Supporting Information for

Cobalt-Catalyzed Cross Addition of Silylacetylenes to Internal Alkynes

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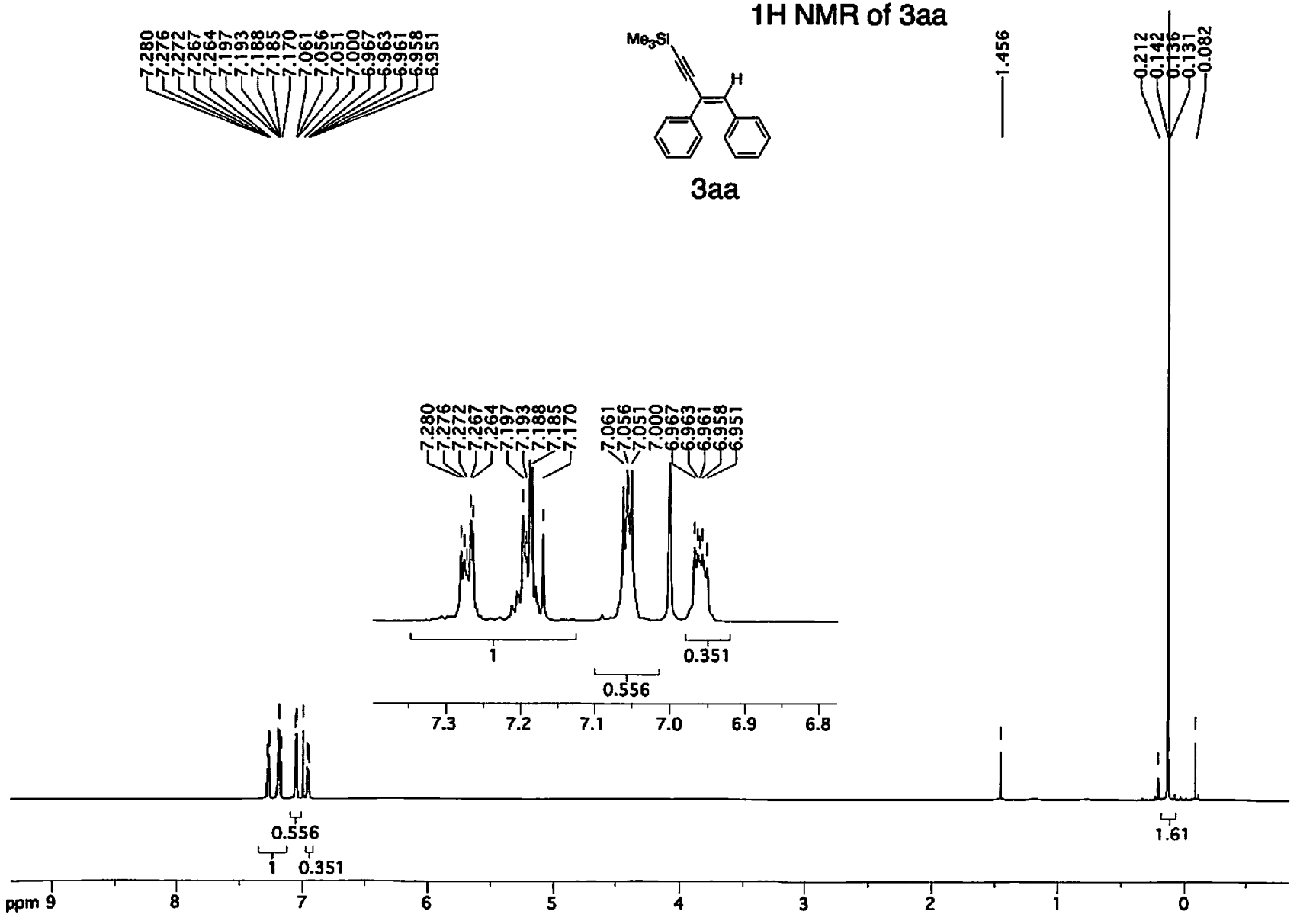
Compound(s)	^{1}H NMR	^{13}C NMR
3aa	Page 2	Page 3
3ab	4	5
4ab	6	7
3ac	8	9
3ad	10	11
3af	12	13
3ag	14	15
4ag	16	17
3ai	18	19
4ai	20	21
3aj	22	23
4aj (+ 2j)	24	25
3ak	26	27

Compound(s)	^{1}H NMR	^{13}C NMR
4ak	Page 28	Page 29
3al	30	31
3am + 4am	32	33
3an	34	35
4an	36	37
3ao	38	39
3ap	40	41
3aq	42	43
3ar	44	45
d-3bf	46	47
3ba	48	49


1H NMR of 3aa
7.280
7.276
7.272
7.267
7.264
7.197
7.193
7.188
7.185
7.170
7.061
7.056
7.051
7.000
6.967
6.963
6.961
6.958
6.951
Me3Si
H
3aa
1.456
0.212
0.142
0.136
0.131
0.082
1
0.351
0.556
7.3
7.2
7.1
7.0
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1
0.351
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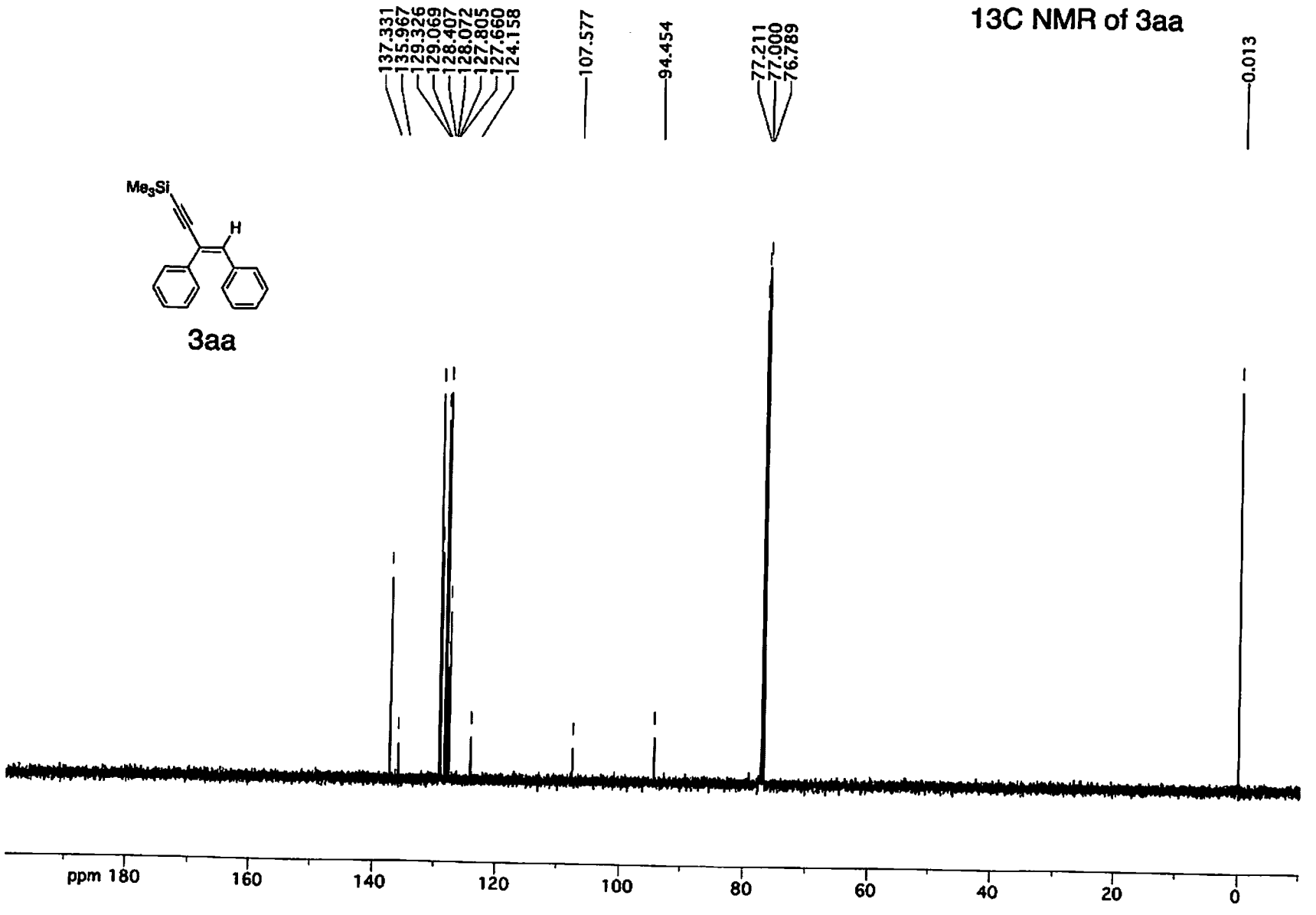
13C NMR of 3aa
137.331
135.967
129.326
129.069
128.407
128.072
127.805
127.660
124.158
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94.454
77.211
77.000
76.789
0.013
Me3Si
H
3aa
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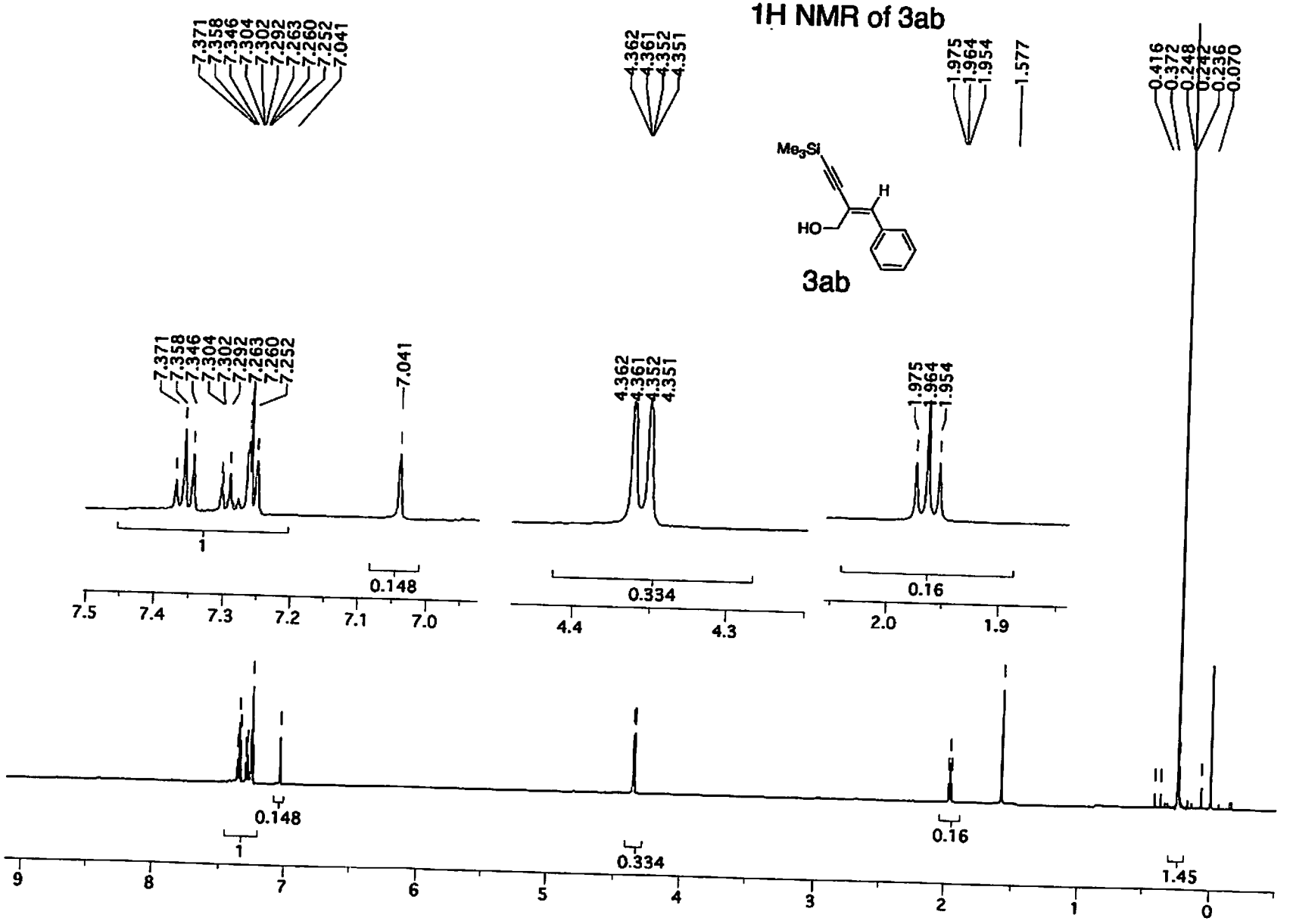
80
60
40
20
0


1H NMR of 3ab
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7.358
7.346
7.304
7.302
7.292
7.263
7.260
7.252
7.041
4.362
4.361
4.352
4.351
1.975
1.964
1.954
1.577
0.416
0.372
0.248
0.242
0.236
0.070
Me3Si
H
HO
3ab
1
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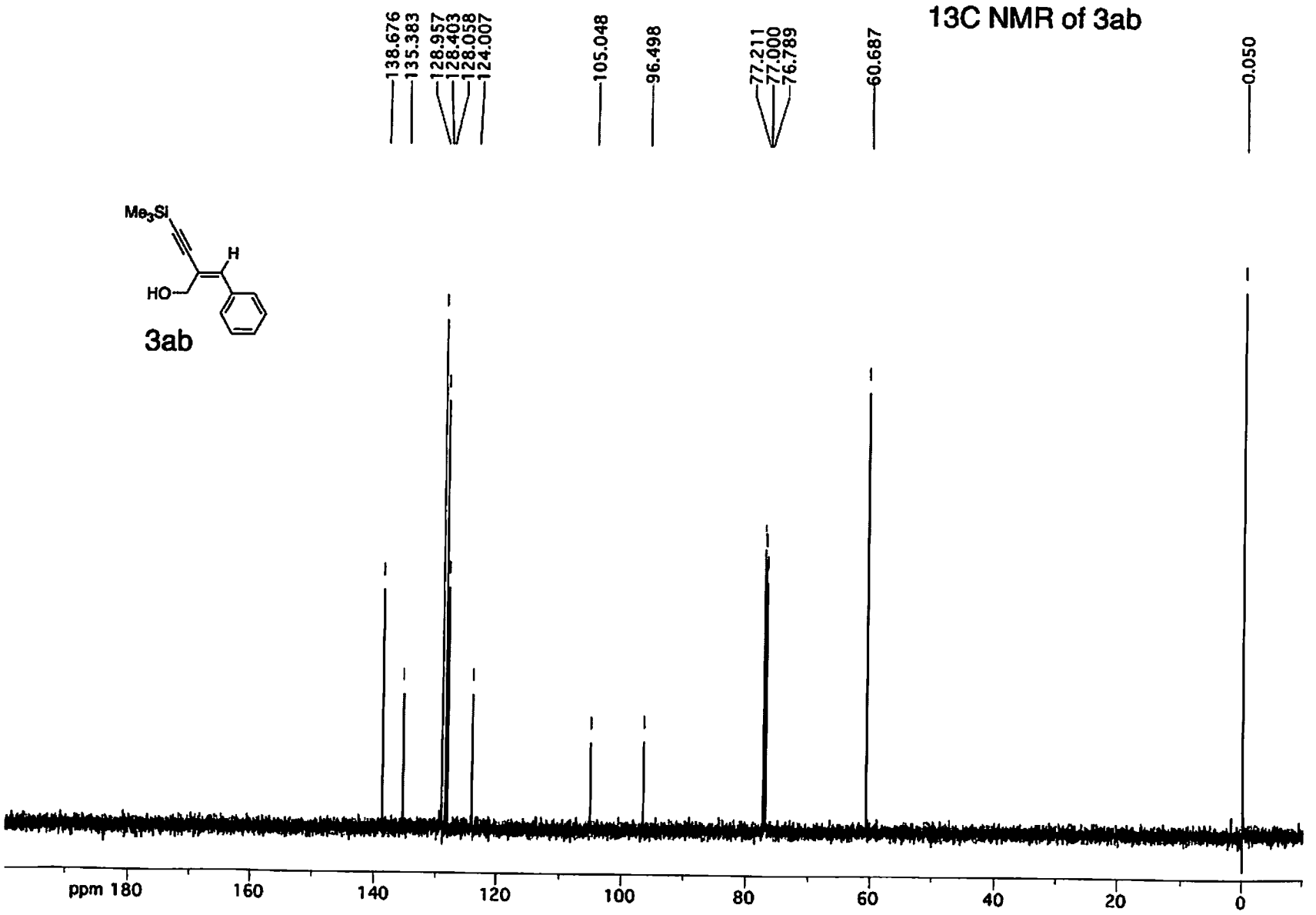
0.334
0.16
1.45


