Supporting Information 2

Chiral Magnesium BINOL Phosphate Catalyzed Phopshination of Imines: Access to Enantioenriched α-Amino Phosphine Oxides

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Contents

^{1}H NMR, ^{13}C NMR, HPLC traces ……S2-S100

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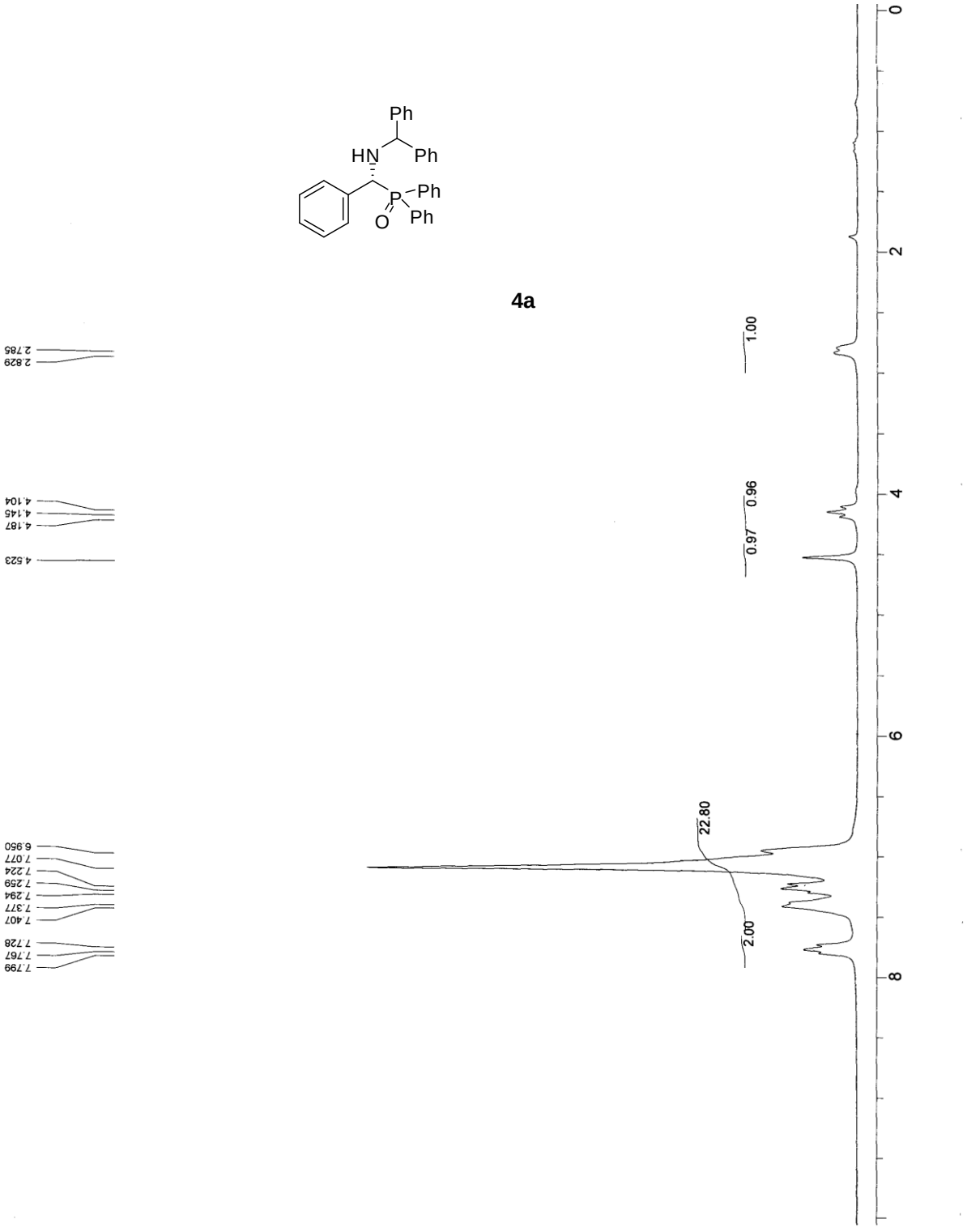
HN
Ph
P
Ph
O
Ph

4a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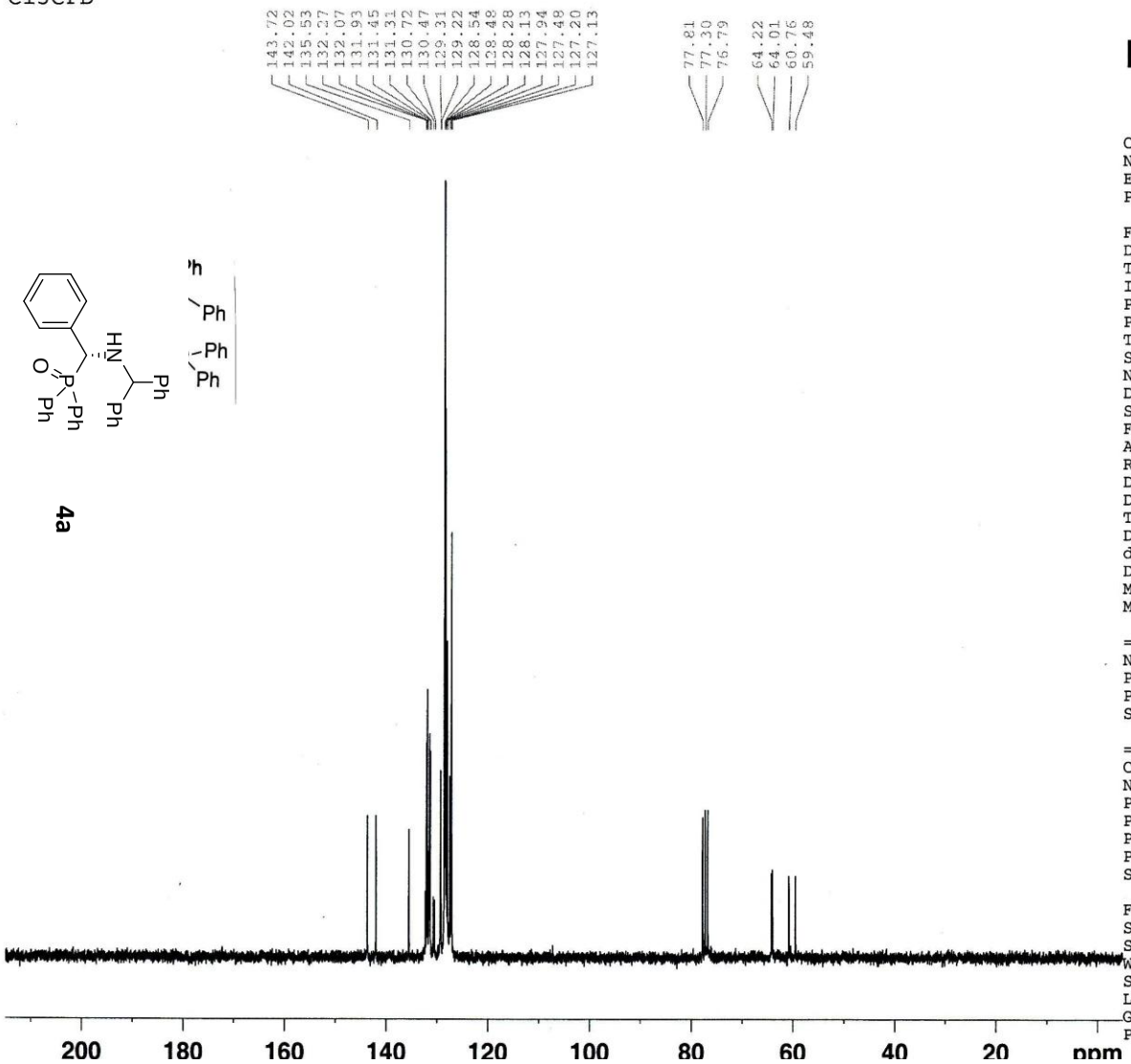

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PROCNO                 1

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MCWRK         0.01500000 sec

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PL1               -6.00 dB
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NUC2                1H
PCPD2            100.00 usec
PL2                0.00 dB
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PL13              25.10 dB
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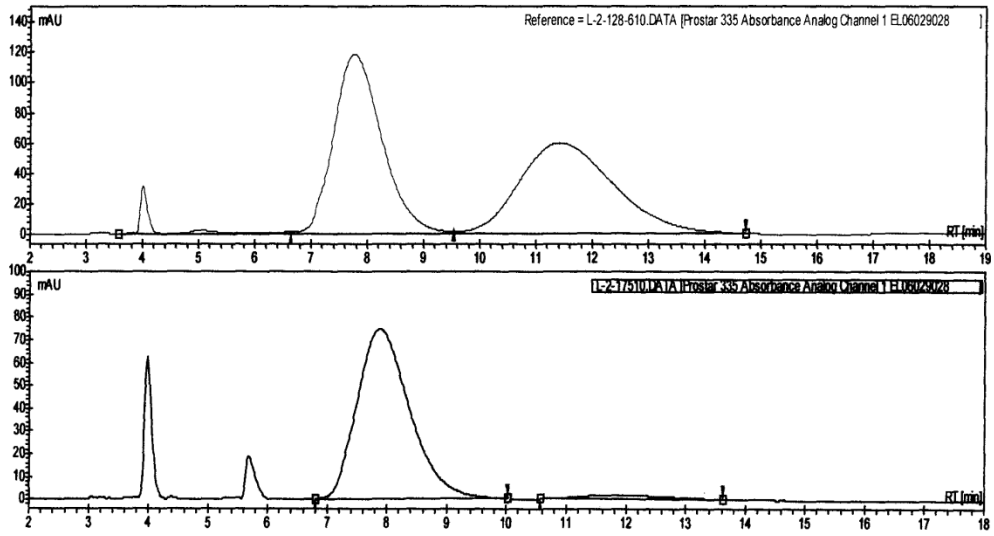

Peak results :

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1	7.77	118.1	1.55	118.1	50.434
2	11.43	59.5	3.09	116.1	49.566
Total		177.6		234.2	100.000

L-2-17510.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

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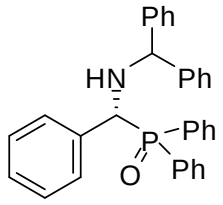

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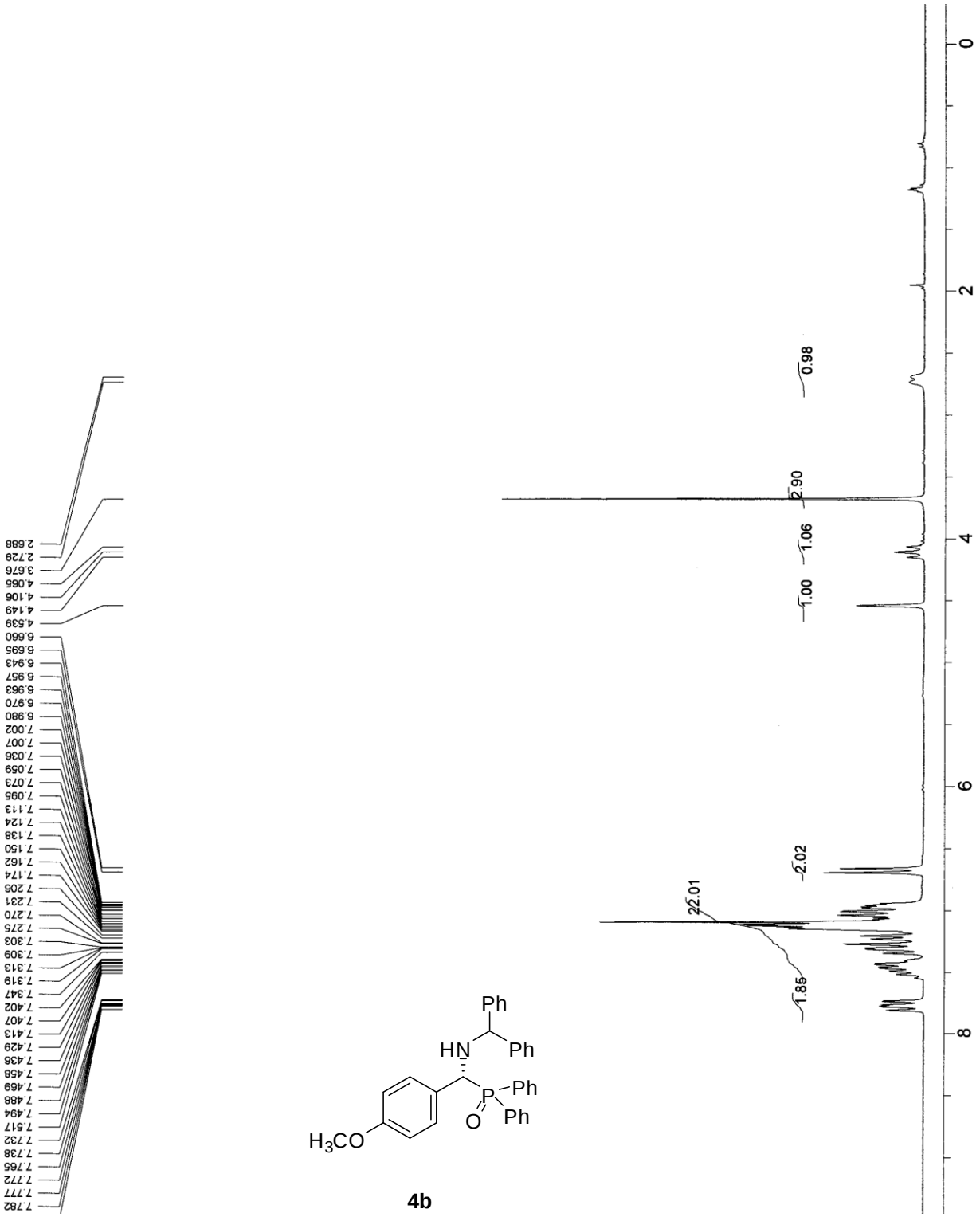
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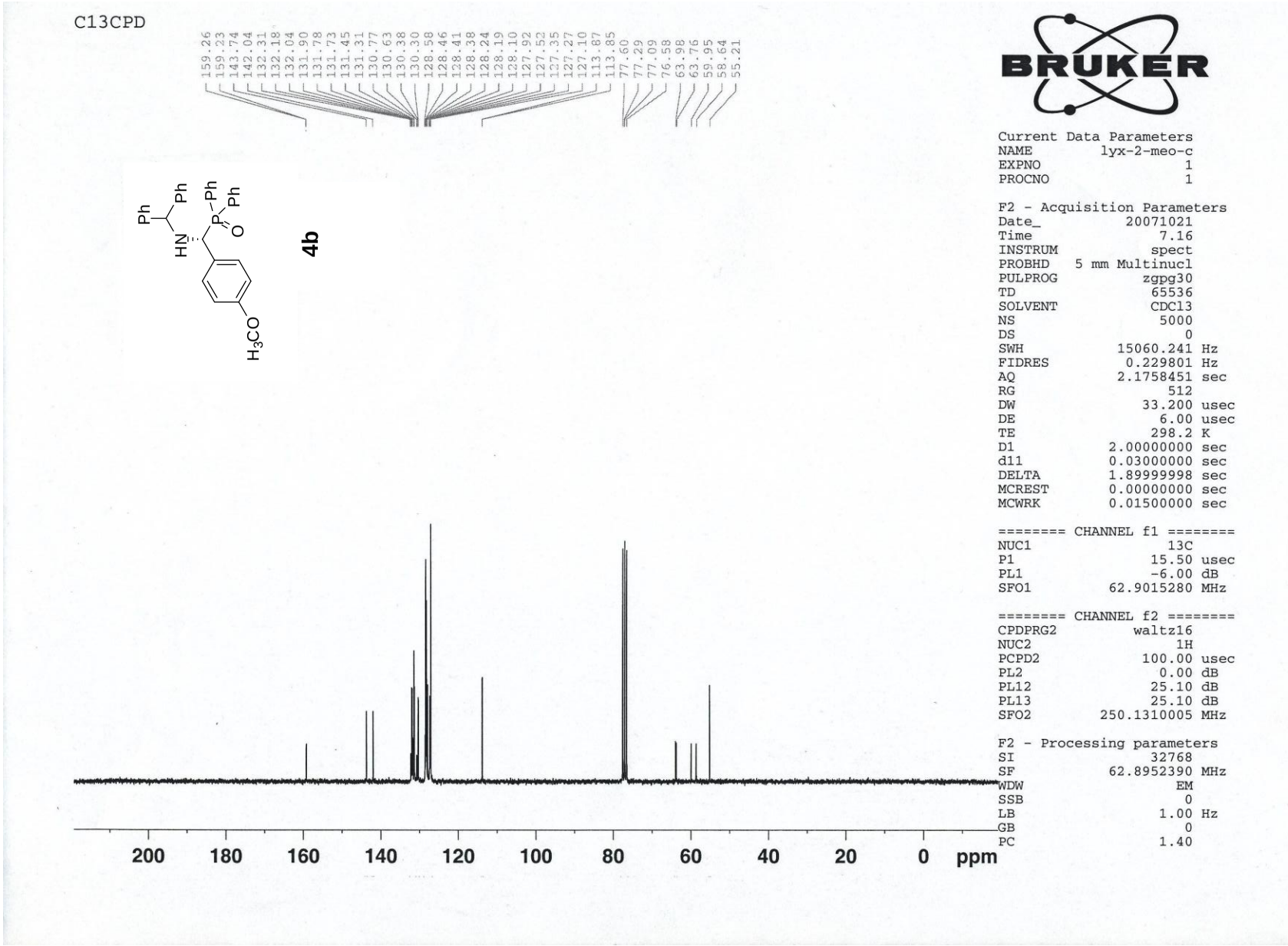
4b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4b
BRUKER
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MCWRK 0.01500000 sec
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PL1 -6.00 dB
SFO1 62.9015280 MHz
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PCPD2 100.00 usec
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PL13 25.10 dB
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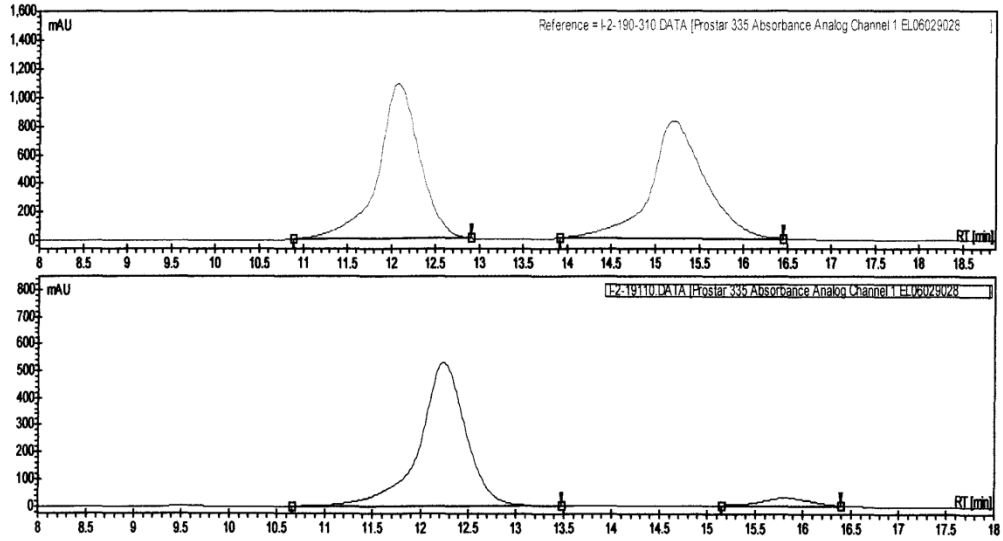

Peak results :

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1	12.08	1082.7	0.80	592.1	50.341
2	15.21	821.2	1.04	584.1	49.659
Total		1903.9		1176.2	100.000

I-2-19110.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	12.24	529.9	0.82	296.9	94.823
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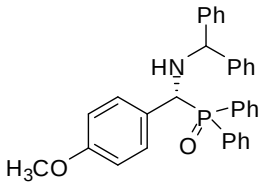

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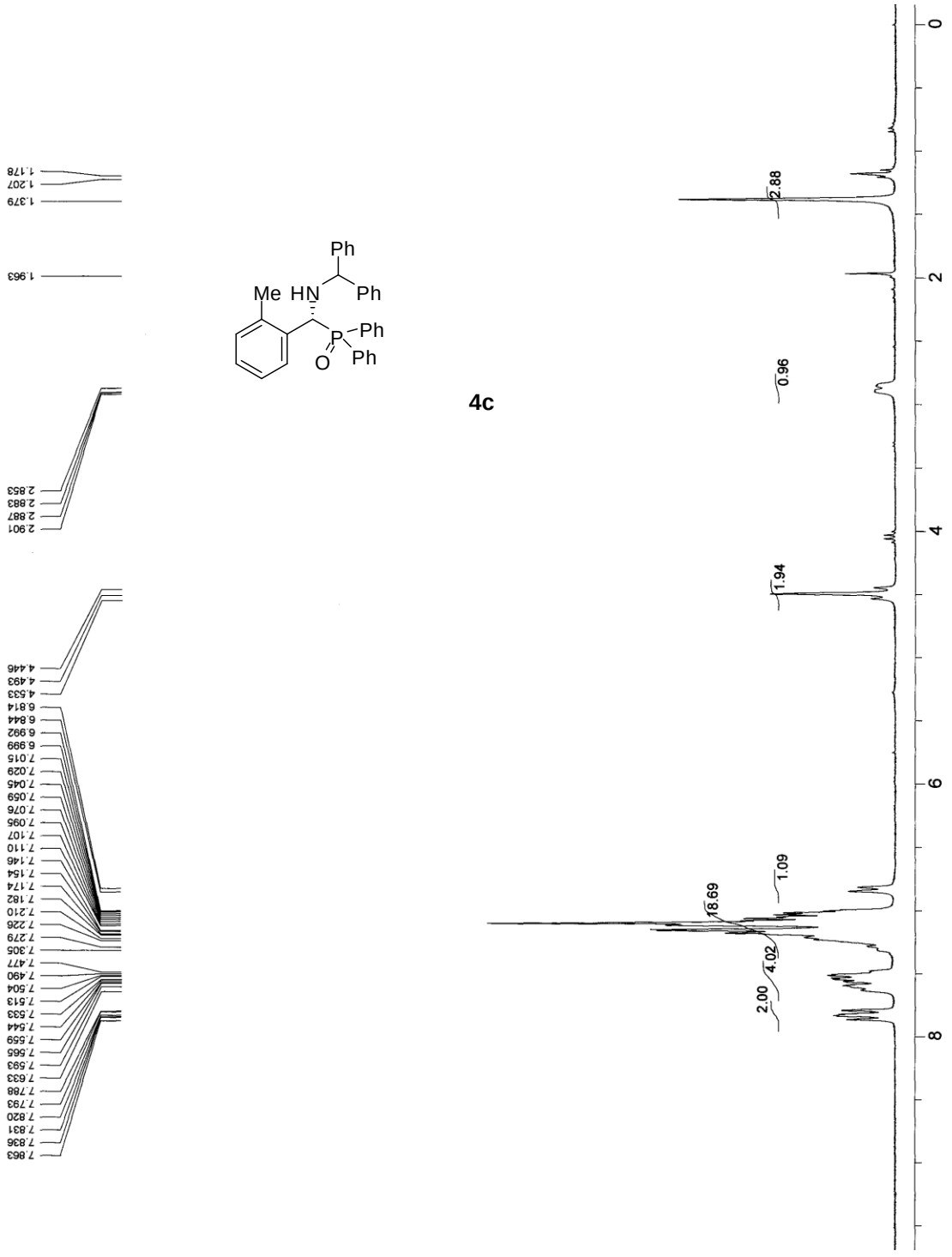
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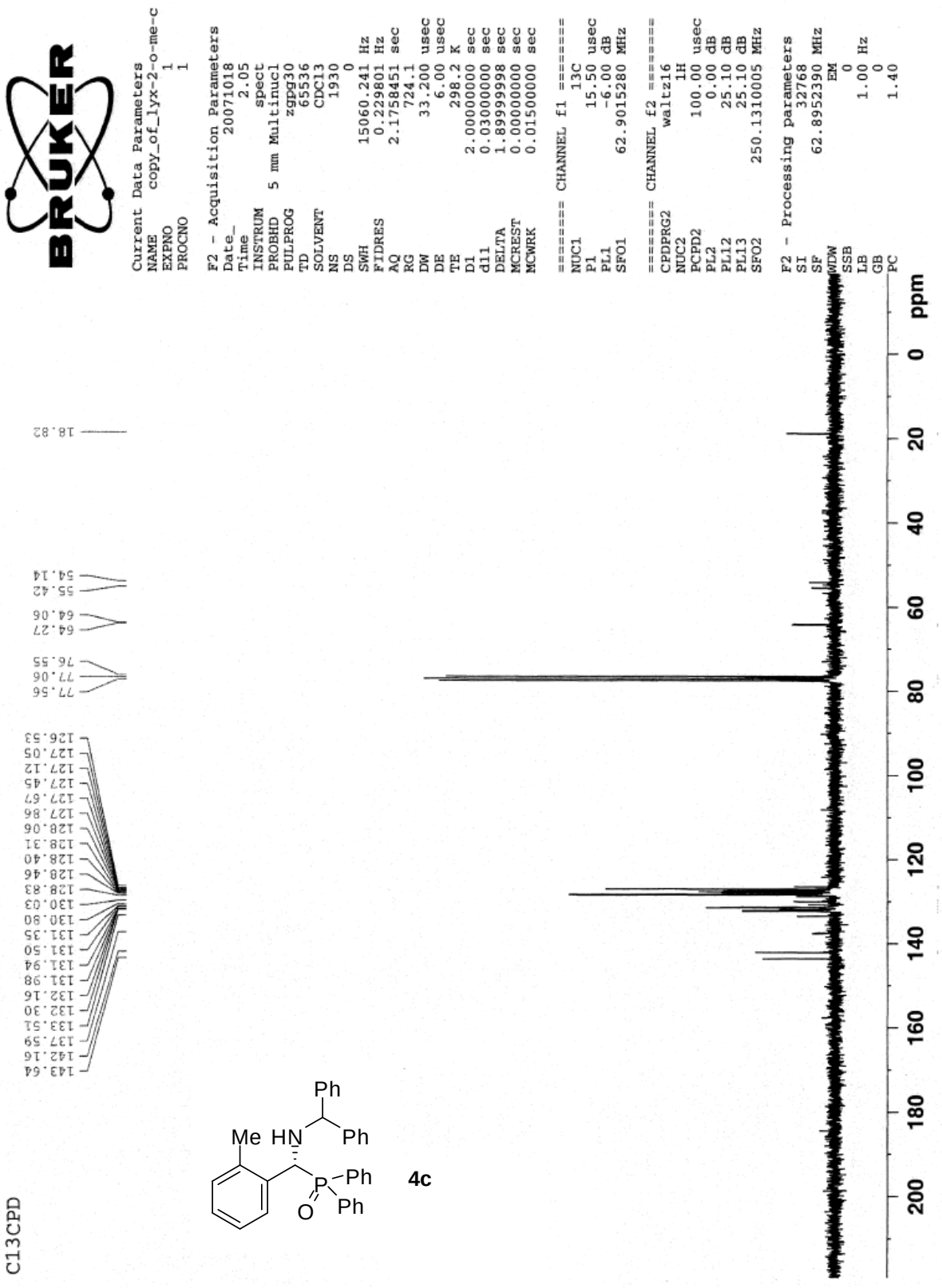
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MCWRK 0.01500000 sec
======== CHANNEL f1 ========
NUC1 13C
P1 15.50 usec
PL1 -6.00 dB
SFO1 62.9015280 MHz
======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 100.00 usec
PL2 0.00 dB
PL12 25.10 dB
PL13 25.10 dB
SFO2 250.1310005 MHz
F2 - Processing parameters
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LB 1.00 Hz
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HN
Ph
Ph
P
Ph
O
Ph
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Chromatogram : I-2-21010_channel1

System : HPLC
Method : test
User : Gerald Rowland

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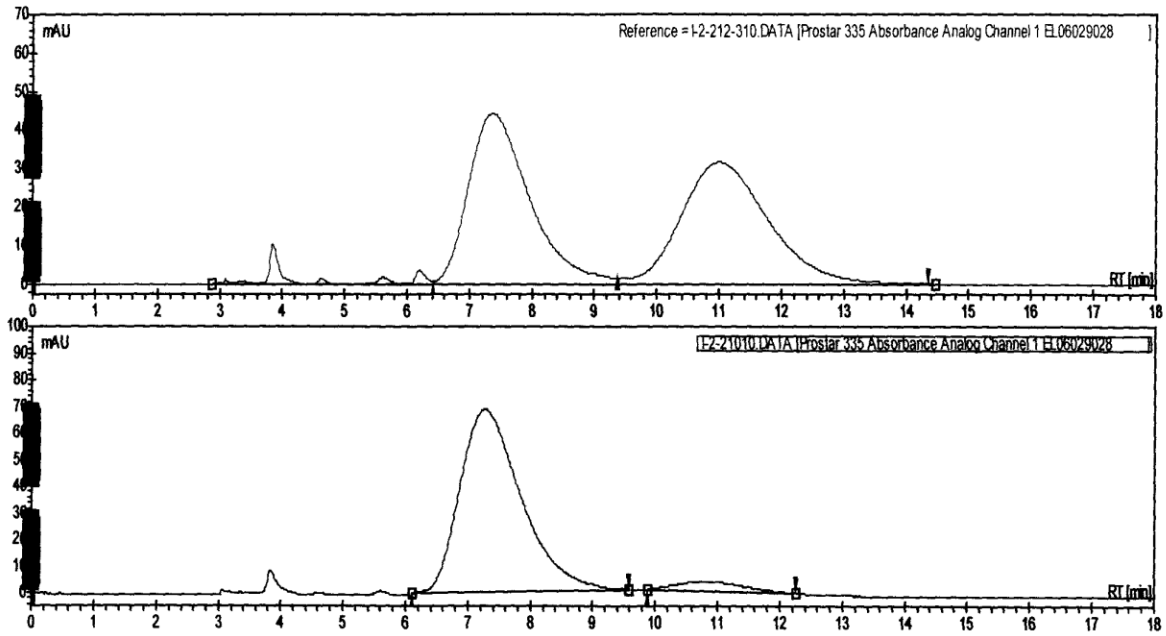

Peak results :

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1	7.37	44.5	1.76	50.4	49.517
2	11.01	31.7	2.52	51.4	50.483
Total		76.1		101.8	100.000

I-2-21010.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	7.27	68.4	1.78	78.1	94.509
2	10.88	3.6	1.98	4.5	5.491
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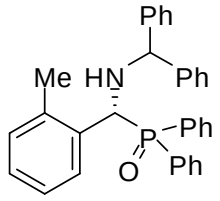

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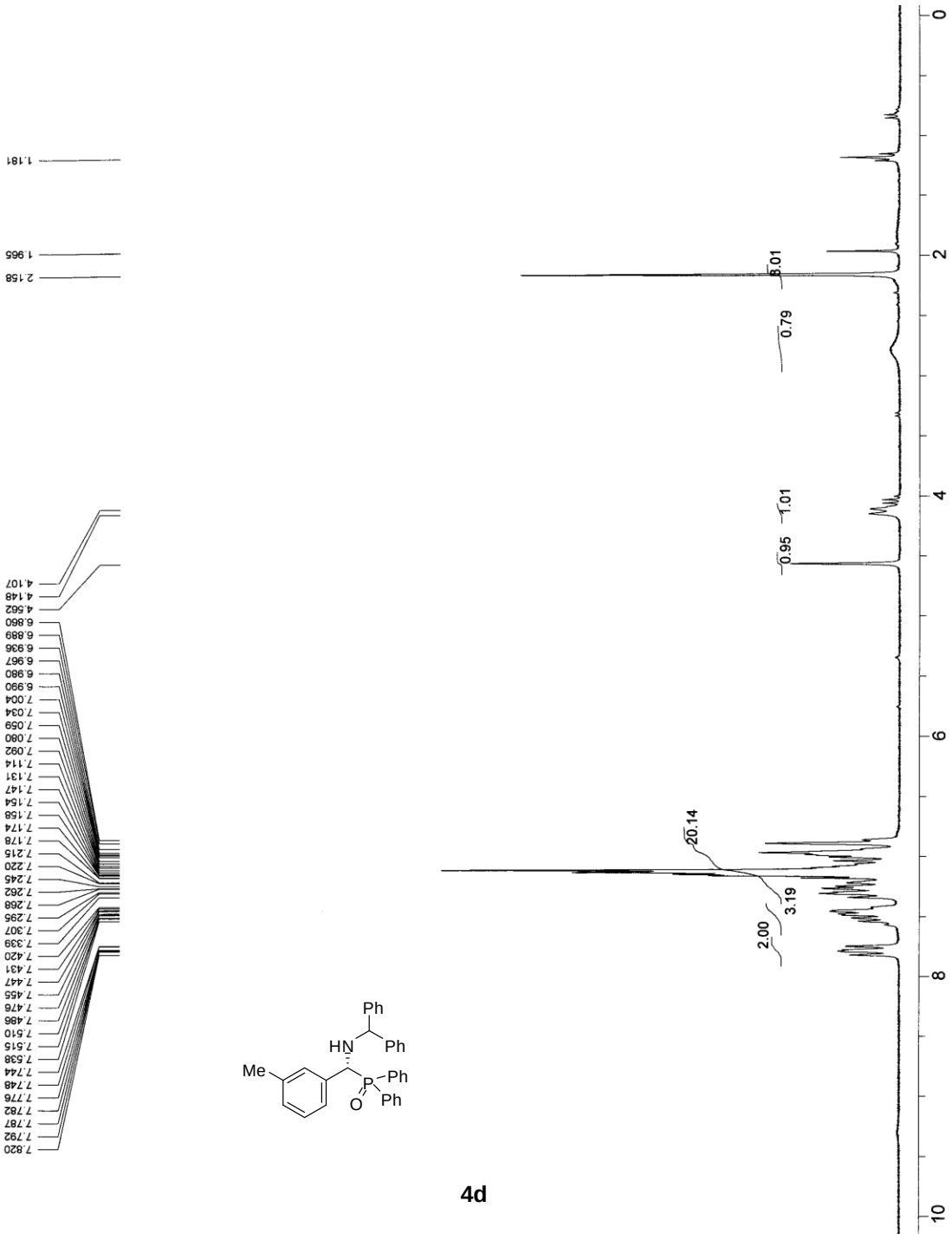
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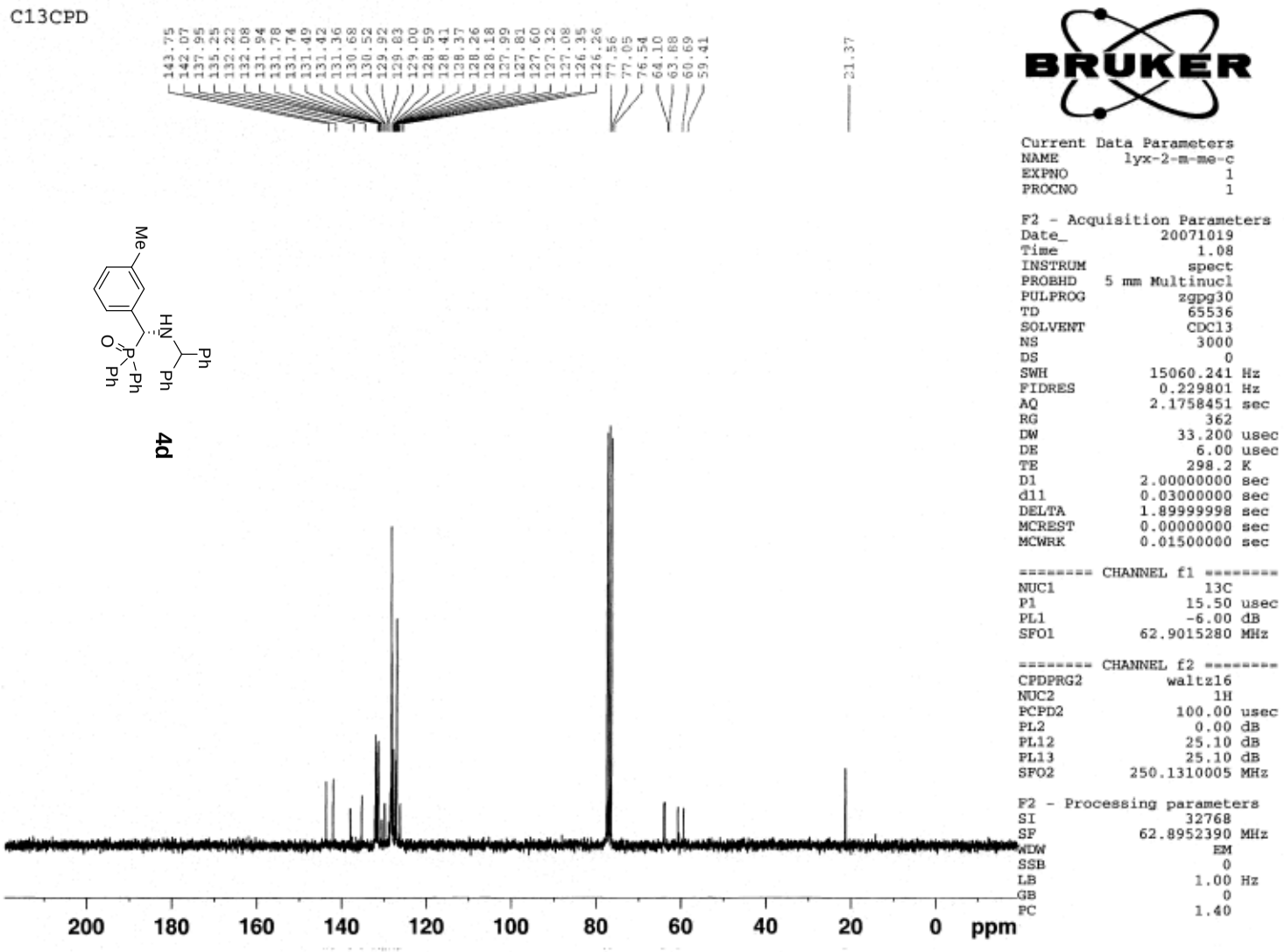
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PROCNO 1
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SOLVENT CDCl3
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AQ 2.1758451 sec
RG 362
DW 33.200 usec
DE 6.00 usec
TE 298.2 K
D1 2.00000000 sec
d11 0.03000000 sec
DELTA 1.89999998 sec
MCREST 0.00000000 sec
MCWRK 0.01500000 sec
======== CHANNEL f1 ========
NUC1 13C
P1 15.50 usec
PL1 -6.00 dB
SFO1 62.9015280 MHz
======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 100.00 usec
PL2 0.00 dB
PL12 25.10 dB
PL13 25.10 dB
SFO2 250.1310005 MHz
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System : HPLC
Method : test
User : Gerald Rowland

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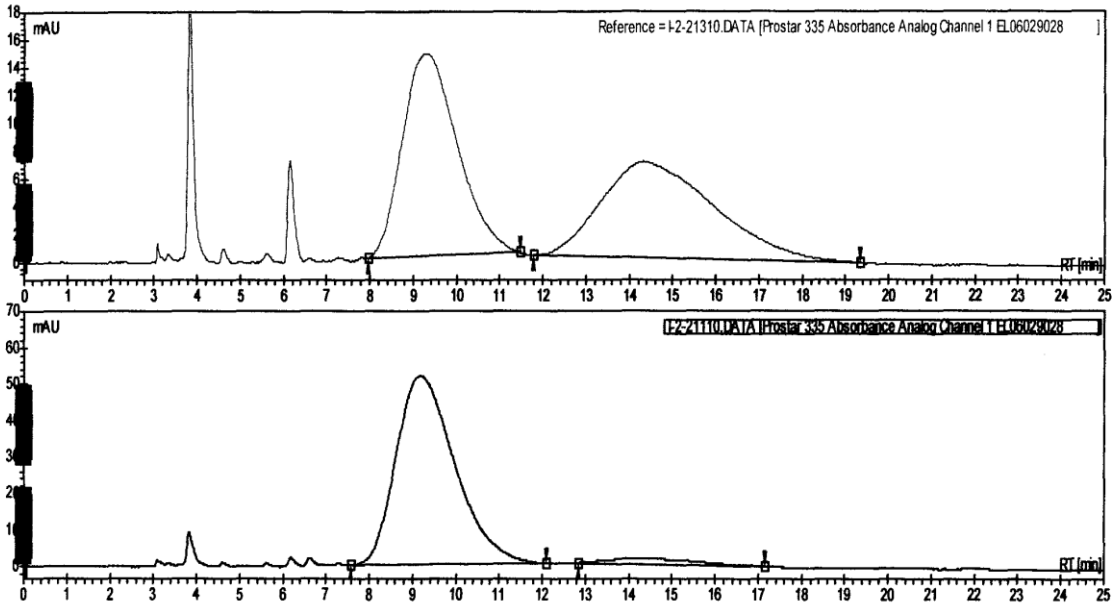

Peak results :

I-2-21310.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

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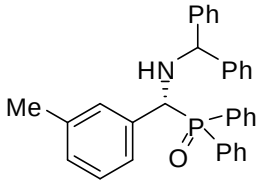
1	9.29	14.5	2.37	21.5	50.702
2	14.33	6.9	4.69	20.9	49.298
Total		21.5		42.4	100.000

I-2-21110.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	9.17	51.7	2.50	81.6	95.815
2	14.45	1.6	3.24	3.6	4.185
Total		53.3		85.1	100.000



4d

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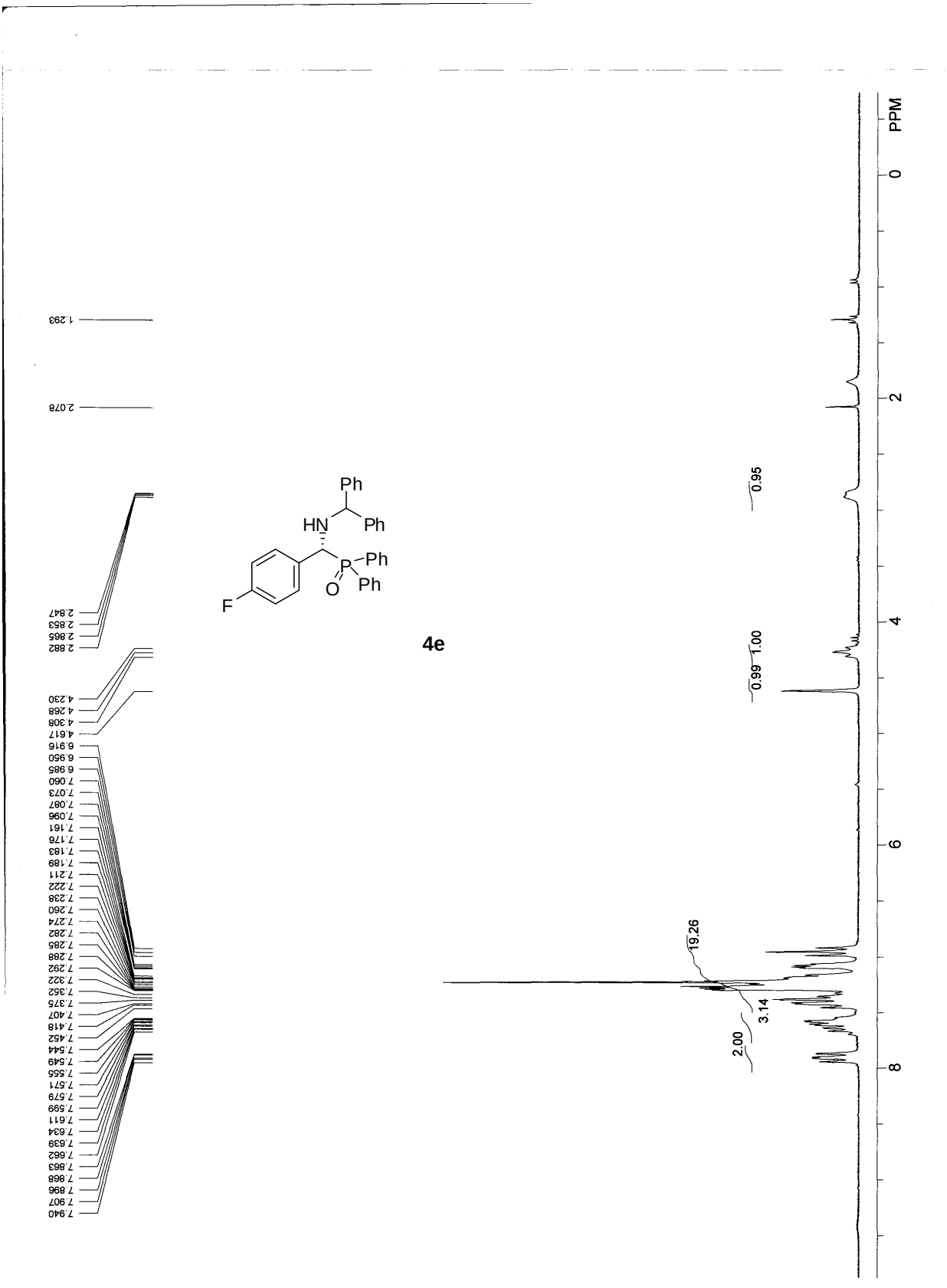
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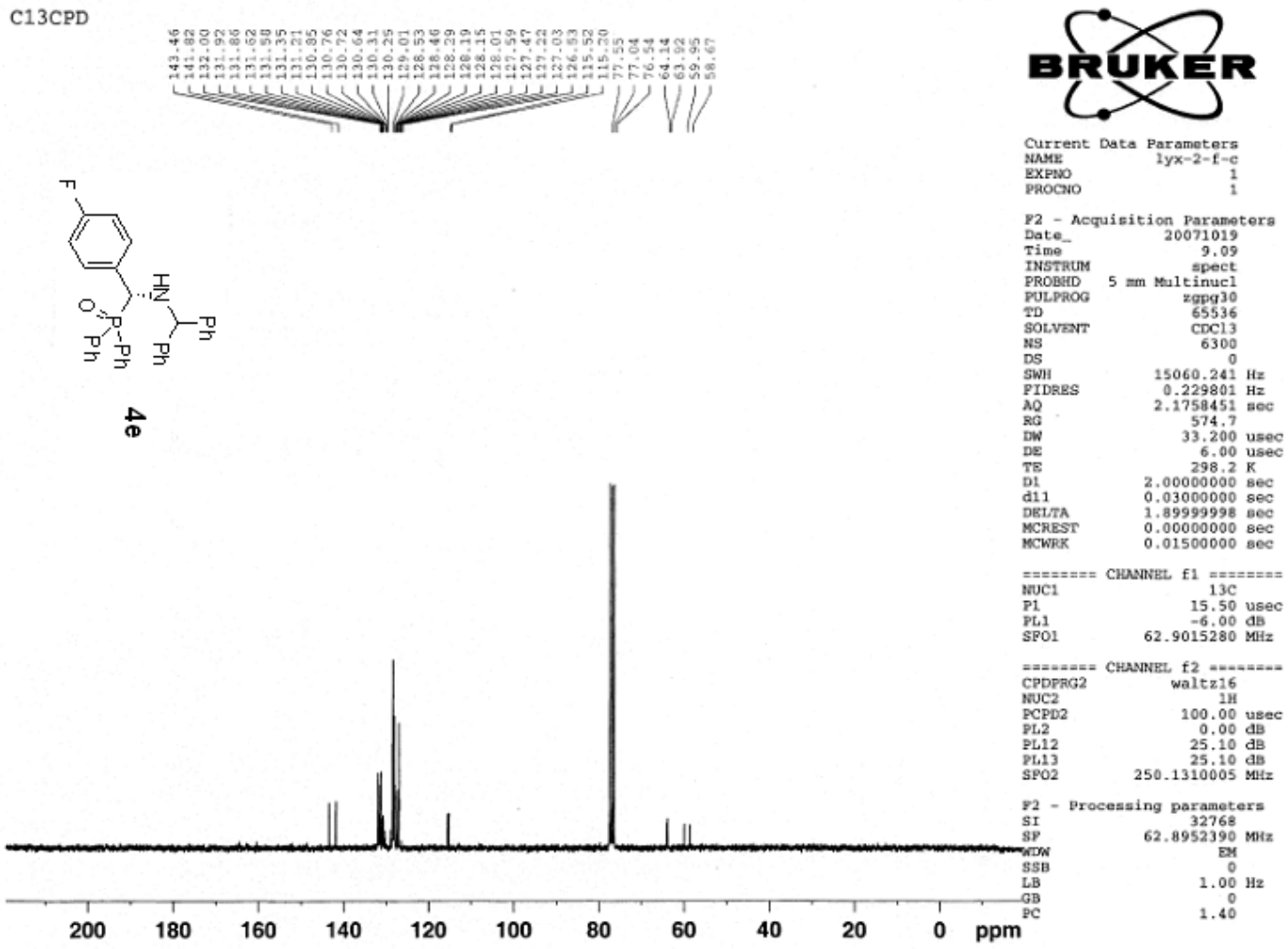

BRUKER

Current Data Parameters

NAME	lyx-2-f-c
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PROCNO	1

F2 - Acquisition Parameters

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PROBHD	5 mm Multinucl
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TD	65536
SOLVENT	CDCl3
NS	6300
DS	0
SWH	15060.241 Hz
FIDRES	0.229801 Hz
AQ	2.1758451 sec
RG	574.7
DW	33.200 usec
DE	6.00 usec
TE	298.2 K
D1	2.00000000 sec
d11	0.03000000 sec
DELTA	1.89999998 sec
MCREST	0.00000000 sec
MCWRK	0.01500000 sec

======== CHANNEL f1 ========

NUC1	13C
P1	15.50 usec
PL1	-6.00 dB
SFO1	62.9015280 MHz

======== CHANNEL f2 ========

CPDPRG2	waltz16
NUC2	1H
PCPD2	100.00 usec
PL2	0.00 dB
PL12	25.10 dB
PL13	25.10 dB
SFO2	250.1310005 MHz

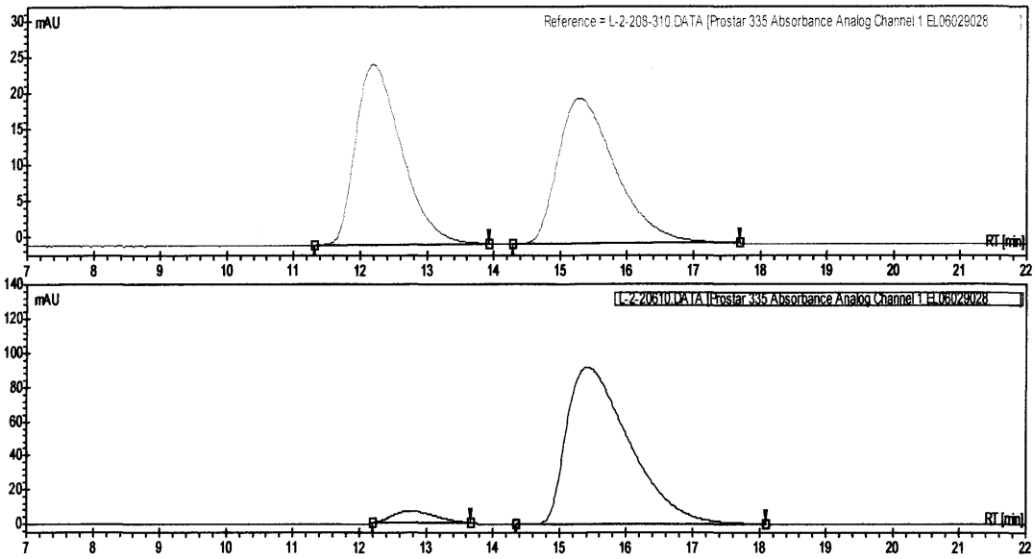
F2 - Processing parameters

SI	32768
SF	62.8952390 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

Chromatogram : L-2-20610_channel1

System : HPLC
Method : test
User : Gerald Rowland

Acquired : 10/16/2007 9:06:32 AM
Processed : 10/16/2007 9:36:27 AM
Printed : 10/16/2007 9:38:52 AM



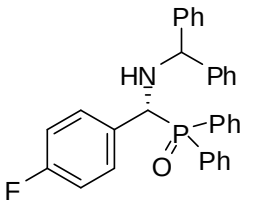
Peak results :

L-2-208-310.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	12.20	25.2	1.26	20.2	49.943
2	15.29	20.3	1.55	20.2	50.057
Total		45.5		40.4	100.000

L-2-20610.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
2	12.77	7.1	1.24	5.4	5.128
1	15.41	91.4	1.71	99.2	94.872
Total		98.5		104.5	100.000



4e

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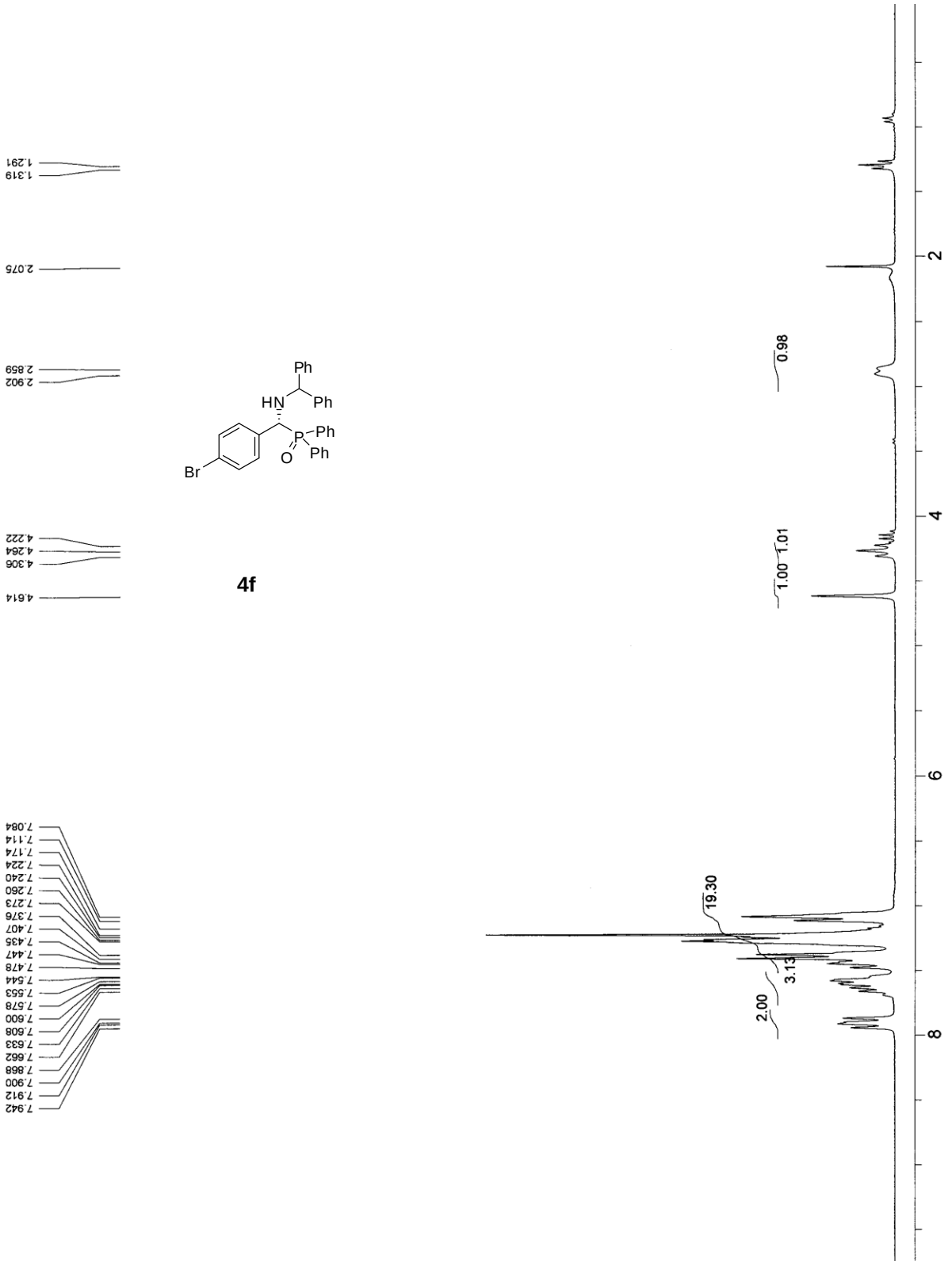
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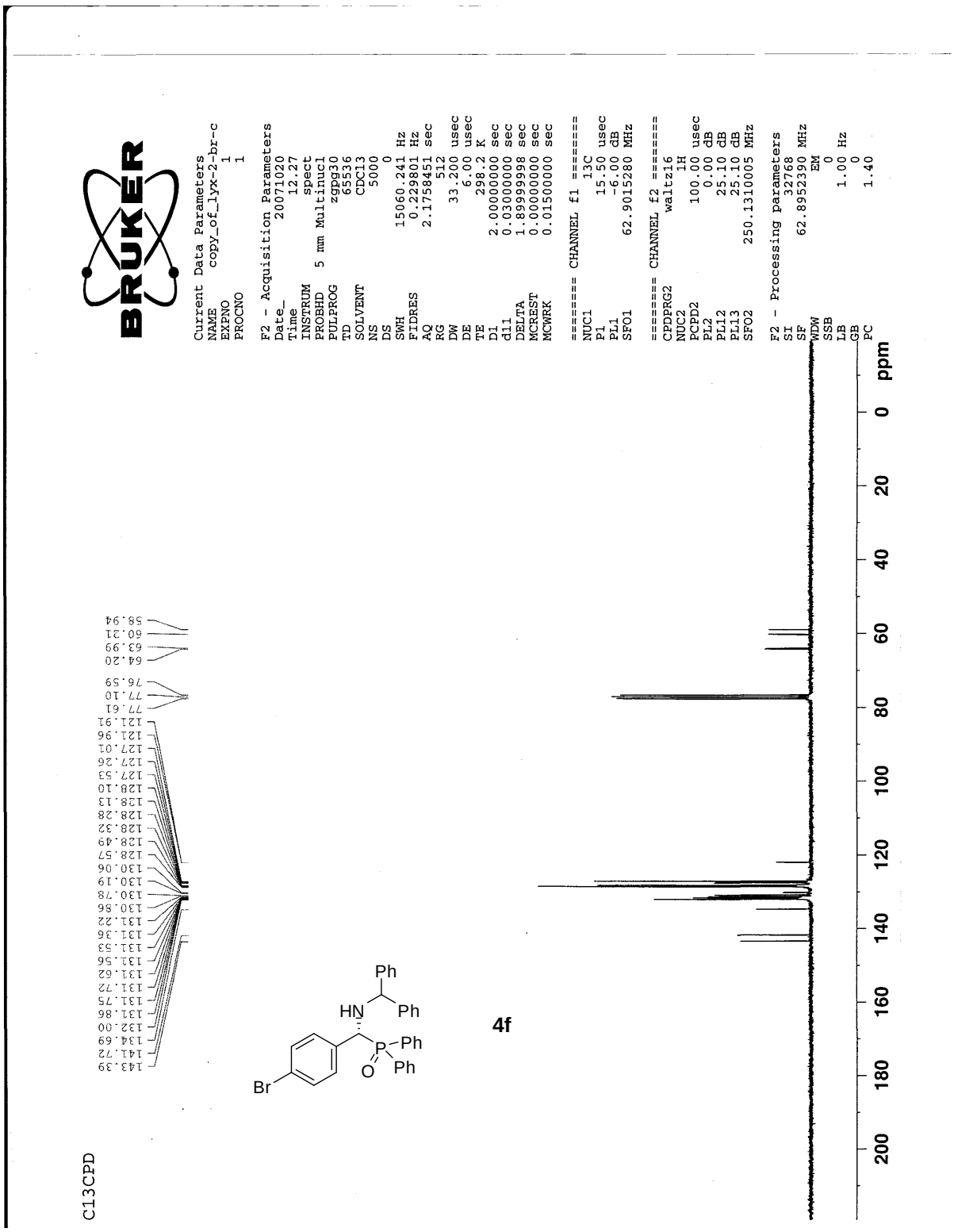
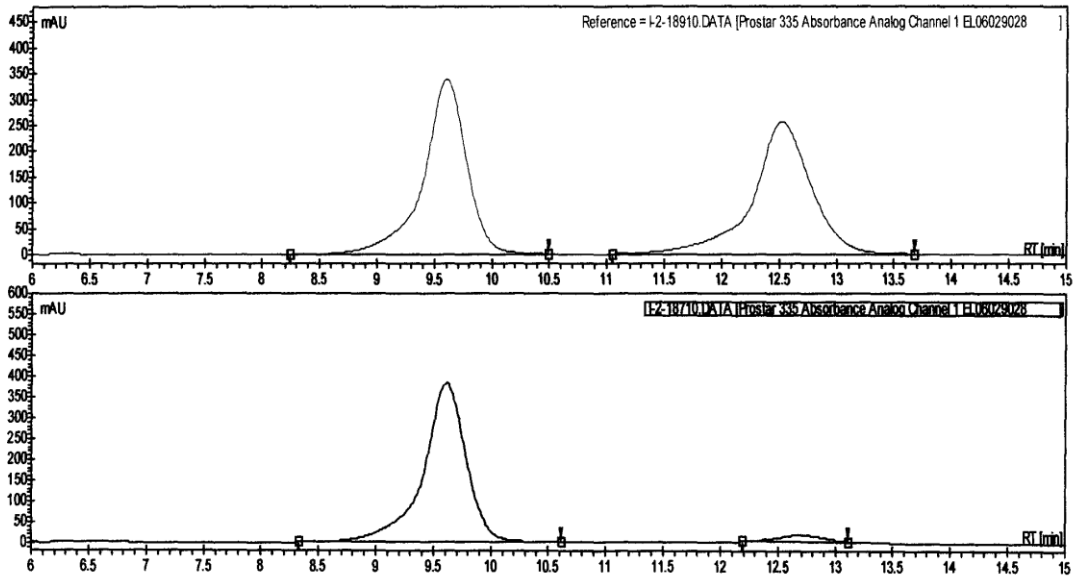
2.859
2.902
4.222
4.264
4.306
4.614
7.084
7.114
7.174
7.224
7.240
7.260
7.273
7.376
7.407
7.435
7.447
7.478
7.544
7.563
7.578
7.600
7.608
7.633
7.662
7.868
7.900
7.912
7.942
Ph
HN
Ph
P
Ph
O
Ph
Br
4f
0.98
1.00
1.01
19.30
3.13
2.00
2
4
6
8


Current Data Parameters
NAME copy_of_lyx-2-br-c
EXPNO 1
PROCNO 1
F2 - Acquisition Parameters
Date_ 20071020
Time 12.27
INSTRUM spect
PROBHD 5 mm Multinucl
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 5000
DS 0
SWH 15060.241 Hz
FIDRES 0.229801 Hz
AQ 2.17758451 sec
RG 512
DW 33.200 usec
DE 6.00 usec
TE 298.2 K
D1 2.00000000 sec
d11 0.03000000 sec
DELTA 1.89999998 sec
MCREST 0.00000000 sec
MCWRK 0.01500000 sec
======== CHANNEL f1 ========
NUC1 13C
P1 15.50 usec
PL1 -6.00 dB
SFO1 62.9015280 MHz
======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 100.00 usec
PL2 0.00 dB
PL12 25.10 dB
PL13 25.10 dB
SFO2 250.1310005 MHz
F2 - Processing parameters
SI 32768
SF 62.8952390 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
ppm
C13CPD
4f

Chromatogram : I-2-18710_channel1

System : HPLC
Method : test
User : Gerald Rowland

Acquired : 10/9/2007 1:50:48 PM
Processed : 10/9/2007 2:48:10 PM
Printed : 10/9/2007 2:48:39 PM



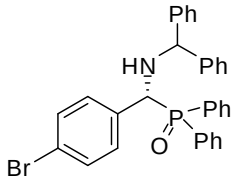
Peak results :

I-2-18910.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	9.60	339.2	0.65	148.3	49.785
2	12.52	255.5	0.85	149.6	50.215
Total		594.6		297.9	100.000

I-2-18710.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	9.61	382.9	0.64	167.2	95.865
2	12.71	16.2	0.74	7.2	4.135
Total		399.1		174.5	100.000



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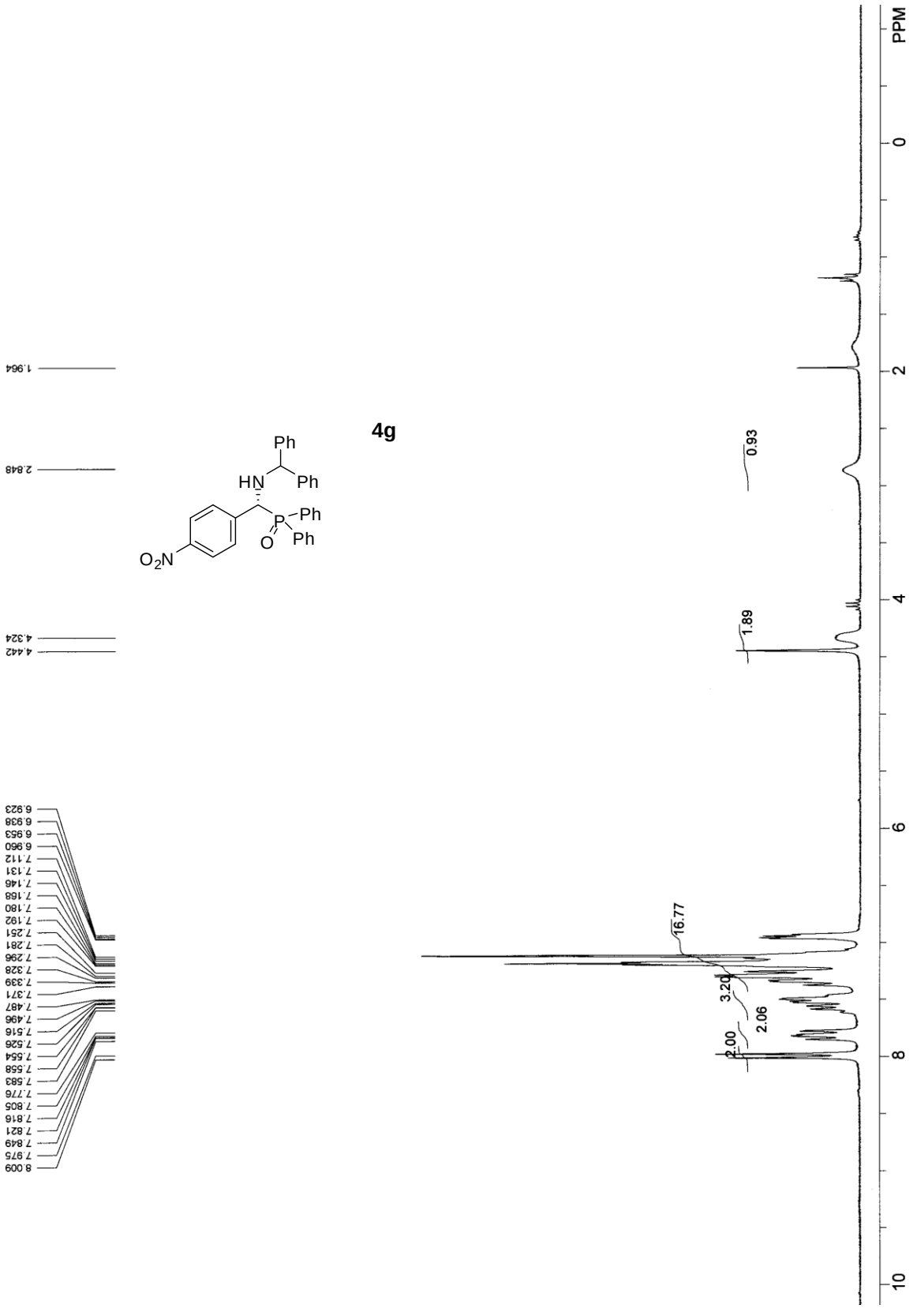
4g
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HN
Ph
P
Ph
O
Ph
O2N
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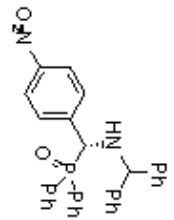
2.848
4.324
4.442
6.923
6.938
6.953
6.960
7.112
7.131
7.146
7.168
7.180
7.192
7.251
7.281
7.296
7.328
7.339
7.371
7.487
7.496
7.516
7.526
7.554
7.558
7.583
7.776
7.805
7.816
7.821
7.849
7.975
8.009
0.93
1.89
16.77
3.20
2.06
2.00
PPM
0
2
4
6
8
10

C13CPD

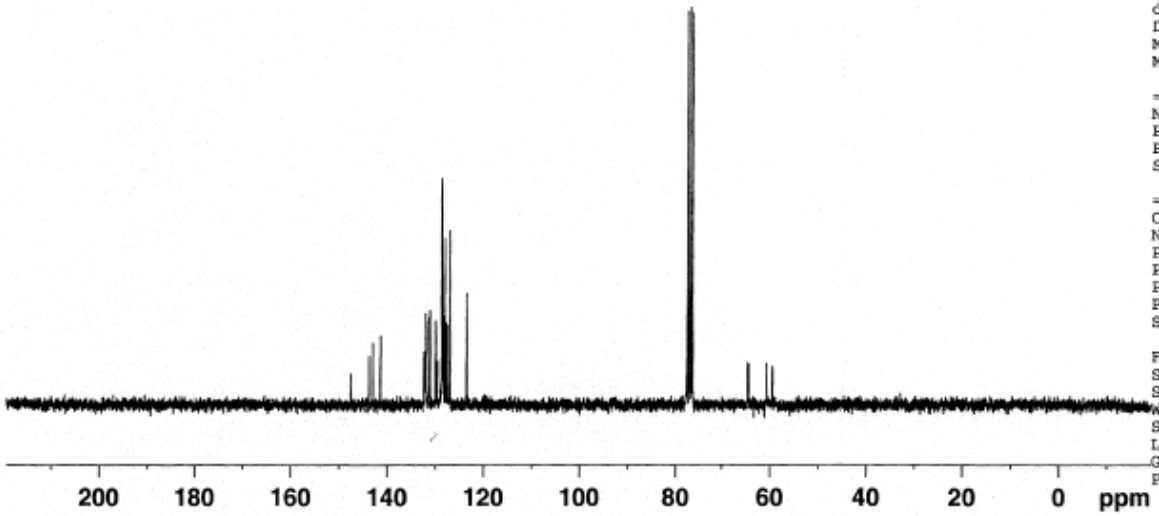
147.53
143.74
142.96
141.38
132.37
132.10
131.96
131.82
131.26
131.12
129.96
129.88
129.52
128.70
128.57
128.49
128.29
128.00
127.74
127.44
126.92
123.46

77.56
77.06
76.55

64.59
64.39
60.66
59.43



4g

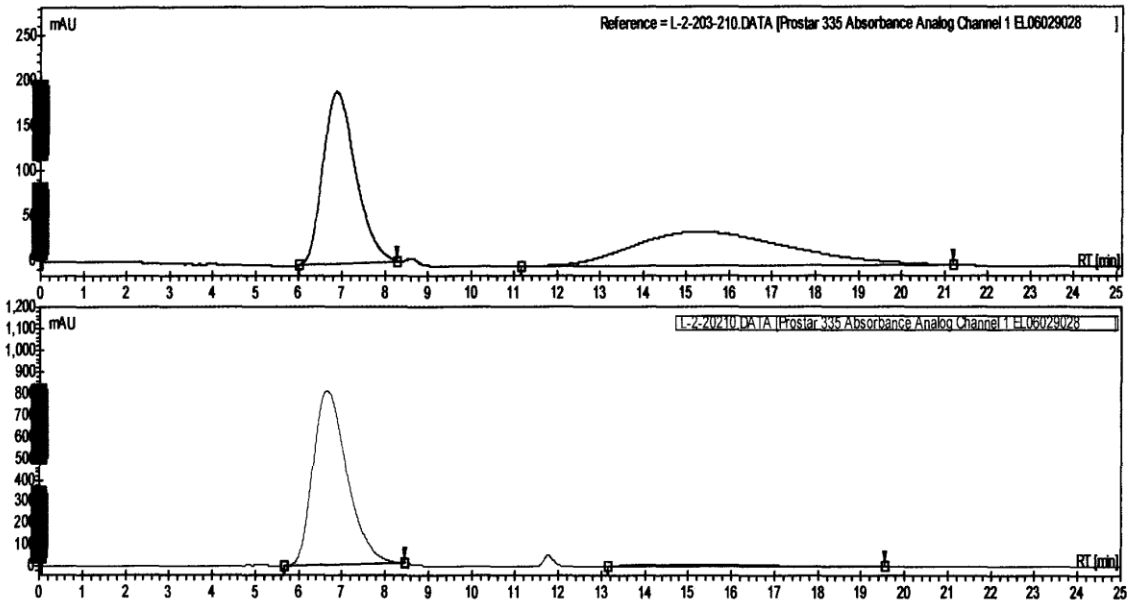


BRUKER

```
Current Data Parameters
NAME        lyx-2-no2-1-h
EXPNO                   1
PROCNO                  1

F2 - Acquisition Parameters
Date_            20071020
Time                22.10
INSTRUM             spect
PROBHD   5 mm Multinucl
PULPROG           zgpg30
TD                 65536
SOLVENT            CDCl3
NS                  3000
DS                     0
SWH            15060.241 Hz
FIDRES         0.229801 Hz
AQ             2.1758451 sec
RG                   362
DW                33.200 usec
DE                 6.00 usec
TE                298.2 K
D1           2.00000000 sec
d11          0.03000000 sec
DELTA        1.89999998 sec
MCREST       0.00000000 sec
MCWRK        0.01500000 sec

======== CHANNEL f1 ========
NUC1                13C
P1                15.50 usec
PL1               -6.00 dB
SFO1         62.9015280 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                1H
PCPD2             100.00 usec
PL2                0.00 dB
PL12              25.10 dB
PL13              25.10 dB
SFO2        250.1310005 MHz

F2 - Processing parameters
SI                 32768
SF           62.8952390 MHz
WDW                   EM
SSB                    0
LB                 1.00 Hz
GB                     0
PC                 1.40
```

System : HPLC
Method : test
User : Gerald Rowland

Acquired : 10/15/2007 4:53:40 PM
Processed : 10/15/2007 5:27:22 PM
Printed : 10/15/2007 5:30:00 PM



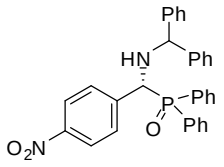
Peak results :

L-2-203-210.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
2	6.88	189.9	1.40	168.2	51.349
1	15.32	37.5	6.72	159.4	48.651
Total		227.5		327.6	100.000

L-2-20210.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	6.65	807.7	1.44	743.1	97.300
2	15.24	6.2	5.89	20.6	2.700
Total		813.9		763.7	100.000



4g

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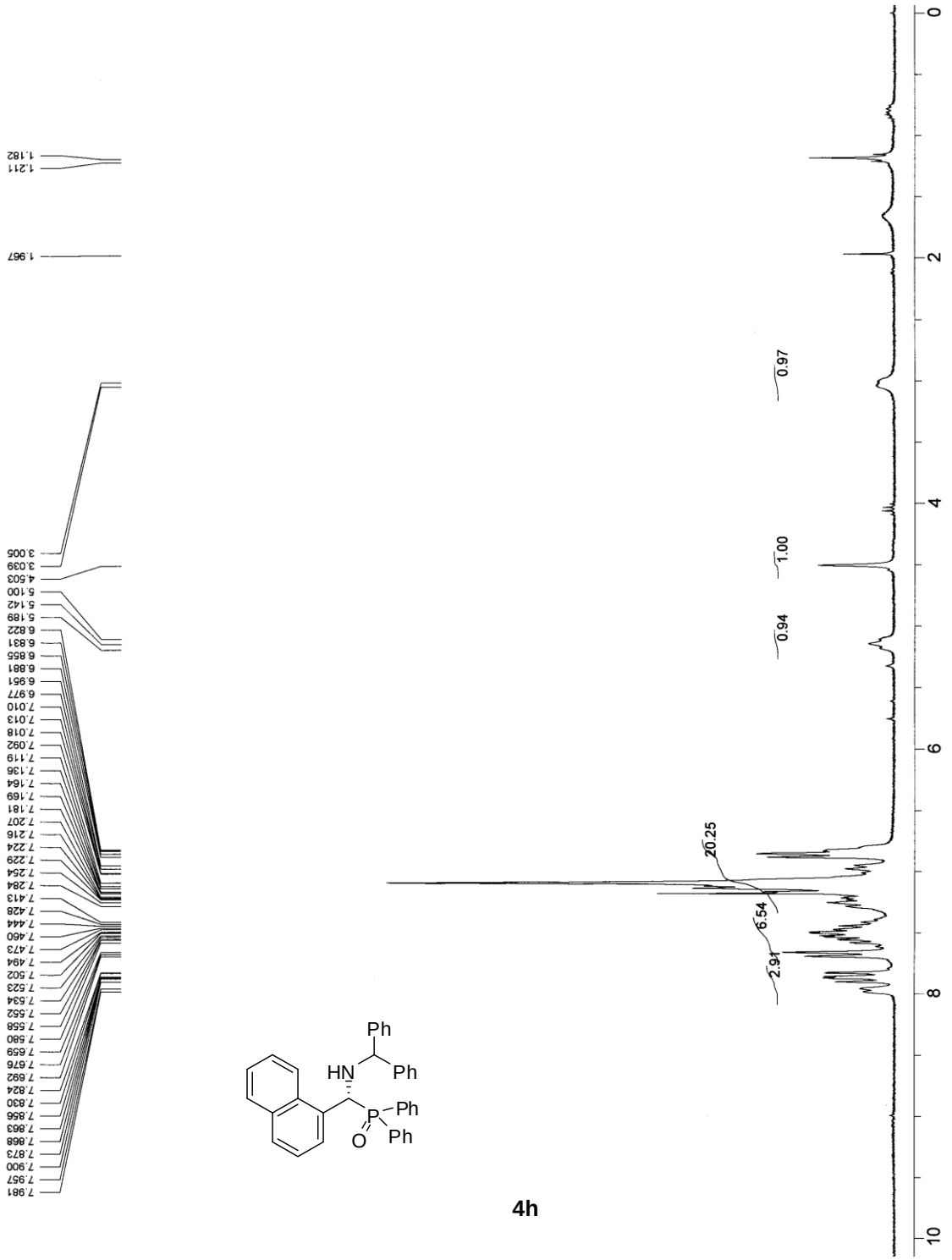
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4.503
5.100
5.142
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6.822
6.831
6.855
6.881
6.951
6.977
7.010
7.013
7.018
7.092
7.119
7.136
7.164
7.169
7.181
7.207
7.216
7.224
7.229
7.254
7.284
7.413
7.428
7.444
7.460
7.473
7.494
7.502
7.523
7.534
7.552
7.558
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7.676
7.692
7.824
7.830
7.856
7.863
7.868
7.873
7.900
7.957
7.981
0.97
1.00
0.94
20.25
6.54
2.91
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2
4
6
8
10
Ph
HN
Ph
P
Ph
O
Ph

4h

C13CPD

143.64
142.17
133.33
132.37
132.15
132.01
131.87
131.83
131.24
131.06
130.92
128.64
128.50
128.41
128.35
128.30
127.68
127.50
127.39
127.29
127.12
127.02
126.47
125.64
125.24
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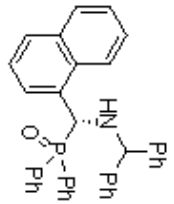
76.53
64.40
64.18
53.78
52.48



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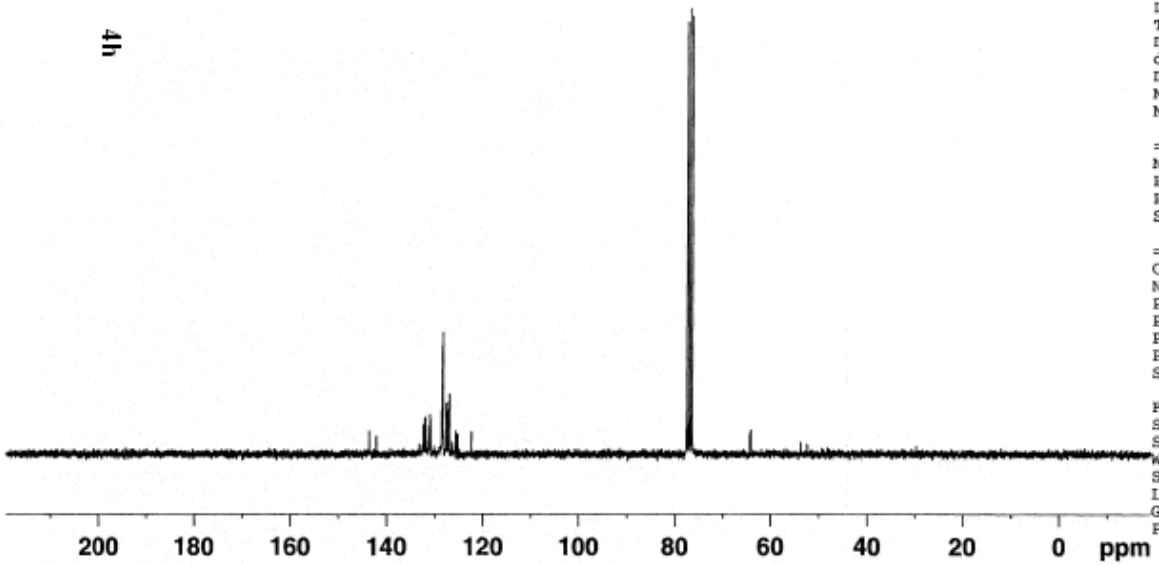


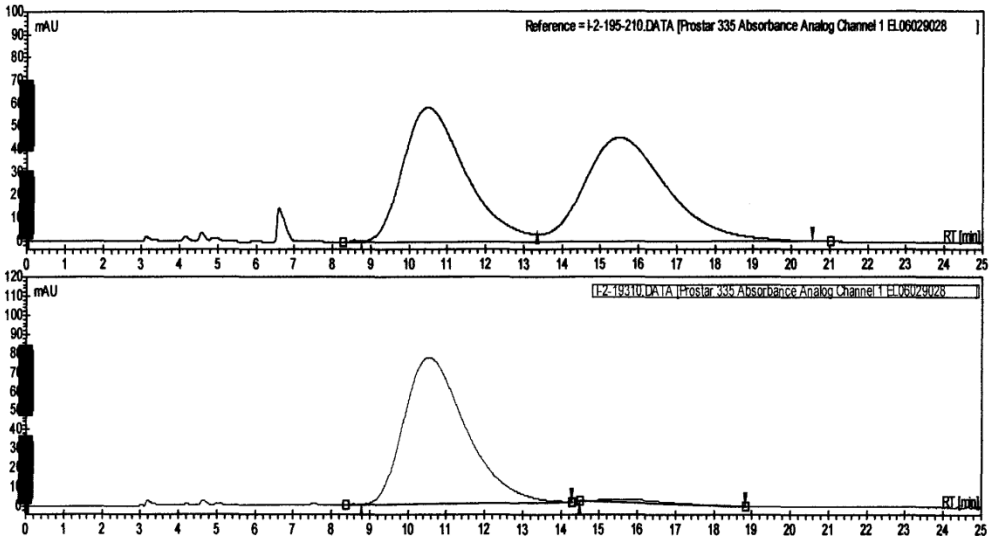
BRUKER

```
Current Data Parameters
NAME                  lyx-2-na-3
EXPNO                          1
PROCNO                         1

F2 - Acquisition Parameters
Date_                   20071024
Time                        9.27
INSTRUM                    spect
PROBHD    5 mm Multinucl
PULPROG                  zgpg30
TD                        65536
SOLVENT                   CDCl3
NS                         7000
DS                            0
SWH                   15060.241 Hz
FIDRES                0.229801 Hz
AQ                    2.1758451 sec
RG                        574.7
DW                       33.200 usec
DE                        6.00 usec
TE                       298.2 K
D1                    2.00000000 sec
d11                   0.03000000 sec
DELTA                 1.89999998 sec
MCREST                0.00000000 sec
MCWRK                 0.01500000 sec

======== CHANNEL f1 ========
NUC1                        13C
P1                        15.50 usec
PL1                       -6.00 dB
SFO1                 62.9015280 MHz

======== CHANNEL f2 ========
CPDPRG2                 waltz16
NUC2                         1H
PCPD2                    100.00 usec
PL2                        0.00 dB
PL12                      25.10 dB
PL13                      25.10 dB
SFO2                250.1310005 MHz

F2 - Processing parameters
SI                         32768
SF                   62.8952390 MHz
WDW                           EM
SSB                            0
LB                         1.00 Hz
GB                             0
PC                          1.40
```

Chromatogram : I-2-19310_channel1

System : HPLC
Method : test
User : Gerald Rowland

Acquired : 10/11/2007 11:03:27 AM
Processed : 10/11/2007 11:32:58 AM
Printed : 10/11/2007 11:35:55 AM



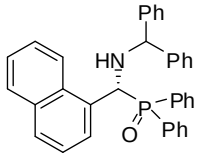
Peak results :

I-2-195-210.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	10.51	58.6	2.92	111.3	49.283
2	15.49	45.4	3.86	114.5	50.717
Total		104.0		225.9	100.000

I-2-19310.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	10.55	76.6	2.90	142.9	97.847
2	15.77	1.8	2.86	3.1	2.153
Total		78.4		146.1	100.000



4h

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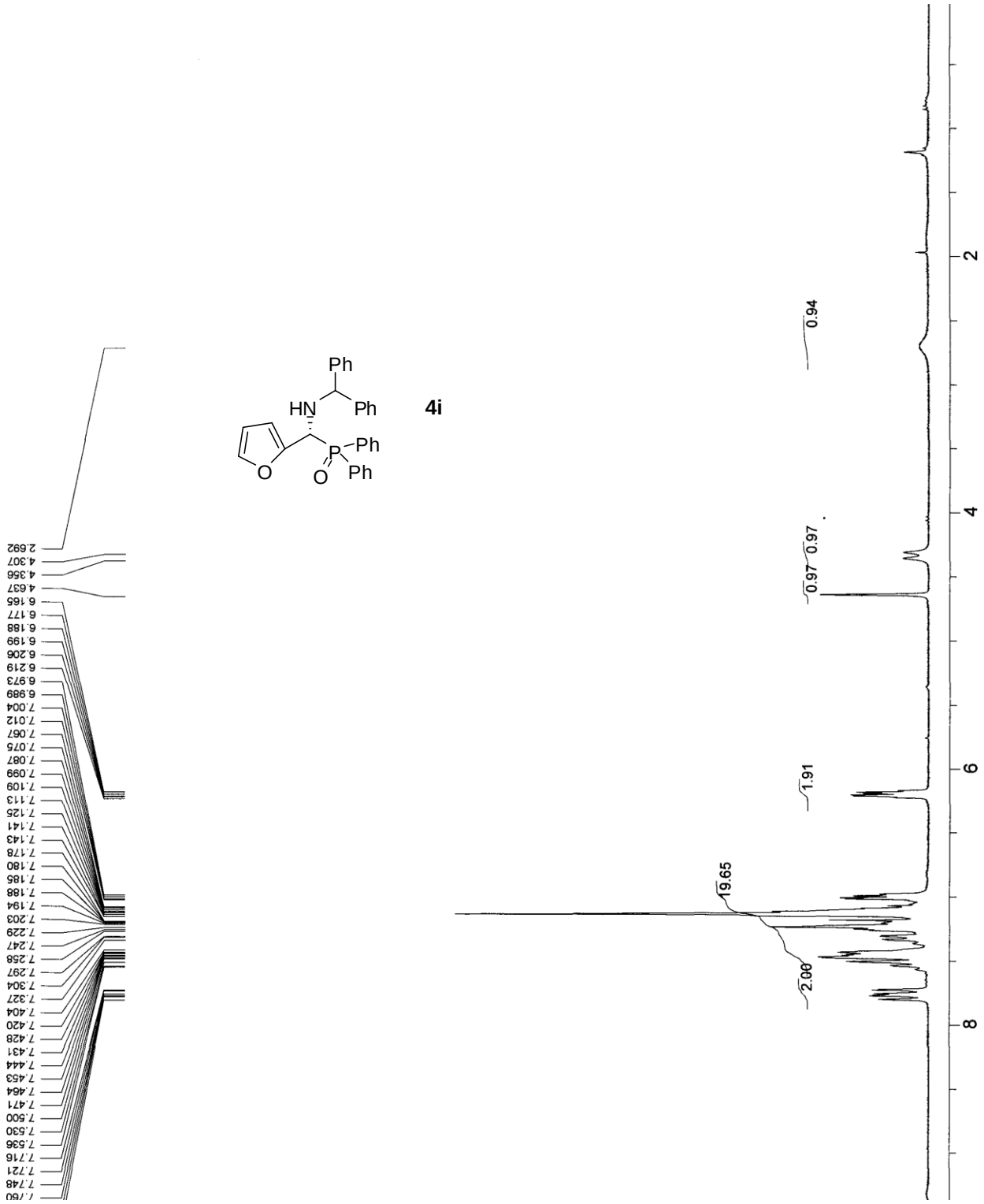
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HN
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P
Ph
O
O
Ph
4i
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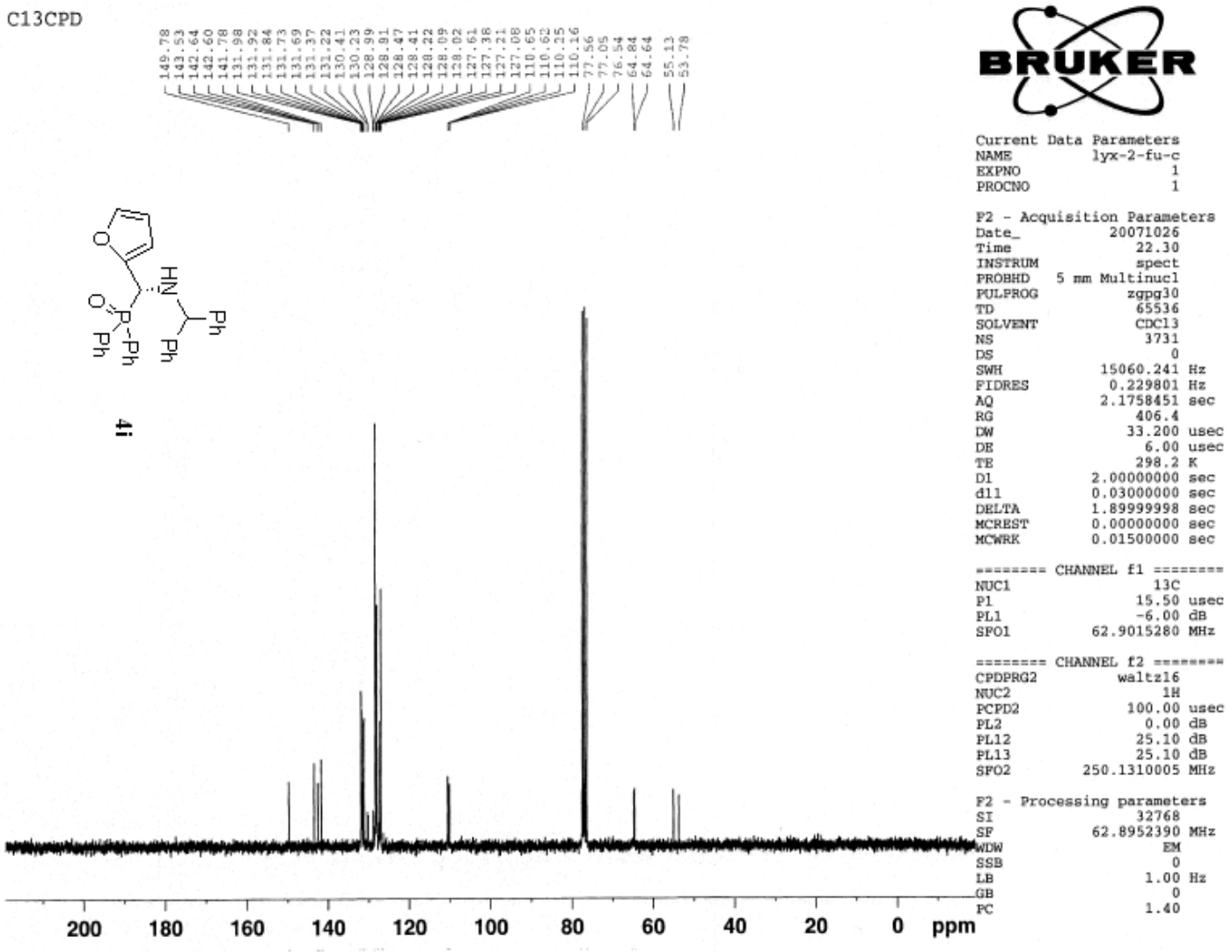
4.307
4.356
4.637
6.165
6.177
6.188
6.199
6.206
6.219
6.973
6.989
7.004
7.012
7.067
7.075
7.087
7.099
7.109
7.113
7.125
7.141
7.143
7.178
7.180
7.185
7.188
7.194
7.203
7.229
7.247
7.258
7.297
7.304
7.327
7.404
7.420
7.428
7.431
7.444
7.453
7.464
7.471
7.500
7.530
7.536
7.716
7.721
7.748
0.94
0.97
0.97
1.91
19.65
2.00
2
4
6
8



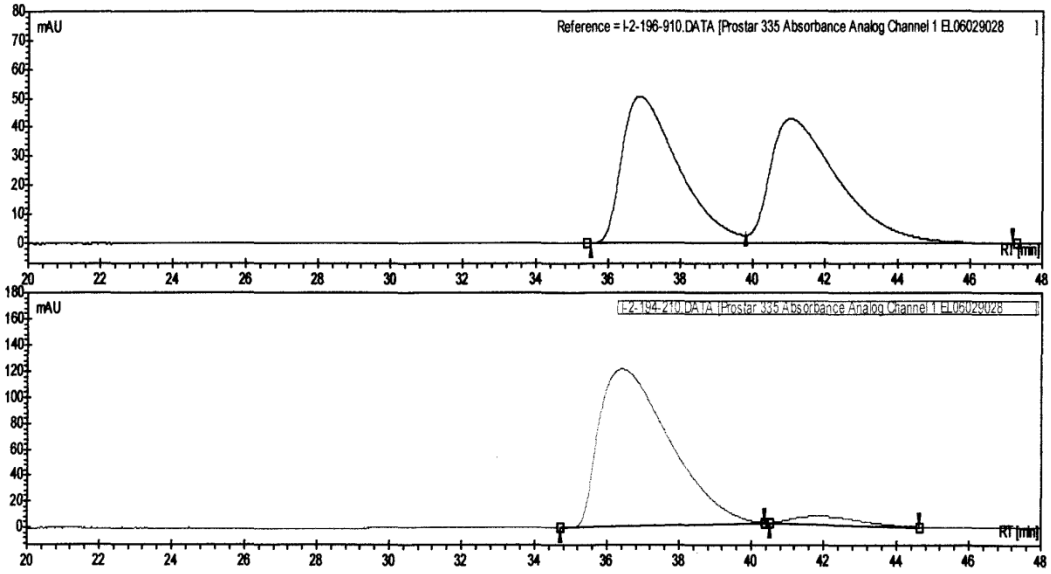
BRUKER

```
Current Data Parameters
NAME          lyx-2-fu-c
EXPNO                  1
PROCNO                 1

F2 - Acquisition Parameters
Date_           20071026
Time               22.30
INSTRUM            spect
PROBHD   5 mm Multinucl
PULPROG          zgpg30
TD                65536
SOLVENT           CDCl3
NS                 3731
DS                    0
SWH           15060.241 Hz
FIDRES         0.229801 Hz
AQ             2.1758451 sec
RG                406.4
DW               33.200 usec
DE                6.00 usec
TE                298.2 K
D1            2.00000000 sec
d11           0.03000000 sec
DELTA         1.89999998 sec
MCREST        0.00000000 sec
MCWRK         0.01500000 sec

======== CHANNEL f1 ========
NUC1                13C
P1                15.50 usec
PL1               -6.00 dB
SFO1          62.9015280 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                1H
PCPD2           100.00 usec
PL2               0.00 dB
PL12             25.10 dB
PL13             25.10 dB
SFO2         250.1310005 MHz

F2 - Processing parameters
SI                 32768
SF          62.8952390 MHz
WDW                EM
SSB                   0
LB                 1.00 Hz
GB                    0
PC                 1.40
```

Chromatogram : I-2-194-210_channel1

System : HPLC
Method : test
User : Gerald Rowland

Acquired : 10/11/2007 5:23:43 PM
Processed : 10/11/2007 6:17:21 PM
Printed : 10/11/2007 7:13:45 PM



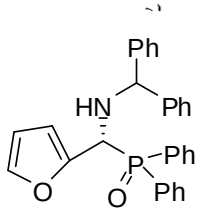
Peak results :

I-2-196-910.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

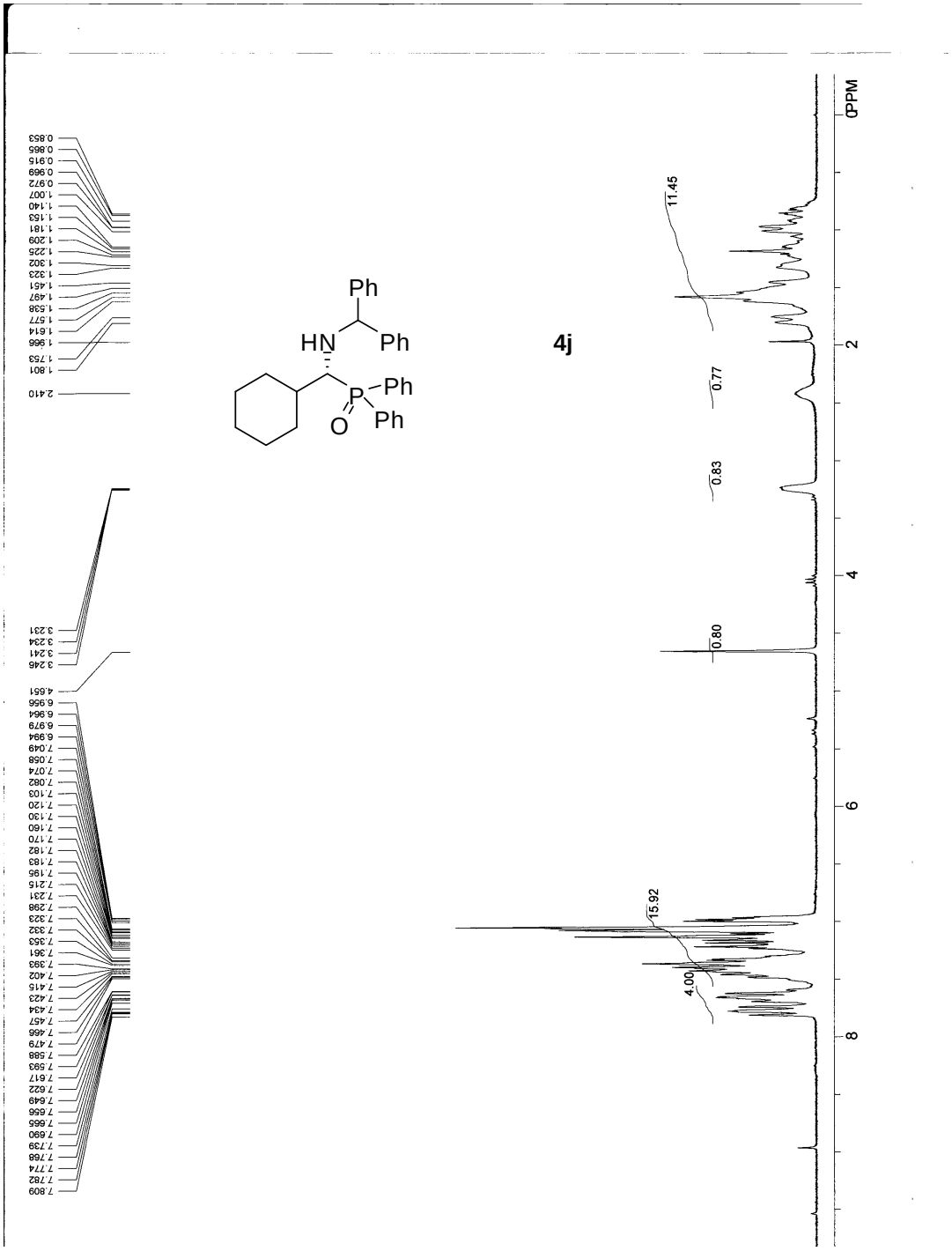
Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	36.88	50.6	2.85	91.8	49.294
2	41.04	42.9	3.38	94.4	50.706
Total		93.5		186.2	100.000

I-2-194-210.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	36.41	120.5	3.57	272.0	95.584
2	41.97	6.1	3.20	12.6	4.416
Total		126.6		284.5	100.000



4i


Ph
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P
Ph
O
Ph
4j
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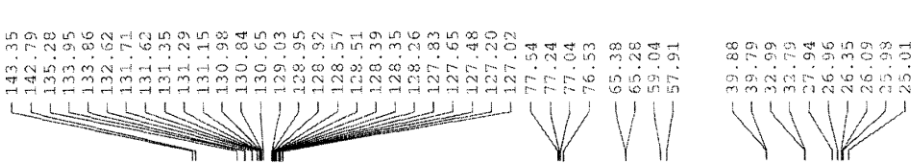
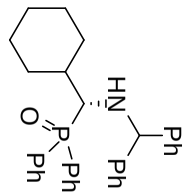
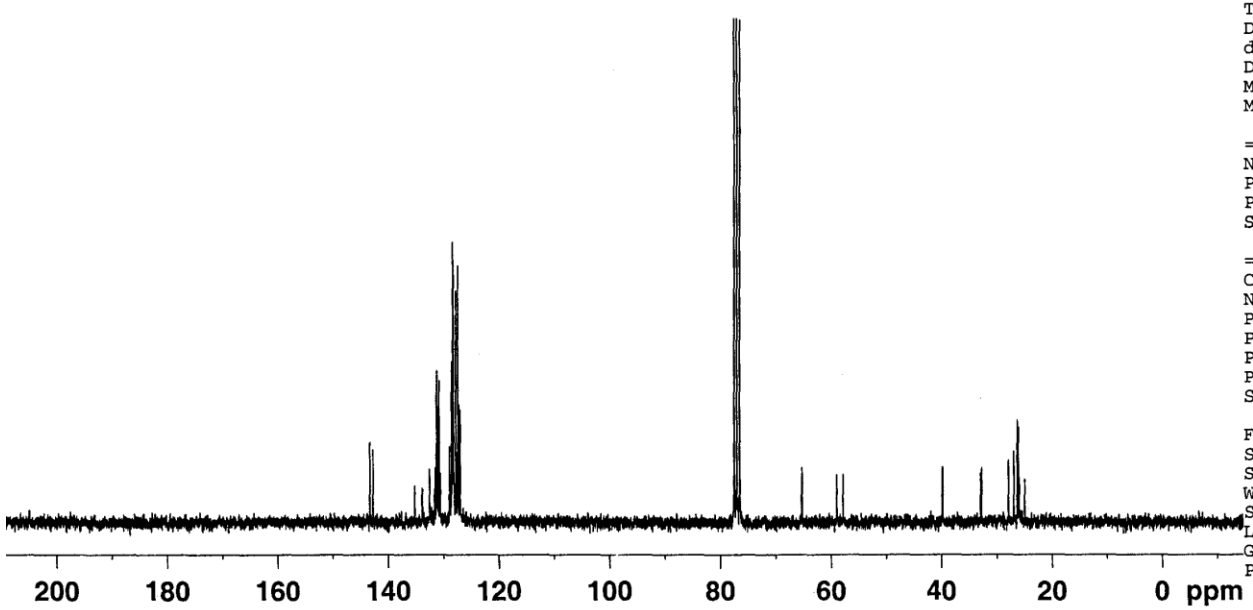
0.77
0.83
0.80
15.92
4.00
PPM

3CPD





4j



BRUKER

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Current Data Parameters
NAME      copy_of_1-2-cyclo-c
EXPNO                   1
PROCNO                  1

F2 - Acquisition Parameters
Date_           20071027
Time               13.12
INSTRUM            spect
PROBHD   5 mm Multinucl
PULPROG          zgpg30
TD                65536
SOLVENT           CDCl3
NS                 7000
DS                    0
SWH           15060.241 Hz
FIDRES         0.229801 Hz
AQ             2.1758451 sec
RG                456.1
DW               33.200 usec
DE                6.00 usec
TE                298.2 K
D1            2.00000000 sec
d11           0.03000000 sec
DELTA         1.89999998 sec
MCREST        0.00000000 sec
MCWRK         0.01500000 sec

======== CHANNEL f1 ========
NUC1                13C
P1                15.50 usec
PL1               -6.00 dB
SFO1          62.9015280 MHz

======== CHANNEL f2 ========
CPDPRG2         waltz16
NUC2                1H
PCPD2           100.00 usec
PL2               0.00 dB
PL12              25.10 dB
PL13              25.10 dB
SFO2         250.1310005 MHz

F2 - Processing parameters
SI                32768
SF           62.8952390 MHz
WDW                EM
SSB                   0
LB                 1.00 Hz
GB                    0
PC                 1.40
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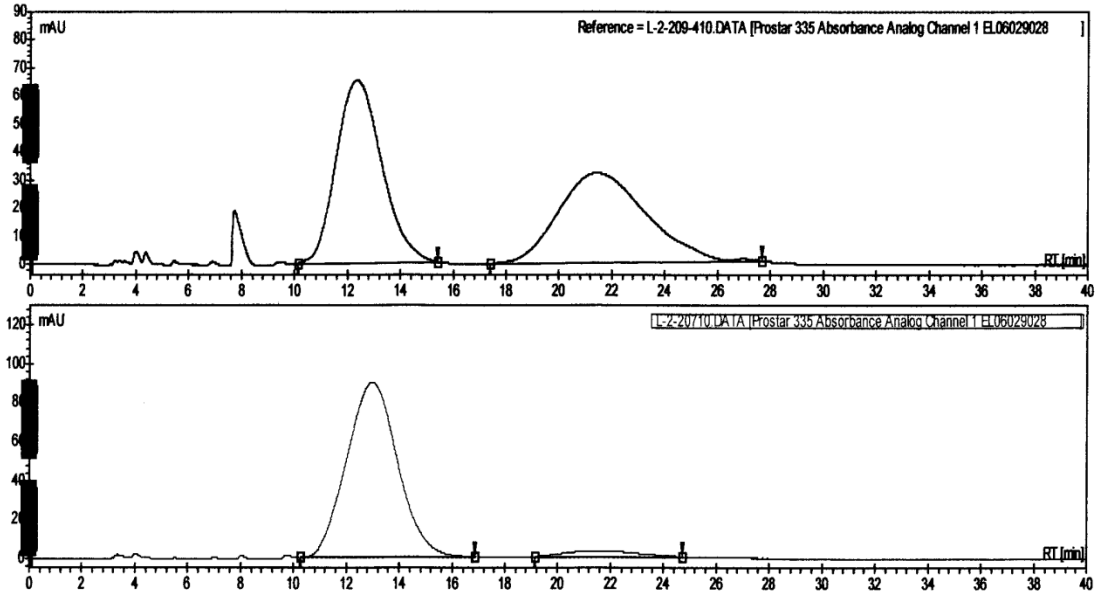
Chromatogram : L-2-20710_channel1

System : HPLC
Method : test
User : Gerald Rowland

Acquired : 10/16/2007 11:05:03 AM
Processed : 10/16/2007 11:50:09 AM
Printed : 10/16/2007 11:51:08 AM



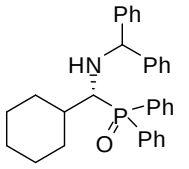
Peak results :

L-2-209-410.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	12.35	65.1	3.14	129.9	51.225
2	21.43	32.0	6.10	123.7	48.775
Total		97.1		253.6	100.000

L-2-20710.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	12.97	89.8	3.60	200.8	95.424
2	21.48	3.1	4.83	9.6	4.576
Total		92.9		210.5	100.000



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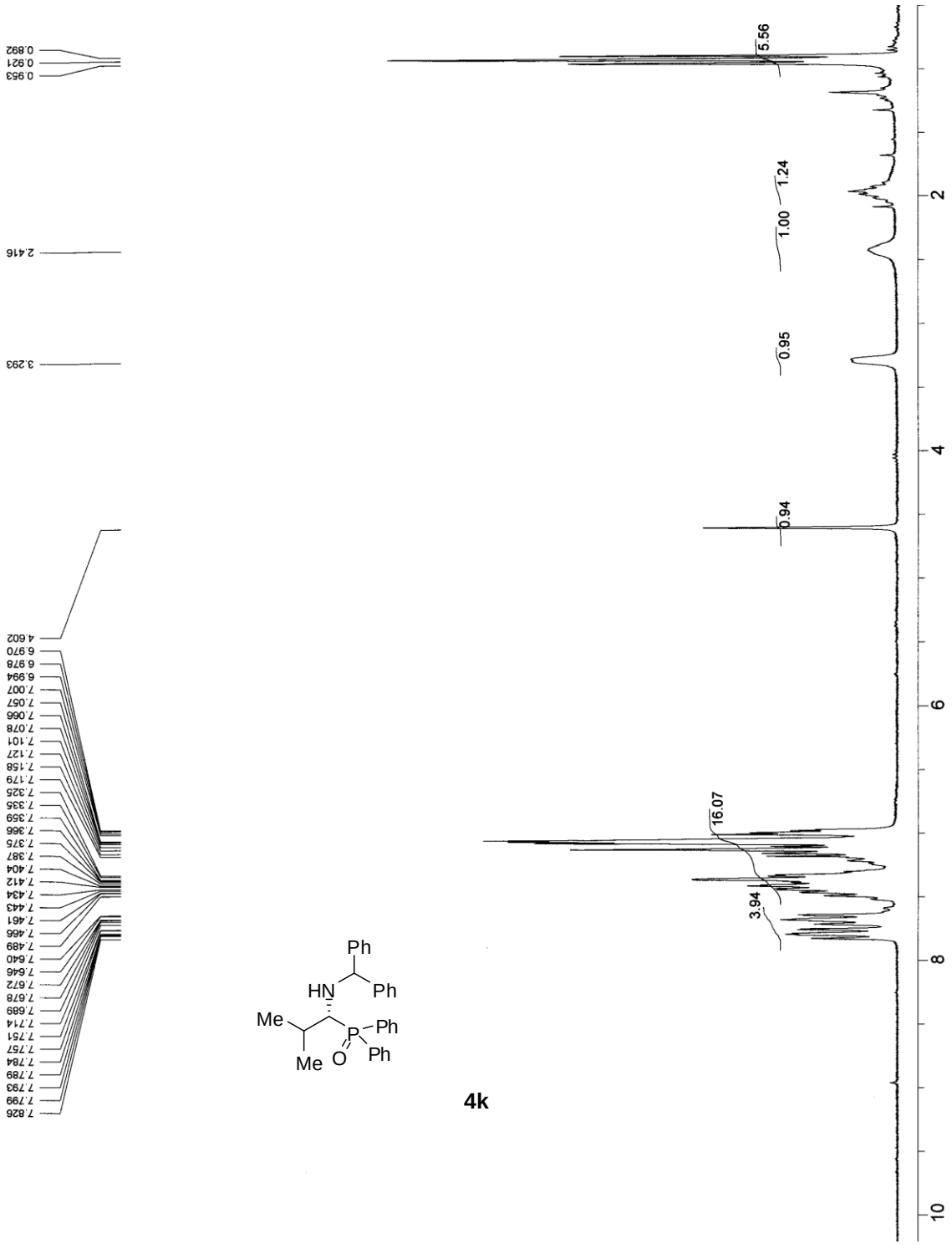
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7.066
7.078
7.101
7.127
7.158
7.179
7.325
7.335
7.359
7.366
7.375
7.387
7.404
7.412
7.434
7.443
7.461
7.466
7.489
7.640
7.646
7.672
7.678
7.689
7.714
7.751
7.757
7.784
7.789
7.793
7.799
7.826
5.56
1.24
1.00
0.95
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2
4
6
8
10
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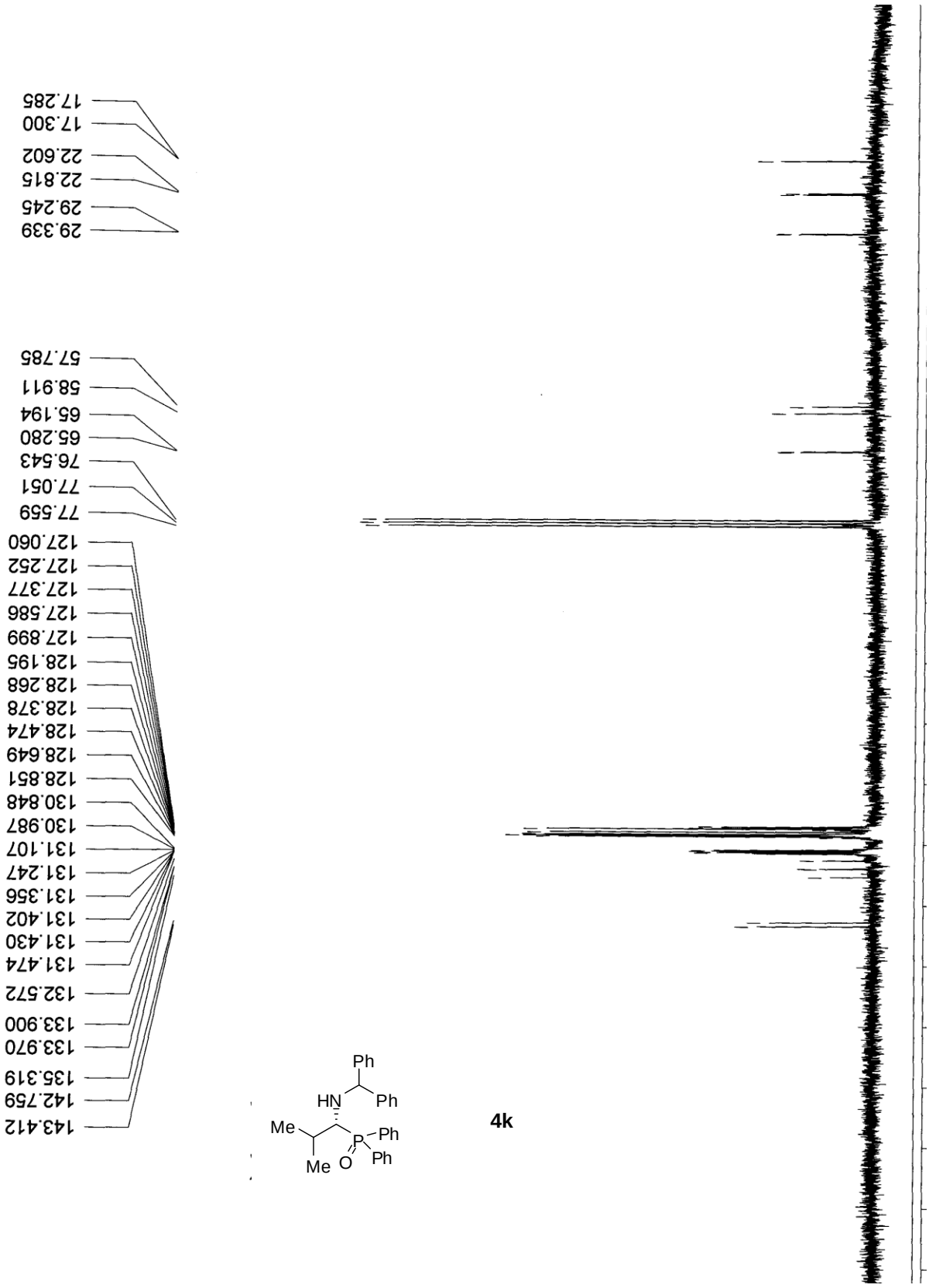
Ph
Me
P
Ph
Me
O
Ph

4k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22.815
29.245
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65.194
65.280
76.543
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77.559
127.060
127.252
127.377
127.586
127.899
128.195
128.268
128.378
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128.851
130.848
130.987
131.107
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131.356
131.402
131.430
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132.572
133.900
133.970
135.319
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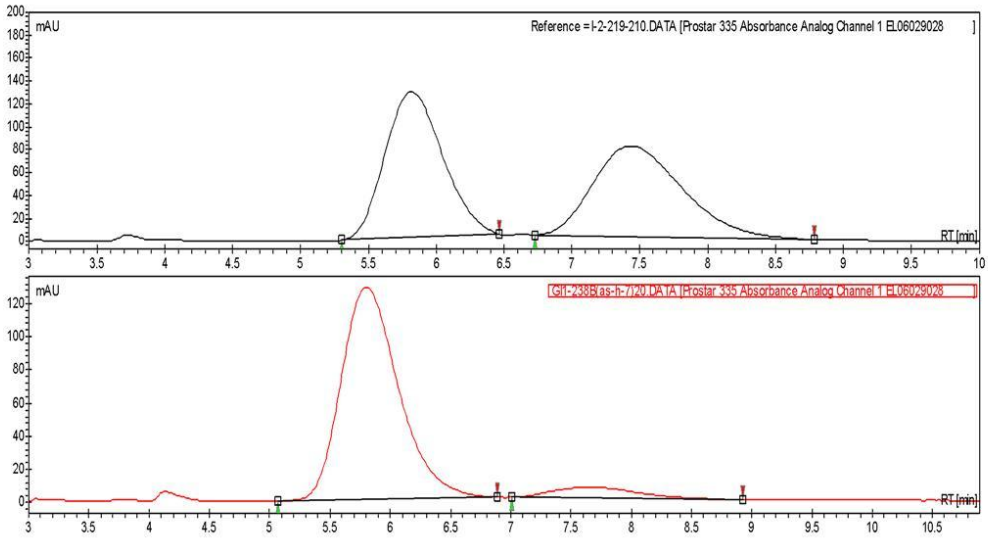
143.412
Ph
HN
Ph
Me
P
Ph
Me
O
Ph

4k

Chromatogram : GI1-238B(as-h-7)20_channel1

System : HPLC
Method : test
User : Gerald Rowland

Acquired : 3/15/2009 6:01:32 PM
Processed : 10/24/2009 2:23:59 PM
Printed : 10/24/2009 2:25:41 PM



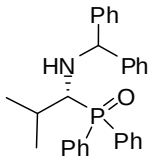
Peak results :

I-2-219-210.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

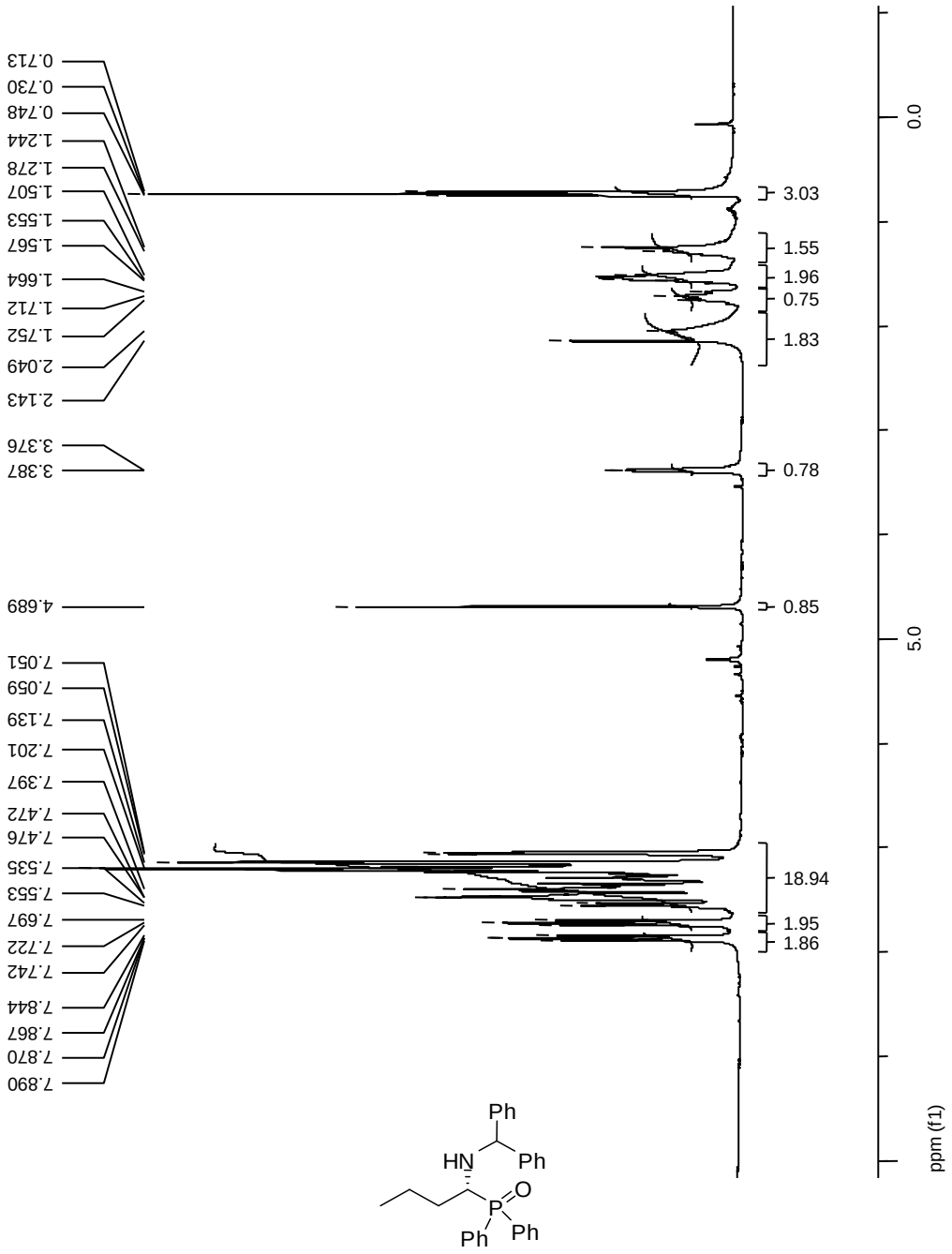
Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
2	5.81	127.6	0.80	63.0	51.148
1	7.44	79.2	1.22	60.2	48.852
Total		206.8		123.3	100.000

GI1-238B(as-h-7)20.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	5.80	128.3	0.87	70.9	92.856
2	7.68	6.7	1.28	5.5	7.144
Total		135.0		76.4	100.000



4k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1.567
1.664
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2.143
3.376
3.387
4.689
7.051
7.059
7.139
7.201
7.397
7.472
7.476
7.535
7.553
7.697
7.722
7.742
7.844
7.867
7.870
7.890
3.03
1.55
1.96
0.75
1.83
0.78
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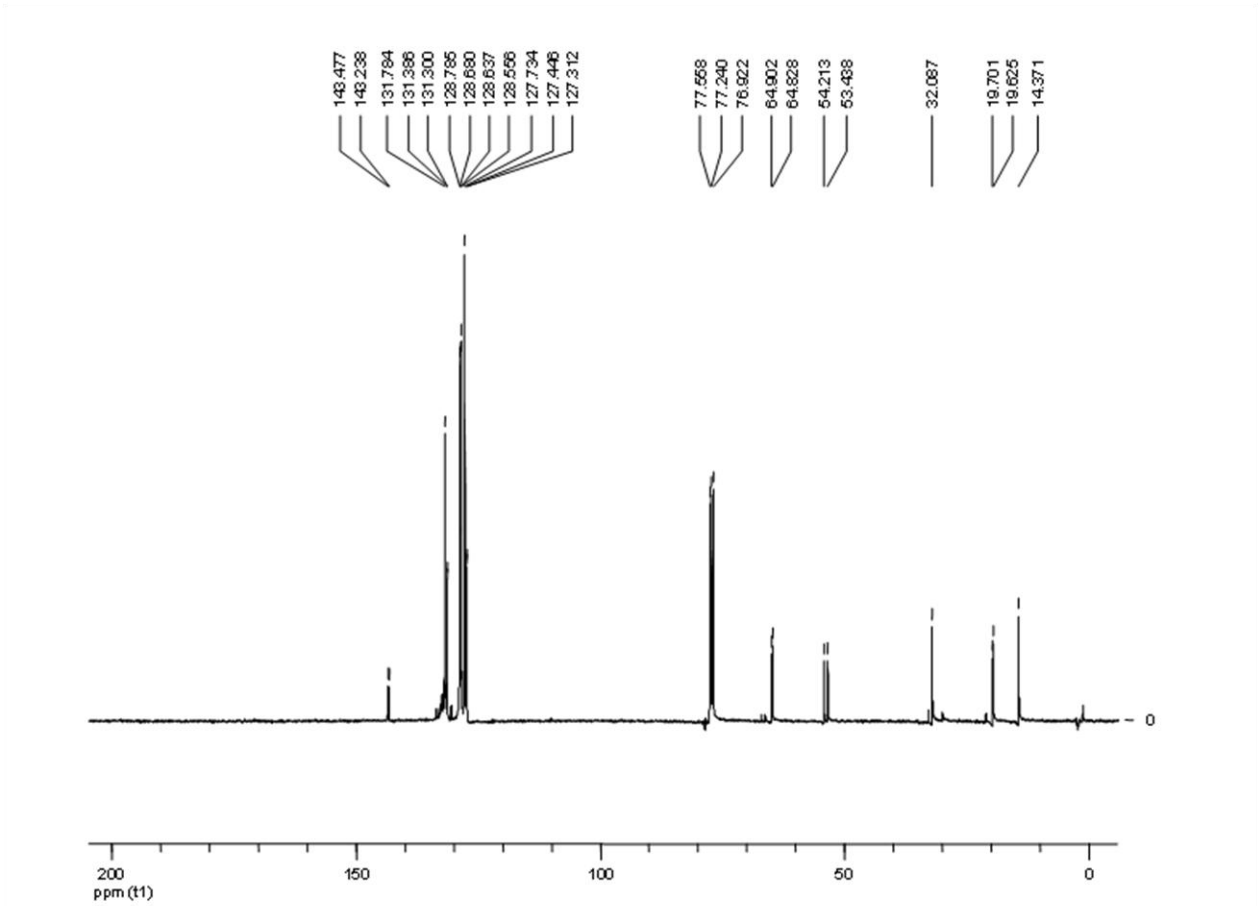
ppm (f1)
Ph
HN
Ph
O
P
Ph
Ph

4l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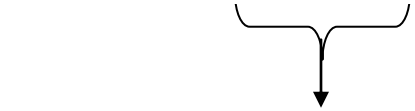
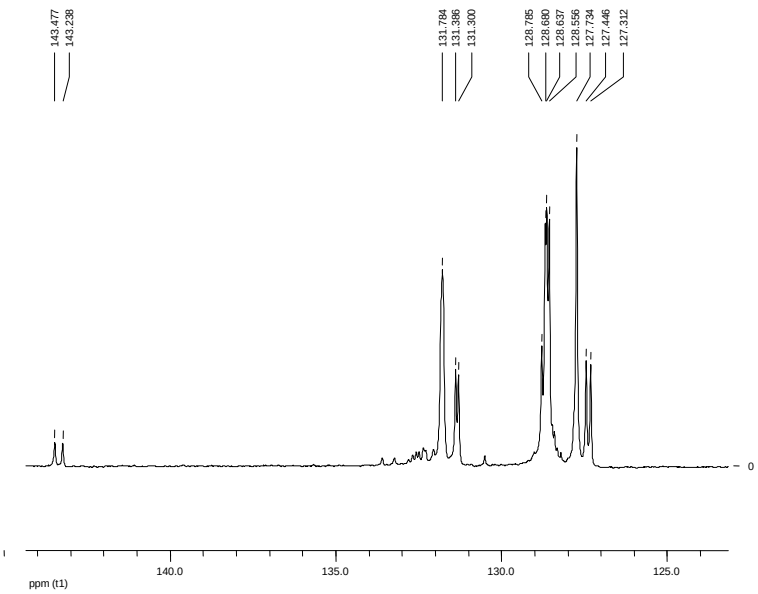
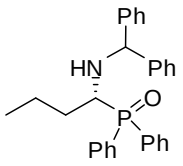
131.386
131.300
128.785
128.680
128.637
128.556
127.734
127.446
127.312
77.558
77.240
76.922
64.902
64.828
54.213
53.438
32.087
19.701
19.625
14.371
0
200
150
100
50
0
ppm (t1)




143.477
143.238
131.784
131.386
131.300
128.785
128.680
128.637
128.556
127.734
127.446
127.312
0
140.0
135.0
130.0
125.0
ppm (t1)

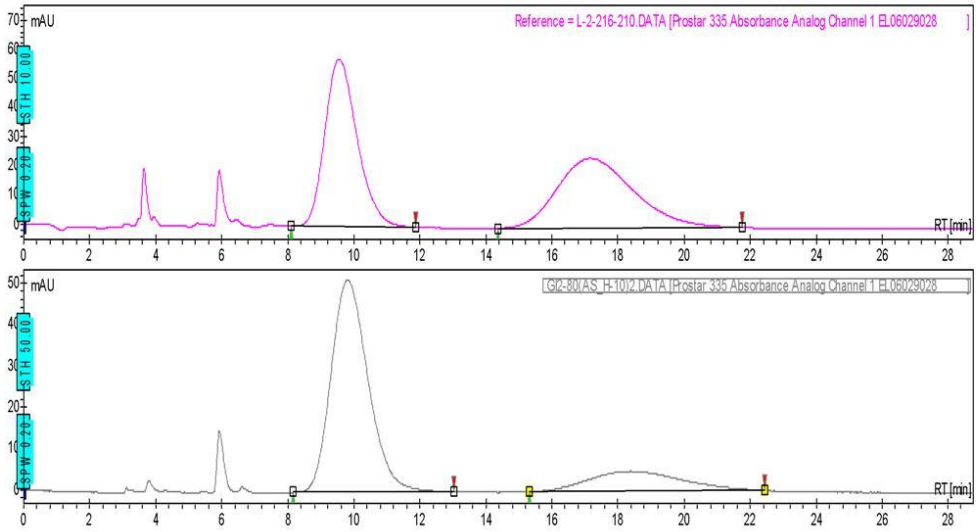

Ph
HN
Ph
O
P
Ph
Ph

4l

Chromatogram : GI2-80(AS_H-10)2_channel1

System : HPLC
Method : test
User : Gerald Rowland

Acquired : 8/13/2009 10:05:20 PM
Processed : 8/13/2009 10:41:14 PM
Printed : 10/24/2009 1:04:55 PM



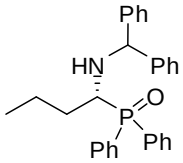
Peak results :

L-2-216-210.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	9.55	57.6	1.79	65.5	50.533
2	17.16	23.9	4.38	64.2	49.467
Total		81.5		129.7	100.000

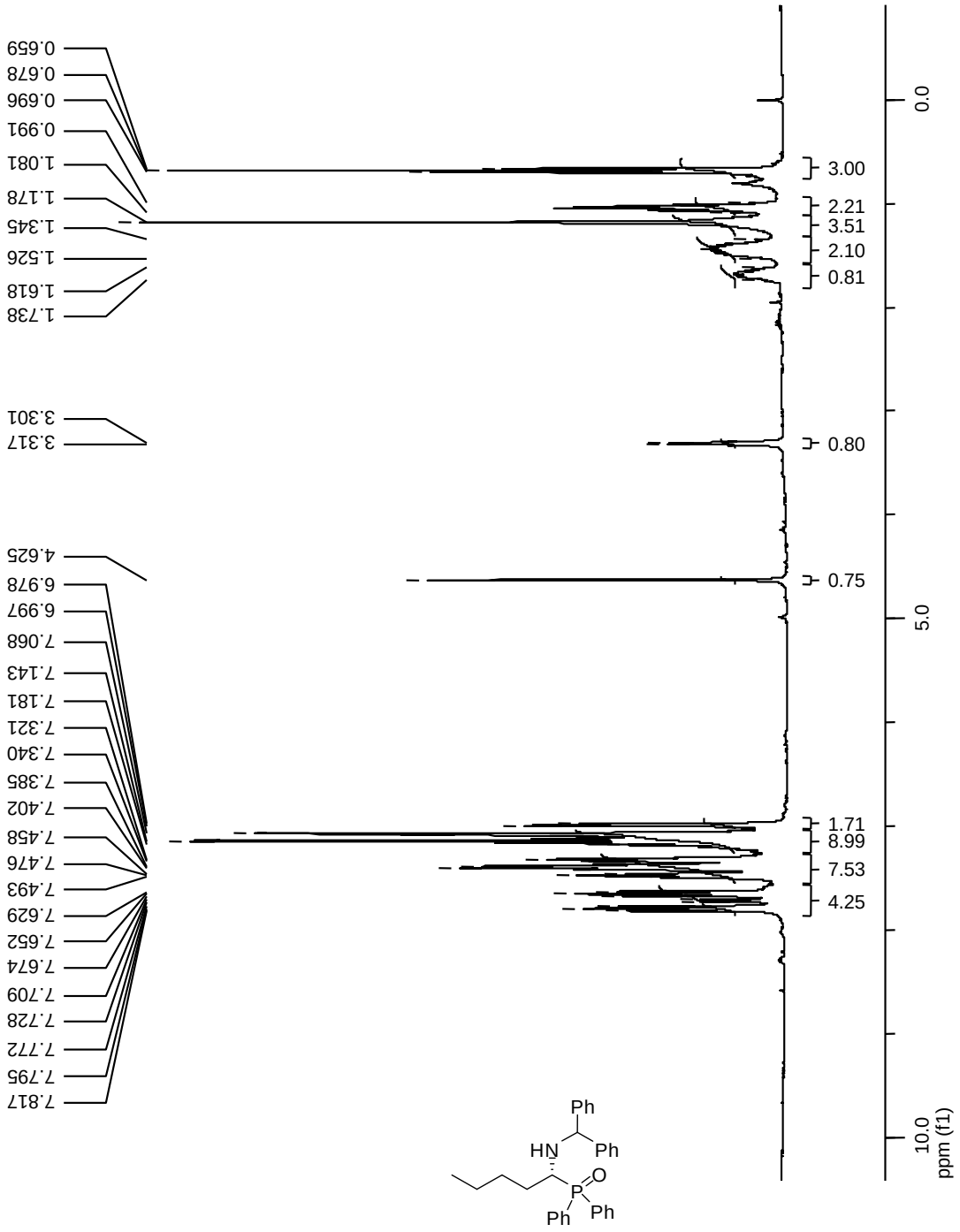
GI2-80(AS_H-10)2.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
2	9.81	51.3	2.04	66.5	80.737
1	18.39	4.9	5.73	15.9	19.263
Total		56.1		82.4	100.000



4l

Page 1/1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4.625
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7.181
7.321
7.340
7.385
7.402
7.458
7.476
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7.629
7.652
7.674
7.709
7.728
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0.75
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10.0
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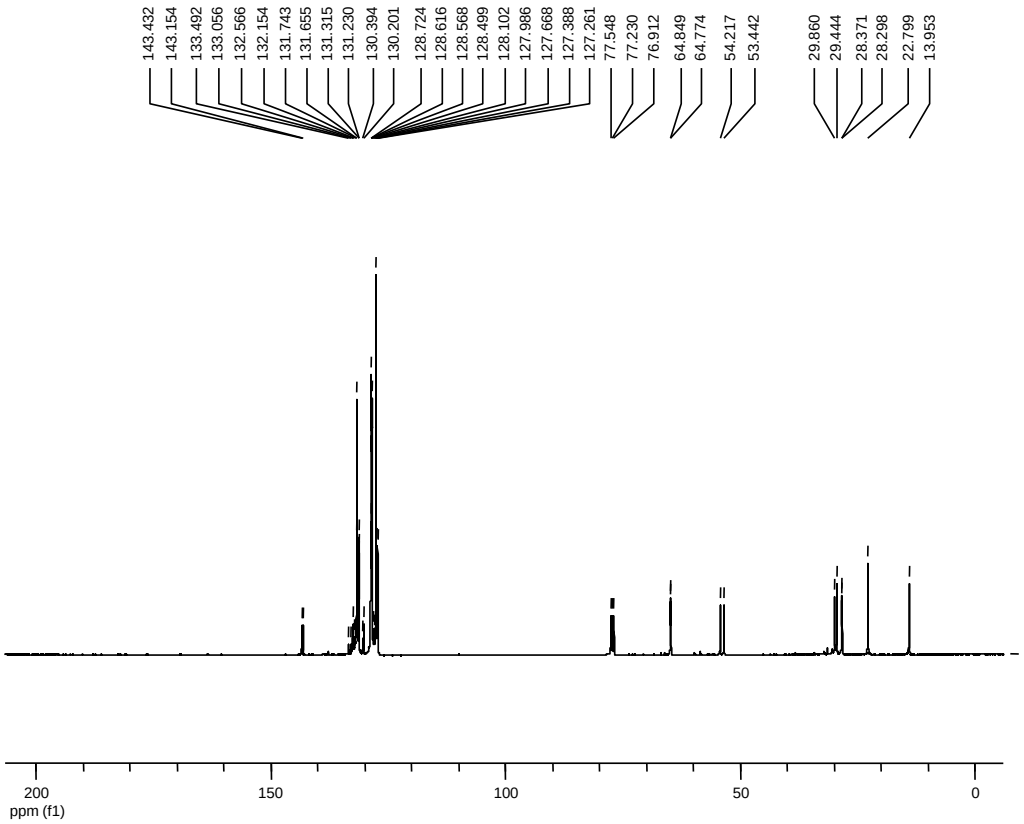
Ph
HN
Ph
O
P
Ph
Ph

4m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131.230
130.394
130.201
128.724
128.616
128.568
128.499
128.102
127.986
127.668
127.388
127.261
77.548
77.230
76.912
64.849
64.774
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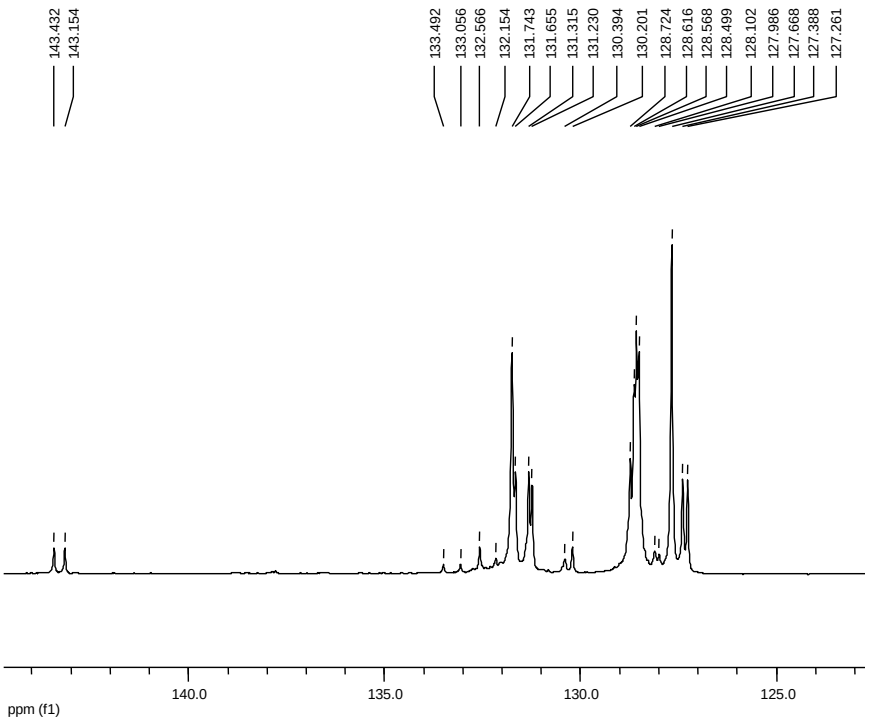
50
0
ppm (f1)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130.394
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128.616
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135.0
130.0
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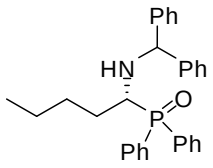
ppm (f1)

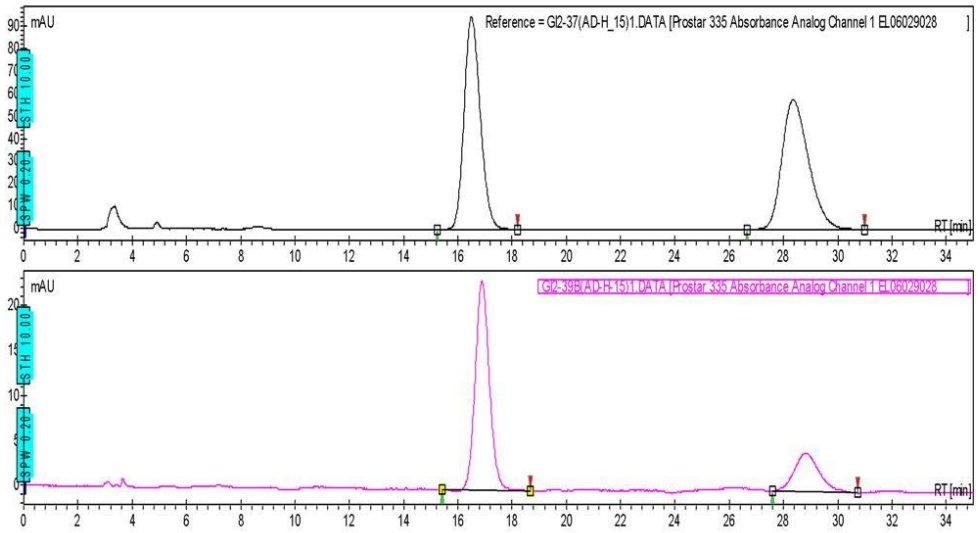

Ph
HN
Ph
O
P
Ph
Ph

4m

Chromatogram : GI2-39B(AD-H-15)1_channel1

System : HPLC
Method : test
User : Gerald Rowland

Acquired : 6/5/2009 10:40:36 AM
Processed : 6/5/2009 11:33:18 AM
Printed : 10/24/2009 1:11:14 PM



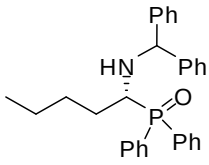
Peak results :

GI2-37(AD-H_15)1.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	16.51	94.1	1.10	65.0	49.910
2	28.36	57.5	1.82	65.3	50.090
Total		151.6		130.3	100.000

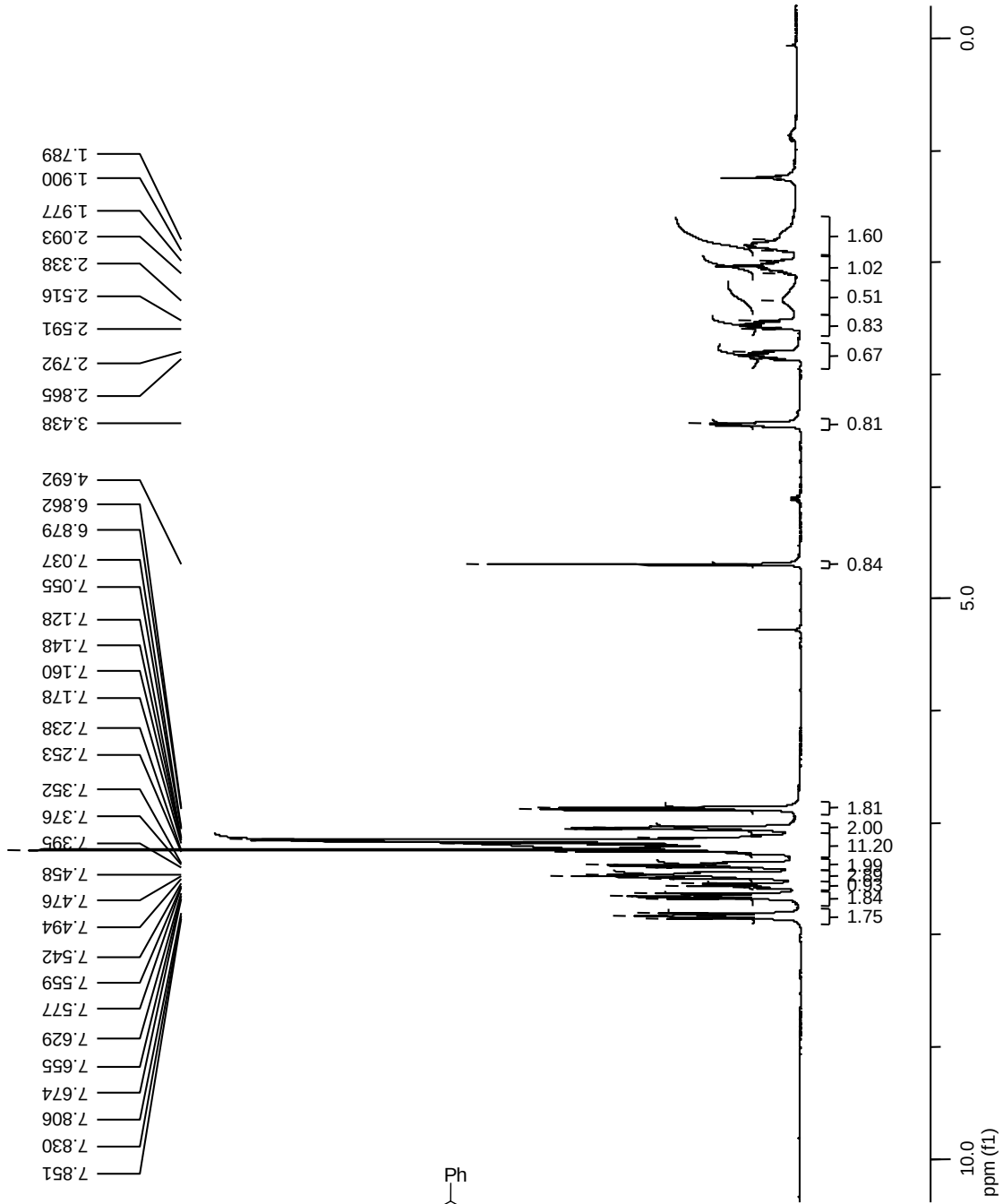
GI2-39B(AD-H-15)1.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	16.89	23.3	0.96	14.1	75.811
2	28.83	4.2	1.66	4.5	24.189
Total		27.5		18.6	100.000



4m

Page 1/1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7.055
7.128
7.148
7.160
7.178
7.238
7.253
7.352
7.376
7.395
7.458
7.476
7.494
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7.655
7.674
7.806
7.830
7.851
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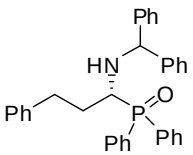
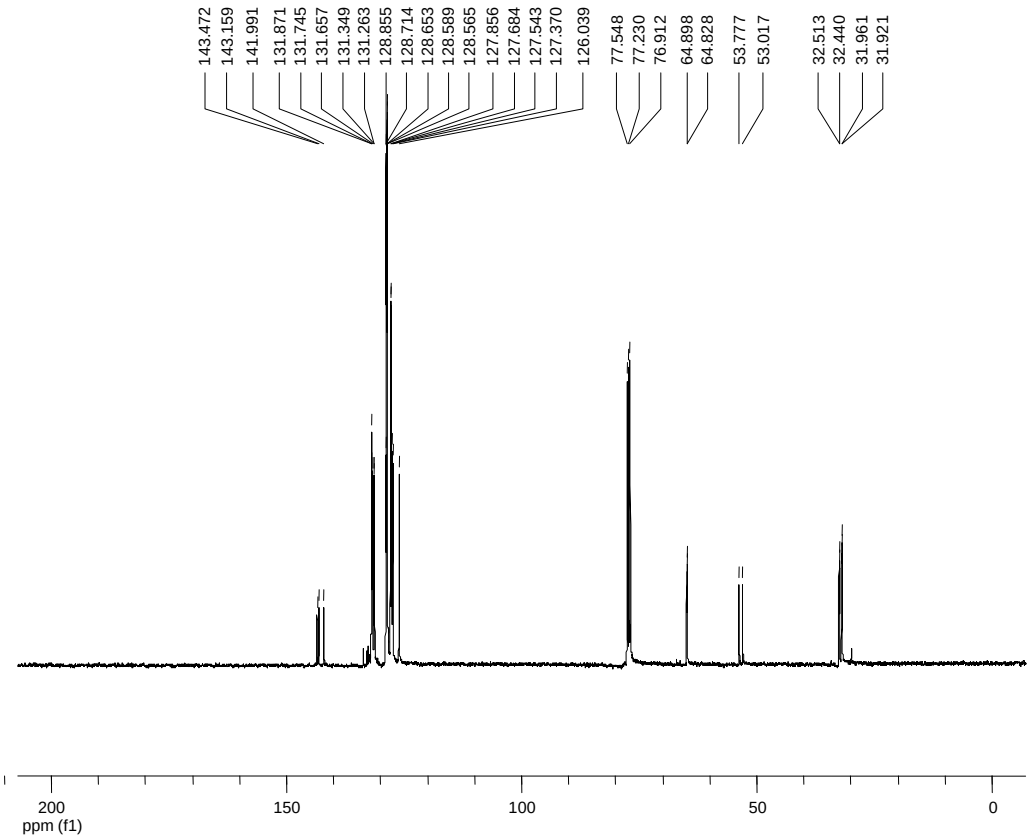

Ph
HN
Ph
Ph
O
P
Ph
Ph
Ph

4n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76.912
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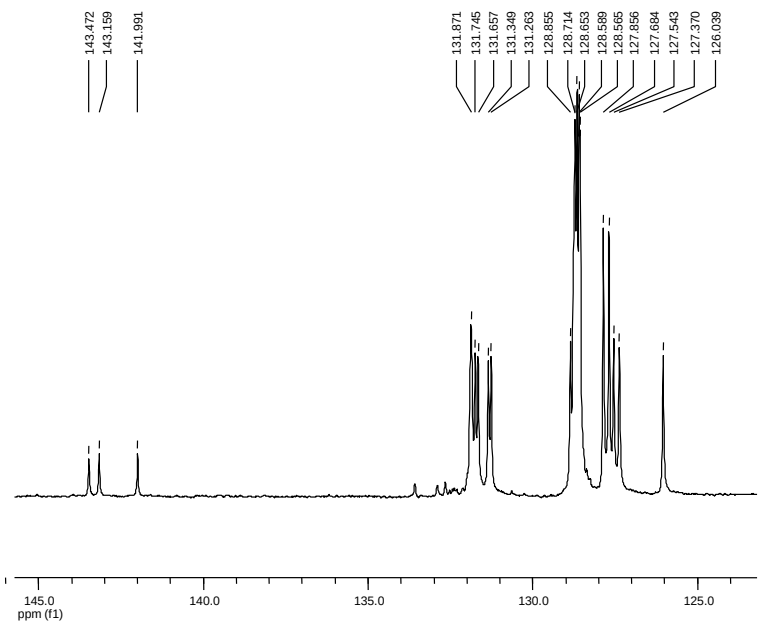
ppm (f1)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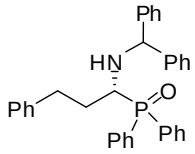
ppm (f1)

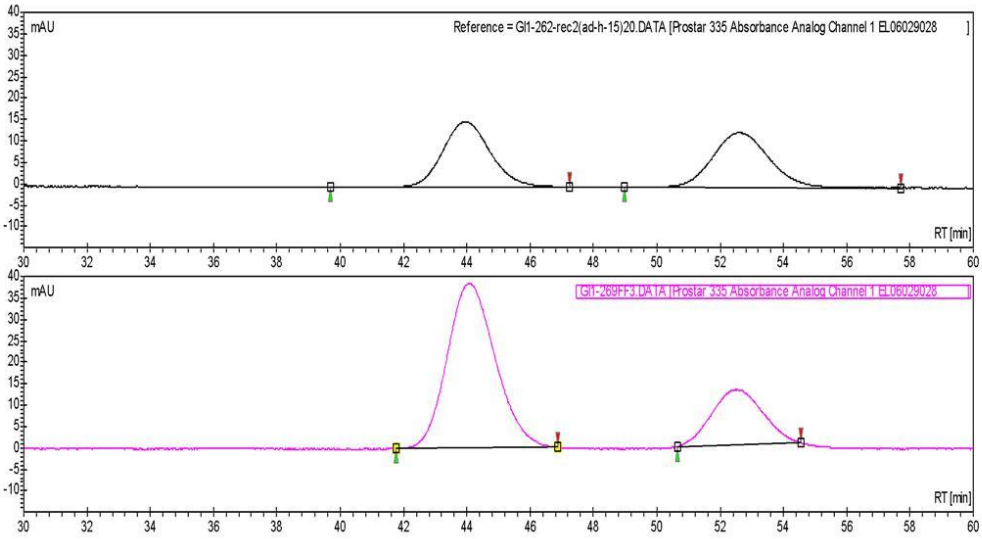

Ph
HN
Ph
Ph
P
O
Ph
Ph
Ph

4n

Chromatogram : GI1-269FF3_channel1

System : HPLC
Method : test
User : Gerald Rowland

Acquired : 11/6/2009 5:19:59 PM
Processed : 11/7/2009 1:20:21 PM
Printed : 11/8/2009 11:02:20 PM



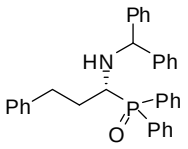
Peak results :

GI1-262-rec2(ad-h-15)20.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	43.95	15.2	2.73	26.3	50.403
2	52.59	12.7	3.21	25.9	49.597
Total		27.9		52.1	100.000

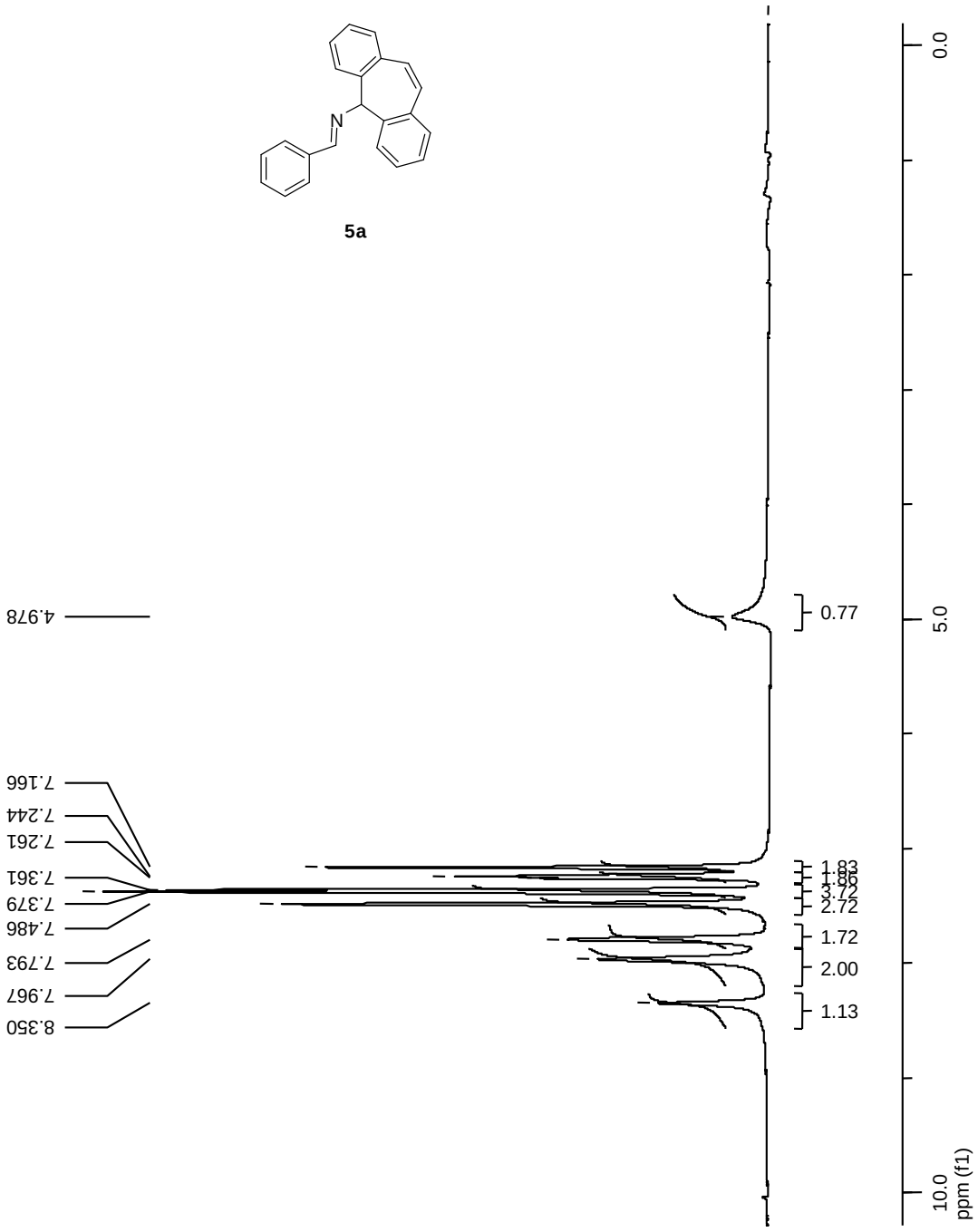
GI1-269FF3.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

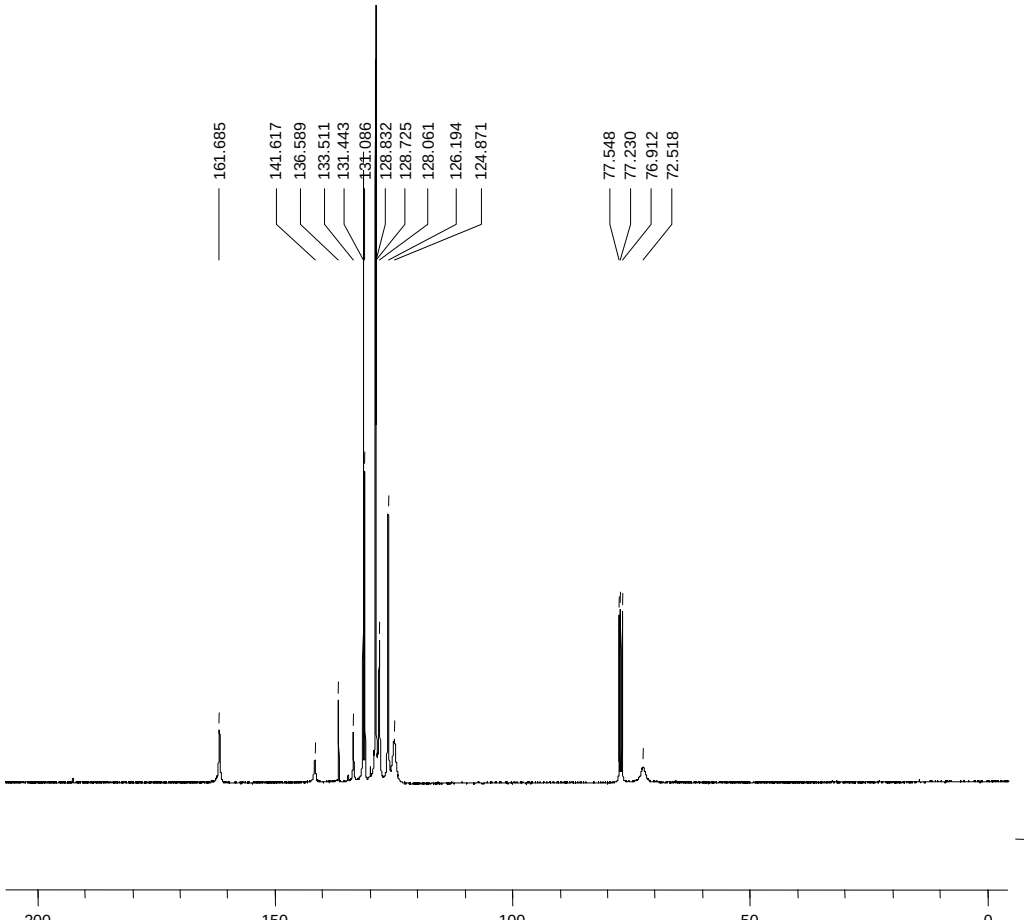
Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	44.08	38.4	2.80	67.8	73.970
2	52.51	12.8	2.98	23.9	26.030
Total		51.2		91.6	100.000

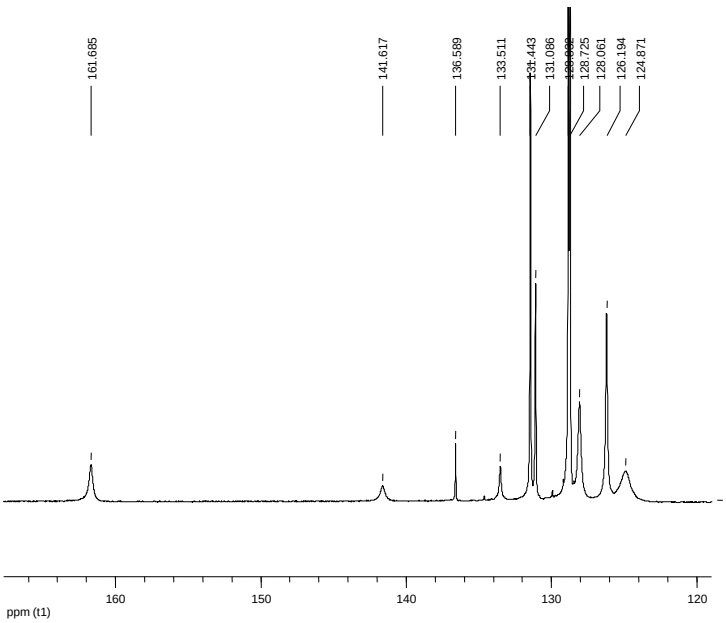


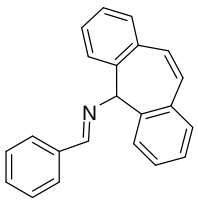
4n

Page 1/1

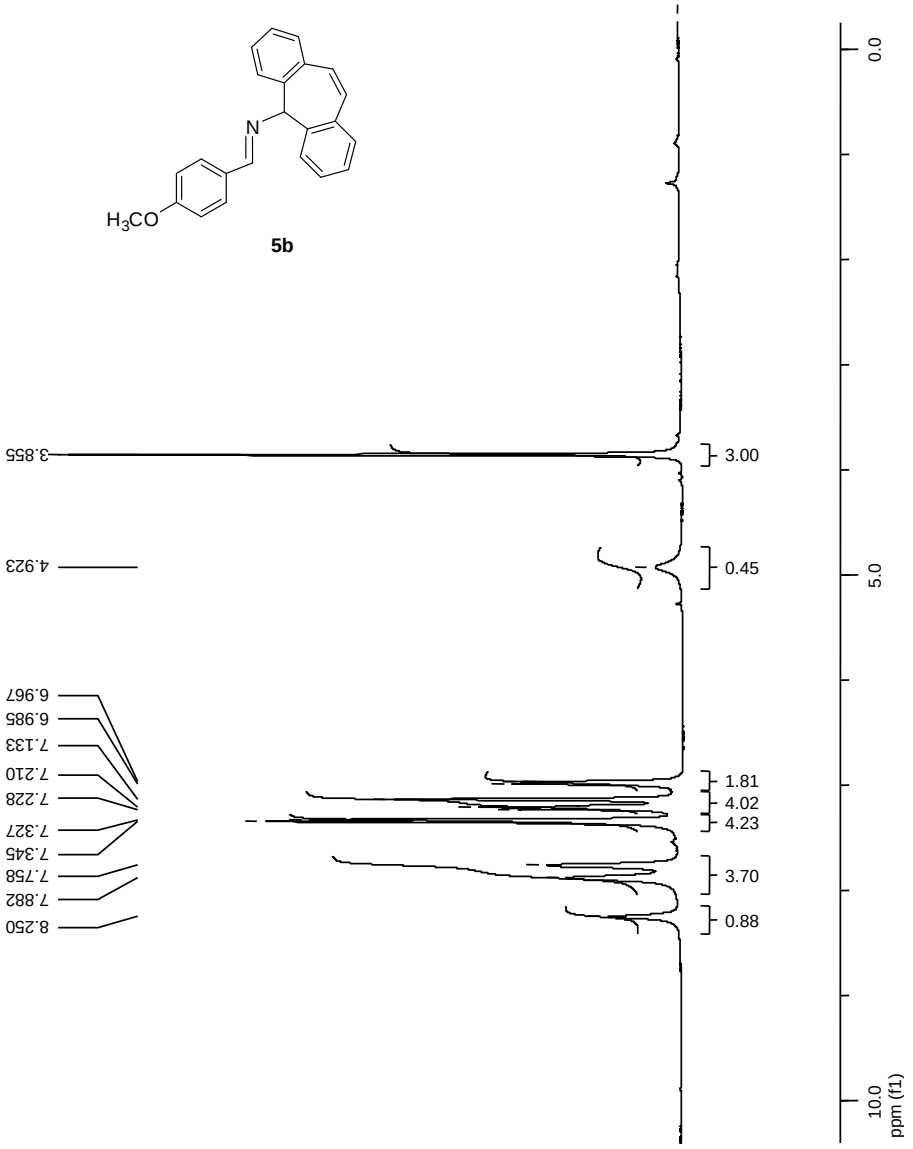

5a
8.350
7.967
7.793
7.486
7.379
7.361
7.261
7.244
7.166
4.978
1.83
1.86
3.72
2.72
1.72
2.00
1.13
0.77
0.0
5.0
10.0
ppm (f1)

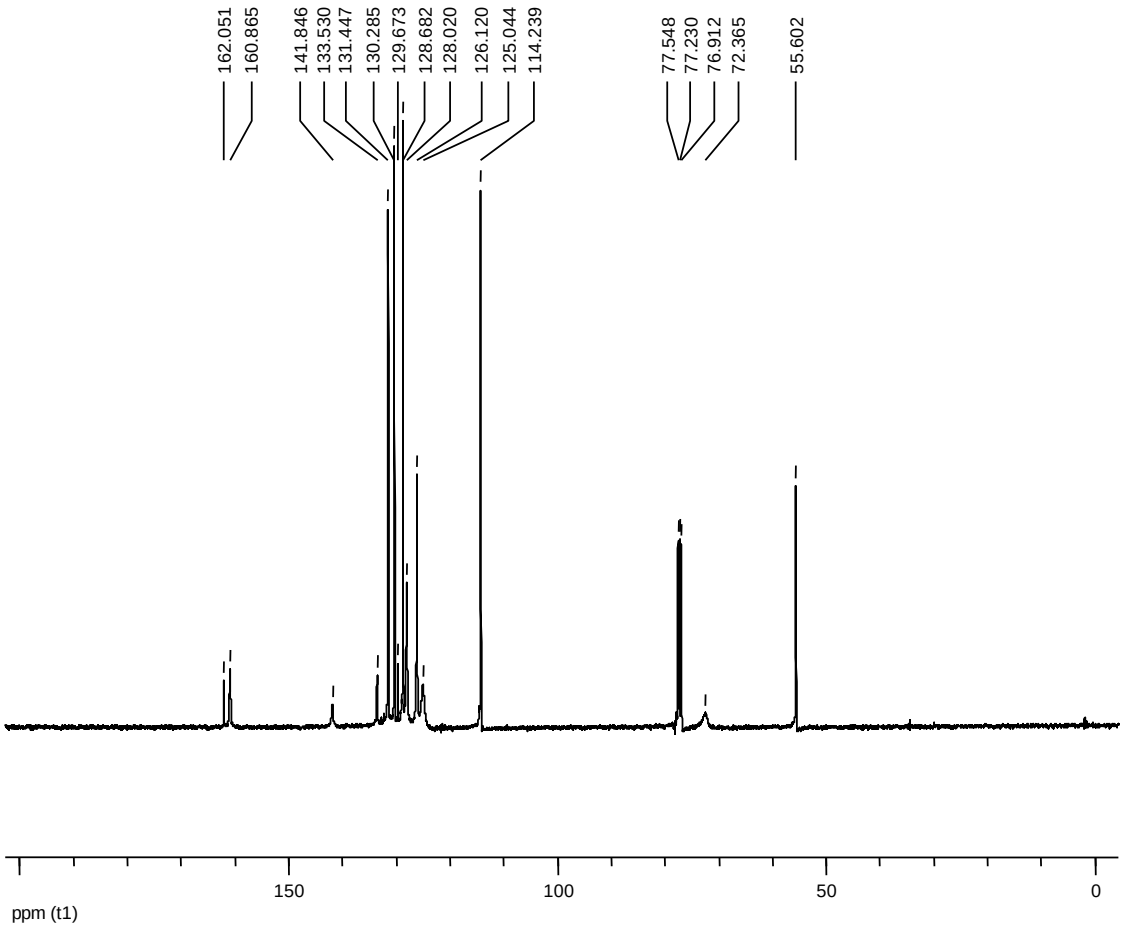

161.685
141.617
136.589
133.511
131.443
131.086
128.832
128.725
128.061
126.194
124.871
77.548
77.230
76.912
72.518
200
150
100
50
0

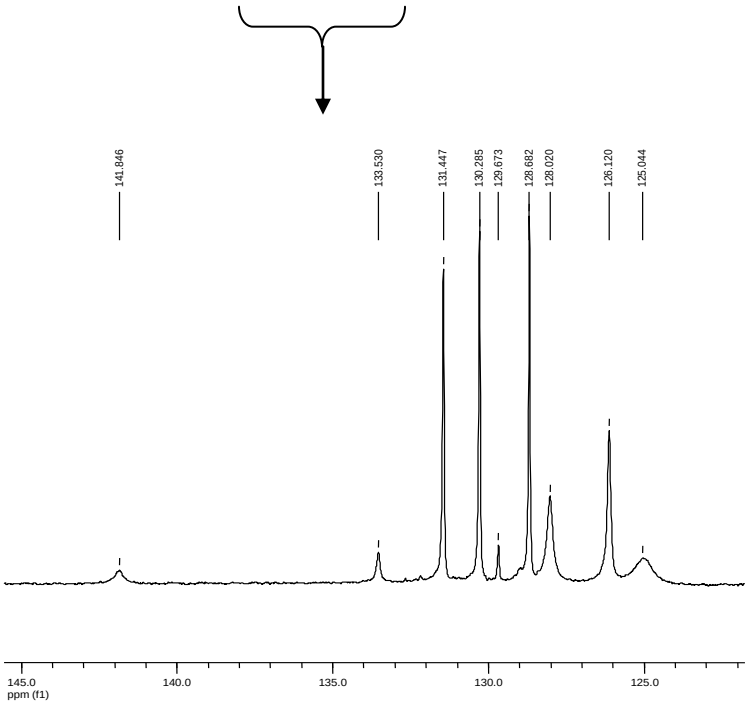

161.685
141.617
136.589
133.511
131.443
131.086
128.725
128.061
126.194
124.871
160
150
140
130
120
ppm (t1)

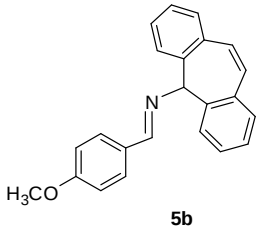

N

5a

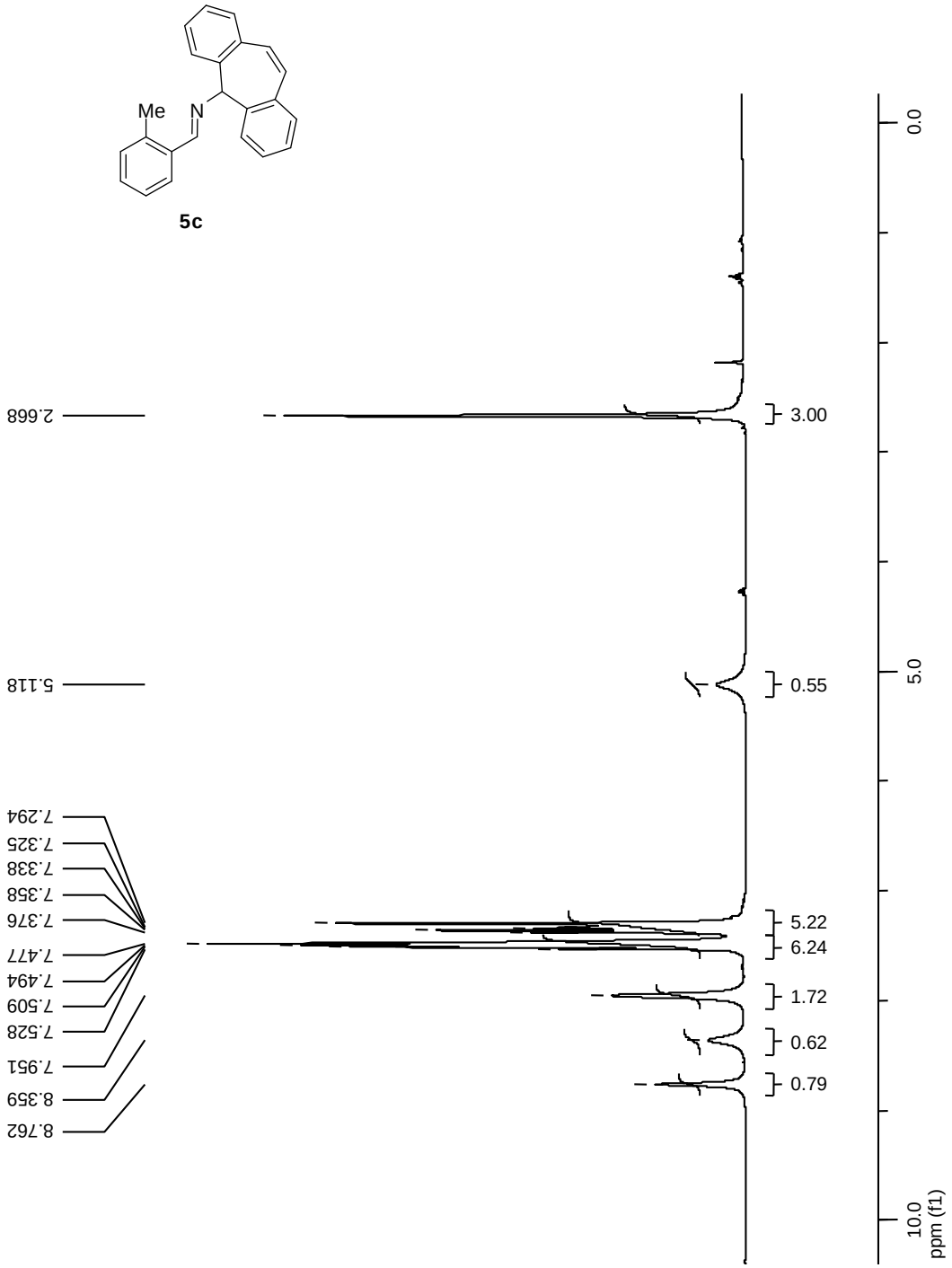

N
H3CO
5b
3.855
4.923
6.967
6.985
7.133
7.210
7.228
7.327
7.345
7.758
7.882
8.250
3.00
0.45
1.81
4.02
4.23
3.70
0.88
0.0
5.0
10.0
ppm (f1)

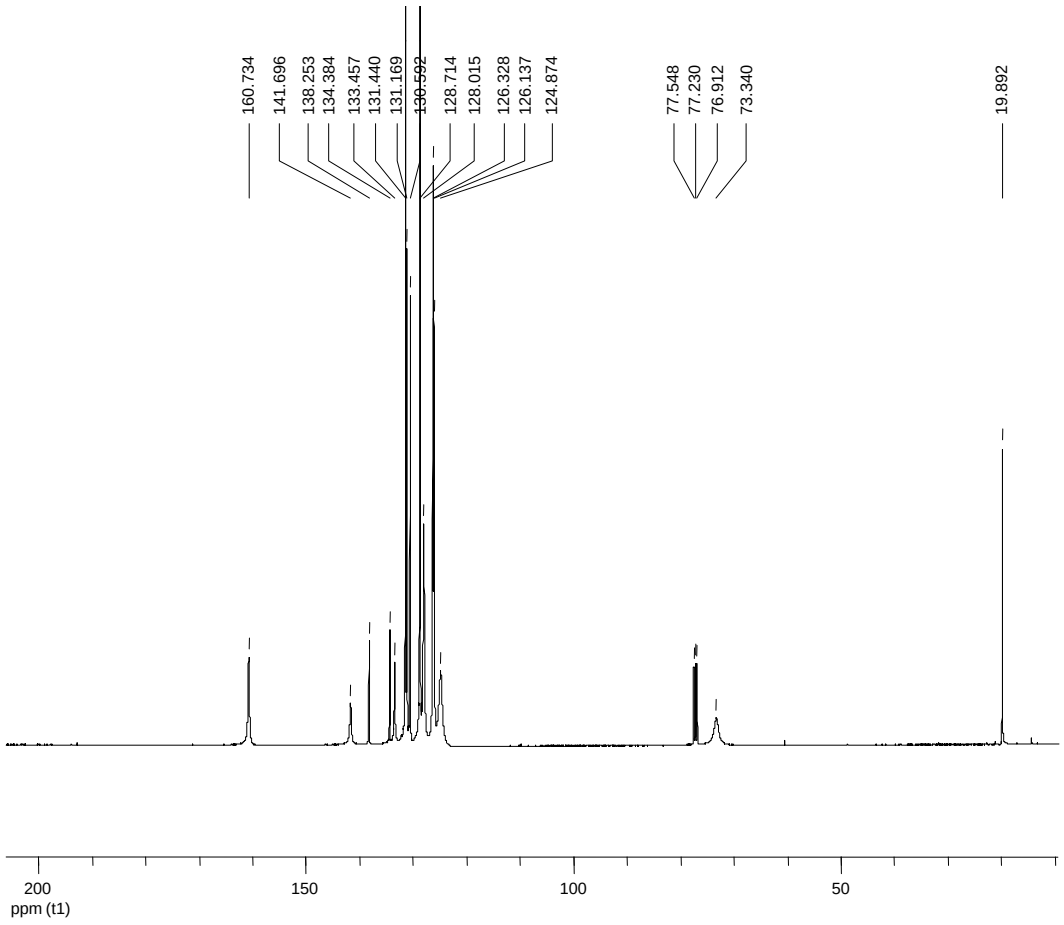

162.051
160.865
141.846
133.530
131.447
130.285
129.673
128.682
128.020
126.120
125.044
114.239
77.548
77.230
76.912
72.365
55.602
150
100
50
0
ppm (t1)

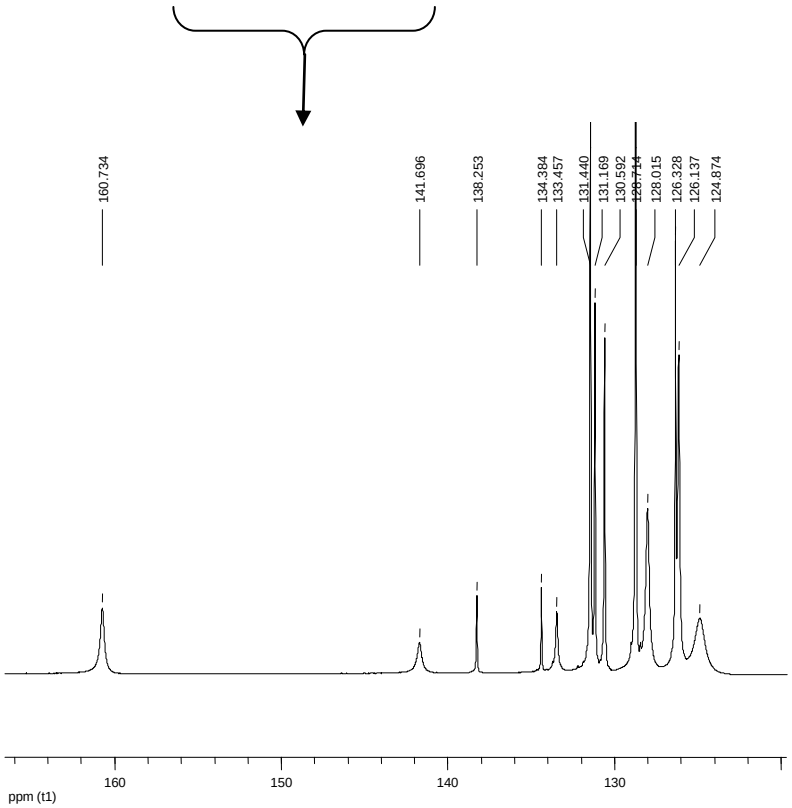

141.846
133.530
131.447
130.285
129.673
128.682
128.020
126.120
125.044
145.0
140.0
135.0
130.0
125.0
ppm (f1)

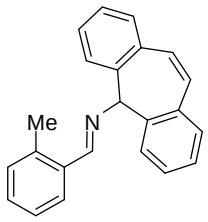

N
H3CO

5b

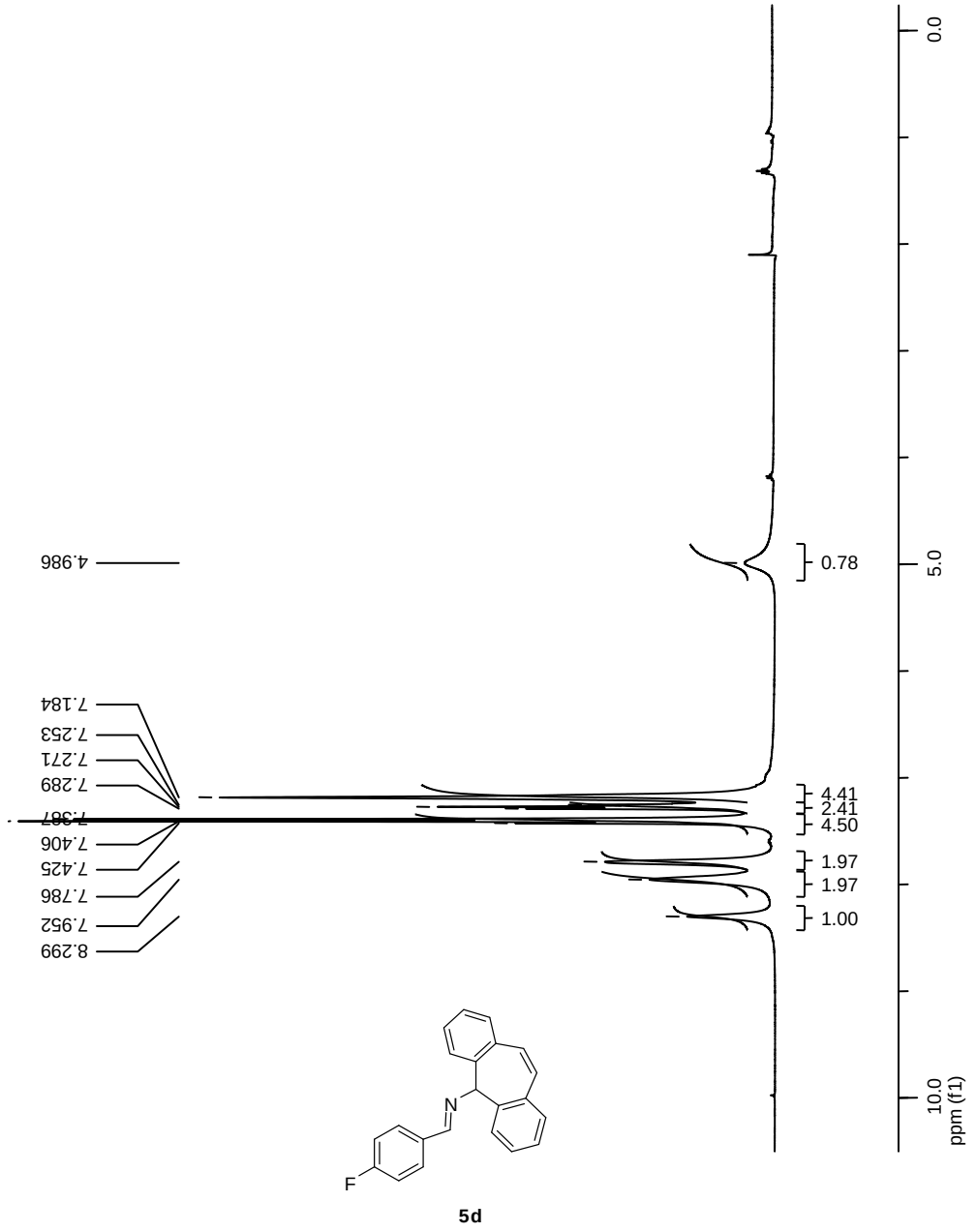

Me
N
5c
2.668
5.118
7.294
7.325
7.338
7.358
7.376
7.477
7.494
7.509
7.528
7.951
8.359
8.762
3.00
0.55
5.22
6.24
1.72
0.62
0.79
0.0
5.0
10.0
ppm (f1)


160.734
141.696
138.253
134.384
133.457
131.440
131.169
130.592
128.714
128.015
126.328
126.137
124.874
77.548
77.230
76.912
73.340
19.892
200
150
100
50
ppm (t1)

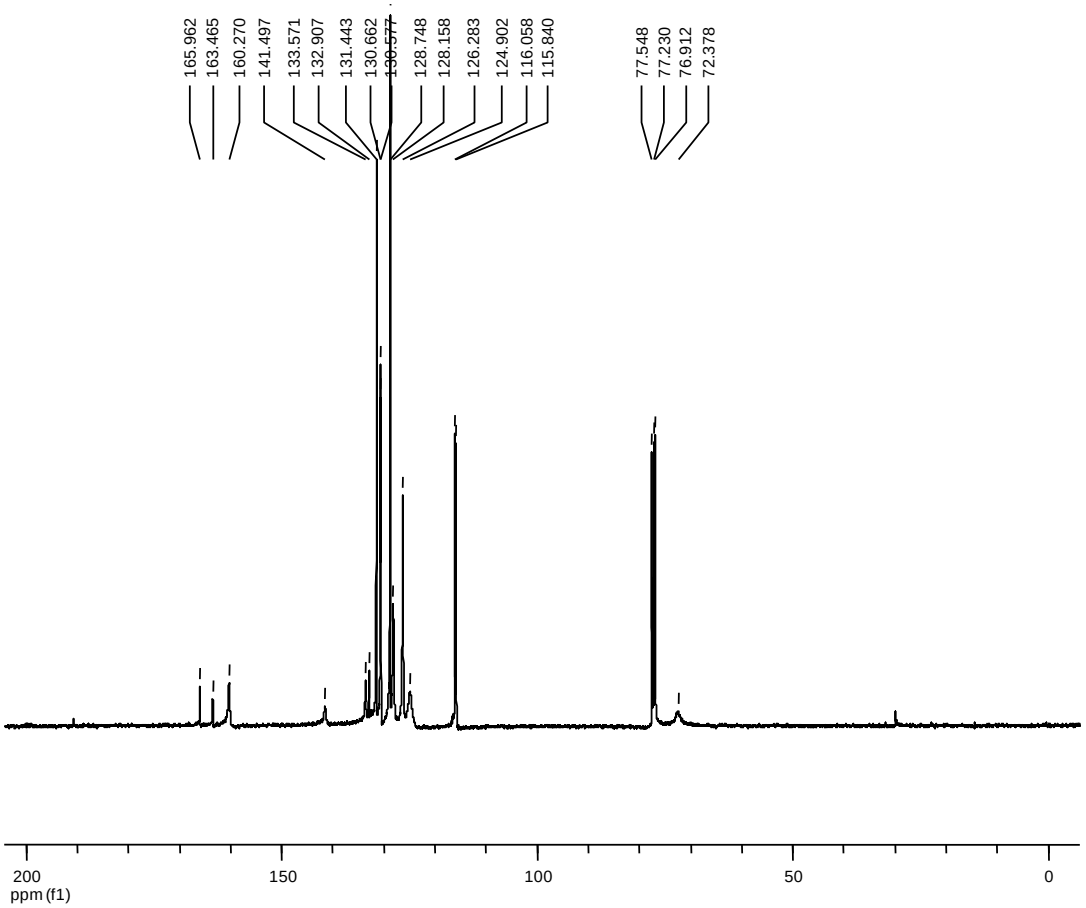

160.734
141.696
138.253
134.384
133.457
131.440
131.169
130.592
128.714
128.015
126.328
126.137
124.874
160
150
140
130
ppm (t1)

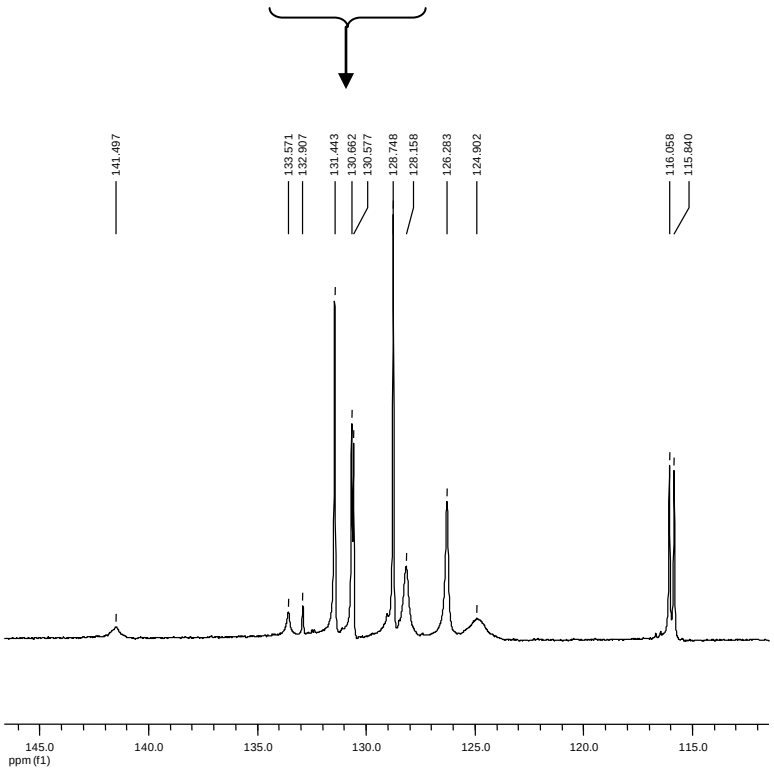

Me
N

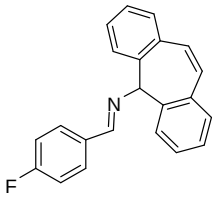
5c


4.986
7.184
7.253
7.271
7.289
7.387
7.406
7.425
7.786
7.952
8.299
0.78
4.41
2.41
4.50
1.97
1.97
1.00
0.0
5.0
10.0
ppm (f1)
N
F

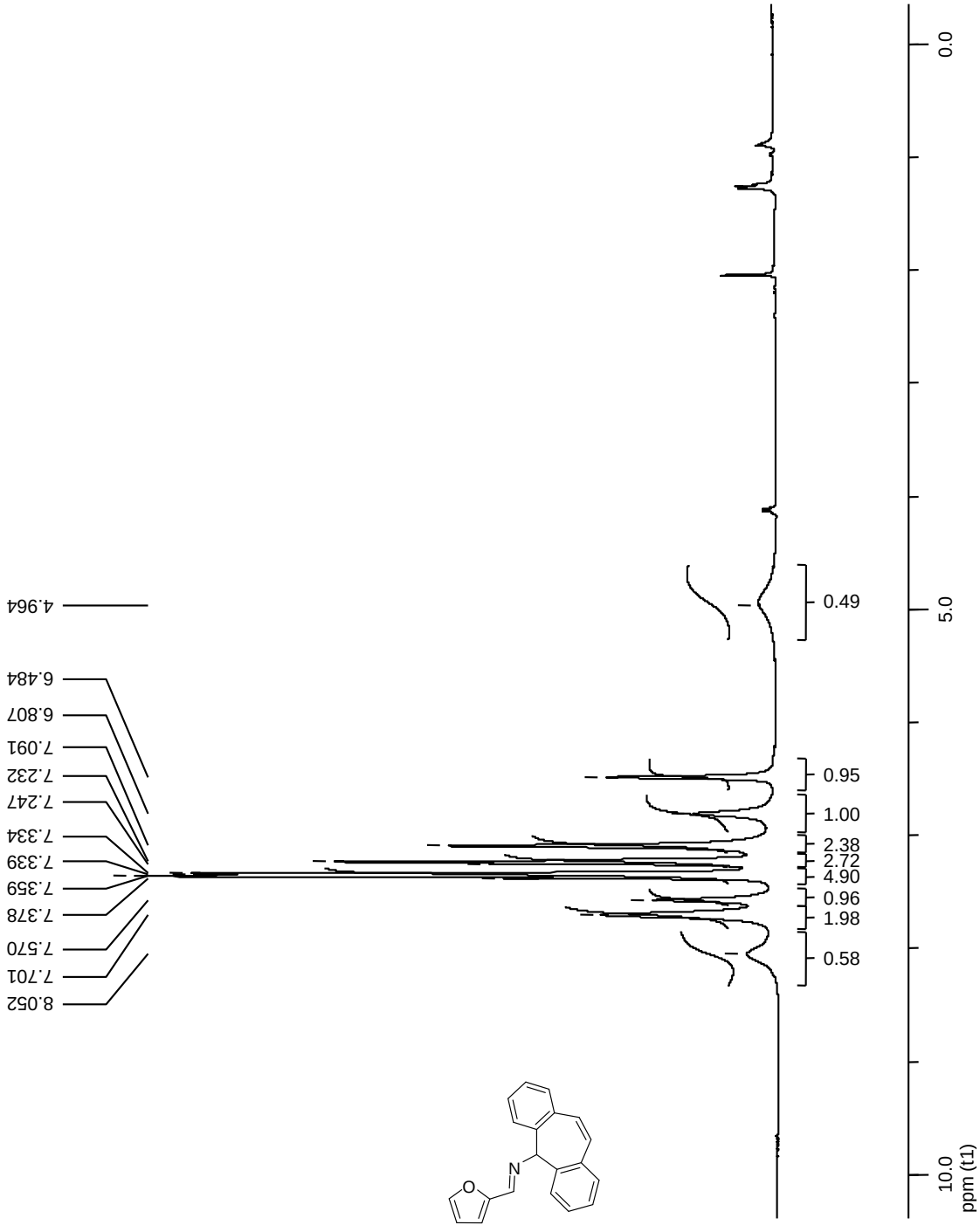
5d

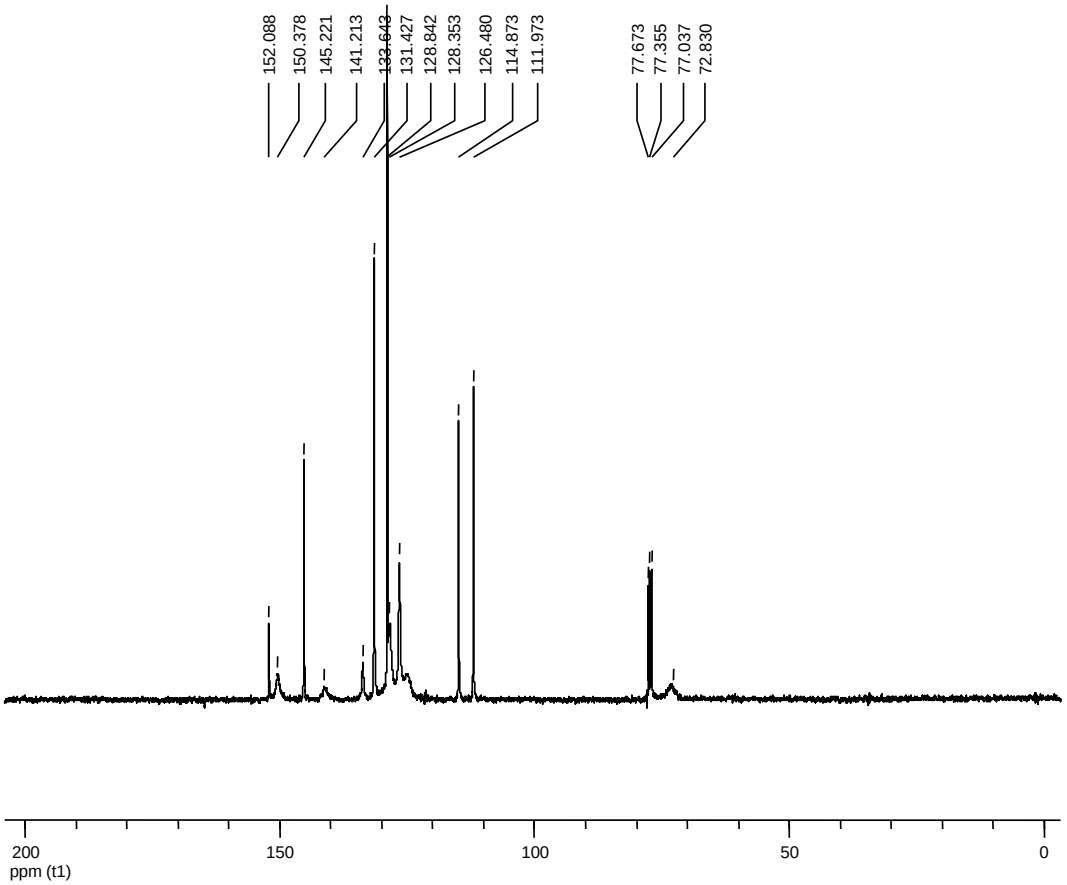

165.962
163.465
160.270
141.497
133.571
132.907
131.443
130.662
130.577
128.748
128.158
126.283
124.902
116.058
115.840
77.548
77.230
76.912
72.378
200
150
100
50
0
ppm (f1)

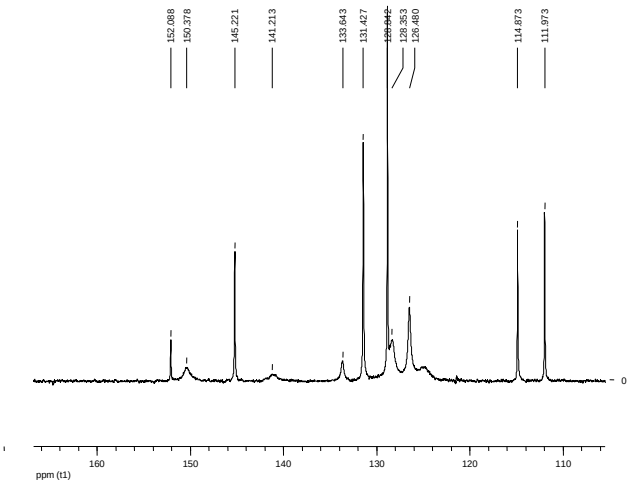

141.497
133.571
132.907
131.443
130.662
130.577
128.748
128.158
126.283
124.902
116.058
115.840
145.0
140.0
135.0
130.0
125.0
120.0
115.0
ppm (f1)

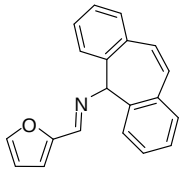

N
F

5d

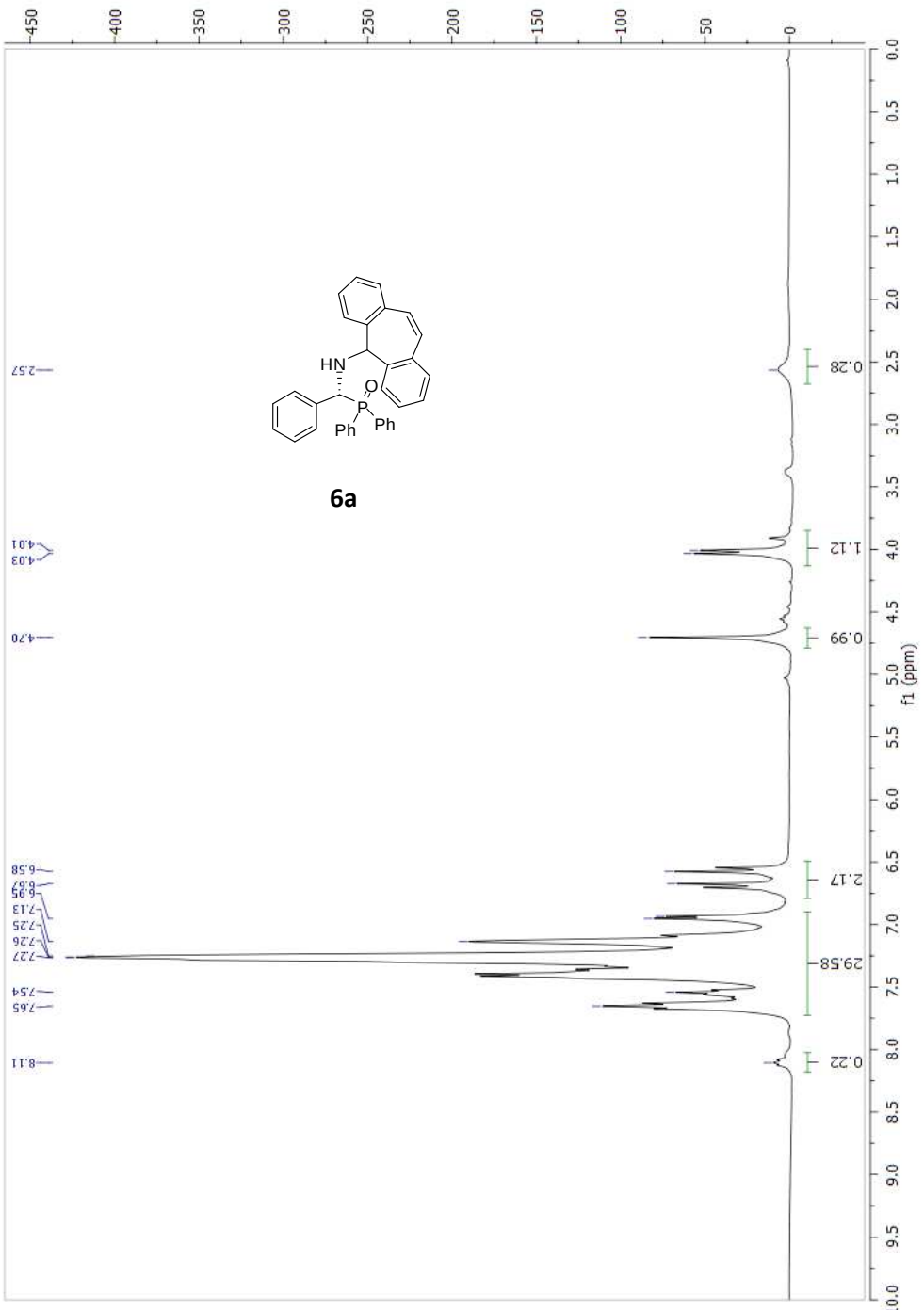

8.052
7.701
7.570
7.378
7.359
7.339
7.334
7.247
7.232
7.091
6.807
6.484
4.964
0.58
1.98
0.96
4.90
2.72
2.38
1.00
0.95
0.49
O
N
5e
10.0
ppm (t1)
5.0
0.0

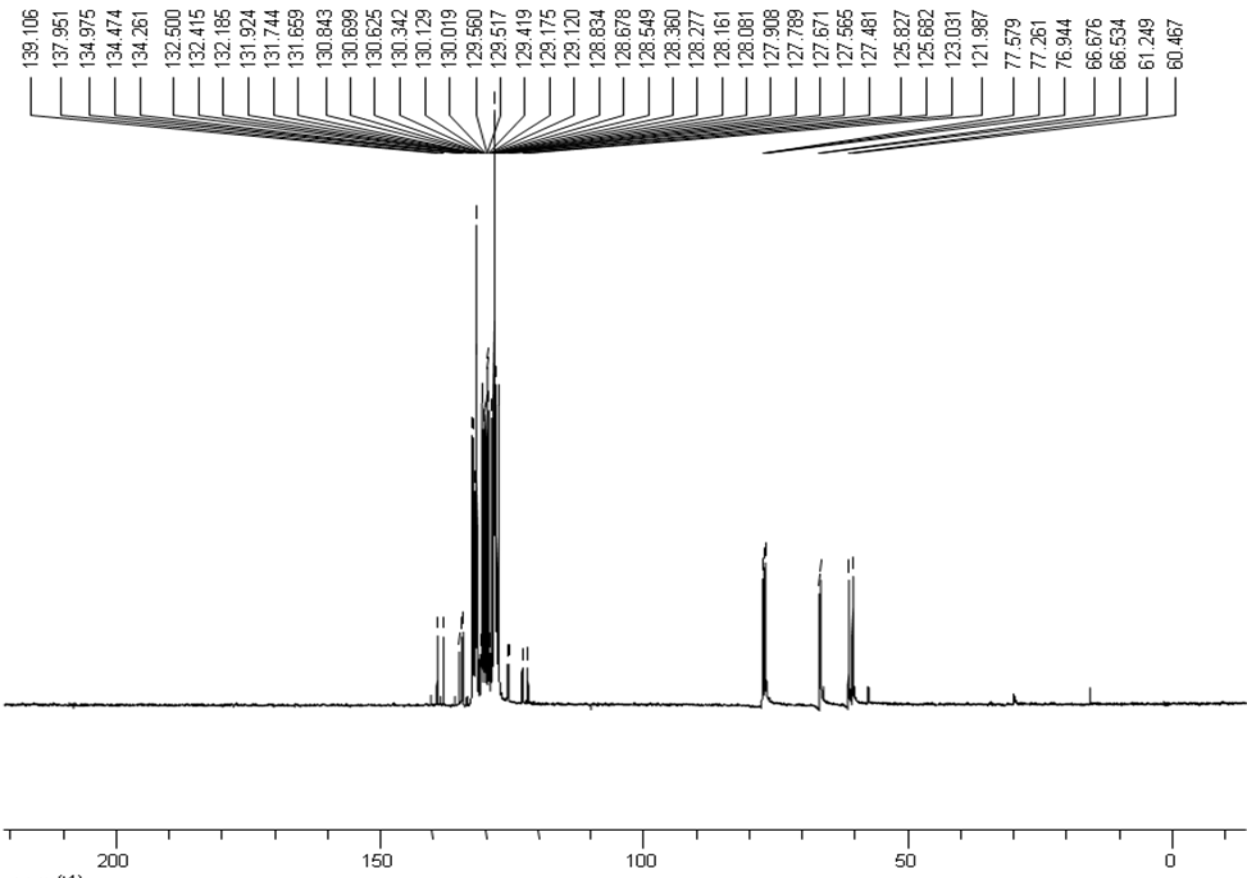

152.088
150.378
145.221
141.213
133.643
131.427
128.842
128.353
126.480
114.873
111.973
77.673
77.355
77.037
72.830
200
150
100
50
0
ppm (t1)


152.088
150.378
145.221
141.213
133.643
131.427
128.353
126.480
114.873
111.973
160
150
140
130
120
110
ppm (t1)


N
O

5e


HN
O
P
Ph
Ph
6a
f1 (ppm)


139.106
137.951
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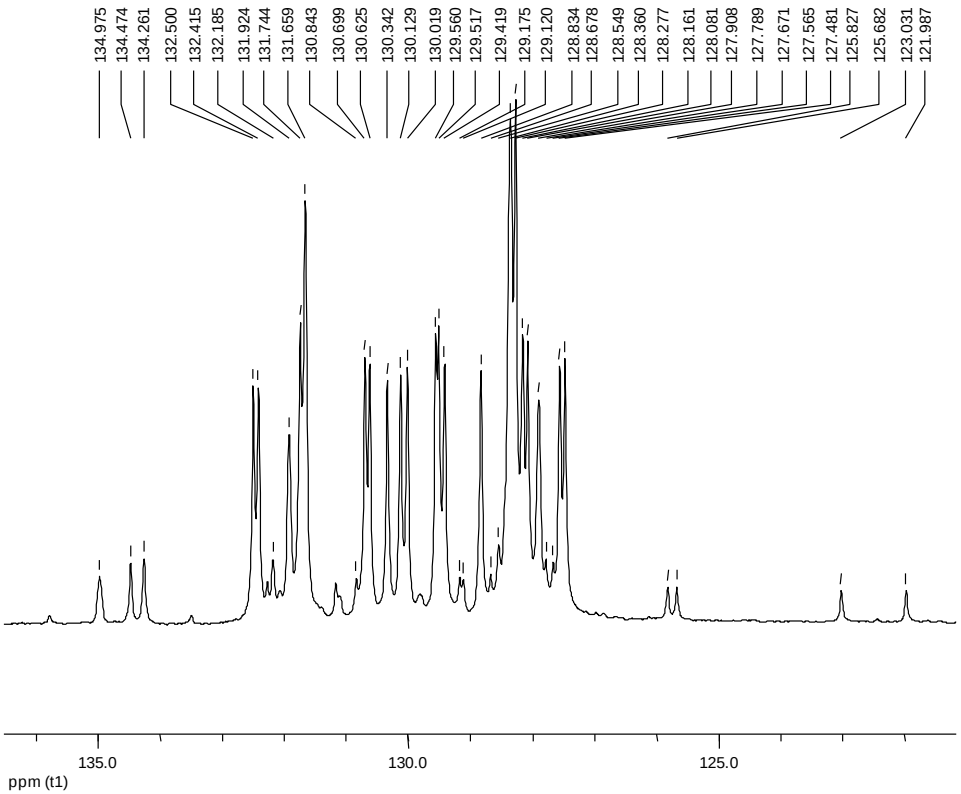
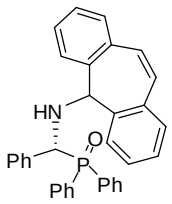
134.261
132.500
132.415
132.185
131.924
131.744
131.659
130.843
130.699
130.625
130.342
130.129
130.019
129.560
129.517
129.419
129.175
129.120
128.834
128.678
128.549
128.360
128.277
128.161
128.081
127.908
127.789
127.671
127.565
127.481
125.827
125.682
123.031
121.987
77.579
77.261
76.944
66.676
66.534
61.249
60.467
200
150
100
50
0


134.975
134.474
134.261
132.500
132.415
132.185
131.924
131.744
131.659
130.843
130.699
130.625
130.342
130.129
130.019
129.560
129.517
129.419
129.175
129.120
128.834
128.678
128.549
128.360
128.277
128.161
128.081
127.908
127.789
127.671
127.565
127.481
125.827
125.682
123.031
121.987
135.0
130.0
125.0
ppm (t1)

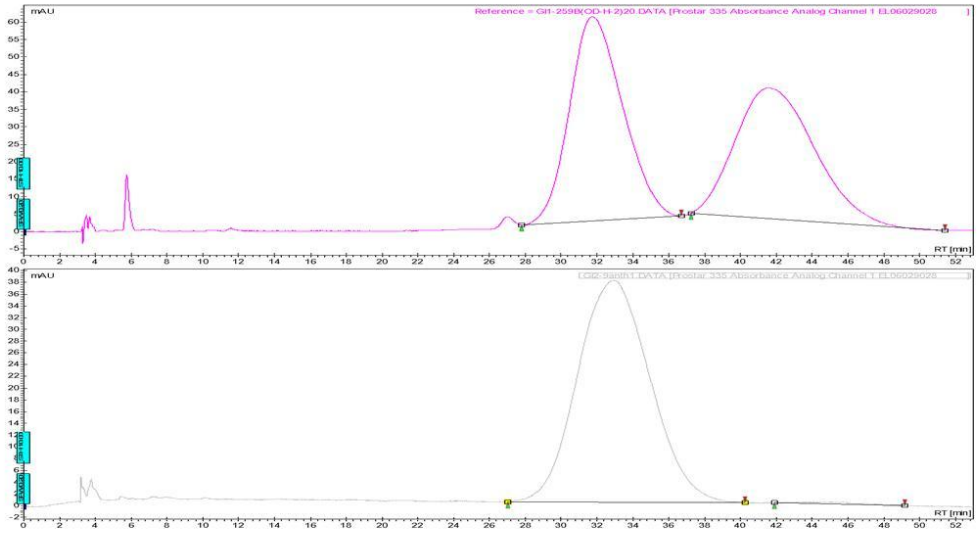

HN
O
Ph
P
Ph
Ph
Ph

6a

Chromatogram : GI2-9anth1_channel1

System : HPLC
Method : test
User : Gerald Rowland

Acquired : 6/10/2009 9:20:24 AM
Processed : 10/23/2009 3:14:23 PM
Printed : 10/23/2009 3:27:04 PM



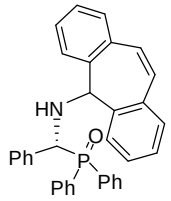
Peak results :

GI1-259B(OD-H-2)20.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	31.72	58.5	5.52	201.4	51.194
2	41.65	37.4	8.41	192.0	48.806
Total		95.9		393.5	100.000

GI2-9anth1.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	32.96	37.7	7.33	176.7	99.325
2	45.60	0.3	4.25	1.2	0.675
Total		38.1		177.9	100.000



6a

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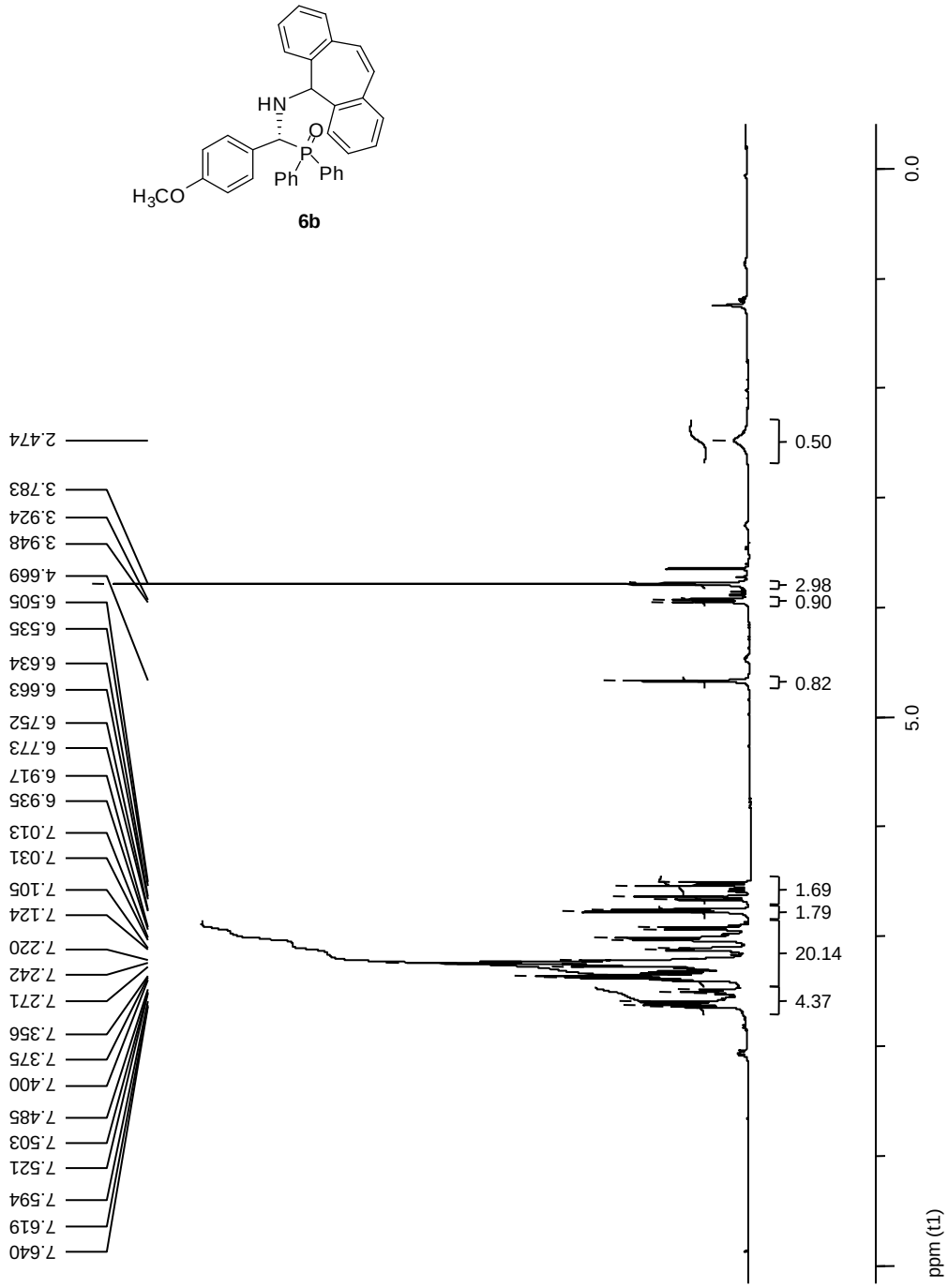
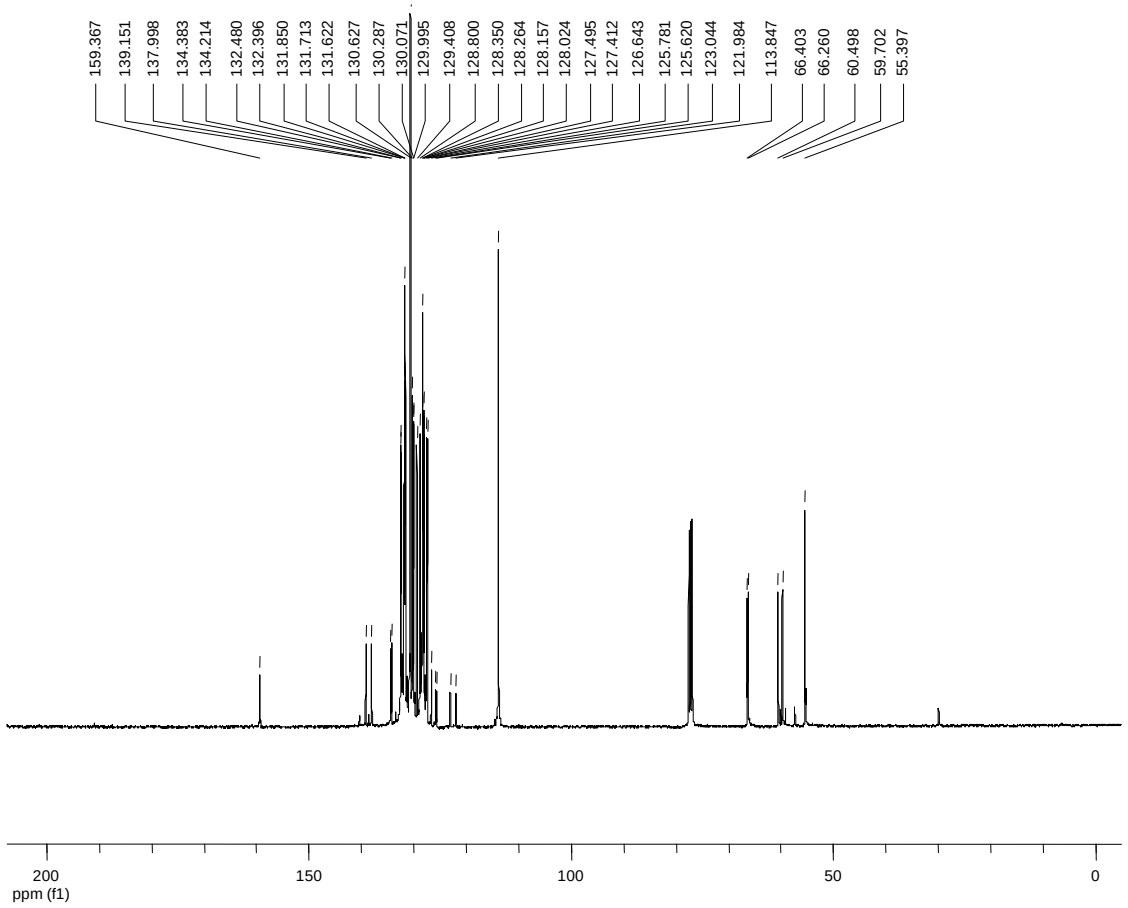
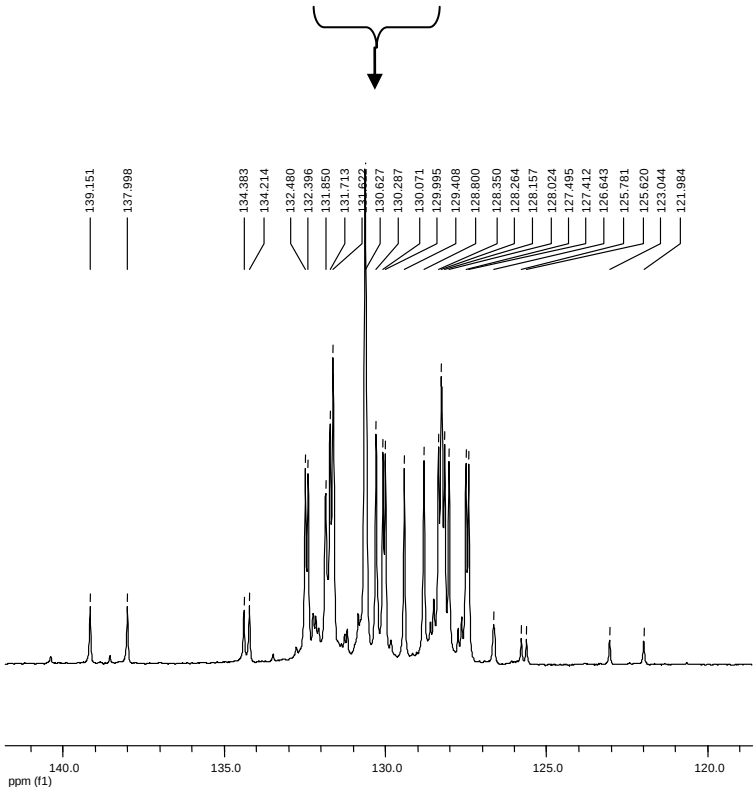

HN
O
P
Ph
Ph
H3CO
6b
2.474
3.783
3.924
3.948
4.669
6.505
6.535
6.634
6.663
6.752
6.773
6.917
6.935
7.013
7.031
7.105
7.124
7.220
7.242
7.271
7.356
7.375
7.400
7.485
7.503
7.521
7.594
7.619
7.640
0.50
2.98
0.90
0.82
1.69
1.79
20.14
4.37
0.0
5.0
ppm (t1)


159.367
139.151
137.998
134.383
134.214
132.480
132.396
131.850
131.713
131.622
130.627
130.287
130.071
129.995
129.408
128.800
128.350
128.264
128.157
128.024
127.495
127.412
126.643
125.781
125.620
123.044
121.984
113.847
66.403
66.260
60.498
59.702
55.397
200
150
100
50
0
ppm (f1)


139.151
137.998
134.383
134.214
132.480
132.396
131.850
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130.627
130.287
130.071
129.995
129.408
128.800
128.350
128.264
128.157
128.024
127.495
127.412
126.643
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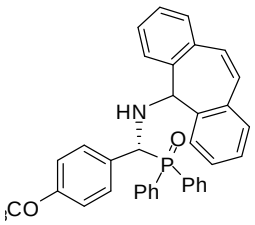
125.620
123.044
121.984
140.0
135.0
130.0
125.0
120.0
ppm (f1)

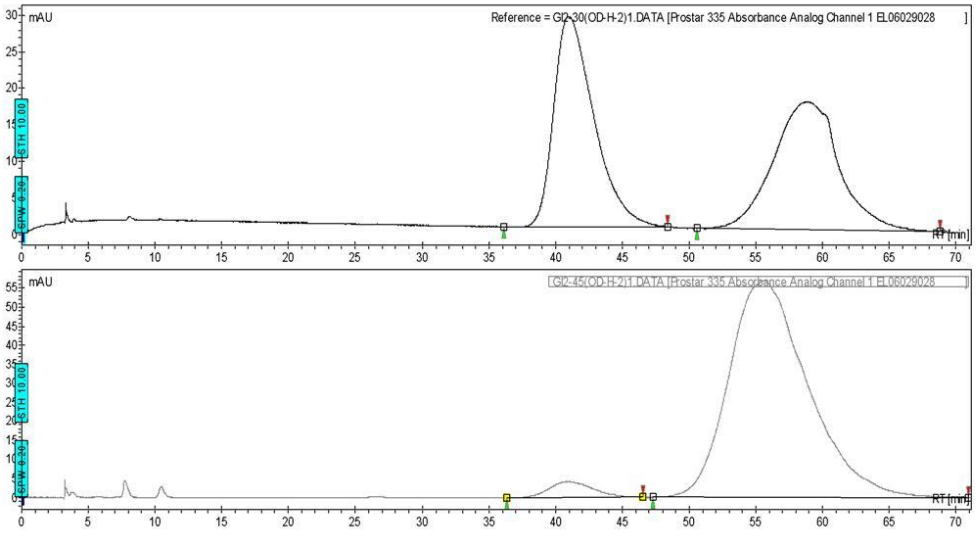

HN
O
P
Ph
Ph
CO

6b

Chromatogram : GI2-45(OD-H-2)1_channel1

System : HPLC
Method : test
User : Gerald Rowland

Acquired : 6/15/2009 10:51:28 AM
Processed : 6/15/2009 1:11:44 PM
Printed : 10/23/2009 4:46:53 PM



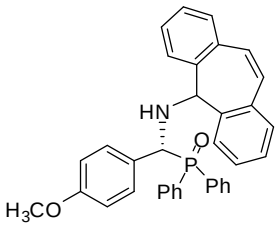
Peak results :

GI2-30(OD-H-2)1.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	41.03	28.9	5.32	100.5	49.933
2	58.97	17.6	7.64	100.8	50.067
Total		46.4		201.3	100.000

GI2-45(OD-H-2)1.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	40.87	4.3	7.86	16.1	3.963
2	55.61	57.1	9.73	390.3	96.037
Total		61.3		406.4	100.000



6b

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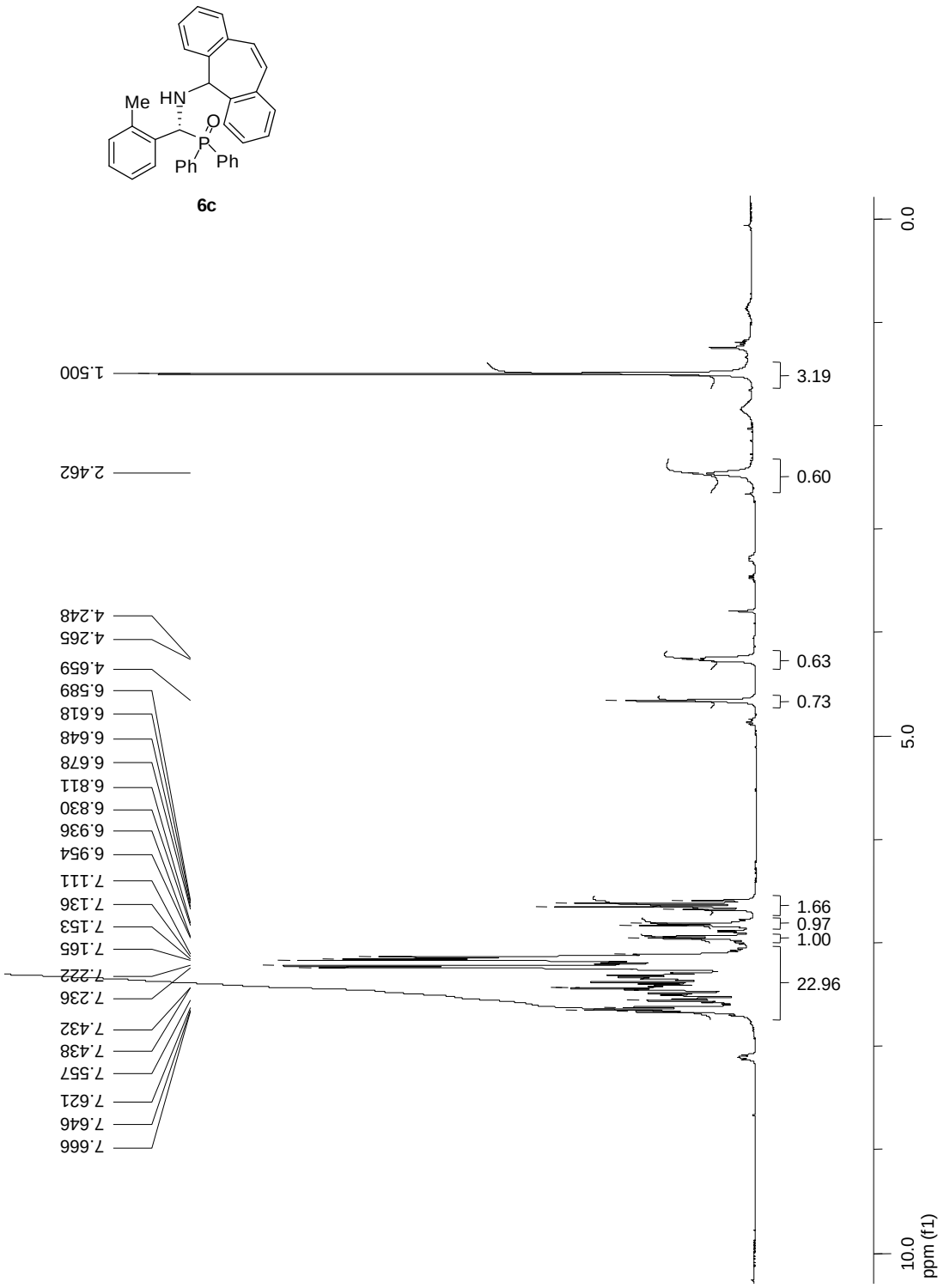
Me
HN
O
P
Ph
Ph
6c
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4.265
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6.589
6.618
6.648
6.678
6.811
6.830
6.936
6.954
7.111
7.136
7.153
7.165
7.222
7.236
7.432
7.438
7.557
7.621
7.646
7.666
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0.73
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10.0
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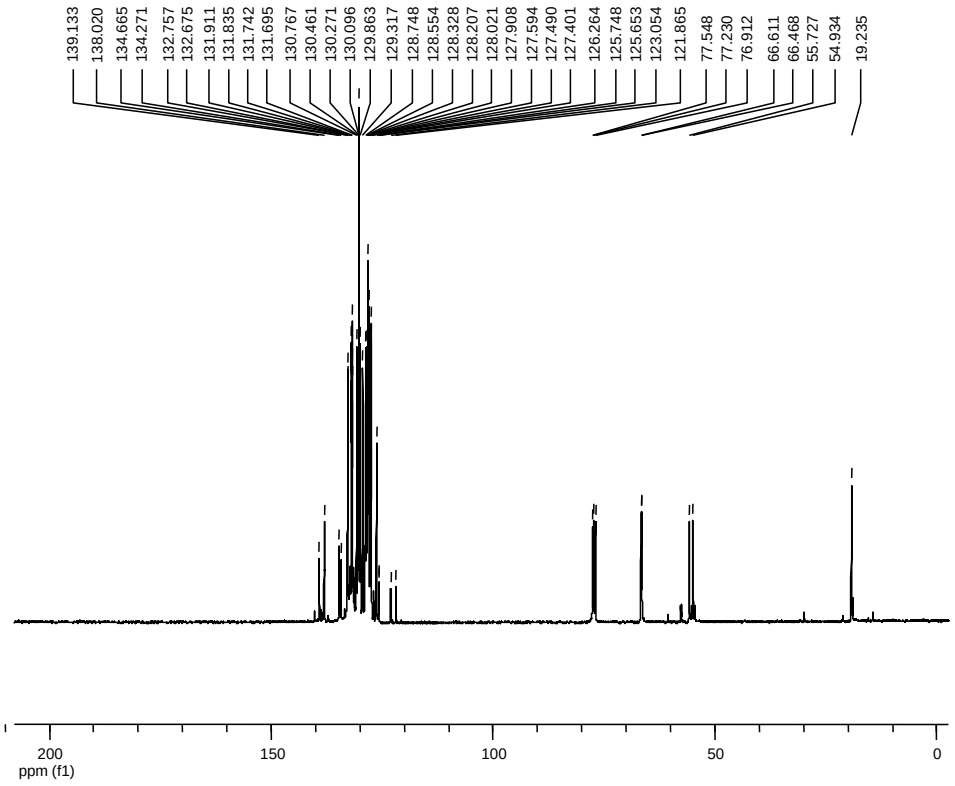
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134.271
132.757
132.675
131.911
131.835
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131.695
130.767
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130.271
130.096
129.863
129.317
128.748
128.554
128.328
128.207
128.021
127.908
127.594
127.490
127.401
126.264
125.748
125.653
123.054
121.865
77.548
77.230
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66.611
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55.727
54.934
19.235
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50
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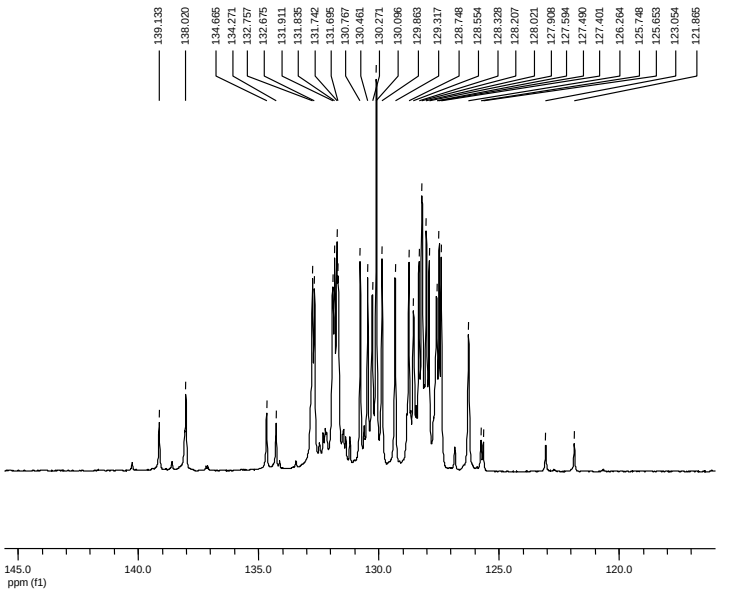
ppm (f1)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130.271
130.096
129.863
129.317
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128.207
128.021
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127.594
127.490
127.401
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130.0
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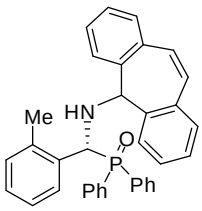
ppm (f1)

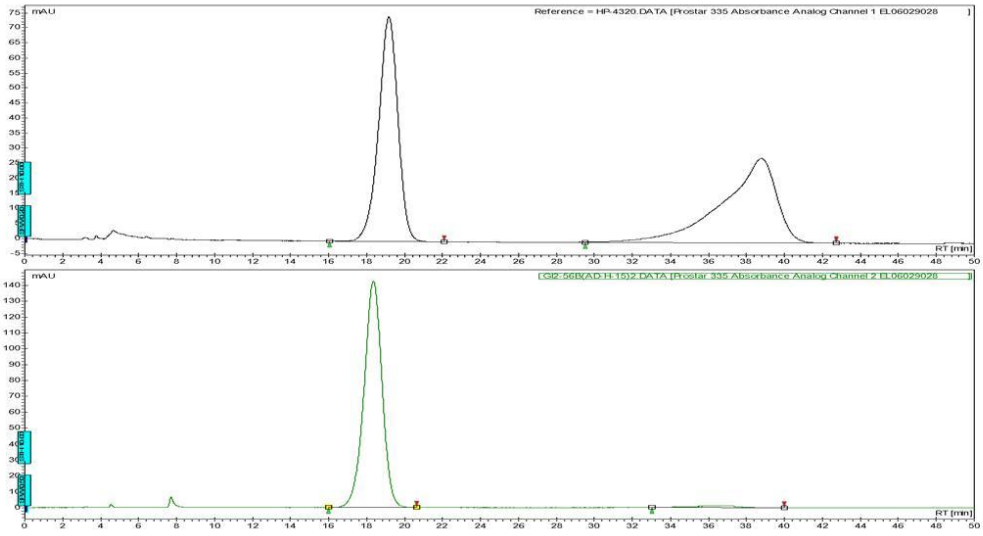

Me
HN
O
P
Ph
Ph

6c

Chromatogram : GI2-56B(AD-H-15)2_channel2

System : HPLC
Method : test
User : Gerald Rowland

Acquired : 7/2/2009 11:52:05 AM
Processed : 10/23/2009 4:57:39 PM
Printed : 10/23/2009 5:00:16 PM



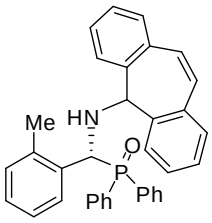
Peak results :

HP-4320.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	19.17	74.6	1.90	88.4	49.081
2	38.79	28.0	4.65	91.7	50.919
Total		102.7		180.1	100.000

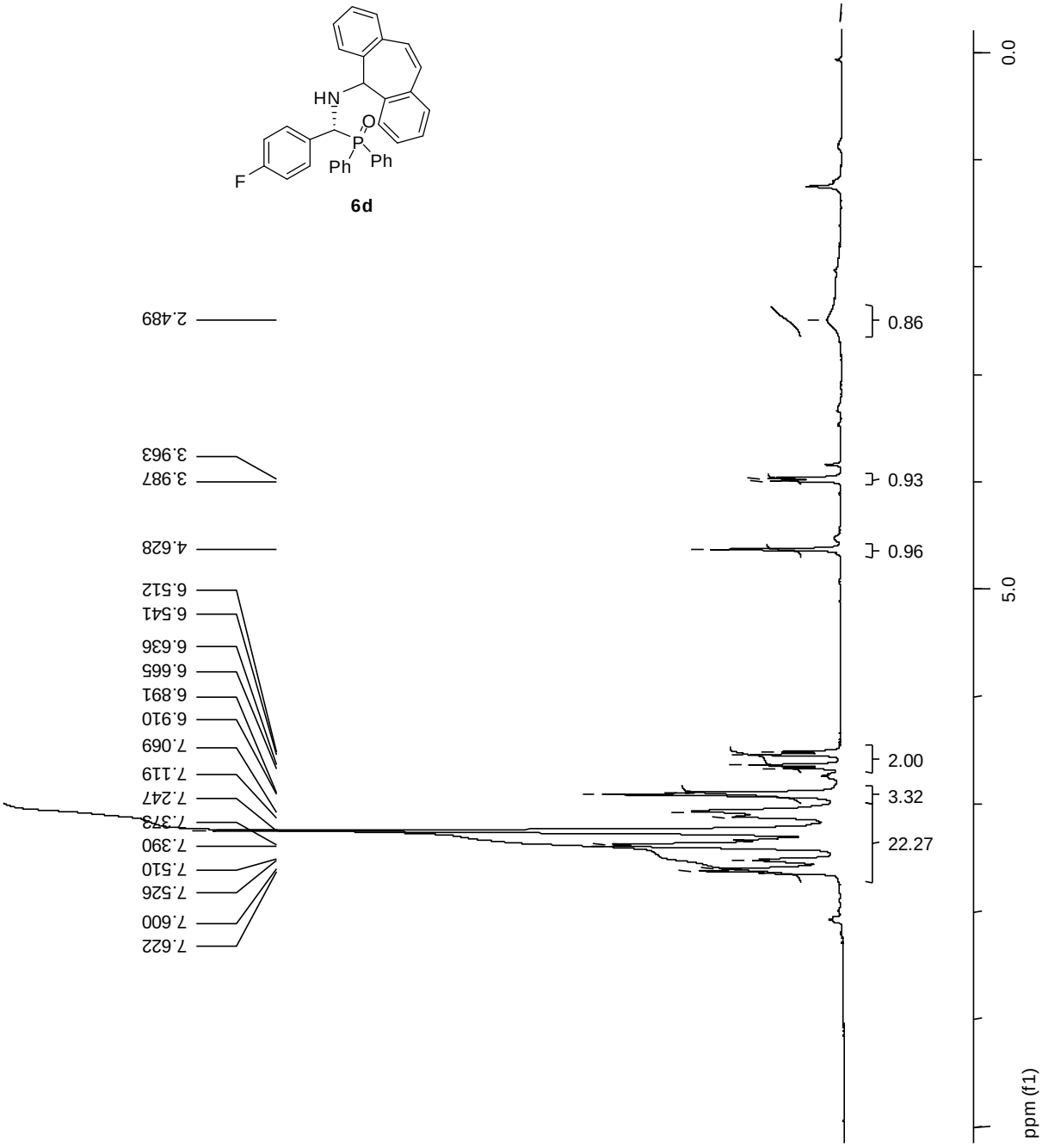
GI2-56B(AD-H-15)2.DATA [Prostar 335 Absorbance Analog Channel 2 EL06029028]

Index	Name	Time [Min]	Quantity [% Area]	Height [mAU]	Area [mAU.Min]	Area % [%]
1	UNKNOWN	18.36	98.11	142.6	157.0	98.107
2	UNKNOWN	36.73	1.89	1.2	3.0	1.893
Total			100.00	143.8	160.0	100.000



6c

Page 1/1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P
Ph
Ph
F
6d
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4.628
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6.541
6.636
6.665
6.891
6.910
7.069
7.119
7.247
7.373
7.390
7.510
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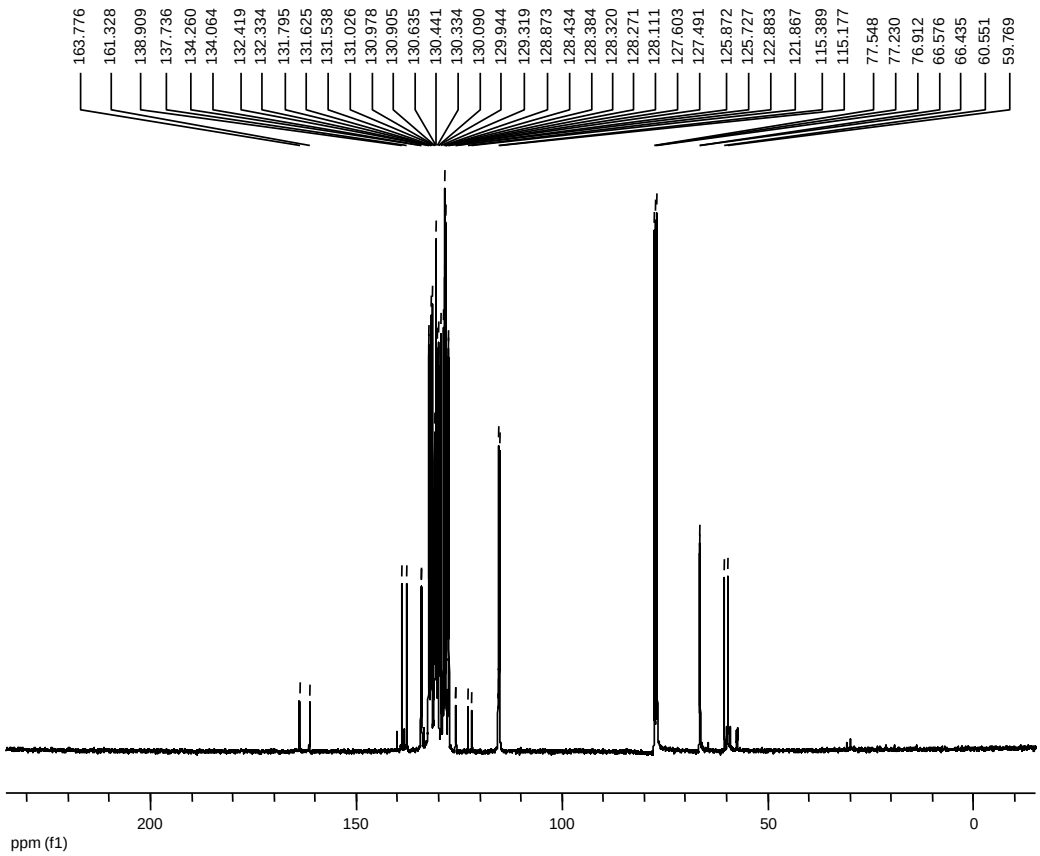
5.0
ppm (f1)


163.776
161.328
138.909
137.736
134.260
134.064
132.419
132.334
131.795
131.625
131.538
131.026
130.978
130.905
130.635
130.441
130.334
130.090
129.944
129.319
128.873
128.434
128.384
128.320
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115.389
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76.912
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66.435
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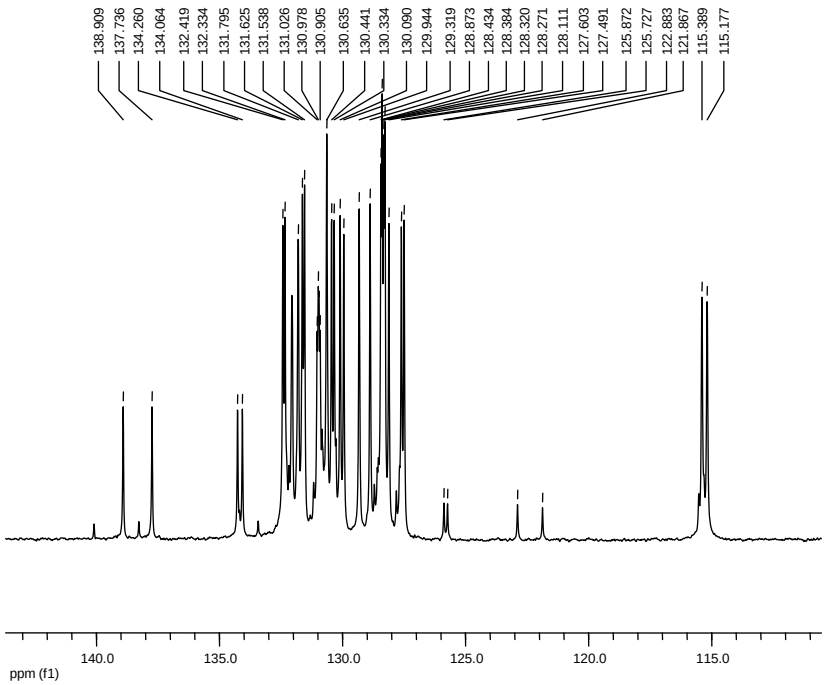
150
100
50
0
ppm (f1)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137.736
134.260
134.064
132.419
132.334
131.795
131.625
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131.026
130.978
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130.635
130.441
130.334
130.090
129.944
129.319
128.873
128.434
128.384
128.320
128.271
128.111
127.603
127.491
125.872
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135.0
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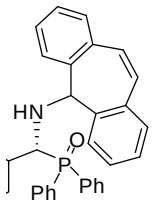
125.0
120.0
115.0
ppm (f1)


HN
O
P
Ph
Ph

6d

Chromatogram : GI2-48(OD-H-1)1_channel2

System : HPLC
Method : test
User : Gerald Rowland

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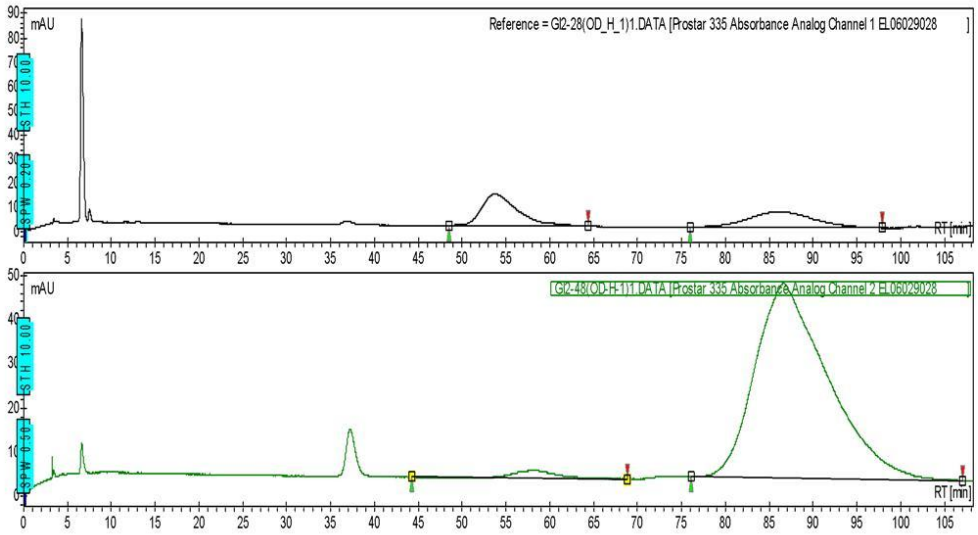
Processed : 6/18/2009 2:02:52 PM
Printed : 10/24/2009 1:26:20 PM



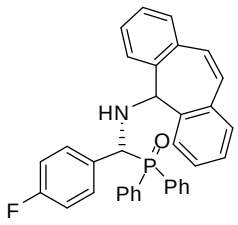
Peak results :

GI2-28(OD_H_1)1.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	53.81	13.0	6.72	62.0	52.650
2	86.15	6.3	11.32	55.8	47.350
Total		19.3		117.8	100.000

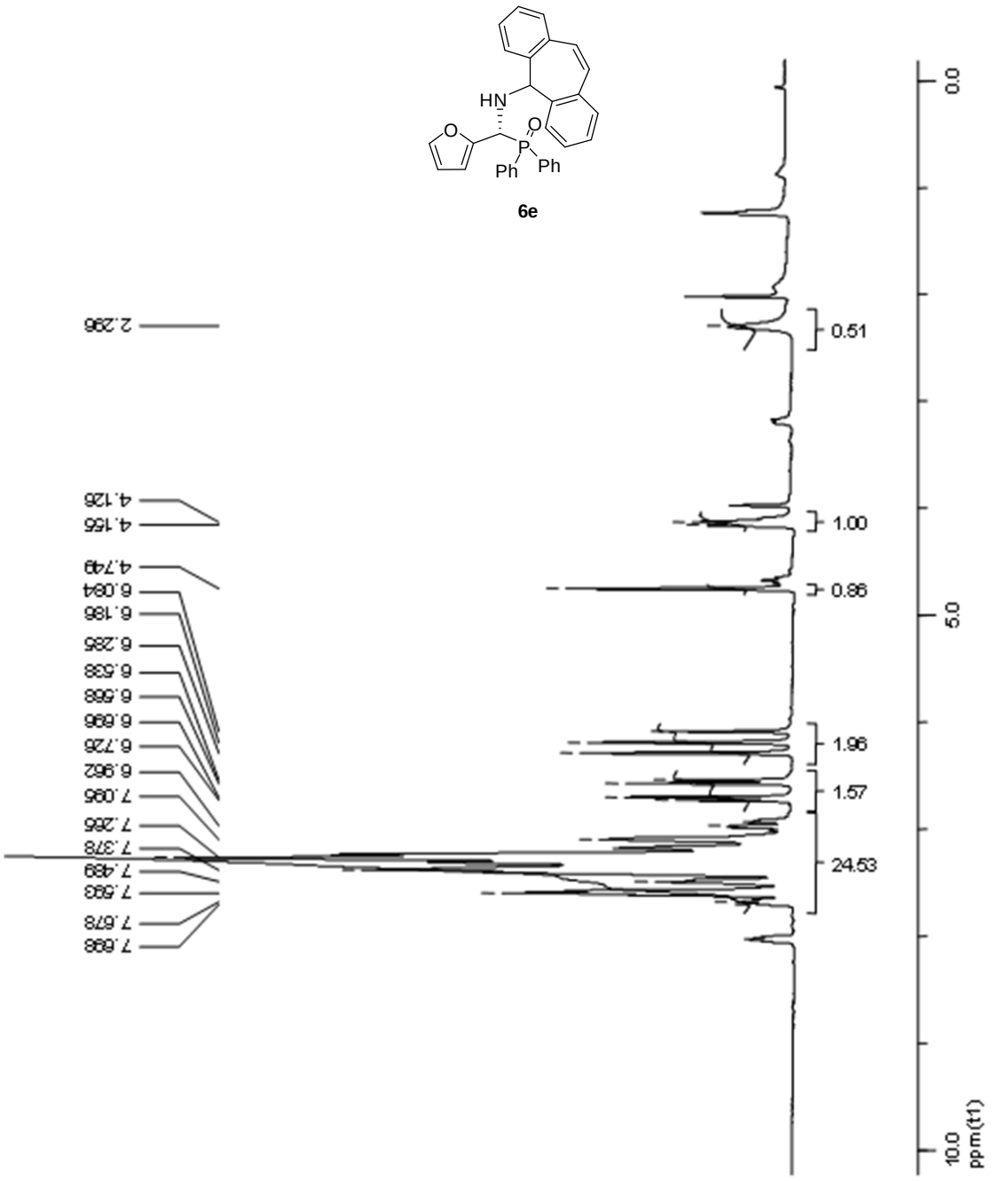
GI2-48(OD-H-1)1.DATA [Prostar 335 Absorbance Analog Channel 2 EL06029028]

Index	Name	Time [Min]	Quantity [% Area]	Height [mAU]	Area [mAU.Min]	Area % [%]
1	UNKNOWN	58.55	2.26	1.7	9.8	2.264
2	UNKNOWN	86.61	97.74	44.3	423.9	97.736
Total			100.00	46.0	433.7	100.000



6d

Page 1/1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O
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P
Ph
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6.186
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6.538
6.668
6.696
6.726
6.962
7.086
7.266
7.378
7.489
7.593
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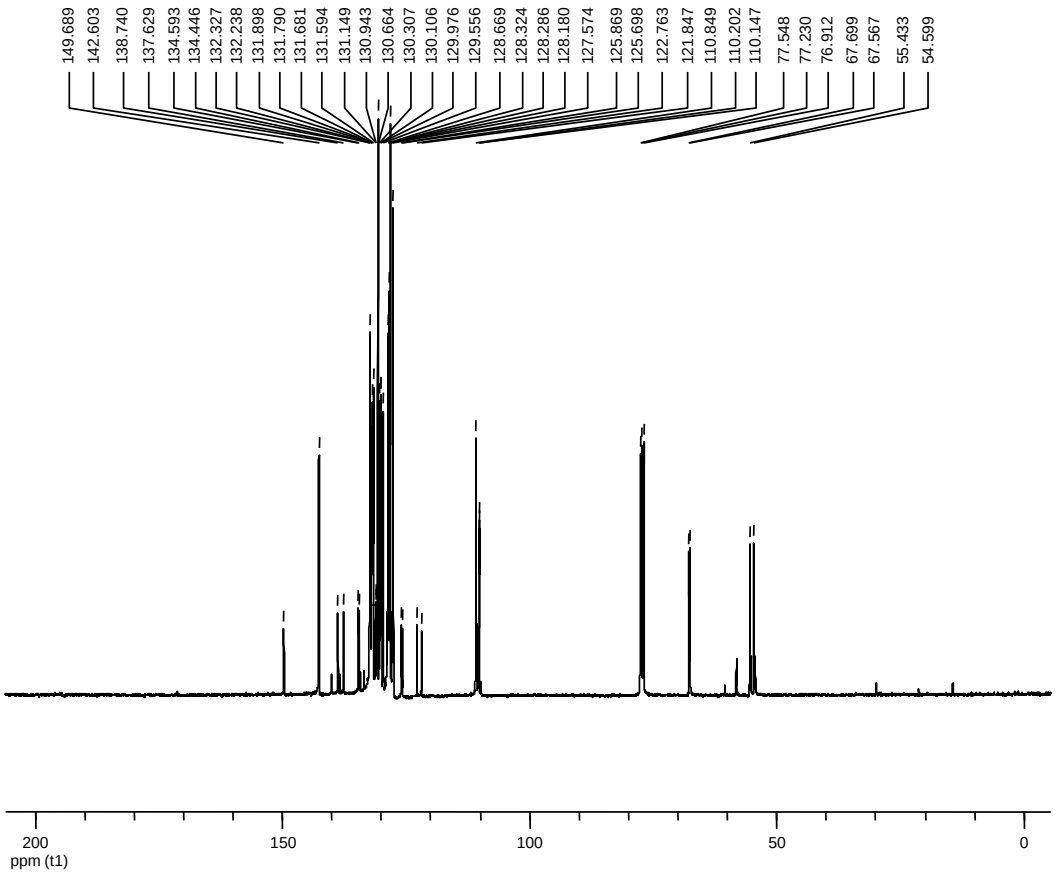
10.0
ppm(t1)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131.149
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130.664
130.307
130.106
129.976
129.556
128.669
128.324
128.286
128.180
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125.869
125.698
122.763
121.847
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110.202
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100
50
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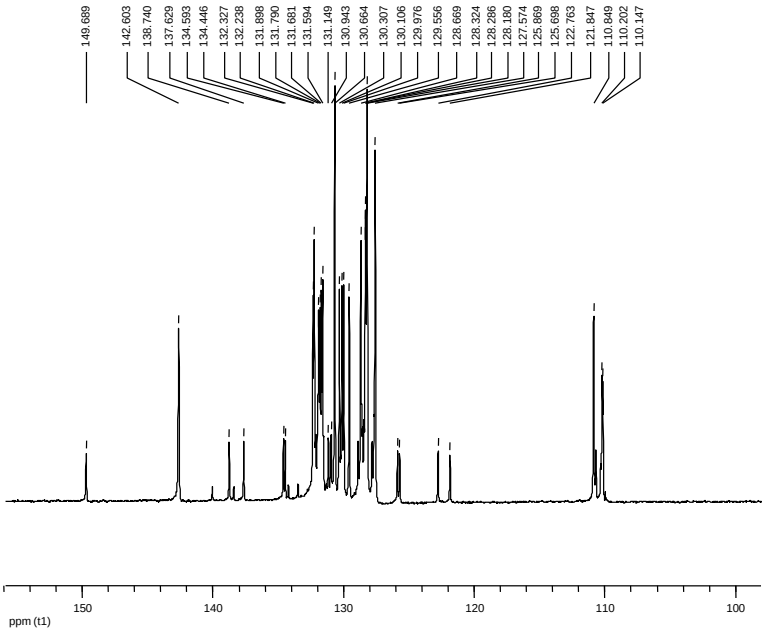
ppm (t1)


149.689
142.603
138.740
137.629
134.593
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131.681
131.594
131.149
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130.664
130.307
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129.976
129.556
128.669
128.324
128.286
128.180
127.574
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121.847
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110.202
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150
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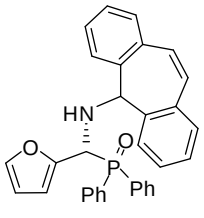
130
120
110
100
ppm (t1)

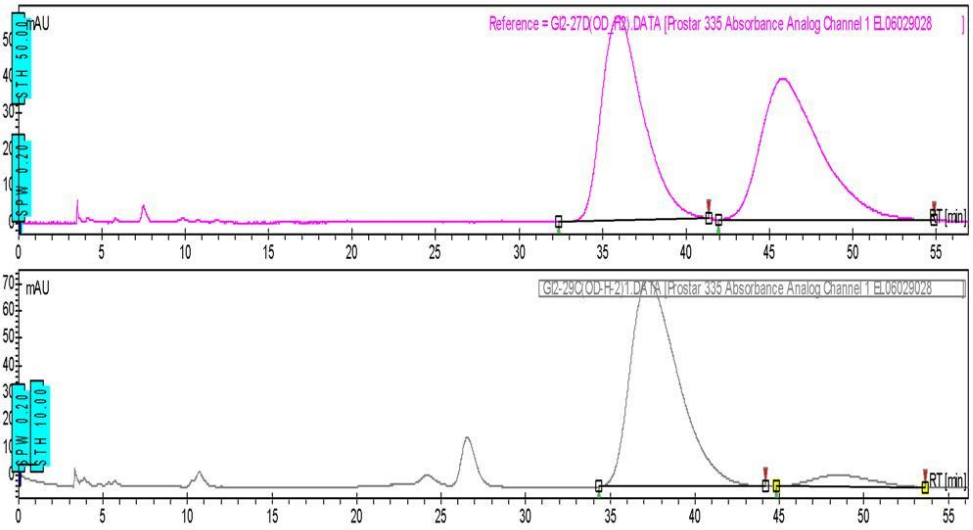

HN
O
O
P
Ph
Ph

6e

Chromatogram : GI2-29C(OD-H-2)1_channel1

System : HPLC
Method : test
User : Gerald Rowland

Acquired : 5/29/2009 10:24:46 PM
Processed : 5/29/2009 11:27:15 PM
Printed : 10/24/2009 9:00:12 PM



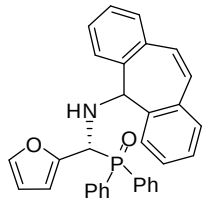
Peak results :

GI2-27D(OD_H2).DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	35.97	56.2	4.42	161.7	50.328
2	45.77	38.8	6.26	159.6	49.672
Total		95.1		321.3	100.000

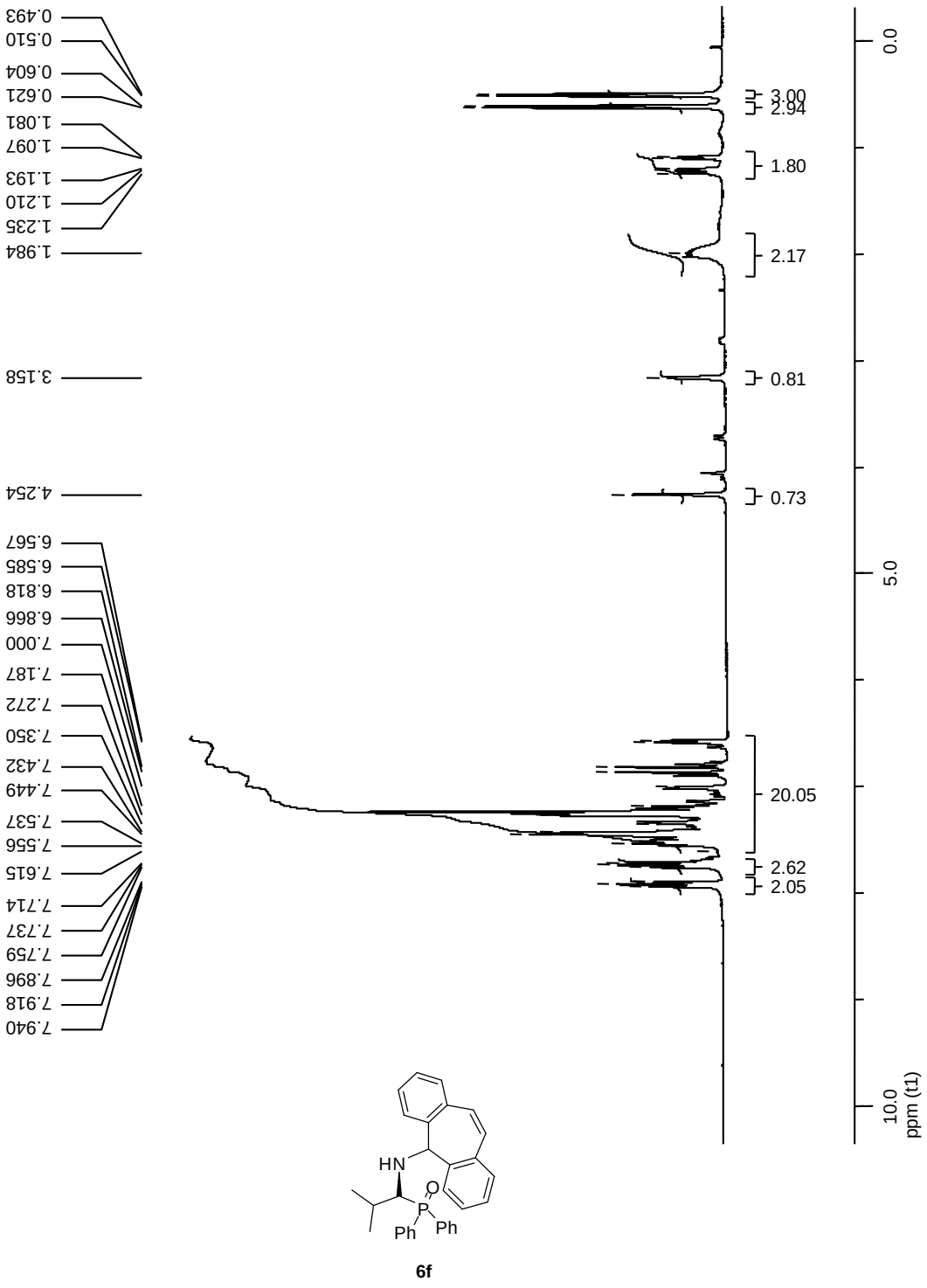
GI2-29C(OD-H-2)1.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
2	37.24	75.5	5.19	246.7	93.366
1	48.25	4.3	6.83	17.5	6.634
Total		79.8		264.2	100.000



6e

Page 1/1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4.254
6.567
6.585
6.818
6.866
7.000
7.187
7.272
7.350
7.432
7.449
7.537
7.556
7.615
7.714
7.737
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7.896
7.918
7.940
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2.17
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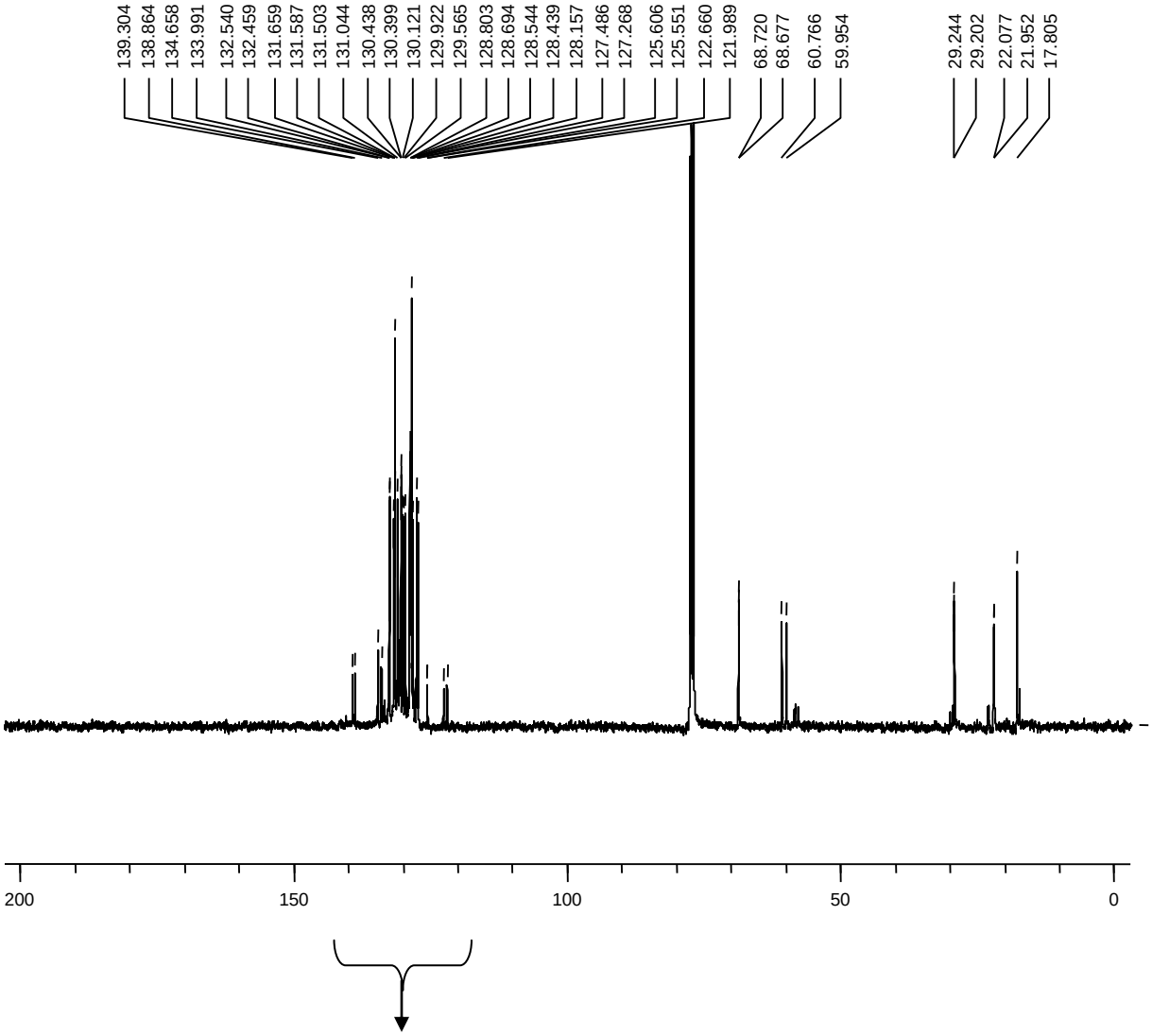
10.0
ppm (t1)
HN
O
P
Ph
Ph

6f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133.991
132.540
132.459
131.659
131.587
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131.044
130.438
130.399
130.121
129.922
129.565
128.803
128.694
128.544
128.439
128.157
127.486
127.268
125.606
125.551
122.660
121.989
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68.677
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29.202
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150
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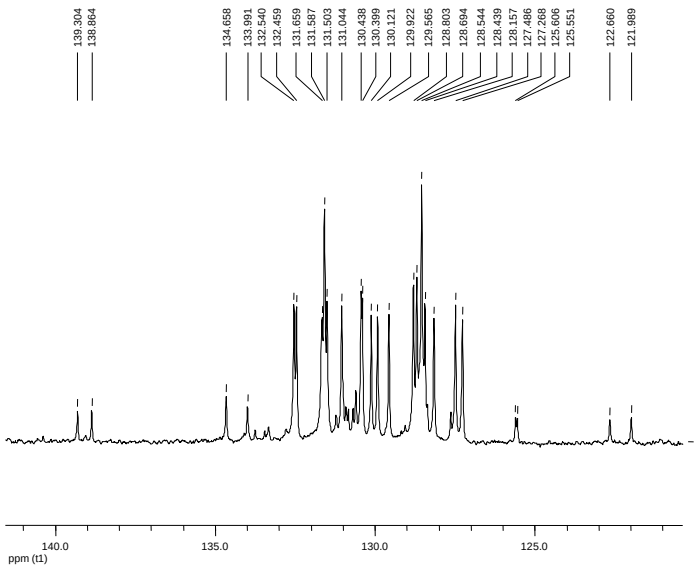
50
0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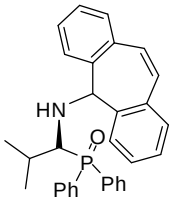
ppm (t1)

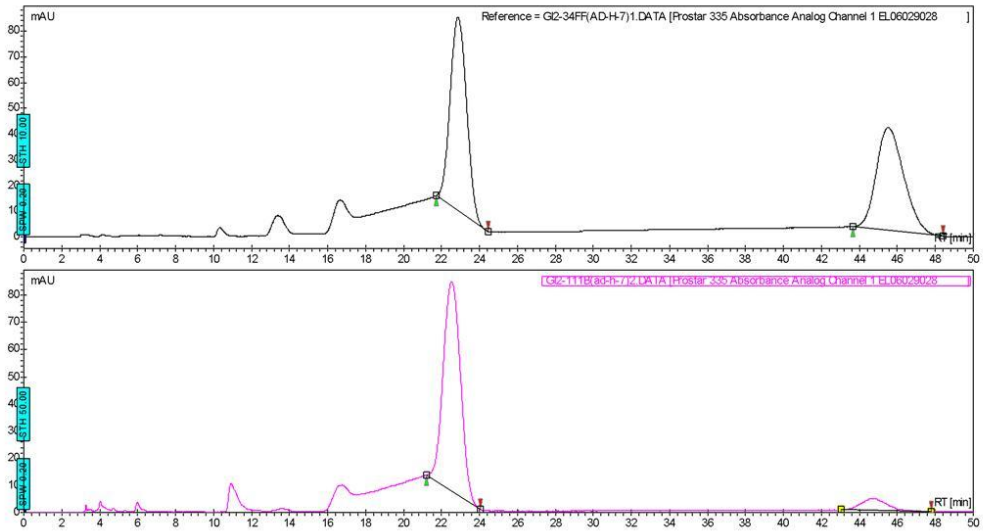

HN
O
P
Ph
Ph

6f

Chromatogram : GI2-111B(ad-h-7)2_channel1

System : HPLC
Method : test
User : Gerald Rowland

Acquired : 10/26/2009 6:08:16 PM
Processed : 10/27/2009 1:19:00 PM
Printed : 11/5/2009 9:37:43 PM



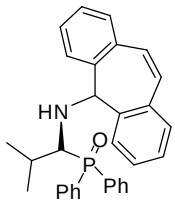
Peak results :

GI2-34FF(AD-H-7)1.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
2	22.88	75.1	1.61	75.5	52.795
1	45.52	40.0	2.70	67.5	47.205
Total		115.2		143.0	100.000

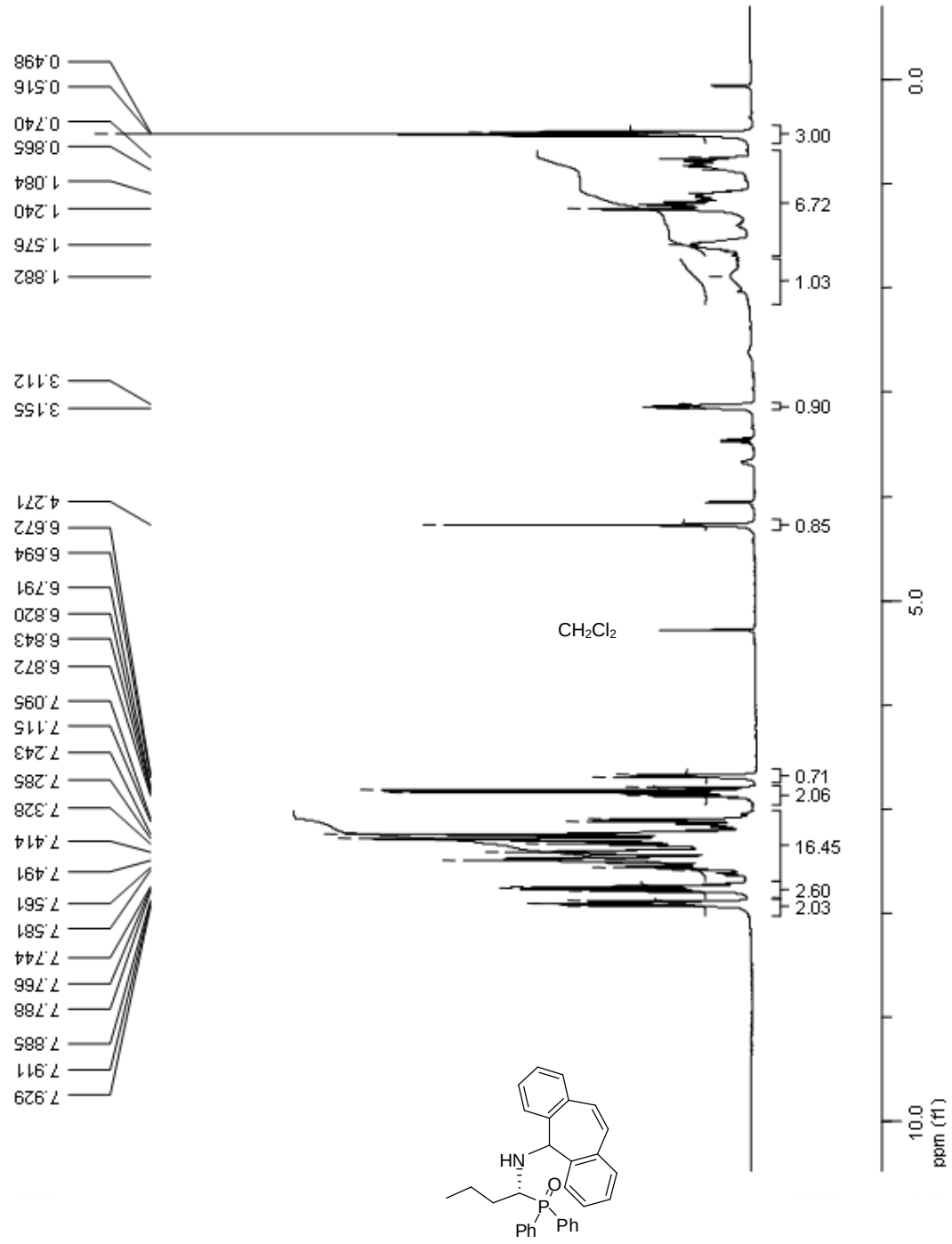
GI2-111B(ad-h-7)2.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
2	22.55	77.2	1.68	81.2	92.422
1	44.71	4.2	2.36	6.7	7.578
Total		81.4		87.9	100.000



6f

Page 1/1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6.791
6.820
6.843
6.872
7.095
7.115
7.243
7.285
7.328
7.414
7.491
7.561
7.581
7.744
7.766
7.788
7.885
7.911
7.929
3.00
6.72
1.03
0.90
0.85
CH2Cl2
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2.03
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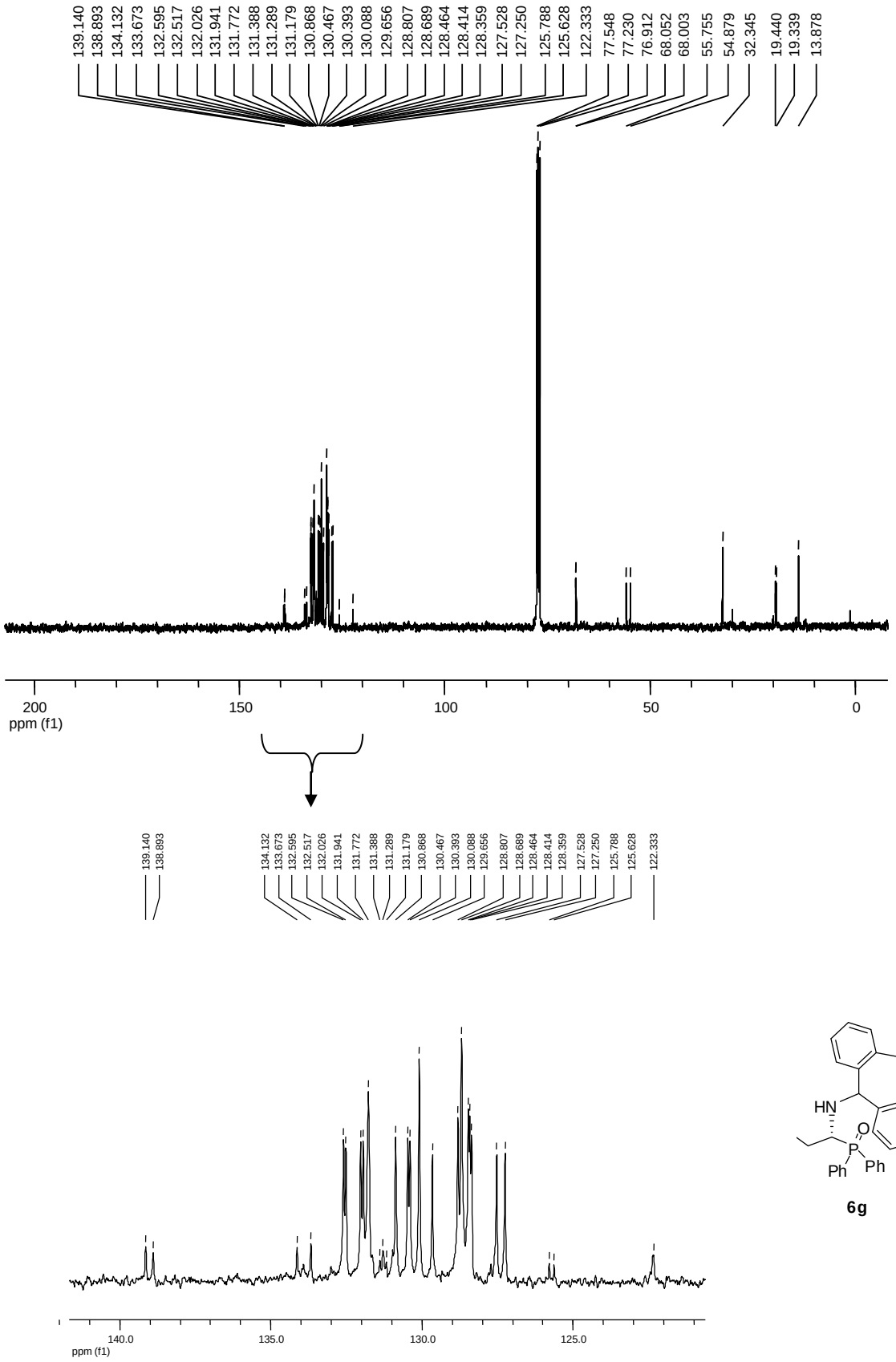
5.0
10.0
ppm (f1)
HN
O
P
Ph
Ph

6g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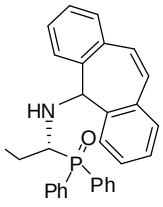
131.289
131.179
130.868
130.467
130.393
130.088
129.656
128.807
128.689
128.464
128.414
128.359
127.528
127.250
125.788
125.628
122.333
77.548
77.230
76.912
68.052
68.003
55.755
54.879
32.345
19.440
19.339
13.878
200
150
100
50
0
ppm (f1)
140.0
135.0
130.0
125.0
ppm (f1)

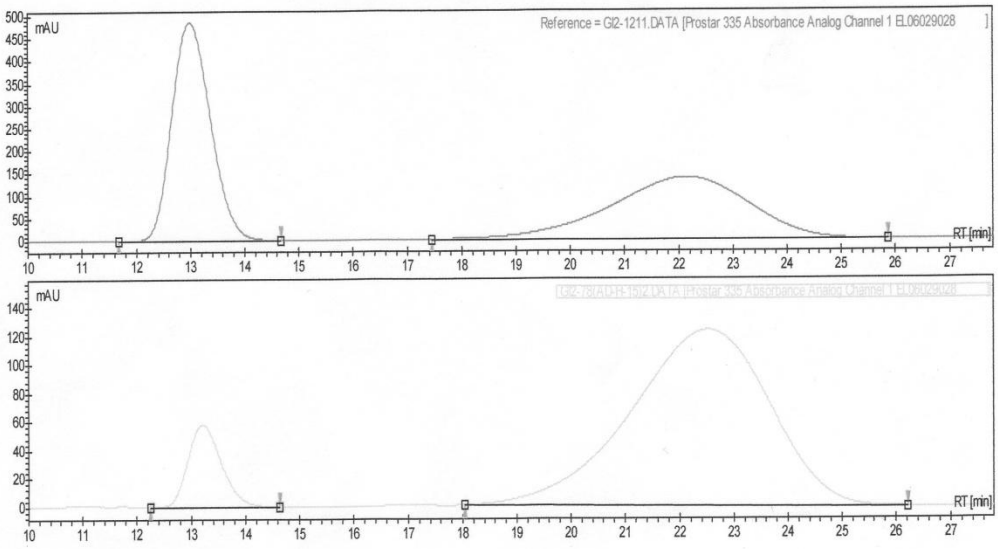

HN
O
P
Ph
Ph

6g

Chromatogram : GI2-78(AD-H-15)2_channel1

System : HPLC
Method : test
User : Gerald Rowland

Acquired : 8/12/2009 2:45:46 PM
Processed : 8/13/2009 11:05:23 PM
Printed : 12/5/2009 3:15:51 PM



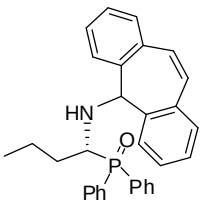
Peak results :

GI2-1211.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	12.99	484.3	1.32	398.5	49.886
2	22.12	136.4	4.69	400.3	50.114
Total		620.7		798.8	100.000

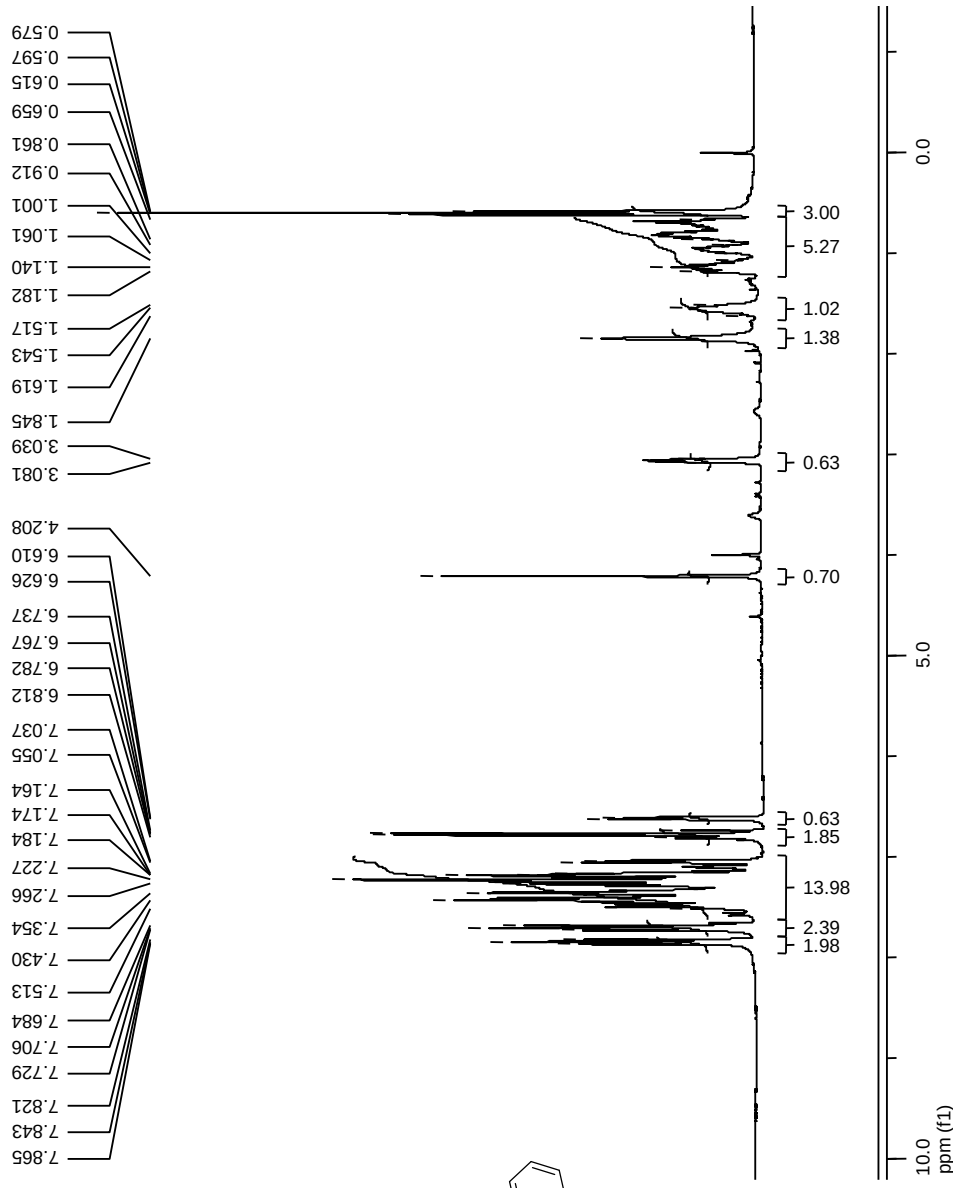
GI2-78(AD-H-15)2.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	13.21	58.0	1.13	41.4	10.185
2	22.53	123.7	4.74	365.0	89.815
Total		181.7		406.4	100.000



6g

Page 1/1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1.517
1.543
1.619
1.845
3.039
3.081
4.208
6.610
6.626
6.737
6.767
6.782
6.812
7.037
7.055
7.164
7.174
7.184
7.227
7.266
7.354
7.430
7.513
7.684
7.706
7.729
7.821
7.843
7.865
3.00
5.27
1.02
1.38
0.63
0.70
0.63
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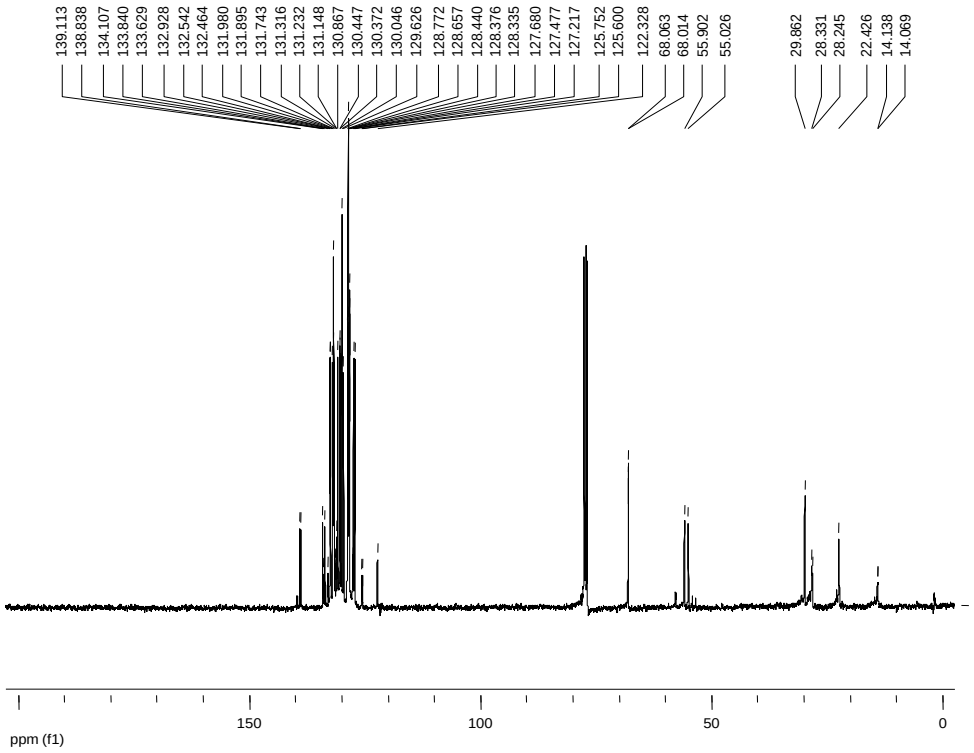
10.0
ppm (f1)
HN
O
P
Ph
Ph

6h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138.838
134.107
133.840
133.629
132.928
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132.464
131.980
131.895
131.743
131.316
131.232
131.148
130.867
130.447
130.372
130.046
129.626
128.772
128.657
128.440
128.376
128.335
127.680
127.477
127.217
125.752
125.600
122.328
68.063
68.014
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28.245
22.426
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14.069
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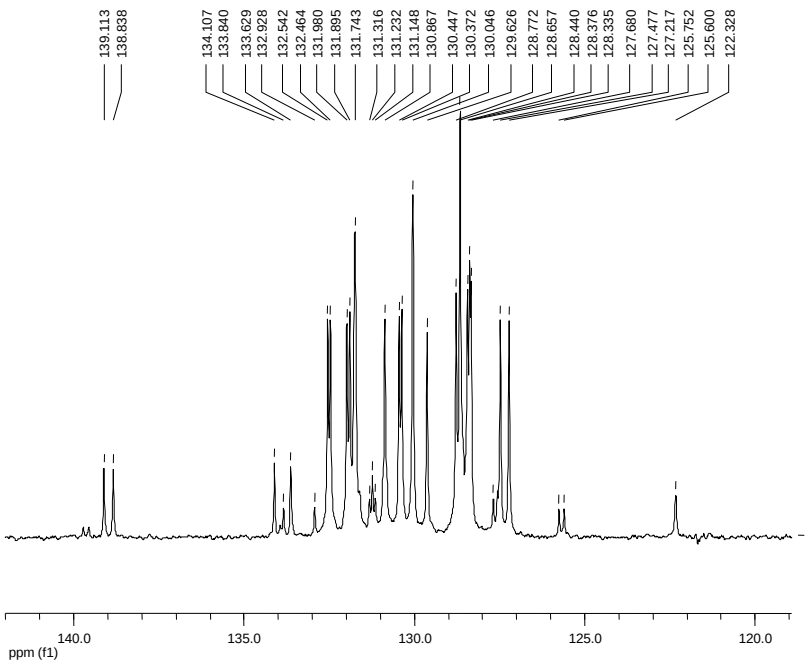
100
50
0
ppm (f1)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131.232
131.148
130.867
130.447
130.372
130.046
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128.772
128.657
128.440
128.376
128.335
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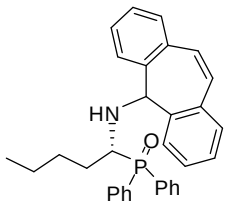
120.0
ppm (f1)


HN
O
P
Ph
Ph

6h

Chromatogram : GI2-421_channel2

System : HPLC
Method : test
User : Gerald Rowland

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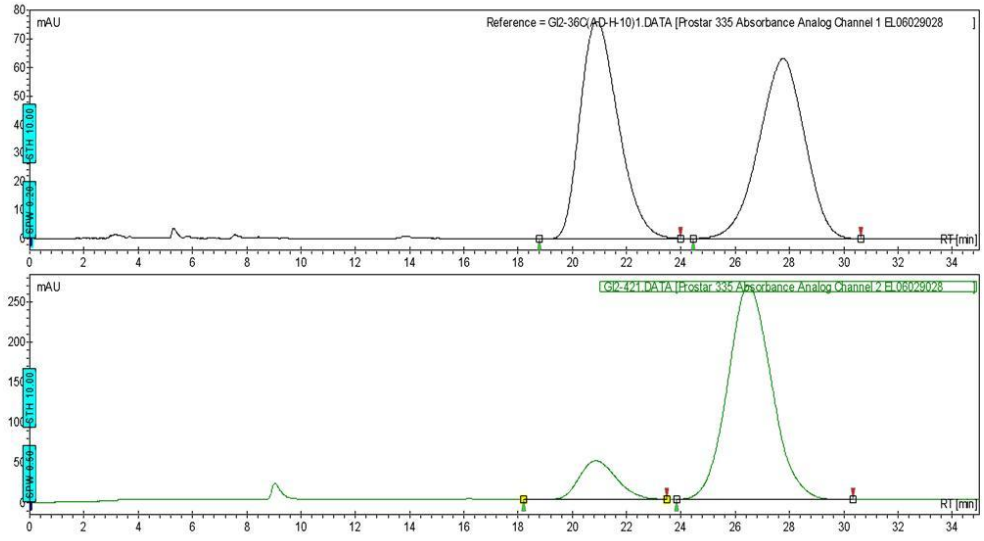
Processed : 6/12/2009 1:47:17 PM
Printed : 10/23/2009 5:15:01 PM



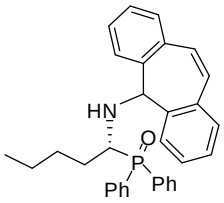
Peak results :

GI2-36C(AD-H-10)1.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	20.91	76.5	2.61	124.2	50.153
2	27.77	63.4	3.21	123.5	49.847
Total		139.9		247.7	100.000

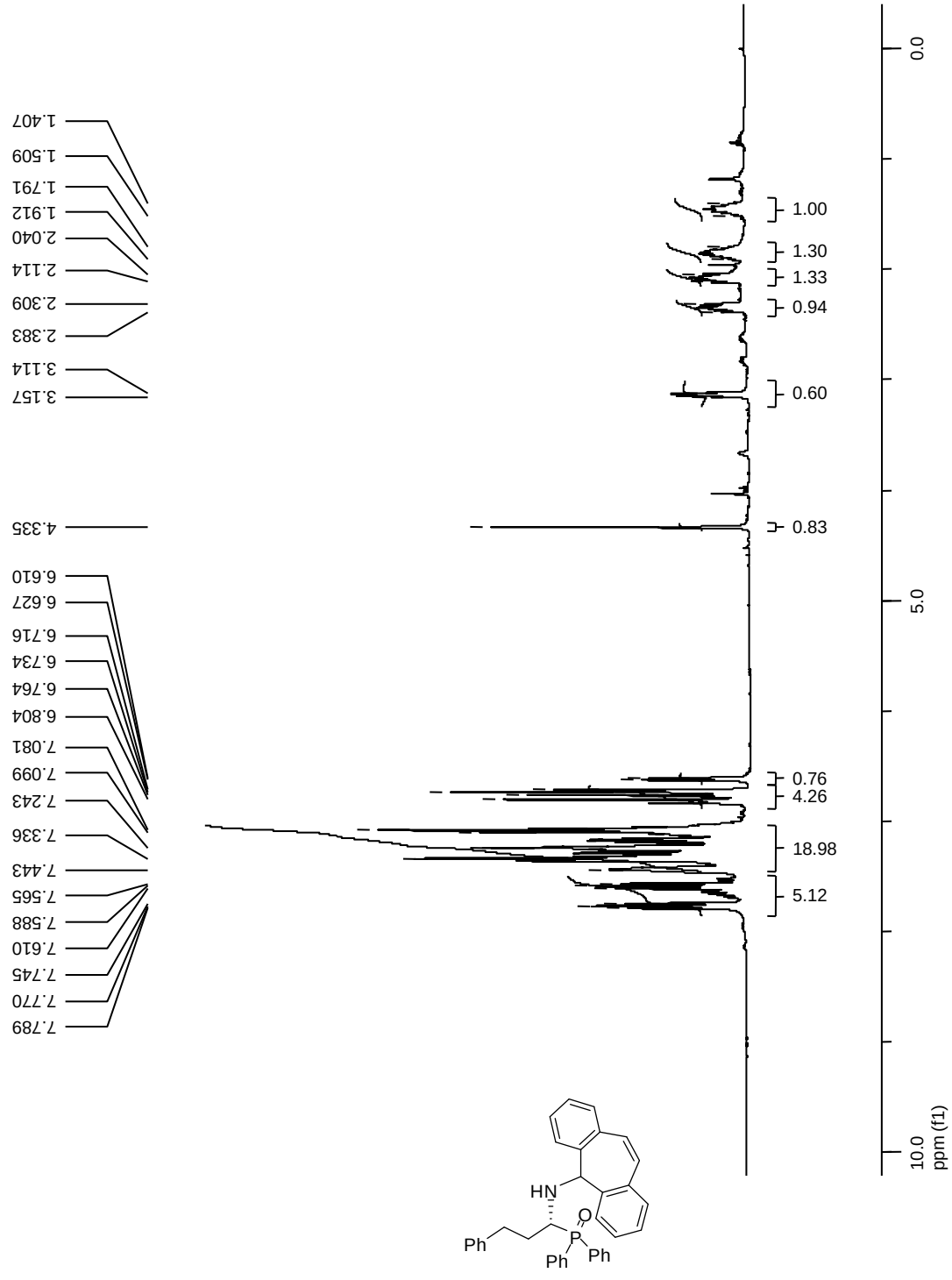
GI2-421.DATA [Prostar 335 Absorbance Analog Channel 2 EL06029028]

Index	Name	Time [Min]	Quantity [% Area]	Height [mAU]	Area [mAU.Min]	Area % [%]
1	UNKNOWN	20.87	13.31	48.0	76.2	13.306
2	UNKNOWN	26.48	86.69	265.9	496.7	86.694
Total			100.00	313.9	573.0	100.000



6h

Page 1/1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2.309
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3.114
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6.716
6.734
6.764
6.804
7.081
7.099
7.243
7.336
7.443
7.565
7.588
7.610
7.745
7.770
7.789
1.00
1.30
1.33
0.94
0.60
0.83
0.76
4.26
18.98
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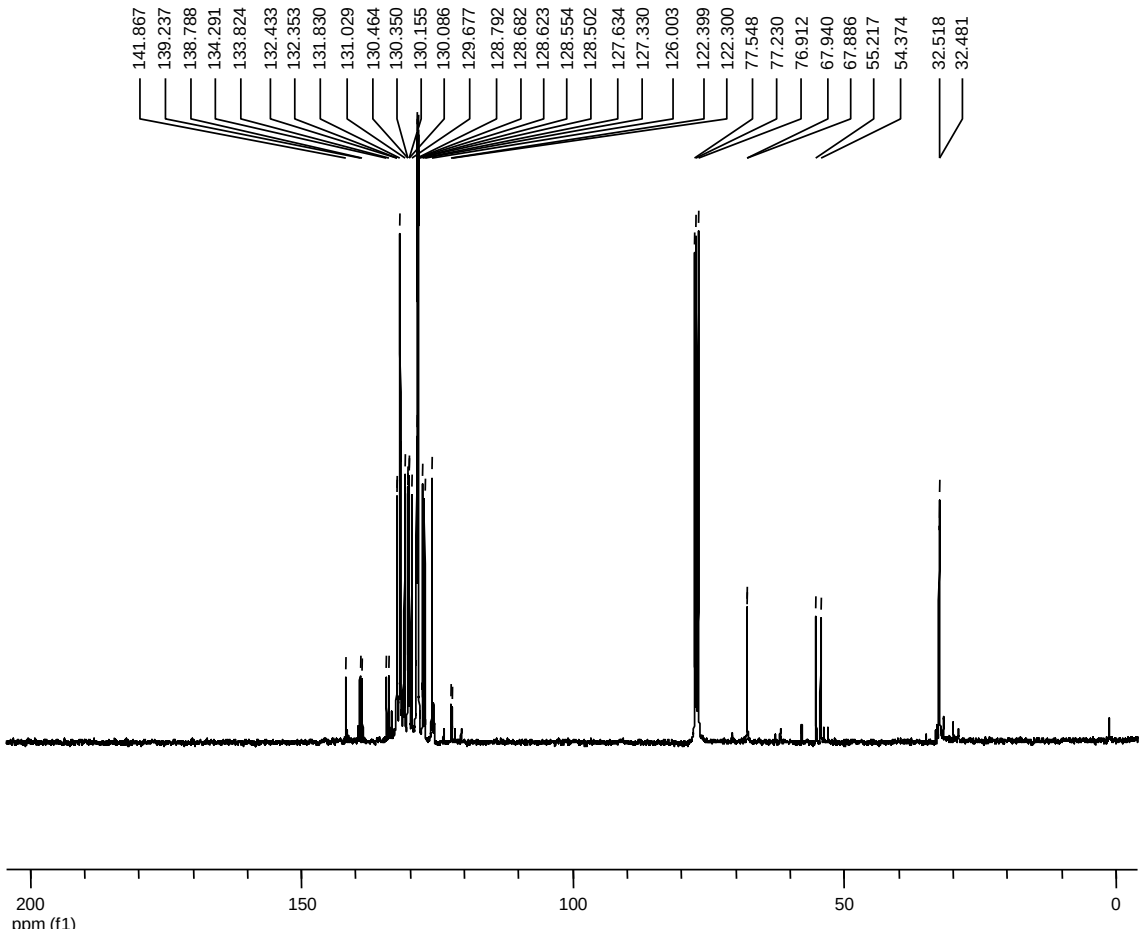
5.0
10.0
ppm (f1)
HN
O
P
Ph
Ph
Ph
Ph

6i


141.867
139.237
138.788
134.291
133.824
132.433
132.353
131.830
131.029
130.464
130.350
130.155
130.086
129.677
128.792
128.682
128.623
128.554
128.502
127.634
127.330
126.003
122.399
122.300
77.548
77.230
76.912
67.940
67.886
55.217
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32.481
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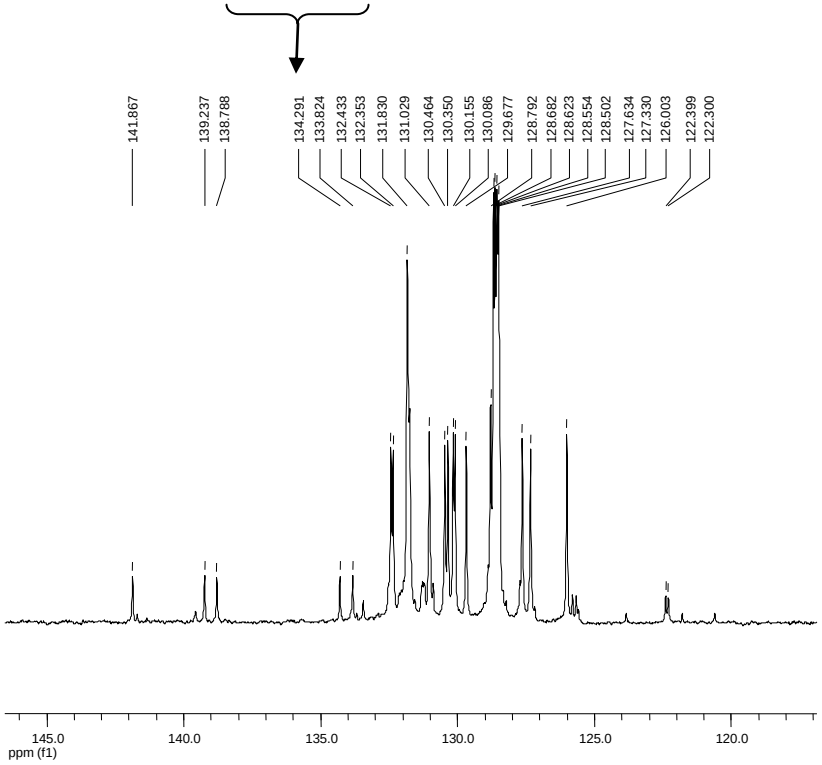
100
50
0
ppm (f1)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133.824
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130.464
130.350
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130.086
129.677
128.792
128.682
128.623
128.554
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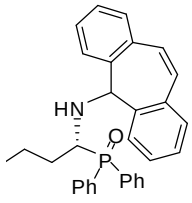
120.0
ppm (f1)

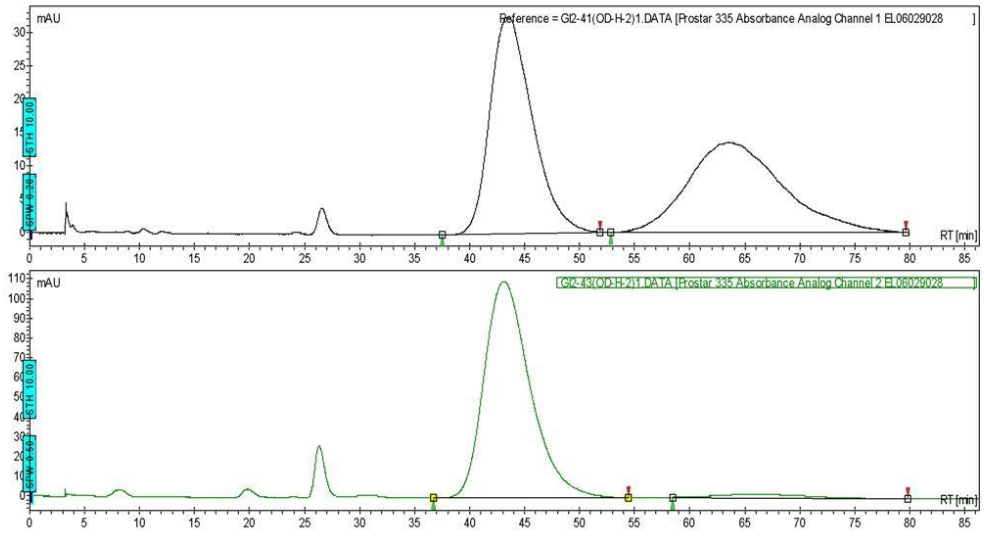

HN
O
P
Ph
Ph

6i

Chromatogram : GI2-43(OD-H-2)1_channel2

System : HPLC
Method : test
User : Gerald Rowland

Acquired : 6/12/2009 9:53:50 AM
Processed : 10/23/2009 5:07:25 PM
Printed : 10/23/2009 5:10:12 PM



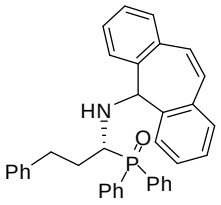
Peak results :

GI2-41(OD-H-2)1.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	43.52	32.5	6.81	145.6	51.727
2	63.57	13.6	14.43	135.9	48.273
Total		46.1		281.5	100.000

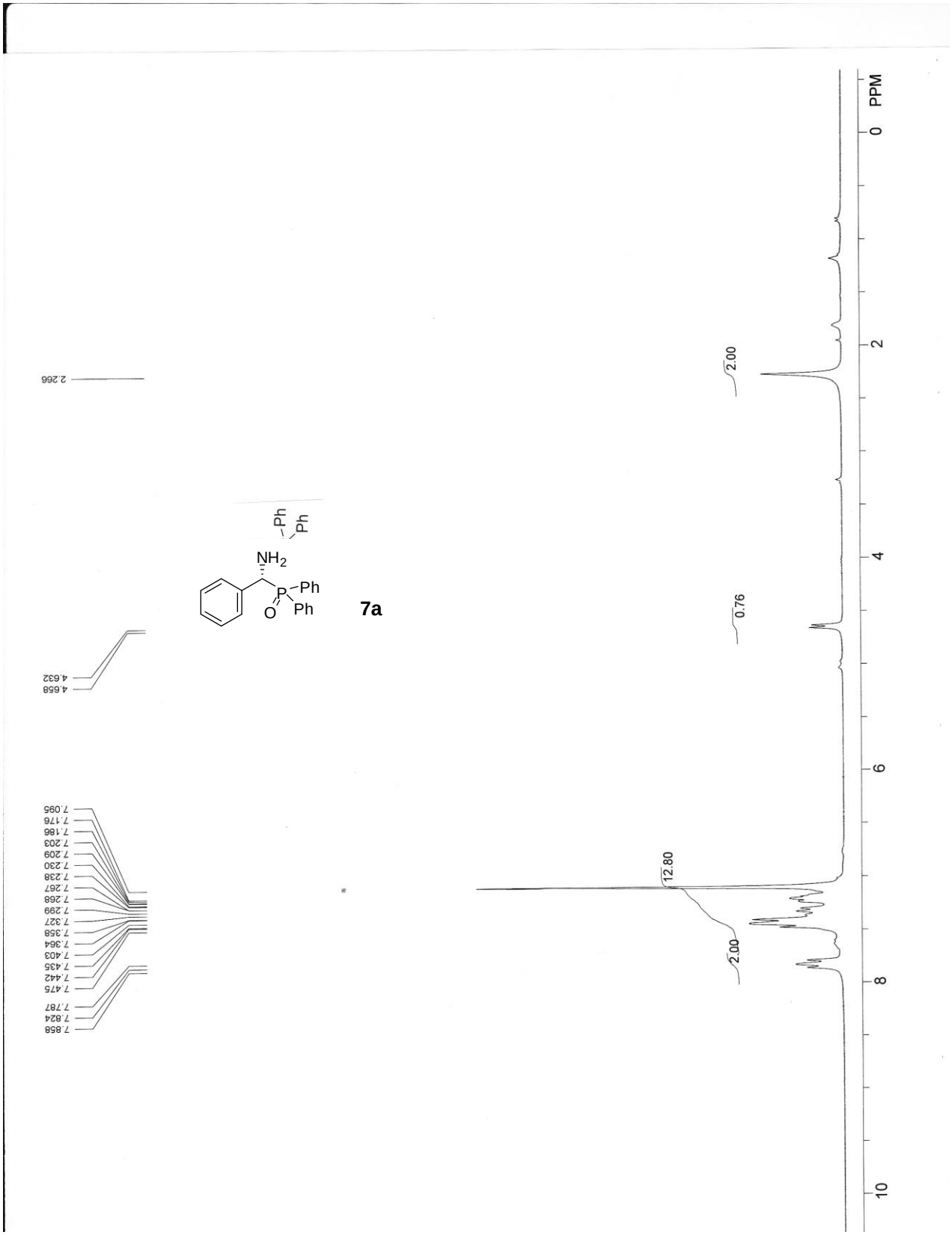
GI2-43(OD-H-2)1.DATA [Prostar 335 Absorbance Analog Channel 2 EL06029028]

Index	Name	Time [Min]	Quantity [% Area]	Height [mAU]	Area [mAU.Min]	Area % [%]
1	UNKNOWN	43.08	96.69	109.9	534.2	96.693
2	UNKNOWN	66.55	3.31	1.9	18.3	3.307
Total			100.00	111.8	552.5	100.000



6i

Page 1/1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P
O
Ph
Ph
Ph
Ph
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7.176
7.186
7.203
7.209
7.230
7.238
7.267
7.268
7.299
7.327
7.358
7.364
7.403
7.435
7.442
7.475
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7.858
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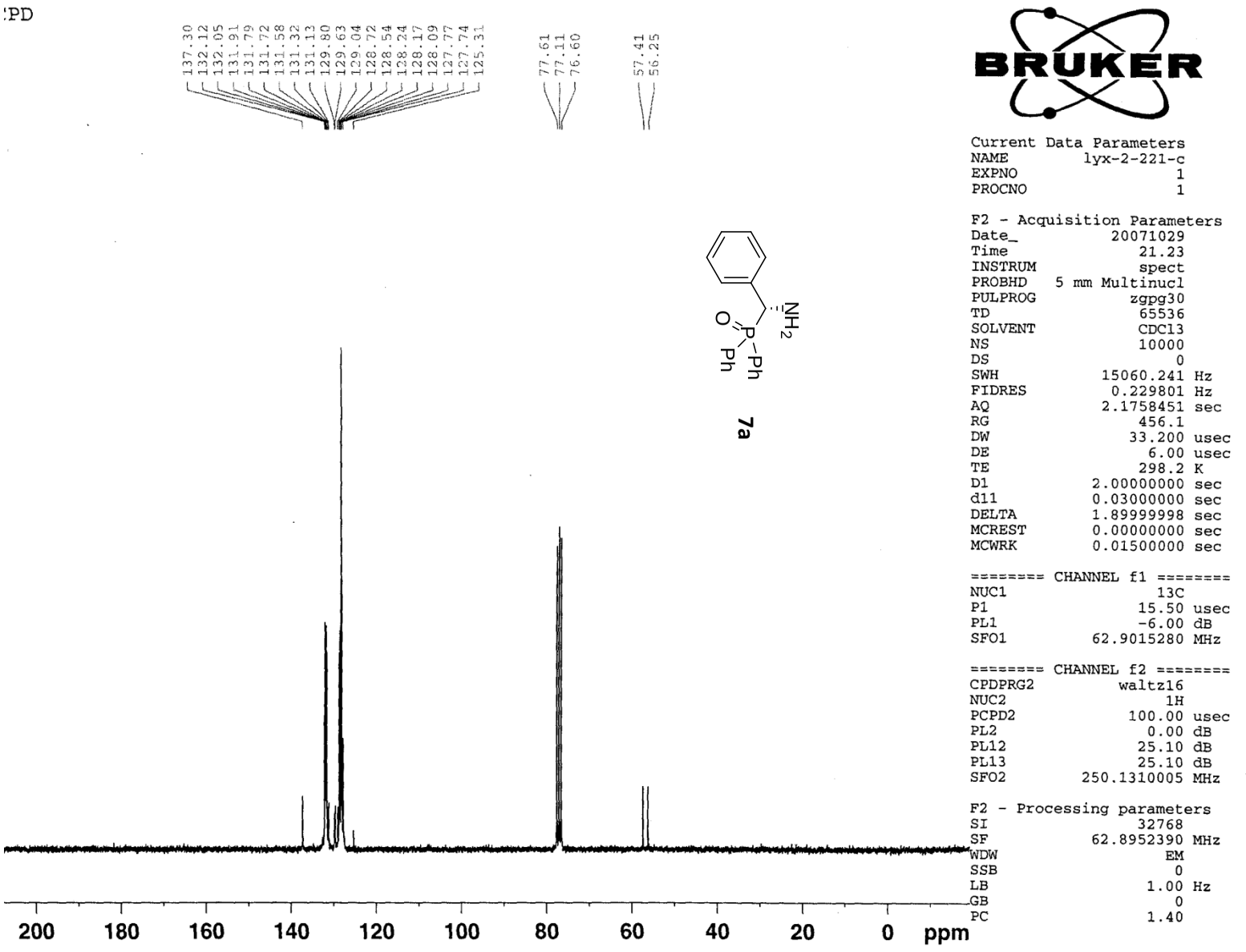
2.00
PPM
0
2
4
6
8
10



BRUKER

Current Data Parameters
NAME lyx-2-221-c
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
Date_ 20071029
Time 21.23
INSTRUM spect
PROBHD 5 mm Multinucl
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 10000
DS 0
SWH 15060.241 Hz
FIDRES 0.229801 Hz
AQ 2.1758451 sec
RG 456.1
DW 33.200 usec
DE 6.00 usec
TE 298.2 K
D1 2.00000000 sec
d11 0.03000000 sec
DELTA 1.89999998 sec
MCREST 0.00000000 sec
MCWRK 0.01500000 sec

======== CHANNEL f1 ========
NUC1 13C
P1 15.50 usec
PL1 -6.00 dB
SFO1 62.9015280 MHz

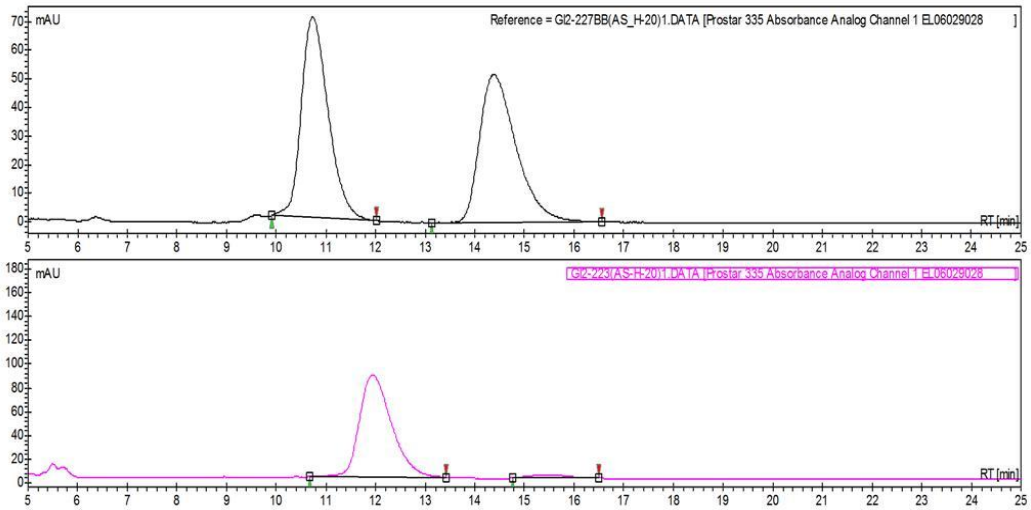
======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 100.00 usec
PL2 0.00 dB
PL12 25.10 dB
PL13 25.10 dB
SFO2 250.1310005 MHz

F2 - Processing parameters
SI 32768
SF 62.8952390 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

Chromatogram : GI2-223(AS-H-20)1_channel1

System : HPLC
Method : test
User : User1

Acquired : 3/30/2010 12:47:59 PM
Processed : 4/21/2010 11:30:06 PM
Printed : 4/21/2010 11:32:26 PM



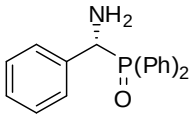
Peak results :

GI2-227BB(AS_H-20)1.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
2	10.73	70.2	0.98	44.0	49.976
1	14.39	51.7	1.33	44.1	50.024
Total		121.9		88.1	100.000

GI2-223(AS-H-20)1.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
2	11.95	85.9	1.17	64.6	96.332
1	15.49	3.0	1.32	2.5	3.668
Total		88.9		67.0	100.000



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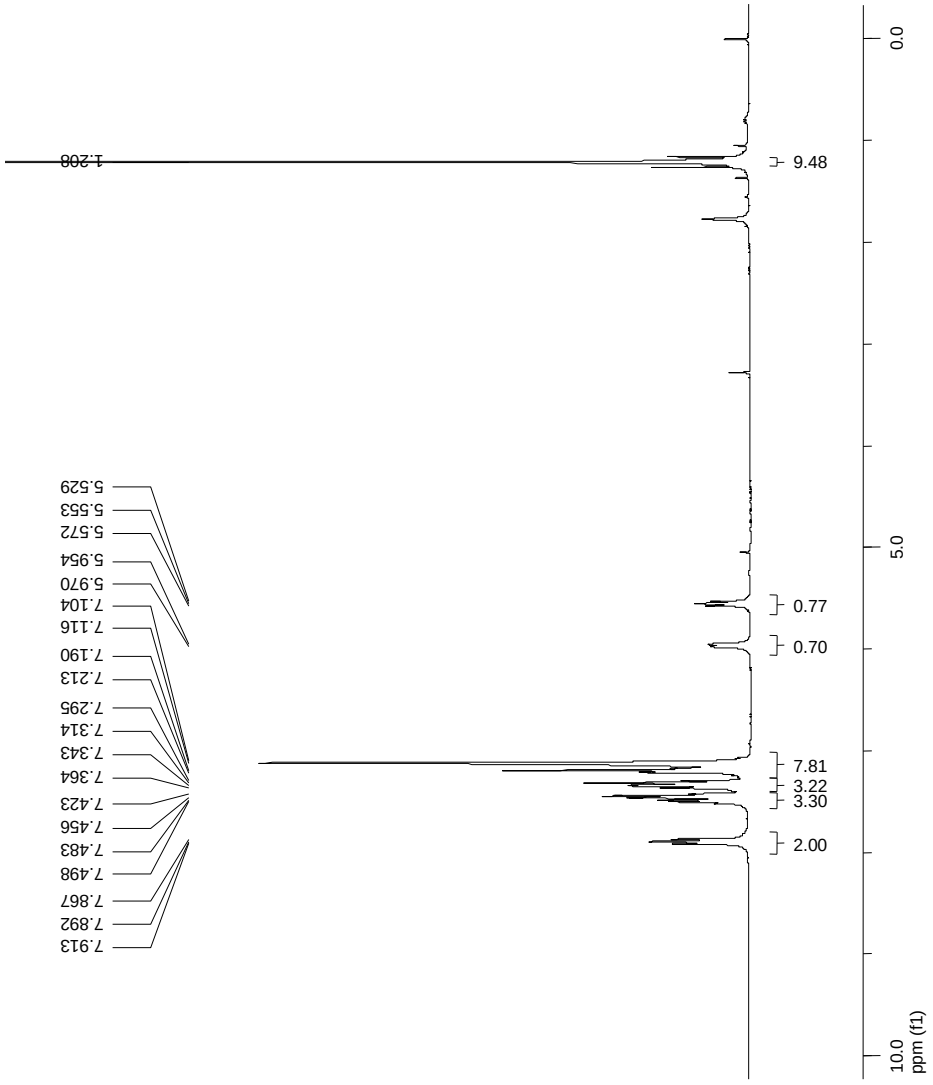
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7.295
7.314
7.343
7.364
7.423
7.456
7.483
7.498
7.867
7.892
7.913
9.48
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3.22
3.30
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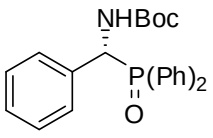
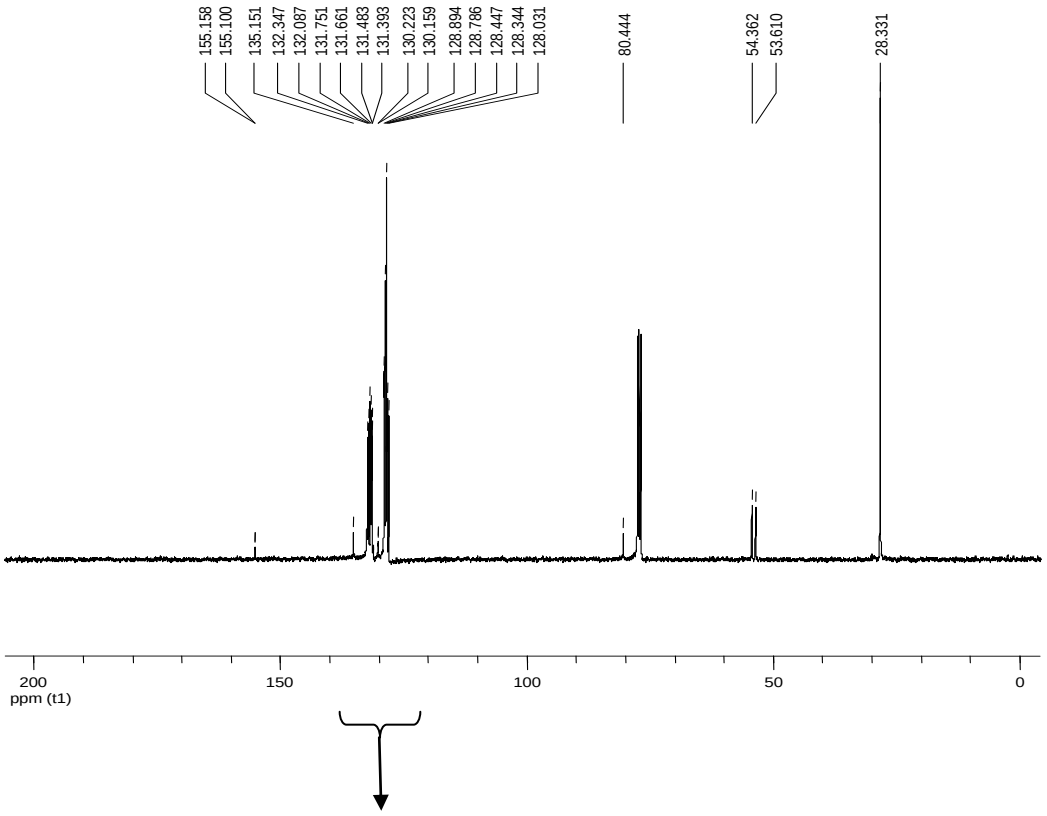
5.0
10.0
ppm (f1)


NHBoc
P(Ph)2
O

8a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155.100
135.151
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132.087
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131.661
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131.393
130.223
130.159
128.894
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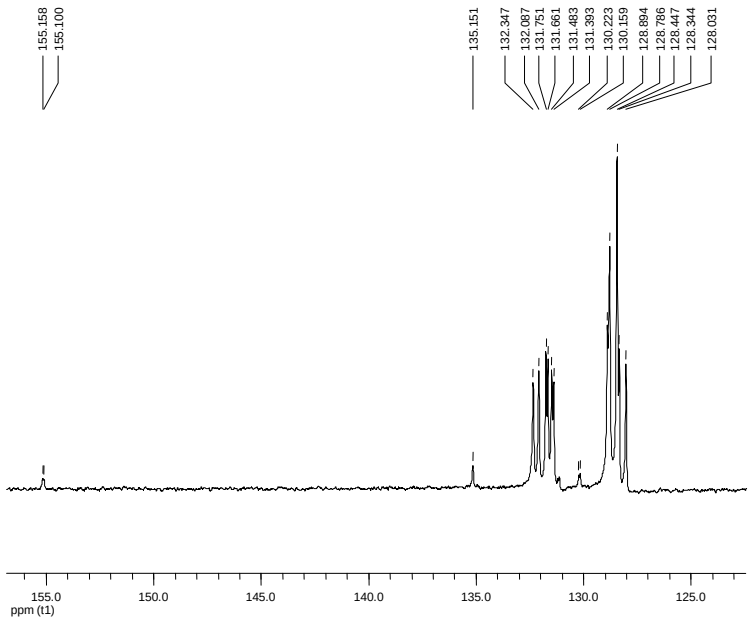
128.447
128.344
128.031
80.444
54.362
53.610
28.331
200
150
100
50
0
ppm (t1)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128.894
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128.031
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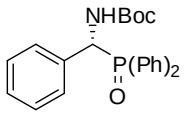
135.0
130.0
125.0
ppm (t1)

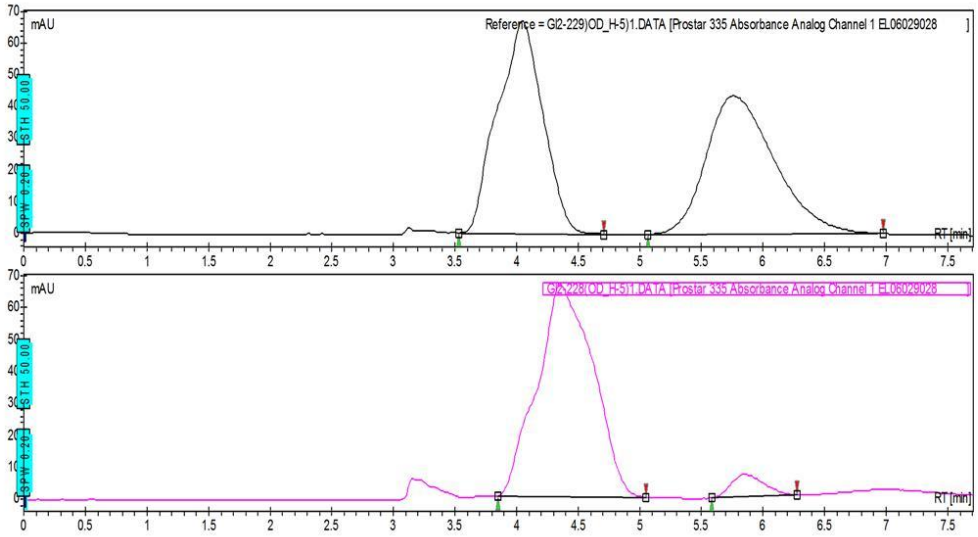

NHBoc
P(Ph)2
O

8a

Chromatogram : GI2-228(OD_H-5)1_channel1

System : HPLC
Method : test
User : User1

Acquired : 4/2/2010 3:07:41 PM
Processed : 4/22/2010 10:35:33 PM
Printed : 4/22/2010 10:35:59 PM



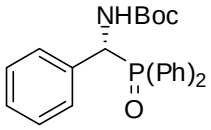
Peak results :

GI2-229)OD_H-5)1.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	4.04	67.2	0.74	28.7	50.449
2	5.76	43.8	1.02	28.2	49.551
Total		110.9		56.8	100.000

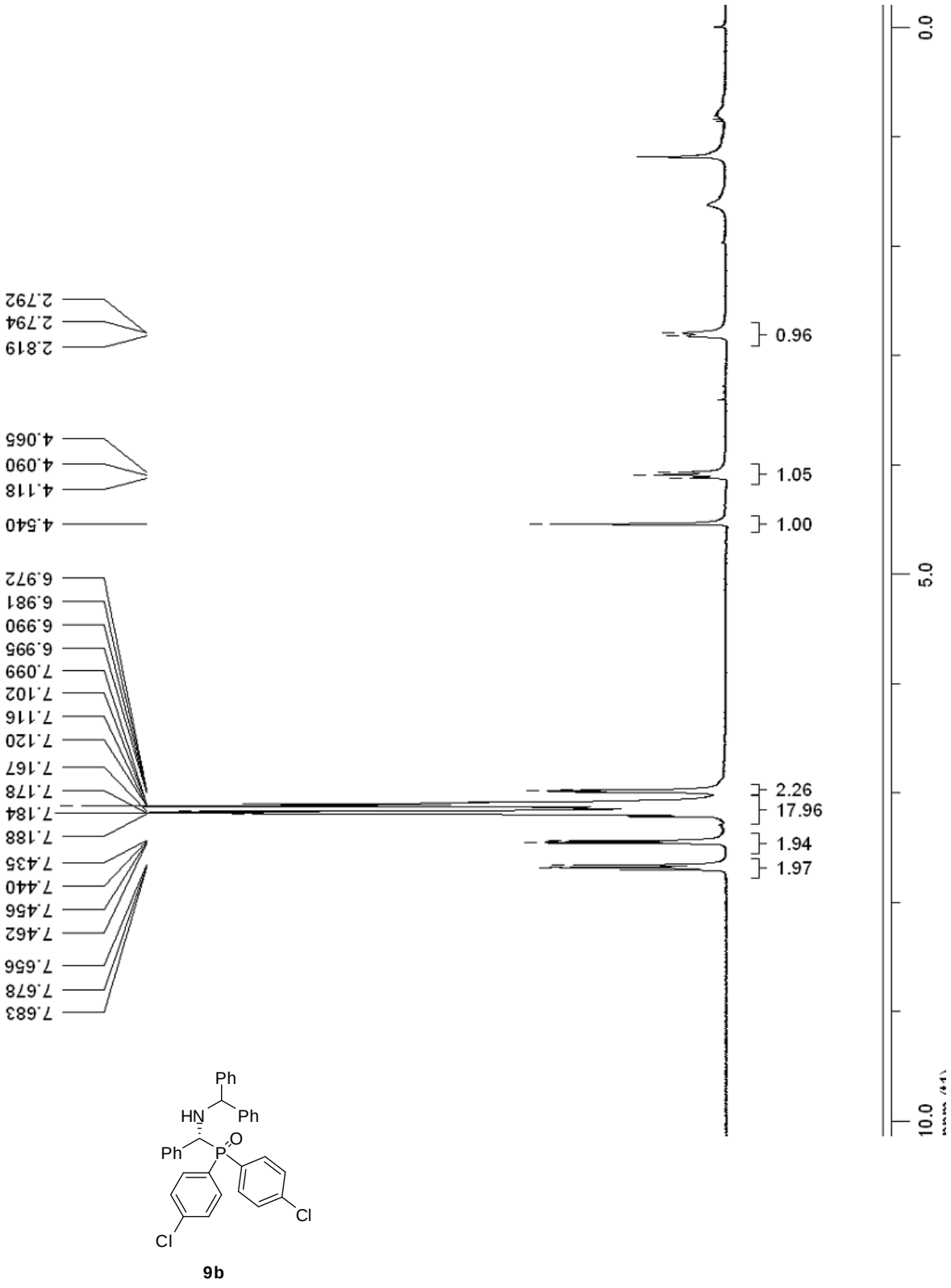
GI2-228(OD_H-5)1.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
2	4.36	66.1	0.80	34.9	94.143
1	5.84	7.0	0.51	2.2	5.857
Total		73.0		37.1	100.000



8a

Page 1/1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7.462
7.656
7.678
7.683
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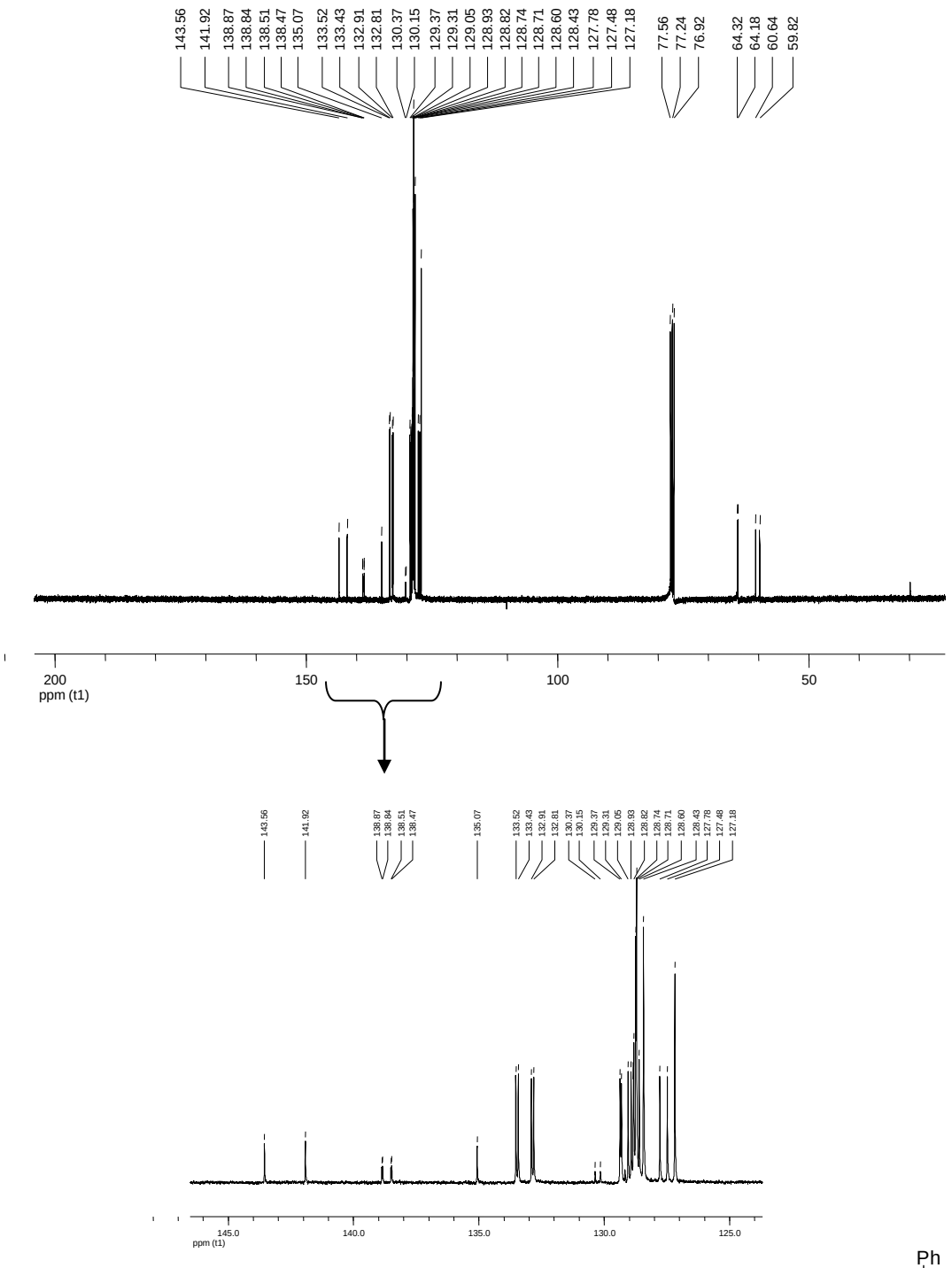
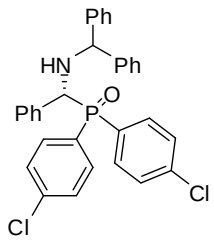
1.00
2.26
17.96
1.94
1.97
0.0
5.0
10.0
Ph
HN
Ph
Ph
P
O
Cl
Cl

9b


143.56
141.92
138.87
138.84
138.51
138.47
135.07
133.52
133.43
132.91
132.81
130.37
130.15
129.37
129.31
129.05
128.93
128.82
128.74
128.71
128.60
128.43
127.78
127.48
127.18
77.56
77.24
76.92
64.32
64.18
60.64
59.82
200
150
100
50
ppm (t1)
145.0
140.0
135.0
130.0
125.0
ppm (t1)

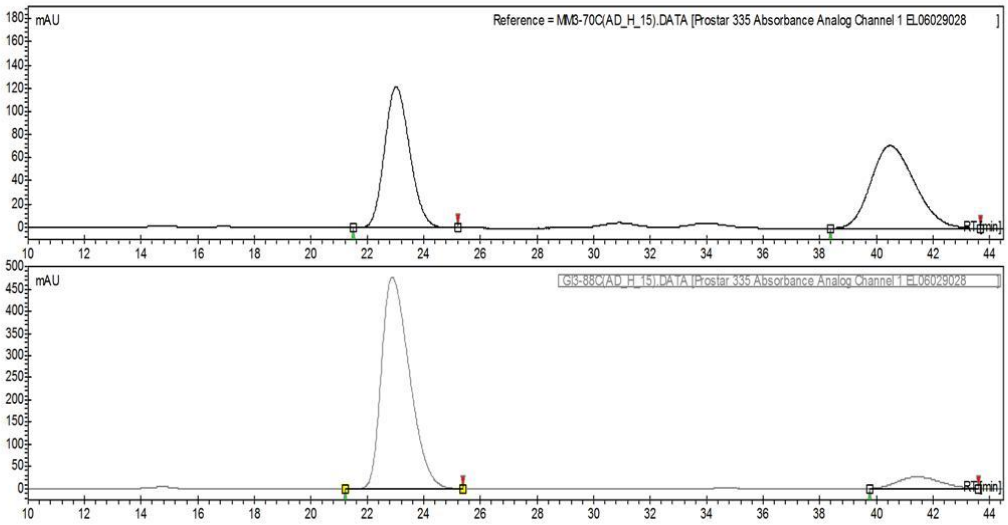

Ph
HN
Ph
Ph
P
O
Cl
Cl

9b

Chromatogram : GI3-88C(AD_H_15)_channel1

System : HPLC
Method : test
User : User1

Acquired : 12/4/2010 2:40:27 PM
Processed : 12/4/2010 3:36:16 PM
Printed : 1/1/2011 11:27:12 PM



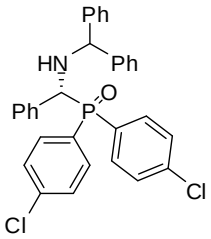
Peak results :

MM3-70C(AD_H_15).DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

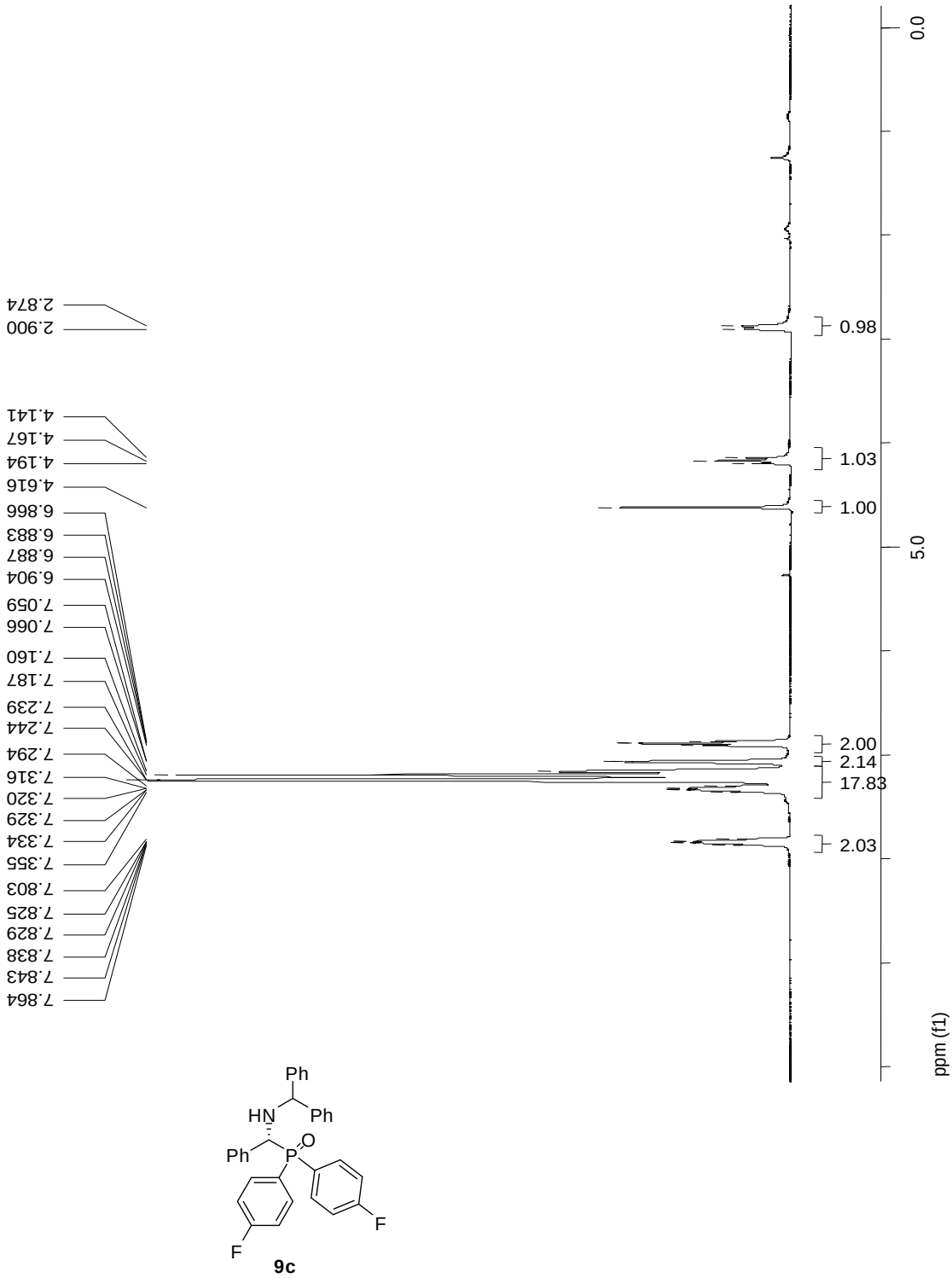
Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	23.01	121.9	1.65	126.0	49.362
2	40.48	71.7	2.87	129.3	50.638
Total		193.7		255.3	100.000

GI3-88C(AD_H_15).DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	22.88	476.8	1.85	548.2	92.154
2	41.44	26.0	2.78	46.7	7.846
Total		502.8		594.9	100.000



9b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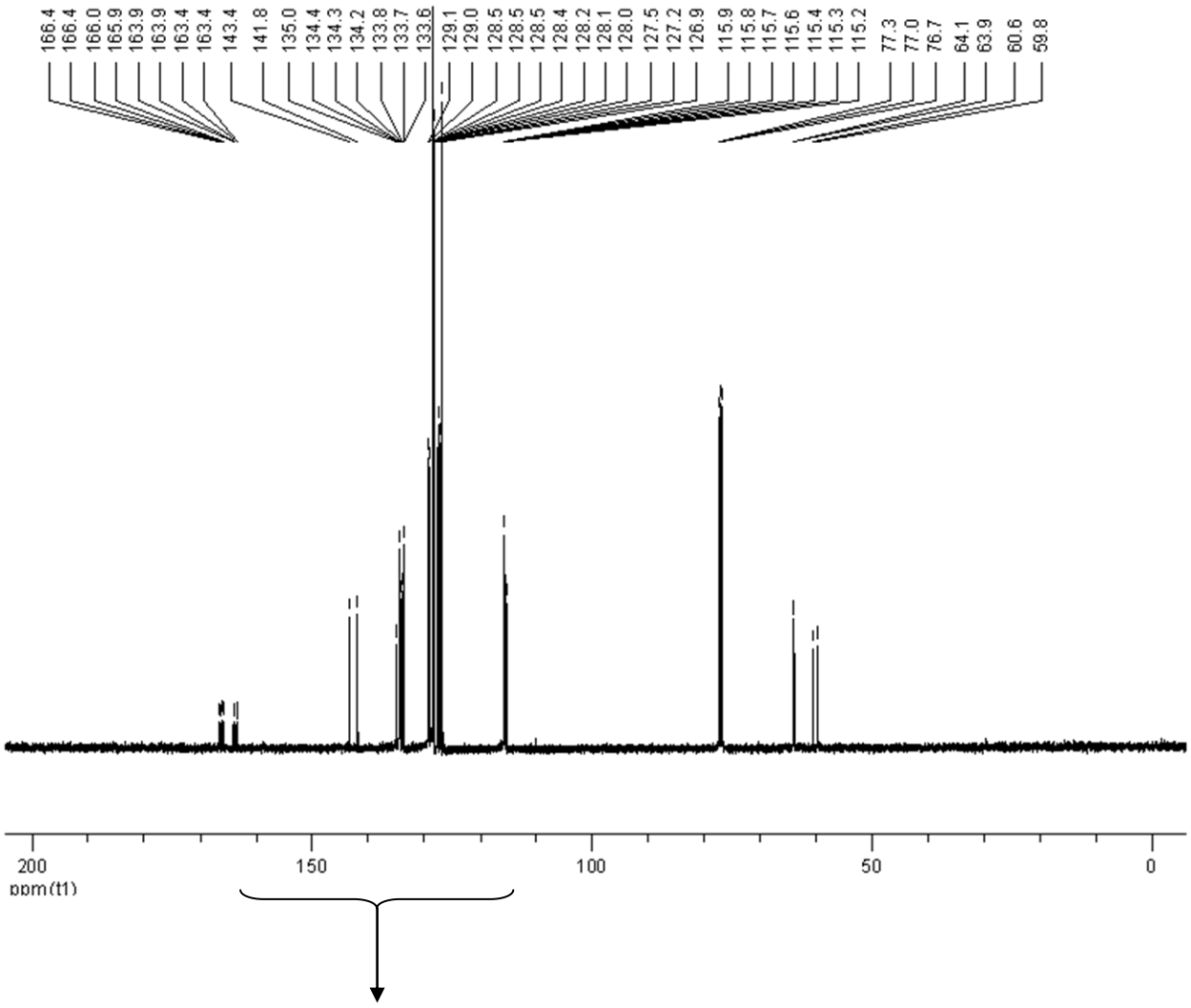
4.167
4.194
4.616
6.866
6.883
6.887
6.904
7.059
7.066
7.160
7.187
7.239
7.244
7.294
7.316
7.320
7.329
7.334
7.355
7.803
7.825
7.829
7.838
7.843
7.864
0.98
1.03
1.00
2.00
2.14
17.83
2.03
0.0
5.0
ppm (f1)

Ph
HN
Ph
Ph
P
O
F
F

9c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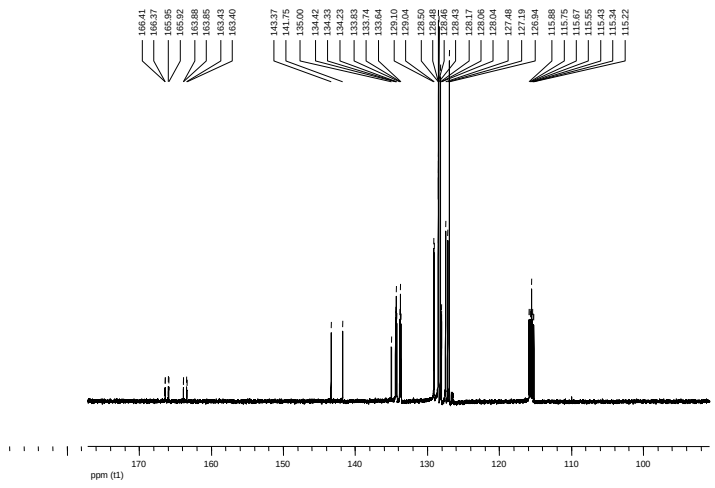
166.0
165.9
163.9
163.9
163.4
163.4
143.4
141.8
135.0
134.4
134.3
134.2
133.8
133.7
133.6
129.1
129.0
128.5
128.5
128.5
128.4
128.2
128.1
128.0
127.5
127.2
126.9
115.9
115.8
115.7
115.6
115.4
115.3
115.2
77.3
77.0
76.7
64.1
63.9
60.6
59.8
200
150
100
50
0
ppm (t1)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166.37
165.95
165.92
163.88
163.85
163.43
163.40
143.37
141.75
135.00
134.42
134.33
134.23
133.83
133.74
133.64
129.10
129.04
128.50
128.48
128.46
128.43
128.17
128.06
128.04
127.48
127.19
126.94
115.88
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140
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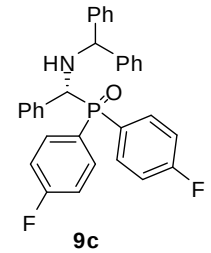
120
110
100
ppm (t1)

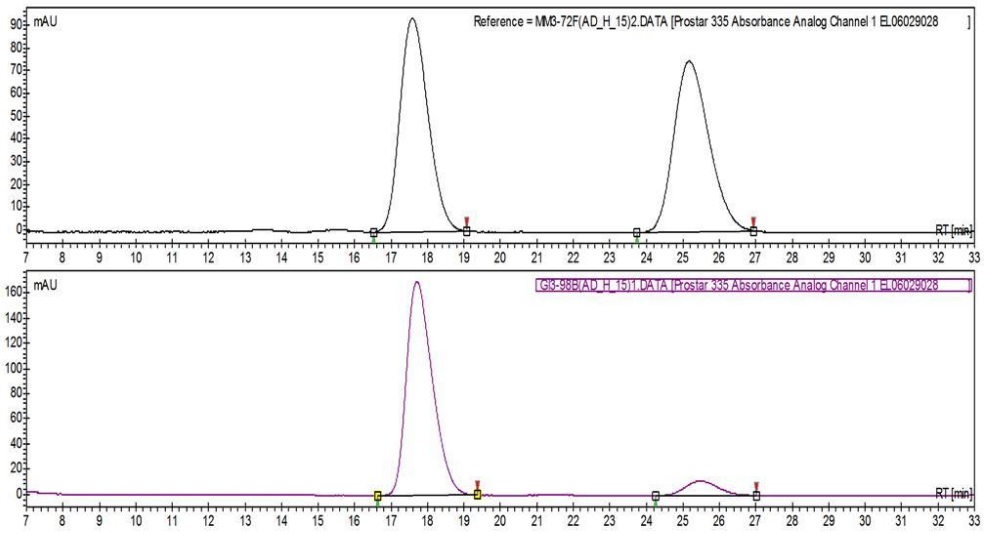

Ph
HN
Ph
Ph
O
P
F
F

9c

Chromatogram : GI3-98B(AD_H_15)1_channel1

System : HPLC
Method : test
User : User1

Acquired : 12/19/2010 11:30:23 PM
Processed : 1/1/2011 11:20:18 PM
Printed : 1/1/2011 11:21:57 PM



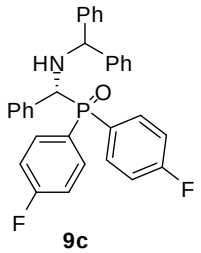
Peak results :

MM3-72F(AD_H_15)2.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	17.59	93.8	1.45	84.6	50.303
2	25.17	75.0	1.77	83.6	49.697
Total		168.9		168.1	100.000

GI3-98B(AD_H_15)1.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	17.71	170.0	1.33	141.7	92.008
2	25.47	11.8	1.68	12.3	7.992
Total		181.8		154.0	100.000



9c

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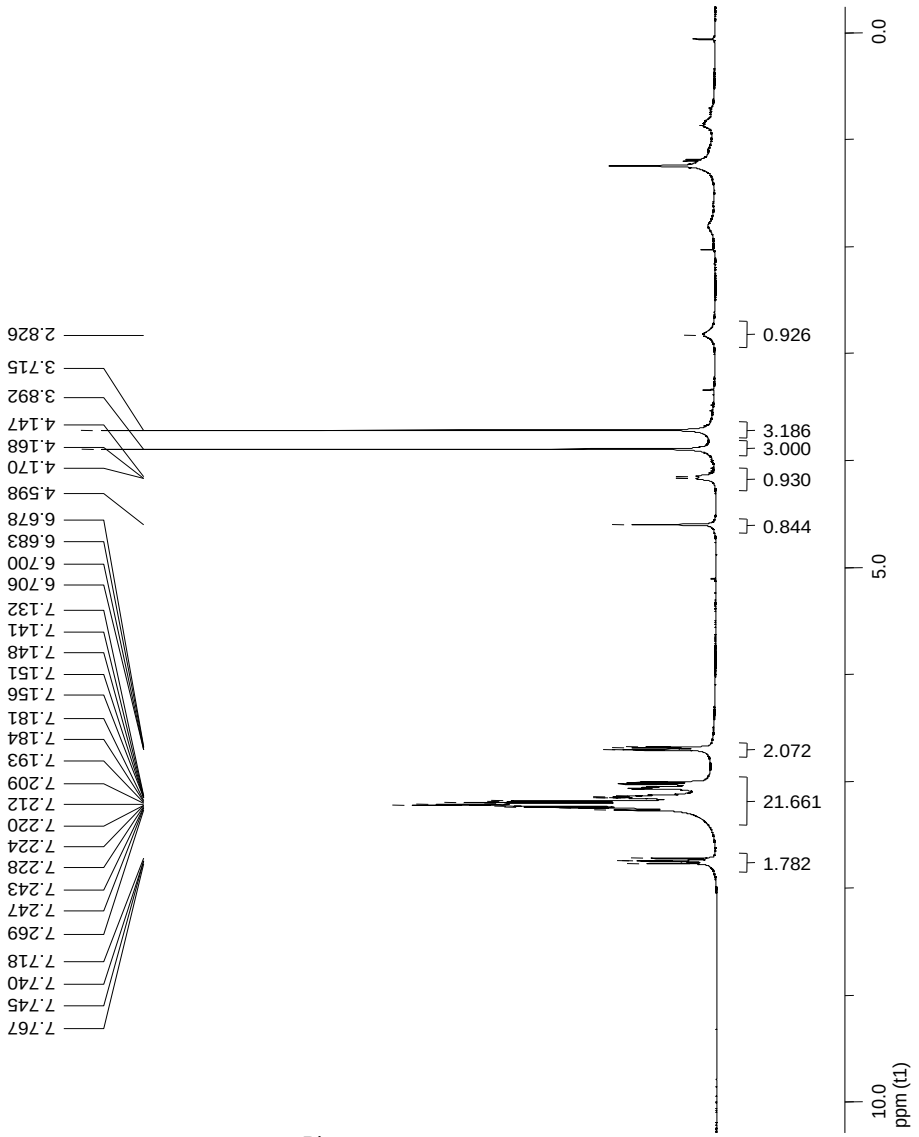
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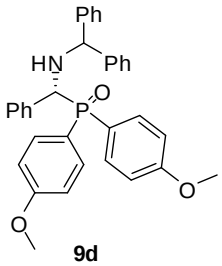
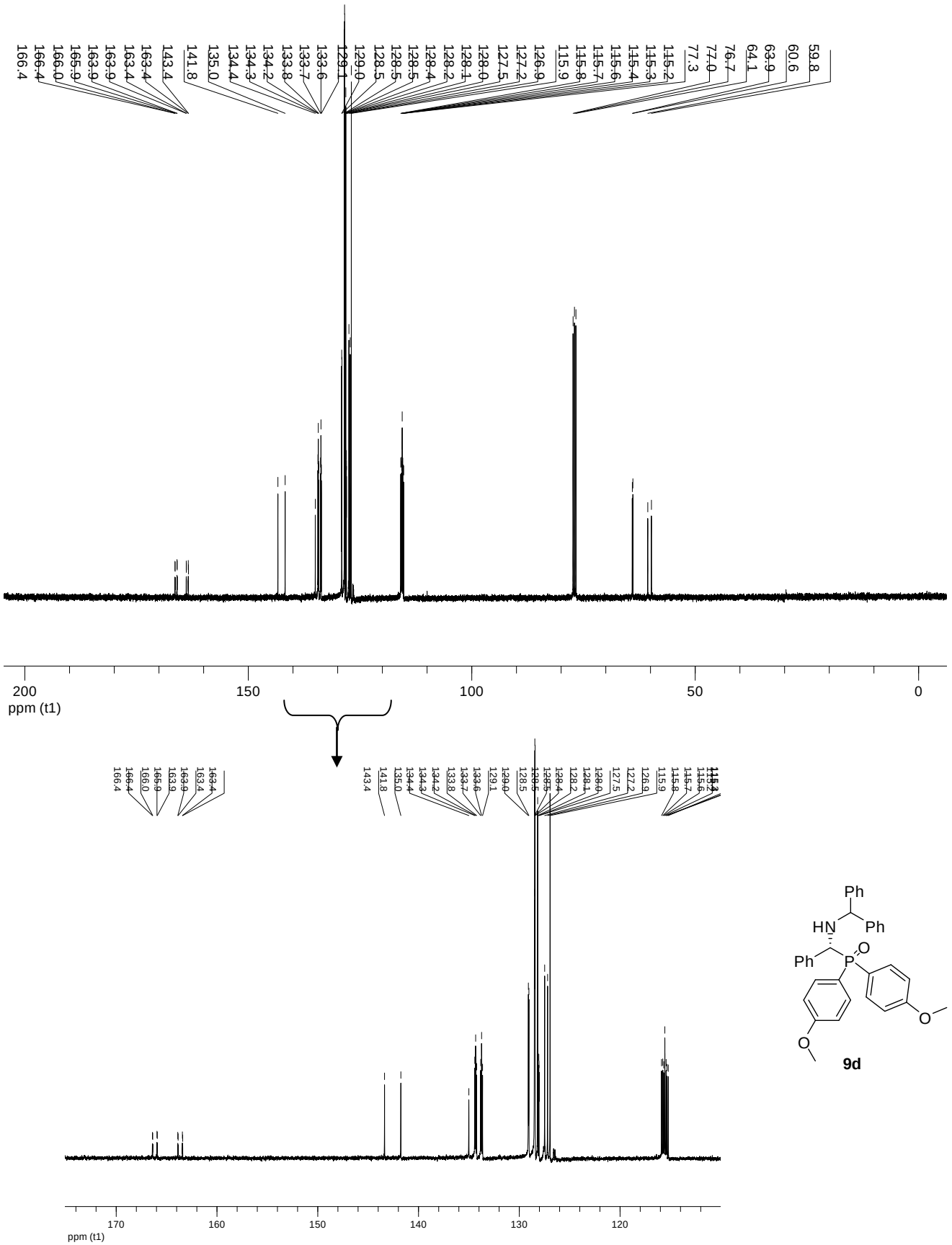
3.892
4.147
4.168
4.170
4.598
6.678
6.683
6.700
6.706
7.132
7.141
7.148
7.151
7.156
7.181
7.184
7.193
7.209
7.212
7.220
7.224
7.228
7.243
7.247
7.269
7.718
7.740
7.745
7.767
0.926
3.186
3.000
0.930
0.844
2.072
21.661
1.782
0.0
5.0
10.0
ppm (t1)


Ph
HN
Ph
Ph
P
O
O
O

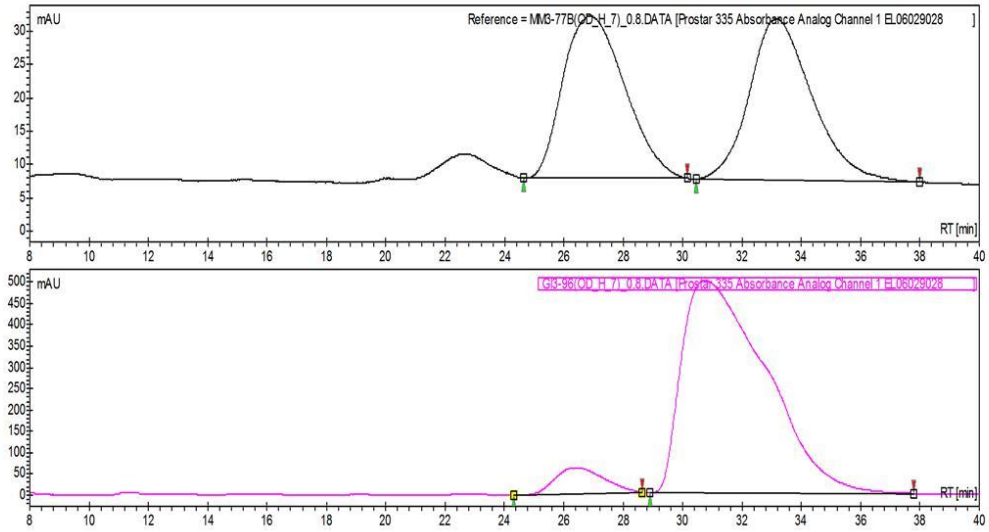
9d


166.4
166.4
166.0
165.9
163.9
163.4
163.4
143.4
141.8
135.0
134.4
134.3
134.2
133.8
133.7
133.6
129.1
129.0
128.5
128.5
128.4
128.2
128.1
128.0
127.5
127.2
126.9
115.9
115.8
115.7
115.6
115.4
115.3
115.2
77.3
77.0
76.7
64.1
63.9
60.6
59.8
200
150
100
50
0
ppm (t1)
170
160
150
140
130
120
ppm (t1)
Ph
HN
Ph
Ph
P
O
O
O
9d

Chromatogram : GI3-96(OD_H_7)_0.8_channel1

System : HPLC
Method : test
User : User1

Acquired : 12/16/2010 12:19:51 PM
Processed : 12/16/2010 1:15:14 PM
Printed : 1/1/2011 11:32:21 PM



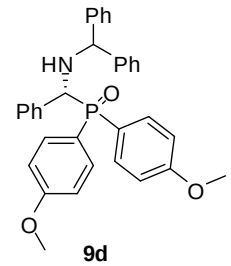
Peak results :

MM3-77B(OD_H_7)_0.8.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	26.88	24.3	3.74	58.7	49.899
2	33.16	24.2	3.74	59.0	50.101
Total		48.5		117.7	100.000

GI3-96(OD_H_7)_0.8.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	26.37	61.6	3.05	115.0	6.569
2	30.75	499.4	5.13	1635.9	93.431
Total		561.0		1751.0	100.000



9d

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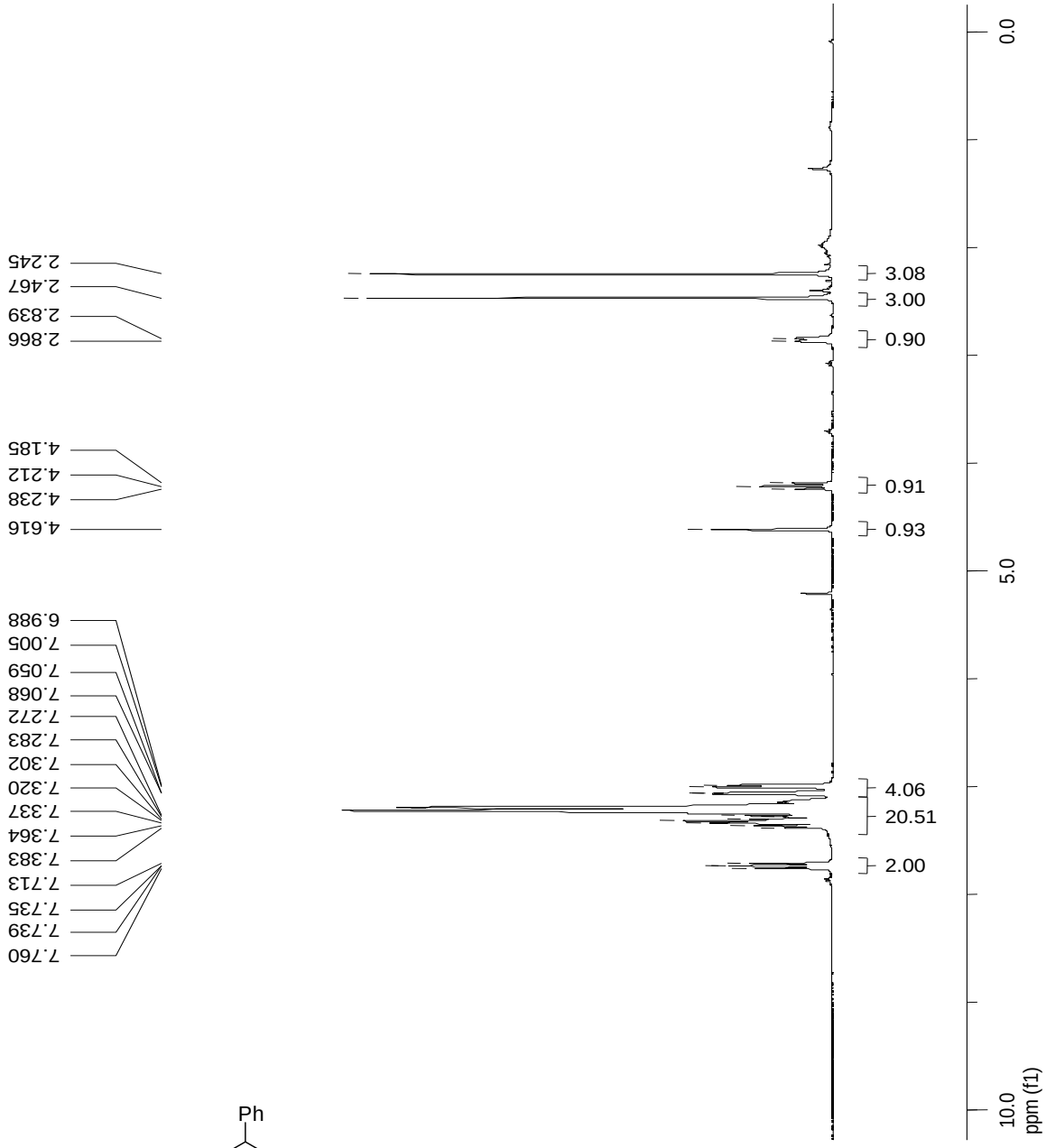
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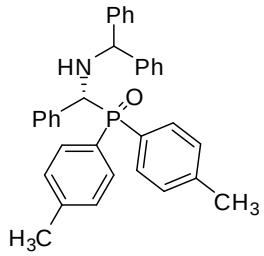
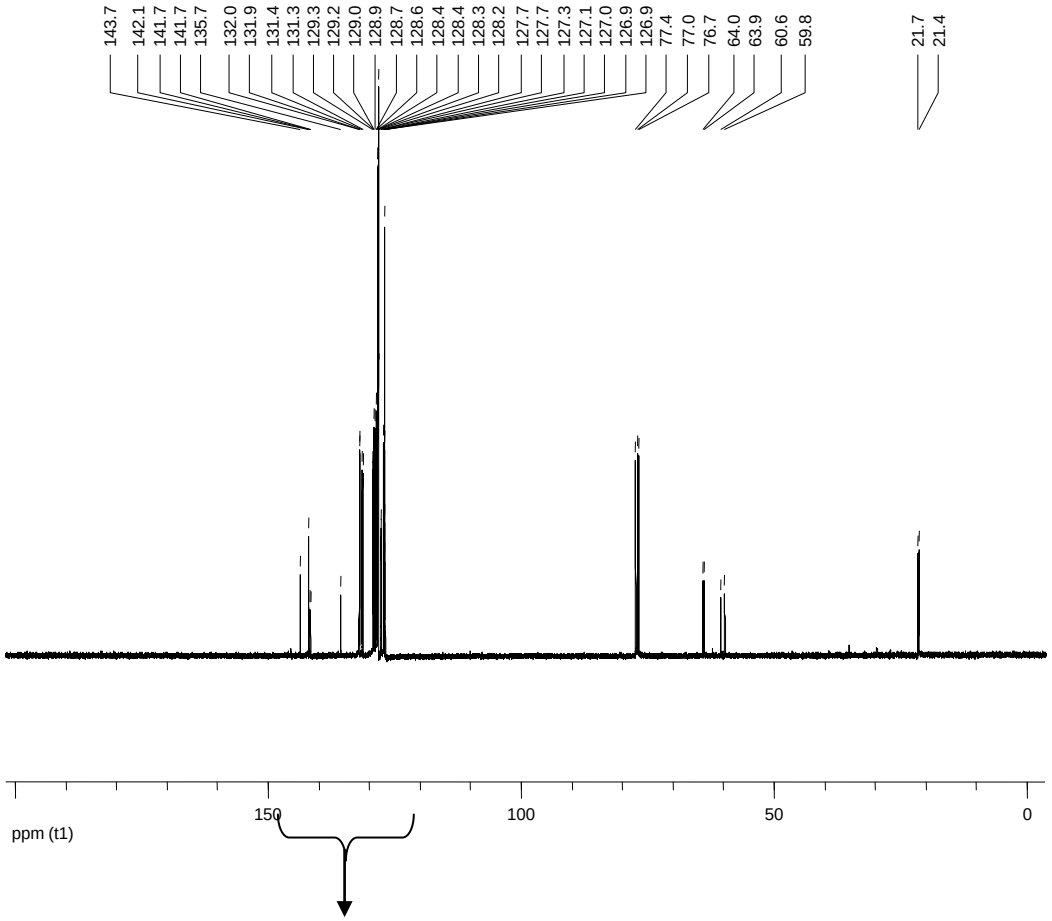
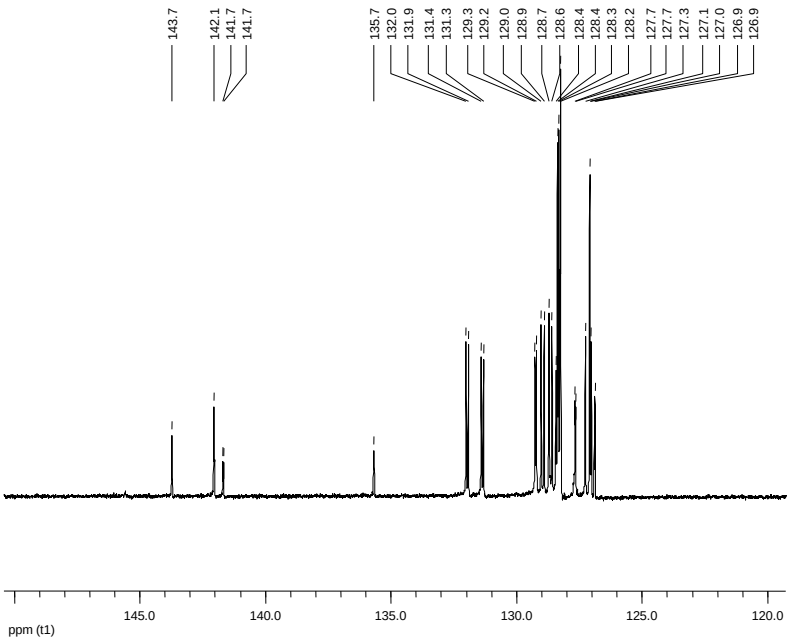
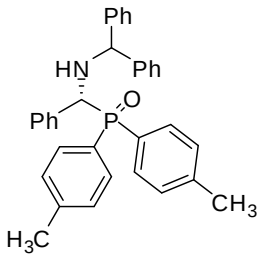
2.839
2.866
4.185
4.212
4.238
4.616
6.988
7.005
7.059
7.068
7.272
7.283
7.302
7.320
7.337
7.364
7.383
7.713
7.735
7.739
7.760
3.08
3.00
0.90
0.91
0.93
4.06
20.51
2.00
0.0
5.0
10.0
ppm (f1)


Ph
HN
Ph
Ph
P
O
CH3
H3C

9e


143.7
142.1
141.7
141.7
135.7
132.0
131.9
131.4
131.3
129.3
129.2
129.0
128.9
128.7
128.6
128.4
128.4
128.3
128.2
127.7
127.7
127.3
127.1
127.0
126.9
126.9
77.4
77.0
76.7
64.0
63.9
60.6
59.8
21.7
21.4
150
100
50
0
ppm (t1)


143.7
142.1
141.7
141.7
135.7
132.0
131.9
131.4
131.3
129.3
129.2
129.0
128.9
128.7
128.6
128.4
128.4
128.3
128.2
127.7
127.7
127.3
127.1
127.0
126.9
126.9
145.0
140.0
135.0
130.0
125.0
120.0
ppm (t1)

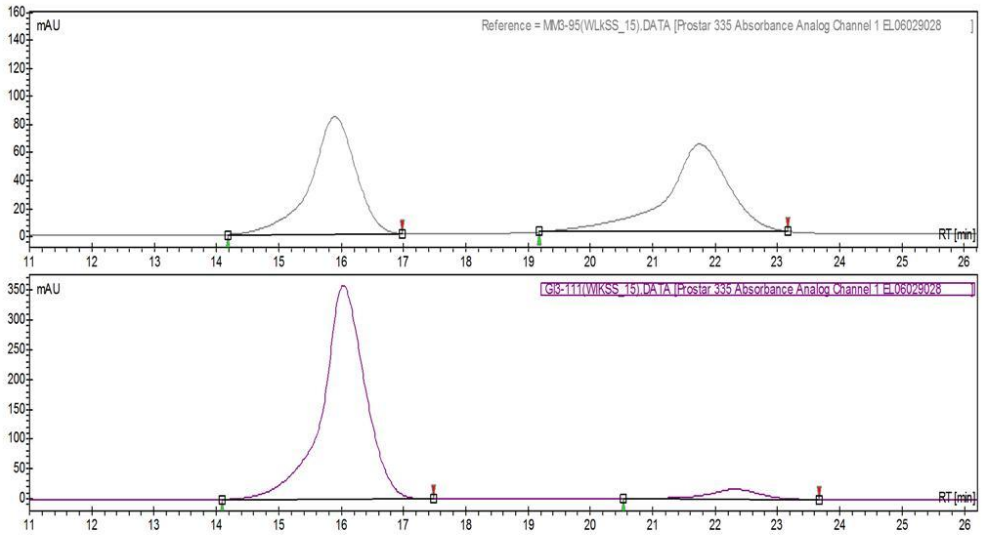

Ph
HN
Ph
Ph
P
O
CH3
H3C

9e

Chromatogram : GI3-111(WIKSS_15)_channel1

System : HPLC
Method : test
User : User1

Acquired : 1/4/2011 12:02:03 PM
Processed : 1/4/2011 9:02:43 PM
Printed : 1/4/2011 9:04:14 PM



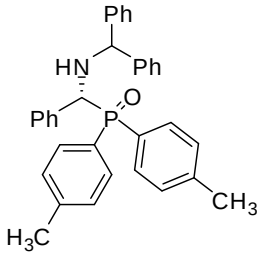
Peak results :

MM3-95(WLkSS_15).DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	15.89	83.7	1.24	70.1	49.418
2	21.75	62.4	1.62	71.8	50.582
Total		146.0		141.9	100.000

GI3-111(WIKSS_15).DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	16.03	357.6	1.19	285.1	94.537
2	22.31	16.9	1.44	16.5	5.463
Total		374.5		301.5	100.000



9e

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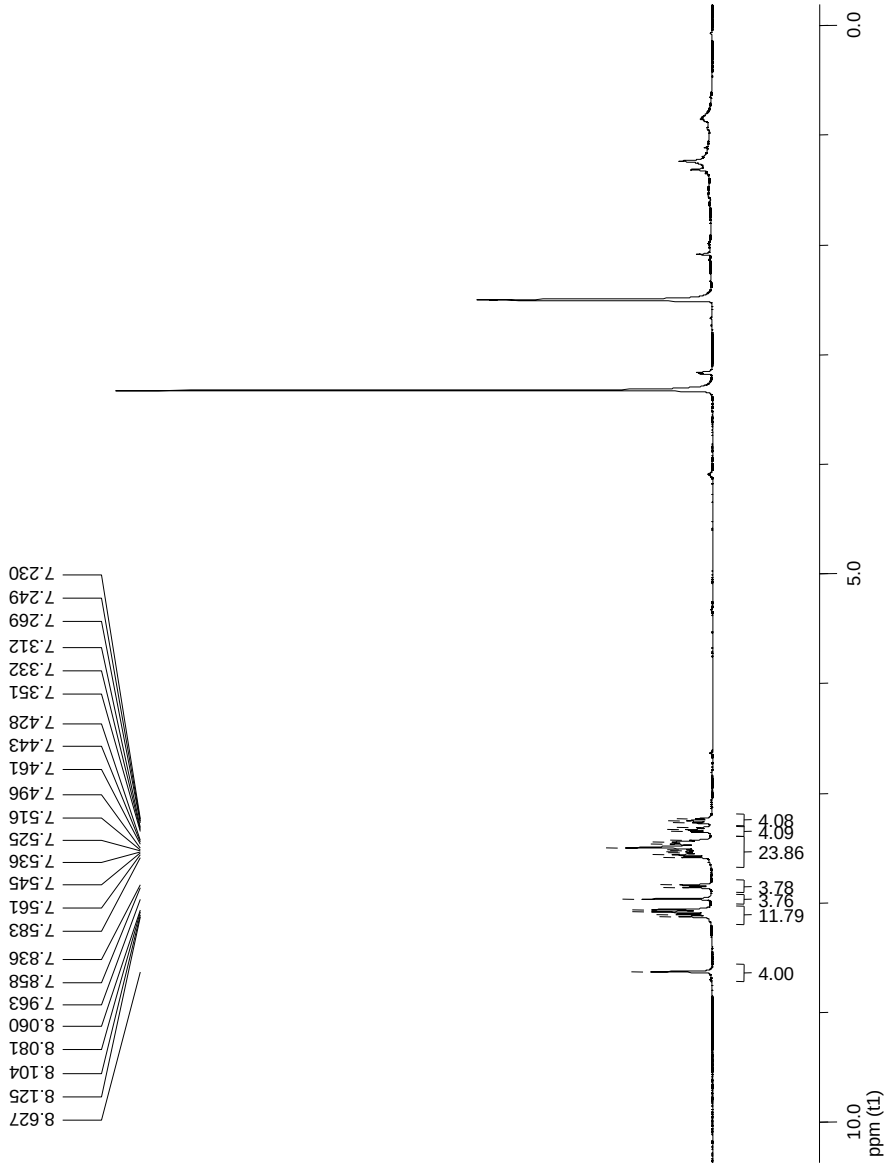
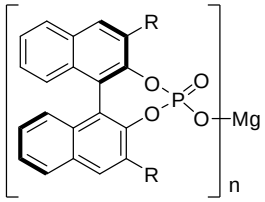
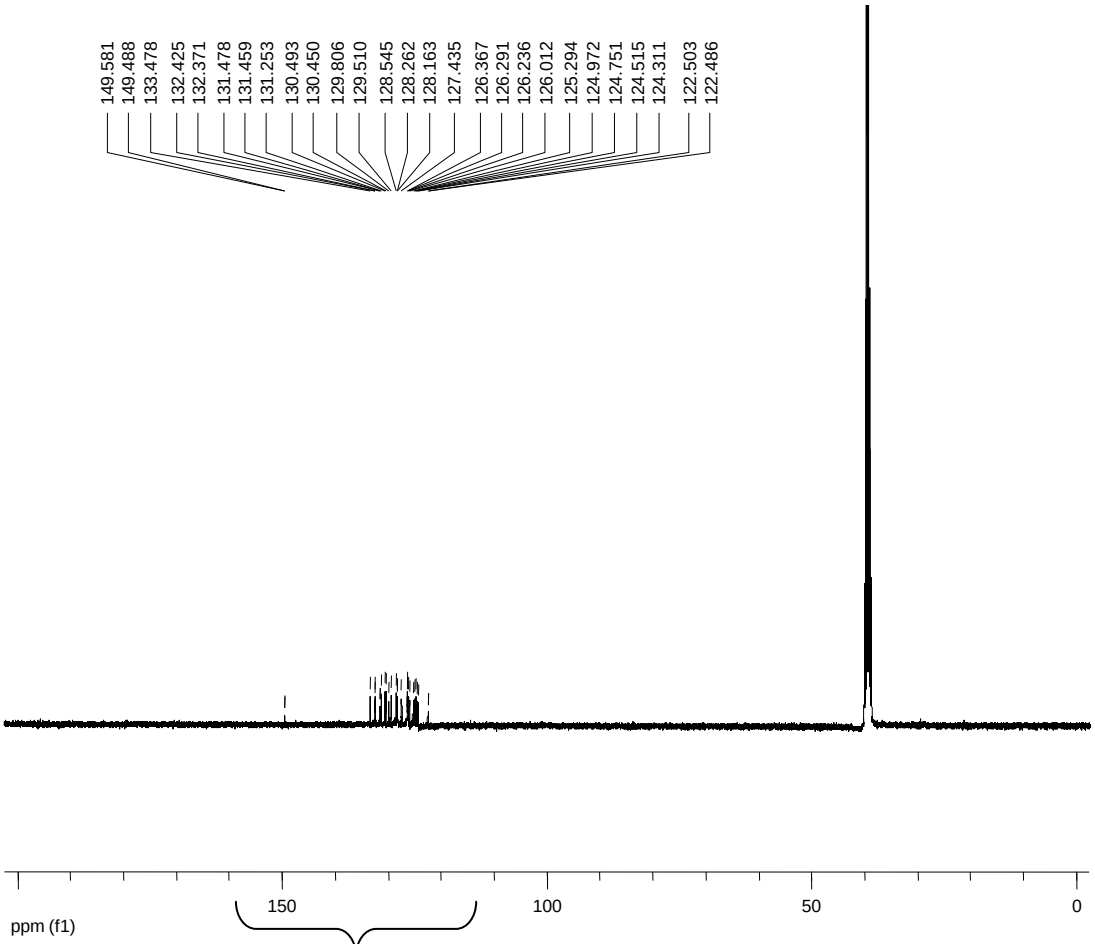
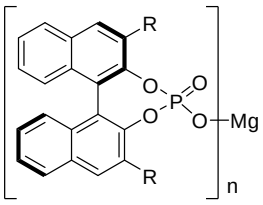


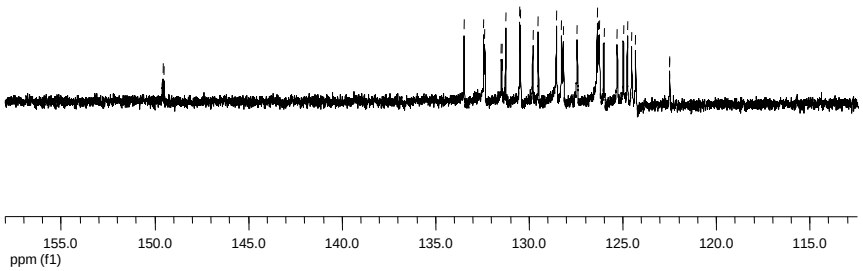


R = 9-anthryl

Mg(**1a**)$_2$





R = 9-anthryl

Mg(**1a**)$_2$