

Dammarane-type saponins from steamed leaves of *Panax Notoginseng*

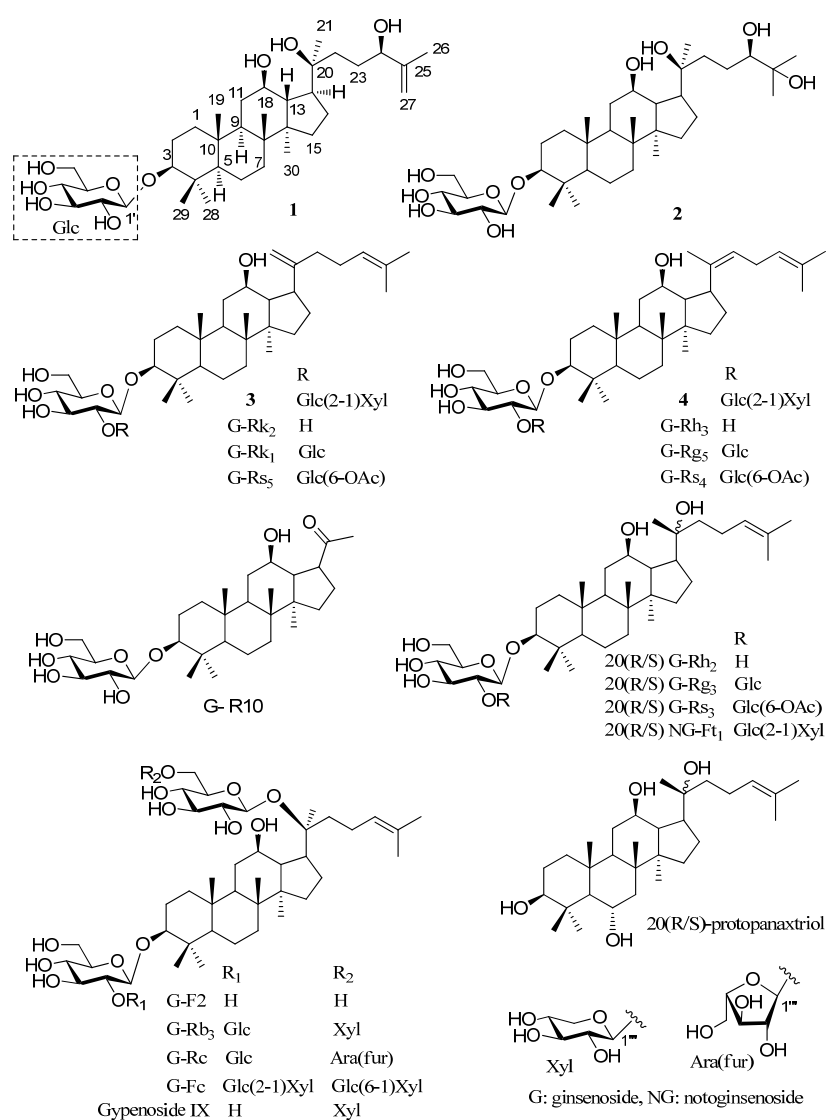
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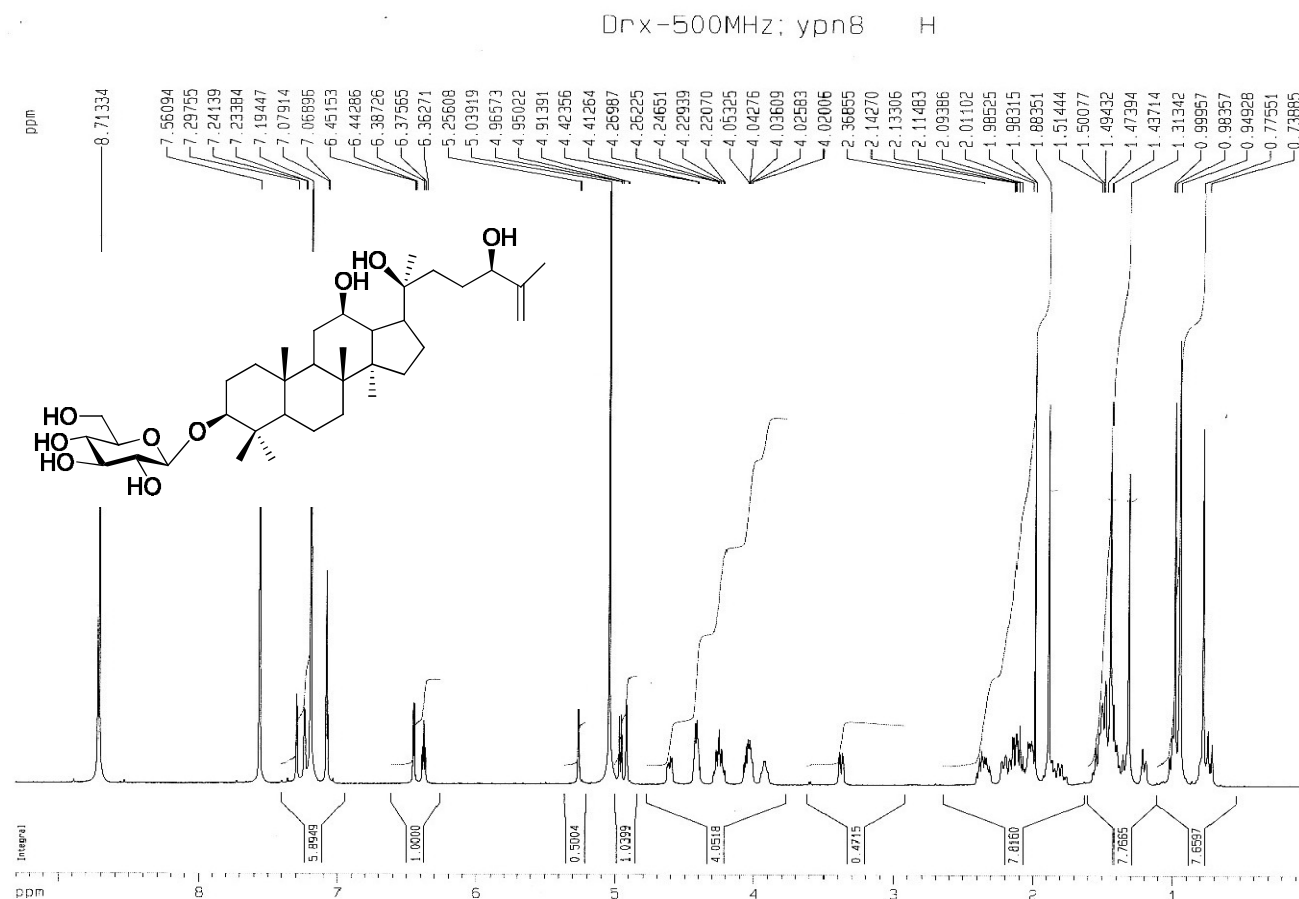
Structures of compounds

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S2 ¹H NMR spectrum of notoginsenosides SFt₁ (1) in C₅D₅N



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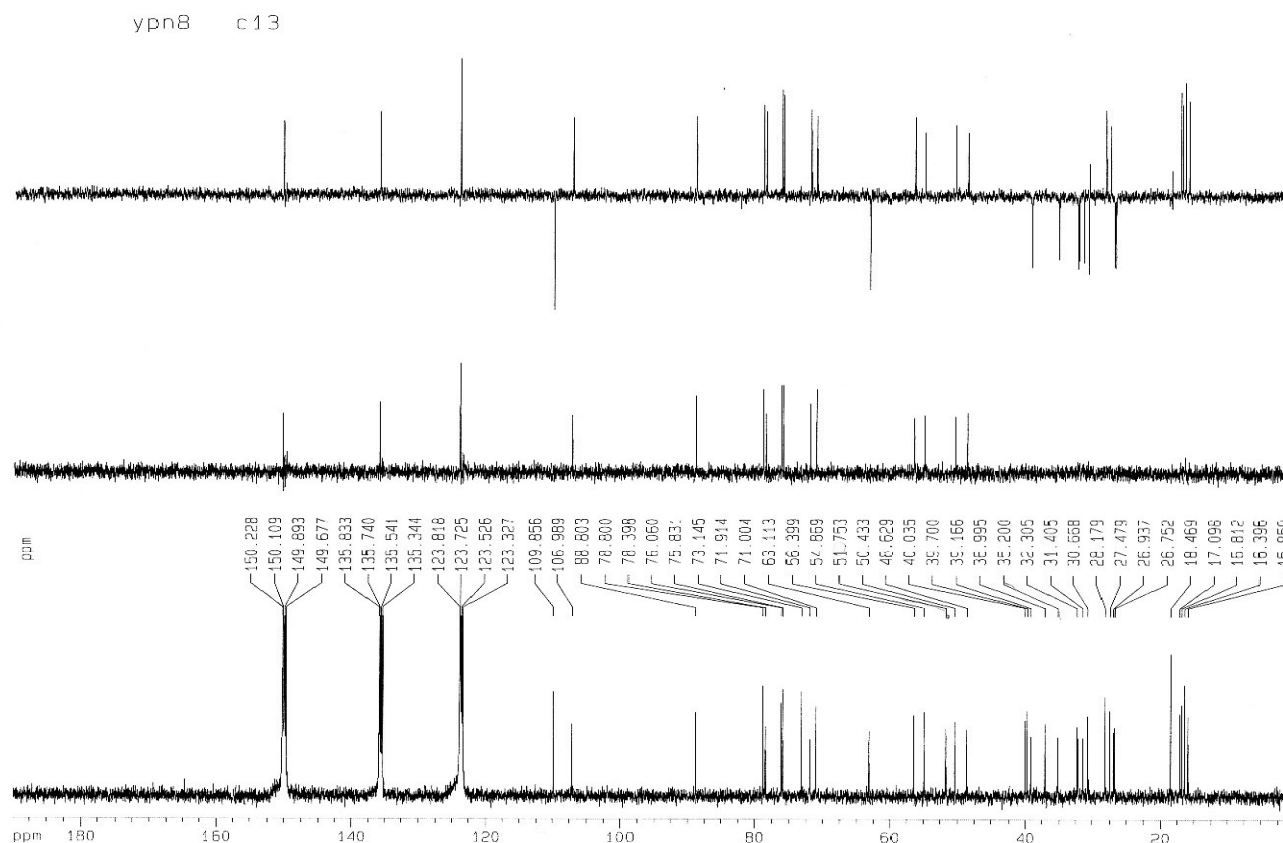
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CY 32.00 cm
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F2P 0.052 ppm
F2 26.17 Hz
PPMCH 0.42066 ppm/cm
HZCM 210.34119 Hz/cm

S3 ^{13}C NMR and DEPT spectra for notoginsenosides SFT₁ (1) in C₅D₅N



Current Data Parameters
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 EXPNO 22
 PROCNO 1

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 TO 32768
 SOLVENT Pyr
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 F1 23889.20 Hz
 F2P -0.000 ppm
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822 3237
 823 26.97

ypn8 - hsqc

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EXPNO 1
PROCNO 1

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===== CHANNEL f3 =====

NAME ypn8
EXPNO 1
PROCNO 1
SOLVENT Acetone
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DS 4
SWH 4006.403 MHz
FIDRES 0.390338 Hz
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DE 6.00 mm
TE 300.2 K

F3 - Acquisition Parameters

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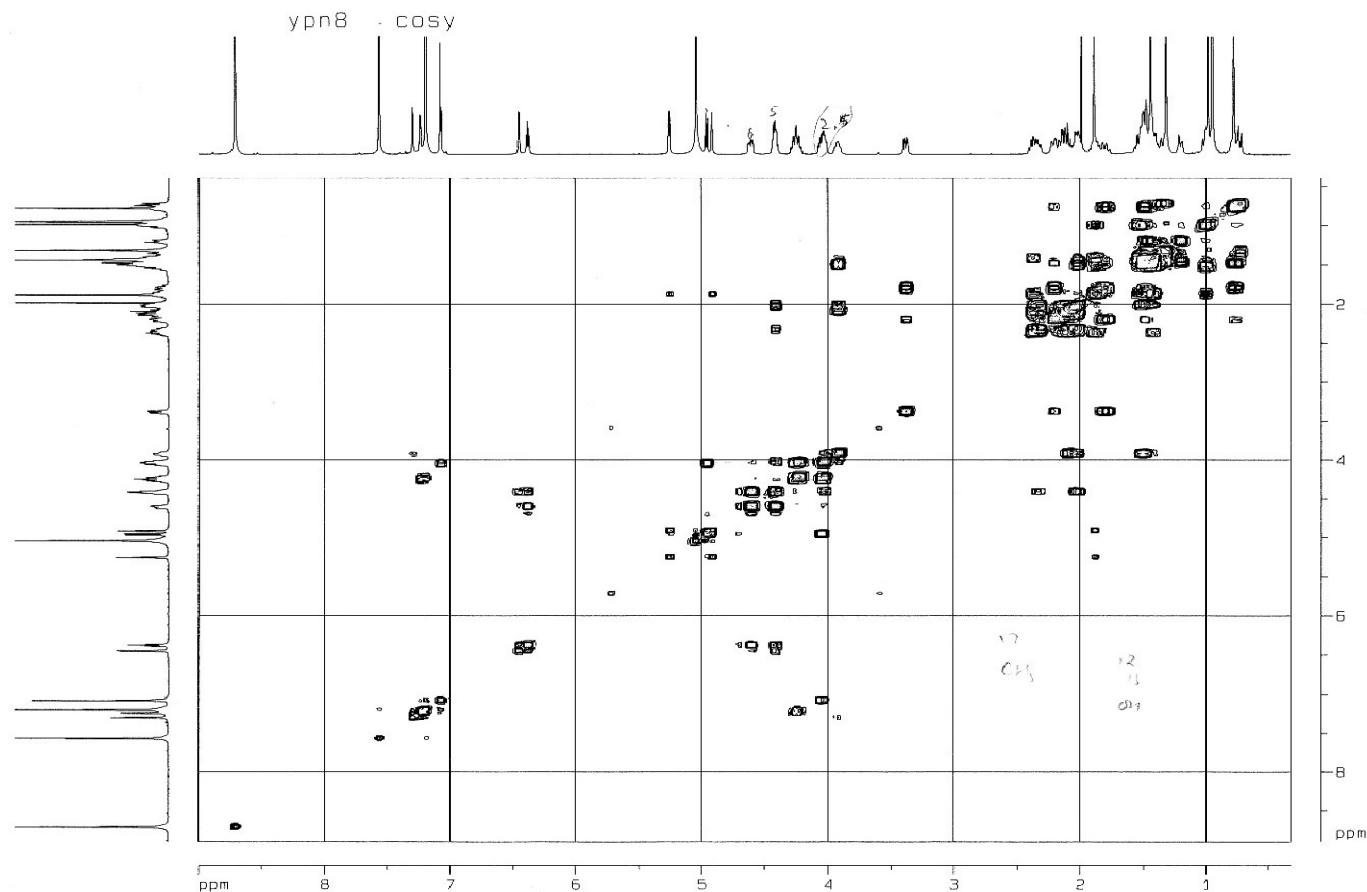
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F94 4.00 Hz
F95 4.00 Hz
F96 4.00 Hz
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F98 4.00 Hz
F99 4.00 Hz
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S5 ^1H - ^1H COSY spectrum of notoginsenosides SFt₁ (1) in C₅D₅N



```

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EXPNO     25
PROCNO    1

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SOLVENT   Py
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GPA2       0.00 %
GPA3       0.00 %
GPA4       0.00 %
GPA5       0.00 %
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PC         1.00

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F2PL2      0.318 ppm
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F1PL1      4654.4 Hz
F1PL2      0.359 ppm
F1HL       194.69 Hz
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PFILENAME      1

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INTEGRATION    30 MHz: 3000 Hz
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P1             4.000000 Hz
P2             2.195000 Hz
P3             0.2077777 Hz
P4             16.120000 Hz
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P8             0.0000000000000000
P9             1.3500000000000000
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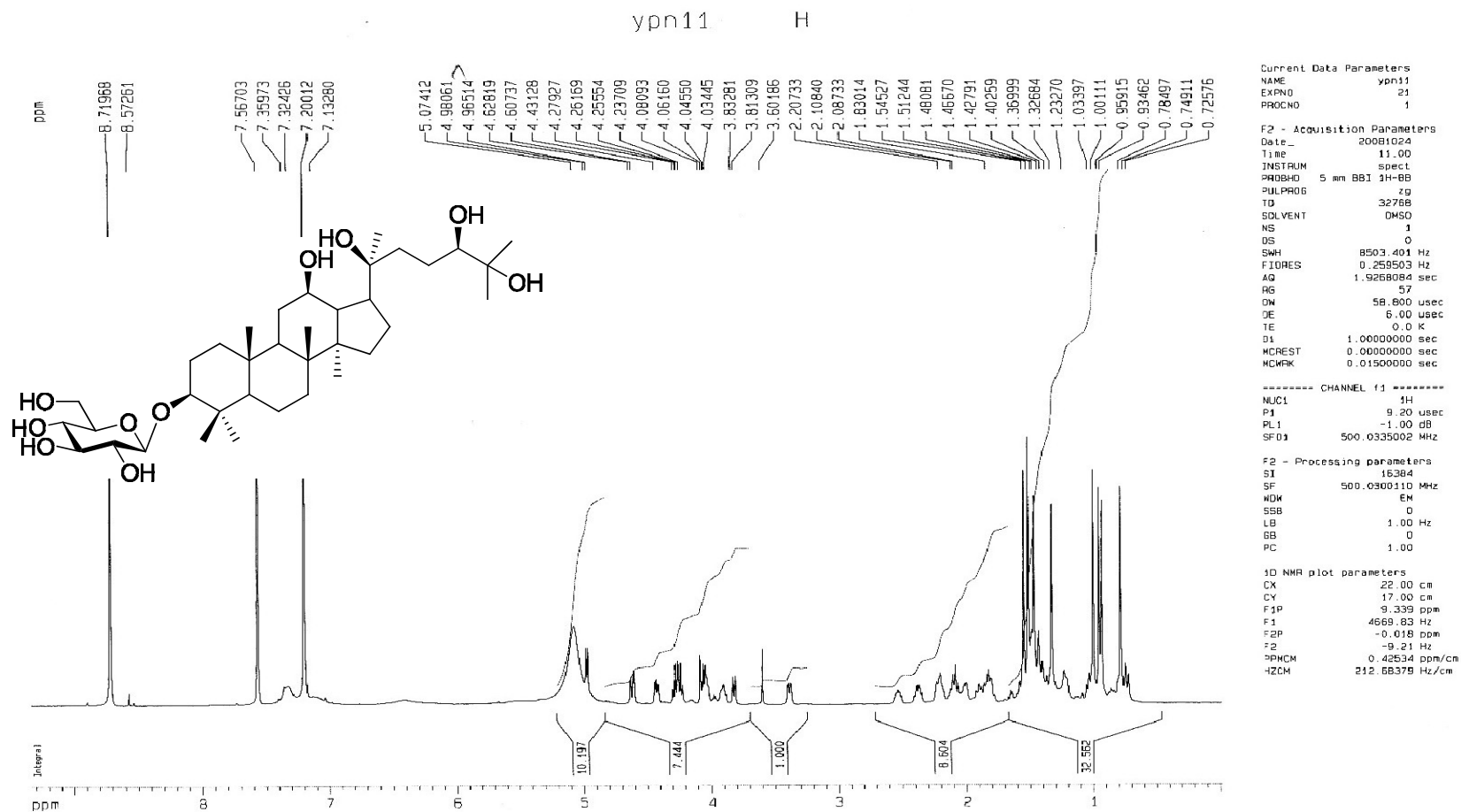
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NB            1.400000 Hz

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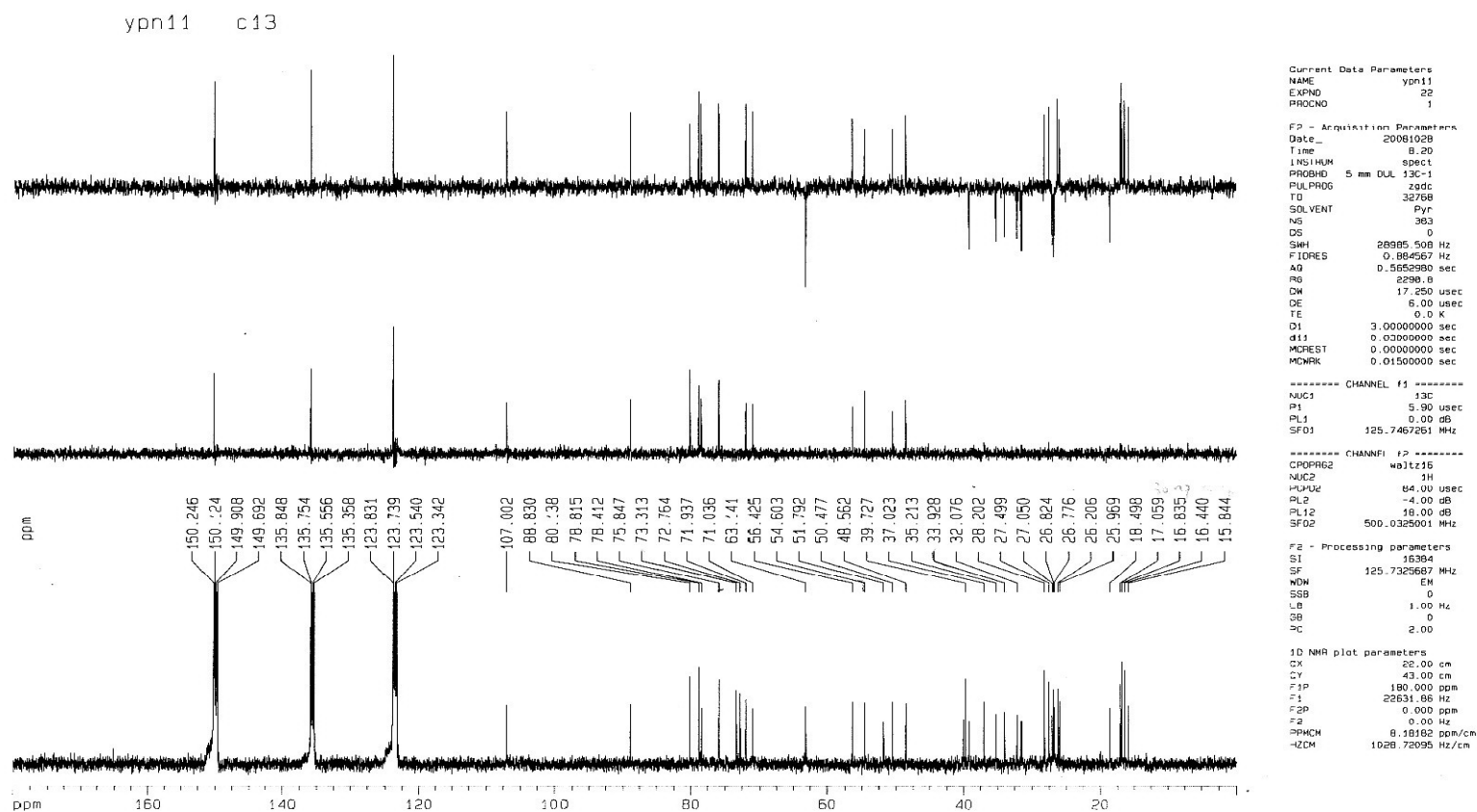
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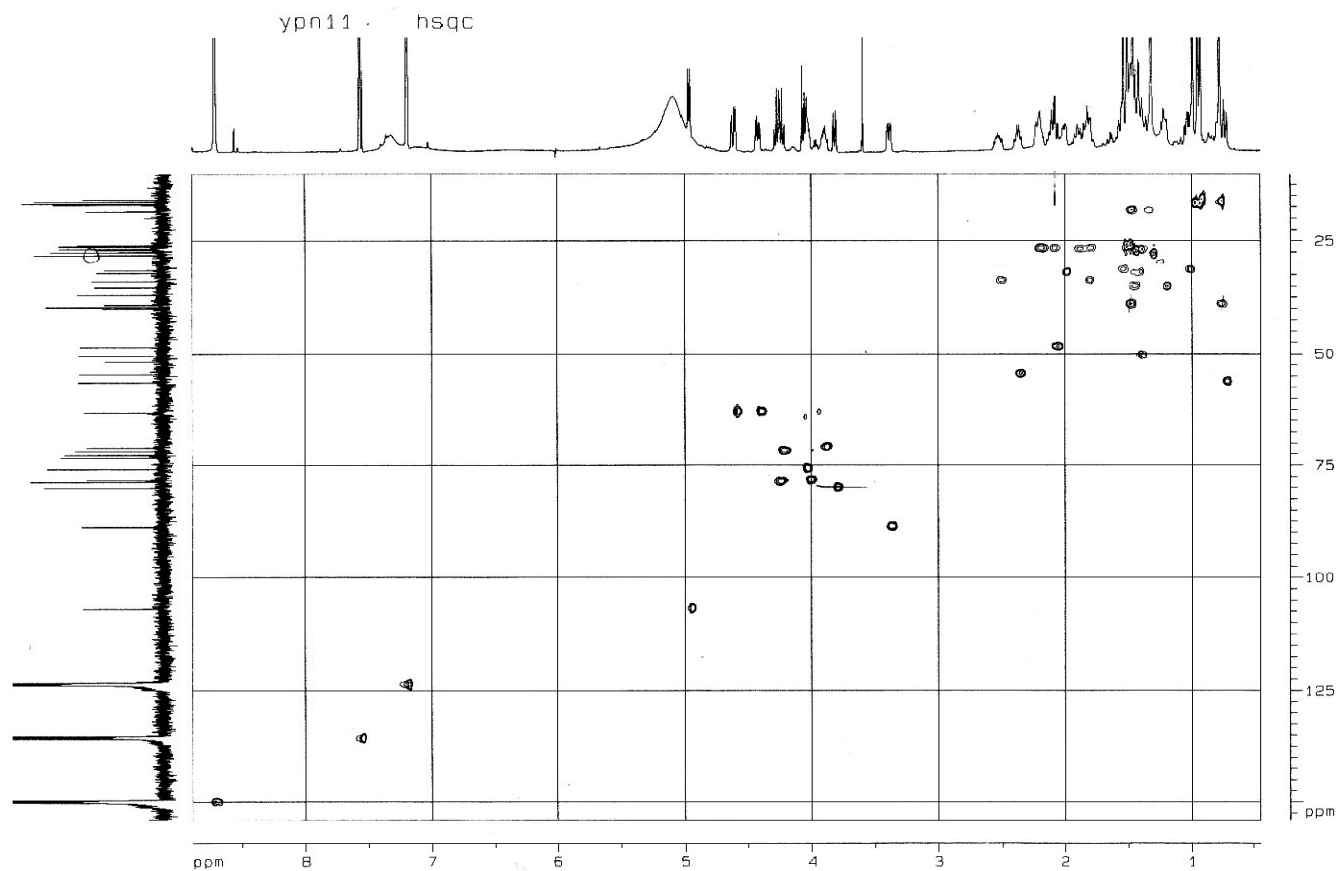
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S7 ^1H NMR spectrum of notoginsenosides SFT₂ (2) in C₅D₅N

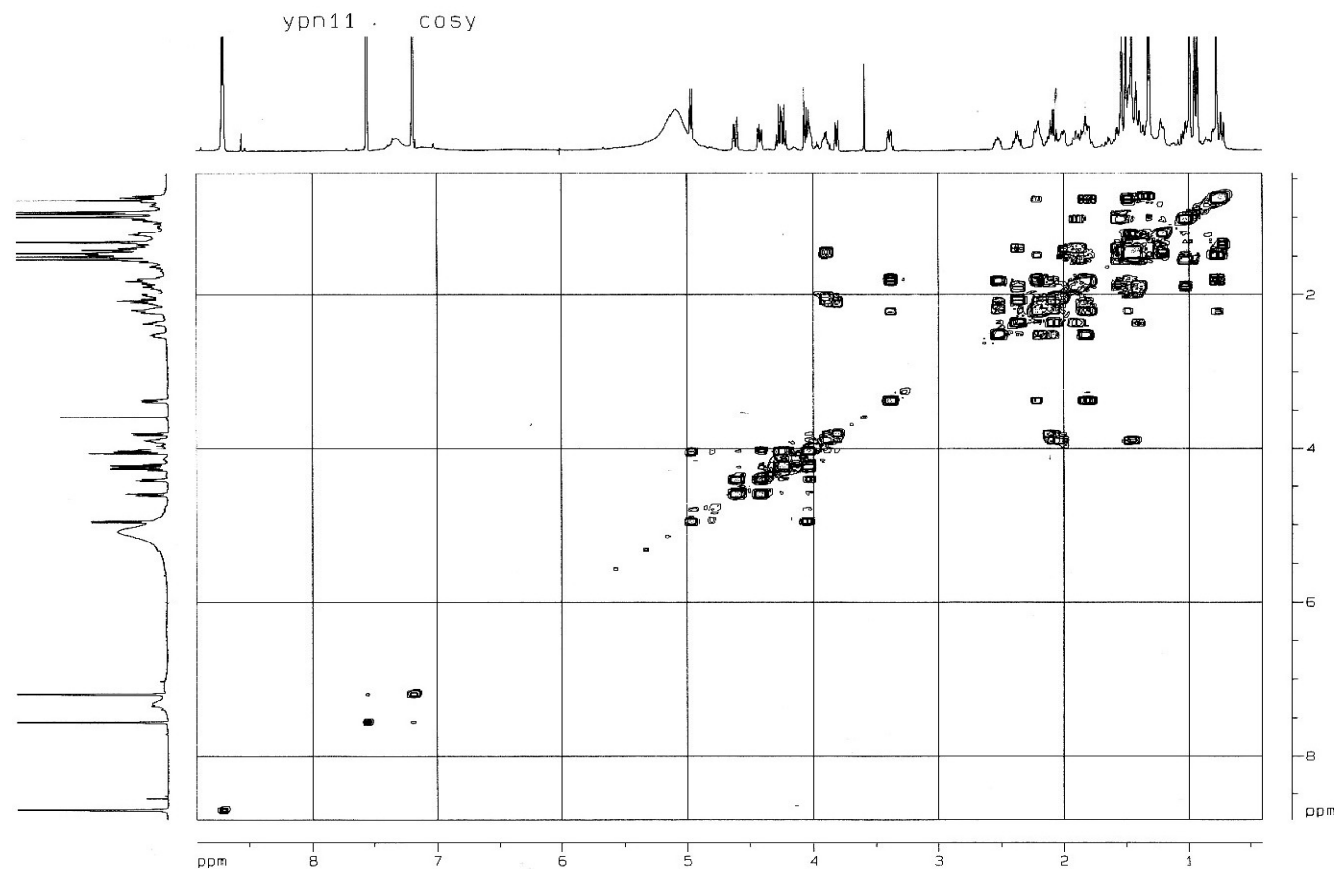


S8 ¹³C NMR and DEPT spectra for notoginsenosides SFT₂ (2) in C₅D₅N



[illegible]

S10 ^1H - ^1H COSY spectrum of notoginsenosides SFt₂ (2) in C₅D₅N



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EXPNO         32
PROCNO        1

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SOLVENT       DMS
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RG            4096
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MCMK          2.0000000 sec

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GPMU3         sine.100
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GP12          0.00 %
GP13          0.00 %
GP14          0.00 %
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GP16          0.00 %
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GP19          40.00 %
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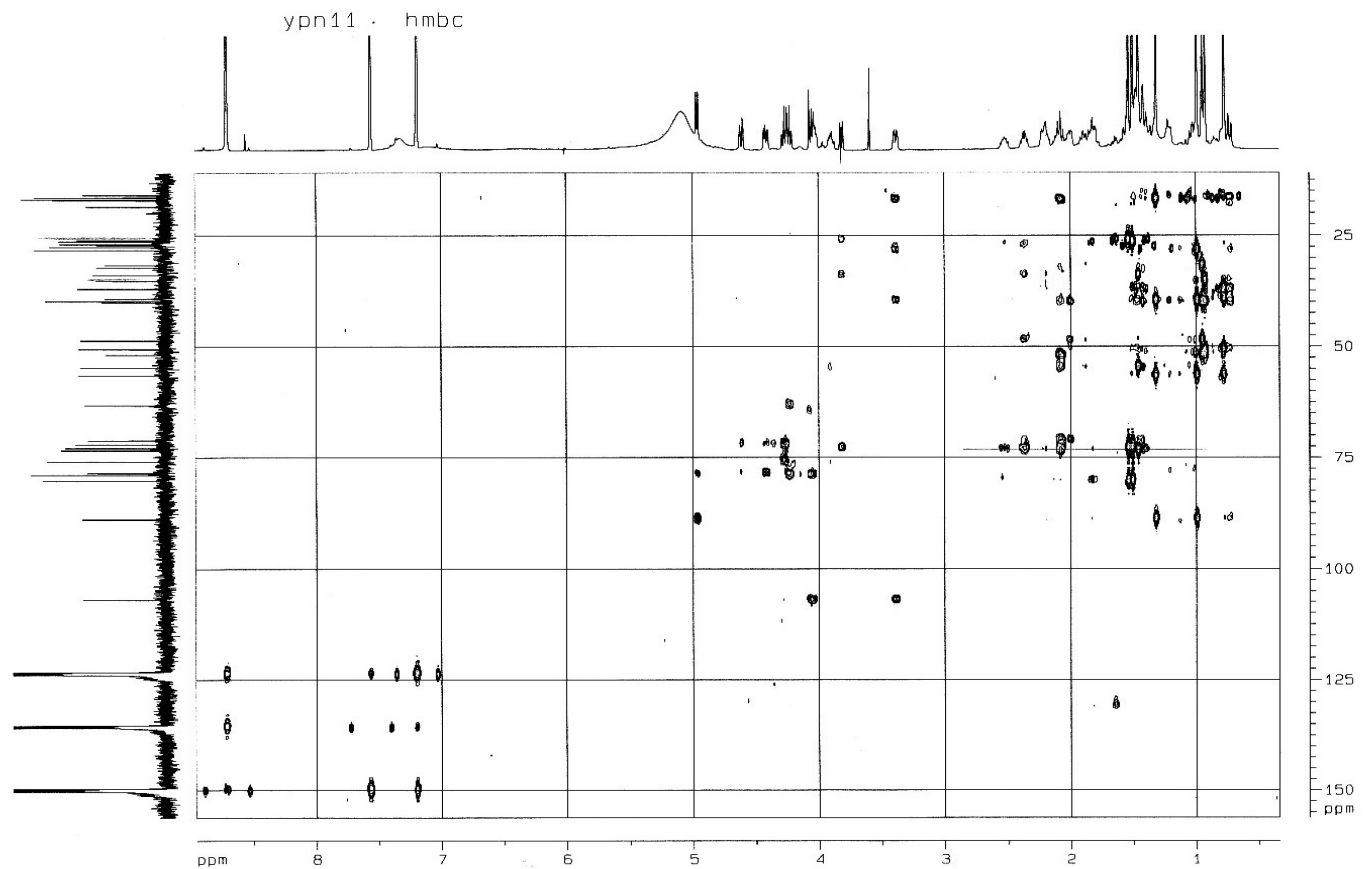
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FWDDE         BF

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SGB           0
LB            0.00 Hz
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PC            1.00

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2D NMR plot parameters
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F2PL2         8.833 ppm
F2L2          4417.40 Hz
F2PL3         0.430 ppm
F2L3          215.12 Hz
F2PRPCHM      0.47371 ppm/cm
F2H2CHM       238.87105 Hz/cm
F1PRPCHM      0.60017 ppm/cm
F1H2CHM       300.16437 Hz/cm
    
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S11 HMBC spectrum for notoginsenosides SFt₂ (2) in C₅D₅N



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DS         4
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AQ          0.3277876 sec
RG          320
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TE          300.2 K
CHET2     145.000000 sec
D1          0.0000000 sec
D2          1.3899999 sec
D3          0.0034638 sec
D8          0.0634000 sec
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LMS        0.0000000 sec
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NOEPR      1.3899999 sec

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PL2         -1.00 dB
SFO1       100.6281001 MHz

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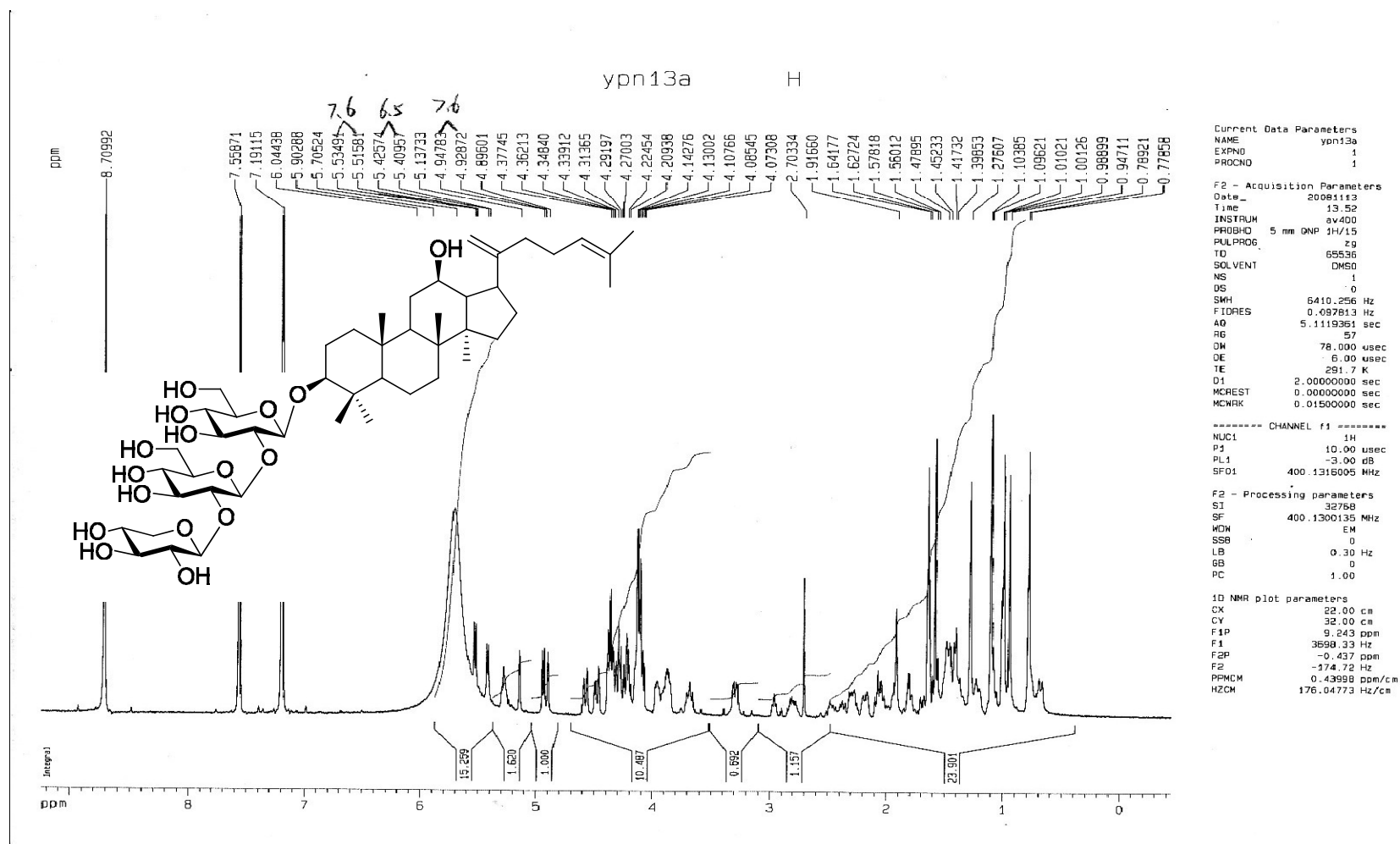
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PC          1.00

F3 - Processing parameters
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SSB         0
LB          0.00 Hz
GB          0
PC          1.00

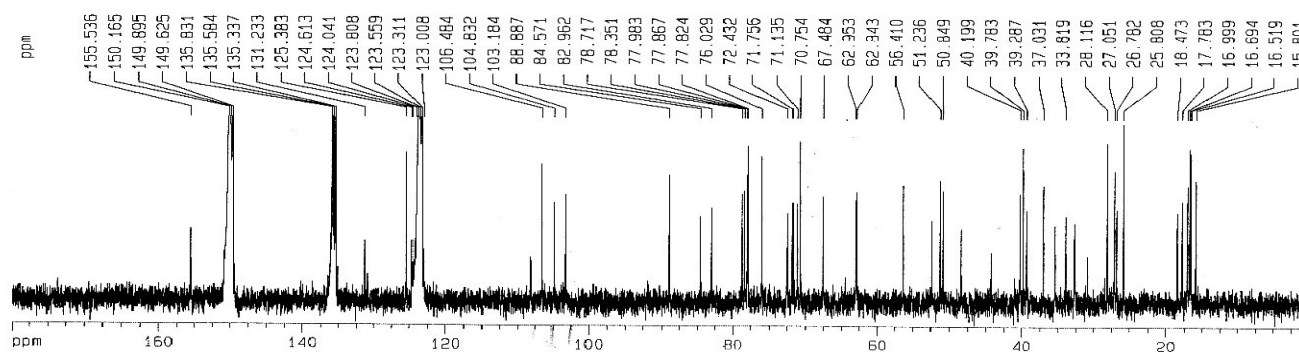
2D NMR plot parameters
CZ1         18.00 cm
CZ2         1.40 cm
F2PLD       8.961 cm
F2LD        4460.50 Hz
F2PHI       0.328 cm
F2PHI2      164.20 Hz
F2PLD2      156.239 cm
F2PLD3      19646.79 Hz
F2PHI3      10.153 cm
F2PHI4      1377.13 Hz
F2PHI5      0.47857 cm/cm
F2PHI6      230.78833 Hz/cm
F2PHI7      10.37738 cm/cm
F2PHI8      1304.83301 Hz/cm
  
```

S12 ^1H NMR spectrum of notoginsenosides SFT₃ (3) in C₅D₅N



S13 ¹³C NMR spectrum for notoginsenosides SFT₃ (3) in C₅D₅N

ypn13a c13 *



```
Current Data Parameters
NAME      ypn13a
EXPNO     2
PROCNO    1

F2 - Acquisition Parameters
Date_     20081114
Time      4.14
INSTRUM   av400
PROBHD    5 mm QNP 1H/13
PULPROG   zgpg30
TD         32768
SOLVENT   Pyri
NS         1640
DS         2
SWH        23564.905 Hz
FIDRES     0.719754 Hz
AQ         0.0547528 sec
RG         35.0
DM         21.200 usec
DE         6.00 usec
TE         292.6 K
D1         3.00000000 sec
d11        0.03000000 sec
MCREST     0.00000000 sec
MCNRK      0.01500000 sec

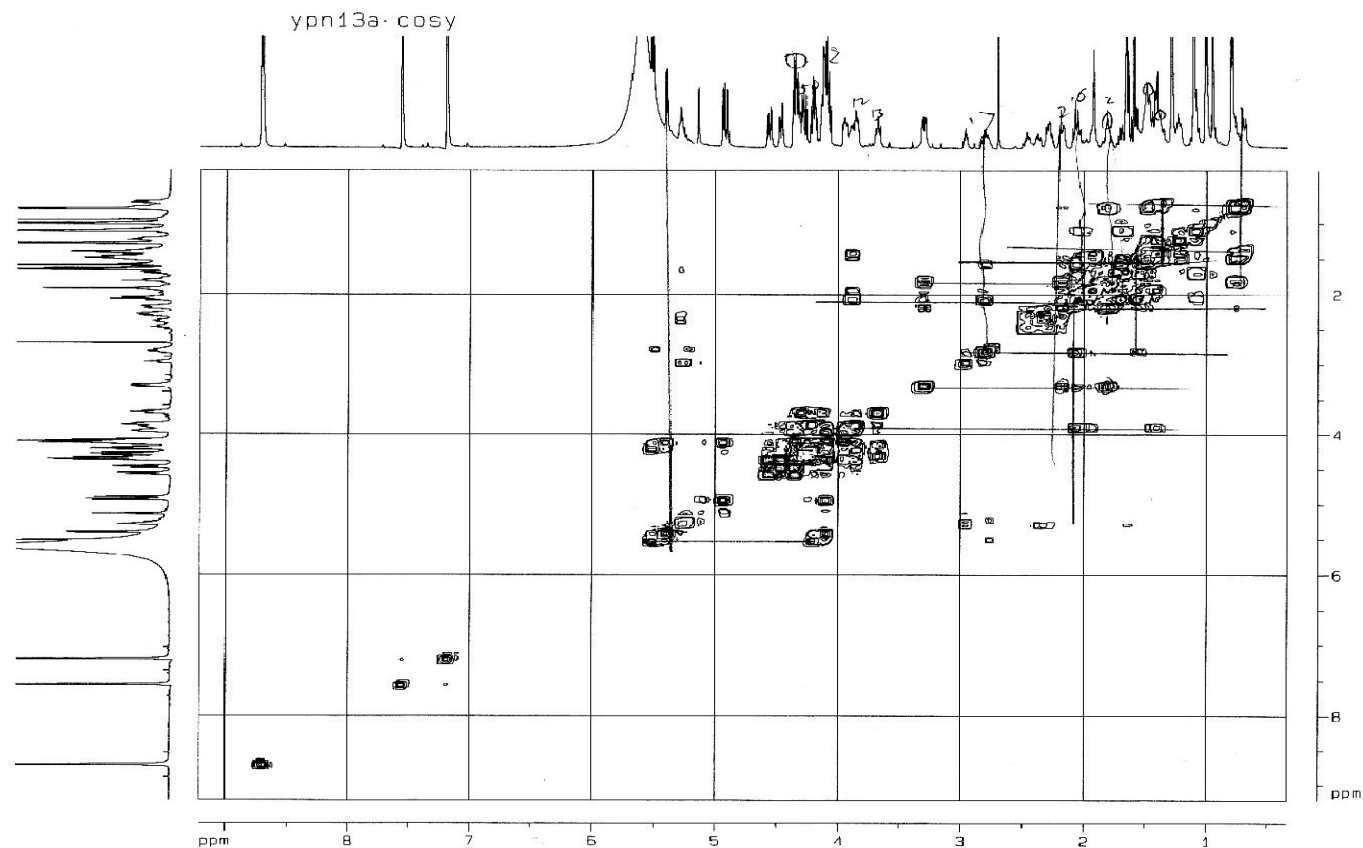
===== CHANNEL f1 =====
NUC1       13C
P1         9.40 usec
PL1        -4.00 dB
SFO1       100.6239976 MHz

===== CHANNEL f2 =====
CPDPRG2    waltz16
NUC2       1H
PCPD2      90.00 usec
PL2        -3.00 dB
PL12       14.00 dB
SFO2       400.1316005 MHz

F2 - Processing parameters
SI          32768
SF          100.6128945 MHz
WDW         EM
SSB         0
LB          1.00 Hz
GB          0
PC          1.50

1D NMR plot parameters
LX          22.00 cm
CY          4.00 cm
F1P         180.000 ppm
F1          18410.32 Hz
F2P         0.000 ppm
F2          0.00 Hz
PPMCH       8.18182 ppm/cm
HZCM        823.19643 Hz/cm
```

S14 ^1H - ^1H COSY spectrum of notoginsenosides SFt_3 (3) in $\text{C}_5\text{D}_5\text{N}$



```

Current Data Parameters
NAME      ypn13a
EXPNO     33
PROCNO    1

F2 - Acquisition Parameters
Date_     20001115
Time      0.30
INSTRUM   spect
PROBHD    5 mm QNP 13C-1
PULPROG   zgpg30
TD         1024
SOLVENT   Pyr
NS         1
DS         16
SWH        6510.417 Hz
FIDRES     0.0785922 sec
AQ          0.0785922 sec
RG          16384
DE          76.800 usec
TE          5.00 usec
TD          0.00000000 sec
SI          2.00000000 sec
S13        0.00000000 sec
D15        0.00020000 sec
TMO        0.00013384 sec
MCREST     0.00000000 sec
NUC1       13C

----- CHANNEL f1 -----
NUC1       1H
P1          9.00 usec
PL1         +1.00 dB
SFO1        500.0325802 MHz

----- GRADIENT CHANNEL -----
GPRNAME    sine 100
GPRNAMEC   sine 100
GPRNAME3   sine 100
GPR1        0.00 %
GPR2        0.00 %
GPR3        0.00 %
GPR4        0.00 %
GPR5        0.00 %
GPR6        0.00 %
GPR7        0.00 %
GPR8        0.00 %
GPR9        0.00 %
GPR10       0.00 %
GPR11       0.00 %
GPR12       0.00 %
GPR13       0.00 %
GPR14       0.00 %
GPR15       0.00 %
GPR16       0.00 %
GPR17       0.00 %
GPR18       0.00 %
GPR19       0.00 %
GPR20       0.00 %
GPR21       0.00 %
GPR22       0.00 %
GPR23       0.00 %
GPR24       0.00 %
GPR25       0.00 %
GPR26       0.00 %
GPR27       0.00 %
GPR28       0.00 %
GPR29       0.00 %
GPR30       0.00 %
GPR31       0.00 %
GPR32       0.00 %
GPR33       0.00 %
GPR34       0.00 %
GPR35       0.00 %
GPR36       0.00 %
GPR37       0.00 %
GPR38       0.00 %
GPR39       0.00 %
GPR40       0.00 %
GPR41       0.00 %
GPR42       0.00 %
GPR43       0.00 %
GPR44       0.00 %
GPR45       0.00 %
GPR46       0.00 %
GPR47       0.00 %
GPR48       0.00 %
GPR49       0.00 %
GPR50       0.00 %
GPR51       0.00 %
GPR52       0.00 %
GPR53       0.00 %
GPR54       0.00 %
GPR55       0.00 %
GPR56       0.00 %
GPR57       0.00 %
GPR58       0.00 %
GPR59       0.00 %
GPR60       0.00 %
GPR61       0.00 %
GPR62       0.00 %
GPR63       0.00 %
GPR64       0.00 %
GPR65       0.00 %
GPR66       0.00 %
GPR67       0.00 %
GPR68       0.00 %
GPR69       0.00 %
GPR70       0.00 %
GPR71       0.00 %
GPR72       0.00 %
GPR73       0.00 %
GPR74       0.00 %
GPR75       0.00 %
GPR76       0.00 %
GPR77       0.00 %
GPR78       0.00 %
GPR79       0.00 %
GPR80       0.00 %
GPR81       0.00 %
GPR82       0.00 %
GPR83       0.00 %
GPR84       0.00 %
GPR85       0.00 %
GPR86       0.00 %
GPR87       0.00 %
GPR88       0.00 %
GPR89       0.00 %
GPR90       0.00 %
GPR91       0.00 %
GPR92       0.00 %
GPR93       0.00 %
GPR94       0.00 %
GPR95       0.00 %
GPR96       0.00 %
GPR97       0.00 %
GPR98       0.00 %
GPR99       0.00 %
GPR100      0.00 %

F1 - Acquisition Parameters
ND0         1
TD          128
SFO1        500.0325802 MHz
FIDRES     0.0785922 sec
AQ          0.0785922 sec
RG          16384
DE          76.800 usec
TE          5.00 usec

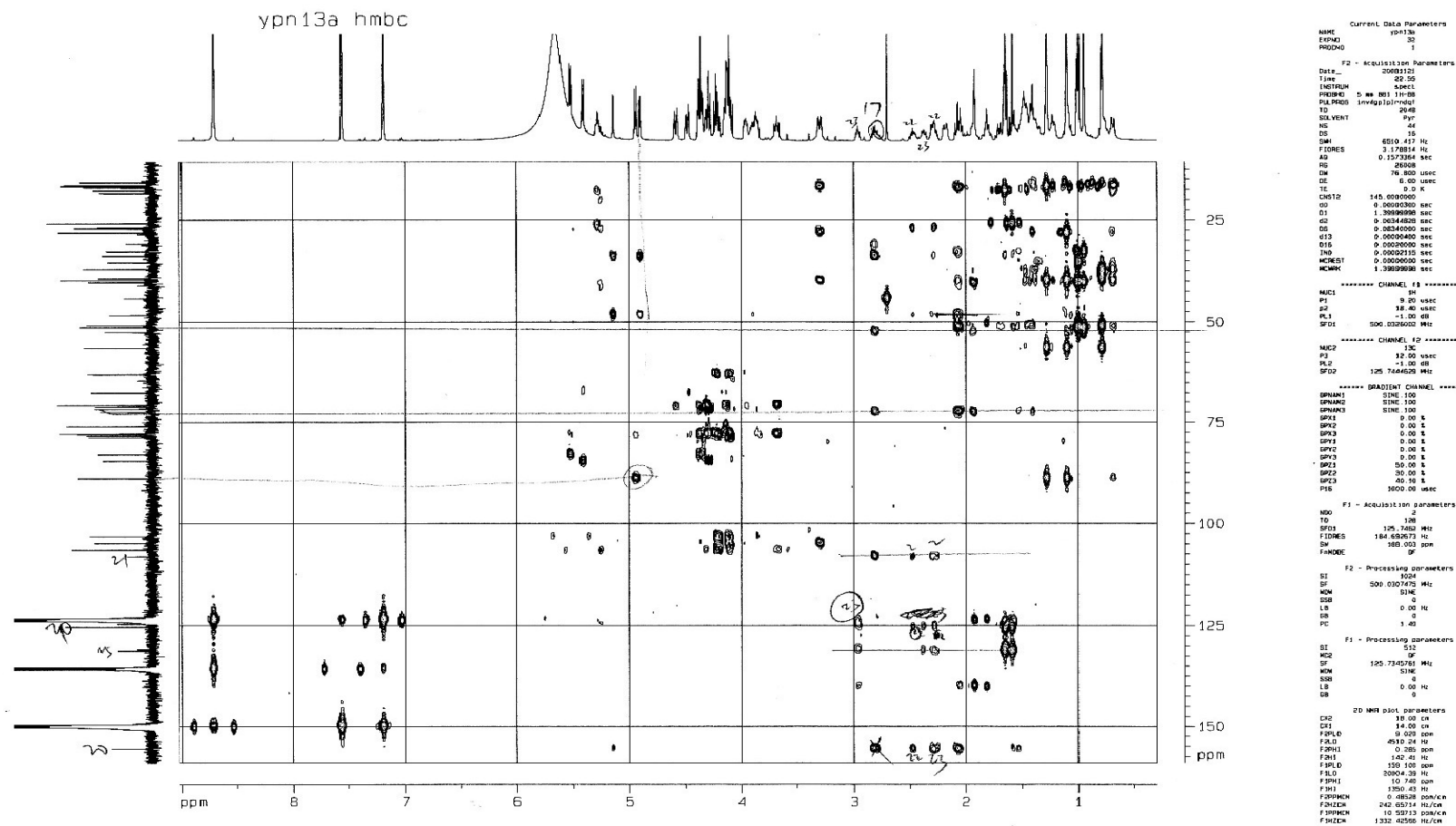
F2 - Processing parameters
SI          1024
SF          500.0325802 MHz
WDW         SINE
SSB          0
LB           0.00 Hz
GB           0
PC           1.00

F1 - Processing parameters
SI          1024
SF          500.0325802 MHz
WDW         SINE
SSB          0
LB           0.00 Hz
GB           0
PC           1.00

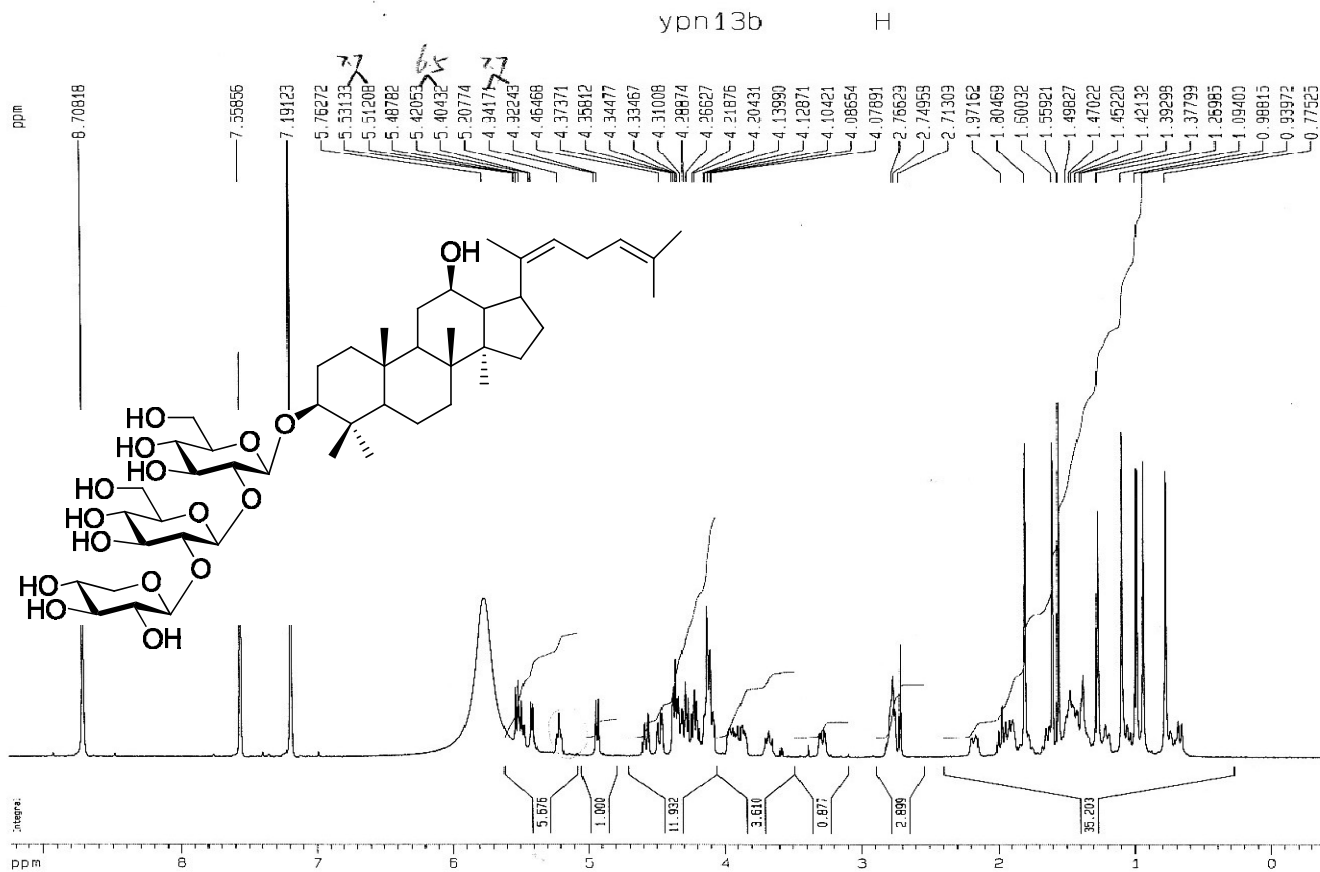
2D NMR plot parameters
CNR         18.00 cm
CX1         14.00 cm
F2P10       0.213 cm
F2L0        4606.84 Hz
F2P01       0.308 cm
F2H1        160.00 Hz
F2L1        0.217 cm
F2L0        4608.57 Hz
F2P10       0.243 cm
F2L1        120.52 Hz
F2P01       0.4206 cm
F2H1        240.54247 Hz/cm
F2L1        0.84113 cm
F2H1        320.57458 Hz/cm

```

S15 HMBC spectrum for notoginsenosides SFT₃ (3) in C₅D₅N



S16 ^1H NMR spectrum of notoginsenosides SFt₄ (4) in C₅D₅N



Current Data Parameters
NAME ypn13b
EXPNO 1
PROCNO 1

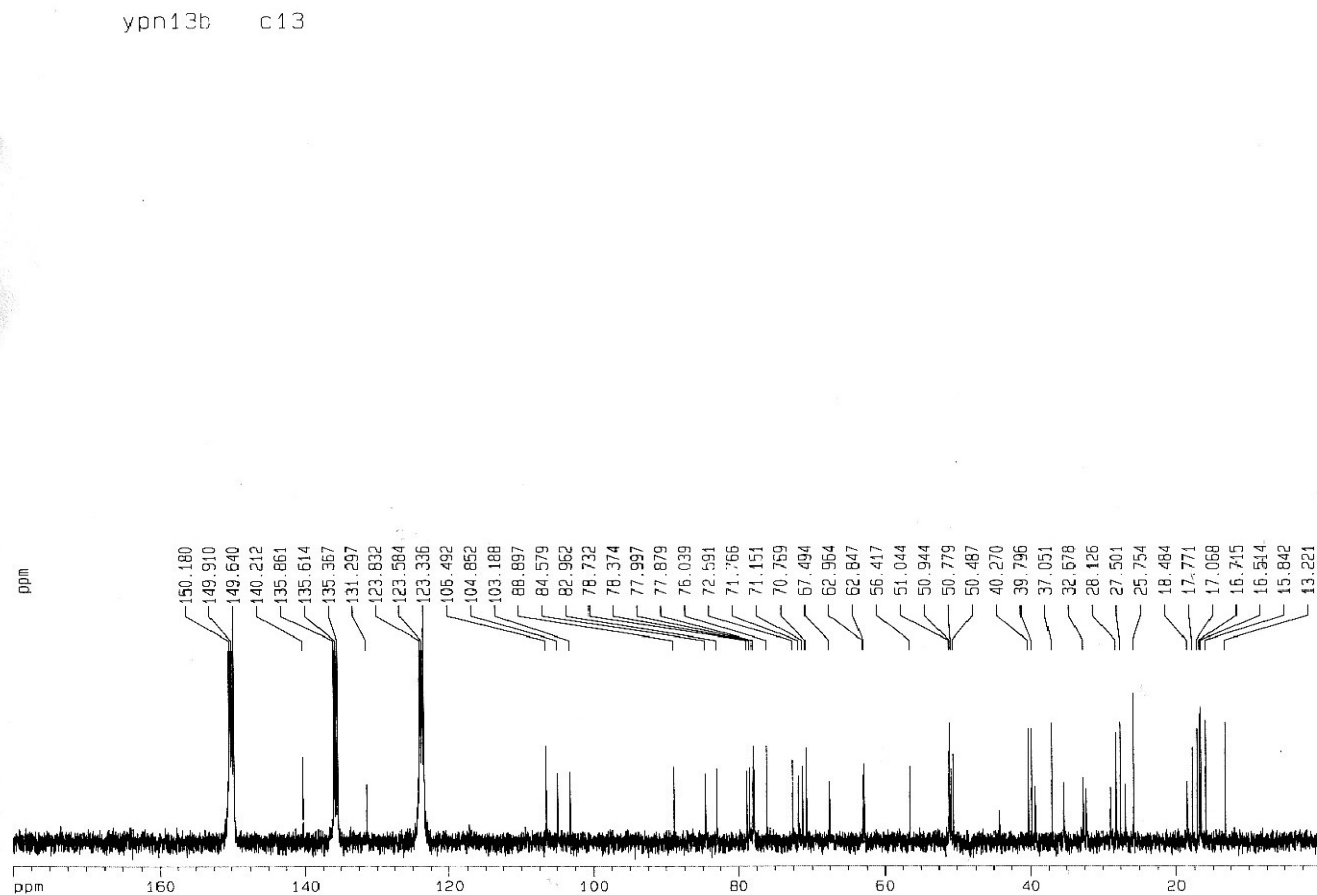
F2 - Acquisition Parameters
Date_ 20081113
Time 13.54
INSTRUM av400
PROBHD 5 mm QNP 1H/15
PULPROG zg
TD 65536
SOLVENT DMSO
NS 0
DS 0
SWH 6410.256 Hz
FIDRES 0.097813 Hz
AQ 5.1119361 sec
RG 57
DM 78.000 usec
DE 6.00 usec
TE 291.7 K
D1 2.00000000 sec
MCREST 0.00000000 sec
MCWAK 0.01500000 sec

----- CHANNEL f1 -----
NUC1 1H
P1 10.00 usec
PL1 -3.00 dB
SFO1 400.1324008 MHz

F2 - Processing parameters
SI 32768
SF 400.1300135 MHz
WDW EM
SSA 0
LB 0.30 Hz
GB 0
PC 1.00

1D NMR plot parameters
CX 22.00 cm
CY 17.00 cm
F1P 9.243 ppm
F1 3698.33 Hz
F2P -0.437 ppm
F2 -174.72 Hz
HPCMC 0.43998 ppm/cm
HZCM 176.04773 Hz/cm

S17 ¹³C NMR spectrum for notoginsenosides Sft₄ (4) in C₅D₅N



Current Data Parameters
NAME ypn13b
EXPNO 2
PROCNO 1

F2 - Acquisition Parameters
Date_ 20081113
Time 14.05
INSTRUM av400
PROBHD 5 mm GNP 1H/15
PULPROG zgpgc
TD 32768
SOLVENT CDCl3
NS 430
DS 2
SWH 23584.906 Hz
FIDRES 0.719754 Hz
AQ 0.6947528 sec
RG 8192
DW 21.200 usec
DE 6.00 usec
TE 298.2 K
D1 3.00000000 sec
d11 0.03000000 sec
MCREST 0.00000000 sec
MCWPR 0.01500000 sec

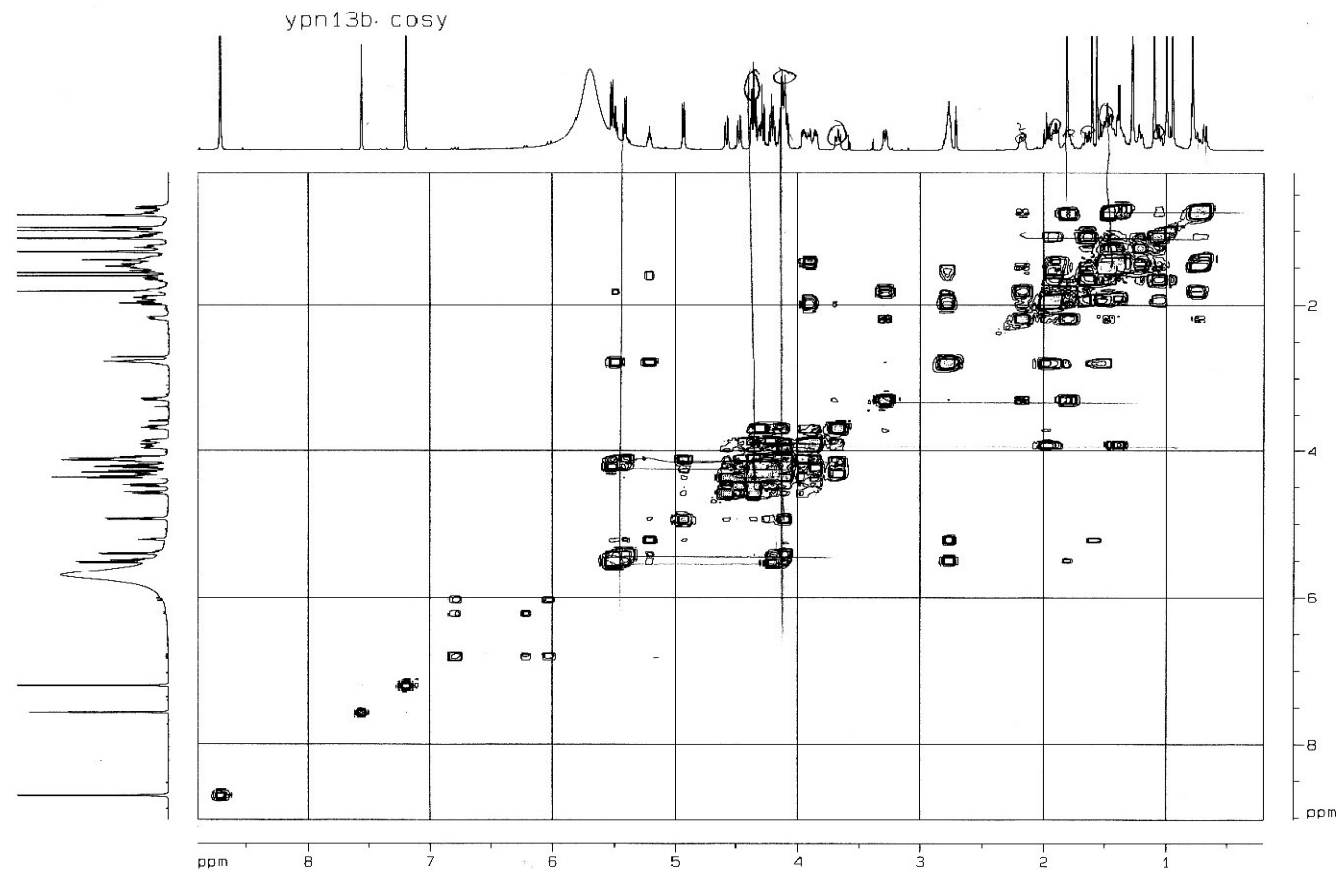
----- CHANNEL f1 -----
NUC1 13C
P1 9.40 usec
PL1 -4.00 dB
SF01 100.6239876 MHz

----- CHANNEL f2 -----
CPDPRG2 waltz16
NUC2 1H
PCPD2 90.00 usec
PL2 -3.00 dB
PL12 14.00 dB
SF02 400.1316005 MHz

F2 - Processing parameters
SI 32768
SF 100.6127449 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 2.00

1D NMR plot parameters
CX 22.00 cm
CY 54.00 cm
F1P 180.000 ppm
F1 18110.23 Hz
F2P 0.000 ppm
F2 0.00 Hz
PPMCM 8.18182 ppm/cm
HZCM 823.19519 Hz/cm

S18 ^1H - ^1H COSY spectrum of notoginsenosides SFt₄ (4) in C₅D₅N



```

Current Data Parameters
NAME      ypn13b
EXPNO     1
PROCNO    1

F2 - Acquisition Parameters
Date_     20081120
Time      3.22
INSTRUM    spect
PROBHD     5 mm BBI 1H-8B
PULPROG    zgpg30
TD         65536
SOLVENT    DMS
NS         1
DS         16
SWH         6510.417 Hz
FIDRES     0.3576029 Hz
AQ         0.0768032 sec
RG         16384
DM         75.800 usec
DE         6.00 usec
TE         300.2 K
DQ         0.00000000 sec
DS         2.00000000 sec
F3         0.00000000 sec
OS         0.00000000 sec
IND         0.00015384 sec
MCREST     0.00000000 sec
MCMRG      2.00000000 sec

----- CHANNEL f1 -----
NUC1       1H
P1         9.20 usec
PL1        -1.00 dB
SFO1       500.0330002 MHz

----- GRADIENT CHANNEL -----
GPMAX1     size: 100
GPMAX2     size: 100
GPMAX3     size: 100
GPX1       0.00 %
GPY1       0.00 %
GPZ1       0.00 %
GPX2       0.00 %
GPY2       0.00 %
GPZ2       15.00 %
GPX3       12.00 %
GPY3       40.00 %
GPZ3       1000.00 usec
P18        1000.00 usec

F1 - Acquisition parameters
TD         1
SFO1       500.0330002 MHz
FIDRES     0.3576029 Hz
SW         65.000 MHz
FHM000     0

F2 - Processing parameters
SI         1024
SF         500.0330002 MHz
WDW         SINE
SSB         0
LB         0.00 Hz
GB         0
PC         1.00

F1 - Smoothing parameters
SI         1024
MC2        SF
SF         500.0330002 MHz
WDW         SINE
SSB         0
LB         0.00 Hz
GB         0

2D NMR plot parameters
FWD        16.00 cm
F2D0        14.00 cm
F2D1        8.000 cm
F2D2        4451.75 Hz
F2D3        0.053 cm
F2D4        56.53 Hz
F3D0        9.045 cm
F3D1        4582.75 Hz
F3D2        0.209 cm
F3D3        104.57 Hz
F3D4        0.00000000 cm/cm
F3D5        241.95071 Hz/cm
F3D6        0.63514 cm/cm
F3D7        315.58684 Hz/cm
    
```

