Supplementary Information

Synthesis of seven-membered oxacycle containing triquinane derivatives *via* olefin metathesis

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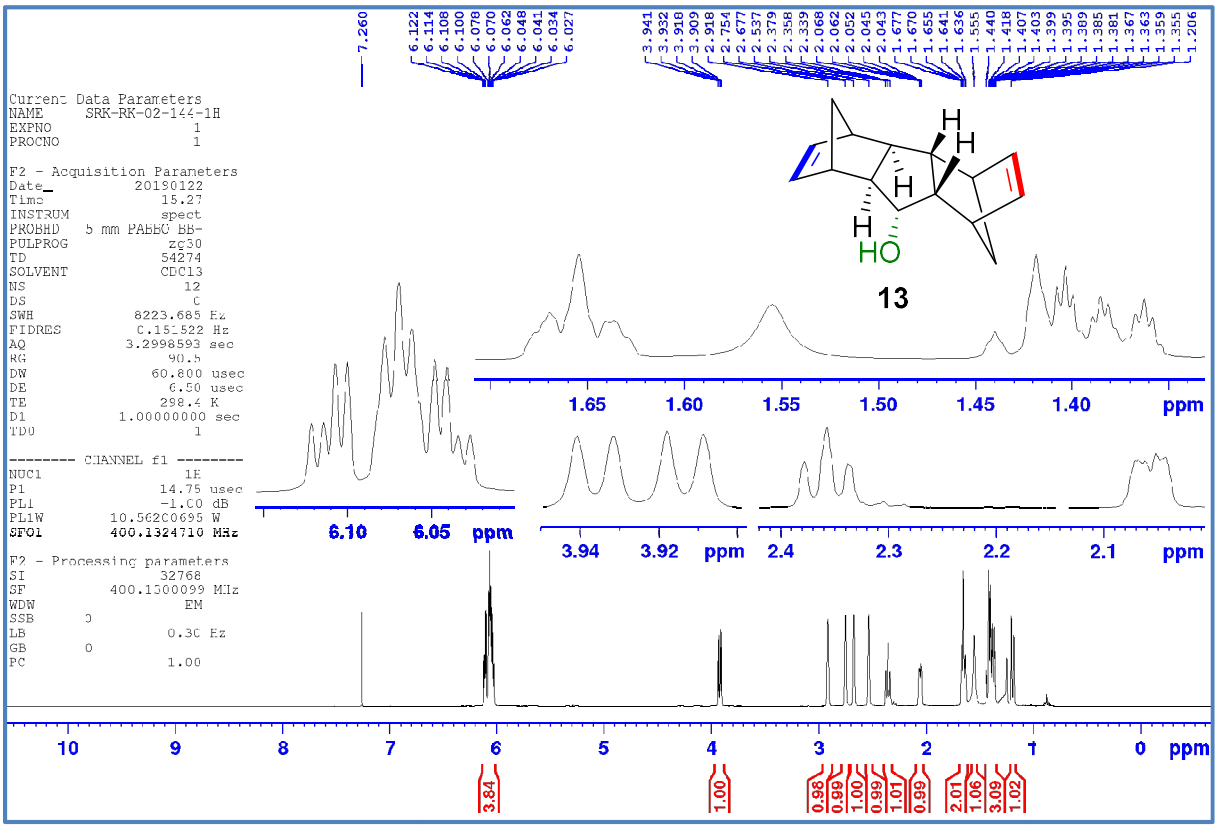
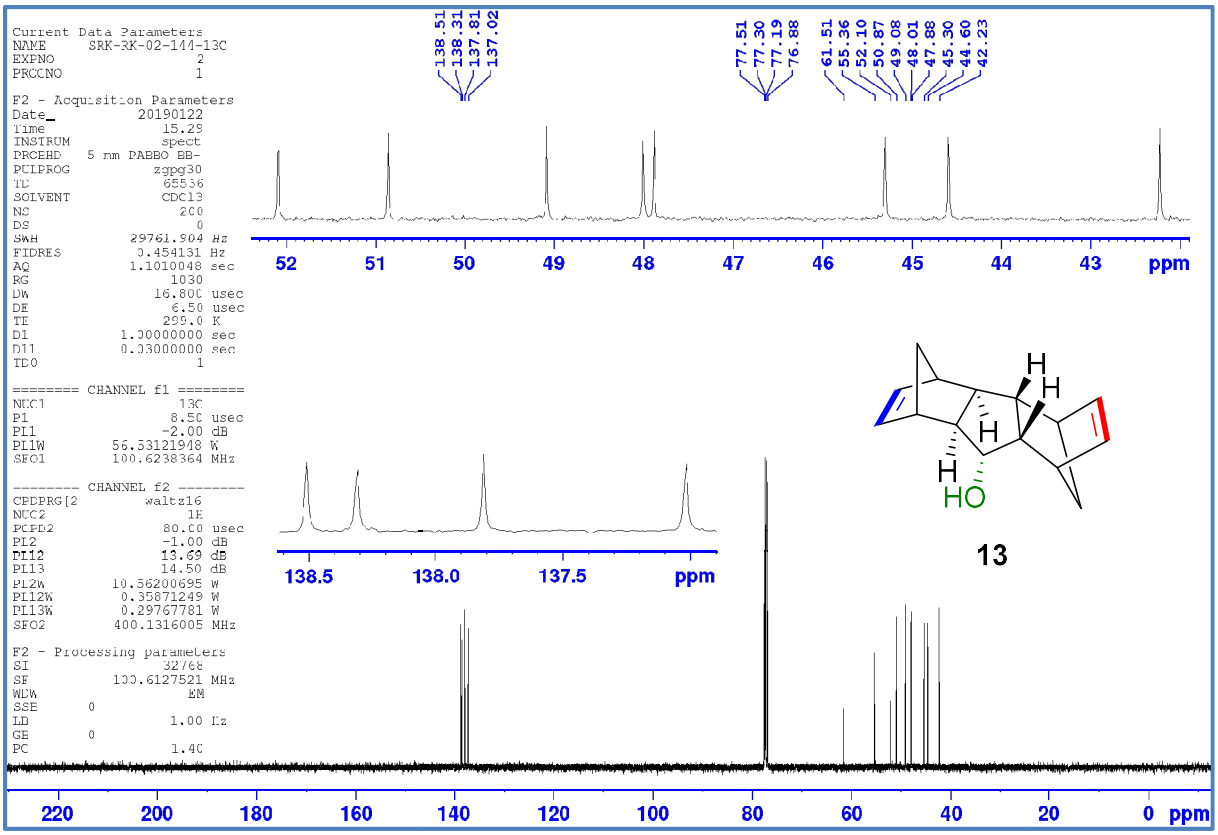
^{1}H, ^{13}C, and DEPT NMR spectra

1. ^{1}H NMR (400 MHz, $CDCl_3$) of (1S,4R,4aS,4bS,8aS,9aS)-4,4a,4b,5,8,8a,9,9a-octahydro-1H-1,4:5,8-dimethanofluoren-9-ol (13)

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TD 65536
SOLVENT CDCl3
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SWH 29761.904 Hz
FIDRES 0.454131 Hz
AQ 1.1010048 sec
RG 1030
DW 16.800 usec
DE 6.50 usec
TE 299.0 K
D1 1.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 13C
P1 8.50 usec
PL1 -2.00 dB
PL1W 56.53121948 W
SFO1 100.6238364 MHz
-------- CHANNEL f2 --------
CPDPRG[2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -1.00 dB
PL12 13.69 dB
PL13 14.50 dB
PL2W 10.56200695 W
PL12W 0.35871249 W
PL13W 0.29767781 W
SFO2 400.1316005 MHz
F2 - Processing parameters
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SF 100.6127521 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
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77.30
77.19
76.88
61.51
55.36
52.10
50.87
49.08
48.01
47.88
45.30
44.60
42.23
52
51
50
49
48
47
46
45
44
43
ppm
138.5
138.0
137.5
ppm
H
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H
HO
13
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200
180
160
140
120
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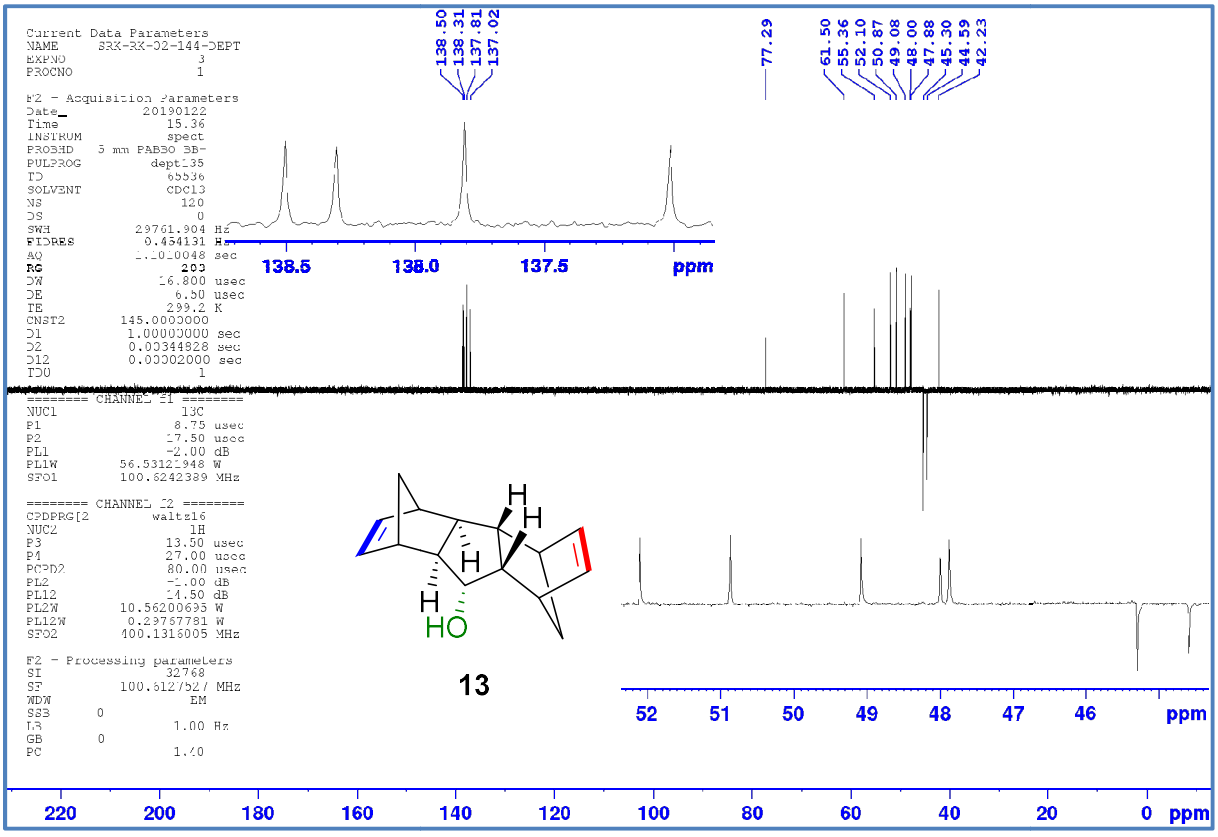
80
60
40
20
0
ppm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TD 65536
SOLVENT CDCl3
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SWH 29761.904 Hz
FIDRES 0.454131 Hz
AQ 1.1010048 sec
RG 203
DW 16.800 usec
DE 6.50 usec
TE 299.2 K
CNST2 145.0000000
D1 1.00000000 sec
D2 0.00344828 sec
D12 0.00002000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 13C
P1 8.75 usec
P2 17.50 usec
PL1 -2.00 dB
PL1W 56.53121948 W
SFO1 100.6242389 MHz
======== CHANNEL f2 ========
CPDPRG[2 waltz16
NUC2 1H
P3 13.50 usec
P4 27.00 usec
PCPD2 80.00 usec
PL2 -1.00 dB
PL12 14.50 dB
PL2W 10.56200695 W
PL12W 0.29767781 W
SFO2 400.1316005 MHz
F2 - Processing parameters
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SF 100.6127527 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
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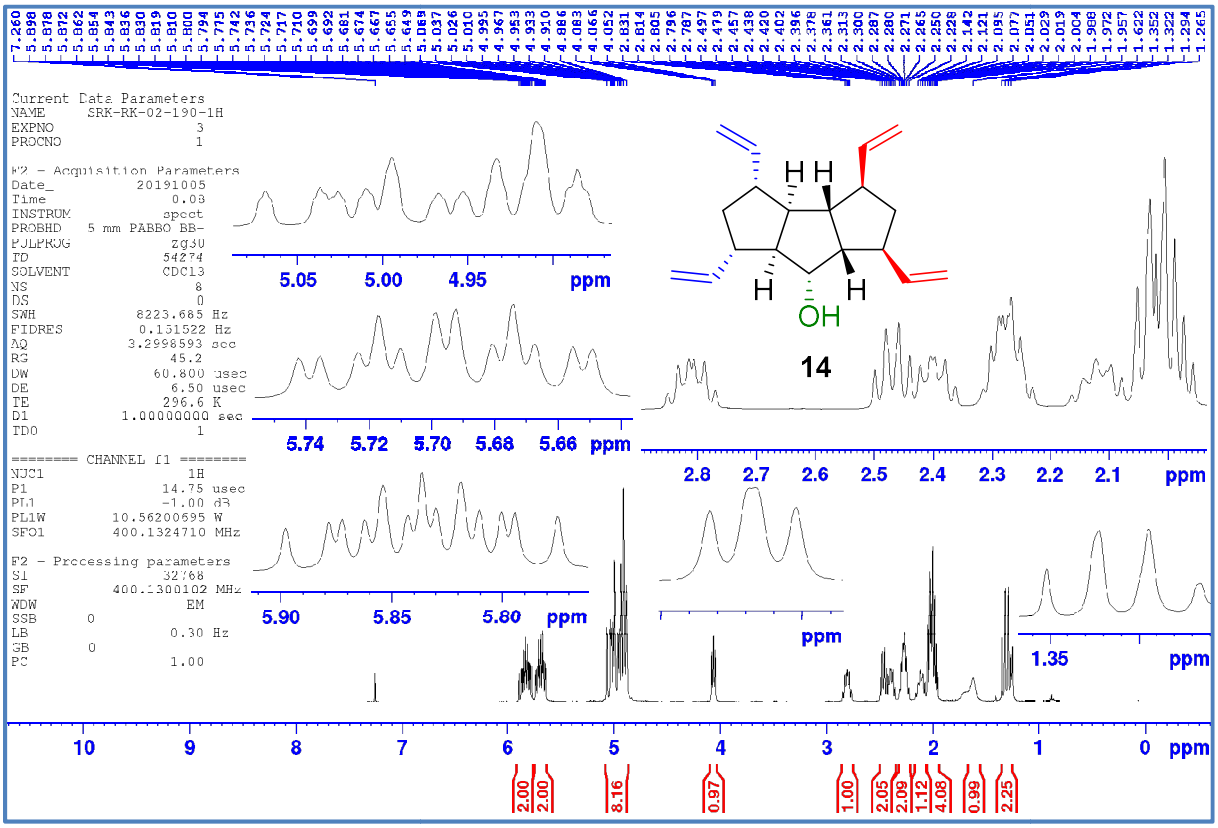
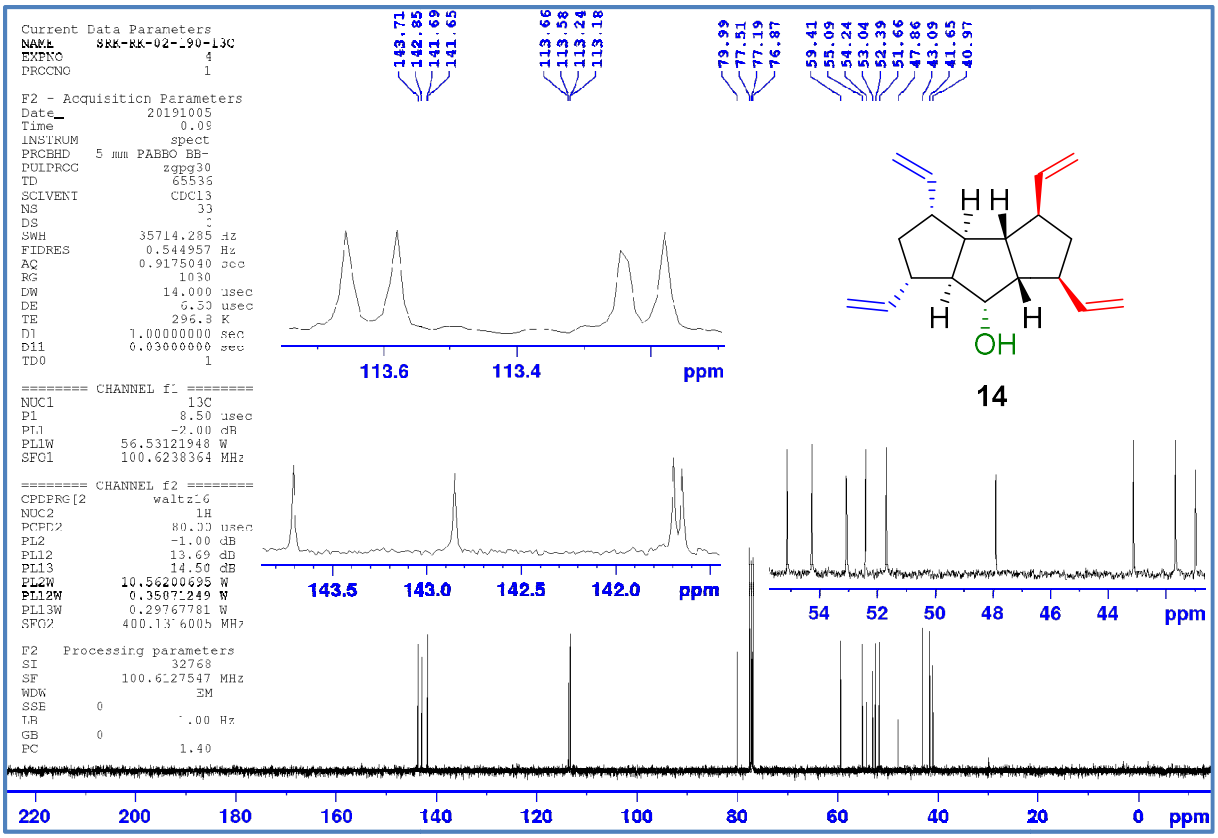
138.31
137.81
137.02
77.29
61.50
55.36
52.10
50.87
49.08
48.00
47.88
45.30
44.59
42.23
138.5
138.0
137.5
ppm
H
H
H
HO
13
52
51
50
49
48
47
46
ppm
220
200
180
160
140
120
100
80
60
40
20
0
ppm

