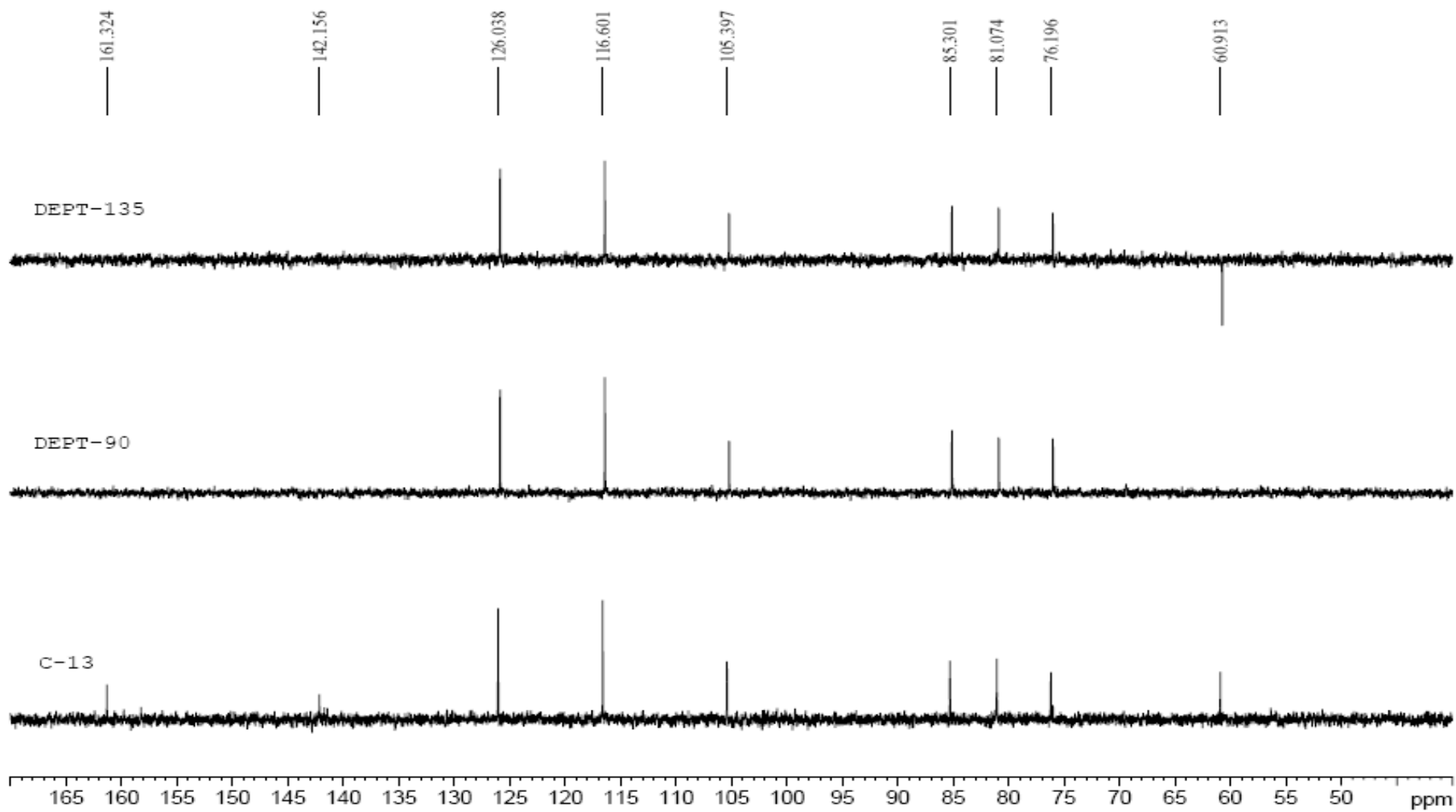
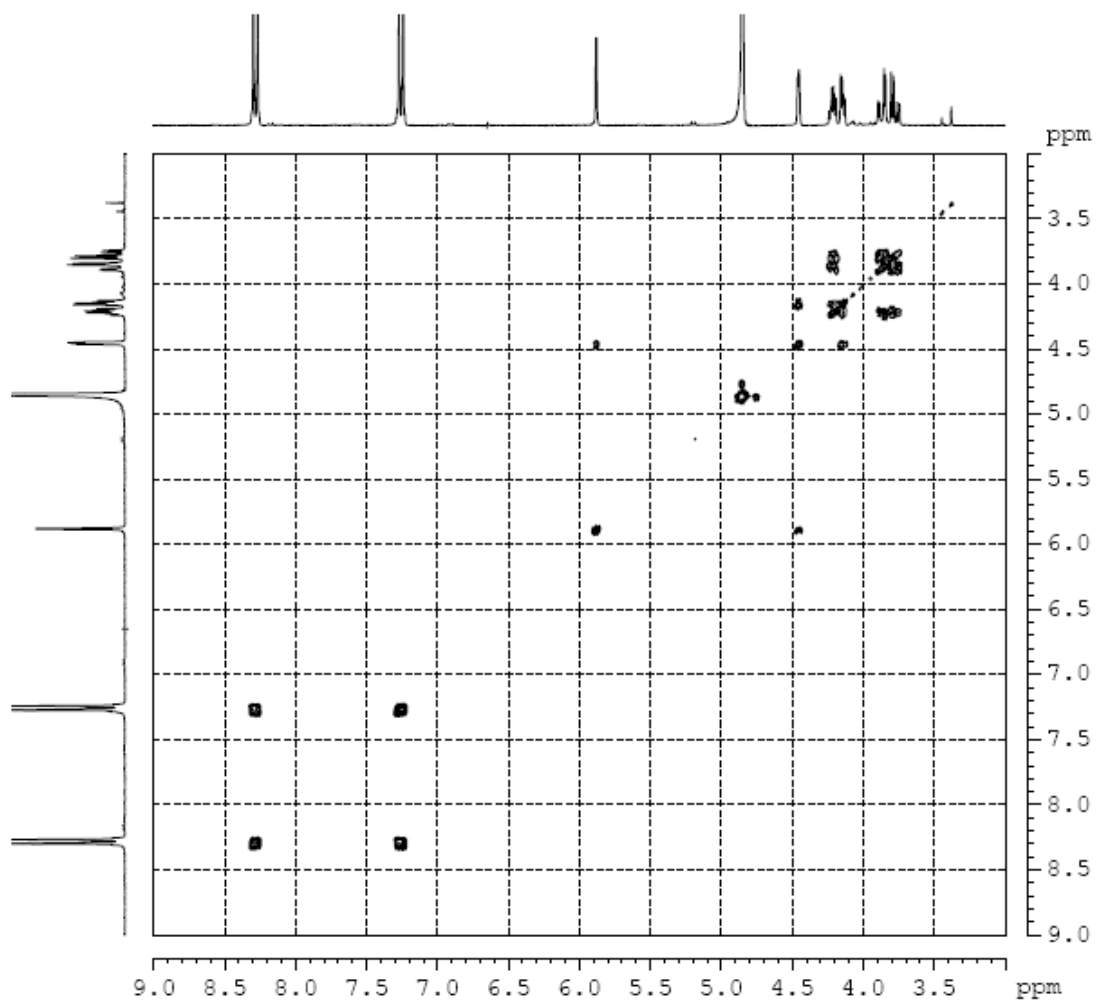


