

**Stereoisomerically Pure Trisubstituted Vinylaluminum Reagents and
their Utility in Cu-Catalyzed Enantioselective Synthesis of 1,4-Dienes
Containing *Z*- and *E*-Alkenes**

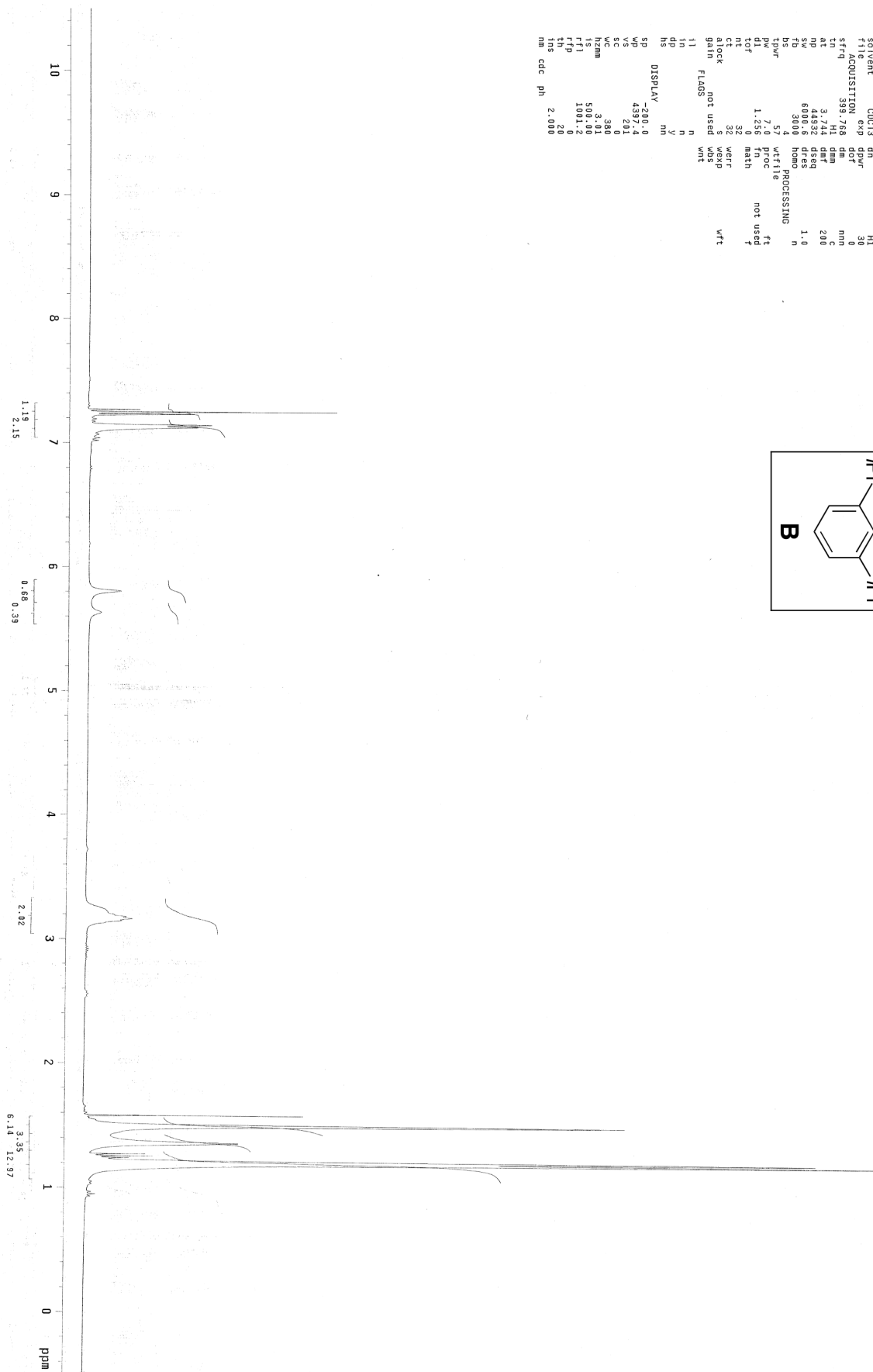
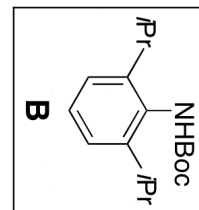
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Boston College, Chestnut Hill, Massachusetts 02467*

SUPPORTING INFORMATION, PART B

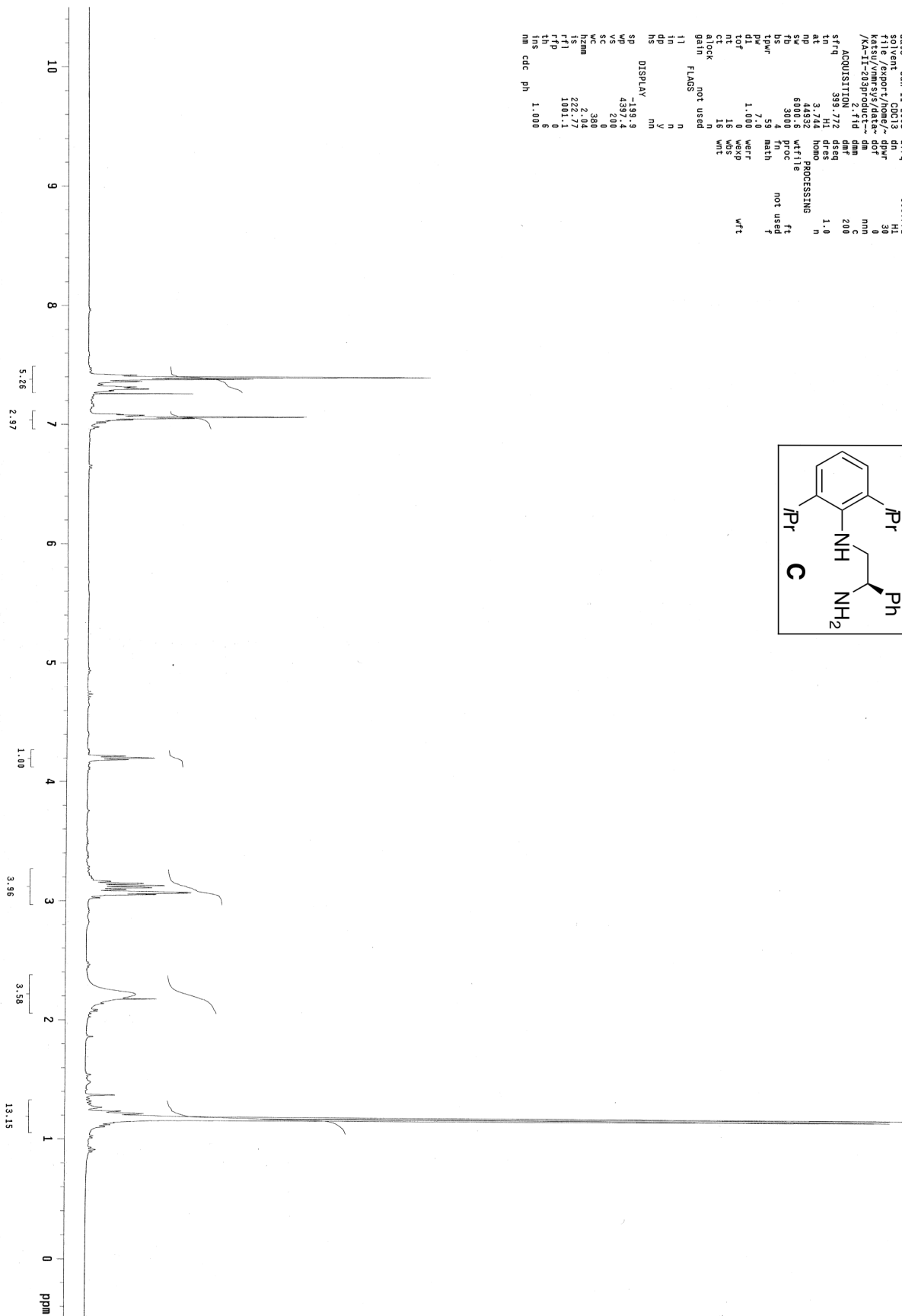
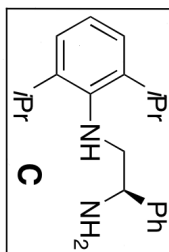
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MA-II-145product
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date Jan 23 2009   dec. 8 VT
solvent CDCl3     dn          399.768
file ACQUISITION exp dpwr     H1
sfrq 399.768     dpr          30
tn    H1 dmh     dpr          nm
at    3.744 dmf    200
sp    64432 dseq  1.0
fb    3000 homo   n
bs    4          PROCESSING
tdpw  57 wftile  ft
dl    1.256 fn    not used f
tof   0 math
rt    32 wept
glock not used  wft
gain  not used  wbs
ll    n         wnt
in    n
dp    y
hs    nm
DISPLAY nm
SP    -200.0
WP    4397.4
VS    201
WC    380
hzem  3.01
fs    500.00
ftf   1001.2
th    20
ms cdc ph 2.000
    
```



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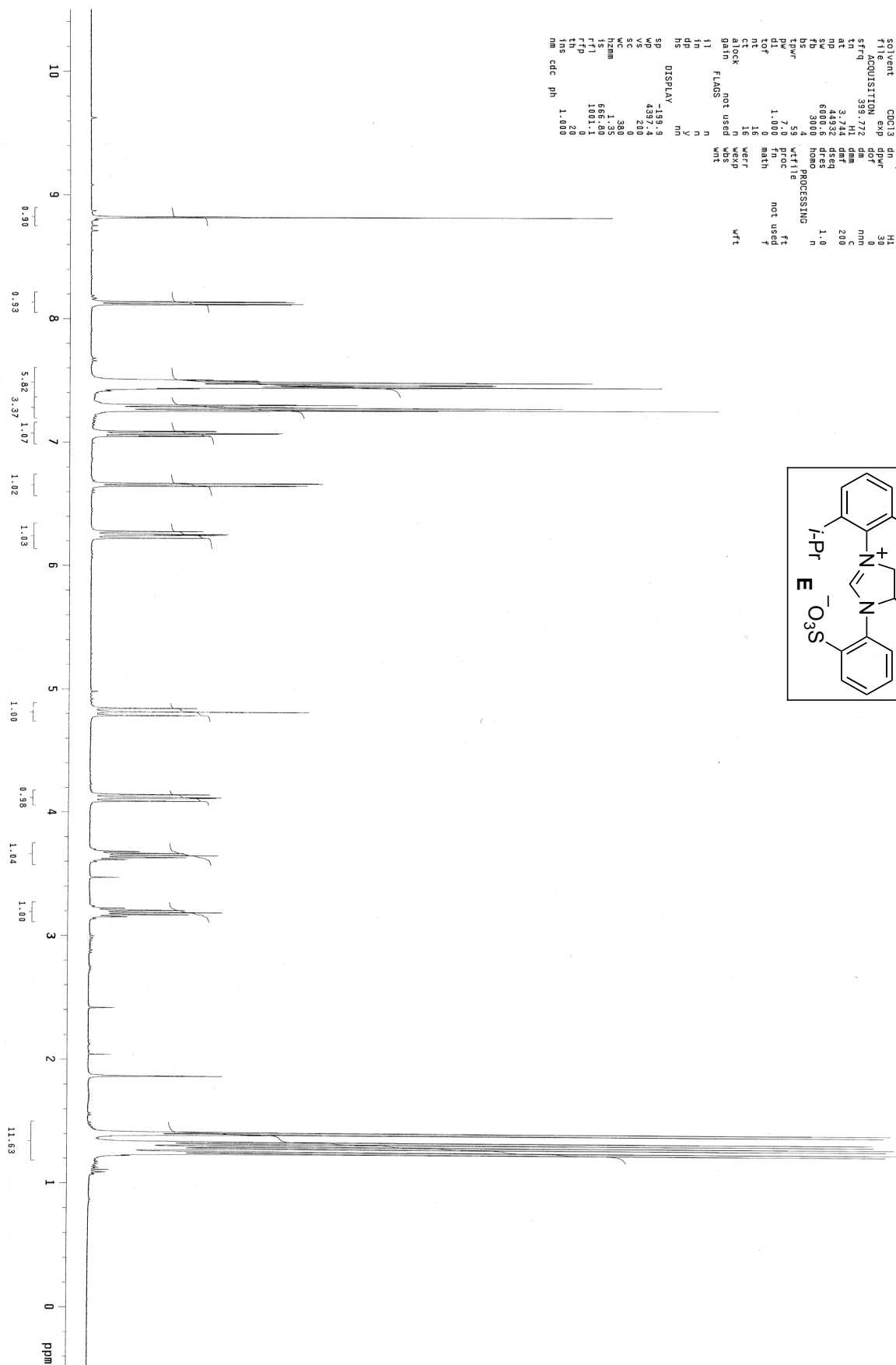
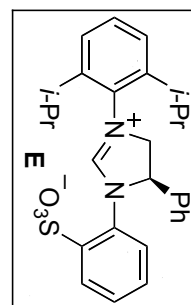
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SAMPLE
date Jun 11 2008 DEC. & VT 399.772
solvent CDCl3 dn H1
f1file /export/home/~dpwr 30
katsuj/amesys/daetac dot m/c
/Kat-11-2008p02 f1d dmf m/c
ACQUISITION 200
sfrq 399.772 dseq 1.0
in 3.71 H1 dres n
nd 44932 HOMO PROCESSING n
sw 6000.6 wfttle n
fb 3000 proc not used f
us 5 fn math f
pwr 7.0 werr ft
dl 1.000 wexp f
tof 16 M/S
ct 16 M/S
clock 1 n
gain not used
flags not used
i1 n
i2 n
dp v
hs m
DISPLAY -189.9
sp 4397.4
vs 200
sc 0
mc 380
wzmm 222.77
rf1 1001.1
rfp 0
th 6
nm cdc ph 1.000
  
```



KA-II-577product

```

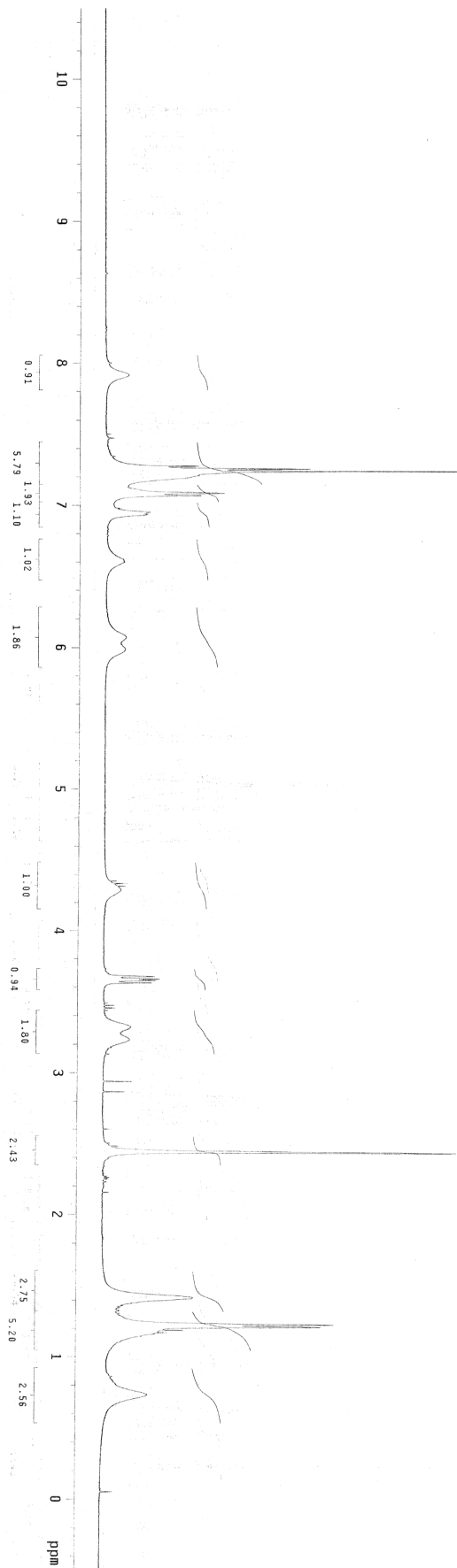
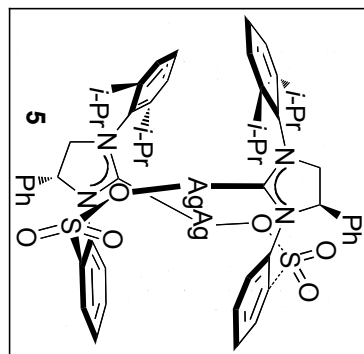
expt  std1h
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date Jul 26 2008   DEC. 8 VT   399.772
solvent CDCl3      dn          HI
file COUSITION   exp         30
PROCUREMENT      dm          nmh
sfrq 399.772     dm          C
en   HI         dm          200
at   3.744      dmf          1.0
mp   6000       dssq         n
fb   3800       homo         n
bs   4          PROCESSING
EDPr 59         w111e       ft
dt   1.000     fn         not used
tof  0         math         f
nt   16        wscr         f
atlock not used  wbs         wft
gain  not used  wnt
flags  not used  wnt
11    n
12    n
dp    v
hs    m
SP    DISPLAY -199.9
WP    4397.4
VS    200
SC    0
WCmm 380
NSmm  1.28
ISmm  666.80
rF1   1001.1
rF2   20
rF3   20
ms    1.000
nm    cdc ph
    
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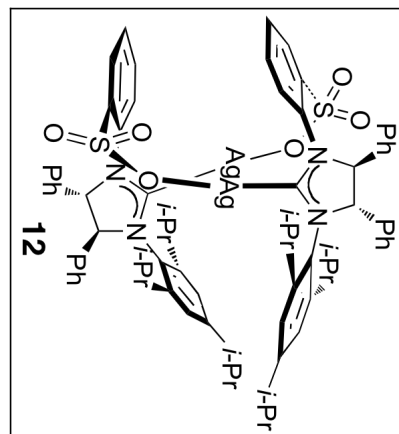
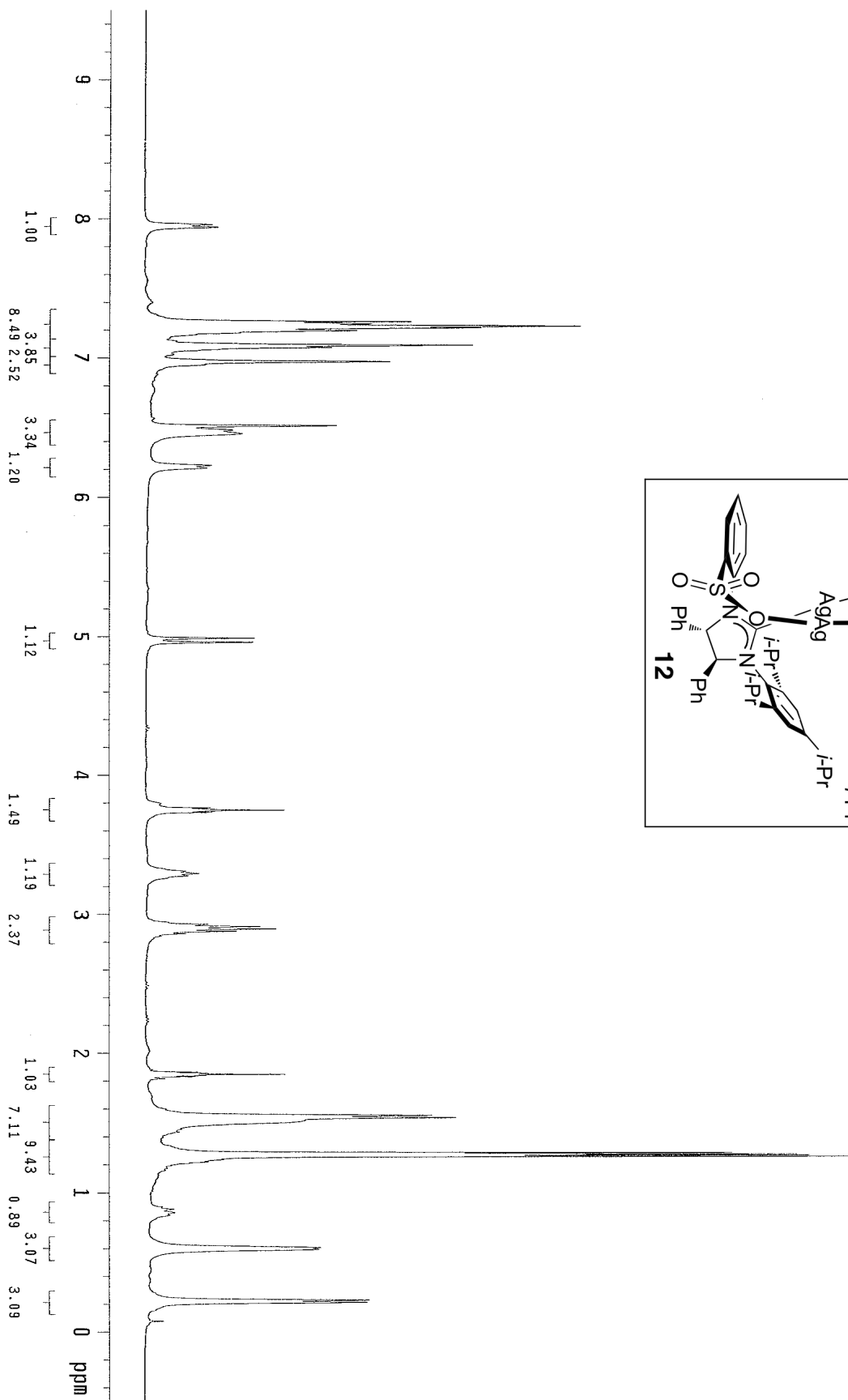


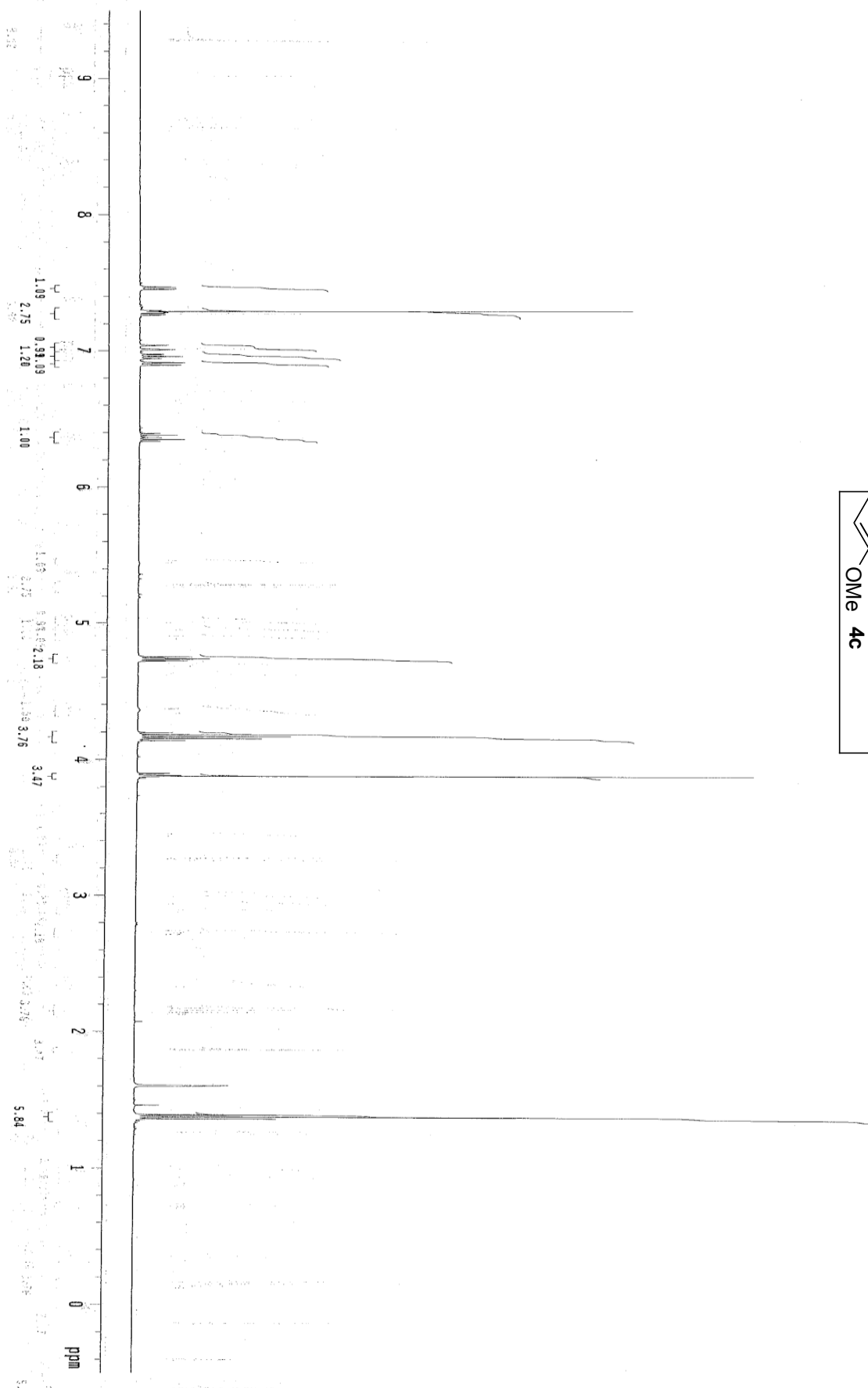
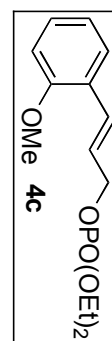
KA-III-1Sproduct
 exp1 std1h

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SAMPLE DEC: & VT
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solvent CDCl3 H
file C003
ACQUISITION exp dpr 30
sfrq 399.768 dm min 0
a 3.744 dml 200
np 44932 dres 1.0
sw 6000.6 dres 1.0
hb 3000 homo PROCESSING n
td 57 wfile
tpr 7.0 proc ft
pw 1.256 fn not used f
di 1024 math
nt 48 warr
ct alock 5 wexp
gain not used wts
fl 1 n
f1 n
f2 n
f3 n
f4 n
th 20
ns cdc ph 1.000
  
