

## REFERENCES

- Albersberg, W., and Singh, Y. 1991. Dammarane triterpenoids from *Dysoxylum richi*. Phytochemistry 30 : 921-926.
- Adesida, G.A., and Okorie, D.A. 1973. Heudebolin : A new limonoid from *Trichilia heudelotii*. Phytochemistry 12 : 3007-3008.
- Adesanya, S.A., Pais, M., and Sevenet, T. 1991. Apotirucallane triterpenes from *Dysoxylum roseum*. J. Nat. Prod. 54 : 1588-1594.
- Agnihotri, V. K. 1987. Poriferasterol-3-rhamnoside, a new saponin from the stem bark of *Amoora rohituka*. Indian J. Pharm. Sci. 49 : 149-150. (Through Chemical Abstract 108 : 72082z)
- \_\_\_\_\_, Srivastava, S.D., and Srivastava, S.K. 1987. A new limonoid, amoorinin from the stem bark of *Amoora rohituka* Wall. Curr. Sci. 15 : 770-771. (Through Chemical Abstract 108 : 19190g)
- Akisanya, A., Bevan, C.W.L., Halsall, T.G., Powell, J.W., and Taylor, D.A.H. 1961. West African timbers. Part IV. Some reactions of gedunin. J. Chem. Soc. : 3705-3708.
- \_\_\_\_\_, Bevan, C.W.L., Hirst, J., Halsall, T.G., and Taylor, D.A.H. 1960. West African timbers. Part III. Petroleum extracts from the genus *Entandrophragma*. J. Chem. Soc. : 3827-3829.
- Aladesanmi, A.J. 1988. The stem constituents of *Dysoxylum lenticellare*. Tetrahedron 44 : 3749-3756.

- \_\_\_\_\_, Adewunmi, C.O., Kelley, C.J., Leary, J.D., and Bischoff, T.A. 1988. Lenticellarine, a molluscidal alkaloid from *Dysoxylum lenticellare*. Phytochemistry 27 : 3789-3792.
- \_\_\_\_\_, and Ilesanmi, O.R. 1987. Phytochemical and pharmacological investigation of the cardioactive constituents of the leaf of *Dysoxylum lenticellare*. J. Nat. Prod. 6 : 1041-1044
- \_\_\_\_\_, Kelley, C.J., and Leary, J.D. 1983. The constituents of *Dysoxylum lenticellare*, phenylethylisoquinoline, homoerythrina and dibenzazecine alkaloids. J. Nat. Prod. 46 : 127-131.
- \_\_\_\_\_, Kelley, C.J., and Leary, J.D. 1986. Isolation and characterization of lenticellarine, a novel alkaloid from *Dysoxylum lenticellare*. Planta Med. 51 : 522-253.
- \_\_\_\_\_, Kelley, C.J., Leary, J.D., and Onan, K.D. 1984. The constituents of *Dysoxylum lenticellare* ; Part 2 New homoerythrina alkaloids. J. Chem. Res. Synop. 40 : 108-109.
- Amoros-Marin, L., Torres, W.I. and Asenjo, C.F. 1959. Isolation of cycloeucalenol from West Indian mahogany wood. J. Org. Chem. 24 : 411-413.
- Ara, I., Siddiqui, B.S., Faizi, S., and Siddiqui, S. 1992. Isolation and structure elucidation of the triterpene azadirinin from the root of *Azadirachta indica*. Fitoterapia. 63 : 191. (Through C.A. 177 : 208887m)
- \_\_\_\_\_, Siddiqui, B.S., Faizi, S., and Siddiqui, S. 1990 a. Tricyclic diterpenoids from root bark of *Azadirachta indica*. Phytochemistry 29 : 911-914.

- \_\_\_\_\_, Siddiqui, B.S., Faizi, S., and Siddiqui, S. 1990 b. Three new diterpenoids from the stem bark of *Azadirachta indica*. J. Nat. Prod. 53 : 816-820.
- Arndt, R.R., and Baarschers, W.H. 1972. The structure of phragmalin, a meliacin with a norbornane part skeleton. Tetrahedron 28 : 2333-2340.
- Ayafor, J.F., Kimbu, S.F., Ngadjui, B.T., Akam, T.M., Dongo, E., and Sondengam, B.L. 1994. Limonoids from *Carapa grandiflora* (Meliaceae). Tetrahedron 50 : 9343-9354.
- Ayoub, S.M.H. and Kingston, D.G.I. 1984 a. Lariciresinol derivatives from *Turrea nilotica* and *Monechma celiatum*. J. Nat. Prod. 47 : 875-876.
- \_\_\_\_\_, and Kingston, D.G.I. 1984 b. Sudan medicinal and aromatic plants ; part IX. Constituents of *Turrea nilotica*. Fitoterapia 55 : 126-128 (Through Chemical Abstract 101 : 207662s)
- Balakrishna, K., and Kundu, A. 1990. Roxburghadiol A and roxburghiadiol B, two 14  $\alpha$ -methylsterols from *Aglaiia roxburghiana*. J. Nat. Prod. 53 : 523-526
- Balasubramanian, C., Mohan, P.S., Arumugasamy, K., and Udaiyan, K. 1993. Flavonoid from resin glands of *Azadirachta indica*. Phytochemistry 34 : 1194-1195.
- Benosman, A., Richomme, P., Sevenet, T., Hadi, A.H.A., and Bruneton, J. 1994. Secotirucallane triterpenes from the stem bark of *Aglaiia leucophylla*. Phytochemistry 37 : 1143 : 1145.
- Berndt, G. 1965. The use of margosa oil and margosa extract in Indian pharmacy. \_\_\_\_\_ Seifen-Oele-Fette-Wachse 59 : 894. (Through Chemical Abstract 63 : 5449<sup>b</sup>)

- Bevan, C.W.L., and Ekong, D.E.U. 1965. Occurrence of 8-methoxy-4-methyl coumarin in *Ekebergia senegalensis* A. Juss. Chem. Ind. 27 : 383-384.
- \_\_\_\_\_, Halsall, T.G., Nwaji, M.N., and Taylor, D.A.H. 1962. West African timbers. Part V. The structure of khivorin, a constituent of *Khaya ivorensis*. J. Chem. Soc. : 768-771.
- Bhakuni, D.S., Dhar, M.L., Dhar, M.M., Dhawan, B.N., and Mehrotra, B.N. 1969. Screening of Indian plants for biological activity : Part II. Indian . Exp. Biol. 7 : 250-262.
- Boar, R.B., and Damps, K. 1973. Configuration of aglaiol, a (24*S*)-24,25-epoxy-triterpene. J. Chem. Soc., Chem. Commun. : 115-116.
- \_\_\_\_\_, and Damps, K. 1977. Triterpenoids of *Aglaia odorata* Configuration of trisubstituted epoxides. J. Chem. Soc. Perkin Trans. I : 510-512.
- Burke, B.A., Chan, W.F., Magnus, K.E., and Taylor, D.R. 1969. Extractives of *Cedrela odorata* L., the structure of photogedunin. Tetrahedron 2 : 5007-5011.
- Carratala, R.E. 1939. Fatal intoxication by fruit from *Melia azedarach* L. Rev. Assoc. Med. Argentina. 53 : 388-340. (Through Chemical Abstract 33 : 6951<sup>b</sup>)
- Chakraborty, D.P., and Basak, S.P. 1971. Cyclomahogenol, a new tetracyclic triterpene from *Swietenia mahogoni*. Phytochemistry 10 : 1367-1372.
- Chan, W.R., Magnus, K.E., and Mootoo, B.S. 1967. Extractives from *Cedrela odorata* L. The structure of methyl angolensate. J. Chem. Soc. C : 171-177.
- \_\_\_\_\_, Gibbs, J.A., and Taylor, D.R. 1973. Triterpenoids from *Trichilia havanensis* Jacq. Part I. The acetates of havanensin and trichilenone, new tetracyclic tetranortriterpenes. J. Chem. Soc. Perkin Trans I : 1047-1051.

- \_\_\_\_\_, Taylor, D.R., and Aplin, R.T. 1972. Extractive of *Cedrela odorata* L. The structure of odoratin, an undecanortriterpene. Tetrahedron 28 : 431-437.
- Chang, F.C., and Chiang, C.K. 1968. Kulinone, a euphane type triterpenoid from *Melia azedarach* L. Chem. Commun. : 1156-1158.
- Chanleur, N. 1993. Effect of a main alkaloid from *Dysoxylum cyrtobotryum* Miq. on the contraction of isolated trachea from rat and guinea-pig. Master's Thesis, Chulalongkorn University.
- Chatterjee, A., and Kundu, A.B. 1967. Isolation, structure and stereochemistry of aphanamixin, a new triterpene from *Aphanamixis polystachya* Wall. and Parker. Tetrahedron Lett. 16 : 1471-1476.
- \_\_\_\_\_, Chakraborty, T., and Chandrasekharan, S. 1971. Chemical investigation of *Cedrela toona*. Phytochemistry 10 : 2533-2535.
- Connolly, J.D., and McCrindle, R. 1971. Tetranortriterpenoids and related substances. Part XIII. The constitution of grandifoliolenone, an apo-tirucallol derivative from *Khaya grandifoliola* (Meliaceae). J. Chem. Soc.C : 1715-1718.
- \_\_\_\_\_, McCrindle, R., and Overton, K.H. 1965 c. The constitution of mexicanolide, a novel cleavage reaction in a naturally occurring bicyclo(3,3,1) nonane derivative. Chem. Comm. 8 : 162-163.
- \_\_\_\_\_, Handa, K.L., McCrindle, R., and Overton, K.H. 1967. Mexicanol. Tetrahedron. Lett. 36 : 3449-3452.
- \_\_\_\_\_, Handa, K.L., McCrindle, R., and Overton, K.H. 1968. Tetranortriterpenoids. Part X. Grandifolione. J. Chem. Soc., C : 2227-2234

- \_\_\_\_\_, Henderson, R., McCrindle, R., Overton, K.H., and Bhacca, N.S. 1965 b. Tetranortriterpenoids. Part I. (Bicyclononanolides. Part I.) The constitution of swietenine. J. Chem. Soc. : 6935-6348.
- \_\_\_\_\_, McCrindle, R., Overton, K.H., and Warnock, W.D.C. 1965 a. Swietenolide. Tetrahedron Lett. 33 : 2937-2940.
- Cortez, D.A.G., Vieira, P.C. Fernandes, J.V., Da Silva, M.F.G.F., and Ferreira, A.G. 1992. Limonoids from *Trichilia hirta*. Phytochemistry 31 : 625-628.
- Craib, W.G. 1931. Florae Siamensis Enumeratio, Vol. 1 Bangkok : Siam Society.
- Dean, F.M., Monkhe, T.V., Mulholland, D.A., and Taylor, D.A.H. 1993. An isoflavonoid from *Aglaia ferruginaea*, an Australian member of the Meliaceae. Phytochemistry 34 : 1537-1539.
- de Souza, N.I. 1993. Rohitukine and forskolin : Second - generation immunomodulatory, intraocular - pressure - lowering, and cardiotoxic analogues, In A.D. Kinghorn and M.F. Balandrin (eds.), Human Medicinal Agent from Plants, pp. 331-340. Washington, DC : American Chemical Society.
- Dhar, M.L., Dhar, M.M., Dhawan, B.N., and Ray, C. 1968. Screening of Indian plants for biological activity : Part I. Indian . Exp. Biol. 6 : 232-247.
- \_\_\_\_\_, Dhar, M.M., Dhawan, B.N., Mehrotra, B.N., Srimal, R.C., and Tandon, J.S. 1973. Screening of Indian plants for biological activity : Part IV. Indian. Exp. Biol. 2 : 43-54.
- Duh, C.Y., Wang, S.K. , Hou, R.S., Wu, Y.C., Wang, Y., Cheng, M.C., and Chang, T.T. 1993. Dehydroodorin, a cytotoxic diamide from the leaves of *Aglaia formosana*. Phytochemistry 34 : 857-858.

- Dulchuprapha, W. 1994. Effects of a main alkaloid from *Dysoxylum cyrtobotryum* Miq. on the contraction of isolated porcine renal and coronary artery. Master's Thesis, Chulalongkorn University.
- Ekimoto, H., Irie, Y., Araki, Y., Kadota, S., and Kikuchi, T. 1991. Platelet aggregation inhibitors from the seeds of *Swietenia mahagoni* : Inhibition of *in vitro* and *in vivo* platelet-activating effects of tetranortriterpenoids related to swietenine and swietenolide. Planta. Med. 57 : 56-58.
- Farnsworth, N.R. 1966. Biological and phytochemical screening of plants. J. Pharm. Sci. 55 : 261-262.
- Gough, J.H., and Sutherland, M.D. 1964. Terpenoid chemistry VIII. The structure of  $\delta$  - elemene. Aust. J. Chem. 17 : 1270-1281.
- \_\_\_\_\_, Powell, V., and Sutherland, M.D. 1961. Constitution and biogenesis of two new sesquiterpenes. Tetrahedron Lett. 21 : 763-767.
- Guevara, R. 1940. Pharmacodynamic study of lansones resin, tangan-tangan oil and palo santo seeds. Rev. Filipina. Med. Farm. 31 : 143-154. (Through Chemical Abstract 34 : 70079)
- Guha-Sircar, S.S., and Chakravarty, T. 1951. The chemical investigation of the seeds of *Swietenia Macrophylla*. The non bitter principle. J. Indian Chem. Soc. 28 : 207-210. (Through Chemical Abstract 47 : 21731)
- Gupta, H.O. and Srivastava, S.K. 1985. Apigenin-5-0-galactoside from the roots of *Melia azedarach* L. Curr. Sci. 54 : 570-571. (Through Chemical Abstract 103 : 11937w)

- Harmon, A.D., and Weiss, U. 1979. The structure of rohitukine, the main alkaloid of *Amoora rohituka* (Syn. *Aphanamixis polystachya*) (Meliaceae). Tetrahedron Lett. 8 : 721-724.
- Hayashi, N., Lee, K.H., Hall, I.H., Mephail, A.T., and Huang, H.C. 1982. Structure and stereochemistry of (-)-odorinol, an antileukomic diamine from *Aglaia odorata*. Phytochemistry 21:2371-2373.
- Henderson, R., McCrindle, R., and Overton, K .H. 1964. Salannin. Tetrahedron Lett. 52 : 3969-3974.
- Hooker, J.D. 1875. The flora of British India. Vol. I : Ranunculacee to Sapindaceae. Kent : L. Reeve.
- Hu, J., Yang , J., and Chen, L. 1983. Preliminary study on the antifeedant and toxicity properties of chinaberry (*Melia azedarach* L.) seed oil against major insect pests of rice. Zhongguo Nongye Kexue 5 : 63-69. (Through Chemical Abstract 100 : 18727n)
- Huang, R.C., Okamura, H., Iwagawa, T., Tadera, K., and Nakatani, M. 1995. Azedarachin C, a limonoid antifeedant from *Melia azedarach*. Phytochemistry 38 : 593-594.
- Hwunseng, S., Wiriyaichitra, P., and Sukumalnand, P. 1995. Structure and insect controlling activities of compounds from *Aglaia oligophylla* Miq. Congress on Science and Technology of Thailand. 21 : 86-87.
- Ishibashi, F., Satasook, C., Isman, M.B., and Towers, G.H.N. 1993. Insecticidal 1H cyclopentatetrahydro (b) benzofurans from *Aglaia odorata*. Phytochemistry 32 : 307-310.



- Janprasert, J., Satasook, C., Sukumalanand, P., Champagne, D.E., Isman, M.B., Wiriyaachitra, P., and Towers, G.H.N. 1993. Rocaglamide, a natural benzofuran insecticide from *Aglaia odorata*. Phytochemistry 32 : 67-69.
- Jermviwatkul, P. 1993. The study of anti-inflammatory activity of alkaloid from *Dysoxylum cyrtobotryum* Miq. Master's Thesis, Chulalongkorn University.
- Jogia, M.K., and Andersen, R.J. 1987. Dysoxylin, A limonoid from *Dysoxylum richii*. Phytochemistry 26 : 3309-3311.
- \_\_\_\_\_, and Andersen, R.J. 1989. Limonoids from the Fijian medicinal plant *Dysoxylum richii*. Can. J. Chem. 67 : 257-260.
- \_\_\_\_\_, Andersen, R.J., Mantus, E.K., and Clardy, J. 1989. Dysoxysulfone, a sulfur rich metabolite from the Fijian medicinal plant *Dysoxylum richii*. Tetrahedron Lett 30 : 4919-4920.
- Jolad, S.D., Hoffmann, J.J., and Cole, J.R. 1980. Constituents of *Trichilia hispida* (Meliaceae), a new triterpenoid, hispidone and bourjotinolone A. J. Org. Chem. 45 : 3132-3135.
- Joshi, M.N., Chowdhury, B.L., Vishnoi, S.P., Shoeb, A., and Kapil, R.S. 1986. Antiviral activity of (+)-odorinol. Planta Med. 53 : 254-255.
- Kehrli, A.R.H., Taylor, D.A.H., and Niven, M. 1990. Limonoids from *Ekebergia pterophylla* seed. Phytochemistry 29 : 153-159.
- Kiang, A.K., Tan, E.L., Lim, F.Y., Habaguchi, K., and Nakanishi, K. 1967. Lansic acid, a bicyclic triterpene. Tetrahedron Lett. 37 : 3571-3574.

