

Electronic Supplementary Information

Expeditious synthesis of the tetrasaccharide cap domain of the *Leishmania donovani* lypophosphoglycan using one-pot glycosylation reactions

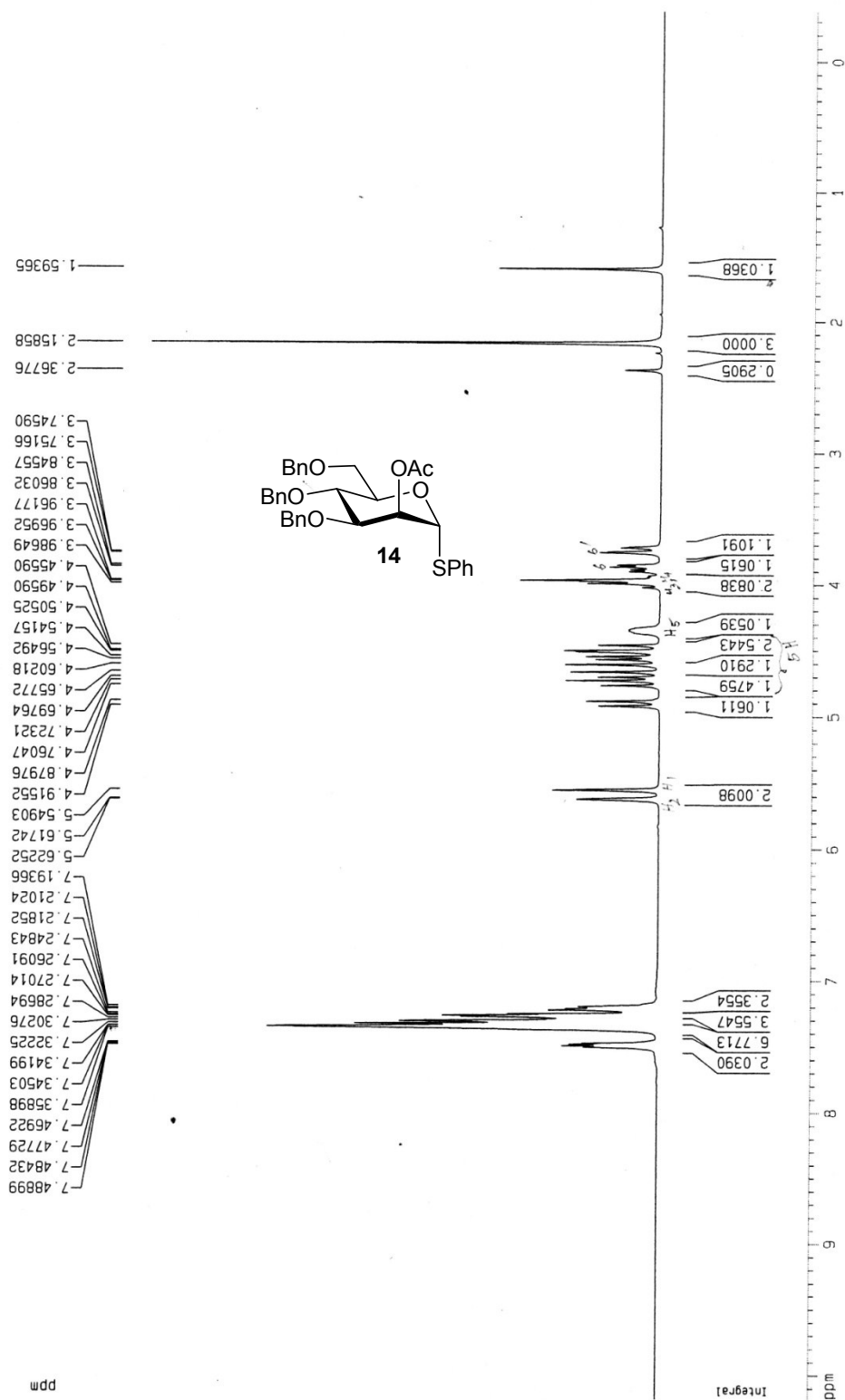
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West Bengal, India, 700032.

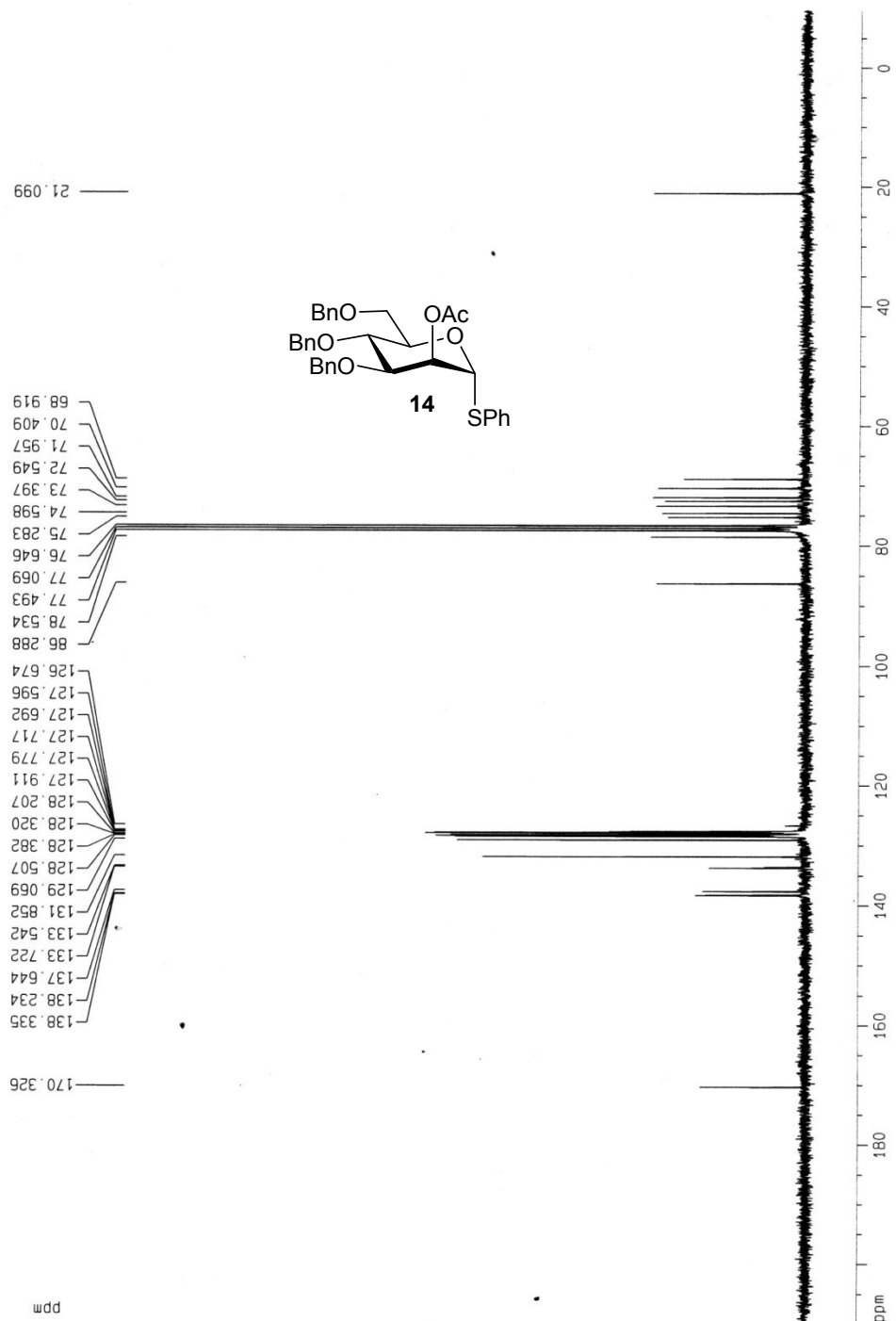
[†] At present: Laboratory of Bioorganic Chemistry, Graduate School of Information Science, Nagoya University, Japan.

¹ H Spectrum of compound 14	Page 2
¹³ C Spectrum of compound 14	Page 3
¹ H Spectrum of compound 5	Page 4
¹³ C Spectrum of compound 5	Page 5
¹ H Spectrum of compound 6	Page 6
¹ H Spectrum of compound 7	Page 7
¹ H Spectrum of compound 9	Page 8
¹³ C Spectrum of compound 9	Page 9
¹ H Spectrum of compound 10	Page 10
¹³ C Spectrum of compound 10	Page 11
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¹³ C Spectrum of compound 11	Page 13
¹ H Spectrum of compound 3	Page 14
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¹ H Spectrum of compound 2	Page 16
¹³ C Spectrum of compound 2	Page 17
DEPT Spectrum of compound 2	Page 18
COSY Spectrum of compound 2	Page 19
HSQC Spectrum of compound 2	Page 20
HMBC Spectrum of compound 2	Page 21
¹ H Spectrum of compound 1	Page 22
¹³ C Spectrum of compound 1	Page 23
COSY Spectrum of compound 1	Page 24
HSQC Spectrum of compound 1	Page 25

RG (0) -6NB116A-1H



RG (O) -MMMLD61-13C



Current Data Parameters
NAME RG (O) -MMMLD61-13C
EXPNO 1
PROCNO 2

F2 - Acquisition Parameters
Date_ 20150427
Time 14.43
INSTRUM av300
PROBHD 5 mm BBO BB-1H
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 597
DS 4
SWH 16556.291 Hz
FIDRES 0.252629 Hz
AQ 1.9793372 sec
RG 18390.4
DM 30.200 usec
DE 6.00 usec
TE 0.0 K
D1 2.00000000 sec
d11 0.03000000 sec
DELTA 1.89999999 sec
ACQRES 0.00000000 sec
PCWAK 0.01500000 sec

