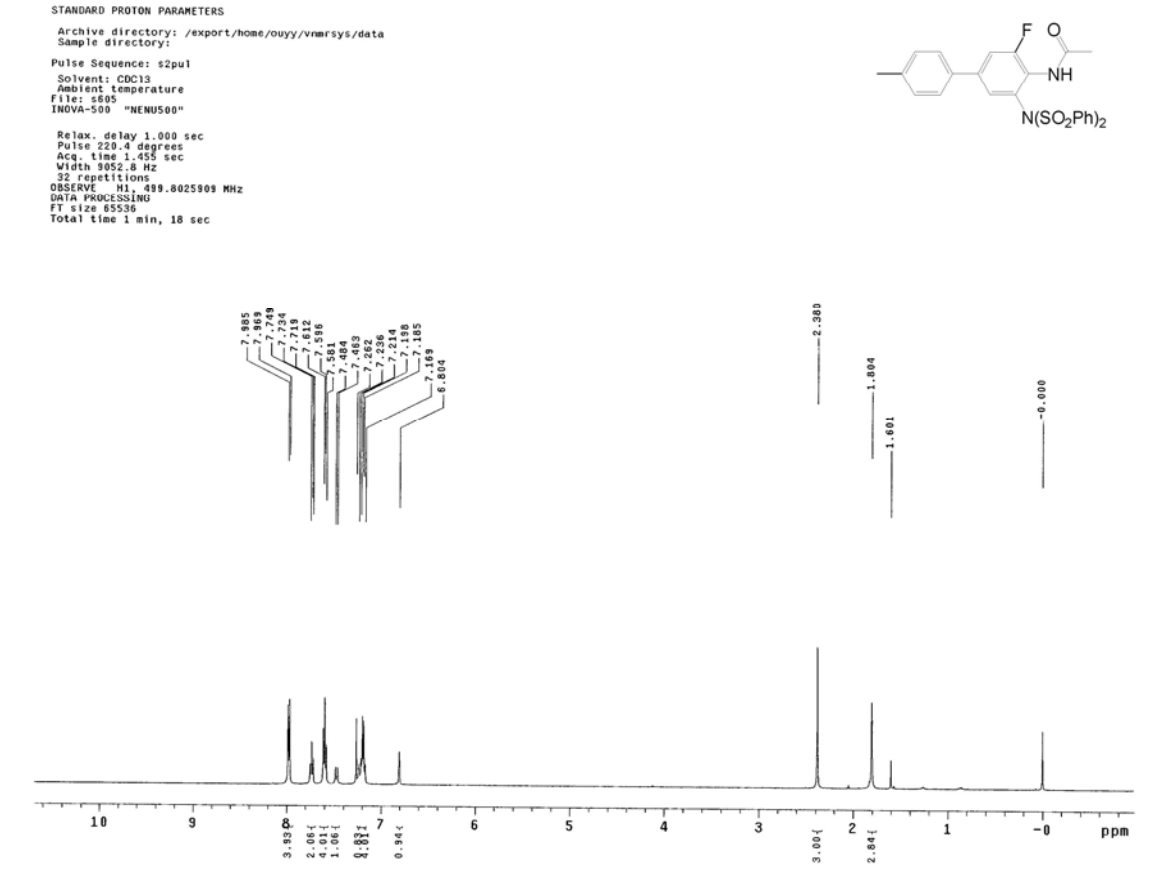
21.083
19.427
ppm

Compound 2d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Solvent: CDCl3
Ambient temperature
File: s605
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Pulse 220.4 degrees
Acq. time 1.455 sec
Width 9052.8 Hz
32 repetitions
OBSERVE H1, 499.8025909 MHz
DATA PROCESSING
FT size 65536
Total time 1 min, 18 sec
F O
NH
N(SO2Ph)2
7.885
7.969
7.749
7.734
7.719
7.612
7.596
7.581
7.484
7.463
7.262
7.236
7.214
7.198
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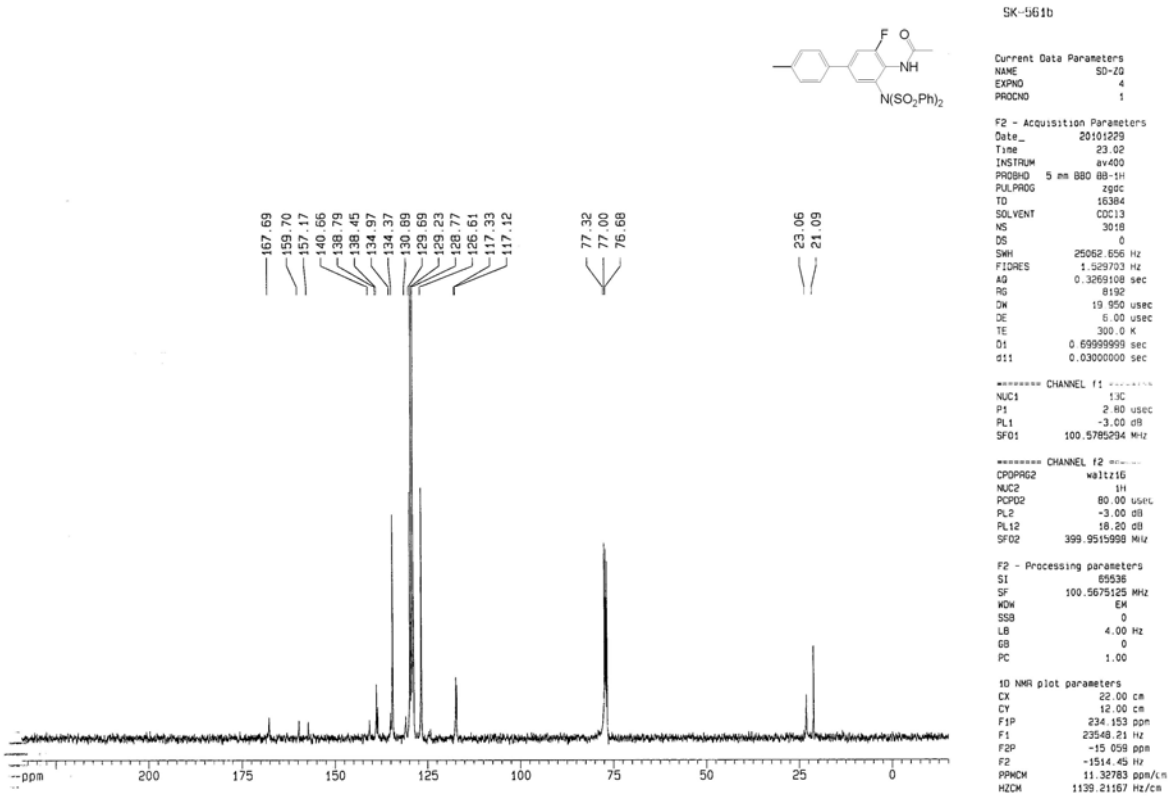
2.380
1.804
1.601
-0.000
ppm


SK-561b
F O
NH
N(SO2Ph)2
Current Data Parameters
NAME SD-ZO
EXPNO 4
PROCNO 1
F2 - Acquisition Parameters
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Time 23.02
INSTRUM av400
PROBHD 5 mm BBO BB-1H
PULPROG zgpg
TD 16384
SOLVENT CDCl3
NS 3018
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SWH 25062.656 Hz
FIDRES 1.529703 Hz
AQ 0.3269108 sec
RG 8192
DW 19.950 usec
DE 6.00 usec
TE 300.0 K
D1 0.69999999 sec
d11 0.03000000 sec
CHANNEL f1
NUC1 13C
P1 2.80 usec
PL1 -3.00 dB
SFO1 100.5785294 MHz
CHANNEL f2
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -3.00 dB
PL12 18.20 dB
SFO2 399.9515998 MHz
F2 - Processing parameters
SI 65536
SF 100.5675125 MHz
WDW EM
SSB 0
LB 4.00 Hz
GB 0
PC 1.00
1D NMR plot parameters
CX 22.00 cm
CY 12.00 cm
F1P 234.153 ppm
F1 23548.21 Hz
F2P -15.059 ppm
F2 -1514.45 Hz
PPMCM 11.32783 ppm/cm
HZCM 1139.21167 Hz/cm
167.69
159.70
157.17
140.66
138.79
138.45
134.97
134.37
130.89
129.69
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117.33
117.12
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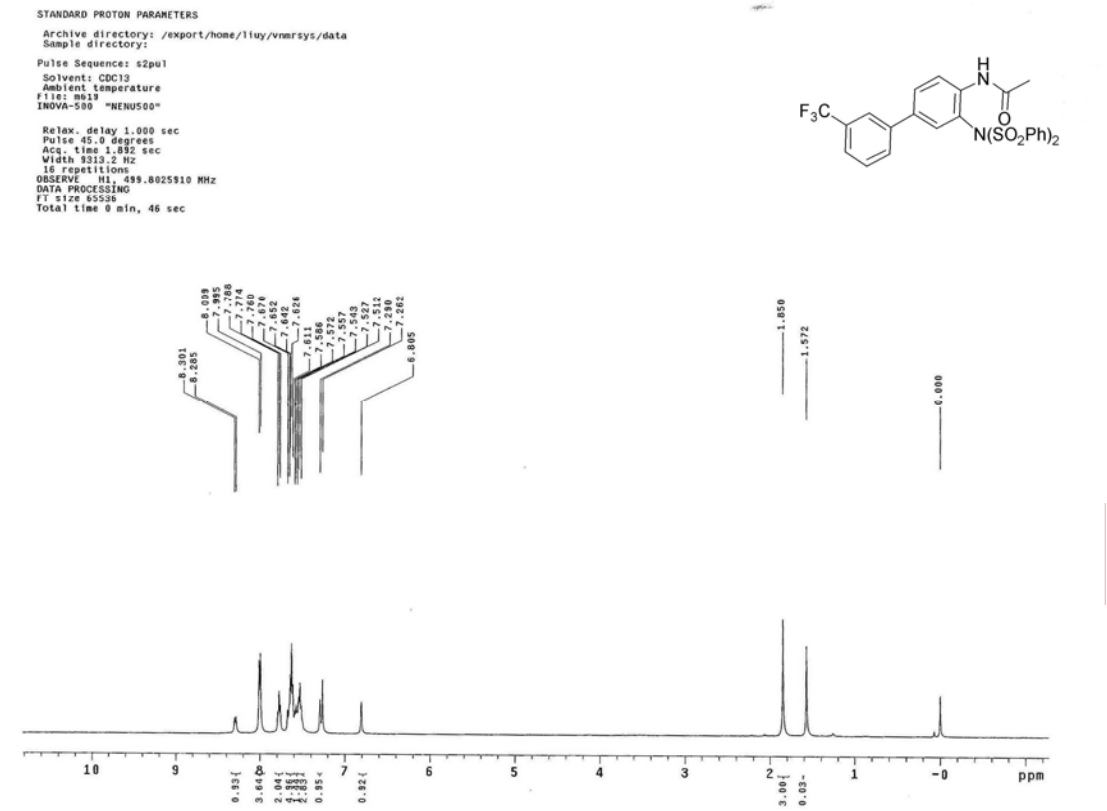
77.00
76.68
23.06
21.09
ppm

Compound 2e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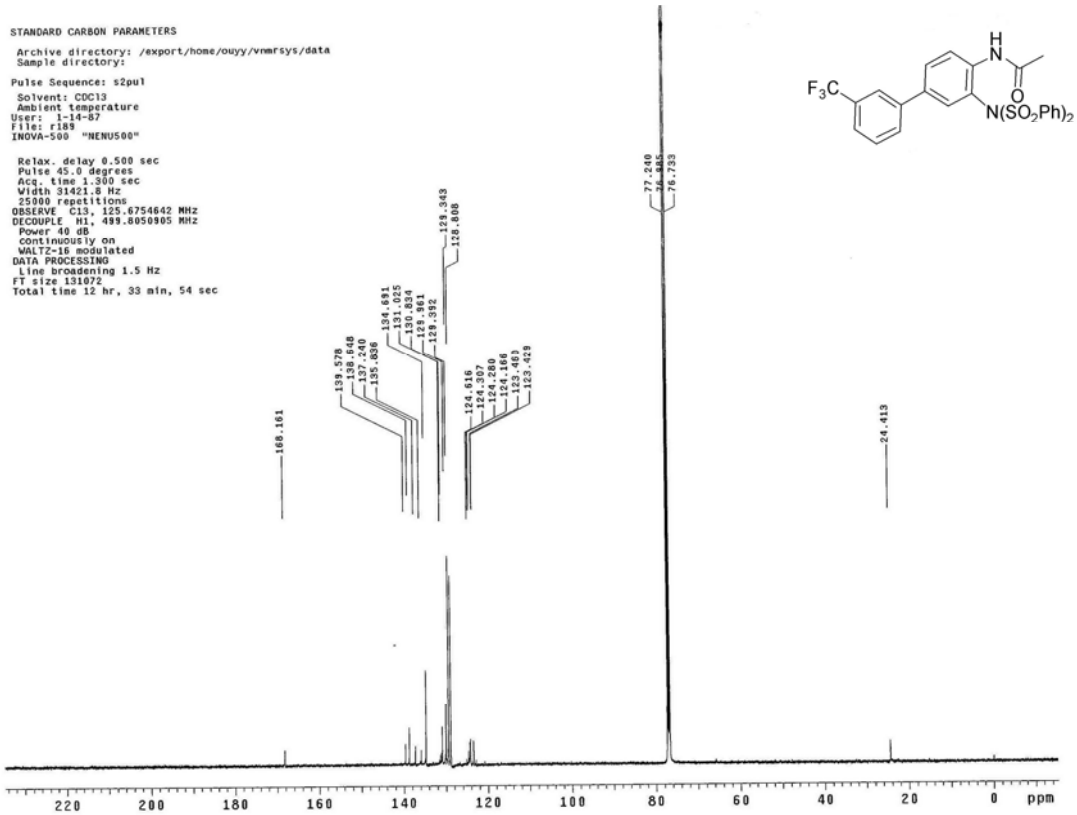
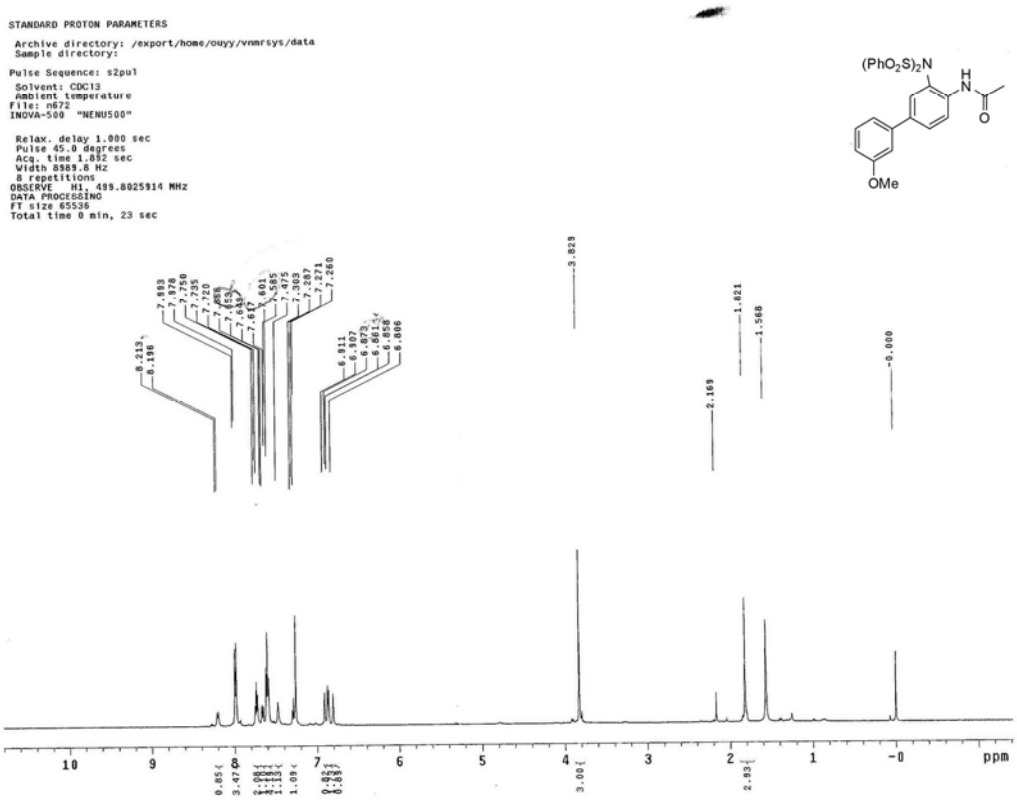
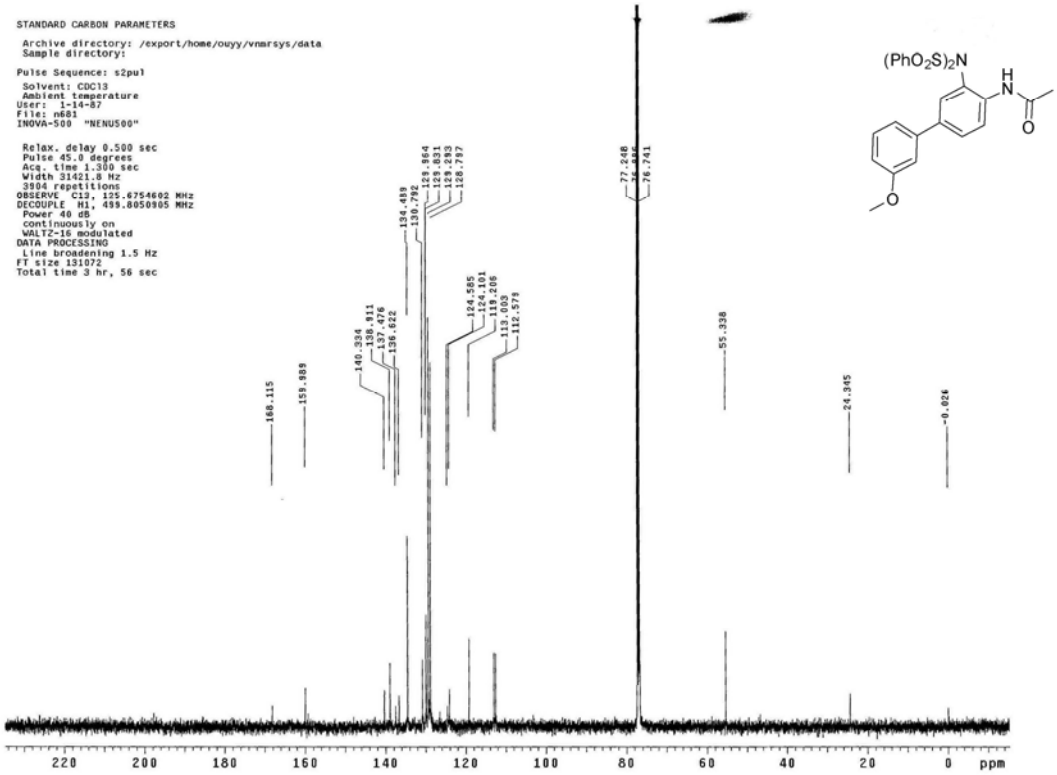
Solvent: CDCl3
Ambient temperature
File: mb19
INOVA-500 "NENU500"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.892 sec
Width 9313.2 Hz
16 repetitions
OBSERVE H1, 499.8025910 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 46 sec
F3C
H
N
O
N(SO2Ph)2
8.301
6.285
8.039
7.995
7.788
7.774
7.760
7.656
7.652
7.642
7.626
7.611
7.586
7.572
7.557
7.543
7.527
7.512
7.290
7.282
6.805
1.850
1.572
0.000
ppm

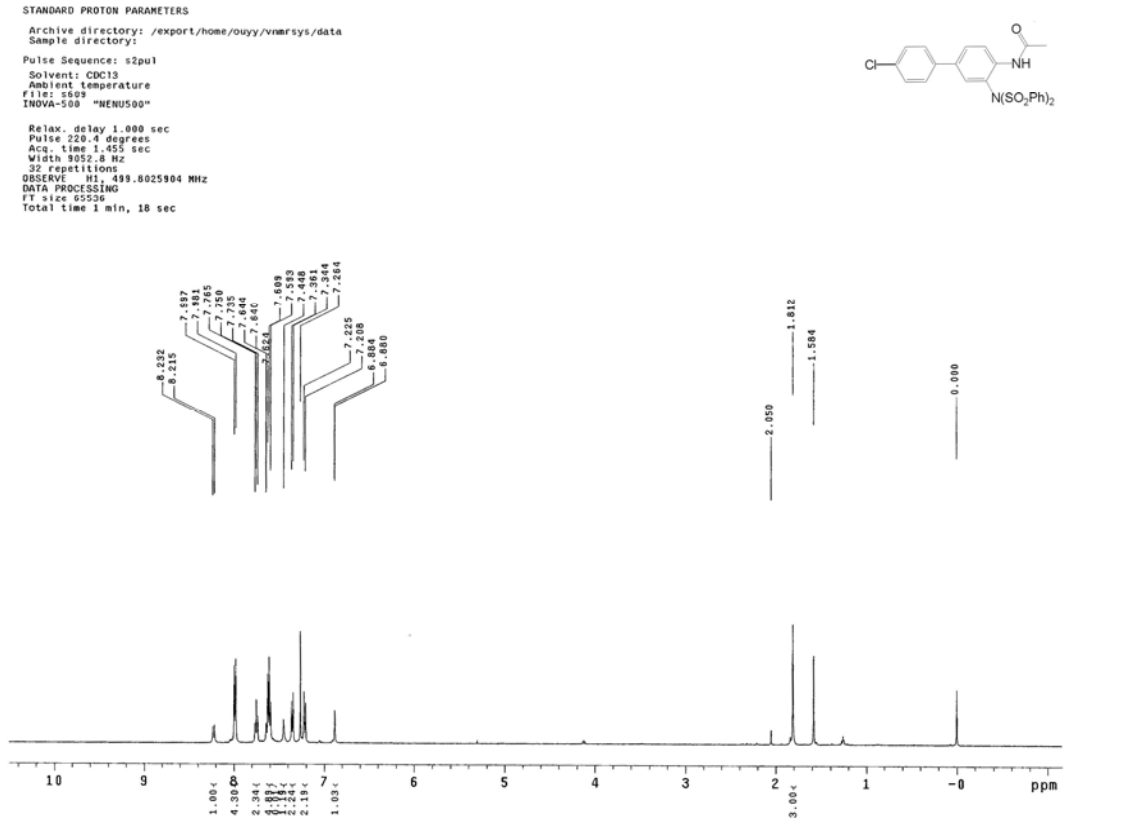

STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
User: 1-14-87
File: r189
INOVA-500 "NENU500"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 31421.8 Hz
25000 repetitions
OBSERVE C13, 125.6754642 MHz
DECOUPLE H1, 499.8050905 MHz
Power 40 dB
Continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 12 hr, 33 min, 54 sec
F3C
H
N
O
N(SO2Ph)2
168.161
139.578
138.848
137.240
135.838
134.691
131.025
130.834
129.961
129.392
129.343
128.808
124.616
124.307
124.280
124.166
123.483
123.429
77.240
76.885
76.733
24.413
ppm