- King, A.K., Tan, E.L., Lim, F.Y., Habaguchi, K., and Nakanishi, K. 1982. X-ray crystal structure of rocaglamide, a novel antileukemic 1H-cyclopenta(b) benzofuran from *Aglaia elliptifolia*. J. Chem. Soc. Chem. Commun. : 1150-1151.
- \_\_\_\_\_, Chaing, C.C., Ling, H.C., Ochiai, M., and Fujita, E. 1985. 1H-cyclopenta(b) benzofuran derivatives and its analog. US US. 4,539,414. (Cl. 549-548 : C07D307/93), 03 sep 1985, JP. Appl. 85/66,280, 14 Apr,1985, (Through Chemical Abstract 104 : 116079c)
- Ko, F.N., Wu, T.S., Liou, M.J., Huang, T.F., and Teng, C.M. 1992. PAF antagonism *in vitro* and *in vivo* by aglafoline from *Aglaia elliptifolia* Merr. Eur. J. Pharmacol. 218 : 129-135.
- Kraus, W., Bokel, M., Cramer, R., Klenk, A., and Poehnl, H. 1985. Constituents of neem and related species (a revised structure of azadirachtin). F. E. C. S. Int. Conf. Chem. Biotechnol. Biol. Act. Nat. prod., (Proc.) 3 rd 4: 446-450. (Through Chemical Abstract 111 : 74740y)
- Kubo, I., and Klocke, J.A. 1982. An insect growth inhibitor from *Trichilia roka* (Meliaceae). Experientia 38 : 693-640.
- Kubo, I., Matsumoto, A., and Matsumoto T. 1986. New insect ecdysis inhibitory limonoid deacetylazadirachtinol isolated from *Azadirachta indica* (Meliaceae) oil. Tetrahedron 42 : 489-496.
- Langenhoven, J.H., Breytenbach, J.C., Gerritsma-Van der Vijverm, L.M., and Fourie, T.G. 1989. An antihypertensive chromone from *Ptaeroxylon obliquum*. : 373 (Through Chemical Abstract 111 : 4650z)

- Lavie, D., Jain, M.K., and Shpan-Gabrielith, S.R. 1967. A locust phargorepellant from two *Melia* species. Chem. Commun. : 910-911.
- Lermanon, C. 1991. A study of cardiovascular effect of *Dysoxylum cyrtobotryum* Miq. in rats. Master's Thesis, Chulalongkorn University.
- Lee, S.M., Klock, J.A., and Balandrin, M.F. 1987. The structure of 1-cinnamoylmelianolone, a new insecticidal tetranortriterpenoid from *Melia azedarach* L. (Meliaceae). Tetrahedron Lett. 28 : 3543-3546.
- Zeng, L., Gu, Z.M., Famwick, P.E., Chang, C.J., Smith, D.L., McLaughlin, J.L. 1995. Additional bioactive triterpenoids from *Melia volkensii* (Meliaceae). Heterocycles 41 : 741-752. (Through Chemical Abstract 123 : 52339v)
- Mabberley, D.J., and Pannell, C.M. 1989. Meliaceae. In Phil, F.N.D. (ed.), Tree flora of Malaya, pp. 199-260. Malasia : Longman.
- Marco, J.A., Sanz, B.J.F., and Sanchez-Parareda, J. 1986. Flavonol diglycosides from *Melia azedarach*. J. Nat. Prod. 49 : 170.
- McCabe, P.H., McCrindle, R., and Murray, R.D.H. 1967. Constituents of sneezewood, *Ptaeroxylon obliquum* (Thunb.) Radlk. Part I. Chromones. J. Chem. Soc. C : 145-151.
- Markham, K.R. 1982. Techniques of flavonoid identification. In J.E. Treherne and P.H. Rubery (eds.), Biological Techniques Series, pp. 36-49. London : Academic Press.
- \_\_\_\_\_, and Chari, V.M. 1982. Carbon-13 NMR spectroscopy of flavonoids. In J.B. Harborn (ed.), The flavonoids, pp. 24-42. London : Chapman & Hall.

- Mishra, M., and Srivastava, S.K. 1984. A new flavone glycoside from *Melia azedarach* L. Curr. Sci. 53 : 694-695. (Through Chemical Abstract 102 : 3211e).
- Morgan, E.D., and Thornton, M.D., 1973. Azadirachtin in the fruit of *Melia azedarach*. Phytochemistry 12 : 391-392.
- Mulholland, D.A., and Monkhe, T.V. 1993. Two glabretal-type triterpenoids from the heartwood of *Aglaia ferruginea*. Phytochemistry 34 : 579-580.
- \_\_\_\_\_, and Nair, J.J. 1994. Triterpenoids from *Dysoxylum peltigrewianum*. Phytochemistry 37 : 1409-1411.
- \_\_\_\_\_, and Taylor, D.A.H. 1988. Protolimonoids from *Turraea nilotica*. Phytochemistry 27 : 1220-1221.
- \_\_\_\_\_, Osborne, R., Roberts, S.L., and Taylor, D.A.H. 1994. Limonoids and triterpenoid acids from the bark of *Entandrophragma devevayi*. Phytochemistry 37 : 1417-1420.
- Murray, R.D.H., and Ballantyne, M.M. 1969. Nieshoutol. A sternutatory hydroxycoumarin from sneezewood. Tetrahedron Lett. 46 : 4031-4034.
- Nagasampagi, B.A., Yankov, L., and Dev, S. 1967. Isolation and characterisation of geranylgeraniol. Tetrahedron Lett. 2 : 189-192.
- Naik, R.G., Kattige, S.L., Bhat, S.V., Alreja, B., and Rupp, R.H. 1988. A antiinflammatory cum immunomodulatory piperidinylbenzopyranone from *Dysoxylum binectariferum* : Isolation, structure and total synthesis. Tetrahedron 44 : 2081-2086.

- Nakanishi, T., Inada, A., and Lavie, D. 1986a. A new trirucallane-type triterpenoid derivative, lipo-melianol from fruits of *Melia toosendan* Sieb et Zucc. Chem. Pharm. Bull. 34 : 100-104.
- \_\_\_\_\_, Kobayashi, M., Murata, H., and Inada, A. 1988. Phytochemical studies on Meliaceae plants IV. Structure of a new pregnane glycoside, toosendanoside, from leaves of *Melia toosendan* Sieb. et Zucc. Chem. Pharm. Bull. 36 : 4148-4152.
- \_\_\_\_\_, Inada, A., Nishi, M., Miki, T., and Hino, R. 1986 b. The structure of a new natural apotirucallane-type triterpene and the stereochemistry of the related terpenes. X-ray and  $^{13}\text{C}$  NMR spectral analyses. Chem.Lett. 1 : 69-72
- Nakatani, M.E., Iwashita, T., Nacki, H, and Hase, T. 1985 a. Structure of a limonoid antifeedant from *Trichilia roka*. Phytochemistry 24 : 195-196.
- \_\_\_\_\_, James, J.C., and Nakanishi, K. 1981. Isolation and structures of trichilins, antifeedants against the Southern Army Worm. J.Am.Chem. Soc. 103 : 1228.
- \_\_\_\_\_, and Nakanishi, K. 1993. Structure of insect antifeeding limonoids, trichilins F and G, from *Trichilia roka*. Heterocycles 4 : 725-731.
- \_\_\_\_\_, Takoa, H., and Miura, I. 1985 b. Azedarachol, a steroid ester antifeedant from *Melia azedarach* var. *japonica*. Phytochemistry 24 : 1945-1948.
- Neto, J., Agostinho, S., Silva, M. Vieira, P., Fernandes, J., Pinheiro, A., and Vilela. 1995. Limonoids from seeds of *Toona ciliata* and their chemosystematic significance. Phytochemistry 38 : 397-401.

- Ngnokam, D., Massiot, G., Jean-Mare, N., and Etienne, T. 1994. Steroids and terpenoids from the bark and the wood of *Entandrophragma cylindricum*. Bull. Chem. Soc. Ethiop. 8 : 15-20. (Through Chemical Abstract 122 : 76570u)
- Ngowgarmratana, R. and Saifah, E. 1987. Lignan from the stem bark of *Aglaia pirifera* Hance. Th. J. Pharm. Sci. 12 : 335-339.
- Nishizawa, M., Inoue, A., Hayashi, Y., Kosela, S., and Iwashita, T. 1984. Structure of aphanamol I and II. J. Org. Chem. 49 : 3660-3662.
- \_\_\_\_\_, Inoue, A., Sastrapradja, S., and Hayashi, Y. 1983. (+)-8-Hydroxy-calamenene : A fish-poison principle of *Dysoxylum acutangulum* and *D. alliaceum*. Phytochemistry 22 : 2083-2085.
- \_\_\_\_\_, Nademoto, Y., Sastrapradja, S., Shiro, M., and Hayashi, Y. 1988. Dukunolide D, E and F : New tetranortriterpenoids from the seeds of *Lansium domesticum*. Phytochemistry 27 : 237-239.
- \_\_\_\_\_, Nademoto, Y., Sastrapradja, S., Shiro, M., and Hayashi, Y. 1985a. Structure of Dukunolide A : A tetranortriterpenoid with a new carbon skeleton from *Lansium domesticum*. J. Chem. Soc., Chem. Commun. 7 : 395-396.
- \_\_\_\_\_, Yamada, H., Sastrapradja, S., and Hayashi, Y. 1985 b. Structure and synthesis of bicalamenene. Tetrahedron Lett. 26 : 1535-1536.
- Ochi, M., and Kotsuki, H. 1976. Sedanin . A new limononoid from *Melia azedarach* L. var. *japonica* Makino. Tetrahedron Lett. 33 : 2877-2880.
- Okorie, D.A., and Taylor, D.A.H. 1967. The structure of heudelottin and extractive from *Trichilia heudelottii*. Chem. Commun. : 83-84.

- \_\_\_\_\_, and Taylor, D.A.H. 1968. Extractives from the seed of *Cedrela odorata* L. Phytochemistry 7: 1683-1686.
- \_\_\_\_\_, and Olugbade, T.A. 1991. Tetracyclic triterpenoids from *Trichilia prieuriana* leaves. Phytochemistry 30 : 698-700.
- Olugbade, T.A. 1991. Tetracyclic triterpenoids from *Trichilia prieuriana* leaves. Phytochemistry 30 : 698-700.
- Omobuwajo, O.R., Martin, M.T., Perromat, G., Sevenet, T., Awang, K., and Pais, M. 1995. Cytotoxic cycloartanes from *Aglaia argentea*. Phytochemistry 41 : 1325-1328.
- Onan, K.D., Kelley, C.J., Patarapanich, C., Leary, J.D., and Aladesanmi, A.J. 1985. Ferrubietolide : X-Ray crystal structure of a novel bis-diterpene from *Dysoxylum lenticellatré*. J. Chem. Soc., Chem. Commun. 3 : 121-122.
- Perry, L.M. 1980. Medicinal plants of East and Southeast Asia. London : M.T. Press.
- Pettit, G.R., Barton, D.H.R., Herald, C.L., Polonsky, J., and Schmidt, J.M. 1983. Evaluation of limonoids against the murine P388 lymphocytic leukemia cell line. J. Nat. Prod. 46 : 380-389.
- Purushothaman , K.K., Balakrishnan, M., and Balakrishna, K. 1986. Structure studies of roxburghiadiol A and B. Indian Drugs. 23 : 260-263. (Through Chemical Abstract 105 : 75902r)
- \_\_\_\_\_, Duraiswamy, K., and Connolly, J.D., 1984. Tetranortriterpenoids from *Melia dubia*. Phytochemistry 23 : 135-137.

- \_\_\_\_\_, Sarada, A., Connolly, J.D., and Akinniyi, J.A. 1979. The structure of roxburghilin, a bis-amide of 2-aminopyrrolidine from the leaves of *Aglaia roxburghiana* (Meliaceae). J. Chem. Soc. Perkin. Trans. I : 3171- 3174.
- \_\_\_\_\_, and Venkatanarasimhan, M. 1983. Structure of heynic acid : A new triterpene acid from *Heynea trijuga* Roxb. Indian J. Chem., Sect B 8 : 820-821.
- \_\_\_\_\_, Venkatanarasimhan, M., and Sarada, A. 1987. Trijugins A and B, tetranortriterpenoids with a novel rearranged carbon skeleton from *Heynea trijuga* (Meliaceae). Can J. Chem. 65 : 35-37.
- Rajab, M.S., and Bentley, M.D. 1988. Tetranortriterpenes from *Melia volkensii*. J. Nat. Prod. 51 : 840.-844
- Rusia, K., and Srivastava, S.K. 1988. Structure of a new limonoid glycoside from *Melia azedarach* L. Proc. Natl. Acad. Sci., India, Sect. A 51 : 33-36.
- Saifah, E., Jongbunprasert, V., and Kelley, C.J. 1988. Piriferine, a new pyrrolidine alkaloid from *Aglaia pirifera* leaves. J. Nat. Prod. 51 : 80-82.
- \_\_\_\_\_, Puripattavong, J., Likhitwitayawuid, K., Cordell, G.A., Chai, H., and Pezzuto, J.M. 1993. Bisamides from *Aglaia* species : Structure analysis and potential to reverse drug resistance with cultured cells. J. Nat. Prod. 56 : 473-477.
- \_\_\_\_\_, and Puripattavong, J. 1992. An amino acid derivative from the leaves of *Aglaia pyramidata*. Hance. Th. J. Pharm. Sci. 16 : 111-112.
- Sangamnadech, S. 1991. Effect of a main alkaloid from *Dysoxylum cyrtobotryum* Miq. Master's Thesis, Chulalongkorn University.



- Shiengtong, D., Kokpol, U., Karntiang, P., and Massy-Westropp, R.A. 1974. Triterpenoid constituents of Thai medicinal plants II. Isomeric aglatriols and aglaiondiol. Tetrahedron 30 : 2211-2215.
- \_\_\_\_\_, Verasarn, A., Suwanrath, P.N., and Warnhoff, E.W. 1965. Constituents of Thai medicinal plants I. Aglaiol. Tetrahedron 21 : 917-924.
- \_\_\_\_\_, Ungphakorn, A., Lewis, D.E. and Massy-Westropp, T.A. 1979. Constituents of Thai medicinal plants IV New nitrogenous compounds odorine and odorinol. Tetrahedron Lett. 24 : 2247-2250.
- Siddiqui, S., Ara, I., Faizi, S., Mahmood, T., and Siddiqui, B.S. 1988. Phenolic tricyclic diterpenoids from the bark of *Azadirachta indica*. Phytochemistry 27 : 3903-3907.
- \_\_\_\_\_, Siddiqui, B.S., and Faizi, S. 1985. Studies in the chemical constituents of *Azadirachta indica* part II : Isolation and structure of the new triterpenoid azadirachtol. Planta Med. 478-450.
- Silva, L.B., Stocklin, W., and Geissman, T.A. 1969. The isolation of salannin from *Melia dubia*. Phytochemistry 8 : 1817-1819.
- Sim, K.Y., and Lee, H.T. 1972. Triterpenoid and other constituent from *Sandoricum indicum*. Phytochemistry 11 : 3341-3343.
- Singh, S., Garg, H.S., and Khanna, N.M. 1976. Dysobinin, a new tetranortriterpene from *Dysoxylum binectariferum*. Phytochemistry 15 : 2001-2002.
- Sinha, N.P., and Gulati, K.C. 1963. Neem (*Azadirachta indica*) seed cake as a source of pest control chemicals. Bull. Reg. Res. Lab. Jammu. India 1 : 176-177.  
(Through Chemical Abstract 60 : 8348)

- Smitinand, T. 1980. Thai Plant Names (Botanical Names-Vernacular Names). 2 nd ed. Bangkok : Funny Publishing.
- Srivastava, S.K. 1986. Limonoids from the seeds of *Melia azedarach*. J. Nat. Prod. 49 : 56-61.
- \_\_\_\_\_, and Gupta, H.O. 1985. New Limonoids from the roots of *Melia azedarach* Linn. Indian J. Chem., Sect. B. 24B : 166-170.
- \_\_\_\_\_, and Mishra, M. 1985. New anthraquinone pigments from the stem bark of *Melia azedarach* L. Indian J. Chem. Sect B. 24B : 793-794.
- Srivilai, A. 1993. Phytochemical study of *Dysoxylum grande* Hiern leaves. Master's Thesis, Chulalongkorn University.
- Taylor, A.R.H., and Taylor, D.A.H. 1984. Limonoids from *Ekebergia pterophylla*. Phytochemistry 23 : 2676-2677.
- Taylor, D.A.H. 1965. Extractives from East African timbers Part I. J. Chem. Soc. : 3495-3496.
- \_\_\_\_\_. 1968. 11-Acetoxykhivorin, a new limonoid from *Khaya madagascariensis*. Chem. Commun.: 1172.
- \_\_\_\_\_. 1969. Extractives from *Swietenia mahogani* (L.) Jacq. Chem. commun. : 58.
- Techasauvapak, P. 1981. A study of some compounds from the flowers of *Aglaia odorata* Lour. Master's Thesis, Chulalongkorn University.
- Tchouankeu, J.C. , Nyasse, B., Tsamo, E., Sondengam, B.L., and Morin, C. 1992. An ergostane derivative from the bark of *Entandrophragma utile*. Phytochemistry 31 : 704-705.



