

REFERENCES

1. Wade, L.G. *Organic chemistry*. New Jersey: Prentice-Hall International, **1995**, 1014-1016.
2. Morrison, R.T. and Boyd, R.N. *Organic chemistry*. New Jersey: Prentice-Hall International, **1992**, 760-762.
3. Meakins, G.D. *Oxford chemistry primers. Functional groups: Characteristics and interconversion*. New York: Oxford University Press, **1996**, 78-79.
4. Norman, R.O.C. *Principles of organic synthesis*. London: Chapman and Hall, **1978**.
5. March, J. *Advanced organic chemistry. Reactions, mechanism and structure*. New York: John Wiley & Sons, **1992**.
6. McMaster, L. and Ahmann, F.F. Action of thionyl chloride on organic acids. *J. Am. Chem. Soc.*, **1928**, *50*, 145-149.
7. Adams, R. and Ulich, L.H. The use of oxalyl chloride and bromide for producing acid chlorides, acid bromides or acid anhydrides III. *J. Am. Chem. Soc.*, **1920**, *42*, 599-611.
8. Schreyer, R.C. Simultaneous synthesis of aromatic acid chlorides and metal chlorides. *J. Am. Chem. Soc.*, **1958**, *80*, 3483-3484.
9. Nakano, T.; Ohkawa, K.; Matsumoto, H. and Nagai, Y. Convenient synthesis of aromatic acid chlorides. The reaction of benzylidene chlorides with hexamethyldisiloxane. *J. Chem. Soc. Chem. Comm.*, **1977**, 808-809.
10. Rondestvedt, C.S. New syntheses of aromatic acid chlorides from trichloromethyl arenes 1. Reaction with sulfur dioxide. *J. Org. Chem.*, **1976**, *41*, 3569-3573.
11. Seikaly, H.R. and Tidwell, T.T. Addition reactions of ketenes. *Tetrahedron*, **1986**, *42*, 2587-2613.
12. Gerrard, W. and Thrush, A.M. Reaction in carboxylic acid-thionyl chloride system. *J. Chem. Soc.*, **1953**, 2117-2120.
13. Rudolf, K. and Joachim, R. Carboxylic acid chlorides. *Ger. I*, 265,749 Apr. 11, 1968. through *Chemical Abstracts*, **1968**, *69*, Abstract No 2680s.

14. Spenskaya, I.N. and Moksarev, G.V. Reaction of benzotrichloride [α,α,α -trichlorotoluene] with organic acids. *Zh. Vses. Khim. Obshchest.*, **1970**, *15*, 583. through *Chemical Abstracts*, **1971**, *74*, Abstract No 12784z.
15. Wissner, A. and Grudzinskas, C.V. Reaction of *tert*-butyldimethylsilyl esters with oxalyl chloride-dimethylformamide: preparation of carboxylic acid chlorides under neutral conditions. *J. Org. Chem.*, **1978**, *43*, 3972-3974.
16. Venkataraman, K. and Wagle, D.R. Cyanuric chloride: A useful reagent for converting carboxylic acids into chlorides, esters, amides and peptides. *Tetrahedron Lett.*, **1979**, *32*, 3037-3040.
17. Jeannine, C.; Jean Pierre, S. and Gary, W. A new method for preparation of acid chlorides. *Eur. Pat. Appl. EP 274,909* May 10, 1989. through *Chemical Abstract*, **1989**, *111*, Abstract No 231450y.
18. Martin, D.; Wolfgang, F.; Rudolf, I. and Manfred, S. Method of manufacture of carboxylic acid chlorides by chlorination of carboxylic acids or anhydrides with phosgene in presence of diisopropylformamide. *Eur. Pat. Appl. EP 406,714* Jan. 9, 1991. through *Chemical Abstract*, **1991**, *114*, Abstract No 101147f.
19. Lee, J.B. Preparation of acyl chlorides under very mild conditions. *J. Am. Chem Soc.*, **1966**, *88*, 3440-3441.
20. Tömösközi, I.; Gruber, L. and Radics, L. On the mechanism of the reaction of triphenylphosphine-carbontetrachloride with alcohols, acids and enolizable ketones. *Tetrahedron Lett.*, **1975**, 2473-2476.
21. Sucheta, K.; Reddy, G.S.R.; Ravi, D. and Rama rao, N. A novel, general route to the synthesis of a carboxylic acid esters and thiolesters. *Tetrahedron Lett.*, **1994**, *35*, 4415-4416.
22. Villeneuve, G.B. and Chan, T.H. A rapid, mild and acid-free procedure for the preparation of acyl chlorides including formyl chloride. *Tetrahedron Lett.*, **1997**, *38*, 6489-6492.
23. Jang, D.O.; Park, D.J. and Kim, J. A mild and efficient procedure for the preparation of acid chlorides from carboxylic acids. *Tetrahedron Lett.*, **1999**, *40*, 5323-5326.

24. Kim, J. and Jang, D.O. A convenient method for synthesis of symmetrical acid anhydride from carboxylic acids with trichloroacetonitrile and triphenylphosphine. *Synth. Commun.*, **2001**, *31*, 395-399.
25. Azumaya, I.; Okamoto, T.; Imabeppu, F. and Takayanagi, H. Simple and convenient synthesis of tertiary benzanilides using dichlorotriphenyl phosphorane. *Tetrahedron Lett.*, **2003**, *59*, 2325-2331.
26. Chan, T.H. and Wong, L.T.L. Silicon tetrachloride as a coupling reagent for amide formation. *J. Org. Chem.*, **1969**, *34*, 2766-2767.
27. Masala, S. and Taddei, M. Solid-supported chloro[1,3,5]triazine. A versatile new synthetic auxiliary for the synthesis of amide libraries. *Org. Lett.*, **1999**, *1*, 1355-1357.
28. Kunishima, M.; Kawachi, C.; Hioki, K.; Terao, K. and Tani, S. Formation of carboxamides by direct condensation of carboxylic acids and amines in alcohols using a new alcohol- and water- soluble condensing agent: DMT-MM. *Tetrahedron Lett.*, **2001**, *57*, 1551-1558.
29. Ley, J.P. and Bertram, H.J. Synthesis of polyhydroxylated aromatic mandelic acid amides and their antioxidative potential. *Tetrahedron Lett.*, **2001**, *57*, 1277-1282.
30. Perreux, L.; Loupy, A. and Volatron, F. Solvent-free preparation of amides from acids and primary amines under microwave irradiation. *Tetrahedron Lett.*, **2002**, *58*, 2155-2162.
31. Sharghi, H. and Sarvari, M.H. A direct synthesis of nitriles and amides from aldehydes using dry or wet alumina in solvent free conditions. *Tetrahedron Lett.*, **2002**, *58*, 10323-10328.
32. Ballini, R.; Bosica, G. and Fiorini, D. Uncatalyzed conversion of linear α -nitro ketones into amides by reaction with primary amines under solventless conditions. *Tetrahedron Lett.*, **2003**, *59*, 1143-1145.
33. Garcia, J.; Urpí, F. and Vilarrasa, J. New synthetic "tricks". Triphenylphosphine-mediated amide formation from carboxylic acids and azides. *Tetrahedron Lett.*, **1984**, *25*, 4841-4844.
34. Bosch, I.; González, A.; Urpí, F. and Vilarrasa, J. On the reaction of acyl chlorides and carboxylic anhydride with phosphazenes. *J. Org. Chem.*, **1996**, *61*, 5638-5643.

35. Neises, B. and Steglich, W. Esterification of carboxylic acids with dicyclohexylcarbodiimide/4-dimethylaminopyridine: *tert*-butyl ethylfumarate. *Organic Syntheses*, 7, 93.
36. Boden, E.P. and Keck, G.E. Proton-transfer steps in steglich esterification: A very practical new method for macrolactonization. *J. Org. Chem.*, **1985**, 50, 2394-2395.
37. Dekeyser, M.A. and Davis, R.A. Synthesis and antifungal activity of 5,6-dihydro-3-methyl-1,4-dioxin-2-carboxamides. *J. Agric. Food Chem.*, **1998**, 46, 2827-2829.
38. Greger, H. and Zechner, G. Bioactive amides from *Glycosmis speciosa*. *J. Nat. Prod.*, **1996**, 59, 1163-1168.
39. Charles, F. and Wilcox, Jr. Experimental in organic chemistry: A small-scale approach. New York: Macmillan Publishing, **1988**, 442-444.
40. Garrido, E.M.; Borges, F.; Silva, A.M.S.; Piedade, J.A.P. and Oliveira Brett, A.M. Electrochemical and spectroscopic studies of the oxidation mechanism of the herbicide propanil. *J. Agric. Food Chem.*, **2003**, 51, 876-879.
41. Dixon, D.; Cole, D.J. and Edward, R. Characterization of multiple glutathione transferases containing the GST I subunit with activities toward herbicide substrates in maize (*Zea mays*). *Pestid. Sci.*, **1997**, 50, 72-82.
42. Ratts, K.W. and Coeur, C. Plant regulation with 2-halo-2',6'-disubstitued-N-aminomethyl-acetanilides. *U.S. patent 3,829,306* Aug. 13, 1974.
43. Orzalesi, G. and Selleri, R. Inhibitor of blood plate aggregation. *U.S. patent 3,973,026* Aug. 3, 1976.
44. Grivsky, E.M. and Hill, C. Anti-convulsant cinnamamide compounds. *U.S. patent 4,041,071* Aug. 9, 1977.
45. Veronesi, U.; Chiesa, F. and Costa, A. Methods of inhibiting development of Leukoplakia with fenretinide. *U.S. patent 5,464,870* Nov. 7, 1995.
46. Son, S. and Lewis, B.A. Free radical scavenging and antioxidative activity of caffeic acid amide and ester analogous: Structure-activity relationship. *J. Agric. Food Chem.*, **2002**, 50, 468-472.
47. Kubicova, L.; Waisser, K.; Kralova, K.; Slosarek, M. and Svoboda, Z. Synthesis of *N,N'*-diarylalkanediamides and their antimycobacterial and antialgal activity. Thrid international electronic conference on synthetic organic

- chemistry [online]. 1999. Available from: <http://www.mdpi.org/ecsoc-3.htm> [1999, Aug. 21].
48. Kikuzaki, H.; Hisamoto, M, Hirose, K.; Akiyama, K. and Taniguchi, H. antioxidant properties of feruic acid and its related compounds. *J. Agric. Food Chem.*, **2002**, *50*, 2161-2168.
 49. Weber, N.; Weitkamp, P. and Mukherjee, K.D. Steryl and stanyl esters of fatty acids by solvent-free esterification and transesterification in vacuo using lipases from *Rhizomucor miehei*, *Candida antarctica*, and *Carica papaya*. *J. Agric. Food Chem.*, **2001**, *49*, 5210-5216.
 50. Tietze, L.F. and Eicher, TH. Reactions and syntheses in the organic chemistry Laboratory. California: University science book, **1988**, 110.
 51. Vogel, A.I. A textbook of practical organic chemistry. London: Longman group, **1978**, 699.
 52. Sukornick, B. α,α,α -Trichloroacetanilide. *Organic Syntheses*, *5*, 1074.
 53. Kaga, H.; Miura, M. and Orito, K. A facile procedure for synthesis of capsaicin. *J. Org. Chem.*, **1989**, *54*, 3477-3478.
 54. Nelson, E.K. The constitution of capsaicin, The pungent principle of capsicum. *J. Am. Chem. Soc.*, **1919**, *41*, 1115.
 55. *Dictionary of organic compounds. Completely revised, enlarge and re-set edition in two volumes.* London: Eyre & Spottiswoode (publishers), **1965**.
 56. Grigg, R.; Monteith, M.; Sridharan, V. and Terrier, C. Palladium catalysed reactions of allenes, carbon monoxide and nucleophiles. *Tetrahedron*, **1998**, 3885-3894.
 57. Heine, H.W.; Zibuck, R. and VandenHeuvel, W.J.A. Mechanisms for the reactions of nitrones with aroyl chlorides. *J. Am. Chem. Soc.*, **1982**, *104*, 3691-3694.
 58. Rebelo, R.A.; Rezende, M.C.; Nome, F. and Zucco, C. The use of 2,2,2-trichloro-1-arylethanones as benzoylating agents. *Synth. Commun.*, **1987**, *17*, 1741-1748.
 59. Osieka, H.; Pommer, E. and Kiefer, H. Methods of controlling fungi related Applications. *U.S. patent 3,969,510* July 13, 1976.
 60. Schobert, R.; Siegfried, S. and Gordon, G.J. Three-component synthesis of (*E*)- α,β -unsaturated amides of the piperine family. *J. Chem. Soc., Perkin Trans. 1*, **2001**, *19*, 2393-2397.

61. Hopkins, T.R.; Neighbors, R.P. and Phillips, L.V. Synthesis and herbicidal activity of small-ring compounds. *J. Agric. Food Chem.*, **1967**, *15*, 501-507.
62. Lambert, D.M.; Vandevoorde, S.; Jonsson, K.O. and Fowler, C.J. The palmitoylethanolamide family: A new class of anti-inflammatory agent. *Curr. Med. Chem.*, **2002**, *9*, 663-674.
63. Weber, N.; Weitkamp, P. and Mukherjee, K.D. Fatty acid steryl, stanyl, and steroid esters by esterification and transesterification in vacuo using *Candida rugosa* lipase as catalyst. *J. Agric. Food Chem.*, **2001**, *49*, 67-71.
64. Plubchang, S. *Methodology of acid chloride preparation and its application for the synthesis of biological active amides*. Master's thesis, Department of science, Chulalongkorn University, **2000**.
65. Crofts, P.C. and Downie, I.M. A novel oxidation of triethylphosphite. *J. Chem. Soc.*, **1963**, 2559-2560.
66. Thomson, R.H. *The chemistry of natural products*. New York: Chapman and Hall, **1985**.
67. McCabe, E.T.; Barthel, W.F.; Gertler, S.I. and Hall, S.A. Insect repellents. III. *N,N*-diethylamides. *J. Org. Chem.*, **1954**, *19*, 493-497.
68. Scherer, O.; Heubach, G. and Haertel, K. *o*-Toluanilide-contg. plant protecting agents. *Ger. Offen 1,907,436* Sep. 3, 1970.
69. Baldwin, R.; Lin, T.H. and Winchell, H.S. Amides useful as brain imaging agents. *U.S. patent 4,279,887* July 21, 1981.
70. Yang, Y.C.; Lee, S.G.; Lee, H.K.; Kim, M.K.; Lee, S.H. and Lee, H.S. A piperidine amide extracted from *Piper longum* L. fruit shows activity against *Aedes aegypti* mosquito larvae. *J. Agric. Food Chem.*, **2002**, *50*, 3765-3767.
71. Paula, V.F.D.; Barbosa, L.C.D.A.; Demuner, A.J.; Piló-Veloso, D. and Picanço, M.C. Synthesis and insecticidal activity of new amide derivatives of piperine. *Pest Manag. Sci.*, **2000**, *56*, 168-174.
72. Pagani, G.; Caccialanza, G. and Montanari, L. Cinnamic acid derivatives with phytotoxic activity II. *Farmaco, Ed. Sci.*, **1973**, *28*, 231-242. Through *Chemical Abstracts*, **1973**, *79*, Abstract No 28247r.
73. Teitel, S.; Brien, J. and Brossi, A. Preferential cleavage of an aromatic methylenedioxy group in the presence of methoxyls with boron trichloride. *J. Org. Chem.*, **1972**, *27*, 3368-3369.

74. Kalia, N.K.; Singh, B. and Sood, R.P. A new amide from *Zanthoxylum armatum*. *J. Nat. Prod.*, **1999**, *62*, 311-312.
75. Loder, J.W.; Moorhouse, A. and Russell, G.B. Tumor inhibitory plants. Amides of *Piper novea-holladiae* (Piperaceae). *Aust. J. Chem.*, **1969**, *22*, 1531-1538.
76. Koul, O.; Saxena, B.P.; Kalla, A.K.; Dhar, K.L. and Atal, C.K. Synergists for pyrethrum III. Amides of 3,4-methylenedioxybenzoic and hydrocinnamic acids. *Pyrethrum Post.*, **1978**, *14*, 89-92. through *Chemical Abstracts*, **1980**, *92*, Abstract No 123386n.
77. Gannett, P.M.; Nagel, D.L.; Reilly, P.J.; Lawson, T.; Sharpe, J. and Toth, B. The capsaicinoids; Their separation, synthesis, and mutagenicity. *J. Org. Chem.*, **1988**, *53*, 1064-1071.
78. Meyer, O. and Heddeshheimer, I. Process for preparing vanillylamine hydrochloride. *U.S. patent 2003/0065223* Apr. 3, 2003.
79. Kuehl, F.A.; Jacob, T.A.; Ganley, O.H., Ormond, R.E. and Meisinger, M.A.P. The identification of *N*-(2-hydroxyethyl)-palmitamide as a naturally occurring anti-inflammatory agent. *J. Am. Chem. Soc.*, **1957**, *79*, 5577-5578.
80. Roe, E.T.; Miles, T.D. and Swern, D. Fatty acid amides. V. Preparation of *N*-(2-acetoxyethyl)-amides of aliphatic acids. *J. Am. Chem. Soc.*, **1952**, *74*, 3442-3443.
81. Nugroho, B.W.; Schwarz, B.; Wray, V. and Proksch, P. Insecticidal constituents from rhizomes of *Zingiber cassumunar* and *Kaempferia rotunda*. *Phytochemistry*, **1996**, *41*, 129-132.
82. Gomberg, M. and Buchler, C.C. The preparation of benzyl esters and other benzyl-derivative from benzyl chloride. *J. Am. Chem. Soc.*, **1920**, *42*, 2059-2072.
83. Pretsch, E.; Bühlmann, P. and Affolter, C. *Structure determination of organic compounds*. New York: Springer-Verlag Berlin Heidelberg, **2000**.

