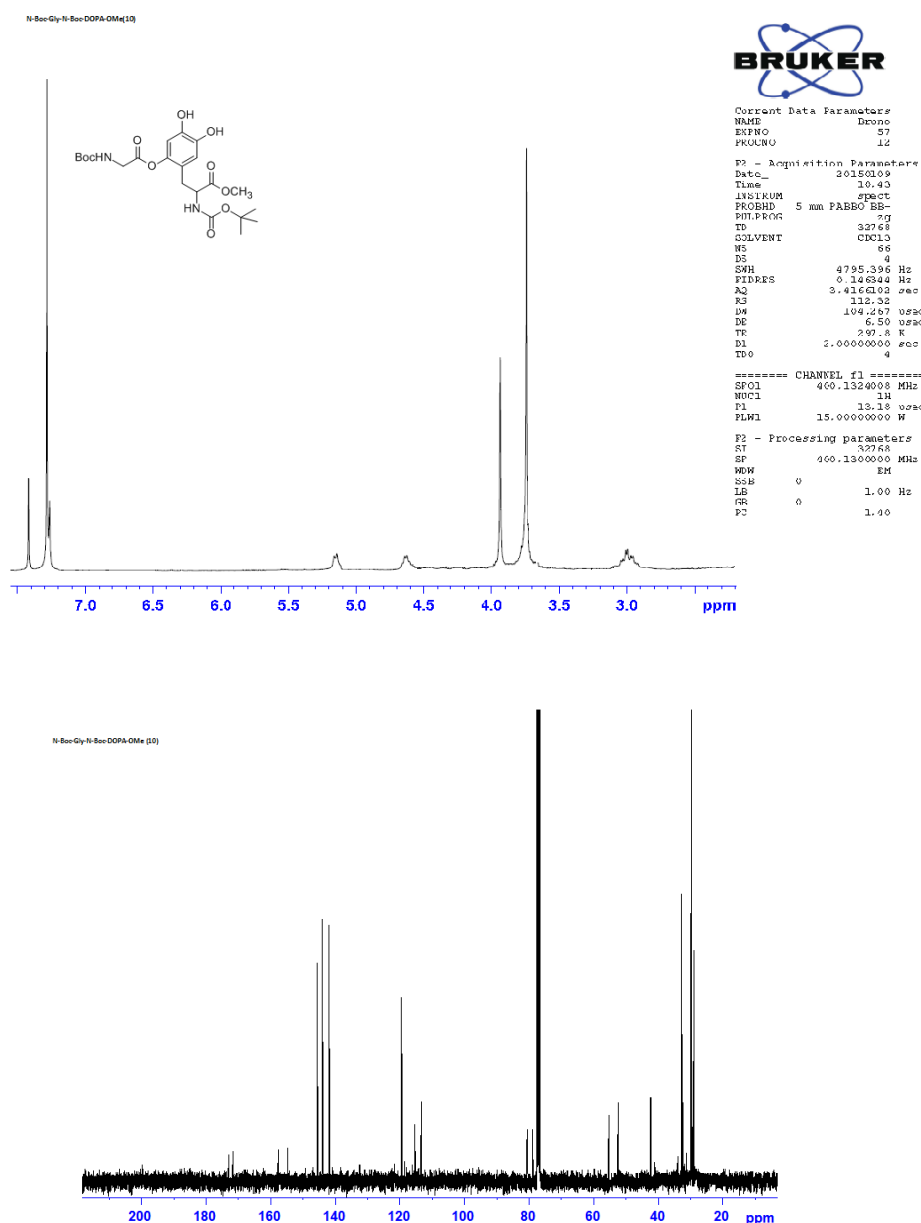


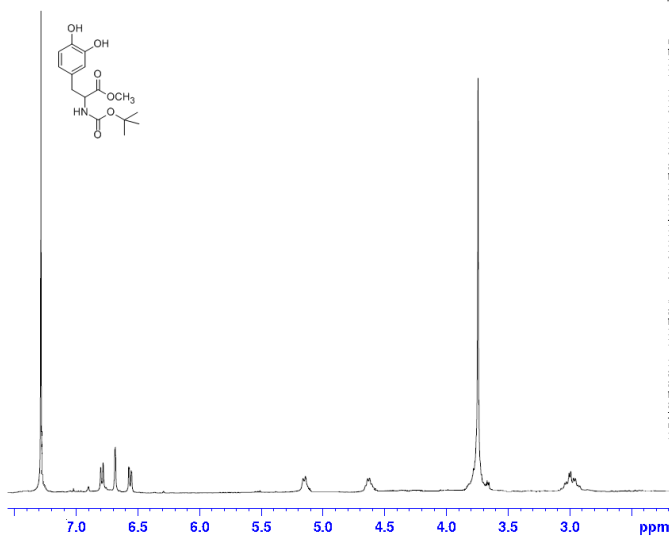
Synthesis and antioxidant activity of DOPA peptidomimetics by a novel IBX mediated aromatic oxidative functionalization

Bruno Mattia Bizzarri^a, Cristina Pieri^a, Giorgia Botta^a, Pasquale Mosesso^a, Serena Cinelli^b, Angelo Schinoppi^a and Raffele Saladino*

Supporting Materials S1#. ¹H-NMR and ¹³C spectra of asynthesized compounds.



N-Boc-DOPA-OMe (11)



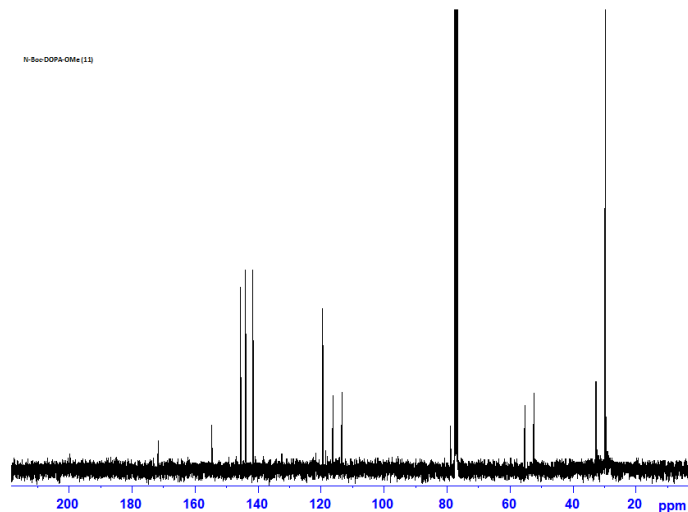
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NAME Bruno
EXPNO 58
PROCNO 12

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Time 10.43
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg
TD 32768
SOLVENT CDCl₃
NS 66
DS 4
SWH 4795.396 Hz
FIDRES 0.146344 Hz
AQ 3.4166102 sec
RG 112.32
DM 104.267 usec
DE 6.50 usec
TE 297.8 K
D1 2.00000000 sec
TD0 4

===== CHANNEL f1 =====
SFO1 400.1324008 MHz
NUC1 1H
P1 13.18 usec
PLW1 15.00000000 W

F2 - Processing parameters
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SF 400.1300000 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

N-Boc-DOPA-OMe (12)



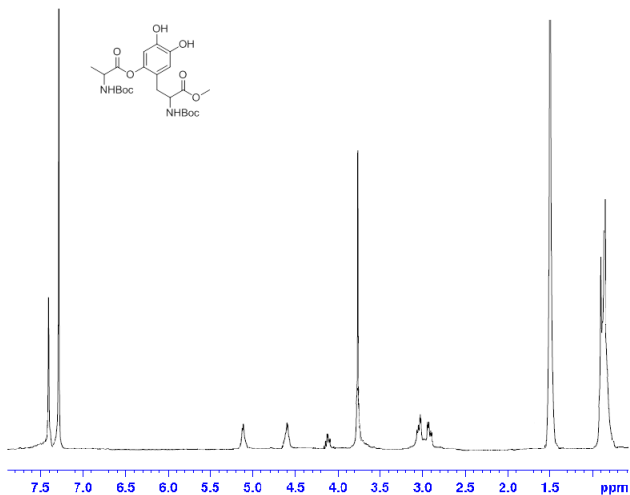
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NAME Bruno
EXPNO 68
PROCNO 2

F2 - Acquisition Parameters
Date_ 20140710
Time 11.11
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg
TD 32768
SOLVENT CDCl₃
NS 38
DS 6
SWH 4795.396 Hz
FIDRES 0.146344 Hz
AQ 3.4166102 sec
RG 112.32
DM 104.267 usec
DE 6.50 usec
TE 294.8 K
D1 2.00000000 sec
TD0 6

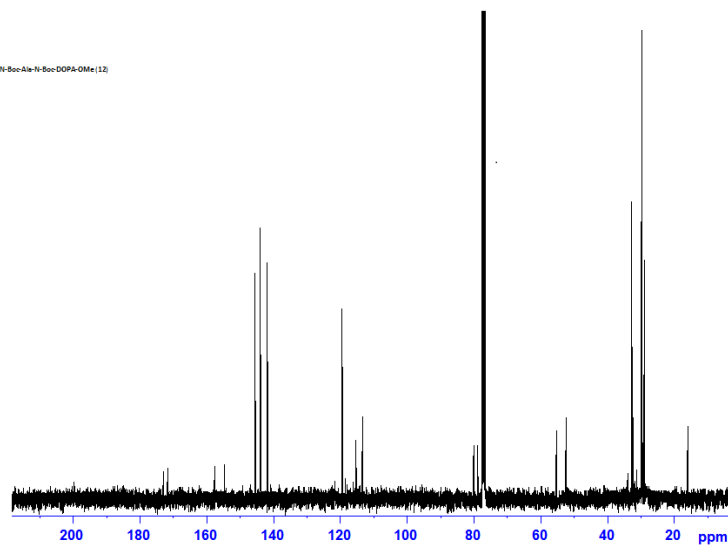
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P1 13.18 usec
PLW1 15.00000000 W

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

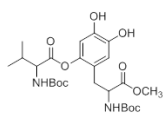
N-Boc-Ala-N-Boc-DOPA-OMe (12)



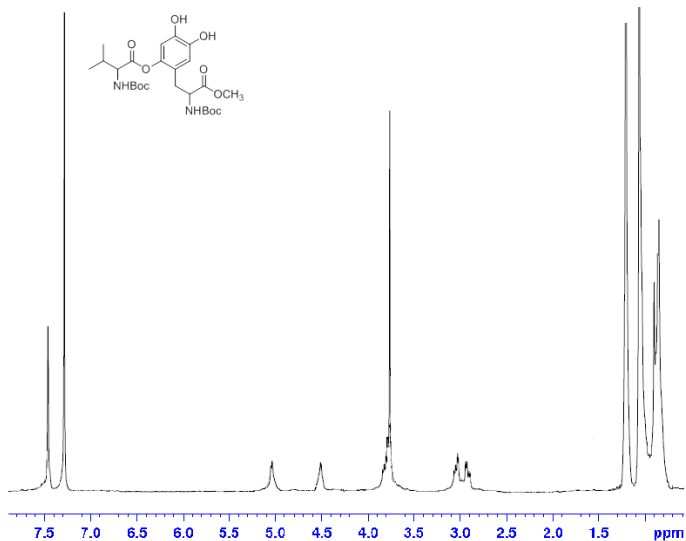
N-Boc-Ala-N-Boc-DOPA-OMe (12)



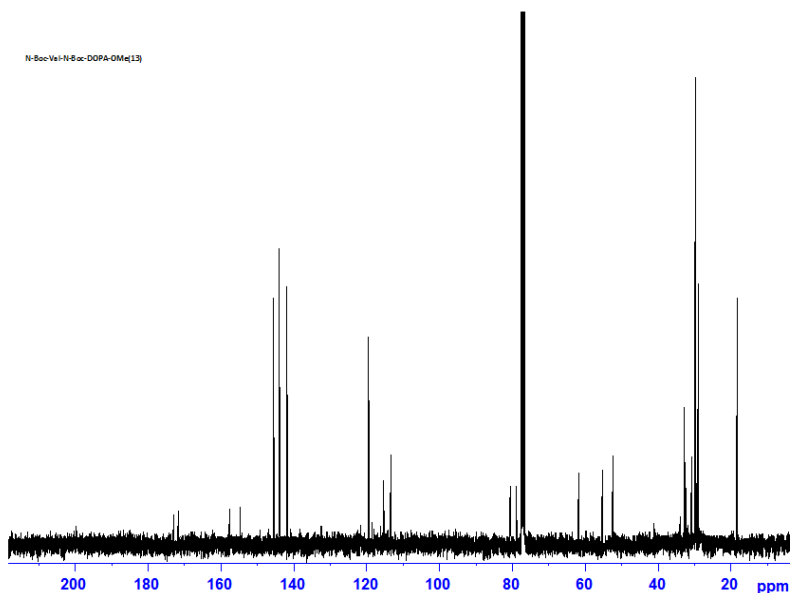
N-Boc-Val-N-Boc-DOPA-OMe (13)