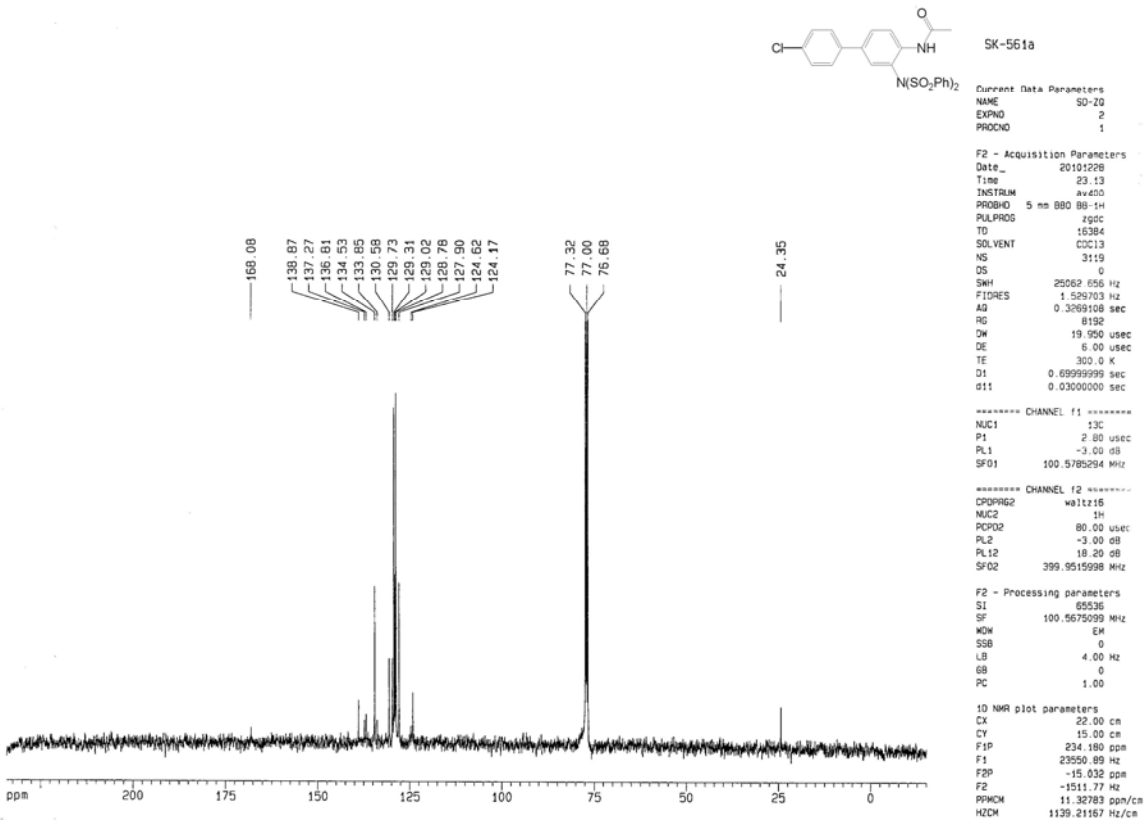
Compound 2f


STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: n672
INOVA-500 "NENU500"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.882 sec
Width 8869.8 Hz
8 repetitions
OBSERVE H1, 499.8025914 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 23 sec
(PhO2S)2N
OMe
ppm

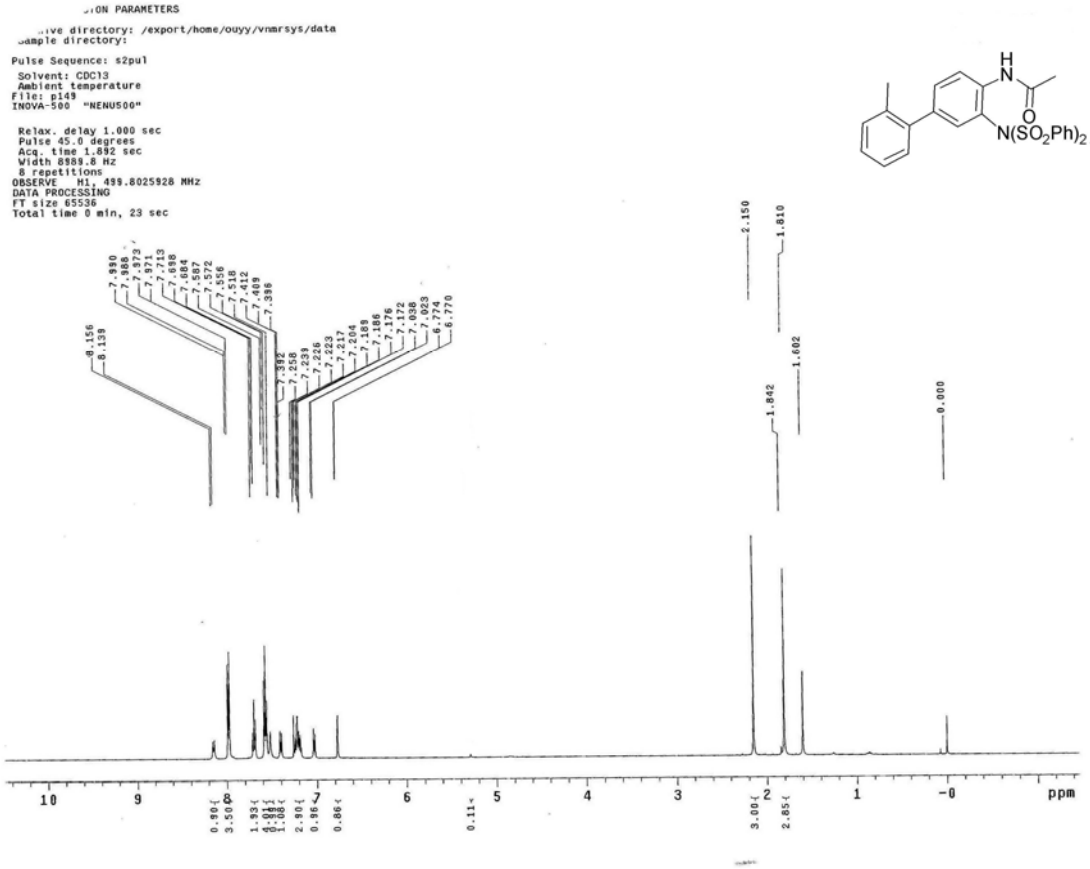

STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
User: 1-14-87
File: n681
INOVA-500 "NENU500"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 31421.8 Hz
3904 repetitions
OBSERVE C13, 125.6754602 MHz
DECOUPLE H1, 499.8050805 MHz
Power 40 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 3 hr, 56 sec
(PhO2S)2N
ppm

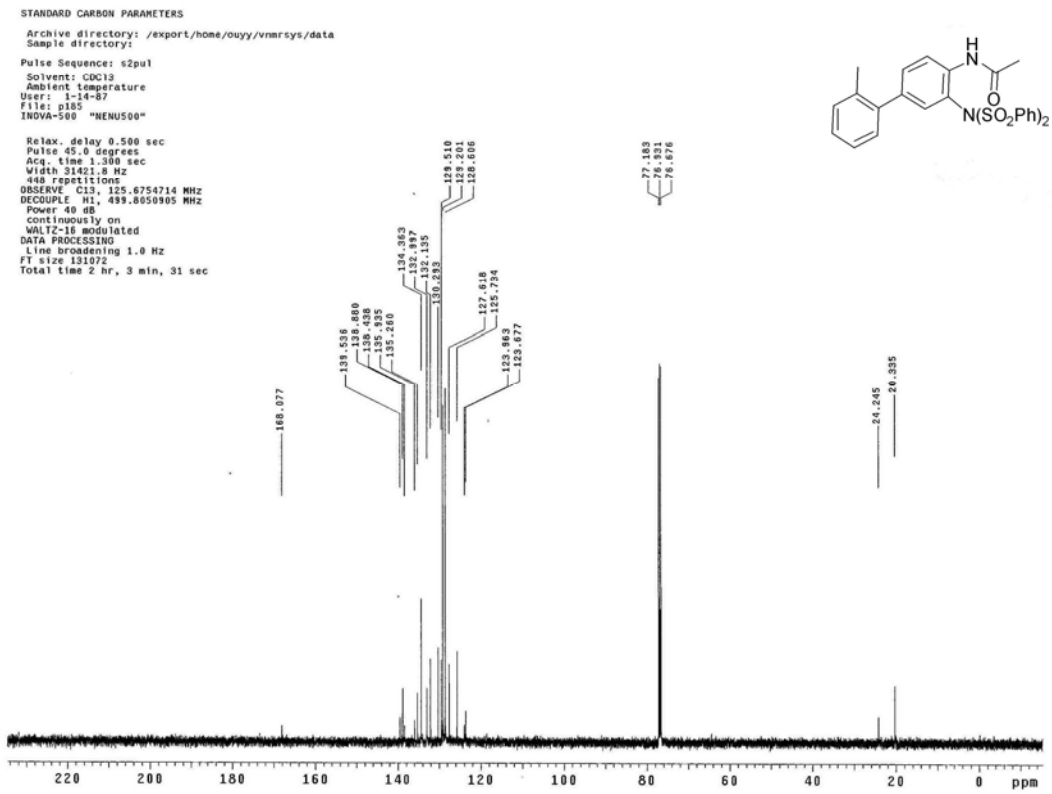
Compound 2g


STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: s609
INOVA-500 "NENU500"
Relax. delay 1.000 sec
Pulse 220.4 degrees
Acq. time 1.455 sec
Width 9052.8 Hz
32 repetitions
OBSERVE H1, 499.8025904 MHz
DATA PROCESSING
FT size 65536
Total time 1 min, 18 sec
Cl
NH
N(SO2Ph)2
8.232
8.215
7.697
7.681
7.765
7.760
7.735
7.644
7.640
7.624
7.608
7.593
7.448
7.361
7.344
7.264
7.225
7.208
6.884
6.880
2.050
1.812
1.584
0.000
ppm

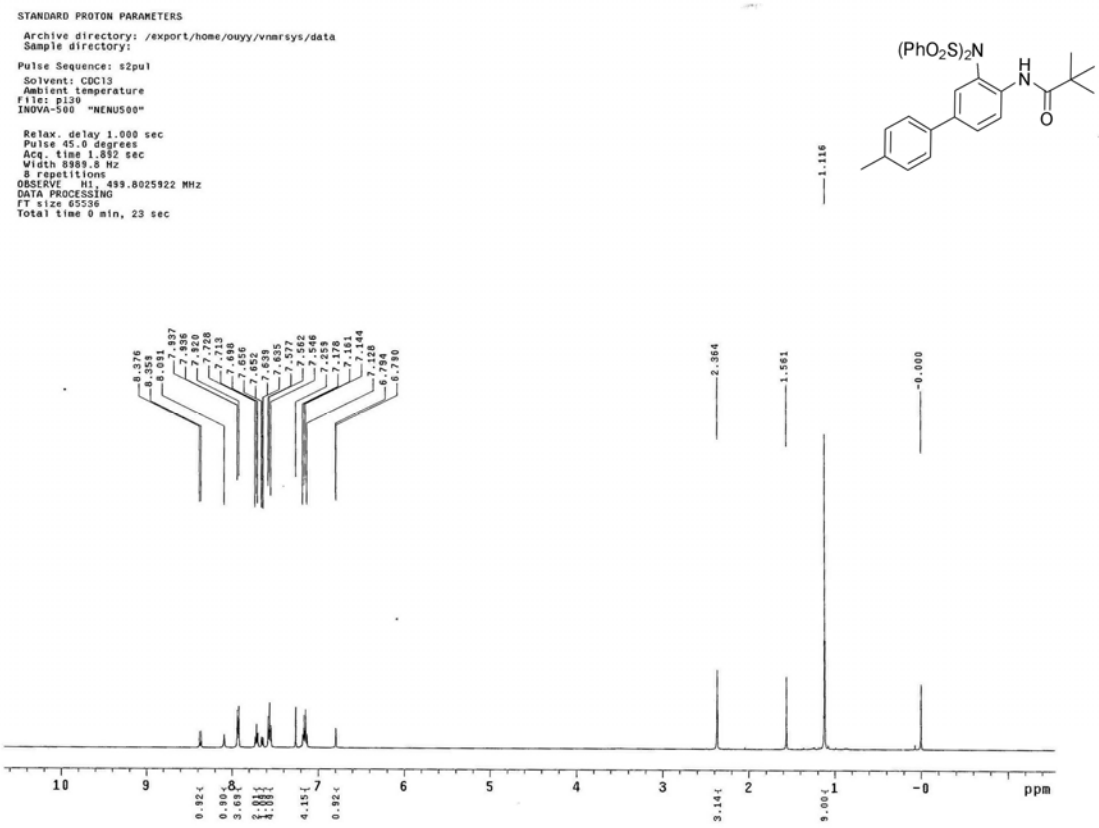

Cl
NH
N(SO2Ph)2
SK-561a
Current Data Parameters
NAME SO-ZQ
EXPNO 2
PROCNO 1
F2 - Acquisition Parameters
Date_ 20101228
Time 23.13
INSTRUM av400
PROBHD 5 mm BBO BB-1H
PULPROG zgdc
TD 16384
SOLVENT CDCl3
NS 3119
DS 0
SWH 25062.656 Hz
FIDRES 1.529703 Hz
AQ 0.3269108 sec
RG 8192
DW 19.950 usec
DE 6.00 usec
TE 300.0 K
D1 0.69999999 sec
d11 0.03000000 sec
======== CHANNEL f1 ========
NUC1 13C
P1 2.80 usec
PL1 -3.00 dB
SFO1 100.5785294 MHz
======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -3.00 dB
PL12 18.20 dB
SFO2 399.9515998 MHz
F2 - Processing parameters
SI 65536
SF 100.5675099 MHz
WDW EM
SSB 0
LB 4.00 Hz
GB 0
PC 1.00
1D NMR plot parameters
CX 22.00 cm
CY 15.00 cm
F1P 234.180 ppm
F1 23550.89 Hz
F2P -15.032 ppm
F2 -1511.77 Hz
PPMCM 11.32783 ppm/cm
HZCM 1139.21167 Hz/cm
168.08
138.87
137.27
136.81
134.53
133.85
130.58
129.73
129.31
129.02
128.78
127.90
124.62
124.17
77.32
77.00
76.68
24.35
ppm

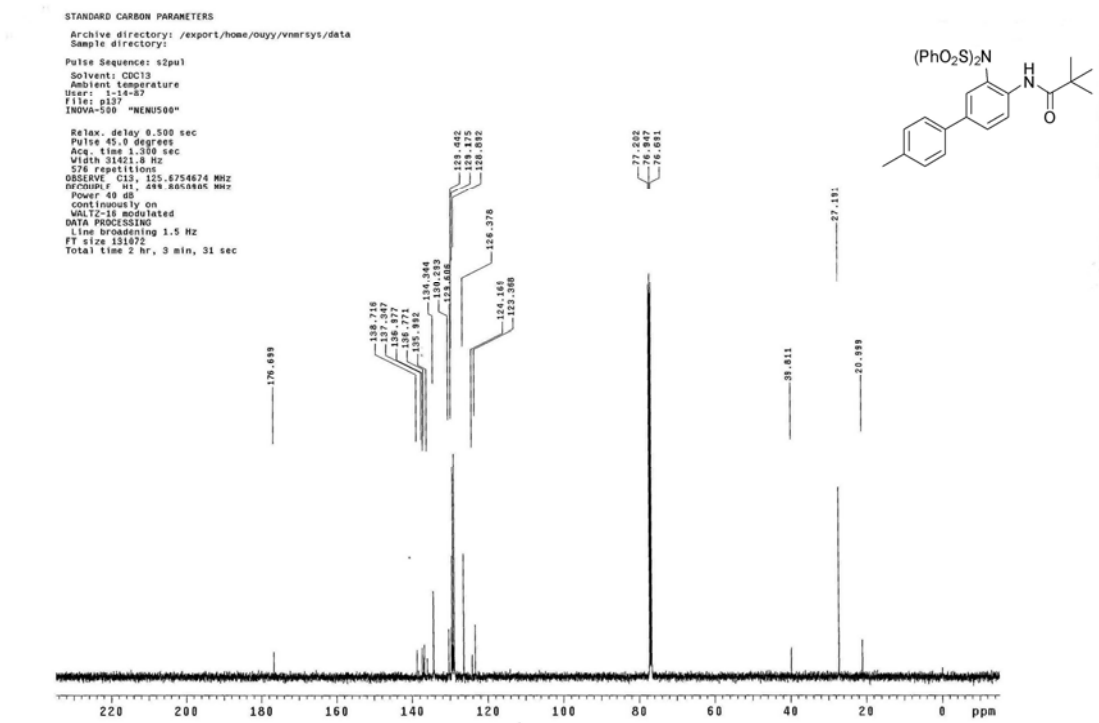
Compound 2h


Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: p149
INOVA-500 "NENU500"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.892 sec
Width 8889.8 Hz
8 repetitions
OBSERVE H1, 499.8025928 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 23 sec
N(SO2Ph)2
ppm

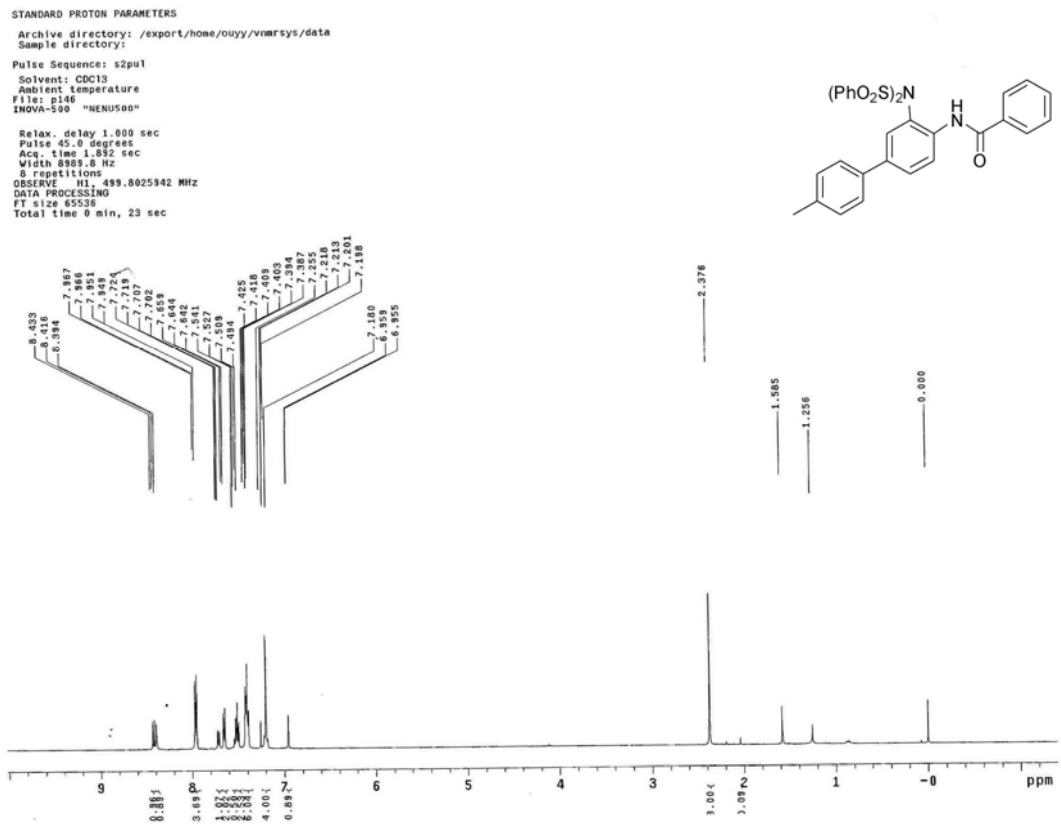

STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
User: 1-14-87
File: p185
INOVA-500 "NENU500"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 31421.8 Hz
448 repetitions
OBSERVE C13, 125.6754714 MHz
DECOUPLE H1, 499.8050905 MHz
Power 40 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.0 Hz
FT size 131072
Total time 2 hr, 3 min, 31 sec
N(SO2Ph)2
ppm

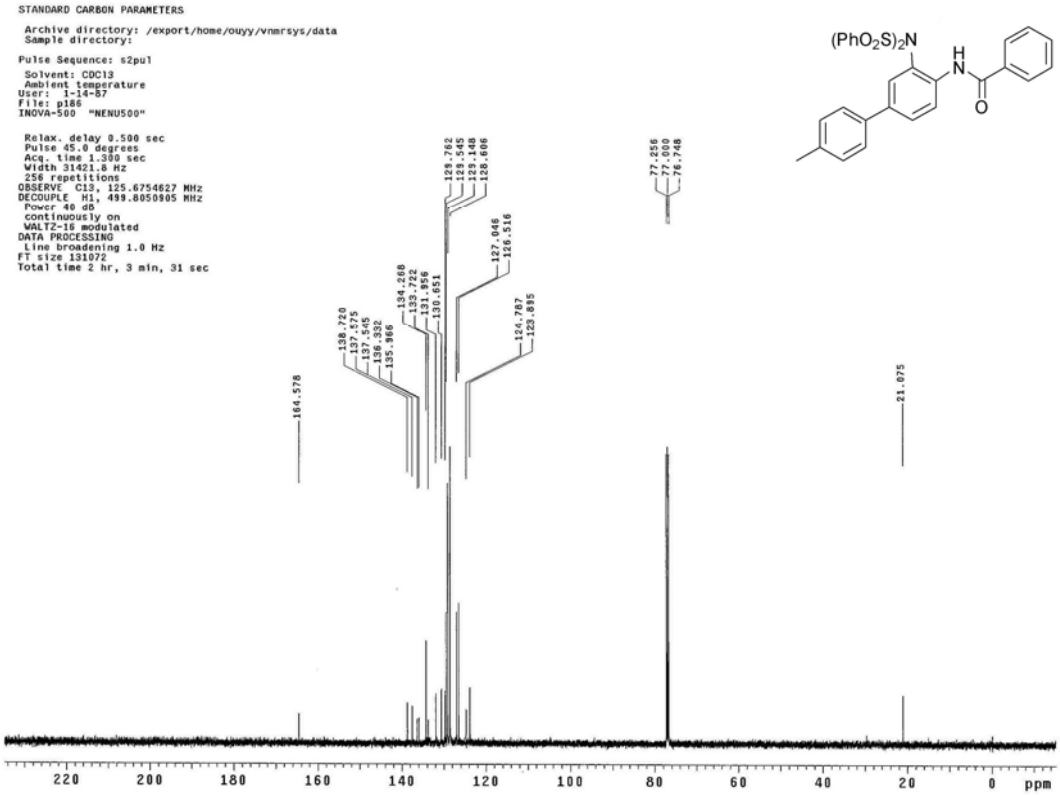
Compound 2i


STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: p130
INOVA-500 "NENU500"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.892 sec
Width 8989.8 Hz
8 repetitions
OBSERVE H1, 499.8025922 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 23 sec
(PhO2S)2N
H
N
O
1.116
8.376
8.355
8.031
7.937
7.936
7.920
7.720
7.713
7.698
7.695
7.652
7.639
7.635
7.577
7.562
7.546
7.255
7.178
7.161
7.128
6.794
6.790
2.364
1.561
-0.000
10
9
8
7
6
5
4
3
2
1
-0
ppm

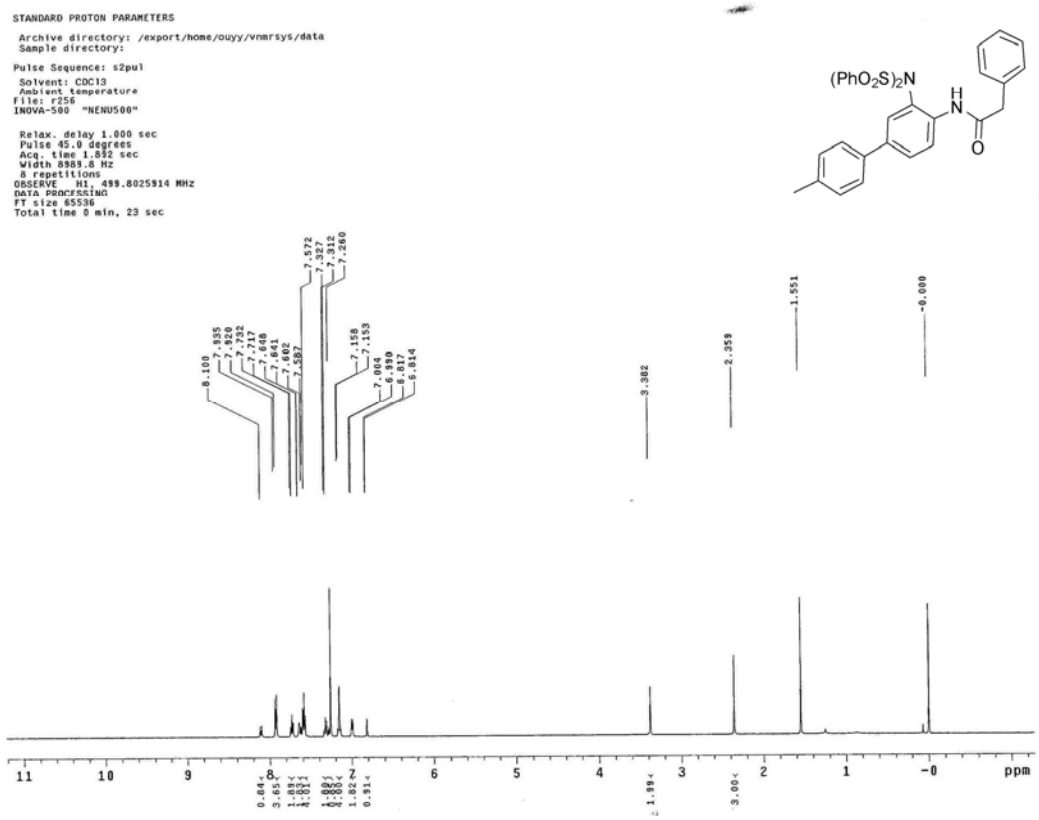

STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
User: 1-14-87
File: p137
INOVA-500 "NENU500"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 31421.8 Hz
576 repetitions
OBSERVE C13, 125.6754674 MHz
DECOUPLE H1, 499.8054885 MHz
Power 40 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 2 hr, 3 min, 31 sec
(PhO2S)2N
H
N
O
170.699
138.716
137.487
136.977
136.771
135.992
134.944
130.293
129.606
129.442
129.175
128.875
128.672
126.378
124.161
123.388
77.202
76.947
76.691
39.811
27.191
20.989
220
200
180
160
140
120
100
80
60
40
20
0
ppm

