Studies Toward the Synthesis of Spirolide C: Exploration into the Formation of the 23-Membered All-Carbon Macrocyclic Framework

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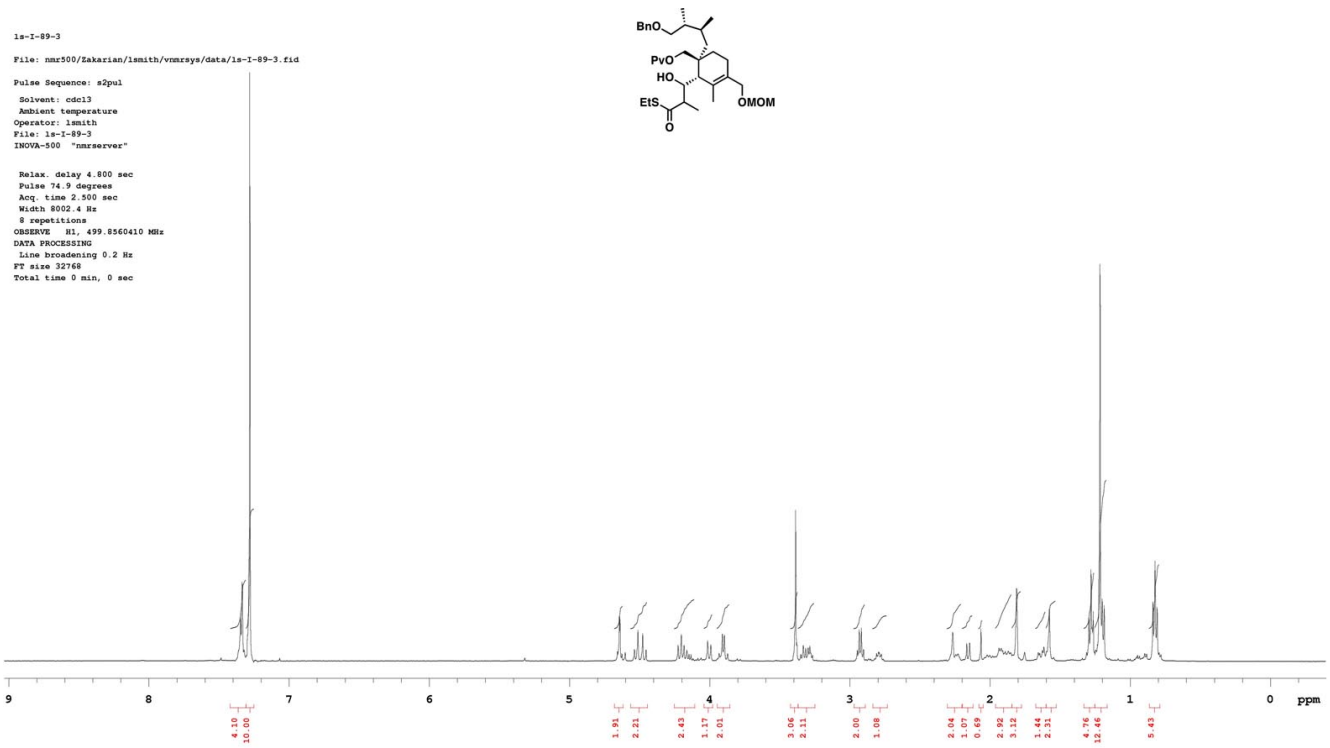
SUPPORTING INFORMATION 2

Copies of Spectra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Solvent: cdcl3
Ambient temperature
Operator: lsmith
File: ls-I-89-3
INOVA-500 "nmrserver"
Relax. delay 4.800 sec
Pulse 74.9 degrees
Acq. time 2.500 sec
Width 8002.4 Hz
8 repetitions
OBSERVE H1, 499.8560410 MHz
DATA PROCESSING
Line broadening 0.2 Hz
FT size 32768
Total time 0 min, 0 sec
BnO
PvO
HO
EtS
O
OMOM
9
8
7
6
5
4
3
2
1
0
ppm
4.10
10.00
1.91
2.21
2.43
1.17
2.01
3.06
2.11
2.00
1.08
2.04
1.07
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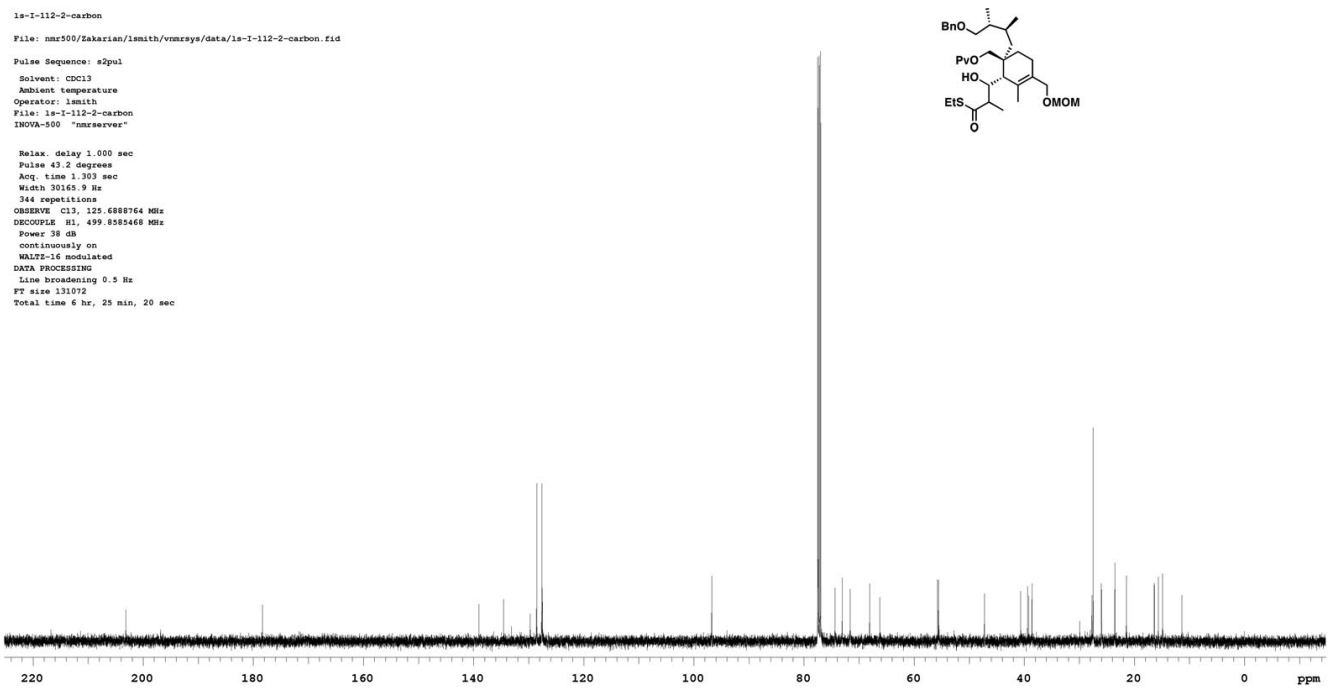
3.12
1.44
2.31
4.76
12.46
5.43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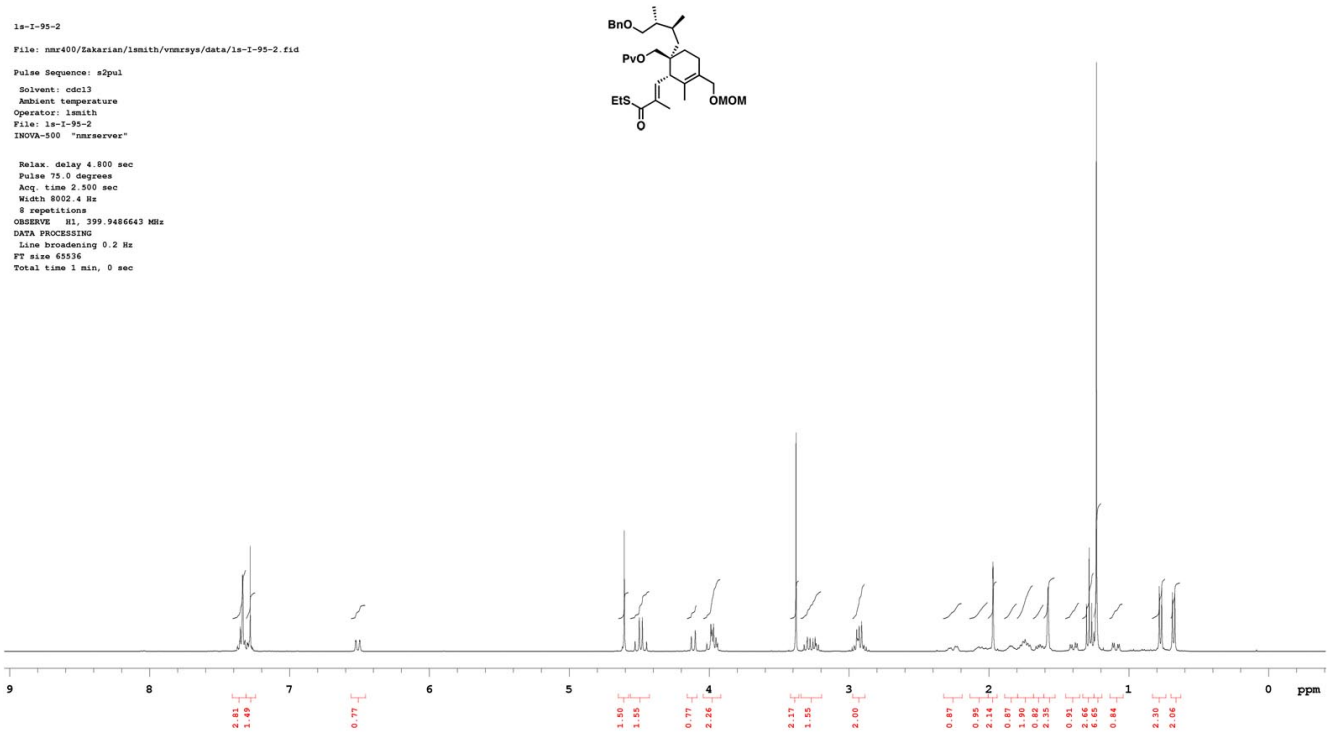
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
Operator: lsmith
File: ls-I-112-2-carbon
INOVA-500 "nmrserver"
Relax. delay 1.000 sec
Pulse 43.2 degrees
Acq. time 1.303 sec
Width 30165.9 Hz
344 repetitions
OBSERVE C13, 125.6888764 MHz
DECOUPLE H1, 499.8585468 MHz
Power 38 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 0.5 Hz
FT size 131072
Total time 6 hr, 25 min, 20 sec
BnO
PvO
HO
EtS
O
OMOM
220
200
180
160
140
120
100
80
60
40
20
0
ppm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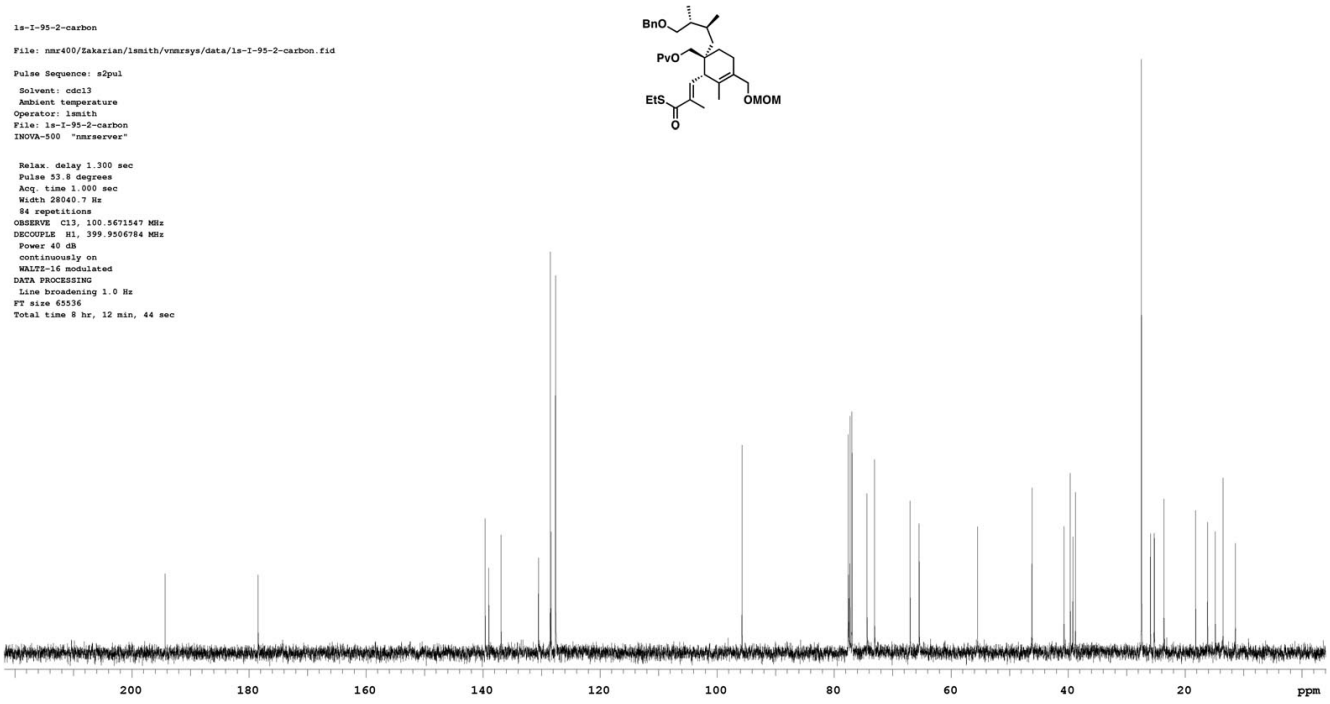
Solvent: cdcl3
Ambient temperature
Operator: lsmith
File: ls-I-95-2
INOVA-500 "nmrserver"
Relax. delay 4.800 sec
Pulse 75.0 degrees
Acq. time 2.500 sec
Width 8002.4 Hz
8 repetitions
OBSERVE H1, 399.9486643 MHz
DATA PROCESSING
Line broadening 0.2 Hz
FT size 65536
Total time 1 min, 0 sec
BnO
PvO
EtS
O
OMOM
9
8
7
6
5
4
3
2
1
0
ppm
2.81
1.49
0.77
1.50
1.55
0.77
2.26
2.17
1.55
2.00
0.87
0.95
2.14
0.87
1.90
0.82
2.35
0.91
2.66
5.65
0.84
2.30
2.06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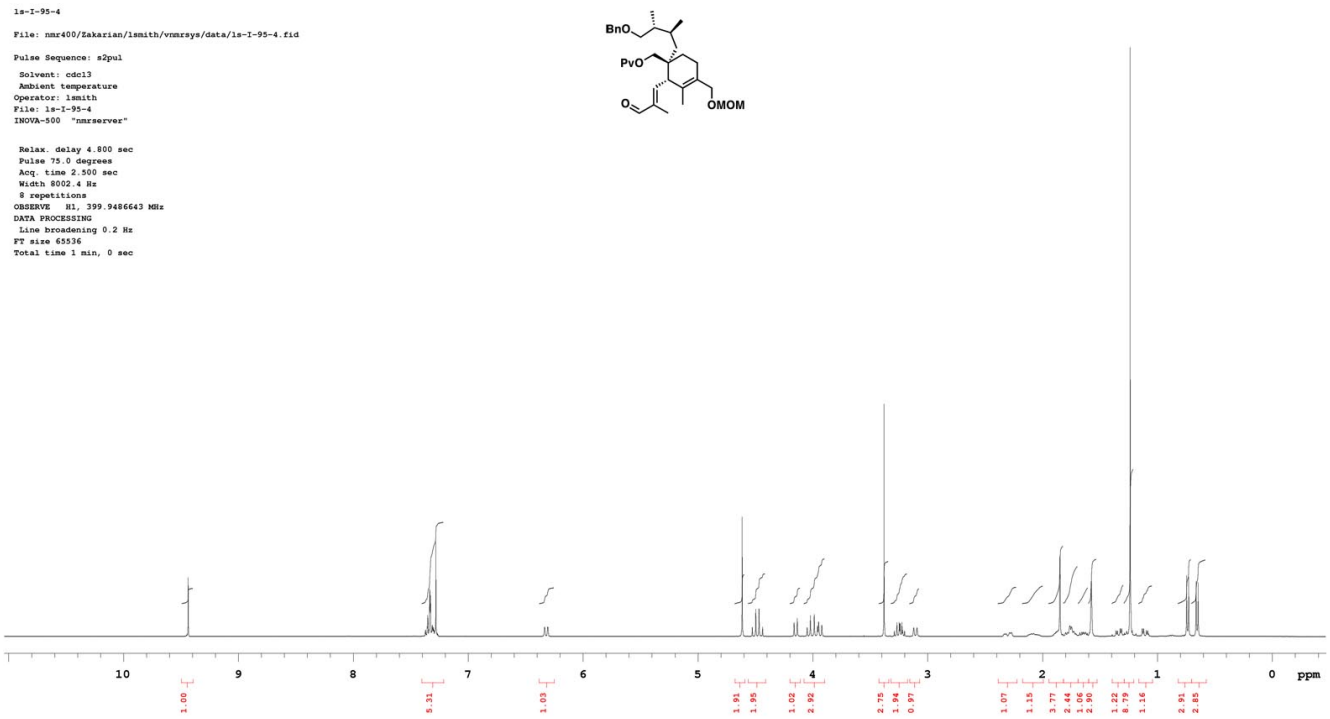
Pulse Sequence: s2pul
Solvent: cdcl3
Ambient temperature
Operator: lsmith
File: ls-I-95-2-carbon
INOVA-500 "nmrserver"
Relax. delay 1.300 sec
Pulse 53.8 degrees
Acq. time 1.000 sec
Width 28040.7 Hz
84 repetitions
OBSERVE C13, 100.5671547 MHz
DECOUPLE H1, 399.9506784 MHz
Power 40 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.0 Hz
FT size 65536
Total time 8 hr, 12 min, 44 sec
BnO
PvO
EtS
O
OMOM
200
180
160
140
120
100
80
60
40
20
ppm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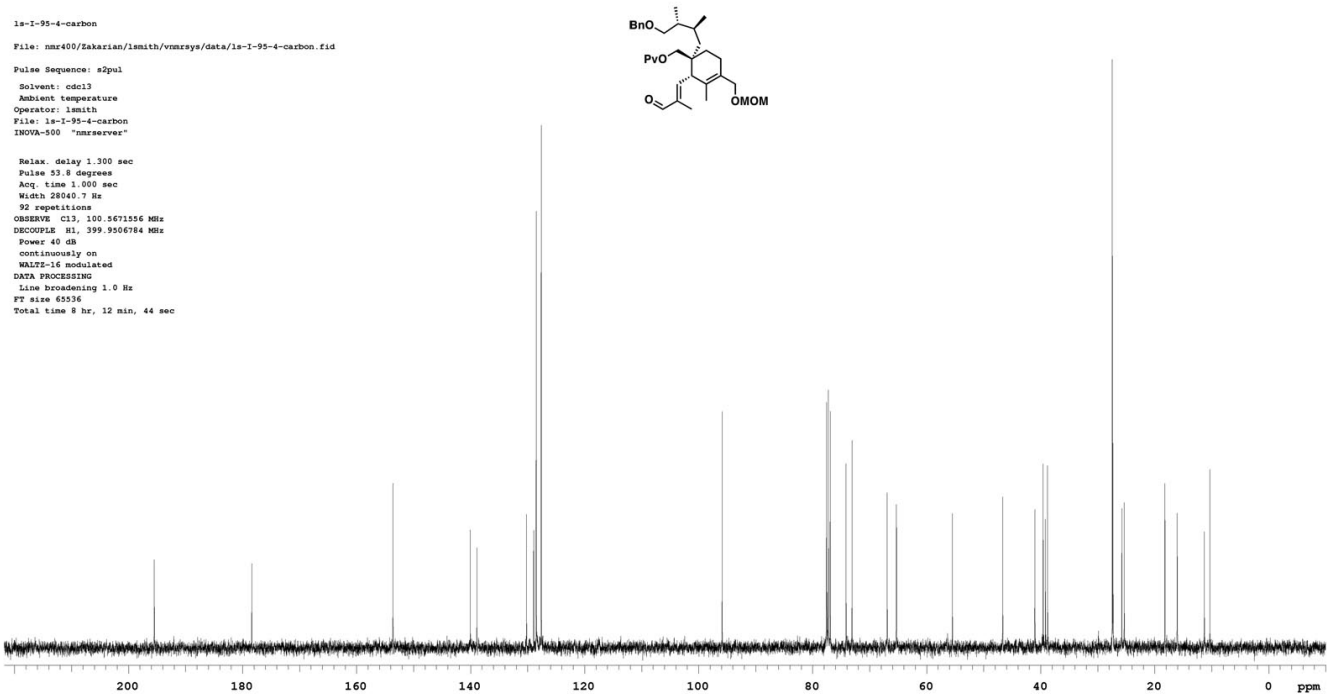
Solvent: cdcl3
Ambient temperature
Operator: lsmith
File: ls-I-95-4
INOVA-500 "nmrserver"
Relax. delay 4.800 sec
Pulse 75.0 degrees
Acq. time 2.500 sec
Width 8002.4 Hz
8 repetitions
OBSERVE H1, 399.9486643 MHz
DATA PROCESSING
Line broadening 0.2 Hz
FT size 65536
Total time 1 min, 0 sec
BnO
PvO
O
OMOM
10
9
8
7
6
5
4
3
2
1
0
ppm
1.00
5.31
1.03
1.91
1.95
1.02
2.92
2.75
1.94
0.97
1.07
1.15
3.77
2.44
1.06
2.90
1.22
8.79
1.16
2.91
2.85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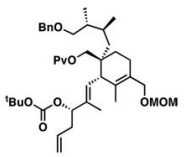
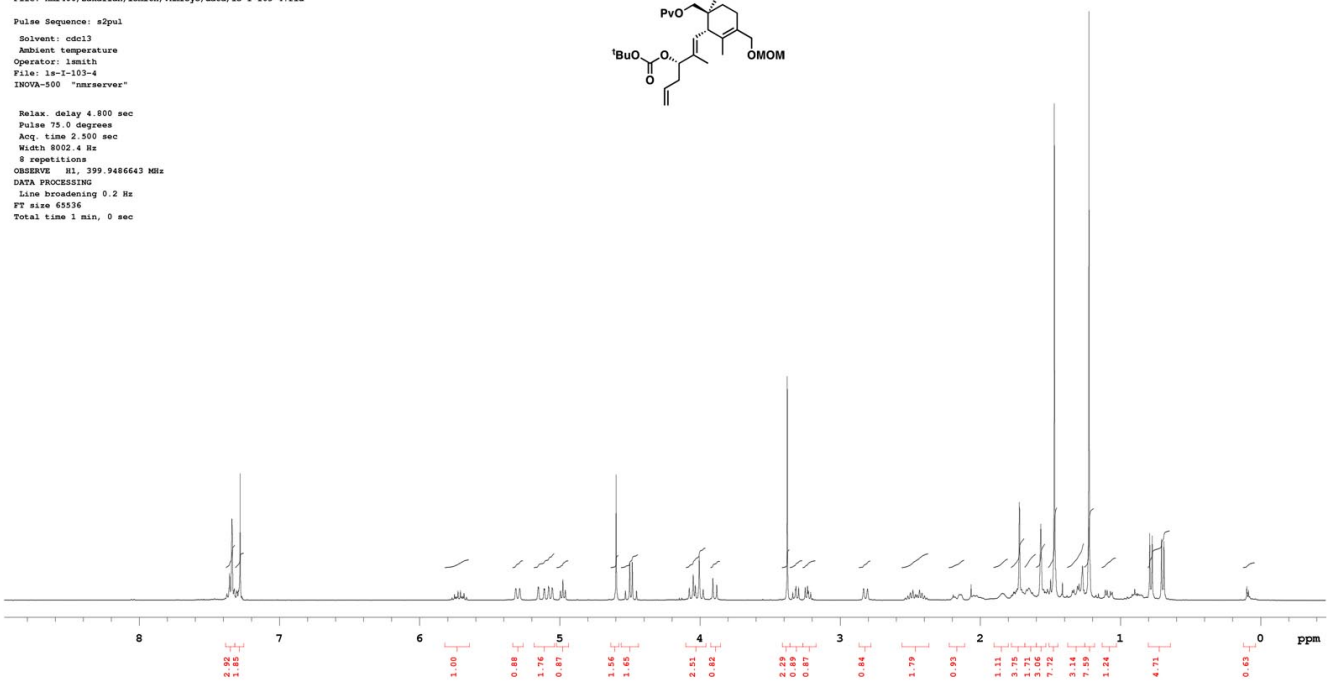
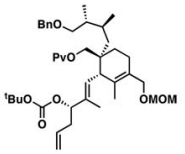
Pulse Sequence: s2pul
Solvent: cdcl3
Ambient temperature
Operator: lsmith
File: ls-I-95-4-carbon
INOVA-500 "nmrserver"
Relax. delay 1.300 sec
Pulse 53.8 degrees
Acq. time 1.000 sec
Width 28040.7 Hz
92 repetitions
OBSERVE C13, 100.5671556 MHz
DECOUPLE H1, 399.9506784 MHz
Power 40 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.0 Hz
FT size 65536
Total time 8 hr, 12 min, 44 sec
BnO
PvO
O
OMOM
200
180
160
140
120
100
80
60
40
20
0
ppm

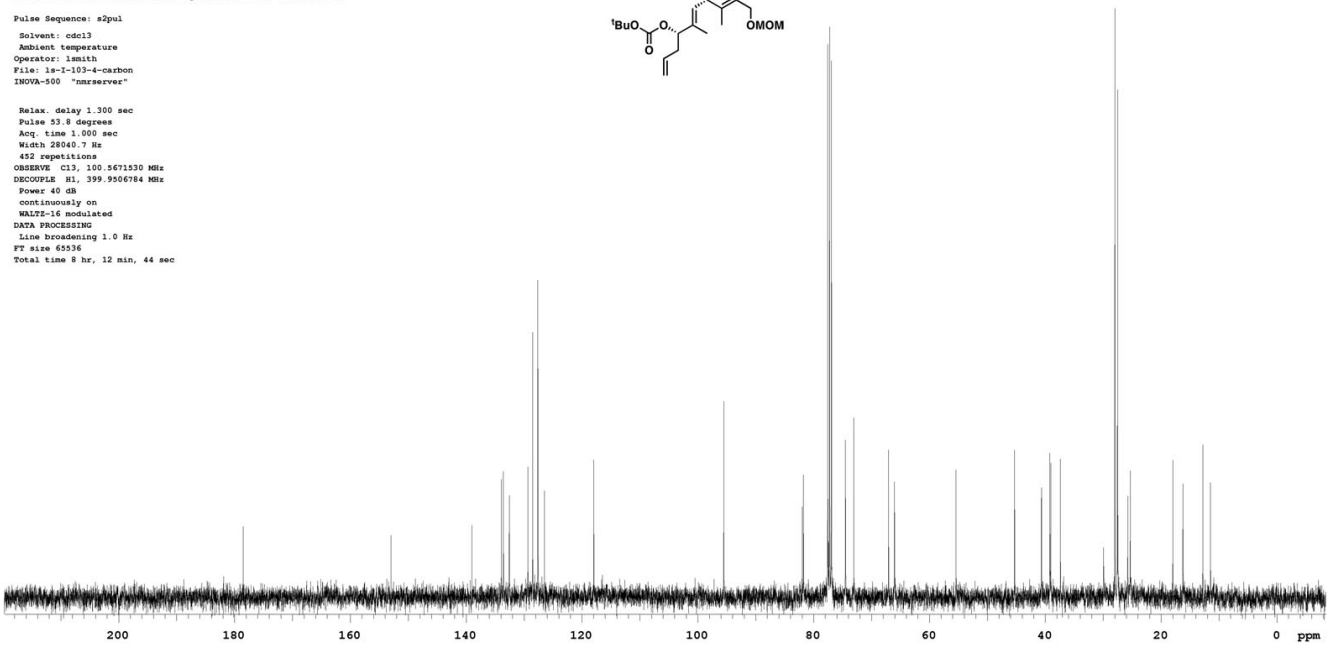
```
ls-I-103-4

File: nmr400/Zakarian/lsmith/vnmrsys/data/ls-I-103-4.fid

Pulse Sequence: s2pul
 Solvent: cdcl3
 Ambient temperature
Operator: lsmith
File: ls-I-103-4
INOVA-500  "nmrserver"

 Relax. delay 4.800 sec
 Pulse 75.0 degrees
 Acq. time 2.500 sec
 Width 8002.4 Hz
 8 repetitions
OBSERVE   H1, 399.9486643 MHz
DATA PROCESSING
 Line broadening 0.2 Hz
FT size 65536
Total time 1 min, 0 sec
```

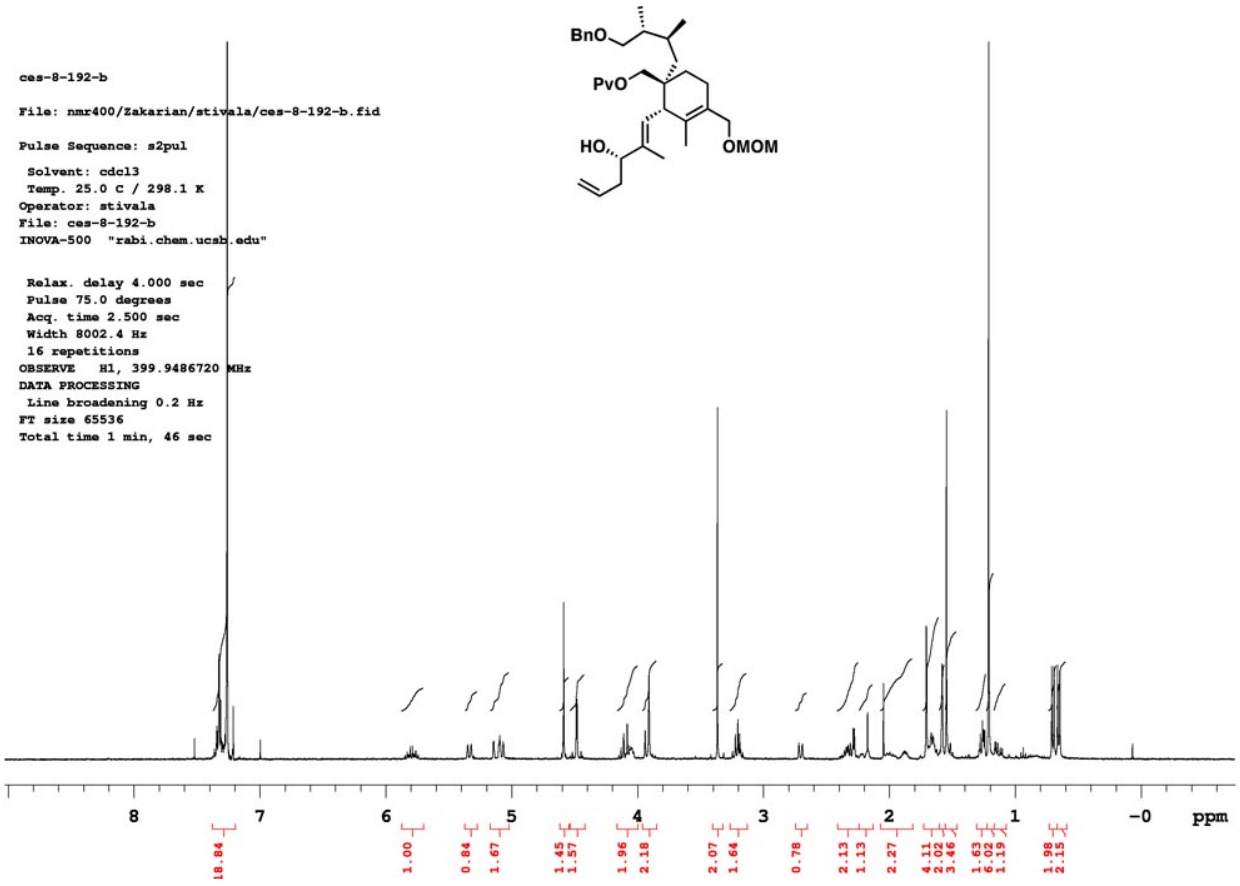


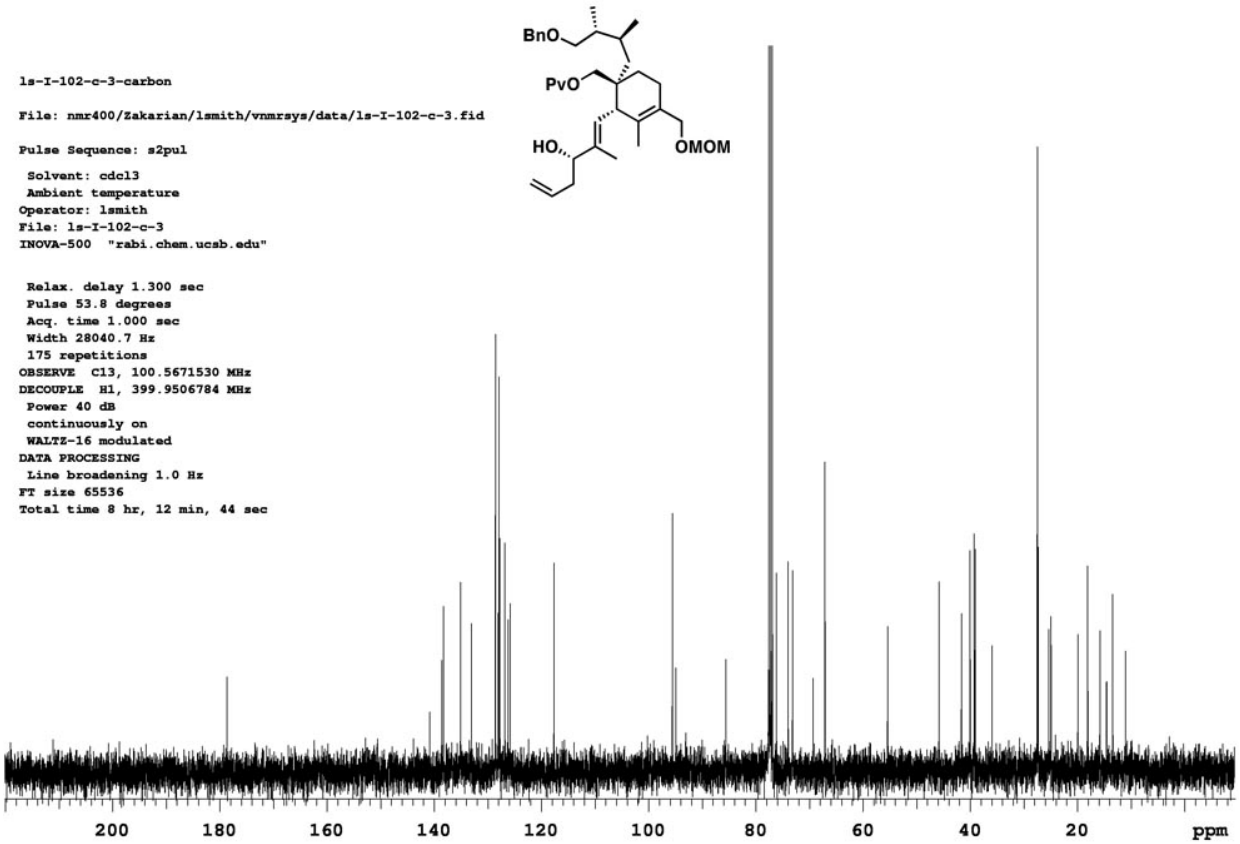


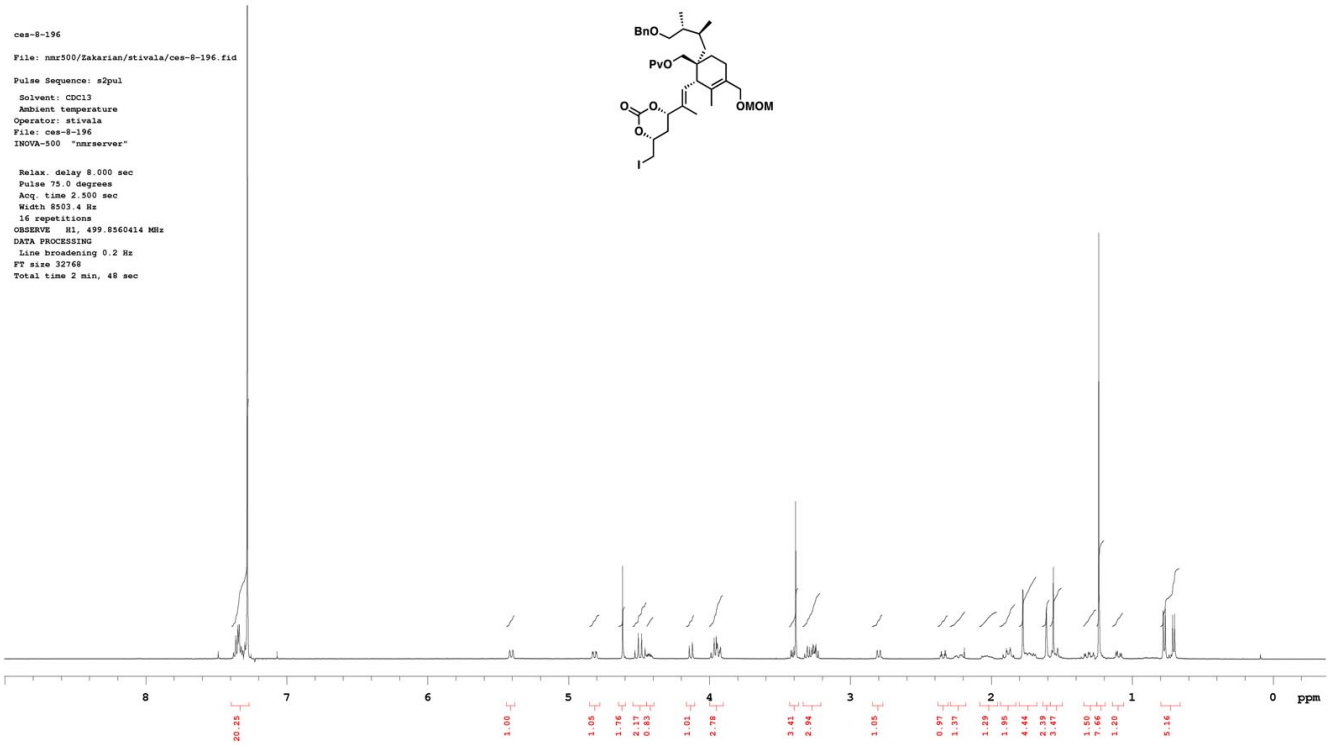

```
ls-I-103-4-carbon

File: nmr400/Zakarian/lsmith/vnmrsys/data/ls-I-103-4-carbon.fid

Pulse Sequence: s2pul
 Solvent: cdcl3
 Ambient temperature
Operator: lsmith
File: ls-I-103-4-carbon
INOVA-500  "nmrserver"

 Relax. delay 1.300 sec
 Pulse 53.8 degrees
 Acq. time 1.000 sec
 Width 28040.7 Hz
 452 repetitions
OBSERVE   C13, 100.5671530 MHz
DECOUPLE  H1, 399.9506784 MHz
 Power 40 dB
 continuously on
 WALTZ-16 modulated
DATA PROCESSING
 Line broadening 1.0 Hz
FT size 65536
Total time 8 hr, 12 min, 44 sec
```

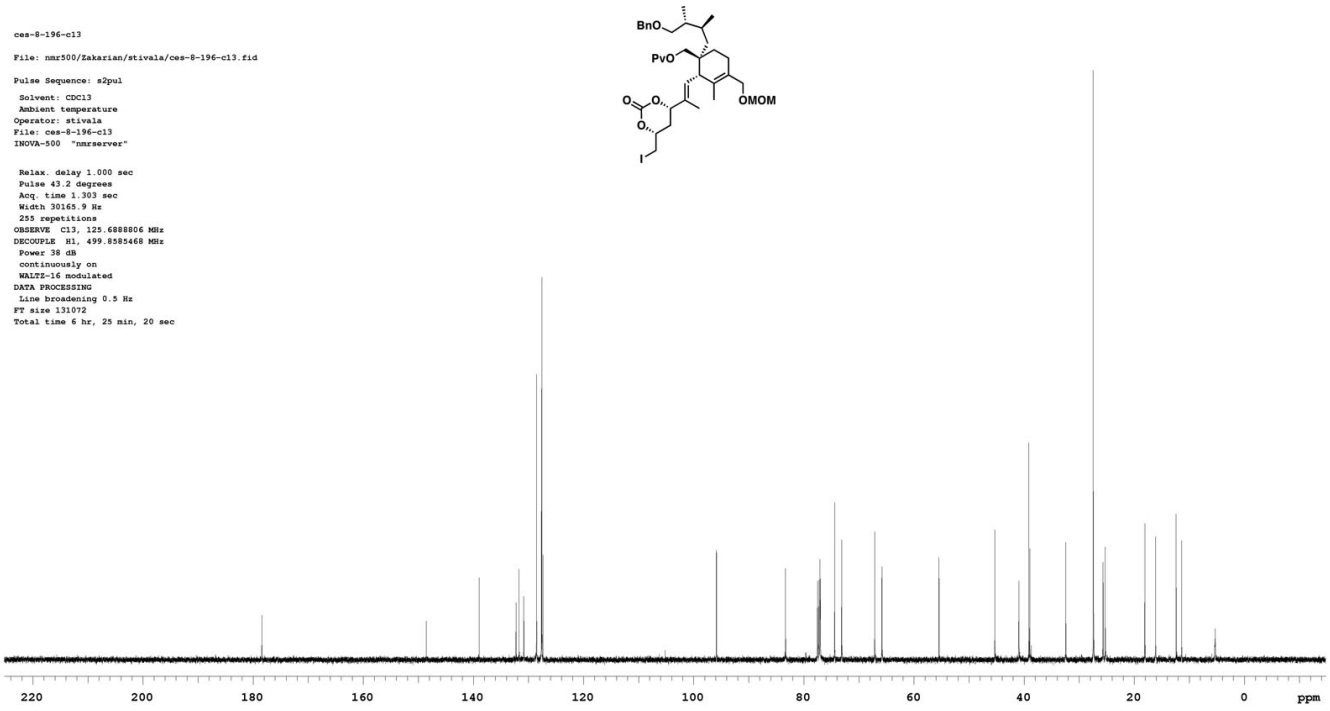





BnO
PvO
HO
OMOM
ces-8-192-b
File: nmr400/Zakarian/stivala/ces-8-192-b.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Temp. 25.0 C / 298.1 K
Operator: stivala
File: ces-8-192-b
INOVA-500 "rabi.chem.ucsb.edu"
Relax. delay 4.000 sec
Pulse 75.0 degrees
Acq. time 2.500 sec
Width 8002.4 Hz
16 repetitions
OBSERVE H1, 399.9486720 MHz
DATA PROCESSING
Line broadening 0.2 Hz
FT size 65536
Total time 1 min, 46 sec
8
7
6
5
4
3
2
1
−0
ppm
18.84
1.00
0.84
1.67
1.45
1.57
1.96
2.18
2.07
1.64
0.78
2.13
1.13
2.27
4.11
4.02
3.46
1.63
6.02
1.19
1.98
2.15


BnO
PvO
HO
OMOM
ls-I-102-c-3-carbon
File: nmr400/Zakarian/lsmith/vnmrsys/data/ls-I-102-c-3.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Ambient temperature
Operator: lsmith
File: ls-I-102-c-3
INOVA-500 "rabi.chem.ucsb.edu"
Relax. delay 1.300 sec
Pulse 53.8 degrees
Acq. time 1.000 sec
Width 28040.7 Hz
175 repetitions
OBSERVE C13, 100.5671530 MHz
DECOUPLE H1, 399.9506784 MHz
Power 40 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.0 Hz
FT size 65536
Total time 8 hr, 12 min, 44 sec
200
180
160
140
120
100
80
60
40
20
ppm


ces-8-196
File: nmr500/Zakarian/stivala/ces-8-196.fid
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
Operator: stivala
File: ces-8-196
INOVA-500 "nmrserver"
Relax. delay 8.000 sec
Pulse 75.0 degrees
Acq. time 2.500 sec
Width 8503.4 Hz
16 repetitions
OBSERVE H1, 499.8560414 MHz
DATA PROCESSING
Line broadening 0.2 Hz
FT size 32768
Total time 2 min, 48 sec
BnO
PvO
OMOM
O
O
O
I
8
7
6
5
4
3
2
1
0
ppm
20.25
1.00
1.05
1.76
2.13
0.83
1.01
2.78
3.41
2.94
1.05
0.97
1.37
1.29
1.95
4.44
2.39
3.47
1.50
7.66
1.20
5.16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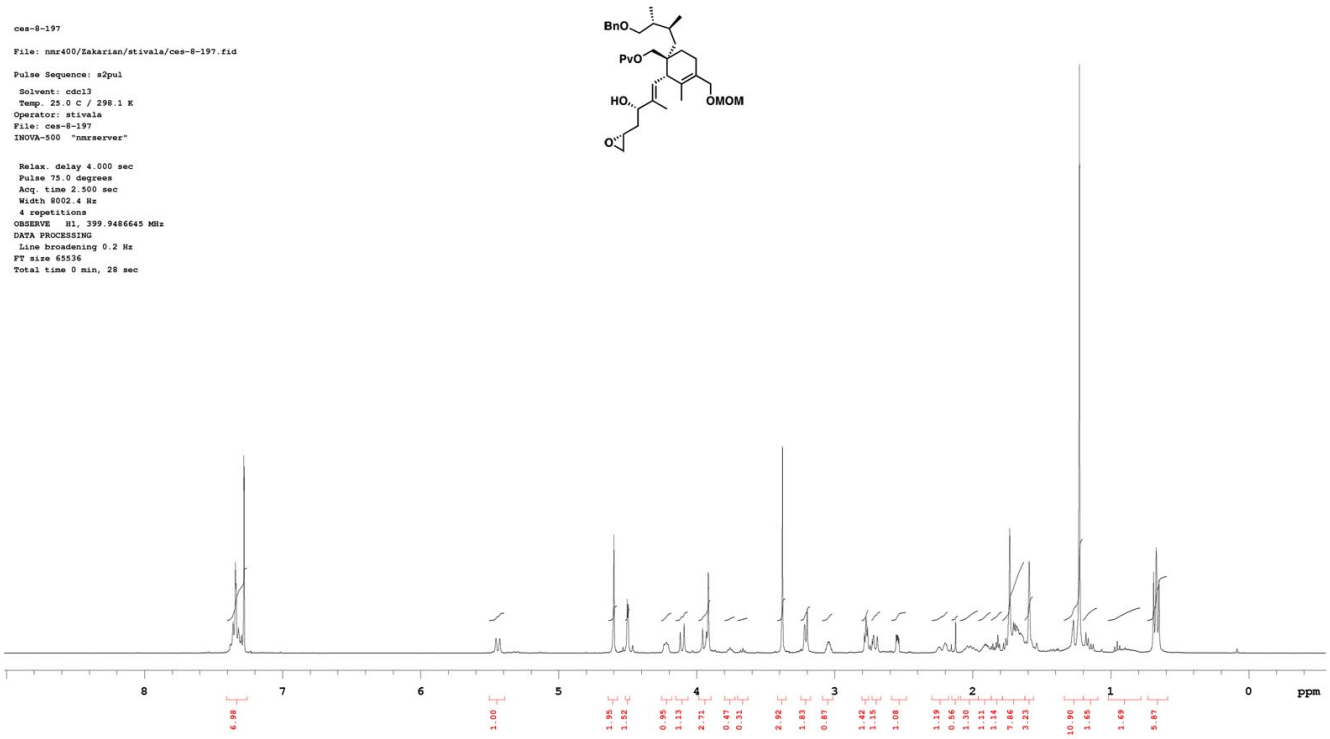
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
Operator: stivala
File: ces-8-196-c13
INOVA-500 "nmrserver"
Relax. delay 1.000 sec
Pulse 43.2 degrees
Acq. time 1.303 sec
Width 30165.9 Hz
255 repetitions
OBSERVE C13, 125.6888806 MHz
DECOUPLE H1, 499.8585468 MHz
Power 38 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 0.5 Hz
FT size 131072
Total time 6 hr, 25 min, 20 sec
BnO
PvO
OMOM
O
O
O
I
220
200
180
160
140
120
100
80
60
40
20
0
ppm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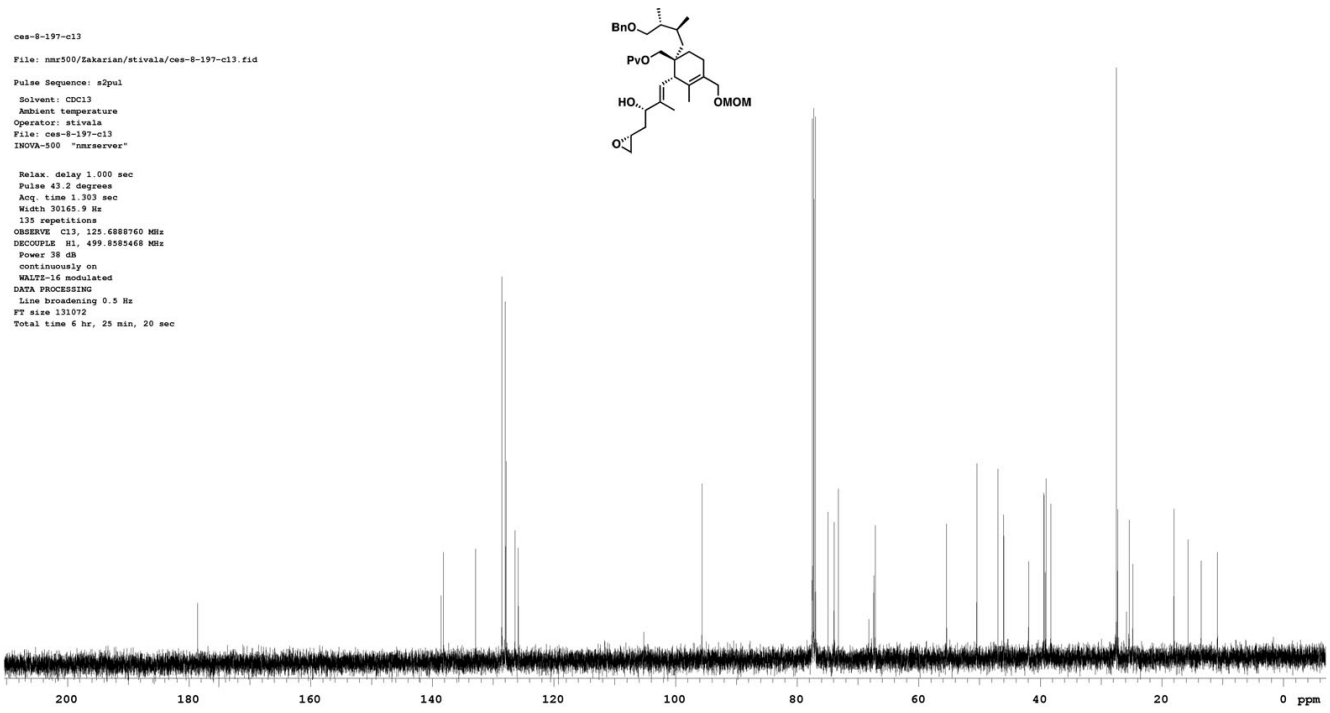
Pulse Sequence: s2pul
Solvent: cdcl3
Temp. 25.0 C / 298.1 K
Operator: stivala
File: ces-8-197
INOVA-500 "nmrserver"
Relax. delay 4.000 sec
Pulse 75.0 degrees
Acq. time 2.500 sec
Width 8002.4 Hz
4 repetitions
OBSERVE H1, 399.9486645 MHz
DATA PROCESSING
Line broadening 0.2 Hz
FT size 65536
Total time 0 min, 28 sec
BnO
PvO
HO
OMOM
O
8
7
6
5
4
3
2
1
0
ppm
6.98
1.00
1.95
1.82
0.95
1.13
2.71
0.47
0.31
2.92
1.83
0.87
1.42
1.15
1.08
1.19
0.56
1.30
1.11
1.14
7.86
3.23
10.90
1.65
1.69
5.87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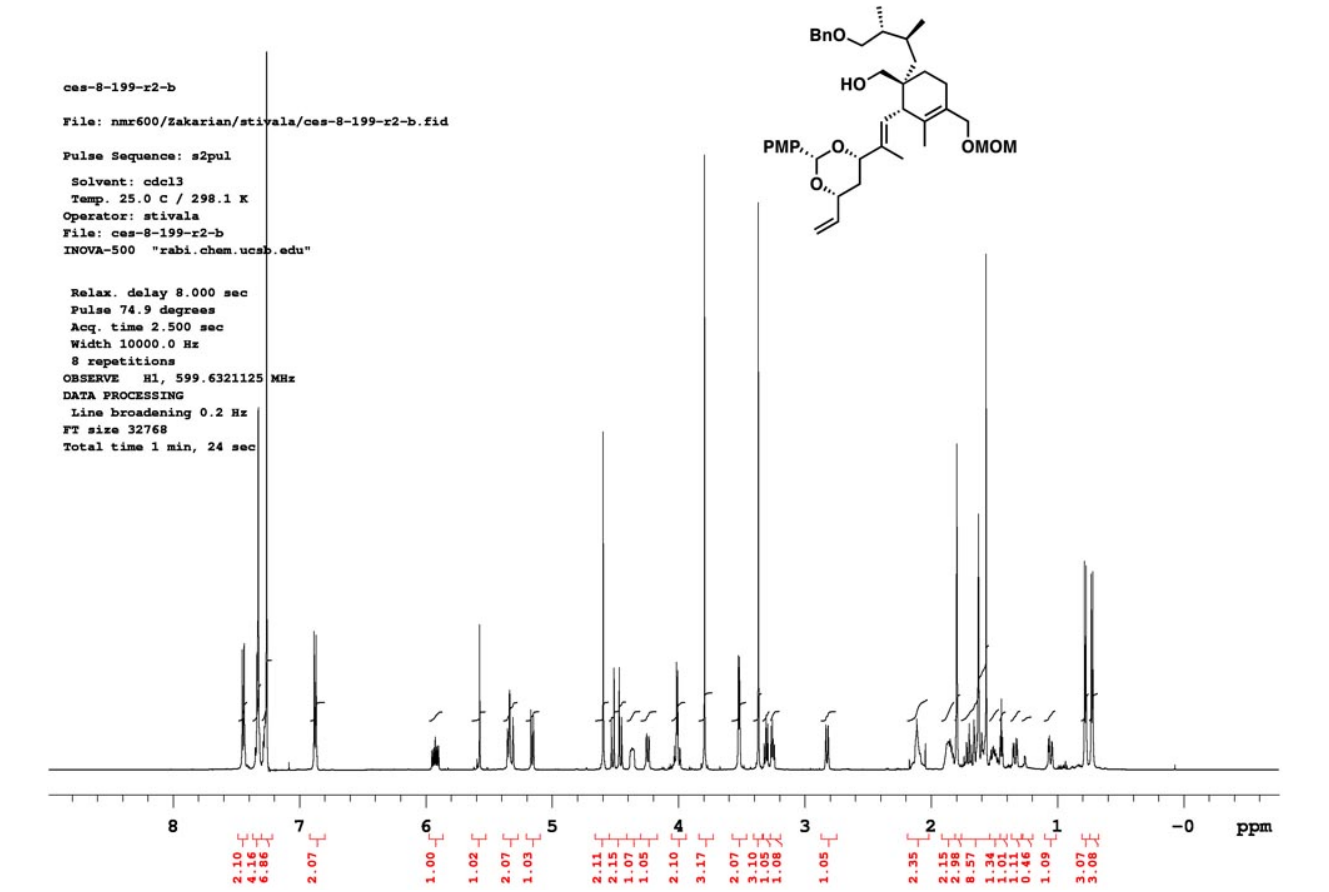
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
Operator: stivala
File: ces-8-197-c13
INOVA-500 "nmrserver"
Relax. delay 1.000 sec
Pulse 43.2 degrees
Acq. time 1.303 sec
Width 30165.9 Hz
135 repetitions
OBSERVE C13, 125.6888760 MHz
DECOUPLE H1, 499.8585468 MHz
Power 38 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 0.5 Hz
FT size 131072
Total time 6 hr, 25 min, 20 sec
BnO
PvO
HO
OMOM
O
200
180
160
140
120
100
80
60
40
20
0
ppm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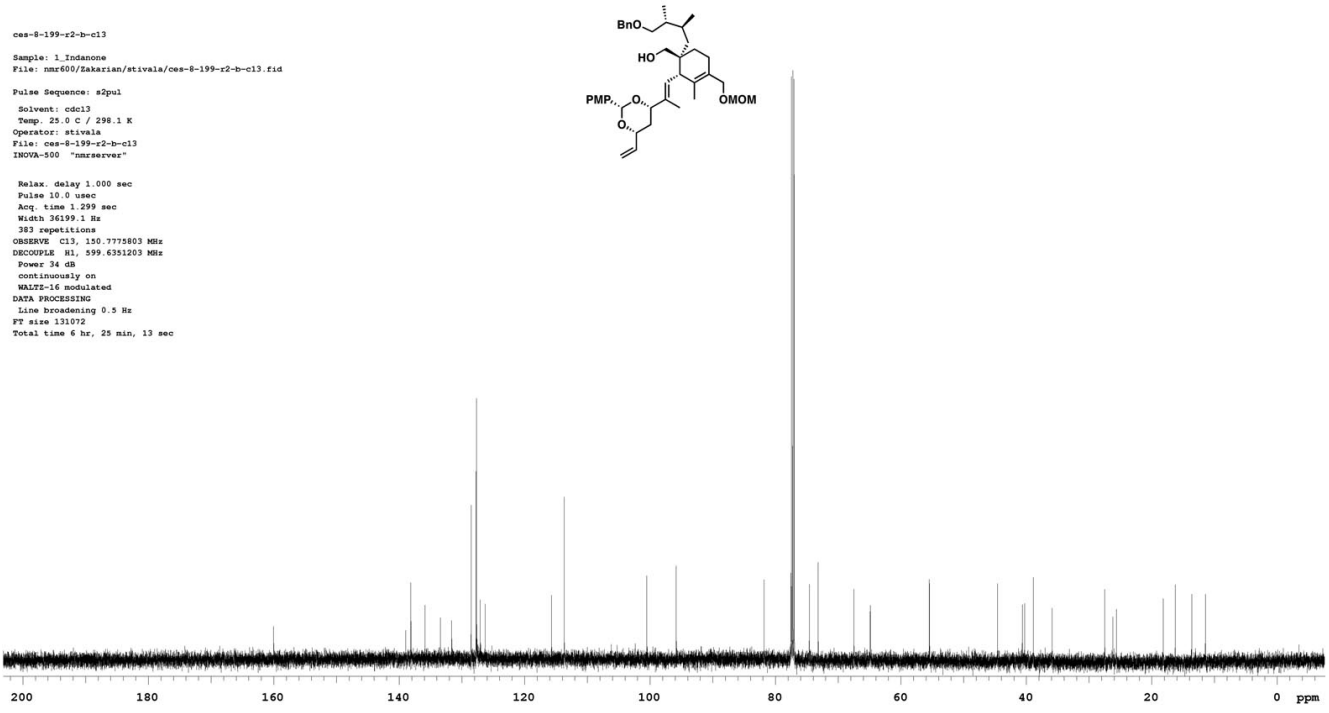
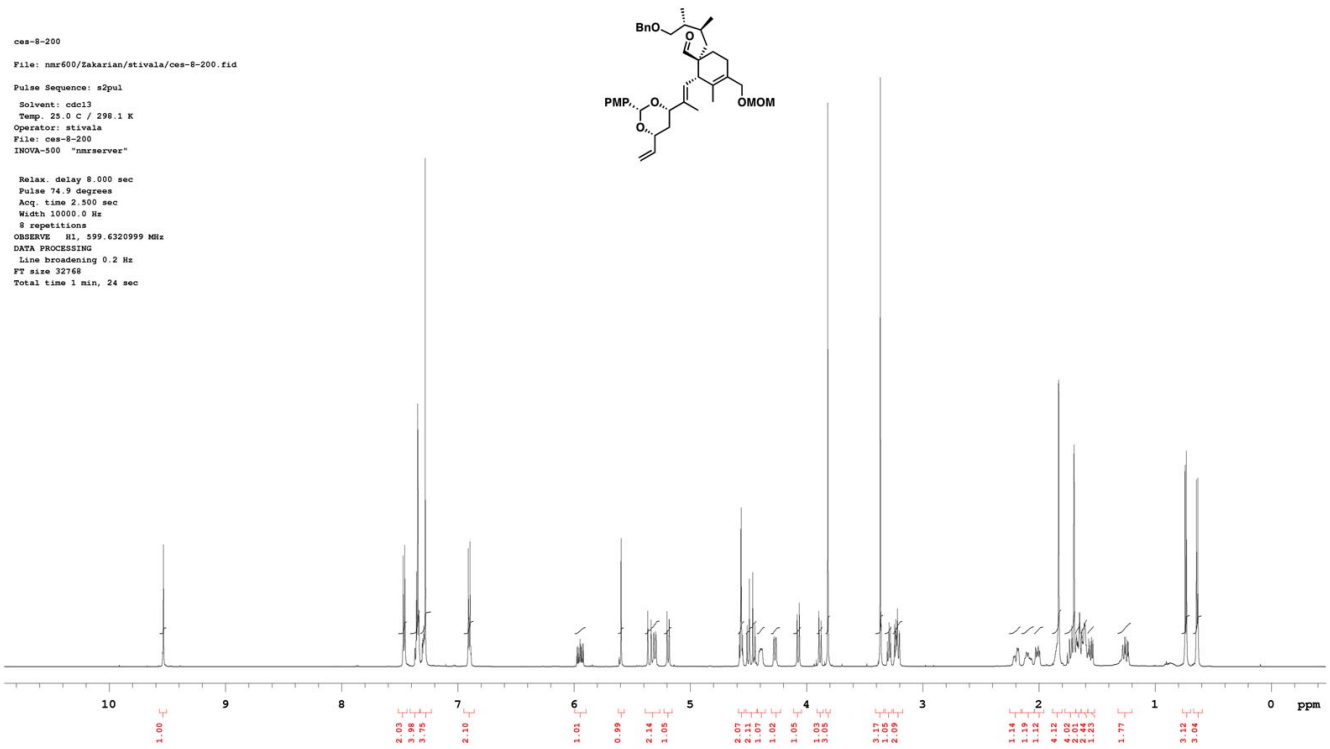
Pulse Sequence: s2pul
Solvent: cdcl3
Temp. 25.0 C / 298.1 K
Operator: stivala
File: ces-8-199-r2-b
INOVA-500 "rabi.chem.ucsb.edu"
Relax. delay 8.000 sec
Pulse 74.9 degrees
Acq. time 2.500 sec
Width 10000.0 Hz
8 repetitions
OBSERVE H1, 599.6321125 MHz
DATA PROCESSING
Line broadening 0.2 Hz
FT size 32768
Total time 1 min, 24 sec
BnO
HO
PMP
O
OMOM
8
7
6
5
4
3
2
1
−0
ppm
2.10
4.16
6.86
2.07
1.00
1.02
2.07
1.03
2.11
2.15
1.07
1.05
2.10
3.17
2.07
3.10
1.05
1.08
1.05
2.35
2.15
2.98
8.57
1.34
1.01
1.11
0.46
1.09
3.07
3.08


ces-8-199-r2-b-c13
Sample: 1_Indanone
File: nmr600/Zakarian/stivala/ces-8-199-r2-b-c13.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Temp. 25.0 C / 298.1 K
Operator: stivala
File: ces-8-199-r2-b-c13
INOVA-500 "nmrserver"
Relax. delay 1.000 sec
Pulse 10.0 usec
Acq. time 1.299 sec
Width 36199.1 Hz
383 repetitions
OBSERVE C13, 150.7775803 MHz
DECOUPLE H1, 599.6351203 MHz
Power 34 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 0.5 Hz
FT size 131072
Total time 6 hr, 25 min, 13 sec
BnO
HO
PMP
O
OMOM
200
180
160
140
120
100
80
60
40
20
0
ppm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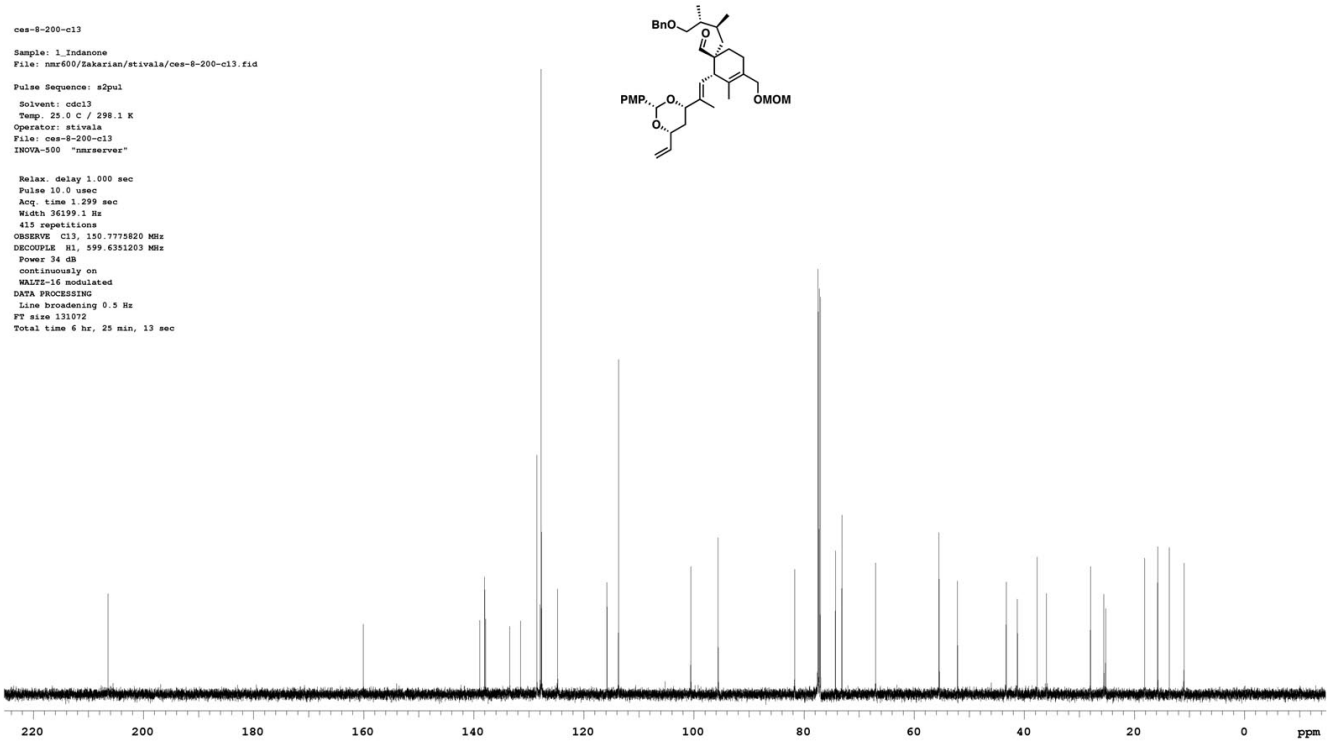
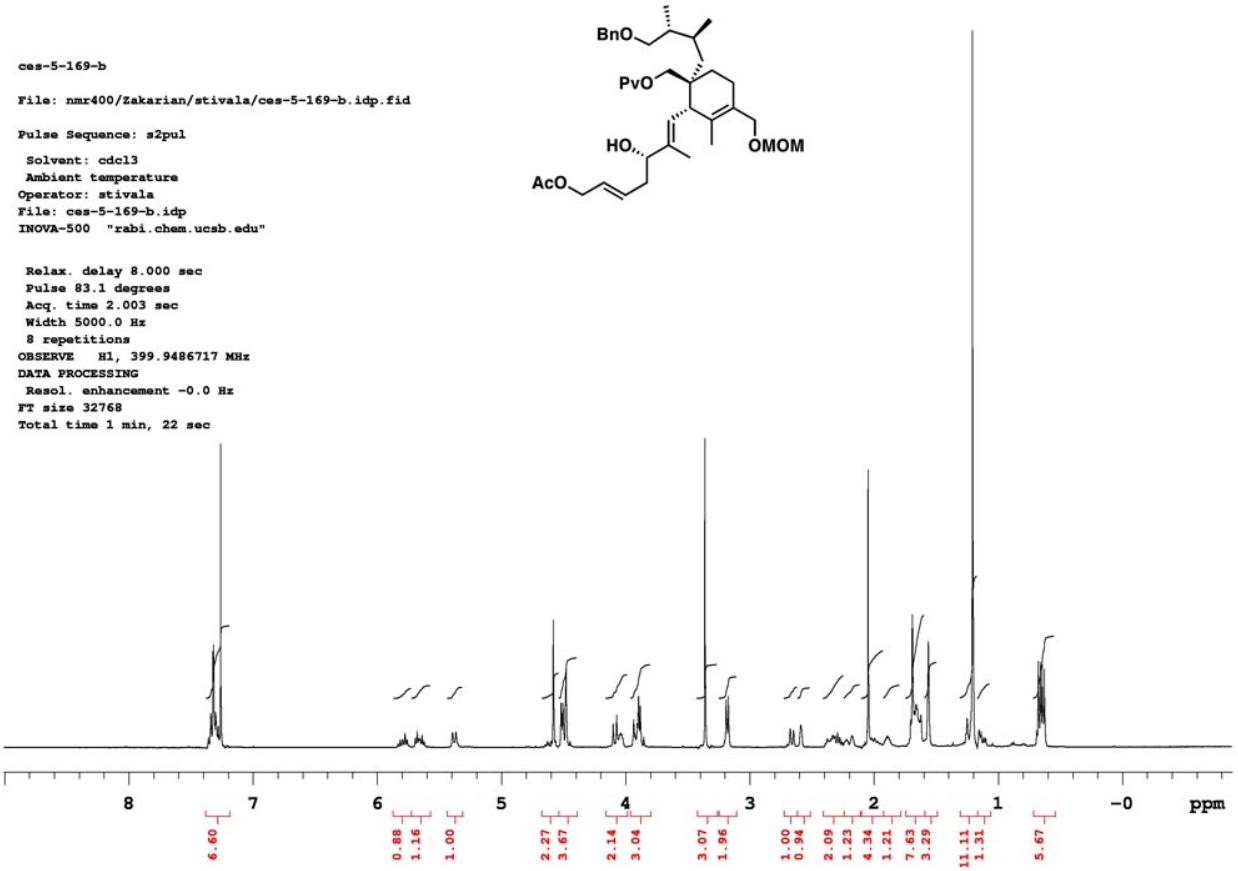
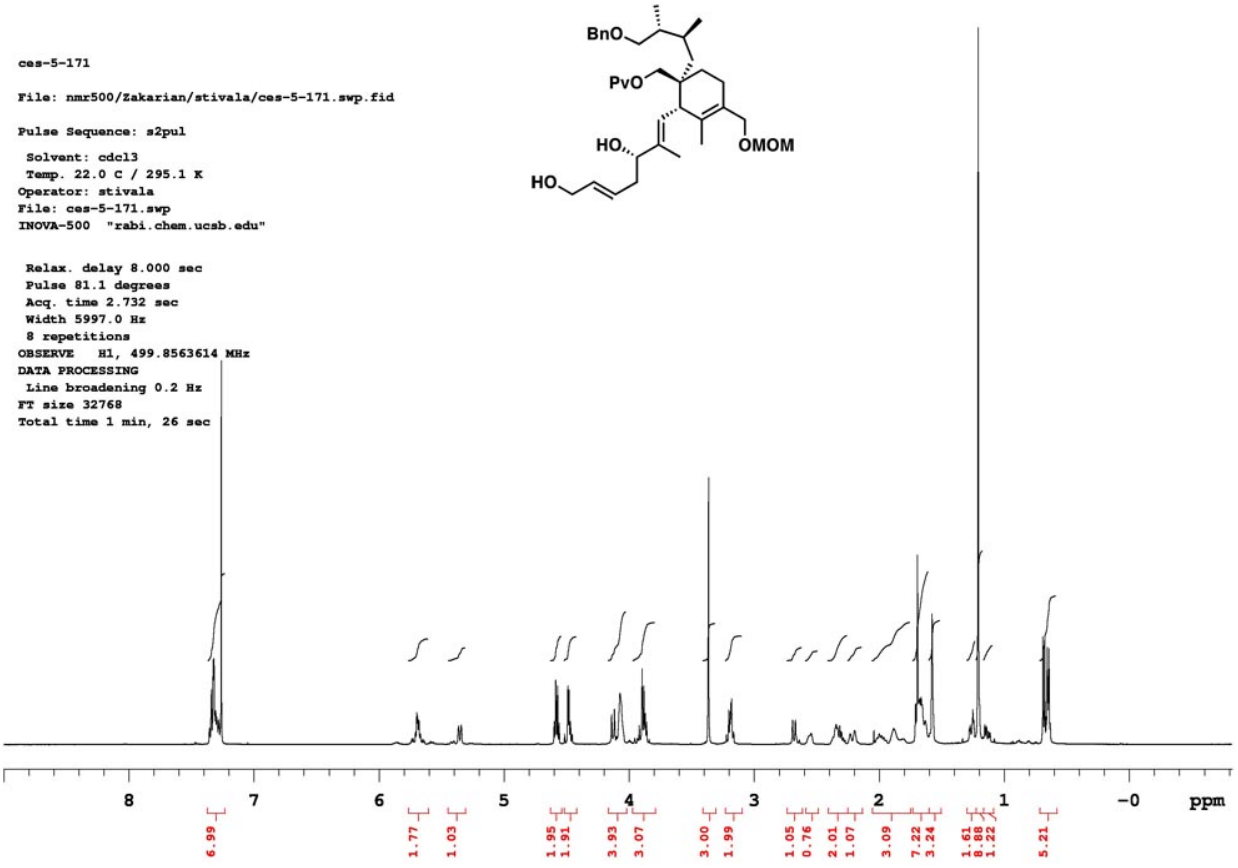
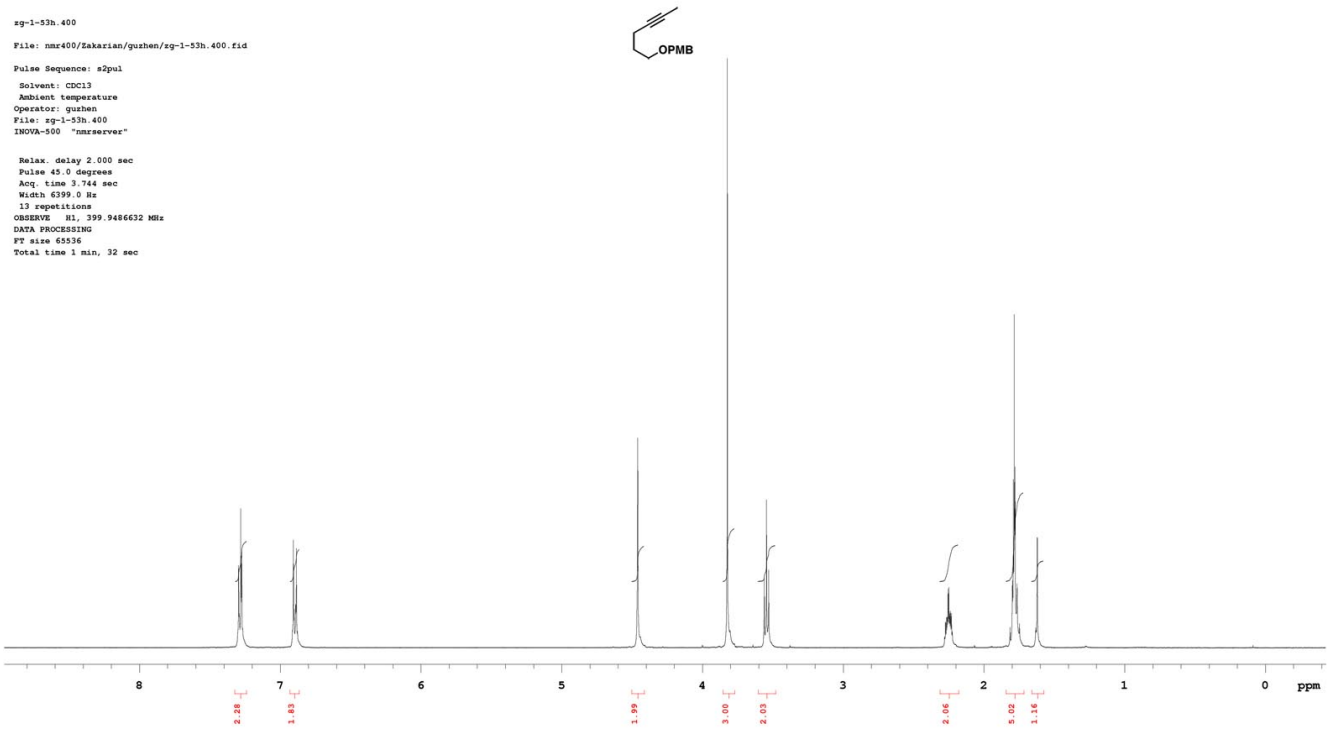
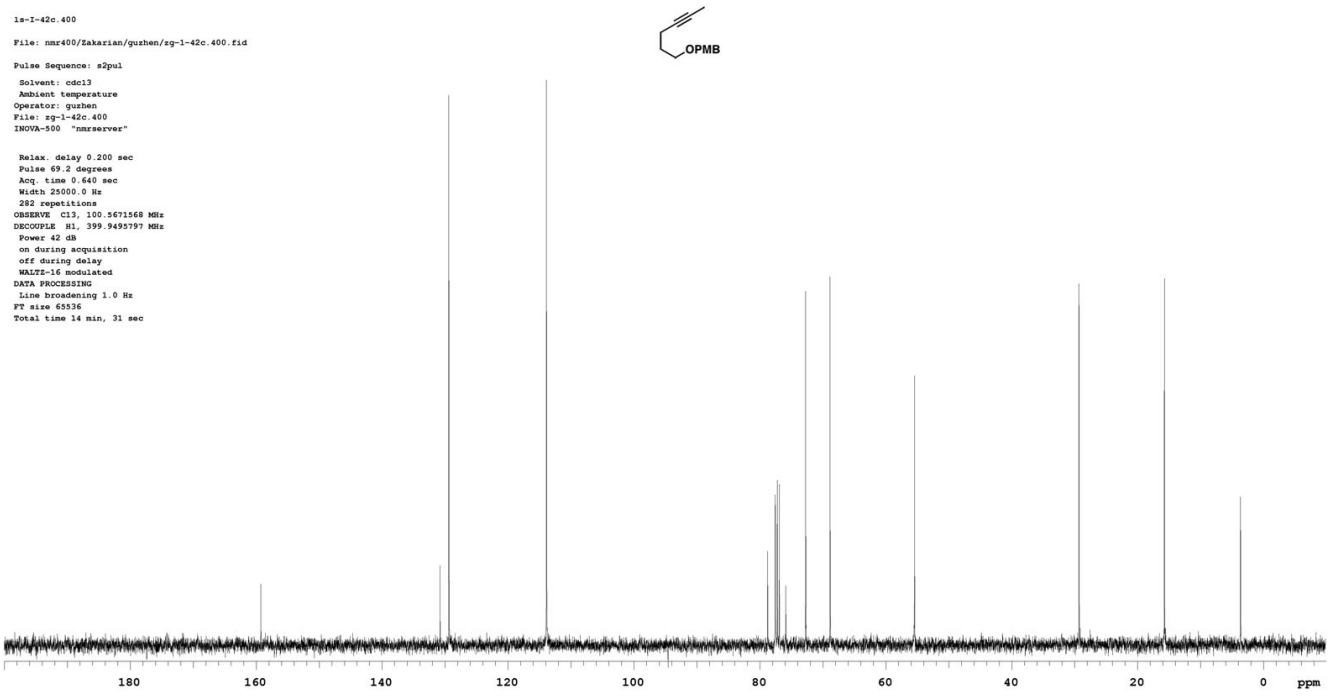
File: nmr600/Zakarian/stivala/ces-8-200.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Temp. 25.0 C / 298.1 K
Operator: stivala
File: ces-8-200
INOVA-500 "nmrserver"
Relax. delay 8.000 sec
Pulse 74.9 degrees
Acq. time 2.500 sec
Width 10000.0 Hz
8 repetitions
OBSERVE H1, 599.6320999 MHz
DATA PROCESSING
Line broadening 0.2 Hz
FT size 32768
Total time 1 min, 24 sec
BnO
PMP
O
OMOM
10
9
8
7
6
5
4
3
2
1
0
ppm
1.00
2.03
3.98
3.75
2.10
1.01
0.99
2.14
1.05
2.07
2.11
1.01
1.02
1.05
1.03
1.03
3.17
1.05
2.09
1.14
1.19
1.12
4.12
4.01
2.01
2.23
1.77
3.12
3.04

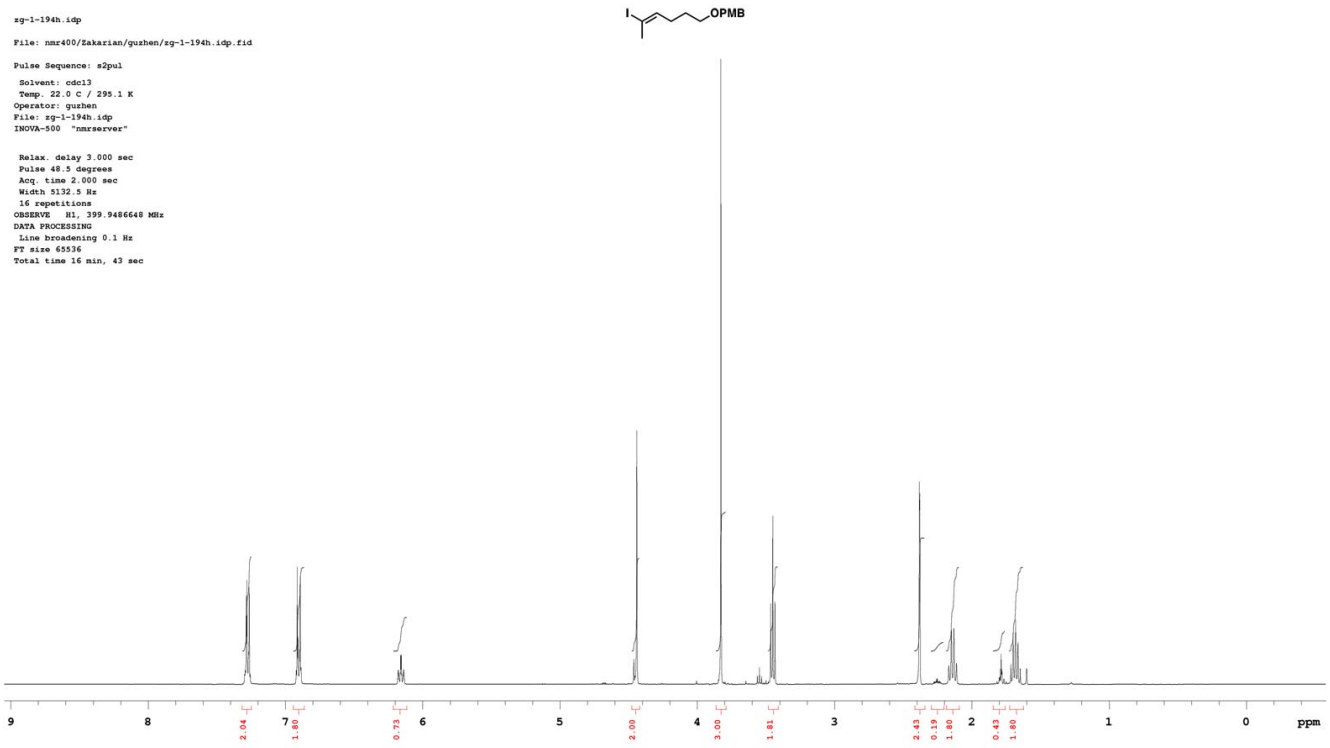

ces-8-200-c13
Sample: 1_Indanone
File: nmr600/Zakarian/stivala/ces-8-200-c13.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Temp. 25.0 C / 298.1 K
Operator: stivala
File: ces-8-200-c13
INOVA-500 "nmrserver"
Relax. delay 1.000 sec
Pulse 10.0 usec
Acq. time 1.299 sec
Width 36199.1 Hz
415 repetitions
OBSERVE C13, 150.7775820 MHz
DECOUPLE H1, 599.6351203 MHz
Power 34 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 0.5 Hz
FT size 131072
Total time 6 hr, 25 min, 13 sec
BnO
PMP
O
OMOM
220
200
180
160
140
120
100
80
60
40
20
0
ppm

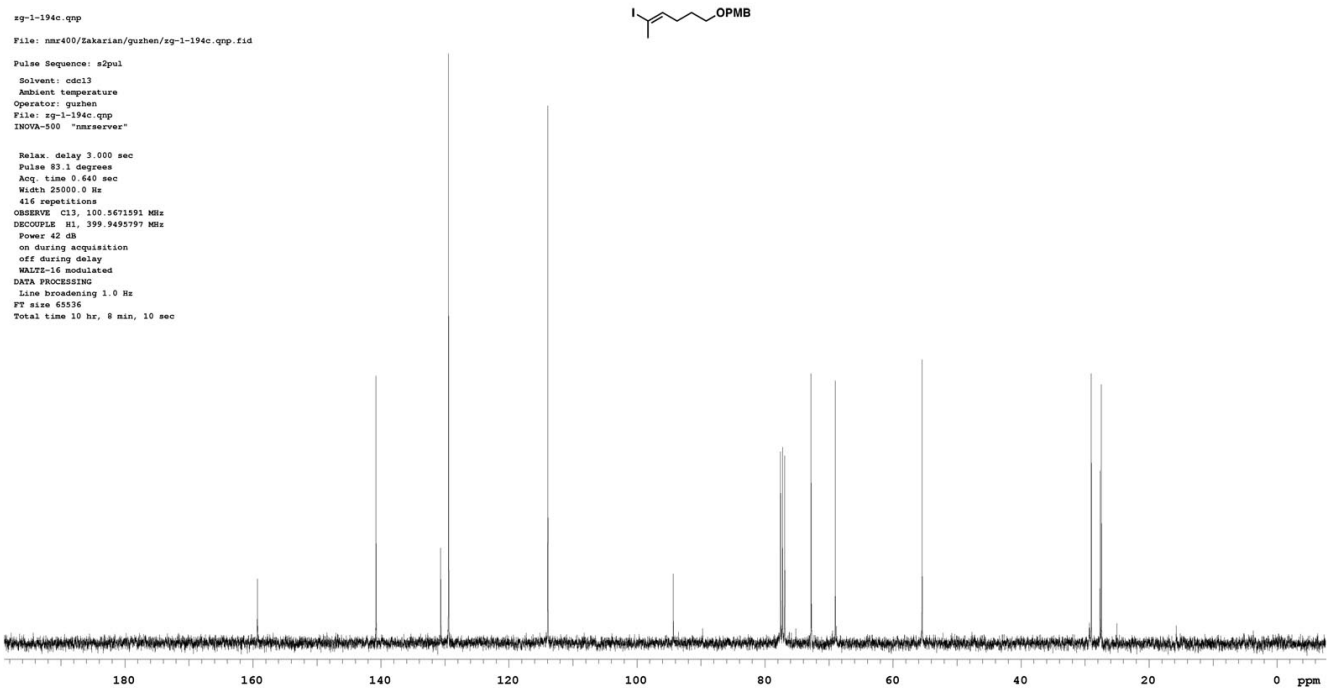

ces-5-169-b
File: nmr400/Zakarian/stivala/ces-5-169-b.idp.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Ambient temperature
Operator: stivala
File: ces-5-169-b.idp
INOVA-500 "rabi.chem.ucsb.edu"
Relax. delay 8.000 sec
Pulse 83.1 degrees
Acq. time 2.003 sec
Width 5000.0 Hz
8 repetitions
OBSERVE H1, 399.9486717 MHz
DATA PROCESSING
Resol. enhancement -0.0 Hz
FT size 32768
Total time 1 min, 22 sec
BnO
PvO
HO
OMOM
AcO
8
7
6
5
4
3
2
1
-0
ppm
6.60
0.88
1.16
1.00
2.27
3.67
2.14
3.04
3.07
1.96
1.00
0.94
2.09
1.23
4.34
1.21
7.63
3.29
11.11
1.31
5.67

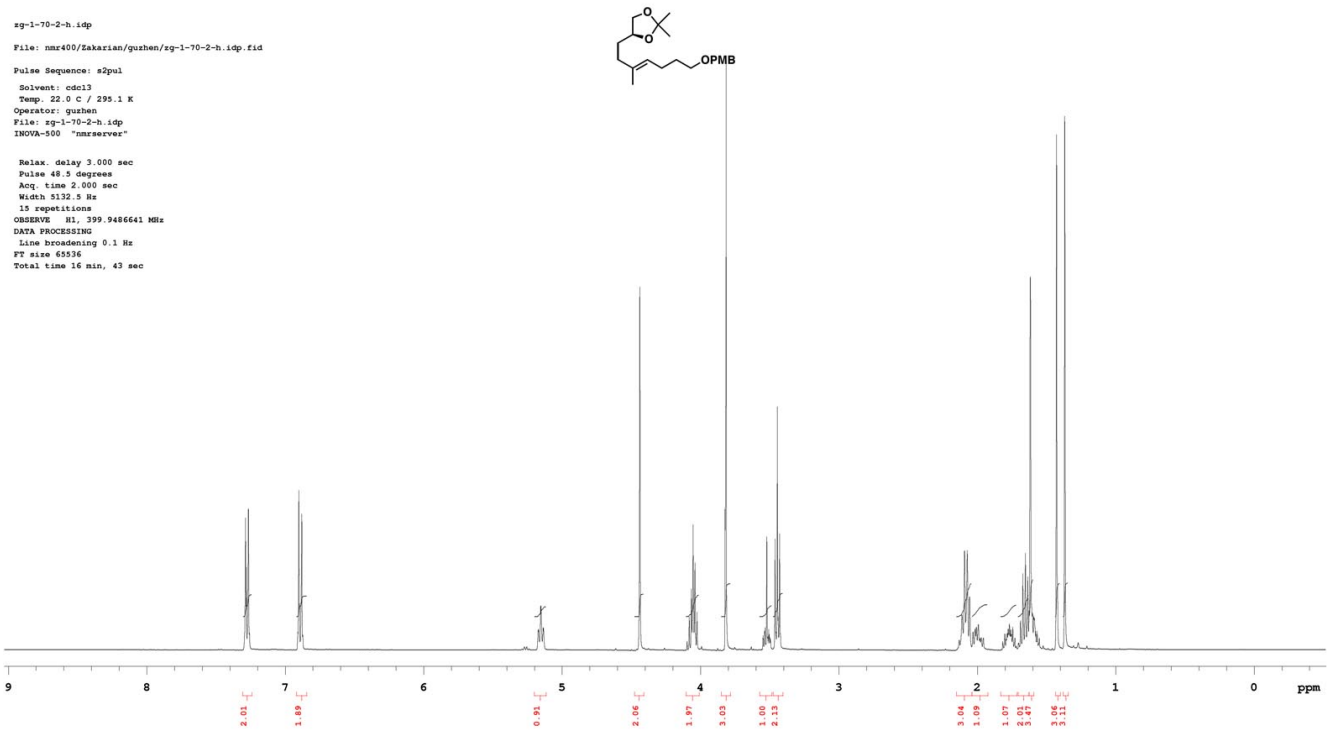

ces-5-171
File: nmr500/Zakarian/stivala/ces-5-171.swp.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Temp. 22.0 C / 295.1 K
Operator: stivala
File: ces-5-171.swp
INOVA-500 "rabi.chem.ucsb.edu"
Relax. delay 8.000 sec
Pulse 81.1 degrees
Acq. time 2.732 sec
Width 5997.0 Hz
8 repetitions
OBSERVE H1, 499.8563614 MHz
DATA PROCESSING
Line broadening 0.2 Hz
FT size 32768
Total time 1 min, 26 sec
BnO
PvO
HO
OMOM
HO
8
7
6
5
4
3
2
1
-0
ppm
6.99
1.77
1.03
1.95
1.91
3.93
3.07
3.00
1.99
1.05
0.76
2.01
1.07
3.09
7.22
3.24
1.61
1.69
1.22
5.21

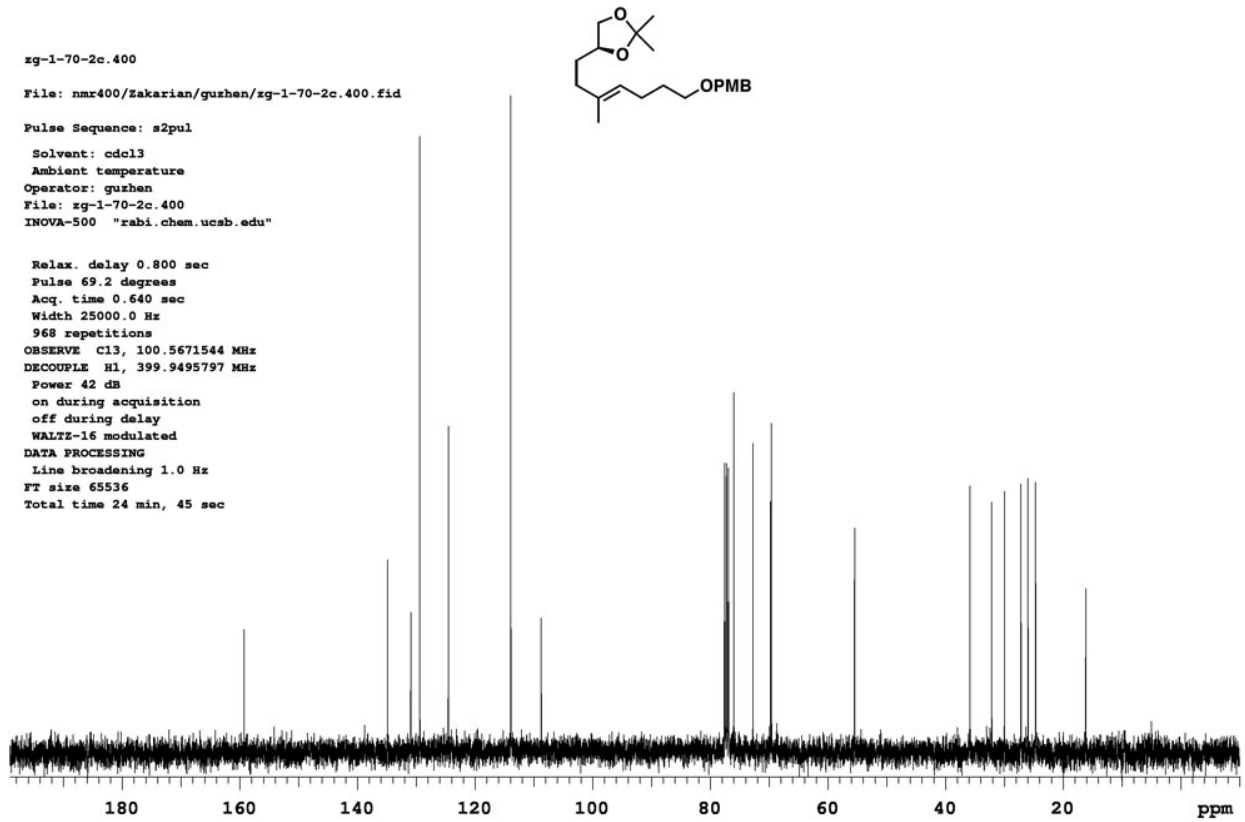

zg-1-53h.400
File: nmr400/Zakarian/guzhen/zg-1-53h.400.fid
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
Operator: guzhen
File: zg-1-53h.400
INOVA-500 "nmrserver"
Relax. delay 2.000 sec
Pulse 45.0 degrees
Acq. time 3.744 sec
Width 6399.0 Hz
13 repetitions
OBSERVE H1, 399.9486632 MHz
DATA PROCESSING
FT size 65536
Total time 1 min, 32 sec
OPMB
8
7
6
5
4
3
2
1
0
ppm
2.28
1.83
1.99
3.00
2.03
2.06
5.02
1.16

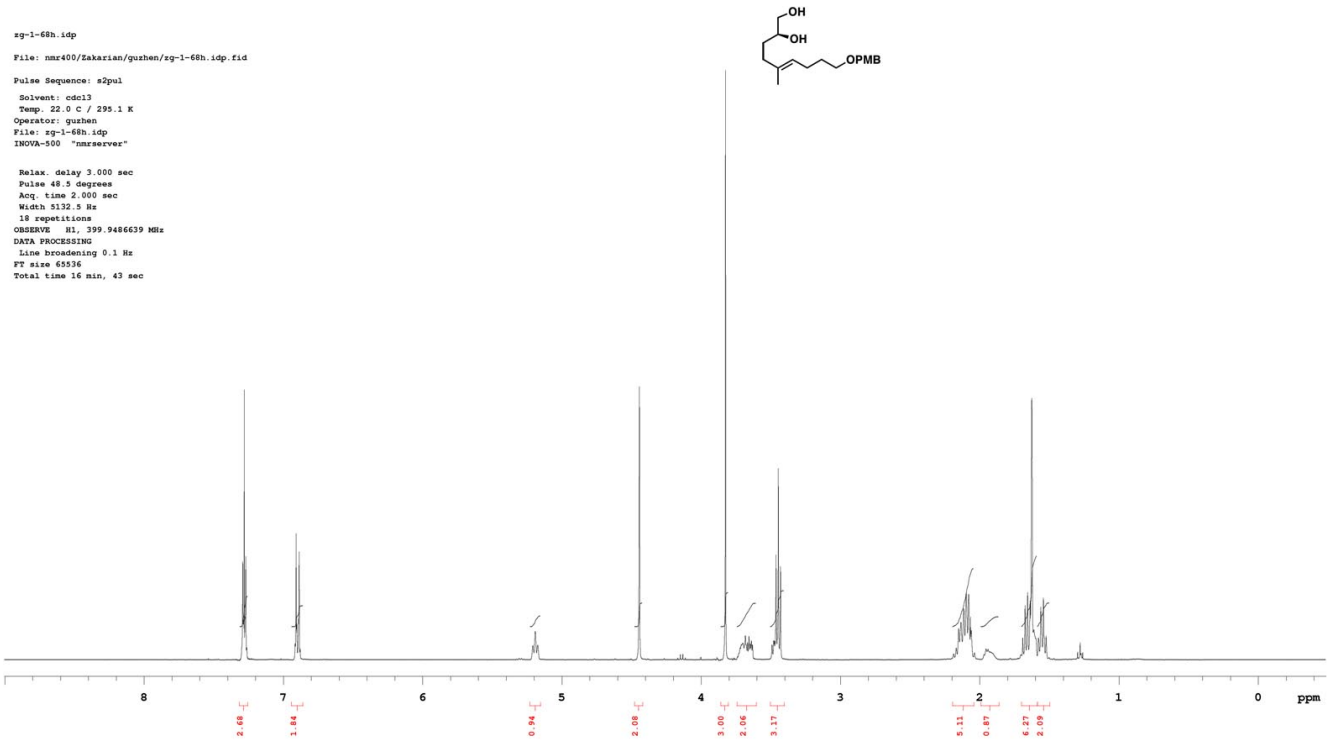

ls-I-42c.400
File: nmr400/Zakarian/guzhen/zg-1-42c.400.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Ambient temperature
Operator: guzhen
File: zg-1-42c.400
INOVA-500 "nmrserver"
Relax. delay 0.200 sec
Pulse 69.2 degrees
Acq. time 0.640 sec
Width 25000.0 Hz
282 repetitions
OBSERVE C13, 100.5671568 MHz
DECOUPLE H1, 399.9495797 MHz
Power 42 dB
on during acquisition
off during delay
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.0 Hz
FT size 65536
Total time 14 min, 31 sec
OPMB
180
160
140
120
100
80
60
40
20
0
ppm

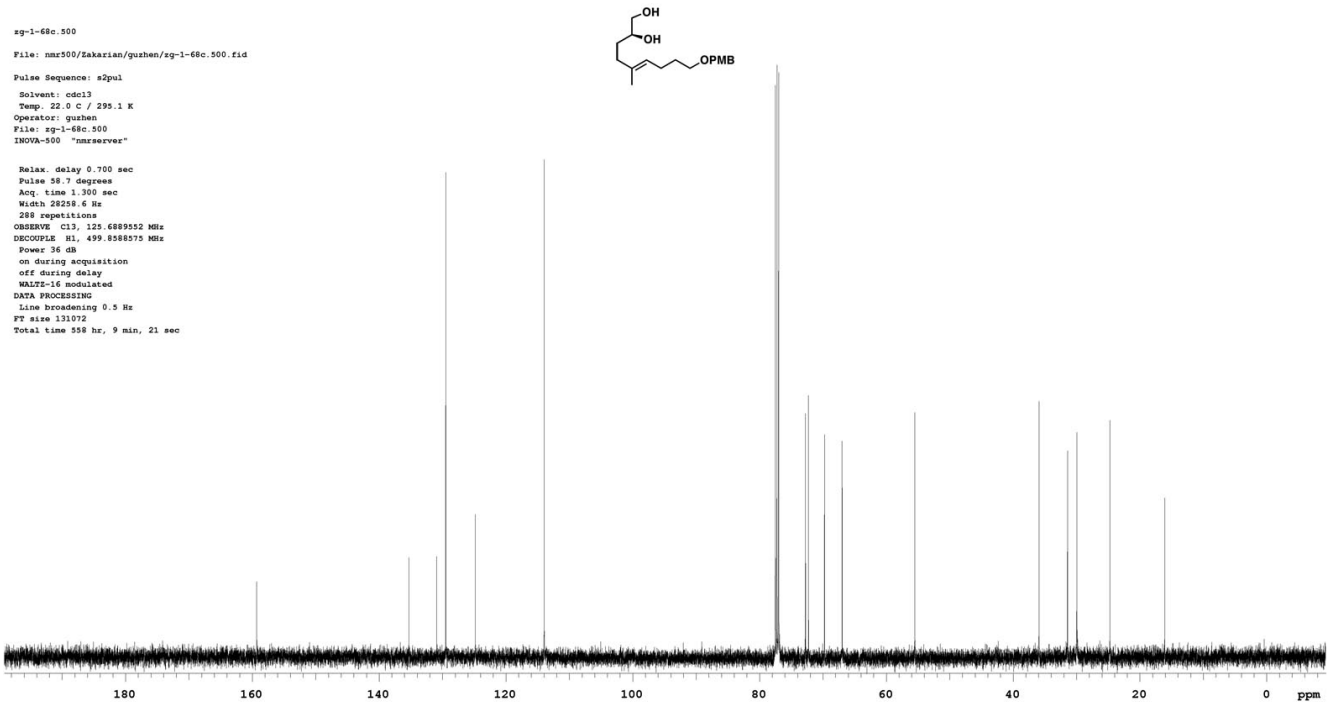

zg-1-194h.idp
File: nmr400/Zakarian/guzhen/zg-1-194h.idp.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Temp. 22.0 C / 295.1 K
Operator: guzhen
File: zg-1-194h.idp
INOVA-500 "nmrserver"
Relax. delay 3.000 sec
Pulse 48.5 degrees
Acq. time 2.000 sec
Width 5132.5 Hz
16 repetitions
OBSERVE H1, 399.9486648 MHz
DATA PROCESSING
Line broadening 0.1 Hz
FT size 65536
Total time 16 min, 43 sec
I
OPMB
2.04
1.80
0.73
2.00
3.00
1.81
2.43
0.19
1.80
0.43
1.80
9
8
7
6
5
4
3
2
1
0
ppm

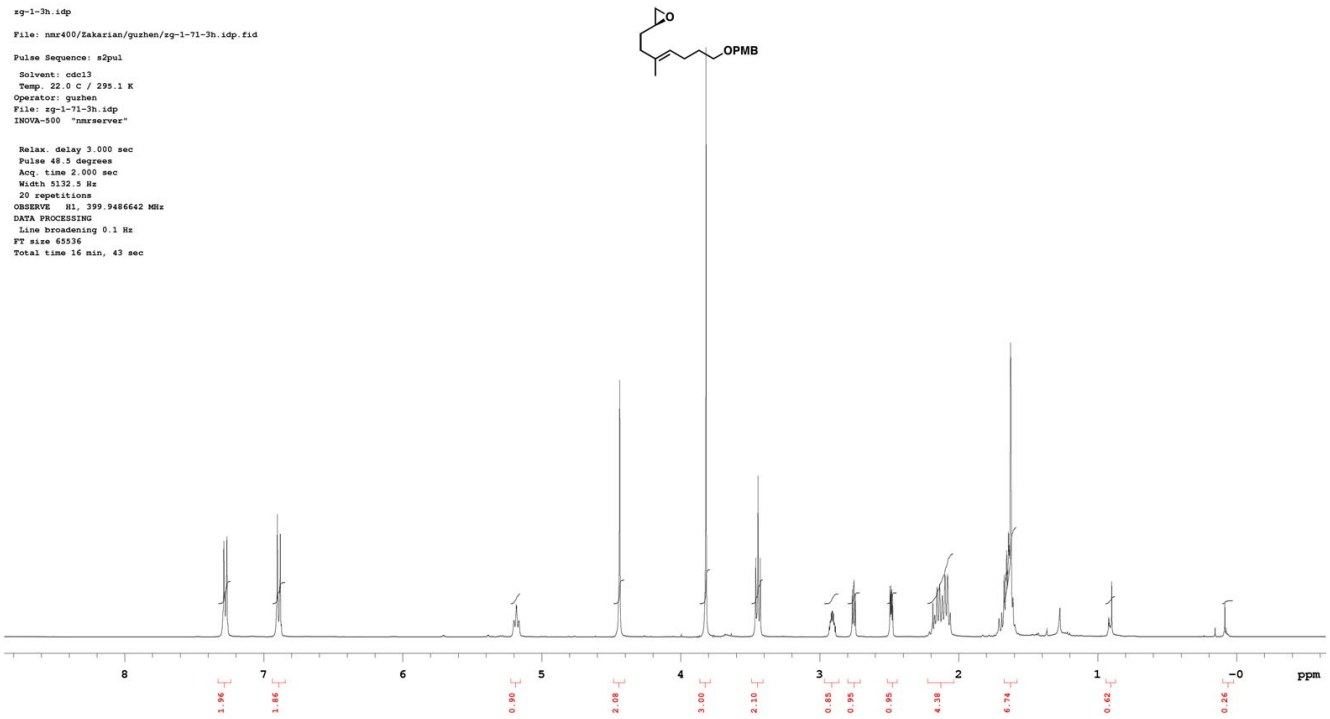

zg-1-194c.qnp
File: nmr400/Zakarian/guzhen/zg-1-194c.qnp.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Ambient temperature
Operator: guzhen
File: zg-1-194c.qnp
INOVA-500 "nmrserver"
Relax. delay 3.000 sec
Pulse 83.1 degrees
Acq. time 0.640 sec
Width 25000.0 Hz
416 repetitions
OBSERVE C13, 100.5671591 MHz
DECOUPLE H1, 399.9495797 MHz
Power 42 dB
on during acquisition
off during delay
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.0 Hz
FT size 65536
Total time 10 hr, 8 min, 10 sec
I
OPMB
180
160
140
120
100
80
60
40
20
0
ppm

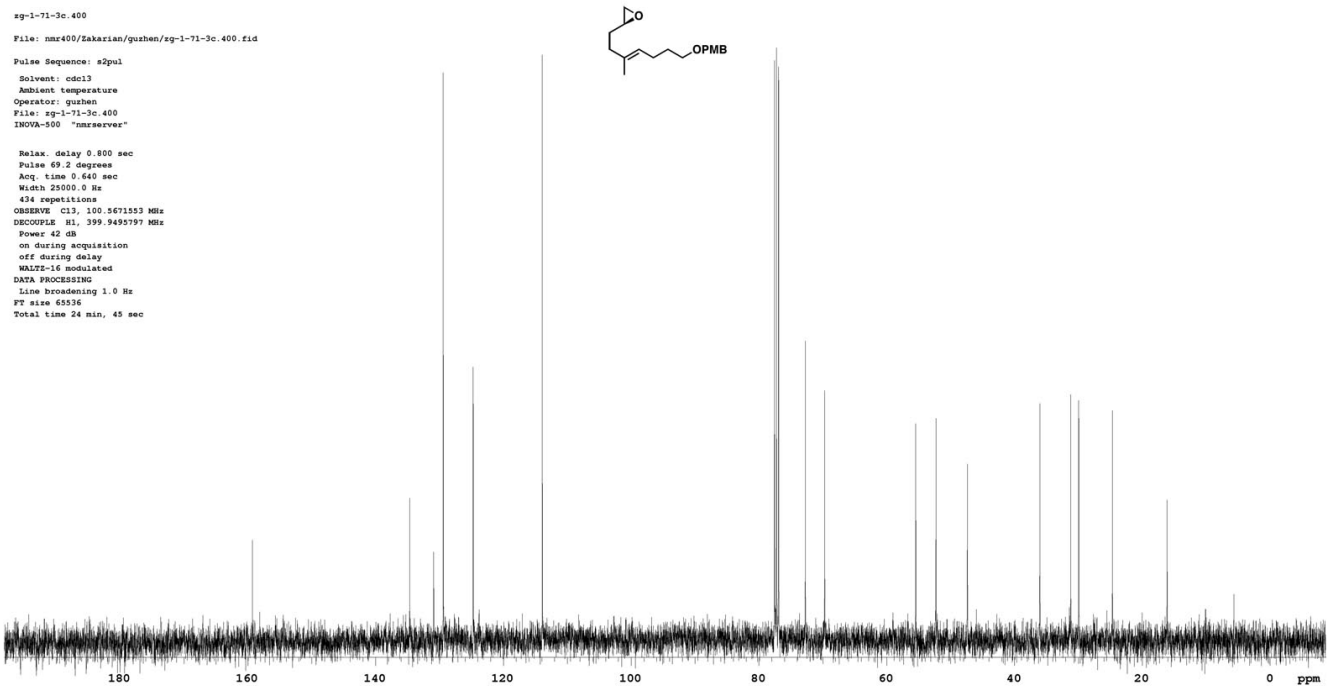

zg-1-70-2-h.idp
File: nmr400/Zakarian/guzhen/zg-1-70-2-h.idp.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Temp. 22.0 C / 295.1 K
Operator: guzhen
File: zg-1-70-2-h.idp
INOVA-500 "nmrserver"
Relax. delay 3.000 sec
Pulse 48.5 degrees
Acq. time 2.000 sec
Width 5132.5 Hz
15 repetitions
OBSERVE H1, 399.9486641 MHz
DATA PROCESSING
Line broadening 0.1 Hz
FT size 65536
Total time 16 min, 43 sec
OPMB
9
8
7
6
5
4
3
2
1
0
ppm
2.01
1.89
0.91
2.06
1.97
3.03
1.00
2.13
3.04
1.09
1.07
2.01
3.47
3.06
3.11

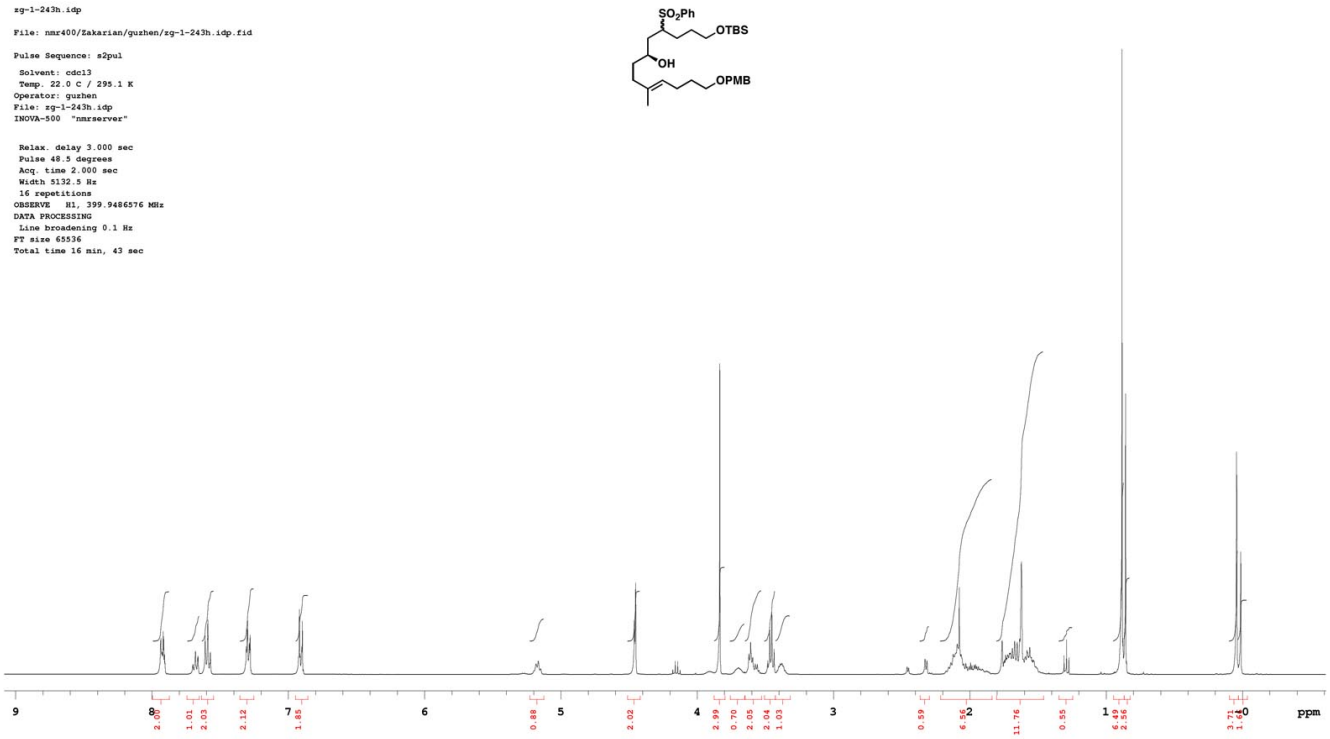

zg-1-70-2c.400
File: nmr400/Zakarian/guzhen/zg-1-70-2c.400.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Ambient temperature
Operator: guzhen
File: zg-1-70-2c.400
INOVA-500 "rabi.chem.ucsb.edu"
Relax. delay 0.800 sec
Pulse 69.2 degrees
Acq. time 0.640 sec
Width 25000.0 Hz
968 repetitions
OBSERVE C13, 100.5671544 MHz
DECOUPLE H1, 399.9495797 MHz
Power 42 dB
on during acquisition
off during delay
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.0 Hz
FT size 65536
Total time 24 min, 45 sec
OPMB
180
160
140
120
100
80
60
40
20
ppm