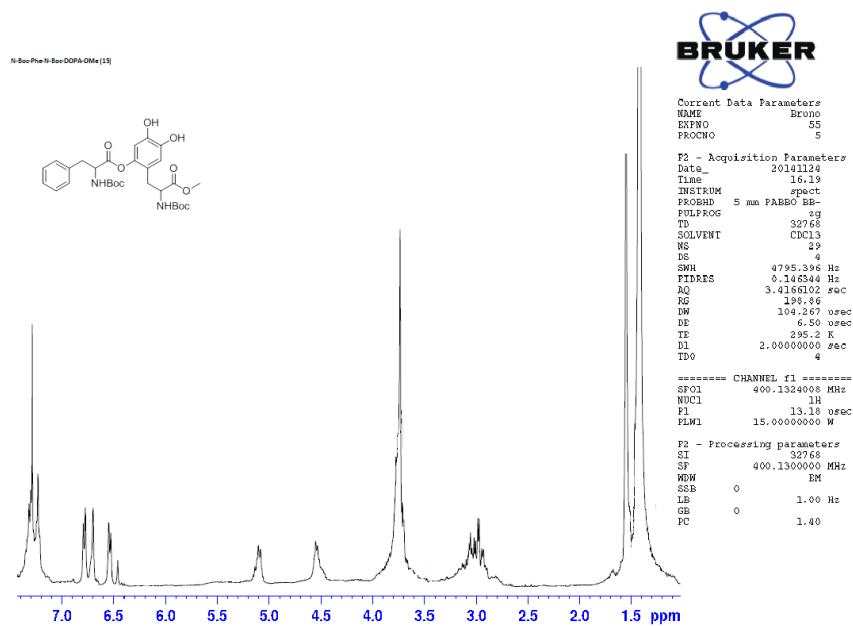
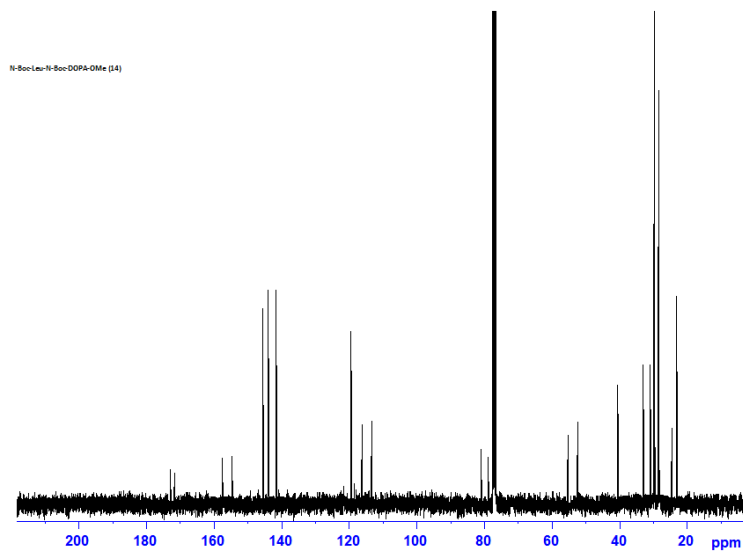
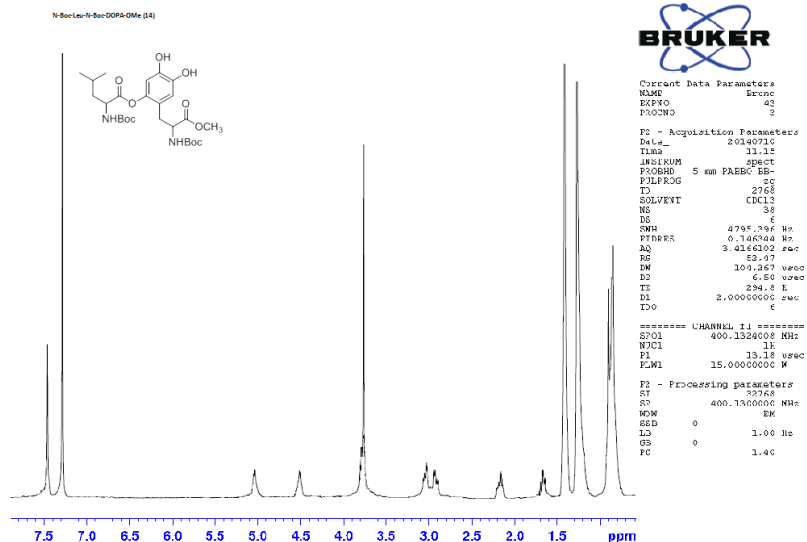


Current Data Parameters
 NAME: 13cnc
 EXPNO: 43
 PROCNO: 2
 F2 - Acquisition Parameters
 Date_: 20140710
 Time: 11.15
 INSTRUM: spect
 F2PROB: 5 mm PAEBB-ES-
 PULPROG: zg
 TD: 2768
 SOLVENT: CDCl3
 NS: 38
 DS: 4
 SWH: 4795.398 Hz
 FIDRES: 0.146344 Hz
 AQ: 3.416302 sec
 RG: 52.47
 DW: 104.267 usec
 D2: 6.50 usec
 T2: 294.8 Hz
 D1: 2.0000000 sec
 T20: 6
 ===== CHANNEL f1 =====
 NUC1: 13C
 P1: 13.18 usec
 PL1: 15.0000000 W
 F2 - Processing parameters
 SI: 32768
 SF: 400.1360000 MHz
 WDM: EK
 SSB: 0
 LB: 1.00 Hz
 GB: 0
 PC: 1.40

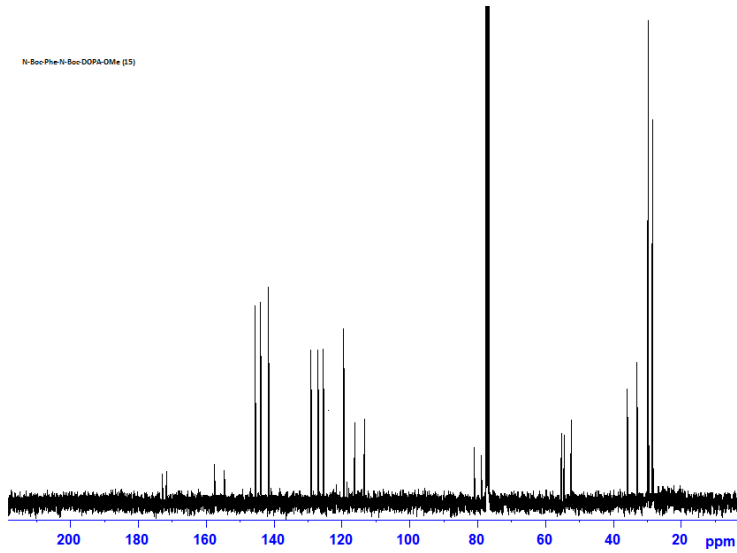


N-Boc-Val-N-Boc-DOPA-OMe (13)

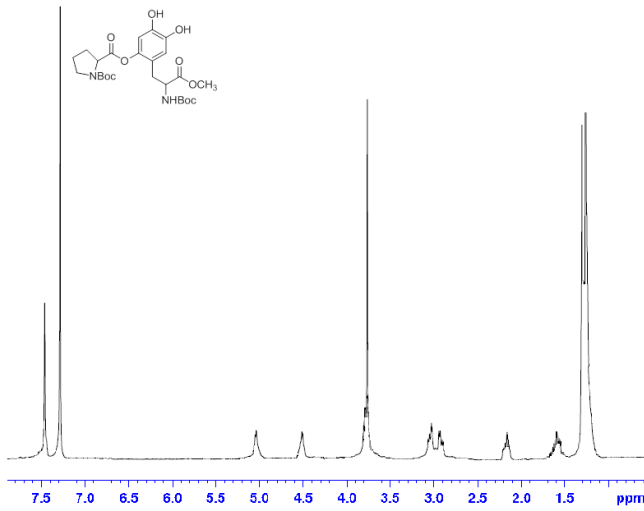
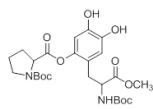




N-Boc-Pro-N-Boc-DOPA-OMe [15]



N-Boc-Pro-N-Boc-DOPA-OMe [16]



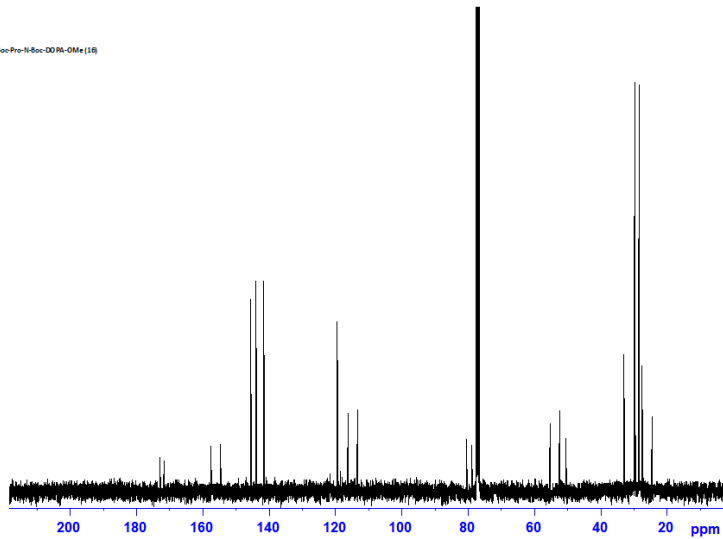
Current Data Parameters
NAME Bruker
EXPNO 71
PROCNO 2

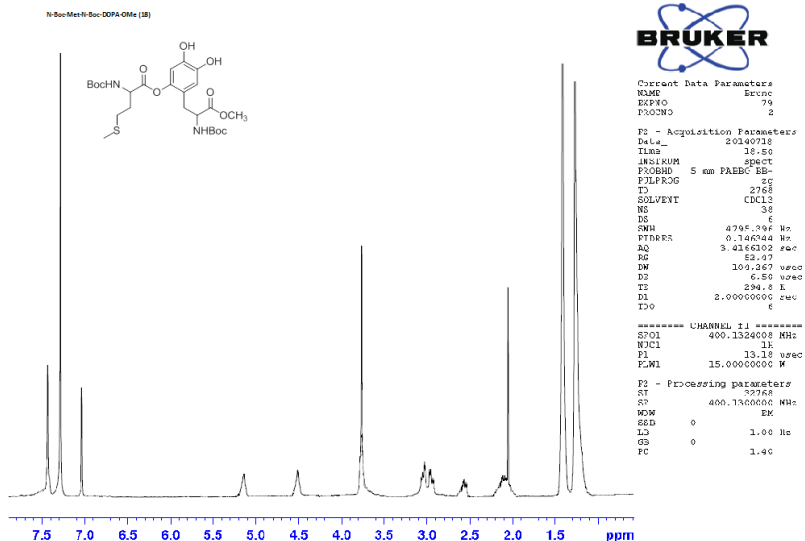
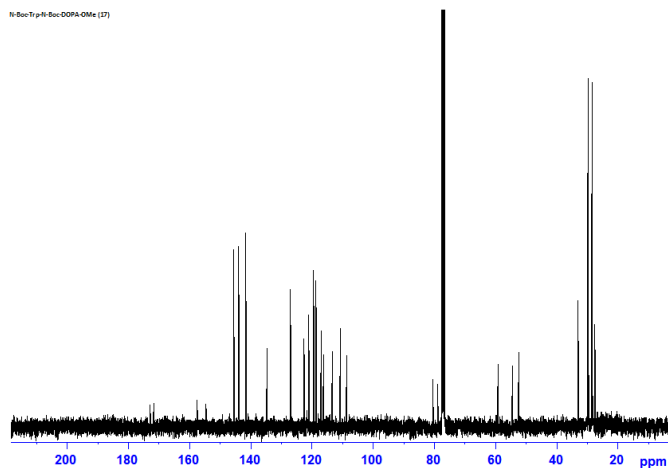
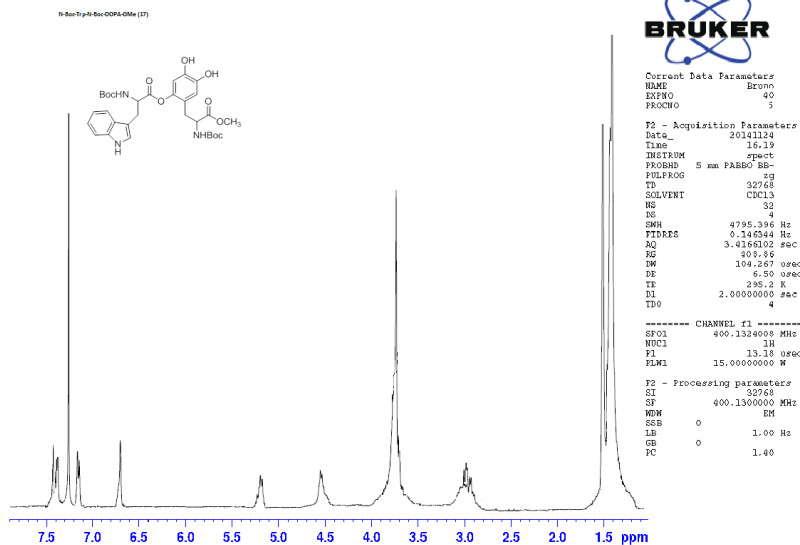
F2 - Acquisition Parameters
Date_ 0140710
Time 11.11
INSTRUM spect
PROBHD 5 mm PAEBB EB-
PULPROG zgpg
TD 2768
SOLVENT CDCl3
NS 38
DS 6
FIDRES 4785.104 Hz
FIDRES 0.746244 Hz
AQ 3.416202 sec
RG 63.07
DM 109.267 usec
D2 5.50 usec
T2 294.8 s
D1 2.0000000 sec
DO 6

===== CHANNEL f1 =====
SFO1 400.1324000 MHz
NUC1 13
P1 13.18 usec
F1W1 15.0000000 W

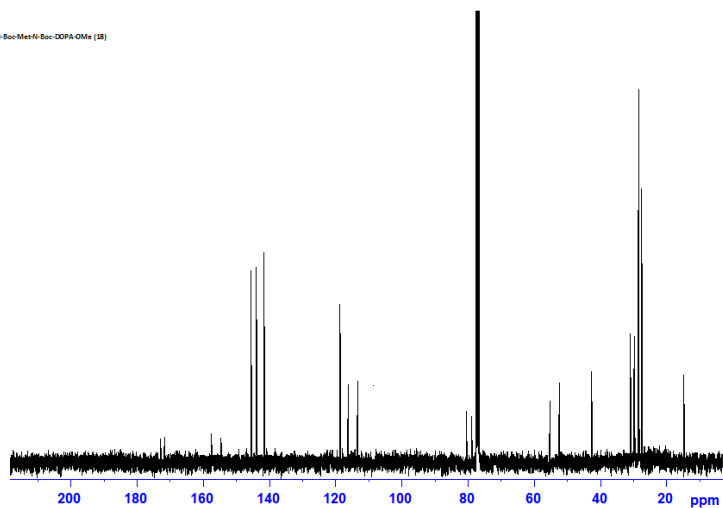
F2 - Processing parameters
SI 32768
SF 400.1324000 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

N-Boc-Pro-N-Boc-DOPA-OMe [16]

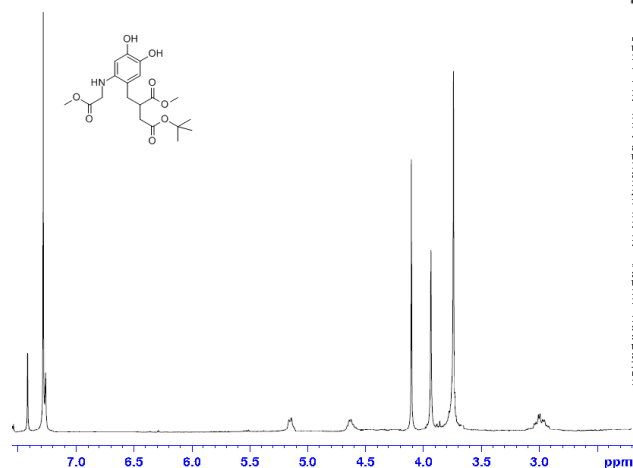
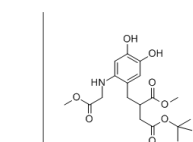




N-Boc-Met-N-Boc-DOPA-OMe (18)

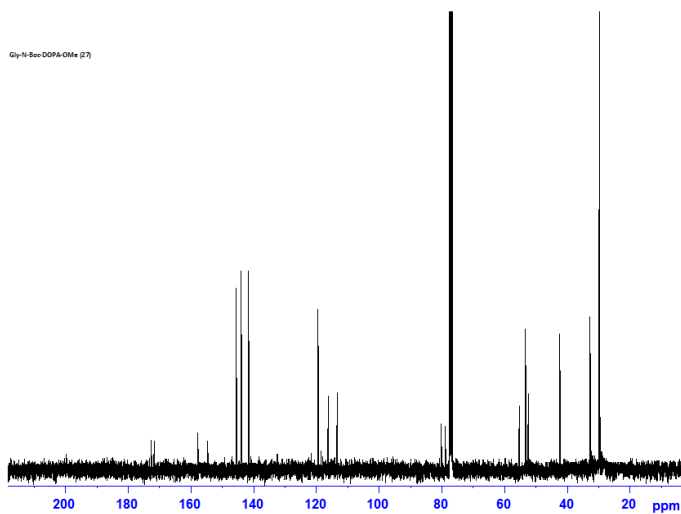


Gly-N-Boc-DOPA-OMe (27)

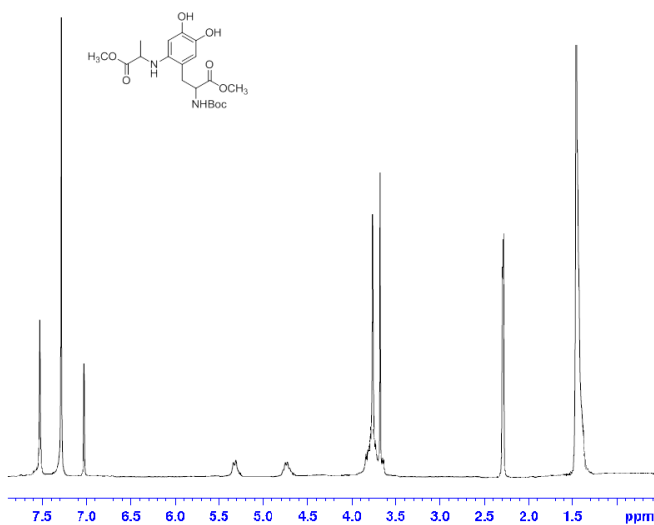


Current Data Parameters
NAME Dromo
EXPNO 95
PROCNO 12
F2 - Acquisition Parameters
Date_ 20150309
Time 15.43
INSTRUM spect
PROBHD 5 mm PABBO ES-
PMT.PRG 7g
TD 32768
SOLVENT CHCL3
NS 66
DS 4
SWH 4795.396 Hz
FIDRES 0.146346 Hz
AQ 3.4166102 sec
RG 112.32
DA 104.267 uspc
DE 6.50 uspc
TE 297.8 K
D1 2.00000000 sec
TD0 4
===== CHANNEL f1 =====
SFO1 400.1324008 MHz
NUC1 1H
P1 13.18 uspc
PLM1 15.00000000 W
F2 - Processing parameters
CT 32768
SF 400.1300000 MHz
MW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.00

Gly-N-Boc-DOPA-OMe (27)



As-H8ac-DORs-OMe (28)



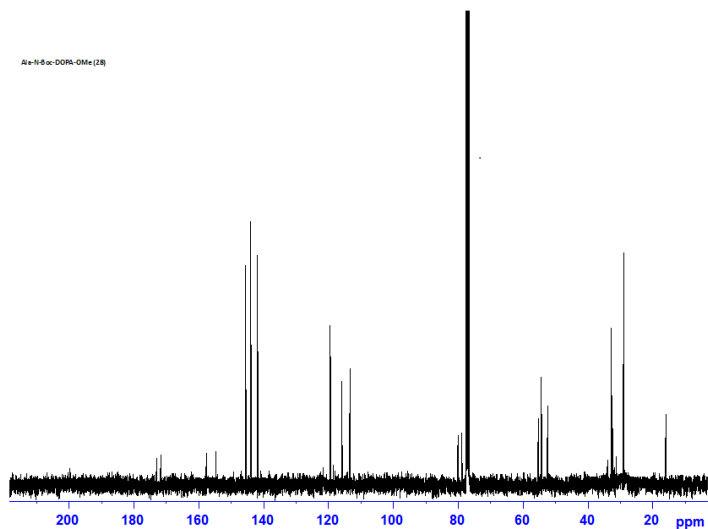
Current Data Parameters
NAME: As-H8ac-DORs-OMe
EXPNO: 66
PROCNO: 11

F2 - Acquisition Parameters
Date_: 20140710
Time: 14.12
INSTRUM: spect
PROBHD: 5 mm PABBO BB-
PULPROG: zgpg30
TD: 32768
SOLVENT: CDCl3
NS: 38
DS: 6
SWH: 4795.596 Hz
FIDRES: 0.146344 Hz
AQ: 3.416302 sec
RG: 63.97
DM: 109.267 usec
D2: 6.50 usec
TE: 294.2 K
D1: 2.00000000 sec
D10: 6

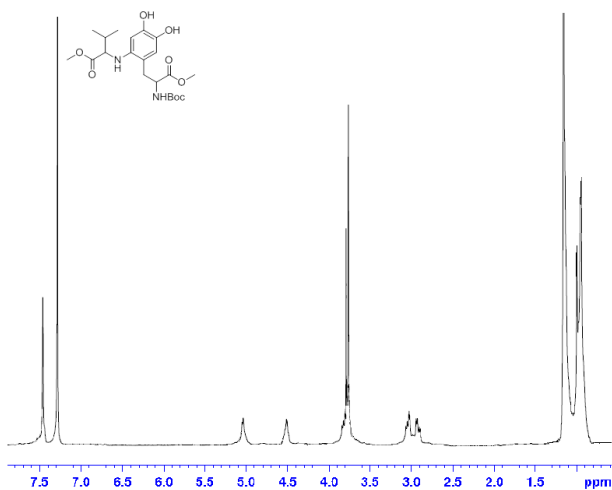
===== CHANNEL f1 =====
SFO1: 400.1324008 MHz
NUC1: 1H
P1: 13.18 usec
PL1: 15.0000000 W

F2 - Processing parameters
SI: 32768
SF: 400.1324008 MHz
WDW: EM
SSB: 0
LB: 1.00 Hz
GB: 0
PC: 1.40

As-H8ac-DORs-OMe (28)



As-H8ac-DORs-OMe (28)



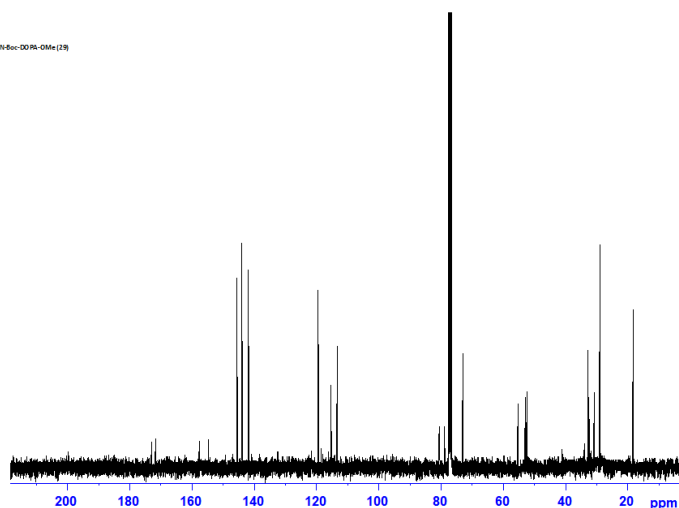
Current Data Parameters
NAME: As-H8ac-DORs-OMe
EXPNO: 48
PROCNO: 2

F2 - Acquisition Parameters
Date_: 20140710
Time: 11.12
INSTRUM: spect
PROBHD: 5 mm PABBO BB-
PULPROG: zgpg30
TD: 32768
SOLVENT: CDCl3
NS: 38
DS: 6
SWH: 4795.596 Hz
FIDRES: 0.146344 Hz
AQ: 3.416302 sec
RG: 63.97
DM: 109.267 usec
D2: 6.50 usec
TE: 294.2 K
D1: 2.00000000 sec
D10: 6

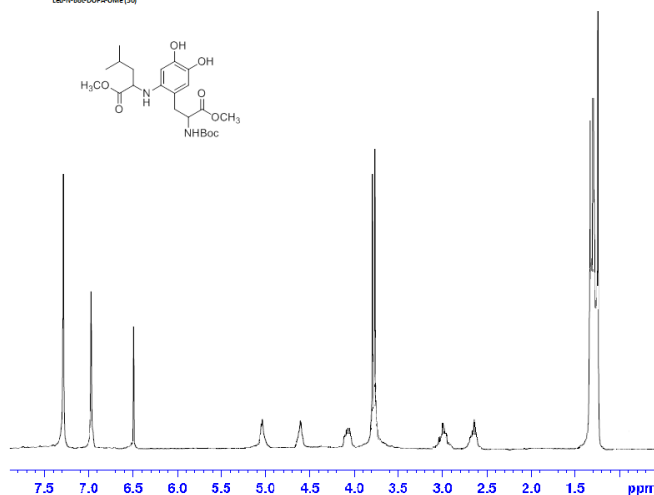
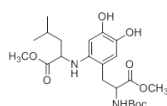
===== CHANNEL f1 =====
SFO1: 400.1324008 MHz
NUC1: 1H
P1: 13.18 usec
PL1: 15.0000000 W

F2 - Processing parameters
SI: 32768
SF: 400.1324008 MHz
WDW: EM
SSB: 0
LB: 1.00 Hz
GB: 0
PC: 1.40

Val-N-Boc-DOPA-OMe (28)

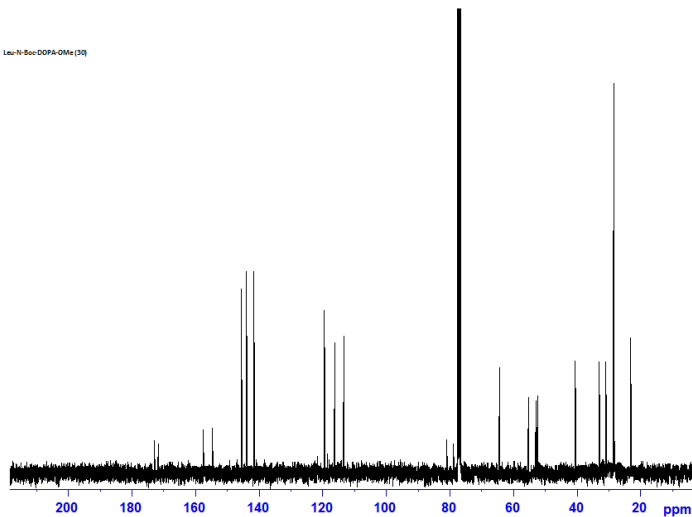


Leu-N-Boc-DOPA-OMe (30)



Current Data Parameters
NAME: 46
EXPNO: 2
PROCNO: 2
P2 - Acquisition Parameters
Date_: 20140718
Time: 13.18
INSTRUM: spect
PROBHD: 5 mm PAEBB-EB-
PULPROG: zg
TD: 2768
SOLVENT: CDCl3
NS: 36
DS: 6
SWH: 4795.396 Hz
FIDRES: 0.146240 Hz
AQ: 3.4166202 sec
RG: 52.07
DM: 104.2567 usec
D2: 6.50 usec
TE: 294.0 K
D1: 2.0000000 sec
TDO: 0
===== CHANNEL f1 =====
SFO1: 400.1324008 MHz
NUC1: 15
P1: 13.18 usec
PLW1: 15.0000000 W
P2 - Processing parameters
ST: 32768
SF: 400.1300000 MHz
WDW: EM
SSB: 0
LB: 1.00 Hz
GB: 0
PC: 1.40

Leu-N-Boc-DOPA-OMe (30)



COC(=O)C(NC(Cc1ccccc1)C(=O)OC)Cc2cc(O)c(O)cc2C(=O)NCC(=O)OC

```

Current Data Parameters
NAME                Bruno
EXPNO                4
PROCNO              45

F2 - Acquisition Parameters
Data                20141129
Time                12.12
INSTRUM             spect
PROBHD              5 mm PABBO-BB
PULPROG             zgpg
TD                  32768
SOLVENT             CDCl3
NS                   97
DS                   4
SWH                  4795.396 Hz
FIDRES              0.165494 Hz
AQ                  3.4165102 sec
RG                  198.96
DE                  104.267 usec
TE                  305.2 K
D1                  2.00000000 sec
T0                  4

===== CHANNEL f1 =====
SPOL1               400.1324000 MHz
NUC1                 1H
P1                   13.16 usec
PLWL1               15.00000000 W

F1 - Processing parameters
SI                   32768
SF                   400.1300000 MHz
RGW                 1600
LB                   1.00 Hz
GB                   0
PC                   0
LC                   0
  
```

Phc-N-Soc-DOPs-OMe (31)

The ¹³C NMR spectrum shows chemical shifts from 20 to 200 ppm. The x-axis is labeled 'ppm' and has major ticks at 200, 180, 160, 140, 120, 100, 80, 60, 40, and 20. The spectrum features a very tall, sharp peak at approximately 75 ppm, which is the solvent peak for CDCl₃. Other significant peaks are observed at approximately 145 ppm (a doublet), 135 ppm (a doublet), 125 ppm (a doublet), 115 ppm (a doublet), 105 ppm (a doublet), 65 ppm (a doublet), 55 ppm (a doublet), 35 ppm (a doublet), and 25 ppm (a doublet). The baseline is relatively flat with some minor noise.

COC(=O)C1CCC1N(c2cc(O)c(O)cc2CC(=O)NCC(=O)OC)C3CCCC3C(=O)OC

```

Current Data Parameters
NAME      Bruno
EXPNO     18
PROCNO    1

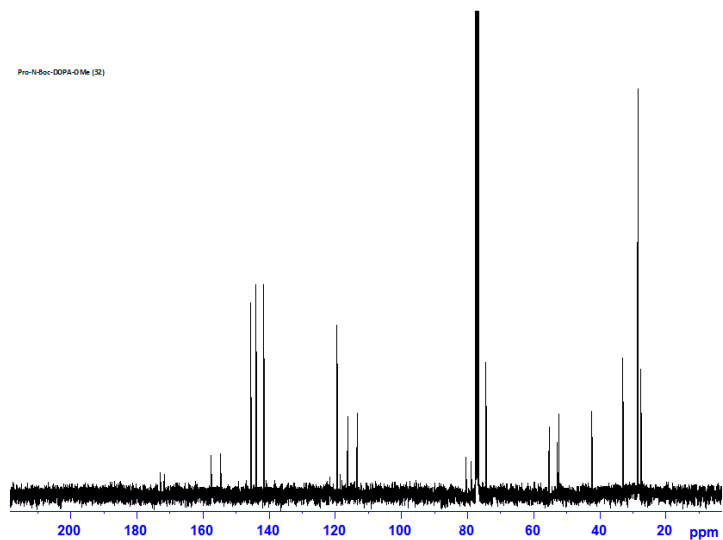
P2 - Acquisition Parameters
Date_     20121213
Time      16:50
INSTRUM    spect
PROBHD     5 mm PABBO BB-
PULPROG    zgpg30
TD          32768
SOLVENT    DMSO
NS          42
DS          2
SWH          4795.394 Hz
FIDRES      0.1663444 Hz
AQ          3.4126502 sec
RG          329.86
DM          104.267 usec
DE          6.50 usec
TE          295.2 K
DQ          2.005000000 sec
TD0         4

===== CHANNEL f2 =====
SF01       400.1324000 MHz
NUC1        13C
P1          13.18 usec
PLW1        15.00000000 usec

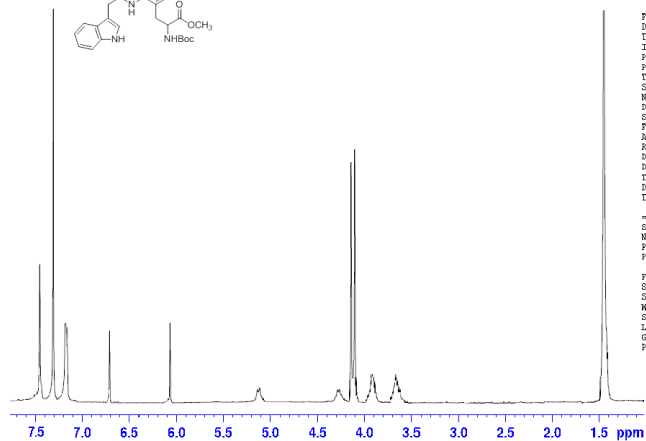
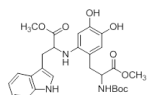
P3 - Processing parameters
SI          32768
SF          400.1324000 MHz
GB          0
WDW          EM
SSB          0
LB          0.100 Hz
GB          0
PC          1.40

```

Pro-H-Boc-DOPA-OMe (32)



Trp-H-Boc-DOPA-OMe (33)



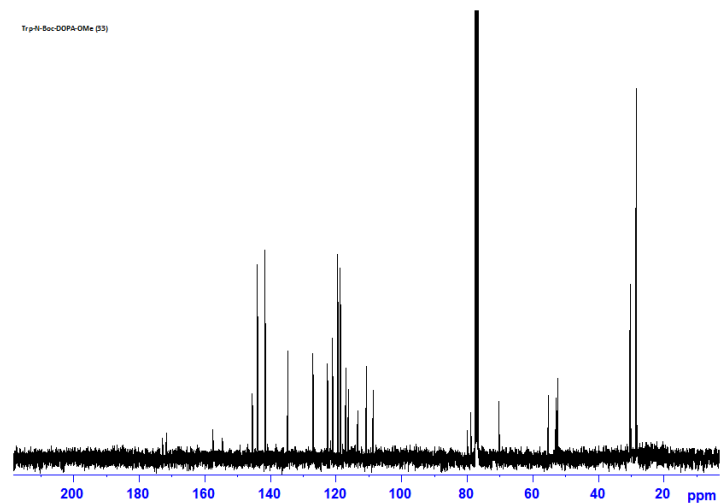
Current Data Parameters
NAME Bruno
EXPNO 98
PROCNO 4

