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APPENDICES

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จุฬาลงกรณ์มหาวิทยาลัย



APPENDICES A

ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

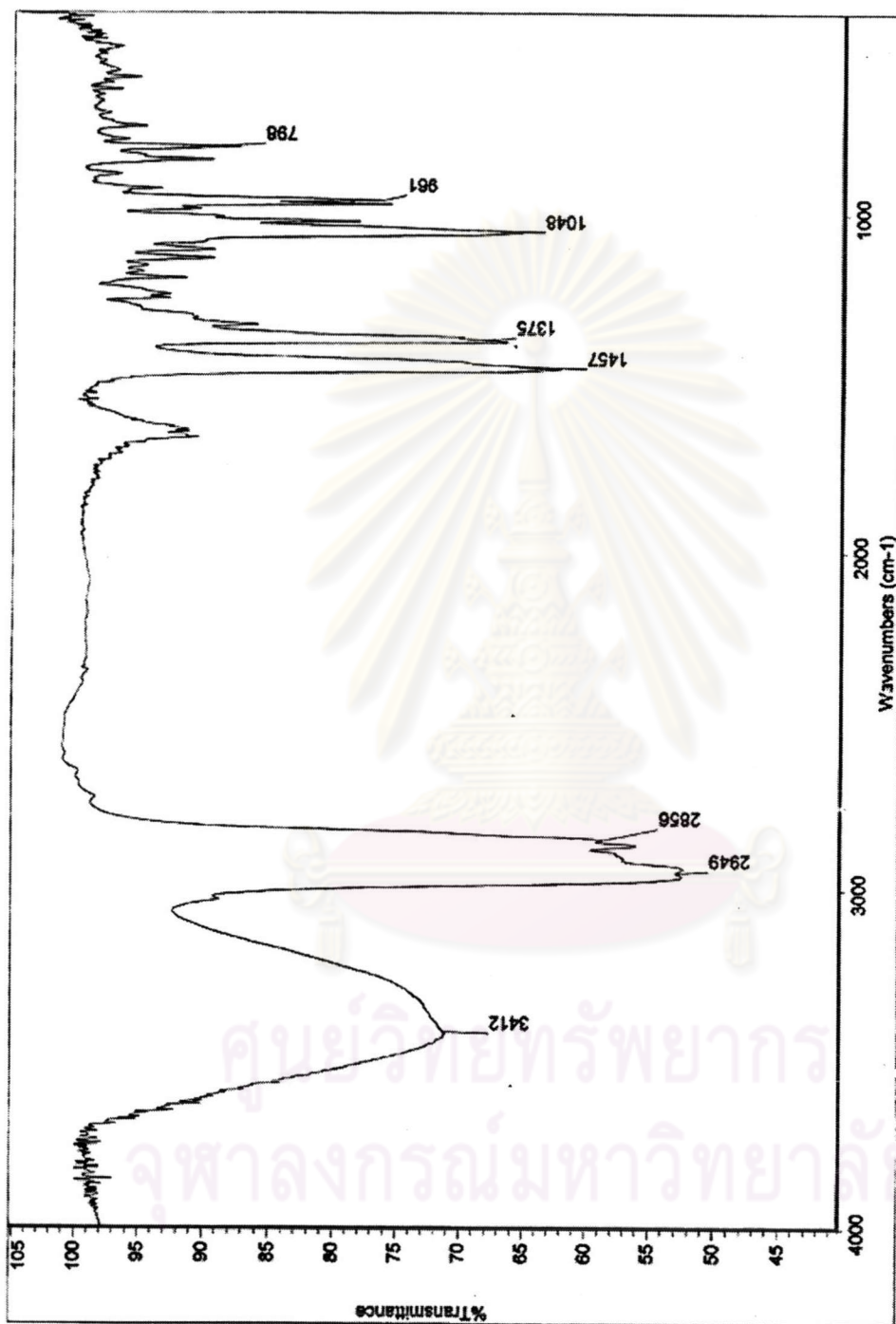


Fig. 1 The IR spectrum of Mixture 1

Chromatogram Plot
Comment:
Scan: 1000 Seg: 1 Group: 0 Retention: 16.66 RIC: 10270 Masses: 35-492
Plotted: 200 to 1000 Range: 1 to 1300 100% = 231221
100%

C:\SATURN\DATA\PS Date: 08/14/02 10:43:51

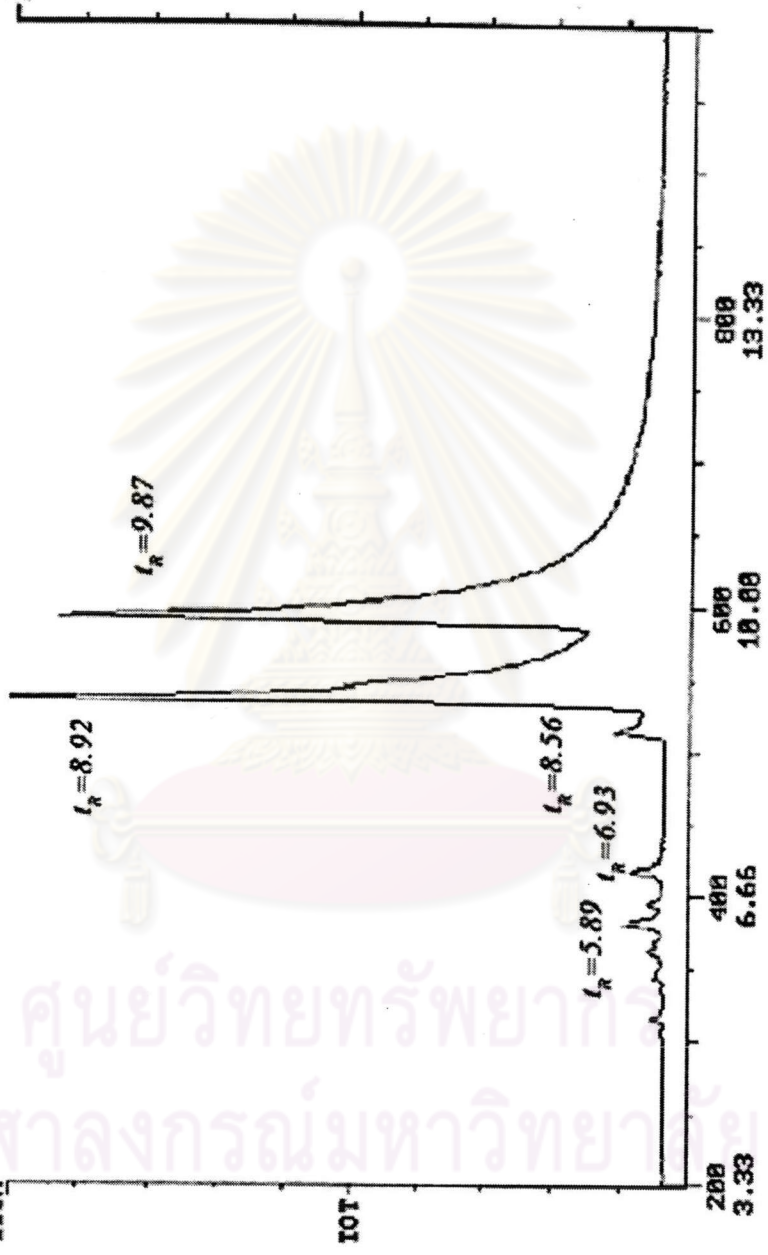


Fig. 2 The GC-MS spectrogram of Mixture I

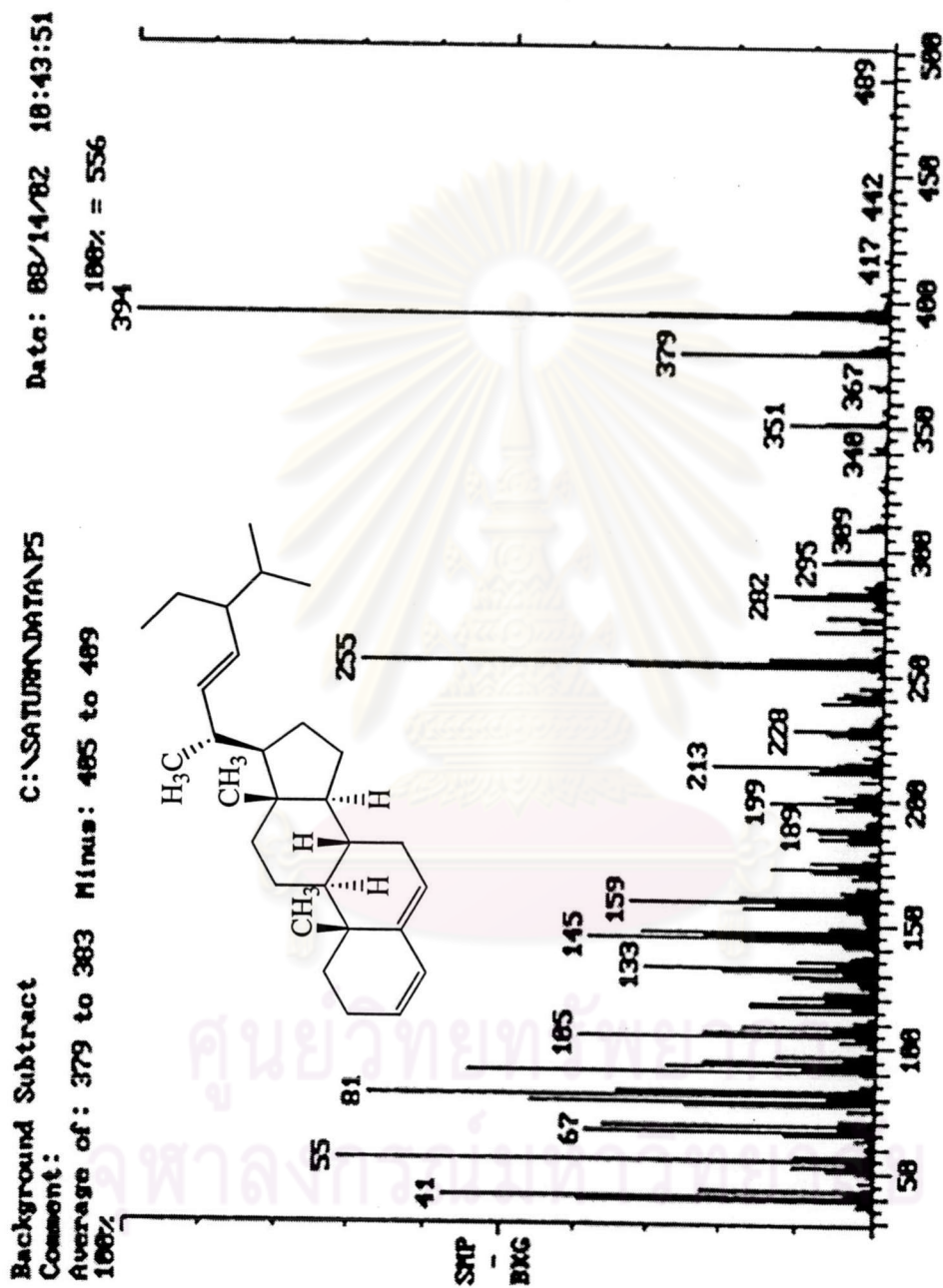


Fig. 3 The mass spectrum of Peak no.1 ($t_R = 5.86$)

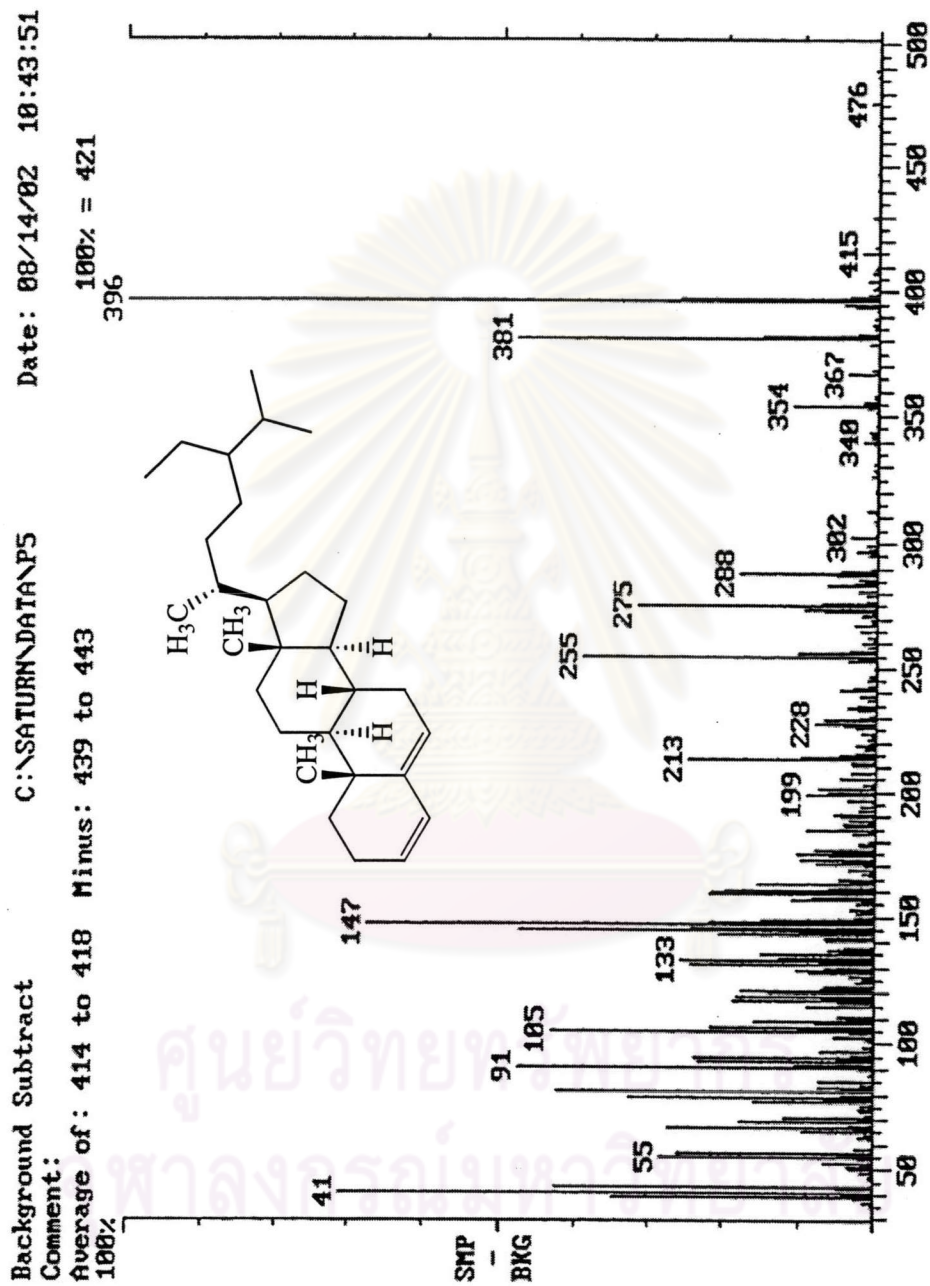


Fig. 3A The mass spectrum of Peak no.2 ($t_R = 6.93$)

Background Subtract C:\SATURN\DATA\NP5 Date: 08/14/02 10:43:51
Comment: Average of: 588 to 588 Minus: 588 to 588 100% = 2357
100% 41

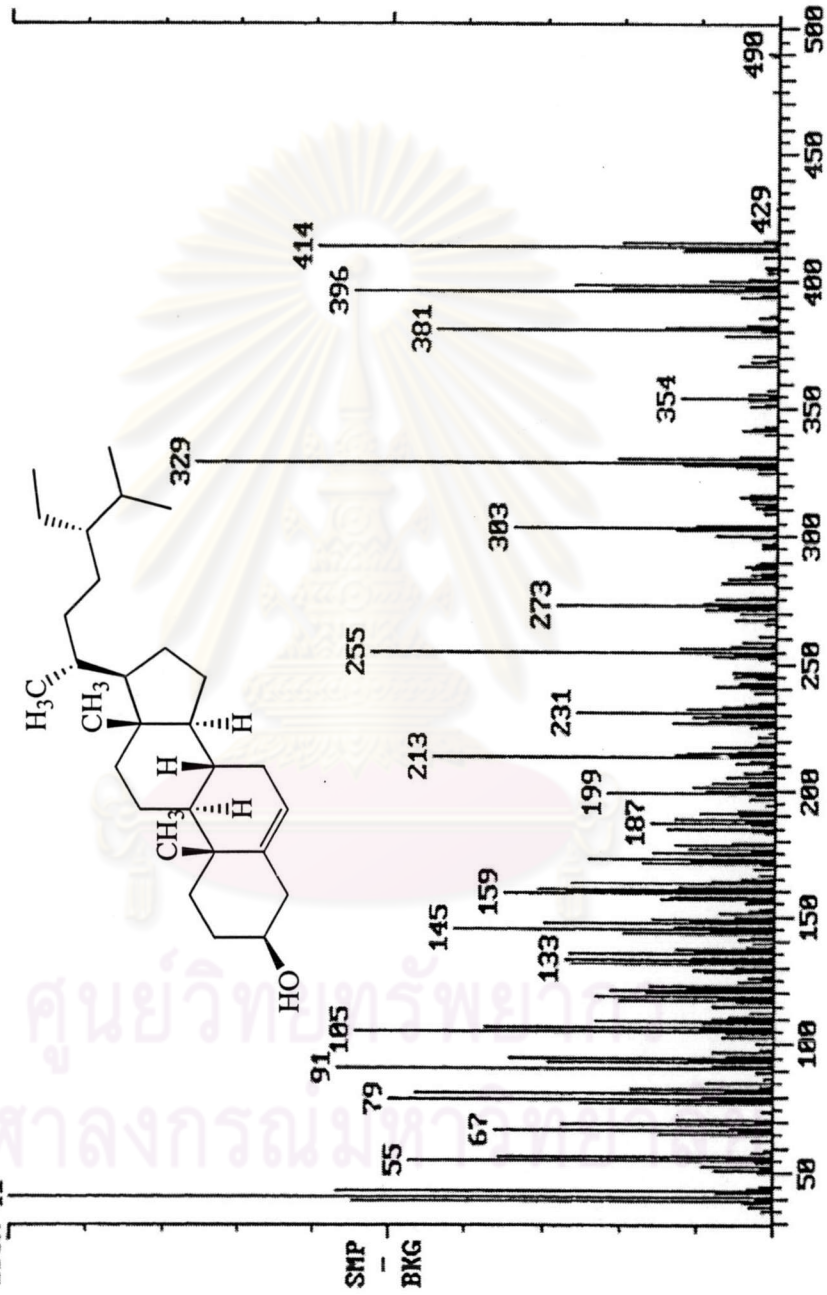


Fig. 3B The mass spectrum of Peak no.3 ($t_R = 8.56$)

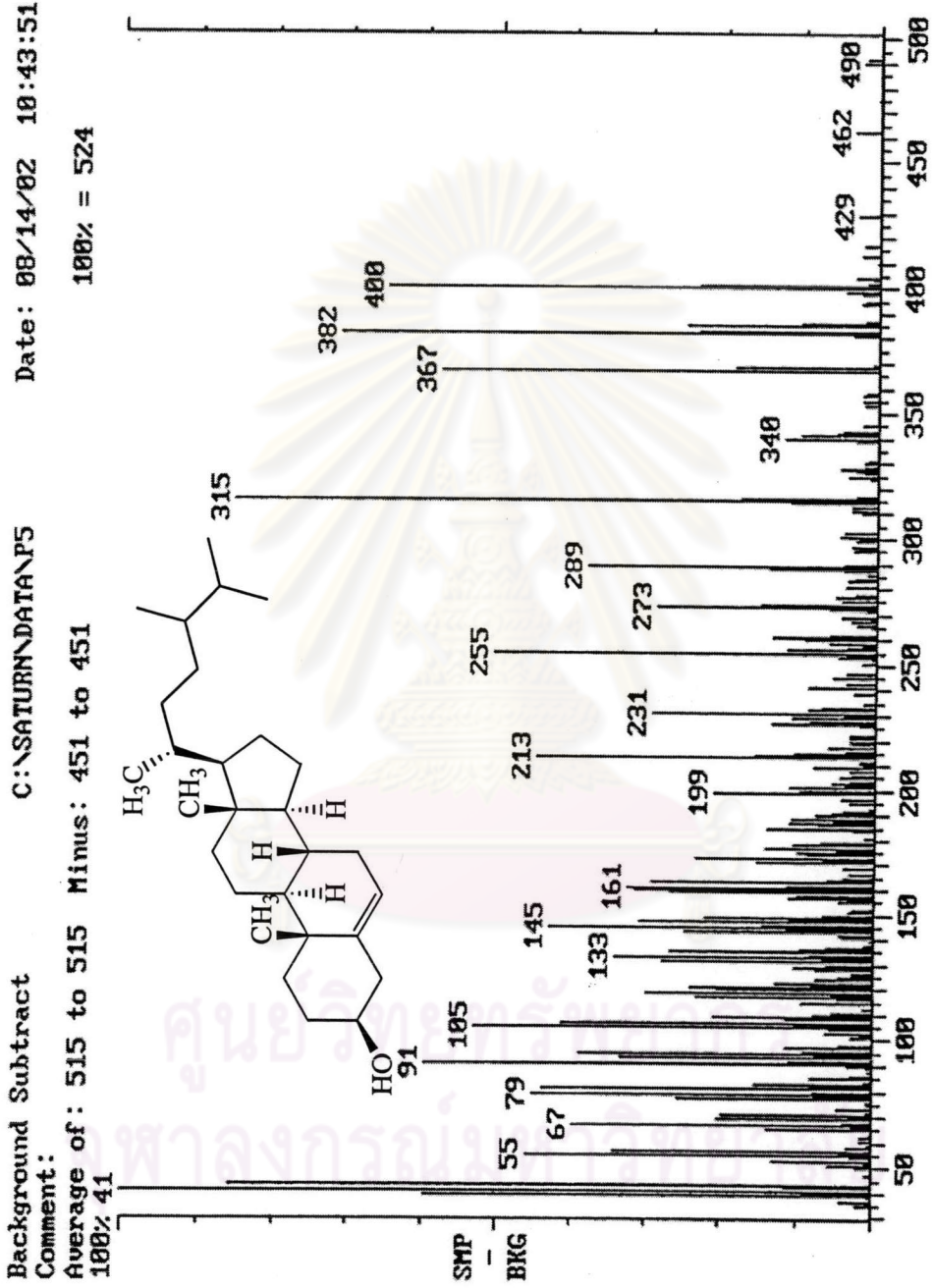


Fig. 3C The mass spectrum of Peak no.4 ($t_R = 8.92$)

Background Subtract C:\SATURN\DATA\PF5 Date: 08/14/02 10:43:51
 Comment: Average of : 538 to 542 Minus: 524 to 528 100% = 4946
 100% 55

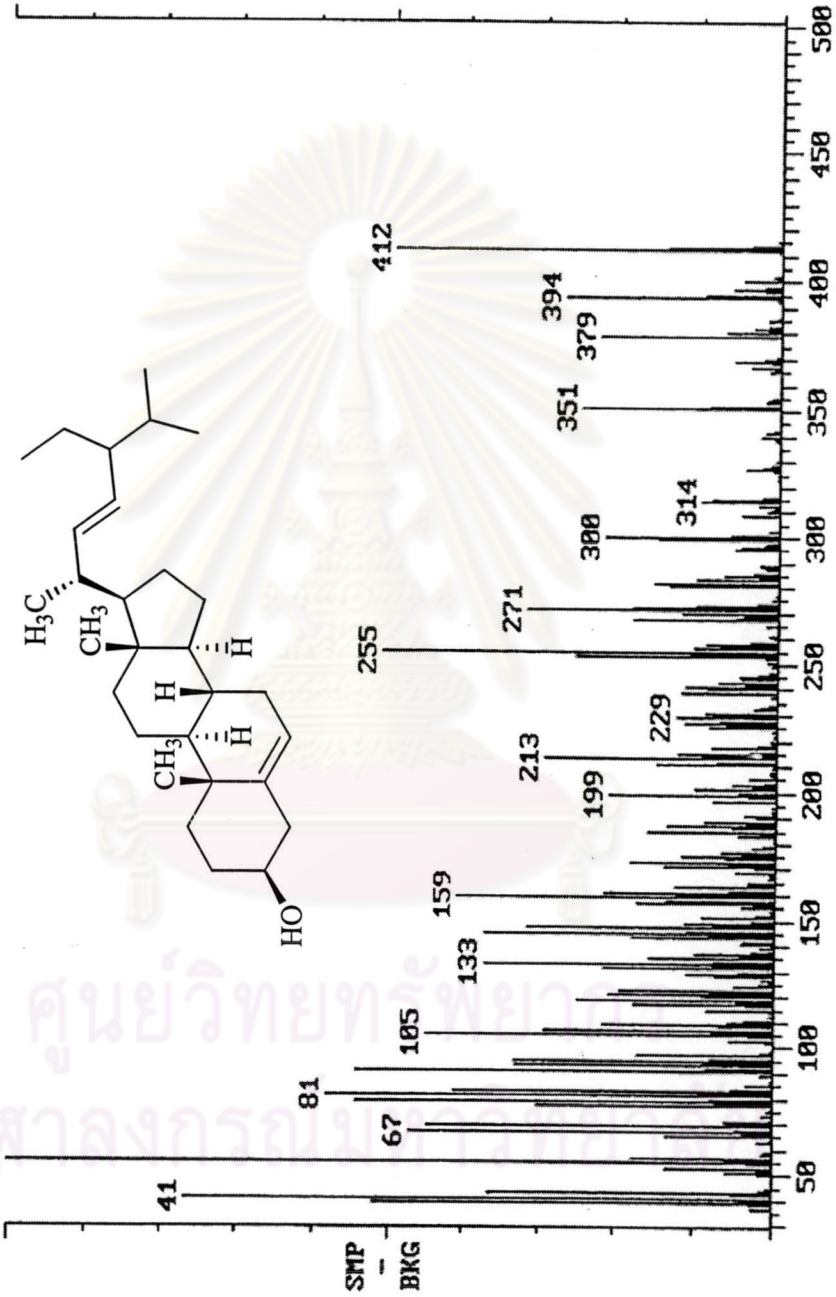


Fig. 3D The mass spectrum of Peak no.5 ($t_R = 9.87$)

