Supplementary Materials

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1. X-ray crystallographic data for 2i:

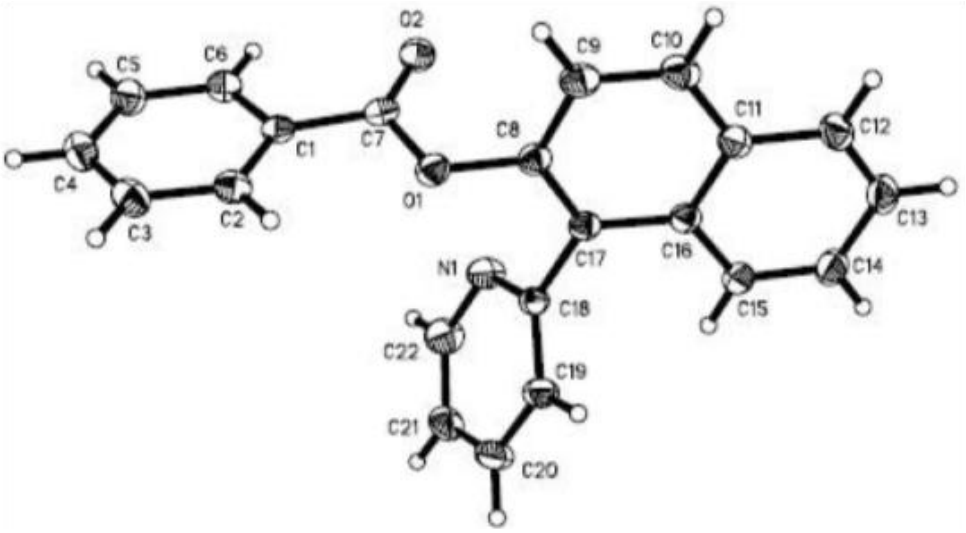


Table S1. Crystal data and structure refinement for **2i** (15 January 2009).

Identification code	snow20	
Empirical formula	$C_{22}H_{15}NO_2$	
Formula weight	325.35	
Temperature	296(2) K	
Wavelength	0.71073 Å	
Crystal system	Triclinic	
Space group	P-1	
Unit cell dimensions	a = 9.0621(2) Å	α = 87.277(2) °.
	b = 9.8863(2) Å	β = 67.4190(10) °.
	c = 10.2723(2) Å	γ = 79.943(2)°.
Volume	836.50(3) Å^3	
Z	2	
Density (calculated)	1.292 Mg/m^3	
Absorption coefficient	0.083 mm^{-1}	
F(000)	340	
Crystal size	0.50 × 0.40 × 0.28 mm^3	
Theta range for data collection	2.09 to 27.68 °.	
Index ranges	$-11 \le h \le 11$, $-12 \le k \le 12$, $-13 \le l \le 13$	
Reflections collected	17175	
Independent reflections	3858 [R(int) = 0.0446]	
Completeness to theta = 27.68 °	98.9%	
Absorption correction	Semi-empirical from equivalents	
Max. and min. transmission	1.000 and 0.817	
Refinement method	Full-matrix least-squares on F^2	
Data/restraints/parameters	3858/0/226	
Goodness-of-fit on F^2	1.001	
Final R indices [I>2sigma(I)]	R1 = 0.0446, wR2 = 0.1112	
R indices (all data)	R1 = 0.1025, wR2 = 0.1364	
Largest diff. peak and hole	0.120 and −0.151 e.Å^{-3}	

Table S2. Atomic coordinates ($\times 10^4$) and equivalent isotropic displacement parameters ($Å^2 \times 10^3$) for **2i**. U(eq) is defined as one third of the trace of the orthogonalized U^{ij} tensor.

	x	y	z	U(eq)
O(1)	7689(1)	6326(1)	4917(1)	67(1)
O(2)	5083(1)	7352(1)	5617(1)	79(1)
N(1)	7646(1)	8373(1)	7096(2)	82(1)
C(1)	6982(2)	7965(1)	3431(1)	56(1)
C(2)	8495(2)	7609(1)	2366(2)	69(1)
C(3)	8888(2)	8318(2)	1117(2)	82(1)
C(4)	7799(2)	9380(2)	942(2)	85(1)
C(5)	6303(2)	9754(2)	1990(2)	81(1)
C(6)	5888(2)	9046(1)	3234(2)	68(1)
C(7)	6452(2)	7219(1)	4763(1)	60(1)
C(8)	7314(2)	5561(1)	6168(2)	62(1)
C(9)	6573(2)	4411(1)	6246(2)	74(1)
C(10)	6297(2)	3619(1)	7402(2)	77(1)
C(11)	6737(2)	3926(1)	8513(2)	66(1)
C(12)	6389(2)	3141(1)	9748(2)	81(1)
C(13)	6772(2)	3473(2)	10827(2)	86(1)
C(14)	7535(2)	4611(2)	10727(2)	82(1)
C(15)	7883(2)	5399(1)	9554(2)	69(1)
C(16)	7493(2)	5089(1)	8414(1)	58(1)
C(17)	7786(1)	5919(1)	7195(1)	56(1)
C(18)	8578(2)	7160(1)	7038(1)	56(1)
C(19)	10179(2)	7034(2)	6840(2)	75(1)
C(20)	10869(2)	8189(2)	6681(2)	91(1)
C(21)	9937(2)	9436(2)	6735(2)	90(1)
C(22)	8366(2)	9480(2)	6936(2)	99(1)

Table S3. Bond lengths [Å] and angles [°] for **2i**.

O(1)-C(7)	1.3563(16)
O(1)-C(8)	1.4143(16)
O(2)-C(7)	1.2018(15)
N(1)-C(18)	1.3301(16)
N(1)-C(22)	1.3419(19)
C(1)-C(2)	1.3846(17)
C(1)-C(6)	1.3885(18)
C(1)-C(7)	1.4736(18)
C(2)-C(3)	1.384(2)
C(2)-H(2A)	0.9300
C(3)-C(4)	1.366(2)
C(3)-H(3A)	0.9300
C(4)-C(5)	1.370(2)
C(4)-H(4A)	0.9300
C(5)-C(6)	1.379(2)
C(5)-H(5A)	0.9300
C(6)-H(6A)	0.9300

Table S3. *Cont.*

C(8)-C(17)	1.362(2)
C(8)-C(9)	1.4029(19)
C(9)-C(10)	1.356(2)
C(9)-H(9A)	0.9300
C(10)-C(11)	1.407(2)
C(10)-H(10A)	0.9300
C(11)-C(12)	1.413(2)
C(11)-C(16)	1.4188(18)
C(12)-C(13)	1.351(2)
C(12)-H(12A)	0.9300
C(13)-C(14)	1.401(2)
C(13)-H(13A)	0.9300
C(14)-C(15)	1.365(2)
C(14)-H(14A)	0.9300
C(15)-C(16)	1.406(2)
C(15)-H(15A)	0.9300
C(16)-C(17)	1.4269(18)
C(17)-C(18)	1.4981(17)
C(18)-C(19)	1.3693(18)
C(19)-C(20)	1.370(2)
C(19)-H(19A)	0.9300
C(20)-C(21)	1.358(2)
C(20)-H(20A)	0.9300
C(21)-C(22)	1.351(2)
C(21)-H(21A)	0.9300
C(22)-H(22A)	0.9300
C(7)-O(1)-C(8)	116.89(10)
C(18)-N(1)-C(22)	116.23(13)
C(2)-C(1)-C(6)	119.28(13)
C(2)-C(1)-C(7)	122.78(12)
C(6)-C(1)-C(7)	117.91(11)
C(3)-C(2)-C(1)	119.72(13)
C(3)-C(2)-H(2A)	120.1
C(1)-C(2)-H(2A)	120.1
C(4)-C(3)-C(2)	120.24(14)
C(4)-C(3)-H(3A)	119.9
C(2)-C(3)-H(3A)	119.9
C(3)-C(4)-C(5)	120.73(15)
C(3)-C(4)-H(4A)	119.6
C(5)-C(4)-H(4A)	119.6
C(4)-C(5)-C(6)	119.65(15)
C(4)-C(5)-H(5A)	120.2
C(6)-C(5)-H(5A)	120.2
C(5)-C(6)-C(1)	120.37(13)
C(5)-C(6)-H(6A)	119.8
C(1)-C(6)-H(6A)	119.8
O(2)-C(7)-O(1)	122.85(13)
O(2)-C(7)-C(1)	124.89(13)
O(1)-C(7)-C(1)	112.25(11)

Table S3. *Cont.*

C(17)-C(8)-C(9)	123.21(13)
C(17)-C(8)-O(1)	118.59(11)
C(9)-C(8)-O(1)	118.04(13)
C(10)-C(9)-C(8)	118.72(15)
C(10)-C(9)-H(9A)	120.6
C(8)-C(9)-H(9A)	120.6
C(9)-C(10)-C(11)	121.51(13)
C(9)-C(10)-H(10A)	119.2
C(11)-C(10)-H(10A)	119.2
C(10)-C(11)-C(12)	121.82(13)
C(10)-C(11)-C(16)	119.05(13)
C(12)-C(11)-C(16)	119.08(15)
C(13)-C(12)-C(11)	121.24(15)
C(13)-C(12)-H(12A)	119.4
C(11)-C(12)-H(12A)	119.4
C(12)-C(13)-C(14)	119.87(15)
C(12)-C(13)-H(13A)	120.1
C(14)-C(13)-H(13A)	120.1
C(15)-C(14)-C(13)	120.57(16)
C(15)-C(14)-H(14A)	119.7
C(13)-C(14)-H(14A)	119.7
C(14)-C(15)-C(16)	121.14(14)
C(14)-C(15)-H(15A)	119.4
C(16)-C(15)-H(15A)	119.4
C(15)-C(16)-C(11)	118.09(13)
C(15)-C(16)-C(17)	122.54(12)
C(11)-C(16)-C(17)	119.34(13)
C(8)-C(17)-C(16)	118.17(12)
C(8)-C(17)-C(18)	120.28(12)
C(16)-C(17)-C(18)	121.55(12)
N(1)-C(18)-C(19)	122.43(12)
N(1)-C(18)-C(17)	116.50(11)
C(19)-C(18)-C(17)	121.08(12)
C(18)-C(19)-H(19A)	120.2
C(20)-C(19)-H(19A)	120.2
C(21)-C(20)-C(19)	118.81(15)
C(21)-C(20)-H(20A)	120.6
C(19)-C(20)-H(20A)	120.6
C(22)-C(21)-C(20)	118.28(15)
C(22)-C(21)-H(21A)	120.9
C(20)-C(21)-H(21A)	120.9
N(1)-C(22)-C(21)	124.68(15)
N(1)-C(22)-H(22A)	117.7
C(21)-C(22)-H(22A)	117.7

Symmetry transformations used to generate equivalent atoms.

Table S4. Anisotropic displacement parameters ($Å^2 \times 10^3$) for **2i**. The anisotropic displacement factor exponent takes the form: $-2\pi^2[h^2a^{*2}U^{11} + ... + 2\ h\ k\ a^*\ b^*\ U^{12}]$.

	U^{11}	U^{22}	U^{33}	U^{23}	U^{13}	U^{12}
O(1)	60(1)	73(1)	68(1)	0(1)	−27(1)	−7(1)
O(2)	56(1)	95(1)	81(1)	8(1)	−22(1)	−9(1)
N(1)	74(1)	56(1)	125(1)	2(1)	−49(1)	−9(1)
C(1)	54(1)	57(1)	62(1)	−6(1)	−25(1)	−14(1)
C(2)	62(1)	65(1)	80(1)	−5(1)	−25(1)	−10(1)
C(3)	75(1)	86(1)	74(1)	−5(1)	−12(1)	−19(1)
C(4)	93(1)	79(1)	78(1)	13(1)	−26(1)	−24(1)
C(5)	83(1)	70(1)	92(1)	12(1)	−36(1)	−12(1)
C(6)	63(1)	66(1)	76(1)	−5(1)	−26(1)	−9(1)
C(7)	54(1)	63(1)	69(1)	−9(1)	−30(1)	−9(1)
C(8)	58(1)	60(1)	69(1)	0(1)	−27(1)	−6(1)
C(9)	75(1)	66(1)	90(1)	−12(1)	−38(1)	−13(1)
C(10)	77(1)	52(1)	109(1)	−1(1)	−40(1)	−15(1)
C(11)	58(1)	49(1)	88(1)	4(1)	−28(1)	−4(1)
C(12)	71(1)	55(1)	110(1)	19(1)	−32(1)	−8(1)
C(13)	78(1)	76(1)	95(1)	26(1)	−31(1)	−3(1)
C(14)	79(1)	87(1)	83(1)	15(1)	−38(1)	−4(1)
C(15)	65(1)	67(1)	77(1)	9(1)	−32(1)	−9(1)
C(16)	48(1)	51(1)	73(1)	2(1)	−24(1)	−1(1)
C(17)	48(1)	51(1)	68(1)	−1(1)	−24(1)	−3(1)
C(18)	53(1)	57(1)	61(1)	2(1)	−25(1)	−11(1)
C(19)	54(1)	80(1)	91(1)	6(1)	−29(1)	−13(1)
C(20)	69(1)	117(1)	95(1)	6(1)	−32(1)	−41(1)
C(21)	109(1)	88(1)	93(1)	12(1)	−45(1)	−53(1)
C(22)	110(1)	59(1)	144(2)	8(1)	−64(1)	−20(1)

Table S5. Hydrogen coordinates ($\times 10^4$) and isotropic displacement parameters ($Å^2 \times 10^3$) for **2i**.

	x	y	z	U(eq)
H(2A)	9244	6895	2489	83
H(3A)	9898	8071	395	99
H(4A)	8076	9855	101	101
H(5A)	5570	10481	1864	98
H(6A)	4871	9294	3945	82
H(9A)	6277	4195	5518	89
H(10A)	5805	2855	7462	93
H(12A)	5888	2381	9820	97
H(13A)	6529	2947	11634	104
H(14A)	7807	4833	11467	99
H(15A)	8386	6153	9507	82
H(19A)	10793	6170	6813	90
H(20A)	11957	8120	6539	109
H(21A)	10369	10240	6637	109
H(22A)	7739	10338	6966	119

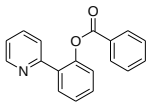
Table S6. Torsion angles [°] for **2i**.

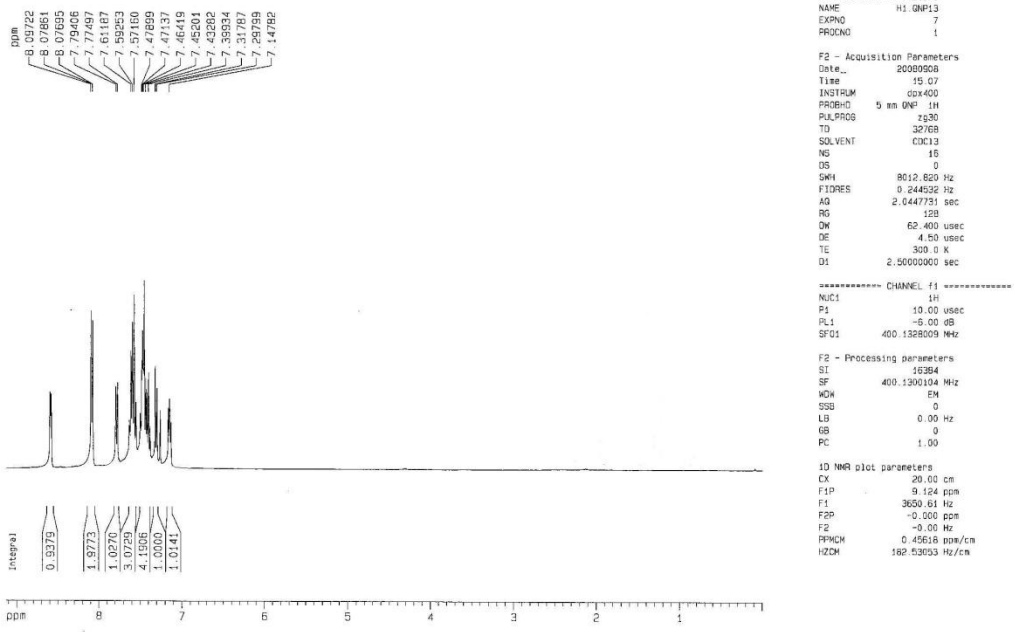
C(6)-C(1)-C(2)-C(3)	−0.9(2)
C(7)-C(1)-C(2)-C(3)	177.30(13)
C(1)-C(2)-C(3)-C(4)	1.0(2)
C(2)-C(3)-C(4)-C(5)	−0.4(3)
C(3)-C(4)-C(5)-C(6)	−0.3(3)
C(4)-C(5)-C(6)-C(1)	0.4(2)
C(2)-C(1)-C(6)-C(5)	0.2(2)
C(7)-C(1)-C(6)-C(5)	−178.08(13)
C(8)-O(1)-C(7)-O(2)	−1.70(19)
C(8)-O(1)-C(7)-C(1)	179.57(10)
C(2)-C(1)-C(7)-O(2)	−168.00(13)
C(6)-C(1)-C(7)-O(2)	10.2(2)
C(2)-C(1)-C(7)-O(1)	10.69(18)
C(6)-C(1)-C(7)-O(1)	−171.09(11)
C(7)-O(1)-C(8)-C(17)	−105.10(13)
C(7)-O(1)-C(8)-C(9)	79.31(14)
C(17)-C(8)-C(9)-C(10)	0.6(2)
O(1)-C(8)-C(9)-C(10)	176.01(12)
C(8)-C(9)-C(10)-C(11)	−0.1(2)
C(9)-C(10)-C(11)-C(12)	177.21(13)
C(9)-C(10)-C(11)-C(16)	−0.3(2)
C(10)-C(11)-C(12)-C(13)	−177.85(13)
C(16)-C(11)-C(12)-C(13)	−0.4(2)
C(11)-C(12)-C(13)-C(14)	−0.3(2)
C(12)-C(13)-C(14)-C(15)	0.6(2)
C(13)-C(14)-C(15)-C(16)	−0.2(2)
C(14)-C(15)-C(16)-C(11)	−0.45(19)
C(14)-C(15)-C(16)-C(17)	177.66(12)
C(10)-C(11)-C(16)-C(15)	178.30(12)
C(12)-C(11)-C(16)-C(15)	0.74(18)
C(10)-C(11)-C(16)-C(17)	0.12(18)
C(12)-C(11)-C(16)-C(17)	−177.43(11)
C(9)-C(8)-C(17)-C(16)	−0.77(19)
O(1)-C(8)-C(17)-C(16)	−176.12(10)
C(9)-C(8)-C(17)-C(18)	179.75(12)
O(1)-C(8)-C(17)-C(18)	4.40(17)
C(15)-C(16)-C(17)-C(8)	−177.71(11)
C(11)-C(16)-C(17)-C(8)	0.38(17)
C(15)-C(16)-C(17)-C(18)	1.77(18)
C(11)-C(16)-C(17)-C(18)	179.85(11)
C(22)-N(1)-C(18)-C(19)	0.6(2)
C(22)-N(1)-C(18)-C(17)	−179.15(14)
C(8)-C(17)-C(18)-N(1)	68.44(16)
C(16)-C(17)-C(18)-N(1)	−111.02(14)
C(8)-C(17)-C(18)-C(19)	−111.35(15)
C(16)-C(17)-C(18)-C(19)	69.19(17)
N(1)-C(18)-C(19)-C(20)	−0.6(2)
C(17)-C(18)-C(19)-C(20)	179.15(14)
C(18)-C(19)-C(20)-C(21)	0.5(2)
C(19)-C(20)-C(21)-C(22)	−0.4(3)
C(18)-N(1)-C(22)-C(21)	−0.5(3)
C(20)-C(21)-C(22)-N(1)	0.4(3)