```

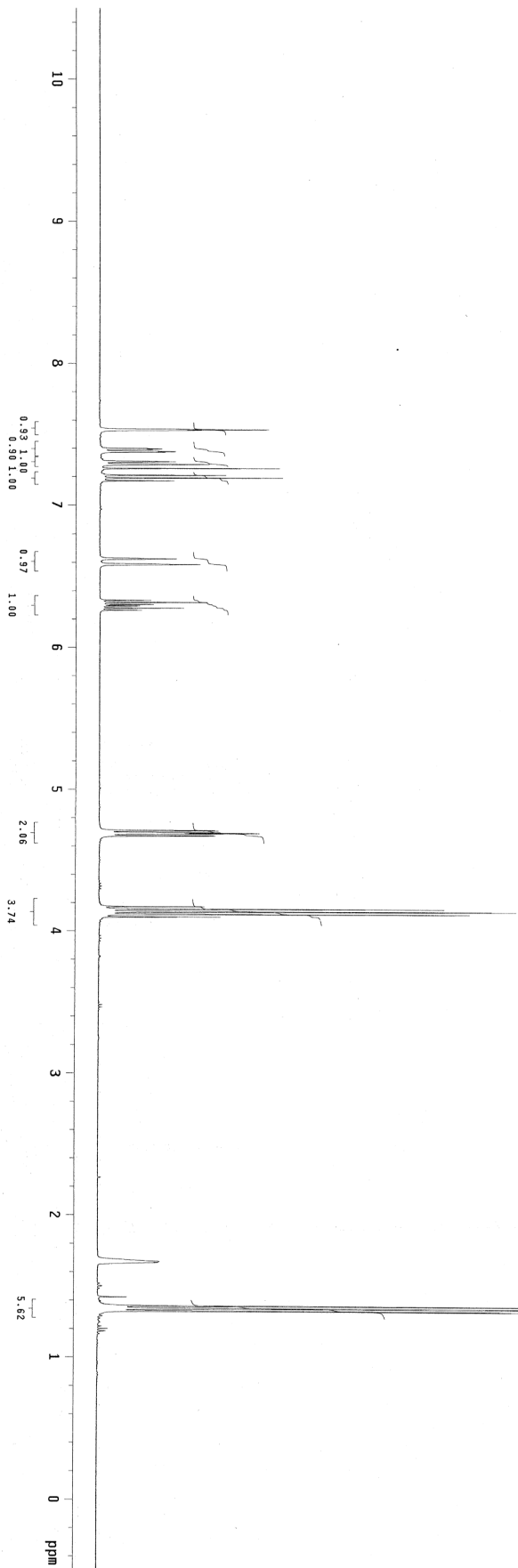
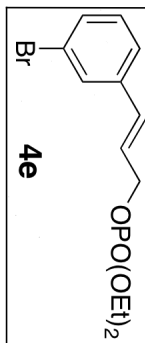






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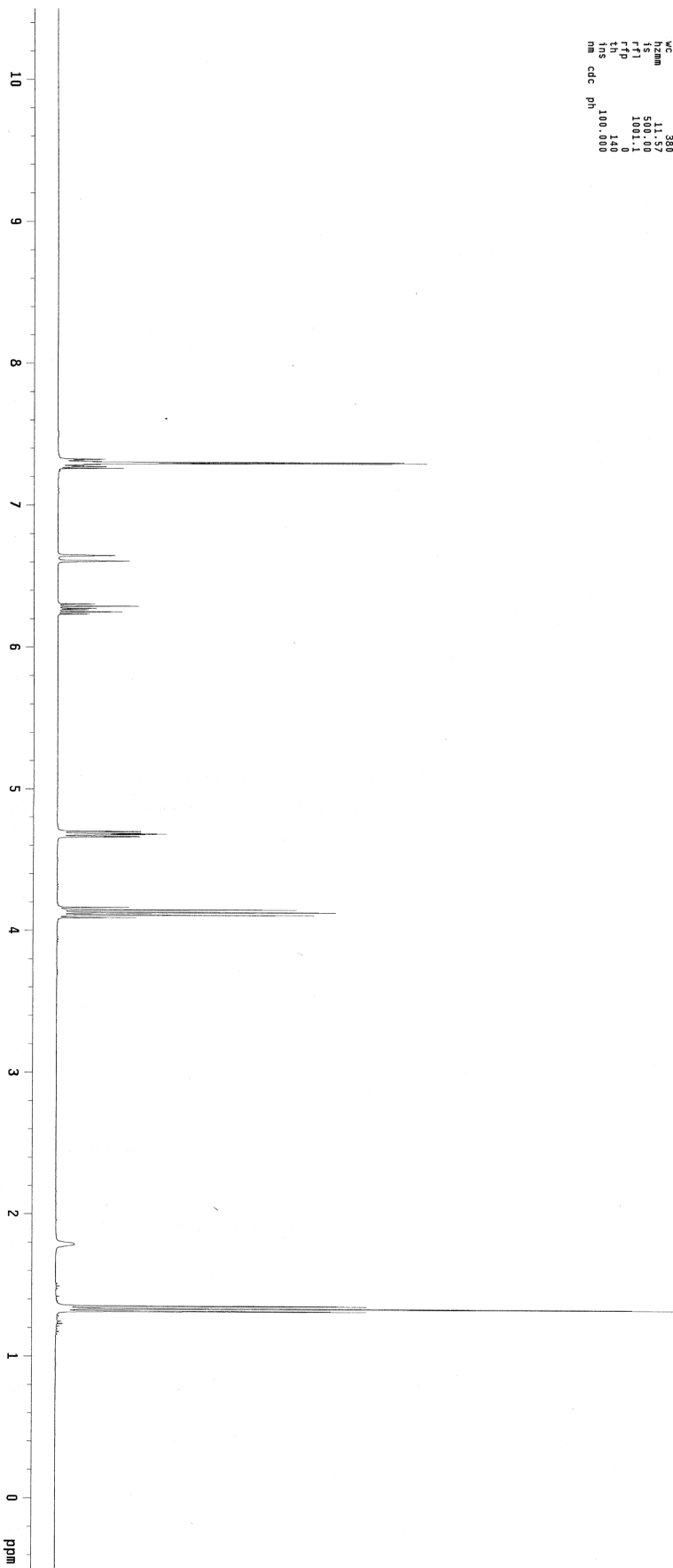
KA-II-259productA
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ent Jul 31 2008 dfreq
prnt CDexp 30
file CDEXP dprw 0
F1 ACQUISITION dof
sfrq 399.772 dm
tn 3.74 dmm
ms 44.4 ddf 200
mp 44932 dseg 1.0
sw 6000.6 dres
f0 3000 homo
BSW 5.9 wft1s
DPW 7.0 proc ft
df 1.000 fn not used f
tof 0 math
ct 16 werr
atlock not used n wexp
gain not used n wbs
F1AS FLAS WFT
l1 n
in n
dp y
hs n
DISPLAY mh
SP -199.9
WP 4397.4
VS 200
SC 380
SE 340
hzam 1.50
IS 500.00
F1 1001.1
F2 20
F3 20
ms cdc ph 1.000
    
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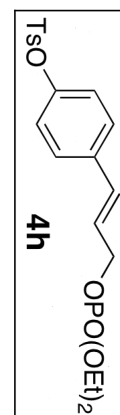




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Ka-II-204product
expt scdsh
SAMPLE Dec. 8 VT
date Jun 7 2008 dfrq 399.772
solvent CDCl3 dn 9H
F1 ACQUISITION cnp dof 0
f1q 399.772 dm nm
In HI dm 200
dl 3.71 dnm C
n 4492 dscg
sw 6800.6 dres 1.0
fb 3000 homo n
bs 4 wft e PROCESSING
dpr 5.0 wft e
n 7.0 proc ft
n 1.000 fn not used f
dl 0 math
tof 0 wft f
nt 15 wft f
sc 15 wft f
gain not used wft
l1 n wft
l2 n
l3 n
l4 n
l5 n
l6 n
l7 n
l8 n
l9 n
l10 n
l11 n
l12 n
l13 n
l14 n
l15 n
l16 n
l17 n
l18 n
l19 n
l20 n
l21 n
l22 n
l23 n
l24 n
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l30 n
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l32 n
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l45 n
l46 n
l47 n
l48 n
l49 n
l50 n
l51 n
l52 n
l53 n
l54 n
l55 n
l56 n
l57 n
l58 n
l59 n
l60 n
l61 n
l62 n
l63 n
l64 n
l65 n
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l68 n
l69 n
l70 n
l71 n
l72 n
l73 n
l74 n
l75 n
l76 n
l77 n
l78 n
l79 n
l80 n
l81 n
l82 n
l83 n
l84 n
l85 n
l86 n
l87 n
l88 n
l89 n
l90 n
l91 n
l92 n
l93 n
l94 n
l95 n
l96 n
l97 n
l98 n
l99 n
l100 n
nm cdc ph 100.000
    
```





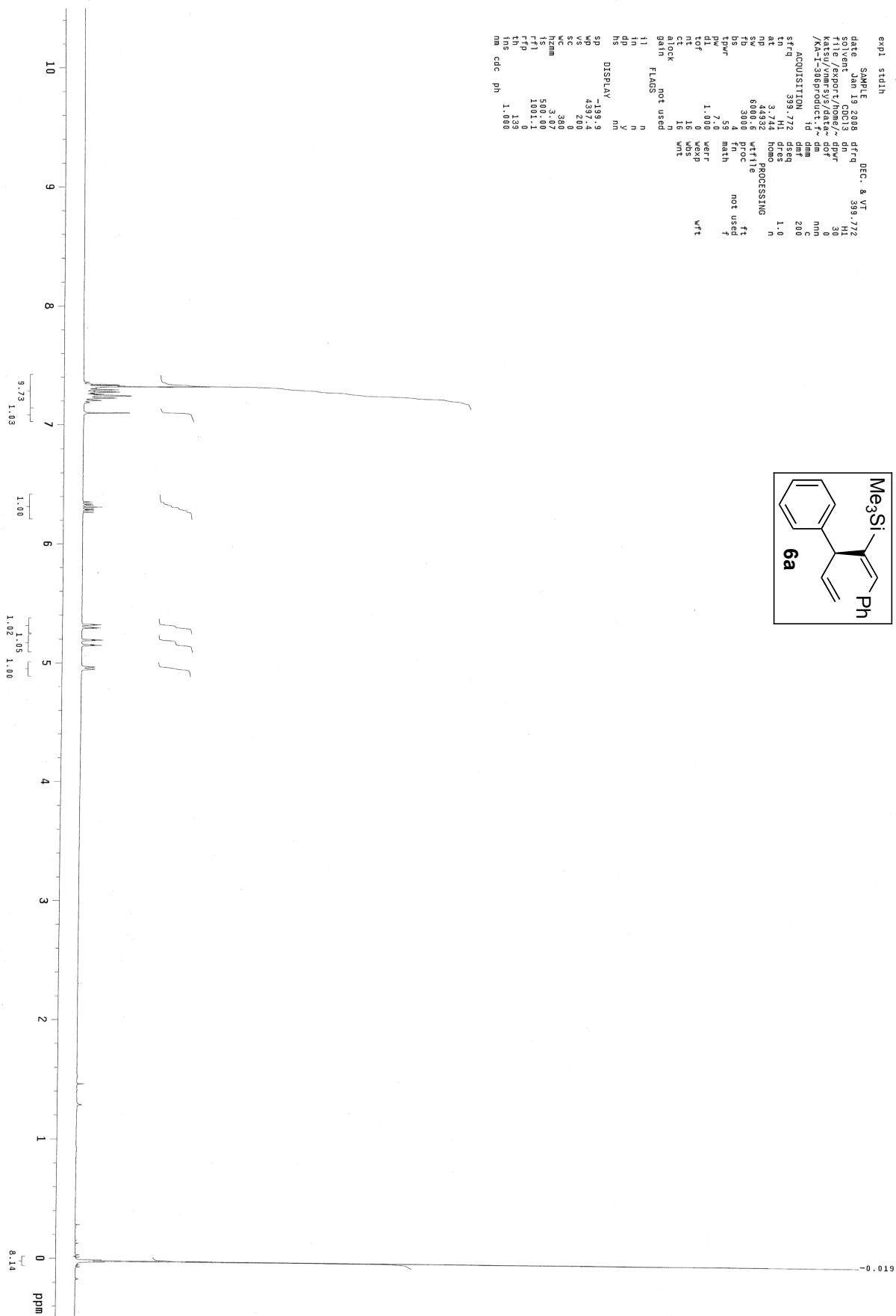
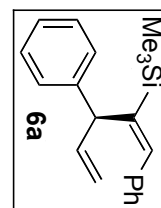
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solvent CDCl3 gn 30
t1 ACQUISITION 259 dof 0
sfrq 399.768 dm nm
tn 3.71 dmm C
mp 4492 dseg 200
sw 6000.6 dres 1.0
fb 3000 homo n
bs 4 wftle PROCESSING
pw 7.0 proc ft
di 1.258 fn not used f
tof 0 math
ct 0 werr
gain not used wbs wft
flask not used wft
in n
dp y
hs n
DISPLAY mh
SP -200.0
VP 4397.4
VS 201
SC 3.0
v 3.0
hzmm 4.09
IS 230.38
rft1 1001.2
rft 20
ms cdc ph 1.000
    
```



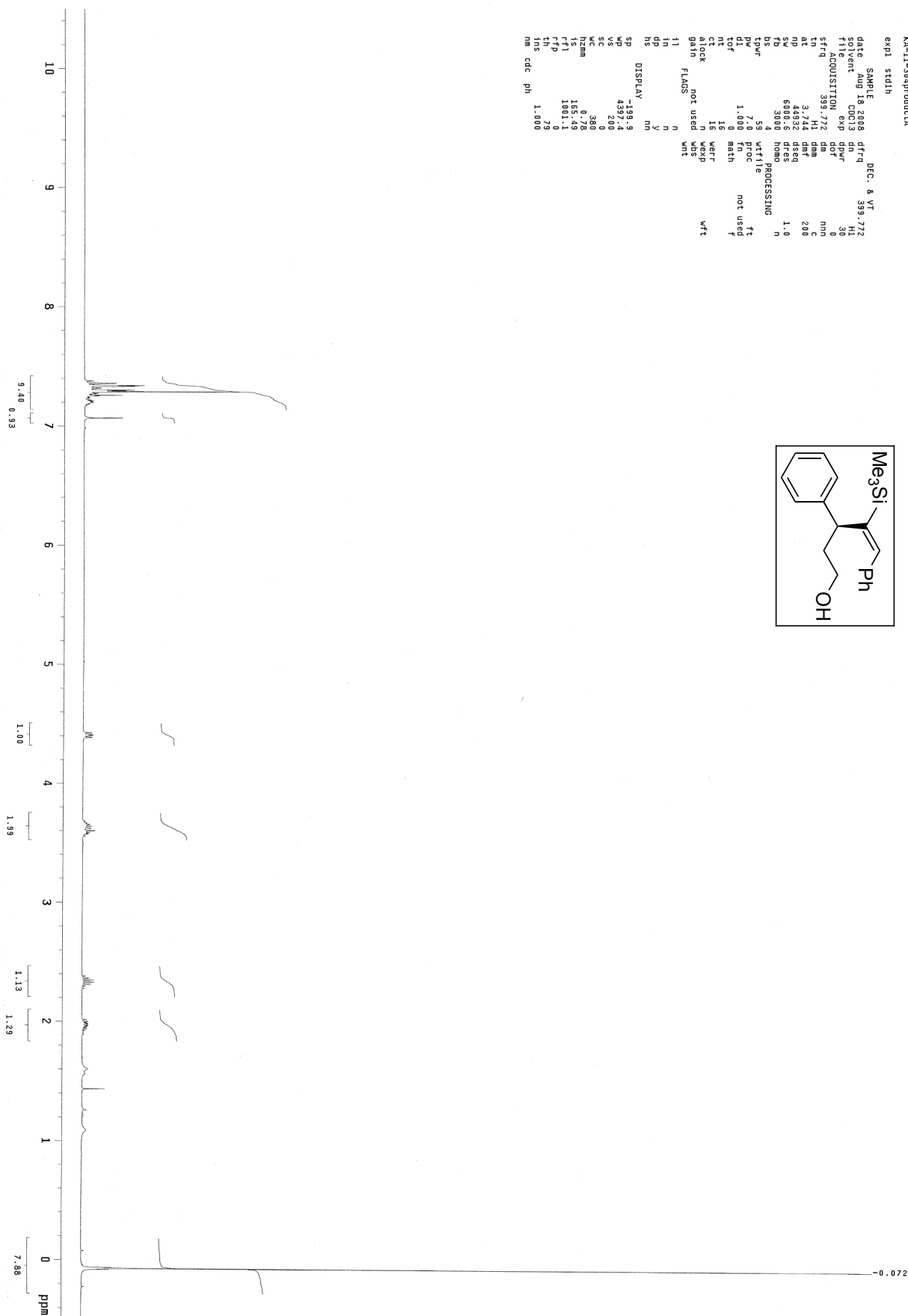
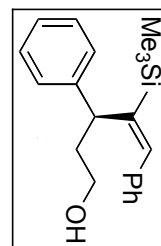
KA-I-396product
 exp1 std1h

SAMPLE DEC: & VT
 date Jan 19 2009 dfrq 399.772
 solvent CDCl3 dn H1
 /Katsujimerys/data/ /Katsujimerys/data/ dof 30
 /KA-I-396product-f~ dm nmh
 ACQUISITION id dnm 200
 sfrq 399.772 dscn
 tn H1 dres 1.0
 at 3.744 homo
 sp 64932 wft 1.0
 fb 3000 proc
 bs 4 fn not used f
 tpmr 7.59 math
 d1 1.000 werr
 tof 0 wexp
 nt 16 wbs
 nt 16 wnt
 alock gain not used
 FLAGS
 i1 n
 in n
 dp v
 hs nm
 DISPLAY -189.9
 sp 4397.4
 wp 200
 vs 200
 sc 8.0
 v 3.87
 hznm 500.00
 f1 1001.1
 f2 139
 tps 1.000
 nm cdc ph



```

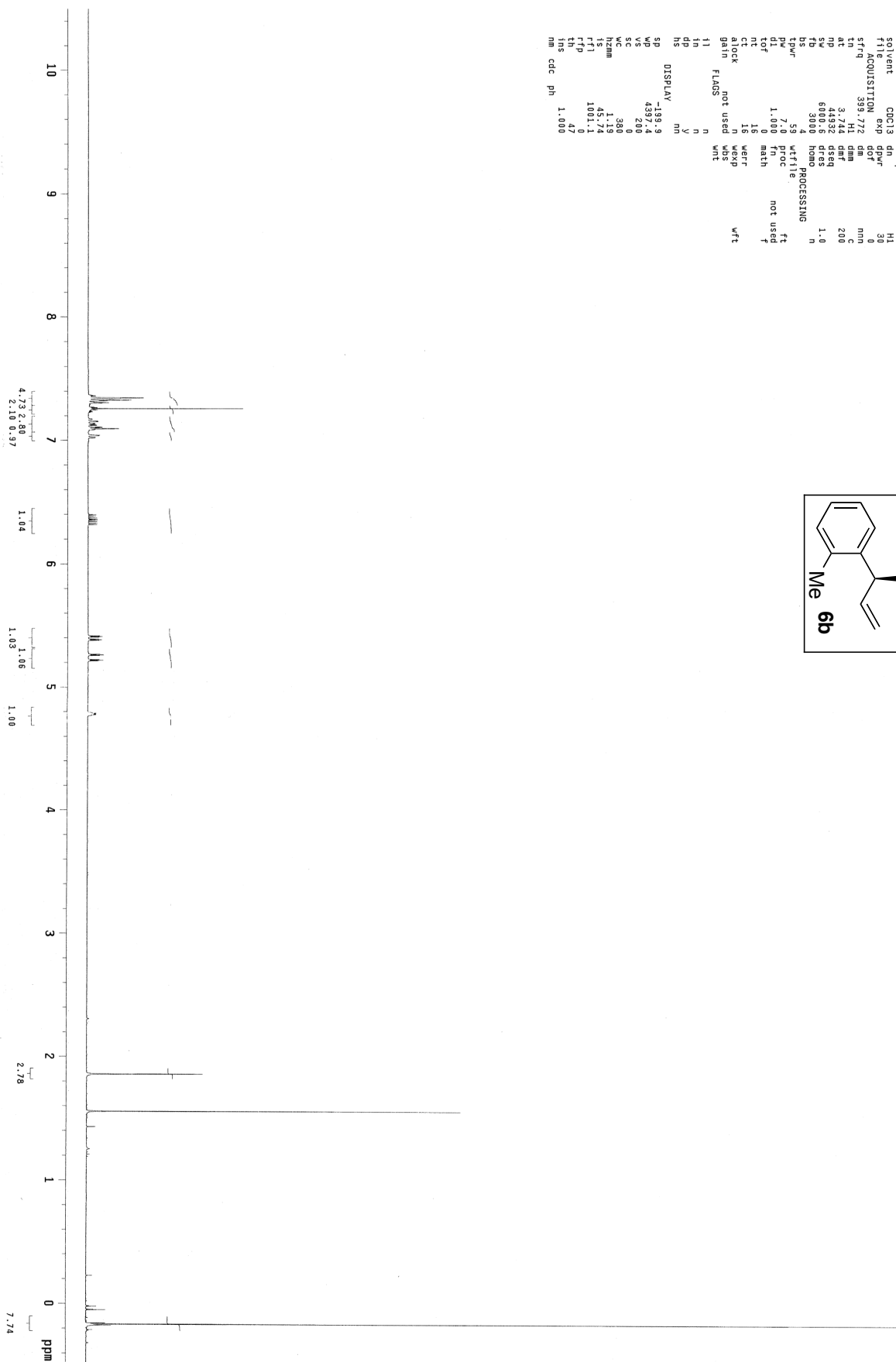
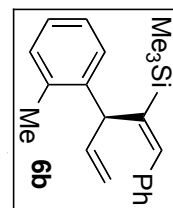
KA-II-304productA
exp1 stdih
date SAMPLE DEC. & VT
      Aug 18 2008 dfreq 399.772
      0003          dm 30
      0003          dpr 0
      0003          dot 0
ACQUISITION exp dm
sfreq 399.772 dm
an 3.744 dnt 200
ap 4452 dseg
sw 6000.6 dres 1.0
bd 3000 homo PROCESSING n
tpwr 59 wfile
pw 7.0 proc ft
dl 1.000 fn not used f
nr 16 math
ct 16 warr
alock not used wft
gain not used
fl 1.000
ns DISPLAY
ns Y
dp Y
sp -199.9
wp 4397.4
sc 200
wc 380
hzm 0.78
s 100.43
f 1001.0
th 79
nm cdc ph 1.000
  
```



KA-I-246product

```

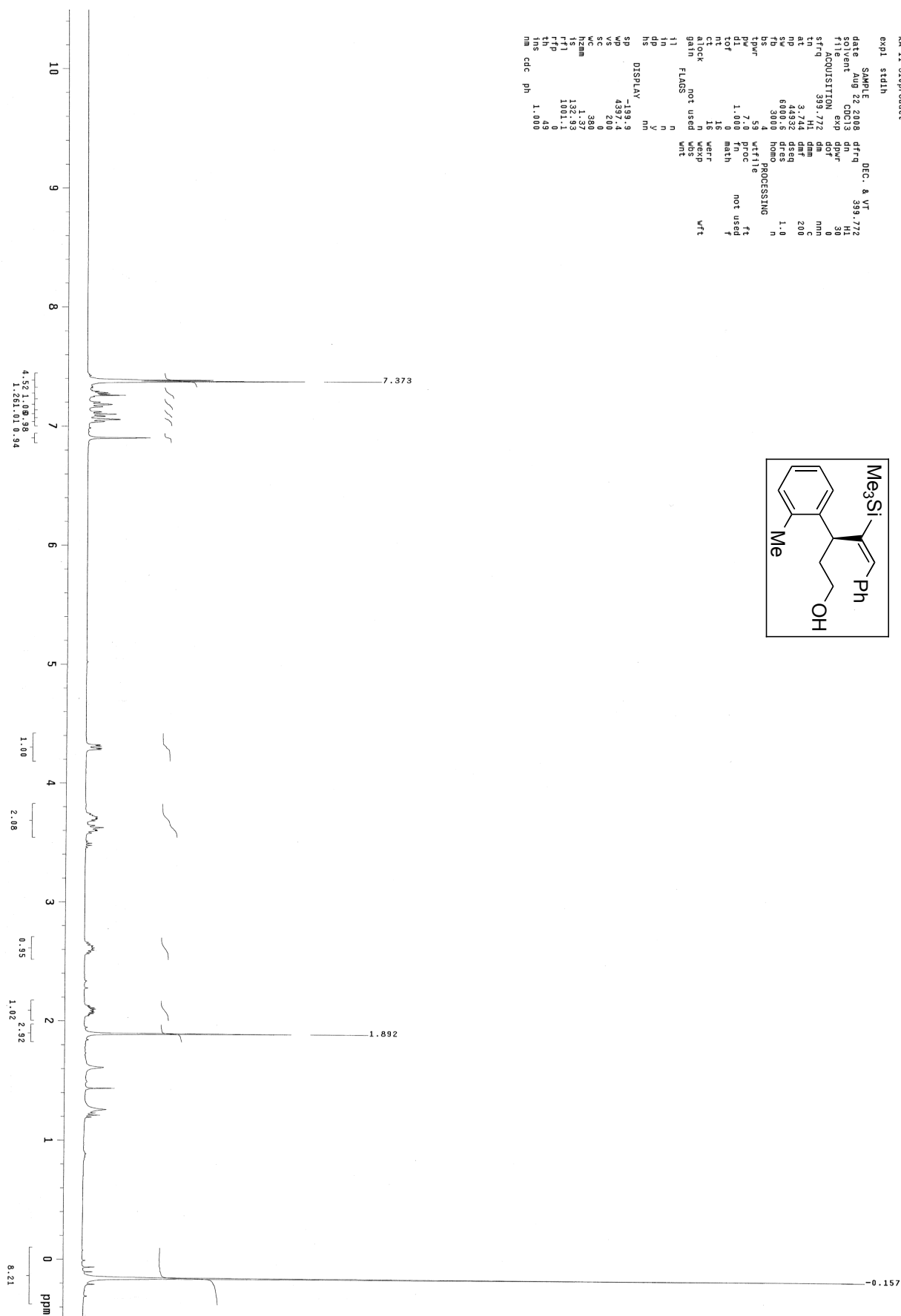
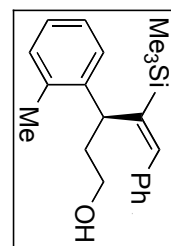
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SAMPLE      DEC. & VT  399.772
date        Jul 23 2008  dfrq
solvent     CDCl3    dn
F1 ACQUISITION  exp  dpr
dfrq        399.772  dm
th          HI dmm
at          2.245  dm
sw          6000.6  dres
fb          3000    homo
DS          4
DPR         39    PROCESSING
DI          79    PLO
DI          1.000  fn
TOF         0    math
NT          18    werr
ALOCK       not used
gain        not used
wbs         not used
wft         wft
FLG         not used
WIT         WIT
n1          n
n2          n
dp          v
hs          mh
DISP          -199.9
SP          4397.4
VS          200
SC          0
WCmm       1.399
IS          45.72
rf1        1001.1
rf2        1.74
rf3        0
ms          1.000
ms cdc ph
  
