

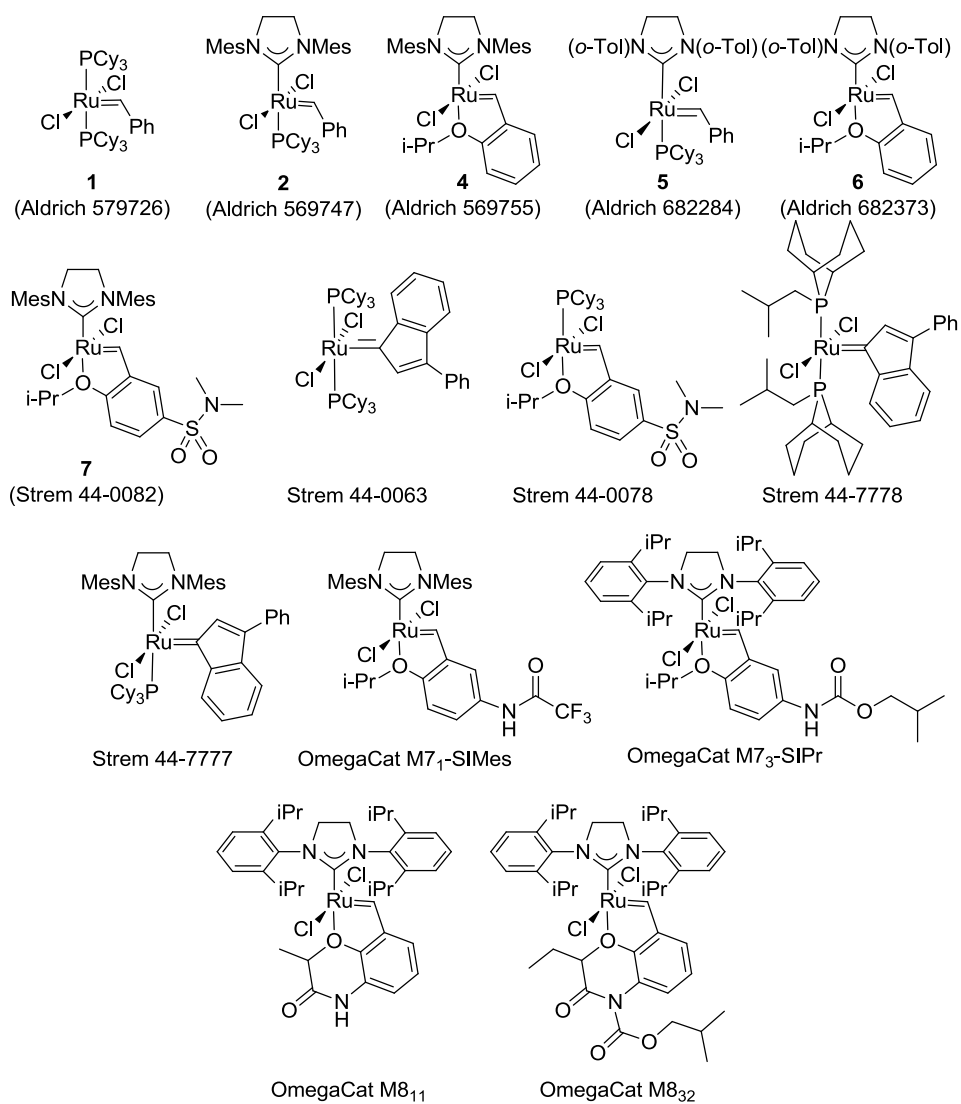
## SUPPORTING INFORMATION

### Ring-closing enyne metathesis of terminal alkynes with propargylic hindrance

Benjamin Laroche, Morgane Detraz, Alain Blond, Lionel Dubost, Patrick Mailliet,  
Bastien Nay\*

### Content

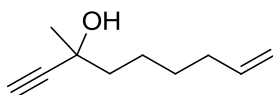
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**Figure S1: Structure of the fourteen ruthenium-based catalysts used in this study**

# <sup>1</sup>H and <sup>13</sup>C NMR spectra of 3-methylnon-8-en-1-yn-3-ol (8a)

PROTON CDC13 {X:\AV400HD} CBAF 1

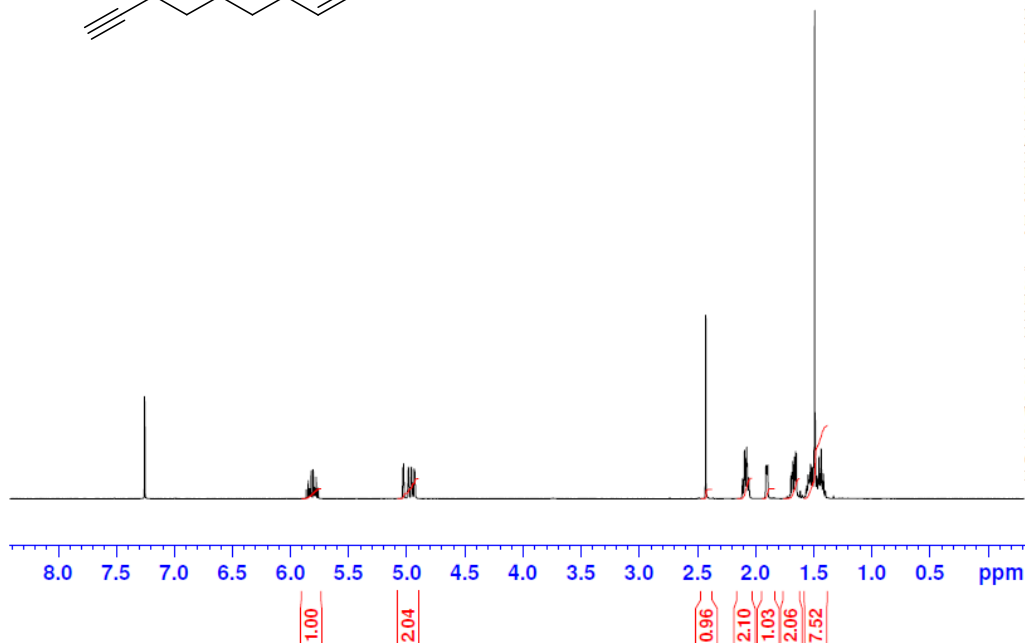


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SOLVENT CDC13  
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DS 2  
SWH 8012.820 Hz  
FIDRES 0.122266 Hz  
AQ 4.0894465 sec  
RG 161  
DW 62.400 usec  
DE 6.50 usec  
TE 298.0 K  
D1 1.00000000 sec  
TD0 1

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NUC1 1H  
P1 8.68 usec  
PLW1 20.00000000 W

F2 - Processing parameters  
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C13\_CPD CDC13 {X:\AV400HD} CBAF 1



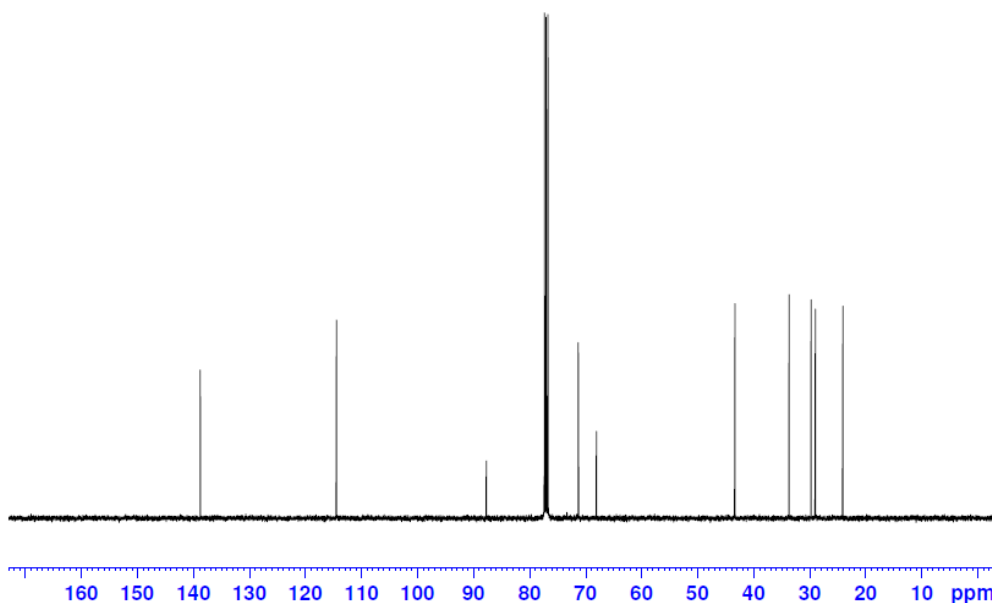
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FIDRES 0.366798 Hz  
AQ 1.3631488 sec  
RG 128  
DW 20.800 usec  
DE 6.50 usec  
TE 298.0 K  
D1 2.00000000 sec  
D11 0.03000000 sec  
TD0 1

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P1 9.75 usec  
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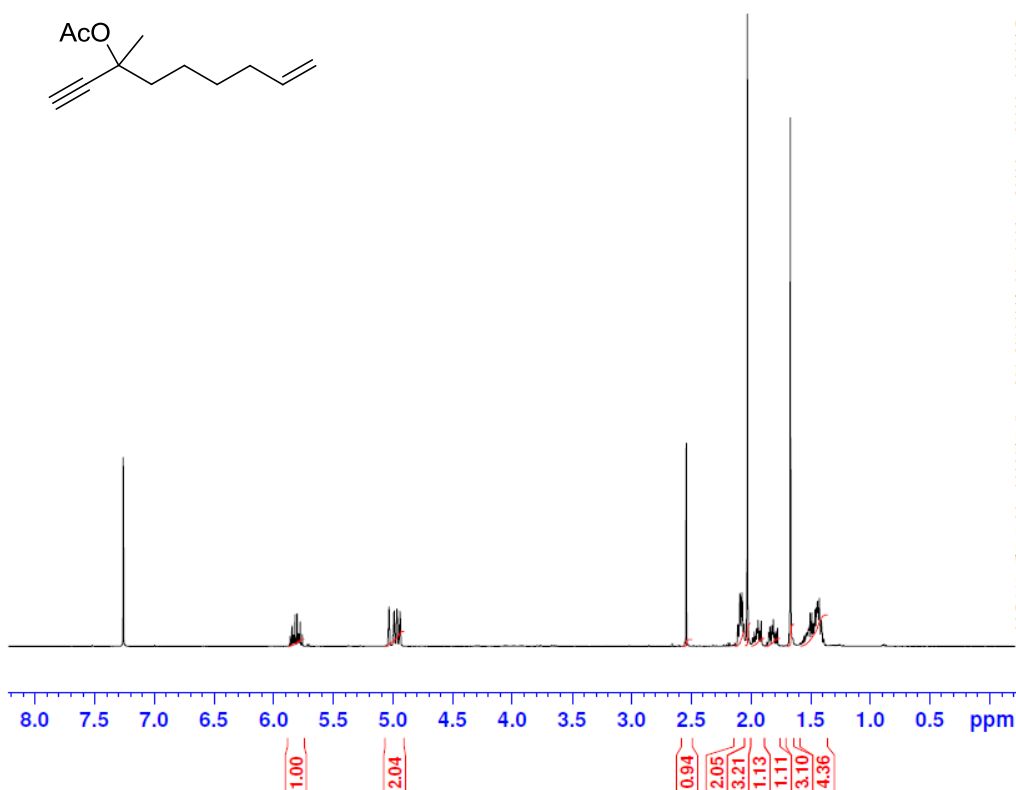
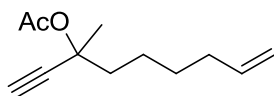
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PLW12 0.18603000 W  
PLW13 0.15068001 W

F2 - Processing parameters  
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LB 1.00 Hz  
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PC 1.40

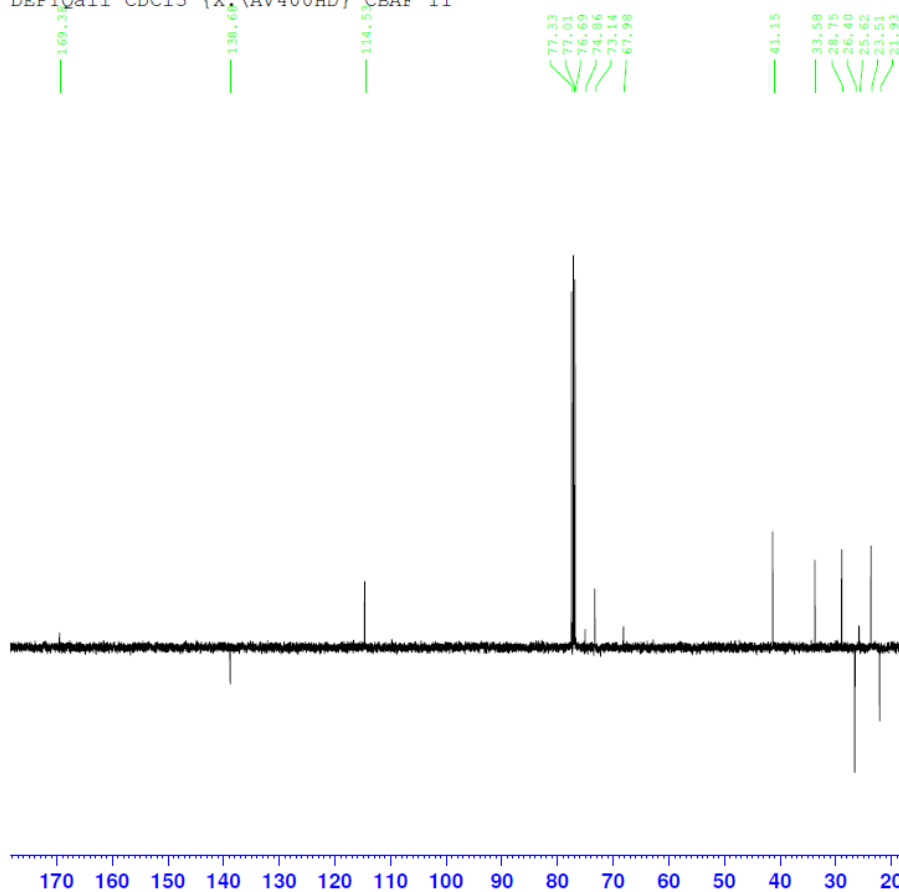


# $^1\text{H}$ and $^{13}\text{C}$ NMR spectra of 3-methylnon-8-en-1-yn-3-yl acetate (8b)

PROTON CDCl<sub>3</sub> {X:\AV400HD} CBAF 1



DEPTQall CDCl<sub>3</sub> {X:\AV400HD} CBAF 11



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DS 2  
SWH 8012.820 Hz  
FIDRES 0.122266 Hz  
AQ 4.0894465 sec  
RG 161  
DW 62.400 usec  
DE 6.50 usec  
TE 298.0 K  
D1 1.00000000 sec  
TD0 1

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P1 8.68 usec  
PLW1 20.00000000 W

F2 - Processing parameters  
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WDW EM  
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PC 1.00



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PROCNO 1

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SOLVENT CDCl<sub>3</sub>  
NS 700  
DS 4  
SWH 24038.461 Hz  
FIDRES 0.366798 Hz  
AQ 1.3631488 sec  
RG 2050  
DW 20.800 usec  
DE 6.50 usec  
TE 298.0 K  
CNST12 145.0000000  
CNST12 1.5000000  
D1 3.00000000 sec  
D2 0.00344828 sec  
D12 0.00002000 sec  
D16 0.00020000 sec  
D28 2.00000000 sec  
TD0 1

===== CHANNEL f1 =====  
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NUC1 <sup>13</sup>C  
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PL1 2000.00 usec  
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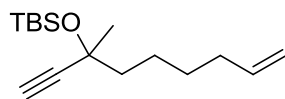
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PLW12 0.18603000 W  
PLW13 0.15068001 W

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LB 1.00 Hz  
GB 0  
PC 1.40

# <sup>1</sup>H and <sup>13</sup>C NMR spectra of *tert*-butyldimethyl[(3-methylnon-8-en-1-yn-3-yl)oxy]silane (8c)

PROTON CDC13 {X:\AV400HD} CBAF 10

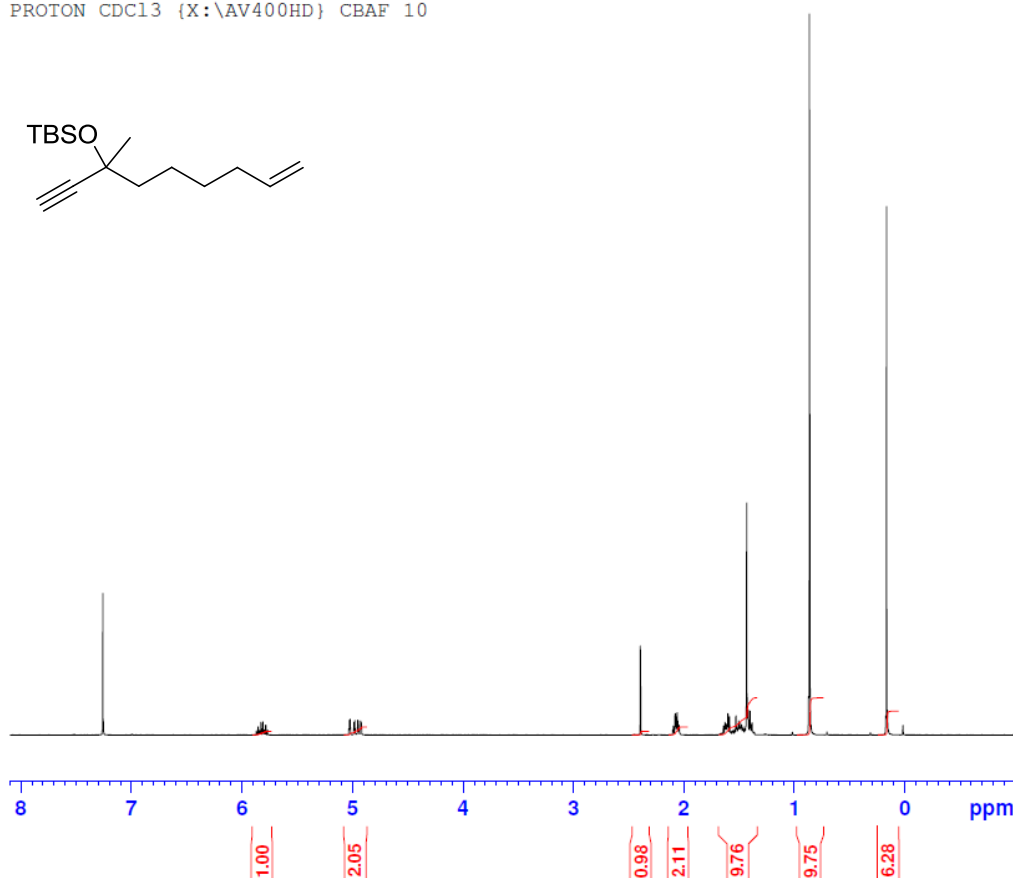


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TD 65536  
SOLVENT CDC13  
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DS 2  
SWH 8012.820 Hz  
FIDRES 0.122266 Hz  
AQ 4.0894465 sec  
RG 181  
DW 62.400 usec  
DE 6.50 usec  
TE 298.0 K  
D1 1.00000000 sec  
TD0 1

===== CHANNEL f1 =====  
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NUC1 1H  
P1 8.68 usec  
PLW1 20.00000000 W

F2 - Processing parameters  
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LB 0.30 Hz  
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PC 1.00



C13\_CPD CDC13 {X:\AV400HD} CBAF 9



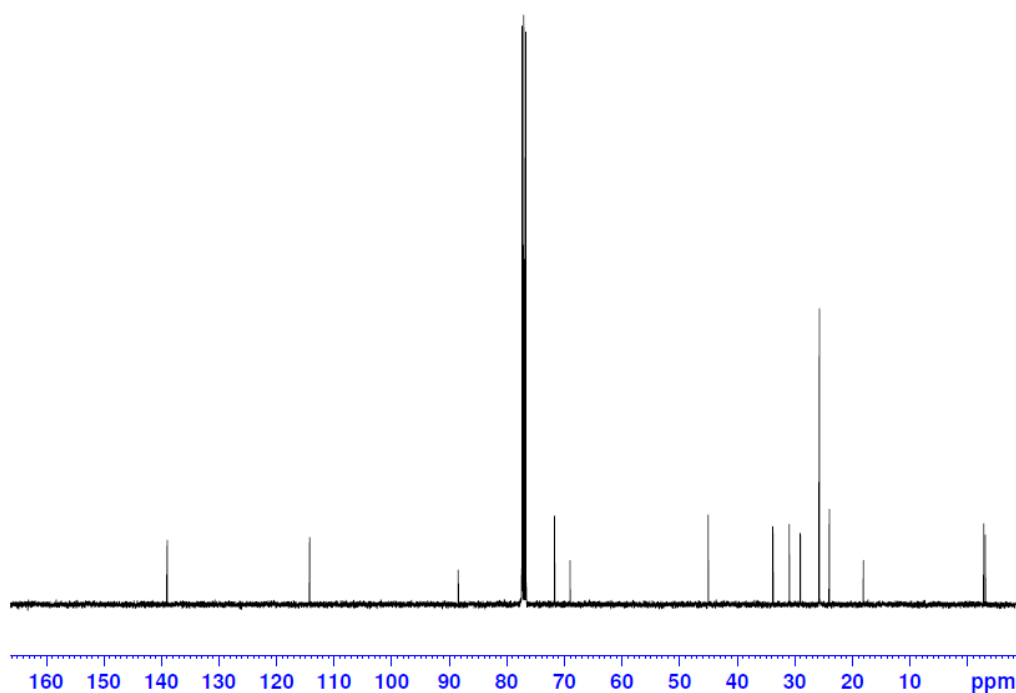
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PULPROG zgpg30  
TD 65536  
SOLVENT CDC13  
NS 700  
DS 4  
SWH 24038.461 Hz  
FIDRES 0.366798 Hz  
AQ 1.3631488 sec  
RG 101  
DW 20.800 usec  
DE 6.50 usec  
TE 298.0 K  
D1 2.00000000 sec  
D11 0.03000000 sec  
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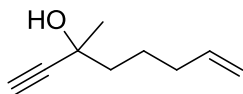
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PLW13 0.15068001 W

F2 - Processing parameters  
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LB 1.00 Hz  
GB 0  
PC 1.40



# <sup>1</sup>H and <sup>13</sup>C NMR spectra of 3-methyloct-7-en-1-yn-3-ol (25)

PROTON CDC13 {X:\AV400HD} CBAF 16

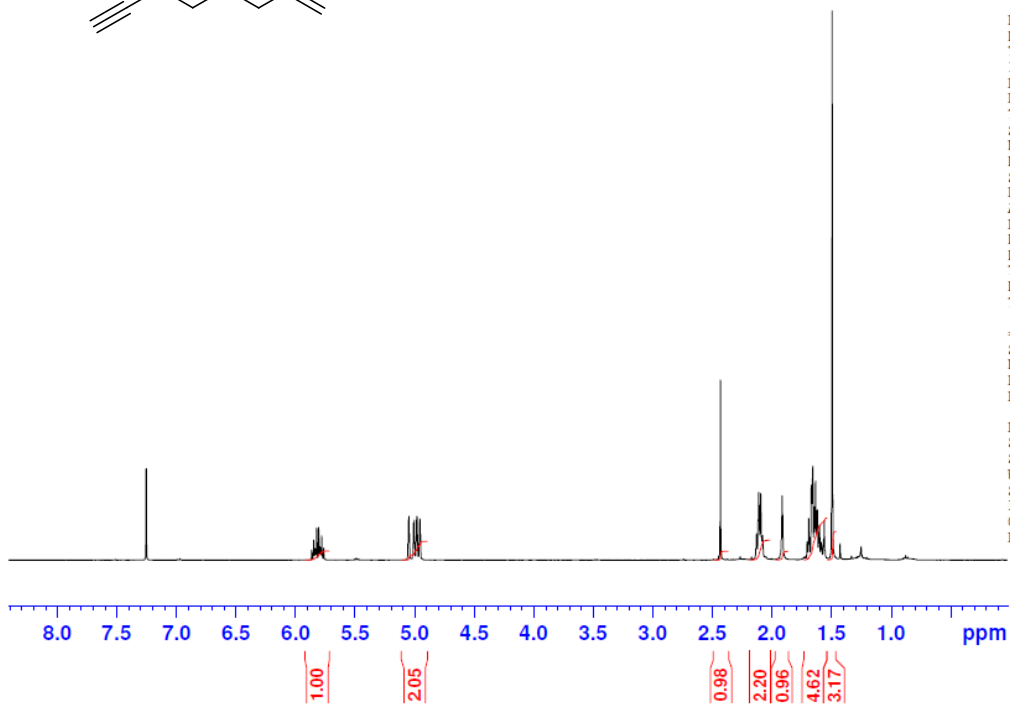


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SOLVENT CDC13  
NS 16  
DS 2  
SWH 8012.820 Hz  
FIDRES 0.122266 Hz  
AQ 4.0894465 sec  
RG 144  
DW 62.400 usec  
DE 6.50 usec  
TE 298.0 K  
D1 1.00000000 sec  
TD0 1

===== CHANNEL f1 =====  
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NUC1 1H  
P1 8.68 usec  
PLW1 20.00000000 W

F2 - Processing parameters  
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C13\_CPD CDC13 {X:\AV400HD} CBAF 16



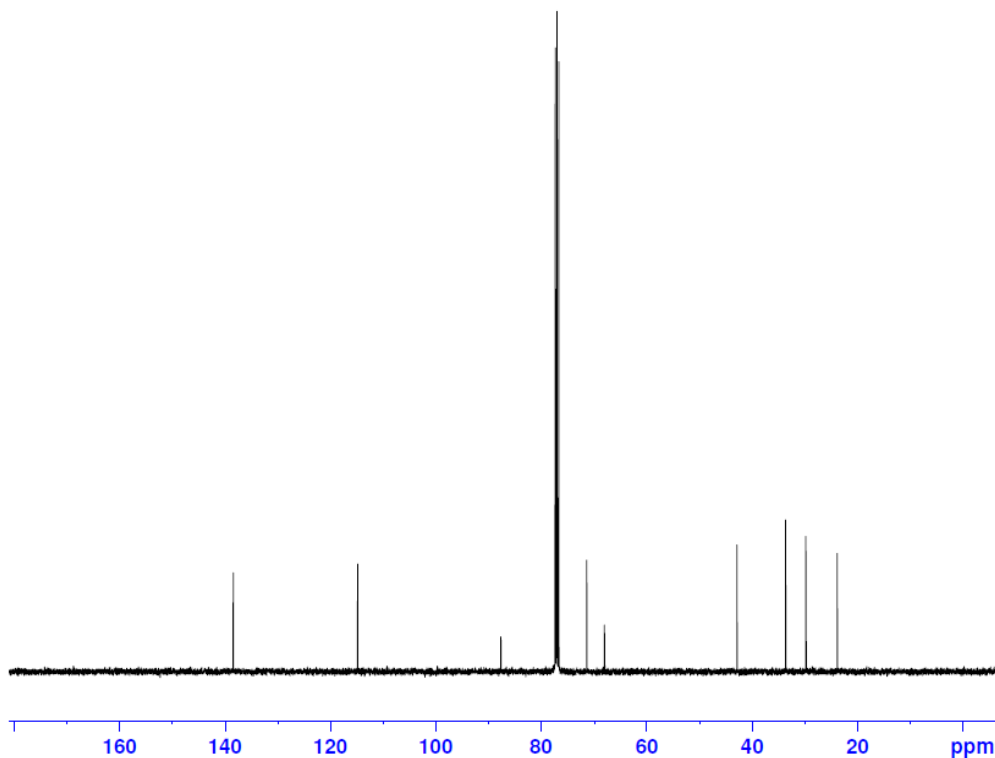
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SOLVENT CDC13  
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DS 4  
SWH 24038.461 Hz  
FIDRES 0.366798 Hz  
AQ 1.3631488 sec  
RG 128  
DW 20.800 usec  
DE 6.50 usec  
TE 298.0 K  
D1 2.00000000 sec  
D11 0.03000000 sec  
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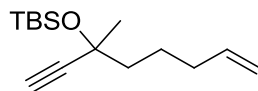
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CPDPRG2 waltz16  
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PLW12 0.18603000 W  
PLW13 0.15068001 W

F2 - Processing parameters  
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WDW EM  
SSB 0  
LB 1.00 Hz  
GB 0  
PC 1.40



# <sup>1</sup>H and <sup>13</sup>C NMR spectra of *tert*-butyldimethyl[(3-methyloct-7-en-1-yn-3-yl)oxy]silane (12)

PROTON CDC13 {X:\AV400HD} CBAF 1

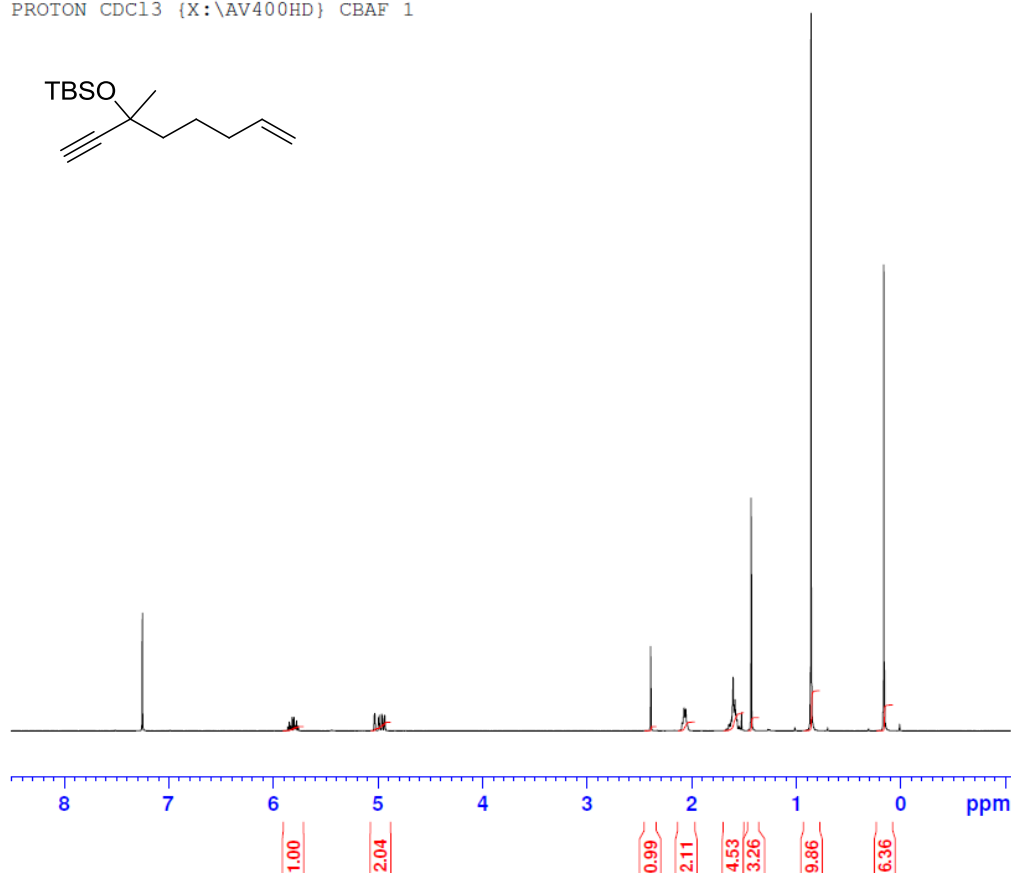


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PULPROG zg30  
TD 65536  
SOLVENT CDC13  
NS 16  
DS 2  
SWH 8012.820 Hz  
FIDRES 0.122266 Hz  
AQ 4.0894465 sec  
RG 181  
DW 62.400 usec  
DE 6.50 usec  
TE 298.0 K  
D1 1.00000000 sec  
TD0 1

===== CHANNEL f1 =====  
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NUC1 1H  
P1 8.68 usec  
PLW1 20.00000000 W

F2 - Processing parameters  
SI 65536  
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GB 0  
PC 1.00



C13\_CPD CDC13 {X:\AV400HD} CBAF 6



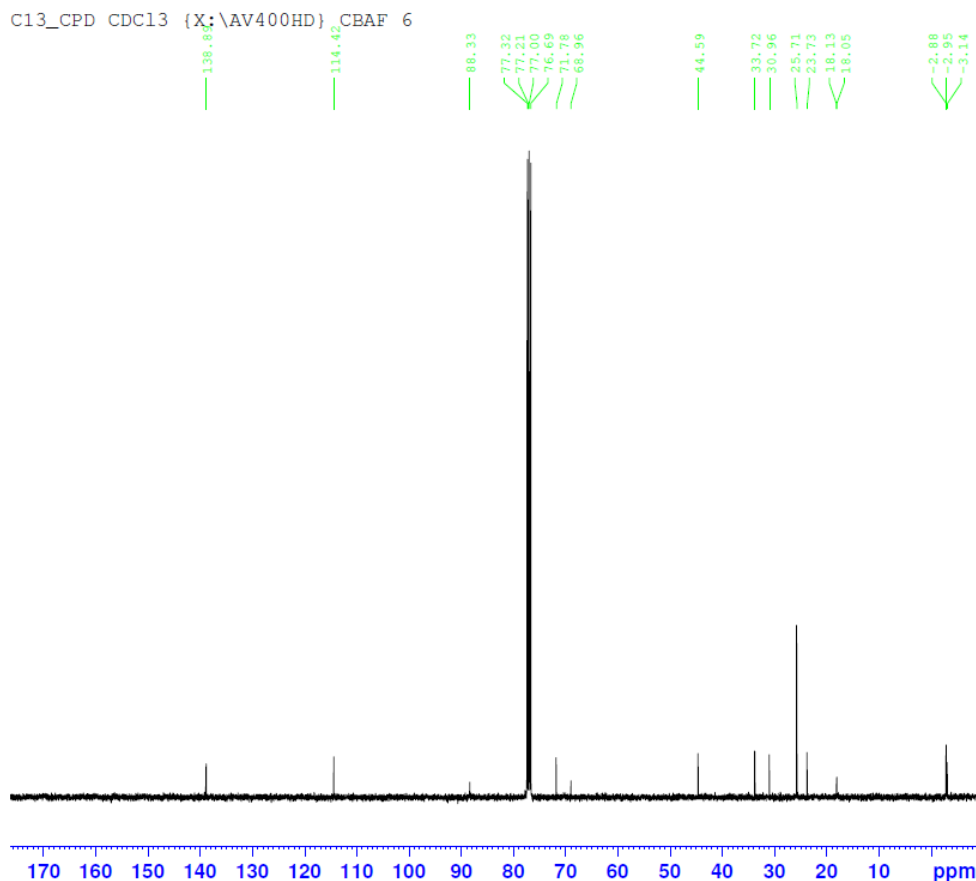
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DS 4  
SWH 24038.461 Hz  
FIDRES 0.366798 Hz  
AQ 1.3631488 sec  
RG 101  
DW 20.800 usec  
DE 6.50 usec  
TE 298.0 K  
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D11 0.03000000 sec  
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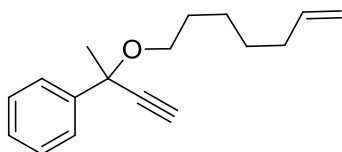
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PCPD2 90.00 usec  
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PLW12 0.18603000 W  
PLW13 0.15068001 W

F2 - Processing parameters  
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SF 100.6127690 MHz  
WDW EM  
SSB 0  
LB 1.00 Hz  
GB 0  
PC 1.40



# <sup>1</sup>H and <sup>13</sup>C NMR spectra of [3-(hept-6-en-1-yloxy)but-1-yn-3-yl]benzene (20)

PROTON CDC13 {X:\AV400HD} CBAF 3

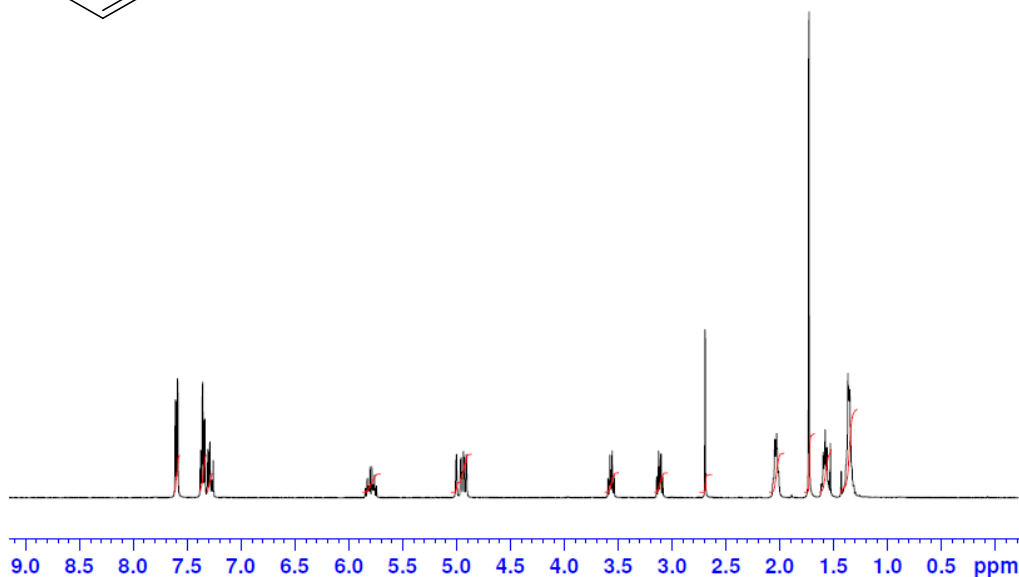


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SOLVENT CDC13  
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SWH 8012.820 Hz  
FIDRES 0.122266 Hz  
AQ 4.0894465 sec  
RG 181  
DW 62.400 usec  
DE 6.50 usec  
TE 298.0 K  
D1 1.00000000 sec  
TD0 1

===== CHANNEL f1 =====  
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NUC1 1H  
P1 8.68 usec  
PLW1 20.00000000 W

F2 - Processing parameters  
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LB 0.30 Hz  
GB 0  
PC 1.00



C13\_CPD CDC13 {X:\AV400HD} CBAF 13



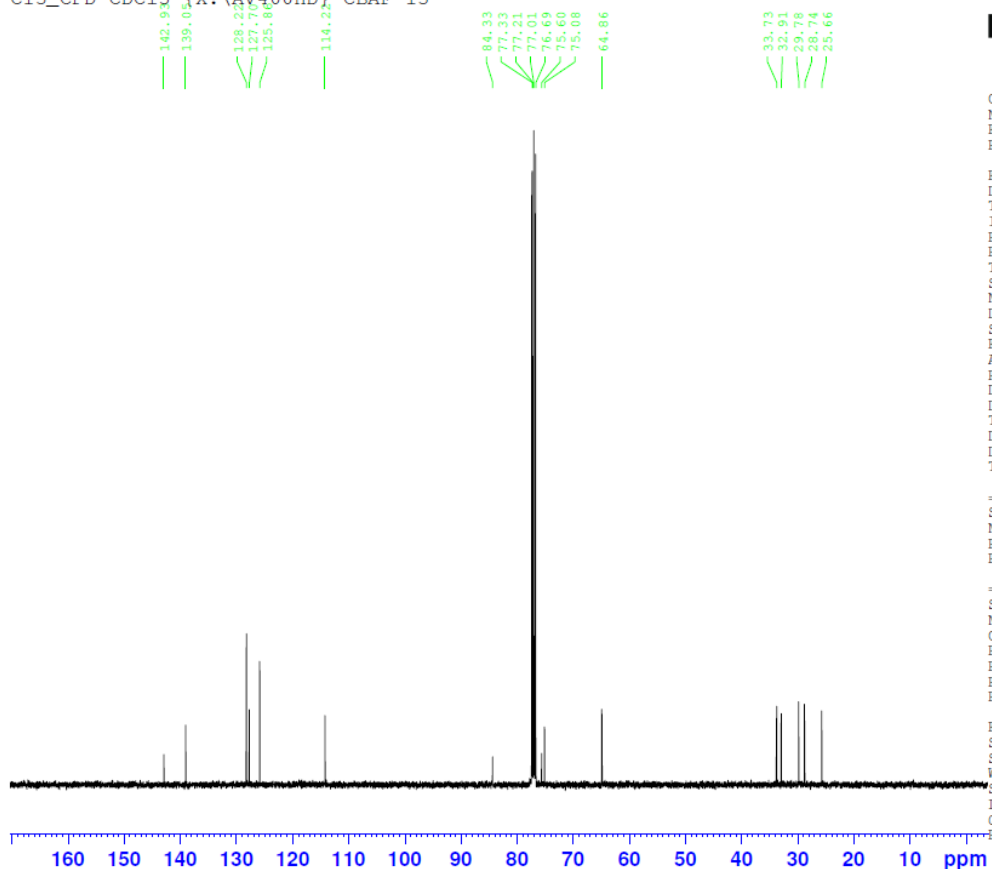
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PULPROG zgpg30  
TD 65536  
SOLVENT CDC13  
NS 700  
DS 4  
SWH 24038.461 Hz  
FIDRES 0.366798 Hz  
AQ 1.3631488 sec  
RG 128  
DW 20.800 usec  
DE 6.50 usec  
TE 298.0 K  
D1 2.00000000 sec  
D11 0.03000000 sec  
TD0 1

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NUC1 13C  
P1 9.75 usec  
PLW1 60.00000000 W

===== CHANNEL f2 =====  
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NUC2 1H  
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PCPD2 90.00 usec  
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PLW12 0.18603000 W  
PLW13 0.15068001 W

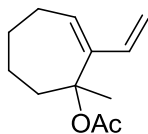
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PC 1.40





# <sup>1</sup>H and <sup>13</sup>C NMR spectra of 1-methyl-2-vinylcyclohept-2-en-1-yl acetate (9b)

PROTON CDC13 {X:\AV400HD} CBAF 4

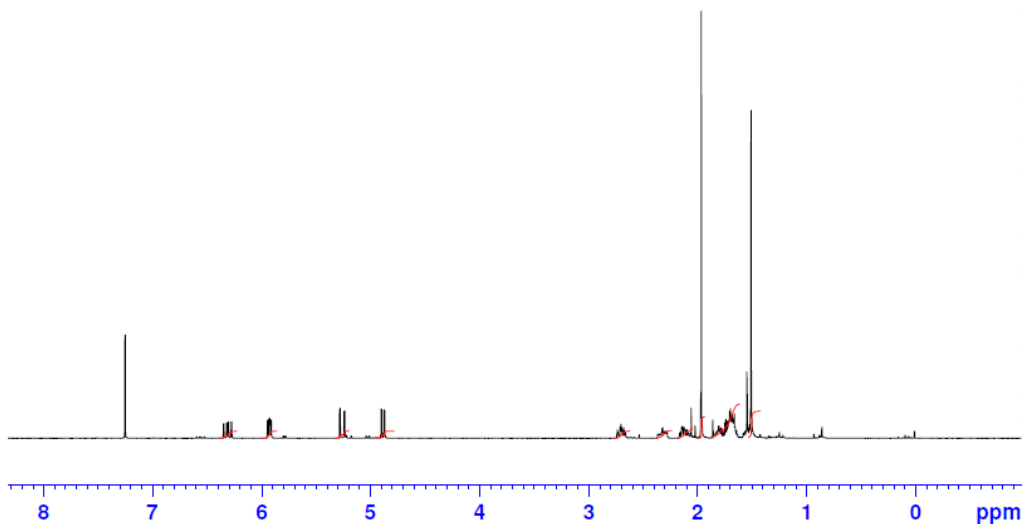


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TD 65536  
SOLVENT CDC13  
NS 16  
DS 2  
SWH 8012.820 Hz  
FIDRES 0.122266 Hz  
AQ 4.0894465 sec  
RG 161  
DW 62.400 usec  
DE 6.50 usec  
TE 298.0 K  
D1 1.00000000 sec  
TD0 1

===== CHANNEL f1 =====  
SFO1 400.1324710 MHz  
NUC1 1H  
P1 8.68 usec  
PLW1 20.00000000 W

F2 - Processing parameters  
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SF 400.1300125 MHz  
WDW EM  
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BL317 / CDCL3 / 298K / DEPTQ



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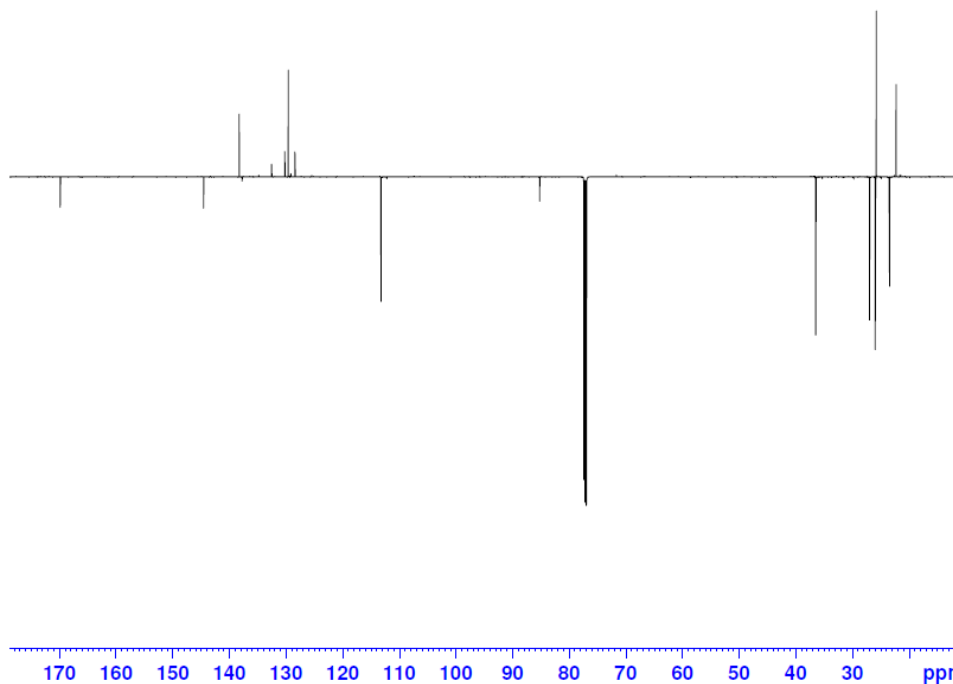
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NS 4096  
DS 8  
SWH 36057.691 Hz  
FIDRES 0.550197 Hz  
AQ 0.9087659 sec  
RG 2050  
DW 13.867 usec  
DE 10.00 usec  
TE 298.0 K  
D1 145.0000000 sec  
D12 1.50000000 sec  
D13 3.00000000 sec  
D14 0.00344828 sec  
D15 0.00002000 sec  
D16 0.00020000 sec  
D18 2.00000000 sec  
TD0 1

===== CHANNEL f1 =====  
SFO1 150.9344970 MHz  
NUC1 13C  
P1 11.00 usec  
P13 2000.00 usec  
PLW0 0 W  
PLW1 103.00000000 W  
SPCAL5 Crp60comp.4  
SPCAL5 0.500  
SPOFF5 0 Hz  
SFW5 19.04199982 W

===== CHANNEL f2 =====  
SFO2 600.1924008 MHz  
NUC2 1H  
CPDPRG2 waltz16  
P0 10.80 usec  
P3 7.20 usec  
P4 14.40 usec  
PCPD2 70.00 usec  
PLW2 7.00000000 W  
PLW12 0.07405700 W  
PLW13 0.03628800 W

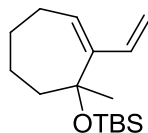
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GPNAM[2] SMSG10.100  
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GPE1 31.00 %  
GPE2 31.00 %  
GPE3 31.00 %  
P16 1000.00 usec

F2 - Processing parameters  
SI 32768  
SF 150.9178774 MHz  
WDW EM  
SSB 0  
LB 1.00 Hz  
GB 0  
PC 10.00



**$^1\text{H}$  and  $^{13}\text{C}$  NMR spectra of *tert*-butyldimethyl[(1-methyl-2-vinylcyclohepta-2-en-1-yl)oxy]silane (9c)**

PROTON CDC13 {X:\AV400HD} CBAF 12

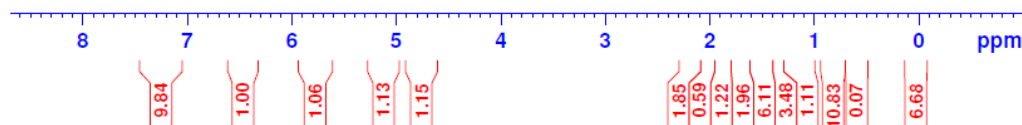


Current Data Parameters  
NAME BL352-2  
EXPNO 10  
PROCNO 1

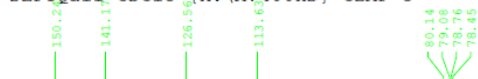
F2 - Acquisition Parameters  
Date\_ 20150128  
Time 18.39  
INSTRUM spect  
PROBHD 5 mm PABBO BB/  
PULPROG zg30  
TD 65536  
SOLVENT CDC13  
NS 16  
DS 2  
SWH 8012.820 Hz  
FIDRES 0.122266 Hz  
AQ 4.0894465 sec  
RG 228  
DW 62.400 usec  
DE 6.50 usec  
TE 298.0 K  
D1 1.00000000 sec  
TD0 1

===== CHANNEL f1 =====  
SFO1 400.1324710 MHz  
NUC1 1H  
P1 8.68 usec  
PLW1 20.00000000 W

F2 - Processing parameters  
SI 65536  
SF 400.1300113 MHz  
WDW EM  
SSB 0  
LB 0.30 Hz  
GB 0  
PC 1.00



DEPTQall CDC13 {X:\AV400HD} CBAF 3



Current Data Parameters  
NAME BL352-2-c13  
EXPNO 10  
PROCNO 1

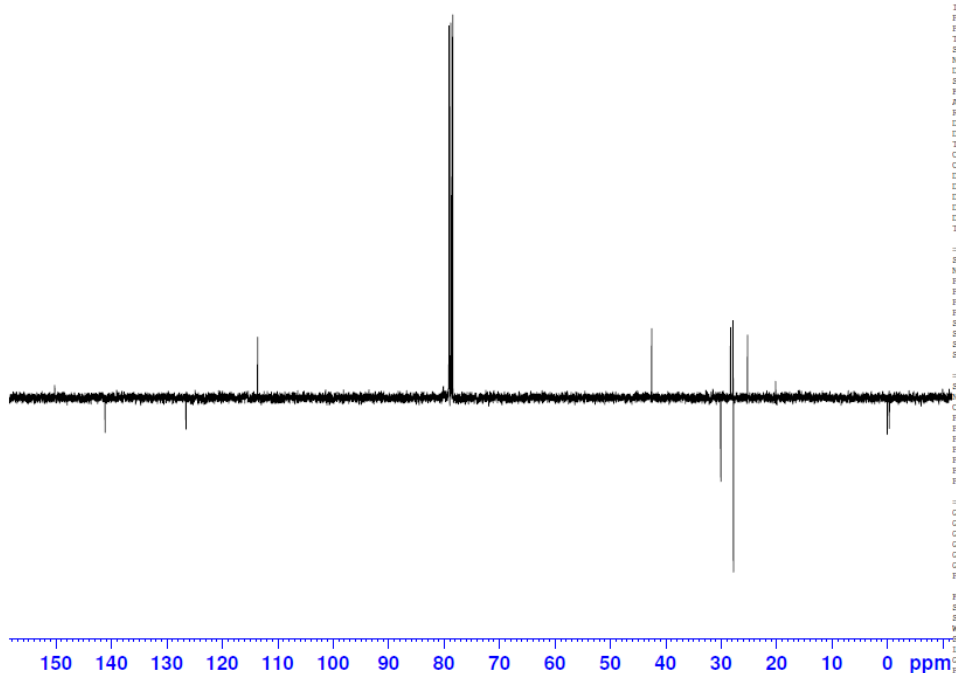
F2 - Acquisition Parameters  
Date\_ 20150130  
Time 9.54  
INSTRUM spect  
PROBHD 5 mm PABBO BB/  
PULPROG deptzgpgp.2  
TD 65536  
SOLVENT CDC13  
NS 700  
DS 4  
SWH 24038.461 Hz  
FIDRES 0.346788 Hz  
AQ 1.3631488 sec  
RG 2050  
DW 20.800 usec  
DE 6.50 usec  
TE 298.0 K  
CNST2 145.0000000  
CNST12 1.5000000  
D1 3.00000000 sec  
D2 0.00344828 sec  
D12 0.00020000 sec  
D16 0.00020000 sec  
D28 2.00000000 sec  
TD0 1

===== CHANNEL f1 =====  
SFO1 100.6228298 MHz  
NUC1 13C  
P1 9.75 usec  
PLW1 2000.00 usec  
P1M0 0 W  
P1M1 60.00000000 W  
SPNAM[5] Crp60comp.4  
SPOR15 0.500  
SPOFF5 0 Hz  
SPW5 8.71469975 W

===== CHANNEL f2 =====  
SFO2 400.1316005 MHz  
NUC2 1H  
CPDPRG2 waltz16  
P0 13.02 usec  
P3 8.68 usec  
P4 17.36 usec  
PCPD2 90.00 usec  
P1M2 20.00000000 W  
P1M12 0.18603000 W  
P1M13 0.15068001 W

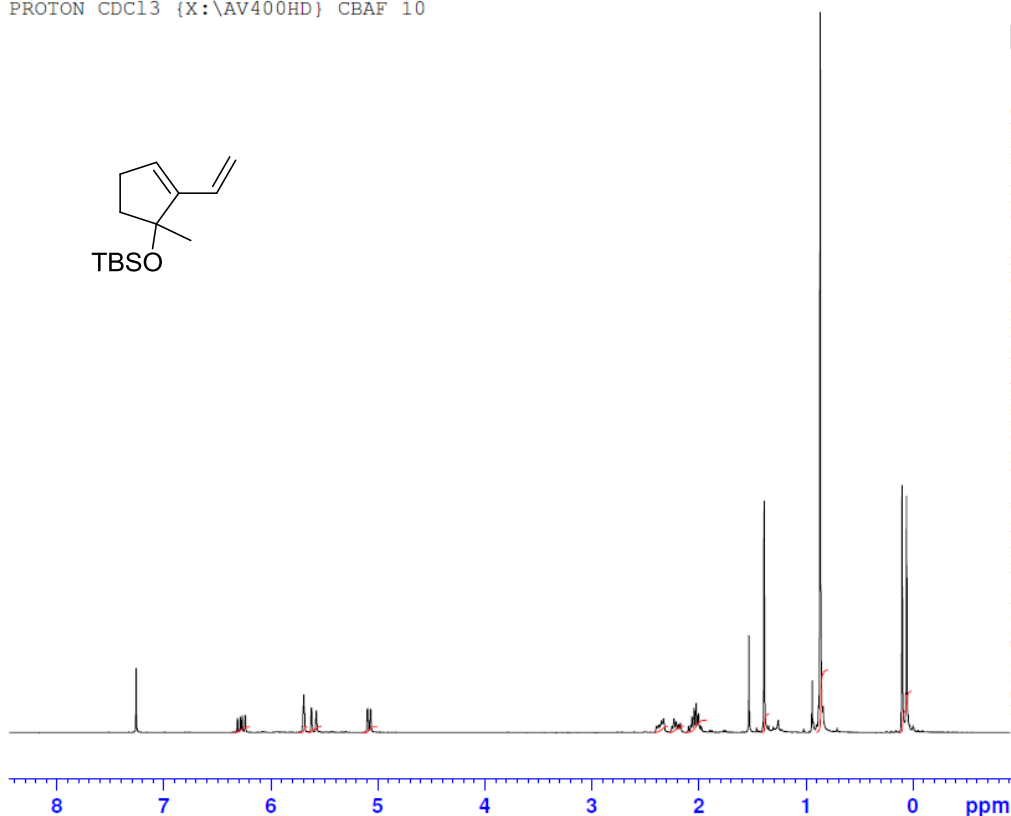
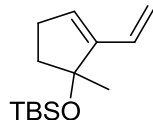
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GPNAM[3] SMSG10.100  
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P16 1000.00 usec

F2 - Processing parameters  
SI 32768  
SF 100.6125923 MHz  
WDW EM  
SSB 0  
LB 1.00 Hz  
GB 0  
PC 1.40



# <sup>1</sup>H and <sup>13</sup>C NMR spectra of *tert*-butyldimethyl(1-methyl-2-vinylcyclopent-2-en-1-yloxy)silane (14)

PROTON CDC13 {X:\AV400HD} CBAF 10



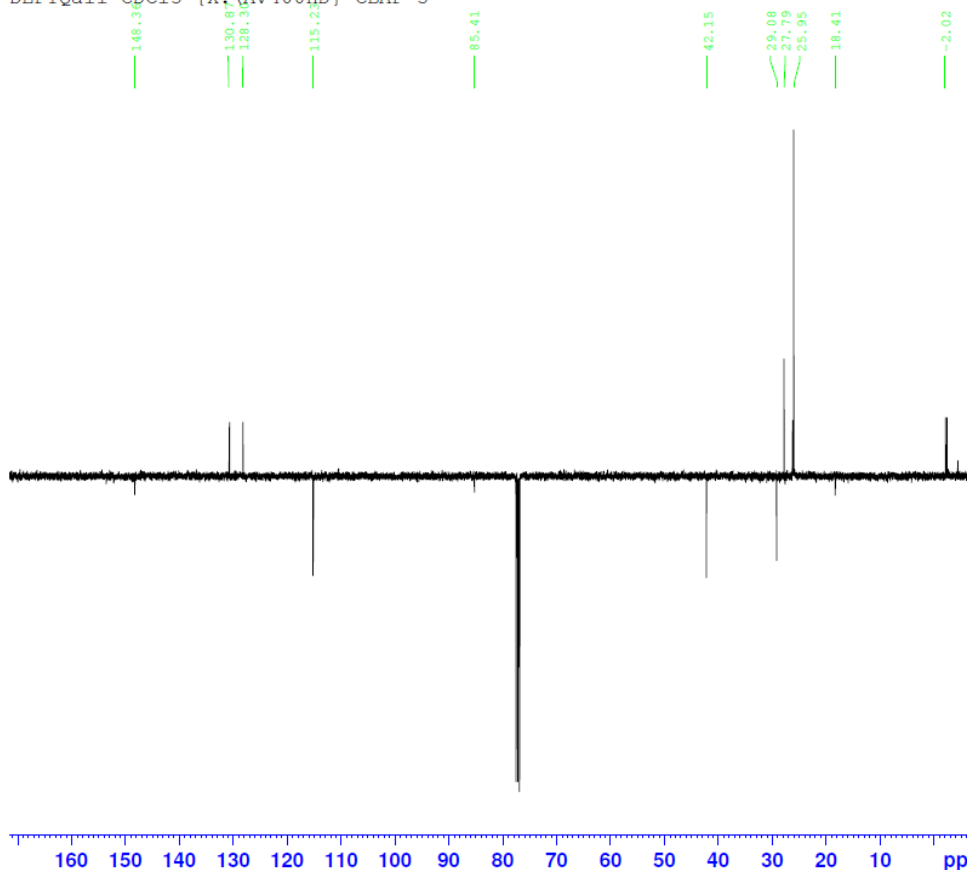
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NAME BL229  
EXPNO 10  
PROCNO 1

F2 - Acquisition Parameters  
Date\_ 20140902  
Time 18.41  
INSTRUM spect  
PROBHD 5 mm PABBO BB/  
PULPROG zg30  
TD 65536  
SOLVENT CDC13  
NS 16  
DS 2  
SWH 8012.820 Hz  
FIDRES 0.122266 Hz  
AQ 4.0894465 sec  
RG 181  
DW 62.400 usec  
DE 6.50 usec  
TE 298.0 K  
D1 1.00000000 sec  
TD0 1

===== CHANNEL f1 =====  
SFO1 400.1324710 MHz  
NUC1 1H  
P1 8.68 usec  
PLW1 20.00000000 W

F2 - Processing parameters  
SI 65536  
SF 400.1300102 MHz  
WDW EM  
SSB 0  
LB 0.30 Hz  
GB 0  
PC 1.00

DEPTQall CDC13 {X:\AV400HD} CBAF 5



Current Data Parameters  
NAME BL307-C13  
EXPNO 10  
PROCNO 1

F2 - Acquisition Parameters  
Date\_ 20141127  
Time 5.29  
INSTRUM spect  
PROBHD 5 mm PABBO BB/  
PULPROG deptqapp.2  
TD 65536  
SOLVENT CDC13  
NS 700  
DS 4  
SWH 24038.461 Hz  
FIDRES 0.366798 Hz  
AQ 1.3631488 sec  
RG 2050  
DW 20.800 usec  
DE 6.50 usec  
TE 298.0 K  
CMT2 145.0000000  
CMT12 1.5000000  
D1 3.00000000 sec  
D2 0.00344828 sec  
D12 0.00002000 sec  
D16 0.00020000 sec  
D28 2.00000000 sec  
TD0 1

===== CHANNEL f1 =====  
SFO1 100.6228298 MHz  
NUC1 13C  
P1 9.75 usec  
PLW1 2000.00 usec  
P1W0 0 W  
P1W1 60.00000000 W  
SPNAM[5] Crp60comp.4  
SPCAL5 0.500  
SFOFF5 0 Hz  
SPW5 8.71469975 W

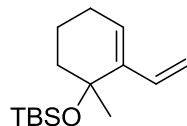
===== CHANNEL f2 =====  
SFO2 400.1316005 MHz  
NUC2 1H  
CPDPRG[2] waltz16  
P0 13.02 usec  
P3 8.68 usec  
P4 17.36 usec  
PCPD2 90.00 usec  
P1W2 20.00000000 W  
P1W12 0.19603000 W  
P1W13 0.15068001 W

===== GRADIENT CHANNEL =====  
GPM[1] SMSG10.100  
GPM[2] SMSG10.100  
GPM[3] SMSG10.100  
GP1 31.00 %  
GP2 31.00 %  
GP3 31.00 %  
P16 1000.00 usec

F2 - Processing parameters  
SI 32768  
SF 100.6127528 MHz  
WDW EM  
SSB 0  
LB 1.00 Hz  
GB 0  
PC 1.40

# <sup>1</sup>H and <sup>13</sup>C NMR spectra of *tert*-butyldimethyl[(1-methyl-2-vinylcyclohex-2-en-1-yl)oxy]silane (15)

PROTON CDC13 {X:\AV400HD} CBAF 11

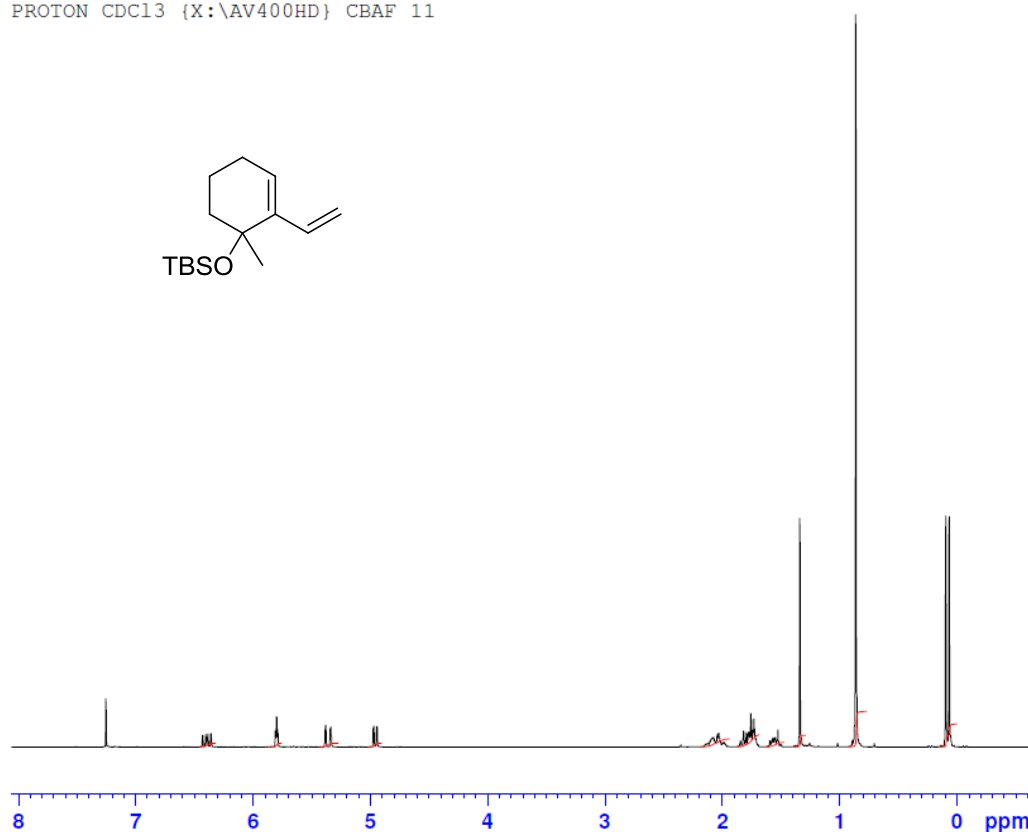


Current Data Parameters  
NAME BL336  
EXPNO 10  
PROCNO 1

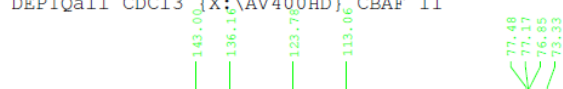
F2 - Acquisition Parameters  
Date\_ 20150114  
Time 16.54  
INSTRUM spect  
PROBHD 5 mm PABBO BB/  
PULPROG zg30  
TD 65536  
SOLVENT CDC13  
NS 16  
DS 2  
SWH 8012.820 Hz  
FIDRES 0.122266 Hz  
AQ 4.0894465 sec  
RG 128  
DW 62.400 usec  
DE 6.50 usec  
TE 298.0 K  
D1 1.00000000 sec  
TD0 1

===== CHANNEL f1 =====  
SFO1 400.1324710 MHz  
NUC1 1H  
P1 8.68 usec  
PLW1 20.00000000 W

F2 - Processing parameters  
SI 65536  
SF 400.1300119 MHz  
WDW EM  
SSB 0  
LB 0.30 Hz  
GB 0  
PC 1.00



DEPTQall1 CDC13 {X:\AV400HD} CBAF 11



Current Data Parameters  
NAME BL336-C13  
EXPNO 10  
PROCNO 1

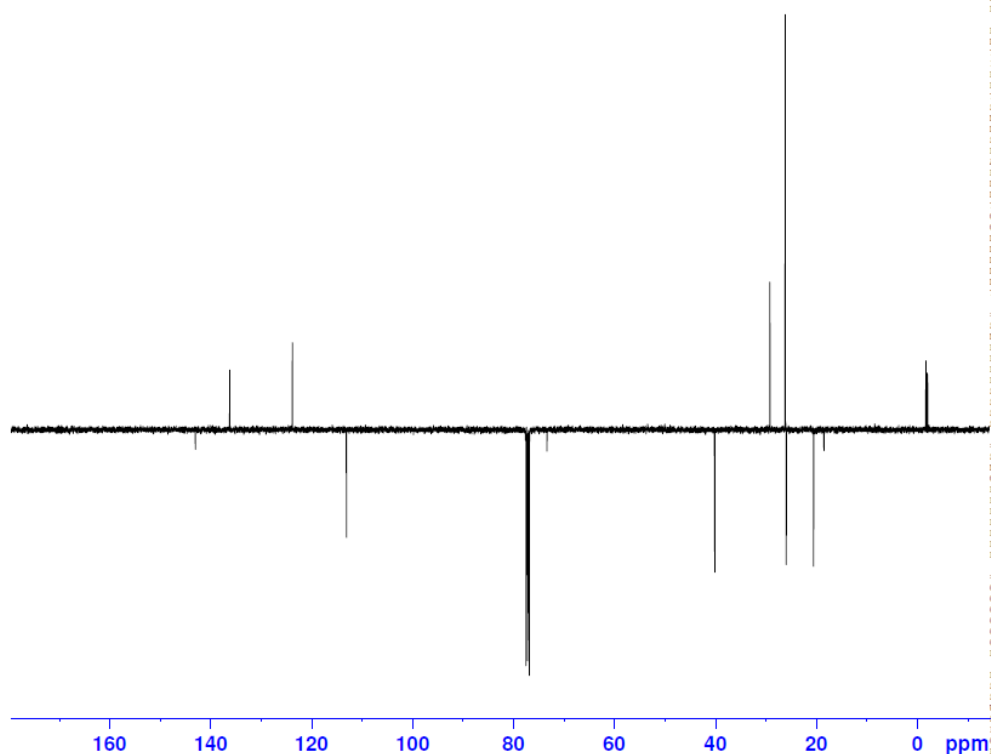
F2 - Acquisition Parameters  
Date\_ 20150114  
Time 19.55  
INSTRUM spect  
PROBHD 5 mm PABBO BB/  
PULPROG deptsqpsp.2  
TD 65536  
SOLVENT CDC13  
NS 700  
DS 4  
SWH 24038.461 Hz  
FIDRES 0.364798 Hz  
AQ 1.3631488 sec  
RG 2050  
DW 20.800 usec  
DE 6.50 usec  
TE 298.0 K  
CNST2 145.000000  
CNST12 1.5000000  
D1 3.00000000 sec  
D2 0.00344828 sec  
D12 0.00002000 sec  
D16 0.00002000 sec  
D28 2.00000000 sec  
TD0 1

===== CHANNEL f1 =====  
SFO1 100.6228298 MHz  
NUC1 13C  
P1 9.75 usec  
P13 2000.00 usec  
P1W0 0 W  
P1W1 60.00000000 W  
SFOAL5 Cmp60000.4  
SFOAL5 0.500  
SFOFFB5 0 Hz  
SFW5 8.71469975 W

===== CHANNEL f2 =====  
SFO2 400.1316005 MHz  
NUC2 1H  
CPDPRG2 waltz16  
P0 13.02 usec  
P3 8.68 usec  
P4 17.36 usec  
PCPD2 90.00 usec  
P1W2 20.00000000 W  
P1W12 0.18603000 W  
P1W13 0.15068001 W

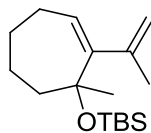
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P16 1000.00 usec

F2 - Processing parameters  
SI 32768  
SF 100.6127528 MHz  
WDW EM  
SSB 0  
LB 1.00 Hz  
GB 0  
PC 1.40



# <sup>1</sup>H and <sup>13</sup>C NMR spectra of *tert*-Butyldimethyl[[1-methyl-2-(propen-2-yl)cyclohept-2-en-1-yl]oxy]silane (16)

MD71 (GII)  
PROTON CDC13 {X:\AV400HD} CBAF 7

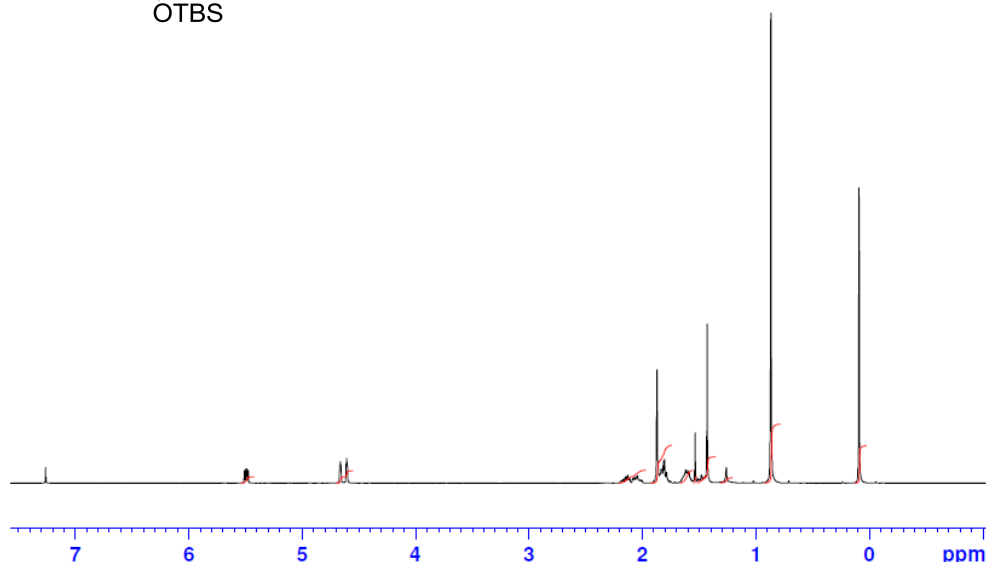


Current Data Parameters  
NAME MD71(GII)  
EXPNO 10  
PROCNO 1

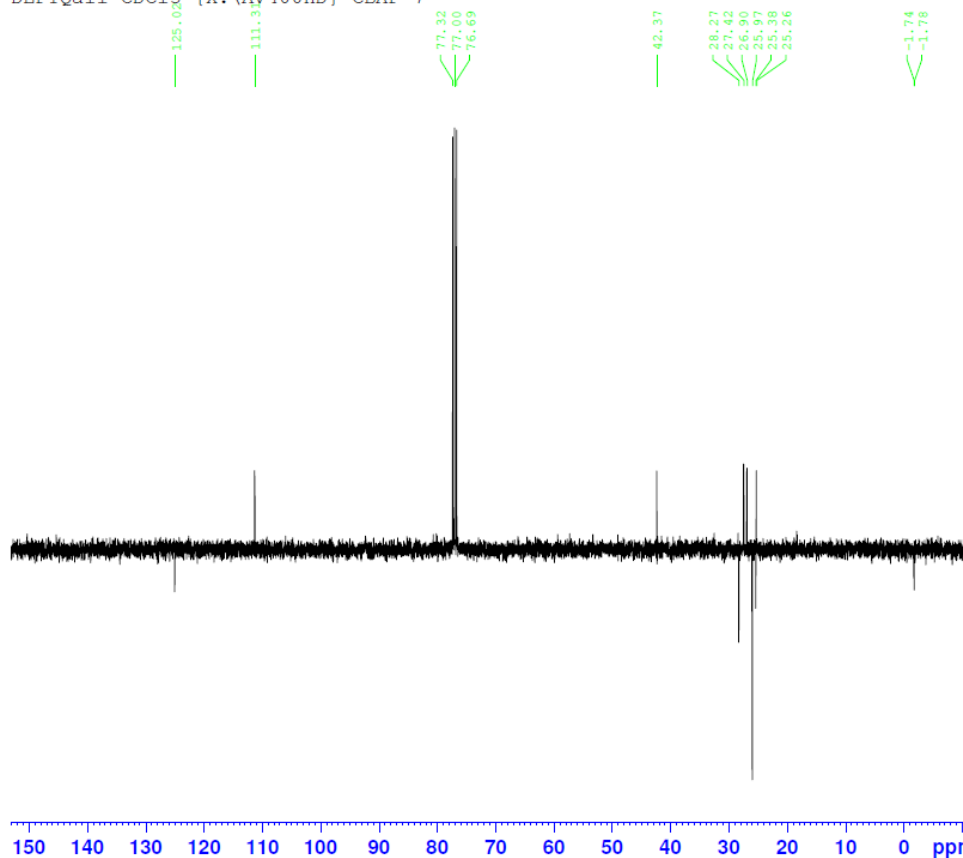
F2 - Acquisition Parameters  
Date\_ 20140730  
Time 17.36  
INSTRUM spect  
PROBHD 5 mm PABBO BB/  
PULPROG zg30  
TD 65536  
SOLVENT CDC13  
NS 32  
DS 2  
SWH 8012.820 Hz  
FIDRES 0.122266 Hz  
AQ 4.0894465 sec  
RG 161  
DW 62.400 usec  
DE 6.50 usec  
TE 298.0 K  
D1 1.00000000 sec  
TD0 1

===== CHANNEL f1 =====  
SFO1 400.1324710 MHz  
NUC1 1H  
P1 8.68 usec  
PLW1 20.00000000 W

F2 - Processing parameters  
SI 65536  
SF 400.1300089 MHz  
WDW EM  
SSB 0  
LB 0.30 Hz  
GB 0  
PC 1.00



MD71-C13  
DEPTQall CDC13 {X:\AV400HD} CBAF 7



Current Data Parameters  
NAME MD71-C13  
EXPNO 10  
PROCNO 1

F2 - Acquisition Parameters  
Date\_ 20140730  
Time 20.39  
INSTRUM spect  
PROBHD 5 mm PABBO BB/  
PULPROG deptzgpgp.2  
TD 65536  
SOLVENT CDC13  
NS 256  
DS 4  
SWH 24038.461 Hz  
FIDRES 0.366798 Hz  
AQ 1.3631488 sec  
RG 2050  
DW 20.800 usec  
DE 6.50 usec  
TE 298.0 K  
D1 1.50000000 sec  
D2 0.00000000 sec  
D12 0.00002000 sec  
D16 0.00002000 sec  
D28 2.00000000 sec  
TD0 1

===== CHANNEL f1 =====  
SFO1 100.6228298 MHz  
NUC1 13C  
P1 9.75 usec  
P13 2000.00 usec  
PLW0 0 W  
PLW1 60.00000000 W  
SPNAM[5] Crp60comp.4  
SPCAL5 0.500  
SPOFFS5 0 Hz  
SPW5 8.71469975 W

===== CHANNEL f2 =====  
SFO2 400.1316005 MHz  
NUC2 1H  
CPDPRG2 waltz16  
P0 13.02 usec  
P3 8.68 usec  
P4 17.36 usec  
PCPD2 80.00 usec  
PLW2 20.00000000 W  
PLW12 0.18603000 W  
PLW13 0.15068001 W

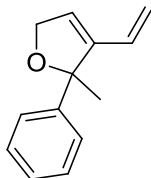
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GP22 31.00 %  
GP23 31.00 %  
P16 1000.00 usec

F2 - Processing parameters  
SI 32768  
SF 100.6127690 MHz  
WDW EM  
SSB 0  
LB 1.00 Hz  
GB 0  
PC 1.40

# <sup>1</sup>H and <sup>13</sup>C NMR spectra of methyl-2-phenyl-3-vinyl-2,5-dihydrofuran (21)

MD72

PROTON CDC13 {X:\AV400HD} CBAF 2

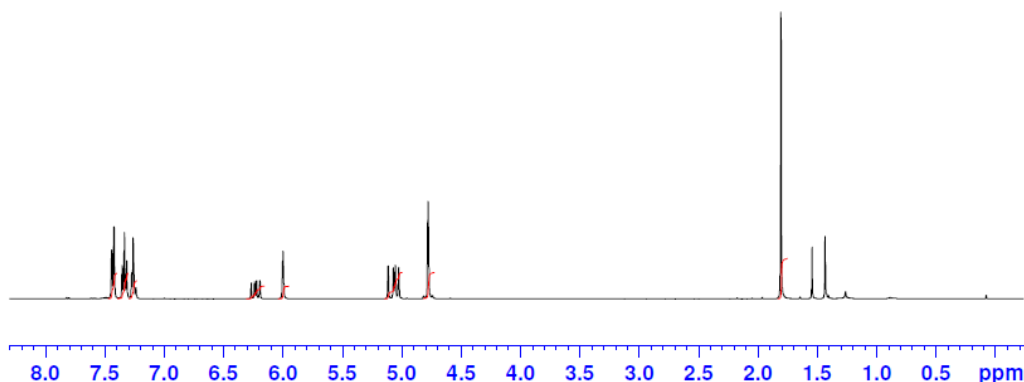


Current Data Parameters  
NAME MD72  
EXPNO 50  
PROCNO 1

F2 - Acquisition Parameters  
Date\_ 20140731  
Time 18.30  
INSTRUM spect  
PROBHD 5 mm PABBO BB/  
PULPROG zg30  
TD 65536  
SOLVENT CDC13  
NS 32  
DS 2  
SWH 8012.820 Hz  
FIDRES 0.122266 Hz  
AQ 4.0894465 sec  
RG 161  
DW 62.400 usec  
DE 6.50 usec  
TE 298.0 K  
D1 1.00000000 sec  
TD0 1

===== CHANNEL f1 =====  
SFO1 400.1324710 MHz  
NUC1 1H  
P1 8.68 usec  
PLW1 20.00000000 W

F2 - Processing parameters  
SI 65536  
SF 400.1300088 MHz  
WDW EM  
SSB 0  
LB 0.30 Hz  
GB 0  
PC 1.00



DEPTQall CDC13 {X:\AV400HD} CBAF 1

144.78  
144.35

128.86  
128.21  
127.39

126.04  
124.22

116.95

89.72

77.33  
77.03  
76.71

73.08

26.92  
24.35



Current Data Parameters  
NAME MD72-C13  
EXPNO 10  
PROCNO 1

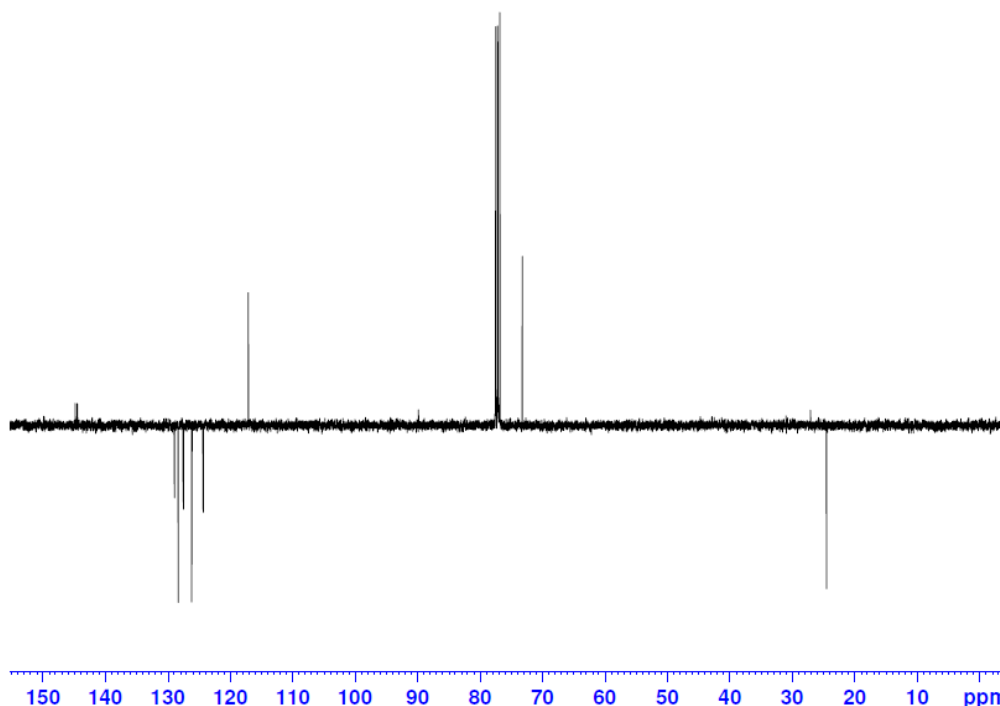
F2 - Acquisition Parameters  
Date\_ 20140812  
Time 19.54  
INSTRUM spect  
PROBHD 5 mm PABBO BB/  
PULPROG dept-qzppp-2  
TD 65536  
SOLVENT CDC13  
NS 700  
DS 4  
SWH 24038.461 Hz  
FIDRES 0.366798 Hz  
AQ 1.3631488 sec  
RG 2050  
DW 20.800 usec  
DE 6.50 usec  
TE 298.0 K  
CNST12 145.0000000  
CNST12 1.50000000  
D1 3.00000000 sec  
D2 0.00344828 sec  
D12 0.00002000 sec  
D16 0.00020000 sec  
D28 2.00000000 sec  
TD0 1

===== CHANNEL f1 =====  
SFO1 100.6228298 MHz  
NUC1 13C  
P1 9.75 usec  
PLW1 2000.00 usec  
PLW0 0 W  
PLW1 60.00000000 W  
SPNAM[5] Crp60comp.4  
SPCAL5 0.500  
SPOFFS5 0 Hz  
SPW5 8.71469975 W

===== CHANNEL f2 =====  
SFO2 400.1316005 MHz  
NUC2 1H  
P2 13.02 usec  
P3 9.68 usec  
P4 17.36 usec  
PCPD2 90.00 usec  
PLW2 20.00000000 W  
PLW12 0.15603000 W  
PLW13 0.15068001 W

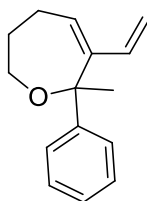
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GPE2 31.00 %  
GPE3 31.00 %  
F16 1000.00 usec

F2 - Processing parameters  
SI 32768  
SF 100.6127563 MHz  
WDW EM  
SSB 0  
LB 1.00 Hz  
GB 0  
PC 1.40



# <sup>1</sup>H and <sup>13</sup>C NMR spectra of 2-methyl-2-phenyl-3-vinyl- 2,5,6,7-tetrahydrooxepine (22)

PROTON CDC13 {X:\AV400HD} CBAF 7

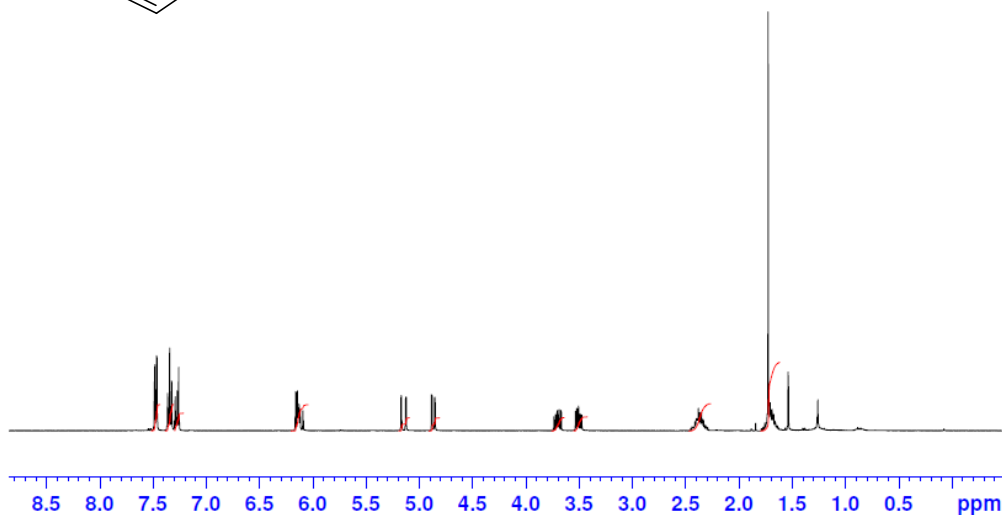


Current Data Parameters  
NAME MD65-PUR  
EXPNO 10  
PROCNO 1

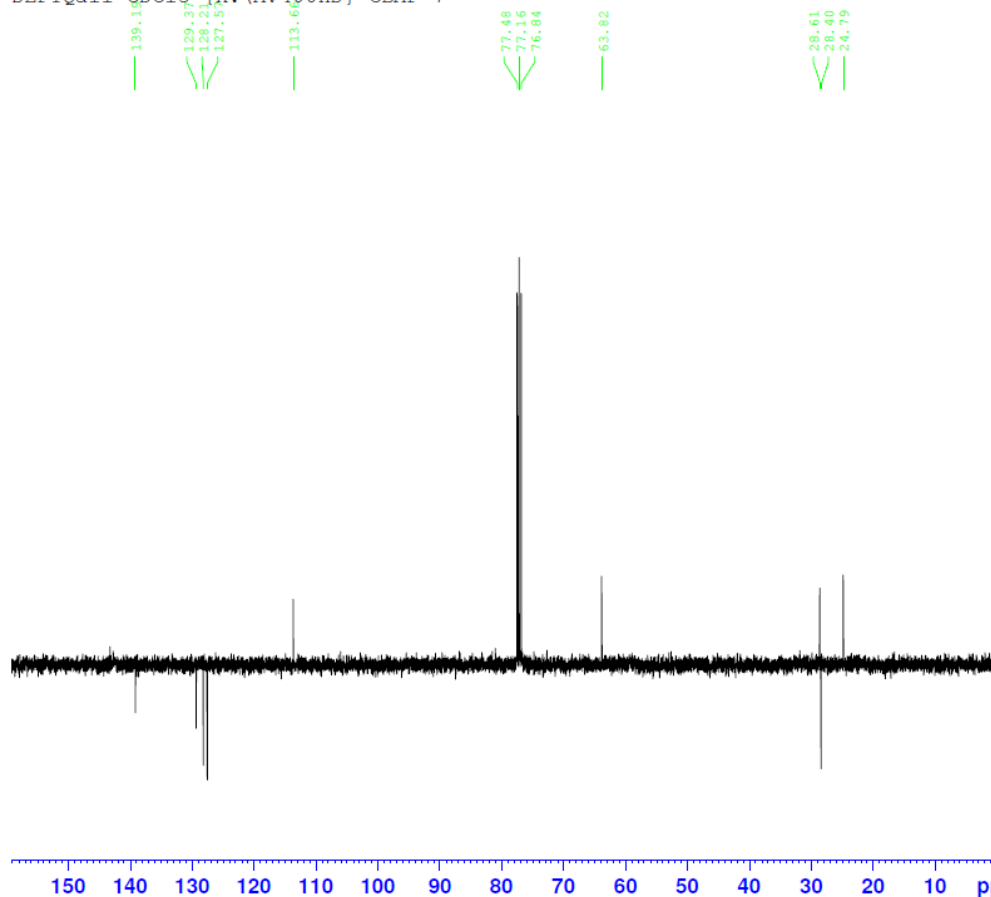
F2 - Acquisition Parameters  
Date\_ 20140729  
Time 15.32  
INSTRUM spect  
PROBHD 5 mm PABBO BB/  
PULPROG zg30  
TD 65536  
SOLVENT CDC13  
NS 16  
DS 2  
SWH 8012.820 Hz  
FIDRES 0.122266 Hz  
AQ 4.0894465 sec  
RG 228  
DW 62.400 usec  
DE 6.50 usec  
TE 298.0 K  
D1 1.00000000 sec  
TD0 1

===== CHANNEL f1 =====  
SFO1 400.1324710 MHz  
NUC1 1H  
P1 8.68 usec  
PLW1 20.00000000 W

F2 - Processing parameters  
SI 65536  
SF 400.1300095 MHz  
WDW EM  
SSB 0  
LB 0.30 Hz  
GB 0  
PC 1.00



DEPTQall CDC13 {X:\AV400HD} CBAF 7



Current Data Parameters  
NAME MD65-C13  
EXPNO 10  
PROCNO 1

F2 - Acquisition Parameters  
Date\_ 20140730  
Time 15.00  
INSTRUM spect  
PROBHD 5 mm PABBO BB/  
PULPROG zgpg30  
TD 65536  
SOLVENT CDC13  
NS 256  
DS 4  
SWH 24038.461 Hz  
FIDRES 0.361798 Hz  
AQ 1.3631488 sec  
RG 2050  
DW 20.800 usec  
DE 6.50 usec  
TE 298.0 K  
CNS12 145.0000000  
CNS12 1.5000000  
D1 3.00000000 sec  
D2 0.00344828 sec  
D12 0.00002000 sec  
D16 0.00020000 sec  
D28 2.00000000 sec  
TD0 1

===== CHANNEL f1 =====  
SFO1 100.6228298 MHz  
NUC1 13C  
P1 9.75 usec  
P13 2000.00 usec  
P1W0 0 W  
P1W1 60.00000000 W  
SPNAM[5] Crp60comp.4  
SPCAL5 0.500  
SPOFFS5 0 Hz  
SPW5 8.71469975 W

===== CHANNEL f2 =====  
SFO2 400.1316005 MHz  
NUC2 1H  
CPDPRG[2] waltz16  
P0 13.02 usec  
P3 8.68 usec  
P4 17.36 usec  
PCPD2 90.00 usec  
P1W2 20.00000000 W  
P1W12 0.18603000 W  
P1W13 0.15068001 W

===== GRADIENT CHANNEL =====  
CPH1[1] SMSG10.100  
CPH1[2] SMSG10.100  
CPH1[3] SMSG10.100  
CPH1 31.00 %  
CPH2 31.00 %  
CPH3 31.00 %  
P16 1000.00 usec

F2 - Processing parameters  
SI 32768  
SF 100.6127538 MHz  
WDW EM  
SSB 0  
LB 1.00 Hz  
GB 0  
PC 1.40

# <sup>1</sup>H and <sup>13</sup>C NMR spectra of (Z)-2-methyl-2-phenyl-3-vinyl-5,6,7,8-tetrahydro-2H-oxocine (23)

PROTON CDC13 {X:\AV400HD} CBAF 5

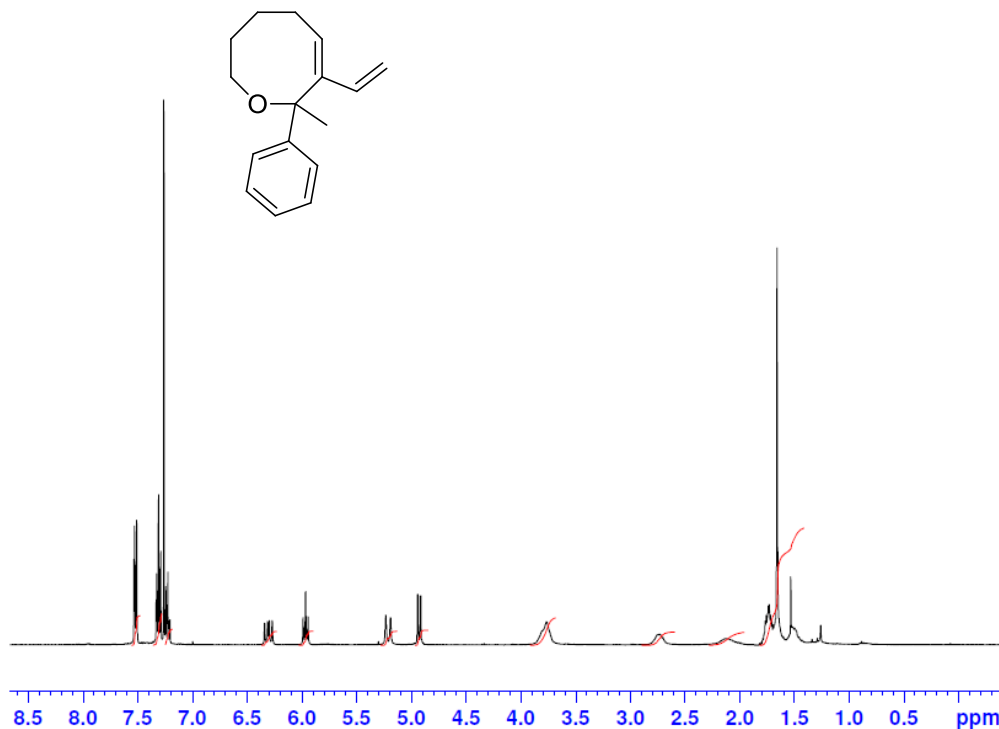


Current Data Parameters  
NAME BL357-4  
EXPNO 10  
PROCNO 1

F2 - Acquisition Parameters  
Date\_ 20150204  
Time 14.25  
INSTRUM spect  
PROBHD 5 mm PABBO BB/  
PULPROG zg30  
TD 65536  
SOLVENT CDC13  
NS 16  
DS 2  
SWH 8012.820 Hz  
FIDRES 0.122266 Hz  
AQ 4.0894465 sec  
RG 203  
DW 62.400 usec  
DE 6.50 usec  
TE 298.0 K  
D1 1.00000000 sec  
TD0 1

===== CHANNEL f1 =====  
SFO1 400.1324710 MHz  
NUC1 1H  
P1 8.68 usec  
PLW1 20.00000000 W

F2 - Processing parameters  
SI 65536  
SF 400.1300091 MHz  
WDW EM  
SSB 0  
LB 0.30 Hz  
GB 0  
PC 1.00



DEPTQa11 CDC13 {X:\AV400HD} CBAF 8



Current Data Parameters  
NAME BL357-c13  
EXPNO 10  
PROCNO 1

F2 - Acquisition Parameters  
Date\_ 20150204  
Time 20.31  
INSTRUM spect  
PROBHD 5 mm PABBO BB/  
PULPROG deptzgpgp.2  
TD 65536  
SOLVENT CDC13  
NS 1200  
DS 4  
SWH 24038.461 Hz  
FIDRES 0.366798 Hz  
AQ 1.3631488 sec  
RG 2050  
DW 20.800 usec  
DE 6.50 usec  
TE 298.0 K  
CNST2 145.000000  
CNST12 1.500000  
D1 3.00000000 sec  
D2 0.00344828 sec  
D12 0.00020000 sec  
D16 0.00020000 sec  
D28 2.00000000 sec  
TD0 1

===== CHANNEL f1 =====  
SFO1 100.6228298 MHz  
NUC1 13C  
P1 9.75 usec  
P13 2000.00 usec  
PIW0 0 W  
PIW1 60.00000000 W  
SPW1[5] Crp60comp.4  
SPW15 0.500  
SPOFFS5 0 Hz  
SPW5 8.71469975 W

===== CHANNEL f2 =====  
SFO2 400.1316005 MHz  
NUC2 1H  
CPDPRG2 waltz16  
P0 13.02 usec  
P3 8.68 usec  
P4 17.36 usec  
PCPD2 90.00 usec  
PIW2 20.00000000 W  
PIW12 0.18613000 W  
PIW13 0.15068001 W

===== GRADIENT CHANNEL =====  
GPNAM[1] SMSQ10.100  
GPNAM[2] SMSQ10.100  
GPNAM[3] SMSQ10.100  
GPZ1 31.00 %  
GPZ2 31.00 %  
GPZ3 31.00 %  
F16 1000.00 usec

F2 - Processing parameters  
SI 32768  
SF 100.6127690 MHz  
WDW EM  
SSB 0  
LB 1.00 Hz  
GB 0  
PC 1.40