13C NMR of 3ab
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128.403
128.058
124.007
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96.498
77.211
77.000
76.789
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Me3Si
H
HO
3ab
ppm 180
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140
120
100
80
60
40
20
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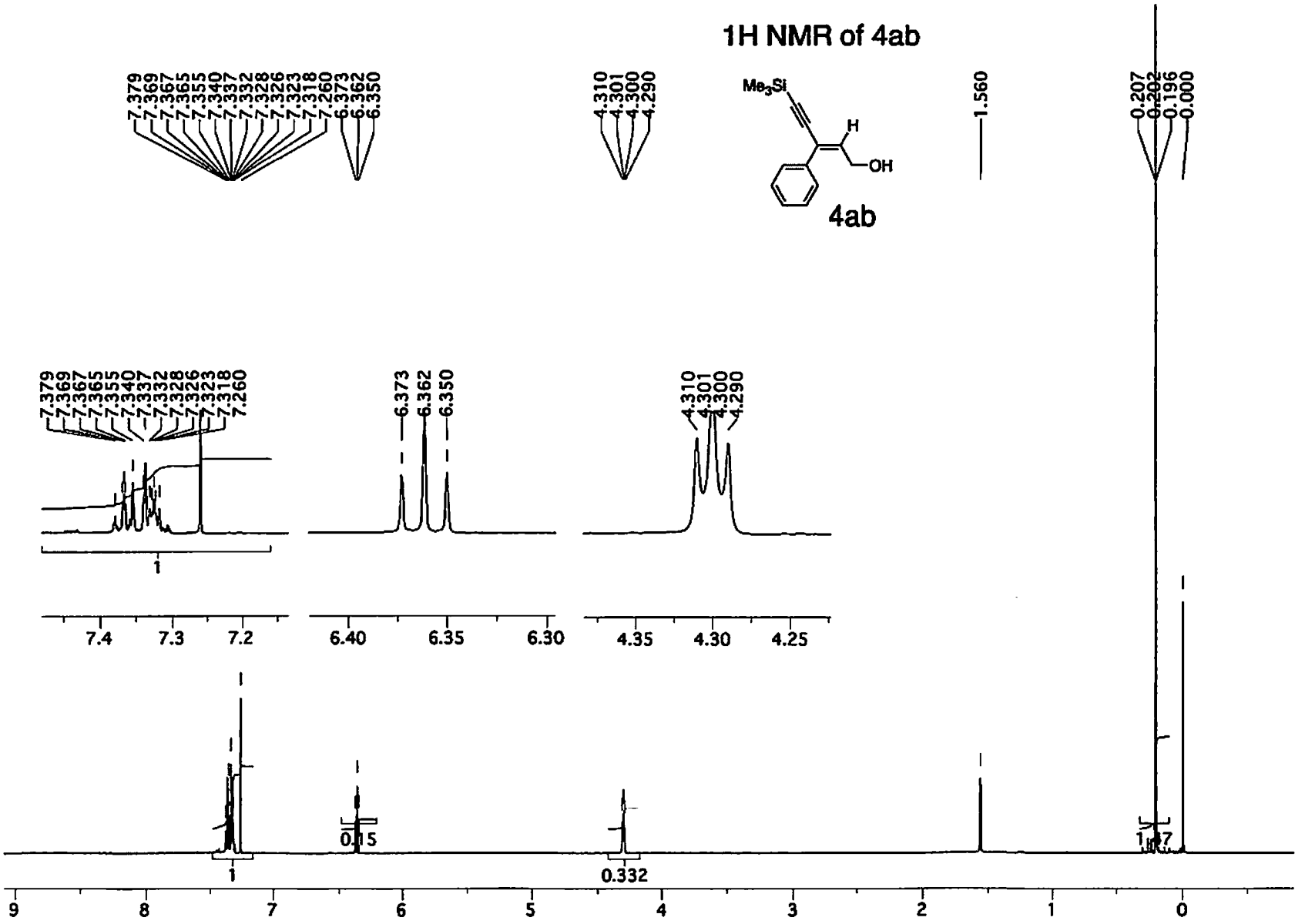
1H NMR of 4ab
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7.369
7.367
7.365
7.355
7.340
7.337
7.332
7.328
7.326
7.323
7.318
7.260
6.373
6.362
6.350
4.310
4.301
4.300
4.290
1.560
0.207
0.202
0.196
0.000
Me3Si
H
OH
4ab
1
0.15
0.332
1.17
9
8
7
6
5
4
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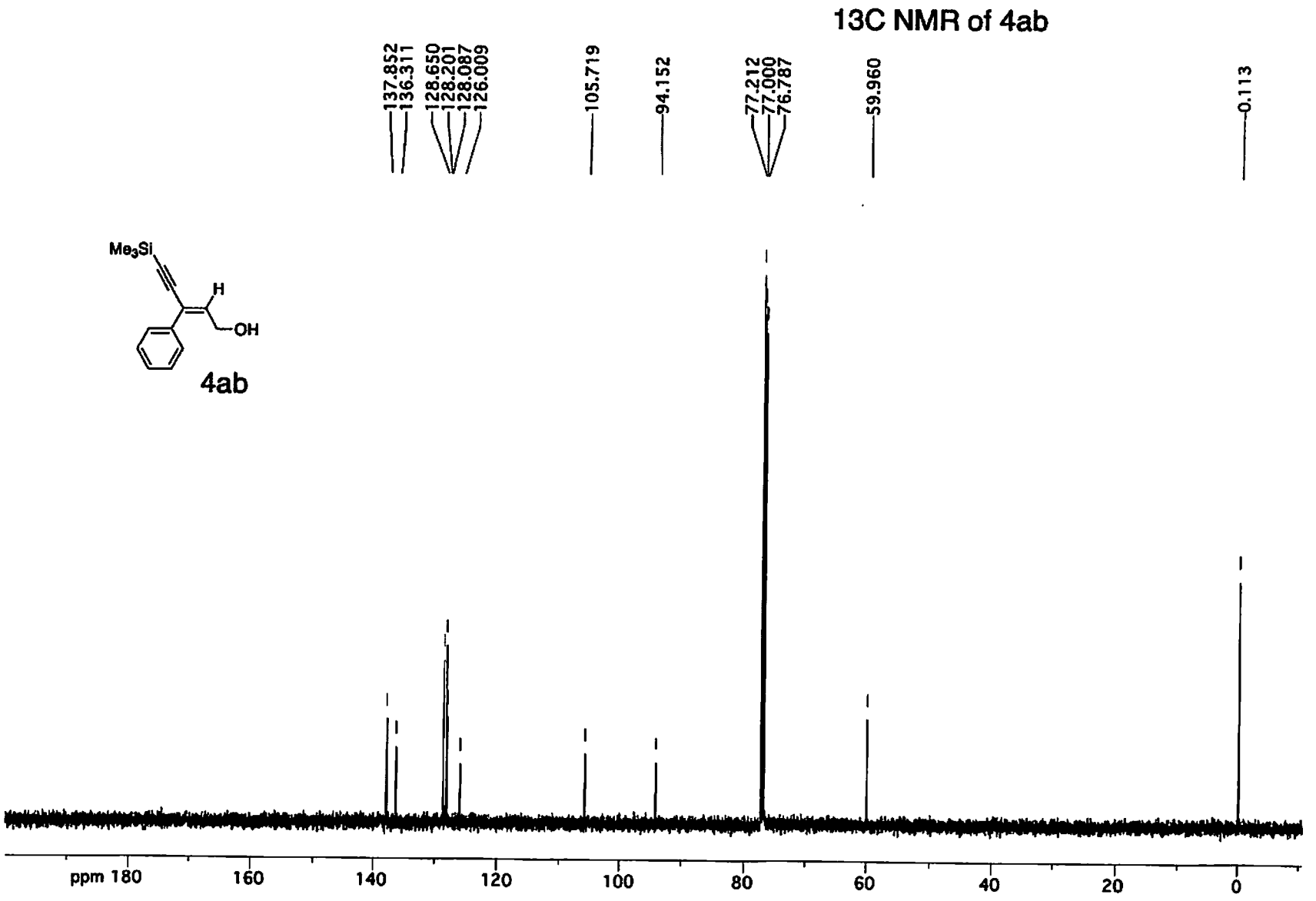
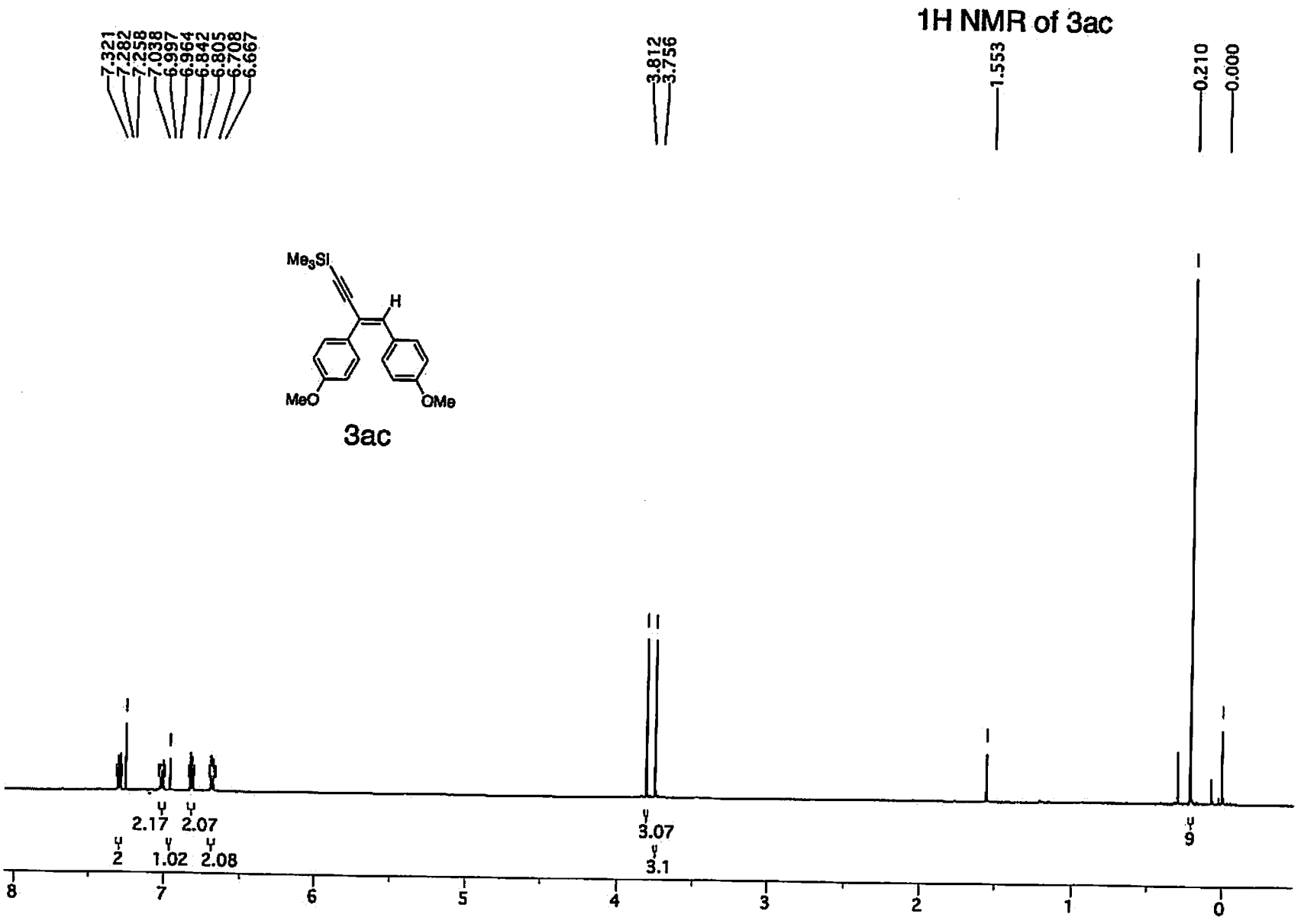
2
1
0
7.4
7.3
7.2
6.40
6.35
6.30
4.35
4.30
4.25


13C NMR of 4ab
137.852
136.311
128.650
128.201
128.087
126.009
105.719
94.152
77.212
77.000
76.787
59.960
0.113
Me3Si
H
OH
4ab
ppm 180
160
140
120
100
80
60
40
20
0


1H NMR of 3ac
7.321
7.282
7.258
7.038
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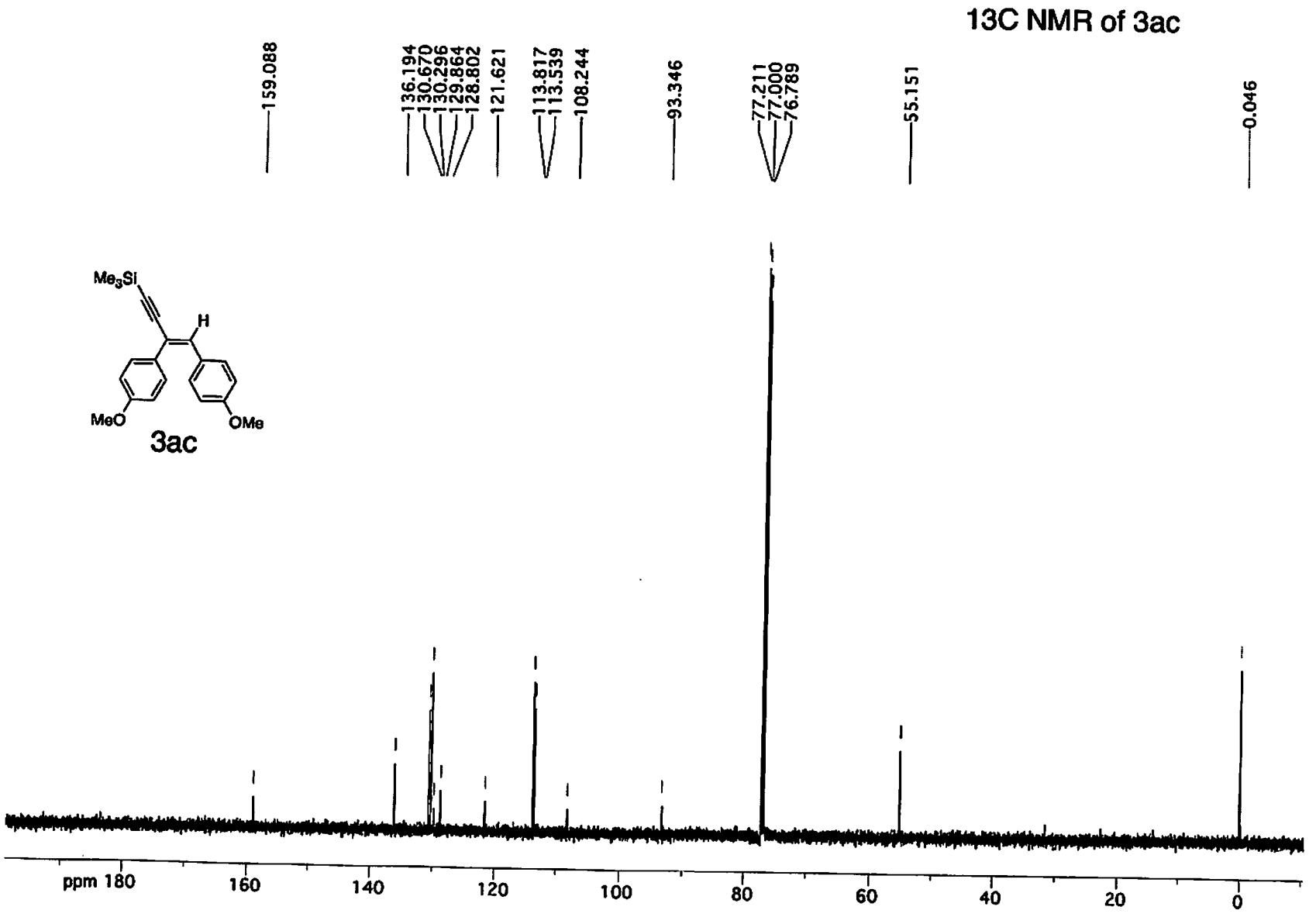
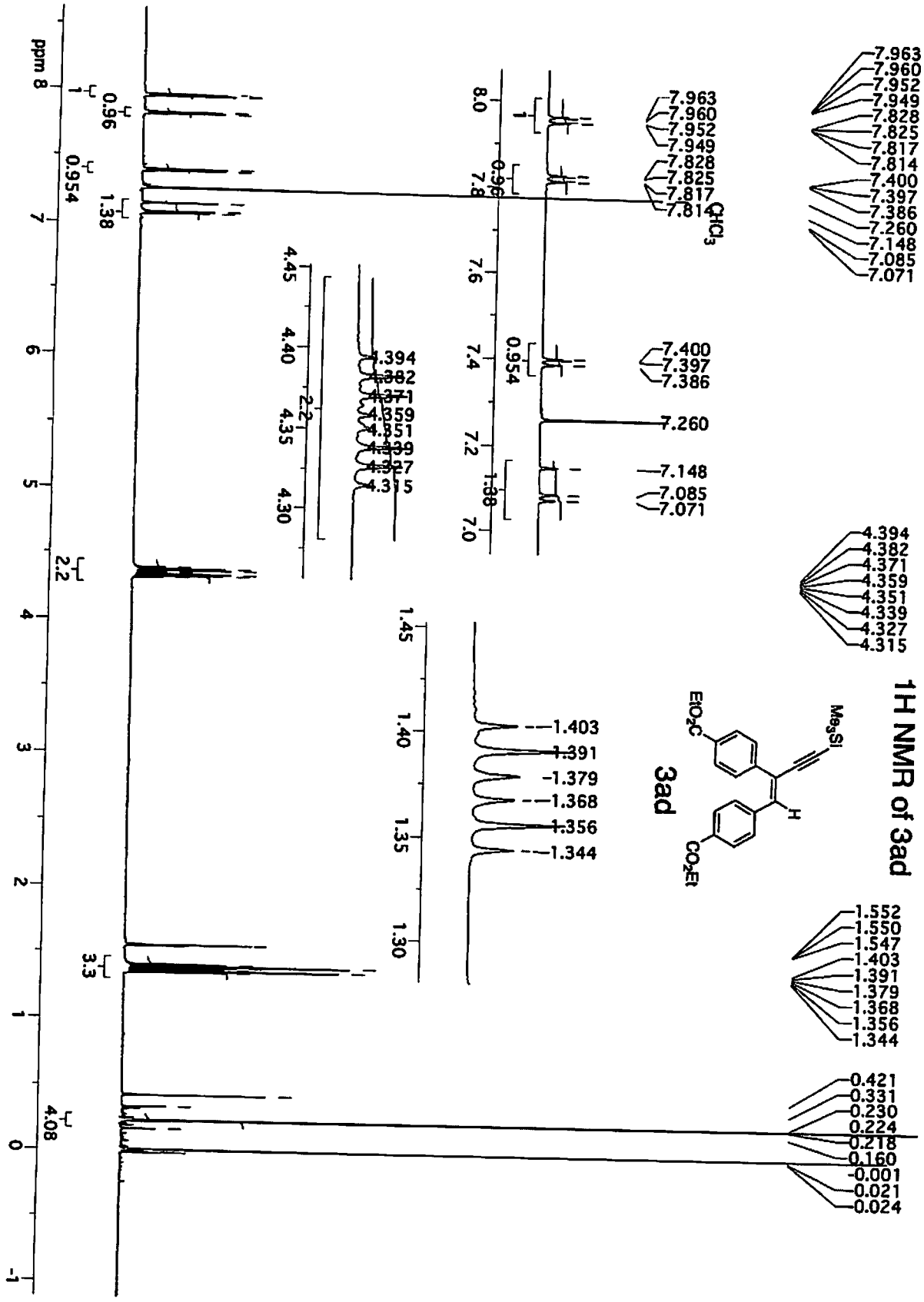
6.964
6.842
6.805
6.708
6.667
3.812
3.756
1.553
0.210
0.000
Me3Si
H
MeO
OMe
3ac
2.17
2.07
2
1.02
2.08
3.07
3.1
9
8
7
6
5
4
3
2
1
0


13C NMR of 3ac
159.088
136.194
130.670
130.296
129.864
128.802
121.621
113.817
113.539
108.244
93.346
77.211
77.000
76.789
55.151
0.046
Me3Si
H
MeO
OMe
3ac
ppm 180
160
140
120
100
80
60
40
20
0


1H NMR of 3ad
3ad
Me3Si
EtO2C
CO2Et
H
CHCl3
7.963
7.960
7.952
7.949
7.828
7.825
7.817
7.814
7.400
7.397
7.386
7.260
7.148
7.085
7.071
4.394
4.382
4.371
4.359
4.351
4.339
4.327
4.315
1.552
1.550
1.547
1.403
1.391
1.379
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1.356
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0.160
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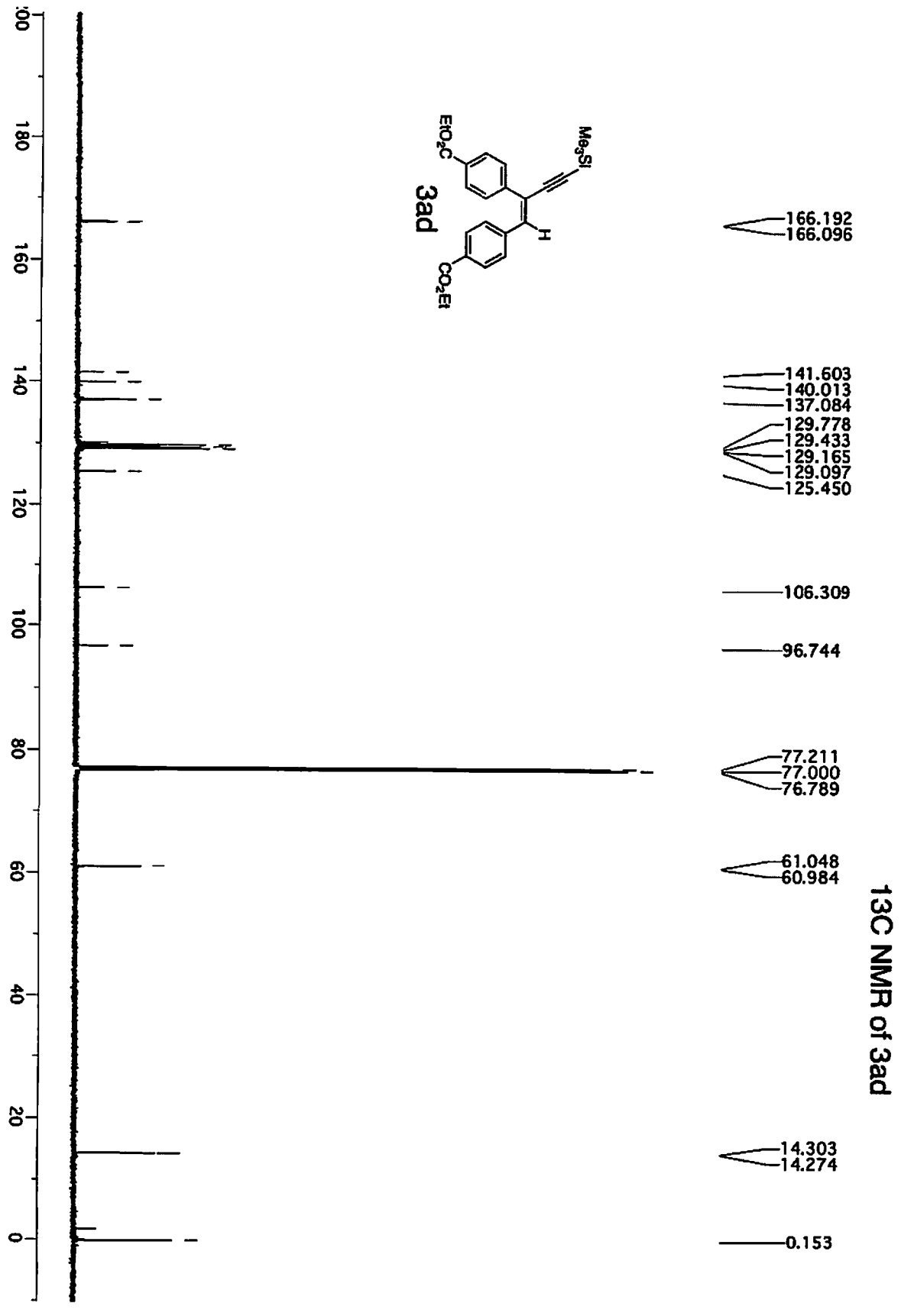
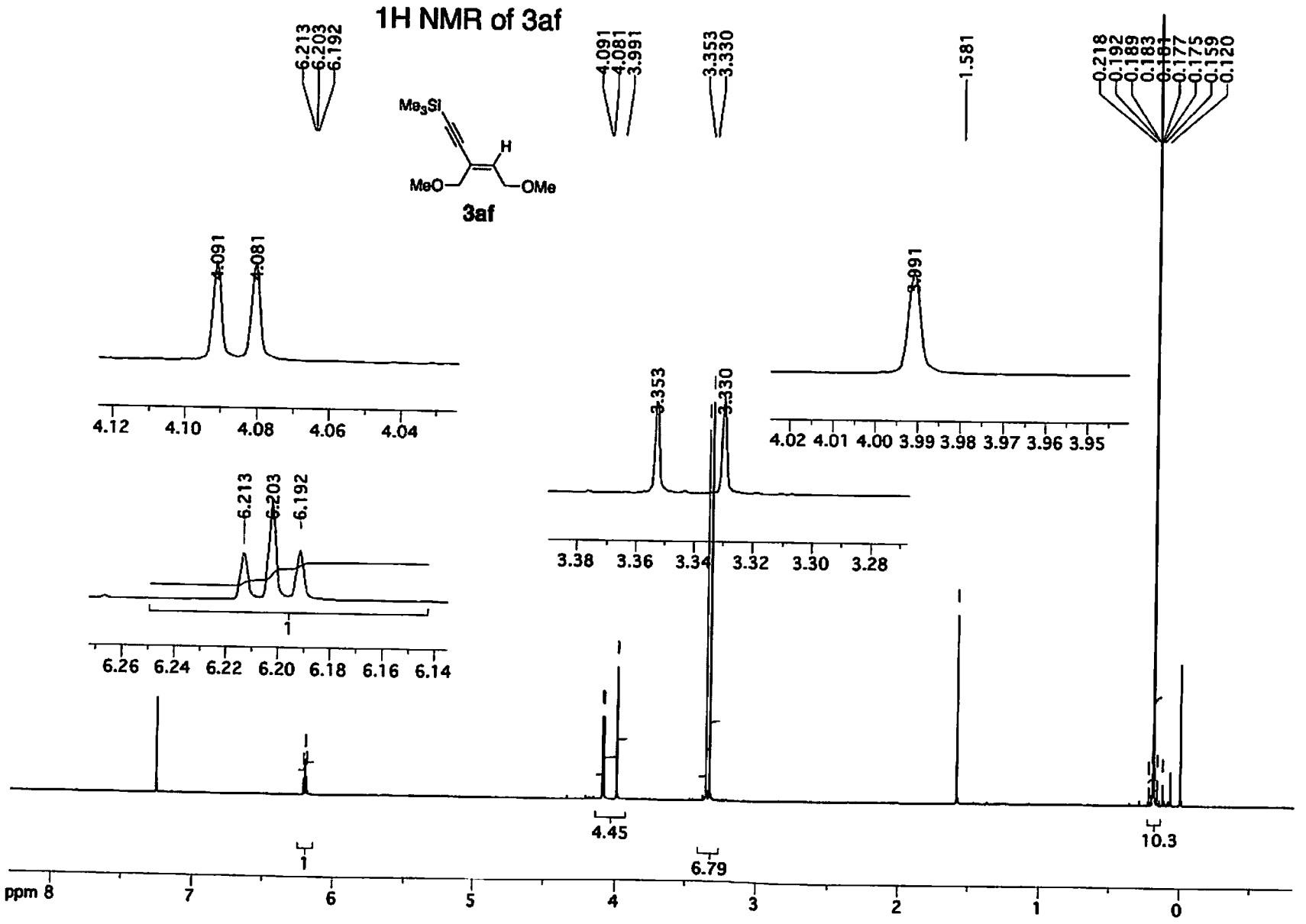
0.021
0.024


