

REFERENCES

1. ธวัชชัย รัตน์ชเลศ. เทคโนโลยีสารกำจัดวัชพืช ภาคพืชสวน คณะเกษตร มหาวิทยาลัยเชียงใหม่, 2540
2. ชมพูนุท จรรยาเพศ และทักษิณ อาชวาคม. หอยเชอรี่. เอกสารการประชุมสัมมนา กองกัญและสัตววิทยา กรมวิชาการเกษตร, ธันวาคม 2541.
3. Baker, D. R., Umetsu, N. K., *Modern Agrochemical Discovery*, ACS Symposium Series # 774., American Chemical Society, Washington D. C., 2001.
4. http://www.spawar.navy.mil/usn/nepmu5/assets/images/p5010ch_8_pdf
5. Susan, B. *The Merck index an encyclopedia of chemicals, drugs, and biologicals* 12th ed., Whitehouse Station, NJ, U.S.A, Merck & Co., Inc, 1996.
6. <http://www.free.de/wila/derik/resmethrin.gif>
7. สิริจันทร์ พัฒนพงศ์สิริกุล, สุมาลี โสณอ่อน. การเสาะหาสารที่มีฤทธิ์ทางชีวภาพต่อหอยเชอรี่จากต้นลำไย. Senior project ภาควิชาเคมี คณะวิทยาศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย, 2543.
8. เพยาร์ เหมือนวงศ์ญาติ. สมุนไพรก้าวหน้า กรุงเทพฯ เมดิคัลมิเดีย, 2537.
9. พรรณิภา ชุมศรี. พืชจำพวกลำไย คณะเภสัชศาสตร์, มหาวิทยาลัยมหิดล, 2518.
10. อินทิรา อาจทอง. ลำไย วารสารสำนักงาน ป.ป.ส. 2538, 12, 56-60.
11. <http://www.ces.ncsu.edu/depts/hort/consumer/poison/Daturame.htm>
12. รพีพล ภโวาท. การศึกษาถึงอนุพันธ์ของสารพวกโทรเปนจากใบลำไยและจากห้วกลอย วิทยานิพนธ์ เภสัชศาสตร์ แผนกเภสัชเวท คณะเภสัชศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย, 2519.
13. Soonthorncharoennon, N., Chetsuthayangkul, P. *Study of tropane alkaloids in Datura metel*. Undergraduate special project report Faculty of Pharmacy, Mahidol University, 1976.
14. Afsharypuor, S., Mostajeran, A., Mokhtary, R. *Variation of scopolamine and atropine in referent parts of Datura metel during development. Planta Medica*. 1995, 61, 383-384.

15. Mandal, S., Naqvu, A. A., Thakur, R. S. *Simultaneous determination of atropine and scopolamine in plants by mixed-column high performance liquid chromatography. Phytochem. Anal.* **1991**, 2, 208-210.
16. DE Pasquale, R, Forestieri, A. M, Giordano, A., Tumio, G. *Ontogenetic variations in the contents of some phenylalkylamines, indolealkylamines and of total alkaloids in different parts of D. metel. Q. J. Crude. Drug Res.* **1981**, 19, 11-24.
17. Khaleque, A., Miah, M. A. W., Huq, M. E., Amin, M. S. *Investigations on Datura fastuosa (D. metel). III. Isolation of atropine and three other new alkaloids. Science res.* **1966**, 2, 212-216.
18. He, L. Y., Zhang, G. D., Tong, Y. Y., Oshima, T., Sangara, K., Shoyakugaku Z. *Determination of hyoscyamine, scopolamine, anisodamin and anisodine in solanaceous plants by high performance liquid chromatography. Shoyakugaku Zasshi.* **1990**, 44, 162-166.
19. Anwar, K., Ghani, A. *Alkaloids of the roots of Datura metel var fastuosa grown in Bangladesh. Bangladesh Pharm. J.* **1973**, 2, 25-27.
20. Siddiqui, S., Sultana, N., Ahmed, S. S. *Isolation and structure of a new alkaloid datumetine from the leaves of Datura metel. J. Nat. Prod.* **1986**, 49, 511-513.
21. Shingu, K., Furusawa, Y., Marubayashi, N., Ueda, I., Yahara, S., Nohara, T. *The structure of Daturametelin D. Chem. Pharm. Bull.* **1990**, 38, 2866-2867.
22. Gupta, M., Bagchi, A., Ray, A. B. *Additional Withanolides of Datura metel. J. Nat. Prod.* **1991**, 54, 599-602.
23. Jain, S. C., Khanna, R., Khanna, P. *Quercetin from the seeds & in vitro cultures of Datura spp. Indian J. Exp. Biol.* **1975**, 13, 83-84.
24. Nag, T. N. *Datura tissue cultures a source of sterols. Indian J. Pharm.* **1976**, 38, 80.
25. Shingu, K., Kajimoto, T., Furusawa, Y., Nohara, T. *The structures of Daturametelin A and B. Chem. Pharm. Bull.* **1987**, 35, 4359-4361.
26. Shingu, K., Furusawa, Y., Nohara, T. *New Withanolides, Daturametelins C, D, E, F and G-Ac from Datura metel Linn. Chem. Pharm. Bull.* **1989**, 37 2132-2135.
27. Gupta, M., Manickam, M., Sinha, S. C., Sinha-Bagchi, A., Ray, A. B. *Withanolides of Datura metel. Phytochemistry* **1992**, 31, 2423-2425.

28. Mahmood, T., Ahmad, S. S., Siddiqui, S. *Daturilinol a new withanolide from the leaves of Datura metel. Heterocycles* **1988**, 27, 101-103.
29. Kundu, S., Sinha, S. C., Bagchi, A., Ray, A. B. *Secowithametelin, a withanolide of Datura metel leaves. Phytochemistry* **1989**, 28, 1769-1770.
30. Jahromi, M. A. F., Manickam, M., Gupta, M., Oshima, Y., Hatakeyama, S., Ray, A. B. *Withametelins F and G, two new withanolides of Datura metel. J. Chem. Res.* **1993**, 6, 234-235.
31. Manickam, M., Sinha-Bagchi, S., Sinha, S. C., Gupta, M., Ray, A. B. *Withanolides of Datura metel Leaves. Phytochemistry* **1993**, 34, 868-870.
32. Manickam, M., Kumar, S., Sinha-Bagchi, A., Sinha, S. C., Ray, A. B. *Withametelin H and withafastuosin C, two new withanolides from the leaves of Datura species. J. Indian Chem. Soc.* **1994**, 71, 393-399.
33. Gupta, S., Prabhakar, V. S., Madan, C. L. *The distribution of total alkaloids and major components in the different organs of Datura metel at various stages of growth. Planta. Med.* **1973**, 23, 370-376.
34. Pelletier, S. W. *Chemistry of the alkaloids.* New York, NY. Van Nostrand Reinhold Company, **1970**.
35. Srinvasna, D., Nathan, S., Suresh, T., Perumalsamy, P. L. *Antimicrobial activity of certain Indian medicinal plants used in folkloric medicine. J. Ethnopharm* **2001**, 74, 217-20.
36. Smit, H. F., Woerdenbah, H. J., Singh, R. H., Meulenbeld, G. J., Labadie, R. P., Zwaving, J. H. *Ayurvedic herbal drugs with possible cytostatic activity. J. Ethnopharm* **1995**, 47, 75-84.
37. Dhar, M.L., Dhar, M. M., Dhawan, B. N, Mehrotra, B. N, Ray, C. *Screening of indian plants for biological activity: part I. Indian J. Exp. Biol* **1968**, 6, 232-247.
38. Fernando, R. *Plant poisoning in Sri Lanka. Toxicon* **1988**, 26, 20-22.
39. Avirutnant, W., Pongpan, A. *The antimicrobial activity of some Thai flowers and plants. Mahidol University J. Pharm. Sci.* **1988**, 10, 81-86.
40. Suresh, M., Rai, R. K. *The antifilarial principle from anacardium occidentale. Curr Sci* **1990**, 59, 477-9.

41. Vijayalakshimi, K., Mishra, S. D., Prasad, S. K. *Nematicidal properties of some indigenous plant materials against second stage juveniles of meloidogyne incognita (Koffoid and White) chitwood. Indian J. Entomol.* 1979, 41, 326-331.
42. Roychoudhury, R. *Effect of extracts of certain Solanaceous plants on plant virus infection. Acta Bot Indica* 1980, 8, 91-94.
43. Soyotong, K., Rakvidhvasastra, V., Sommartya, T. *Effect of some medicinal plants on growth of fungi and potential in plant disease control. Abstr. 11th Conference of Science and Technology of Thailand, Kasetsart University, Bangkok, Thailand, 1985, 24, 361.*
44. Prabhakar, E., Kumar, N. V. N. *Potentiating action of Datura metel Linn. root extract on rat intestinal cholinesterase. Phytotherapy Research* 1992, 6, 160-162.
45. Prabhakar, E., Kumar, N. V. N. *Spasmogenic effect of Datura metel root extract on rat uterus and rectum smooth muscles. Phytotherapy Research* 1994, 8, 52-54.
46. มณฑามาศ สืบเสณห์. ผลกระทบของสารที่สกัดจากเมล็ดสลอดและใบลำโพงต่อหอยเชอร์รี่. วิทยานิพนธ์ครุศาสตรบัณฑิต ภาควิชาชีววิทยา คณะครุศาสตร์ สถาบันราชภัฏลพบุรี, 2541.
47. Sharma, R. G. L. *Studies on antimycotic properties of Datura metel. J. Ethnopharm.* 2002, 80, 193-197.
48. Vitale, A. A., Acher, A., Pomilio, A. B. *Alkaloids of Datura ferox from Argentina. J. Ethnopharm.* 1995, 49, 81-89.
49. Solis, P. N., Wright, C. W., Anderson, M. M., Gupta, M. P., Phillipson J. D. *A microwell cytotoxicity assay using Artemia salina (Brine Shrimp). Planta Med.* 1993, 59, 250-252.
50. Camper, N. D. *Research Methods in Weed Science.* 3rd ed.: Southern Weed Science Society, 1986.
51. *WHO Tech. Rep. Ser.* 1985, 61, 728.
52. WHO. *Molluscicide screening and evaluation. Bull World Health Organization.* 1965, 33, 567-81.
53. Pandji, C., Grimm, C., Wray, V., Witte, L., Proksch, P. *Insecticidal constituents from four species of the Zingiberaceae. Phytochemistry* 1993, 34, 415-419.

54. Nugroho, B. W., Schwarz, B, Wray, V., Proksch, P. *Insecticidal constituents from rhizomes of Zingiber callumunar and Kaempferia rotunda. Phytochemistry* **1996**, 41, 129-132.
55. Harborne, J. B. *The Flavonoids advances in research since 1986*. 1st ed., London, Chapman & Hall, 2-6 Boundary Row, **1994**.
56. Agrawal, P. K., ed. *Carbon-13 NMR of Flavonoids*, Elsevier, Amsterdam, Oxford New York, and Tokyo, **1989**.
57. <http://www.aist.go.jp/RIODB/SDBS/perl/img-disp>
58. Breitmaier, E., Voelter, W. *Carbon-13 NMR Spectroscopy* 3rd ed., New York, **1987**, 55.
59. Fodor, G. *Chemistry of the alkaloids*. New York: Van Nostrand Reinhold, **1970**.
60. Geoffrey, A. *Introduction to alkaloids a biogenetic approach*. New York: John Willey & Sons, **1981**.
61. Philipov, S., Berkov, S. *GC-MS Investigation of tropane alkaloids in Datura stramonium. Z. Naturforsch* **2002**, 57c, 559-561.
62. Evan, W. C., Major, V. A. *Alkaloids of genus Datura section. J Chem Soc* **1965** 4936.

ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย



APPENDICES

ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

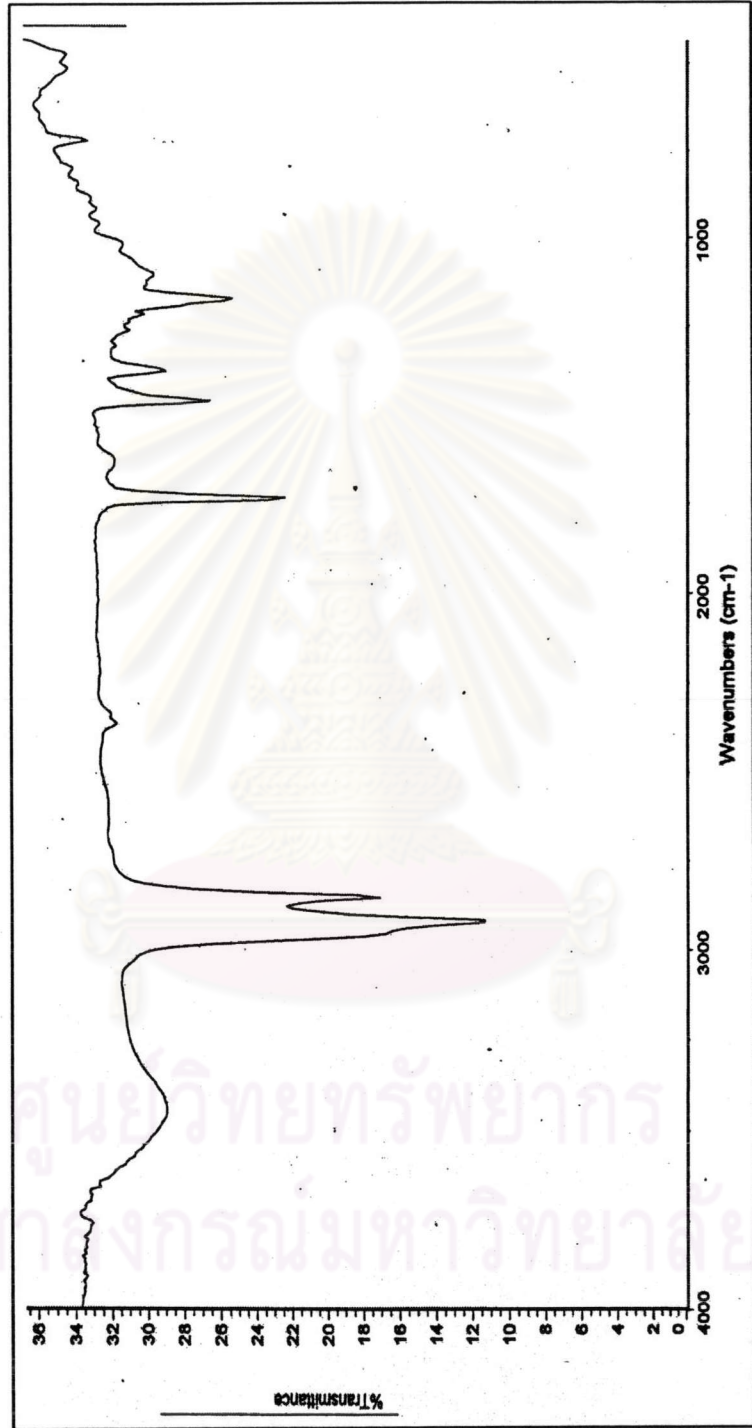


Figure 1 The IR spectrum of Mixture 1

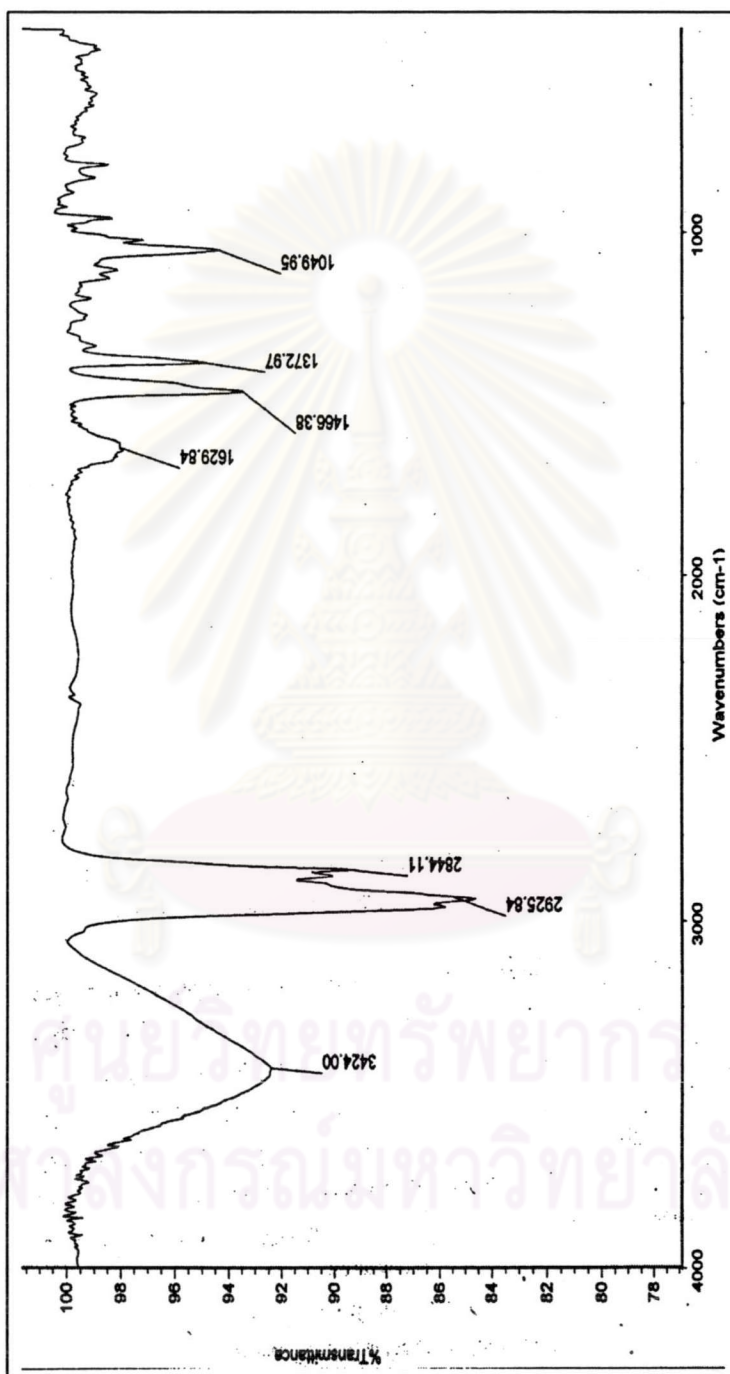


Figure 2 The IR spectrum of Mixture 1a

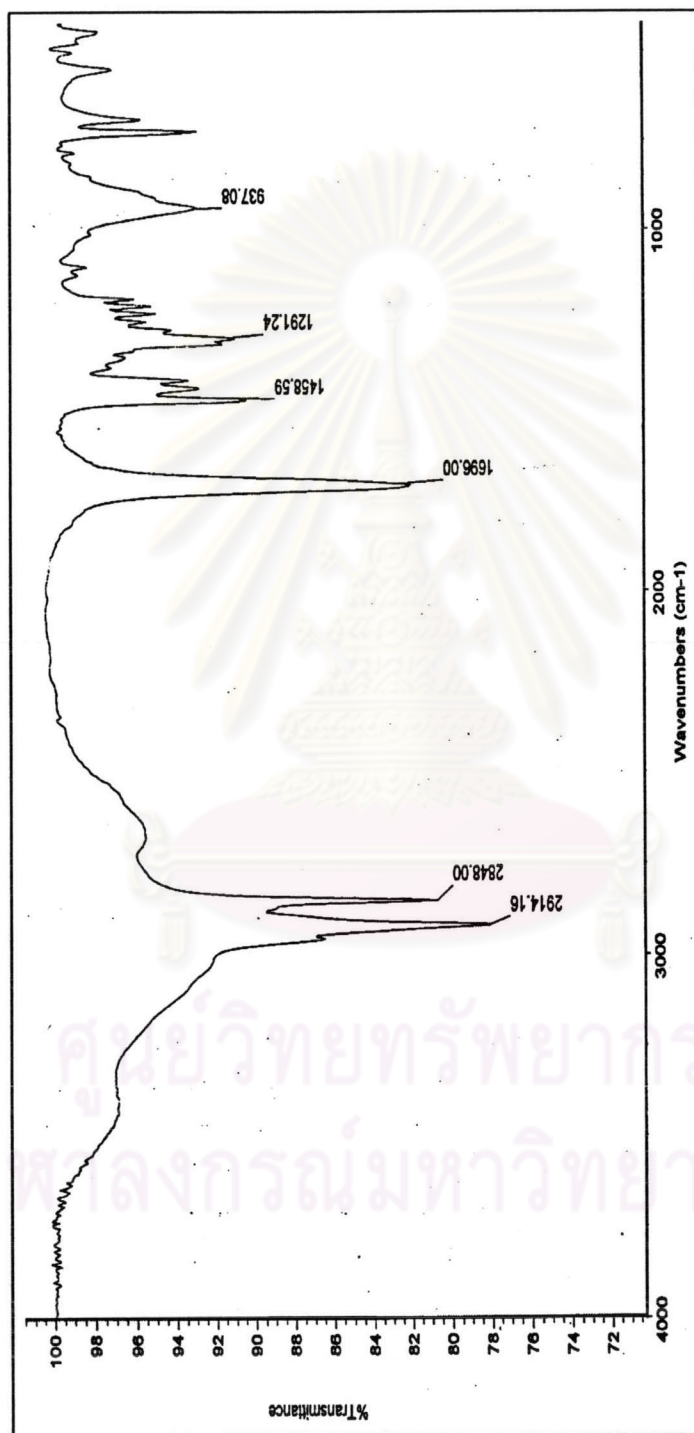


Figure 3 The IR spectrum of Mixture 1b

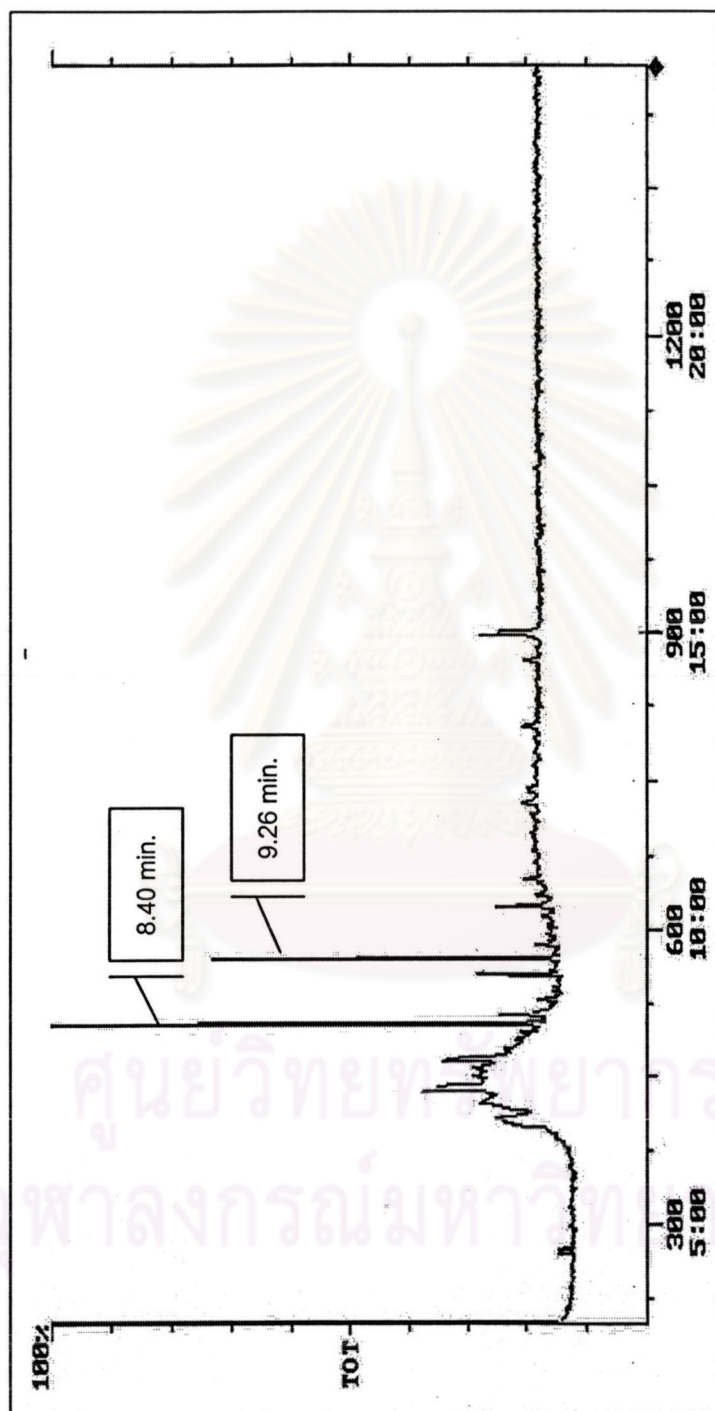


Figure 4 The GC-MS chromatogram of Mixture 1b



Figure 5 The Mass spectrum of Component 1 (retention time at 8.40 min.)

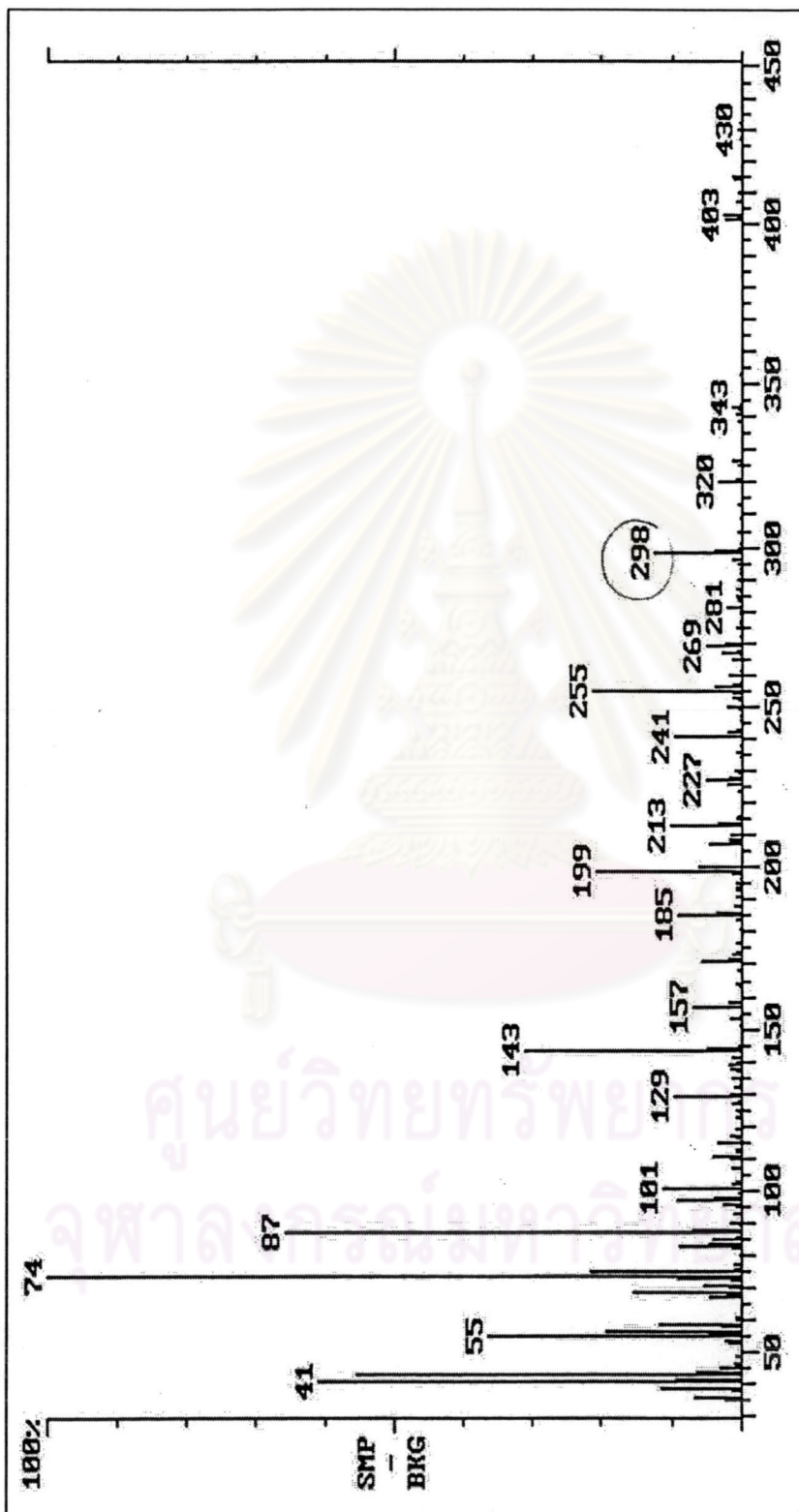


Figure 6 The Mass spectrum of Component 2 (retention time at 9.26 min.)

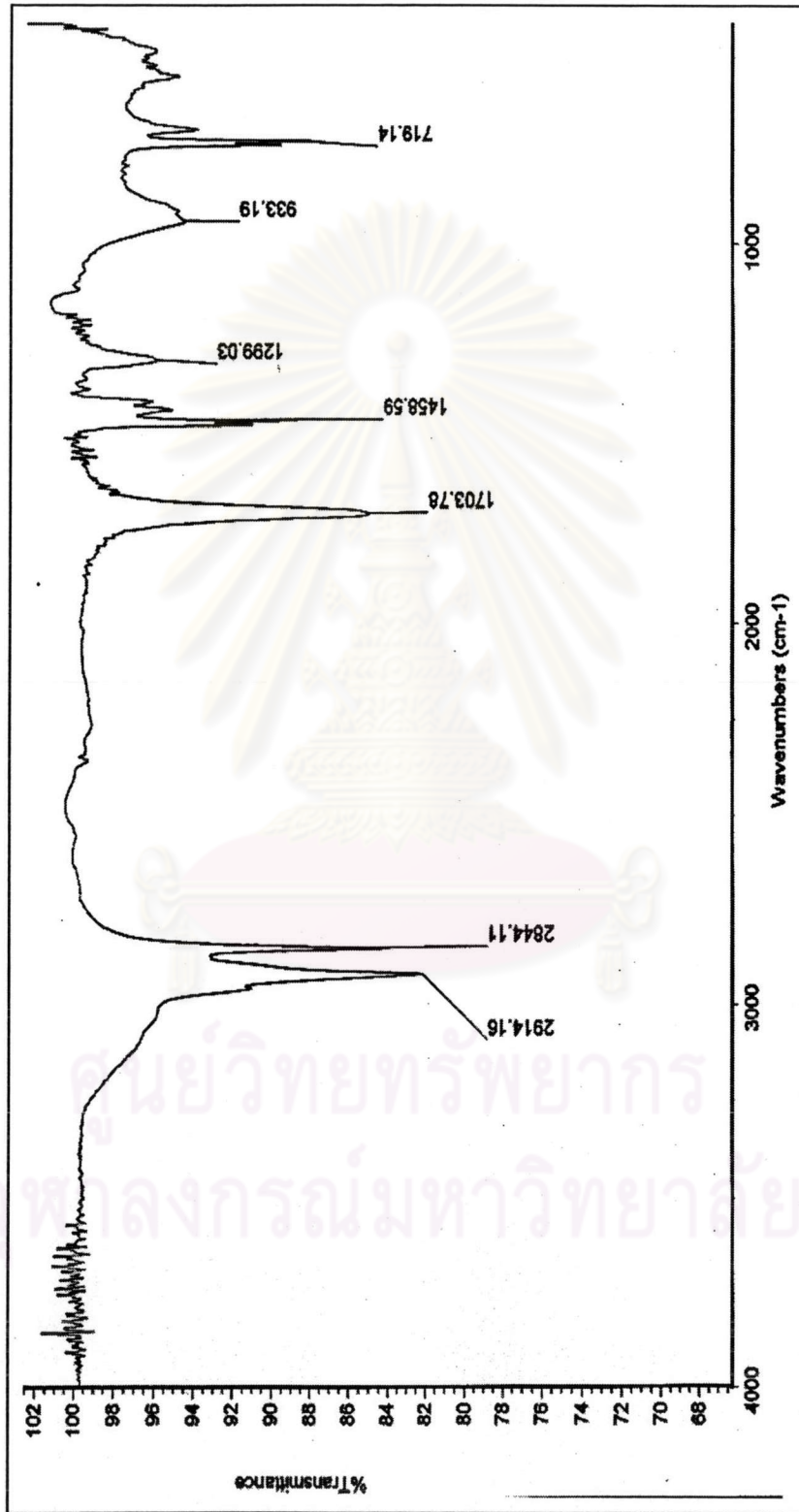


Figure 7 The IR spectrum of Mixture 2

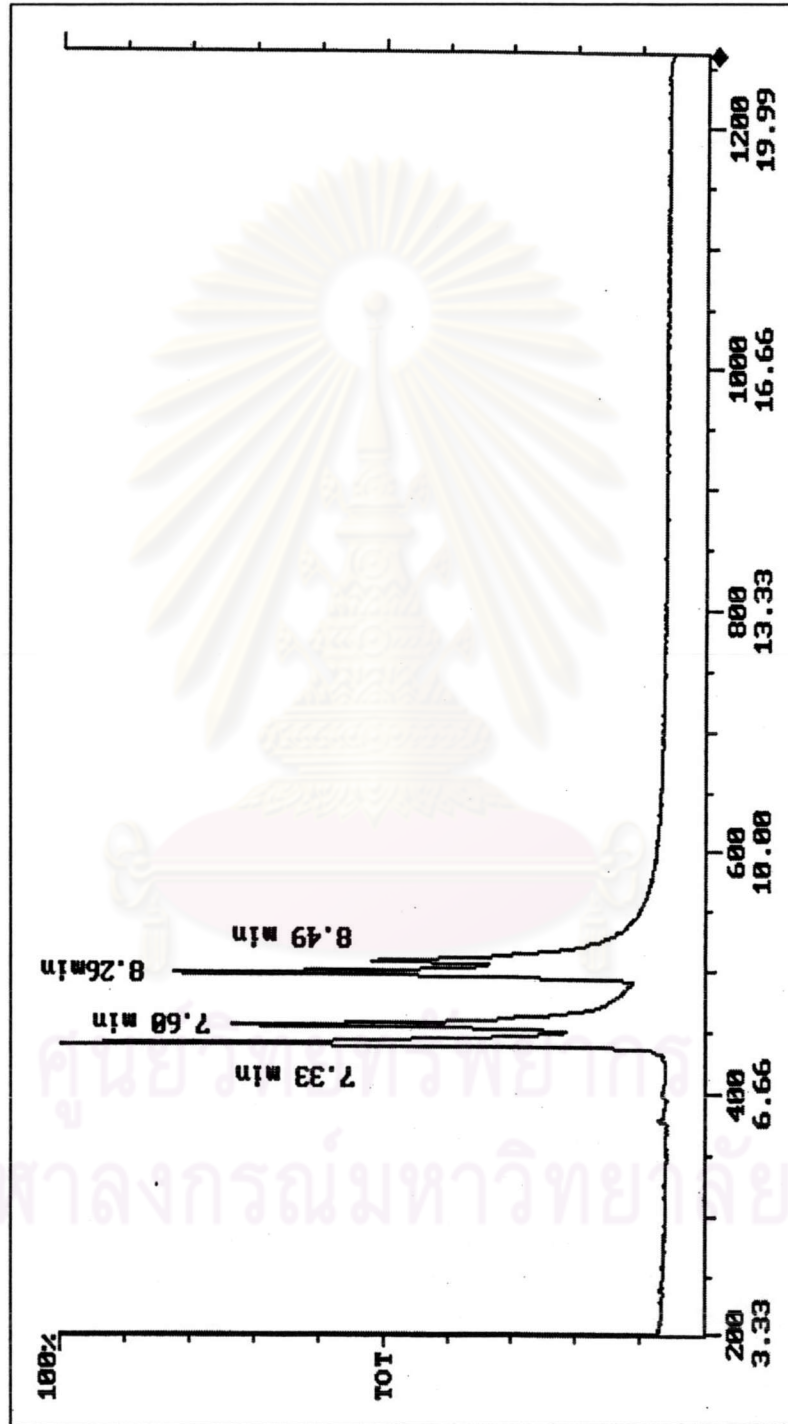


Figure 8 The GC-MS chromatogram of Mixture 3

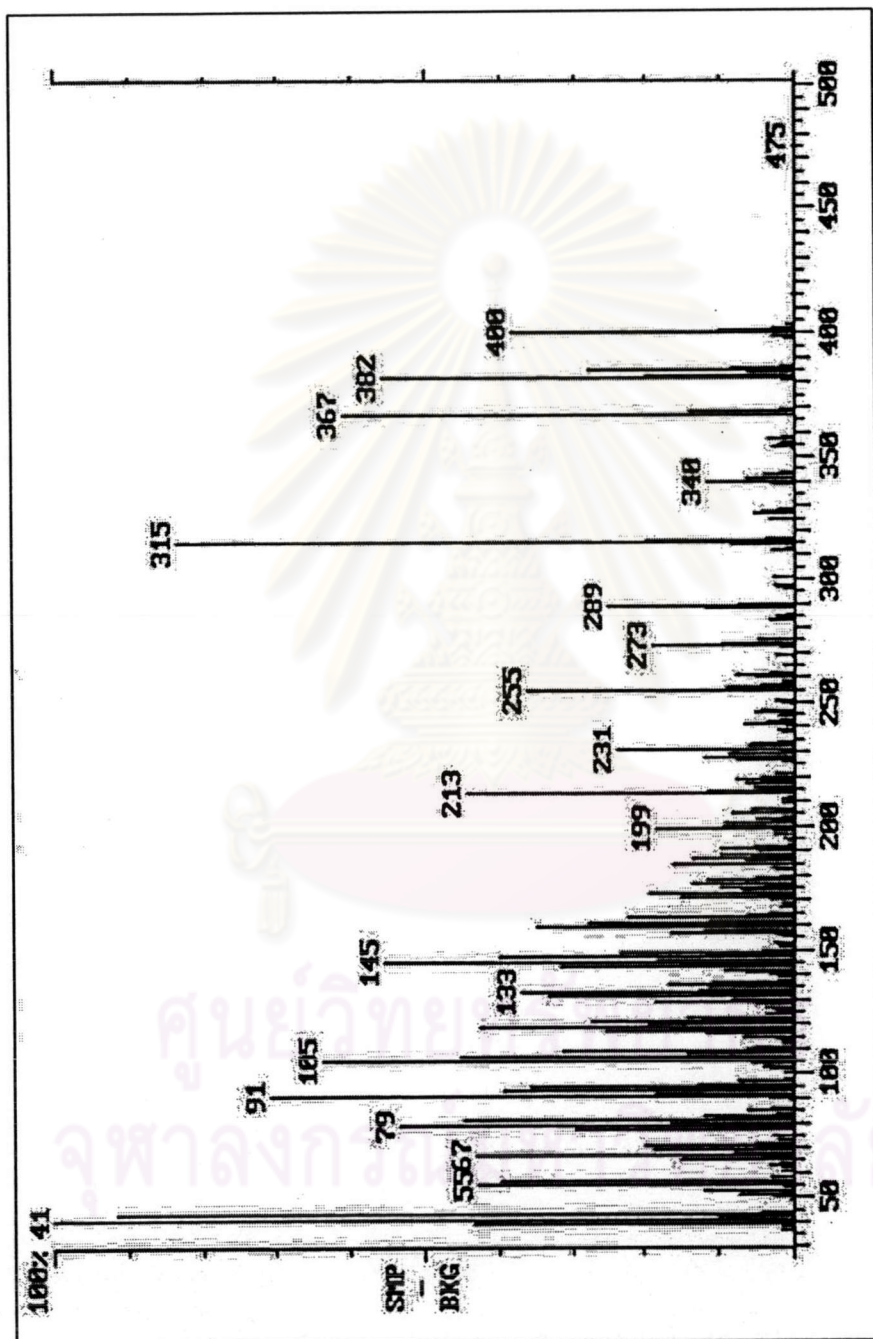


Figure 9 Mass spectrum of Component 1 (retention time at 7.33 min.)