```

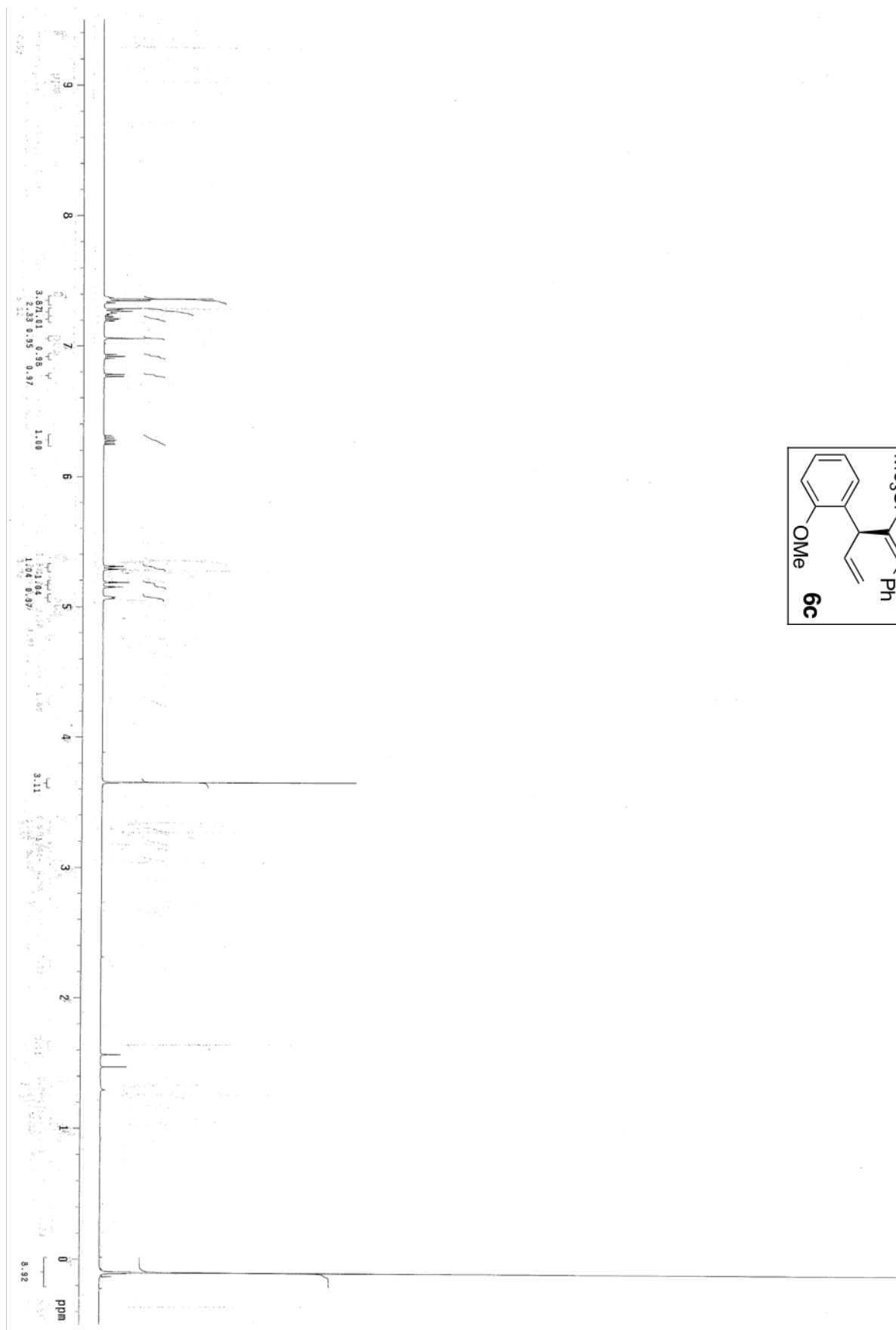
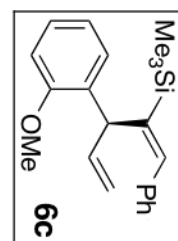


KA-II-310Product

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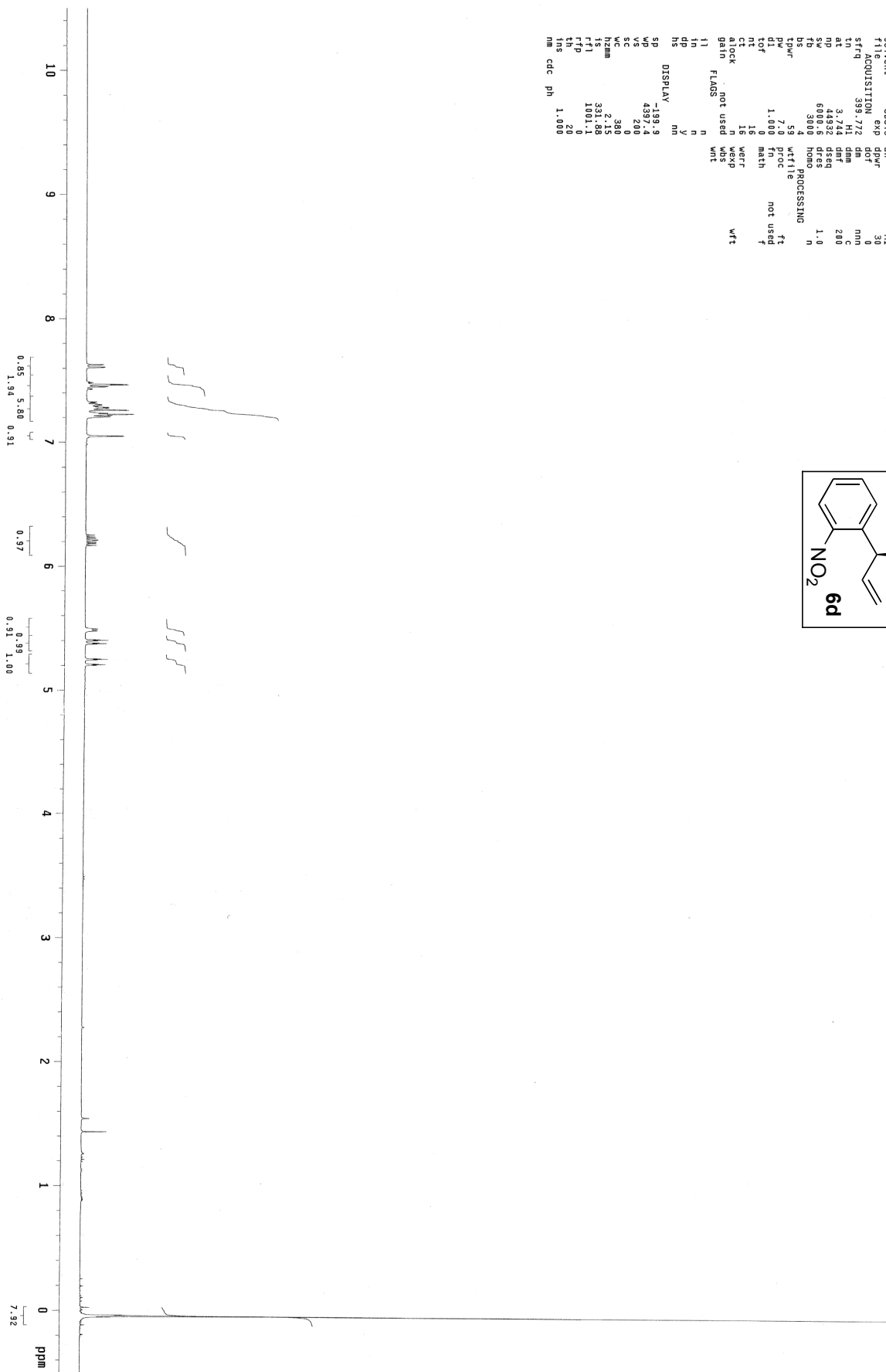
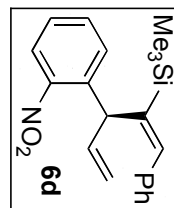
exp1 stidh
SAMPLE      DEC. 8 VT 399.772
date Aug 22 2008  dfreq
solvent CDCl3  dn
file COUSITION  exp 30
sfrq 399.772  dm 30
in HI  dm 200
at 3.744  dm
SP 6000.6  dres
fb 3900  homo 1.0
bs 4  PROCESSING
DPR 59  wfttle ft
dl 1.000  Fno  not used f
tof 0  math
nt 16  wexp
gain not used  wbs
flags not used  wft
l1 n
l2 n
l3 n
l4 n
l5 n
l6 n
l7 n
l8 n
l9 n
l10 n
hs DISPLAY -199.9
sp 4397.4
vs 200
sc 348
sz 320
hzmm 132.93
ls 1001.1
fft 49
th 49
ms cdc ph 1.000
  
```





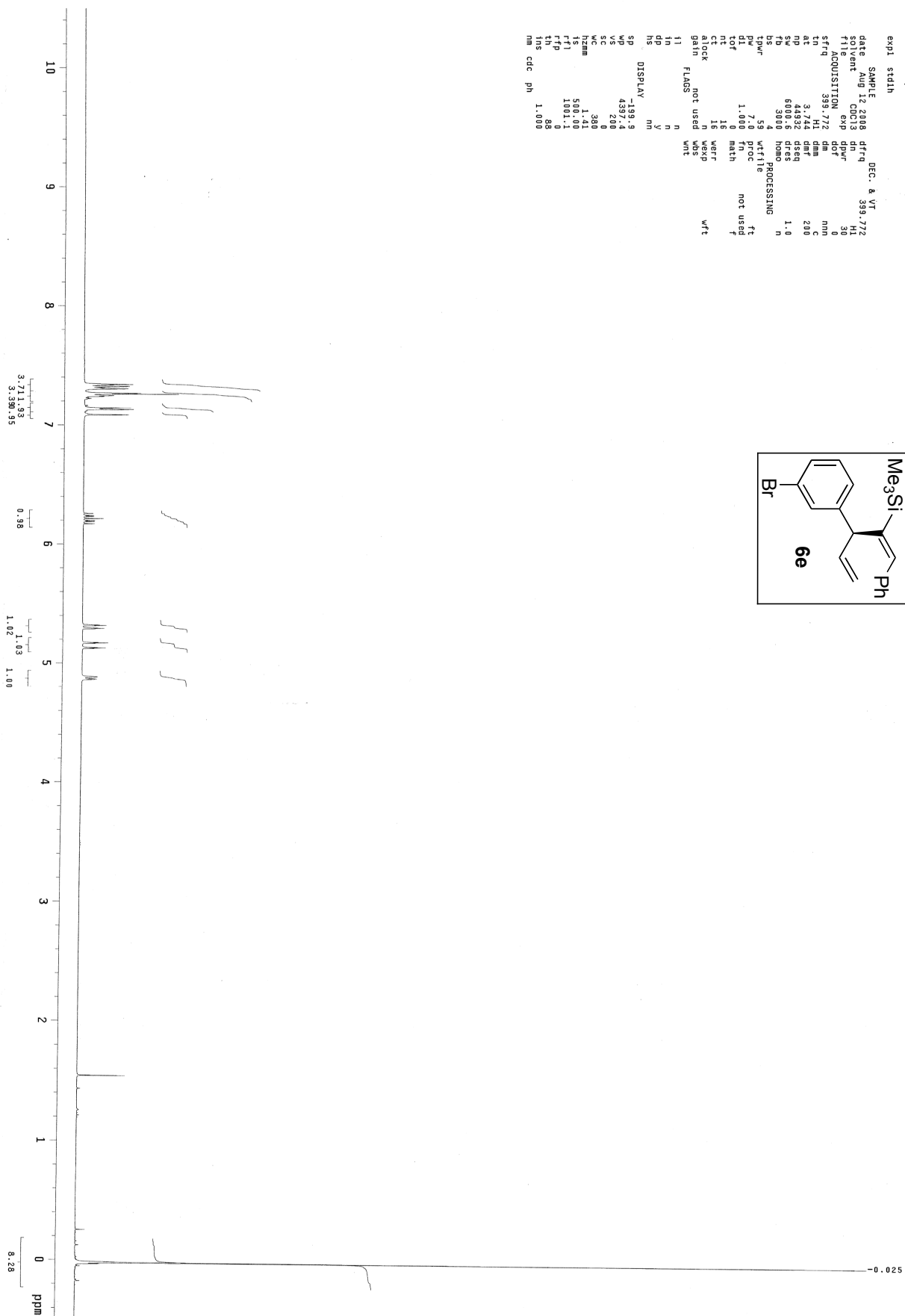
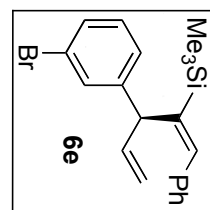
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KA-II-244product
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SAMPLE DEC. & VI
date Jul 15 2008 dfrq 389.772
solvent CDCl3 dn H1
F1 ACQUISITION exp 30
EXP 30
dfrq 389.772 dm H1
tn H1 dm C
at 3.724 dfrq 200
SP 4.754 dfrq 200
SD 6000.6 dres 1.0
fb 3000 homo n
bs 54
tdmr 7.59
d1 1.000 fn ft
tof 0 math not used f
nt 16 warr
atlock 1 n wexp
gain not used wfs
flags not used wft
11 n
12 n
13 n
14 n
15 n
16 n
17 n
18 n
19 n
20 n
nm cdc ph 1.000
  
```



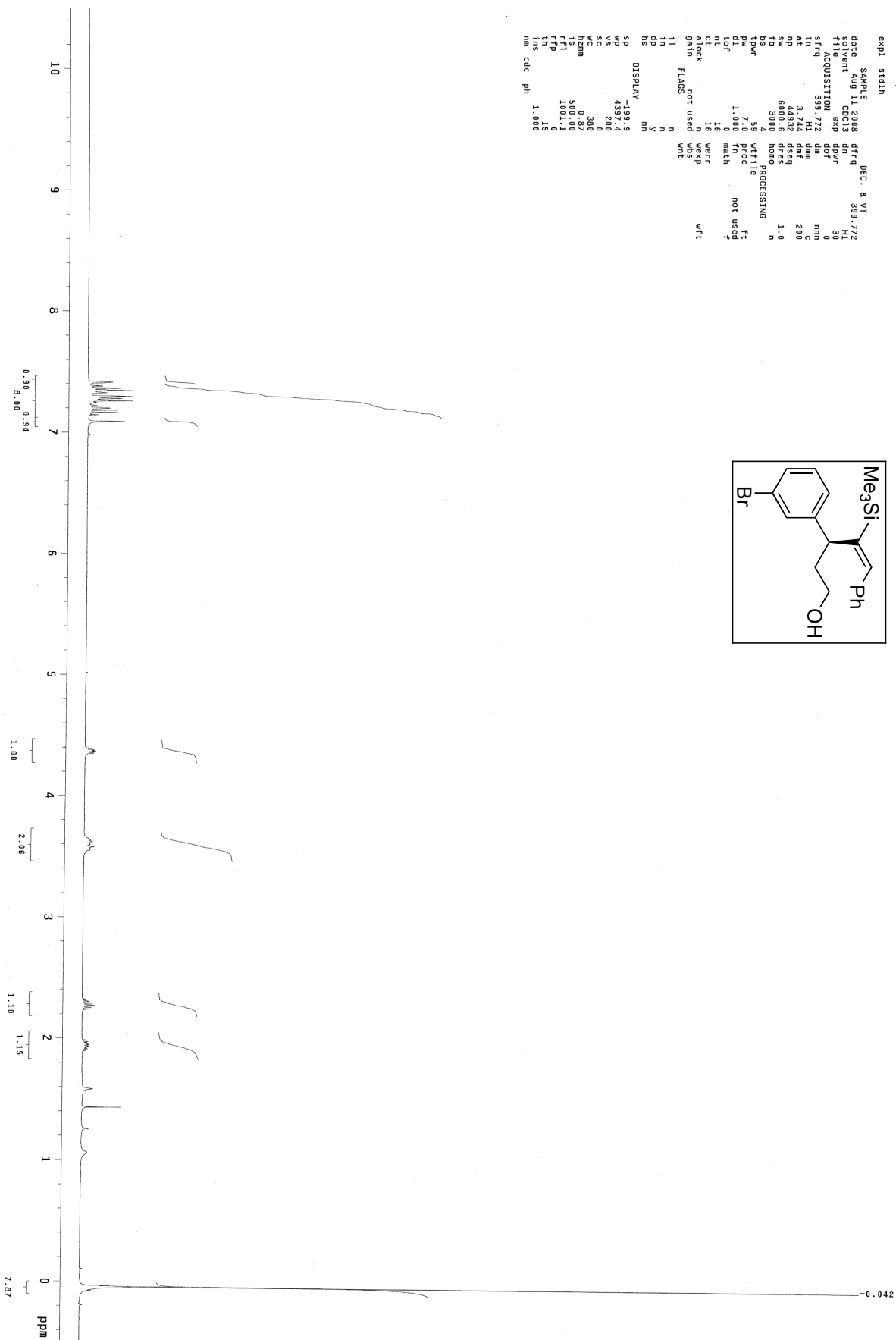
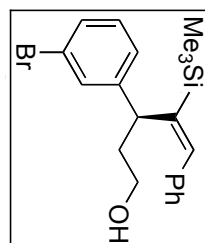

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KA-II-238products
expt stidh
SAMPLE 2 2008 DEC. & VT
date Aug 12 2008 dfrq 339.772
solvent CDCl3 dn H1
file C0013 exp dpwr 30
sf_Acquisition 339.772 dn 0
tn H1 dm nm c
at 3.744 dmf 290
np 44932 dseq 1.0
fm 60046 dres
fw 394 NMRD
bs 4 NMRD PROCESSING N
tpwr 59 wftitle
pw 7.0 proc ft
tdf 1.00 math not used
rt 16
ct 16 WERR
qltch not used WERR
gln not used WERR
h1 11 n WERR
h2 11 n WERR
h3 11 n WERR
h4 11 n WERR
hs n WERR
DISPLAY n
SP -189.9
VS 439.200
SC 0
WC 380
I2EM 1.41
FT1 500.41
FT2 1001.1
TH 0
TM 88
na cdc ph 1.000
  
```



```

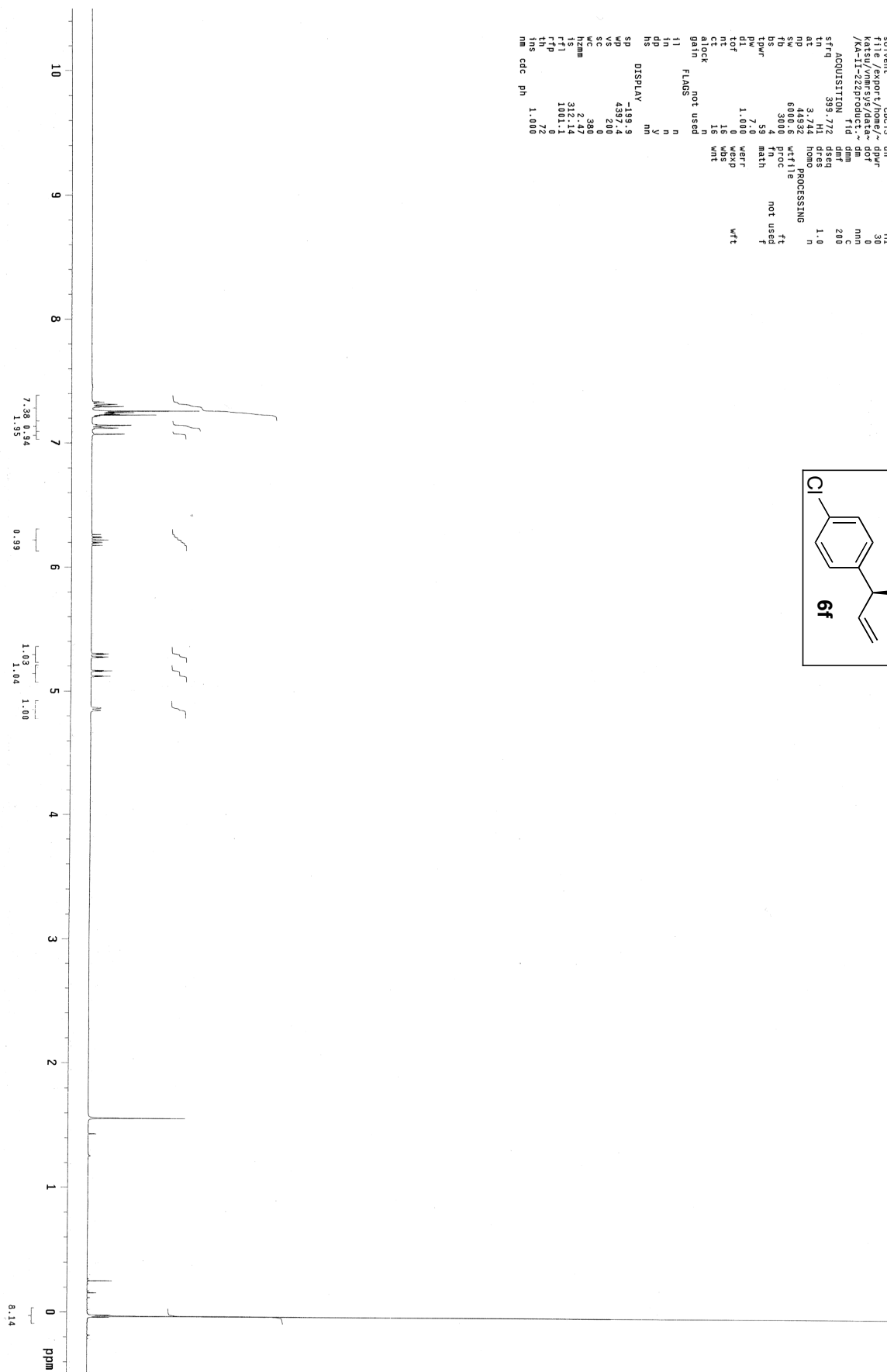
KA-II-285Product
expl stidh
SAMPLE DEC. & VT
date Aug 11 2008 dfrq 393.772
time 11:41:41 dprq 30
file 1100000000 exp dpr 30
ACQUISITION 393.772 dm mn
sfrq 393.772 dm mn
at 3.724 dmf 200
np 44932 dseq 1.0
sw 6000 dres 1.0
sh 5000 nomd
bs 500.4
tpwr 59 wfile
pw 7.00 proc
pr 1.000 math not used
tof 1.000 wft
ct 16 werr
stck 16 werr
gain not used wts
flgs not used wnt
11 n
11 n
11 y
dp v
hs DISPLAY nn
SD -199.9
WP 4397.4
VS 200
SC 380
vdc 0
hzam 500.00
ts 0.87
ft 1001.1
th 15
fms cdc ph 1.000
  
```



KA-II-222product

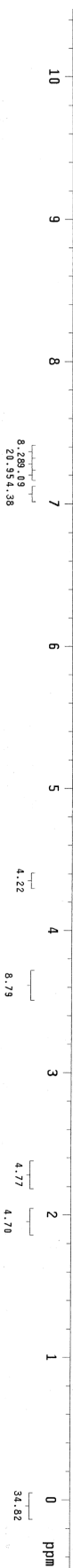
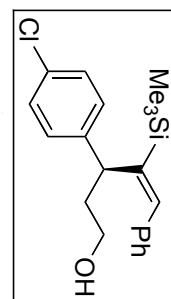
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solvent CCl4 dn
F118 /export/home/ dpwr 30
F119 /export/home/ dm 30
/Ka-II-222product / dm
ACQUISITION fid dm 200
sfreq 399.772 dm
at HI deg 1.0
at 3.744 homo
PROCESSING
nm 600.6 wftle ft
sc 308.4 fn not used f
bs 59 math not used f
tpwr 7.0 warr
pw 1.000 wexp
tof 16 wbs
ct 16 wnt
d1ock not used
gain FLAGS
i1 n
i2 n
dn n
hs m
DISPLAY
sp -189.9
wp 439.200
sc 0
wc 380
izem 2.12
rf1 1001.1
rfp 22
th 1.000
nm cdc ph
    
```



```

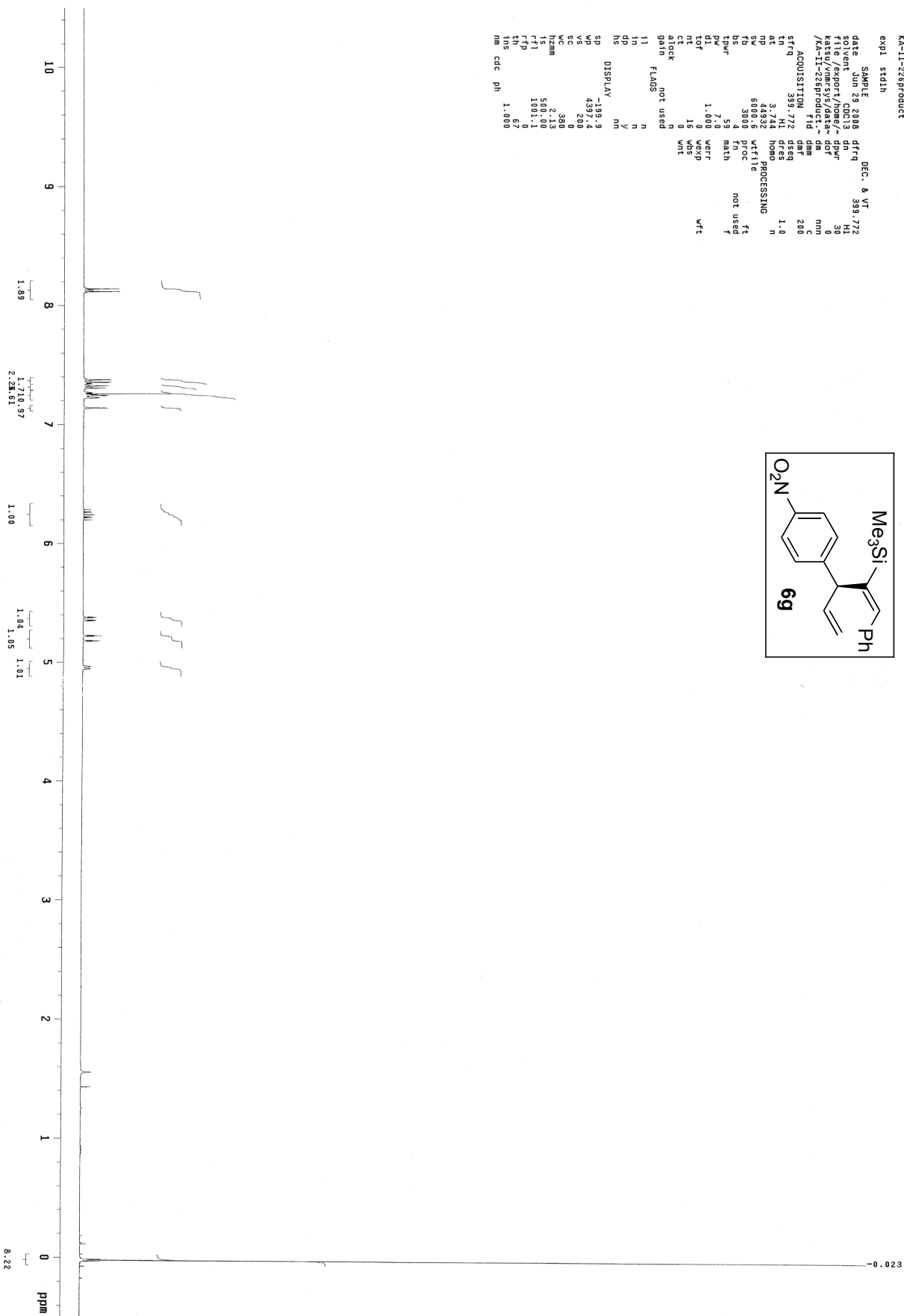
KA-II-255product
expt stdIn
SAMPLE
date Aug 19 2008 dfrq DEC. 8 VT 399.772
solvent CDCl3 dn H1
file ACQUISITION exp dpr 30
sfrq 399.772 dm nm
en H1 dm 200
at 3.744 dmf C
dp 60000 dse9 1.0
sb 3000 homo n
bs 4 PROCESSING
tdmr 59 wfile ft
d1 1.000 fn not used f
tof 0 math
nt 16 wgrt
atlock n wexp
gain not used wbs
flags wft
ij n
i1 n
i2 n
dp y
hs nh
DISPLAY -189.9
sp 4397.4
vs 199
sc 0
sc 38.0
hznm 4.47
is 250.70
f1 1001.1
f2 98
tms nm cdc ph 100.000
  