3ad
Me3Si
EtO2C
CO2Et
H
166.192
166.096
141.603
140.013
137.084
129.778
129.433
129.165
129.097
125.450
106.309
96.744
77.211
77.000
76.789
61.048
60.984
14.303
14.274
0.153
13C NMR of 3ad


1H NMR of 3af
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6.203
6.192
4.091
4.081
3.991
3.353
3.330
1.581
0.218
0.192
0.189
0.183
0.177
0.175
0.159
0.120
Me3Si
H
MeO
OMe
3af
4.12 4.10 4.08 4.06 4.04
4.02 4.01 4.00 3.99 3.98 3.97 3.96 3.95
3.38 3.36 3.34 3.32 3.30 3.28
6.26 6.24 6.22 6.20 6.18 6.16 6.14
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4.45
10.3
6.79
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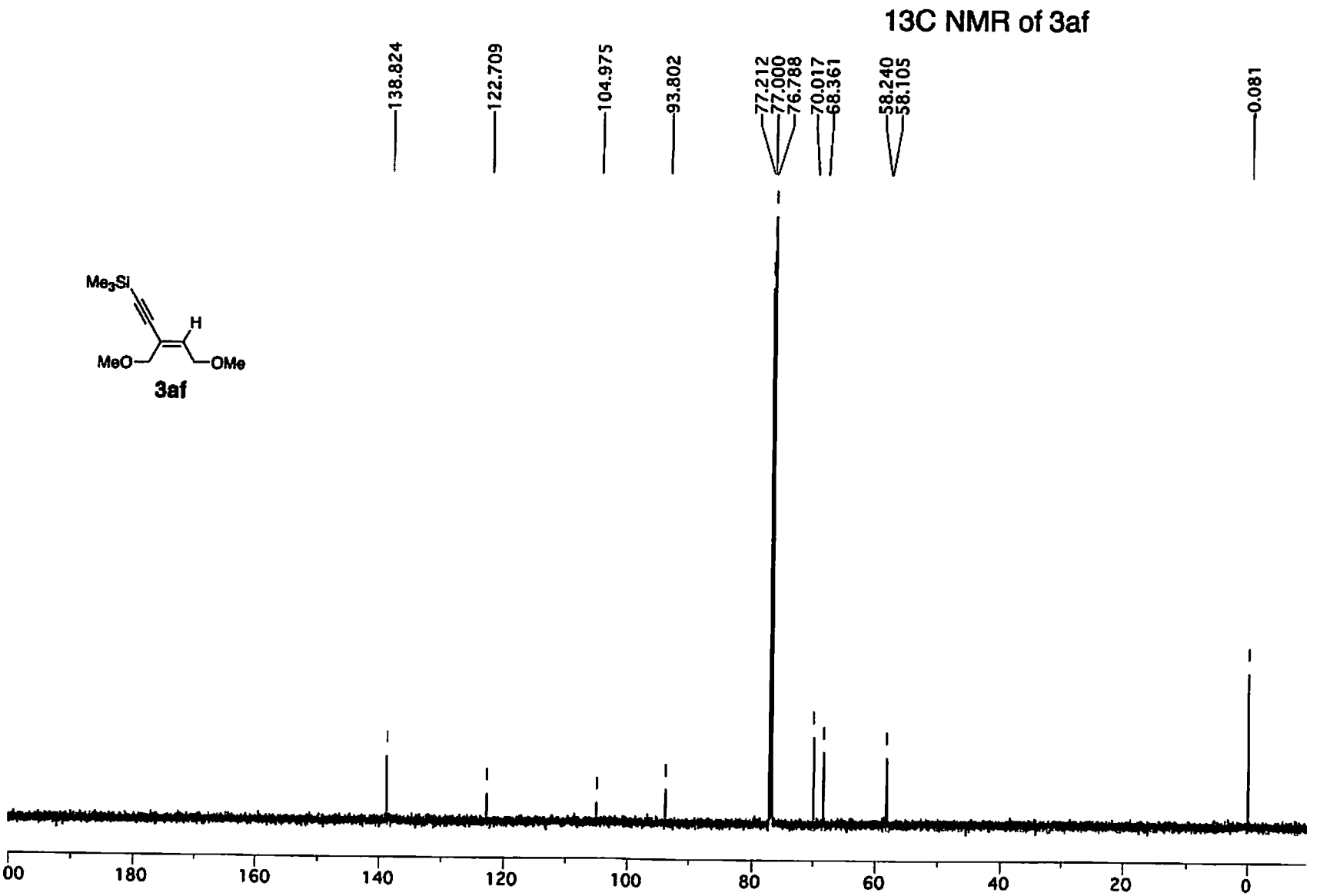
13C NMR of 3af
138.824
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104.975
93.802
77.212
77.000
76.788
70.017
68.361
58.240
58.105
0.081
Me3Si
H
MeO
OMe
3af
00
180
160
140
120
100
80
60
40
20
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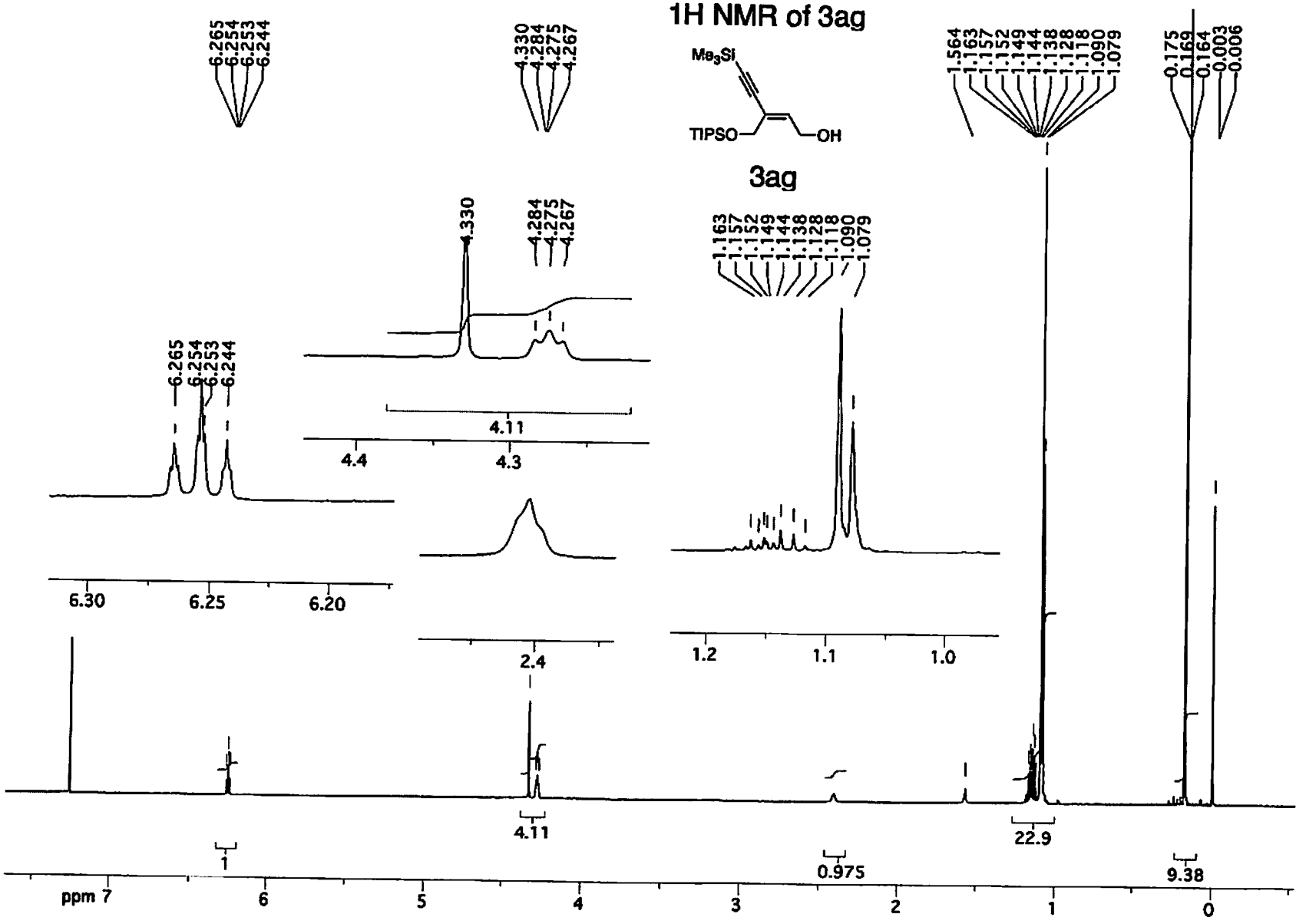
1H NMR of 3ag
Me3Si
TIPSO
OH
3ag
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6.253
6.244
4.330
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4.275
4.267
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1.163
1.157
1.152
1.149
1.144
1.138
1.128
1.118
1.090
1.079
0.175
0.169
0.164
0.003
0.006
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22.9
1
0.975
9.38
ppm 7
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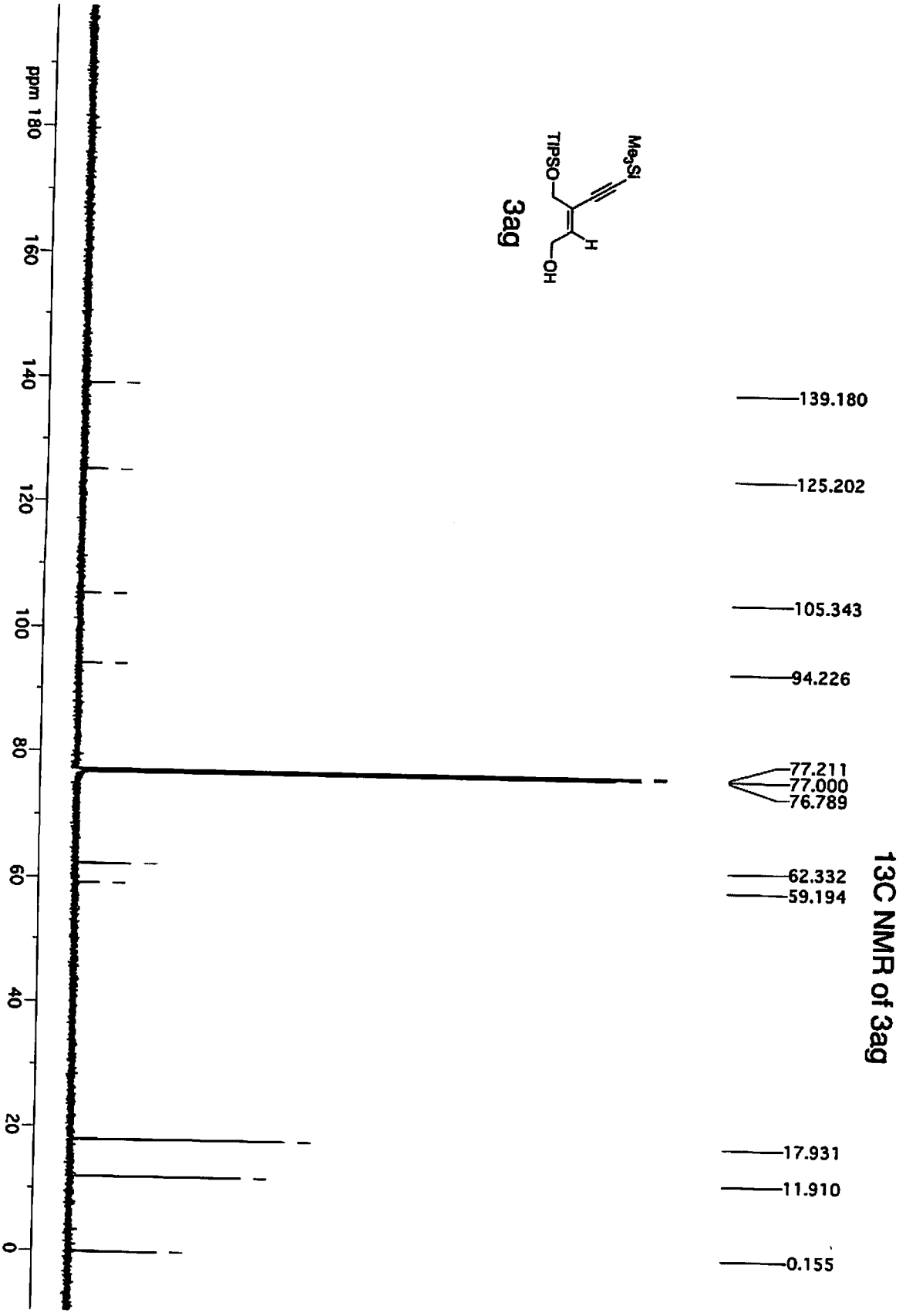
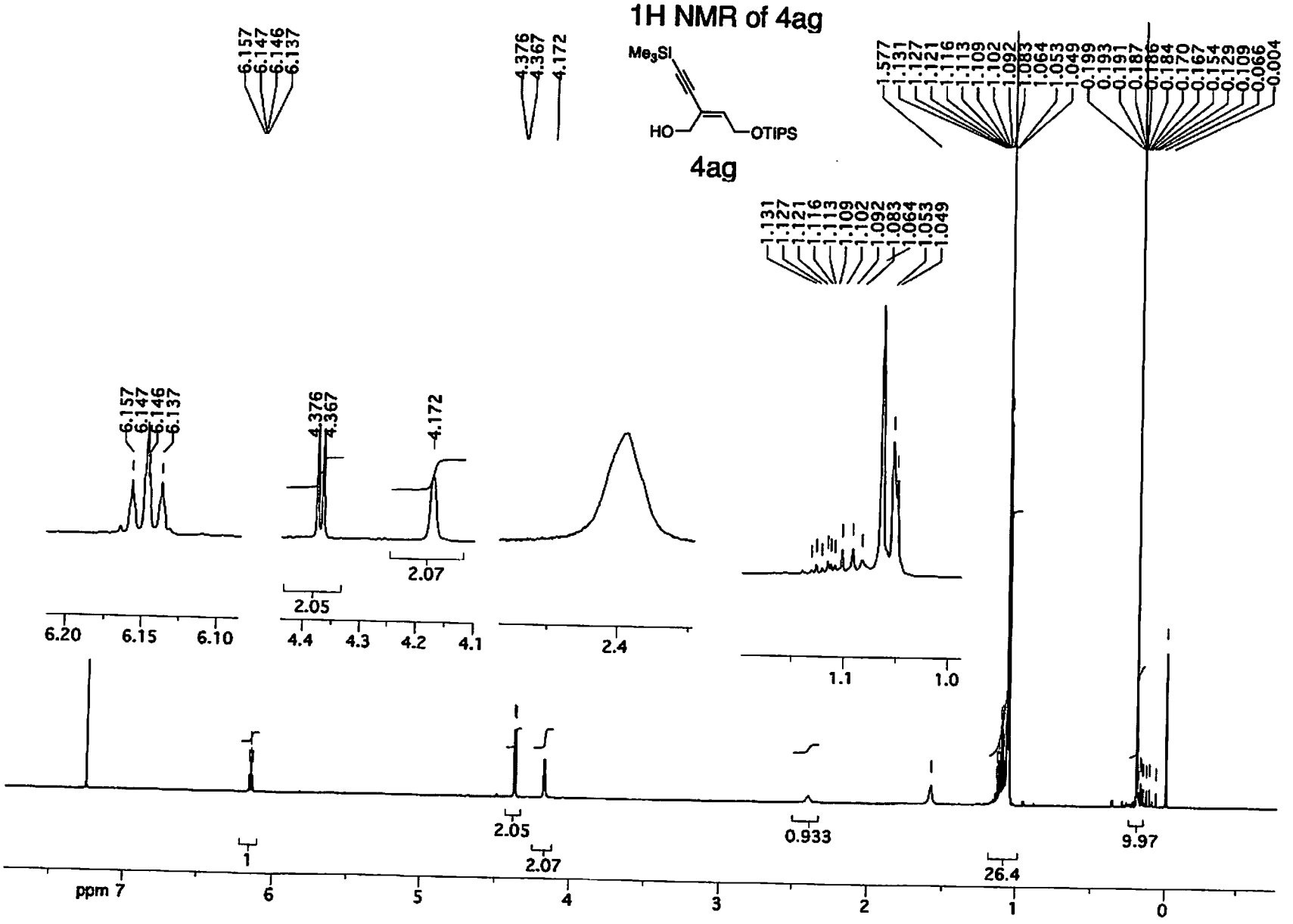
4
3
2
1
0



13C NMR of 3ag


1H NMR of 4ag
Me3Si
HO
OTIPS
4ag
6.157
6.147
6.146
6.137
4.376
4.367
4.172
1.577
1.131
1.127
1.121
1.116
1.113
1.109
1.102
1.092
1.083
1.064
1.053
1.049
0.199
0.193
0.191
0.187
0.186
0.184
0.170
0.167
0.154
0.129
0.109
0.066
0.004
2.07
2.05
2.4
1.1
1.0
6.20
6.15
6.10
4.4
4.3
4.2
4.1
2.05
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1
2.07
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ppm 7
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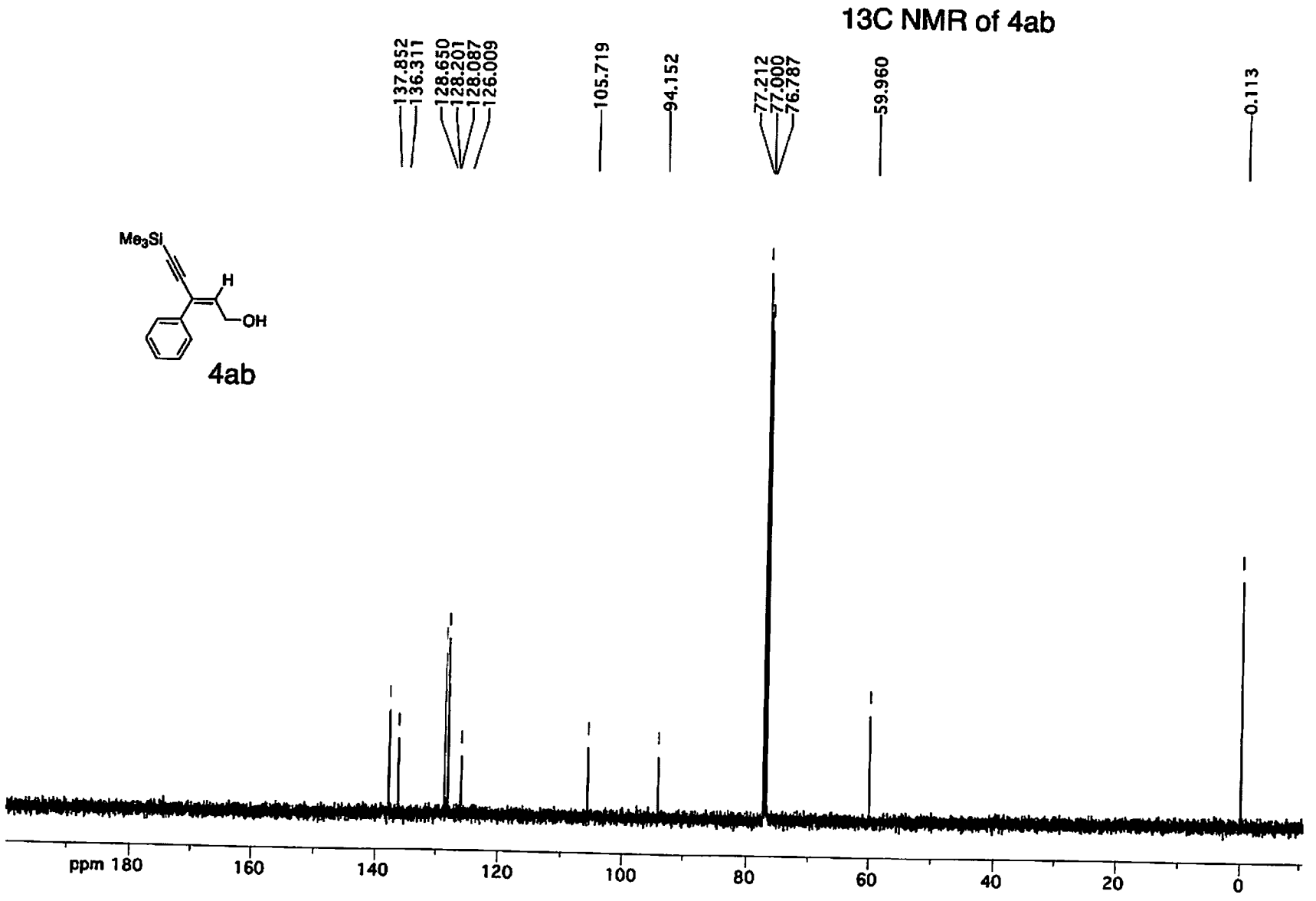
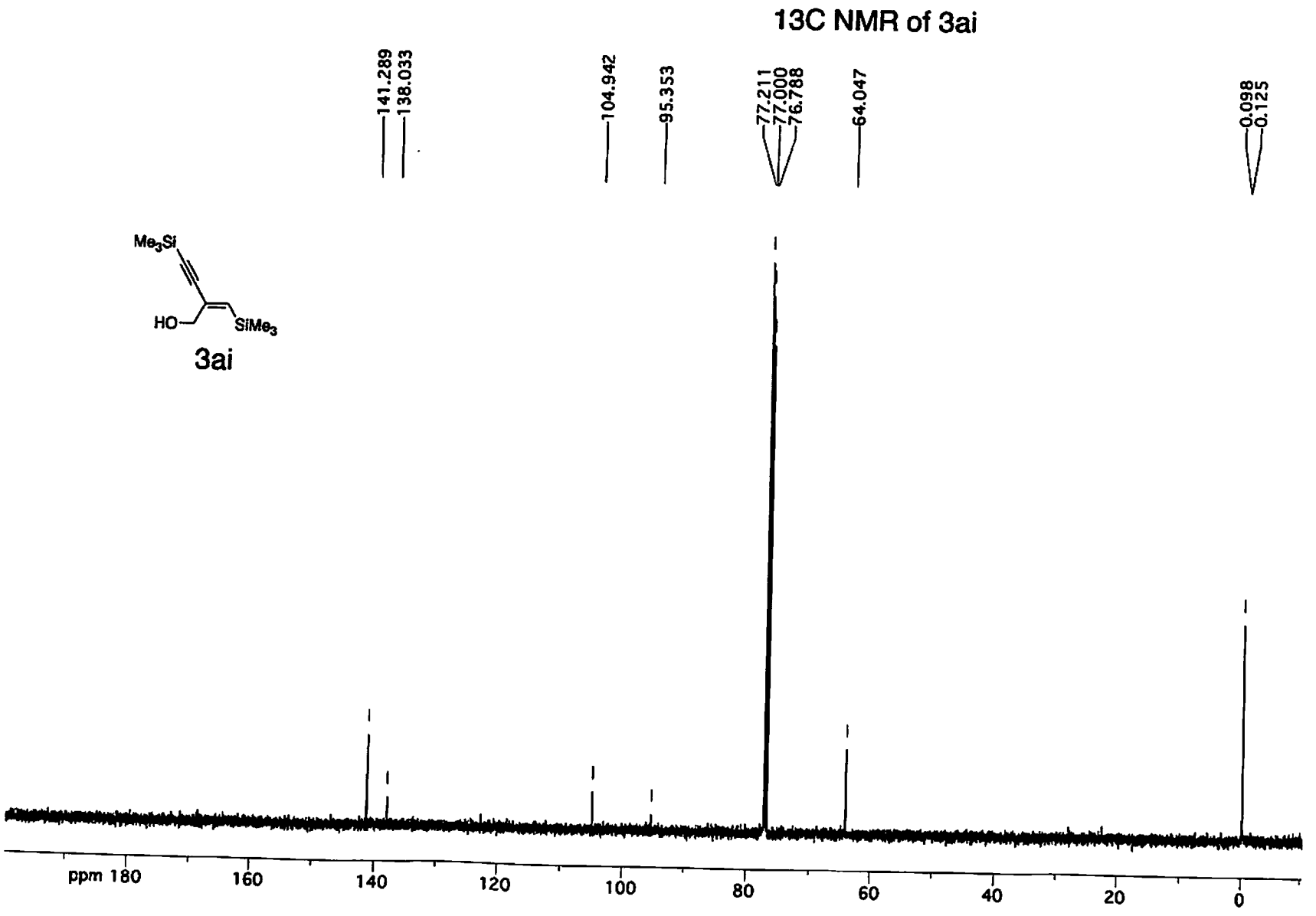
4
3
2
1
0


