

NHC–Cu-Catalyzed Silyl Conjugate Additions to Acyclic and Cyclic Dienones and Dienonates. Efficient Site-, Diastereo- and Enantioselective Synthesis of Carbonyl-Containing Allylsilanes

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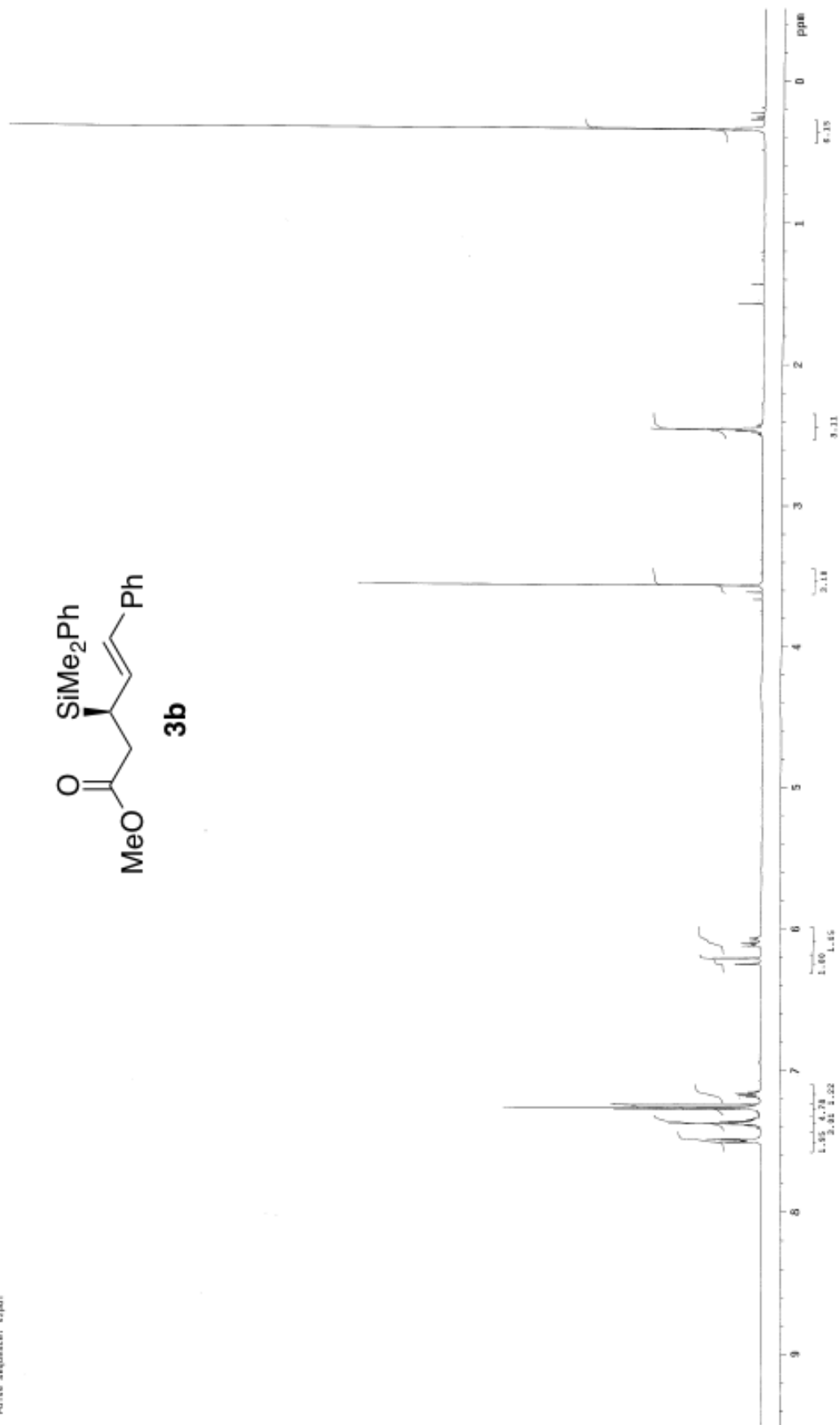
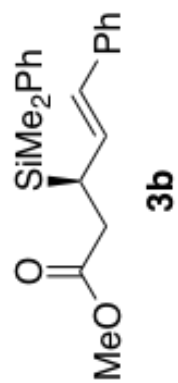
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SUPPORTING INFORMATION, PART II

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Sample: 6L-26-384
Pulse: 40P
Pulse sequence: zgpg30

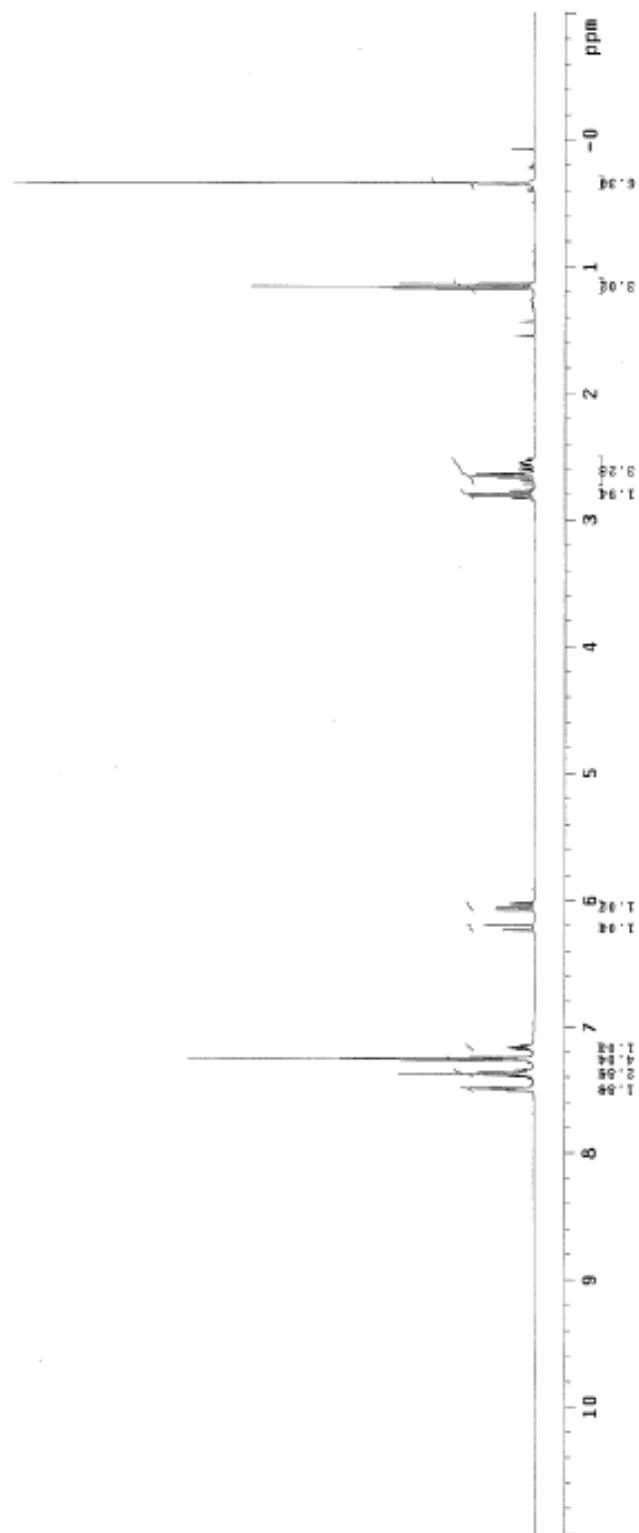
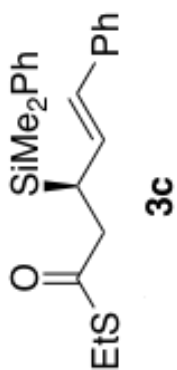


Sample: MW-1-157-2
 File: exp

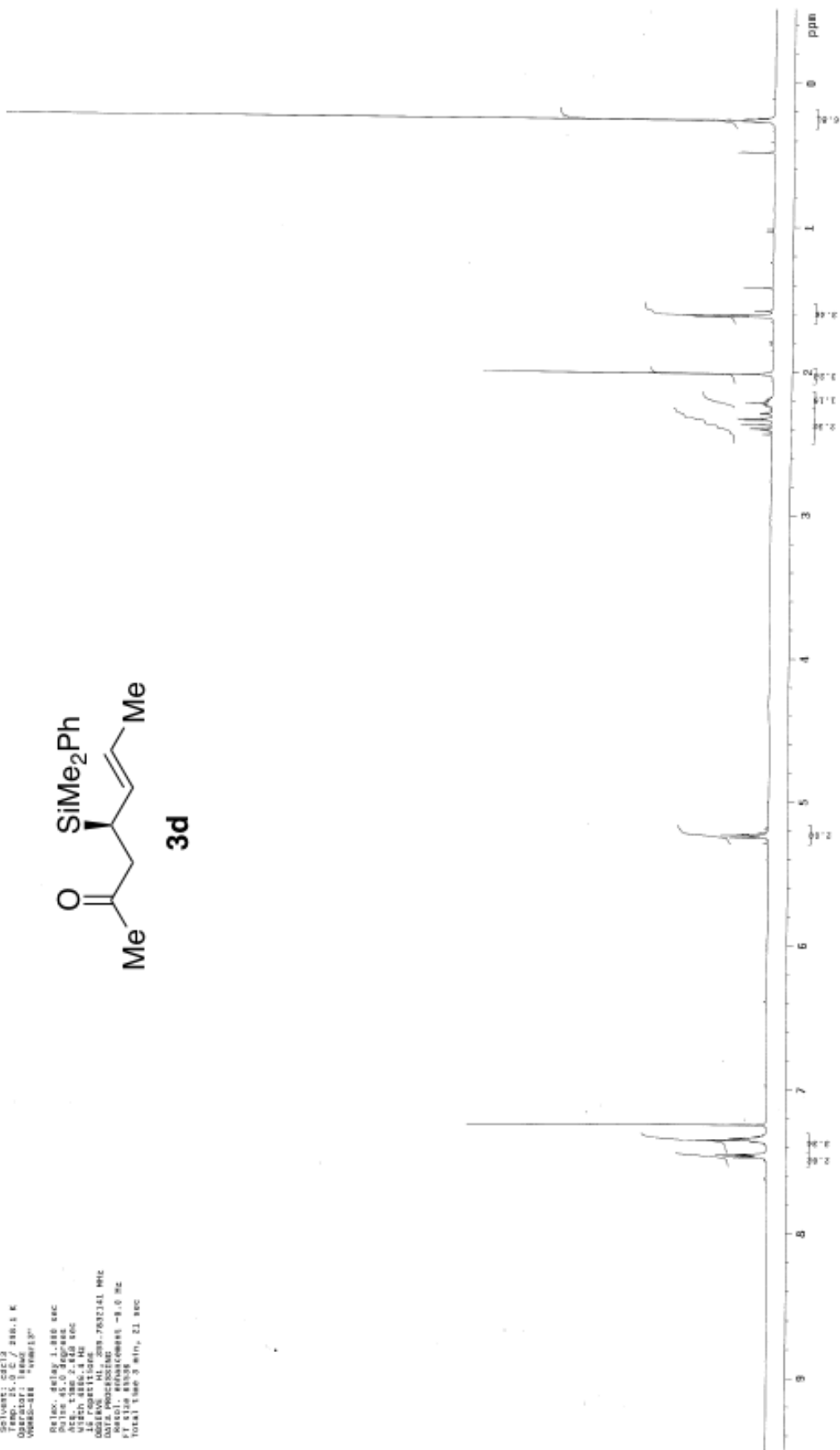
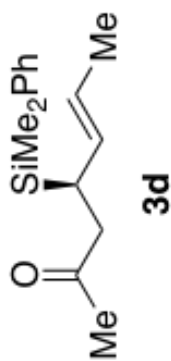
Pulse Sequence: zgpg30

Solvent: cdcl3
 Temp: 25.0 C / 298.1 K
 Operator: wjhr
 VNAME: 400 -vnmr13*

Relax. delay: 1.000 sec
 Pulse: 45.0 degrees
 Acq. time: 2.000 sec
 Width: 4807.7 Hz
 Frequency: 99.626100 MHz
 Q1: 399.7832141 MHz
 DATE_ PROCESSED:
 Resol: enhancement -0.8 Hz
 FT size: 6535
 Total time: 3 min, 21 sec



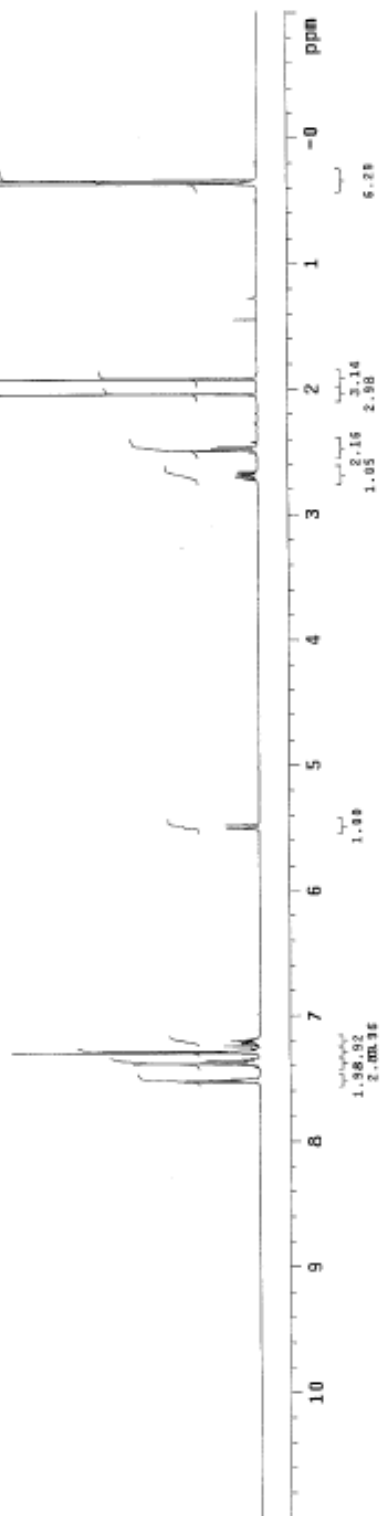
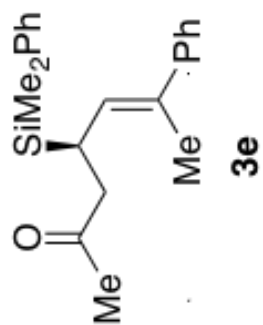
Sample: 41-EP-233-1H
 File: 41p
 Pulse Program: zgpg30
 Solvent: CDCl₃
 Concentration: 10.00 mg/ml
 OBSERVED: 100.627, 101.618, 1
 VNAME: 41p
 VNAME1: 41p
 Relax delay: 1.000 sec
 Aq: 1.000 sec
 Acq. time: 2.460 sec
 USZN: 886.4 Hz
 USZN1: 886.4 Hz
 OBSERVED: 1H: 209.783131 MHz
 DATA PROCESSING
 FT 4110 81928
 Total time: 3 min, 21 sec



Sample: MW-1-091
File: exp

Pulse Sequence: s2p01
Solvent: cdcl3
Temp: 25.8 C / 298.1 K
Operator: wuhr
vnmr3-000 "vnmr13"

Relax. delay 1.800 sec
Pulse 45.0 degrees
Acq. time 7.003 sec
FIDIn 4881.7 Hz
31PIn 125013.0 Hz
OBSERVE F1: 399.7832161 MHz
DATA PROCESSING
Resol: enhancement -8.0 Hz
FT size 65536
Total time 3 min, 21 sec