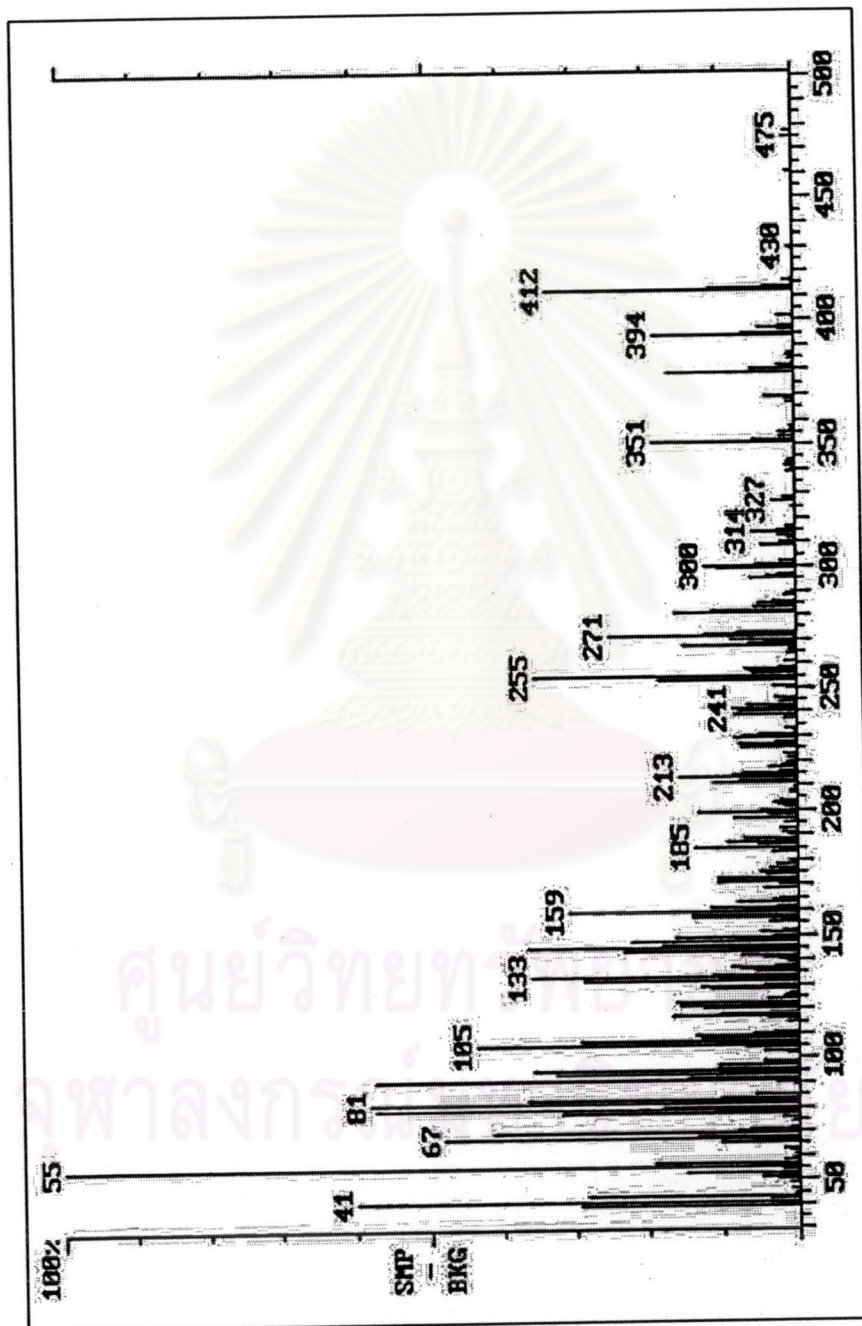


Figure 10 Mass spectrum of Component 2 (retention time at 7.60 min.)

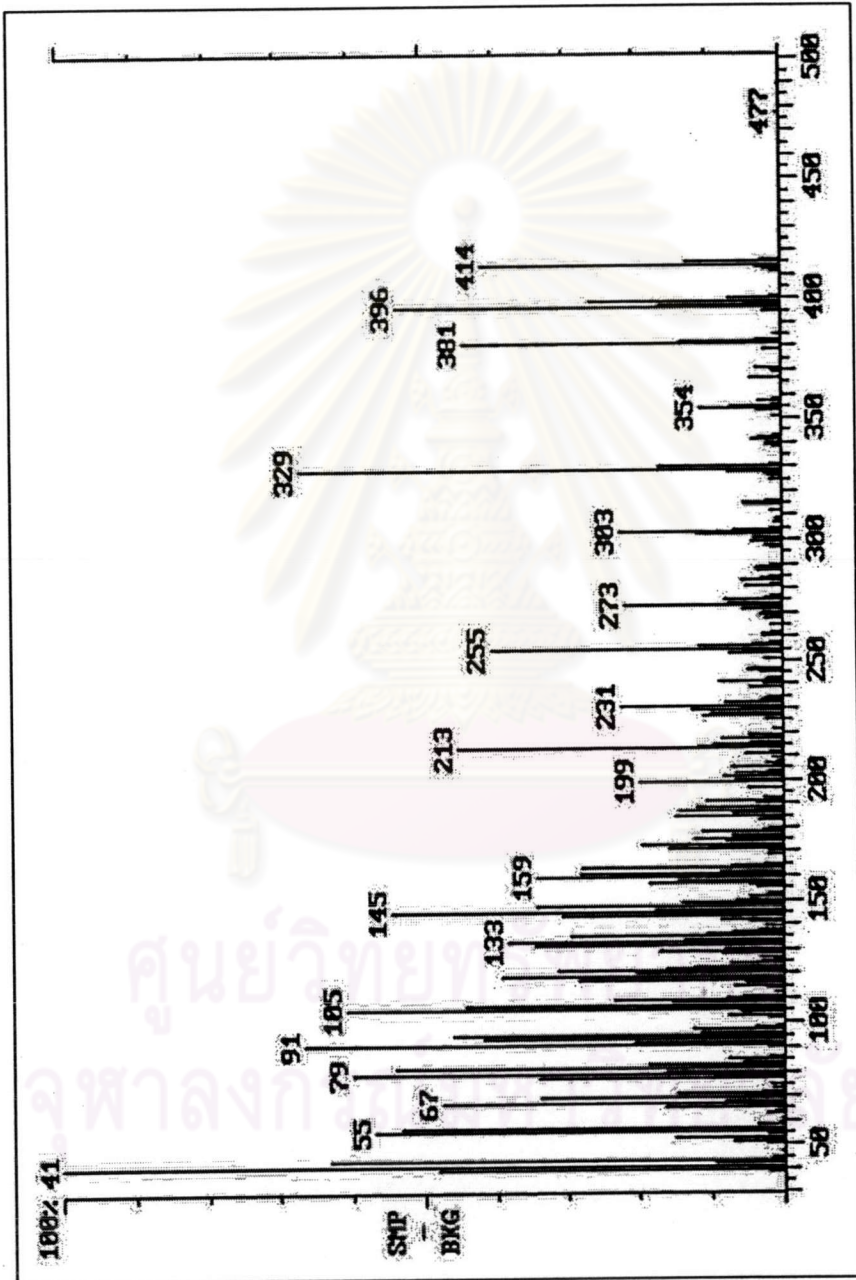


Figure 11 Mass spectrum of Component 3 (retention time at 8.26 min.)

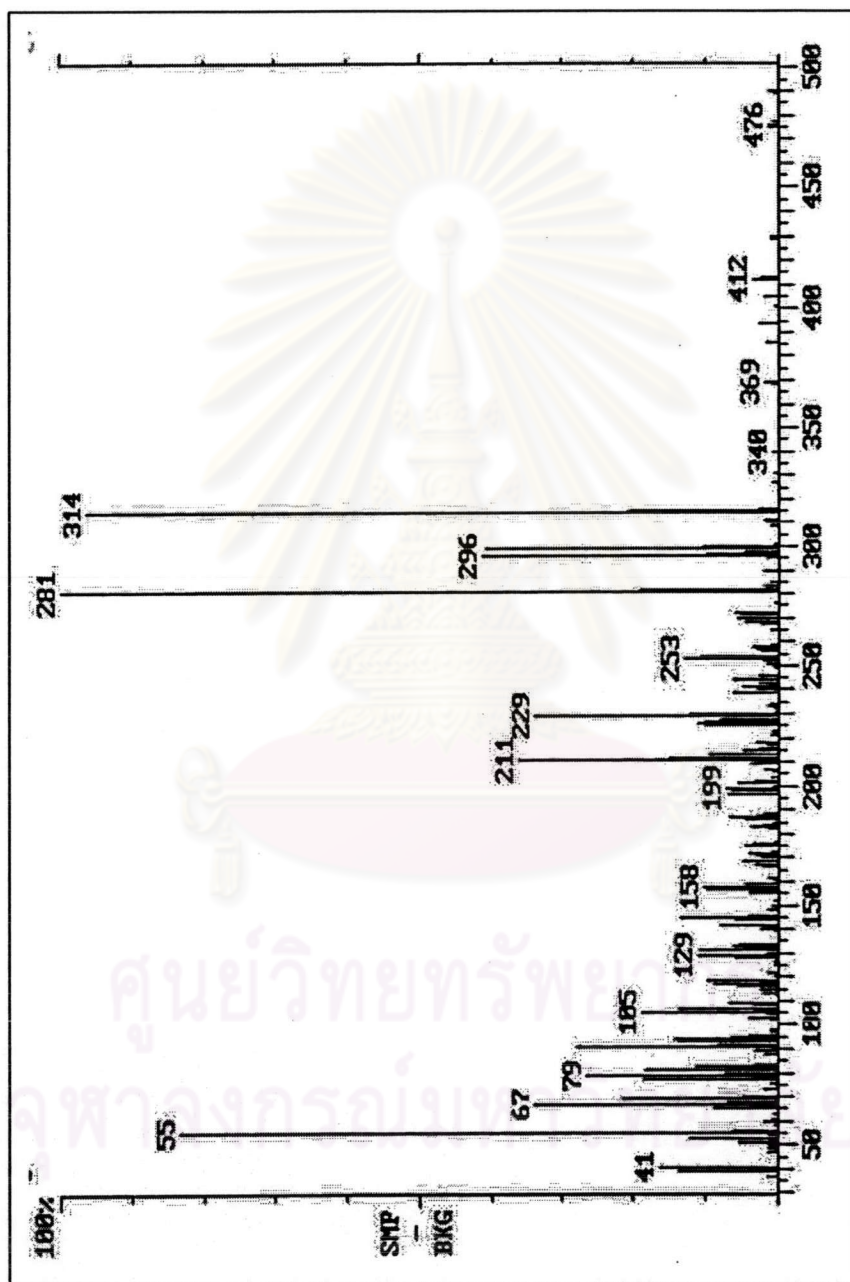


Figure 12 Mass spectrum of Component 4 (retention time at 8.49 min.)

