Supporting Information

Zinc Salt-Catalyzed Reduction of α-Aryl Imino Esters, Diketones and Phenylacetylenes with Water as Hydrogen Source

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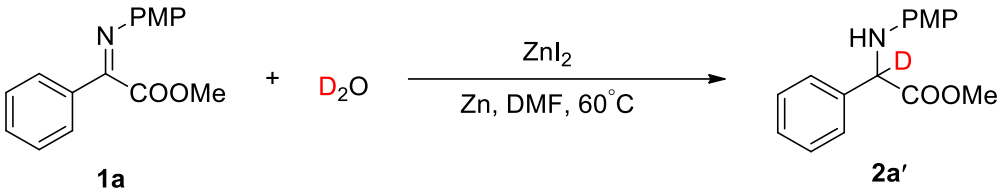
A: Procedure for the reactions

A_1. Typical procedure for the transfer deuteriation of α-aryl imino esters:



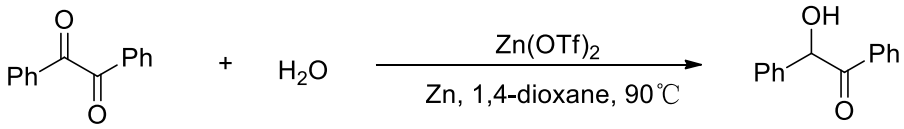
1a **2a′**

ZnI_2 (6.4 mg, 0.02 mmol), α-aryl imino esters **1a** (53.9 mg, 0.2 mmol), Zinc powder (325 mesh, 39 mg, 0.6 mmol), D_2O (20 μL, 1.0 mmol) and 2.0 mL anhydrous DMF were added to a Schlenk tube under argon atmosphere. The mixture was stirred at 60 ℃ under argon atmosphere with TLC monitoring until the complete consumption of **1a**. The mixture was extracted with EtOAc. The organic layers were washed with brine, dried over Na_2SO_4, filtered and concentrated. The residue was purified by chromatography on a silica gel column (ethyl acetate / petroleum ether, 1 / 20) to afford the desired product **2a'** (95% yield, 98% D).

Gram scale reactions:

ZnI_2 (118.4 mg, 0.371 mmol), α-aryl imino esters **1a** (1.0 g, 3.71 mmol), Zinc powder (325 mesh, 727.7 mg, 11.13 mmol), D_2O (337.3 μL, 18.55 mmol) and 36 mL anhydrous DMF were added to a Schlenk tube under argon atmosphere. The mixture was stirred at 60 ℃ under argon atmosphere with TLC monitoring until the complete consumption of **1a**. The mixture was extracted with EtOAc. The organic layers were washed with brine, dried over Na_2SO_4, filtered and concentrated. The residue was purified by chromatography on a silica gel column (ethyl acetate / petroleum ether, 1 / 20) to afford the desired product **2a'** (93% yield, 99% D).

A_2. Typical procedure for the transfer hydrogenation of 1, 2 – diphenylethane – 1, 2 - dione:

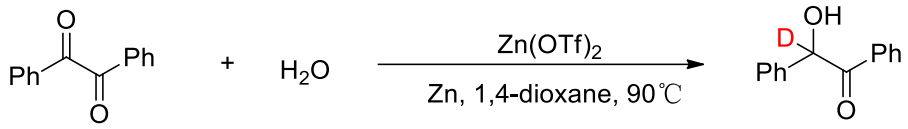


3a **4a**

$Zn(OTf)_2$ (7.3 mg, 0.02 mmol), 1, 2 - diphenylethane - 1, 2 - dione **3a** (42.0 mg, 0.2 mmol), Zinc powder (325 mesh, 39 mg, 0.6 mmol), H_2O (18 μL, 1.0 mmol) and 2.0 mL anhydrous 1,4-Dioxane were added to a Schlenk tube under argon atmosphere. The mixture was stirred at 90 ℃ under argon atmosphere with TLC monitoring until

the complete consumption of **3a**. The residue was purified by chromatography on a silica gel column (ethyl acetate / petroleum ether, 1 / 5) to afford the desired product **4a** (95% yield).

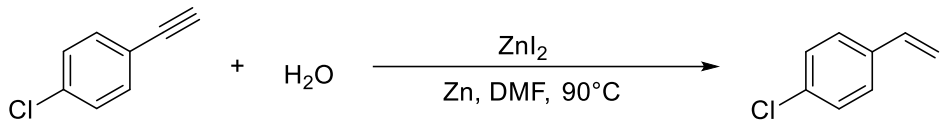
A_3. Typical procedure for the transfer deuteriation of 1, 2 – diphenylethane – 1, 2 - dione:



3a **4a′**

$Zn(OTf)_2$ (7.3 mg, 0.02 mmol), 1, 2 - diphenylethane - 1, 2 - dione **3a** (42.0 mg, 0.2 mmol), Zinc powder (325 mesh, 39 mg, 0.6 mmol), D_2O (18 μL, 1.0 mmol) and 2.0 mL anhydrous 1,4-Dioxane were added to a Schlenk tube under argon atmosphere. The mixture was stirred at 90 ℃ under argon atmosphere with TLC monitoring until the complete consumption of **3a**. The residue was purified by chromatography on a silica gel column (ethyl acetate / petroleum ether, 1 / 5) to afford the desired product **4a'** (94% yield, 91% D).

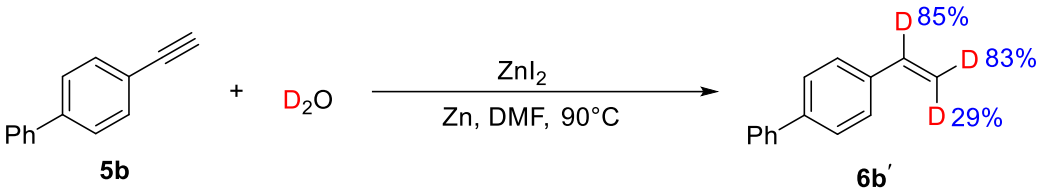
A_4. Typical procedure for the transfer hydrogenation of 1 – chloro – 4 – ethynyl benzene:



5a **6a**

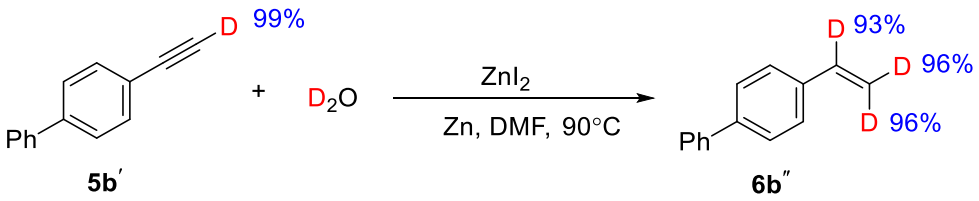
ZnI_2 (6.4 mg, 0.02 mmol), 1-chloro-4-ethynylbenzene **5a** (35.6 mg, 0.2 mmol), Zinc powder (325 mesh, 39 mg, 0.6 mmol), H_2O (18 μL, 1.0 mmol) and 2.0 mL anhydrous DMF were added to a Schlenk tube under argon atmosphere. The mixture was stirred at 90 ℃ under argon atmosphere with TLC monitoring until the complete consumption of **5a**. The mixture was extracted with Et_2O. The organic layers were washed with brine, dried over Na_2SO_4, filtered and concentrated. The residue was purified by chromatography on a silica gel column (*n*-Hexane) to afford the desired product **6a** (94% yield).

A_5. Typical procedure for the transfer deuteriation of 4-Ethynyl-1,1'-biphenyl:



ZnI_2 (6.4 mg, 0.02 mmol), 4-Ethynyl-1,1'-biphenyl **5b** (35.6 mg, 0.2 mmol), Zinc powder (325 mesh, 39 mg, 0.6 mmol), D_2O (18 μL, 1.0 mmol) and 2.0 mL anhydrous DMF were added to a Schlenk tube under argon atmosphere. The mixture was stirred at 90 ℃ under argon atmosphere with TLC monitoring until the complete consumption of **5b**. The mixture was extracted with Et_2O. The organic layers were washed with brine, dried over Na_2SO_4, filtered and concentrated. The residue was purified by chromatography on a silica gel column (*n*-Hexane) to afford the desired product **6b'** (90% yield).

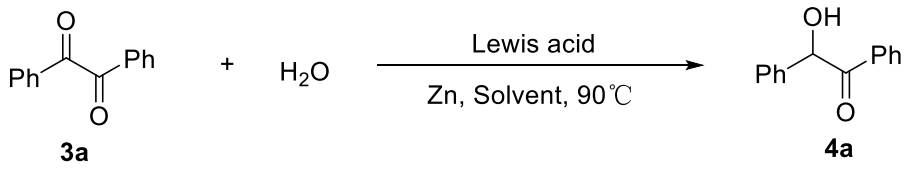
A_6. Typical procedure for the transfer deuteriation of 4-Ethynyl-1,1'-biphenyl-*d*:



ZnI_2 (6.4 mg, 0.02 mmol), 4-Ethynyl-1,1'-biphenyl-*d* **5b'** (35.8 mg, 0.2 mmol), Zinc powder (325 mesh, 39 mg, 0.6 mmol), D_2O (18 μL, 1.0 mmol) and 2.0 mL anhydrous DMF were added to a Schlenk tube under argon atmosphere. The mixture was stirred at 90 ℃ under argon atmosphere with TLC monitoring until the complete consumption of **5b'**. The mixture was extracted with Et_2O. The organic layers were washed with brine, dried over Na_2SO_4, filtered and concentrated. The residue was purified by chromatography on a silica gel column (*n*-Hexane) to afford the desired product **6b''** (95% yield).

B: Optimization Table

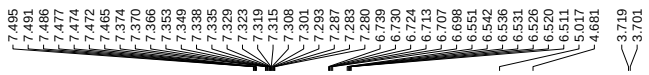
Table S1. Reaction conditions optimization for the reduction of 3a.[a]

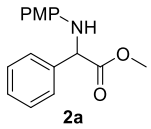


Entry	Solvent	Lewis acid	time (h)	yield (%)[b]
1	1,4-dioxane	$Zn(OTf)_2$	2	95
2	1,4-dioxane	AgOTf	2	90
3	1,4-dioxane	$Fe(OTf)_2$	7	81
4	1,4-dioxane	$Cu(OTf)_2$	7	69
5	1,4-dioxane	$Yb(OTf)_3$	7	62
6	1,4-dioxane	ZnI_2	48	95
7	1,4-dioxane	/	48	NR
8	Toluene	$Zn(OTf)_2$	96	76
10	THF	$Zn(OTf)_2$	2	88
11	DMF	$Zn(OTf)_2$	2	88
12	DCE	$Zn(OTf)_2$	96	69
13	CH_3CN	$Zn(OTf)_2$	2	83

[a] Reaction conditions: **3a** (0.2 mmol), H_2O (1.0 mmol), Lewis acid (0.02 mmol) and zinc powder (325 mesh, 0.6 mmol) in Solvent (2 mL) at 90 ℃ under an argon atmosphere. [b] Isolated yield.

C: NMR Spectra of Products





2a

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FIDRES           0.125483 Hz
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TD0                     1

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PL1                 -3.00 dB
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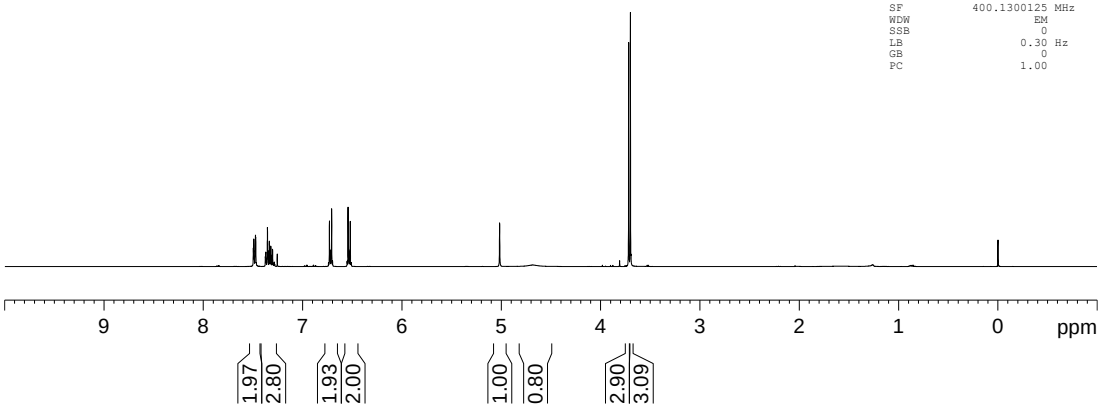

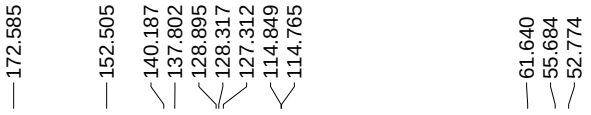


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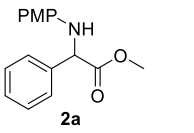
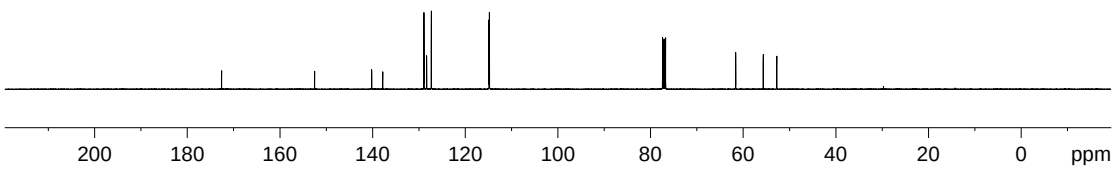
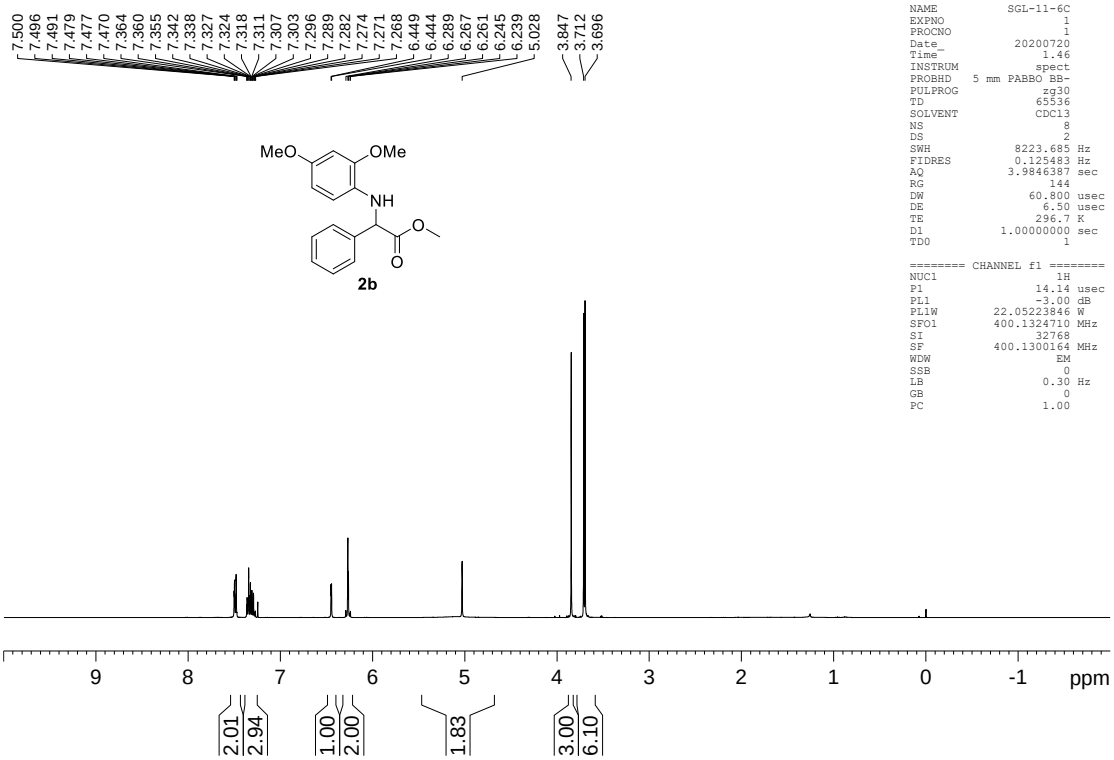


2a

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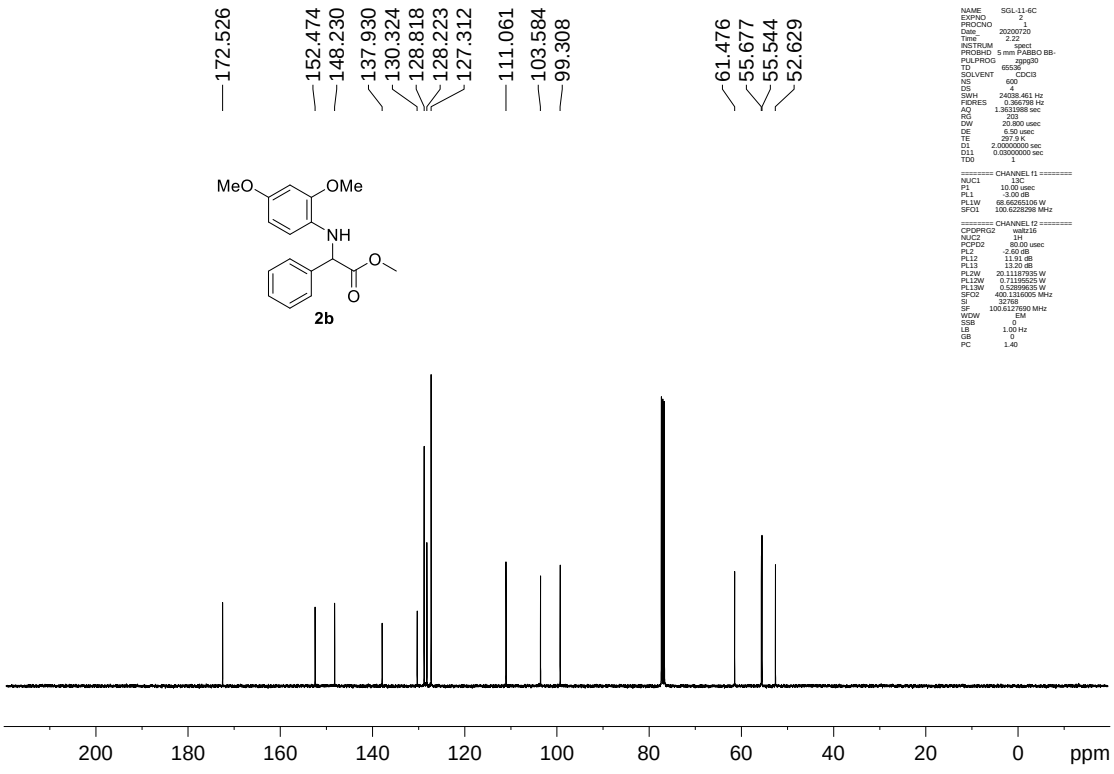
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PL13 13.20 dB
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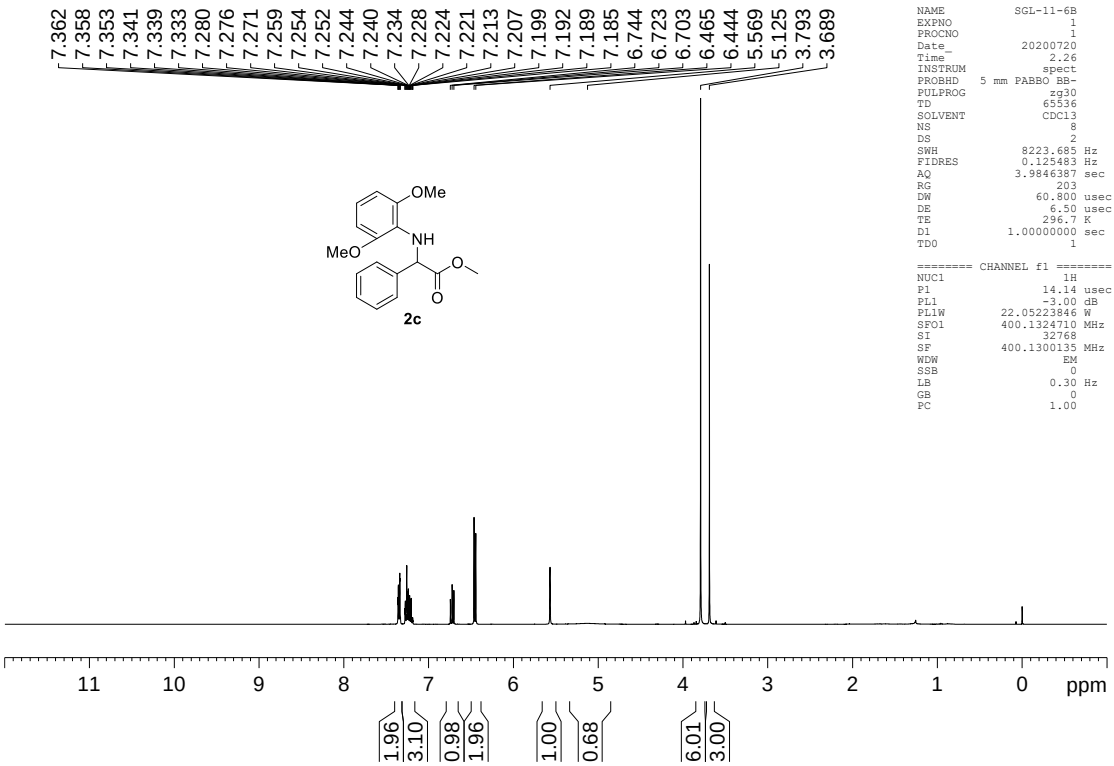
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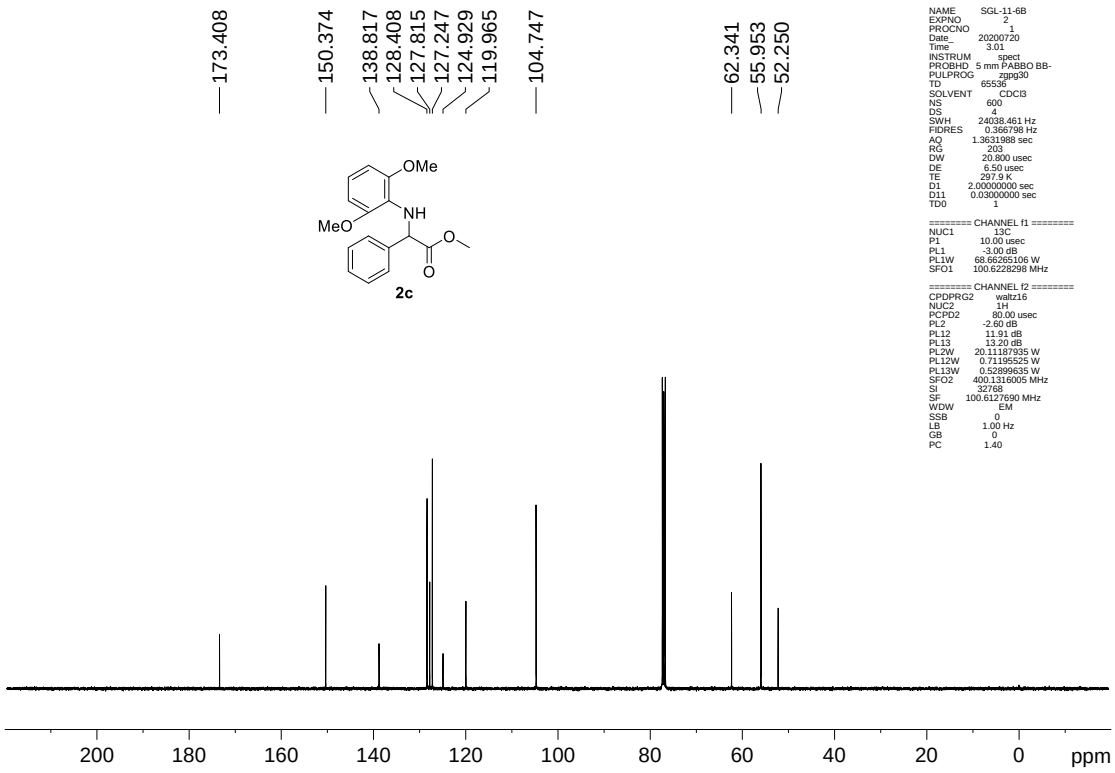
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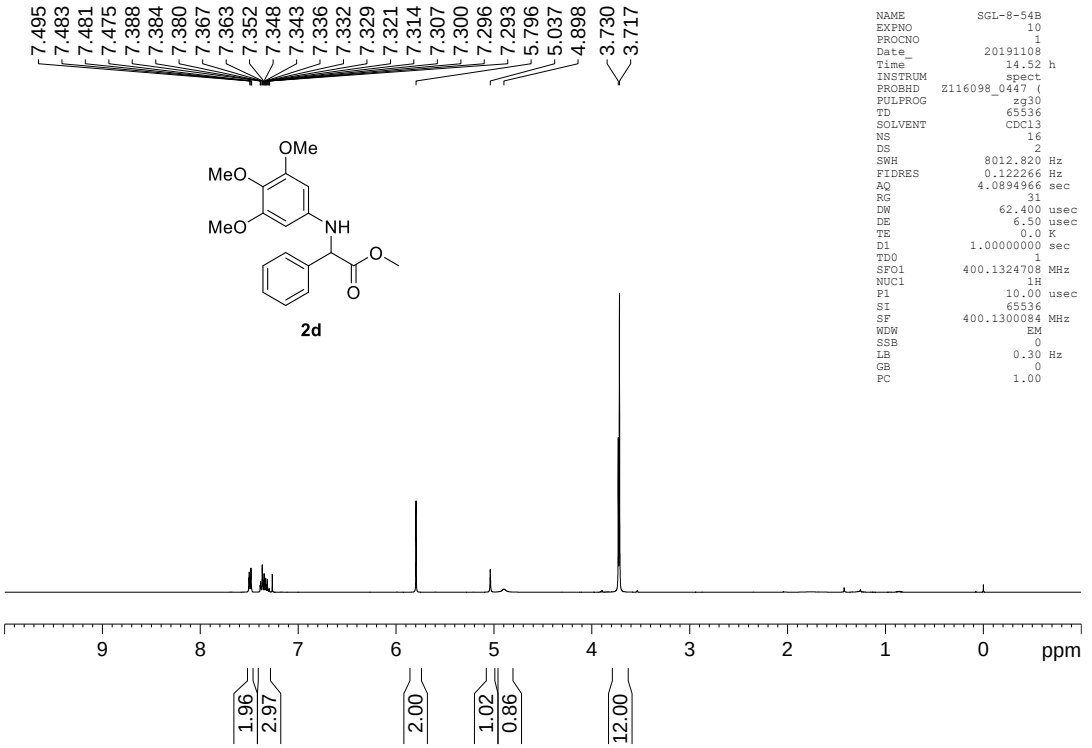
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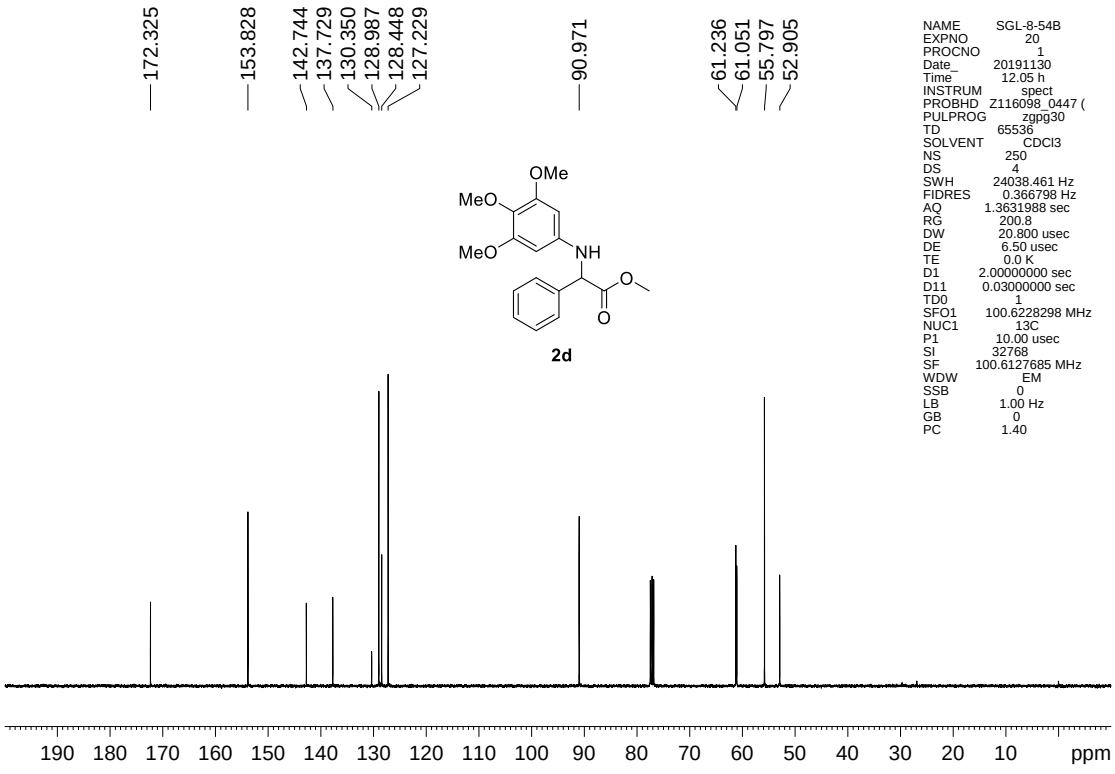
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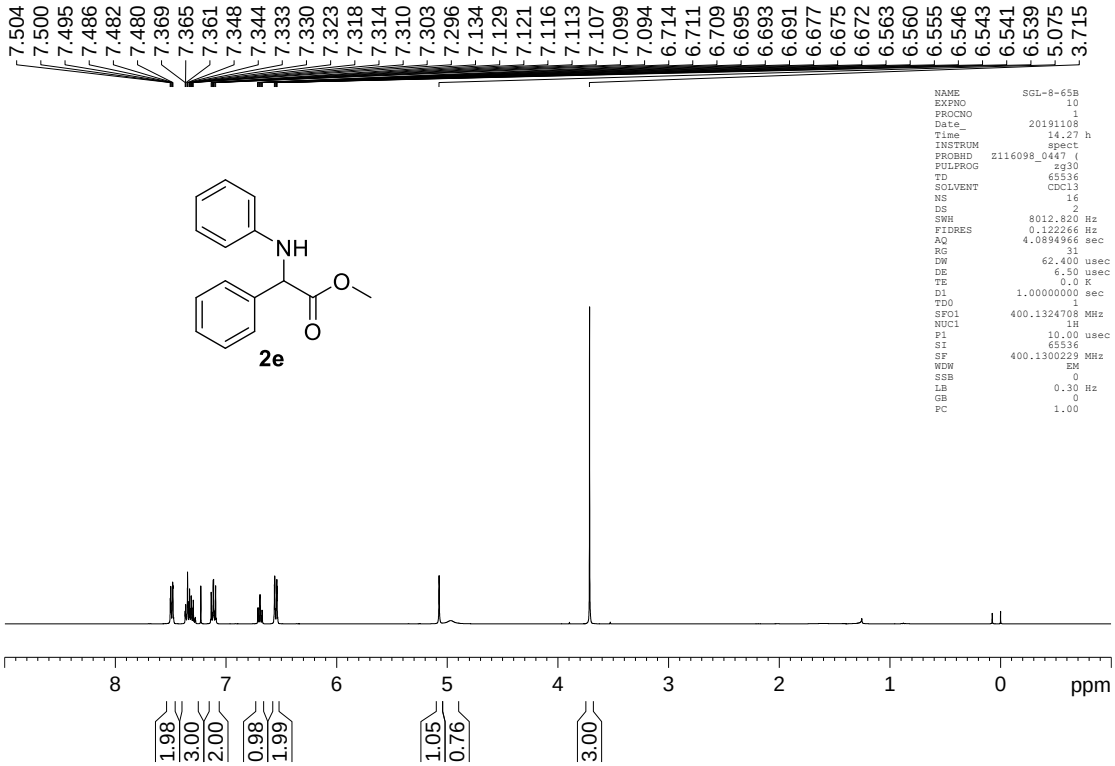
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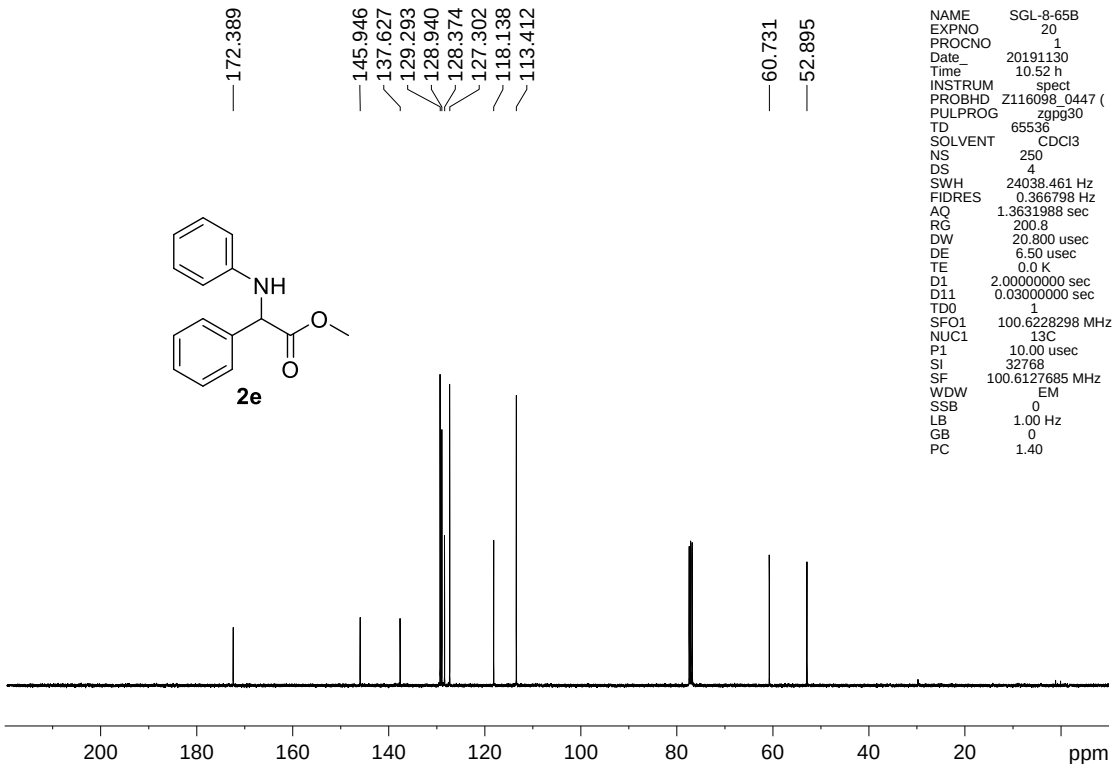
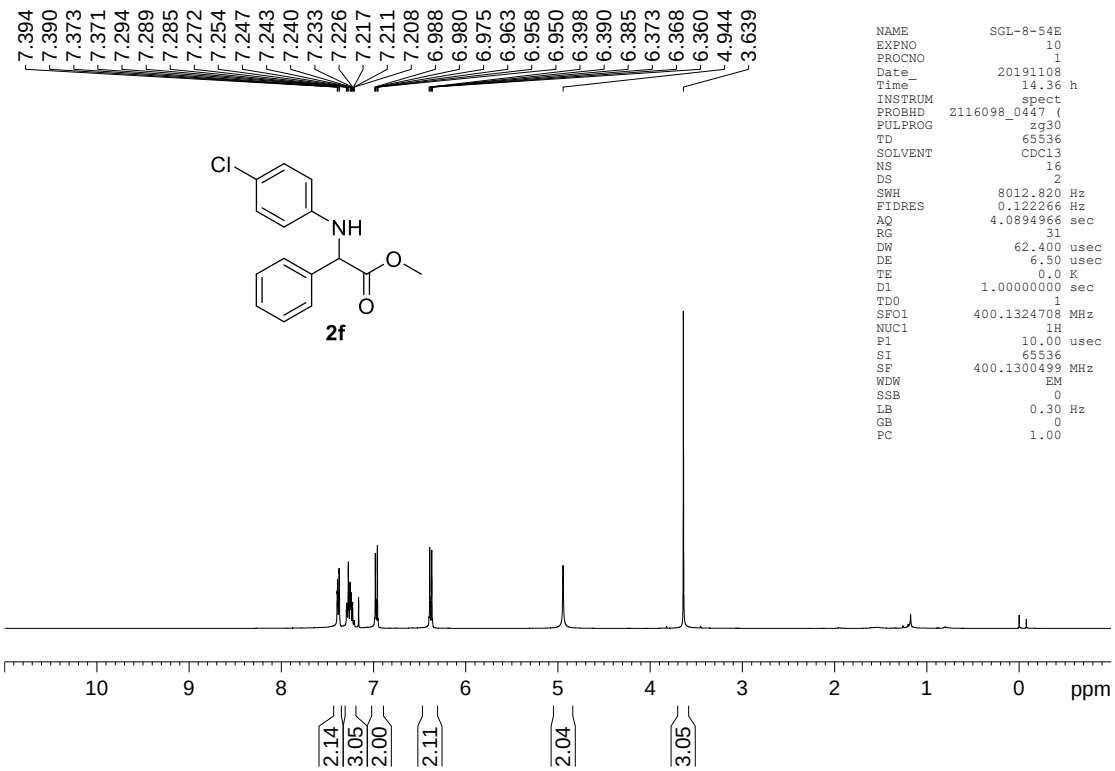
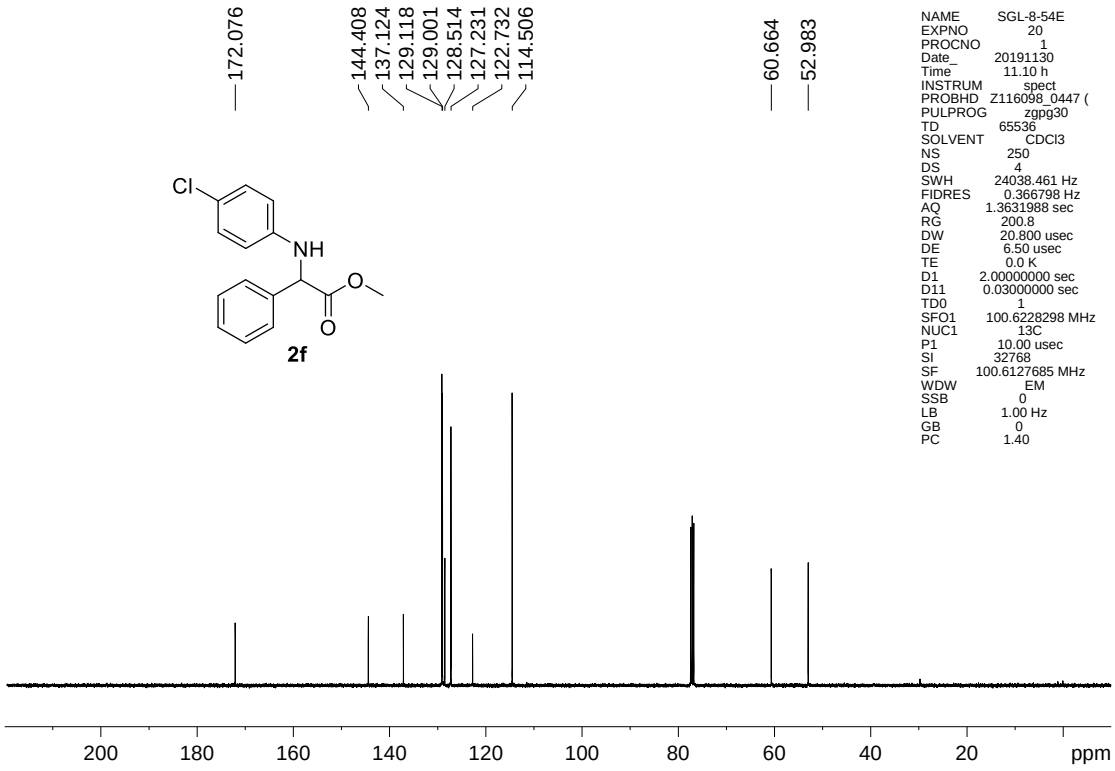
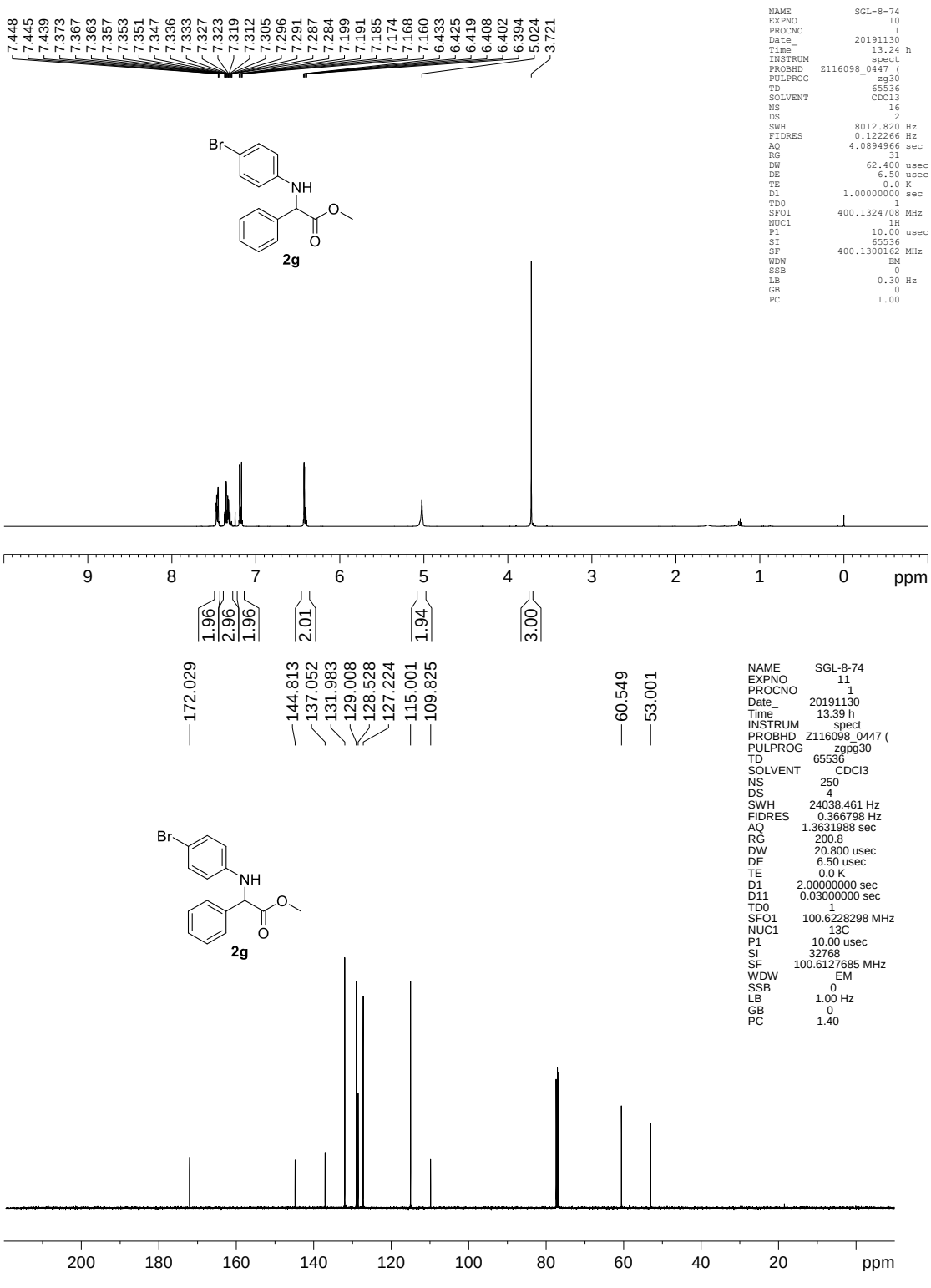
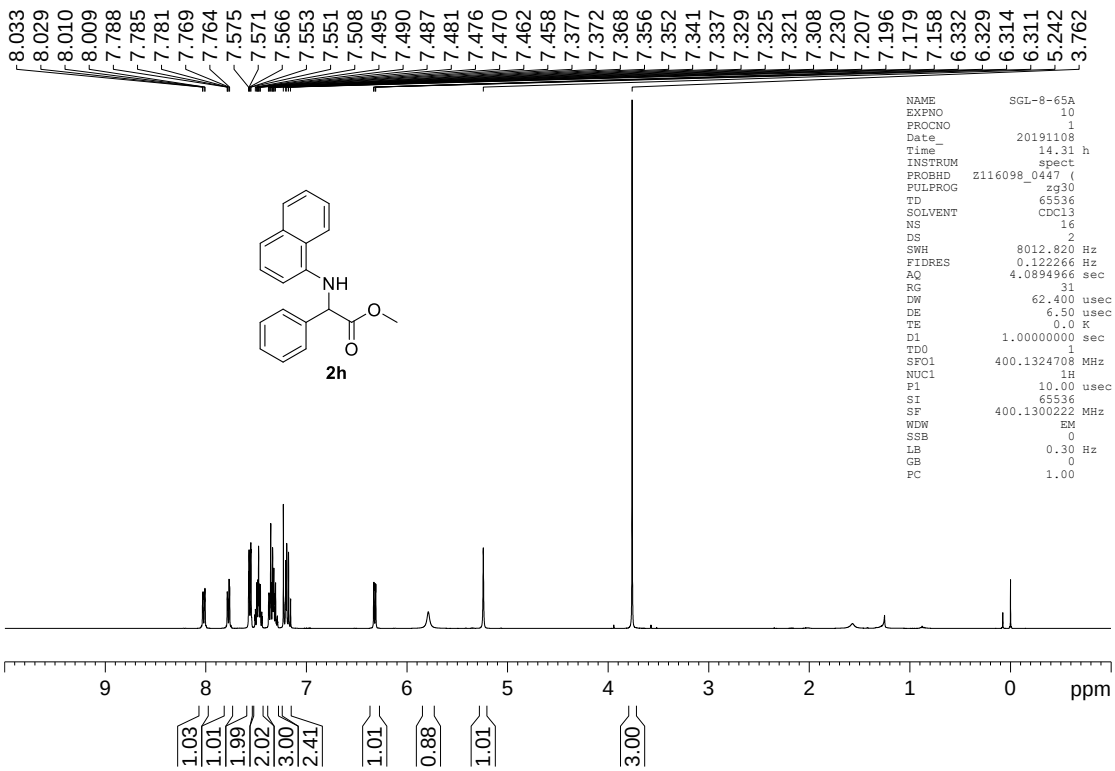
7.310
7.303
7.296
7.134
7.129
7.121
7.116
7.113
7.107
7.099
7.094
6.714
6.711
6.709
6.695
6.693
6.691
6.677
6.675
6.672
6.563
6.560
6.555
6.546
6.543
6.541
6.539
5.075
3.715
NAME SGL-8-65B
EXPNO 10
PROCNO 1
Date_ 20191108
Time 14.27 h
INSTRUM spect
PROBHD Z116098_0447 (
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 31
DW 62.400 usec
DE 6.50 usec
TE 0.0 K
D1 1.00000000 sec
TD0 1
SFO1 400.1324708 MHz
NUC1 1H
P1 10.00 usec
SI 65536
SF 400.1300229 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
NH
O
O
2e
8
7
6
5
4
3
2
1
0
ppm
1.98
3.00
2.00
0.98
1.99
1.05
0.76
3.00