Symmetry transformations used to generate equivalent atoms.

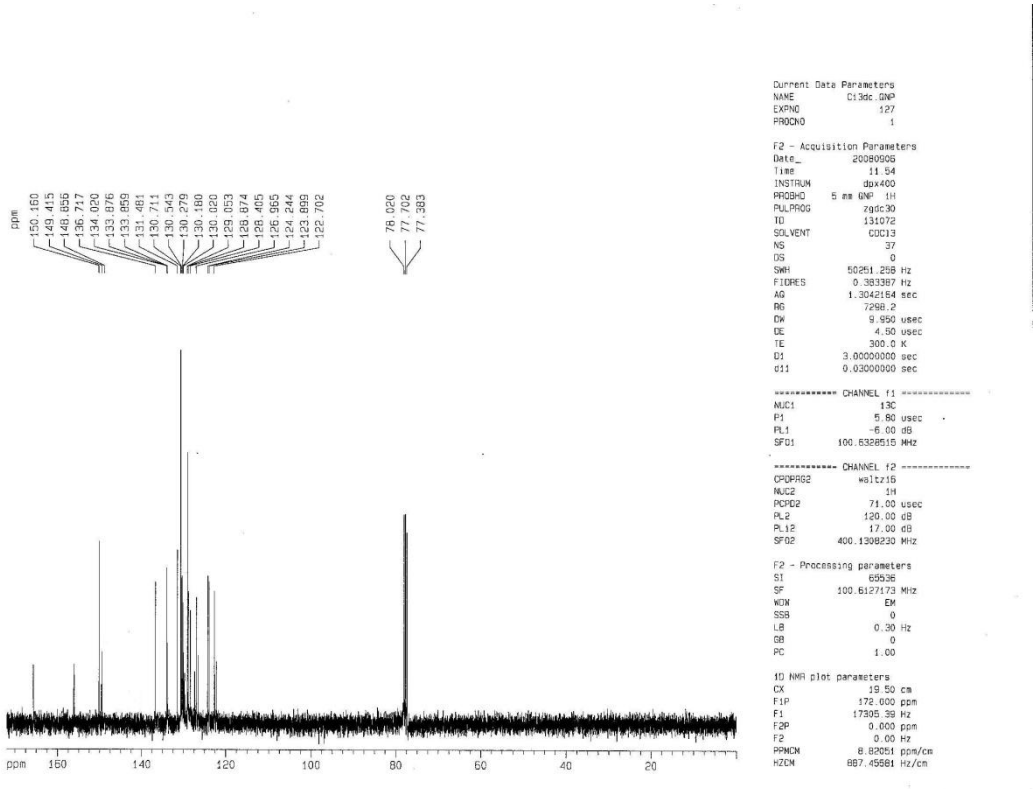
2. ^{1}H and ^{13}C-NMR Spectra:

^{1}H-NMR of **2a**

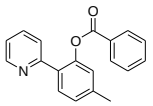


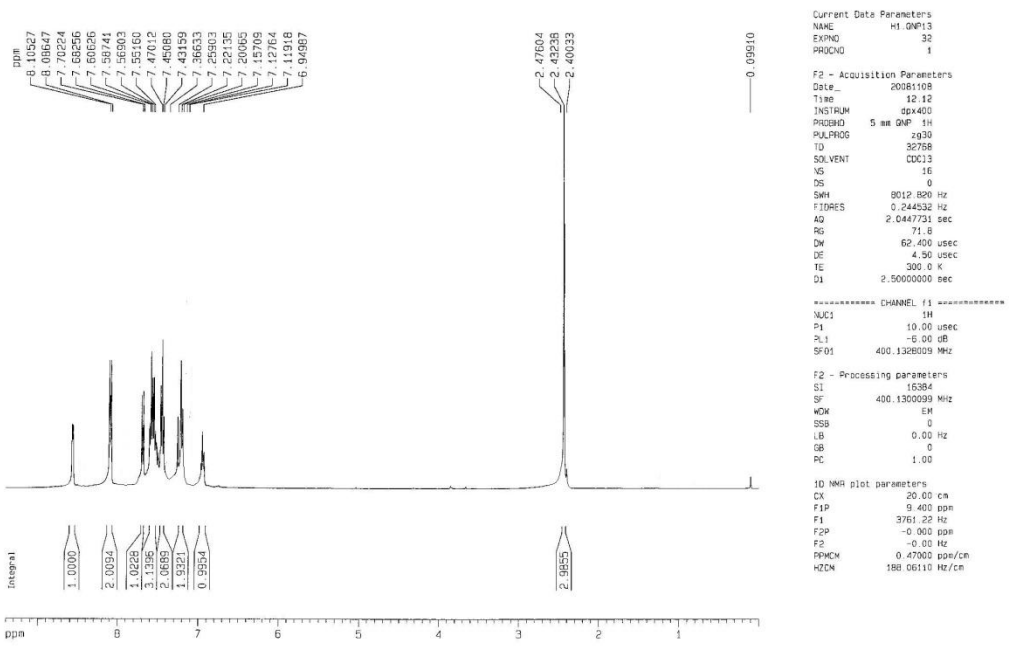


^{13}C-NMR of **2a**

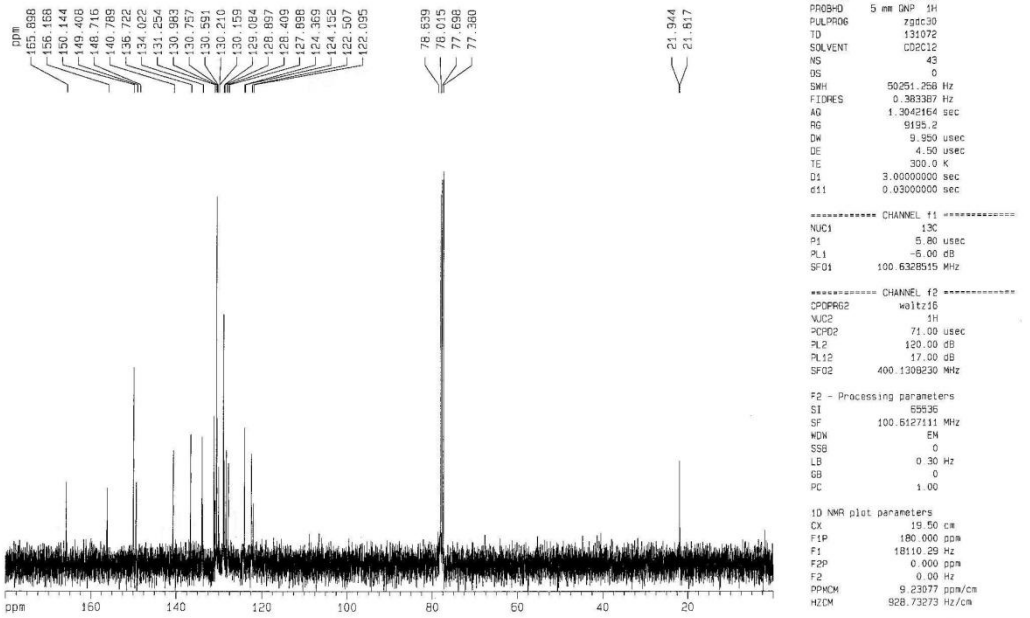


^{1}H-NMR of **2b**

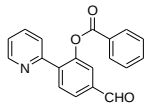


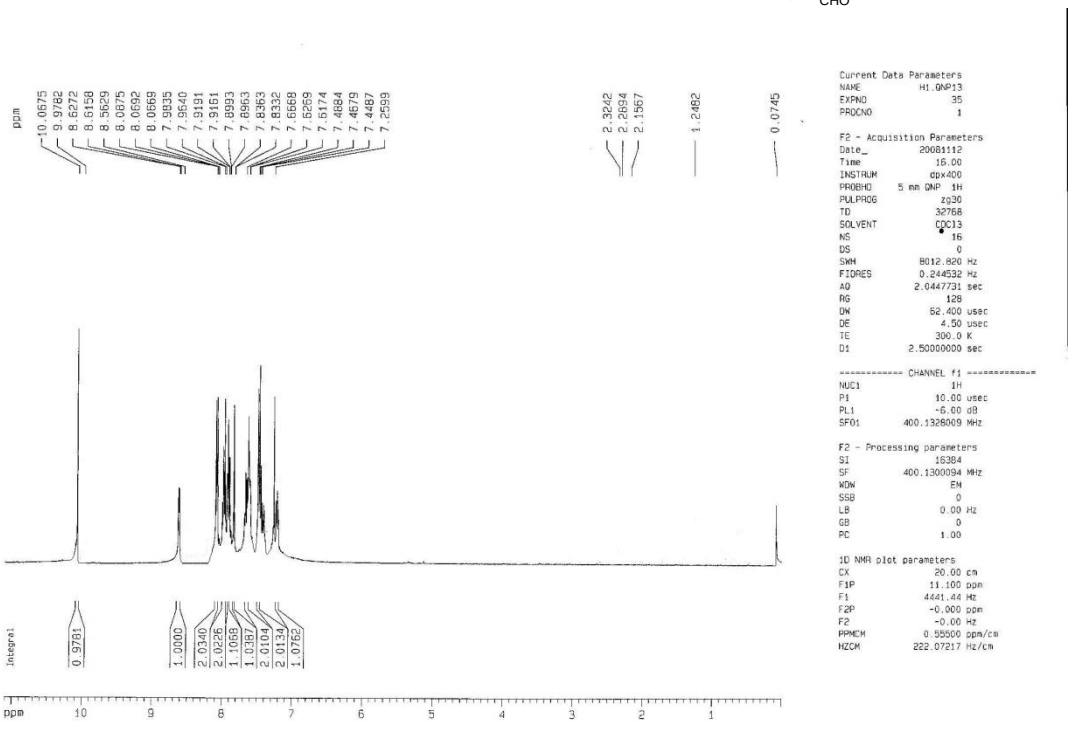


^{13}C-NMR of **2b**

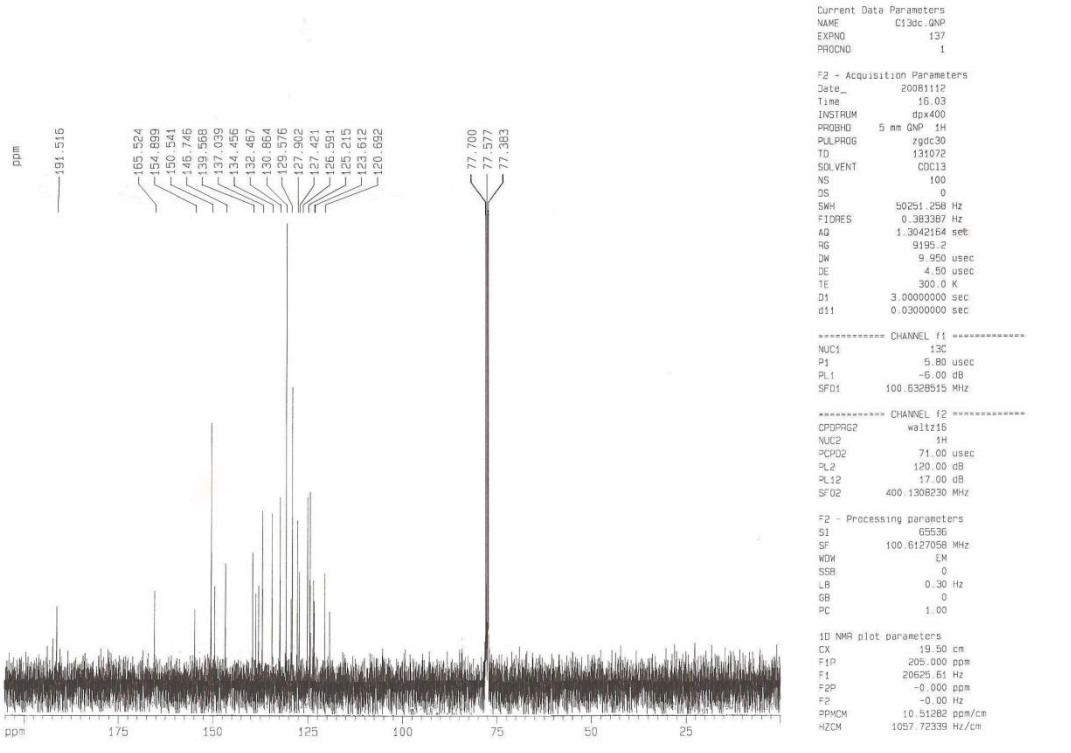


^{1}H-NMR of **2c**





^{13}C-NMR of **2c**



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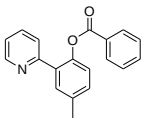

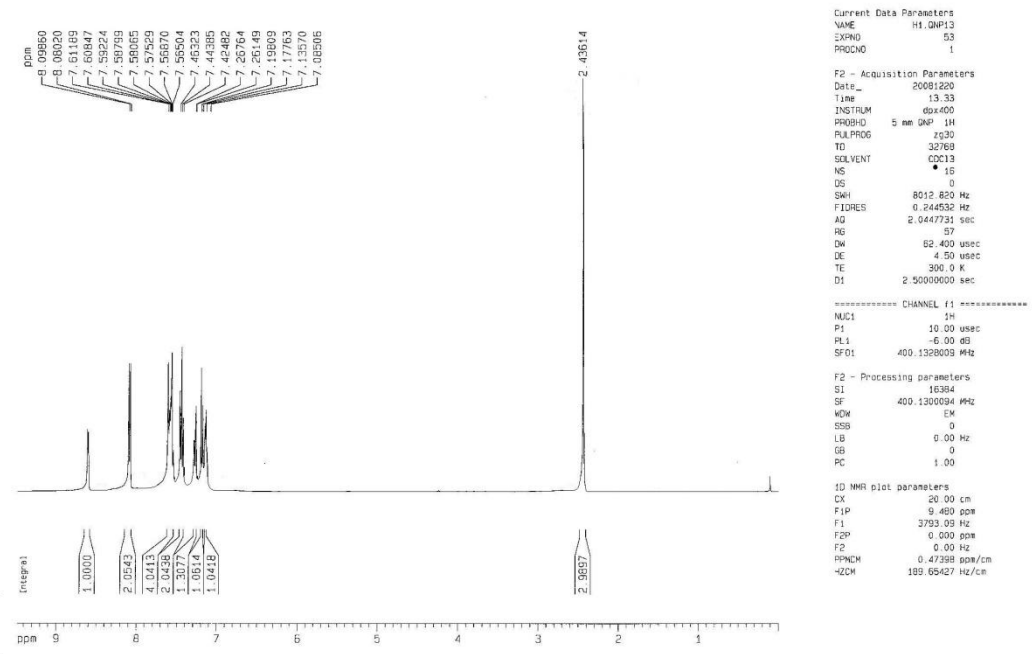


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PROCNO                       1

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TD                       32768
SOLVENT                  CDCl3
NS                          * 16
DS                           0
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FIDRES              0.244532 Hz
AQ                  2.0447731 sec
RG                          57
DW                    62.400 usec
DE                     4.50 usec
TE                     300.0 K
D1                  2.50000000 sec

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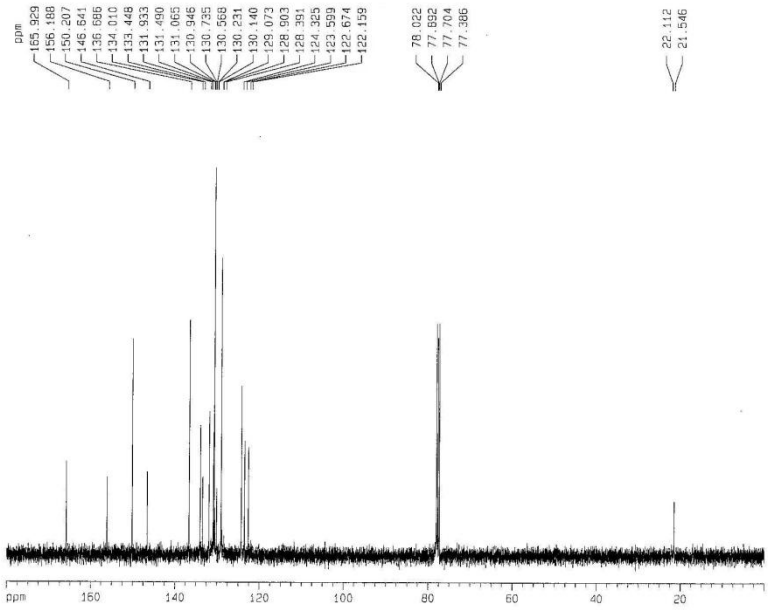
P1                        10.00 usec
PL1                       -6.00 dB
SFO1               400.1328009 MHz

F2 - Processing parameters
SI                       16384
SF                 400.1300094 MHz
WDW                         EM
SSB                          0
LB                        0.00 Hz
GB                           0
PC                        1.00

1D NMR plot parameters
CX                       20.00 cm
F1P                       9.480 ppm
F1                     3793.09 Hz
F2P                       0.000 ppm
F2                        0.00 Hz
PPMCM                 0.47398 ppm/cm
HZCM                189.65427 Hz/cm
```

^{13}C-NMR of **2d**




```
Current Data Parameters
NAME                  C13dc.QNP
EXPNO                       151
PROCNO                       1

F2 - Acquisition Parameters
Date_               20081220
Time                      13.34
INSTRUM                 dpx400
PROBHD     5 mm QNP  1H
PULPROG                 zgdc30
TD                      131072
SOLVENT                  CDCl3
NS                          83
DS                           0
SWH                50251.258 Hz
FIDRES              0.383387 Hz
AQ                  1.3042164 sec
RG                     9195.2
DW                     9.950 usec
DE                     4.50 usec
TE                     300.0 K
D1                  3.00000000 sec
d11                 0.03000000 sec

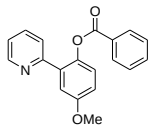
============ CHANNEL f1 =============
NUC1                         13C
P1                         5.80 usec
PL1                       -6.00 dB
SFO1               100.6328515 MHz

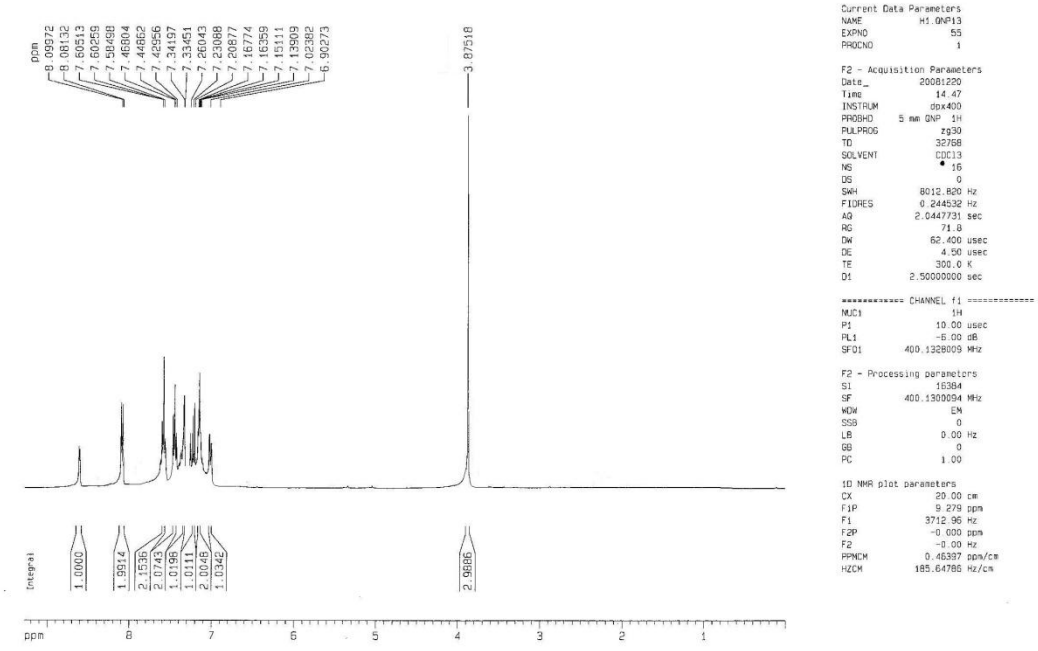
============ CHANNEL f2 =============
CPDPRG2                 waltz16
NUC2                         1H
PCPD2                     71.00 usec
PL2                      120.00 dB
PL12                      17.00 dB
SFO2               400.1308230 MHz

F2 - Processing parameters
SI                       65536
SF                 100.6127119 MHz
WDW                         EM
SSB                          0
LB                        0.30 Hz
GB                           0
PC                        1.00

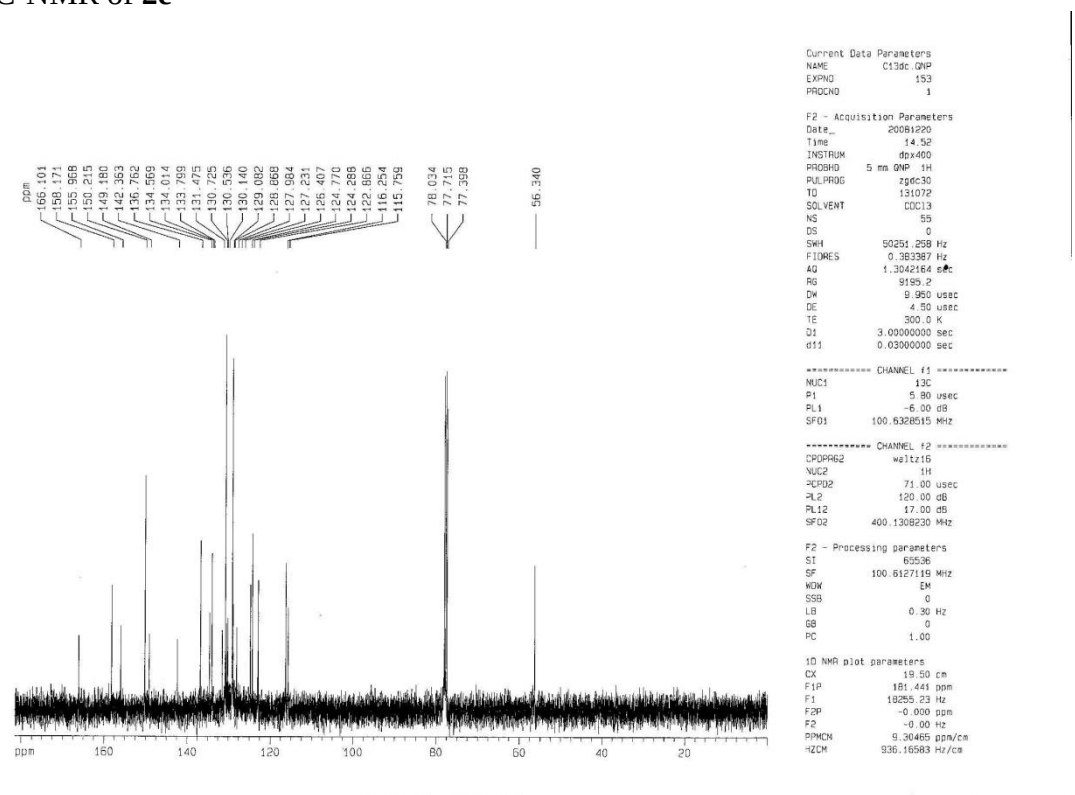
1D NMR plot parameters
CX                       19.50 cm
F1P                     180.000 ppm
F1                    18110.29 Hz
F2P                       0.000 ppm
F2                        0.00 Hz
PPMCM                 9.23077 ppm/cm
HZCM                928.73273 Hz/cm
```

^{1}H-NMR of **2e**

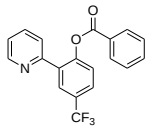


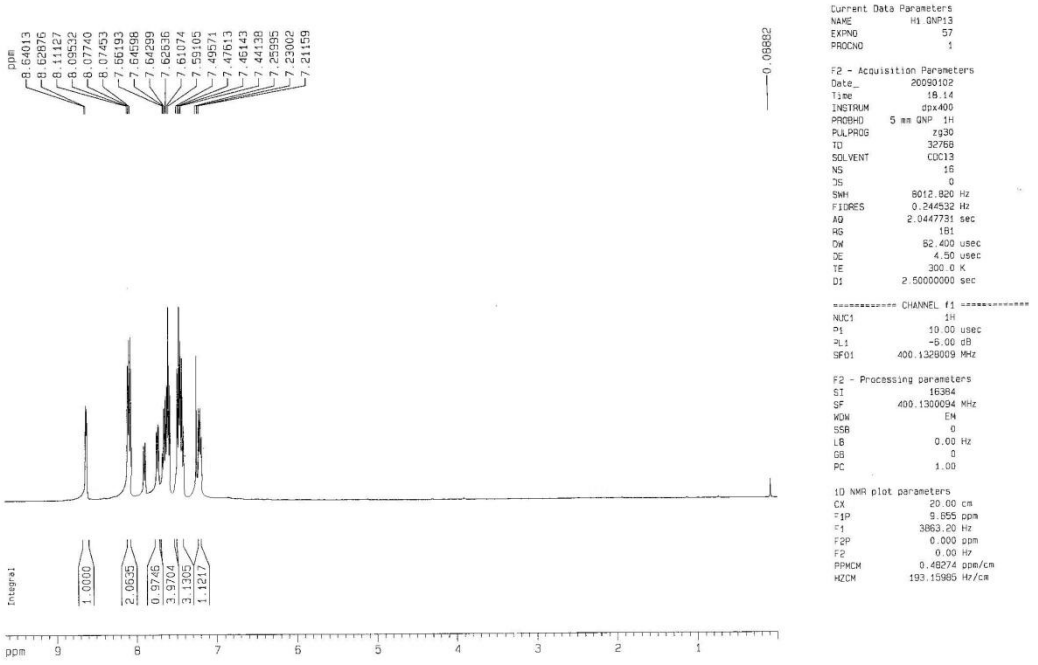


^{13}C-NMR of **2e**

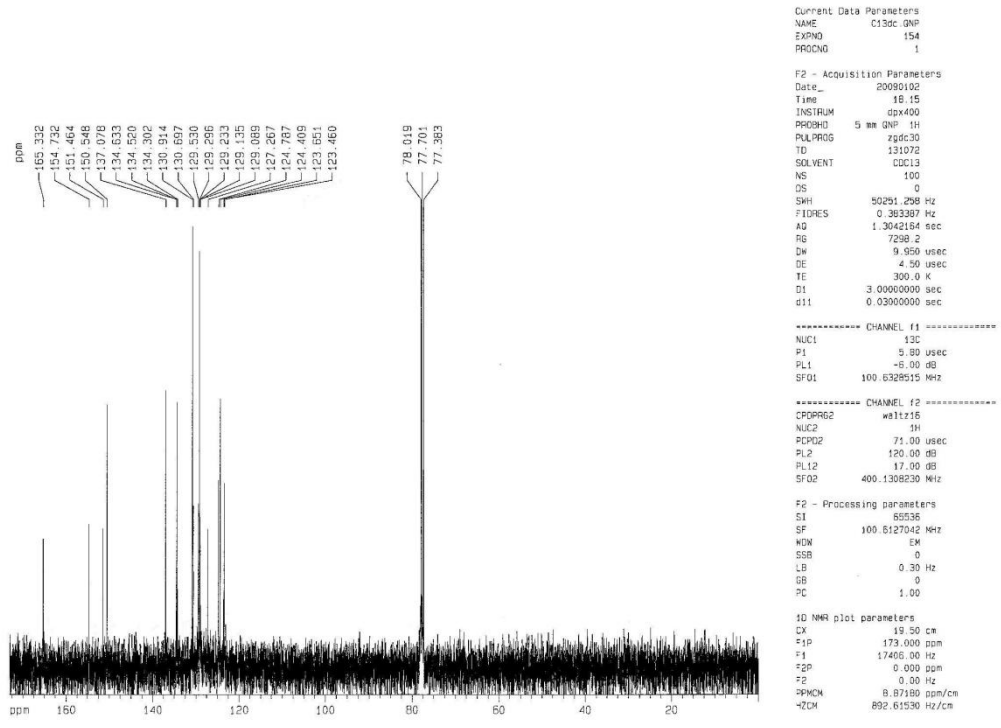


^{1}H-NMR of **2f**

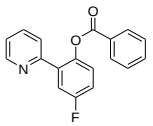


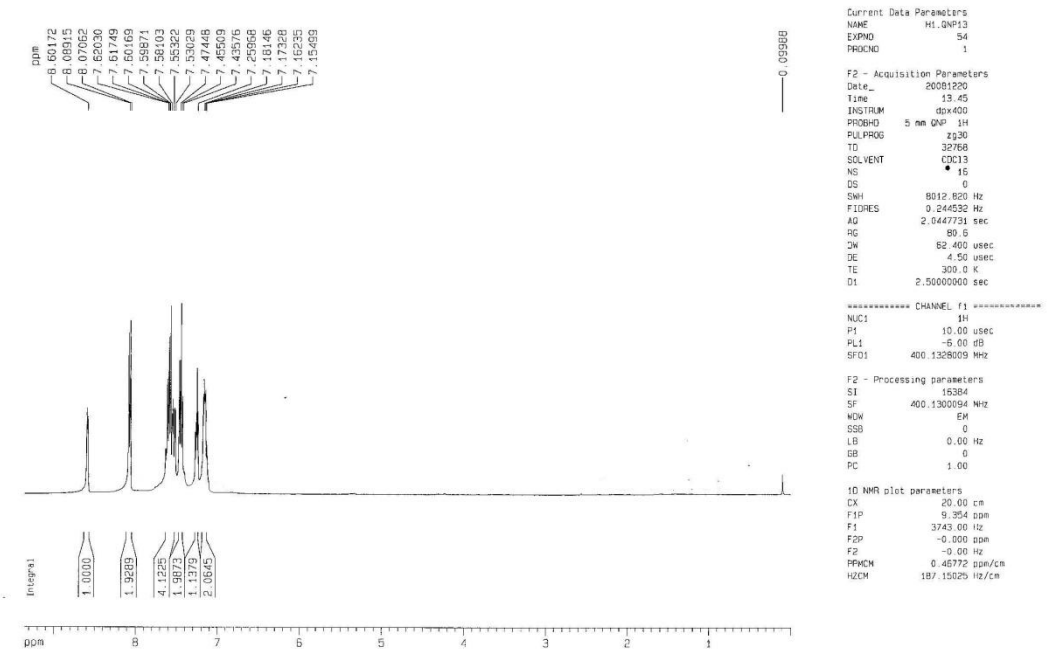


^{13}C-NMR of **2f**

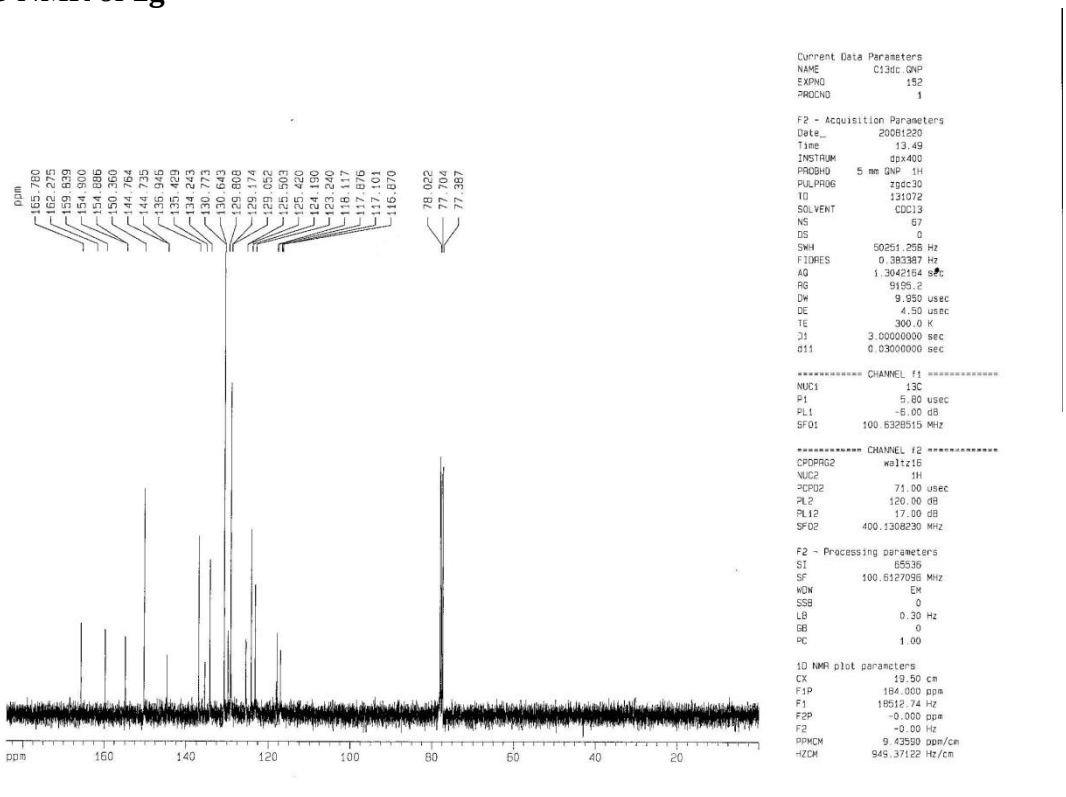


^{1}H-NMR of **2g**

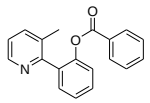


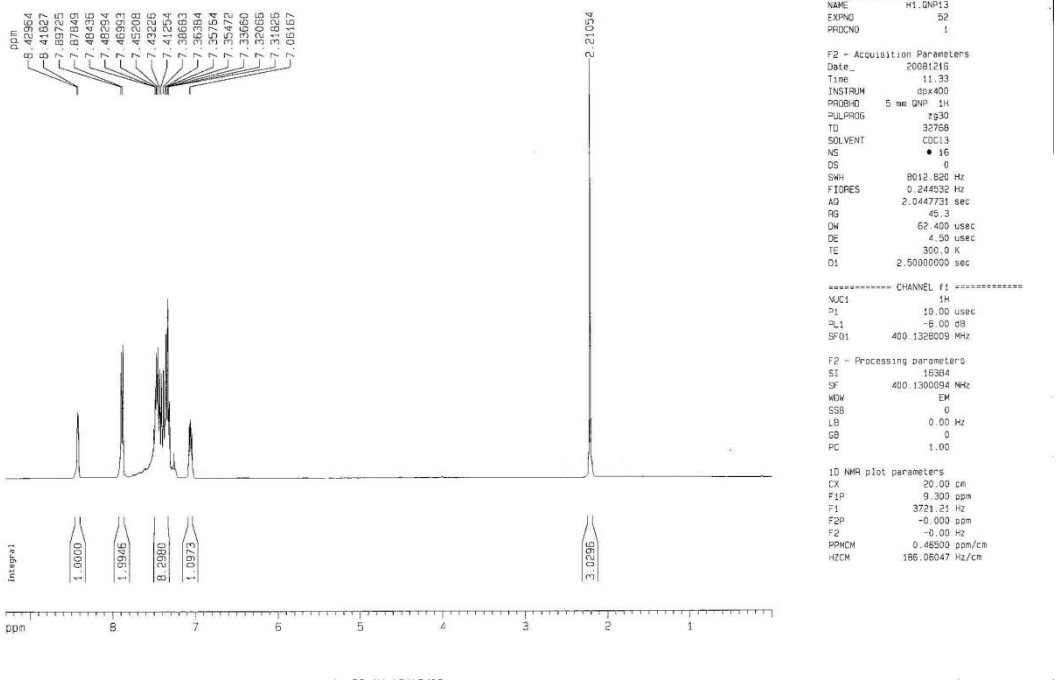


^{13}C-NMR of **2g**



^{1}H-NMR of **2h**






```
Current Data Parameters
NAME                  H1.GNP13
EXPNO                       52
PROCNO                       1

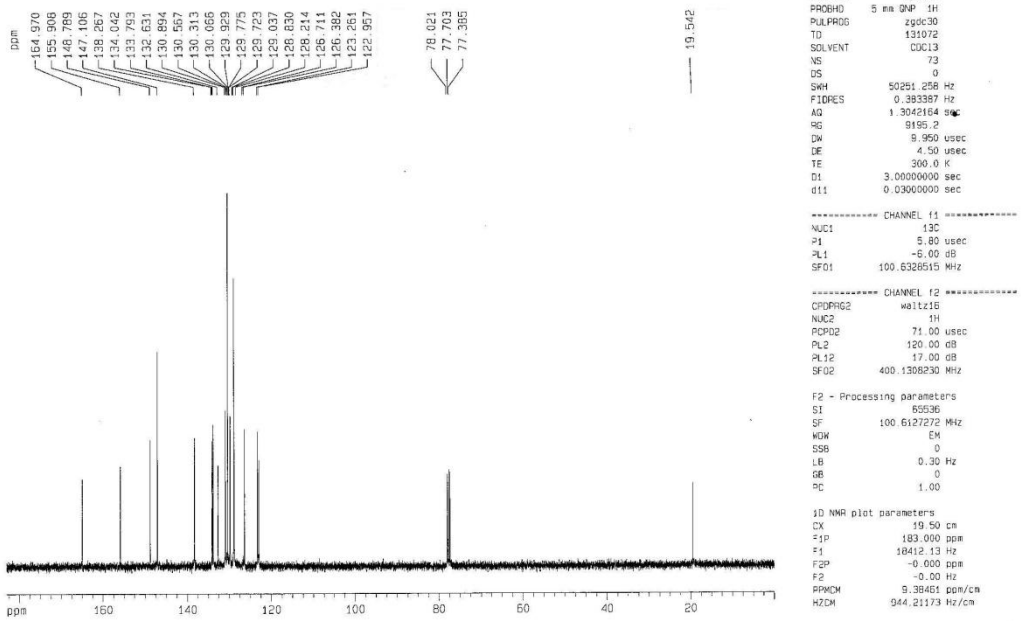
F2 - Acquisition Parameters
Date_               20081216
Time                    11.33
INSTRUM                 dpx400
PROBHD     5 mm GNP  1H
PULPROG                 zg30
TD                      32768
SOLVENT                 CDCl3
NS                    * 16
DS                          0
SWH                  8012.820 Hz
FIDRES               0.244532 Hz
AQ                   2.0447731 sec
RG                        45.3
DW                     62.400 usec
DE                      4.50 usec
TE                     300.0 K
D1                  2.50000000 sec

============ CHANNEL f1 =============
NUC1                       1H
P1                      10.00 usec
PL1                     -6.00 dB
SF01               400.1328009 MHz

F2 - Processing parameters
SI                      16384
SF                 400.1300094 MHz
WDW                        EM
SSB                         0
LB                      0.00 Hz
GB                          0
PC                       1.00

1D NMR plot parameters
CX                      20.00 cm
F1P                     9.300 ppm
F1                    3721.21 Hz
F2P                    -0.000 ppm
F2                     -0.00 Hz
PPMCM                 0.46500 ppm/cm
HZCM                186.06047 Hz/cm
```

^{13}C-NMR of **2h**




```
Current Data Parameters
NAME                  C13dc.GNP
EXPNO                       150
PROCNO                        1

F2 - Acquisition Parameters
Date_               20081216
Time                    11.42
INSTRUM                 dpx400
PROBHD     5 mm GNP  1H
PULPROG                 zgdc30
TD                     131072
SOLVENT                 CDCl3
NS                          73
DS                          0
SWH                 50251.258 Hz
FIDRES               0.383387 Hz
AQ                   1.3042164 sec
RG                       9195.2
DW                      9.950 usec
DE                      4.50 usec
TE                     300.0 K
D1                  3.00000000 sec
d11                 0.03000000 sec

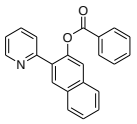
============ CHANNEL f1 =============
NUC1                       13C
P1                       5.80 usec
PL1                     -6.00 dB
SF01               100.6328515 MHz

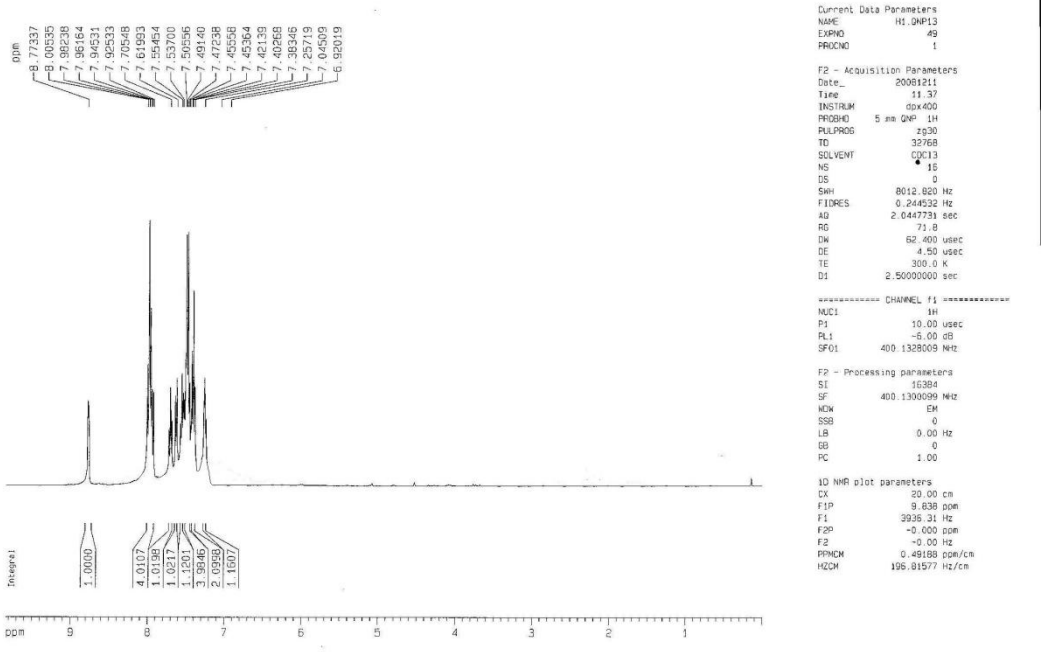
============ CHANNEL f2 =============
CPDPRG2                 waltz16
NUC2                       1H
PCPD2                   71.00 usec
PL2                     120.00 dB
PL12                     17.00 dB
SF02               400.1308230 MHz

F2 - Processing parameters
SI                      65536
SF                 100.6127272 MHz
WDW                        EM
SSB                         0
LB                      0.30 Hz
GB                          0
PC                       1.00

1D NMR plot parameters
CX                      19.50 cm
F1P                    183.000 ppm
F1                   18412.13 Hz
F2P                    -0.000 ppm
F2                     -0.00 Hz
PPMCM                 9.38461 ppm/cm
HZCM                944.21173 Hz/cm
```

^{1}H-NMR of **2i**






```
Current Data Parameters
NAME                  H1_GNP13
EXPNO                       49
PROCNO                       1

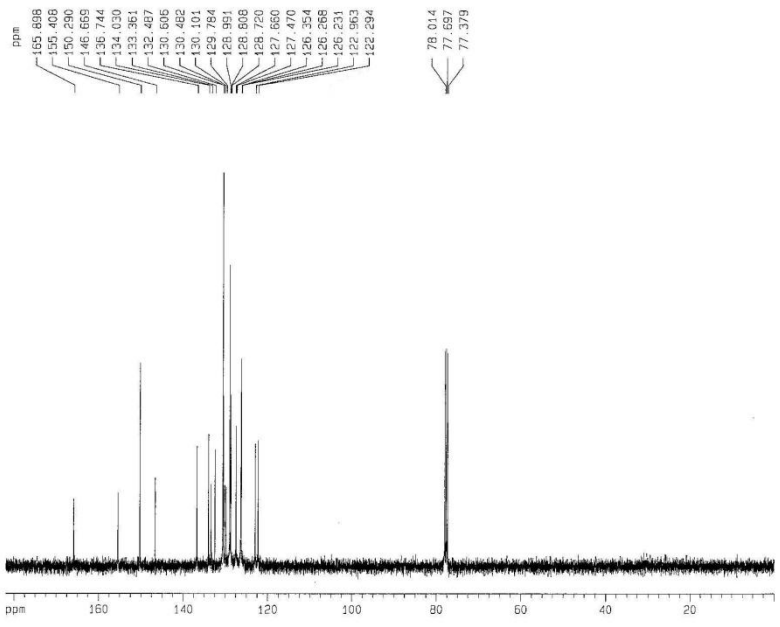
F2 - Acquisition Parameters
Date_               20081211
Time                    11.37
INSTRUM                 dpx400
PROBHD     5 mm GNP  1H
PULPROG                 zg30
TD                      32768
SOLVENT                 CDCl3
NS                          16
DS                           0
SWH                  8012.820 Hz
FIDRES               0.244532 Hz
AQ                   2.0447731 sec
RG                        71.8
DW                      62.400 usec
DE                       4.50 usec
TE                      300.0 K
D1                   2.50000000 sec

========== CHANNEL f1 ==========
NUC1                        1H
P1                       10.00 usec
PL1                      -5.00 dB
SF01             400.1328009 MHz

F2 - Processing parameters
SI                       16384
SF                400.1300099 MHz
WDW                         EM
SSB                          0
LB                        0.00 Hz
GB                           0
PC                        1.00

1D NMR plot parameters
CX                       20.00 cm
F1P                       9.838 ppm
F1                     3936.31 Hz
F2P                      -0.000 ppm
F2                       -0.00 Hz
PPMCM                 0.49188 ppm/cm
HZCM                196.81577 Hz/cm
```

^{13}C-NMR of **2i**




```
Current Data Parameters
NAME                  C13dc_GNP
EXPNO                       148
PROCNO                       1

F2 - Acquisition Parameters
Date_               20081211
Time                    11.40
INSTRUM                 dpx400
PROBHD     5 mm GNP  1H
PULPROG                 zgdc30
TD                      131072
SOLVENT                 CDCl3
NS                          101
DS                           0
SWH                  50251.258 Hz
FIDRES               0.383387 Hz
AQ                   1.3042154 sec
RG                        9195.2
DW                       9.950 usec
DE                       4.50 usec
TE                      300.0 K
D1                   3.00000000 sec
d11                  0.03000000 sec

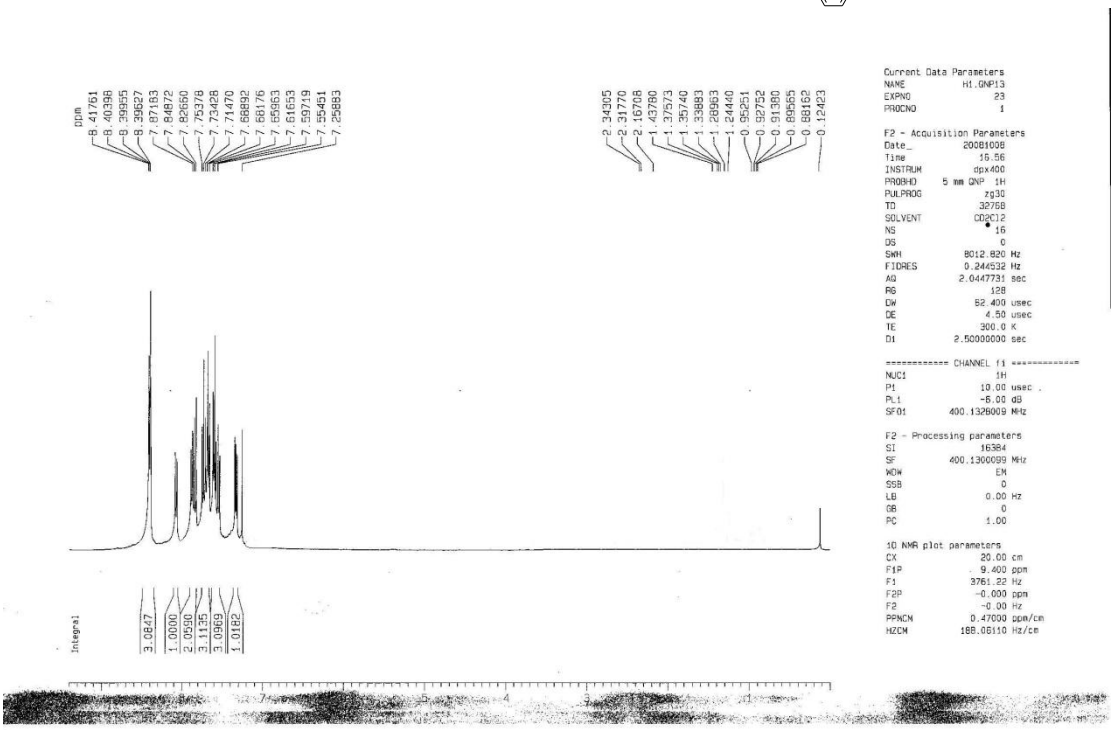
========== CHANNEL f1 ==========
NUC1                        13C
P1                        5.80 usec
PL1                      -6.00 dB
SF01             100.6328515 MHz

