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APPENDIX

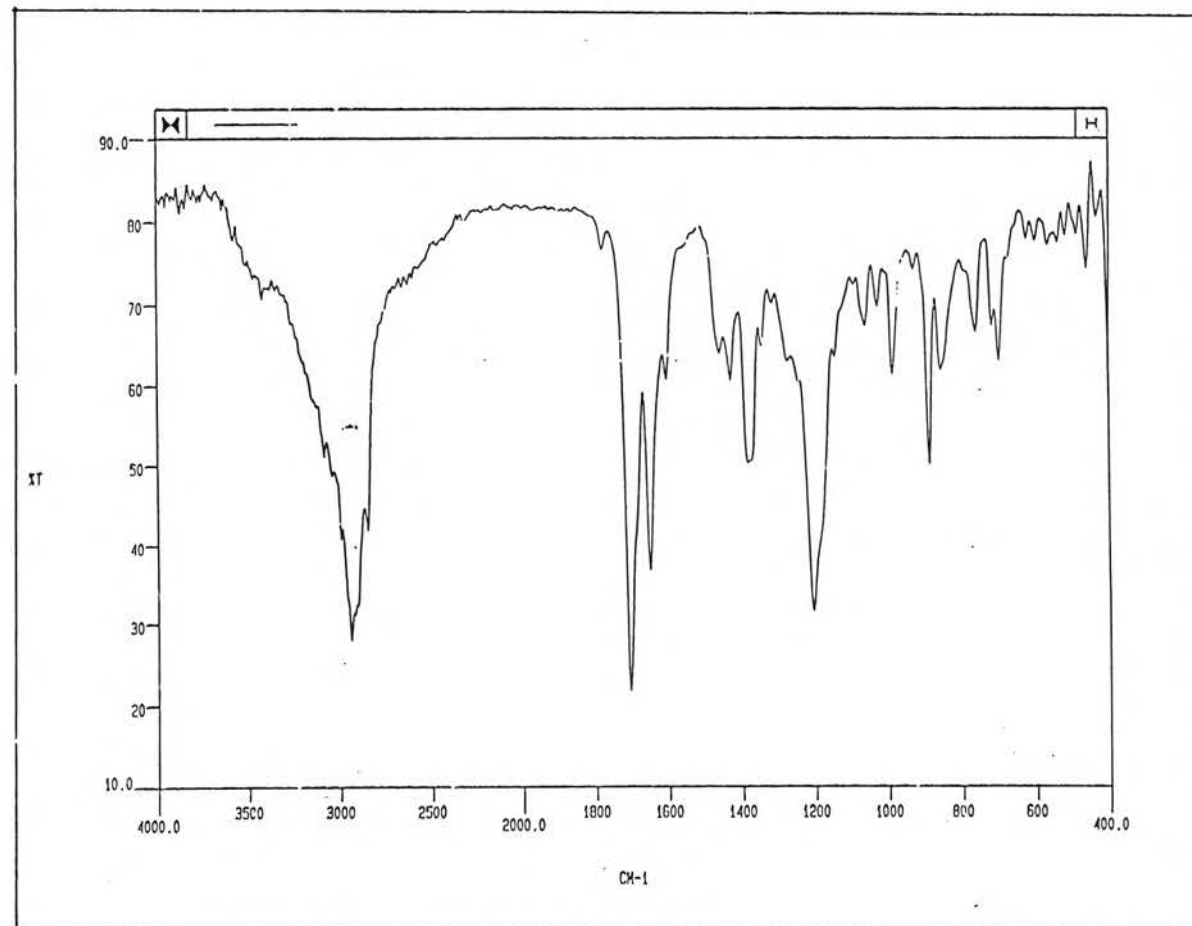


Figure 11 The IR spectrum of Compound 1

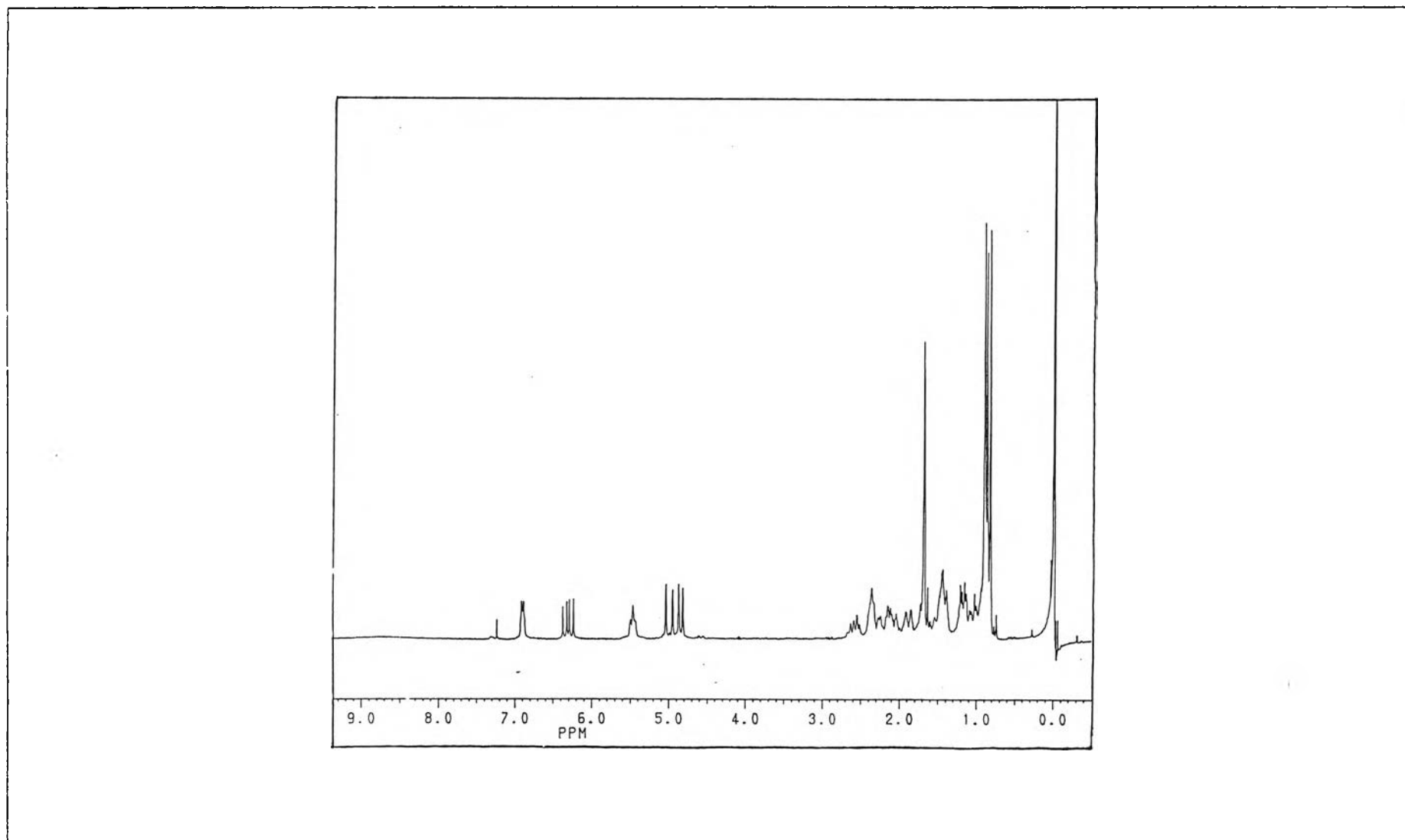


Figure 12 The $^1\text{H-NMR}$ spectrum of Compound 1

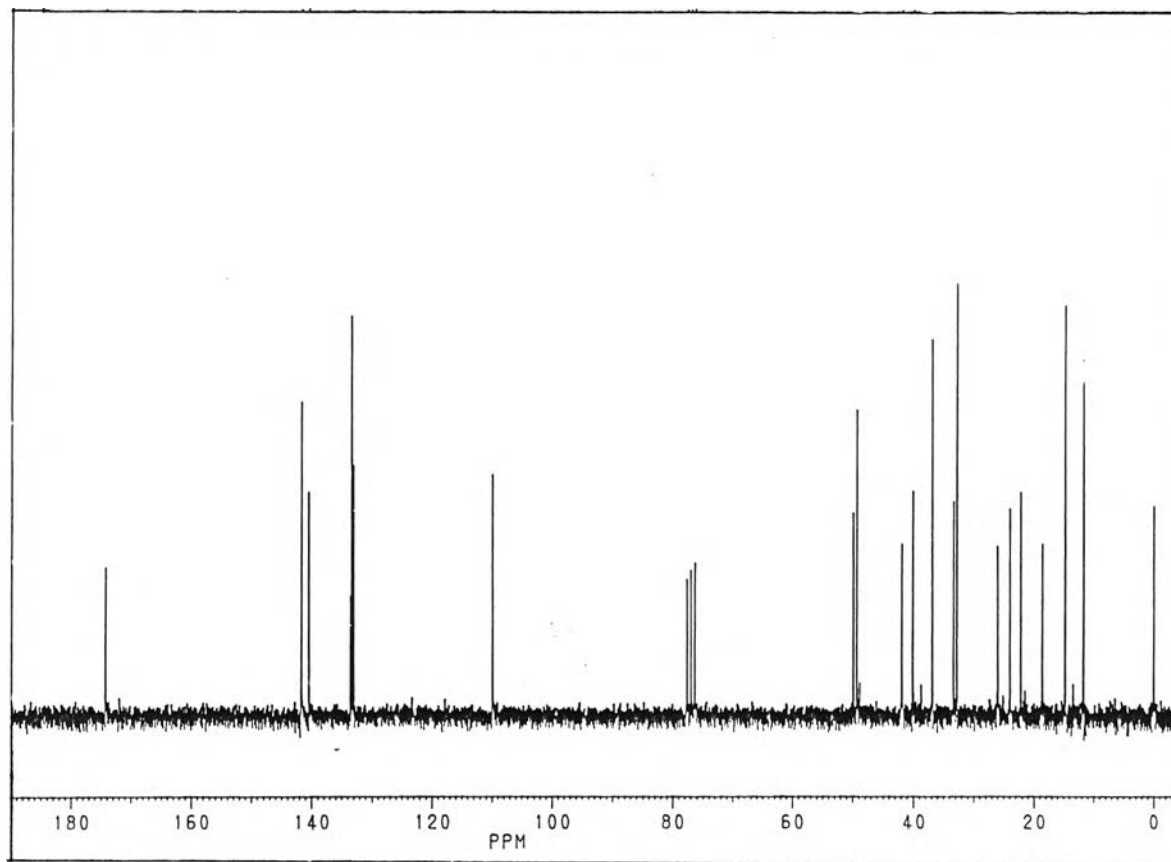


Figure 13 The ^{13}C -NMR spectrum of Compound 1

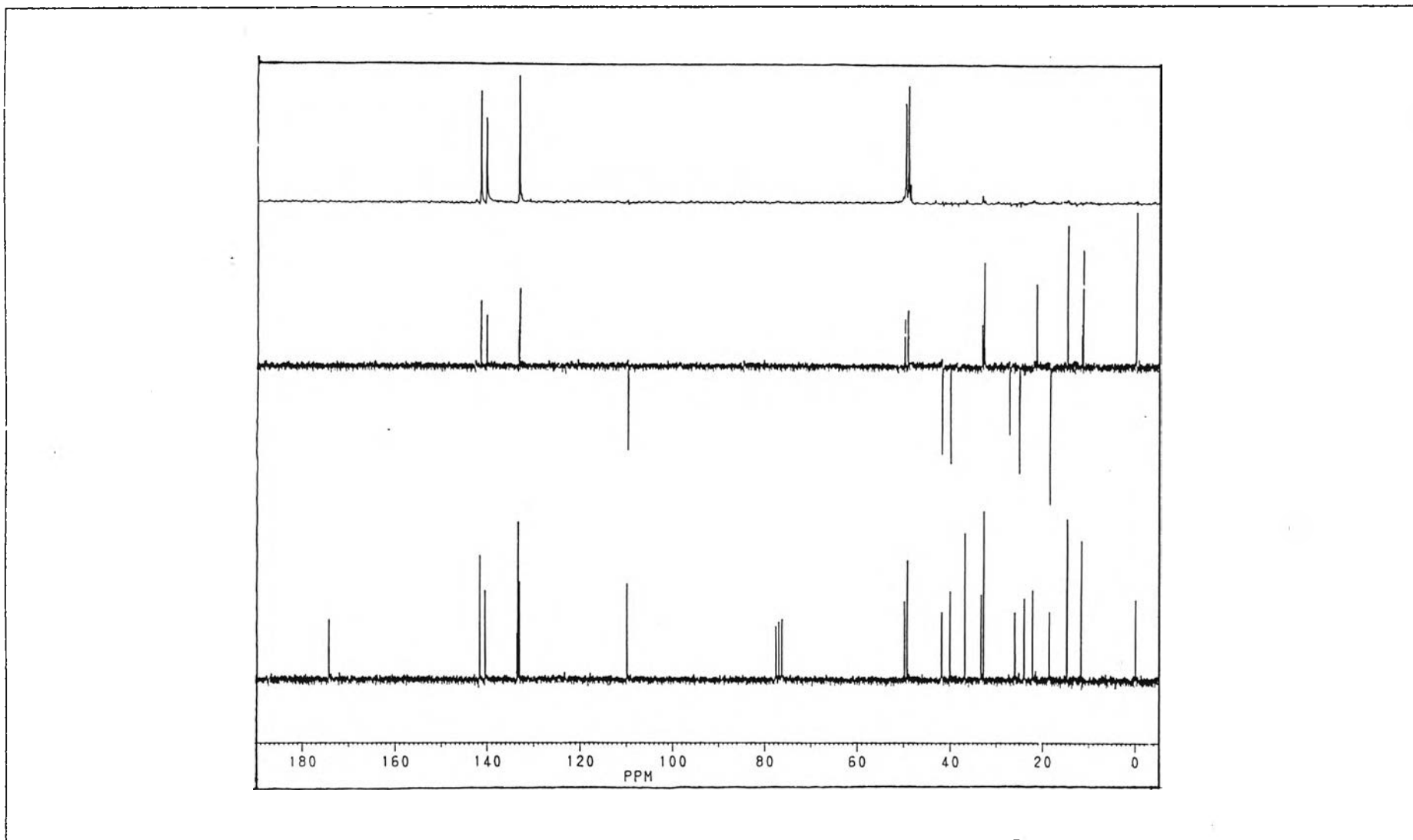


Figure 14 The DEPT-135, 90 and ^{13}C -NMR spectra of Compound 1

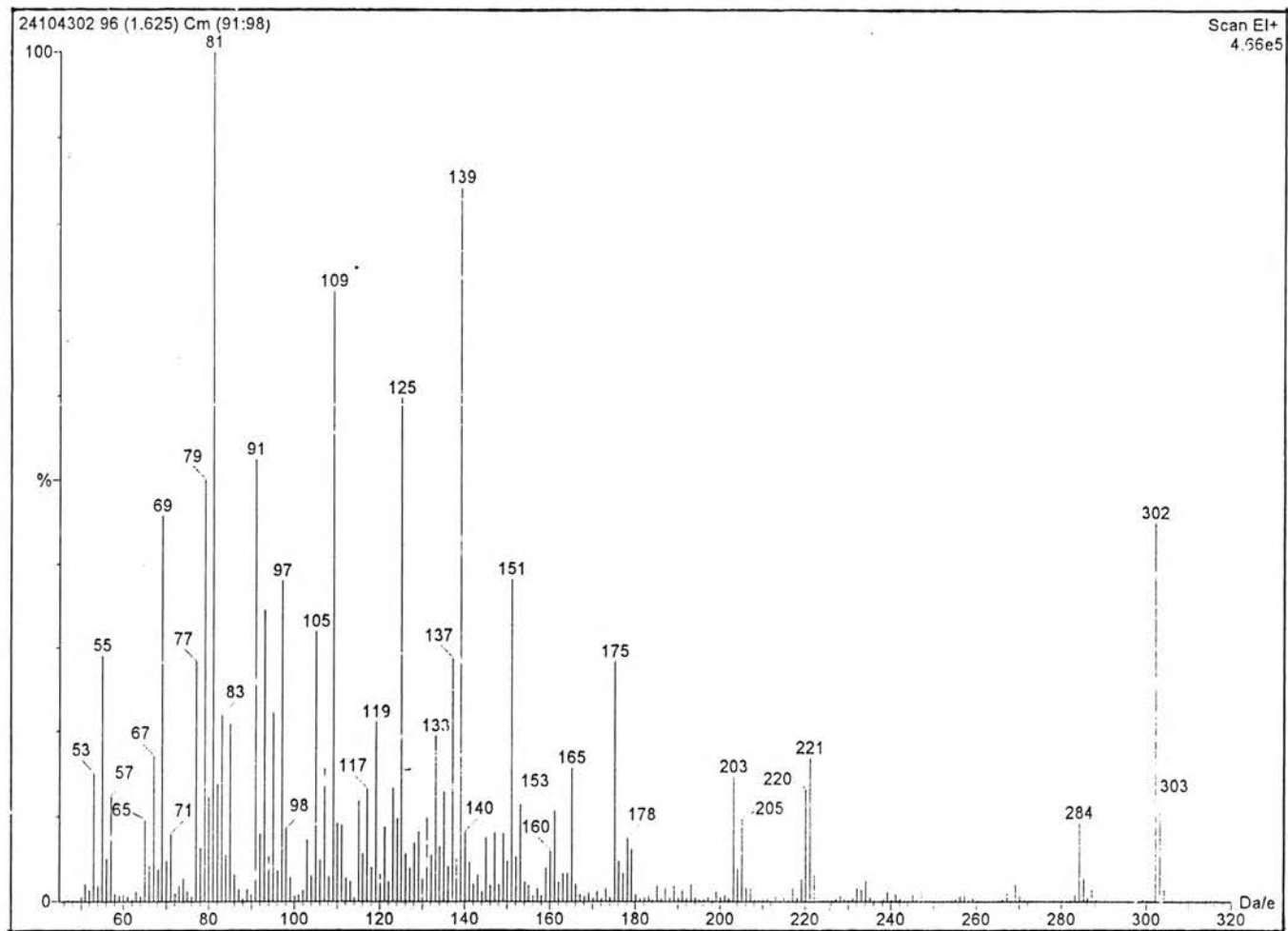


Figure 15 The EIMS spectrum of Compound 1

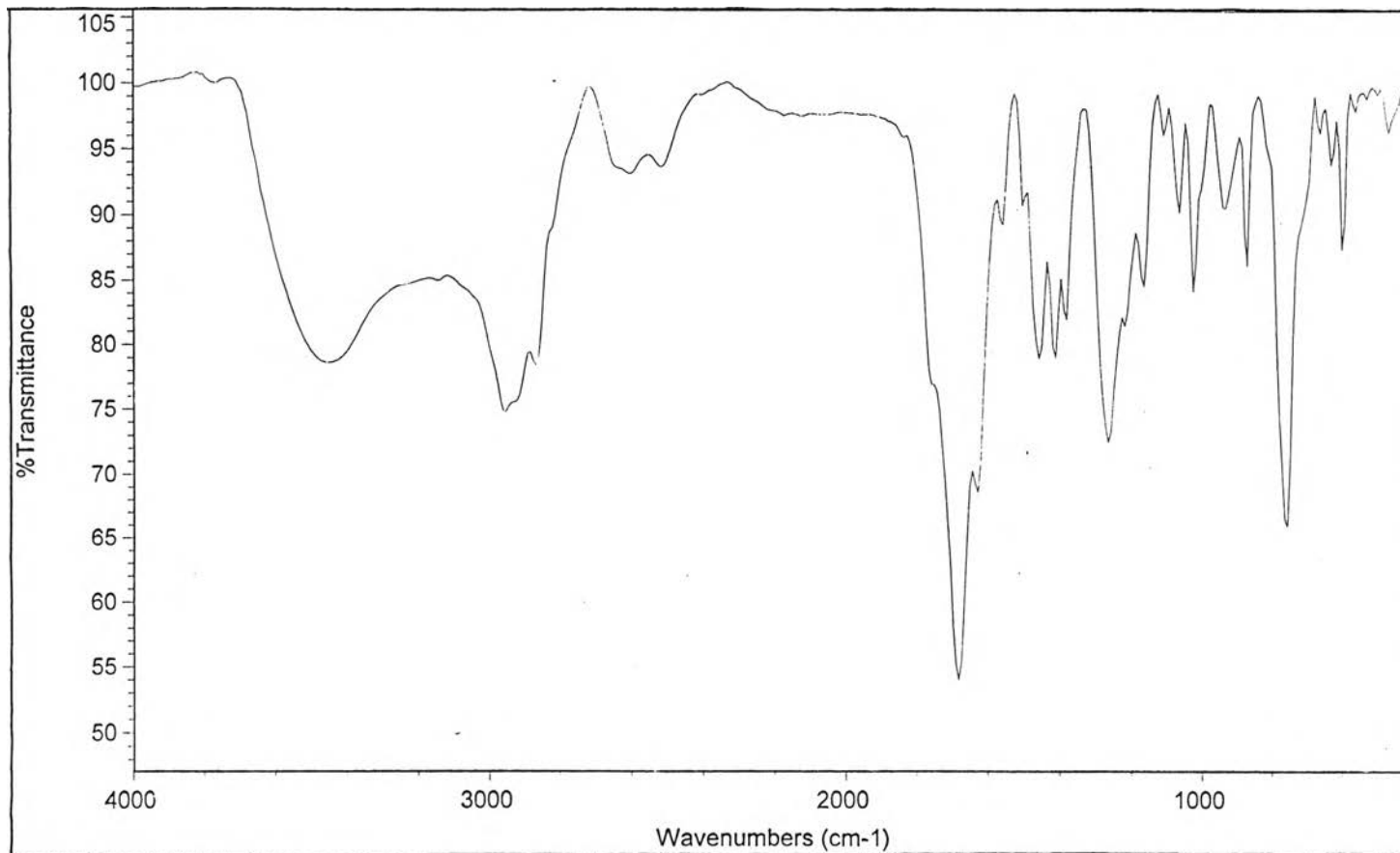


Figure 16 The IR spectrum of Compound 2

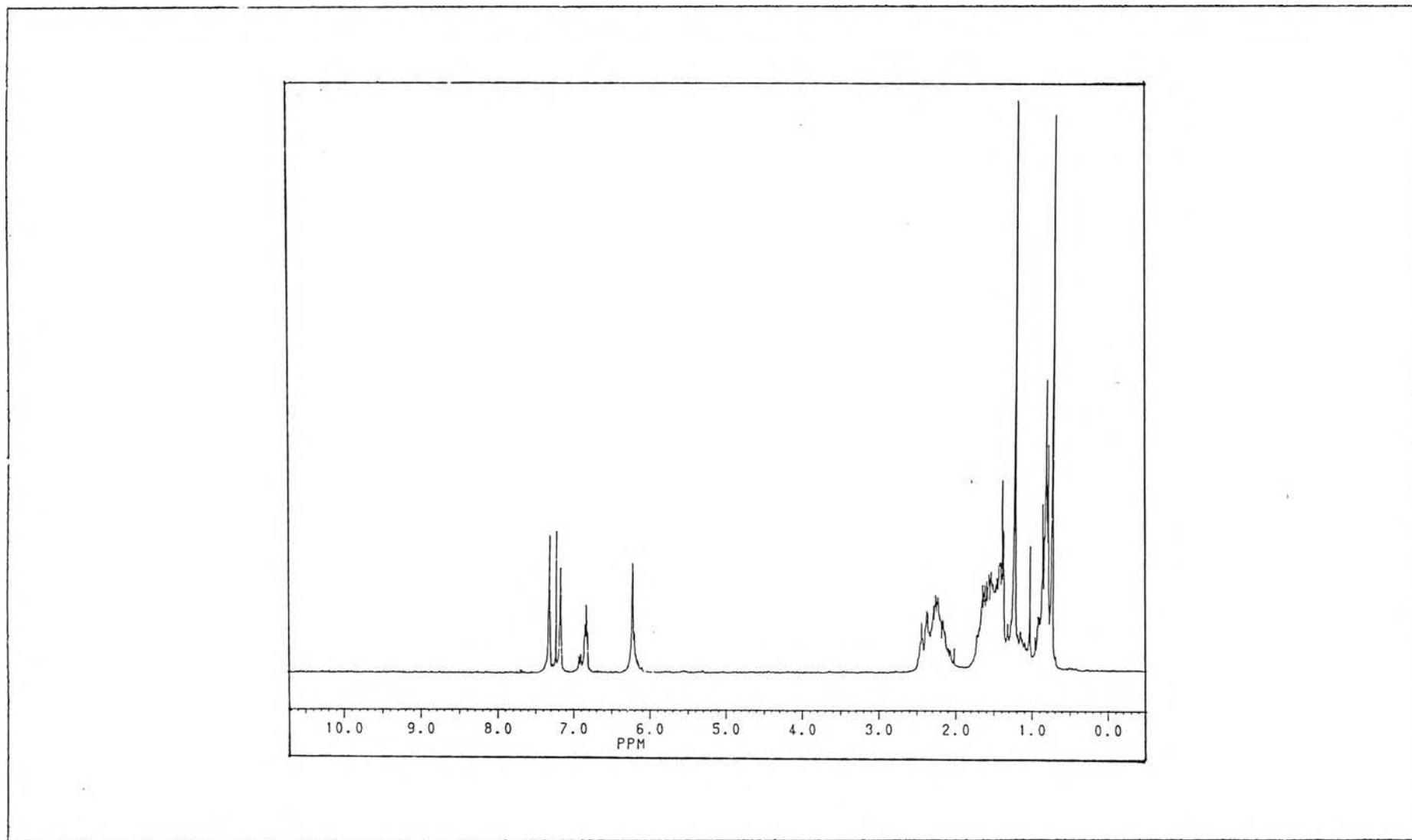


Figure 17 The $^1\text{H-NMR}$ spectrum of Compound 2

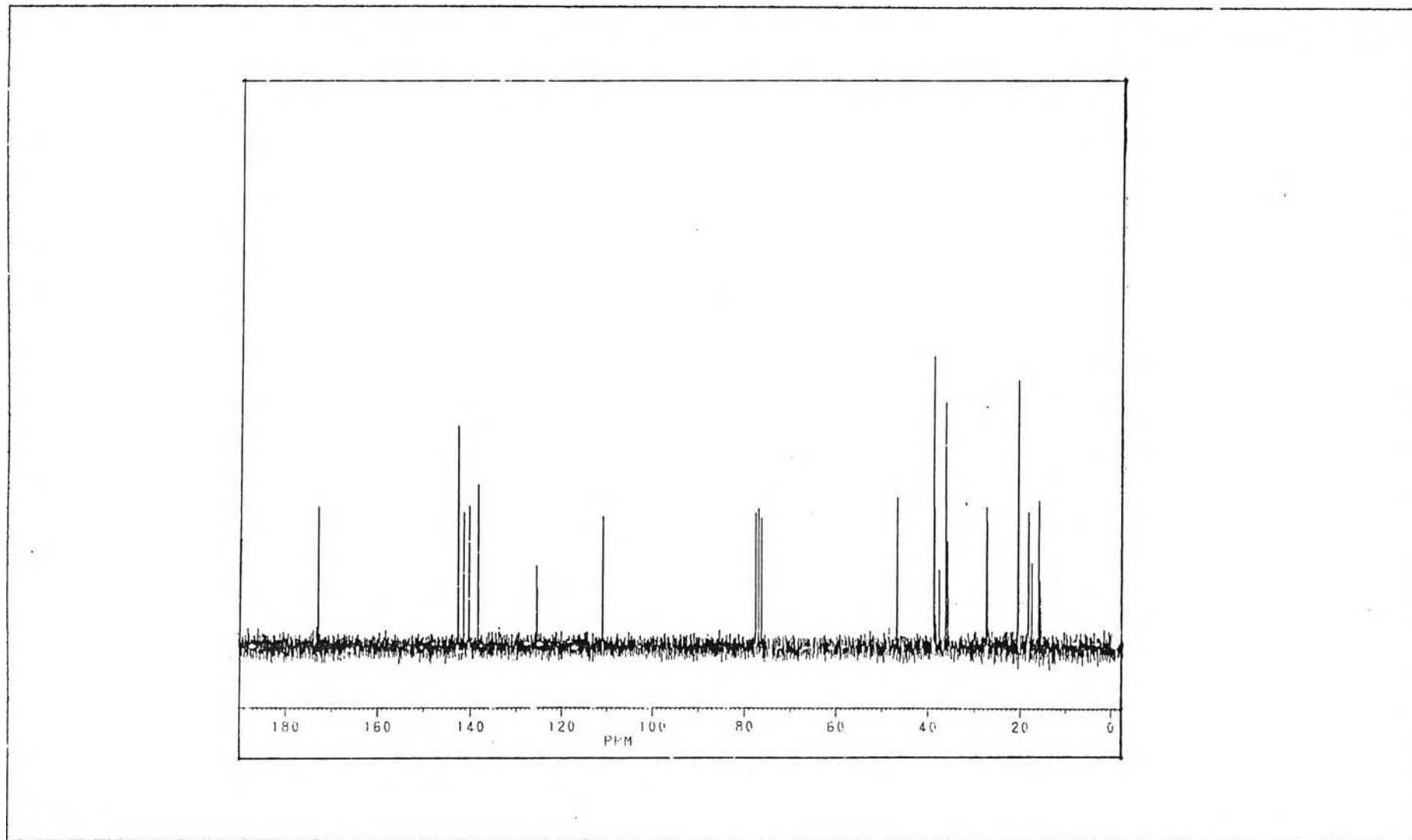


Figure 18 The ^{13}C -NMR spectrum of Compound 2

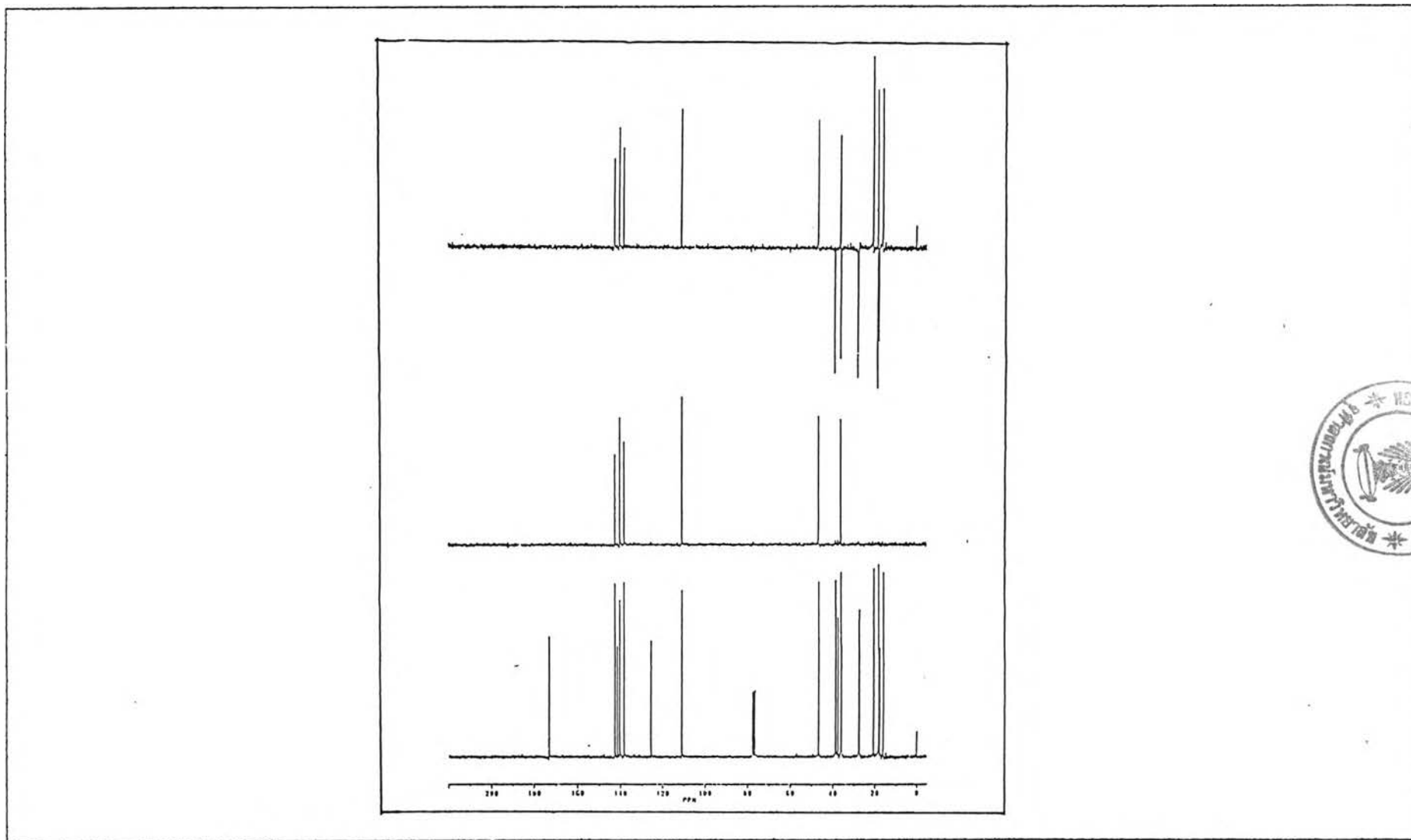


Figure 19 The DEPT-135, 90 and ^{13}C -NMR spectra of Compound 2

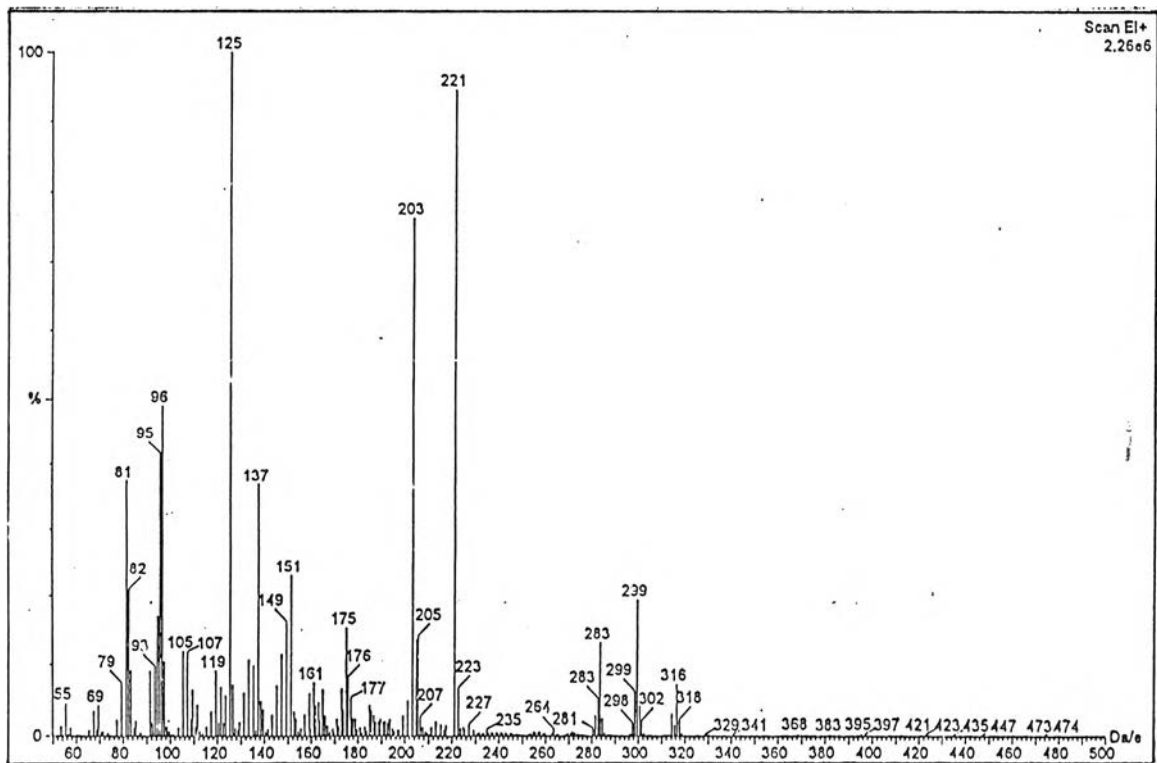


Figure 20 The EIMS spectrum of Compound 2

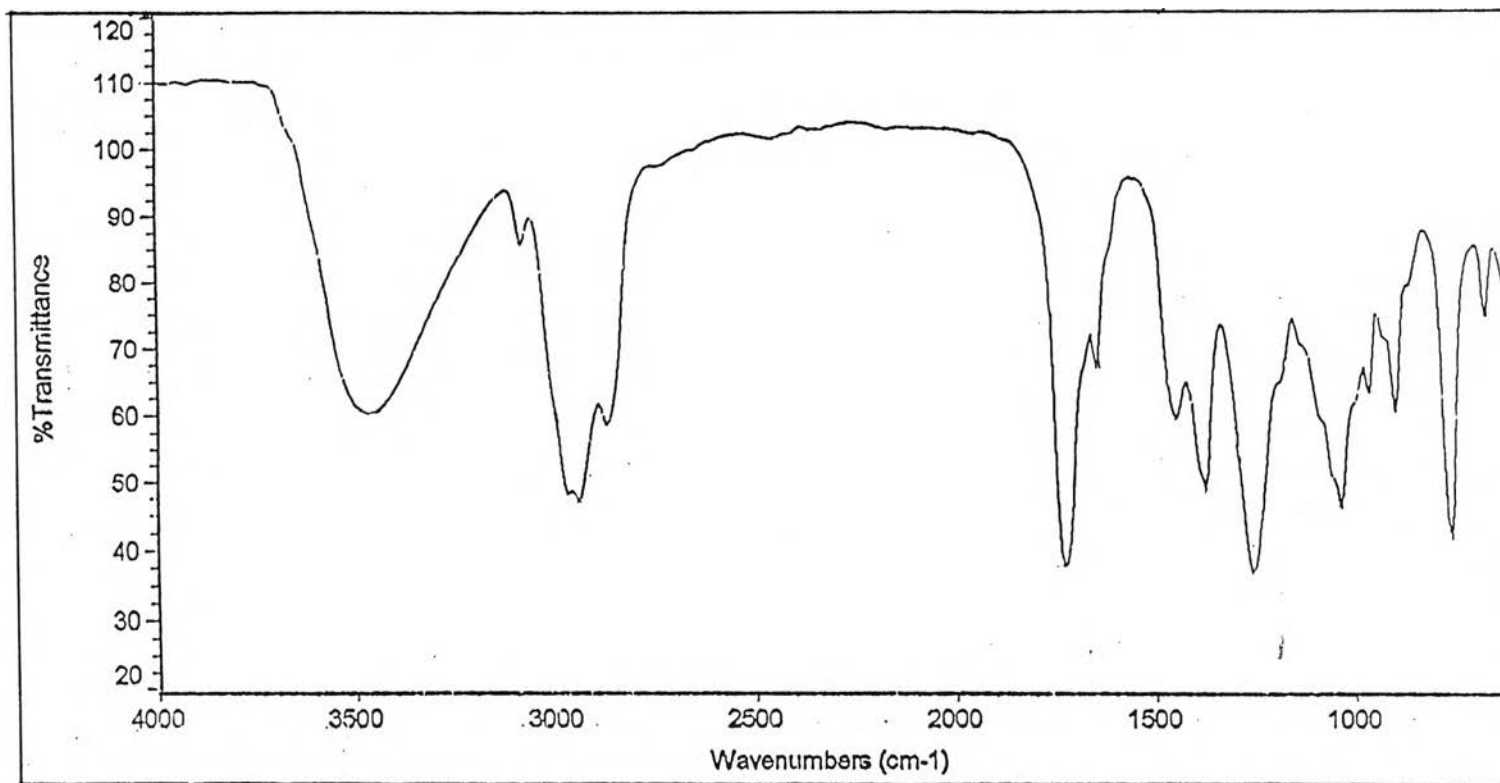


Figure 21 The IR spectrum of Compound 3

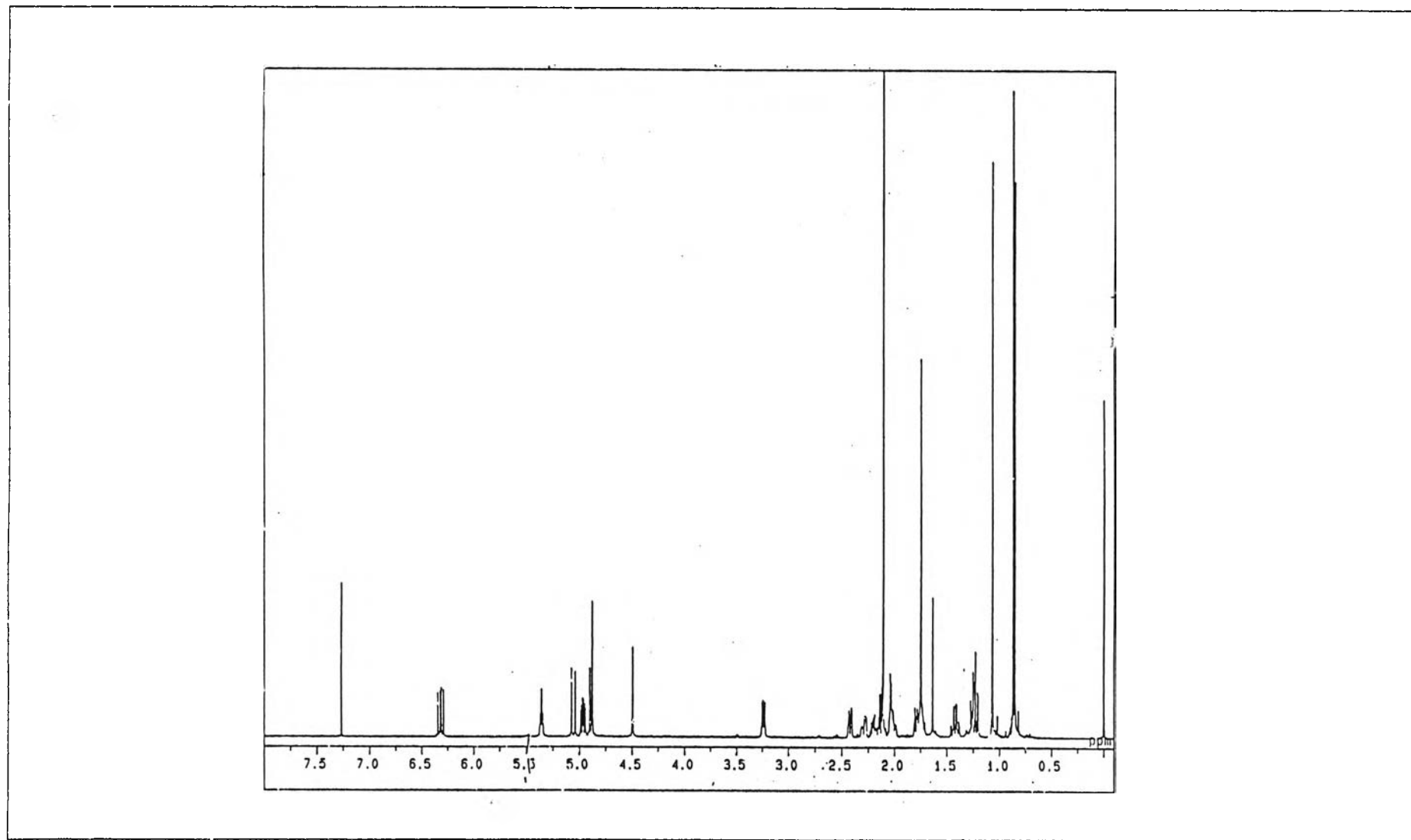


Figure 22 The ¹H-NMR spectrum of Compound 3

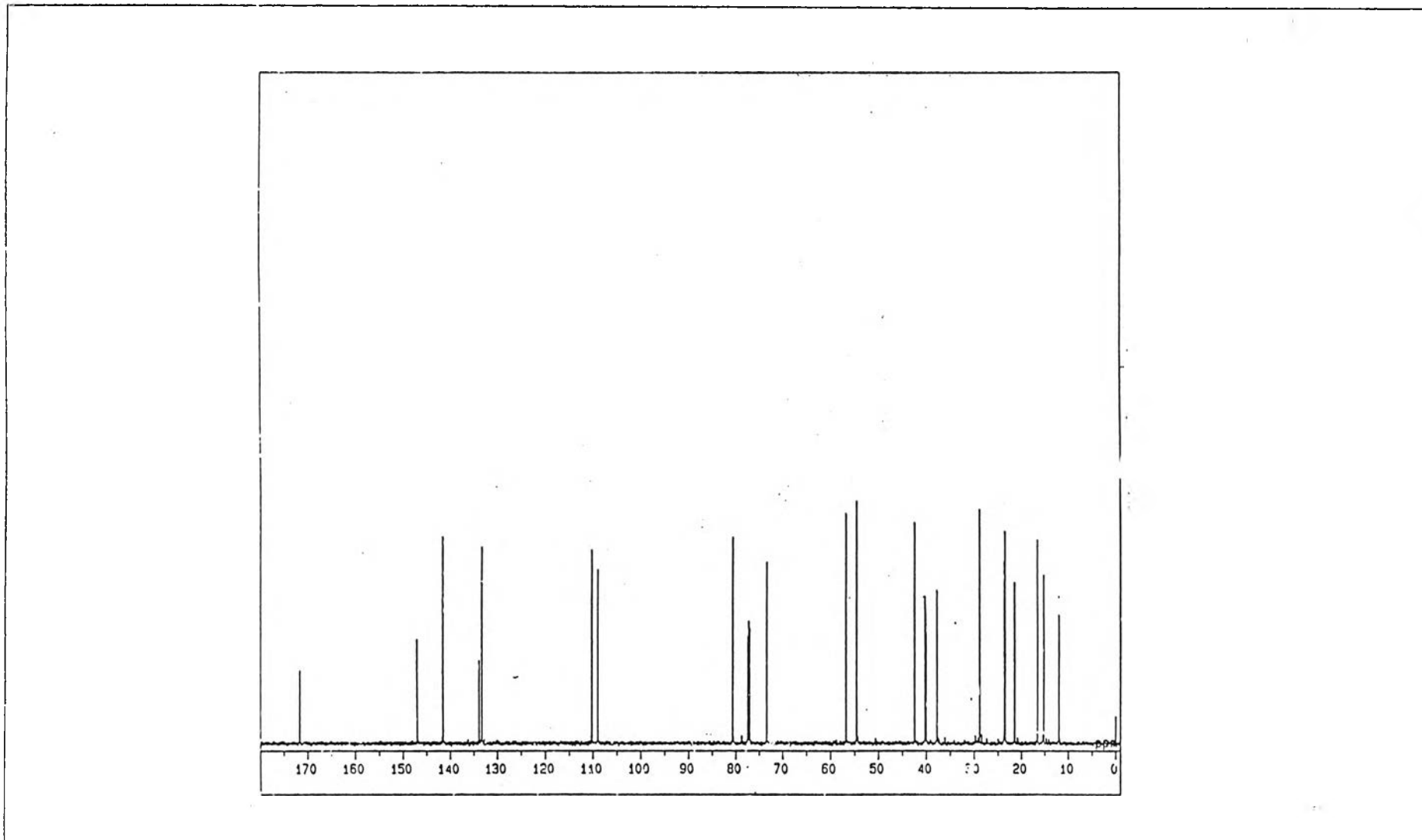


Figure 23 The ^{13}C -NMR spectrum of Compound 3

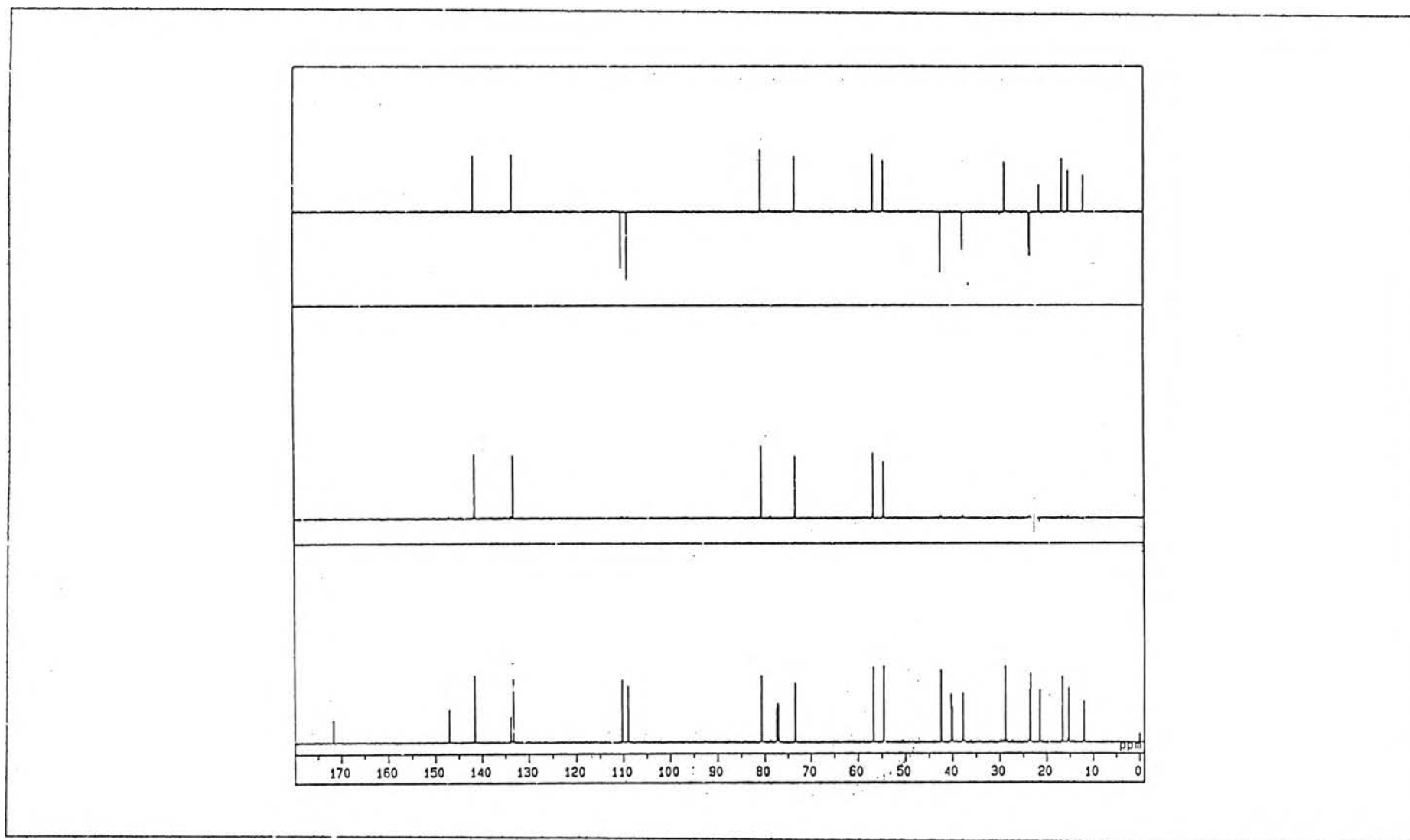


Figure 24 The DEPT-135, 90 and ^{13}C -NMR spectra of Compound 3

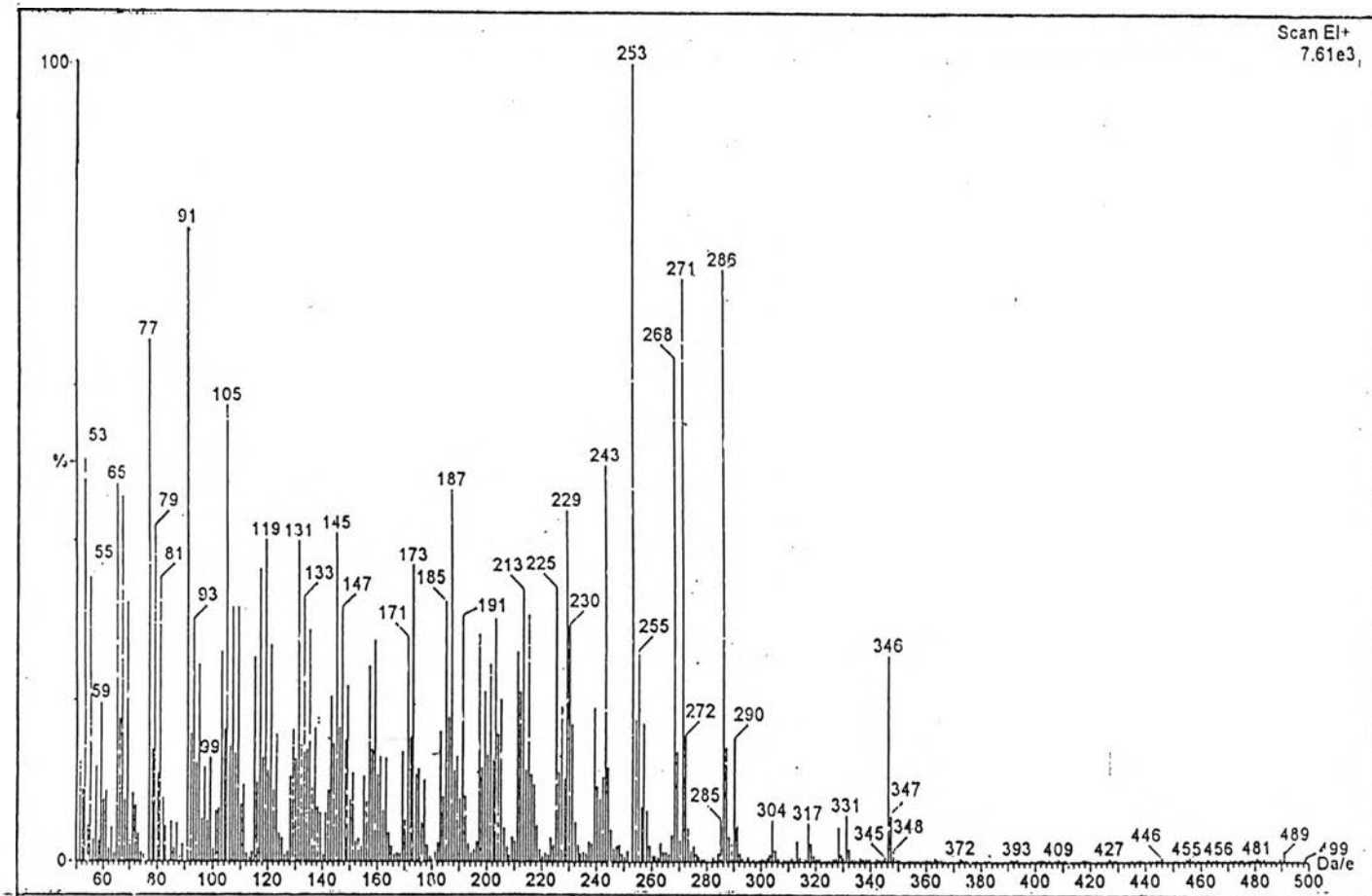


Figure 25 The EIMS spectrum of Compound 3

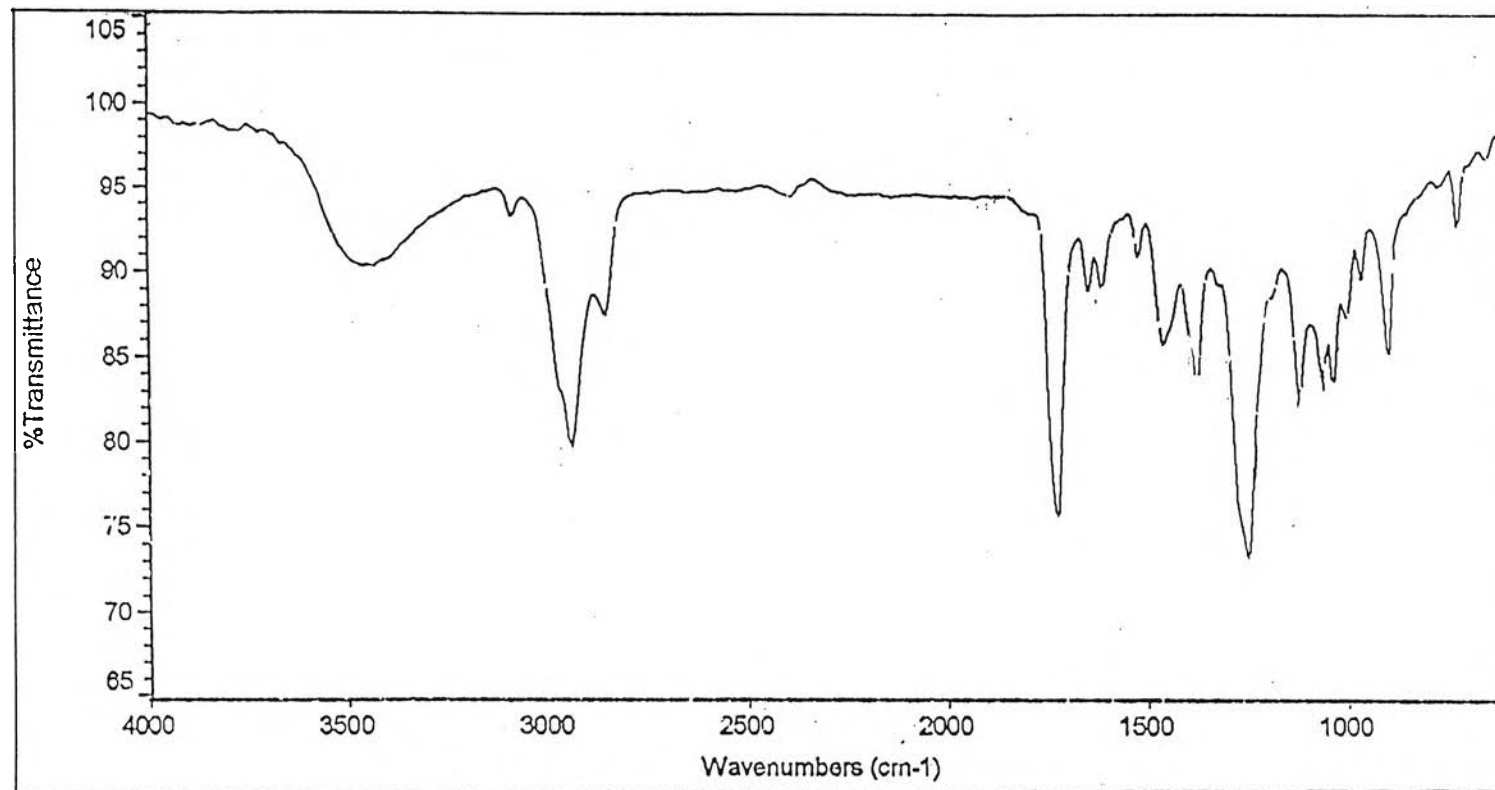


Figure 26 The IR spectrum of Compound 4

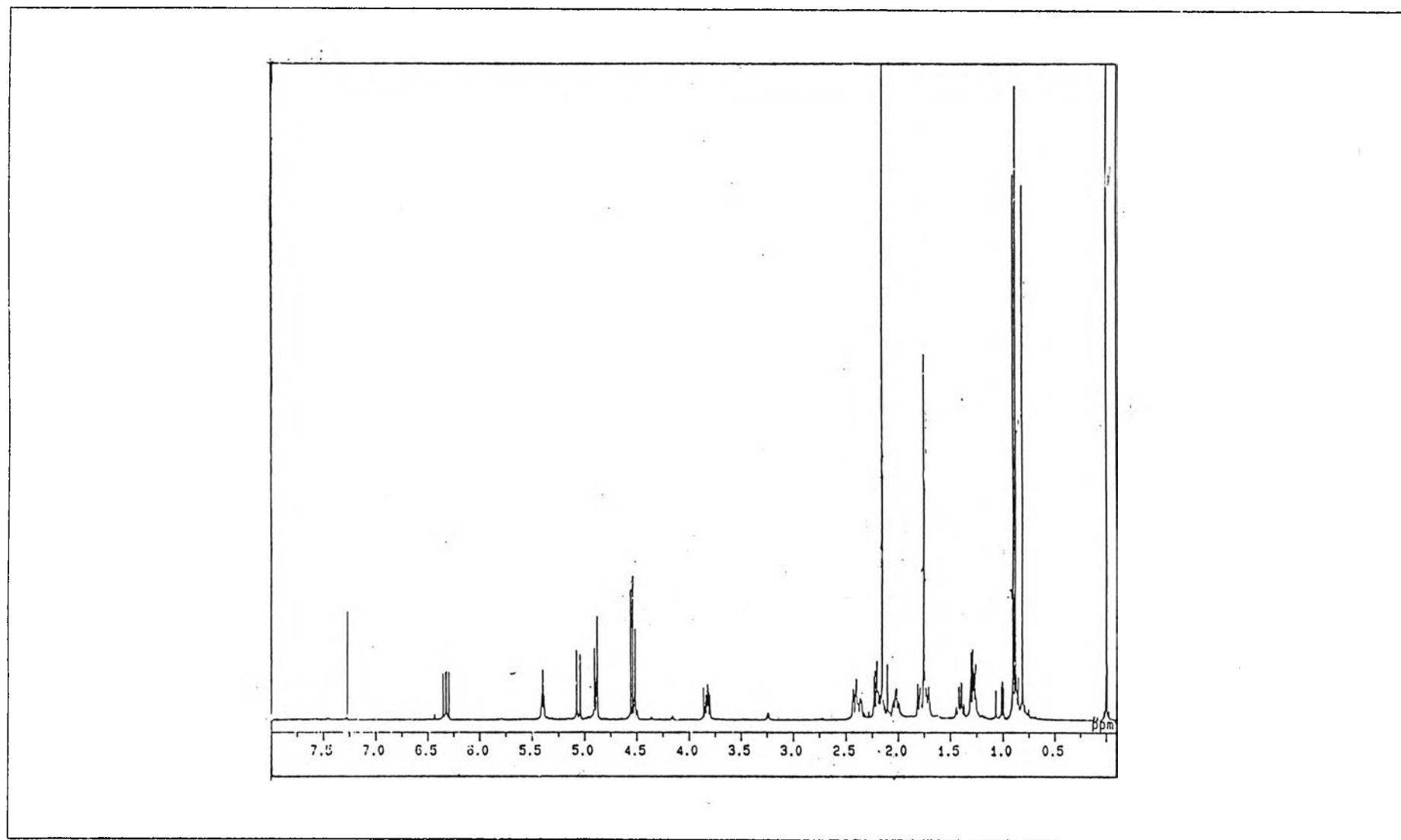


Figure 27 The $^1\text{H-NMR}$ spectrum of Compound 4

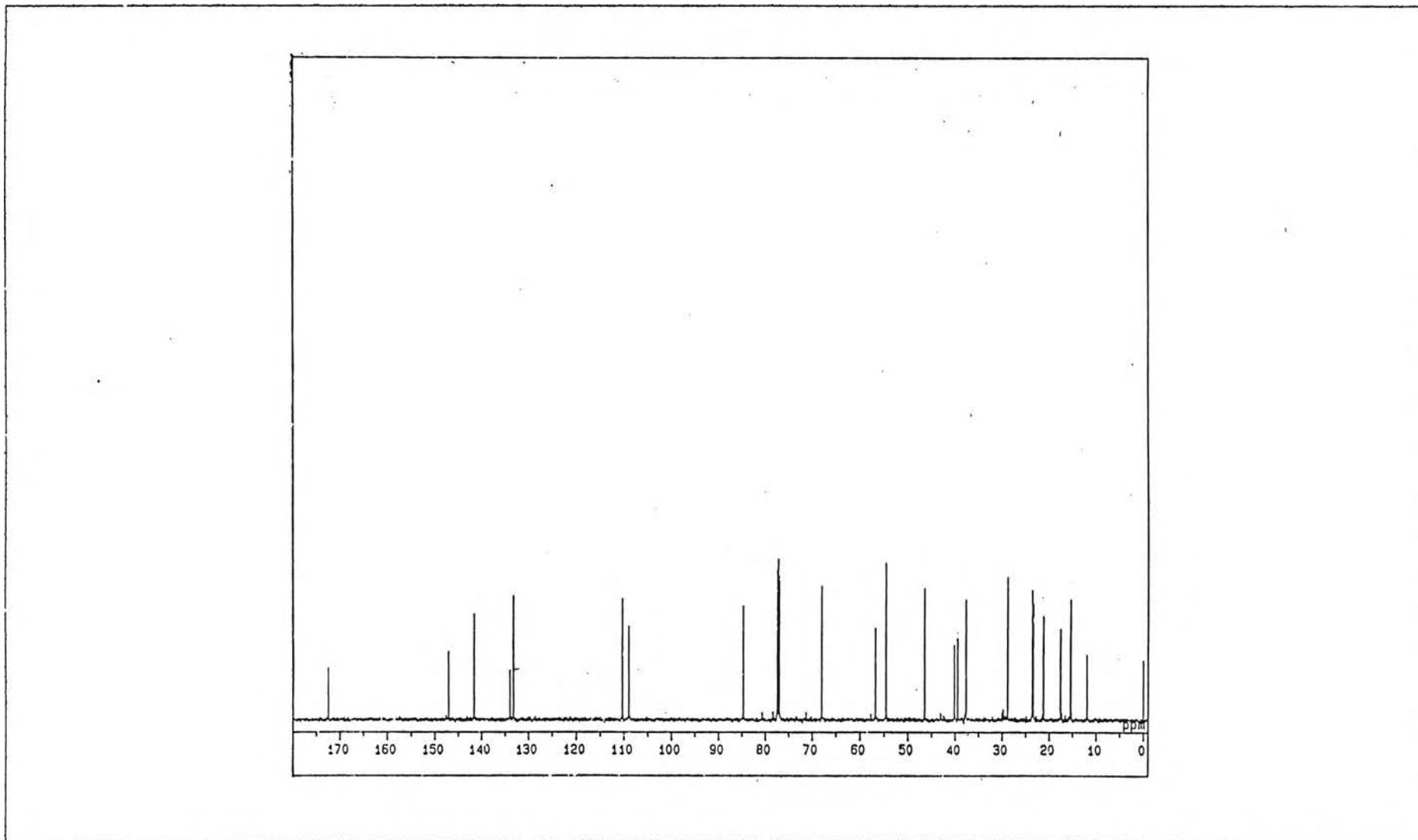


Figure 28 The ^{13}C -NMR spectrum of Compound 4

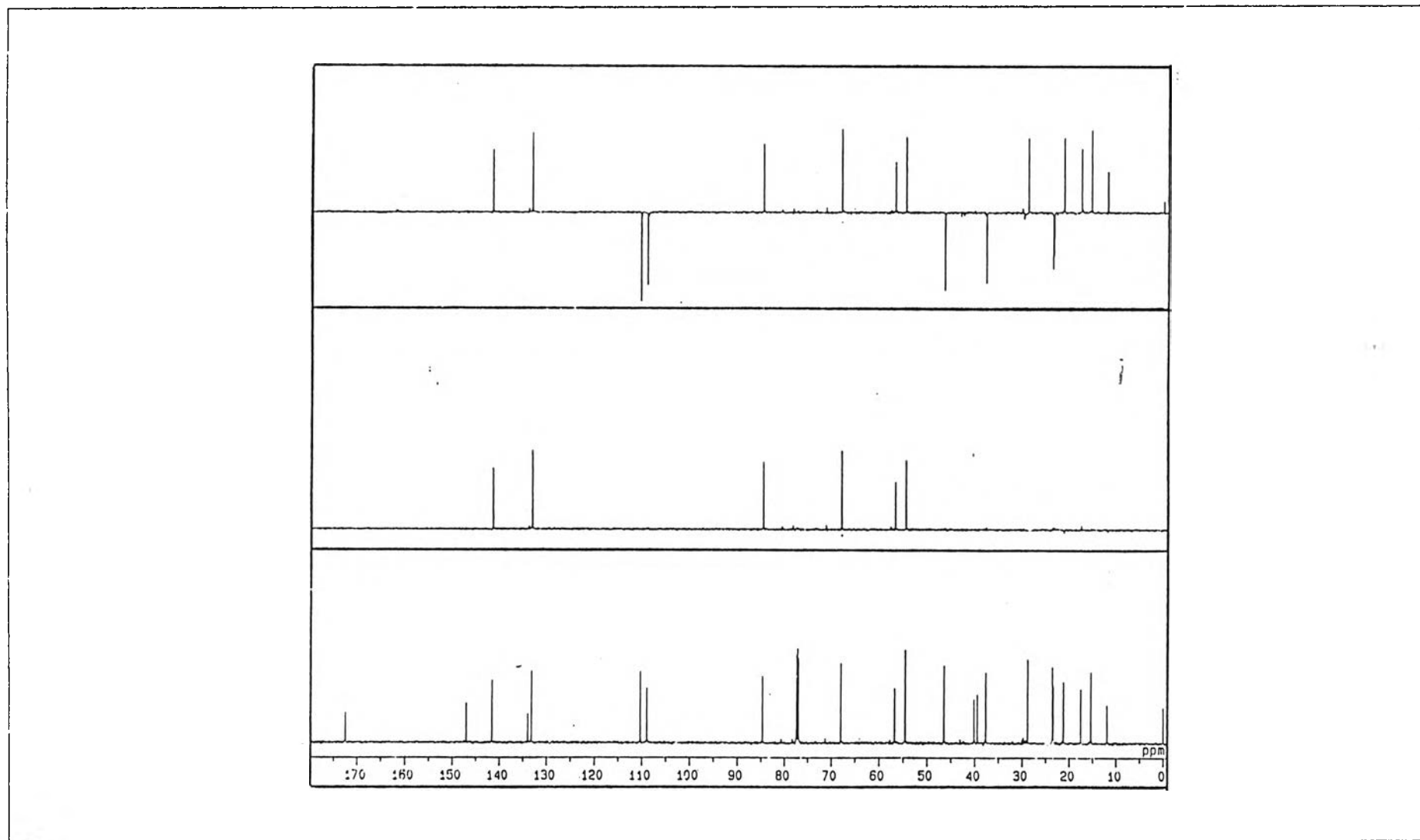


Figure 29 The DEPT-135, 90 and ^{13}C -NMR spectra of Compound 4

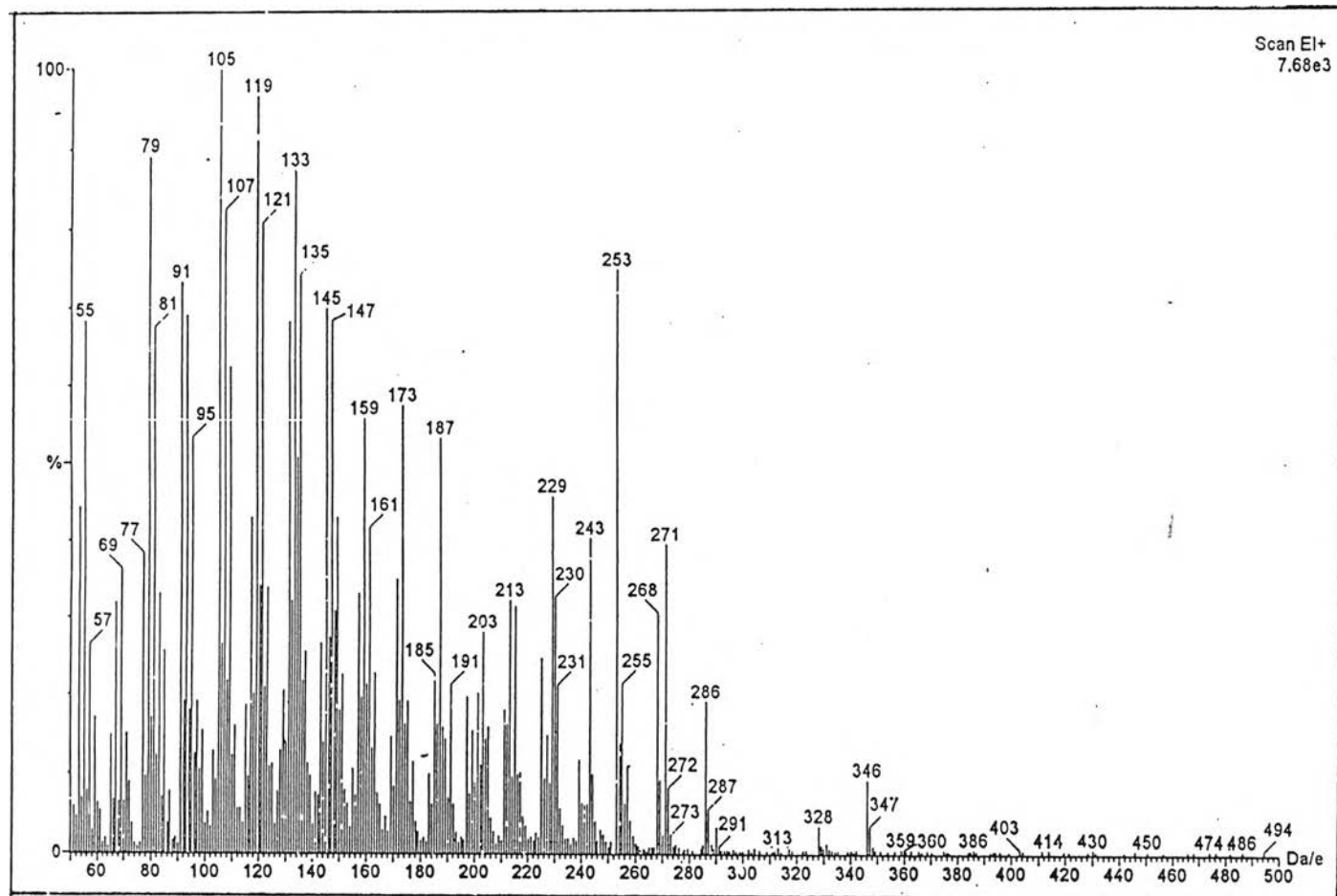


Figure 30 The EIMS spectrum of Compound 4

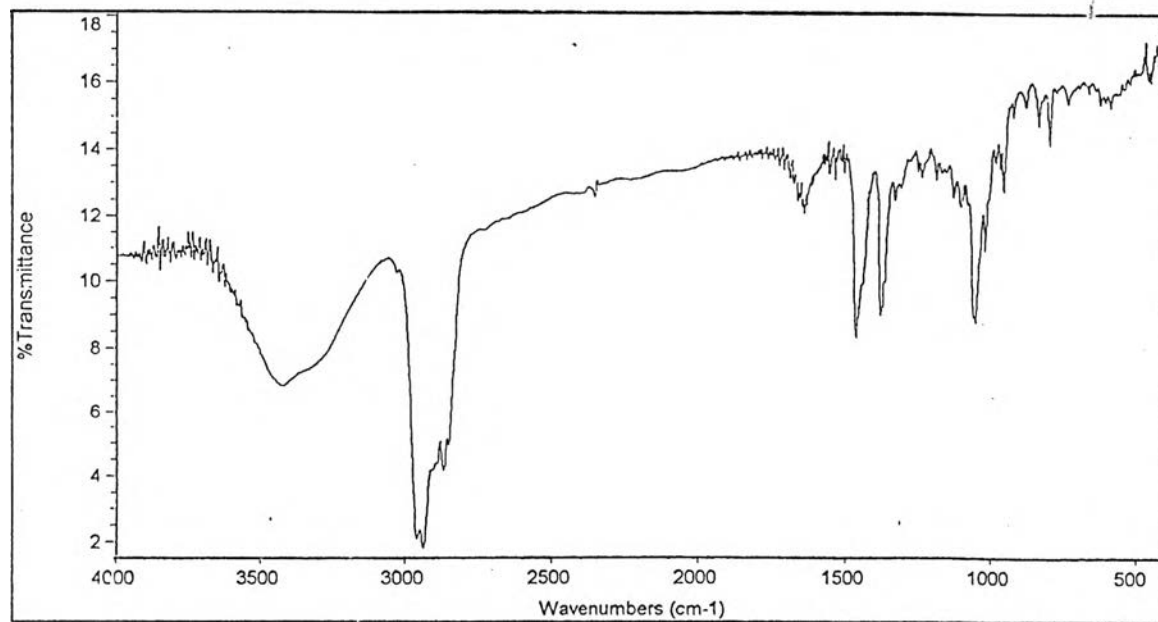


Figure 31 The IR spectrum of Mixture 5

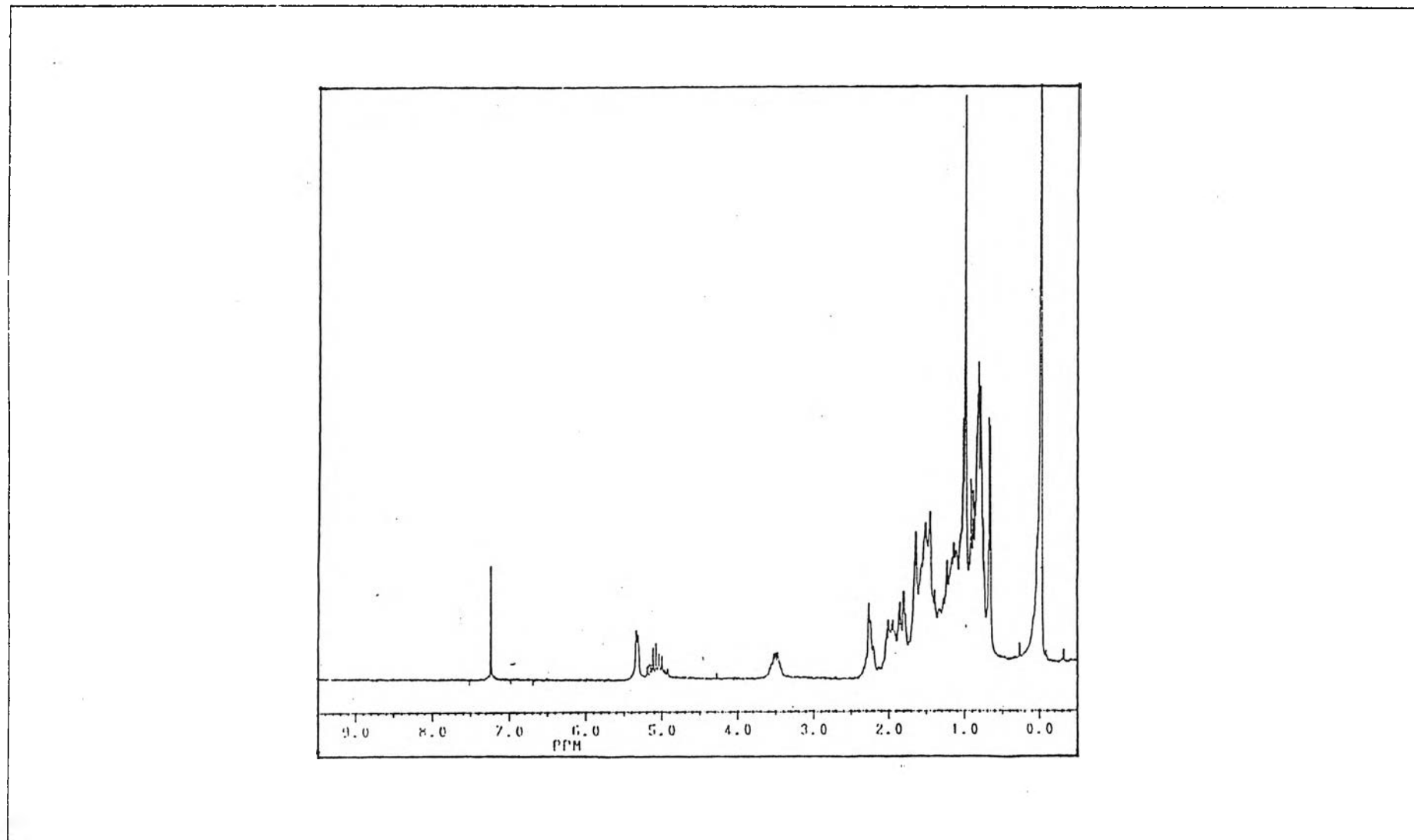


Figure 32 The $^1\text{H-NMR}$ spectrum of Mixture 5

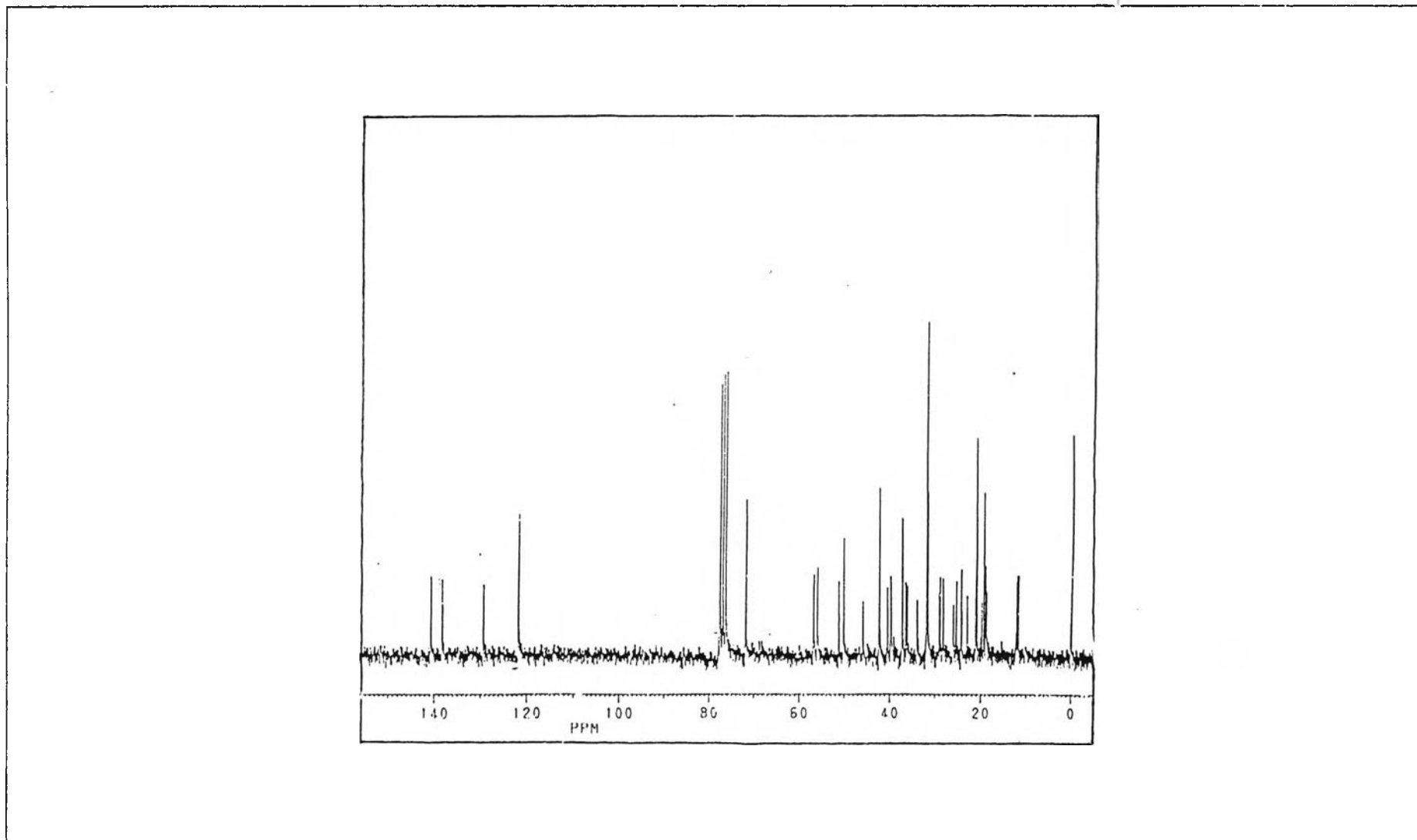


Figure 33 The ^{13}C -NMR spectrum of Mixture 5

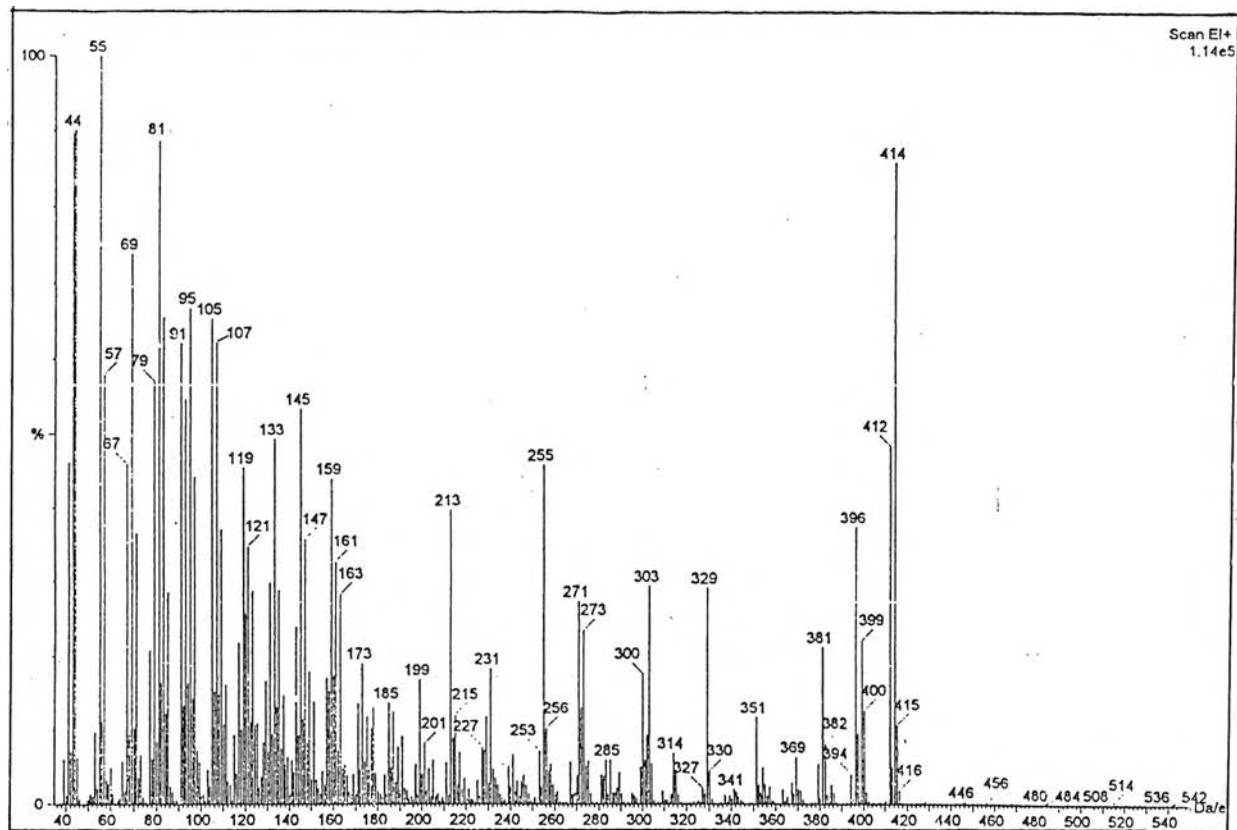
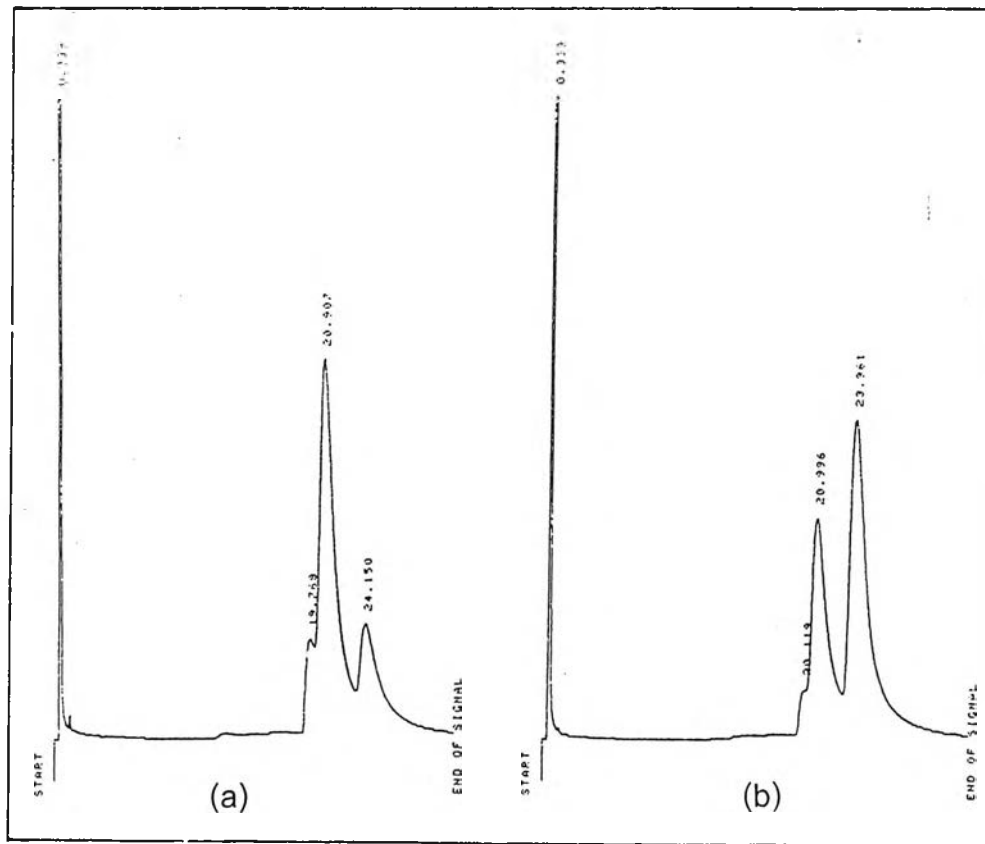


Figure 34 The mass spectrum of Mixture 5



(a) The GLC analysis results of standard steroid
 (b) The GLC analysis results of Mixture 5

Figure 35 The GC-MS chromatogram of Mixture 5

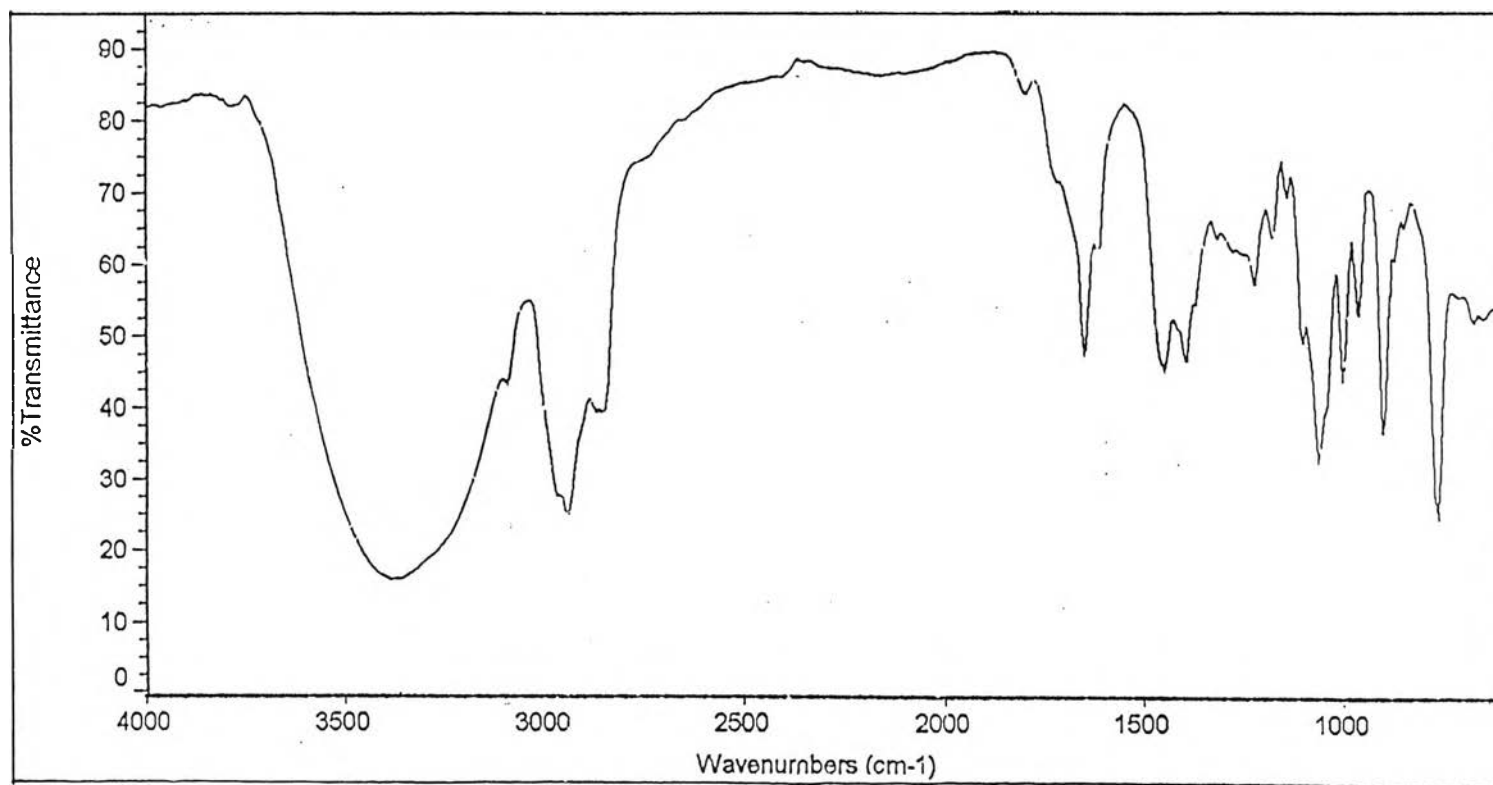


Figure 36 The IR spectrum of Compound 6

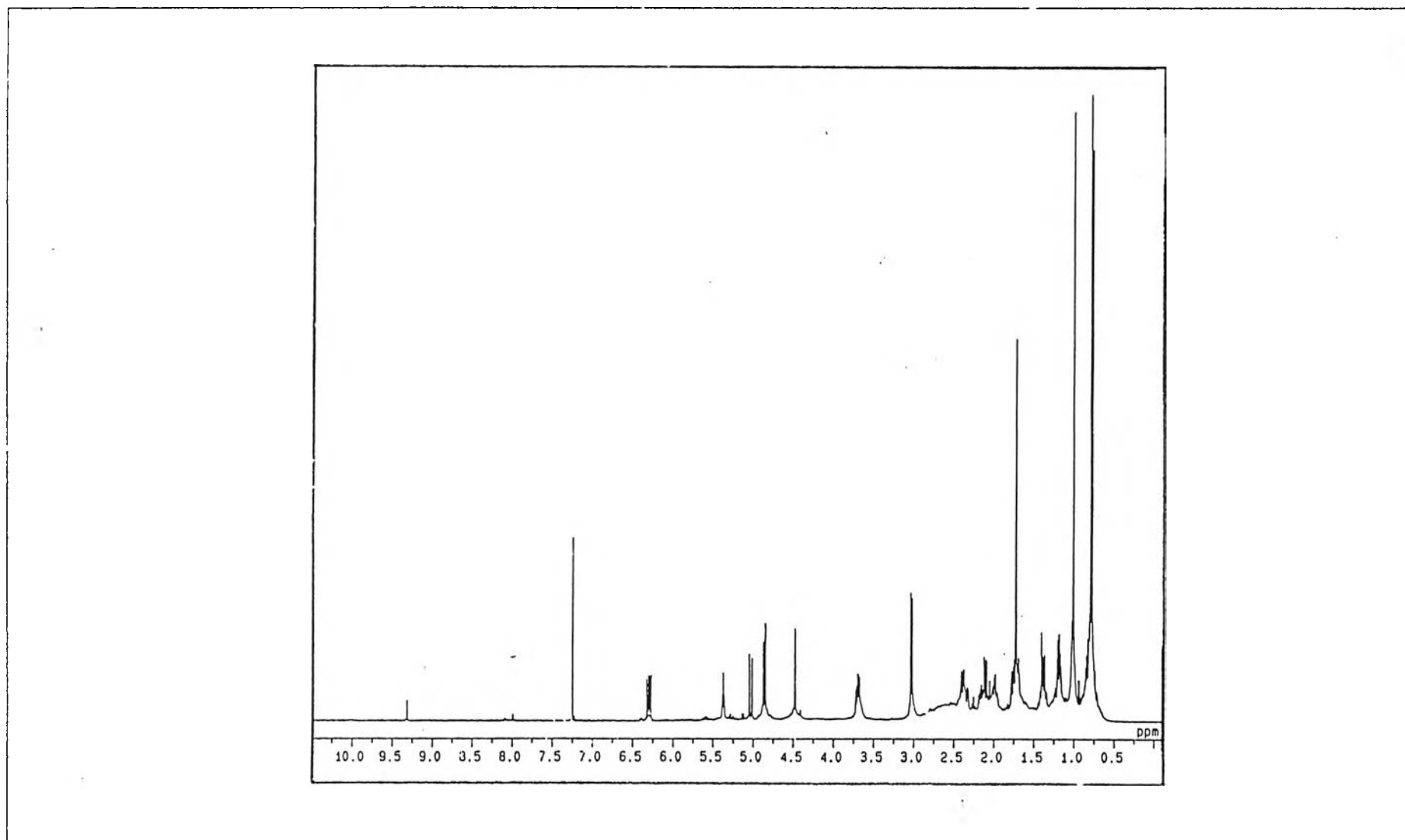


Figure 37 The $^1\text{H-NMR}$ spectrum of Compound 6

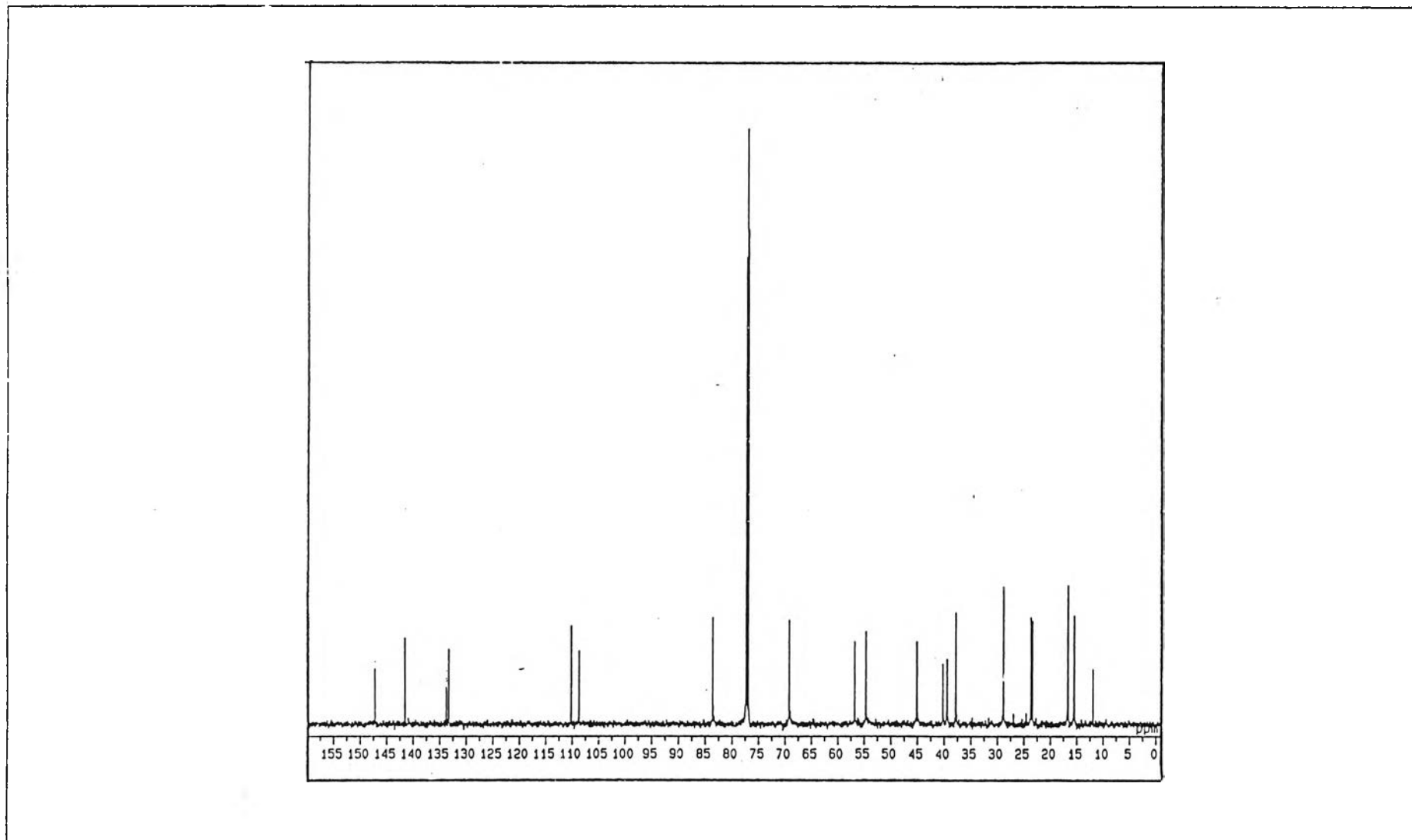


Figure 38 The ^{13}C -NMR spectrum of Compound 6

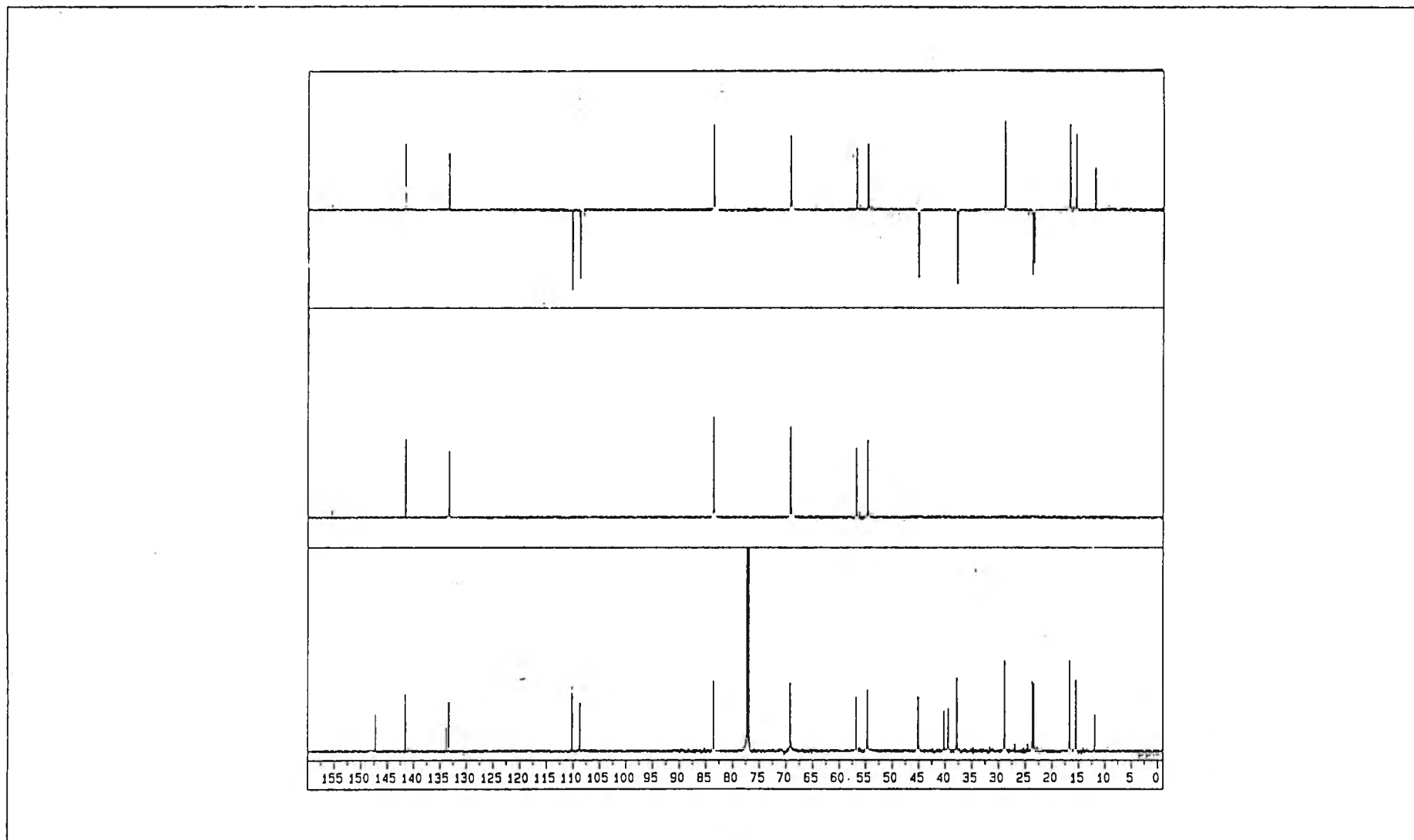


Figure 39 The DEPT-135, 90 and ^{13}C -NMR spectra of Compound 6

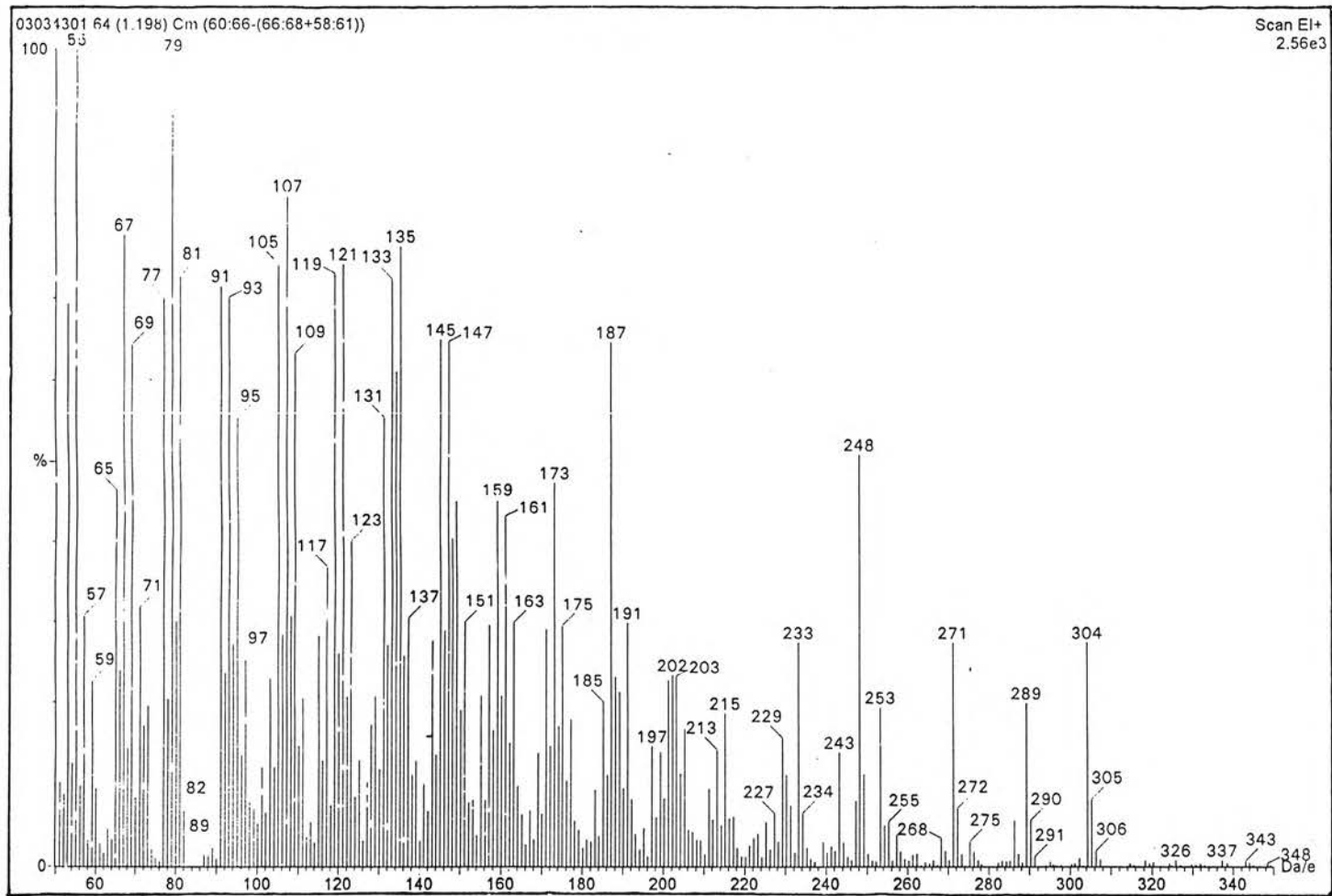


Figure 40 The EIMS spectrum of Compound 6

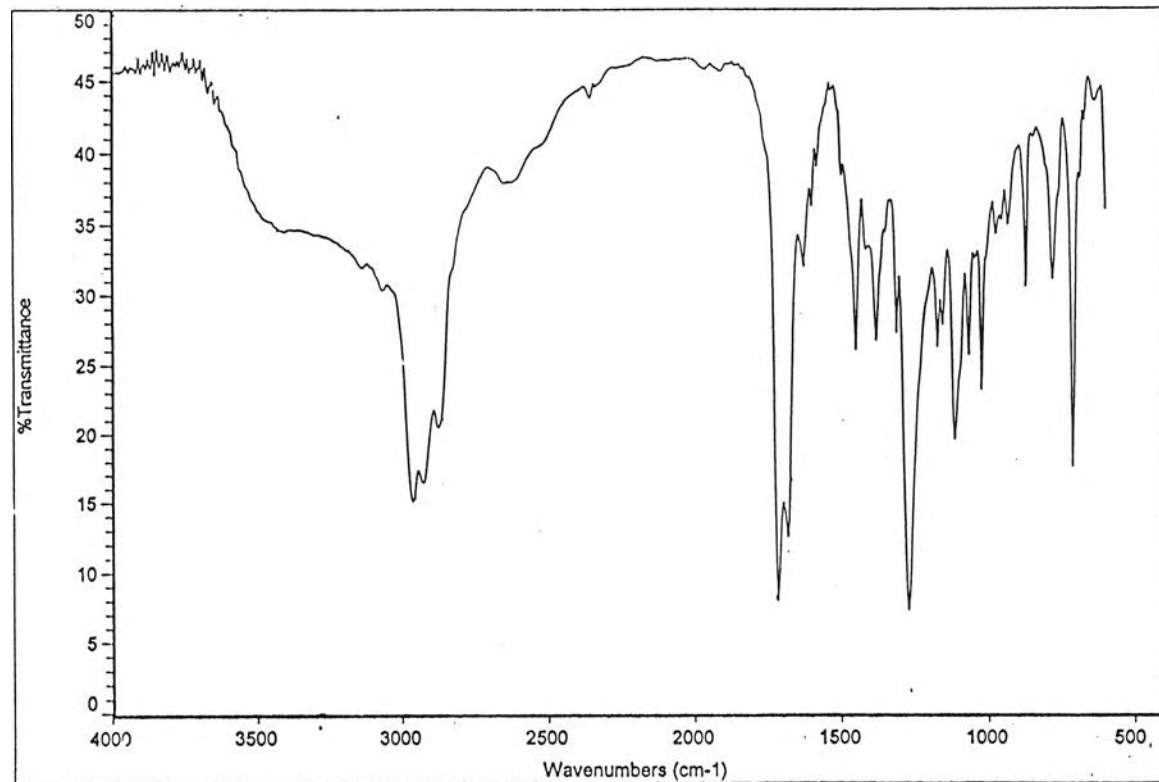


Figure 41 The IR spectrum of Compound 7

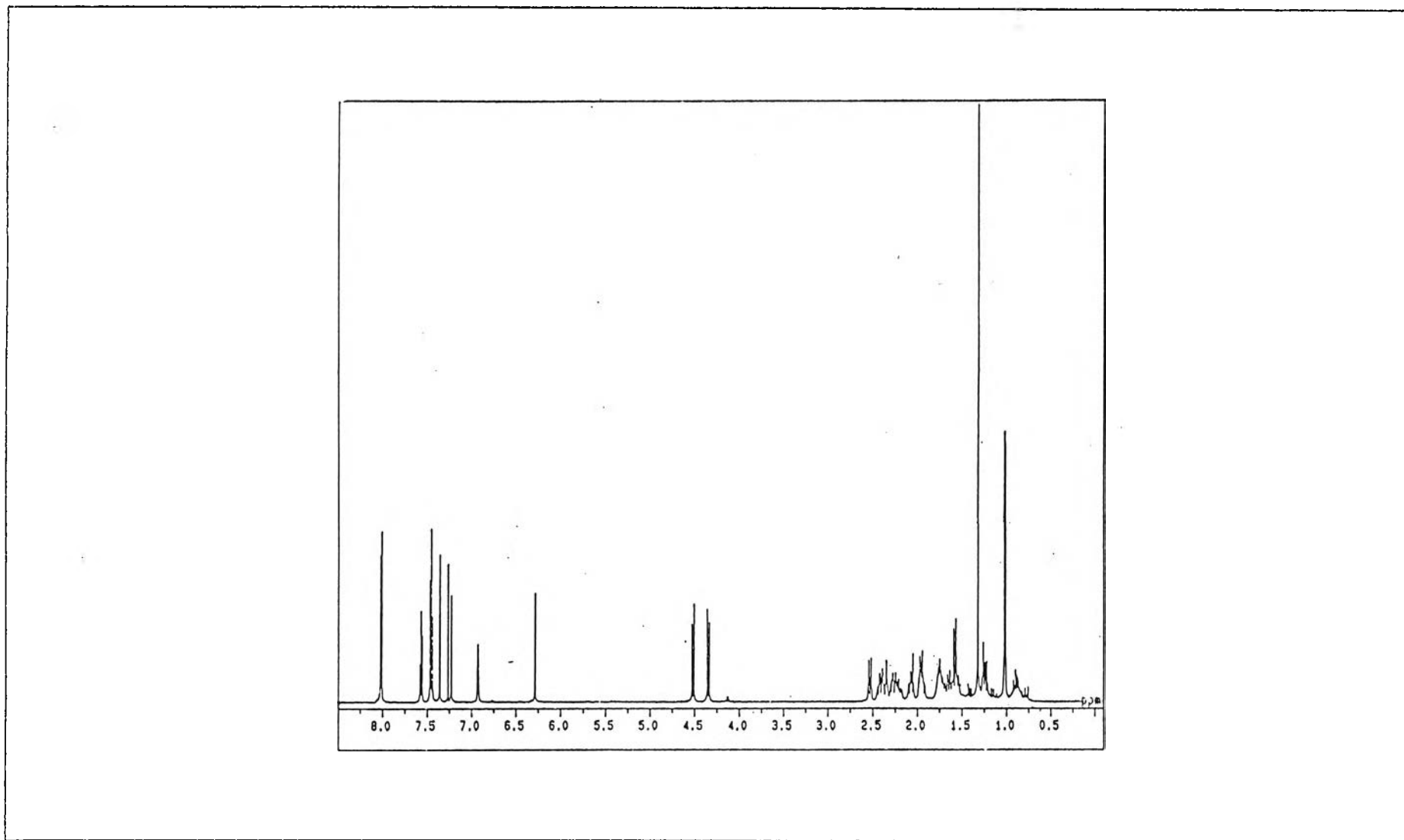


Figure 42 The $^1\text{H-NMR}$ spectrum of Compound 7

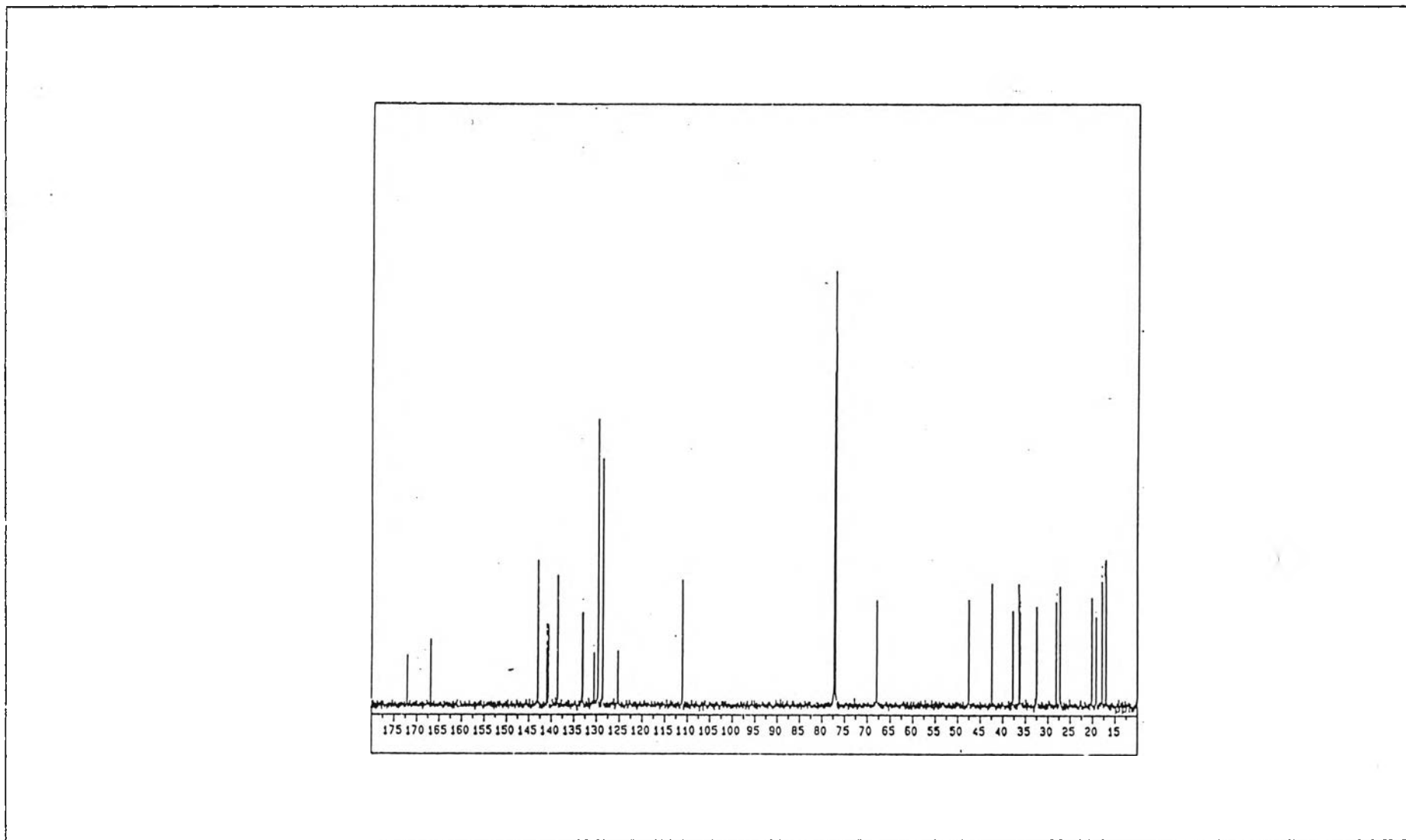


Figure 43 The ^{13}C -NMR spectrum of Compound 7

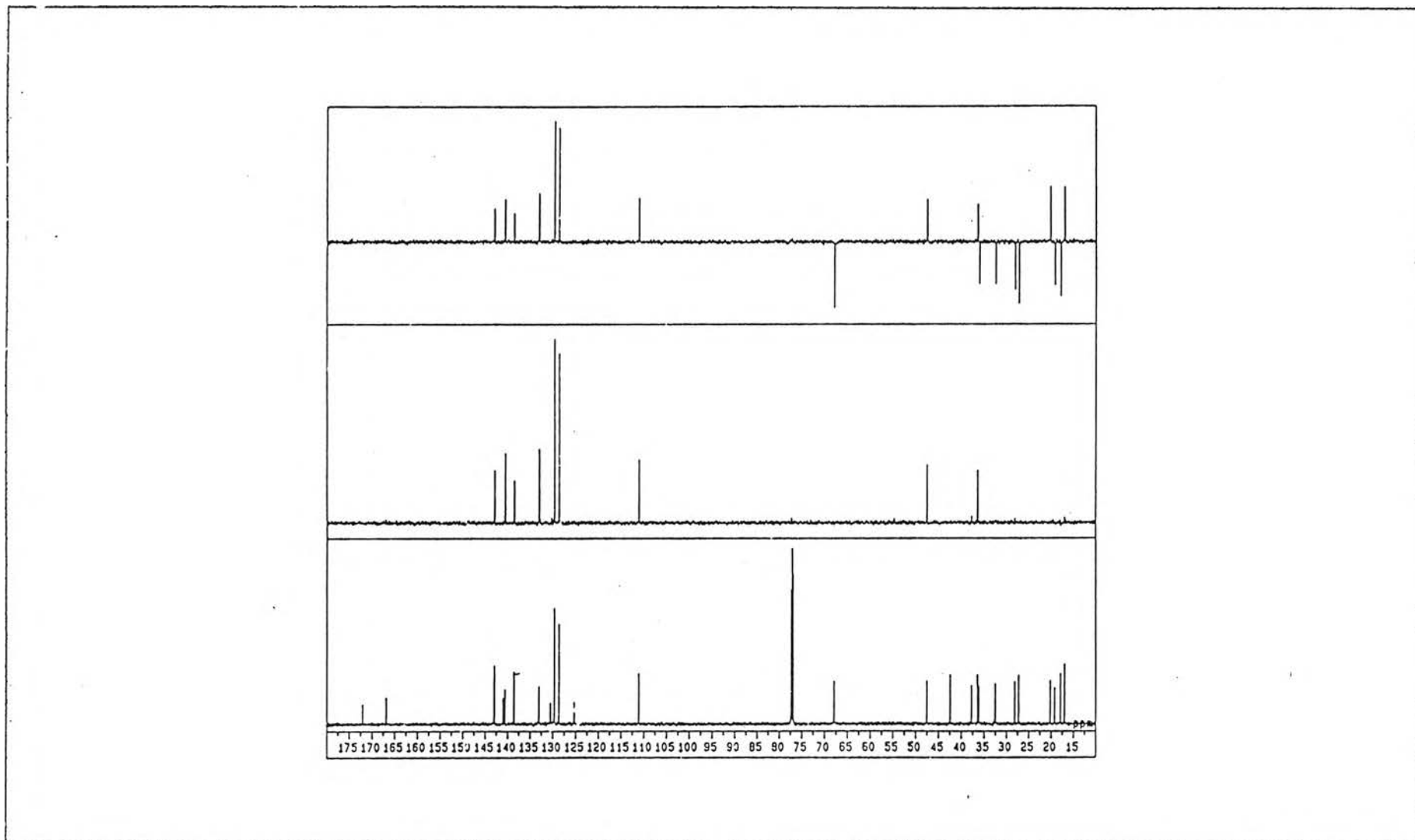


Figure 44 The DEPT-135, 90 and ¹³C-NMR spectra of Compound 7

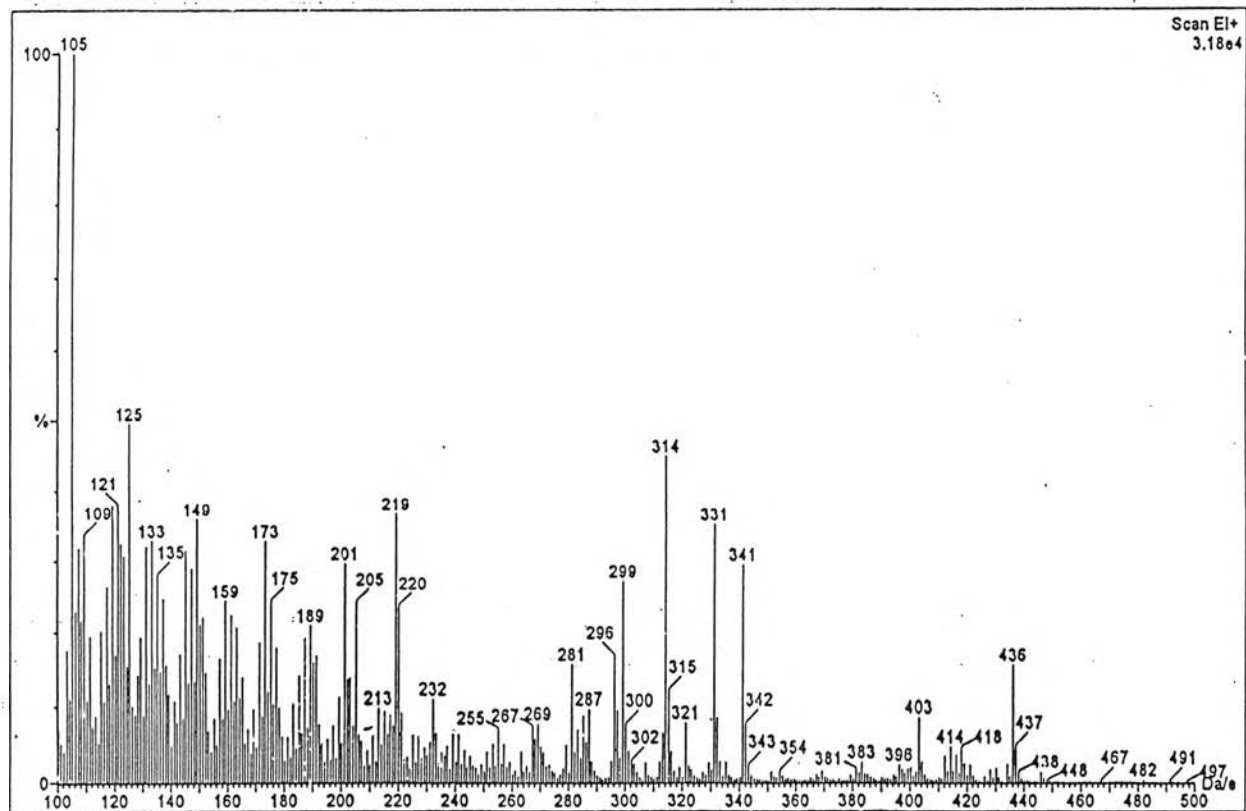


Figure 45 The EIMS spectrum of Compound 7



VITA

Miss Patchara Bunyamanee was born on February 3, 1977 in Kanchanaburi, Thailand. She graduated with Bachelor Degree of Science in Chemistry from Thammasat University in 1998. During the same year, she was admitted into the Master's Degree Program in organic chemistry at Chulalongkorn University and complete the program in year 2001.