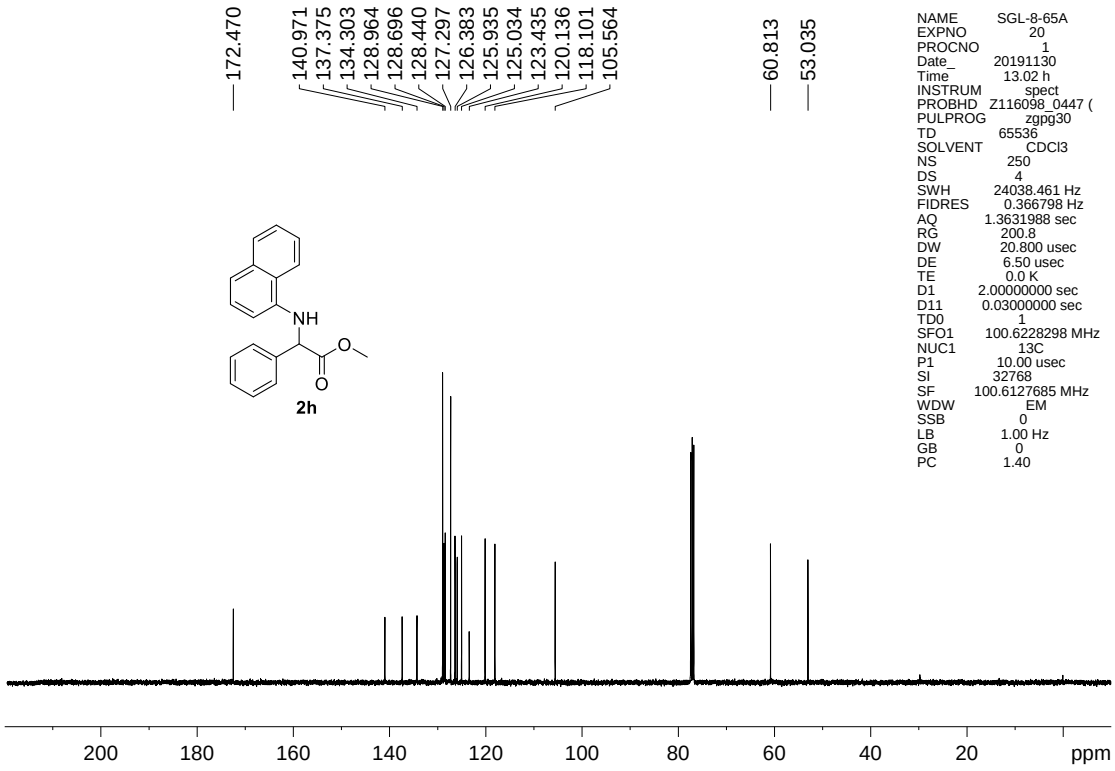

172.389
145.946
137.627
129.293
128.940
128.374
127.302
118.138
113.412
60.731
52.895
NAME SGL-8-65B
EXPNO 20
PROCNO 1
Date_ 20191130
Time 10.52 h
INSTRUM spect
PROBHD Z116098_0447 (
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 250
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 200.8
DW 20.800 usec
DE 6.50 usec
TE 0.0 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
SFO1 100.6228298 MHz
NUC1 13C
P1 10.00 usec
SI 32768
SF 100.6127685 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
NH
O
O
2e
200
180
160
140
120
100
80
60
40
20
ppm

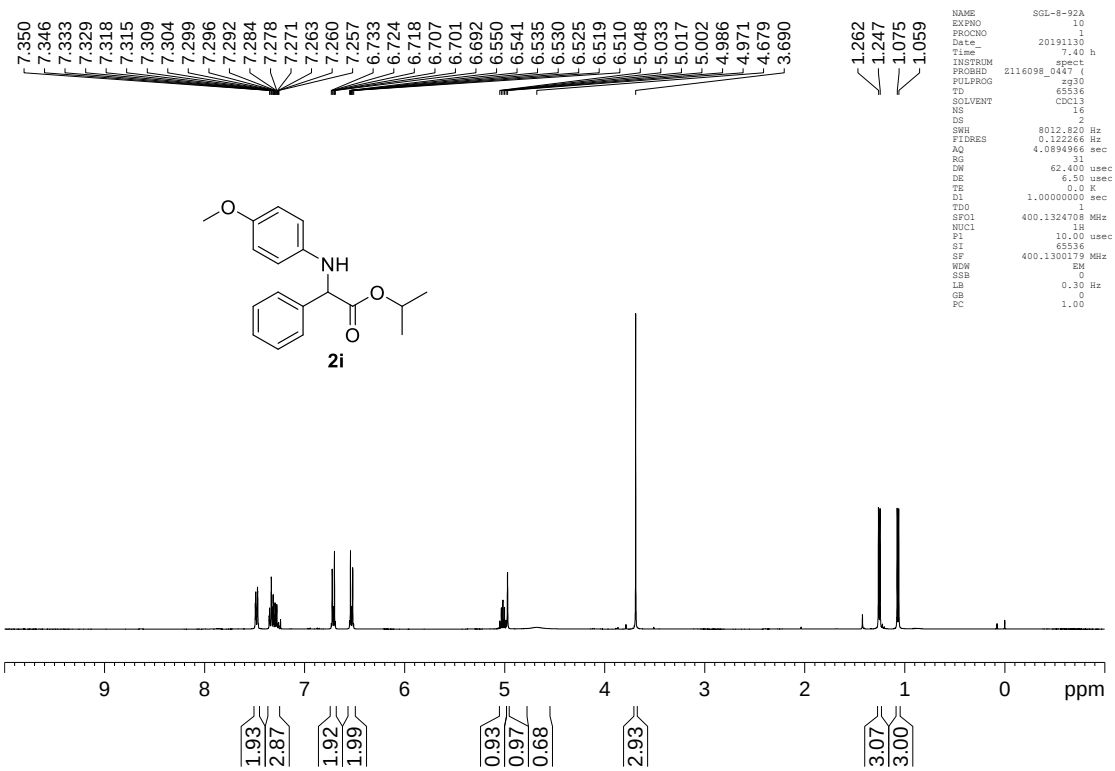

7.394
7.390
7.373
7.371
7.294
7.289
7.285
7.272
7.254
7.247
7.243
7.240
7.233
7.226
7.217
7.211
7.208
6.988
6.980
6.975
6.963
6.958
6.950
6.398
6.390
6.385
6.373
6.368
6.360
4.944
3.639
Cl
NH
O
O
2f
NAME SGL-8-54E
EXPNO 10
PROCNO 1
Date_ 20191108
Time 14.36 h
INSTRUM spect
PROBHD Z116098_0447 (
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 31
DW 62.400 usec
DE 6.50 usec
TE 0.0 K
D1 1.00000000 sec
TD0 1
SFO1 400.1324708 MHz
NUC1 1H
P1 10.00 usec
SI 65536
SF 400.1300499 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
10
9
8
7
6
5
4
3
2
1
0
ppm
2.14
3.05
2.00
2.11
2.04
3.05

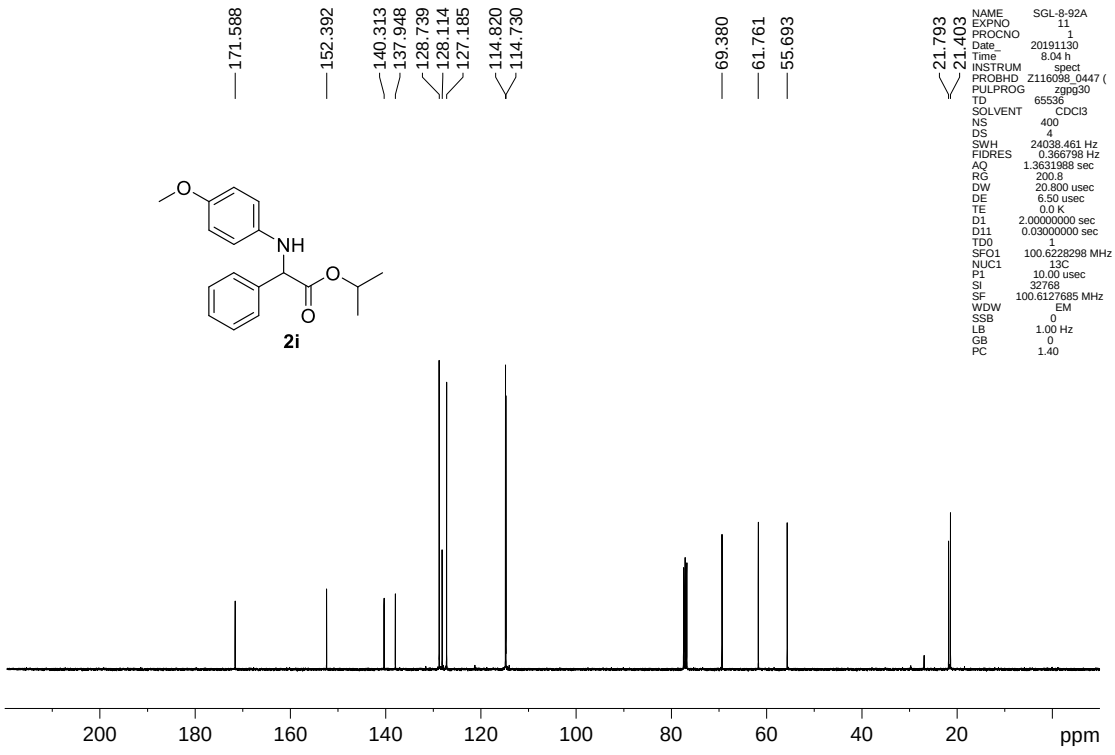

172.076
144.408
137.124
129.118
129.001
128.514
127.231
122.732
114.506
60.664
52.983
Cl
NH
O
O
2f
NAME SGL-8-54E
EXPNO 20
PROCNO 1
Date_ 20191130
Time 11.10 h
INSTRUM spect
PROBHD Z116098_0447 (
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 250
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 200.8
DW 20.800 usec
DE 6.50 usec
TE 0.0 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
SFO1 100.6228298 MHz
NUC1 13C
P1 10.00 usec
SI 32768
SF 100.6127685 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
200
180
160
140
120
100
80
60
40
20
ppm

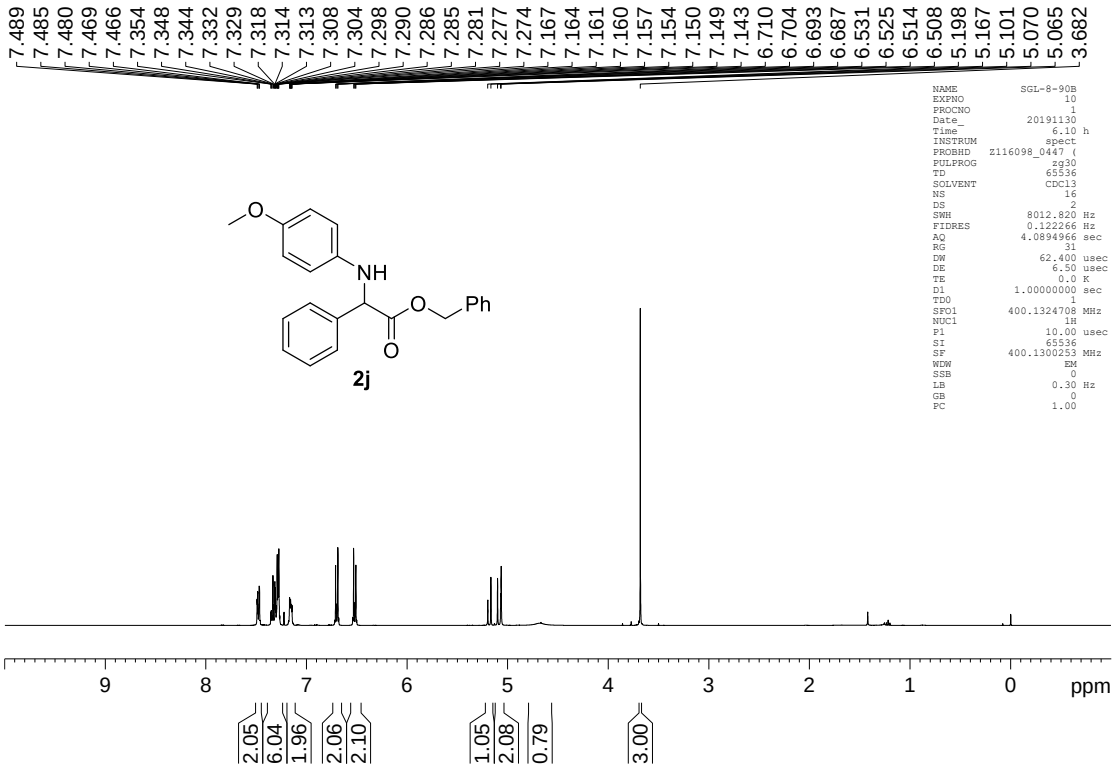

7.448
7.445
7.439
7.373
7.367
7.363
7.357
7.353
7.351
7.347
7.336
7.333
7.327
7.323
7.319
7.312
7.305
7.296
7.291
7.287
7.284
7.199
7.191
7.185
7.174
7.168
7.160
6.433
6.425
6.419
6.408
6.402
6.394
5.024
3.721
NAME SGL-8-74
EXPNO 10
PROCNO 1
Date_ 20191130
Time 13.24 h
INSTRUM spect
PROBHD Z116098_0447 (
PULPROG zg30
TD 65536
SOLVENT CDC13
NS 16
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 31
DW 62.400 usec
DE 6.50 usec
TE 0.0 K
D1 1.00000000 sec
TD0 1
SFO1 400.1324708 MHz
NUC1 1H
P1 10.00 usec
SI 65536
SF 400.1300162 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
Br
NH
O
O
2g
9
8
7
6
5
4
3
2
1
0
ppm
1.96
2.96
1.96
2.01
1.94
3.00
172.029
144.813
137.052
131.983
129.008
128.528
127.224
115.001
109.825
60.549
53.001
NAME SGL-8-74
EXPNO 11
PROCNO 1
Date_ 20191130
Time 13.39 h
INSTRUM spect
PROBHD Z116098_0447 (
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 250
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 200.8
DW 20.800 usec
DE 6.50 usec
TE 0.0 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
SFO1 100.6228298 MHz
NUC1 13C
P1 10.00 usec
SI 32768
SF 100.6127685 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
Br
NH
O
O
2g
200
180
160
140
120
100
80
60
40
20
ppm

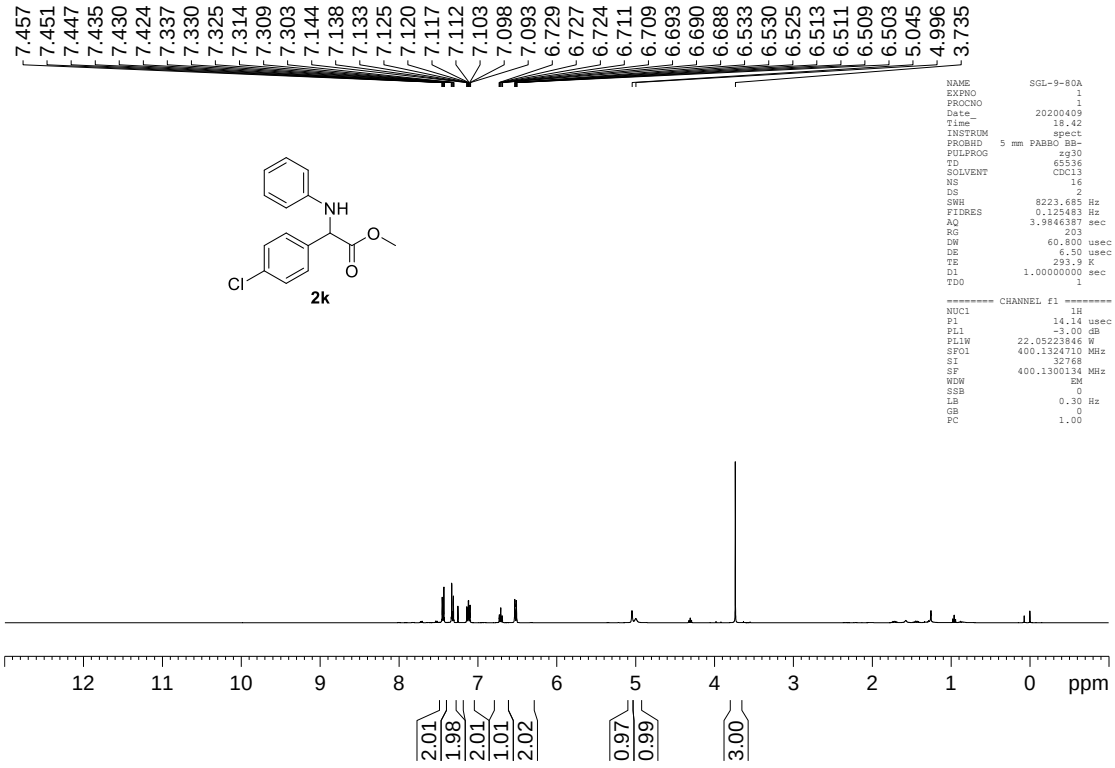

8.033
8.029
8.010
8.009
7.788
7.785
7.781
7.769
7.764
7.575
7.571
7.566
7.553
7.551
7.508
7.495
7.490
7.487
7.481
7.476
7.470
7.462
7.458
7.377
7.372
7.368
7.356
7.352
7.341
7.337
7.329
7.325
7.321
7.308
7.230
7.207
7.196
7.179
7.158
6.332
6.329
6.314
6.311
5.242
3.762
NAME SGL-8-65A
EXPNO 10
PROCNO 1
Date_ 20191108
Time 14.31 h
INSTRUM spect
PROBHD Z116098_0447 (
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 31
DW 62.400 usec
DE 6.50 usec
TE 0.0 K
D1 1.00000000 sec
TD0 1
SFO1 400.1324708 MHz
NUC1 1H
P1 10.00 usec
SI 65536
SF 400.1300222 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
NH
O
O
2h
9
8
7
6
5
4
3
2
1
0
ppm
1.03
1.01
1.99
2.02
3.00
2.41
1.01
0.88
1.01
3.00

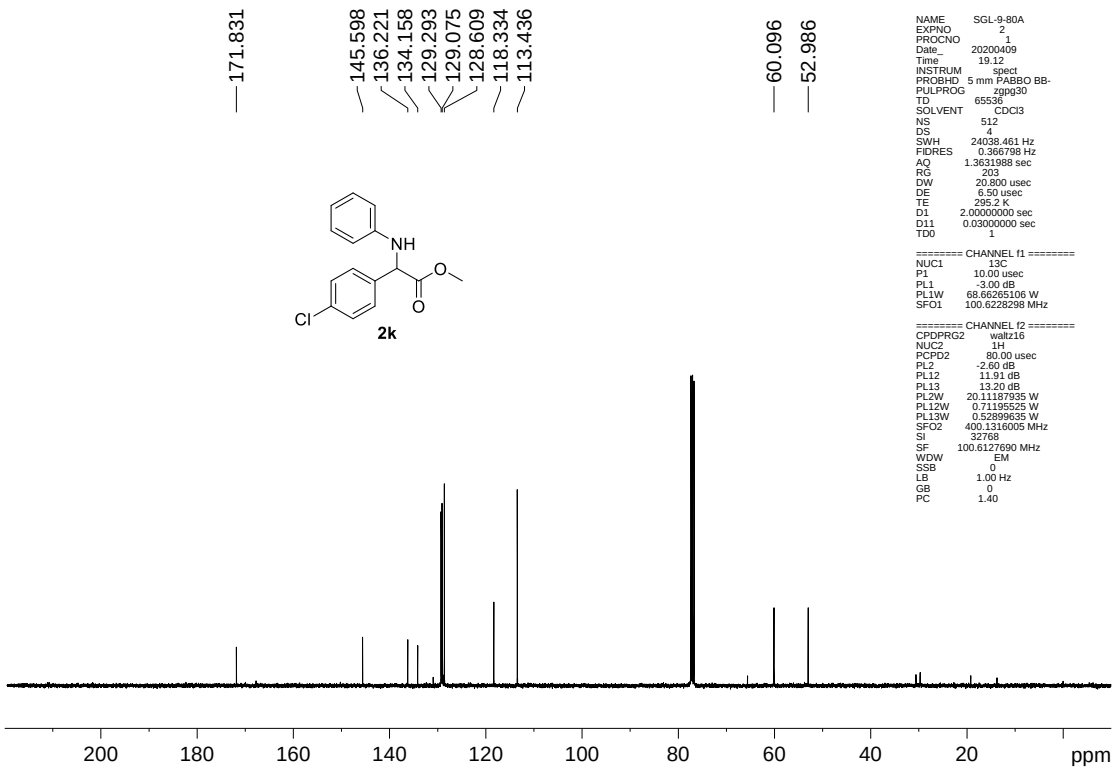

172.470
140.971
137.375
134.303
128.964
128.696
128.440
127.297
126.383
125.935
125.034
123.435
120.136
118.101
105.564
60.813
53.035
NAME SGL-8-65A
EXPNO 20
PROCNO 1
Date_ 20191130
Time 13.02 h
INSTRUM spect
PROBHD Z116098_0447 (
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 250
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 200.8
DW 20.800 usec
DE 6.50 usec
TE 0.0 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
SFO1 100.6228298 MHz
NUC1 13C
P1 10.00 usec
SI 32768
SF 100.6127685 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
NH
O
O
2h
200
180
160
140
120
100
80
60
40
20
ppm

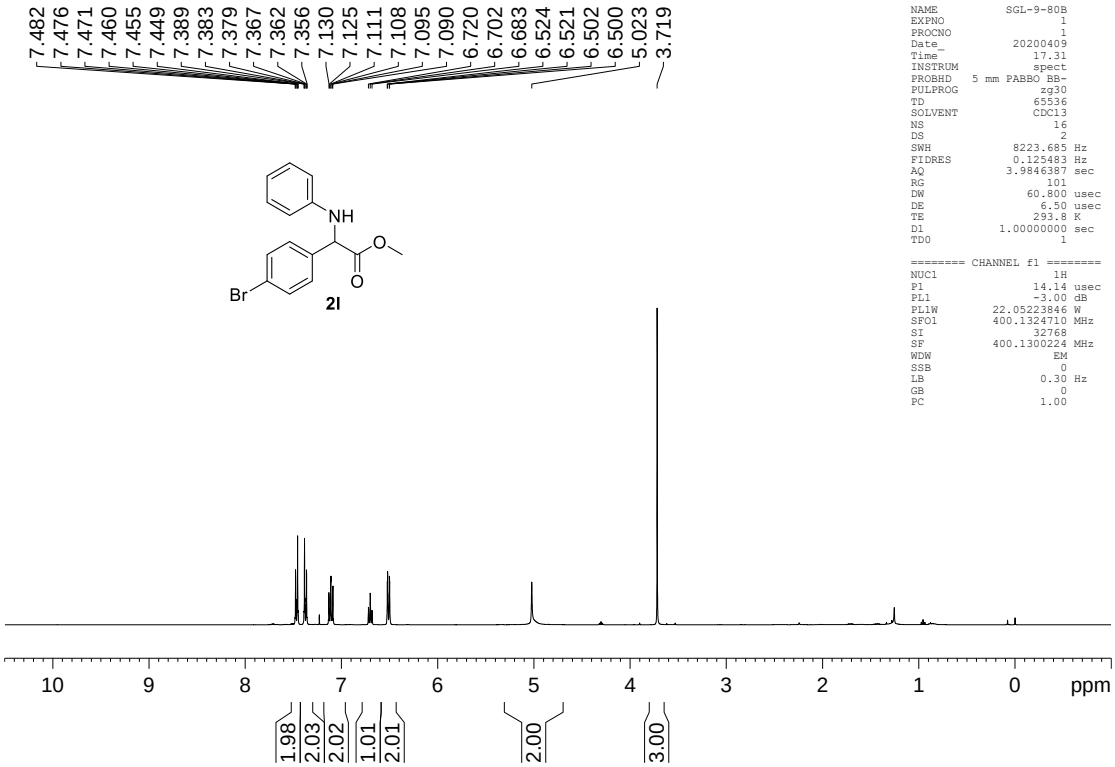

7.350
7.346
7.333
7.329
7.318
7.315
7.309
7.304
7.299
7.296
7.292
7.284
7.278
7.271
7.263
7.260
7.257
6.733
6.724
6.718
6.707
6.701
6.692
6.550
6.541
6.535
6.530
6.525
6.519
6.510
5.048
5.033
5.017
5.002
4.986
4.971
4.679
3.690
1.262
1.247
1.075
1.059
NAME SGL-8-92A
EXPNO 10
PROCNO 1
Date_ 20191130
Time_ 7.40 h
INSTRUM spect
PROBHD Z116098_0447 (
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 31
DW 62.400 usec
DE 6.50 usec
TE 0.0 K
D1 1.00000000 sec
TD0 1
SFO1 400.1324708 MHz
NUC1 1H
P1 10.00 usec
SI 65536
SF 400.1300179 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
O
NH
O
O
2i
9
8
7
6
5
4
3
2
1
0
ppm
1.93
2.87
1.92
1.99
0.93
0.97
0.68
2.93
3.07
3.00

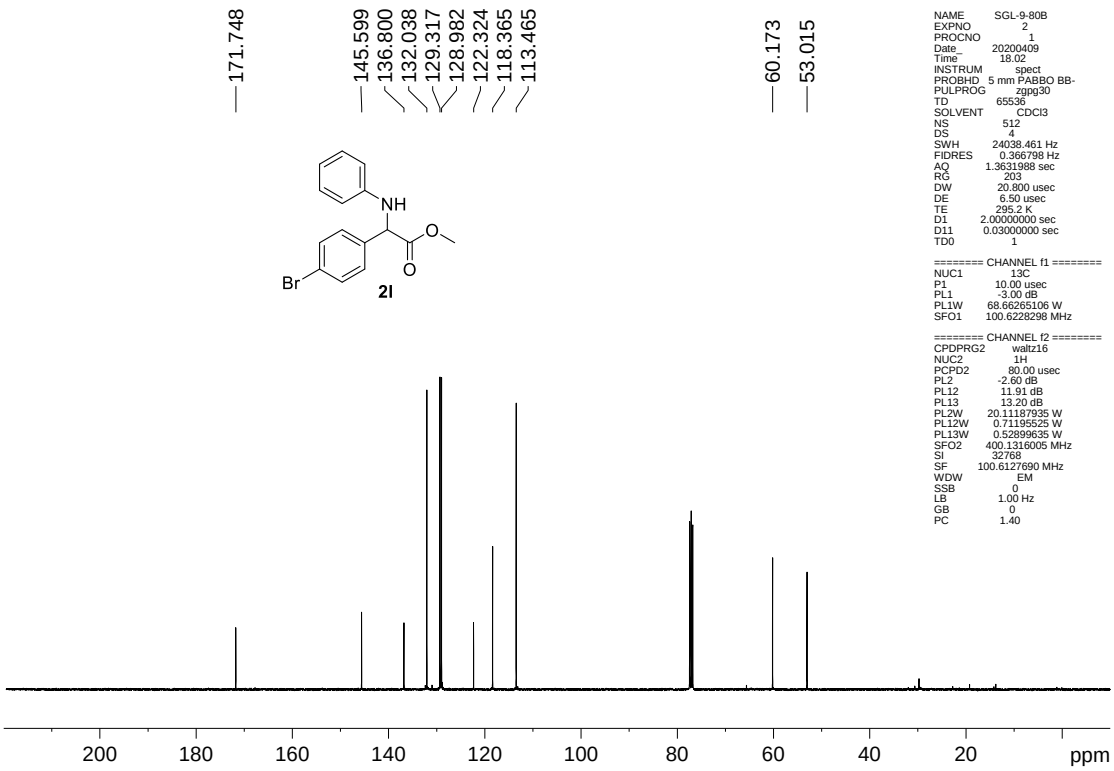

171.588
152.392
140.313
137.948
128.739
128.114
127.185
114.820
114.730
69.380
61.761
55.693
21.793
21.403
NAME SGL-8-92A
EXPNO 11
PROCNO 1
Date_ 20191130
Time_ 8.04 h
INSTRUM spect
PROBHD Z116098_0447 (
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 400
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 200.8
DW 20.800 usec
DE 6.50 usec
TE 0.0 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
SFO1 100.6228298 MHz
NUC1 13C
P1 10.00 usec
SI 32768
SF 100.6127685 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
O
NH
O
O
2i
200
180
160
140
120
100
80
60
40
20
ppm

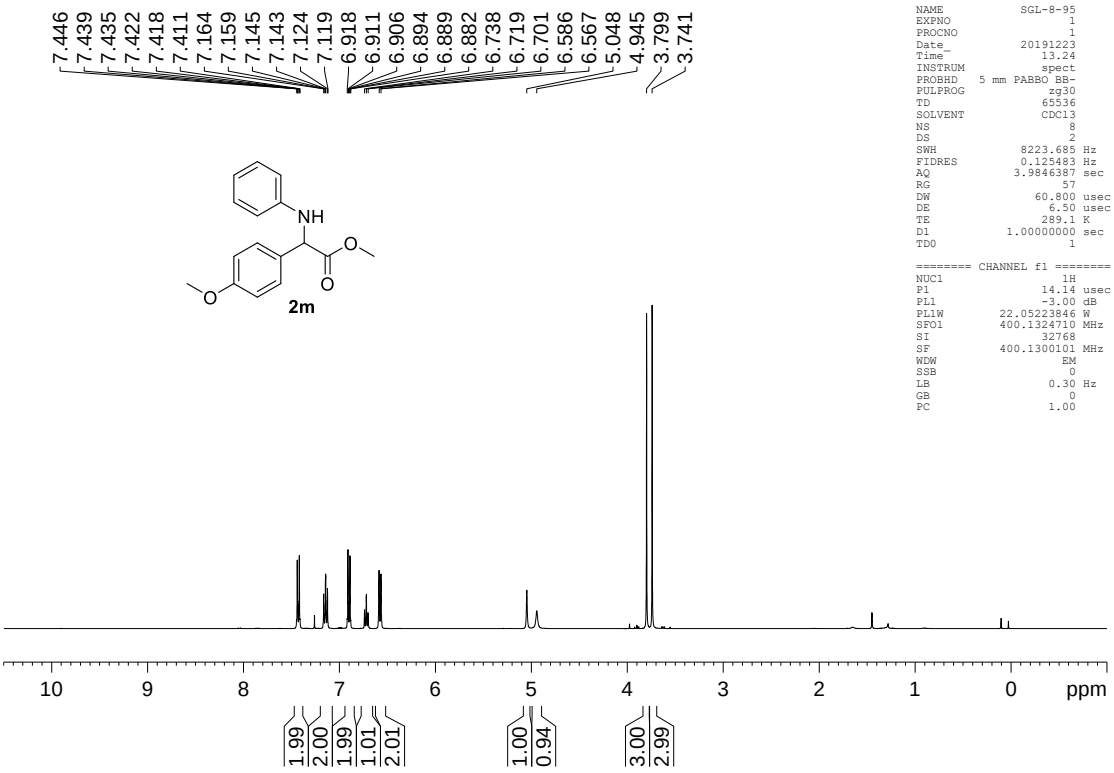

7.489
7.485
7.480
7.469
7.466
7.354
7.348
7.344
7.332
7.329
7.318
7.314
7.313
7.308
7.304
7.298
7.290
7.286
7.285
7.281
7.277
7.274
7.167
7.164
7.161
7.160
7.157
7.154
7.150
7.149
7.143
6.710
6.704
6.693
6.687
6.531
6.525
6.514
6.508
5.198
5.167
5.101
5.070
5.065
3.682
NAME SGL-8-90B
EXPNO 10
PROCNO 1
Date_ 20191130
Time 6.10 h
INSTRUM spect
PROBHD Z116098_0447 (
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 31
DW 62.400 usec
DE 6.50 usec
TE 0.0 K
D1 1.00000000 sec
TD0 1
SFO1 400.1324708 MHz
NUC1 1H
P1 10.00 usec
SI 65536
SF 400.1300253 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
NH
O
O
Ph
O
2j
9
8
7
6
5
4
3
2
1
0
ppm
2.05
6.04
1.96
2.06
2.10
1.05
2.08
0.79
3.00

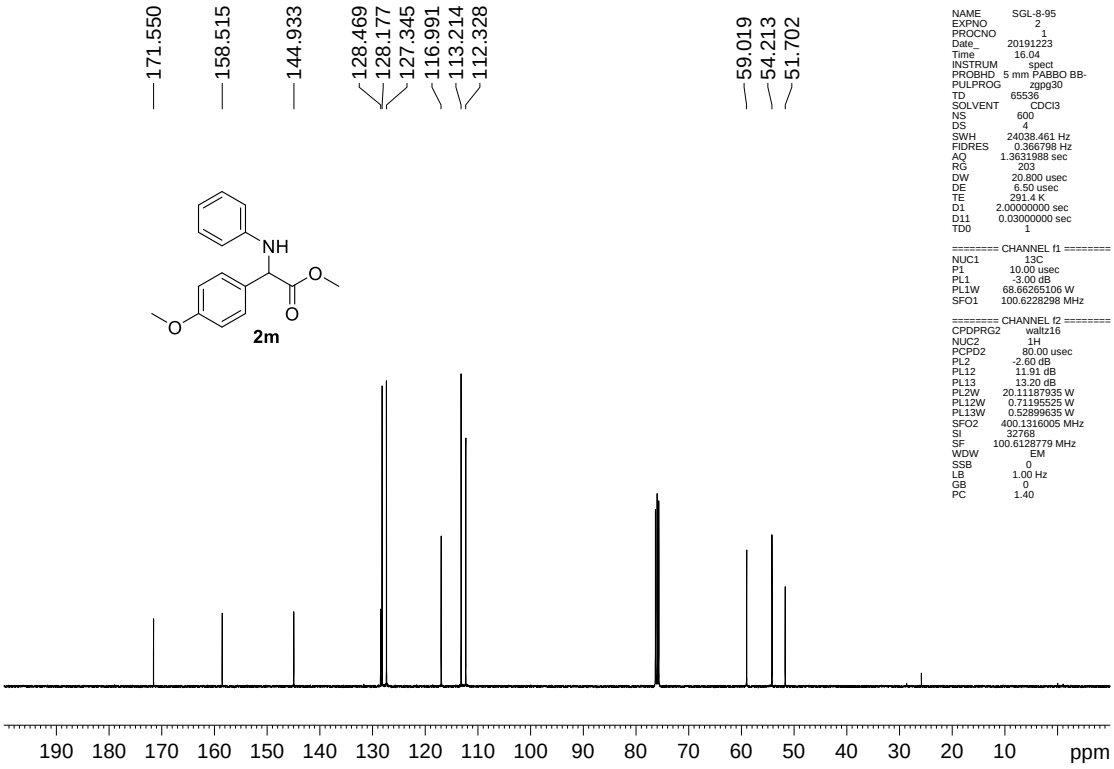

7.457
7.451
7.447
7.435
7.430
7.424
7.337
7.330
7.325
7.314
7.309
7.303
7.144
7.138
7.133
7.125
7.120
7.117
7.112
7.103
7.098
7.093
6.729
6.727
6.724
6.711
6.709
6.693
6.690
6.688
6.533
6.530
6.525
6.513
6.511
6.509
6.503
5.045
4.996
3.735
NAME SGL-9-80A
EXPNO 1
PROCNO 1
Date_ 20200409
Time 18.42
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8223.685 Hz
FIDRES 0.125483 Hz
AQ 3.9846387 sec
RG 203
DW 60.800 usec
DE 6.50 usec
TE 293.9 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 1H
P1 14.14 usec
PL1 -3.00 dB
PL1W 22.05223846 W
SFO1 400.1324710 MHz
SI 32768
SF 400.1300134 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
NH
O
O
Cl
2k
12
11
10
9
8
7
6
5
4
3
2
1
0
ppm
2.01
1.98
2.01
1.01
2.02
0.97
0.99
3.00

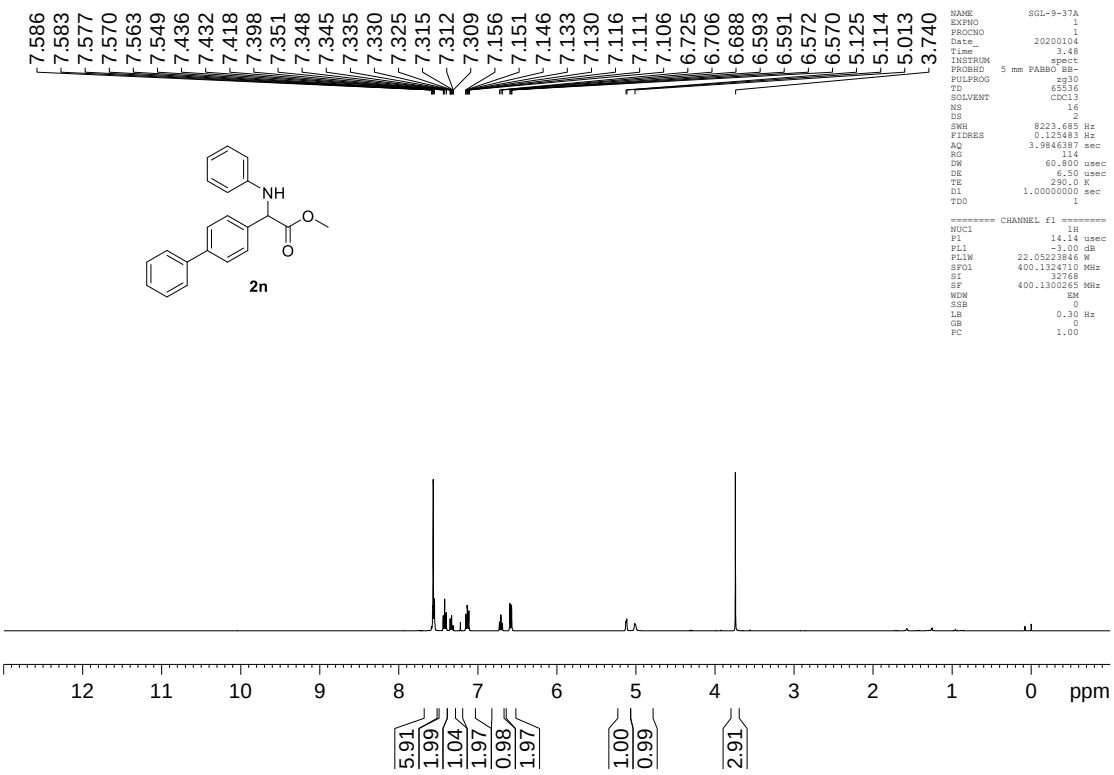

171.831
145.598
136.221
134.158
129.293
129.075
128.609
118.334
113.436
60.096
52.986
NH
O
O
Cl
2k
NAME SGL-9-80A
EXPNO 2
PROCNO 1
Date_ 20200409
Time 19.12
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 512
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 203
DW 20.800 usec
DE 6.50 usec
TE 295.2 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 13C
P1 10.00 usec
PL1 -3.00 dB
PL1W 68.66265106 W
SFO1 100.6228298 MHz
======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -2.60 dB
PL12 11.91 dB
PL13 13.20 dB
PL2W 20.11187935 W
PL12W 0.71195525 W
PL13W 0.52899635 W
SFO2 400.1316005 MHz
SI 32768
SF 100.6127690 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
200
180
160
140
120
100
80
60
40
20
ppm

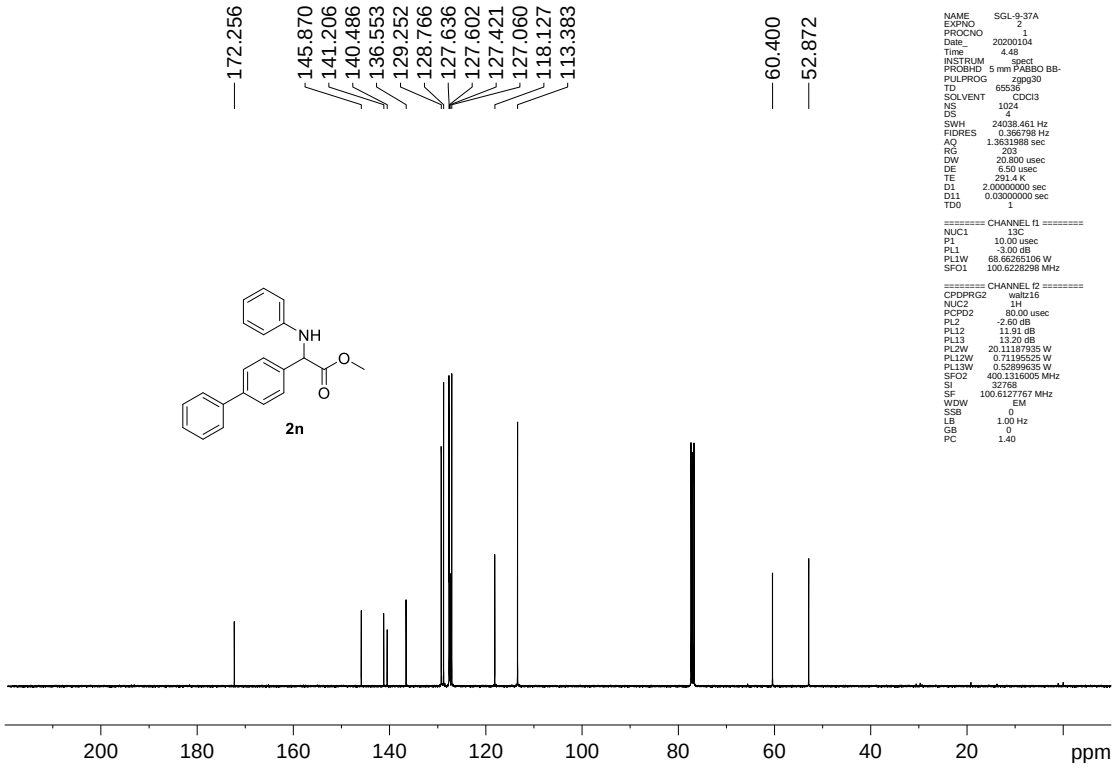

7.482
7.476
7.471
7.460
7.455
7.449
7.389
7.383
7.379
7.367
7.362
7.356
7.130
7.125
7.111
7.108
7.095
7.090
6.720
6.702
6.683
6.524
6.521
6.502
6.500
5.023
3.719
NH
O
O
Br
2l
NAME SGL-9-80B
EXPNO 1
PROCNO 1
Date_ 20200409
Time 17.31
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8223.685 Hz
FIDRES 0.125483 Hz
AQ 3.9846387 sec
RG 101
DW 60.800 usec
DE 6.50 usec
TE 293.8 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 1H
P1 14.14 usec
PL1 -3.00 dB
PL1W 22.05223846 W
SFO1 400.1324710 MHz
SI 32768
SF 400.1300224 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
10
9
8
7
6
5
4
3
2
1
0
ppm
1.98
2.03
2.02
1.01
2.01
2.00
3.00

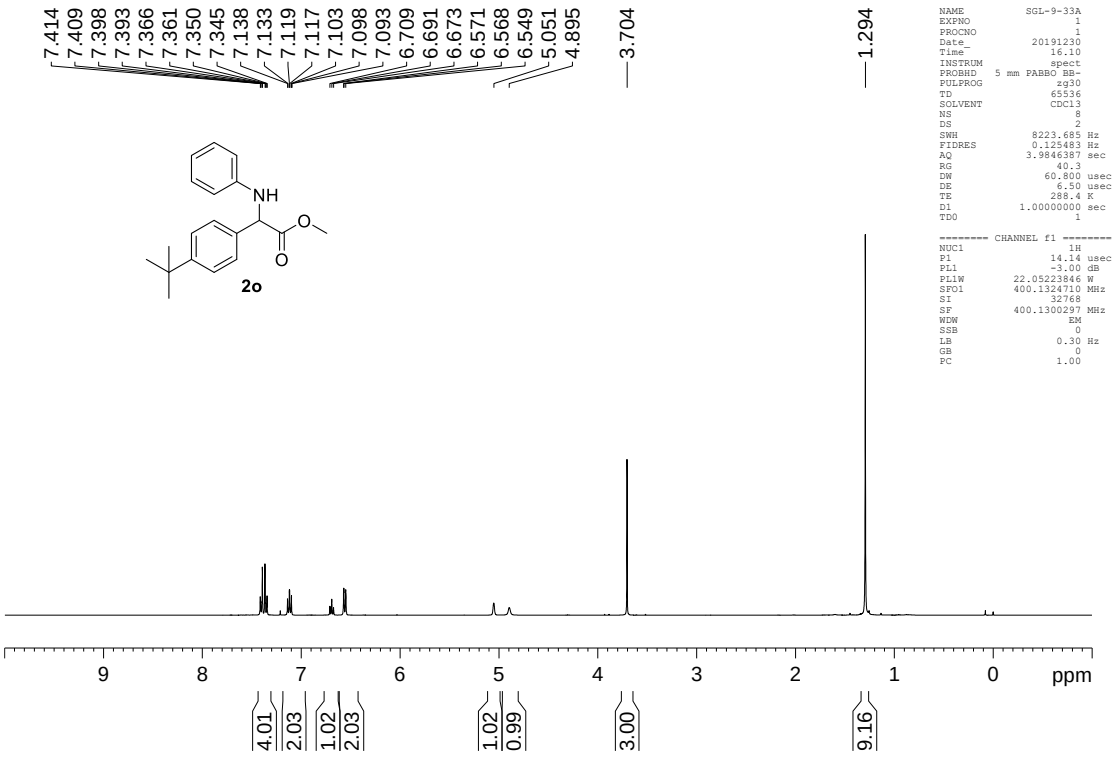

171.748
145.599
136.800
132.038
129.317
128.982
122.324
118.365
113.465
60.173
53.015
NH
O
O
Br
2l
NAME SGL-9-80B
EXPNO 2
PROCNO 1
Date_ 20200409
Time 18.02
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 512
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 203
DW 20.800 usec
DE 6.50 usec
TE 295.2 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 13C
P1 10.00 usec
PL1 -3.00 dB
PL1W 68.66265106 W
SFO1 100.6228298 MHz
======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -2.60 dB
PL12 11.91 dB
PL13 13.20 dB
PL2W 20.11187935 W
PL12W 0.71195525 W
PL13W 0.52899635 W
SFO2 400.1316005 MHz
SI 32768
SF 100.6127690 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
200
180
160
140
120
100
80
60
40
20
ppm

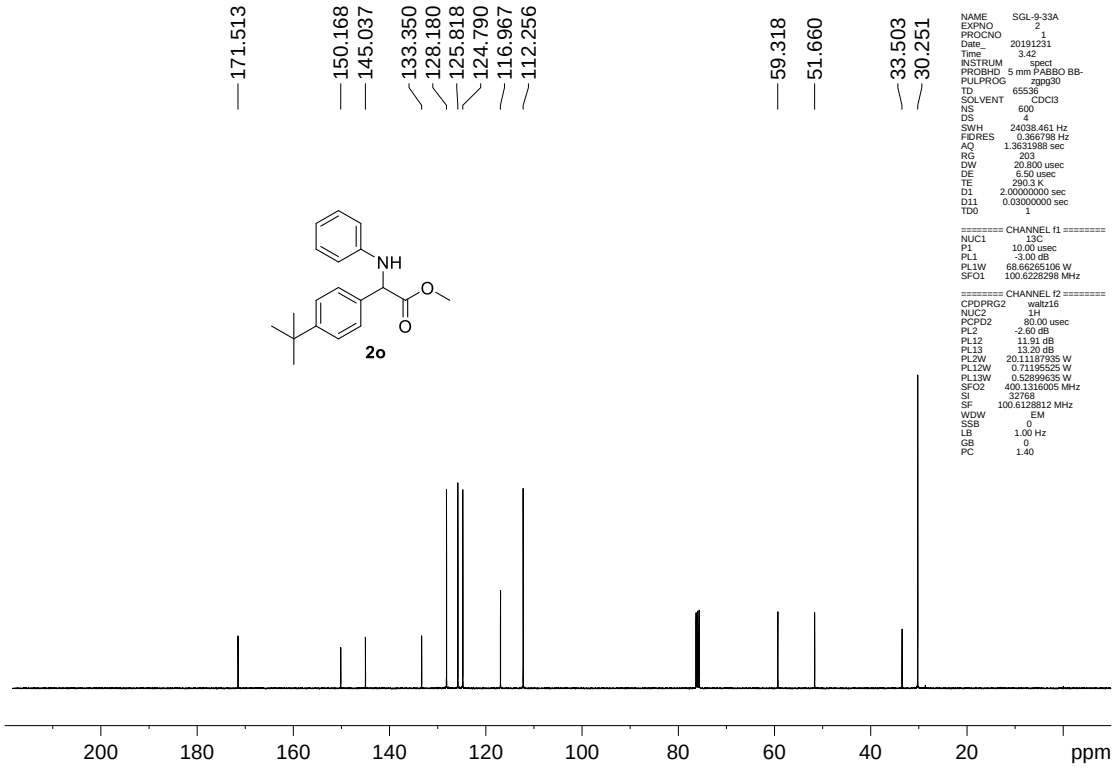

7.446
7.439
7.435
7.422
7.418
7.411
7.164
7.159
7.145
7.143
7.124
7.119
6.918
6.911
6.906
6.894
6.889
6.882
6.738
6.719
6.701
6.586
6.567
5.048
4.945
3.799
3.741
NH
O
O
O
2m
NAME SGL-8-95
EXPNO 1
PROCNO 1
Date_ 20191223
Time 13.24
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 8
DS 2
SWH 8223.685 Hz
FIDRES 0.125483 Hz
AQ 3.9846387 sec
RG 57
DW 60.800 usec
DE 6.50 usec
TE 289.1 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 1H
P1 14.14 usec
PL1 -3.00 dB
PL1W 22.05223846 W
SFO1 400.1324710 MHz
SI 32768
SF 400.1300101 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
10
9
8
7
6
5
4
3
2
1
0
ppm
1.99
2.00
1.99
1.01
2.01
1.00
0.94
3.00
2.99

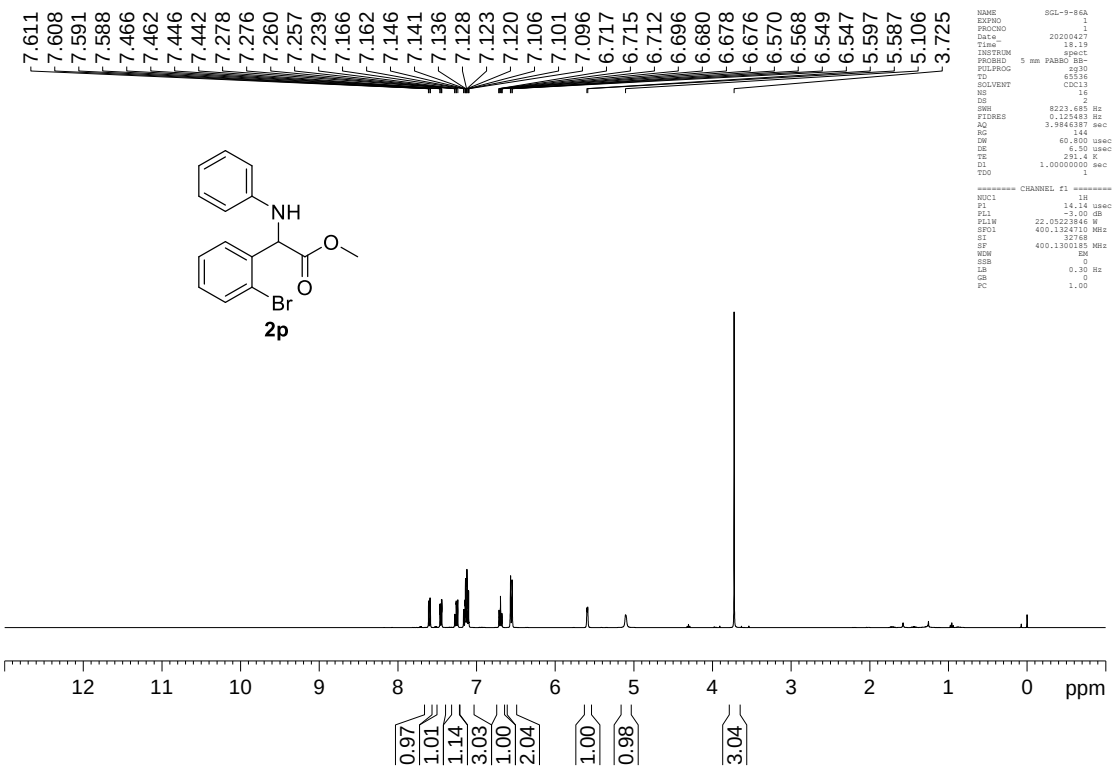

171.550
158.515
144.933
128.469
128.177
127.345
116.991
113.214
112.328
59.019
54.213
51.702
NH
O
O
O
2m
190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ppm

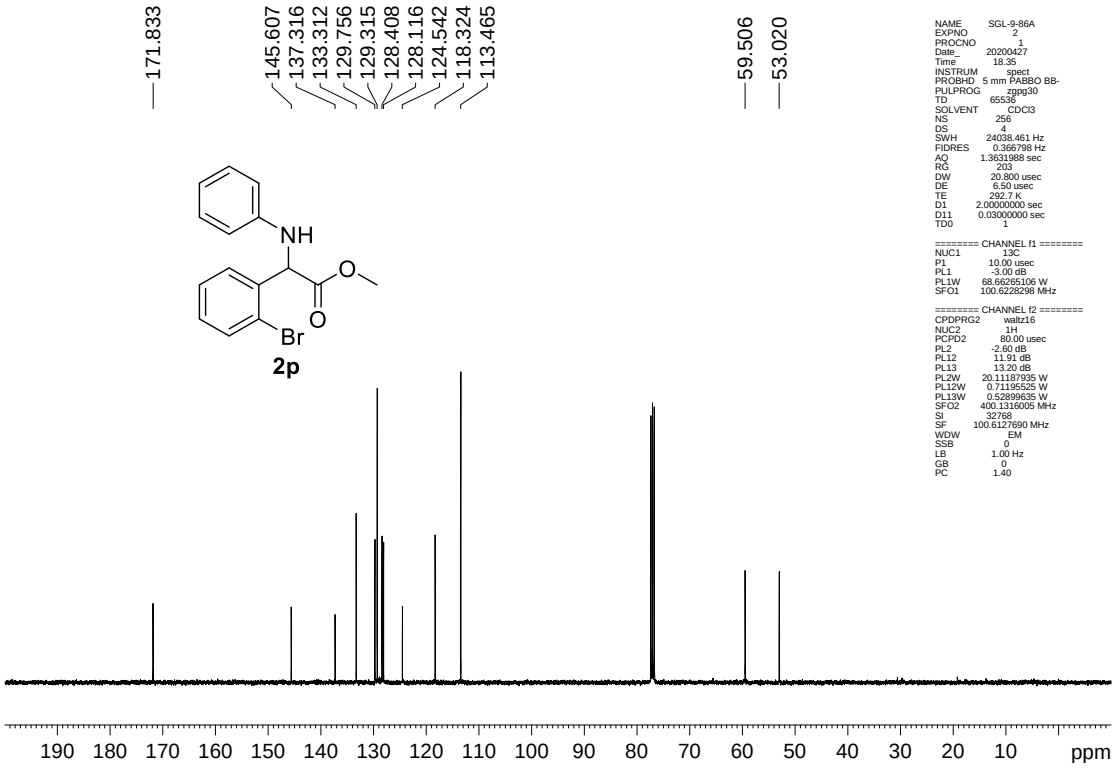

7.586
7.583
7.577
7.570
7.563
7.549
7.436
7.432
7.418
7.398
7.351
7.348
7.345
7.335
7.330
7.325
7.315
7.312
7.309
7.156
7.151
7.146
7.133
7.130
7.116
7.111
7.106
6.725
6.706
6.688
6.593
6.591
6.572
6.570
5.125
5.114
5.013
3.740
NH
O
O
2n
12 11 10 9 8 7 6 5 4 3 2 1 0 ppm
5.91
1.99
1.04
1.97
0.98
1.97
1.00
0.99
2.91

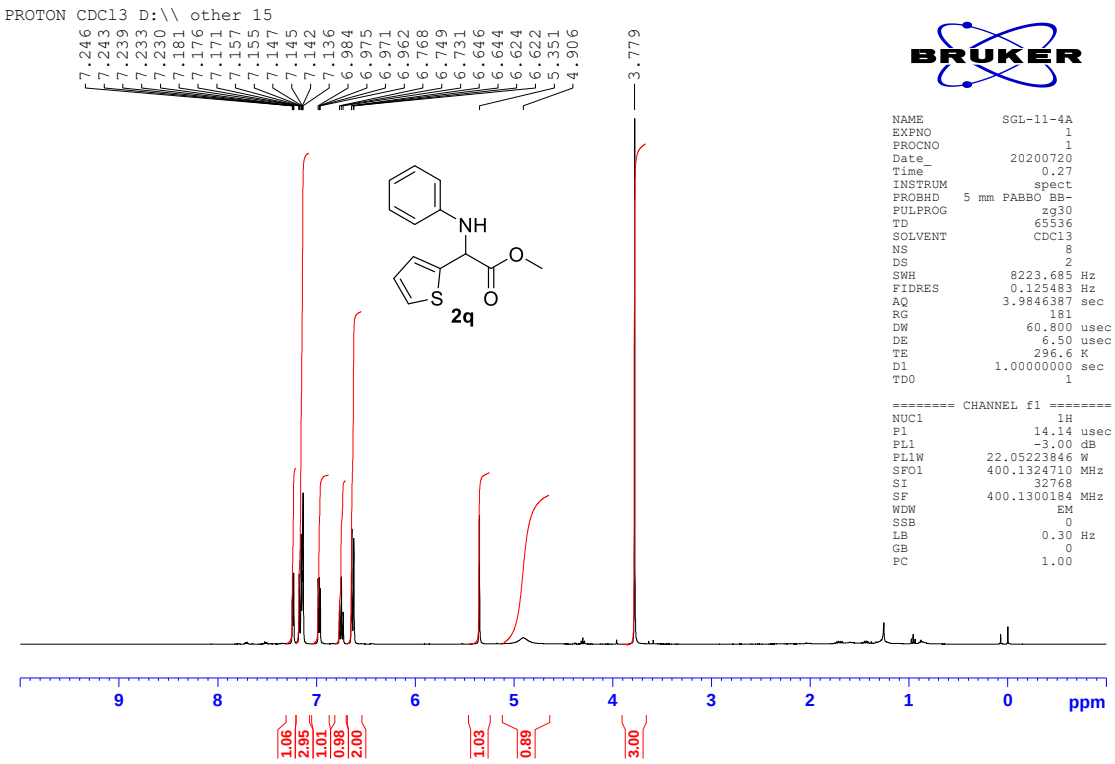

172.256
145.870
141.206
140.486
136.553
129.252
128.766
127.636
127.602
127.421
127.060
118.127
113.383
60.400
52.872
NH
O
O
2n
200
180
160
140
120
100
80
60
40
20
ppm

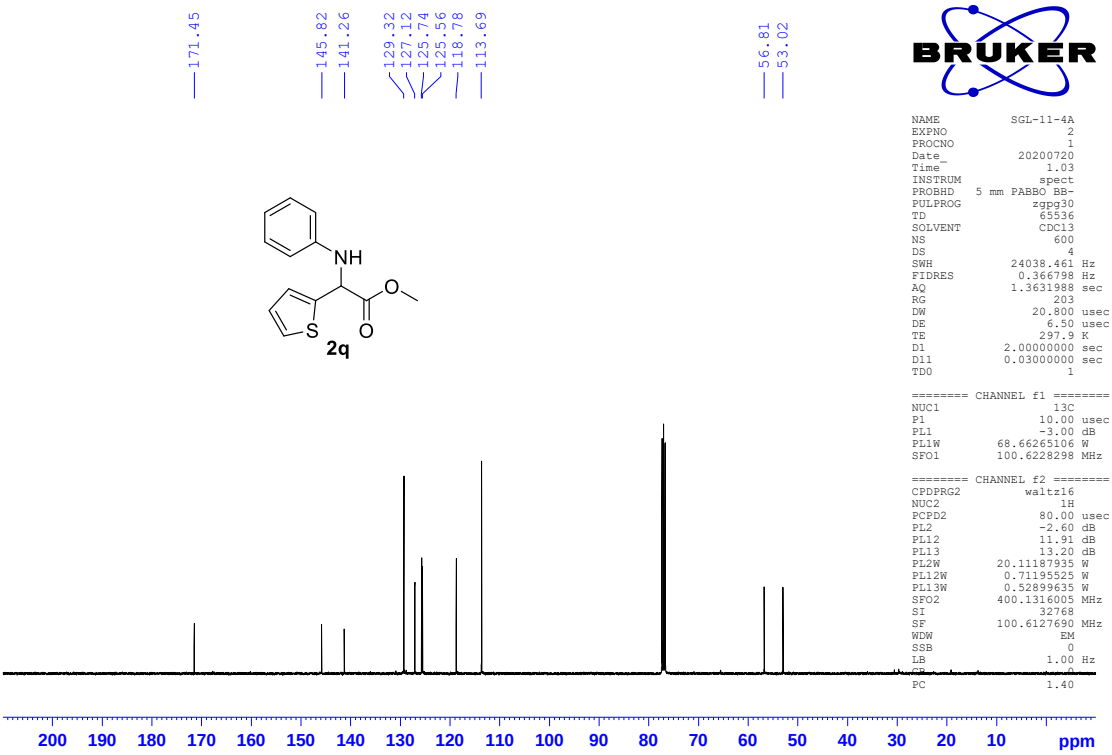

7.414
7.409
7.398
7.393
7.366
7.361
7.350
7.345
7.138
7.133
7.119
7.117
7.103
7.098
7.093
6.709
6.691
6.673
6.571
6.568
6.549
5.051
4.895
3.704
1.294
NH
O
O
2o
9
8
7
6
5
4
3
2
1
0
ppm
4.01
2.03
1.02
2.03
1.02
0.99
3.00
9.16

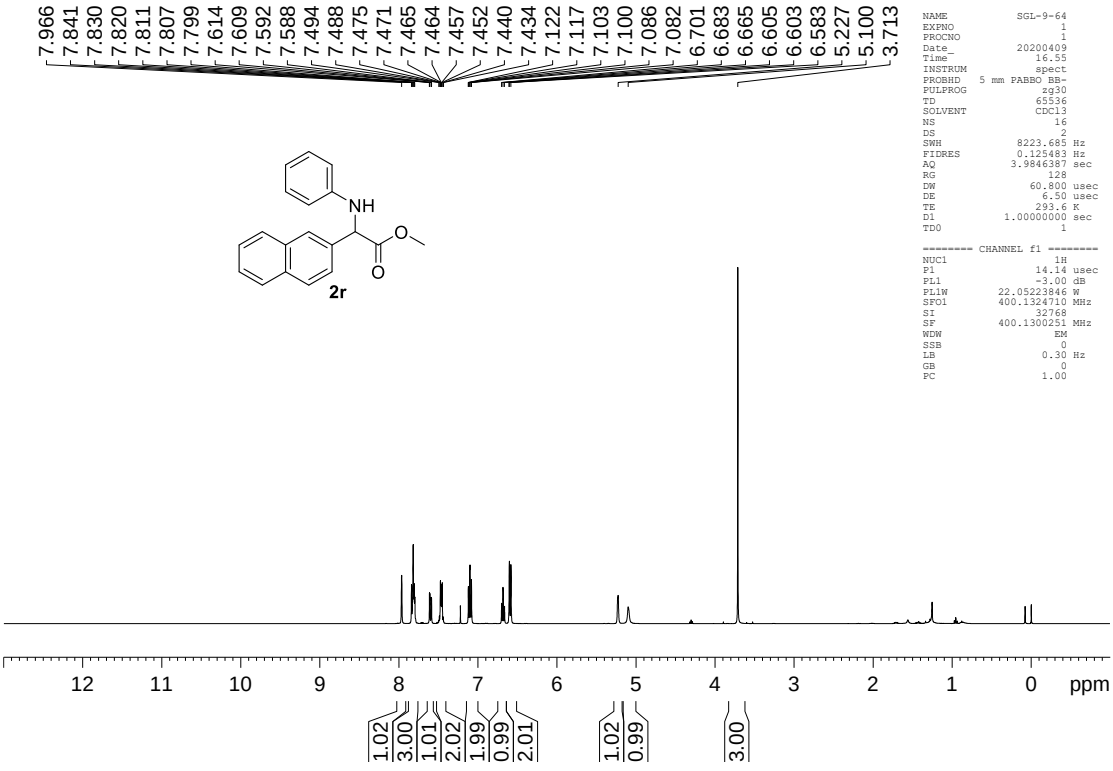

171.513
150.168
145.037
133.350
128.180
125.818
124.790
116.967
112.256
59.318
51.660
33.503
30.251
NH
O
O
2o
200
180
160
140
120
100
80
60
40
20
ppm

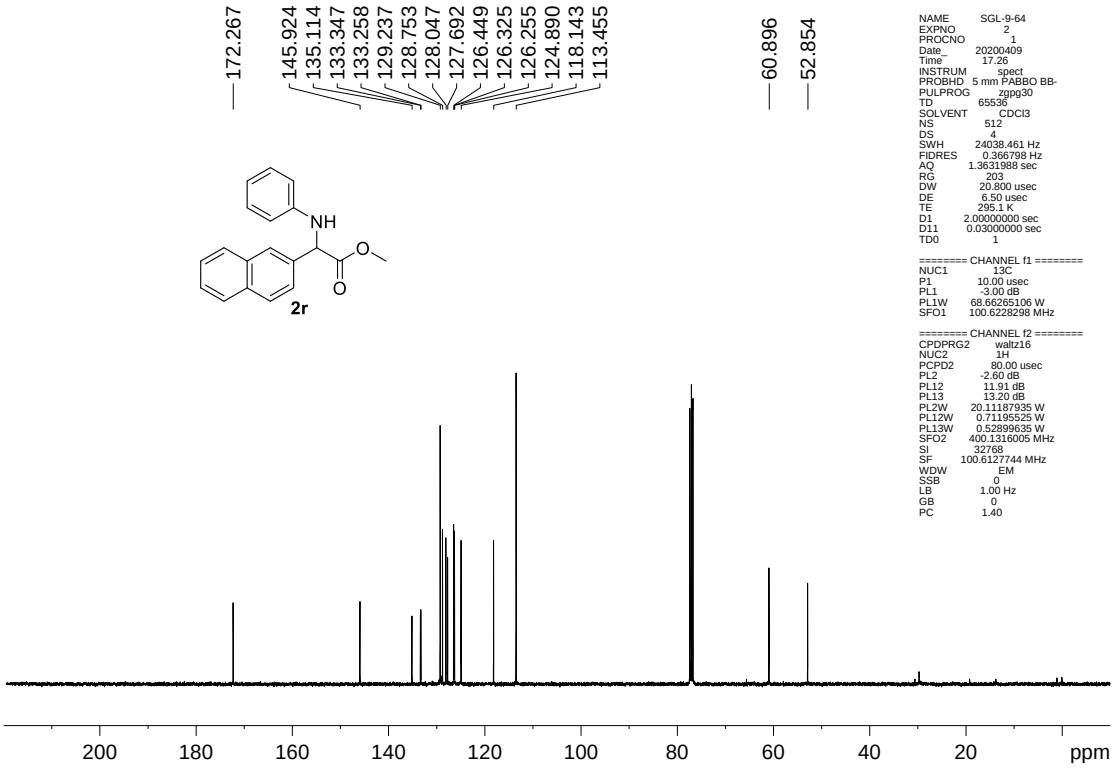

7.611
7.608
7.591
7.588
7.466
7.462
7.446
7.442
7.278
7.276
7.260
7.257
7.239
7.166
7.162
7.146
7.141
7.136
7.128
7.123
7.120
7.106
7.101
7.096
6.717
6.715
6.712
6.696
6.680
6.678
6.676
6.570
6.568
6.549
6.547
5.597
5.587
5.106
3.725
NH
O
O
Br
2p
12
11
10
9
8
7
6
5
4
3
2
1
0
ppm
0.97
1.01
1.14
3.03
1.00
2.04
1.00
0.98
3.04

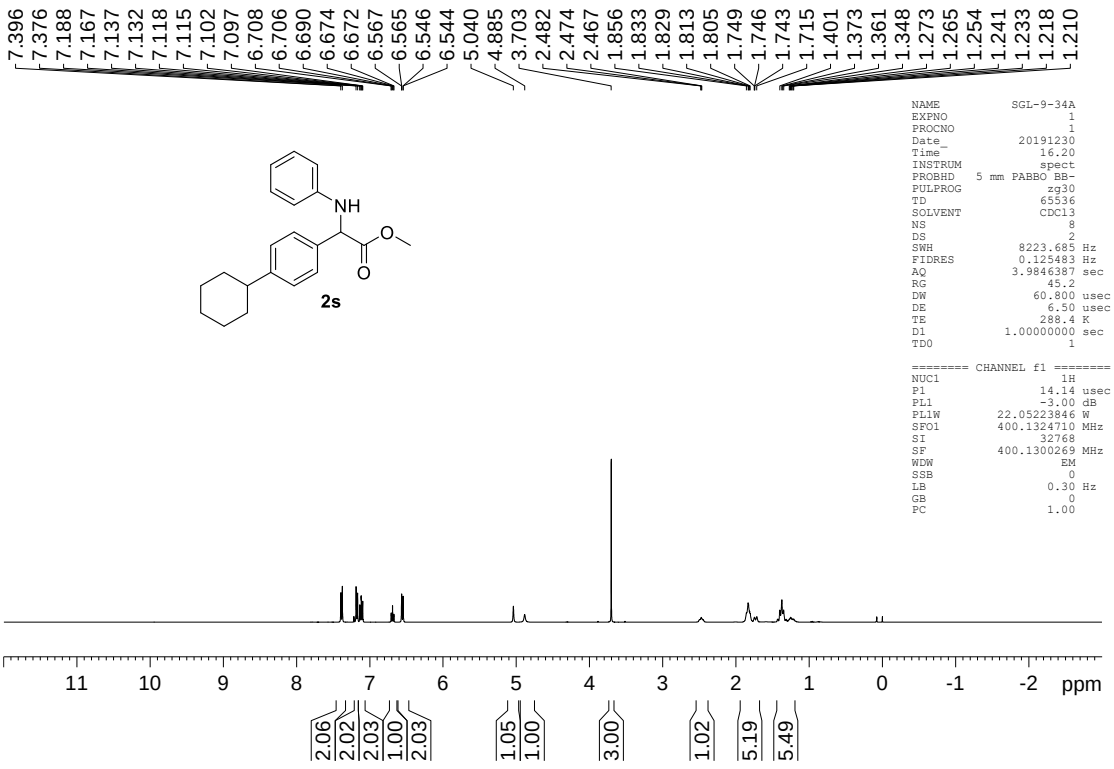

171.833
145.607
137.316
133.312
129.756
129.315
128.408
128.116
124.542
118.324
113.465
59.506
53.020
NH
O
O
Br
2p
NAME SGL-9-86A
EXPNO 2
PROCNO 1
Date_ 20200427
Time 18.35
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 256
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 203
DW 20.800 usec
DE 6.50 usec
TE 292.7 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 13C
P1 10.00 usec
PL1 -3.00 dB
PL1W 68.66265106 W
SFO1 100.6228298 MHz
======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -2.60 dB
PL12 11.91 dB
PL13 13.20 dB
PL2W 20.11187935 W
PL12W 0.71195525 W
PL13W 0.52899635 W
SFO2 400.1316005 MHz
SI 32768
SF 100.6127690 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ppm

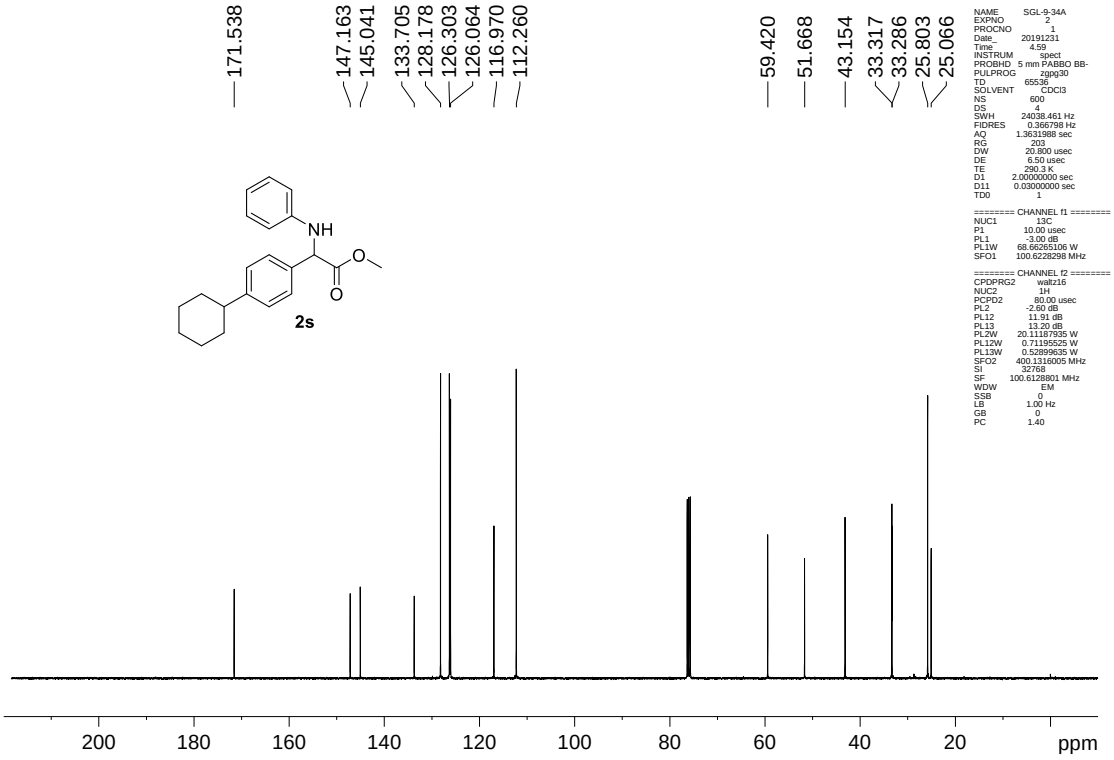

PROTON CDCl3 D:\\ other 15
7.246
7.243
7.239
7.233
7.230
7.181
7.176
7.171
7.157
7.155
7.147
7.145
7.142
7.136
6.984
6.975
6.971
6.962
6.768
6.749
6.731
6.646
6.644
6.624
6.622
5.351
4.906
3.779
NH
O
O
S
2q
BRUKER
NAME SGL-11-4A
EXPNO 1
PROCNO 1
Date_ 20200720
Time 0.27
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 8
DS 2
SWH 8223.685 Hz
FIDRES 0.125483 Hz
AQ 3.9846387 sec
RG 181
DW 60.800 usec
DE 6.50 usec
TE 296.6 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 1H
P1 14.14 usec
PL1 -3.00 dB
PL1W 22.05223846 W
SFO1 400.1324710 MHz
SI 32768
SF 400.1300184 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
9 8 7 6 5 4 3 2 1 0 ppm
1.06
2.95
1.01
0.98
2.00
1.03
0.89
3.00

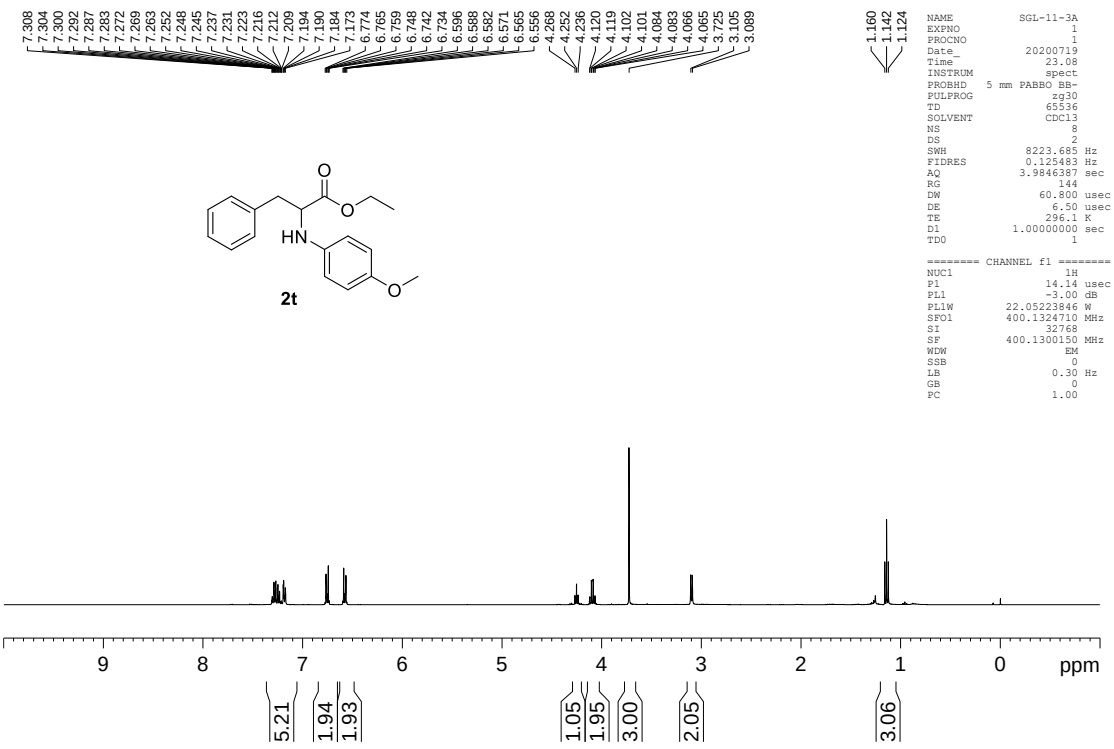

171.45
145.82
141.26
129.32
127.12
125.74
125.56
118.78
113.69
56.81
53.02
NH
O
O
S
2q
NAME SGL-11-4A
EXPNO 2
PROCNO 1
Date_ 20200720
Time 1.03
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 65536
SOLVENT CDC13
NS 600
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 203
DW 20.800 usec
DE 6.50 usec
TE 297.9 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 13C
P1 10.00 usec
PL1 -3.00 dB
PL1W 68.66265106 W
SFO1 100.6228298 MHz
======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -2.60 dB
PL12 11.91 dB
PL13 13.20 dB
PL2W 20.11187935 W
PL12W 0.71195525 W
PL13W 0.52899635 W
SFO2 400.1316005 MHz
SI 32768
SF 100.6127690 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ppm

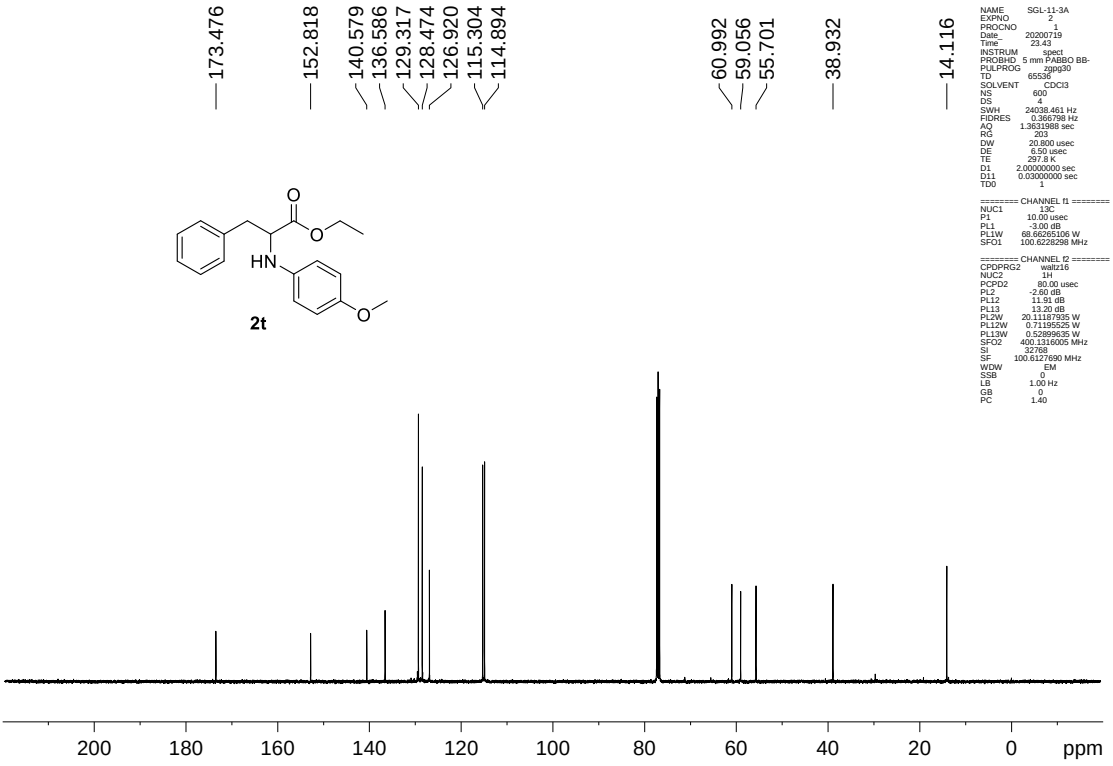

7.966
7.841
7.830
7.820
7.811
7.807
7.799
7.614
7.609
7.592
7.588
7.494
7.488
7.475
7.471
7.465
7.464
7.457
7.452
7.440
7.434
7.122
7.117
7.103
7.100
7.086
7.082
6.701
6.683
6.665
6.605
6.603
6.583
5.227
5.100
3.713
NH
O
O
2r
NAME SGL-9-64
EXPNO 1
PROCNO 1
Date_ 20200409
Time 16.55
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDC13
NS 16
DS 2
SWH 8223.685 Hz
FIDRES 0.125483 Hz
AQ 3.9846387 sec
RG 128
DW 60.800 usec
DE 6.50 usec
TE 293.6 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 1H
P1 14.14 usec
PL1 -3.00 dB
PL1W 22.05223846 W
SFO1 400.1324710 MHz
SI 32768
SF 400.1300251 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
12 11 10 9 8 7 6 5 4 3 2 1 0 ppm
1.02
3.00
1.01
2.02
1.99
0.99
2.01
1.02
0.99
3.00

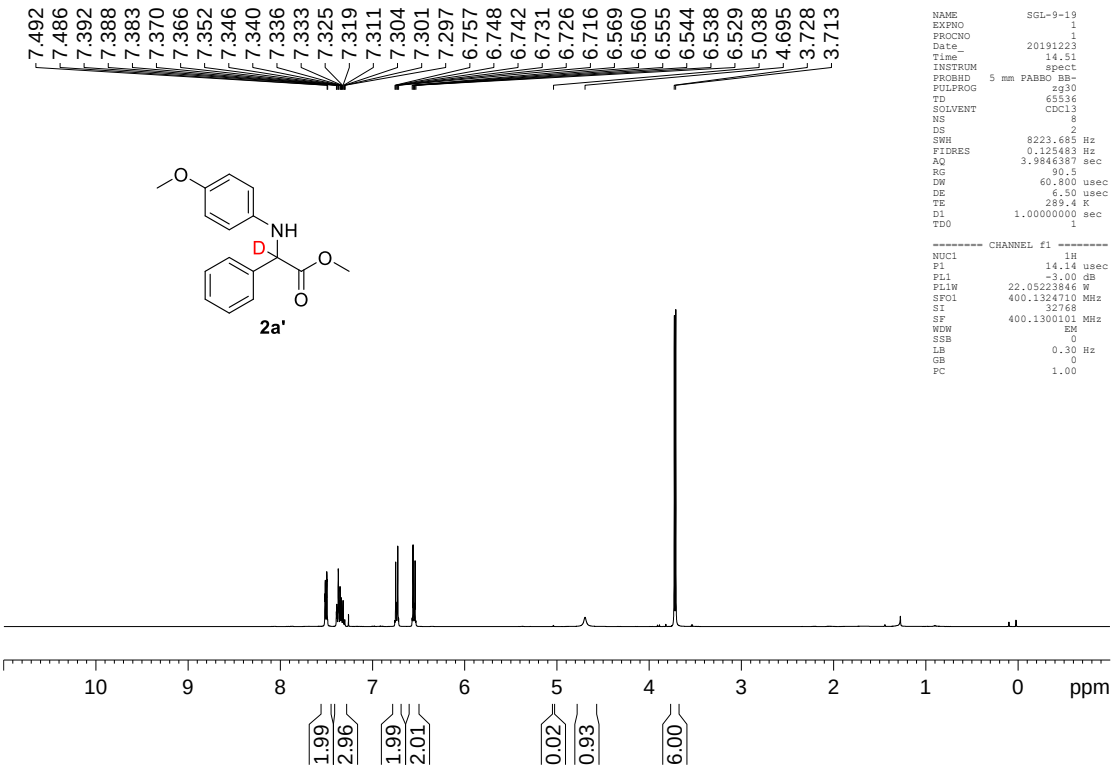

172.267
145.924
135.114
133.347
133.258
129.237
128.753
128.047
127.692
126.449
126.325
126.255
124.890
118.143
113.455
60.896
52.854
NH
O
O
2r
NAME SGL-9-64
EXPNO 2
PROCNO 1
Date_ 20200409
Time 17.26
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 512
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 203
DW 20.800 usec
DE 6.50 usec
TE 295.1 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 13C
P1 10.00 usec
PL1 -3.00 dB
PL1W 68.66265106 W
SFO1 100.6228298 MHz
======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -2.60 dB
PL12 11.91 dB
PL13 13.20 dB
PL2W 20.11187935 W
PL12W 0.71195525 W
PL13W 0.52899635 W
SFO2 400.1316005 MHz
SI 32768
SF 100.6127744 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
200
180
160
140
120
100
80
60
40
20
ppm

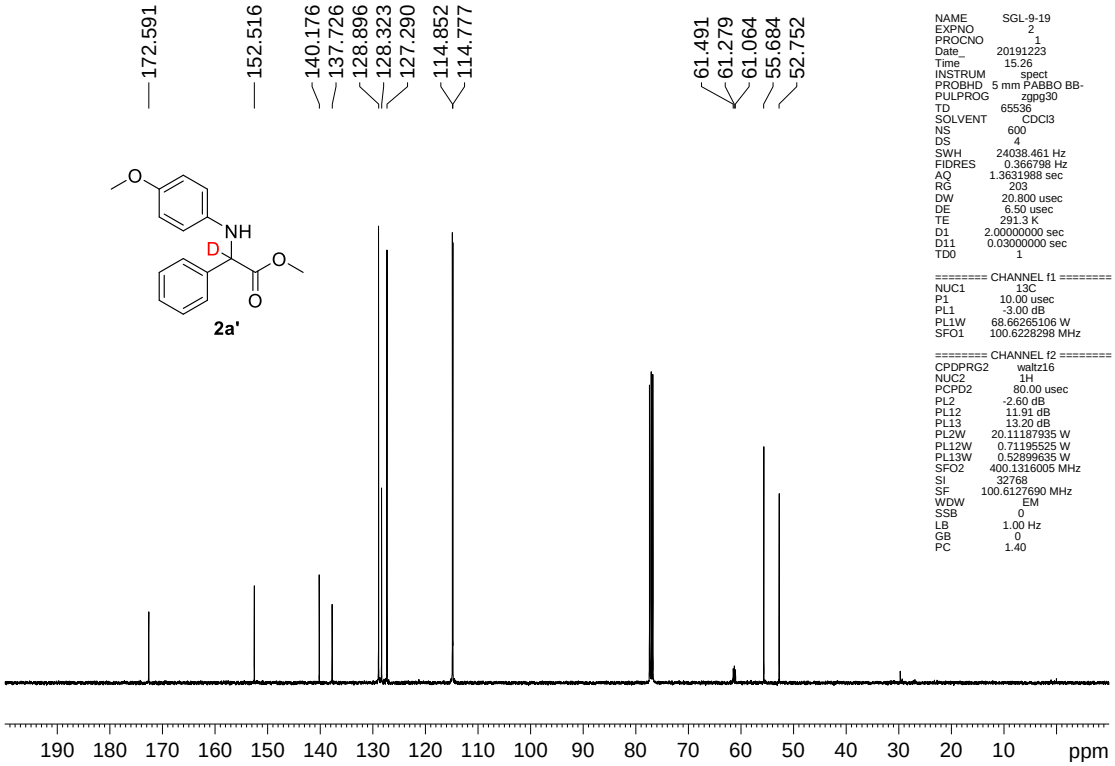

7.396
7.376
7.188
7.167
7.137
7.132
7.118
7.115
7.102
7.097
6.708
6.706
6.690
6.674
6.672
6.567
6.565
6.546
6.544
5.040
4.885
3.703
2.482
2.474
2.467
1.856
1.833
1.829
1.813
1.805
1.749
1.746
1.743
1.715
1.401
1.373
1.361
1.348
1.273
1.265
1.254
1.241
1.233
1.218
1.210
NH
O
O
2s
NAME SGL-9-34A
EXPNO 1
PROCNO 1
Date_ 20191230
Time 16.20
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 8
DS 2
SWH 8223.685 Hz
FIDRES 0.125483 Hz
AQ 3.9846387 sec
RG 45.2
DW 60.800 usec
DE 6.50 usec
TE 288.4 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 1H
P1 14.14 usec
PL1 -3.00 dB
PL1W 22.05223846 W
SFO1 400.1324710 MHz
SI 32768
SF 400.1300269 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
ppm
2.06
2.02
2.03
1.00
2.03
1.05
1.00
3.00
1.02
5.19
5.49

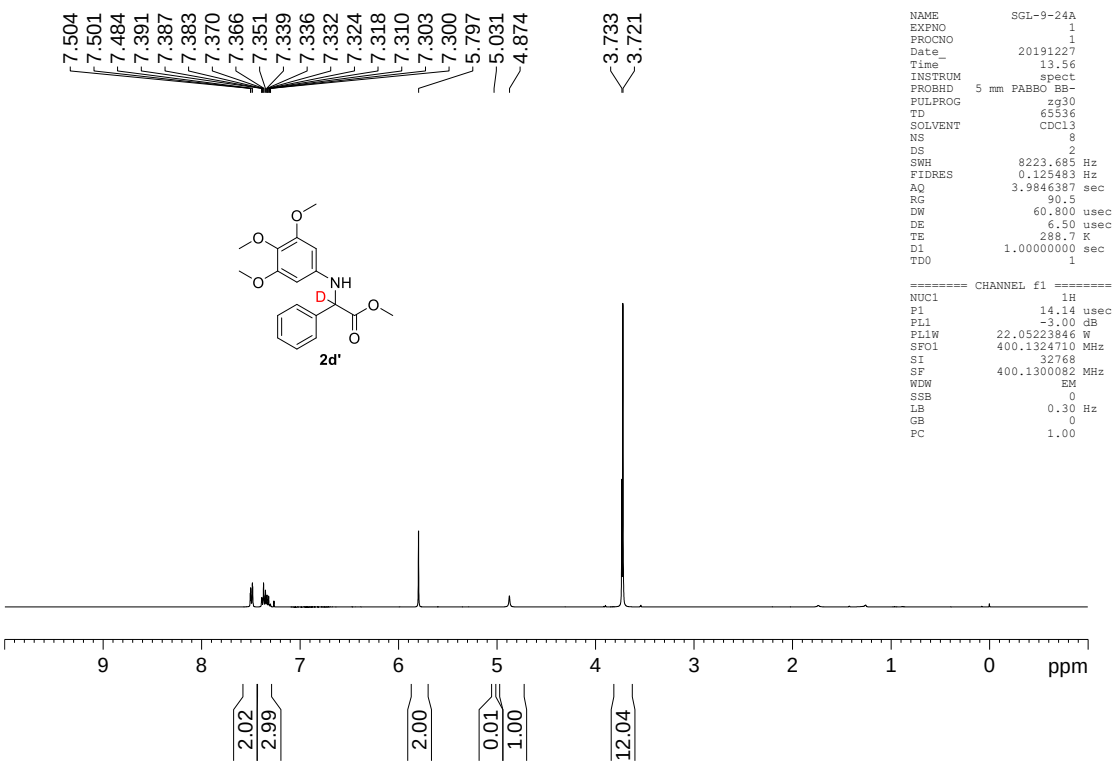

171.538
147.163
145.041
133.705
128.178
126.303
126.064
116.970
112.260
59.420
51.668
43.154
33.317
33.286
25.803
25.066
NH
O
O
2s
200
180
160
140
120
100
80
60
40
20
ppm

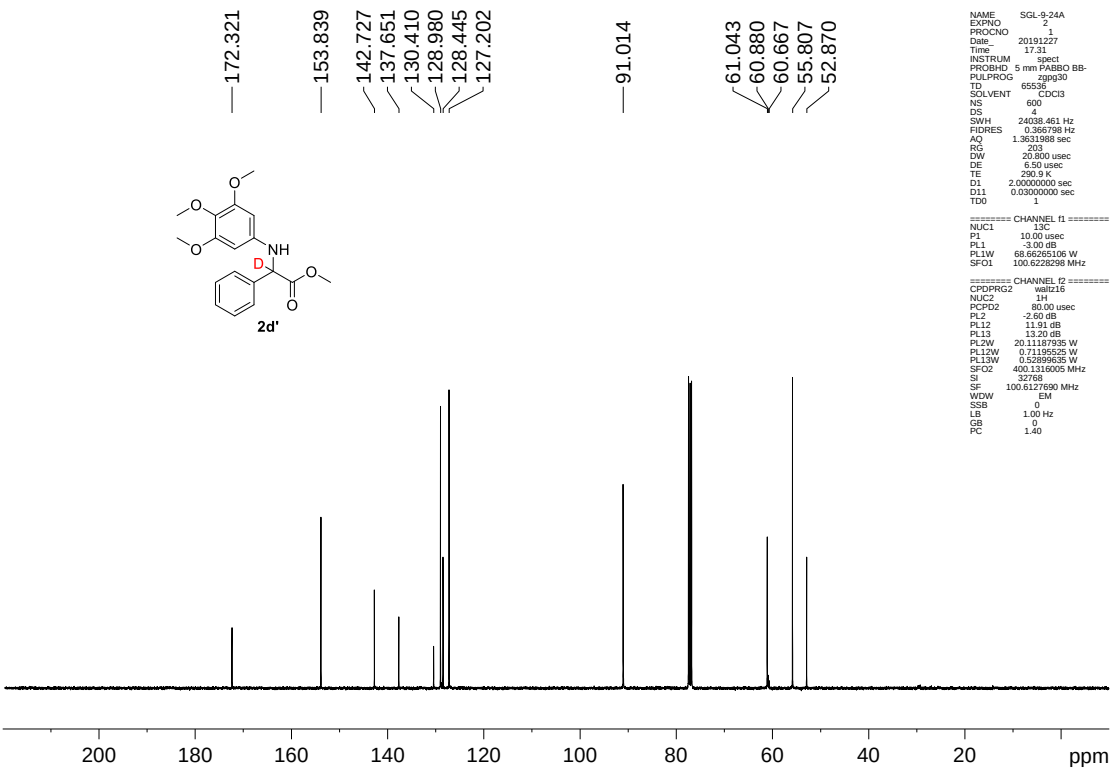

7.308
7.304
7.300
7.292
7.287
7.283
7.272
7.269
7.263
7.252
7.248
7.245
7.237
7.231
7.223
7.216
7.212
7.209
7.194
7.190
7.184
7.173
6.774
6.765
6.759
6.748
6.742
6.734
6.596
6.588
6.582
6.571
6.565
6.556
4.268
4.252
4.236
4.120
4.119
4.102
4.101
4.084
4.083
4.066
4.065
3.725
3.105
3.089
1.160
1.142
1.124
O
O
HN
O
2t
9
8
7
6
5
4
3
2
1
0
ppm
5.21
1.94
1.93
1.05
1.95
3.00
2.05
3.06

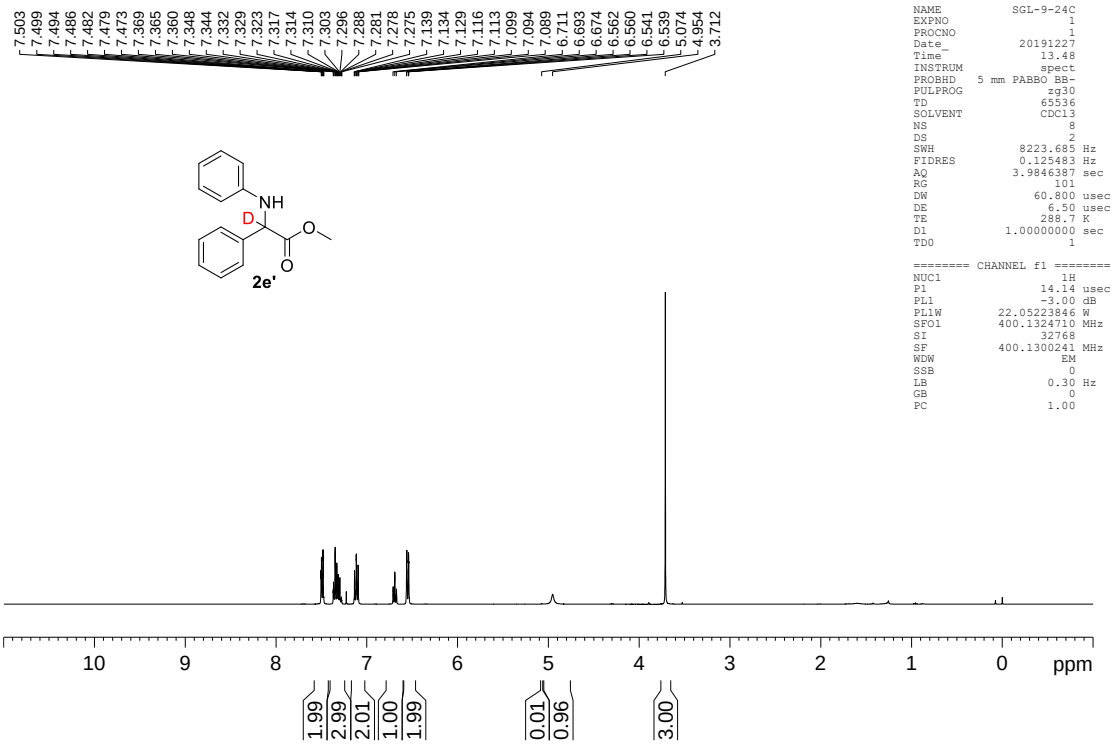

173.476
152.818
140.579
136.586
129.317
128.474
126.920
115.304
114.894
60.992
59.056
55.701
38.932
14.116
2t
200
180
160
140
120
100
80
60
40
20
0
ppm