13C NMR of 4ab
137.852
136.311
128.650
128.201
128.087
126.009
105.719
94.152
77.212
77.000
76.787
59.960
0.113
Me3Si
H
OH
4ab
ppm 180
160
140
120
100
80
60
40
20
0

1H NMR of 3ai
3ai
HO
Me3Si
SiMe3
7.262
6.247
4.180
4.169
1.778
1.767
1.757
0.202
0.149
0.000
8.96
8.94
0.963
0.92
2
ppm


13C NMR of 3ai
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138.033
104.942
95.353
77.211
77.000
76.788
64.047
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0.125
Me3Si
HO
SiMe3
3ai
ppm 180
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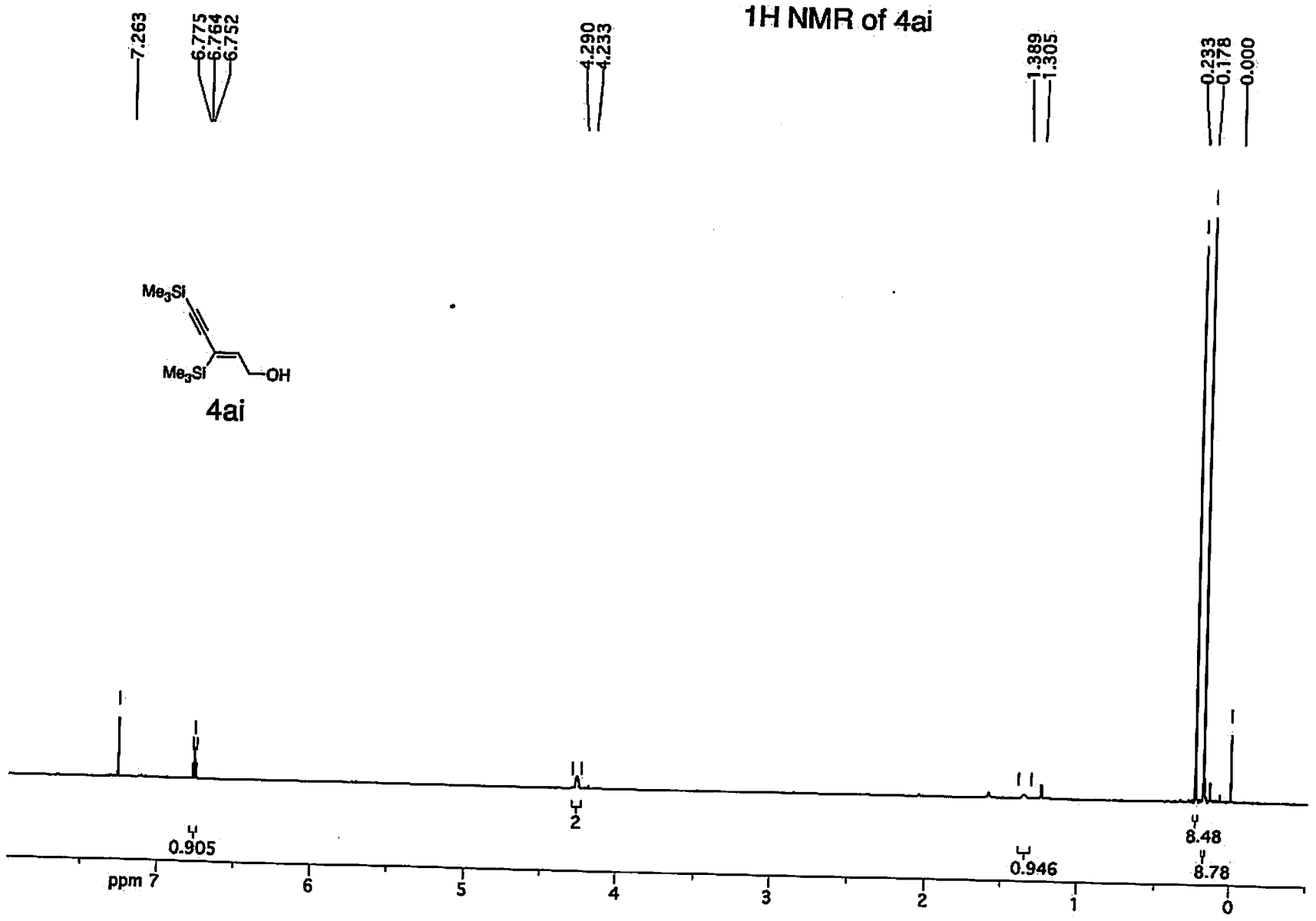
140
120
100
80
60
40
20
0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4.233
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1.305
0.233
0.178
0.000
Me3Si
Me3Si
OH
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0.946
8.78
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4
3
2
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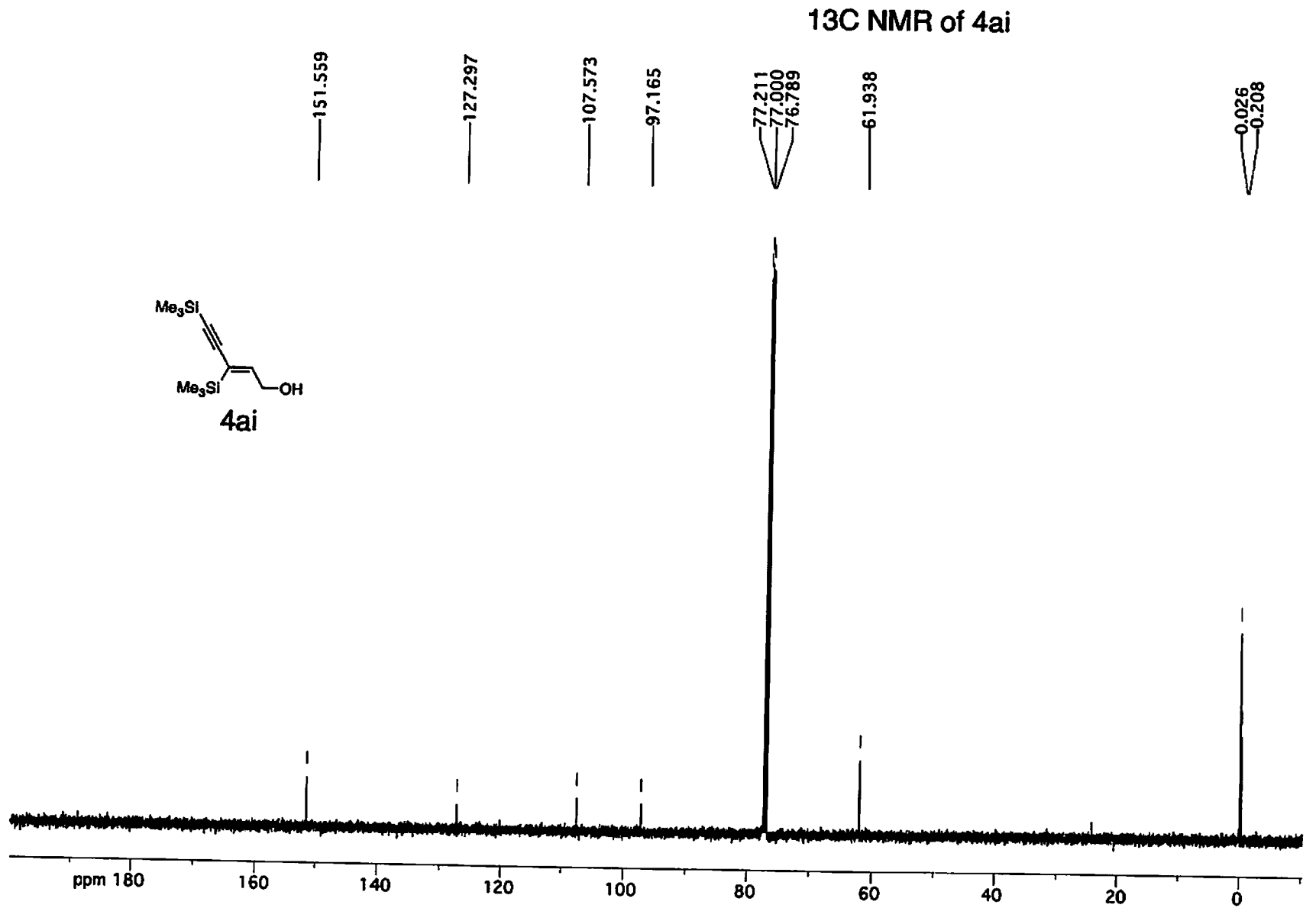
13C NMR of 4ai
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77.000
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Me3Si
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4ai
ppm 180
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60
40
20
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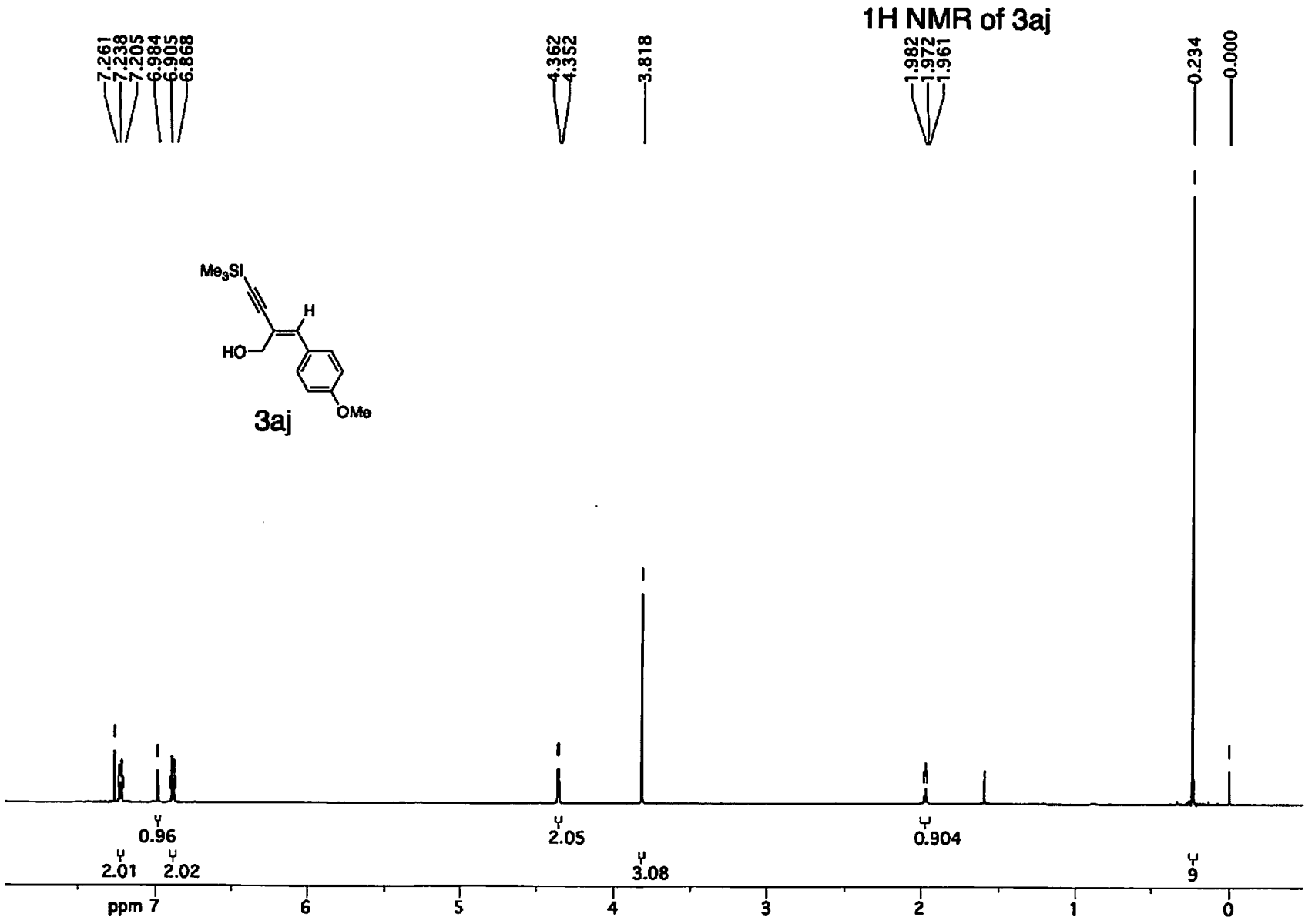
1H NMR of 3aj
7.261
7.238
7.205
6.984
6.905
6.868
4.362
4.352
3.818
1.982
1.972
1.961
0.234
0.000
Me3Si
H
HO
OMe
3aj
0.96
2.05
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2.02
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9
ppm 7
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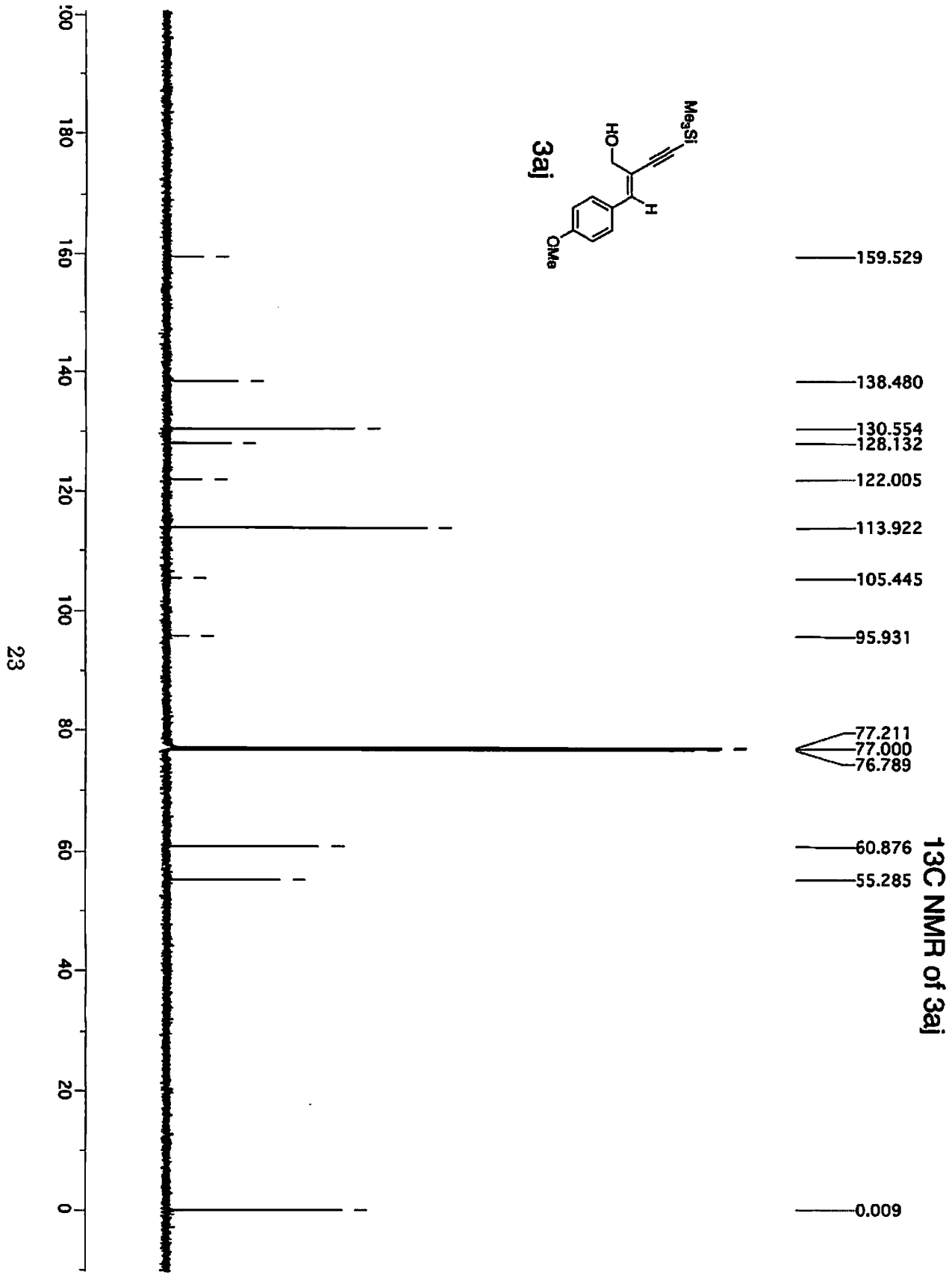
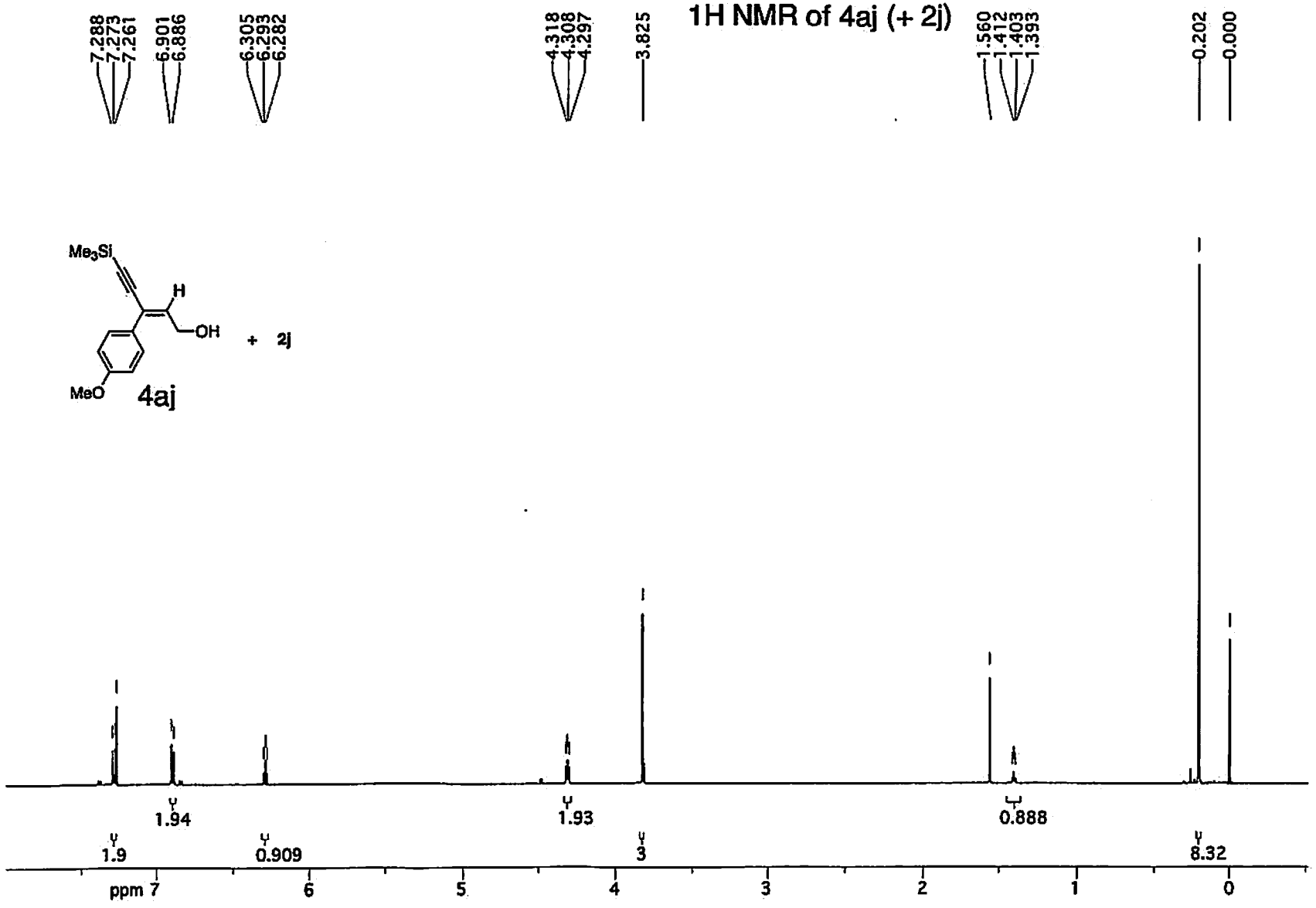
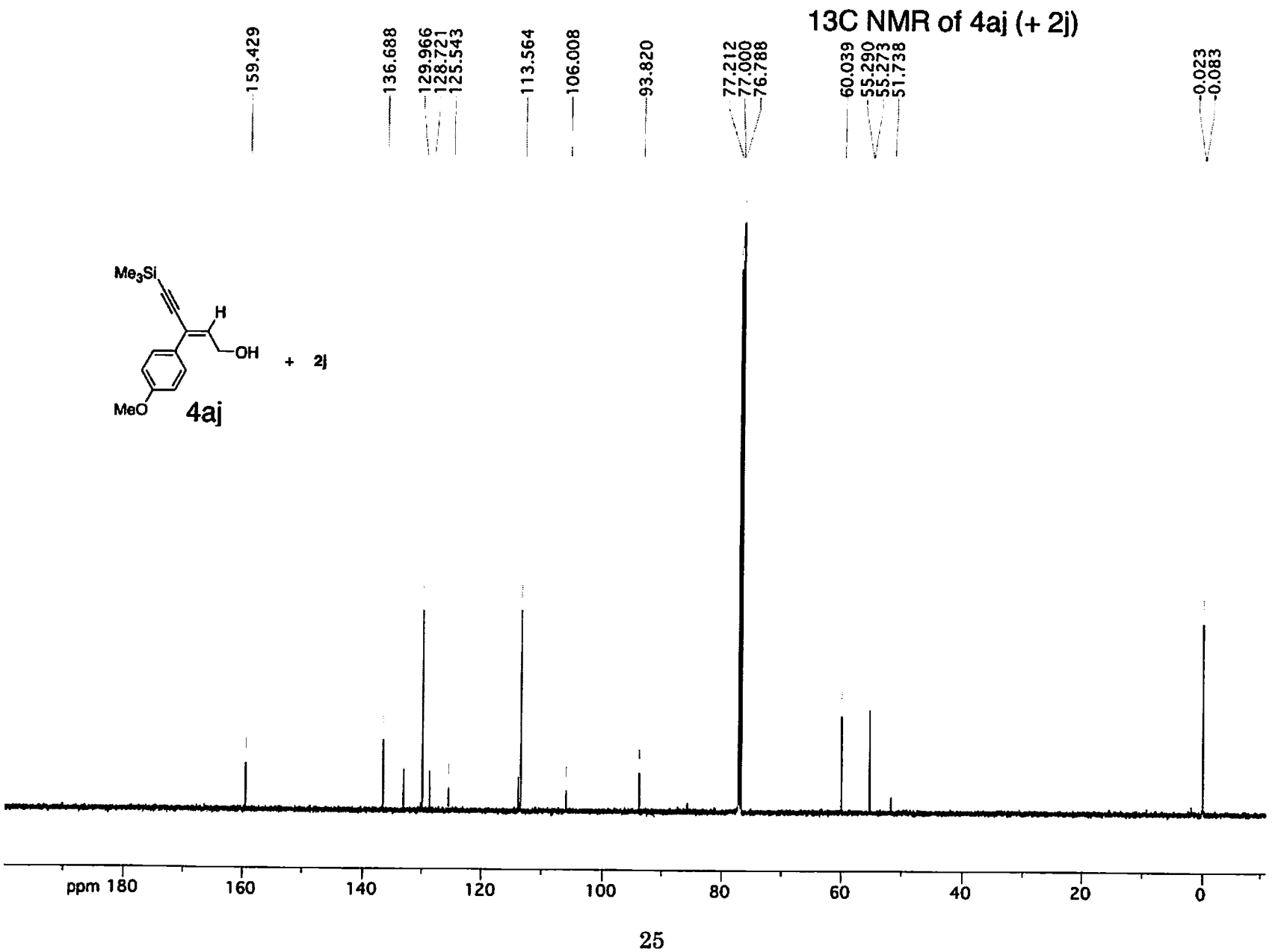
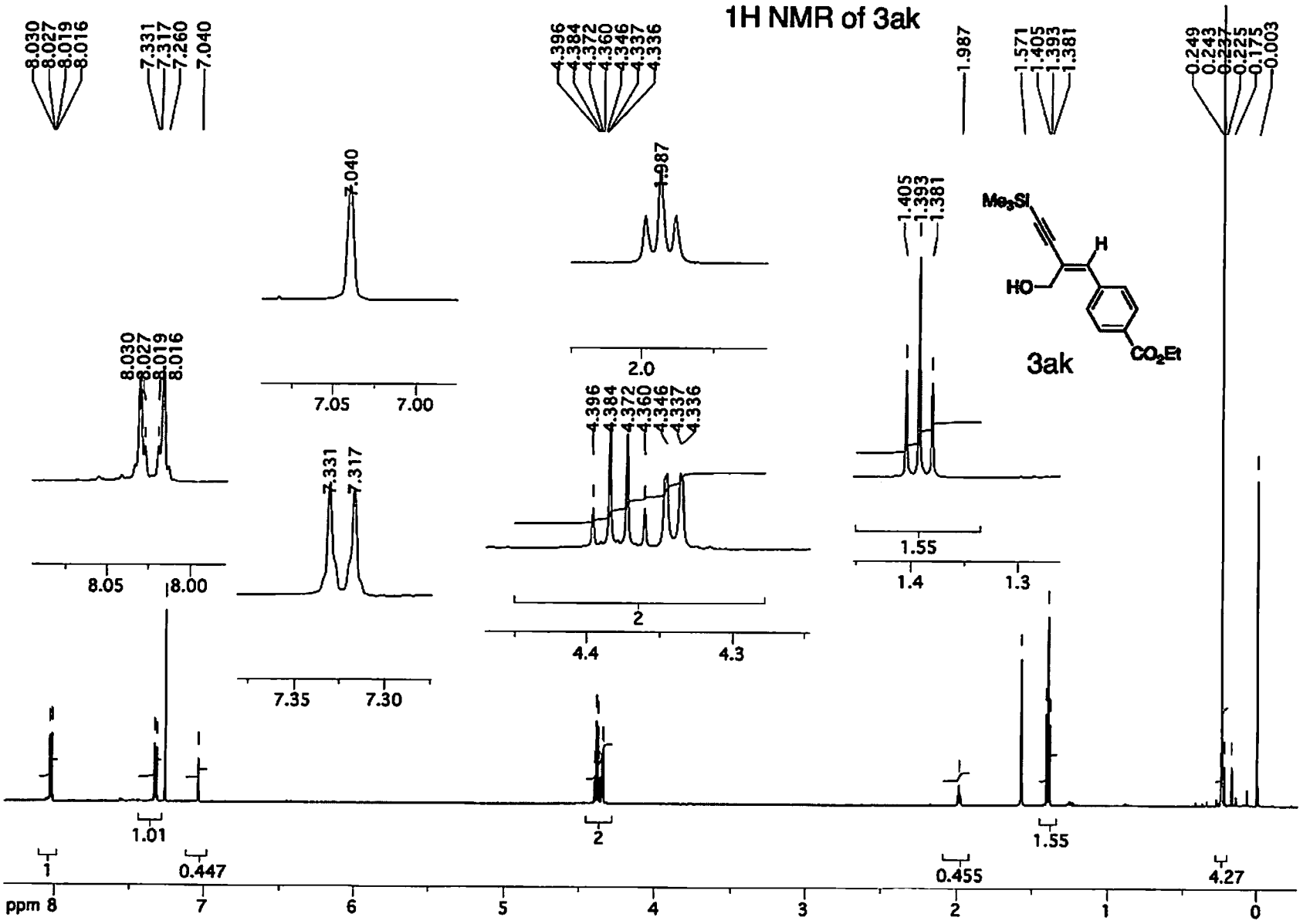