**APPENDIX**

ศูนย์วิทยทรัพยากร  
จุฬาลงกรณ์มหาวิทยาลัย



Figure 2 *Aglaia edulis* A. Gray

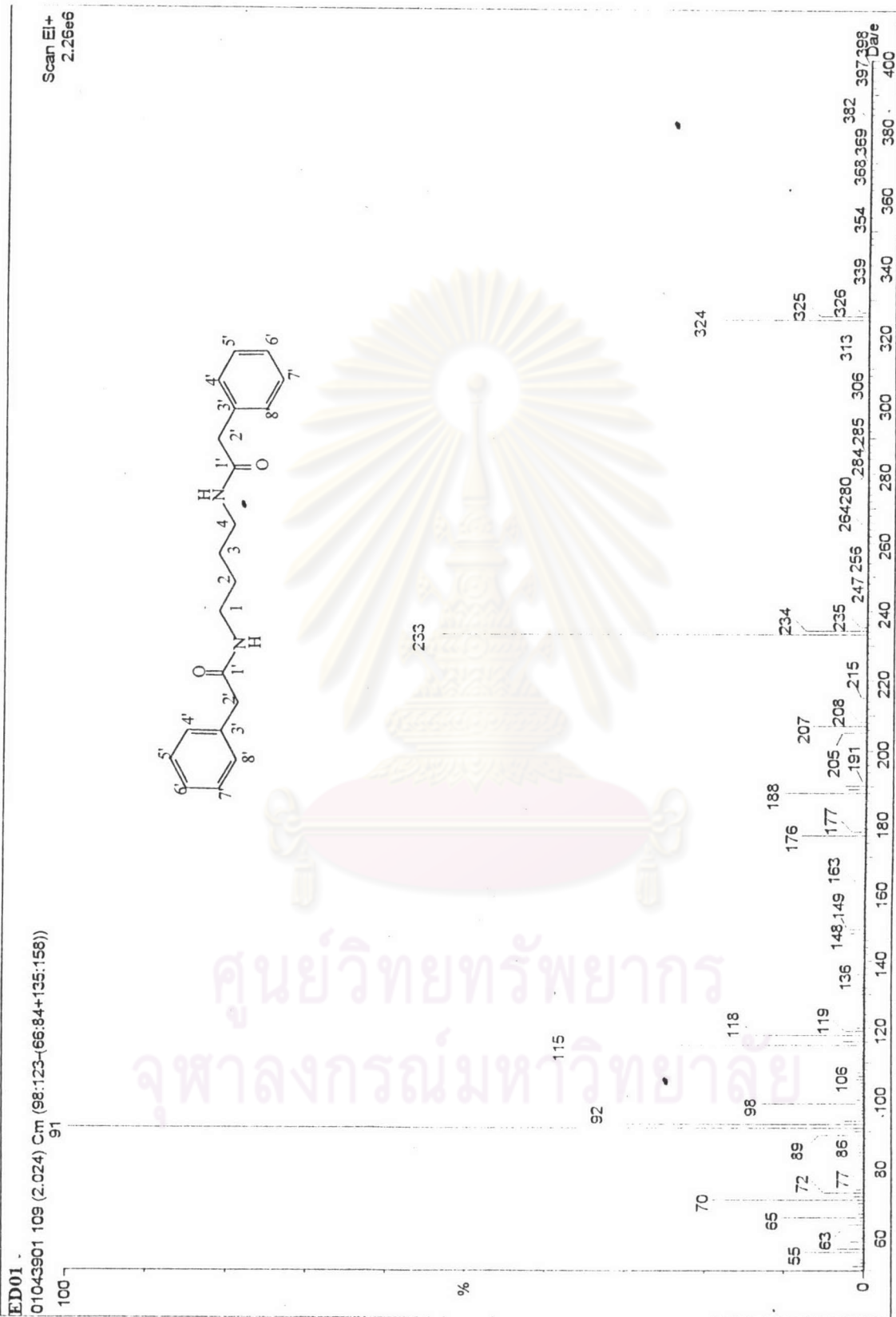


Figure 3 EIMS spectrum of ED01

ศูนย์วิทยทรัพยากร  
 จุฬาลงกรณ์มหาวิทยาลัย

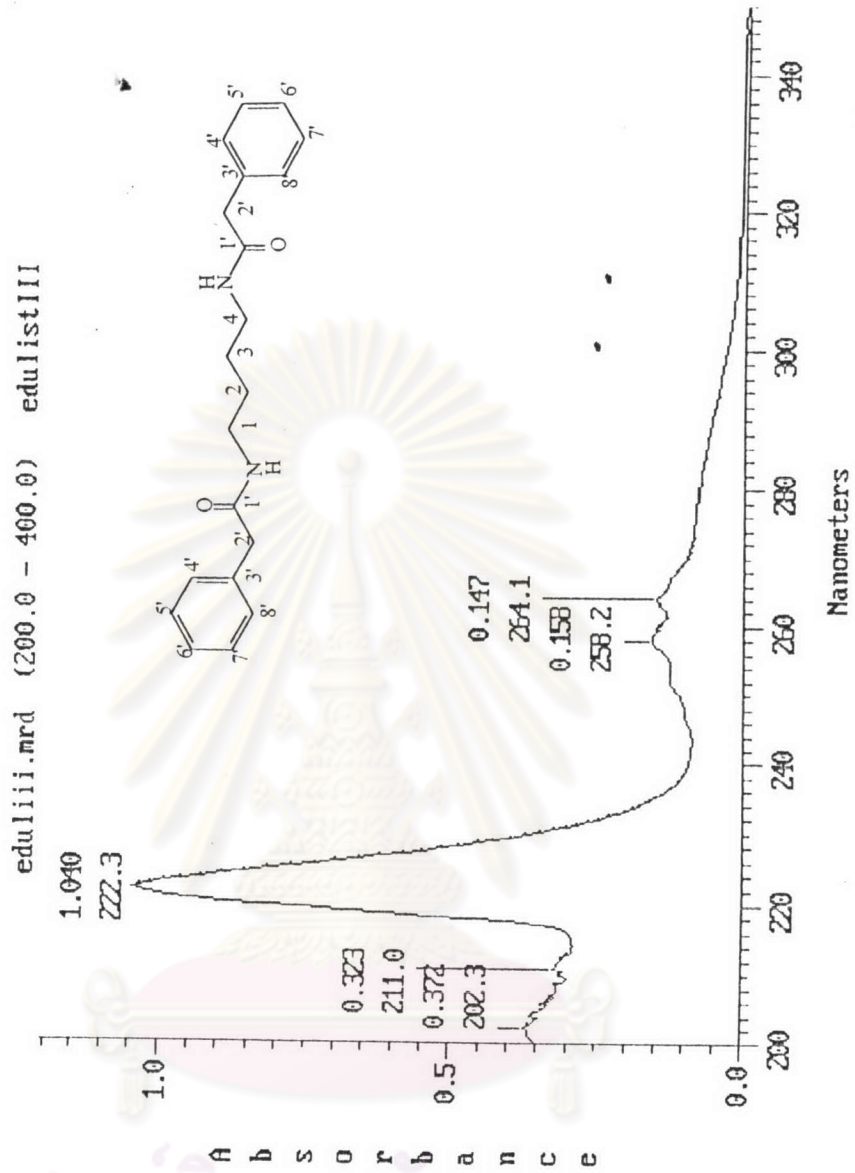


Figure 4 UV spectrum of ED01 (in methanol)

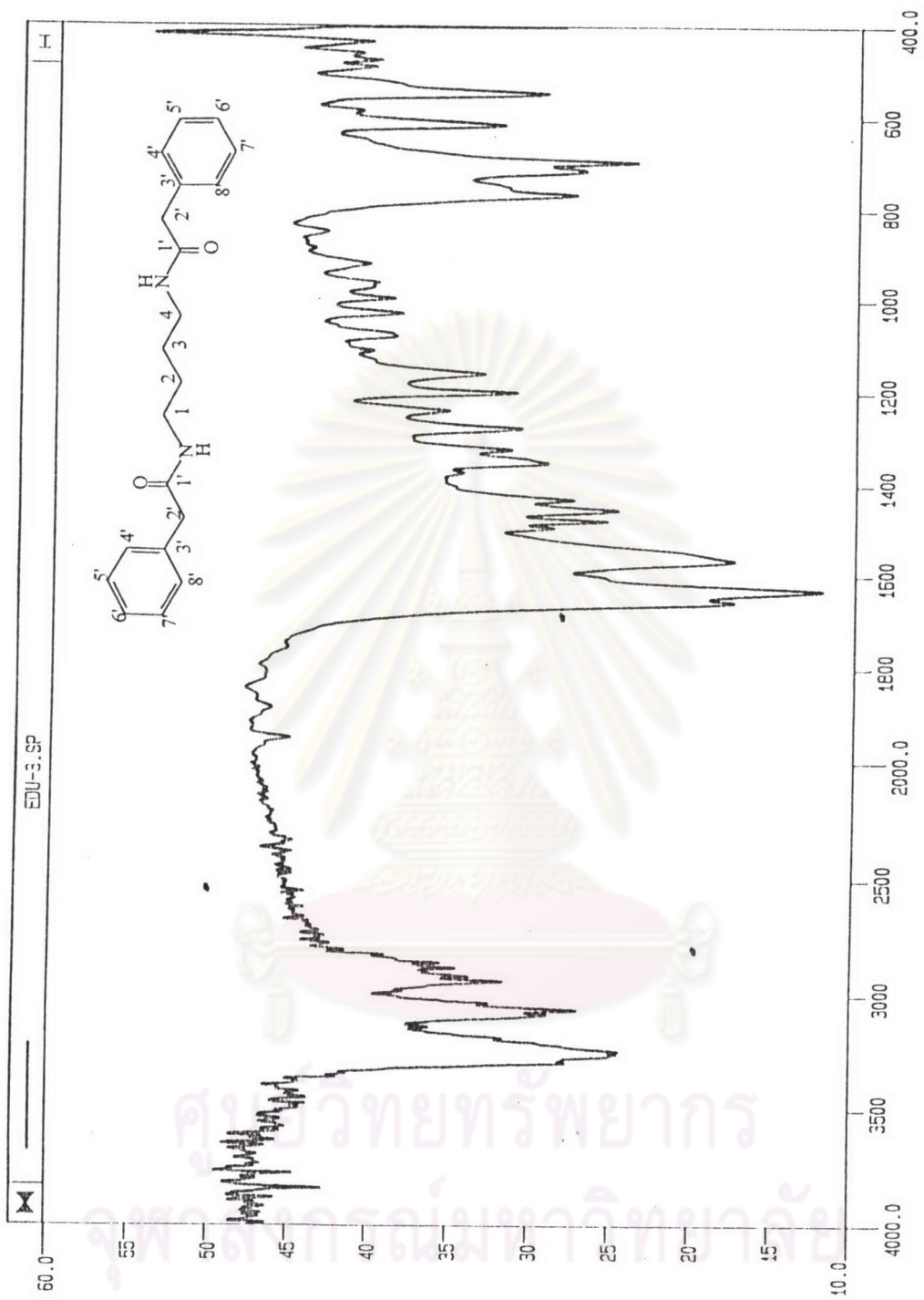


Figure 5 IR spectrum of ED01 ( KBr disc)  
CM-1

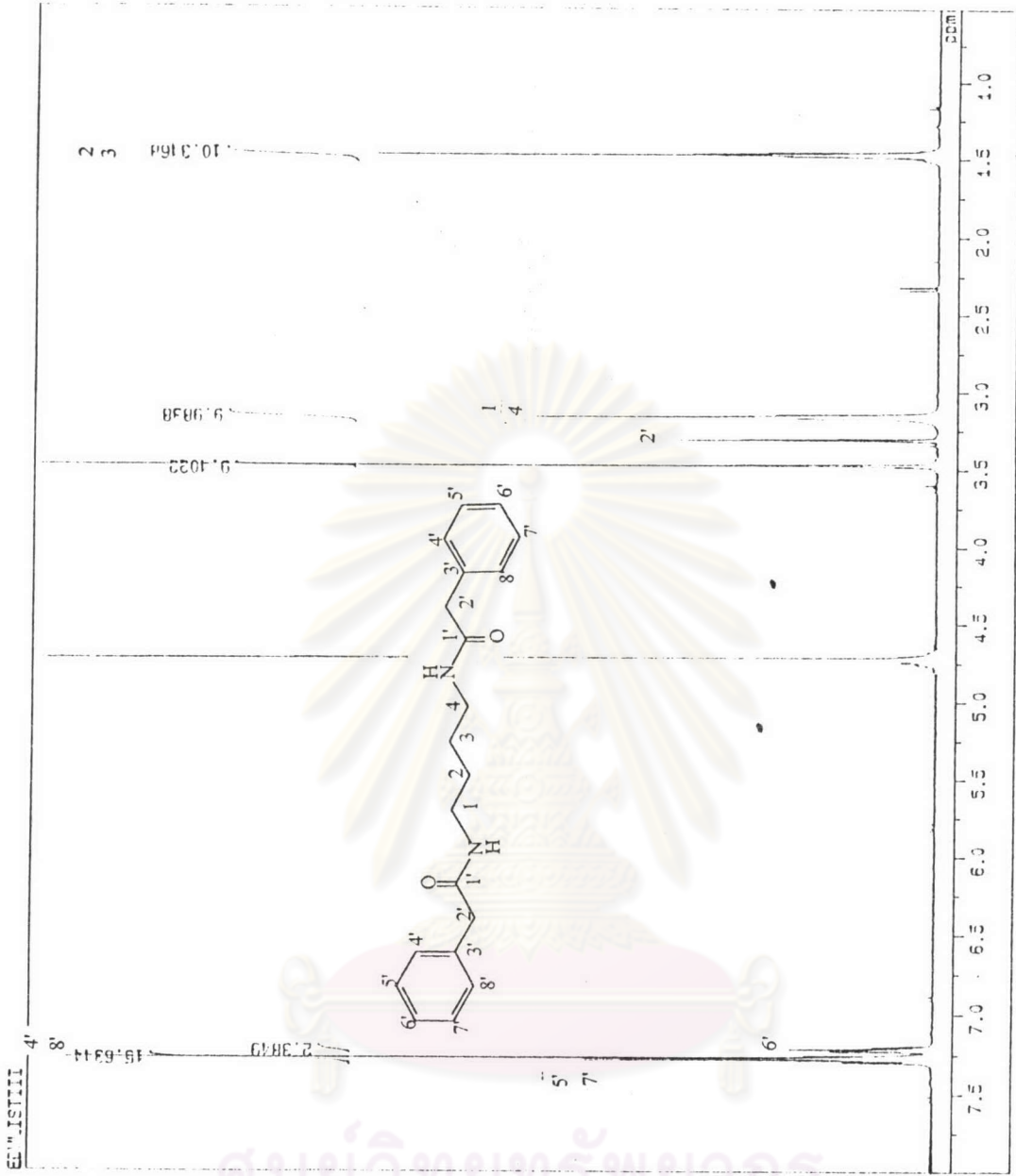


Figure 6 The 500 MHz <sup>1</sup>H NMR spectrum of ED01 (in CD<sub>3</sub>OD)

ศูนย์วิทยทรัพยากร  
จุฬาลงกรณ์มหาวิทยาลัย



EW1JSTIII

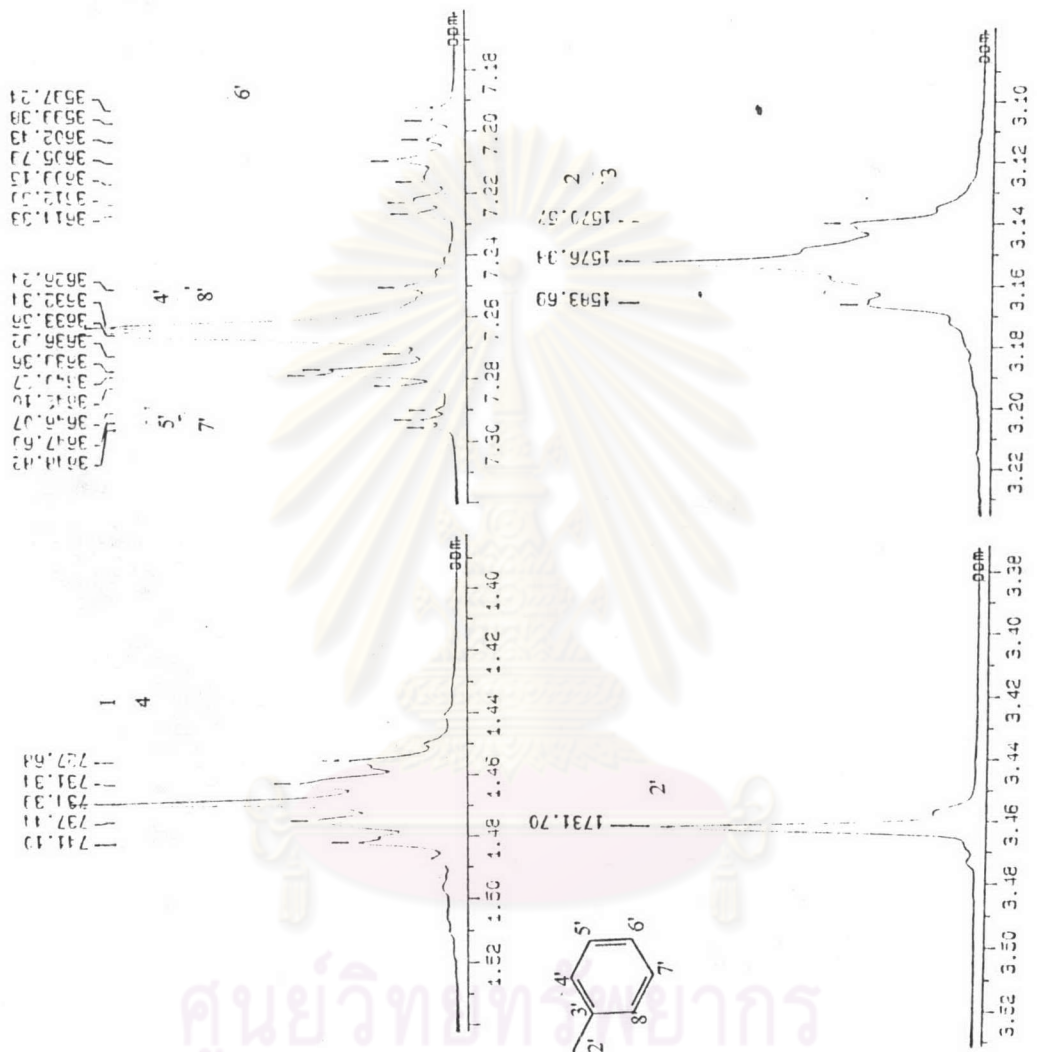


Figure 7 Expansions of the 500 MHz <sup>1</sup>H NMR spectrum of ED01 (in CD<sub>3</sub>OD)