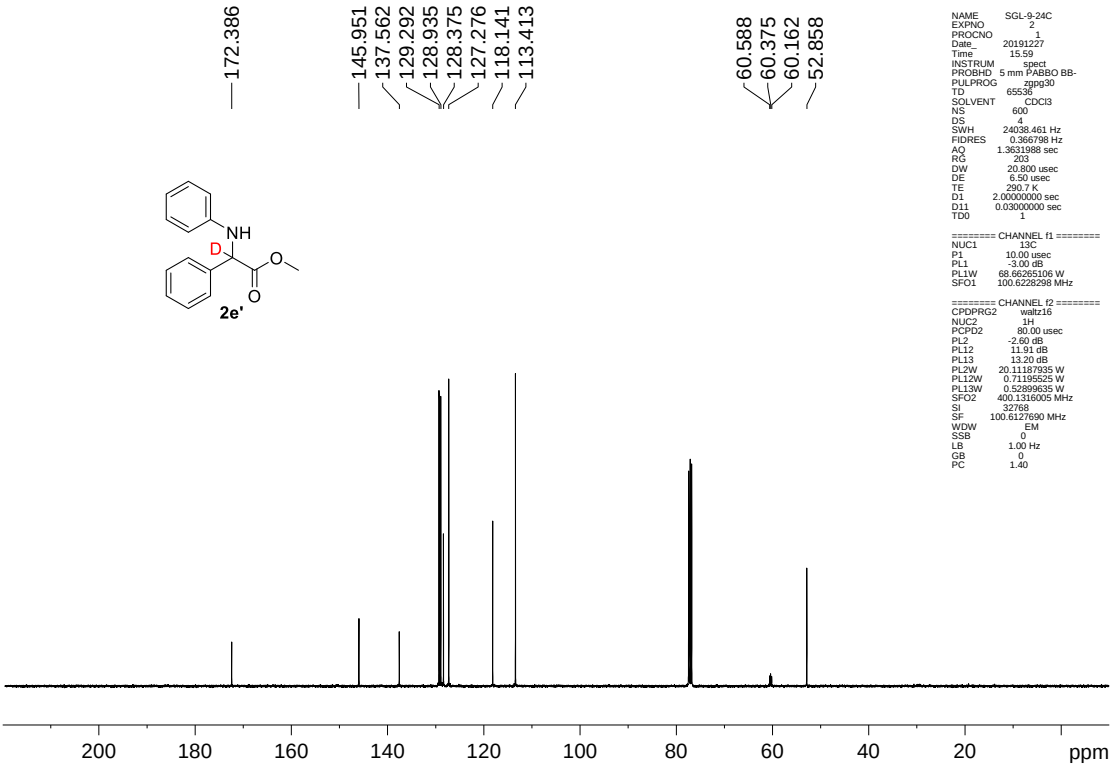

7.492
7.486
7.392
7.388
7.383
7.370
7.366
7.352
7.346
7.340
7.336
7.333
7.325
7.319
7.311
7.304
7.301
7.297
6.757
6.748
6.742
6.731
6.726
6.716
6.569
6.560
6.555
6.544
6.538
6.529
5.038
4.695
3.728
3.713
NH
D
2a'
10
9
8
7
6
5
4
3
2
1
0
ppm
1.99
2.96
1.99
2.01
0.02
0.93
6.00

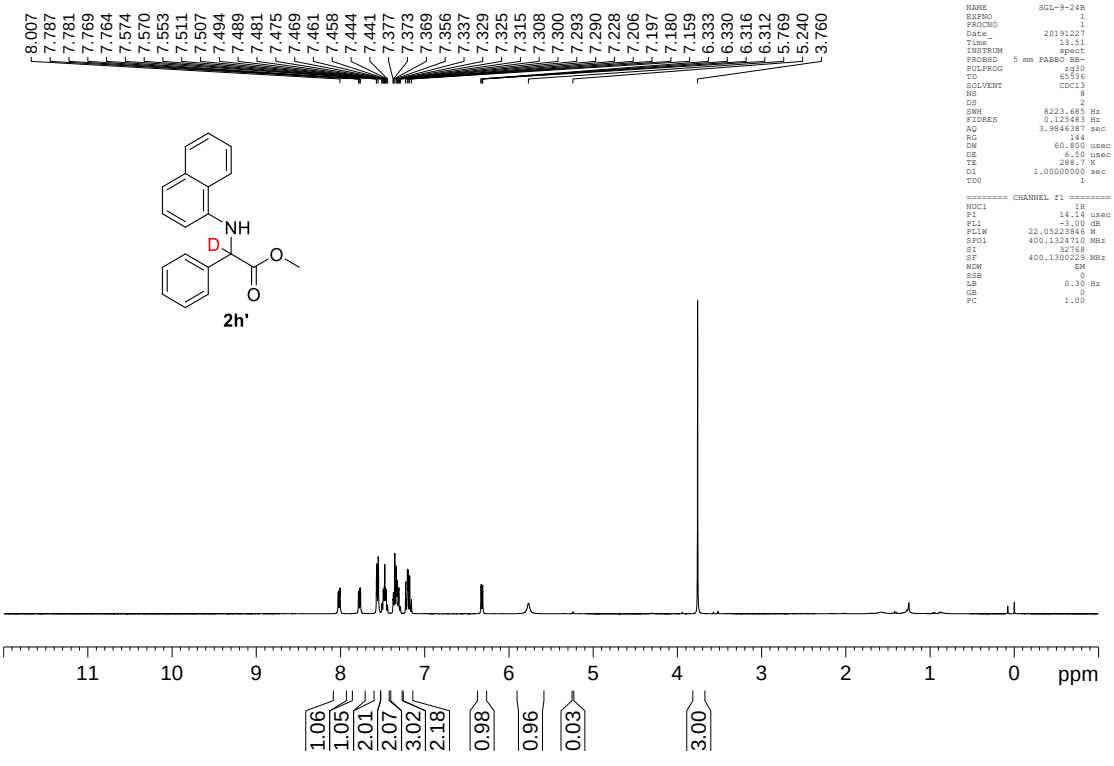

172.591
152.516
140.176
137.726
128.896
128.323
127.290
114.852
114.777
61.491
61.279
61.064
55.684
52.752
NAME SGL-9-19
EXPNO 2
PROCNO 1
Date_ 20191223
Time 15.26
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 600
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 203
DW 20.800 usec
DE 6.50 usec
TE 291.3 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 13C
P1 10.00 usec
PL1 -3.00 dB
PL1W 68.66265106 W
SFO1 100.6228298 MHz
======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -2.60 dB
PL12 11.91 dB
PL13 13.20 dB
PL2W 20.11187935 W
PL12W 0.71195525 W
PL13W 0.52899635 W
SFO2 400.1316005 MHz
SI 32768
SF 100.6127690 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
O
NH
D
O
O
2a'
190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ppm

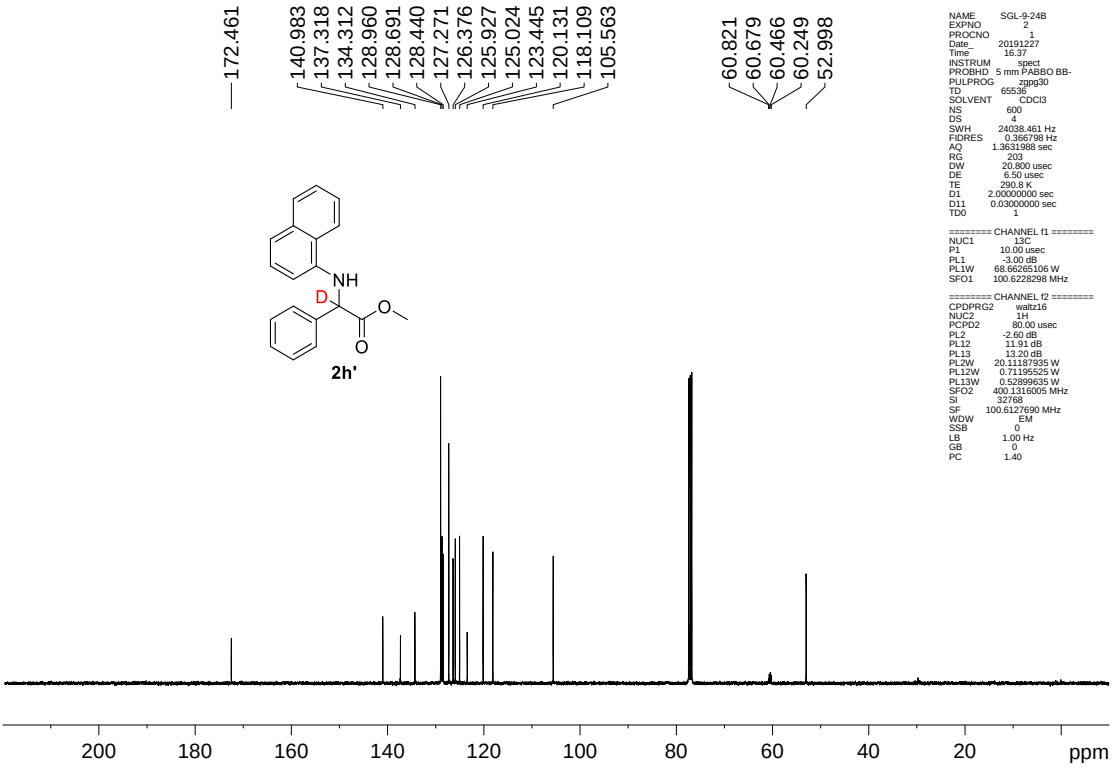

7.504
7.501
7.484
7.391
7.387
7.383
7.370
7.366
7.351
7.339
7.336
7.332
7.324
7.318
7.310
7.303
7.300
5.797
5.031
4.874
3.733
3.721
NAME SGL-9-24A
EXPNO 1
PROCNO 1
Date_ 20191227
Time 13.56
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 8
DS 2
SWH 8223.685 Hz
FIDRES 0.125483 Hz
AQ 3.9846387 sec
RG 90.5
DW 60.800 usec
DE 6.50 usec
TE 288.7 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 1H
P1 14.14 usec
PL1 -3.00 dB
PL1W 22.05223846 W
SFO1 400.1324710 MHz
SI 32768
SF 400.1300082 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
O
O
O
NH
D
O
O
2d'
9 8 7 6 5 4 3 2 1 0 ppm
2.02
2.99
2.00
0.01
1.00
12.04

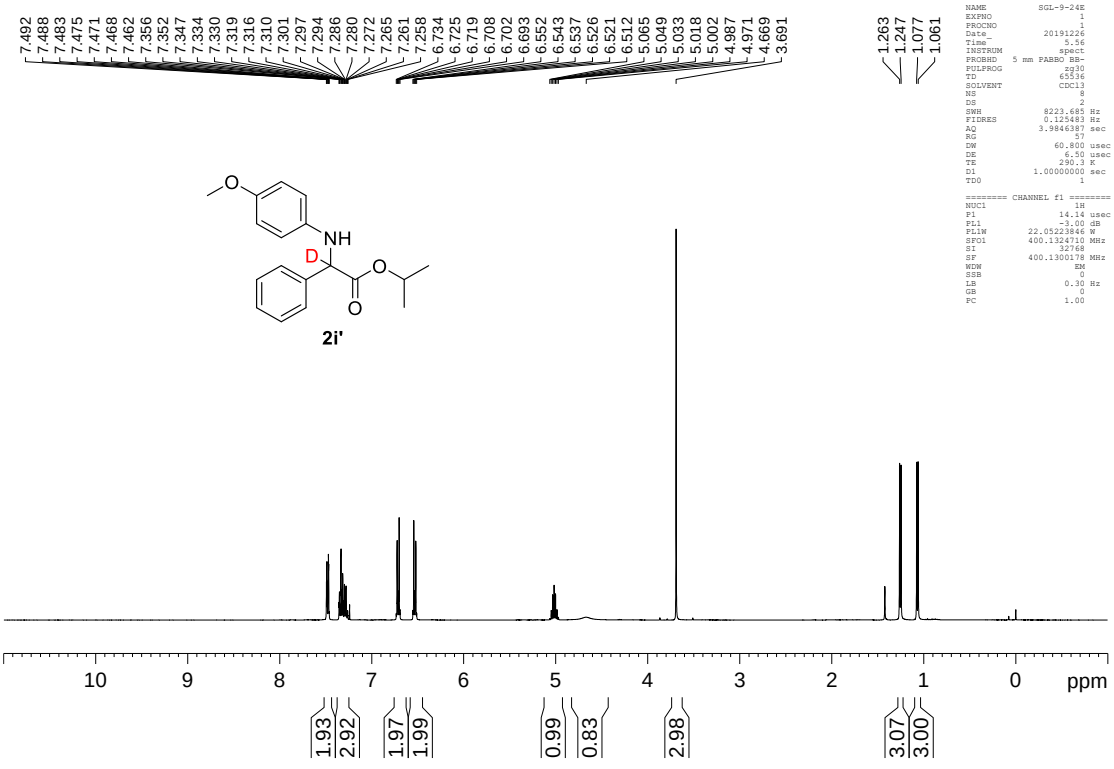

172.321
153.839
142.727
137.651
130.410
128.980
128.445
127.202
91.014
61.043
60.880
60.667
55.807
52.870
NAME SGL-9-24A
EXPNO 2
PROCNO 1
Date_ 20191227
Time 17.31
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 600
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 203
DW 20.800 usec
DE 6.50 usec
TE 290.9 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 13C
P1 10.00 usec
PL1 -3.00 dB
PL1W 68.66265106 W
SFO1 100.6228298 MHz
======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -2.60 dB
PL12 11.91 dB
PL13 13.20 dB
PL2W 20.11187935 W
PL12W 0.71195525 W
PL13W 0.52899635 W
SFO2 400.1316005 MHz
SI 32768
SF 100.6127690 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
O
O
O
NH
D
O
O
2d'
200
180
160
140
120
100
80
60
40
20
ppm

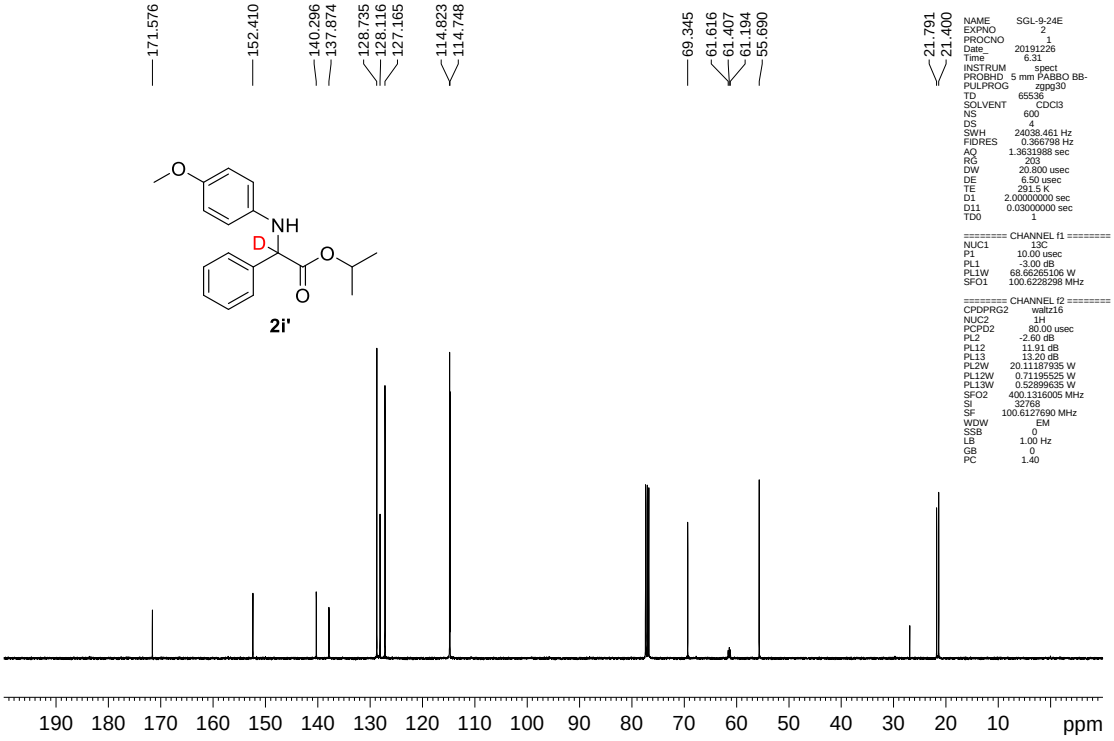

7.503
7.499
7.494
7.486
7.482
7.479
7.473
7.369
7.365
7.360
7.348
7.344
7.332
7.329
7.323
7.317
7.314
7.310
7.303
7.296
7.288
7.281
7.278
7.275
7.139
7.134
7.129
7.116
7.113
7.099
7.094
7.089
6.711
6.693
6.674
6.562
6.560
6.541
6.539
5.074
4.954
3.712
NAME SGL-9-24C
EXPNO 1
PROCNO 1
Date_ 20191227
Time 13.48
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 8
DS 2
SWH 8223.685 Hz
FIDRES 0.125483 Hz
AQ 3.9846387 sec
RG 101
DW 60.800 usec
DE 6.50 usec
TE 288.7 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 1H
P1 14.14 usec
PL1 -3.00 dB
PL1W 22.05223846 W
SFO1 400.1324710 MHz
SI 32768
SF 400.1300241 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
NH
D
O
O
2e'
10
9
8
7
6
5
4
3
2
1
0
ppm
1.99
2.99
2.01
1.00
1.99
0.01
0.96
3.00

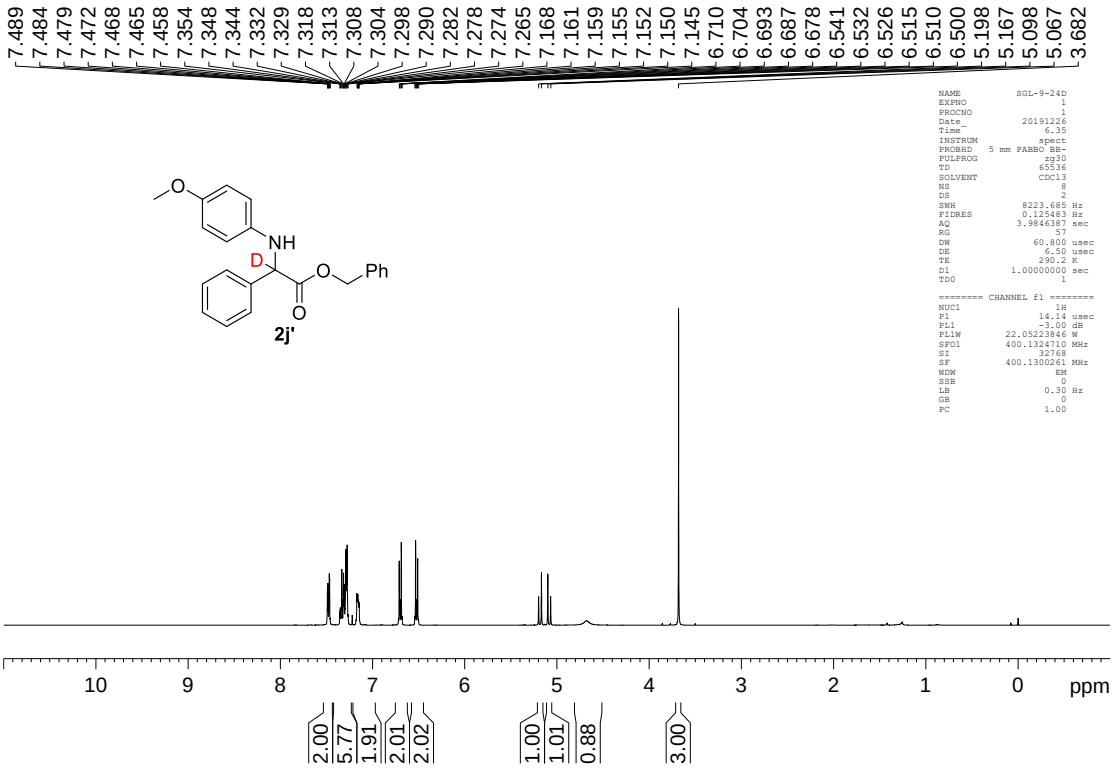

172.386
145.951
137.562
129.292
128.935
128.375
127.276
118.141
113.413
60.588
60.375
60.162
52.858
NH
D
O
O
2e'
200
180
160
140
120
100
80
60
40
20
ppm

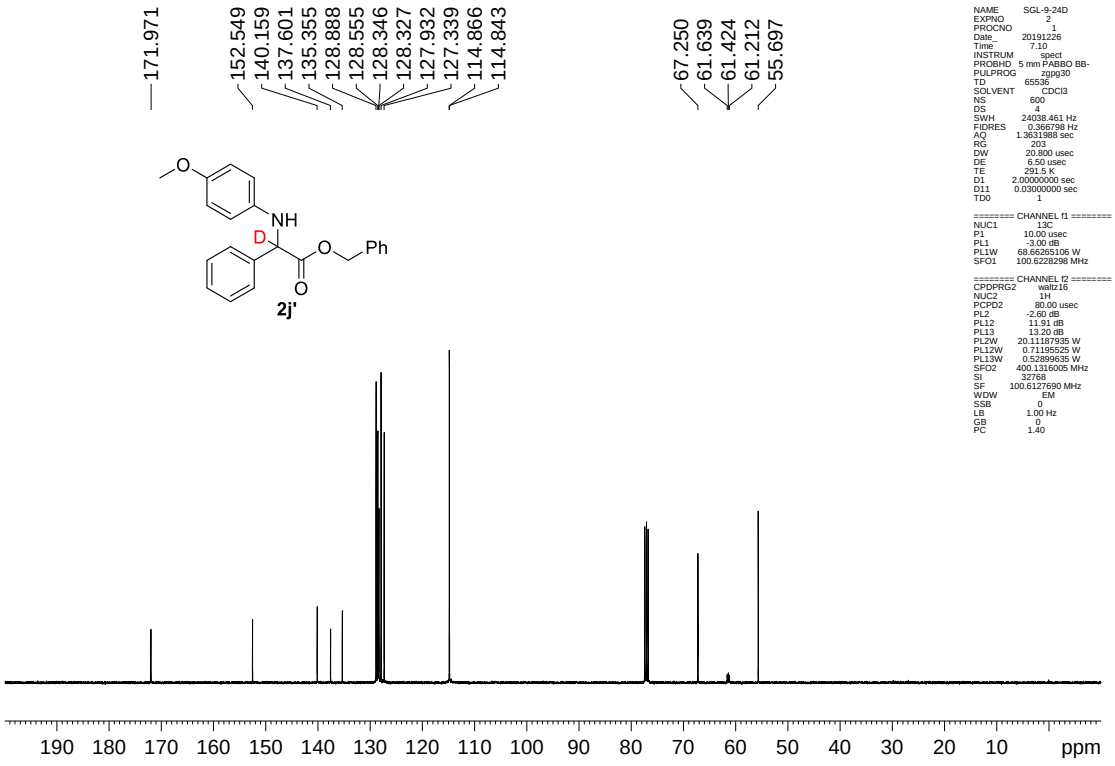

8.007
7.787
7.781
7.769
7.764
7.574
7.570
7.553
7.511
7.507
7.494
7.489
7.481
7.475
7.469
7.461
7.458
7.444
7.441
7.377
7.373
7.369
7.356
7.337
7.329
7.325
7.315
7.308
7.300
7.293
7.290
7.228
7.206
7.197
7.180
7.159
6.333
6.330
6.316
6.312
5.769
5.240
3.760
NH
D
O
O
2h'
11
10
9
8
7
6
5
4
3
2
1
0
ppm
1.06
1.05
2.01
2.07
3.02
2.18
0.98
0.96
0.03
3.00

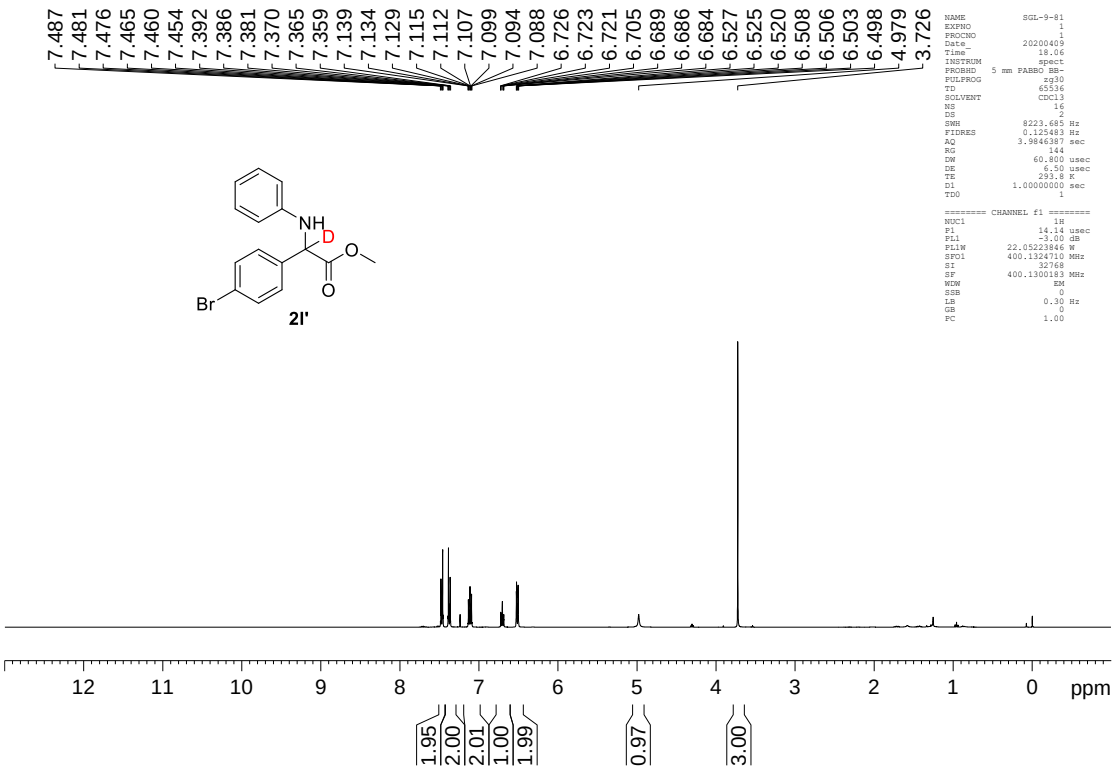

172.461
140.983
137.318
134.312
128.960
128.691
128.440
127.271
126.376
125.927
125.024
123.445
120.131
118.109
105.563
60.821
60.679
60.466
60.249
52.998
NH
D
O
O
2h'
200
180
160
140
120
100
80
60
40
20
ppm

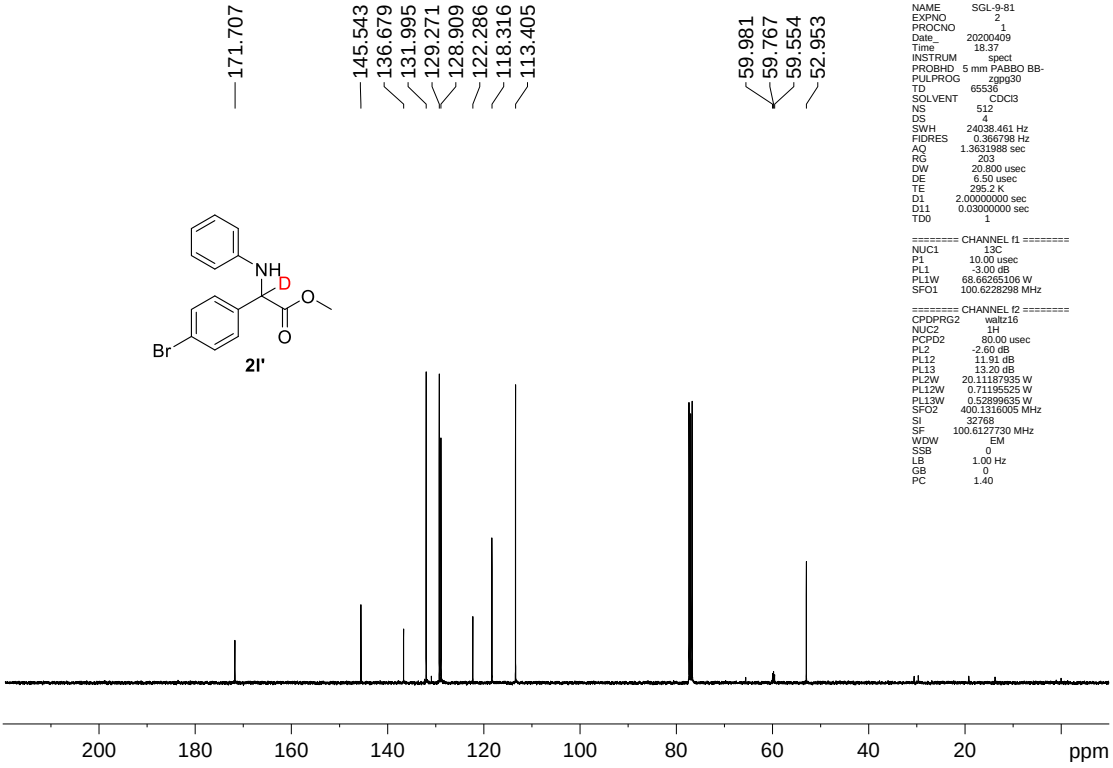

7.492
7.488
7.483
7.475
7.471
7.468
7.462
7.356
7.352
7.347
7.334
7.330
7.319
7.316
7.310
7.301
7.297
7.294
7.286
7.280
7.272
7.265
7.261
7.258
6.734
6.725
6.719
6.708
6.702
6.693
6.552
6.543
6.537
6.526
6.521
6.512
5.065
5.049
5.033
5.018
5.002
4.987
4.971
4.669
3.691
1.263
1.247
1.077
1.061
O
NH
D
O
O
2i'
10
9
8
7
6
5
4
3
2
1
0
ppm
1.93
2.92
1.97
1.99
0.99
0.83
2.98
3.07
3.00

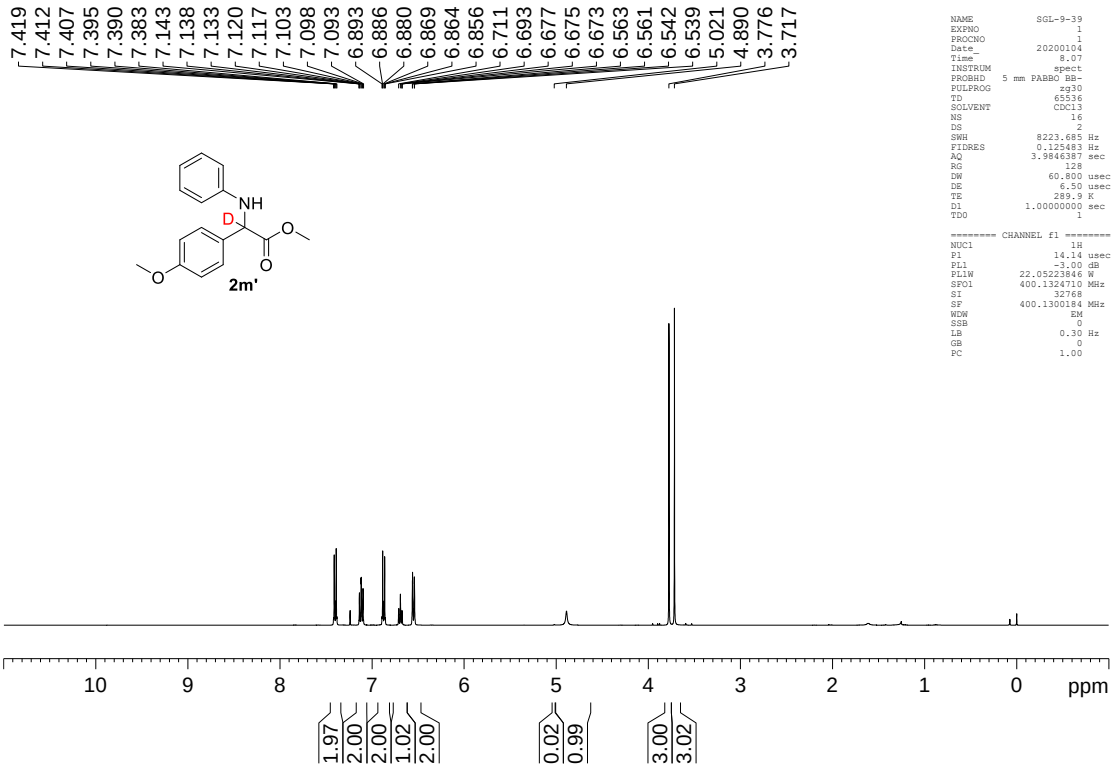

171.576
152.410
140.296
137.874
128.735
128.116
127.165
114.823
114.748
69.345
61.616
61.407
61.194
55.690
21.791
21.400
NAME SGL-9-24E
EXPNO 2
PROCNO 1
Date_ 20191226
Time 6.31
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 600
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 203
DW 20.800 usec
DE 6.50 usec
TE 291.5 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 13C
P1 10.00 usec
PL1 -3.00 dB
PL1W 68.66265106 W
SFO1 100.6228298 MHz
======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -2.60 dB
PL12 11.91 dB
PL13 13.20 dB
PL2W 20.11187935 W
PL12W 0.71195525 W
PL13W 0.52899635 W
SFO2 400.1316005 MHz
SI 32768
SF 100.6127690 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
O
NH
D
O
O
2i'
190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ppm

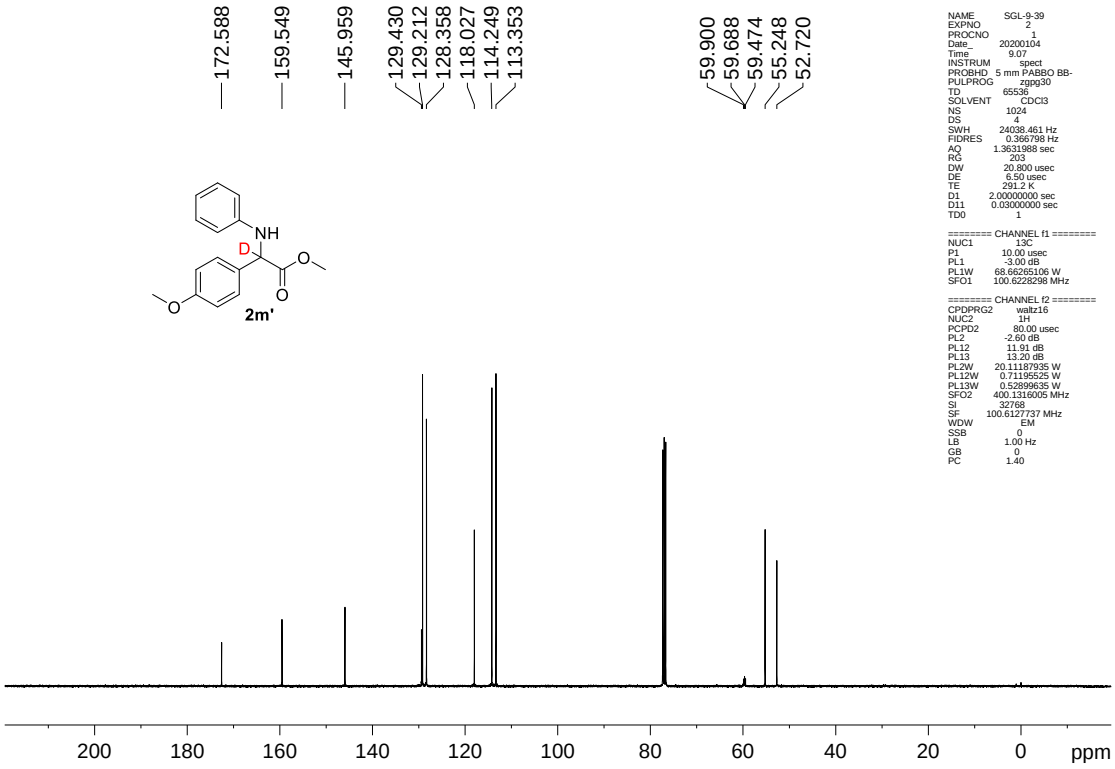

7.489
7.484
7.479
7.472
7.468
7.465
7.458
7.354
7.348
7.344
7.332
7.329
7.318
7.313
7.308
7.304
7.298
7.290
7.282
7.278
7.274
7.265
7.168
7.161
7.159
7.155
7.152
7.150
7.145
6.710
6.704
6.693
6.687
6.678
6.541
6.532
6.526
6.515
6.510
6.500
5.198
5.167
5.098
5.067
3.682
NAME SGL-9-24D
EXPNO 1
PROCNO 1
Date_ 20191226
Time 6.35
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 8
DS 2
SWH 8223.685 Hz
FIDRES 0.125483 Hz
AQ 3.9846387 sec
RG 57
DW 60.800 usec
DE 6.50 usec
TE 290.2 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 1H
P1 14.14 usec
PL1 -3.00 dB
PL1W 22.05223846 W
SFO1 400.1324710 MHz
SI 32768
SF 400.1300261 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
O
NH
D
O
O
Ph
2j'
10 9 8 7 6 5 4 3 2 1 0 ppm
2.00
5.77
1.91
2.01
2.02
1.00
1.01
0.88
3.00


171.971
152.549
140.159
137.601
135.355
128.888
128.555
128.346
128.327
127.932
127.339
114.866
114.843
67.250
61.639
61.424
61.212
55.697
NH
D
O
Ph
O
O
2j'
190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ppm

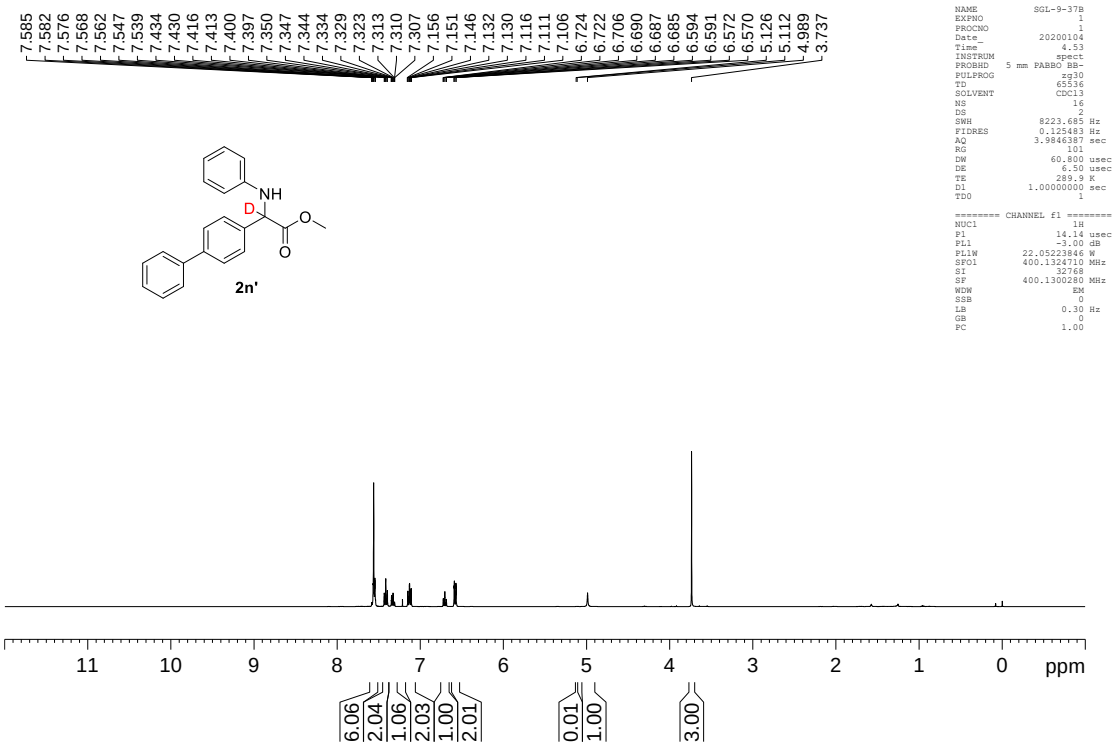

7.487
7.481
7.476
7.465
7.460
7.454
7.392
7.386
7.381
7.370
7.365
7.359
7.139
7.134
7.129
7.115
7.112
7.107
7.099
7.094
7.088
6.726
6.723
6.721
6.705
6.689
6.686
6.684
6.527
6.525
6.520
6.508
6.506
6.503
6.498
4.979
3.726
NH
D
O
O
Br
2l'
12 11 10 9 8 7 6 5 4 3 2 1 0 ppm
1.95
2.00
2.01
1.00
1.99
0.97
3.00


171.707
145.543
136.679
131.995
129.271
128.909
122.286
118.316
113.405
59.981
59.767
59.554
52.953
NAME SGL-9-81
EXPNO 2
PROCNO 1
Date_ 20200409
Time 18.37
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 512
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 203
DW 20.800 usec
DE 6.50 usec
TE 295.2 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 13C
P1 10.00 usec
PL1 -3.00 dB
PL1W 68.66265106 W
SFO1 100.6228298 MHz
======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -2.60 dB
PL12 11.91 dB
PL13 13.20 dB
PL2W 20.11187935 W
PL12W 0.71195525 W
PL13W 0.52899635 W
SFO2 400.1316005 MHz
SI 32768
SF 100.6127730 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
NH
D
O
O
Br
2l'
200
180
160
140
120
100
80
60
40
20
ppm

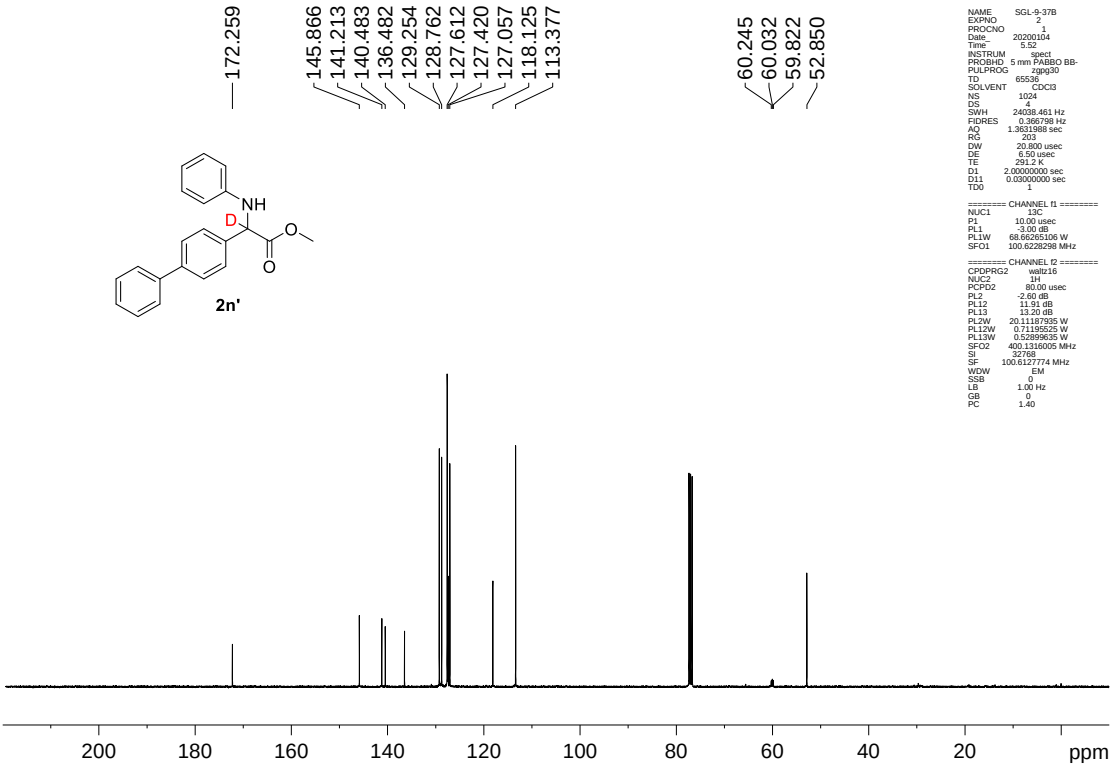

7.419
7.412
7.407
7.395
7.390
7.383
7.143
7.138
7.133
7.120
7.117
7.103
7.098
7.093
6.893
6.886
6.880
6.869
6.864
6.856
6.711
6.693
6.677
6.675
6.673
6.563
6.561
6.542
6.539
5.021
4.890
3.776
3.717
NAME SGL-9-39
EXPNO 1
PROCNO 1
Date_ 20200104
Time 8.07
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8223.685 Hz
FIDRES 0.125483 Hz
AQ 3.9846387 sec
RG 128
DW 60.800 usec
DE 6.50 usec
TE 289.9 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 1H
P1 14.14 usec
PL1 -3.00 dB
PL1W 22.05223846 W
SFO1 400.1324710 MHz
SI 32768
SF 400.1300184 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
NH
D
O
O
O
2m'
10
9
8
7
6
5
4
3
2
1
0
ppm
1.97
2.00
2.00
1.02
2.00
0.02
0.99
3.00
3.02

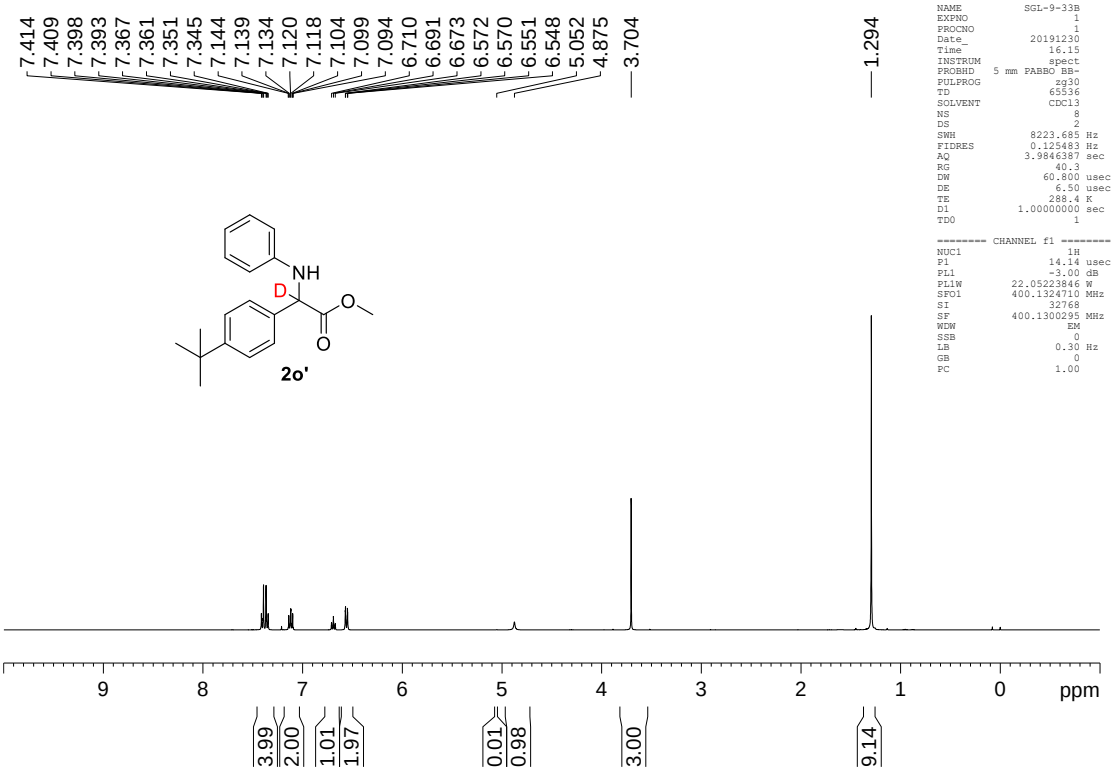


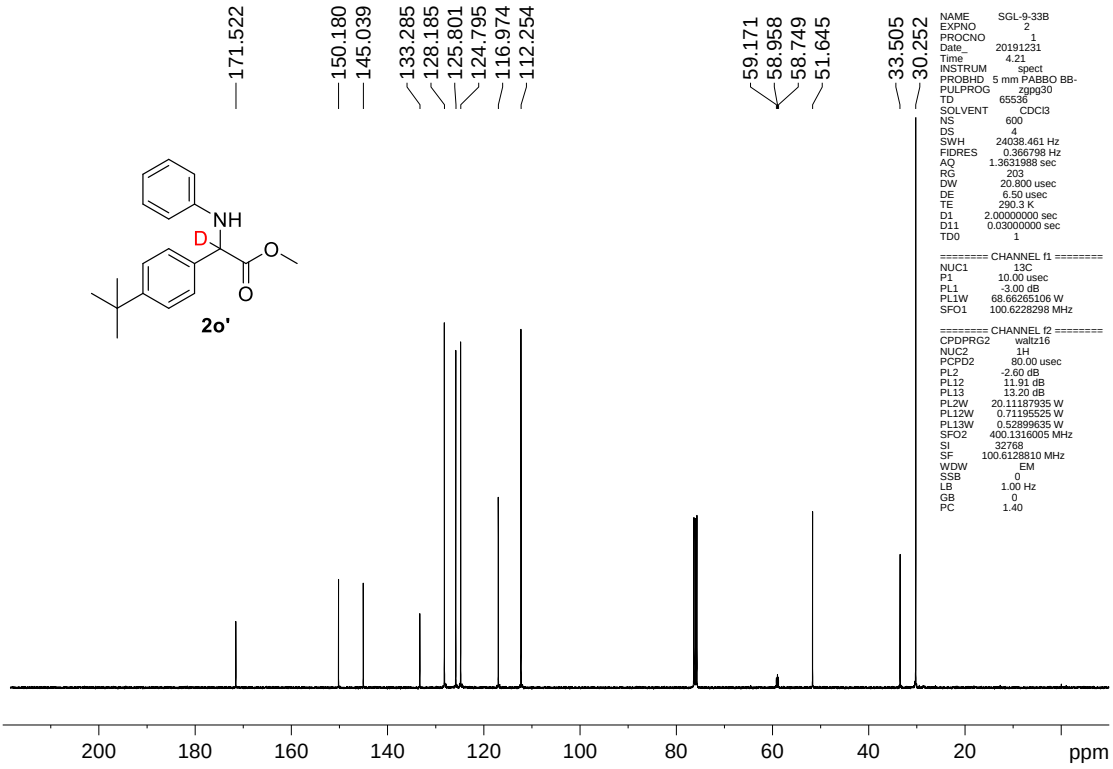

```
NAME            SGL-9-39
EXPNO                2
PROCNO               1
Date_         20200104
Time              9.07
INSTRUM          spect
PROBHD  5 mm PABBO BB-
PULPROG         zgpg30
TD                65536
SOLVENT           CDCl3
NS                 1024
DS                    4
SWH           24038.461 Hz
FIDRES        0.366798 Hz
AQ            1.3631988 sec
RG                  203
DW             20.800 usec
DE              6.50 usec
TE              291.2 K
D1          2.00000000 sec
D11         0.03000000 sec
TD0                   1

======== CHANNEL f1 ========
NUC1               13C
P1              10.00 usec
PL1             -3.00 dB
PL1W        68.66265106 W
SFO1        100.6228298 MHz

======== CHANNEL f2 ========
CPDPRG2         waltz16
NUC2                1H
PCPD2           80.00 usec
PL2             -2.60 dB
PL12            11.91 dB
PL13            13.20 dB
PL2W        20.11187935 W
PL12W        0.71195525 W
PL13W        0.52899635 W
SFO2        400.1316005 MHz
SI                 32768
SF          100.6127737 MHz
WDW                EM
SSB                 0
LB              1.00 Hz
GB                  0
PC              1.40
```

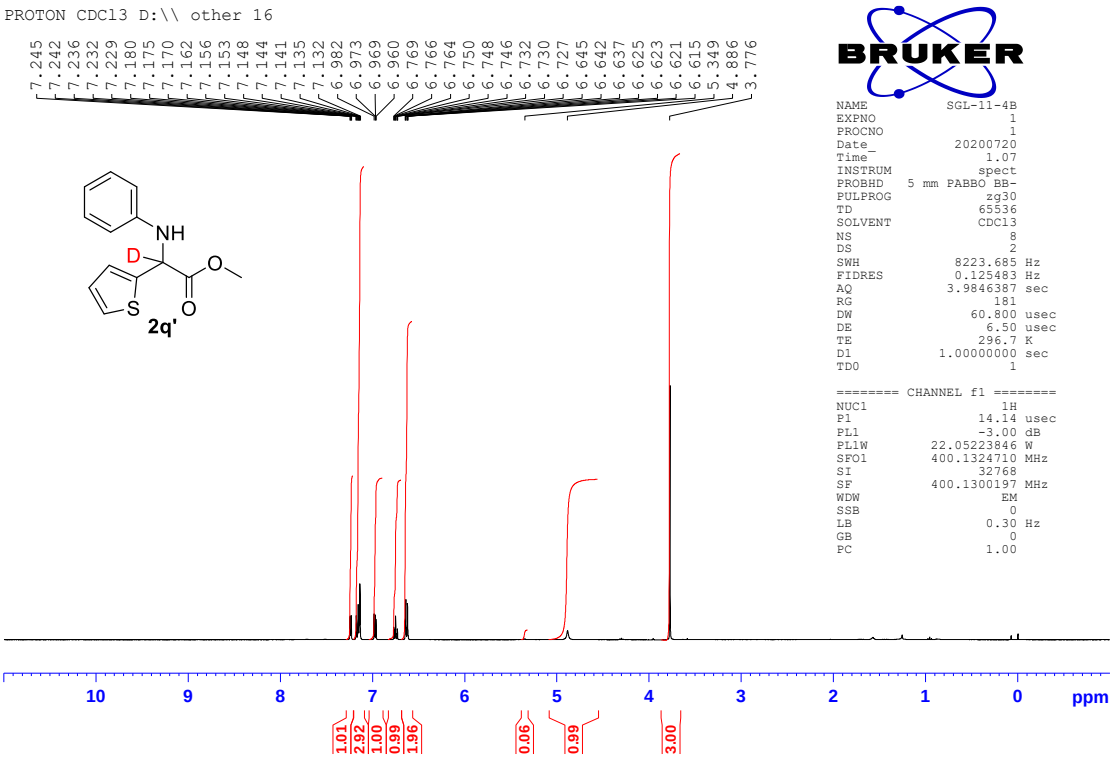


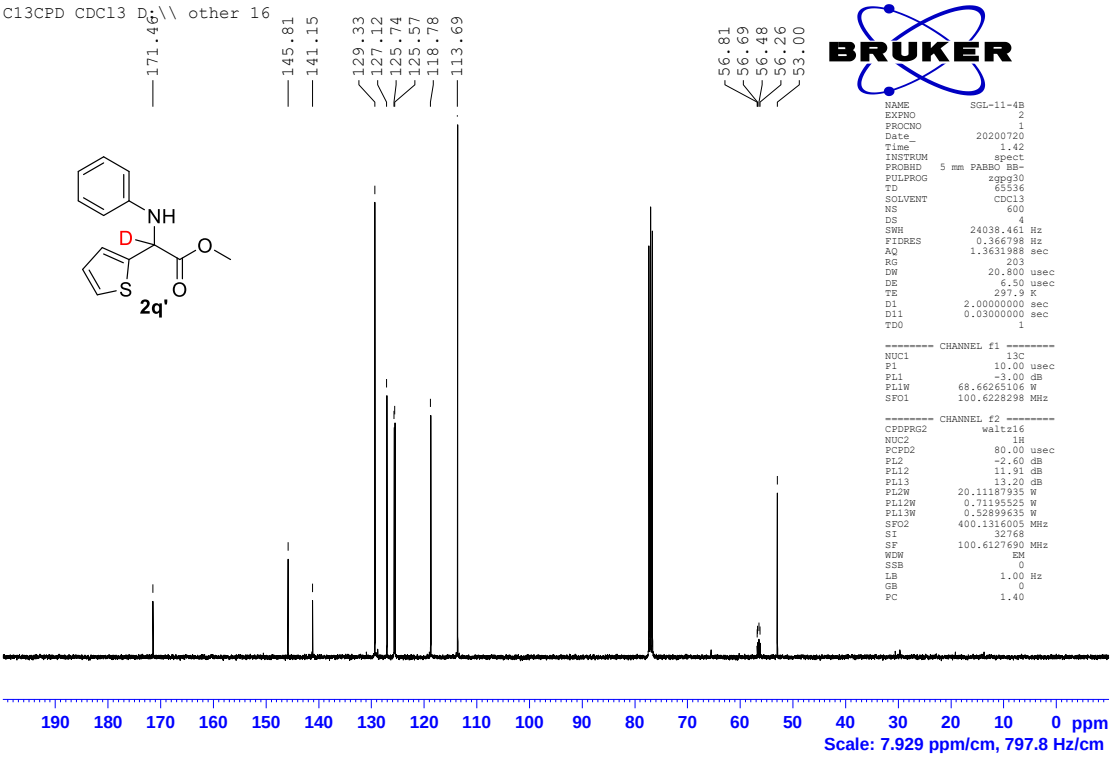

```
NAME            SGL-9-37B
EXPNO                1
PROCNO               1
Date_         20200104
Time              4.53
INSTRUM          spect
PROBHD  5 mm PABBO BB-
PULPROG         zg30
TD                65536
SOLVENT           CDCl3
NS                  16
DS                   2
SWH           8223.685 Hz
FIDRES        0.125483 Hz
AQ            3.9846387 sec
RG                 101
DW             60.800 usec
DE              6.50 usec
TE              289.9 K
D1          1.00000000 sec
TD0                   1

======== CHANNEL f1 ========
NUC1                1H
P1              14.14 usec
PL1             -3.00 dB
PL1W        22.05223846 W
SFO1        400.1324710 MHz
SI                 32768
SF          400.1300280 MHz
WDW                EM
SSB                 0
LB              0.30 Hz
GB                  0
PC              1.00
```

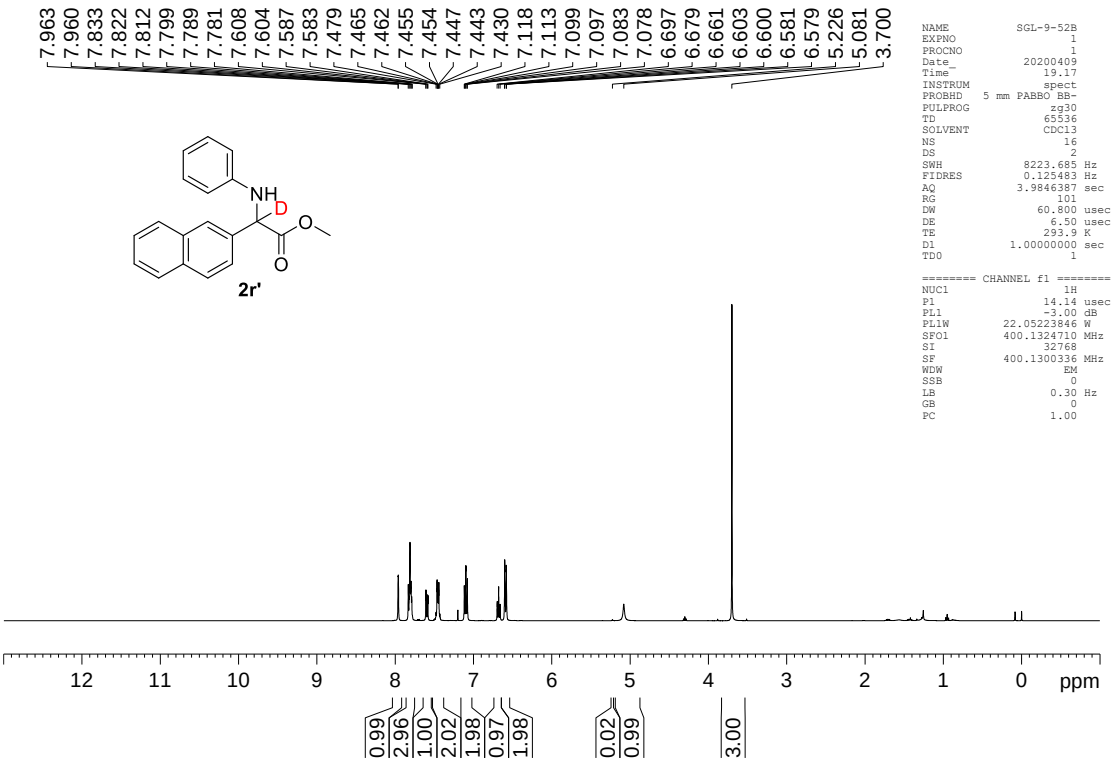

172.259
145.866
141.213
140.483
136.482
129.254
128.762
127.612
127.420
127.057
118.125
113.377
60.245
60.032
59.822
52.850
NH
D
O
O
2n'
200
180
160
140
120
100
80
60
40
20
ppm

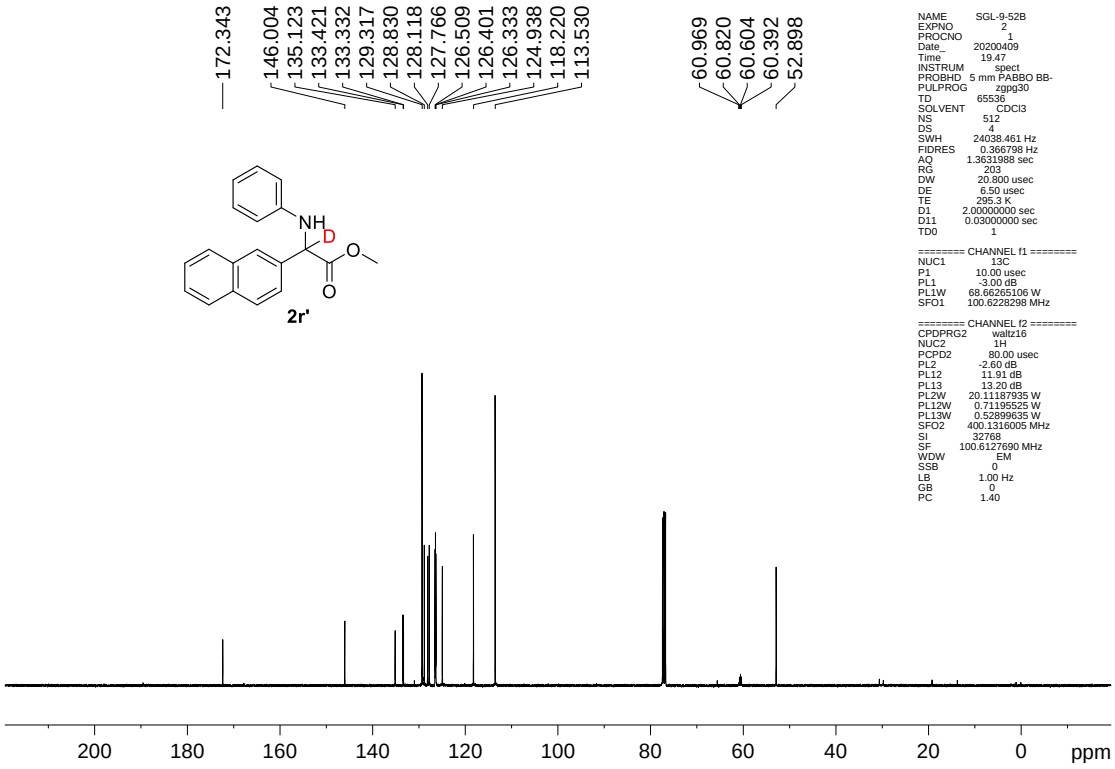

7.414
7.409
7.398
7.393
7.367
7.361
7.351
7.345
7.144
7.139
7.134
7.120
7.118
7.104
7.099
7.094
6.710
6.691
6.673
6.572
6.570
6.551
6.548
5.052
4.875
3.704
1.294
NH
D
O
O
2o'
9
8
7
6
5
4
3
2
1
0
ppm
3.99
2.00
1.01
1.97
0.01
0.98
3.00
9.14

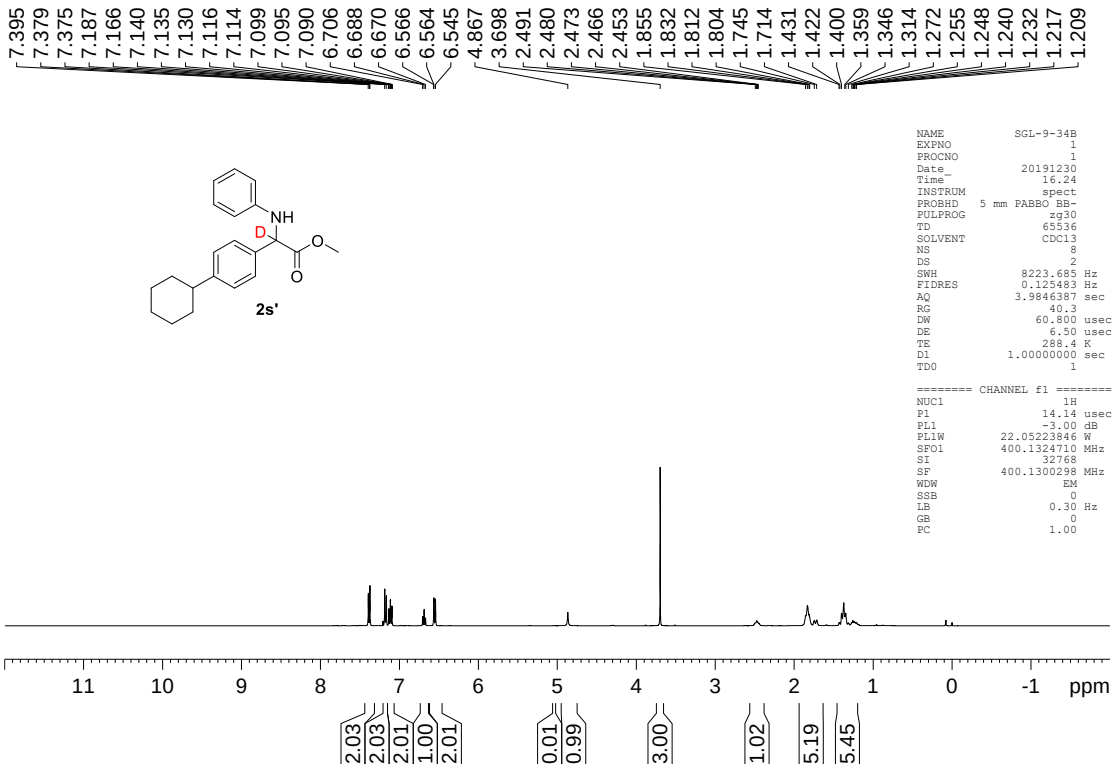

171.522
150.180
145.039
133.285
128.185
125.801
124.795
116.974
112.254
59.171
58.958
58.749
51.645
33.505
30.252
NH
D
O
O
2o'
200
180
160
140
120
100
80
60
40
20
ppm

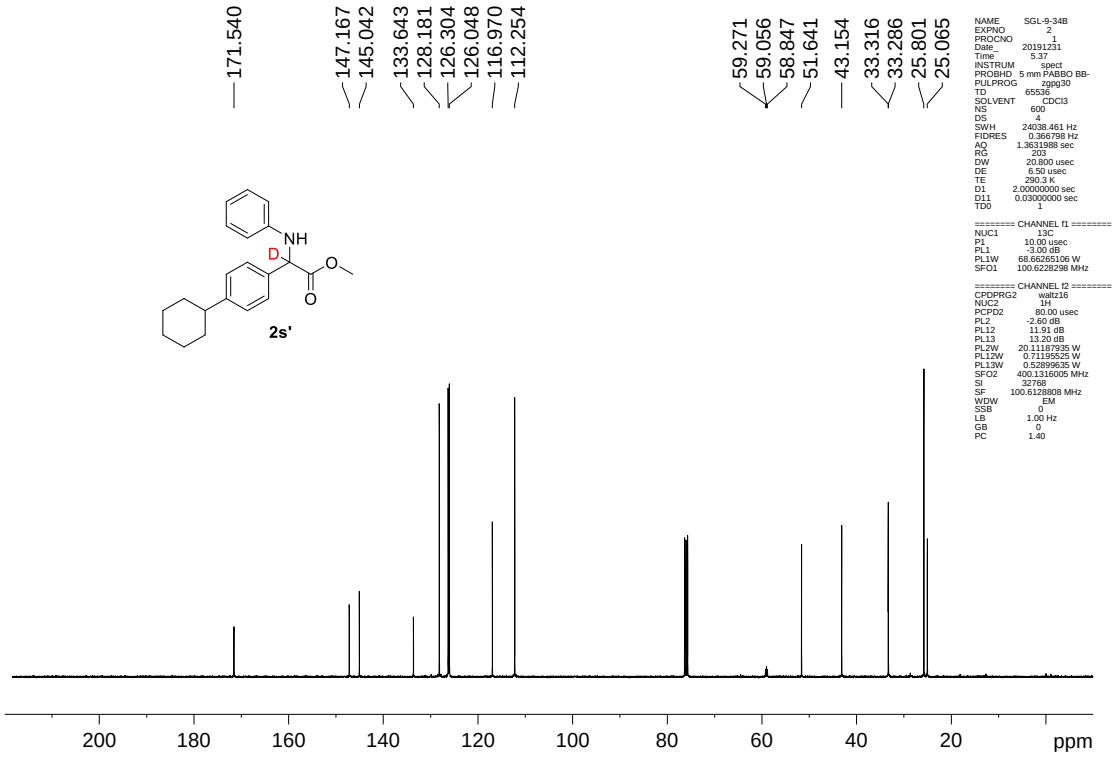

PROTON CDCl3 D:\\ other 16
7.245
7.242
7.236
7.232
7.229
7.180
7.175
7.170
7.162
7.156
7.153
7.148
7.144
7.141
7.135
7.132
6.982
6.973
6.969
6.960
6.769
6.766
6.764
6.750
6.748
6.746
6.732
6.730
6.727
6.645
6.642
6.637
6.625
6.623
6.621
6.615
5.349
4.886
3.776
NH
D
O
S
O
2q'
10
9
8
7
6
5
4
3
2
1
0
ppm
1.01
2.92
1.00
0.99
1.96
0.06
0.99
3.00


C13CPD CDCl3 D:\\ other 16
171.46
145.81
141.15
129.33
127.12
125.74
125.57
118.78
113.69
56.81
56.69
56.48
56.26
53.00
NH
D
O
S
O
2q'
NAME SGL-11-4B
EXPNO 2
PROCNO 1
Date_ 20200720
Time 1.42
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 600
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 203
DW 20.800 usec
DE 6.50 usec
TE 297.9 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 13C
P1 10.00 usec
PL1 -3.00 dB
PL1W 68.66265106 W
SFO1 100.6228298 MHz
======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -2.60 dB
PL12 11.91 dB
PL13 13.20 dB
PL2W 20.11187935 W
PL12W 0.71195525 W
PL13W 0.52899635 W
SFO2 400.1316005 MHz
SI 32768
SF 100.6127690 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 ppm
Scale: 7.929 ppm/cm, 797.8 Hz/cm

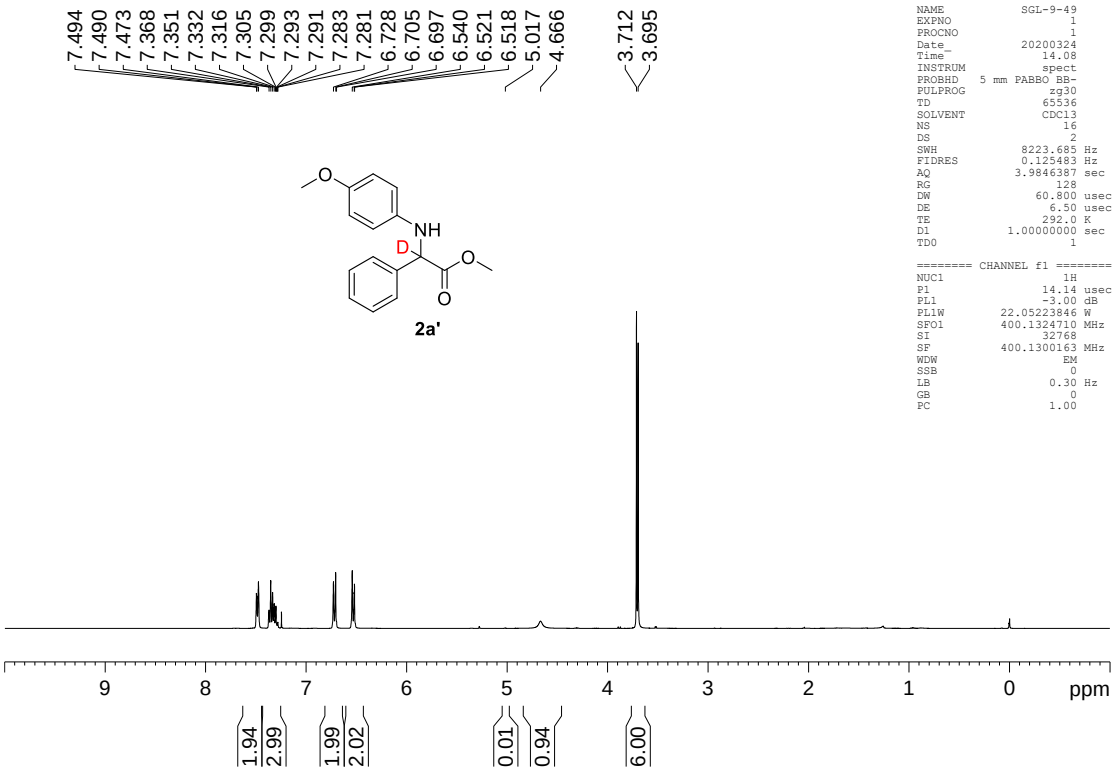

7.963
7.960
7.833
7.822
7.812
7.799
7.789
7.781
7.608
7.604
7.587
7.583
7.479
7.465
7.462
7.455
7.454
7.447
7.443
7.430
7.118
7.113
7.099
7.097
7.083
7.078
6.697
6.679
6.661
6.603
6.600
6.581
6.579
5.226
5.081
3.700
NH
D
O
O
2r'
NAME SGL-9-52B
EXPNO 1
PROCNO 1
Date_ 20200409
Time 19.17
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8223.685 Hz
FIDRES 0.125483 Hz
AQ 3.9846387 sec
RG 101
DW 60.800 usec
DE 6.50 usec
TE 293.9 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 1H
P1 14.14 usec
PL1 -3.00 dB
PL1W 22.05223846 W
SFO1 400.1324710 MHz
SI 32768
SF 400.1300336 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
12 11 10 9 8 7 6 5 4 3 2 1 0 ppm
0.99
2.96
1.00
2.02
1.98
0.97
1.98
0.02
0.99
3.00

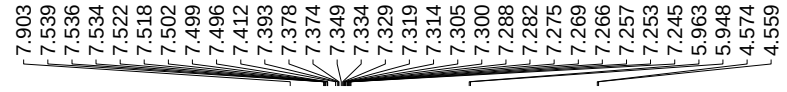

172.343
146.004
135.123
133.421
133.332
129.317
128.830
128.118
127.766
126.509
126.401
126.333
124.938
118.220
113.530
60.969
60.820
60.604
60.392
52.898
NH
D
O
O
2r'
NAME SGL-9-52B
EXPNO 2
PROCNO 1
Date_ 20200409
Time 19.47
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 512
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 203
DW 20.800 usec
DE 6.50 usec
TE 295.3 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 13C
P1 10.00 usec
PL1 -3.00 dB
PL1W 68.66265106 W
SFO1 100.6228298 MHz
======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -2.60 dB
PL12 11.91 dB
PL13 13.20 dB
PL2W 20.11187935 W
PL12W 0.71195525 W
PL13W 0.52899635 W
SFO2 400.1316005 MHz
SI 32768
SF 100.6127690 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
200
180
160
140
120
100
80
60
40
20
0
ppm

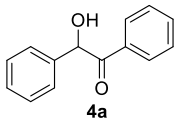

7.395
7.379
7.375
7.187
7.166
7.140
7.135
7.130
7.116
7.114
7.099
7.095
7.090
6.706
6.688
6.670
6.566
6.564
6.545
4.867
3.698
2.491
2.480
2.473
2.466
2.453
1.855
1.832
1.812
1.804
1.745
1.714
1.431
1.422
1.400
1.359
1.346
1.314
1.272
1.255
1.248
1.240
1.232
1.217
1.209
NH
D
O
O
2s'
NAME SGL-9-34B
EXPNO 1
PROCNO 1
Date_ 20191230
Time 16.24
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 8
DS 2
SWH 8223.685 Hz
FIDRES 0.125483 Hz
AQ 3.9846387 sec
RG 40.3
DW 60.800 usec
DE 6.50 usec
TE 288.4 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 1H
P1 14.14 usec
PL1 -3.00 dB
PL1W 22.05223846 W
SFO1 400.1324710 MHz
SI 32768
SF 400.1300298 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
11
10
9
8
7
6
5
4
3
2
1
0
-1
ppm
2.03
2.03
2.01
1.00
2.01
0.01
0.99
3.00
1.02
5.19
5.45



gram scale reactions

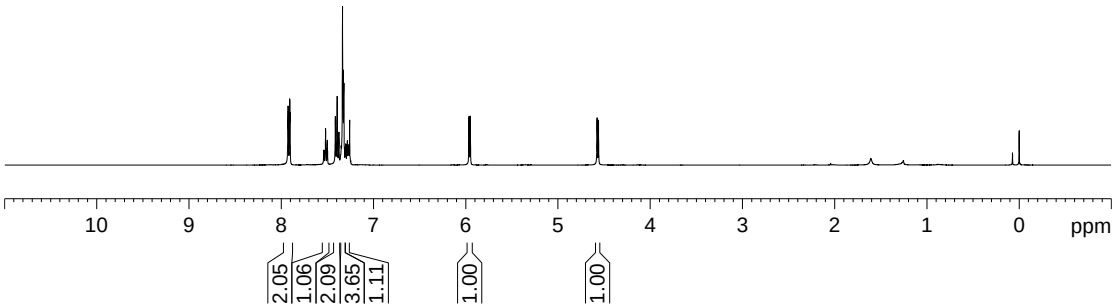


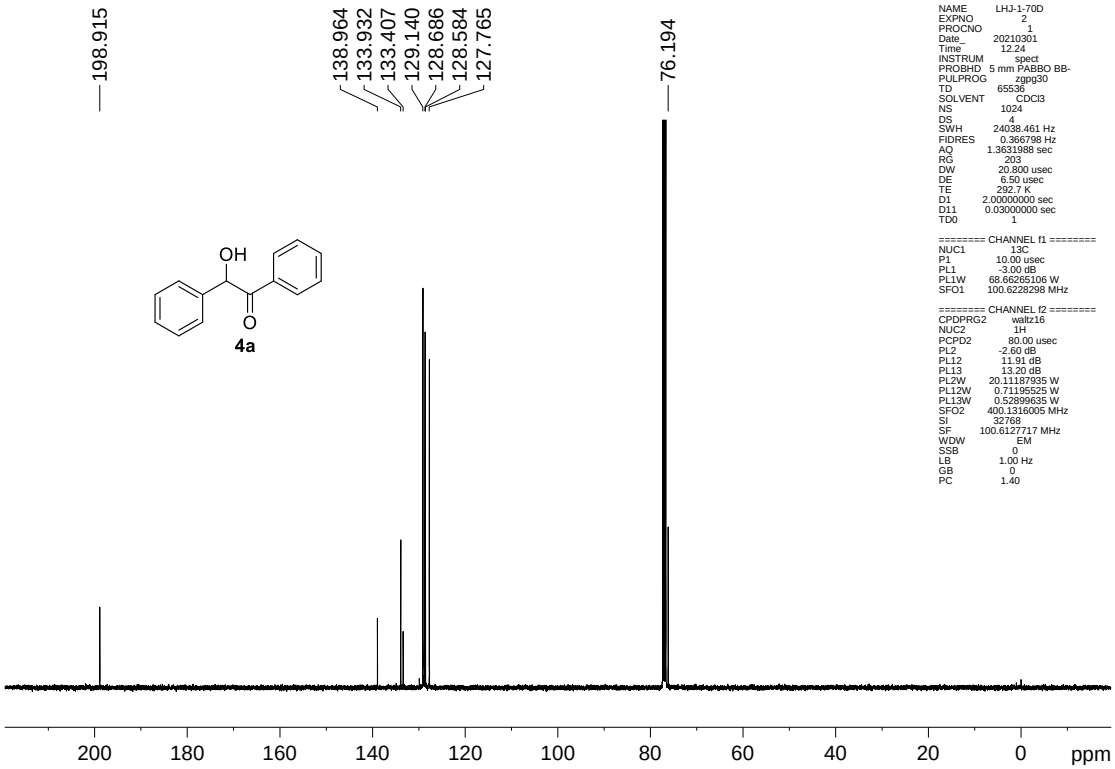




4a

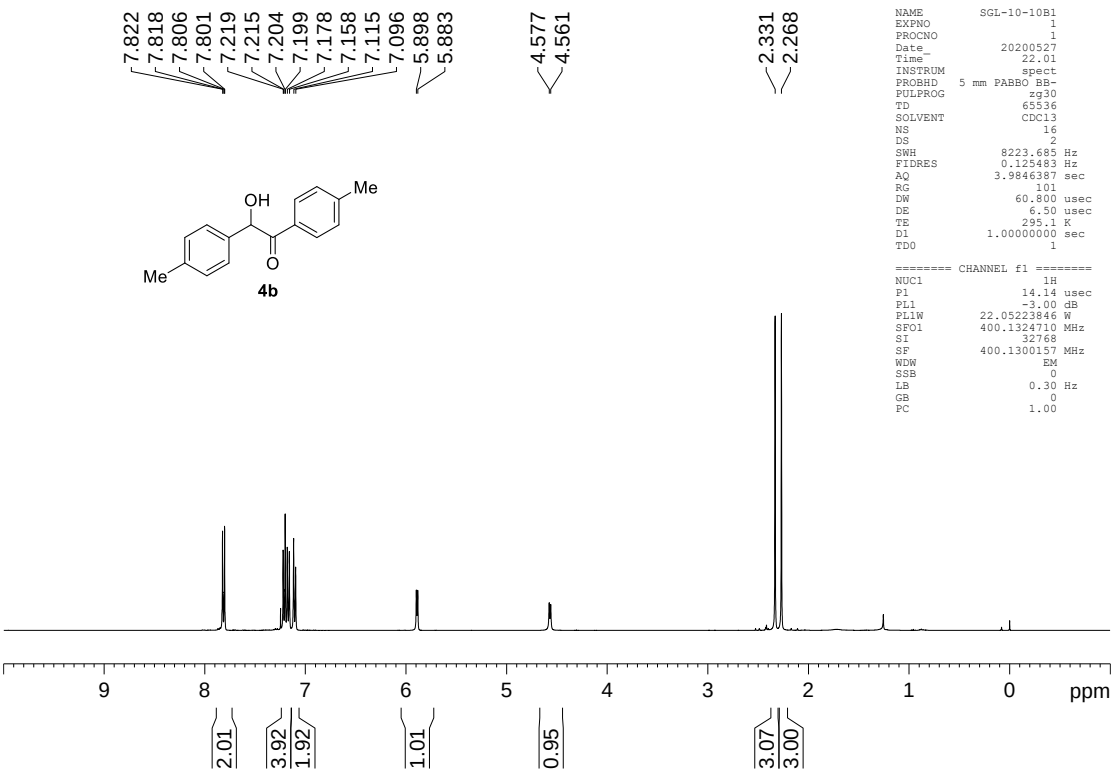
```
NAME            LHJ-2-6D
EXPNO                  1
PROCNO                 1
Date_           20200528
Time_              10.55
INSTRUM            spect
PROBHD   5 mm PABBO BB-
PULPROG             zg30
TD                 65536
SOLVENT            CDCl3
NS                     8
DS                     2
SWH             8223.685 Hz
FIDRES          0.125483 Hz
AQ              3.9846387 sec
RG                   203
DW                60.800 usec
DE                 6.50 usec
TE                294.5 K
D1             1.00000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                  1H
P1                 14.14 usec
PL1                -3.00 dB
PL1W         22.05223846 W
SFO1        400.1324710 MHz
SI                 32768
SF          400.1300110 MHz
WDW                   EM
SSB                    0
LB                  0.30 Hz
GB                     0
PC                  1.00
```

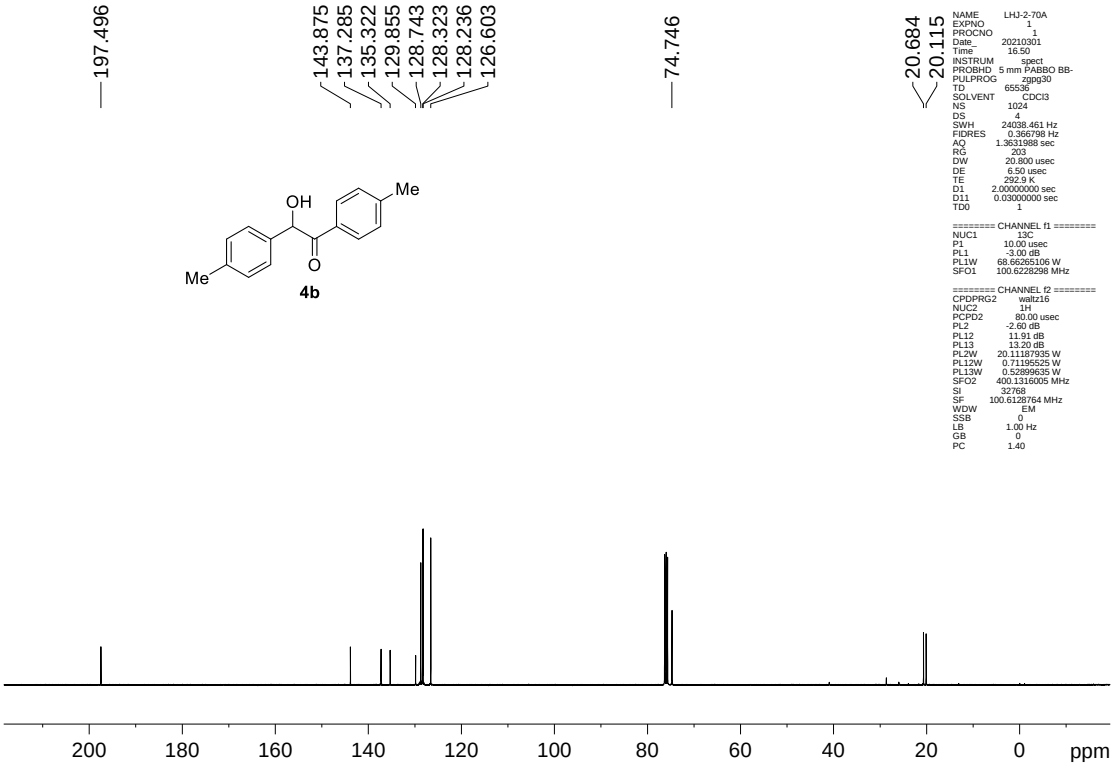


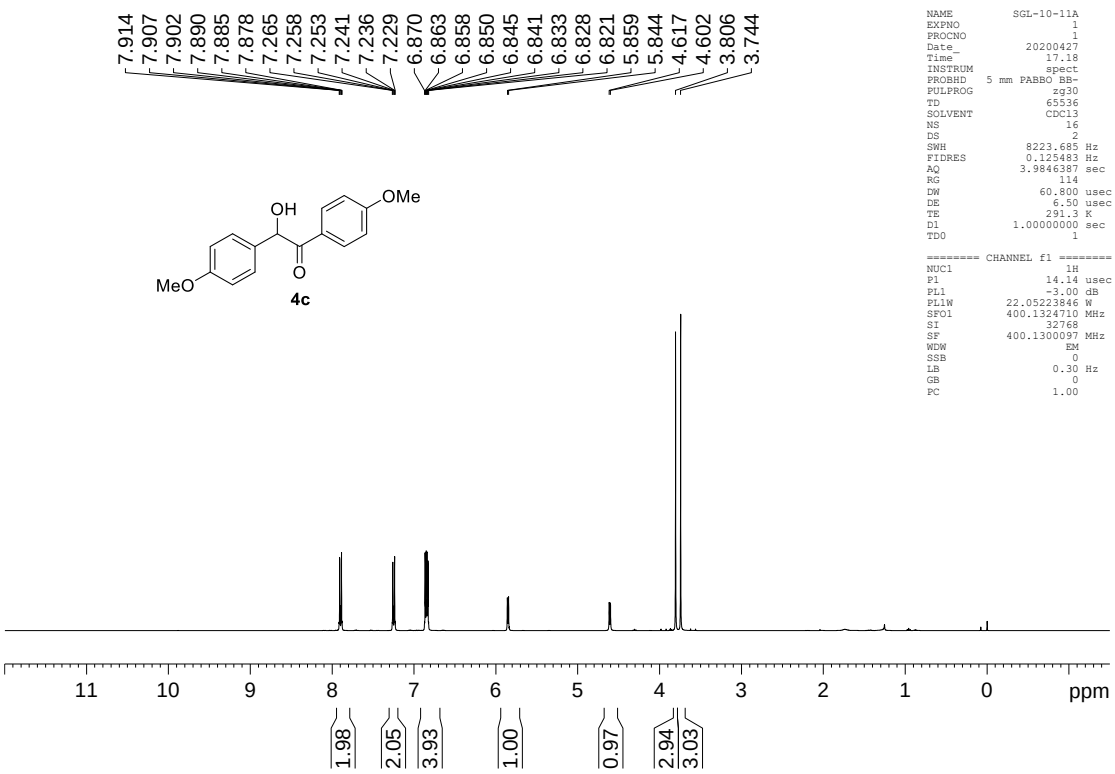


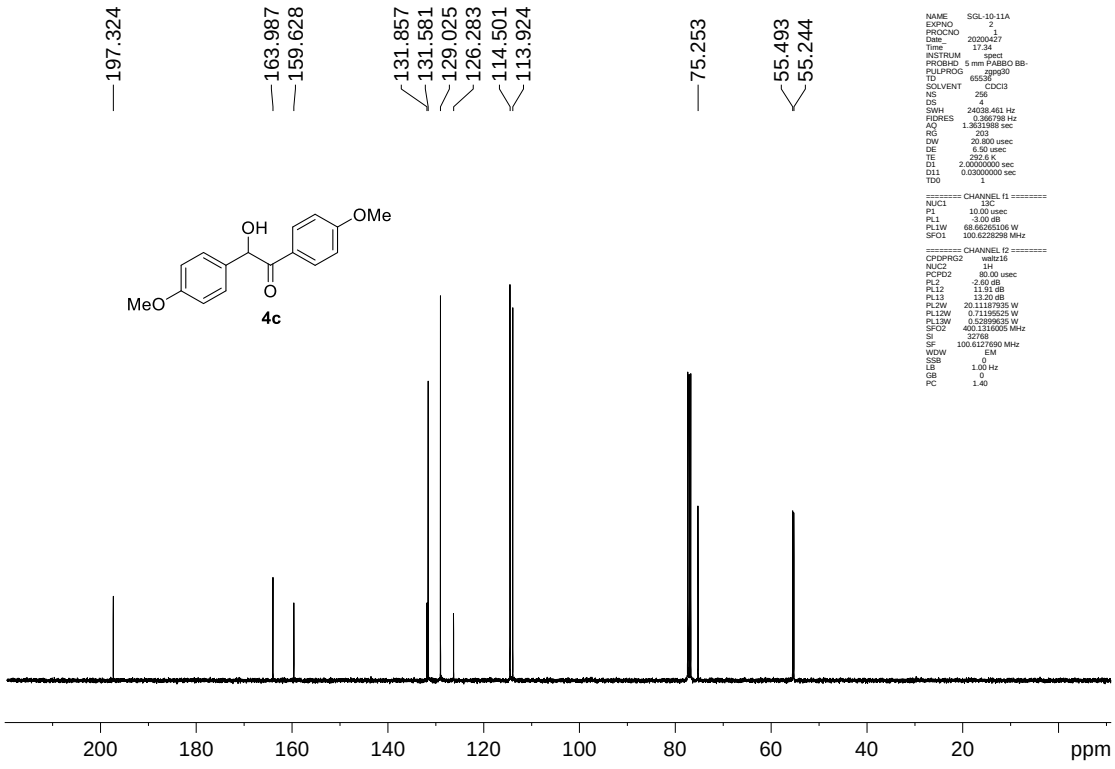
4a

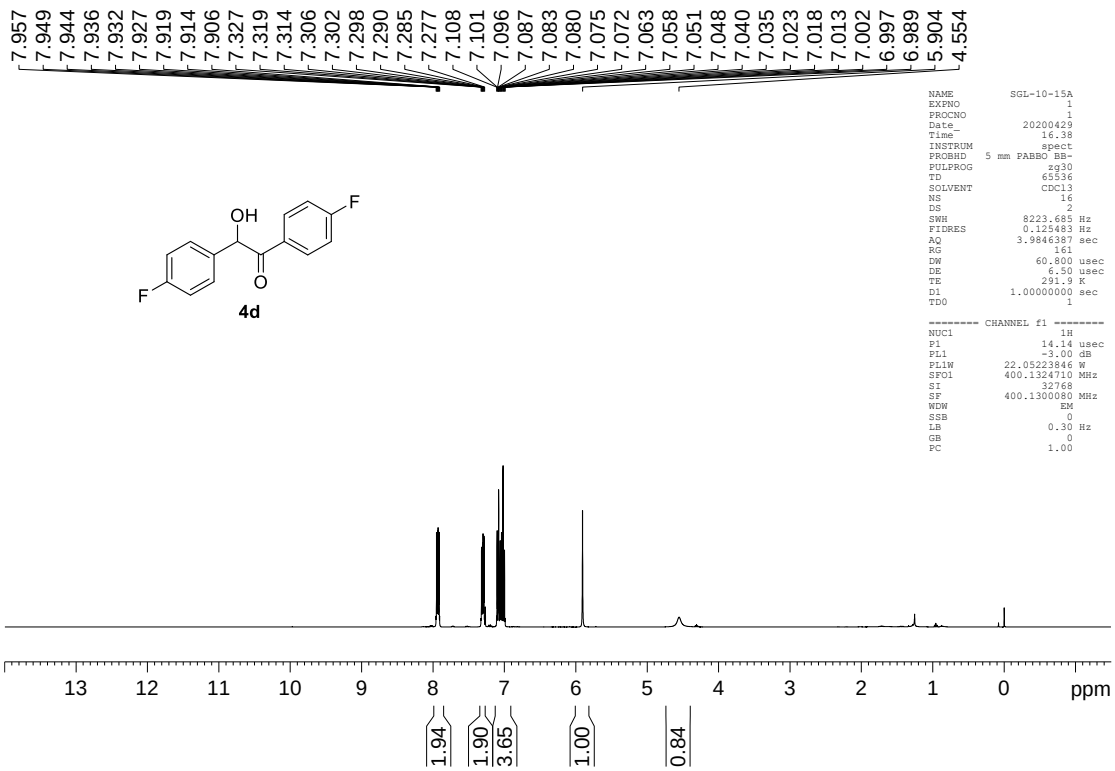
```
NAME          LHJ-1-70D
EXPNO                 2
PROCNO                1
Date_          20210301
Time              12.24
INSTRUM           spect
PROBHD  5 mm PABBO BB-
PULPROG         zgpg30
TD                65536
SOLVENT           CDCl3
NS                 1024
DS                    4
SWH           24038.461 Hz
FIDRES         0.366798 Hz
AQ             1.3631988 sec
RG                  203
DW                20.800 usec
DE                 6.50 usec
TE                292.7 K
D1             2.00000000 sec
D11            0.03000000 sec
TD0                   1

======== CHANNEL f1 ========
NUC1                 13C
P1                10.00 usec
PL1               -3.00 dB
PL1W         68.66265106 W
SFO1        100.6228298 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                 1H
PCPD2             80.00 usec
PL2               -2.60 dB
PL12              11.91 dB
PL13              13.20 dB
PL2W         20.11187935 W
PL12W         0.71195525 W
PL13W         0.52899635 W
SFO2        400.1316005 MHz
SI                 32768
SF          100.6127717 MHz
WDW                   EM
SSB                    0
LB                 1.00 Hz
GB                     0
PC                 1.40
```

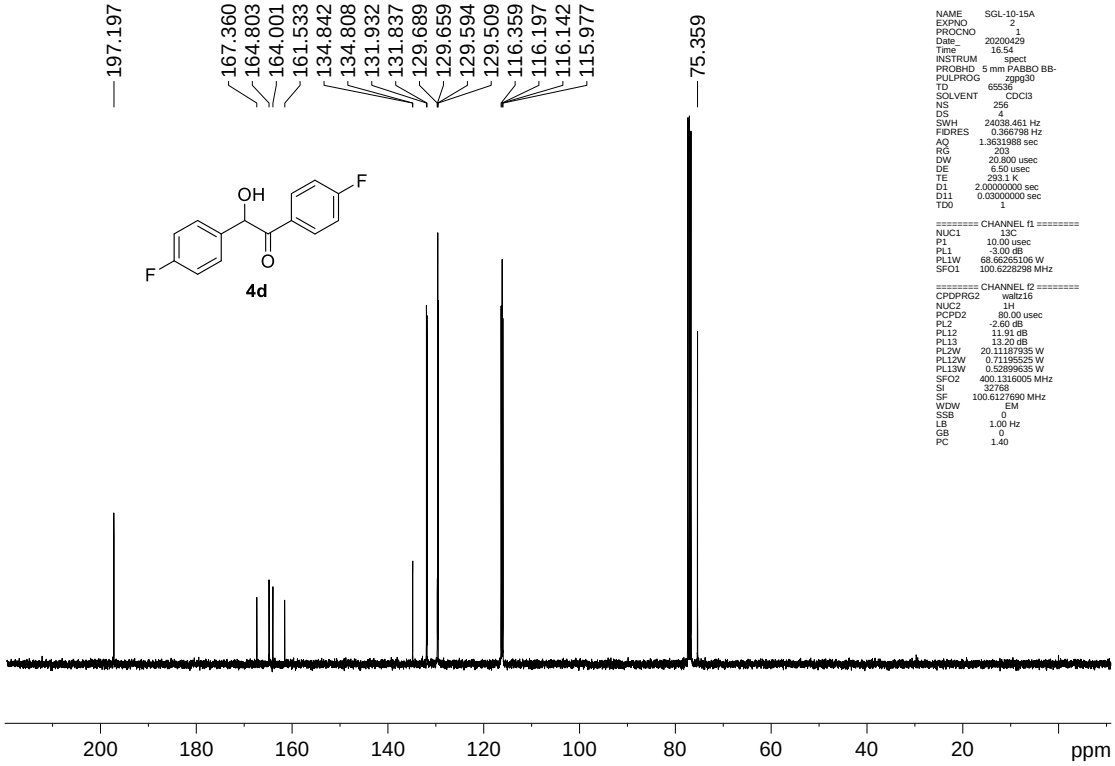

7.822
7.818
7.806
7.801
7.219
7.215
7.204
7.199
7.178
7.158
7.115
7.096
5.898
5.883
4.577
4.561
2.331
2.268
OH
Me
Me
O
4b
NAME SGL-10-10B1
EXPNO 1
PROCNO 1
Date_ 20200527
Time 22.01
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8223.685 Hz
FIDRES 0.125483 Hz
AQ 3.9846387 sec
RG 101
DW 60.800 usec
DE 6.50 usec
TE 295.1 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 1H
P1 14.14 usec
PL1 -3.00 dB
PL1W 22.05223846 W
SFO1 400.1324710 MHz
SI 32768
SF 400.1300157 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
9
8
7
6
5
4
3
2
1
0
ppm
2.01
3.92
1.92
1.01
0.95
3.07
3.00

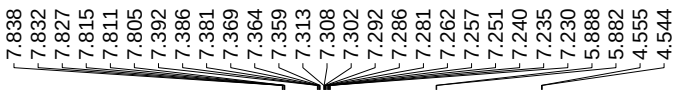

197.496
143.875
137.285
135.322
129.855
128.743
128.323
128.236
126.603
74.746
20.684
20.115
OH
Me
Me
O
4b
NAME LHJ-2-70A
EXPNO 1
PROCNO 1
Date_ 20210301
Time 16.50
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 1024
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 203
DW 20.800 usec
DE 6.50 usec
TE 292.9 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 13C
P1 10.00 usec
PL1 -3.00 dB
PL1W 68.66265106 W
SFO1 100.6228298 MHz
======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -2.60 dB
PL12 11.91 dB
PL13 13.20 dB
PL2W 20.11187935 W
PL12W 0.71195525 W
PL13W 0.52899635 W
SFO2 400.1316005 MHz
SI 32768
SF 100.6128764 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
200
180
160
140
120
100
80
60
40
20
0
ppm

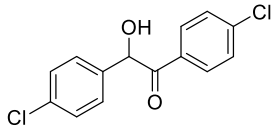

7.914
7.907
7.902
7.890
7.885
7.878
7.265
7.258
7.253
7.241
7.236
7.229
6.870
6.863
6.858
6.850
6.845
6.841
6.833
6.828
6.821
5.859
5.844
4.617
4.602
3.806
3.744
OMe
OH
O
MeO
4c
NAME SGL-10-11A
EXPNO 1
PROCNO 1
Date_ 20200427
Time_ 17.18
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8223.685 Hz
FIDRES 0.125483 Hz
AQ 3.9846387 sec
RG 114
DW 60.800 usec
DE 6.50 usec
TE 291.3 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 1H
P1 14.14 usec
PL1 -3.00 dB
PL1W 22.05223846 W
SFO1 400.1324710 MHz
SI 32768
SF 400.1300097 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
11
10
9
8
7
6
5
4
3
2
1
0
ppm
1.98
2.05
3.93
1.00
0.97
2.94
3.03


197.324
163.987
159.628
131.857
131.581
129.025
126.283
114.501
113.924
75.253
55.493
55.244
OMe
OH
O
MeO
4c
NAME SGL-10-11A
EXPNO 2
PROCNO 1
Date_ 20200427
Time_ 17.34
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 256
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 203
DW 20.800 usec
DE 6.50 usec
TE 292.6 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 13C
P1 10.00 usec
PL1 -3.00 dB
PL1W 68.66265106 W
SFO1 100.6228298 MHz
======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -2.60 dB
PL12 11.91 dB
PL13 13.20 dB
PL2W 20.11187935 W
PL12W 0.71195525 W
PL13W 0.52899635 W
SFO2 400.1316005 MHz
SI 32768
SF 100.6127690 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
200
180
160
140
120
100
80
60
40
20
ppm


7.957
7.949
7.944
7.936
7.932
7.927
7.919
7.914
7.906
7.327
7.319
7.314
7.306
7.302
7.298
7.290
7.285
7.277
7.108
7.101
7.096
7.087
7.083
7.080
7.075
7.072
7.063
7.058
7.051
7.048
7.040
7.035
7.023
7.018
7.013
7.002
6.997
6.989
5.904
4.554
OH
F
O
F
4d
NAME SGL-10-15A
EXPNO 1
PROCNO 1
Date_ 20200429
Time_ 16.38
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8223.685 Hz
FIDRES 0.125483 Hz
AQ 3.9846387 sec
RG 161
DW 60.800 usec
DE 6.50 usec
TE 291.9 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 1H
P1 14.14 usec
PL1 -3.00 dB
PL1W 22.05223846 W
SFO1 400.1324710 MHz
SI 32768
SF 400.1300080 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
13
12
11
10
9
8
7
6
5
4
3
2
1
0
ppm
1.94
1.90
3.65
1.00
0.84

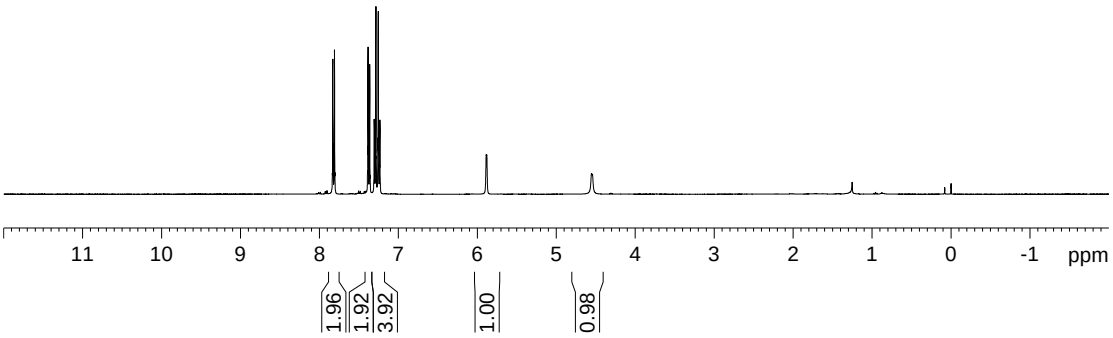

197.197
167.360
164.803
164.001
161.533
134.842
134.808
131.932
131.837
129.689
129.659
129.594
129.509
116.359
116.197
116.142
115.977
75.359
OH
F
O
F
4d
NAME SGL-10-15A
EXPNO 2
PROCNO 1
Date_ 20200429
Time 16.54
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 256
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 203
DW 20.800 usec
DE 6.50 usec
TE 293.1 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 13C
P1 10.00 usec
PL1 -3.00 dB
PL1W 68.66265106 W
SFO1 100.6228298 MHz
======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -2.60 dB
PL12 11.91 dB
PL13 13.20 dB
PL2W 20.11187935 W
PL12W 0.71195525 W
PL13W 0.52899635 W
SFO2 400.1316005 MHz
SI 32768
SF 100.6127690 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
200
180
160
140
120
100
80
60
40
20
ppm

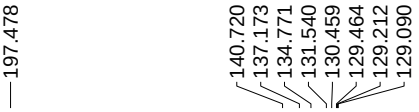




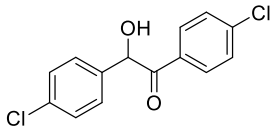
4e

```
NAME            SGL-10-11B
EXPNO                    1
PROCNO                   1
Date_             20200427
Time                 17.39
INSTRUM              spect
PROBHD    5 mm PABBO BB-
PULPROG              zg30
TD                  65536
SOLVENT             CDCl3
NS                     16
DS                      2
SWH               8223.685 Hz
FIDRES           0.125483 Hz
AQ                3.9846387 sec
RG                    144
DW                 60.800 usec
DE                  6.50 usec
TE                 291.4 K
D1              1.00000000 sec
TD0                     1

========= CHANNEL f1 ========
NUC1                   1H
P1                  14.14 usec
PL1                 -3.00 dB
PL1W          22.05223846 W
SFO1          400.1324710 MHz
SI                   32768
SF            400.1300091 MHz
WDW                    EM
SSB                     0
LB                   0.30 Hz
GB                      0
PC                   1.00
```

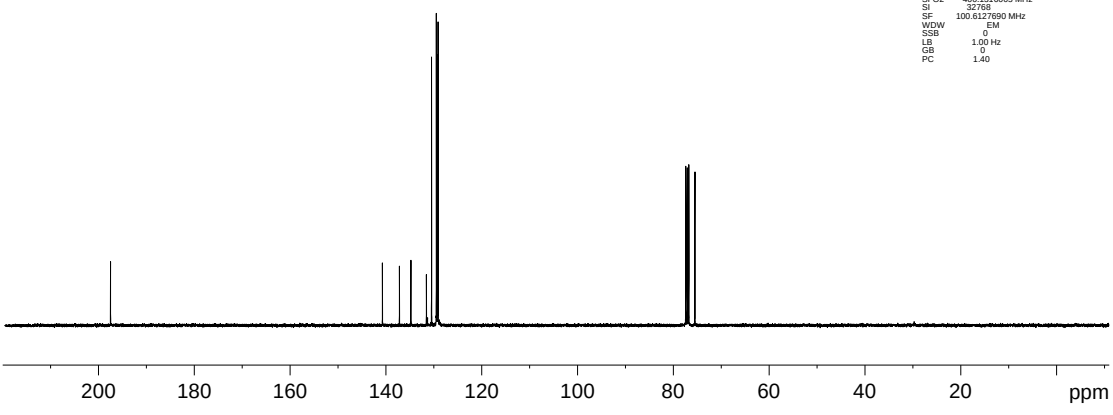


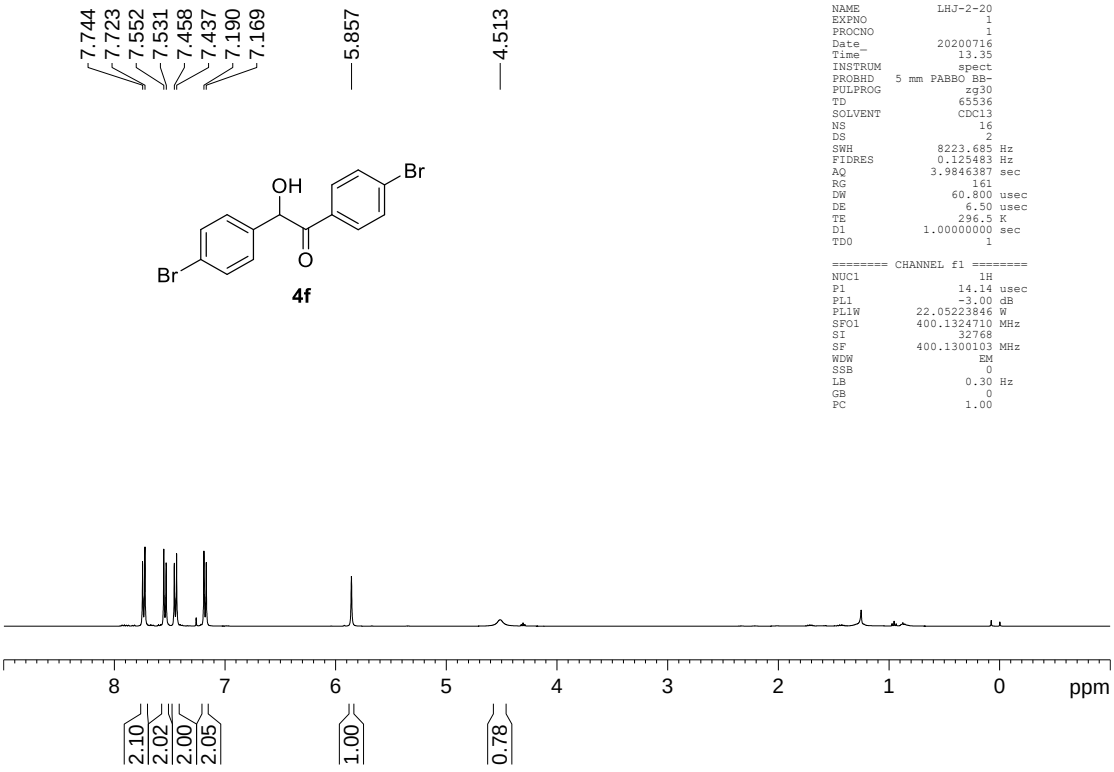


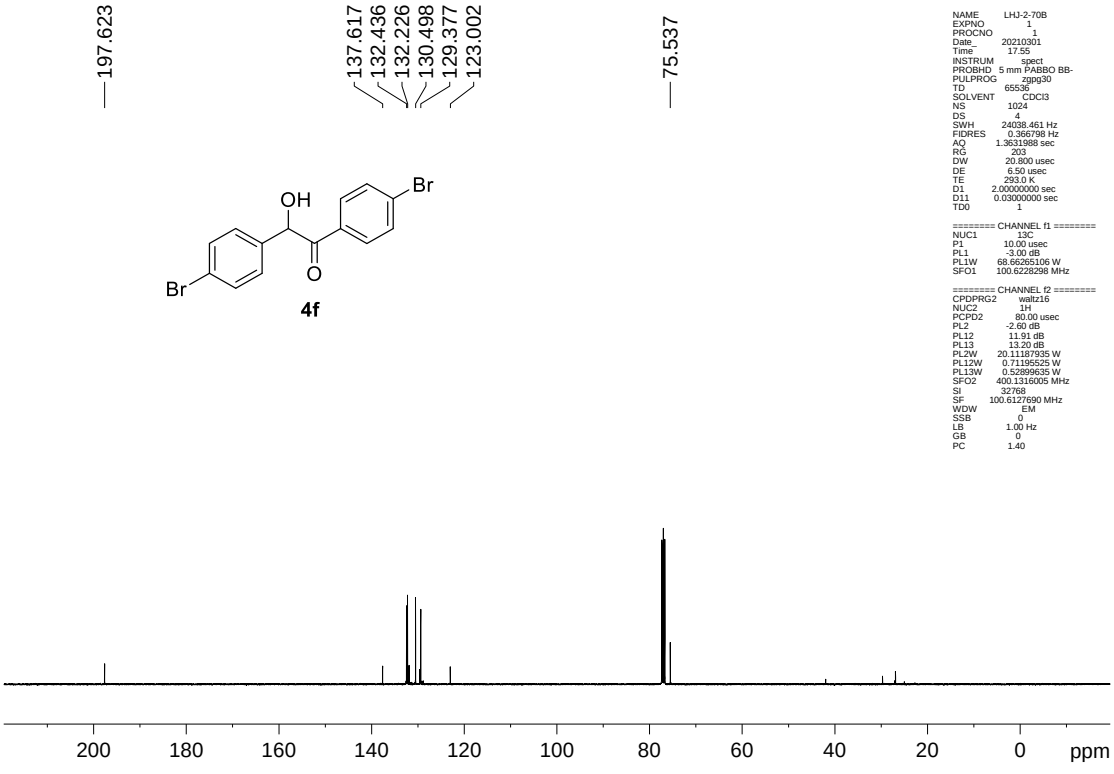

```
NAME        SGL-10-11B
EXPNO                2
PROCNO               1
Date_         20200427
Time             17.54
INSTRUM          spect
PROBHD  5 mm PABBO BB-
PULPROG       zgpg30
TD                65536
SOLVENT           CDCl3
NS                  256
DS                    4
SWH           24038.461 Hz
FIDRES        0.366798 Hz
AQ            1.3631988 sec
RG                  203
DW               20.800 usec
DE                6.50 usec
TE                282.7 K
D1            2.00000000 sec
D11           0.03000000 sec
TD0                  1

======== CHANNEL f1 ========
NUC1                13C
P1               10.00 usec
PL1               -3.00 dB
PL1W        68.66265106 W
SFO1        100.6228298 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                1H
PCPD2            80.00 usec
PL2               -2.60 dB
PL12              11.91 dB
PL13              13.20 dB
PL2W        20.11187935 W
PL12W        0.71195525 W
PL13W        0.52899635 W
SFO2        400.1316005 MHz
SI                 32768
SF          100.6127690 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  1.40
```

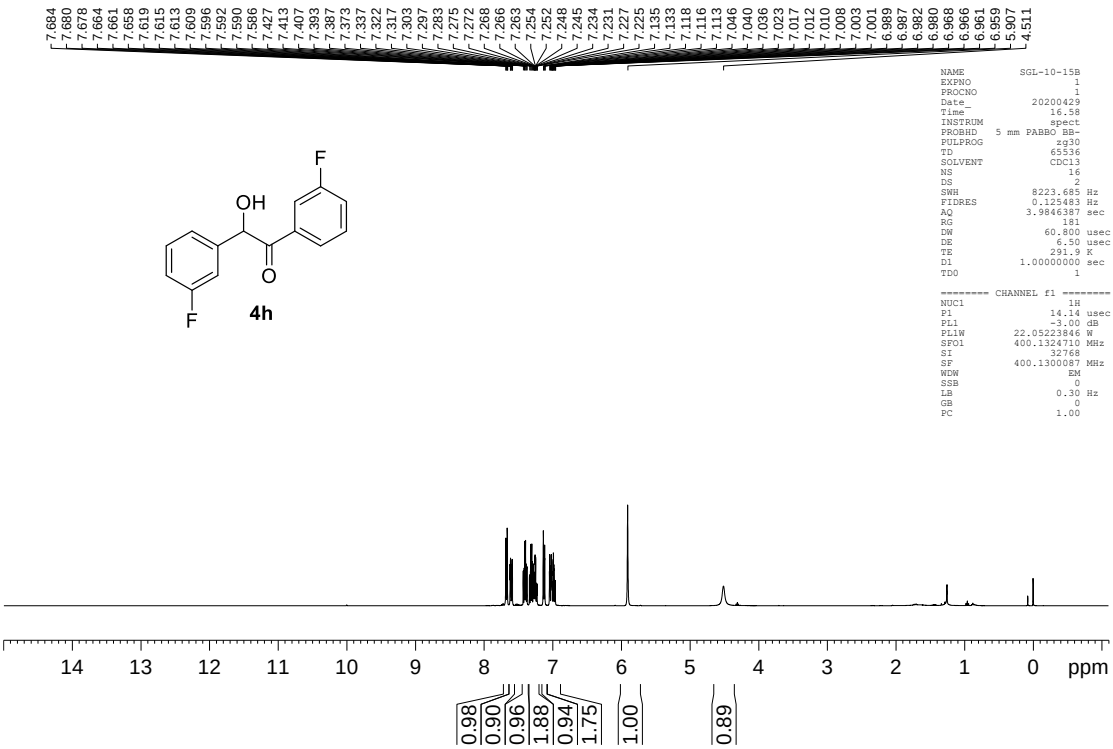


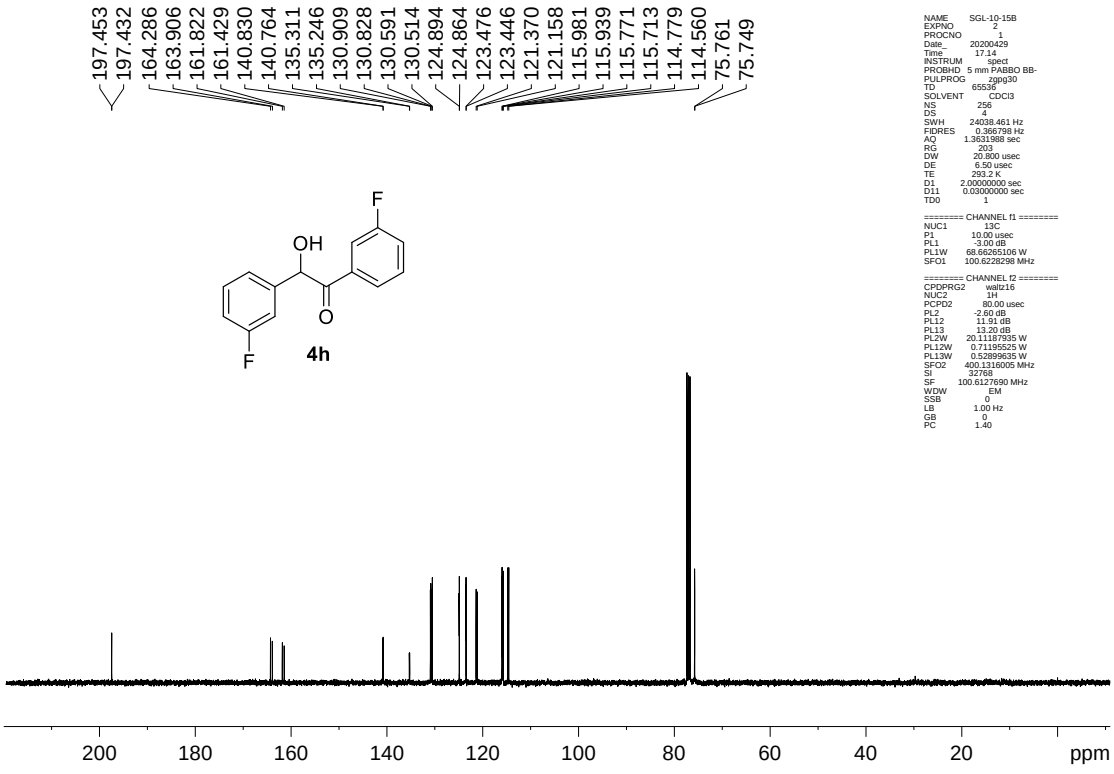
4e

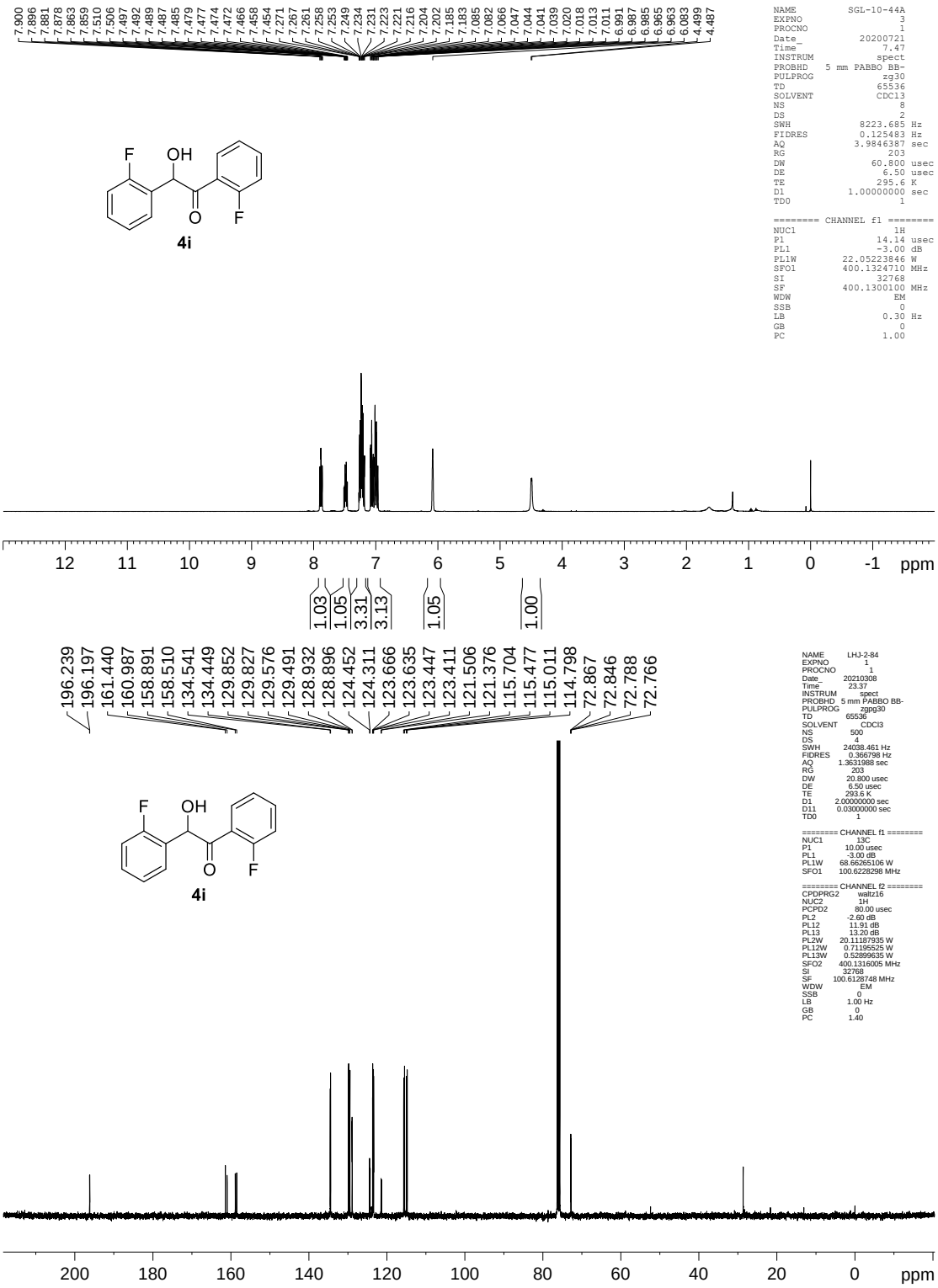



7.744
7.723
7.552
7.531
7.458
7.437
7.190
7.169
5.857
4.513
OH
Br
Br
O
4f
NAME LHJ-2-20
EXPNO 1
PROCNO 1
Date_ 20200716
Time 13.35
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDC13
NS 16
DS 2
SWH 8223.685 Hz
FIDRES 0.125483 Hz
AQ 3.9846387 sec
RG 161
DW 60.800 usec
DE 6.50 usec
TE 296.5 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 1H
P1 14.14 usec
PL1 -3.00 dB
PL1W 22.05223846 W
SFO1 400.1324710 MHz
SI 32768
SF 400.1300103 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
8
7
6
5
4
3
2
1
0
ppm
2.10
2.02
2.00
2.05
1.00
0.78

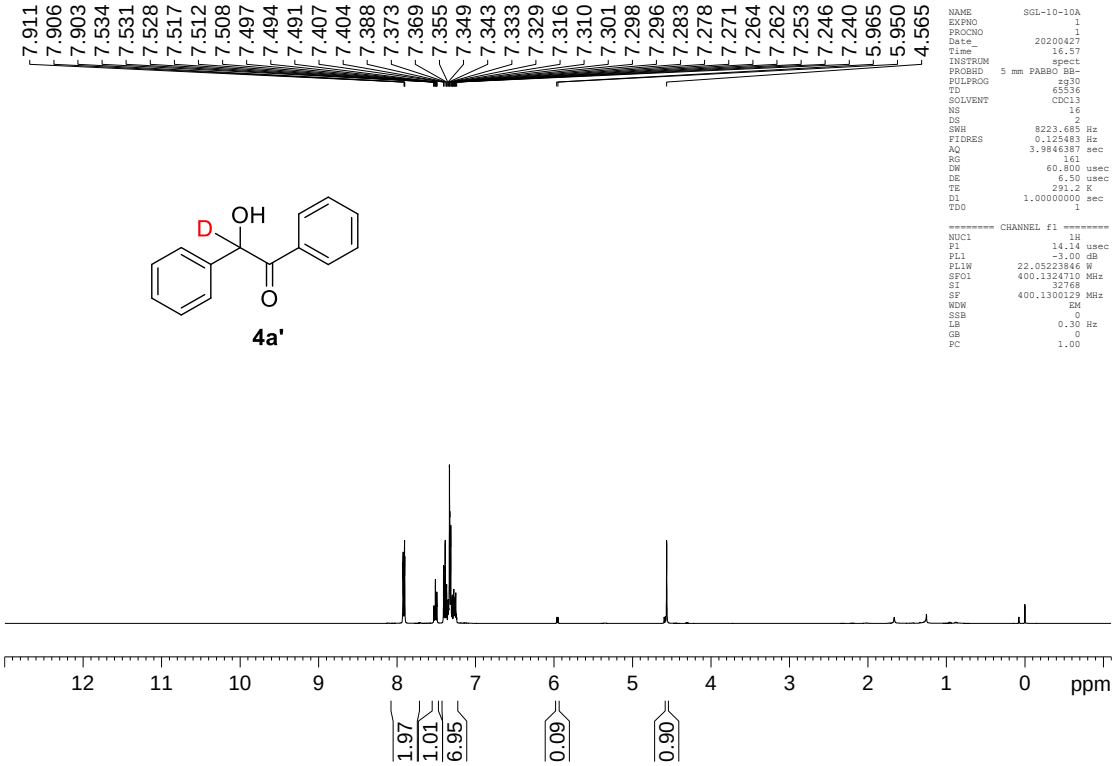

197.623
137.617
132.436
132.226
130.498
129.377
123.002
75.537
OH
Br
Br
O
4f
NAME LHJ-2-70B
EXPNO 1
PROCNO 1
Date_ 20210301
Time 17.55
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 1024
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 203
DW 20.800 usec
DE 6.50 usec
TE 293.0 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 13C
P1 10.00 usec
PL1 -3.00 dB
PL1W 68.66265106 W
SFO1 100.6228298 MHz
======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -2.60 dB
PL12 11.91 dB
PL13 13.20 dB
PL2W 20.11187935 W
PL12W 0.71195525 W
PL13W 0.52899635 W
SFO2 400.1316005 MHz
SI 32768
SF 100.6127690 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
200
180
160
140
120
100
80
60
40
20
0
ppm

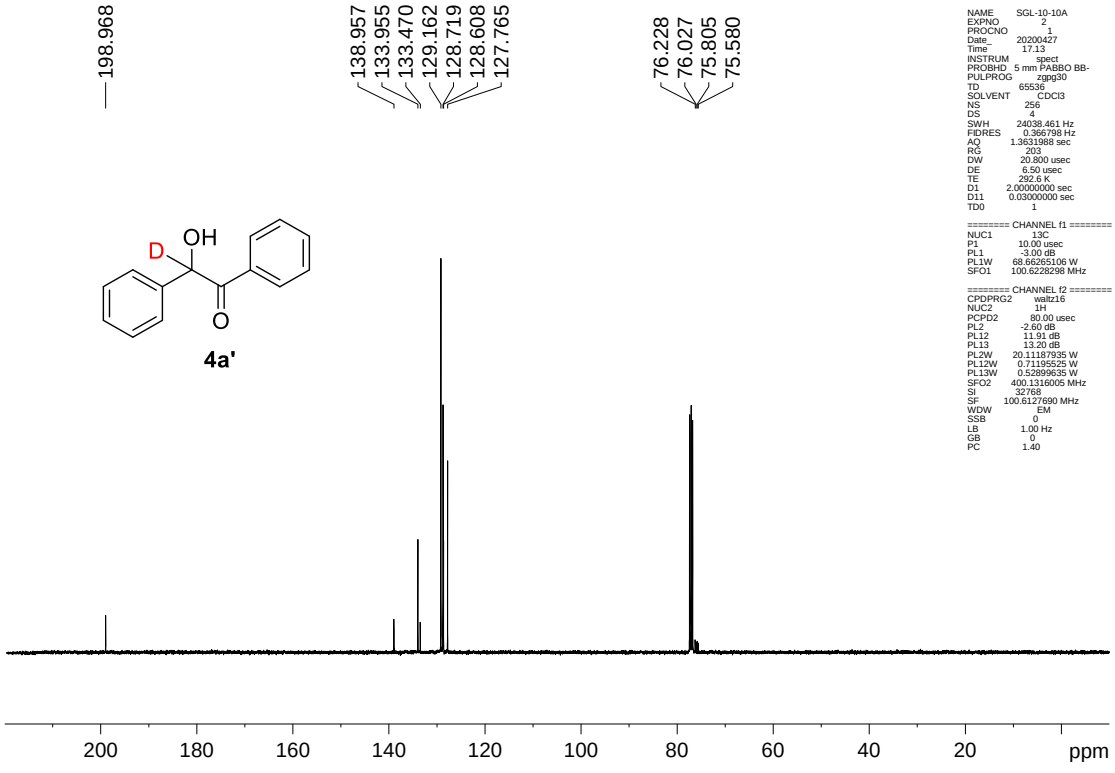

7.684 7.680 7.678 7.664 7.661 7.658 7.619 7.615 7.613 7.609 7.596 7.592 7.590 7.586 7.427 7.413 7.407 7.393 7.387 7.373 7.337 7.322 7.317 7.303 7.297 7.283 7.275 7.272 7.268 7.266 7.263 7.254 7.252 7.248 7.245 7.234 7.231 7.227 7.225 7.135 7.133 7.118 7.116 7.113 7.046 7.040 7.036 7.023 7.017 7.012 7.010 7.008 7.003 7.001 6.989 6.987 6.982 6.980 6.968 6.966 6.961 6.959 5.907 4.511
NAME SGL-10-15B
EXPNO 1
PROCNO 1
Date_ 20200429
Time_ 16.58
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8223.685 Hz
FIDRES 0.125483 Hz
AQ 3.9846387 sec
RG 181
DW 60.800 usec
DE 6.50 usec
TE 291.9 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 1H
P1 14.14 usec
PL1 -3.00 dB
PL1W 22.05223846 W
SFO1 400.1324710 MHz
SI 32768
SF 400.1300087 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
F
OH
O
F
4h
14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 ppm
0.98 0.90 0.96 1.88 0.94 1.75 1.00 0.89

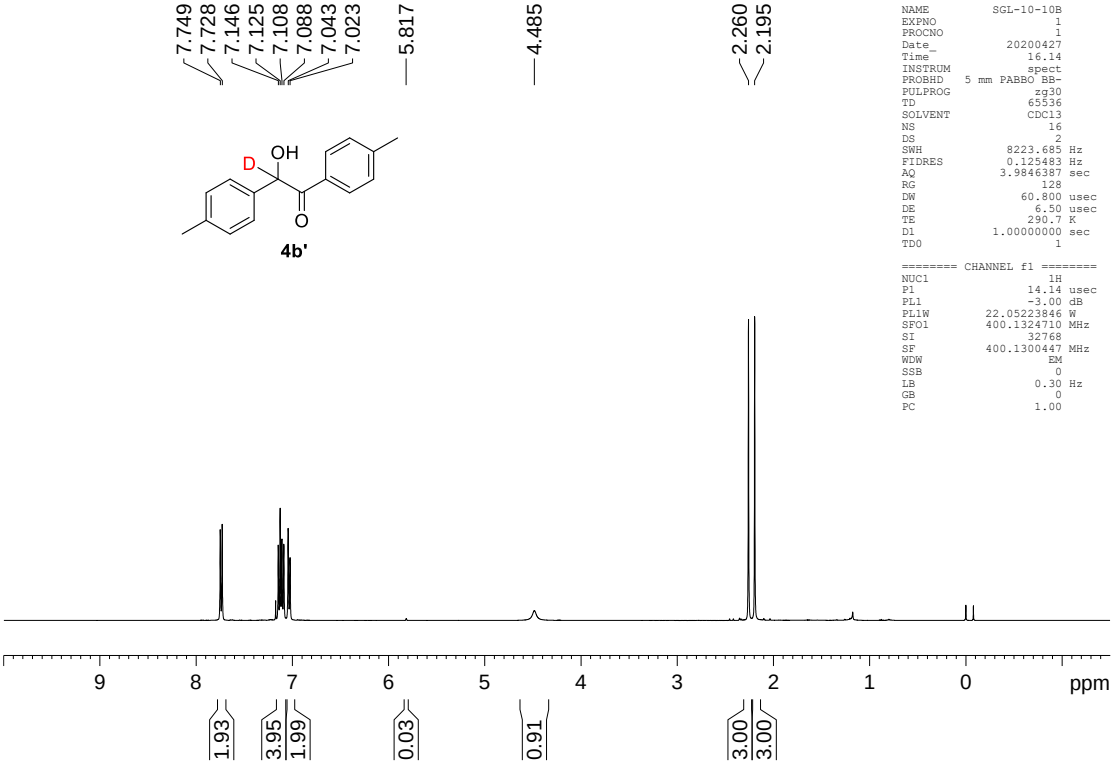

197.453 197.432 164.286 163.906 161.822 161.429 140.830 140.764 135.311 135.246 130.909 130.828 130.591 130.514 124.894 124.864 123.476 123.446 121.370 121.158 115.981 115.939 115.771 115.713 114.779 114.560 75.761 75.749
NAME SGL-10-15B
EXPNO 2
PROCNO 1
Date_ 20200429
Time 17.14
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 256
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 203
DW 20.800 usec
DE 6.50 usec
TE 293.2 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 13C
P1 10.00 usec
PL1 -3.00 dB
PL1W 68.66265106 W
SFO1 100.6228298 MHz
======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -2.60 dB
PL12 11.91 dB
PL13 13.20 dB
PL2W 20.11187935 W
PL12W 0.71195525 W
PL13W 0.52899635 W
SFO2 400.1316005 MHz
SI 32768
SF 100.6127690 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
F
OH
O
F
4h
200 180 160 140 120 100 80 60 40 20 ppm

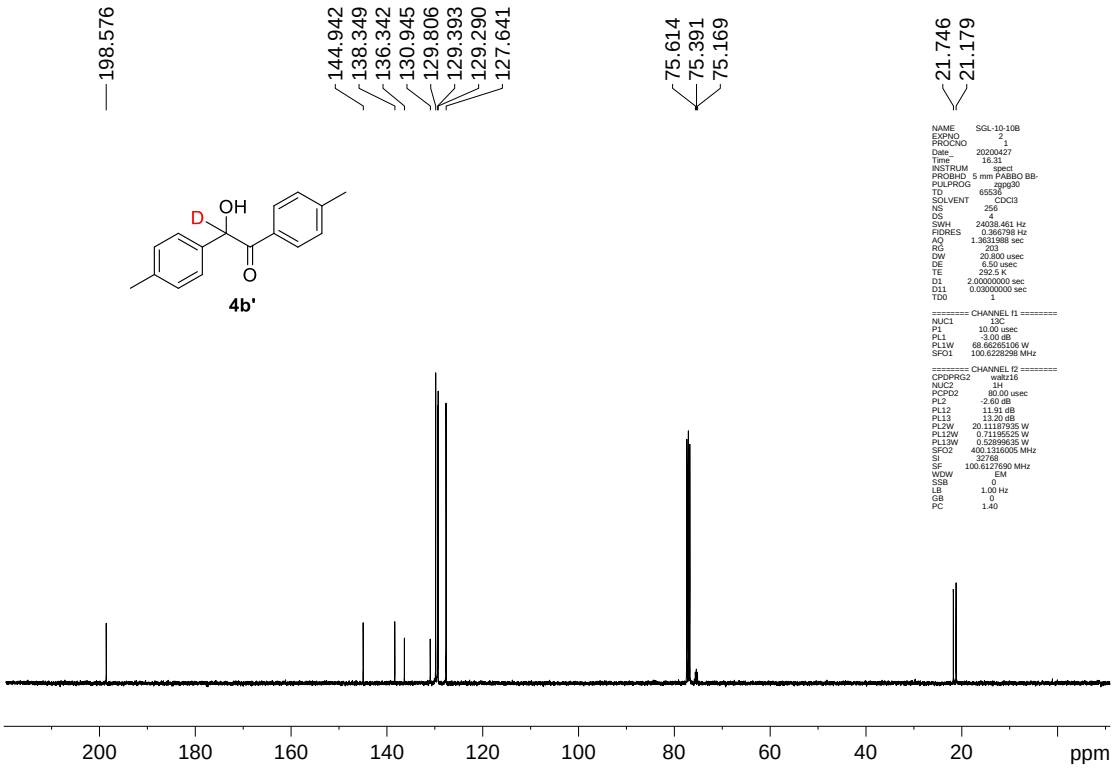

7.900
7.896
7.881
7.878
7.863
7.859
7.510
7.506
7.497
7.492
7.489
7.487
7.485
7.479
7.477
7.474
7.472
7.466
7.458
7.454
7.271
7.267
7.261
7.258
7.253
7.249
7.234
7.231
7.223
7.221
7.216
7.204
7.202
7.185
7.183
7.085
7.082
7.066
7.047
7.044
7.041
7.039
7.020
7.018
7.013
7.011
6.991
6.987
6.985
6.965
6.963
6.083
4.499
4.487
F
OH
O
F
4i
NAME SGL-10-44A
EXPNO 3
PROCNO 1
Date_ 20200721
Time 7.47
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDC13
NS 8
DS 2
SWH 8223.685 Hz
FIDRES 0.125483 Hz
AQ 3.9846387 sec
RG 203
DW 60.800 usec
DE 6.50 usec
TE 295.6 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 1H
P1 14.14 usec
PL1 -3.00 dB
PL1W 22.05223846 W
SFO1 400.1324710 MHz
SI 32768
SF 400.1300100 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
ppm
1.03
1.05
3.31
3.13
1.05
1.00
196.239
196.197
161.440
160.987
158.891
158.510
134.541
134.449
129.852
129.827
129.576
129.491
128.932
128.896
124.452
124.311
123.666
123.635
123.447
123.411
121.506
121.376
115.704
115.477
115.011
114.798
72.867
72.846
72.788
72.766
F
OH
O
F
4i
NAME LHJ-2-84
EXPNO 1
PROCNO 1
Date_ 20210308
Time 23.37
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 500
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 203
DW 20.800 usec
DE 6.50 usec
TE 293.6 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 13C
P1 10.00 usec
PL1 -3.00 dB
PL1W 68.66265106 W
SFO1 100.6228298 MHz
======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -2.60 dB
PL12 11.91 dB
PL13 13.20 dB
PL2W 20.11187935 W
PL12W 0.71195525 W
PL13W 0.52899635 W
SFO2 400.1316005 MHz
SI 32768
SF 100.6128748 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
200
180
160
140
120
100
80
60
40
20
0
ppm

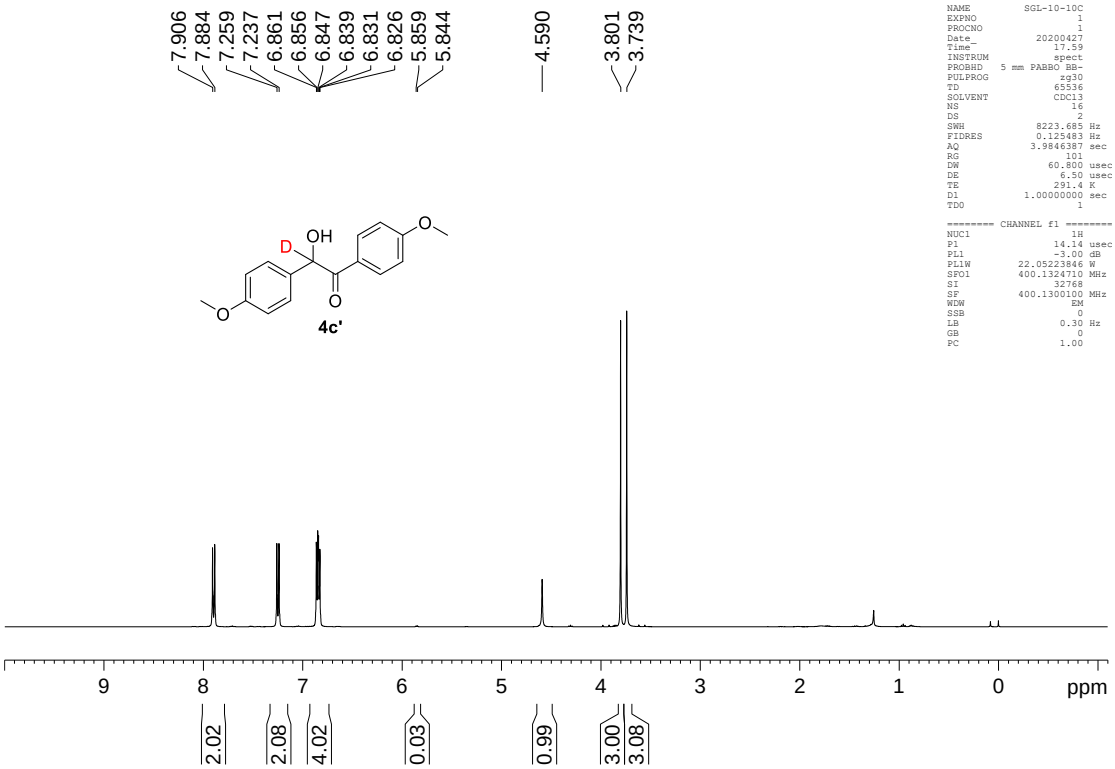

8.068
7.467
7.463
7.447
7.443
7.421
7.412
7.407
7.404
7.396
7.390
7.382
7.363
7.359
7.355
7.351
7.342
7.332
7.328
7.325
7.321
6.849
6.841
6.835
6.824
6.818
6.810
5.129
5.120
3.770
3.602
3.593
OH
H
N
O
OMe
4j
NAME LHJ-2-2B
EXPNO 1
PROCNO 1
Date_ 20200521
Time 17.35
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 8
DS 2
SWH 8223.685 Hz
FIDRES 0.125483 Hz
AQ 3.9846387 sec
RG 203
DW 60.800 usec
DE 6.50 usec
TE 297.0 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 1H
P1 14.14 usec
PL1 -3.00 dB
PL1W 22.05223846 W
SFO1 400.1324710 MHz
SI 32768
SF 400.1300112 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
10
9
8
7
6
5
4
3
2
1
0
ppm
0.95
6.82
2.01
1.01
3.00
1.05
169.779
156.620
139.096
130.137
128.946
128.828
126.880
121.548
114.141
74.559
55.465
OH
H
N
O
OMe
4j
NAME LHJ-2-71A
EXPNO 2
PROCNO 1
Date_ 20210301
Time 22.21
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 1024
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 203
DW 20.800 usec
DE 6.50 usec
TE 292.7 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 13C
P1 10.00 usec
PL1 -3.00 dB
PL1W 68.66265106 W
SFO1 100.6228298 MHz
======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -2.60 dB
PL12 11.91 dB
PL13 13.20 dB
PL2W 20.11187935 W
PL12W 0.71195525 W
PL13W 0.52899635 W
SFO2 400.1316005 MHz
SI 32768
SF 100.6127715 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
200
180
160
140
120
100
80
60
40
20
0
ppm

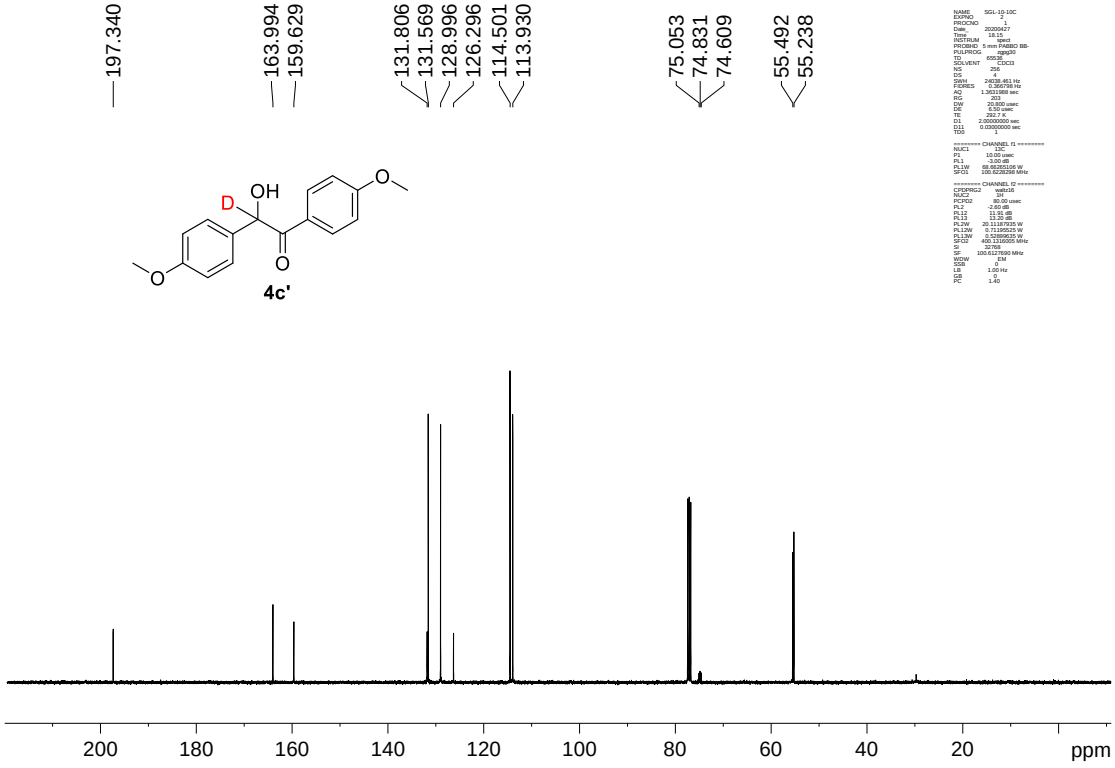

7.911
7.906
7.903
7.534
7.531
7.528
7.517
7.512
7.508
7.497
7.494
7.491
7.407
7.404
7.388
7.373
7.369
7.355
7.349
7.343
7.333
7.329
7.316
7.310
7.301
7.298
7.296
7.283
7.278
7.271
7.264
7.262
7.253
7.246
7.240
5.965
5.950
4.565
NAME SGL-10-10A
EXPNO 1
PROCNO 1
Date_ 20200427
Time 16.57
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8223.685 Hz
FIDRES 0.125483 Hz
AQ 3.9846387 sec
RG 161
DW 60.800 usec
DE 6.50 usec
TE 291.2 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 1H
P1 14.14 usec
PL1 -3.00 dB
PL1W 22.05223846 W
SFO1 400.1324710 MHz
SI 32768
SF 400.1300129 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
D
OH
O
4a'
12
11
10
9
8
7
6
5
4
3
2
1
0
ppm
1.97
1.01
6.95
0.09
0.90


198.968
138.957
133.955
133.470
129.162
128.719
128.608
127.765
76.228
76.027
75.805
75.580
NAME SGL-10-10A
EXPNO 2
PROCNO 1
Date_ 20200427
Time 17.13
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 256
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 203
DW 20.800 usec
DE 6.50 usec
TE 292.6 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 13C
P1 10.00 usec
PL1 -3.00 dB
PL1W 68.66265106 W
SFO1 100.6228298 MHz
======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -2.60 dB
PL12 11.91 dB
PL13 13.20 dB
PL2W 20.11187935 W
PL12W 0.71195525 W
PL13W 0.52899635 W
SFO2 400.1316005 MHz
SI 32768
SF 100.6127690 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
D
OH
O
4a'
200
180
160
140
120
100
80
60
40
20
ppm


7.749
7.728
7.146
7.125
7.108
7.088
7.043
7.023
5.817
4.485
2.260
2.195
OH
D
O
4b'
NAME SGL-10-10B
EXPNO 1
PROCNO 1
Date_ 20200427
Time 16.14
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8223.685 Hz
FIDRES 0.125483 Hz
AQ 3.9846387 sec
RG 128
DW 60.800 usec
DE 6.50 usec
TE 290.7 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 1H
P1 14.14 usec
PL1 -3.00 dB
PL1W 22.05223846 W
SFO1 400.1324710 MHz
SI 32768
SF 400.1300447 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
9
8
7
6
5
4
3
2
1
0
ppm
1.93
3.95
1.99
0.03
0.91
3.00
3.00


198.576
144.942
138.349
136.342
130.945
129.806
129.393
129.290
127.641
75.614
75.391
75.169
21.746
21.179
OH
D
O
4b'
NAME SGL-10-10B
EXPNO 2
PROCNO 1
Date_ 20200427
Time 16.31
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 256
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 203
DW 20.800 usec
DE 6.50 usec
TE 292.5 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 13C
P1 10.00 usec
PL1 -3.00 dB
PL1W 68.66265106 W
SFO1 100.6228298 MHz
======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -2.60 dB
PL12 11.91 dB
PL13 13.20 dB
PL2W 20.11187935 W
PL12W 0.71195525 W
PL13W 0.52899635 W
SFO2 400.1316005 MHz
SI 32768
SF 100.6127690 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
200
180
160
140
120
100
80
60
40
20
ppm


7.906
7.884
7.259
7.237
6.861
6.856
6.847
6.839
6.831
6.826
5.859
5.844
4.590
3.801
3.739
D
OH
O
O
O
4c'
2.02
2.08
4.02
0.03
0.99
3.00
3.08
9
8
7
6
5
4
3
2
1
0
ppm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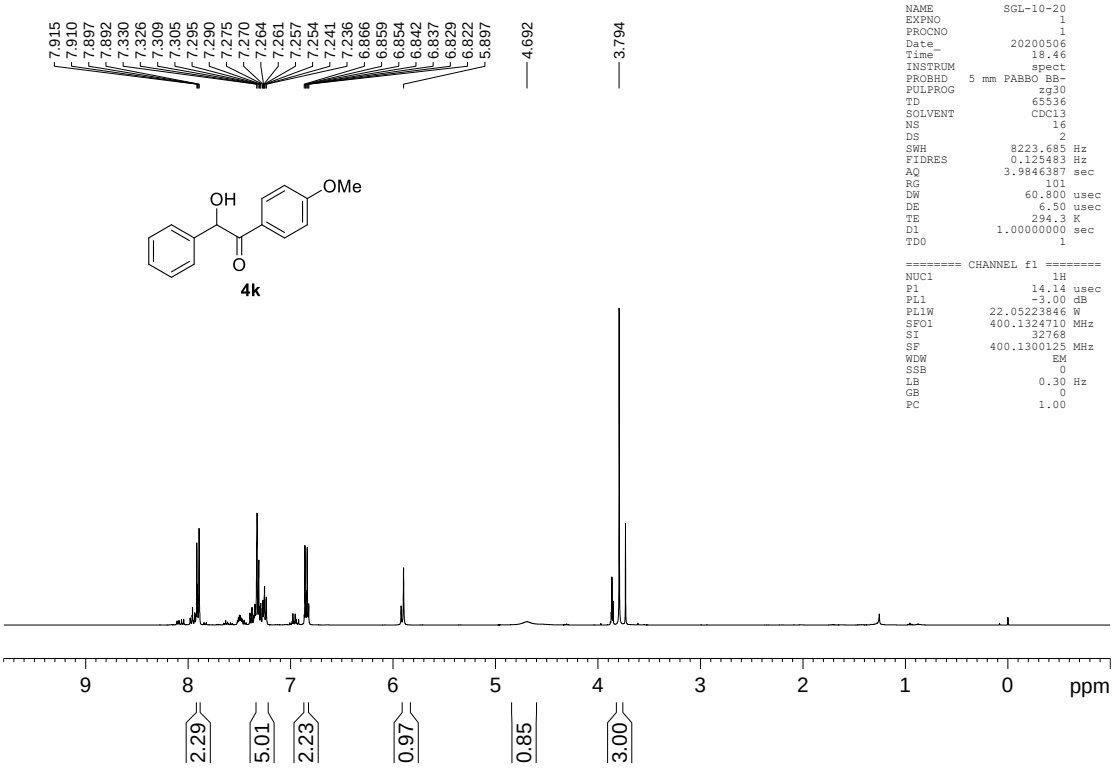
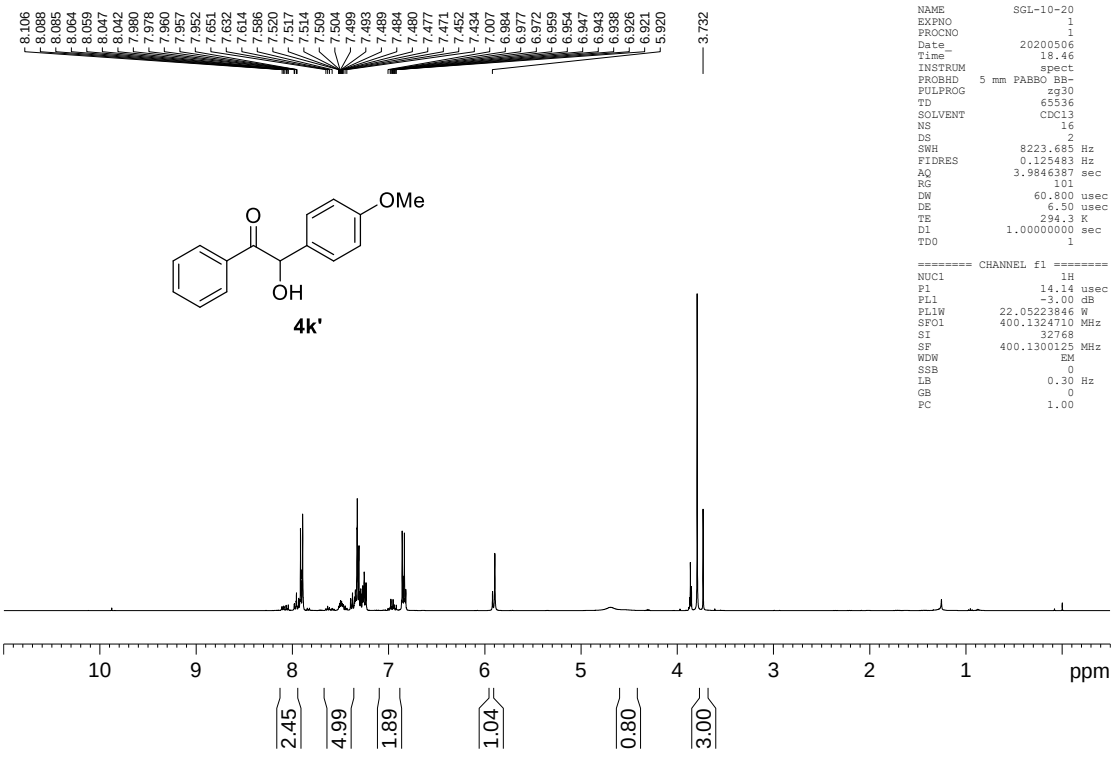
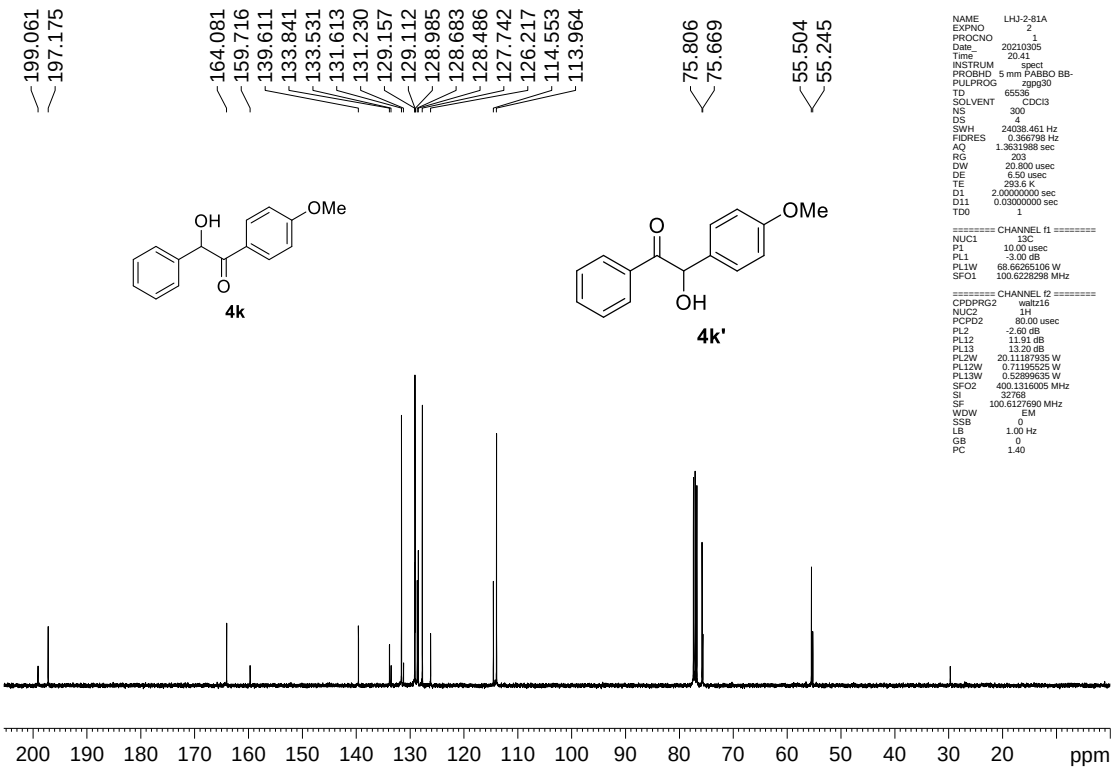
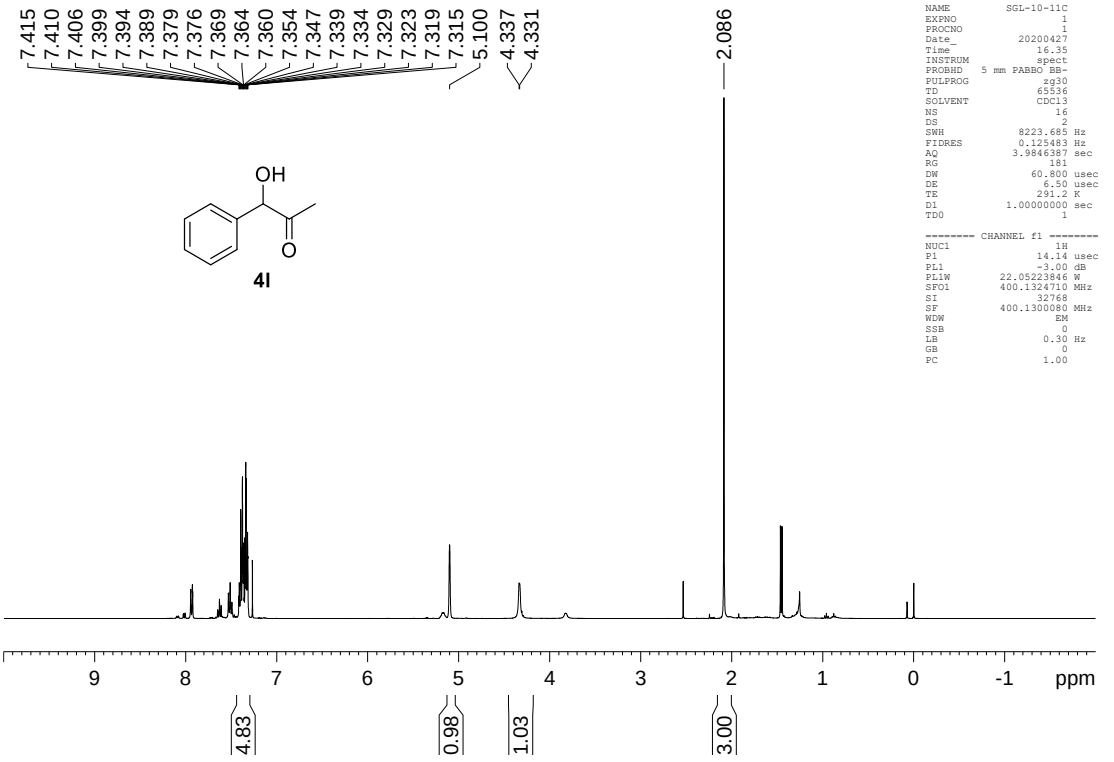
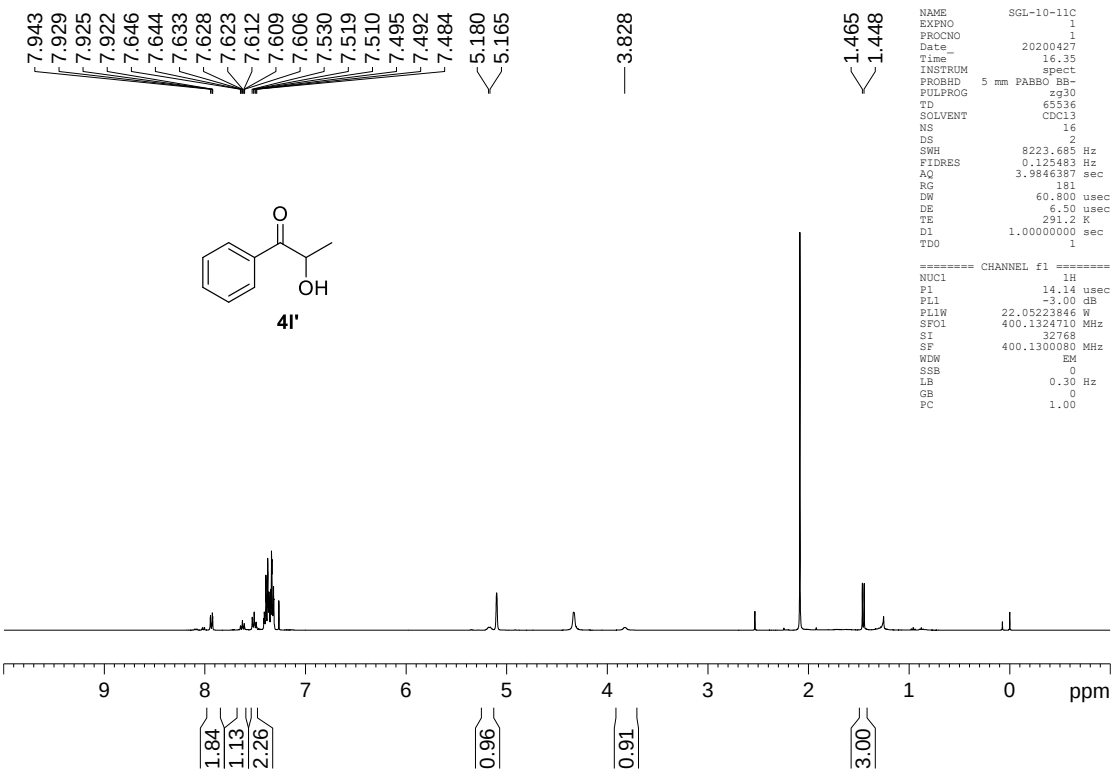
163.994
159.629
131.806
131.569
128.996
126.296
114.501
113.930
75.053
74.831
74.609
55.492
55.238
D
OH
O
O
O
4c'
200
180
160
140
120
100
80
60
40
20
ppm

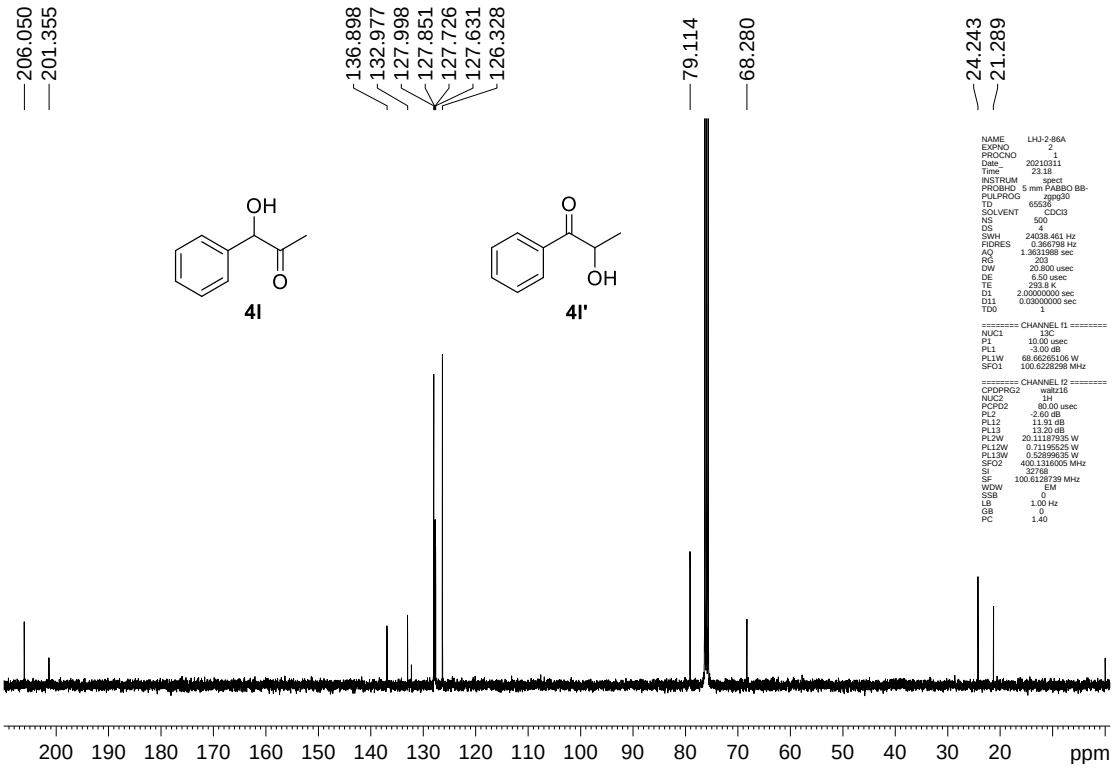

7.915
7.910
7.897
7.892
7.330
7.326
7.309
7.305
7.295
7.290
7.275
7.270
7.264
7.261
7.257
7.254
7.241
7.236
6.866
6.859
6.854
6.842
6.837
6.829
6.822
5.897
4.692
3.794
OH
OMe
O
4k
NAME SGL-10-20
EXPNO 1
PROCNO 1
Date_ 20200506
Time 18.46
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDC13
NS 16
DS 2
SWH 8223.685 Hz
FIDRES 0.125483 Hz
AQ 3.9846387 sec
RG 101
DW 60.800 usec
DE 6.50 usec
TE 294.3 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 1H
P1 14.14 usec
PL1 -3.00 dB
PL1W 22.05223846 W
SFO1 400.1324710 MHz
SI 32768
SF 400.1300125 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
9
8
7
6
5
4
3
2
1
0
ppm
2.29
5.01
2.23
0.97
0.85
3.00

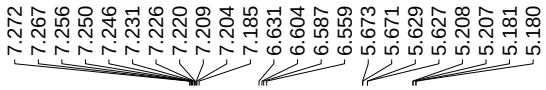

8.106
8.088
8.085
8.064
8.059
8.047
8.042
7.980
7.978
7.960
7.957
7.952
7.651
7.632
7.614
7.586
7.520
7.517
7.514
7.509
7.504
7.499
7.493
7.489
7.484
7.480
7.477
7.471
7.452
7.434
7.007
6.984
6.977
6.972
6.959
6.954
6.947
6.943
6.938
6.926
6.921
5.920
3.732
O
OMe
OH
4k'
NAME SGL-10-20
EXPNO 1
PROCNO 1
Date_ 20200506
Time 18.46
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDC13
NS 16
DS 2
SWH 8223.685 Hz
FIDRES 0.125483 Hz
AQ 3.9846387 sec
RG 101
DW 60.800 usec
DE 6.50 usec
TE 294.3 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 1H
P1 14.14 usec
PL1 -3.00 dB
PL1W 22.05223846 W
SFO1 400.1324710 MHz
SI 32768
SF 400.1300125 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
10
9
8
7
6
5
4
3
2
1
ppm
2.45
4.99
1.89
1.04
0.80
3.00

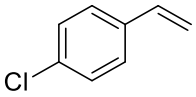

199.061
197.175
164.081
159.716
139.611
133.841
133.531
131.613
131.230
129.157
129.112
128.985
128.683
128.486
127.742
126.217
114.553
113.964
75.806
75.669
55.504
55.245
OH
OMe
O
4k
O
OMe
OH
4k'
NAME LHJ-2-81A
EXPNO 2
PROCNO 1
Date_ 20210305
Time 20.41
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 300
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 203
DW 20.800 usec
DE 6.50 usec
TE 293.6 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 13C
P1 10.00 usec
PL1 -3.00 dB
PL1W 68.66265106 W
SFO1 100.6228298 MHz
======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -2.60 dB
PL12 11.91 dB
PL13 13.20 dB
PL2W 20.11187935 W
PL12W 0.71195525 W
PL13W 0.52899635 W
SFO2 400.1316005 MHz
SI 32768
SF 100.6127690 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 ppm


7.415
7.410
7.406
7.399
7.394
7.389
7.379
7.376
7.369
7.364
7.360
7.354
7.347
7.339
7.334
7.329
7.323
7.319
7.315
5.100
4.337
4.331
2.086
OH
O
4l
NAME SGL-10-11C
EXPNO 1
PROCNO 1
Date_ 20200427
Time 16.35
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8223.685 Hz
FIDRES 0.125483 Hz
AQ 3.9846387 sec
RG 181
DW 60.800 usec
DE 6.50 usec
TE 291.2 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 1H
P1 14.14 usec
PL1 -3.00 dB
PL1W 22.05223846 W
SFO1 400.1324710 MHz
SI 32768
SF 400.1300080 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
9 8 7 6 5 4 3 2 1 0 -1 ppm
4.83
0.98
1.03
3.00


7.943
7.929
7.925
7.922
7.646
7.644
7.633
7.628
7.623
7.612
7.609
7.606
7.530
7.519
7.510
7.495
7.492
7.484
5.180
5.165
3.828
1.465
1.448
O
OH
4l'
NAME SGL-10-11C
EXPNO 1
PROCNO 1
Date_ 20200427
Time 16.35
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8223.685 Hz
FIDRES 0.125483 Hz
AQ 3.9846387 sec
RG 181
DW 60.800 usec
DE 6.50 usec
TE 291.2 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 1H
P1 14.14 usec
PL1 -3.00 dB
PL1W 22.05223846 W
SFO1 400.1324710 MHz
SI 32768
SF 400.1300080 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
9
8
7
6
5
4
3
2
1
0
ppm
1.84
1.13
2.26
0.96
0.91
3.00

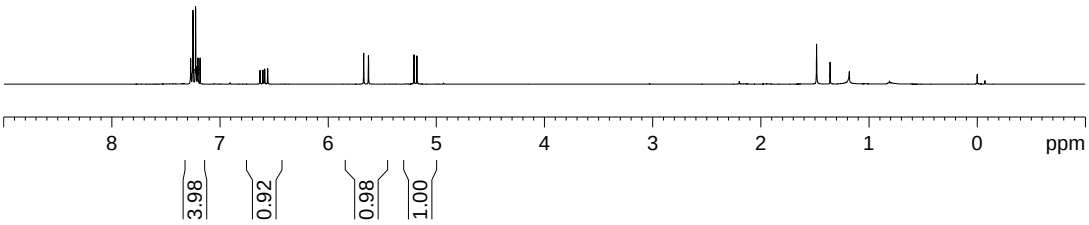

206.050
201.355
136.898
132.977
127.998
127.851
127.726
127.631
126.328
79.114
68.280
24.243
21.289
OH
O
4l
O
OH
4l'
NAME LHJ-2-86A
EXPNO 2
PROCNO 1
Date_ 20210311
Time 23.18
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 500
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 203
DW 20.800 usec
DE 6.50 usec
TE 293.8 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 13C
P1 10.00 usec
PL1 -3.00 dB
PL1W 68.66265106 W
SFO1 100.6228298 MHz
======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -2.60 dB
PL12 11.91 dB
PL13 13.20 dB
PL2W 20.11187935 W
PL12W 0.71195525 W
PL13W 0.52899635 W
SFO2 400.1316005 MHz
SI 32768
SF 100.6128739 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
ppm

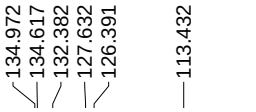


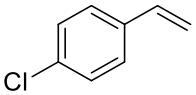


6a

```
NAME          SGL-10-100B
EXPNO                   1
PROCNO                  1
Date_          20200709
Time              13.41
INSTRUM           spect
PROBHD   5 mm PABBO BB-
PULPROG           zg30
TD               65536
SOLVENT          CDCl3
NS                    8
DS                    2
SWH           8223.685 Hz
FIDRES        0.125483 Hz
AQ            3.9846387 sec
RG                  203
DW               60.800 usec
DE                6.50 usec
TE               297.5 K
D1           1.00000000 sec
TD0                   1

======== CHANNEL f1 ========
NUC1                 1H
P1                14.14 usec
PL1               -3.00 dB
PL1W        22.05223846 W
SFO1        400.1324710 MHz
SI                32768
SF          400.1300403 MHz
WDW                  EM
SSB                   0
LB                 0.30 Hz
GB                    0
PC                 1.00
```

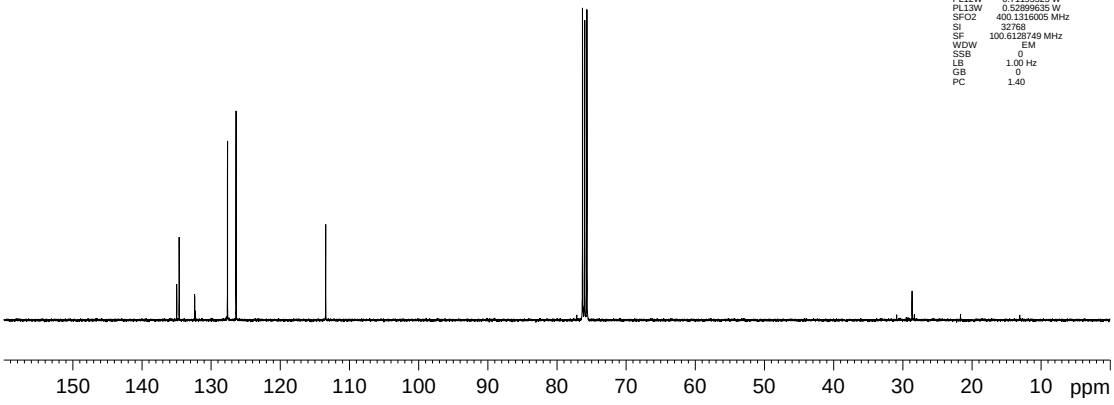


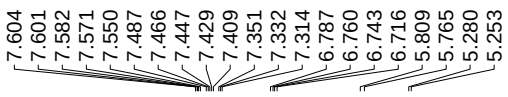


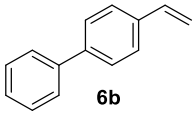


6a

```
NAME        LHJ-2-68D
EXPNO               1
PROCNO              1
Date_        20210303
Time             2.18
INSTRUM         spect
PROBHD  5 mm PABBO BB-
PULPROG       zgpg30
TD             65536
SOLVENT        CDCl3
NS              1024
DS                 4
SWH        24038.461 Hz
FIDRES      0.366798 Hz
AQ          1.3631988 sec
RG               203
DW            20.800 usec
DE             6.50 usec
TE             292.9 K
D1         2.00000000 sec
D11        0.03000000 sec
TD0                1

======== CHANNEL f1 ========
NUC1             13C
P1             10.00 usec
PL1             -3.00 dB
PL1W       68.66265106 W
SFO1       100.6228298 MHz

======== CHANNEL f2 ========
CPDPRG2       waltz16
NUC2             1H
PCPD2         80.00 usec
PL2            -2.60 dB
PL12           11.91 dB
PL13           13.20 dB
PL2W       20.11187935 W
PL12W       0.71195525 W
PL13W       0.52899635 W
SFO2       400.1316005 MHz
SI             32768
SF         100.6128749 MHz
WDW               EM
SSB                0
LB              1.00 Hz
GB                 0
PC              1.40
```

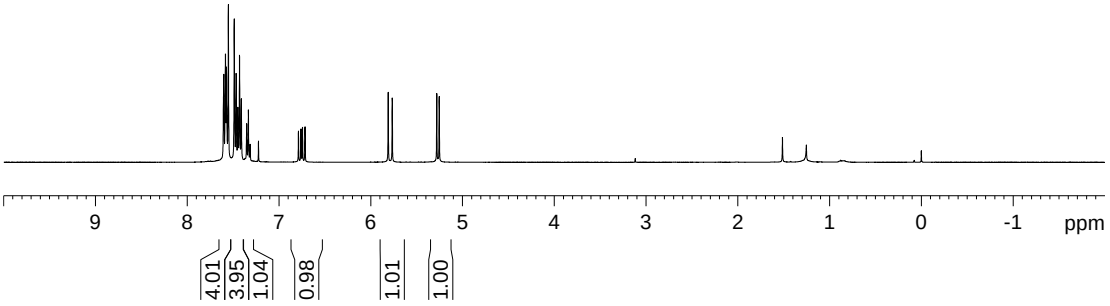


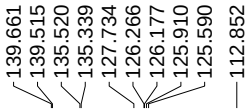


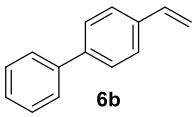


6b

```
NAME            SGL-10-52C
EXPNO                    1
PROCNO                   1
Date_             20200527
Time                 23.13
INSTRUM              spect
PROBHD   5 mm PABBO BB-
PULPROG              zg30
TD                  65536
SOLVENT             CDCl3
NS                      16
DS                       2
SWH              8223.685 Hz
FIDRES           0.125483 Hz
AQ               3.9846387 sec
RG                     181
DW                60.800 usec
DE                 6.50 usec
TE                295.3 K
D1              1.00000000 sec
TD0                      1

======== CHANNEL f1 ========
NUC1                   1H
P1                 14.14 usec
PL1                -3.00 dB
PL1W          22.05223846 W
SFO1          400.1324710 MHz
SI                   32768
SF            400.1300251 MHz
WDW                    EM
SSB                     0
LB                 0.30 Hz
GB                      0
PC                   1.00
```

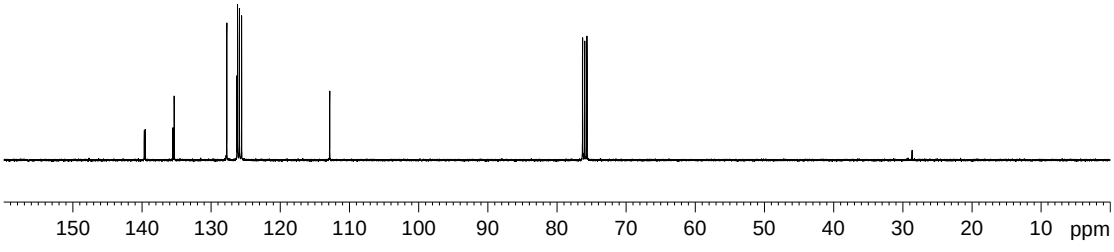


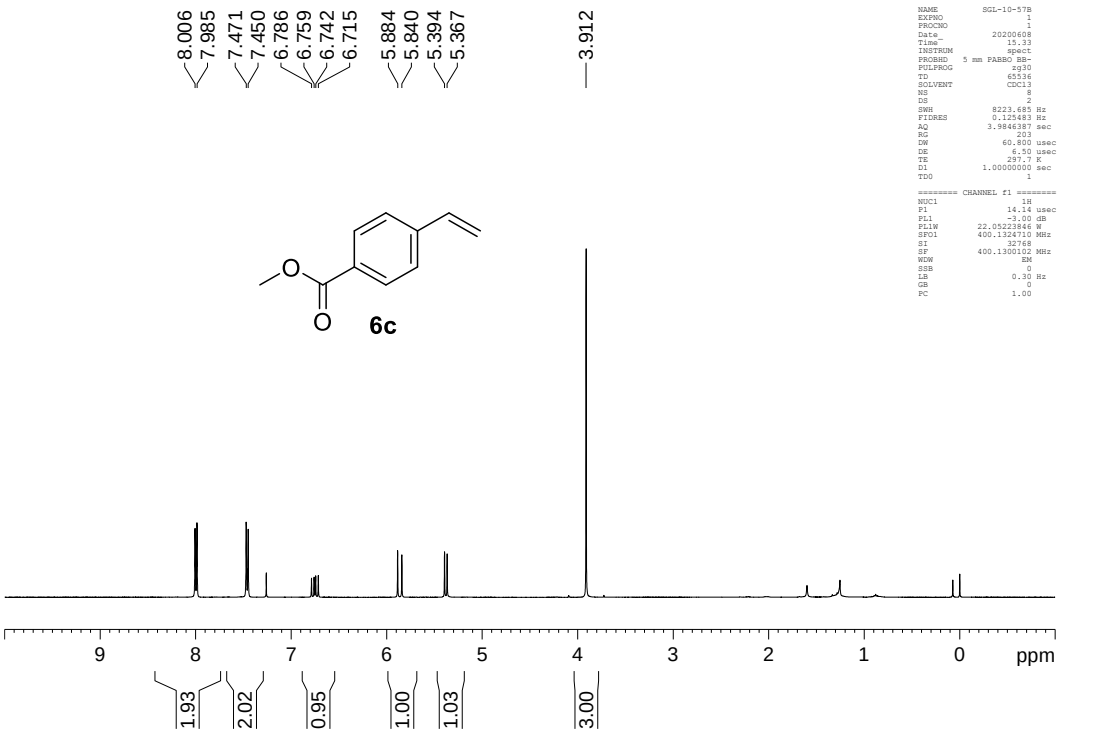


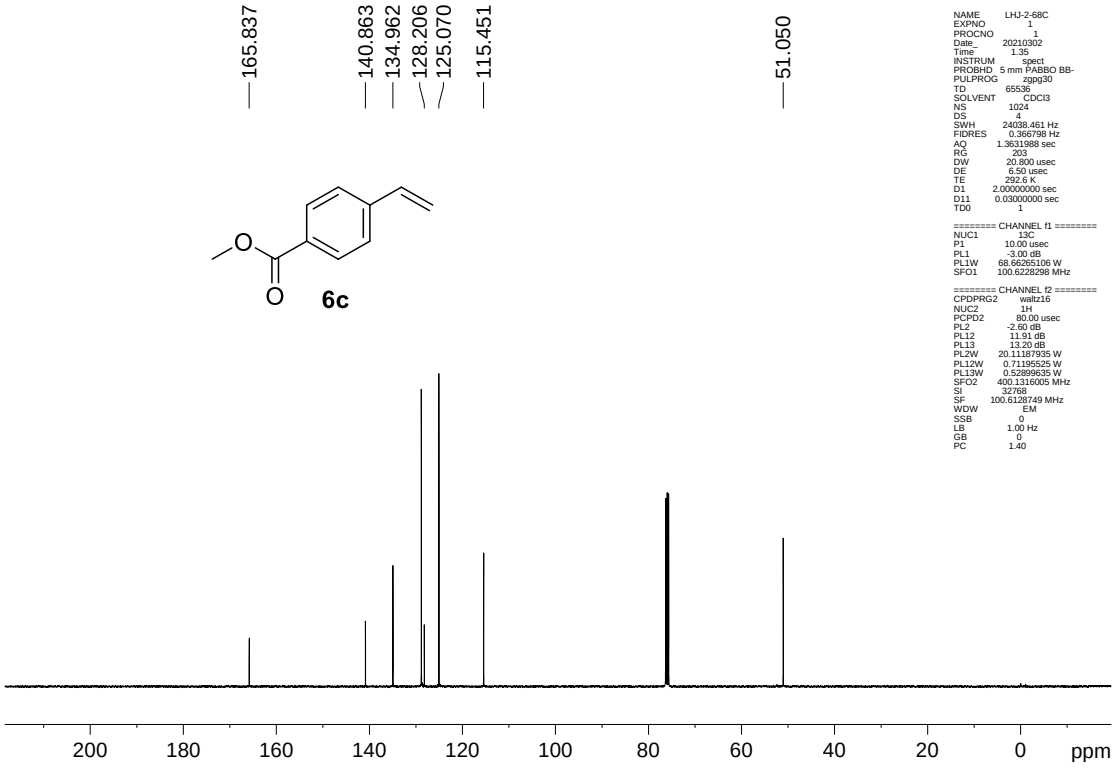


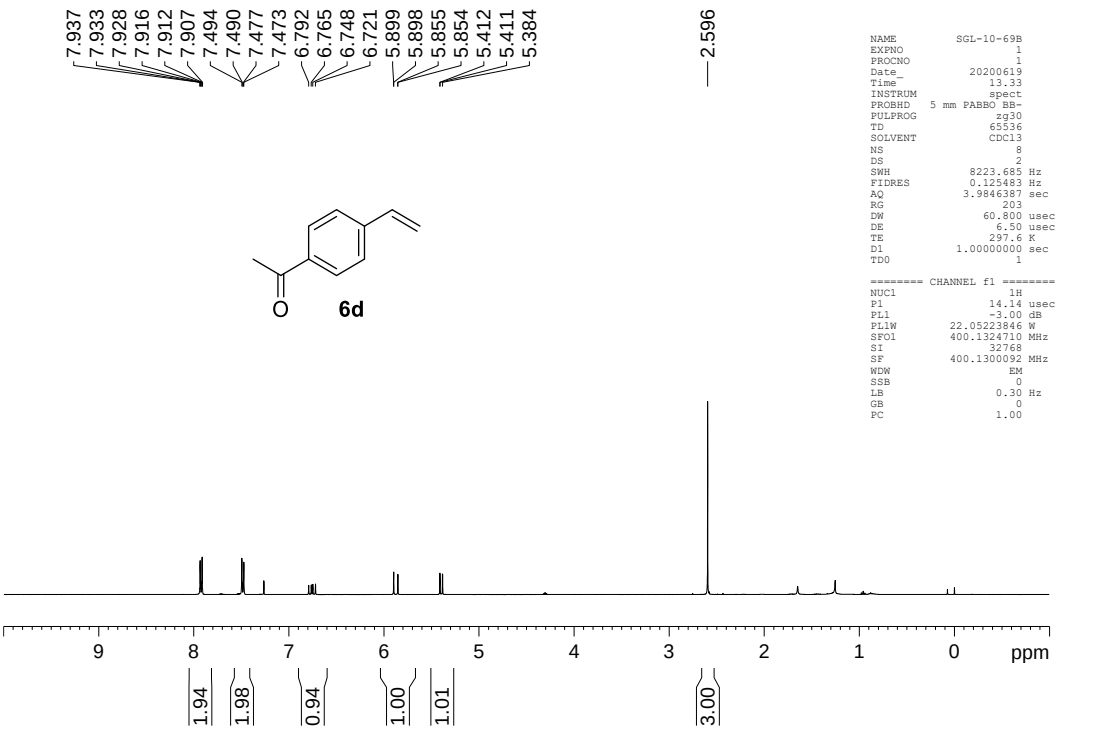
6b

```
NAME          LHJ-2-79A
EXPNO                 1
PROCNO                1
Date_          20210304
Time              23.47
INSTRUM           spect
PROBHD  5 mm PABBO BB-
PULPROG         zgpg30
TD                65536
SOLVENT           CDCl3
NS                  300
DS                    4
SWH           24038.461 Hz
FIDRES         0.366798 Hz
AQ            1.3631988 sec
RG                  203
DW               20.800 usec
DE                6.50 usec
TE               293.1 K
D1            2.00000000 sec
D11           0.03000000 sec
TD0                   1

======== CHANNEL f1 ========
NUC1                 13C
P1                10.00 usec
PL1               -3.00 dB
PL1W         68.66265106 W
SFO1         100.6228298 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                 1H
PCPD2             80.00 usec
PL2               -2.60 dB
PL12              11.91 dB
PL13              13.20 dB
PL2W         20.11187935 W
PL12W         0.71195525 W
PL13W         0.52899635 W
SFO2         400.1316005 MHz
SI                 32768
SF           100.6128794 MHz
WDW                  EM
SSB                   0
LB                1.00 Hz
GB                    0
PC                 1.40
```




8.006
7.985
7.471
7.450
6.786
6.759
6.742
6.715
5.884
5.840
5.394
5.367
3.912
6c
1.93
2.02
0.95
1.00
1.03
3.00
ppm


165.837
140.863
134.962
128.206
125.070
115.451
51.050
6c
200
180
160
140
120
100
80
60
40
20
0
ppm