```





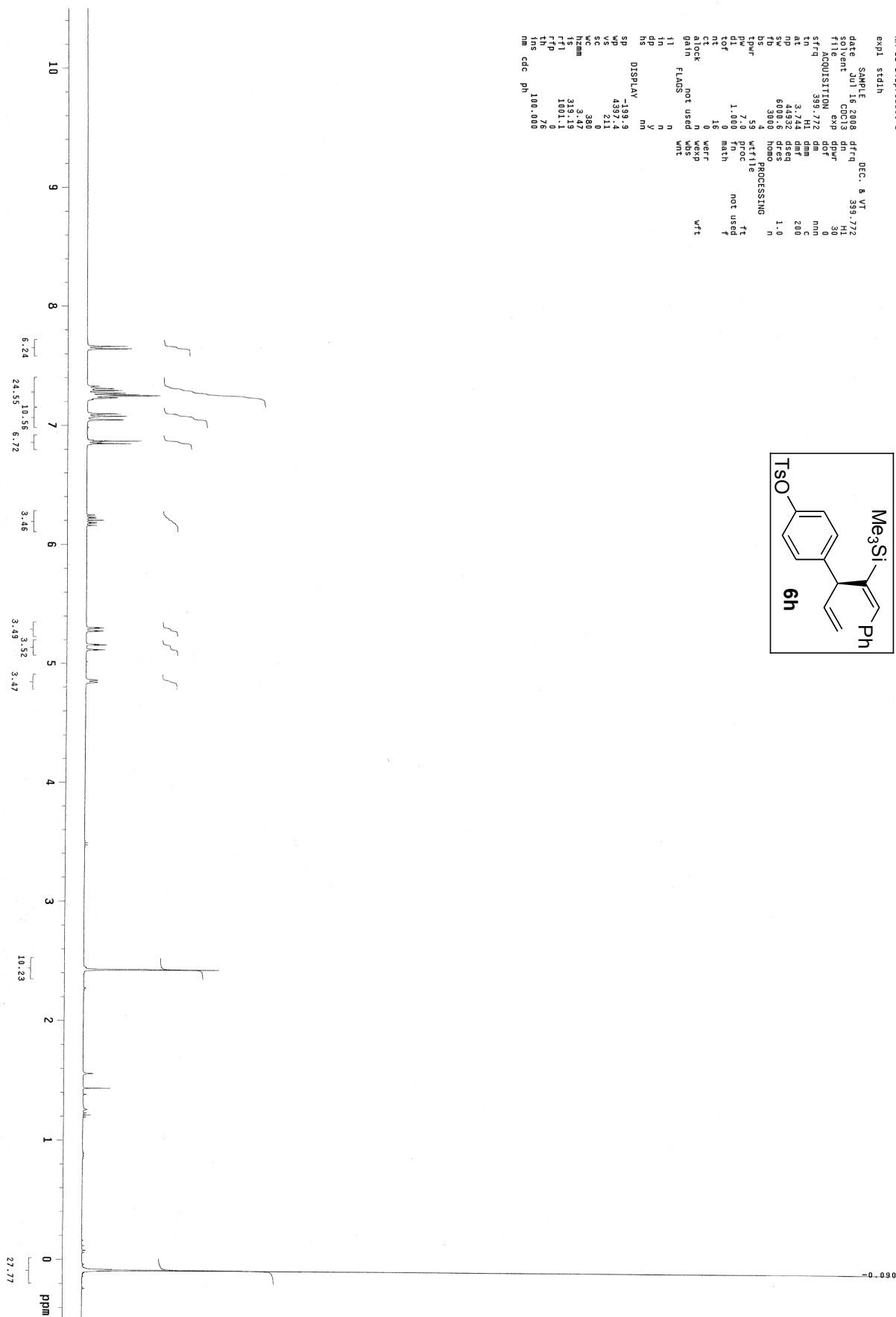
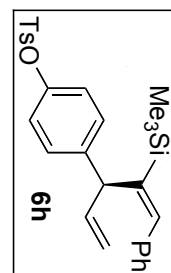
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KA-II-226product
expt stidh
SAMPLE date Jun 29 2008 dfrq DEC. 8 VT 399.772
solvent CCl3 dn H1
f1f8 /export/home/ dbrw H1
f2f9 /export/home/ dbrw H1
/Ka-II-226product- dm mmn
sfacq ACQUISITION fid dm 200
tn 399.772 darf 1.0
at 3.744 homo PROCESSING
np 44932 wffile ft
pw 600.6 fn c not used
bs 309.4 fn c not used
tpwr 59 math f
pw 7.0 warr ft
tof 1.000 wexp f
nt 16 wbs wft
ct 0 wnt
gain not used
11 n
1n n
dn n
hs mn
SP DISPLAY 199.9
vs 439.200
sc 0
mc 390
kcm 2
f1f1 500.00
f1f2 1001.1
f1f3 0
f1f4 0
nm cdc ph 1.000
    
```



```

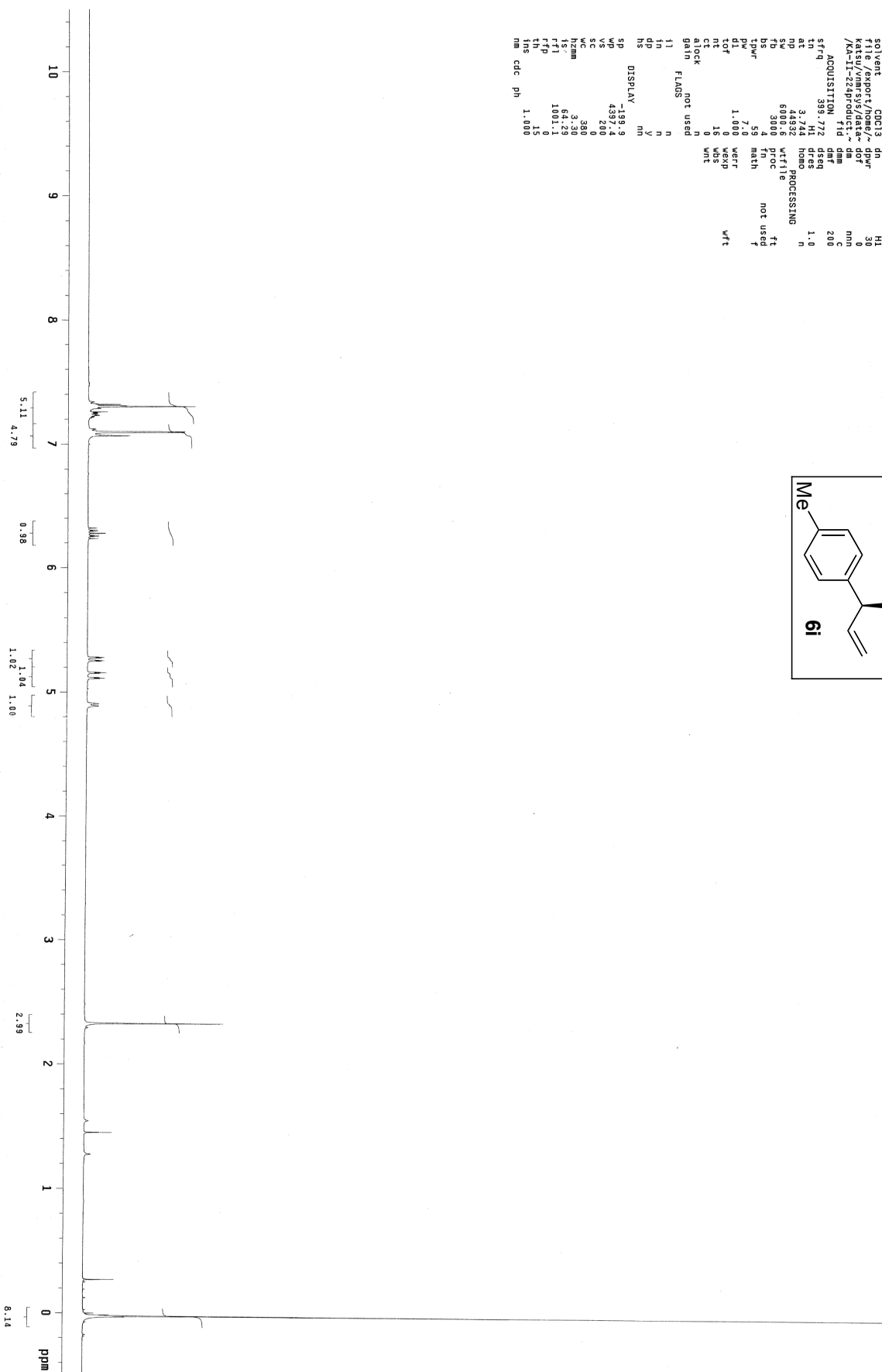
KA-II-242Product-2
expt stdin
date Jul 16 2008 DEC. & VT 399.772
f1vent C08 exp dprvr 30
ACQUISITION exp dof 0
sfrq 399.772 dm mm 0
an 41 dnm 200
ap 3.74 dnm 200
sw 44932 dres 1.0
hb 6090.6 homo PROCESSING n
tpwr 59 wfile
pw 7.0 proc ft
dl 1.00 fn not used f
nc 16 math
ct 0 werr
alock not used wft
gain flags not
i1 n
i2 n
hp n
ns y
DISPLAY nm
sp -199.9
wp 4397.4
wc 2.0
sc 0
hzmm 380
f1 318.47
f2 1001.1
f3 20
th 100.00
nm cdc ph
  
```

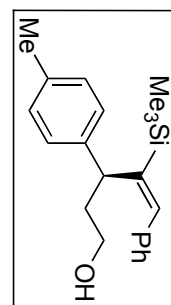


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KA-II-224product
expl stddh
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KATSU/ymrsys/data/ dof      0
/Ka-II-224product.*.dm      mnm
ACQUISITION f1d      dm          C
sfrq      399.772  dseg      200
tn         HI      dres      1.0
at         3.744  homo      n
mp         64892  wffile     PROCESSING
fb         3000  proc      ft
bs         4      fn      not used f
tpwr      7.59  match
dl         1.000  werr      f
tof        0      wexp      wft
nt         16      wds
atlock    not used
gain      not used
FLAGS     not used
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f5        n
f6        n
f7        n
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f9        n
f10       n
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f13       n
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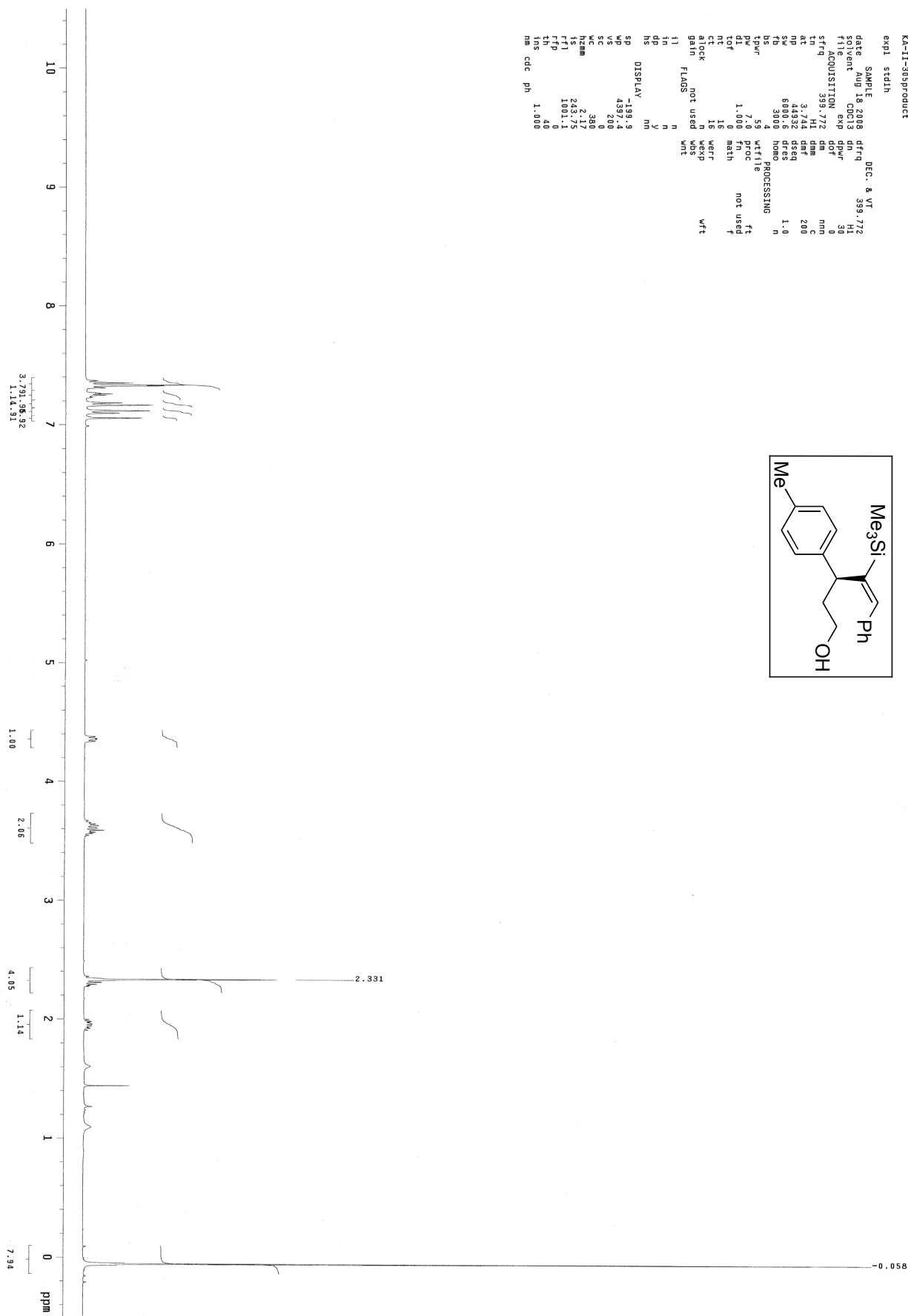
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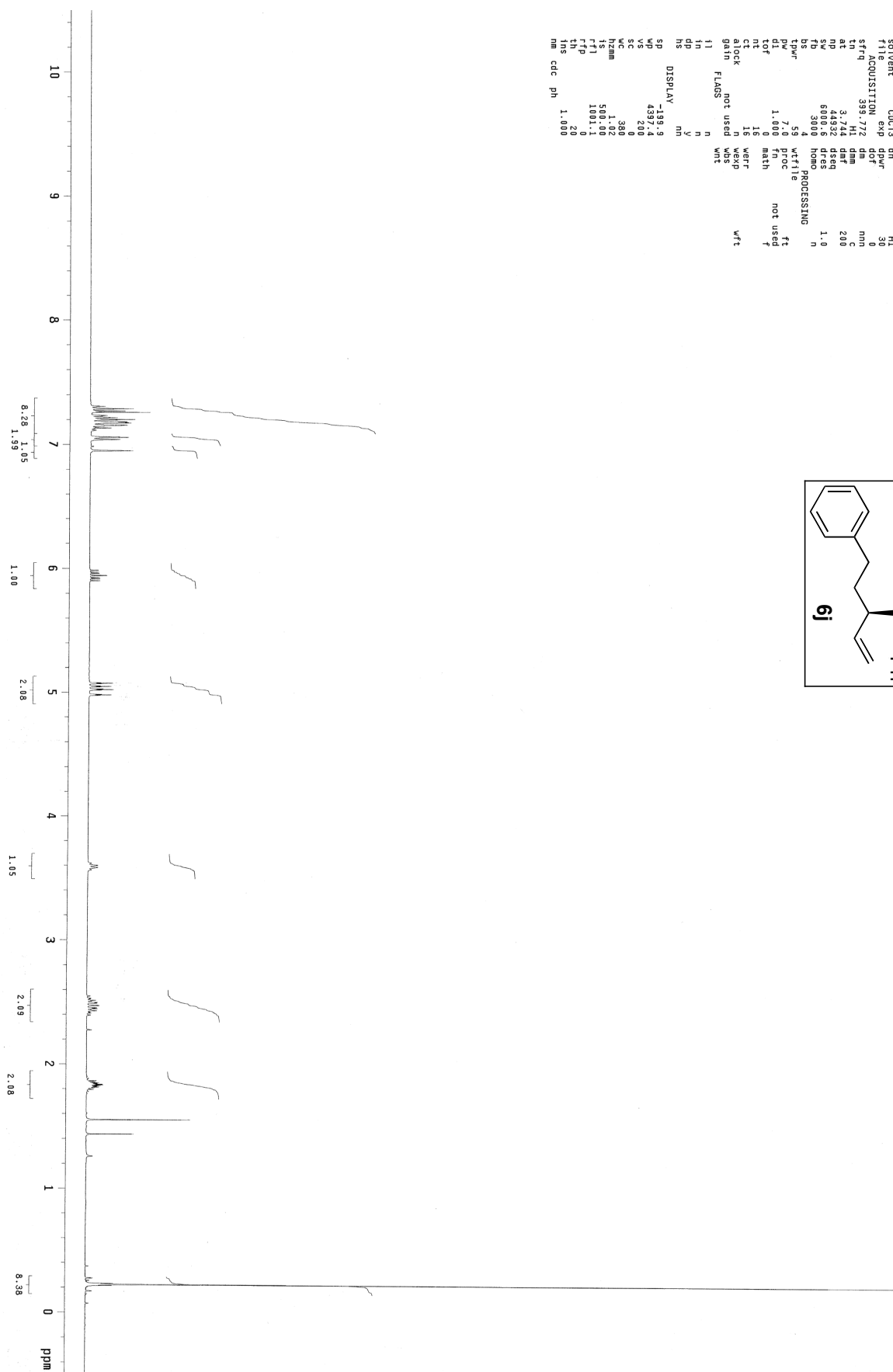
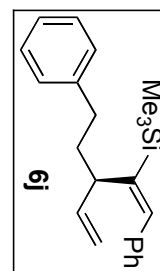
KA-II-305product
expt  stdIn
SAMPLE  Aug 18 2008  dfrq. 8 WT 399.772
solvent  CDCl3  dn  HI
file COUSITION  exp  gprf  30
f1  f2  f3  f4  f5  f6  f7  f8  f9  f10
sfrq  399.772  dm  mm  C
tr  3.744  gmf  200
at  3.744  gmf  200
np  6000  gmf  1.0
fb  3000  homo  n
bs  4  PROCESSING
dpr  59  wtitle  ft
dt  79  floc  not used  f
df  1.000  math  f
nt  16  wgt  not used  f
ctoc  0  wgt  not used  f
clock  16  wgt  not used  f
gain  not used  wts  wft
flags  not used  wts  wft
11  11  n  n
12  12  n  n
13  13  n  n
14  14  n  n
15  15  n  n
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83  83  n  n
84  84  n  n
85  85  n  n
86  86  n  n
87  87  n  n
88  88  n  n
89  89  n  n
90  90  n  n
91  91  n  n
92  92  n  n
93  93  n  n
94  94  n  n
95  95  n  n
96  96  n  n
97  97  n  n
98  98  n  n
99  99  n  n
100 100  n  n
ms  cdc  ph  1.000
  
```



KA-III-4-product

```

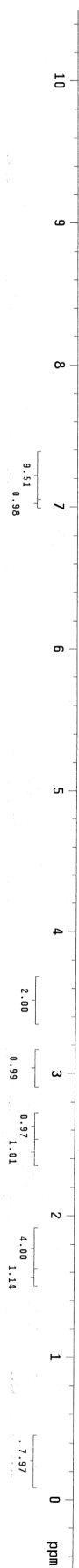
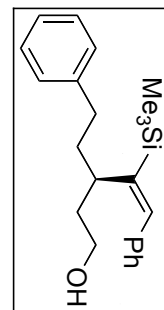
expl sidh
SAMPLE 5 2908 DEC. 8 VT 399.772
date Sep 5 2908 dfrq 399.772
solvent CDCl3 dn HI
F1 ACQUISITION exp dof 0
F1 ACQUISITION exp dof 0
strq 399.772 dm nm
dn HI dm C
ds 3.743 deen 200
ms 44432 deen
sw 6000.6 dres 1.0
fs 3800 homo n
BS 5 v+file n
PWR 4 PROCESSING
DI 7.0 PROC ft
OP 1.000 FN not used f
TOF 0 math
TE 16
SC 16 WFR
atlock n exp
gain not used wft
FLAOS n
l1 n
in n
dn v
hs y
DISPLAY -199.9
SP 4397.4
WP 200
VS 200
SC 380
SW 6000.6
Hzmm 500.00
IS 1001.1
F1 20
TH 20
ms cdc ph 1.000
  
```

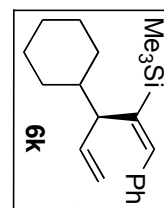


KA-III-9product

```

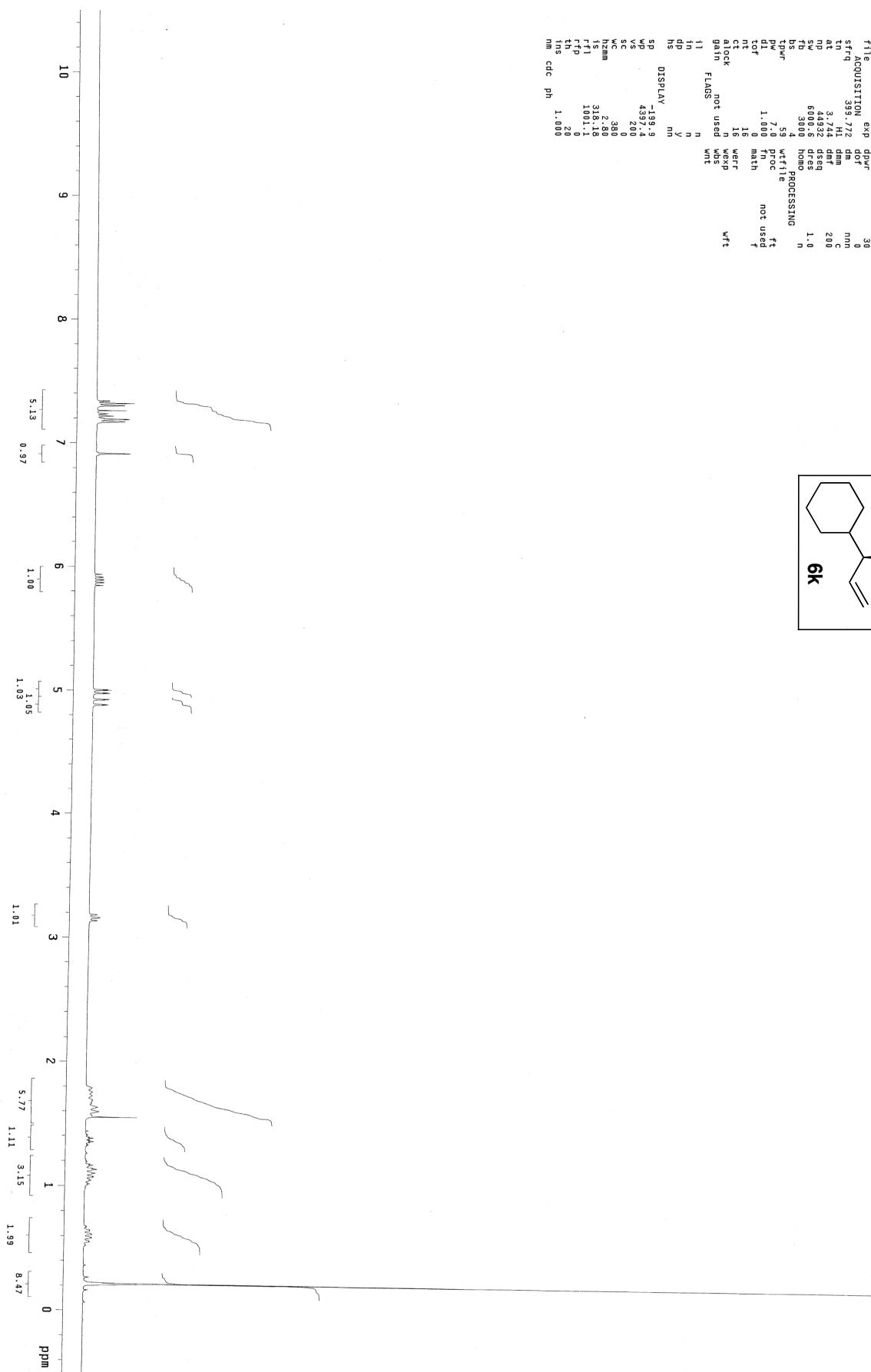
expl stidln
date Sep 18 2008 dfrq DEC. 8 VT 393.772
solvent CDCl3 dn HI
FILE ACQUISITION exp dfrq 30
NAME KA-III-9product dfrq 30
dfrq 393.772 dm nmn
tn HI dm C
at 3.743 dfrq 200
sw 4.743 dfrq 200
sp 6000.5 dres 1.0
fb 3000 homo n
bs 4 vrf:file
Dfrq 50 PROC
di 750 proc ft
di 1.000 fn not used f
tof 0 math f
nt 15 werr f
atlock not used wbs wft
gain not used wbs
flags not used wft
in n
dp y
hs nh
SP DISPLAY -199.9
WP 4397.4
VS 200
SC 380
hzmm 3.52
fs 140.91
rf1 1001.1
th 20
ms cdc ph 2.000
    
```