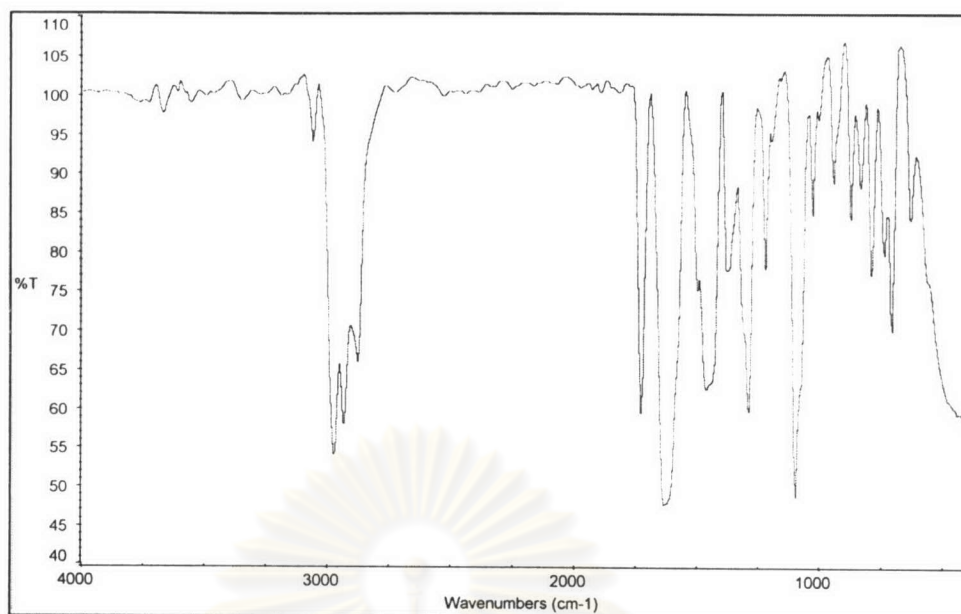


Figure 1 The IR spectrum of *N,N*-diethylbenzamide (T1)

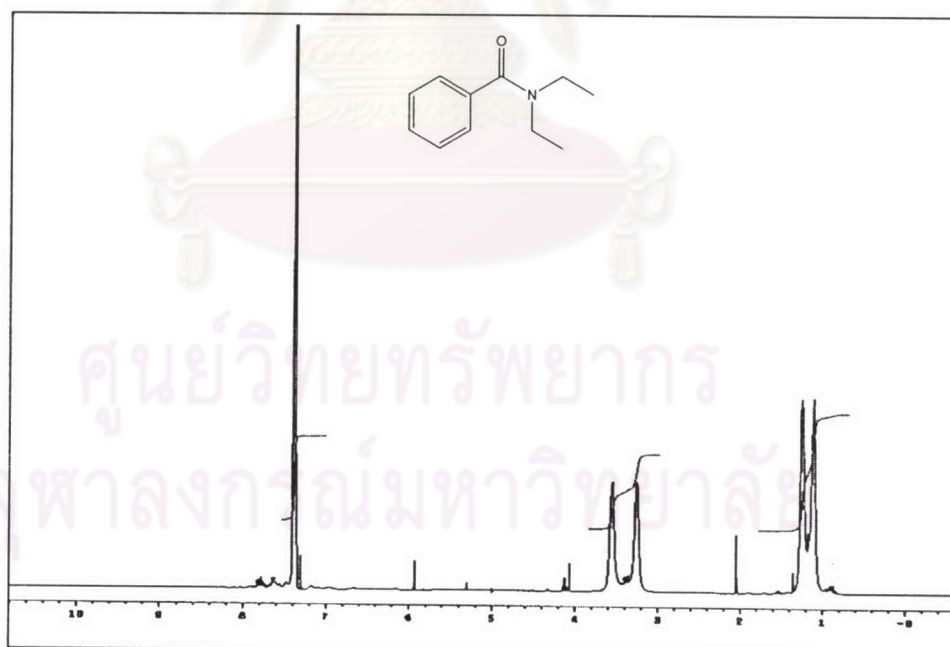


Figure 2 The ¹H-NMR spectrum of *N,N*-diethylbenzamide (T1)

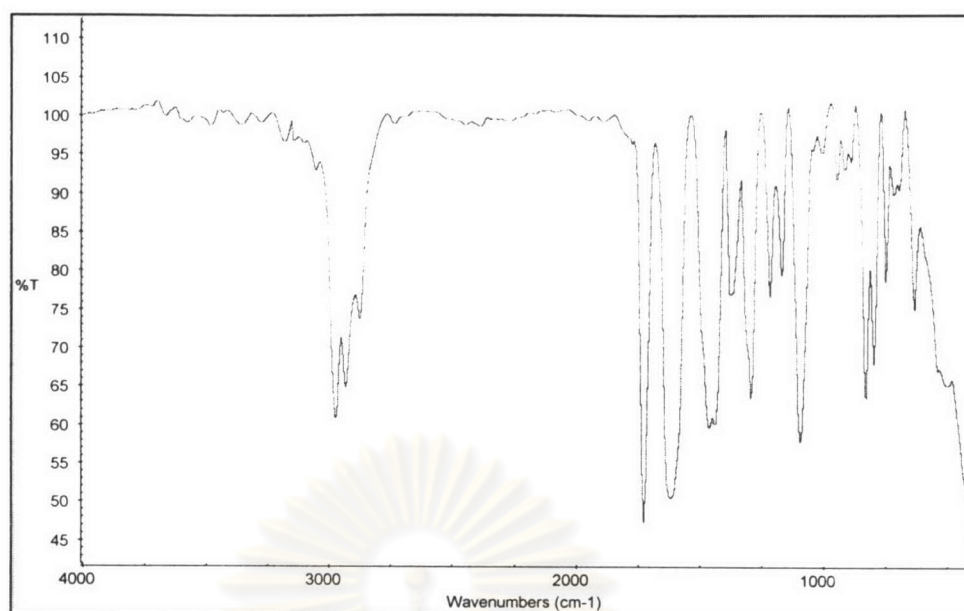


Figure 3 The IR spectrum of *N,N*-diethyl-*m*-toluamide (T2)

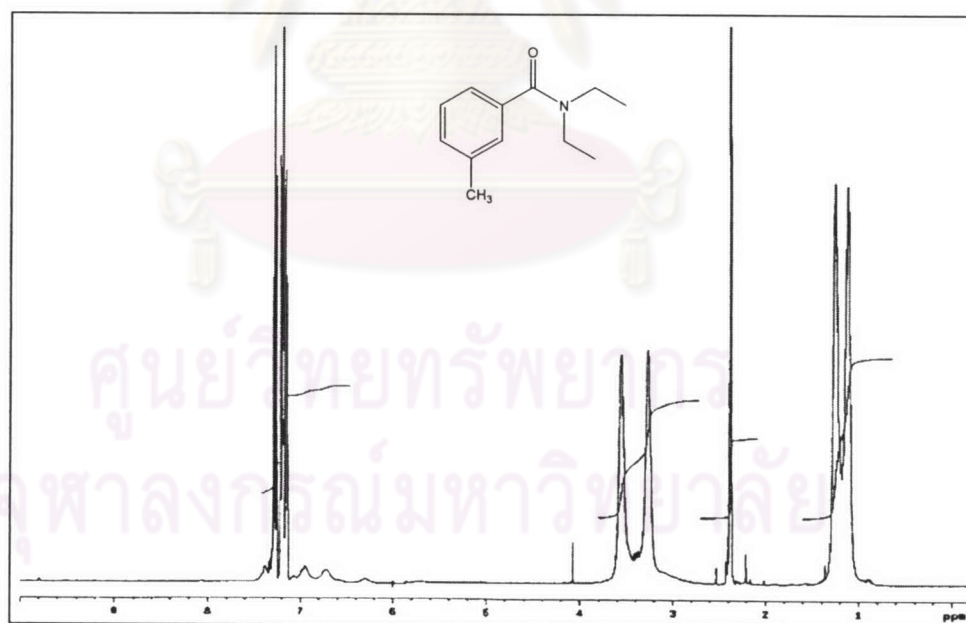


Figure 4 The ¹H-NMR spectrum of *N,N*-diethyl-*m*-toluamide (T2)

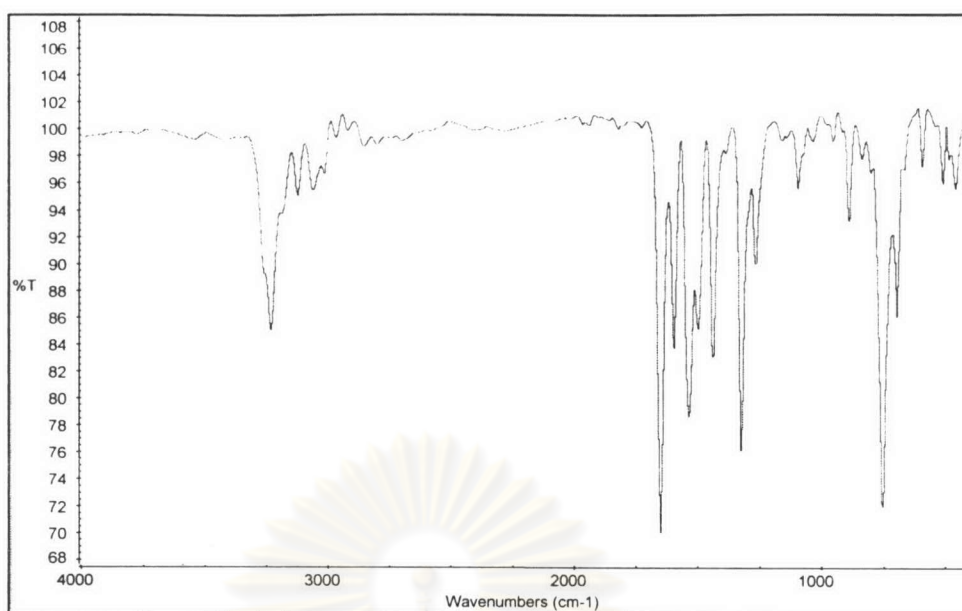


Figure 5 The IR spectrum of mebenil (**T3**)

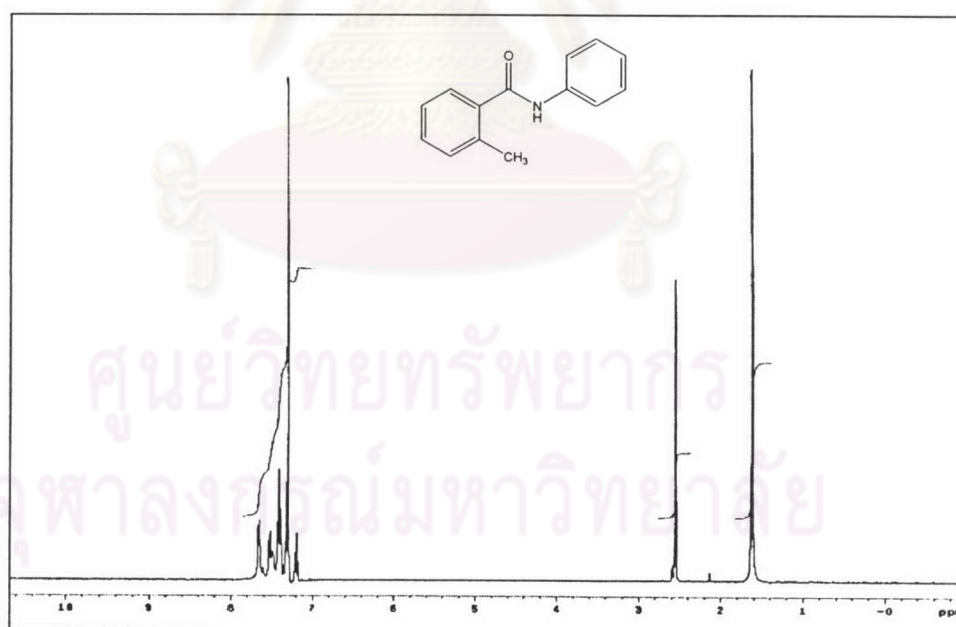


Figure 6 The ^1H -NMR spectrum of mebenil (**T3**)

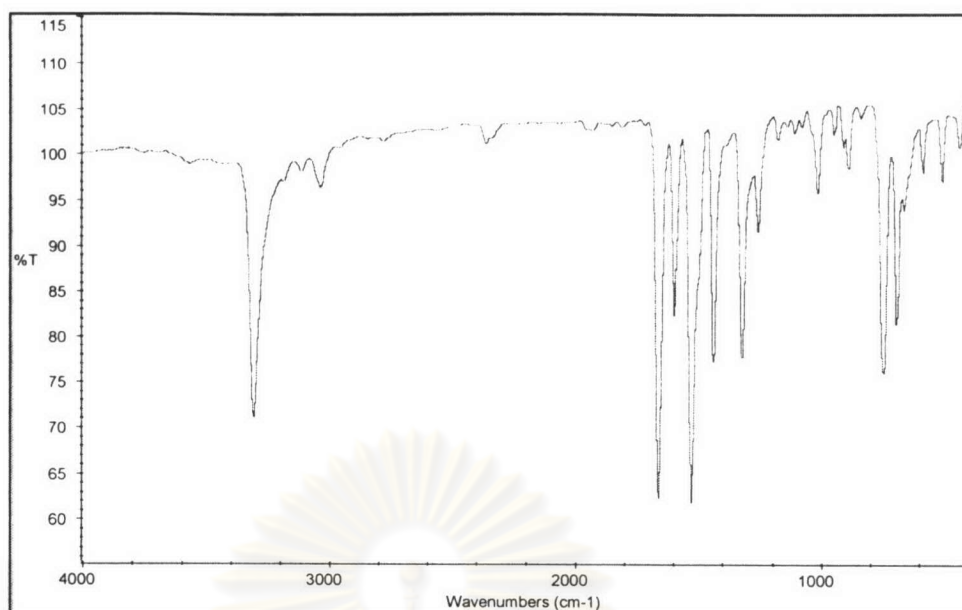


Figure 7 The IR spectrum of benodanil (T4)

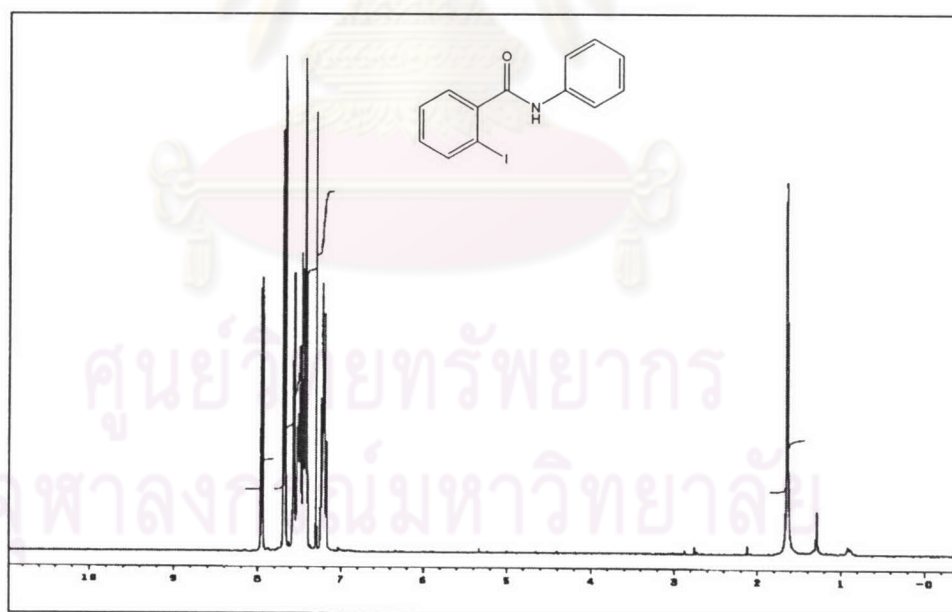


Figure 8 The ¹H-NMR spectrum of benodanil (T4)

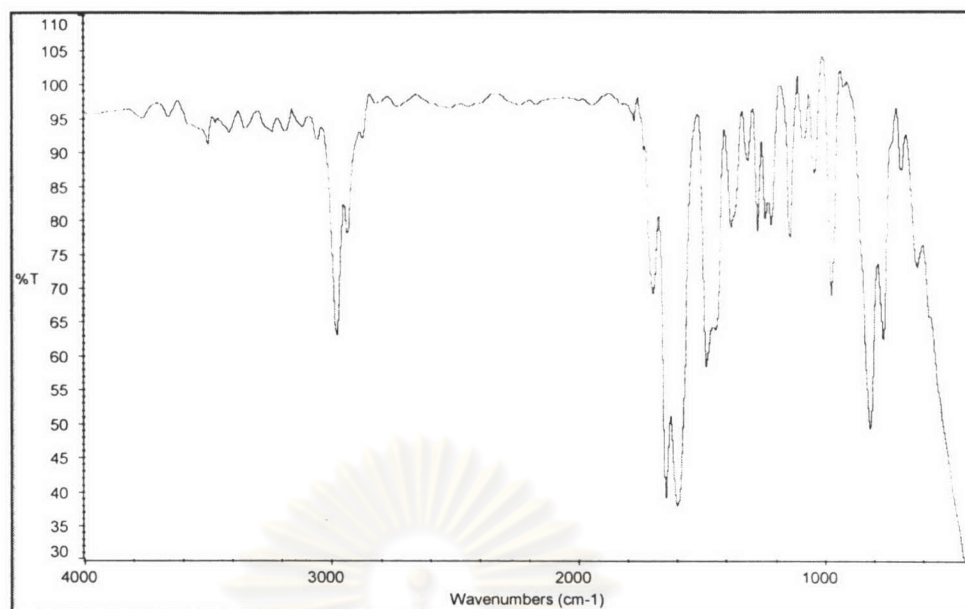


Figure 9 The IR spectrum of 2-chloro-*N,N*-diethylcinnamamide (**T5**)

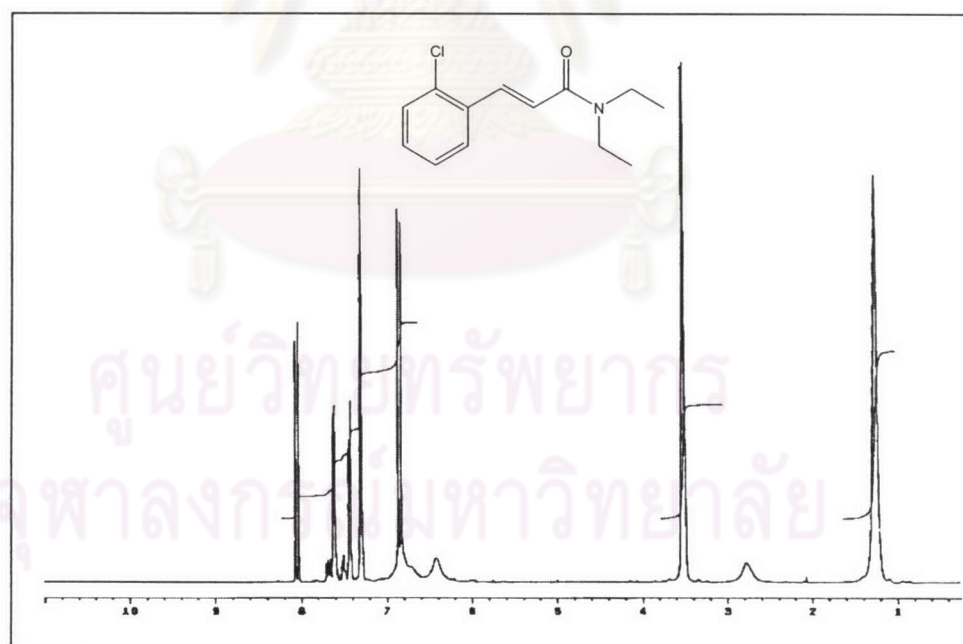


Figure 10 The ¹H-NMR spectrum of 2-chloro-*N,N*-diethylcinnamamide (**T5**)

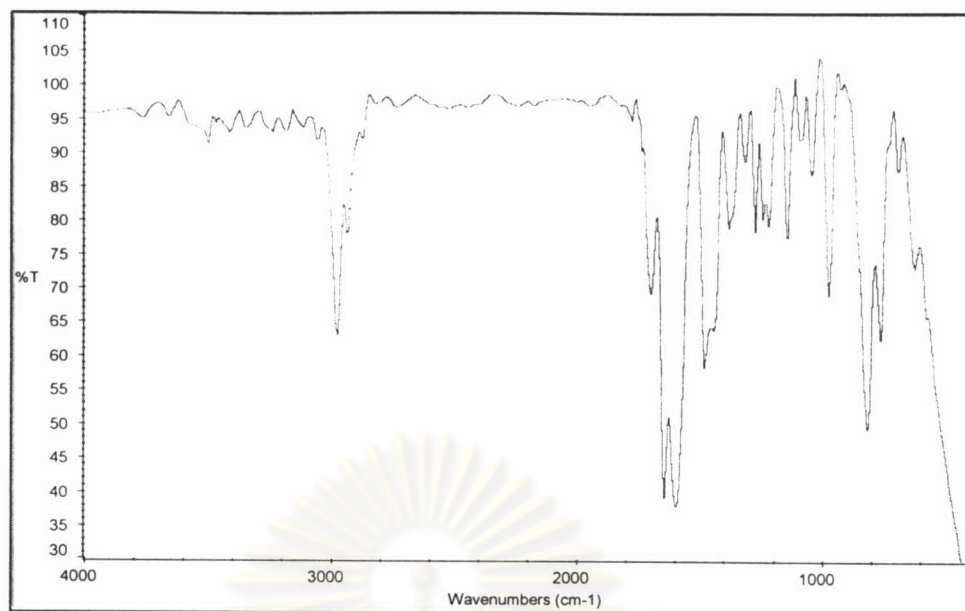


Figure 11 The IR spectrum of *N*-(3,4-methylenedioxyphenyl)phenethylamide **T6-1**

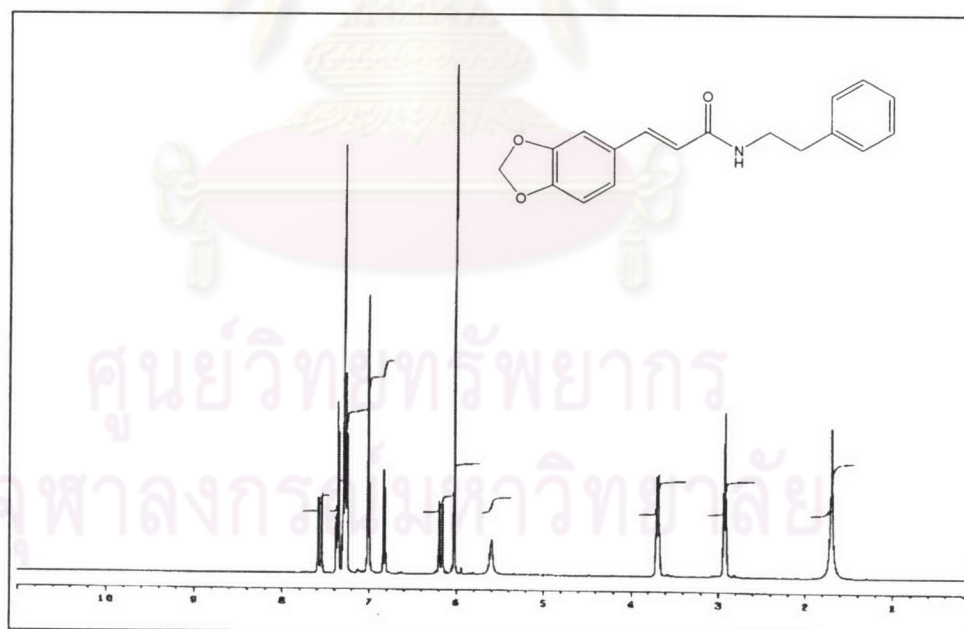


Figure 12 The $^1\text{H-NMR}$ spectrum of *N*-(3,4-methylenedioxyphenyl)phenethylamide **T6-1**

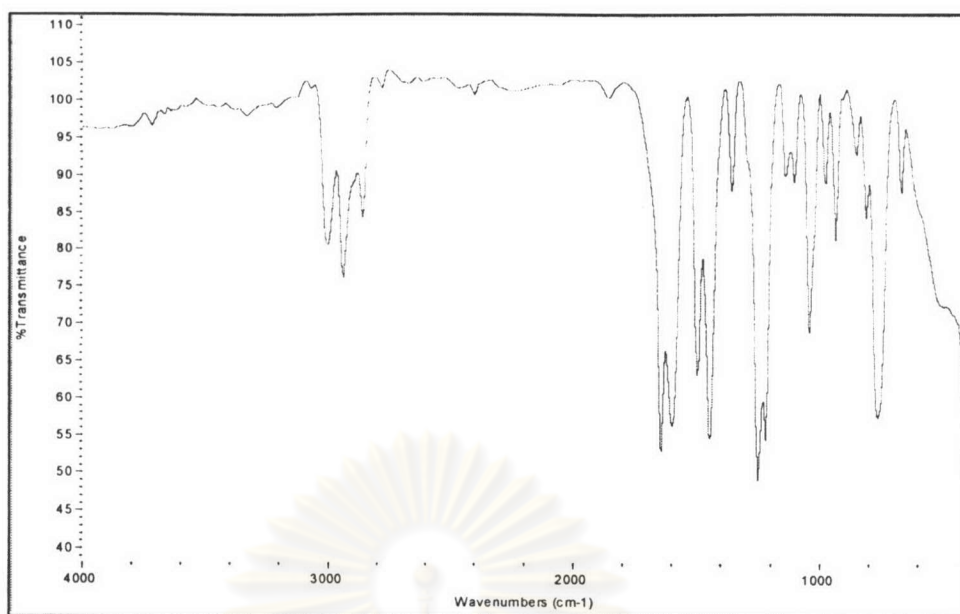


Figure 13 The IR spectrum of *N*-(3,4-methylenedioxcinnamoyl)piperidine (**T7**)

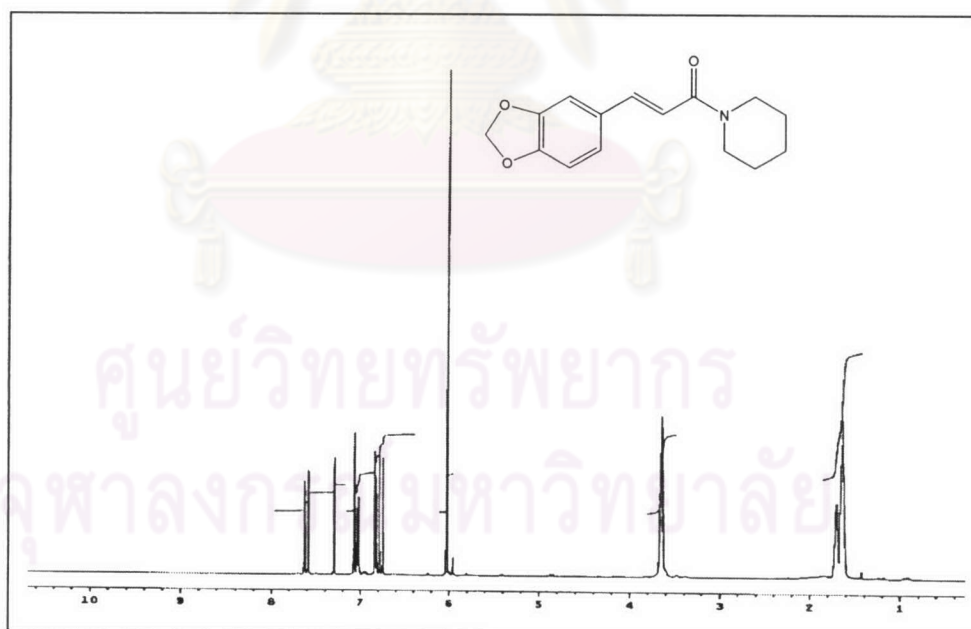


Figure 14 The ¹H-NMR spectrum of *N*-(3,4-methylenedioxcinnamoyl)piperidine (**T7**)

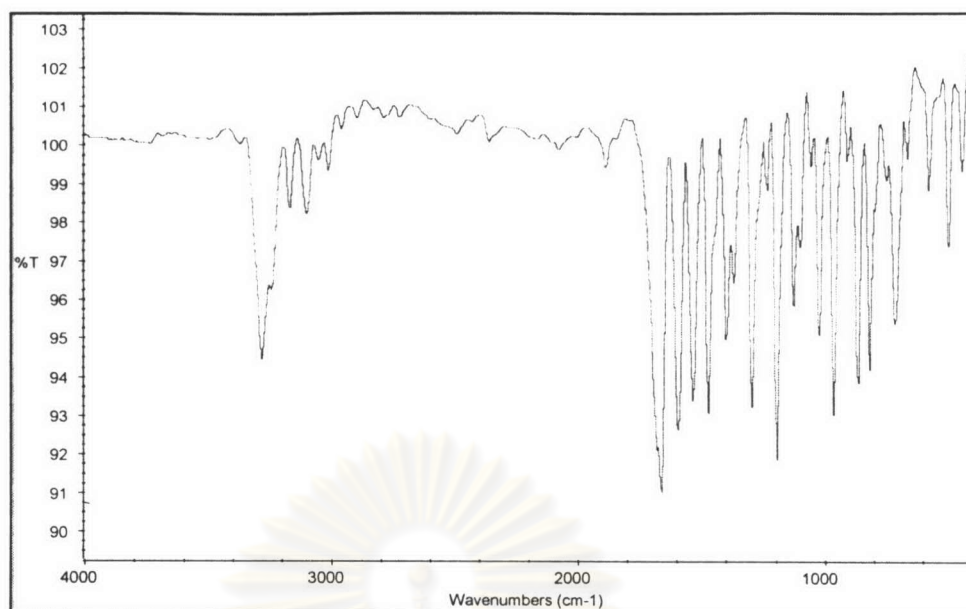


Figure 15 The IR spectrum of cypromid (T8)

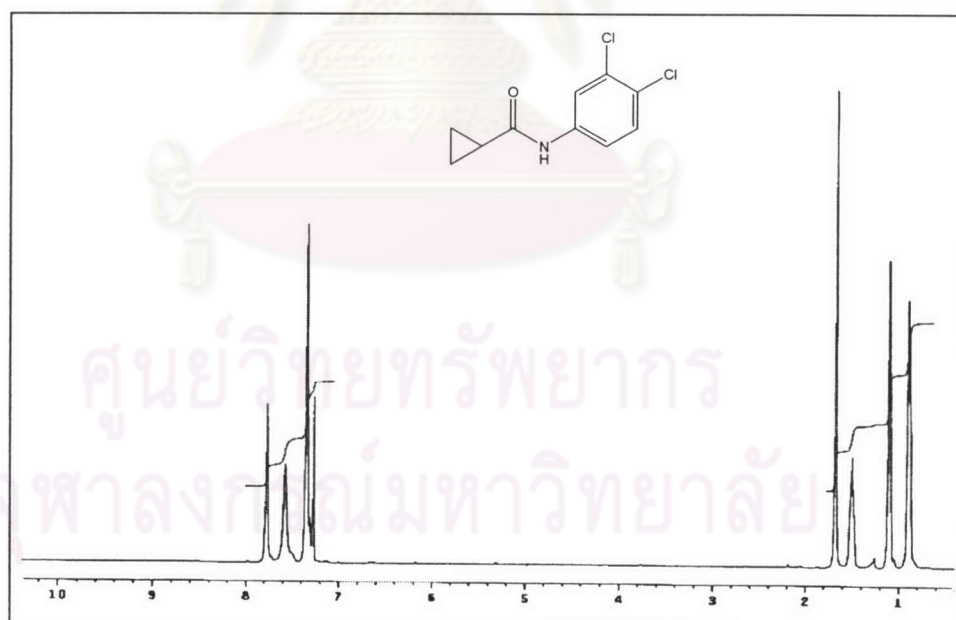


Figure 16 The ¹H-NMR spectrum of cypromid (T8)

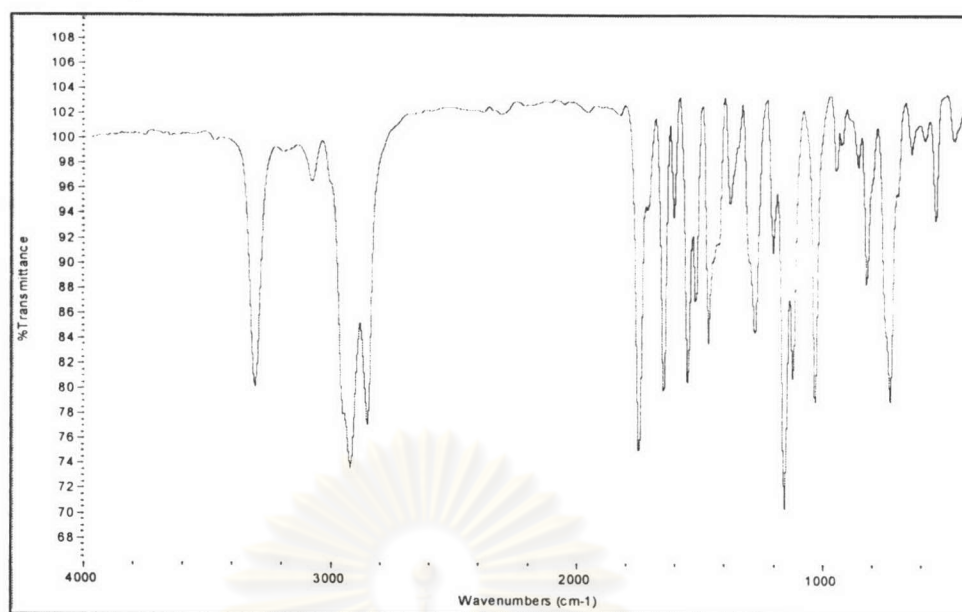


Figure 17 The IR spectrum of capsaicine synthetic (T9)

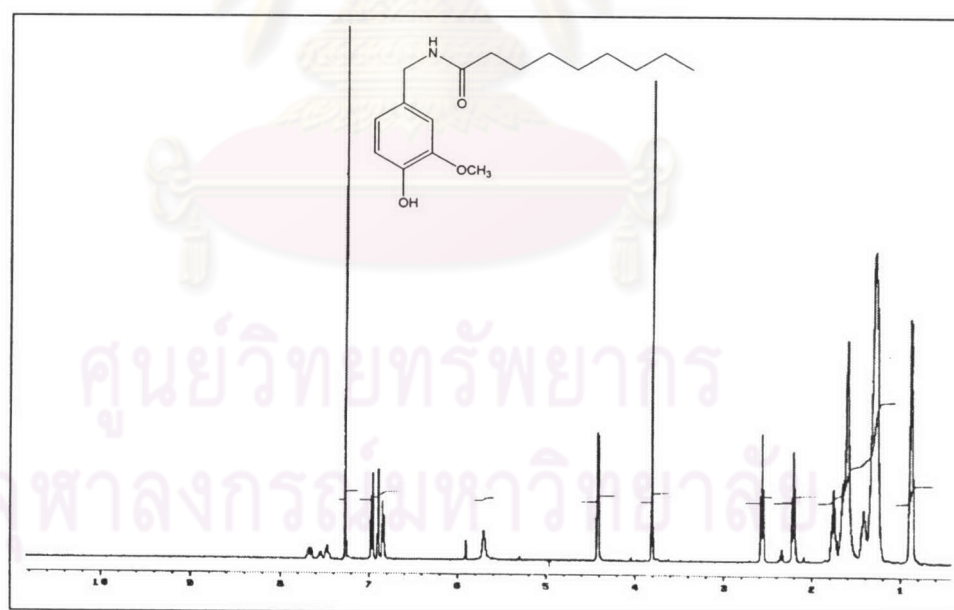


Figure 18 The ¹H-NMR spectrum of capsaicine synthetic (T9)

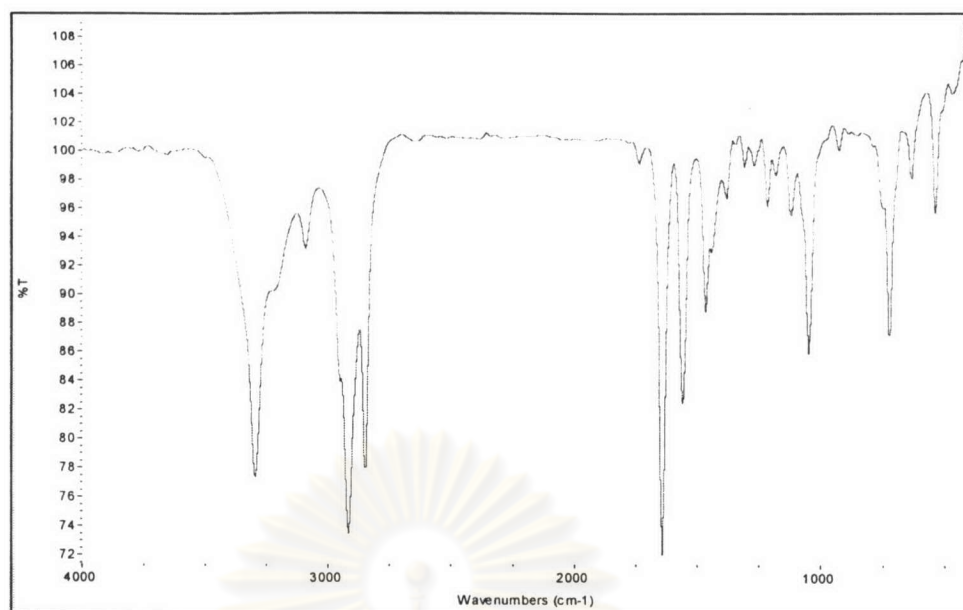


Figure 19 The IR spectrum of *N*-palmitoylethanolamine (T10)

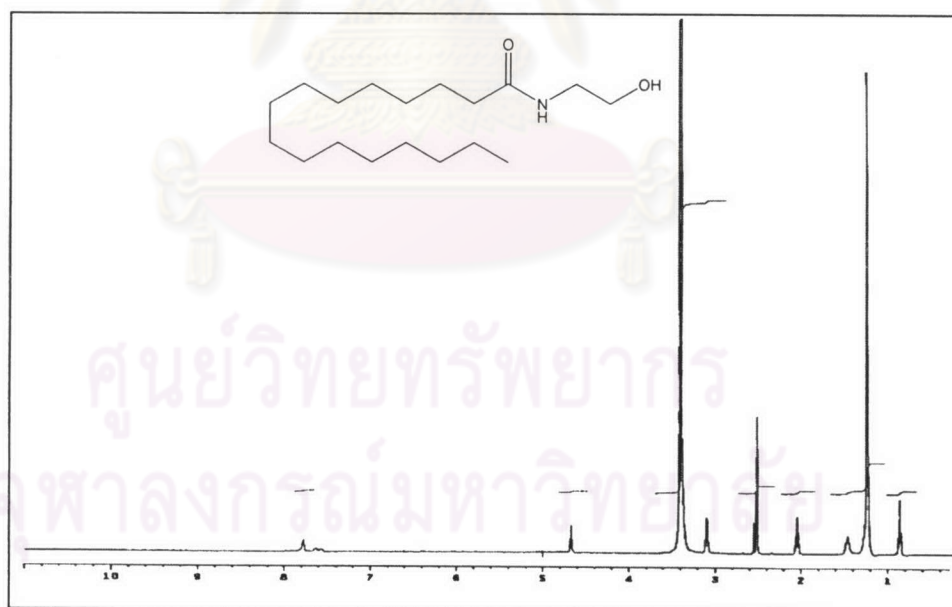


Figure 20 The ¹H-NMR spectrum of *N*-palmitoylethanolamine (T10)

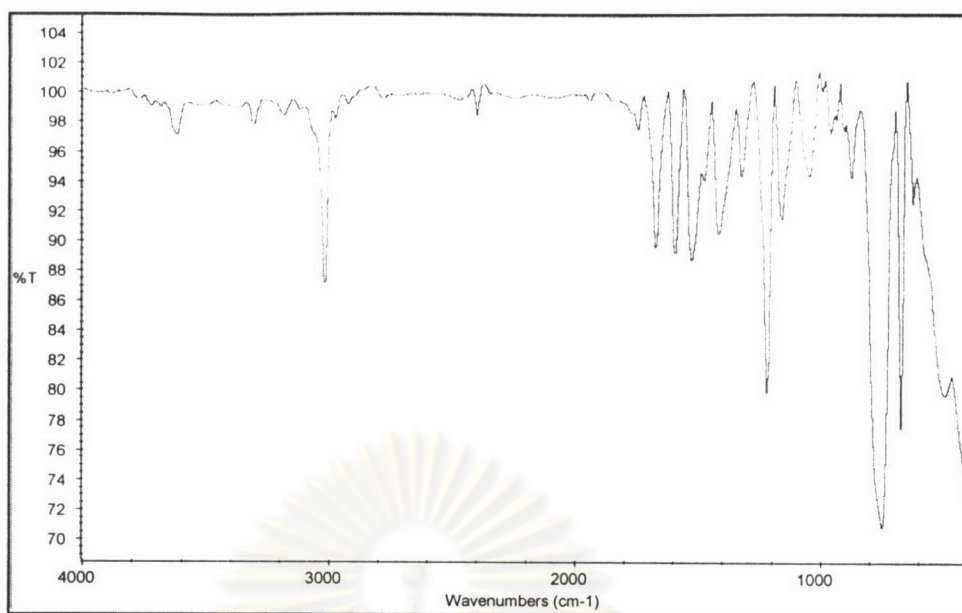


Figure 21 The IR spectrum of *N,N'*-bis(3-chlorophenyl)butanediamide (**T11**)

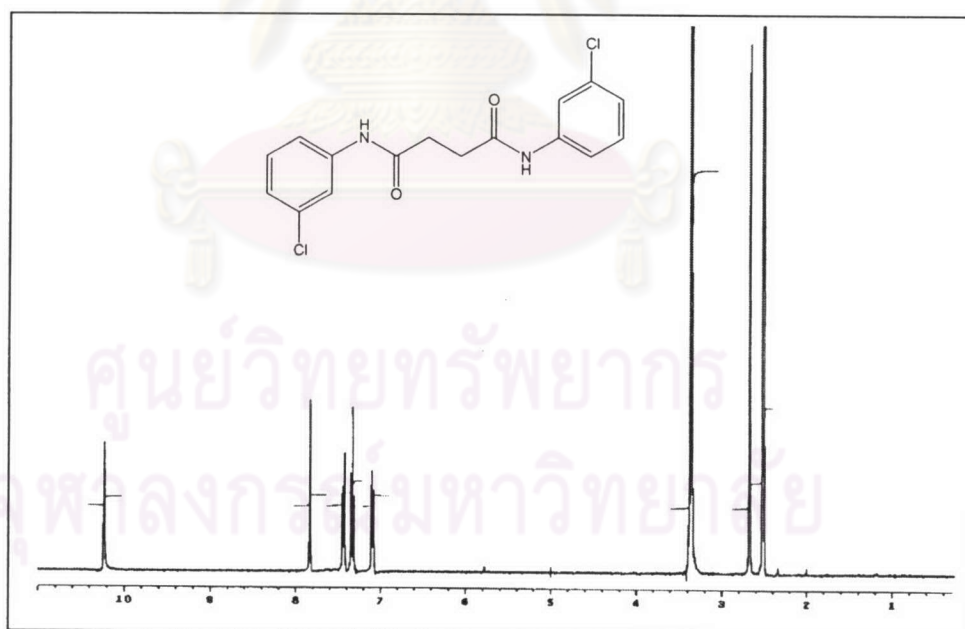


Figure 22 The ¹H-NMR spectrum of *N,N'*-bis(3-chlorophenyl)butanediamide (**T11**)

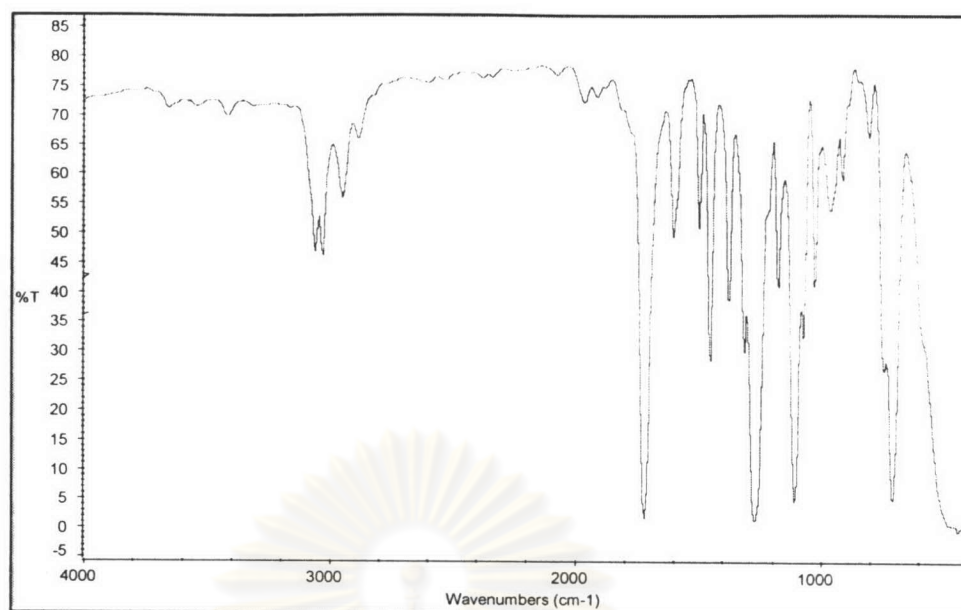


Figure 23 The IR spectrum of benzyl benzoate (T13)

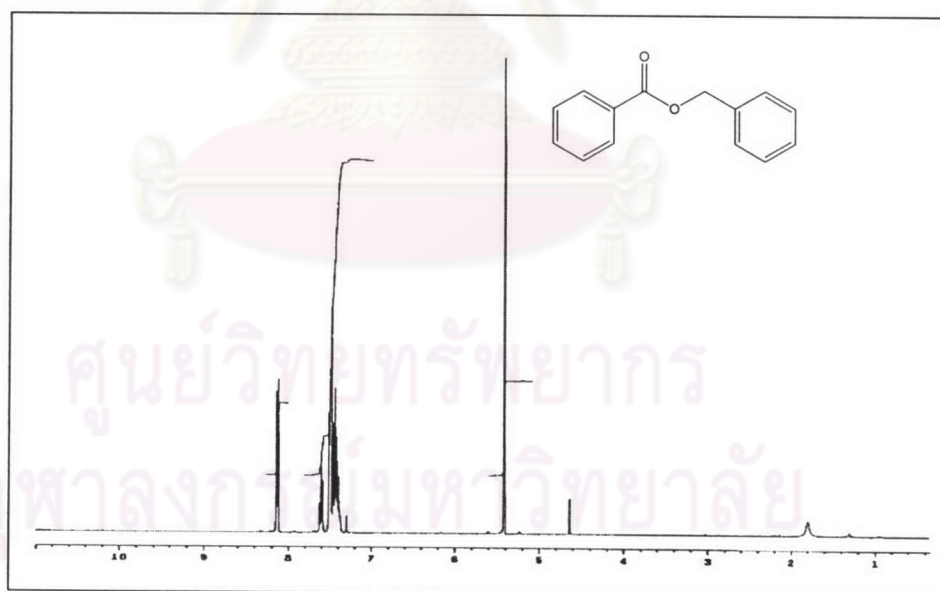


Figure 24 The ¹H-NMR spectrum of benzyl benzoate (T13)

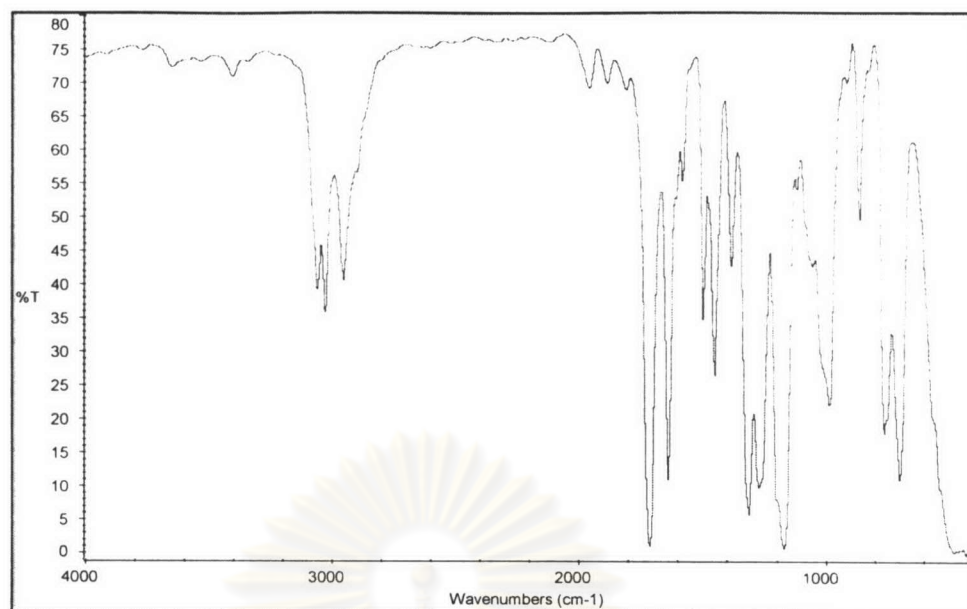


Figure 25 The IR spectrum of phenethyl cinnamate (T14)

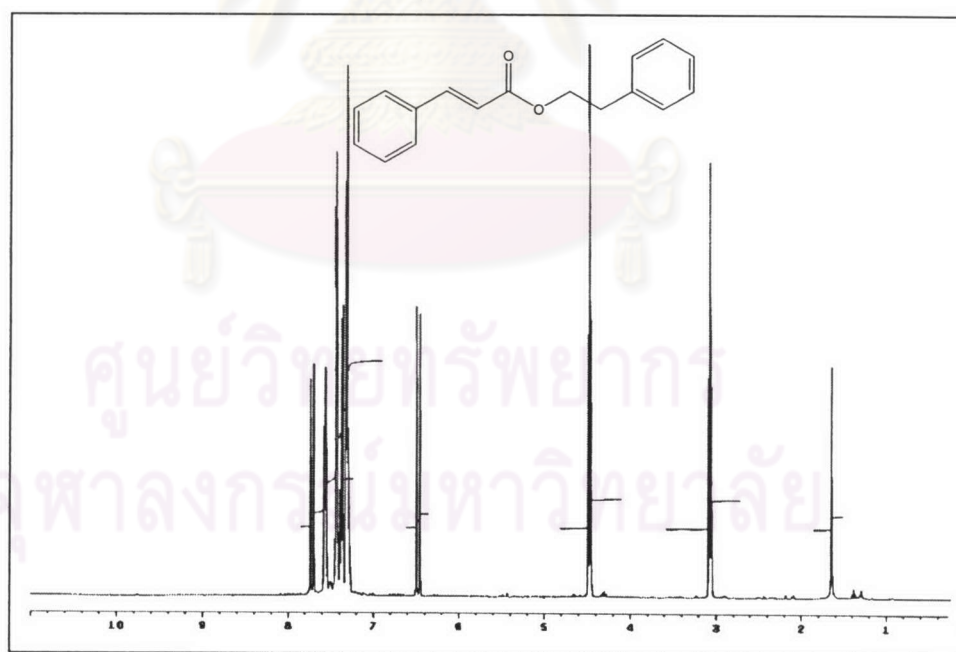


Figure 26 The ¹H-NMR spectrum of phenethyl cinnamate (T14)

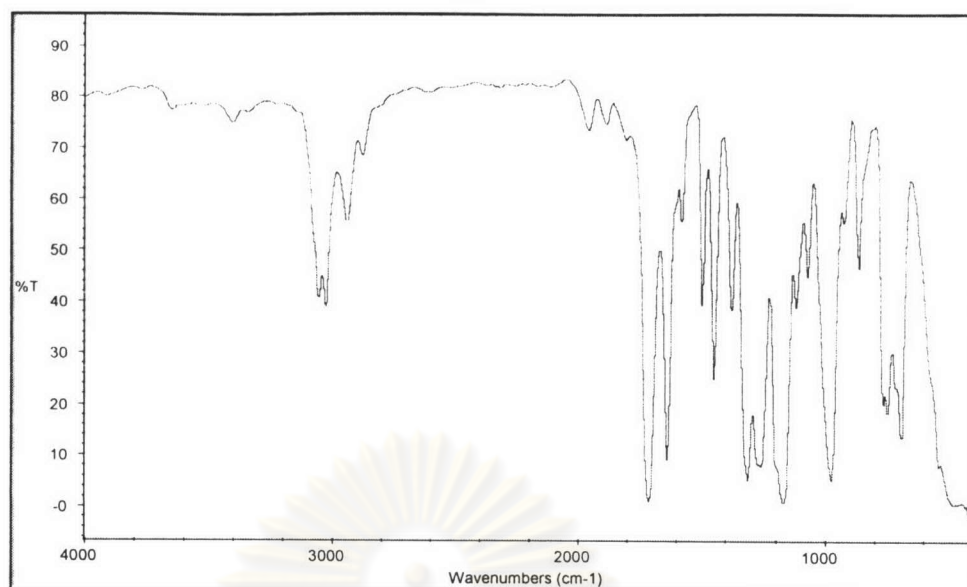


Figure 27 The IR spectrum of cinnamoyl cinnamate (T15)

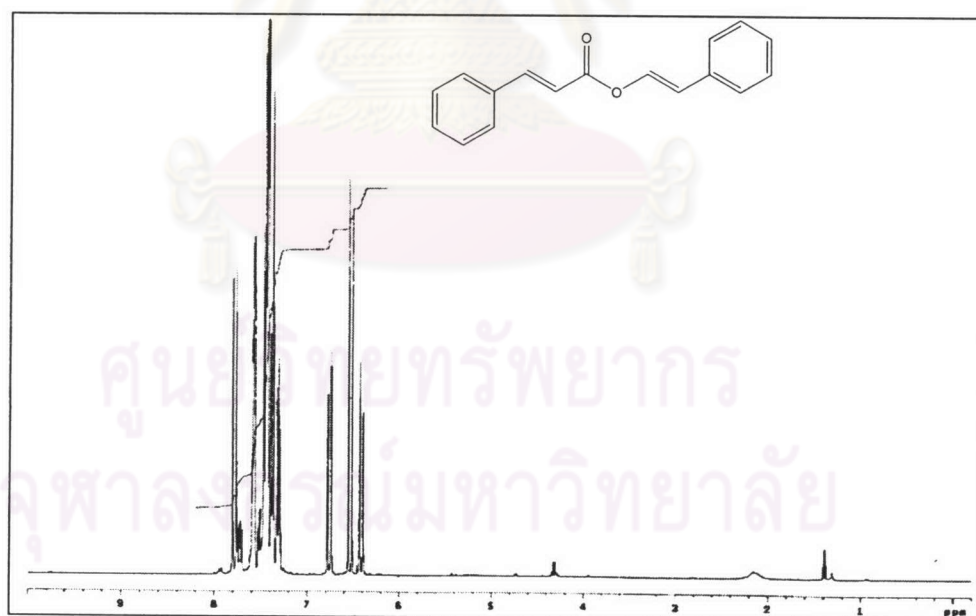


Figure 28 The ¹H-NMR spectrum of cinnamoyl cinnamate (T15)

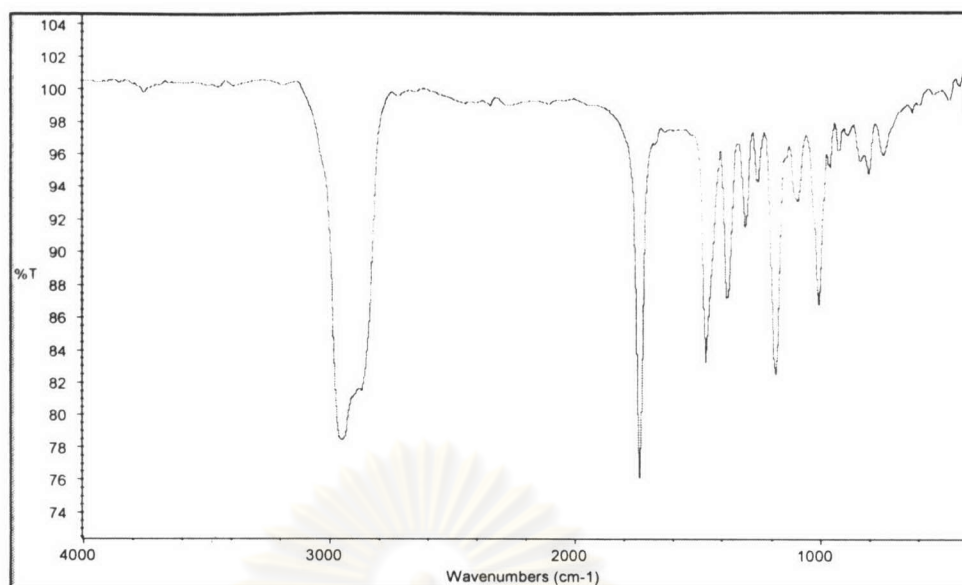


Figure 29 The IR spectrum of cholesteryl butyrate (T16)

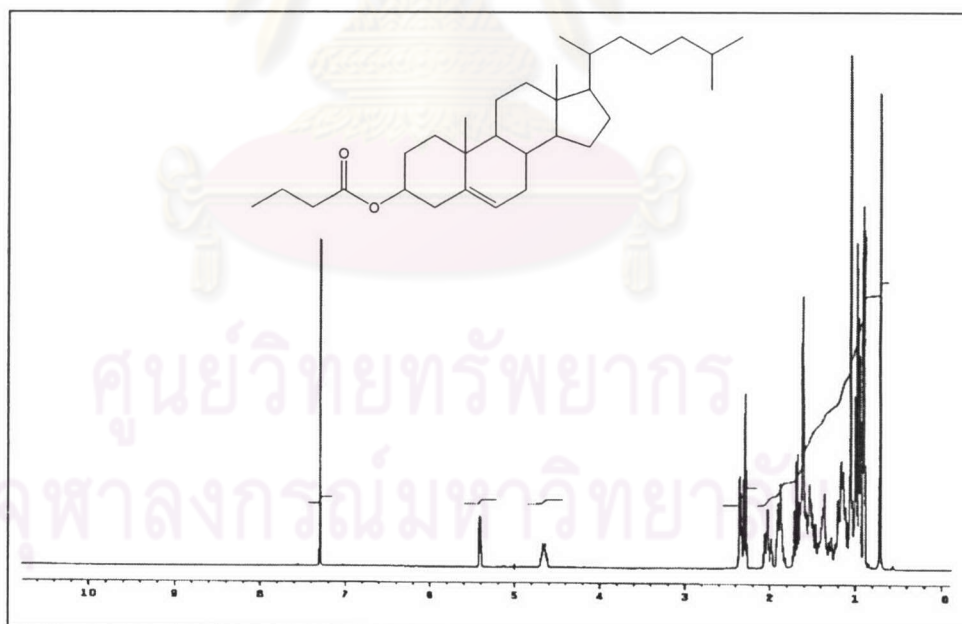


Figure 30 The ¹H-NMR spectrum of cholesteryl butyrate (T16)

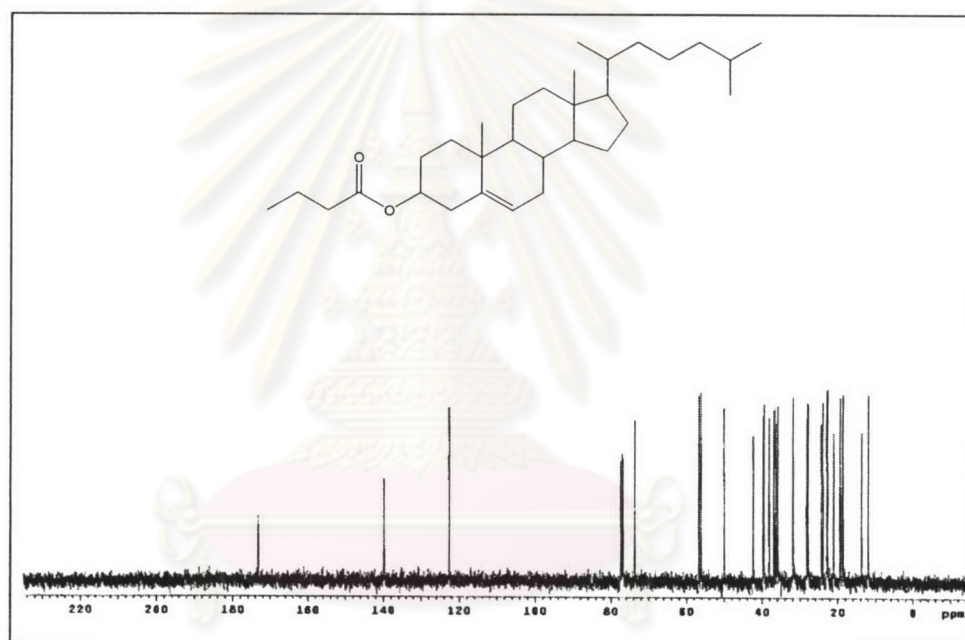


Figure 31 The ^{13}C -NMR spectrum of cholesteryl butyrate (T16)

จุฬาลงกรณ์มหาวิทยาลัย

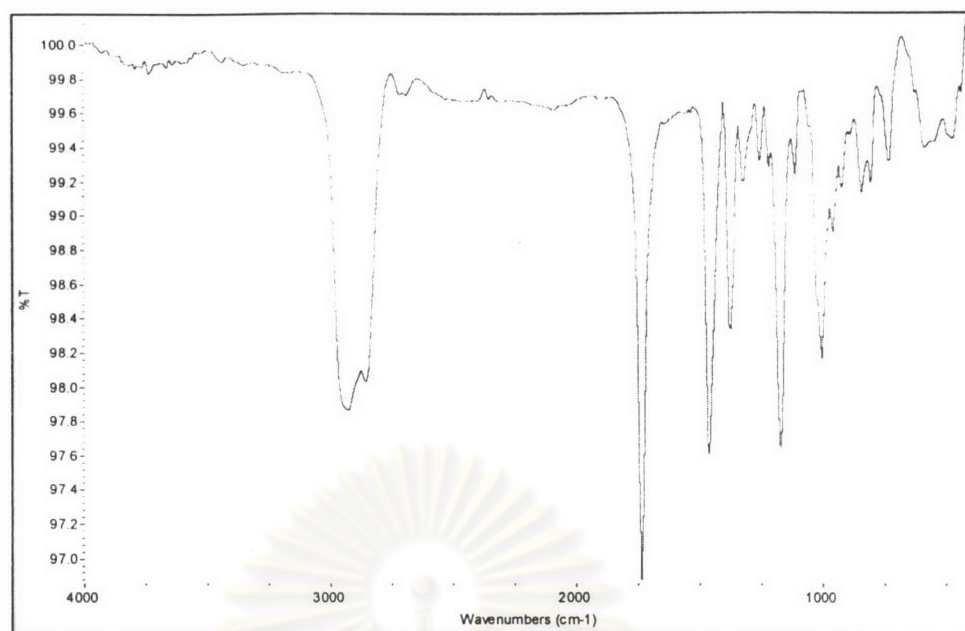


Figure 32 The IR spectrum of cholesteryl nonanoate (T17)

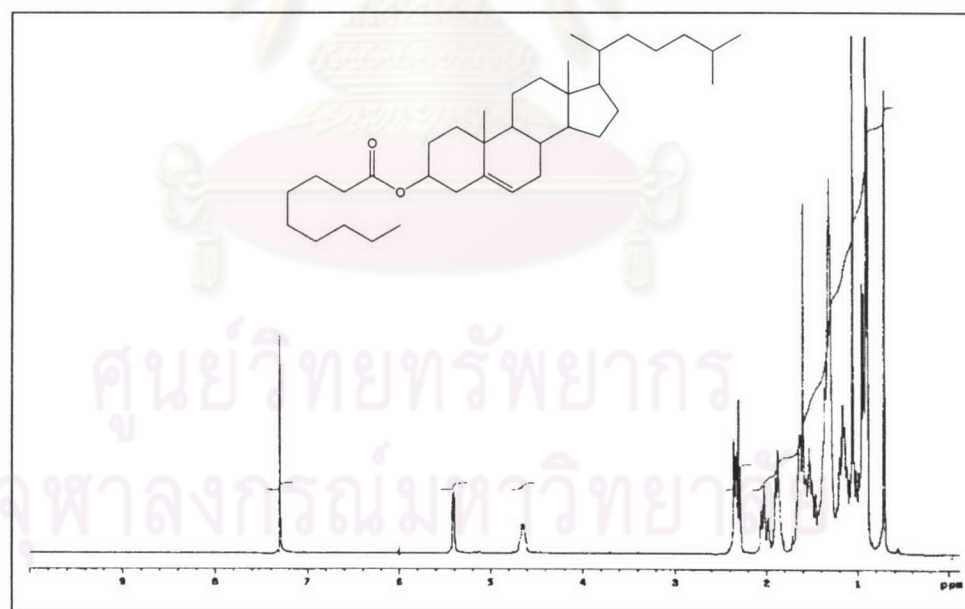


Figure 33 The ¹H-NMR spectrum of cholesteryl nonanoate (T17)

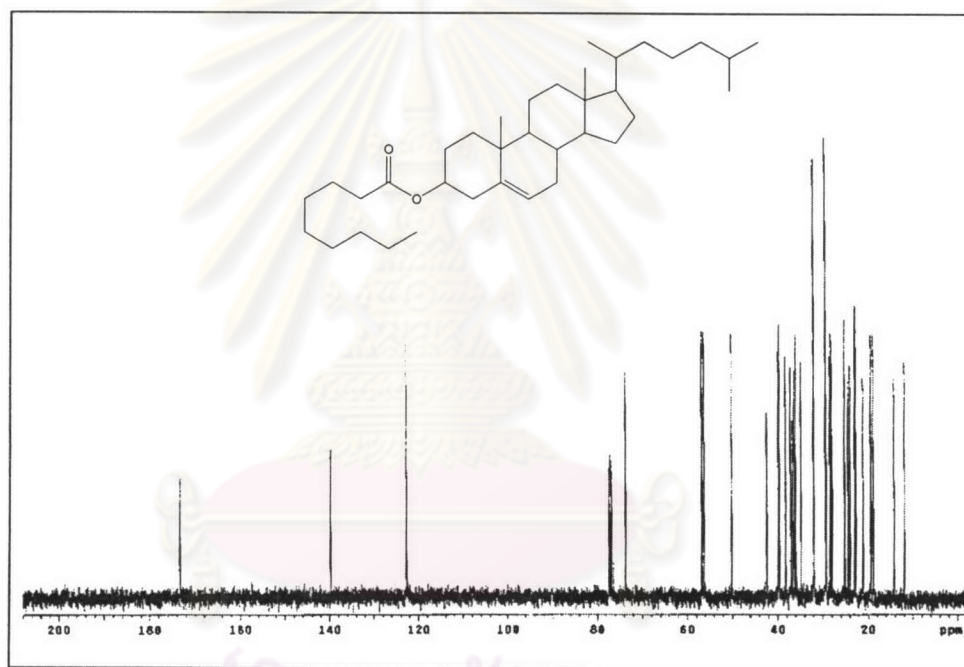


Figure 34 The ^{13}C -NMR spectrum of cholesteryl nonanoate (T17)

ศูนย์วิทยาศาสตร์
จุฬาลงกรณ์มหาวิทยาลัย

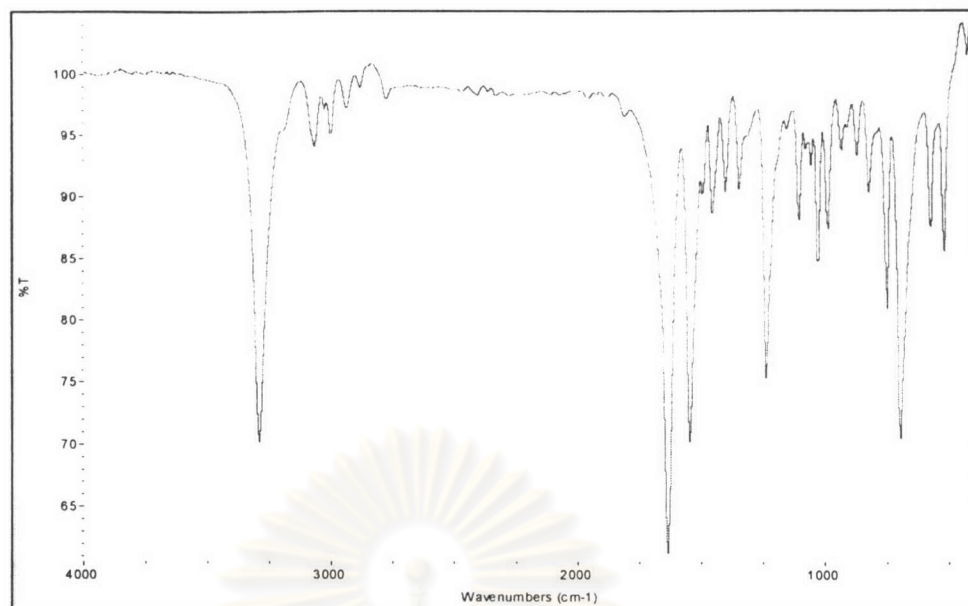


Figure 35 The IR spectrum of *N*-benzylcyclopropanecarboxamide

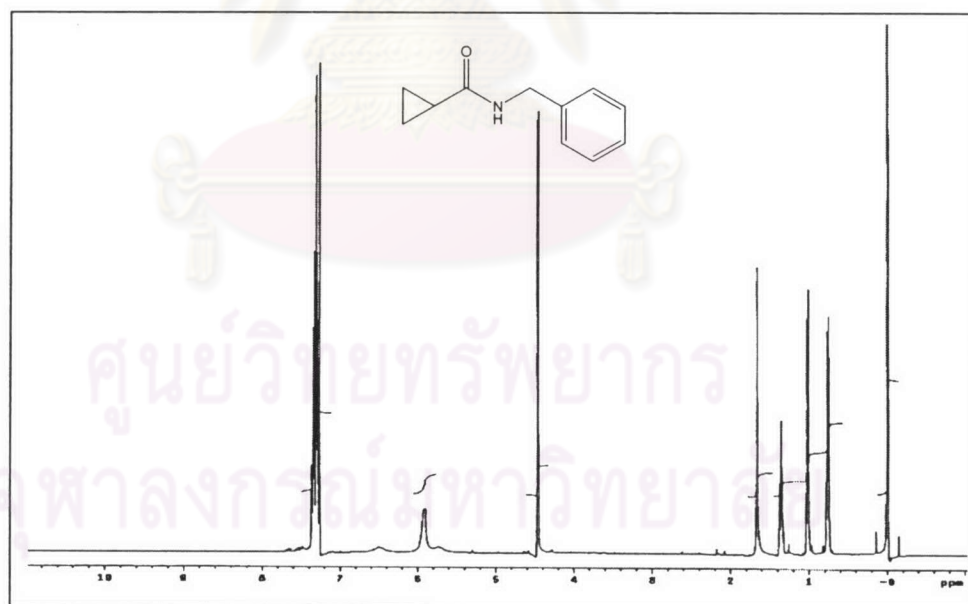


Figure 36 The ^1H -NMR spectrum of *N*-benzylcyclopropanecarboxamide

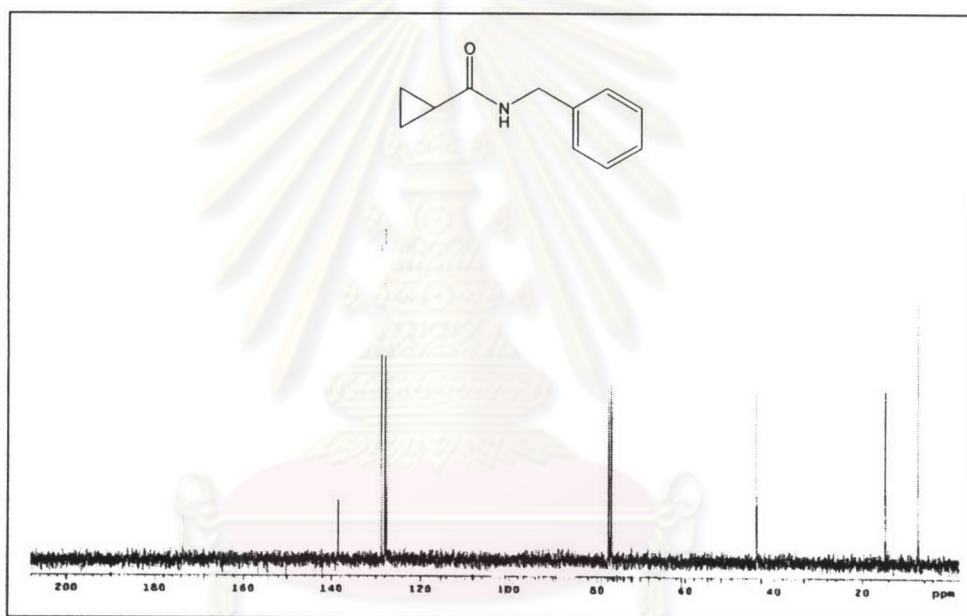


Figure 37 The ¹³C-NMR spectrum of *N*-benzylcyclopropanecarboxamide

จุฬาลงกรณ์มหาวิทยาลัย

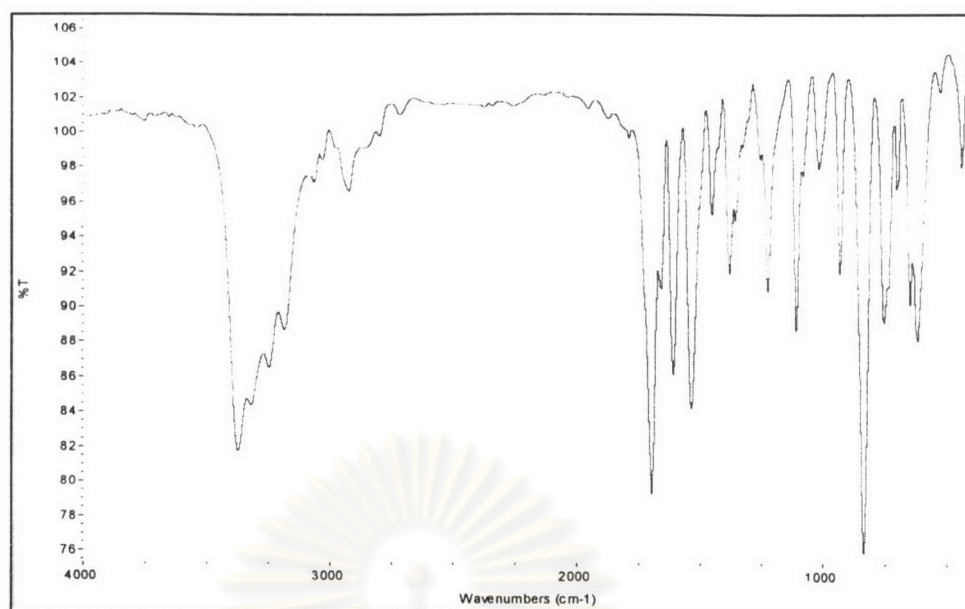


Figure 38 The IR spectrum of *N*-benzylmethacrylamide

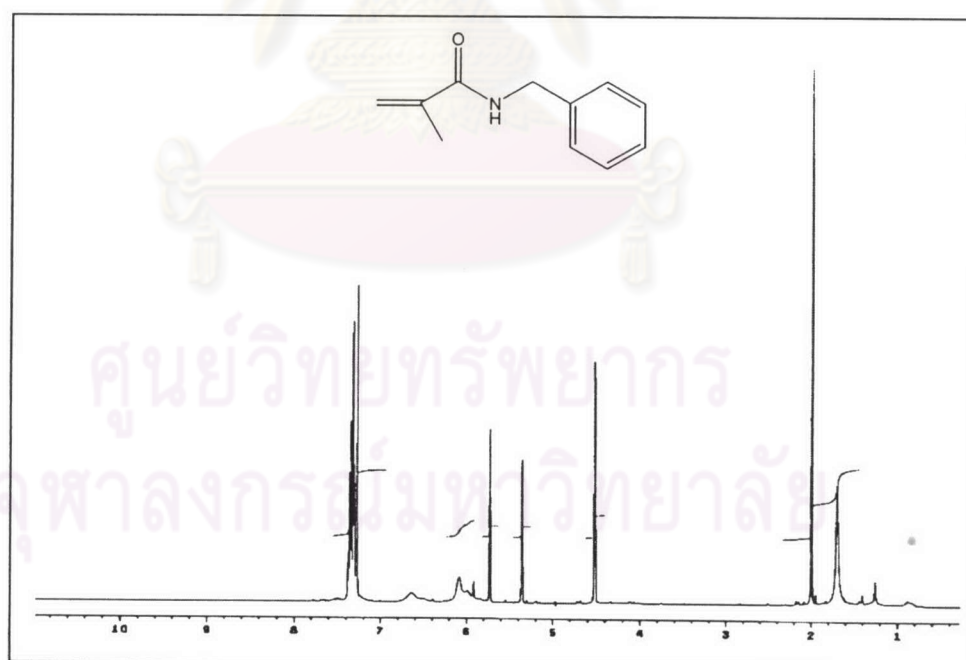


Figure 39 The ¹H-NMR spectrum of *N*-benzylmethacrylamide

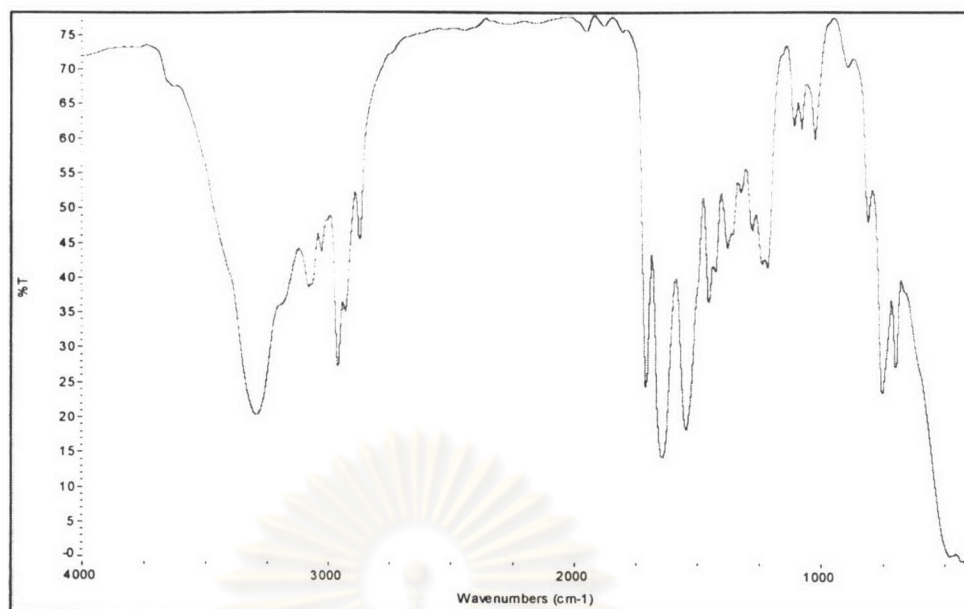


Figure 40 The IR spectrum of *N*-benzylbutanamide

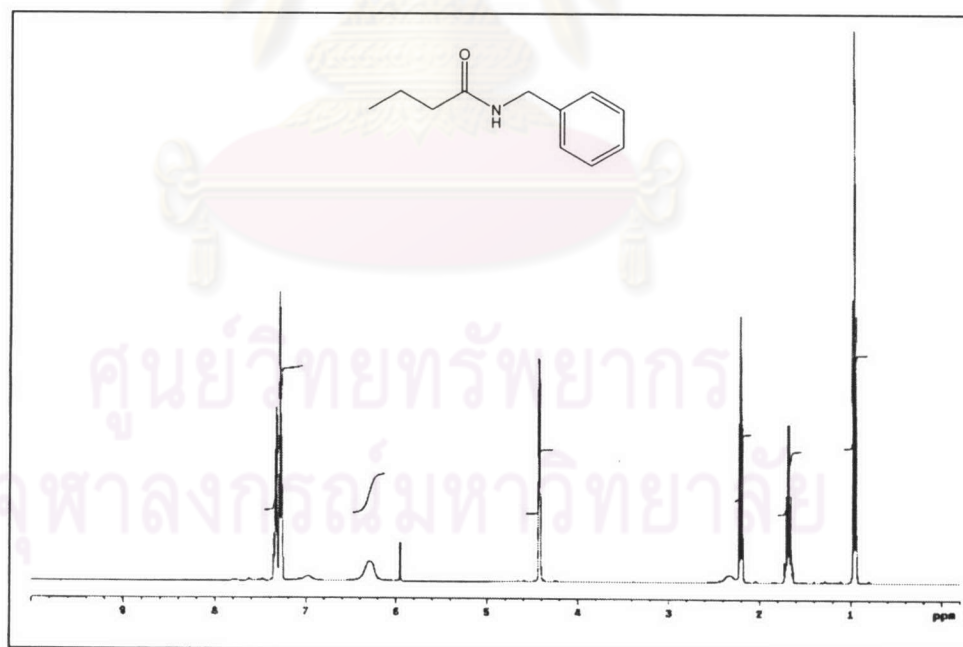


Figure 41 The ¹H-NMR spectrum of *N*-benzylbutanamide

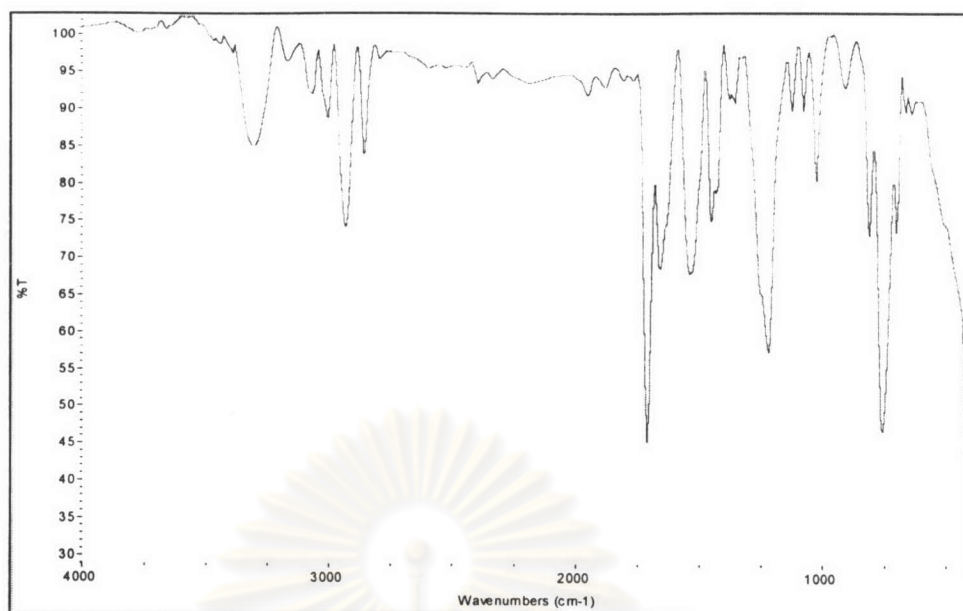


Figure 42 The IR spectrum of *N*-benzyl-6-bromohexanamide

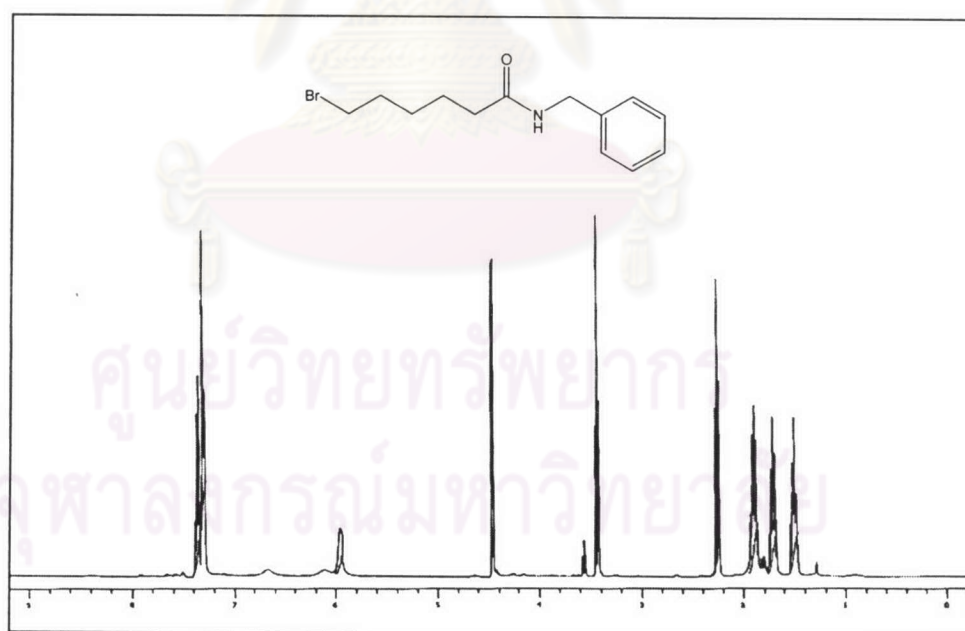


Figure 43 The ¹H-NMR spectrum of *N*-benzyl-6-bromohexanamide

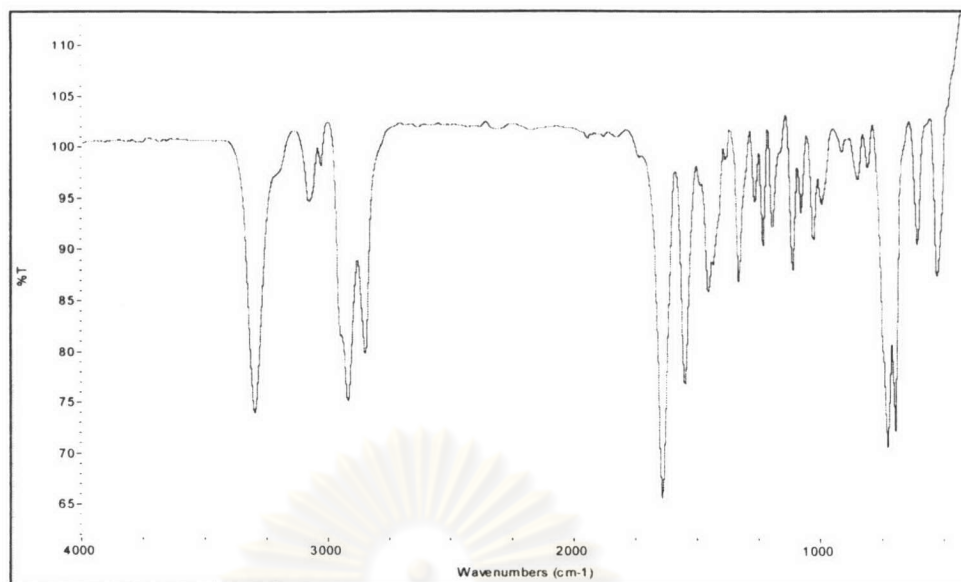


Figure 44 The IR spectrum of *N*-benzylnonanamide

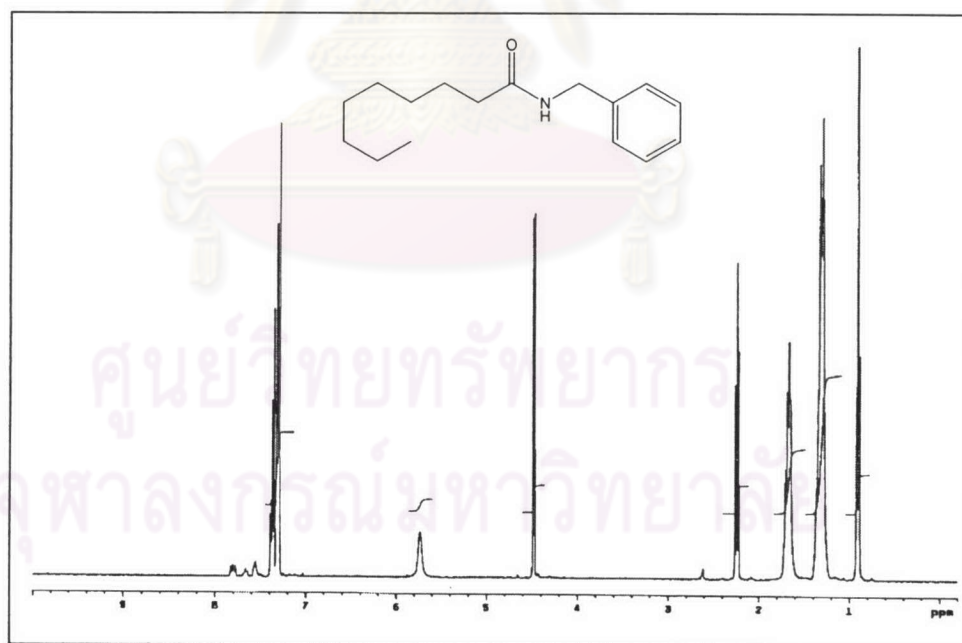


Figure 45 The ¹H-NMR spectrum of *N*-benzylnonanamide

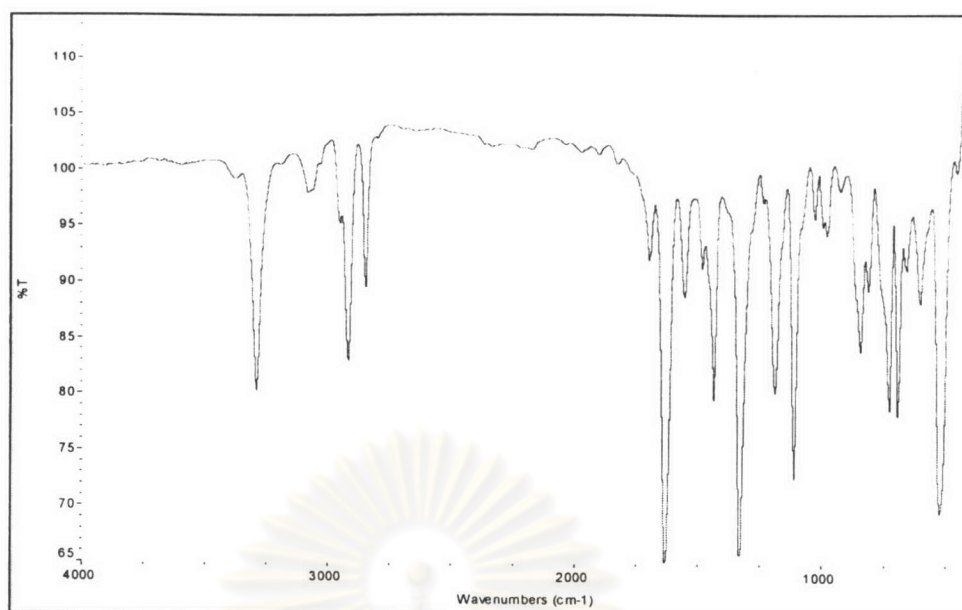


Figure 46 The IR spectrum of *N*-benzyl dodecanamide

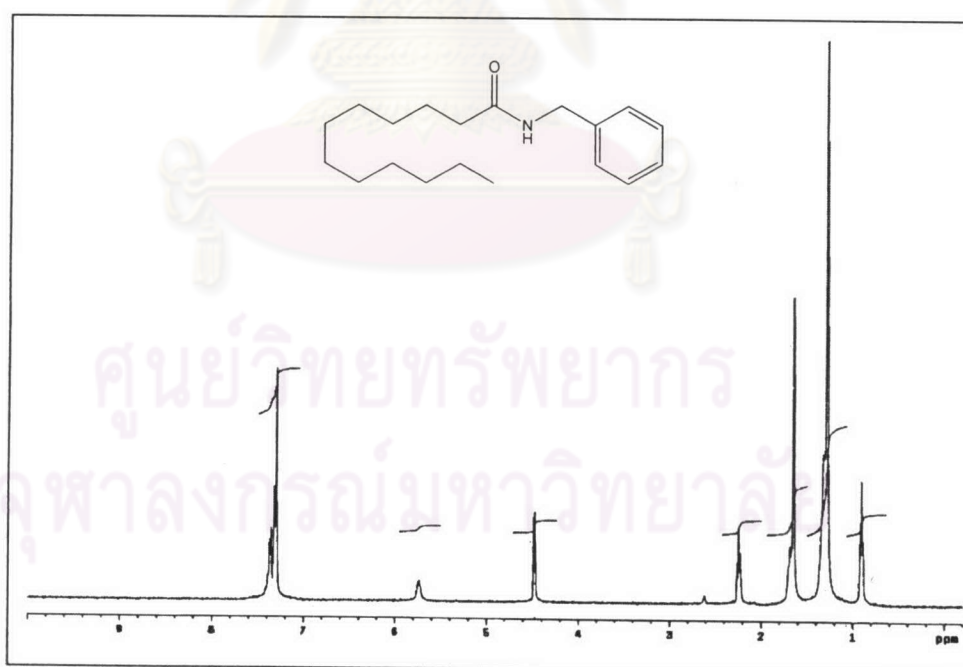


Figure 47 The ¹H-NMR spectrum of *N*-benzyl dodecanamide

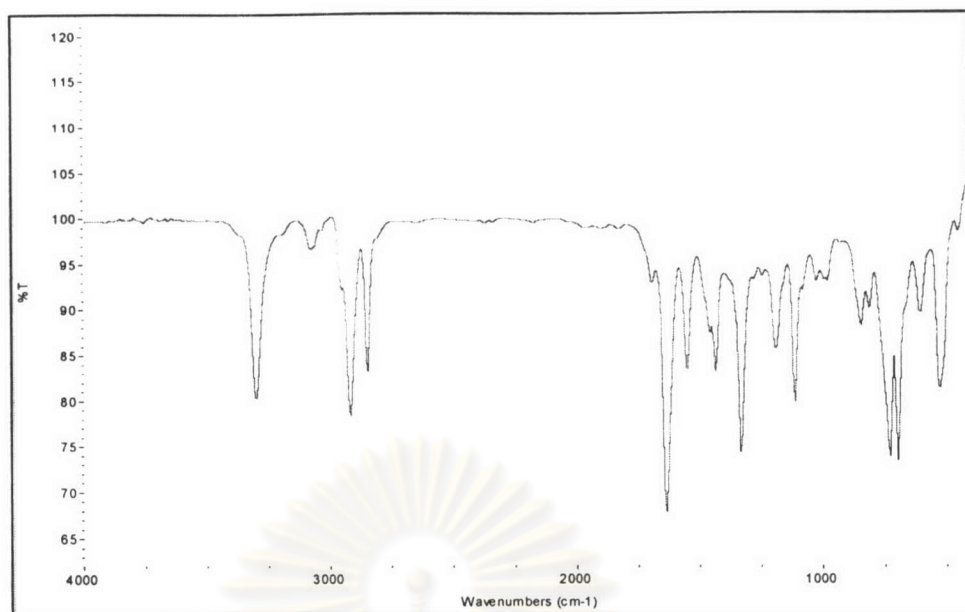


Figure 48 The IR spectrum of *N*-benzylhexadecanamide

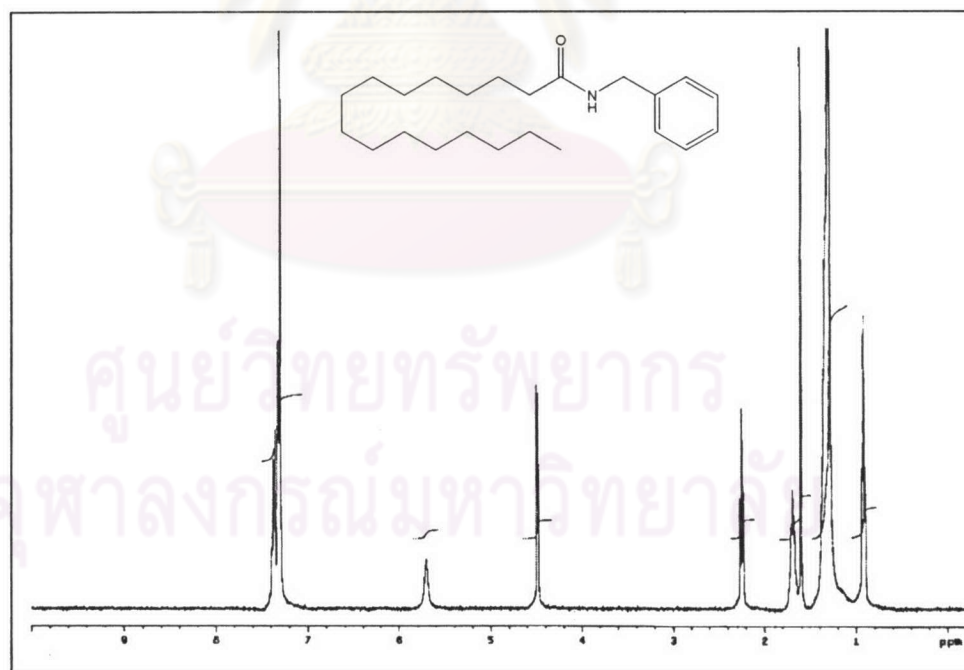


Figure 49 The ¹H-NMR spectrum of *N*-benzylhexadecanamide

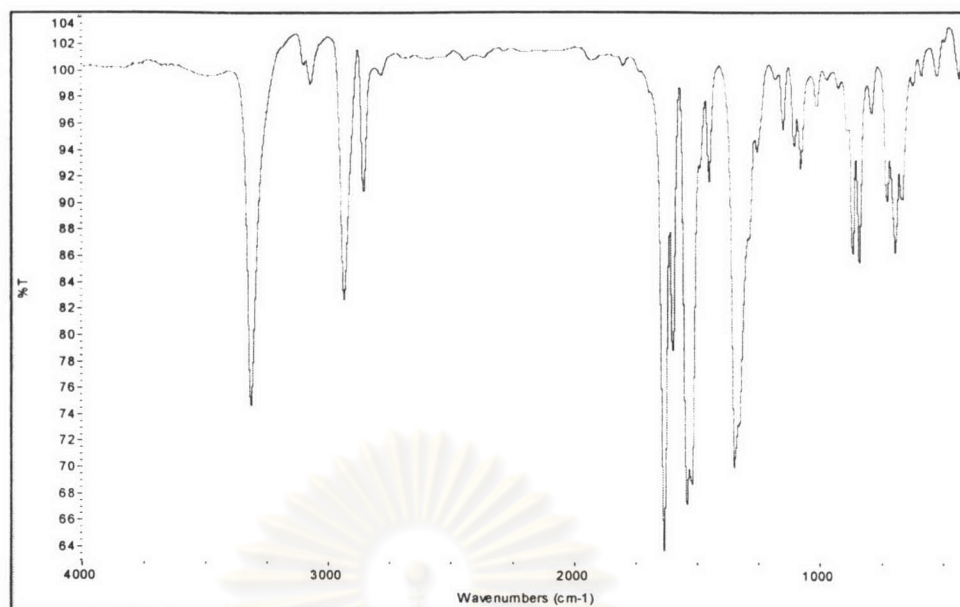


Figure 50 The IR spectrum of 4-nitro-*N*-cyclohexylbenzamide

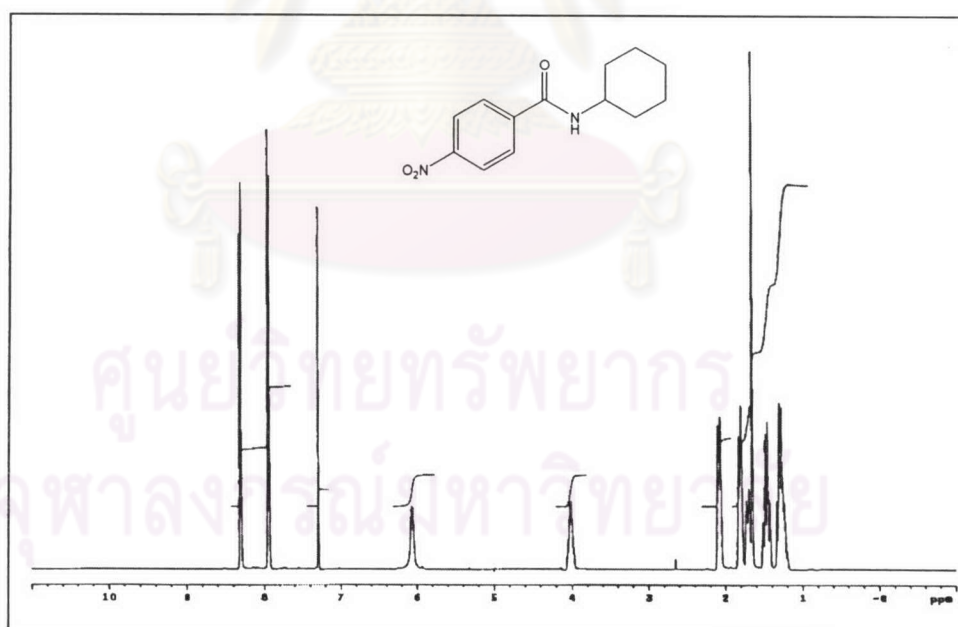


Figure 51 The ¹H-NMR spectrum of 4-nitro-*N*-cyclohexylbenzamide

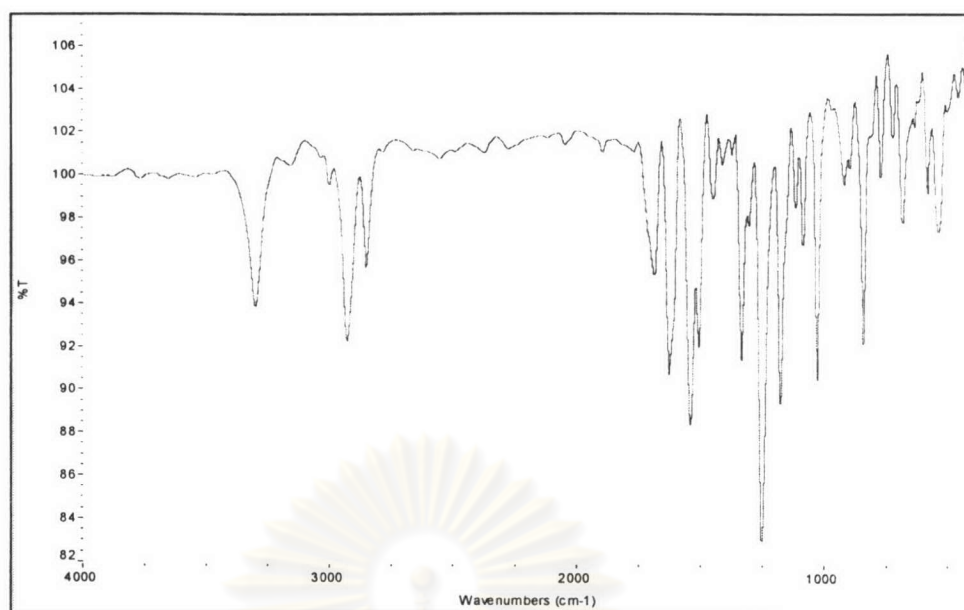


Figure 52 The IR spectrum of 4-methoxy-*N*-cyclohexylbenzamide

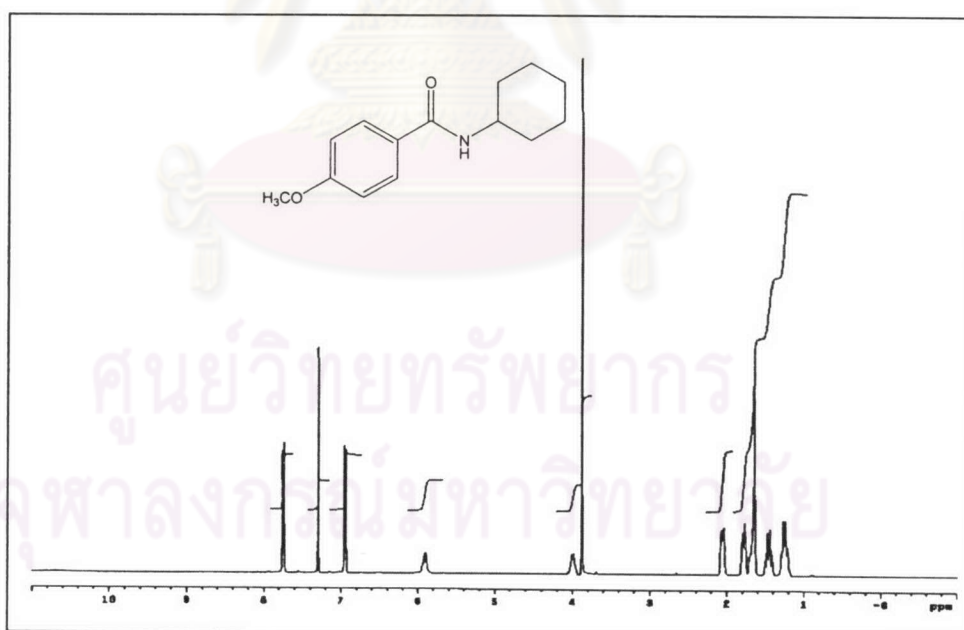


Figure 53 The ¹H-NMR spectrum of 4-methoxy-*N*-cyclohexylbenzamide

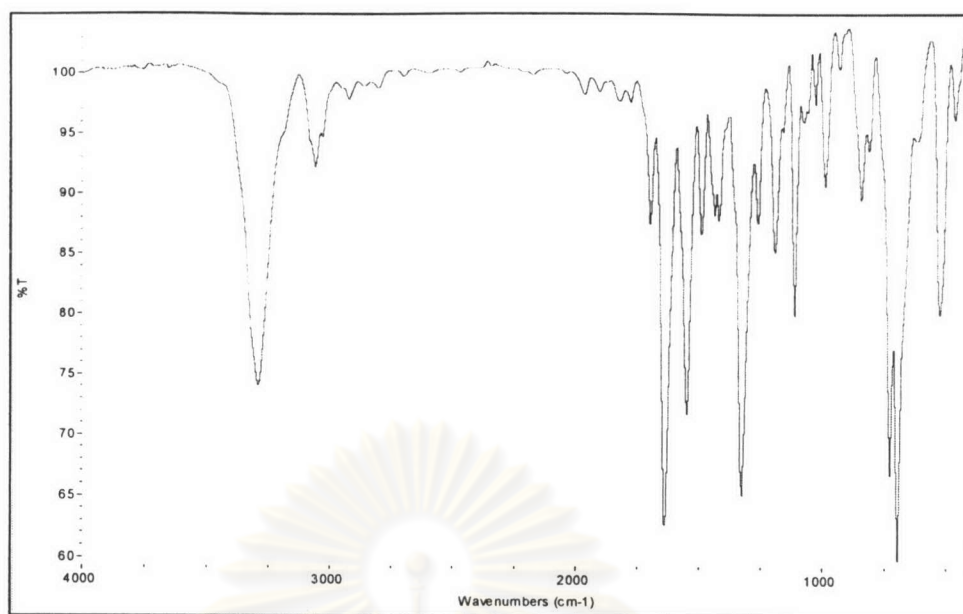


Figure 54 The IR spectrum of *N*-benzylbenzamide

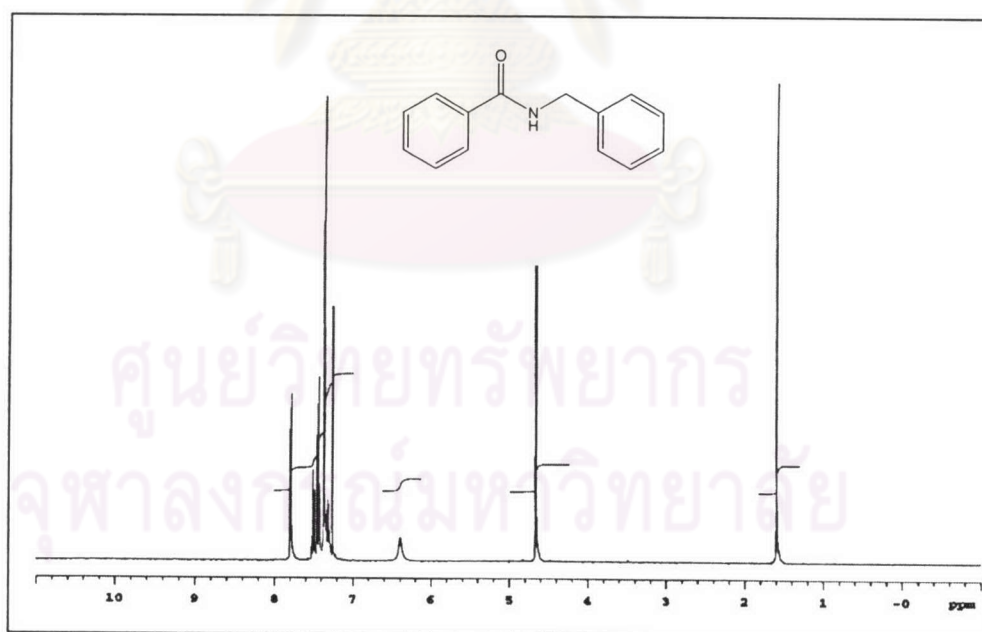


Figure 55 The ¹H-NMR spectrum of *N*-benzylbenzamide

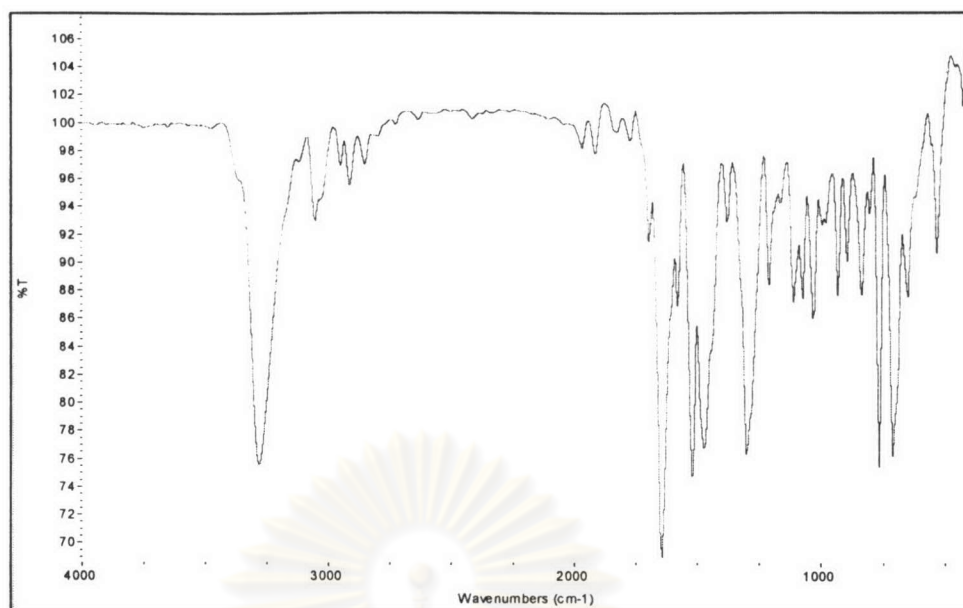


Figure 56 The IR spectrum of *N*-(2,6-dimethylphenyl)benzamide

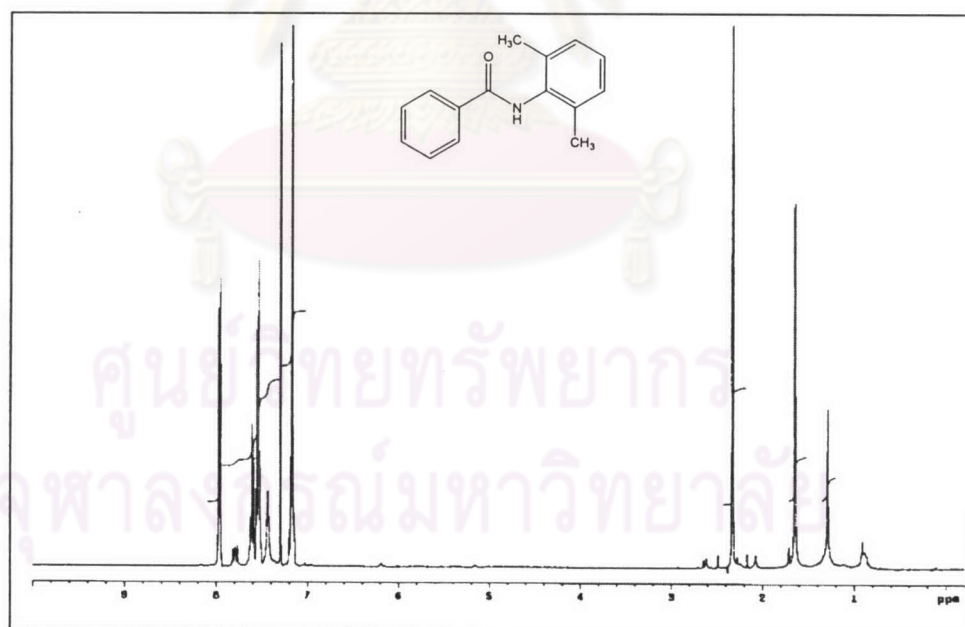


Figure 57 The ¹H-NMR spectrum of *N*-(2,6-dimethylphenyl)benzamide

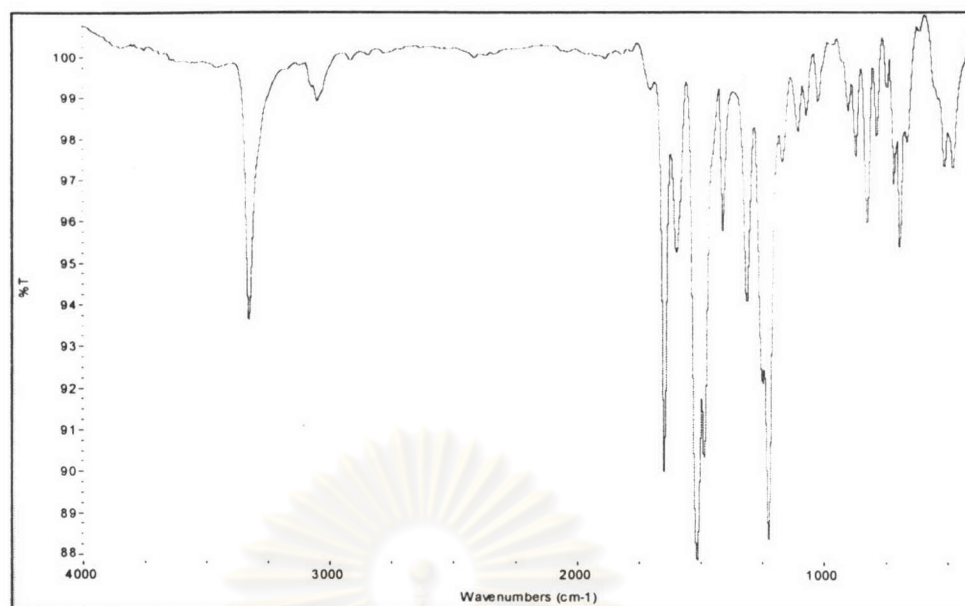


Figure 58 The IR spectrum of *N*-(4-phenoxyphenyl)benzamide

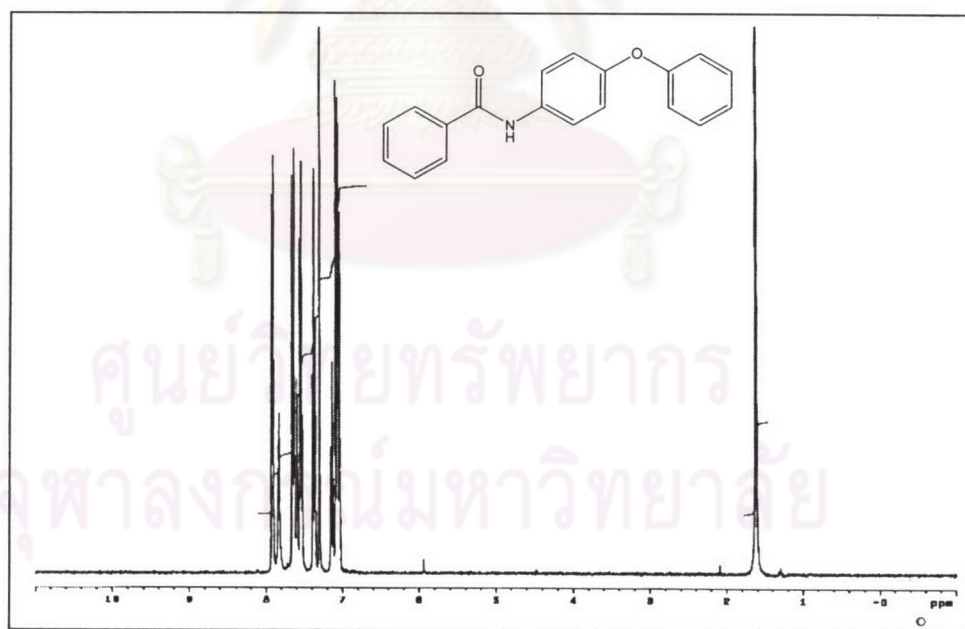


Figure 59 The ¹H-NMR spectrum of *N*-(4-phenoxyphenyl)benzamide

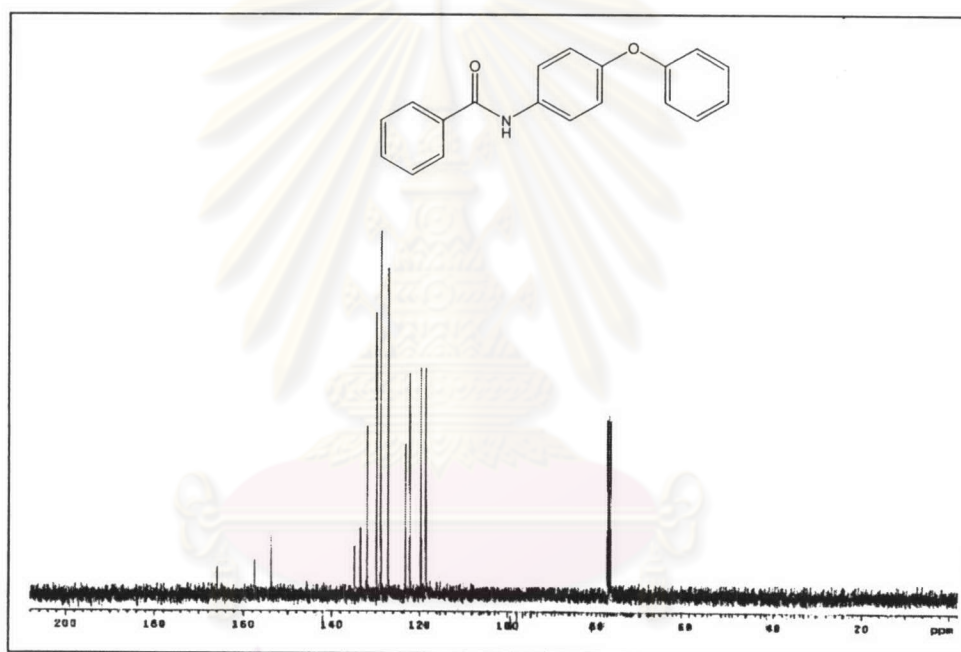


Figure 60 The ^{13}C -NMR spectrum of *N*-(4-phenoxyphenyl)benzamide

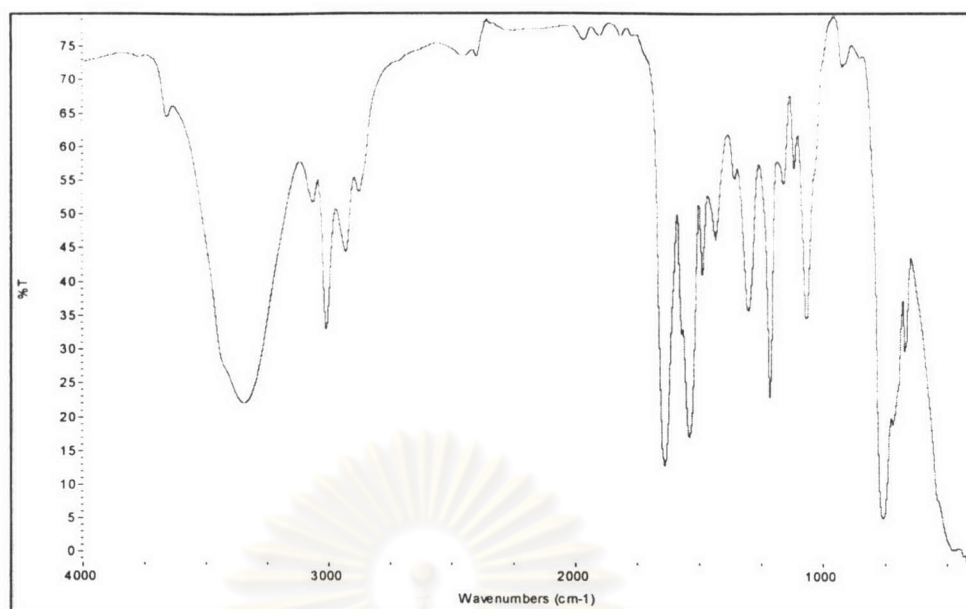


Figure 61 The IR spectrum of *N*-(2-hydroxyethyl)benzamide

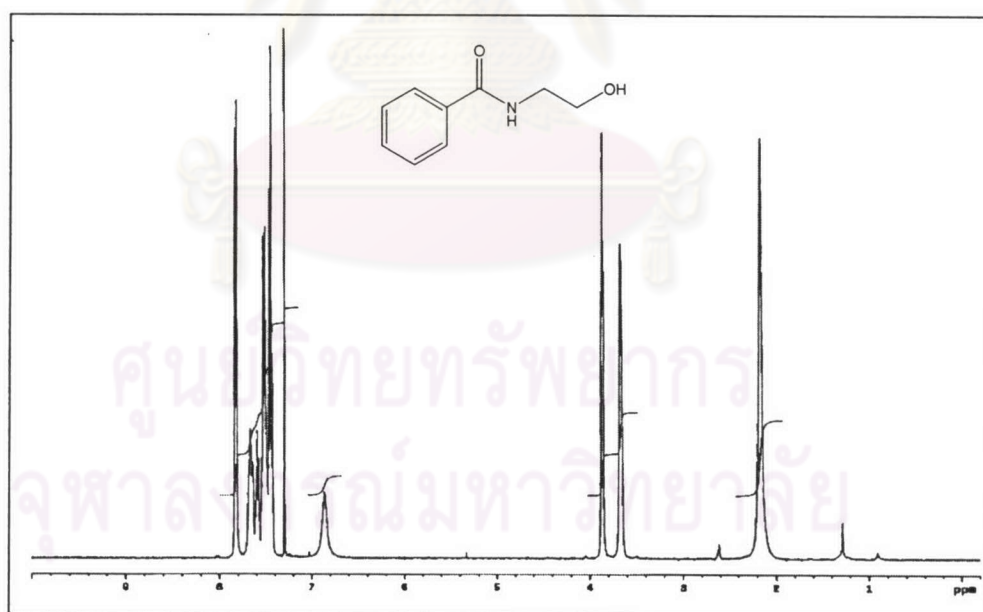


Figure 62 The ¹H-NMR spectrum of *N*-(2-hydroxyethyl)benzamide

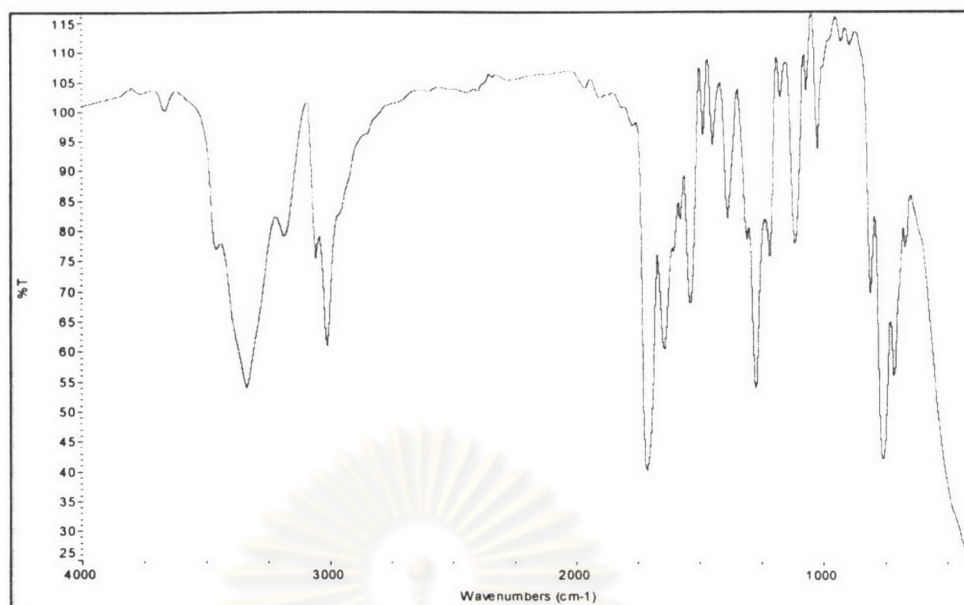


Figure 63 The IR spectrum of 2-benzamidoethyl benzoate

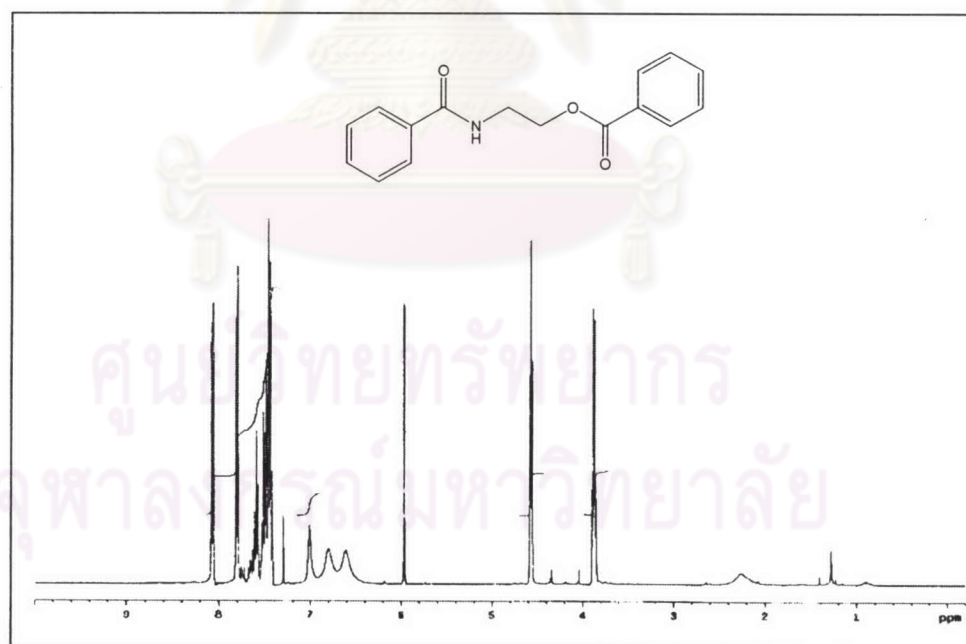


Figure 64 The ¹H-NMR spectrum of 2-benzamidoethyl benzoate

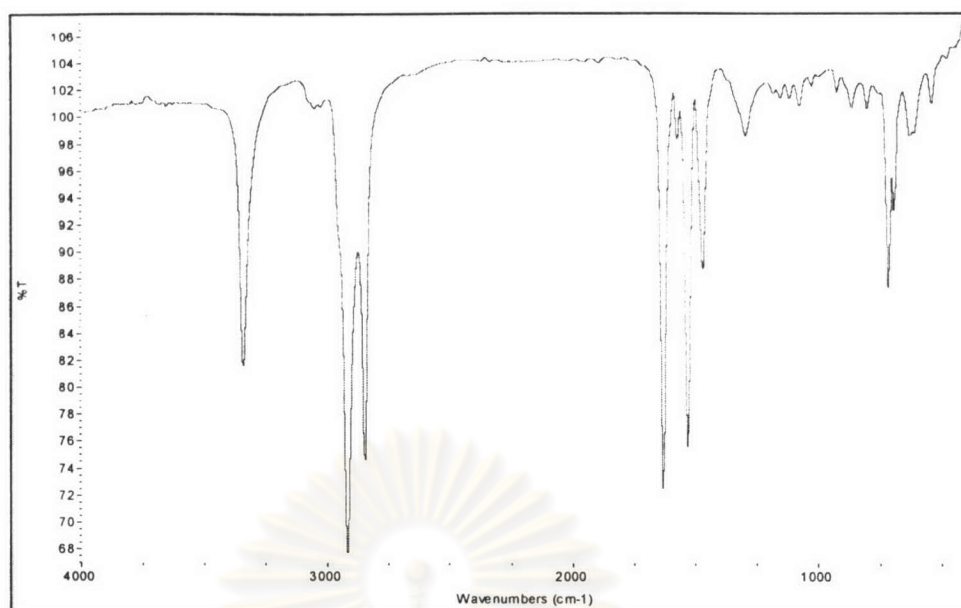


Figure 65 The IR spectrum of *N*-octadecylbenzamide

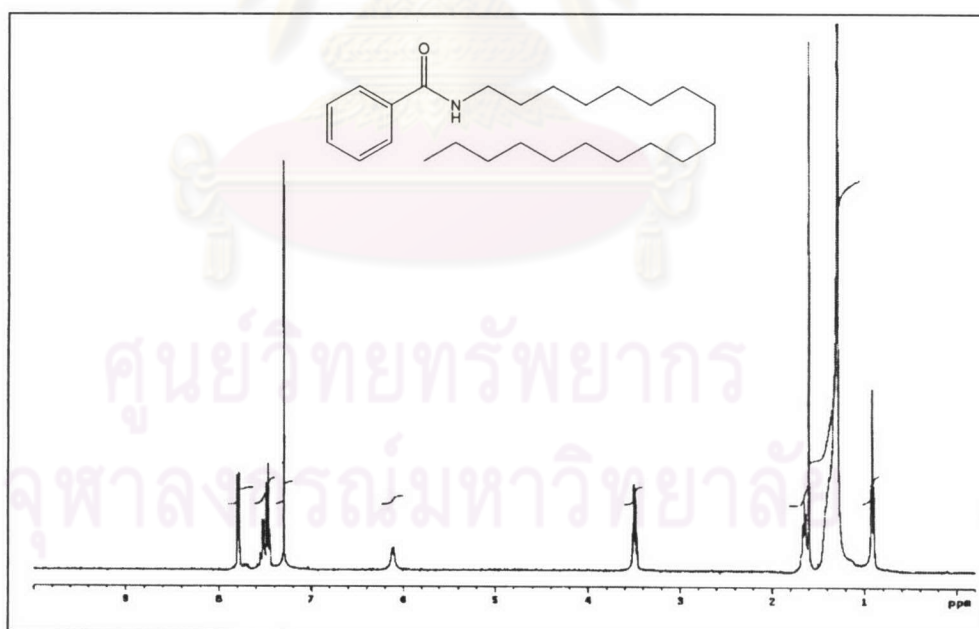


Figure 66 The ¹H-NMR spectrum of *N*-octadecylbenzamide

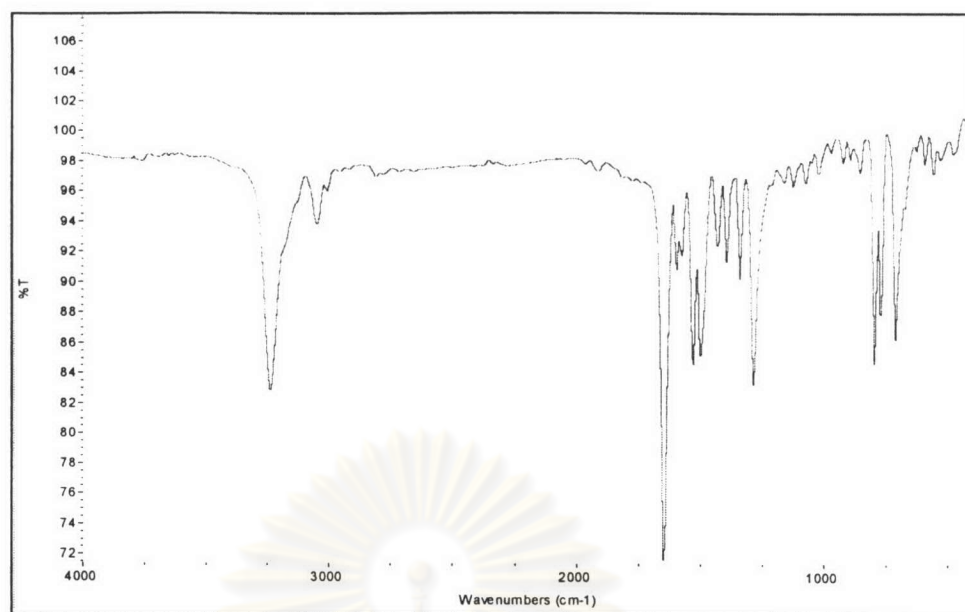


Figure 67 The IR spectrum of *N*-(1-naphthyl)benzamide

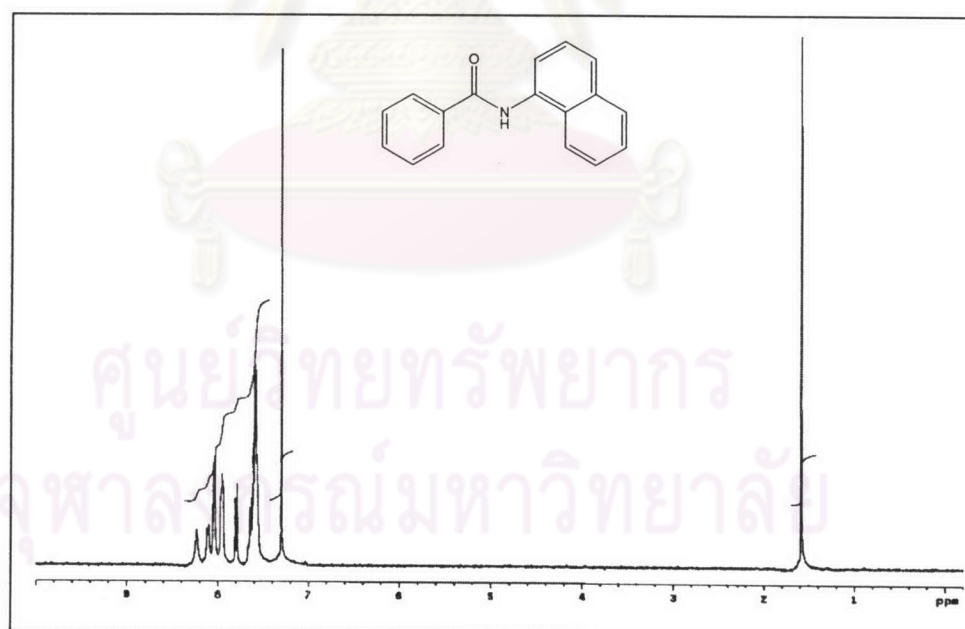


Figure 68 The ¹H-NMR spectrum of *N*-(1-naphthyl)benzamide

VITA

Miss Skaydaw Chaysripongkul was born on November 23, 1979 in Bangkok, Thailand. She graduated with Bachelor Degree of Science in Chemistry from Srinakharinwirot University in 1997, In 2001, she has been a graduate student studying in Organic Chemistry at Chulalongkorn University. During her study towards the Master Degree, she was awarded a teaching assistantship by the Faculty of Science, Chulalongkorn University and was also supported a research grant for her Master degree's thesis by Graduate School of Chulalongkorn University.



ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย