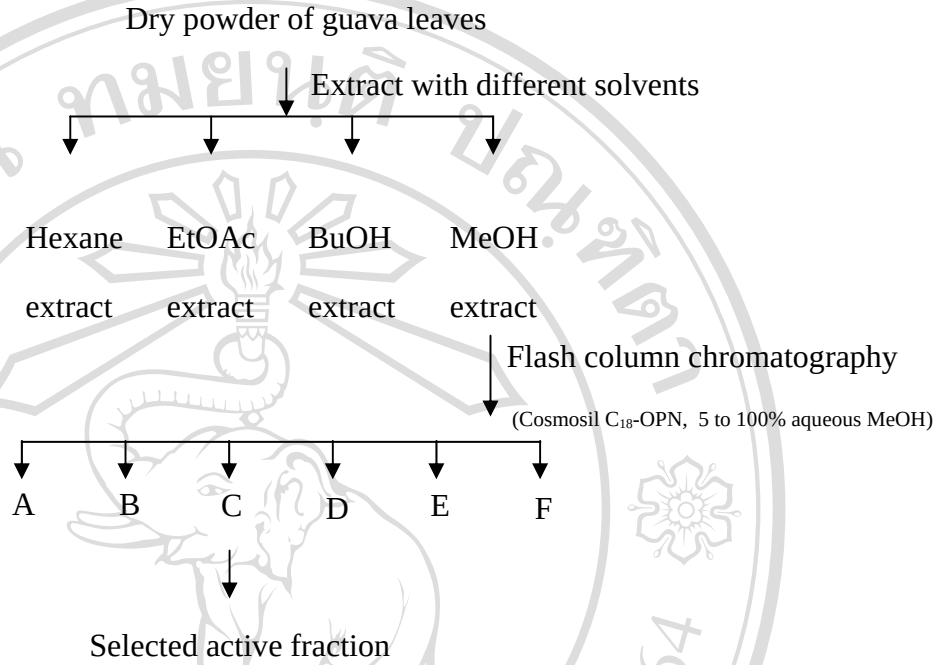
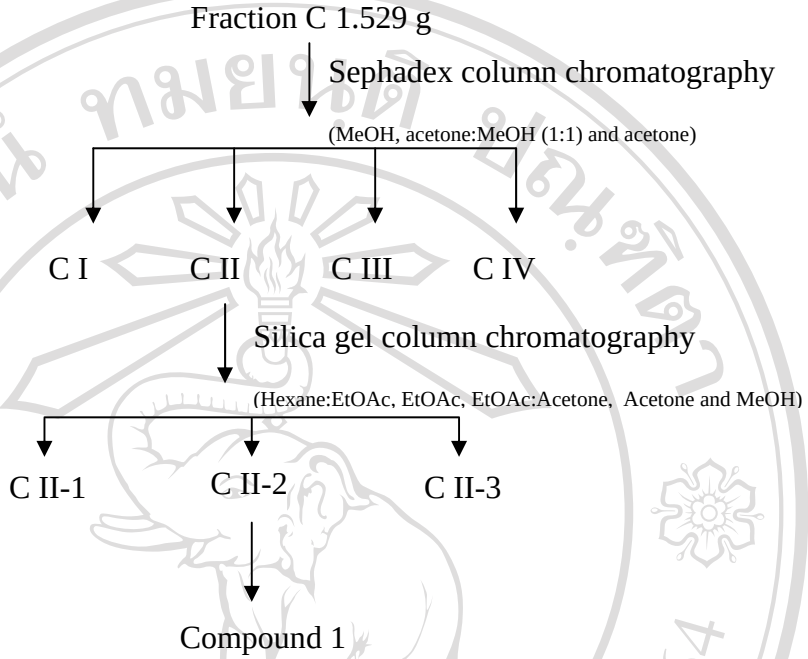
APPENDIX

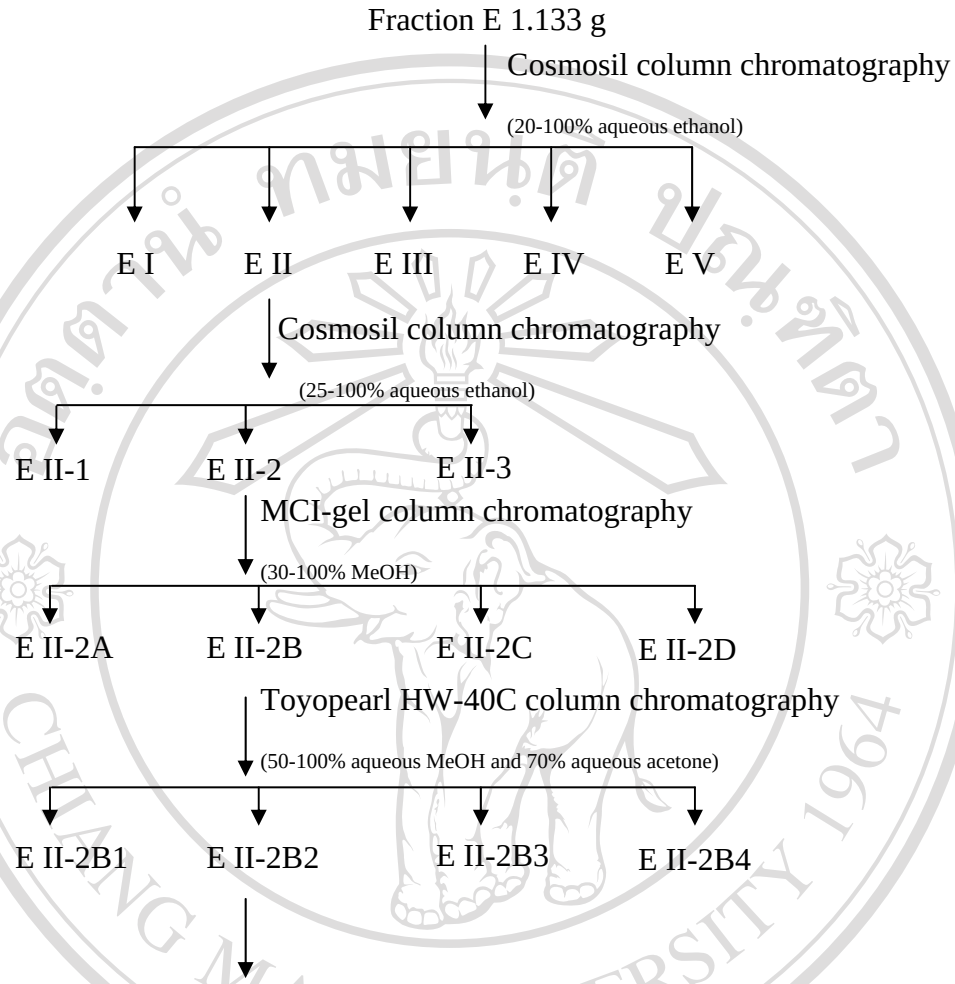
Scheme 1 A The fractionation and Isolation of guava leaves



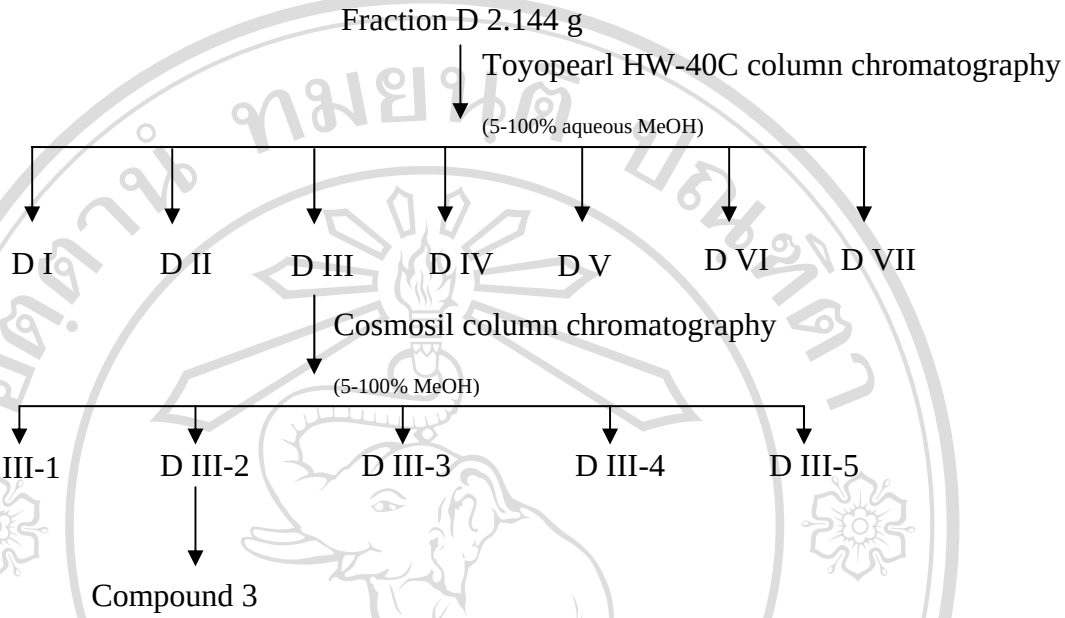
Scheme 2 A The Isolation of fraction C from guava leaves



Scheme 3 A The Isolation of fraction E from guava leaves



Scheme 4 A The Isolation of fraction D from guava leaves



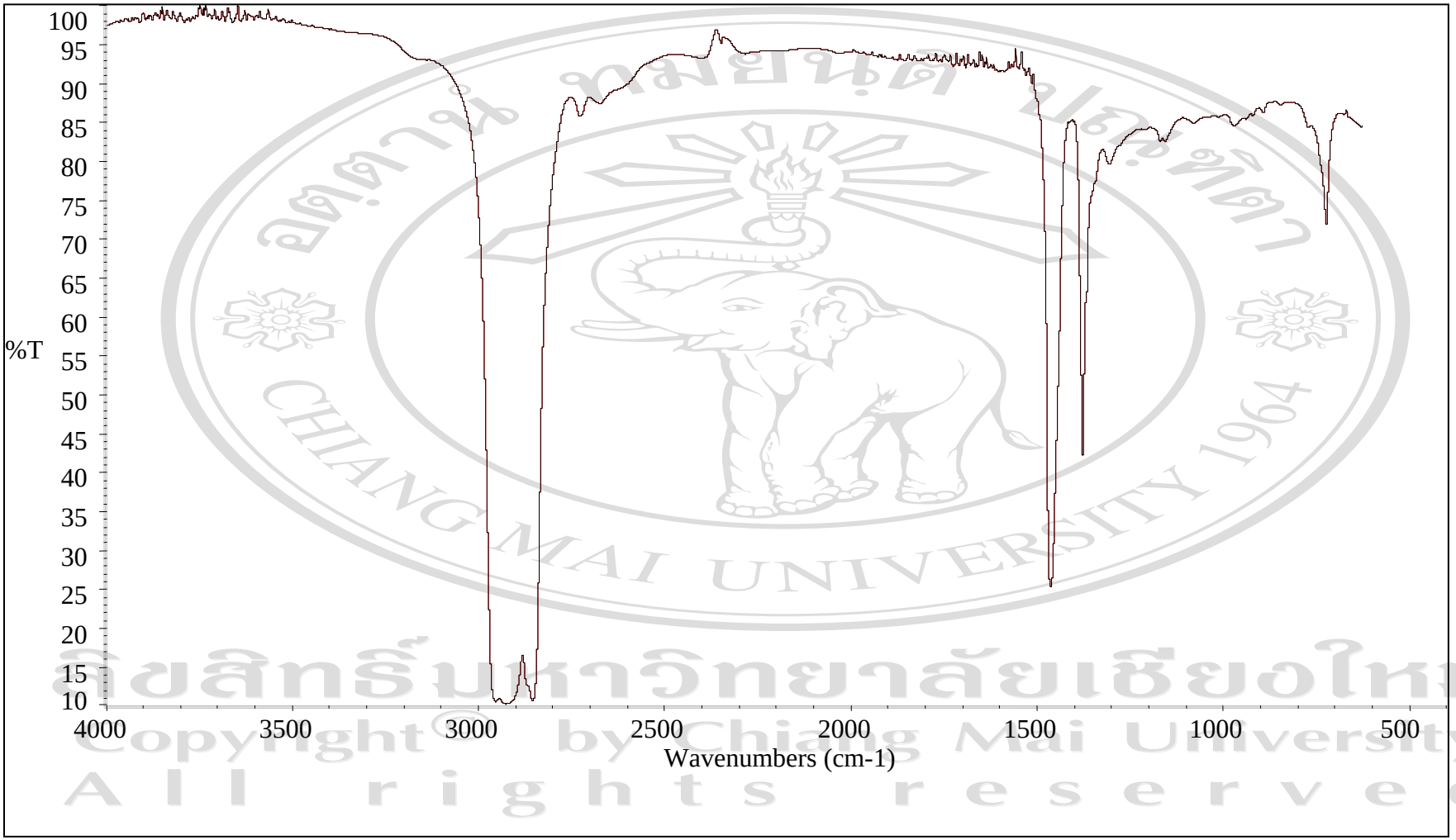


Figure 1 A IR spectrum of methanol crude extract from *Psidium guajava* leaves

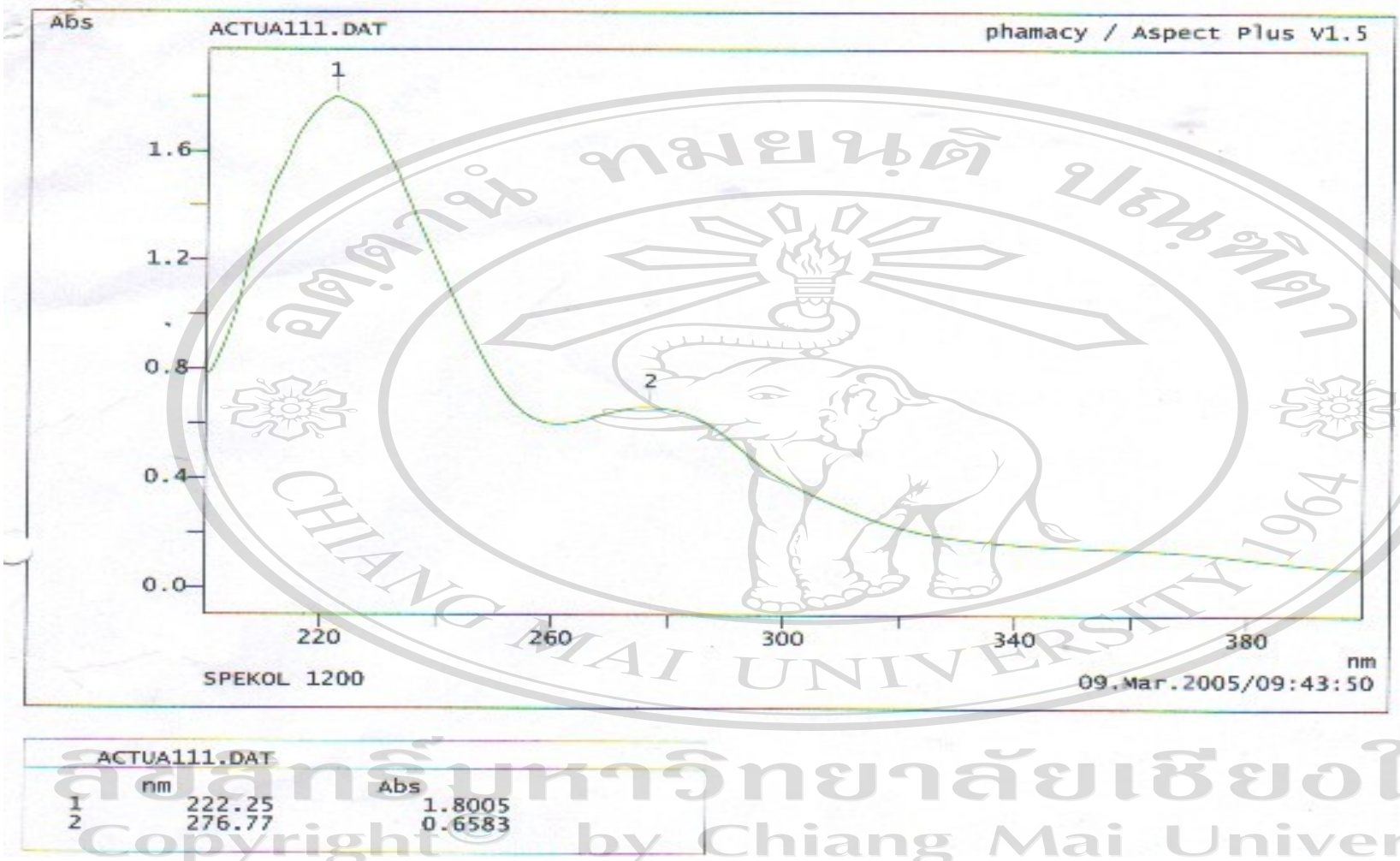


Figure 2 A UV spectrum of methanol crude extract from *Psidium guajava* leaves

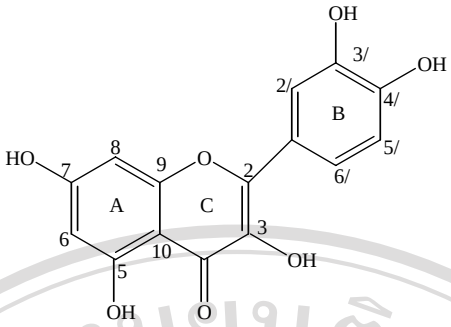


Figure 3 A The structure of Compound 1 = Quercetin ($C_{15}H_{10}O_7$, M.W. = 302)

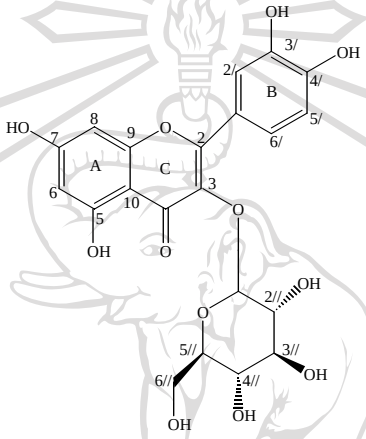


Figure 4 A The structure of Compound 2 = Quercetin-3-O-glucopyranoside ($C_{21}H_{20}O_{12}$, M.W. = 464)

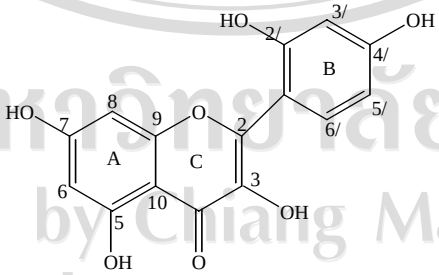


Figure 5 A The structure of Compound 3 = Morin ($C_{15}H_{10}O_7$, M.W. = 302)

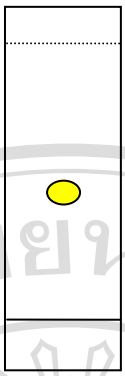


Figure 6 A TLC chromatogram of Compound 1

(acetone : water : acetic acid; 2:1:0.1, 10%sulfuric acid spraying reagent)

Figure 7 A TLC chromatogram of Compound 2

(methanol : water : acetic acid; 6:4:0.5, 10%sulfuric acid spraying reagent)

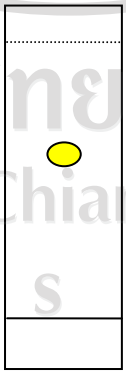


Figure 8 A TLC chromatogram of Compound 3

(methanol : water : acetic acid; 1:1:0.1, 10%sulfuric acid spraying reagent)

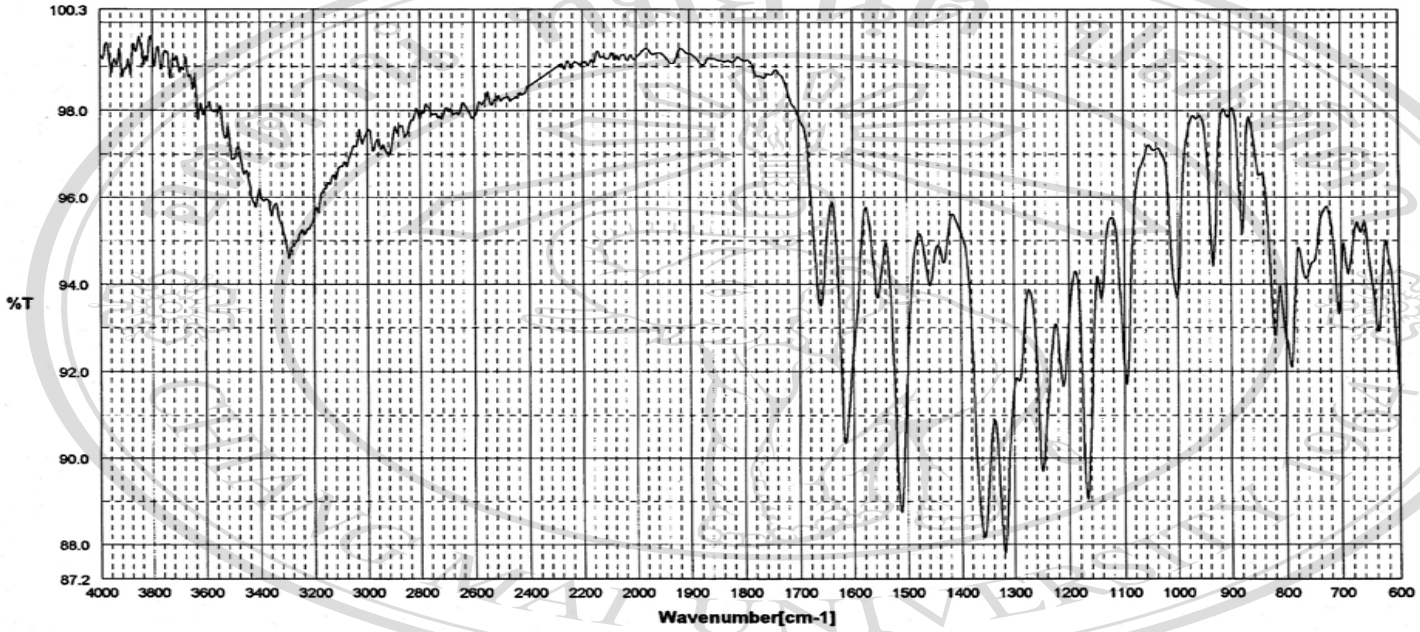


Figure 9 A IR spectrum of Compound 1

102

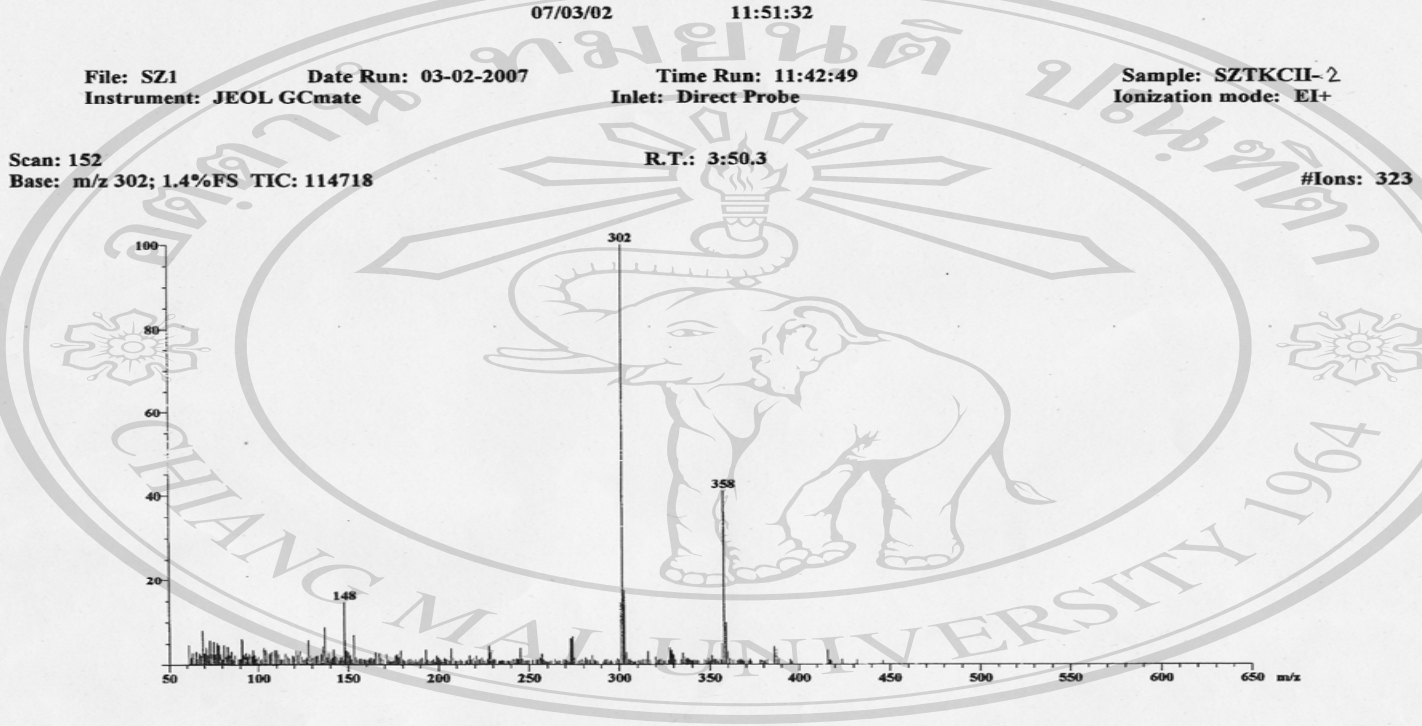


Figure 10 A MS spectrum of Compound 1

103

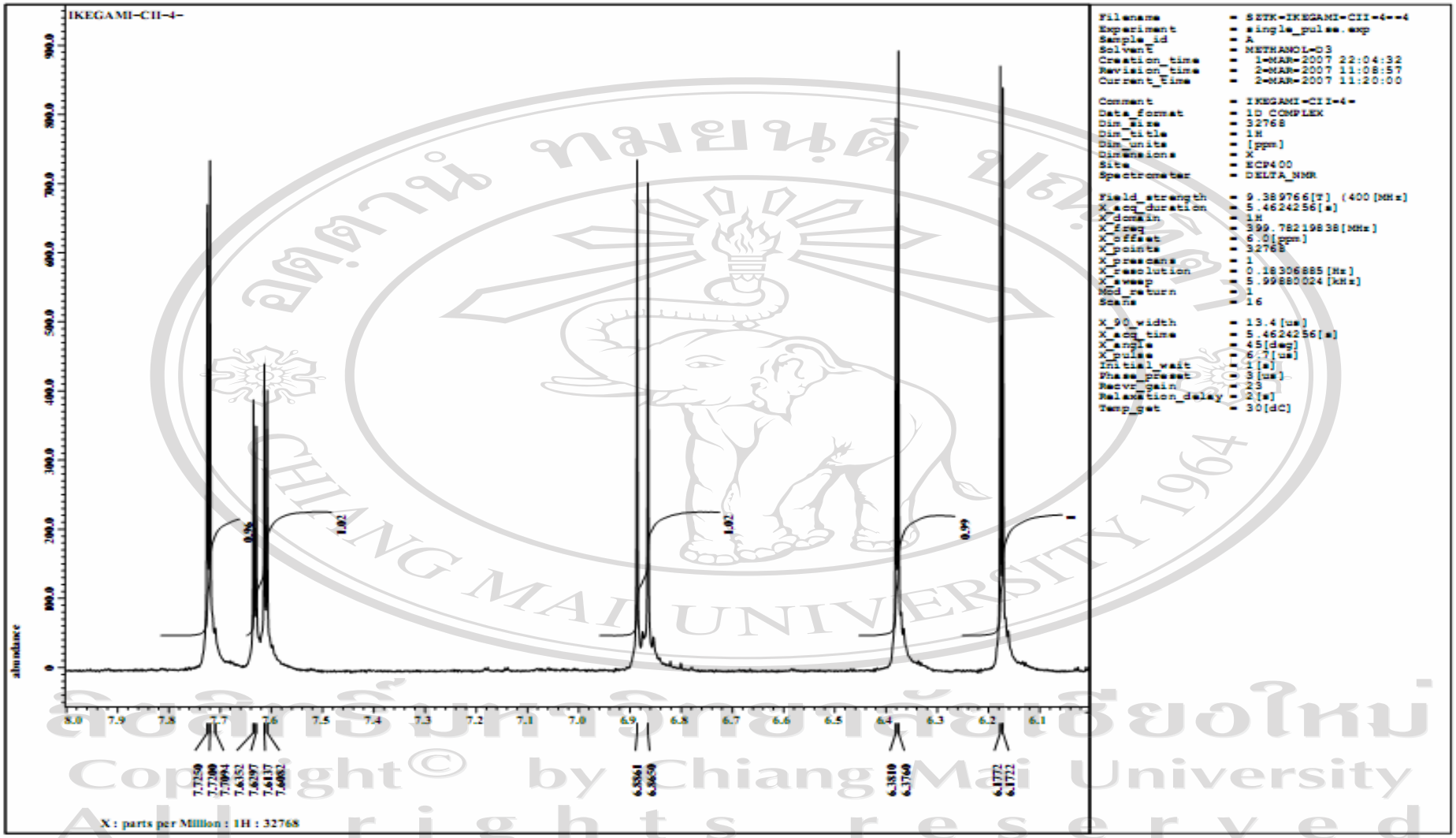


Figure 11 A ^{1}H spectrum of Compound 1

104

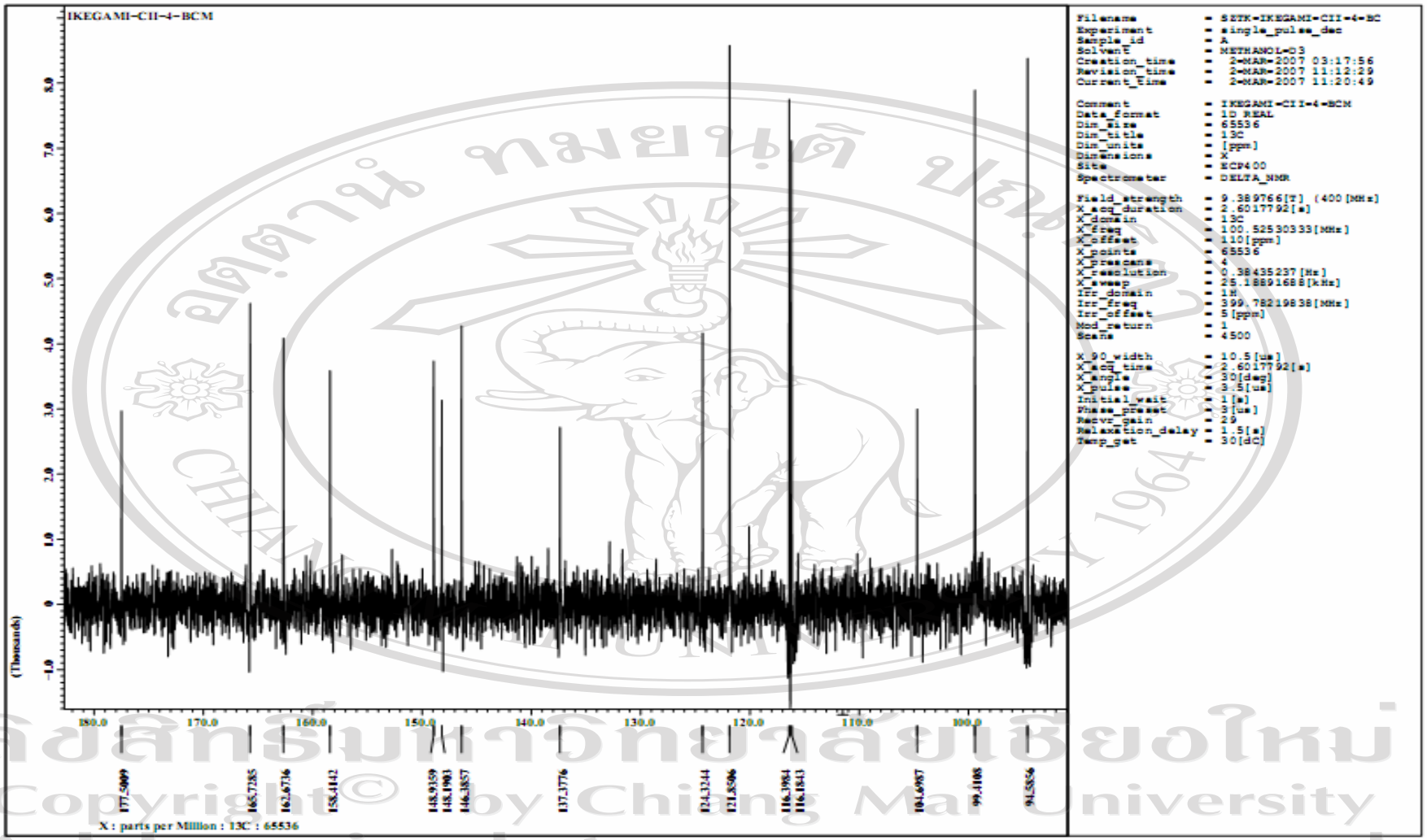


Figure 12 A ^{13}C spectrum of Compound 1

105

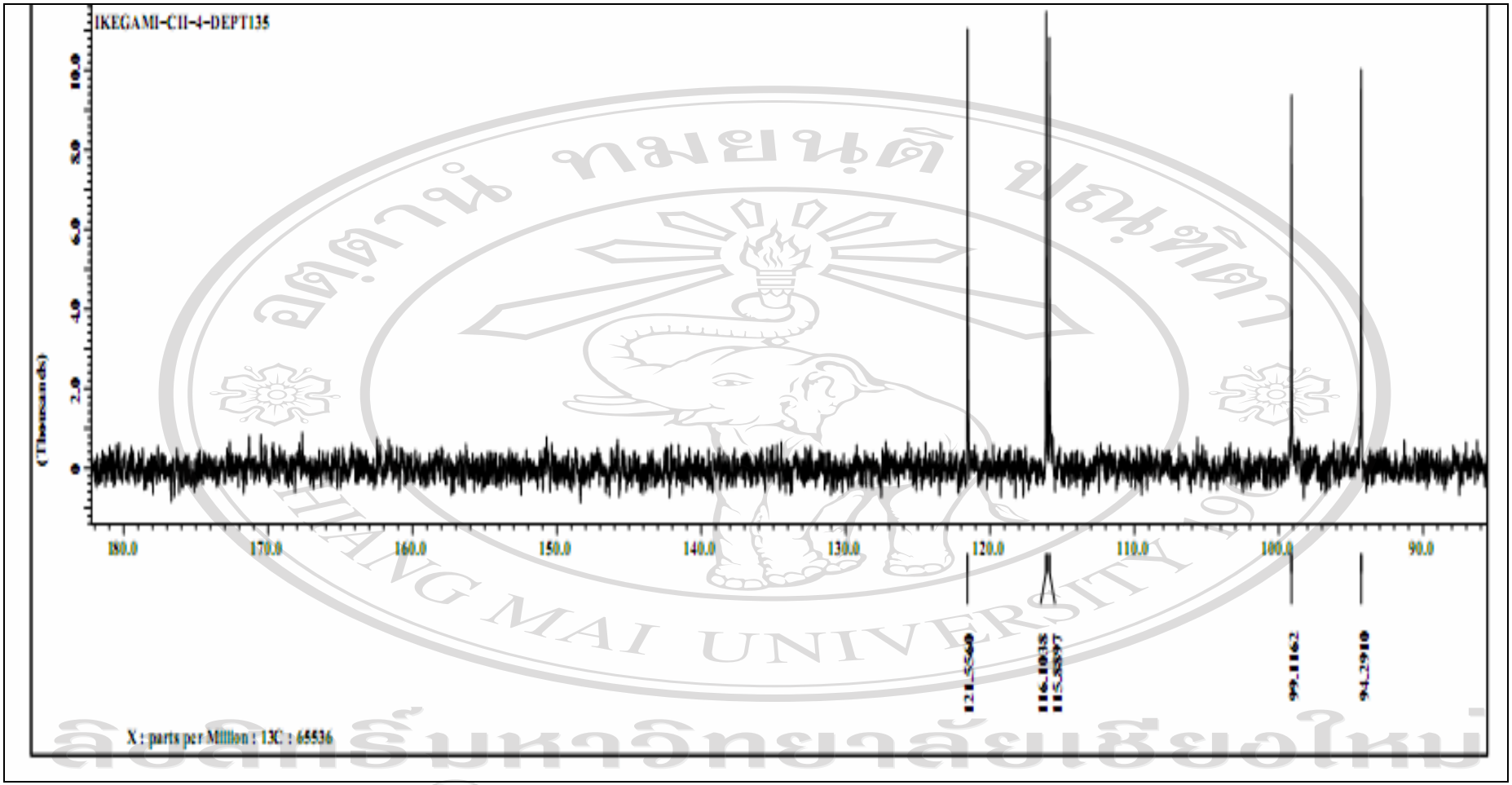


Figure 13 A ^{13}C DEPT135 spectrum of Compound 1

106

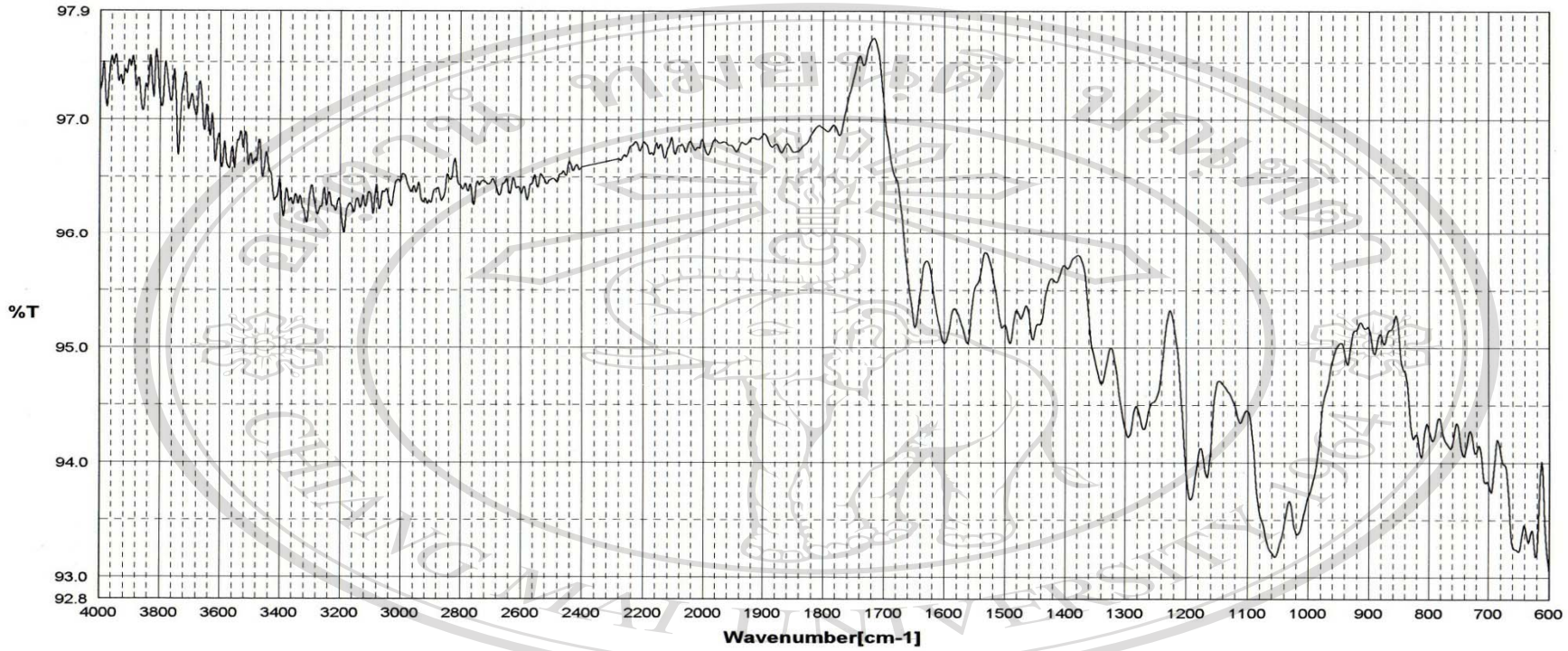


Figure 14 A IR spectrum of Compound 2

107

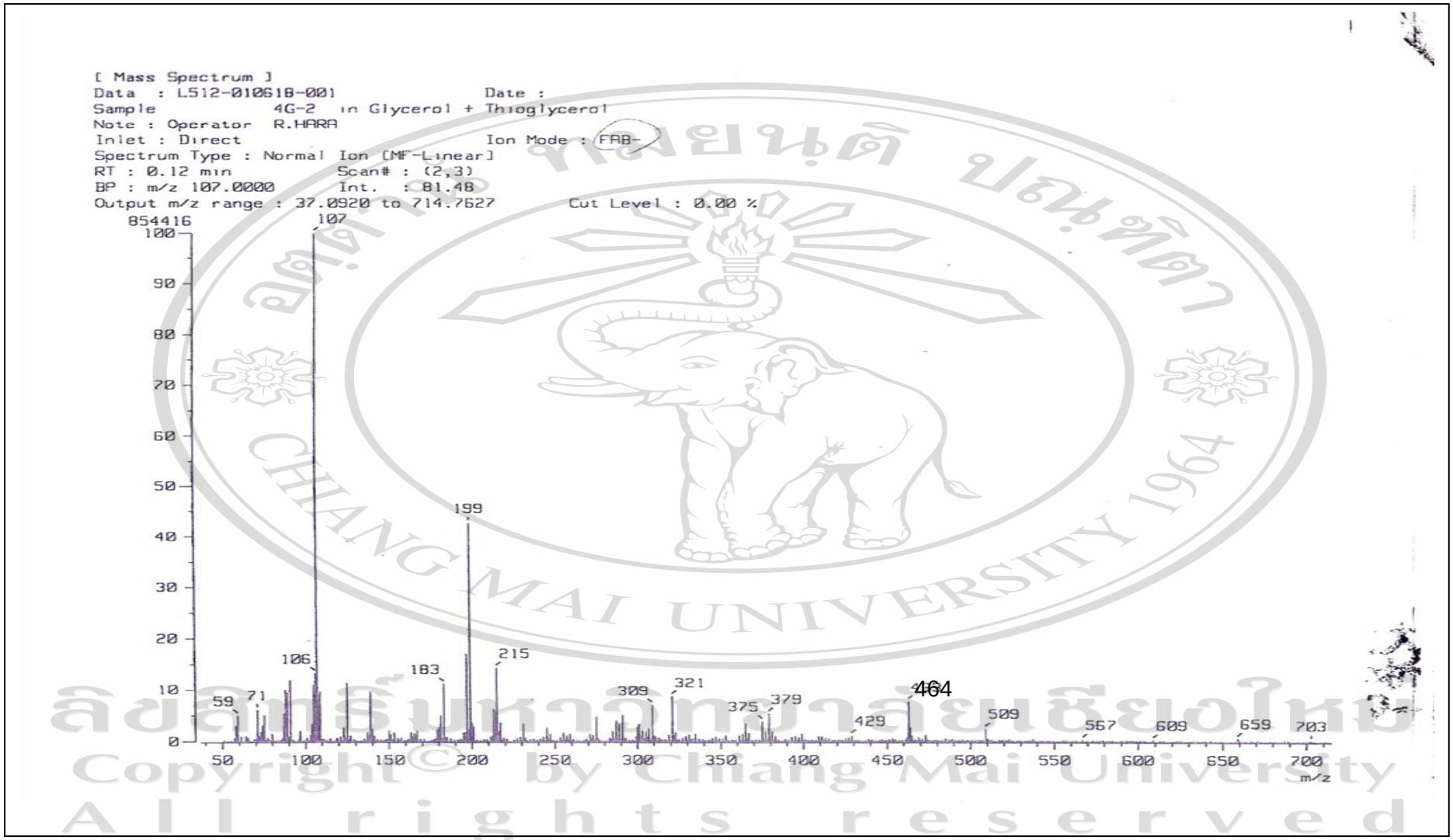


Figure 15 A MS spectrum of Compound 2

108

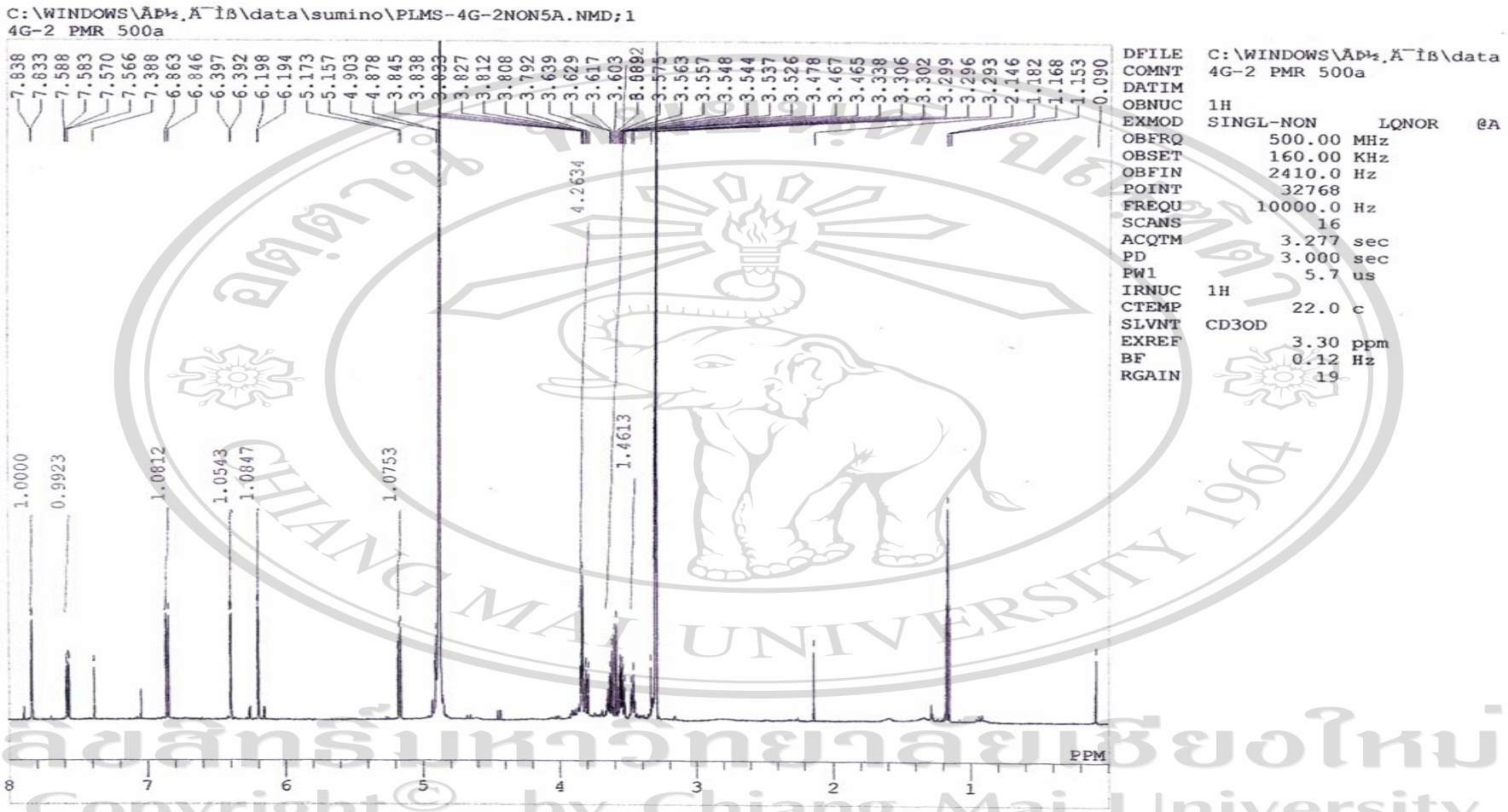


Figure 16 A ^{1}H spectrum of Compound 2

109

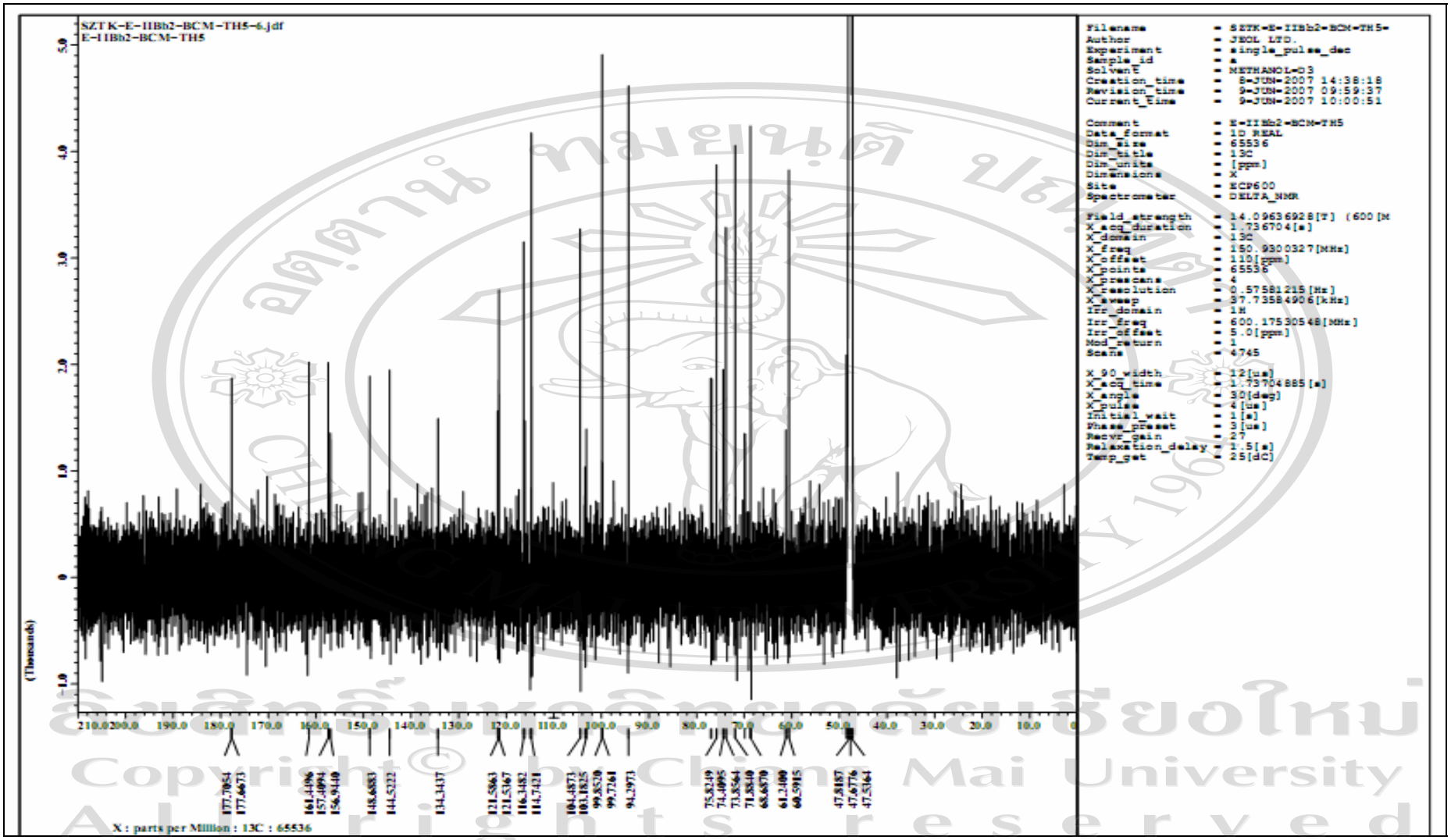


Figure 17 A ^{13}C spectrum of Compound 2

110

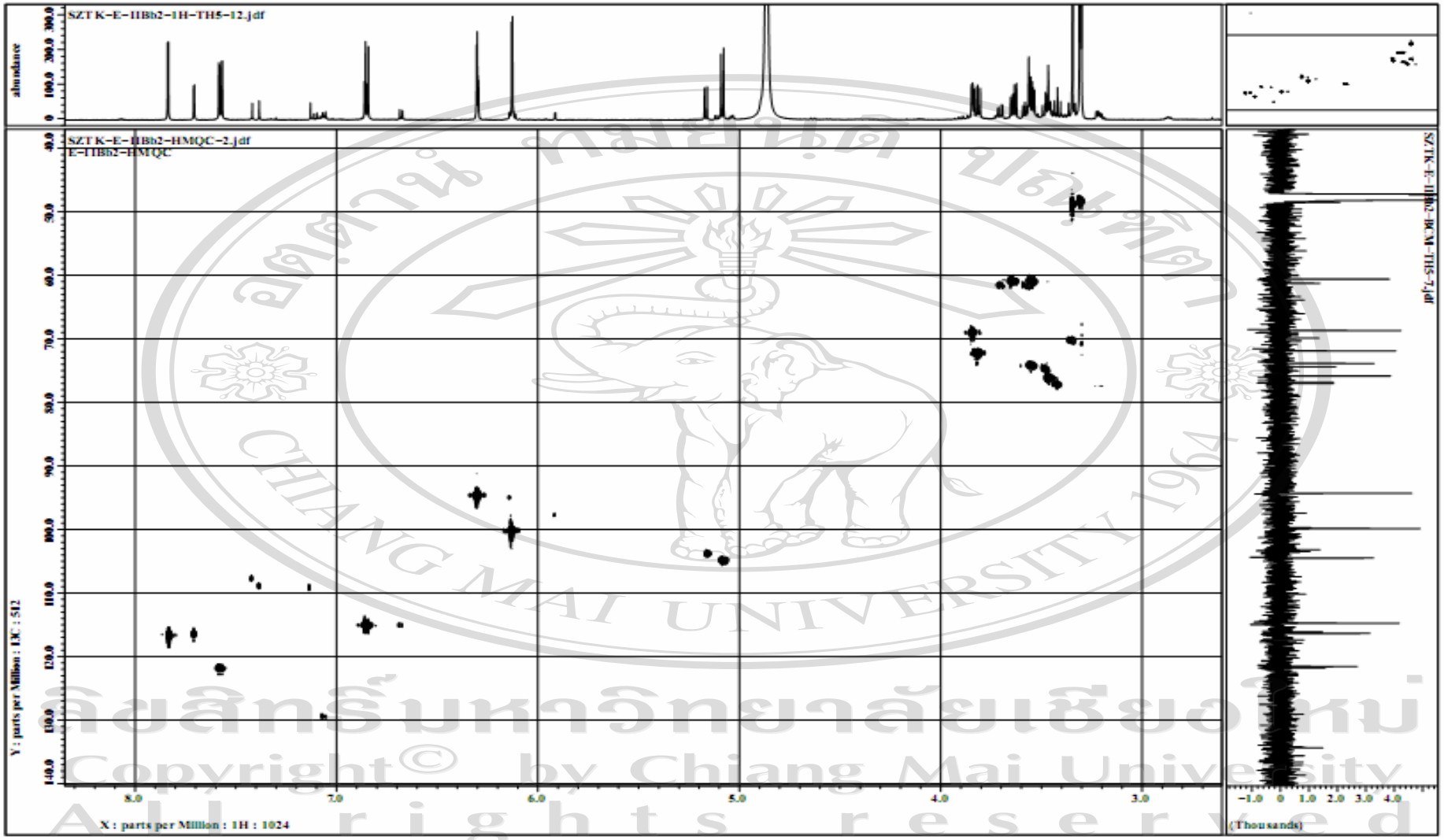


Figure 18 A HMQC spectrum of Compound 2

111

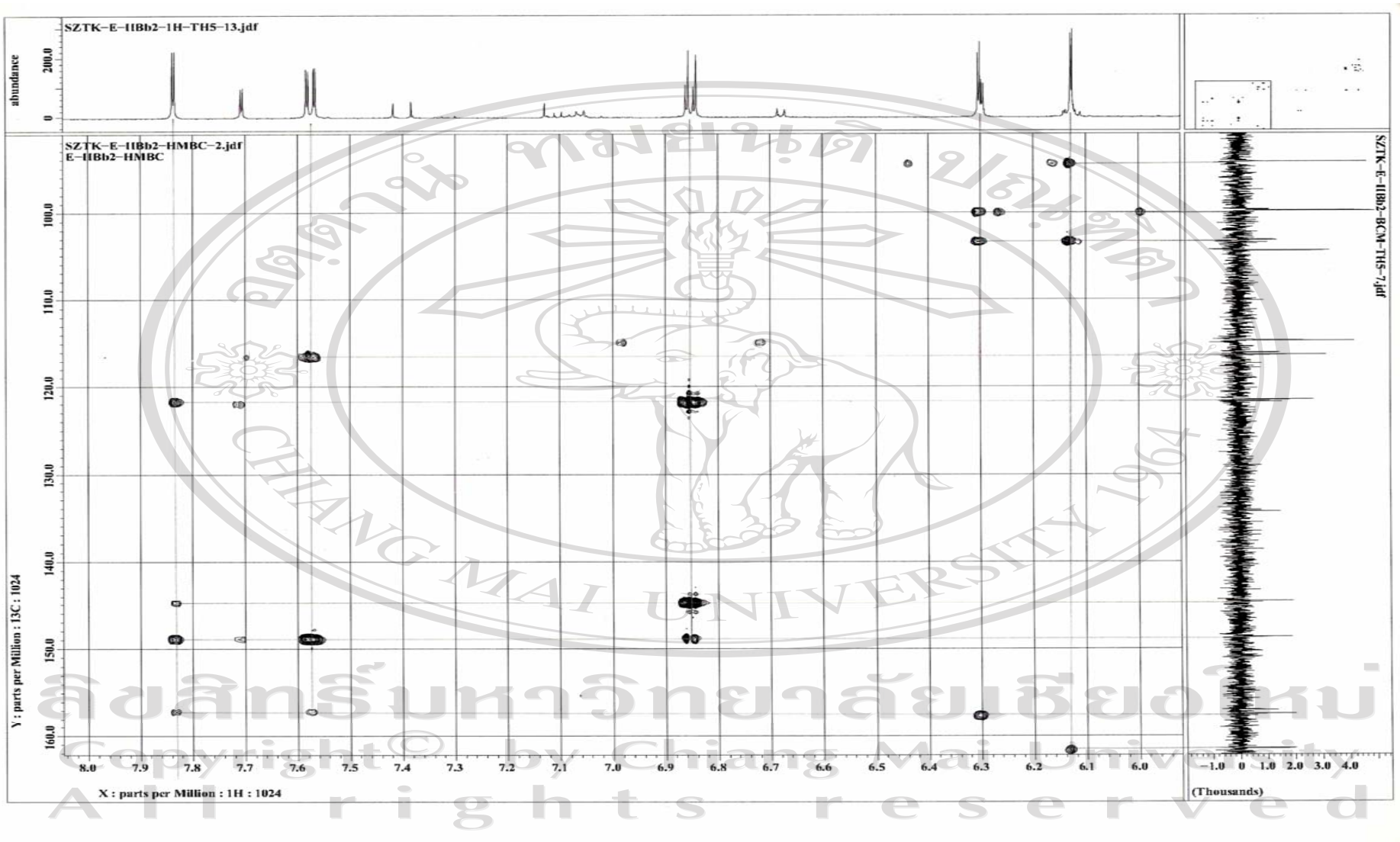
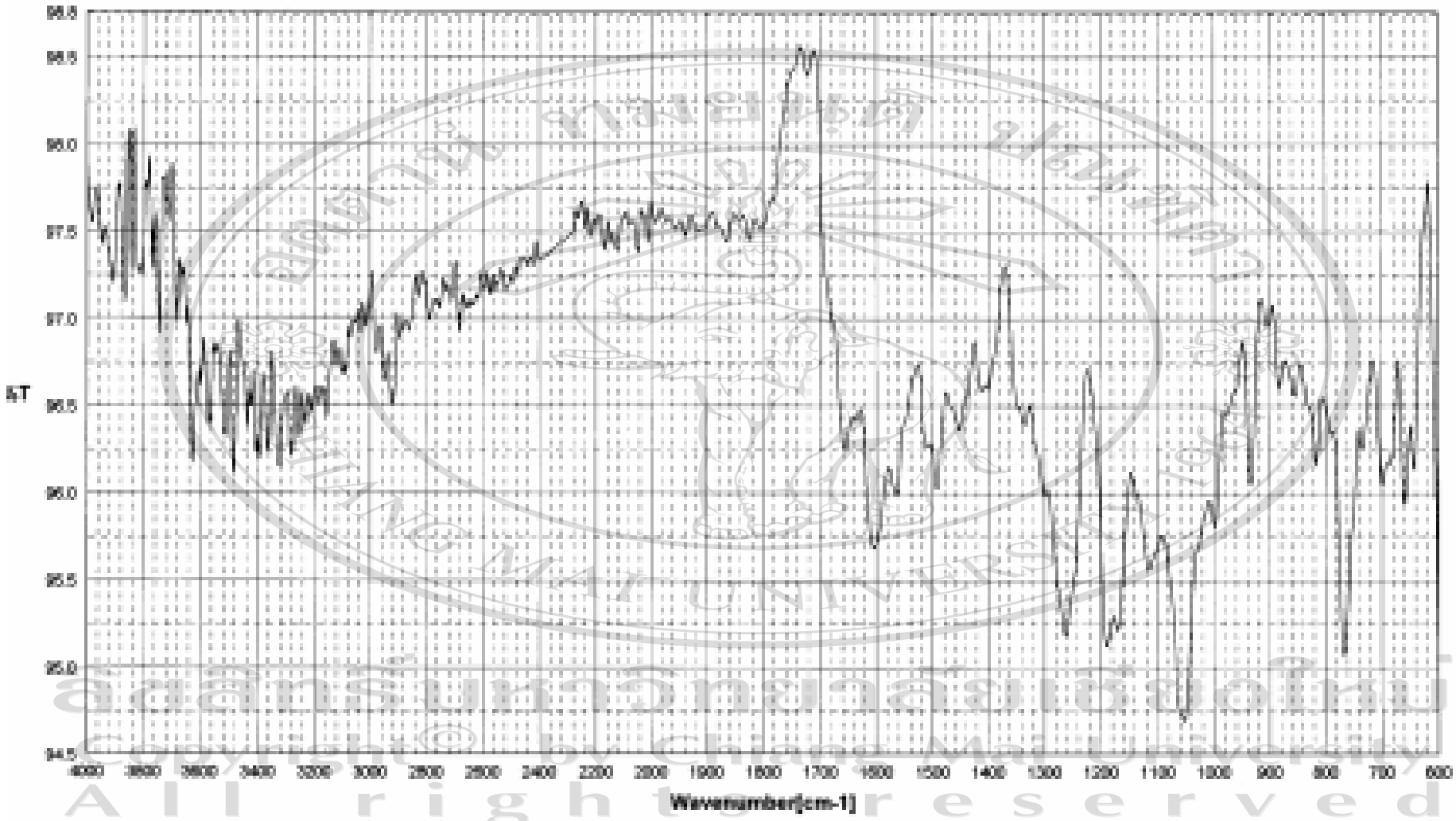


Figure 19 A HMBC spectrum of Compound 2

112



113

Figure 20 A IR spectrum of Compound 3

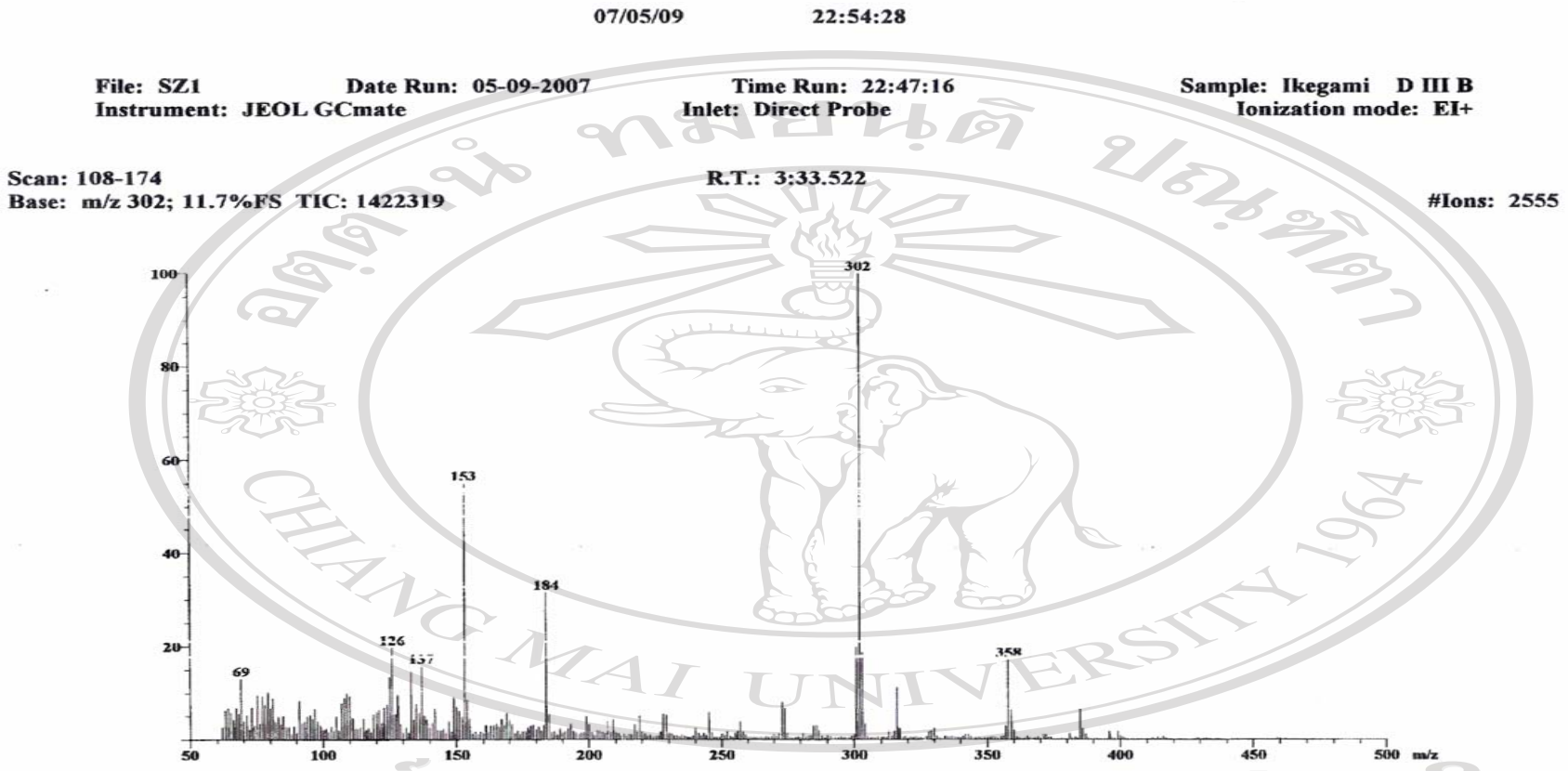


Figure 21 A MS spectrum of Compound 3

114

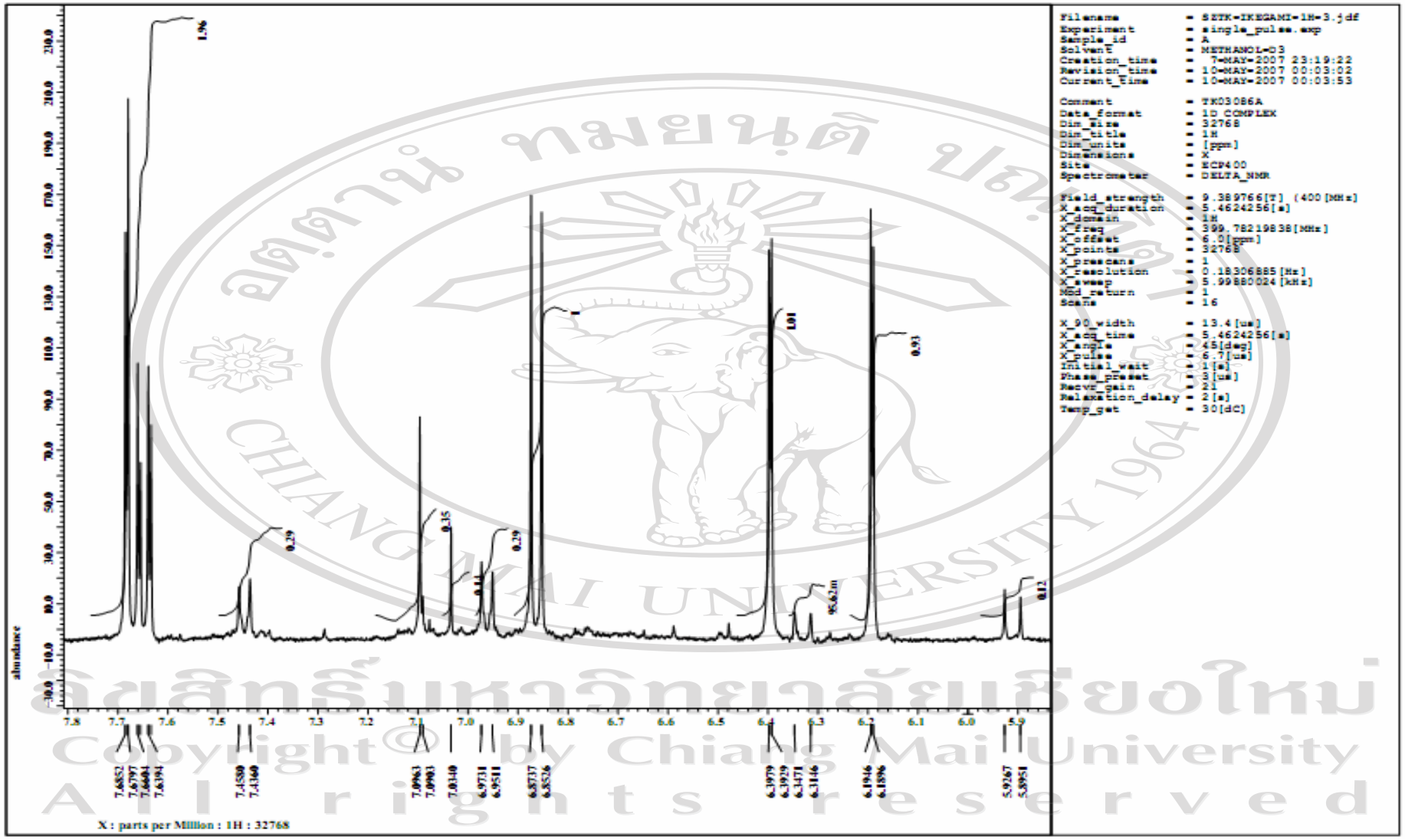


Figure 22 A ^{1}H spectrum of Compound 3

115

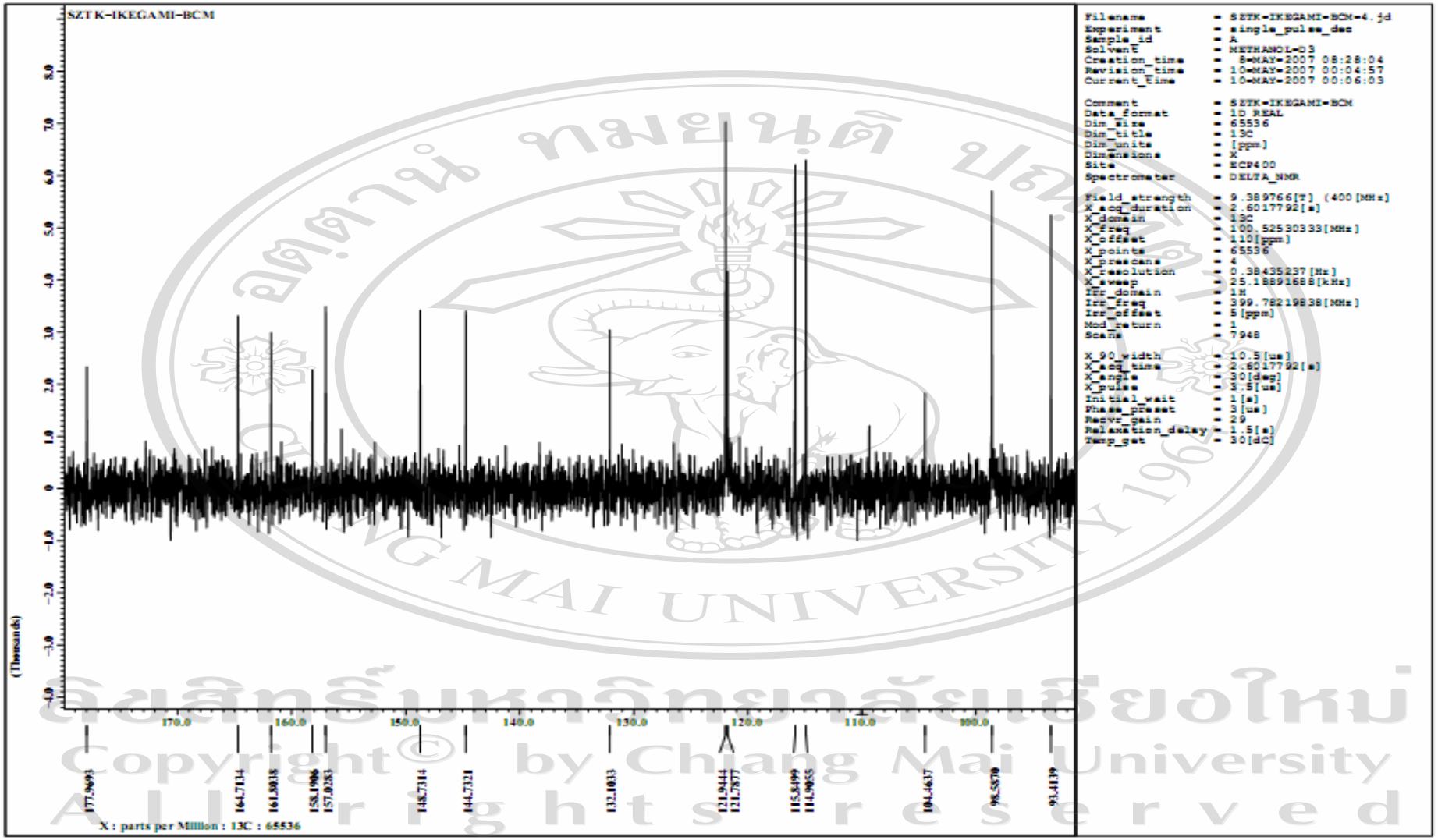


Figure 23 A ^{13}C spectrum of Compound 3

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LIST OF PUBLICATIONS

Journals:

1. Tachakittirungrod S., Okonogi S., Chowwanapoonpohn S. (2007). Study on antioxidant activity of certain plants in Thailand: Mechanism of antioxidant action of guava leaf extract. *Food Chemistry*, 103, 381-388.

2. Okonogi S., Duangrat C., Anuchpreeda S., Tachakittirungrod S., Chowwanapoonpohn S. (2007). Comparison of antioxidant capacities and cytotoxicities of certain fruit peels. *Food Chemistry*, 103, 839-846.

3. Tachakittirungrod S., Ikegami F., Okonogi S. (2007). Antioxidant active principles isolated from *Psidium guajava* grown in Thailand. *Scientia Pharmaceutica*, 75, 179-193.

Poster of conference:

1. Suganya Tachakittirungrod , Sombat Chowwanapoonpohn, Maitree Suttajit and Siriporn Okonogi. “Screening of Antioxidant Activity from Edible Plants grown in Northern Thailand”. Poster PC-7, The 1st International Conference on Natural Products for Health and Beauty, Maha Sarakham, Thailand, 2005.

2. Siriporn Okonogi, Suganya Tachakittirungrod, Sombat Chowwanapoonpohn, Chadarat Duangrat, Songyot Anuchpreeda, Maitree Suttajit, and Fumio Ikegami . “In Vitro Antioxidant Activities and Cytotoxicity in Caco-2 Cell and PBMC of the Waste Part of Thai Fruits”. การประชุมเพื่อเสนอผลงานวิจัยของนักวิจัยรุ่นใหม่ และพบกับเมธีวิจัยอาวุโส สกว, 2548.

3. Suganya Tachakittirungrod, Siriporn Okonogi, Sombat Chowwanapoonpohn, and Maitree Suttajit. “Antioxidant activity of guava leaf extract”. การประชุมเพื่อเสนอผลงานวิจัยของนักวิจัยรุ่นใหม่ และพบกับเมธีวิจัยอาวุโส สกว, 2549.

4. Suganya Tachakittirungrod, Sombat Chowwanapoonpohn, Maitree Suttajit, Fumio Ikegami and Siriporn Okonogi. “Antioxidant Activity of Thai Indigenous Vegetables”. Poster S4-011, RGJ-Ph.D. Congress VII, Chonburi, Thailand, 2006.

5. Okonogi S., Okonogi R., Tachakittirungrod S., Ausayakhun S. “Development of Anti-aging Product from Coconut Peel”. 1st European Congress on Anti-Aging Medicine & 16th Congress on Menopause Andropause Anti-Aging October 18th – 21st, 2006 Vienna/Austria.