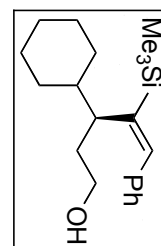




```

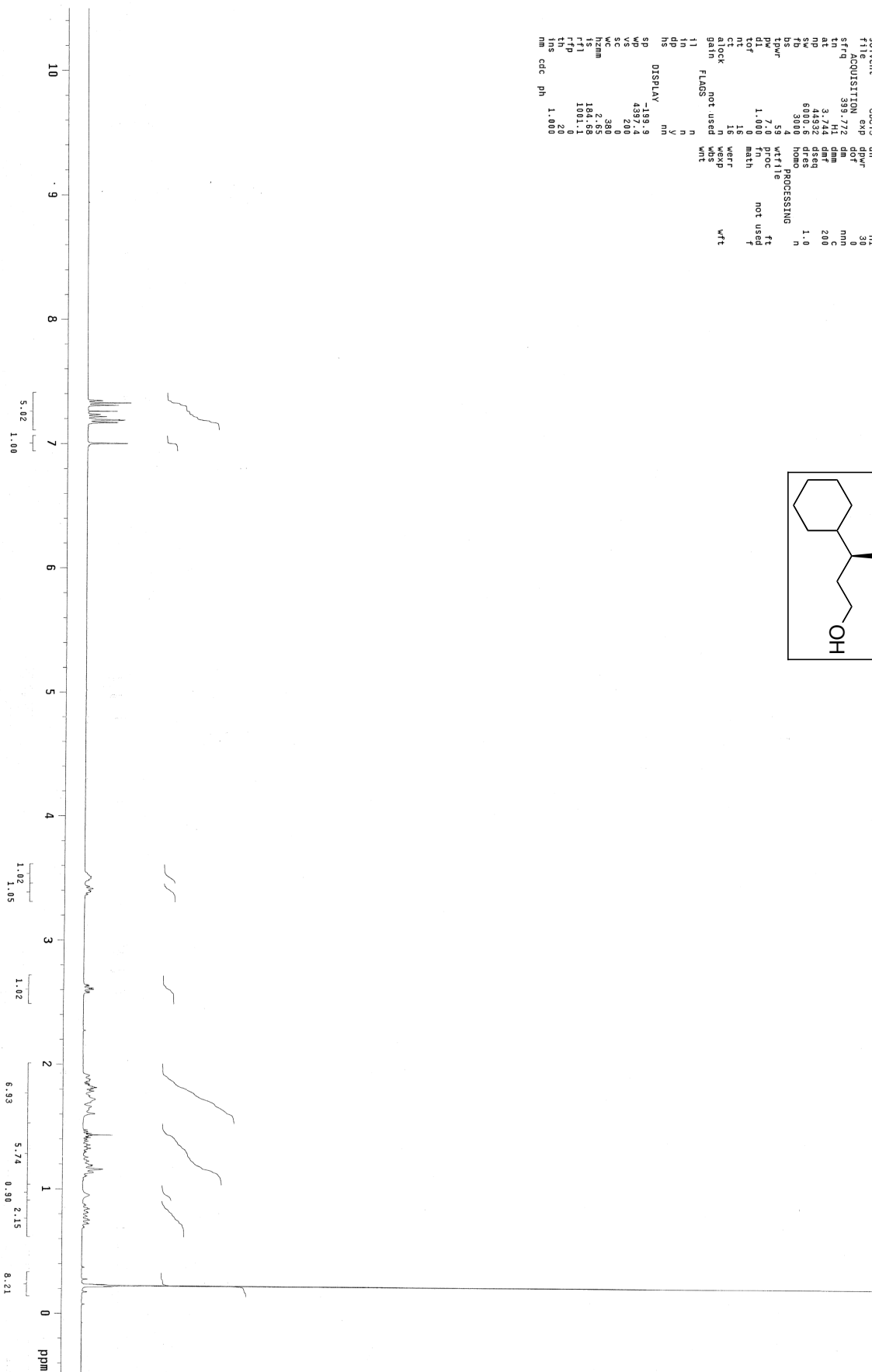
KA-III-3-product
expl stidh
SAMPLE DEC. & VT 393.772
date Sep 6 2008 dfrq
solvent exp dnc13 dn HI
file dfrq dof 30
ACQUISITION 393.772 dm mm
sfrq 44932 dseq 200
at 3.744 dmf
np 6000.6 dres 1.0
sq 4 nom PROCESSING
bs 4 wffile n
tpwr 59 wffile ft
pw 7.0 ploc ft
nt 1.00 math not used
tof 16 werr not used
ctock 16 werr not used
gain not used wbsp wft
flags not used wnt
11 n
10 n
9 n
8 n
7 n
6 n
5 n
4 n
3 n
2 n
1 n
0 n
ms cdc ph 1.000
  
```





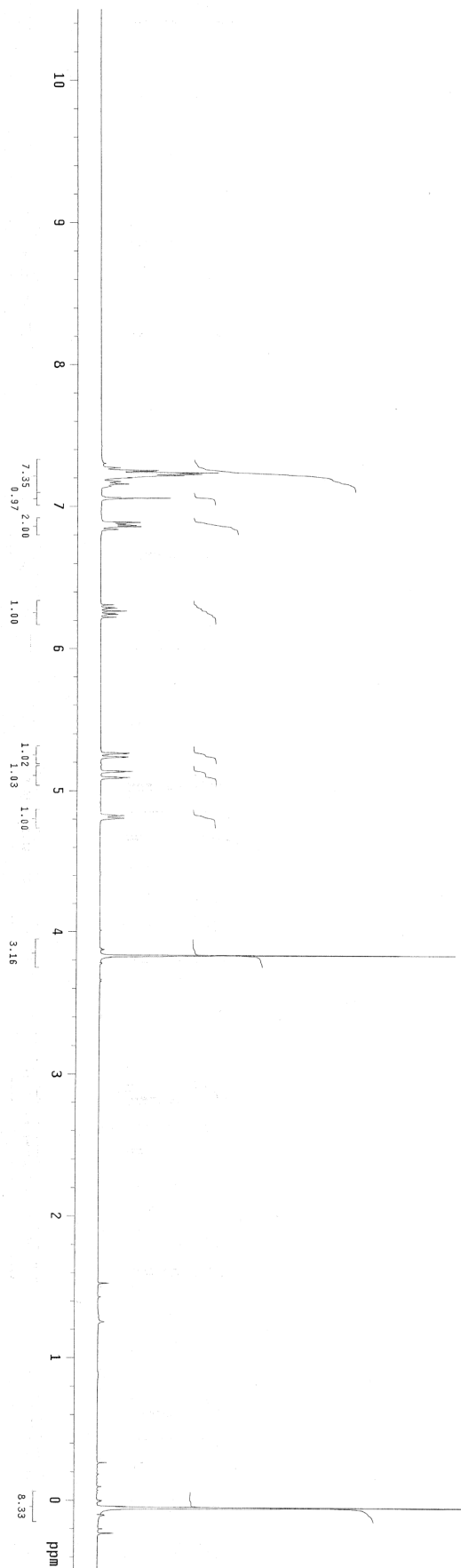
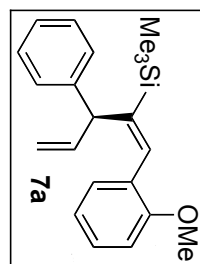
```

KA-III-1-product
expt stdIn
SAMPLE date Sep 12 2008 dfrq DEC. 8 VI 399.772
solvent CCl3 dn H1 30
F1 ACQUISITION exp dDWR 30
F2 ACQUISITION exp dDWR 30
sfrq 399.772 dm min
tn H1 dm 200
at 3.424 dm 1.0
sw 6000.6 dres
fb 3000 homo PROGRESSING
bs 54 vrf1 b
pwr 7.0 proc ft
di 1.000 fn not used f
tof 0 math
ct 16 warr
alock n wexp
gain not used wts
f1 n
f2 n
f3 n
f4 n
f5 n
f6 n
f7 n
f8 n
f9 n
f10 n
f11 n
f12 n
f13 n
f14 n
f15 n
f16 n
f17 n
f18 n
f19 n
f20 n
nm cdc ph 1.000
  
```



```

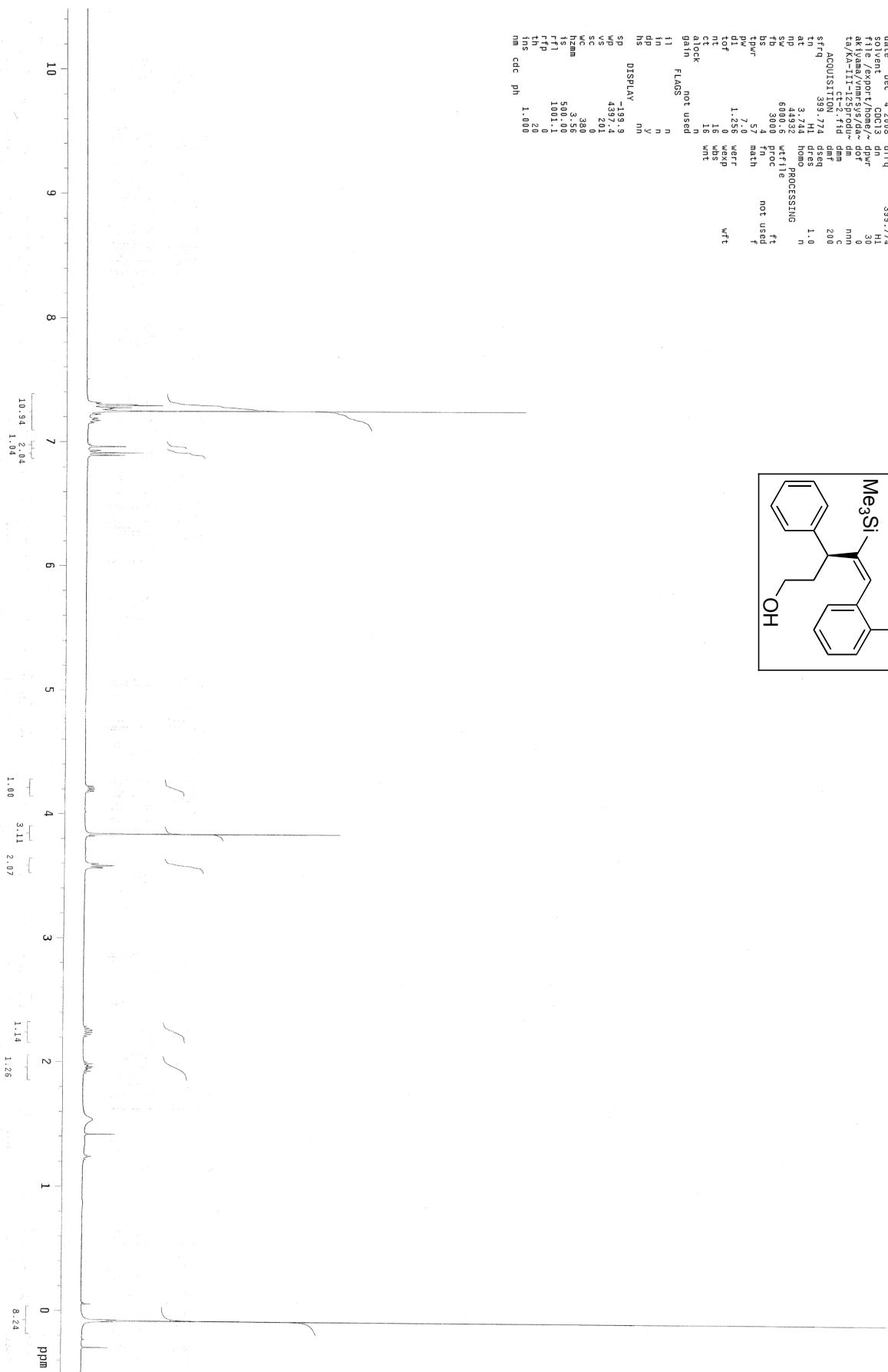
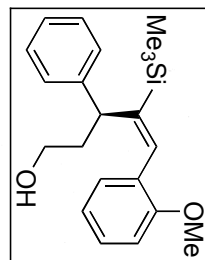
KA-III-106product
expd stdIn
SAMPLE date Nov 19 2008 dfrq DEC. & VT 399.774
solvent CDCl3 dn HI
F1 ACQUISITION exp dot 30
sfrq 399.774 dm mnc
fn HI dm 200
nc 3.71 dres 1.0
sw 6000.6 dres
fb 3000 homo PROGRESSING n
bs 5 vrfi e
pwr 7.0 proc ft
d1 1.256 fn not used f
tof 0 math
ct 16 wft
cl 16 wexp
alock not used n
gain not used wft
f1 1 n
f2 1 n
f3 1 n
f4 1 n
f5 1 n
f6 1 n
f7 1 n
f8 1 n
f9 1 n
f10 1 n
nm cdc ph 1.000
  
```



K3-II-12Spr product
exp2 std1h

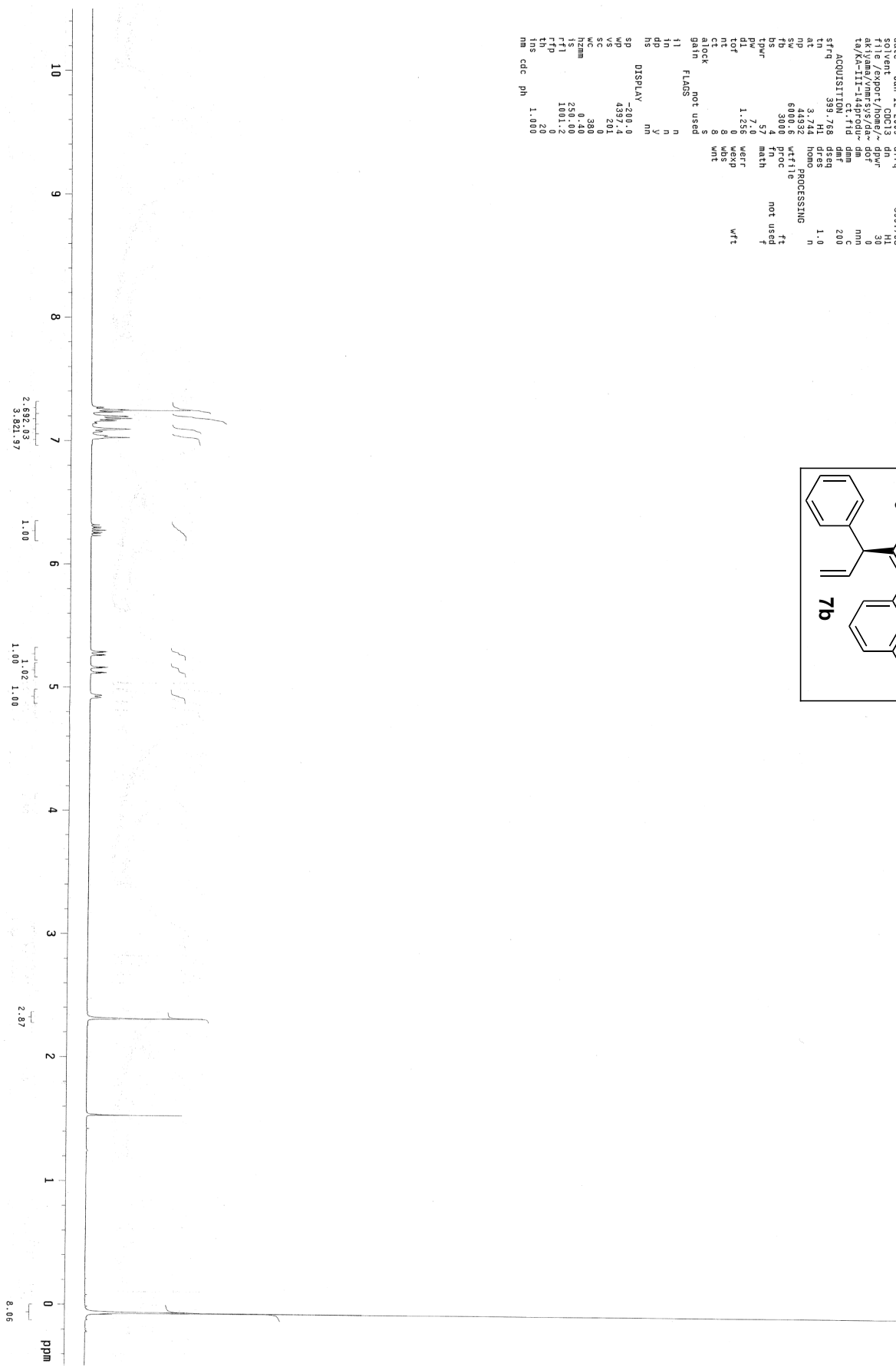
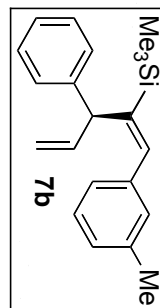
```

SAMPLE      Dec 4 2008  dfrc  8 VI  399.774
solvent     CDCl3  dn
f1ie /export/home/~/dpr
f2/Ka=III-12SprStd1h
f3/Ka=III-12SprStd1h
CT=2.fid dmf
ACQUISITION 399.774 dseq 200
sfrq 399.774 dseq 1.0
at 3.744 homo
np 44932 wtr1ie
sw 6000.6 wtr1ie
bs 300.9 f2 oc not used f4
tpwr 7.0 math
pw 7.0 warr
d1f 1.258 warr
nt 1.8 wbs
ct 1.8 wnt
alock not used
gain not used
l1 n
in n
ip n
ns v
DISPLAY nm
sp -199.9
wp 439.4
sc 2.0
wc 380
hzmm 50.156
f1 1001.1
r1p 0
th 20
ms cdc ph 1.000
    
```



Ka-III-143product
 expd std1h

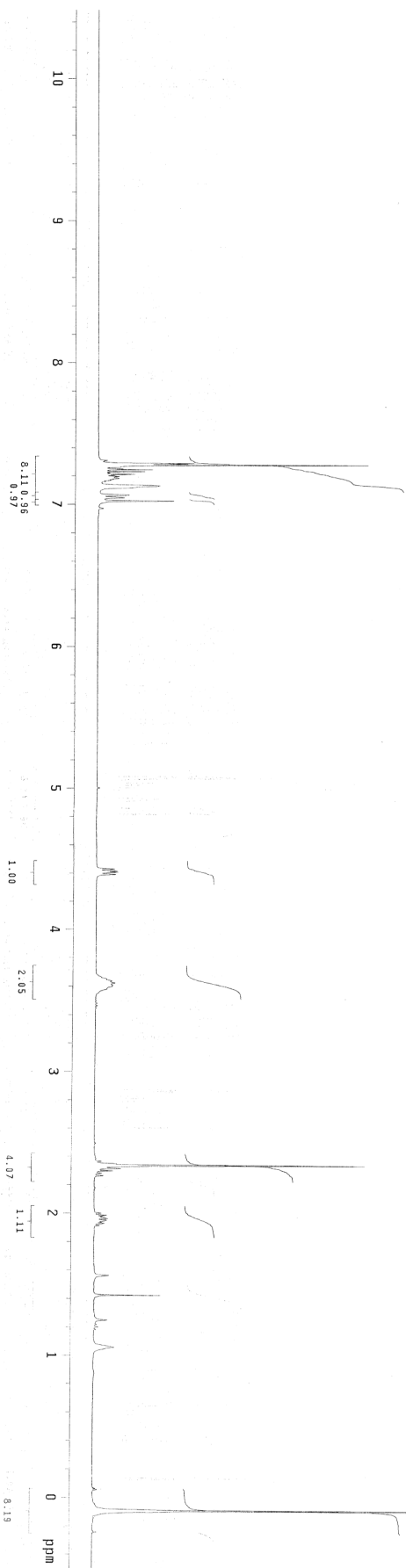
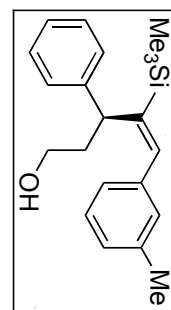
date Jan 12 2019 DEC. & VT
 time 11:00:00 dfrq 399.768
 f1/a/epopt/home2 dm 31
 f1/b/epopt/home2 dm 30
 ak/yama/vmr/svs/94e-dof mn 0
 ta/Ka-III-143prod- dm mn
 ct-ftid dm 200
 ACQUISITION dm C
 sfreq 399.768 dres 1.0
 tn HI dres 1.0
 at 3.744 homo PROGRESSING n
 np 64832 wft1s
 fb 3000 proc ft
 bs 4 fn not used f
 tpwr 57 math
 pw 7.256 warr
 tof 1.256 wexp wft
 nt 8 wbs
 ct 8 wnt
 gain not used
 FLABS not used
 i1 n
 dn n
 hs n
 DISPLAY 289.0
 sp 439.201
 vs 0
 sc 0
 wc 380
 l2mm 0
 rft1 258.40
 rft2 1081.2
 rft3 0
 tn 20
 nm cdc ph 1.000



Ka-II-117/productA

```

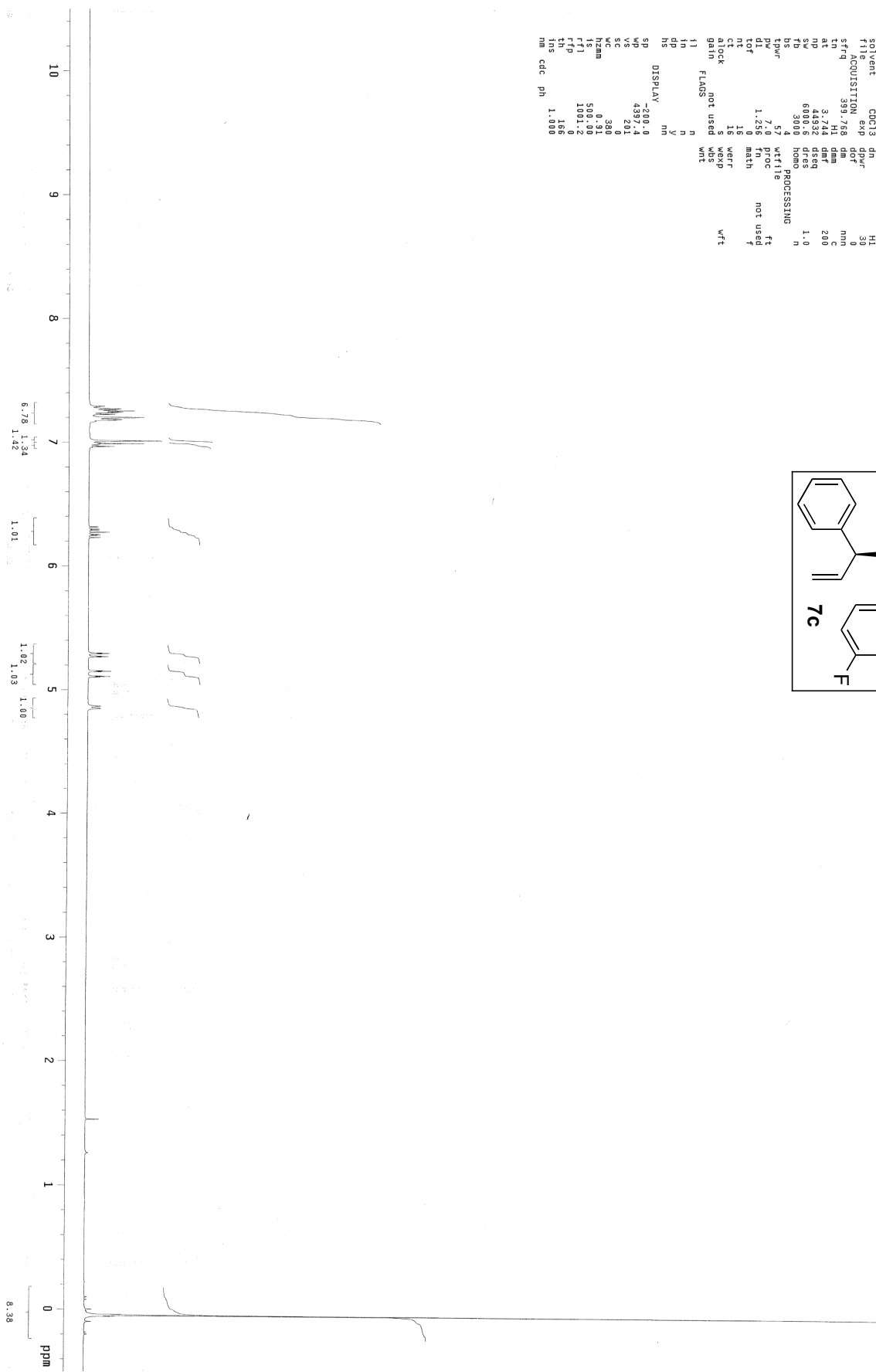
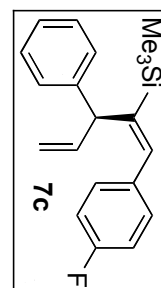
expd stidh
SAMPLE
date Jan 15 2009 dfrc DEC. 8 VT
solvent dmf CDCl3 dn HI
f1file ACQUISITION exp dpwr 30
sfrc 399.768 dnf n/c
en HI dm 200
at 3.744 dmf 1.0
pp 44832 dseq n
fb 3000 homo n
bs 4 PROCESSING
tdwr 57 wffile f
dl 7.0c not used f
d 1.258 fn math
tof 0
nt 18 wdrf
clock 18 wdrf
gain not used wft
flags not used
l1 n
i1 n
dp y
hs DISPLAY
sp -200.0
wp 497.4
vs 201
sc 0
sc 348
hznm 290.00
ts 1001.2
fft 20
ins 1.000
nm cdc ph
    
```




```

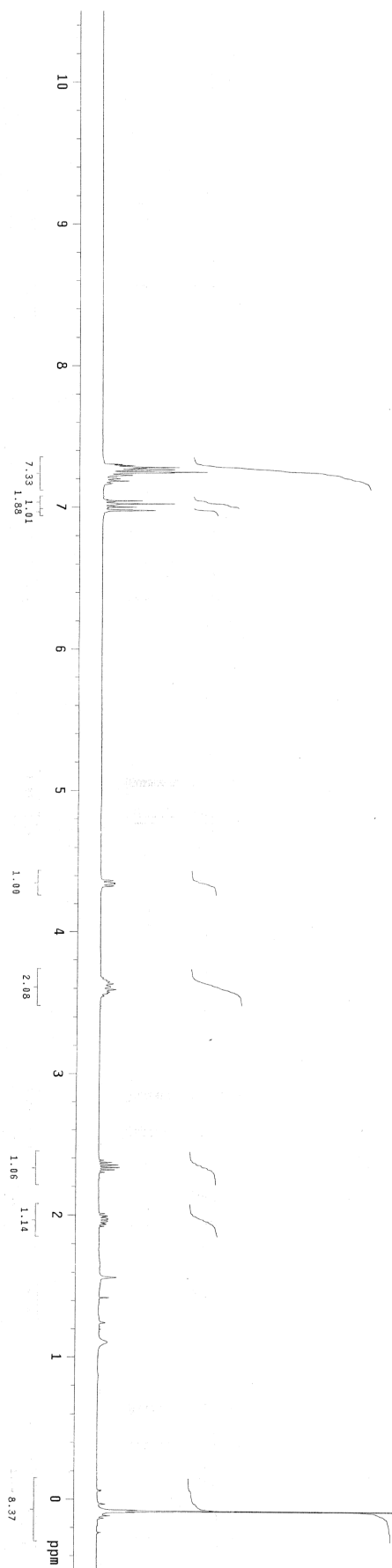
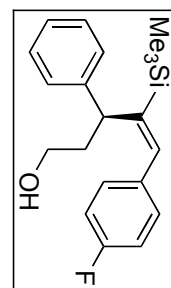
KA-III-133product
expt stidih

SAMPLE 1.2008 DEC. 8 VT
date_08112008 dfrq_393.768
solvent_ccl3 dn_H1
file_CACI3 exp_dpvr_30
sfAcQUISITION_393.768 HI_dm_mnc
at_3.744 daf_200
np_4492 dseq_1.0
fb_6096 NMRB
bs_900 NMRB PROCESSING
tpwr_57 wfttle ft
pw_750 n proc not used f
sl_1.50 n math not used f
tof_1.50 math not used f
nt_16 werr not used f
gt_16 werr not used f
stck not used wft
gain not used wft
flABS not used wft
l1 n
l2 n
l3 n
l4 n
l5 n
hs n
dsPLAY_289.0
wp_4397.4
vs_201
sc_880
vsc_880
hznm_0.91
ts_500.00
fft_1001.2
tA_160
tB_160
nm_cdc_ph_1.000
    
```