2. **^{1}H NMR (400 MHz, $CDCl_3$) of (1S,3R,3aS,3bS,4R,6S,6aS,7aS)-1,3,4,6-tetravinyldecahydro-1H cyclopenta[a]pentalen-7-ol (14)**

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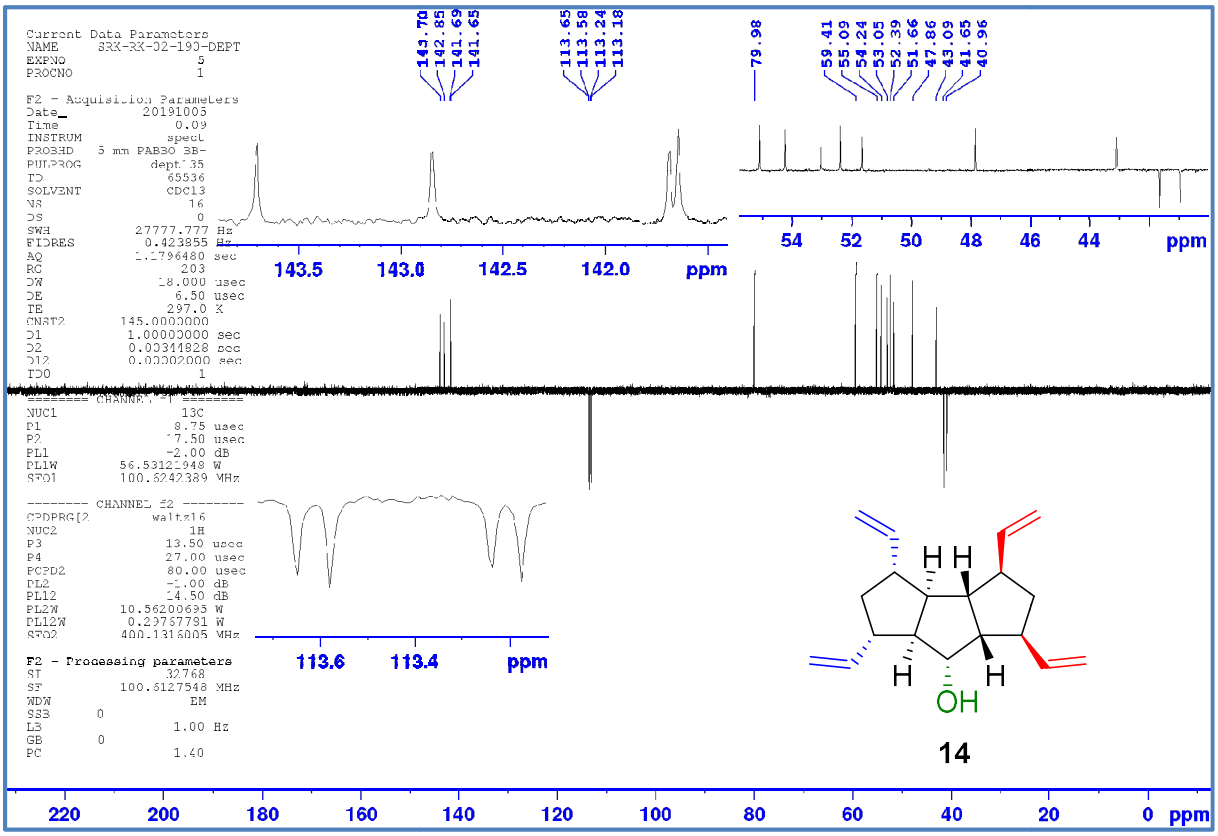
141.65
113.66
113.58
113.24
113.18
79.99
77.51
77.19
76.87
59.41
55.09
54.24
53.04
52.39
51.66
47.86
43.09
41.65
40.97
H H
H H
OH
14
113.6
113.4
ppm
143.5
143.0
142.5
142.0
ppm
54
52
50
48
46
44
ppm
220
200
180
160
140
120
100
80
60
40
20
0
ppm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141.65
113.65
113.58
113.24
113.18
79.98
59.41
55.09
54.24
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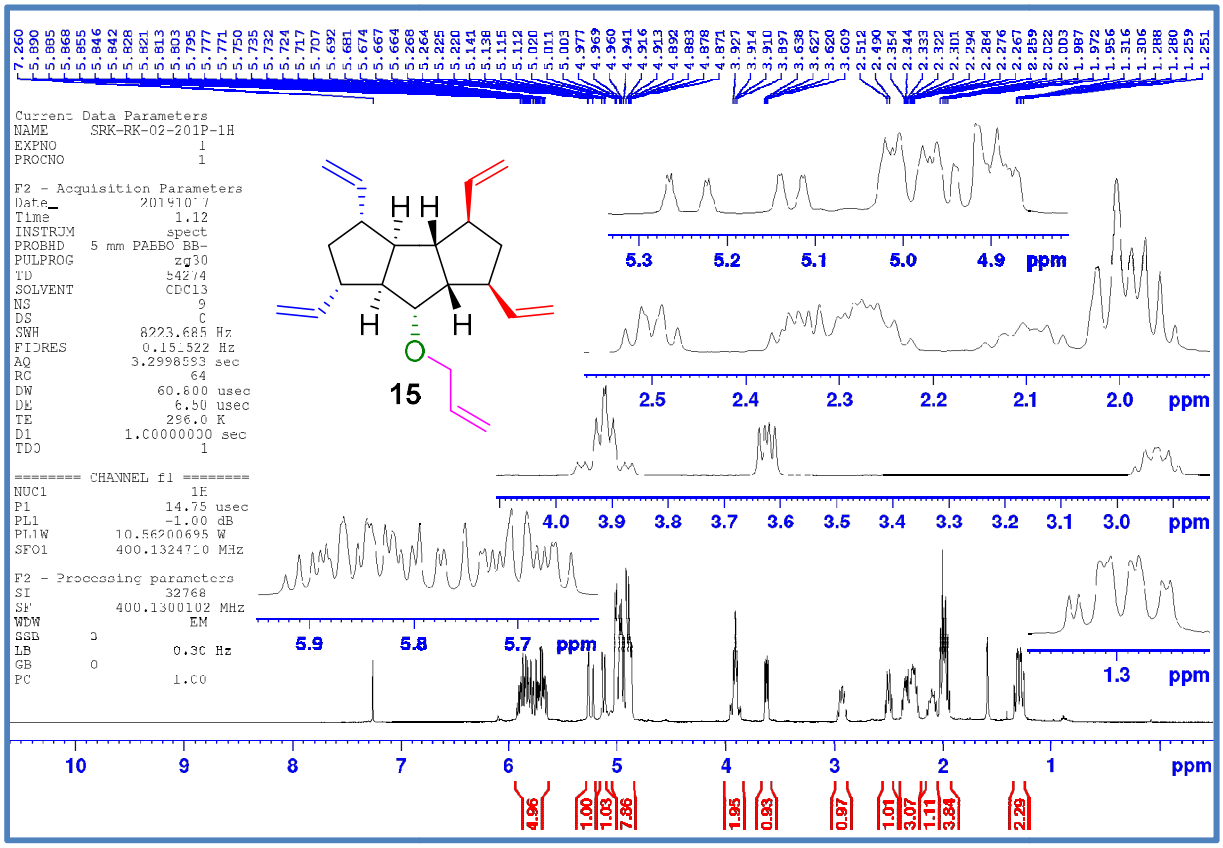
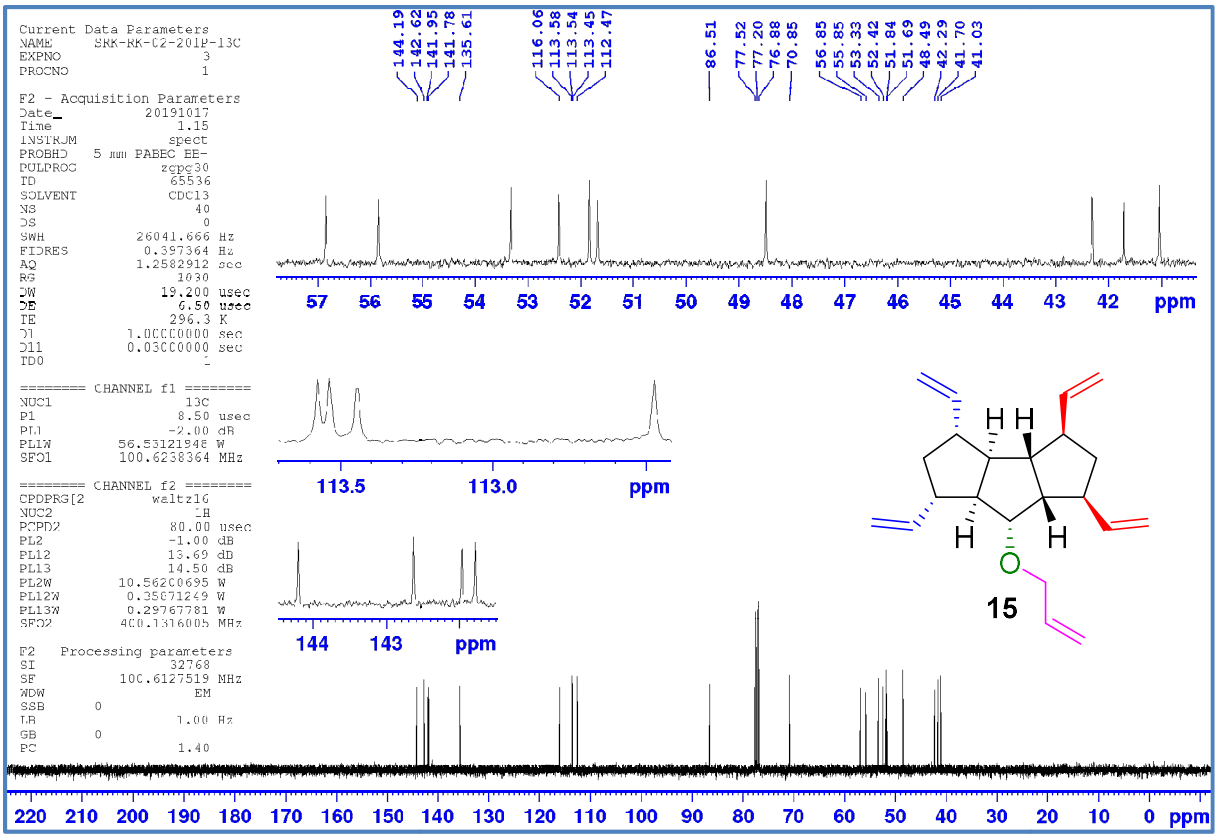
52.39
51.66
47.86
43.09
41.65
40.96
H H
H H
OH
14
143.5
143.0
142.5
142.0
ppm
54
52
50
48
46
44
ppm
113.6
113.4
ppm
220
200
180
160
140
120
100
80
60
40
20
0
ppm