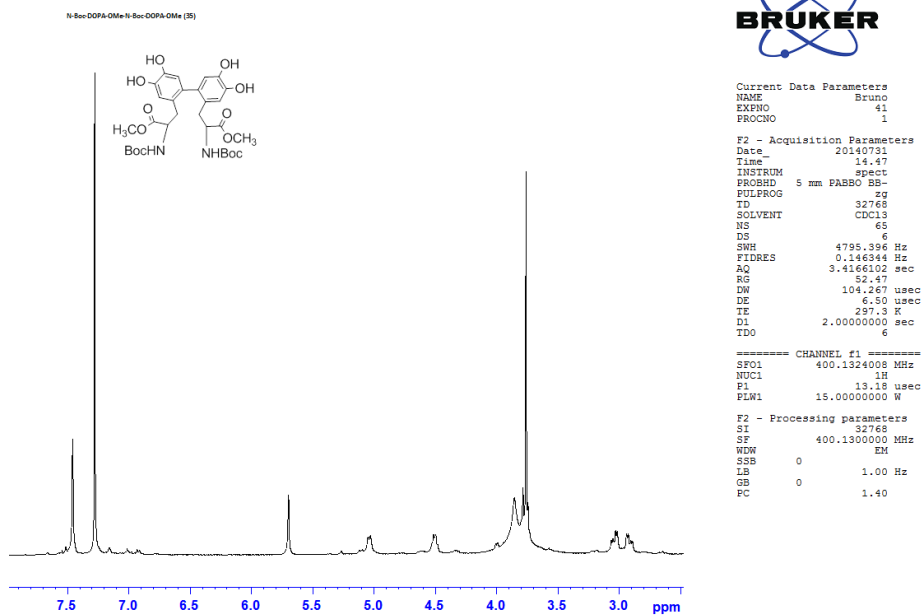
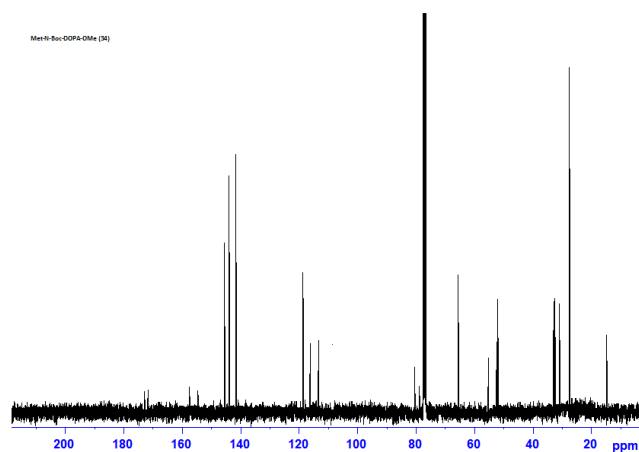
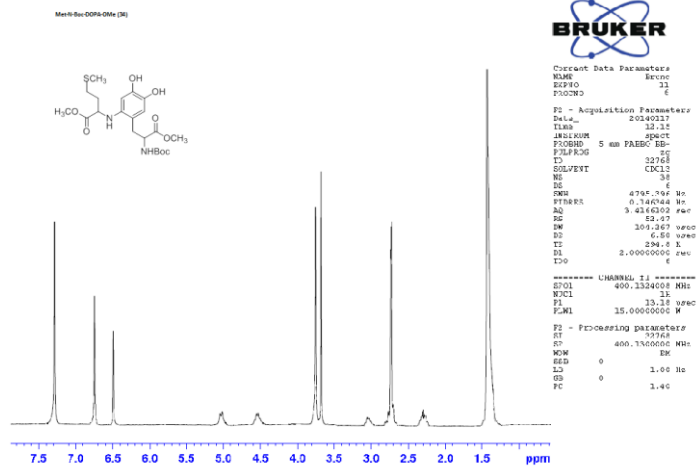
F2 - Acquisition Parameters
Date_ 20181124
Time
INSTRUM spect
PROBHD 5 mm FASBO BB-
PULPROG zg
TD 32768
SOLVENT CDCl3
NS 22
DS 4
SWH 4795.396 Hz
FIDRES 0.146544 Hz
AQ 3.4156102 sec
RG 138.86
DM 104.267 usec
DE 6.50 usec
TE 295.2 K
D1 2.0000000 sec
TD0 4

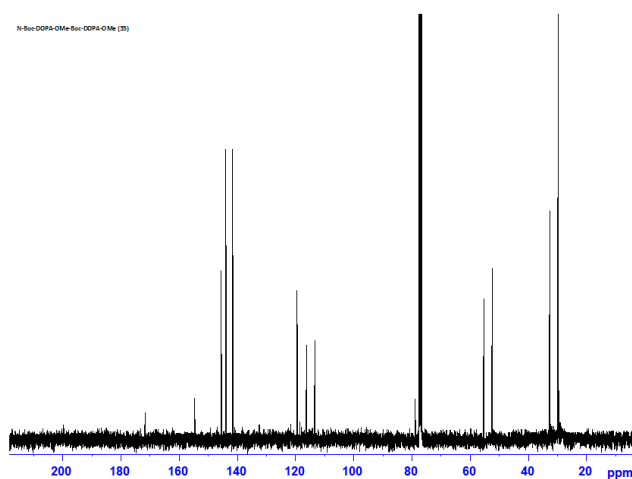
===== CHANNEL f1 =====
SFO1 400.1304000 MHz
NUC1 1H
P1 13.18 usec
PLM1 15.0000000 W

F2 - Processing parameters
SI 32768
SF 400.1300000 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

Trp-H-Boc-DOPA-OMe (33)







Supporting Materials S2#. Comet assay performed on cultures of mouse lymphoma L5178Y (TK^{+/−}) cells

Figure 1. Comet assay performed on untreated cells (control PBS)



Figure 2 Comet assay performed in presence of an aliquot of 50 μ l of H₂O₂ (0.25 μ M).

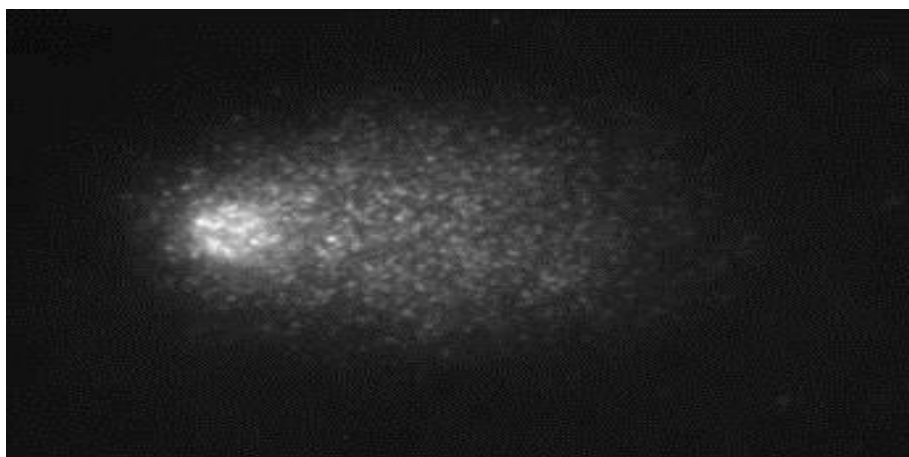


Figure 3 Comet assay showing the efficacy of compound N-Boc-Gly-N-Boc-DOPA-OMe (**10**), against the extent of DNA breakage induced