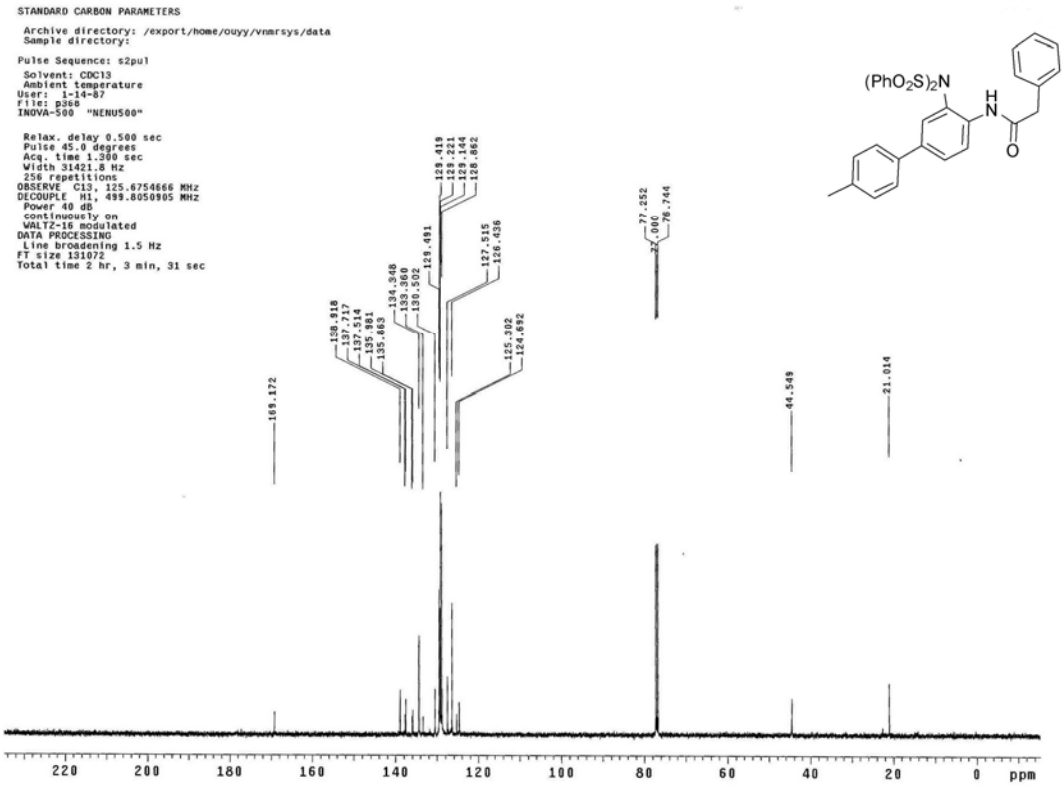
Compound 2j


STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: p146
INOVA-500 "NENU500"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.892 sec
Width 8989.8 Hz
8 repetitions
OBSERVE H1, 499.8025942 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 23 sec
(PhO2S)2N
H
N
O
8.433
8.416
8.394
7.867
7.866
7.851
7.849
7.729
7.719
7.707
7.702
7.659
7.644
7.642
7.541
7.527
7.509
7.494
7.425
7.418
7.403
7.400
7.394
7.387
7.255
7.218
7.213
7.201
7.188
7.180
6.959
6.955
2.376
1.585
1.256
0.000
ppm

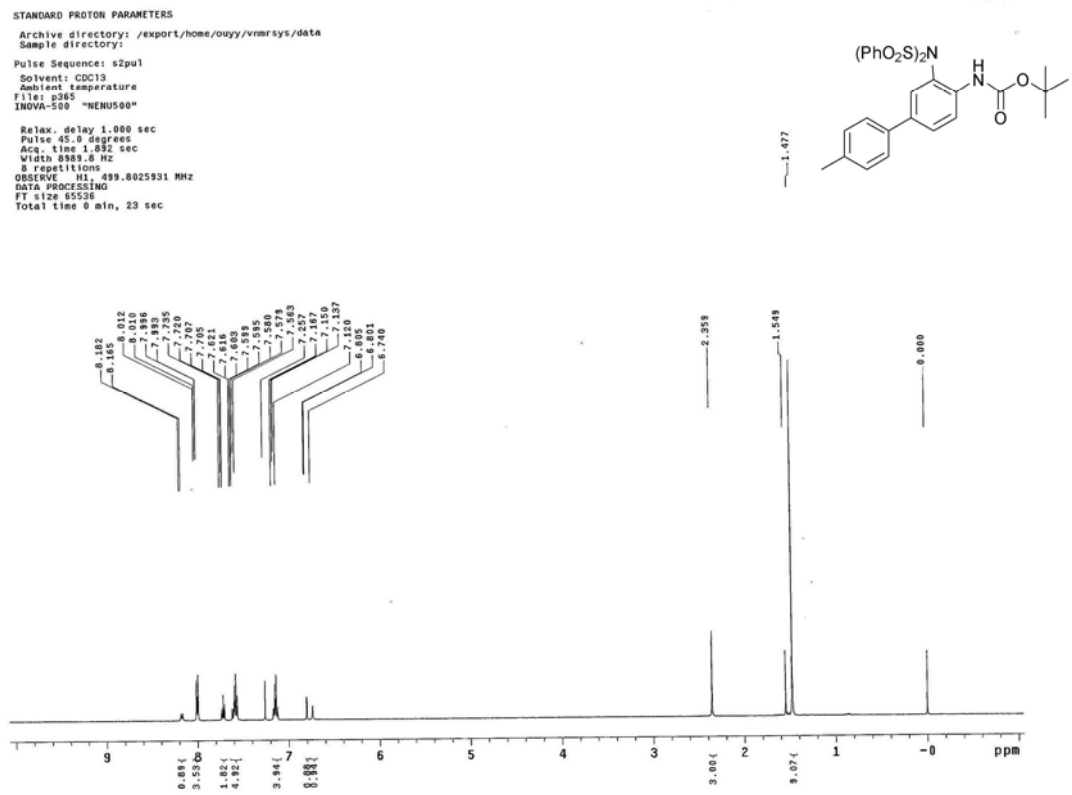

STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
User: 1-14-87
File: p186
INOVA-500 "NENU500"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 31421.8 Hz
256 repetitions
OBSERVE C13, 125.6754627 MHz
DECOUPLE H1, 499.8050905 MHz
Power 40 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.0 Hz
FT size 131072
Total time 2 hr, 3 min, 31 sec
(PhO2S)2N
H
N
O
164.578
138.720
137.575
137.545
136.332
135.966
134.268
133.722
131.856
130.651
129.762
129.545
129.148
128.686
127.046
126.516
124.787
123.895
77.256
77.000
76.748
21.075
ppm

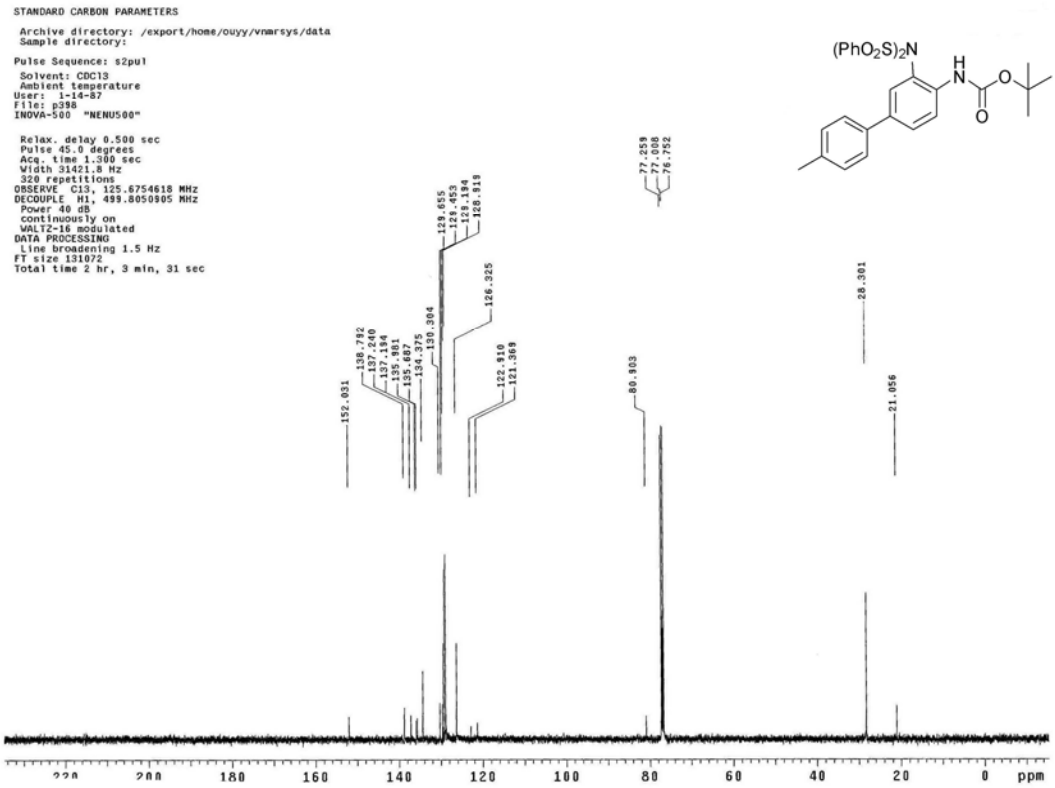
Compound 2k


STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
file: r256
INOVA-500 "NENU500"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.832 sec
Width 8989.8 Hz
8 repetitions
OBSERVE H1, 499.8025914 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 23 sec
(PhO2S)2N
H
N
O
8.100
7.935
7.920
7.732
7.717
7.648
7.641
7.602
7.587
7.572
7.327
7.312
7.260
7.158
7.153
7.064
6.819
6.817
6.814
3.382
2.359
1.551
-0.000
ppm

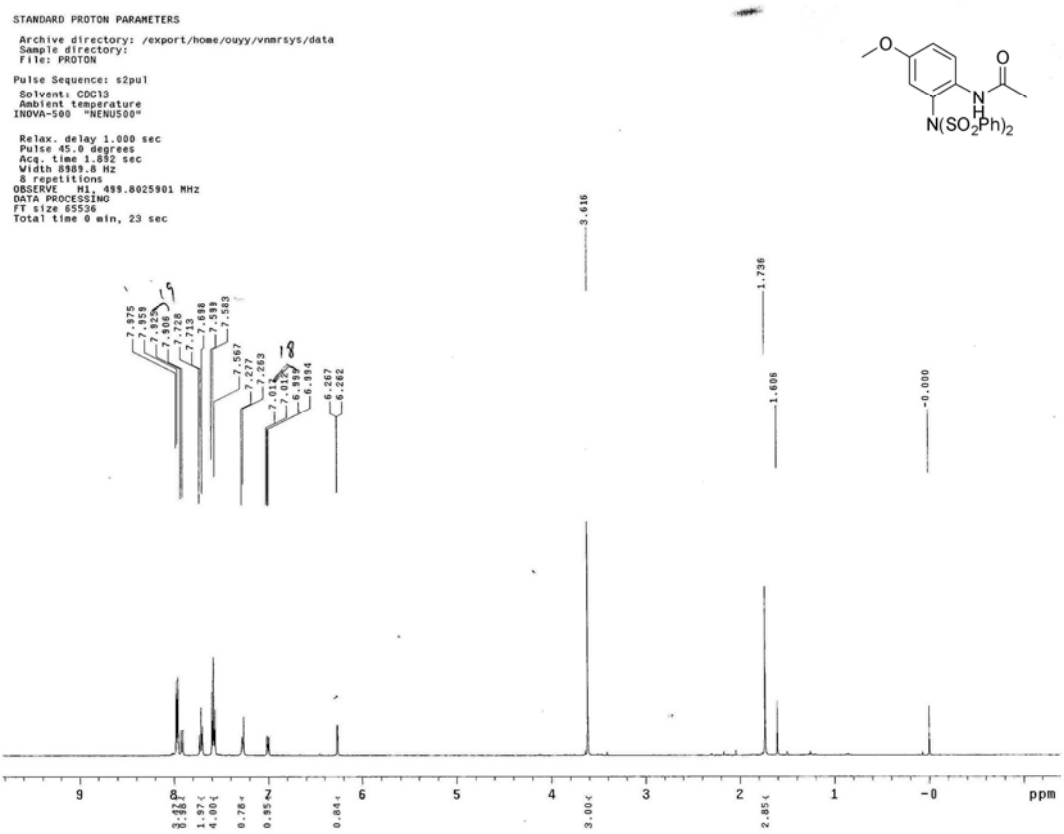

STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
User: 1-14-87
file: p368
INOVA-500 "NENU500"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 31421.8 Hz
256 repetitions
OBSERVE C13, 125.6754666 MHz
DECOUPLE H1, 499.8050905 MHz
Power 40 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 2 hr, 3 min, 31 sec
(PhO2S)2N
H
N
O
169.172
138.918
137.717
137.514
135.981
135.863
134.848
133.360
130.502
129.491
129.419
129.221
128.454
128.062
127.515
126.436
125.302
124.692
77.252
77.000
76.744
44.549
21.014
ppm

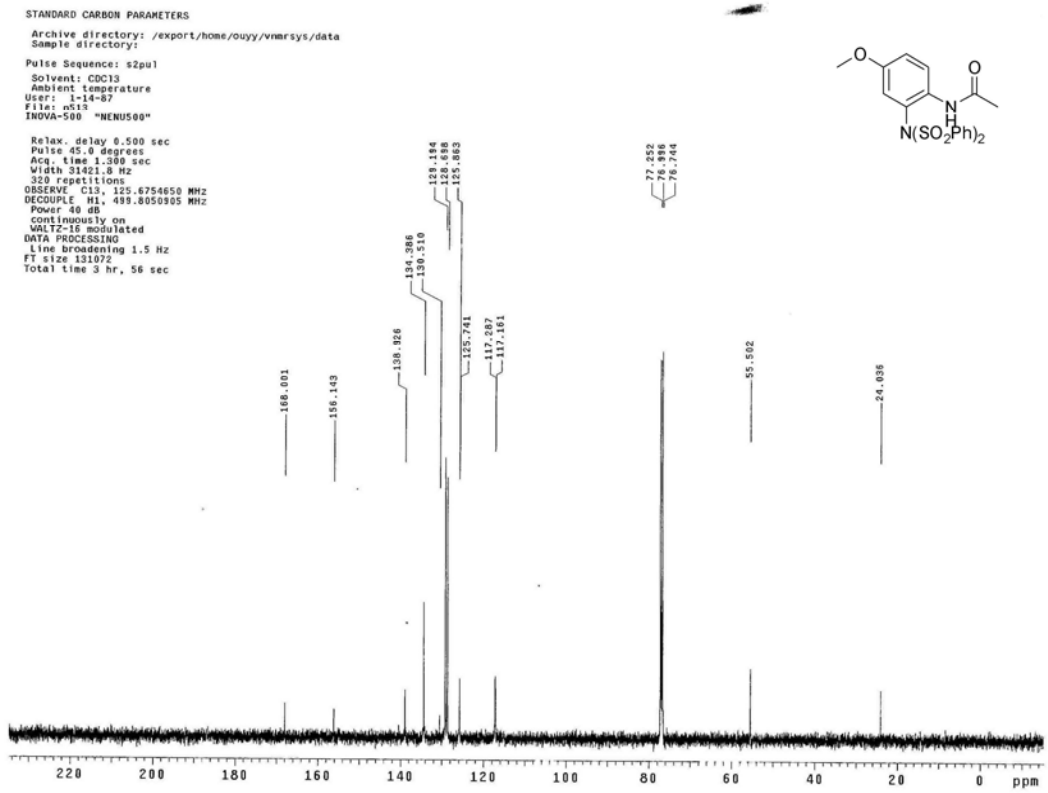
Compound 2l


STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: p365
INOVA-500 "NENU500"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.892 sec
Width 8989.8 Hz
8 repetitions
OBSERVE H1, 499.8025931 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 23 sec
(PhO2S)2N
H
N
O
O
O
1.477
8.182
8.165
8.012
8.010
7.996
7.993
7.735
7.720
7.707
7.705
7.621
7.616
7.605
7.599
7.595
7.580
7.578
7.565
7.257
7.167
7.150
7.137
7.120
6.805
6.801
6.740
2.359
1.549
0.000
9
8
7
6
5
4
3
2
1
-0
ppm

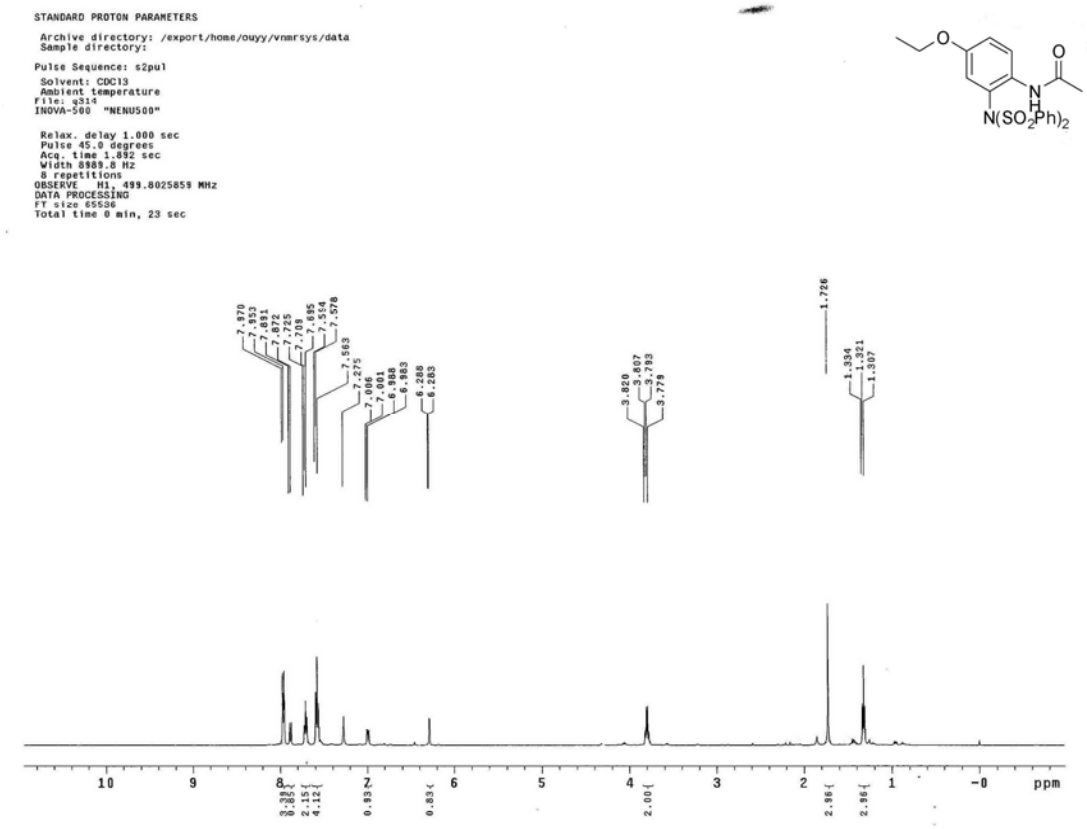

STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
User: 1-14-87
File: p398
INOVA-500 "NENU500"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 31421.8 Hz
320 repetitions
OBSERVE C13, 125.6754618 MHz
DECOUPLE H1, 499.8050905 MHz
Power 40 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 2 hr, 3 min, 31 sec
(PhO2S)2N
H
N
O
O
O
77.259
77.008
76.752
129.655
129.453
129.184
128.918
126.325
122.910
121.369
138.792
137.240
137.184
135.801
135.057
134.375
130.304
152.031
80.903
28.301
21.056
220
200
180
160
140
120
100
80
60
40
20
0
ppm

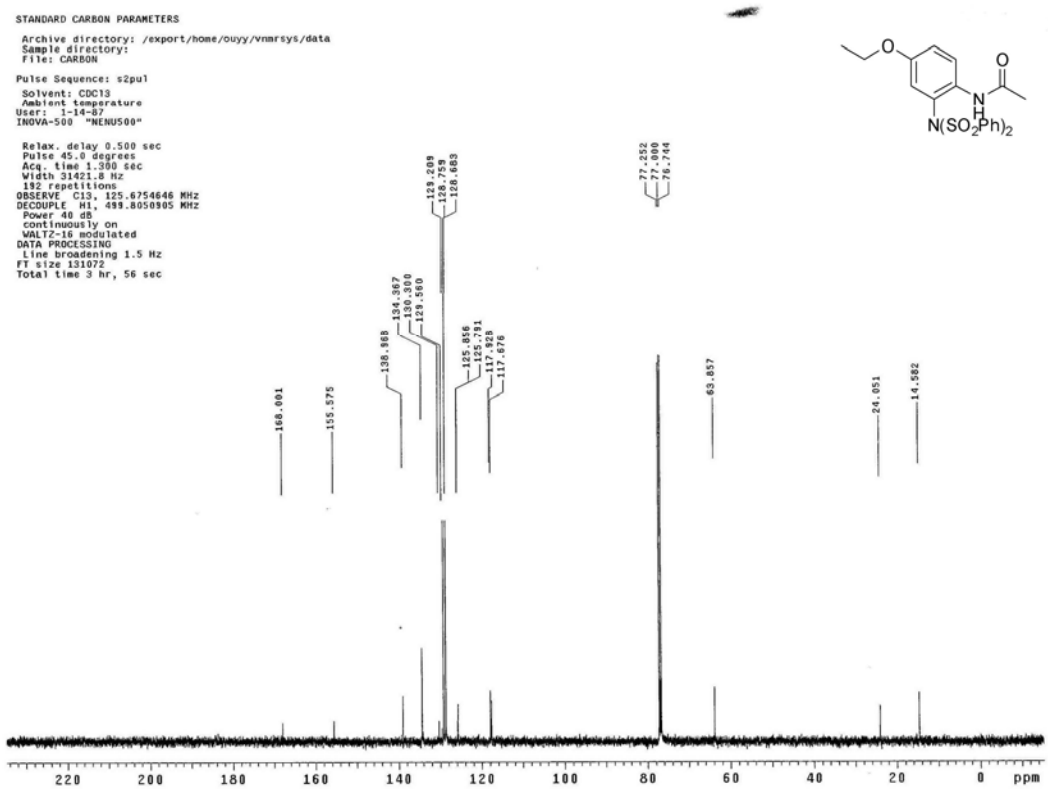
Compound 2m


STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
File: PROTON
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
INOVA-500 "NENU500"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.892 sec
Width 8389.8 Hz
8 repetitions
OBSERVE H1, 499.8025901 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 23 sec
N(SO2Ph)2
3.616
1.736
1.606
-0.000
ppm

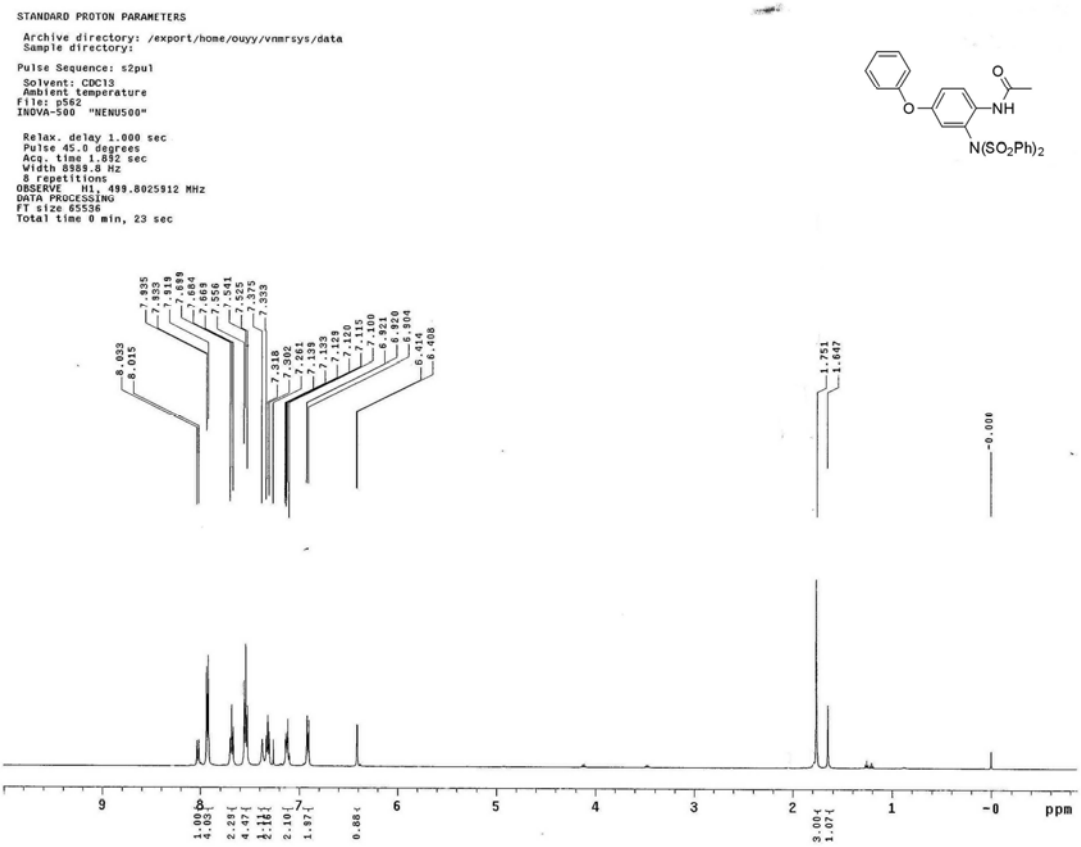

STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
User: 1-14-87
File: nC13
INOVA-500 "NENU500"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 31421.8 Hz
320 repetitions
OBSERVE C13, 125.6754650 MHz
DECOUPLE H1, 499.8050905 MHz
Power 40 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 3 hr, 56 sec
N(SO2Ph)2
168.001
156.143
138.326
134.386
130.510
129.194
128.698
125.863
125.741
117.287
117.161
77.252
76.946
76.744
55.502
24.036
ppm

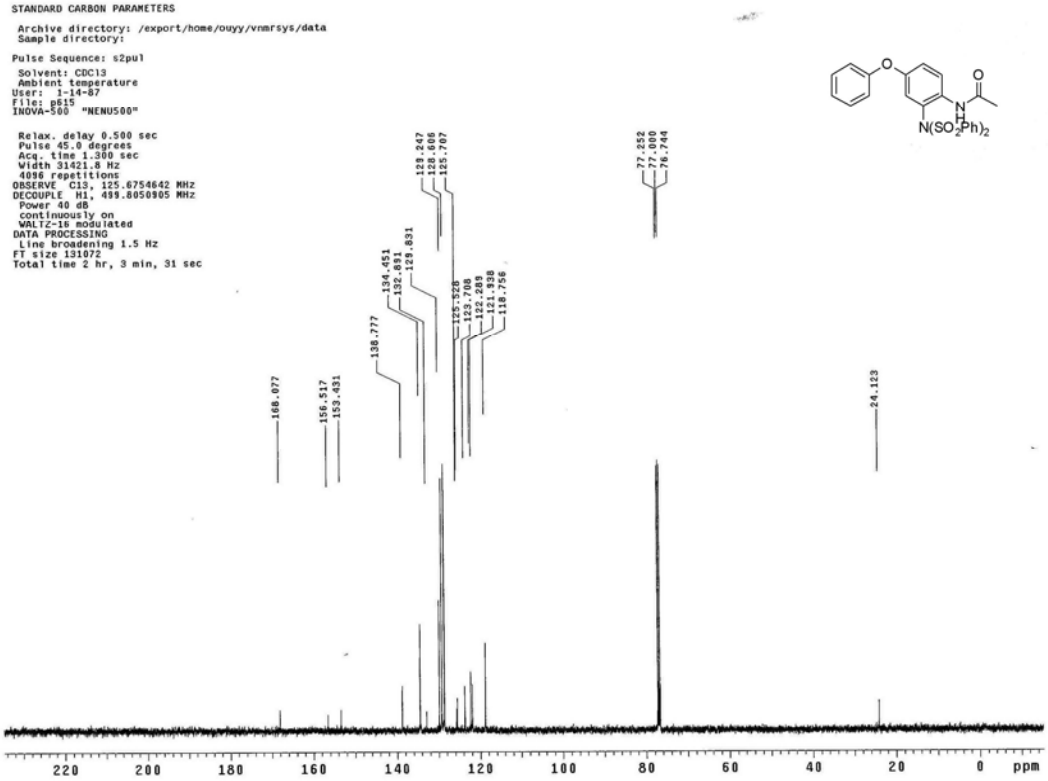
Compound 2n


STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: q314
INOVA-500 "NENU500"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.892 sec
Width 8989.8 Hz
8 repetitions
OBSERVE H1, 499.8025859 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 23 sec
N(SO2Ph)2
ppm

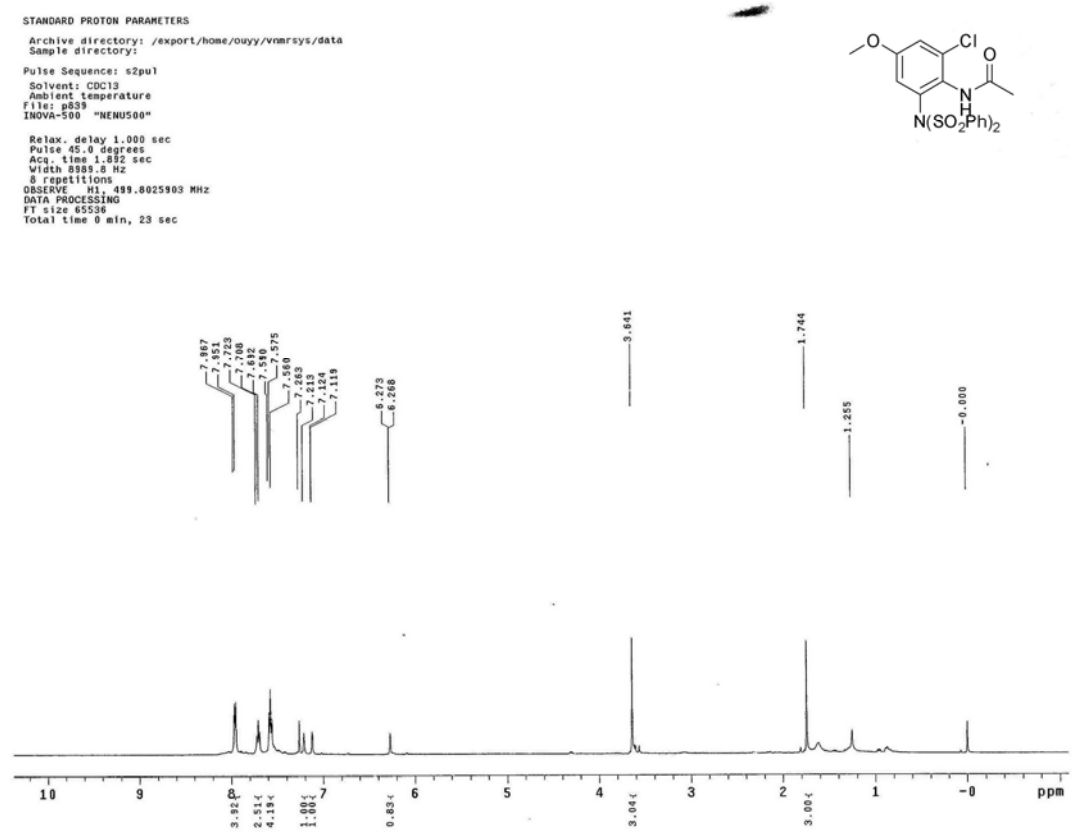

STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
File: CARBON
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
User: 1-14-87
INOVA-500 "NENU500"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 31421.8 Hz
192 repetitions
OBSERVE C13, 125.6754646 MHz
DECOUPLE H1, 499.8050905 MHz
Power 40 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 3 hr, 56 sec
N(SO2Ph)2
ppm

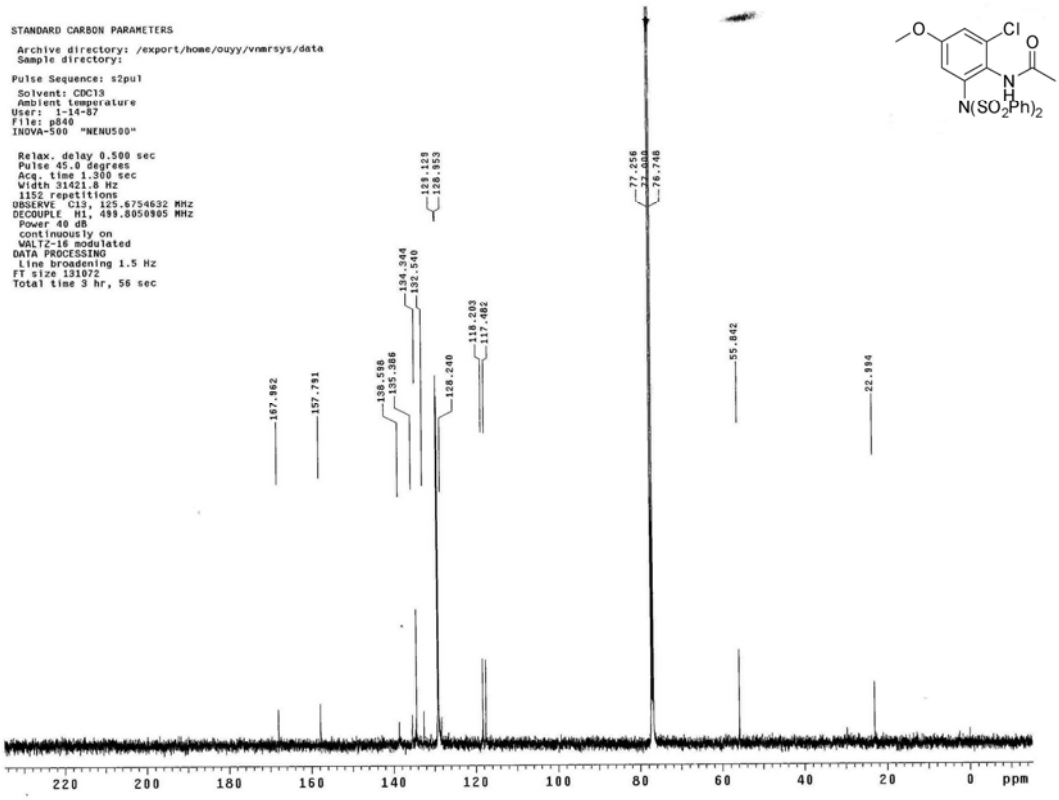
Compound 2o


STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: p562
INOVA-500 "NENU500"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.882 sec
Width 8989.8 Hz
8 repetitions
OBSERVE H1, 499.8025912 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 23 sec
NH
N(SO2Ph)2
8.033
8.015
7.935
7.933
7.818
7.684
7.669
7.556
7.541
7.525
7.375
7.353
7.318
7.302
7.261
7.139
7.133
7.123
7.120
7.115
7.100
6.921
6.920
6.904
6.416
6.408
1.751
1.647
-0.006
ppm

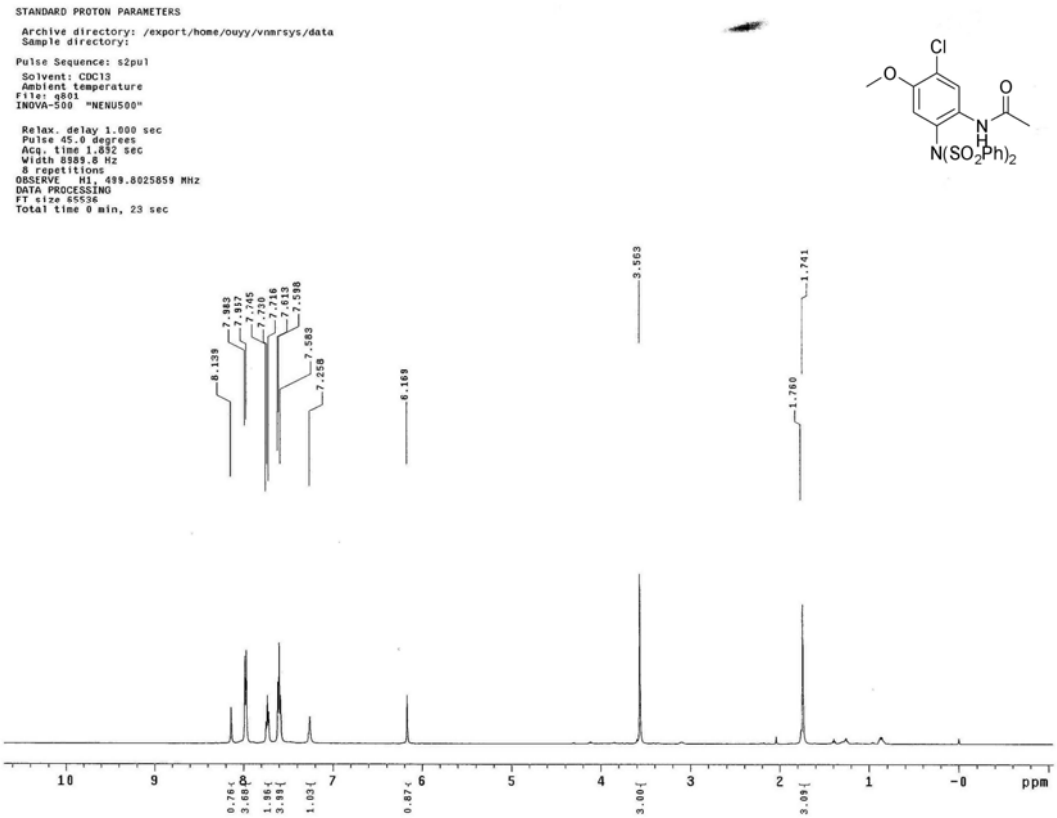

STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
User: 1-14-87
File: p615
INOVA-500 "NENU500"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 31421.8 Hz
4096 repetitions
OBSERVE C13, 125.6754642 MHz
DECOUPLE H1, 499.8050905 MHz
Power 40 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 2 hr, 3 min, 31 sec
N(SO2Ph)2
168.077
156.517
153.431
138.777
134.451
132.891
129.831
129.247
128.606
125.707
125.326
123.708
122.289
121.938
118.756
77.252
77.000
76.744
24.123
ppm

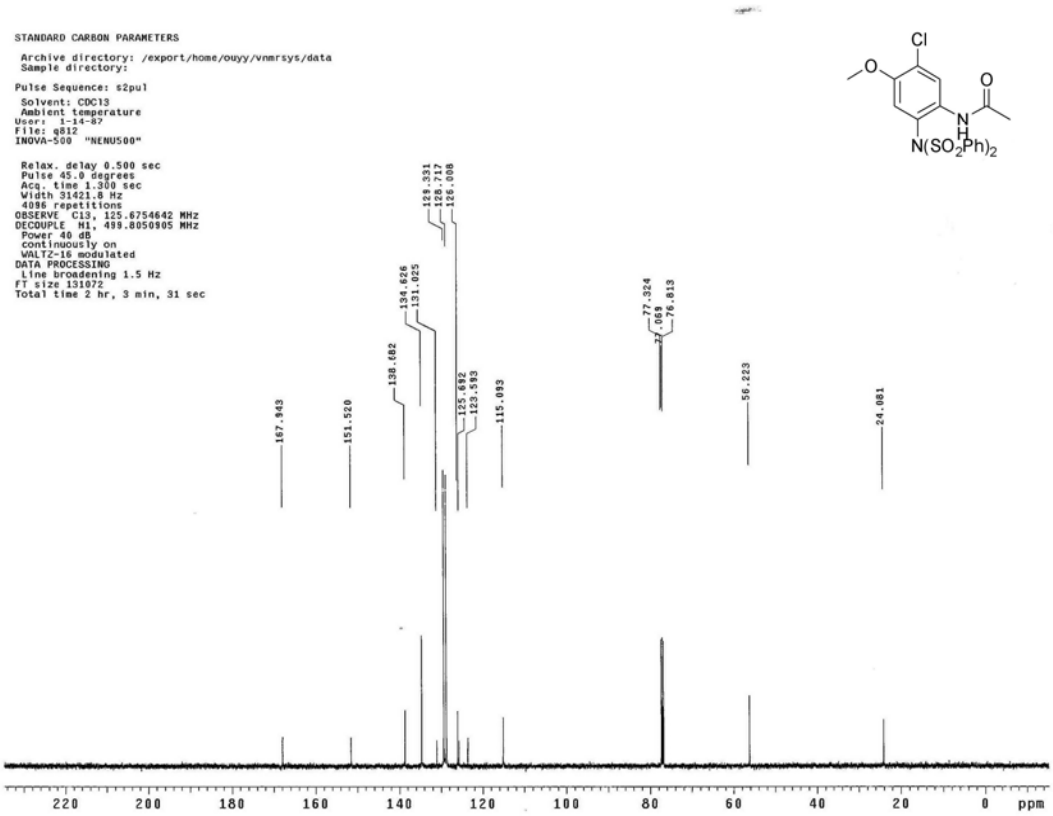
Compound 2p


STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: p839
INOVA-500 "NENU500"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.892 sec
Width 8989.8 Hz
8 repetitions
OBSERVE H1, 499.8025903 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 23 sec
Cl
O
N
H
N(SO2Ph)2
7.967
7.951
7.773
7.700
7.692
7.580
7.575
7.560
7.283
7.213
7.124
7.119
6.273
6.268
3.641
1.744
1.255
-0.000
ppm

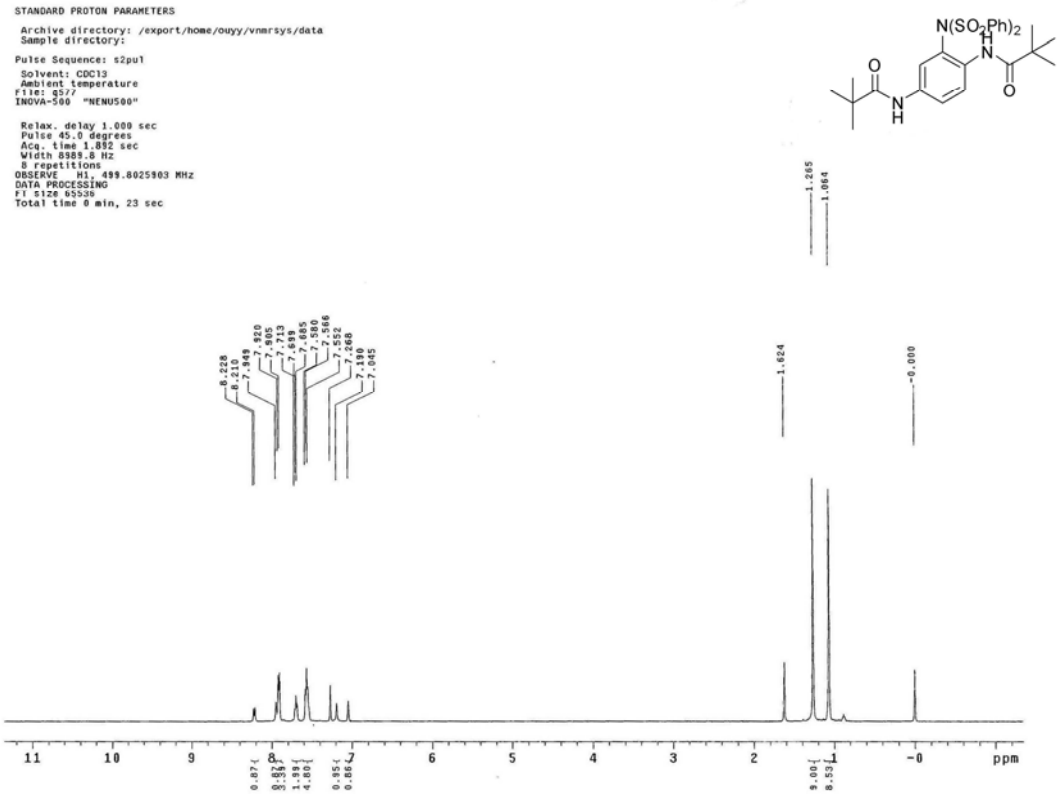

STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
User: 1-14-87
File: p840
INOVA-500 "NENU500"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 31421.8 Hz
1152 repetitions
OBSERVE C13, 125.6754632 MHz
DECOUPLE H1, 499.8050905 MHz
Power 40 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 3 hr, 56 sec
Cl
O
N
H
N(SO2Ph)2
167.962
157.791
138.598
135.386
134.344
132.540
128.123
128.953
128.240
118.203
117.482
77.256
77.000
76.748
55.842
22.884
ppm

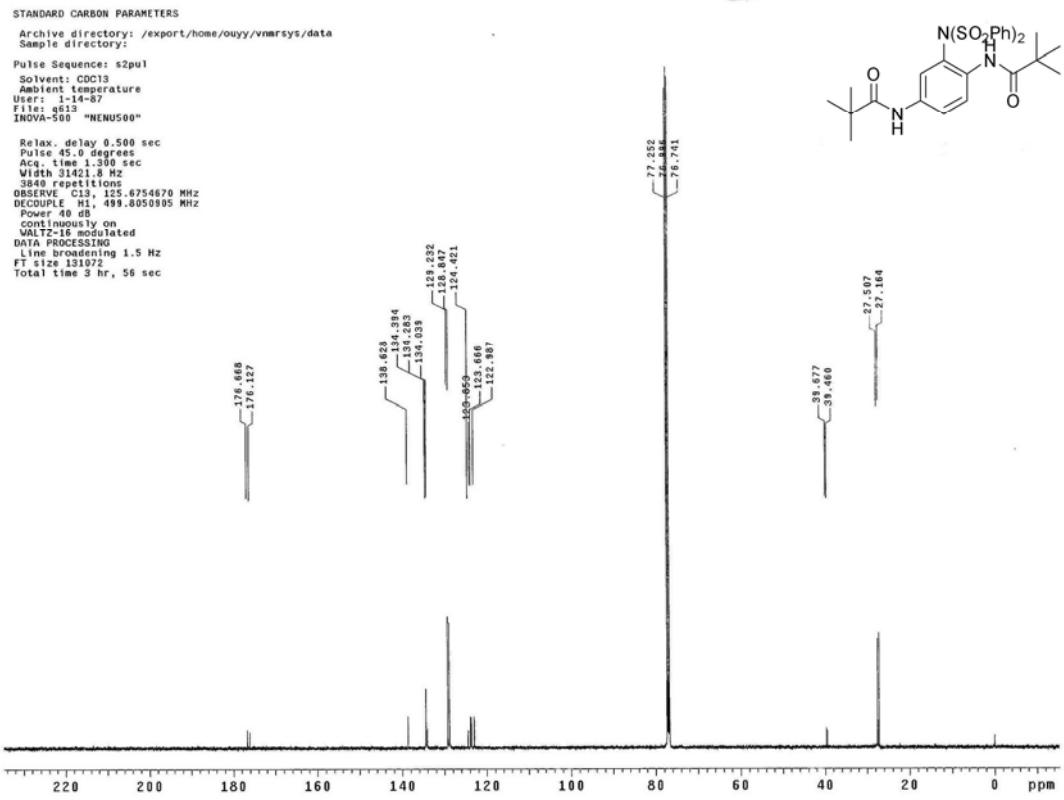
Compound 2q


STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: q801
INOVA-500 "NENU500"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.852 sec
Width 8989.8 Hz
8 repetitions
OBSERVE H1, 499.8025859 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 23 sec
Cl
O
N
H
N(SO2Ph)2
8.139
7.983
7.917
7.765
7.730
7.716
7.613
7.598
7.583
7.258
6.169
3.563
1.741
1.760
10
9
8
7
6
5
4
3
2
1
-0
ppm

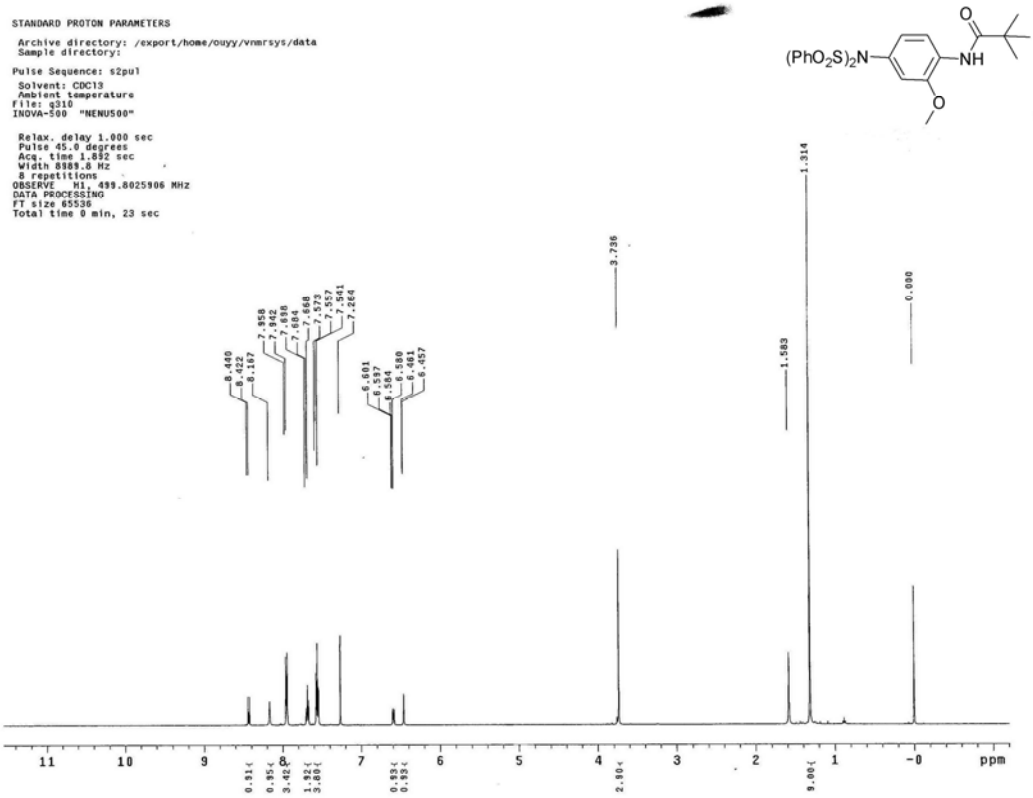

STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
User: 1-14-87
File: q812
INOVA-500 "NENU500"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 31421.8 Hz
4096 repetitions
OBSERVE C13, 125.6754642 MHz
DECOUPLE H1, 499.8050905 MHz
Power 40 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 2 hr, 3 min, 31 sec
Cl
O
N
H
N(SO2Ph)2
167.943
151.520
138.682
134.626
131.025
129.331
128.717
126.008
125.692
123.593
115.093
77.324
77.069
76.813
56.223
24.081
220
200
180
160
140
120
100
80
60
40
20
0
ppm

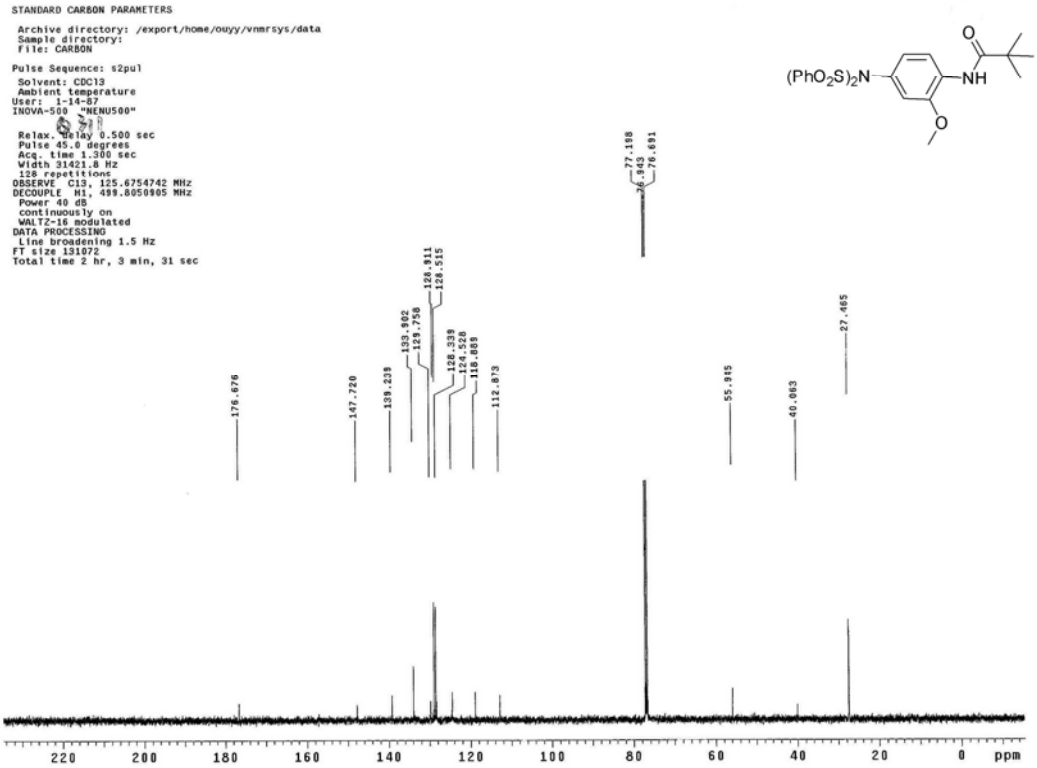
Compound 2r


STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: q577
INOVA-500 "NENU500"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.892 sec
Width 8989.8 Hz
8 repetitions
OBSERVE H1, 499.8025903 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 23 sec
N(SO2Ph)2
1.265
1.064
8.228
8.210
7.849
7.820
7.805
7.713
7.699
7.685
7.580
7.566
7.552
7.268
7.190
7.045
1.624
-0.000
ppm

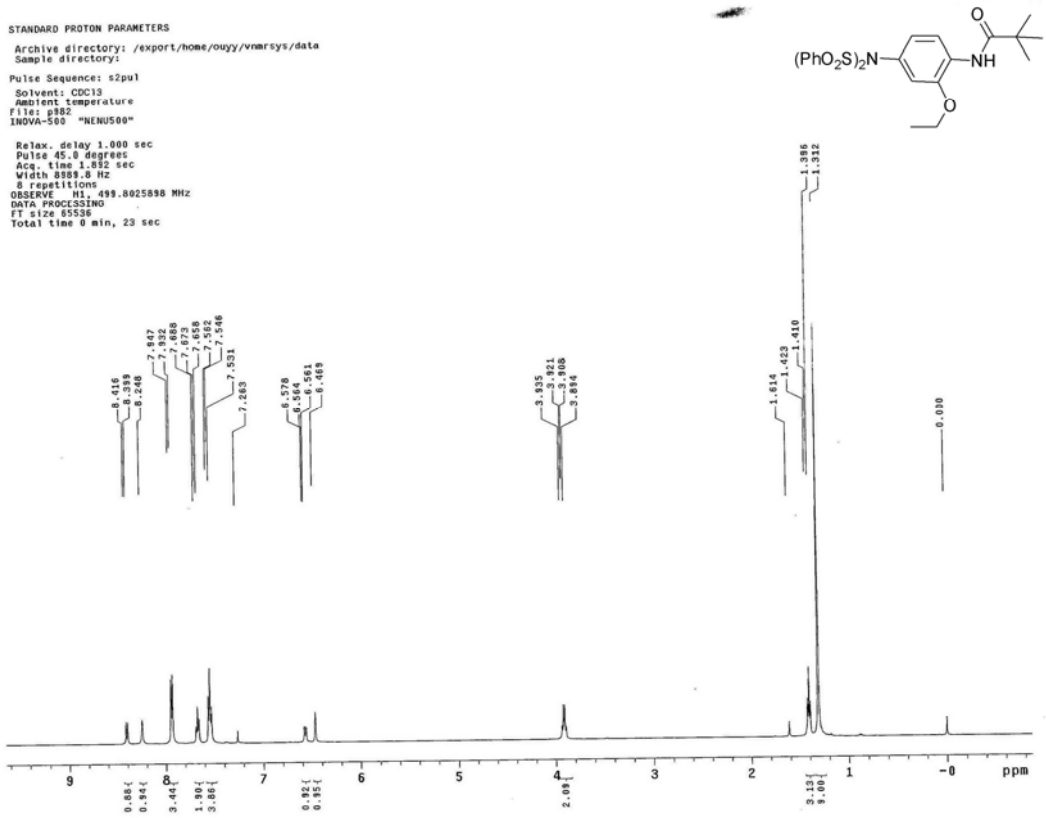

STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
User: 1-14-87
File: q613
INOVA-500 "NENU500"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 31421.8 Hz
3840 repetitions
OBSERVE C13, 125.6754670 MHz
DECOUPLE H1, 499.8050905 MHz
Power 40 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 3 hr, 56 sec
N(SO2Ph)2
77.252
77.041
76.741
176.668
176.127
138.628
134.394
134.283
134.039
129.232
128.847
124.421
123.666
122.987
39.677
39.460
27.507
27.164
ppm

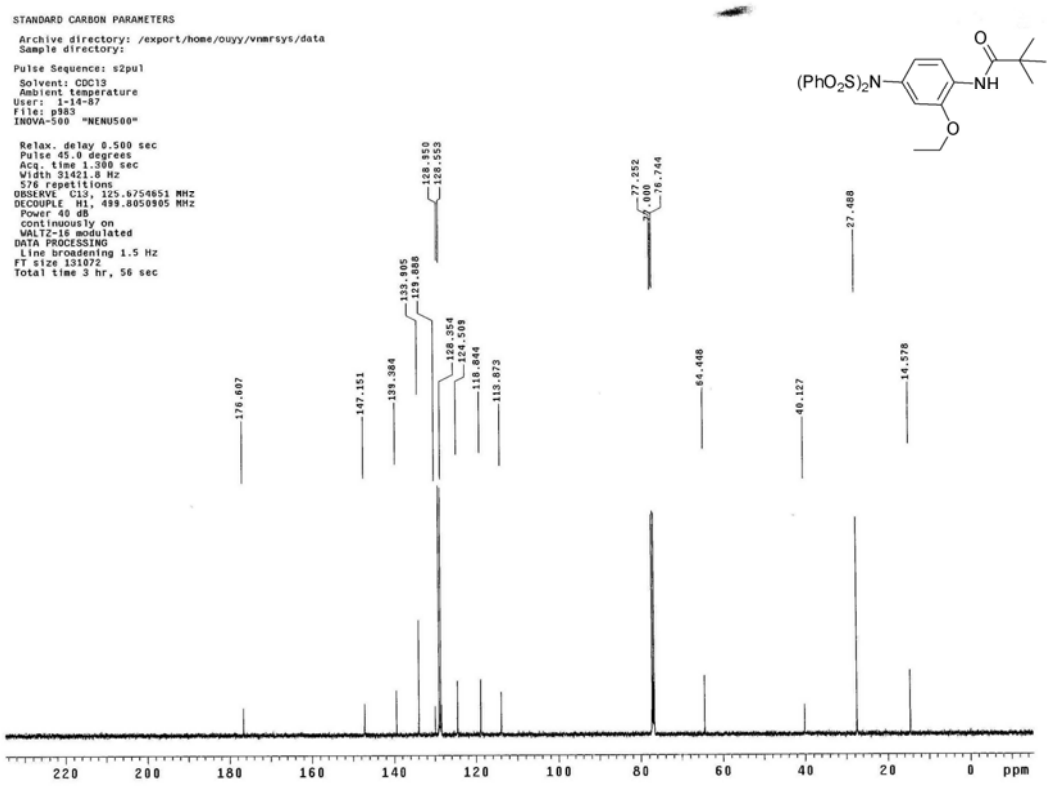
Compound 4a


STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: q310
INOVA-500 "NENU500"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.882 sec
Width 8888.8 Hz
8 repetitions
OBSERVE H1, 499.8025906 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 23 sec
(PhO2S)2N
NH
O
3.736
1.314
1.583
0.000
ppm

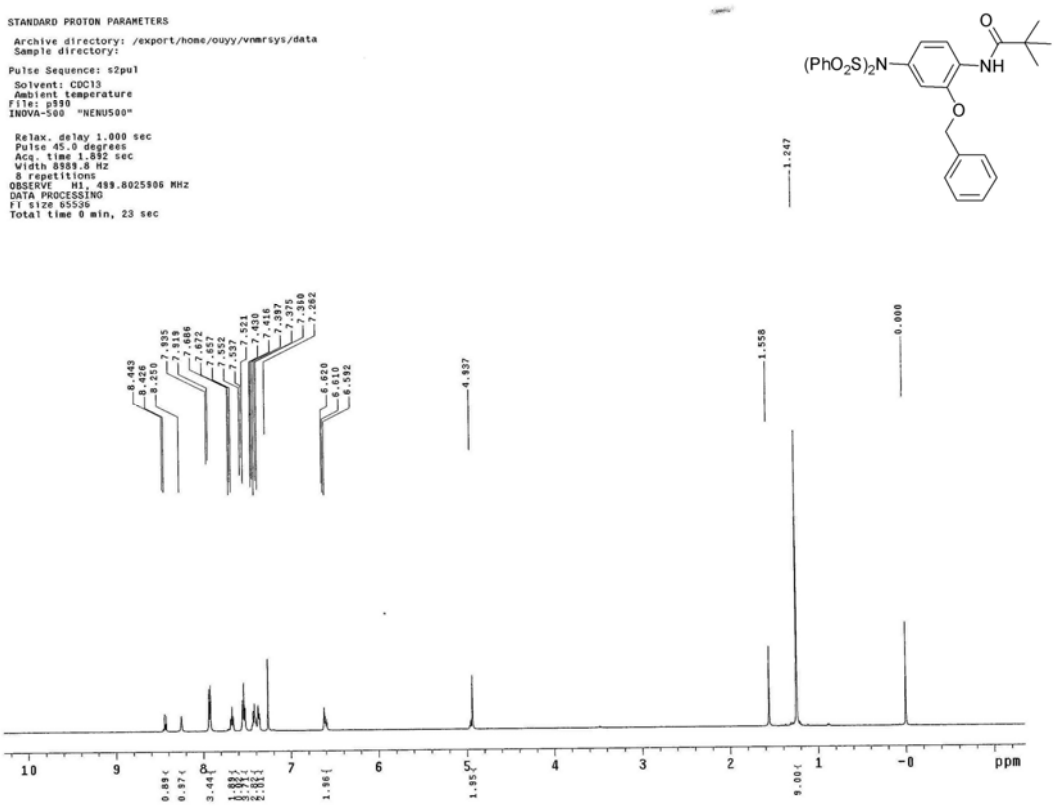

STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
File: CARBON
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
User: 1-14-87
INOVA-500 "NENU500"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 31421.8 Hz
128 repetitions
OBSERVE C13, 125.6754742 MHz
DECOUPLE H1, 499.8050905 MHz
Power 40 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 2 hr, 3 min, 31 sec
(PhO2S)2N
NH
O
77.198
76.943
76.691
176.676
147.720
139.239
133.902
129.758
126.811
126.515
128.339
124.528
118.868
112.873
55.915
40.063
27.465
ppm

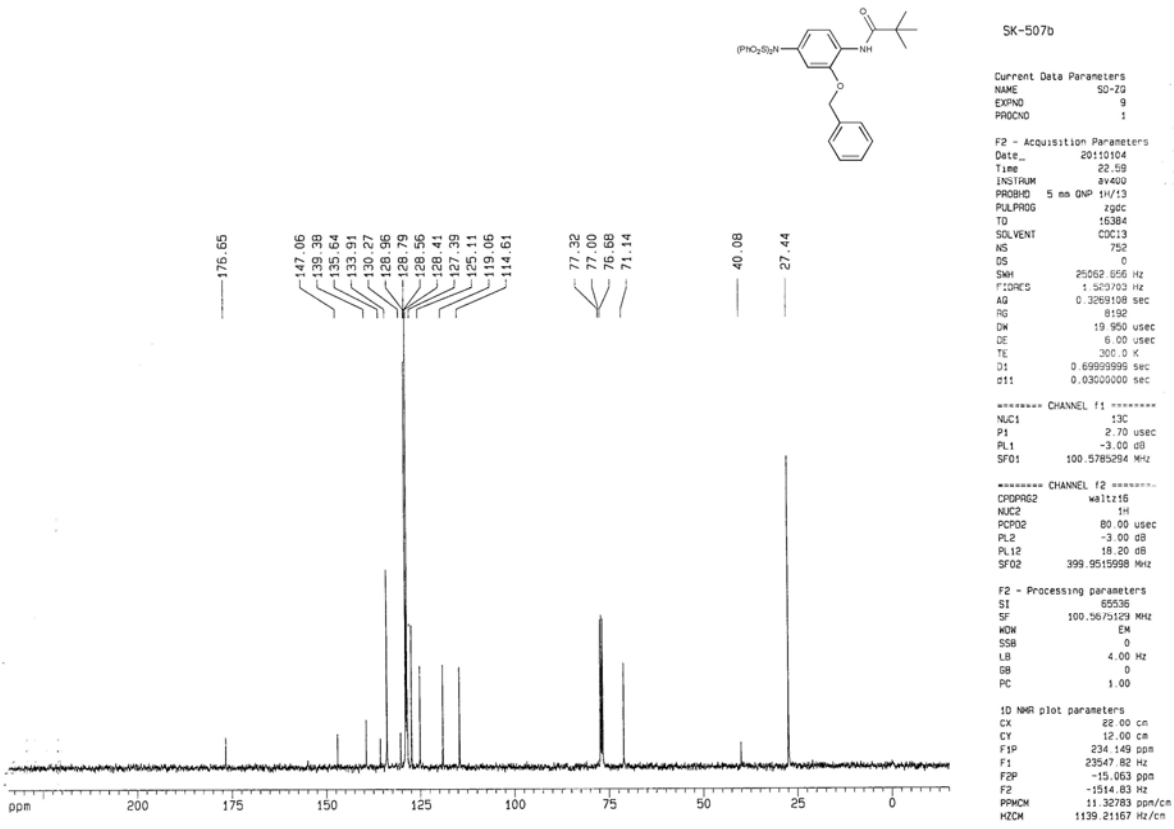
Compound 4b


STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: p982
INOVA-500 "NENU500"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.882 sec
Width 8889.8 Hz
8 repetitions
OBSERVE H1, 499.8025898 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 23 sec
(PhO2S)2N
NH
O
ppm

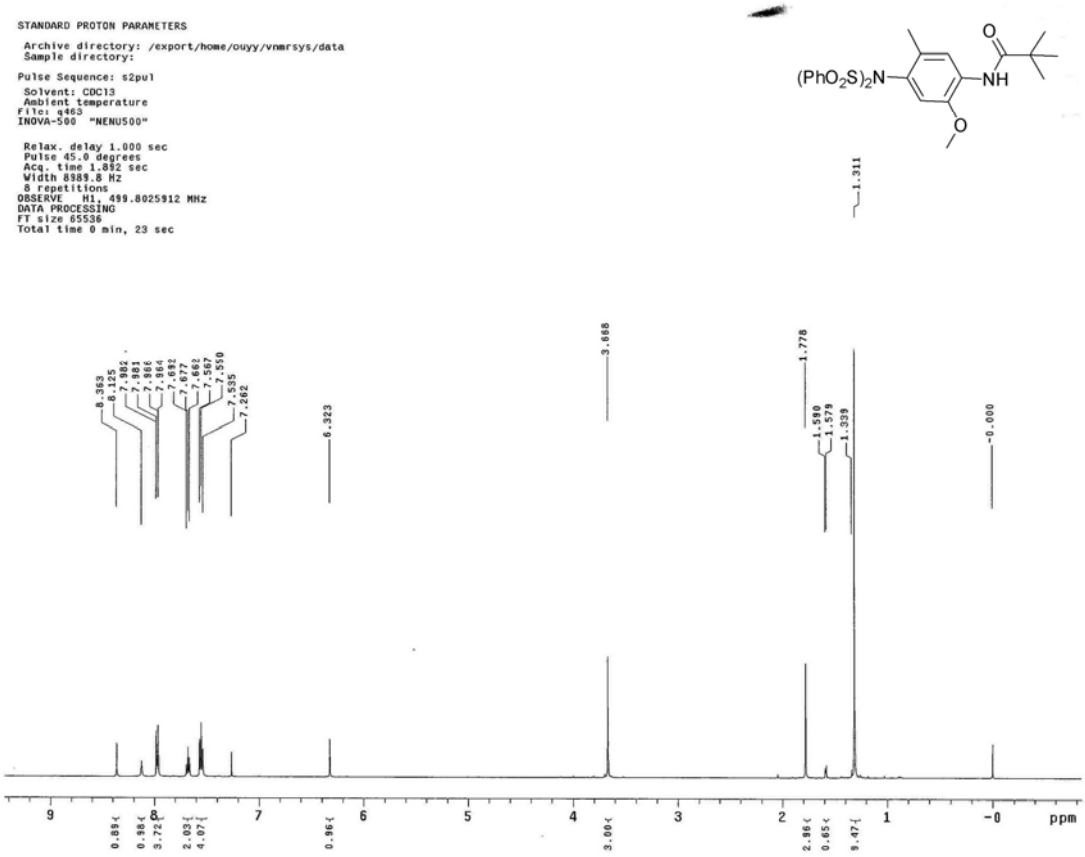

STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
User: 1-14-87
File: p983
INOVA-500 "NENU500"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 31421.8 Hz
576 repetitions
OBSERVE C13, 125.6754651 MHz
DECOUPLE H1, 499.8050905 MHz
Power 40 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 3 hr, 56 sec
(PhO2S)2N
NH
O
ppm

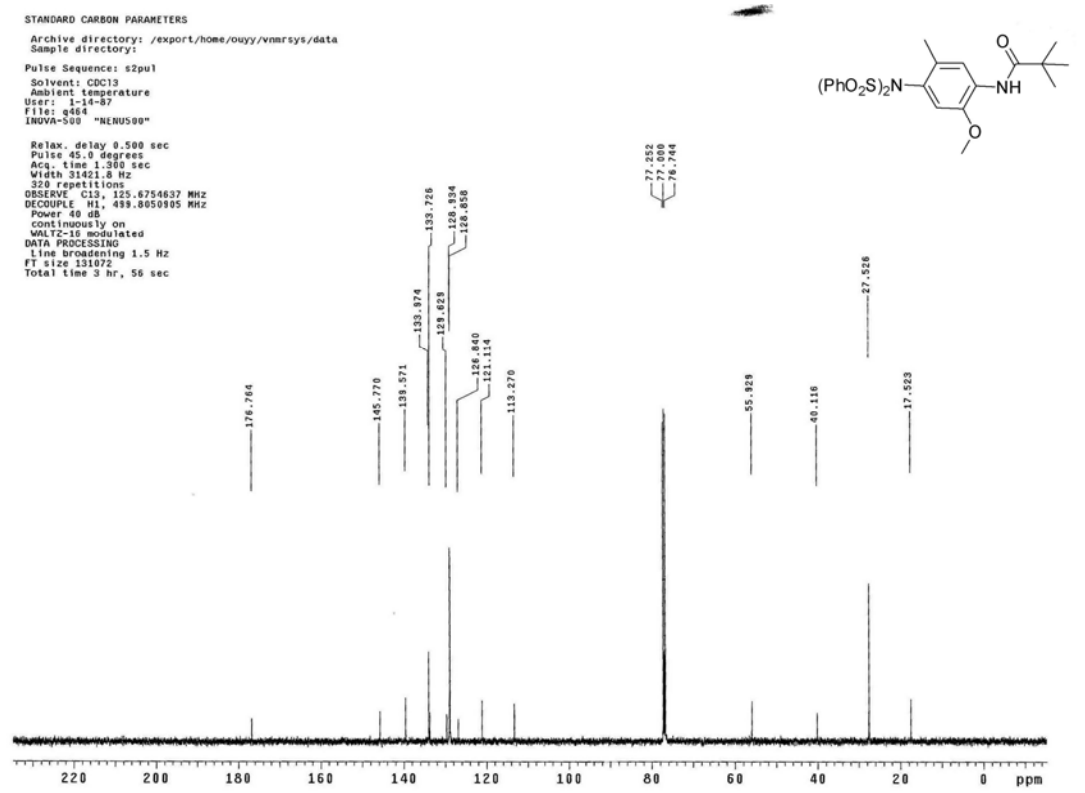
Compound 4c


STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: p930
INOVA-500 "NENU500"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.892 sec
Width 8989.8 Hz
8 repetitions
OBSERVE H1, 499.8025906 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 23 sec
(PhO2S)2N
NH
O
1.247
8.443
8.426
8.250
7.935
7.919
7.686
7.672
7.657
7.552
7.537
7.521
7.430
7.416
7.397
7.375
7.360
7.282
6.620
6.610
6.592
4.937
1.558
0.000
ppm

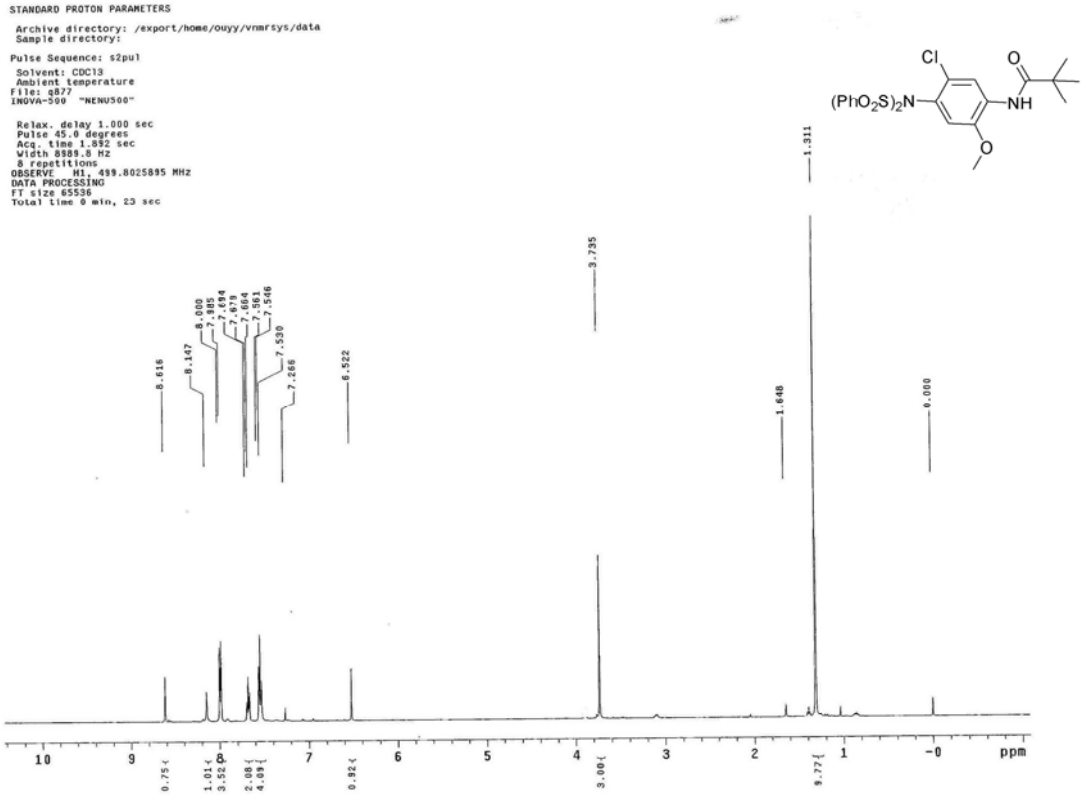

SK-507b
Current Data Parameters
NAME SO-ZQ
EXPNO 9
PROCNO 1
F2 - Acquisition Parameters
Date_ 20110104
Time 22.59
INSTRUM av400
PROBHD 5 mm QNP 1H/13
PULPROG zgdc
TD 16384
SOLVENT CDCl3
NS 752
DS 0
SWH 25062.656 Hz
FIDRES 1.529703 Hz
AQ 0.3269108 sec
RG 8192
DW 19.950 usec
DE 6.00 usec
TE 300.0 K
D1 0.69999999 sec
d11 0.03000000 sec
======== CHANNEL f1 ========
NUC1 13C
P1 2.70 usec
PL1 -3.00 dB
SFO1 100.5785294 MHz
======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -3.00 dB
PL12 18.20 dB
SFO2 399.9515998 MHz
F2 - Processing parameters
SI 65536
SF 100.5675129 MHz
WDW EM
SSB 0
LB 4.00 Hz
GB 0
PC 1.00
1D NMR plot parameters
CX 22.00 cm
CY 12.00 cm
F1P 234.149 ppm
F1 23547.82 Hz
F2P -15.063 ppm
F2 -1514.83 Hz
PPMCM 11.32783 ppm/cm
HZCM 1139.21167 Hz/cm
176.65
147.06
139.38
135.64
133.91
130.27
128.96
128.79
128.56
128.41
127.39
125.11
119.06
114.61
77.32
77.00
76.68
71.14
40.08
27.44
ppm

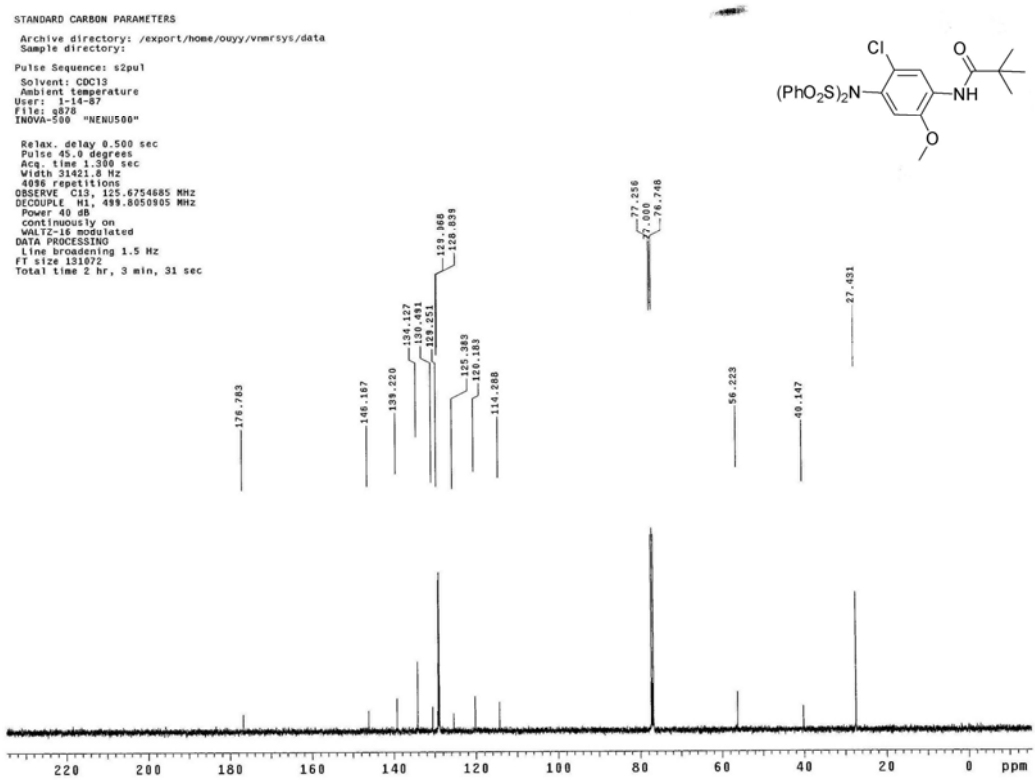
Compound 4d


STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: q463
INOVA-500 "NENU500"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.892 sec
Width 8989.8 Hz
8 repetitions
OBSERVE H1, 499.8025912 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 23 sec
(PhO2S)2N
NH
O
O
1.311
8.363
8.125
7.982
7.981
7.966
7.964
7.692
7.677
7.682
7.567
7.550
7.535
7.262
6.323
3.668
1.778
1.590
1.579
1.339
-0.000
ppm

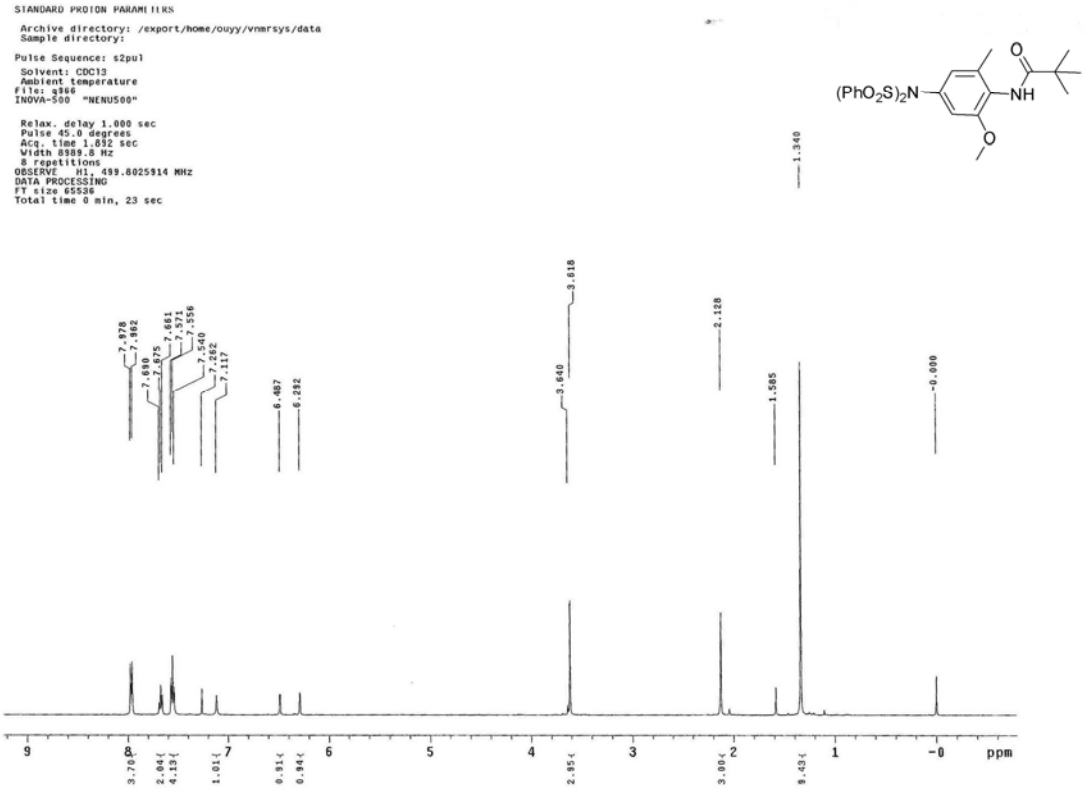

STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
User: 1-14-87
File: q464
INOVA-500 "NENU500"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 31421.8 Hz
320 repetitions
OBSERVE C13, 125.6754637 MHz
DECOUPLE H1, 499.8050905 MHz
Power 40 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 3 hr, 56 sec
(PhO2S)2N
NH
O
O
77.252
77.000
76.744
133.726
128.934
128.658
133.074
129.629
126.840
121.114
113.270
145.770
139.571
176.764
27.526
55.829
40.116
17.523
ppm

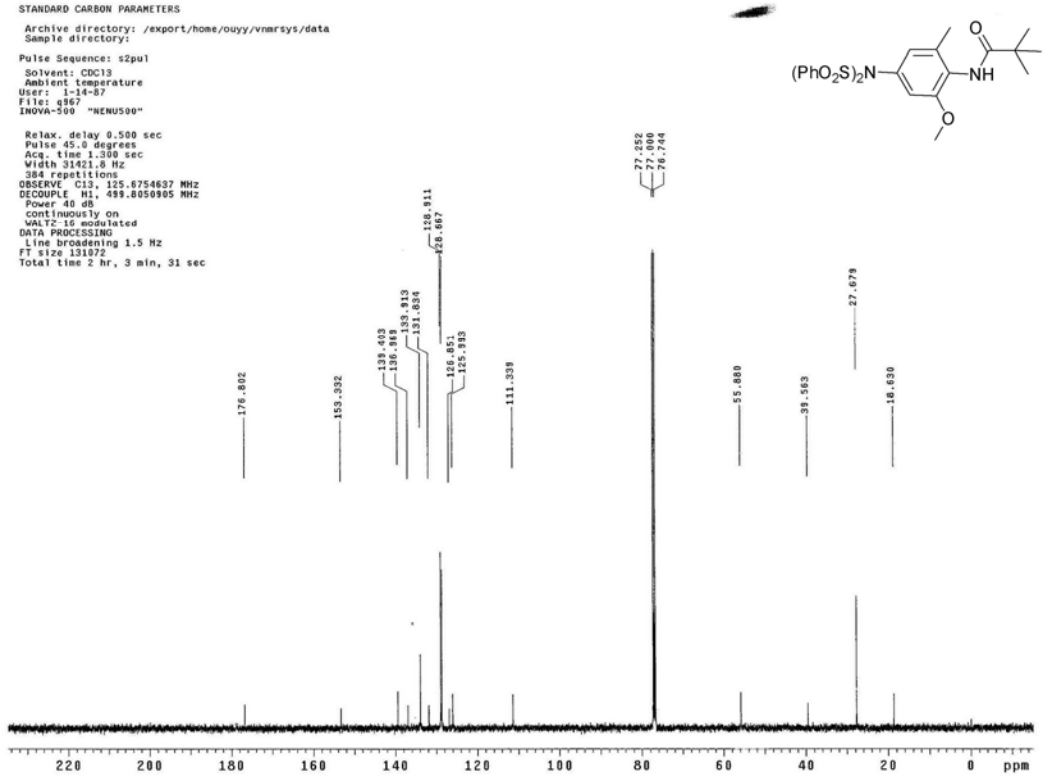
Compound 4e


STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: g877
INOVA-500 "NENU500"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.892 sec
Width 8989.8 Hz
8 repetitions
OBSERVE H1, 499.8025895 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 23 sec
Cl
O
(PhO2S)2N
NH
O
8.616
8.147
8.000
7.885
7.694
7.619
7.604
7.561
7.546
7.530
7.266
6.522
3.735
1.648
1.311
0.000
10
9
8
7
6
5
4
3
2
1
-0
ppm
0.75
1.01
3.52
2.08
4.09
0.92
3.00
9.77

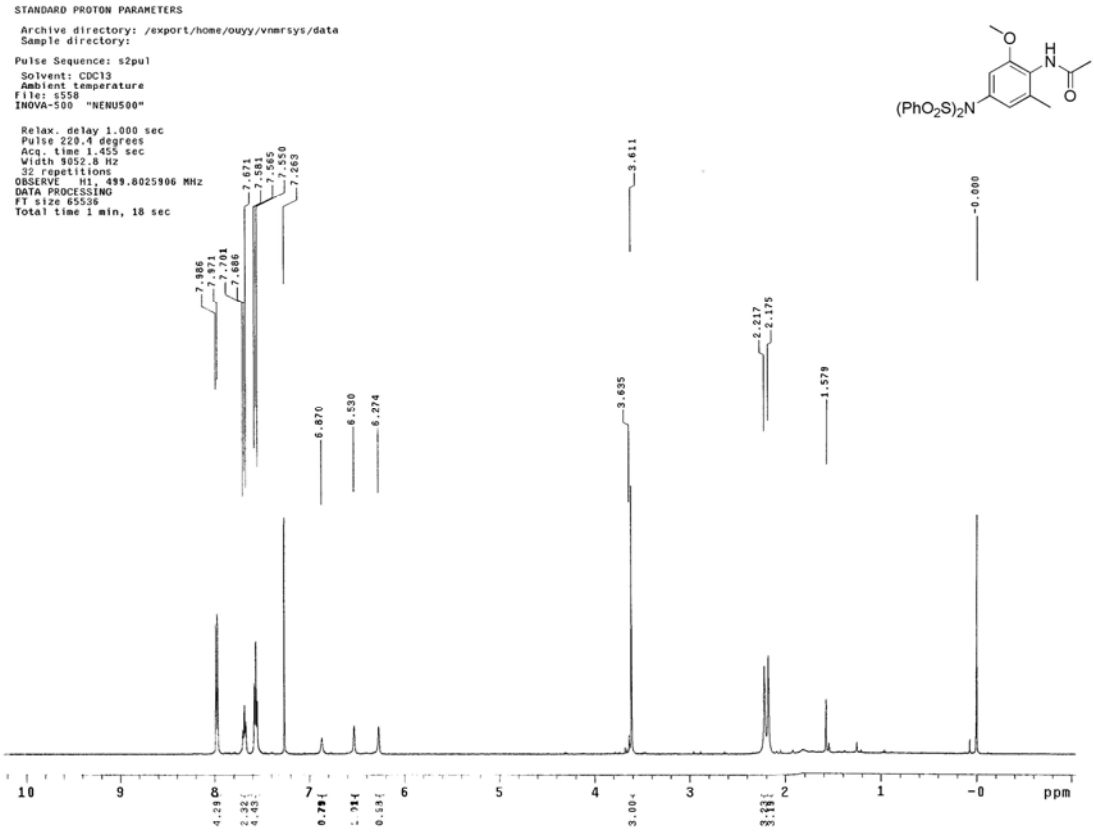

STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
User: 1-14-87
File: g878
INOVA-500 "NENU500"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 31421.8 Hz
4096 repetitions
OBSERVE C13, 125.6754685 MHz
DECOUPLE H1, 499.8050905 MHz
Power 40 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 2 hr, 3 min, 31 sec
Cl
O
(PhO2S)2N
NH
O
176.783
146.167
139.220
134.127
130.491
129.251
129.068
128.839
125.383
120.183
114.288
77.256
77.000
76.748
56.223
40.147
27.431
220
200
180
160
140
120
100
80
60
40
20
0
ppm

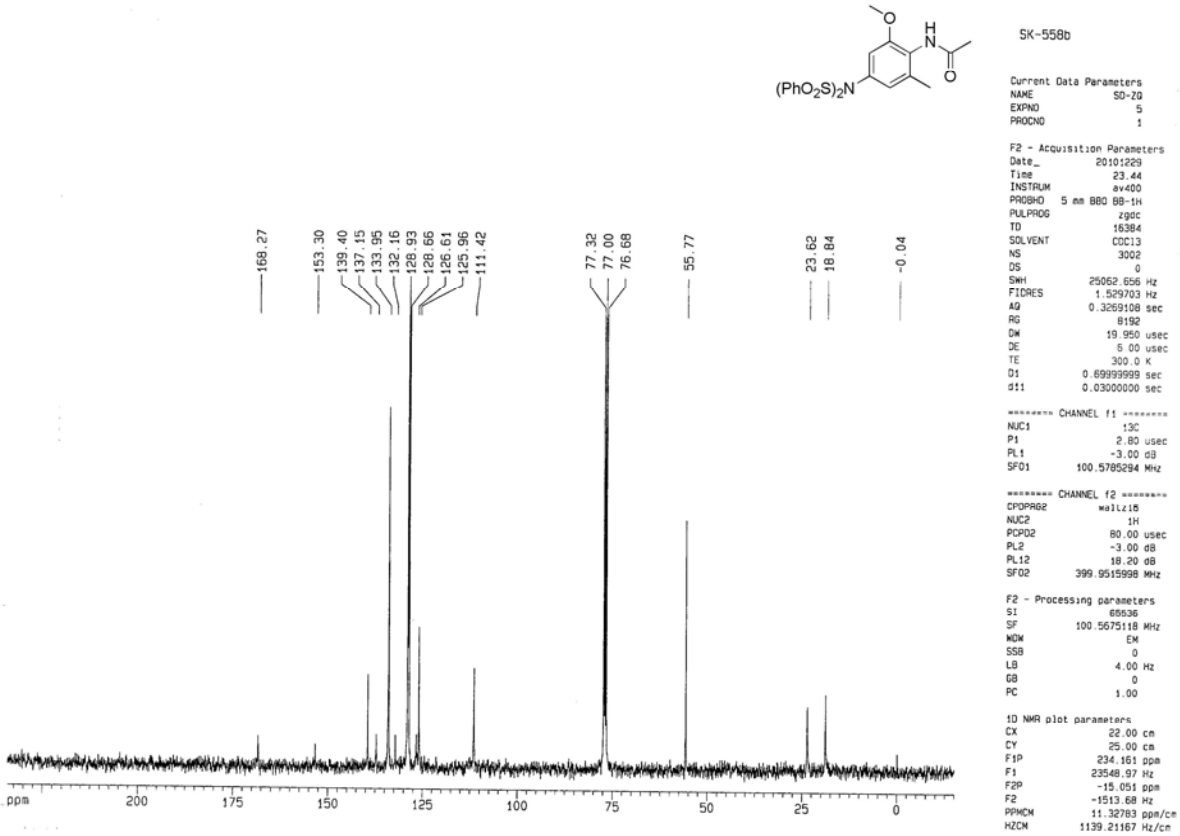
Compound 4f


STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: q966
INOVA-500 "NENU500"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.692 sec
Width 8989.8 Hz
8 repetitions
OBSERVE H1, 499.8025914 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 23 sec
(PhO2S)2N
NH
O
O
7.978
7.962
7.680
7.675
7.661
7.571
7.556
7.540
7.262
7.117
6.487
6.292
3.618
3.640
2.128
1.585
1.340
-0.000
ppm

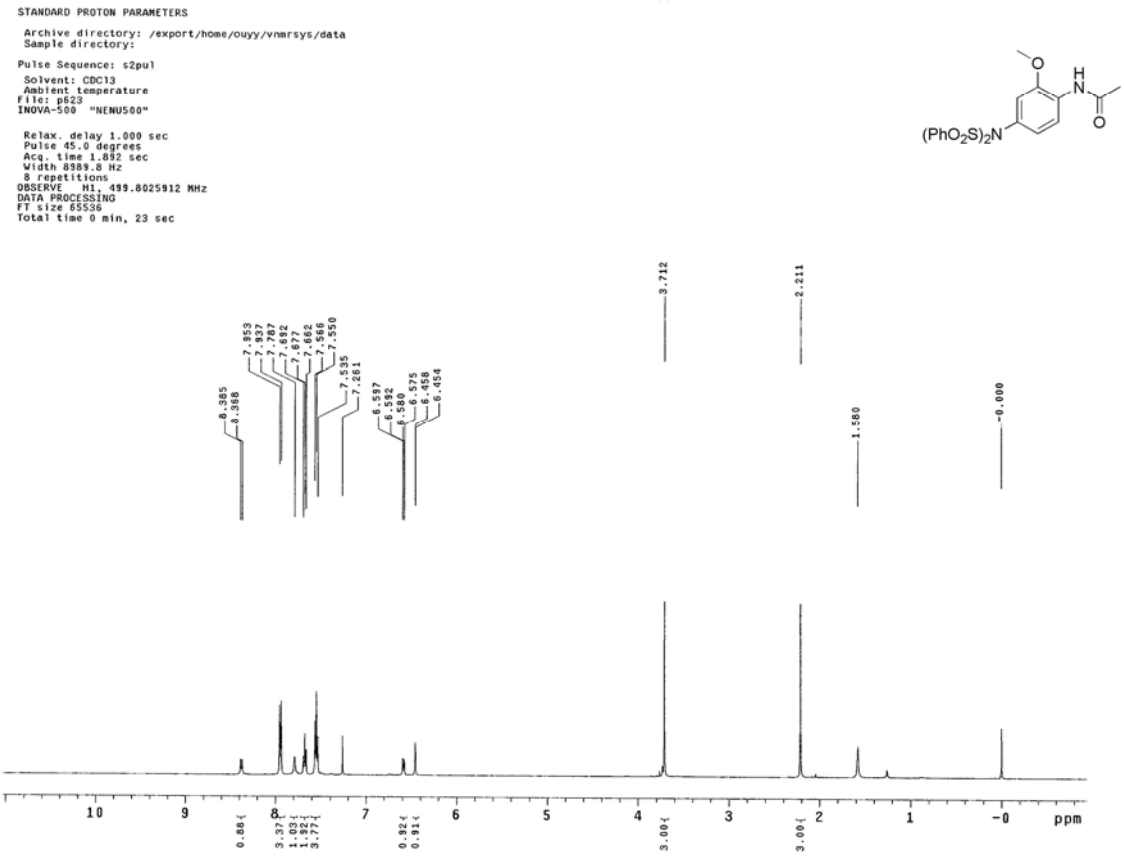

STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
User: 1-14-87
File: q967
INOVA-500 "NENU500"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 31421.8 Hz
384 repetitions
OBSERVE C13, 125.6754637 MHz
DECOUPLE H1, 499.8050905 MHz
Power 40 dB
continuously On
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 2 hr, 3 min, 31 sec
(PhO2S)2N
NH
O
O
77.252
77.000
76.744
128.911
128.667
139.403
136.969
133.913
131.834
126.851
125.993
111.339
176.802
153.332
55.880
39.563
27.679
16.630
ppm

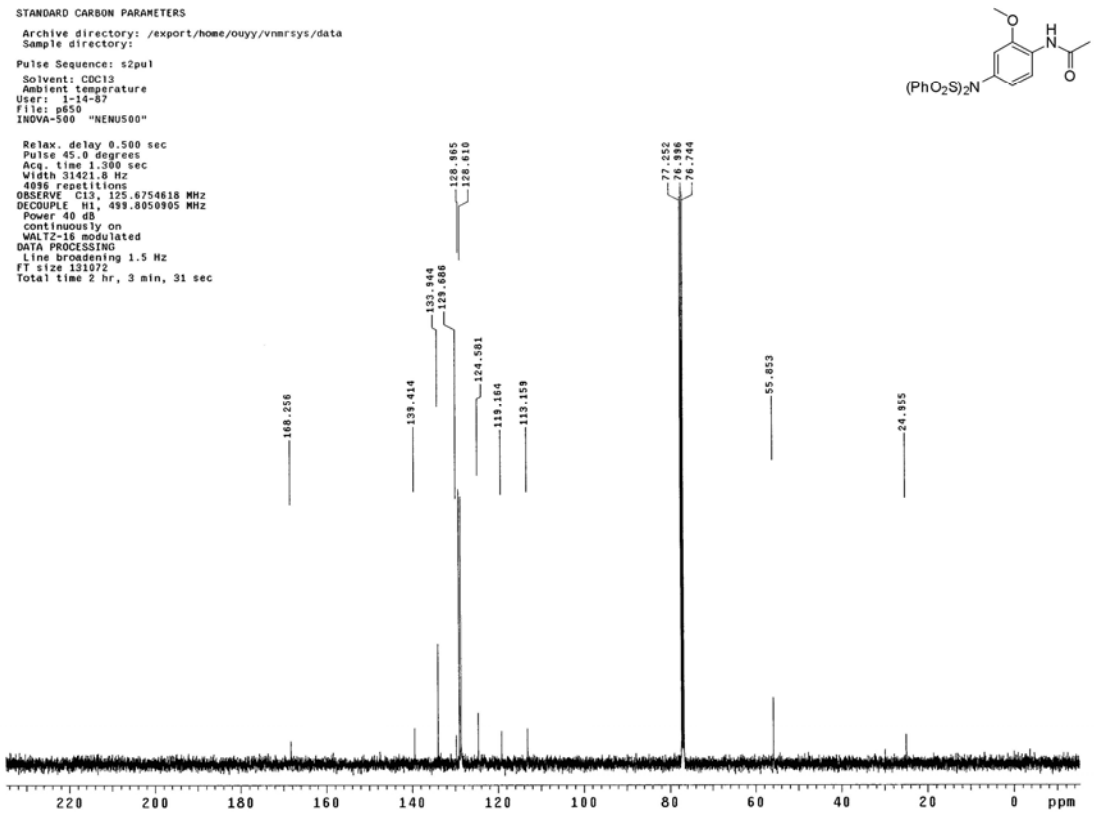
Compound 4g


STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: s558
INOVA-500 "NENU500"
Relax. delay 1.000 sec
Pulse 220.4 degrees
Acq. time 1.455 sec
Width 9052.8 Hz
32 repetitions
OBSERVE H1, 499.8025906 MHz
DATA PROCESSING
FT size 65536
Total time 1 min, 18 sec
7.886
7.971
7.701
7.686
7.671
7.581
7.565
7.550
7.263
6.870
6.530
6.274
3.611
3.635
2.217
2.175
1.579
-0.000
ppm


SK-558b
Current Data Parameters
NAME SO-2Q
EXPNO 5
PROCNO 1
F2 - Acquisition Parameters
Date_ 20101229
Time 23.44
INSTRUM av400
PROBHD 5 mm BBO BB-1H
PULPROG zgdc
TD 16384
SOLVENT CDCl3
NS 3002
DS 0
SWH 25062.656 Hz
FIDRES 1.529703 Hz
AQ 0.3269108 sec
RG 8192
DW 19.950 usec
DE 6.00 usec
TE 300.0 K
D1 0.69999999 sec
d11 0.03000000 sec
======== CHANNEL f1 ========
NUC1 13C
P1 2.80 usec
PL1 -3.00 dB
SFO1 100.5785294 MHz
======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -3.00 dB
PL12 18.20 dB
SFO2 399.9515998 MHz
F2 - Processing parameters
SI 65536
SF 100.5675118 MHz
WDW EM
SSB 0
LB 4.00 Hz
GB 0
PC 1.00
1D NMR plot parameters
CX 22.00 cm
CY 25.00 cm
F1P 234.161 ppm
F1 23548.97 Hz
F2P -15.051 ppm
F2 -1513.68 Hz
PPMCM 11.32783 ppm/cm
HZCM 1139.21167 Hz/cm
168.27
153.30
139.40
137.15
133.95
132.16
128.93
128.66
126.61
125.96
111.42
77.32
77.00
76.68
55.77
23.62
18.84
-0.04
ppm

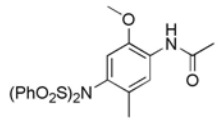
Compound 4h

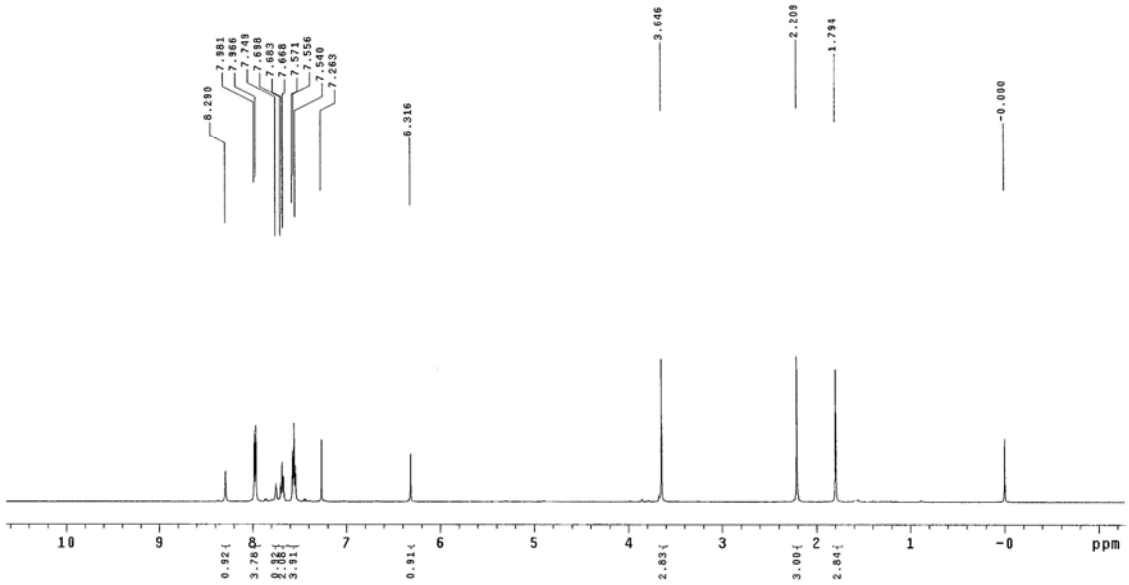

STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: p623
INOVA-500 "NENU500"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.892 sec
Width 8989.8 Hz
8 repetitions
OBSERVE H1, 499.8025912 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 23 sec
(PhO2S)2N
ppm

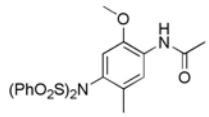

STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
User: 1-14-87
File: p650
INOVA-500 "NENU500"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 31421.8 Hz
4096 repetitions
OBSERVE C13, 125.6754618 MHz
DECOUPLE H1, 499.8050905 MHz
Power 40 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 2 hr, 3 min, 31 sec
(PhO2S)2N
ppm

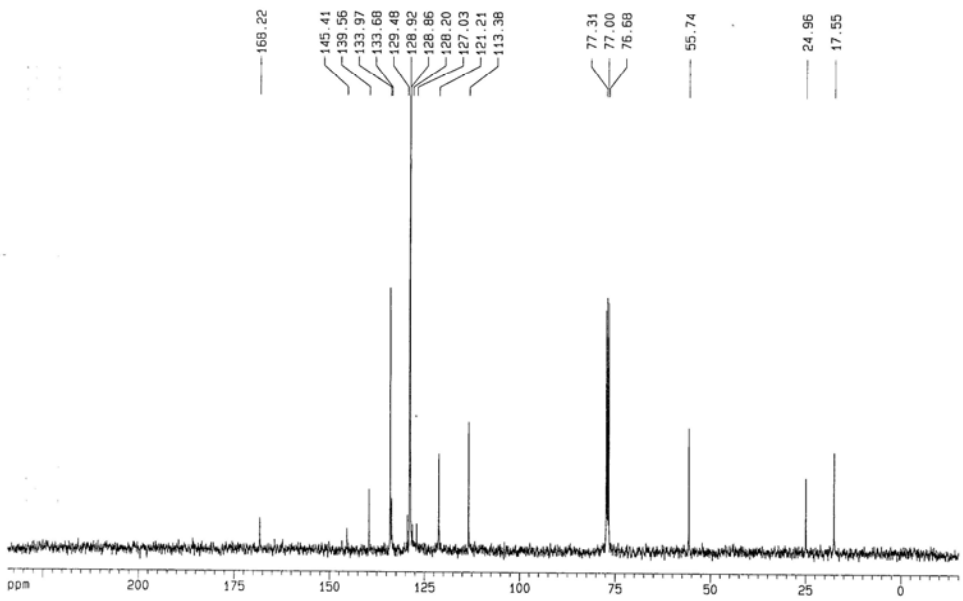
Compound 4i

```
STANDARD PROTON PARAMETERS

 Archive directory: /export/home/ouyy/vnmrsys/data
 Sample directory:

Pulse Sequence: s2pul

 Solvent: CDCl3
 Ambient temperature
File: s557
INOVA-500  "NENU500"

 Relax. delay 1.000 sec
 Pulse 220.4 degrees
 Acq. time 1.455 sec
 Width 9052.8 Hz
 32 repetitions
OBSERVE   H1, 499.8025906 MHz
DATA PROCESSING
FT size 65536
Total time 1 min, 18 sec
```





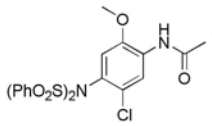


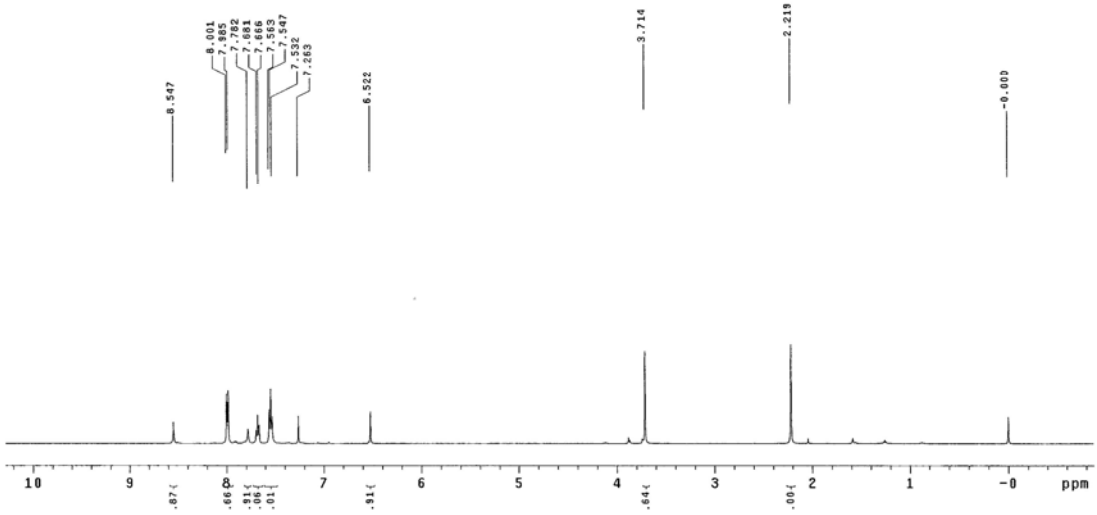


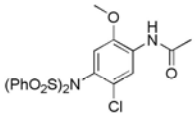

```
SK-558a

Current Data Parameters
NAME                 SD-ZQ
EXPNO                    3
PROCNO                   1

F2 - Acquisition Parameters
Date_             20101229
Time                 15.41
INSTRUM              av400
PROBHD   5 mm BBO BB-1H
PULPROG              zgdc
TD                   16384
SOLVENT              CDCl3
NS                    1012
DS                       0
SWH             25062.656 Hz
FIDRES           1.529703 Hz
AQ               0.3269108 sec
RG                    8192
DW                 19.950 usec
DE                  6.00 usec
TE                 300.0 K
D1              0.69999999 sec
d11             0.03000000 sec

======== CHANNEL f1 ========
NUC1                   13C
P1                    2.80 usec
PL1                  -3.00 dB
SFO1           100.5785294 MHz

======== CHANNEL f2 ========
CPDPRG2            waltz16
NUC2                    1H
PCPD2                80.00 usec
PL2                  -3.00 dB
PL12                 18.20 dB
SFO2           399.9515998 MHz

F2 - Processing parameters
SI                    65536
SF             100.5675122 MHz
WDW                      EM
SSB                       0
LB                     4.00 Hz
GB                        0
PC                     1.00

1D NMR plot parameters
CX                    22.00 cm
CY                    15.00 cm
F1P                  234.157 ppm
F1                 23548.58 Hz
F2P                 -15.055 ppm
F2                 -1514.07 Hz
PPMCM               11.32783 ppm/cm
HZCM             1139.21167 Hz/cm
```

Compound 4j

```
STANDARD PROTON PARAMETERS

 Archive directory: /export/home/ouyy/vnmrsys/data
 Sample directory:

Pulse Sequence: s2pul

 Solvent: CDCl3
 Ambient temperature
File: s588
INOVA-500  "NENU500"

 Relax. delay 1.000 sec
 Pulse 220.4 degrees
 Acq. time 1.455 sec
 Width 8052.8 Hz
 16 repetitions
OBSERVE    H1, 499.8025909 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 39 sec
```

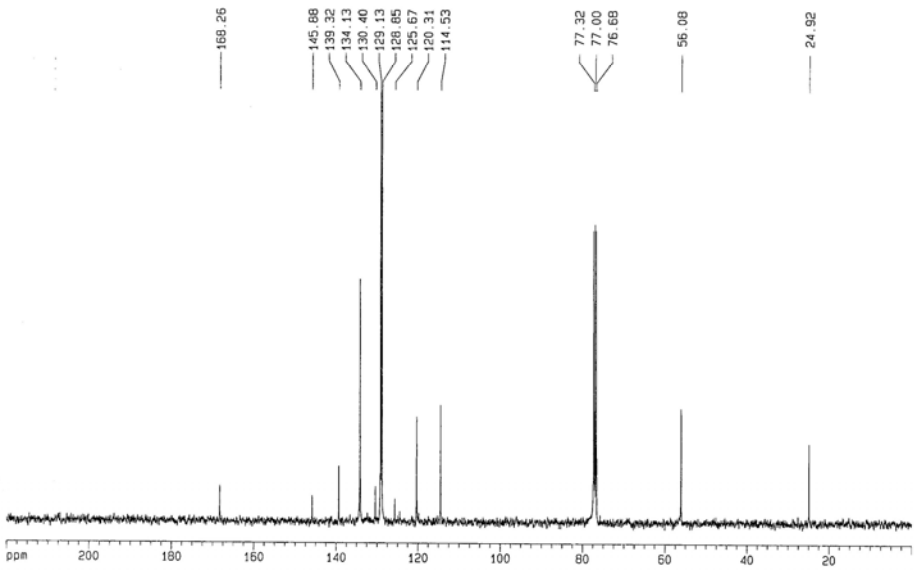






SK-558C

```
Current Data Parameters
NAME              SO-ZQ
EXPNO                 1
PROCNO                1

F2 - Acquisition Parameters
Date_           20101229
Time                0.48
INSTRUM           av400
PROBHD   5 mm BBO BB-1H
PULPROG            zgdc
TD                16384
SOLVENT           CDCl3
NS                 3012
DS                    0
SWH           25062.656 Hz
FIDRES         1.529703 Hz
AQ            0.3269108 sec
RG                 8192
DW              19.950 usec
DE               6.00 usec
TE              300.0 K
D1           0.69999999 sec
d11          0.03000000 sec

======== CHANNEL f1 ========
NUC1                13C
P1                 2.80 usec
PL1               -3.00 dB
SFO1         100.5785294 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                 1H
PCPD2             80.00 usec
PL2               -3.00 dB
PL12              18.20 dB
SFO2         399.9515998 MHz

F2 - Processing parameters
SI                 65536
SF           100.5675110 MHz
WDW                   EM
SSB                    0
LB                  4.00 Hz
GB                     0
PC                  1.00

1D NMR plot parameters
CX                 22.00 cm
CY                 12.00 cm
F1P             220.000 ppm
F1            22124.85 Hz
F2P               0.000 ppm
F2                 0.00 Hz
PPMCM          10.00000 ppm/cm
HZCM          1005.67511 Hz/cm
```



Compound 4k

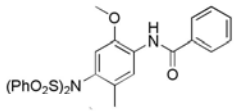
STANDARD PROTON PARAMETERS

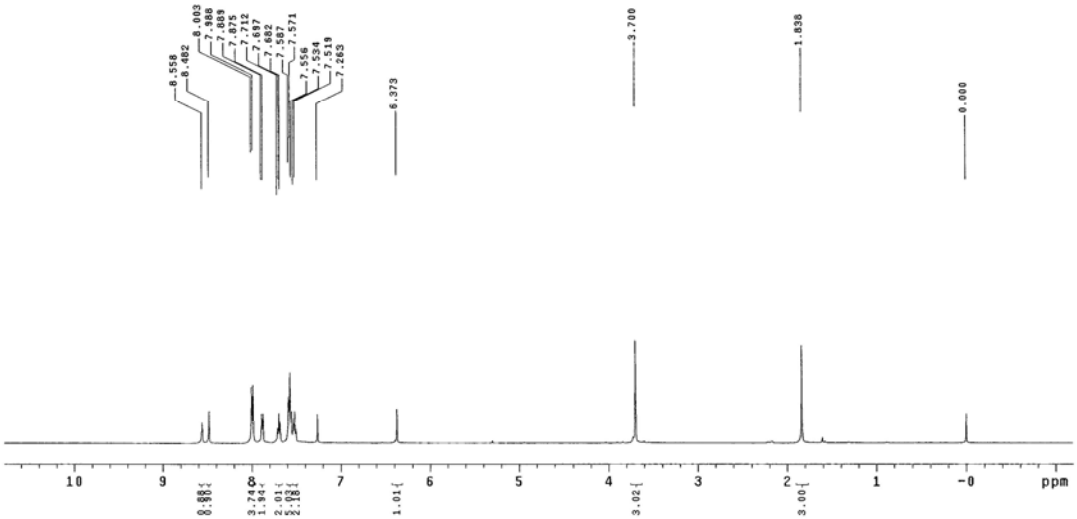
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:

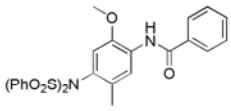
Pulse Sequence: s2pul

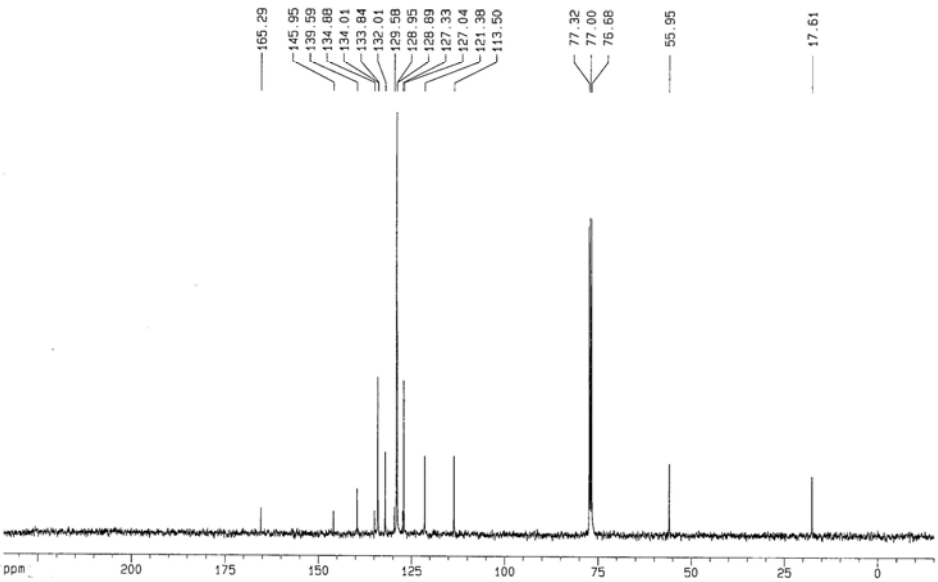
Solvent: CDCl3
Ambient temperature
File: t012
INOVA-500 "NENU500"

Relax. delay 1.000 sec
Pulse 220.4 degrees
Acq. time 1.455 sec
Width 9052.8 Hz
16 repetitions
OBSERVE H1, 499.8025901 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 39 sec









SK-559a

Current Data Parameters
NAME SO-20
EXPNO 10
PROCNO 1

F2 - Acquisition Parameters
Date_ 20110104
Time 23.31
INSTRUM av400
PROBHD 5 mm QNP 1H/13
PULPROG zgdc
TD 16384
SOLVENT CDCl3
NS 1523
DS 0
SWH 25062.656 Hz
FIDRES 1.529703 Hz
AQ 0.3269108 sec
RG 8192
DW 19.950 usec
DE 6.00 usec
TE 300.0 K
D1 0.69999999 sec
d11 0.03000000 sec

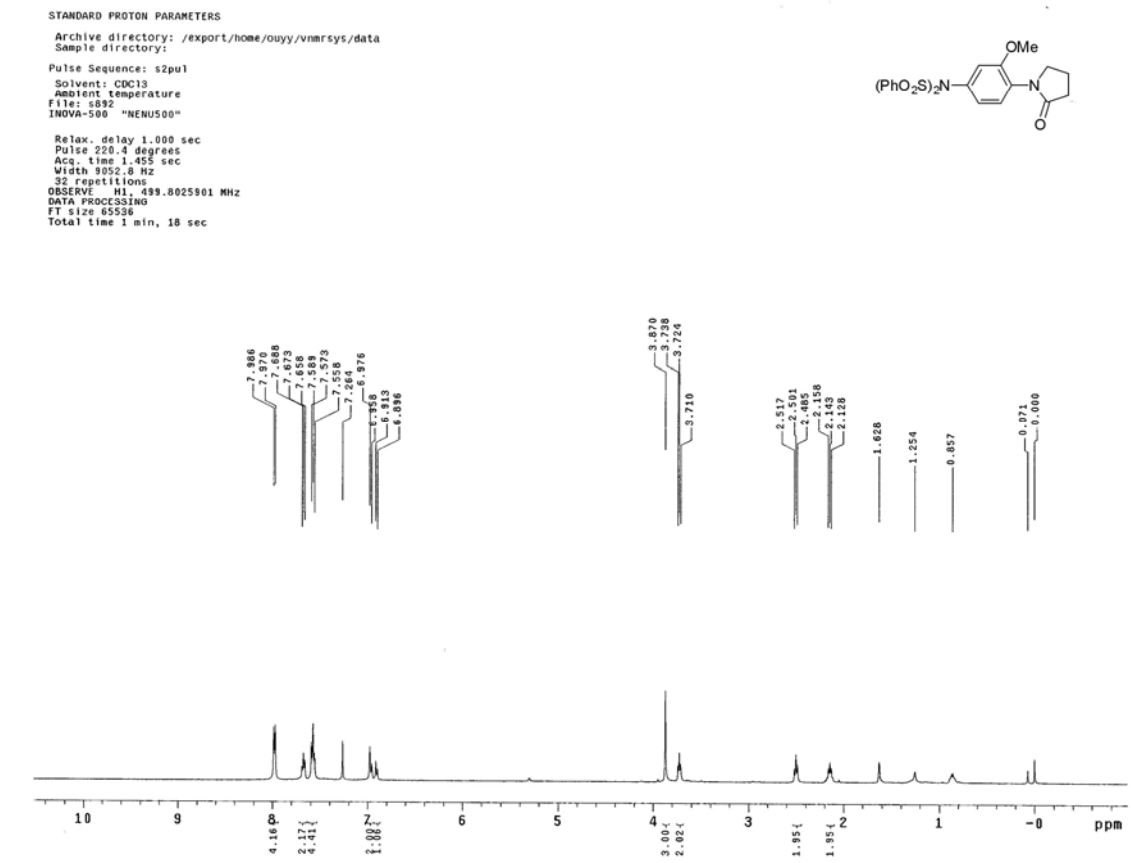
======== CHANNEL f1 ========
NUC1 13C
P1 2.70 usec
PL1 -3.00 dB
SFO1 100.5785294 MHz

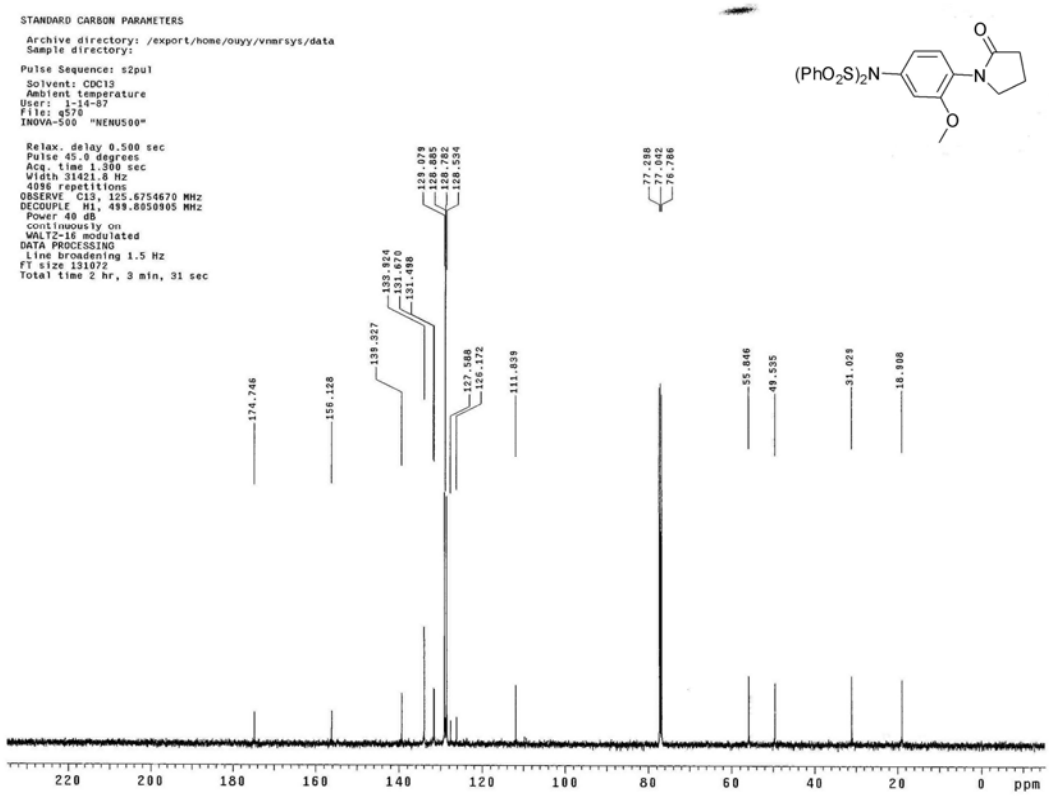
======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -3.00 dB
PL12 18.20 dB
SFO2 399.9515998 MHz

F2 - Processing parameters
SI 65536
SF 100.5675110 MHz
WDW EM
SSB 0
LB 4.00 Hz
GB 0
PC 1.00

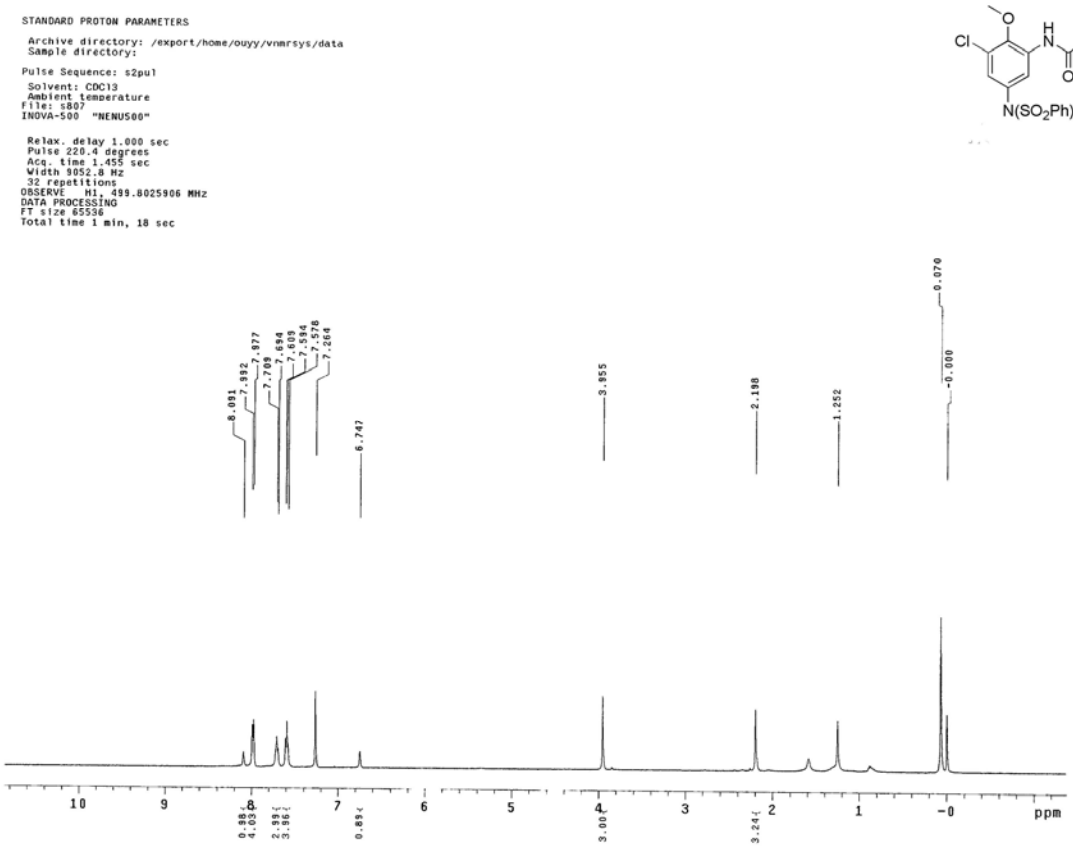
1D NMR plot parameters
CX 22.00 cm
CY 10.00 cm
F1P 234.168 ppm
F1 23549.74 Hz
F2P -15.044 ppm
F2 -1512.92 Hz
PPMCM 11.32783 ppm/cm
HZCM 1139.21167 Hz/cm

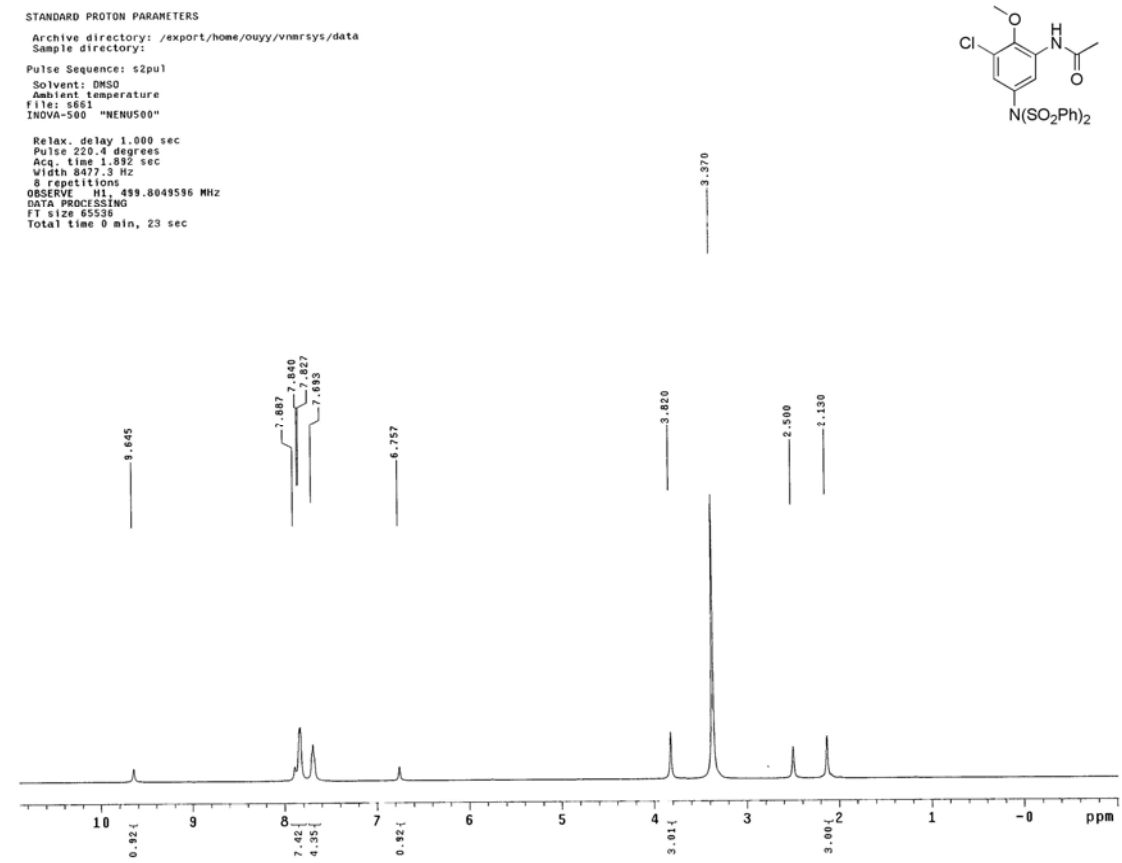
Compound 4l

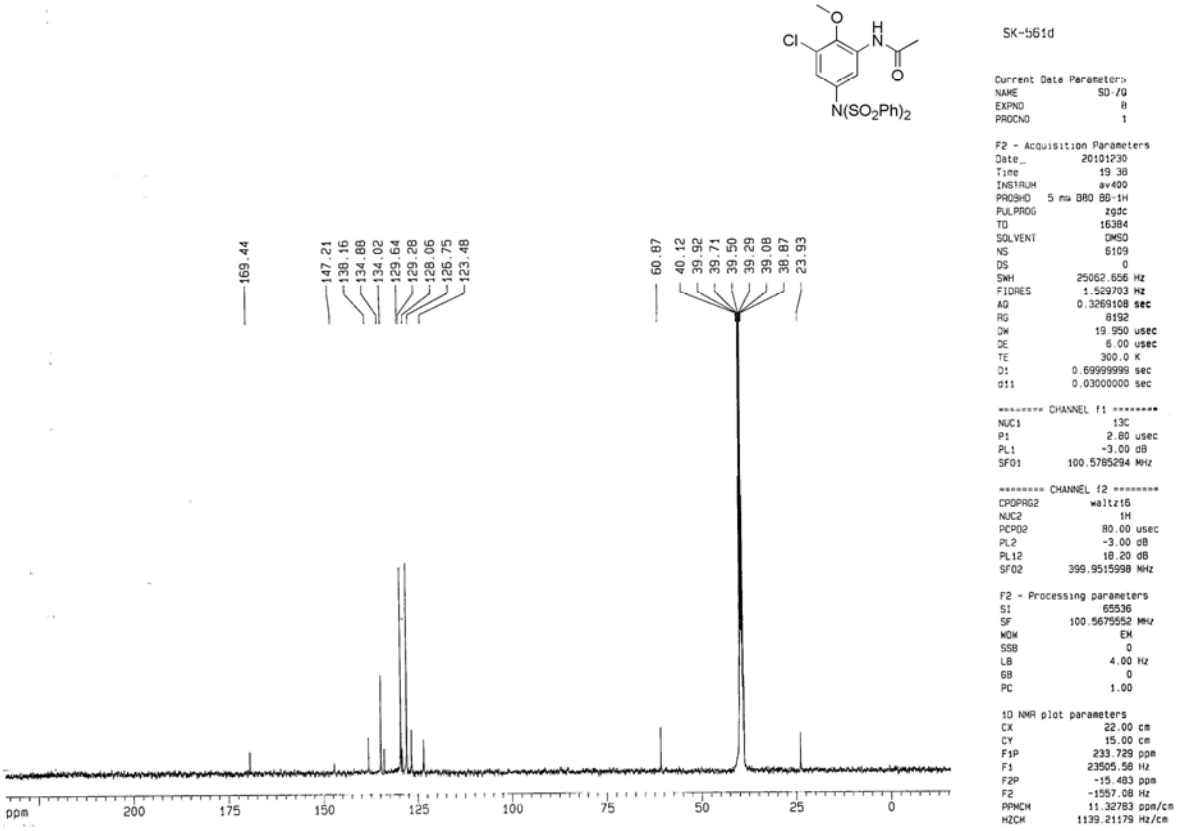

STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: s892
INOVA-500 "NENU500"
Relax. delay 1.000 sec
Pulse 220.4 degrees
Acq. time 1.455 sec
Width 9052.8 Hz
32 repetitions
OBSERVE H1, 499.8025901 MHz
DATA PROCESSING
FT size 65536
Total time 1 min, 18 sec
OMe
(PhO2S)2N
N
O
7.986
7.970
7.688
7.673
7.658
7.589
7.573
7.558
7.264
6.976
6.958
6.913
6.896
3.870
3.738
3.724
3.710
2.517
2.501
2.485
2.158
2.143
2.128
1.628
1.254
0.857
0.071
0.000
10
9
8
7
6
5
4
3
2
1
-0
ppm
4.16
2.17
4.41
3.00
1.06
3.00
2.02
1.95
1.95


STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
User: 1-14-87
File: q576
INOVA-500 "NENU500"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 31421.8 Hz
4096 repetitions
OBSERVE C13, 125.6754670 MHz
DECOUPLE H1, 499.8050905 MHz
Power 40 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 2 hr, 3 min, 31 sec
O
(PhO2S)2N
N
O
174.746
156.128
139.327
133.924
131.670
131.498
129.079
128.885
128.782
128.534
127.588
126.172
111.839
77.288
77.042
76.786
55.846
49.535
31.029
18.908
220
200
180
160
140
120
100
80
60
40
20
0
ppm

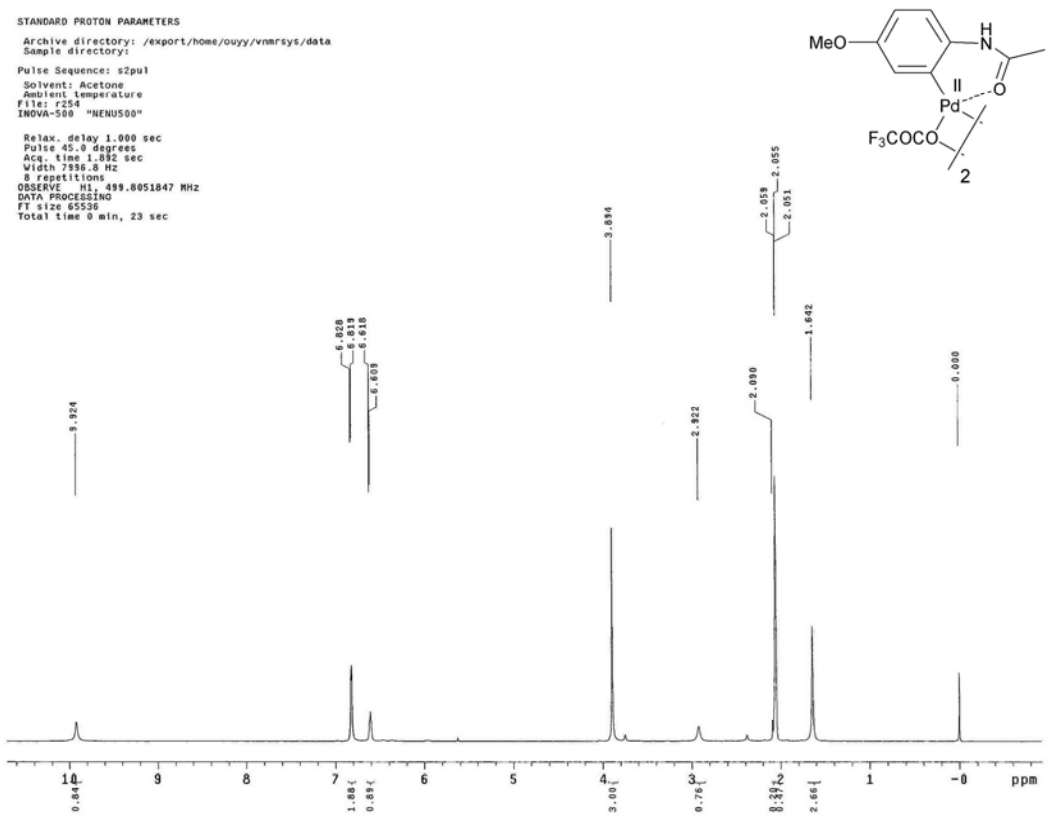
Compound 5p

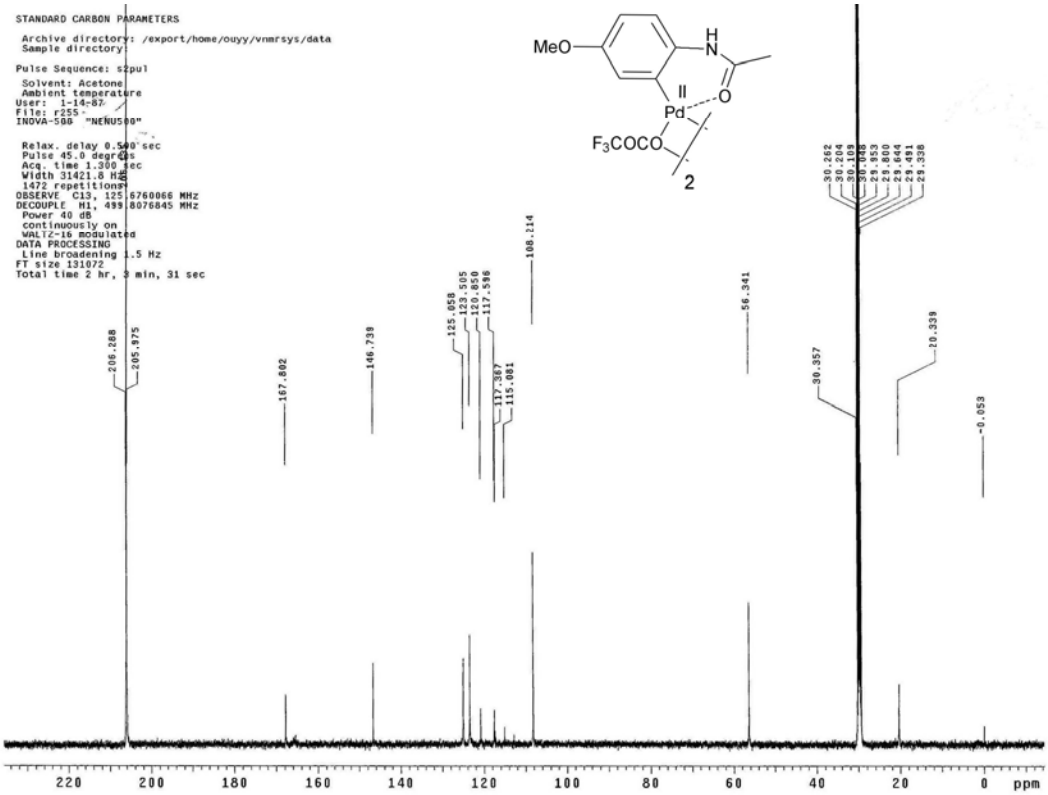

STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: s807
INOVA-500 "NENU500"
Relax. delay 1.000 sec
Pulse 220.4 degrees
Acq. time 1.455 sec
Width 9052.8 Hz
32 repetitions
OBSERVE H1, 499.8025906 MHz
DATA PROCESSING
FT size 65536
Total time 1 min, 18 sec
Cl
N(SO2Ph)2
8.091
7.892
7.877
7.769
7.694
7.689
7.584
7.578
7.264
6.747
3.955
2.198
1.252
0.070
-0.000
ppm


STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: DMSO
Ambient temperature
File: s661
INOVA-500 "NENU500"
Relax. delay 1.000 sec
Pulse 220.4 degrees
Acq. time 1.892 sec
Width 8477.3 Hz
8 repetitions
OBSERVE H1, 499.8049596 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 23 sec
Cl
N(SO2Ph)2
3.370
9.645
7.887
7.840
7.827
7.693
6.757
3.820
2.500
2.130
ppm


SK-561d
Current Data Parameters
NAME SD-70
EXPNO 8
PROCNO 1
F2 - Acquisition Parameters
Date_ 20101230
Time 19.38
INSTRUM av400
PROBHD 5 mm BBO BB-1H
PULPROG zgdc
TD 16384
SOLVENT DMSO
NS 6109
DS 0
SWH 25062.656 Hz
FIDRES 1.529703 Hz
AQ 0.3269108 sec
RG 8192
DW 19.950 usec
DE 6.00 usec
TE 300.0 K
D1 0.69999999 sec
d11 0.03000000 sec
======== CHANNEL f1 ========
NUC1 13C
P1 2.80 usec
PL1 -3.00 dB
SFO1 100.5785294 MHz
======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -3.00 dB
PL12 18.20 dB
SFO2 399.9515998 MHz
F2 - Processing parameters
SI 65536
SF 100.5675552 MHz
WDW EM
SSB 0
LB 4.00 Hz
GB 0
PC 1.00
1D NMR plot parameters
CX 22.00 cm
CY 15.00 cm
F1P 233.729 ppm
F1 23505.58 Hz
F2P -15.483 ppm
F2 -1557.08 Hz
PPMCM 11.32783 ppm/cm
HZCM 1139.21179 Hz/cm
Cl
O
H
N
O
N(SO2Ph)2
169.44
147.21
138.16
134.88
134.02
129.64
129.28
128.06
126.75
123.48
60.87
40.12
39.92
39.71
39.50
39.29
39.08
38.87
23.93
ppm
200
175
150
125
100
75
50
25
0

Compound G


STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: Acetone
Ambient temperature
File: r254
INOVA-500 "NENU500"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.892 sec
Width 7936.8 Hz
8 repetitions
OBSERVE H1, 499.8051847 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 23 sec
MeO
H
N
O
Pd
O
F3COCO
2
9.324
6.828
6.819
6.618
6.609
3.884
2.922
2.058
2.055
2.051
2.090
1.642
0.000
ppm
10
9
8
7
6
5
4
3
2
1
-0


STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: Acetone
Ambient temperature
User: 1-14-87
File: r255
INOVA-500 "NENU500"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 31421.8 Hz
1472 repetitions
OBSERVE C13, 125.6760066 MHz
DECOUPLE H1, 499.8076845 MHz
Power 40 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 2 hr, 3 min, 31 sec
MeO
H
N
O
Pd
F3COCO
2
206.288
205.975
167.802
146.739
125.658
123.505
120.850
117.598
117.387
115.081
108.214
56.341
30.262
30.204
30.109
30.357
20.339
-0.053
220
200
180
160
140
120
100
80
60
40
20
0
ppm