3. **^{1}H NMR (400 MHz, $CDCl_3$) of (1S,3R,3aS,3bS,4R,6S,6aS,7aS)-7-(allyloxy)-1,3,4,6-tetravinyldecahydro-1H-cyclopenta[a]pentalene (15)**

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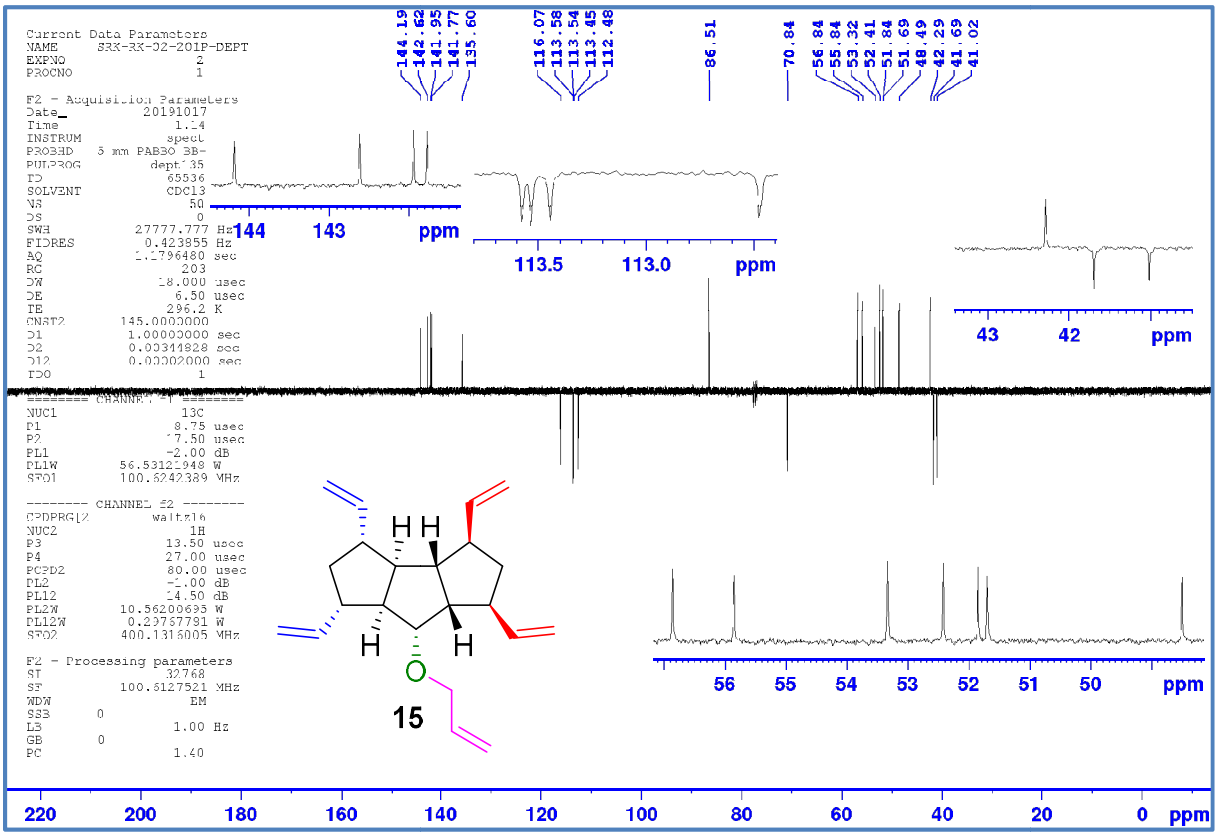
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 40
DS 0
SWH 26041.666 Hz
FIDRES 0.397364 Hz
AQ 1.2582912 sec
RG 1030
DW 19.200 usec
DE 6.50 usec
TE 296.3 K
D1 1.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 13C
P1 8.50 usec
PL1 -2.00 dB
PL1W 56.53121948 W
SFO1 100.6238364 MHz
======== CHANNEL f2 ========
CPDPRG[2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -1.00 dB
PL12 13.69 dB
PL13 14.50 dB
PL2W 10.56200695 W
PL12W 0.35671249 W
PL13W 0.29767781 W
SFO2 400.1316005 MHz
F2 - Processing parameters
SI 32768
SF 100.6127519 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
144.19 142.62 141.95 141.78 135.61
116.06 113.58 113.54 113.45 112.47
86.51 77.52 77.20 76.88 70.85
56.85 55.85 53.33 52.42 51.84 51.69 48.49 42.29 41.70 41.03
57 56 55 54 53 52 51 50 49 48 47 46 45 44 43 42 ppm
113.5 113.0 ppm
144 143 ppm
H H
H H
O
15
220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 ppm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PULPROG dept135
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SOLVENT CDCl3
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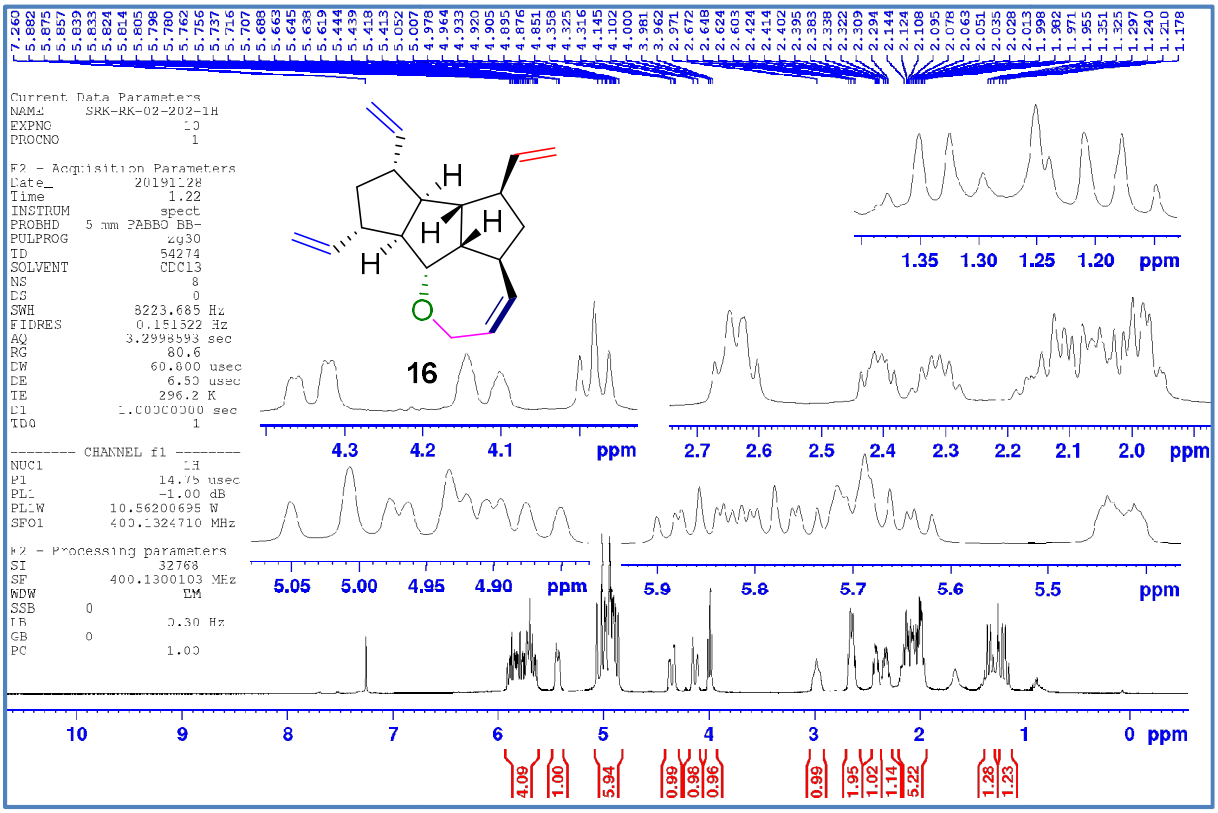
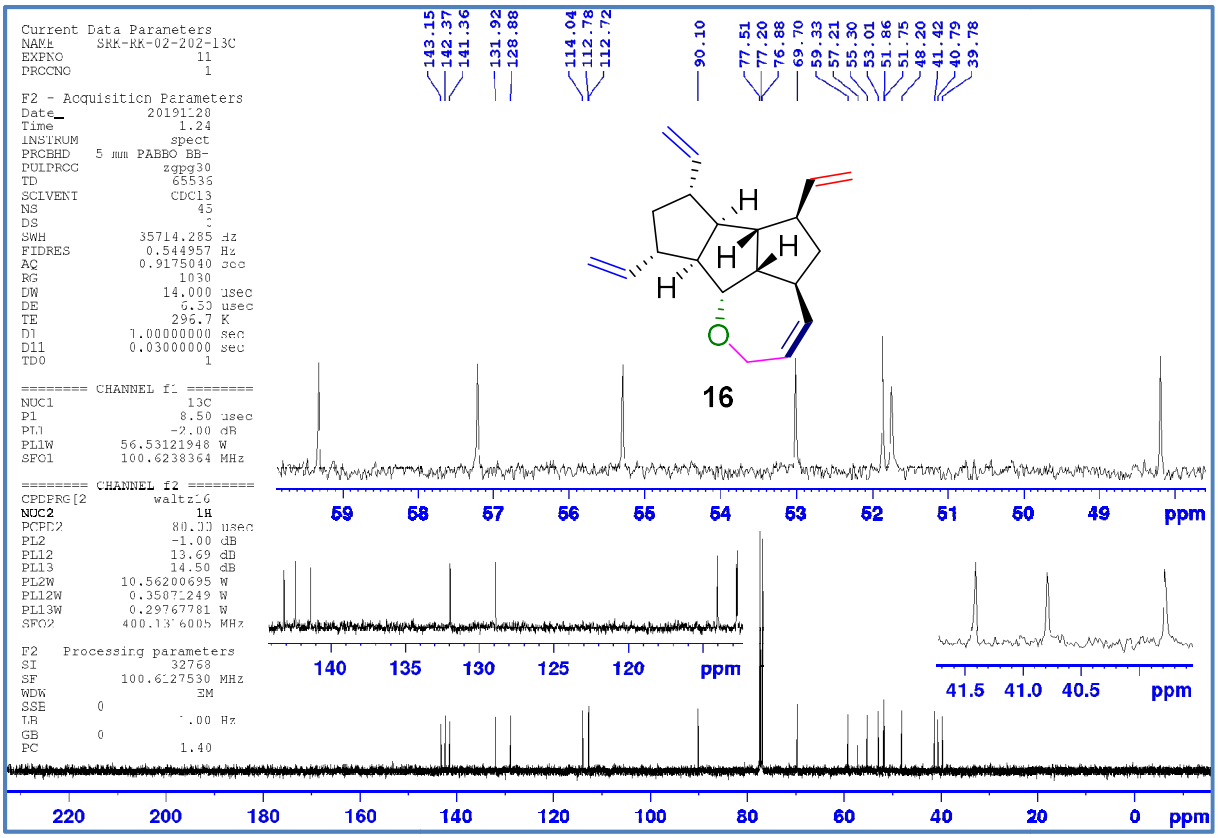
DS 0
SWH 27777.777 Hz
FIDRES 0.423855 Hz
AQ 1.1796480 sec
RG 203
DW 18.000 usec
DE 6.50 usec
TE 296.2 K
CNST2 145.0000000
D1 1.00000000 sec
D2 0.00344828 sec
D12 0.00002000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 13C
P1 8.75 usec
P2 17.50 usec
PL1 -2.00 dB
PL1W 56.53121948 W
SFO1 100.6242389 MHz
-------- CHANNEL f2 --------
CPDPRG[2 waltz16
NUC2 1H
P3 13.50 usec
P4 27.00 usec
PCPD2 80.00 usec
PL2 -1.00 dB
PL12 14.50 dB
PL2W 10.56200695 W
PL12W 0.29767781 W
SFO2 400.1316005 MHz
F2 - Processing parameters
SI 32768
SF 100.6127521 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
144.19 142.62 141.95 141.77 135.60
116.07 113.58 113.54 113.45 112.48
86.51 70.84
56.84 55.84 53.32 52.41 51.84 51.69 48.49 42.29 41.69 41.02
144 143 ppm
113.5 113.0 ppm
43 42 ppm
H H
H H
O
15
56 55 54 53 52 51 50 ppm
220 200 180 160 140 120 100 80 60 40 20 0 ppm

4. **^{1}H NMR (400 MHz, $CDCl_3$) of (4aS,4a1S,6R,6aS,6bS,7R,9S,9aS,9bR)-6,7,9-trivinyl-2,4a,4a1,5,6,6a,6b,7,8,9,9a,9b-dodecahydrocyclopenta[2,3]pentaleno[1,6-bc]oxepine (16)**