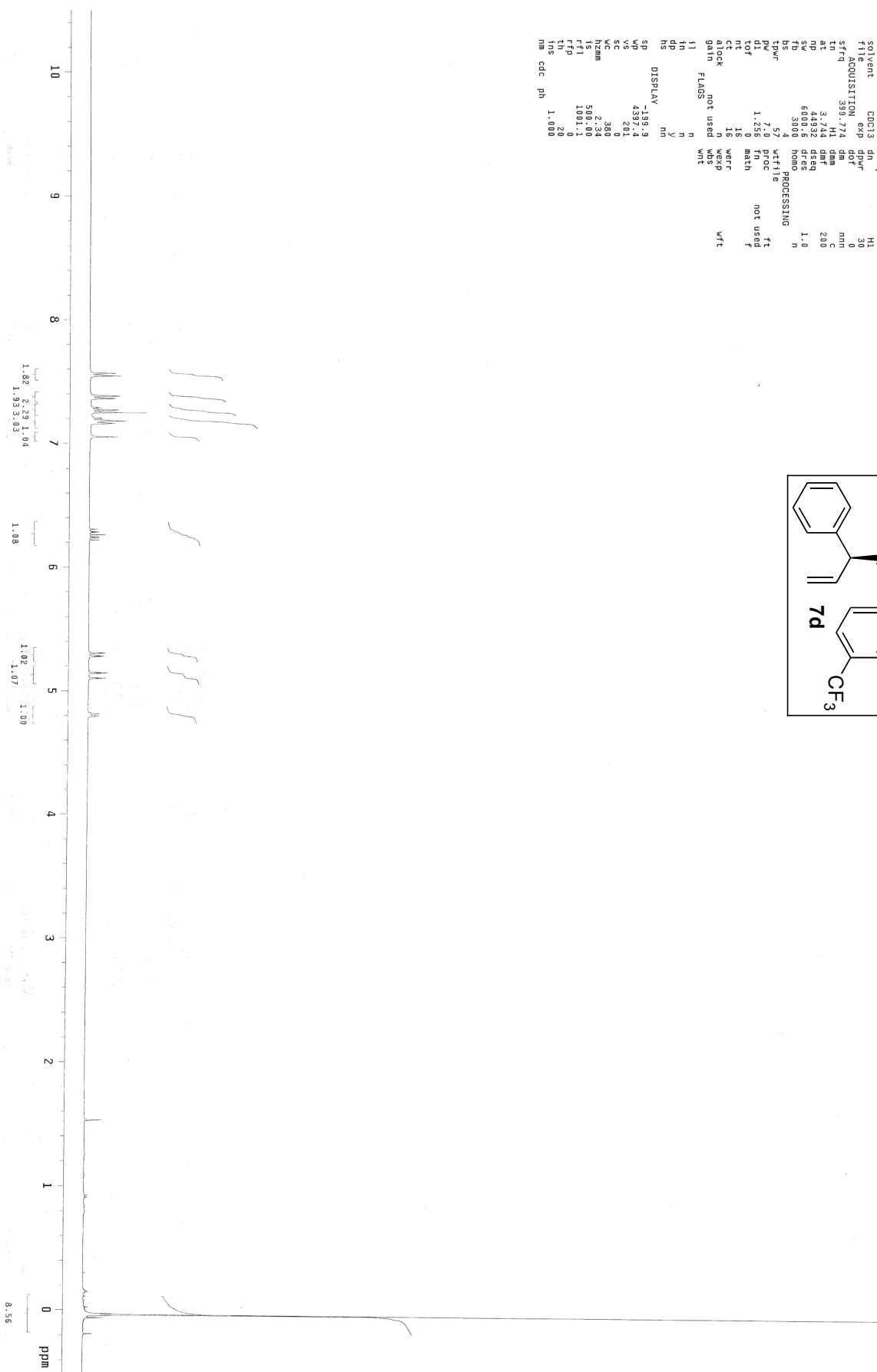
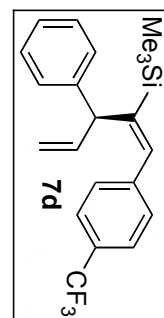
```

KA-III-132ProductA
exp3 std1h
SAMPLE DEC. & VT
date Dec 11 2018 dfrq 399.768
sdate Dec 11 2018 dfrq 399.768
file C00033.d file 30
ACQUISITION dof 0
sfrq 399.768 dm 0
at 3.744 dmf 200
mp 44332 dses 200
sw 6000.16 dres 1.0
lb 3000 homo n
PROBHD 5mm QNP1H
P1 7.0 wffile n
PV 7.0 proc ft
DI 1.256 Fin not used
SC 18 match f
nt 18 werr f
ct 18 wepp f
alock not used wft
gain FLAS 5 wepp
fl1 n n
fl2 n n
fl3 n n
fl4 n n
fl5 n n
fl6 n n
fl7 n n
fl8 n n
fl9 n n
fl10 n n
fl11 n n
fl12 n n
fl13 n n
fl14 n n
fl15 n n
fl16 n n
fl17 n n
fl18 n n
fl19 n n
fl20 n n
fl21 n n
fl22 n n
fl23 n n
fl24 n n
fl25 n n
fl26 n n
fl27 n n
fl28 n n
fl29 n n
fl30 n n
DISPLAY -200.0
sp -200.0
vr 439.701
vs 0
sc 0
wcm 388
wzmm 25.24
rf1 1001.2
rfp 0
th 8
ms cdc ph 1.000
  
```



KA-II-116product
exp3 std1h

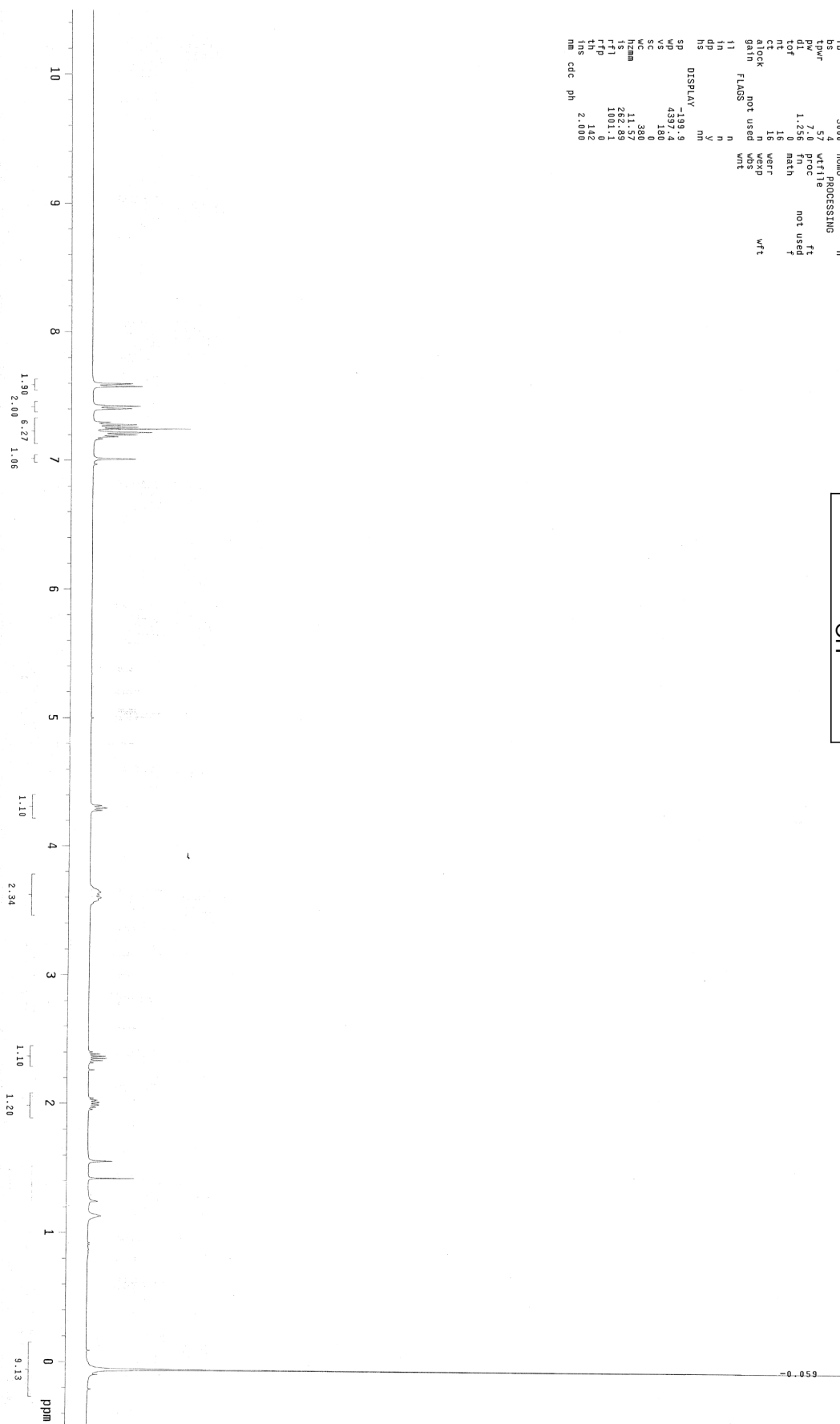
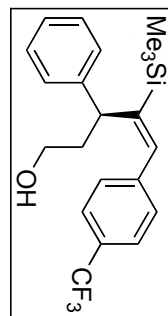
date Nov 29 2008 dfrq DEC. 8 VT
 SAMPLE Nov 29 2008 dfrq 393.774
 solvent CDCl3 dn HI
 file CDCl3 dn HI
 ACQUISITION exp dpr 30
 sfrq 393.774 dm 30
 tn HI dm 200
 at 3.744 dfr 200
 sp 6000.0 dfr 200
 fb 3000 homo 1.0
 bs 54 PROCESSING
 dpr 7.0 wftie ft
 di 7.0 pco not used f
 tof 1.256 fn math
 nt 10 werr
 gain not used wbs wft
 flags not used wft
 ti n
 in n
 dp y
 ns nh
 SP DISPLAY -199.9
 WP 4397.4
 VS 201
 WC 380
 Hzmm 2.34
 IS 500.00
 FID 1001.4
 TH 20
 ms cdc ph 1.000



KA-III-12gproduct

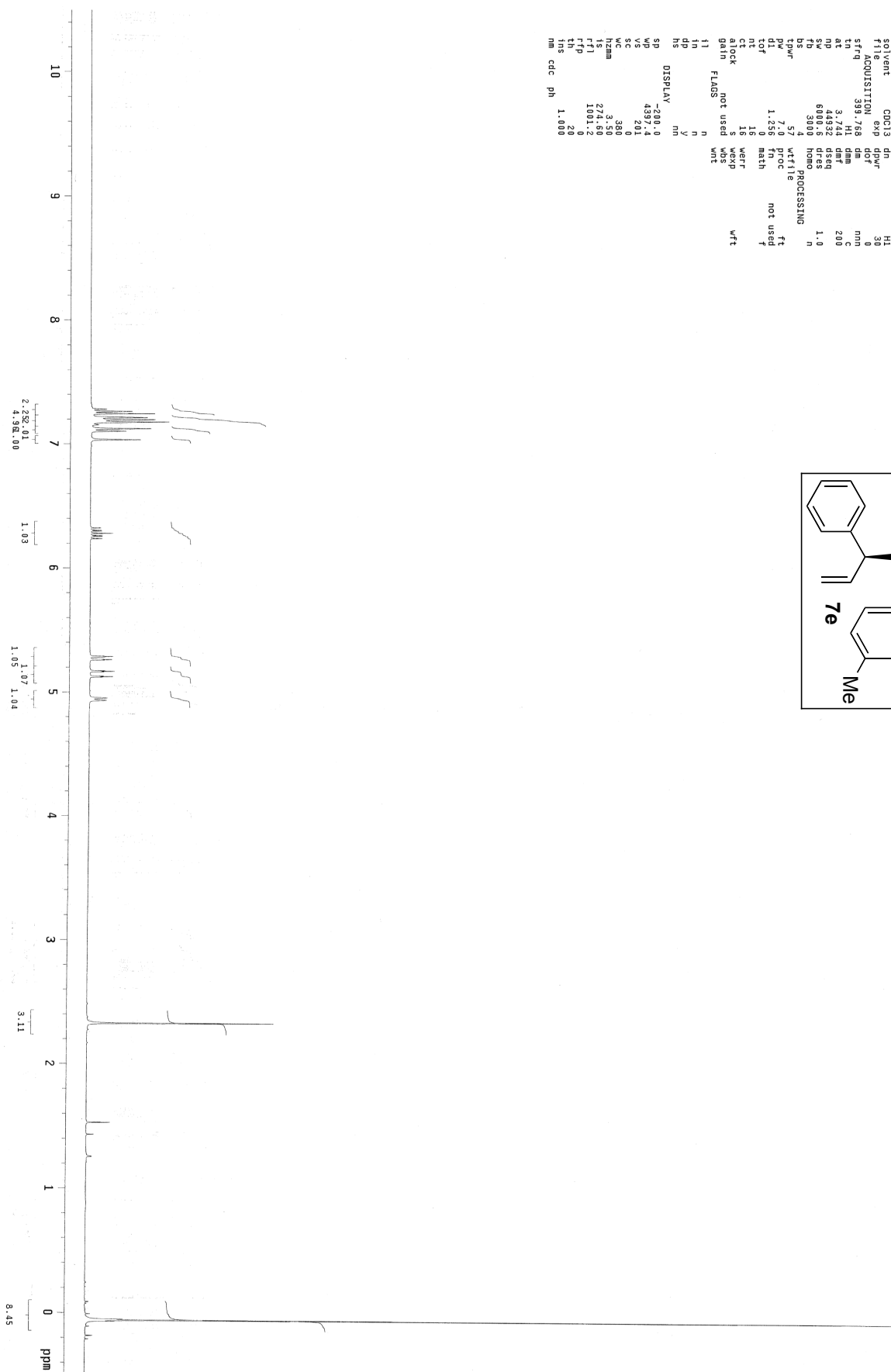
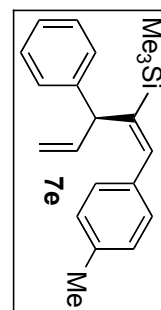
```

exp#  st11h
SAMPLE  Dec 2 2008  dfrq  DEC. 8 VT 393.774
SOLVENT  CCl3  dm  HI
1 ACQUISITION  exp  dof  3
sfrq  393.774  dm  30
tn  HI  dm  nmn
ac  3  dm  C
ns  4.432  dres  200
sw  6000.6  dres  1.0
fb  3000  homo  n
BS  5  vrf1e  PROCESSING
DM  7.0  proc  ft
DI  1.256  fn  not used
TOF  0  math  f
NT  16  werr  f
SI  1  wexp  f
atlock  not used  wbs  wft
gain  not used  wbs
1)  FLAGS  n  wft
in  n
dp  v
hs  DISPLAY  mh
SP  -193.9
WP  4397.4
VS  180
SC  0
SC  388
hscm  11.57
IS  262.89
rfl  1001.1
TH  142
ms  cdc  ph  2.700
    
```



```

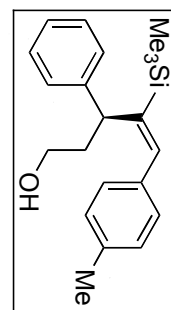
Ka-III-130product
exp2 std1h
SAMPLE Dec 16 2008 dfrq DEC. 8 VI
solvent CDCl3 dn H1
F1 ACQUISITION exp dpr 30
sfrq 399.768 dm mm
tn H1 dm 200
at 3.424 dfrn 1.0
sw 6000.6 dres
fb 3000 homo
bs 54 xffile
dpr 7.20 proc ft
dl 1.256 fn not used f
nt 18 math
rt 18 warr
atlock s wbp
gain not used wft
fl FLABS not used wnt
i1 n
in n
dp y
hs nh
DISPLAY -200.0
sp 4397.4
vs 201
vc 380
vsc 380
hzam 274.60
ts 1001.2
ft 20
ins cdc ph 1.000
  
```



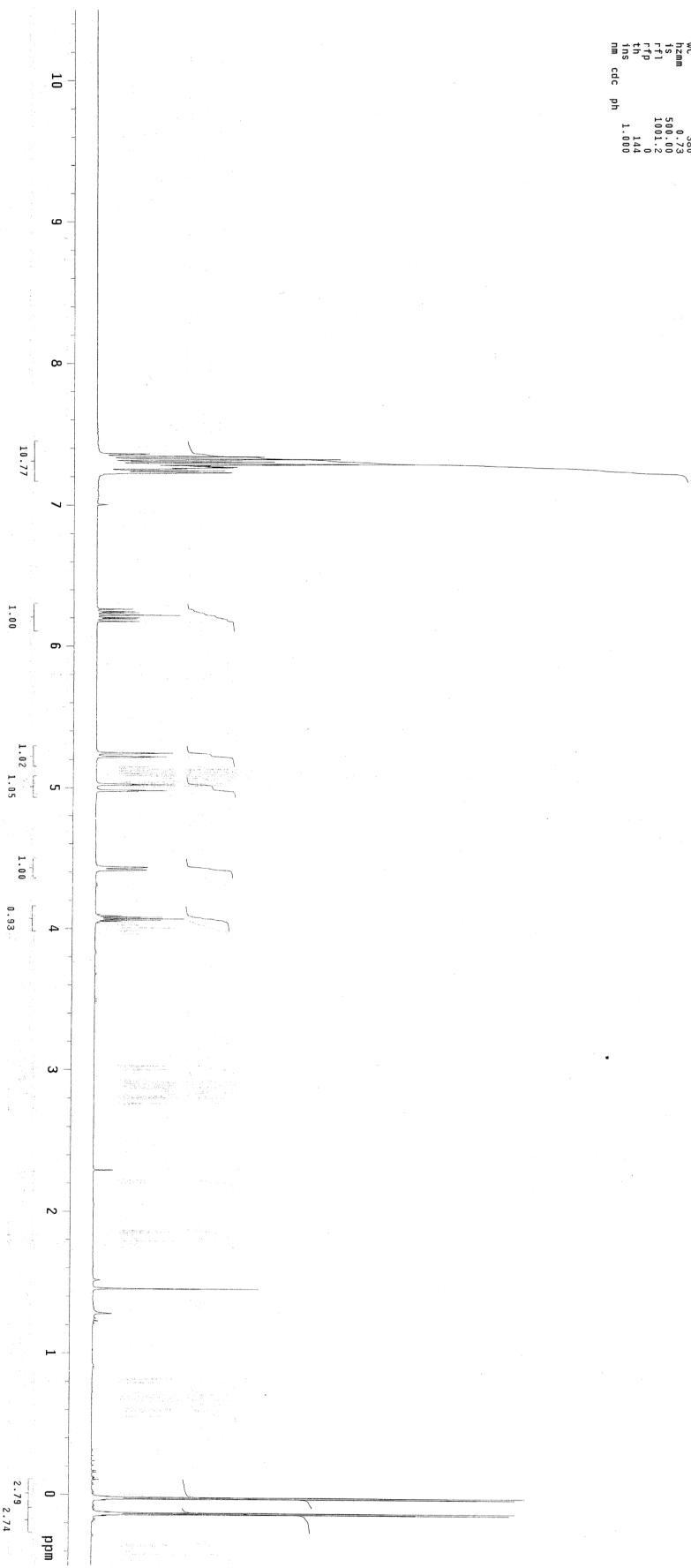
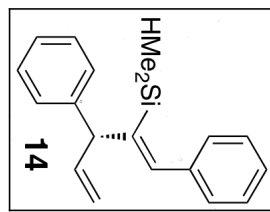
KF-II-13bproductB-1
exp2 std1h

```

SAMPLE      6 2009 dfrq DEC. 8 07 398.768
date      Jan  CDD13 dn  HI
solvent    CDCl3 exp  dpwv 30
file ACQUISITION 768 dof 0
f1      393.768 HI dm  n/c
f2      3.744 dmf  C
at      44832 dseq 200
ap      80000 Nmeas 1.0
ap      3000  PROCESSING  n
bswv    4
tpwv    57 wffile
pv      7.28 Proc  ft
f1      1.70 f  not use f
tof      0 math
nt      8
ct      8 werrp
clock    not used
gain     8 wbs
FLASH   not used wft
11      n
10      n
9        n
8        n
7        n
6        n
5        n
4        n
3        n
2        n
1        n
0        n
nm cdc ph 1.000
  
```

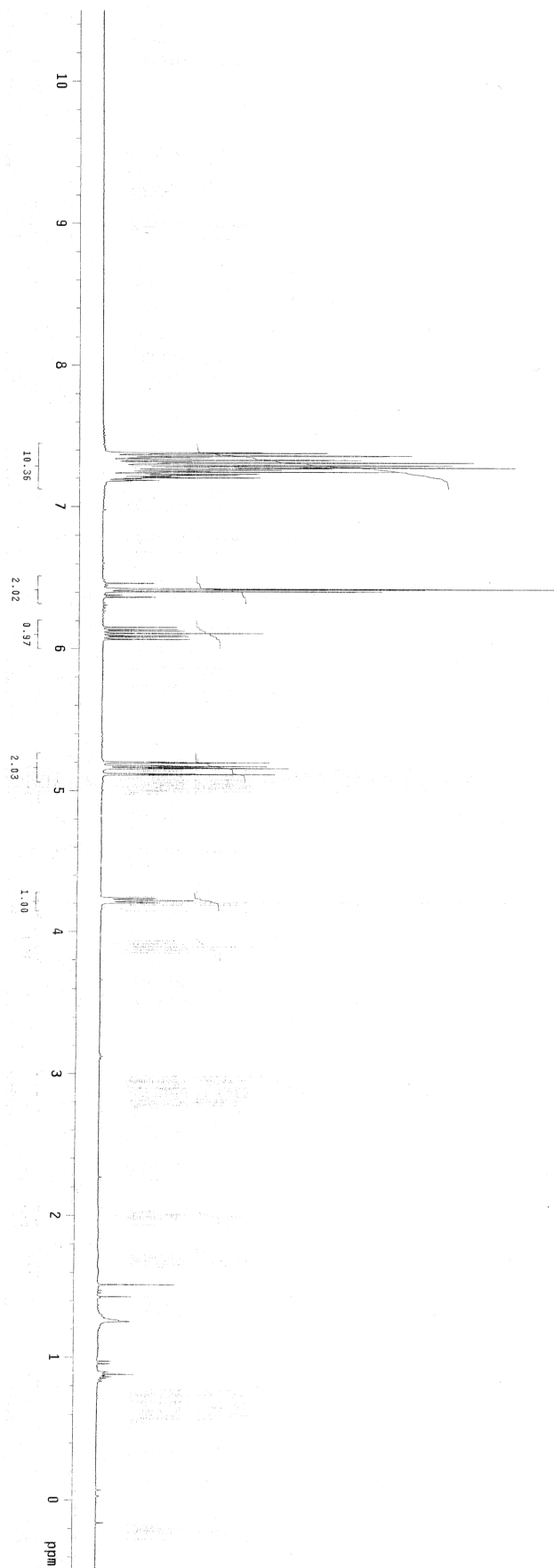
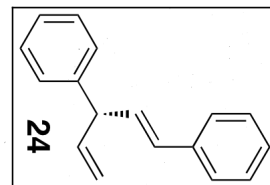


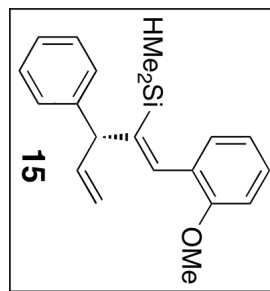
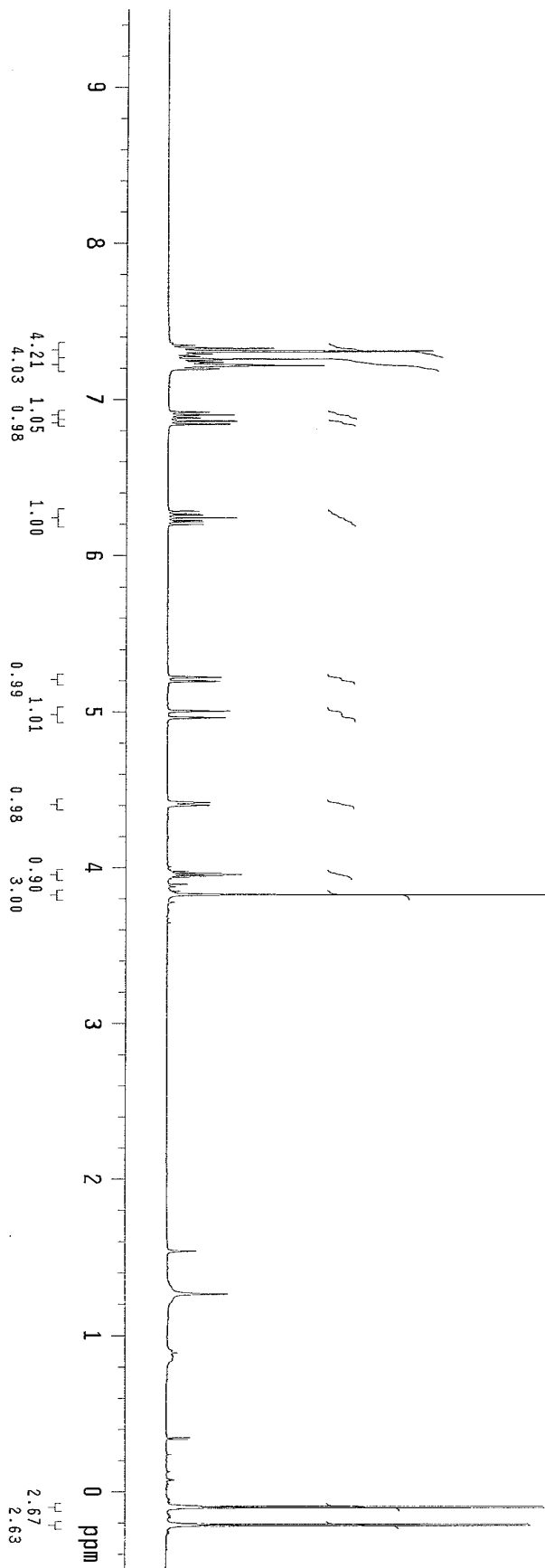
KA-III-12productA
 exp3 stdIn
 SAMPLE DEC. & VI
 date Feb 7 2019 dfrq 399.768
 time 12:01:33 ch1
 file ent exp ddr 30
 ACQUISITION exp ddr 0
 sfrq 399.768 da min
 an 3.741 det 200
 np 44932 dres 1.0
 sw 6000.6
 fd 3000 homePROCESSING n
 tpwr 57 wfttle
 pw 7.0 proc ft
 dl 1.258 fa not used f
 nt match
 ct 8 werr
 atlock 8 wexp
 gain not used wft
 flags not used wft
 i1 n
 i2 n
 in n
 ip y
 hs n
 DISPLAY n
 sp -299.0
 wp 439.74
 sc 0
 wc 390
 hzmm 0.73
 f1 500.73
 rffl 1001.2
 rfp 1.0
 tn 1.44
 mm cdc ph 1.000