化合物 6b C<sup>13</sup> & DEPT



化合物 6b H-H cosy

COSY spectrum of p-nitrophenylAF



```

Current Data Parameters
NAME      chen050415
EXPNO     5
PROCNO    1

F2 - Acquisition Parameters
Date_     20050415
Time      19.07
INSTRUM   spect
PROBHD    5 mm BBO

PULPROG   cosy45
TD         2048
SOLVENT   CDCl3
NS         16
DS         16
SWH        3156.566 Hz
FIDRES     1.541292 Hz
AQ         0.3244532 sec
RG         256
DW         158.400 usec
DE         6.50 usec
TE         300.0 K
D0         0.00000300 sec
D1         1.50000000 sec
IN0        0.00031680 sec

===== CHANNEL f1 =====
NUC1       1H
P1         9.20 usec
PL1        0.00 dB
SF01       300.1313805 MHz

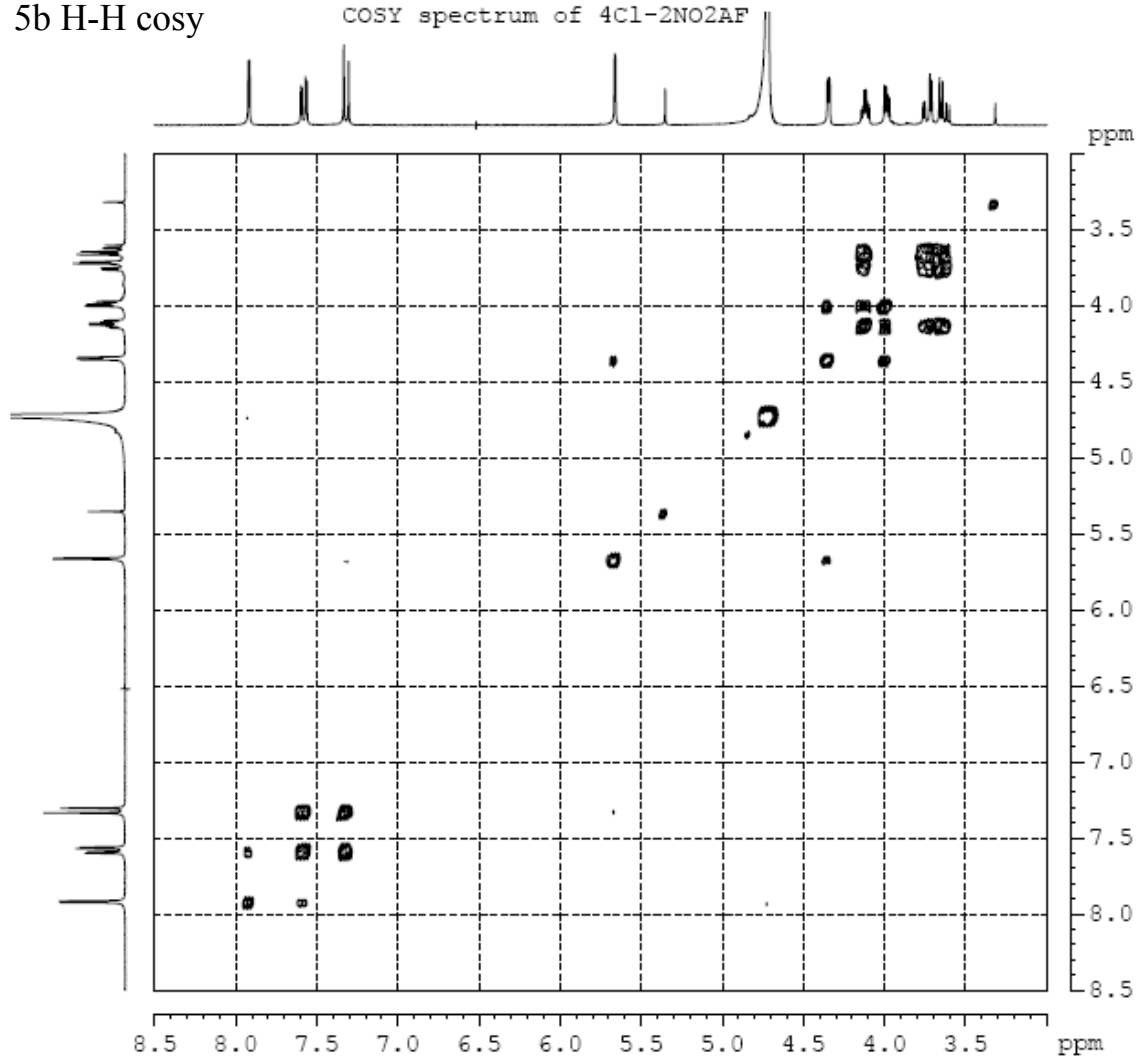
F1 - Acquisition parameters
ND0        1
TD         512
SF01       300.1314 MHz
FIDRES     6.165167 Hz
SW         10.517 ppm
PnMODE     undefined

F2 - Processing parameters
SI         1024
SF         300.1299530 MHz
WDW        QSINE
SSB        0
LB         0.00 Hz
GB         0
PC         1.00

F1 - Processing parameters
SI         512
MC2        QF
SF         300.1299527 MHz
WDW        QSINE
SSB        0
LB         0.00 Hz
GB         0
    
```

化合物 5b H-H cosy

COSY spectrum of 4Cl-2NO2AF



```

Current Data Parameters
NAME      chen050416
EXPNO     5
PROCNO    1

F2 - Acquisition Parameters
Date_     20050419
Time      11.16
INSTRUM   spect
PROBHD    5 mm BBO

PULPROG   cosy45
TD         2048
SOLVENT   CDCl3
NS         16
DS         16
SWH        3156.566 Hz
FIDRES     1.541292 Hz
AQ         0.324532 sec
RG         256
DM         158.400 usec
DE         6.50 usec
TE         300.0 K
DO         0.0000300 sec
D1         1.5000000 sec
INO        0.00031680 sec

----- CHANNEL f1 -----
NUC1       1H
P1         9.20 usec
PL1        0.00 dB
SFO1       300.1314203 MHz

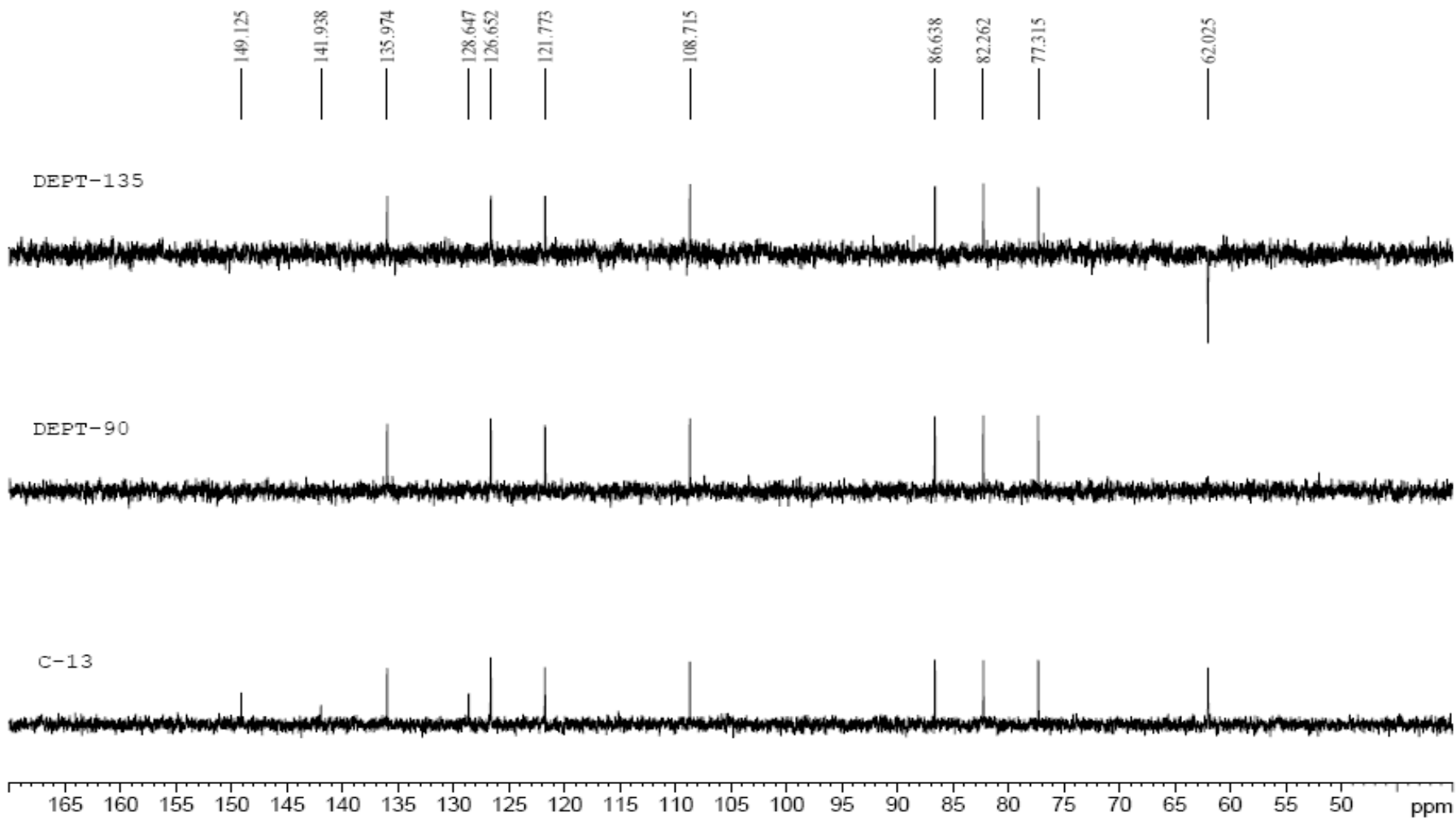
F1 - Acquisition parameters
ND0        1
TD         141
SFO1       300.1314 MHz
FIDRES     22.386990 Hz
SW         10.517 ppa

F2 - Processing parameters
SI         1024
SF         300.1299941 MHz
WDW        QSINE
SSB        0
LB         0.00 Hz
GB         0
PC         1.00

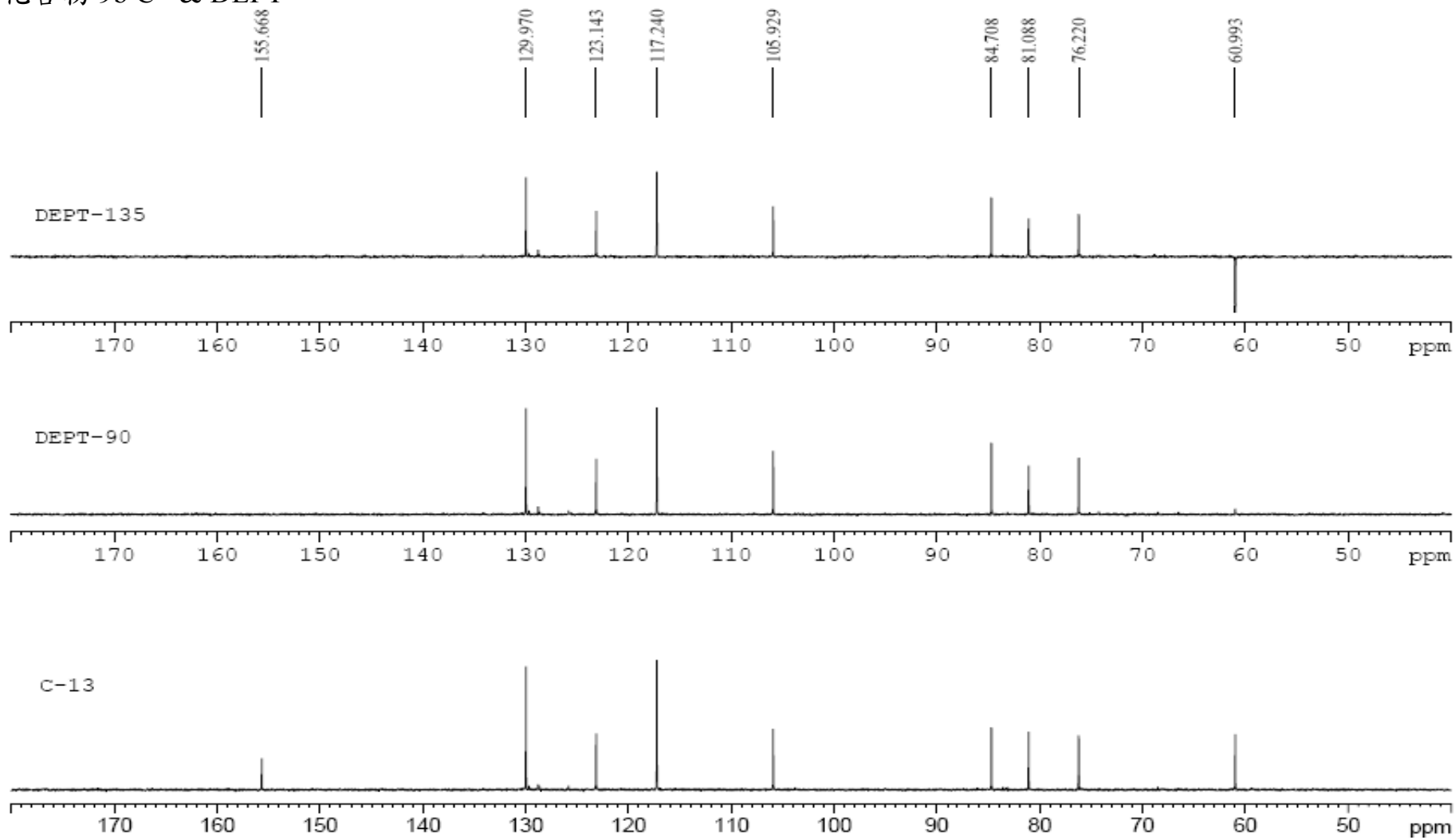
F1 - Processing parameters
SI         512
MC2        QF
SF         300.1299943 MHz
WDW        QSINE
SSB        0
LB         0.00 Hz
GB         0

2D NMR plot parameters
CX2        15.00 cm
CX1        15.00 cm
F2PLO      10.002 ppa
F2LO       3002.02 Hz
F2PHI      -0.515 ppa
F2HI       -154.55 Hz
F1PLO      10.010 ppa
F1LO       3004.23 Hz
F1PHI      -0.508 ppa
F1HI       -152.34 Hz
F2PPMCM    0.70116 ppa/cm
F2HZCM     210.43770 Hz/cm
F1PPMCM    0.70116 ppa/cm
F1HZCM     210.43793 Hz/cm
    
```

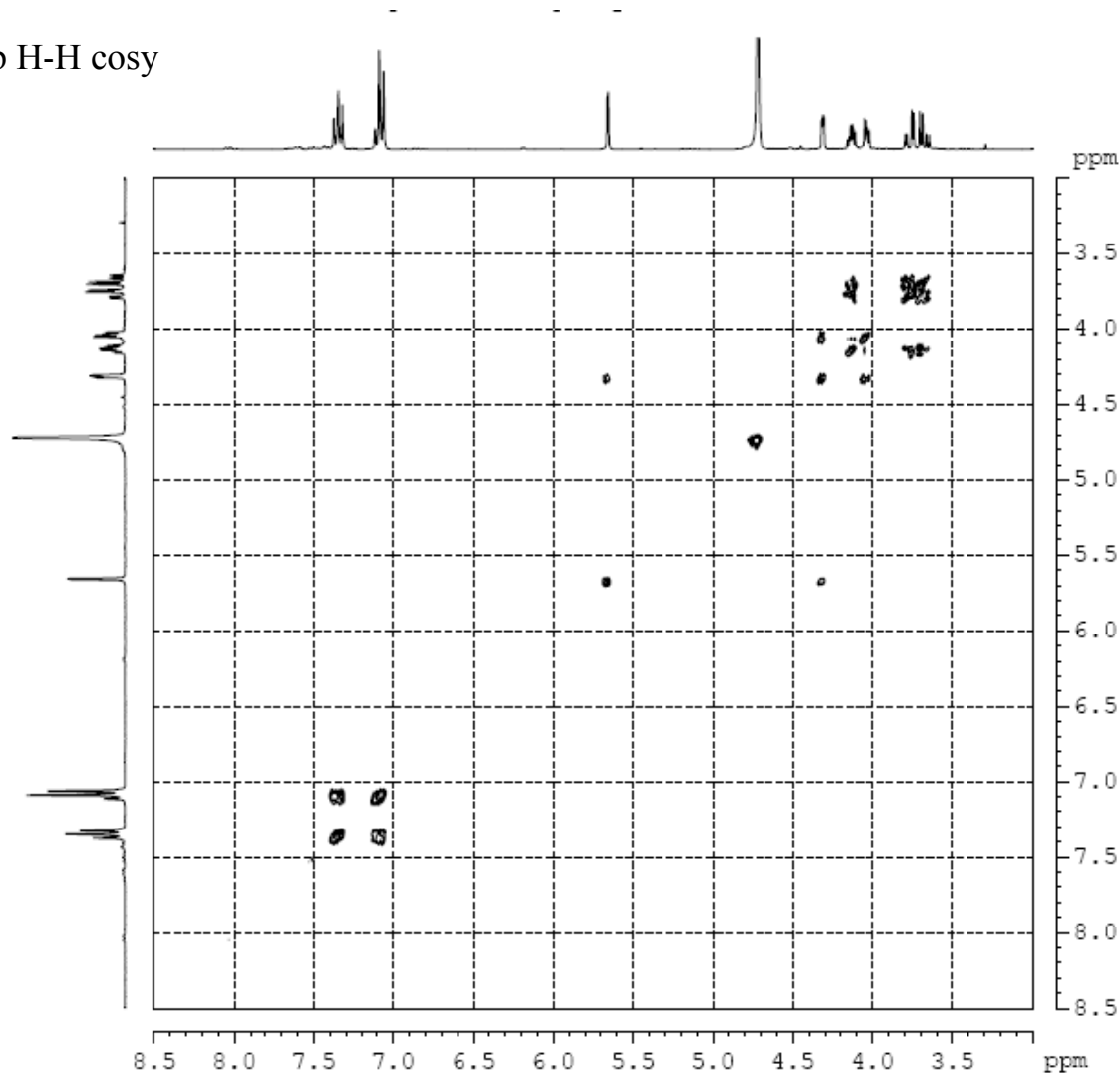
化合物 5b C<sup>13</sup> & DEPT



化合物 9b C<sup>13</sup> & DEPT



化合物 9b H-H cosy



```

Current Data Parameters
NAME      chen050612
EXPNO    9
PROCNO   1

F2 - Acquisition Parameters
Date_    20050614
Time     1.58
INSTRUM  spect
PROBHD   5 mm BBO

PULPROG  cosy45
TD        2048
SOLVENT  CDCl3
NS        16
DS        16
SWH       3156.566 Hz
FIDRES    1.541292 Hz
AQ        0.3244532 sec
RG        256
DW        158.400 usec
DE        6.50 usec
TE        300.0 K
D0        0.0000300 sec
D1        1.5000000 sec
INO       0.00031680 sec

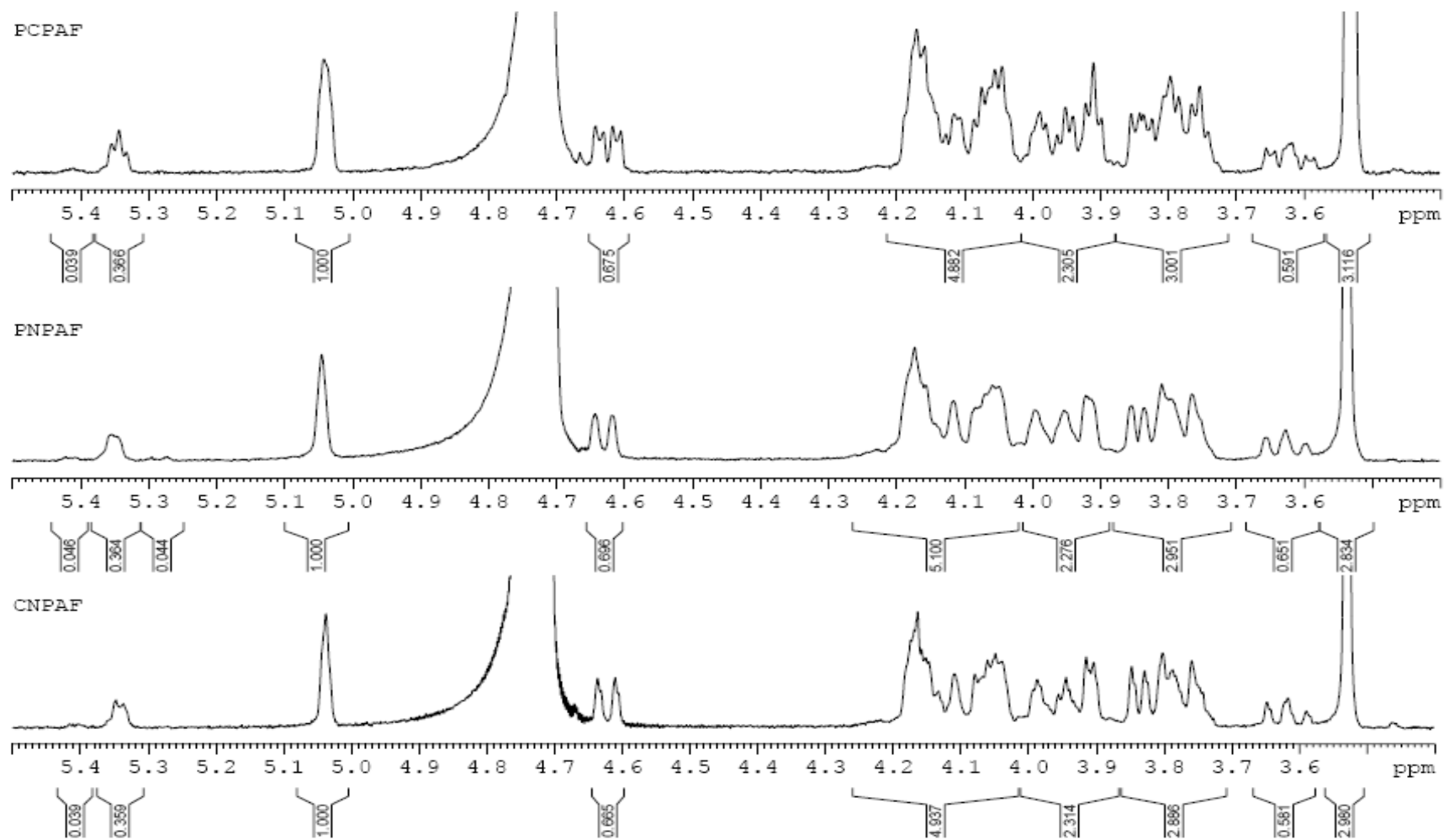
----- CHANNEL f1 -----
NUC1      1H
P1        9.20 usec
PL1       0.00 dB
SF01     300.1314187 MHz

F1 - Acquisition parameters
ND0       1
TD        469
SF01     300.1314 MHz
FIDRES    6.730417 Hz
SW        10.517 ppm
F0MODE    undefined

F2 - Processing parameters
SI        1024
SF        300.1299906 MHz
NEW       QSINE
SSB       0
LB        0.00 Hz
GB        0
PC        1.00

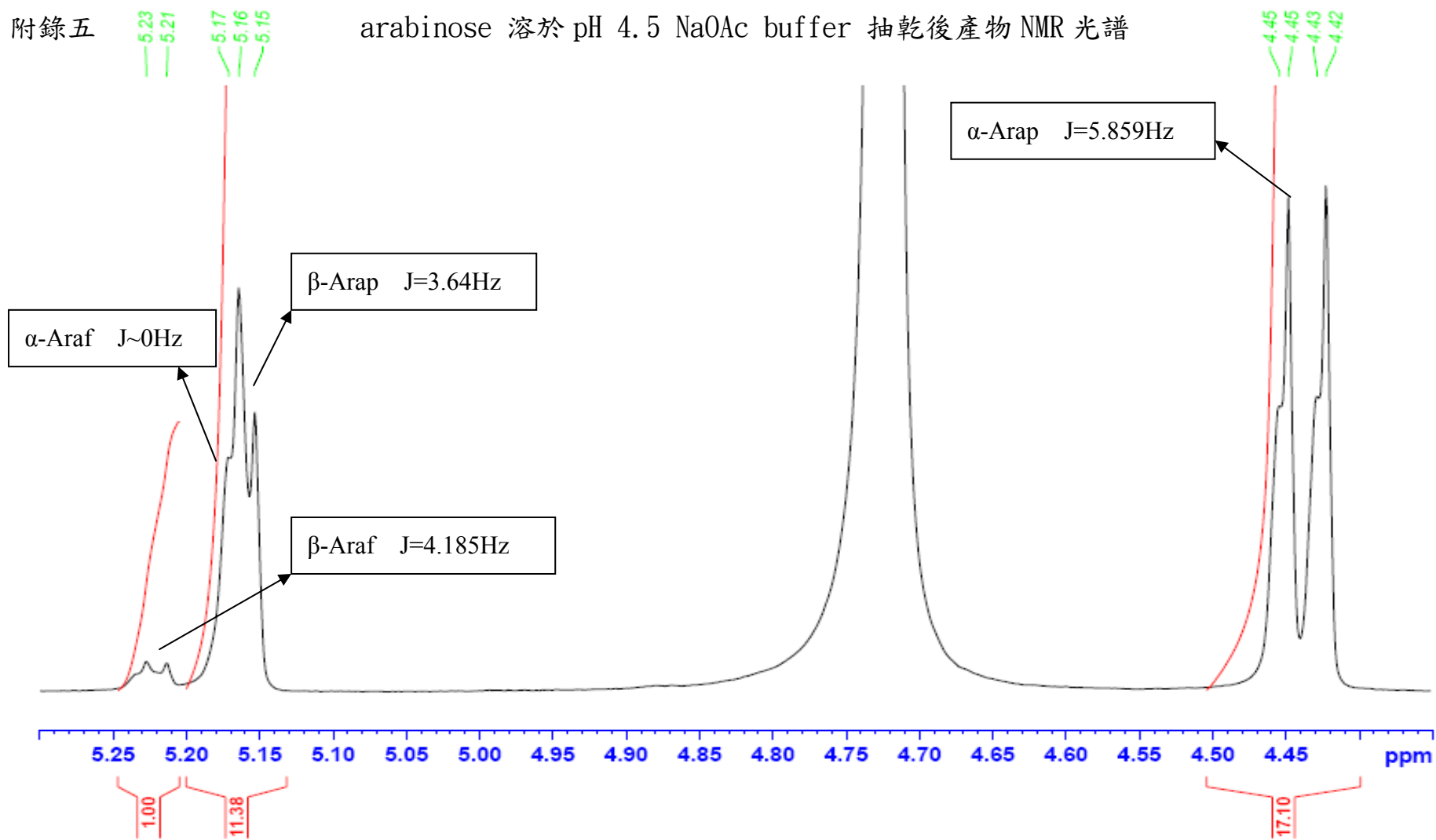
F1 - Processing parameters
SI        512
MC2       QF
SF        300.1299894 MHz
NEW       QSINE
SSB       0
LB        0.00 Hz
GB        0
    
```

附錄四



附錄五

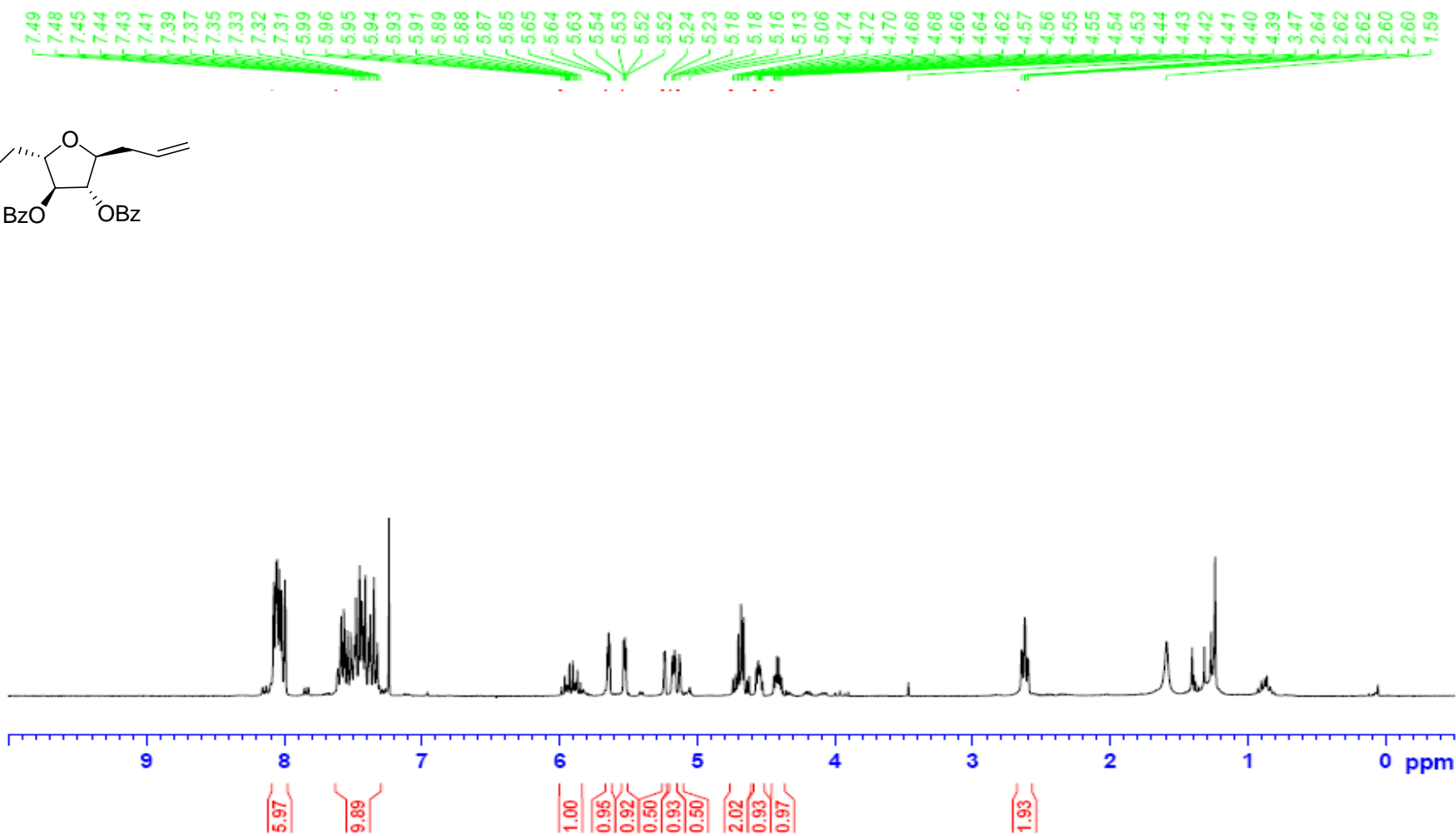
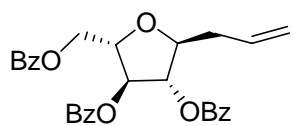
arabinose 溶於 pH 4.5 NaOAc buffer 抽乾後產物 NMR 光譜

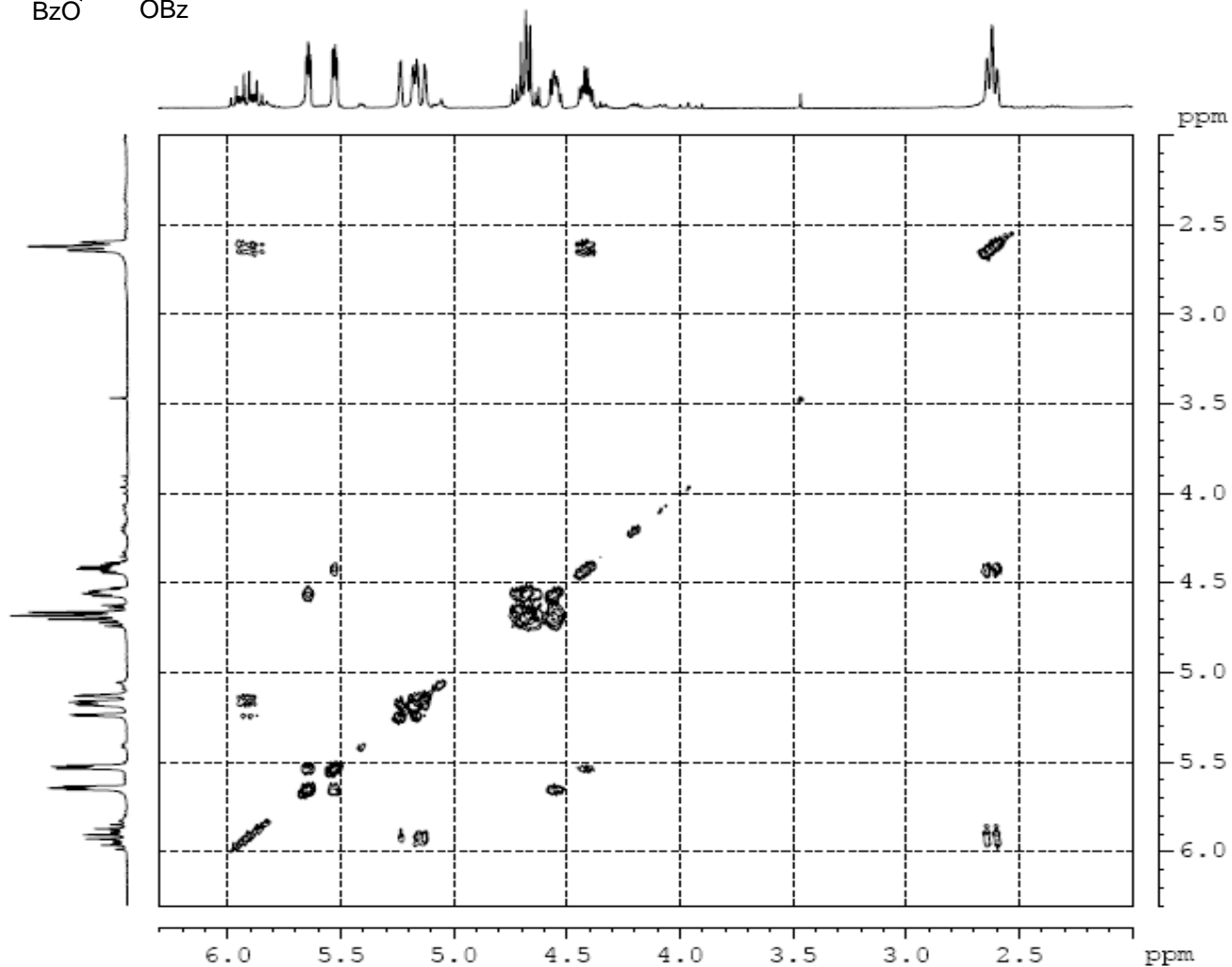
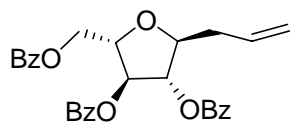




附錄六

chen050607 OBz-ally





Current Data Parameters  
 NAME chen050607  
 EXPNO 6  
 PROCNO 1

F2 - Acquisition Parameters  
 Date\_ 20050509  
 Time 22.34  
 INSTRUM spect  
 PROBHD 5 mm BBO

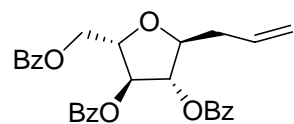
PULPROG cosy45  
 TD 2048  
 SOLVENT CDCl3  
 NS 16  
 DS 16  
 SWH 3156.566 Hz  
 FIDRES 1.541292 Hz  
 AQ 0.3244532 sec  
 RG 256  
 DW 158.400 usec  
 DE 6.50 usec  
 TE 300.0 K  
 DO 0.00000300 sec  
 D1 1.50000000 sec  
 INO 0.00031680 sec

----- CHANNEL f1 -----  
 NUC1 1H  
 P1 9.20 usec  
 PL1 0.00 dB  
 SFO1 300.1314286 MHz

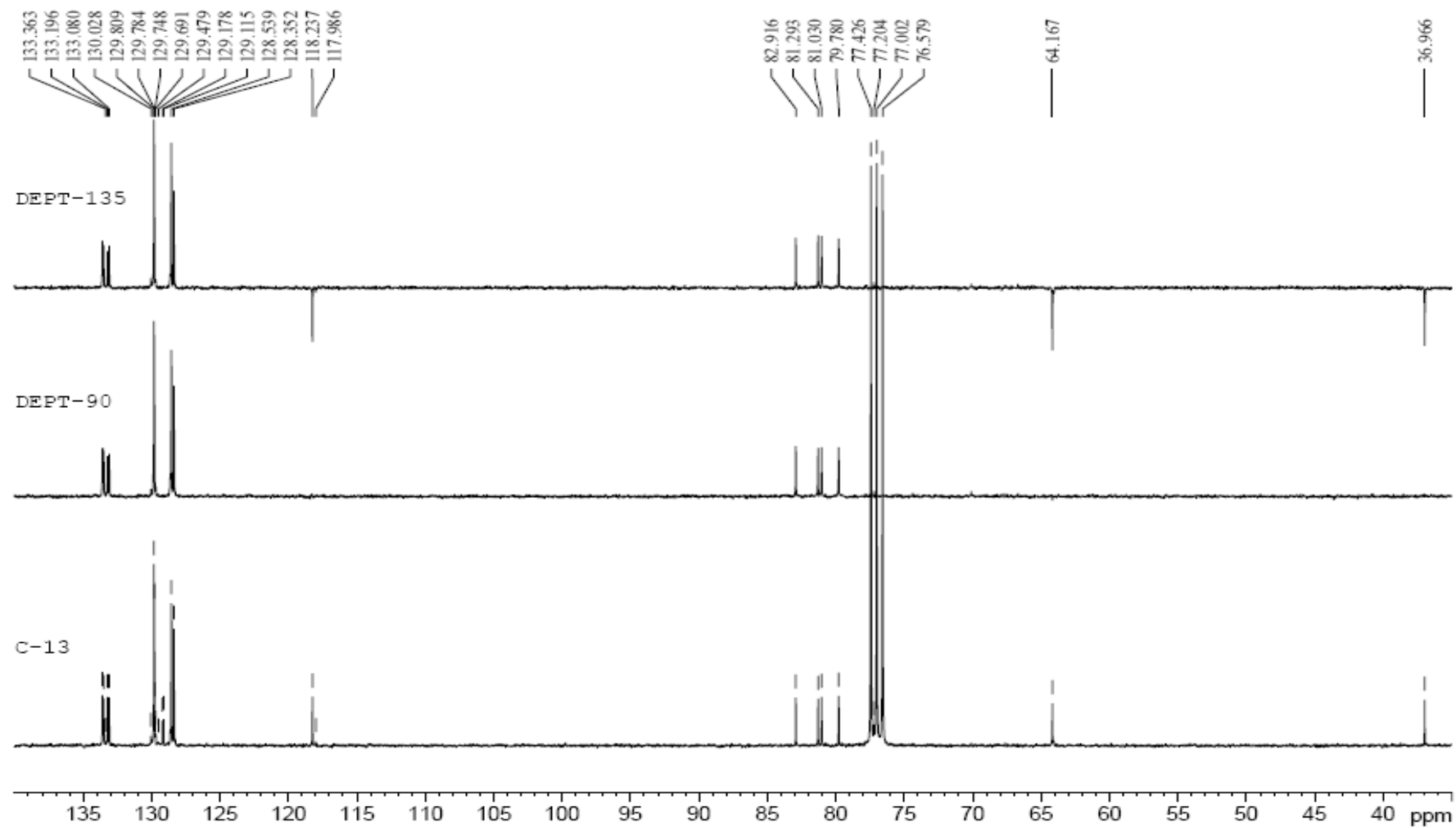
F1 - Acquisition parameters  
 NDO 1  
 TD 505  
 SFO1 300.1314 MHz  
 FIDRES 6.250625 Hz  
 SW 10.517 ppm  
 FMODE undefined

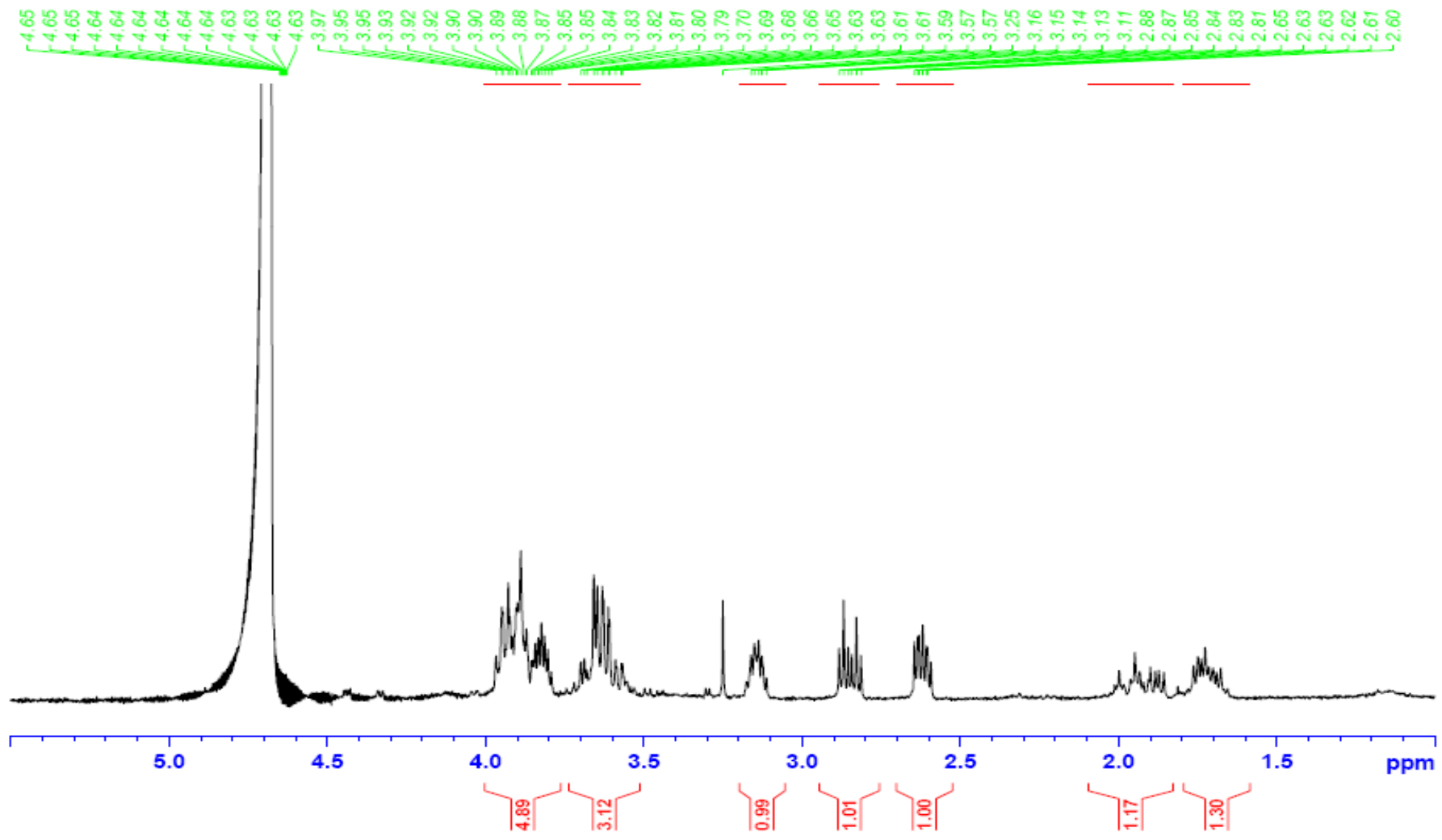
F2 - Processing parameters  
 SI 1024  
 SF 300.1300110 MHz  
 WDW QSINE  
 SSB 0  
 LB 0.00 Hz  
 GB 0  
 PC 1.00

F1 - Processing parameters  
 SI 512  
 MC2 QF  
 SF 300.1300109 MHz  
 WDW QSINE  
 SSB 0  
 LB 0.00 Hz  
 GB 0



C13 & DEPT spectrum of OBz-allyl





## 附錄七

### 初始速度 (initial velocity)之修正

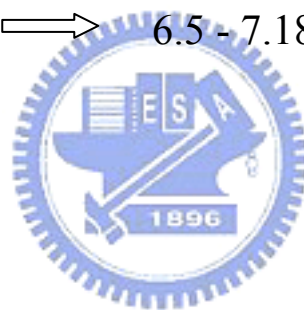
p-nitrophenol 之 pKa 為 7.18，當緩衝液之 pH 值為 6.5，則根據下列公式可以知道真正之初始速度，以 PNPAF 為例

$$\text{pH} - \text{pKa} = \log \frac{[\text{A}^-]}{[\text{HA}]} \quad \Rightarrow \quad 6.5 - 7.18 = \log \frac{[\text{A}^-]}{[\text{HA}]}$$

$$[\text{HA}] = 4.8 [\text{A}^-]$$

$$[\text{Total}] = [\text{HA}] + [\text{A}^-]$$

$$= 5.8 [\text{A}^-]$$



所以將儀器所顯示之初始速度，再乘上 5.8 即為真正之初始速度，依此類推可以得到不同 pH 值緩衝液下測得之真正初始速度。若緩衝液之 pH 值高於 pKa，則不用作任何修正，因為 [HA] 完全解離成 [A<sup>-</sup>]。