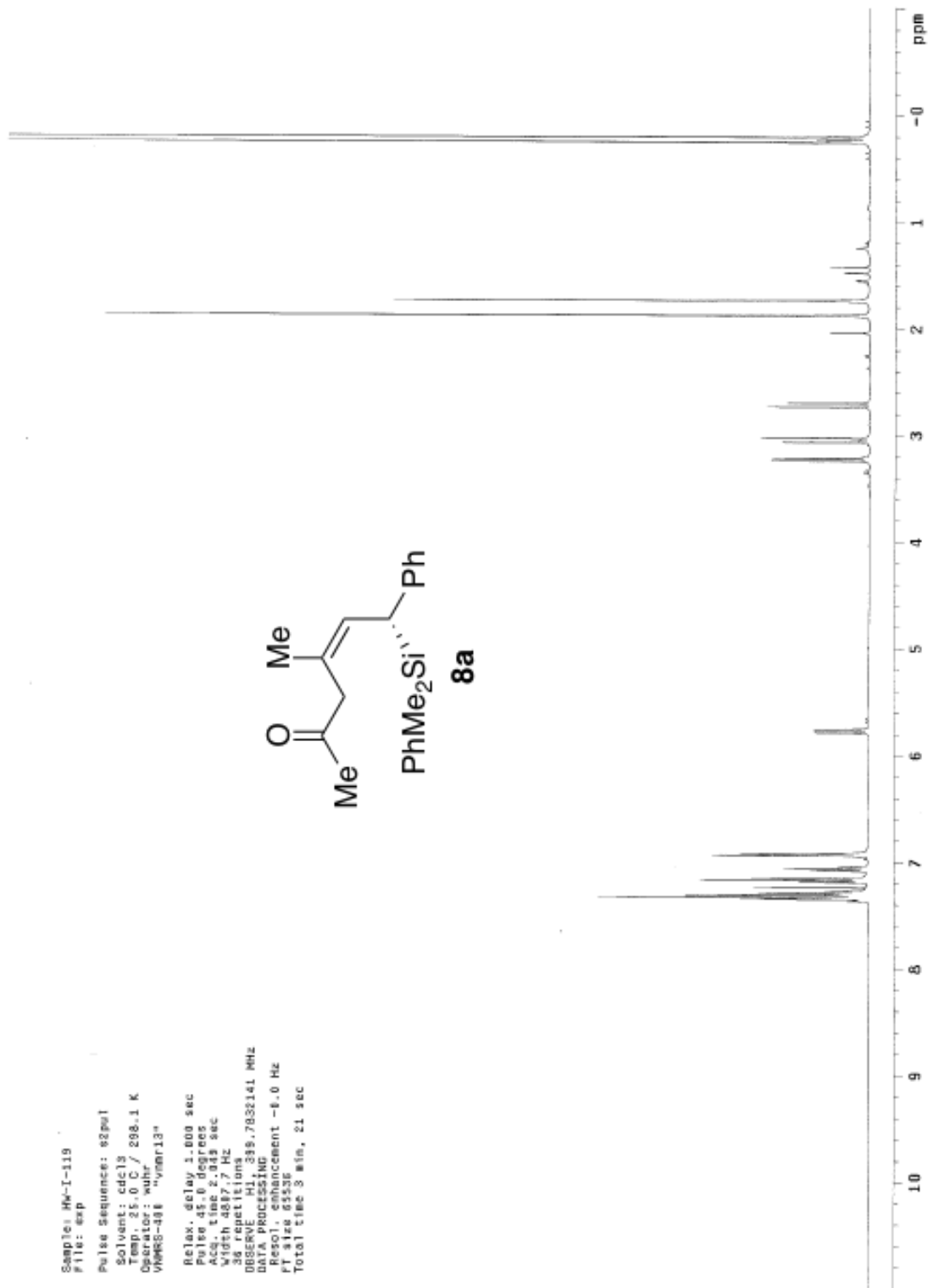
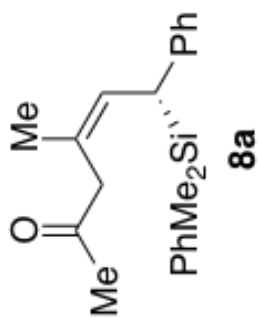


Sample: HM-I-119
File: exp

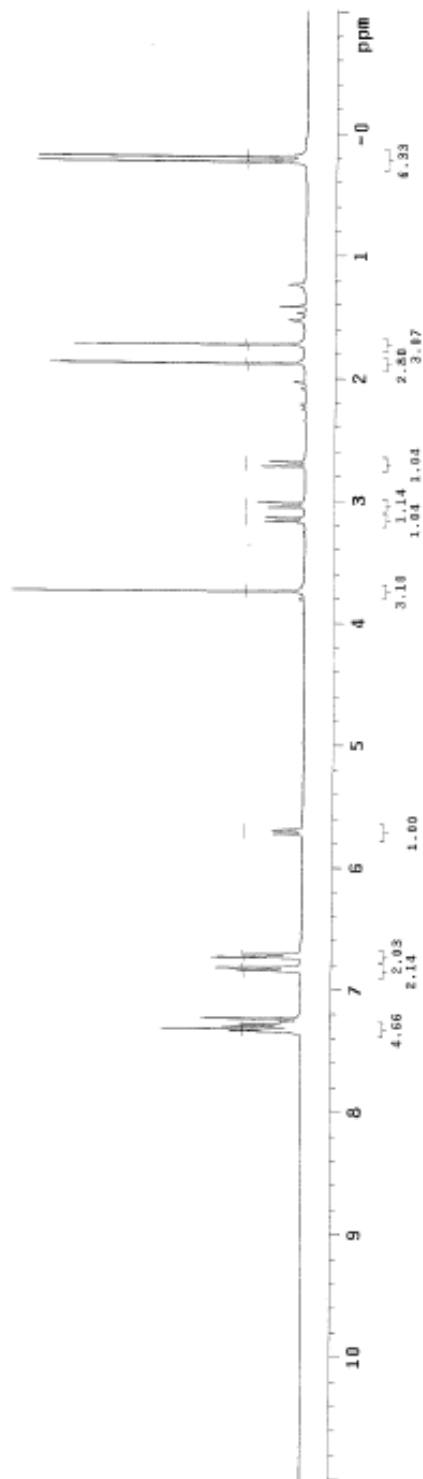
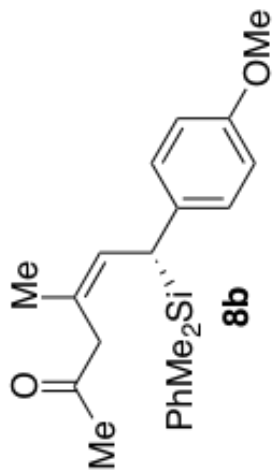
Pulse Sequence: zgpg30

Solvent: cdcl3
Temp: 25.0 C / 298.1 K
Operator: mhr
VME6-481 vsmr13"

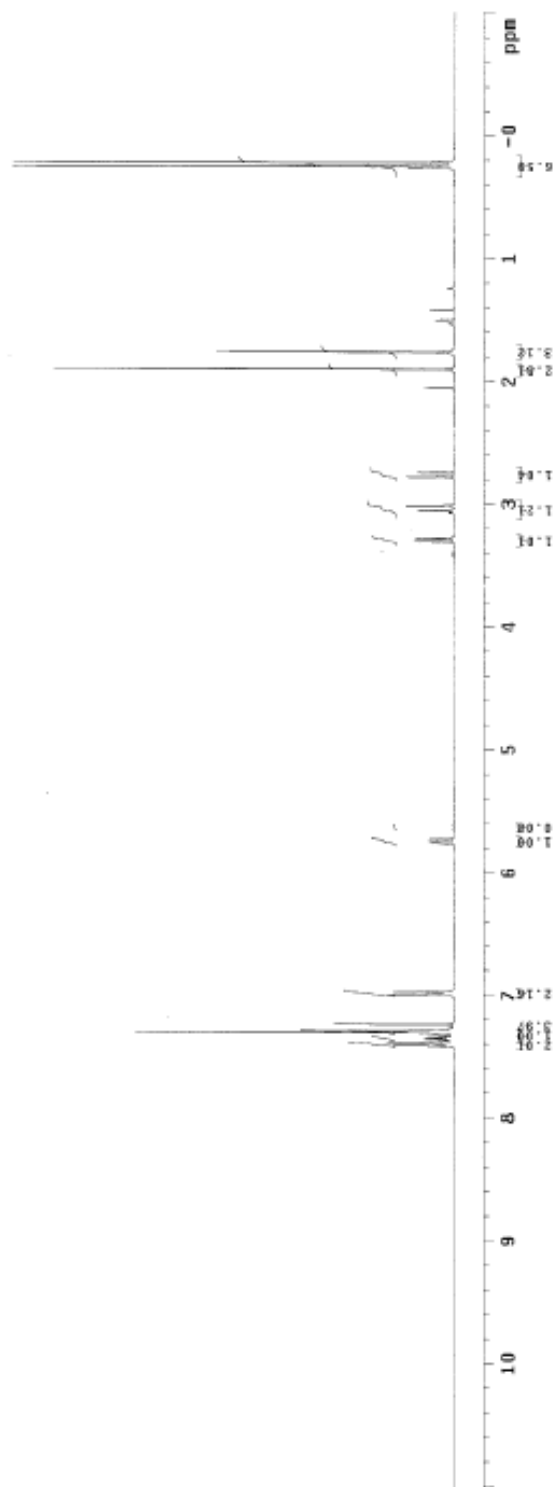
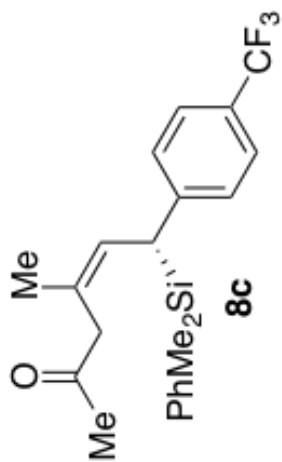
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 2.148 sec
Width 4887.7 Hz
38 repetitions
OBSERVE H1 399.783141 MHz
DATA PROCESSING
Resol. enhancement -6.0 Hz
FT size 6536
Total time 3 min, 21 sec



Sample: HW-1-132
 File: exp
 Pulse Sequence: zgpg30
 Solvent: cdcl3
 Temp: 25.8 C / 298.1 K
 Omega: 125.763 MHz
 VPROB: zgpg30
 Relax: delay 1.888 sec
 Acq: 400.136 MHz
 Acq: time 3.849 sec
 Width: 4007.7 Hz
 25 repetitions
 OBSERVE: M1, 389.7832141 MHz
 DATA PROCESSING
 Resol: enhancement -0.0 Hz
 F1 size 45536
 Total time 3 min, 21 sec



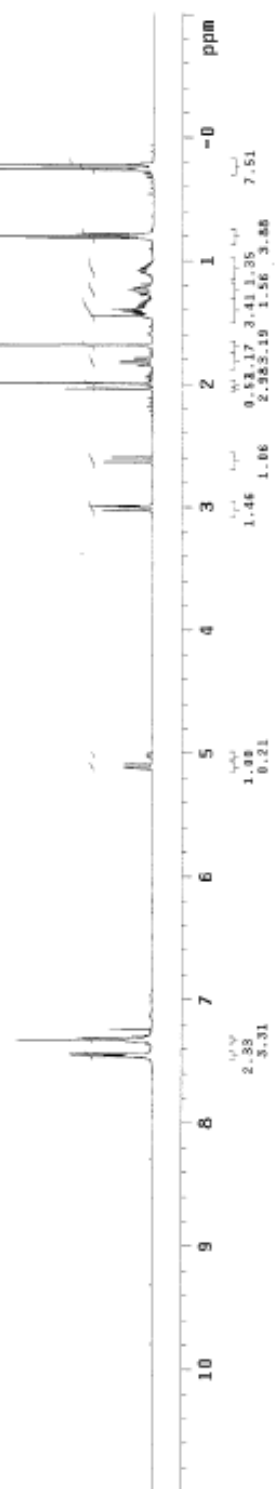
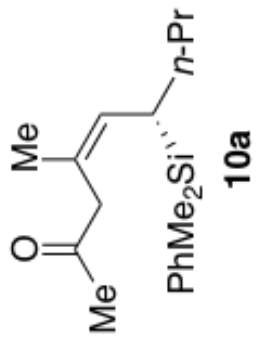
Sample: HN-1-132
 File: exp
 Pulse Sequence: zgpg30
 Solvent: cdcl3
 Temp: 25.0 C / 298.1 K
 Acq. Date: 2013-01-13
 VENDOR: Varian
 Relax. delay: 1.000 sec
 Pulse: zgpg30
 Acq. Time: 2.669 sec
 Width: 4807.7 Hz
 SR: 38 repetitions
 OBSERVE: H1, 399.7632141 MHz
 Resol: enhancement -0.8 Hz
 FT Size: 65536
 Total Time: 3 min, 21 sec



Sample: HN-2-142
File: exp

Pulse Sequence: zgpg30
Solvent: cdcl3
Temp: 25.0 C / 298.1 K
Operator: vahr
VNMRS-460 "vnmr13"

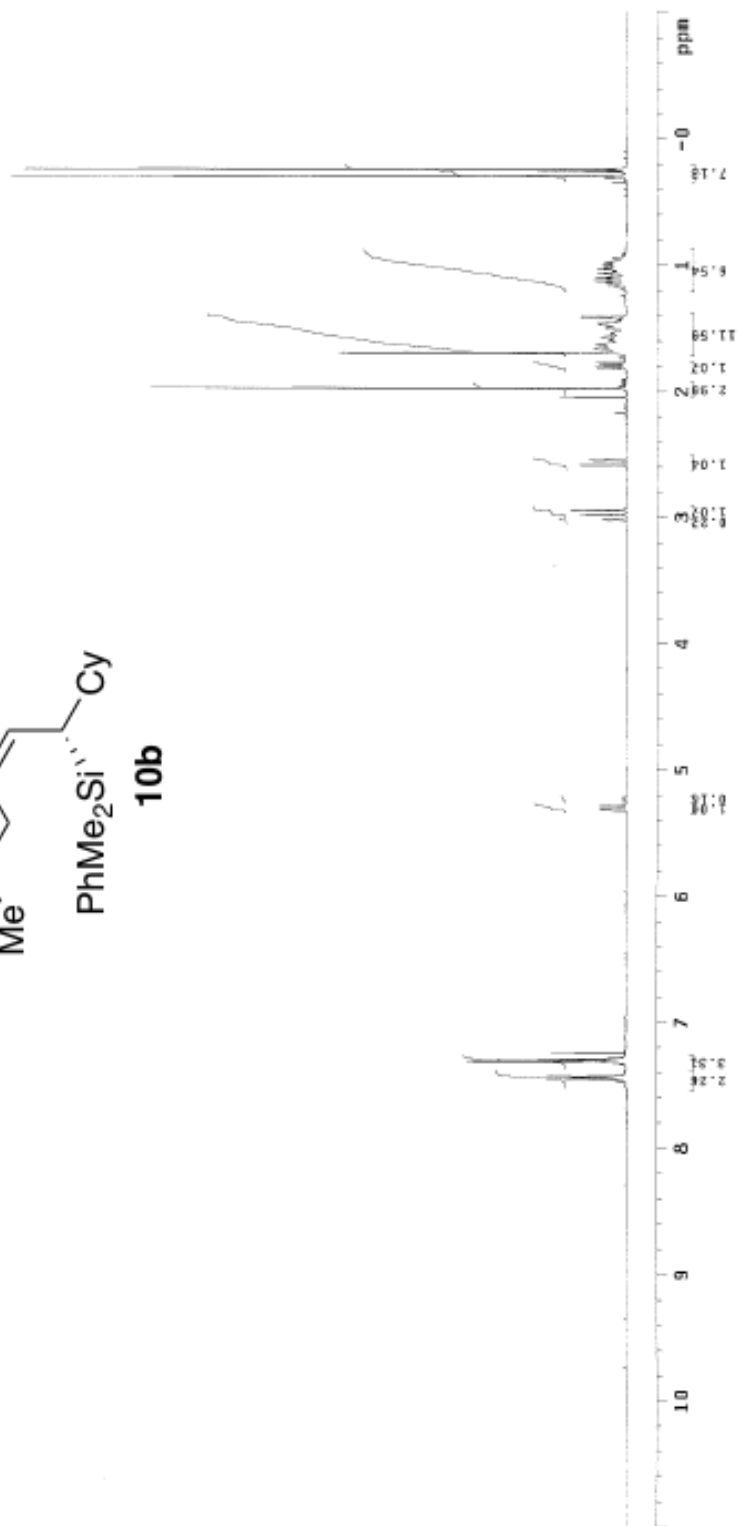
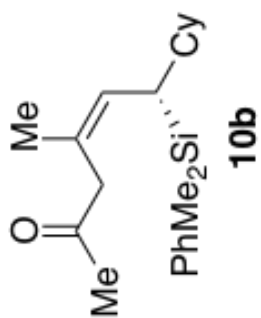
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 2.669 sec
Width 4807.7 Hz
of repetitions 509.7532141 MHz
DATE_ PROCESSED
Rerol. enhancement -0.0 Hz
F1 size 6536
Total time 3 min, 21 sec



Sample: HM-1-138
File: exp

Pulse Sequence: s2pul
Solvent: cdcl3
Temp: 25.0 C / 298.1 K
Operator: wuhr
vnmr5-418 "vnmr13"

Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 2.810 sec
Width 4807.7 Hz
SOLVENT
ORBITAL POSITION 89.7832141 MHz
DATA PROCESSING
Resol. enhancement -0.0 Hz
FT size 65836
Total time 3 min, 21 sec



Sample: MWJ-145-3

File: 648

Pulse Sequence: zgpg30

Solvent: CDCl3

Temp: 25.0 C / 298.1 K

Operator: wuhr/vmr13

VNMR5-600 "vnmr13"

Relax. delay: 1.000 sec

Pulse: 45.0 degrees

Acq. time: 2.049 sec

Width: 4807.7 Hz

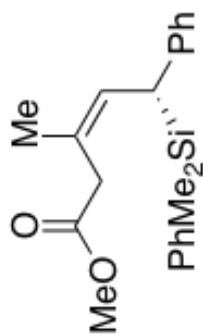
32 repetitions

OBSERVE: H1, 399.7832141 MHz

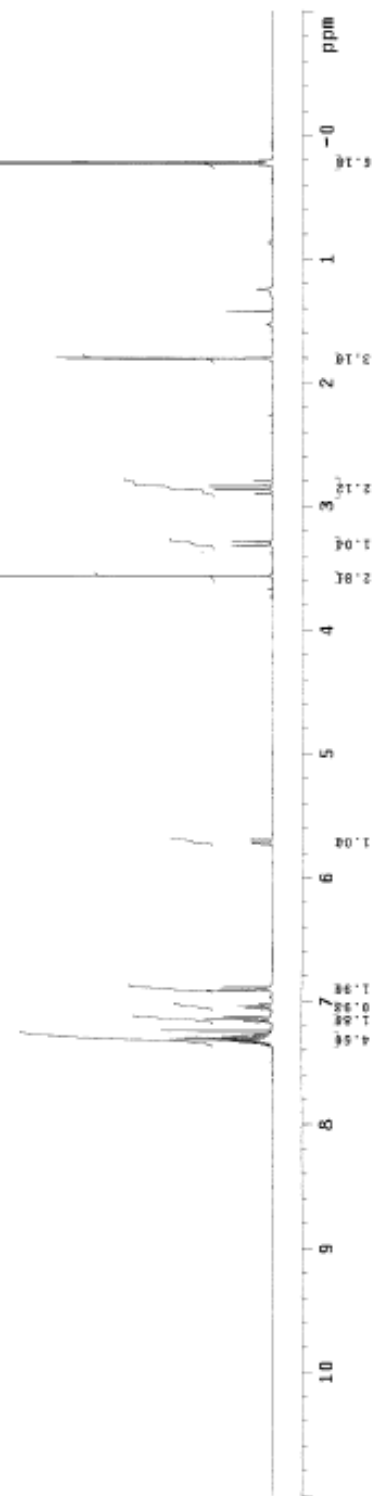
DATA PROCESSING

Frequency offset: -0.6 Hz

Total time: 3 min, 21 sec



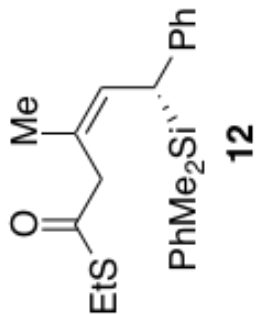
11



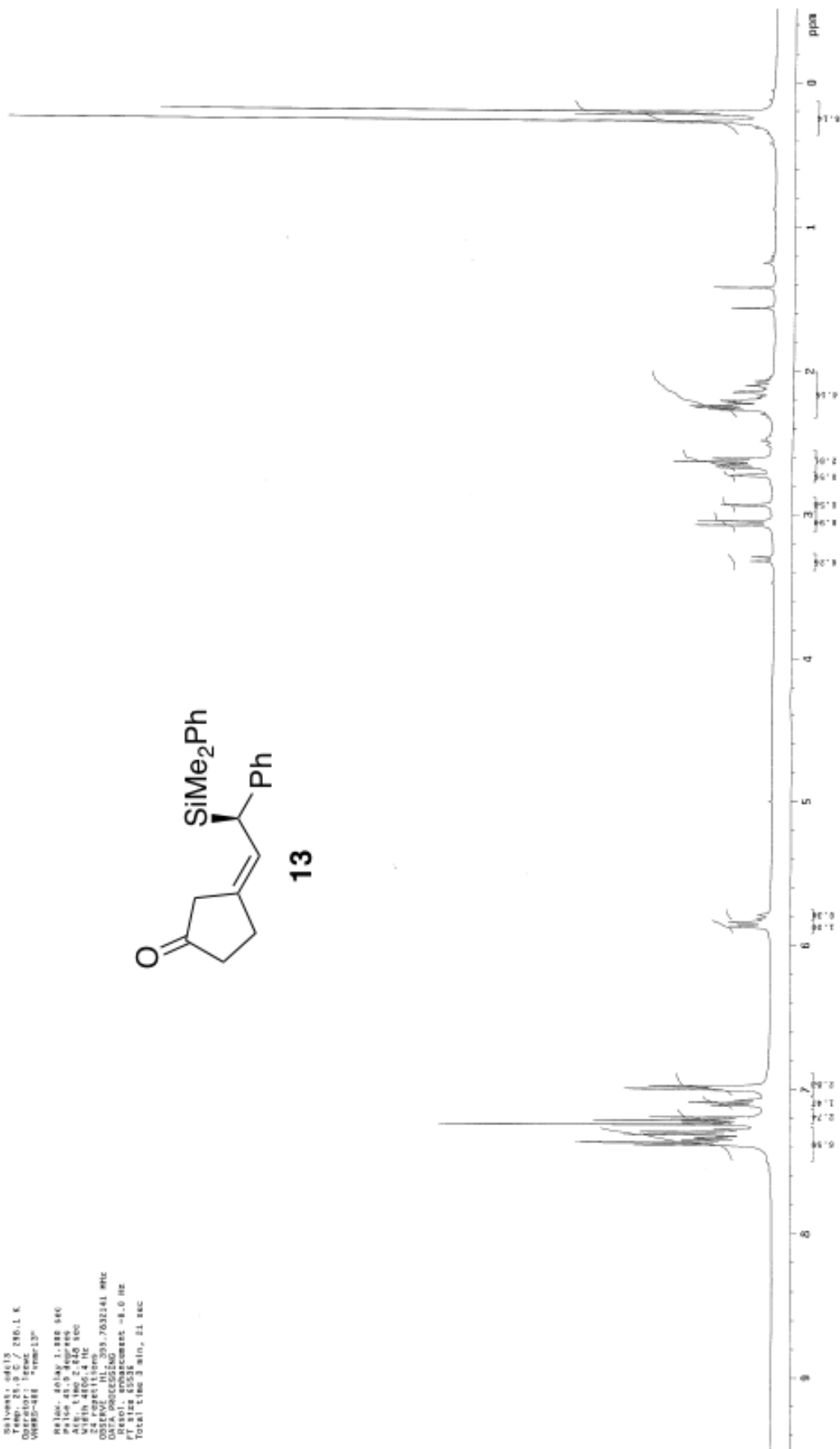
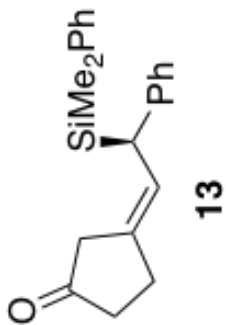
Sample: Mw-1-151
 File: exp

Pulse Sequence: zgpg30
 Solvent: cdcl3
 Temp: 25.00 C / 298.1 K
 Operator: mh / mar11
 INOVA-500 "mr11"

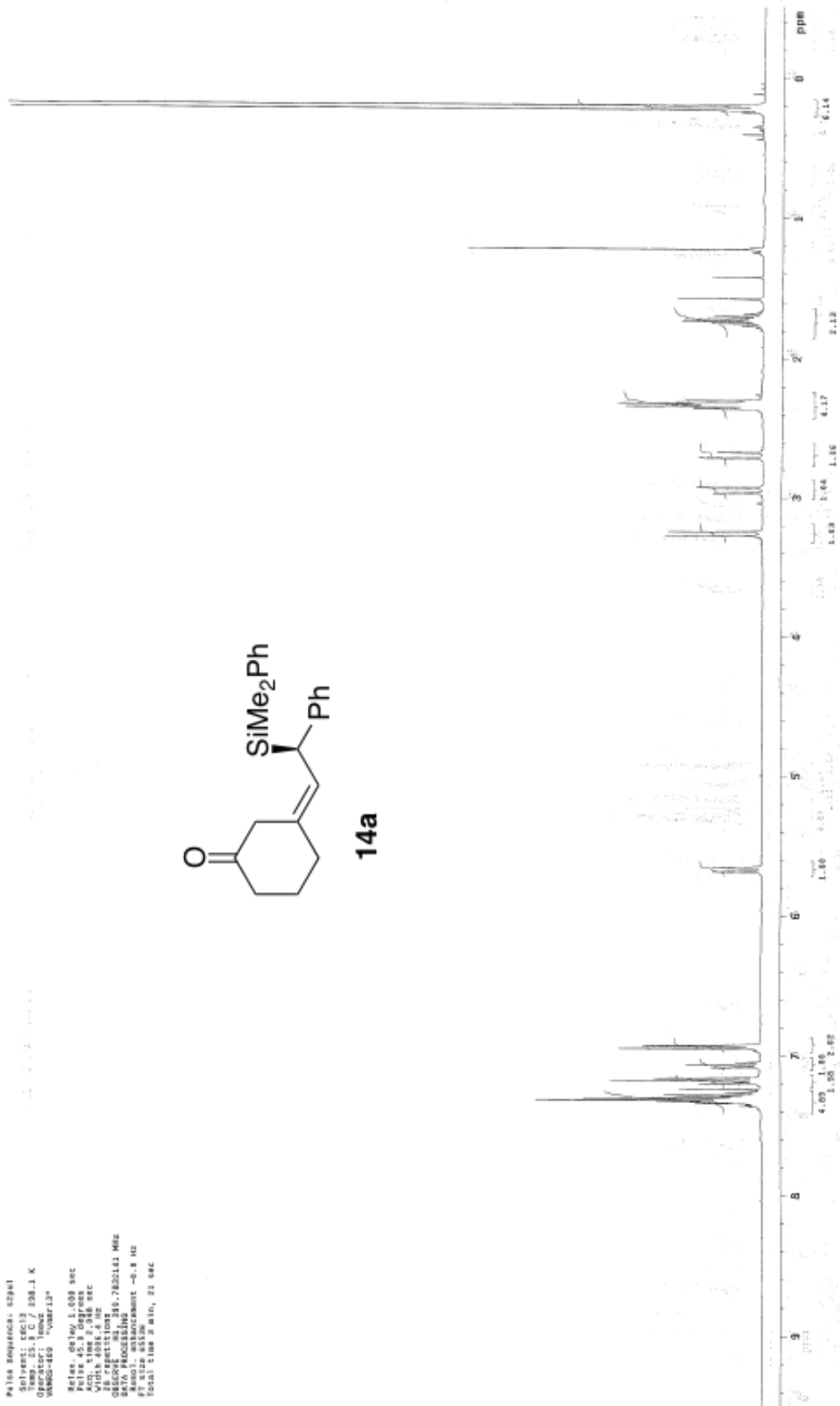
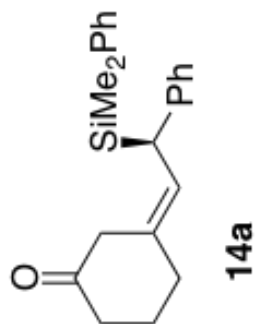
Relax. delay: 1.000 sec
 Pulse: 45.0 degrees
 Acq. time: 3.986 sec
 Width: 5987.5 Hz
 24 repetitions
 OBSERVE: M1, 499.7728124 MHz
 DATA PROCESSING
 Resol.: enhancement -8.0 Hz
 FT S'ize: 85526
 Total time: 2 min, 25 sec



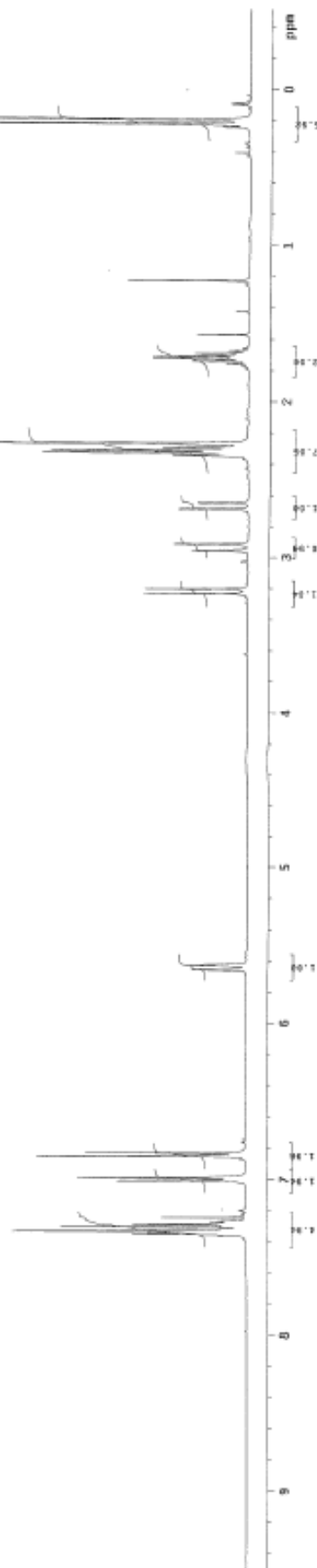
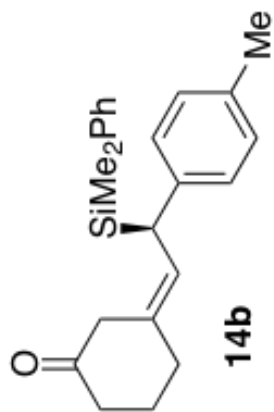
Sample: 6L-DK-287-1-L8
 File: exp
 Pulse Sequence: zgpg30
 Solvent: cdcl3
 Temp: 29.8 C / 286.1 K
 VPROB: zgpg30
 VPPROB: zgpg30
 Melin: 401kg 1.122 640
 Acq: 1.122 640
 Acq Time: 2.045 sec
 N: 640
 N/Hz: 4866.4 Hz
 032402111003-7032141 MHz
 DATA: 03012252M3
 F2: 125.761 MHz
 F1: 500.136 MHz
 Total time 3 min, 21 sec



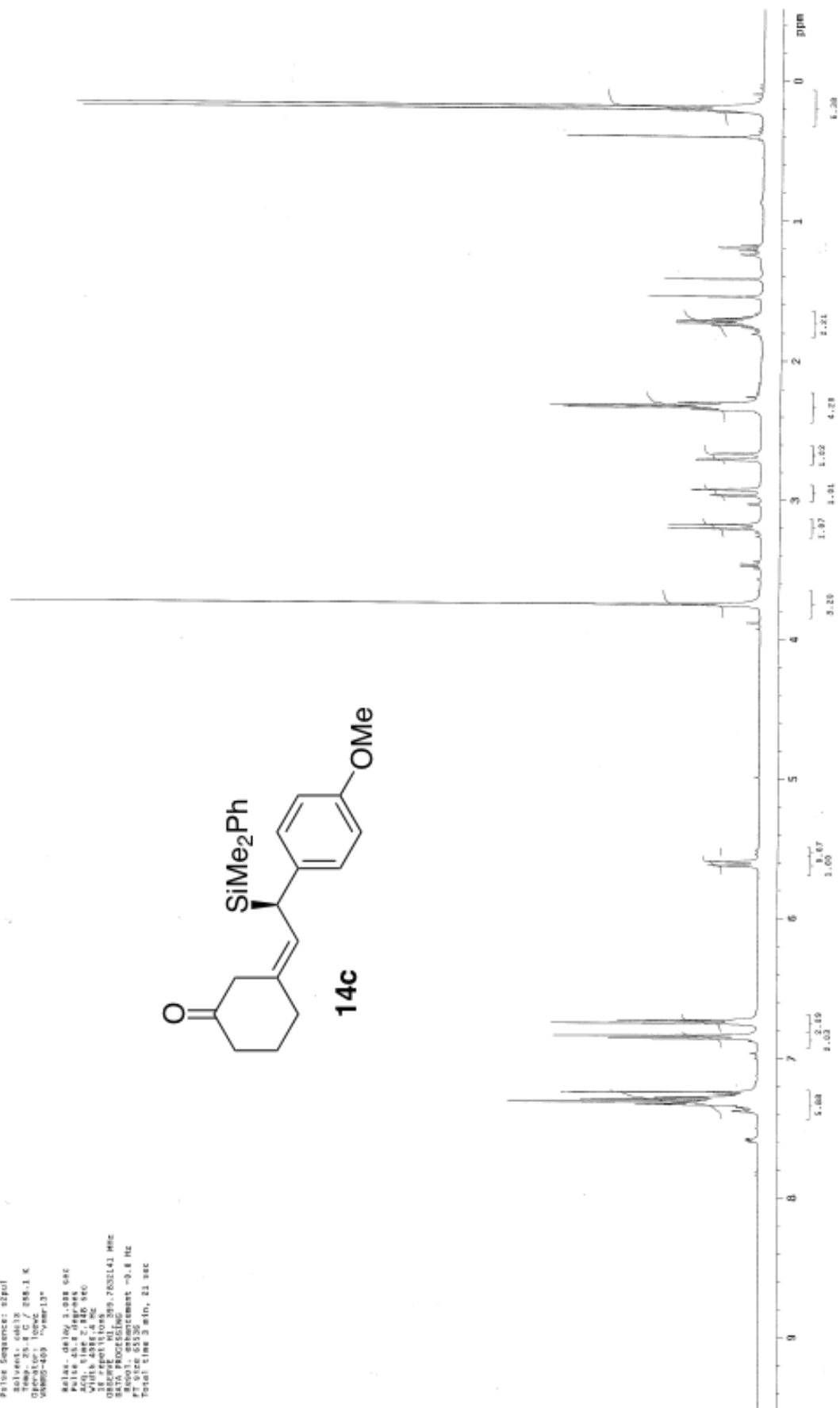
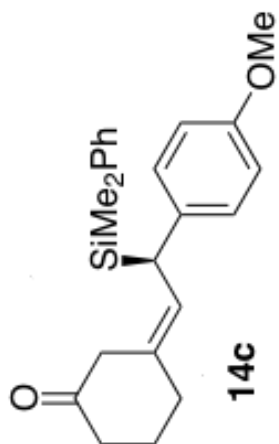
Sample: KL-20-108-1H
 File: exp
 Pulse sequence: zgpg30
 Solvent: cdcl3
 Temp: 25.3 C / 298.1 K
 VPROB: zgpg30
 VENDOR: agilent
 Acq. delay: 1.000 sec
 Pulse: zgpg30
 Flip: 15.0 degrees
 Width: 2000.0 Hz
 VWidth: 4000.0 Hz
 EQ: 2.0000000000000000
 DECOUPLING: 7820141 MHz
 DATA PROCESSING
 SFO: 100.626151 MHz
 AQC: 0.0000000000000000
 SFO2: 100.626151 MHz
 Total time 2 min, 21 sec



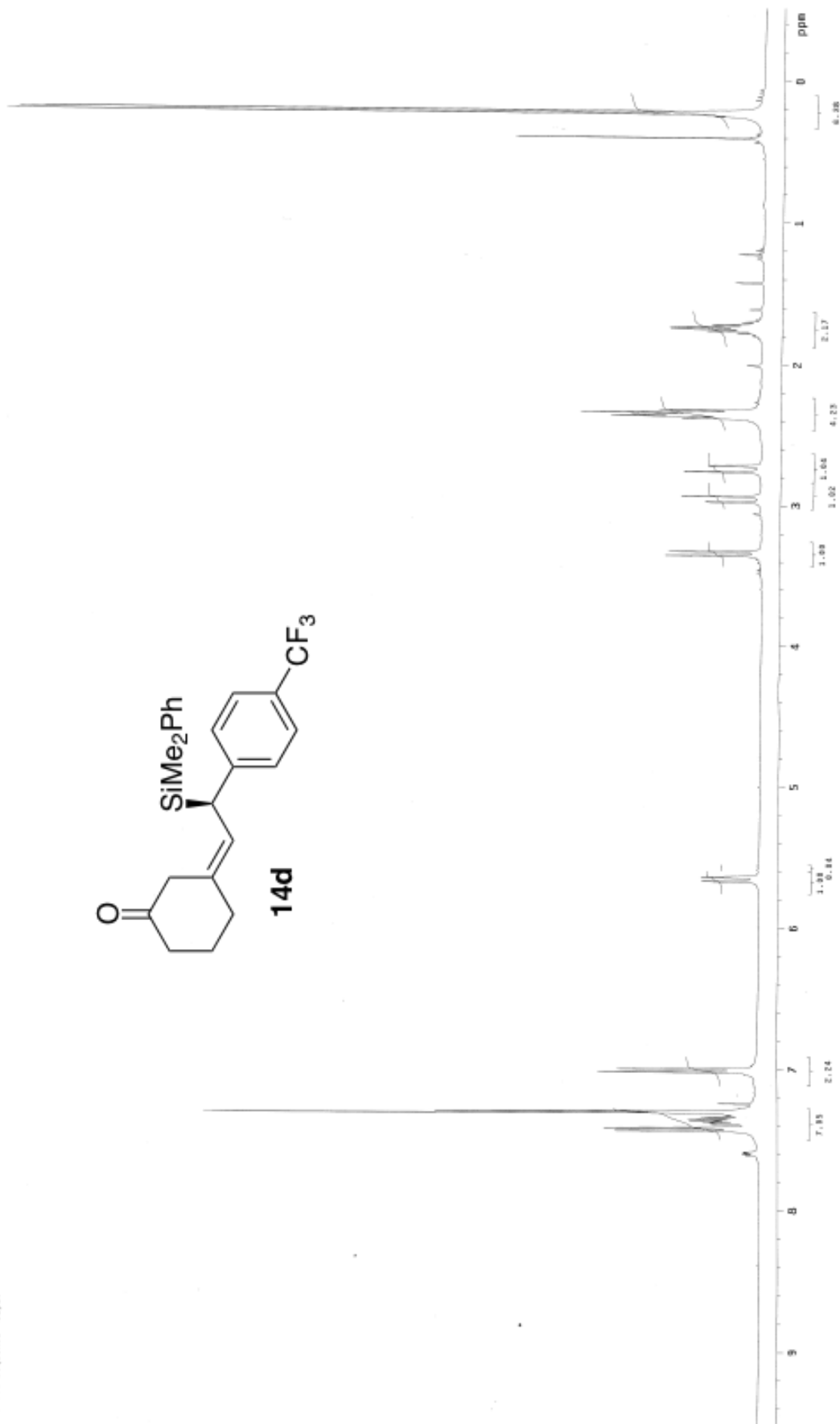
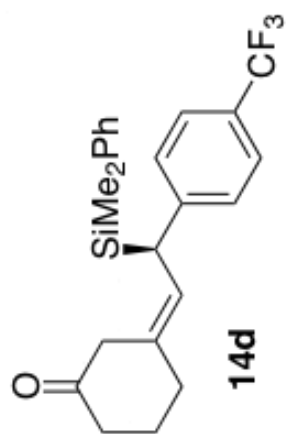
Sample: 6L-D0627a-01H
 File: exp
 Pulse Sequence: zgpg30
 Solvent: cdcl3
 Temp: 25.0 C / 298.1 K
 Operator: leed
 V0605-001 "zgpg30"
 Relax, delay 1.000 sec
 Pulse 45.0 degree
 Acq. 1.000 sec
 163h 38m 4 sec
 16 repetitions
 007460030109_7622411.mlx
 Date_20160303
 Rec1: enhanced -s 0 Hz
 F1 size 65536
 Total time 2.810, 21 sec



Sample: KL-10-277-3H
 File: 009
 Pulse Sequence: zgpg30
 Solvent: cdcl3
 Temp: 25.4 C / 298.1 K
 VPROB: zgpg30 129mm13*
 Relax delay: 3.000 sec
 Acq: 16384
 F2: 101.626 MHz
 WIDW: 4388.4 Hz
 SFO: 400.146 MHz
 D1: 2.00000000
 D11: 0.05000000
 D12: 0.05000000
 D13: 0.05000000
 D14: 0.05000000
 D15: 0.05000000
 D16: 0.05000000
 D17: 0.05000000
 D18: 0.05000000
 D19: 0.05000000
 D20: 0.05000000
 D21: 0.05000000
 D22: 0.05000000
 D23: 0.05000000
 D24: 0.05000000
 D25: 0.05000000
 D26: 0.05000000
 D27: 0.05000000
 D28: 0.05000000
 D29: 0.05000000
 D30: 0.05000000
 D31: 0.05000000
 D32: 0.05000000
 D33: 0.05000000
 D34: 0.05000000
 D35: 0.05000000
 D36: 0.05000000
 D37: 0.05000000
 D38: 0.05000000
 D39: 0.05000000
 D40: 0.05000000
 D41: 0.05000000
 D42: 0.05000000
 D43: 0.05000000
 D44: 0.05000000
 D45: 0.05000000
 D46: 0.05000000
 D47: 0.05000000
 D48: 0.05000000
 D49: 0.05000000
 D50: 0.05000000
 D51: 0.05000000
 D52: 0.05000000
 D53: 0.05000000
 D54: 0.05000000
 D55: 0.05000000
 D56: 0.05000000
 D57: 0.05000000
 D58: 0.05000000
 D59: 0.05000000
 D60: 0.05000000
 D61: 0.05000000
 D62: 0.05000000
 D63: 0.05000000
 D64: 0.05000000
 D65: 0.05000000
 D66: 0.05000000
 D67: 0.05000000
 D68: 0.05000000
 D69: 0.05000000
 D70: 0.05000000
 D71: 0.05000000
 D72: 0.05000000
 D73: 0.05000000
 D74: 0.05000000
 D75: 0.05000000
 D76: 0.05000000
 D77: 0.05000000
 D78: 0.05000000
 D79: 0.05000000
 D80: 0.05000000
 D81: 0.05000000
 D82: 0.05000000
 D83: 0.05000000
 D84: 0.05000000
 D85: 0.05000000
 D86: 0.05000000
 D87: 0.05000000
 D88: 0.05000000
 D89: 0.05000000
 D90: 0.05000000
 D91: 0.05000000
 D92: 0.05000000
 D93: 0.05000000
 D94: 0.05000000
 D95: 0.05000000
 D96: 0.05000000
 D97: 0.05000000
 D98: 0.05000000
 D99: 0.05000000
 D100: 0.05000000
 Total time 3 min, 24 sec



Sample: KL-1X-279-2H
 F116: 009
 Pulse sequence: zgpg30

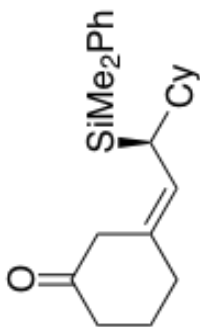


Sample: KL-IX-235-A-1H
 File: exp

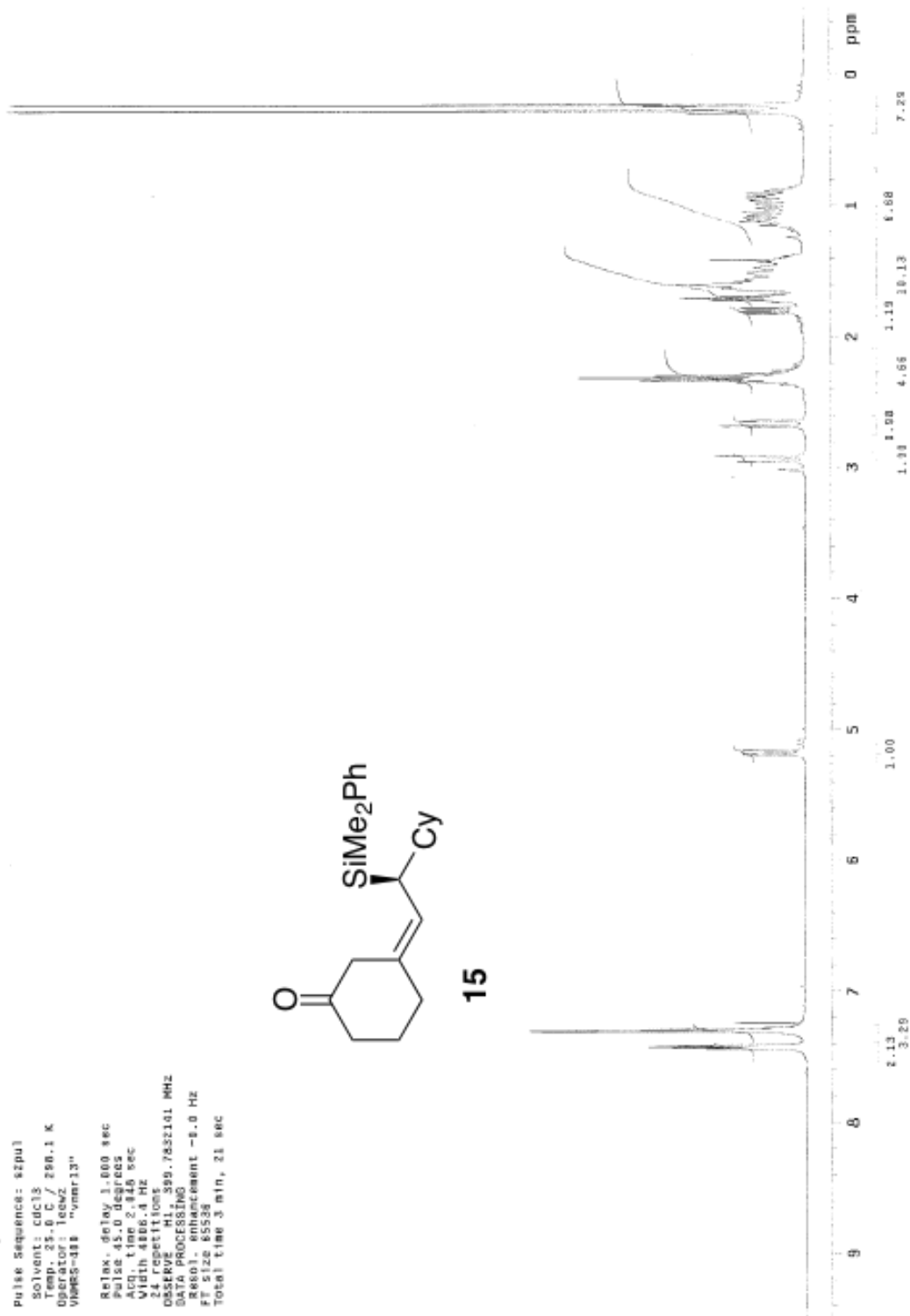
Pulse Sequence: zgpg3

Solvent: CDCl3
 Temp: 25.0 C / 298.1 K
 QPCPC001 "qpcpc"
 VPR03-001 "vpr03"

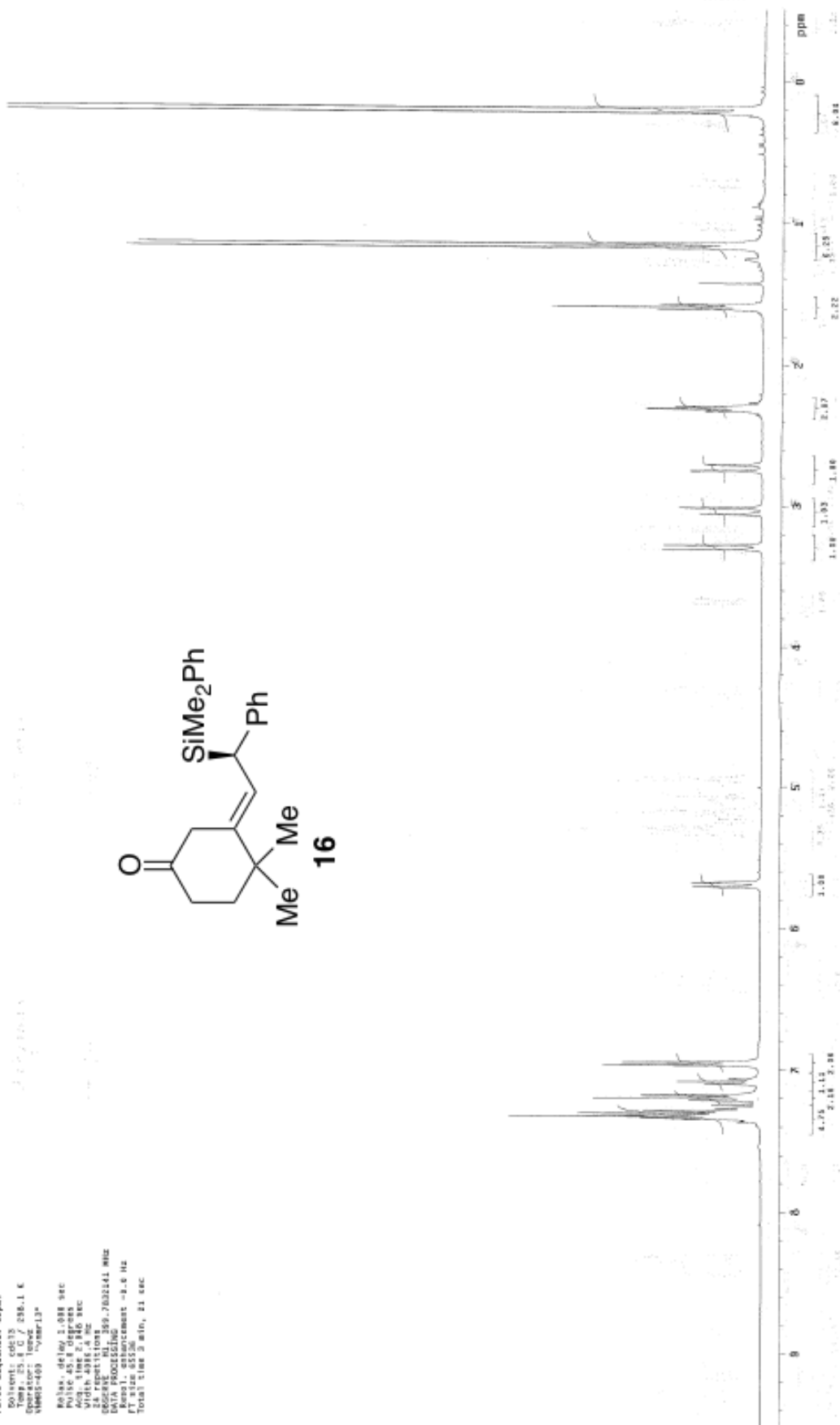
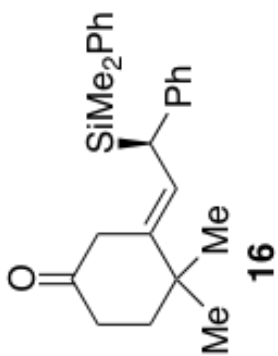
Relax. delay: 1.000 sec
 Acq. time: 21.847 sec
 ACH time: 2.847 sec
 VPR03: 4800.0 MHz
 24 repetitions
 OBSERVE: H1, 399.7832101 MHz
 DATA PROCESSING
 Rec01 - Enhancement -8.0 Hz
 FT size: 65538
 Total time: 3 min, 21 sec

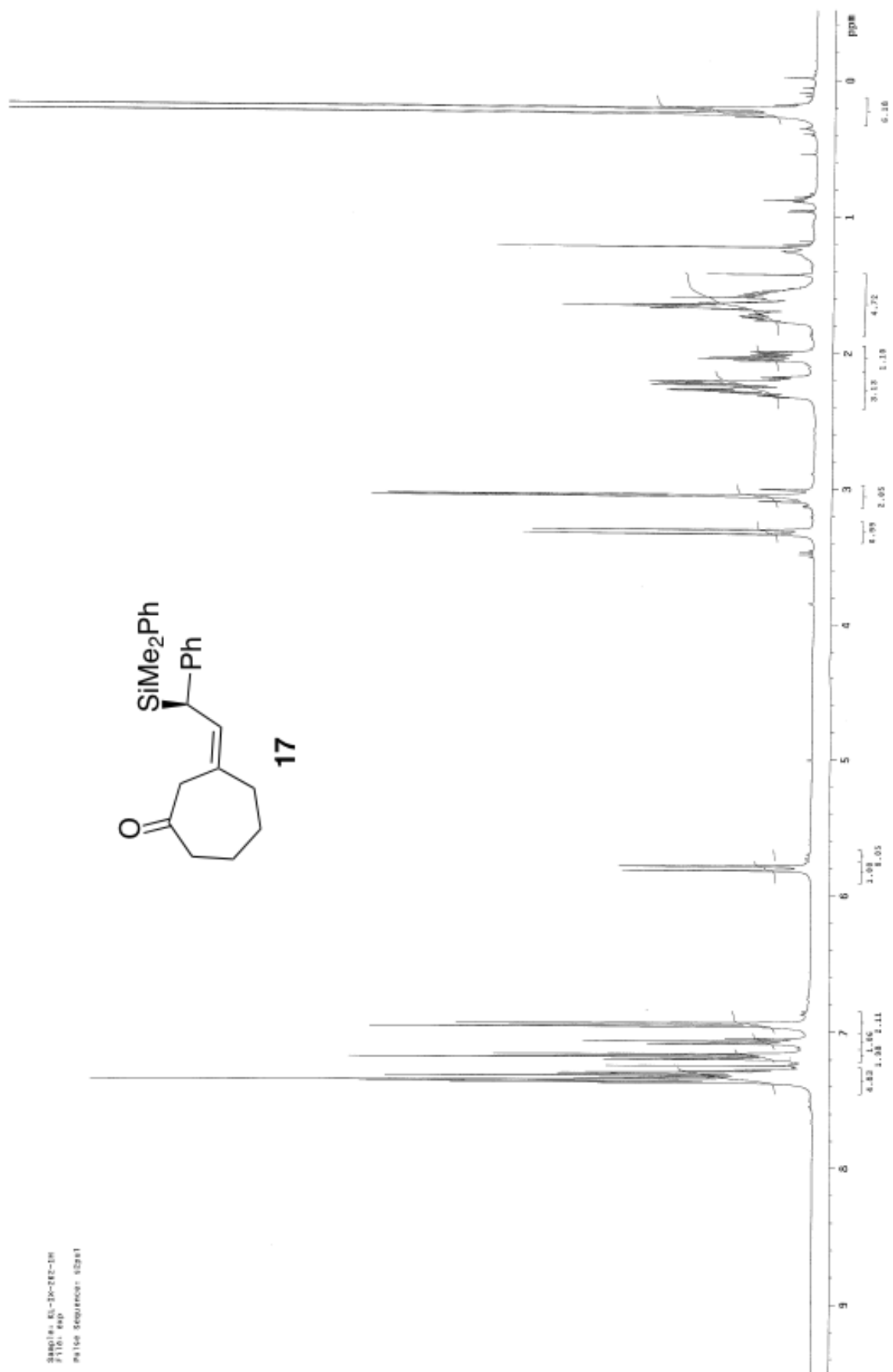


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Sample: XL-10-139-1H
 File: e09
 Pulse Sequence: zgpg30
 Solvent: cdcl3
 Temp: 25.1 C / 235.1 K
 Operator: tomve
 Date_09: 09/13/13
 Rollax: delay 1.000 sec
 Pulse: 45.1 degrees
 Width: 18.2140 sec
 Width: 18.2140 sec
 24 repetitions
 DVT: 0.00000000
 DVT2: 0.00000000
 Rec1: enhancement -3.5 Hz
 FT size: 65536
 Total time: 2 min, 21 sec





004017_01-10-102-01
 2100_000
 pulse Sequence: zgpg1

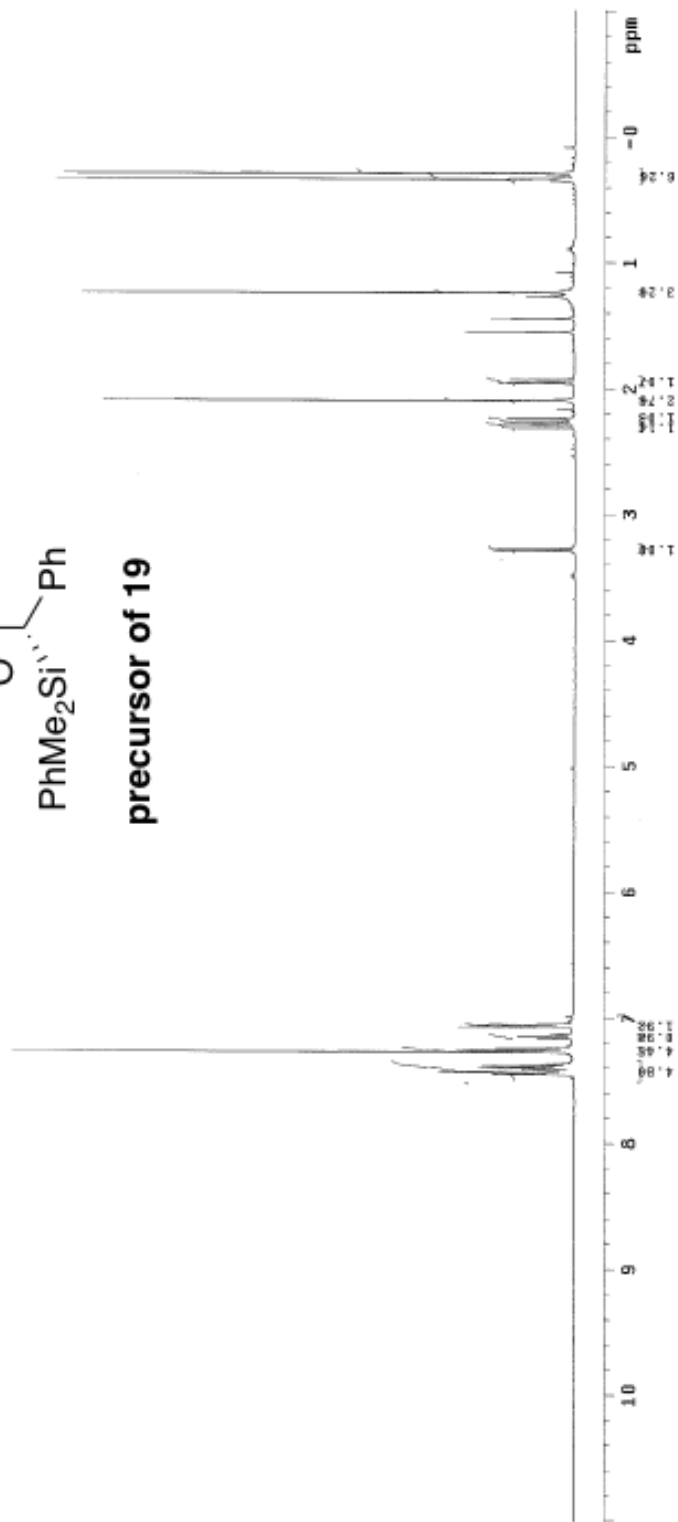
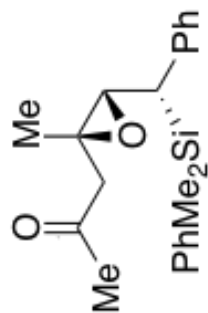
Glycosylation of phthalimide substrate, flash
mixed fractions

Sample: HV-1-193
F110: exp

Pulse Sequence: e2pu1

Solvent: cdcl3
Temp: 25.0 C / 298.1 K
Operator: dmh
VME5-586 "hmr15"

Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 2.13 sec
Vprh 600.132 Hz
24 repetitions
OBSERVE HI 499.8853621 MHz
DATA PROCESSING
Resol. enhancement -6.0 Hz
FT size 65536
Total time 3 min, 21 sec

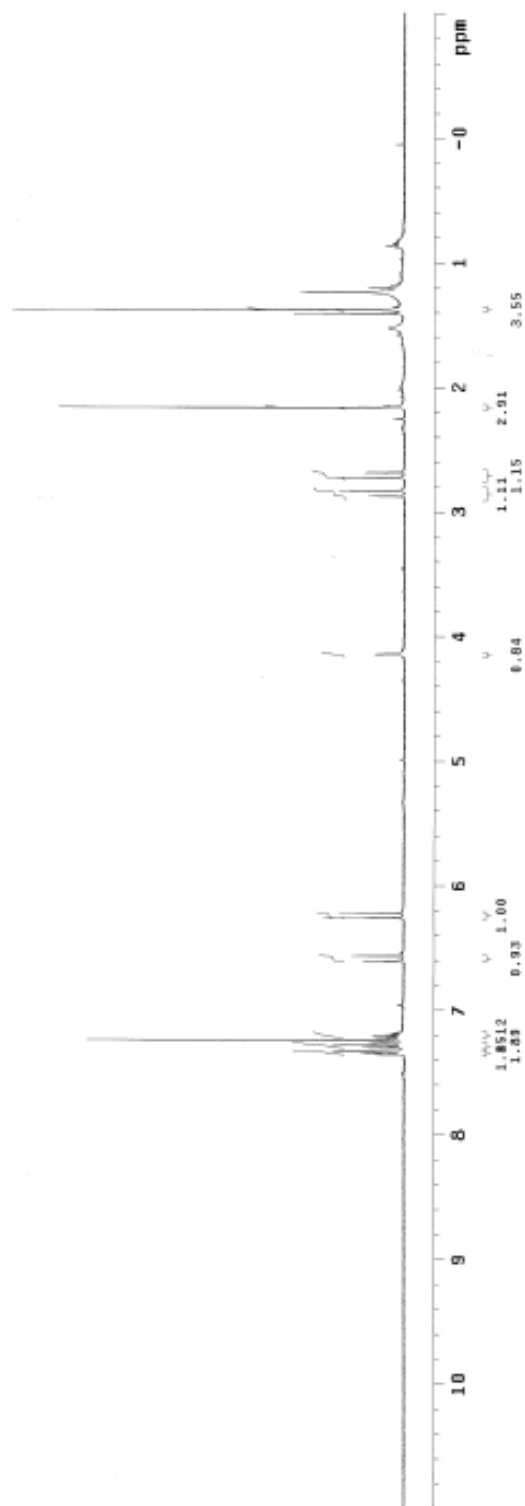
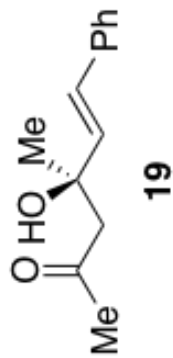


Sample: M4-I-254-4
File: exp

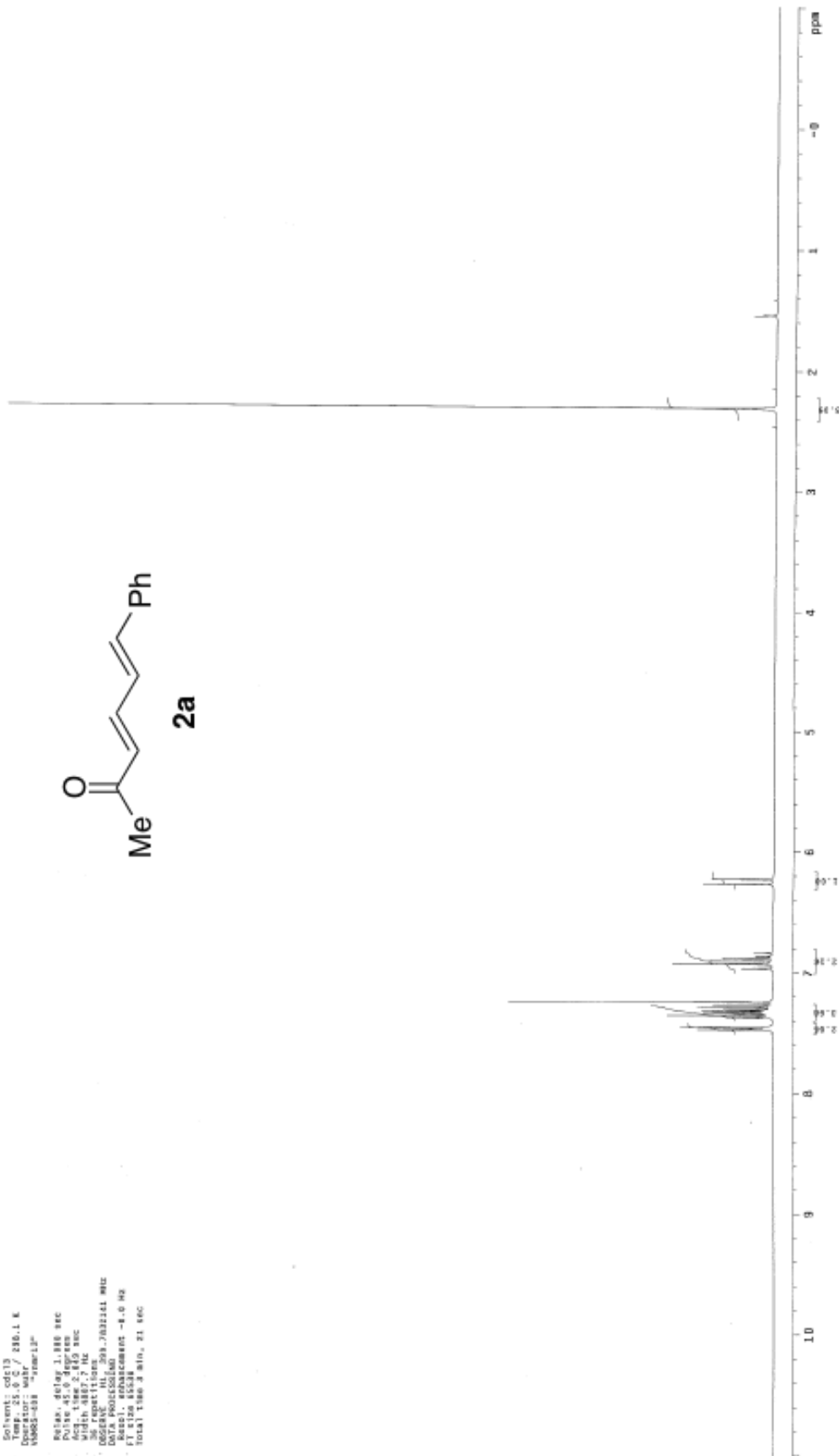
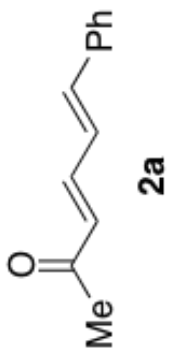
Pulse Sequence: zgpg30

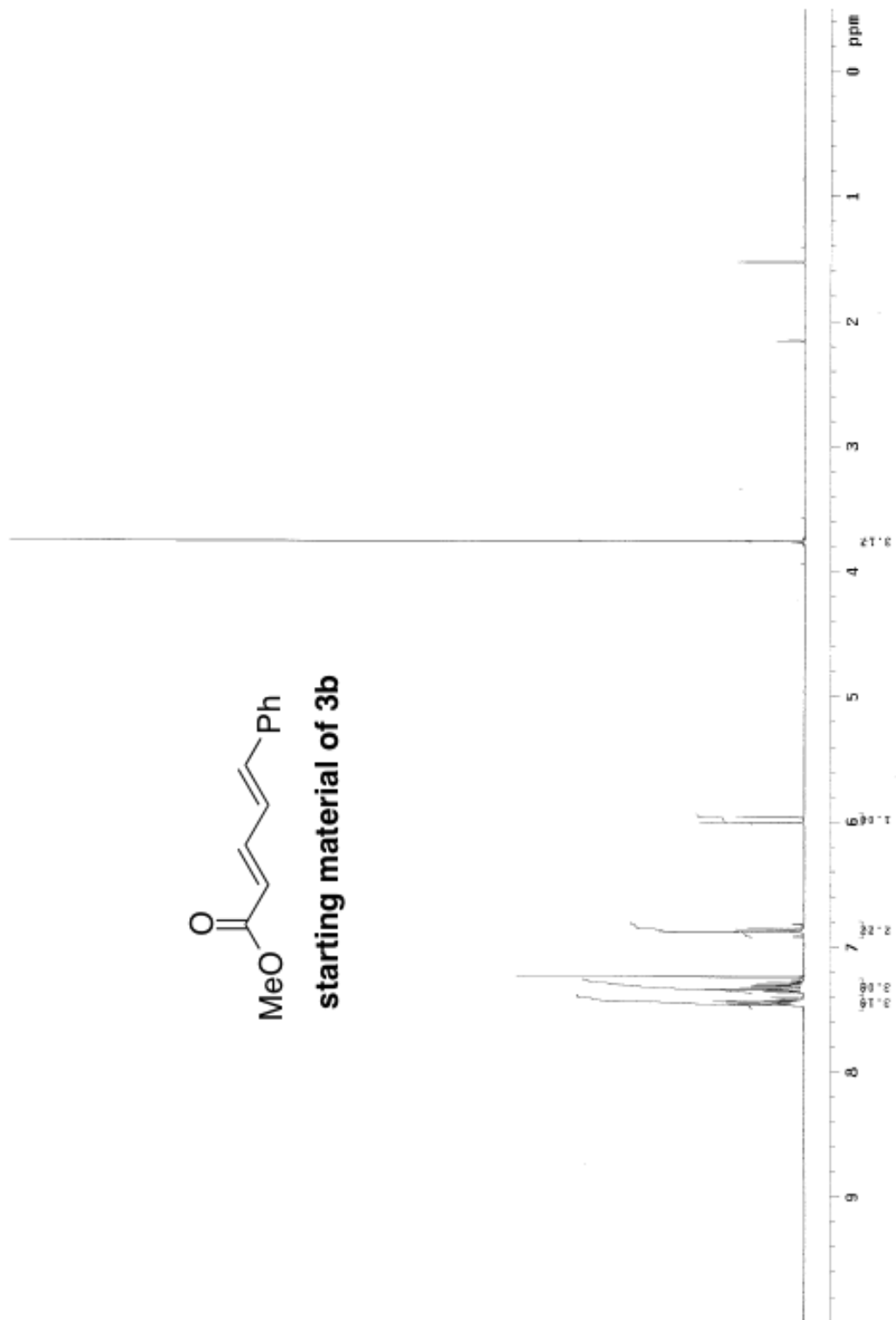
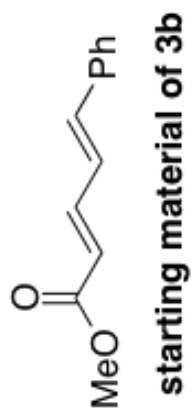
Solvent: cdcl3
Temp: 25.0 C / 298.1 K
Operator: whr
VNAME: 403 "vnmr13"

Relax. delay: 1.000 sec
Pulse: 14.0 degrees
A1: 1.00 sec
V1: 4887.7 Hz
a: 10.00000000
a repetitions: 1
OBSERVE: H1, 399.7832141 MHz
DATA PROCESSING
Resol.: enhancement -8.0 Hz
FT size: 65536
Total time: 3 min, 21 sec



Sample: 30-C-460
 F1: 60p
 Pulse Sequence: zgpg30
 Solvent: CDCl3
 Concentration: 200.1 mg / 200.1 µl
 Operator: mhr / 200.1 µl
 VPROB: zgpg30 "zgpg30"
 RNAME: 30p_1_180 SEC
 PULSE: 45.0 µsec
 ACQ: 45.0 µsec
 AQC: 45.0 µsec
 30 sec
 30 sec
 OBSERVE: 1H, 200.132261 MHz
 PULPROG: zgpg30
 FT SIZE: 65536
 TOTAL TIME: 3.010, 21.000



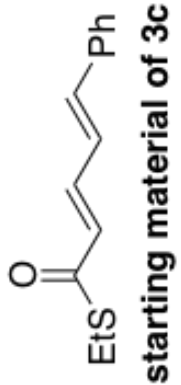


Sample: MW-3-158
File: exp

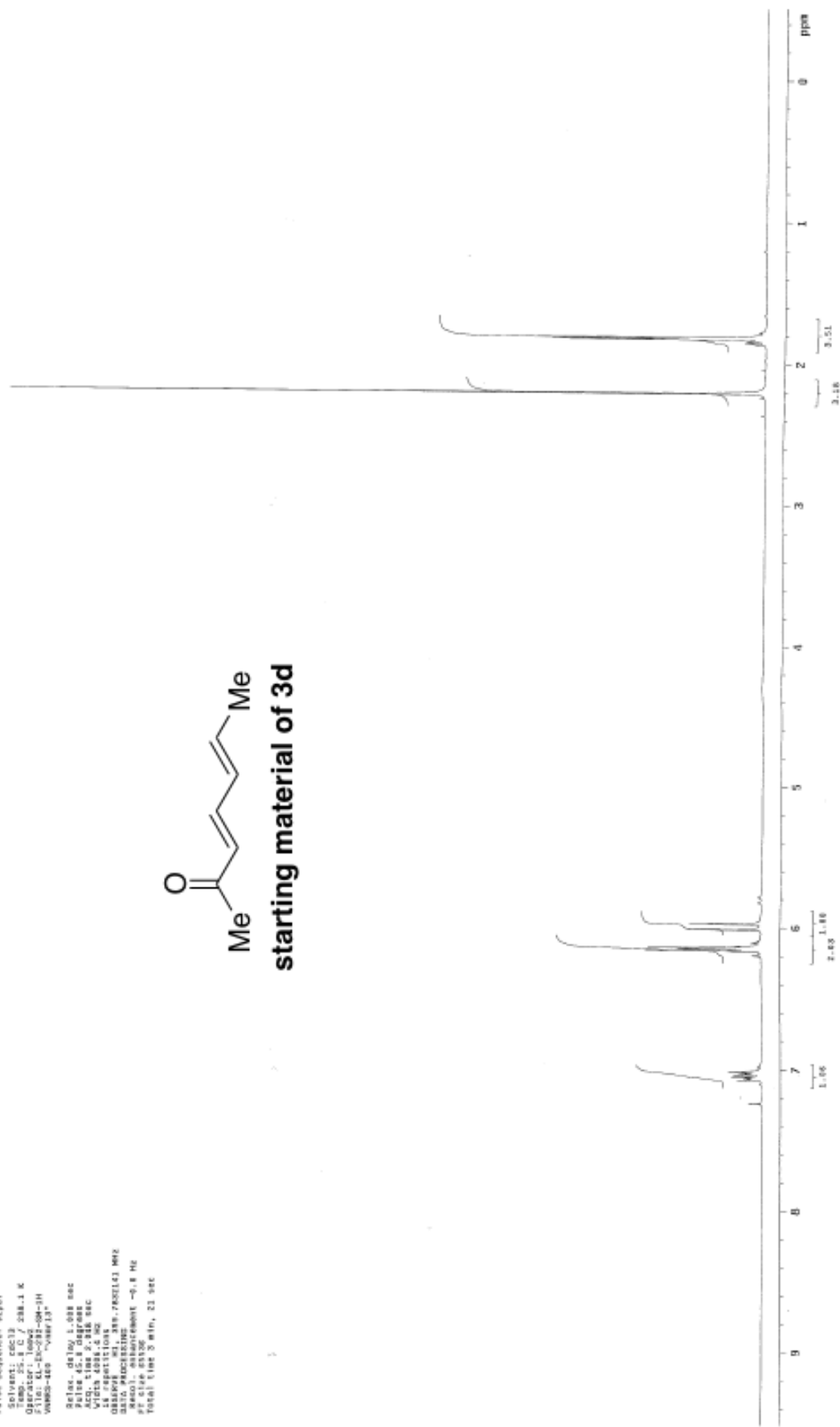
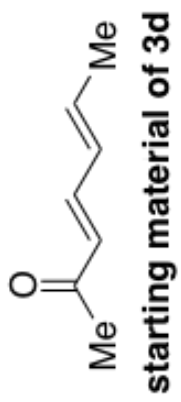
Pulse Sequence: zgpg30

Solvent: cdcl3
Temp: 24.8 C / 297.1 K
Operator: wuhr
VIMS-400 "vnmr3"

Relax. delay 1.000 sec
Pulpc 45.0 degrees
Acq time 0.093 sec
Fwhm 4807.7 Hz
Sb repetitions
OBSERVE H1 393.7832141 MHz
DATA PROCESSING
Resol. enhancement -0.0 Hz
FT size 65336
Total time 3 min, 21 sec



QM015_01_20-010-04-1H
 F100_700e0085\chem\015\DATA\FILE\REL-120-102-04-1H_1.H
 Pulse sequence: zgpg30
 Solvent: CDCl3
 Temperature: 298.1 K
 Operator: tomw
 File: 01-10-010-04-1H
 Name: 01-10-010-04-1H
 Relax. delay: 1.000 sec
 Pulse: 45.0 degrees
 ACQ. time: 7.916 sec
 F2: 100.626 MHz
 14 repetitions
 OBSERVED: 01_10-010-04-1H_7801013.MHZ
 Name: 01-10-010-04-1H_7801013.MHZ
 PC step: 01020
 Total time: 5 min, 21 sec



Sample: MW-1-088-04-12-2018
 File: exp

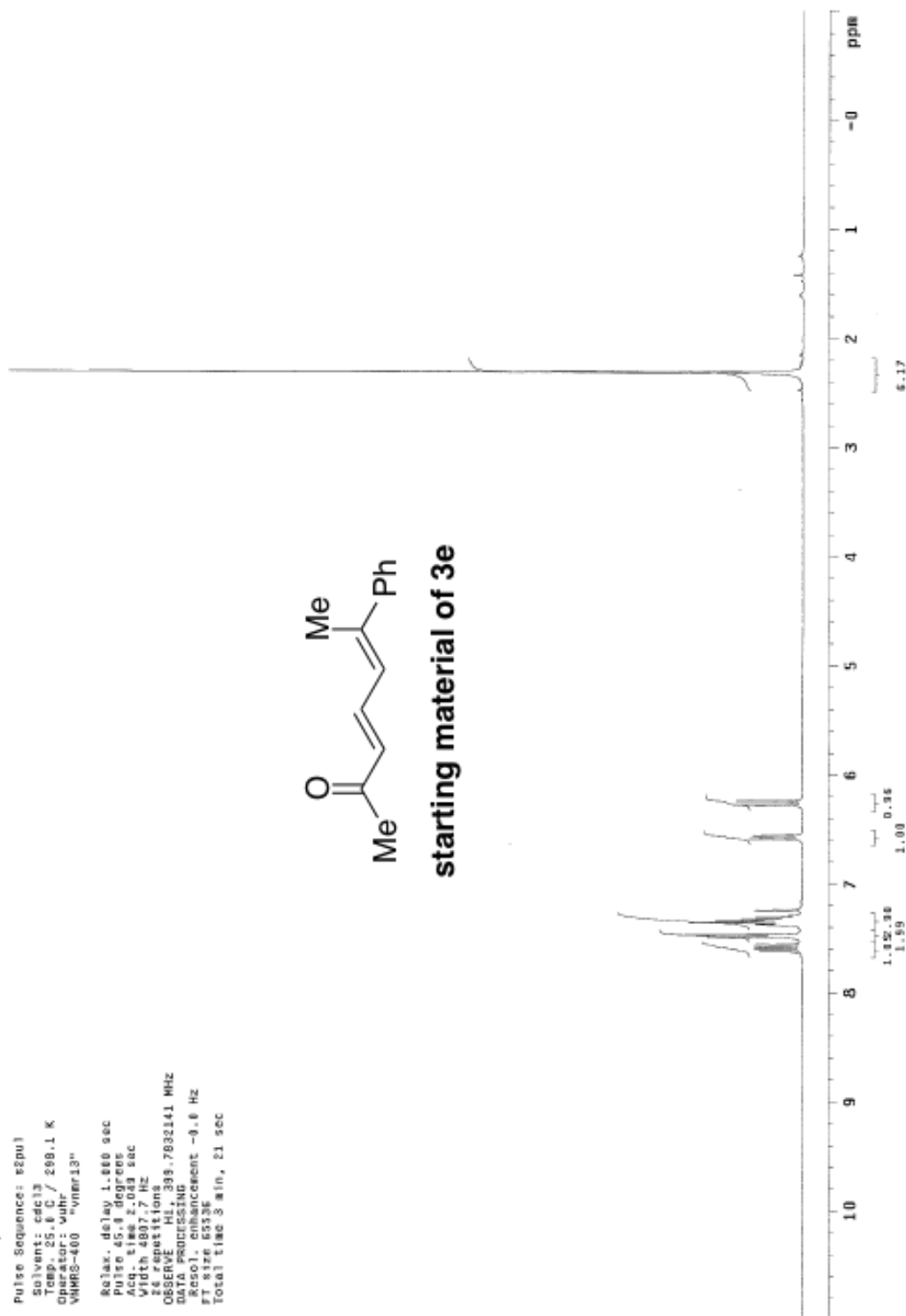
Pulse Sequence: zgpg30

Solvent: cdcl3
 Temp: 25.8 C / 289.1 K
 Operator: vubr
 VHMSS-400 "vnmr13"

Relax. delay: 1.000 sec
 Pulse: 45.0 degrees
 Width: 2.000 sec
 Width: 400.7 MHz
 24 repetitions
 OBSERVE H1, 399.783241 MHz
 DATA PROCESSING
 Resol.: enhancement -9.6 Hz
 FT size: 65236
 Total time: 3 min, 21 sec



starting material of 3e



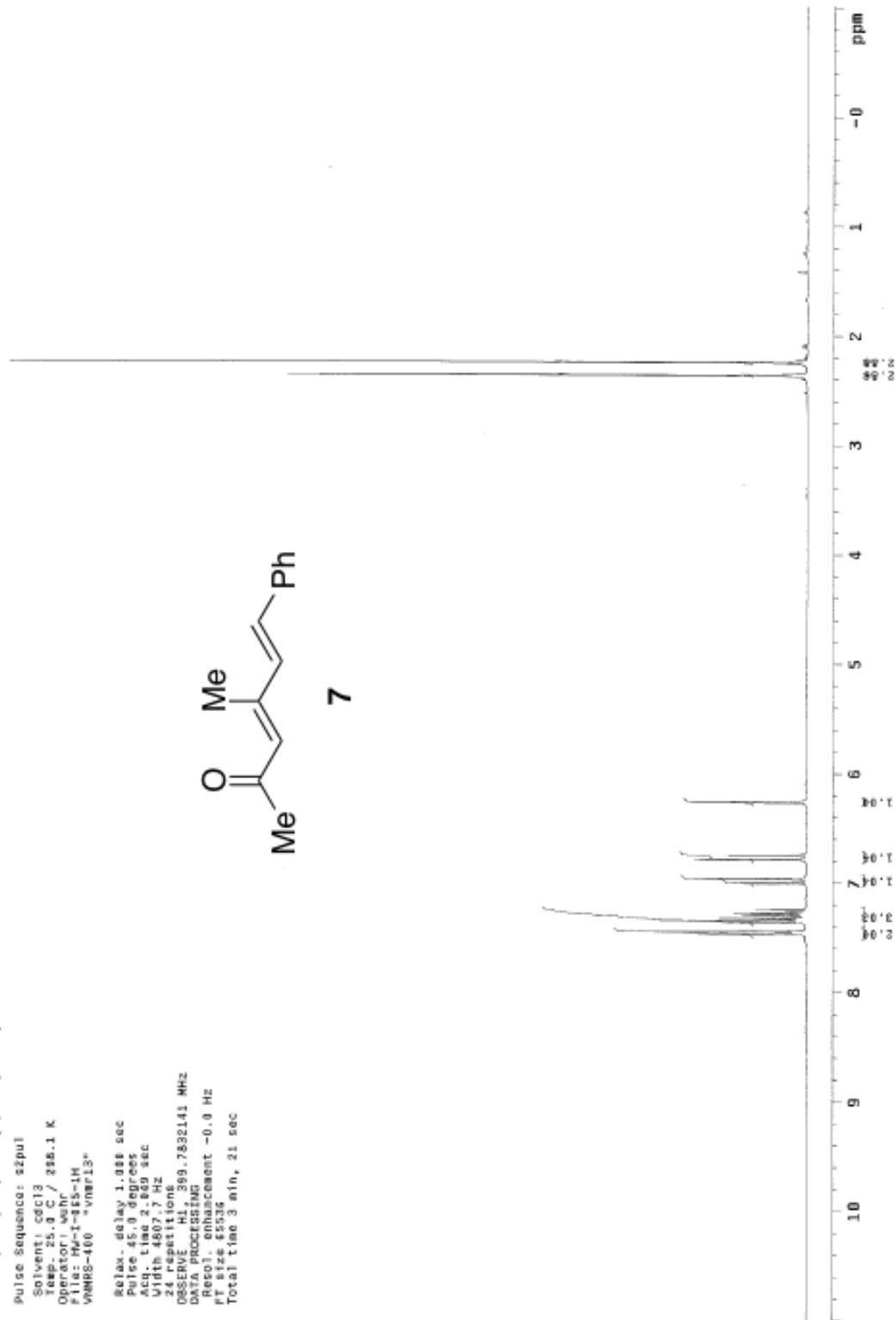
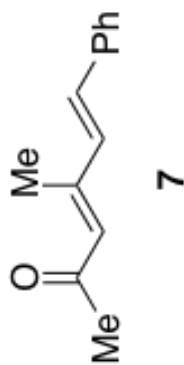
Sample: M0-I-065-3-04-22-2010
 File: /home/ahn/vnmr32/data/haokku/M0-I-065-3H.fid

Pulse Sequence: s2pul

Solvent: cdcl3
 Temp: 25.0 C / 298.1 K
 Operator: s2pul
 Date: 01-25-10
 VNMRS-400 "VNMRS13"

Relax. delay 1.000 sec
 Pulse 45.0 degrees
 Width 4807.7 Hz
 24 repetitions

OBSERVE H1 399.7832141 MHz
 DATA PROCESSING
 Resol. enhancement -0.0 Hz
 FT size 65536
 Total time 3 min, 21 sec

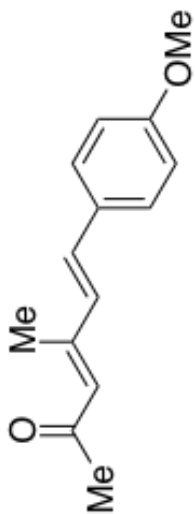


Sample: MW-1-121-2-05-21-2010
 File: exp

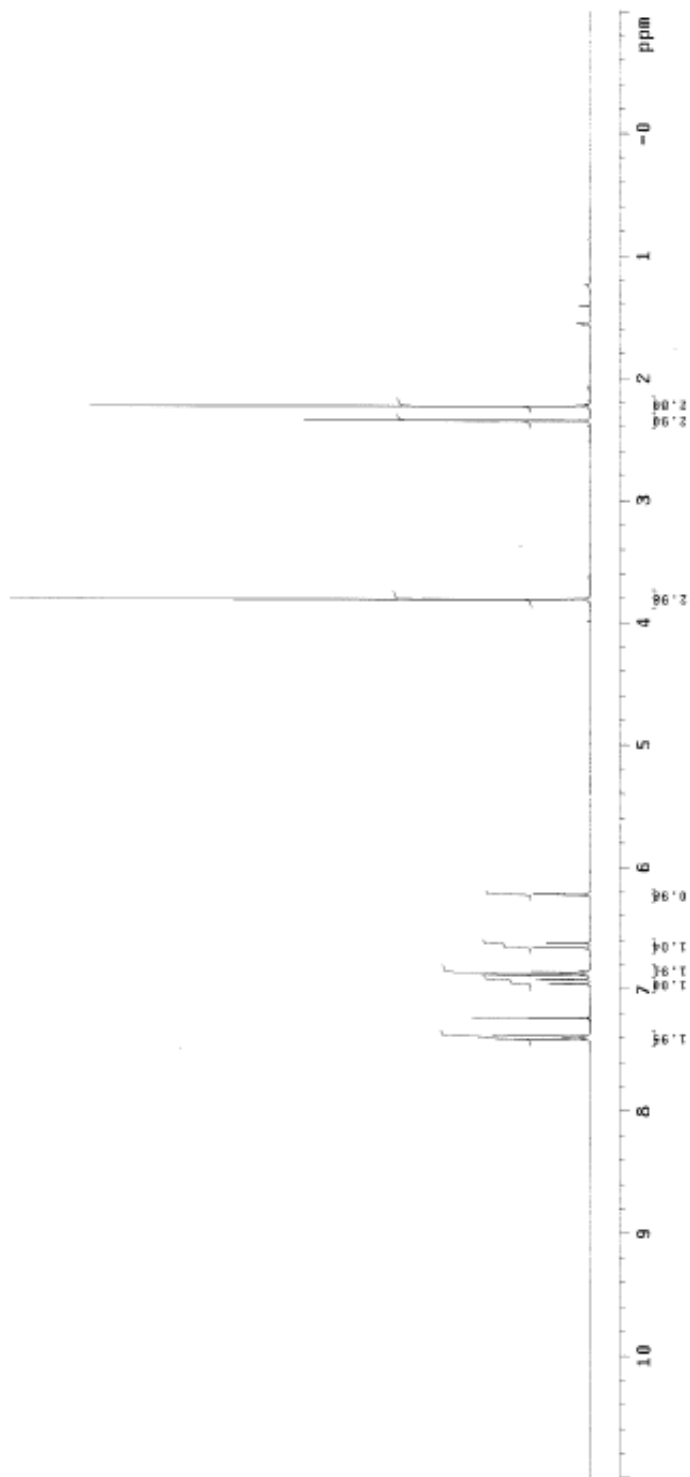
Pulse Sequence: zgpg30

Solvent: cdcl3
 Temp: 25.0 C / 298.1 K
 Operator: wuhr
 VNMRS-600 vnmr13"

Relax. delay 1.000 sec
 Pulse 45.0 degrees
 Acq. time 2.009 sec
 FID 4807.7 Hz
 OBSERVED F1 F2 399.7832141 MHz
 DATA PROCESSING
 Resol. enhancement -0.0 Hz
 FT size 65536
 Total time 3 min, 21 sec



starting material of 8b

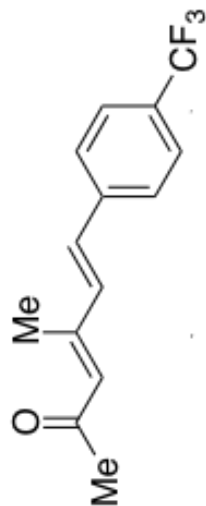


Sample: MW-1-112-2
 F1ID: /home/ahh/vmerys/data/haobu/MW-1-112-1H.fid

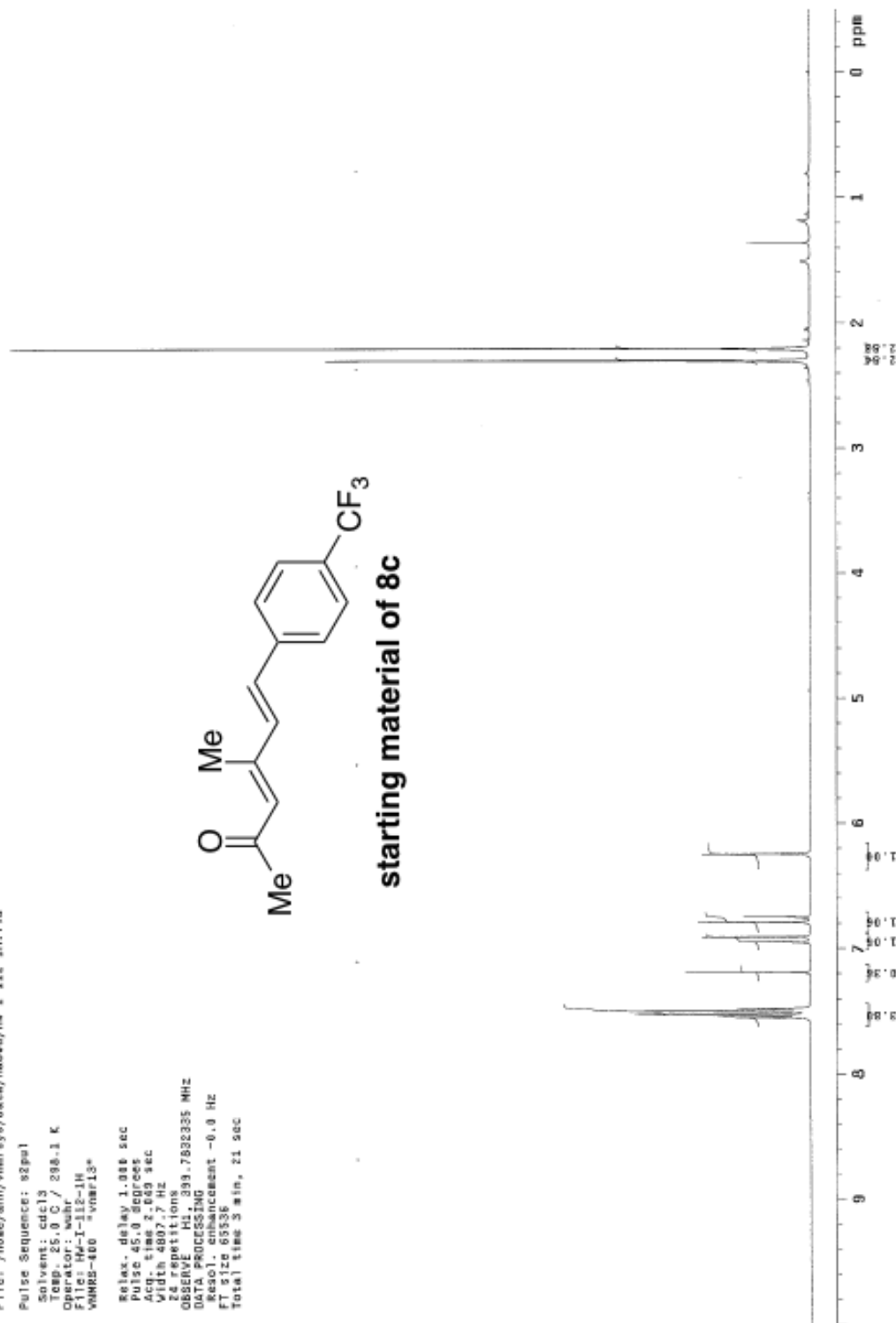
Pulse Sequence: zgpg30

Solvent: cdcl3
 Temp: 25.0 C / 298.1 K
 Date_UTC: 20130710 11:05:11
 File: MW-1-112-1H
 VNAME: 160 - vmr13*

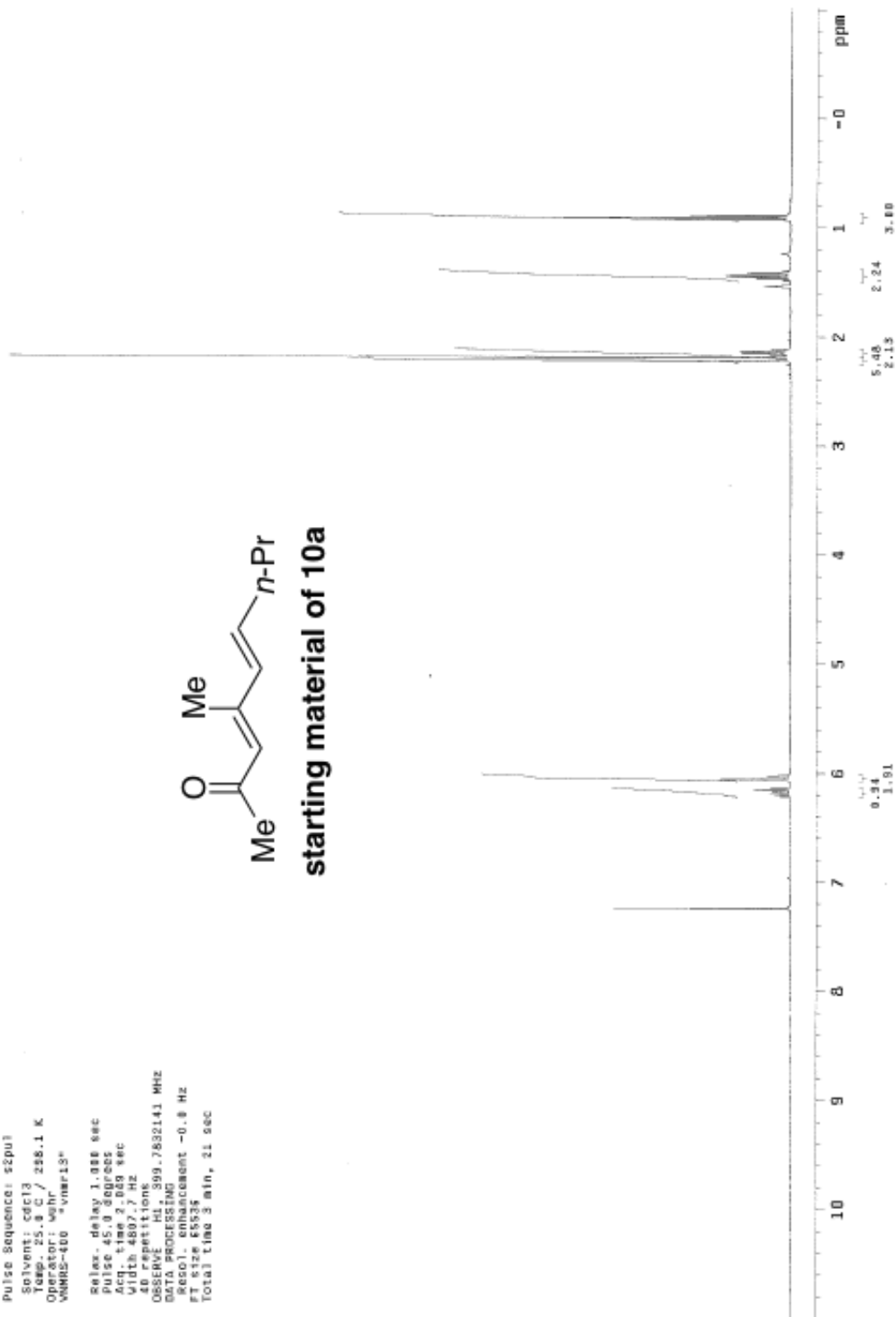
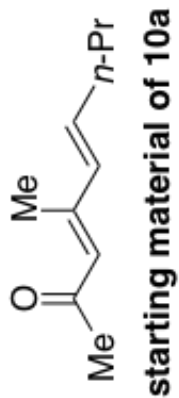
Relax. delay: 1.000 sec
 Pulse: 45.0 degrees
 Acq. time: 2.669 sec
 Width: 4807.7 Hz
 ZF repetitions: 24
 OBSERVE H1: 393.7932335 MHz
 DATA PROCESSING
 Resol. enhancement: -0.0 Hz
 FT size: 65536
 Total time: 3 min, 21 sec



starting material of 8c



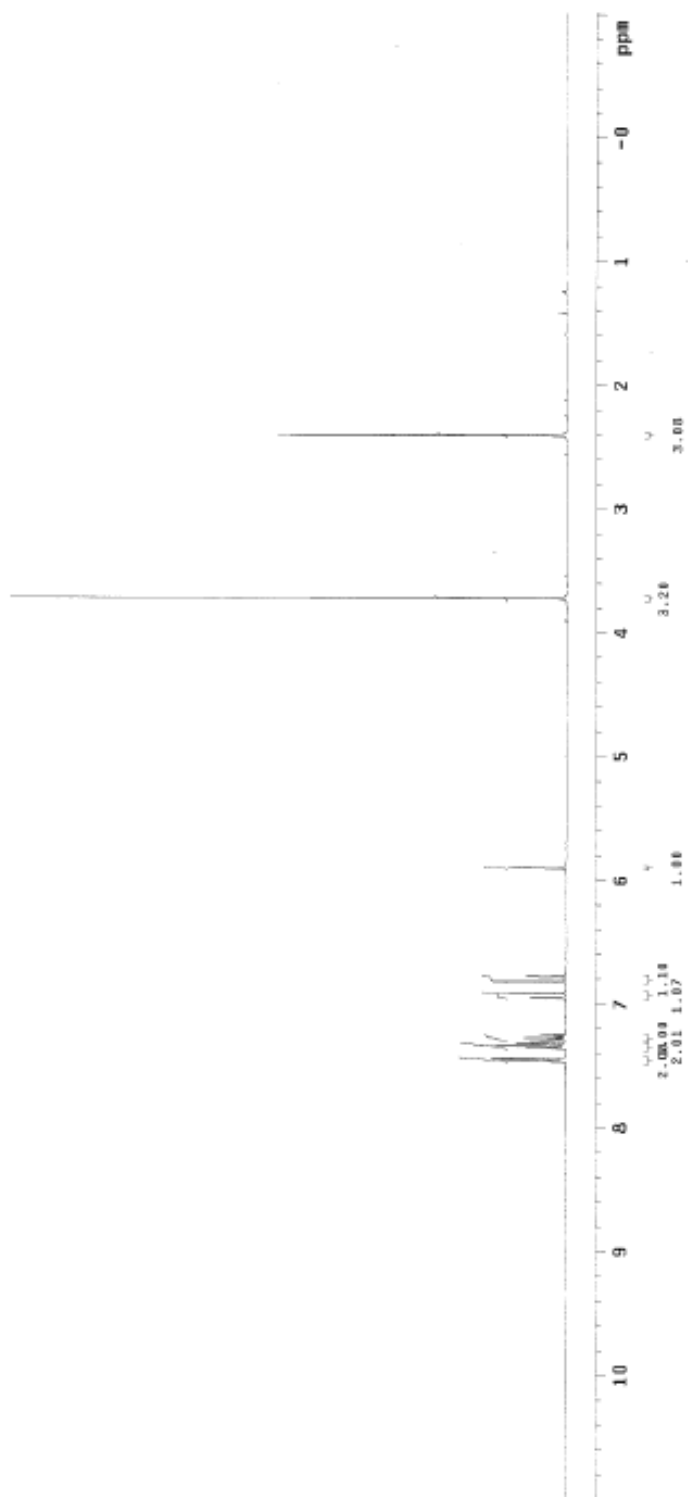
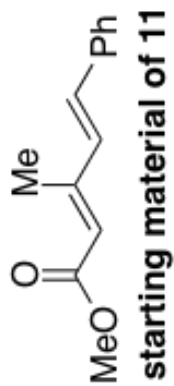
Sample: IN-1-133-2
 File: exp
 Pulse Sequence: zgpg30
 Solvent: CDCl3
 Temp: 25.3 C / 298.1 K
 Operator: wjhr
 VNAME: 400 -vnmr13*
 Relax. delay: 1.000 sec
 Pulse: 45.000000 sec
 Acq: 4.000000 sec
 Width: 4807.7 Hz
 40 repetitions
 OBSERVE: H1, 399.7832141 MHz
 DATA PROCESSING
 Recor: enhancement -0.8 Hz
 F1 size: 18536
 Total time 3 min, 21 sec