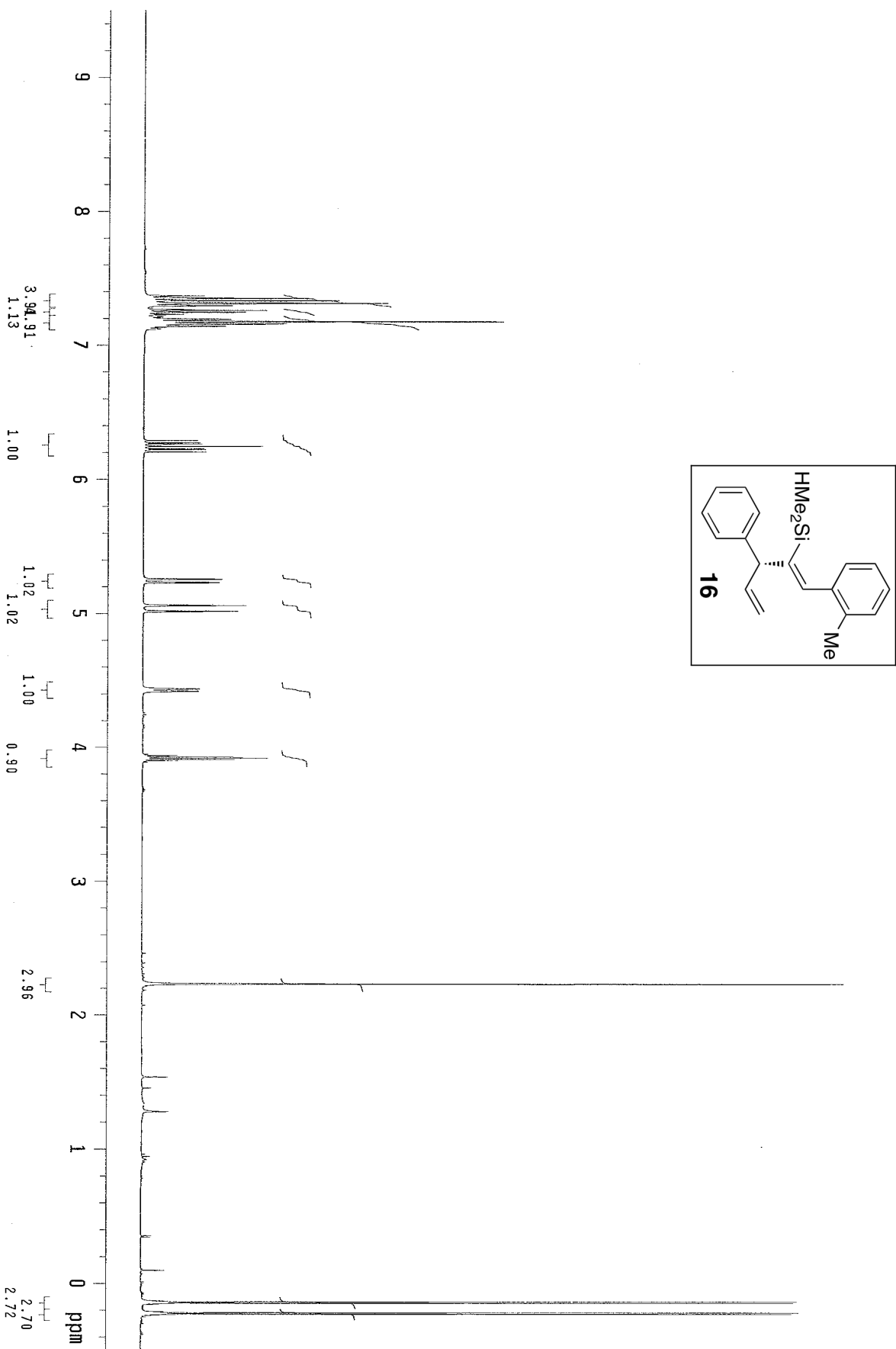


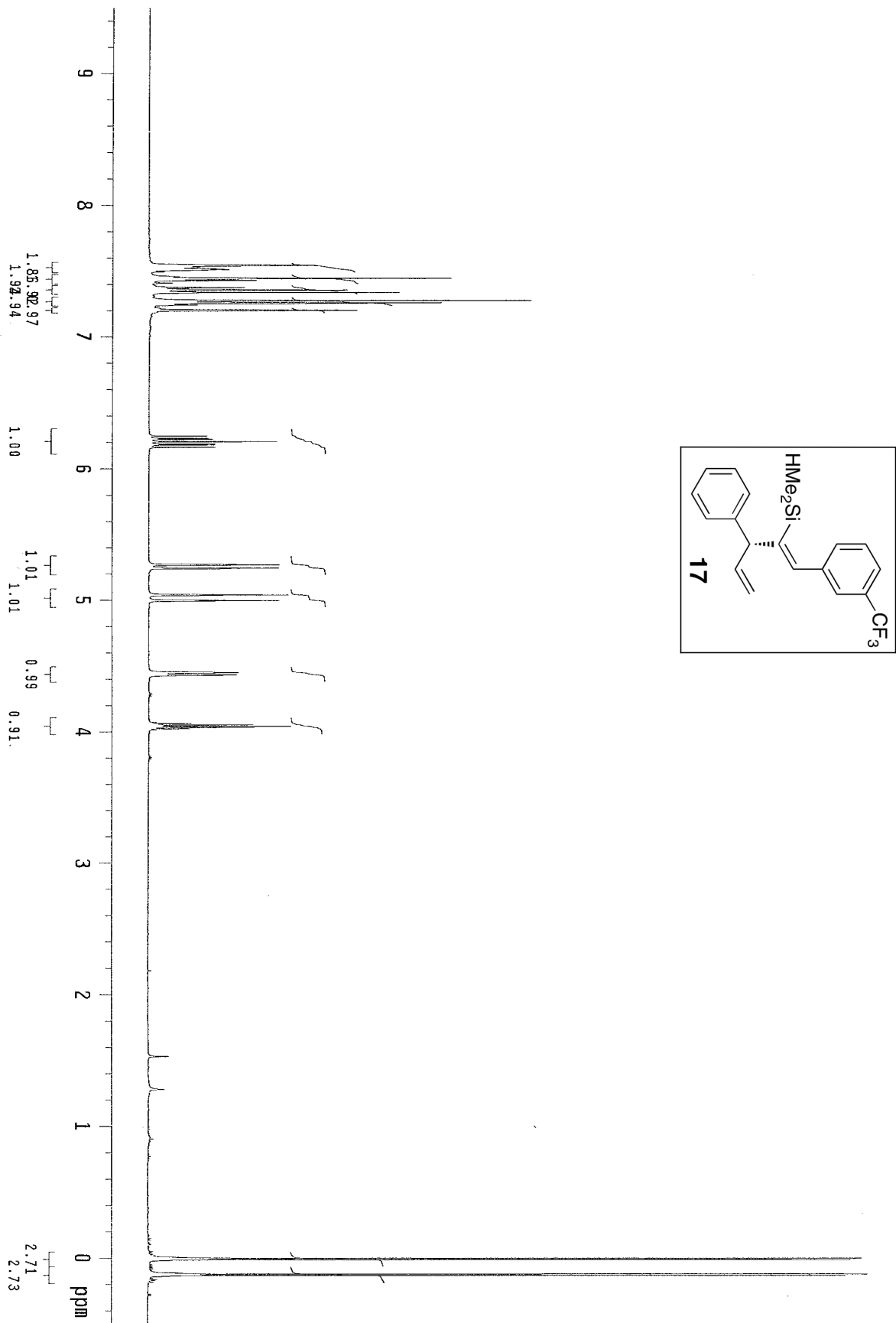
```

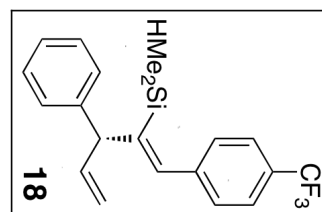
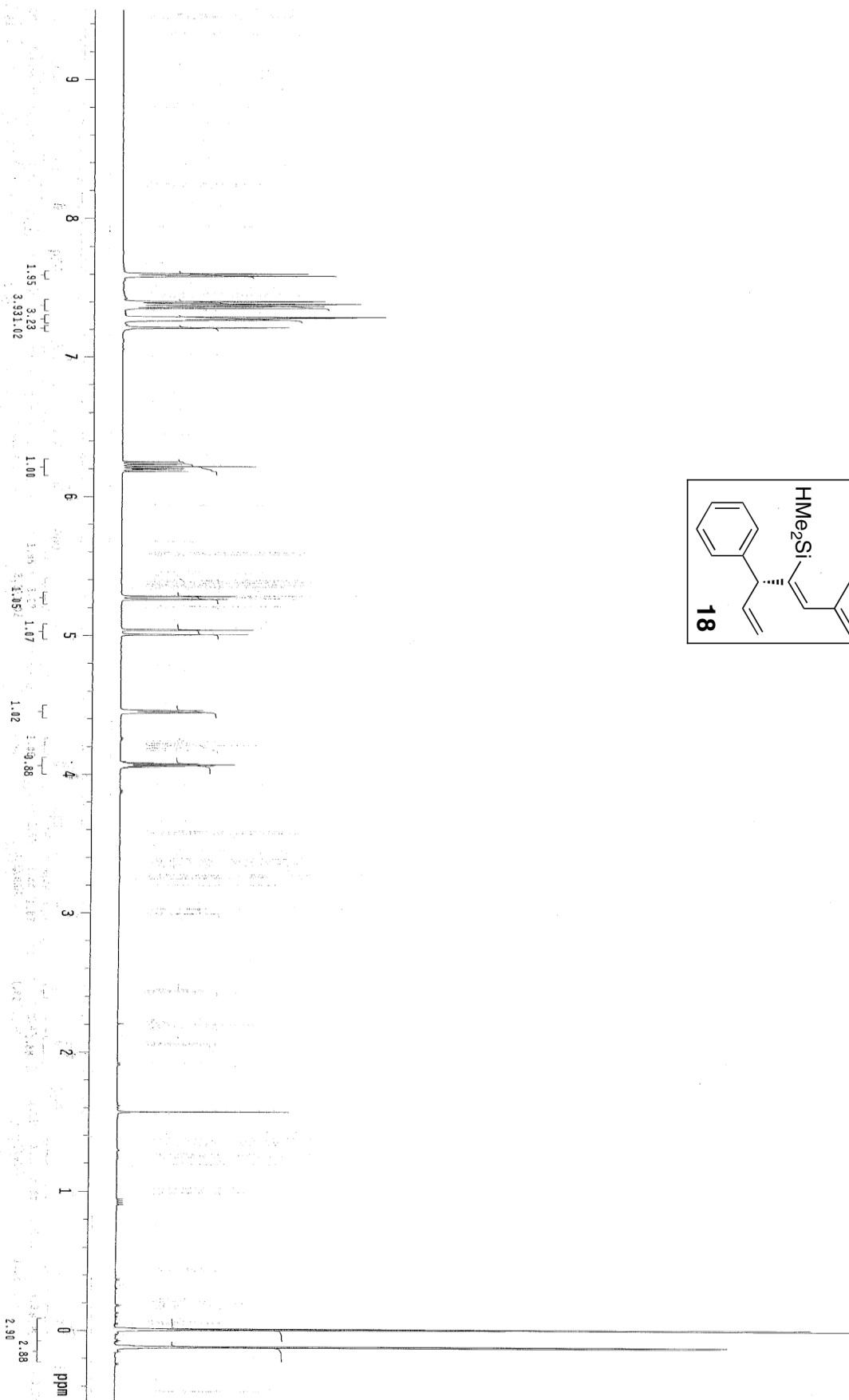
Ka-III-181producta
expd stidih
SAMPLE DEC. & VT
date Feb 11 2009 dfrq 399.768
solvent CDCl3 dn H1
F1 ACQUISITION exp dof 30
sfrq 399.768 dm mm
tn H1 dm 200
nt 44932 dres 1.0
sw 6090.6 dres 1.0
fb 3000 homo n
bs 5 wff18 PROCESSING
pwr 7.0 proc ft
di 1.256 tn not used f
ct 1.6 math not used f
ct 1.6 warr not used f
alock 5 wexp not used f
gain not used wft
}1 FLAGS not used wft
}1 n
}2 n
}3 n
}4 n
}5 n
}6 n
}7 n
}8 n
}9 n
}10 n
}11 n
}12 n
}13 n
}14 n
}15 n
nm cdc ph 1.000
  
```

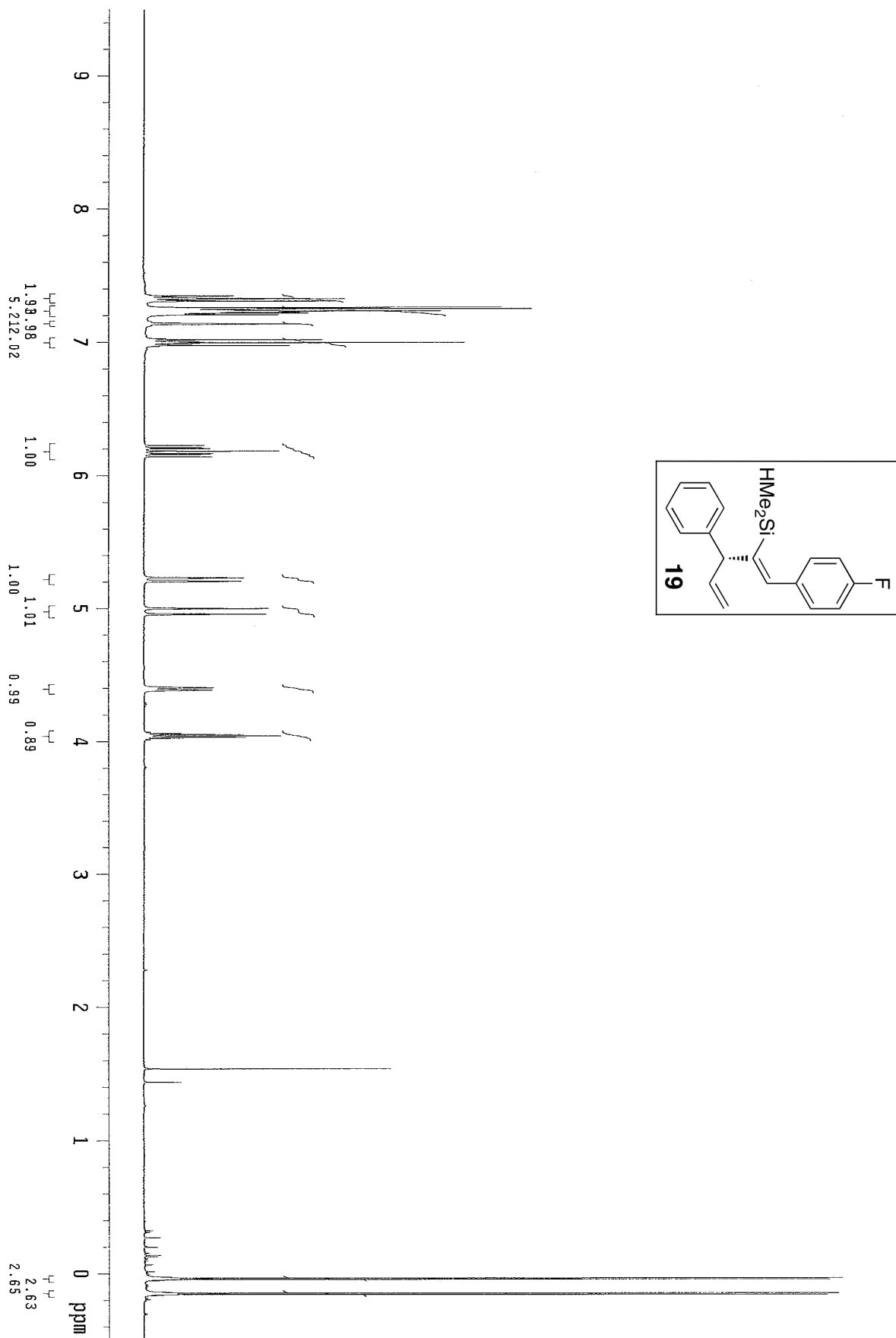


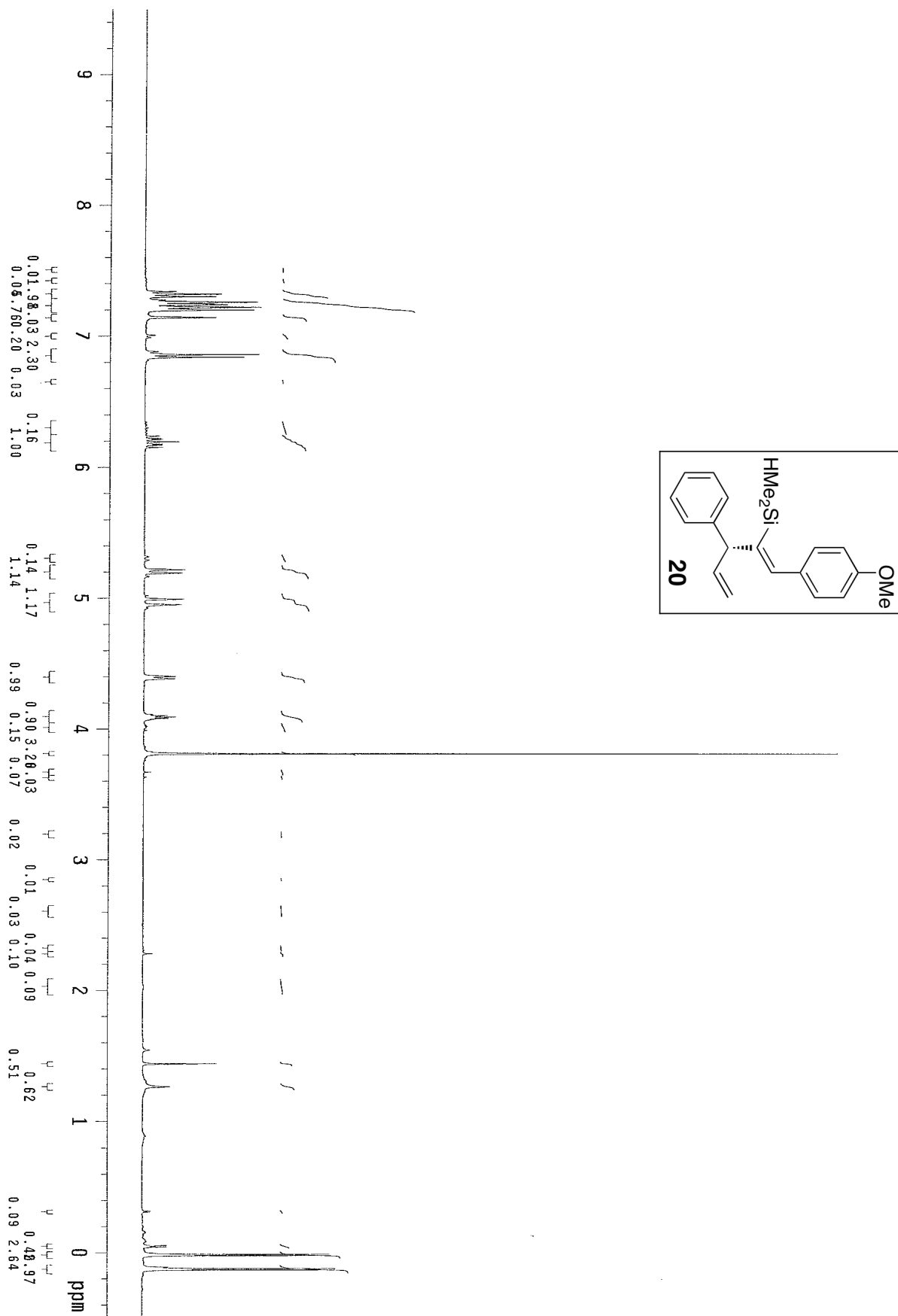






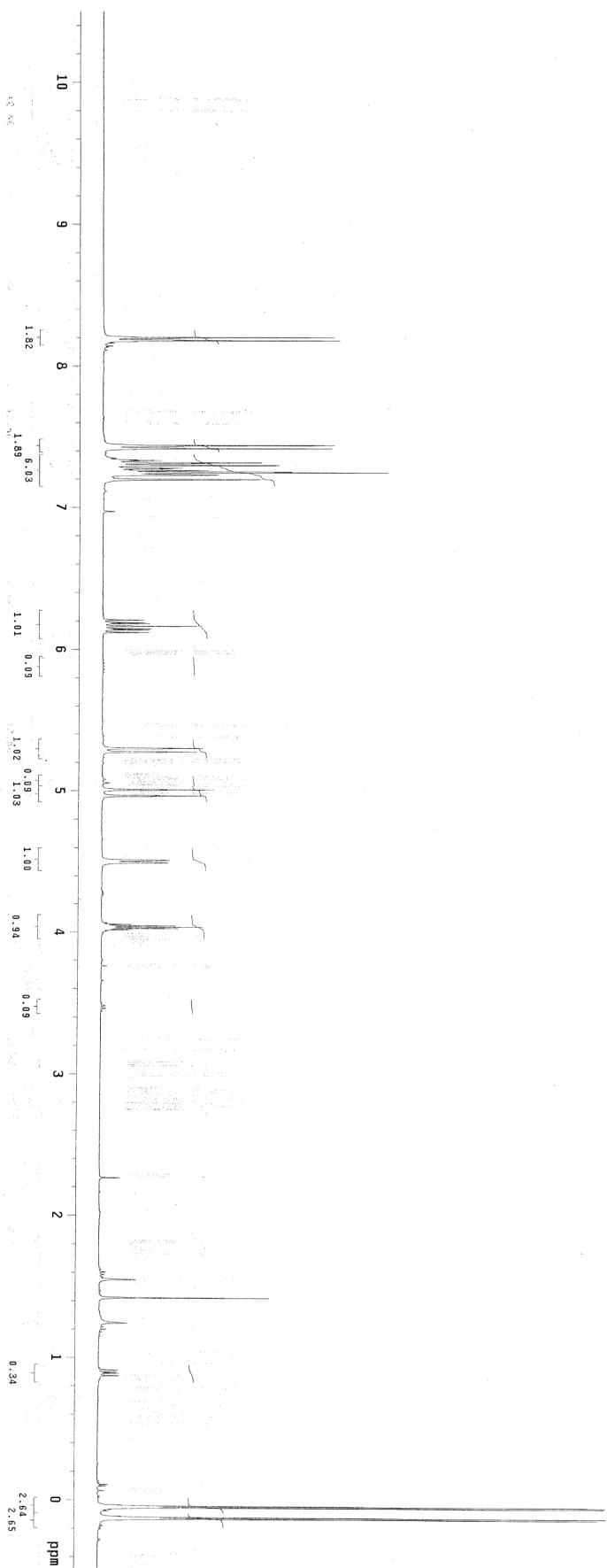
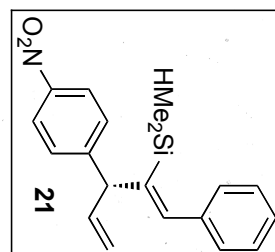






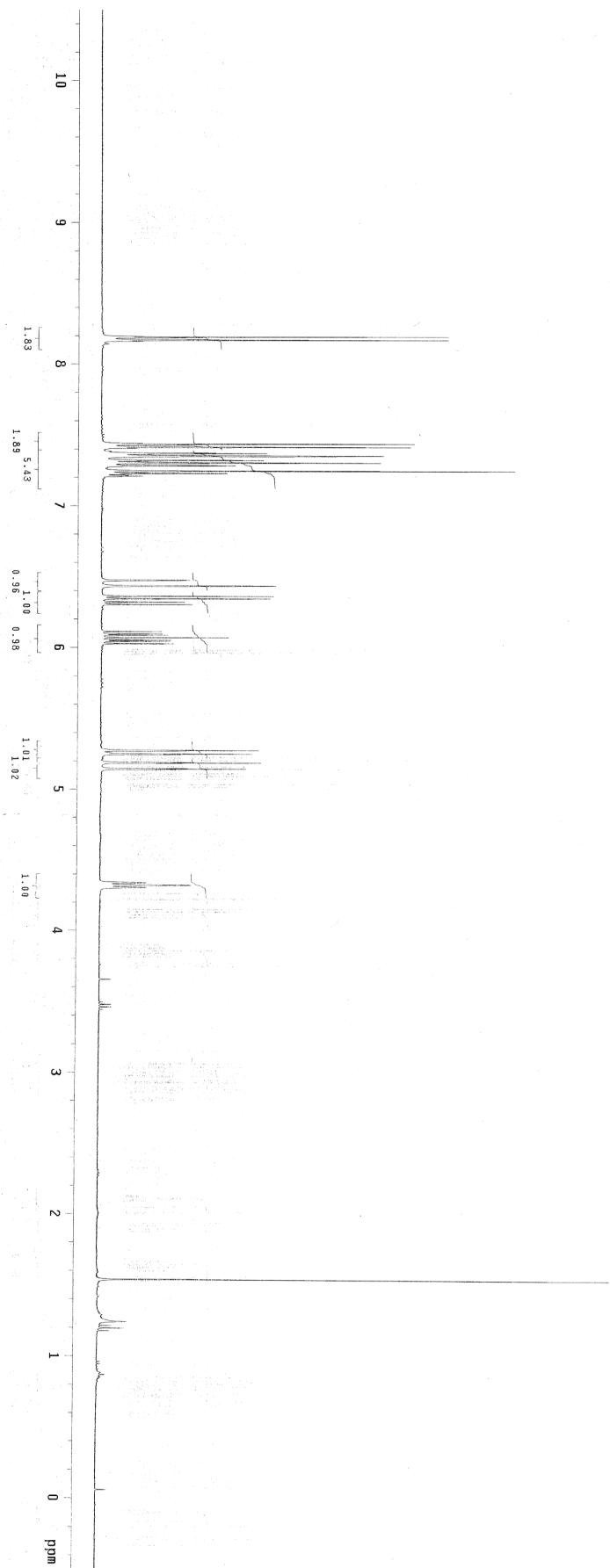
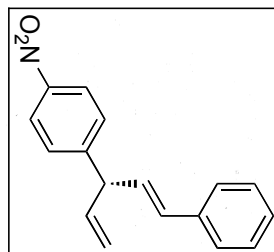
```

KA-III-171productA
expd stidih
SAMPLE 9 2009 DEC. 8 UT
date Feb 5 2009 dfrq 399.768
solvent CDCl3 dn HI
file ACQUISITION exp dpwr 30
sfreq 399.768 dm nmf
tn HI dm C
at 3.744 daf 200
np 64832 dsed 1.0
fb 3000 homo n
bs 54 PROCESSING
tpwr 57 wftitle ft
dv 7.256 fn not used f
tof 1.256 math not used f
nt 16 warr
atlock 16 WEXP
gain WNS
flags not used wft
i1 n
i2 y
dp hs
hs DISPLAY nn
SP -200.0
WP 4397.4
VS 112
SC 380
vdc 0
hzam 1.54
ts 96.13
FTI 1001.2
TH 20
fns cdc ph 1.000
  
