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APPENDIX

a) silica gel G / chloroform : acetone (9:1)

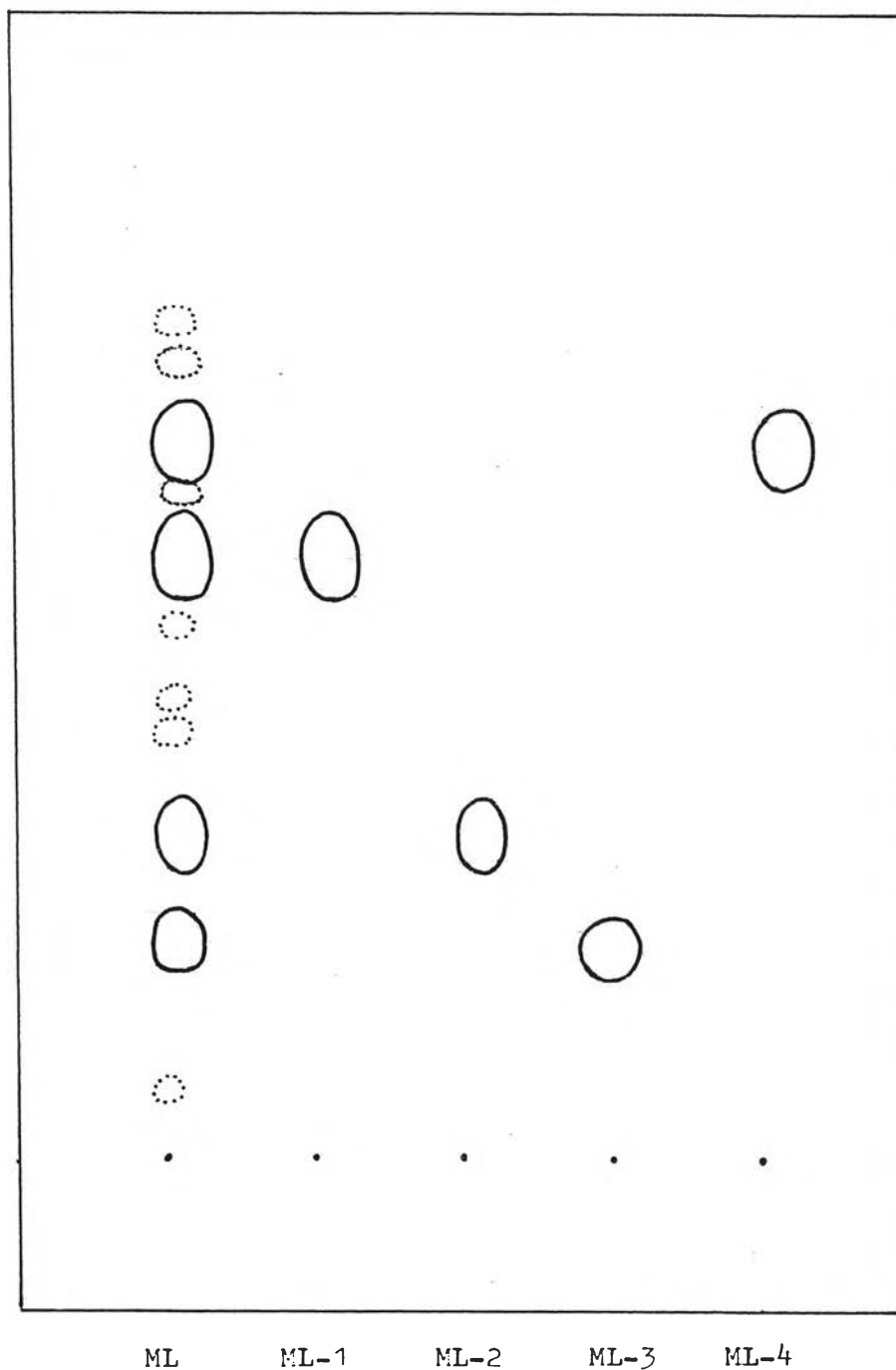


Figure 3.1 Thin-layer chromatogram of isolated compounds from *Michelia longifolia* Blume stem bark.



b) silica gel G / benzene : ethyl acetate  
(9:1)

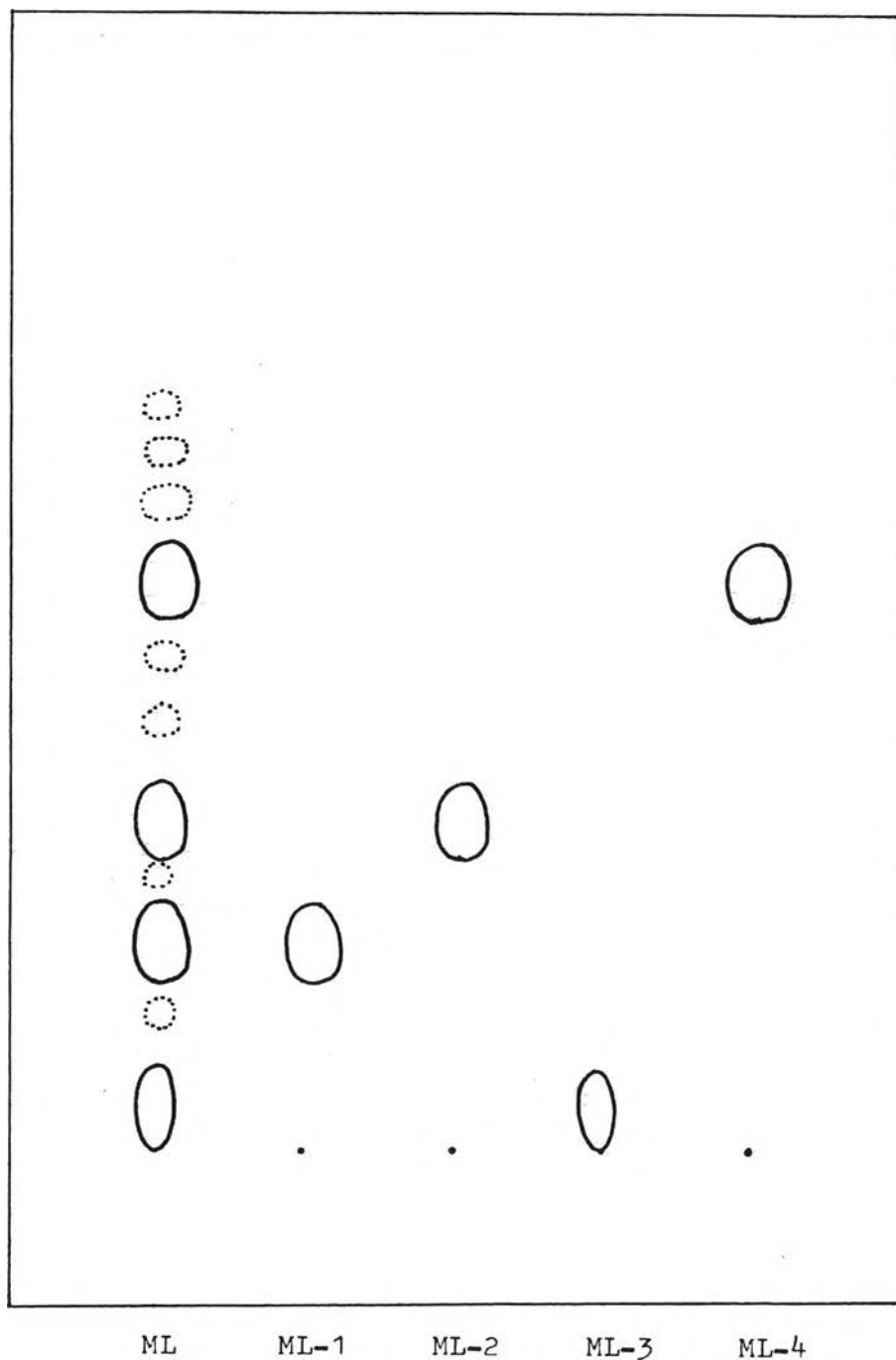


Figure 3.2 Thin-layer chromatogram of isolated compounds from  
*Michelia longifolia* Blume stem bark.

c) silica gel G / chloroform : ethyl acetate

(7:3)