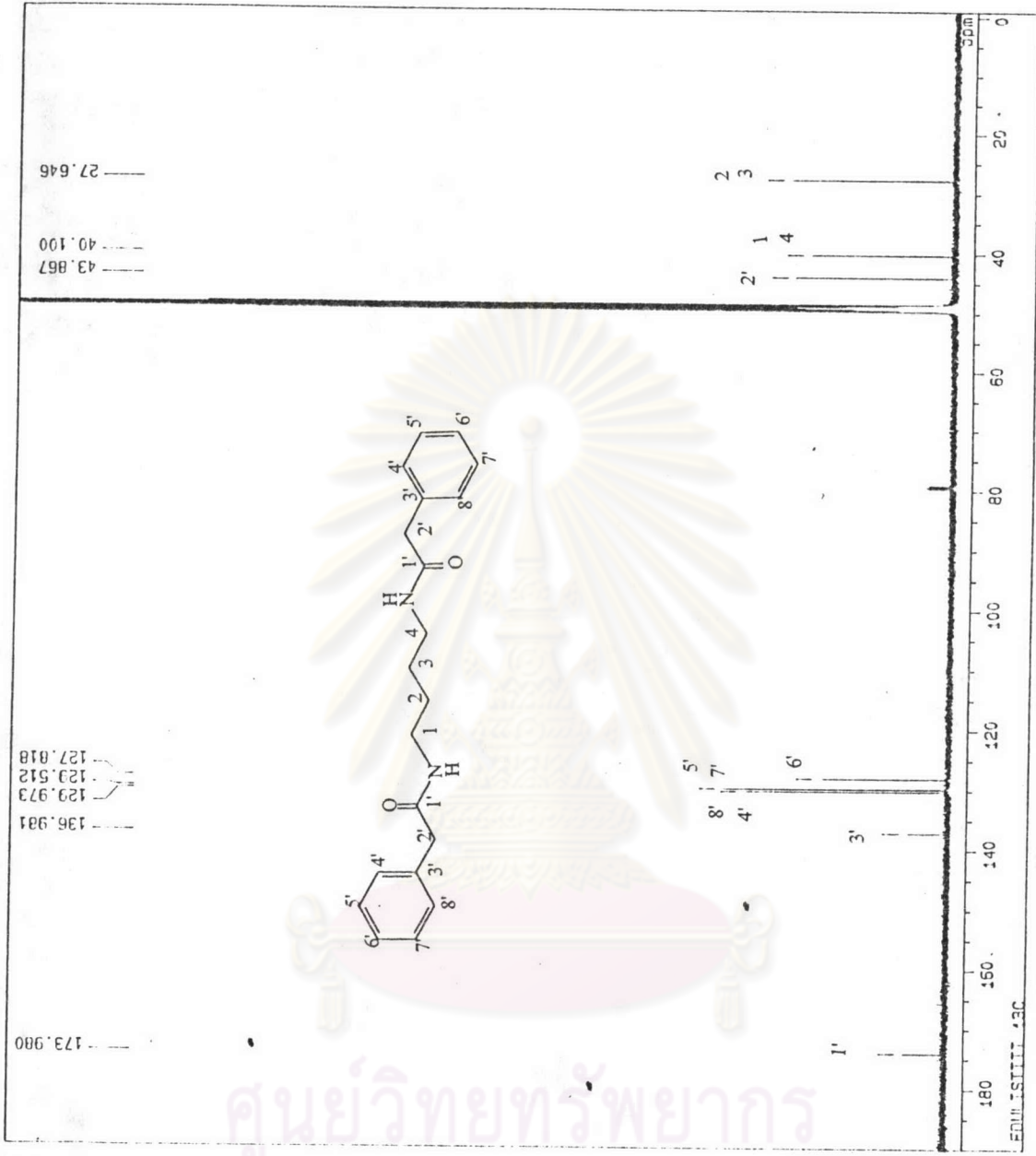


Figure 8 The 125 MHz <sup>13</sup>C NMR spectrum of ED01 (in CD<sub>3</sub>OD)

ศูนย์วิทยทรัพยากร  
จุฬาลงกรณ์มหาวิทยาลัย

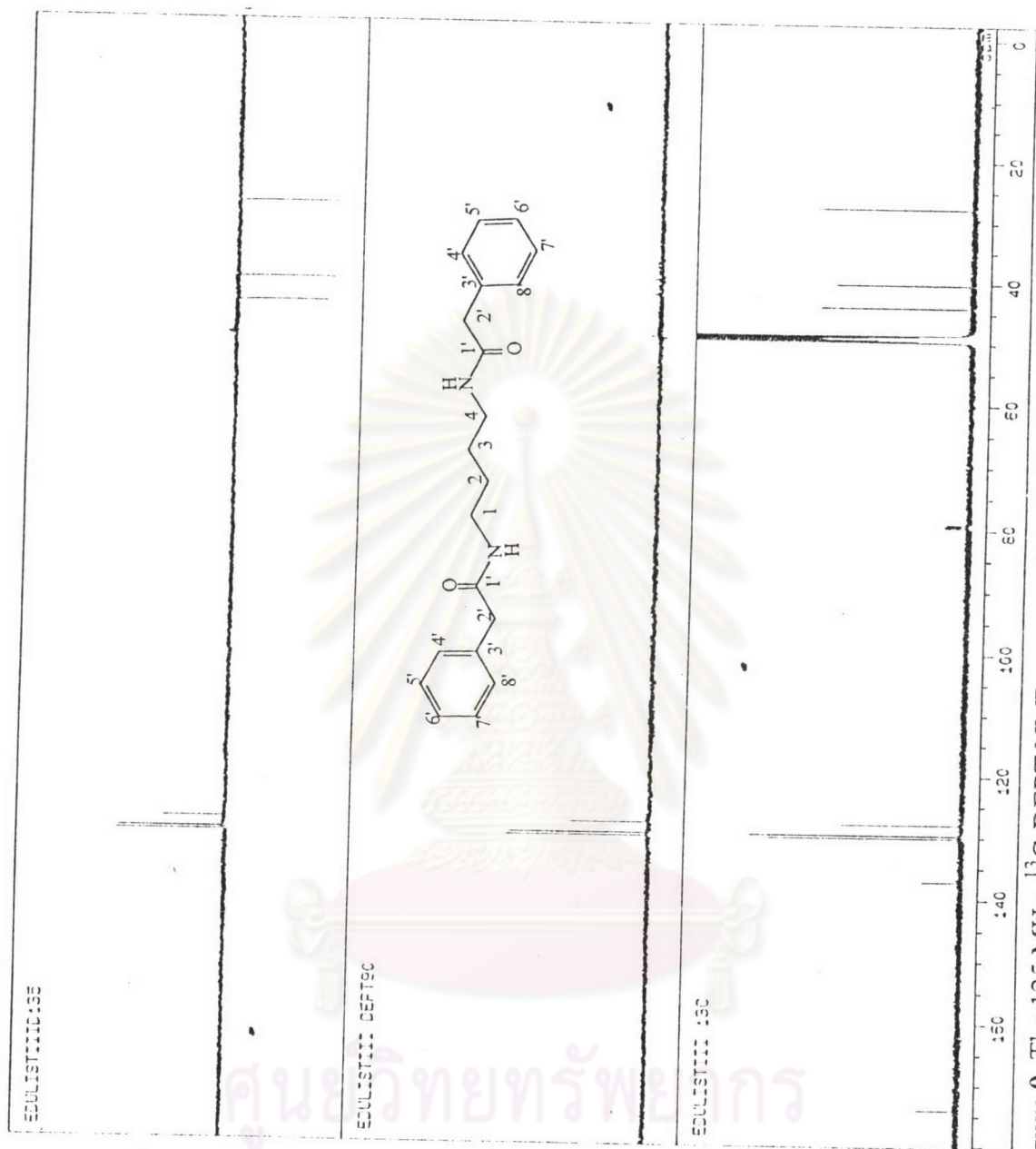


Figure 9 The 125 MHz <sup>13</sup>C-DEPT NMR spectra of ED01 (in CD<sub>3</sub>OD)

ศูนย์วิทยุทรัพยากร  
จุฬาลงกรณ์มหาวิทยาลัย



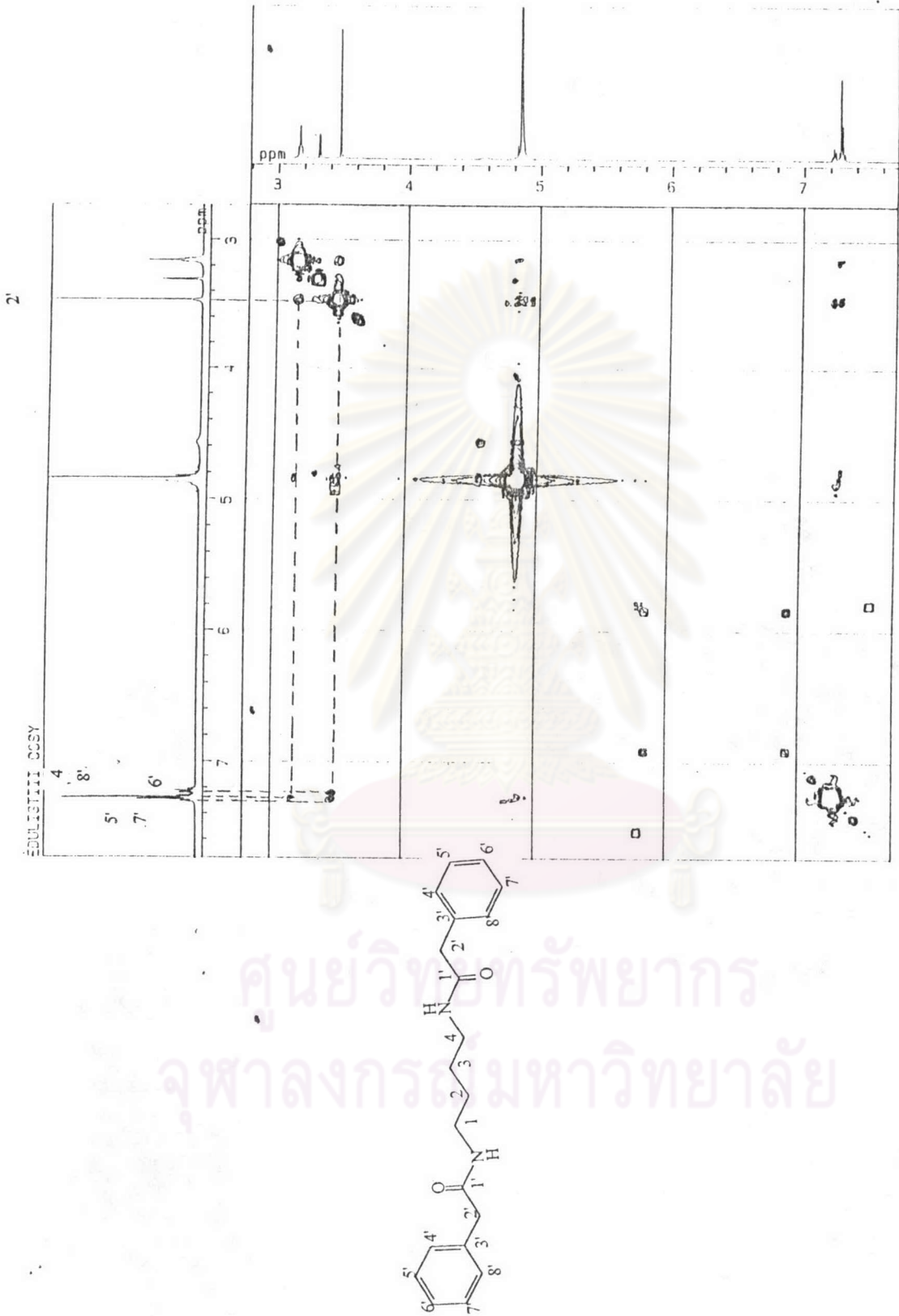


Figure 11 Expansions of the 500 MHz  $^1\text{H}$ - $^1\text{H}$  COSY spectrum of ED01 (in  $\text{CD}_3\text{OD}$ )

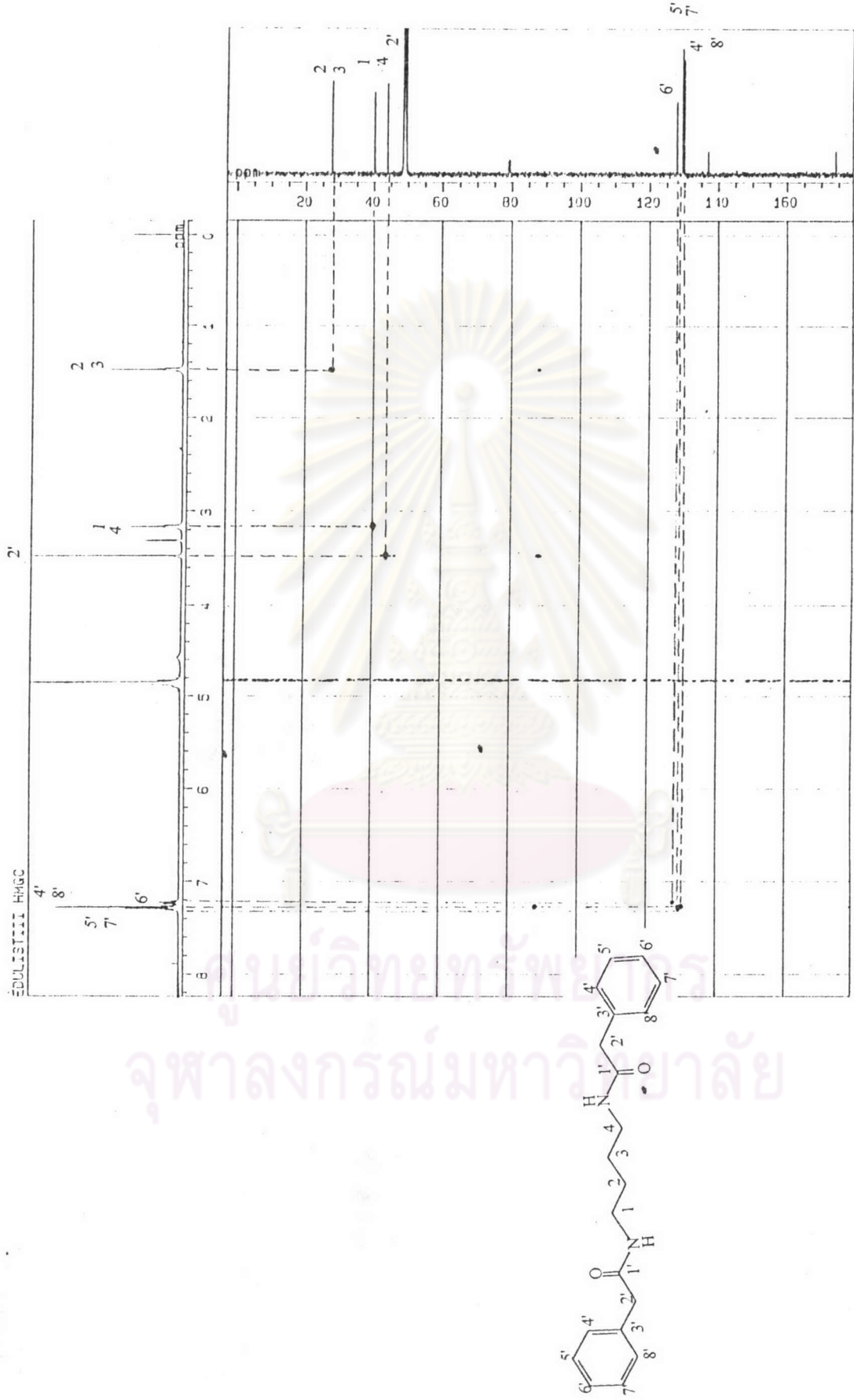


Figure 12 The 500 MHz  $^1\text{H}$ - $^{13}\text{C}$  HMQC spectrum of ED01 (in  $\text{CD}_3\text{OD}$ )

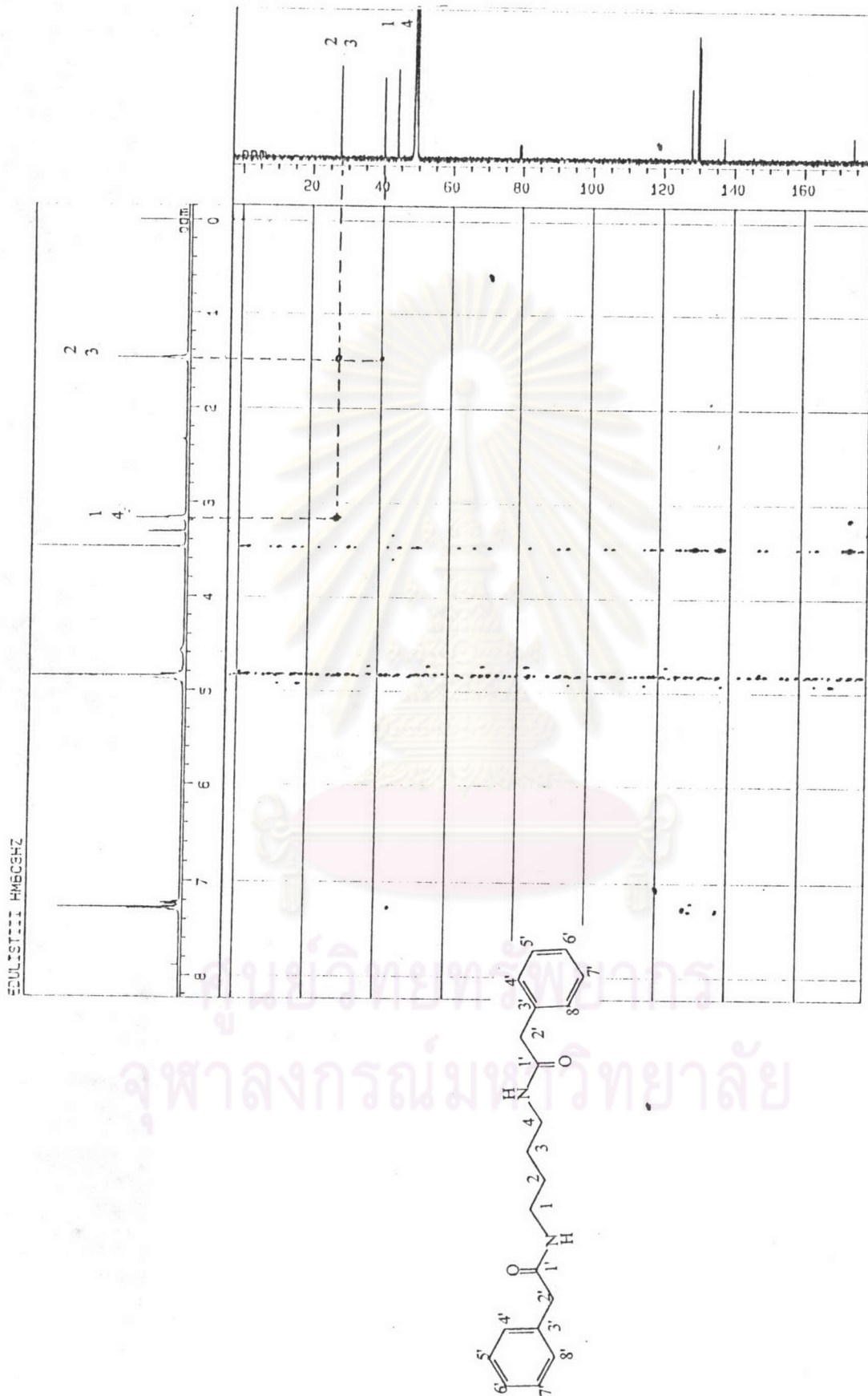


Figure 13 The 500 MHz  $^1\text{H}$ - $^{13}\text{C}$  HMBBC spectrum of ED01 (in  $\text{CD}_3\text{OD}$ )

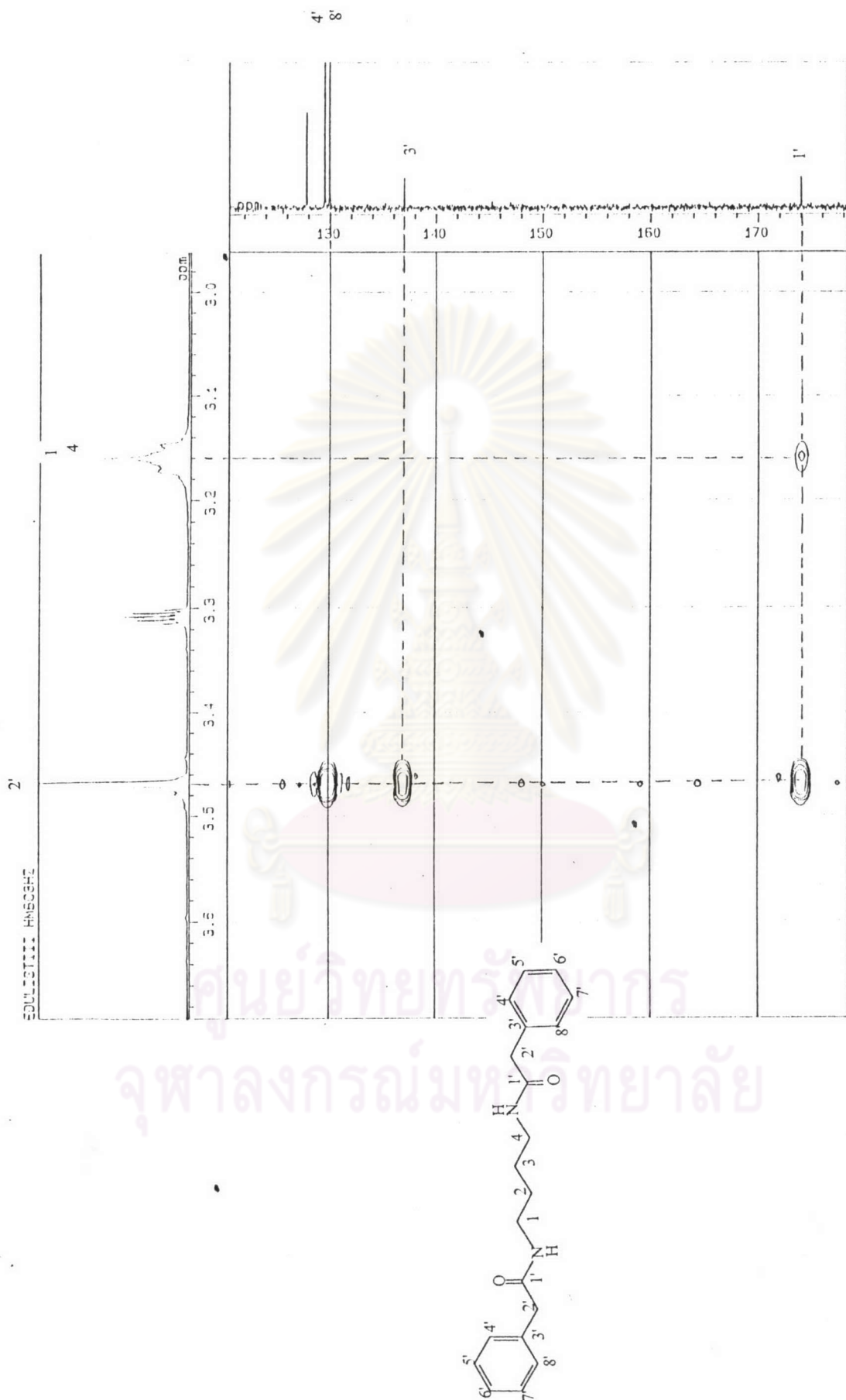


Figure 14 Expansions of the 500 MHz  $^1\text{H}$ - $^{13}\text{C}$  HMBSCHE spectrum of ED01 (in  $\text{CD}_3\text{OD}$ )



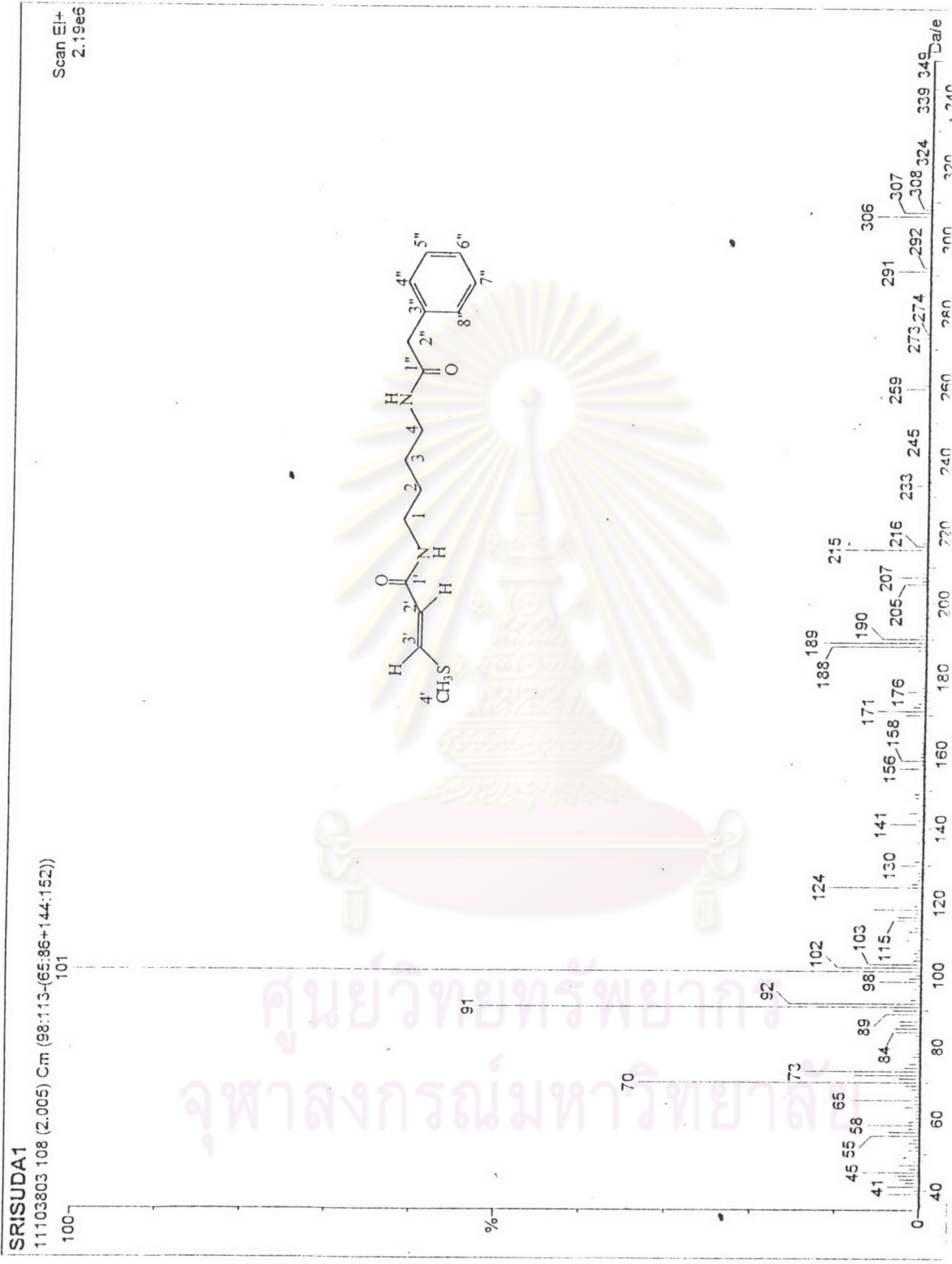


Figure 15 EIMS spectrum of ED02

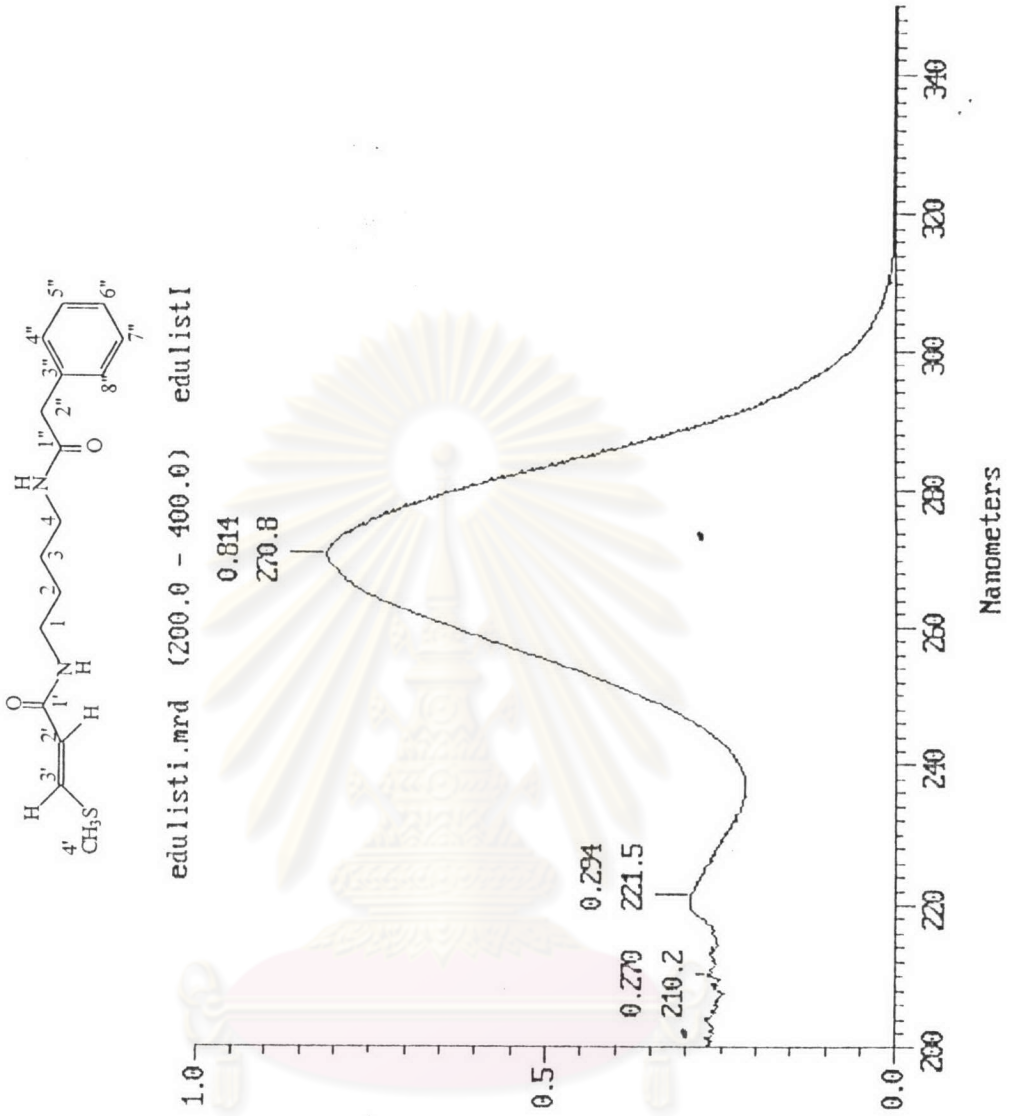


Figure 16 UV spectrum of ED02 (in methanol)

ศูนย์วิทยทรัพยากร  
จุฬาลงกรณ์มหาวิทยาลัย

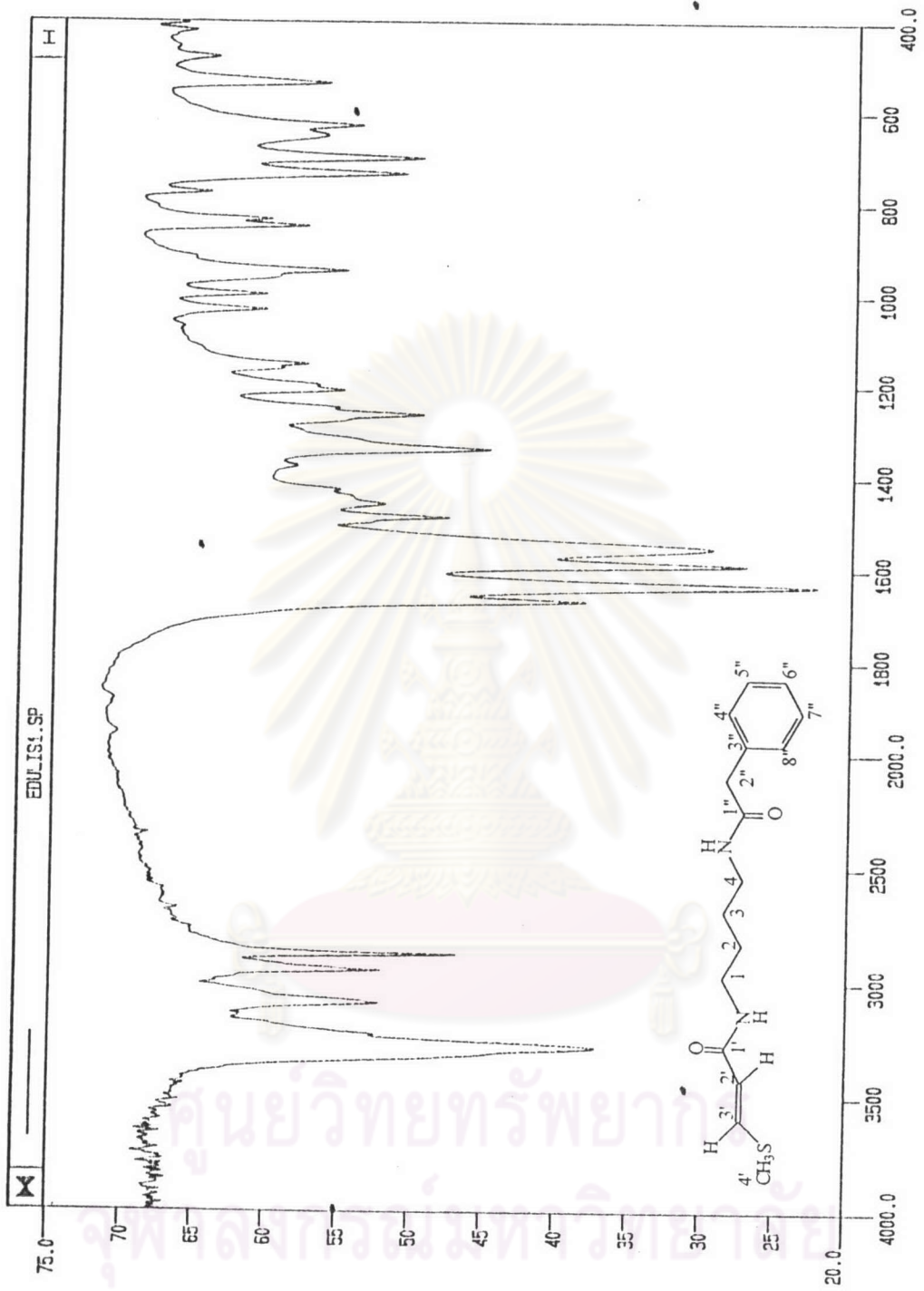


Figure 17 IR spectrum of ED02 (KBr disc)