```



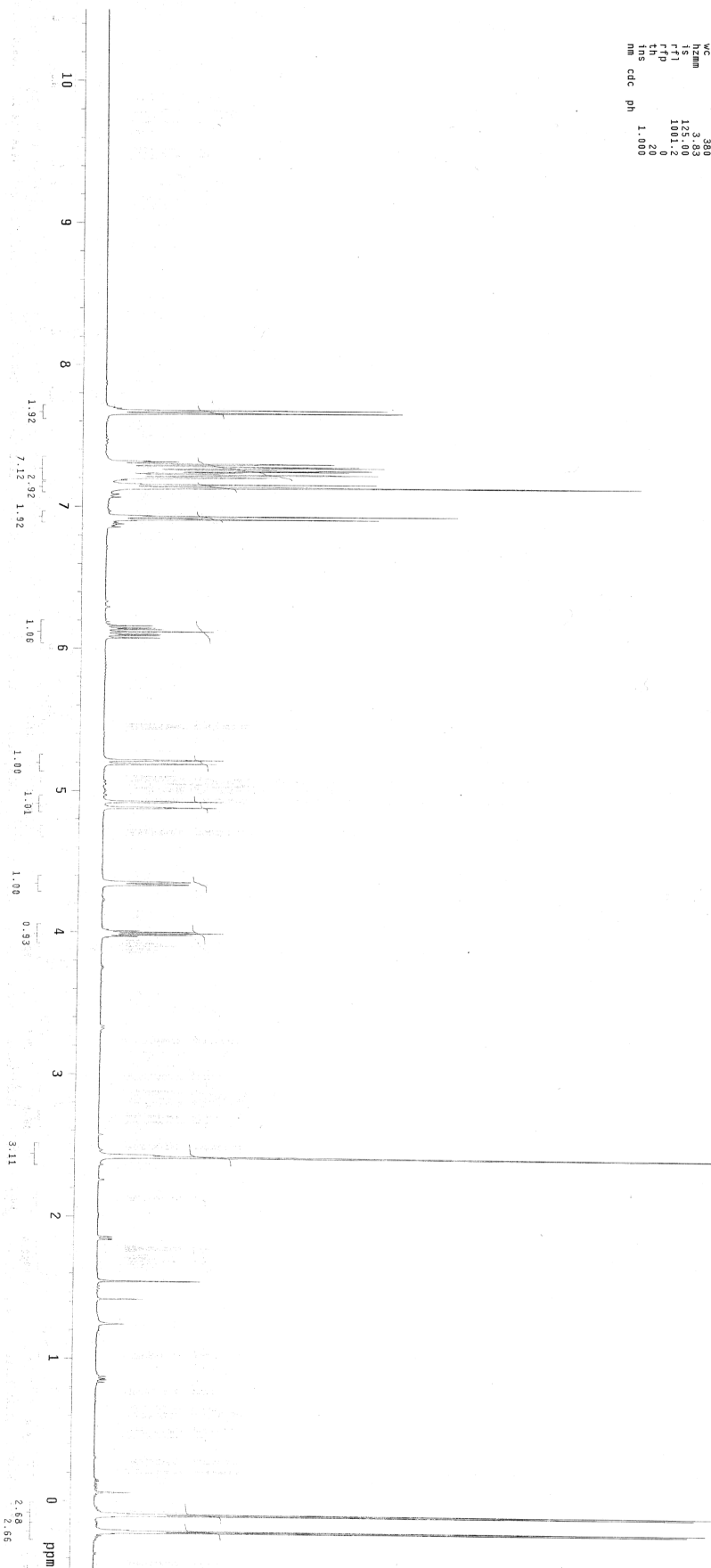
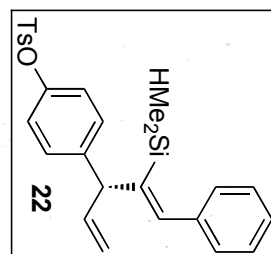
KA-III-18product
exp3 std1h

SAMPLE DEC. 8 WT 599.768
 date Feb 11, 2009 df-rq
 solvent CDCl3 dn HI
 file ACQUISITION exp dpwr 30
 sf ACQUISITION dn mm
 sf 399.768 HI dm C
 tn at 3.744 dmf 200
 dp 64492 dsdq 1.0
 fb 3900 homo n
 bs 4 wffile PROCESSING
 dpw 57 wffile f4
 df 7.26 FID not used f
 tof 1.256 math
 nt 15 wff not used f
 CLOCK 18 wff
 gain not used wbs
 FLAS not used wff
 WIT



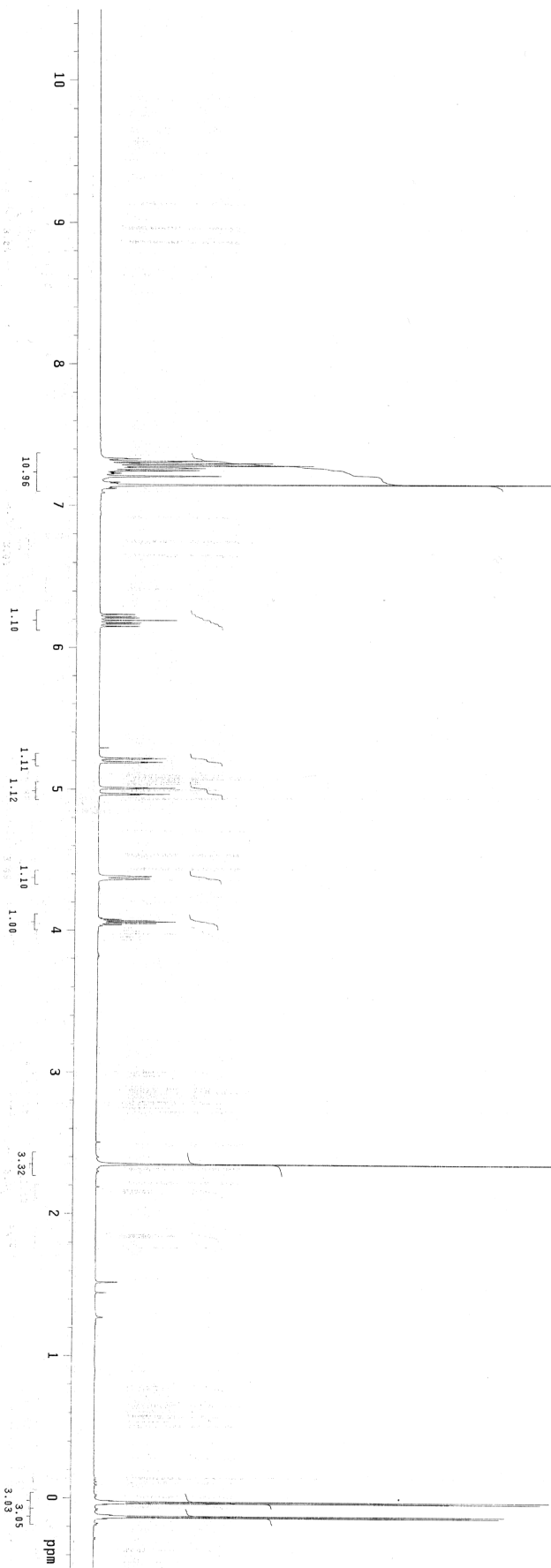
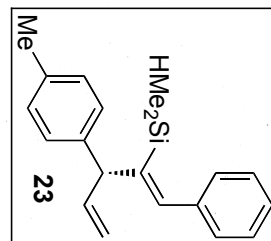
```

Ka-II-159productC
exp3 std1h
SAMPLE      DEC 8 VT
date Jan 29 2009   dfrq 399.768
solvent CDCl3     dn   H1
F1 ACQUISITION exp 30   nnn
ppr 399.768 dm'   C
f1rq 399.768 dm'   C
t1n 3.243 dnm     200
d1n 2.443 dnm     200
s1w 6000.0 dres   1.0
f1b 3800 homo     n
BS 5.4 w/f1e      n
PM 7.0 proc      ft
d1 1.256 fn      not used
tof 0 math       f
cc 0 werr        f
alock not used  wft
gain not used  wft
FLAOS not used wft
l1 n
ln n
in n
dp y
ns y
DISPLAY -200.0 mm
sp wp 4397.4
ve 20.1
s 380
wzmm 3.83
f1 183.00
f1 1800.0
th 20
ms cdc ph 1.000
    
```



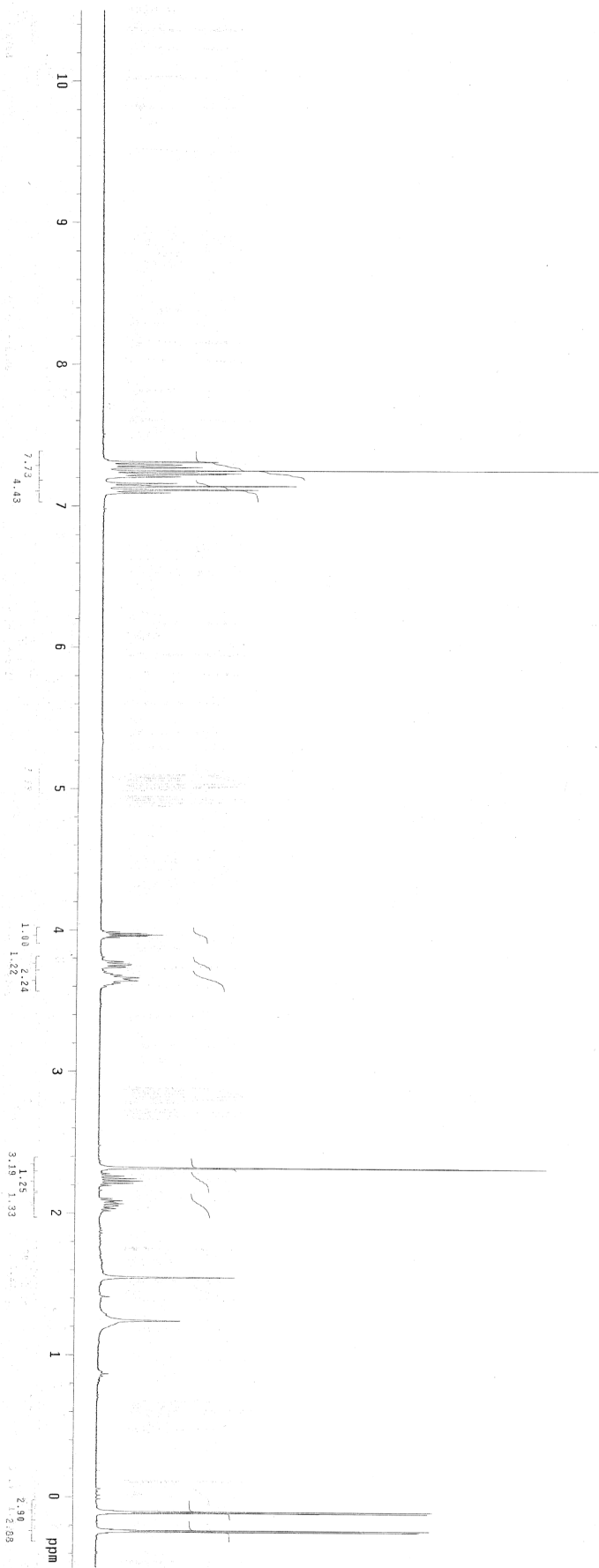
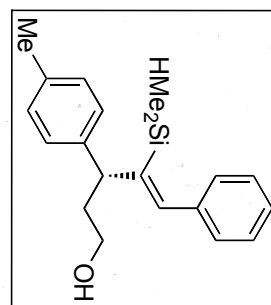
```

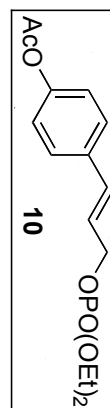
KA-III-168productA
expd stdIn
SAMPLE date Feb 13 2009 dfrq DEC: 8 VT 399.768
solvent CDCl3 dn H1
F1 ACQUISITION exp ddF 30
sfrq 399.768 dm nm
tn H1 dm C
nc 3.7 H1 dm 200
sw 4.4932 dres 1.0
fb 6000.6 homo n
bs 3000
pwr 5.0 vrf1 e
prc 7.0 proc ft
dl 1.256 fn not used f
ct 10 math
cl 16 warr
alock not used s weyp
gain not used wbs
fls not used wft
i1 n
in n
dp y
hs DISPLAY nm
sp -200.0
wp 4397.4
vs 201
wc 380
hzmm 1.20
fs 250.00
ft 1001.2
th 20
ins cdc ph 1.000
    
```



```

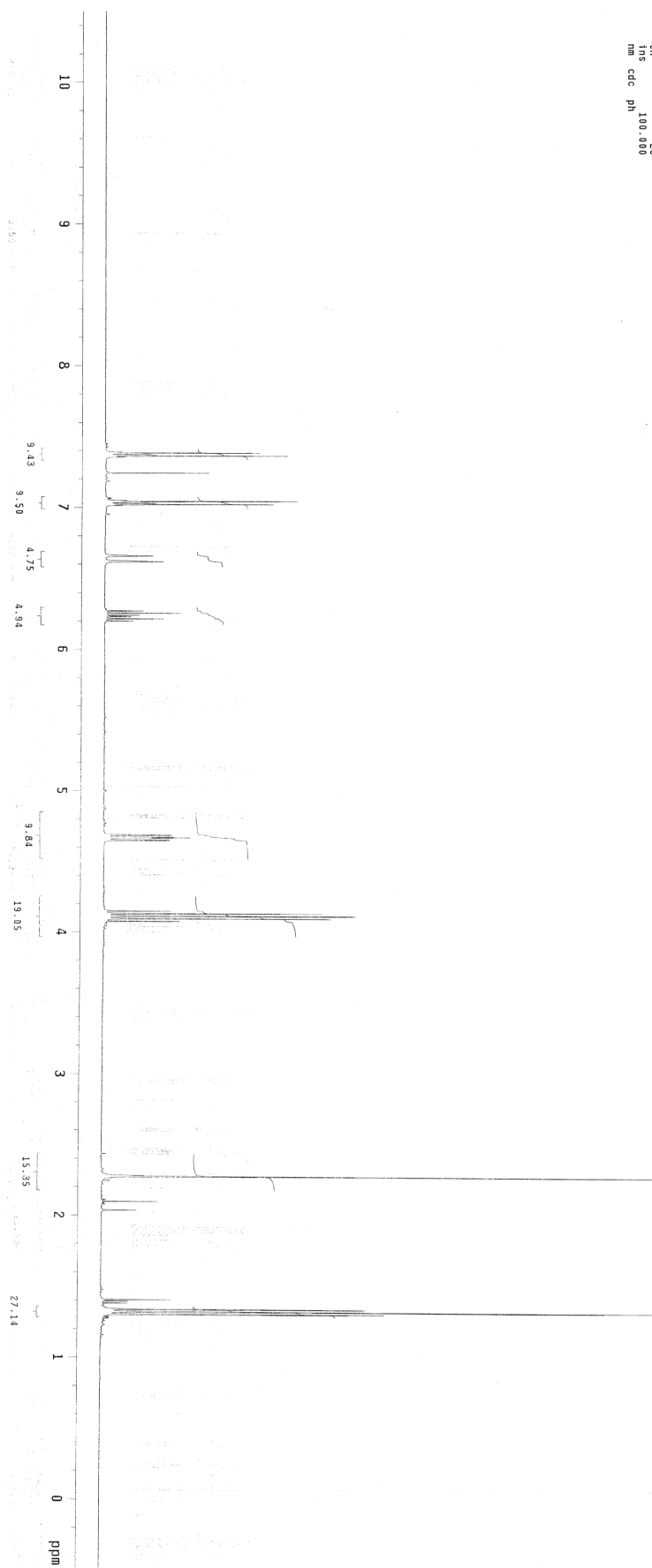
KA-III-187productA
expt std1h
SAMPLE DEC: & VT
date Feb 16 2013 dfrq 399.768
time 11:41:41 f1 30
file 187prodA.d f2 30
ACQUISITION exp dpr 0
sfrq 399.768 dm mn
an 3.741 dnt c
np 44932 dseg 200
sw 6000.6 dres 1.0
fb 3000 homo PROCESSING n
tpr 57 wfile
pw 7.0 proc ft
di 1.256 fn not used f
ct 16 math
ct lock 16 wexp s
gain not used wps
flags not used wft
f1 n
f2 n
f3 n
f4 n
f5 n
f6 n
f7 n
f8 n
f9 n
f10 n
f11 n
f12 n
f13 n
f14 n
f15 n
f16 n
f17 n
f18 n
f19 n
f20 n
f21 n
f22 n
f23 n
f24 n
f25 n
f26 n
f27 n
f28 n
f29 n
f30 n
nm cdc ph 1.000
  
```





```

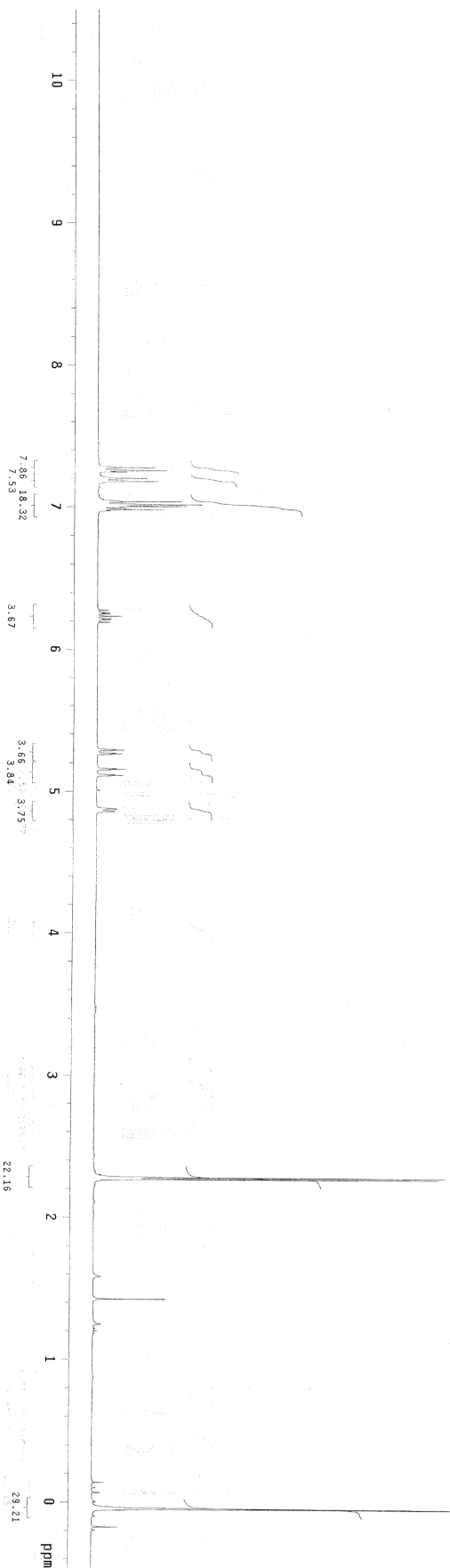
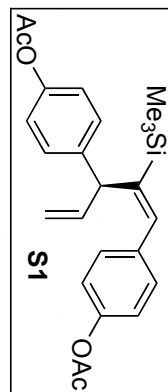
KA-III-15@product
exp2 stat1h
SAMPLE DEC: & VT
date Jan 21 2009 dfrq 399.768
solvent CDCl3 dm H1
f119 ACQUISITION exp dof
f219 ACQUISITION exp dof
sfrfq 399.768 dm
tn 3.741 dm
no 44492 dseg
sw 6000.6 dres
fb 3000 homoPROCESSING
ds 5.7 wfft18
pw 7.0 proc ft
d1 1.256 fn not used f
lof 0 math
no 0 math
ct 8 werr
atock $ wexp
gain not used wds
flms not used wft
f1 n
f2 n
f3 n
f4 n
f5 n
f6 n
f7 n
f8 n
f9 n
f10 n
f11 n
f12 n
f13 n
f14 n
f15 n
f16 n
f17 n
f18 n
f19 n
f20 n
f21 n
f22 n
f23 n
f24 n
f25 n
f26 n
f27 n
f28 n
f29 n
f30 n
f31 n
f32 n
f33 n
f34 n
f35 n
f36 n
f37 n
f38 n
f39 n
f40 n
f41 n
f42 n
f43 n
f44 n
f45 n
f46 n
f47 n
f48 n
f49 n
f50 n
f51 n
f52 n
f53 n
f54 n
f55 n
f56 n
f57 n
f58 n
f59 n
f60 n
f61 n
f62 n
f63 n
f64 n
f65 n
f66 n
f67 n
f68 n
f69 n
f70 n
f71 n
f72 n
f73 n
f74 n
f75 n
f76 n
f77 n
f78 n
f79 n
f80 n
f81 n
f82 n
f83 n
f84 n
f85 n
f86 n
f87 n
f88 n
f89 n
f90 n
f91 n
f92 n
f93 n
f94 n
f95 n
f96 n
f97 n
f98 n
f99 n
f100 n
nm cdc ph
100.000
  
```

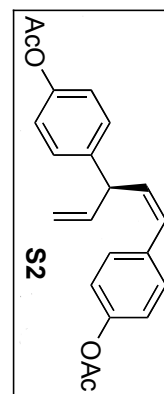


KA-III-142product

```

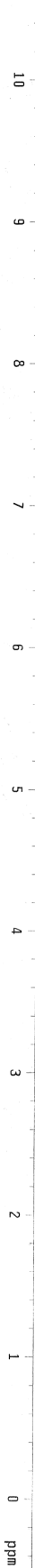
expd stdIn
SAMPLE DEC: & VT
date Dec 19 2008 dfreq 399.768
solvent CDCl3 dn
f1 ACQUISITION exp dcf
f2 ACQUISITION exp dcf
dfreq 399.768 dm
tn 3.41 dhm
at 4.493 deq
sw 6000.6 dres
fb 3000 homo
bs 54 vrf1s
pwr 7.0 proc
dl 1.256 fn not used
tof 0 math
ct 18 werr
atloc 5 wexp
gain not used wft
f1 FLAS n
f2 FLAS n
f3 FLAS n
f4 FLAS n
f5 FLAS n
f6 FLAS n
f7 FLAS n
f8 FLAS n
f9 FLAS n
f10 FLAS n
f11 FLAS n
f12 FLAS n
f13 FLAS n
f14 FLAS n
f15 FLAS n
f16 FLAS n
f17 FLAS n
f18 FLAS n
f19 FLAS n
f20 FLAS n
nm cdc ph
DISPLAY nn
SP -200.0
WP 4397.4
VS 201
SFC 380
WDC 0.94
hzmm 225.04
f1 1001.2
f2 1001.2
th 20
fns 100.000
nm cdc ph
  
```





```

KA-II-145product
exp3 stdhh
SAMPLE Jan 15 2009 DEC 8 VT
date Jan 15 2009 dfreq 399.768
solvent CDCl3 dn HI
F1 ACQUISITION exp dof 0
dfreq 399.768 dm nm
to 2.744 dm 200
at 2.744 dm
sw 6000.6 dres 1.0
fb 3000 homo n
bs 4 wctfile
FIDPR 57 wctfile
df 1.256 fn ft
tof 0 math not used f
nt 8 wctf
clock 8 wctf
gain not used wctf
FLAOS not used wti
l1 n
l2 n
l3 n
l4 n
l5 n
l6 n
l7 n
l8 n
l9 n
l10 n
hs n
do y
ds m
DISPLAY 200.0
sp 399.768
vs 201
sc 0
wctm 1.380
wctm 12.482
rf1 1001.2
rfp 188
th 188
nm cdc ph 1.000
    
```

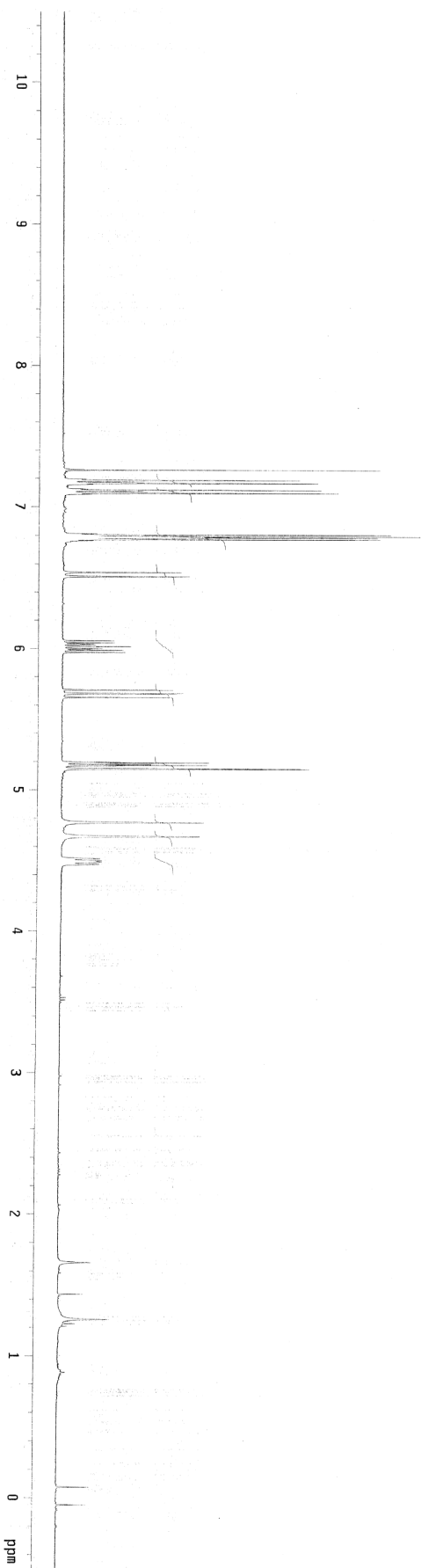
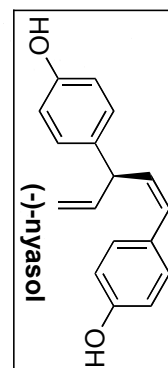


KA-III-167productA
exp3 std1h

```

SAMPLE      DEC. 8 VI
date  Jan 29 2009  dfrq  399.768
solvent  CDCl3  dn  H1
file  C0013  dn  H1
TITLE  ACQUISITION  exp  dpr  30
dfrq  399.768  dn  H1
in  H1  dam  mnc
at  3.744  daf  200
md  64892  dse8
sp  3000  homo  1.0
bs  16  PROCESSING
tpwr  57  wfttle
pw  7.0  proc  ft
tof  1.50  math  not used
nt  16  werr
ct  16  werr
adck  not used  werr
gain  not used  werr
flags  wnt
wft
11  n
1a  n
1b  y
1c  y
1d  y
1e  y
1f  y
1g  y
1h  y
1i  y
1j  y
1k  y
1l  y
1m  y
1n  y
1o  y
1p  y
1q  y
1r  y
1s  y
1t  y
1u  y
1v  y
1w  y
1x  y
1y  y
1z  y
DISPLAY  n
sp  -200.0
mp  4397.14
wc  7.0
h2mm  11.57
f1  1429.40
f2  3259.40
f3  2802.3
th  20
ins  cdc  ph  100.000
nm

```



KA-II-168product

```

exp4 stdin
SAMPLE
date Jan 31 2009 dfrq 399.769
solvent methanol dn HI
T1 ACQUISITION exp dd 30
sfrq 399.769 dm nmn
tn HI dnm 200
at 3.284 dnm
sw 10000.0 dres 1.0
fb 6000 homo n
bs 4
PROCCESSING
dpr 50 vfile
p 70 proc ft
d1 1.256 fn not used f
tof 0 math
ct 15 warr
atlock not used wft
gain not used
l1 FLAGS n
in n
dp y
hs DISPLAY nm
SP -139.9
WP 4397.4
VS 201
SC 380
hzam 3.52
f1 4995.6
f2 1923.2
f3 1.000
nm cdc ph
    
```