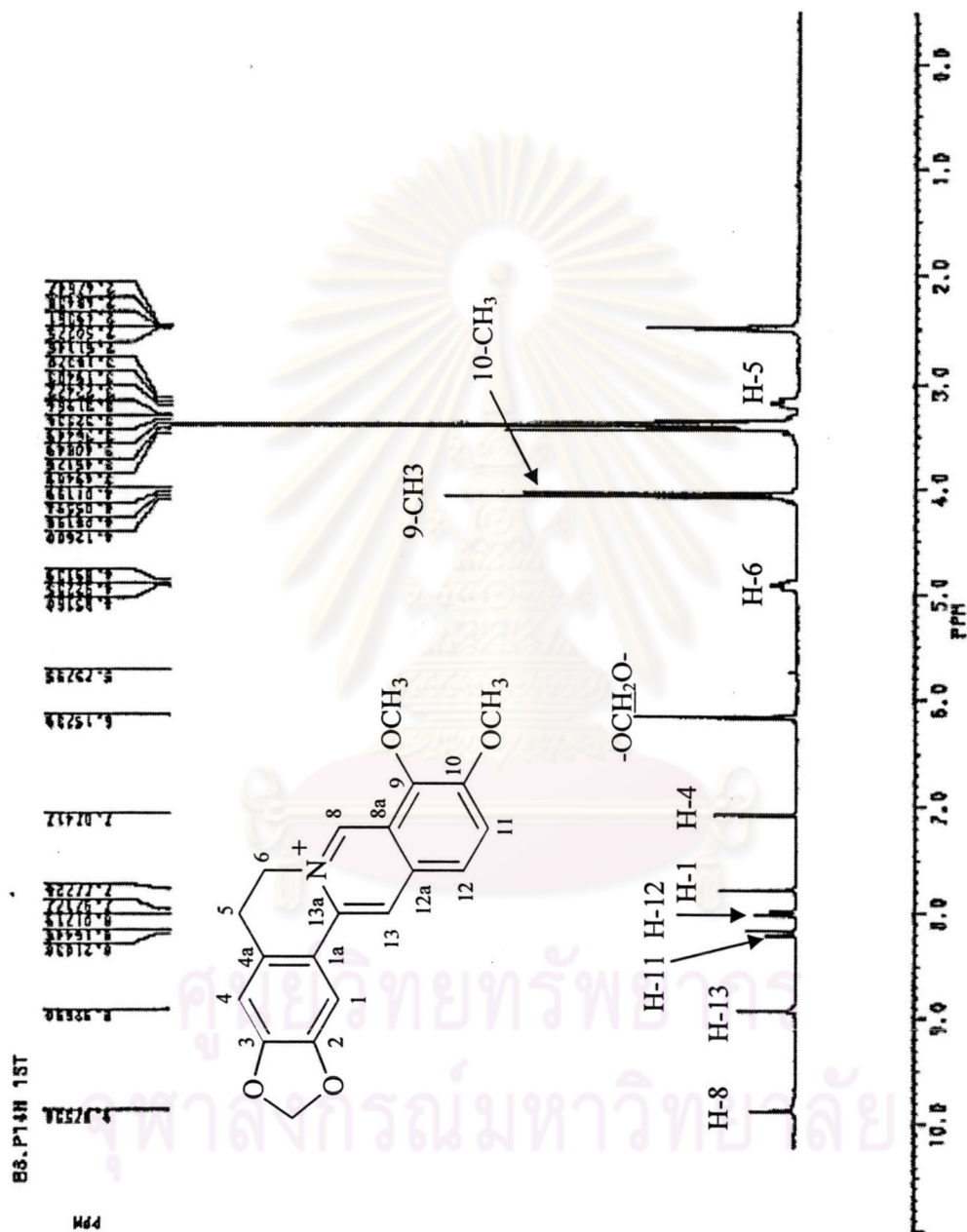


Fig. 4 The ^1H NMR ($\text{DMSO-}d_6$) spectrum of Compound 2

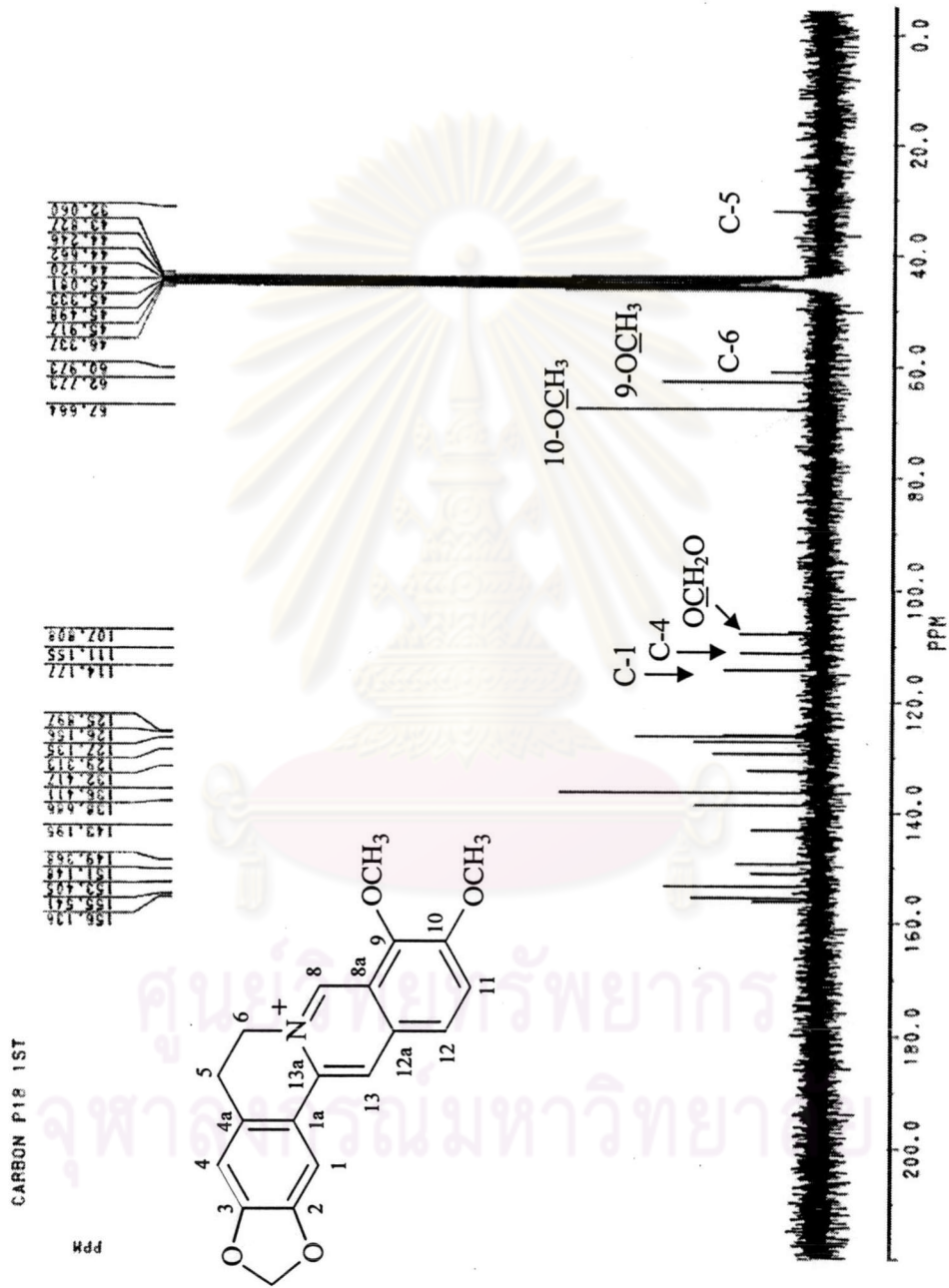


Fig. 5 The ¹³C NMR (DMSO-*d*₆) spectrum of Compound 2



Fig. 6 The mass spectrum of Compound 2

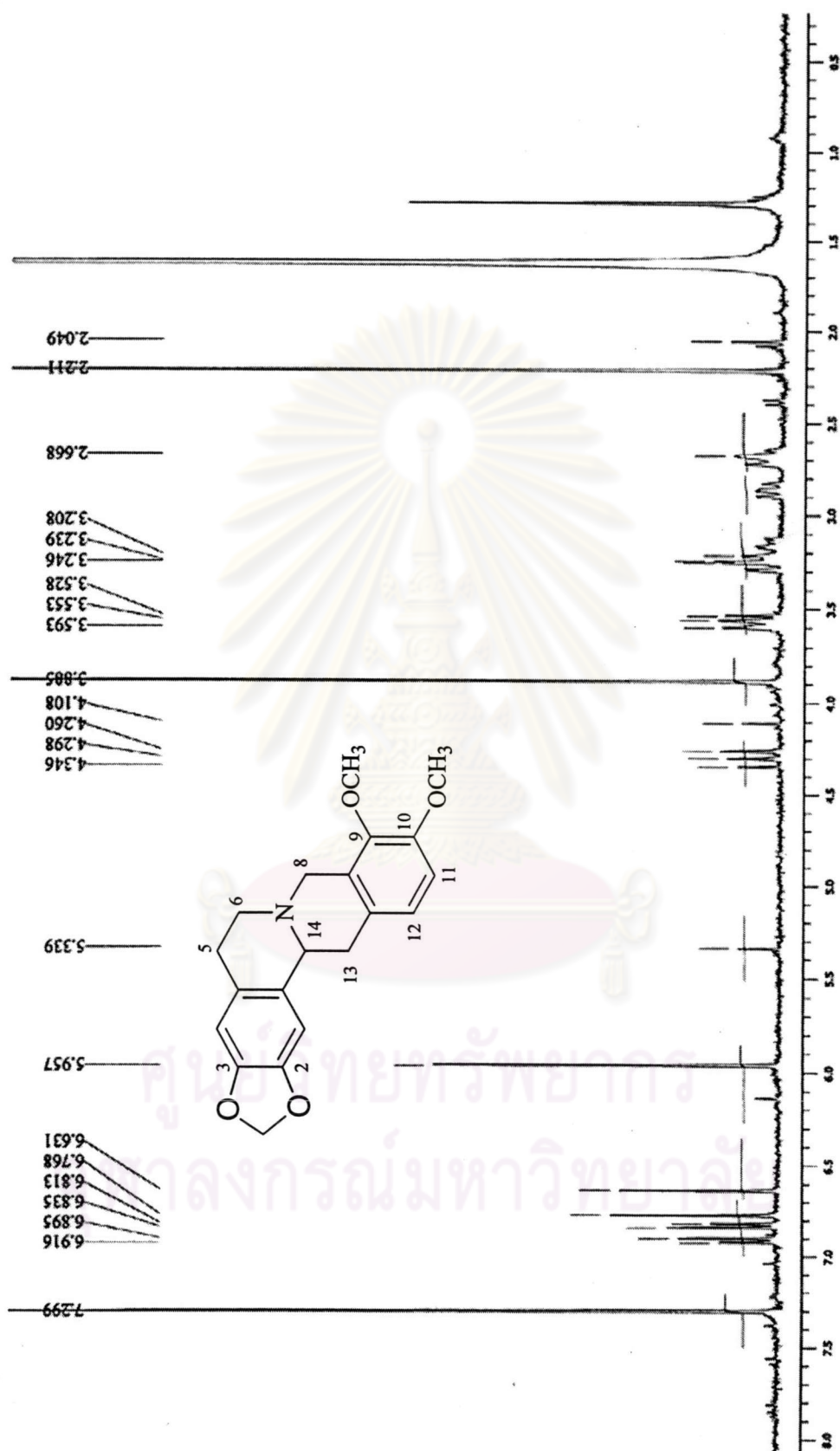


Fig. 7 The ^1H NMR ($\text{DMSO-}d_6$) spectrum of Compound 2A

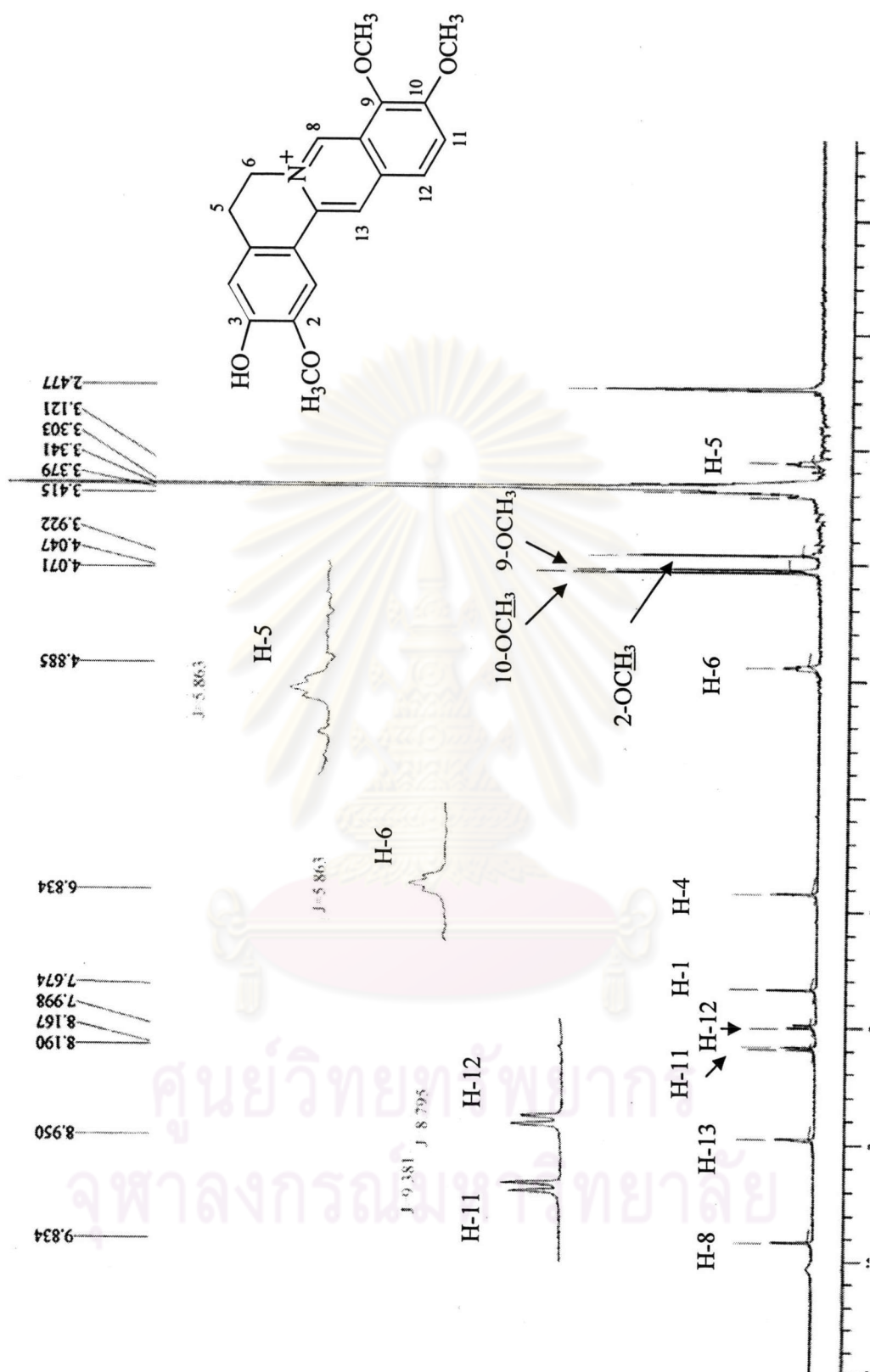


Fig.8 The $^1\text{H NMR}$ (DMSO- d_6) spectrum of Compound 3

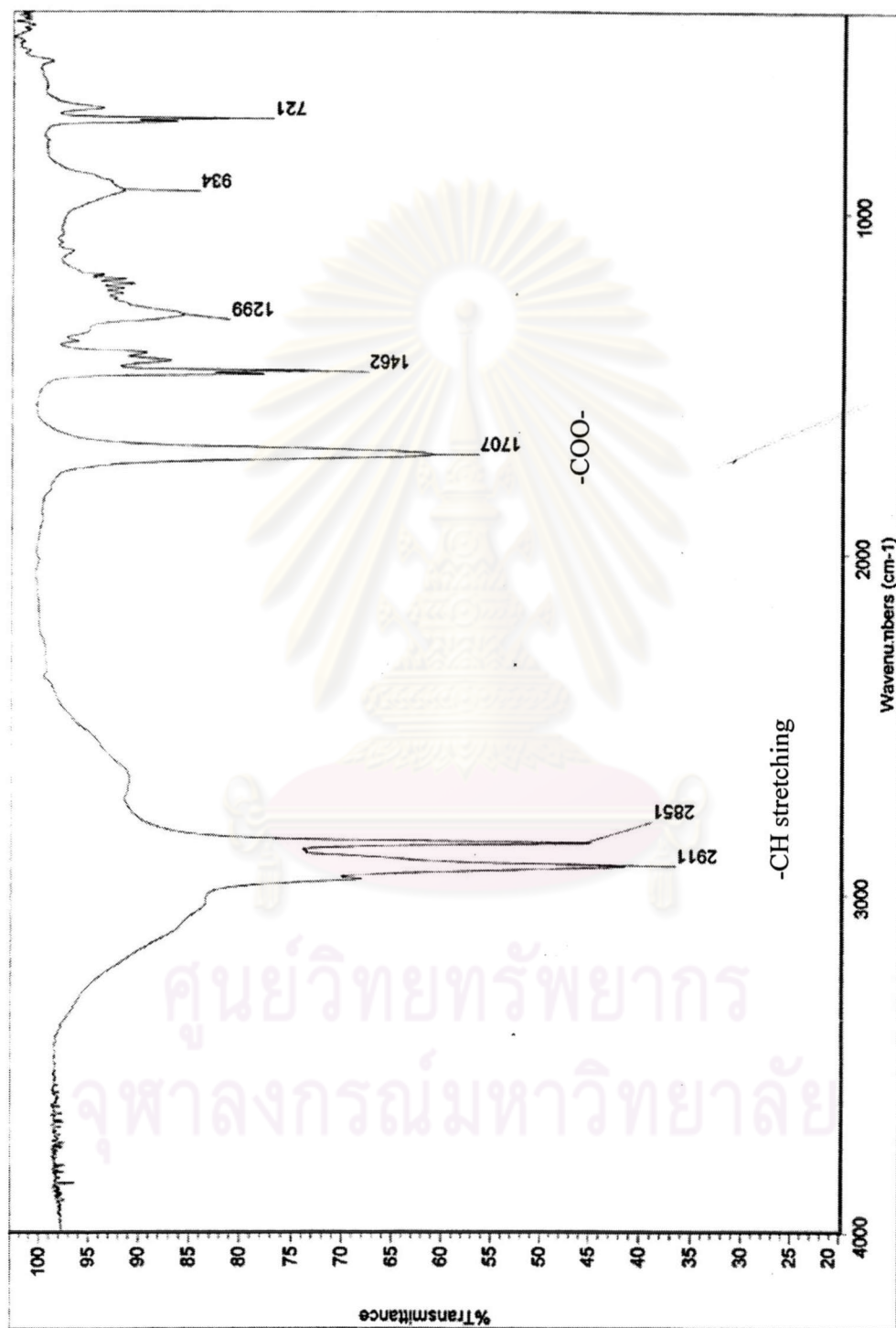


Fig. 9 The IR spectrum of Compound 4

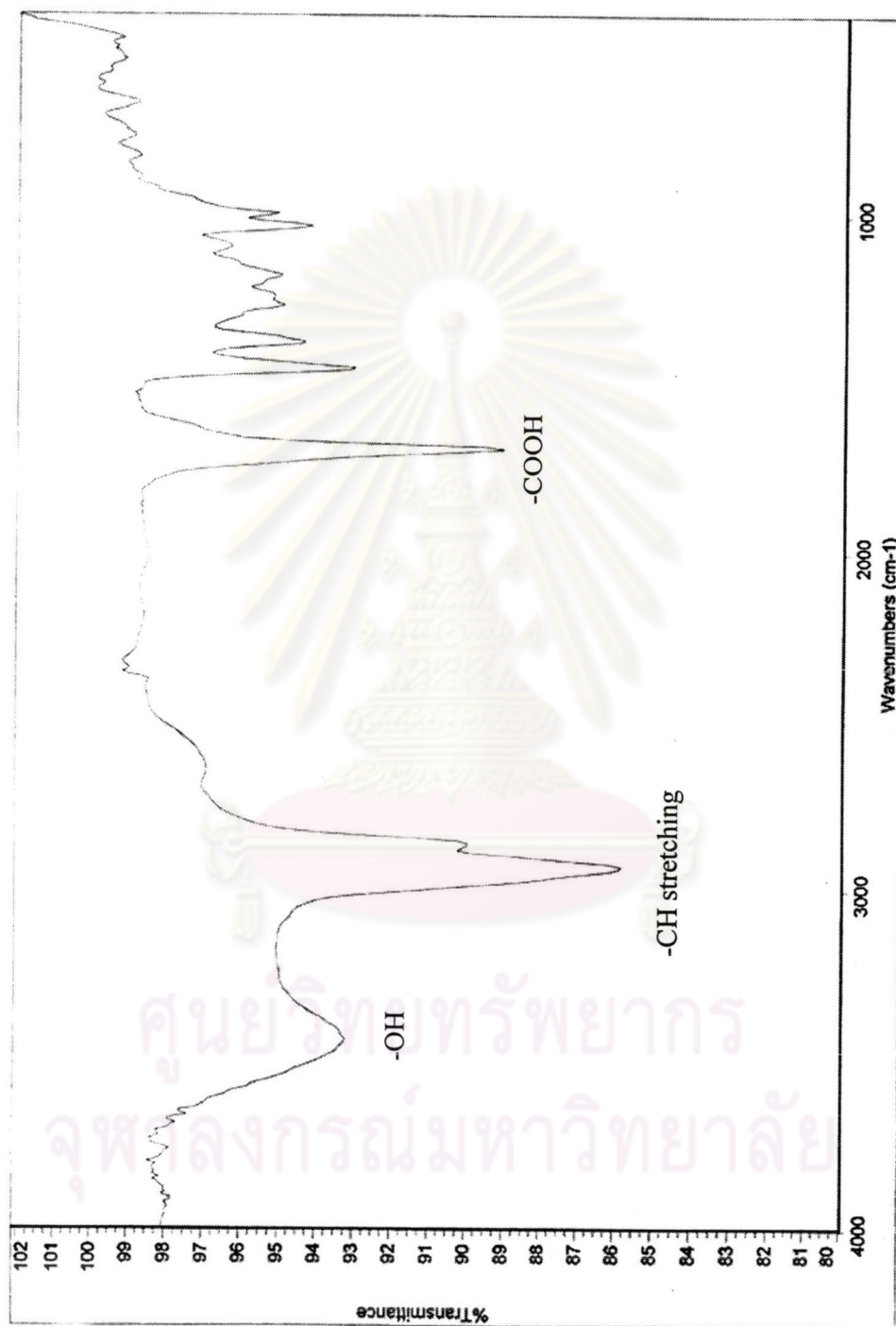


Fig. 10 The IR spectrum of Mixture 5

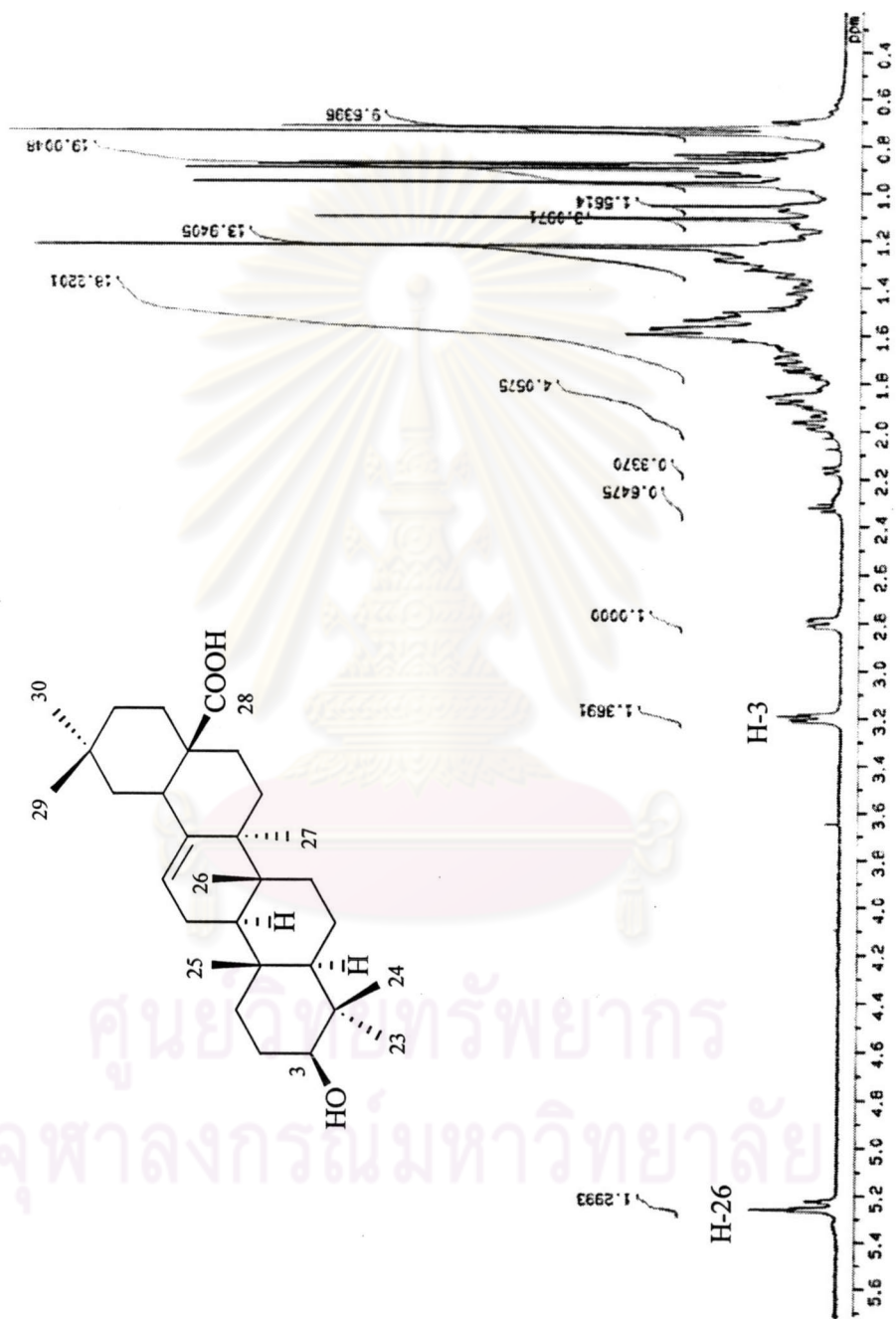


Fig. 11 The ^1H NMR (DMSO- d_6) spectrum of Mixture 5

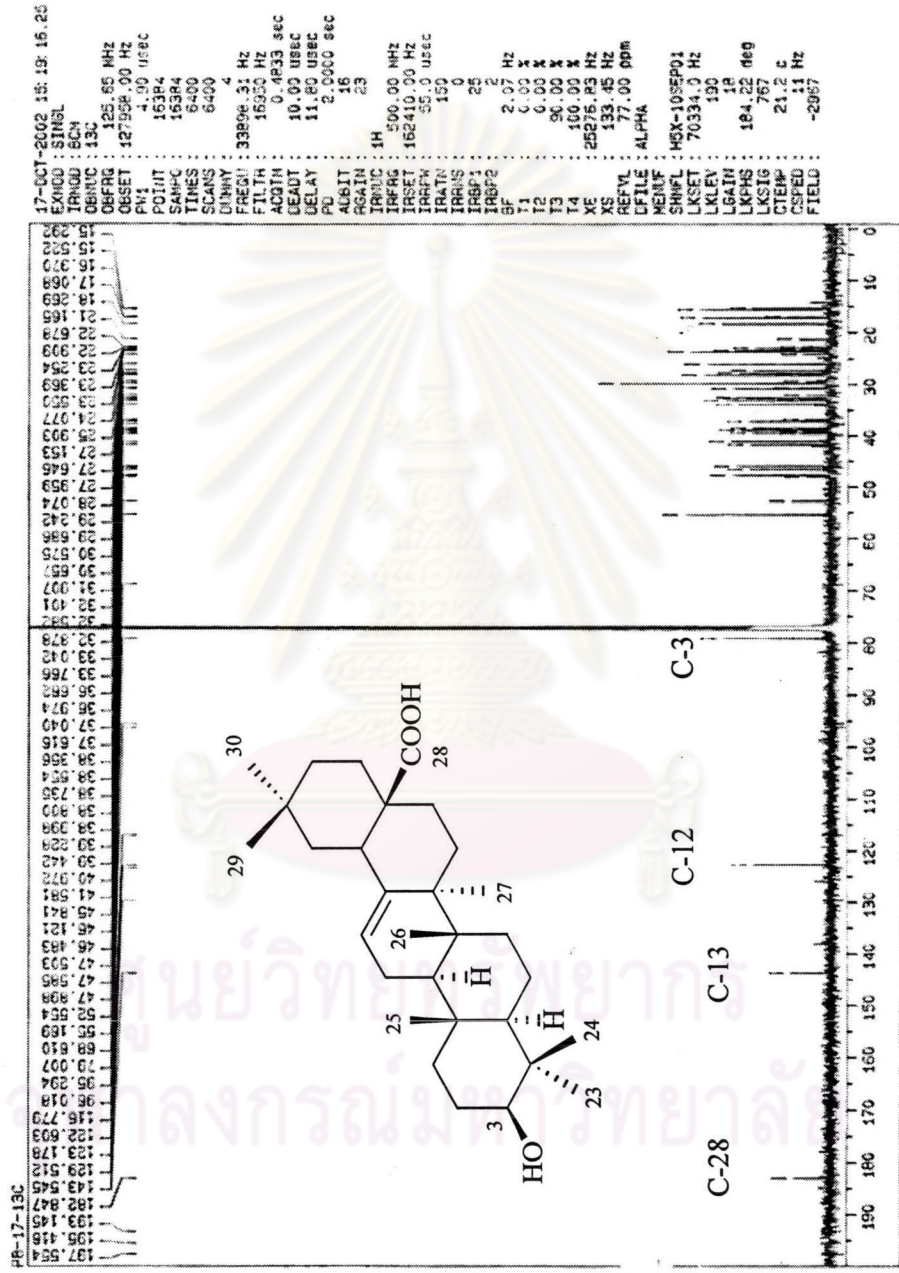


Fig. 12 The ¹³C NMR (DMSO-d₆) spectrum of Mixture 5

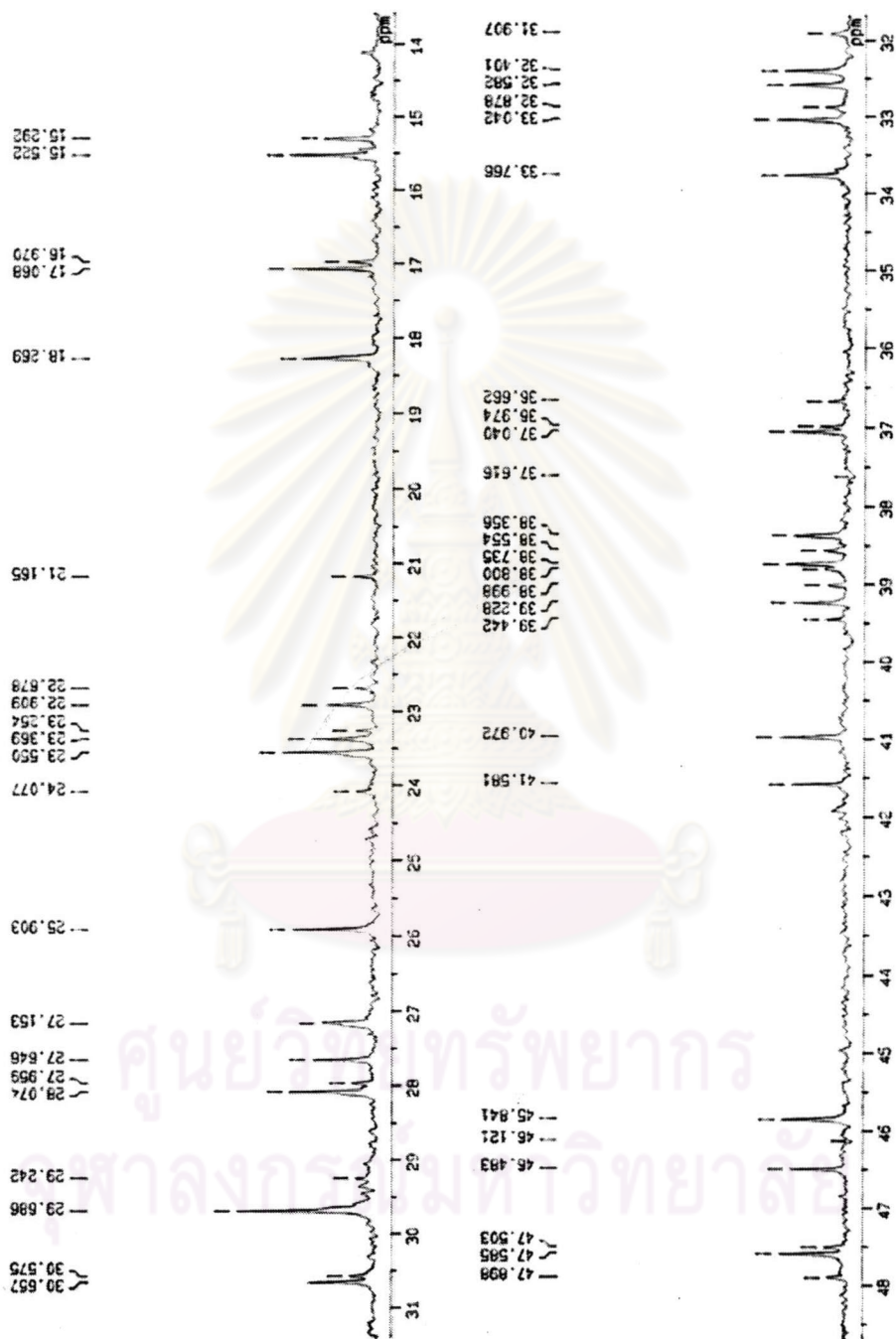


Fig. 12A The ^{13}C NMR ($\text{DMSO-}d_6$) spectrum of Mixture 5

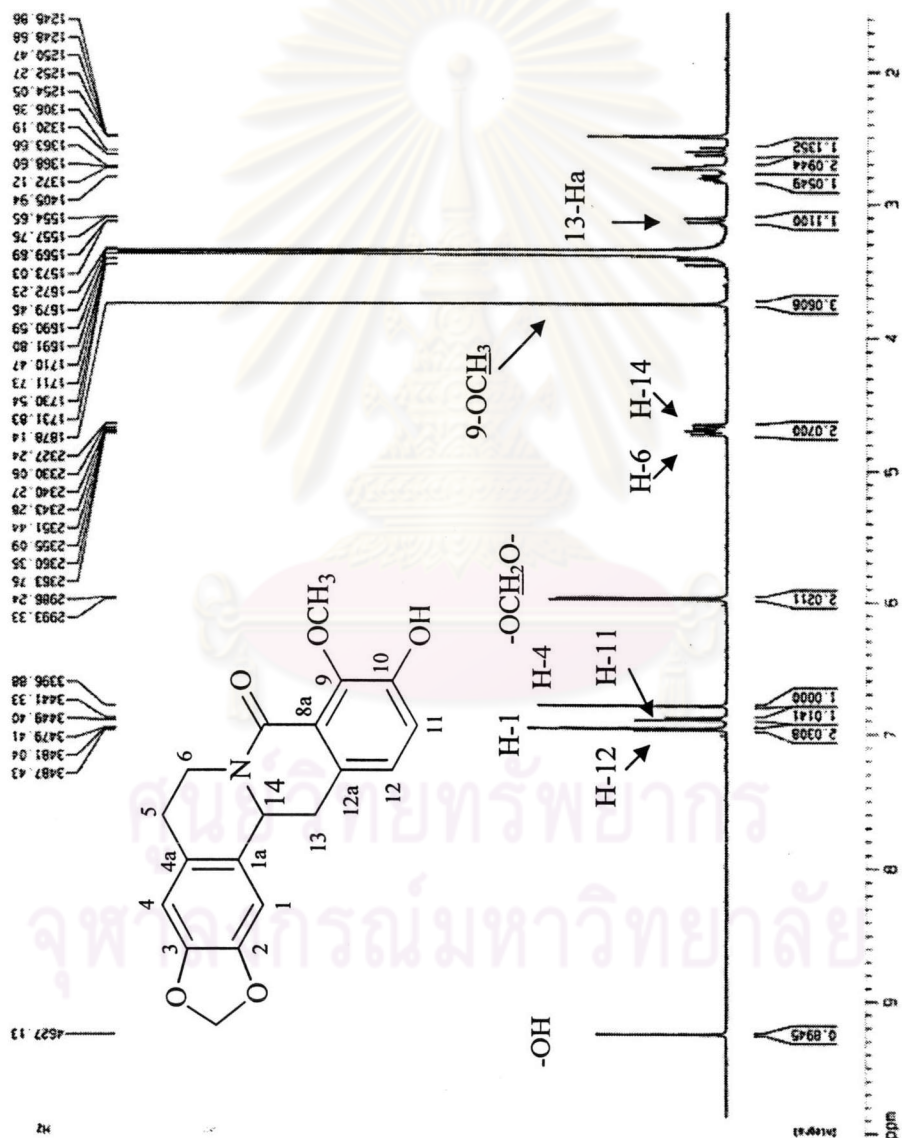
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 PROCNO 1

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 FIDRES 0.183399 Hz
 AQ 2.7263892 sec
 RG 181
 DM 41.600 usec
 DE 6.00 usec
 TE 300.0 K
 IE 1
 O1 2.0000000 sec

***** CHANNEL f1 *****
 NUC1 1H
 P1 12.00 usec
 PL1 -3.00 dB
 SF01 500 1335129 MHz

F2 - Processing parameters
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 SF 500 1300046 MHz
 MVM no
 SSB 0
 LB 0.00 Hz
 GB 0
 PC 1.00

10 NMR plot parameters
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 CY 400.00 cm
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 PRMCM 775.60 Hz
 MZCM 0.42465 ppm/cm
 212.27995 Hz/cm