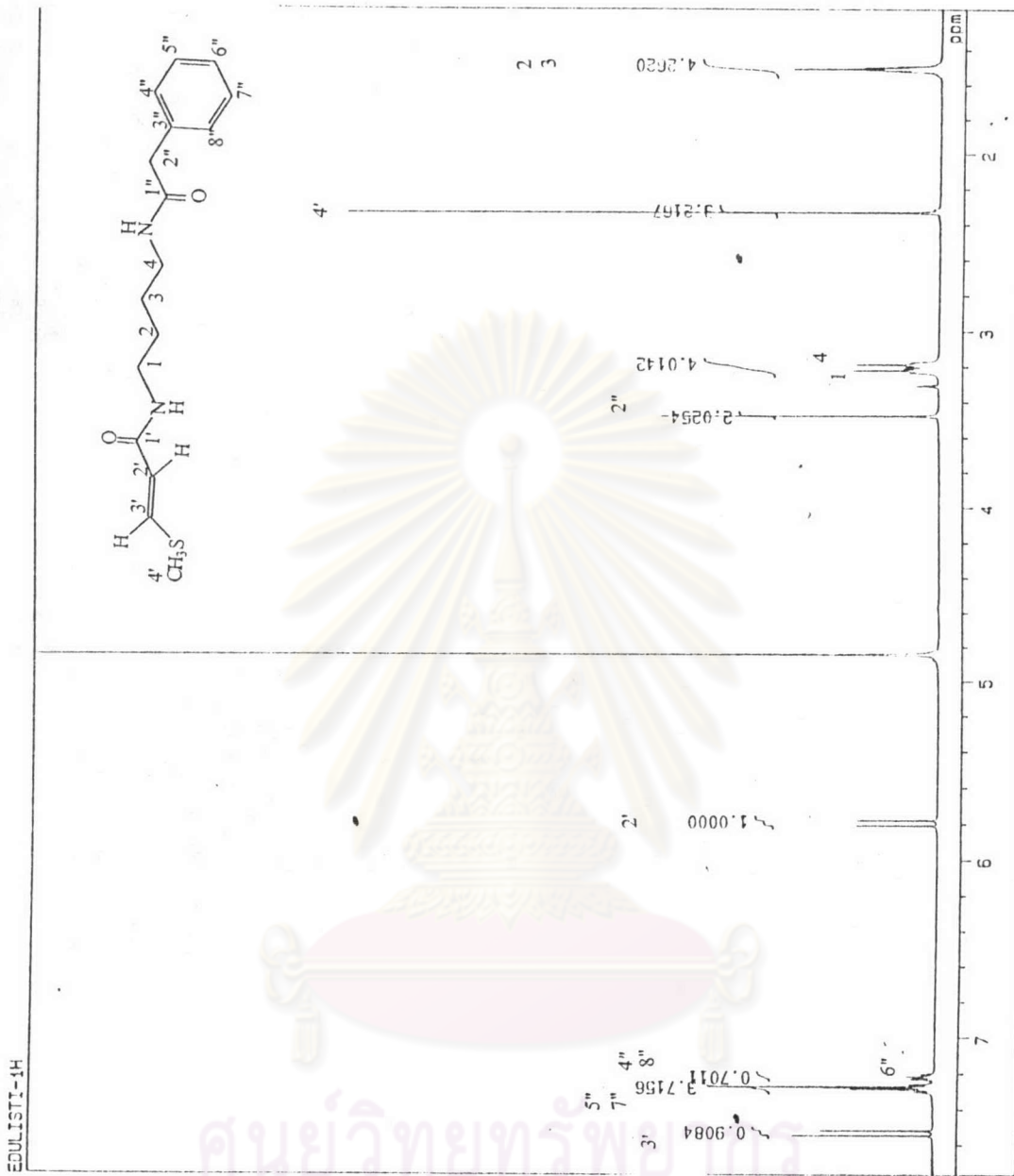


Figure 18 The 500 MHz <sup>1</sup>H NMR spectrum of ED02 (in CD<sub>3</sub>OD)

ศูนย์วิทยทรัพยากร  
จุฬาลงกรณ์มหาวิทยาลัย

EDULISTI-1H

760.64  
758.19  
757.28  
753.92  
750.56  
749.65  
747.21

2  
3

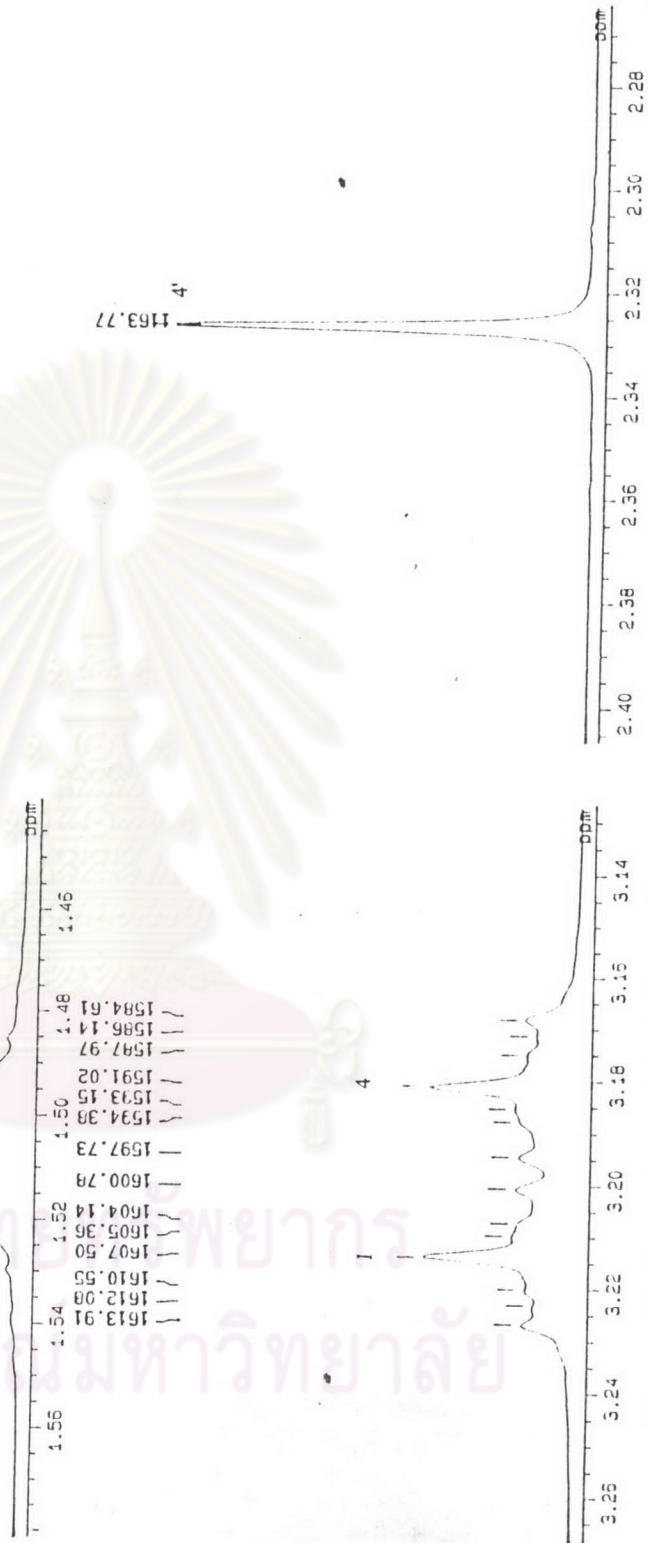
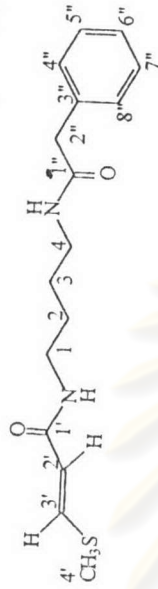


Figure 19 Expansions of the 500 MHz <sup>1</sup>H NMR spectrum of ED02 (in CD<sub>3</sub>OD)

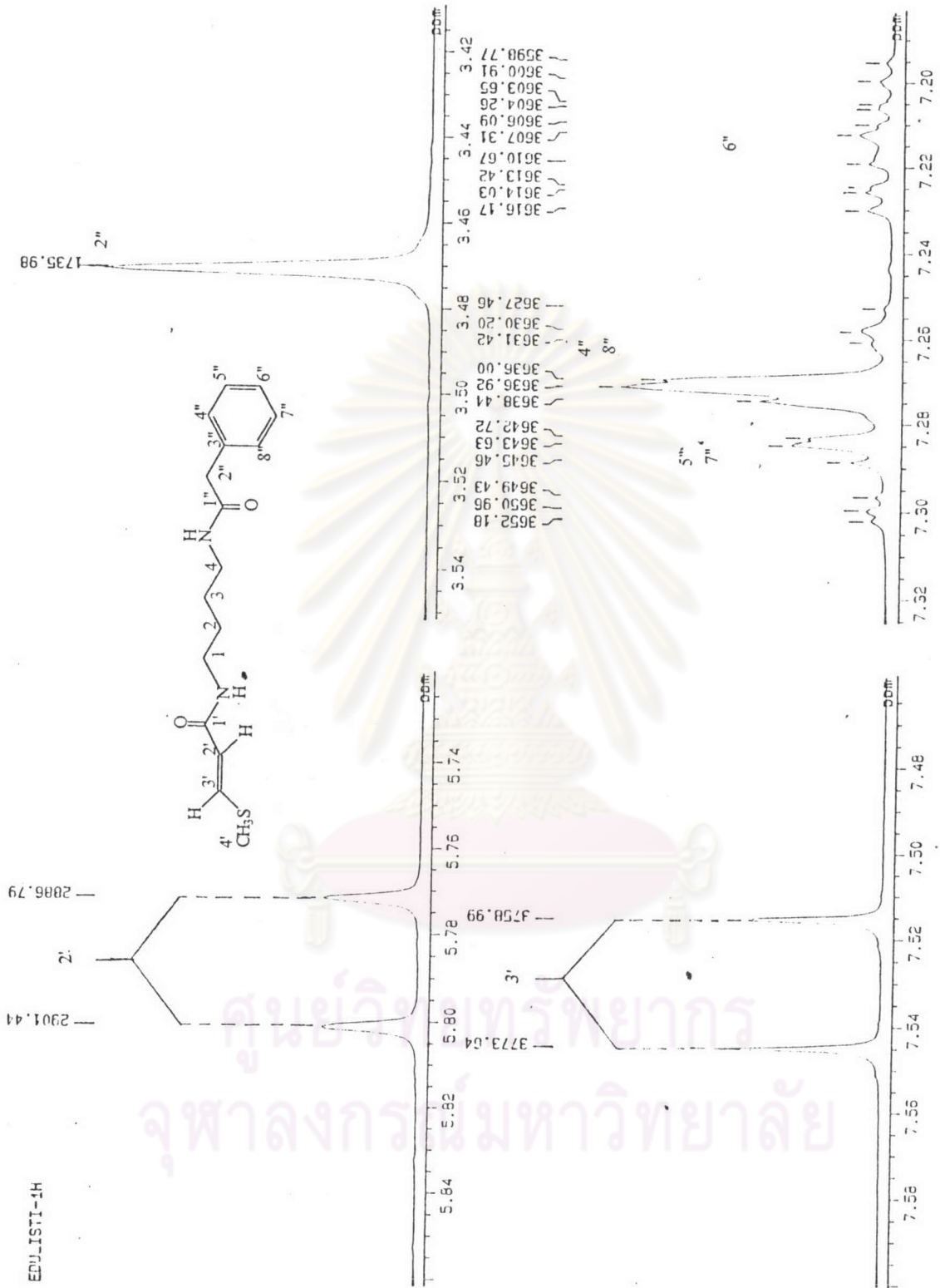


Figure 19 Expansions of the 500 MHz <sup>1</sup>H NMR spectrum of ED02 (in CD<sub>3</sub>OD)

EDU.JSTI-1H

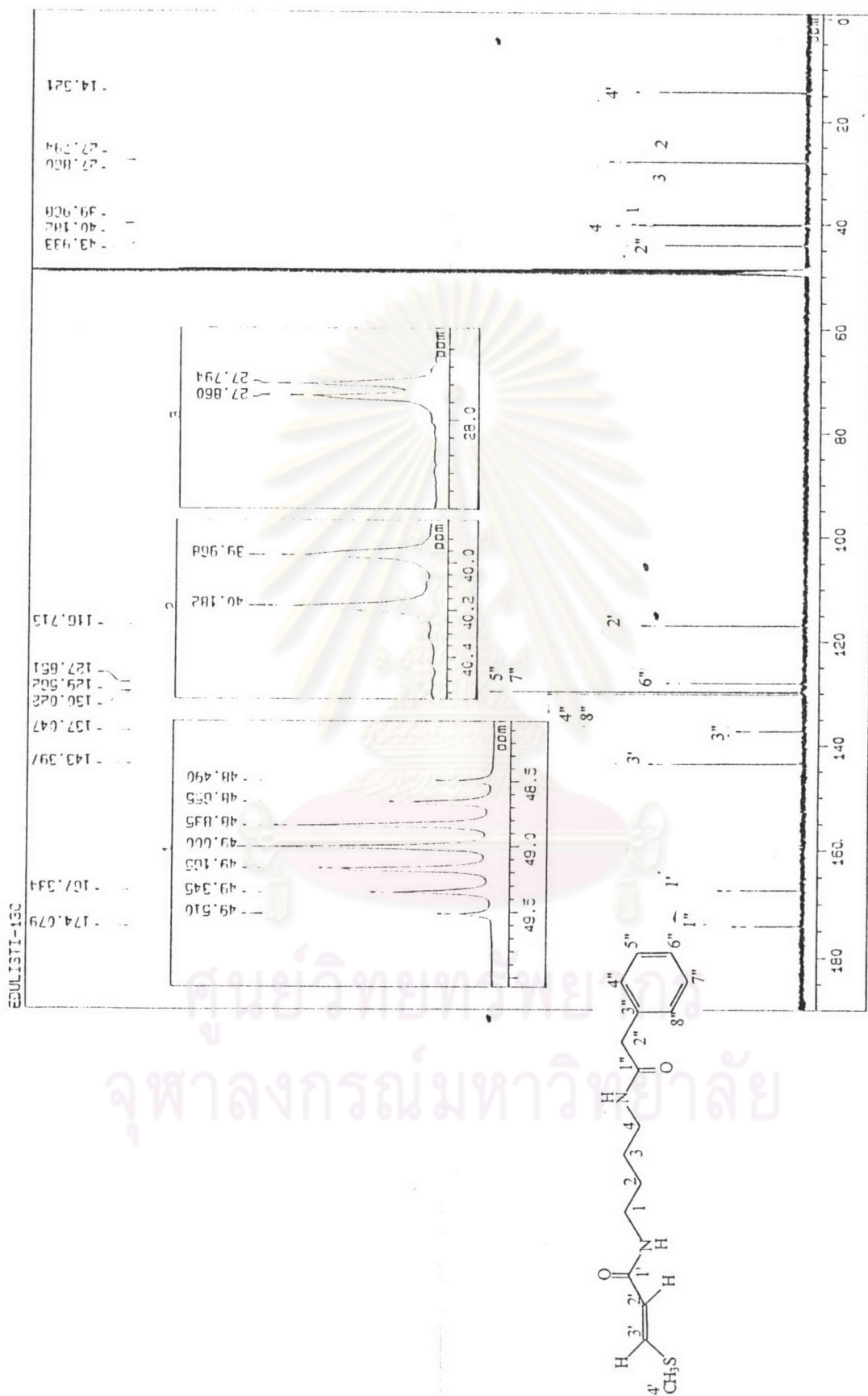


Figure 20 The 125 MHz  $^{13}\text{C}$  NMR spectra of ED02 (in  $\text{CD}_3\text{OD}$ )

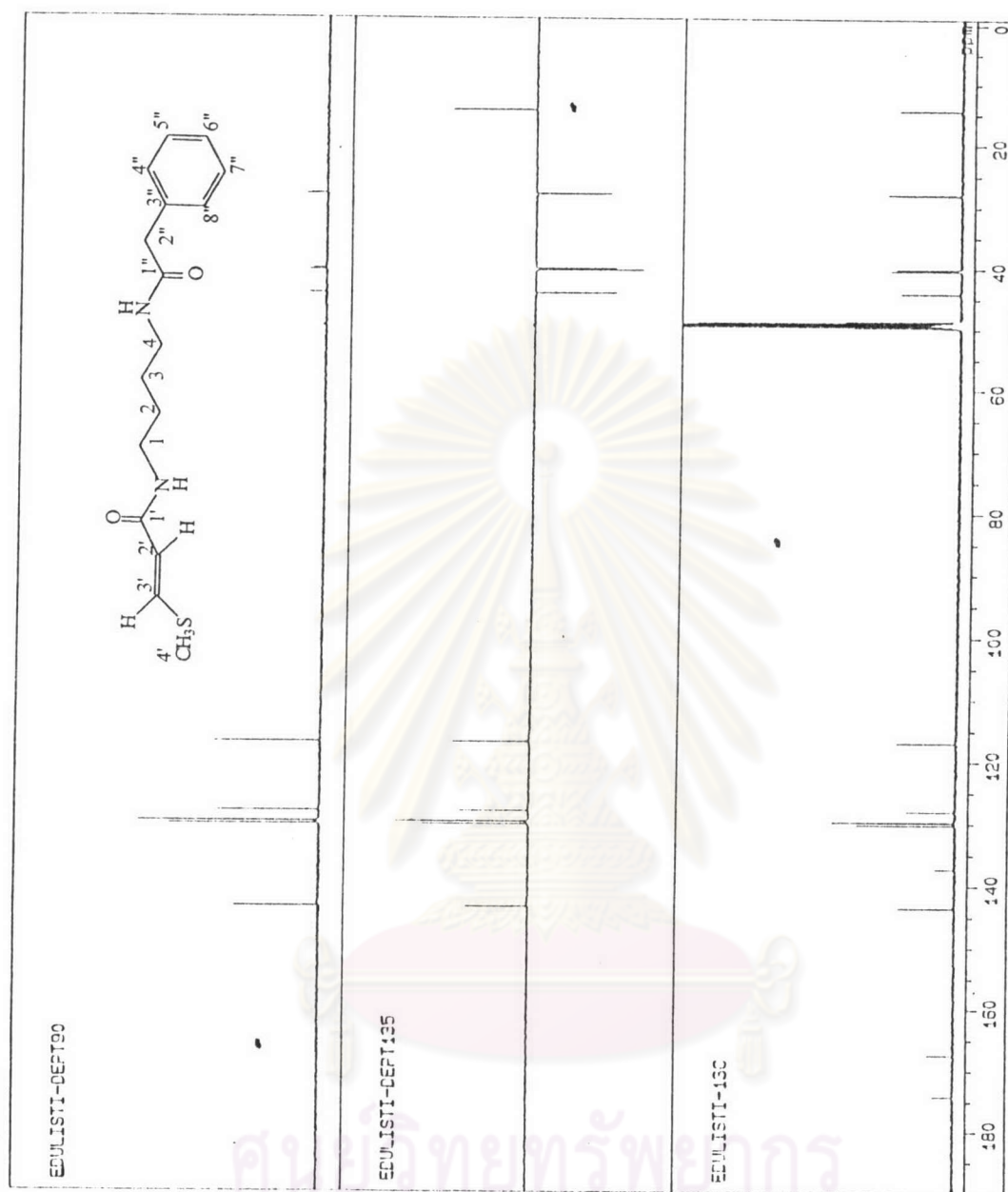


Figure 21 The 125 MHz  $^{13}\text{C}$ -DEPT NMR spectra of ED02 (in  $\text{CD}_3\text{OD}$ )