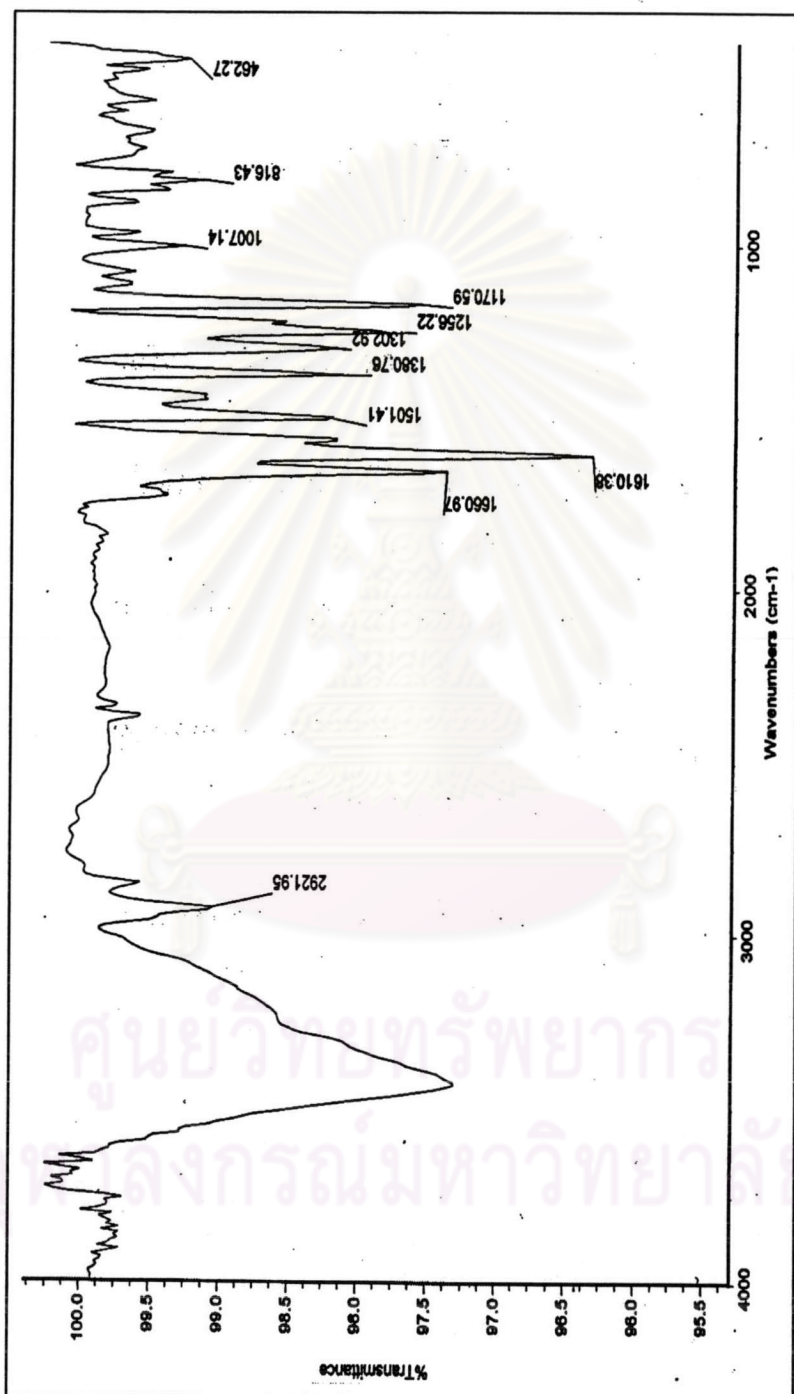


Figure 13 IR spectrum of Compound 1

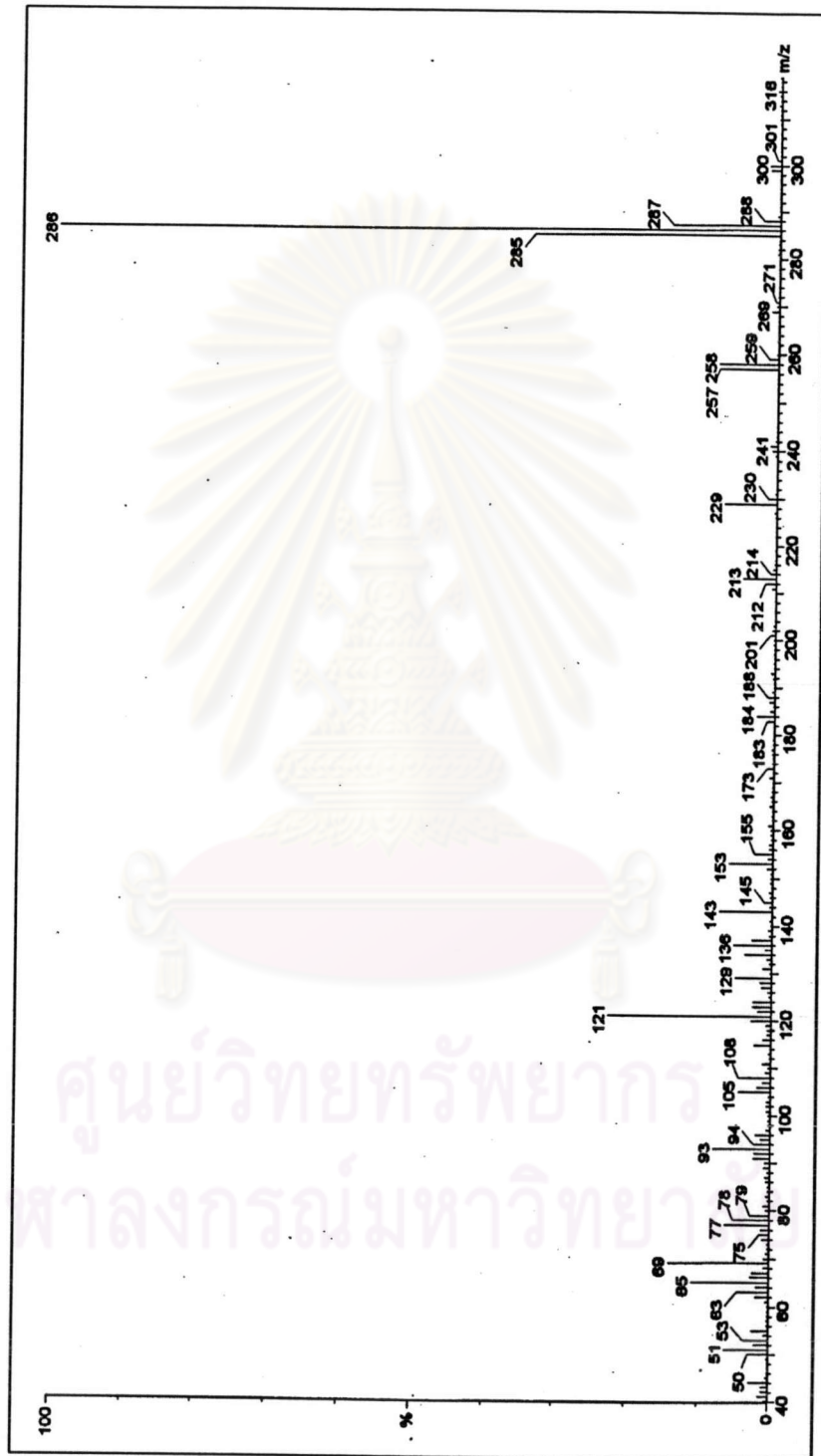


Figure 14 Mass spectrum of Compound 1

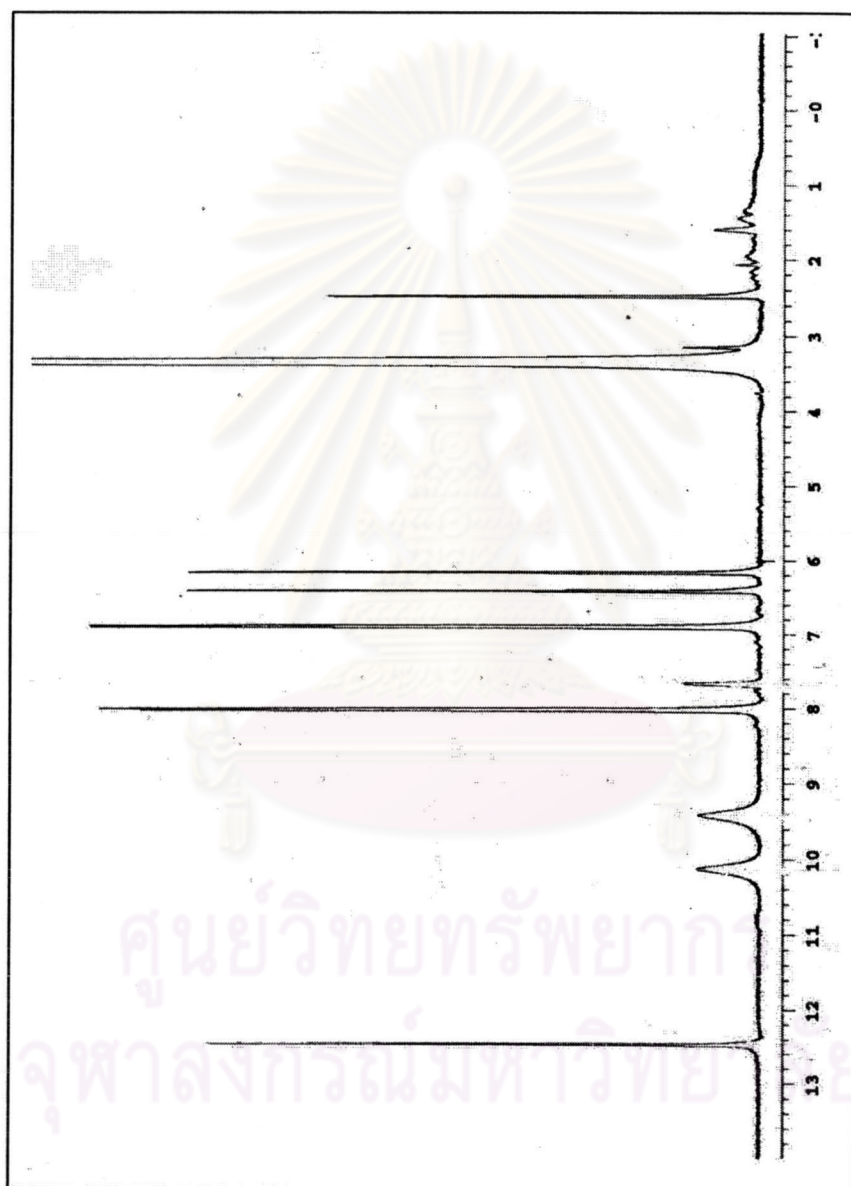


Figure 15 The $^1\text{H-NMR}$ spectrum of Compound 1

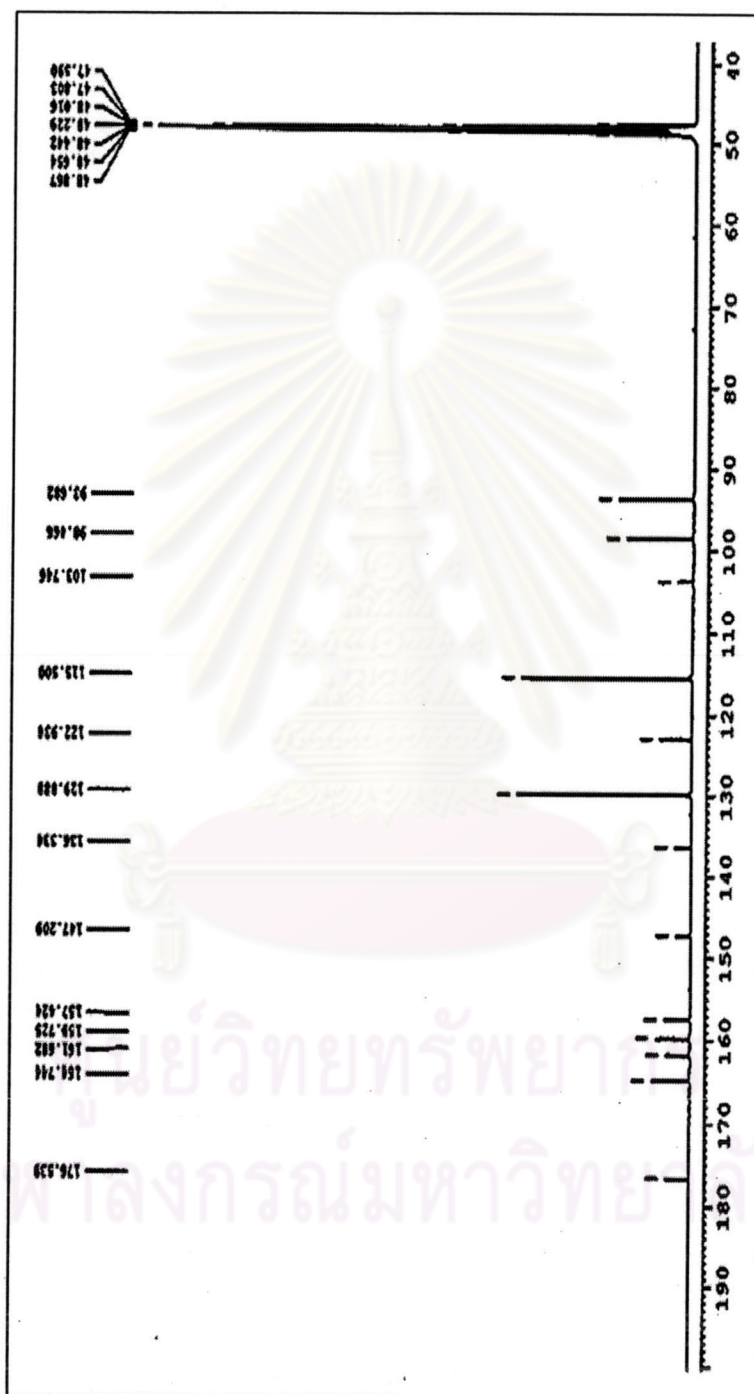


Figure 16 $^{13}\text{C-NMR}$ spectrum of Compound 1

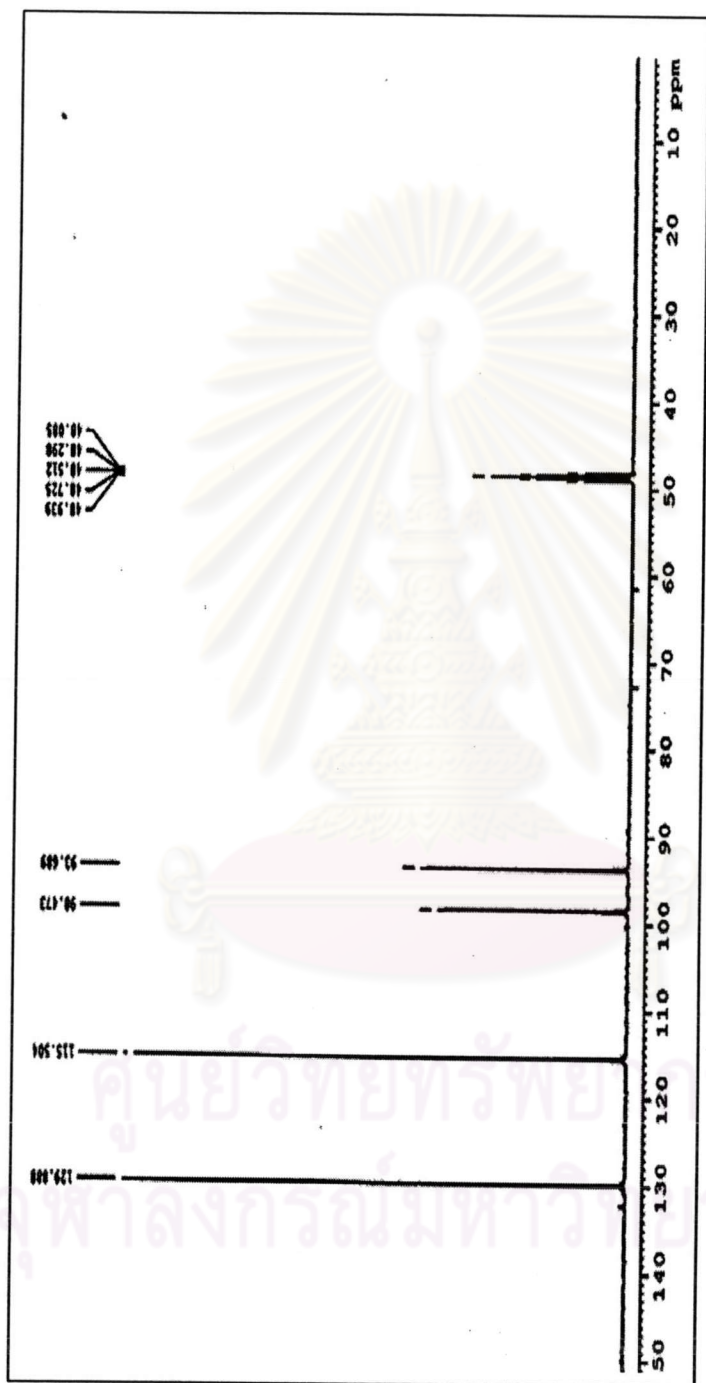