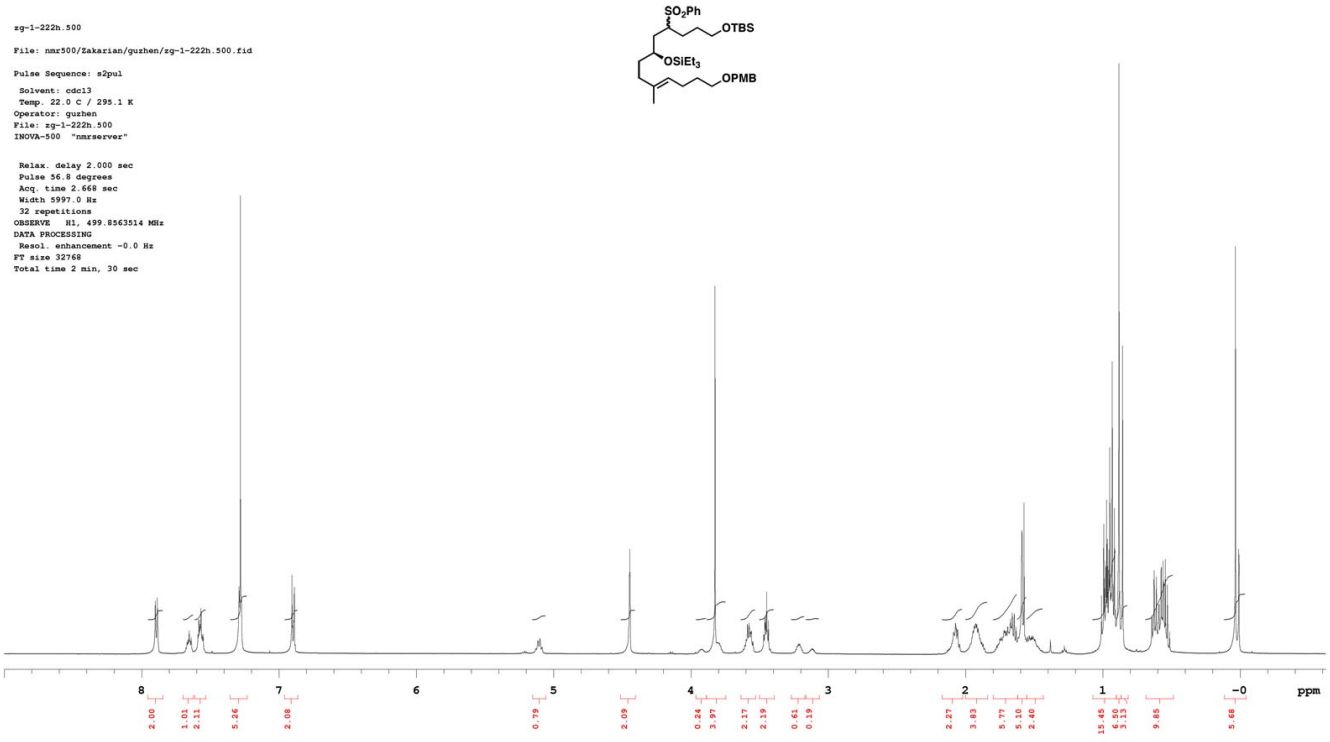

zg-1-68h.idp
File: nmr400/Zakarian/guzhen/zg-1-68h.idp.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Temp. 22.0 C / 295.1 K
Operator: guzhen
File: zg-1-68h.idp
INOVA-500 "nmrserver"
Relax. delay 3.000 sec
Pulse 48.5 degrees
Acq. time 2.000 sec
Width 5132.5 Hz
18 repetitions
OBSERVE H1, 399.9486639 MHz
DATA PROCESSING
Line broadening 0.1 Hz
FT size 65536
Total time 16 min, 43 sec
OH
OH
OPMB
8
7
6
5
4
3
2
1
0
ppm
2.68
1.84
0.94
2.08
3.00
2.06
3.17
5.11
0.87
6.27
2.09

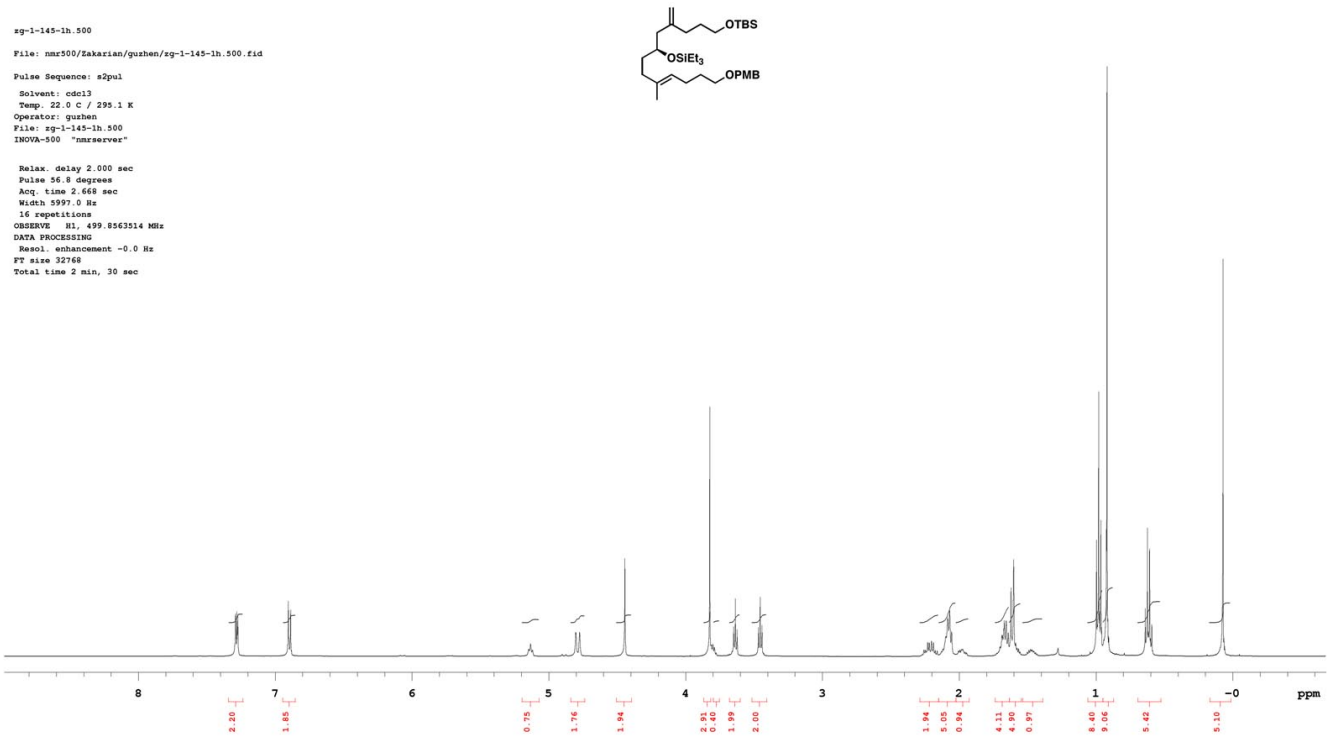

zg-1-68c.500
File: nmr500/Zakarian/guzhen/zg-1-68c.500.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Temp. 22.0 C / 295.1 K
Operator: guzhen
File: zg-1-68c.500
INOVA-500 "nmrserver"
Relax. delay 0.700 sec
Pulse 58.7 degrees
Acq. time 1.300 sec
Width 28258.6 Hz
288 repetitions
OBSERVE C13, 125.6889552 MHz
DECOUPLE H1, 499.8588575 MHz
Power 36 dB
on during acquisition
off during delay
WALTZ-16 modulated
DATA PROCESSING
Line broadening 0.5 Hz
FT size 131072
Total time 558 hr, 9 min, 21 sec
OH
OH
OPMB
180
160
140
120
100
80
60
40
20
0
ppm

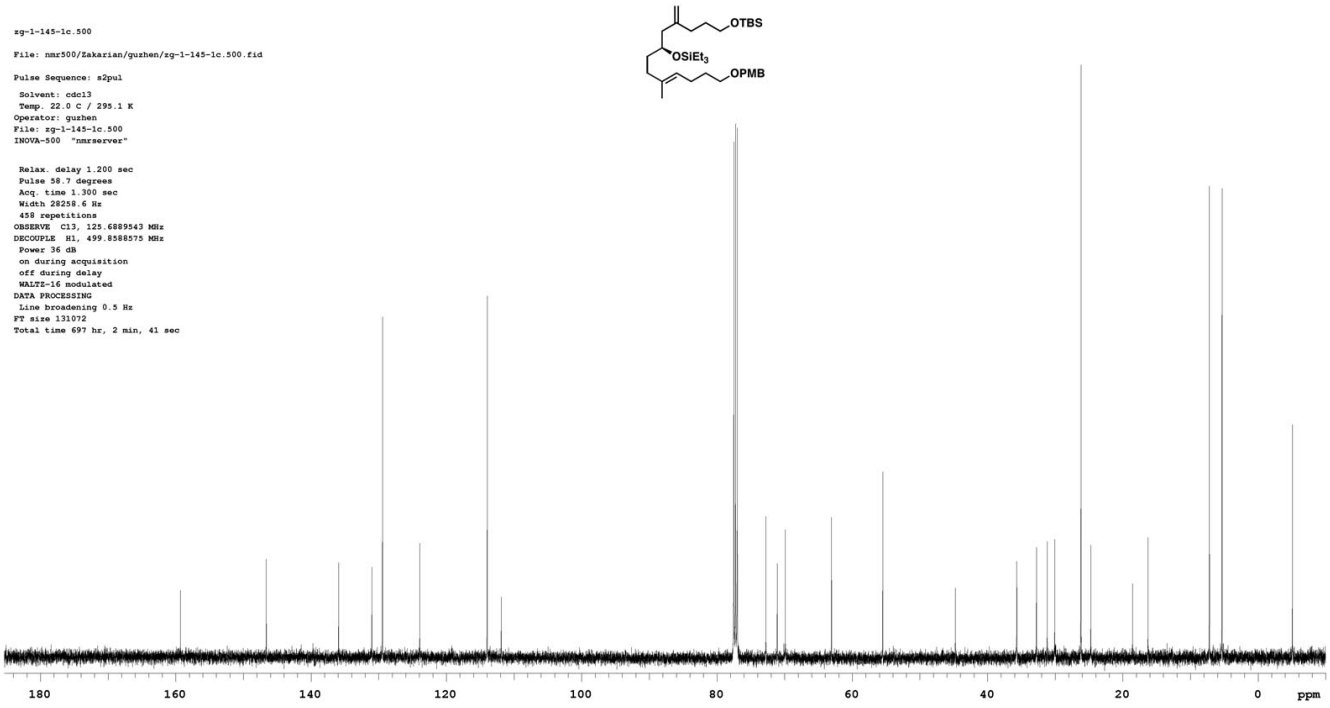

zg-1-3h.idp
File: nmr400/Zakarian/guzhen/zg-1-71-3h.idp.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Temp. 22.0 C / 295.1 K
Operator: guzhen
File: zg-1-71-3h.idp
INOVA-500 "nmrserver"
Relax. delay 3.000 sec
Pulse 48.5 degrees
Acq. time 2.000 sec
Width 5132.5 Hz
20 repetitions
OBSERVE H1, 399.9486642 MHz
DATA PROCESSING
Line broadening 0.1 Hz
FT size 65536
Total time 16 min, 43 sec
O
OPMB
8
7
6
5
4
3
2
1
0
ppm
1.96
1.86
0.90
2.08
3.00
2.10
0.85
0.95
0.95
4.38
6.74
0.62
0.26

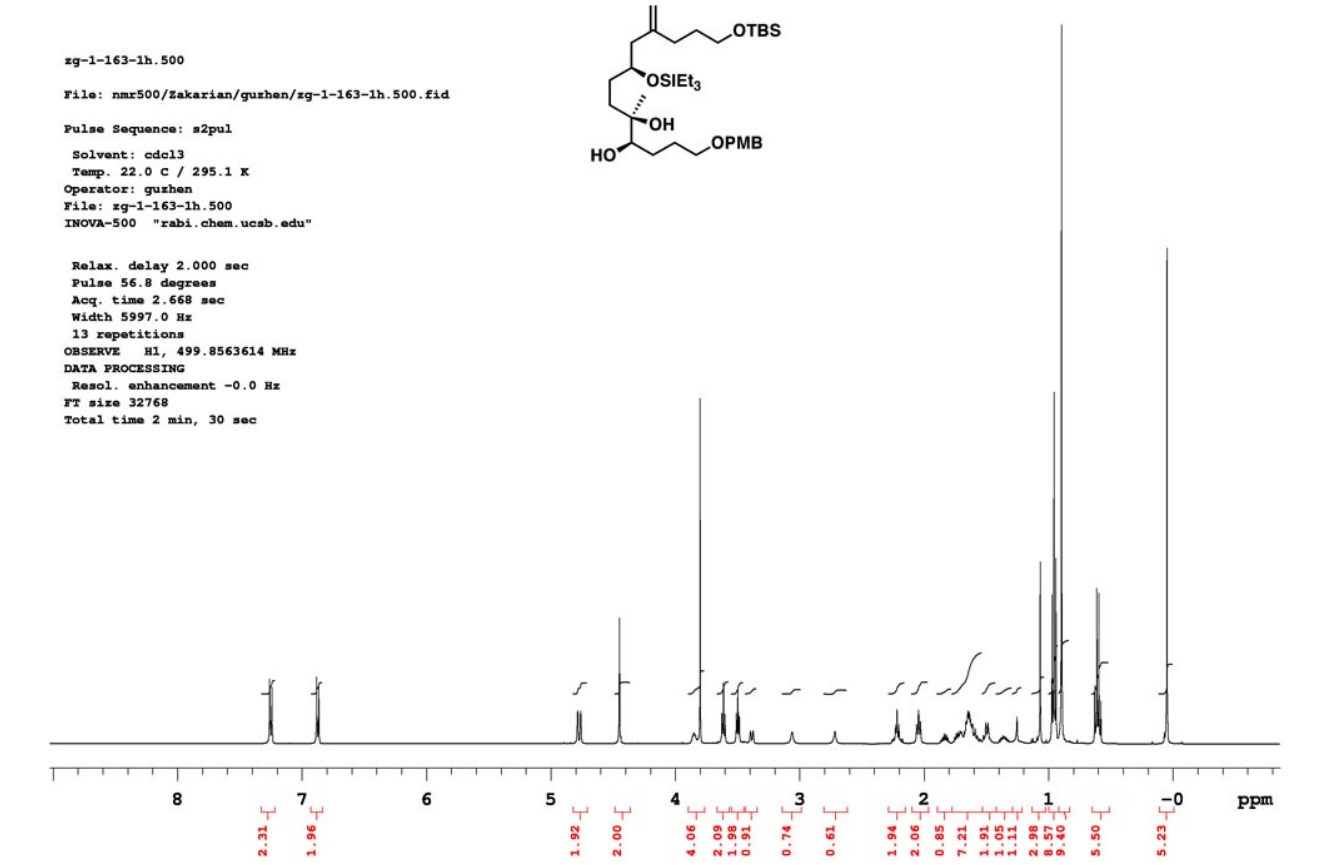

zg-1-71-3c.400
File: nmr400/Zakarian/guzhen/zg-1-71-3c.400.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Ambient temperature
Operator: guzhen
File: zg-1-71-3c.400
INOVA-500 "nmrserver"
Relax. delay 0.800 sec
Pulse 69.2 degrees
Acq. time 0.640 sec
Width 25000.0 Hz
434 repetitions
OBSERVE C13, 100.5671553 MHz
DECOUPLE H1, 399.9495797 MHz
Power 42 dB
on during acquisition
off during delay
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.0 Hz
FT size 65536
Total time 24 min, 45 sec
O
OPMB
180
160
140
120
100
80
60
40
20
0
ppm

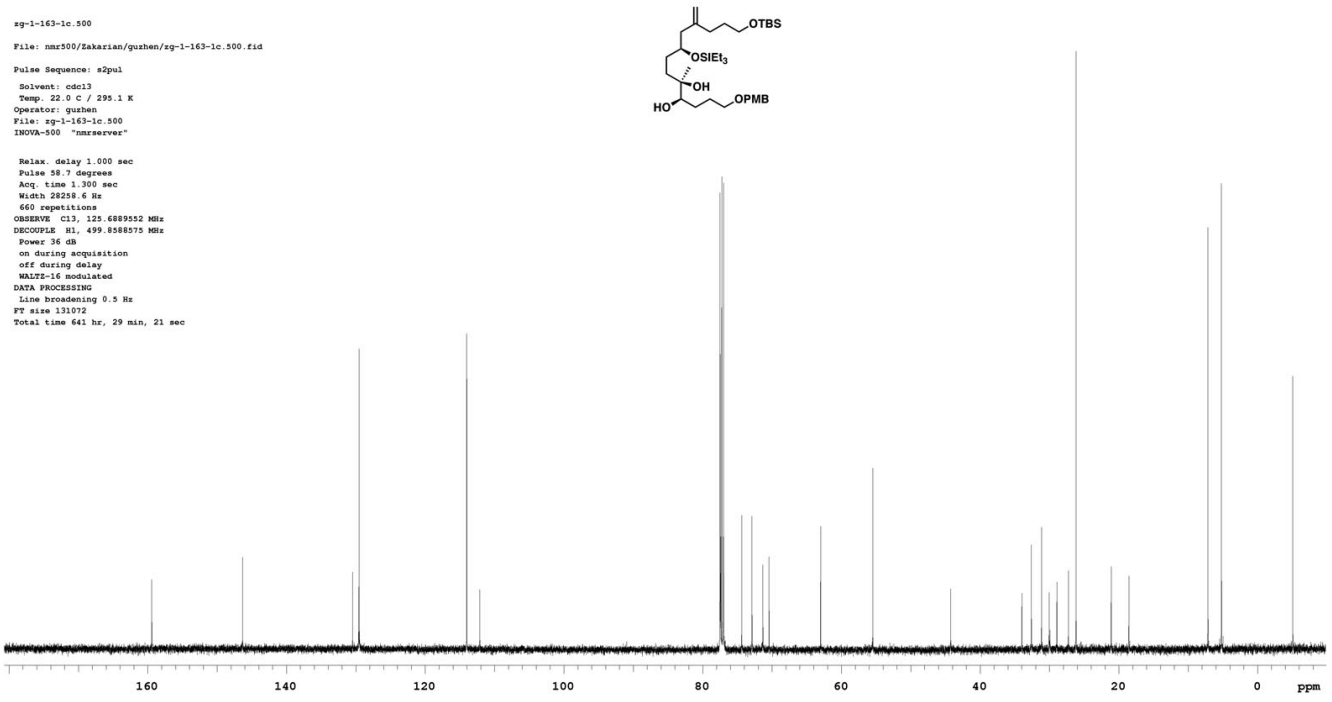

zg-1-243h.idp
File: nmr400/Zakarian/guzhen/zg-1-243h.idp.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Temp. 22.0 C / 295.1 K
Operator: guzhen
File: zg-1-243h.idp
INOVA-500 "nmrserver"
Relax. delay 3.000 sec
Pulse 48.5 degrees
Acq. time 2.000 sec
Width 5132.5 Hz
16 repetitions
OBSERVE H1, 399.9486576 MHz
DATA PROCESSING
Line broadening 0.1 Hz
FT size 65536
Total time 16 min, 43 sec
SO2Ph
OTBS
OH
OPMB
ppm

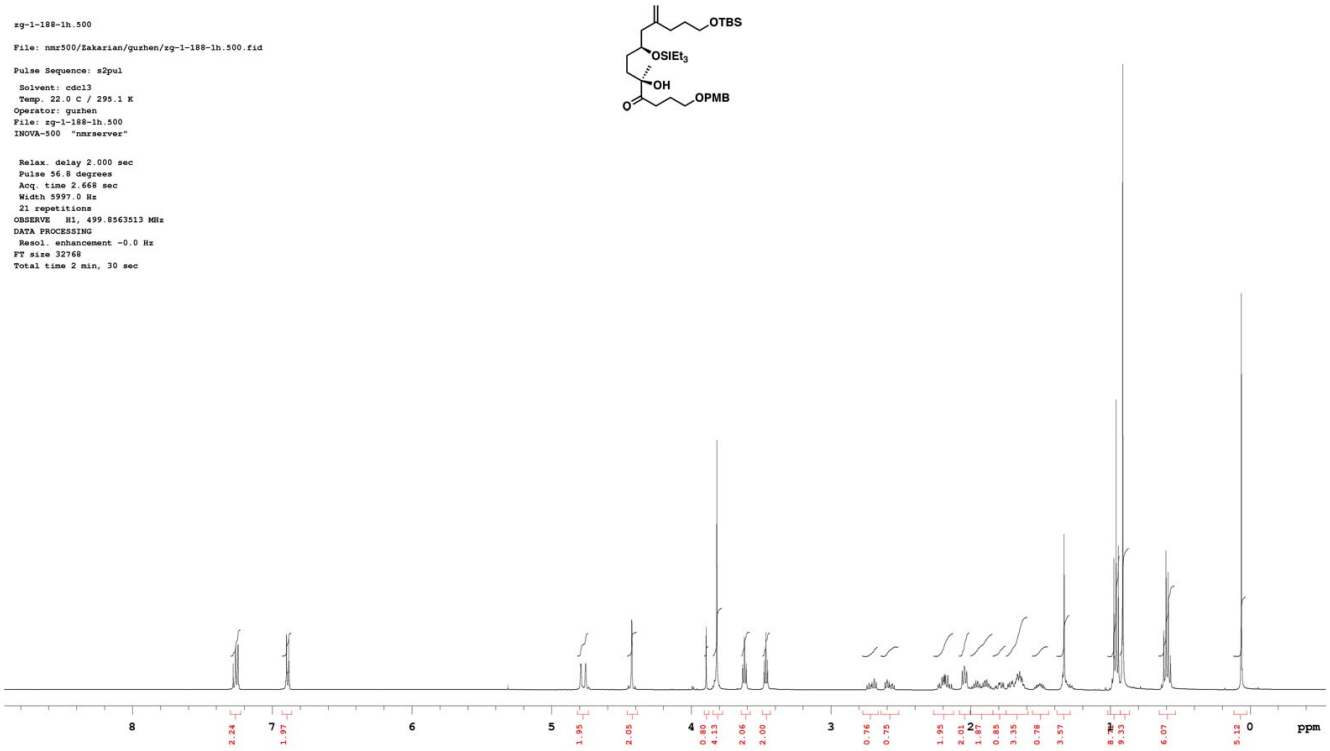

zg-1-222h.500
File: nmr500/Zakarian/guzhen/zg-1-222h.500.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Temp. 22.0 C / 295.1 K
Operator: guzhen
File: zg-1-222h.500
INOVA-500 "nmrserver"
Relax. delay 2.000 sec
Pulse 56.8 degrees
Acq. time 2.668 sec
Width 5997.0 Hz
32 repetitions
OBSERVE H1, 499.8563514 MHz
DATA PROCESSING
Resol. enhancement -0.0 Hz
FT size 32768
Total time 2 min, 30 sec
SO2Ph
OTBS
OSiEt3
OPMB
ppm

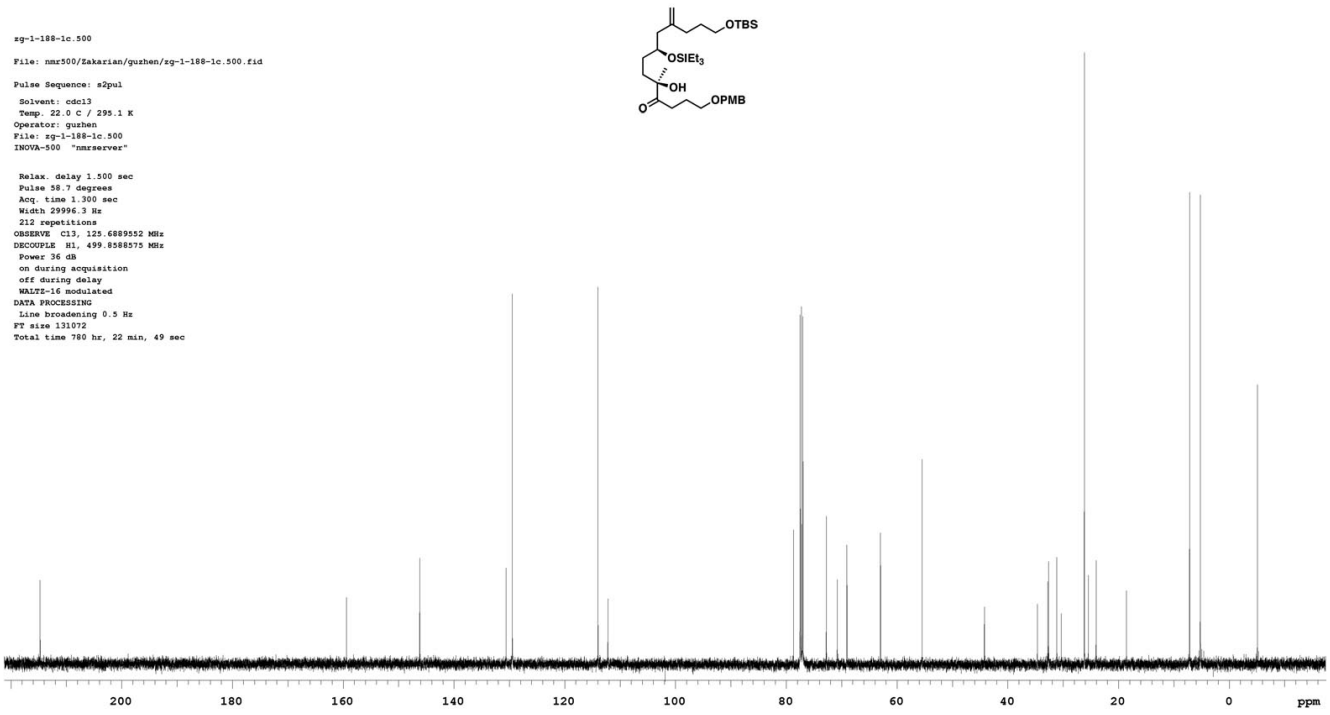

zg-1-145-1h.500
File: nmr500/Zakarian/guzhen/zg-1-145-1h.500.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Temp. 22.0 C / 295.1 K
Operator: guzhen
File: zg-1-145-1h.500
INOVA-500 "nmrserver"
Relax. delay 2.000 sec
Pulse 56.8 degrees
Acq. time 2.668 sec
Width 5997.0 Hz
16 repetitions
OBSERVE H1, 499.8563514 MHz
DATA PROCESSING
Resol. enhancement -0.0 Hz
FT size 32768
Total time 2 min, 30 sec
OTBS
OSiEt3
OPMB
8
7
6
5
4
3
2
1
−0
ppm
2.20
1.85
0.75
1.76
1.94
2.91
0.40
1.99
2.00
1.94
5.05
0.94
4.11
4.90
0.97
8.40
9.06
5.42
5.10