========== CHANNEL f2 ==========
CPDPRG2                 waltz16
NUC2                        1H
PCPD2                    71.00 usec
PL2                     120.00 dB
PL12                     17.00 dB
SF02             400.1308230 MHz

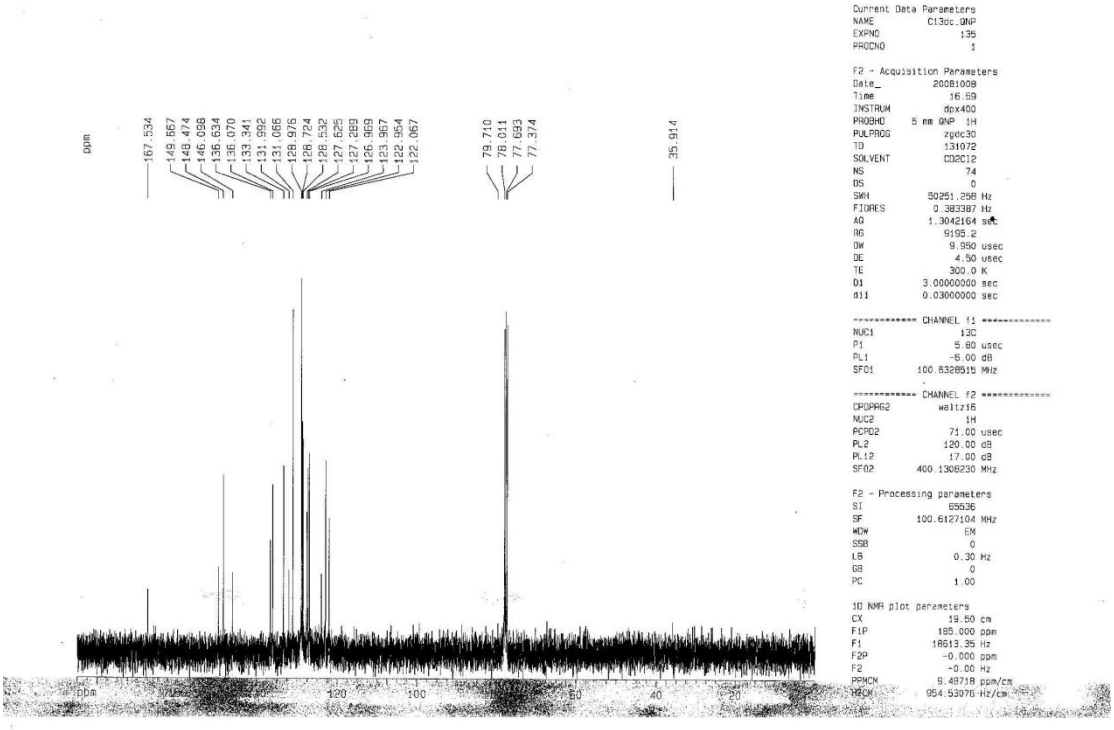
F2 - Processing parameters
SI                       65536
SF                100.6127173 MHz
WDW                         EM
SSB                          0
LB                        0.30 Hz
GB                           0
PC                        1.00

1D NMR plot parameters
CX                       19.50 cm
F1P                     182.000 ppm
F1                     18311.51 Hz
F2P                      0.000 ppm
F2                       0.00 Hz
PPMCM                 9.33333 ppm/cm
HZCM                939.05200 Hz/cm
```

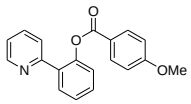
^{1}H-NMR of **2j**

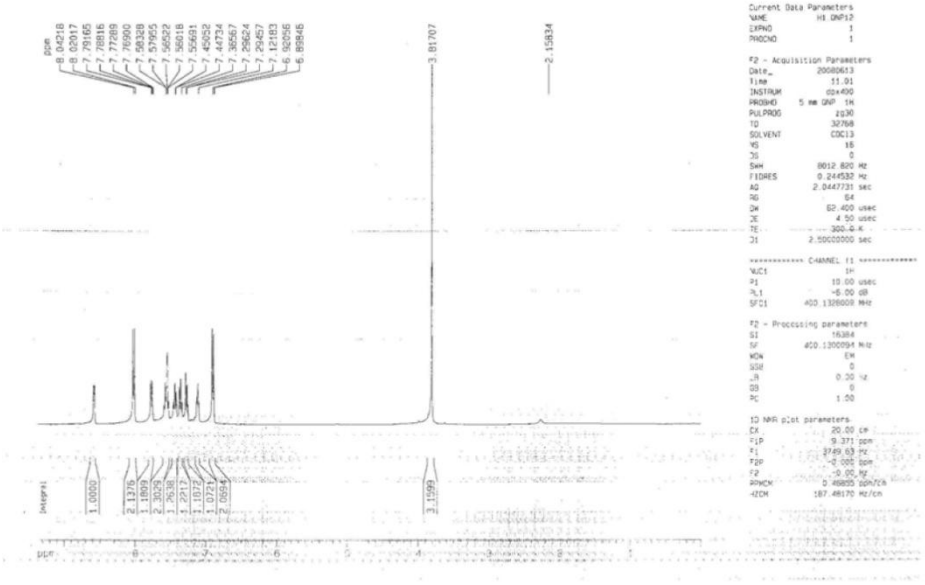


^{13}C-NMR of **2j**

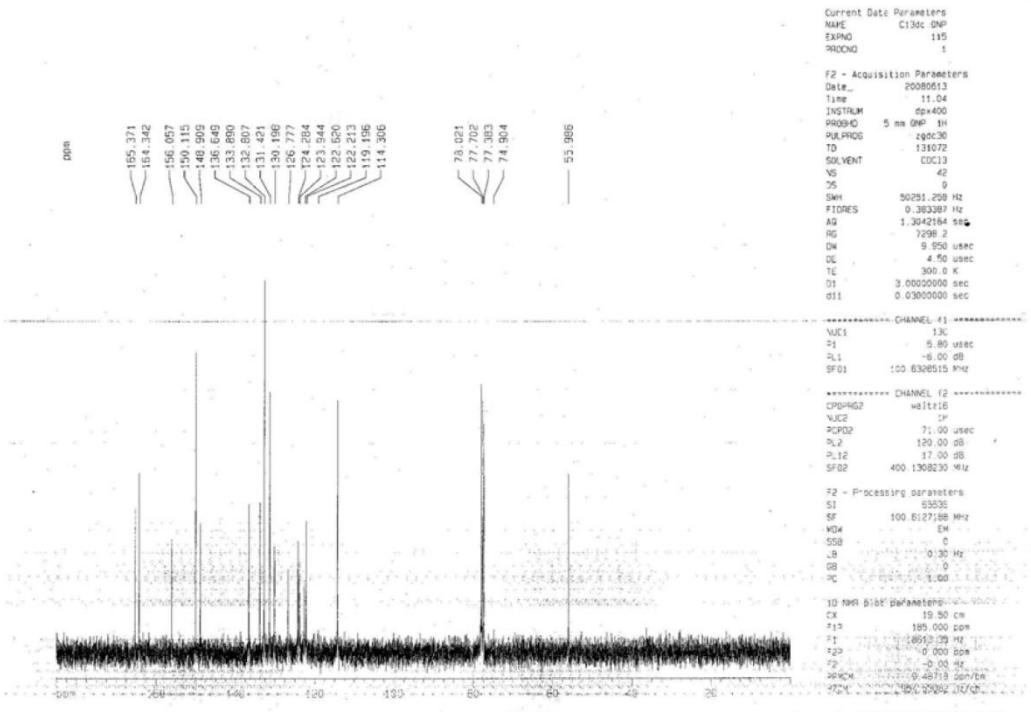


^{1}H-NMR of **2k**

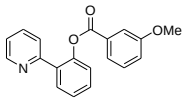


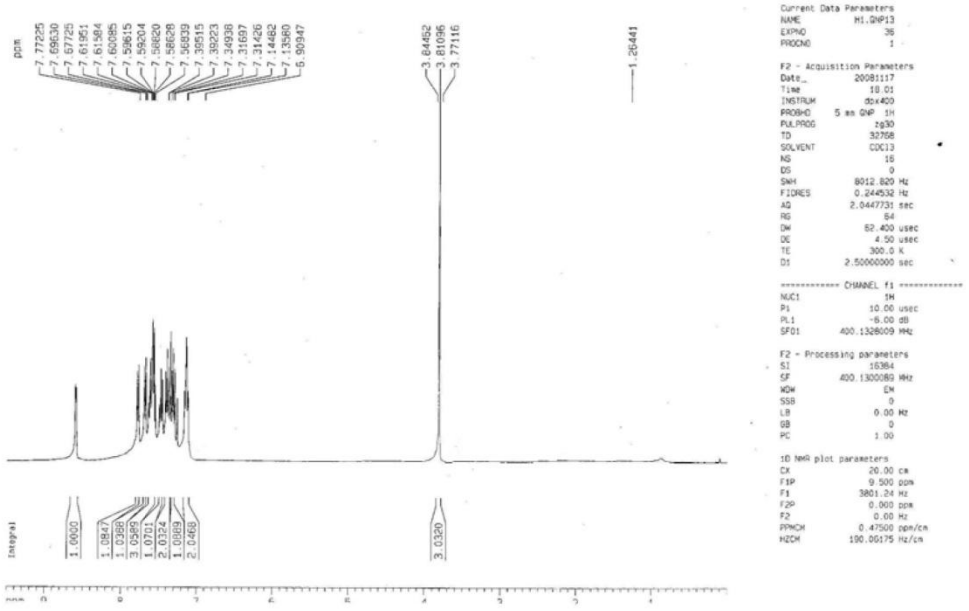


^{13}C-NMR of **2k**

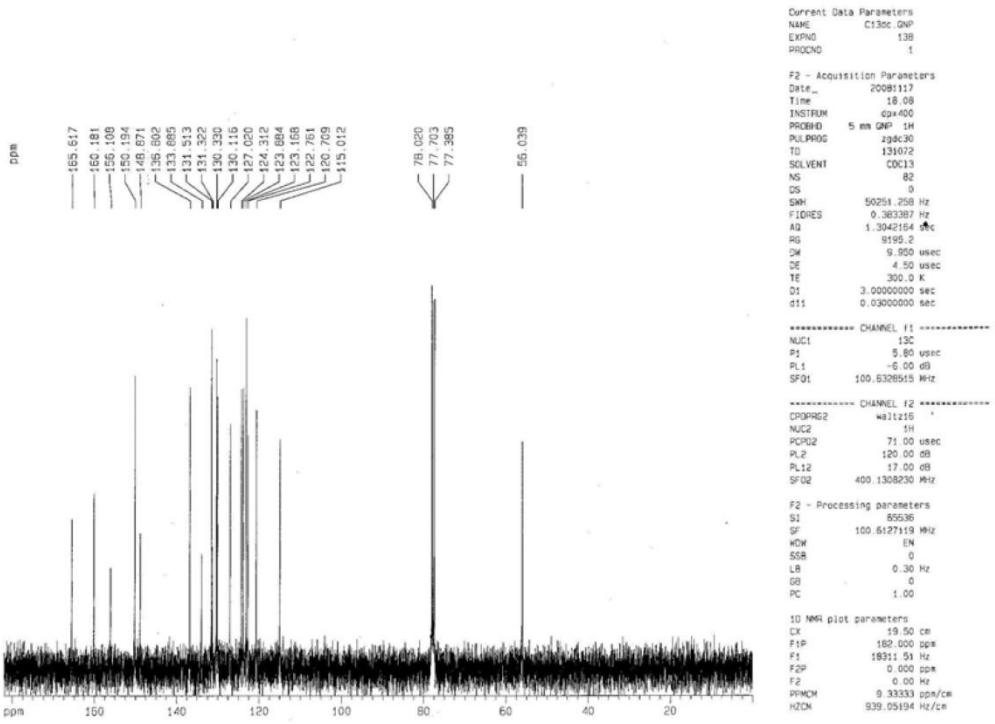


^{1}H-NMR of **2l**

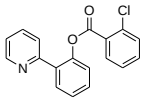


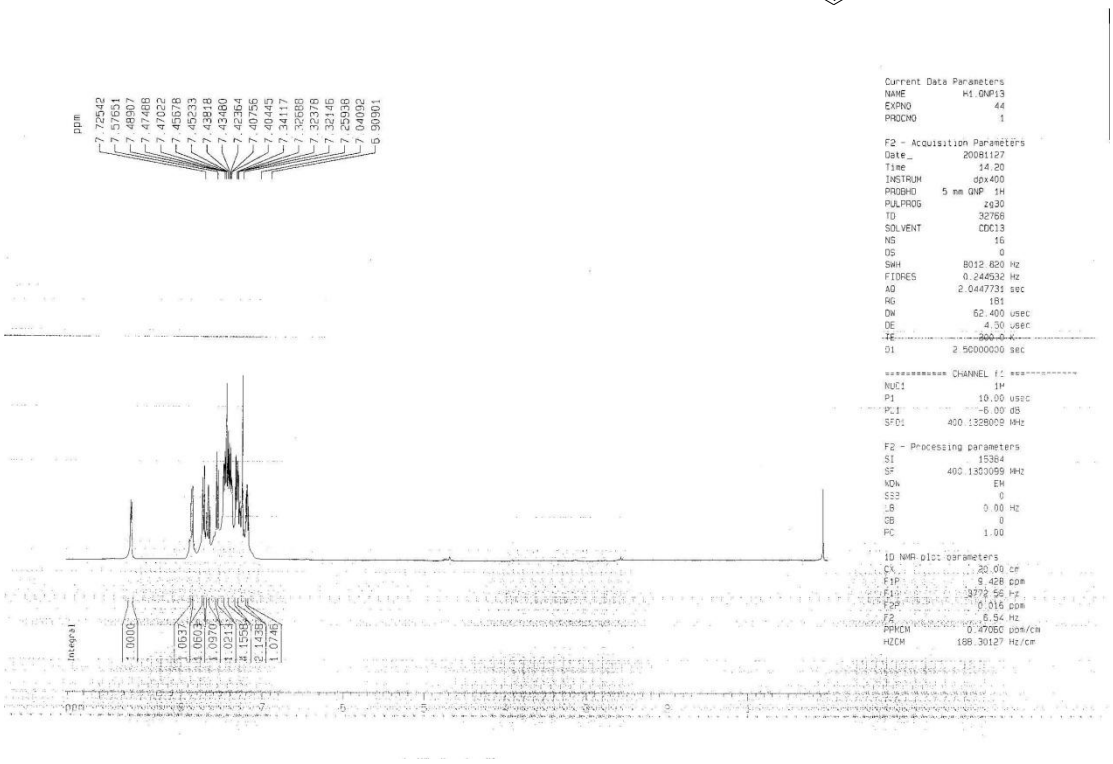


^{13}C-NMR of **2l**

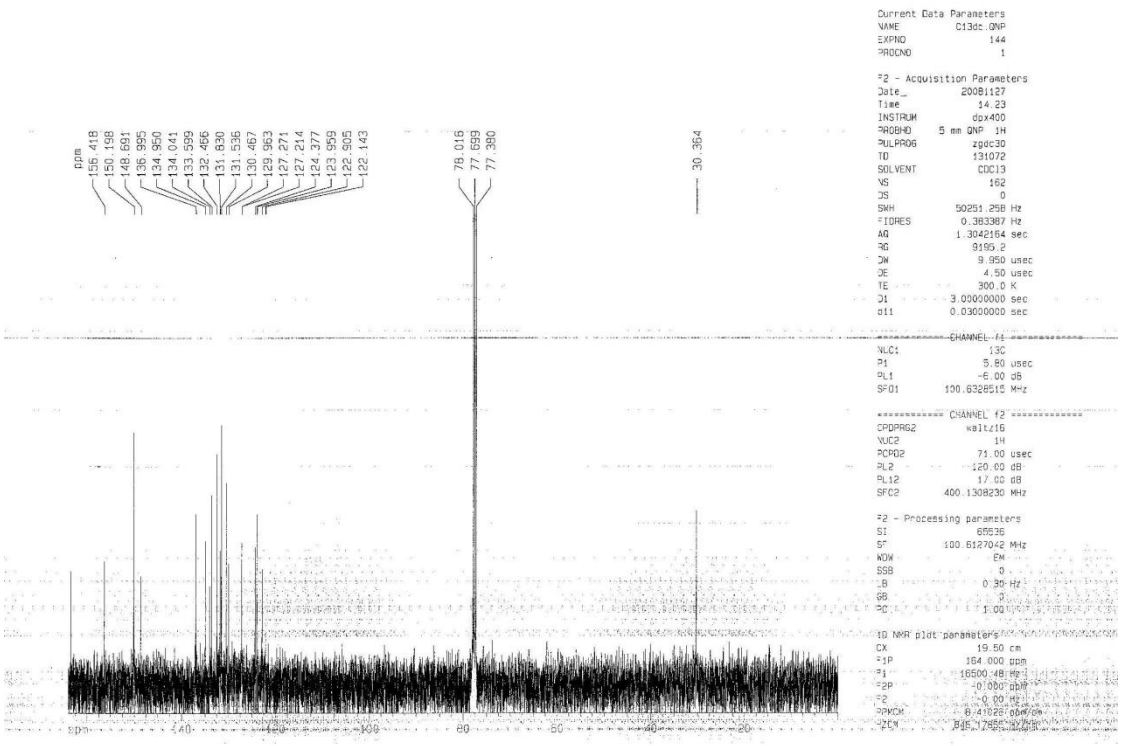


^{1}H-NMR of **2m**

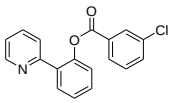


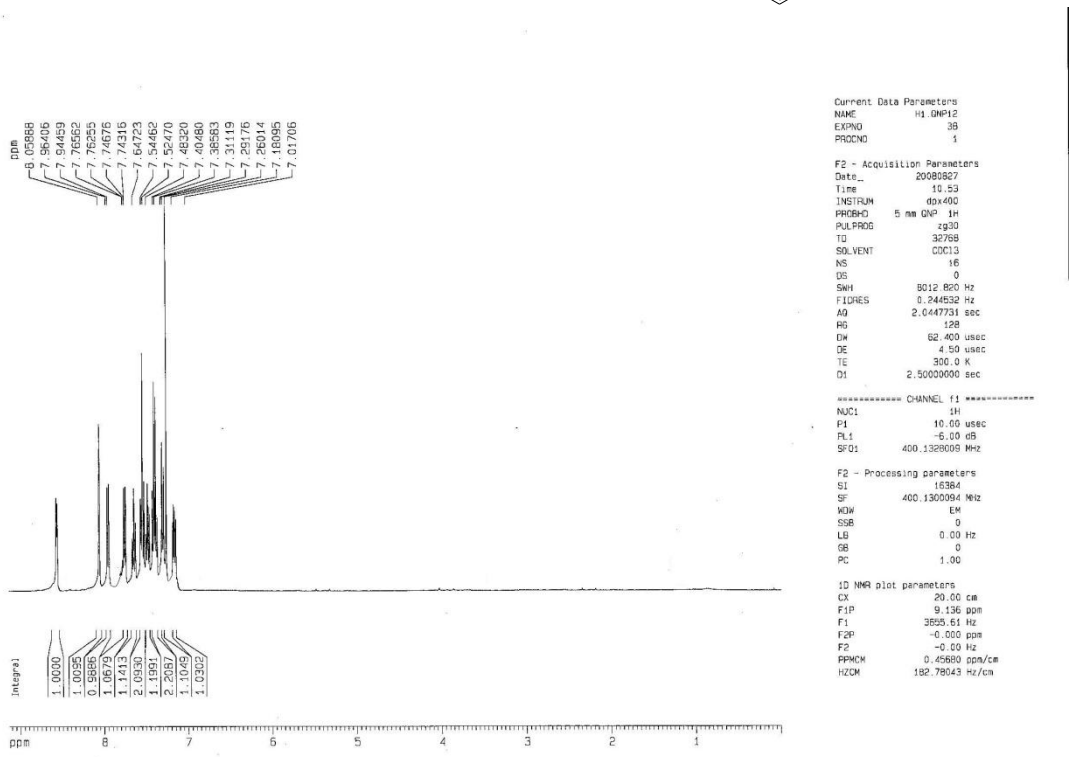


^{13}C-NMR of **2m**

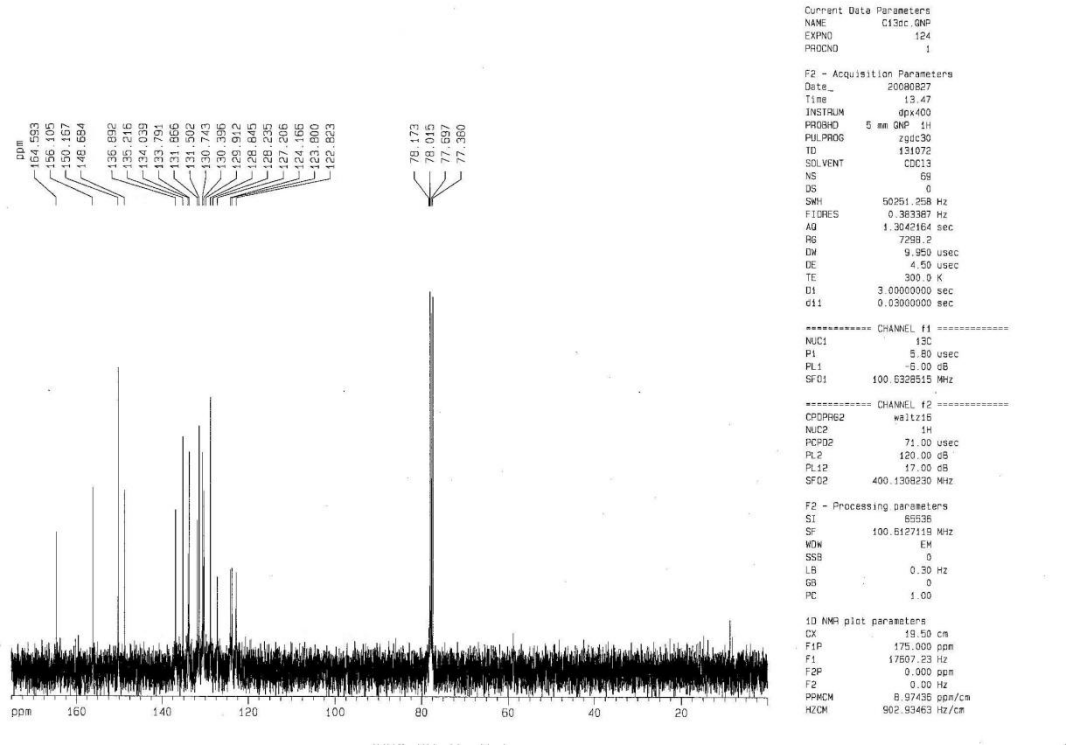


^{1}H-NMR of **2n**

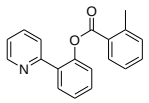


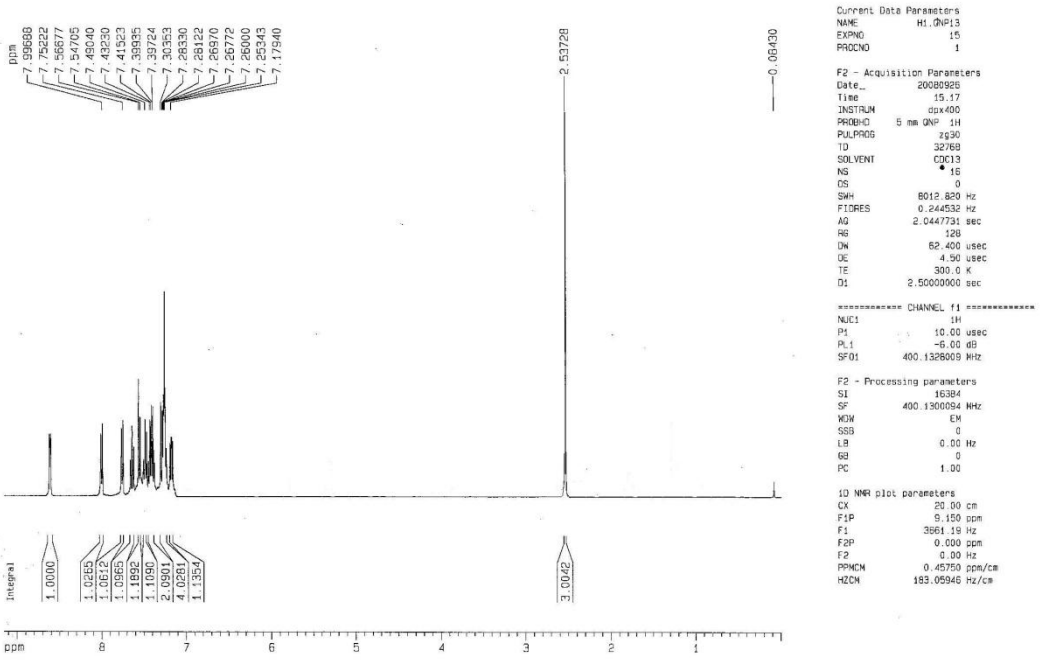


^{13}C-NMR of **2n**

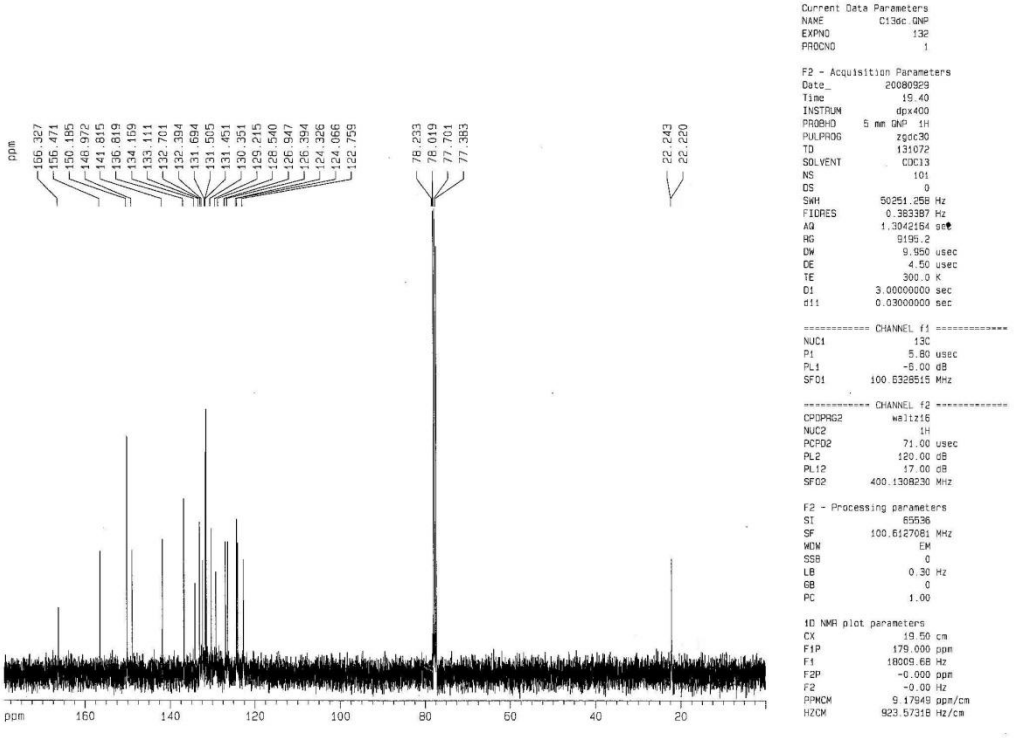


^{1}H-NMR of **2o**

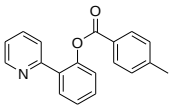


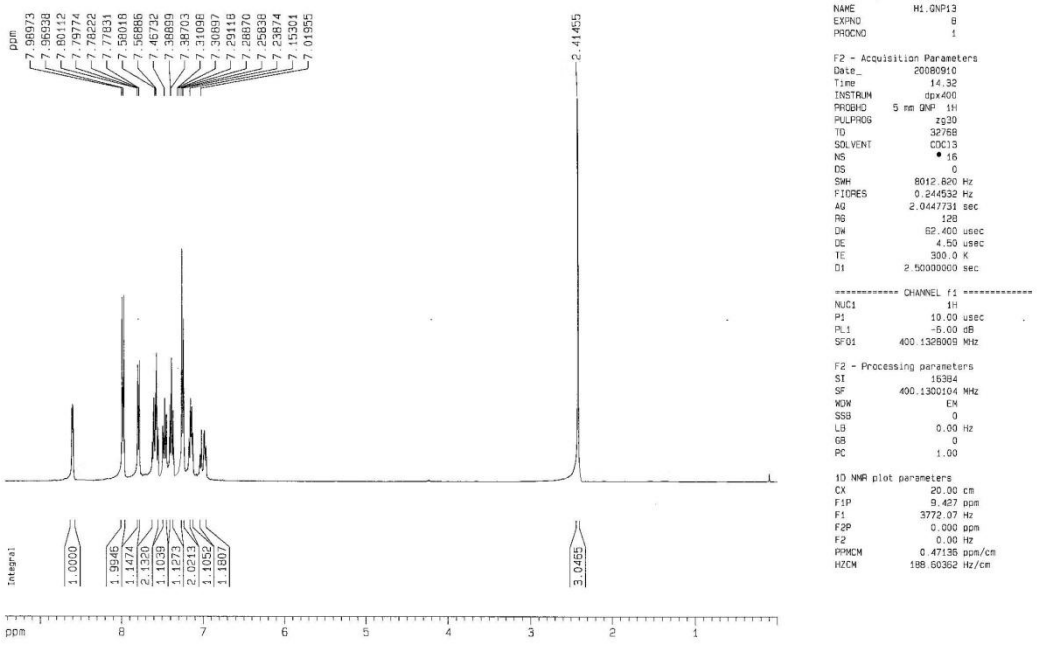


^{13}C-NMR of **2o**



^{1}H-NMR of **2p**






```
Current Data Parameters
NAME                  H1.GNP13
EXPNO                        8
PROCNO                       1

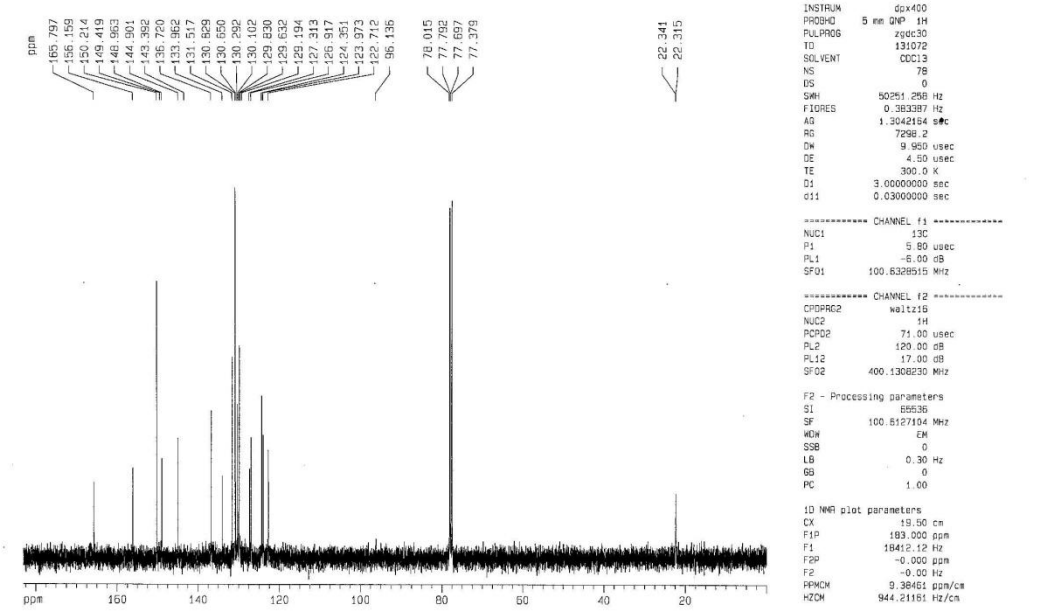
F2 - Acquisition Parameters
Date_                 20080910
Time                     14.32
INSTRUM                dpx400
PROBHD     5 mm GNP  1H
PULPROG                 zg30
TD                      32768
SOLVENT                 CDCl3
NS                         * 16
DS                          0
SWH                  8012.820 Hz
FIDRES               0.244532 Hz
AQ                   2.0447731 sec
RG                        128
DW                     62.400 usec
DE                      4.50 usec
TE                     300.0 K
D1                   2.50000000 sec

============ CHANNEL f1 ============
NUC1                       1H
P1                      10.00 usec
PL1                     -6.00 dB
SFO1               400.1328009 MHz

F2 - Processing parameters
SI                         16384
SF                 400.1300104 MHz
WDW                           EM
SSB                            0
LB                          0.00 Hz
GB                             0
PC                          1.00

1D NMR plot parameters
CX                         20.00 cm
F1P                         9.427 ppm
F1                       3772.07 Hz
F2P                         0.000 ppm
F2                          0.00 Hz
PPMCM                  0.47136 ppm/cm
HZCM                 188.60362 Hz/cm
```

^{13}C-NMR of **2p**




```
Current Data Parameters
NAME                  C13dc.GNP
EXPNO                       128
PROCNO                        1

F2 - Acquisition Parameters
Date_                 20080910
Time                     14.36
INSTRUM                dpx400
PROBHD     5 mm GNP  1H
PULPROG                zgdc30
TD                     131072
SOLVENT                 CDCl3
NS                         78
DS                          0
SWH                  50251.256 Hz
FIDRES               0.383387 Hz
AQ                   1.3042164 sec
RG                        7298.2
DW                      9.950 usec
DE                      4.50 usec
TE                     300.0 K
D1                   3.00000000 sec
d11                  0.03000000 sec

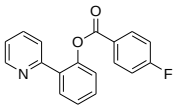
============ CHANNEL f1 ============
NUC1                      13C
P1                      5.80 usec
PL1                     -6.00 dB
SFO1               100.6328515 MHz

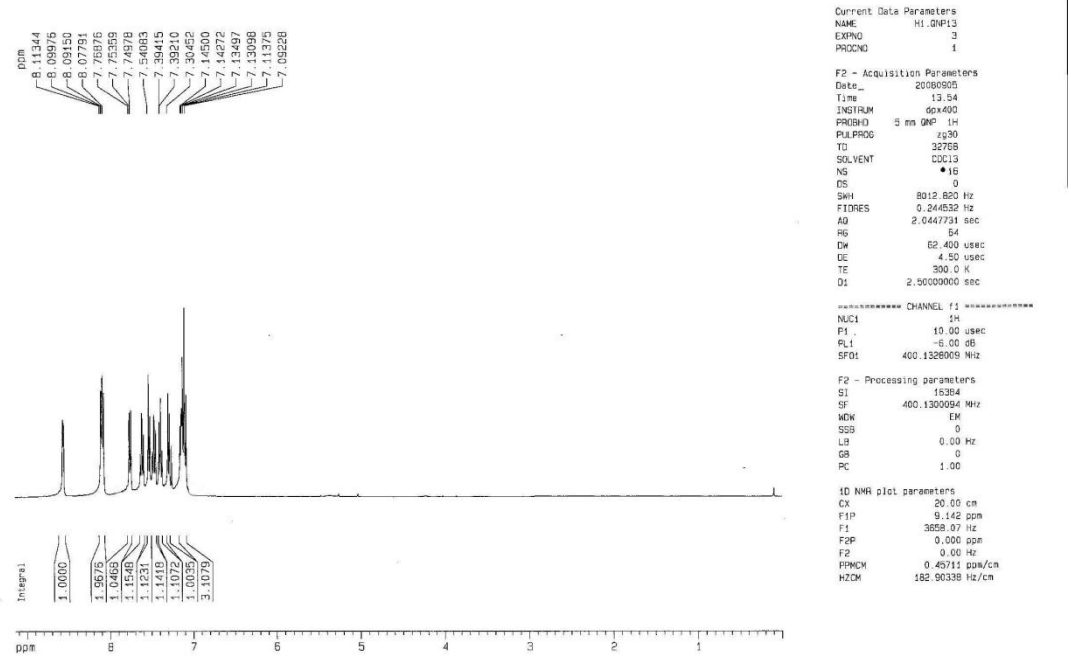
============ CHANNEL f2 ============
CPDPRG2                waltz16
NUC2                       1H
PCPD2                  71.00 usec
PL2                    120.00 dB
PL12                    17.00 dB
SFO2               400.1308230 MHz

F2 - Processing parameters
SI                         65536
SF                 100.6127104 MHz
WDW                           EM
SSB                            0
LB                          0.30 Hz
GB                             0
PC                          1.00

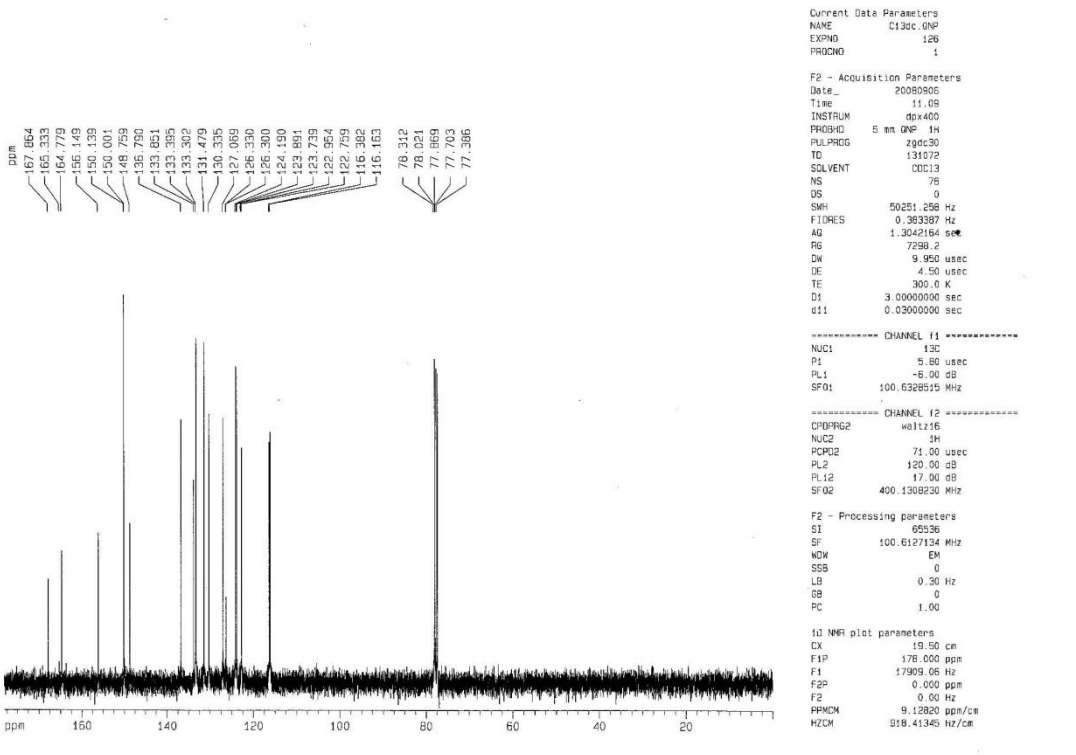
1D NMR plot parameters
CX                         19.50 cm
F1P                      193.000 ppm
F1                     19412.12 Hz
F2P                       -0.000 ppm
F2                         -0.00 Hz
PPMCM                  9.38461 ppm/cm
HZCM                 944.21161 Hz/cm
```

^{1}H-NMR of **2q**

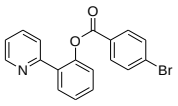


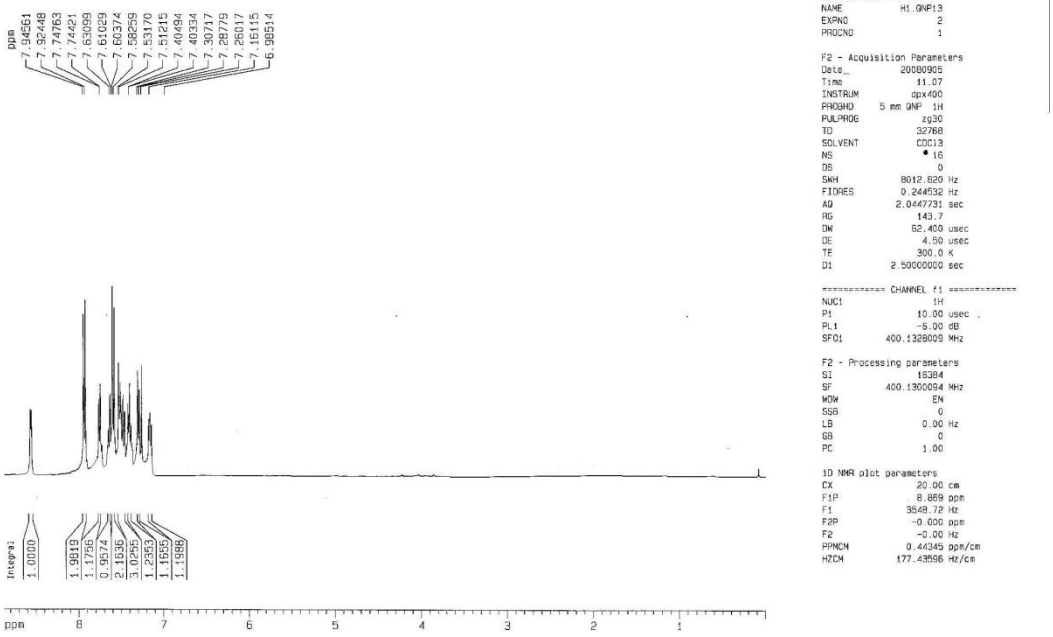


^{13}C-NMR of **2q**

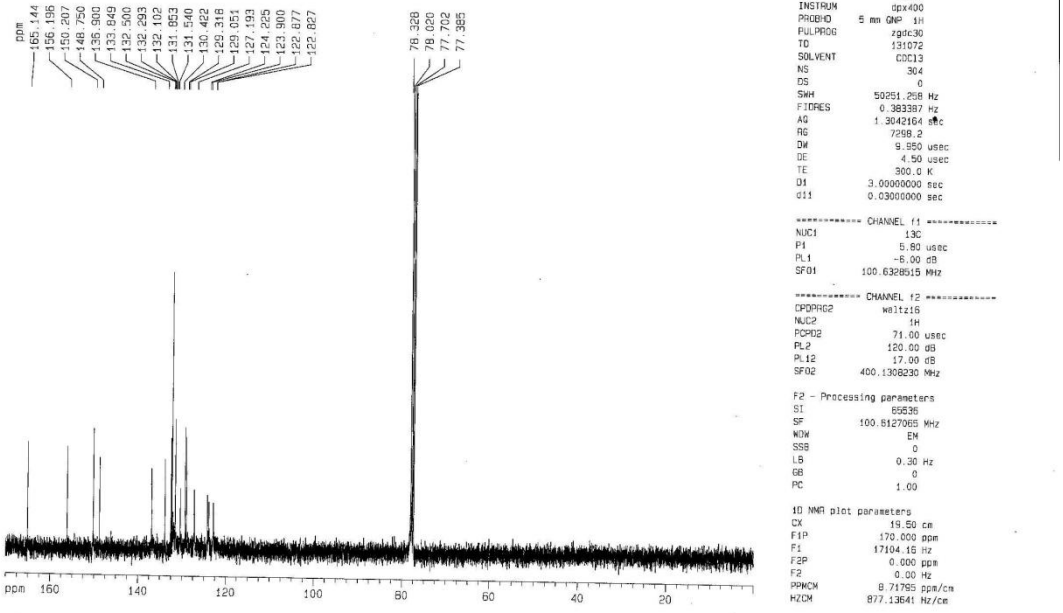


^{1}H-NMR of **2r**

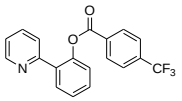


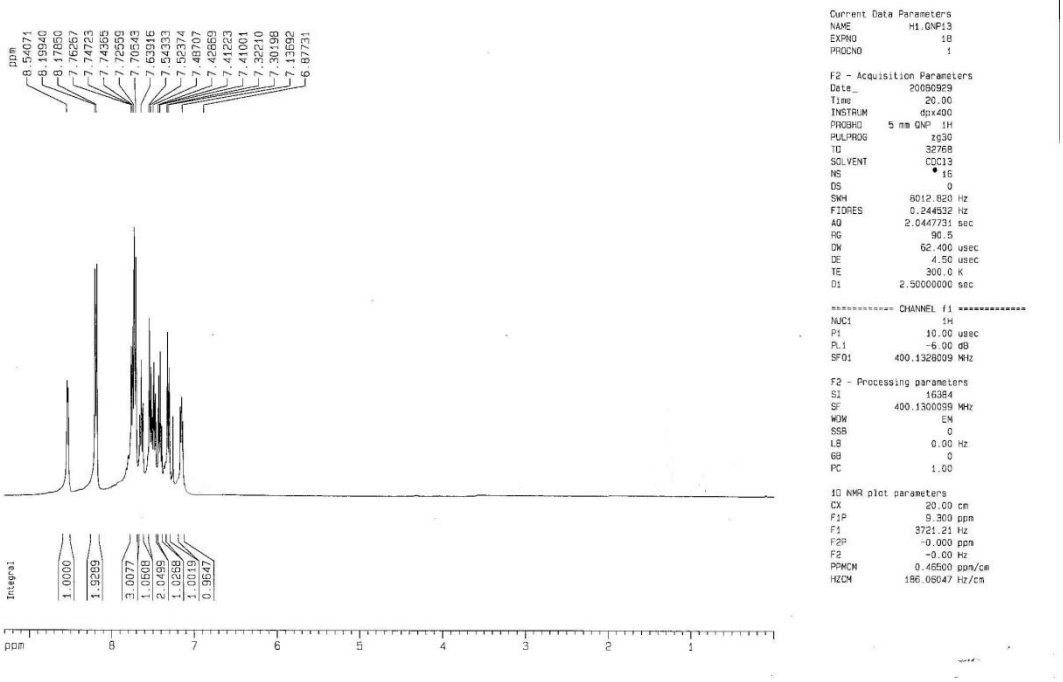


^{13}C-NMR of **2r**



^{1}H-NMR of **2s**



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Current Data Parameters
NAME                  H1.GNP13
EXPNO                       18
PROCNO                       1

F2 - Acquisition Parameters
Date_                 20080929
Time                      20.00
INSTRUM                 dpx400
PROBHD     5 mm GNP  1H
PULPROG                   zg30
TD                        32768
SOLVENT                   CDCl3
NS                          16
DS                           0
SWH                    8012.820 Hz
FIDRES                 0.244532 Hz
AQ                     2.0447731 sec
RG                         90.5
DW                       62.400 usec
DE                        4.50 usec
TE                       300.0 K
D1                    2.50000000 sec

============ CHANNEL f1 =============
NUC1                         1H
P1                        10.00 usec
PL1                       -6.00 dB
SFO1                400.1328099 MHz

F2 - Processing parameters
SI                        16384
SF                  400.1300099 MHz
WDW                          EM
SSB                           0
LB                         0.00 Hz
GB                            0
PC                         1.00

1D NMR plot parameters
CX                        20.00 cm
F1P                       9.300 ppm
F1                      3721.21 Hz
F2P                      -0.000 ppm
F2                       -0.00 Hz
PPMCM                 0.46500 ppm/cm
HZCM                186.06047 Hz/cm
```
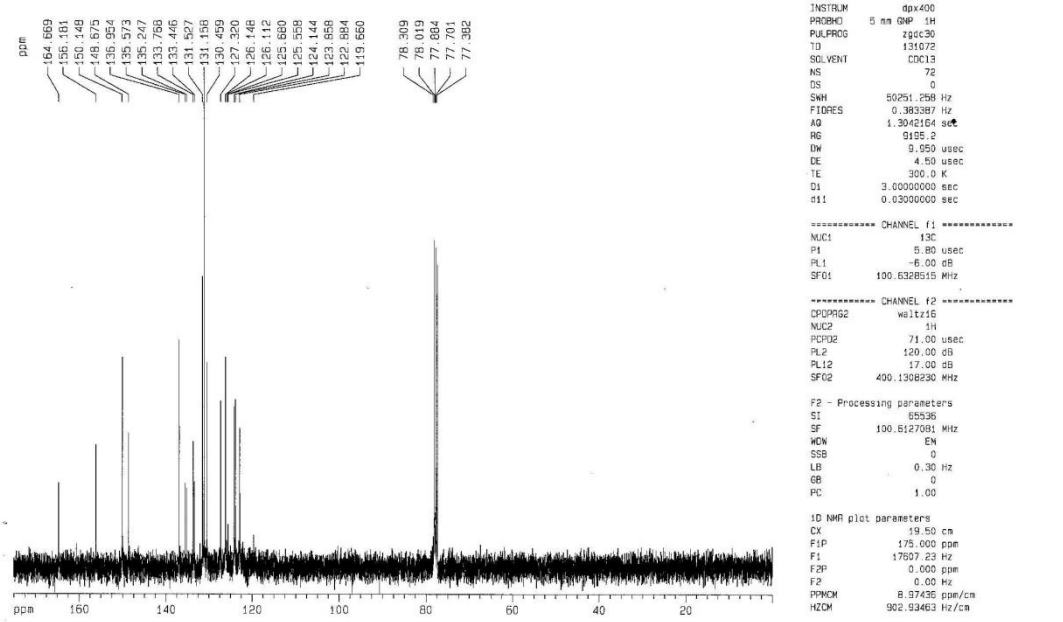

^{13}C-NMR of **2s**

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Current Data Parameters
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EXPNO                       133
PROCNO                       1

F2 - Acquisition Parameters
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Time                      20.05
INSTRUM                 dpx400
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PULPROG                 zgdc30
TD                        131072
SOLVENT                   CDCl3
NS                           72
DS                            0
SWH                   50251.258 Hz
FIDRES                0.383387 Hz
AQ                    1.3042164 sec
RG                         9195.2
DW                        9.950 usec
DE                        4.50 usec
TE                       300.0 K
D1                    3.00000000 sec
d11                   0.03000000 sec

============ CHANNEL f1 =============
NUC1                         13C
P1                         5.80 usec
PL1                       -6.00 dB
SFO1                100.6328515 MHz

============ CHANNEL f2 =============
CPDPRG2                  waltz16
NUC2                         1H
PCPD2                     71.00 usec
PL2                      120.00 dB
PL12                      17.00 dB
SFO2                400.1308230 MHz

F2 - Processing parameters
SI                        65536
SF                  100.6127081 MHz
WDW                          EM
SSB                           0
LB                         0.30 Hz
GB                            0
PC                         1.00

1D NMR plot parameters
CX                        19.50 cm
F1P                      175.000 ppm
F1                     17607.23 Hz
F2P                       0.000 ppm
F2                        0.00 Hz
PPMCM                 8.97436 ppm/cm
HZCM                902.93463 Hz/cm
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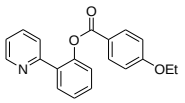
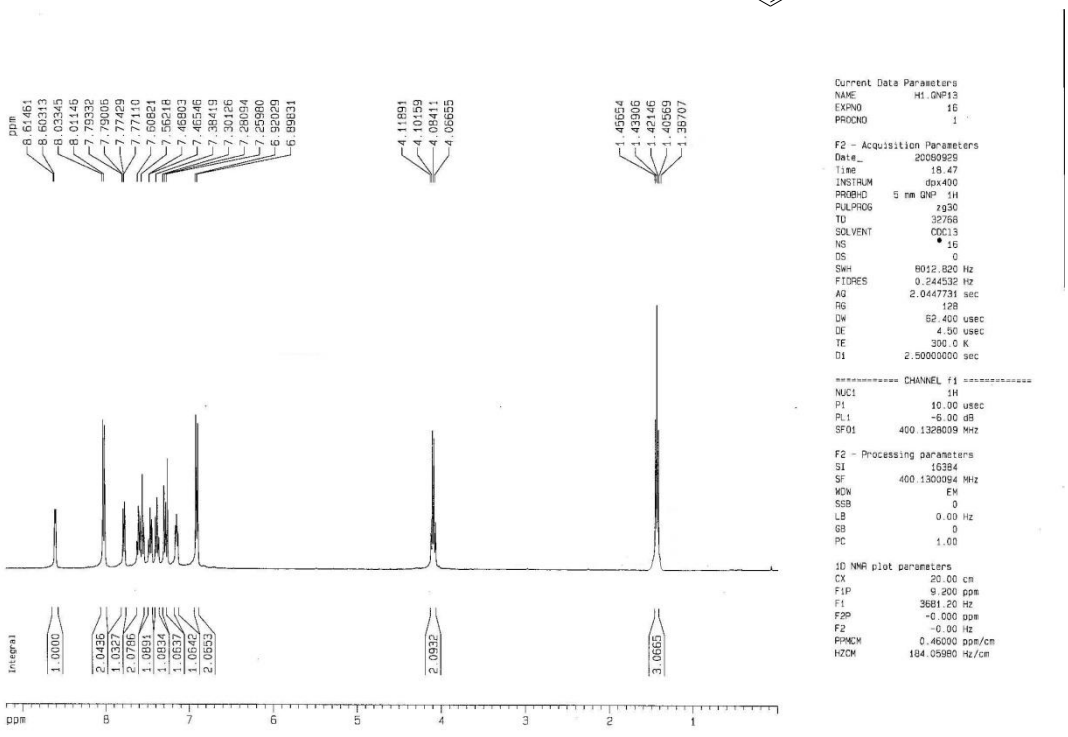
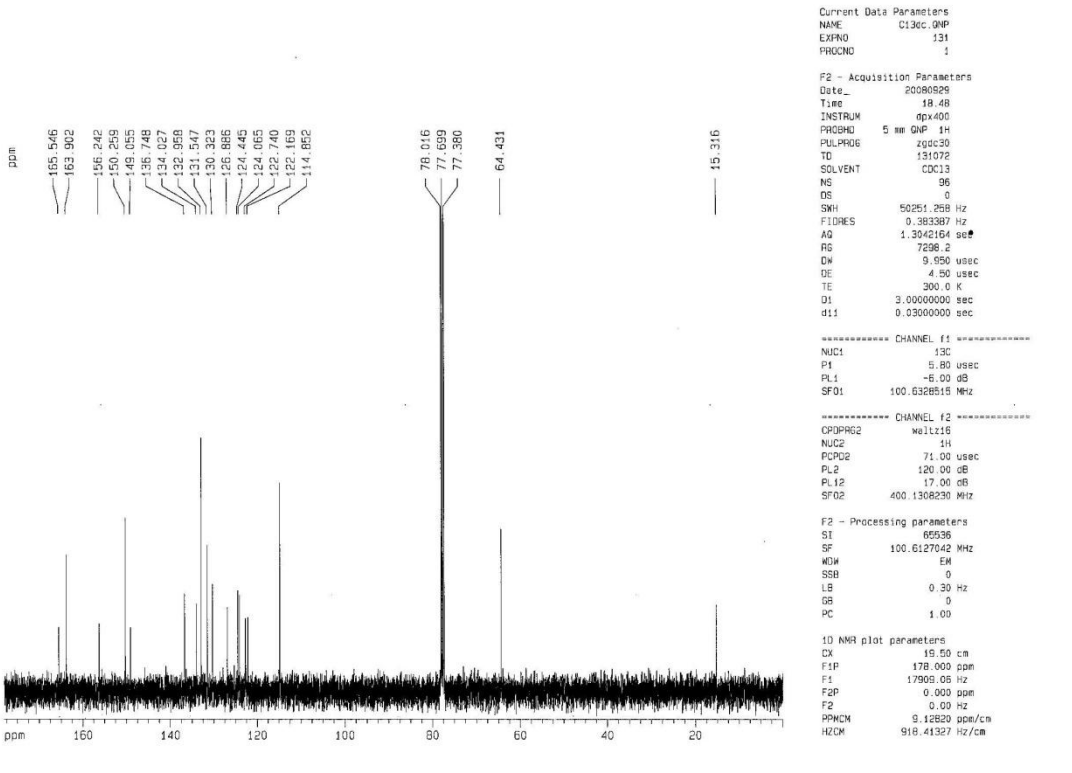
^{1}H-NMR of **2t**

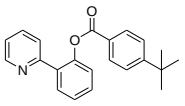


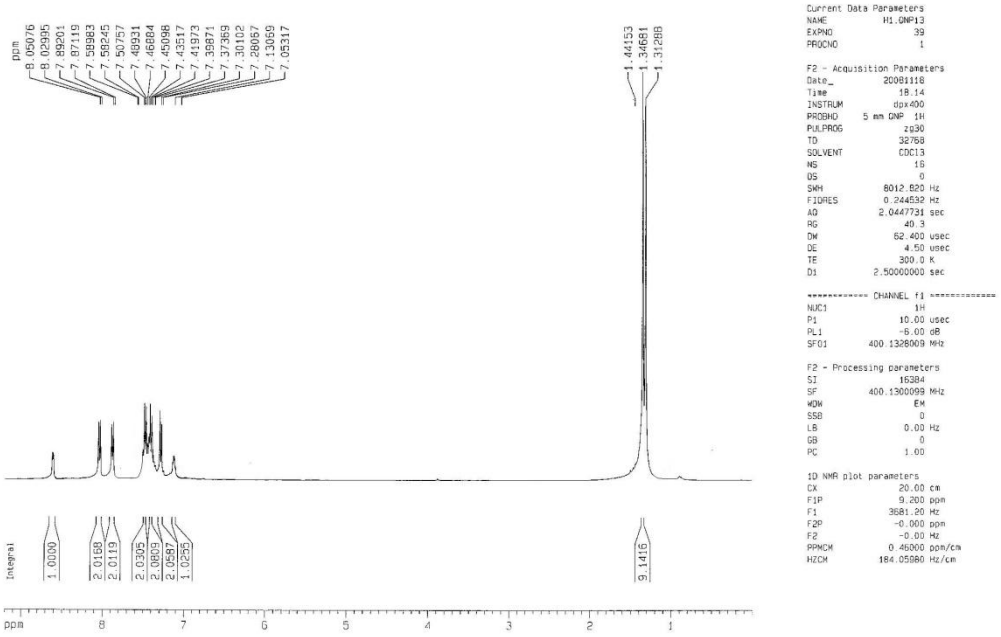


^{13}C-NMR of **2t**

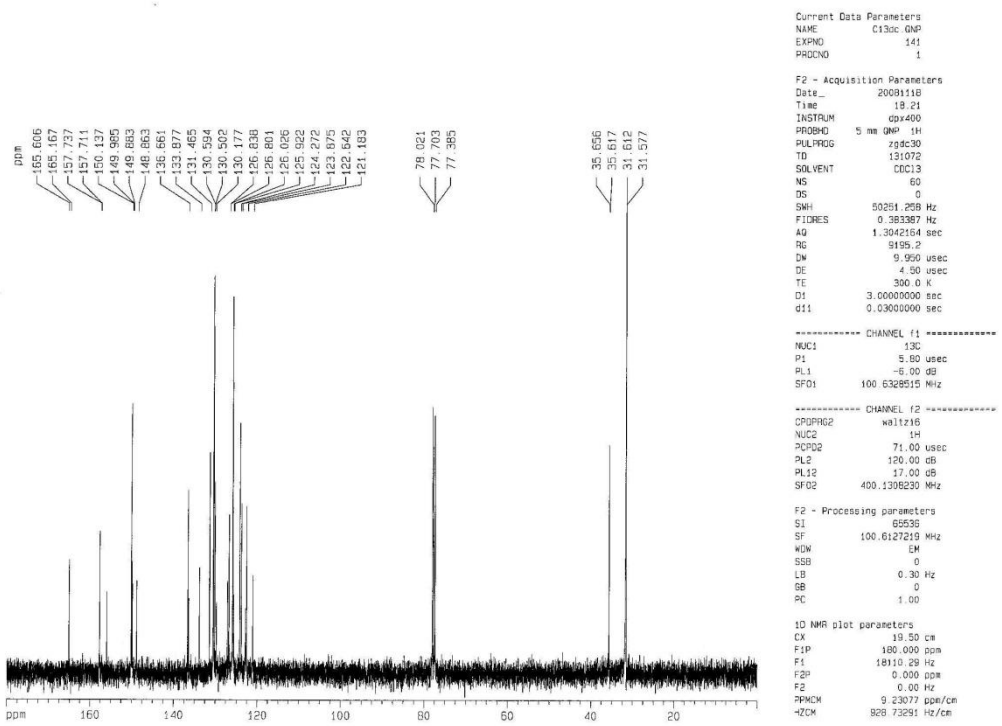


^{1}H-NMR of **2u**

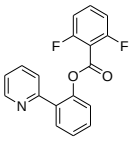


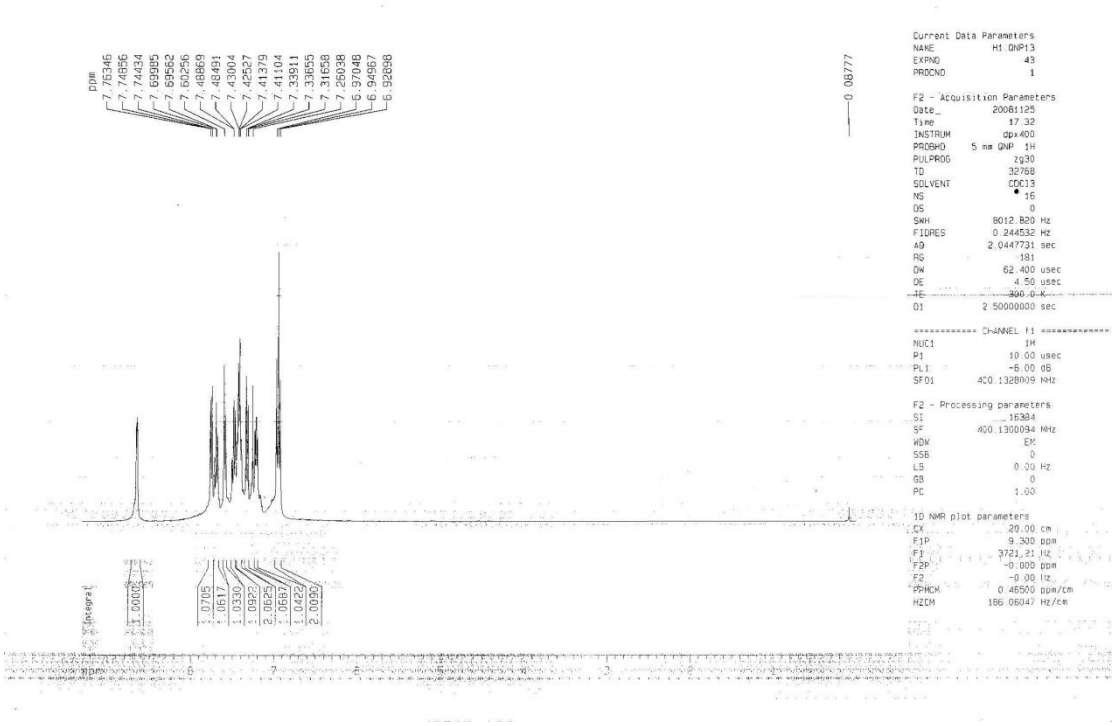


^{13}C-NMR of **2u**

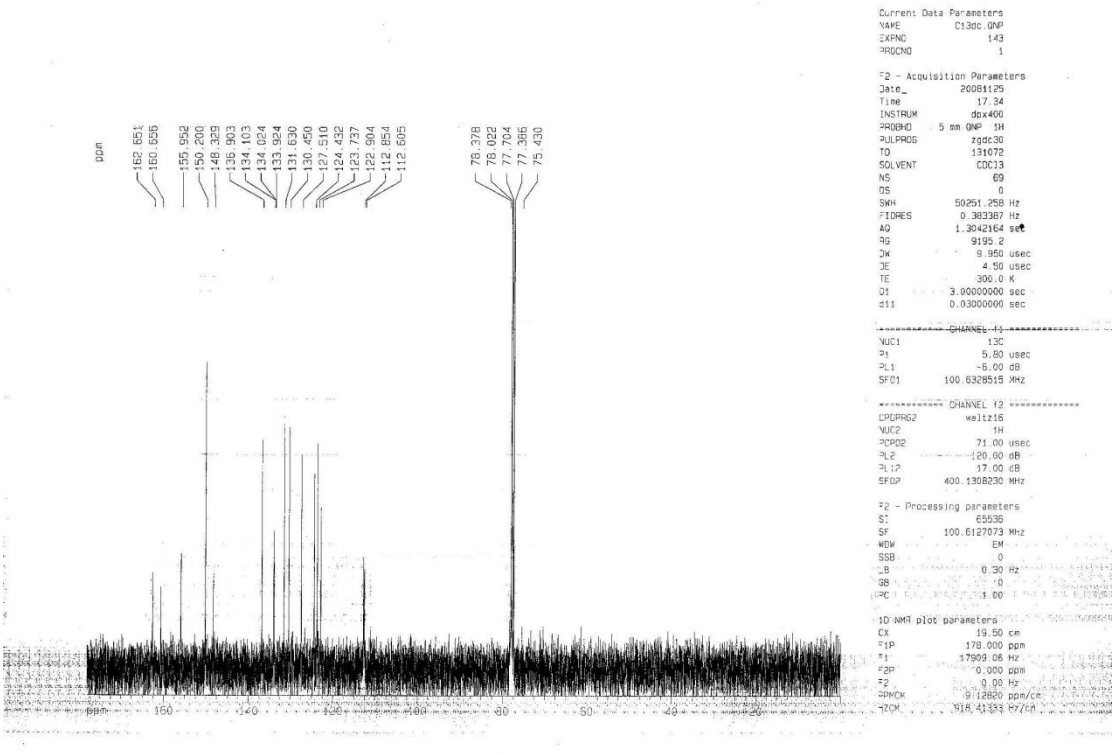


^{1}H-NMR of **2v**

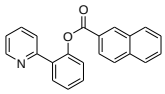


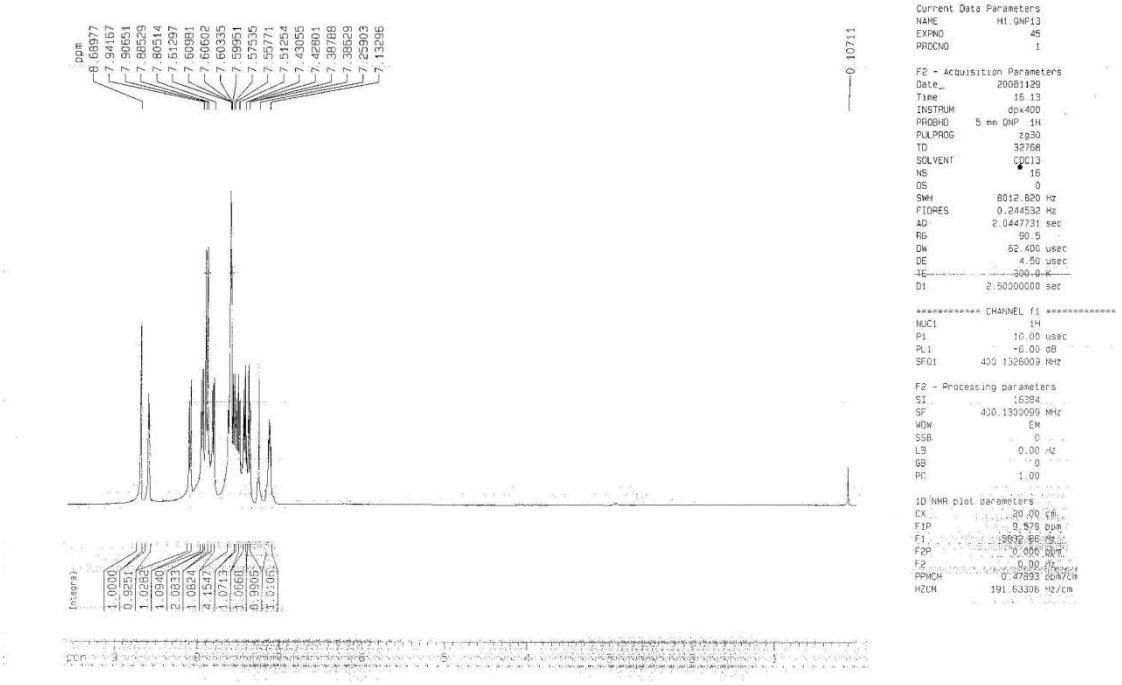


^{13}C-NMR of **2v**



^{1}H-NMR of **2w**





^{13}C-NMR of **2w**