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สถาบันวิทยบริการ
จุฬาลงกรณ์มหาวิทยาลัย



APPENDIX

สถาบันวิทยบริการ
จุฬาลงกรณ์มหาวิทยาลัย

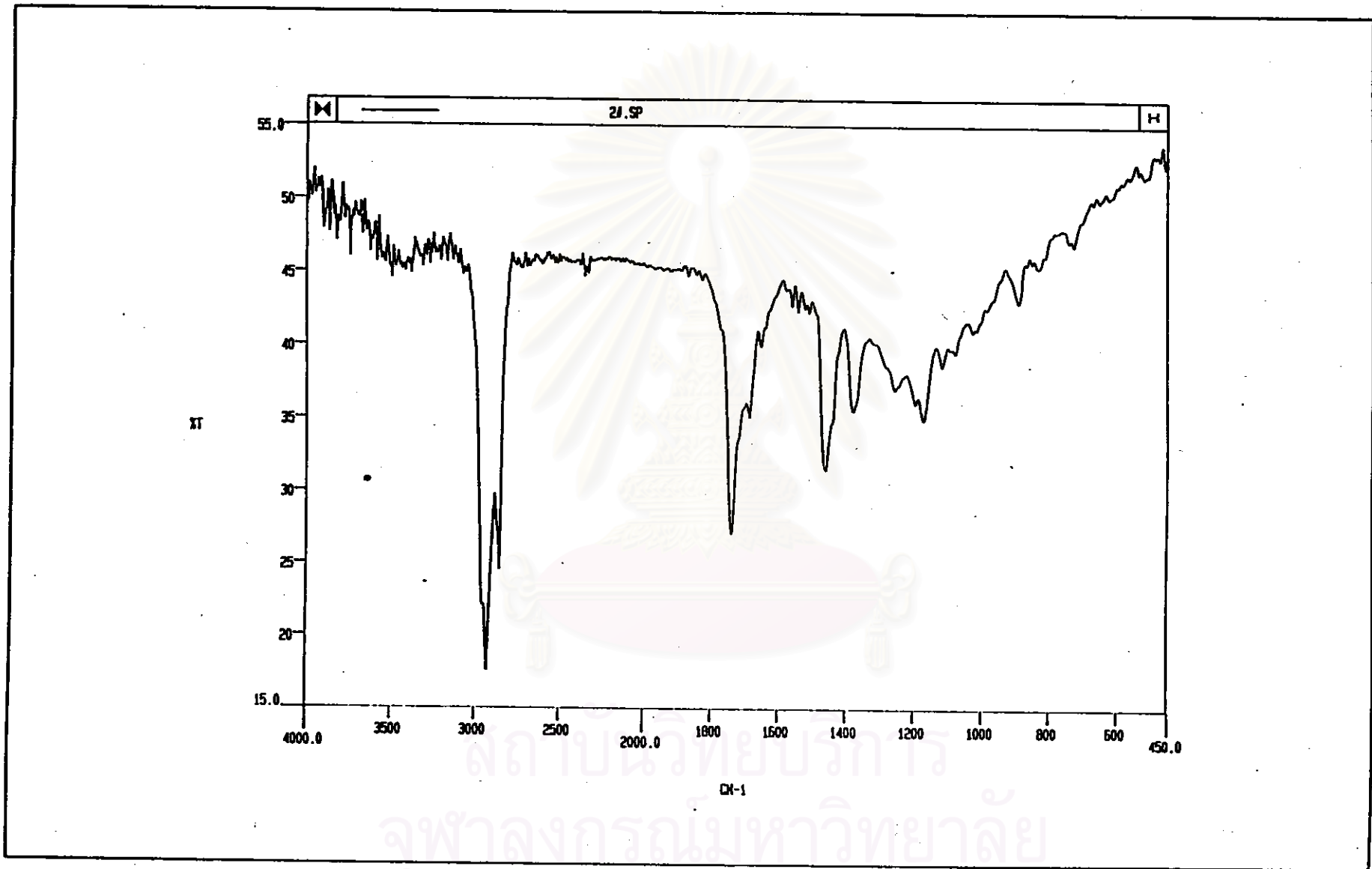


Figure 3 The IR spectrum of mixture I

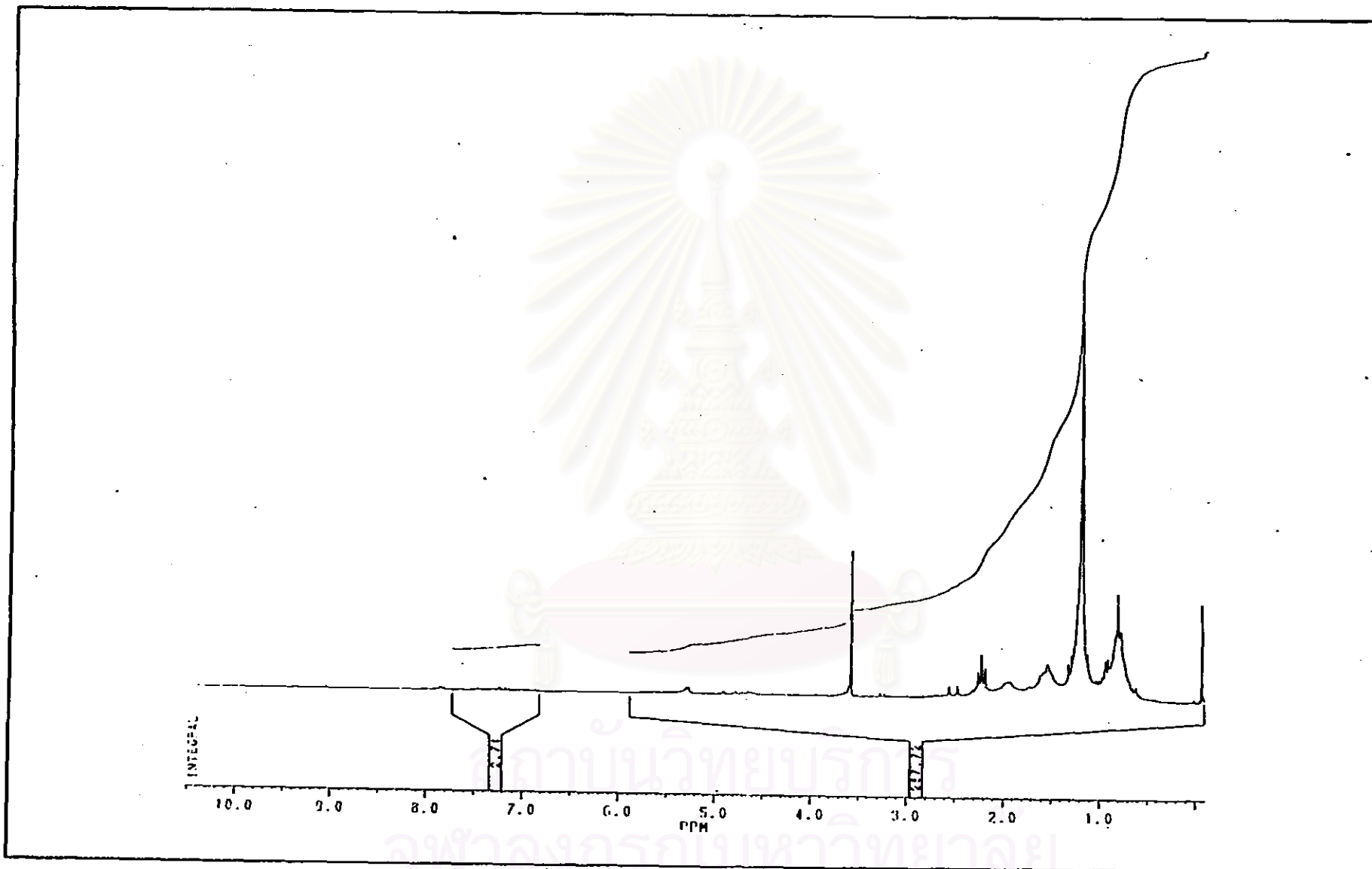


Figure 4 The $^1\text{H-NMR}$ spectrum of mixture I

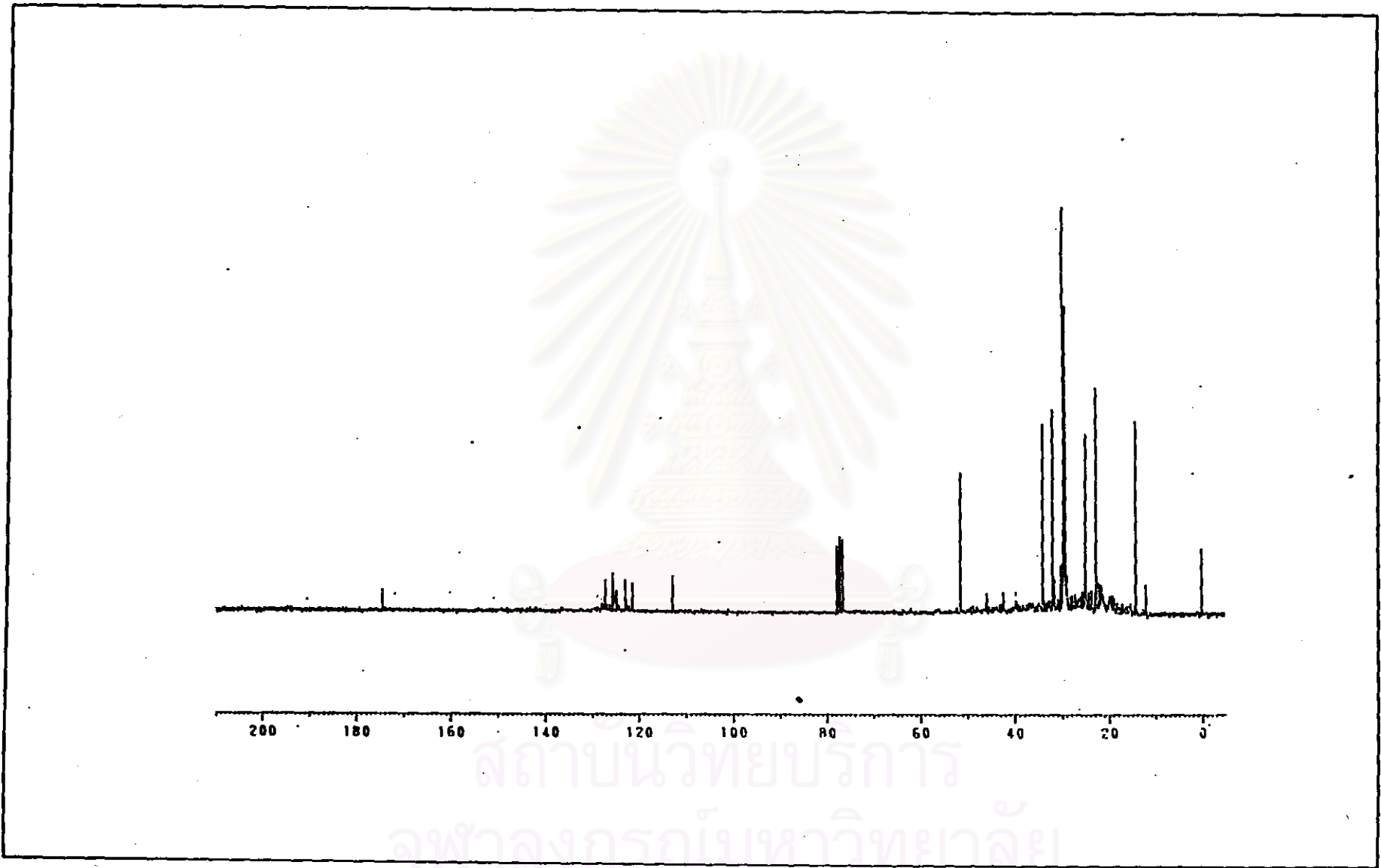


Figure 5 The ^{13}C -NMR spectrum of mixture 1

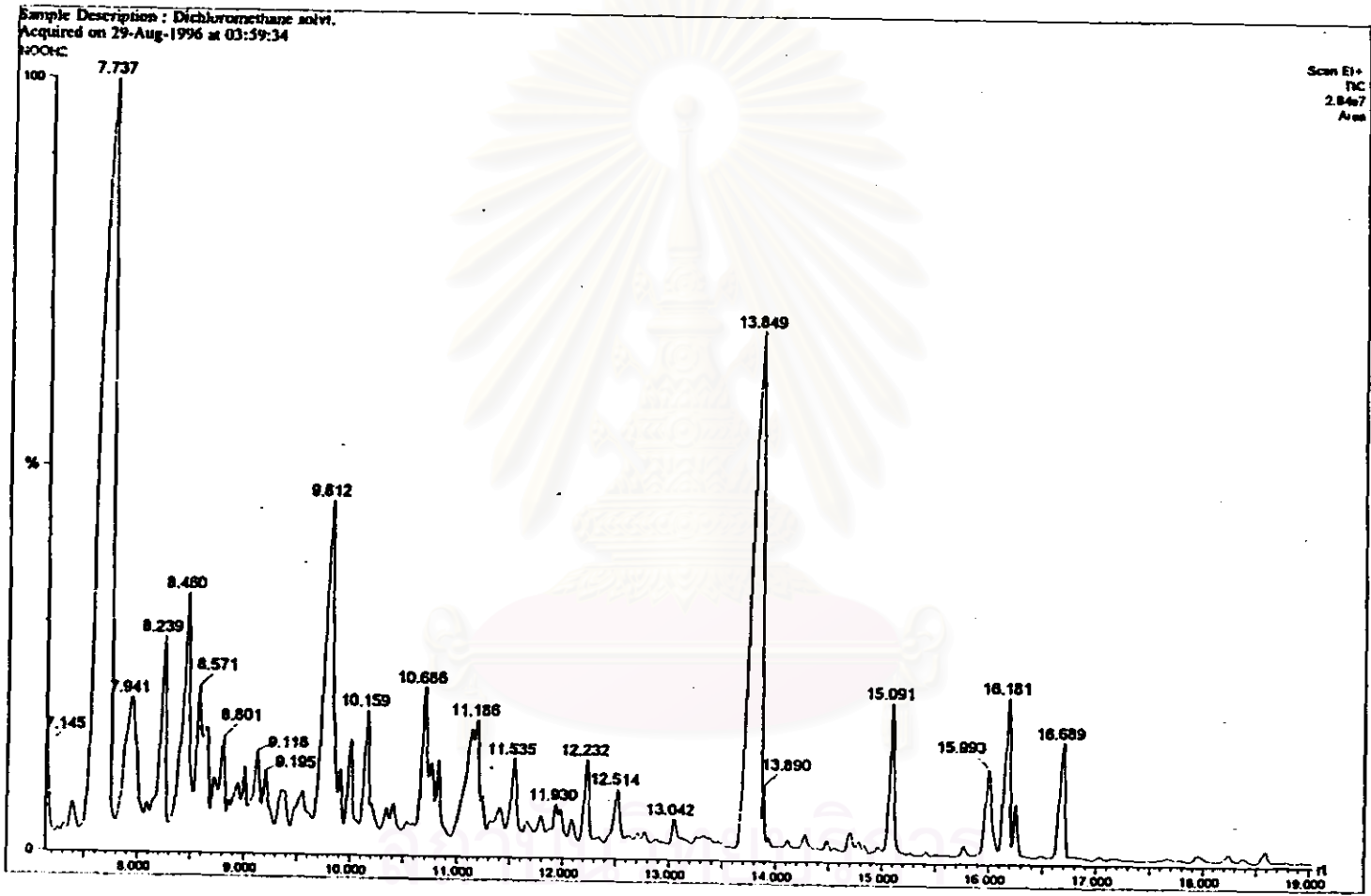


Figure 6 The Gas-Liquid chromatogram of mixture I

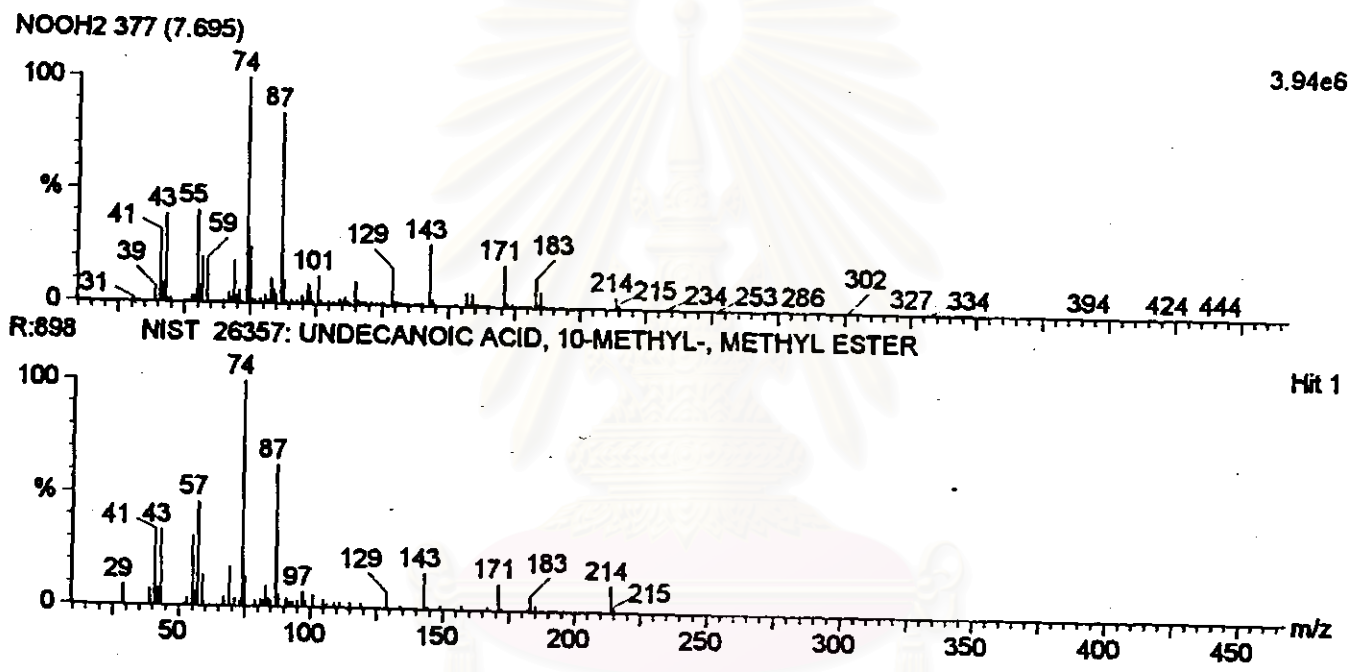


Figure 7 The mass spectrum of mixture I at retention time 7.74

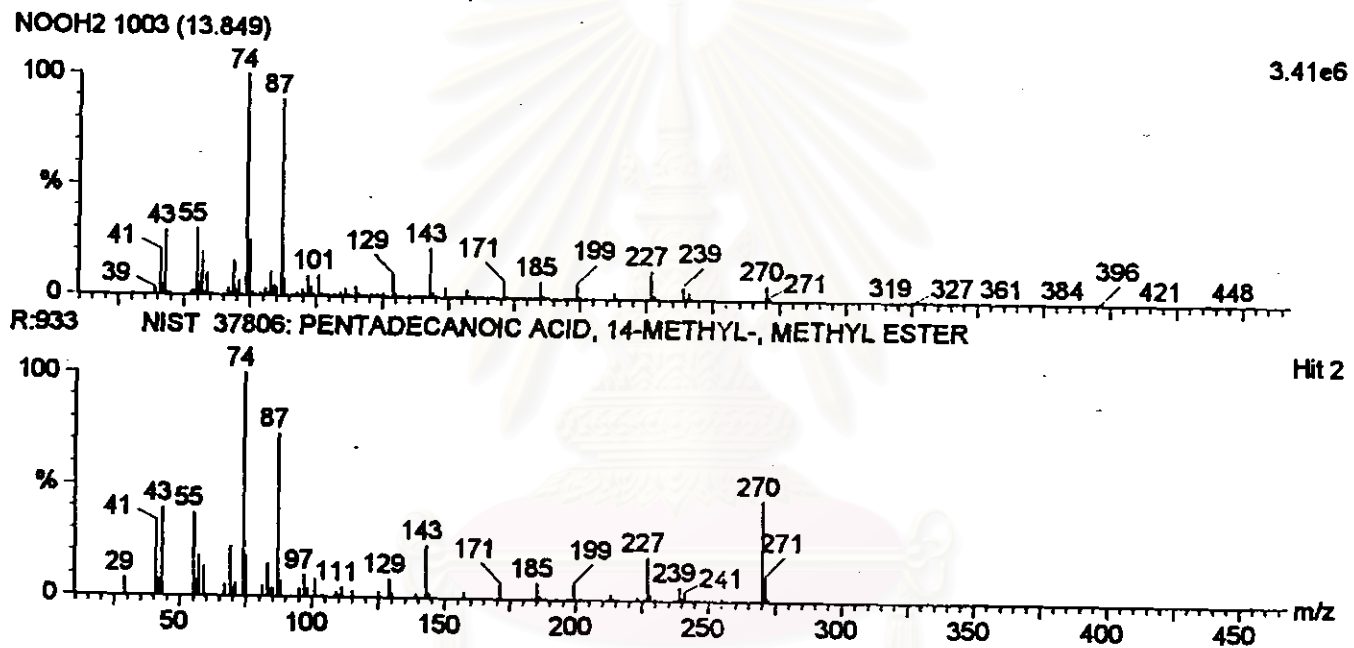


Figure 8 The mass spectrum of mixture I at retention time 14.85

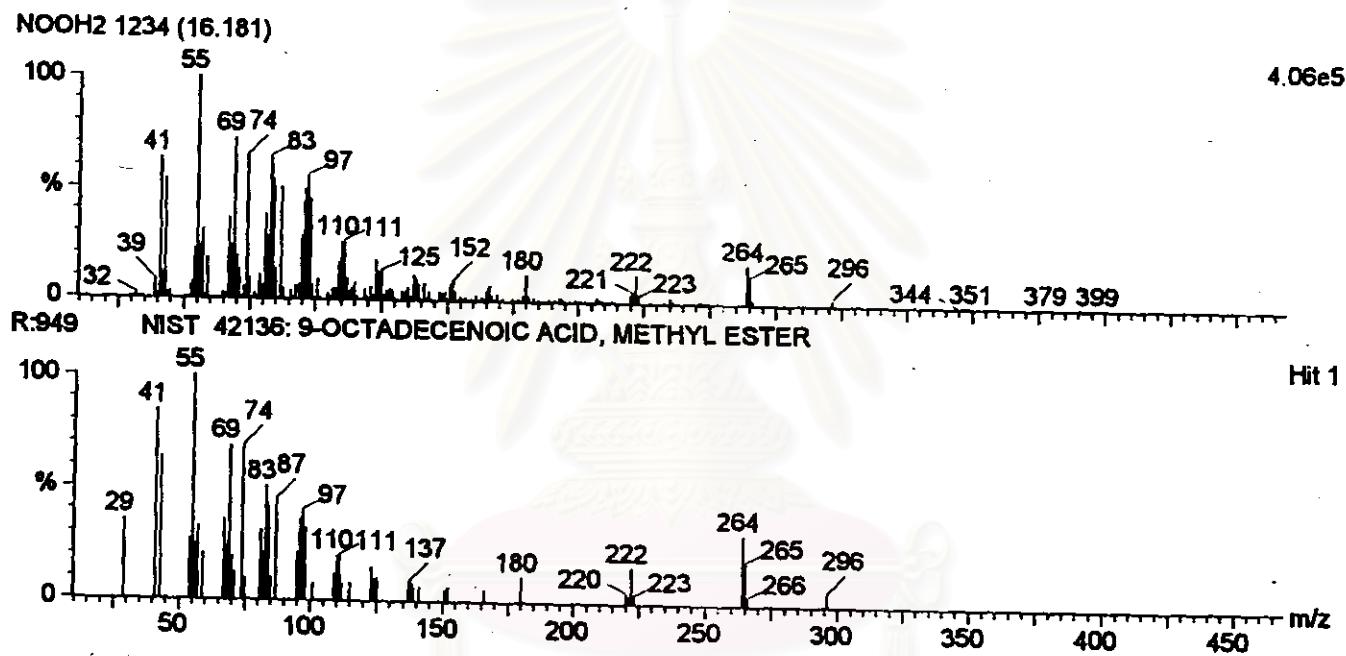


Figure 9 The mass spectrum of mixture I at retention time 16.18

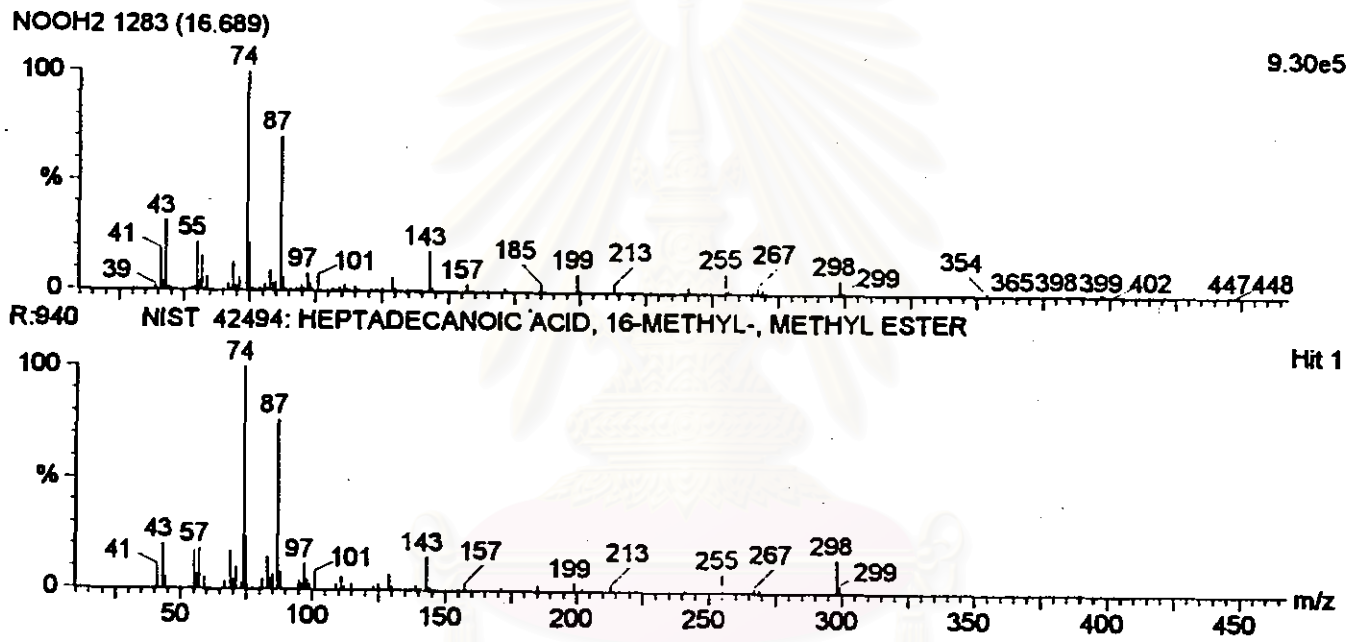


Figure 10 The mass spectrum of mixture I at retention time 16.70

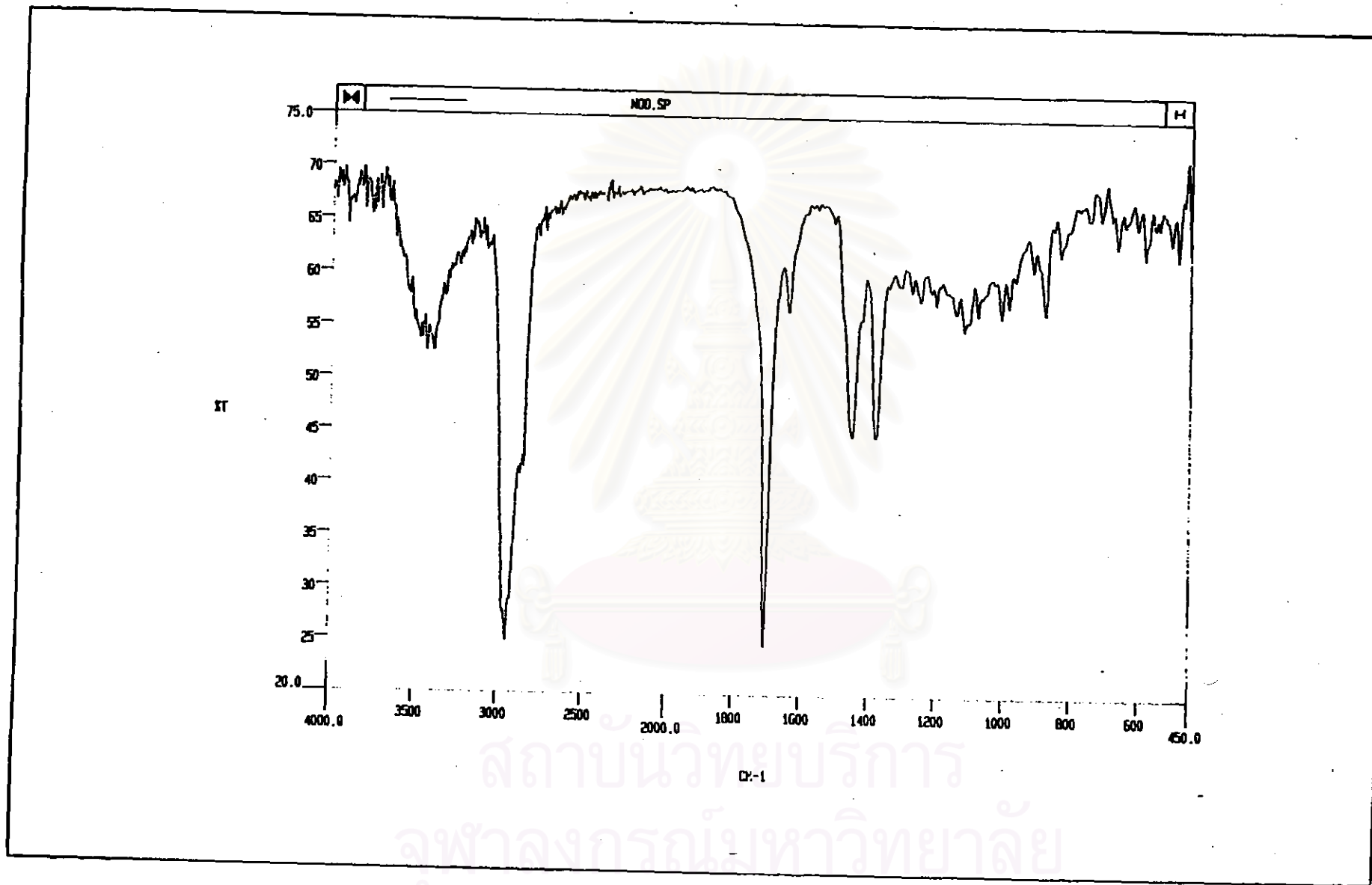
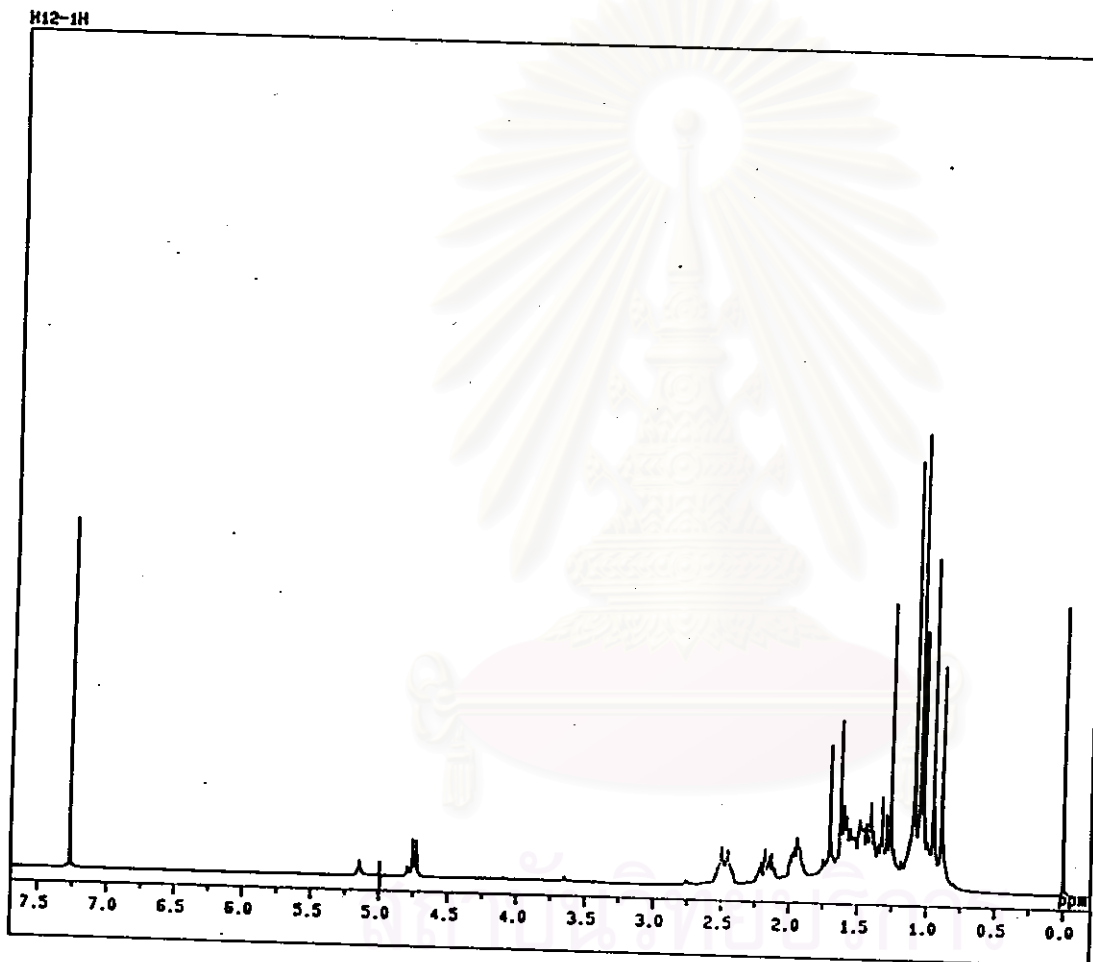


Figure 11 The IR spectrum of compound II



12-NOV-1996 10:20:02.93

 * CHULALONGKORN UNIVERSITY *
 * JRM-4500 *

SFIL: (.SS)M12-H
 CON: M12-1H

EXMO: SINGL
 IRPO: NOM
 POINT: 32768
 FREQ: 10000.00 Hz
 SCANS: 24
 DUMY: 1
 ACQTM: 3.2768 sec
 PD: 3.0000 sec
 RGAIN: 17
 PVI: 3.40 usec
 OPRAC: 1H
 OPRF: 500.00 MHz
 OPRS: 162410.00 Hz

IRAC: 1H
 IRFR: 560.00 MHz
 IRSE: 162410.00 Hz
 IRAT: 120
 IRPW: 30.0 usec
 IRP1: 25
 IRP2: 2
 IRP3: 0

AOBIT: 16
 CTEP: 29.4 c
 CSPED: 13 Hz
 SLVNT: CDCL3
 RESOL: 0.31 Hz
 BP: 0.31 Hz
 REFVL: 0.00 ppm
 XE: 3551.72 Hz
 XS: 618.44 Hz

OPERATOR:

Figure 12 The ¹H-NMR spectrum of compound II

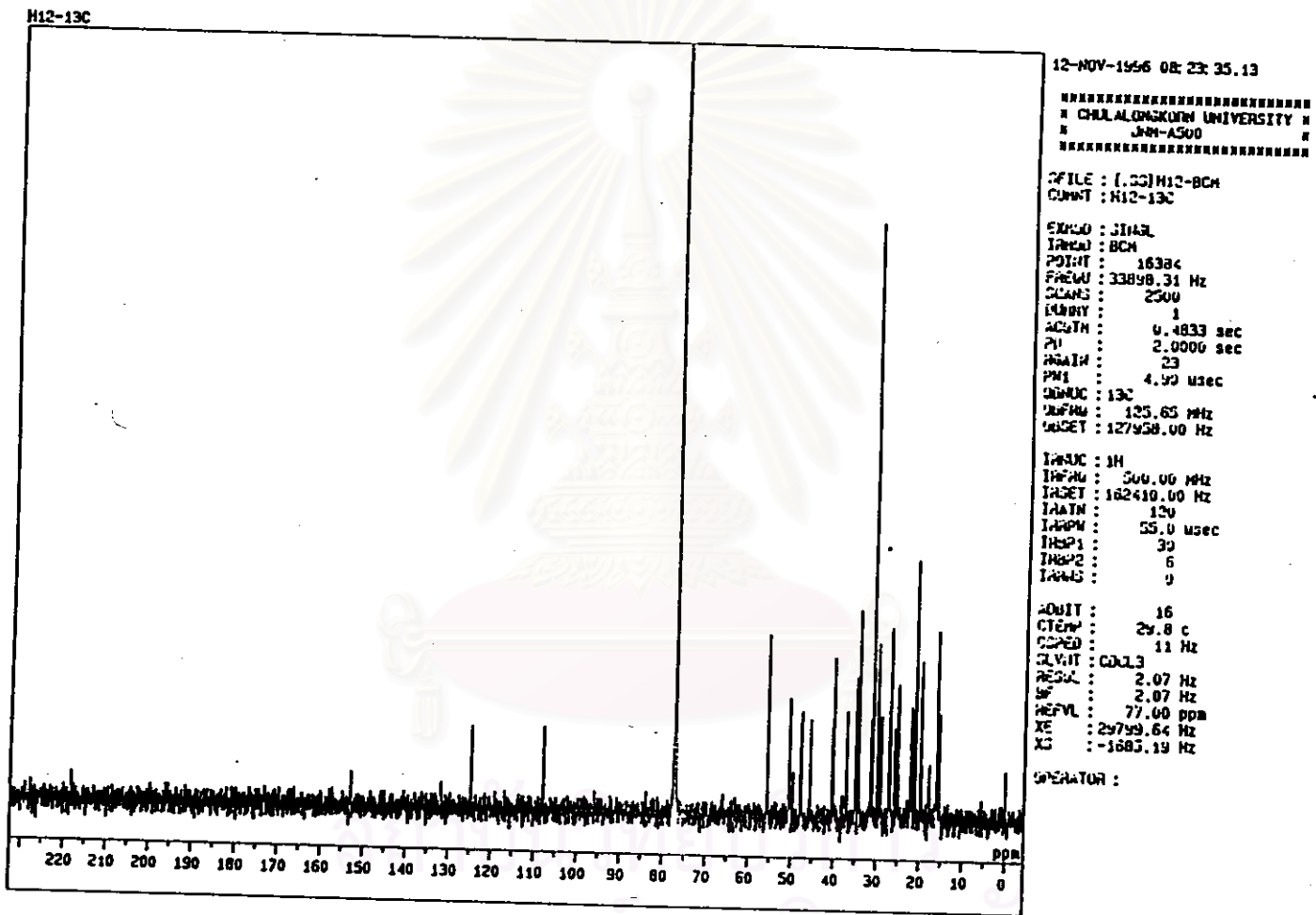


Figure 13 The ^{13}C -NMR spectrum of compound II

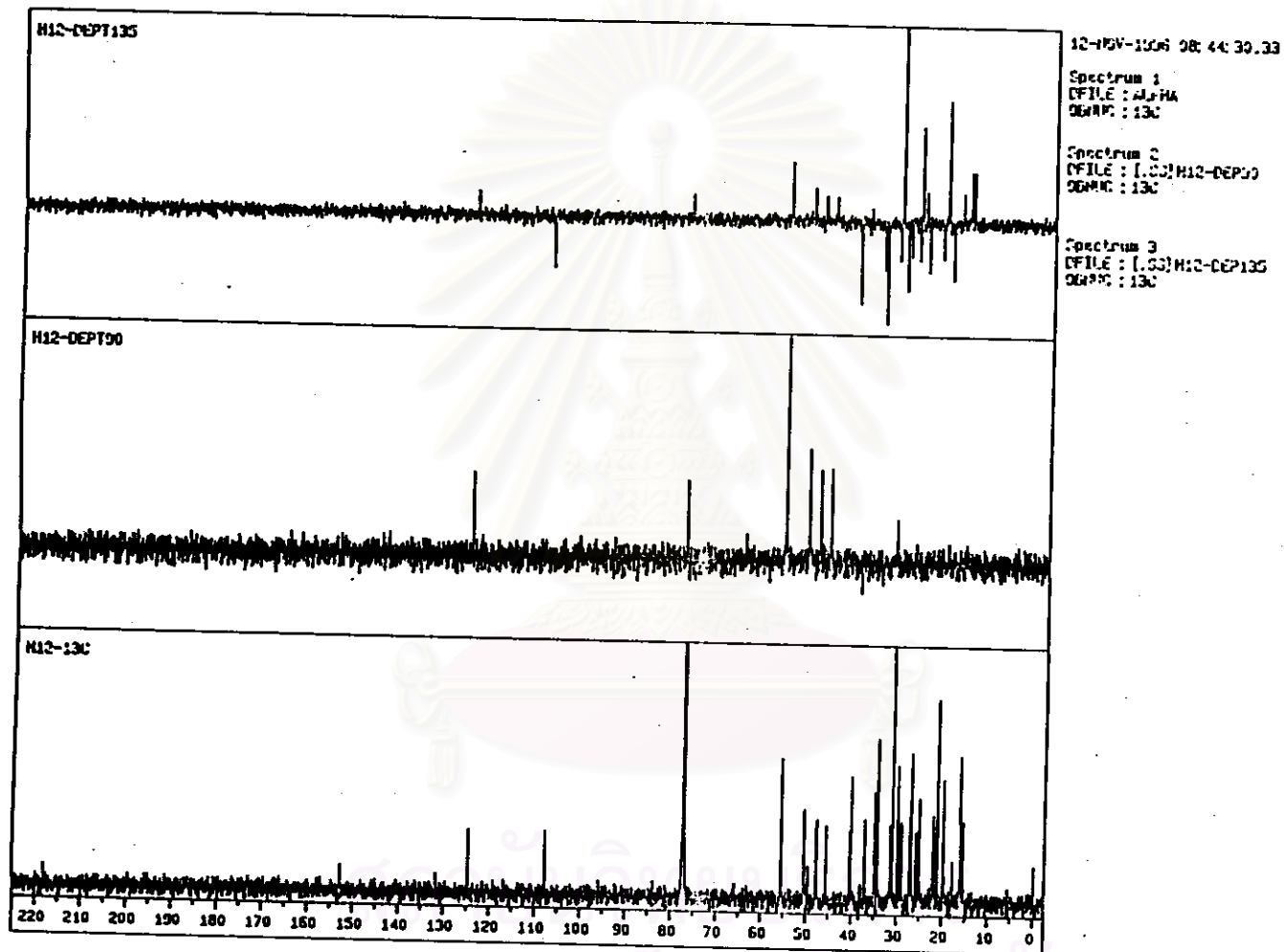


Figure 14 The DEPT 90 and DEPT 135 ^{13}C -NMR spectrum of compound II

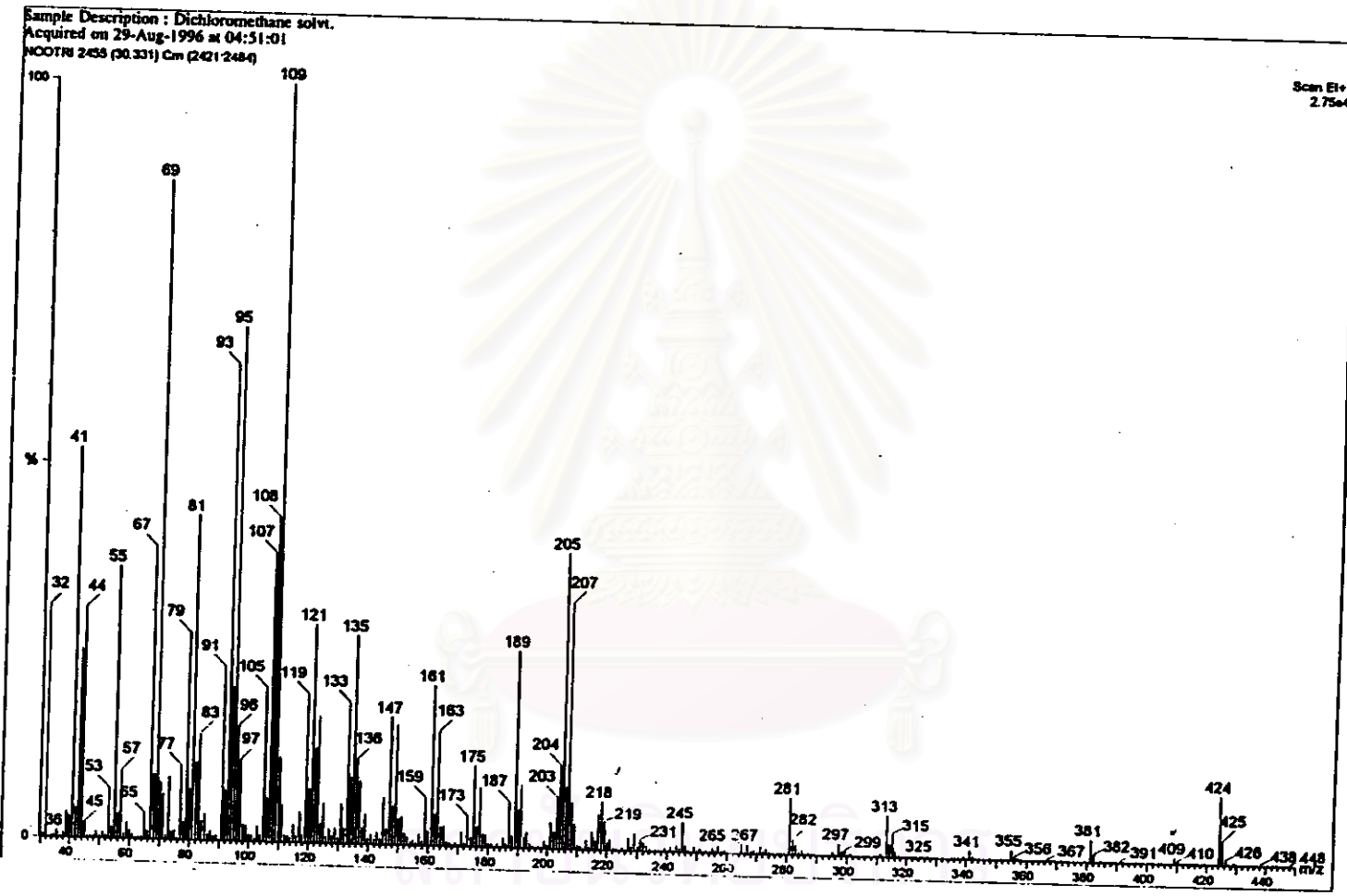


Figure 15 The mass spectrum of compound II

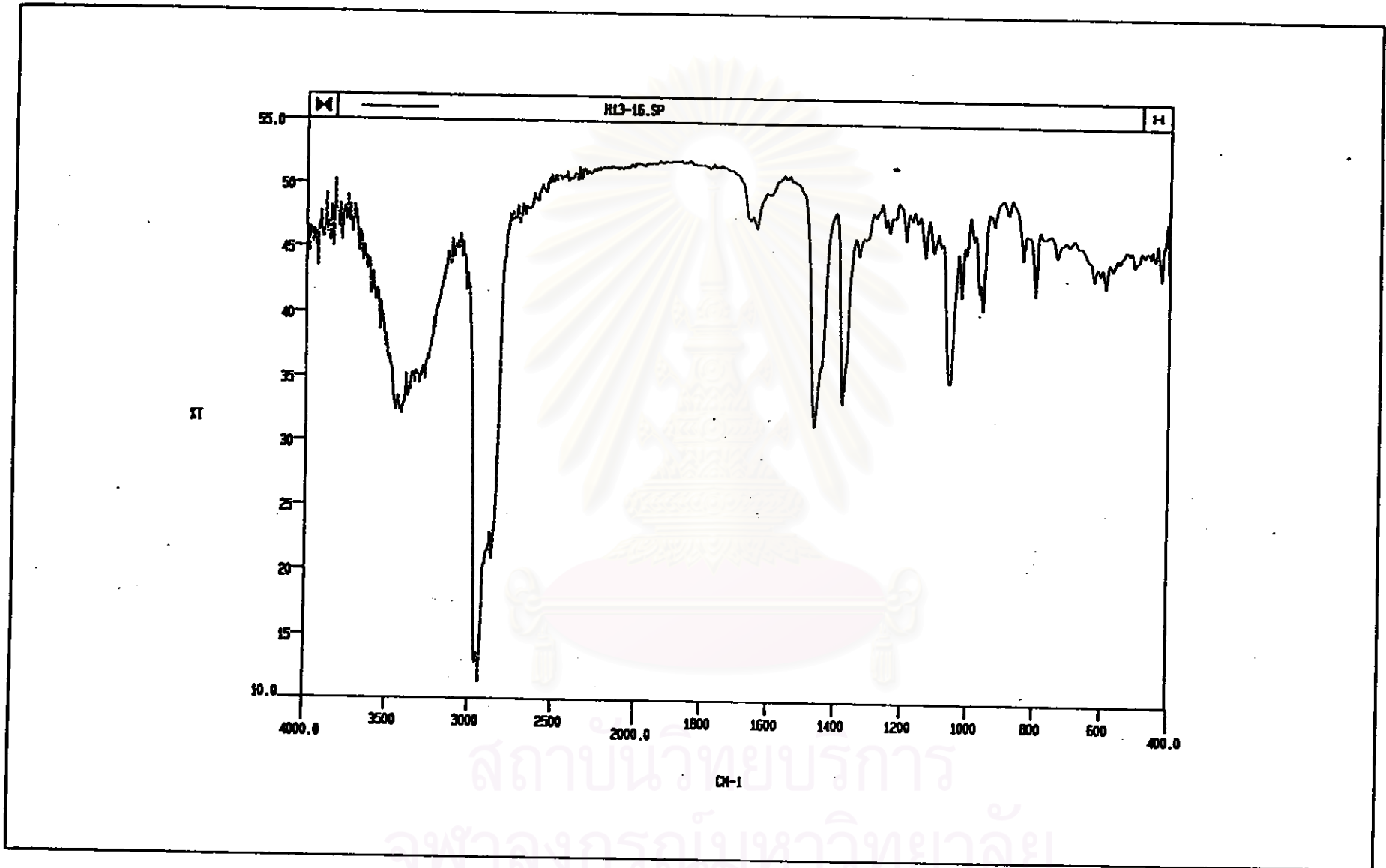


Figure 16 The IR spectrum of mixture III

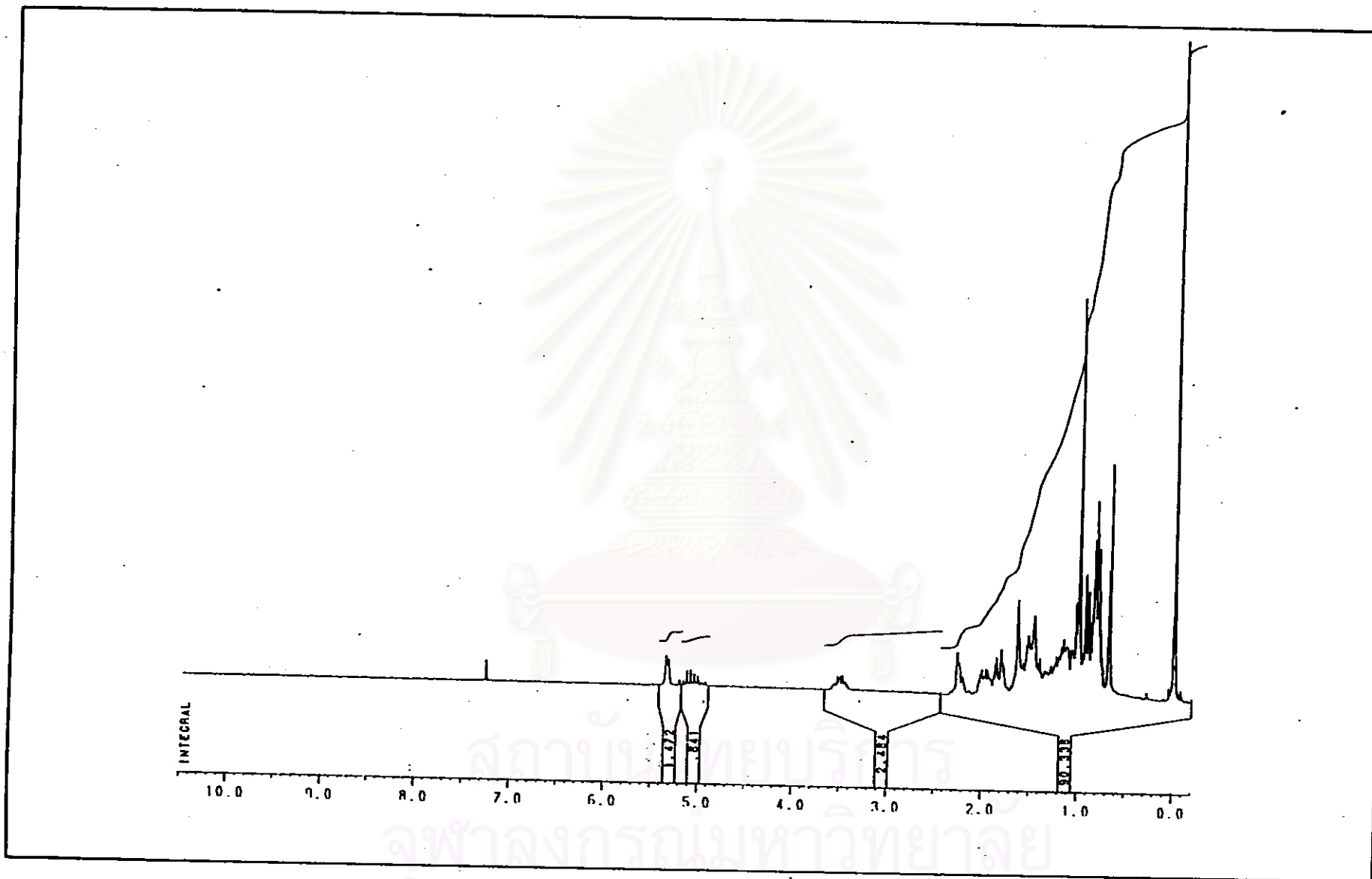


Figure 17 The $^1\text{H-NMR}$ spectrum of mixture III

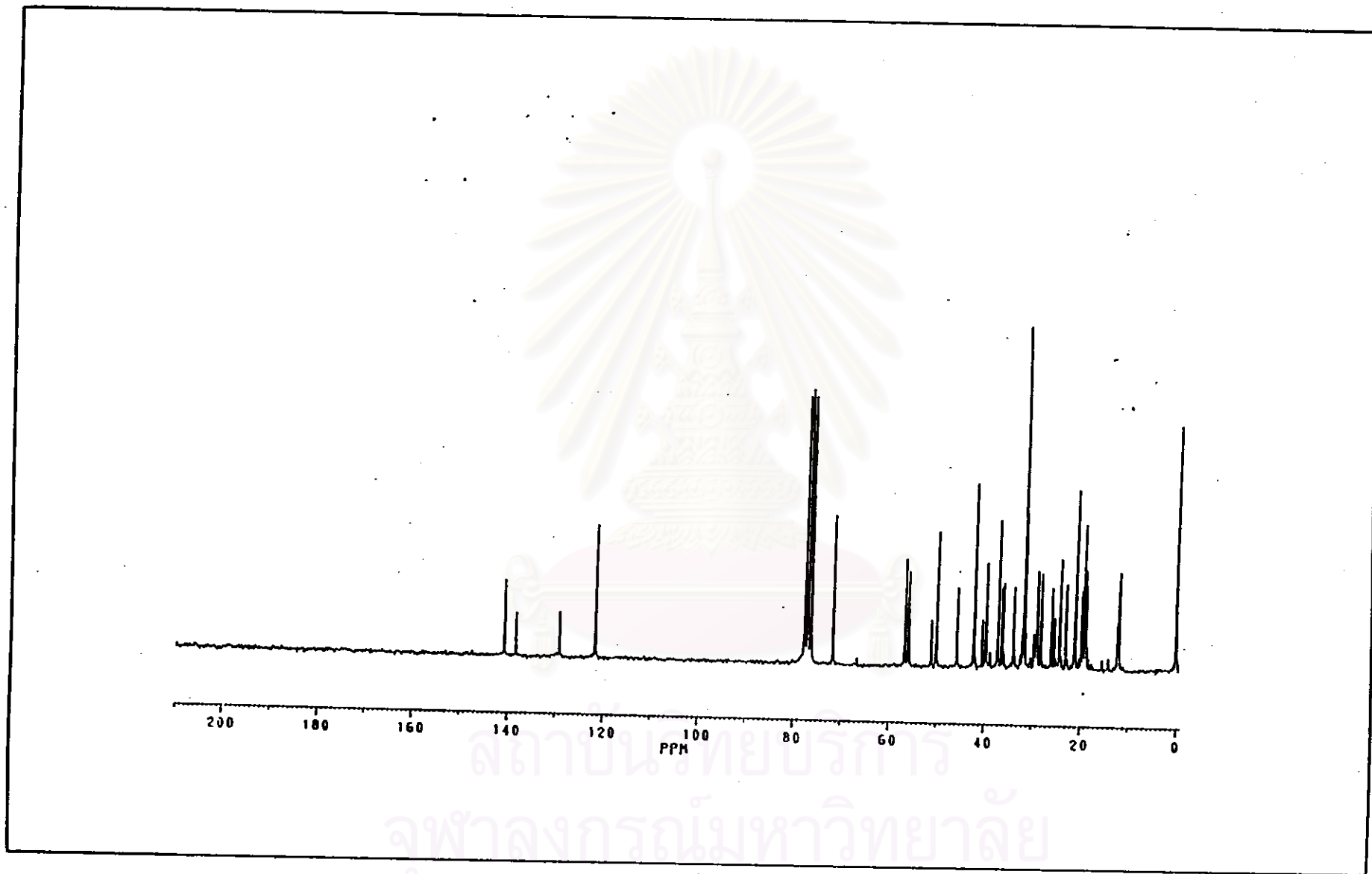


Figure 18 The ^{13}C -NMR spectrum of mixture III

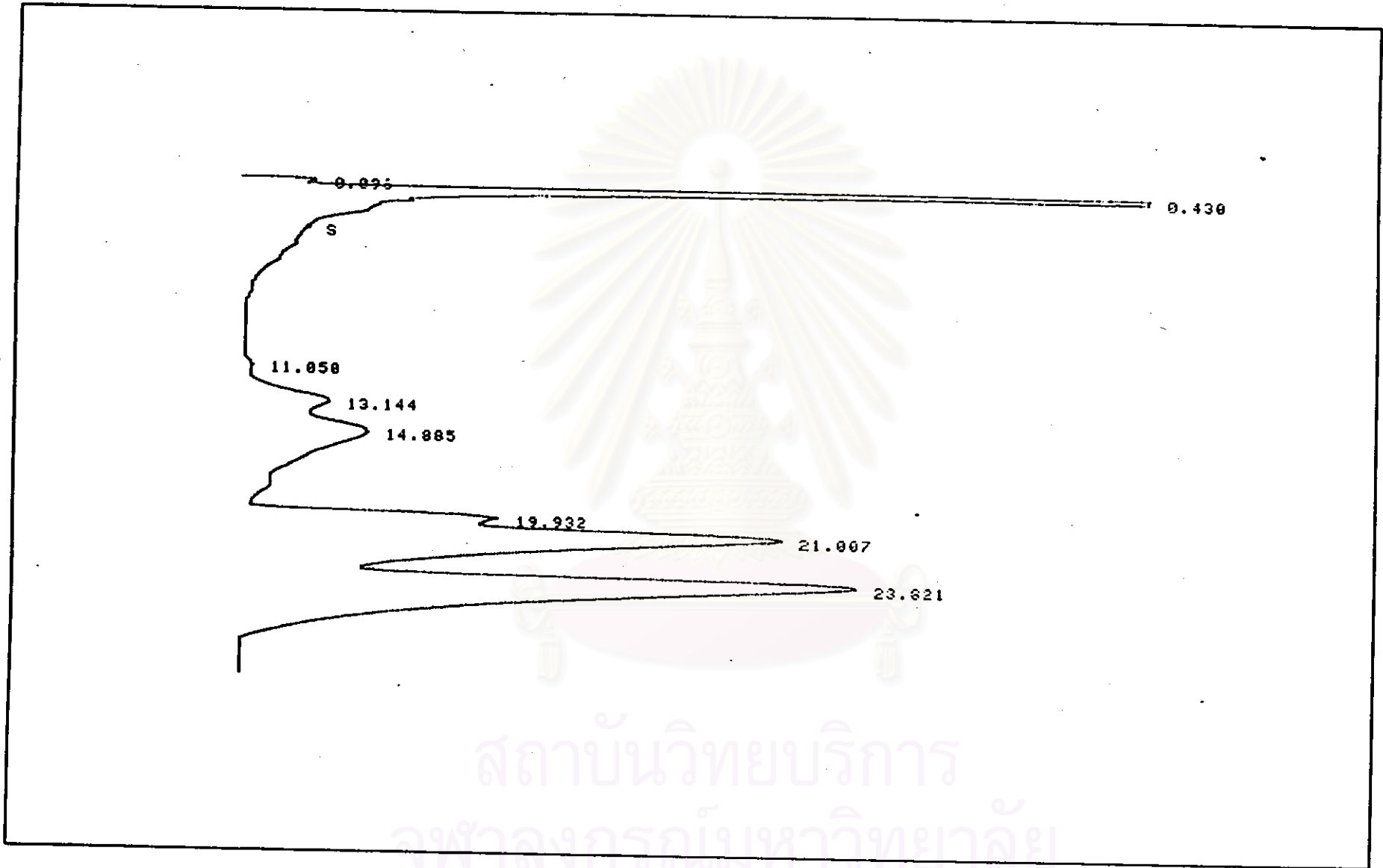


Figure 19 The Gas-Liquid chromatogram of mixture of standard steroid

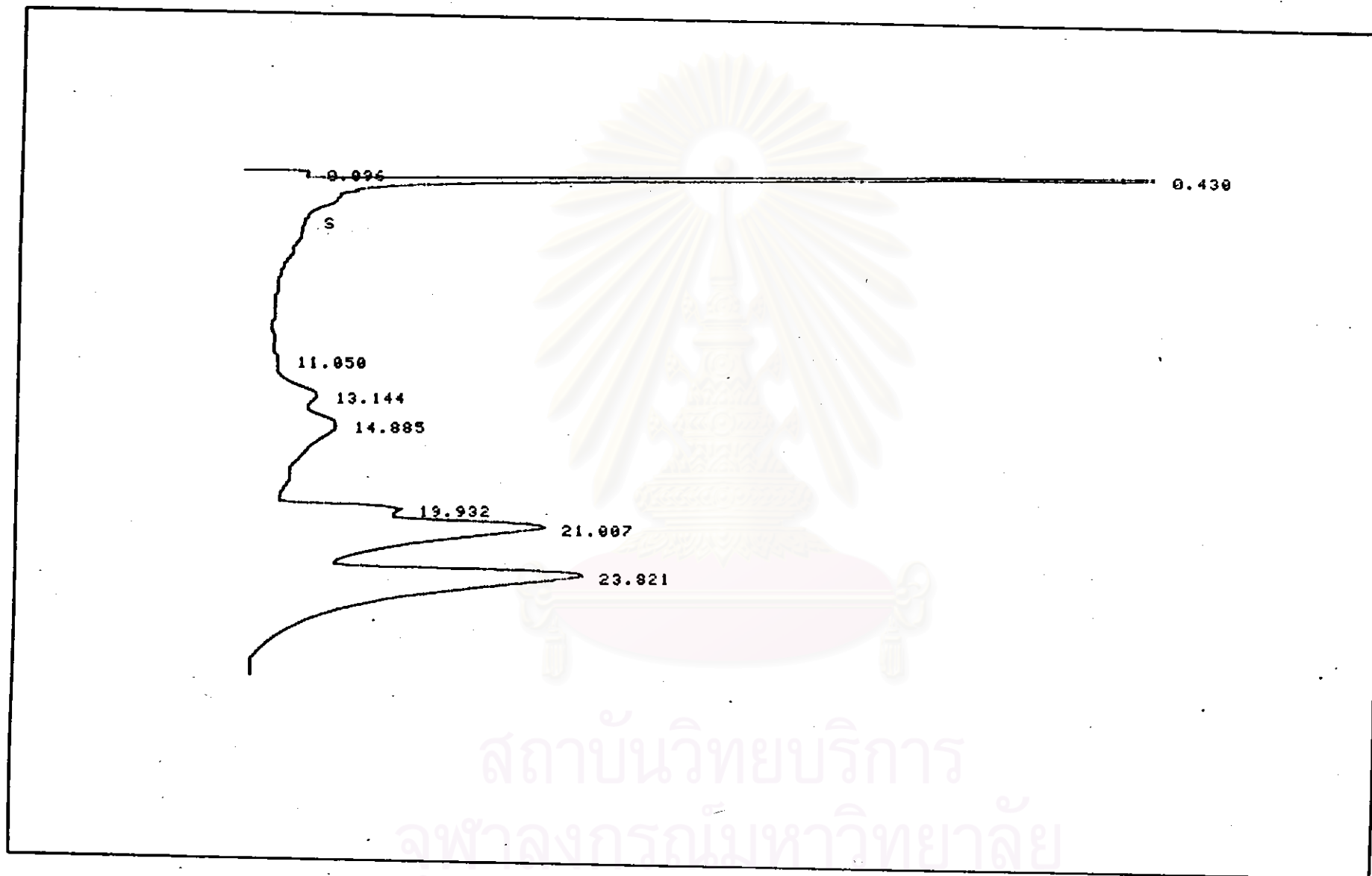


Figure 20 The Gas-Liquid chromatogram of mixture III

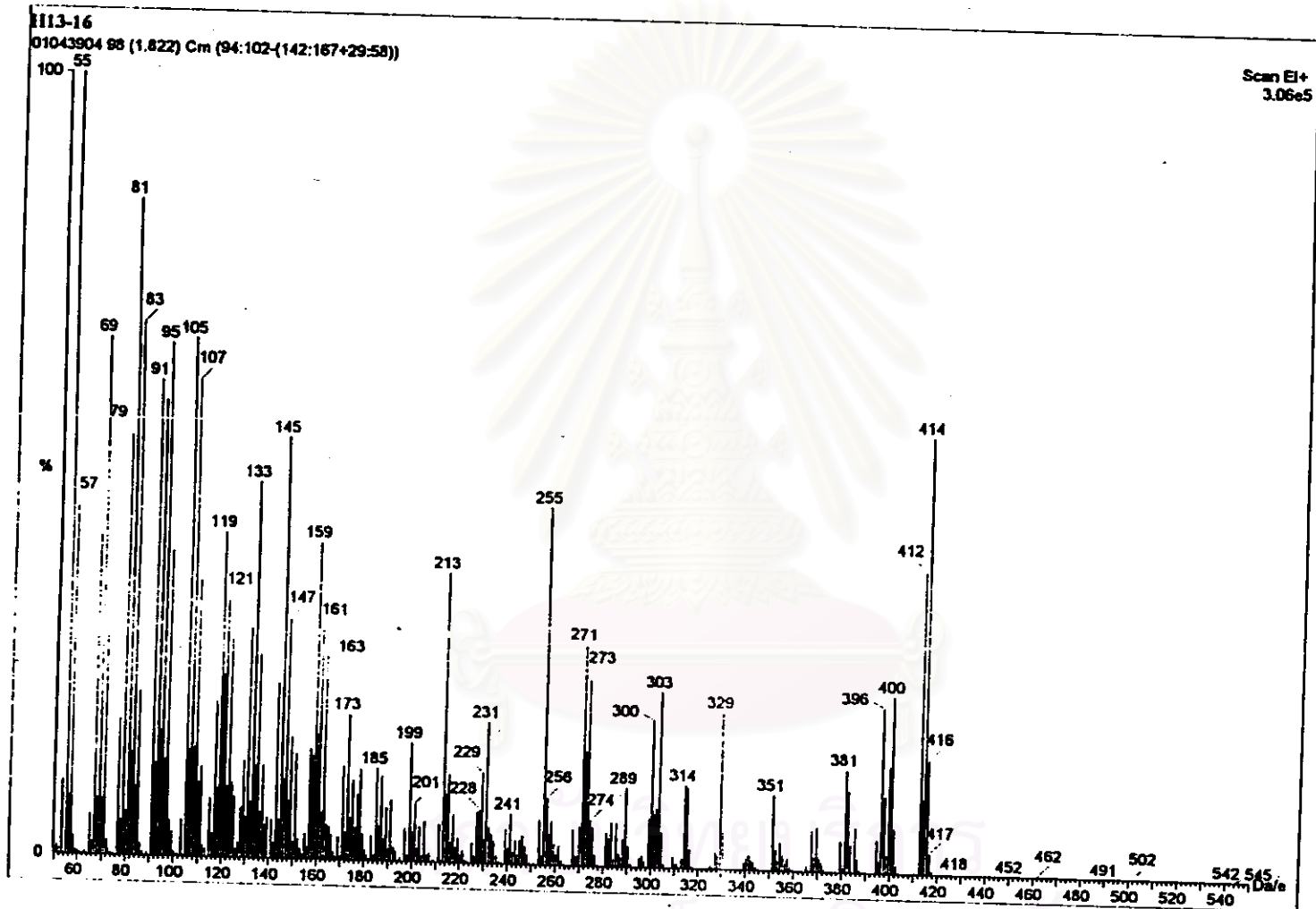


Figure 21 The mass spectrum of mixture III

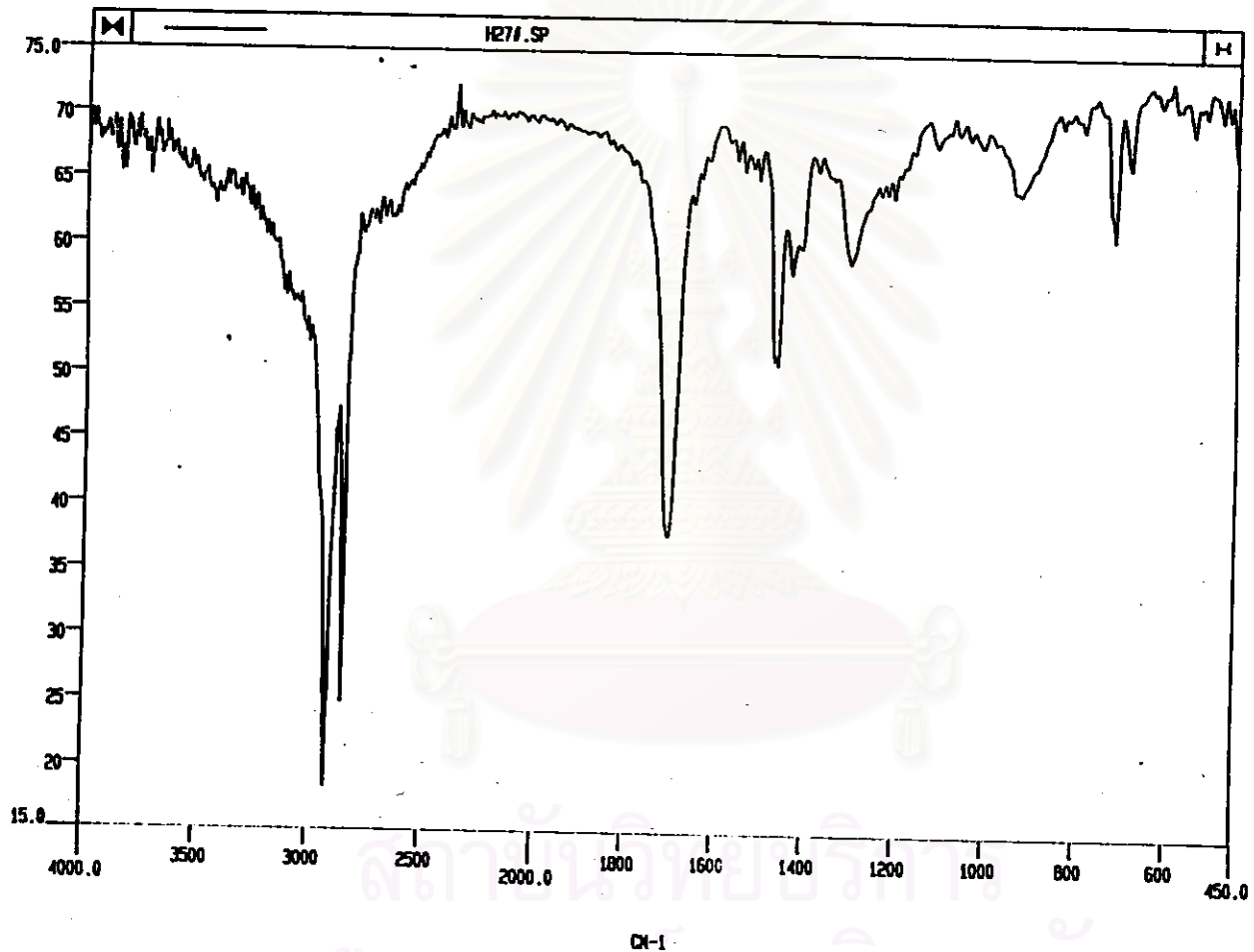


Figure 22 The IR spectrum of mixture IV

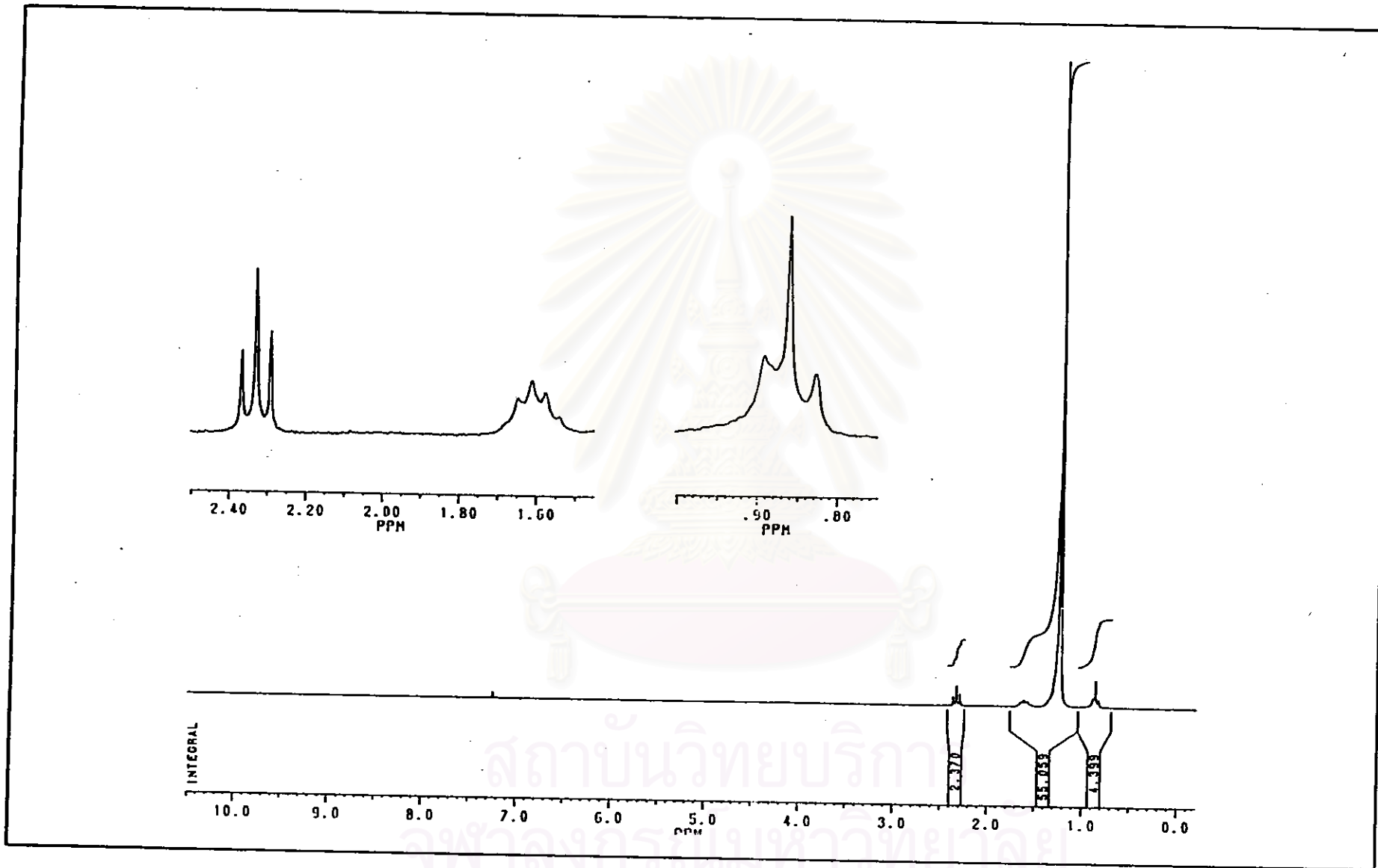


Figure 23 The $^1\text{H-NMR}$ spectrum of mixture IV

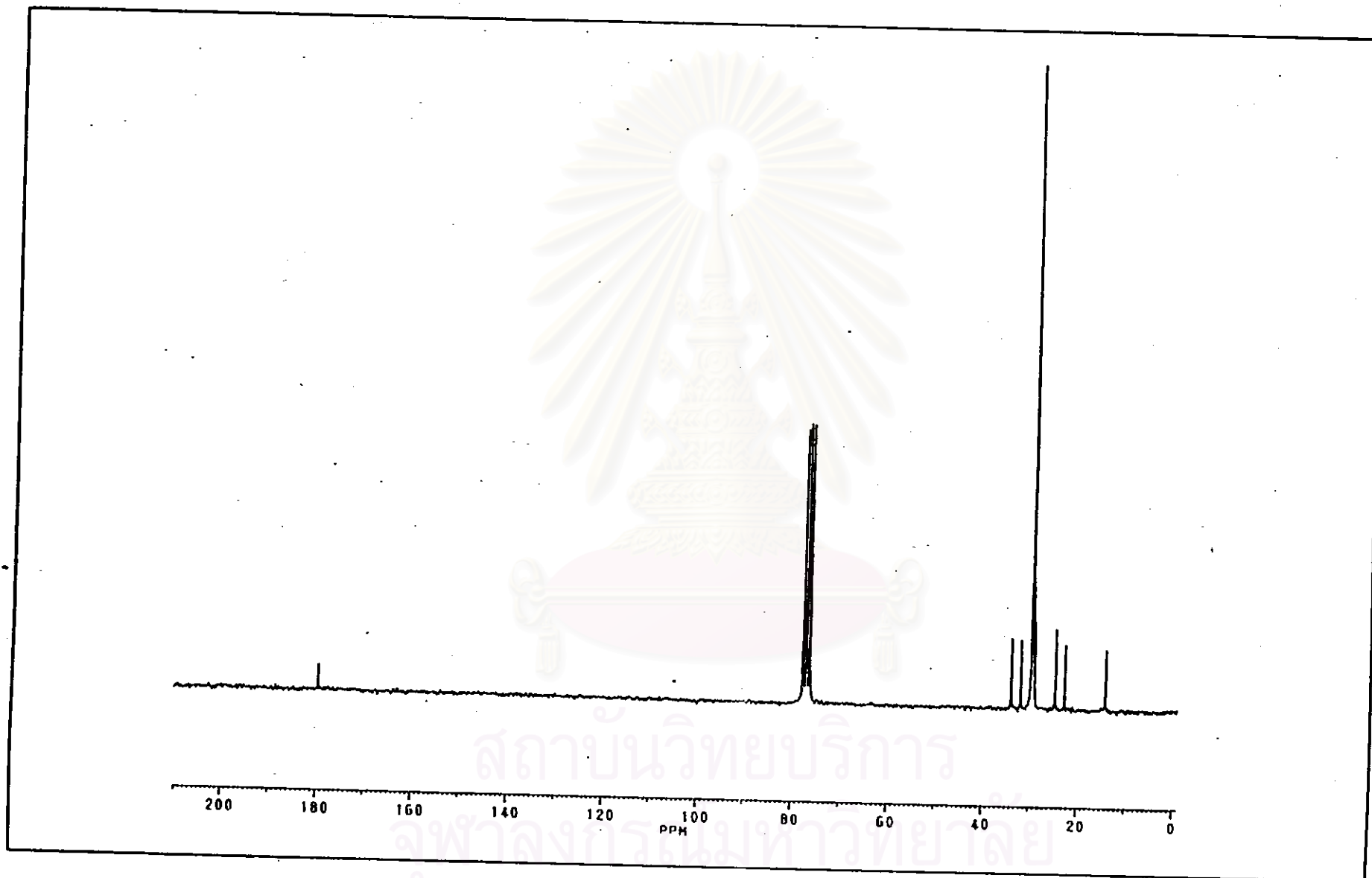


Figure 24 The ^{13}C -NMR spectrum of mixture IV

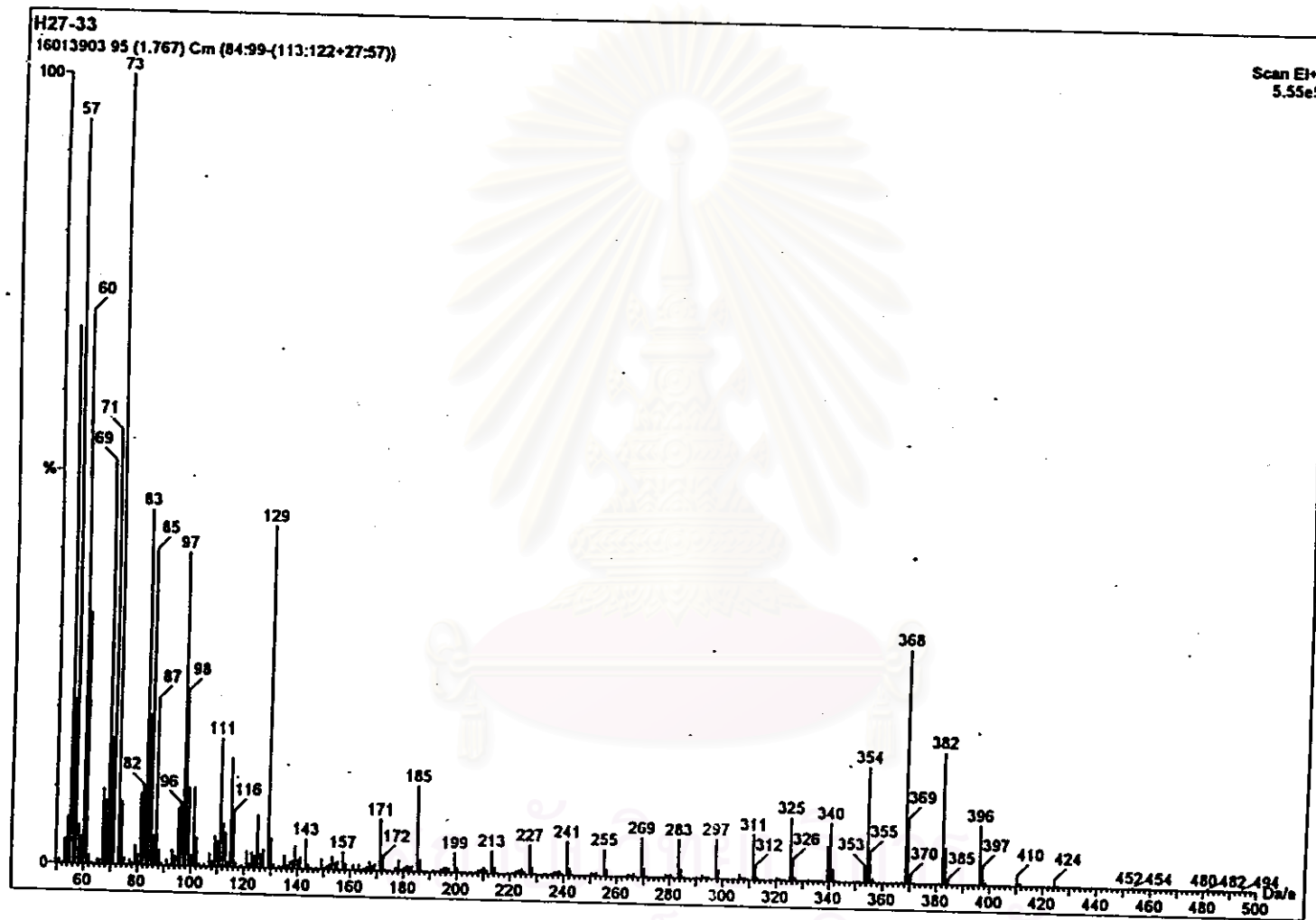


Figure 25 The mass spectrum of mixture IV

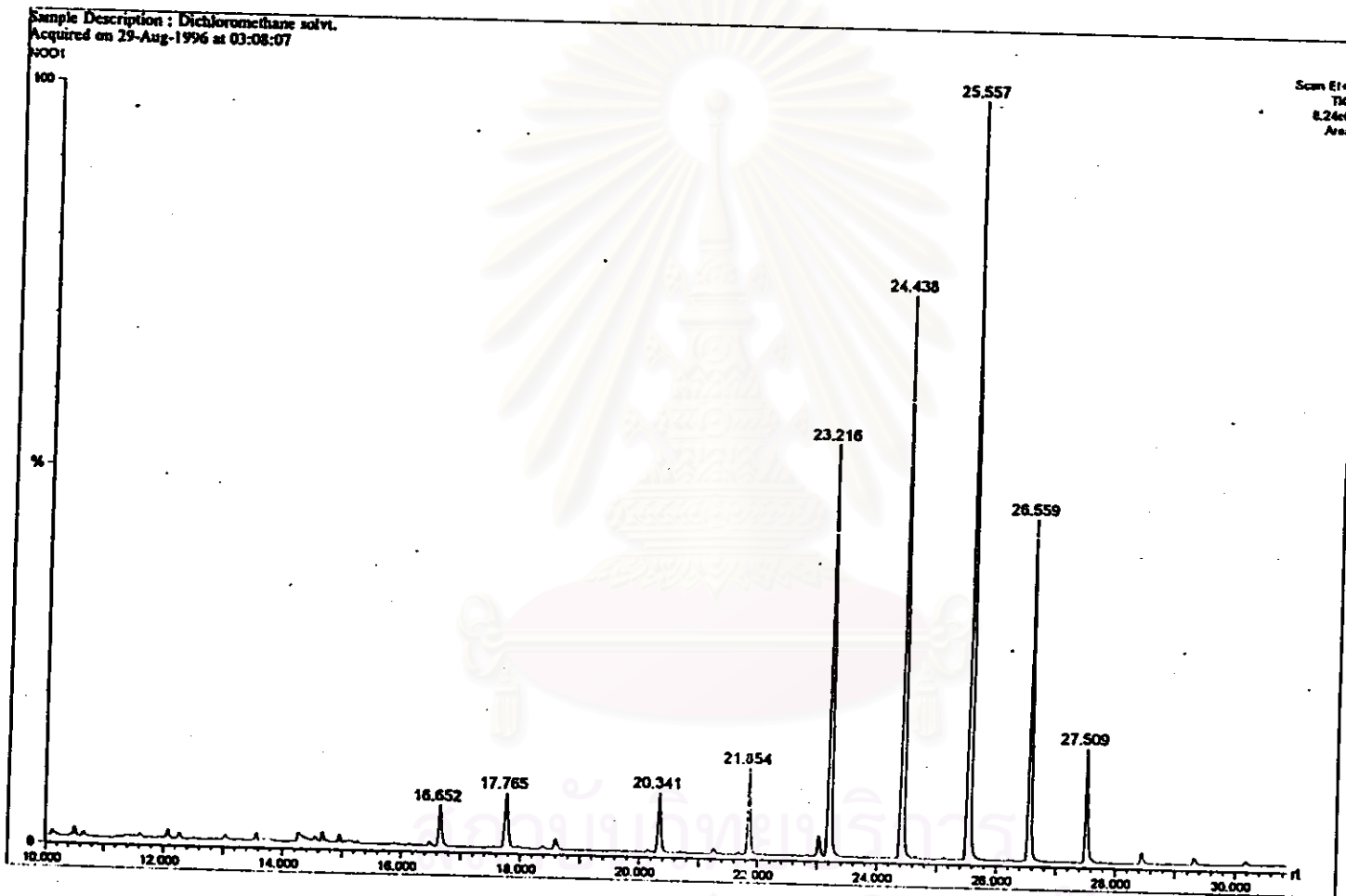


Figure 26 The Gas-Liquid chromatogram of methyl ester of mixture IV

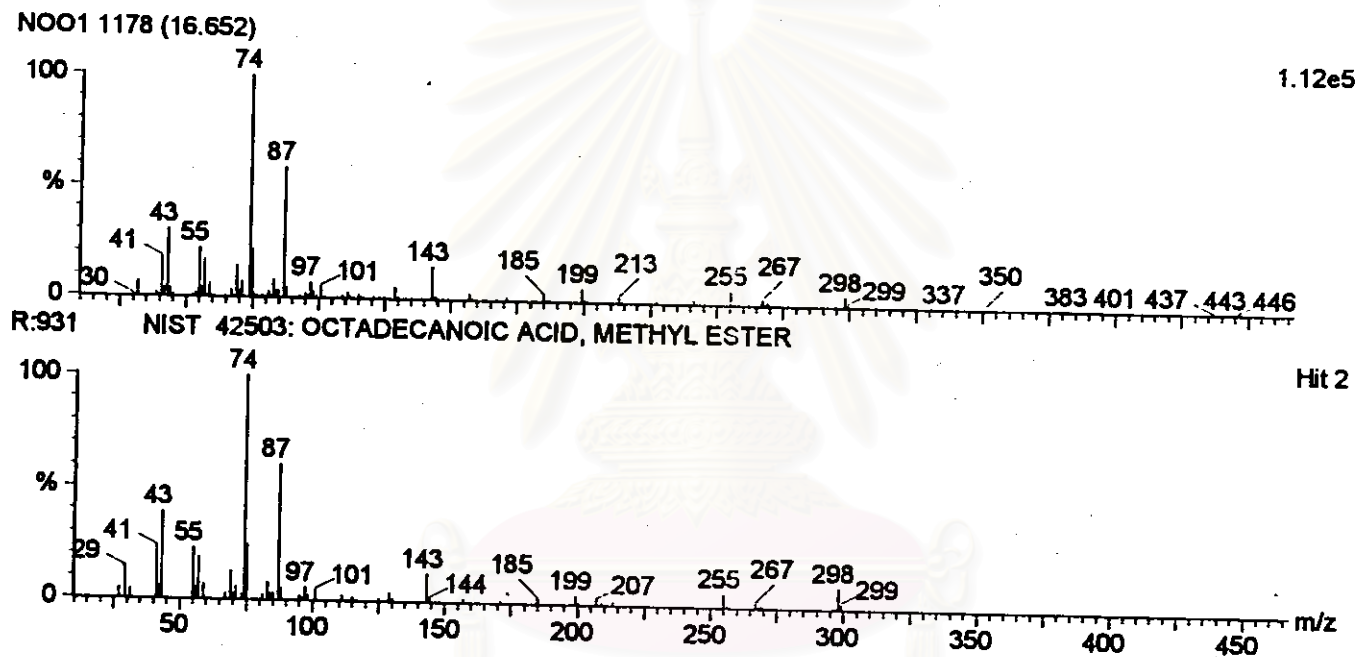


Figure 27 The mass spectrum of methyl ester at retention time 16.65

Sample Description : Dichloromethane solvt.
Acquired 29-Aug-1996 at 03:08:07
Library: NIST
NOO1

Forward Fit: 844, Reverse Fit: 927

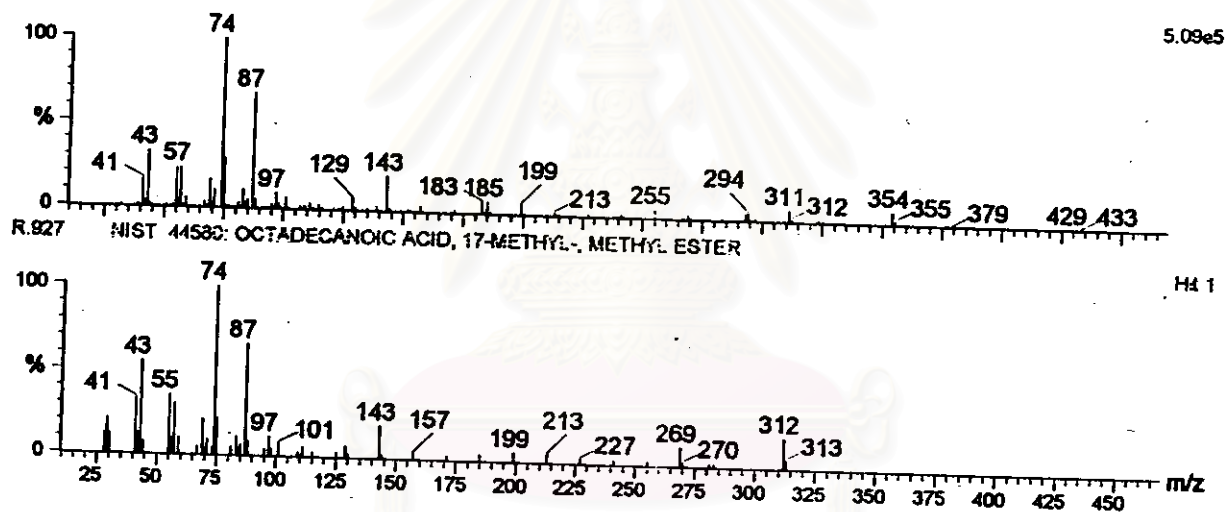


Figure 28 The mass spectrum of methyl ester at retention time 17.77

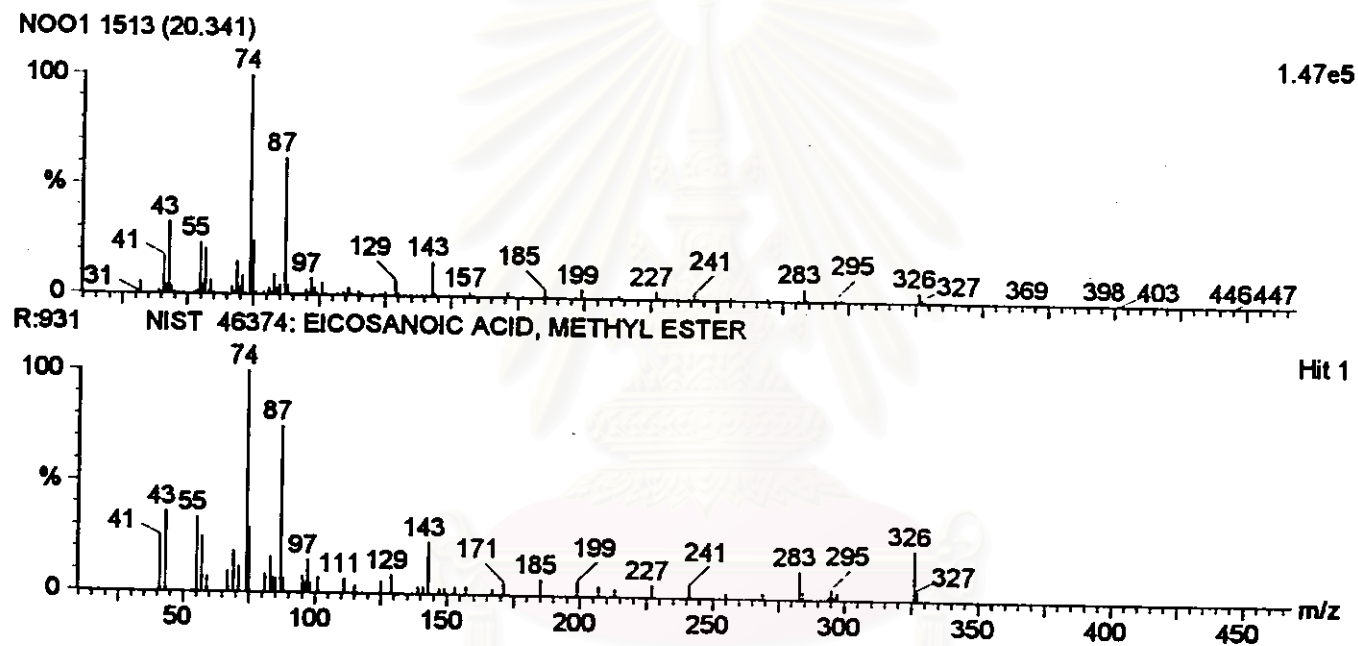


Figure 29 The mass spectrum of methyl ester at retention time 20.34

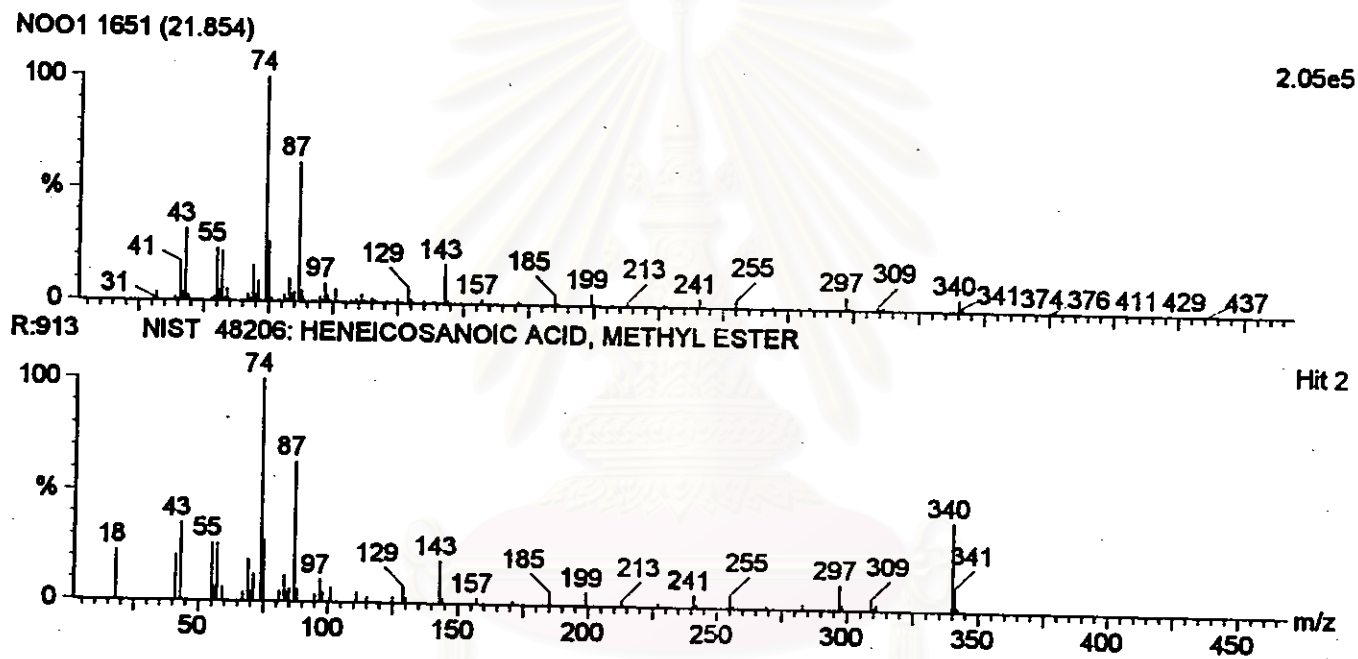


Figure 30 The mass spectrum of methyl ester at retention time 21.85

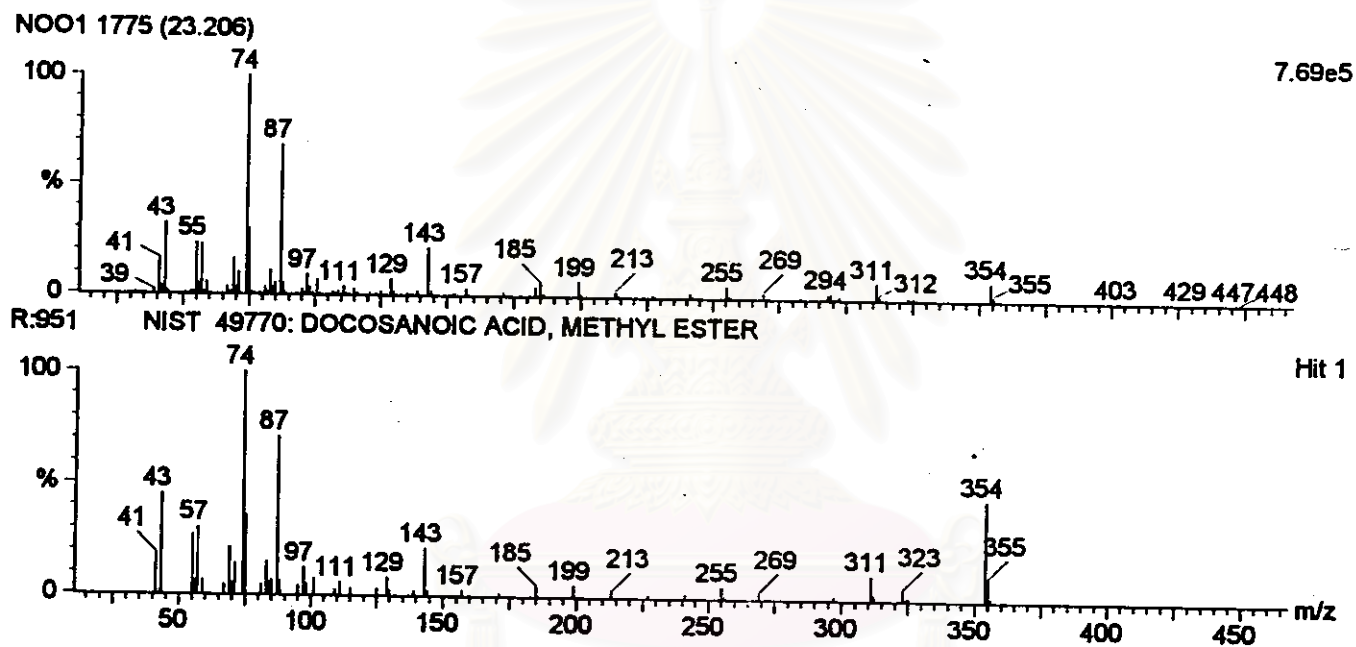


Figure 31 The mass spectrum of methyl ester at retention time 23.22

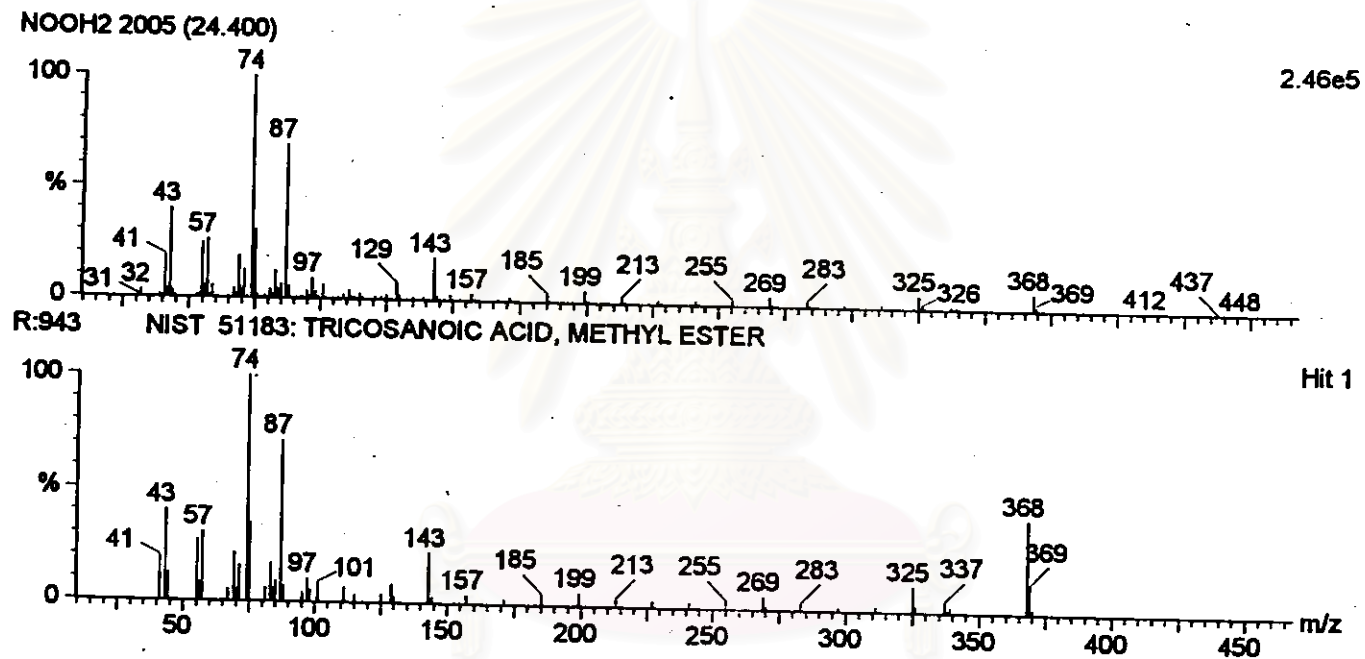


Figure 32 The mass spectrum of methyl ester at retention time 24.44

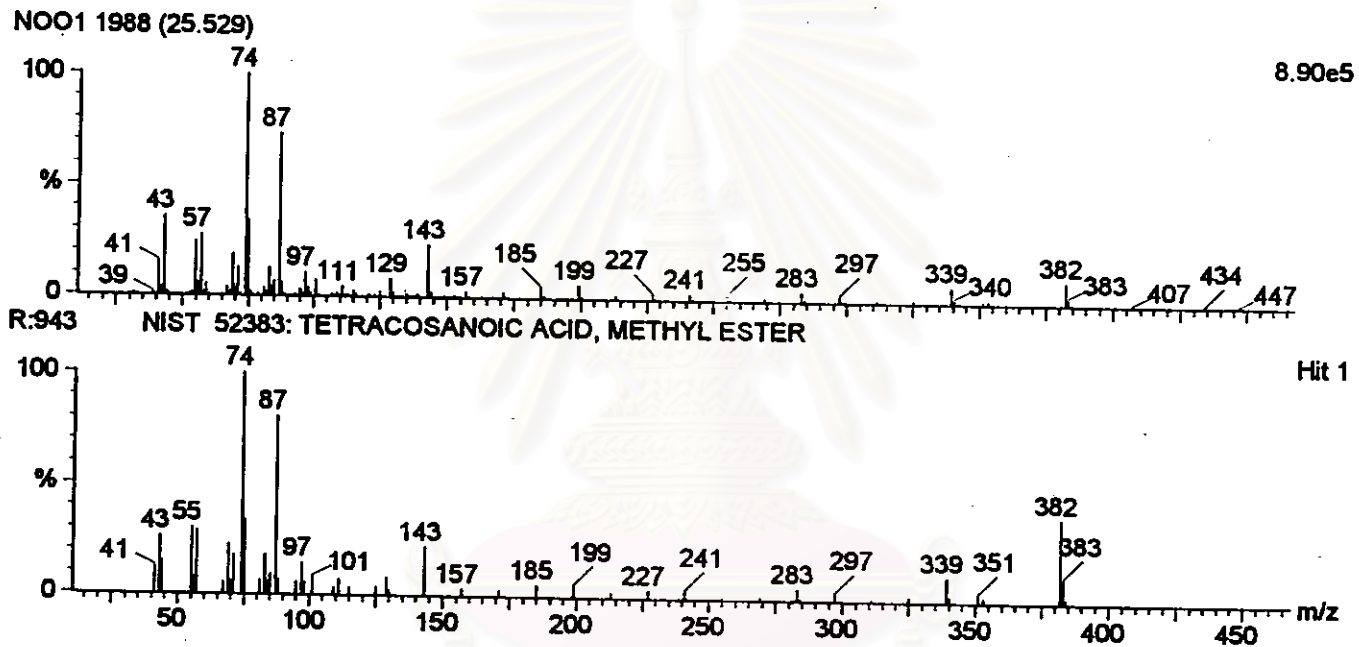


Figure 33 The mass spectrum of methyl ester at retention time 25.56

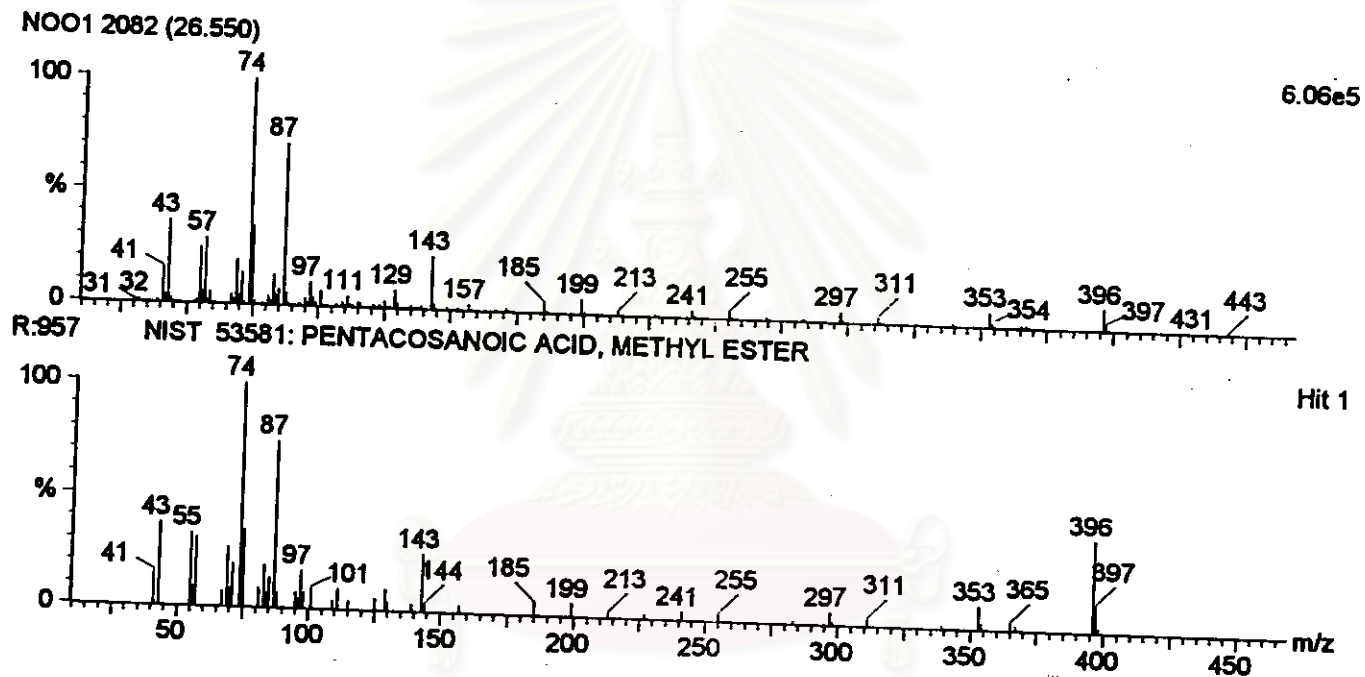


Figure 34 The mass spectrum of methyl ester at retention time 26.56

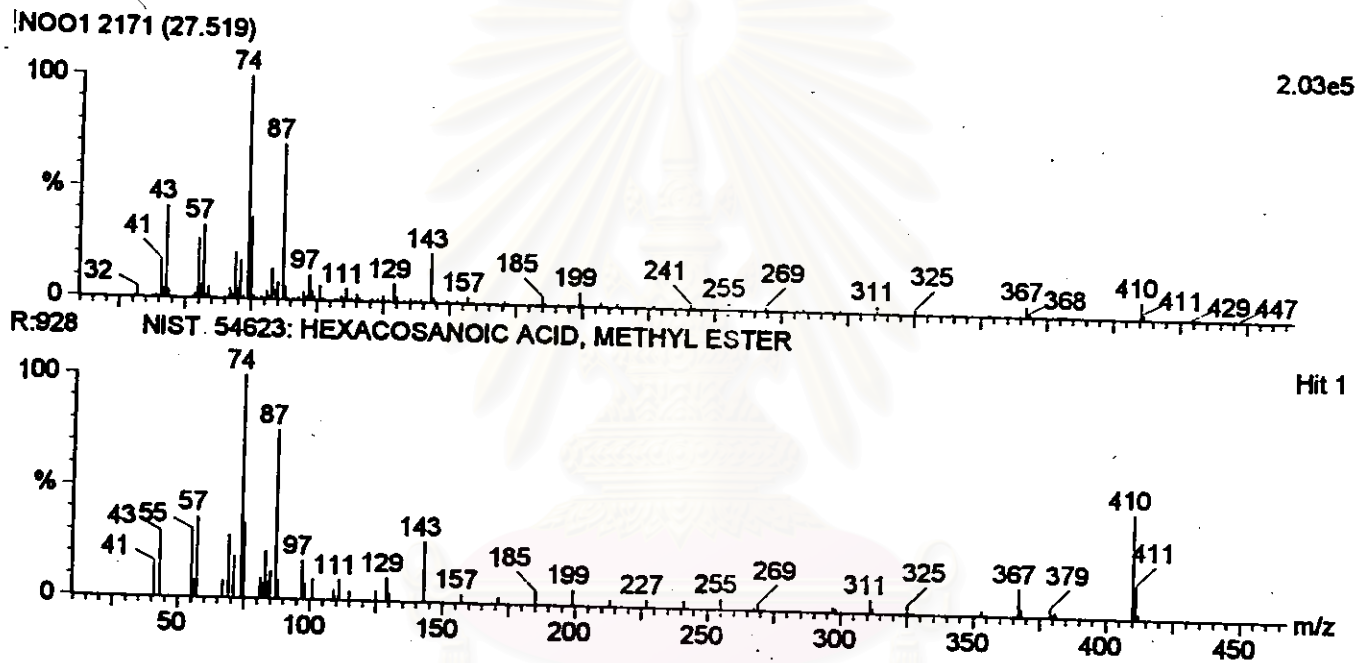


Figure 35 The mass spectrum of methyl ester at retention time 27.51

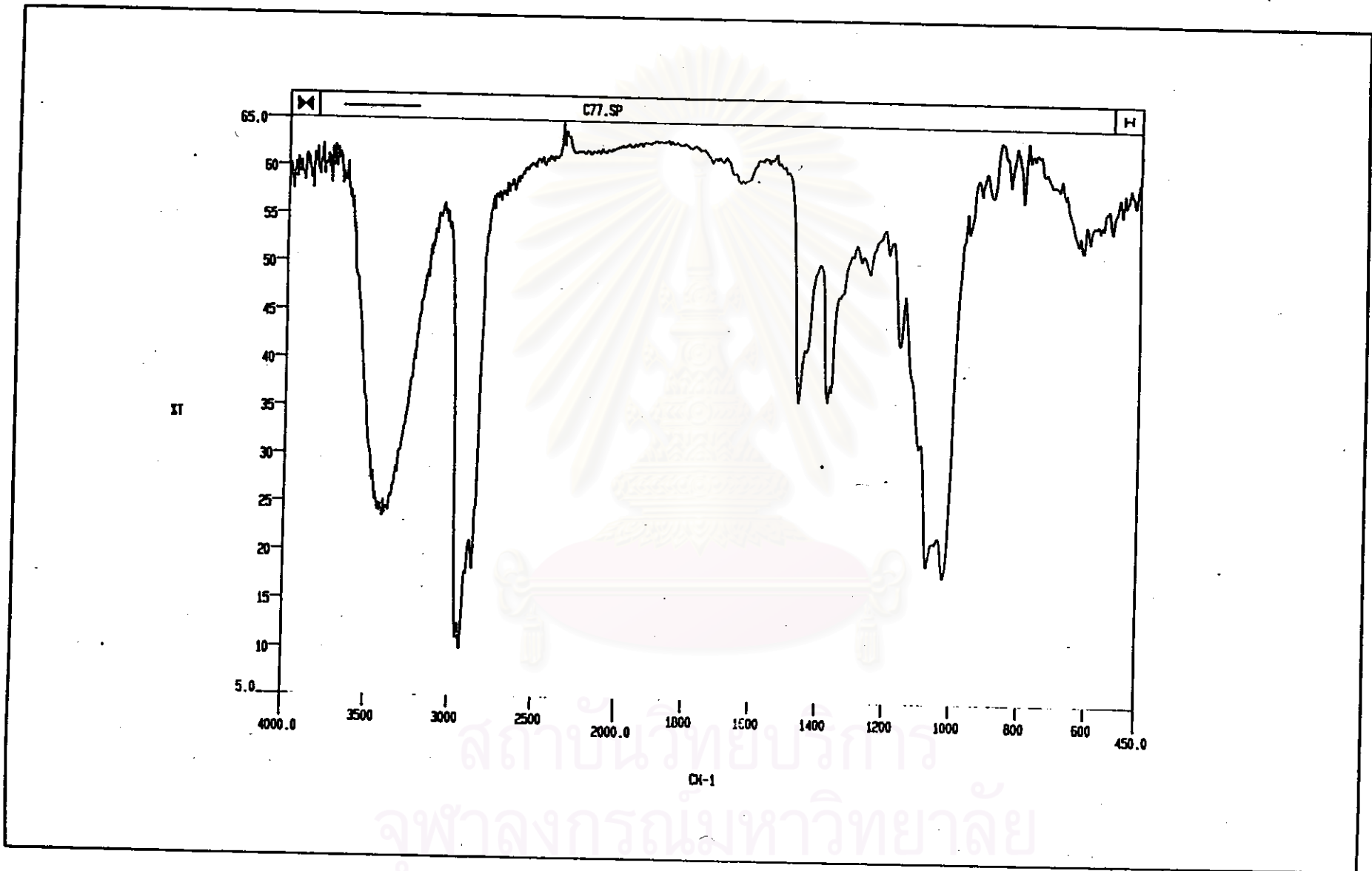


Figure 36 The IR spectrum of mixture V

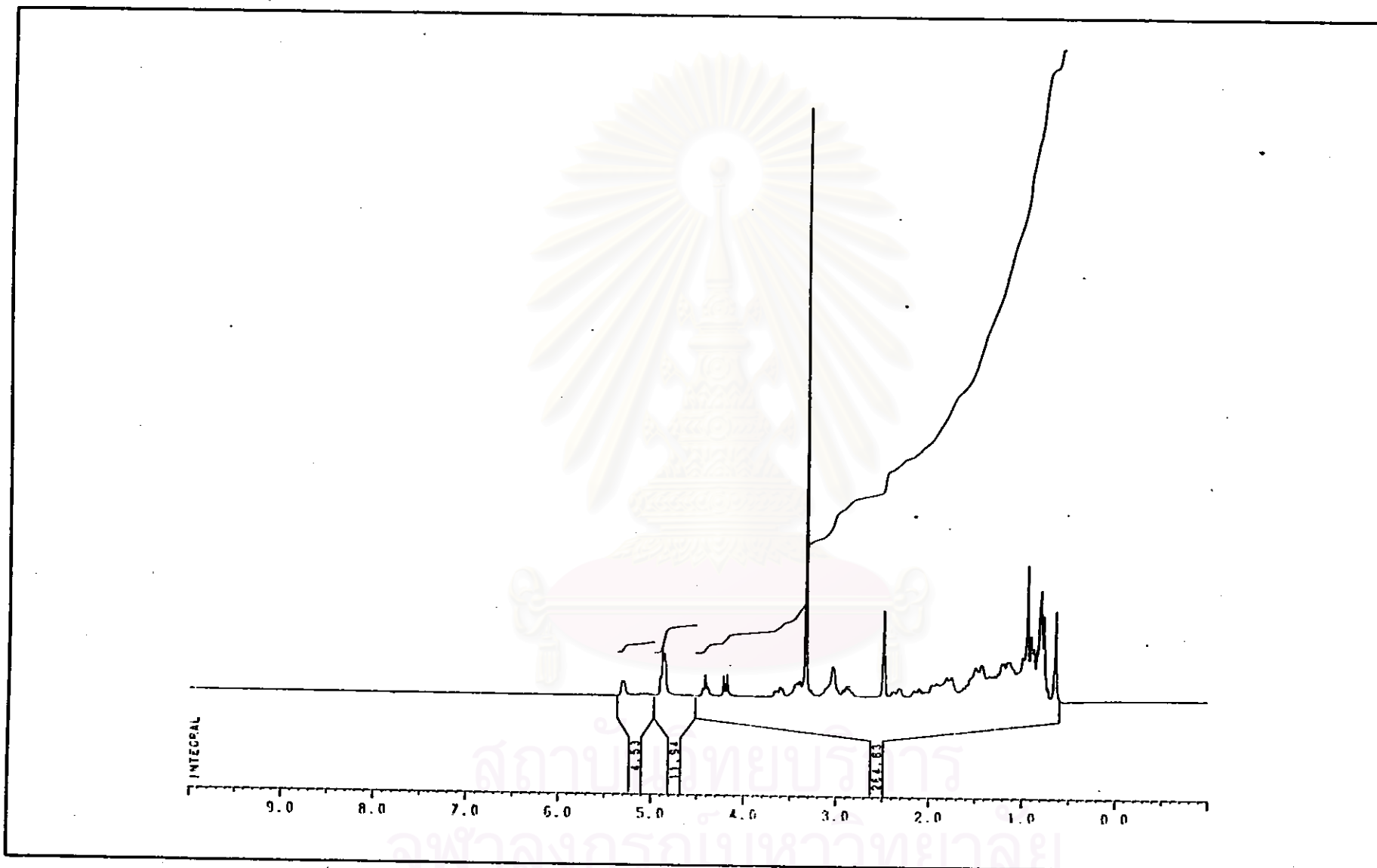


Figure 37 The $^1\text{H-NMR}$ spectrum of mixture V

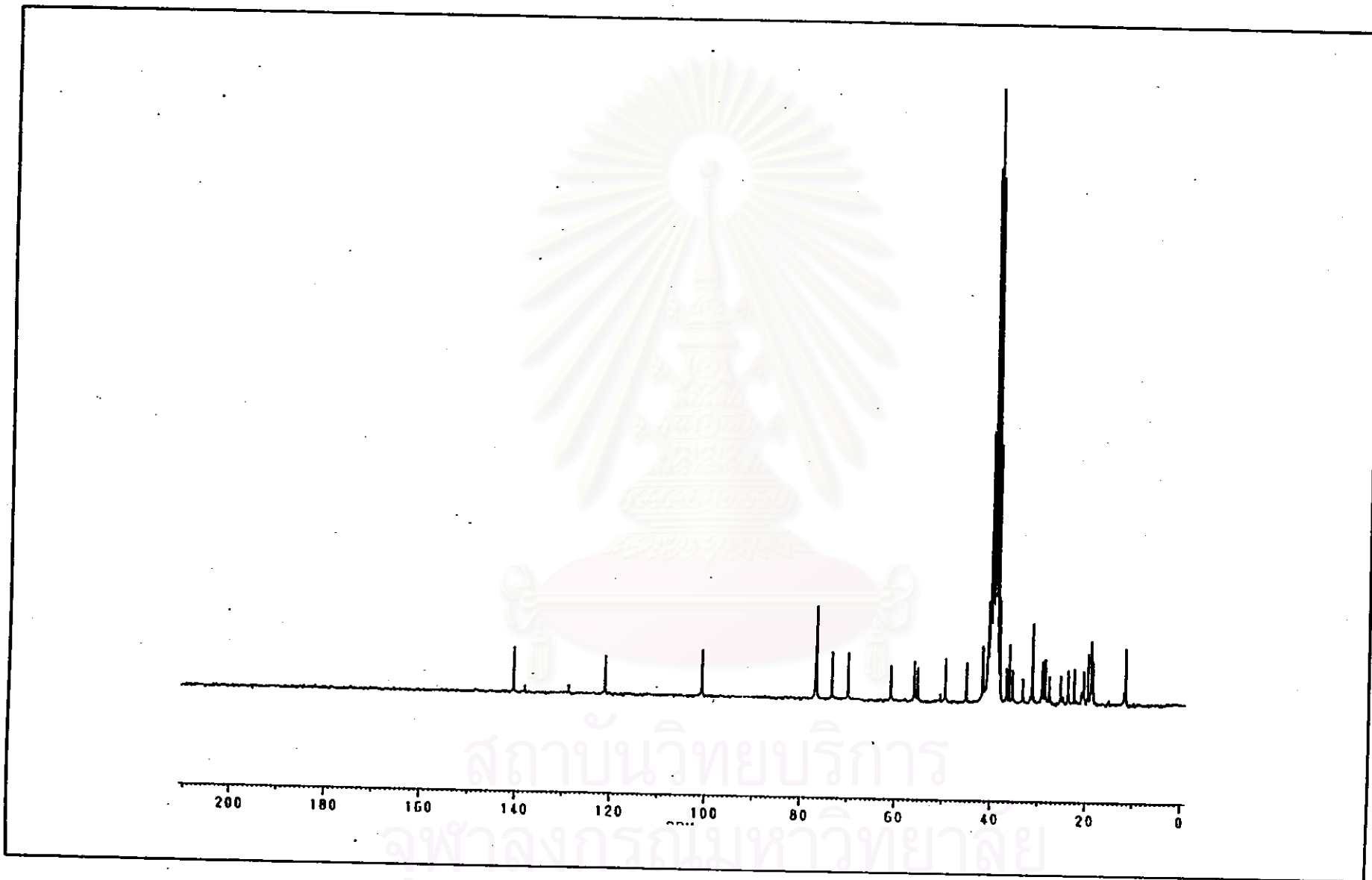


Figure 38 The ^{13}C -NMR spectrum of mixture V

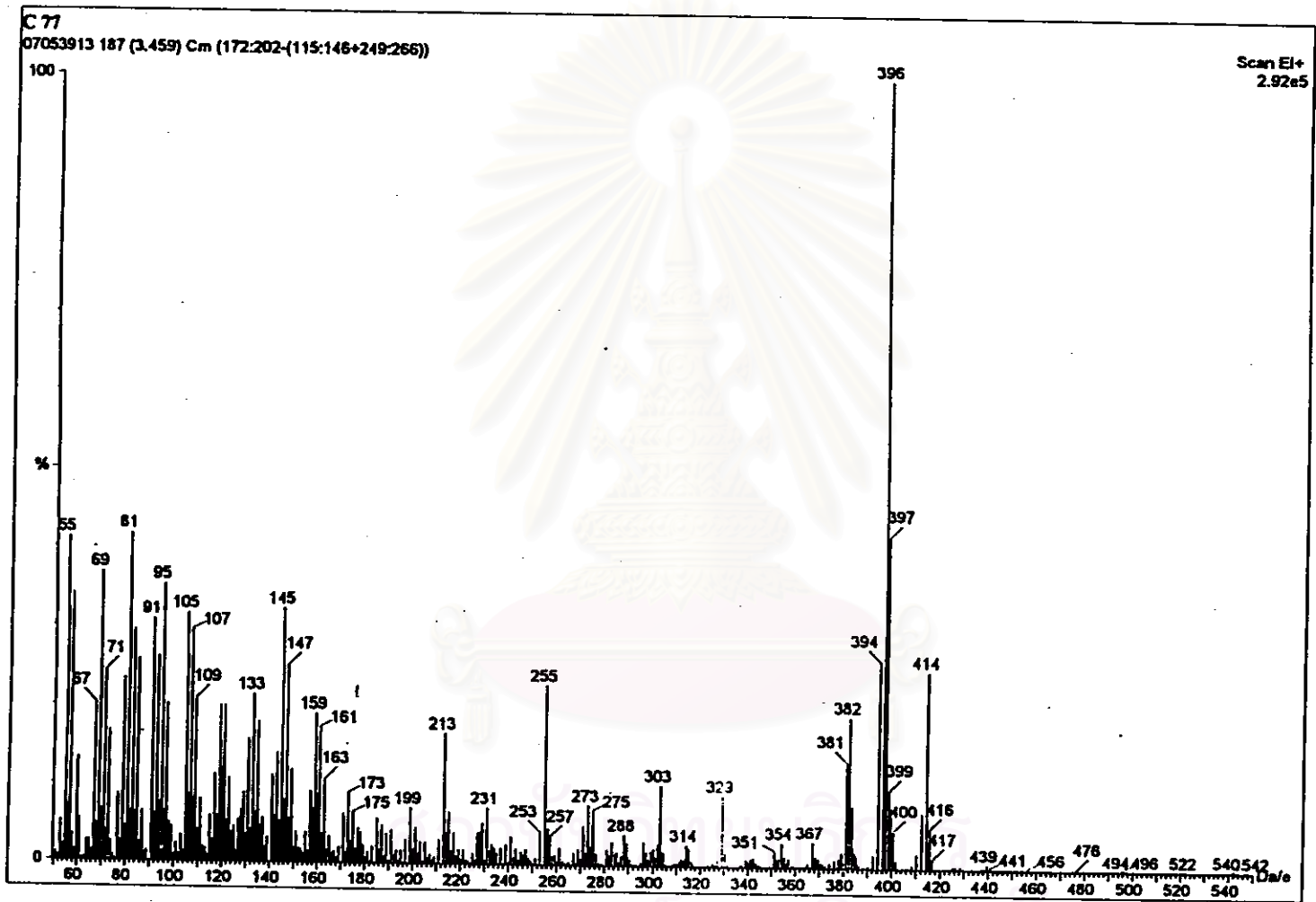


Figure 39 The mass spectrum of mixture V

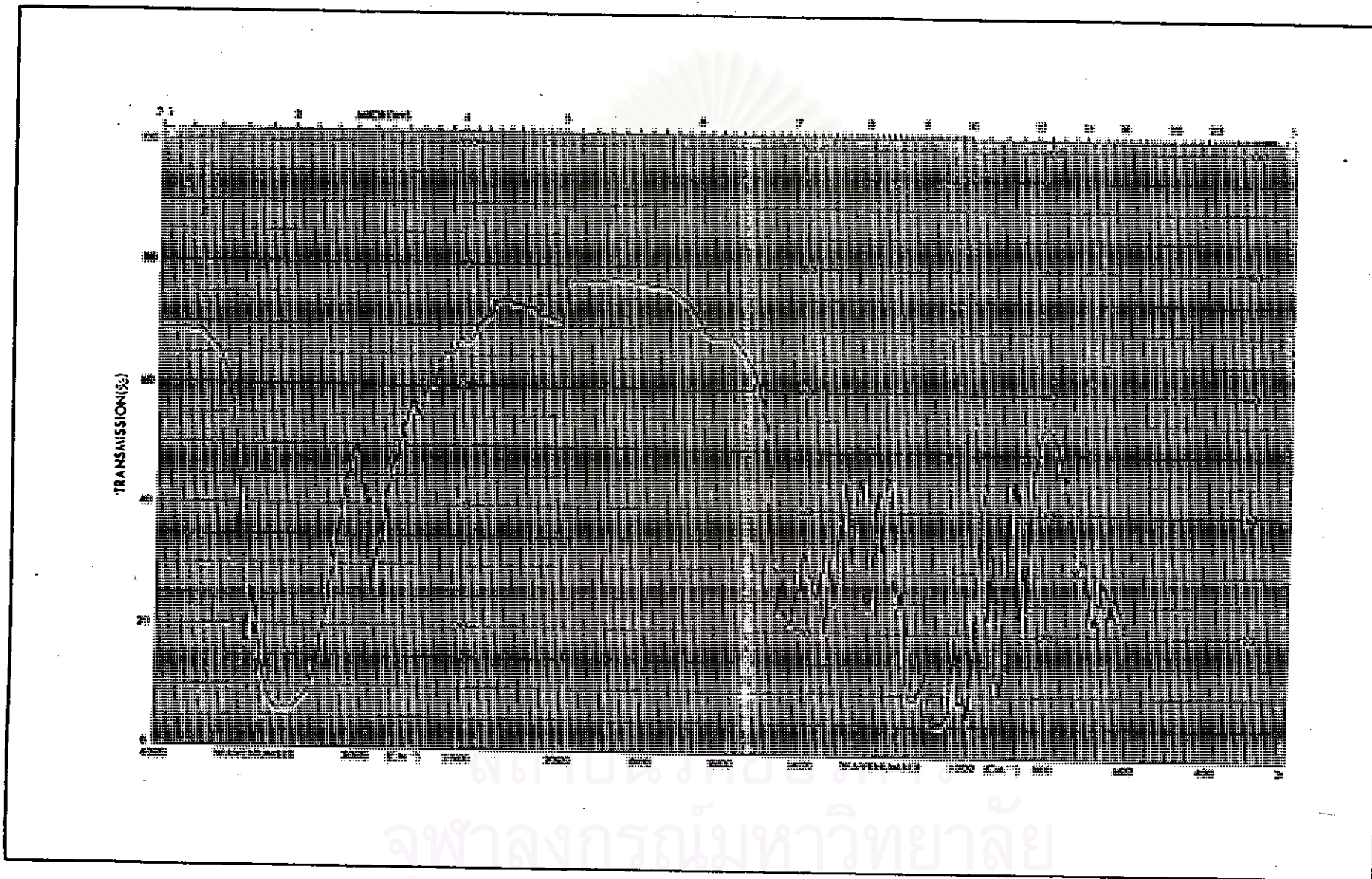


Figure 40 The IR spectrum of compound VI

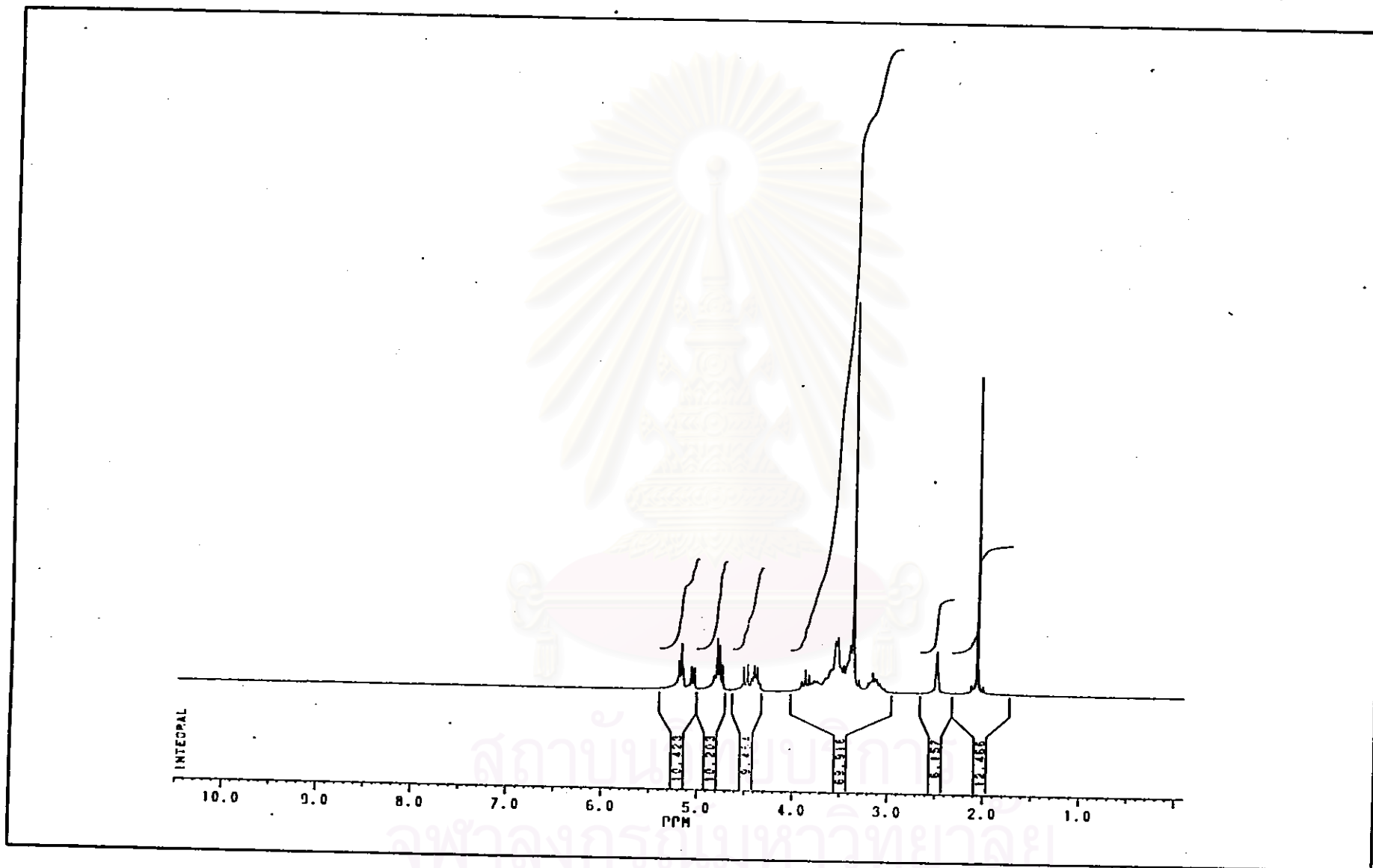


Figure 41 The $^1\text{H-NMR}$ spectrum of compound VI

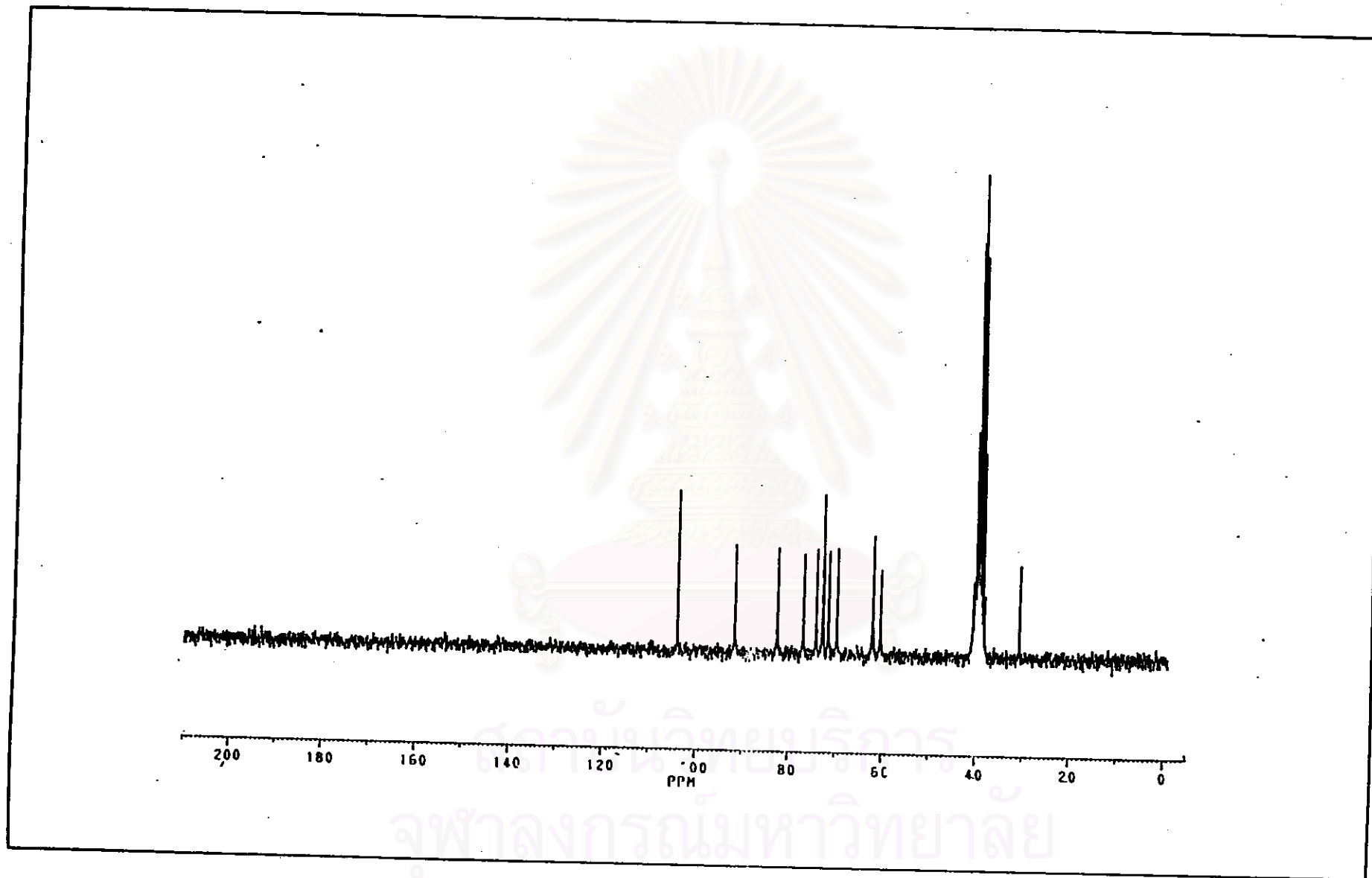


Figure 42 The ^{13}C -NMR spectrum of compound VI

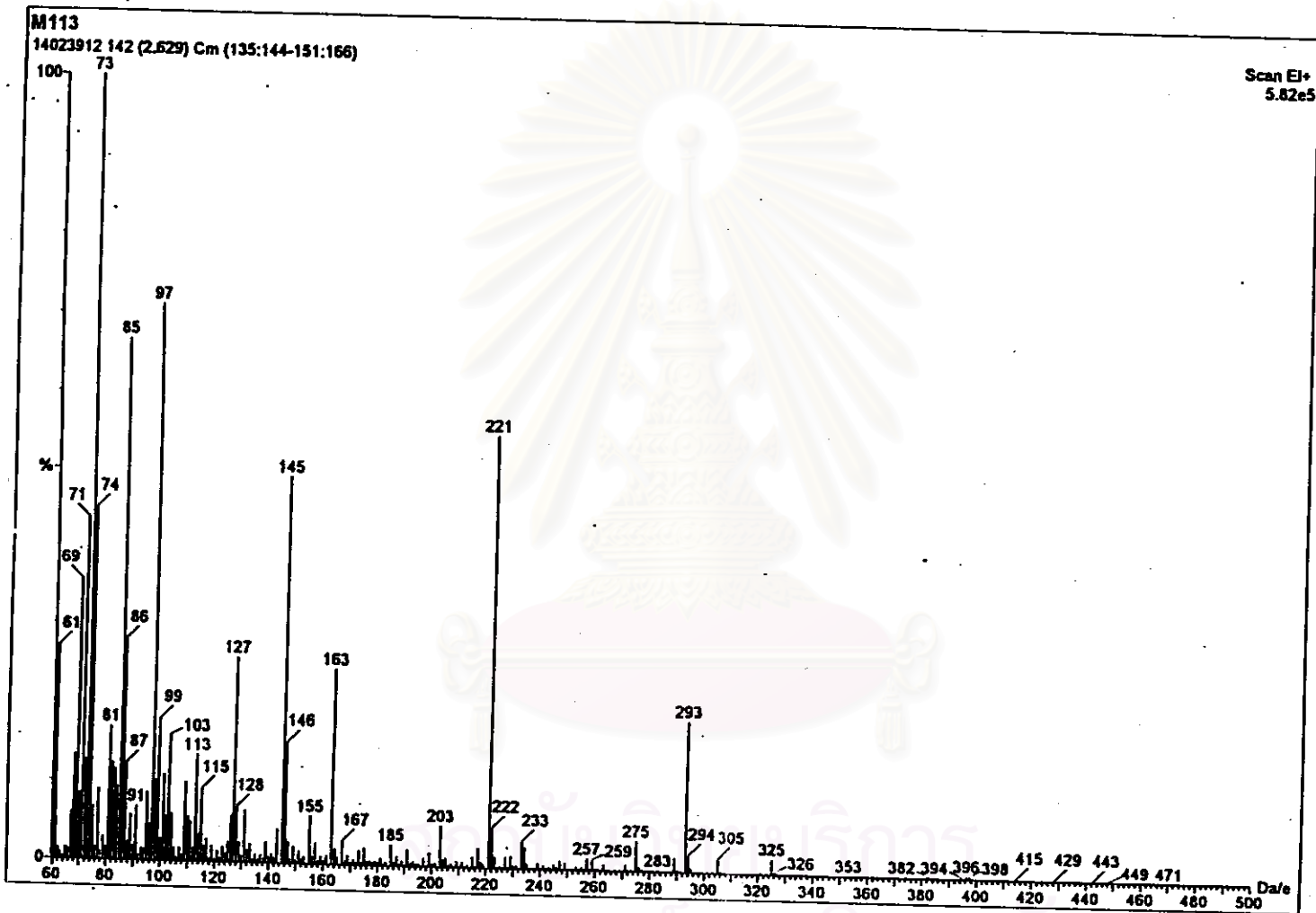


Figure 43 The mass spectrum of compound VI

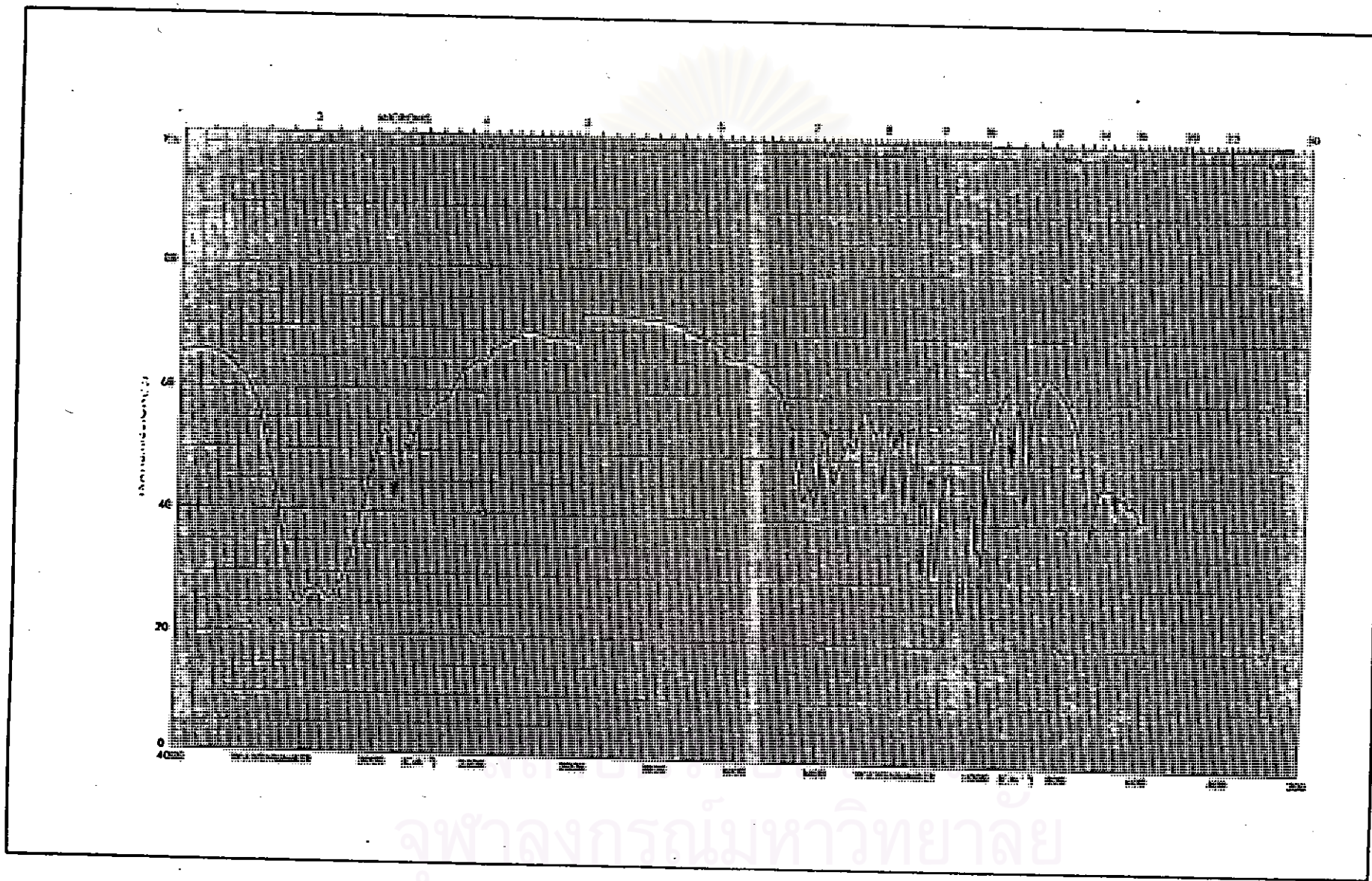


Figure 44 The IR spectrum of compound VII

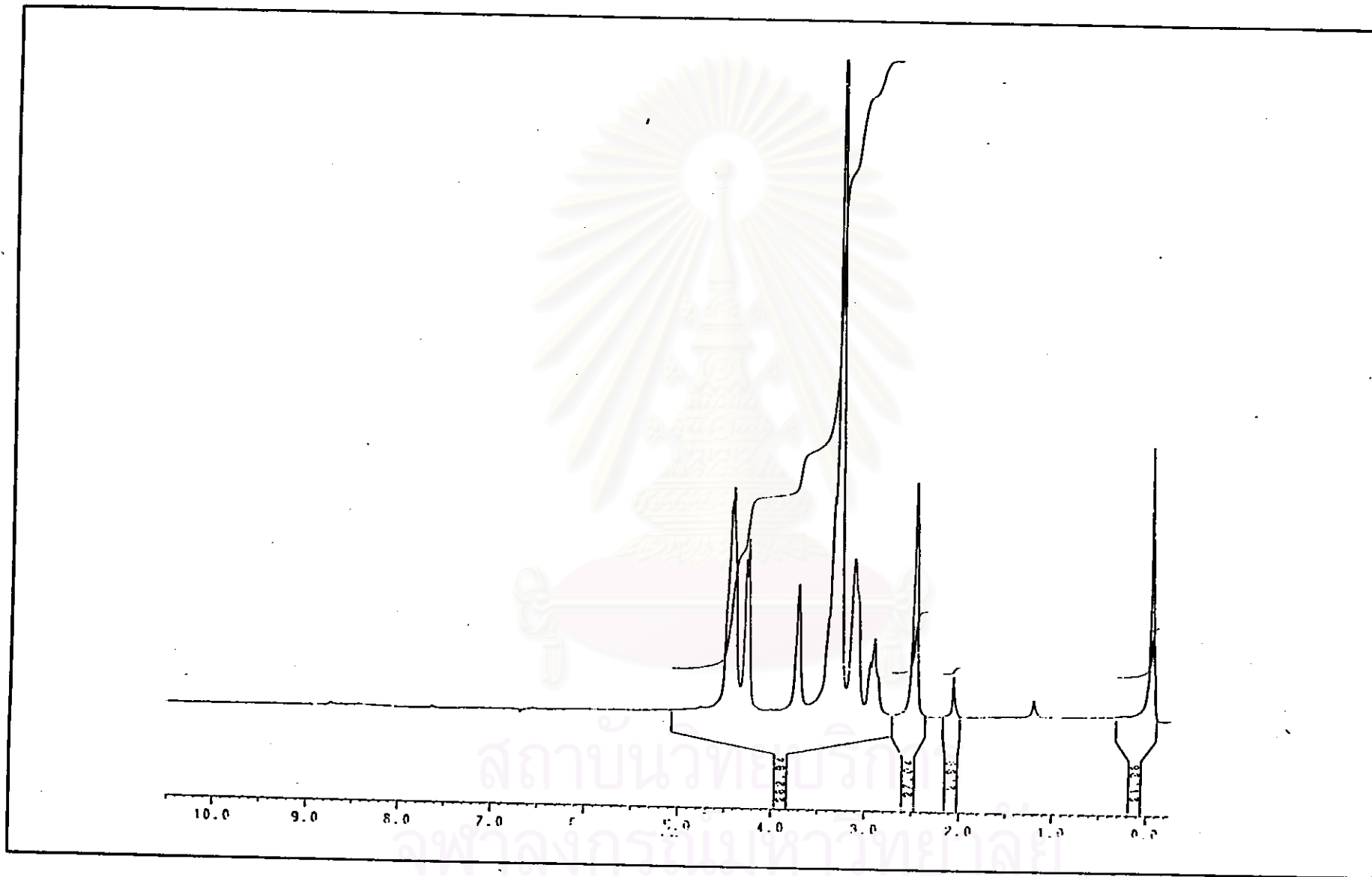


Figure 45 The $^1\text{H-NMR}$ spectrum of compound VII

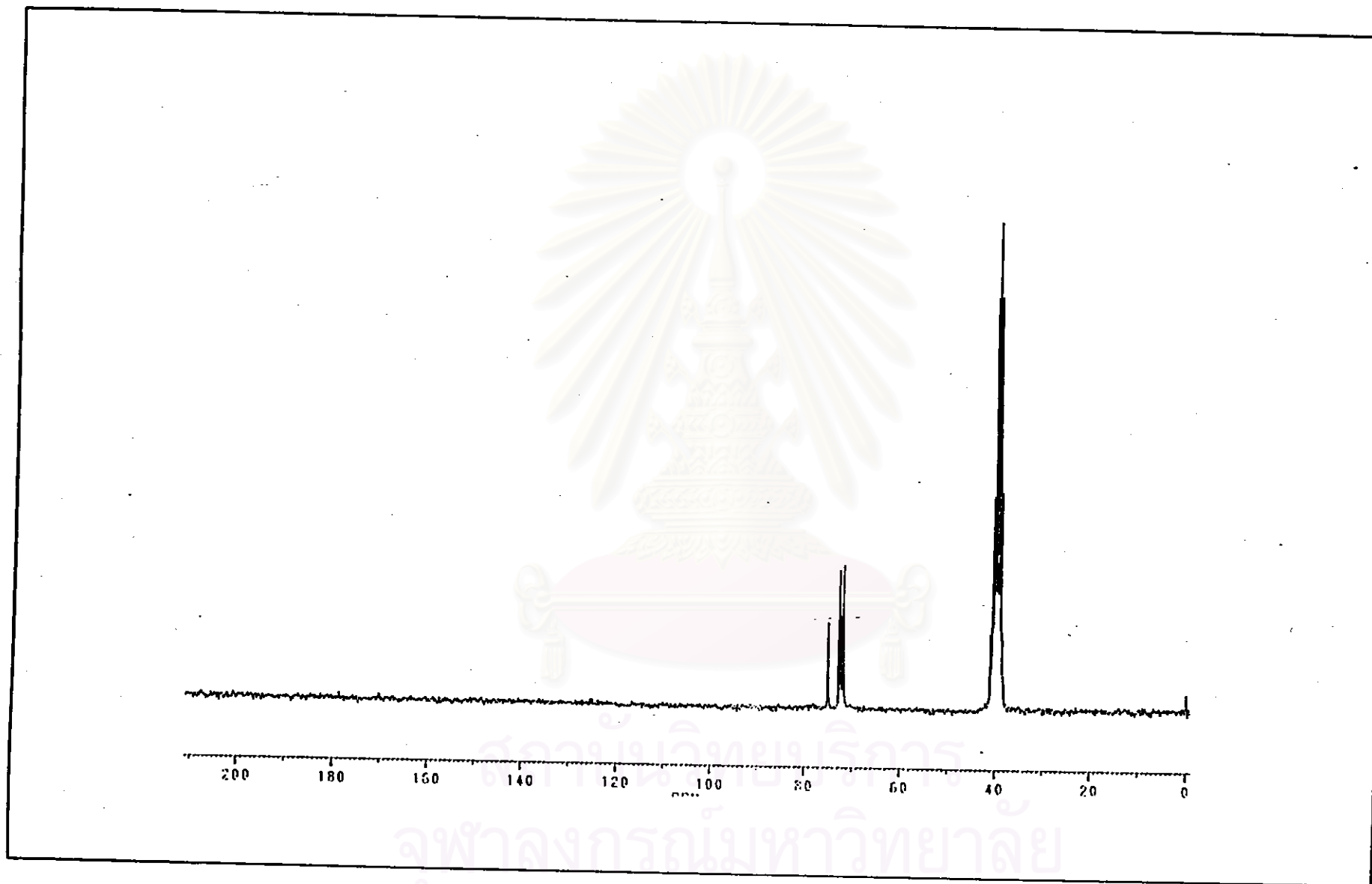


Figure 46 The ^{13}C -NMR spectrum of compound VII

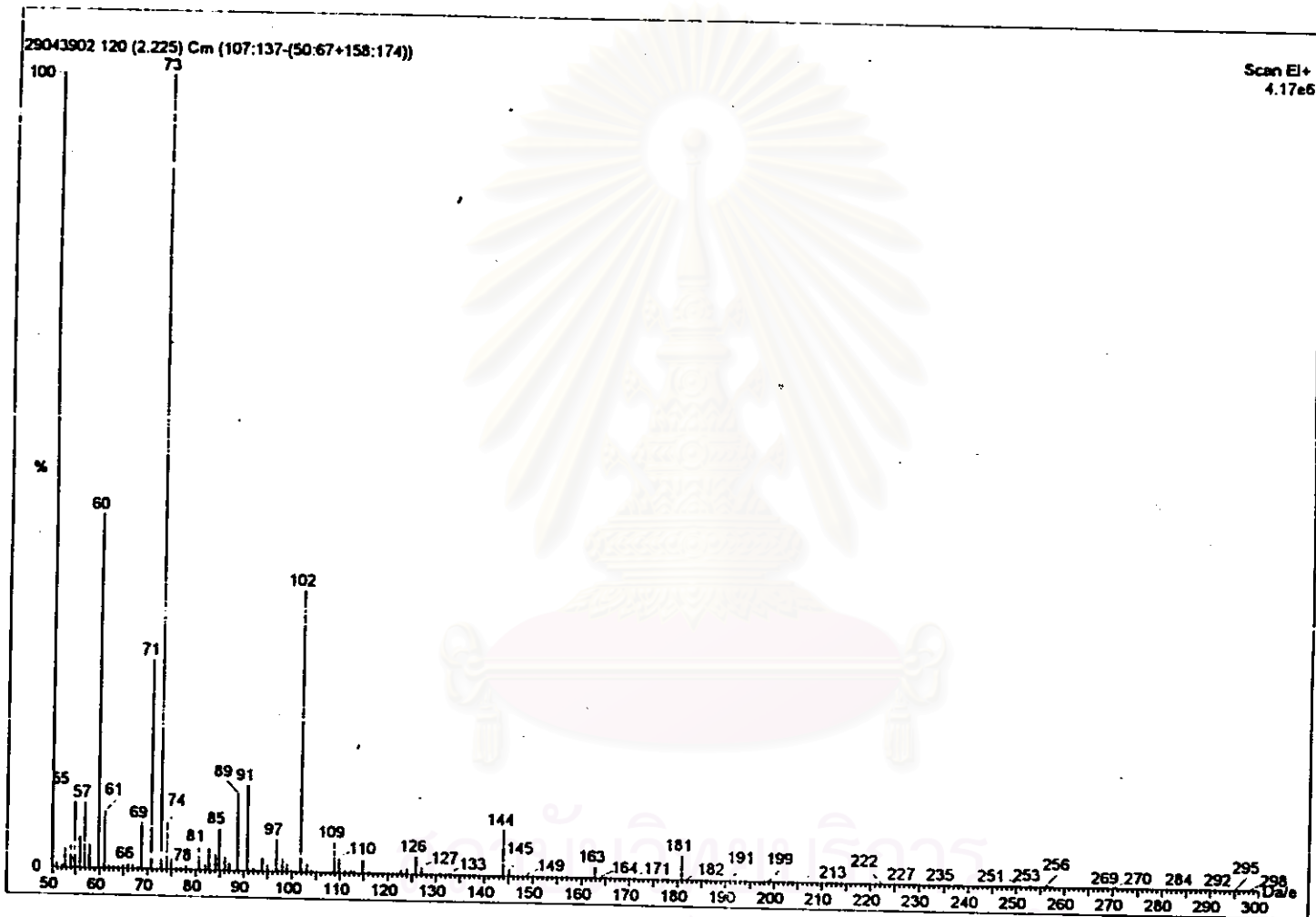


Figure 47 The mass spectrum of compound VII

VITA

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