Figure 17 DEPT-135 spectrum of Compound 1

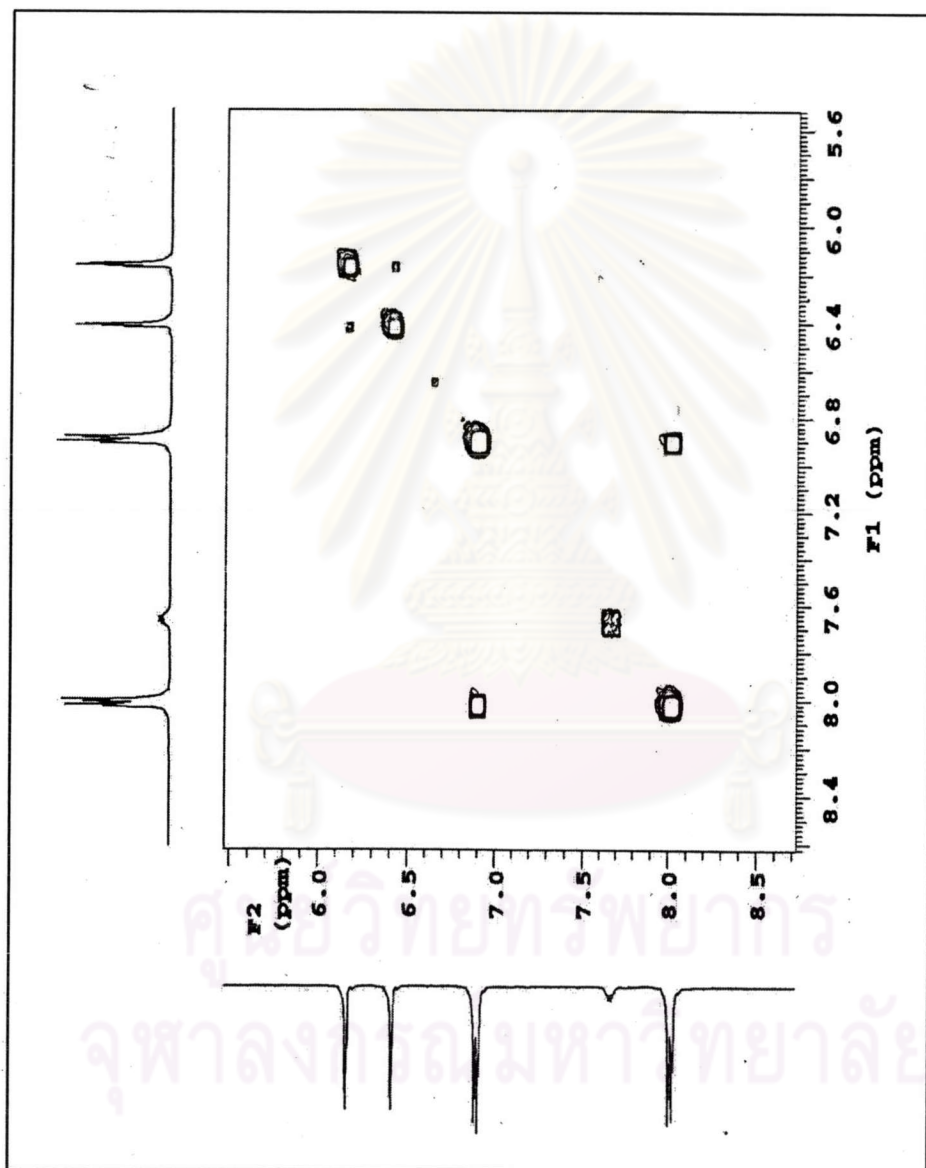


Figure 18 ^1H - ^1H NMR spectrum of Compound I

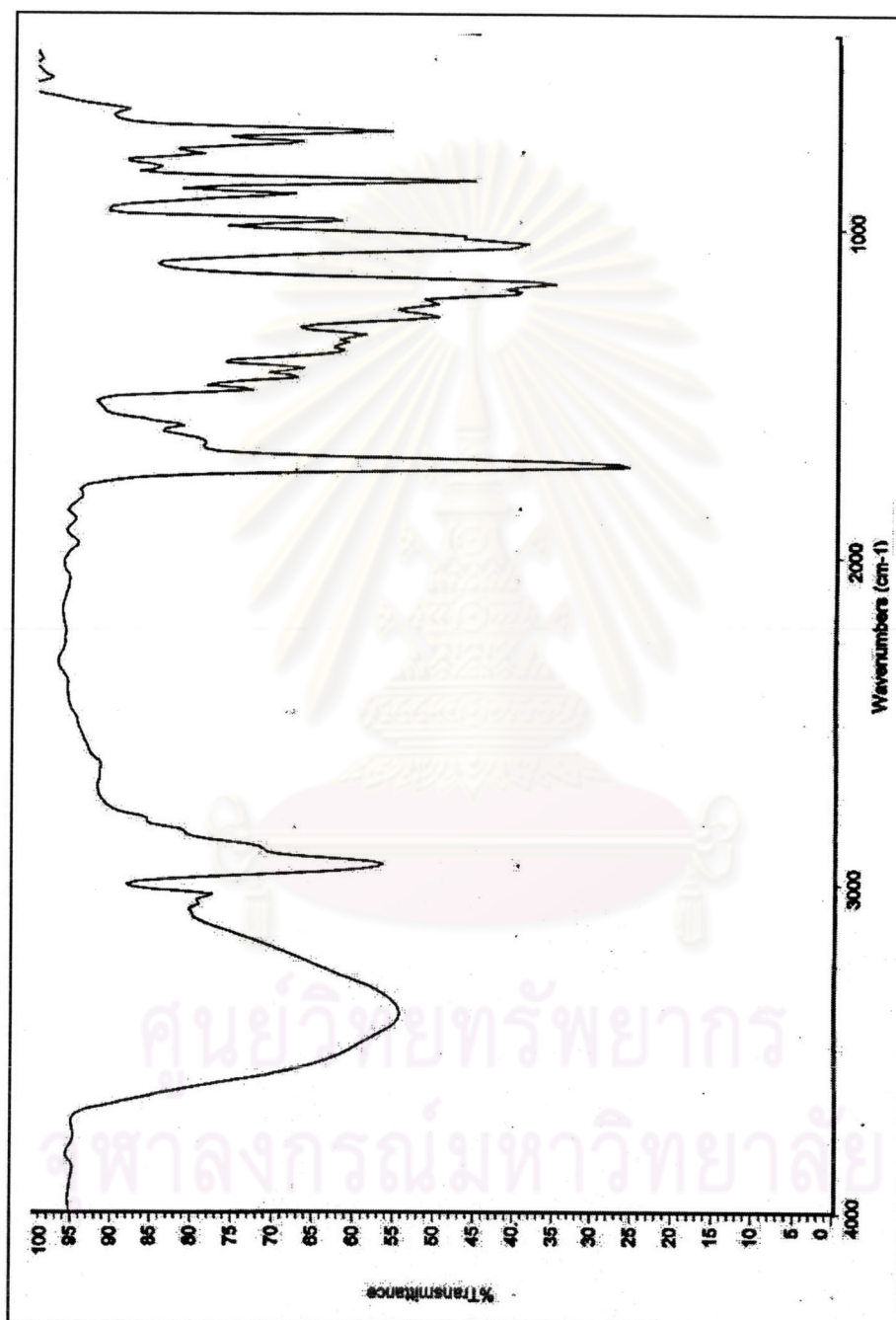


Figure 19 IR spectrum of Compound 2

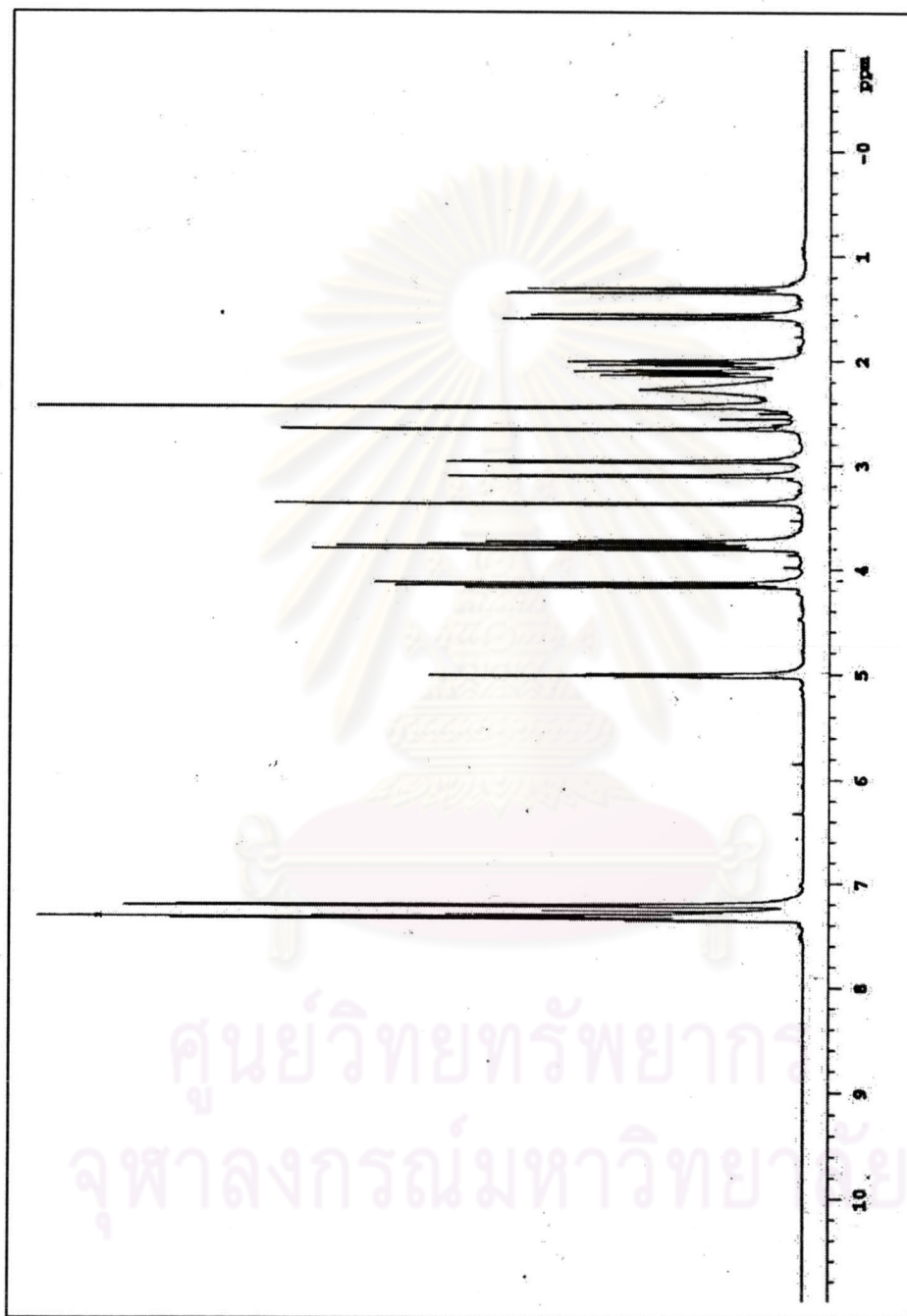


Figure 20 ^1H NMR spectrum of Compound 2

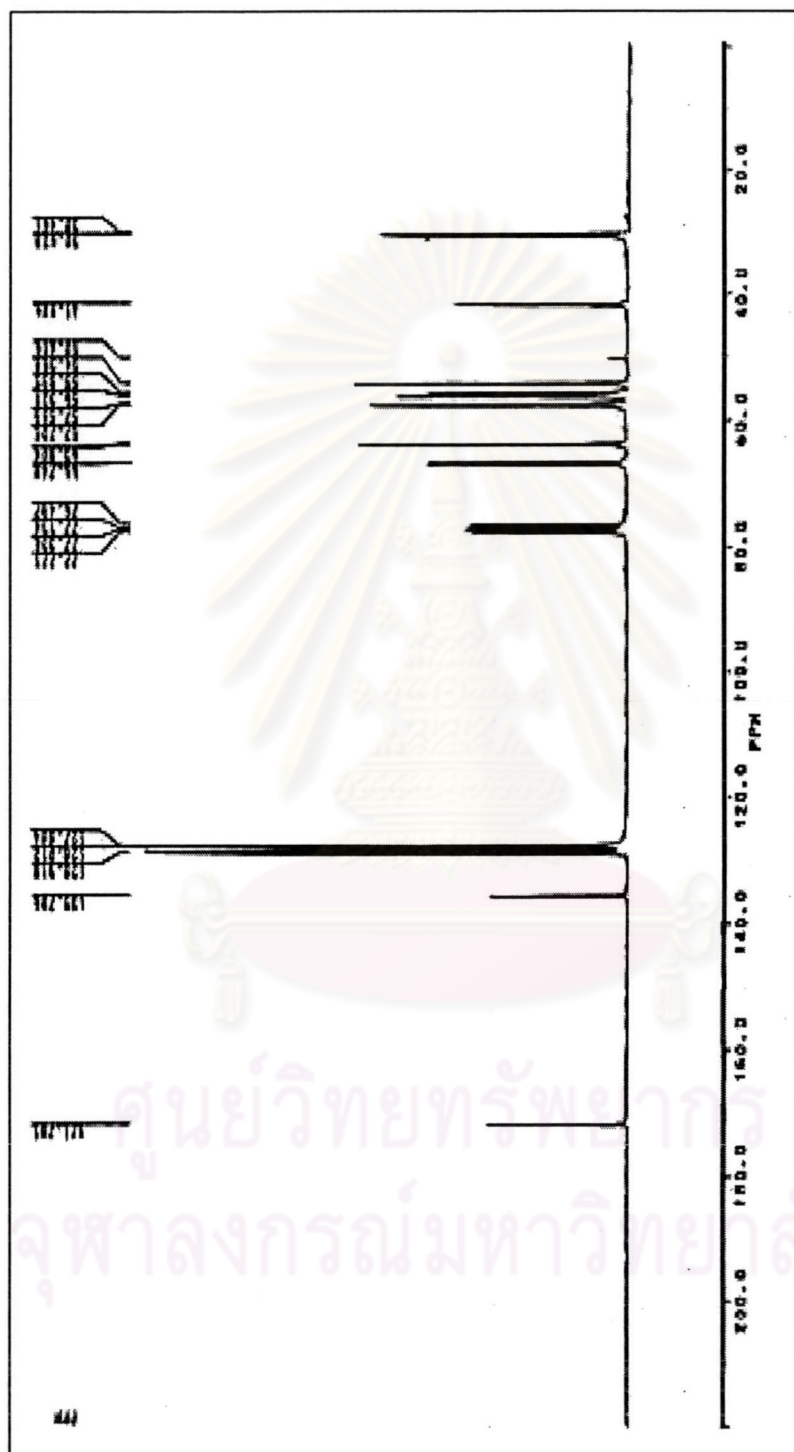
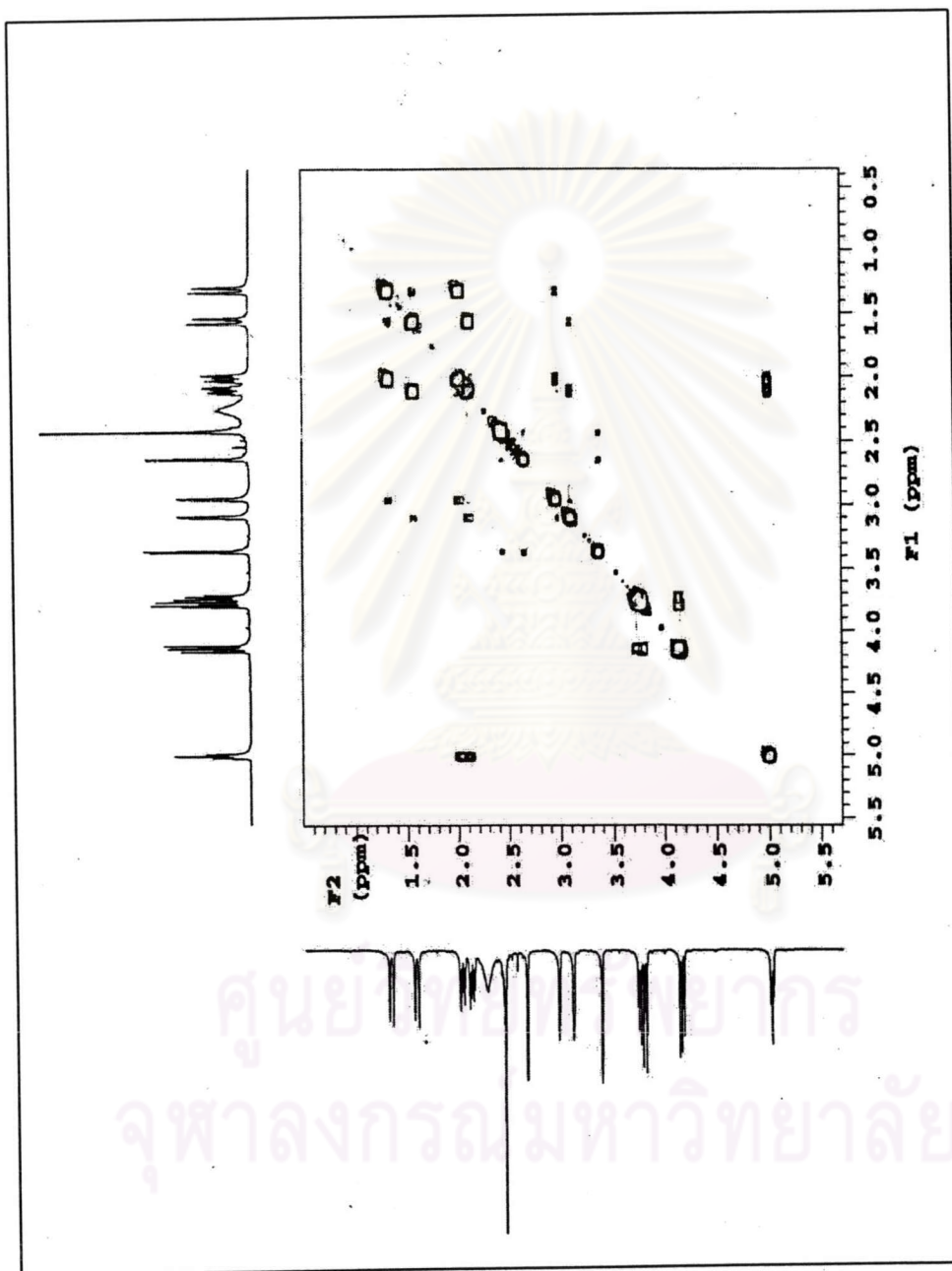