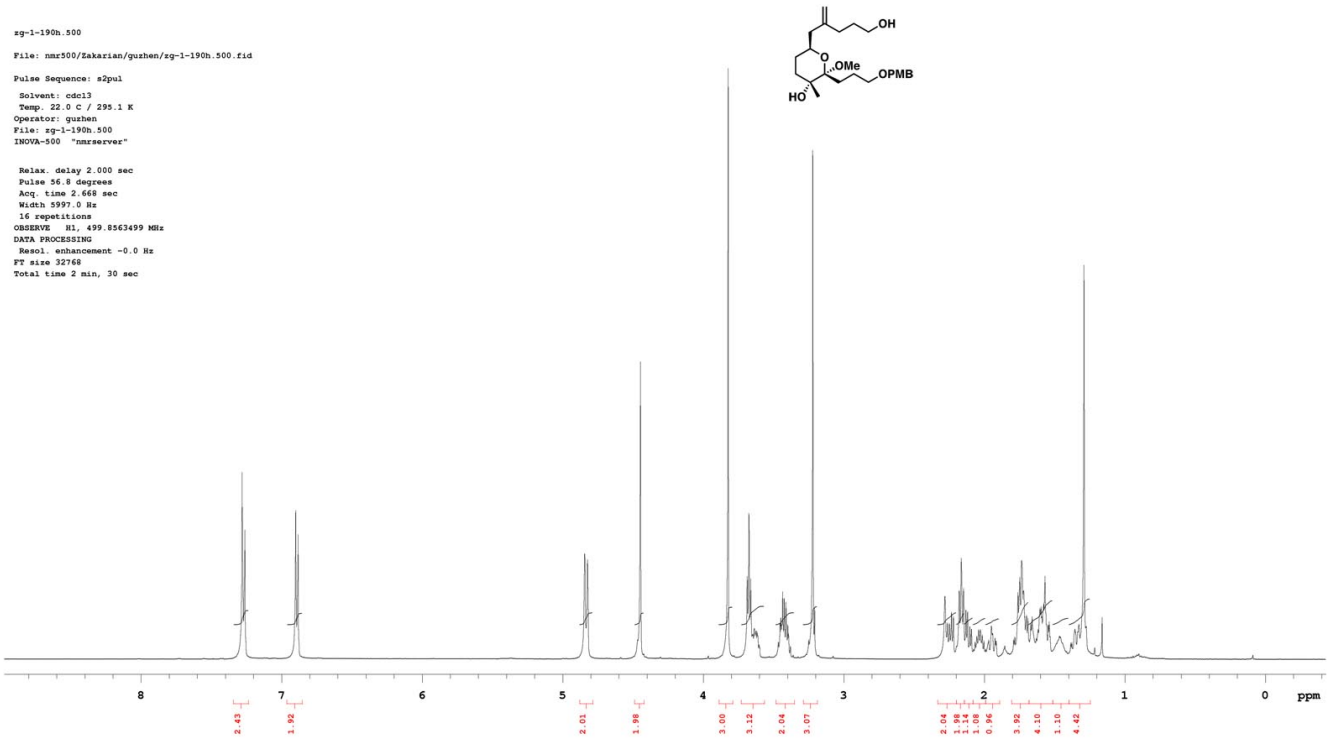

zg-1-145-1c.500
File: nmr500/Zakarian/guzhen/zg-1-145-1c.500.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Temp. 22.0 C / 295.1 K
Operator: guzhen
File: zg-1-145-1c.500
INOVA-500 "nmrserver"
Relax. delay 1.200 sec
Pulse 58.7 degrees
Acq. time 1.300 sec
Width 28258.6 Hz
458 repetitions
OBSERVE C13, 125.6889543 MHz
DECOUPLE H1, 499.8588575 MHz
Power 36 dB
on during acquisition
off during delay
WALTZ-16 modulated
DATA PROCESSING
Line broadening 0.5 Hz
FT size 131072
Total time 697 hr, 2 min, 41 sec
OTBS
OSiEt3
OPMB
180
160
140
120
100
80
60
40
20
0
ppm

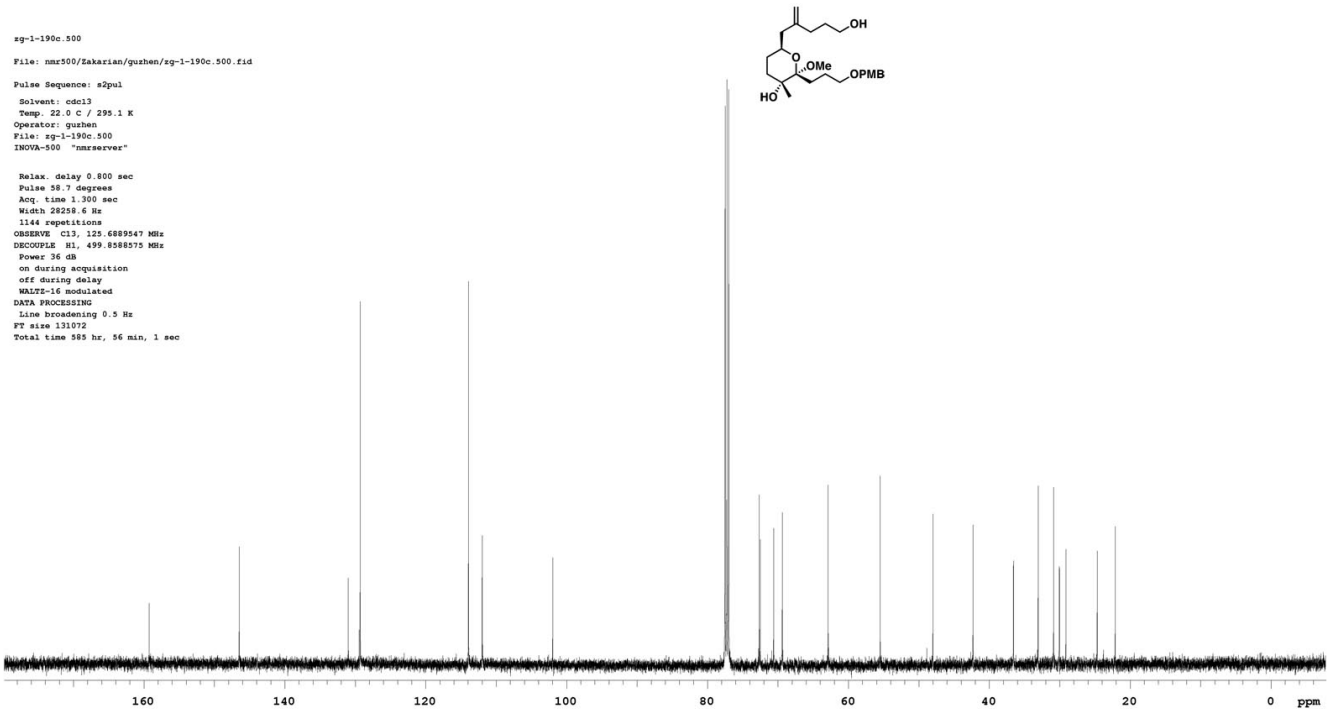

zg-1-163-1h.500
File: nmr500/Zakarian/guzhen/zg-1-163-1h.500.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Temp. 22.0 C / 295.1 K
Operator: guzhen
File: zg-1-163-1h.500
INOVA-500 "rabi.chem.ucsb.edu"
Relax. delay 2.000 sec
Pulse 56.8 degrees
Acq. time 2.668 sec
Width 5997.0 Hz
13 repetitions
OBSERVE H1, 499.8563614 MHz
DATA PROCESSING
Resol. enhancement -0.0 Hz
FT size 32768
Total time 2 min, 30 sec
OTBS
OSIEt3
OH
HO
OPMB
8
7
6
5
4
3
2
1
-0
ppm
2.31
1.96
1.92
2.00
4.06
2.09
1.98
0.91
0.74
0.61
1.94
2.06
0.85
7.21
1.91
1.05
1.11
2.98
8.57
9.40
5.50
5.23

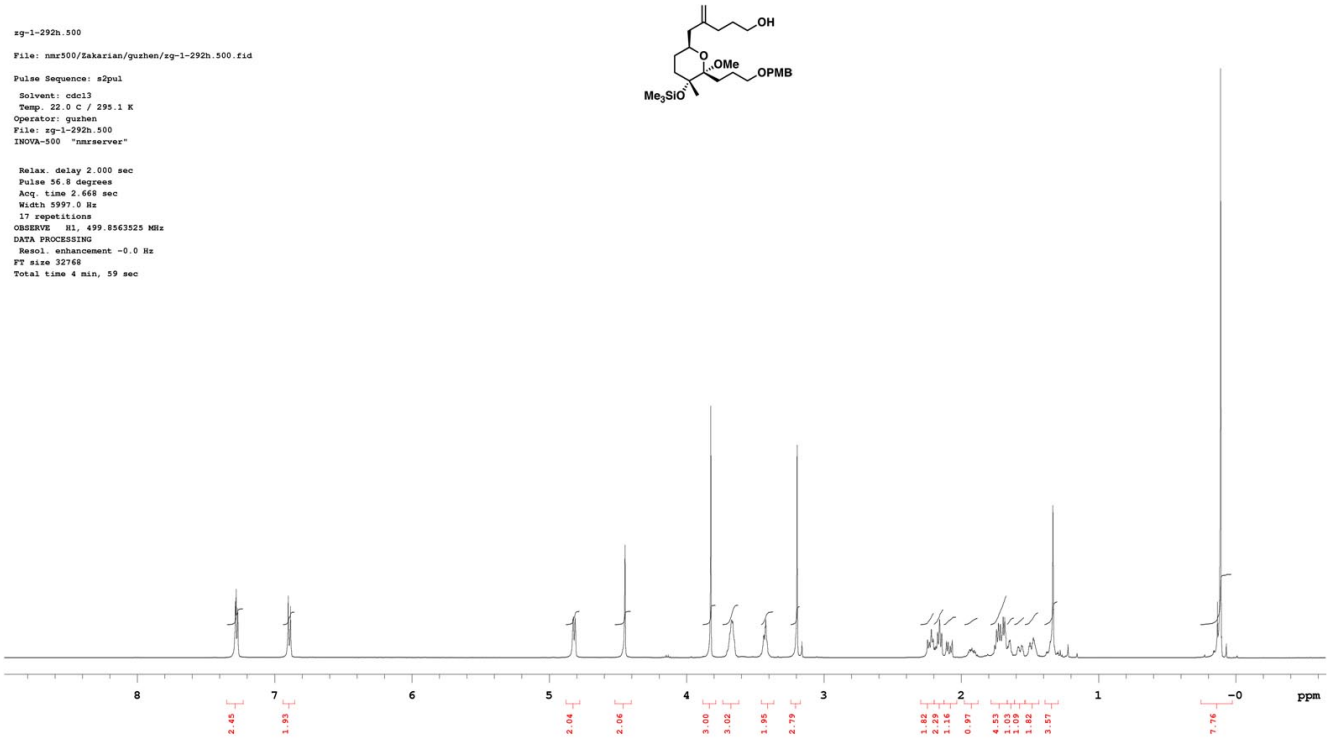

zg-1-163-1c.500
File: nmr500/Zakarian/guzhen/zg-1-163-1c.500.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Temp. 22.0 C / 295.1 K
Operator: guzhen
File: zg-1-163-1c.500
INOVA-500 "nmrserver"
Relax. delay 1.000 sec
Pulse 58.7 degrees
Acq. time 1.300 sec
Width 28258.6 Hz
660 repetitions
OBSERVE C13, 125.6889552 MHz
DECOUPLE H1, 499.8588575 MHz
Power 36 dB
on during acquisition
off during delay
WALTZ-16 modulated
DATA PROCESSING
Line broadening 0.5 Hz
FT size 131072
Total time 641 hr, 29 min, 21 sec
OTBS
OSIEt3
OH
HO
OPMB
160
140
120
100
80
60
40
20
0
ppm

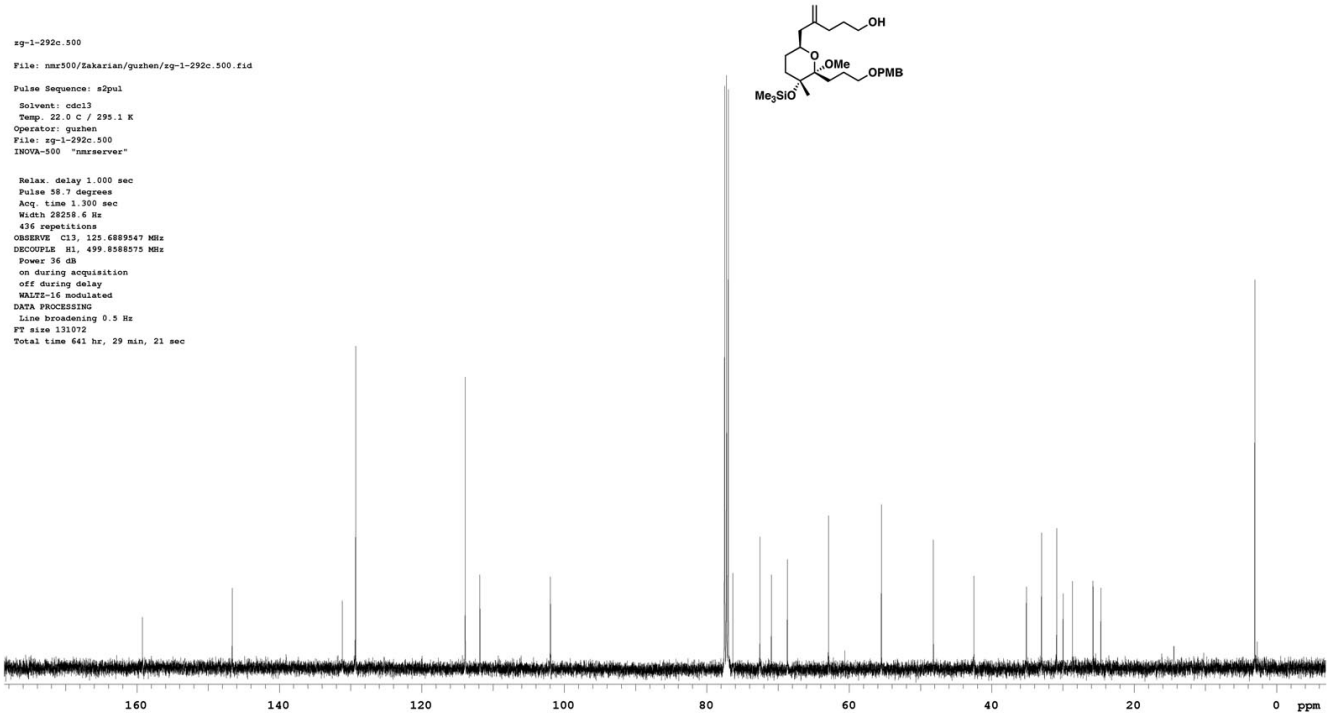

zg-1-188-1h.500
File: nmr500/Zakarian/guzhen/zg-1-188-1h.500.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Temp. 22.0 C / 295.1 K
Operator: guzhen
File: zg-1-188-1h.500
INOVA-500 "nmrserver"
Relax. delay 2.000 sec
Pulse 56.8 degrees
Acq. time 2.668 sec
Width 5997.0 Hz
21 repetitions
OBSERVE H1, 499.8563513 MHz
DATA PROCESSING
Resol. enhancement -0.0 Hz
FT size 32768
Total time 2 min, 30 sec
OTBS
OSiEt3
OH
OPMB
O
8
7
6
5
4
3
2
1
0
ppm
2.24
1.97
1.95
2.05
0.80
4.13
2.06
2.00
0.76
0.75
1.95
2.01
1.87
0.85
3.35
0.78
3.57
9.33
6.07
5.12

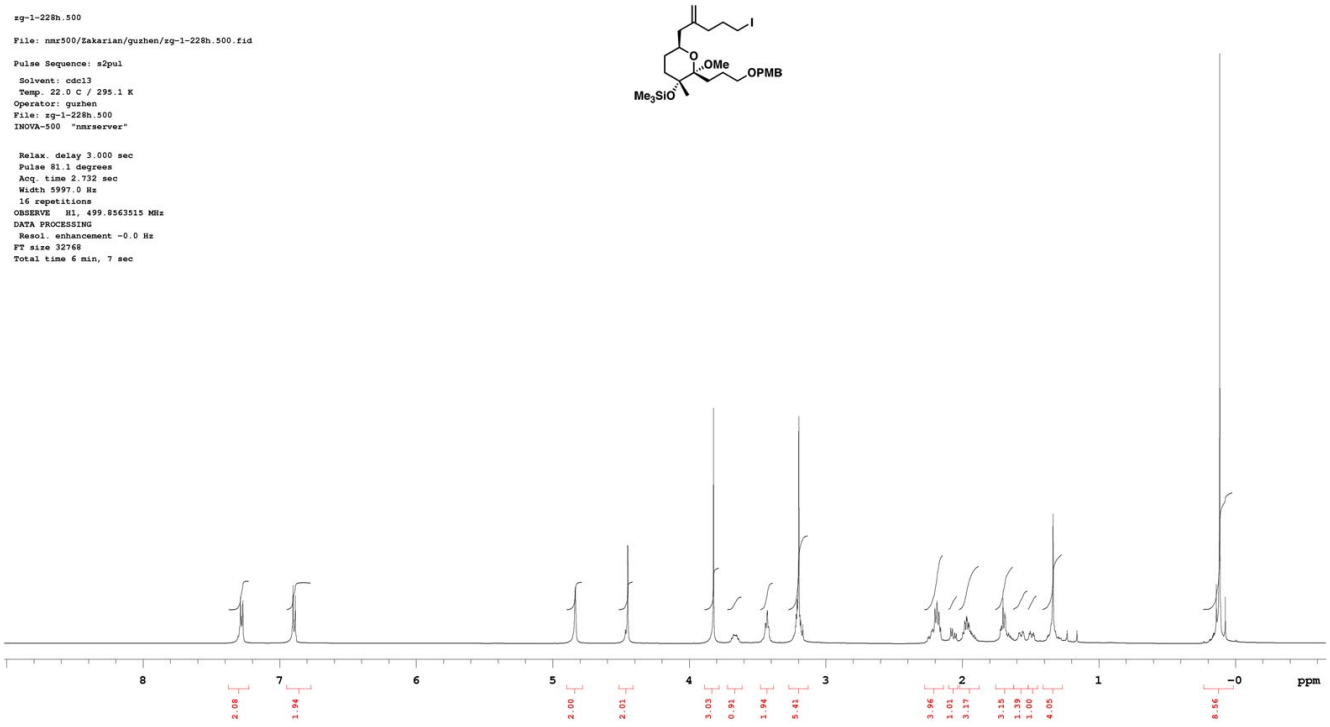

zg-1-188-1c.500
File: nmr500/Zakarian/guzhen/zg-1-188-1c.500.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Temp. 22.0 C / 295.1 K
Operator: guzhen
File: zg-1-188-1c.500
INOVA-500 "nmrserver"
Relax. delay 1.500 sec
Pulse 58.7 degrees
Acq. time 1.300 sec
Width 29996.3 Hz
212 repetitions
OBSERVE C13, 125.6889552 MHz
DECOUPLE H1, 499.8588575 MHz
Power 36 dB
on during acquisition
off during delay
WALTZ-16 modulated
DATA PROCESSING
Line broadening 0.5 Hz
FT size 131072
Total time 780 hr, 22 min, 49 sec
OTBS
OSiEt3
OH
OPMB
O
200
180
160
140
120
100
80
60
40
20
0
ppm

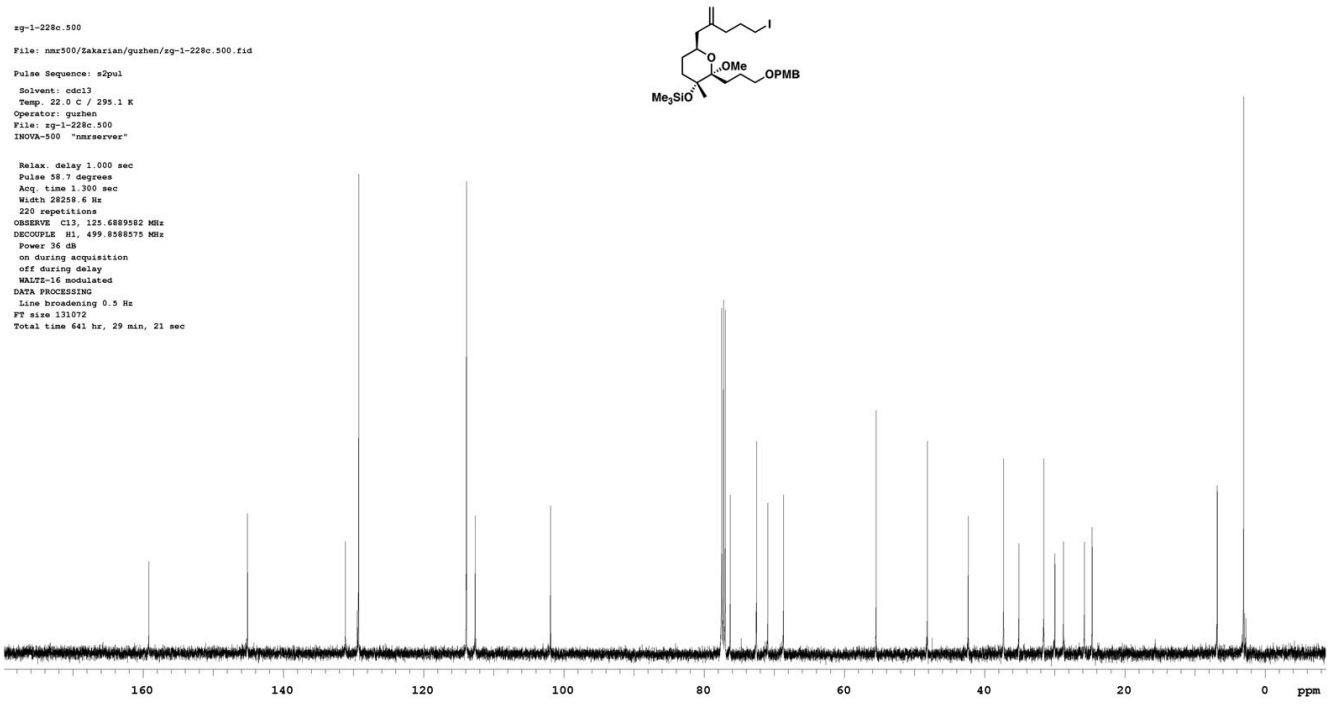

zg-1-190h.500
File: nmr500/Zakarian/guzhen/zg-1-190h.500.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Temp. 22.0 C / 295.1 K
Operator: guzhen
File: zg-1-190h.500
INOVA-500 "nmrserver"
Relax. delay 2.000 sec
Pulse 56.8 degrees
Acq. time 2.668 sec
Width 5997.0 Hz
16 repetitions
OBSERVE H1, 499.8563499 MHz
DATA PROCESSING
Resol. enhancement -0.0 Hz
FT size 32768
Total time 2 min, 30 sec
OH
OMe
OPMB
HO
8
7
6
5
4
3
2
1
0
ppm
2.43
1.92
2.01
1.98
3.00
3.12
2.04
3.07
2.04
1.84
1.14
1.08
0.96
3.92
4.10
1.10
4.42

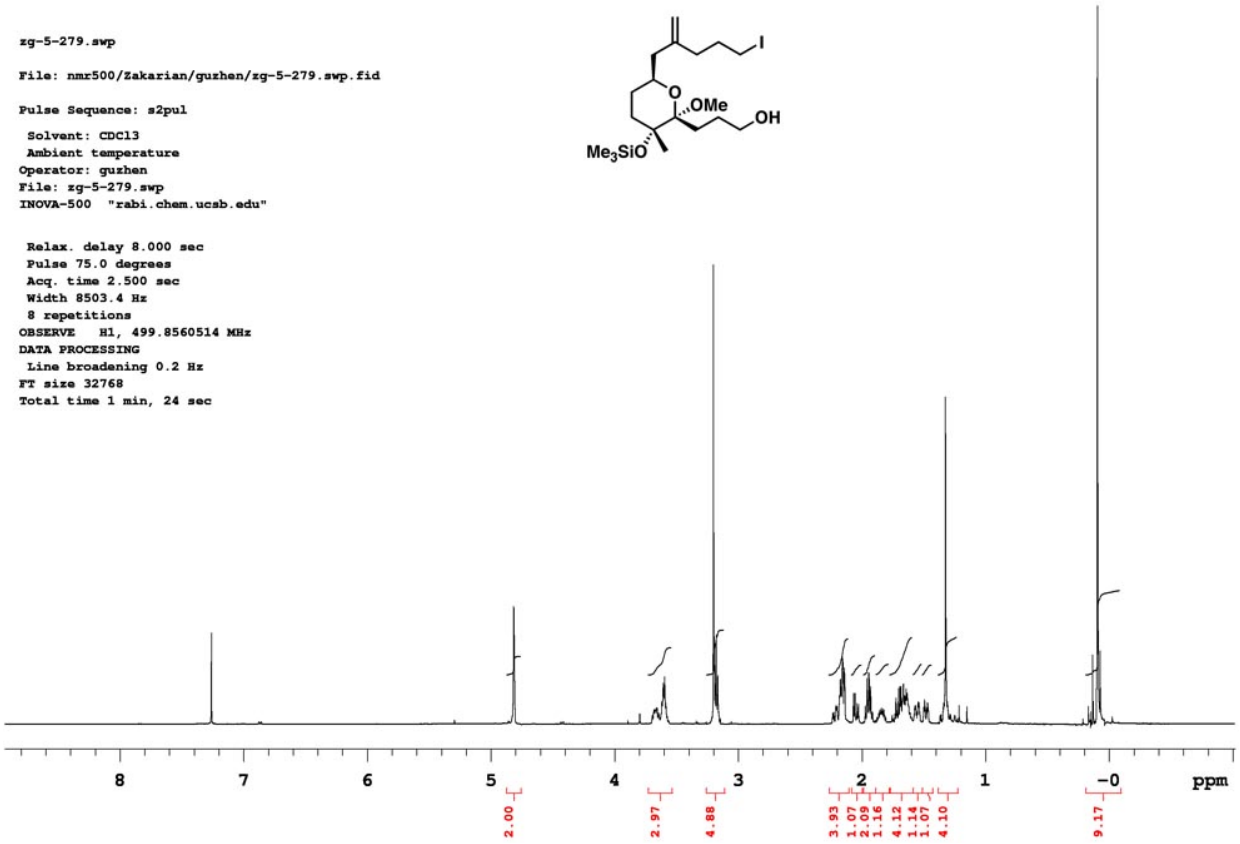

zg-1-190c.500
File: nmr500/Zakarian/guzhen/zg-1-190c.500.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Temp. 22.0 C / 295.1 K
Operator: guzhen
File: zg-1-190c.500
INOVA-500 "nmrserver"
Relax. delay 0.800 sec
Pulse 58.7 degrees
Acq. time 1.300 sec
Width 28258.6 Hz
1144 repetitions
OBSERVE C13, 125.6889547 MHz
DECOUPLE H1, 499.8588575 MHz
Power 36 dB
on during acquisition
off during delay
WALTZ-16 modulated
DATA PROCESSING
Line broadening 0.5 Hz
FT size 131072
Total time 585 hr, 56 min, 1 sec
OH
OMe
OPMB
HO
160
140
120
100
80
60
40
20
0
ppm

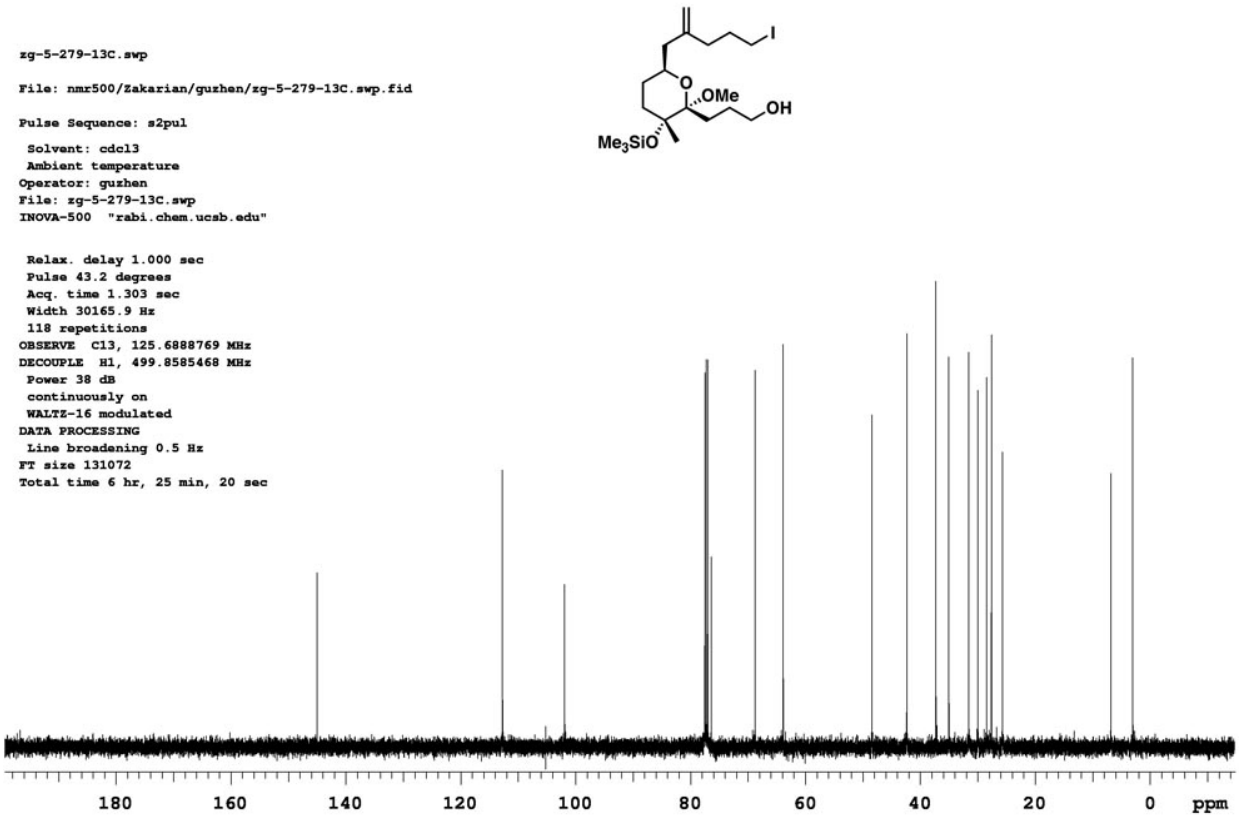

zg-1-292h.500
File: nmr500/Zakarian/guzhen/zg-1-292h.500.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Temp. 22.0 C / 295.1 K
Operator: guzhen
File: zg-1-292h.500
INOVA-500 "nmrserver"
Relax. delay 2.000 sec
Pulse 56.8 degrees
Acq. time 2.668 sec
Width 5997.0 Hz
17 repetitions
OBSERVE H1, 499.8563525 MHz
DATA PROCESSING
Resol. enhancement -0.0 Hz
FT size 32768
Total time 4 min, 59 sec
OH
OMe
OPMB
Me3SiO
8
7
6
5
4
3
2
1
0
ppm
2.45
1.93
2.04
2.06
3.00
3.02
1.95
2.79
1.82
2.29
1.16
0.97
4.53
1.03
1.09
1.82
3.57
7.76

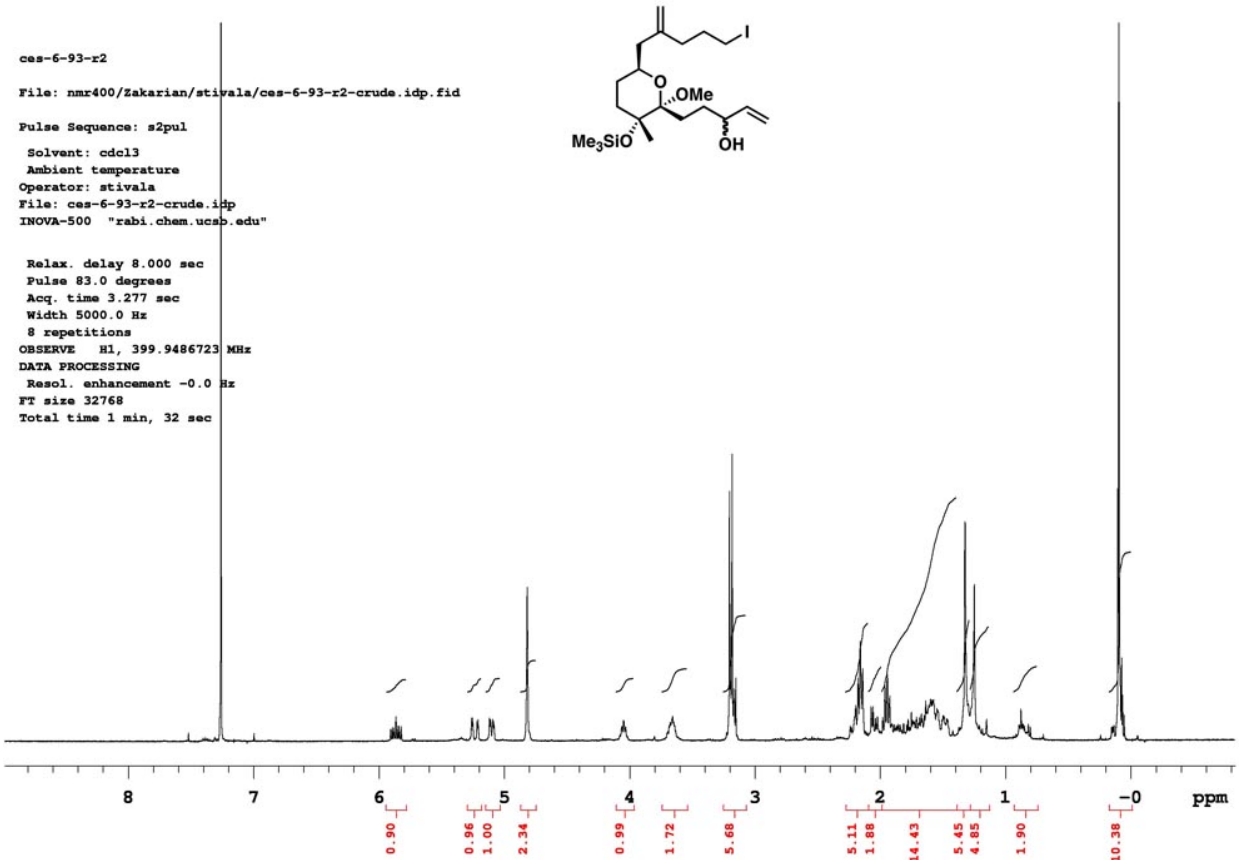

zg-1-292c.500
File: nmr500/Zakarian/guzhen/zg-1-292c.500.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Temp. 22.0 C / 295.1 K
Operator: guzhen
File: zg-1-292c.500
INOVA-500 "nmrserver"
Relax. delay 1.000 sec
Pulse 58.7 degrees
Acq. time 1.300 sec
Width 28258.6 Hz
436 repetitions
OBSERVE C13, 125.6889547 MHz
DECOUPLE H1, 499.8588575 MHz
Power 36 dB
on during acquisition
off during delay
WALTZ-16 modulated
DATA PROCESSING
Line broadening 0.5 Hz
FT size 131072
Total time 641 hr, 29 min, 21 sec
OH
OMe
OPMB
Me3SiO
160
140
120
100
80
60
40
20
0
ppm

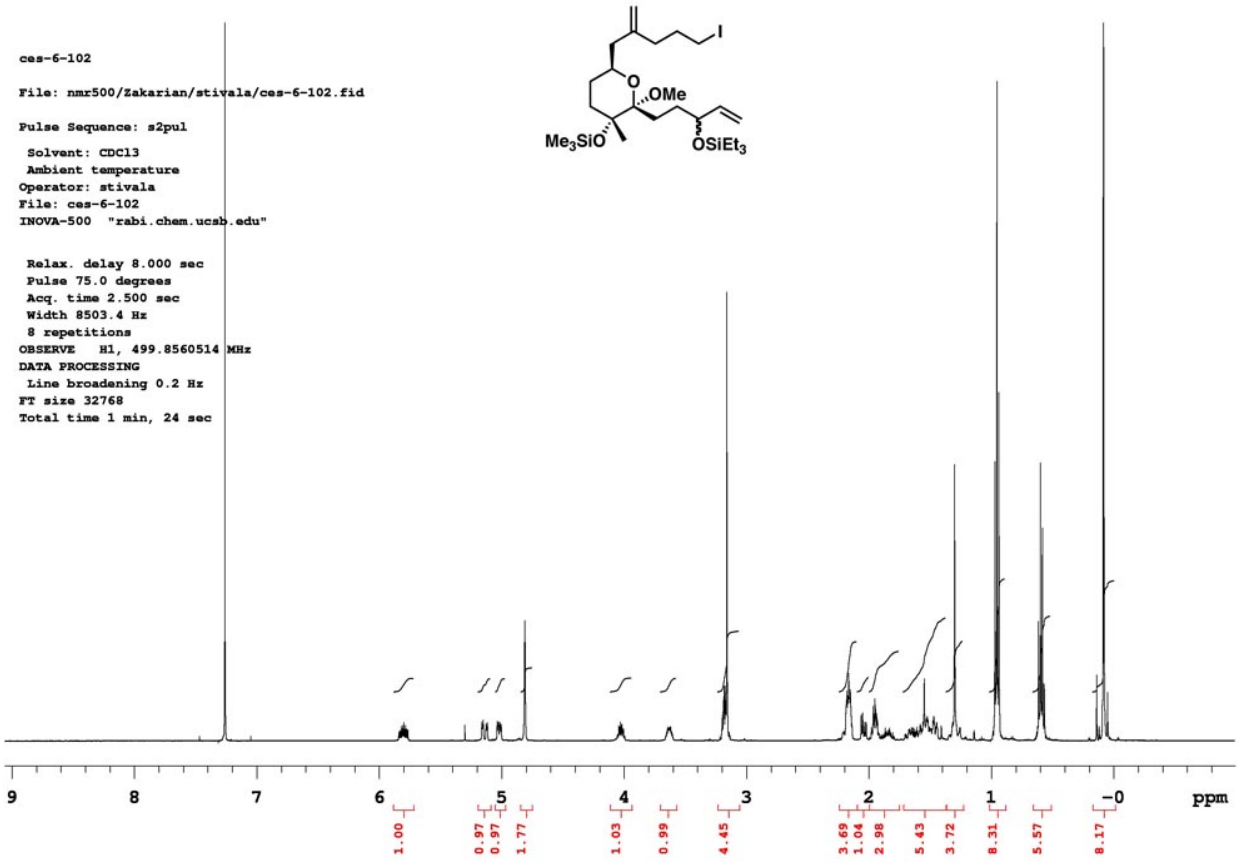

zg-1-228h.500
File: nmr500/Zakarian/guzhen/zg-1-228h.500.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Temp. 22.0 C / 295.1 K
Operator: guzhen
File: zg-1-228h.500
INOVA-500 "nmrserver"
Relax. delay 3.000 sec
Pulse 81.1 degrees
Acq. time 2.732 sec
Width 5997.0 Hz
16 repetitions
OBSERVE H1, 499.8563515 MHz
DATA PROCESSING
Resol. enhancement -0.0 Hz
FT size 32768
Total time 6 min, 7 sec
I
O
OMe
OPMB
Me3SiO
8
7
6
5
4
3
2
1
−0
ppm
2.08
1.94
2.00
2.01
3.03
0.91
1.94
5.41
3.96
1.01
3.17
3.15
1.39
1.00
4.05
8.56

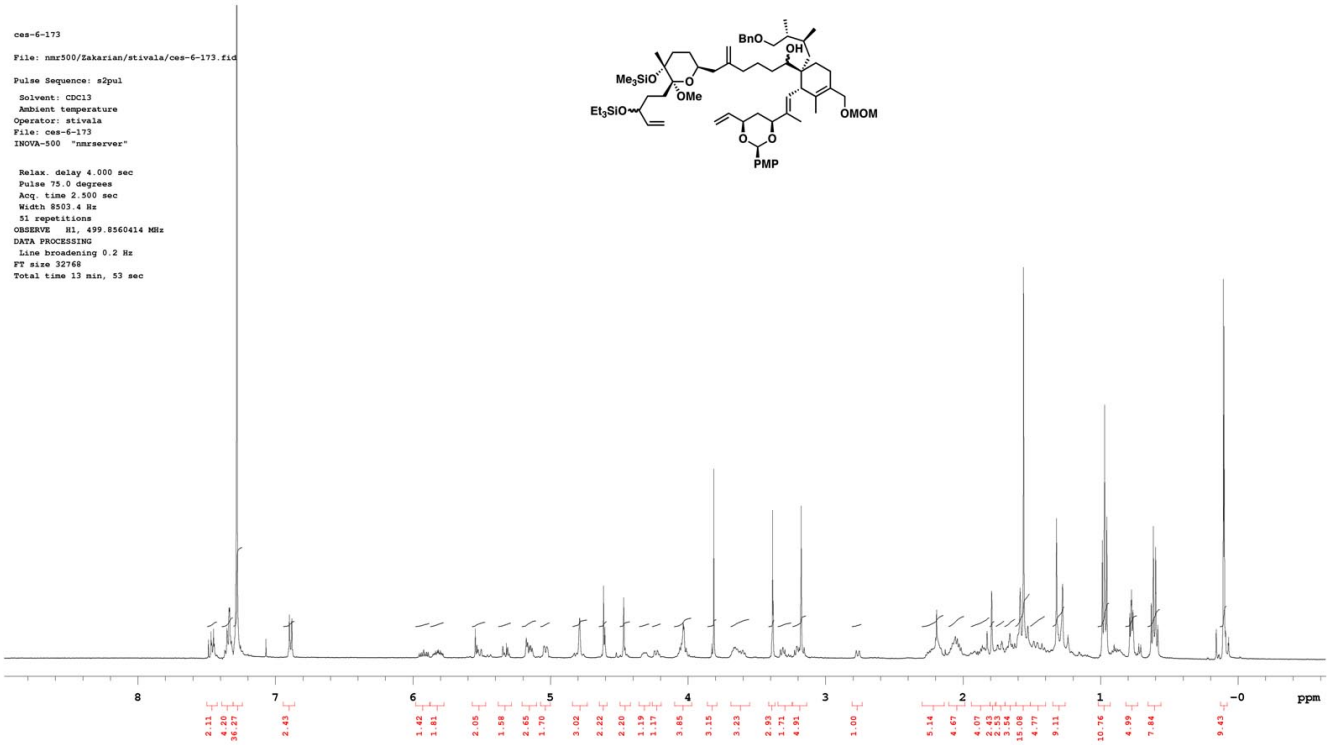

zg-1-228c.500
File: nmr500/Zakarian/guzhen/zg-1-228c.500.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Temp. 22.0 C / 295.1 K
Operator: guzhen
File: zg-1-228c.500
INOVA-500 "nmrserver"
Relax. delay 1.000 sec
Pulse 58.7 degrees
Acq. time 1.300 sec
Width 28258.6 Hz
220 repetitions
OBSERVE C13, 125.6889582 MHz
DECOUPLE H1, 499.8588575 MHz
Power 36 dB
on during acquisition
off during delay
WALTZ-16 modulated
DATA PROCESSING
Line broadening 0.5 Hz
FT size 131072
Total time 641 hr, 29 min, 21 sec
I
O
OMe
OPMB
Me3SiO
160
140
120
100
80
60
40
20
0
ppm

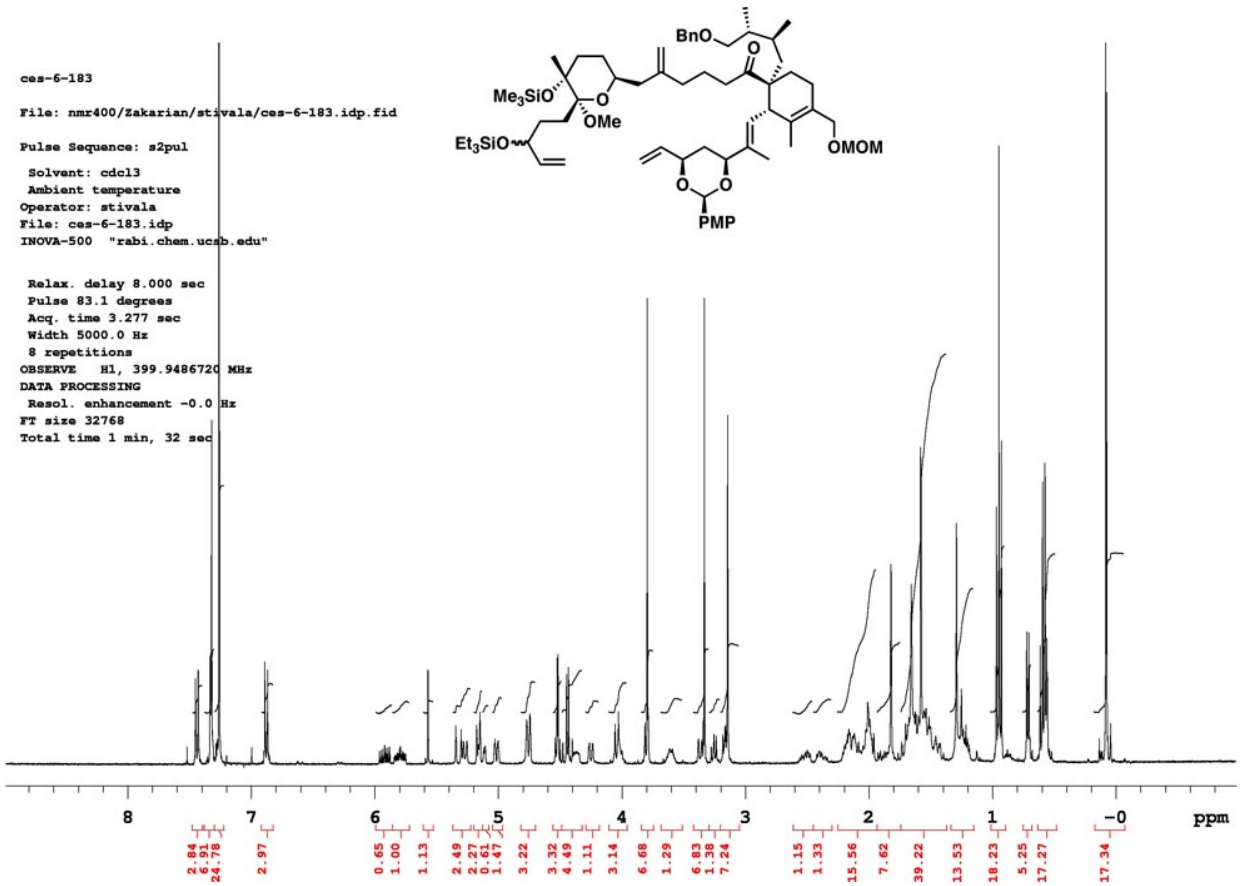

zg-5-279.swp
File: nmr500/Zakarian/guzhen/zg-5-279.swp.fid
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
Operator: guzhen
File: zg-5-279.swp
INOVA-500 "rabi.chem.ucsb.edu"
Relax. delay 8.000 sec
Pulse 75.0 degrees
Acq. time 2.500 sec
Width 8503.4 Hz
8 repetitions
OBSERVE H1, 499.8560514 MHz
DATA PROCESSING
Line broadening 0.2 Hz
FT size 32768
Total time 1 min, 24 sec
I
O
OMe
OH
Me3SiO
8
7
6
5
4
3
2
1
−0
ppm
2.00
2.97
4.88
3.93
1.07
2.09
1.16
4.12
1.14
1.07
4.10
9.17

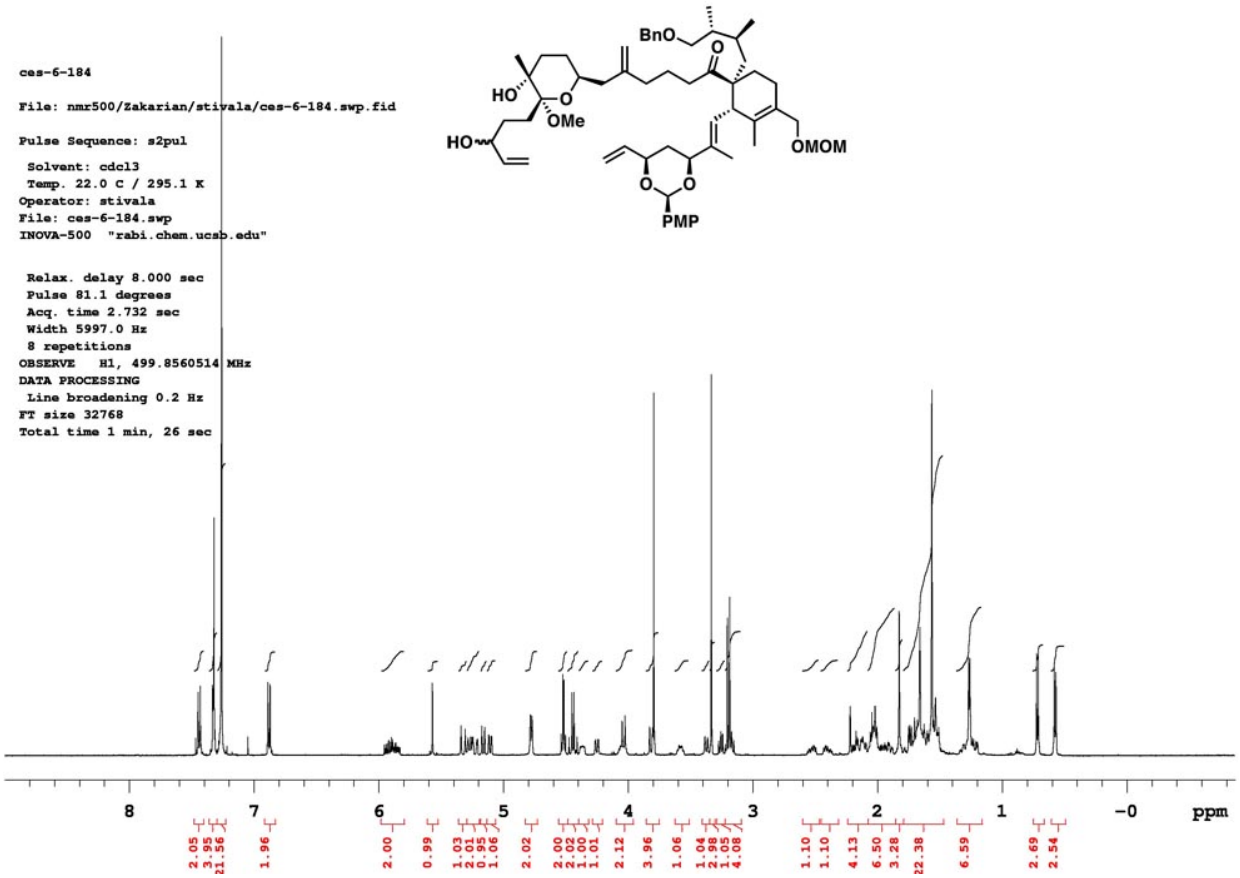

zg-5-279-13C.swp
File: nmr500/Zakarian/guzhen/zg-5-279-13C.swp.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Ambient temperature
Operator: guzhen
File: zg-5-279-13C.swp
INOVA-500 "rabi.chem.ucsb.edu"
Relax. delay 1.000 sec
Pulse 43.2 degrees
Acq. time 1.303 sec
Width 30165.9 Hz
118 repetitions
OBSERVE C13, 125.6888769 MHz
DECOUPLE H1, 499.8585468 MHz
Power 38 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 0.5 Hz
FT size 131072
Total time 6 hr, 25 min, 20 sec
I
O
OMe
OH
Me3SiO
180
160
140
120
100
80
60
40
20
0
ppm

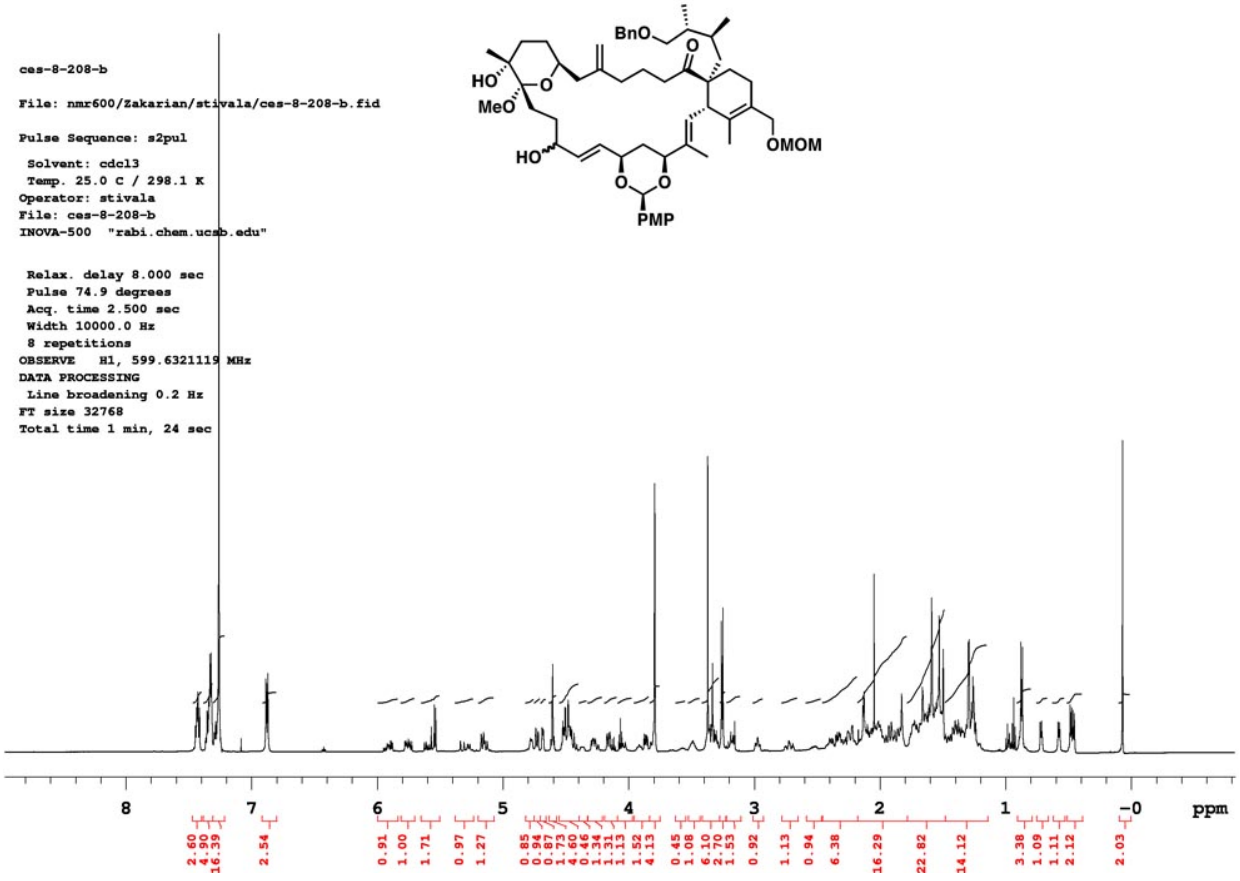

ces-6-93-r2
File: nmr400/Zakarian/stivala/ces-6-93-r2-crude.idp.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Ambient temperature
Operator: stivala
File: ces-6-93-r2-crude.idp
INOVA-500 "rabi.chem.ucsb.edu"
Relax. delay 8.000 sec
Pulse 83.0 degrees
Acq. time 3.277 sec
Width 5000.0 Hz
8 repetitions
OBSERVE H1, 399.9486723 MHz
DATA PROCESSING
Resol. enhancement -0.0 Hz
FT size 32768
Total time 1 min, 32 sec
Me3SiO
OMe
OH
I
ppm

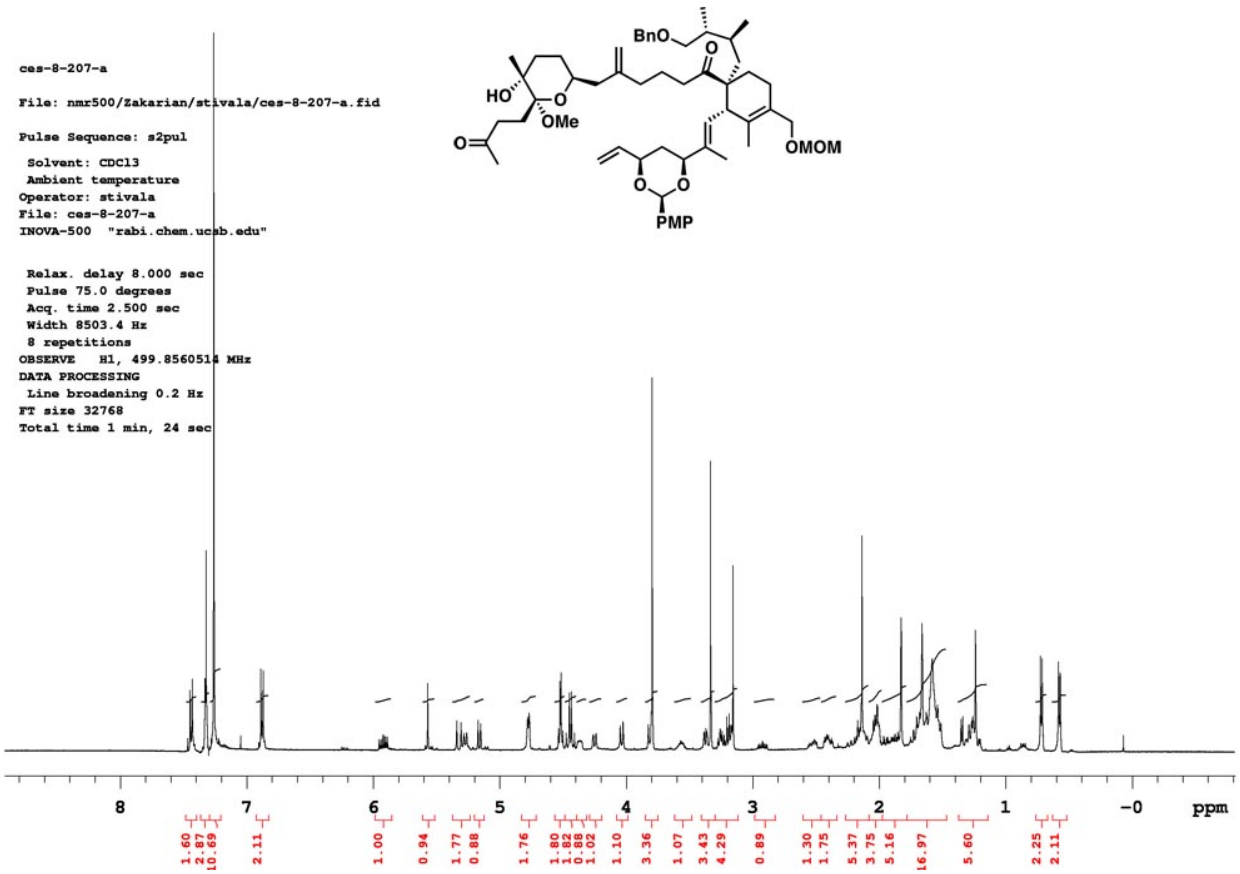

ces-6-102
File: nmr500/Zakarian/stivala/ces-6-102.fid
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
Operator: stivala
File: ces-6-102
INOVA-500 "rabi.chem.ucsb.edu"
Relax. delay 8.000 sec
Pulse 75.0 degrees
Acq. time 2.500 sec
Width 8503.4 Hz
8 repetitions
OBSERVE H1, 499.8560514 MHz
DATA PROCESSING
Line broadening 0.2 Hz
FT size 32768
Total time 1 min, 24 sec
Me3SiO
OMe
OSiEt3
I
ppm

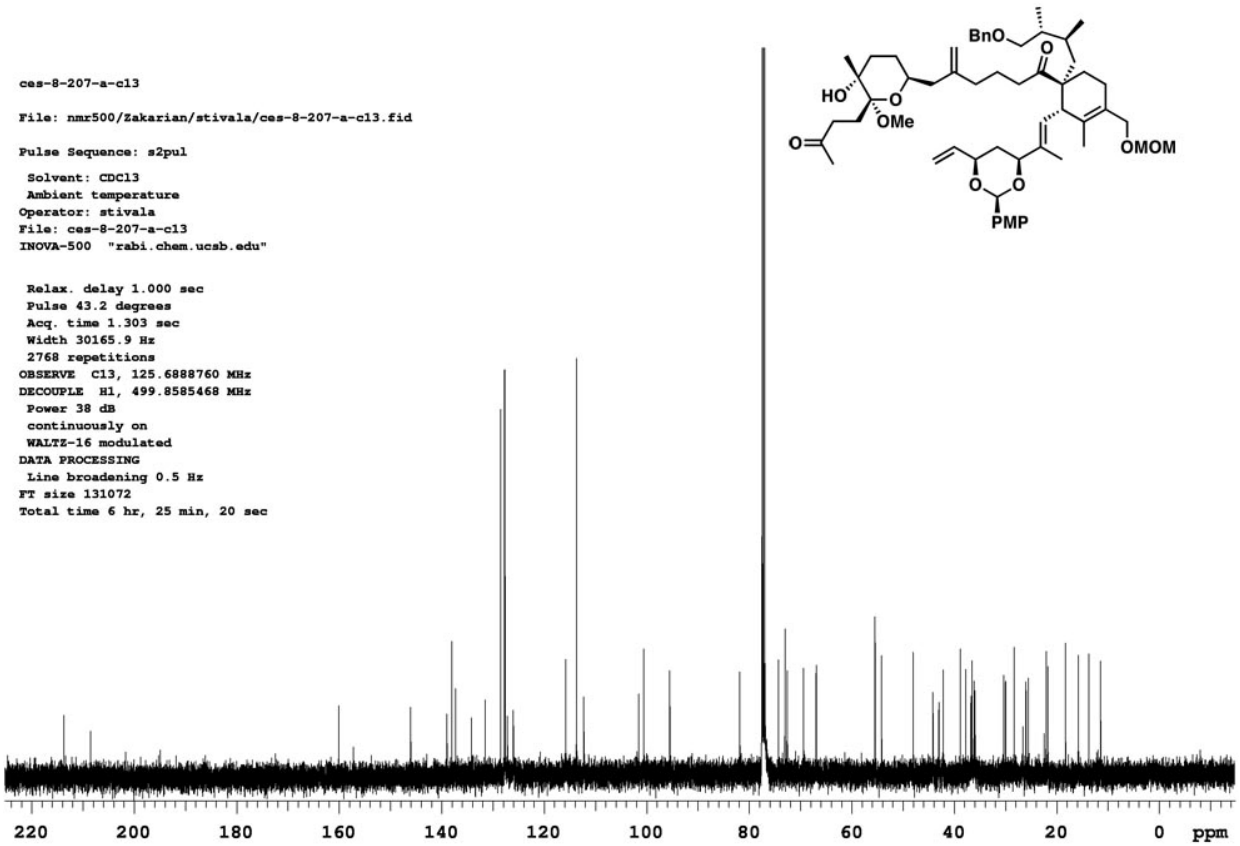

ces-6-173
File: nmr500/Zakarian/stivala/ces-6-173.fid
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
Operator: stivala
File: ces-6-173
INOVA-500 "nmrserver"
Relax. delay 4.000 sec
Pulse 75.0 degrees
Acq. time 2.500 sec
Width 8503.4 Hz
51 repetitions
OBSERVE H1, 499.8560414 MHz
DATA PROCESSING
Line broadening 0.2 Hz
FT size 32768
Total time 13 min, 53 sec
BnO
OH
Me3SiO
OMe
Et3SiO
OMOM
PMP
ppm

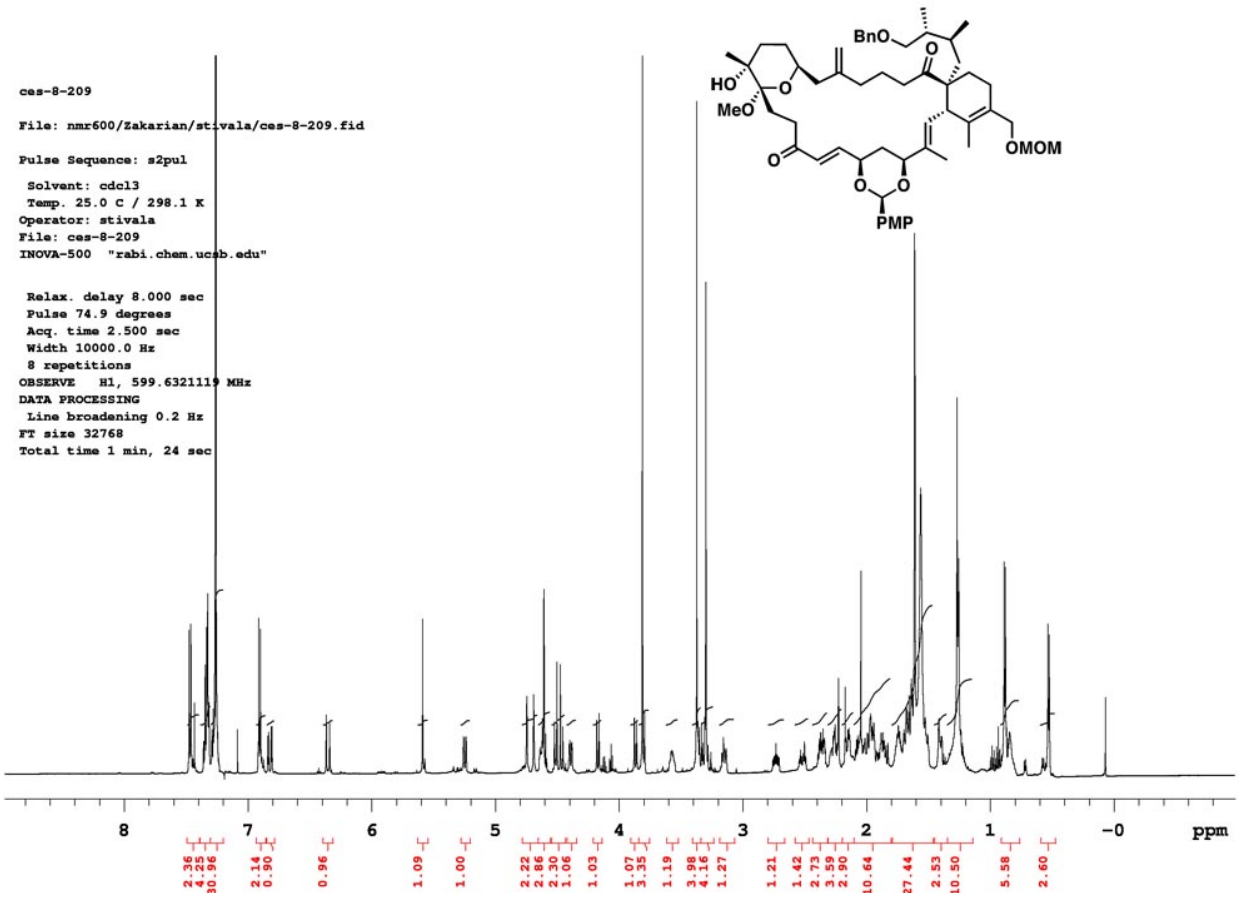

ces-6-183
File: nmr400/Zakarian/stivala/ces-6-183.idp.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Ambient temperature
Operator: stivala
File: ces-6-183.idp
INOVA-500 "rabi.chem.ucsb.edu"
Relax. delay 8.000 sec
Pulse 83.1 degrees
Acq. time 3.277 sec
Width 5000.0 Hz
8 repetitions
OBSERVE H1, 399.9486720 MHz
DATA PROCESSING
Resol. enhancement -0.0 Hz
FT size 32768
Total time 1 min, 32 sec
BnO
O
Me3SiO
OMe
Et3SiO
OMOM
PMP
ppm

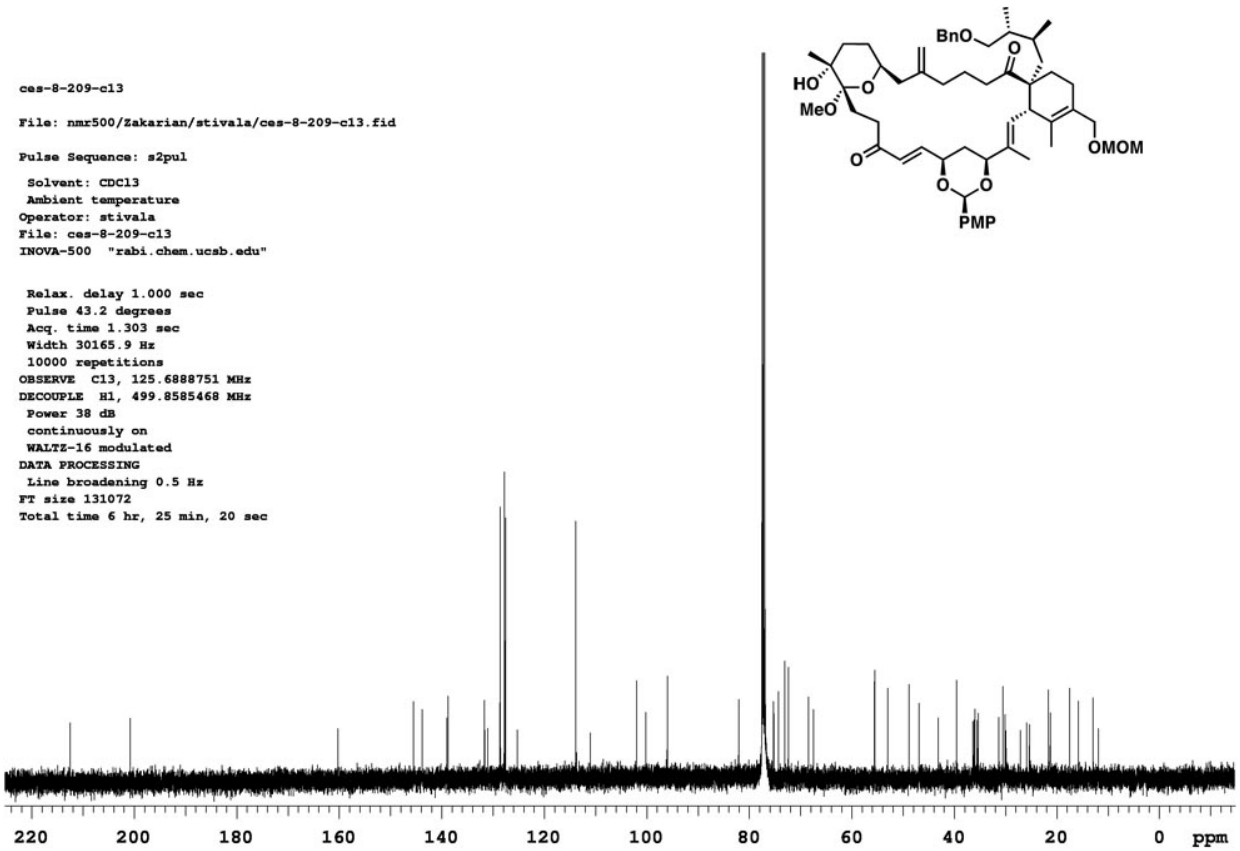

ces-6-184
File: nmr500/Zakarian/stivala/ces-6-184.swp.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Temp. 22.0 C / 295.1 K
Operator: stivala
File: ces-6-184.swp
INOVA-500 "rabi.chem.ucsb.edu"
Relax. delay 8.000 sec
Pulse 81.1 degrees
Acq. time 2.732 sec
Width 5997.0 Hz
8 repetitions
OBSERVE H1, 499.8560514 MHz
DATA PROCESSING
Line broadening 0.2 Hz
FT size 32768
Total time 1 min, 26 sec
BnO
HO
OMe
HO
OMOM
PMP
ppm

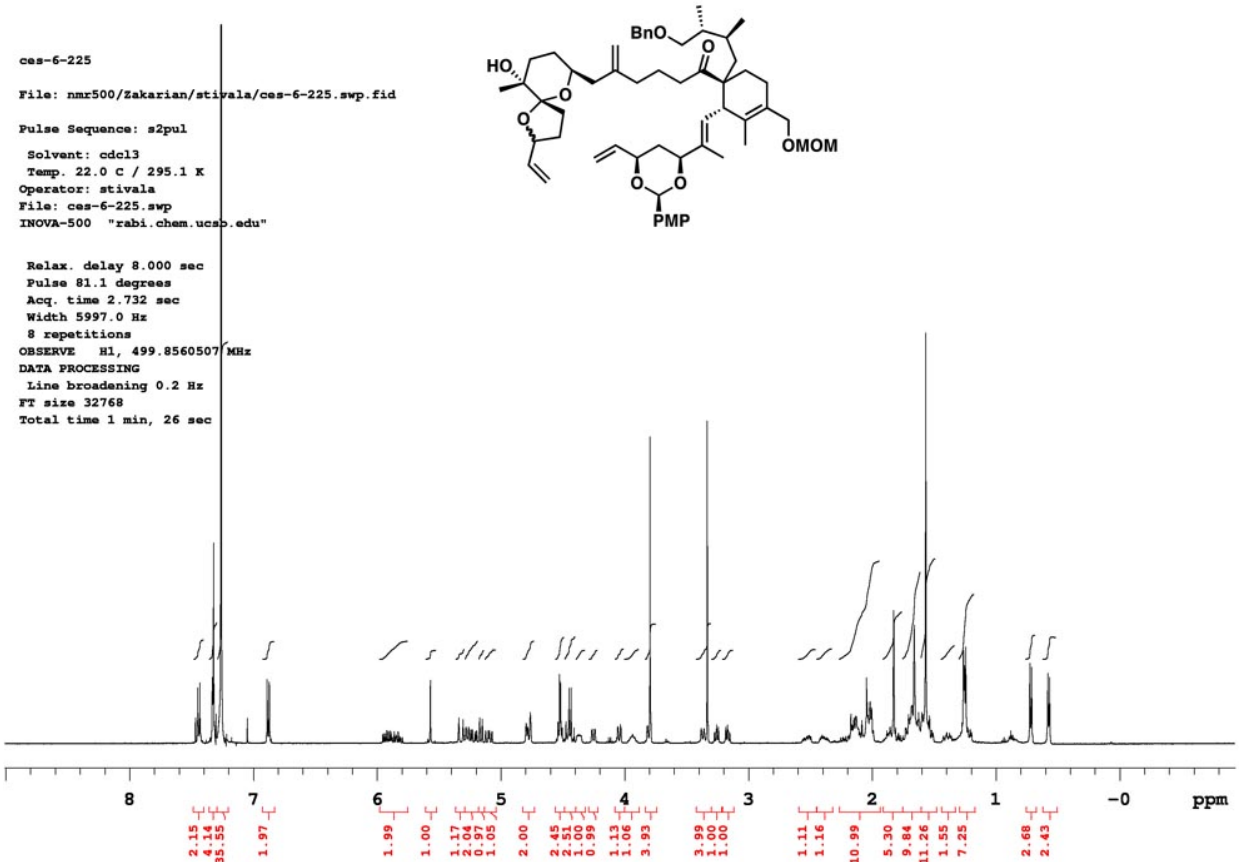

ces-8-208-b
File: nmr600/Zakarian/stivala/ces-8-208-b.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Temp. 25.0 C / 298.1 K
Operator: stivala
File: ces-8-208-b
INOVA-500 "rabi.chem.ucsb.edu"
Relax. delay 8.000 sec
Pulse 74.9 degrees
Acq. time 2.500 sec
Width 10000.0 Hz
8 repetitions
OBSERVE H1, 599.6321119 MHz
DATA PROCESSING
Line broadening 0.2 Hz
FT size 32768
Total time 1 min, 24 sec
BnO
HO
MeO
HO
OMOM
PMP
ppm

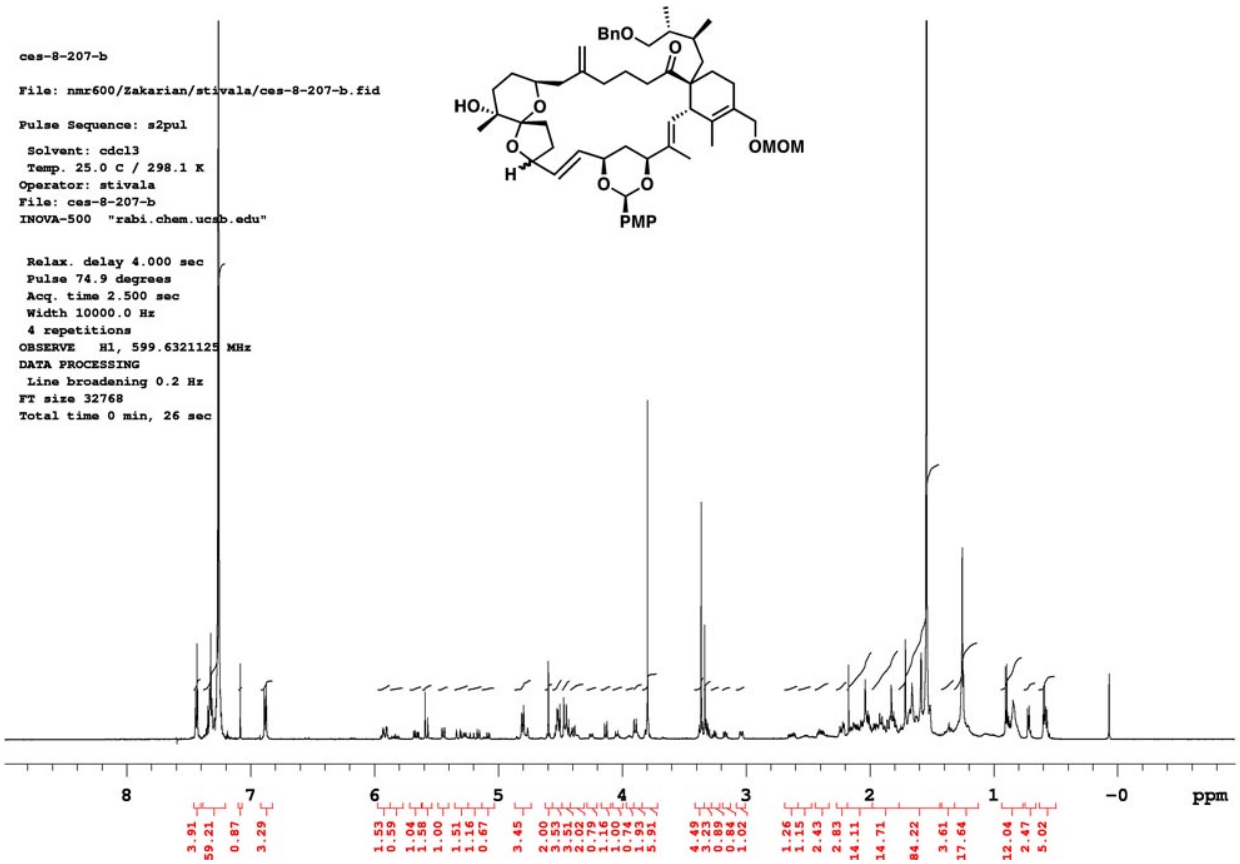

ces-8-207-a
File: nmr500/Zakarian/stivala/ces-8-207-a.fid
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
Operator: stivala
File: ces-8-207-a
INOVA-500 "rabi.chem.ucsb.edu"
Relax. delay 8.000 sec
Pulse 75.0 degrees
Acq. time 2.500 sec
Width 8503.4 Hz
8 repetitions
OBSERVE H1, 499.8560514 MHz
DATA PROCESSING
Line broadening 0.2 Hz
FT size 32768
Total time 1 min, 24 sec
BnO
HO
OMe
OMOM
PMP
ppm

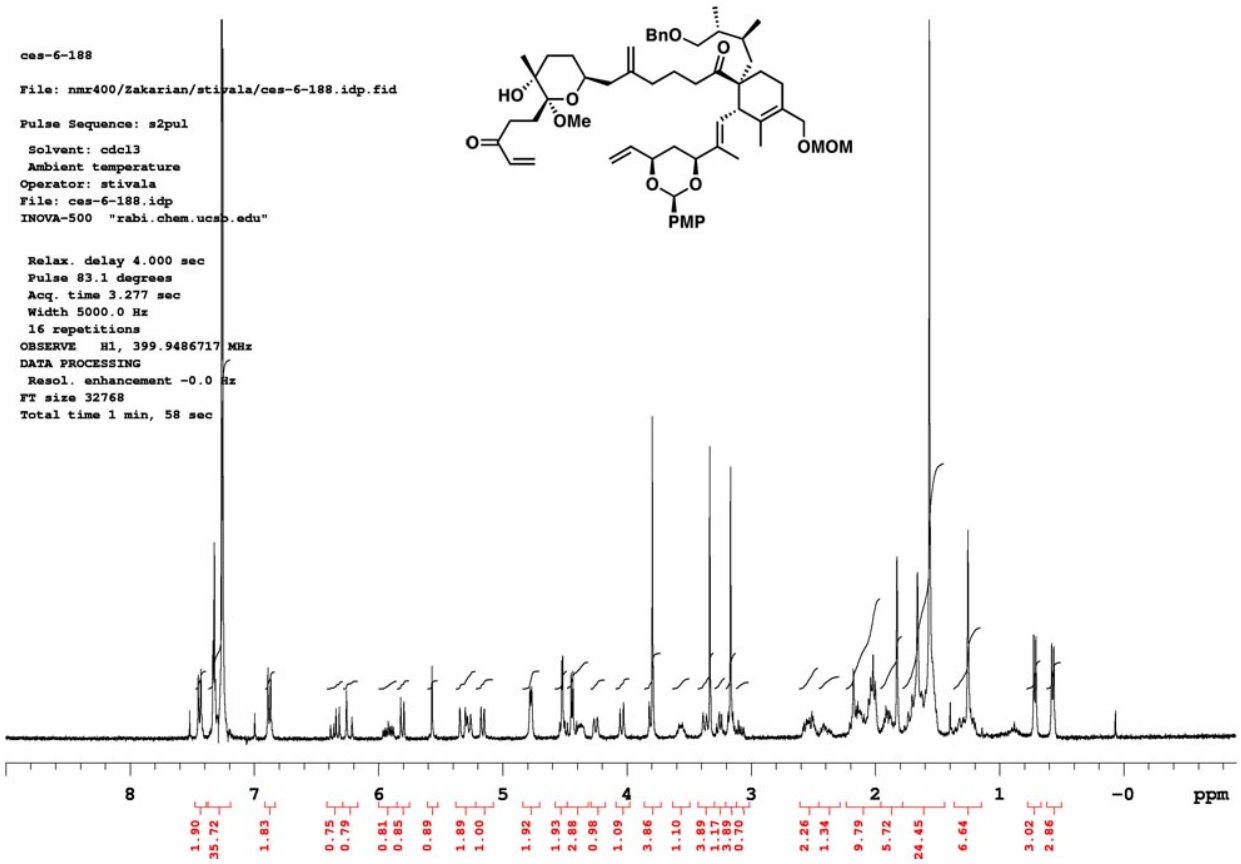

ces-8-207-a-c13
File: nmr500/Zakarian/stivala/ces-8-207-a-c13.fid
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
Operator: stivala
File: ces-8-207-a-c13
INOVA-500 "rabi.chem.ucsb.edu"
Relax. delay 1.000 sec
Pulse 43.2 degrees
Acq. time 1.303 sec
Width 30165.9 Hz
2768 repetitions
OBSERVE C13, 125.6888760 MHz
DECOUPLE H1, 499.8585468 MHz
Power 38 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 0.5 Hz
FT size 131072
Total time 6 hr, 25 min, 20 sec
BnO
HO
OMe
OMOM
PMP
ppm


ces-8-209
File: nmr600/Zakarian/stivala/ces-8-209.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Temp. 25.0 C / 298.1 K
Operator: stivala
File: ces-8-209
INOVA-500 "rabi.chem.ucsb.edu"
Relax. delay 8.000 sec
Pulse 74.9 degrees
Acq. time 2.500 sec
Width 10000.0 Hz
8 repetitions
OBSERVE H1, 599.6321119 MHz
DATA PROCESSING
Line broadening 0.2 Hz
FT size 32768
Total time 1 min, 24 sec
BnO
HO
MeO
OMOM
PMP
ppm


ces-8-209-c13
File: nmr500/Zakarian/stivala/ces-8-209-c13.fid
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
Operator: stivala
File: ces-8-209-c13
INOVA-500 "rabi.chem.ucsb.edu"
Relax. delay 1.000 sec
Pulse 43.2 degrees
Acq. time 1.303 sec
Width 30165.9 Hz
10000 repetitions
OBSERVE C13, 125.6888751 MHz
DECOUPLE H1, 499.8585468 MHz
Power 38 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 0.5 Hz
FT size 131072
Total time 6 hr, 25 min, 20 sec
BnO
HO
MeO
OMOM
PMP
ppm


ces-6-225
File: nmr500/Zakarian/stivala/ces-6-225.swp.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Temp. 22.0 C / 295.1 K
Operator: stivala
File: ces-6-225.swp
INOVA-500 "rabi.chem.ucsb.edu"
Relax. delay 8.000 sec
Pulse 81.1 degrees
Acq. time 2.732 sec
Width 5997.0 Hz
8 repetitions
OBSERVE H1, 499.8560507 MHz
DATA PROCESSING
Line broadening 0.2 Hz
FT size 32768
Total time 1 min, 26 sec
BnO
HO
O
OMOM
PMP
ppm


ces-8-207-b
File: nmr600/Zakarian/stivala/ces-8-207-b.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Temp. 25.0 C / 298.1 K
Operator: stivala
File: ces-8-207-b
INOVA-500 "rabi.chem.ucsb.edu"
Relax. delay 4.000 sec
Pulse 74.9 degrees
Acq. time 2.500 sec
Width 10000.0 Hz
4 repetitions
OBSERVE H1, 599.6321125 MHz
DATA PROCESSING
Line broadening 0.2 Hz
FT size 32768
Total time 0 min, 26 sec
BnO
HO
O
H
OMOM
PMP
ppm


ces-6-188
File: nmr400/Zakarian/stivala/ces-6-188.idp.fid
Pulse Sequence: s2pul
Solvent: cdcl3
Ambient temperature
Operator: stivala
File: ces-6-188.idp
INOVA-500 "rabi.chem.ucsb.edu"
Relax. delay 4.000 sec
Pulse 83.1 degrees
Acq. time 3.277 sec
Width 5000.0 Hz
16 repetitions
OBSERVE H1, 399.9486717 MHz
DATA PROCESSING
Resol. enhancement -0.0 Hz
FT size 32768
Total time 1 min, 58 sec
BnO
HO
OMe
OMOM
PMP
8
7
6
5
4
3
2
1
−0
ppm
1.90
35.72
1.83
0.75
0.79
0.81
0.85
0.89
1.89
1.00
1.92
1.93
2.88
0.98
1.09
3.86
1.10
3.89
1.17
3.89
0.70
2.26
1.34
9.79
5.72
24.45
6.64
3.02
2.86