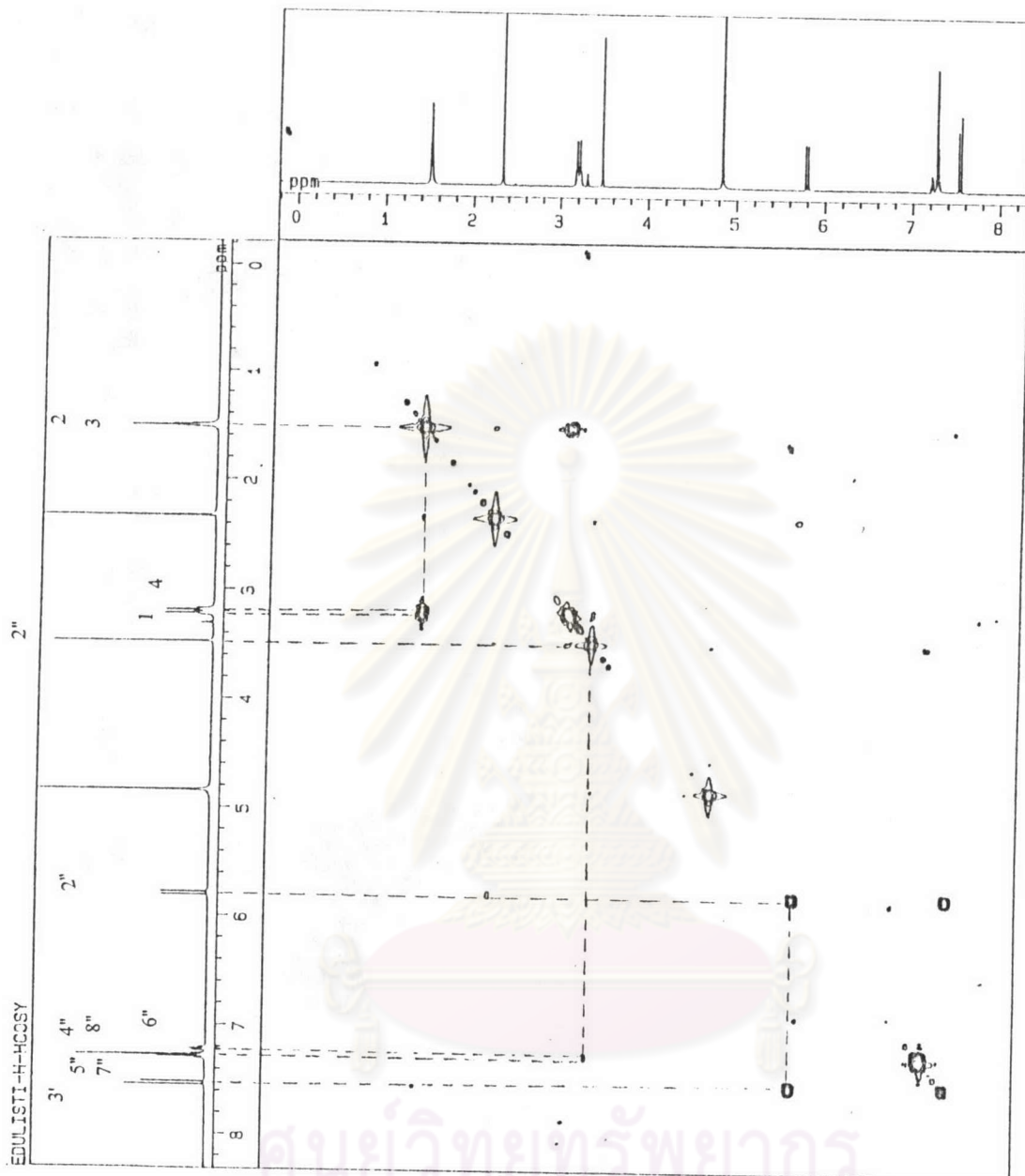
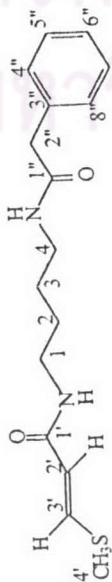


Figure 22 The 500 MHz  $^1\text{H}$ - $^1\text{H}$  COSY spectrum of ED02 (in  $\text{CD}_3\text{OD}$ )



ศูนย์วิทยทรัพยากร  
จุฬาลงกรณ์มหาวิทยาลัย

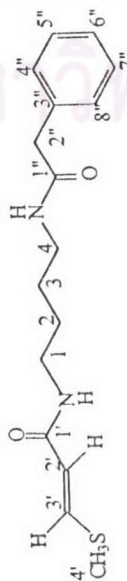
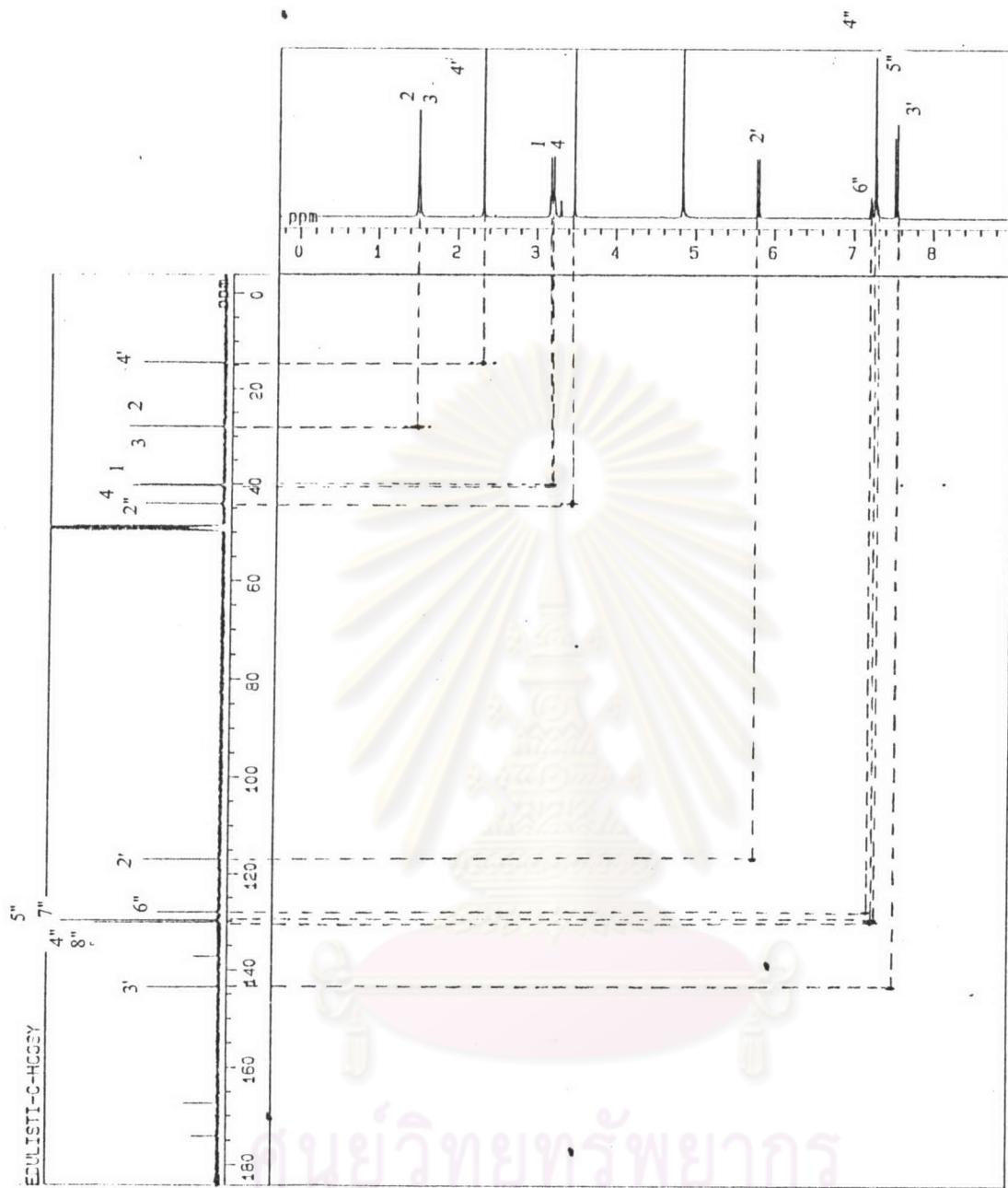
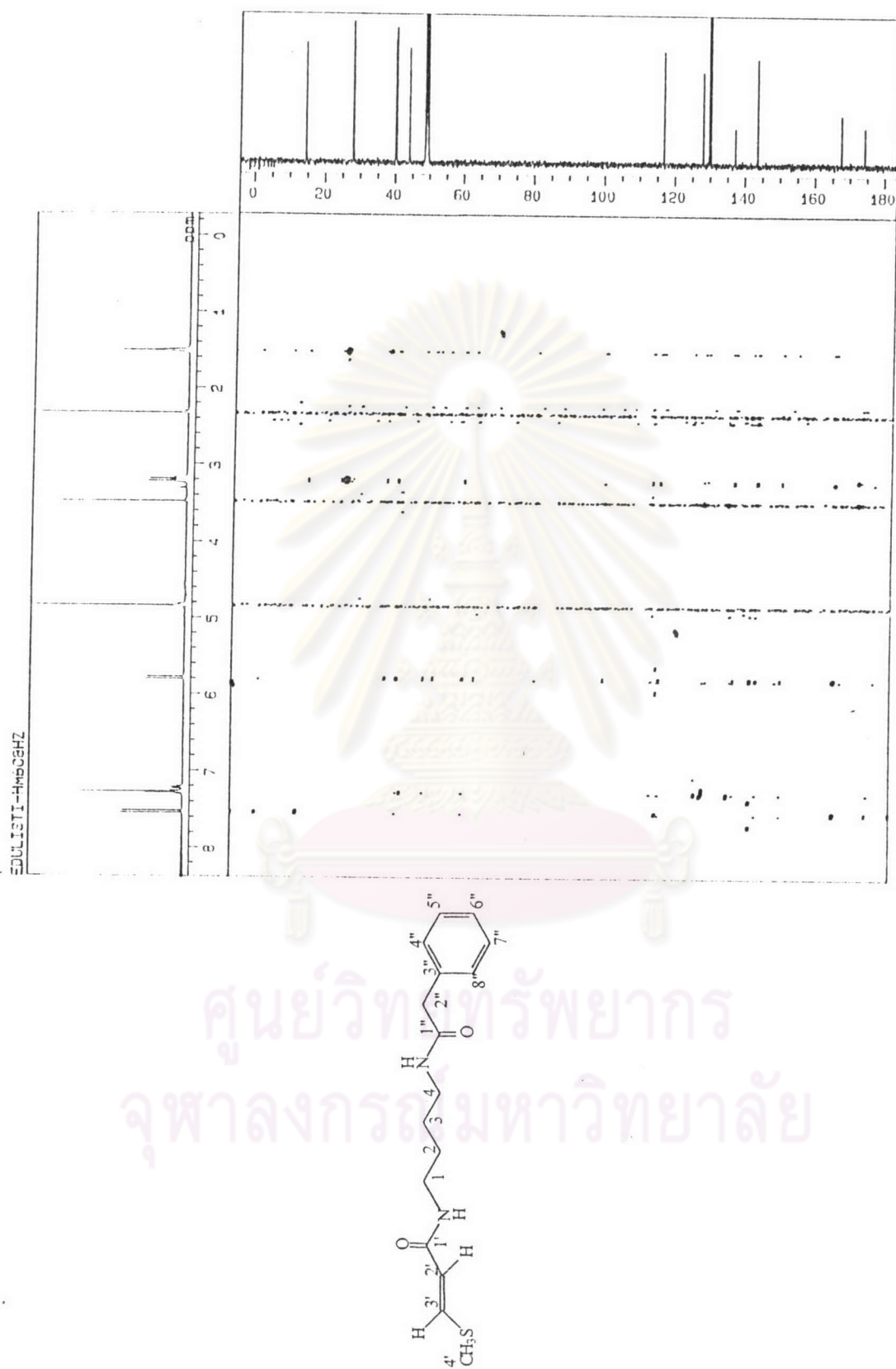


Figure 23 The 500 MHz  $^{13}\text{C}$ - $^1\text{H}$  COSY spectrum of ED02 (in  $\text{CD}_3\text{OD}$ )



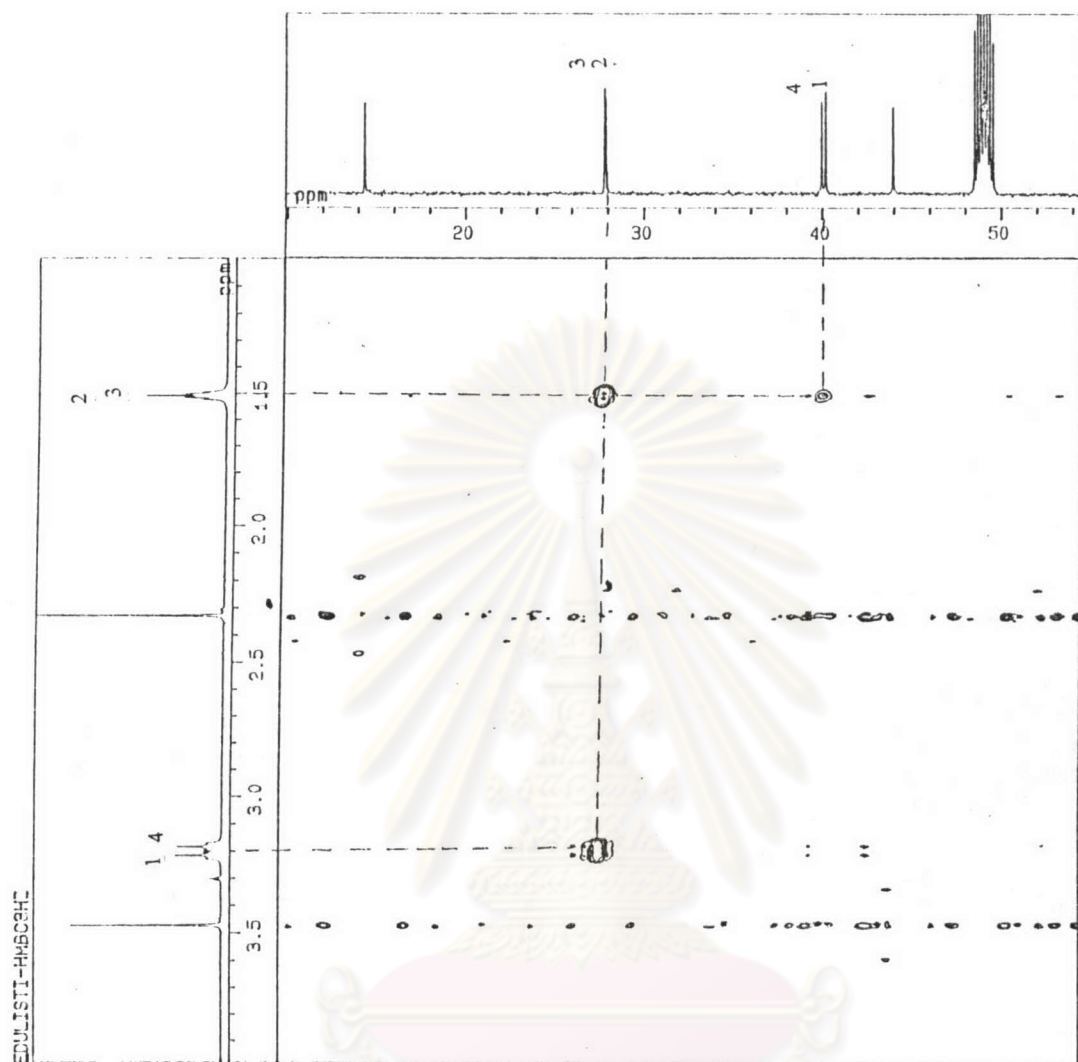


Figure 25 Expansions of the 500 MHz  $^1\text{H}$ - $^{13}\text{C}$  HMBBC spectrum of ED02 (in  $\text{CD}_3\text{OD}$ )