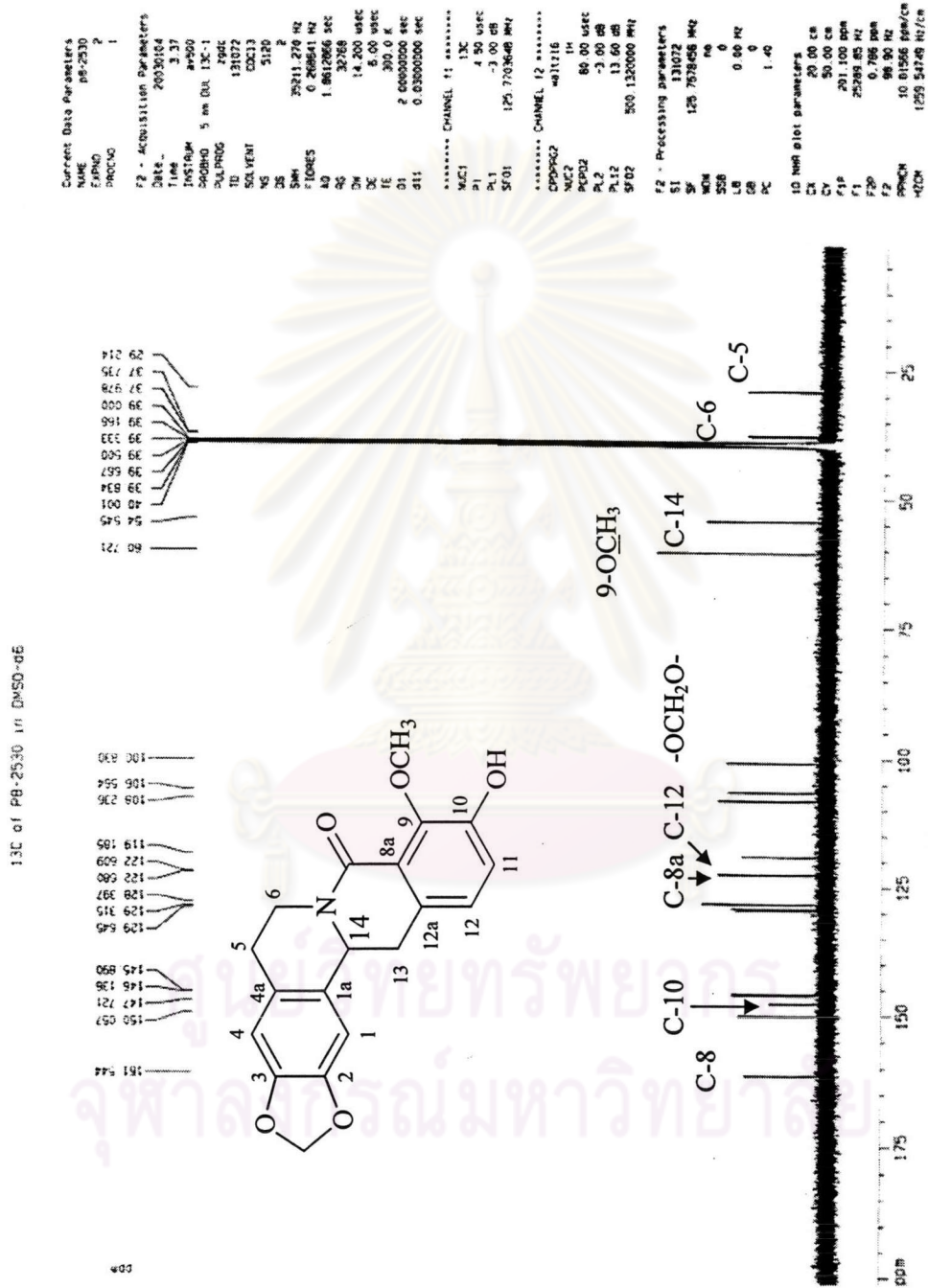


Fig. 14 The ¹³C NMR (DMSO-d₆) spectrum of Compound 6

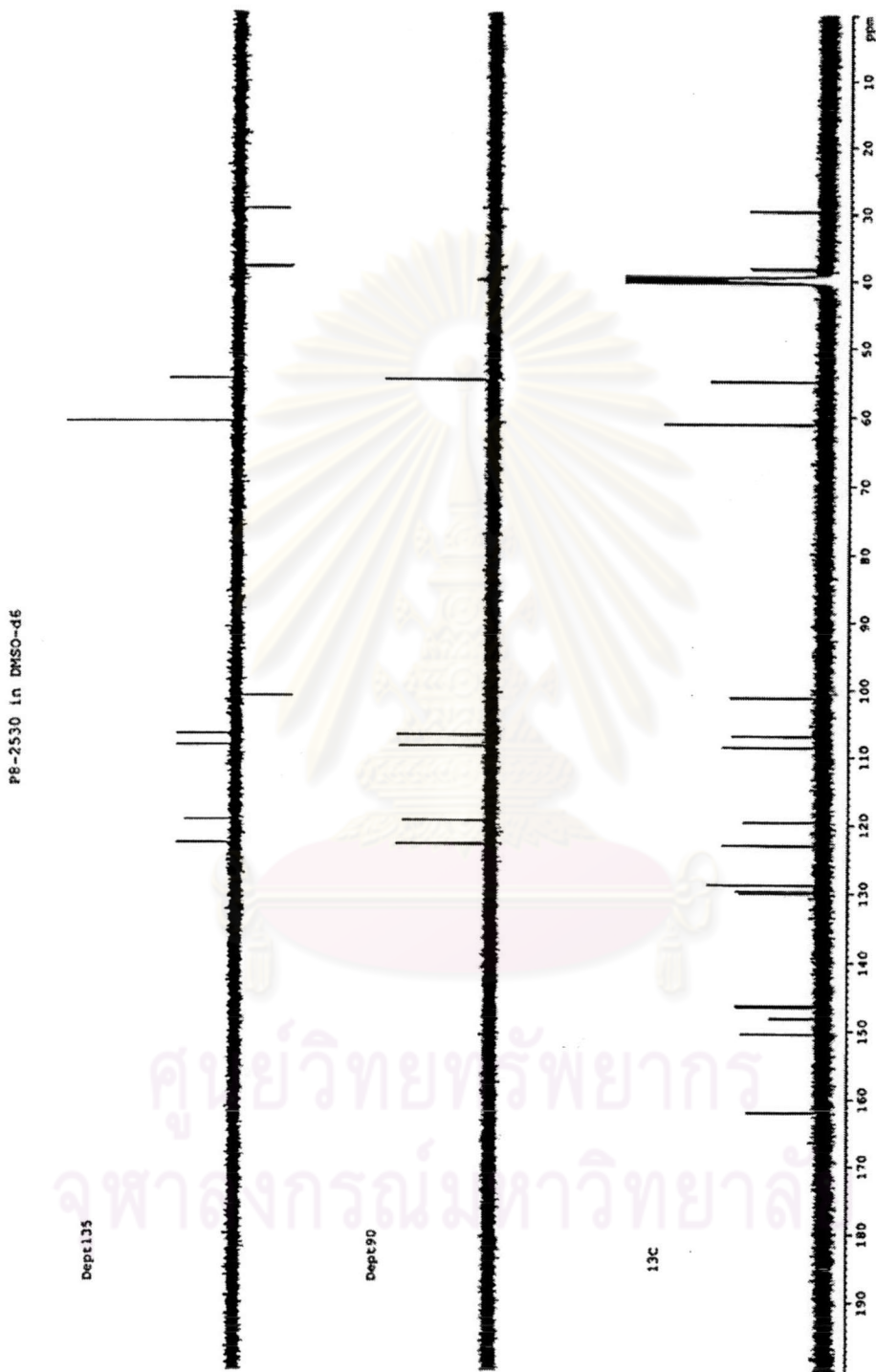


Fig. 15 The DEPT 90 and 135 spectrum of Compound 6

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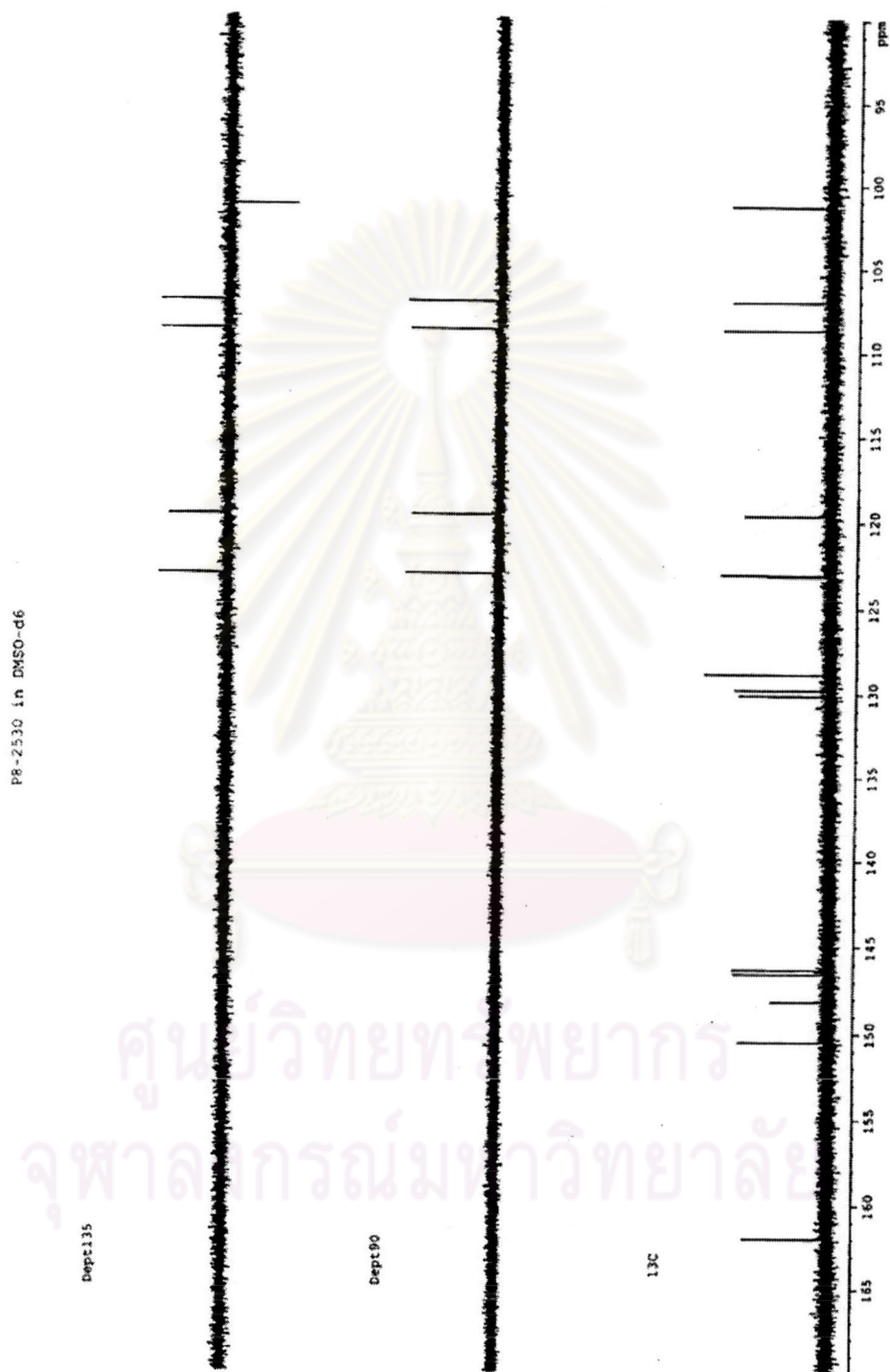
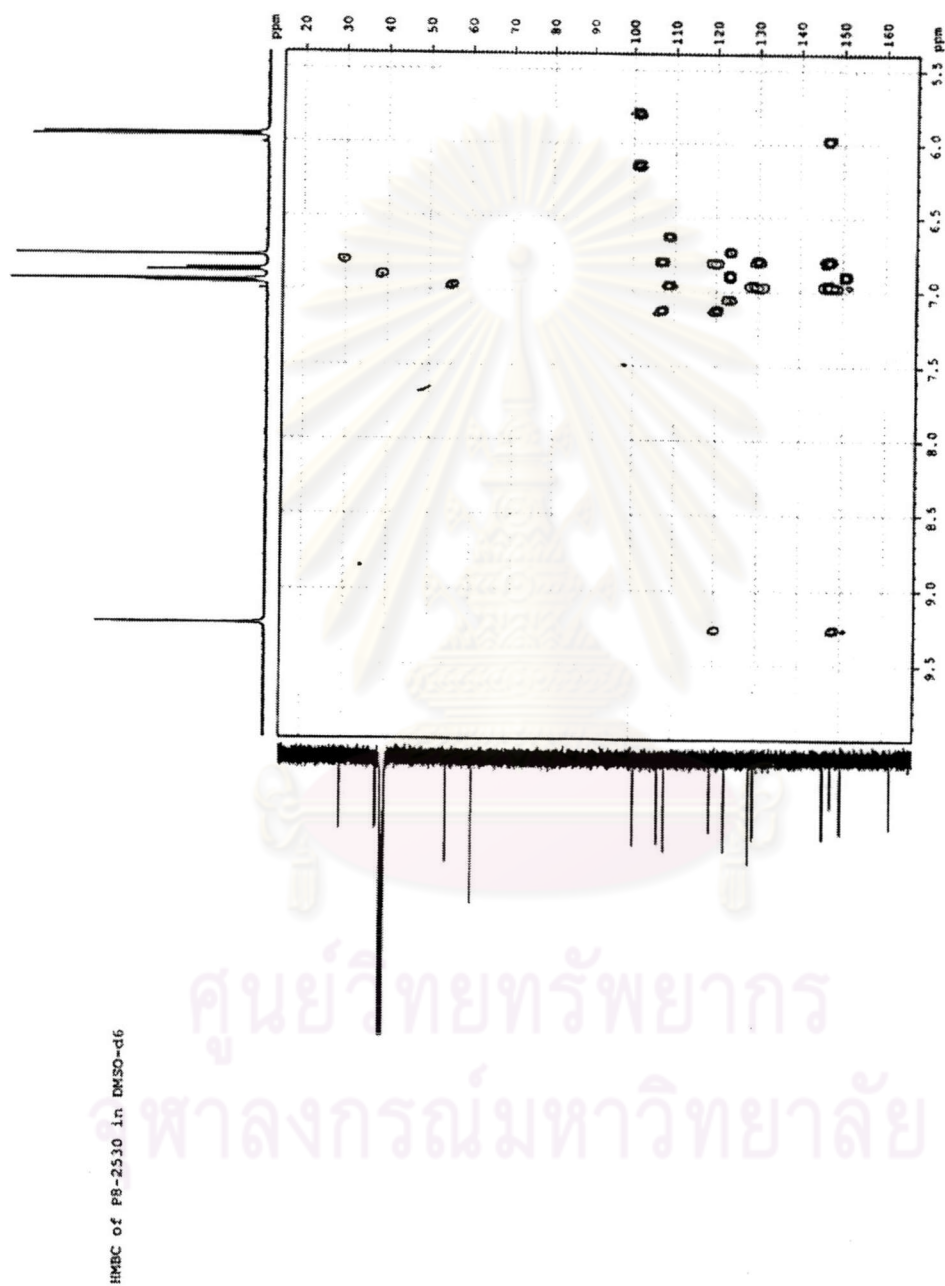


Fig. 15A The DEPT 90 and 135 spectrum of Compound **6**

Fig. 16 The HMBC spectrum of Compound **6**

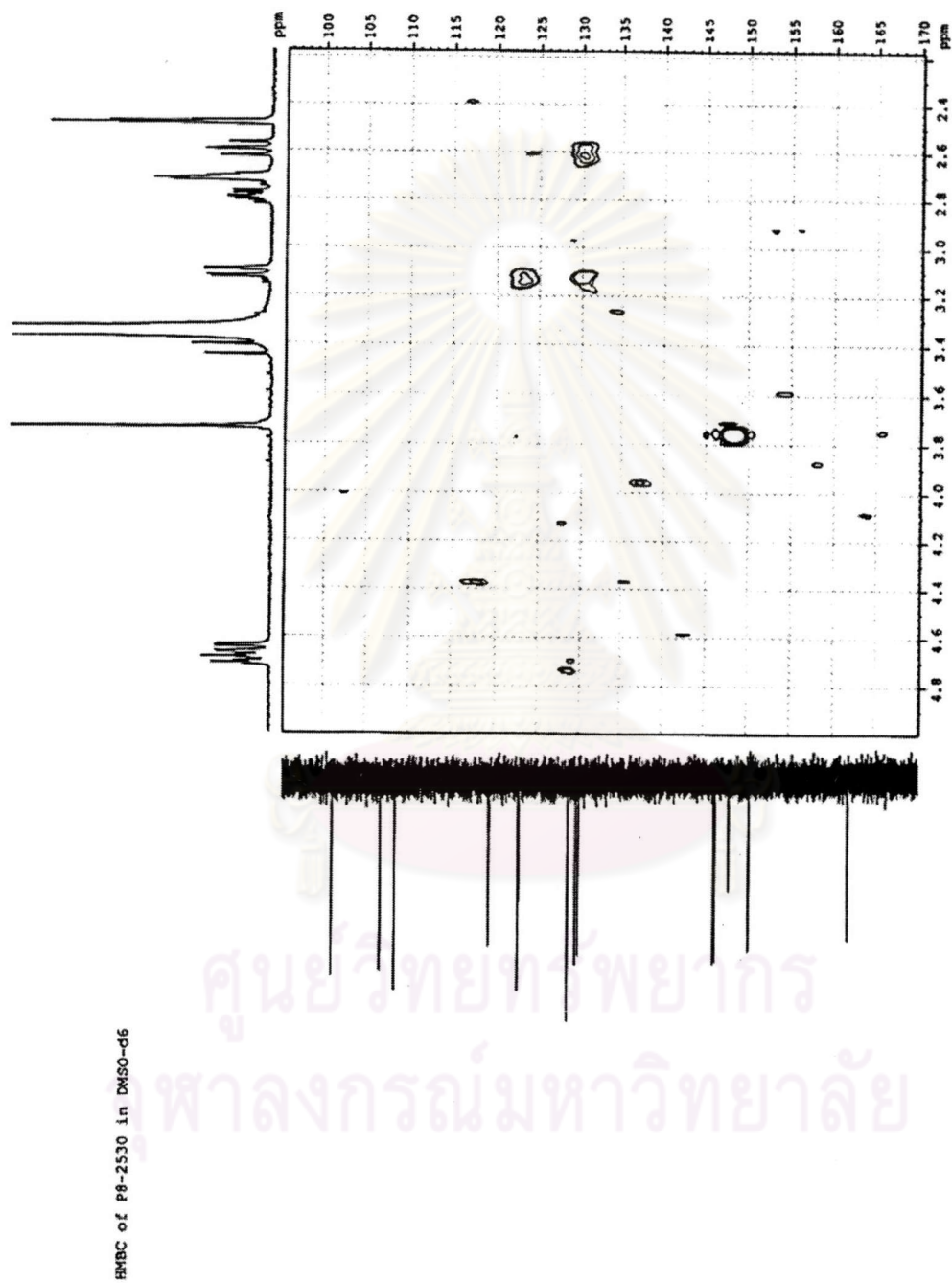


Fig. 16A The HMBC spectrum of Compound 6

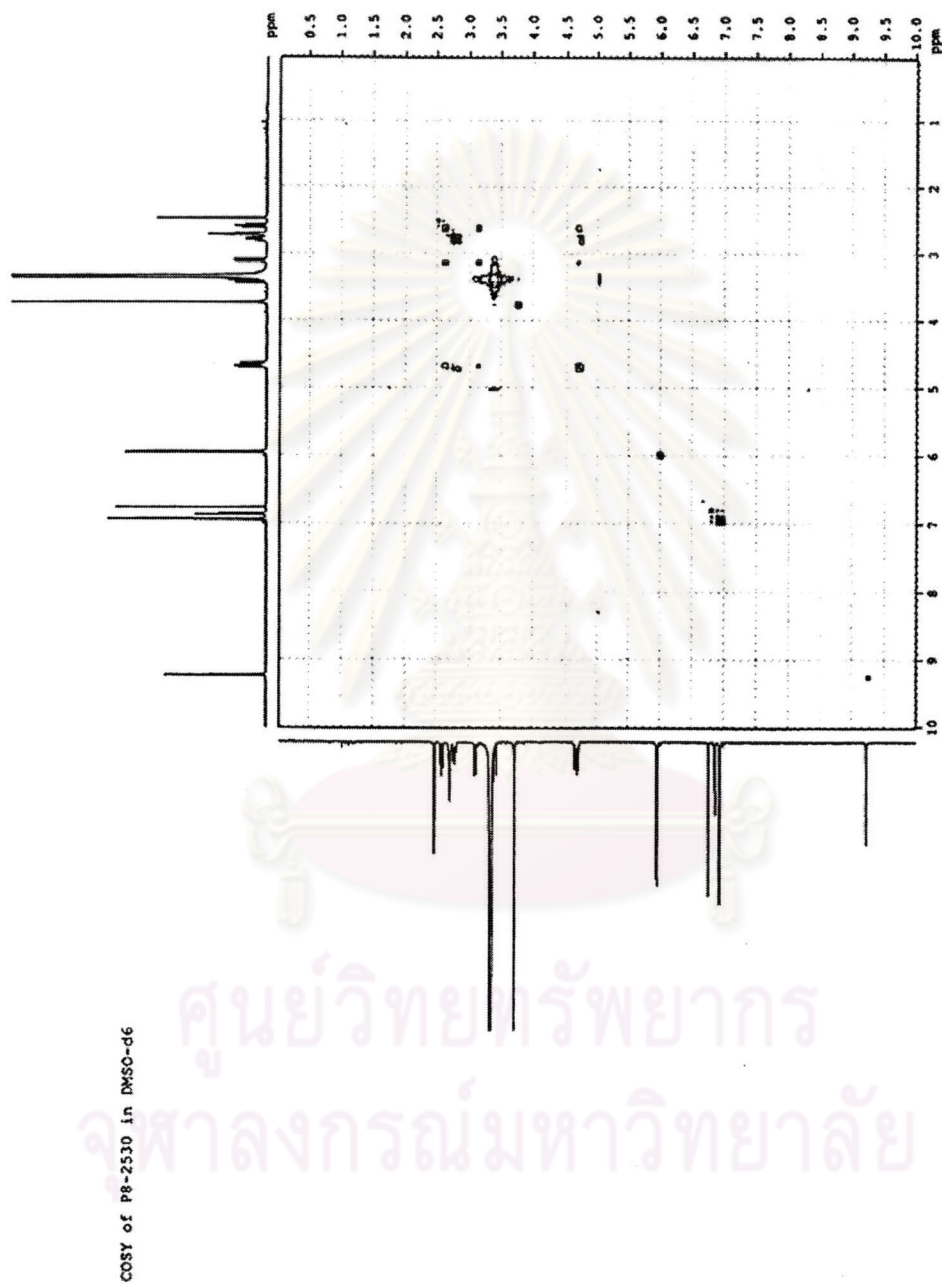


Fig. 17 The COSY spectrum of Compound 6

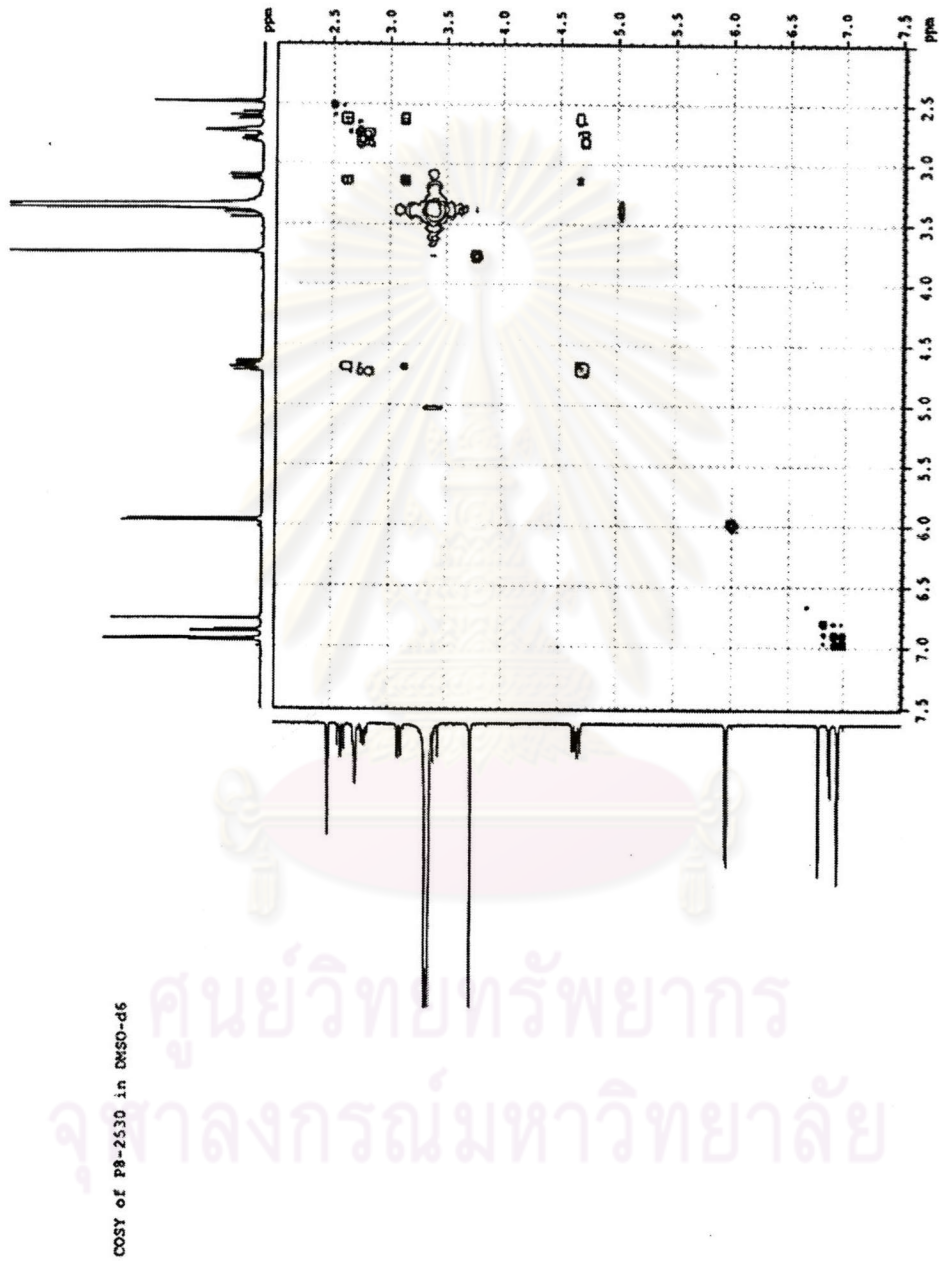
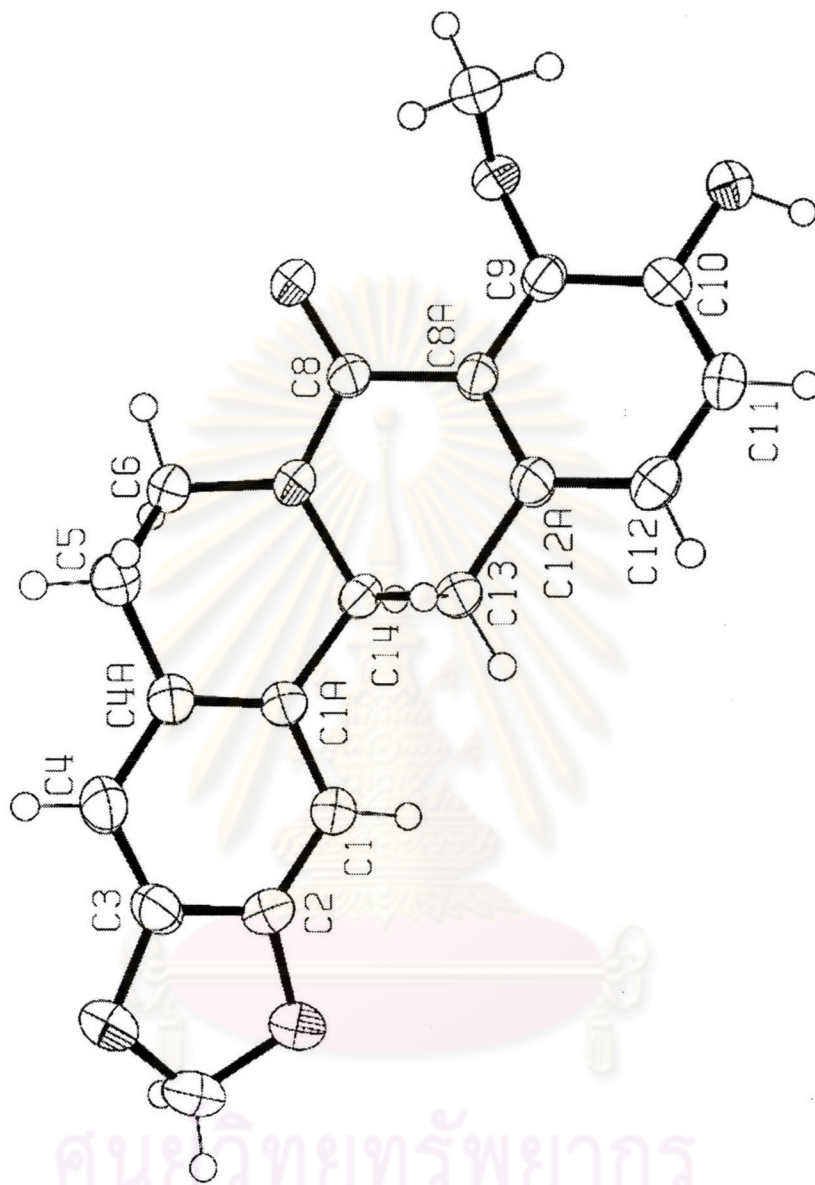


Fig. 17A The COSY spectrum of Compound 6



The Characteristic of crystal:

-Colourless, rod-shape

-Orthorhombic space

-Group $P2_12_12_1$

- $a = 8.0217(7)$

- $b = 13.5313(12)$

- $c = 14.2383(12)$

- $\alpha, \beta, \gamma = 90.00$

- $R = 6.5\%$

Fig. 18 The X-ray structure of Compound 6

```

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PROCNO   1

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PULPROG  zgpg30
TD        65536
SOLVENT  DMSO
NS        64
DS        0
SWH       12019.230 MHz
FIDRES    0.183399 MHz
AQ        2.7263892 sec
RG        181
AQ        41.600 usec
DE        6.00 usec
TE        300.2 K
TE        2.0000000 sec

***** CHANNEL f1 *****
NUC1      1H
P1        12.00 usec
PL1       -3.00 dB
SFO1     500.135129 MHz

F2 - Processing parameters
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RG        180
ACQ       0
SFO2     0.00 MHz
LB        0
GB        0
PC        1.00

1D NMR plot parameters
CA        20.00 cm
CY        200.00 cm
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F2        0.226 ppm
SFO2     0.55807 GHz/cm
-12CM    276.85562 MHz/cm
    
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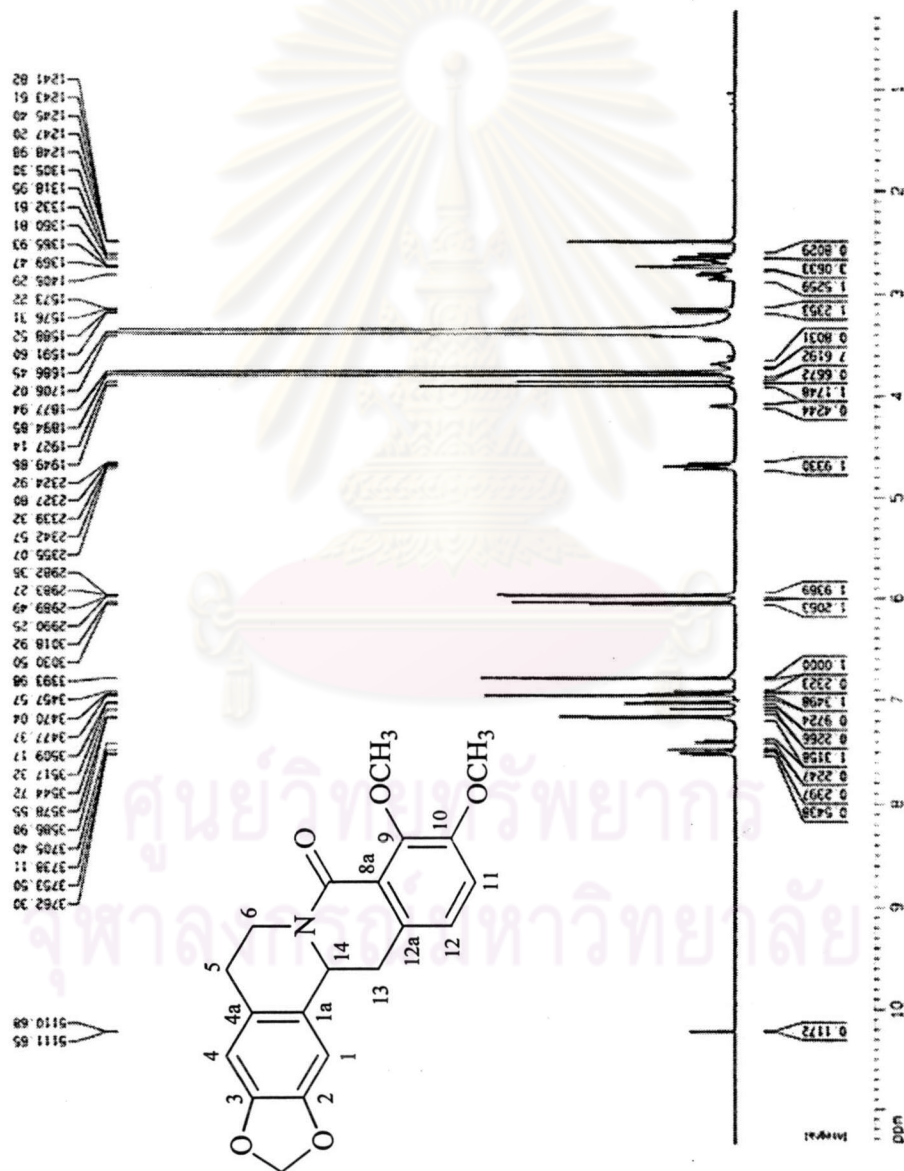


Fig. 19 The ¹H NMR (DMSO-d₆) spectrum of Compound 7

```

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PROCNO        1

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PULPROG       zgpg
TD             131072
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DS            2
SMA           35211.270 Hz
FIDRES        0.268641 Hz
AQ            1.0612666 sec
RG            32768
CH           14.200 usec
DE           6.00 usec
TE            300.2 K
D1            2.0000000 sec
d11           0.3000000 sec

***** CHANNEL f1 *****
NUC1          13C
P1            4.50 usec
PL1          -3.00 dB
SFO1         125.7702648 MHz

***** CHANNEL f2 *****
CPDPRG2       waltz16
NUC2          1H
P2            80.00 usec
PL2          -3.00 dB
PL12         13.50 dB
SFO2         500.1320000 MHz

F2 - Processing parameters
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WDW          no
SSB          0
LB           0.00 Hz
GB           0
PC           1.40

ID MSB plot parameters
CX            20.00 cm
CY            50.00 cm
FIP           201.661 ppm
FPI           25360.45 Hz
FPF          -0.043 ppm
F2           -5.68 Hz
PCMON        10.08531 ppm/cm
PCMCN        1268.30652 Hz/cm
    
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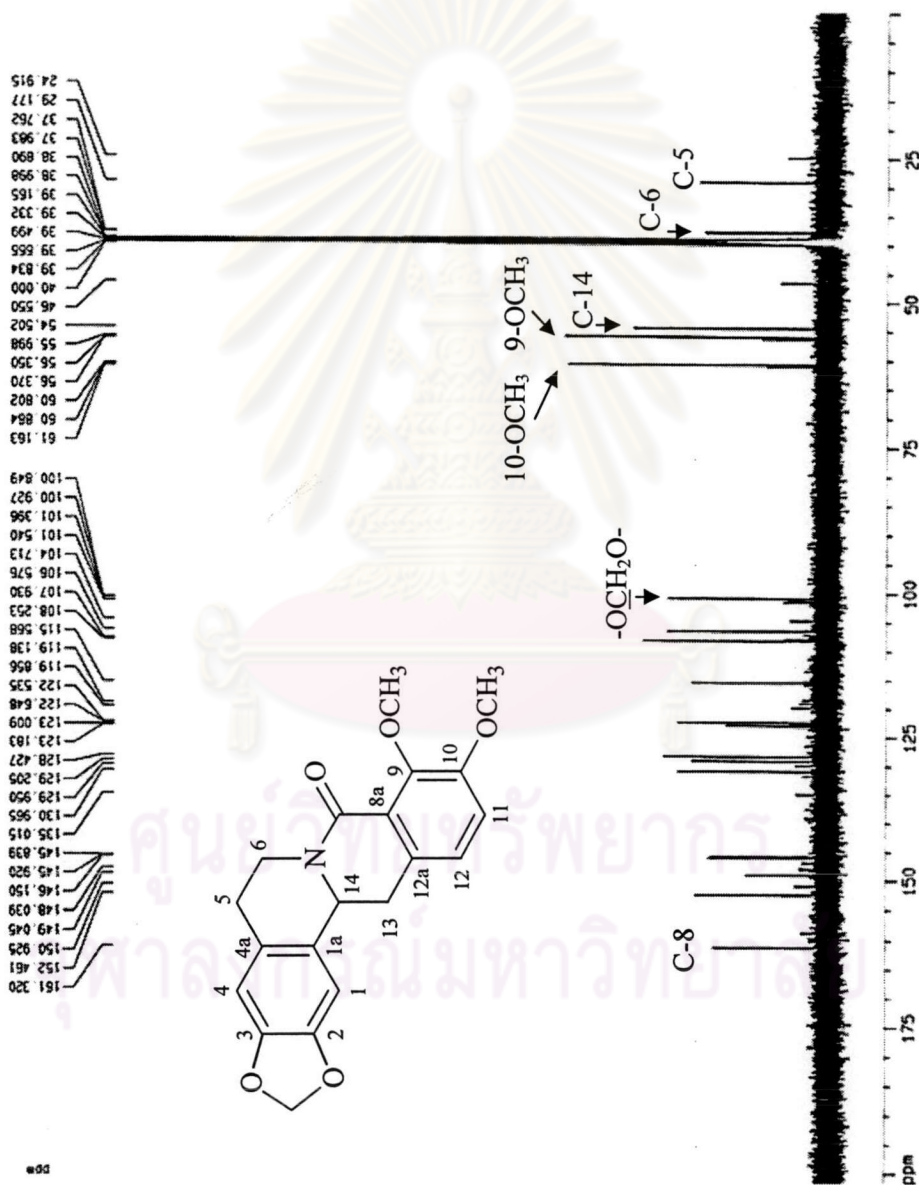


Fig. 20 The ¹³C NMR (DMSO-d₆) spectrum of Compound 1

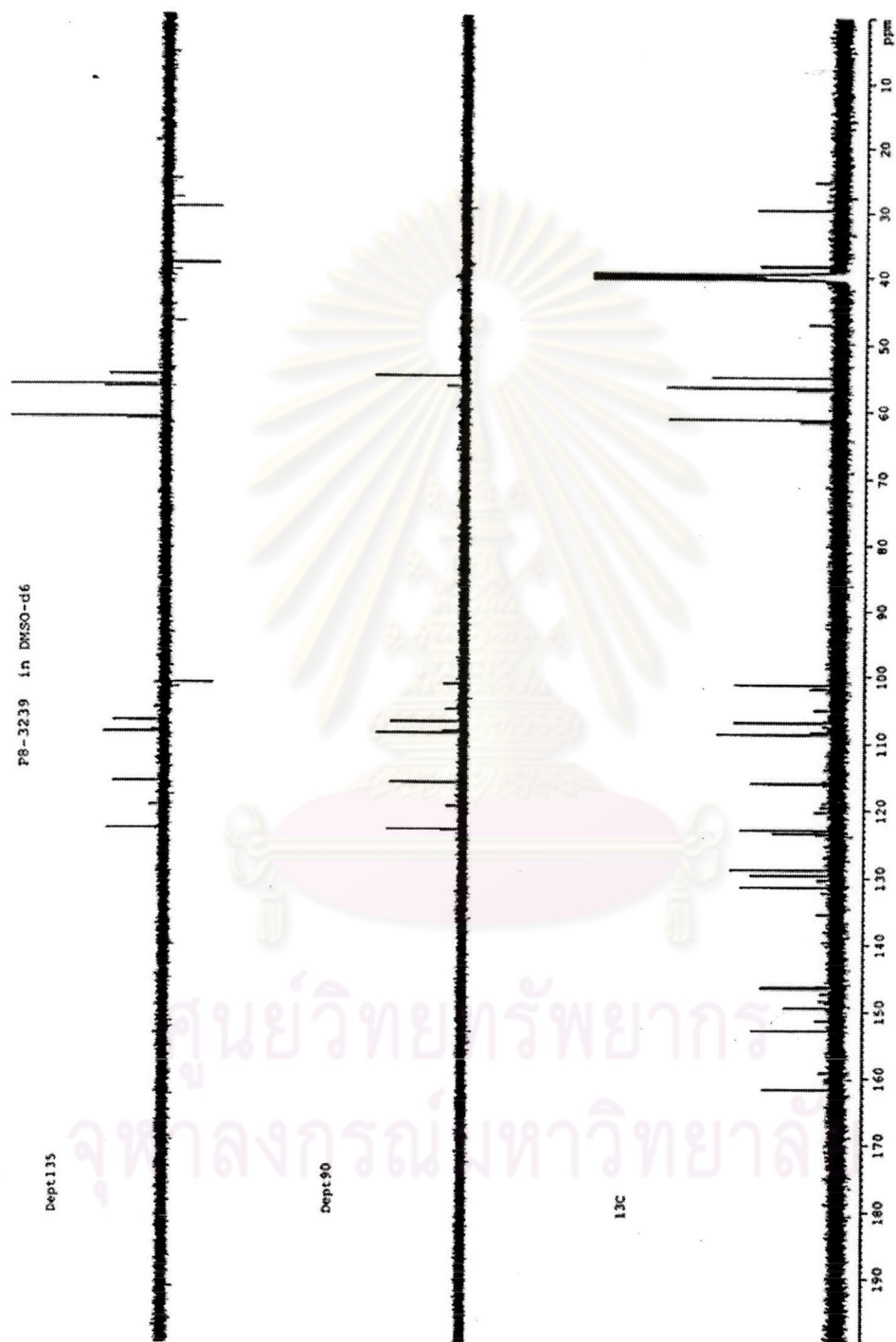


Fig. 21 The DEPT 90 and 135 spectrum of Compound 7

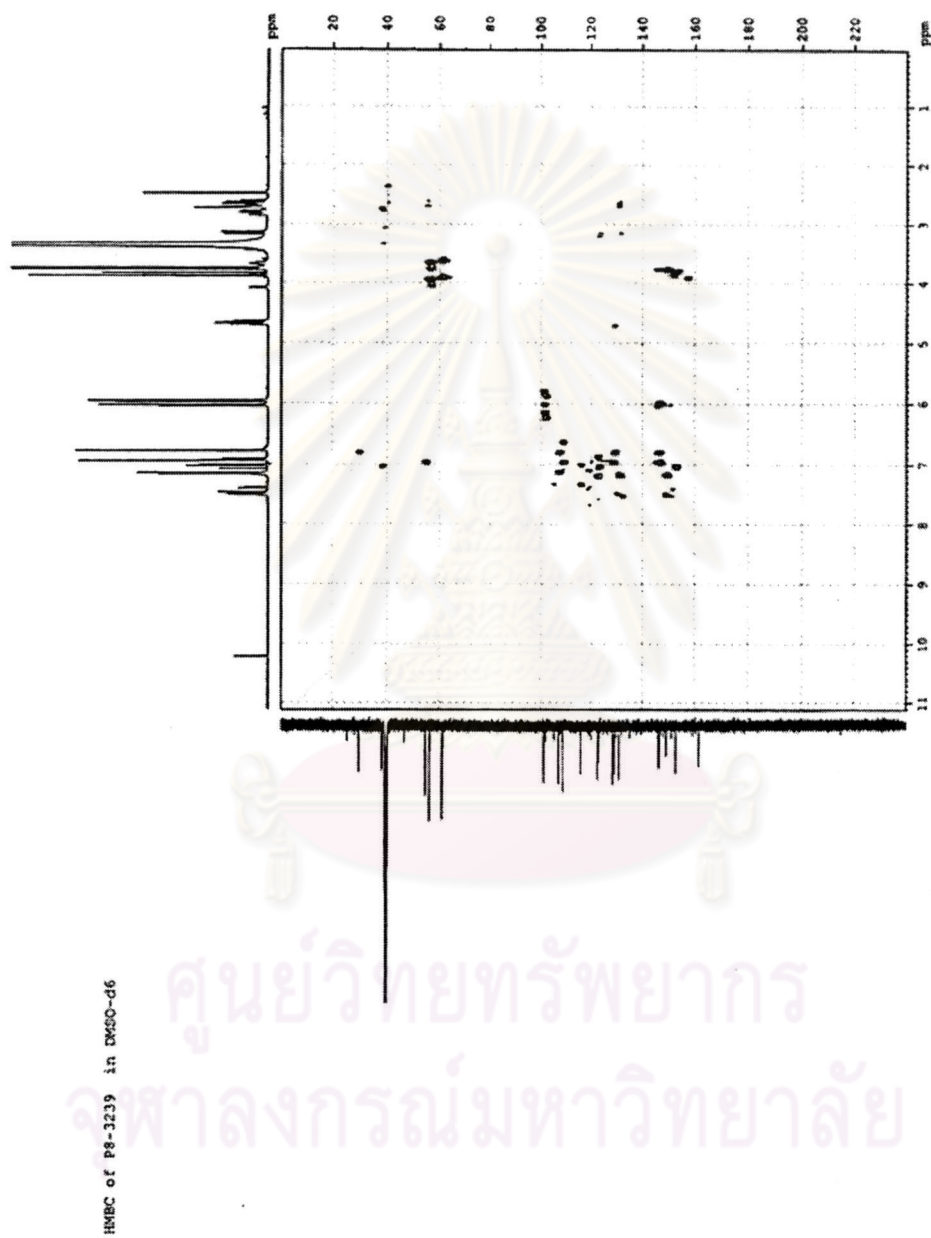


Fig. 22 The HMBC spectrum of Compound 7

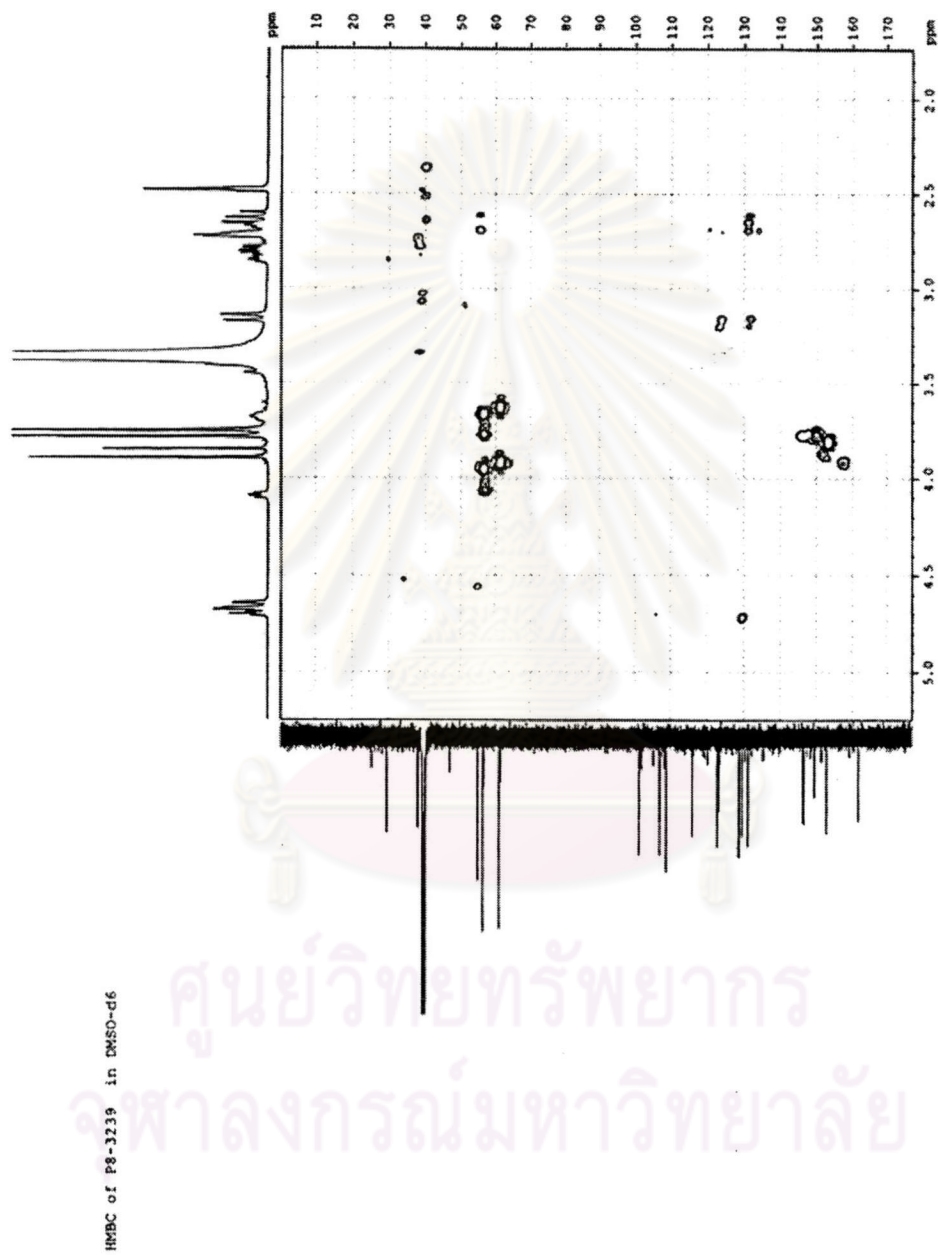


Fig. 22A The HMBC spectrum of Compound 7

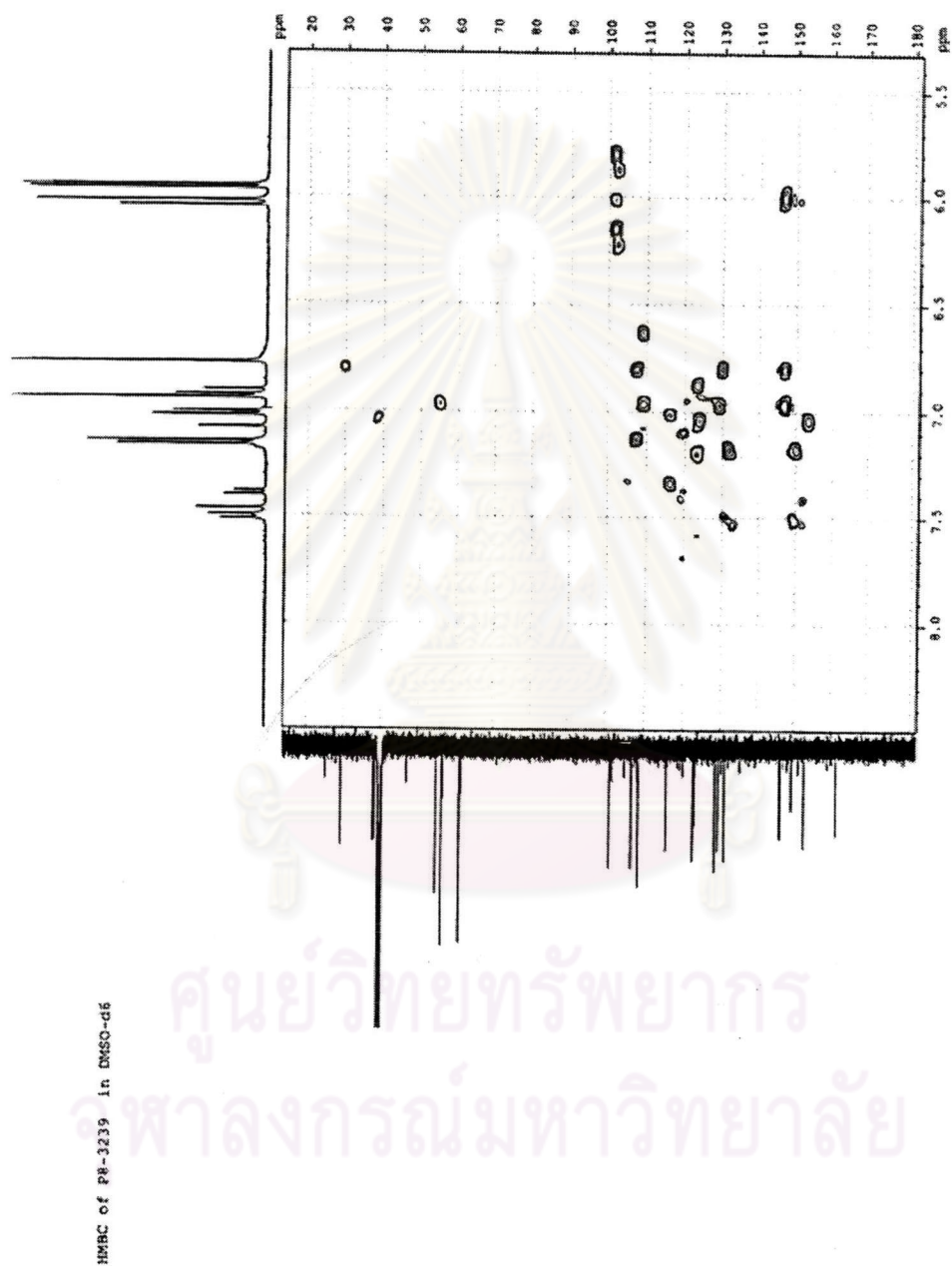


Fig. 22B The HMBC spectrum of Compound 7

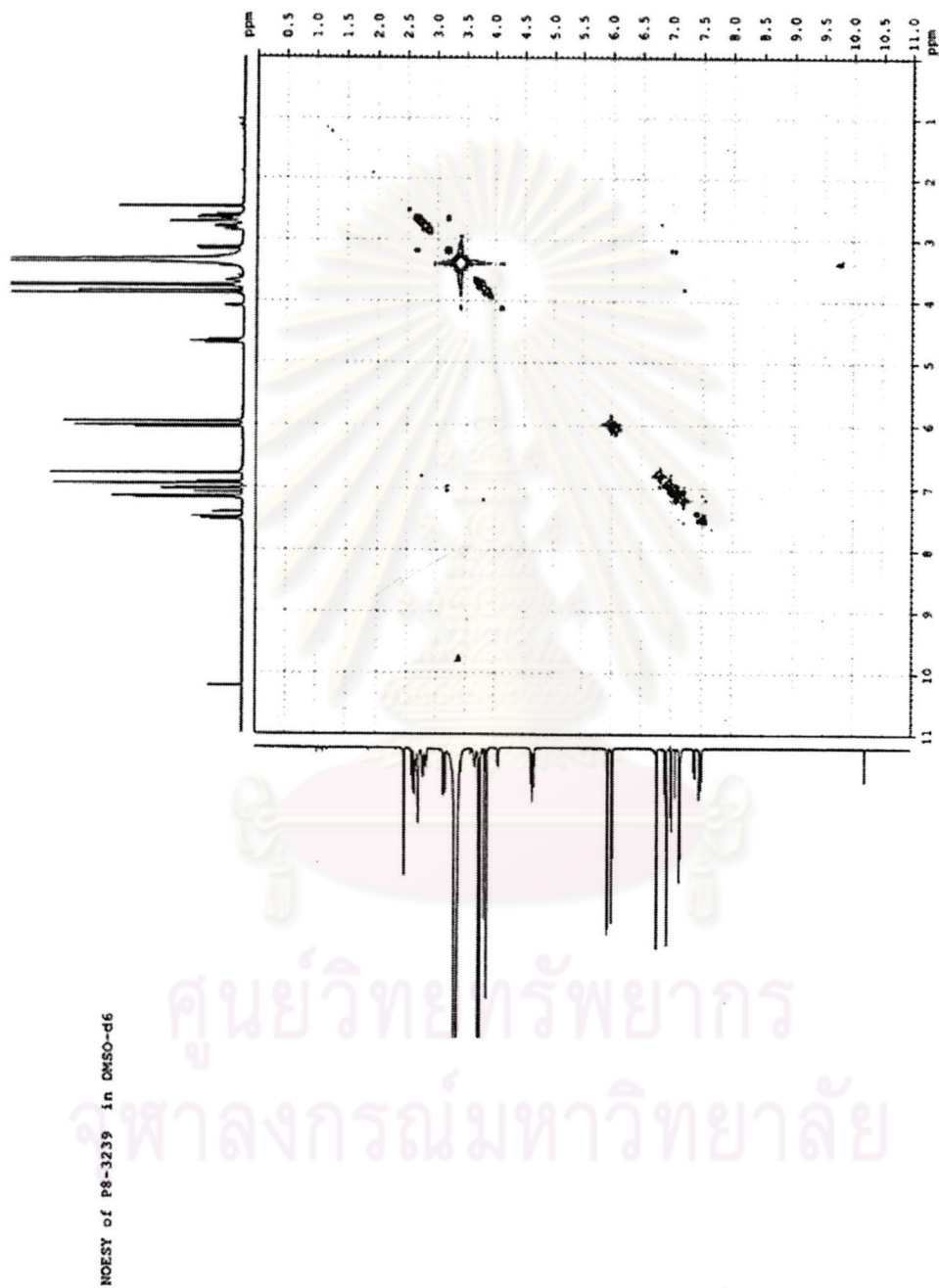


Fig. 23 The NOSEY spectrum of Compound 7

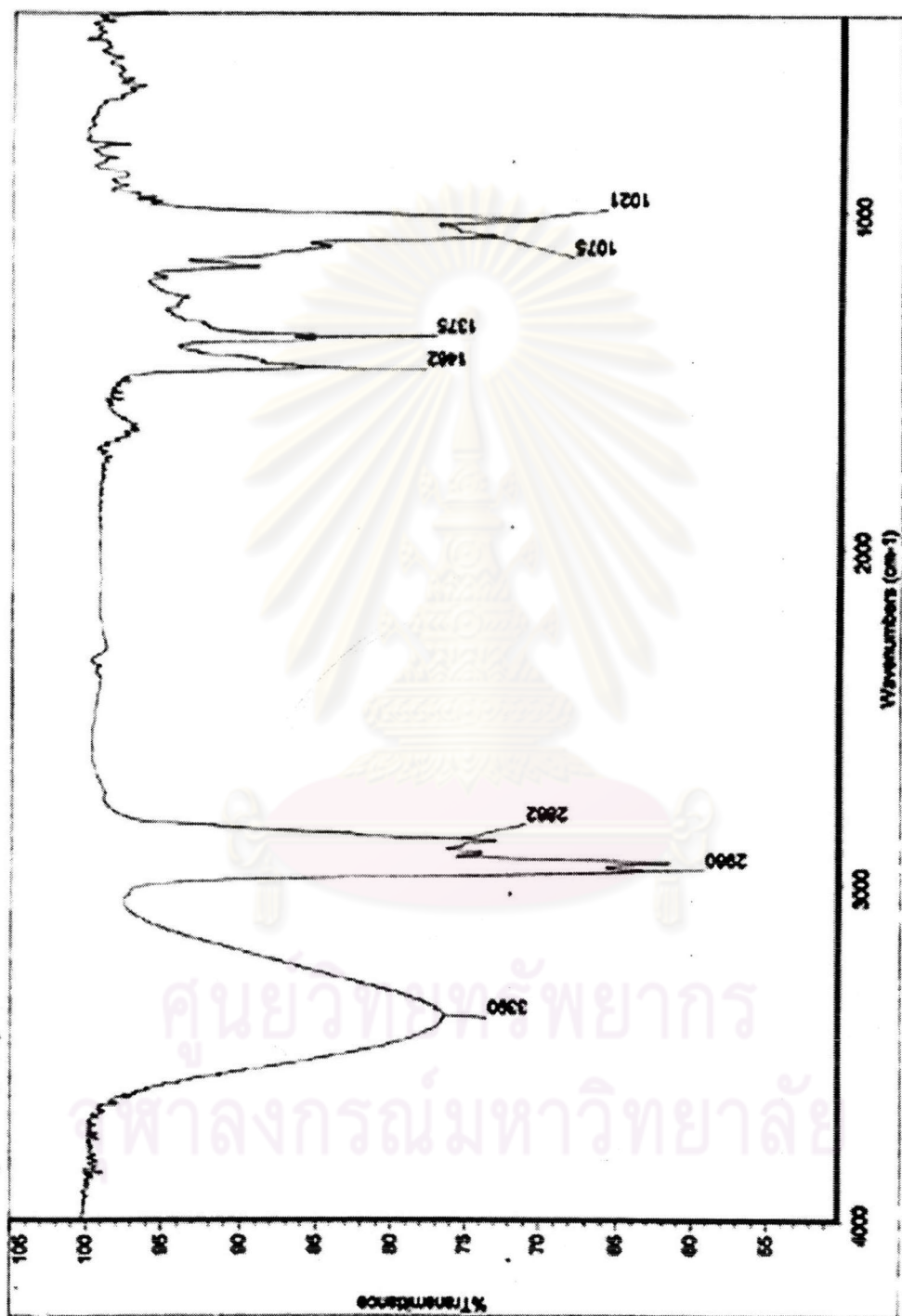


Fig. 24 The IR spectrum of Mixture 8

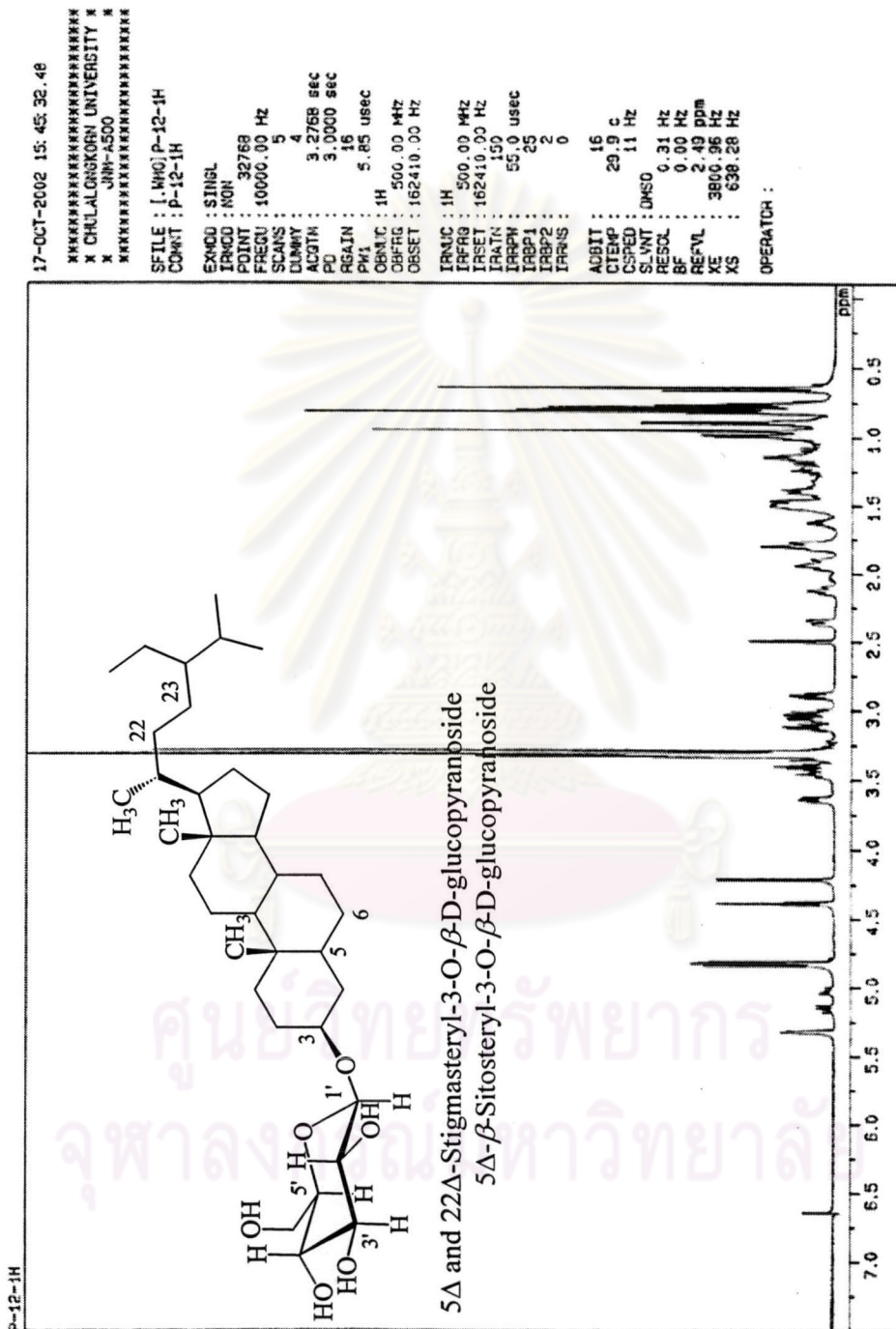


Fig. 25 The ^1H NMR (DMSO- d_6) spectrum of Mixture 8

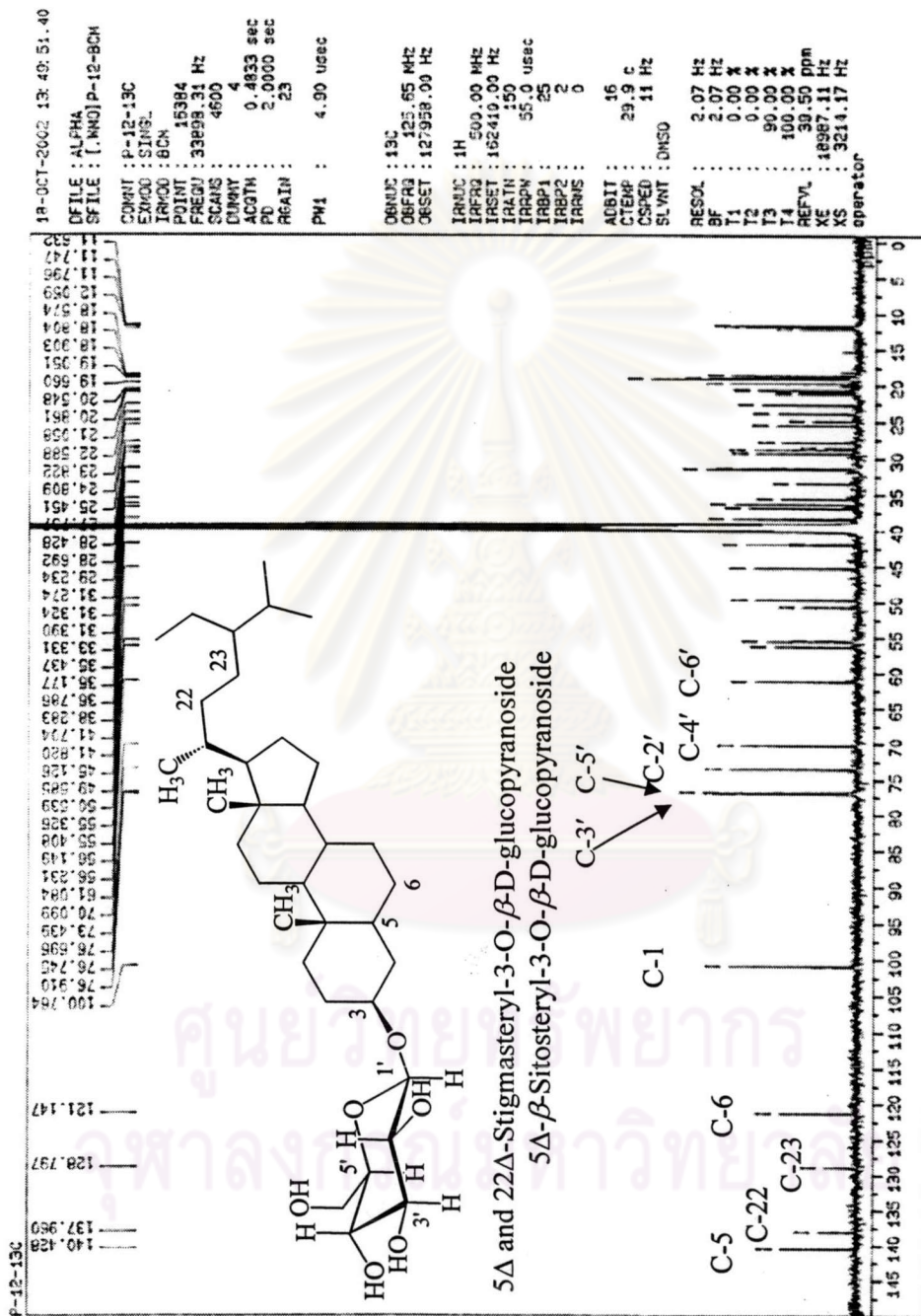


Fig. 26 The ¹³C NMR (DMSO-d₆) spectrum of Mixture 8

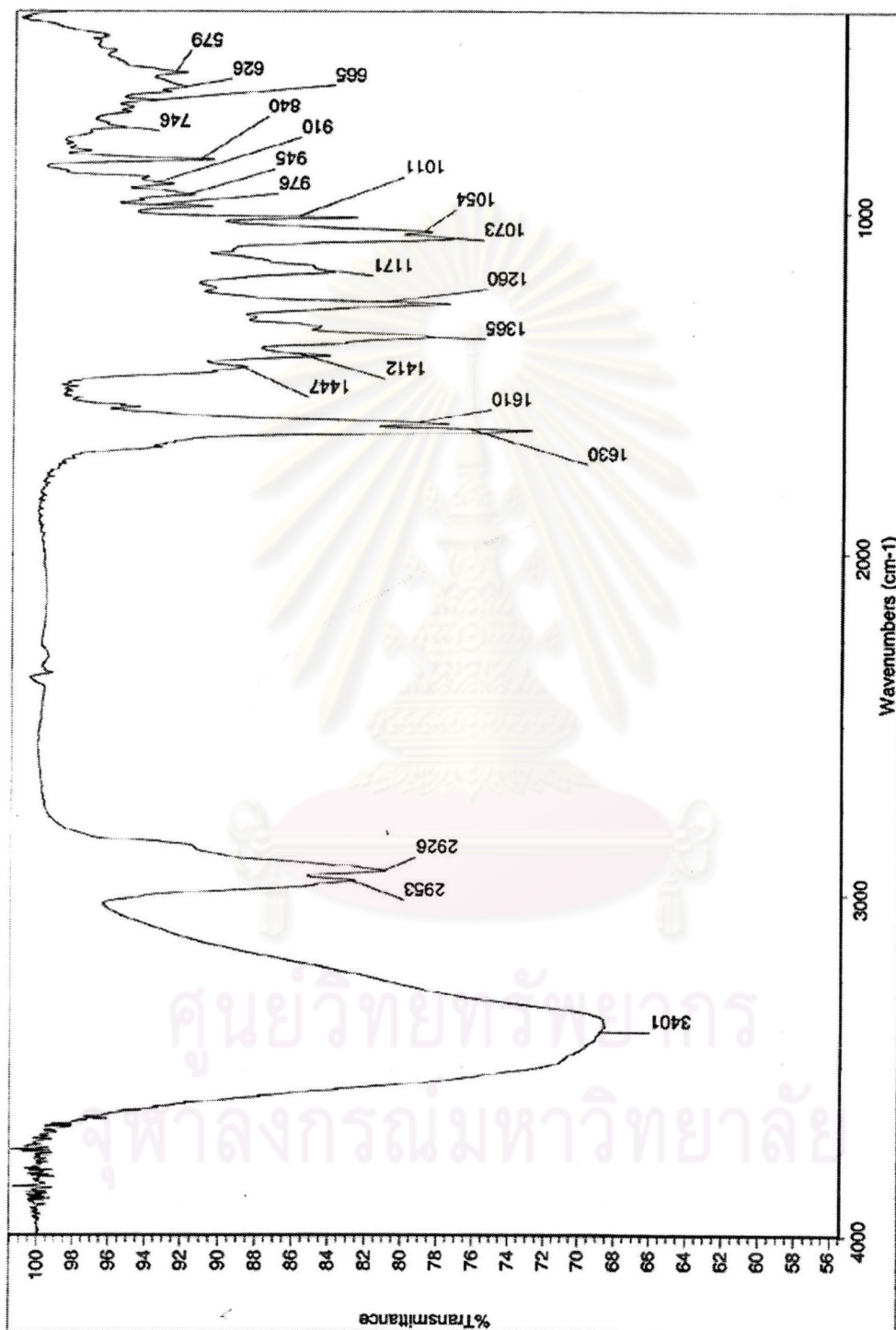


Fig. 27 The IR spectrum of Compound 9

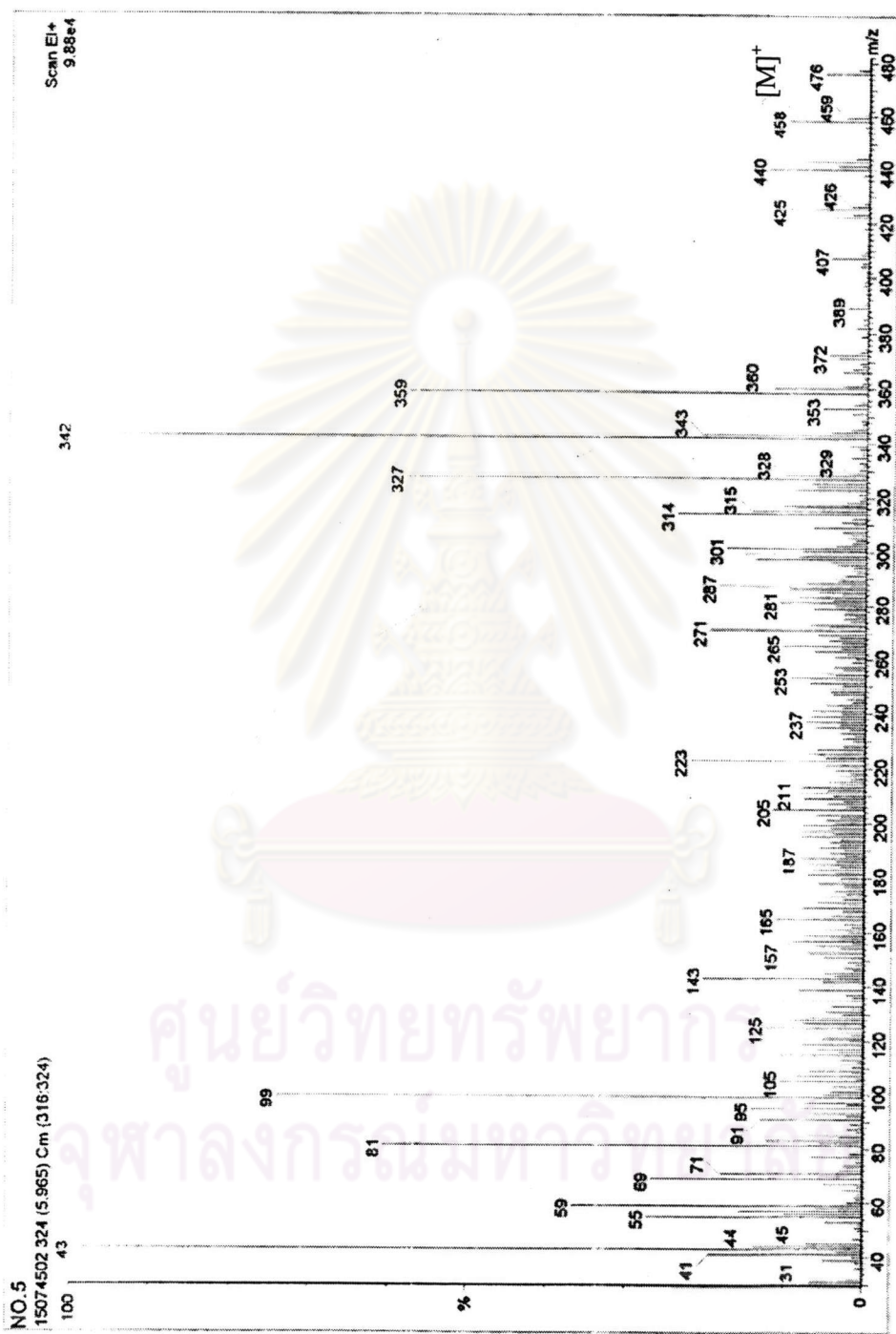


Fig. 28 The mass spectrum of Compound 9

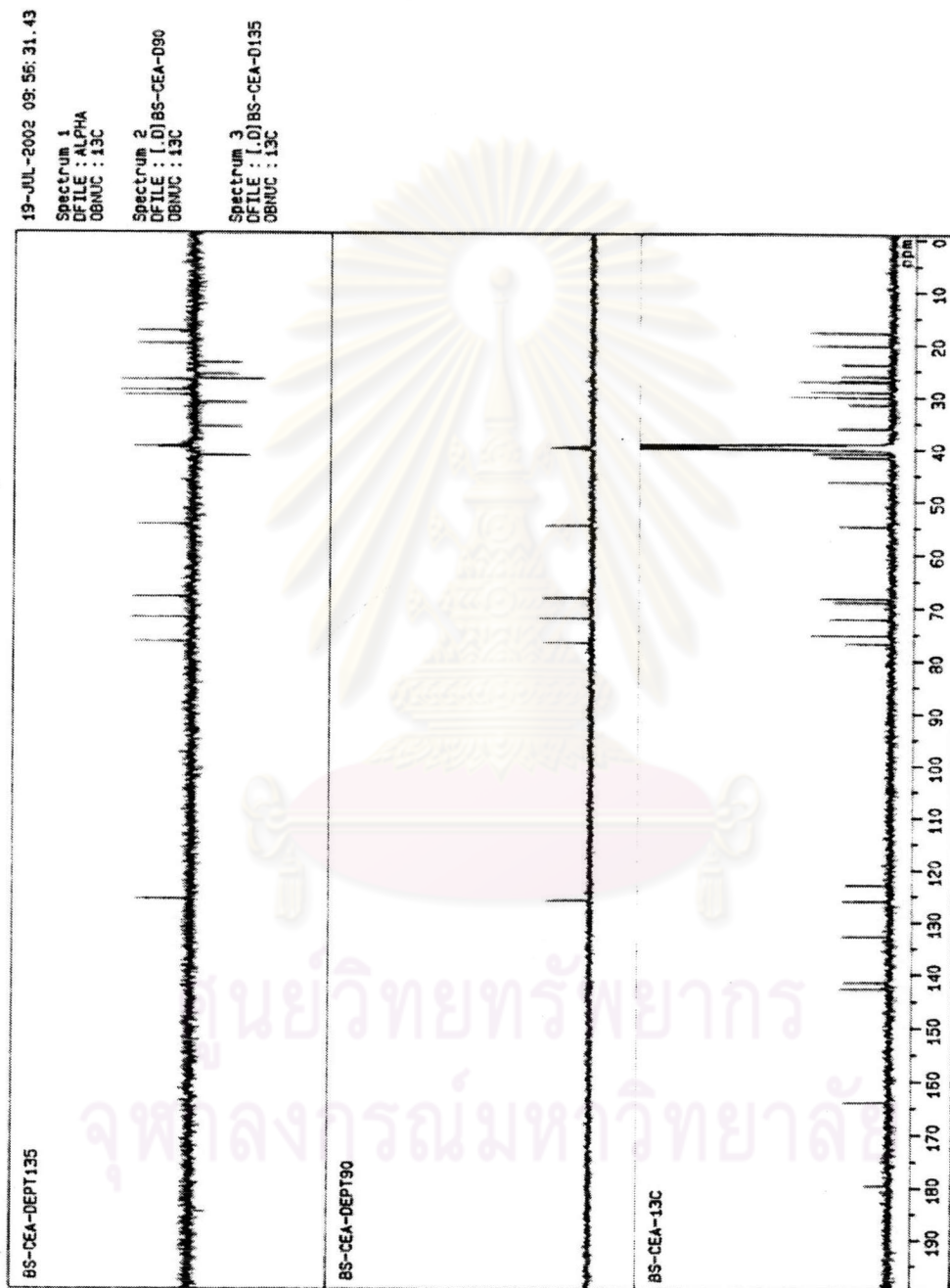


Fig. 31 The DEPT 90 and 135 spectrum of Compound 9

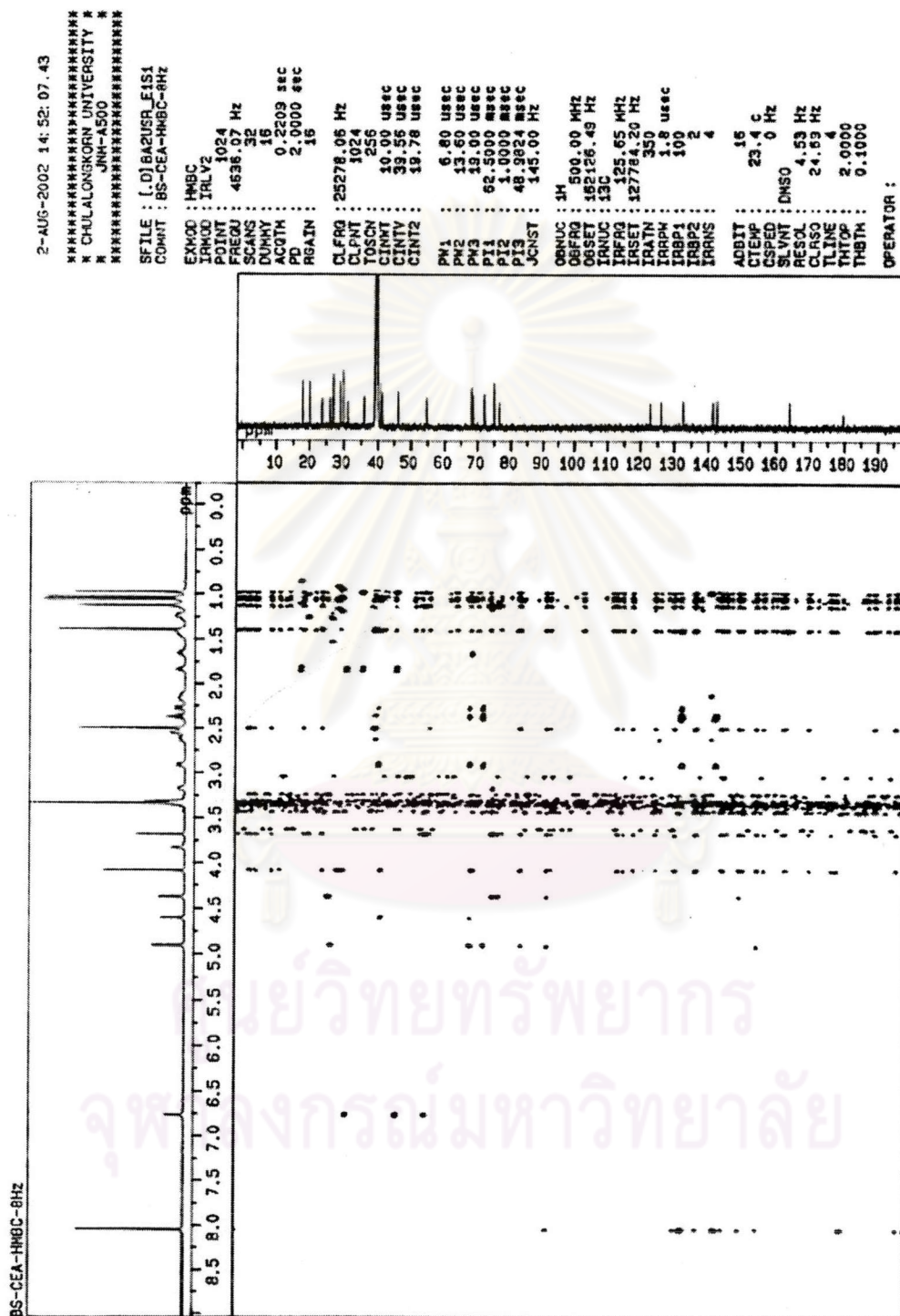


Fig. 32 The HMBC spectrum of Compound 9

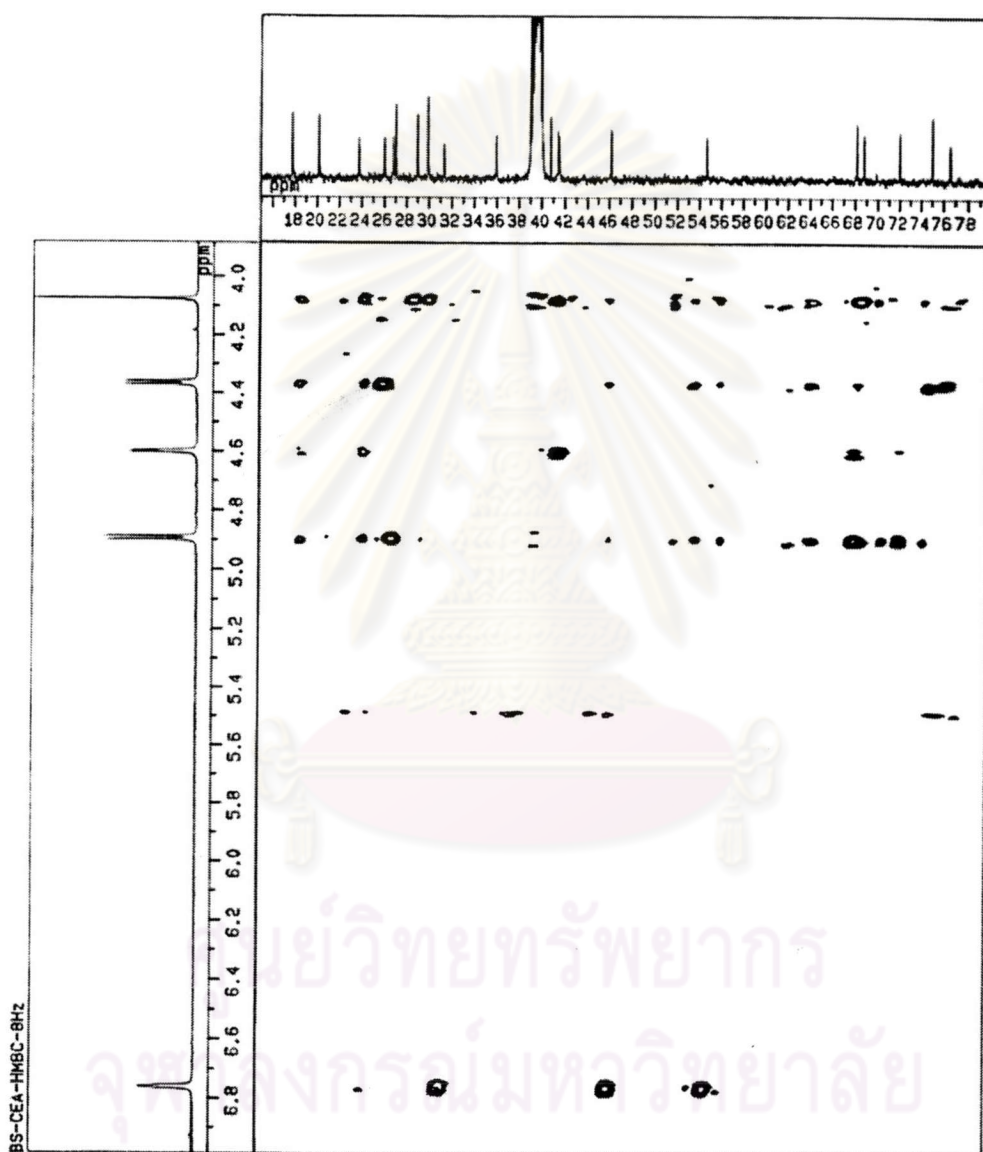


Fig. 32A The HMBC spectrum of Compound 2

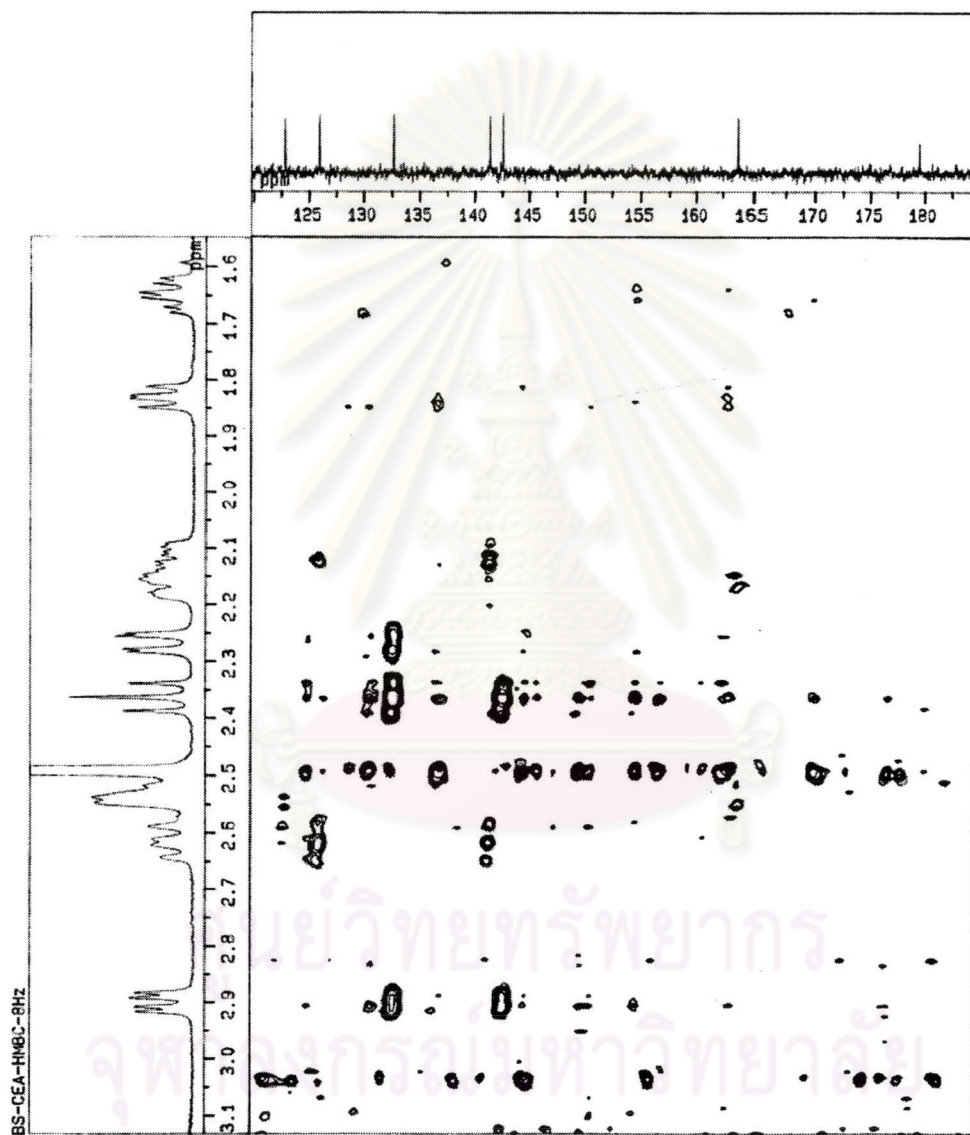


Fig. 32B The HMBC spectrum of Compound 9

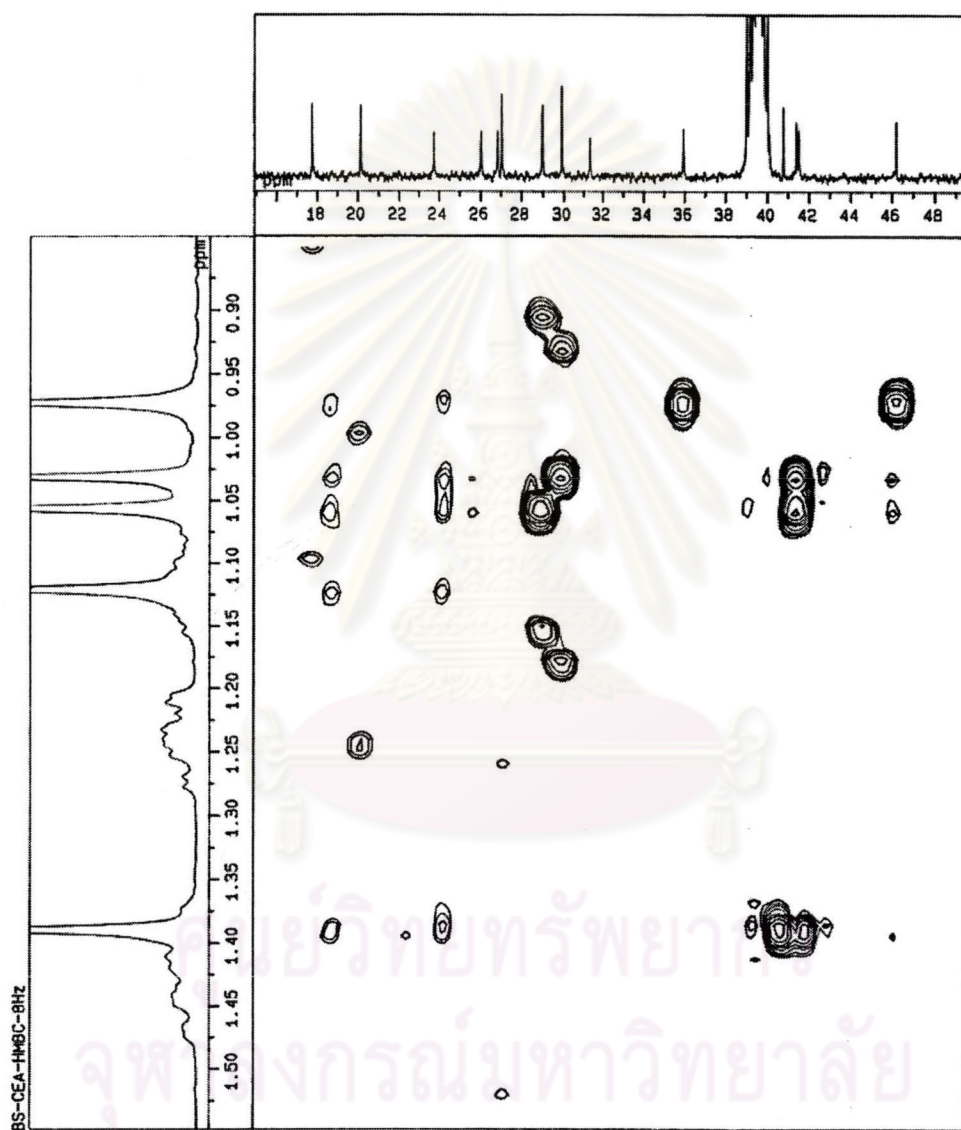


Fig. 32C The HMBC spectrum of Compound 2

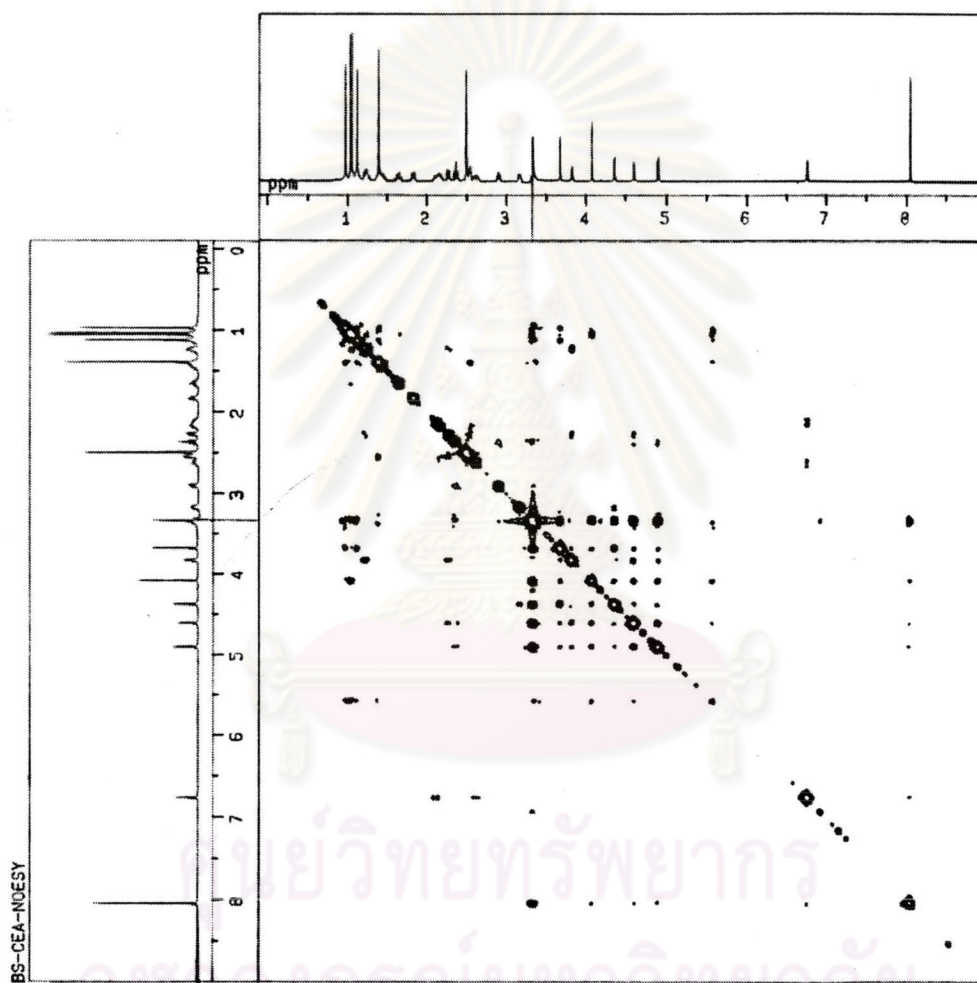


Fig. 33 The NOSEY spectrum of Compound 7

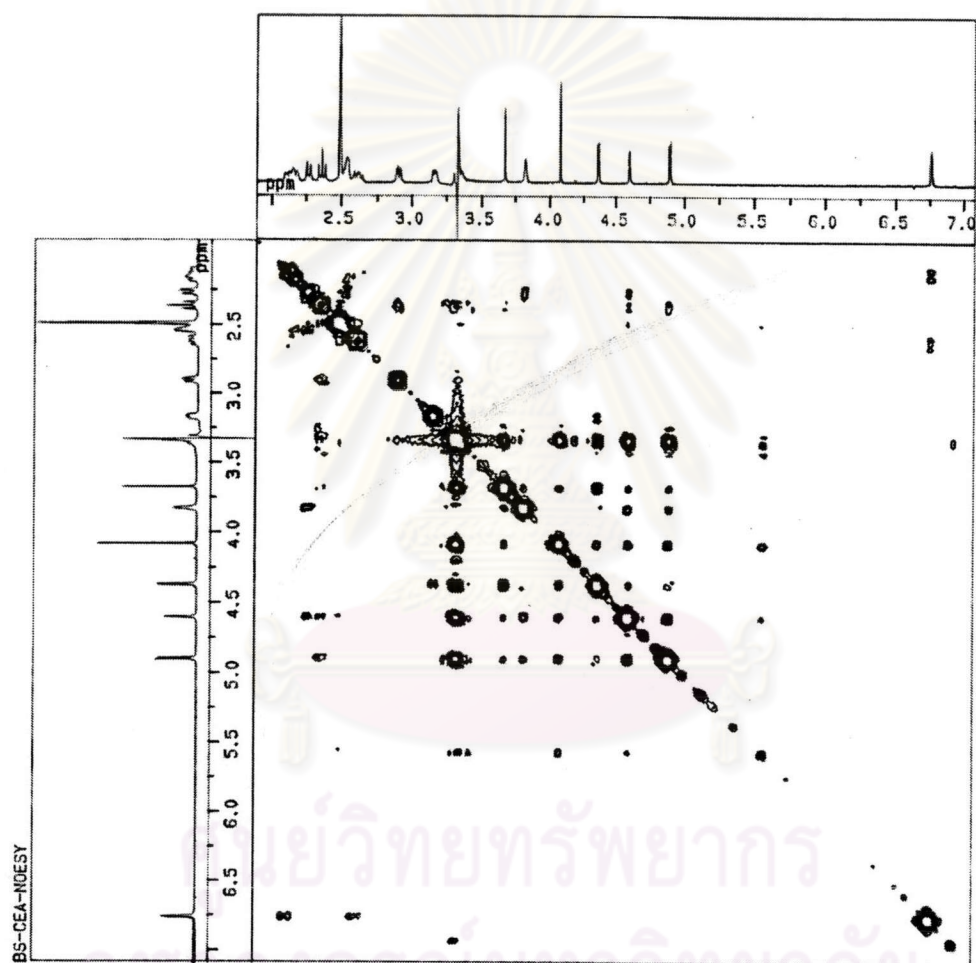


Fig. 33A The NOSEY spectrum of Compound 7

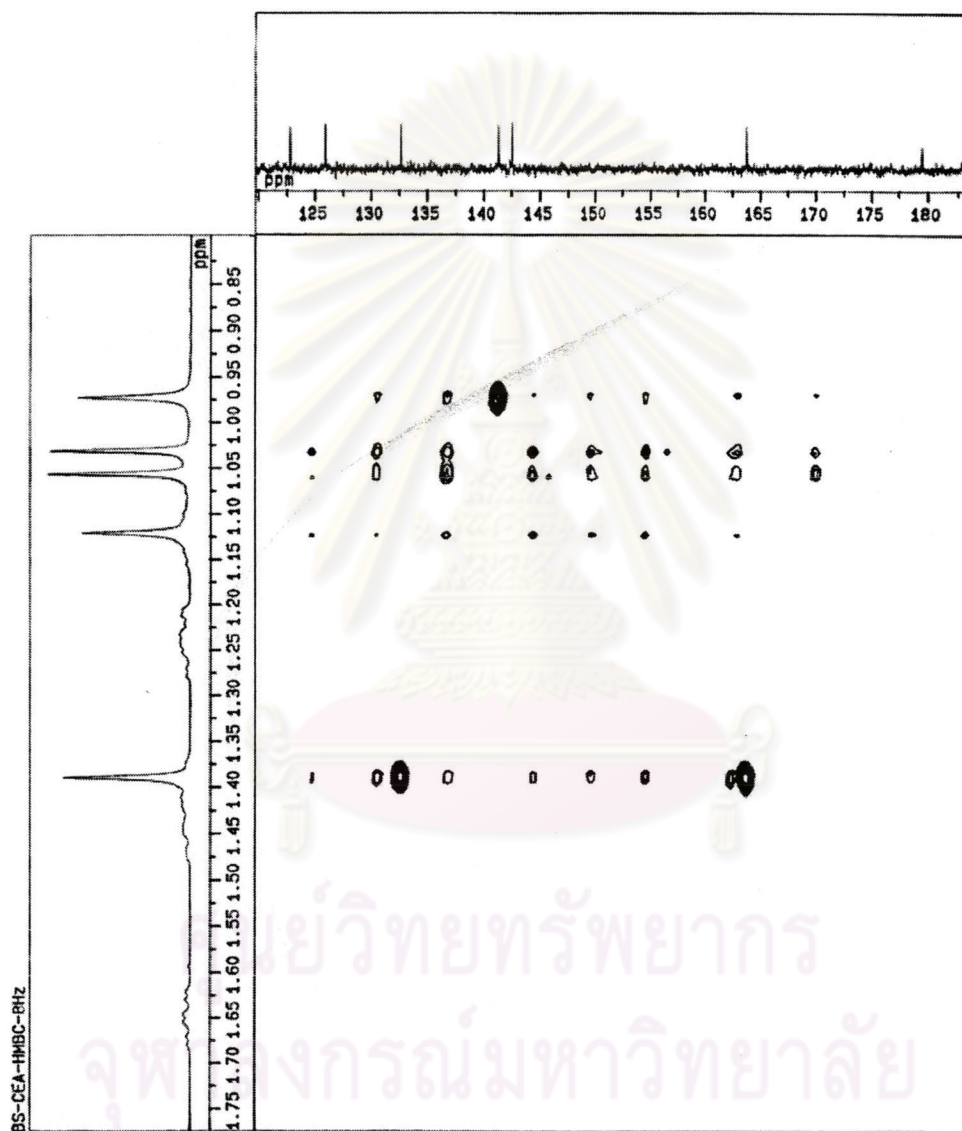


Fig. 33B The NOSEY spectrum of Compound Z

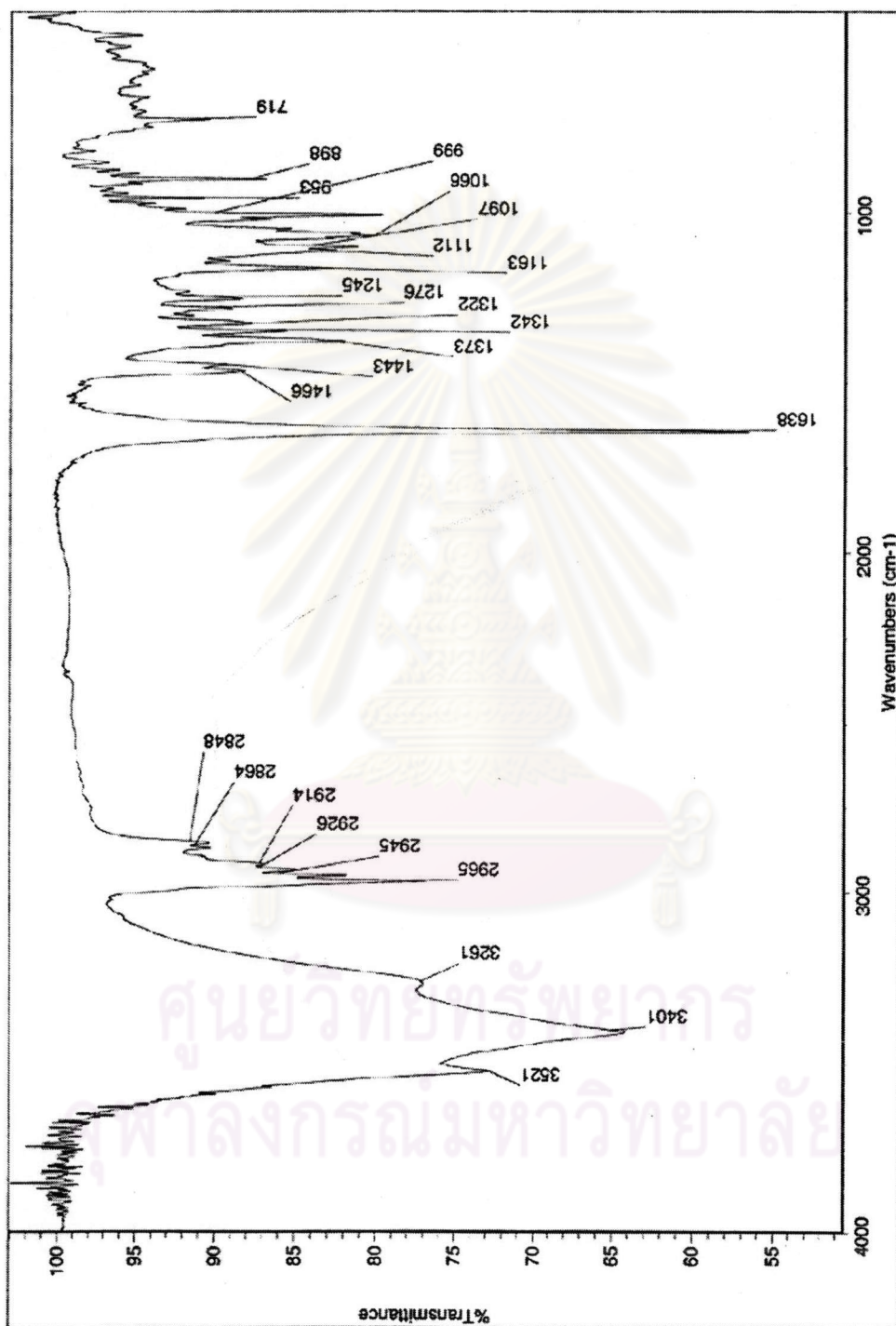


Fig. 34 The IR spectrum of Compound 10

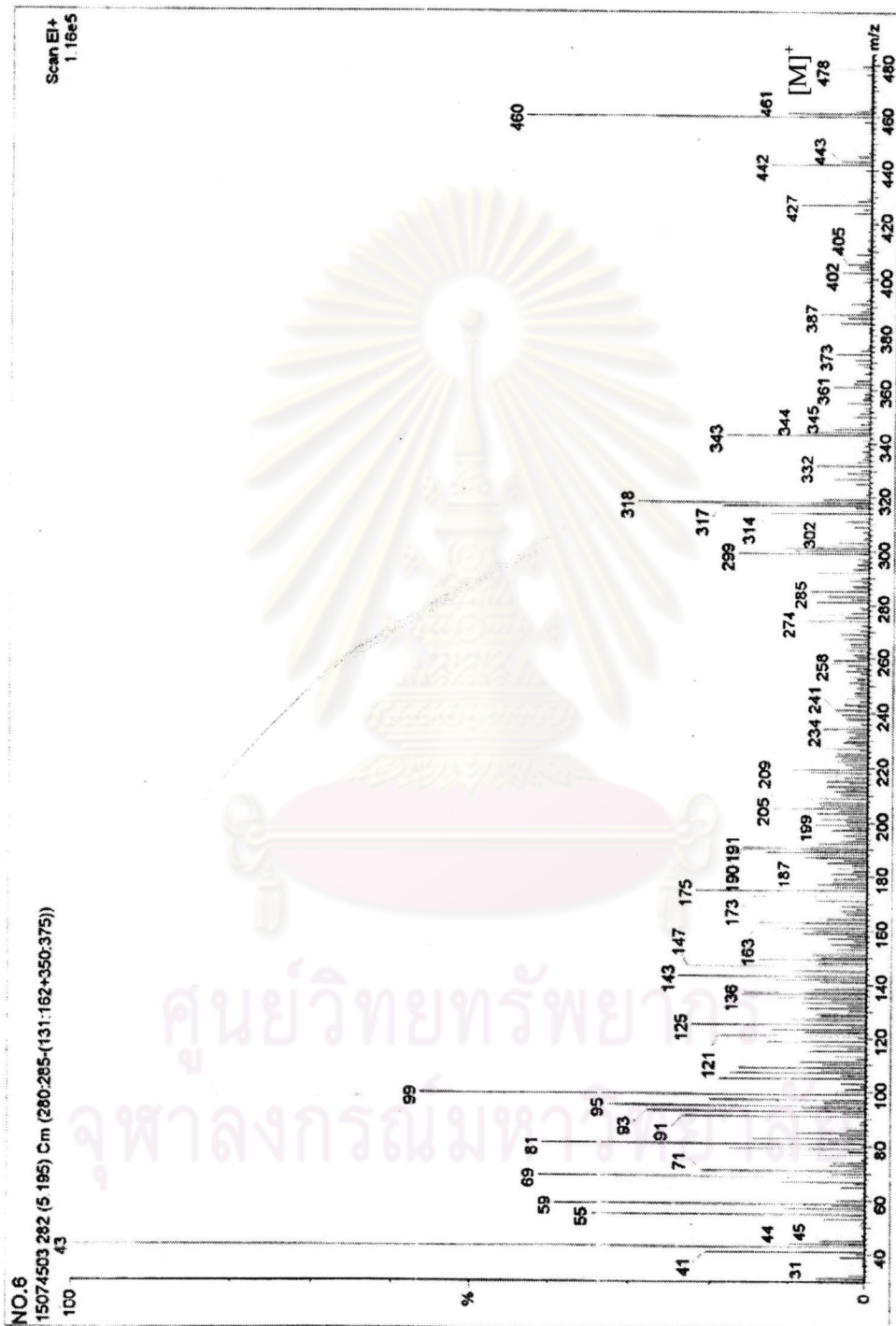


Fig. 35 The EI mass spectrum of Compound 10

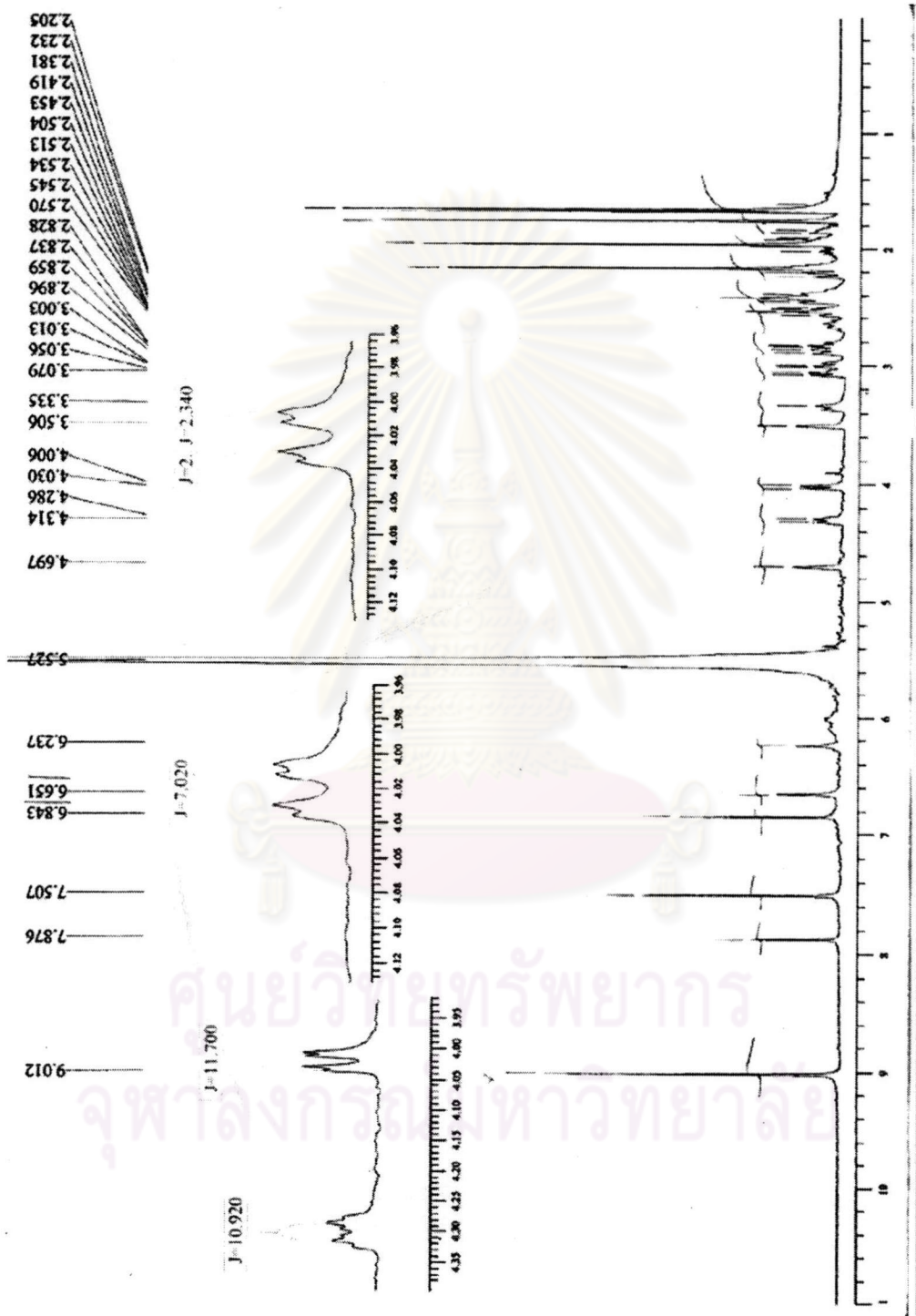


Fig. 36 The ¹H NMR (pyrine-d₅) spectrum of Compound 10

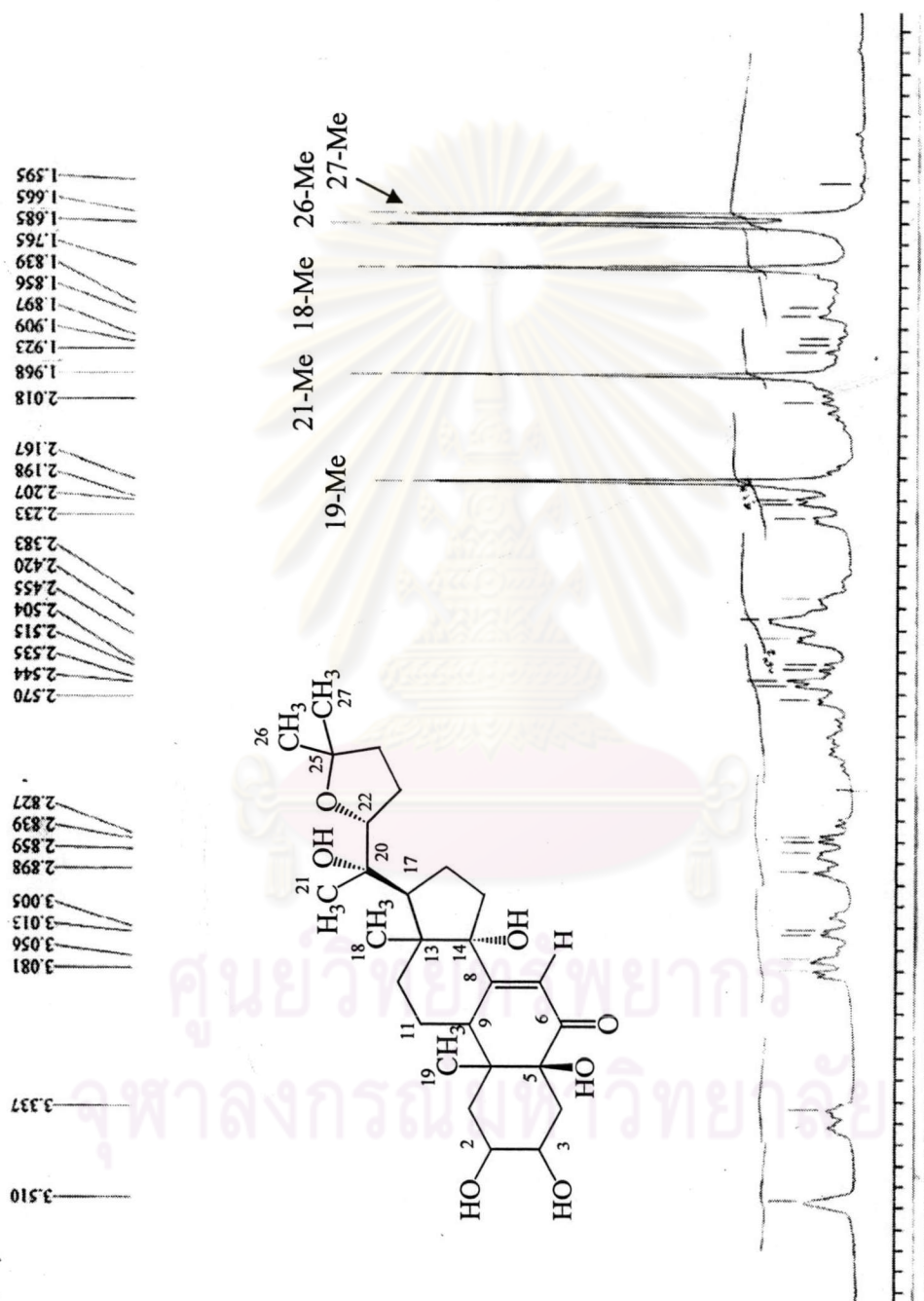


Fig. 36A The $^1\text{H NMR}$ (pyridine- d_5) spectrum of Compound 10

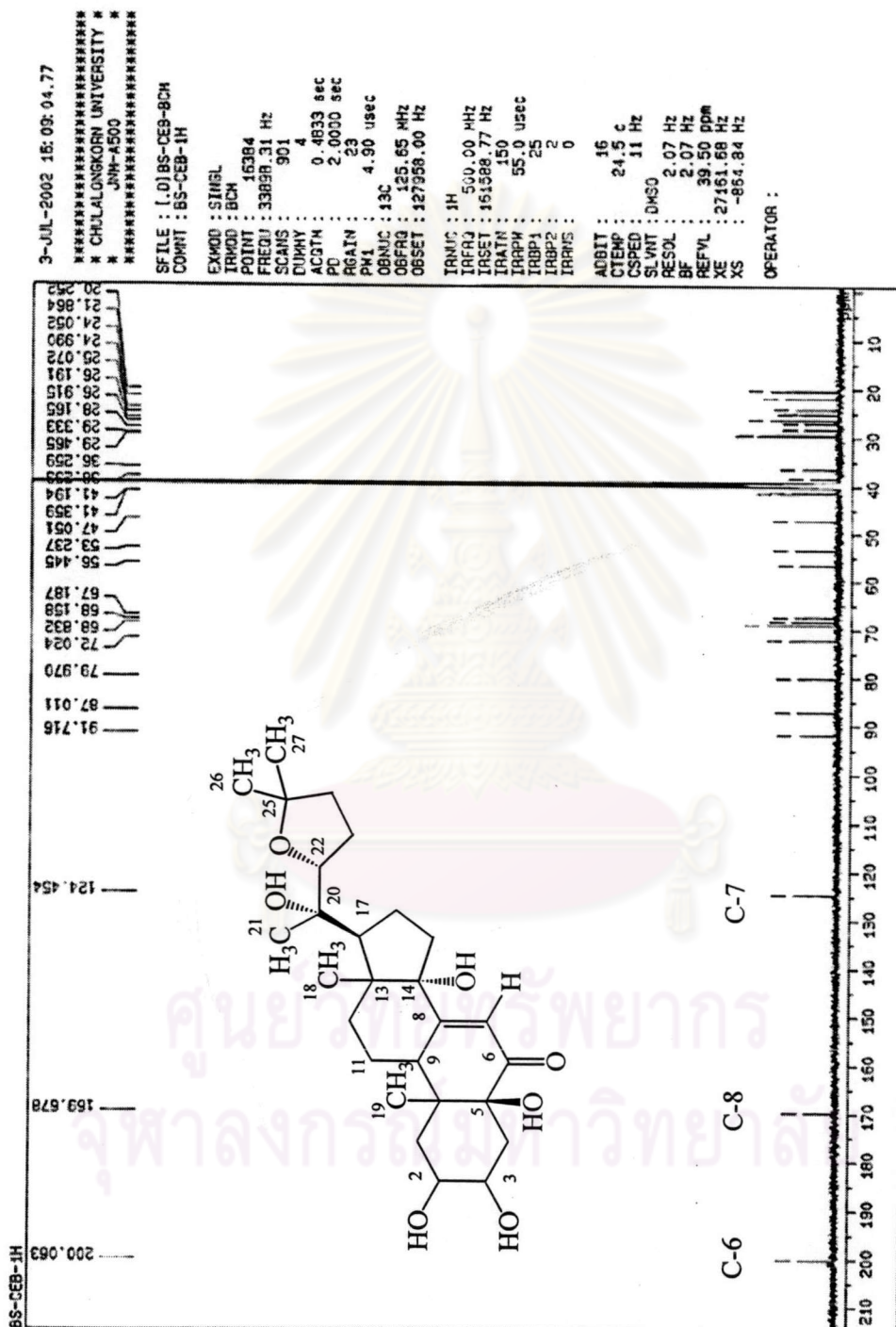


Fig. 37 The ^{13}C NMR (DMSO- d_6) spectrum of Compound 10

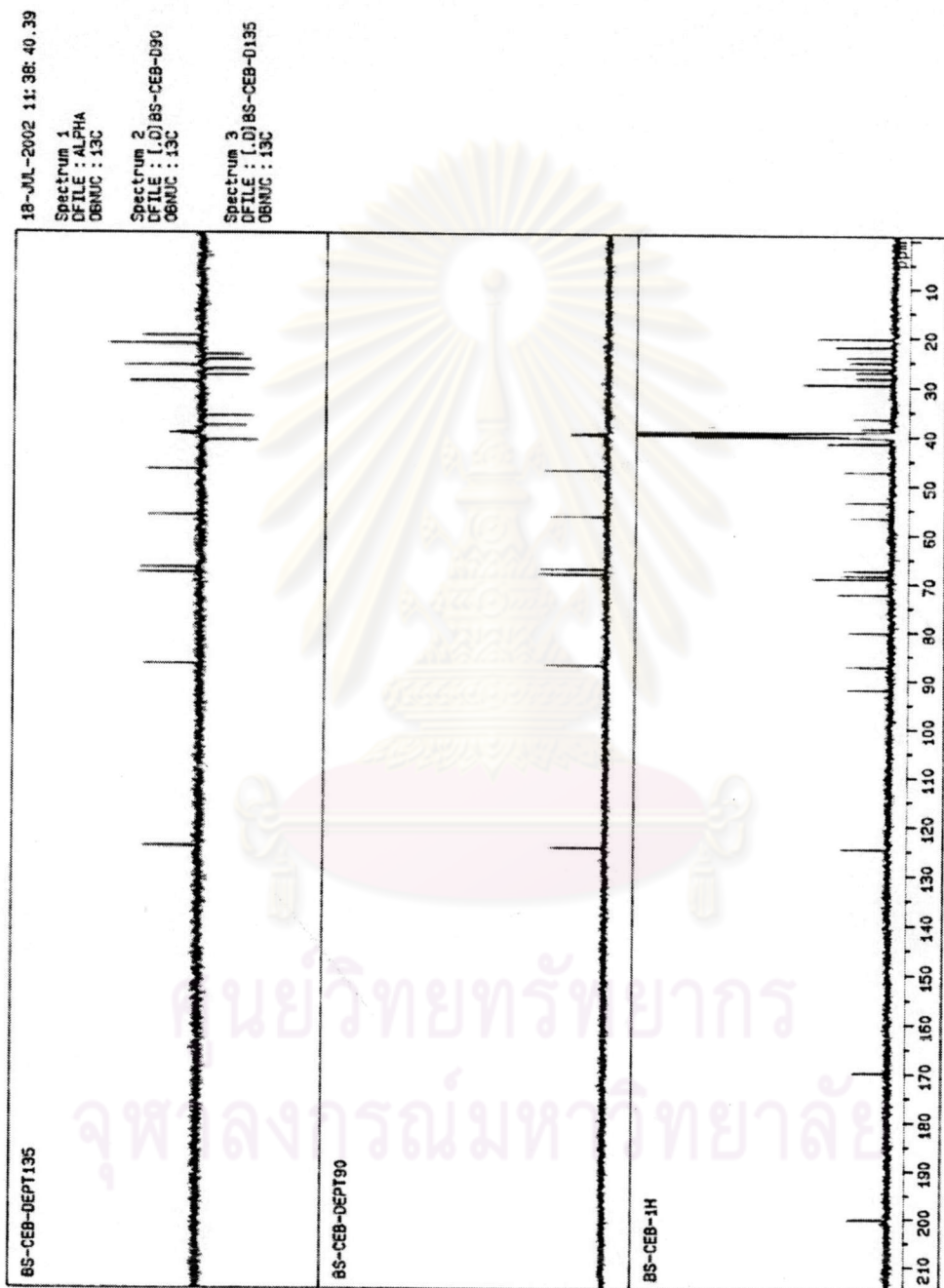


Fig. 38 The DEPT 90 and 135 spectrum of Compound 10

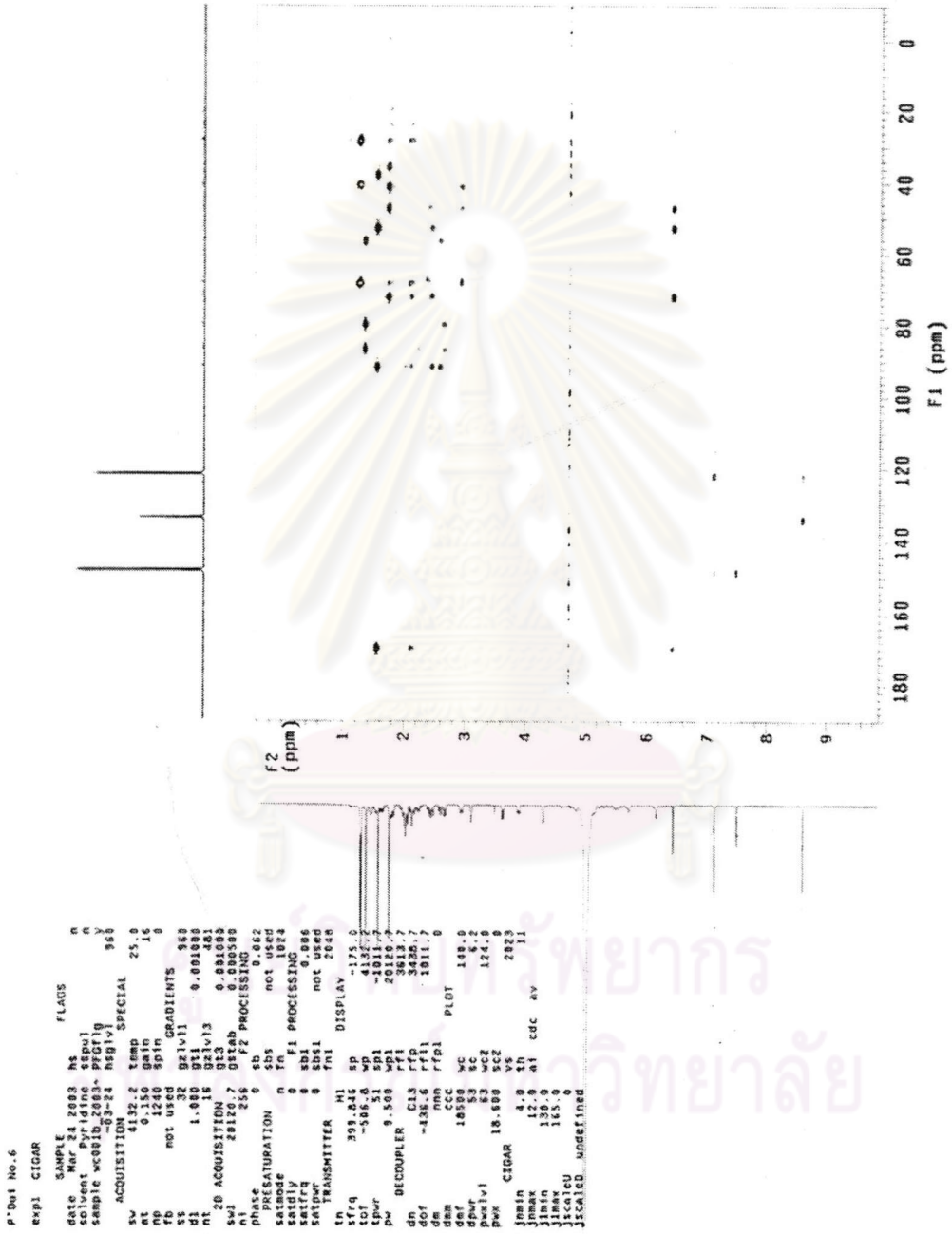


Fig. 39 The CIGAR (pyridine-*d*₅) spectrum of Compound 10



APPENDIX B

ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

* * * * * P R O B I T A N A L Y S I S * * * * *

Observed and Expected Frequencies

CONC	Number of Subjects	Observed Responses	Expected Responses	Residual	Prob
.00	30.0	1.0	7.968	-6.968	.26560
10.00	30.0	3.0	8.105	-5.105	.27015
100.00	30.0	23.0	9.384	13.616	.31279
1000.00	30.0	22.0	23.255	-1.255	.77515

Confidence Limits for Effective CONC

Prob	CONC	95% Confidence Limits	
		Lower	Upper
.01	-1230.15848	.	.
.02	-1032.92068	.	.
.03	-907.77962	.	.
.04	-813.64087	.	.
.05	-737.06627	.	.
.06	-671.88925	.	.
.07	-614.74176	.	.
.08	-563.57299	.	.
.09	-517.03705	.	.
.10	-474.20063	.	.
.15	-296.84644	.	.
.20	-155.89095	.	.
.25	-34.96369	.	.
.30	73.63273	.	.
.35	174.26350	.	.
.40	269.75225	.	.
.45	362.13873	.	.
.50	453.06045	.	.
.55	543.98217	.	.
.60	636.36865	.	.
.65	731.85740	.	.
.70	832.48817	.	.
.75	941.08459	.	.
.80	1062.01185	.	.
.85	1202.96734	.	.
.90	1380.32153	.	.
.91	1423.15795	.	.
.92	1469.69389	.	.
.93	1520.86266	.	.
.94	1578.01015	.	.
.95	1643.18717	.	.
.96	1719.76177	.	.
.97	1813.90052	.	.
.98	1939.04158	.	.
.99	2136.27938	.	.

VITAE

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ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย