

Electronic Supplementary Information

Biphenyl dioxygenase-catalysed *cis*-dihydroxylation of tricyclic azaarenes: chemoenzymatic synthesis of arene oxide metabolites and furoquinoline alkaloids

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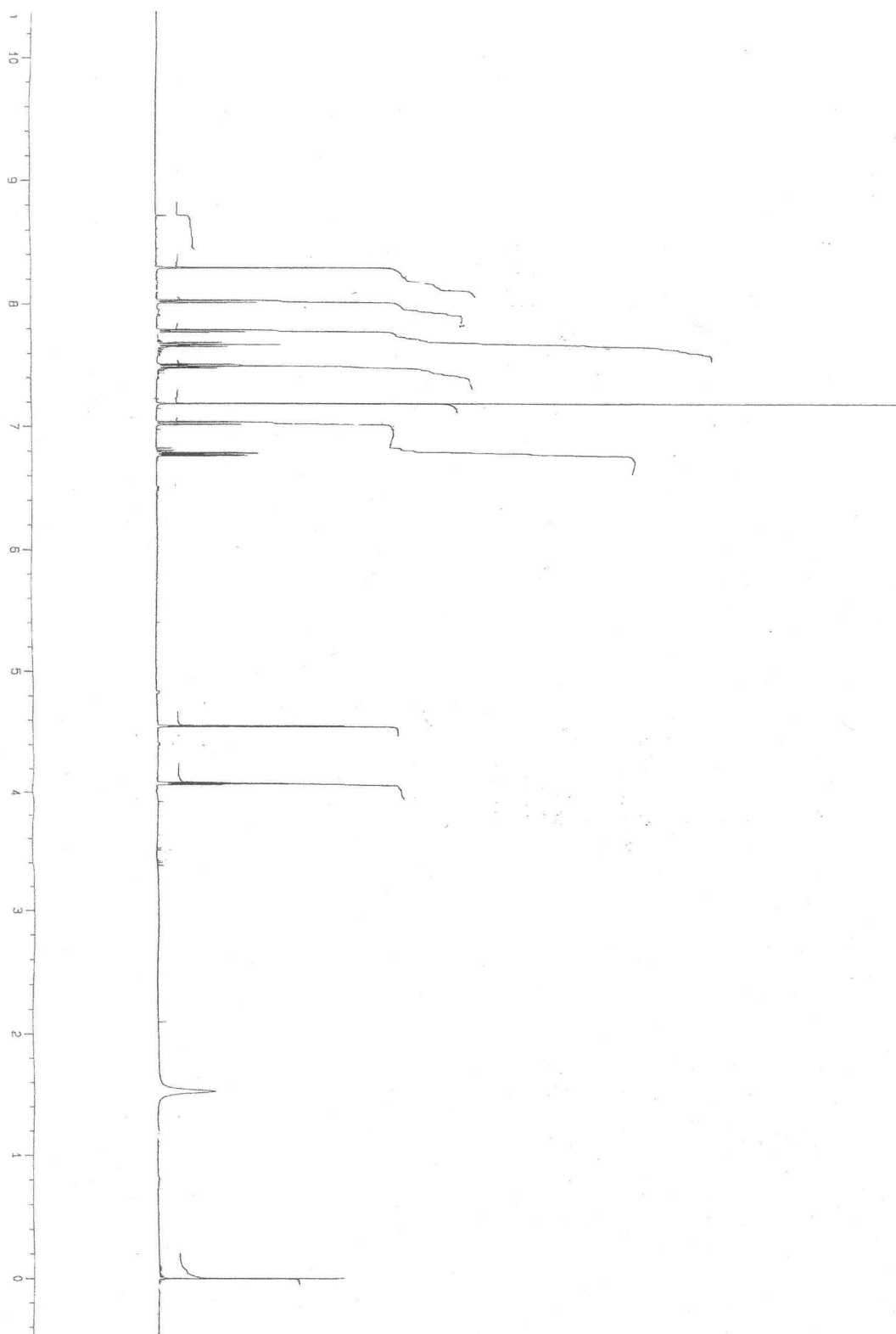
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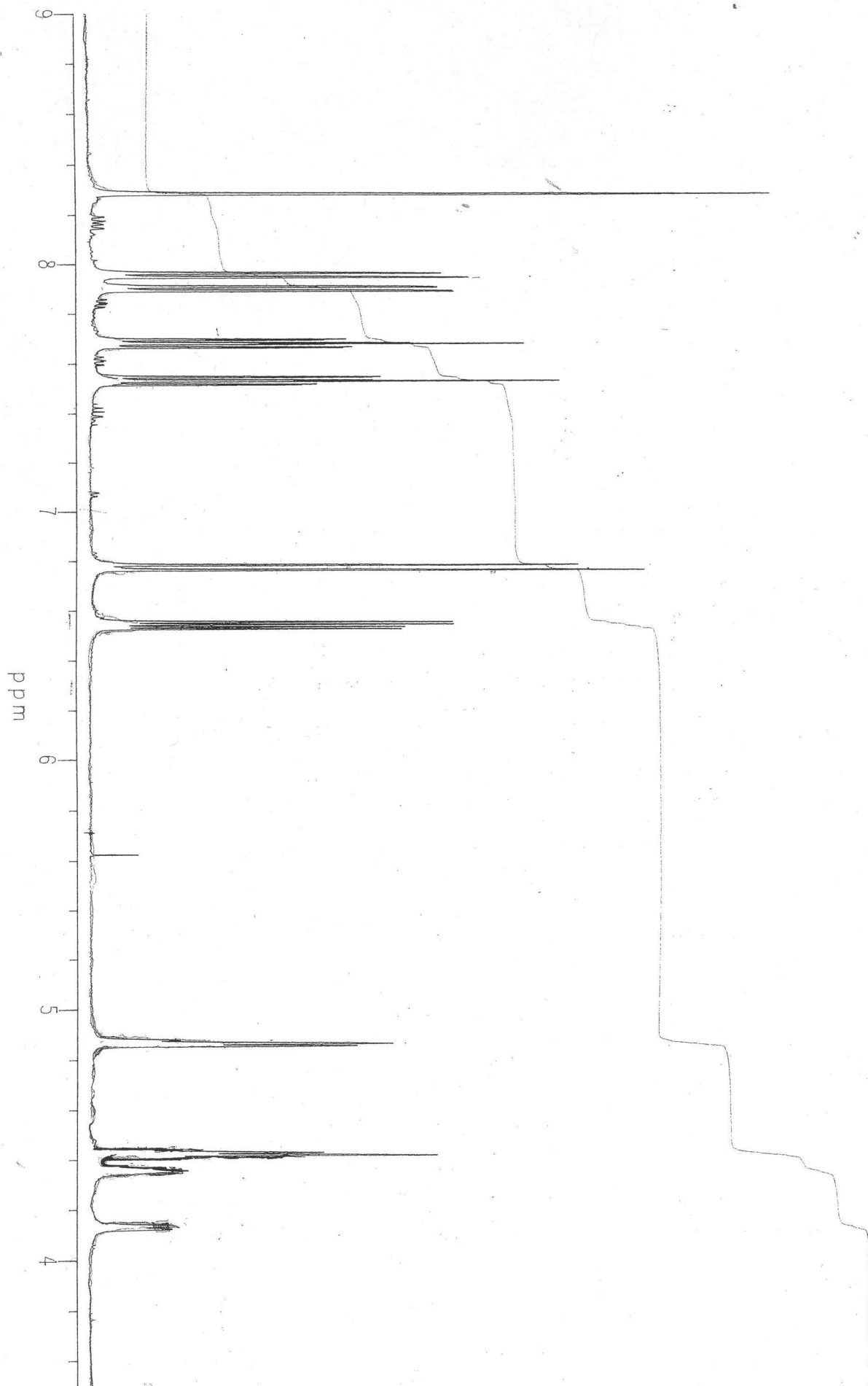
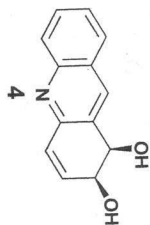
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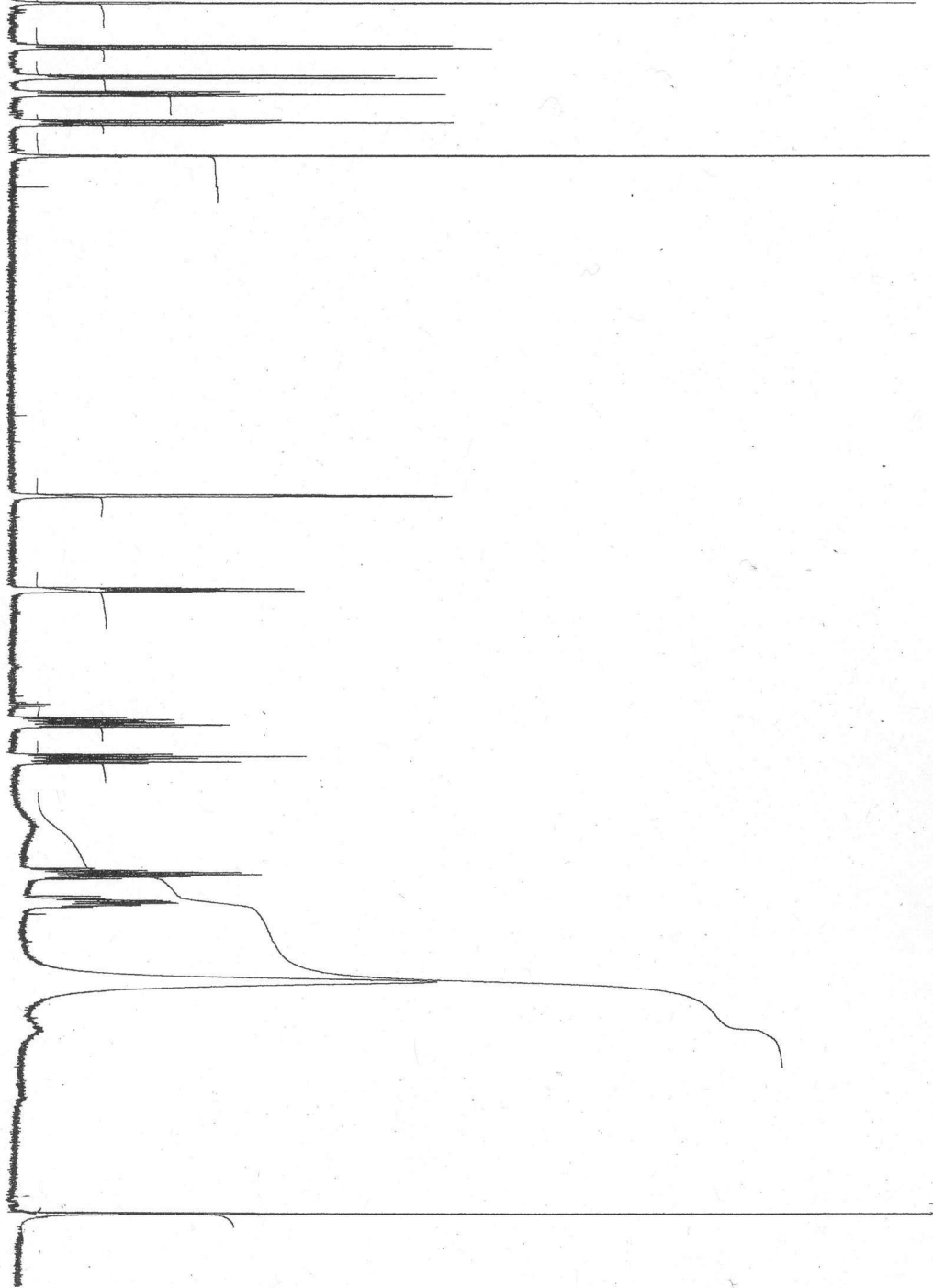
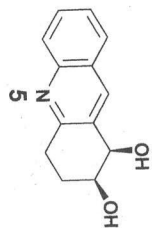
NMR Spectra of acridine and dictamnine metabolites and derivatives

Copy of ¹ H spectrum of compound	2
Copy of ¹ H spectrum of compound	4
Copy of ¹ H spectrum of compound	5
Copy of ¹ H spectrum of compound	6
Copy of ¹ H spectrum of compound	14
Copy of ¹ H spectrum of compound	16
Copy of ¹ H spectrum of compound	17
Copy of ¹ H spectrum of compound	23
Copy of ¹ H spectrum of compound	27
Copy of ¹ H spectrum of compound	29



Current Data Parameters	
NAME	SCR100
PROBNO	20
PROBNO	1
F2 - Acquisition Parameters	
Pris-	950624
INSTR	drift01
PROBNO	5 mm Out1.HI
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TE	300.0 K
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D11	0.00 usec
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MU1	1H
PL1	-3.00 dB
F3 - Processing Parameters	
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SF	500.135060 MHz
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SSS	0.00 Hz
LB	0.00 Hz
GB	0.00 Hz
PC	1.00
10 NMR plot parameters	
IX	33.00 cm
FY	33.00 cm
FZ	5251.37 Hz
F2p	-0.000 gpm
F2	-250.07 Hz
PRICH	0.33333 pps/cd
PRICH	160.171 Hz/cd



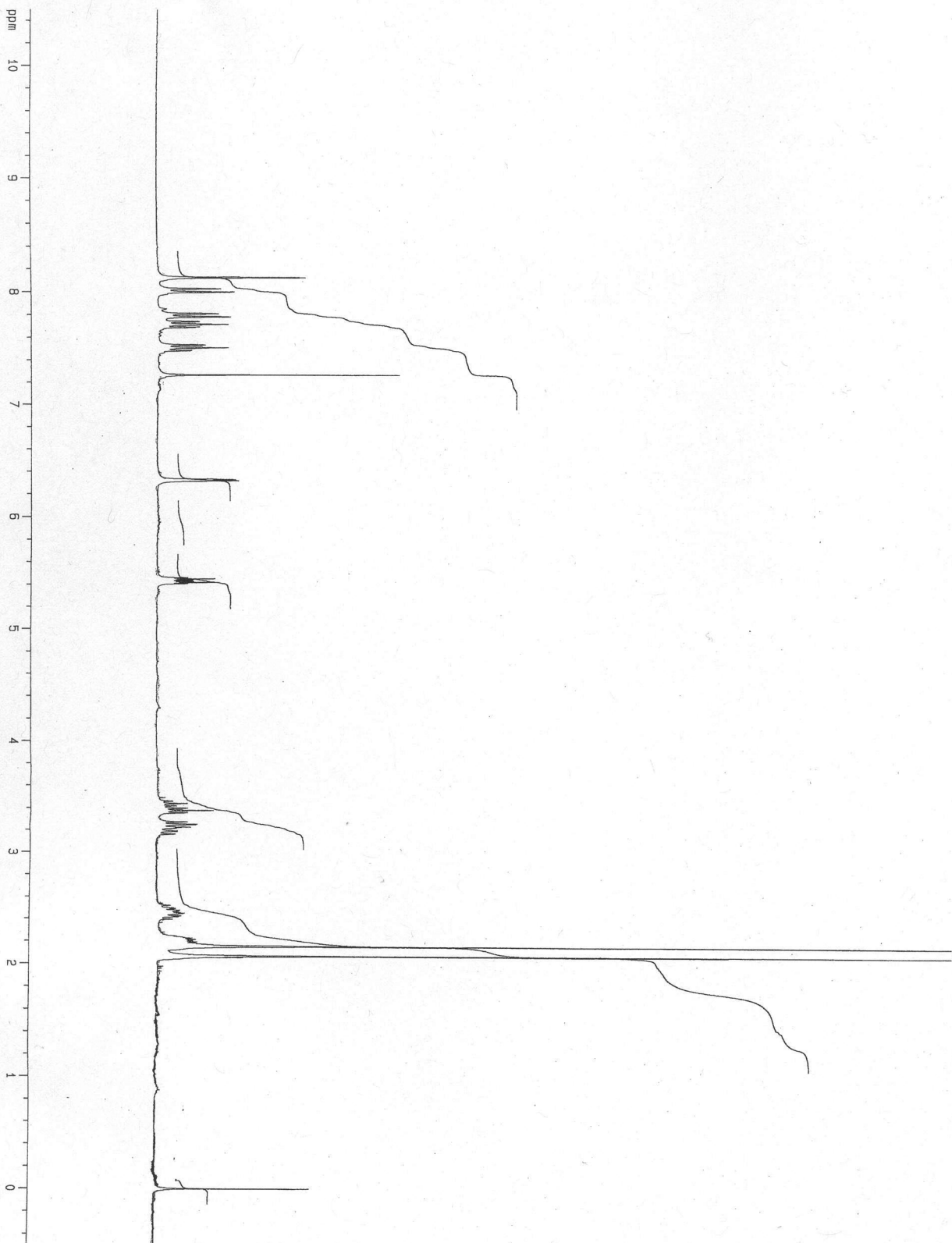
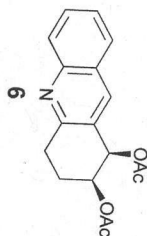


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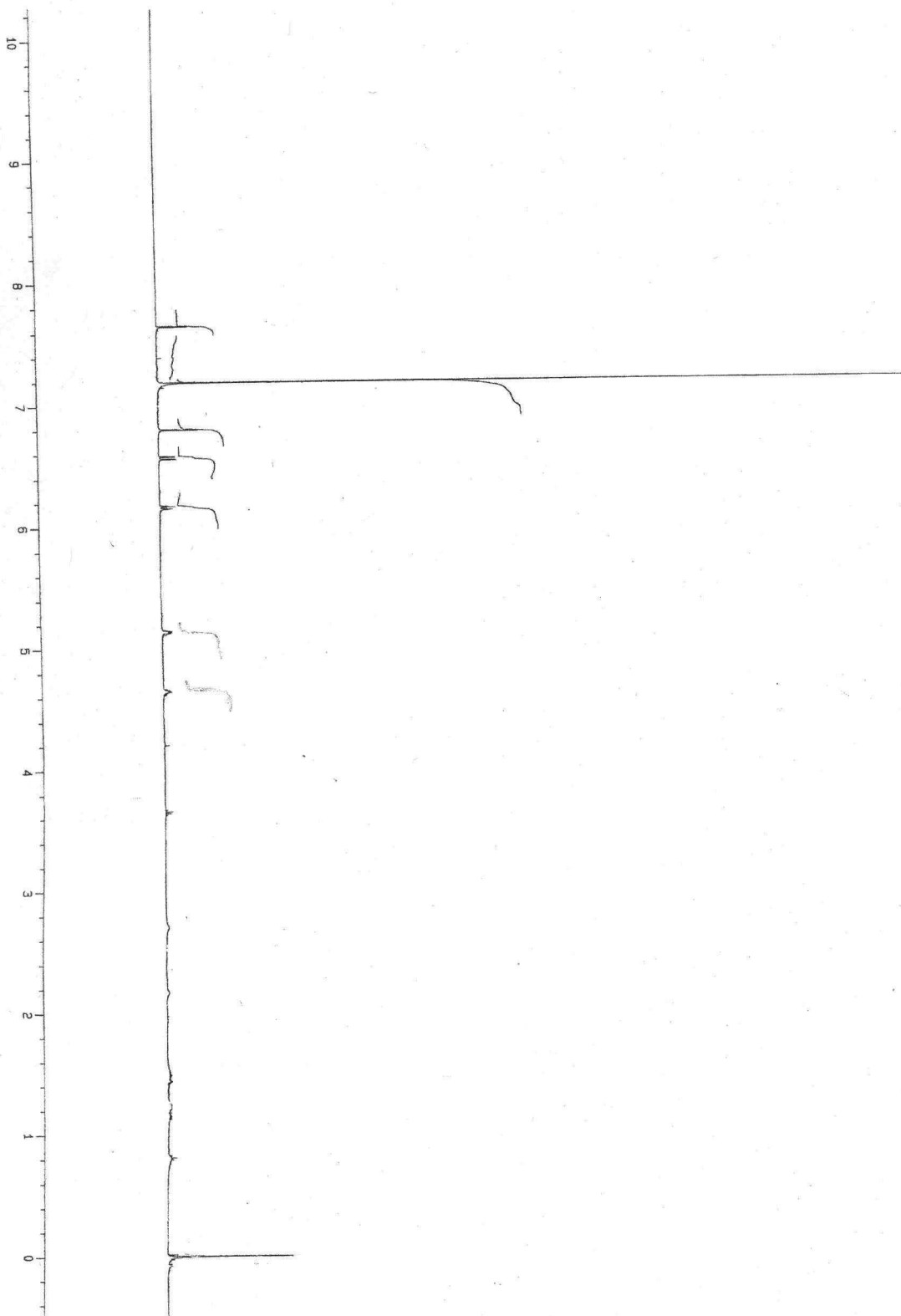
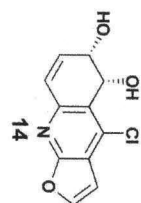
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TD	65536
SOLVENT	CDCl3
NS	32
DS	4
SWH	7607.507 Hz
FIDRES	0.114955 Hz
AQ	4.3647475 sec
RG	512.7
DM	66.600 usec
DE	7.11 usec
TE	300.0 K
D1	2.0000000 sec
P1	6.00 usec
DE	7.11 usec
SFO1	500.1327507 MHz
NUC1	1H
PL1	-3.00 dB

F2 - Processing Parameters	
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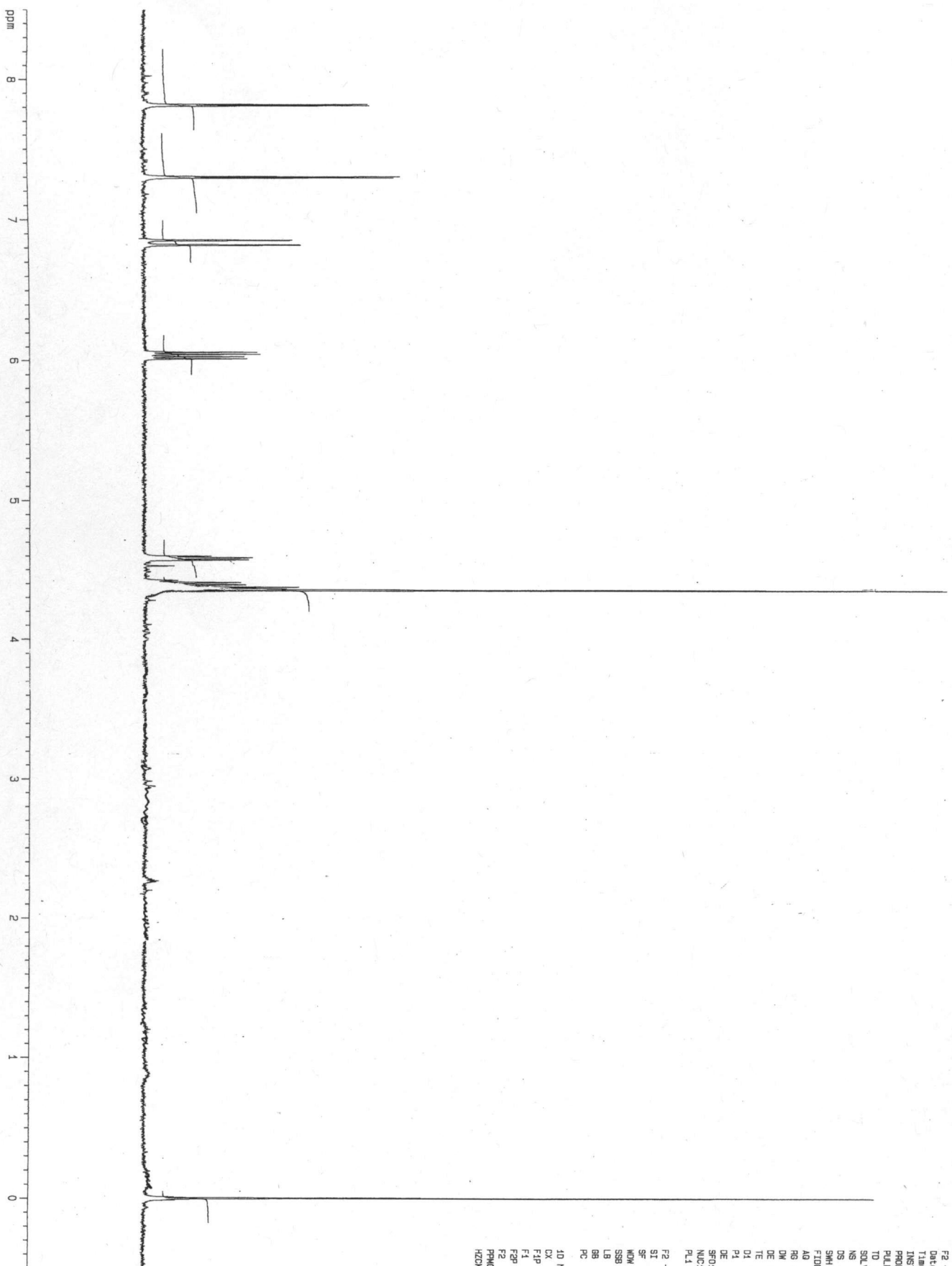
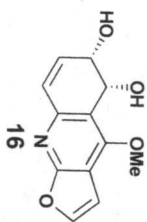
1D NMR plot parameters	
CX	33.00 cm
F1P	10.500 ppm
F1	5251.37 Hz
F2P	-250.07 Hz
F2	0.33333 ppm/cm
PRMCH	166.71001 Hz/cm



Current Data Parameters
 Name: 6
 EXPNO: 10
 PROCNO: 1
 F2 - Acquisition Parameters
 Date_: 990701
 Time: 11.46
 INSTRUM: dpx300
 PROBHD: 5 mm QNP 1H
 PULPROG: zgpg30
 TO: 2930
 SOLVENT: CDCl3
 NS: 327
 DS: 4
 SWH: 4789.272 Hz
 FIDRES: 0.146157 Hz
 AQ: 3.4210294 sec
 RG: 382
 DW: 104.400 usec
 DE: 5.50 usec
 TE: 300.0 K
 D1: 1.00000000 sec
 P1: 10.80 usec
 DE: 5.50 usec
 SFO1: 300.018001 MHz
 NUC1: 1H
 PC1: -6.00 dB
 F2 - Processing parameters
 SI: 16384
 SF: 300.0100067 MHz
 MDW: EN
 SSB: 0
 LB: 0.30 Hz
 SB: 0
 PC: 1.00
 1D NMR plot parameters
 CX: 30.00 cm
 CZ: 30.00 cm
 F1P: 100.500 MHz
 F2P: 300.000 MHz
 F3P: -190.01 MHz
 PPMCH: 0.38657 ppm/cm
 HZCM: 110.00357 Hz/cm



Current Data Parameters
EXPNO 2
PROCNO 1
F2 - Acquisition Parameters
Date_ 07/04/15
Time 14:51
INSTRUM spect
PROBHD 5 mm MSL100
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 64
DS 4
SWH 6892.806 Hz
AQ 0.274439 Hz
RG 327.14
FIDRES 1.821908 sec
AQ 0.274439 Hz
RG 327.14
TE 300.0 K
D1 1.0000000 sec
P1 10.00 usec
DE 7.11 usec
SFO1 500.136298 MHz
NUC1 1H
P11 -3.00 dB
F2 - Processing parameters
SI 32768
SF 500.136298 MHz
NMQ 64
EN 1
SFO 500.136298 MHz
NUC 1H
P1 10.00 usec
PC 1.00
D1 1.00
F2 - NMR plot parameters
CX 32.00 cm
ZP 1.00 cm
F1 4501.37 Hz
F2 -250.07 Hz
P1 0.33333 sec/cm
H2CM 100.7100 Hz/cm

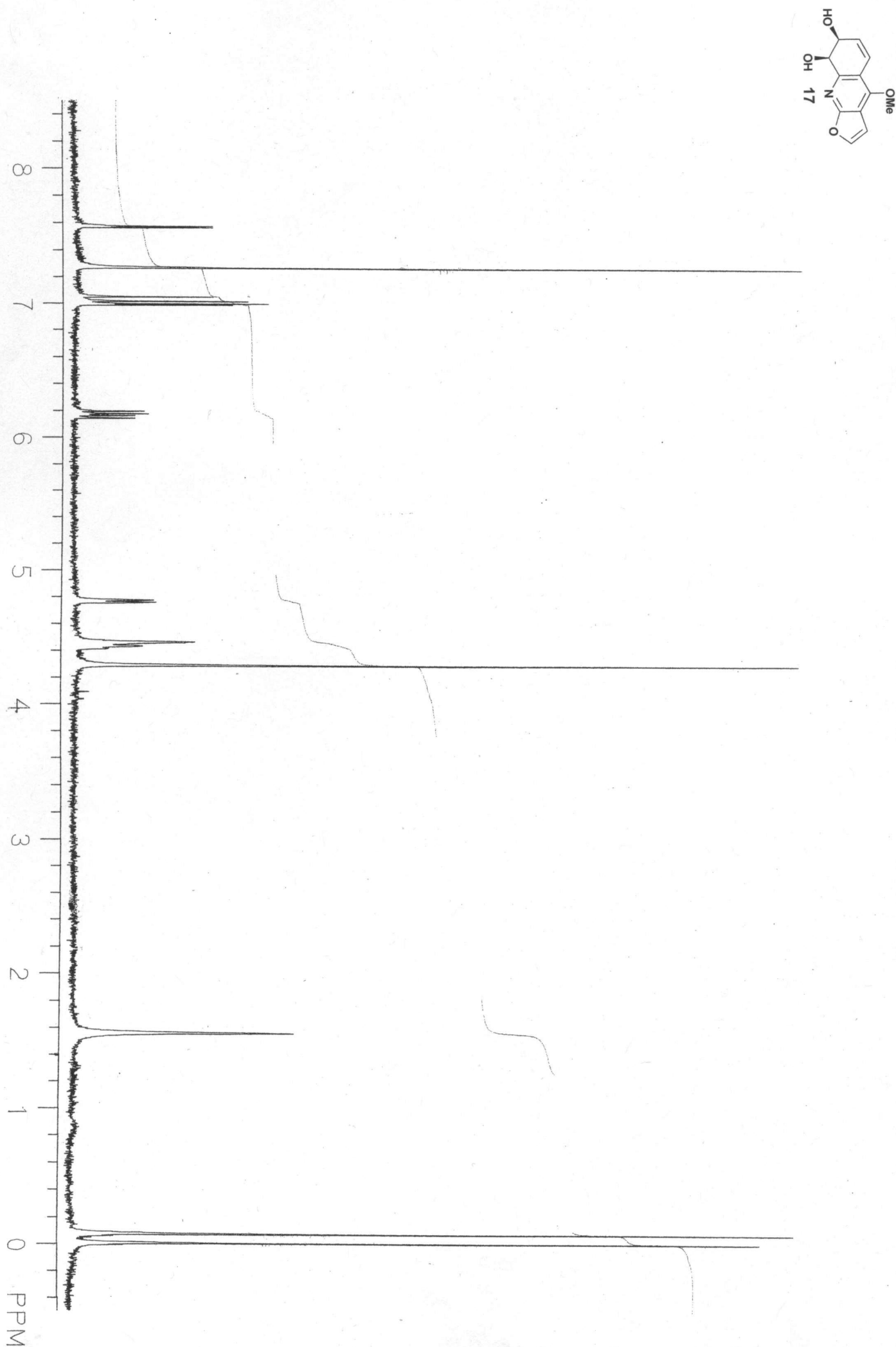


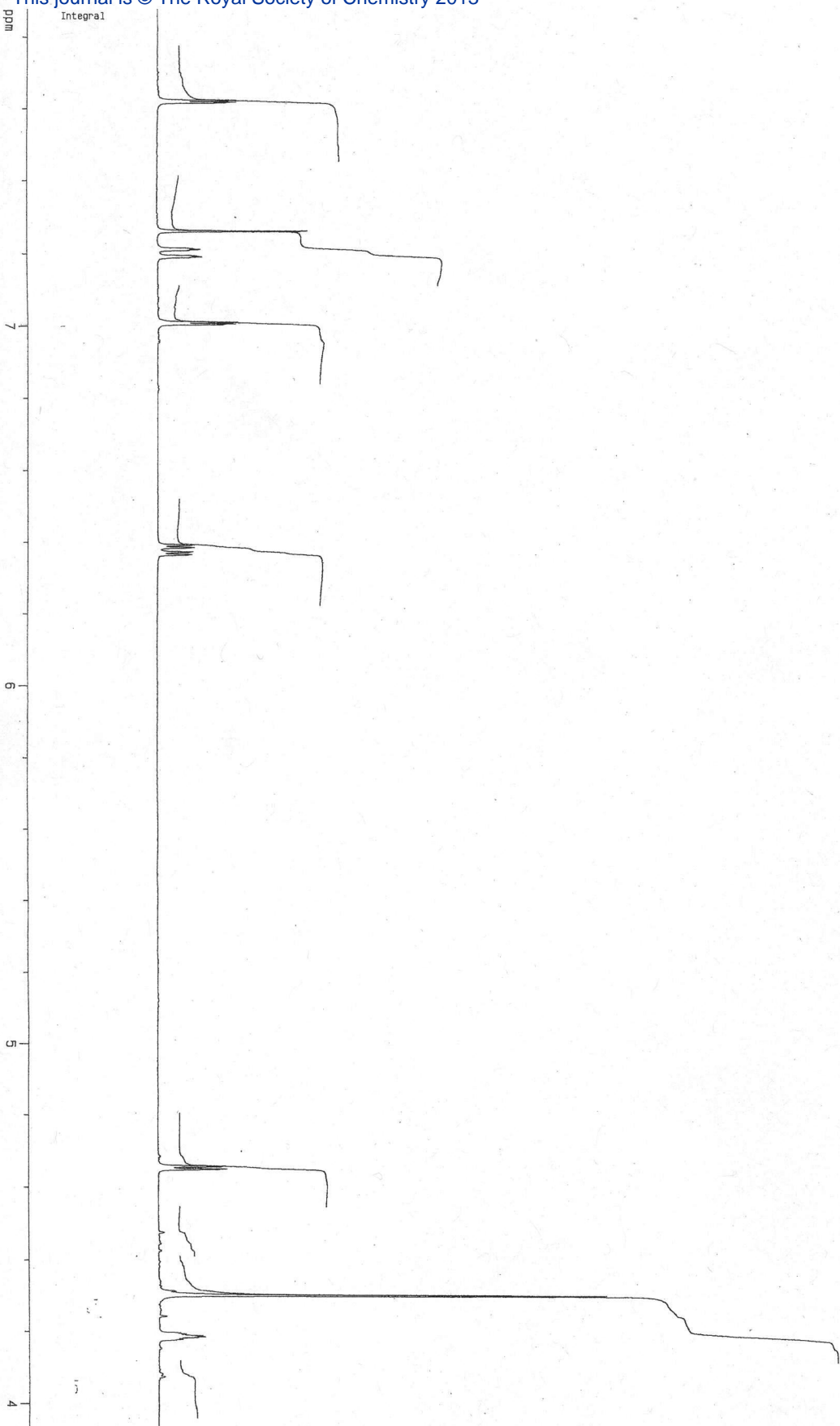
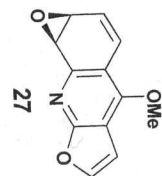
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EXPNO 10
PROCNO 1

F2 - Acquisition Parameters
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Time 11.50
INSTRUM dpv300
PROBHD 5 mm QNP 1H
PULPROG zg30
TD 32768
SOLVENT Aceton
NS 8
DS 0
SWH 5341.880 Hz
FIDRES 0.163021 Hz
AQ 3.0671349 sec
RG 812.7
DE 93.600 usec
TE 300.0 K
D1 1.00000000 sec
P1 10.80 usec
DE 5.50 usec
SF01 300.0120673 MHz
NUC1 1H
PL1 -6.00 dB

F2 - Processing parameters
SI 16384
SF 300.0100074 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

10 MHz plot parameters
CX 33.00 cm
F1P 8.500 ppm
F1 2550.08 Hz
F2P -0.500 ppm
F2 -150.04 Hz
PRNCH 0.27273 ppm/cm
HZCH 81.82092 Hz/cm



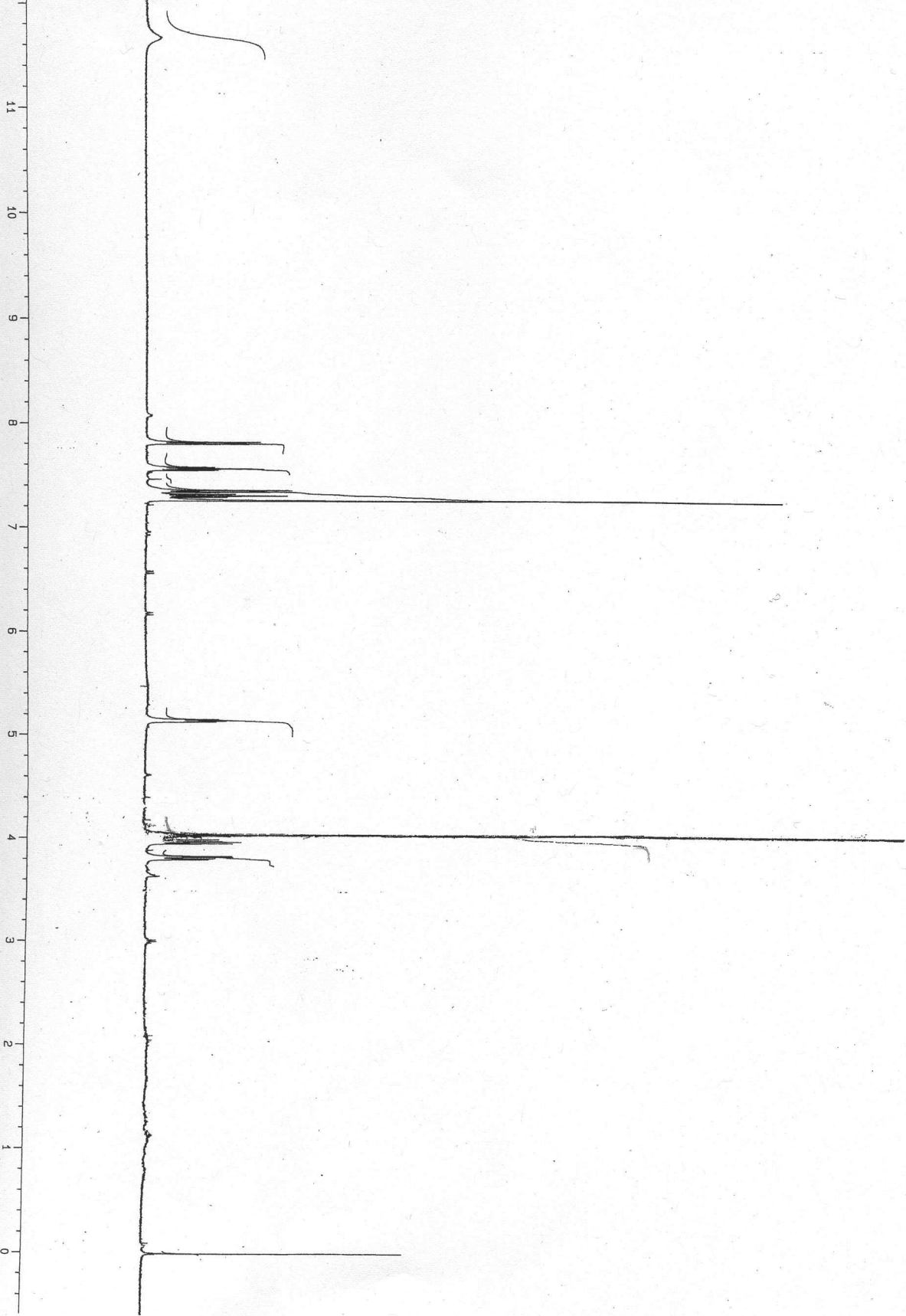
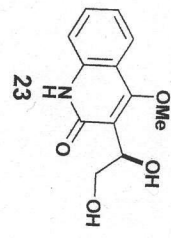


Current Data Parameters
NAME dltcpx
EXPNO 10
PROCNO 1

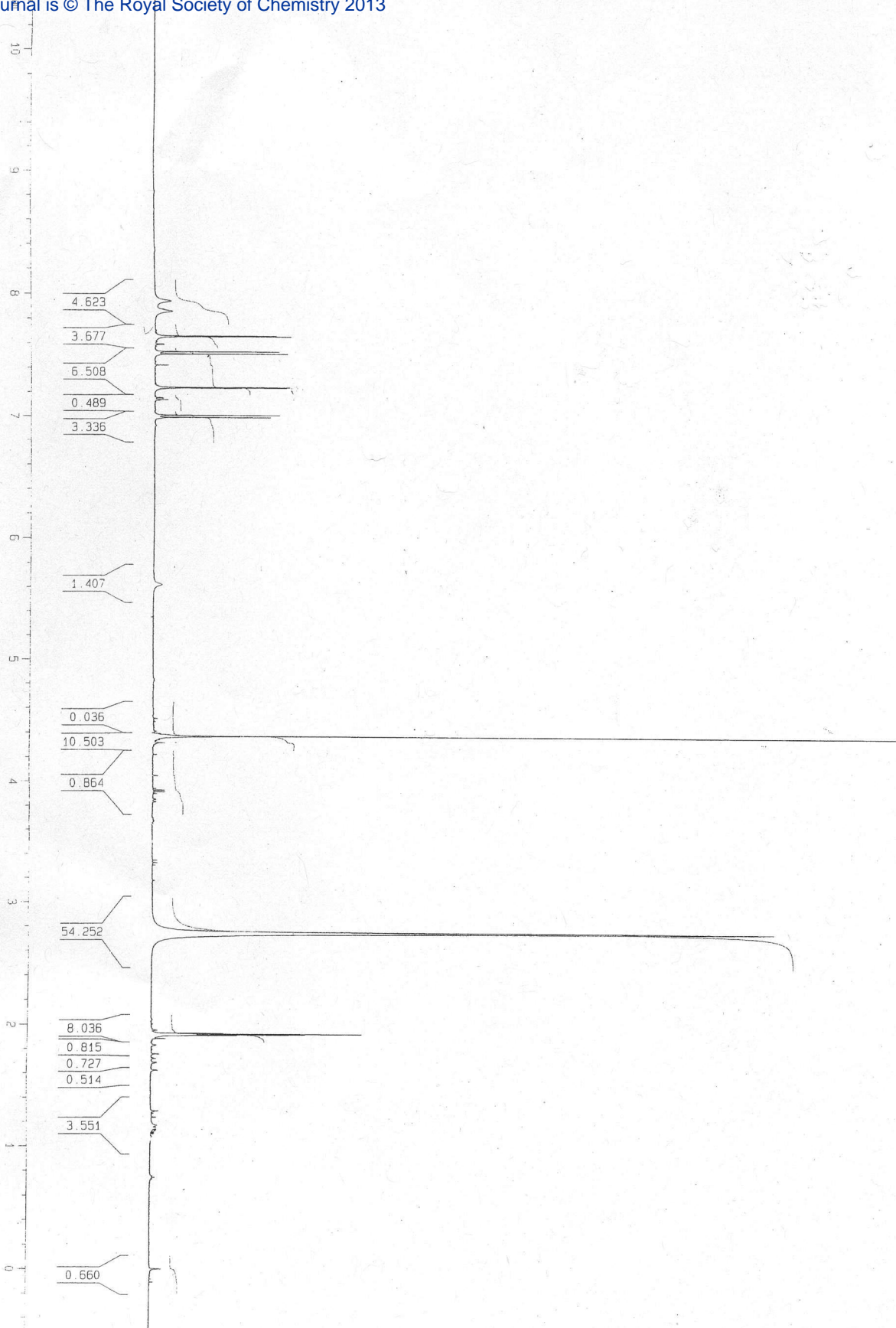
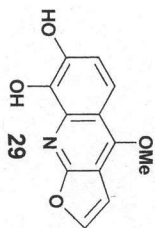
F2 - Acquisition Parameters
Date_ 20120323
Time 14:13
INSTRUM spect
PROBHD 5 mm QNP 1H
PULPROG zgpg30
TD 65536
FIDRES 0.114555 Hz
AQ 4.364775 sec
RG 256
DM 65.500 usec
DE 7.11 usec
TE 300.0 K

F2 - Processing parameters
SI 32768
SF 500.130013 MHz
WDW EM
SSB 0
LB 0.00 Hz
GB 0
PC 1.00

1D NMR plot parameters
CX 33.00 cm
F1P 7.879 ppm
F1 3940.44 Hz
F2P 3.928 ppm
F2 1964.35 Hz
PNUCK 0.11973 ppm/cm
HZCK 59.95140 Hz/cm



Current Data Parameters		
NAME	dictacid	
EXPNO	20	
PROCNO	1	
F2 - Acquisition Parameters		
Date_	981118	
Time	10.52	
INSTRUM	drx500	
PROBHD	5 mm MSLTNU	
PULPROG	zgpg30	
TD	65536	
SOLVENT	CDCl3	
NS	32	
DS	4	
SWH	7507.507 Hz	
FIDRES	0.11455 Hz	
AQ	4.364735 sec	
RG	574.7	
DM	66.600 usec	
DE	7.11 usec	
TE	300.0 K	
D1	2.00000000 sec	
P1	10.00 usec	
DE	7.11 usec	
SFO1	500.1327507 MHz	
F2 - Processing parameters		
SI	32768	
SF	500.1300121 MHz	
MDM	EN	
SSB	0	
LB	0.00 Hz	
GB	0	
PC	1.00	
1D NMR plot parameters		
CX	33.00 cm	
F1P	12.358 ppm	
F1	6159.18 Hz	
F2P	-0.589 ppm	
F2	-294.24 Hz	
PPM0	0.39182 ppm/cm	
HZCM	195.85111 Hz/cm	



Current Data Parameters
NAME PL-11-91A
EXPNO 10
PROCNO 1
F2 - Acquisition Parameters
Date_ 20010131
Time 12.33
INSTRUM drx500
PROBHD 5 mm Multinu
PULPROG zgpg30
NUC1 13C
SOLVENT Aceton
NS 16
DS 16
SWH 7507.507 Hz
FIDRES 0.114555 Hz
AQ 4.364775 sec
RG 181
RG 66.600 usec
DE 7.11 usec
TE 300.0 K
D1 1.00000000 sec
===== CHANNEL f1 =====
NUC1 1H
P1 10.00 usec
PL 0.00 dB
SFO1 500.1362507 MHz
F2 - Processing parameters
SI 32768
SF 500.1360749 MHz
WDW EM
SSB 0
LB 0.00 Hz
GB 0
PC 1.00
F2 - NMR plot parameters
CV 16380.00 cm
F1P 10.500 cm
F1 5251.37 Hz
F2P -250.07 Hz
F2 0.3333 ppm/cm
HZCM 166.71002 Hz/cm