7.937
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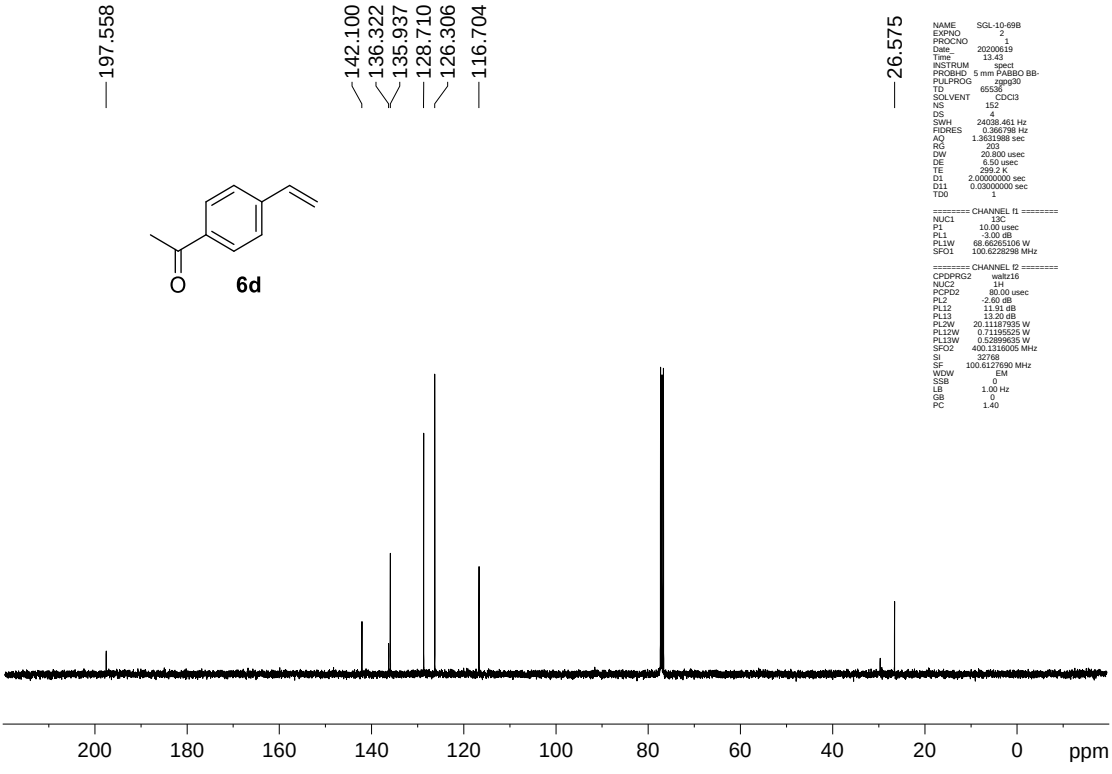
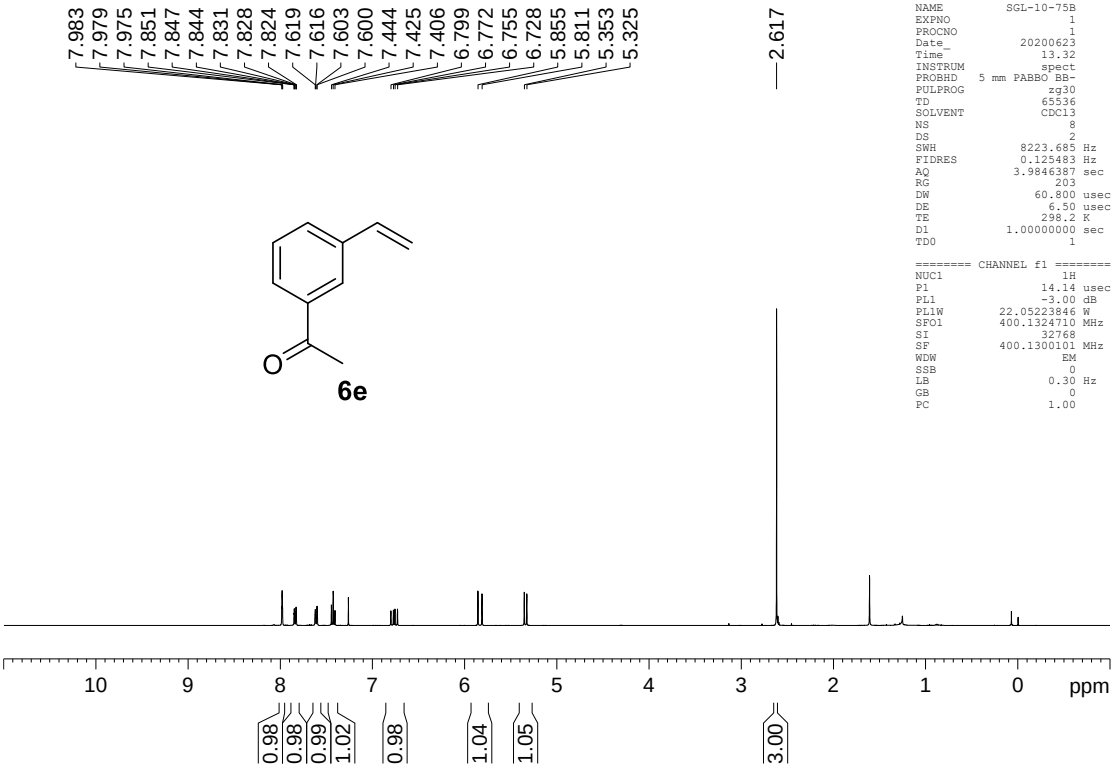
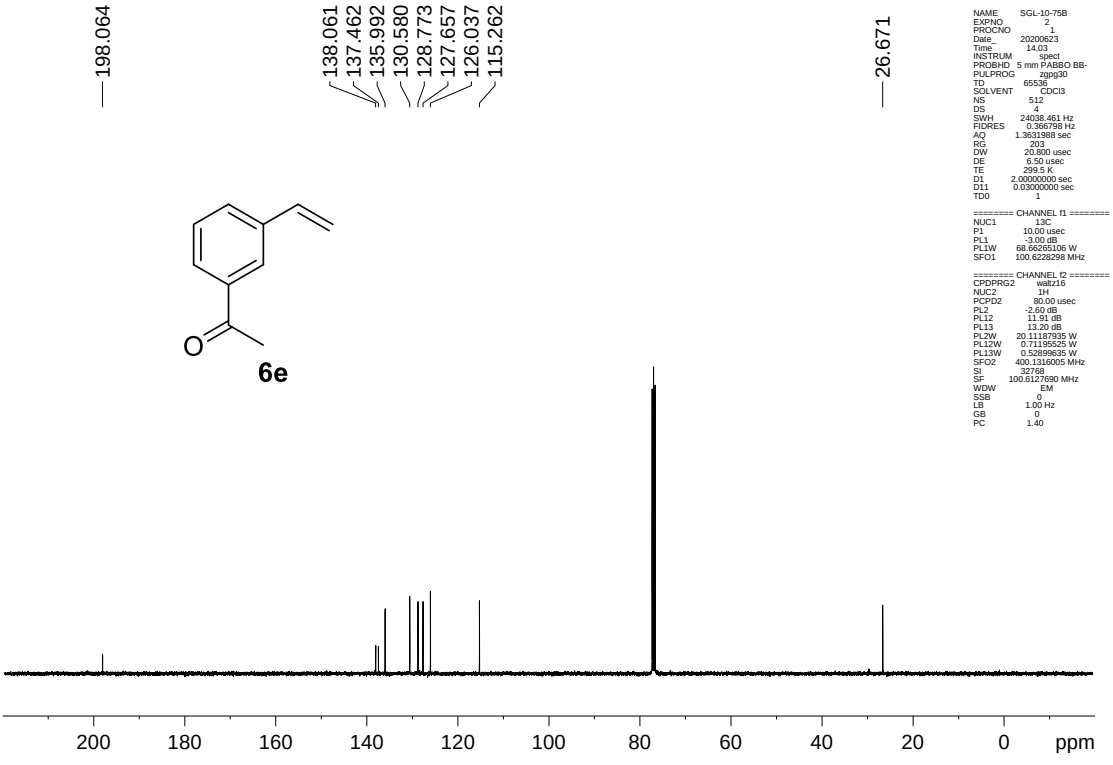
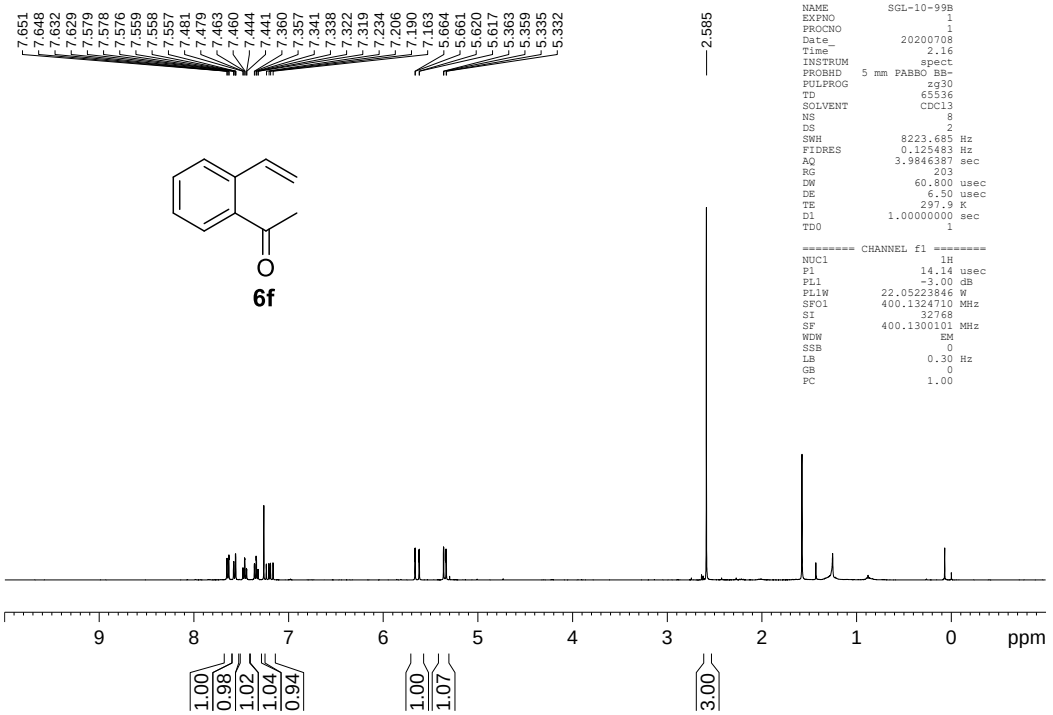
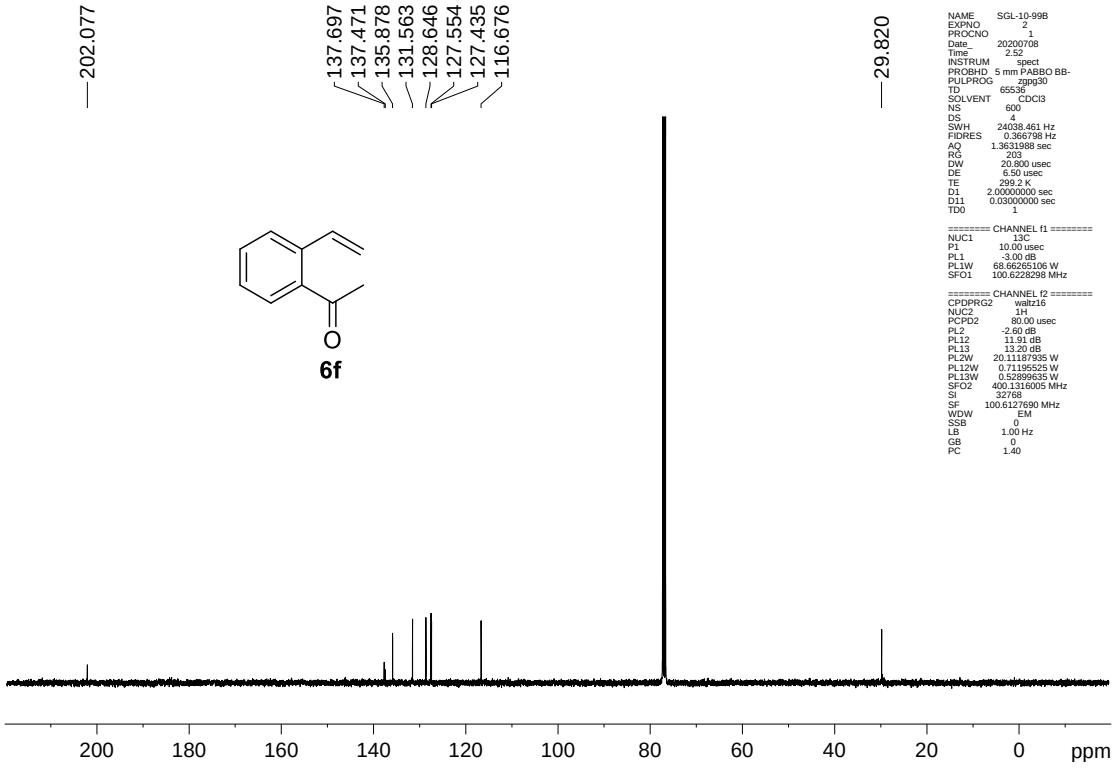
7.928
7.916
7.912
7.907
7.494
7.490
7.477
7.473
6.792
6.765
6.748
6.721
5.899
5.898
5.855
5.854
5.412
5.411
5.384
2.596
O
6d
NAME SGL-10-69B
EXPNO 1
PROCNO 1
Date_ 20200619
Time 13.33
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 8
DS 2
SWH 8223.685 Hz
FIDRES 0.125483 Hz
AQ 3.98463870 sec
RG 203
DW 60.800 usec
DE 6.50 usec
TE 297.6 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 1H
P1 14.14 usec
PL1 -3.00 dB
PL1W 22.05223846 W
SFO1 400.1324710 MHz
SI 32768
SF 400.1300092 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
9
8
7
6
5
4
3
2
1
0
ppm
1.94
1.98
0.94
1.00
1.01
3.00


197.558
142.100
136.322
135.937
128.710
126.306
116.704
26.575
O
6d
NAME SGL-10-69B
EXPNO 2
PROCNO 1
Date_ 20200619
Time 13.43
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 152
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 203
DW 20.800 usec
DE 6.50 usec
TE 299.2 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 13C
P1 10.00 usec
PL1 -3.00 dB
PL1W 68.66265106 W
SFO1 100.6228298 MHz
======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -2.60 dB
PL12 11.91 dB
PL13 13.20 dB
PL2W 20.11187935 W
PL12W 0.71195525 W
PL13W 0.52899635 W
SFO2 400.1316005 MHz
SI 32768
SF 100.6127690 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
200
180
160
140
120
100
80
60
40
20
0
ppm

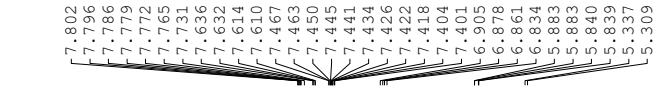

7.983
7.979
7.975
7.851
7.847
7.844
7.831
7.828
7.824
7.619
7.616
7.603
7.600
7.444
7.425
7.406
6.799
6.772
6.755
6.728
5.855
5.811
5.353
5.325
2.617
O
6e
10
9
8
7
6
5
4
3
2
1
0
ppm
0.98
0.98
0.99
1.02
0.98
1.04
1.05
3.00


198.064
138.061
137.462
135.992
130.580
128.773
127.657
126.037
115.262
26.671
O
6e
200
180
160
140
120
100
80
60
40
20
0
ppm

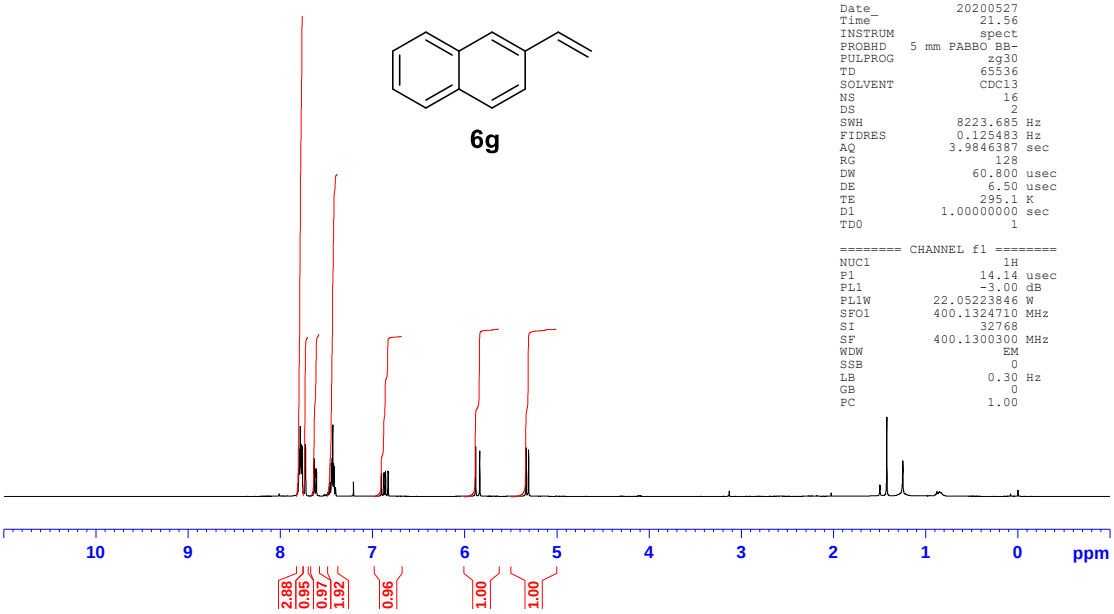

7.651
7.648
7.632
7.629
7.579
7.578
7.576
7.559
7.558
7.557
7.481
7.479
7.463
7.460
7.444
7.441
7.360
7.357
7.341
7.338
7.322
7.319
7.234
7.206
7.190
7.163
5.664
5.661
5.620
5.617
5.363
5.359
5.335
5.332
2.585
O
6f
NAME SGL-10-99B
EXPNO 1
PROCNO 1
Date_ 20200708
Time 2.16
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 8
DS 2
SWH 8223.685 Hz
FIDRES 0.125483 Hz
AQ 3.9846387 sec
RG 203
DW 60.800 usec
DE 6.50 usec
TE 297.9 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 1H
P1 14.14 usec
PL1 -3.00 dB
PL1W 22.05223846 W
SFO1 400.1324710 MHz
SI 32768
SF 400.1300101 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
9
8
7
6
5
4
3
2
1
0
ppm
1.00
0.98
1.02
1.04
0.94
1.00
1.07
3.00


202.077
137.697
137.471
135.878
131.563
128.646
127.554
127.435
116.676
29.820
O
6f
NAME SGL-10-99B
EXPNO 2
PROCNO 1
Date_ 20200708
Time 2.52
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 600
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 203
DW 20.800 usec
DE 6.50 usec
TE 299.2 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 13C
P1 10.00 usec
PL1 -3.00 dB
PL1W 68.66265106 W
SFO1 100.6228298 MHz
======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -2.60 dB
PL12 11.91 dB
PL13 13.20 dB
PL2W 20.11187935 W
PL12W 0.71195525 W
PL13W 0.52899635 W
SFO2 400.1316005 MHz
SI 32768
SF 100.6127690 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
200
180
160
140
120
100
80
60
40
20
0
ppm

PROTON CDCl3 D:\\ other 9

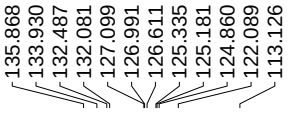


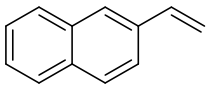
6g



NAME SGL-10-52B
EXPNO 1
PROCNO 1
Date_ 20200527
Time 21.56
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8223.685 Hz
FIDRES 0.125483 Hz
AQ 3.9846387 sec
RG 128
DW 60.800 usec
DE 6.50 usec
TE 295.1 K
D1 1.00000000 sec
TD0 1

======== CHANNEL f1 ========
NUC1 1H
P1 14.14 usec
PL1 -3.00 dB
PL1W 22.05223846 W
SFO1 400.1324710 MHz
SI 32768
SF 400.1300300 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00



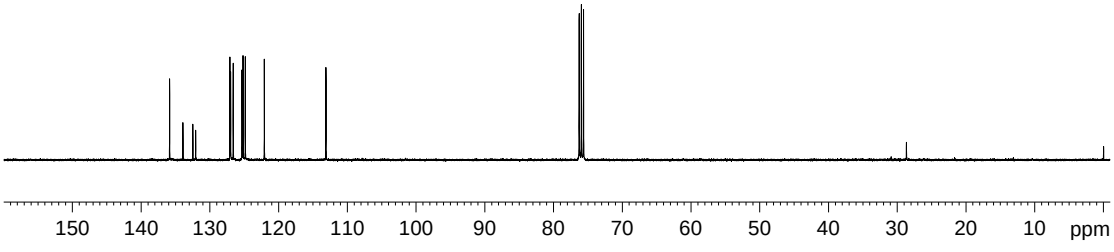


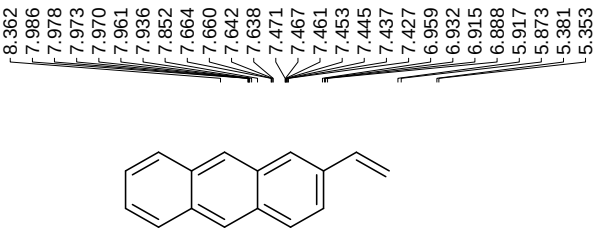
6g

NAME LHJ-2-72B
EXPNO 1
PROCNO 1
Date_ 20210303
Time 21.19
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 500
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 203
DW 20.800 usec
DE 6.50 usec
TE 293.2 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

======== CHANNEL f1 ========
NUC1 13C
P1 10.00 usec
PL1 -3.00 dB
PL1W 68.66265106 W
SFO1 100.6228298 MHz

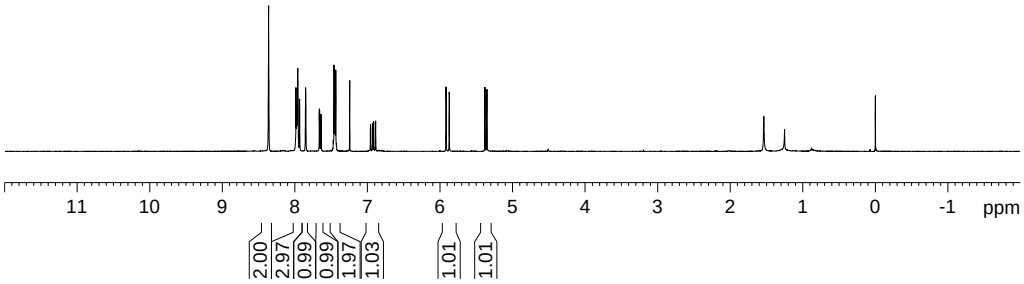
======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -2.60 dB
PL12 11.91 dB
PL13 13.20 dB
PL2W 20.11187935 W
PL12W 0.71195525 W
PL13W 0.52899635 W
SFO2 400.1316005 MHz
SI 32768
SF 100.6128792 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

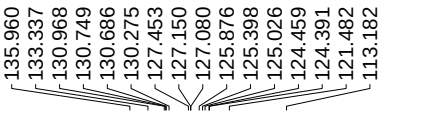


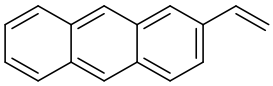


6h

```
NAME          SGL-10-69A
EXPNO                  1
PROCNO                 1
Date_           20200619
Time               13.14
INSTRUM            spect
PROBHD  5 mm PABBO BB-
PULPROG             zg30
TD                 65536
SOLVENT            CDCl3
NS                     8
DS                     2
SWH             8223.685 Hz
FIDRES          0.125483 Hz
AQ              3.9846387 sec
RG                   203
DW                60.800 usec
DE                 6.50 usec
TE                297.6 K
D1             1.00000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                  1H
P1                 14.14 usec
PL1                -3.00 dB
PL1W        22.05223846 W
SFO1        400.1324710 MHz
SI                 32768
SF          400.1300162 MHz
WDW                   EM
SSB                    0
LB                  0.30 Hz
GB                     0
PC                  1.00
```

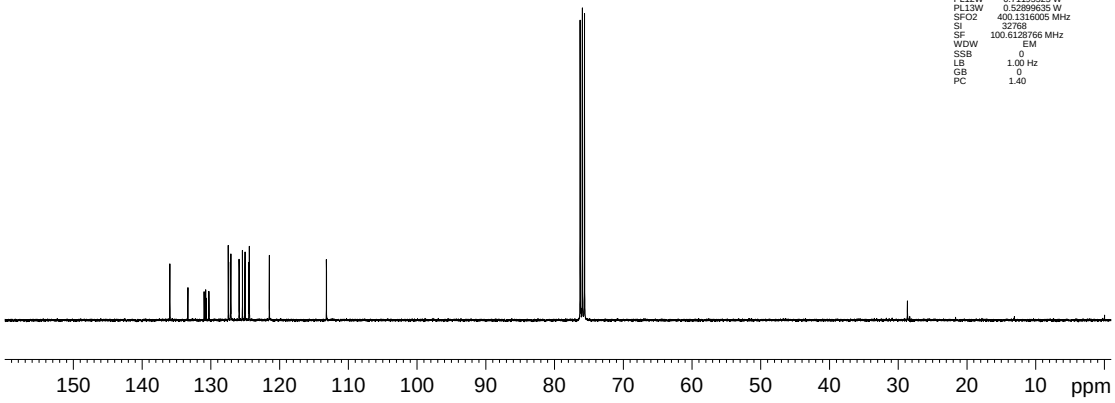


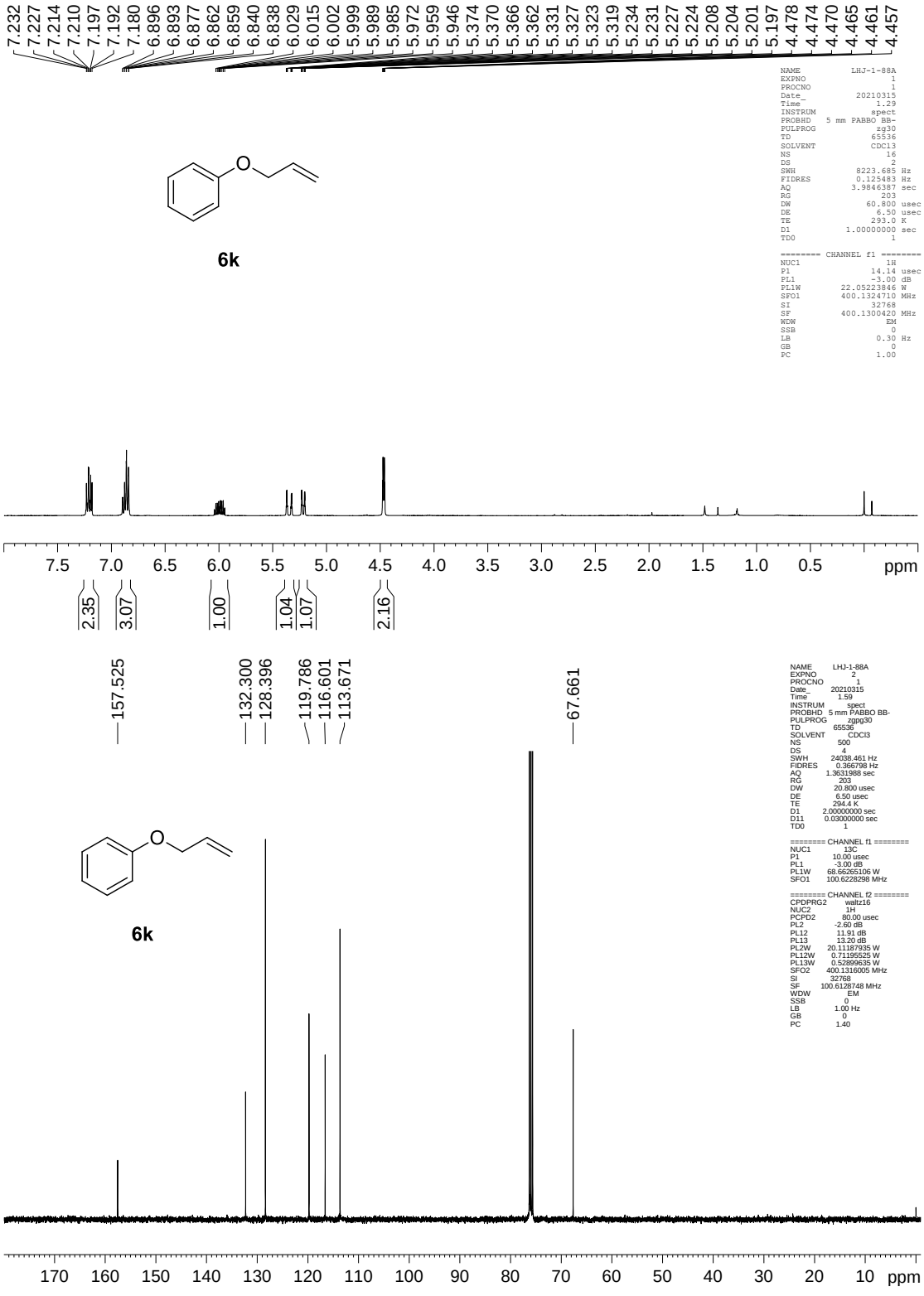


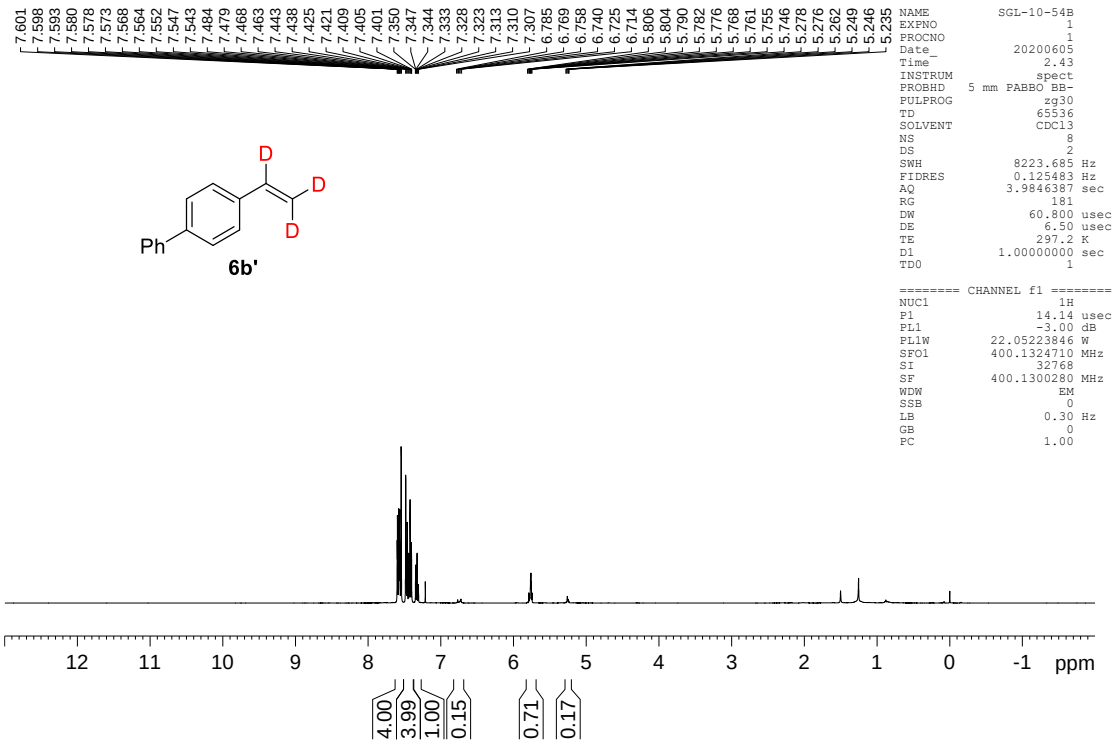


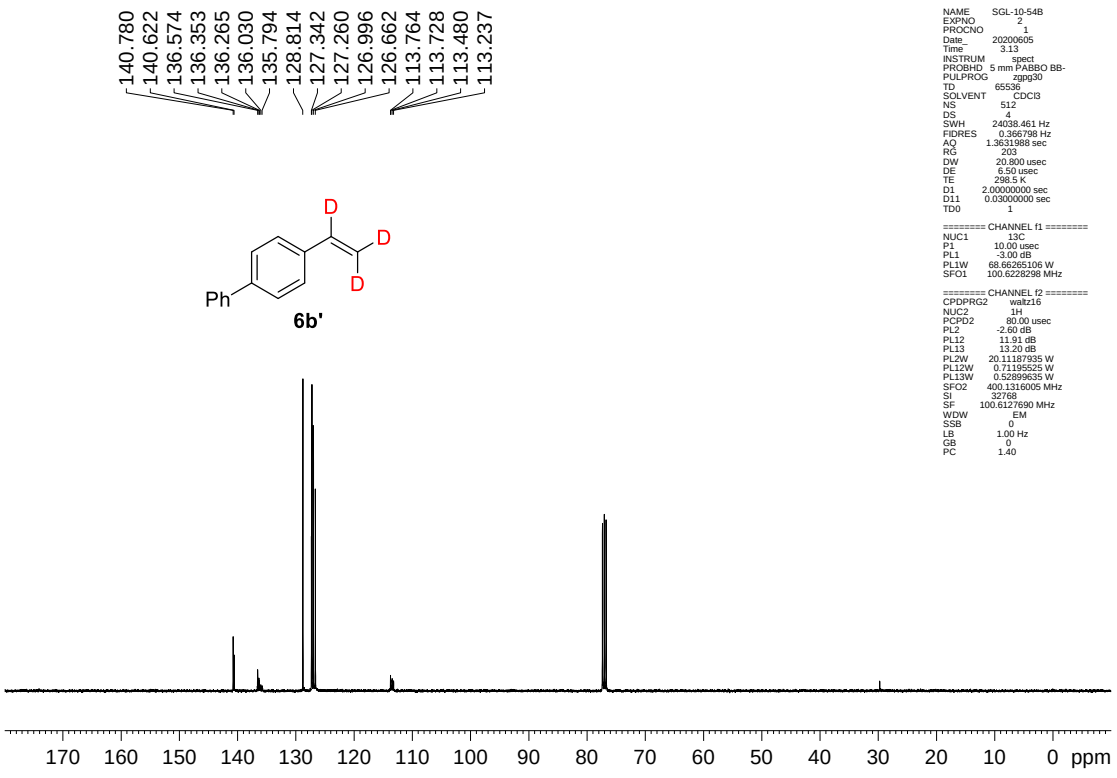
6h

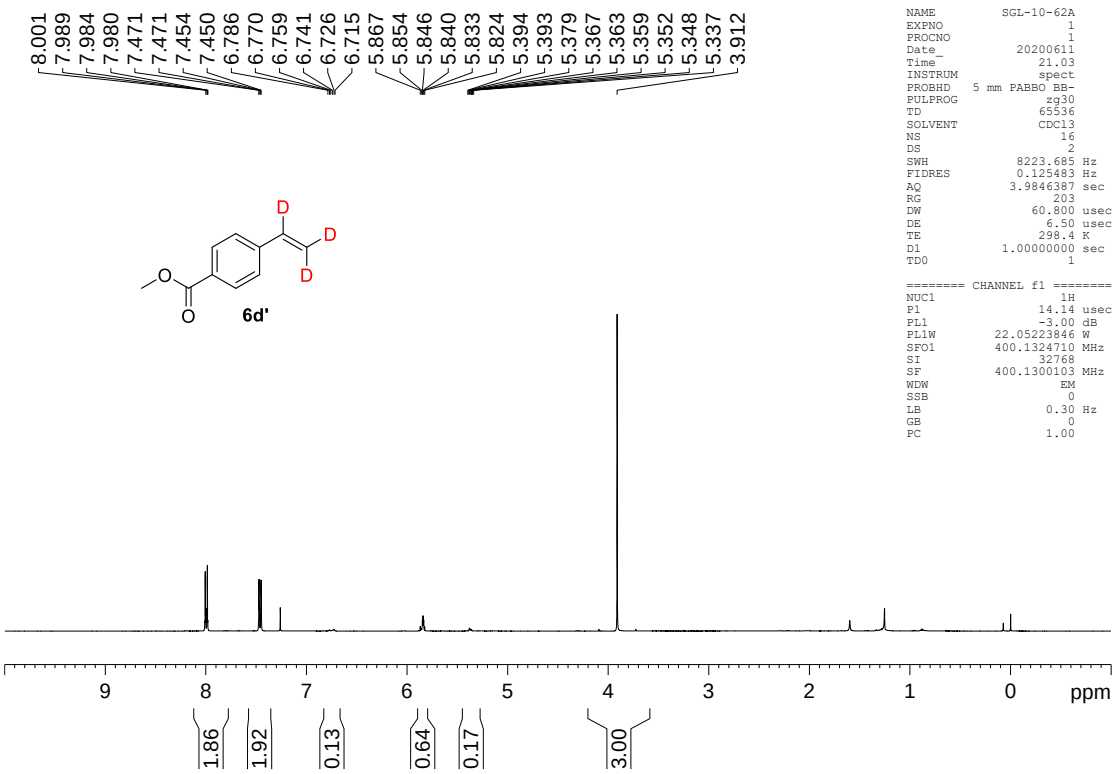
```
NAME          LHJ-2-68F
EXPNO                  1
PROCNO                 1
Date_           20210303
Time               3.24
INSTRUM            spect
PROBHD  5 mm PABBO BB-
PULPROG           zgpg30
TD                 65536
SOLVENT            CDCl3
NS                  1024
DS                     4
SWH            24038.461 Hz
FIDRES          0.366798 Hz
AQ              1.3631988 sec
RG                   203
DW                20.800 usec
DE                 6.50 usec
TE                292.8 K
D1             2.00000000 sec
D11            0.03000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                  13C
P1                10.00 usec
PL1                -3.00 dB
PL1W        68.66265106 W
SFO1        100.6228298 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                  1H
PCPD2             80.00 usec
PL2                -2.60 dB
PL12               11.91 dB
PL13               13.20 dB
PL2W        20.11187935 W
PL12W        0.71195525 W
PL13W        0.52899635 W
SFO2        400.1316005 MHz
SI                 32768
SF          100.6128766 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  1.40
```

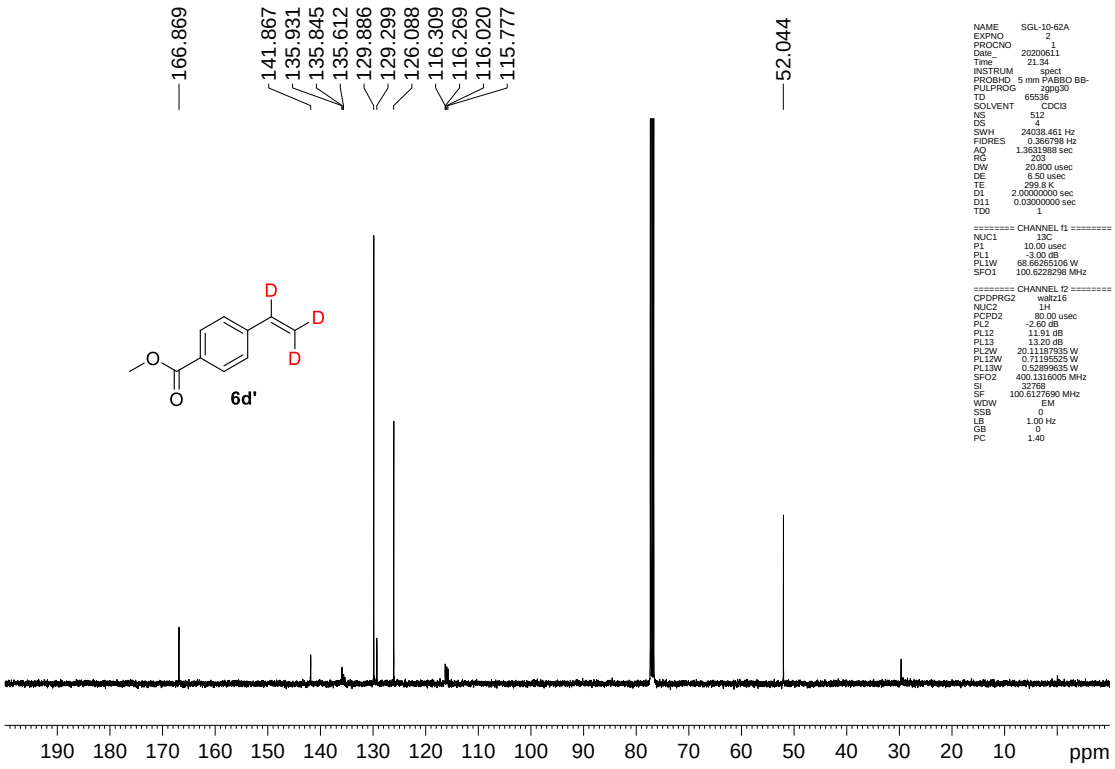


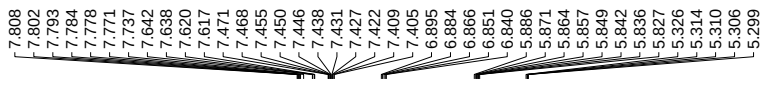

7.232
7.227
7.214
7.210
7.197
7.192
7.180
6.896
6.893
6.877
6.862
6.859
6.840
6.838
6.029
6.015
6.002
5.999
5.989
5.985
5.972
5.959
5.946
5.374
5.370
5.366
5.362
5.331
5.327
5.323
5.319
5.234
5.231
5.227
5.224
5.208
5.204
5.201
5.197
4.478
4.474
4.470
4.465
4.461
4.457
NAME LHJ-1-88A
EXPNO 1
PROCNO 1
Date_ 20210315
Time 1.29
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8223.685 Hz
FIDRES 0.125483 Hz
AQ 3.9846387 sec
RG 203
DW 60.800 usec
DE 6.50 usec
TE 293.0 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 1H
P1 14.14 usec
PL1 -3.00 dB
PL1W 22.05223846 W
SFO1 400.1324710 MHz
SI 32768
SF 400.1300420 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
O
6k
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
ppm
2.35
3.07
1.00
1.04
1.07
2.16
157.525
132.300
128.396
119.786
116.601
113.671
67.661
NAME LHJ-1-88A
EXPNO 2
PROCNO 1
Date_ 20210315
Time 1.59
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 500
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 203
DW 20.800 usec
DE 6.50 usec
TE 294.4 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 13C
P1 10.00 usec
PL1 -3.00 dB
PL1W 68.66265106 W
SFO1 100.6228298 MHz
======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -2.60 dB
PL12 11.91 dB
PL13 13.20 dB
PL2W 20.11187935 W
PL12W 0.71195525 W
PL13W 0.52899635 W
SFO2 400.1316005 MHz
SI 32768
SF 100.6128748 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
O
6k
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
ppm

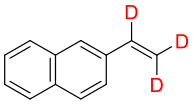

7.601 7.598 7.593 7.580 7.578 7.573 7.568 7.564 7.552 7.547 7.543 7.484 7.479 7.468 7.463 7.443 7.438 7.425 7.421 7.409 7.405 7.401 7.350 7.347 7.344 7.333 7.328 7.323 7.313 7.310 7.307 6.785 6.769 6.758 6.740 6.725 6.714 5.806 5.804 5.790 5.782 5.776 5.768 5.761 5.755 5.746 5.278 5.276 5.262 5.249 5.246 5.235
D
D
D
Ph
6b'
NAME SGL-10-54B
EXPNO 1
PROCNO 1
Date_ 20200605
Time 2.43
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 8
DS 2
SWH 8223.685 Hz
FIDRES 0.125483 Hz
AQ 3.9846387 sec
RG 181
DW 60.800 usec
DE 6.50 usec
TE 297.2 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 1H
P1 14.14 usec
PL1 -3.00 dB
PL1W 22.05223846 W
SFO1 400.1324710 MHz
SI 32768
SF 400.1300280 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
12 11 10 9 8 7 6 5 4 3 2 1 0 -1 ppm
4.00 3.99 1.00 0.15 0.71 0.17


140.780 140.622 136.574 136.353 136.265 136.030 135.794 128.814 127.342 127.260 126.996 126.662 113.764 113.728 113.480 113.237
D
D
D
Ph
6b'
NAME SGL-10-54B
EXPNO 2
PROCNO 1
Date_ 20200605
Time 3.13
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 512
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 203
DW 20.800 usec
DE 6.50 usec
TE 298.5 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 13C
P1 10.00 usec
PL1 -3.00 dB
PL1W 68.66265106 W
SFO1 100.6228298 MHz
======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -2.60 dB
PL12 11.91 dB
PL13 13.20 dB
PL2W 20.11187935 W
PL12W 0.71195525 W
PL13W 0.52899635 W
SFO2 400.1316005 MHz
SI 32768
SF 100.6127690 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 ppm


8.001
7.989
7.984
7.980
7.471
7.471
7.454
7.450
6.786
6.770
6.759
6.741
6.726
6.715
5.867
5.854
5.846
5.840
5.833
5.824
5.394
5.393
5.379
5.367
5.363
5.359
5.352
5.348
5.337
3.912
D
D
D
O
O
6d'
NAME SGL-10-62A
EXPNO 1
PROCNO 1
Date_ 20200611
Time 21.03
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8223.685 Hz
FIDRES 0.125483 Hz
AQ 3.9846387 sec
RG 203
DW 60.800 usec
DE 6.50 usec
TE 298.4 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 1H
P1 14.14 usec
PL1 -3.00 dB
PL1W 22.05223846 W
SFO1 400.1324710 MHz
SI 32768
SF 400.1300103 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
9
8
7
6
5
4
3
2
1
0
ppm
1.86
1.92
0.13
0.64
0.17
3.00

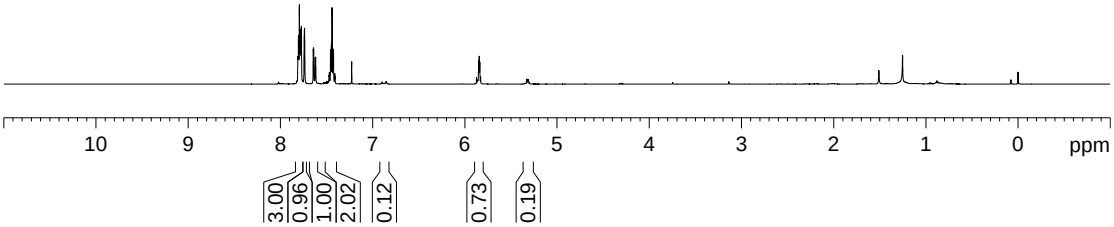

166.869
141.867
135.931
135.845
135.612
129.886
129.299
126.088
116.309
116.269
116.020
115.777
52.044
D
D
D
O
O
6d'
NAME SGL-10-62A
EXPNO 2
PROCNO 1
Date_ 20200611
Time 21.34
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 512
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 203
DW 20.800 usec
DE 6.50 usec
TE 299.8 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 13C
P1 10.00 usec
PL1 -3.00 dB
PL1W 68.66265106 W
SFO1 100.6228298 MHz
======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -2.60 dB
PL12 11.91 dB
PL13 13.20 dB
PL2W 20.11187935 W
PL12W 0.71195525 W
PL13W 0.52899635 W
SFO2 400.1316005 MHz
SI 32768
SF 100.6127690 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
ppm

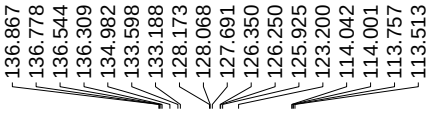


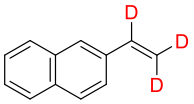


6g'

```
NAME          SGL-10-54A
EXPNO                  1
PROCNO                 1
Date_           20200605
Time               2.08
INSTRUM           spect
PROBHD   5 mm PABBO BB-
PULPROG             zg30
TD                 65536
SOLVENT            CDCl3
NS                     8
DS                     2
SWH             8223.685 Hz
FIDRES          0.125483 Hz
AQ              3.9846387 sec
RG                   203
DW                60.800 usec
DE                 6.50 usec
TE                297.2 K
D1             1.00000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                  1H
P1                 14.14 usec
PL1                -3.00 dB
PL1W          22.05223846 W
SFO1          400.1324710 MHz
SI                 32768
SF            400.1300237 MHz
WDW                   EM
SSB                    0
LB                  0.30 Hz
GB                     0
PC                  1.00
```

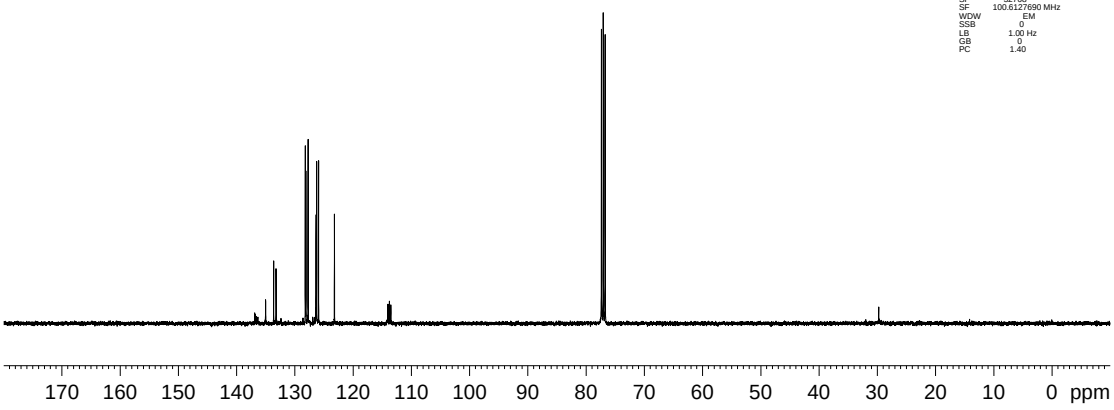


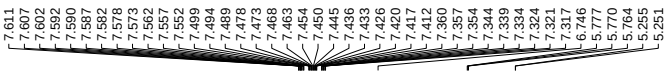


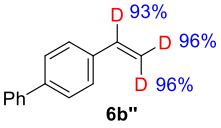


6g'

```
NAME          SGL-10-54A
EXPNO                  2
PROCNO                 1
Date_           20200605
Time               2.39
INSTRUM           spect
PROBHD   5 mm PABBO BB-
PULPROG          zgpg30
TD                 65536
SOLVENT            CDCl3
NS                   512
DS                     4
SWH            24038.461 Hz
FIDRES          0.366798 Hz
AQ              1.3631988 sec
RG                   203
DW                20.800 usec
DE                 6.50 usec
TE                298.4 K
D1             2.00000000 sec
D11            0.03000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                  13C
P1                10.00 usec
PL1                -3.00 dB
PL1W          68.66265106 W
SFO1          100.6228298 MHz

======== CHANNEL f2 ========
CPDPRG2           waltz16
NUC2                  1H
PCPD2             80.00 usec
PL2                -2.60 dB
PL12               11.91 dB
PL13               13.20 dB
PL2W          20.11187935 W
PL12W          0.71195525 W
PL13W          0.52899635 W
SFO2          400.1316005 MHz
SI                 32768
SF            100.6127690 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  1.40
```







6b"

```
NAME          SGL-10-77B-2
EXPNO                    2
PROCNO                   1
Date_             20200708
Time                 2.56
INSTRUM             spect
PROBHD    5 mm PABBO BB-
PULPROG               zg30
TD                   65536
SOLVENT              CDCl3
NS                       8
DS                       2
SWH              8223.685 Hz
FIDRES           0.125483 Hz
AQ               3.9846387 sec
RG                     203
DW                60.800 usec
DE                 6.50 usec
TE                 297.9 K
D1             1.00000000 sec
TD0                      1

======== CHANNEL f1 ========
NUC1                   1H
P1                 14.14 usec
PL1                -3.00 dB
PL1W         22.05223846 W
SFO1         400.1324710 MHz
SI                   32768
SF           400.1300141 MHz
WDW                    EM
SSB                     0
LB                 0.30 Hz
GB                      0
PC                   1.00
```