13C NMR of 3aj


1H NMR of 4aj (+ 2j)
7.288
7.273
7.261
6.901
6.886
6.305
6.293
6.282
4.318
4.308
4.297
3.825
1.560
1.412
1.403
1.393
0.202
0.000
Me3Si
H
OH
MeO
4aj
+ 2j
1.94
1.93
0.888
1.9
0.909
3
8.32
ppm 7
6
5
4
3
2
1
0


13C NMR of 4aj (+ 2j)
159.429
136.688
129.966
128.721
125.543
113.564
106.008
93.820
77.212
77.000
76.788
60.039
55.290
55.273
51.738
0.023
-0.083
Me3Si
H
OH
MeO
4aj
+ 2j
ppm 180
160
140
120
100
80
60
40
20
0


1H NMR of 3ak
8.030
8.027
8.019
8.016
7.331
7.317
7.260
7.040
4.396
4.384
4.372
4.360
4.346
4.337
4.336
1.987
1.571
1.405
1.393
1.381
0.249
0.243
0.237
0.225
0.175
0.003
Me3Si
H
HO
CO2Et
3ak
8.05
8.00
7.05
7.00
7.35
7.30
4.4
4.3
2.0
1.4
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1.55
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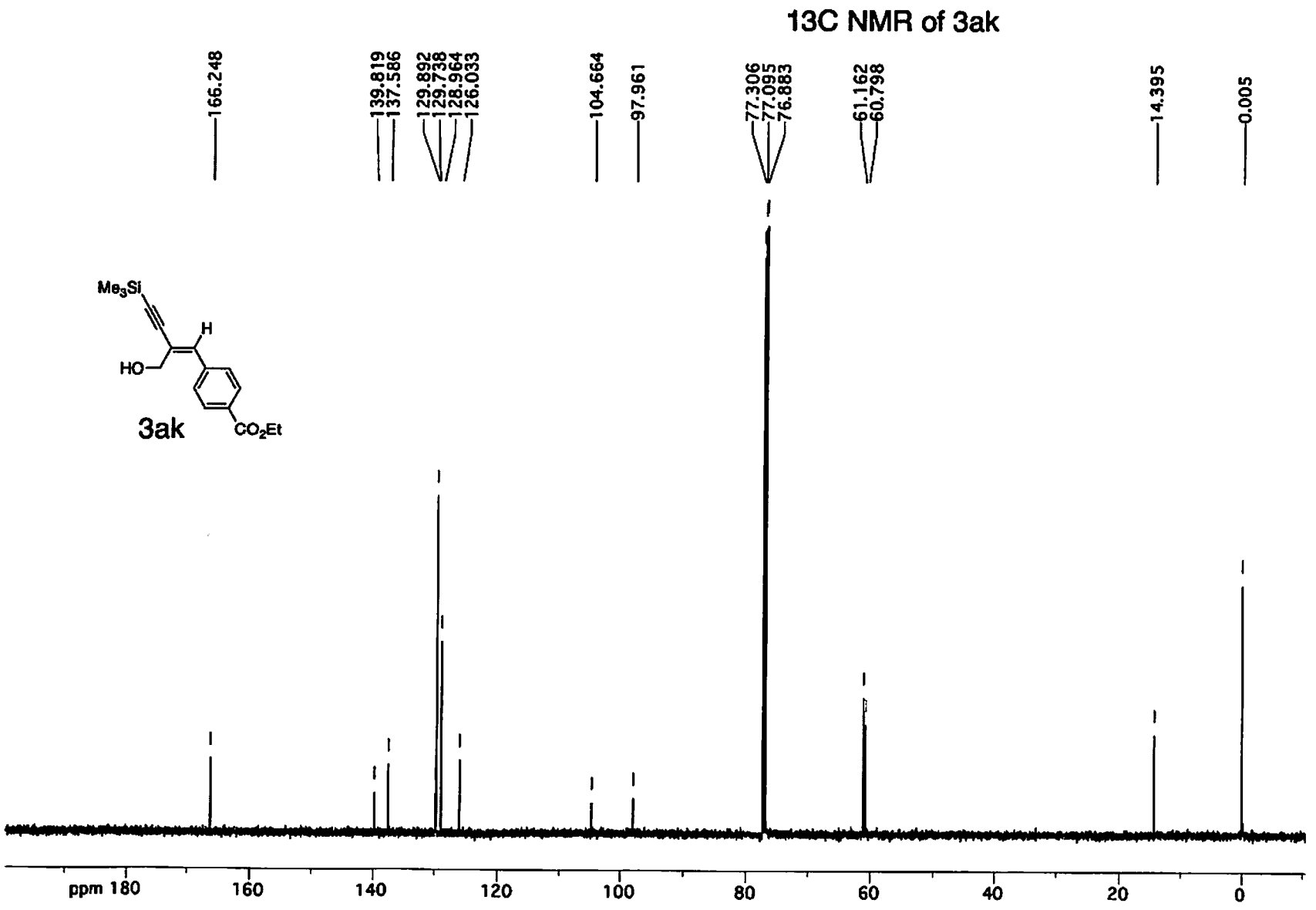
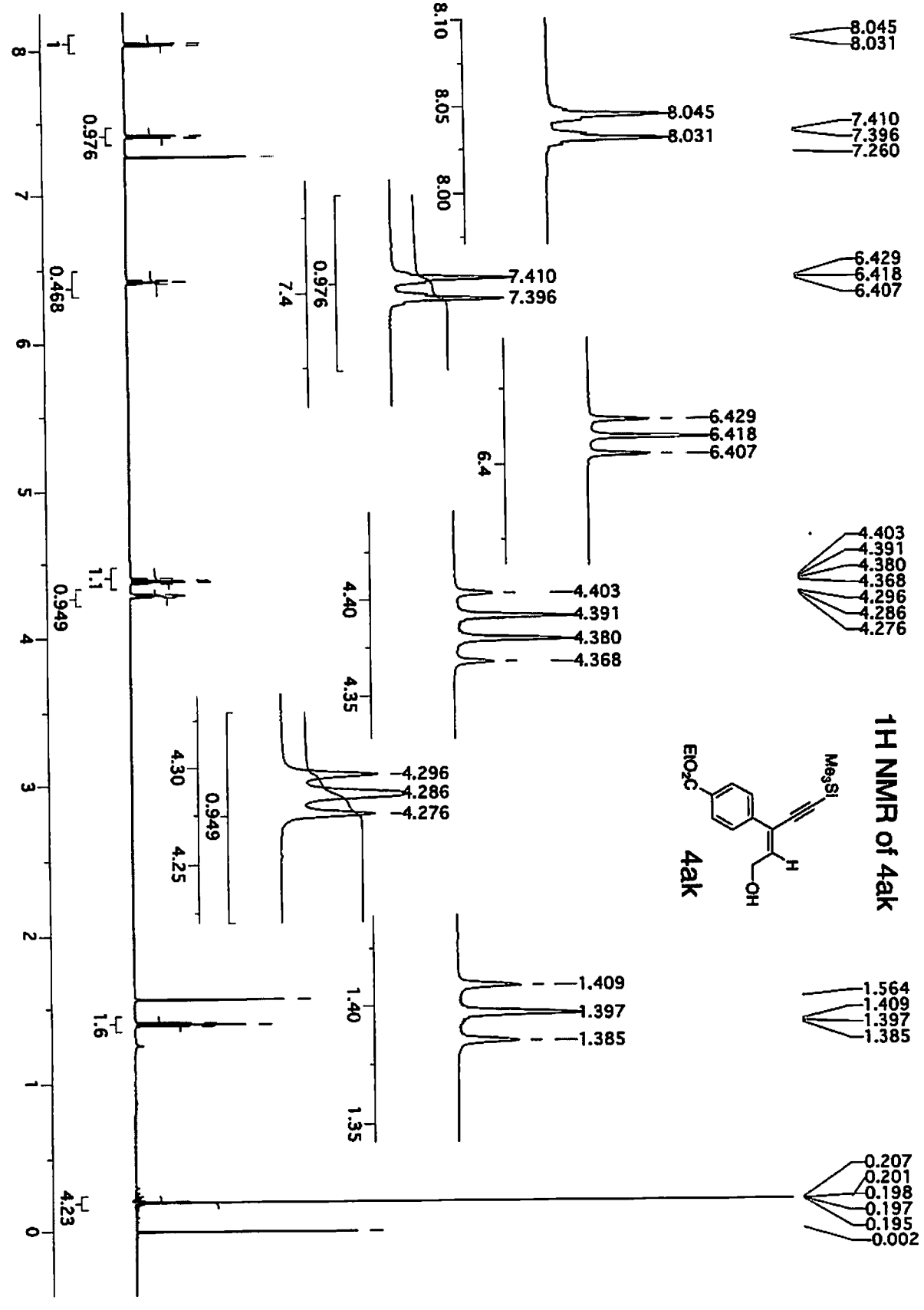

13C NMR of 3ak
166.248
139.819
137.586
129.892
129.738
128.964
126.033
104.664
97.961
77.306
77.095
76.883
61.162
60.798
14.395
0.005
Me3Si
H
HO
3ak
CO2Et
ppm 180
160
140
120
100
80
60
40
20
0


1H NMR of 4ak
4ak
EtO_2C
Me_3Si
OH
H
8.045
8.031
7.410
7.396
7.260
6.429
6.418
6.407
4.403
4.391
4.380
4.368
4.296
4.286
4.276
1.409
1.397
1.385
1.564
1.409
1.397
1.385
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0.197
0.195
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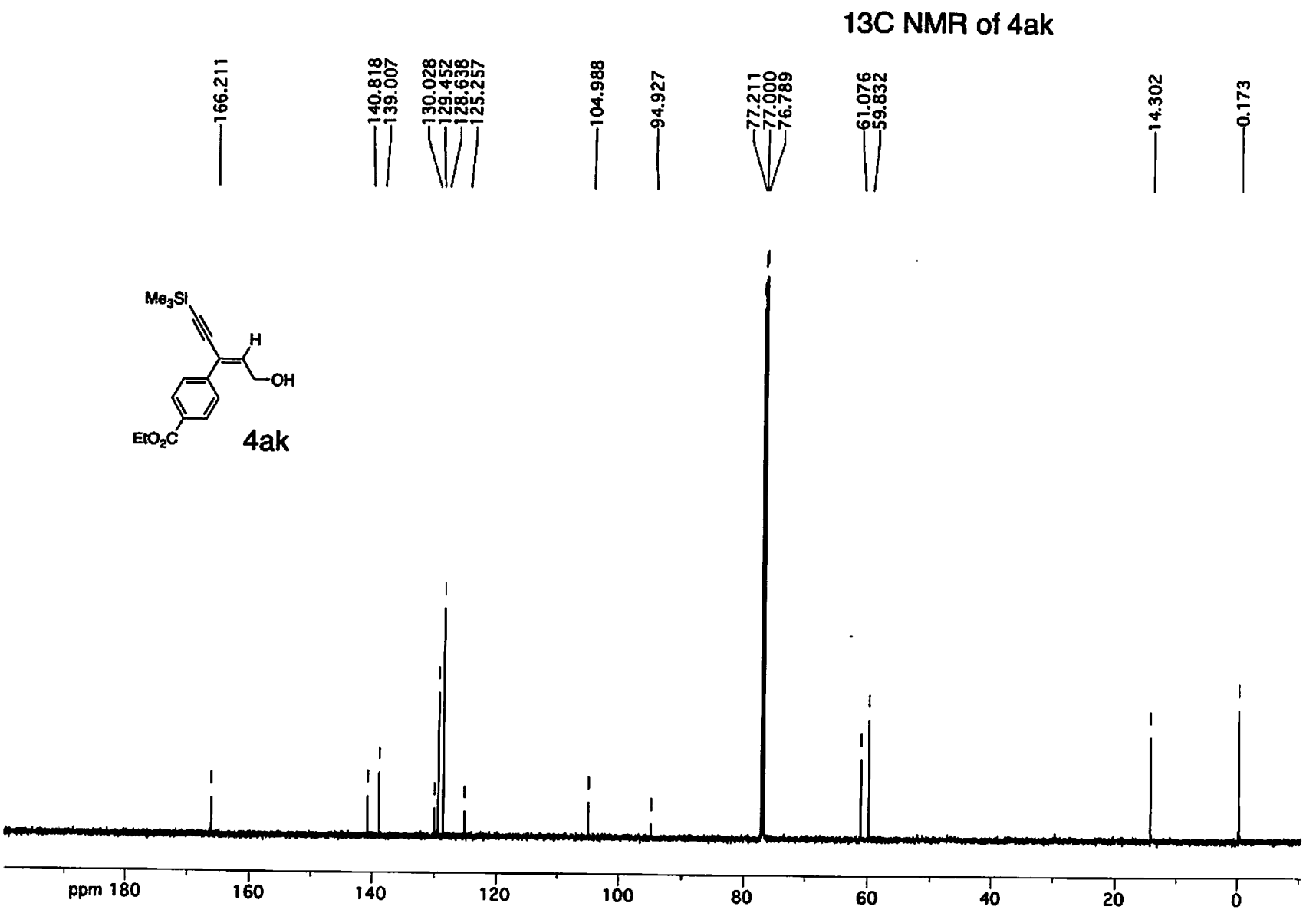
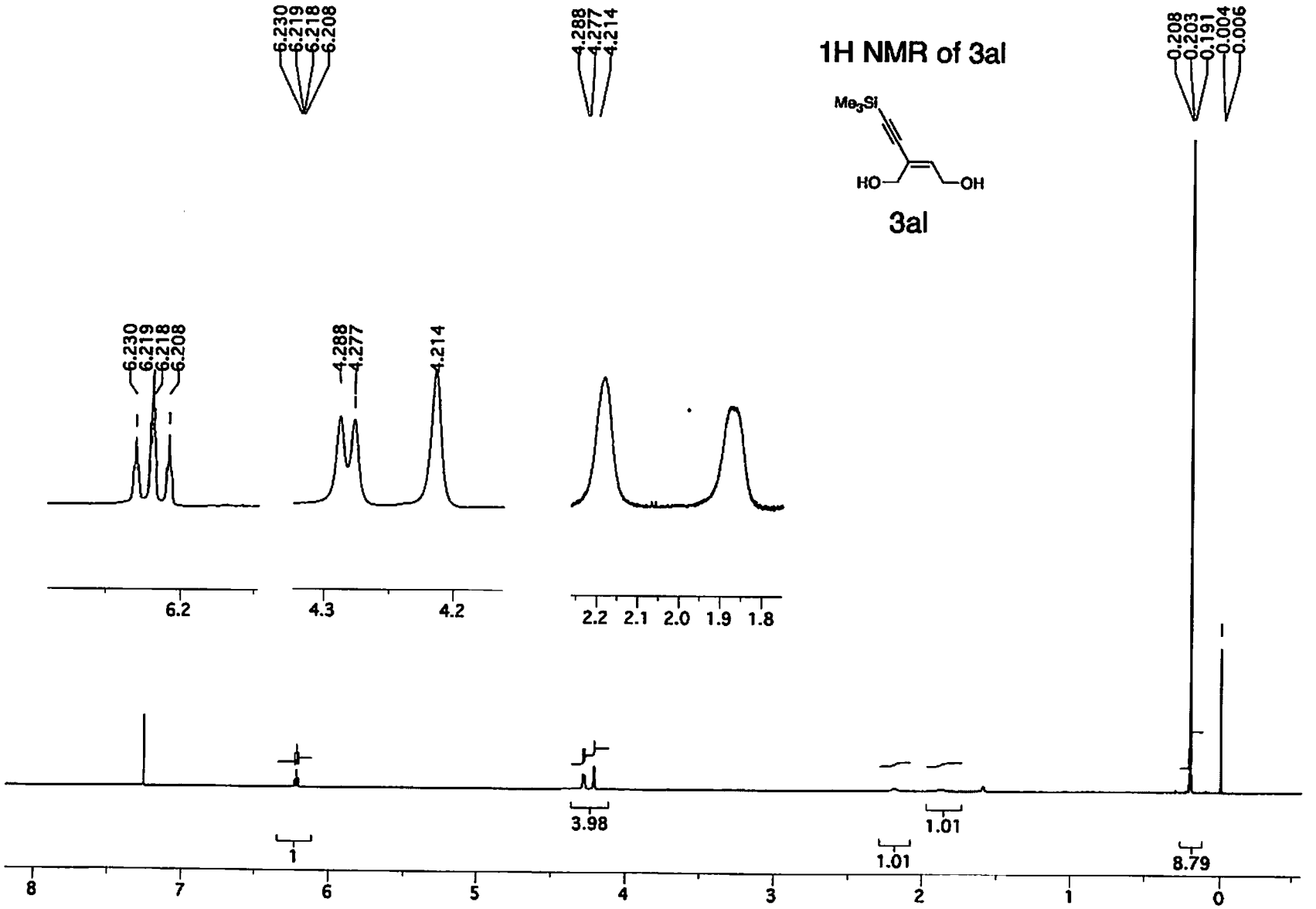
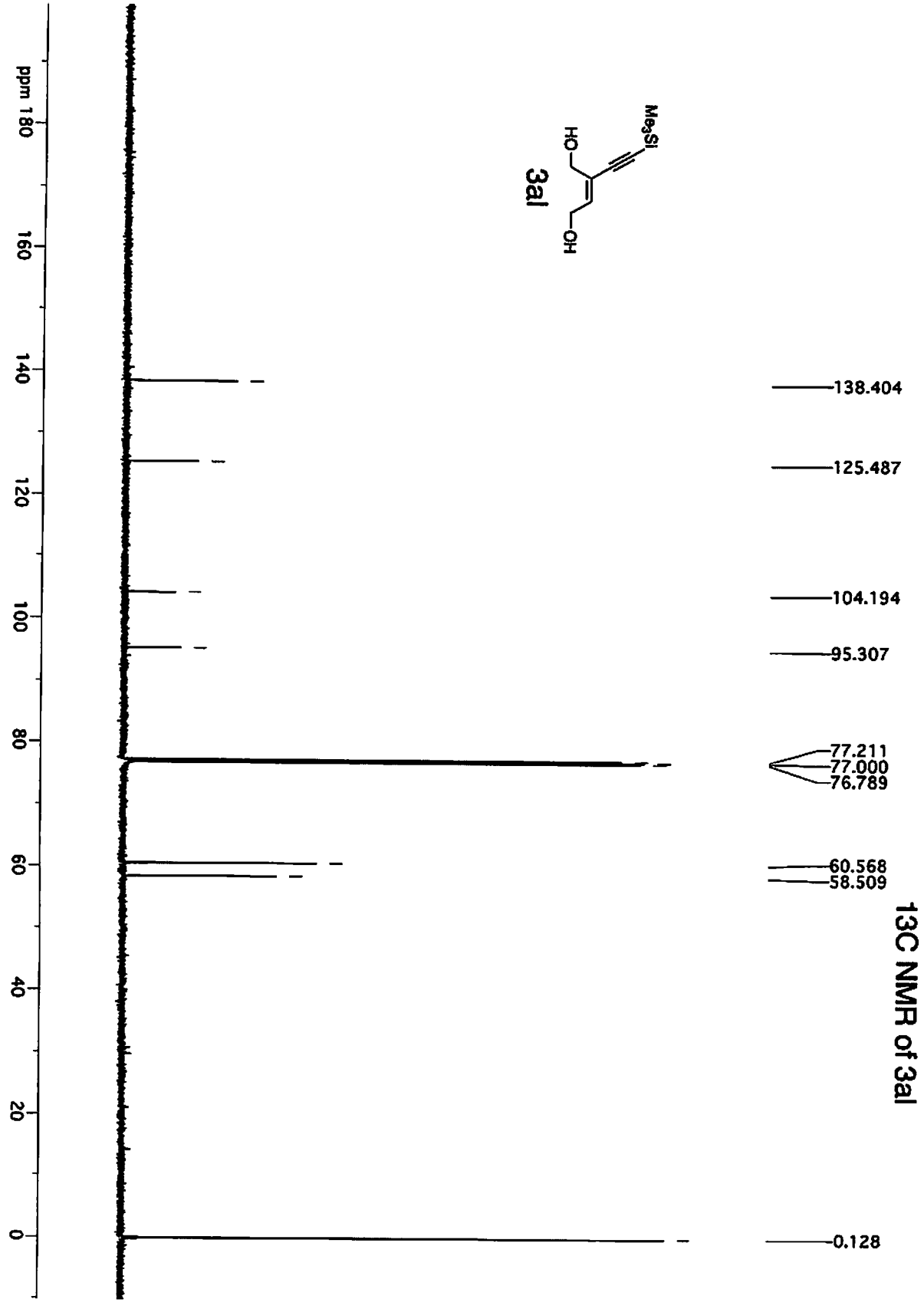
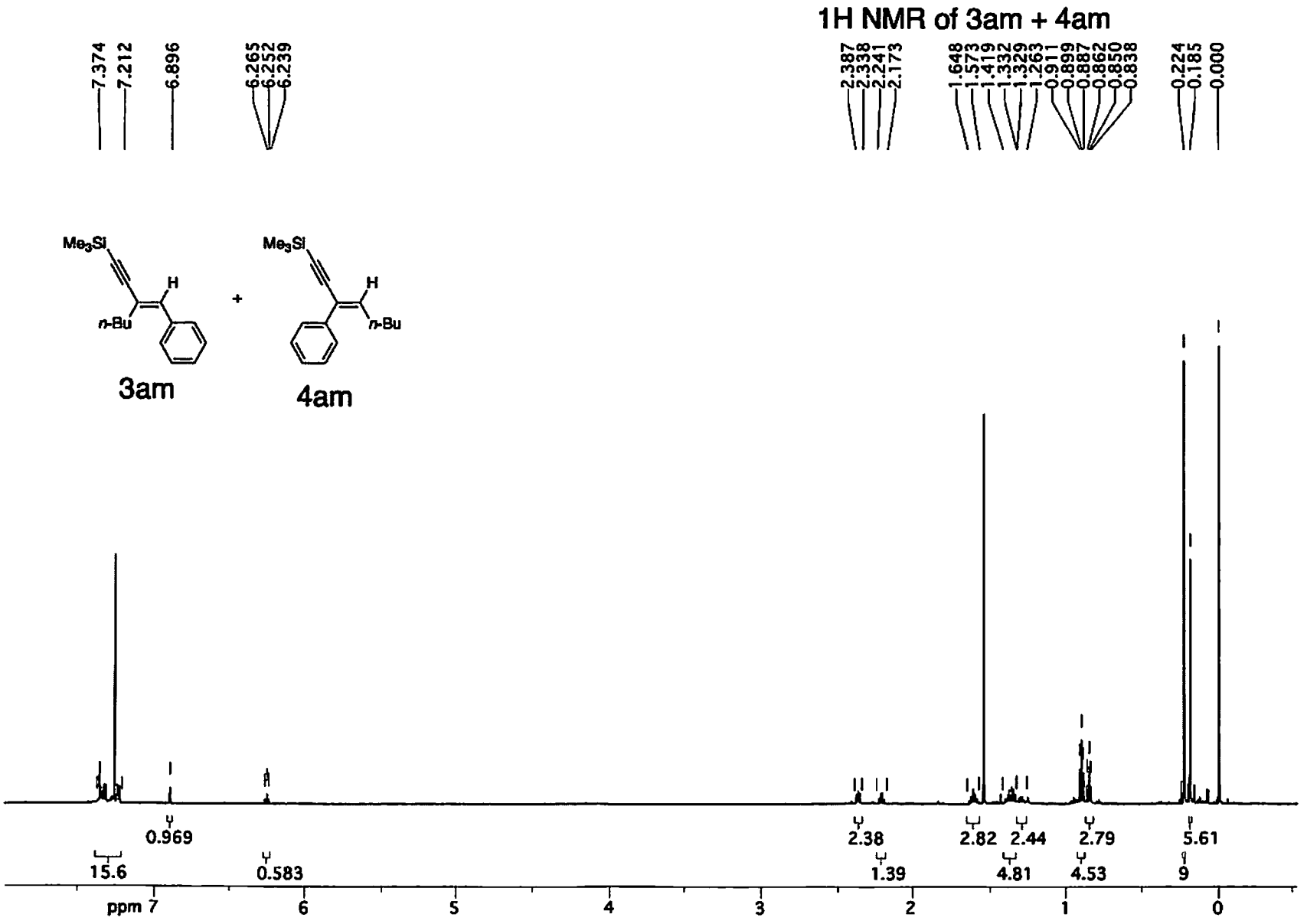
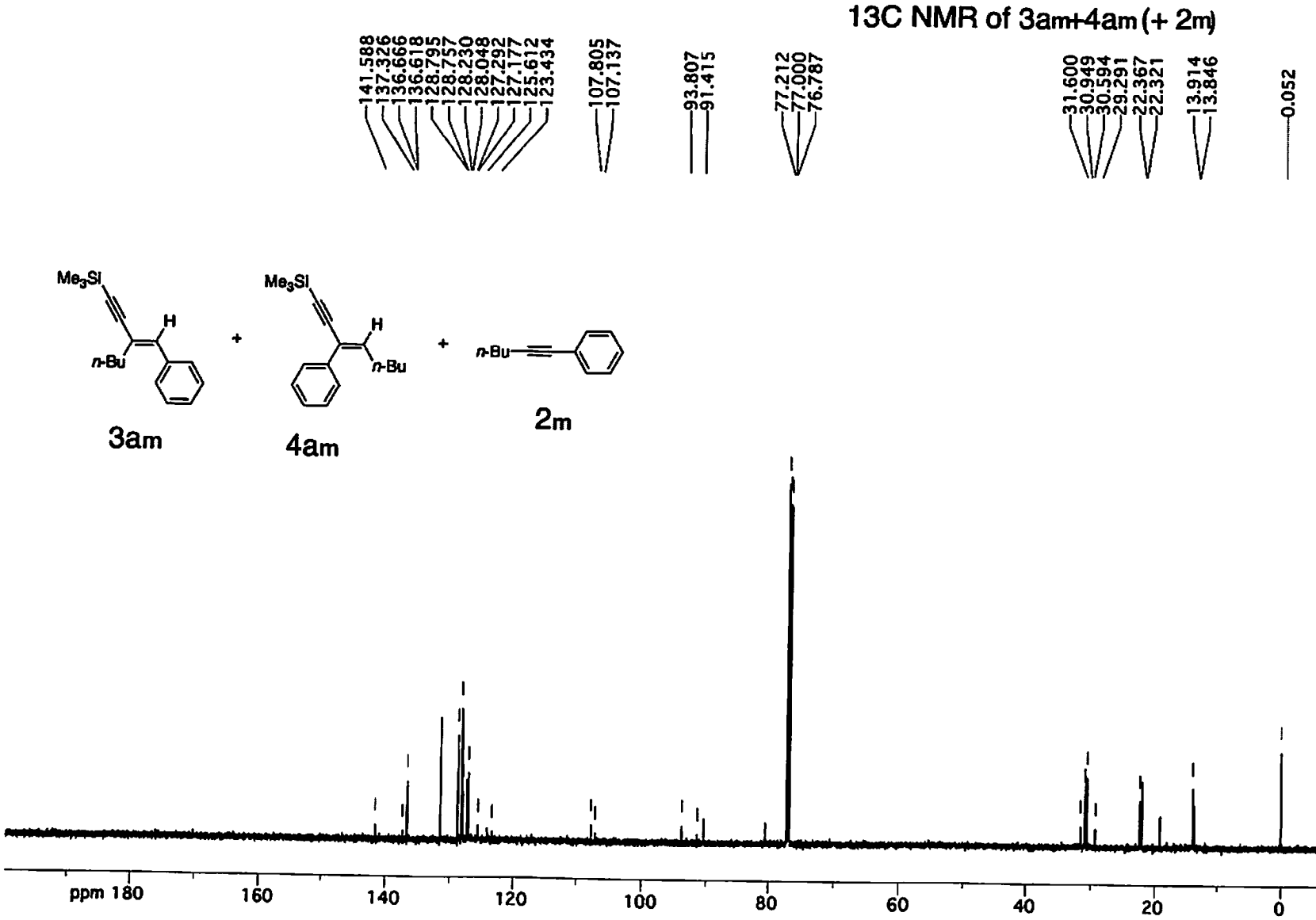

13C NMR of 4ak
166.211
140.818
139.007
130.028
129.452
128.638
125.257
104.988
94.927
77.211
77.000
76.789
61.076
59.832
14.302
0.173
Me3Si
H
OH
EtO2C
4ak
ppm 180
160
140
120
100
80
60
40
20
0

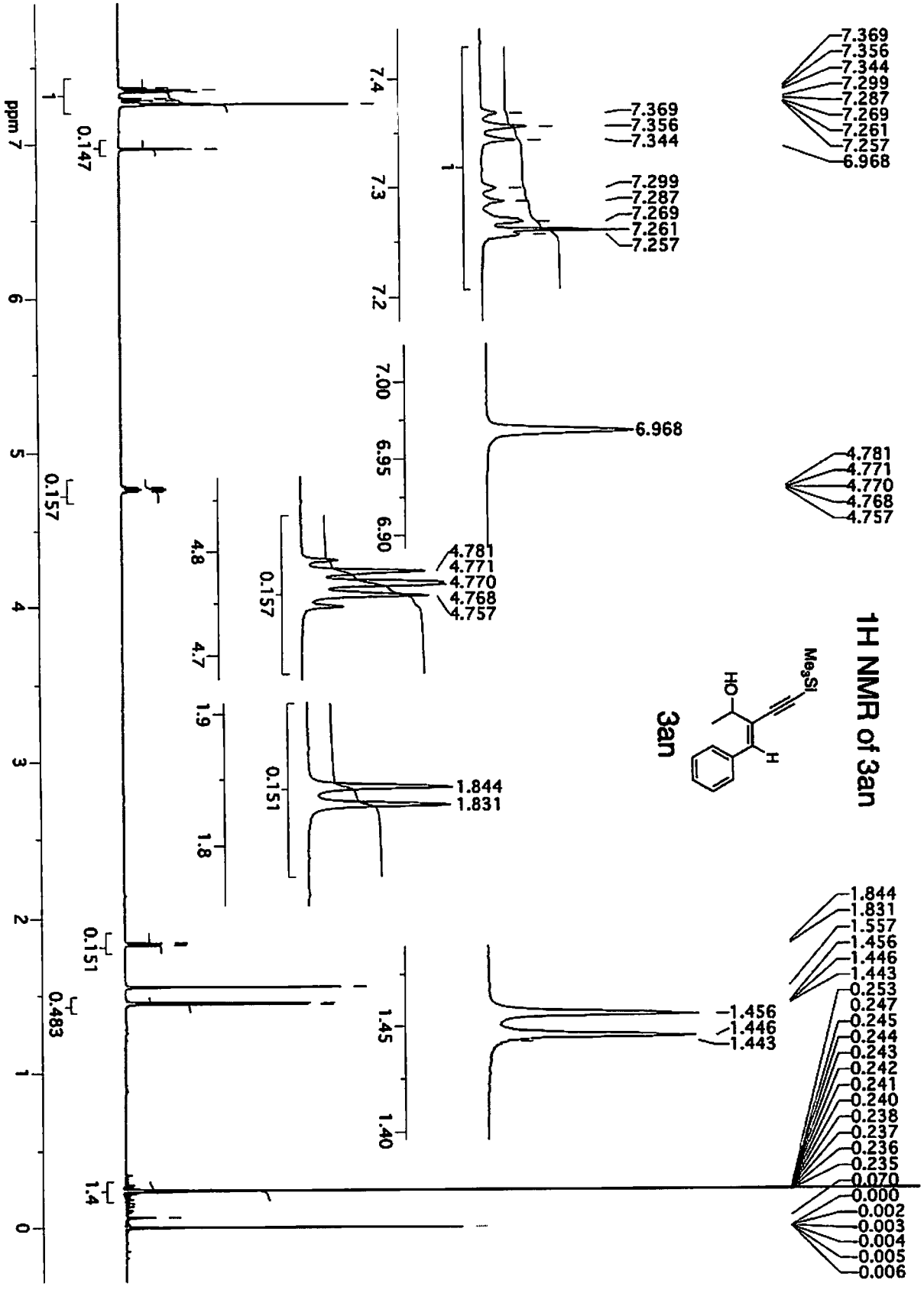

1H NMR of 3al
Me3Si
HO
OH
3al
6.230
6.219
6.218
6.208
4.288
4.277
4.214
0.208
0.203
0.191
0.004
0.006
6.2
4.3
4.2
2.2 2.1 2.0 1.9 1.8
1
3.98
1.01
1.01
8.79
8 7 6 5 4 3 2 1 0

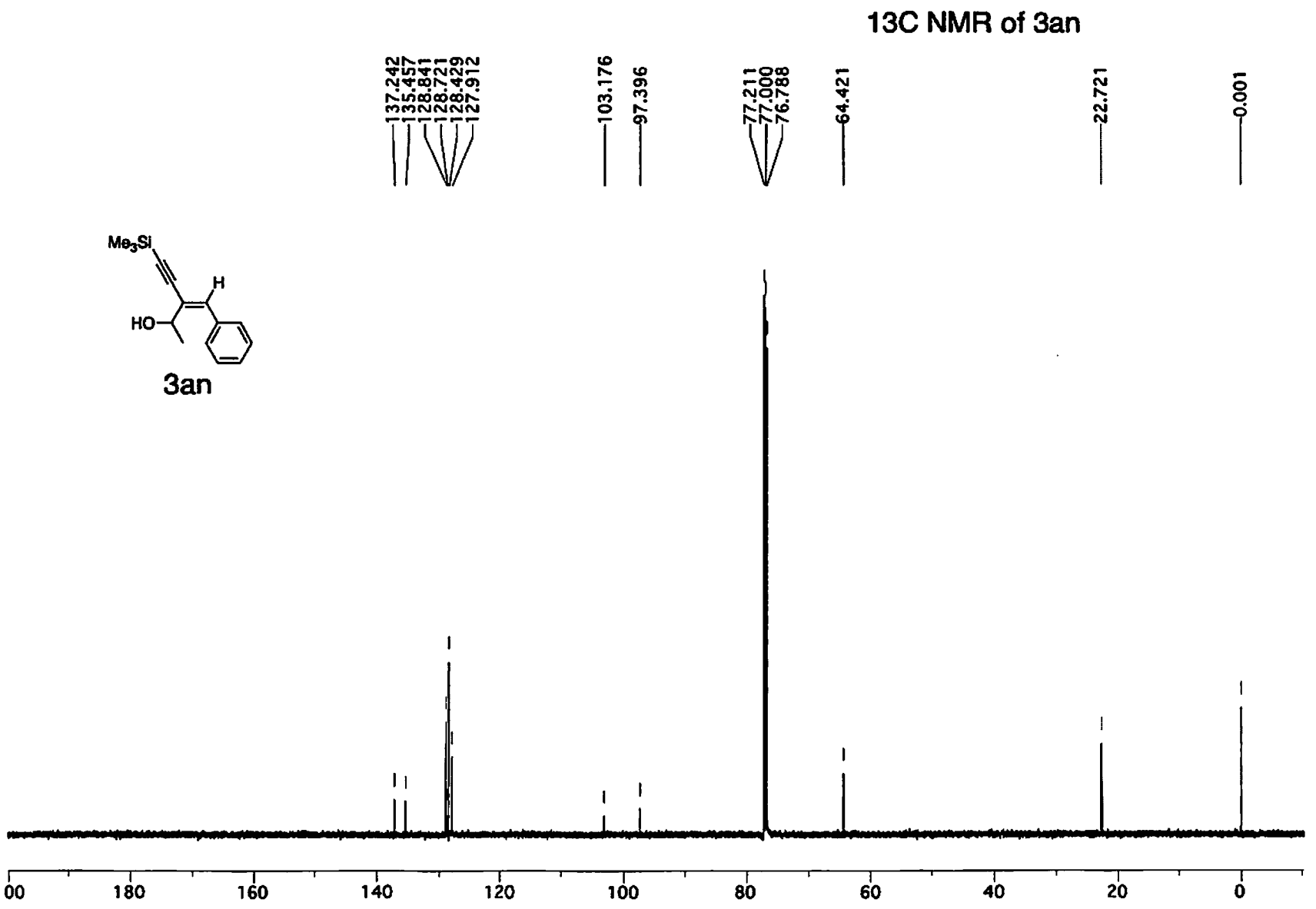


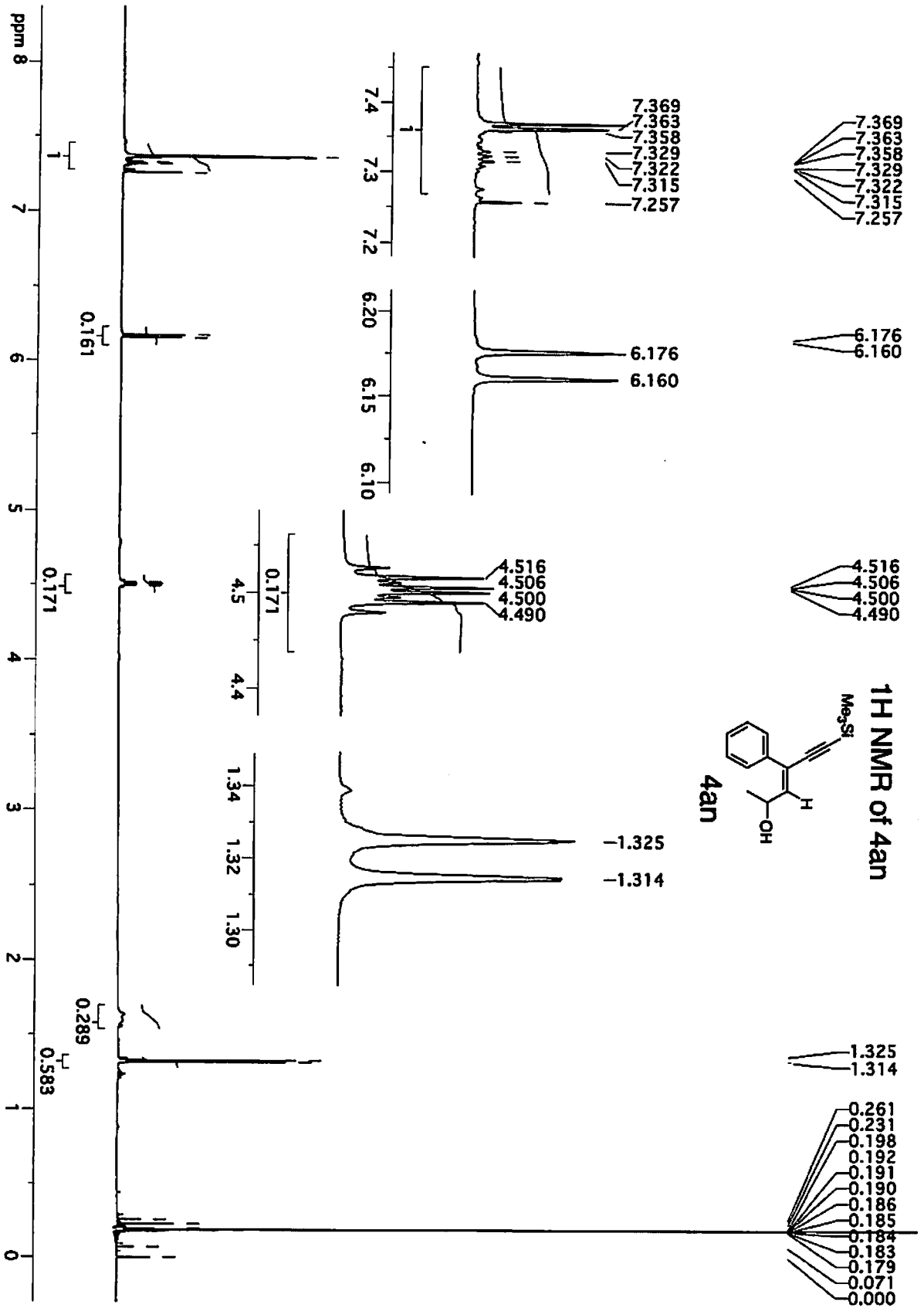
13C NMR of 3al

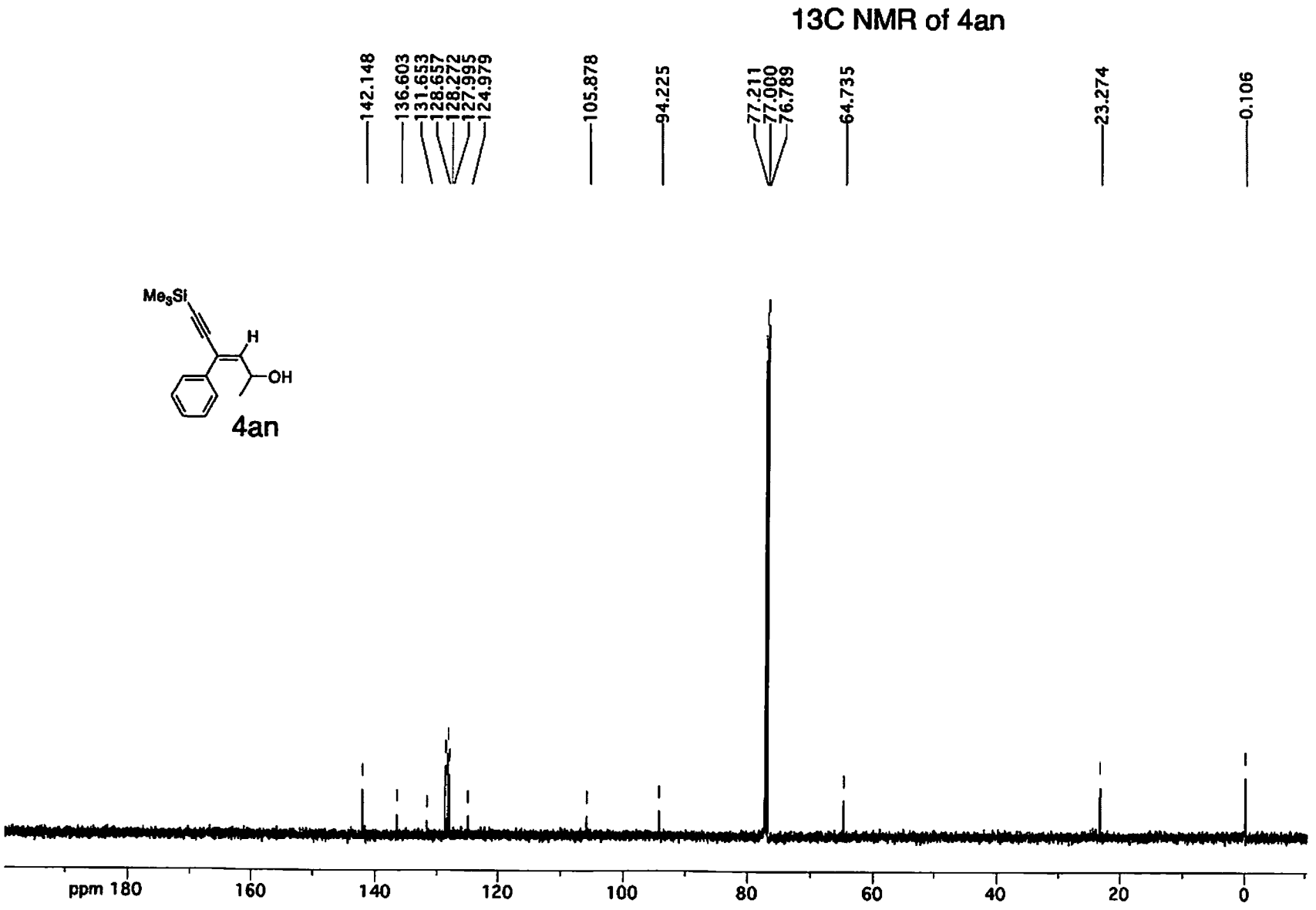

1H NMR of 3am + 4am
7.374
7.212
6.896
6.265
6.252
6.239
2.387
2.338
2.241
2.173
1.648
1.573
1.419
1.332
1.329
1.263
0.911
0.899
0.887
0.862
0.850
0.838
0.224
0.185
0.000
Me3Si
H
n-Bu
+
Me3Si
H
n-Bu
3am
4am
0.969
0.583
2.38
2.82
2.44
2.79
5.61
15.6
1.39
4.81
4.53
9
ppm 7
6
5
4
3
2
1
0


13C NMR of 3am+4am (+ 2m)
141.588
137.326
136.666
136.618
128.795
128.757
128.230
128.048
127.292
127.177
125.612
123.434
107.805
107.137
93.807
91.415
77.212
77.000
76.787
31.600
30.949
30.594
29.291
22.367
22.321
13.914
13.846
0.052
Me3Si
H
n-Bu
3am
4am
2m
ppm 180
160
140
120
100
80
60
40
20
0


1H NMR of 3an
3an
HO
Me3Si
H
7.369
7.356
7.344
7.299
7.287
7.269
7.261
7.257
6.968
4.781
4.771
4.770
4.768
4.757
1.844
1.831
1.557
1.456
1.446
1.443
0.253
0.247
0.245
0.244
0.243
0.242
0.241
0.240
0.238
0.237
0.236
0.235
0.070
0.000
0.002
0.003
0.004
0.005
0.006
0.147
0.157
0.151
0.483
1.4
ppm


13C NMR of 3an
137.242
135.457
128.841
128.721
128.429
127.912
103.176
97.396
77.211
77.000
76.788
64.421
22.721
0.001
Me3Si
H
HO
3an
00
180
160
140
120
100
80
60
40
20
0

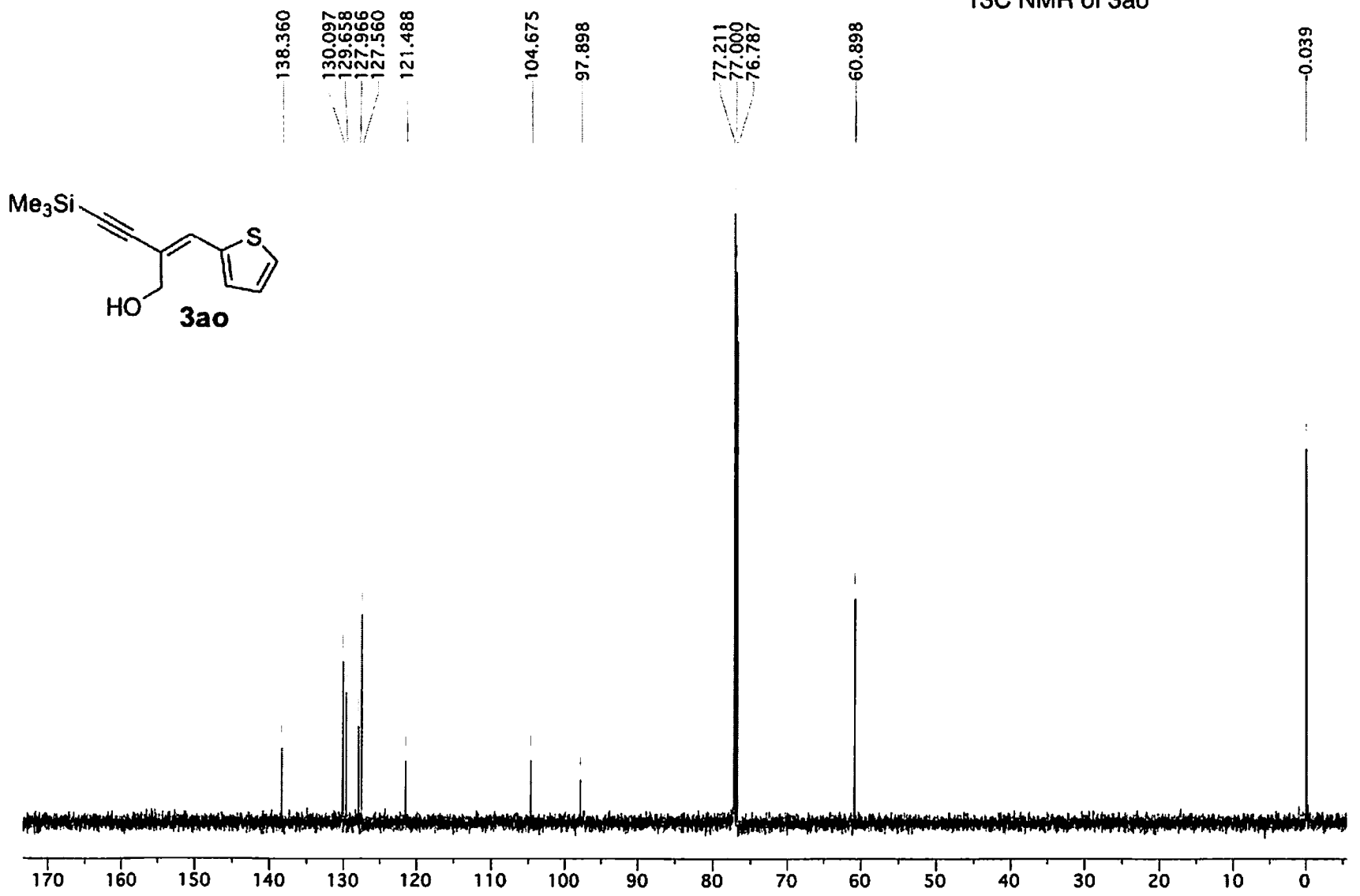

1H NMR of 4an
4an
Me3Si
OH
H
7.369
7.363
7.358
7.329
7.322
7.315
7.257
6.176
6.160
4.516
4.506
4.500
4.490
1.325
1.314
0.261
0.231
0.198
0.192
0.191
0.190
0.186
0.185
0.184
0.183
0.179
0.071
0.000
ppm


13C NMR of 4an
142.148
136.603
131.653
128.657
128.272
127.995
124.979
105.878
94.225
77.211
77.000
76.789
64.735
23.274
0.106
Me3Si
H
OH
4an
ppm 180
160
140
120
100
80
60
40
20
0

7.388
7.387
7.380
7.378
7.260
7.082
7.072
7.066
7.057
7.050
7.048
7.042
Me3Si
HO
3ao
S
4.487
4.485
4.476
4.474
2.045
1.978
1.975
1.972
1.567
1.564
0.238
0.232
0.226
0.188
0.186
0.076
0.068
0.002
1
2.99
2.03
0.952
9.4
8
7
6
5
4
3
2
1
0

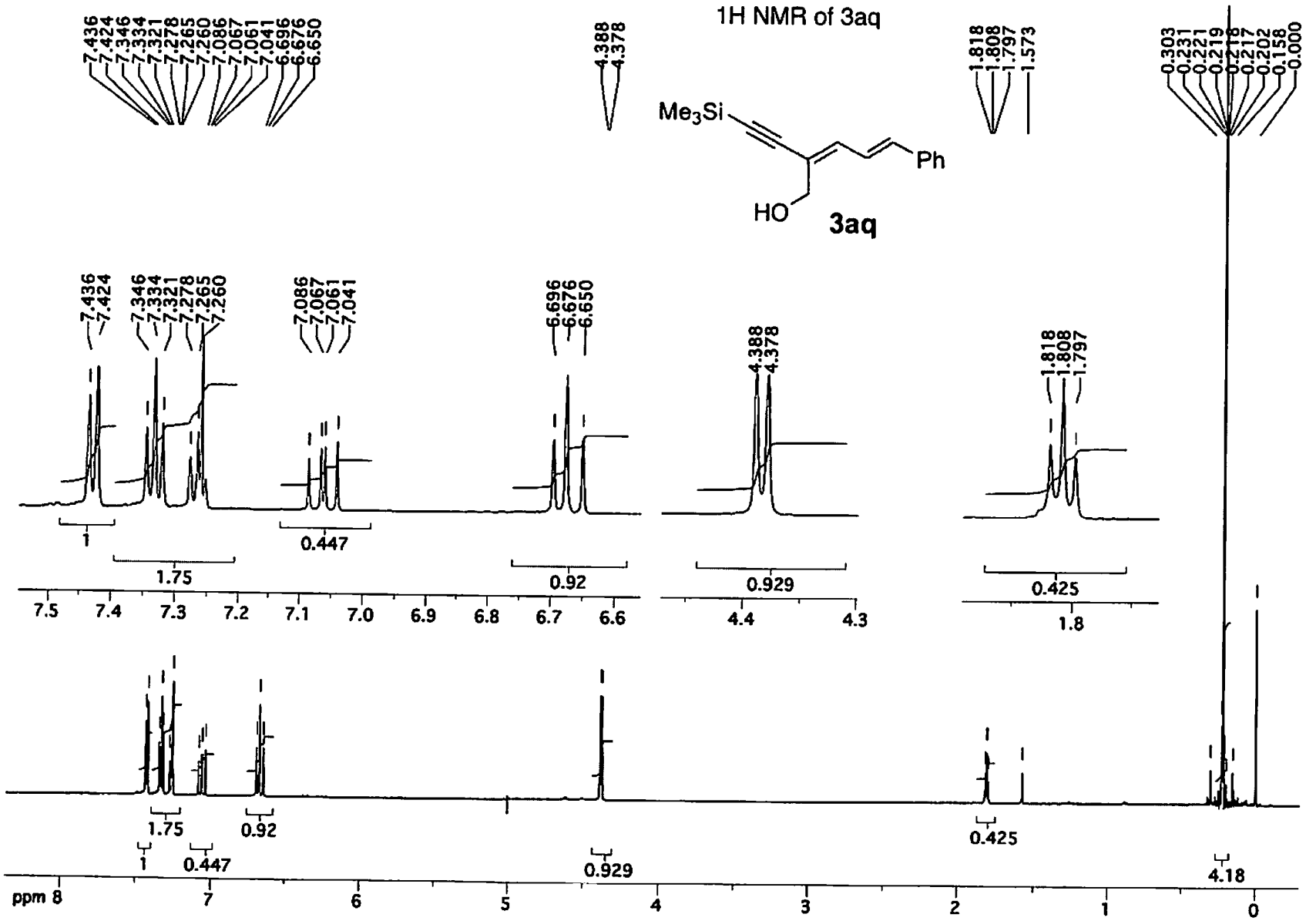
1H NMR of 3ao

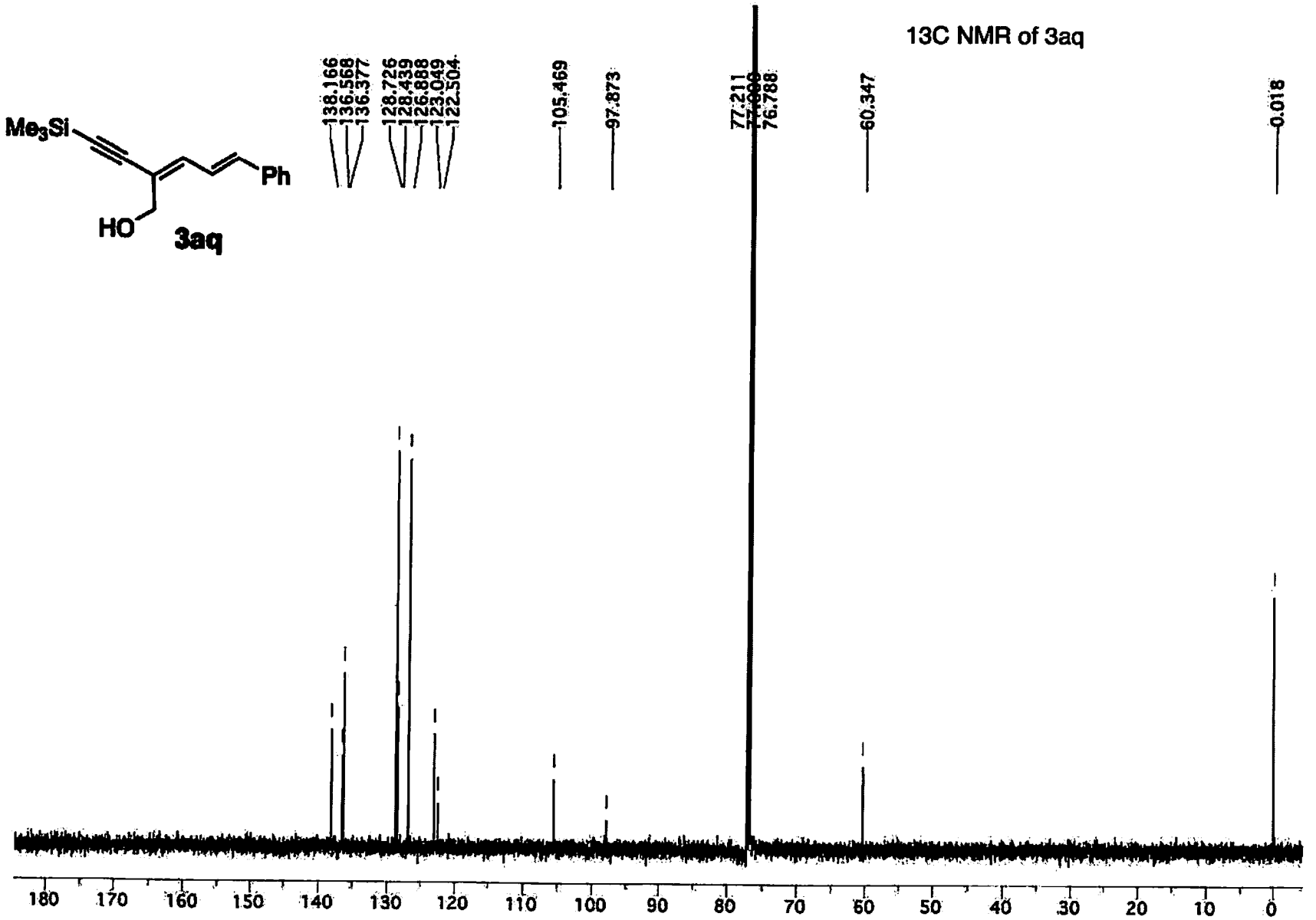
13C NMR of 3ao

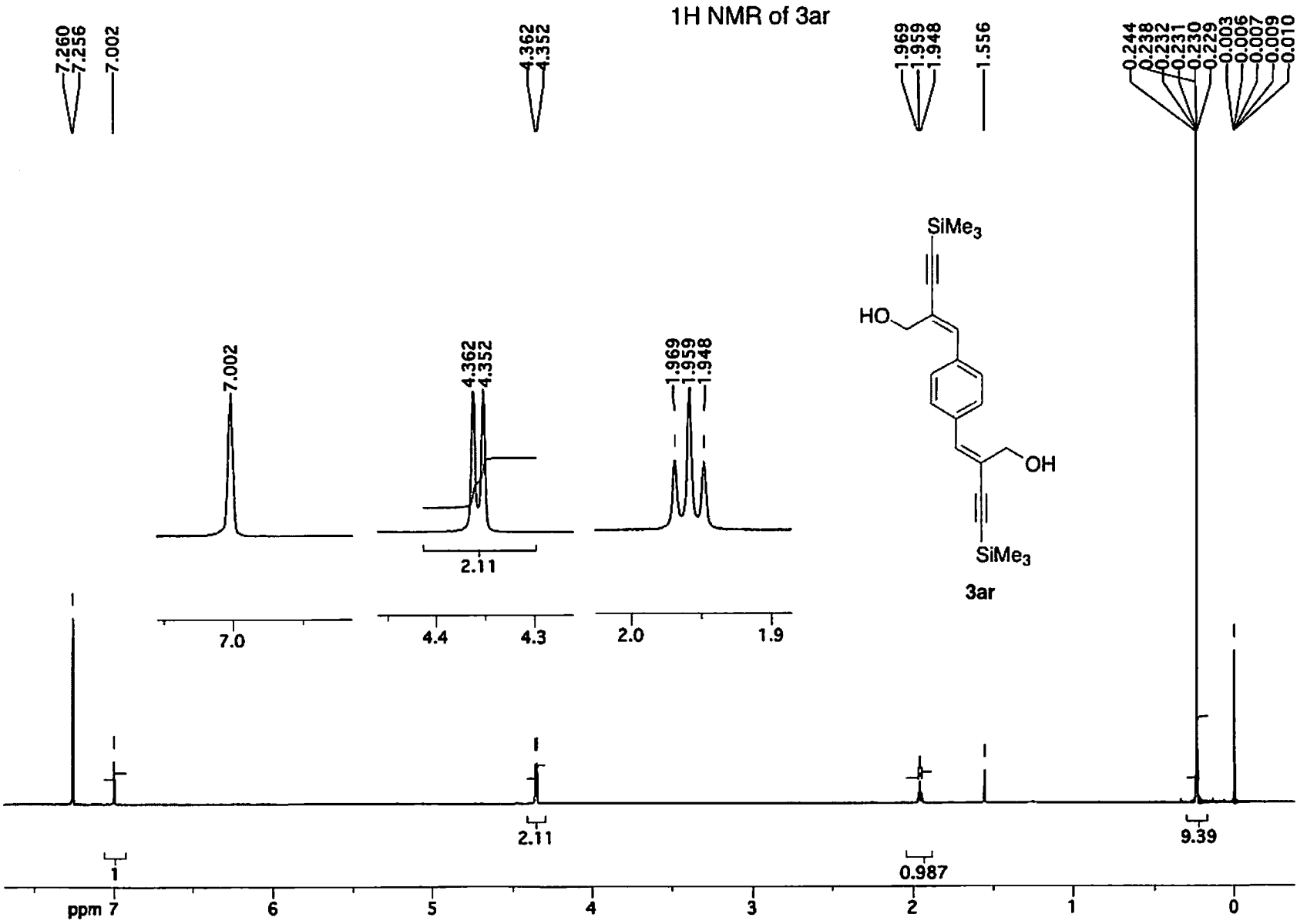


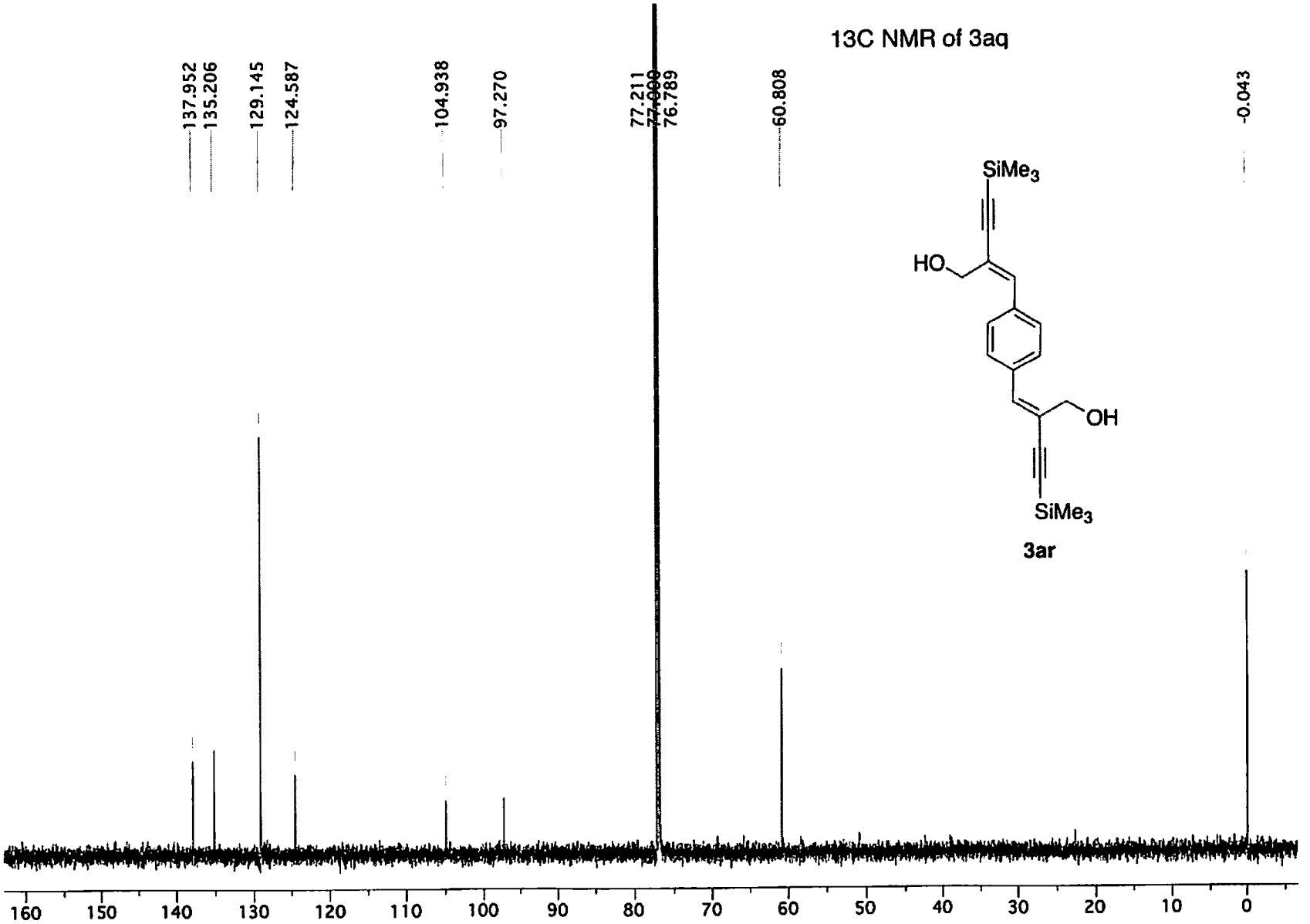
8.579
8.577
8.576
8.570
8.569
7.737
7.733
7.724
7.721
7.711
7.708
7.276
7.263
7.260
7.209
7.208
7.201
7.199
7.197
7.195
7.189
7.187
6.934
4.353
0.225
0.218
0.216
0.215
0.213
0.110
0.006
Me3Si
HO
N
3ap
1H NMR of 3ap

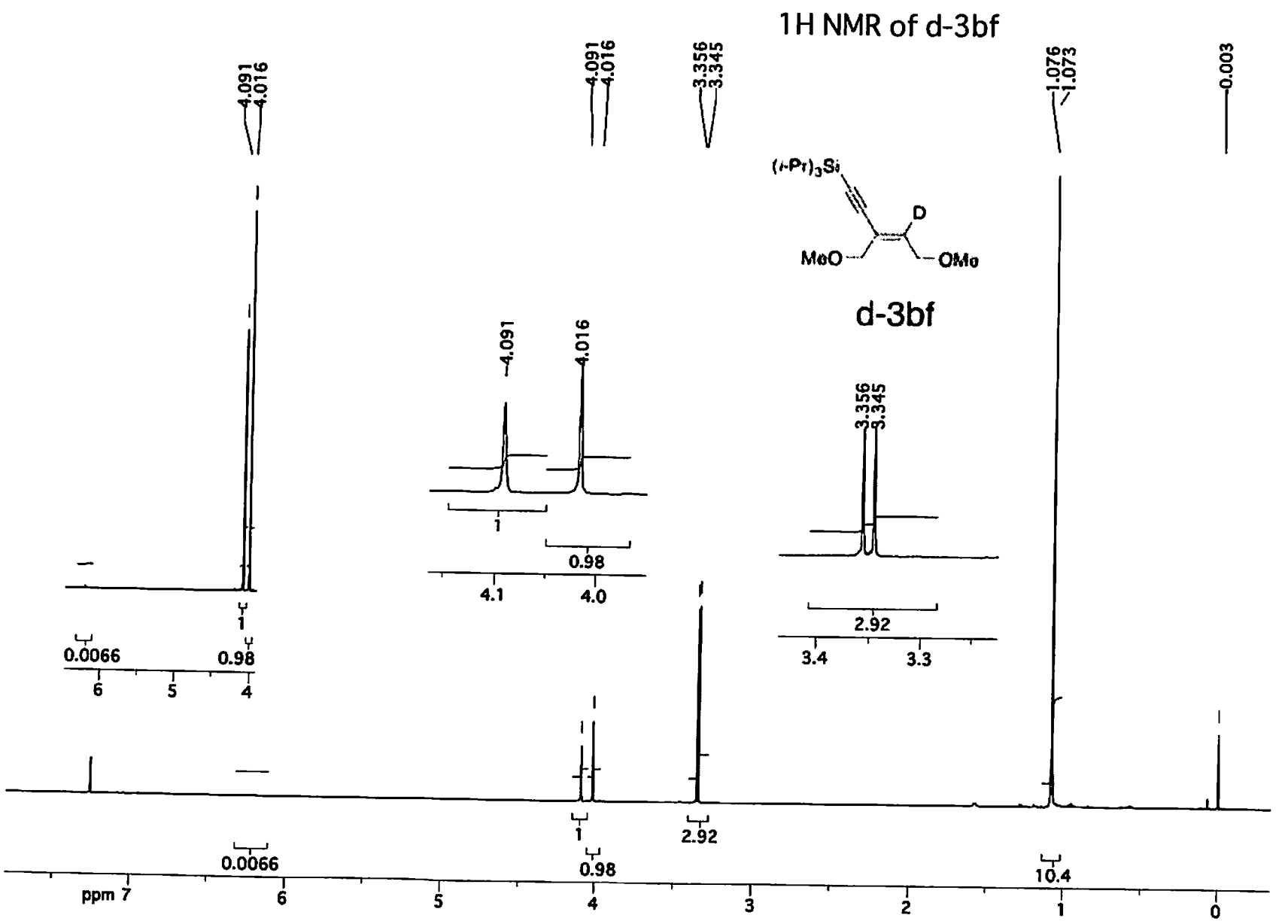
154.113
148.851
137.410
136.130
131.027
125.397
122.199
106.995
97.987
77.212
77.000
76.788
62.718
0.134
Me3Si
HO
N
3ap
13C NMR of 3ap

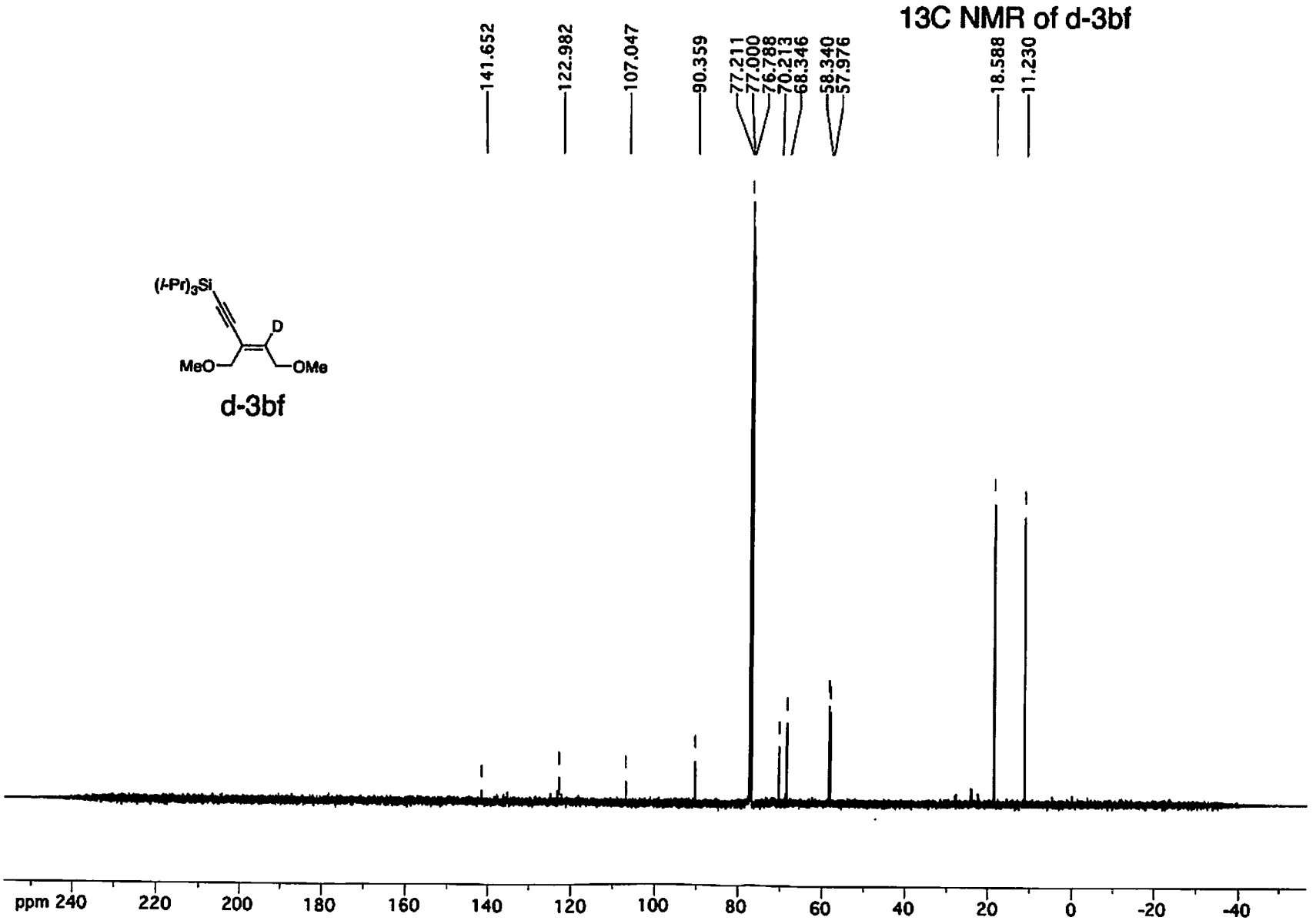

1H NMR of 3aq
Me3Si
Ph
HO
3aq
7.436
7.424
7.346
7.334
7.321
7.278
7.265
7.260
7.086
7.067
7.061
7.041
6.696
6.676
6.650
4.388
4.378
1.818
1.808
1.797
1.573
0.303
0.231
0.221
0.219
0.218
0.217
0.202
0.158
0.000
1
1.75
0.447
0.92
0.929
0.425
4.18
ppm 8
7
6
5
4
3
2
1
0

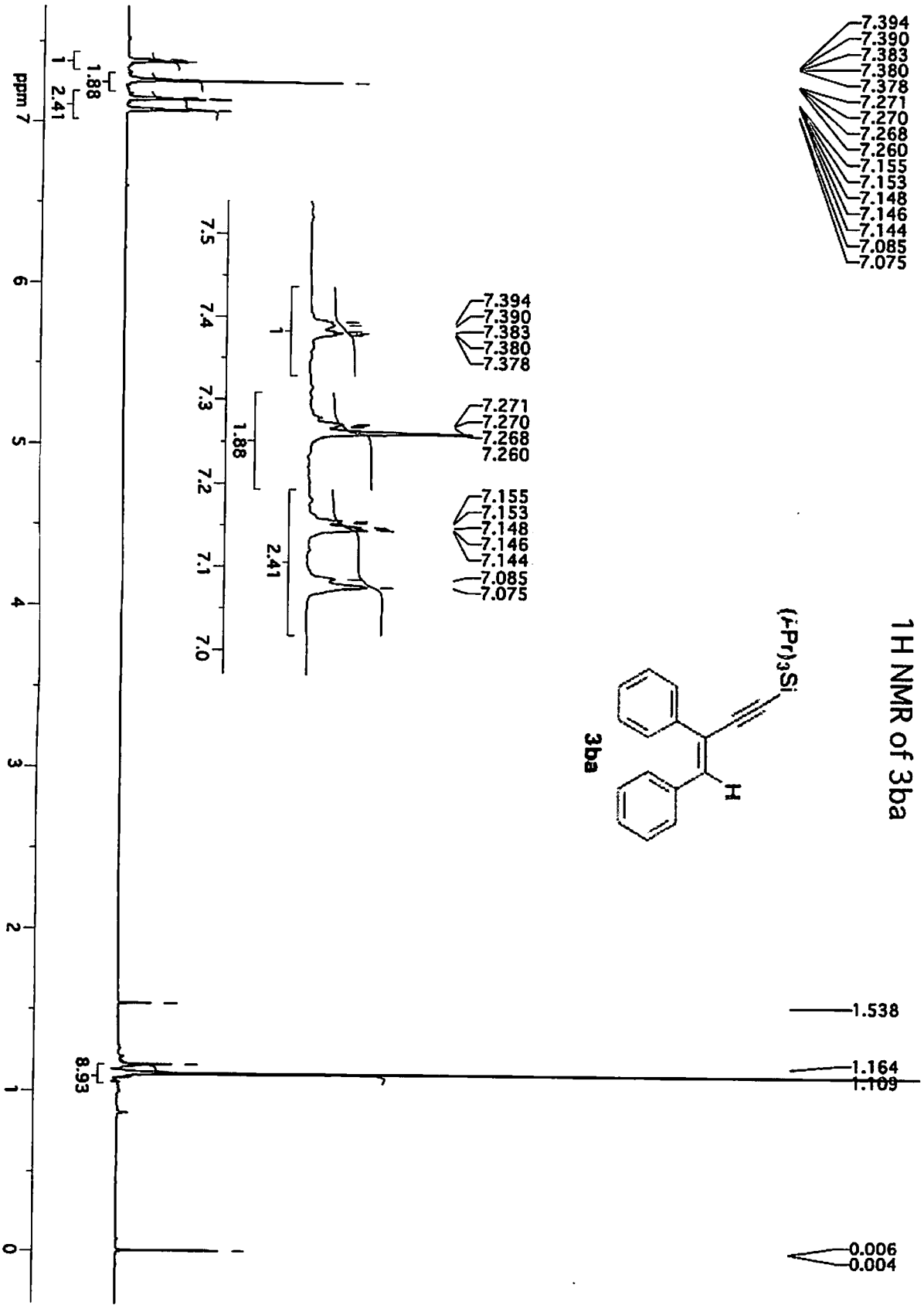

13C NMR of 3aq
Me3Si
Ph
HO
3aq
138.166
136.568
136.377
128.726
128.439
126.888
123.049
122.504
105.469
97.873
77.211
76.788
60.347
0.018
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0


1H NMR of 3ar
7.260
7.256
7.002
4.362
4.352
1.969
1.959
1.948
1.556
0.244
0.238
0.232
0.231
0.230
0.229
0.003
0.006
0.007
0.009
0.010
SiMe3
HO
OH
SiMe3
3ar
2.11
9.39
1
0.987
ppm 7
6
5
4
3
2
1
0


13C NMR of 3aq
137.952
135.206
129.145
124.587
104.938
97.270
77.211
77.000
76.789
60.808
-0.043
SiMe3
HO
OH
SiMe3
3ar
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0


1H NMR of d-3bf
4.091
4.016
3.356
3.345
1.076
1.073
0.003
(i-Pr)3Si
D
MeO
OMe
d-3bf
0.0066
0.98
2.92
10.4
ppm 7
6
5
4
3
2
1
0


13C NMR of d-3bf
141.652
122.982
107.047
90.359
77.211
77.000
76.788
70.213
68.346
58.340
57.976
18.588
11.230
(i-Pr)3Si
D
MeO
OMe
d-3bf
ppm 240
220
200
180
160
140
120
100
80
60
40
20
0
-20
-40


1H NMR of 3ba
3ba
(i-Pr)3Si
H
7.394
7.390
7.383
7.380
7.378
7.271
7.270
7.268
7.260
7.155
7.153
7.148
7.146
7.144
7.085
7.075
1.538
1.164
1.109
0.006
0.004
1.88
2.41
8.93
ppm

13C NMR of 3ba