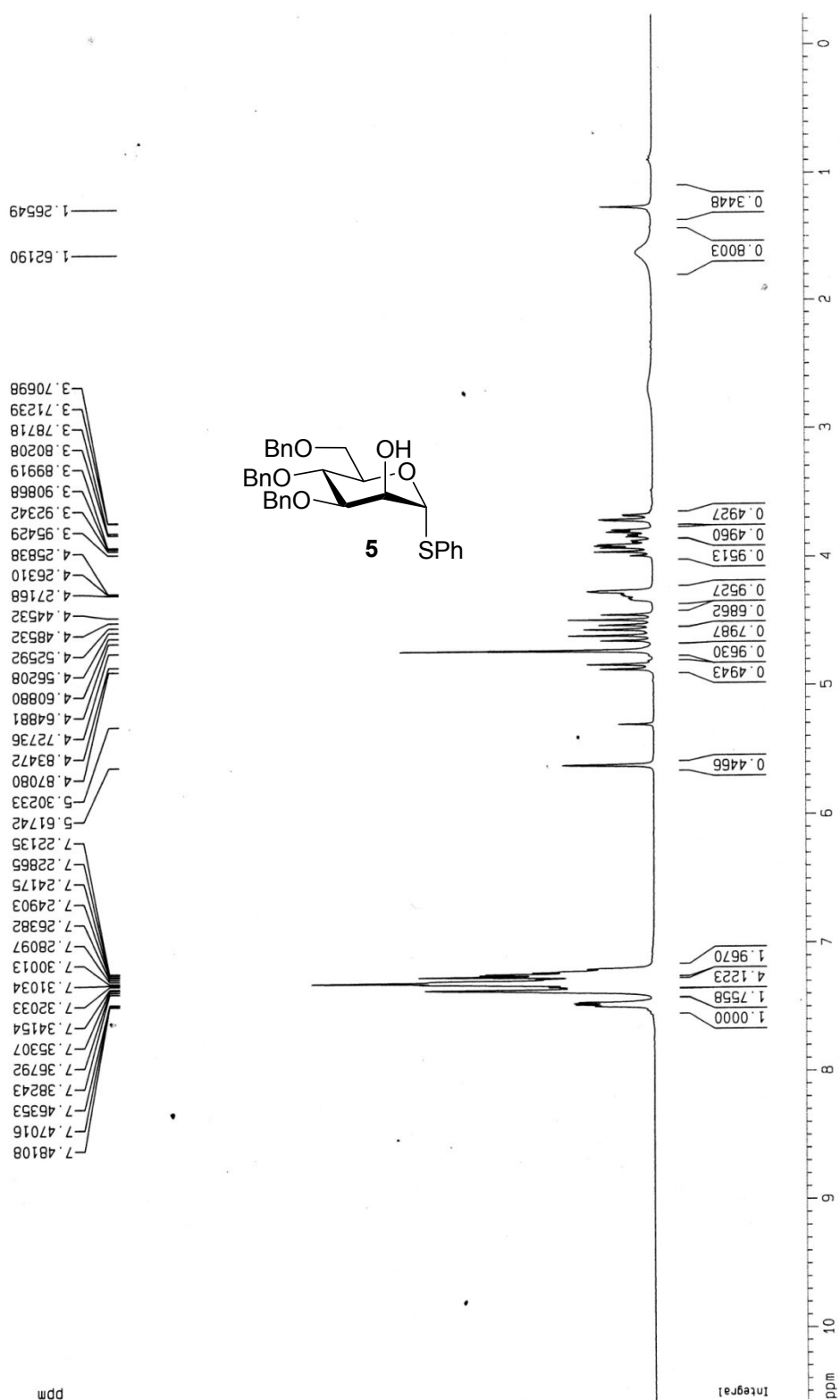
===== CHANNEL f1 =====
NUC1 13C
P1 11.00 usec
PL1 -1.00 dB
SF01 75.4752958 MHz

===== CHANNEL f2 =====
CPRPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -2.00 dB
PL12 13.00 dB
PL13 17.00 dB
SF02 300.1312005 MHz

F2 - Processing parameters
SI 32768
SF 75.4677490 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

10 NMR plot parameters
CX 24.00 cm
CY 7.00 cm
F1P 209.691 ppm
F1 15824.92 Hz
F2P -9.691 ppm
F2 -731.37 Hz
PPMCM 9.14093 ppm/cm
HZCM 689.84558 Hz/cm

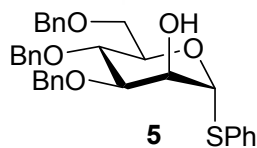
RG (0) - 6NB93B-1H



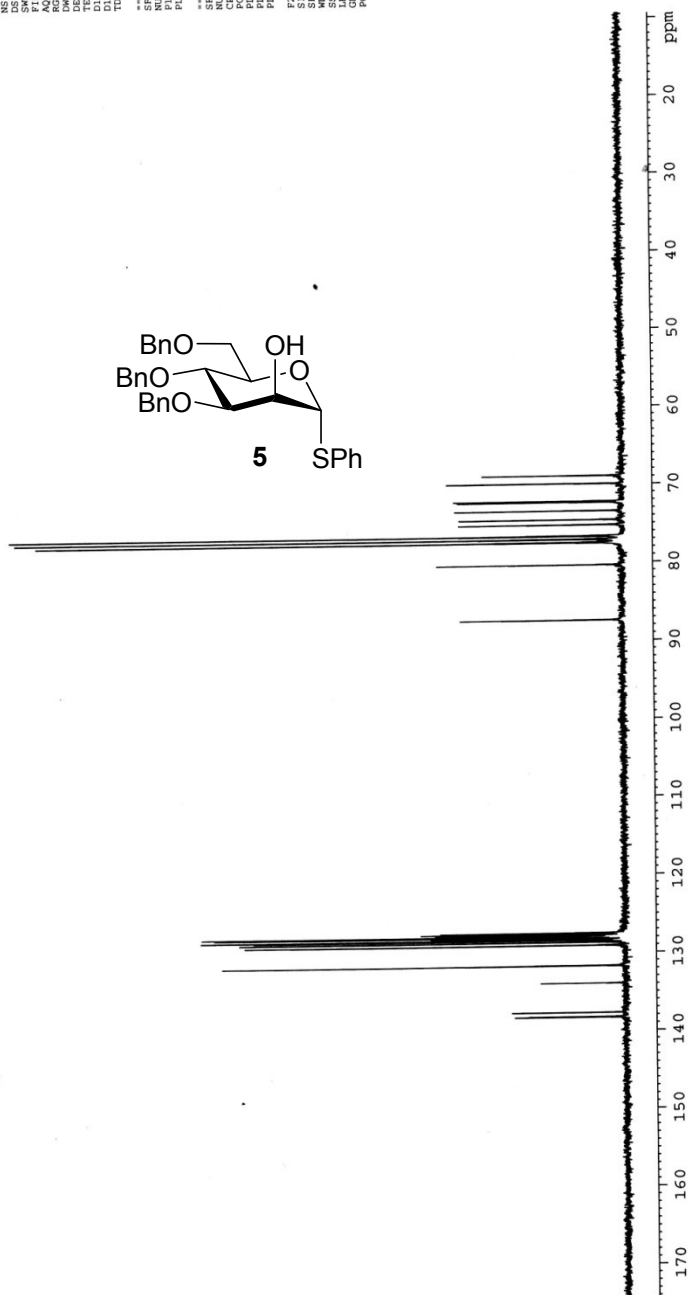
SADA-SADA-13C

138.36
138.29
137.74
133.97
131.73
129.11
128.71
128.48
128.39
128.26
128.17
128.14
128.08
128.02
127.95
127.82
127.65
127.52

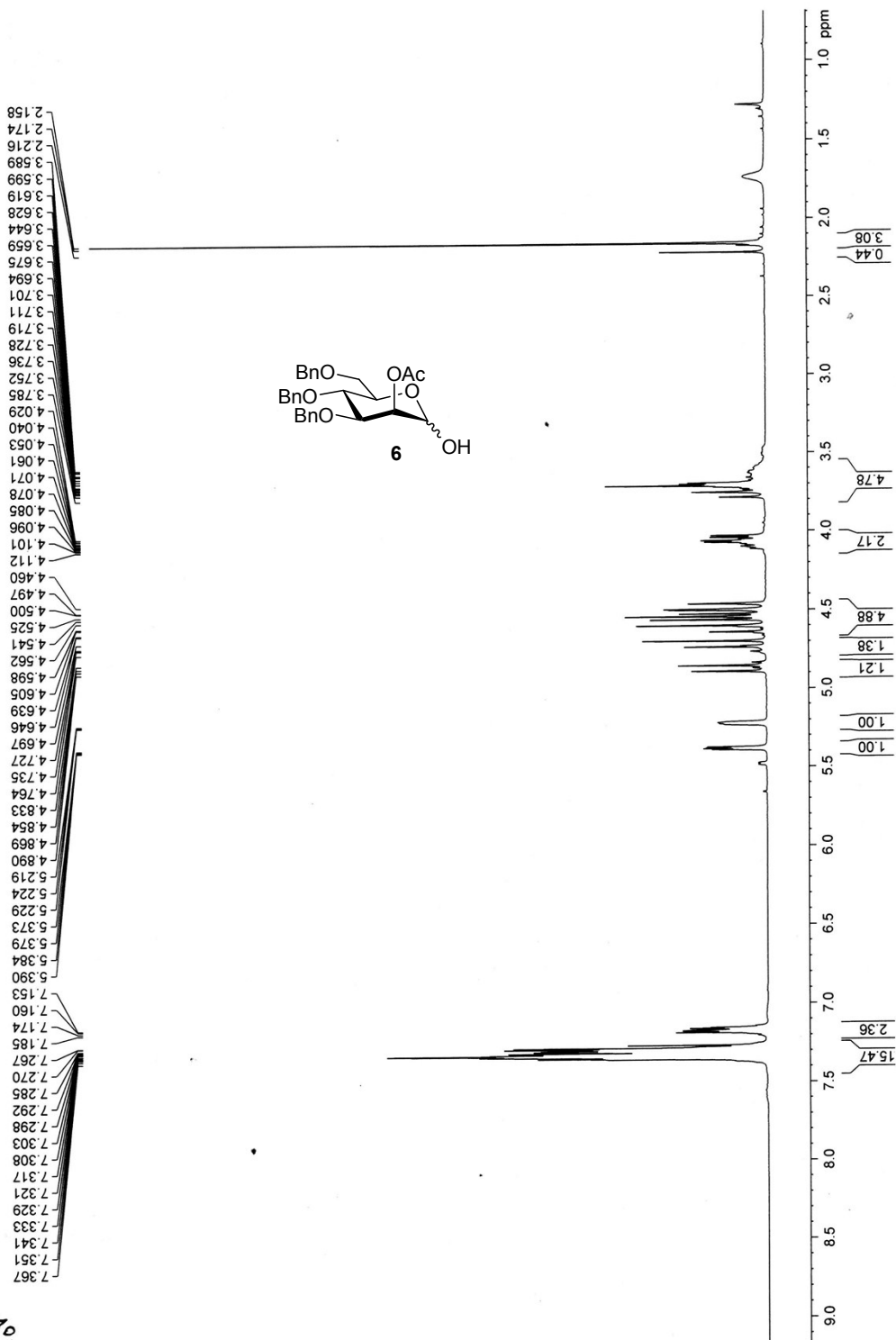
87.45
80.40
77.56
77.34
77.13
76.71
75.27
74.62
73.48
72.39
72.24
70.00
68.97



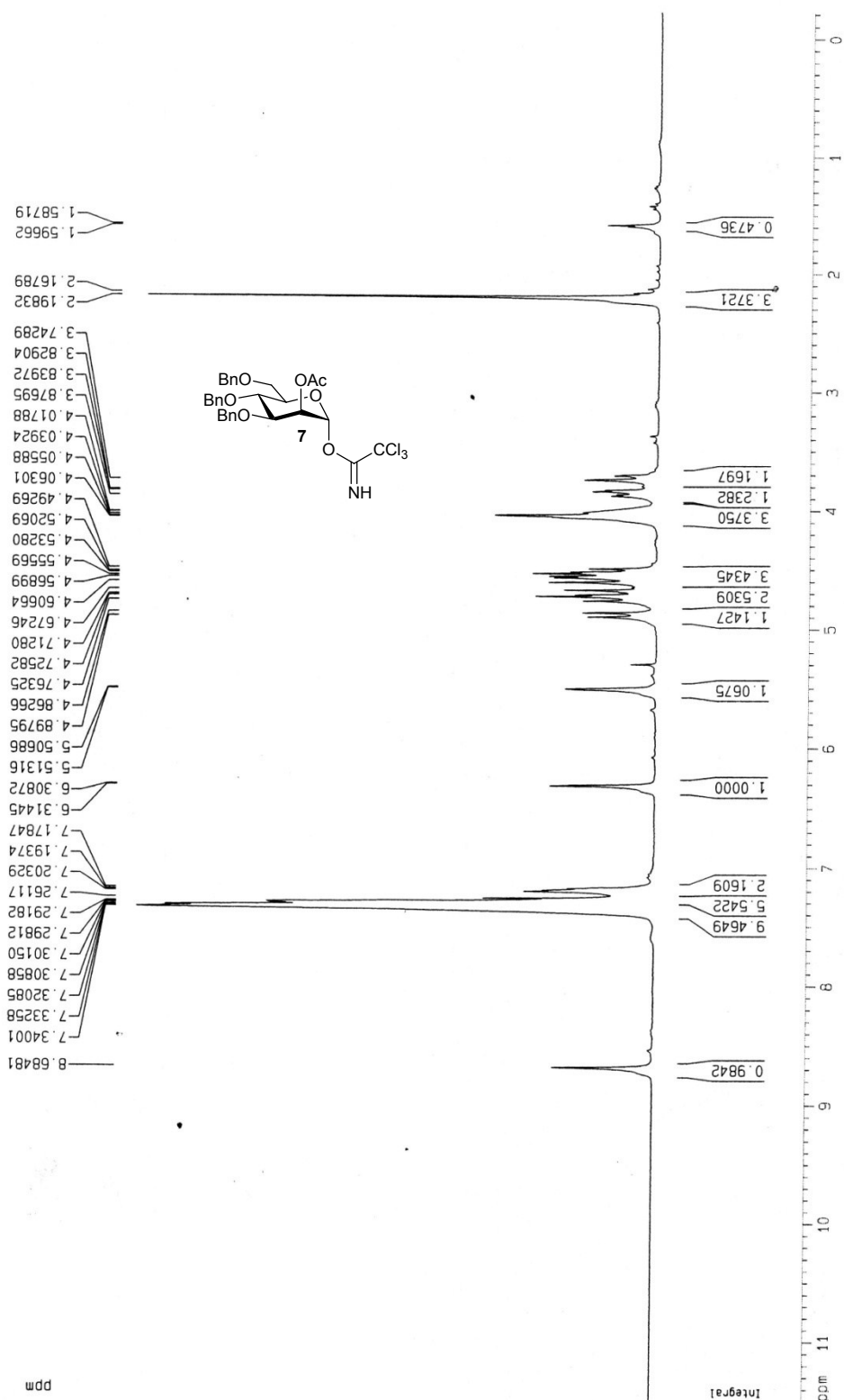
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Time 14.01
INSTRUM spect
PROBHD 5 mm PABBO-90
PULPROG zgpg30
TD 32768
SOLVENT CDCl3
NS 1725
DS 4
SWH 21929.824 MHz
FIDRES 0.669245 Hz
AQ 0.7471104 sec
RG 327.68
DM 22.800 usec
DE 6.50 usec
TE 30.50
D1 2.00000000 sec
D11 0.03000000 sec
D12 1.00
===== CHANNEL f1 =====
SFO1 75.4752949 MHz
NUC1 13C
P1 12.00 usec
PL1 34.00000000 W
===== CHANNEL f2 =====
SFO2 300.1312005 MHz
NUC2 1H
P2 12.00 usec
PL2 34.00000000 W
===== CHANNEL f3 =====
SFO3 90.00 usec
PL3 0.1211001 W
===== CHANNEL f4 =====
SFO4 90.00 usec
PL4 0.1211001 W
F2 - Processing parameters
SI 32768
SF 75.4677424 MHz
WDW EM
SSB 0
GB 0
PC 1.40



BGC-1-MM1-1H

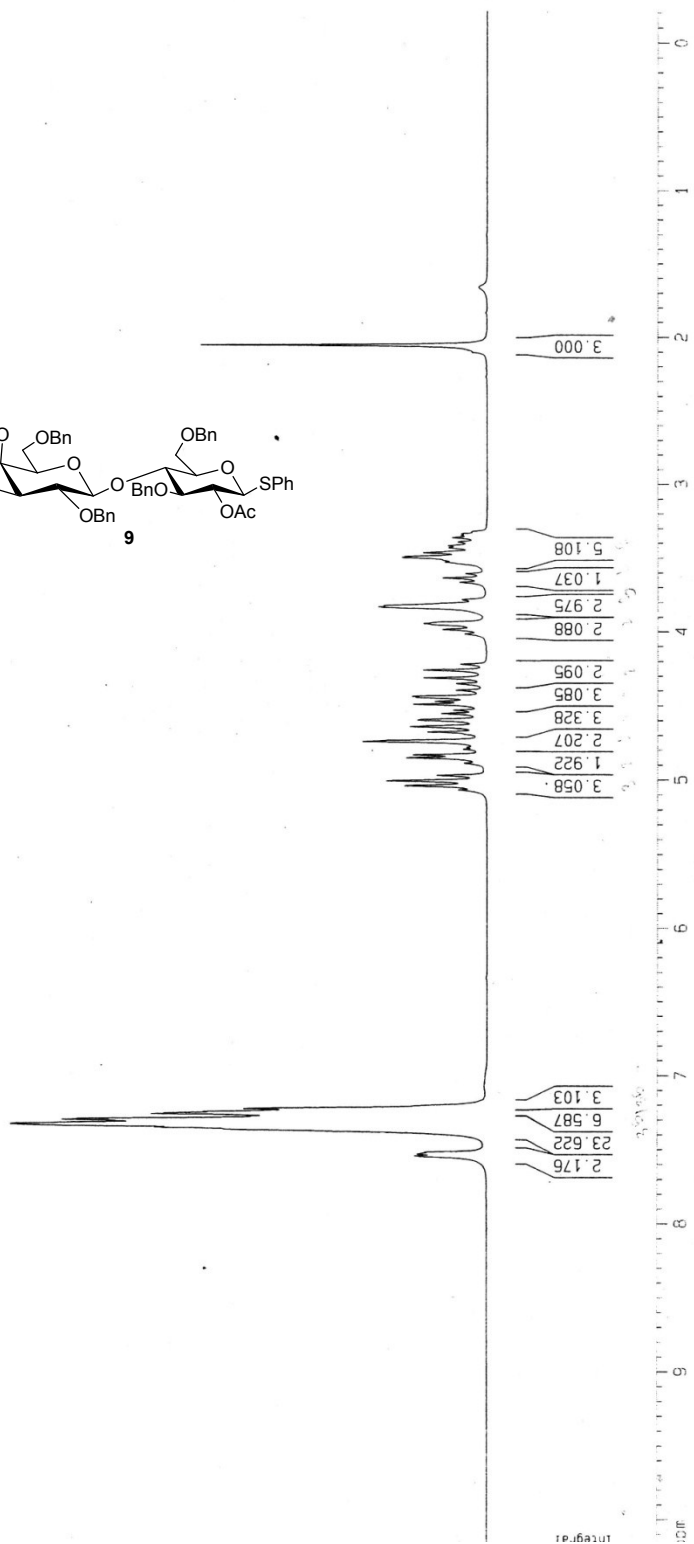
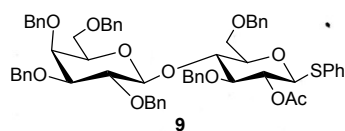


RG (0) - MMMLD25-1H



RG (0) - PM3-1H

7.54855
7.54334
7.53148
7.51913
7.36212
7.34987
7.32561
7.29740
7.29297
7.27682
7.25968
7.25418
7.24449
7.22427
5.03885
5.00561
4.96948
4.85093
4.83131
4.74017
4.67656
4.64222
4.59706
4.55371
4.49121
4.47115
4.44468
4.43694
4.31261
4.25953
3.98444
3.94390
3.83119
3.82209
3.63516
3.52831
3.51415
3.49531
3.46410
2.05267



RG (0) - MMMPM3-13C

Current Data Parameters
NAME RG (0) - MMMPM3-13C
EXPNO 1
PROCNO 2

F2 - Acquisition Parameters
Date_ 20150210
Time 14.17
INSTRUM av300
PROBHD 5 mm BBO BB-1H
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 268
DS 4
SWH 16556.281 Hz
FIDRES 0.252629 Hz
AQ 1.9792372 sec
RG 32768
DM 30.200 usec
DE 6.00 usec
TE 0.0 K
D1 2.00000000 sec
d11 0.03000000 sec
DELTA 1.89999998 sec
MCREST 0.00000000 sec
MCPRK 0.01500000 sec

===== CHANNEL f1 =====
NUC1 13C
P1 11.00 usec
PL1 -1.00 dB
SFO1 75.4752958 MHz

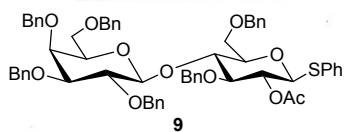
===== CHANNEL f2 =====
CPOPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -2.00 dB
PL12 13.00 dB
PL13 17.00 dB
SFO2 300.1312005 MHz

F2 - Processing parameters
SI 32768
SF 75.4677490 MHz
WDW EN
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

1D NMR plot parameters
CX 254.00 cm
CY 7.00 cm
F1 205.691 ppm
F2 15824.82 Hz
F3 -9.691 ppm
F4 -731.37 Hz
PRCM 9.14093 ppm/cm
-ZCM 689.84546 Hz/cm

21.054

68.247
71.405
72.677
73.175
73.486
74.700
75.415
76.698
77.122
77.546
79.759
80.031
82.279
82.546
86.036
103.048
103.183
127.183
127.417
127.476
127.523
127.583
127.622
127.718
127.794
127.911
127.998
128.098
128.214
128.315
128.424
128.449
128.858
132.258
138.466
138.998
169.500

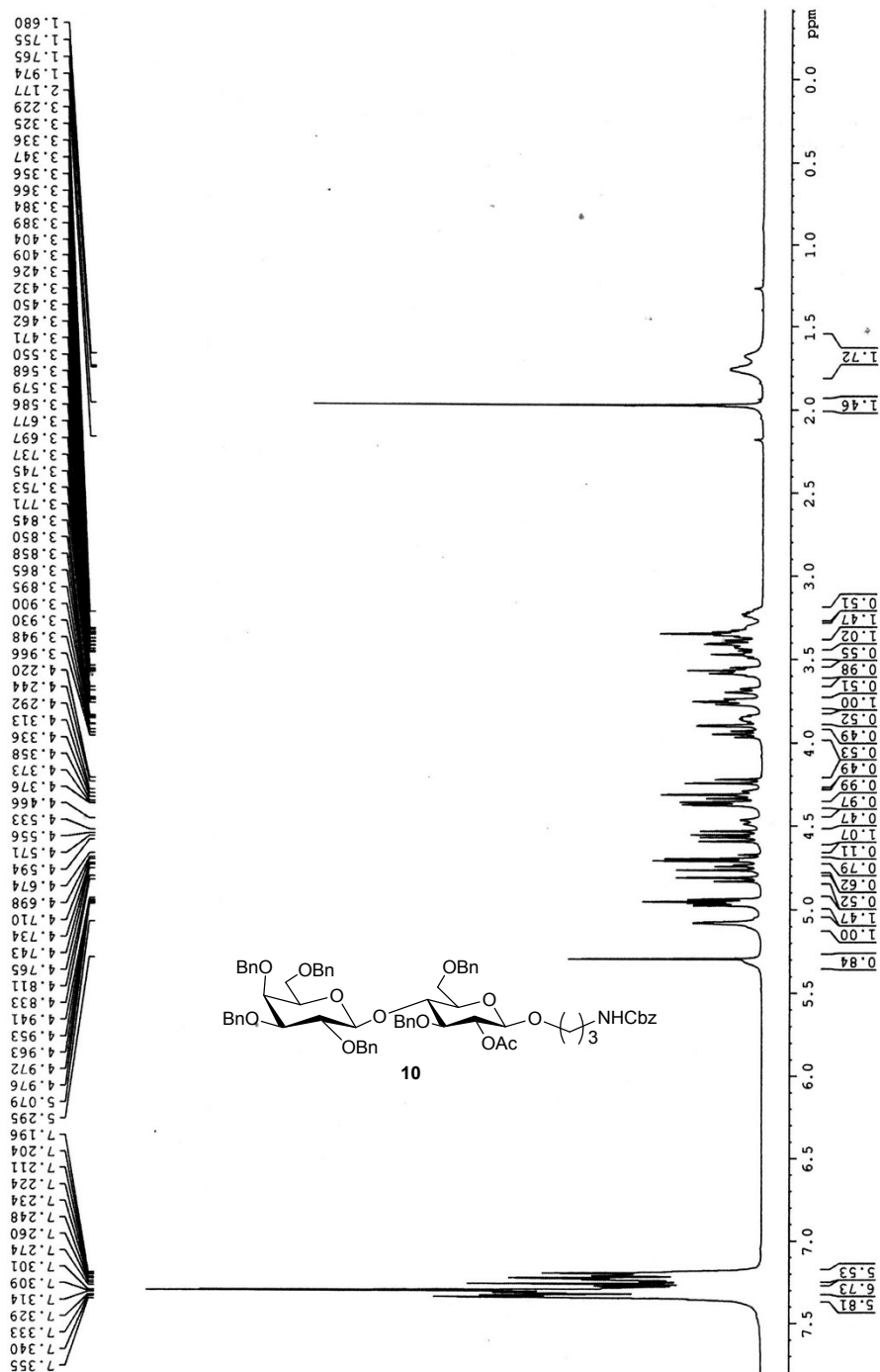


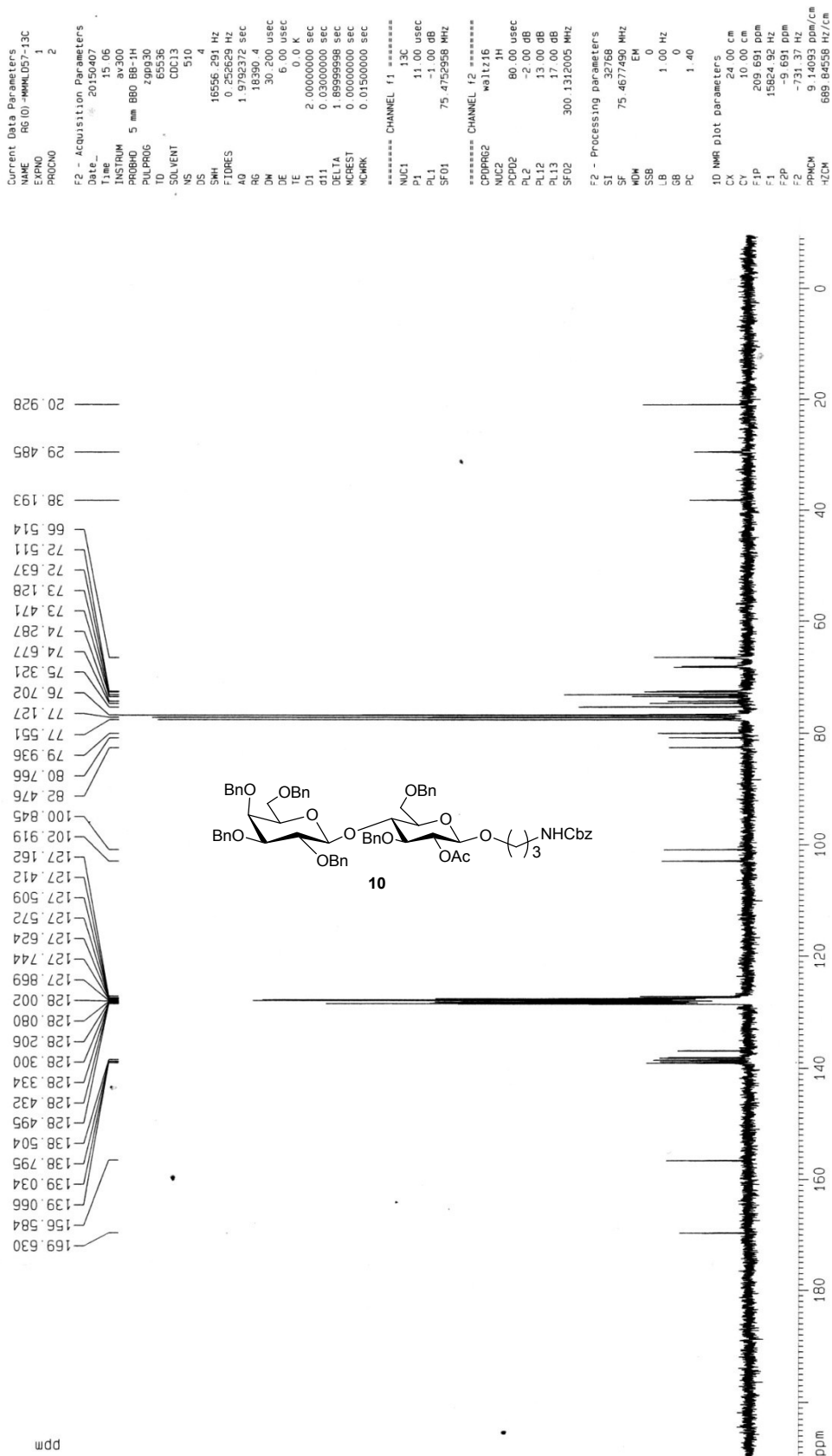
9

ppm

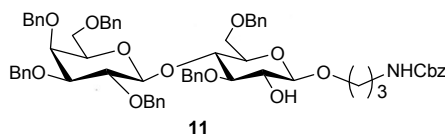
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SADA.LAC1-1H (SKD) 500MHz

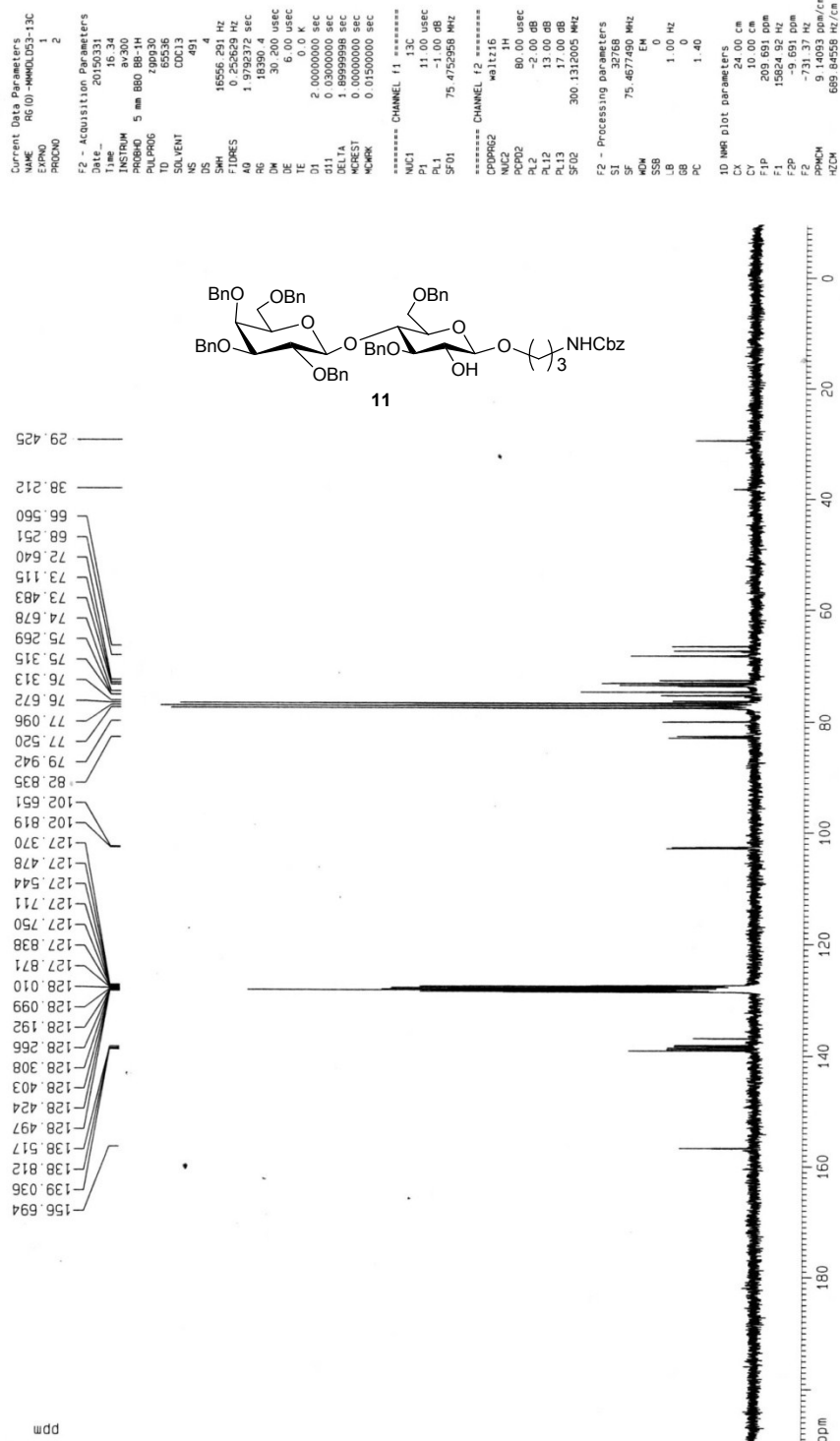




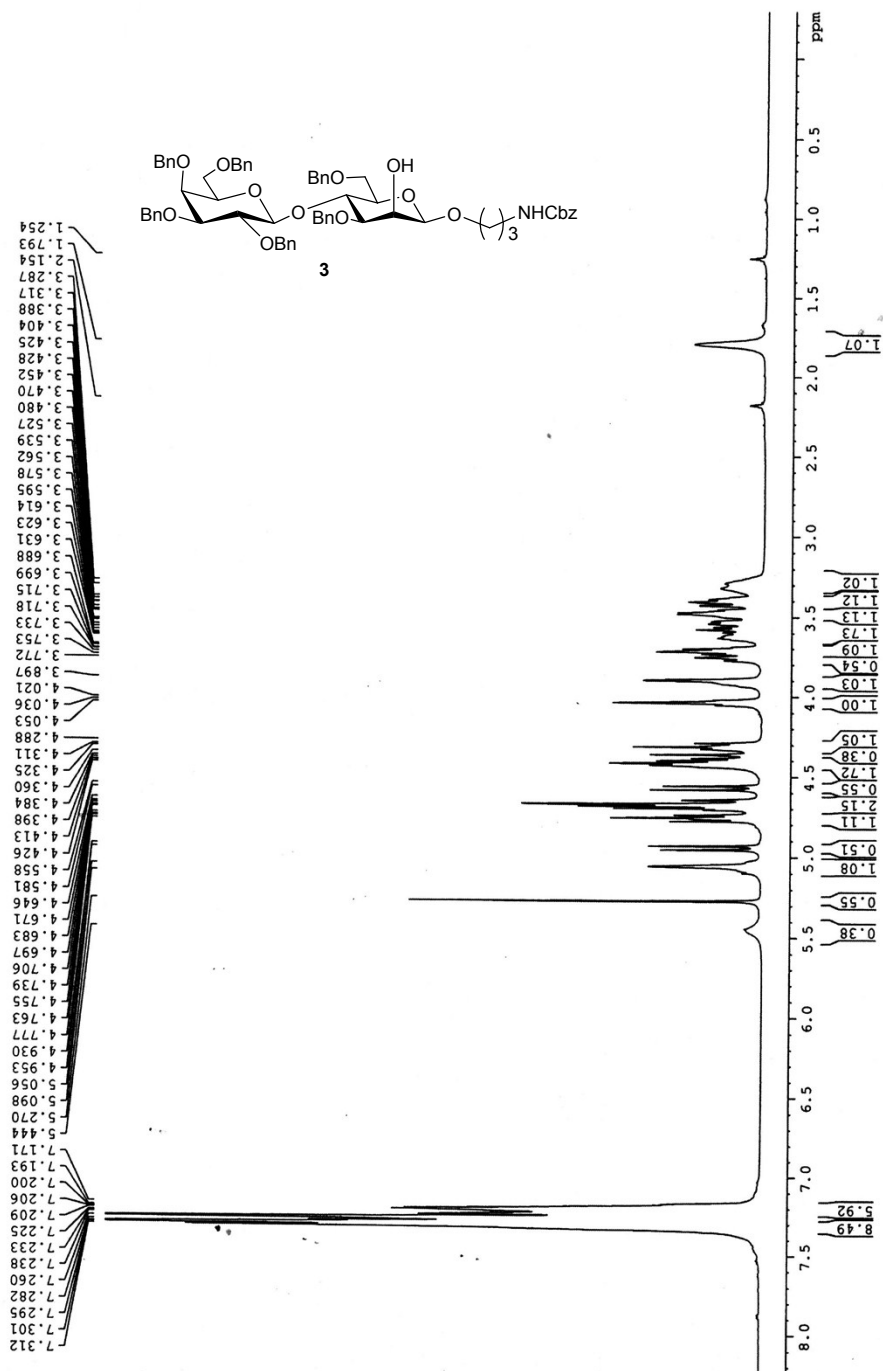
SADA.MM.LAC2-1H (SKD) 500MHz.



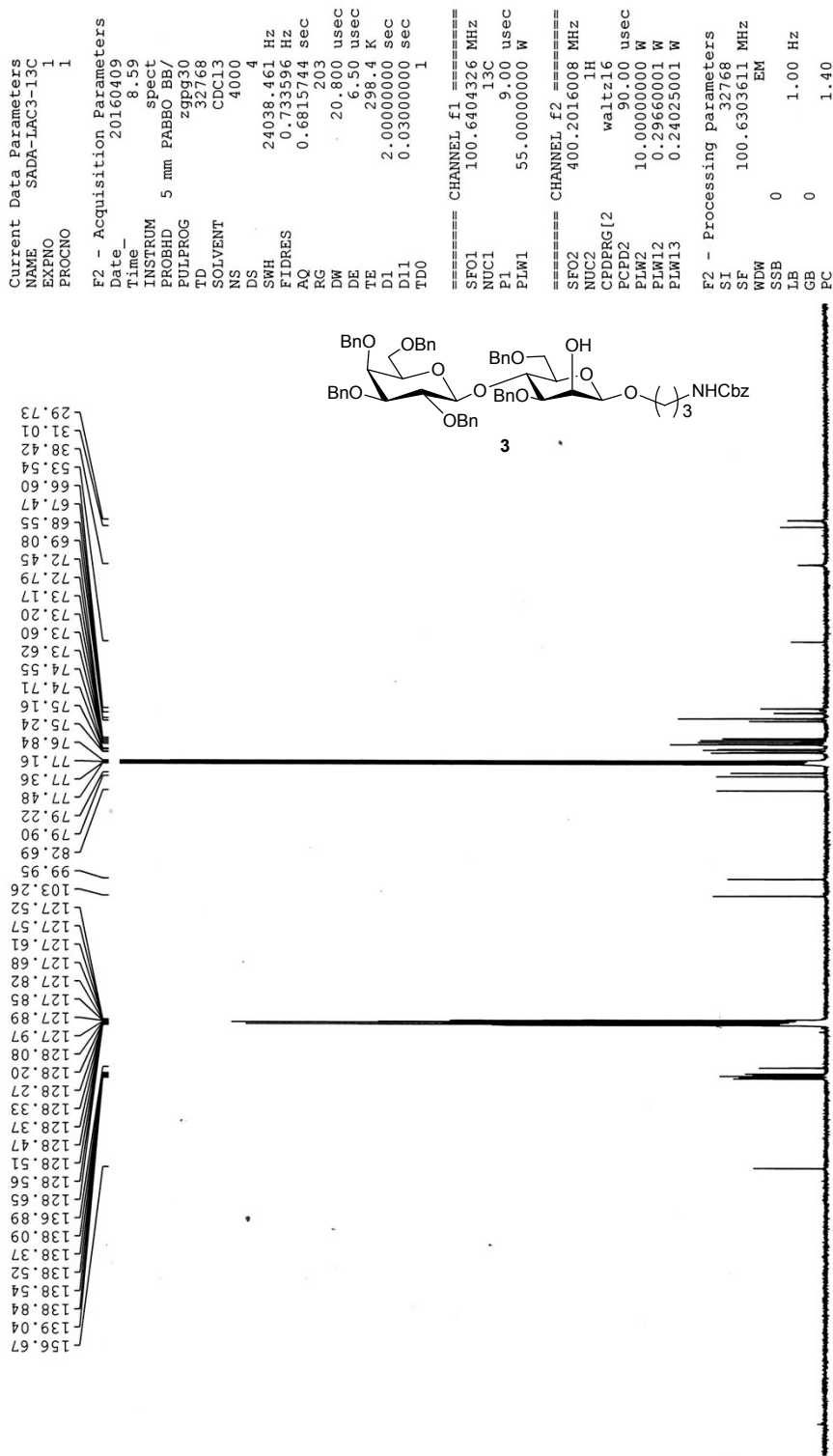
RG (0) - MMOLDS3-13C

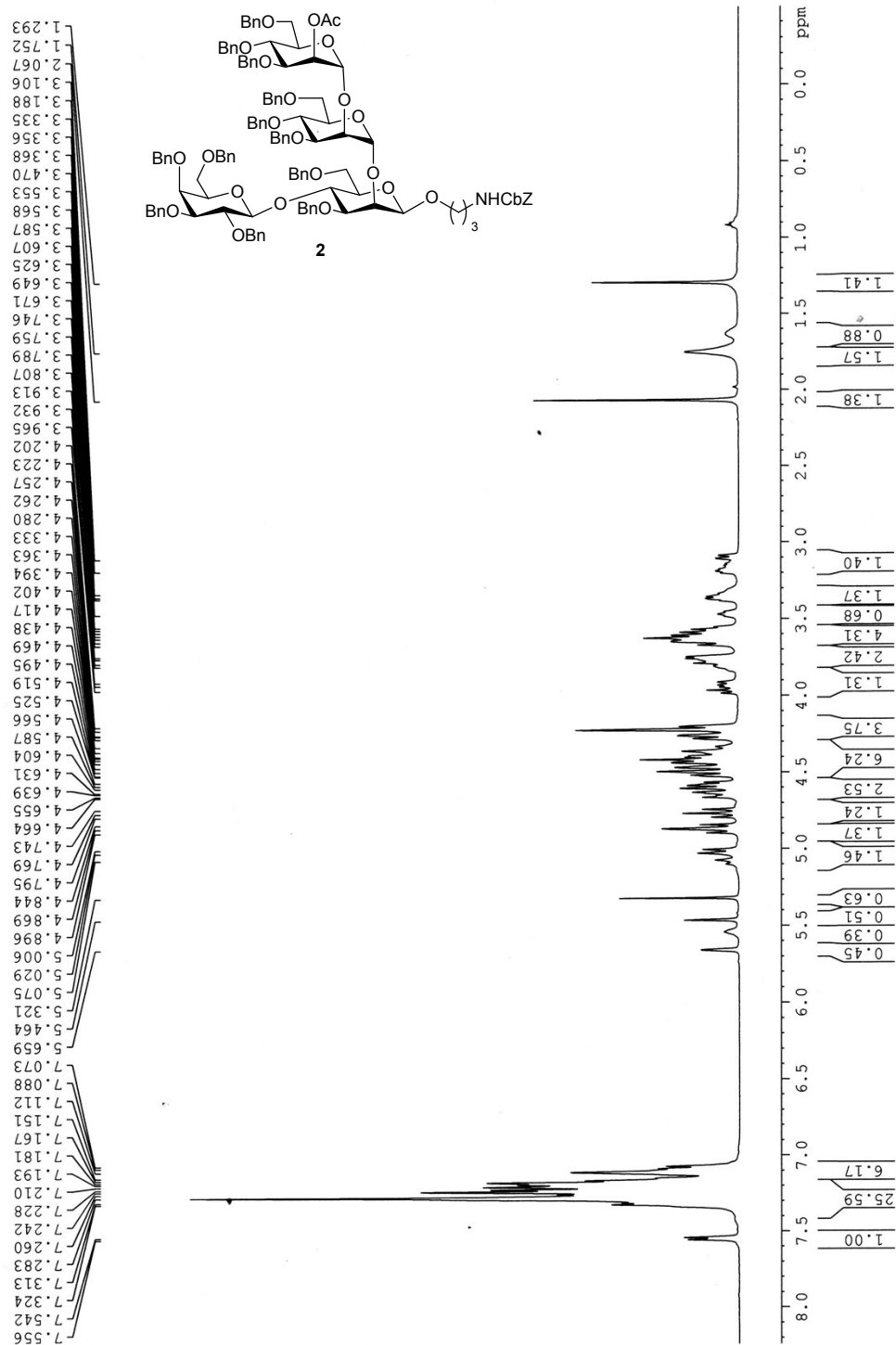


SADA.LAC3-1H (SKD) 500MHz

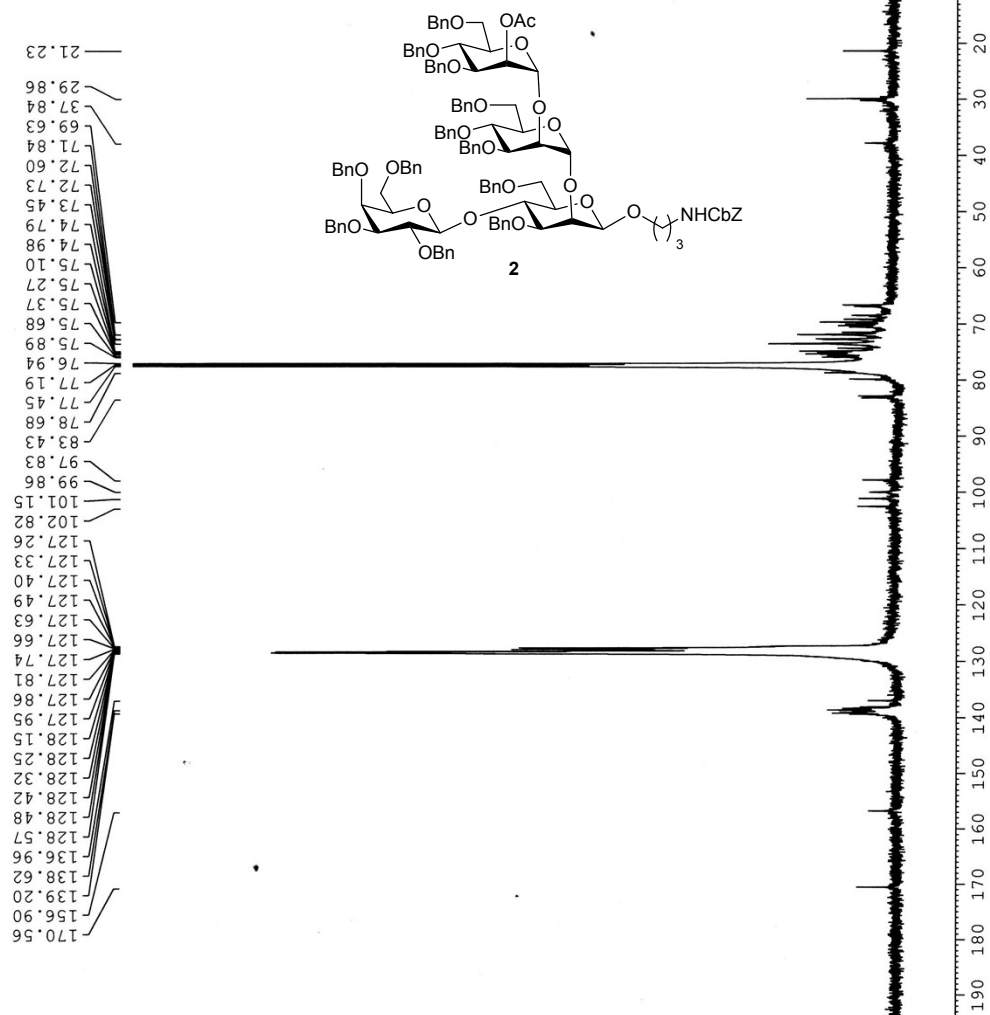


SADA-LAC3-13C (SR) 400





BGC-1-SP-13C (SR)



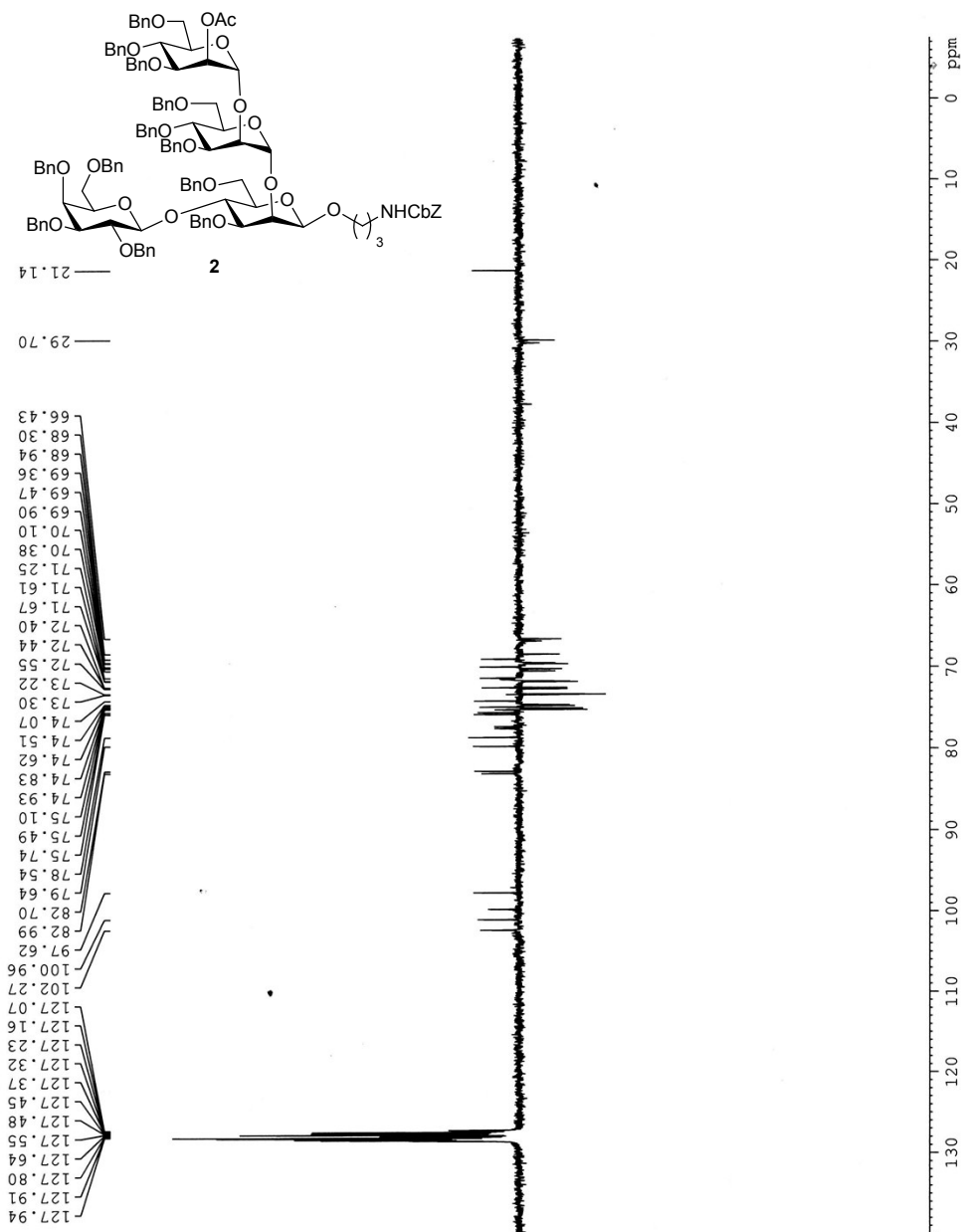
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EXPNO         1
PROCNO        1
Date_         20160108
Time          18.49
INSTRUM       spect
PROBHD        5 mm FAPBO BB-
PULPROG       zgpg30
TD            32768
SOLVENT       CDCl3
NS            20000
DS            4
SWH           29761.904 Hz
FIDRES        0.908261 Hz
AQ            0.5505524 sec
RG            32
DE            16.800 usec
TE            300.0 K
D1            2.00000000 sec
D11           0.03000000 sec
TD0           1

===== CHANNEL f1 =====
NUC1          13C
P1            9.88 usec
PL1           0.50 dB
PL1W          82.16106415 W
SF01          125.7703643 MHz

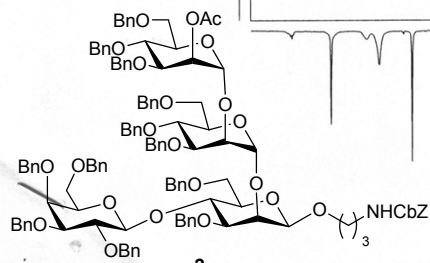
===== CHANNEL f2 =====
CPDPRG2       waltz16
NUC2          1H
PCPD2         80.00 usec
PL2           1.00 dB
PL12          15.34 dB
PL13          20.00 dB
PL1W          15.50318813 W
PL12W         0.57071728 W
PL13W         0.19517358 W
SF02          500.1320005 MHz
SI            16384
SF            125.7577678 MHz
WDW           EM
SSB           0
LB            1.00 Hz
GB            0
PC            1.00
  
```

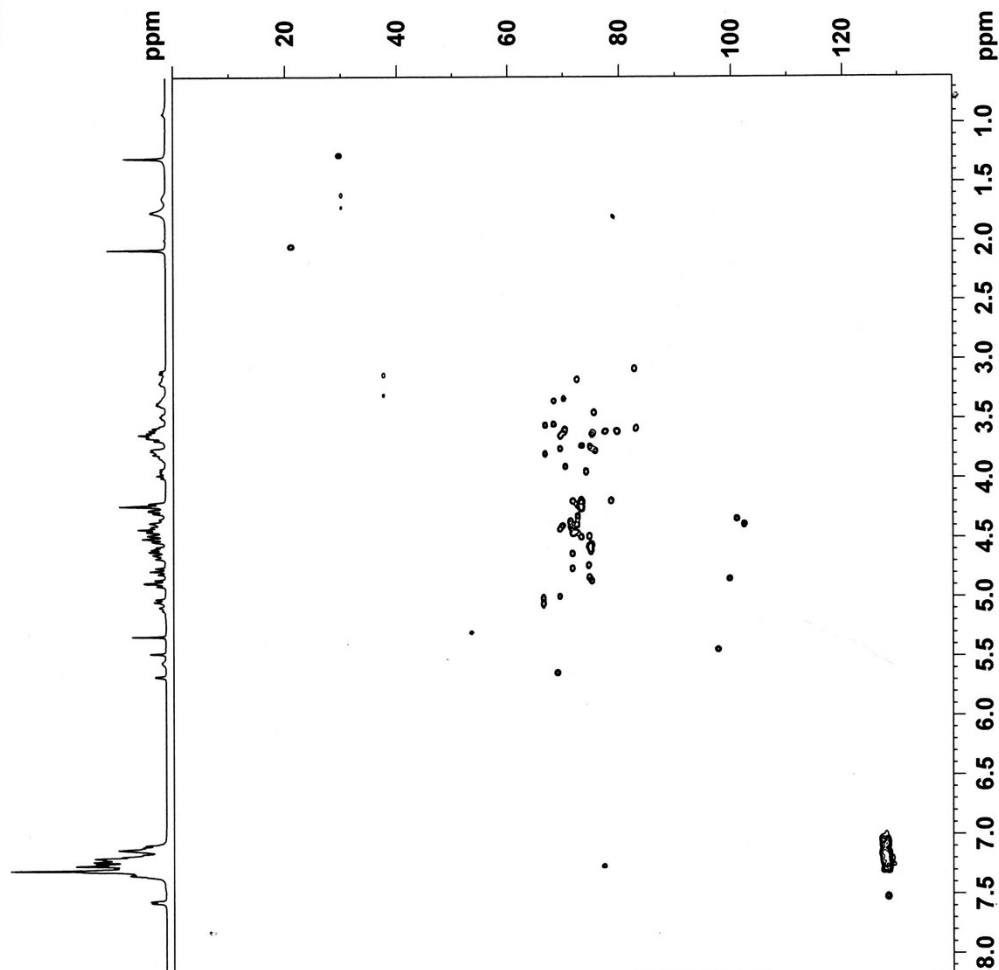
BGC-1-SP-DEPT135 (SR)



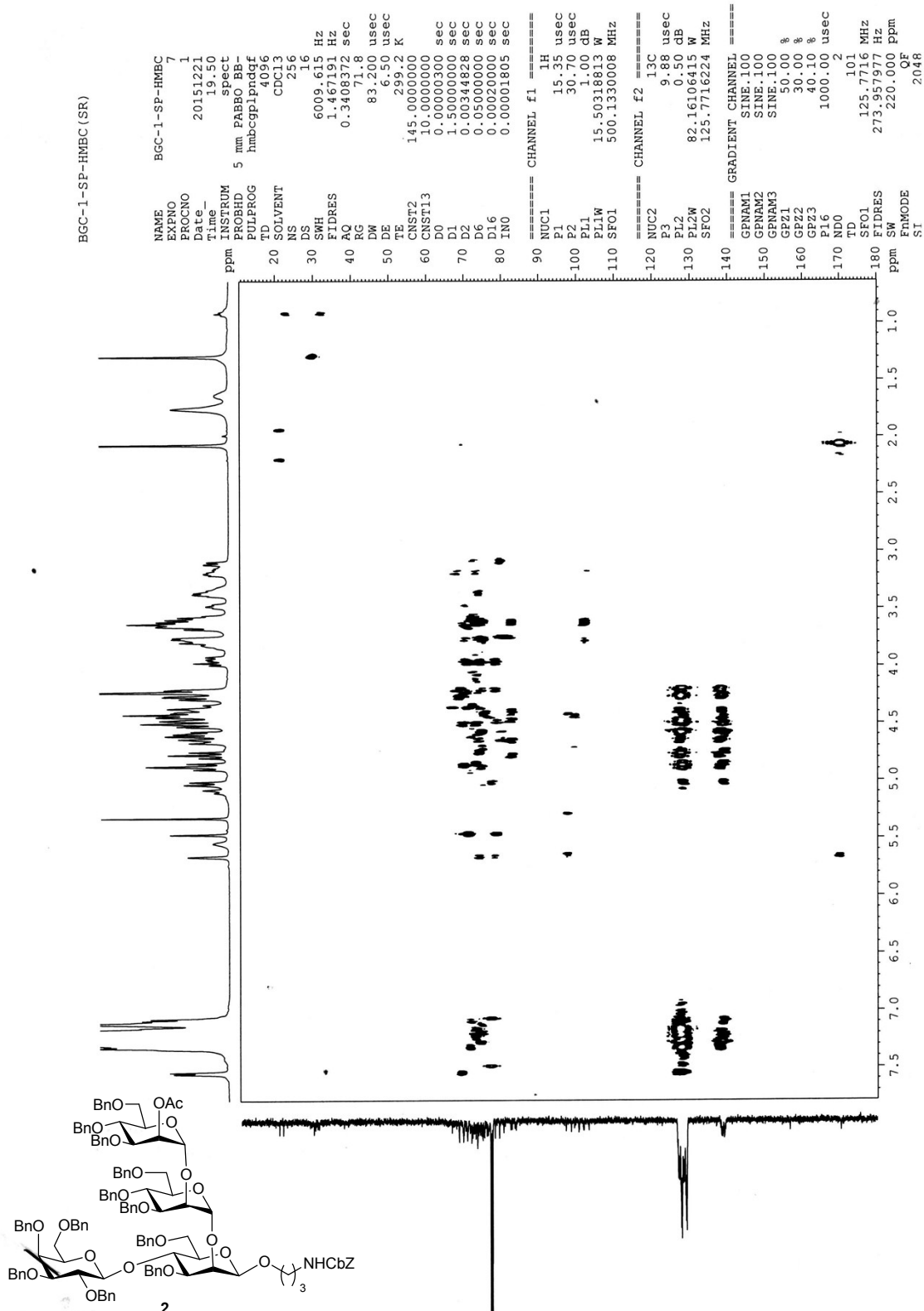
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EXPNO 1
PROCNO 1
Date_ 20151208
Time 19.23
INSTRUM spect
PROBHD 5 mm PABBO B1
PULPROG zgpg30
DEPT135
3718
SOLVENT CDCl3
NS 683
DS 4
SWH 29761.904 Hz
FIDRES 0.908261 Hz
AQ 0.5505524 sec
RG 57
DE 16.800 usec
TE 300.1 K
CNST2 145.0000000 sec
D1 2.00000000 sec
D2 0.0034828 sec
D12 0.00002000 sec
TD0 1
===== CHANNEL f1 =====
NUC1 13C
P1 9.88 usec
P2 19.76 usec
PL1 0.50 dB
PL1W 82.16106415 W
SF01 125.7703643 MHz
===== CHANNEL f2 =====
CEDEFG2 waltz16
NUC2 1H
P3 15.35 usec
P4 30.70 usec
PCPD2 80.00 usec
PL2 1.00 dB
PL12 15.34 dB
PL2W 15.50318813 W
PL12W 0.57071728 W
SF02 500.1320005 MHz
SI 16384
SF 125.7577890 MHz
EN
GB 1.00 Hz
PC 1.20

NAME BGC-1-SP-COSY



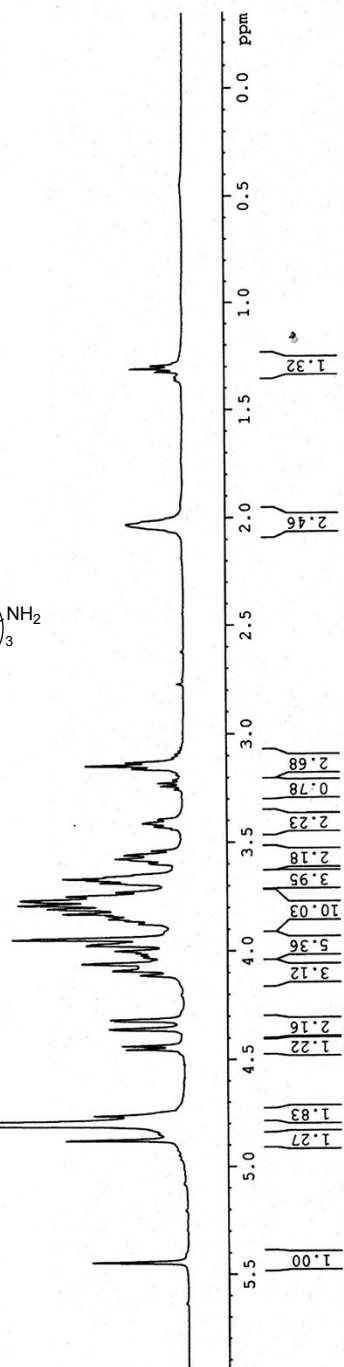
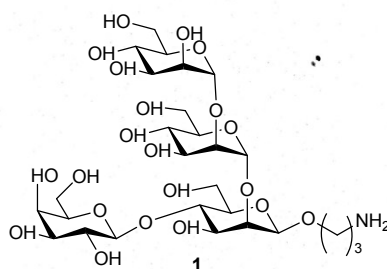
[illegible]

BGC-1-SP-HMBC (SR)

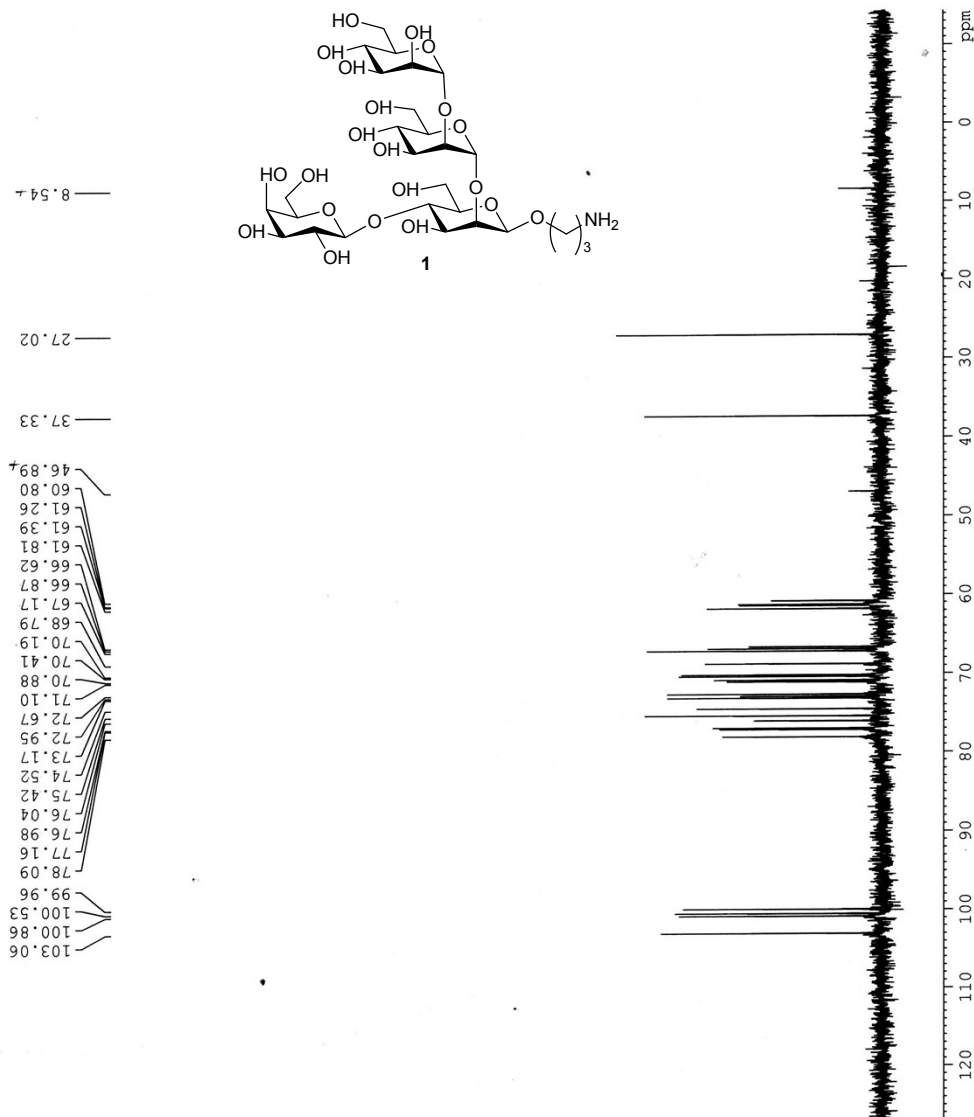


BGC-1-MH3-1H (SR) 500MHz

5.444
4.876
4.800
4.761
4.452
4.436
4.357
4.320
4.315
4.089
4.056
4.010
3.998
3.973
3.960
3.945
3.940
3.859
3.851
3.845
3.836
3.826
3.802
3.786
3.764
3.752
3.745
3.727
3.692
3.685
3.673
3.665
3.657
3.647
3.573
3.557
3.558
3.144
3.130
2.029
1.310



BGC-1-MH3-13C (SR)

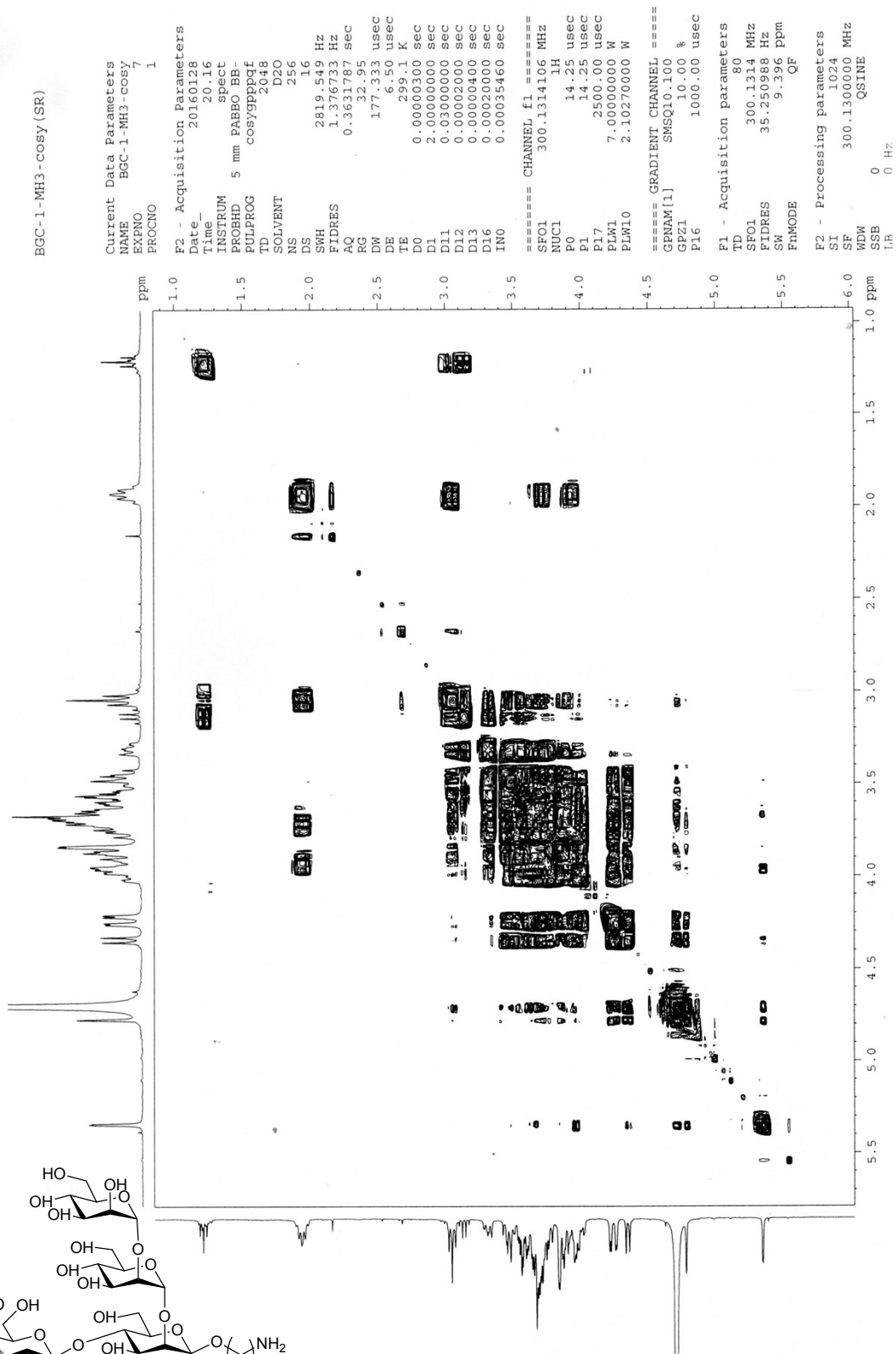
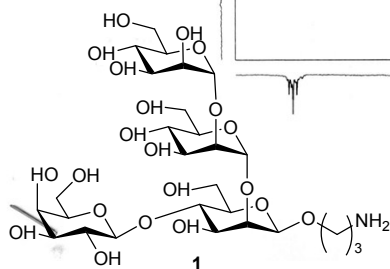


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PROCNO        1
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Time          19.21
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PROBHD        5 mm PABBO BB-
PULPROG       zgpg30
TD            32768
SOLVENT       D2O
NS            30000
DS            4
SWH           36231.883 Hz
FIDRES        1.105709 Hz
AQ            0.4522484 sec
RG            32
DW            13.800 usec
DE            6.50 usec
TE            299.4 K
D1            2.00000000 sec
D11           0.03000000 sec
TD0           1

===== CHANNEL f1 =====
NUC1          13C
P1            9.88 usec
PL1           0.50 dB
PL1W          82.16106415 W
SFO1          125.7703643 MHz

===== CHANNEL f2 =====
CPDPRG2       waltz16
NUC2          1H
PCPD2         80.00 usec
PL2           1.00 dB
PL12          15.34 dB
PL13          20.00 dB
PL1W          15.50318813 W
PL12W         0.57071728 W
PL13W         0.19517358 W
SFO2          500.1320005 MHz
SI            16384
SF            125.7577807 MHz
WDW           EM
SSB           0
LB            1.00 Hz
GB            0
PC            1.00
  
```



BGC-1-MH3-HSQC (SR)