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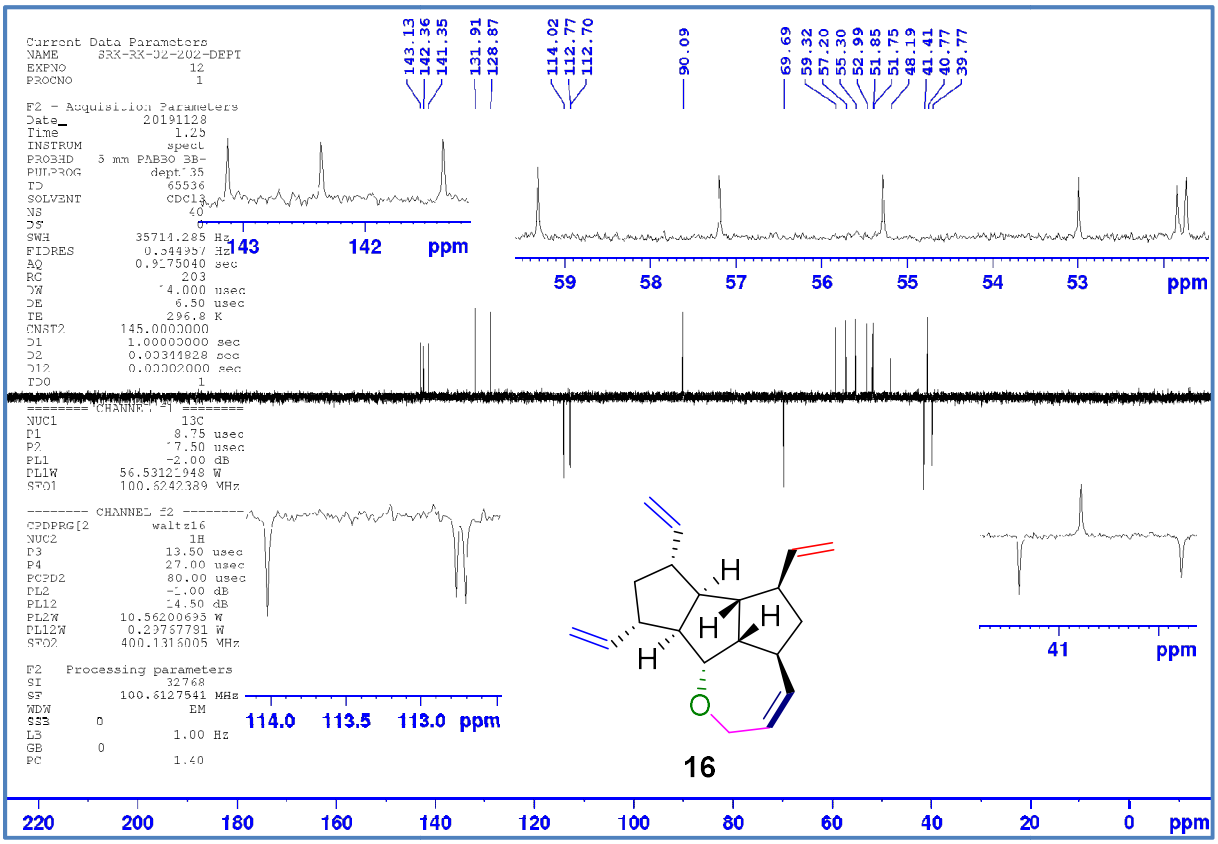
142.37
141.36
131.92
128.88
114.04
112.78
112.72
90.10
77.51
77.20
76.88
69.70
59.33
57.21
55.30
53.01
51.86
51.75
48.20
41.42
40.79
39.78
16
ppm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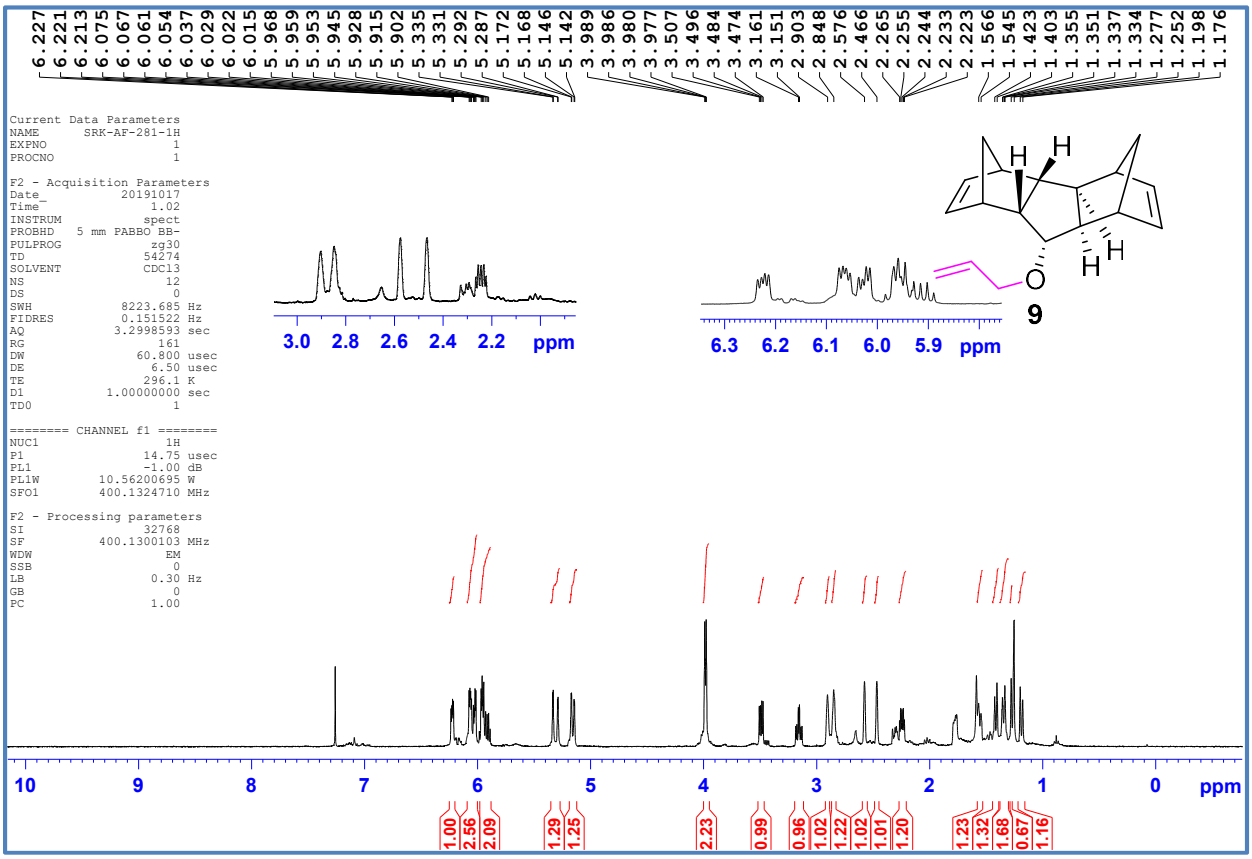
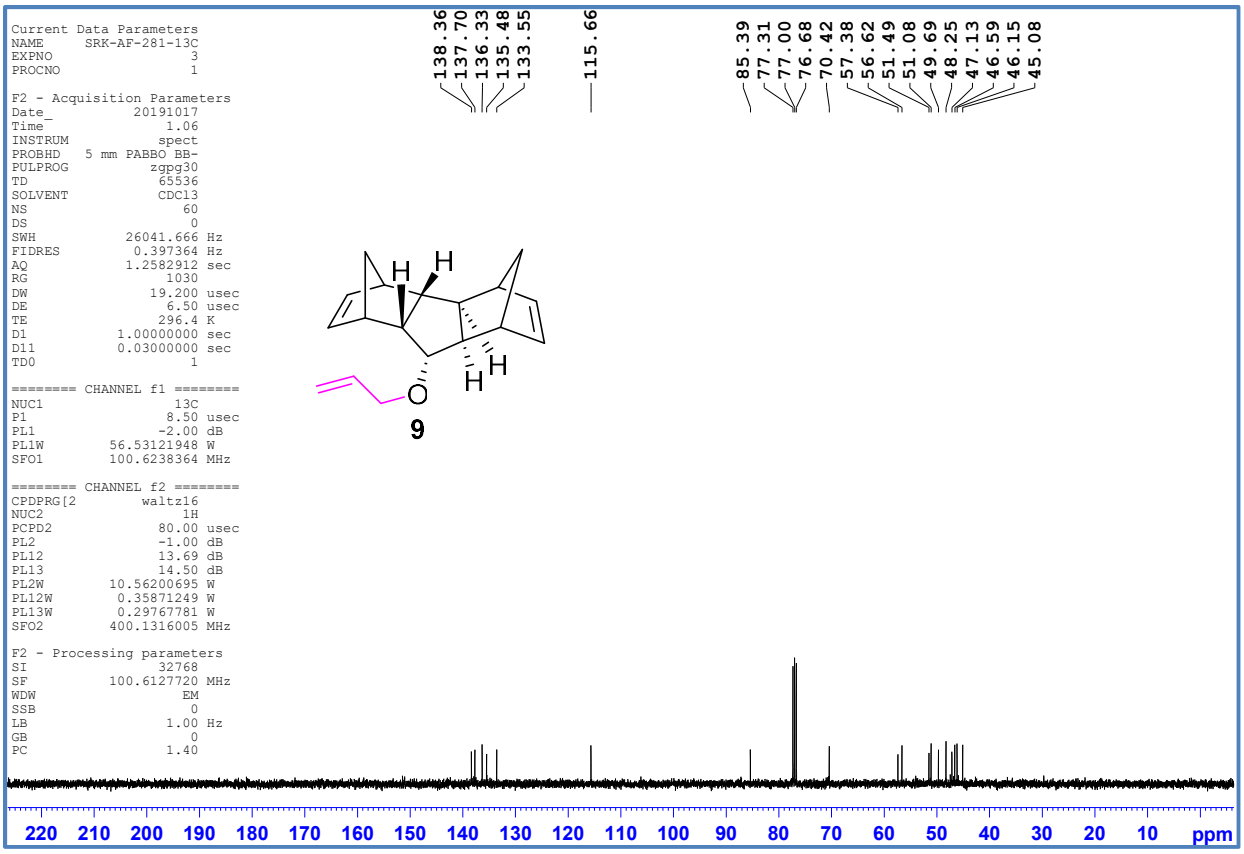
142.36
141.35
131.91
128.87
114.02
112.77
112.70
90.09
69.69
59.32
57.20
55.30
52.99
51.85
51.75
48.19
41.41
40.77
39.77
16
ppm

5. **^{1}H NMR (400 MHz, $CDCl_3$) of 9-(allyloxy)-4,4a,4b,5,8,8a,9,9a-octahydro-1H-1,4:5,8-dimethanofluorene(9)**

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FIDRES 0.397364 Hz
AQ 1.2582912 sec
RG 1030
DW 19.200 usec
DE 6.50 usec
TE 296.4 K
D1 1.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 13C
P1 8.50 usec
PL1 -2.00 dB
PL1W 56.53121948 W
SFO1 100.6238364 MHz
======== CHANNEL f2 ========
CPDPRG[2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -1.00 dB
PL12 13.69 dB
PL13 14.50 dB
PL2W 10.56200695 W
PL12W 0.35871249 W
PL13W 0.29767781 W
SFO2 400.1316005 MHz
F2 - Processing parameters
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SF 100.6127720 MHz
WDW EM
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LB 1.00 Hz
GB 0
PC 1.40
138.36
137.70
136.33
135.48
133.55
115.66
85.39
77.31
77.00
76.68
70.42
57.38
56.62
51.49
51.08
49.69
48.25
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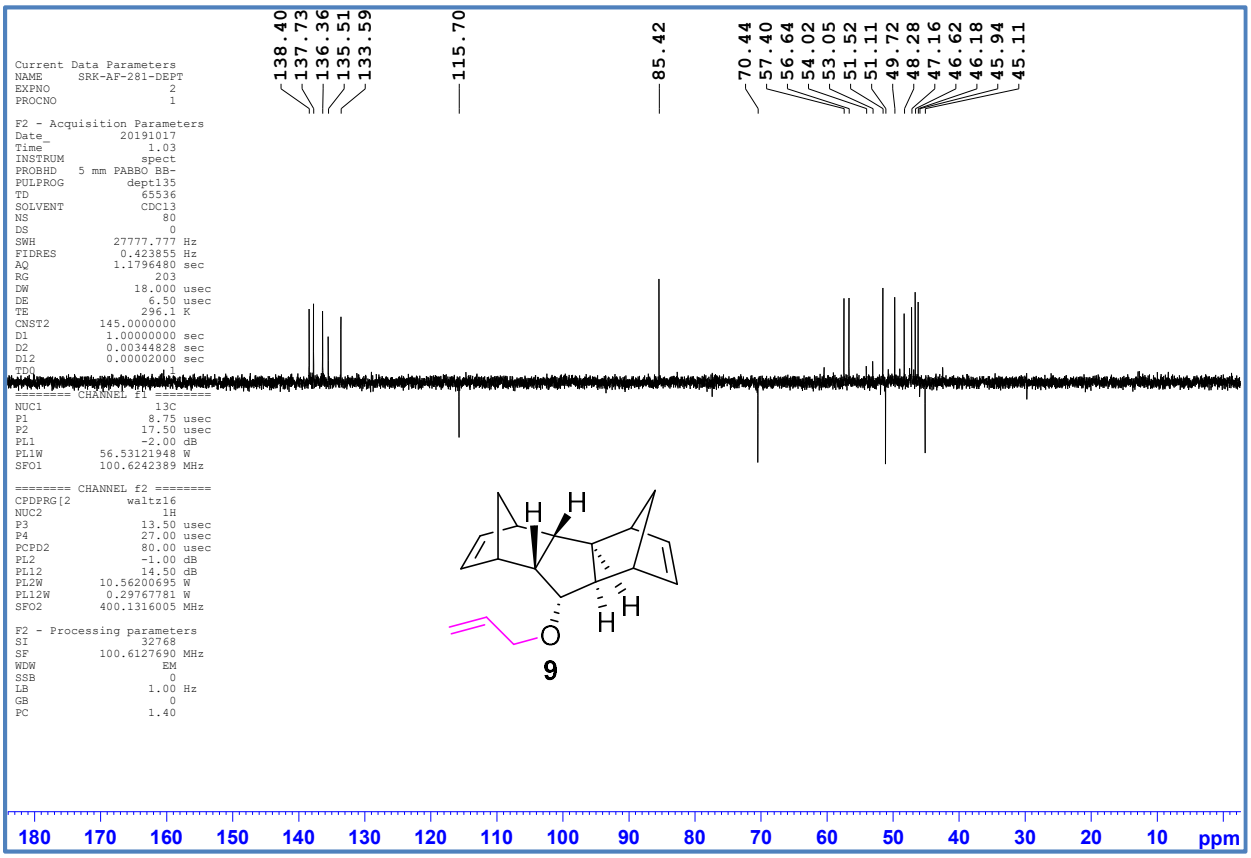
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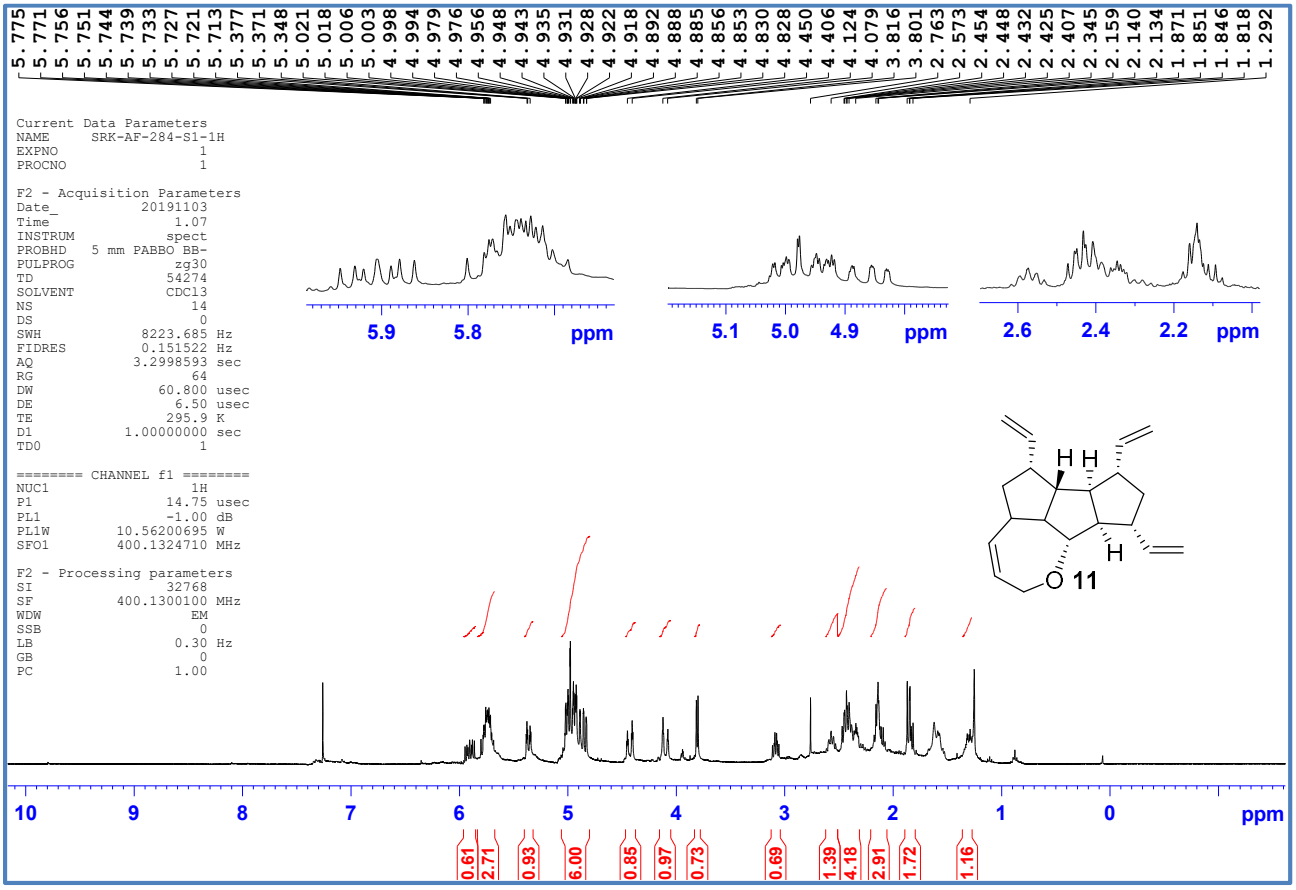
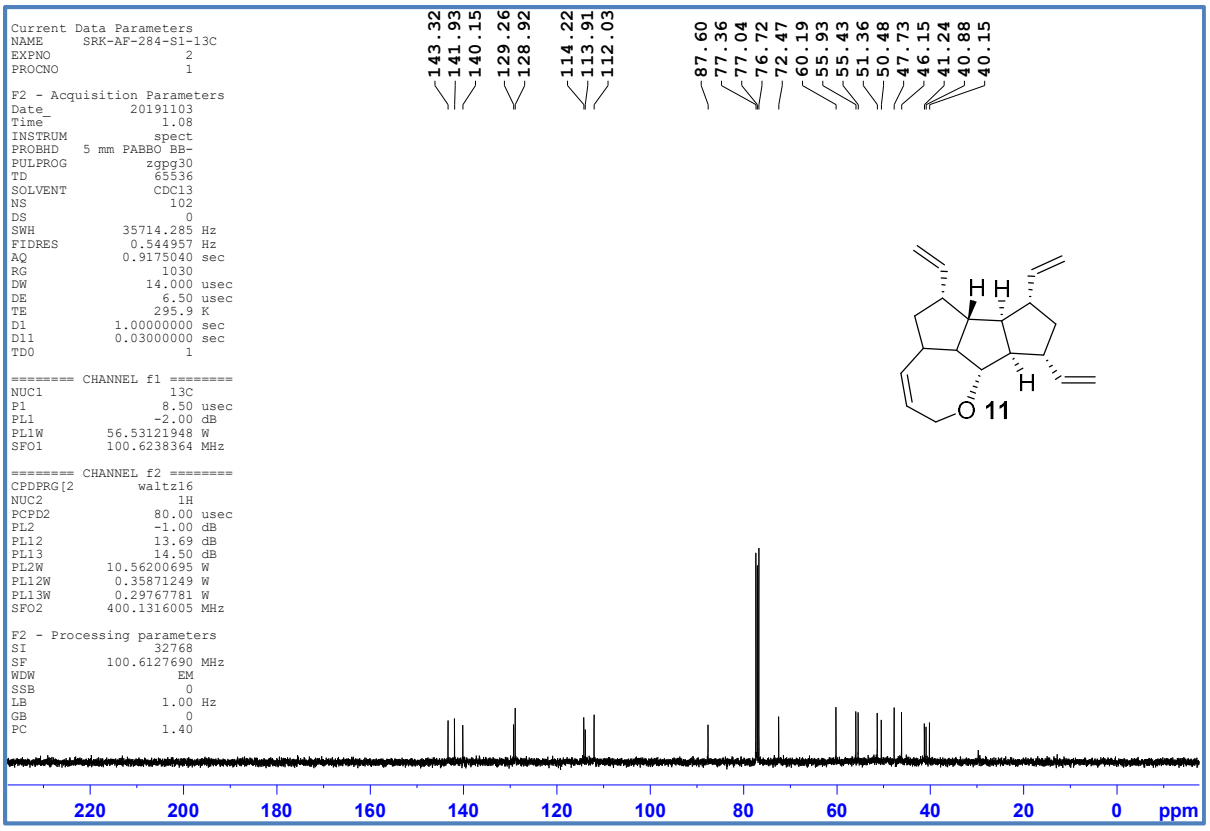
PULPROG dept135
TD 65536
SOLVENT CDCl3
NS 80
DS 0
SWH 27777.777 Hz
FIDRES 0.423855 Hz
AQ 1.1796480 sec
RG 203
DW 18.000 usec
DE 6.50 usec
TE 296.1 K
CNST2 145.0000000
D1 1.00000000 sec
D2 0.00344828 sec
D12 0.00002000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 13C
P1 8.75 usec
P2 17.50 usec
PL1 -2.00 dB
PL1W 56.53121948 W
SFO1 100.6242389 MHz
======== CHANNEL f2 ========
CPDPRG[2 waltz16
NUC2 1H
P3 13.50 usec
P4 27.00 usec
PCPD2 80.00 usec
PL2 -1.00 dB
PL12 14.50 dB
PL2W 10.56200695 W
PL12W 0.29767781 W
SFO2 400.1316005 MHz
F2 - Processing parameters
SI 32768
SF 100.6127690 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
138.40
137.73
136.36
135.51
133.59
115.70
85.42
70.44
57.40
56.64
54.02
53.05
51.52
51.11
49.72
48.28
47.16
46.62
46.18
45.94
45.11
H
H
H
H
O
9
180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ppm

6. ^{1}H NMR (400 MHz, $CDCl_3$) of (4a1R,6R,6aR,6bR,7S,9R,9aR)-6,7,9-trivinyl-2,4a,4a1,5,6,6a,6b,7,8,9,9a,9b dodecahydro cyclopenta[2,3]pentaleno[1,6-bc]oxepine (11)

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SOLVENT CDCl3
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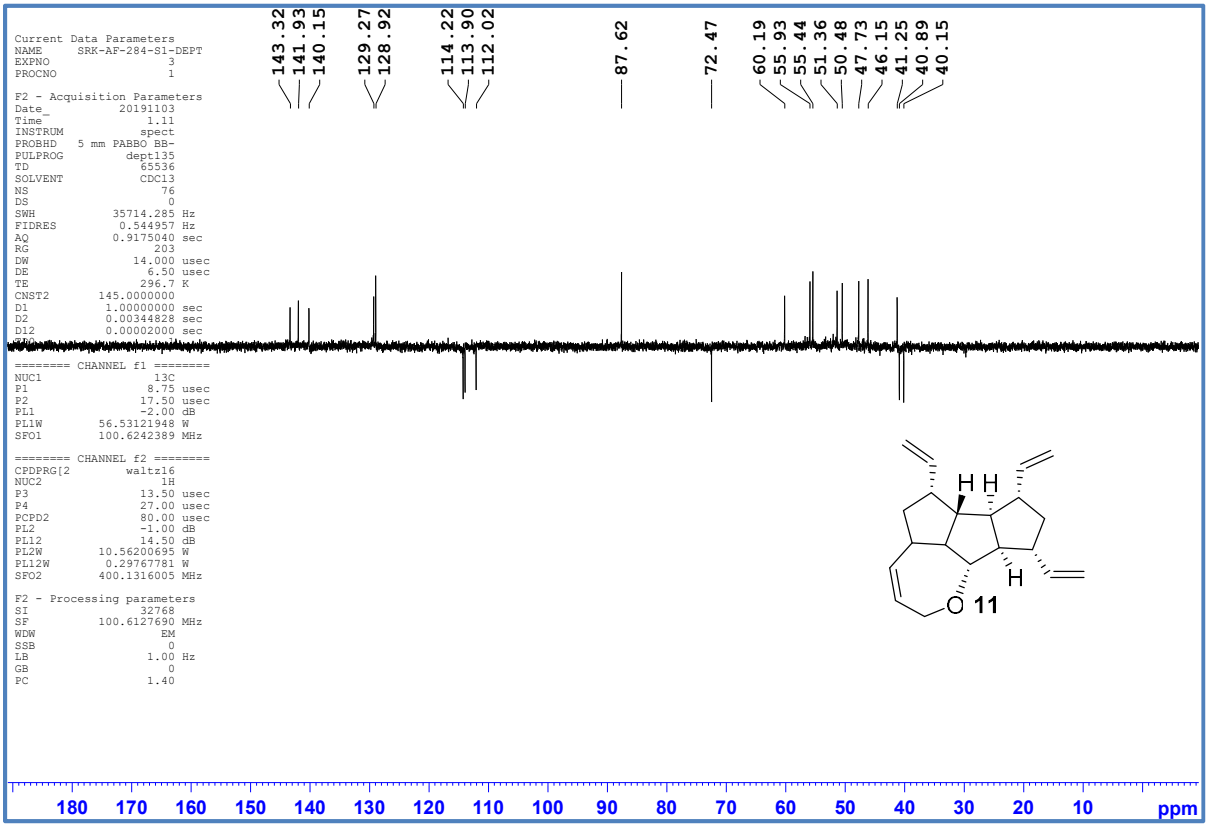
SWH 35714.285 Hz
FIDRES 0.544957 Hz
AQ 0.9175040 sec
RG 1030
DW 14.000 usec
DE 6.50 usec
TE 295.9 K
D1 1.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 13C
P1 8.50 usec
PL1 -2.00 dB
PL1W 56.53121948 W
SFO1 100.6238364 MHz
======== CHANNEL f2 ========
CPDPRG[2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -1.00 dB
PL12 13.69 dB
PL13 14.50 dB
PL2W 10.56200695 W
PL12W 0.35871249 W
PL13W 0.29767781 W
SFO2 400.1316005 MHz
F2 - Processing parameters
SI 32768
SF 100.6127690 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
143.32
141.93
140.15
129.26
128.92
114.22
113.91
112.03
87.60
77.36
77.04
76.72
72.47
60.19
55.93
55.43
51.36
50.48
47.73
46.15
41.24
40.88
40.15
H H
H
O 11
220 200 180 160 140 120 100 80 60 40 20 0 ppm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SOLVENT CDCl3
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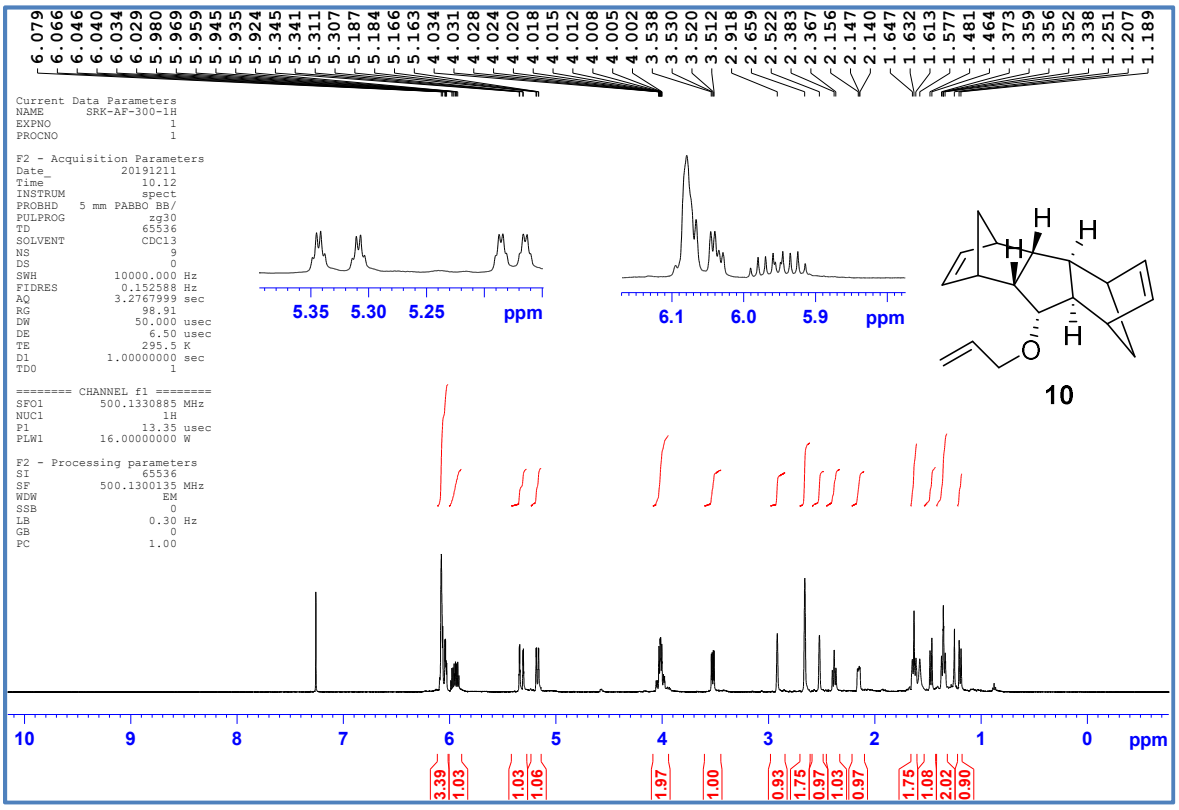
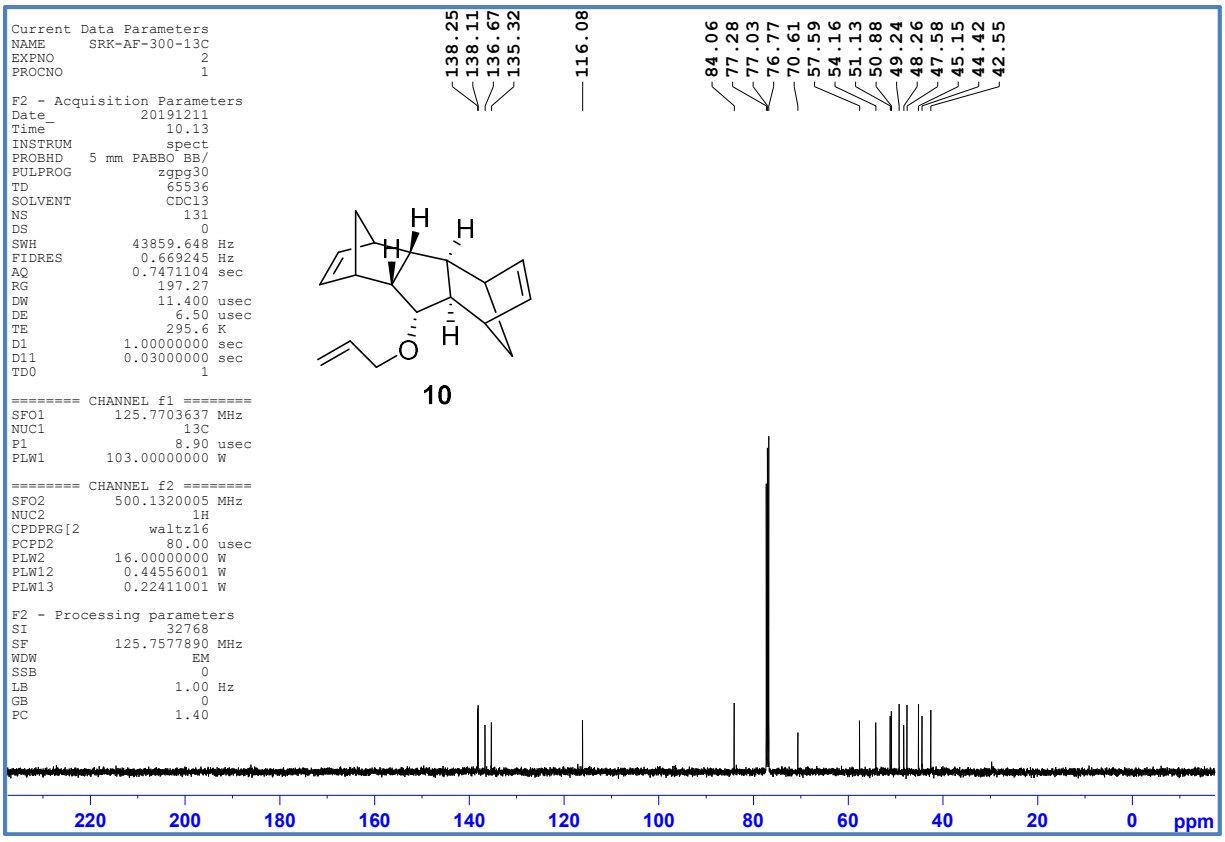
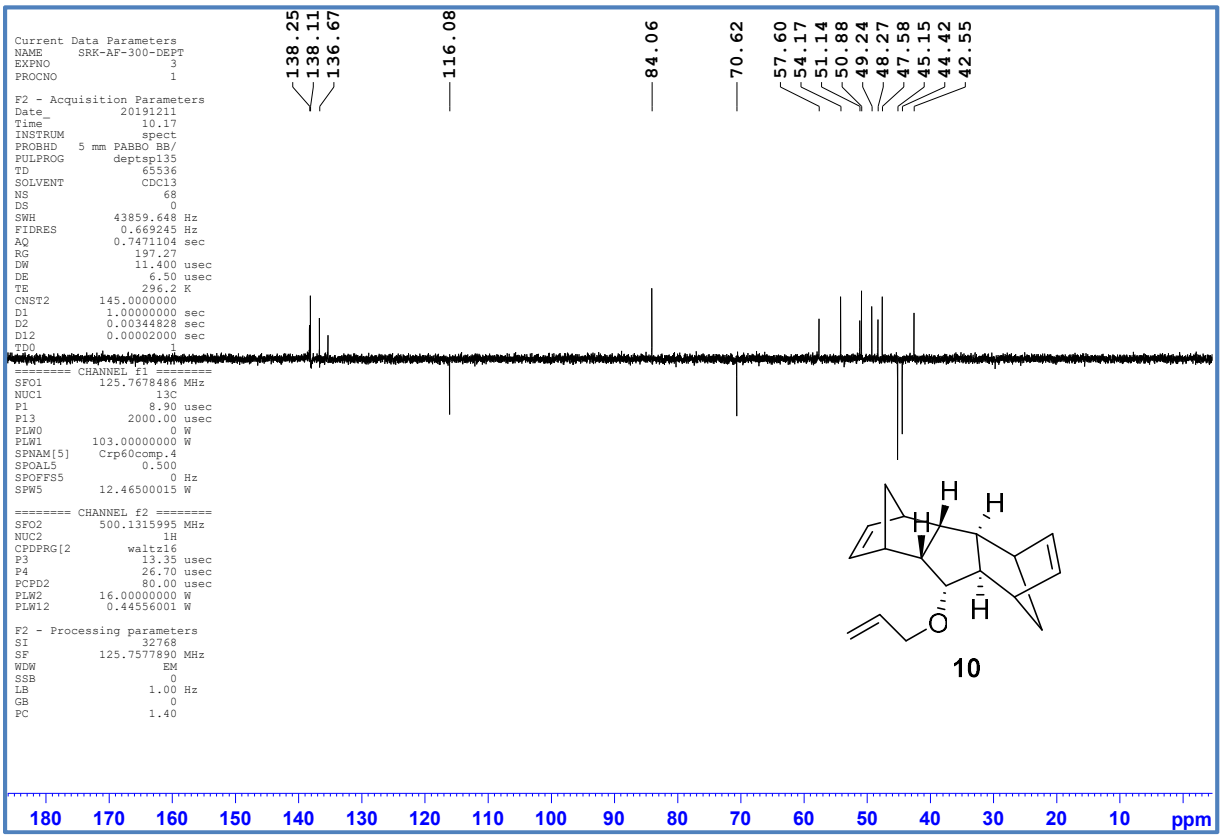
SWH 35714.285 Hz
FIDRES 0.544957 Hz
AQ 0.9175040 sec
RG 203
DW 14.000 usec
DE 6.50 usec
TE 296.7 K
CNST2 145.0000000
D1 1.00000000 sec
D2 0.00344828 sec
D12 0.00002000 sec
======== CHANNEL f1 ========
NUC1 13C
P1 8.75 usec
P2 17.50 usec
PL1 -2.00 dB
PL1W 56.53121948 W
SFO1 100.6242389 MHz
======== CHANNEL f2 ========
CPDPRG[2 waltz16
NUC2 1H
P3 13.50 usec
P4 27.00 usec
PCPD2 80.00 usec
PL2 -1.00 dB
PL12 14.50 dB
PL2W 10.56200695 W
PL12W 0.29767781 W
SFO2 400.1316005 MHz
F2 - Processing parameters
SI 32768
SF 100.6127690 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
143.32
141.93
140.15
129.27
128.92
114.22
113.90
112.02
87.62
72.47
60.19
55.93
55.44
51.36
50.48
47.73
46.15
41.25
40.89
40.15
H H
H
O 11
180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ppm

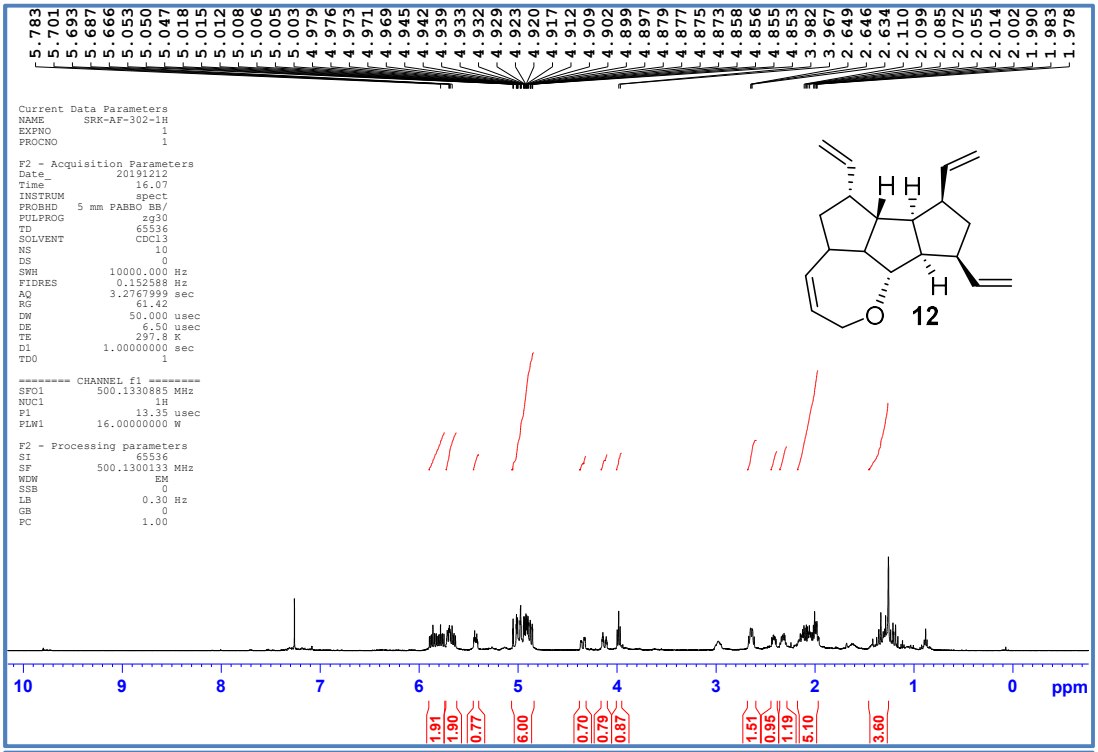
7. **^{1}H NMR (500 MHz, $CDCl_3$) of 9-(allyloxy)-4,4a,4b,5,8,8a,9,9a-octahydro-1H-1,4:5,8-dimethanofluorene (10)**

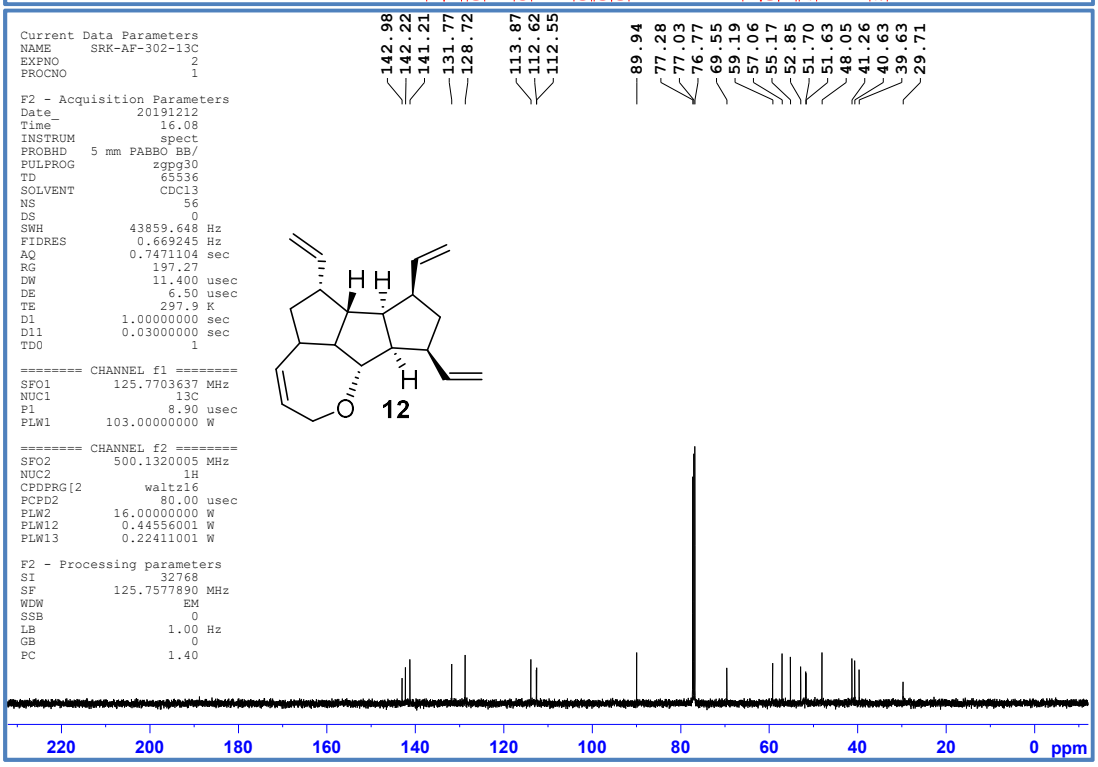



Current Data Parameters
NAME SRK-AF-300-13C
EXPNO 2
PROCNO 1
F2 - Acquisition Parameters
Date_ 20191211
Time 10.13
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 131
DS 0
SWH 43859.648 Hz
FIDRES 0.669245 Hz
AQ 0.7471104 sec
RG 197.27
DW 11.400 usec
DE 6.50 usec
TE 295.6 K
D1 1.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 125.7703637 MHz
NUC1 13C
P1 8.90 usec
PLW1 103.00000000 W
======== CHANNEL f2 ========
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG[2 waltz16
PCPD2 80.00 usec
PLW2 16.00000000 W
PLW12 0.44556001 W
PLW13 0.22411001 W
F2 - Processing parameters
SI 32768
SF 125.7577890 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
138.25
138.11
136.67
135.32
116.08
84.06
77.28
77.03
76.77
70.61
57.59
54.16
51.13
50.88
49.24
48.26
47.58
45.15
44.42
42.55
10
220
200
180
160
140
120
100
80
60
40
20
0
ppm

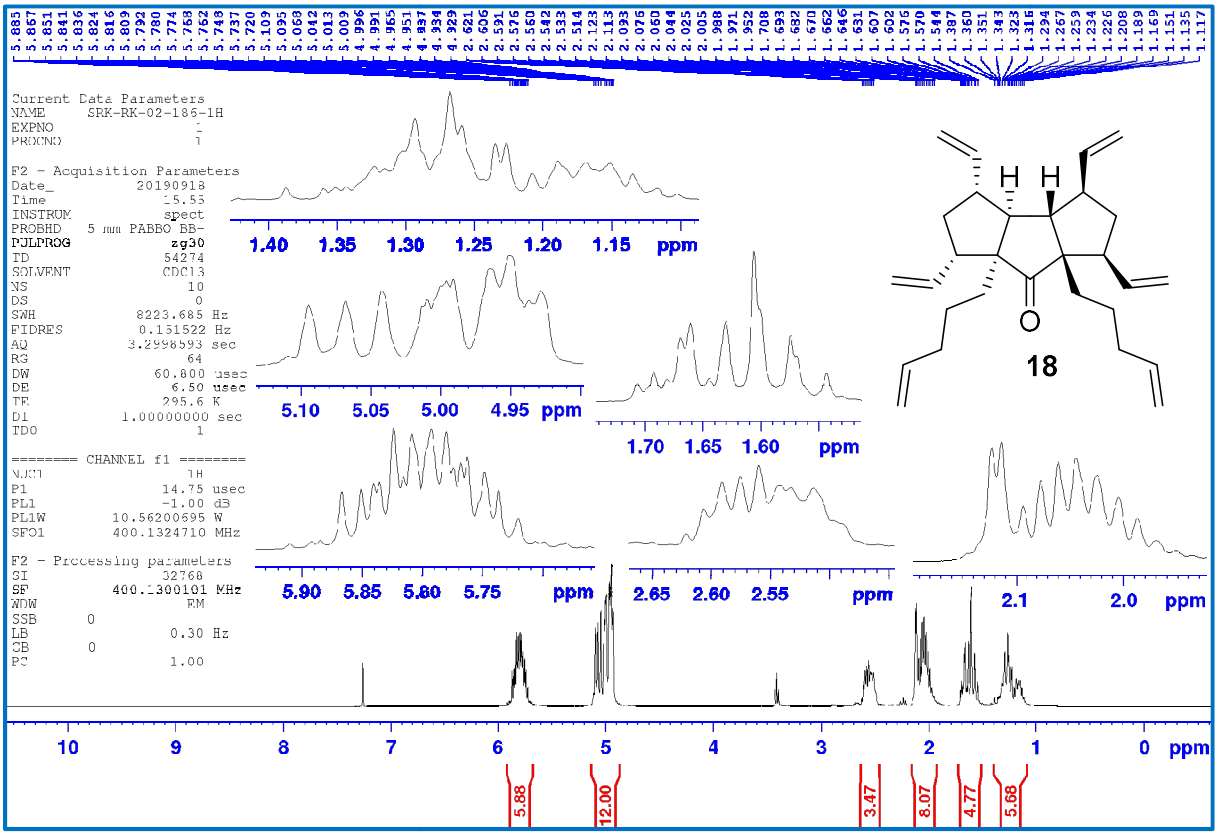

Current Data Parameters
NAME SRK-AF-300-DEPT
EXPNO 3
PROCNO 1
F2 - Acquisition Parameters
Date_ 20191211
Time 10.17
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG deptsp135
TD 65536
SOLVENT CDCl3
NS 68
DS 0
SWH 43859.648 Hz
FIDRES 0.669245 Hz
AQ 0.7471104 sec
RG 197.27
DW 11.400 usec
DE 6.50 usec
TE 296.2 K
CNST2 145.0000000
D1 1.00000000 sec
D2 0.00344828 sec
D12 0.00002000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 125.7678486 MHz
NUC1 13C
P1 8.90 usec
P13 2000.00 usec
PLW0 0 W
PLW1 103.00000000 W
SPNAM[5] Crp60comp.4
SPOAL5 0.500
SPOFFS5 0 Hz
SPW5 12.46500015 W
======== CHANNEL f2 ========
SFO2 500.1315995 MHz
NUC2 1H
CPDPRG[2 waltz16
P3 13.35 usec
P4 26.70 usec
PCPD2 80.00 usec
PLW2 16.00000000 W
PLW12 0.44556001 W
F2 - Processing parameters
SI 32768
SF 125.7577890 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
138.25
138.11
136.67
116.08
84.06
70.62
57.60
54.17
51.14
50.88
49.24
48.27
47.58
45.15
44.42
42.55
10
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
ppm

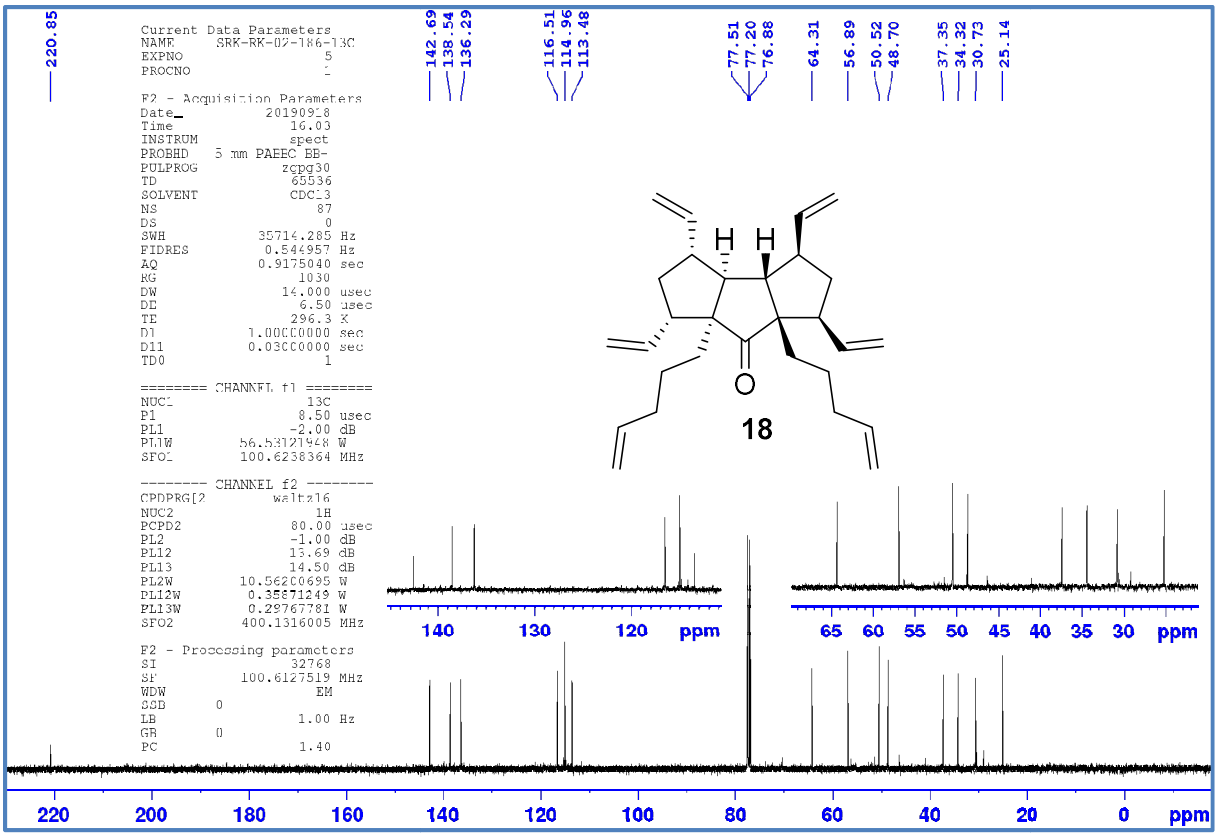
8. ^{1}H NMR (500 MHz, $CDCl_3$) of (6R,6aR,6bR,7R,9S,9aR)-6,7,9-trivinyl-2,4a,4a1,5,6,6a,6b,7,8,9,9a,9b-dodecahydro cyclopenta[2,3]pentaleno[1,6-bc]oxepine (12)