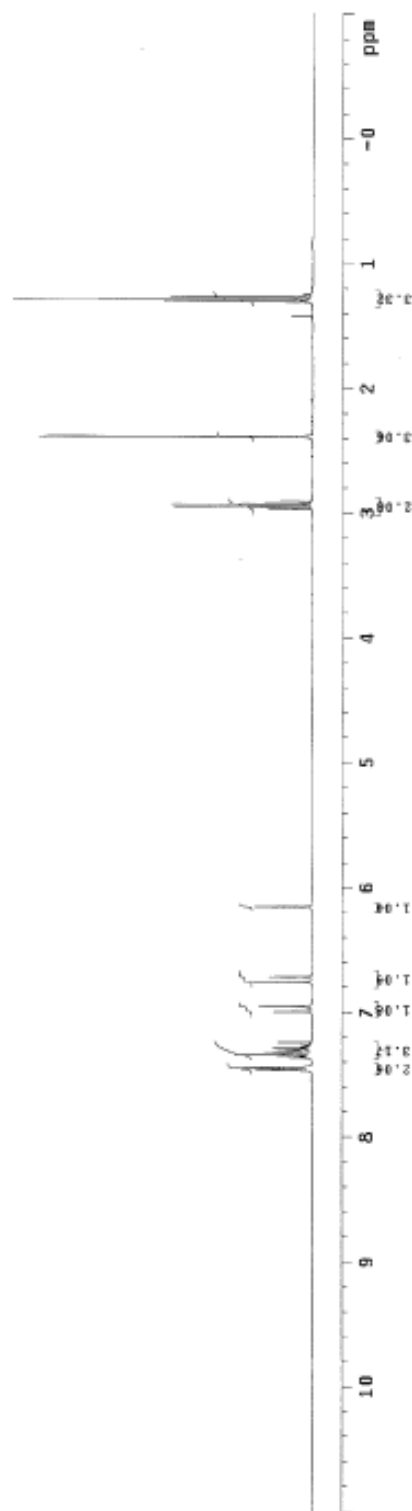
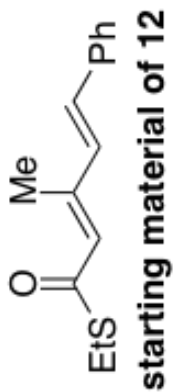
Sample: MW-1-143-1-08-23-2810
 File: exp

Pulse Sequence: sZpu1
 Solvent: cdcl3
 Temp: 25.8 C / 280.1 K
 Operator: wubr
 VNMRS=400 "vnmr13"

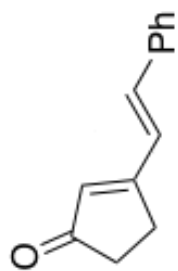
Relax. delay 1.800 sec
 Pulse 45.8 degrees
 Acq. time 2.045 sec
 Width 400.17 Hz
 Spectrometer vnmr13
 OBSERVATION: 399.7632141 MHz
 DATA PROCESSING:
 Resol. enhancement 0.8 Hz
 FT size 6536
 Total time 3 min, 21 sec



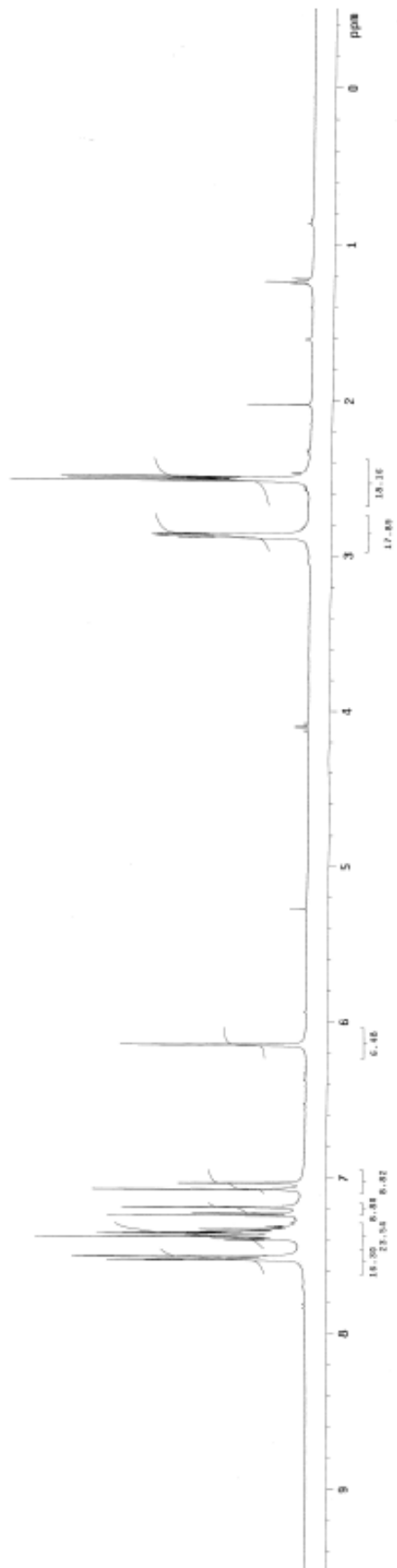
Sample: RM-1-168-2
 File: exp
 Pulse Sequence: s2pu1
 Solvent: cdcl3
 Temp: 25.0 C / 298.1 K
 Operator: wuhr
 VNAME: 403 "vmer13"
 Relax. delay: 1.000 sec
 Pulse: 45.0 degree
 Acq. time: 2.043 sec
 Inj. volume: 10
 Inj. concentration:
 OBSERVE: H1, 333.7832161 MHz
 DATA PROCESSING
 Resol: enhancement -1.0 Hz
 FT size: 65536
 Total time: 3 min, 21 sec



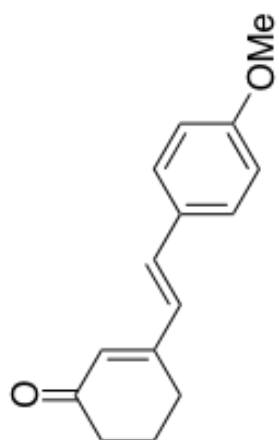
Sample: AL-DX-165-3H
File: exg
Pulse Sequence: zgpg30



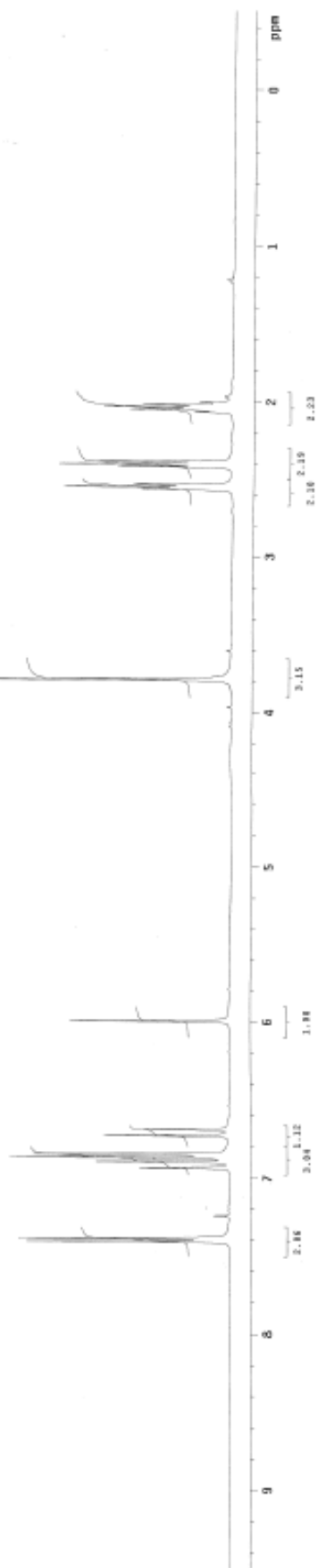
starting material of 13



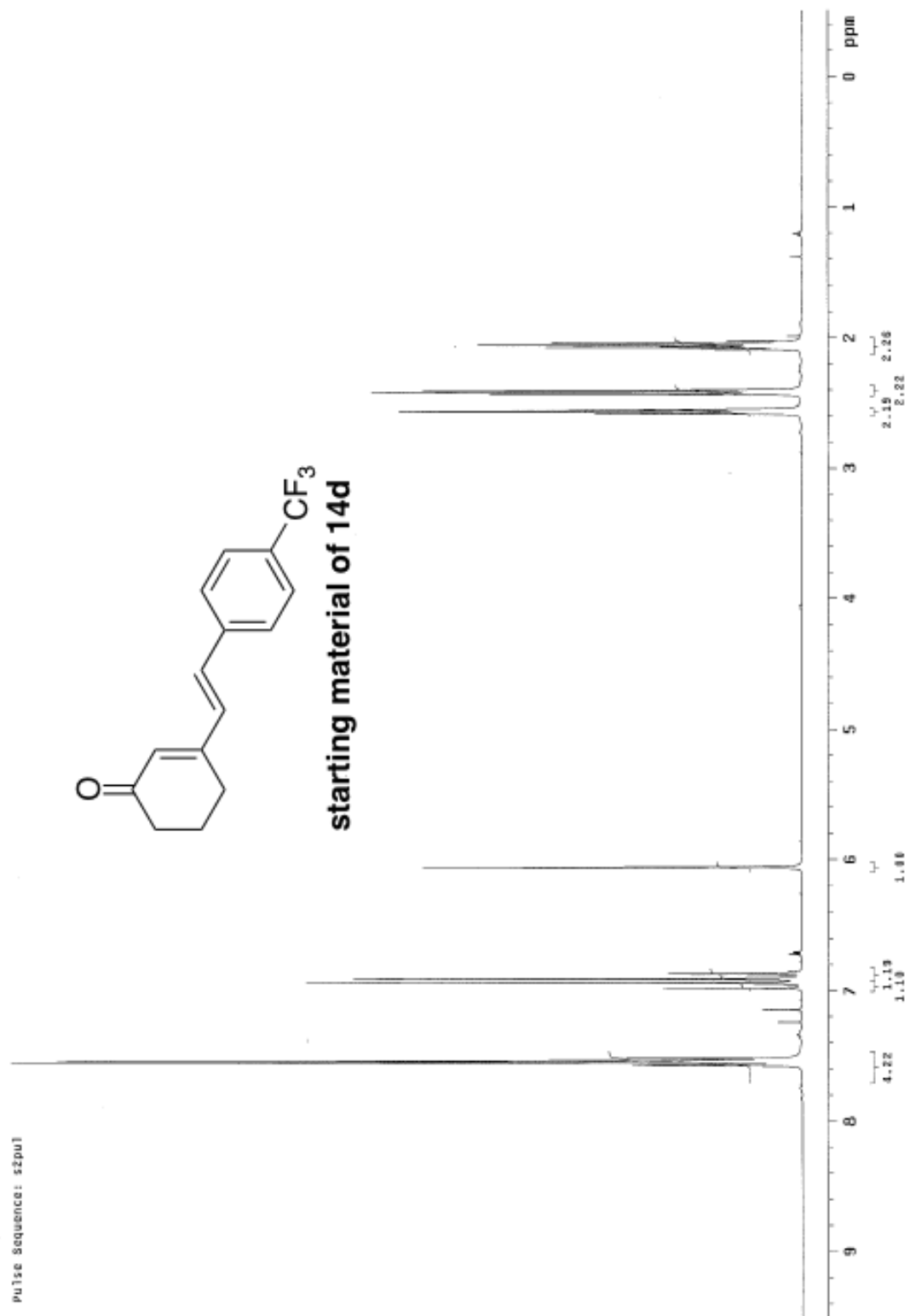
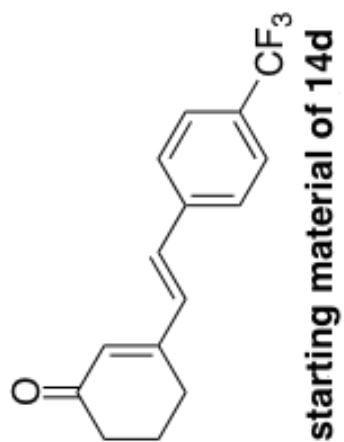
Sample: E1-D4-268-3H
File: e02
Pulse Sequence: zgpg30



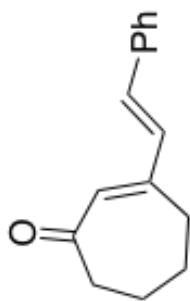
starting material of 14c



Sample: K1-Ex-269-3H
File: exp
Pulse Sequence: s2p01



Sample: AL-Ex-251-JH
 File: exp
 Pulse Sequence: zgpg30
 Solvent: cdcl3
 Temp: 25.0 C / 298.1 K
 VPROB: zgpg30
 VNAME: 13c
 Delay: 1.988 sec
 Relax: 2.00000000 sec
 Acq: 1.19160000 sec
 W4: 4866.4 Hz
 W2: 4866.4 Hz
 L1: 601311.00 MHz
 L2: 601311.00 MHz
 L3: 601311.00 MHz
 Q1: 1.00000000
 Q2: 1.00000000
 Q3: 1.00000000
 Q4: 1.00000000
 Q5: 1.00000000
 Q6: 1.00000000
 Q7: 1.00000000
 Q8: 1.00000000
 Q9: 1.00000000
 Q10: 1.00000000
 Q11: 1.00000000
 Q12: 1.00000000
 Q13: 1.00000000
 Q14: 1.00000000
 Q15: 1.00000000
 Q16: 1.00000000
 Q17: 1.00000000
 Q18: 1.00000000
 Q19: 1.00000000
 Q20: 1.00000000
 Q21: 1.00000000
 Q22: 1.00000000
 Q23: 1.00000000
 Q24: 1.00000000
 Q25: 1.00000000
 Q26: 1.00000000
 Q27: 1.00000000
 Q28: 1.00000000
 Q29: 1.00000000
 Q30: 1.00000000
 Q31: 1.00000000
 Q32: 1.00000000
 Q33: 1.00000000
 Q34: 1.00000000
 Q35: 1.00000000
 Q36: 1.00000000
 Q37: 1.00000000
 Q38: 1.00000000
 Q39: 1.00000000
 Q40: 1.00000000
 Q41: 1.00000000
 Q42: 1.00000000
 Q43: 1.00000000
 Q44: 1.00000000
 Q45: 1.00000000
 Q46: 1.00000000
 Q47: 1.00000000
 Q48: 1.00000000
 Q49: 1.00000000
 Q50: 1.00000000
 Q51: 1.00000000
 Q52: 1.00000000
 Q53: 1.00000000
 Q54: 1.00000000
 Q55: 1.00000000
 Q56: 1.00000000
 Q57: 1.00000000
 Q58: 1.00000000
 Q59: 1.00000000
 Q60: 1.00000000
 Q61: 1.00000000
 Q62: 1.00000000
 Q63: 1.00000000
 Q64: 1.00000000
 Q65: 1.00000000
 Q66: 1.00000000
 Q67: 1.00000000
 Q68: 1.00000000
 Q69: 1.00000000
 Q70: 1.00000000
 Q71: 1.00000000
 Q72: 1.00000000
 Q73: 1.00000000
 Q74: 1.00000000
 Q75: 1.00000000
 Q76: 1.00000000
 Q77: 1.00000000
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 Q81: 1.00000000
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 Q85: 1.00000000
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 Q87: 1.00000000
 Q88: 1.00000000
 Q89: 1.00000000
 Q90: 1.00000000
 Q91: 1.00000000
 Q92: 1.00000000
 Q93: 1.00000000
 Q94: 1.00000000
 Q95: 1.00000000
 Q96: 1.00000000
 Q97: 1.00000000
 Q98: 1.00000000
 Q99: 1.00000000
 Q100: 1.00000000
 Total time 3 min, 21 sec



starting material of 17