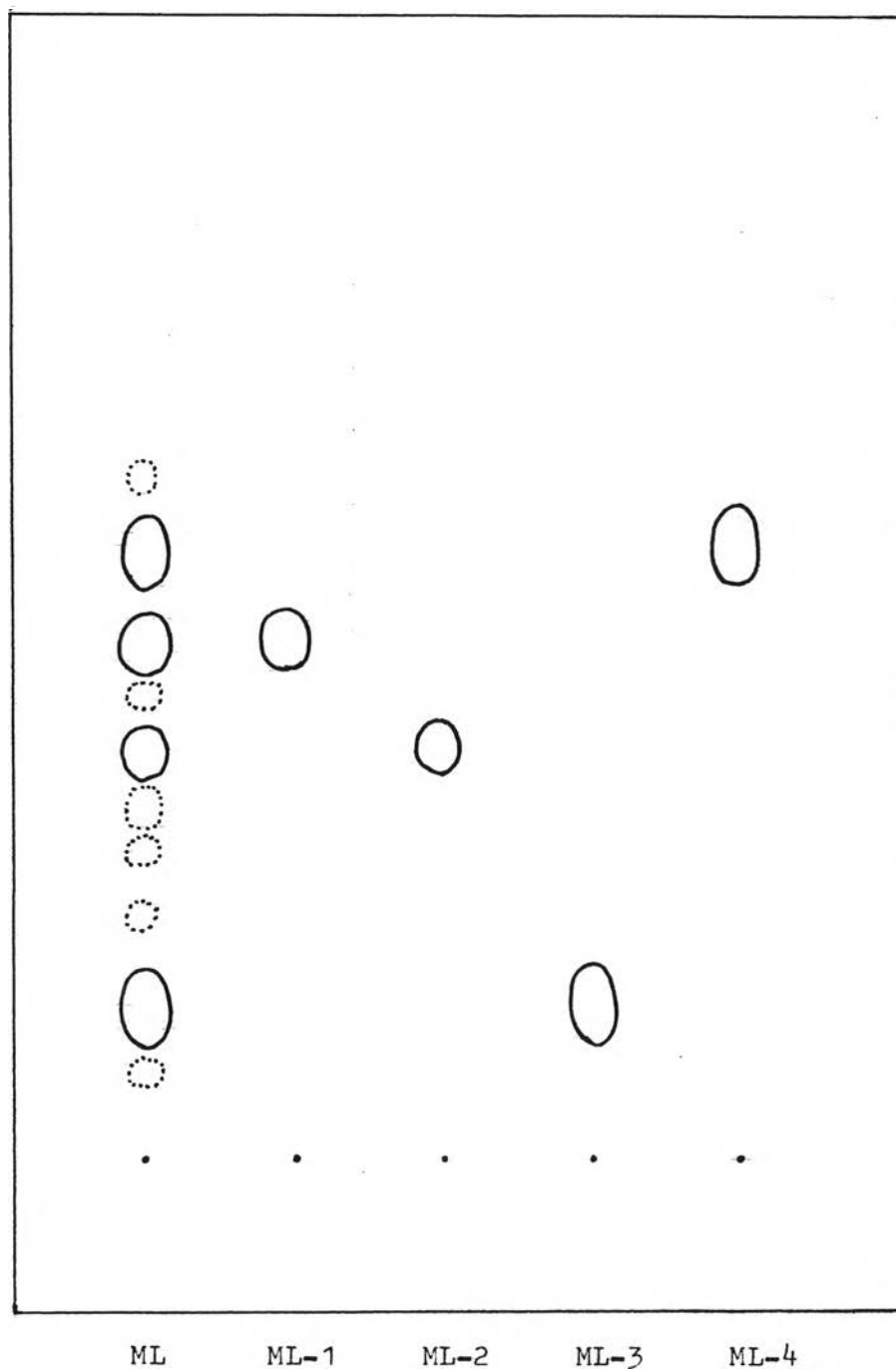


Figure 3.3 Thin-layer chromatogram of isolated compounds from *Michelia longifolia* Blume stem bark.

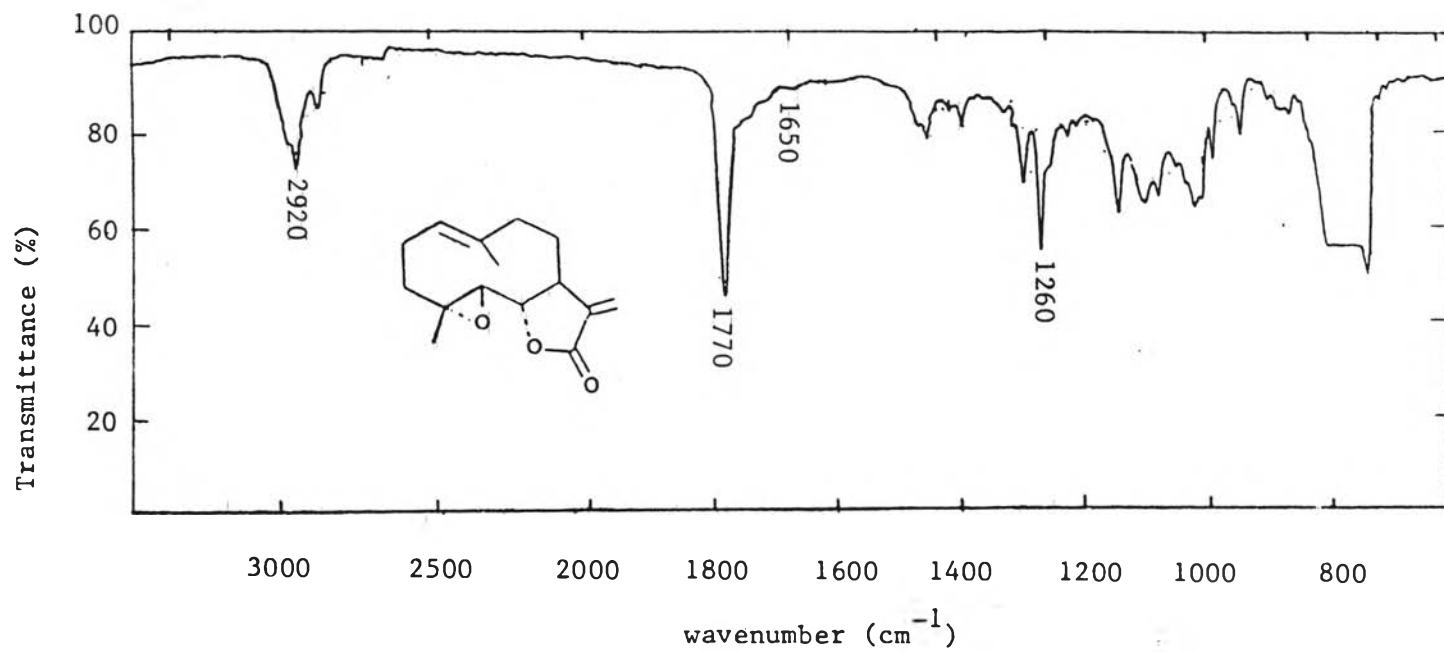
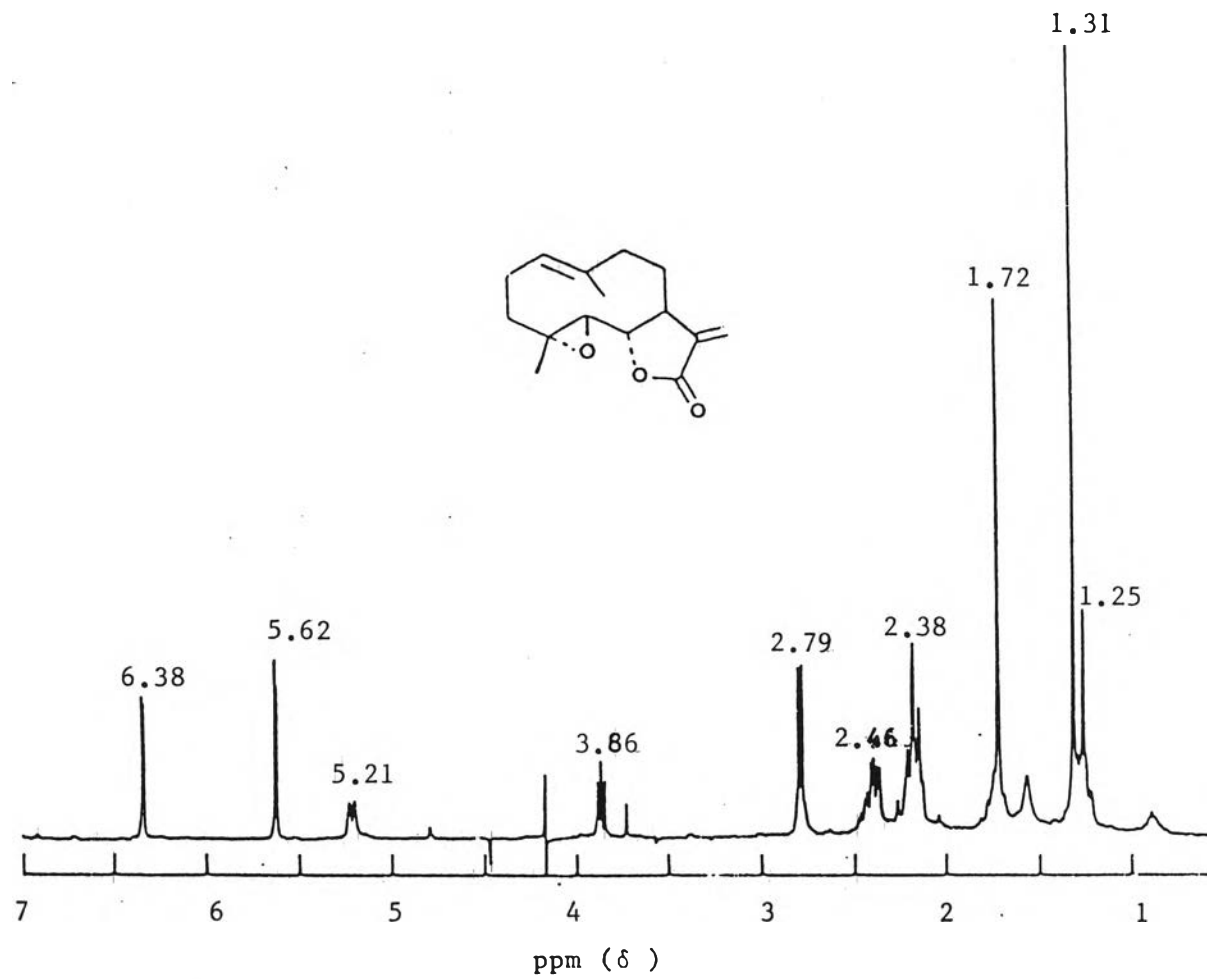


Figure 3.4 . Infrared absorption spectrum of ML-1 from *Michelia longifolia* Blume stem bark in CCl<sub>4</sub>



**Figure 3.5** <sup>1</sup>H - nuclear magnetic resonance (400 MHz) of ML-1 from *Michelia longifolia* Blume stem bark in CDCl<sub>3</sub>.

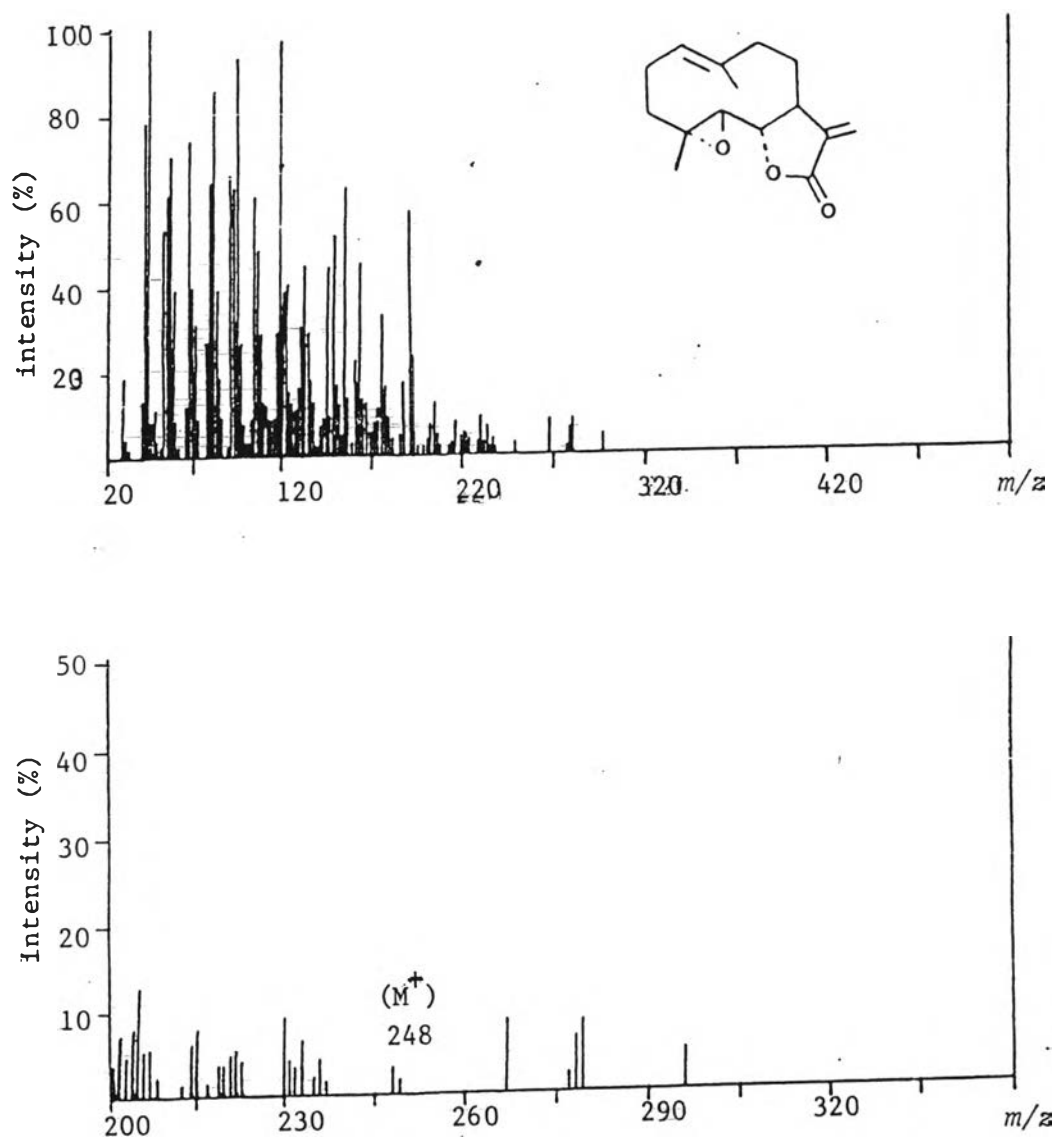


Figure 3.6 Electron impact mass spectrum of ML-1 from *Michelia longifolia* Blume stem bark.

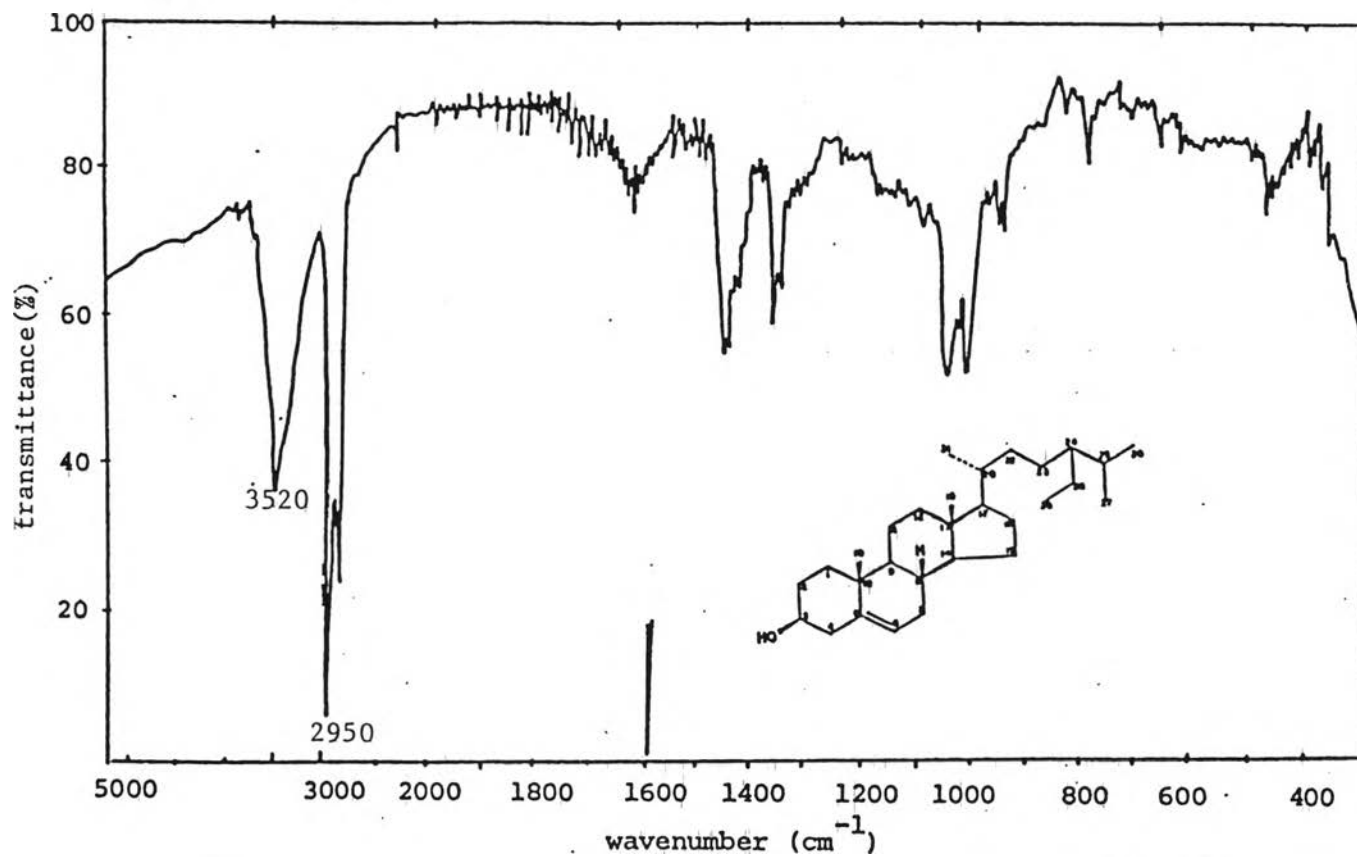


Figure 3.7 Infrared absorption spectrum of ML-2 from *Michelia longifolia* Blume stem bark in KBr disc.

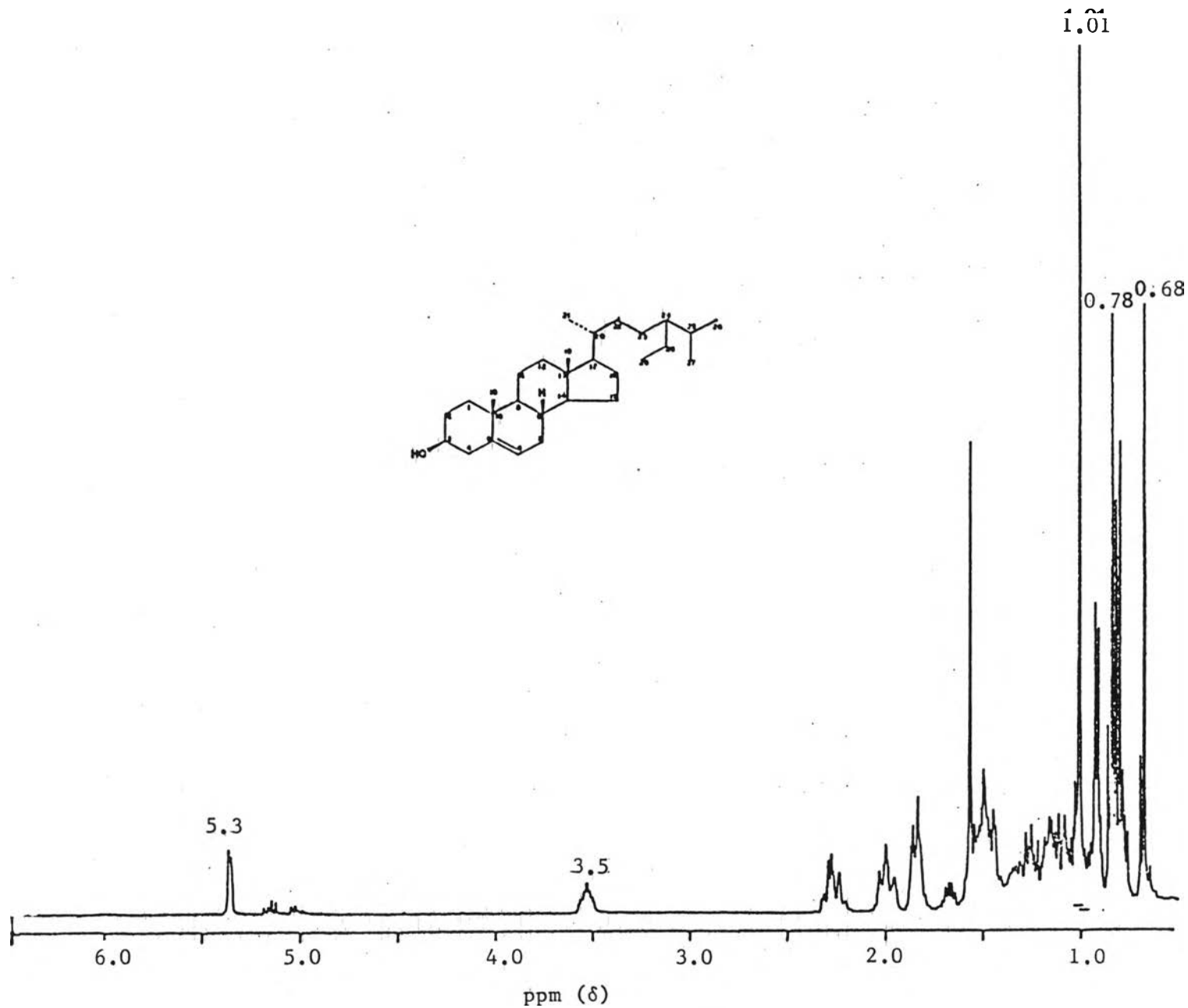


Figure 3.8 <sup>1</sup>H-Nuclear magnetic resonance spectrum (400 MHz) of ML-2 from *Michelia longifolia* Blume stem bark in CDCl<sub>3</sub>.

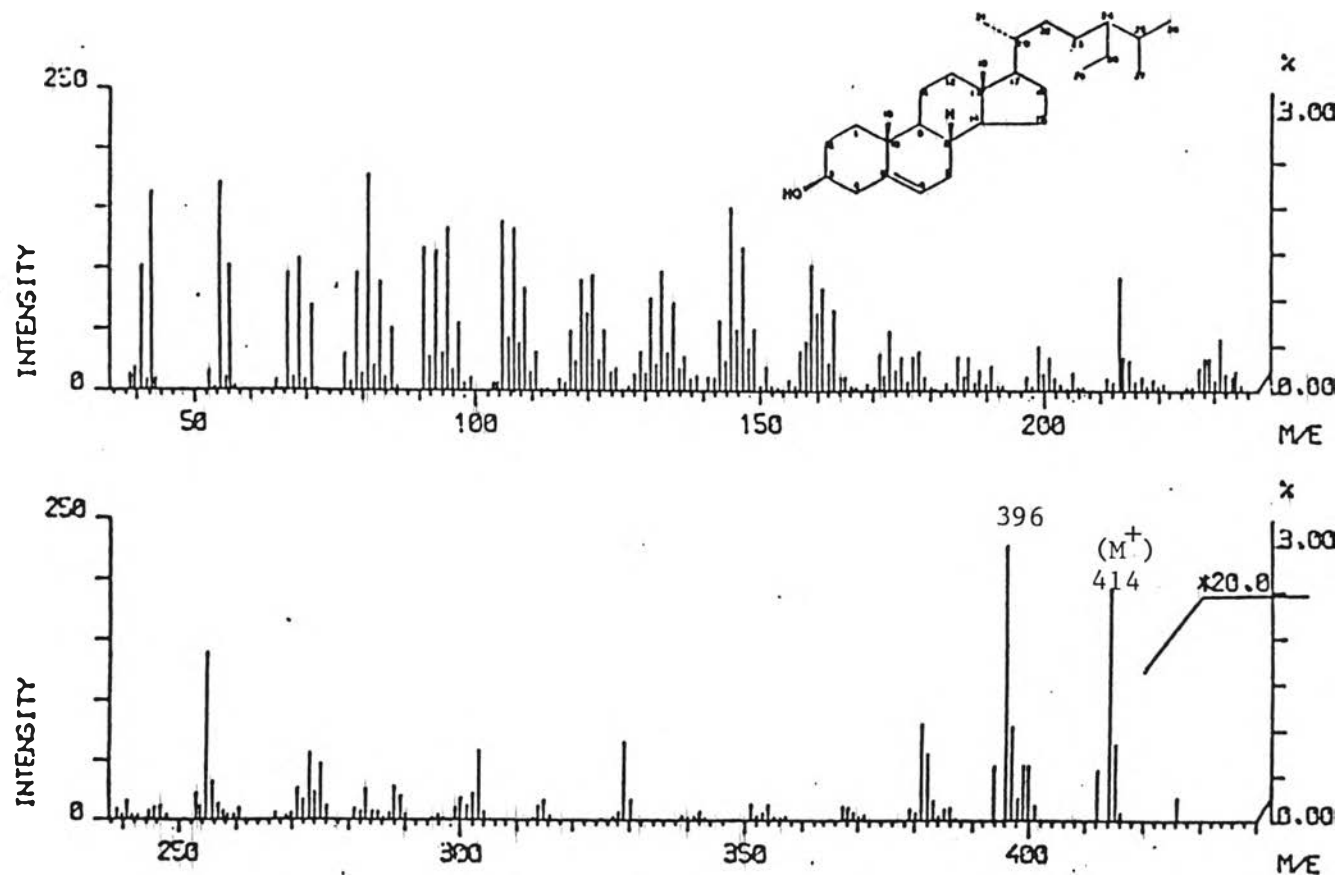


Figure 3.9 Electron impact mass spectrum of ML-2 from *Michelia longifolia*  
Blume stem bark.



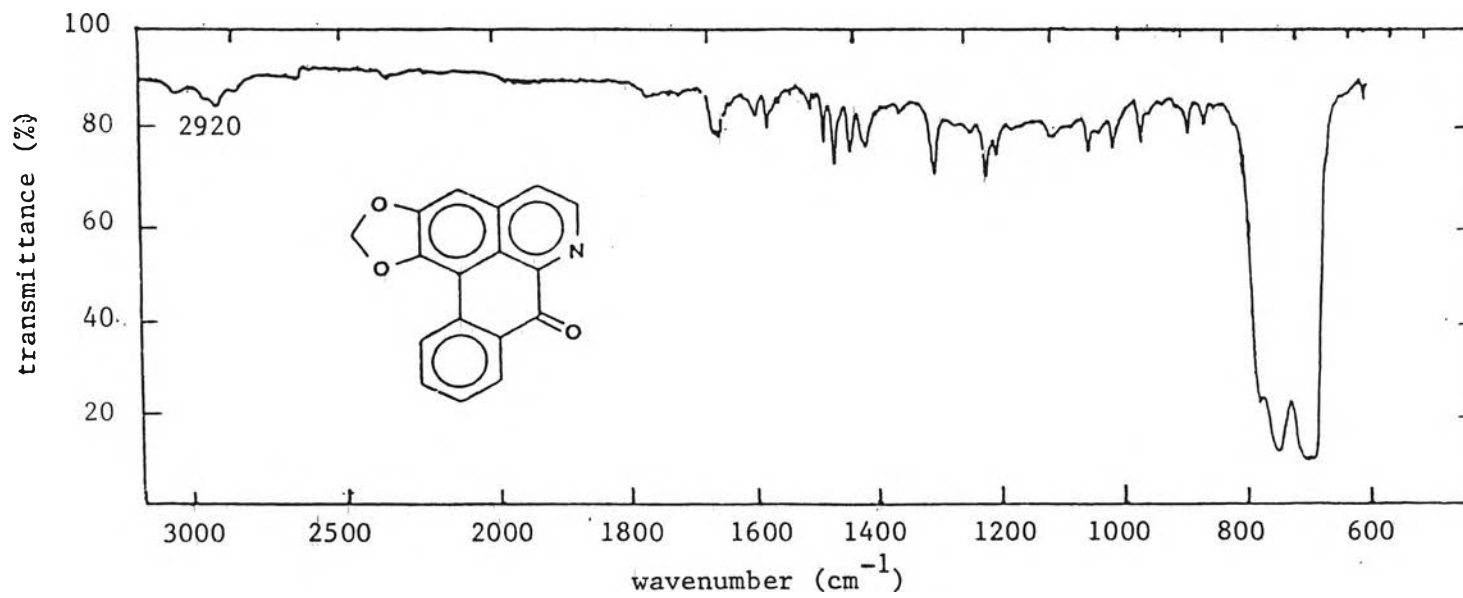
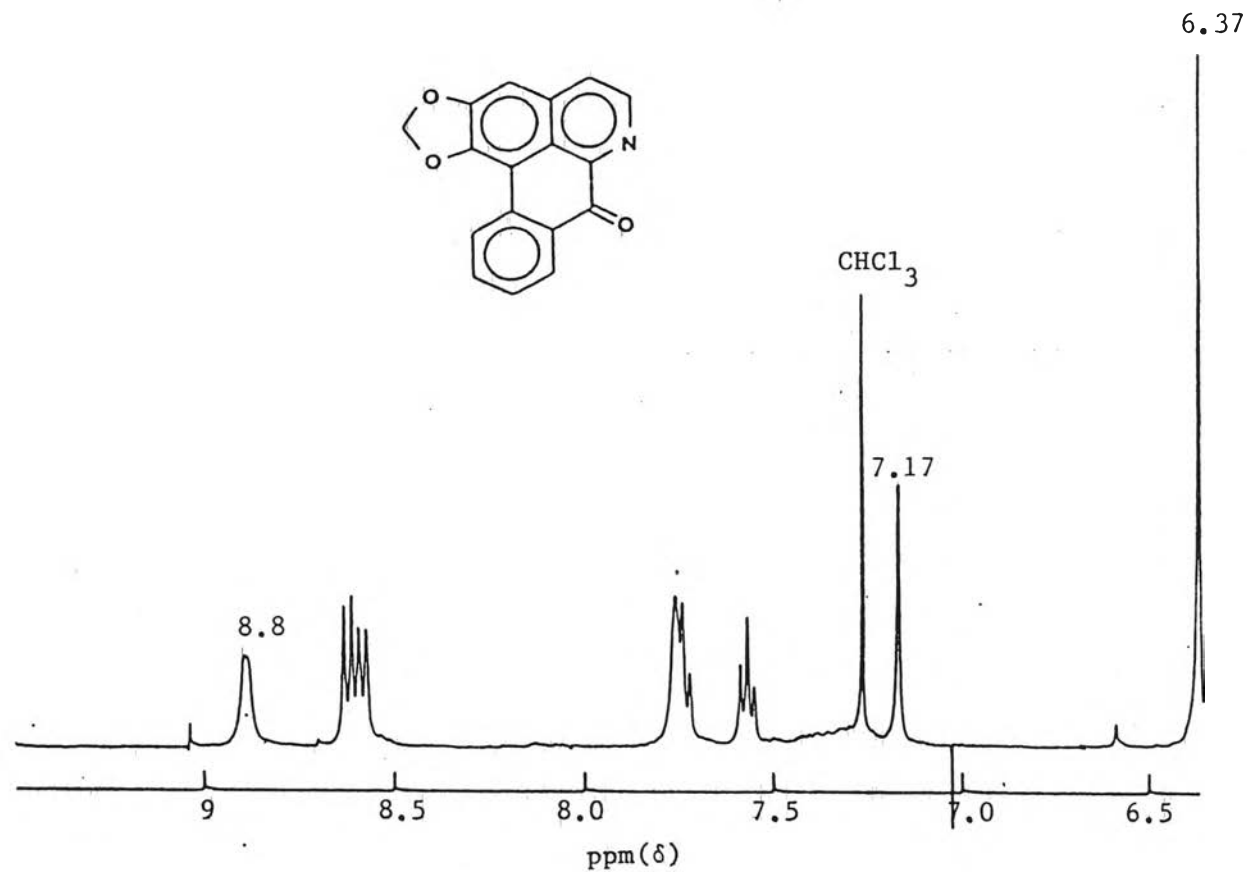


Figure 3.10 Infrared absorption spectrum of ML-3 from *Michelia longifolia* Blume stem bark in CH<sub>2</sub>Cl<sub>2</sub>.



**Figure 3.11** <sup>1</sup>H-Nuclear magnetic resonance spectrum (400 MHz) of ML-3 from *Michelia longifolia* Blume stem bark in CDCl<sub>3</sub>.

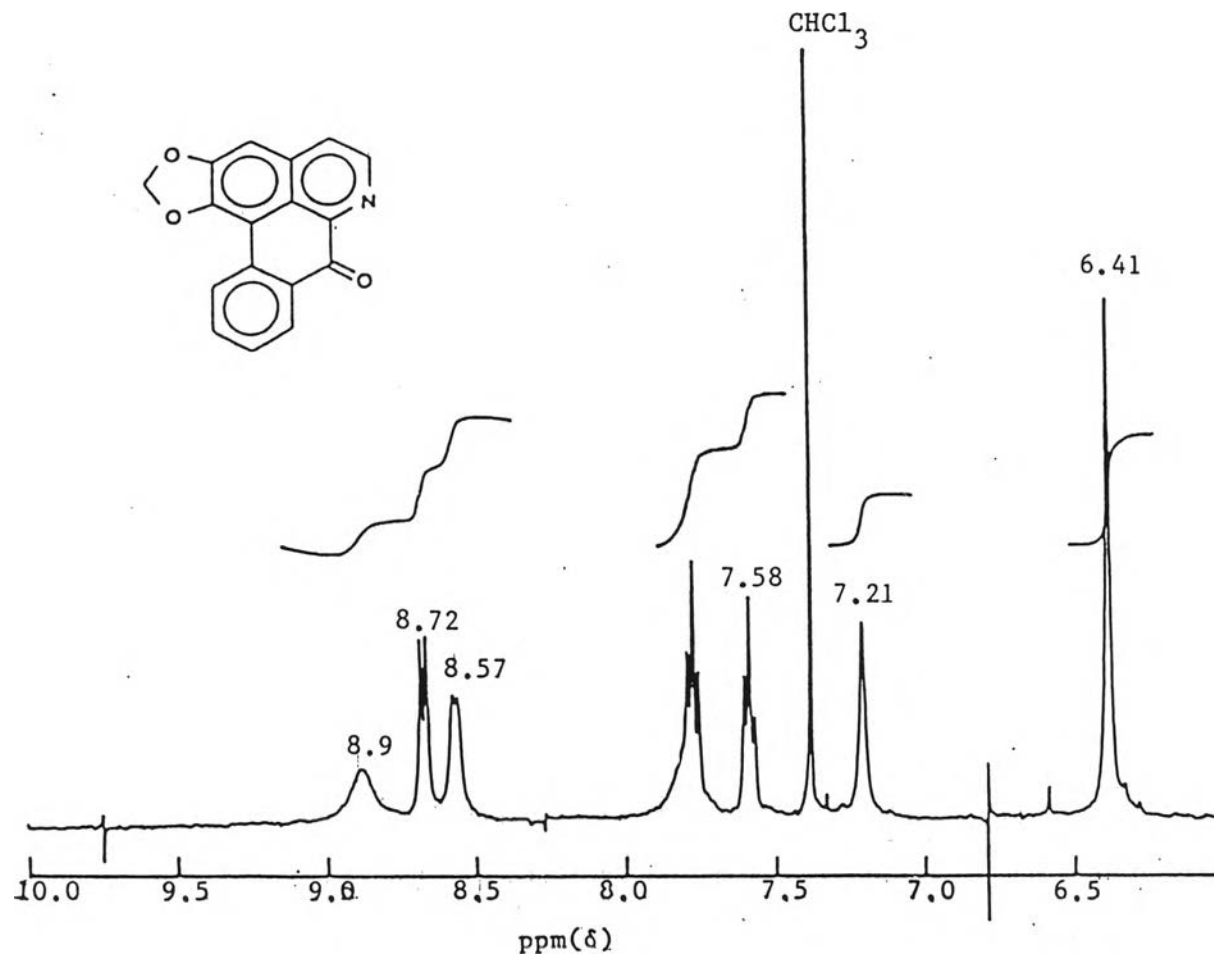


Figure 3.12  $^1\text{H}$ -Nuclear magnetic resonance spectrum (400 MHz) of ML-3 from *Michelia longifolia* Blume stem bark in 10 %  $\text{DMSO-d}_6$  in  $\text{CDCl}_3$ .

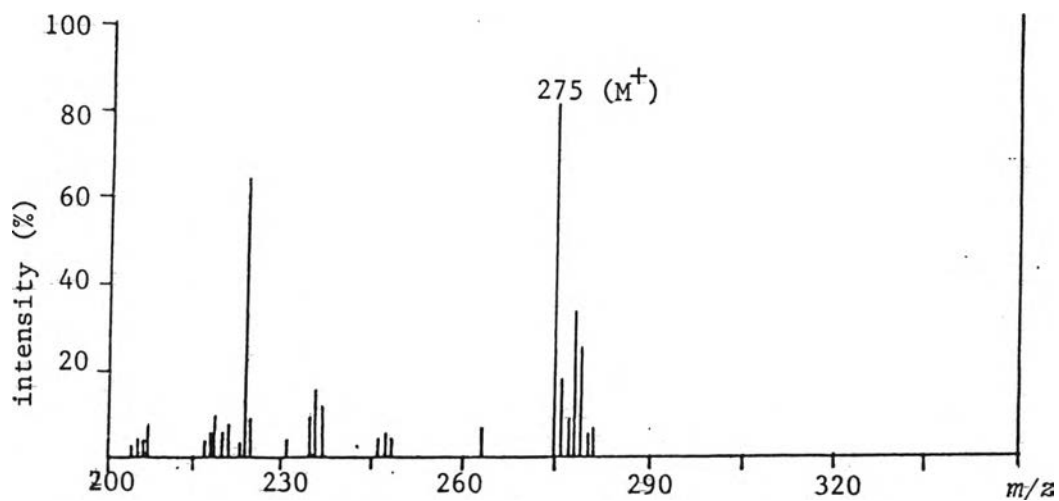
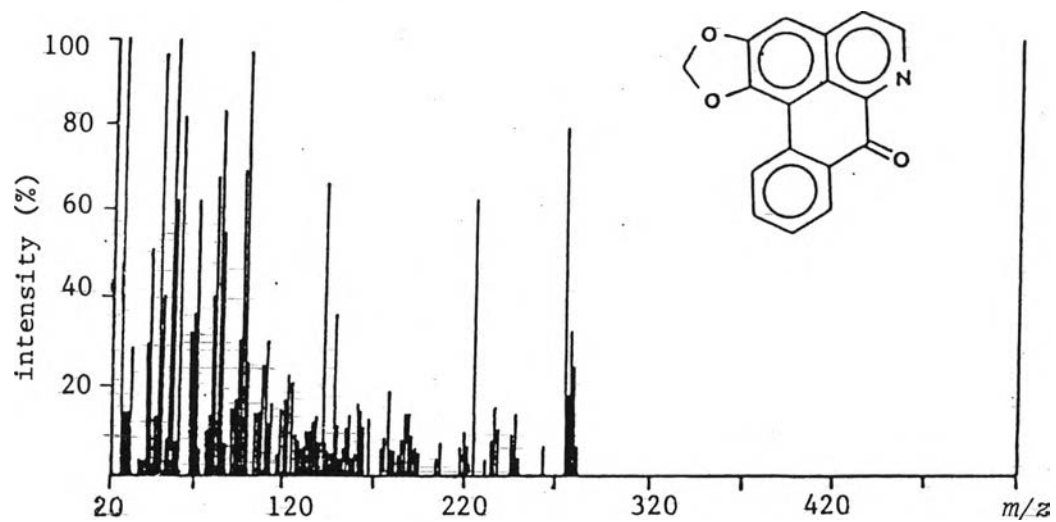


Figure 3.13 Electron impact mass spectrum of ML-3 from *Michelia longifolia* Blume stem bark.

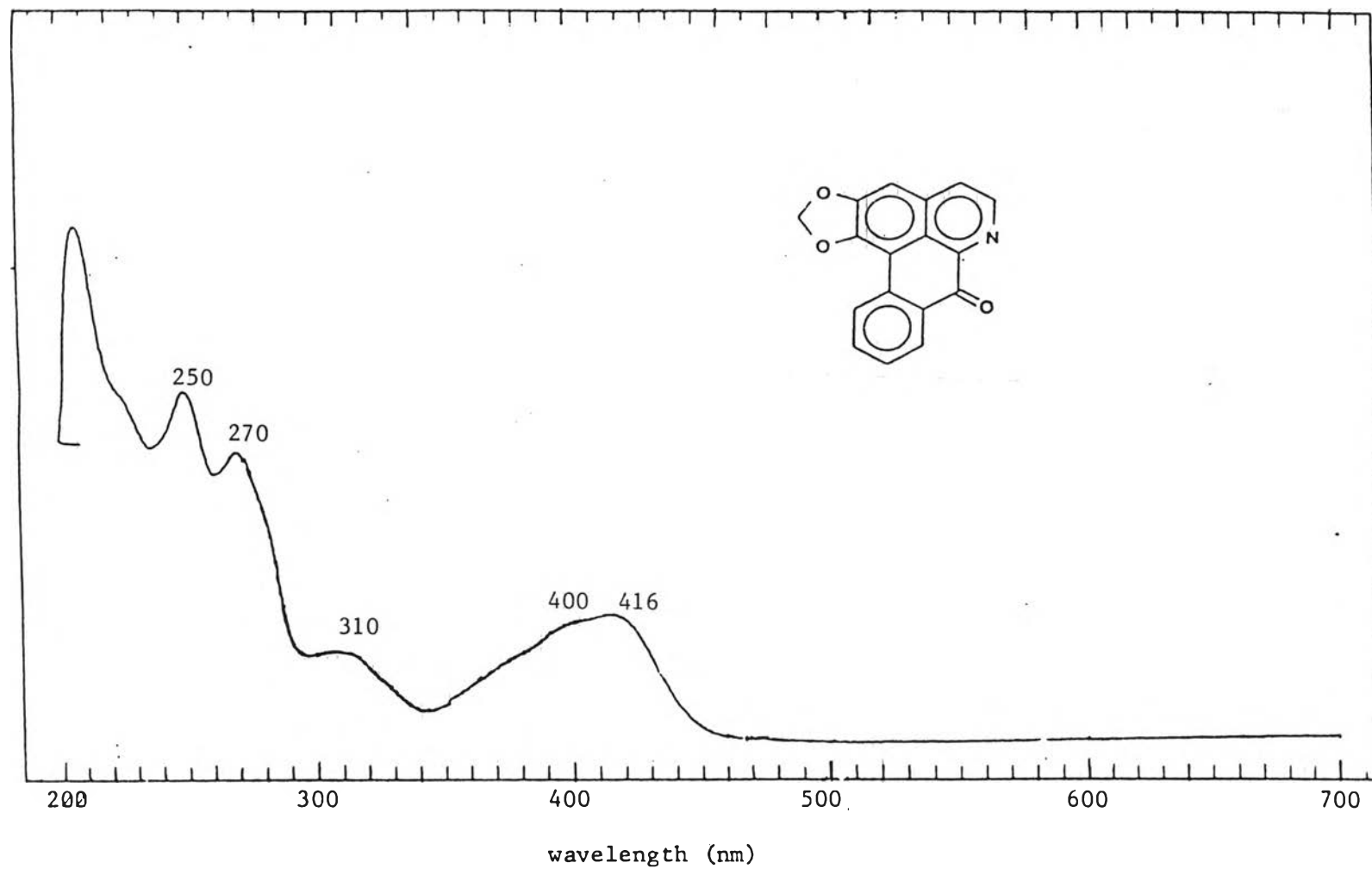


Figure 3.14 Ultraviolet absorption spectrum of ML-3 from *Michelia longifolia* Blume stem bark in 95 % ethanol.

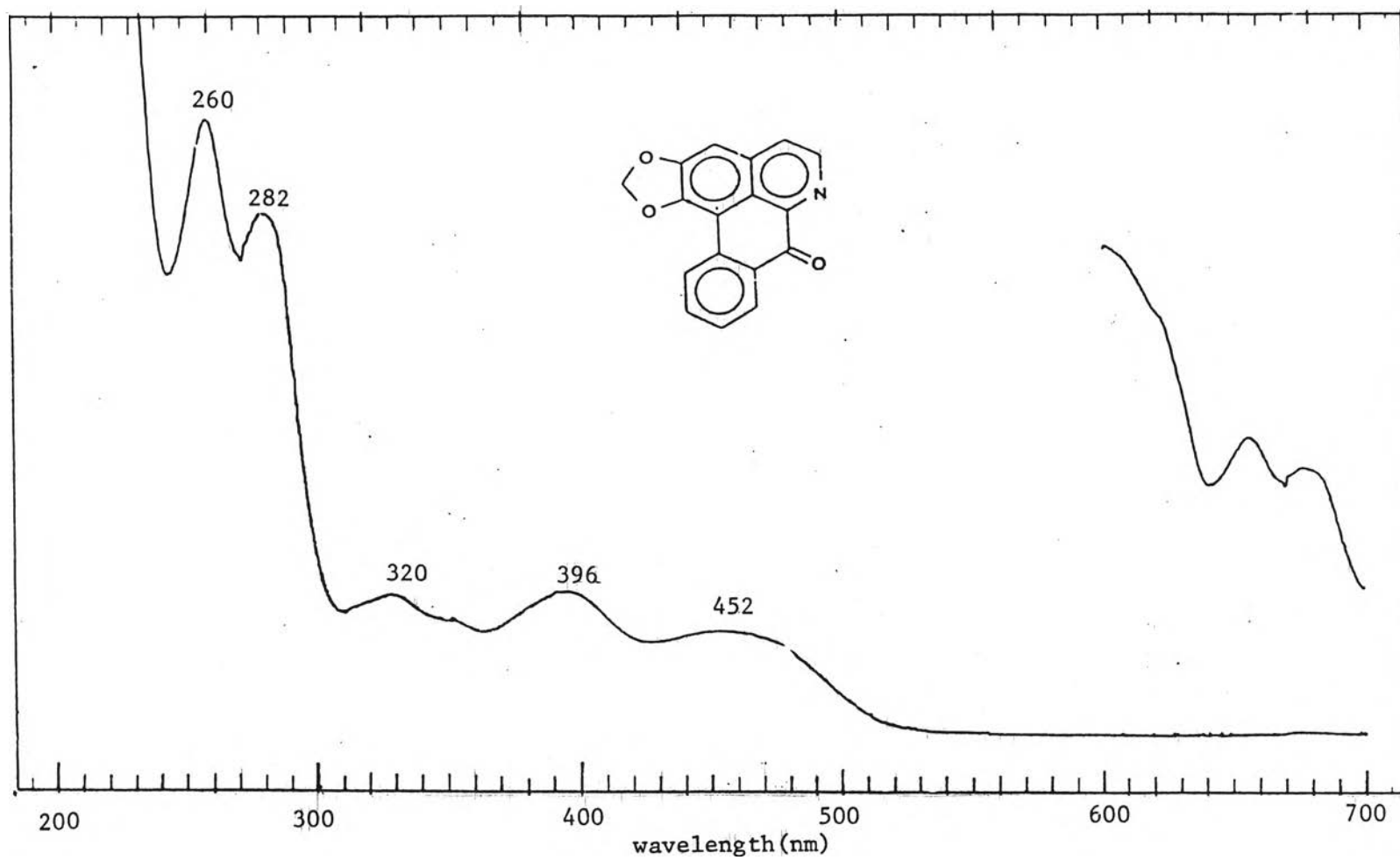


Figure 3.15 Ultraviolet absorption spectrum of ML-3 from *Michelia longifolia* Blume stem bark in 0.1 N HCl in ethanol.

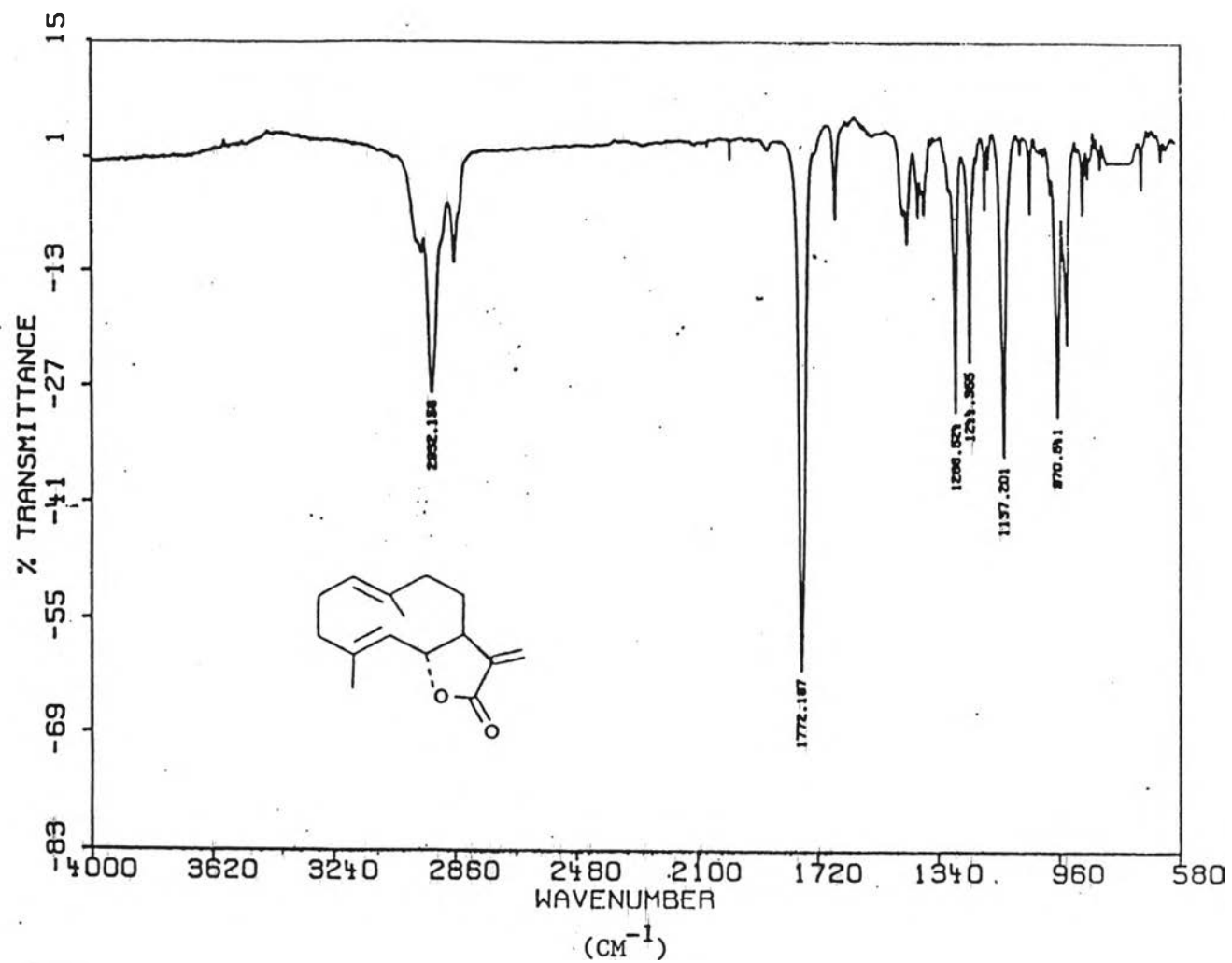


Figure 3.16 Infrared absorption spectrum of ML-4 from *Michelia longifolia* Blume stem bark in  $\text{CCl}_4$ .

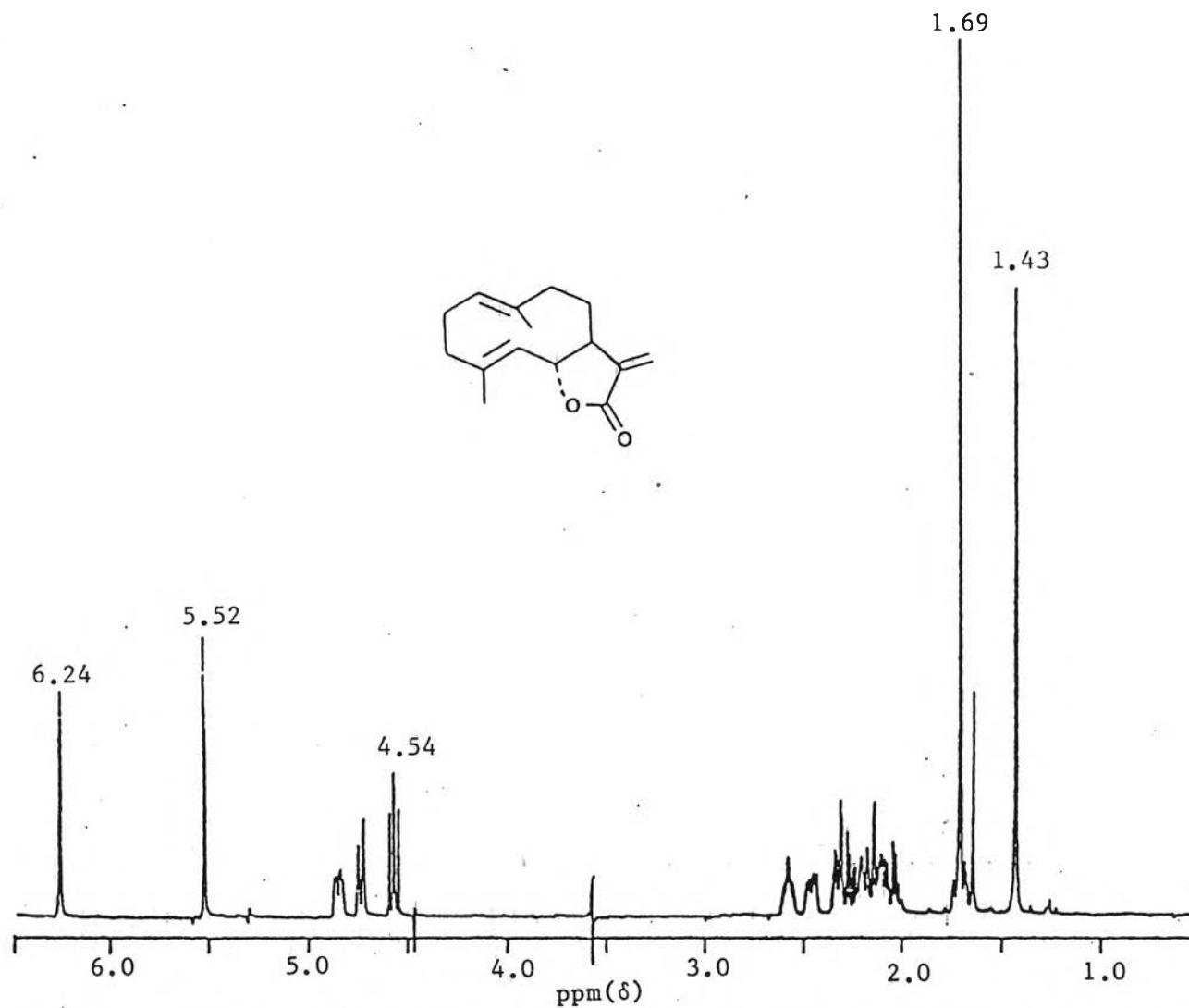


Figure 3.17  $^1\text{H}$ -Nuclear magnetic resonance (400 MHz) of ML-4 from *Michelia longifolia* Blume stem bark in  $\text{CDCl}_3$ .



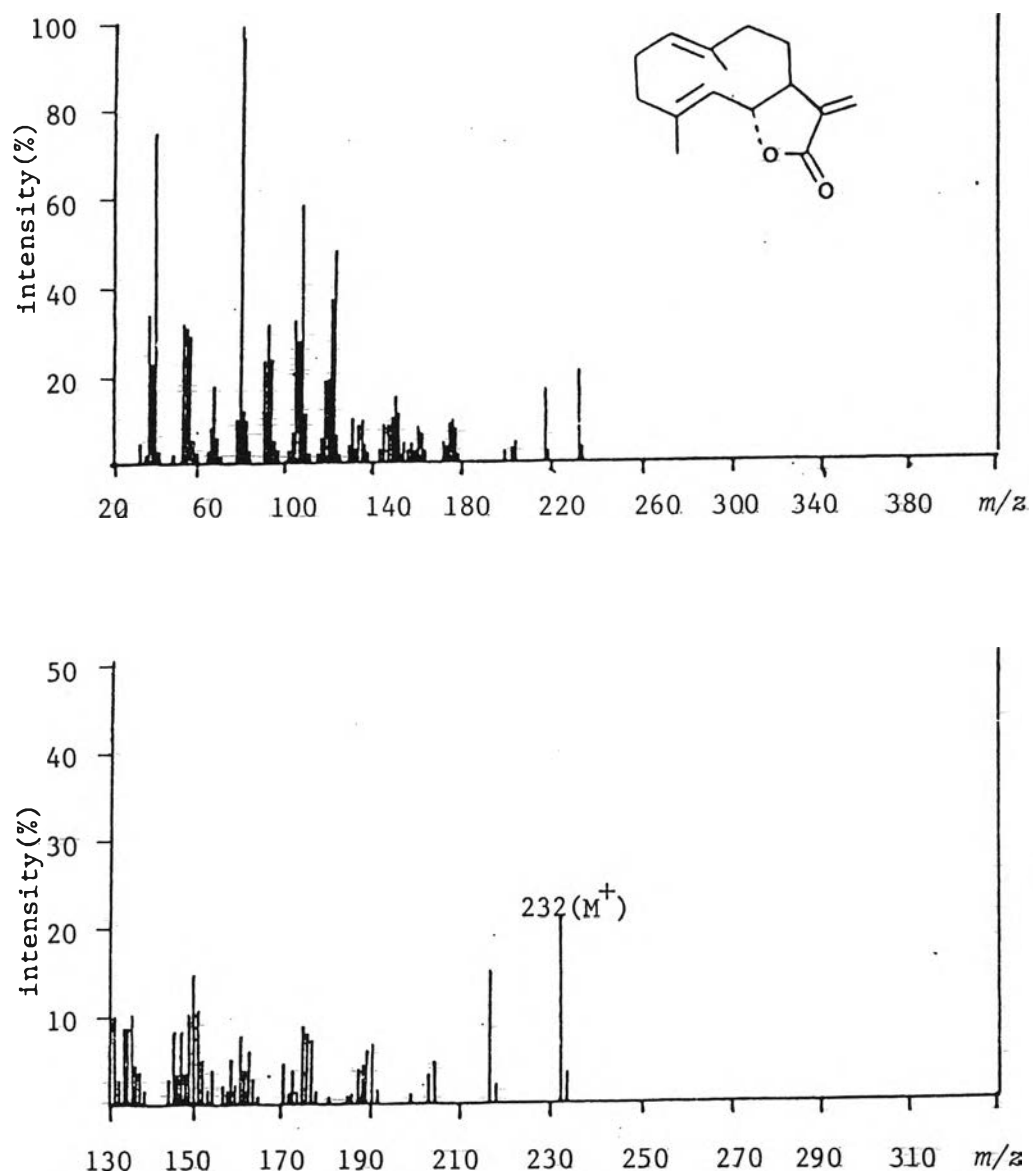


Figure 3.18 Electron impact mass spectrum of ML-4 from  
*Michelia longifolia* Blume stem bark.

## VITA

Miss Malee Boriboon was born on January 10, 1957 in Sri Sa Ket Province, Thailand. She obtained her Bachelor of Science in Pharmacy in 1980 from the Faculty of Pharmacy, Mahidol University, Bangkok, Thailand. At present, she is a quality control pharmacist of Thai-Sankyo Co. Ltd.