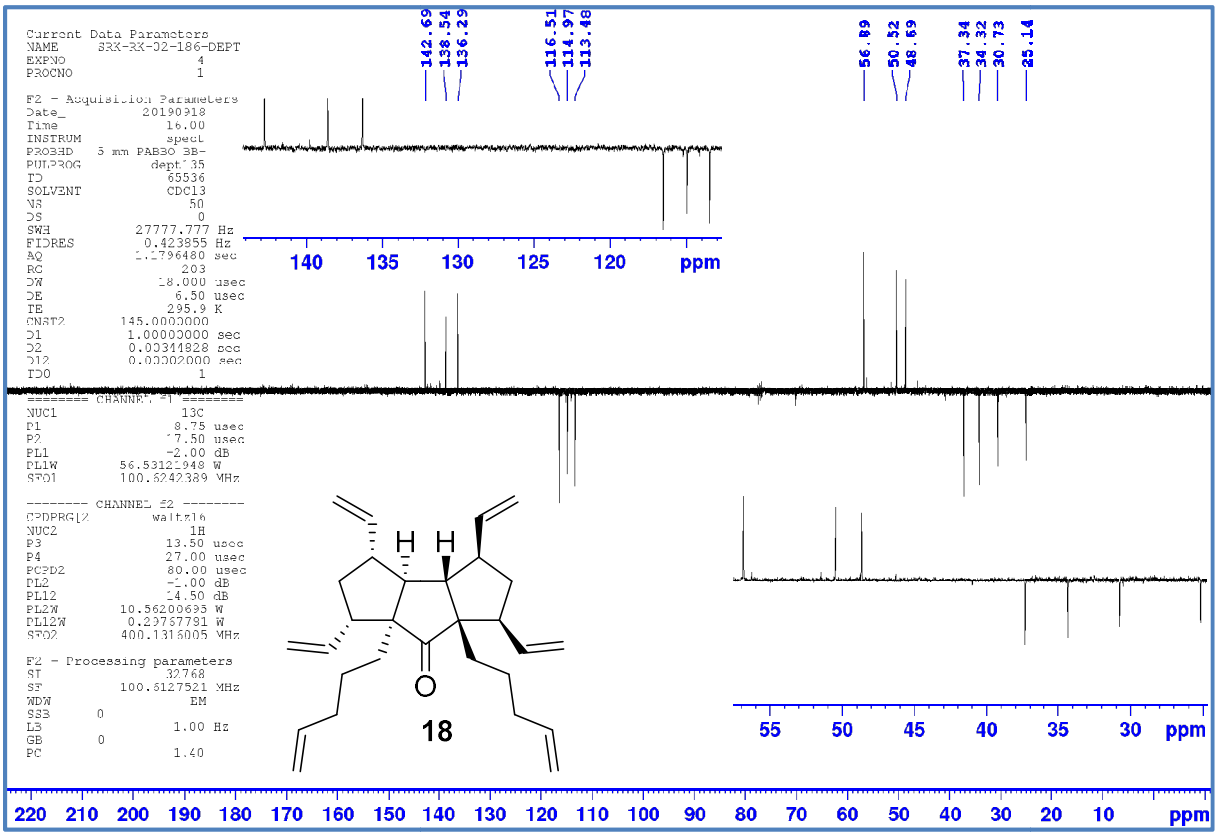




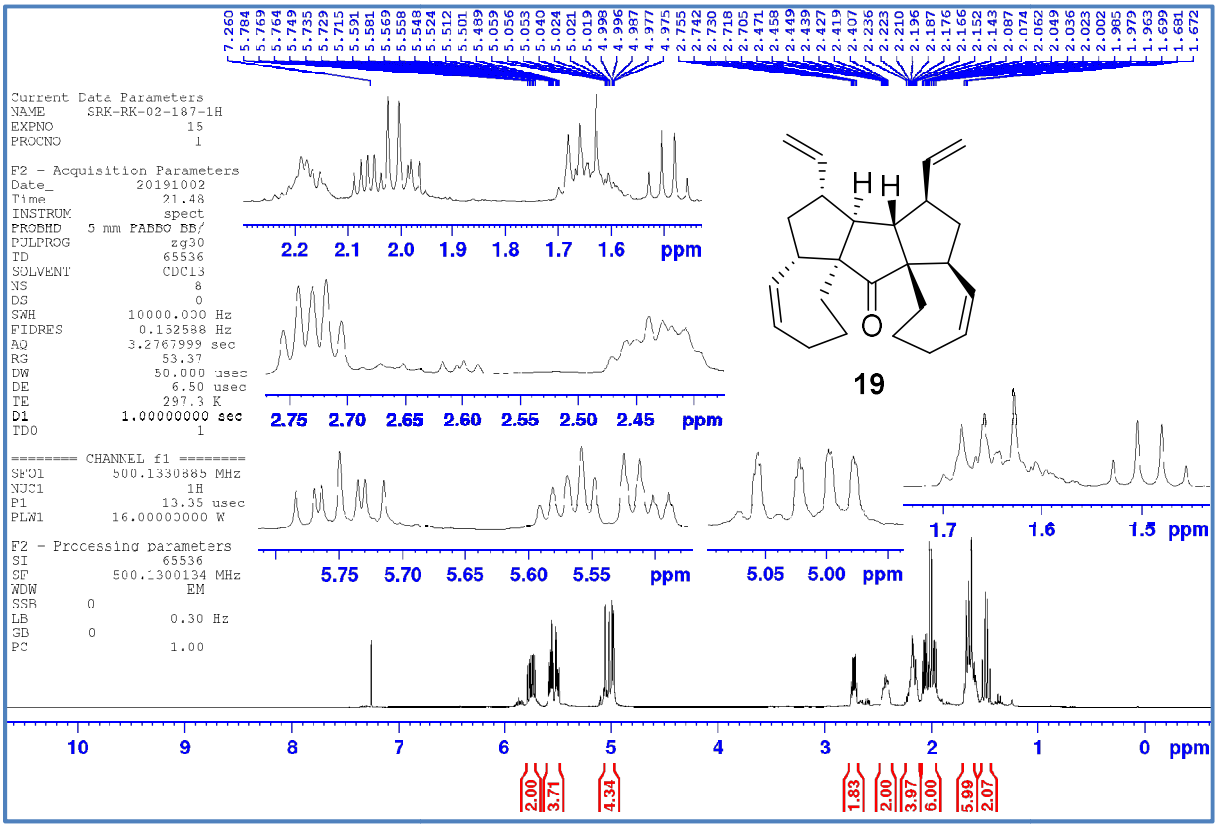
9. **(1S,3R,3aS,3bS,4R,6S,6aS,7aS)-6a,7a-di(pent-4-en-1-yl)-1,3,4,6-tetravinyldecahydro-7H-cyclopenta[a]pentalen-7-one (18)**

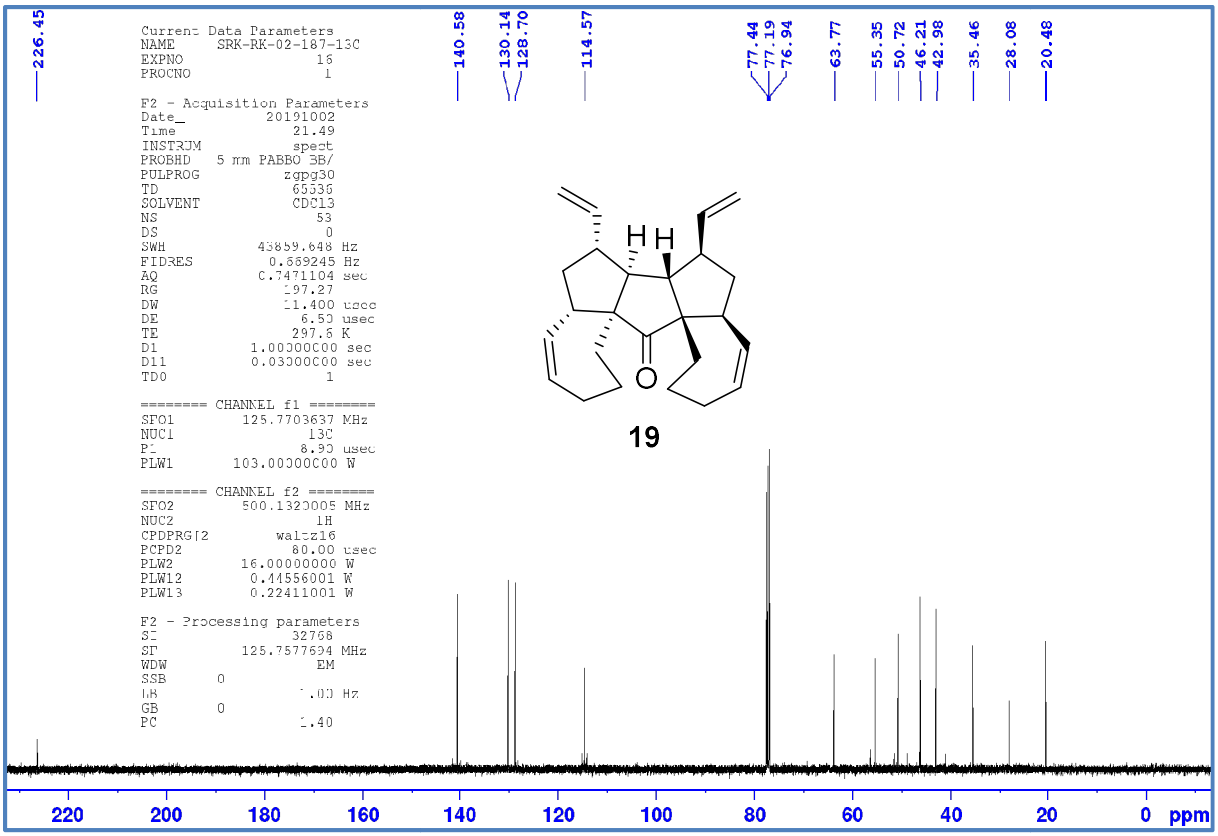


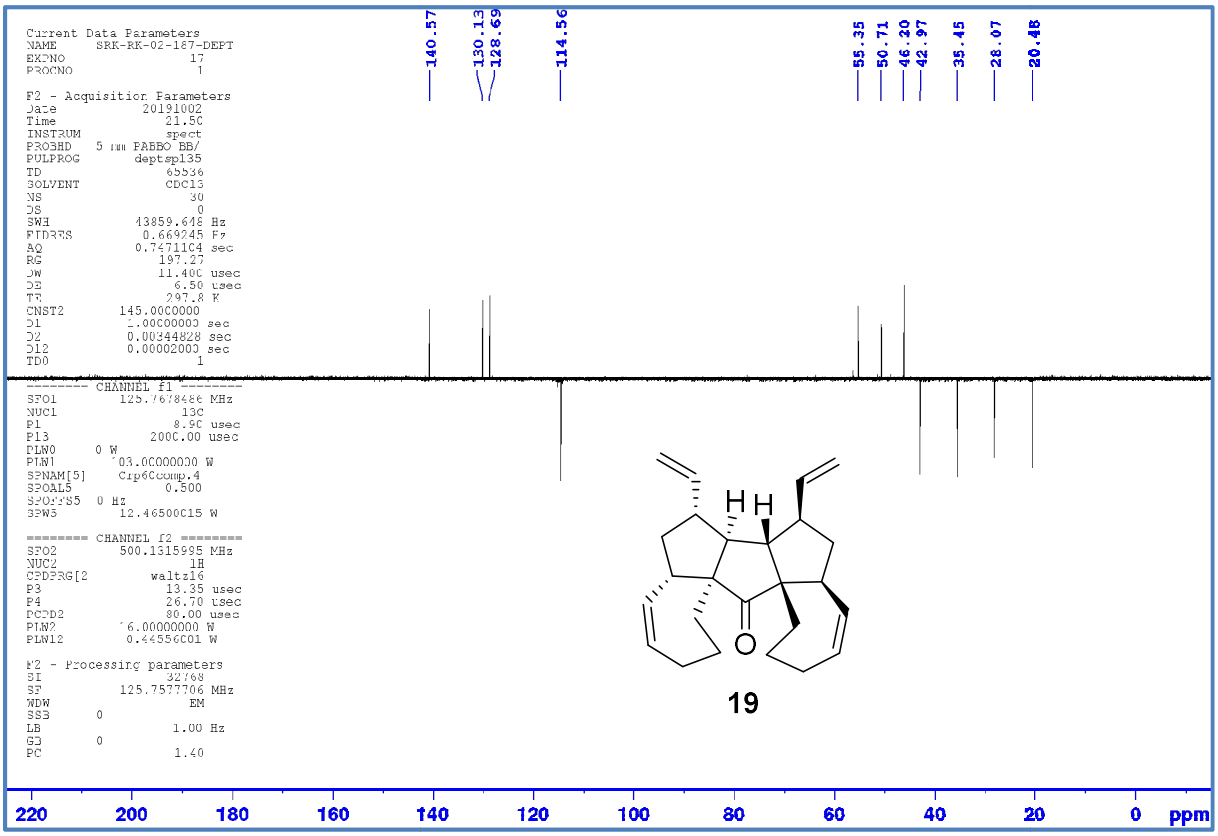

220.85
142.69
138.54
136.29
116.51
114.96
113.48
77.51
77.20
76.88
64.31
56.89
50.52
48.70
37.35
34.32
30.73
25.14
Current Data Parameters
NAME SRK-RK-02-186-13C
EXPNO 5
PROCNO 1
F2 - Acquisition Parameters
Date_ 20190918
Time 16.03
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 87
DS 0
SWH 35714.285 Hz
FIDRES 0.544957 Hz
AQ 0.9175040 sec
RG 1030
DW 14.000 usec
DE 6.50 usec
TE 296.3 K
D1 1.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 13C
P1 8.50 usec
PL1 -2.00 dB
PL1W 56.53123948 W
SFO1 100.6238364 MHz
-------- CHANNEL f2 --------
CPDPRG[2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -1.00 dB
PL12 13.69 dB
PL13 14.50 dB
PL2W 10.56200695 W
PL12W 0.35871249 W
PL13W 0.29767781 W
SFO2 400.1316005 MHz
F2 - Processing parameters
SI 32768
SF 100.6127519 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
H H
O
18
140 130 120 ppm
65 60 55 50 45 40 35 30 ppm
220 200 180 160 140 120 100 80 60 40 20 0 ppm


142.69
138.54
136.29
116.51
114.97
113.48
56.89
50.52
48.69
37.34
34.32
30.73
25.14
Current Data Parameters
NAME SRK-RK-02-186-DEPT
EXPNO 4
PROCNO 1
F2 - Acquisition Parameters
Date_ 20190918
Time 16.00
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG dept135
TD 65536
SOLVENT CDCl3
NS 50
DS 0
SWH 27777.777 Hz
FIDRES 0.423855 Hz
AQ 1.1796480 sec
RG 203
DW 18.000 usec
DE 6.50 usec
TE 295.9 K
CNST2 145.0000000
D1 1.00000000 sec
D2 0.00341828 sec
D12 0.00002000 sec
TD0 1
NUC1 13C
P1 8.75 usec
P2 17.50 usec
PL1 -2.00 dB
PL1W 56.53123948 W
SFO1 100.6242389 MHz
-------- CHANNEL f2 --------
CPDPRG[2 waltz16
NUC2 1H
P3 13.50 usec
P4 27.00 usec
PCPD2 80.00 usec
PL2 -1.00 dB
PL12 14.50 dB
PL2W 10.56200695 W
PL12W 0.29767781 W
SFO2 400.1316005 MHz
F2 - Processing parameters
SI 32768
SF 100.6127521 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
H H
O
18
55 50 45 40 35 30 ppm
220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ppm

10. (5aR,7R,7aS,7bS,8R,14aR,15aR)-7,8-divinyl-1,2,3,5a,6,7,7a,7b,8,9,9a,12,13,14-tetradecahydro-15H-cyclopenta[2,1-c:3,4-c']diazulen-15-one (19)




226.45
140.58
130.14
128.70
114.57
77.44
77.19
76.94
63.77
55.35
50.72
46.21
42.98
35.46
28.08
20.48
Current Data Parameters
NAME SRK-RK-02-187-13C
EXPNO 16
PROCNO 1
F2 - Acquisition Parameters
Date_ 20191002
Time 21.49
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 53
DS 0
SWH 43859.648 Hz
FIDRES 0.669245 Hz
AQ 0.7471104 sec
RG 197.27
DW 11.400 usec
DE 6.50 usec
TE 297.5 K
D1 1.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 125.7703637 MHz
NUC1 13C
P1 8.90 usec
PLW1 103.00000000 W
======== CHANNEL f2 ========
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG[2 waltz16
PCPD2 80.00 usec
PLW2 16.00000000 W
PLW12 0.44556001 W
PLW13 0.22411001 W
F2 - Processing parameters
SI 32768
SF 125.7577694 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
19
220
200
180
160
140
120
100
80
60
40
20
0
ppm


140.57
130.13
128.69
114.56
55.35
50.71
46.20
42.97
35.45
28.07
20.48
Current Data Parameters
NAME SRK-RK-02-187-DEPT
EXPNO 17
PROCNO 1
F2 - Acquisition Parameters
Date_ 20191002
Time 21.50
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG deptsp135
TD 65536
SOLVENT CDCl3
NS 30
DS 0
SWH 43859.648 Hz
FIDRES 0.669245 Hz
AQ 0.7471104 sec
RG 197.27
DW 11.400 usec
DE 6.50 usec
TE 297.8 K
CNST2 145.0000000
D1 2.00000000 sec
D2 0.00344828 sec
D12 0.00002000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 125.7678486 MHz
NUC1 13C
P1 8.90 usec
P13 2000.00 usec
PLW0 0 W
PLW1 103.00000000 W
SPNAM[5] Crp60comp.4
SPOAL5 0.500
SPOFFS5 0 Hz
SPW5 12.46500015 W
======== CHANNEL f2 ========
SFO2 500.1315995 MHz
NUC2 1H
CPDPRG[2 waltz16
P3 13.35 usec
P4 26.70 usec
PCPD2 80.00 usec
PLW2 16.00000000 W
PLW12 0.44556001 W
F2 - Processing parameters
SI 32768
SF 125.7577706 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
19
220
200
180
160
140
120
100
80
60
40
20
0
ppm