Figure 21 ^{13}C NMR spectrum of Compound 2

Figure 22 ^1H - ^1H COSY of Compound 2

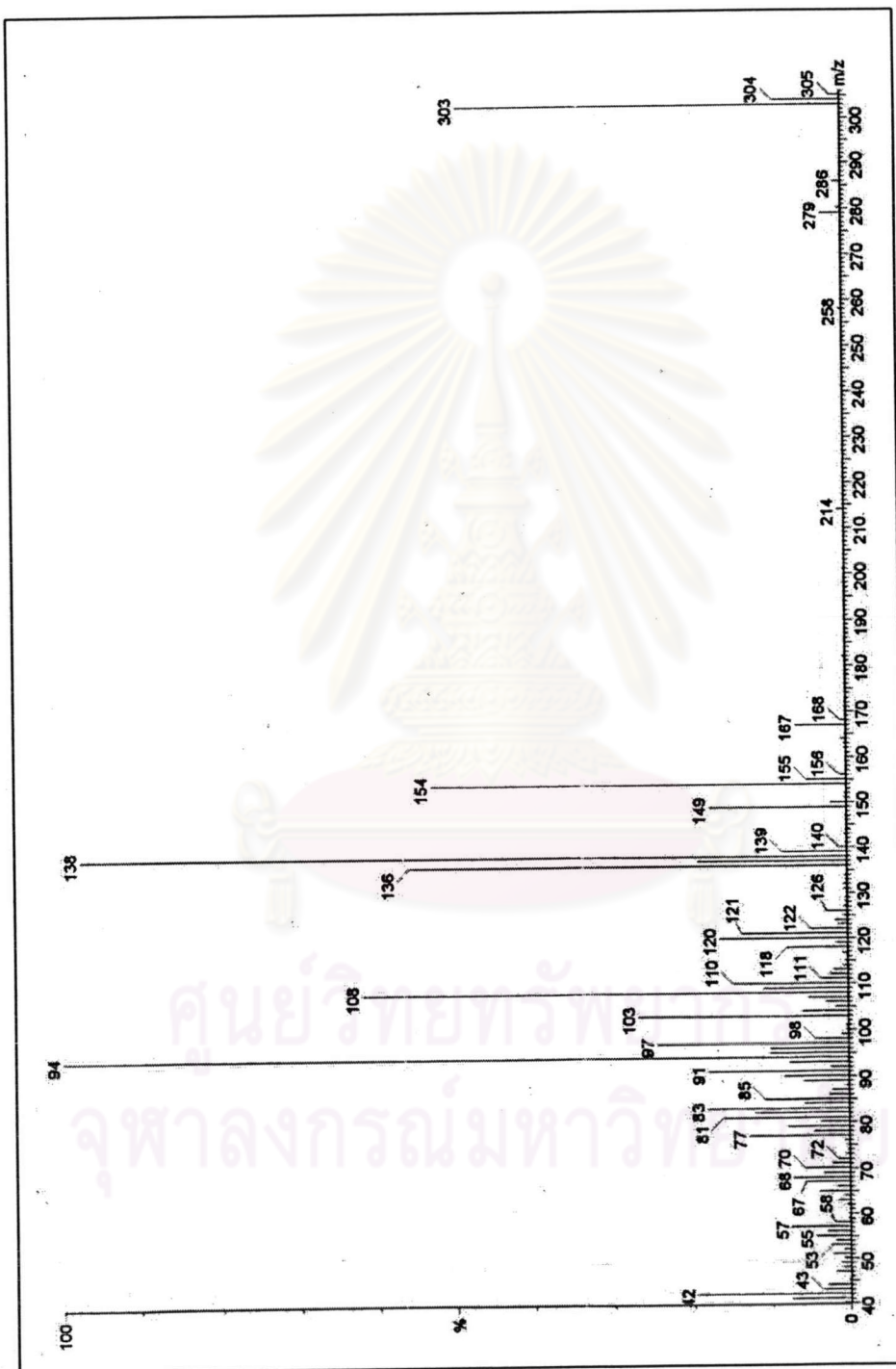


Figure 23 MS spectrum of Compound 2

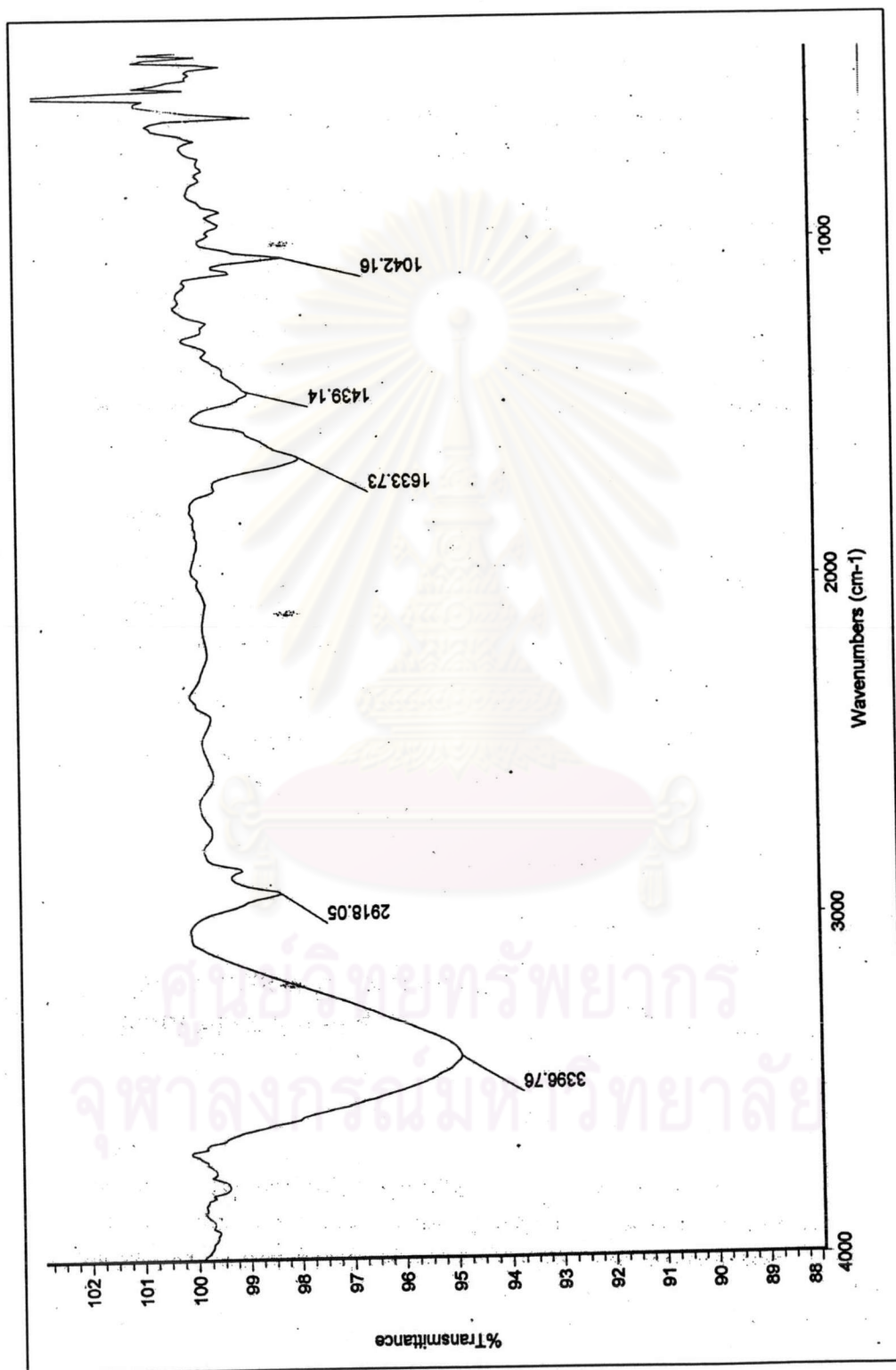


Figure 24 IR spectrum of Compound 3

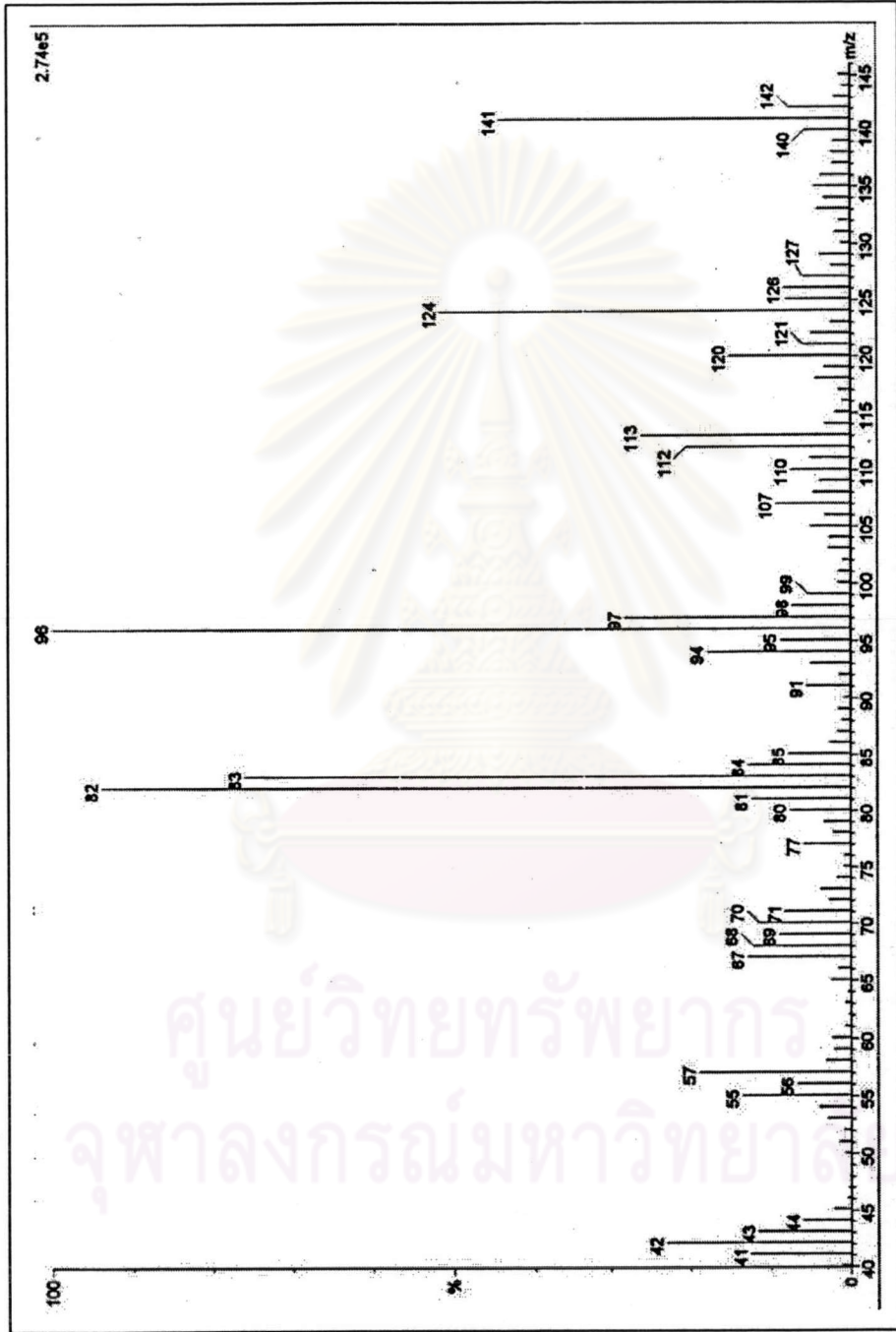


Figure 25 MS spectrum of Compound 3

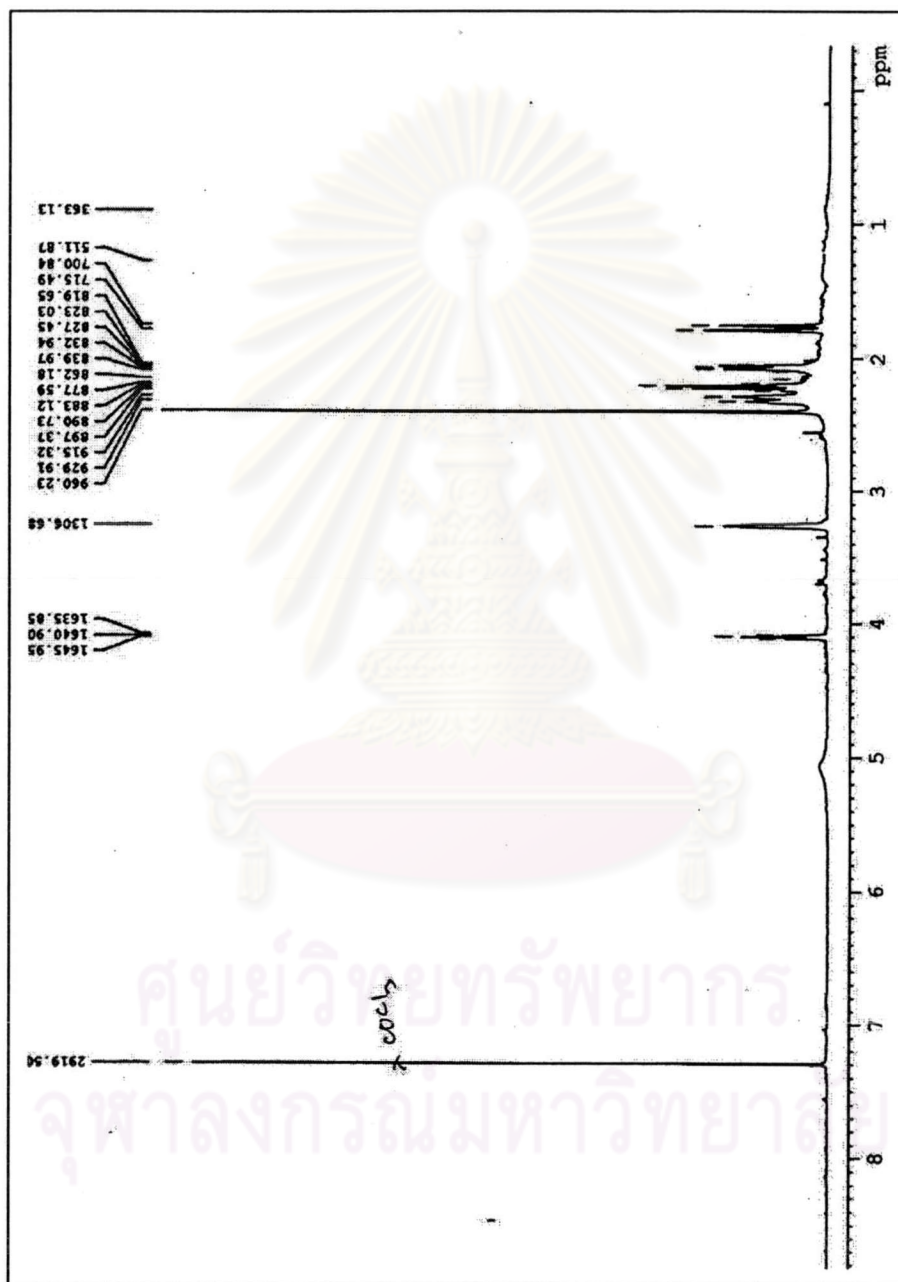


Figure 26 ¹H NMR spectrum of Compound 3

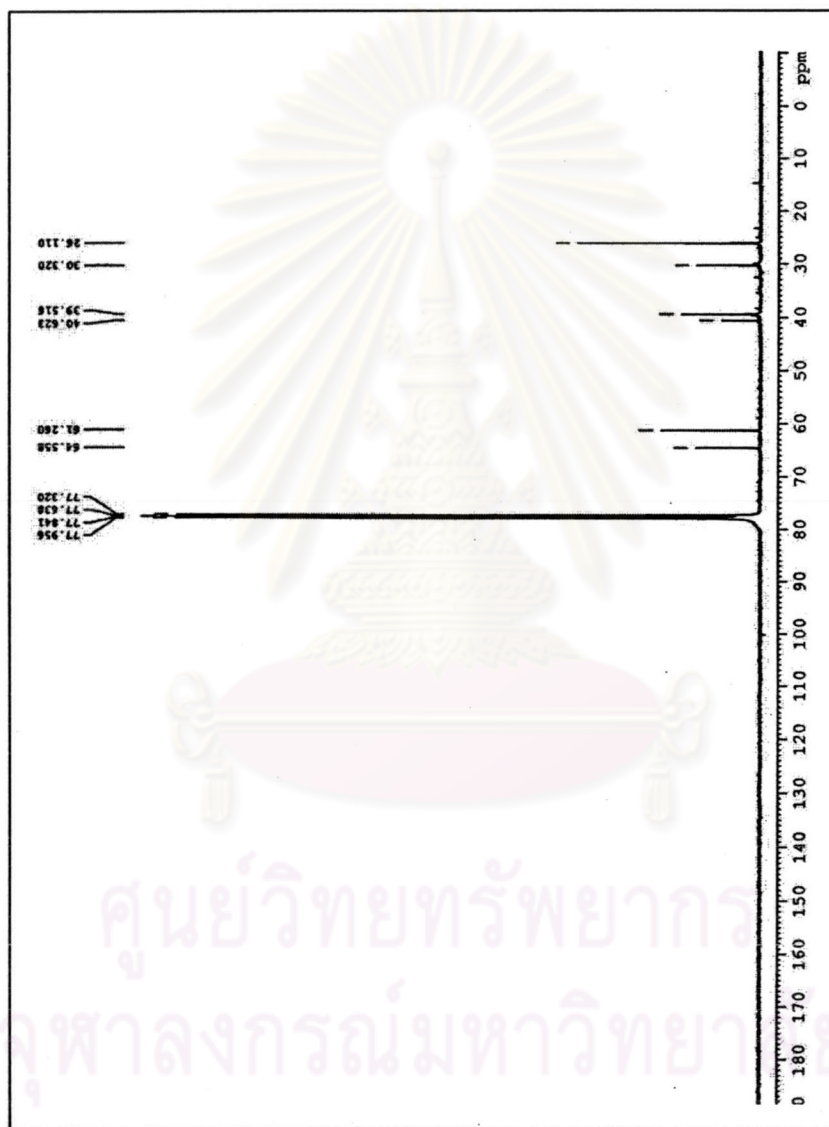


Figure 27 ^{13}C NMR spectrum of Compound 3

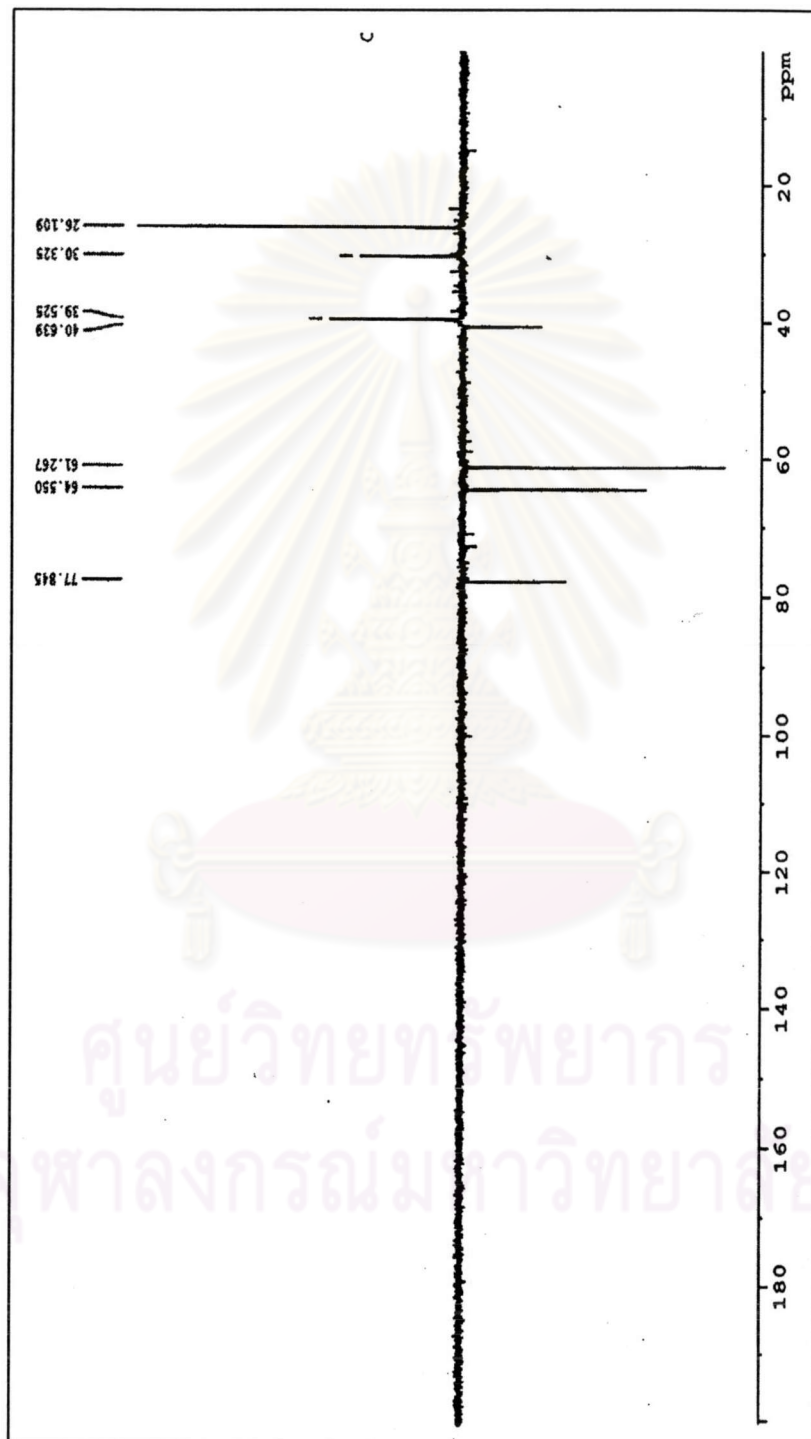


Figure 28 DEPT-135 spectrum of Compound 3

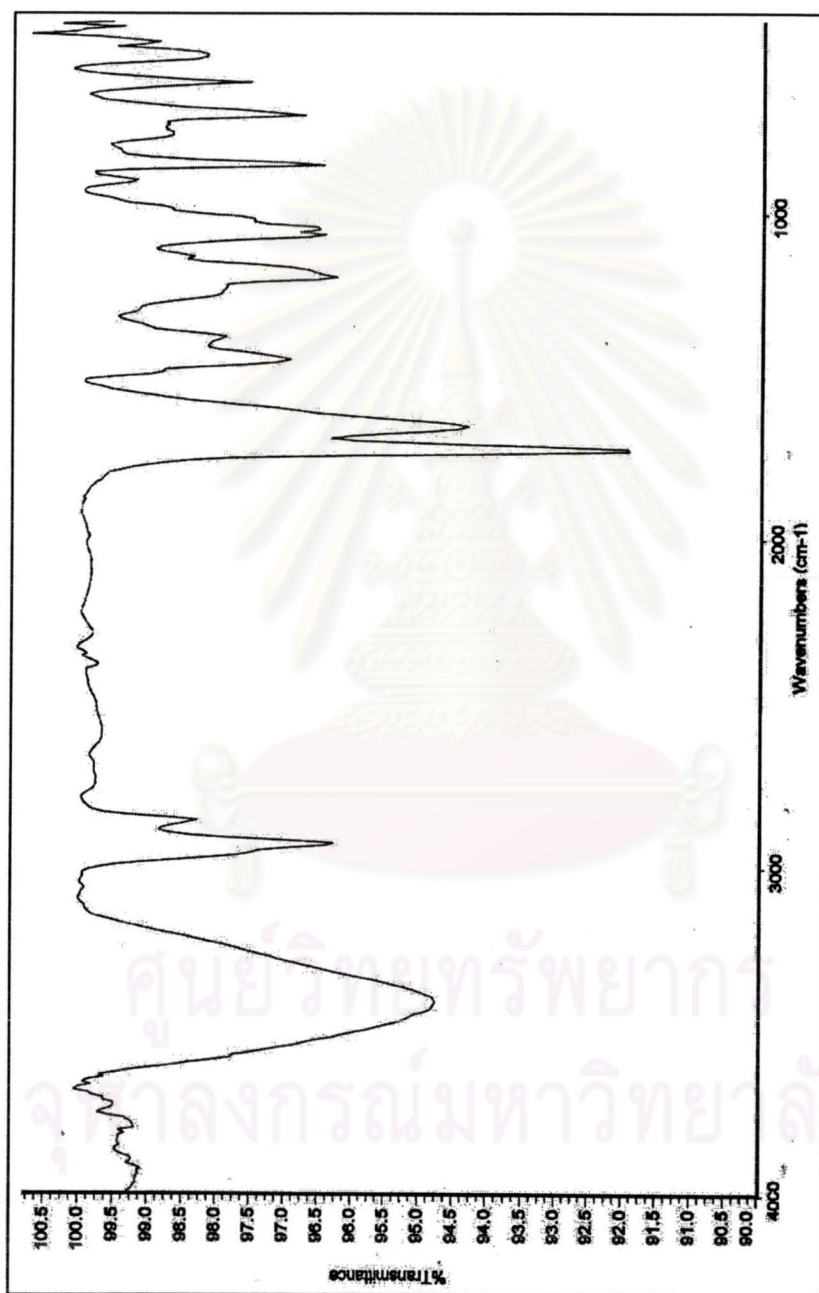


Figure 29 IR spectrum of Compound 4

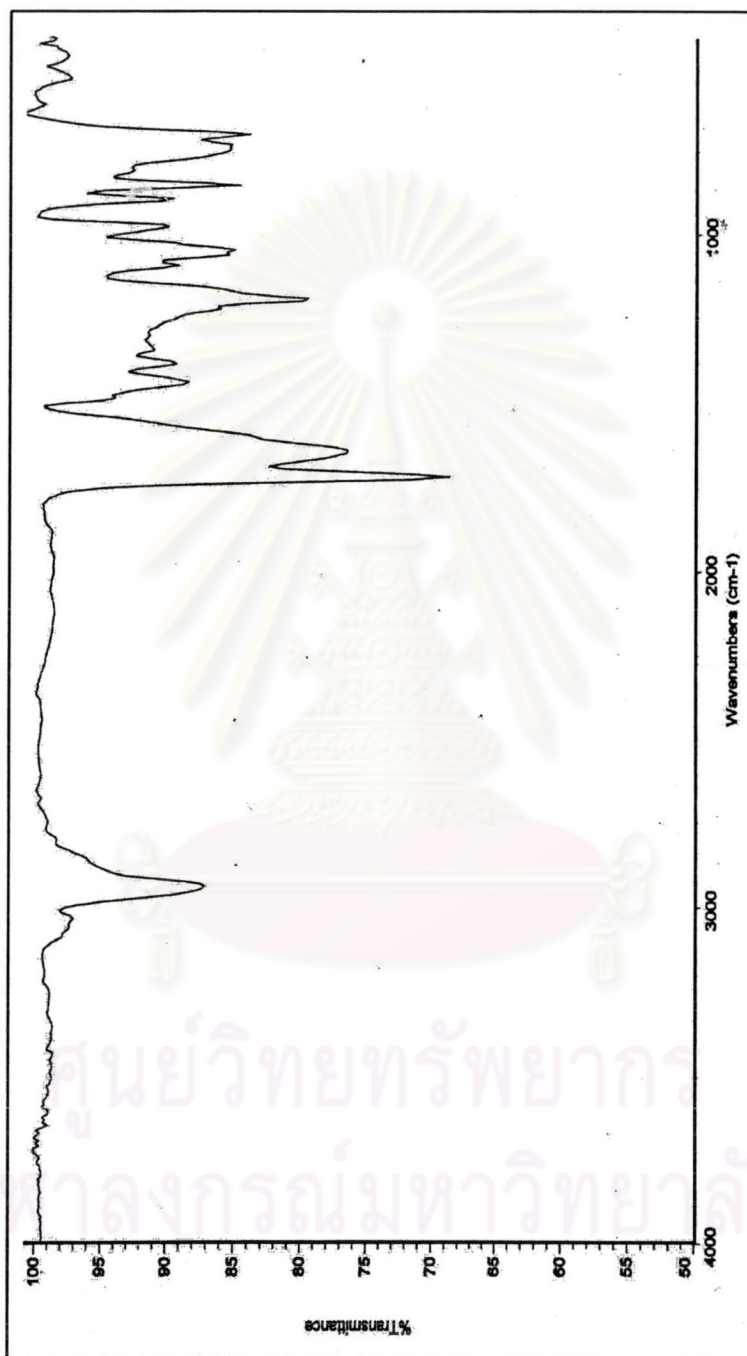


Figure 30 IR spectrum of Compound 5

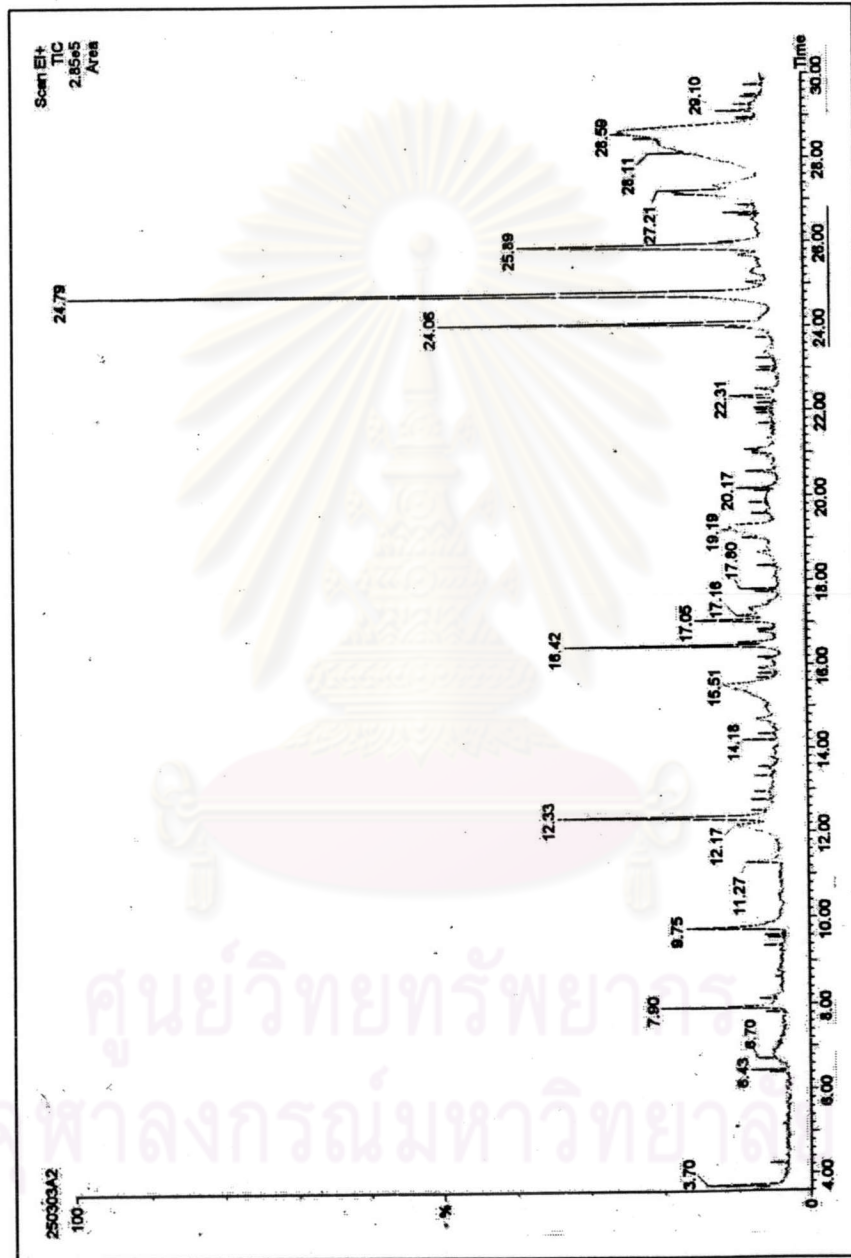


Figure 31 GC-MS chromatogram of Compound 5

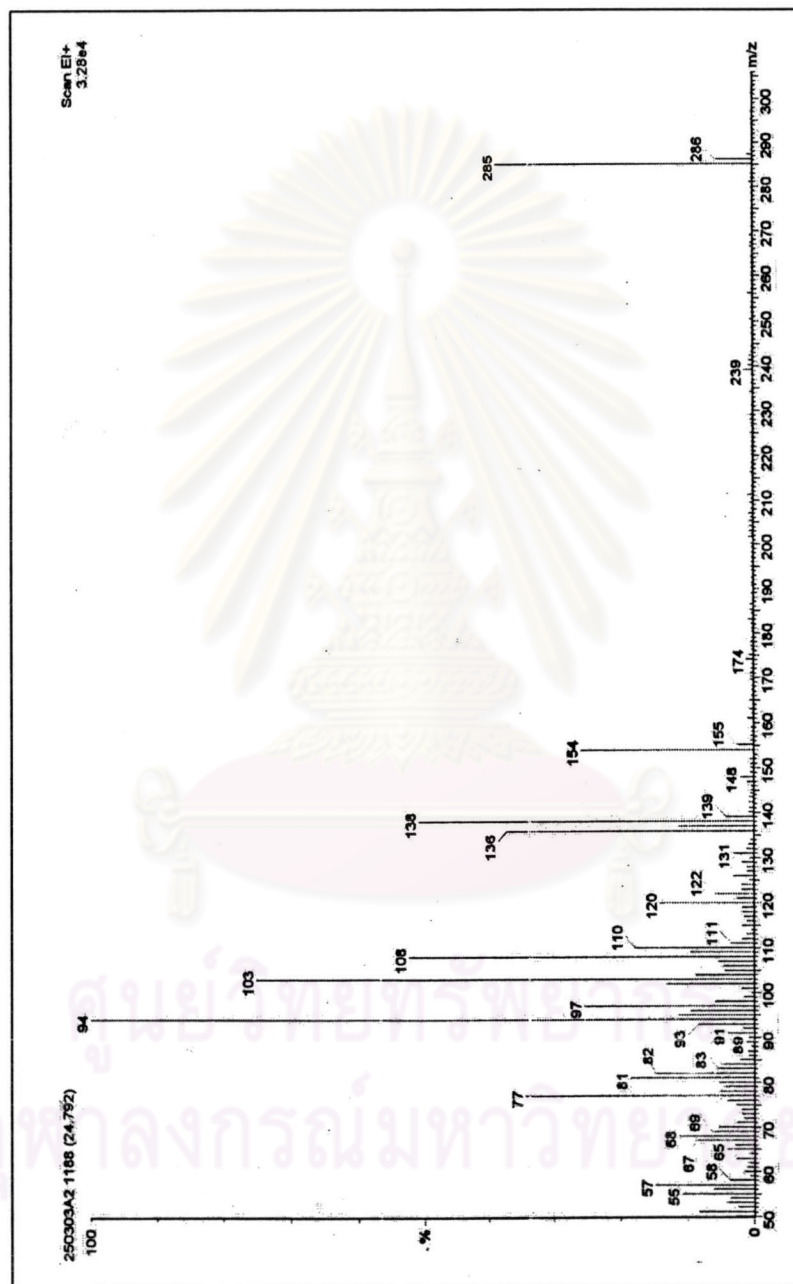


Figure 32 Mass spectrum of Compound 5

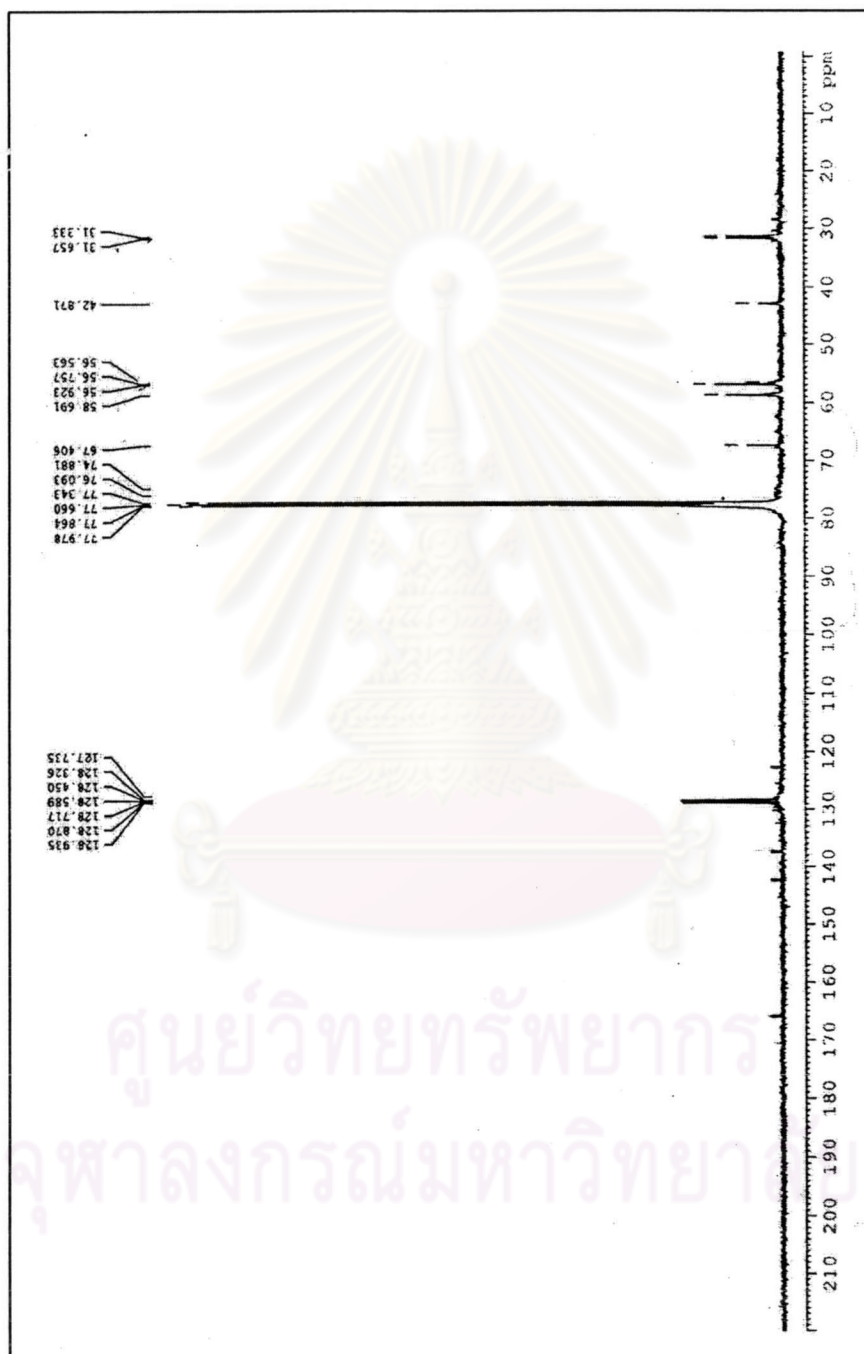


Figure 33 ^{13}C NMR spectrum of Compound 5

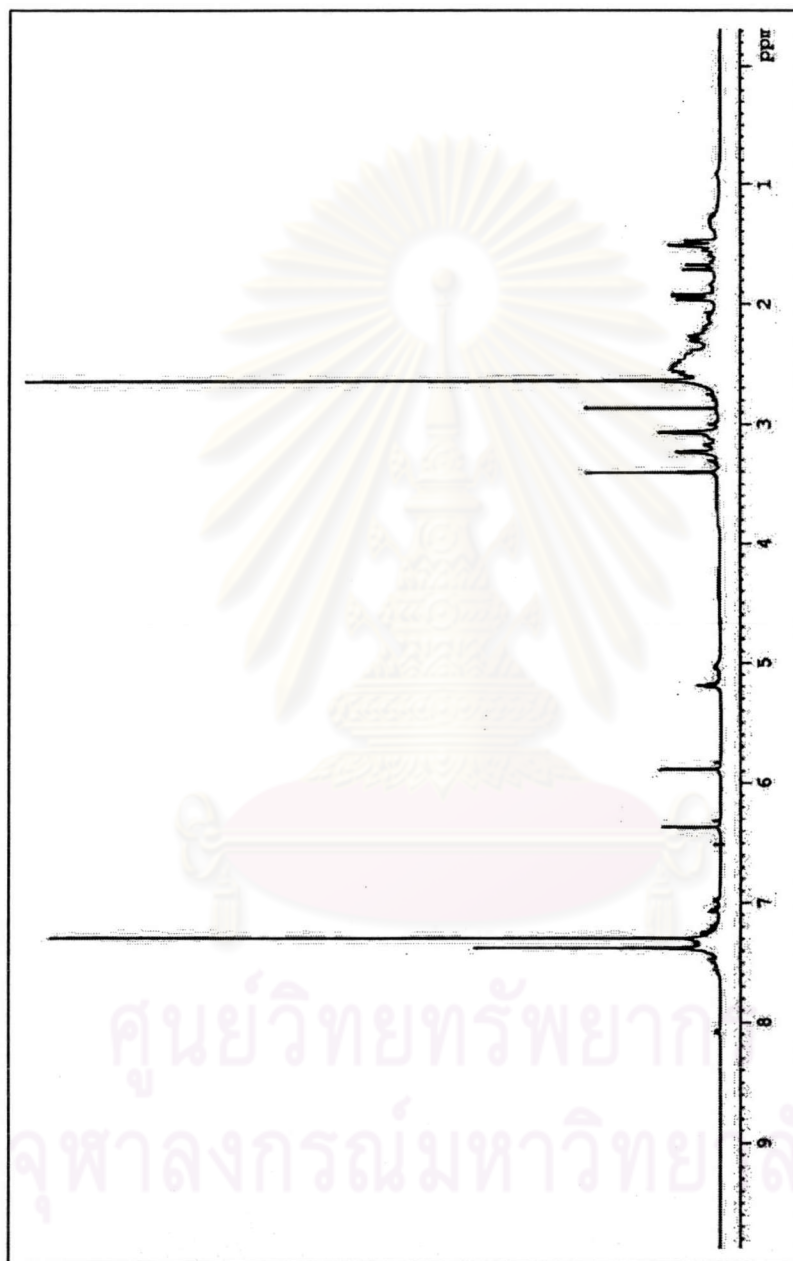


Figure 34 ^1H NMR spectrum of Compound 5

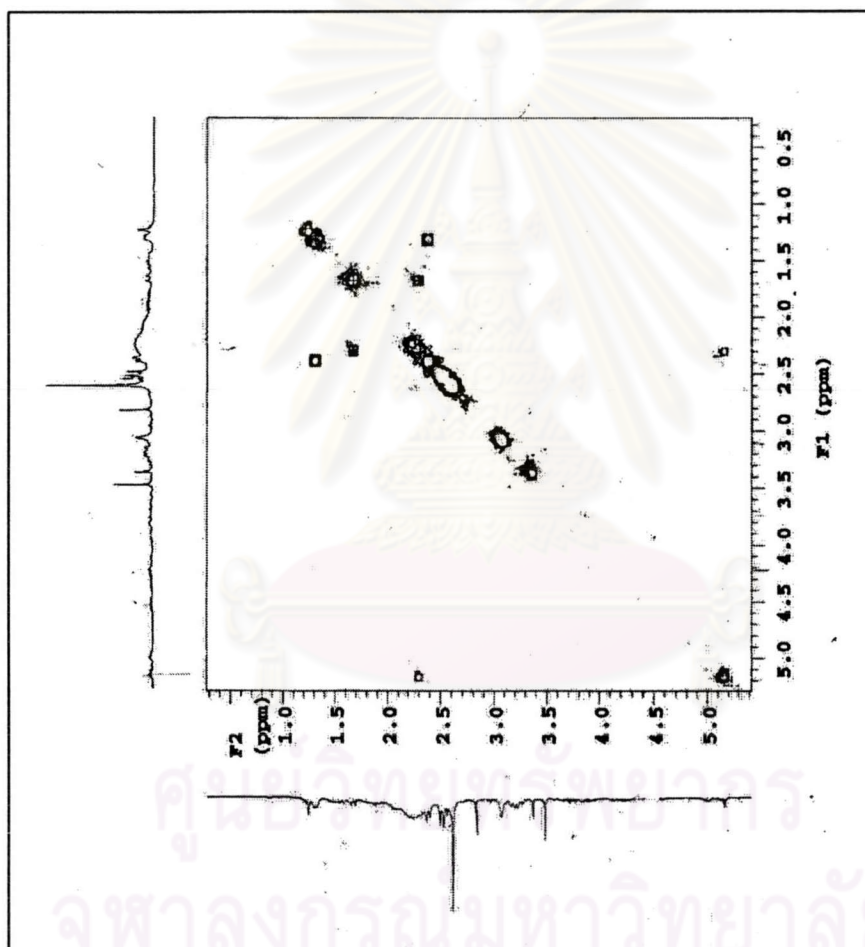


Figure 35 ^1H COSY NMR spectrum of Compound 5

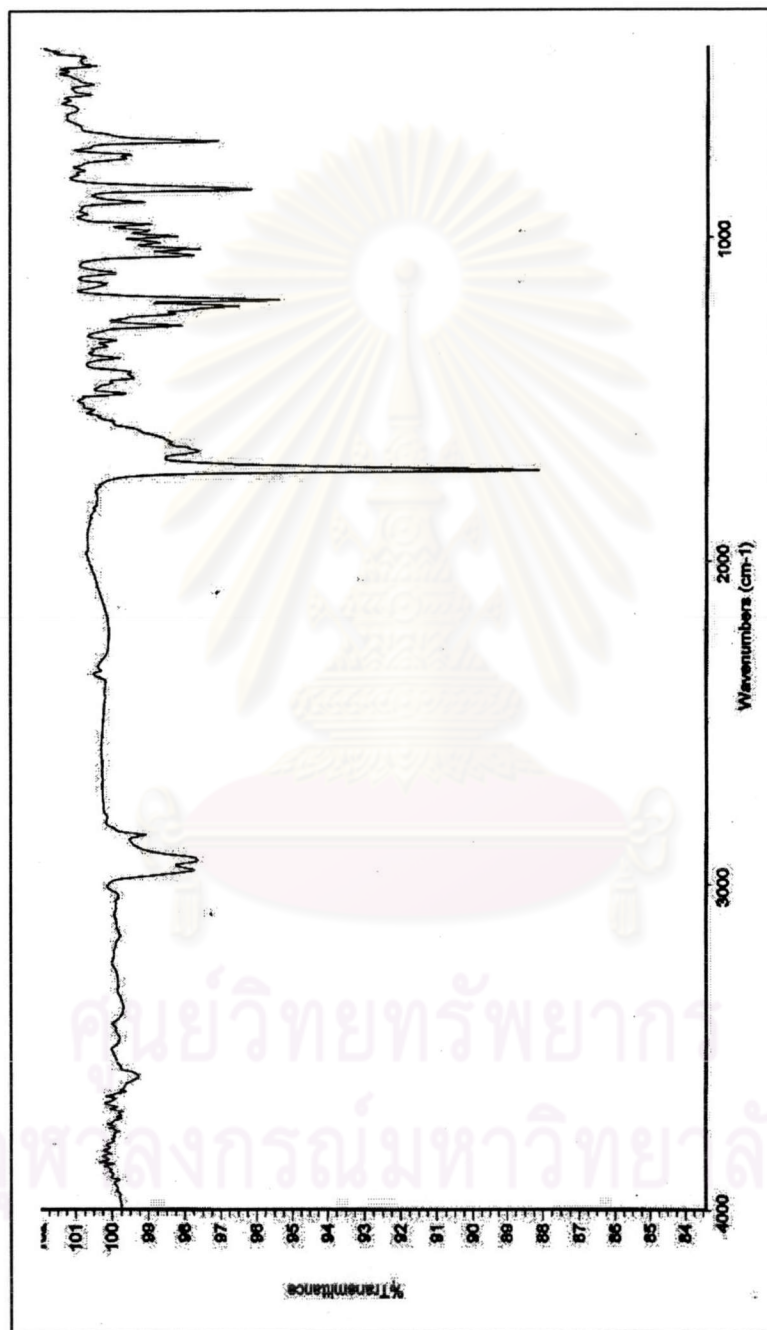


Figure 36 IR spectrum of Mixture 4

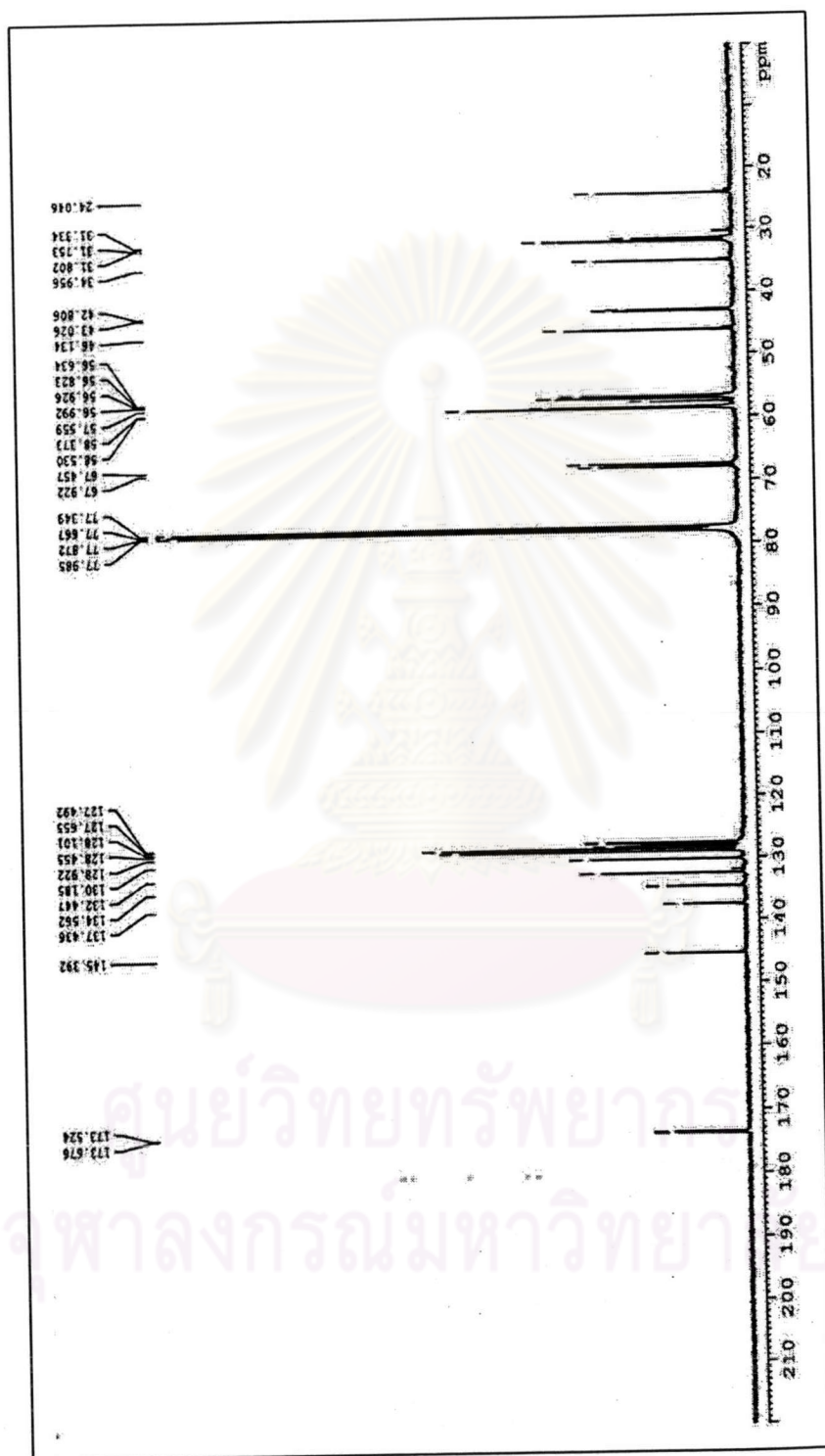


Figure 37 ^{13}C NMR spectrum of Mixture 4

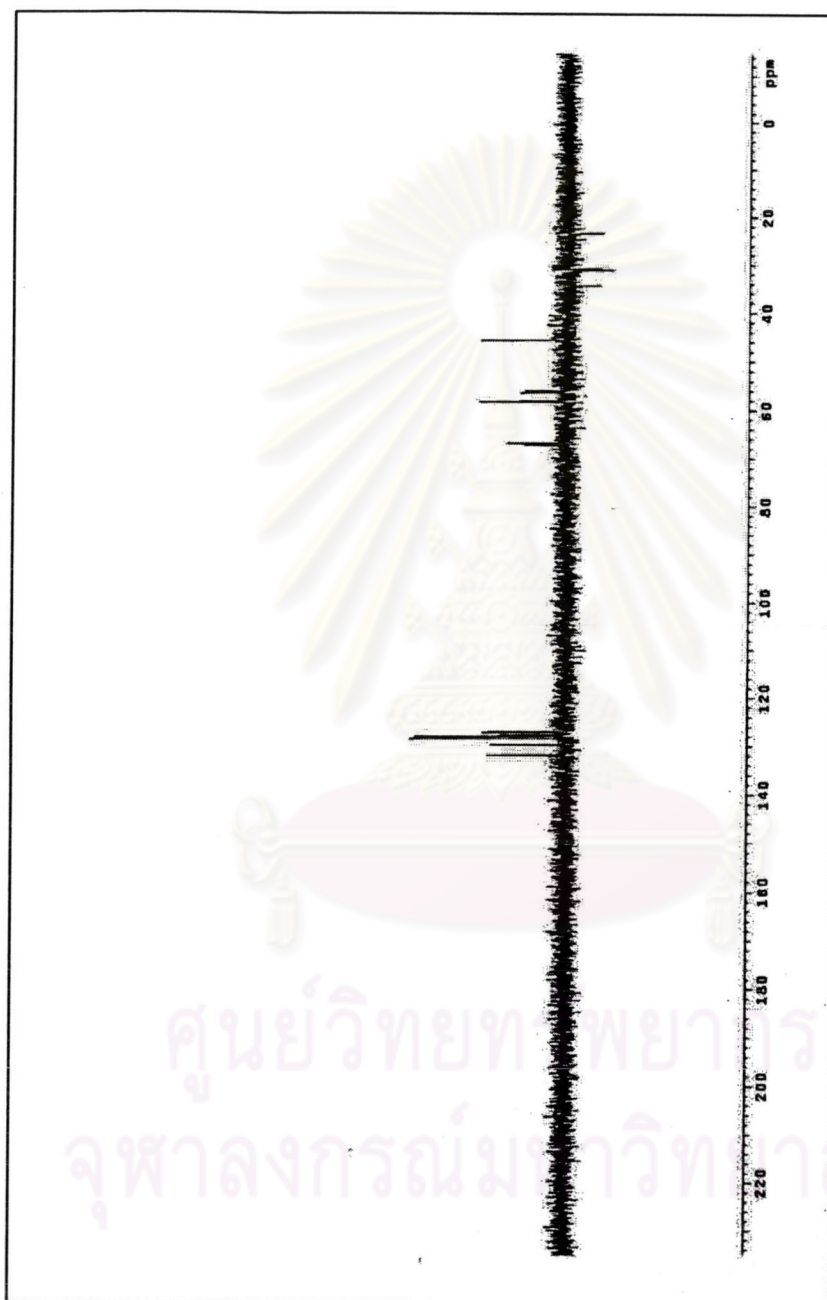


Figure 38 DEPT-135 spectrum of Mixture 4

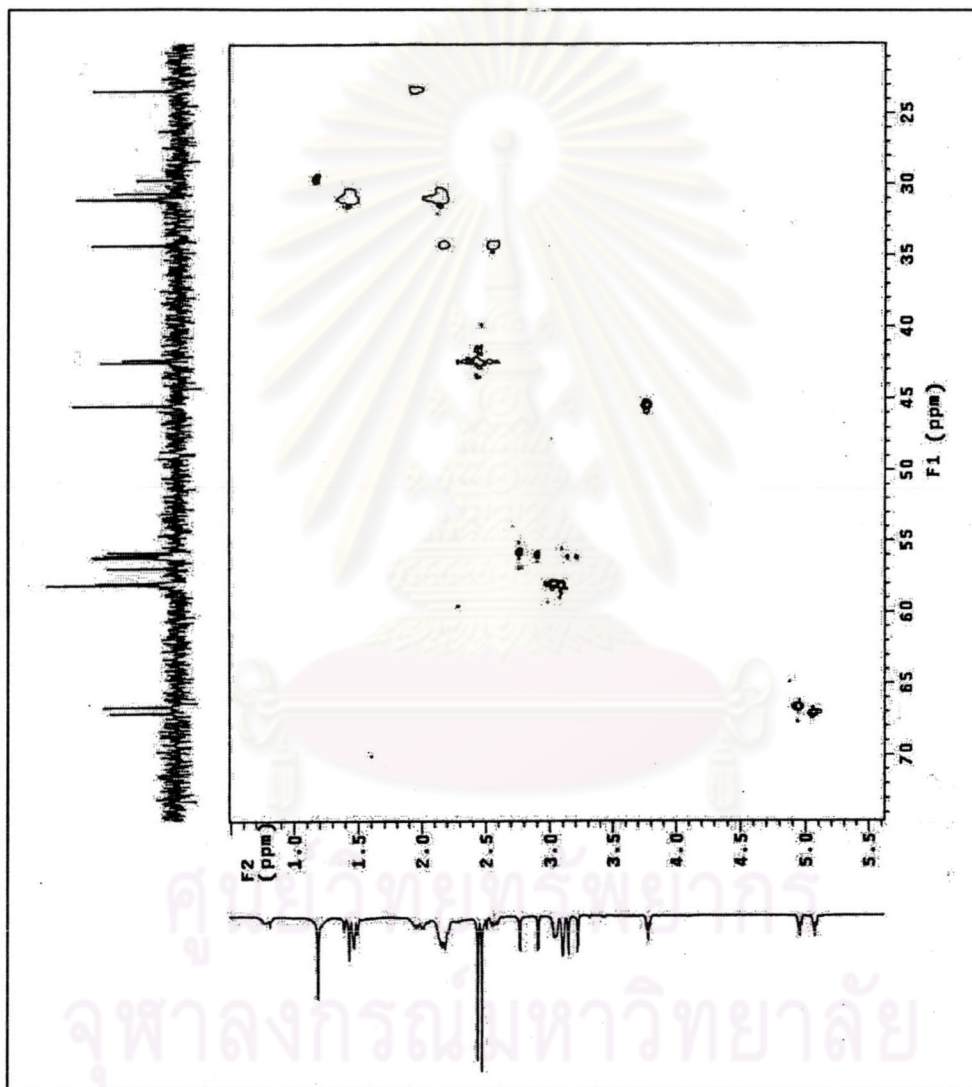


Figure 39 HSQC spectrum of Mixture 4

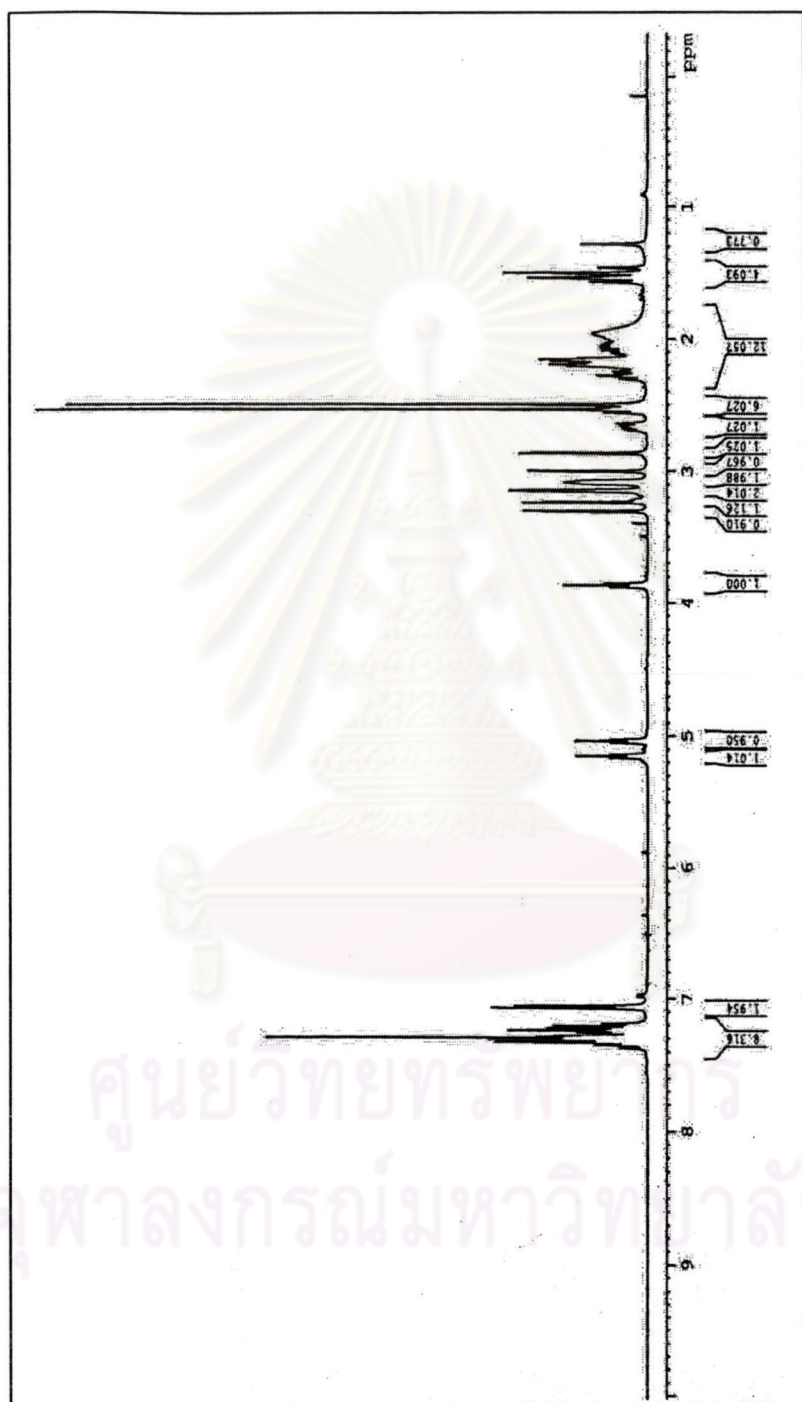


Figure 40 ^1H NMR spectrum of Mixture 4

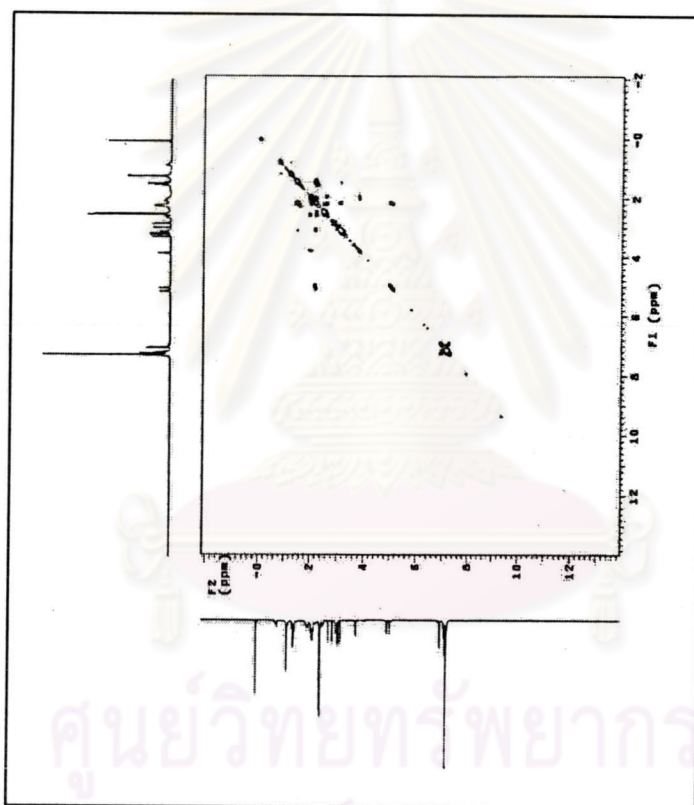


Figure 41 ^1H - ^1H COSY spectrum of Mixture 4

ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

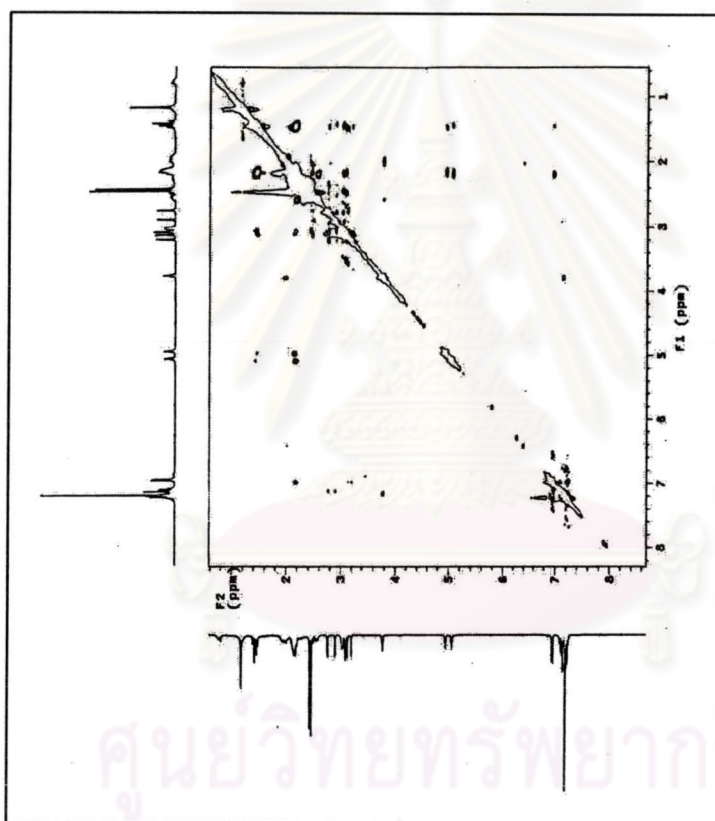


Figure 42 ^1H - ^1H NOESY spectrum of Mixture 4

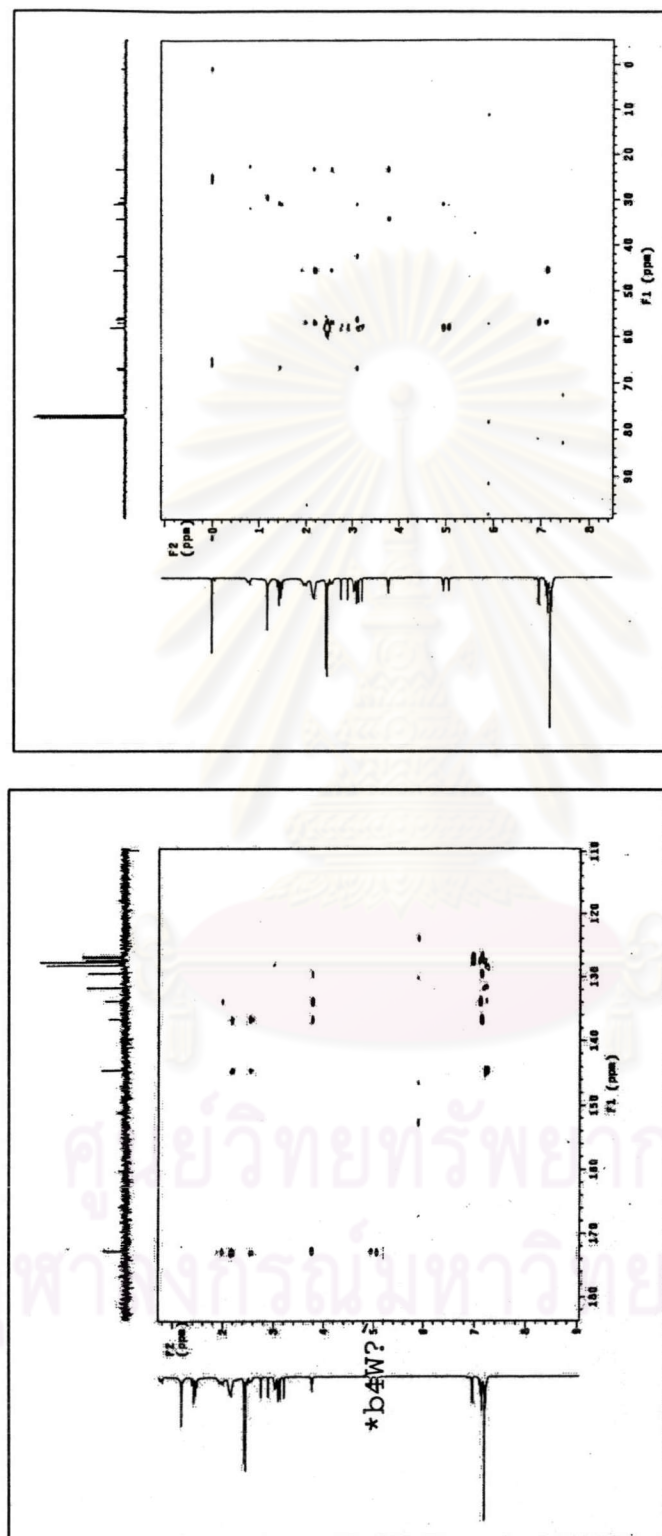


Figure 43 CIGAR spectrum of Mixture 4

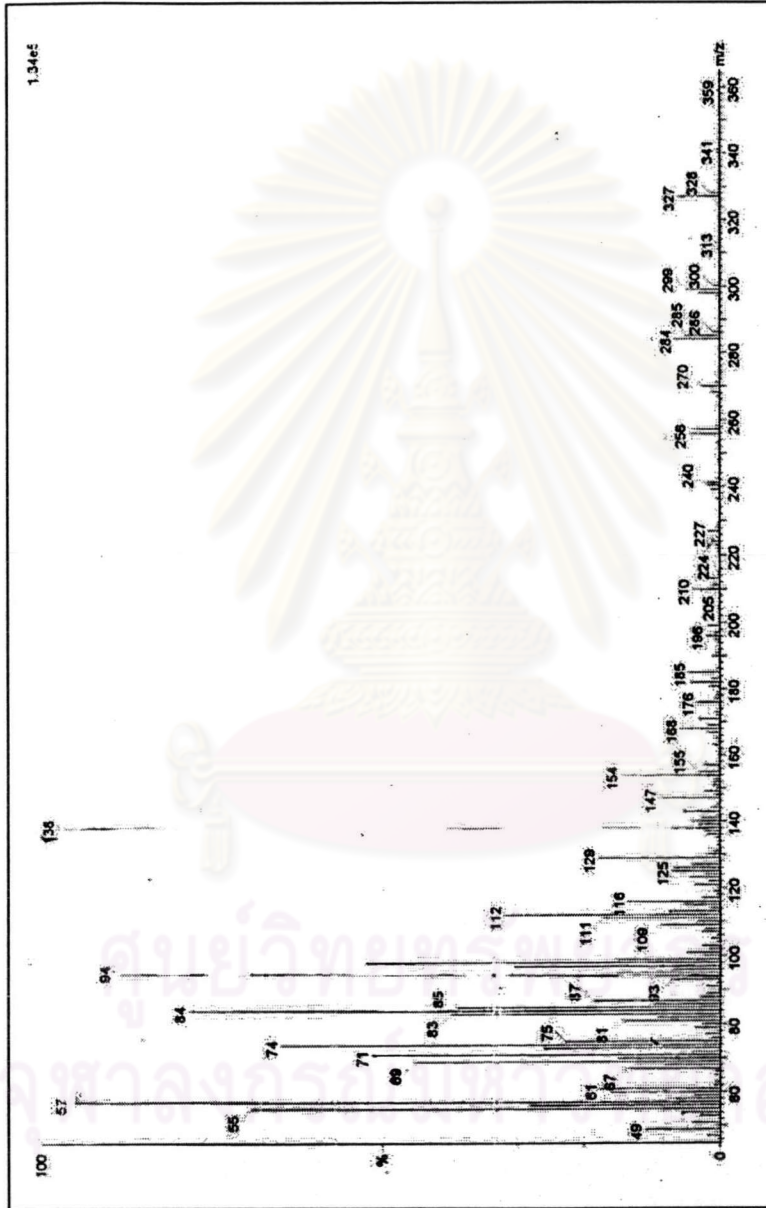


Figure 44 Mass spectrum of Mixture 4

VITA

Ms. Sirichan Patanapongsirikul was born on May 24, 1977 in Chonburi, Thailand. Her address is 219/2 Moo.6, Tumbol Lomrad, Amphur Thoen, Lampang 52160. Tel (054)326314. She finished primary school and high school from Thoen Vittaya School. She received a diploma in analytical chemistry from Institute of Analytical Chemistry Training and the graduated a Bachelor's Degree of Science from Department of Chemistry, Chulalongkorn University two years later (in 2000). During she was studying in Master degree program, she was awarded as teaching assistance fellowship from Faculty of Science, Chulalongkorn University.



ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย