CHEMISTRY
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Supporting Information

Organic-Inorganic Hybrid Polymer-Encapsulated Magnetic Nanobead Catalysts

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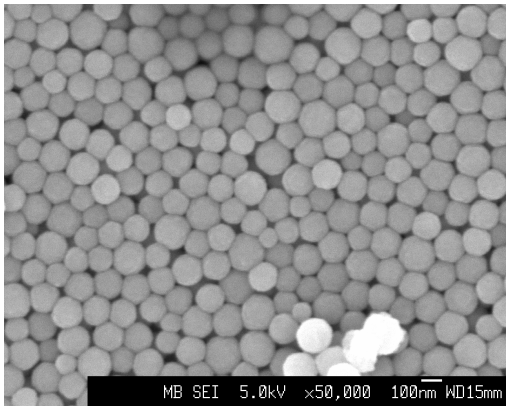
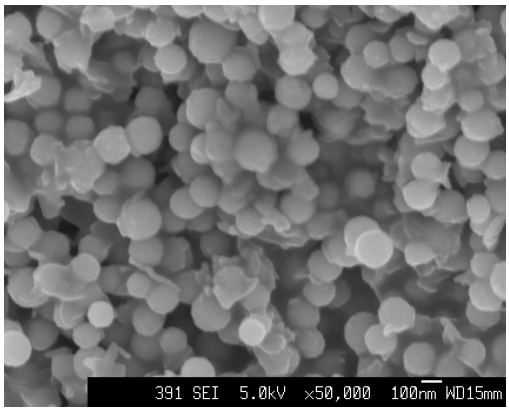
Experimental

SEM images of low magnification

(a) original amino functionalized magnetic beads



(b) Cu-bpy organic-inorganic hybrid polymer-encapsulated magnetic beads.



General procedure for the Cu-bpy HP-MB catalyzed synthesis of *a*-hydroxyketone (Entry 2, Table 1), and reuse of Cu-bpy HP-MB:

Synthesis of 3,4-dihydro-2-hydroxy-2-methylnaphthalen-1(2*H*)-one (2). To the solution of Cu-bpy HP-MB (0.78 μmol as -NH_2) in EtOH (1.5 mL) was added silyl enolate **1** (9.1 mg, 39 μmol). The mixture was agitated at room temperature for 48 h under oxygen atmosphere (1 atm). After treating with $P(OEt)_3$ (7 μL, 39 μmol), the Cu-bpy HP-MB was recovered by making cohere under an external magnetic field. From the organic phase, the solvents were evaporated i*n vacuo*, and the residues were purified by column chromatography on silica gel to give *a*-hydroxyketone **2** (1^{st} use: 92 %, 2^{nd} use: 92 %, 3^{rd} use: 89 %, 4^{th} use:

85 %, 5th use: 84 %) as colorless oil. TLC R_f 0.32 (1:3 ethyl acetate/hexane); IR (neat) 3479, 2971, 2932, 1683, 1602, 1456, 1370, 1289, 1222, 1154, 1096, 970, 740 cm^{-1}; ^{1}H-NMR(400 MHz, $CDCl_3$) δ 1.40(s, 3H, CH_3), 2.19-2.29(m, 2H, CH_2), 3.00-3.14(m, 2H, CH_2), 3.86(br-s, 1H, OH), 7.26(d, 1H, *J*=7.6 Hz, aromatic), 7.35(t, 1H, *J*=7.6 Hz, aromatic), 7.52(dt, *J*=1.4, 7.6 Hz, 1H, aromatic), 8.17(dd, *J*=1.4, 7.6 Hz, 1H, aromatic); ^{13}C-NMR(100 MHz, $CDCl_3$) δ 23.9, 26.8, 35.8, 73.6, 126.9, 128.0, 129.0, 130.0, 134.0, 143.4, 201.8. HRMS (FAB+) calcd for $C_{11}H_{13}O_2$ (M^++H) 177.0916: found 177.0909.

3,4-dihydro-2-hydroxy-2,5,7-trimethylnaphthalen-1(2H)-one (entry 1 in Table 2). TLC R_f 0.51 (1:3 ethyl acetate/hexane); IR (neat) 3485, 2971, 2930, 2863, 1680, 1610, 1475, 1369, 1306, 1132, 1097, 1050, 984, 871 cm^{-1}; ^{1}H-NMR(400 MHz, $CDCl_3$) δ 1.36(s, 3H, CH_3), 2.12-2.33(m, 2H, CH_2), 2.27(s, 3H, CH_3), 2.34(s, 3H, CH_3), 2.72-2.98(m, 2H, CH_2), 3.93(br-s, 1H, OH), 7.23(s, 1H, aromatic), 7.71(s, 1H, aromatic); ^{13}C-NMR(100 MHz, $CDCl_3$) δ 202.5, 138.8, 136.6, 136.4, 129.9, 125.9, 73.2, 35.4, 24.2, 23.9, 20.9, 19.2, 1.0. HRMS (FAB+) calcd for $C_{13}H_{17}O_2$(M^++H) 205.1229: found 205.1243.

3,4-dihydro-2-hydroxy-5-methoxy-2-methylnaphthalen-1(2H)-one (entry 2 in Table 2). TLC R_f 0.36 (1:3 ethyl acetate/hexane); IR (neat) 3734, 3477, 2935, 1685, 1581, 1472, 1261, 1187, 983, 751 cm^{-1}; ^{1}H-NMR(400 MHz, $CDCl_3$) δ 1.38(s, 3H, CH_3), 2.10-2.17(m, 1H, CH_2), 2.26-2.31(m, 1H, CH_2), 2.67-2.79(m, 1H, CH_2), 3.11-3.18(m, 1H, CH_2), 3.88(s, 3H, OCH_3), 3.90(br-s, 1H, OH), 7.05(d, *J*=8.0 Hz, 1H, aromatic), 7.32(t, *J*=8.0 Hz, 1H, aromatic), 7.62(d, *J*=8.0 Hz, 1H, aromatic); ^{13}C-NMR(100 MHz, $CDCl_3$) δ 202.2, 156.9, 132.4, 130.9, 127.5, 119.4, 114.7, 73.4, 55.6, 35.1, 23.8, 21.0. HRMS (FAB+) calcd for $C_{12}H_{15}O_3$(M^++H) 207.1021: found 207.1028.

3,4-dihydro-2-hydroxy-6-methoxy-2-methylnaphthalen-1(2H)-one (entry 3 in Table 2). TLC R_f 0.31 (1:3 ethyl acetate/hexane); IR (neat) 3466, 2928, 1660, 1590, 1494, 1456, 1340, 1299, 1260, 1224, 1137, 1089, 1024, 969, 840 cm^{-1}; ^{1}H-NMR(400 MHz, $CDCl_3$) δ 1.38(s, 3H, CH_3), 2.16-2.26(m, 2H, CH_2), 2.94-3.12(m, 1H, CH_2), 3.87(s, 3H, OCH_3), 3.87(br-s, 1H, OH), 6.70(s, 1H, aromatic), 7.32(d, *J*=8.7 Hz, 1H, aromatic), 8.00(d, *J*=8.7

Hz, 1H, aromatic); ^{13}C-NMR(100 MHz, $CDCl_3$) δ 200.4, 164.2, 146.0, 130.5, 123.2, 113.7, 112.6, 73.3, 55.5, 35.8, 27.2, 24.1. HRMS (FAB+) calcd for $C_{12}H_{15}O_3$(M^++H) 207.1021: found 207.1029.

3,4-dihydro-2-hydroxy-2-propylnaphthalen-1(2*H*)-one (entry 4 in Table 2). TLC R_f 0.47 (1:8 ethyl acetate/hexane); IR (neat) 3492, 2957, 2931, 2871, 1681, 1603, 1455, 1286, 1233, 1154, 1098, 991, 740 cm^{-1}; ^{1}H-NMR(400 MHz, $CDCl_3$) δ 0.88(t, *J*= 7.3 Hz, 3H, CH_3) , 1.23-1.39(m, 1H, CH_2), 1.43-1.71(m, 3H, CH_2), 2.15(dt, *J*=5.5, 13.0 Hz, 1H, CH_2), 2.34(ddd, *J*=2.2, 5.5, 13.0 Hz, 1H, CH_2), 2.95-3.14(m, 2H, CH_2), 3.87(br-s, 1H, OH), 7.25(d, *J*=7.7 Hz, 1H, aromatic), 7.34(t, *J*=7.7 Hz, 1H, aromatic), 7.52(dt, *J*=1.5, 7.5 Hz, 1H, aromatic), 8.01(dd, *J*=1.5, 7.5 Hz, 1H, aromatic); ^{13}C-NMR(100 MHz, $CDCl_3$) δ 14.2, 16.3, 26.5, 33.9, 37.7, 75.8, 126.8, 127.9, 129.0, 130.3. 133.9, 143.4, 202.0. HRMS (FAB+) calcd for $C_{13}H_{17}O_2$ (M^++H) 205.1229: found 205.1212.

2-allyl-3,4-dihydro-2-hydroxynaphthalen-1(2*H*)-one (entry 5 in Table 2). TLC R_f 0.24 (1:10 ethyl acetate/hexane); IR (neat) 3481, 3074, 2930, 1681, 1603, 1287, 1231, 1155, 995, 741 cm^{-1}; ^{1}H-NMR(400 MHz, $CDCl_3$) δ 2.17(dt, *J*=5.6, 12.8 Hz, 1H, CH_2), 2.33-2.47(m, 3H, CH_2 x 2), 2.95-3.16(m, 2H, CH_2), 3.84(br-s, 1H, OH), 5.13(dd, *J*=9.4, 18.3 Hz, 2H, olefinic), 5.88(ddt, *J*=7.5, 9.4, 18.3 Hz, 1H, olefinic), 7.27(dt, *J*=7.7 Hz, 1H, aromatic), 7.35(t, *J*=7.5 Hz, 1H, aromatic), 7.53(dt, *J*=1.2, 7.5 Hz, 1H, aromatic), 8.02(dd, *J*=1.2, 7.7 Hz, 1H, aromatic) ; ^{13}C-NMR(100 MHz, $CDCl_3$) δ 26.1, 33.5, 40.3, 75.3, 119.1, 126.9, 128.0, 129.0, 130.1, 132.1, 134.1, 143.4, 201.0. HRMS (FAB+) calcd for $C_{13}H_{15}O_2$ (M^++H) 203.1072: found 203.1079.

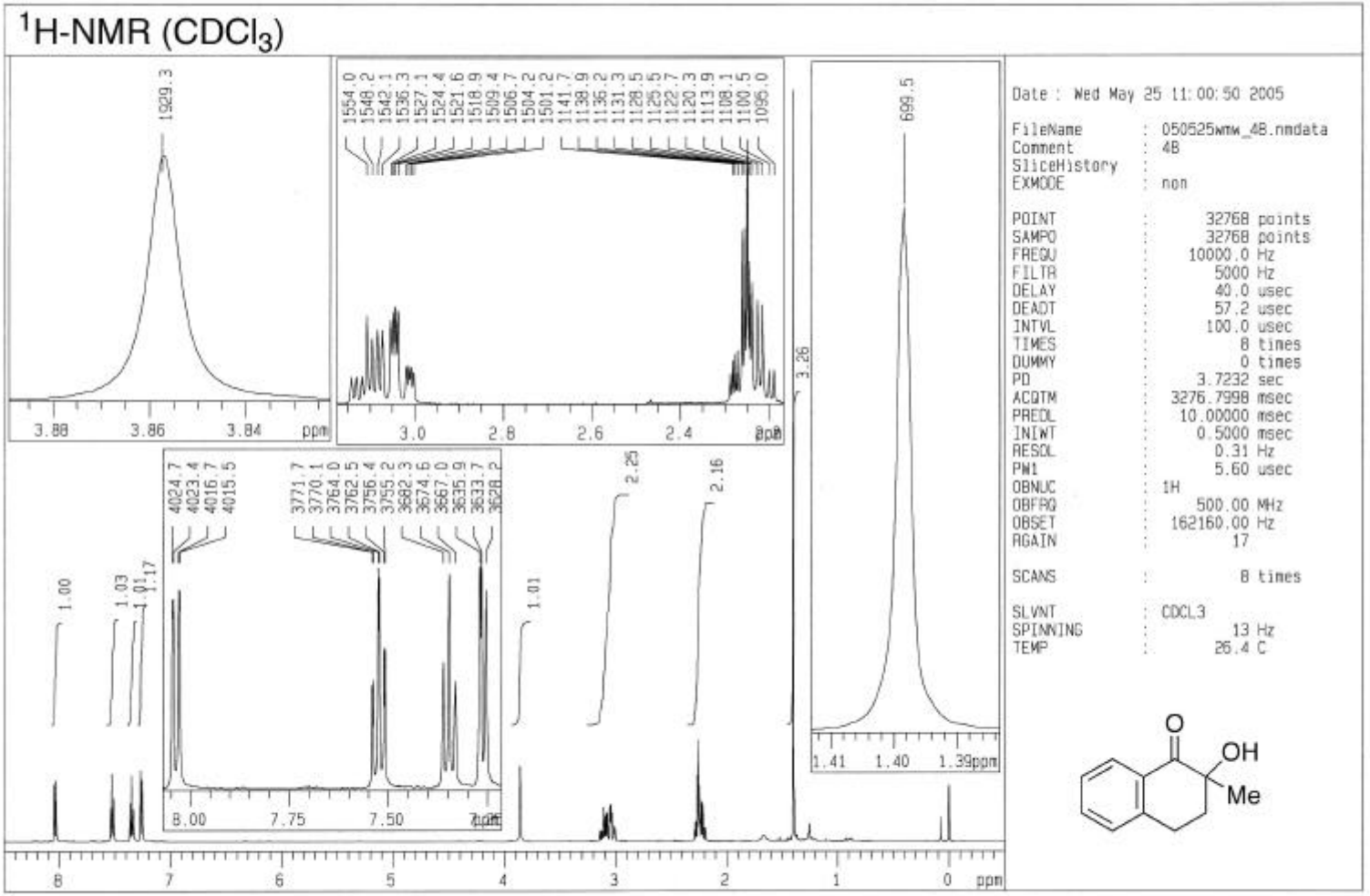
2-benzyl-2-hydroxycyclohexan-1-one (entry 6 in Table 2). TLC R_f 0.32 (1:7 ethyl acetate/hexane); IR (neat) 3482, 2938, 2864, 1707, 1495, 1451, 1089, 702 cm^{-1}; ^{1}H-NMR(400 MHz, $CDCl_3$) δ 1.60-1.75(m, 2H, CH_2), 1.83-1.90(m, 2H, CH_2), 2.13-2.25(m, 2H, CH_2), 2.50-2.58(m, 1H, CH_2), 2.70(dt, *J*=6.3, 13.8 Hz, 1H, CH_2), 2.97(d, *J*=13.8 Hz, 1H, CH_2), 3.14(d, *J*=13.8 Hz, 1H, CH_2), 3.86(br-s, 1H, OH), 7.18-7.29(m, 5H, aromatic);

^{13}C-NMR(100 MHz, $CDCl_3$) δ 22.8, 28.0, 38.6, 40.4, 43.3, 79.3, 127.0, 128.3, 130.1, 135.3, 213.3. HRMS (FAB+) calcd for $C_{13}H_{17}O_2$ (M^++H) 205.1229: found 205.1219.

2-hydroxy-2-methyl-1-phenylpropan-1-one (entry 7 in Table 2). TLC R_f 0.33 (1:3 ethyl acetate/hexane); IR (neat) 3452, 2979, 1669, 1597, 1446, 1365, 1259, 1168, 956, 714, 694 cm^{-1}; ^{1}H-NMR(400 MHz, $CDCl_3$) δ 1.64(s, 6H, 2 x CH_3), 4.10(br-s, 1H, OH), 7.46(t, *J*=7.3 Hz, 2H, aromatic), 7.57(tt, *J*=1.5, 7.3 Hz, 1H, aromatic), 8.01(dd, *J*=1.5, 7.3 Hz, 2H, aromatic); ^{13}C-NMR(100 MHz, $CDCl_3$) δ 28.4, 76.2, 128.4, 129.6, 132.9, 133.7, 204.7.

2-hydroxy-2-(4-methoxyphenyl)-1-phenylpropan-1-one (entry 8 in Table 2). TLC R_f 0.24 (1:3 ethyl acetate/hexane); IR (neat) 3450, 2931, 1671, 1606, 1509, 1448, 1297, 1178, 1029, 833, 707 cm^{-1}; ^{1}H-NMR(400 MHz, $CDCl_3$) δ 1.88(s, 3H, CH_3), 3.81(s, 3H, OCH_3), 4.80(br-s, 1H, OH), 6.90(d, *J*=9.0 Hz, 2H, aromatic), 7.30(t, *J*=7.2 Hz, 2H, aromatic), 7.36(d, *J*=9.0 Hz, 2H, aromatic), 7.45(t, *J*=7.2 Hz, 1H, aromatic), 7.67(d, *J*=7.2 Hz, 2H, aromatic); ^{13}C-NMR(100 MHz, $CDCl_3$) δ 202.3, 159.4, 134.5, 133.5, 132.9, 130.2, 128.3, 127.9, 114.9, 78.5, 55.3, 25.9. HRMS (FAB+) calcd for $C_{16}H_{15}O_2$ (M^++H-H_2O) 239.1072: found 239.1069.

2-hydroxy-4,4-dimethyl-2-phenylpentan-3-one (entry 9 in Table 2). TLC R_f 0.54 (1:3 ethyl acetate/hexane); IR (neat) 3494, 2969, 1689, 1481, 1446, 1363, 1220, 1147, 1118, 1068, 1041, 993, 912, 775, 734, 700 cm^{-1}; ^{1}H-NMR(400 MHz, $CDCl_3$) δ 1.07(s, 9H, $C(CH_3)_3$), 1.83(s, 3H, CH_3), 4.36(br-s, 1H, OH), 7.27-7.35(m, 5H, aromatic); ^{13}C-NMR(100 MHz, $CDCl_3$) δ 141.9, 128.5, 127.8, 125.9, 80.6, 44.3, 28.5, 25.7.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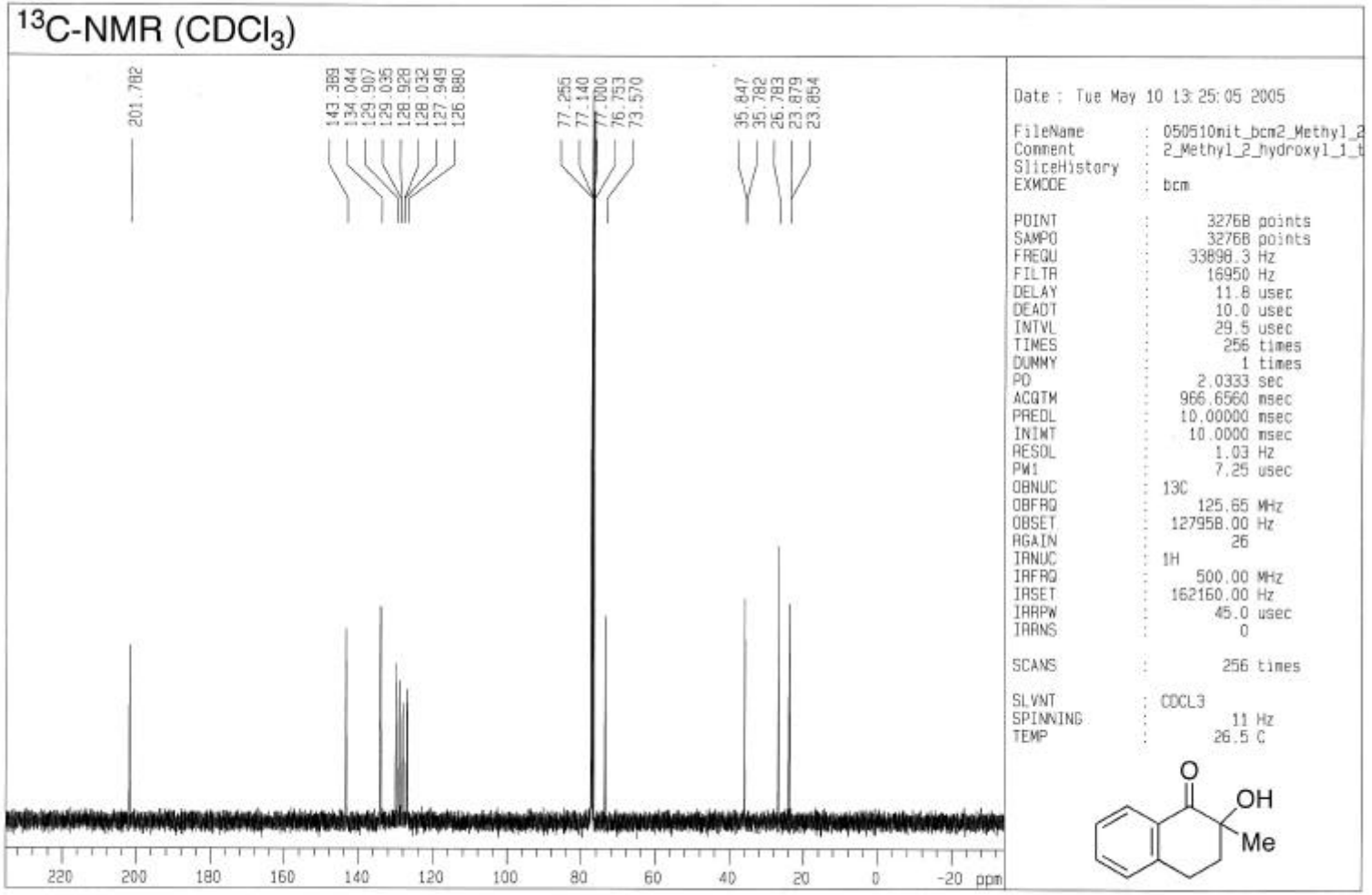
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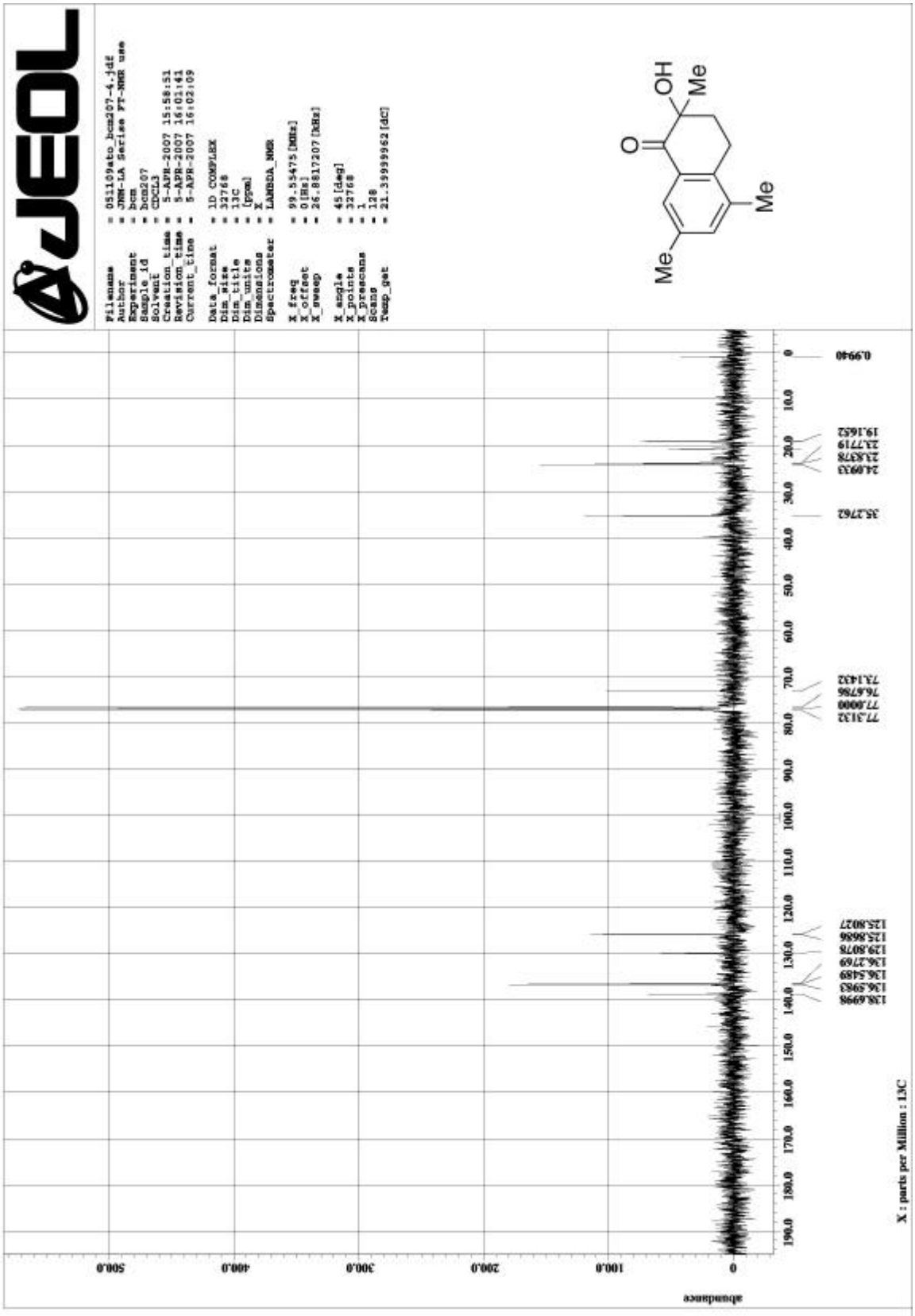
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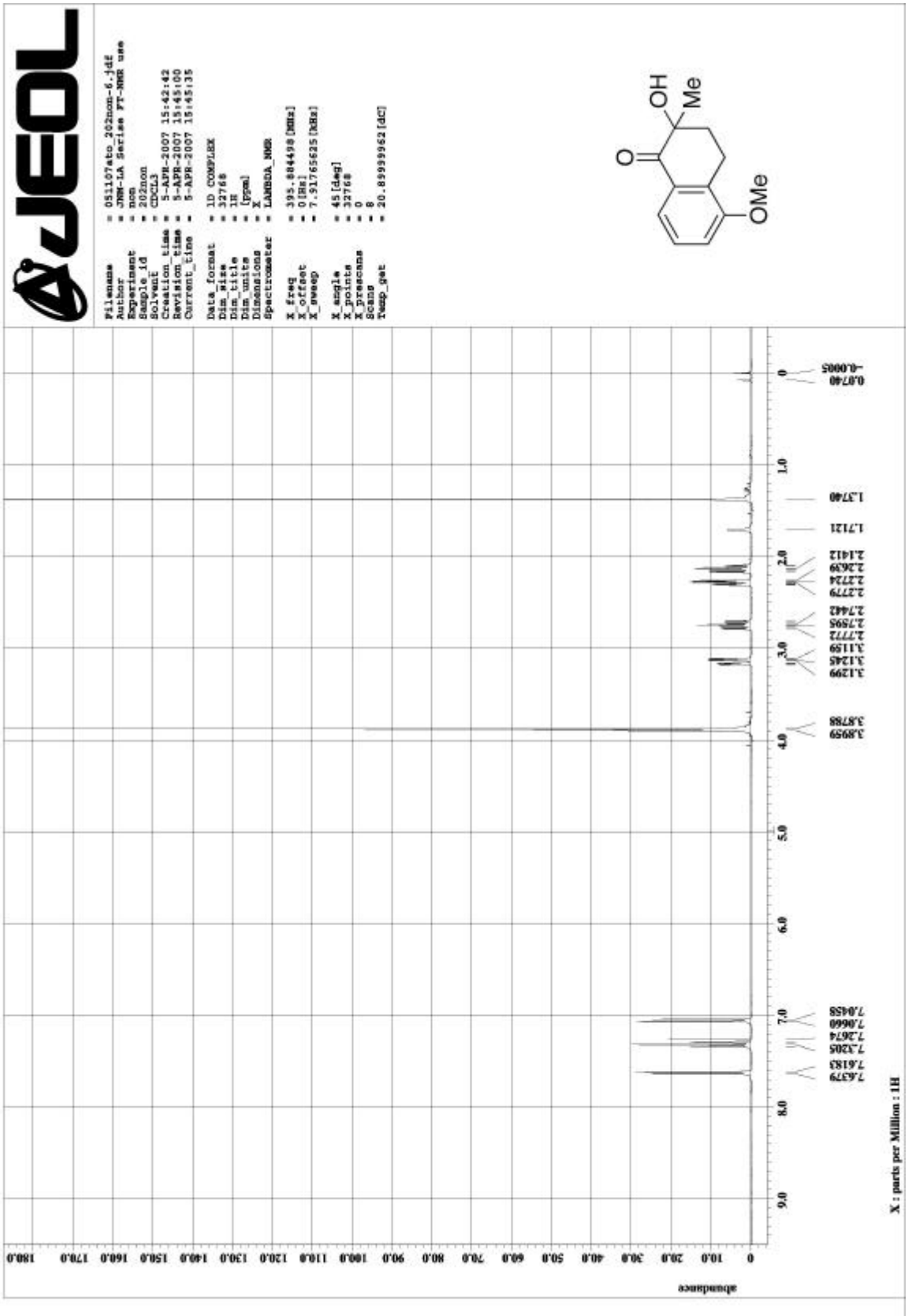
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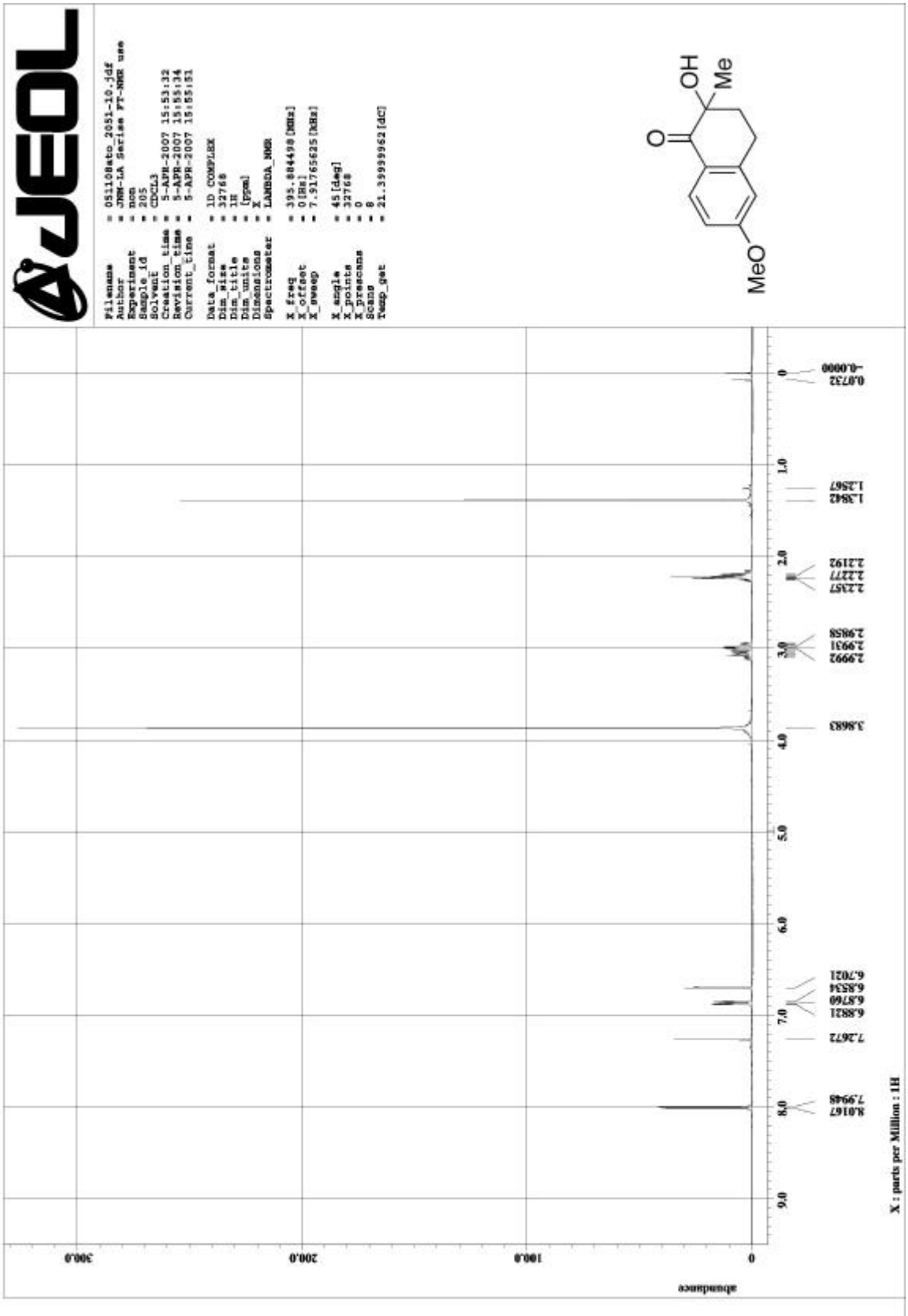
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abundance
X : parts per Million : 1H

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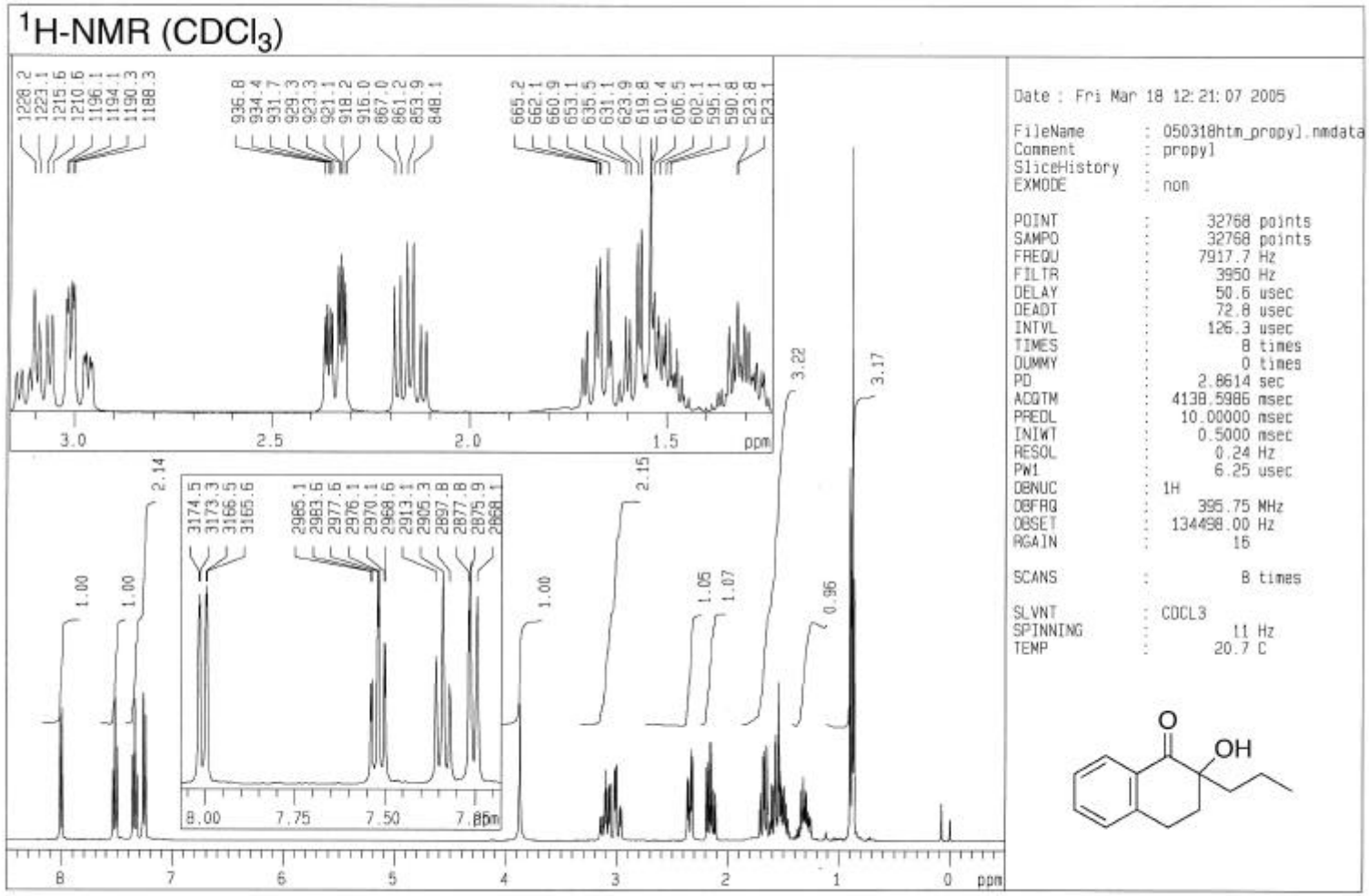
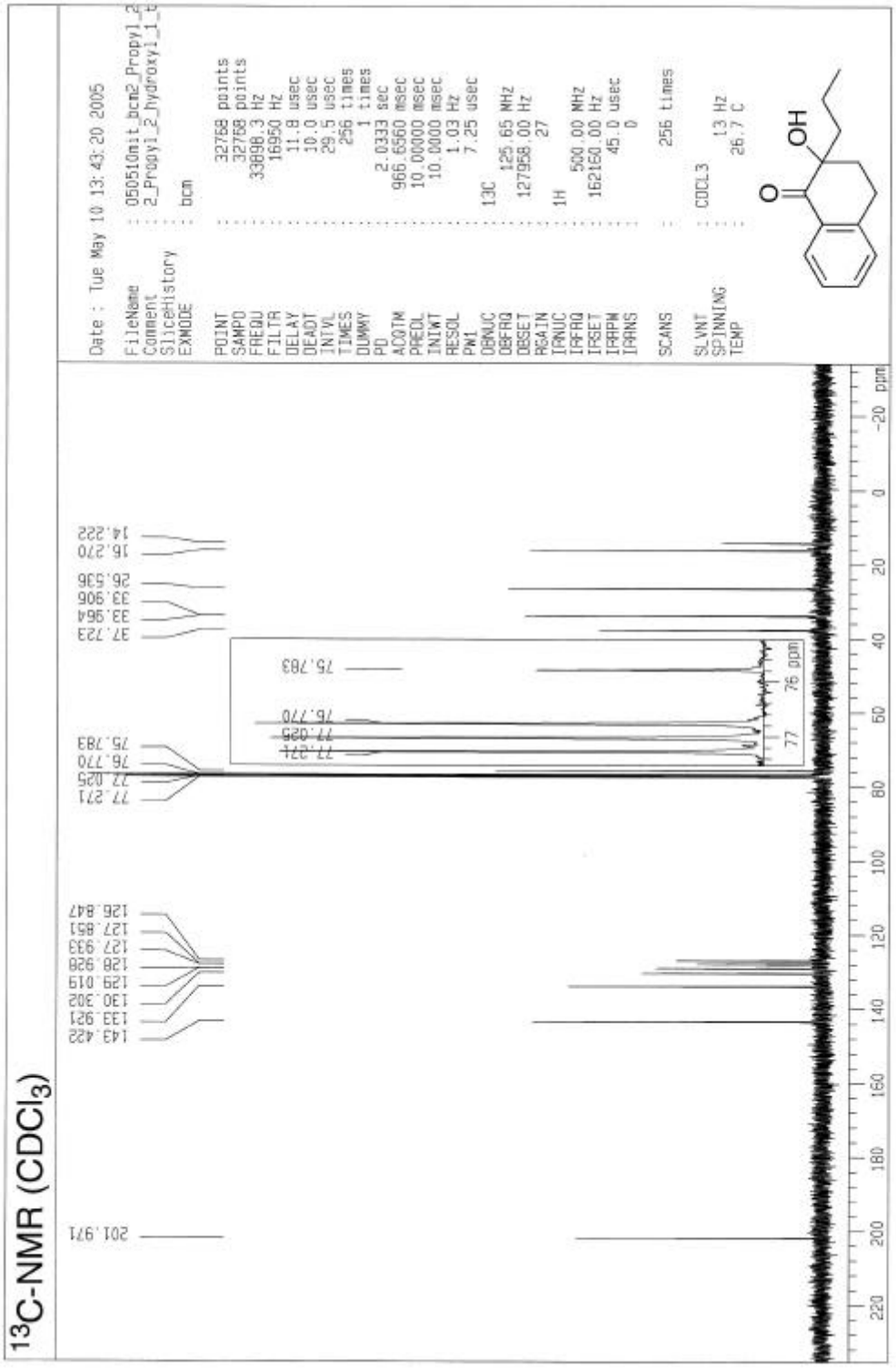
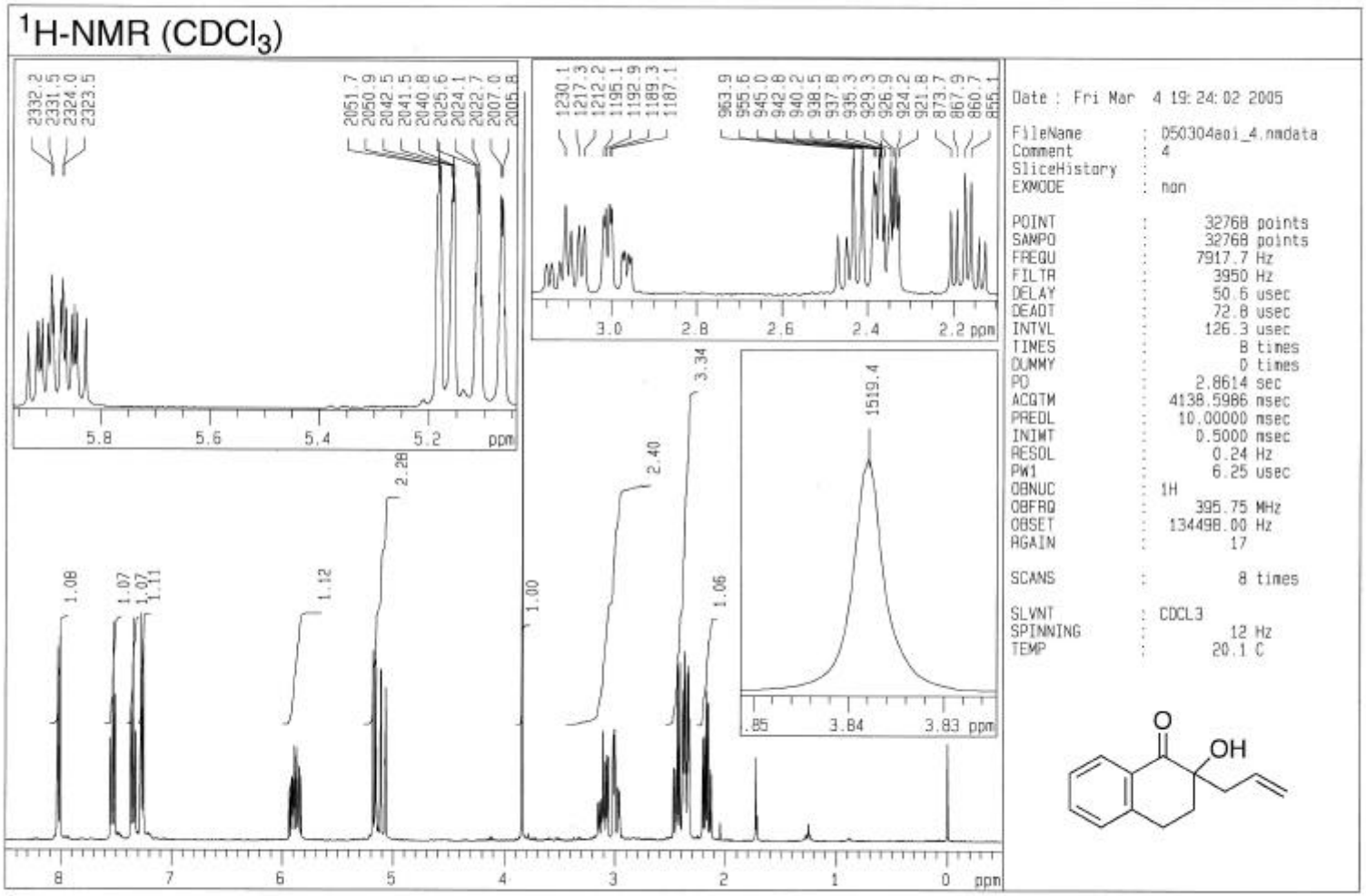
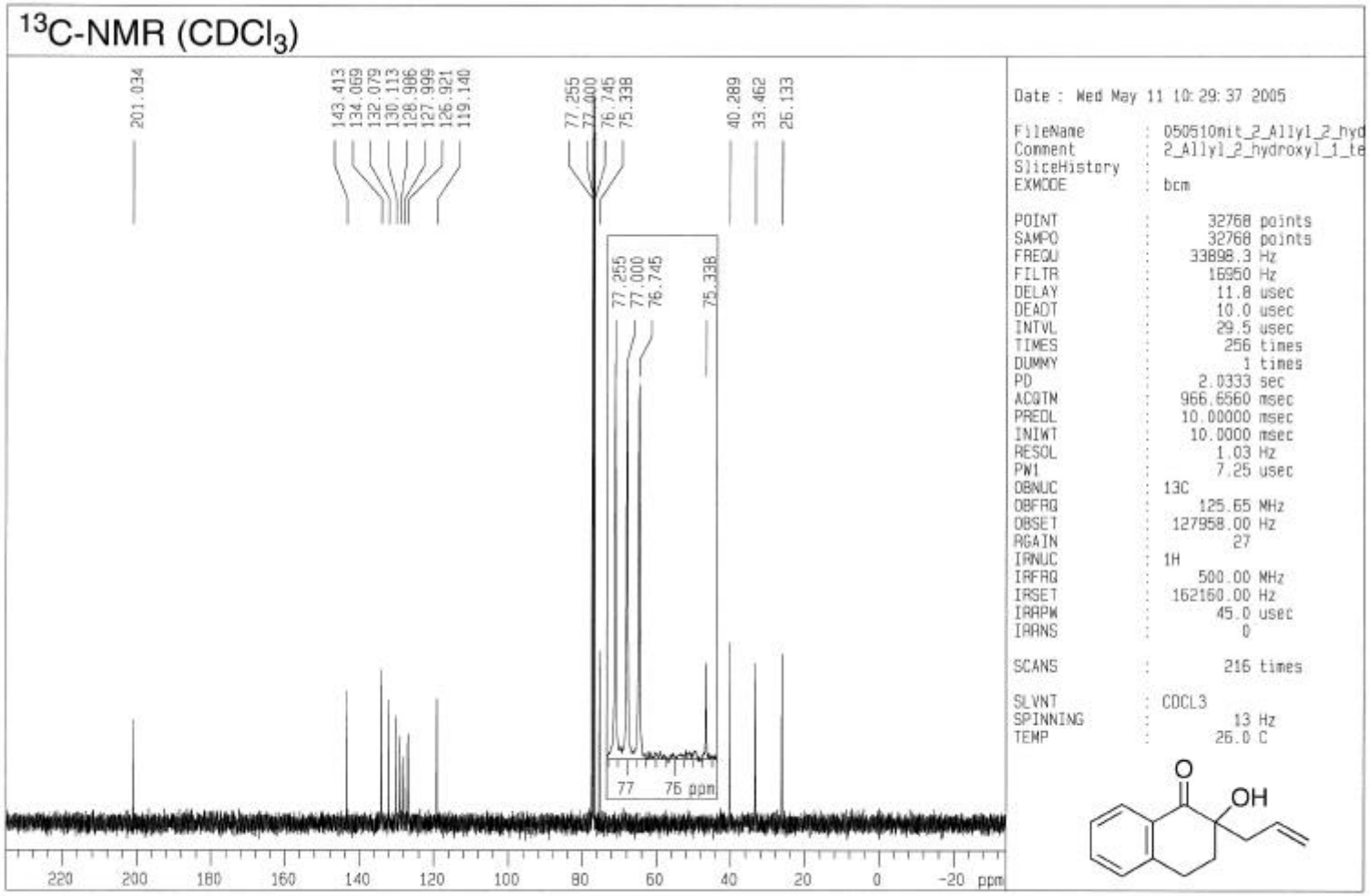
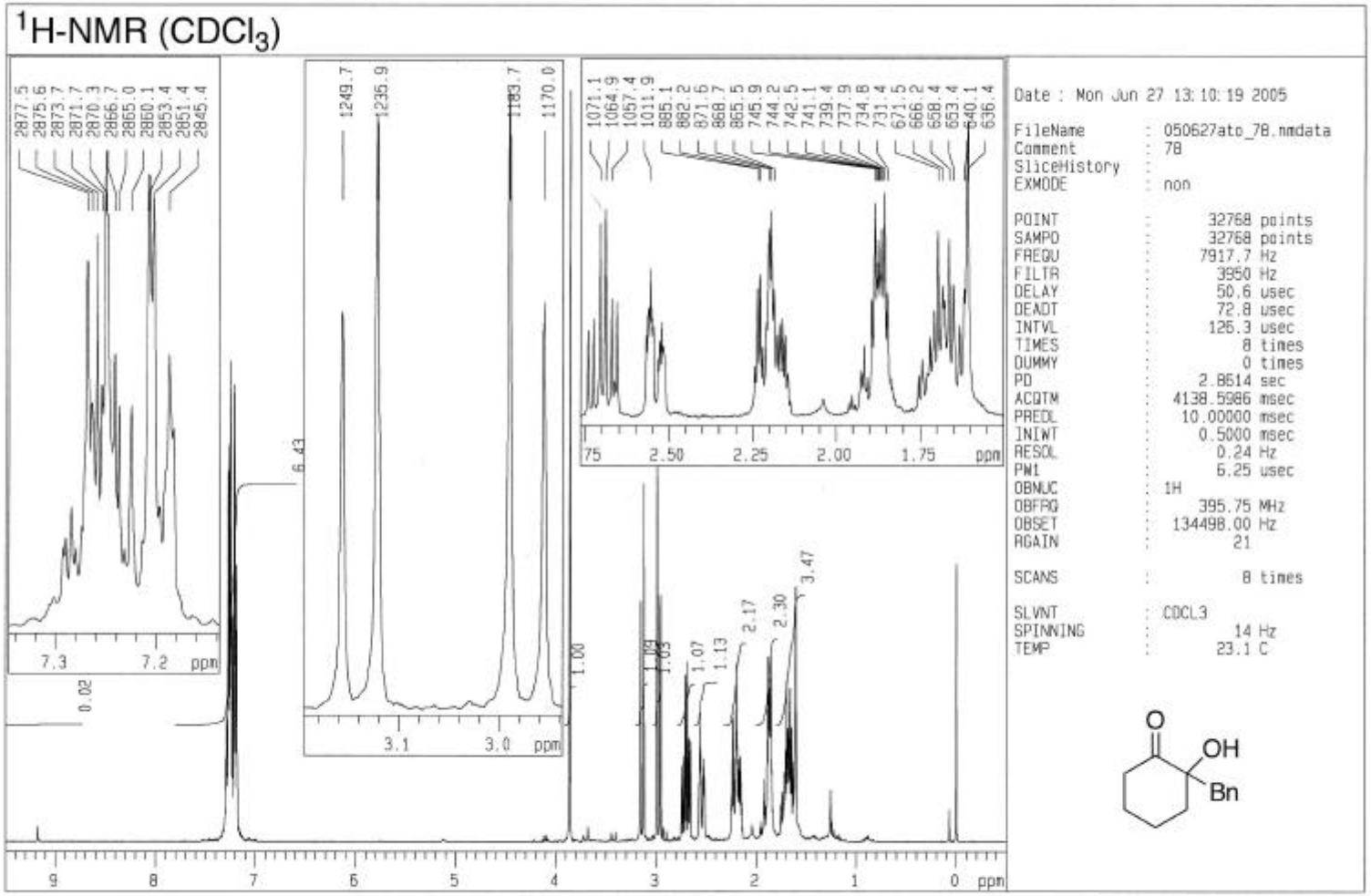
145.9847
X : parts per Million : 13C

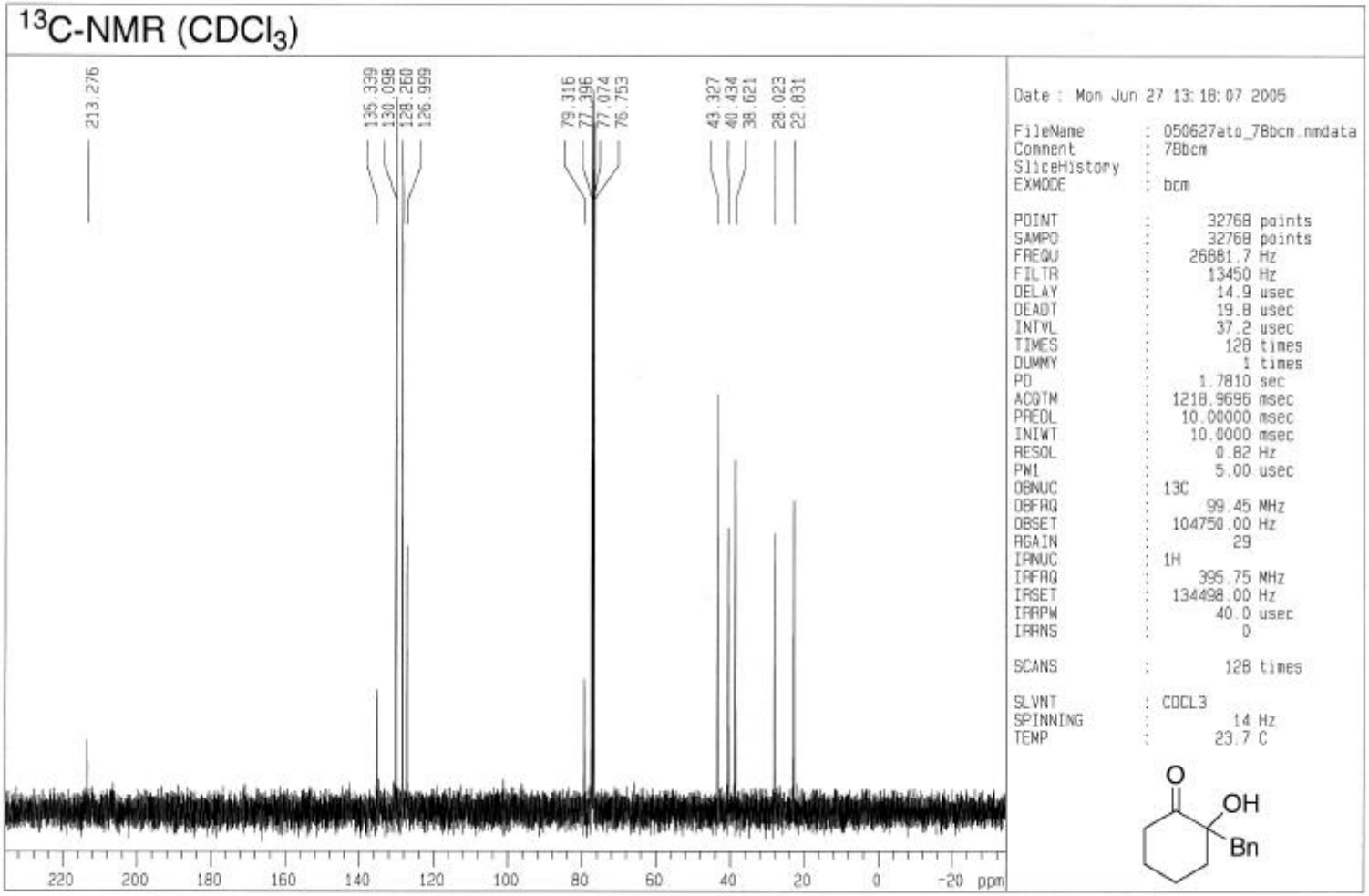

1H-NMR (CDCl3)
Date : Fri Mar 18 12:21:07 2005
FileName : 050318htm_propyl.nmdata
Comment : propyl
SliceHistory :
EXMODE : non
POINT : 32768 points
SAMPO : 32768 points
FREQU : 7917.7 Hz
FILTR : 3950 Hz
DELAY : 50.6 usec
DEADT : 72.8 usec
INTVL : 126.3 usec
TIMES : 8 times
DUMMY : 0 times
PD : 2.8614 sec
ACQTM : 4138.5986 msec
PREDL : 10.00000 msec
INIWT : 0.5000 msec
RESOL : 0.24 Hz
PW1 : 6.25 usec
OBNUC : 1H
OBFRQ : 395.75 MHz
OBSET : 134498.00 Hz
RGAIN : 16
SCANS : 8 times
SLVNT : CDCL3
SPINNING : 11 Hz
TEMP : 20.7 C
O
OH
ppm

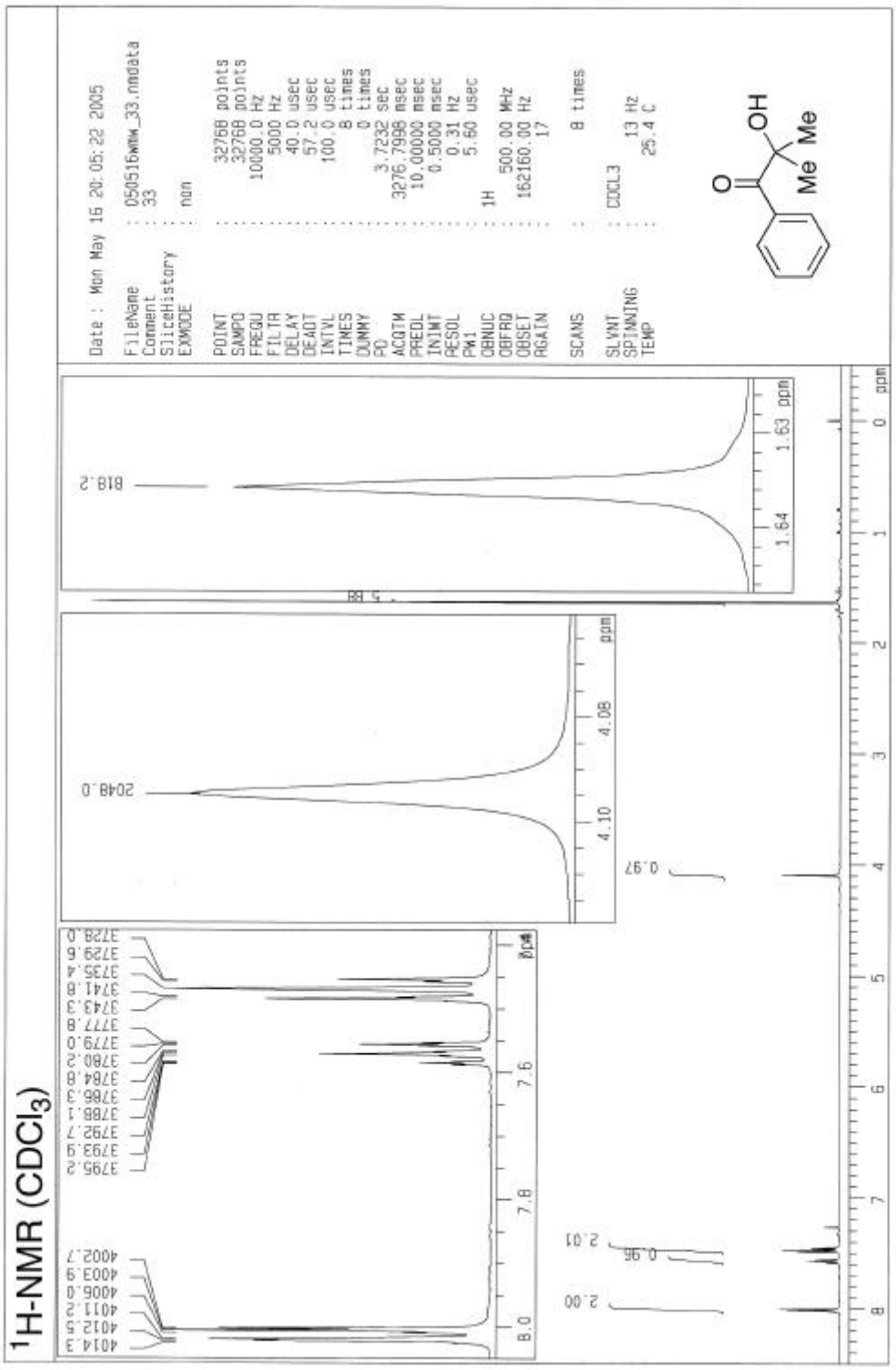

13C-NMR (CDCl3)
Date : Tue May 10 13:43:20 2005
FileName : 050510nit_bcm2_Propyl_2
Comment : 2_Propyl_2_hydroxyl_1_t
SliceHistory :
EXMODE : bcm
POINT : 32768 points
SAMPO : 32768 points
FREQU : 33898.3 Hz
FILTR : 16950 Hz
DELAY : 11.8 usec
DEADT : 10.0 usec
INTVL : 29.5 usec
TIMES : 256 times
DUMMY : 1 times
PD : 2.0333 sec
ACQTM : 966.6560 msec
PREDL : 10.00000 msec
INIWT : 10.0000 msec
RESOL : 1.03 Hz
PW1 : 7.25 usec
OBNUC : 13C
OBFRQ : 125.65 MHz
OBSET : 127958.00 Hz
OBAIN : 27
IFNUC : 1H
IFFRQ : 500.00 MHz
IFSET : 162160.00 Hz
IFATTN : 45.0 usec
IFANS : 0
SCANS : 256 times
SLVNT : CDCL3
SPINNING : 13 Hz
TEMP : 26.7 C
OH
O
201.971
143.422
133.921
130.302
129.019
128.928
127.933
127.851
126.847
77.271
77.025
76.770
75.783
37.723
33.906
33.964
26.536
16.270
14.222
77 76 ppm
220 200 180 160 140 120 100 80 60 40 20 0 -20 ppm

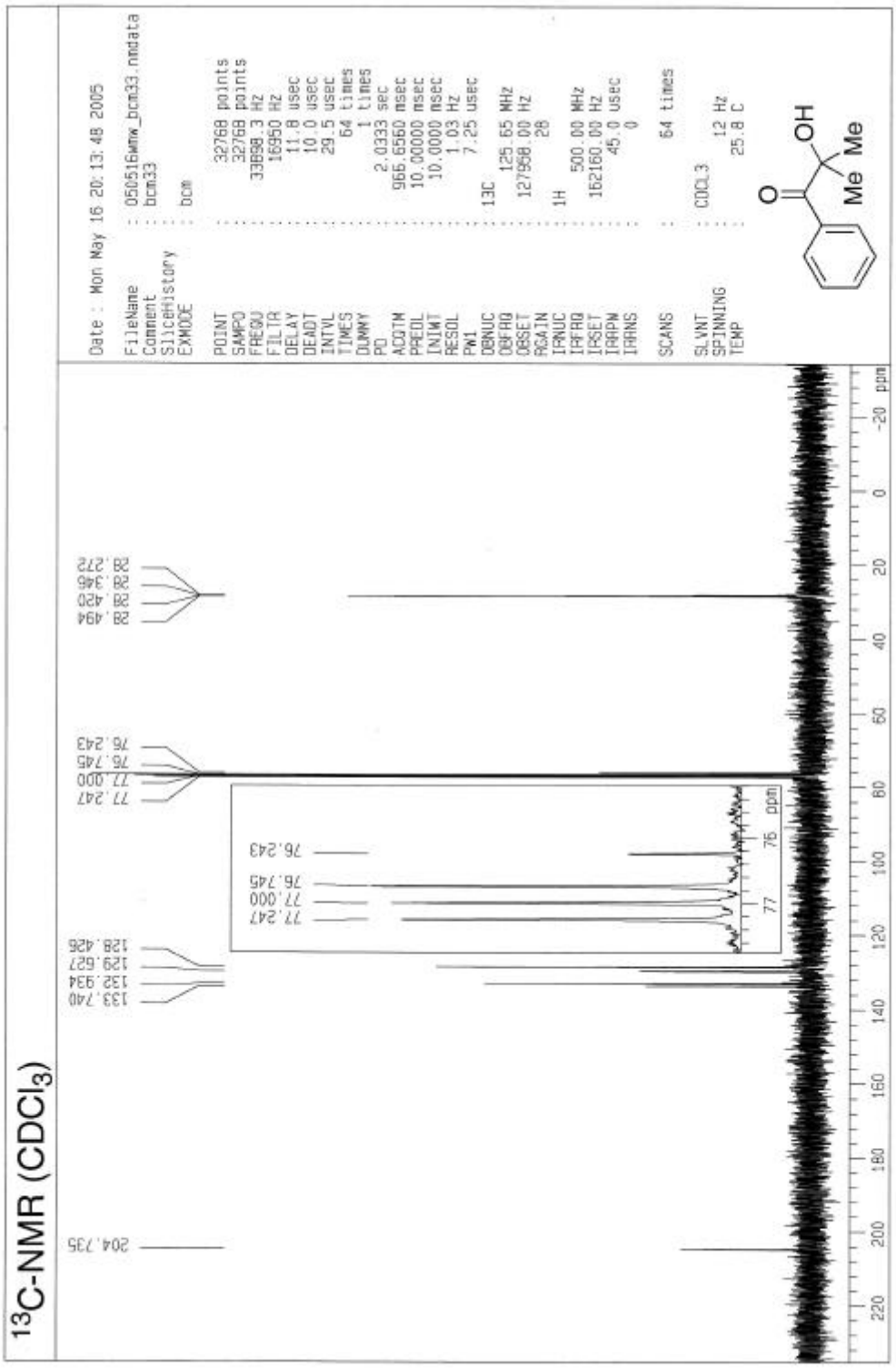

1H-NMR (CDCl3)
Date : Fri Mar 4 19:24:02 2005
FileName : 050304aoi_4.nmdata
Comment : 4
SliceHistory :
EXMODE : non
POINT : 32768 points
SAMPO : 32768 points
FREQU : 7917.7 Hz
FILTR : 3950 Hz
DELAY : 50.6 usec
DEADT : 72.8 usec
INTVL : 126.3 usec
TIMES : 8 times
DUMMY : 0 times
PD : 2.8614 sec
ACQTM : 4138.5986 msec
PREDL : 10.00000 msec
INIWT : 0.5000 msec
RESOL : 0.24 Hz
PW1 : 6.25 usec
OBNUC : 1H
OBFRQ : 395.75 MHz
OBSET : 134498.00 Hz
RGAIN : 17
SCANS : 8 times
SLVNT : CDCL3
SPINNING : 12 Hz
TEMP : 20.1 C
O
OH

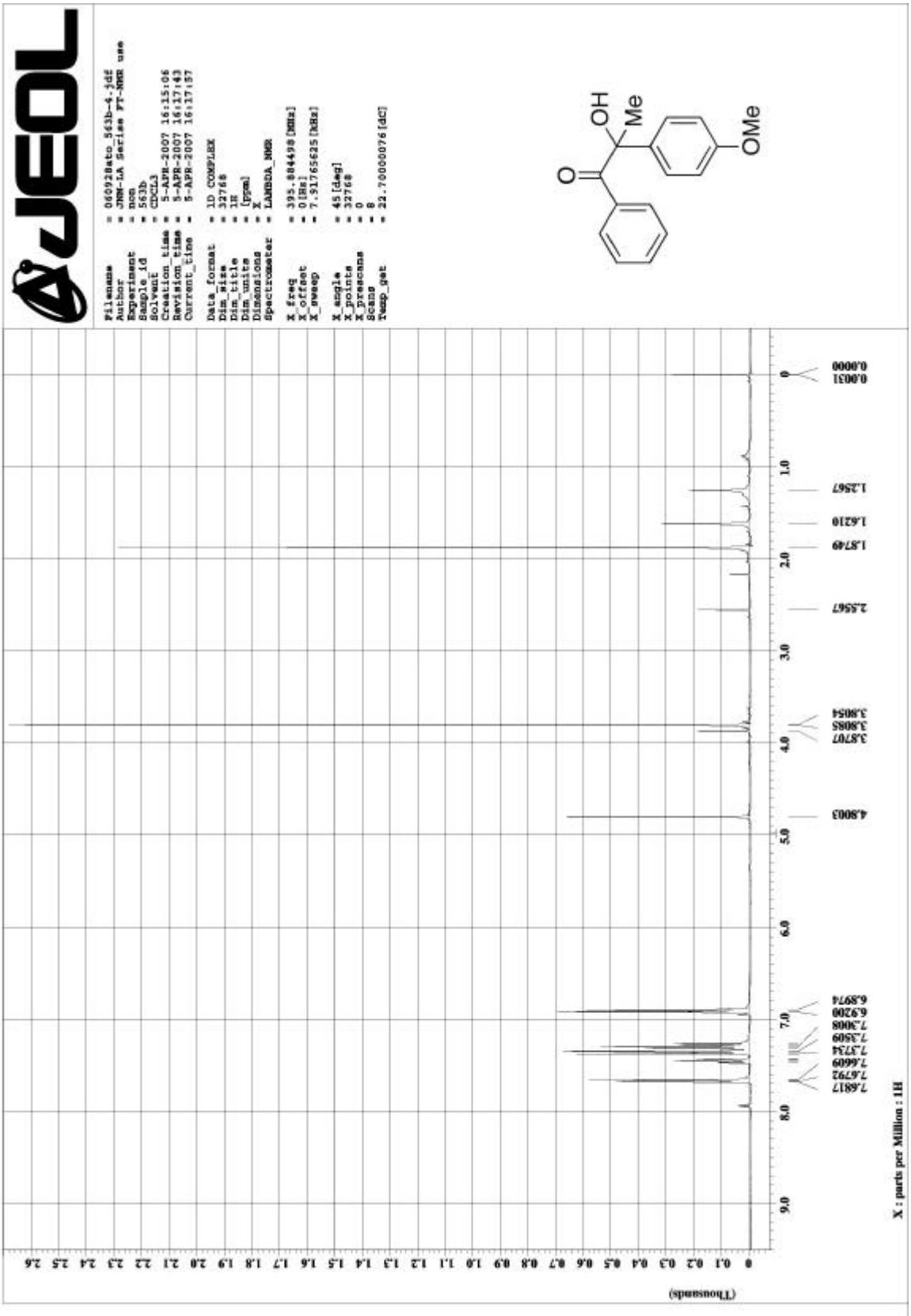

13C-NMR (CDCl3)
201.034
143.413
134.069
132.079
130.113
128.986
127.999
126.921
119.140
77.255
77.000
76.745
75.338
40.289
33.462
26.133
77 76 ppm
220 200 180 160 140 120 100 80 60 40 20 0 -20 ppm
Date : Wed May 11 10:29:37 2005
FileName : 050510mit_2_Allyl_2_hyd
Comment : 2_Allyl_2_hydroxyl_1_te
SliceHistory :
EXMODE : bcm
POINT : 32768 points
SAMPO : 32768 points
FREQU : 33898.3 Hz
FILTR : 16950 Hz
DELAY : 11.8 usec
DEADT : 10.0 usec
INTVL : 29.5 usec
TIMES : 256 times
DUMMY : 1 times
PD : 2.0333 sec
ACQTM : 966.6560 msec
PREDL : 10.00000 msec
INIWT : 10.0000 msec
RESOL : 1.03 Hz
PW1 : 7.25 usec
OBNUC : 13C
OBFRQ : 125.65 MHz
OBSET : 127958.00 Hz
RGAIN : 27
IRNUC : 1H
IRFRQ : 500.00 MHz
IRSET : 162160.00 Hz
IRAPW : 45.0 usec
IRANS : 0
SCANS : 216 times
SLVNT : CDCL3
SPINNING : 13 Hz
TEMP : 26.0 C
O
OH


^{1}H-NMR ($CDCl_3$)
2877.5
2875.6
2873.7
2871.7
2870.3
2866.7
2865.0
2860.1
2853.4
2851.4
2845.4
7.3
7.2
ppm
0.02
6.43
1249.7
1235.9
1183.7
1170.0
3.1
3.0
ppm
1.00
1071.1
1064.9
1057.4
1011.9
885.1
882.2
871.6
868.7
865.5
745.9
744.2
742.5
741.1
739.4
737.9
734.8
731.4
671.5
666.2
658.4
653.4
640.1
636.4
75
2.50
2.25
2.00
1.75
ppm
1.09
1.05
1.07
1.13
2.17
2.30
3.47
9
8
7
6
5
4
3
2
1
0
ppm
Date : Mon Jun 27 13:10:19 2005
FileName : 050627ato_78.nmdata
Comment : 78
SliceHistory :
EXMODE : non
POINT : 32768 points
SAMPD : 32768 points
FREQU : 7917.7 Hz
FILTR : 3950 Hz
DELAY : 50.6 usec
DEADT : 72.8 usec
INTVL : 126.3 usec
TIMES : 8 times
DUMMY : 0 times
PD : 2.8614 sec
ACQTM : 4138.5986 msec
PREDL : 10.00000 msec
INIWT : 0.5000 msec
RESOL : 0.24 Hz
PW1 : 6.25 usec
OBNUC : 1H
OBFRQ : 395.75 MHz
OBSET : 134498.00 Hz
RGAIN : 21
SCANS : 8 times
SLVNT : CDCL3
SPINNING : 14 Hz
TEMP : 23.1 C
O
OH
Bn

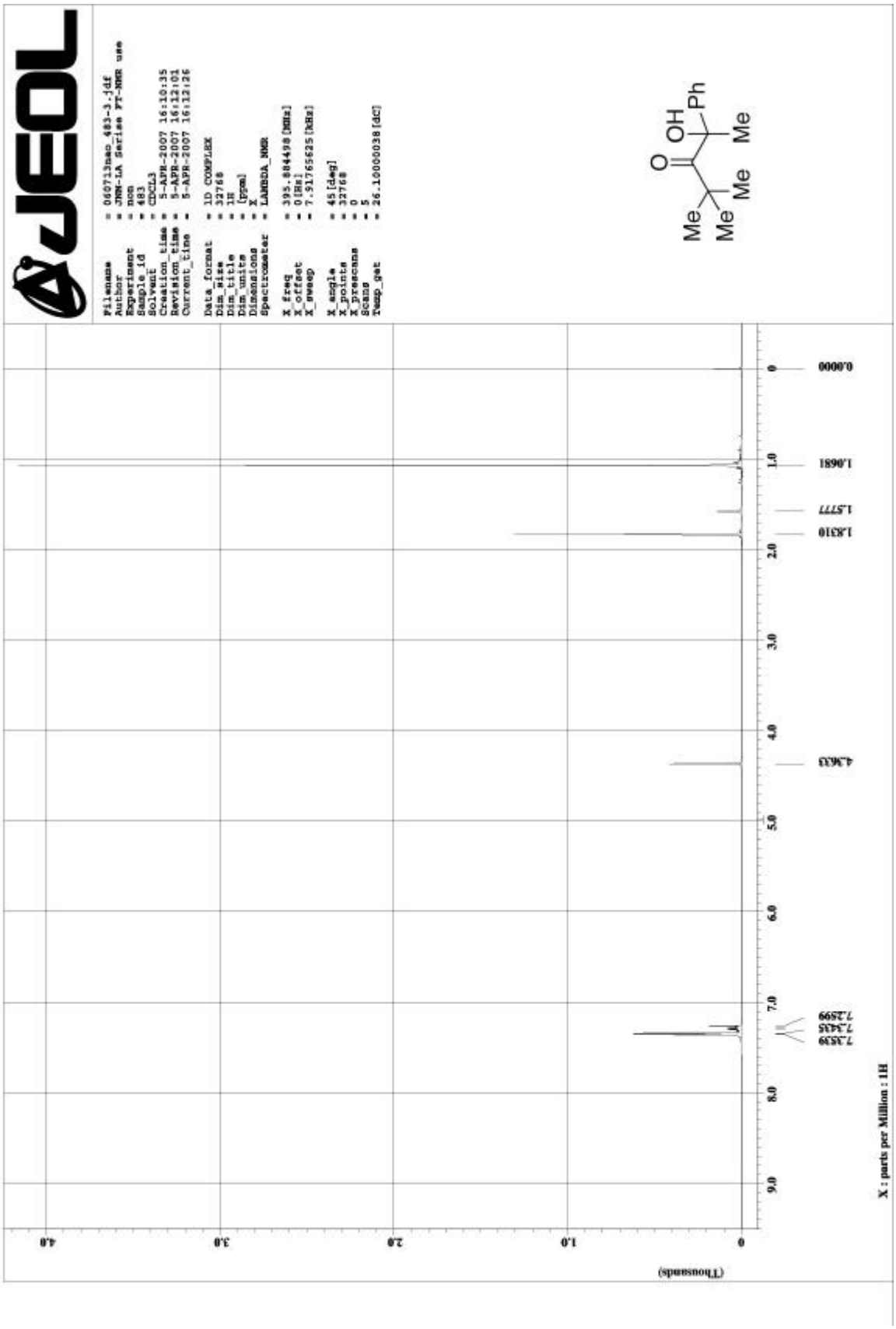

13C-NMR (CDCl3)
213.276
135.339
130.098
128.260
126.999
79.316
77.396
77.074
76.753
43.327
40.434
38.621
28.023
22.831
220
200
180
160
140
120
100
80
60
40
20
0
-20
ppm
Date : Mon Jun 27 13:16:07 2005
FileName : 050627ato_7Bbcm.nmdata
Comment : 7Bbcm
SliceHistory :
EXMODE : bcm
POINT : 32768 points
SAMPO : 32768 points
FREQU : 26881.7 Hz
FILTR : 13450 Hz
DELAY : 14.9 usec
DEADT : 19.8 usec
INTVL : 37.2 usec
TIMES : 128 times
DUMMY : 1 times
PD : 1.7810 sec
ACQTM : 1218.9696 msec
PREDL : 10.00000 msec
INIWT : 10.0000 msec
RESOL : 0.82 Hz
PW1 : 5.00 usec
OBNUC : 13C
OBFRQ : 99.45 MHz
OBSET : 104750.00 Hz
RGAIN : 29
IRNUC : 1H
IRFRQ : 396.75 MHz
IRSET : 134498.00 Hz
IRRPW : 40.0 usec
IRRNS : 0
SCANS : 128 times
SLVNT : CDCL3
SPINNING : 14 Hz
TEMP : 23.7 C
O
OH
Bn

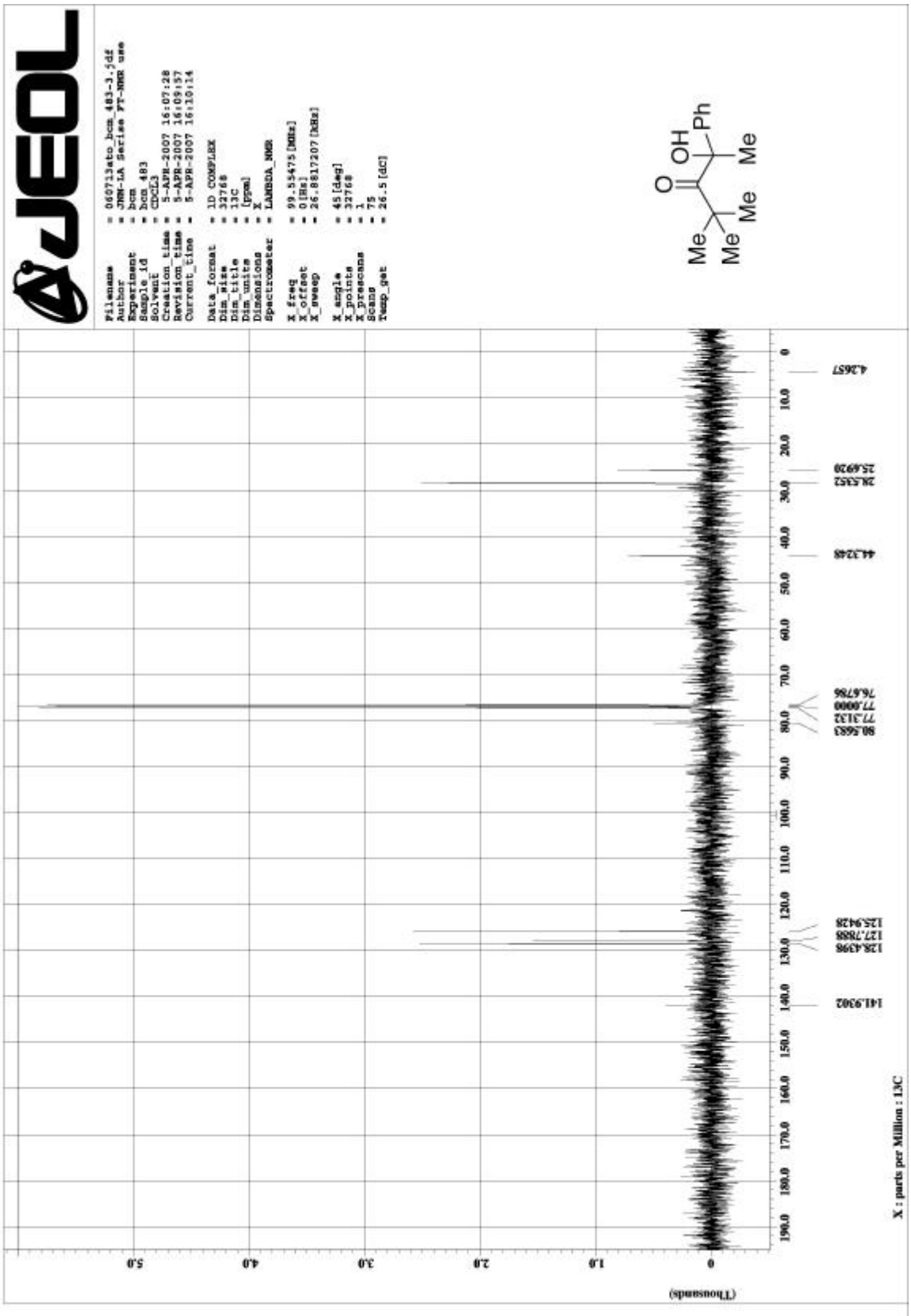

1H-NMR (CDCl3)
Date : Mon May 16 20:05:22 2005
FileName : 050516wmw_33.nmrdata
Comment : 33
SliceHistory : ...
EXMODE : non
POINT : 32768 points
SAMPO : 32768 points
FREQU : 10000.0 Hz
FILTR : 5000 Hz
DELAY : 40.0 usec
DEADT : 57.2 usec
INTVL : 100.0 usec
TIMES : 8 times
DUMMY : 0 times
PD : 3.7232 sec
ACQTM : 3276.7998 msec
PREDL : 10.00000 msec
INIMT : 0.5000 msec
RESOL : 0.31 Hz
PW1 : 5.60 usec
OBNUC : 1H 500.00 MHz
OBFRQ : 162160.00 Hz
OBSET : 17
RGAIN : ...
SCANS : 8 times
SLVNT : CDCL3
SPINNING : 13 Hz
TEMP : 25.4 C
OH
O
Me Me
818.2
2048.0
4.10
4.08
1.64
1.63 ppm
0.97
2.01
0.96
2.00
ppm


13C-NMR (CDCl3)
Date : Mon May 16 20:13:48 2005
FileName : 050516wmw_bcm33.nmdata
Comment : bcm33
SiliconHistory :
EXMODE : bcm
POINT : 32768 points
SAMPO : 32768 points
FREQU : 33898.3 Hz
FILTR : 16950 Hz
DELAY : 11.8 usec
DEADT : 10.0 usec
INTVL : 29.5 usec
TIMES : 64 times
DUMMY : 1 times
PD : 2.0333 sec
ACQTM : 966.6560 msec
PREDL : 10.00000 msec
INIWT : 10.0000 msec
RESOL : 1.03 Hz
Pw1 : 7.25 usec
DBNUC : 13C
OBFRQ : 125.65 MHz
OBSET : 127950.00 Hz
AGAIN : 28
IFNUC : 1H
IFFRQ : 500.00 MHz
IRSET : 162160.00 Hz
IRAPW : 45.0 usec
IRANS : 0
SCANS : 64 times
SLVNT : CDCL3
SPINNING : 12 Hz
TEMP : 25.8 C
204.735
133.740
132.934
129.627
128.426
77.247
77.000
76.745
76.243
28.494
28.420
28.346
28.272
OH
Me Me
O
ppm


JEOL
Filename = 060928ato_563b-4.jdf
Author = JNM-LA Series FT-NMR use
Experiment = nos
Sample_id = 563b
Solvent = CDCl3
Creation_time = 5-APR-2007 16:15:06
Revision_time = 5-APR-2007 16:17:43
Current_time = 5-APR-2007 16:17:57
Data_format = 1D COMPLEX
Dim_size = 32768
Dim_title = 1H
Dim_units = [ppm]
Dimensions = X
Spectrometer = LAMBDA_NMR
X_freq = 395.884498 [MHz]
X_offset = 0 [Hz]
X_sweep = 7.51765625 [kHz]
X_angle = 45 [deg]
X_points = 32768
X_prescans = 0
Scans = 8
Temp_get = 22.700000076 [dC]
OH
Me
OMe
O
0.0000
0.0031
1.2567
1.6210
1.8749
2.5567
3.8054
3.8085
3.8707
4.8003
6.8974
6.9200
7.3008
7.3509
7.5734
7.6609
7.6792
7.6817
(Thousands)
X : parts per Million : 1H

JEOL
Filename = 060927ato_bcm563b-4.jdf
Author = JNM-LA Series FT-NMR use
Experiment = bcm
Sample_id = bcm563b
Solvent = CDCL3
Creation_time = 5-APR-2007 16:13:07
Revision_time = 5-APR-2007 16:14:30
Current_time = 5-APR-2007 16:14:42
Data_format = 1D COMPLEX
Dim_size = 32768
Dim_title = 13C
Dim_units = [ppm]
Dimensions = X
Spectrometer = LAMBDA_NMR
X_freq = 99.534475[MHz]
X_offset = 0[Hz]
X_sweep = 26.8817207[kHz]
X_angle = 45[deg]
X_points = 32768
X_prescans = 1
Scans = 133
Temp_get = 22.899999962[dC]
OH
Me
O
OMe
(Thousands)
X : parts per Million : 13C
25.9310
55.2522
76.4786
77.0000
77.3214
114.2902
127.2861
128.2585
130.1786
132.9311
134.5216
159.3844


JEOL
Filename = 060713nao_483-3.jdf
Author = JNM-LA Series FT-NMR use
Experiment = non
Sample_id = 483
Solvent = CDCL3
Creation_time = 5-APR-2007 16:10:35
Revision_time = 5-APR-2007 16:12:01
Current_time = 5-APR-2007 16:13:26
Data_format = 1D COMPLEX
Dim_size = 32768
Dim_title = 1H
Dim_units = [ppm]
Dimensions = X
Spectrometer = LAMBDA_NMR
X_freq = 395.884498[MHz]
X_offset = 0[Hz]
X_sweep = 7.917655[kHz]
X_angle = 45[deg]
X_points = 32768
X_prescans = 0
Scans = 5
Temp_set = 26.10000038[dC]
O
OH
Ph
Me
Me
Me
Me
0.0000
1.0681
1.5777
1.8310
4.3633
7.3539
7.3635
7.2599
(Thousands)
X : parts per Million : 1H


JEOL
Filename = 060713ato_bcm_483-3.jdf
Author = JNM-LA Series FT-NMR use
Experiment = bcm
Sample_id = bcm_483
Solvent = CDCl3
Creation_time = 5-APR-2007 16:07:28
Revision_time = 5-APR-2007 16:09:57
Current_time = 5-APR-2007 16:10:14
Data_format = 1D COMPLEX
Dim_size = 32768
Dim_title = 13C
Dim_units = [ppm]
Dimensions = X
Spectrometer = LAMBDA_NMR
X_freq = 99.534475[MHz]
X_offset = 0[Hz]
X_sweep = 26.8817207[kHz]
X_angle = 45[deg]
X_points = 32768
X_prescans = 1
Scans = 75
Temp_get = 26.5[dC]
O
OH
Ph
Me
Me
Me
Me
(Thousands)
5.0
4.0
3.0
2.0
1.0
0
X : parts per Million : 13C
190.0
180.0
170.0
160.0
150.0
140.0
130.0
120.0
110.0
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0
4.2657
25.4928
26.5352
44.3248
76.6786
77.0000
77.3132
80.5683
125.9428
127.7888
128.4398
141.9302