ศูนย์วิทยทรัพยากร  
จุฬาลงกรณ์มหาวิทยาลัย

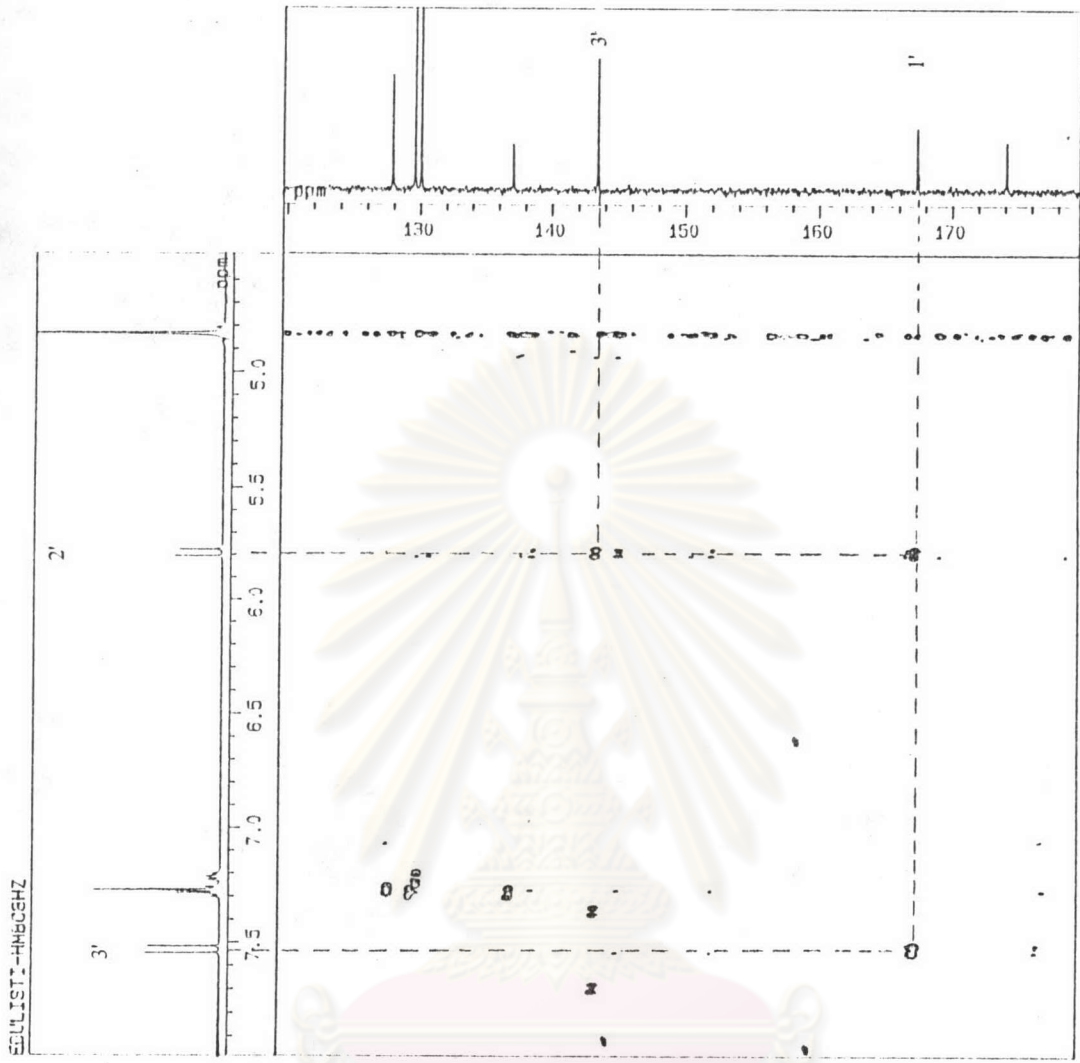


Figure 25 Expansions of the 500 MHz  $^1\text{H}$ - $^{13}\text{C}$  HMBC spectrum of ED02 (in  $\text{CD}_3\text{OD}$ )

ศูนย์วิทยทรัพยากร  
จุฬาลงกรณ์มหาวิทยาลัย

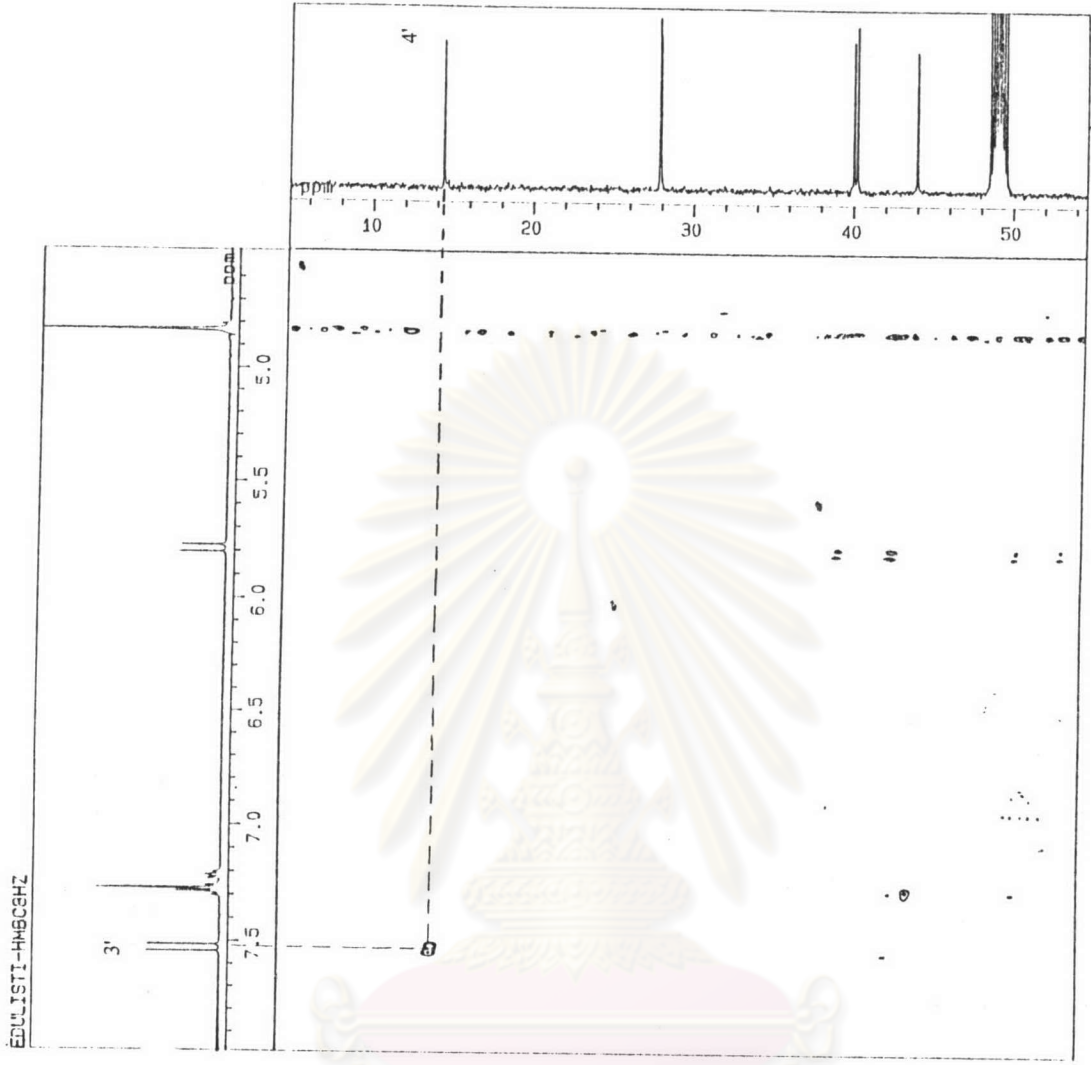


Figure 25 Expansions of the 500 MHz  $^1\text{H}$ - $^{13}\text{C}$  HMBC spectrum of ED02 (in  $\text{CD}_3\text{OD}$ )

ศูนย์วิทยทรัพยากร  
จุฬาลงกรณ์มหาวิทยาลัย

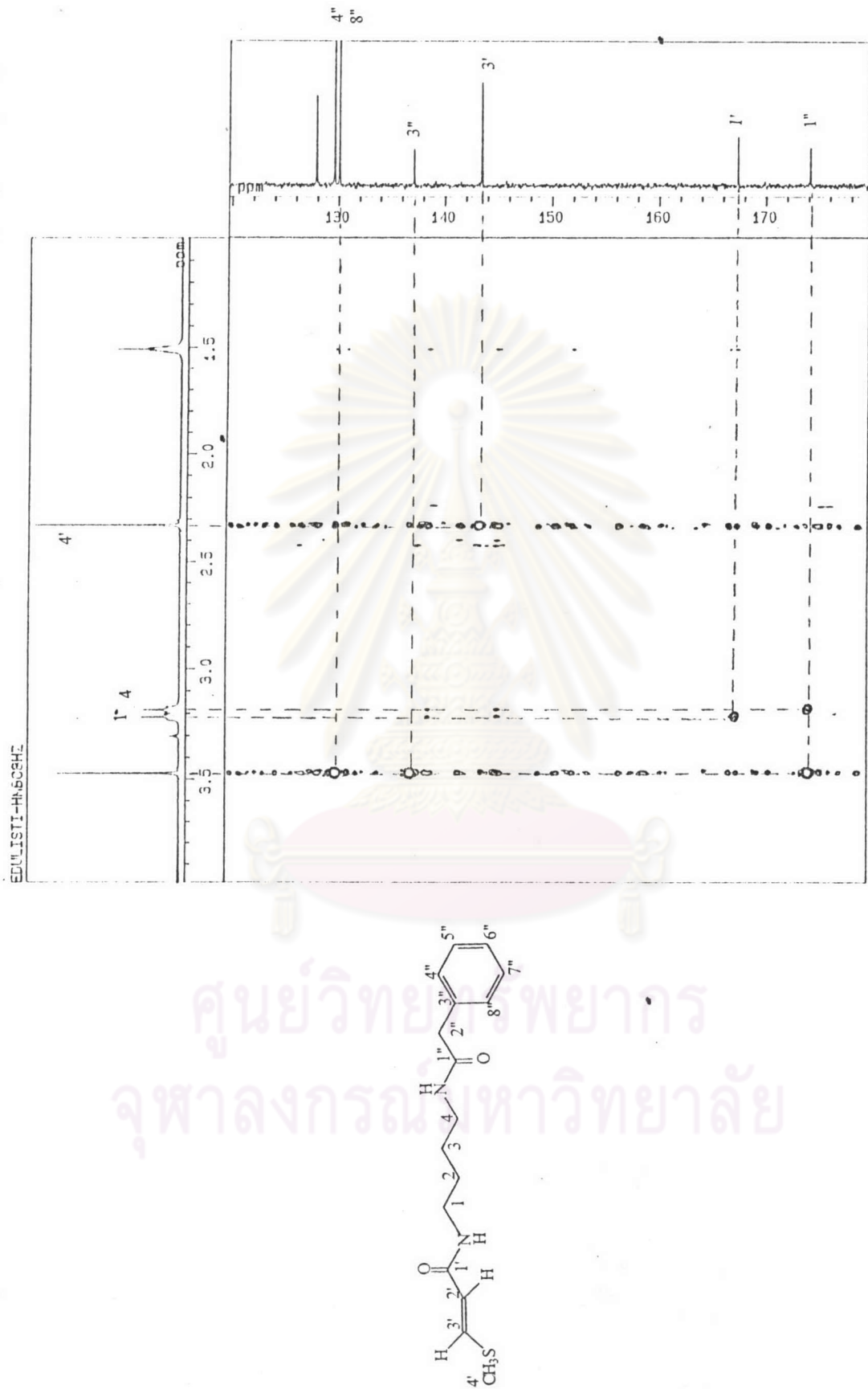


Figure 25 Expansions of the 500 MHz  $^1\text{H}$ - $^{13}\text{C}$  HMBSCHE spectrum of ED02 (in  $\text{CD}_3\text{OD}$ )

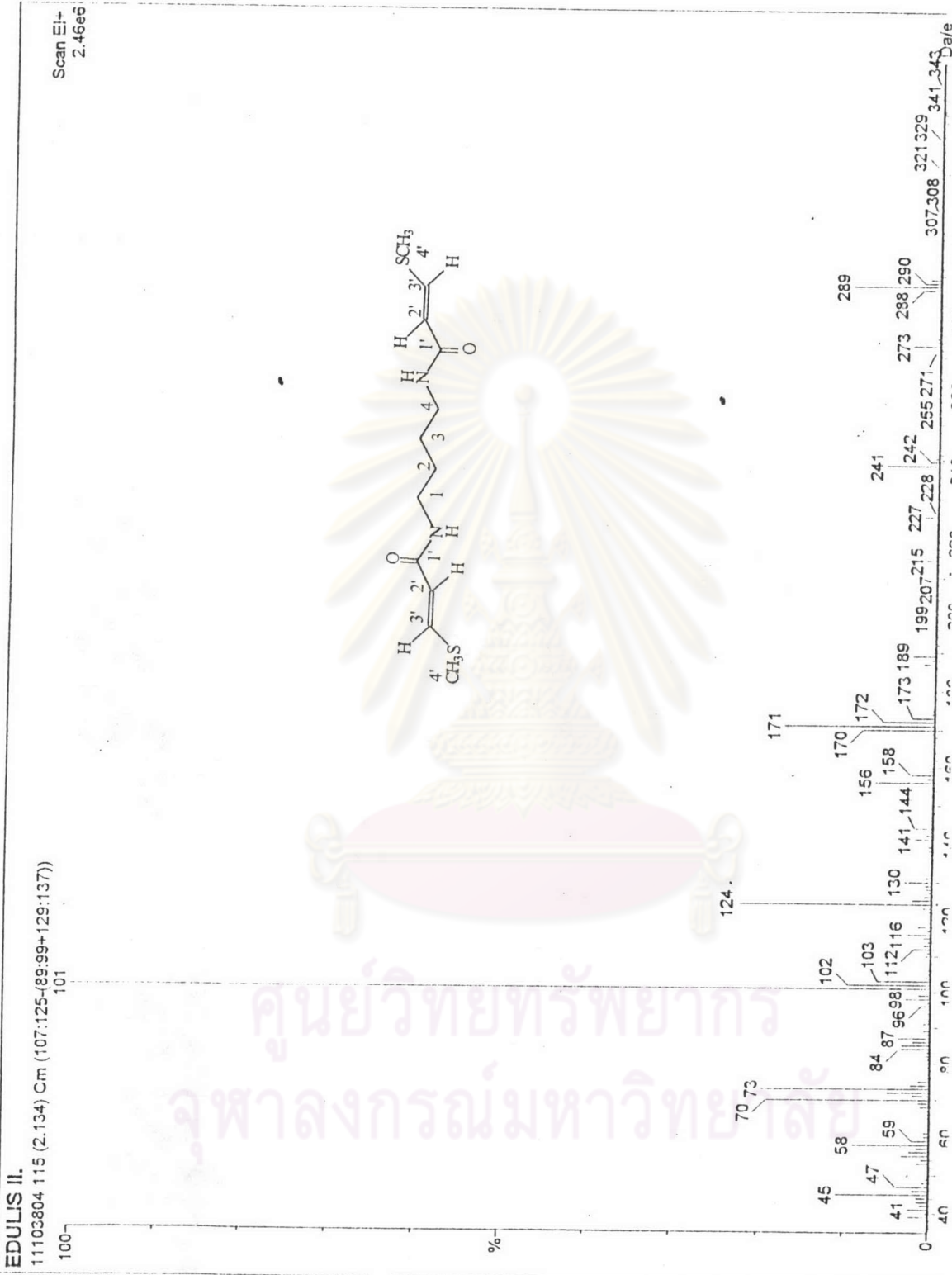


Figure 26 EIMS spectrum of ED05



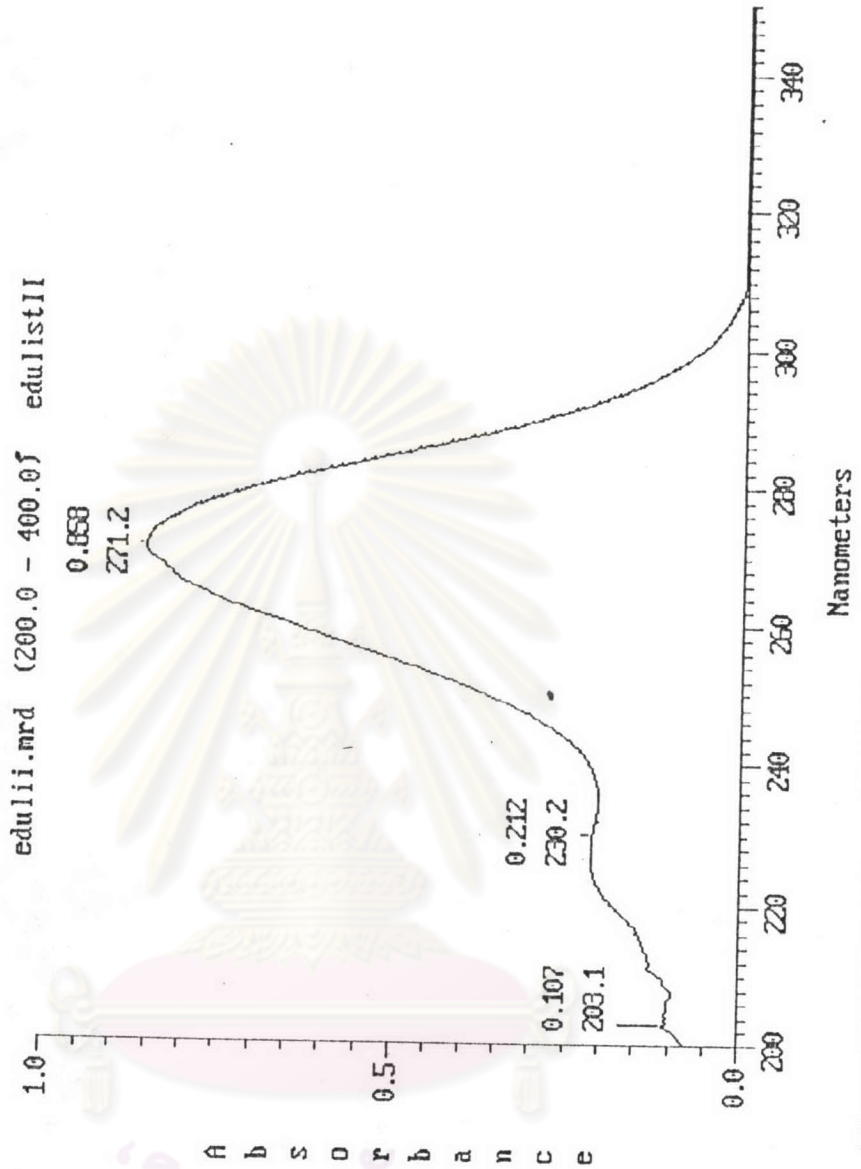
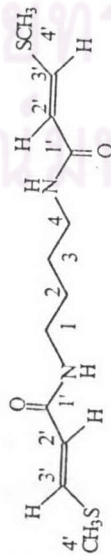


Figure 27 UV spectrum of ED03 (in methanol)

Absorbance



ศูนย์วิทยาศาสตร์สุขภาพ  
จุฬาลงกรณ์มหาวิทยาลัย

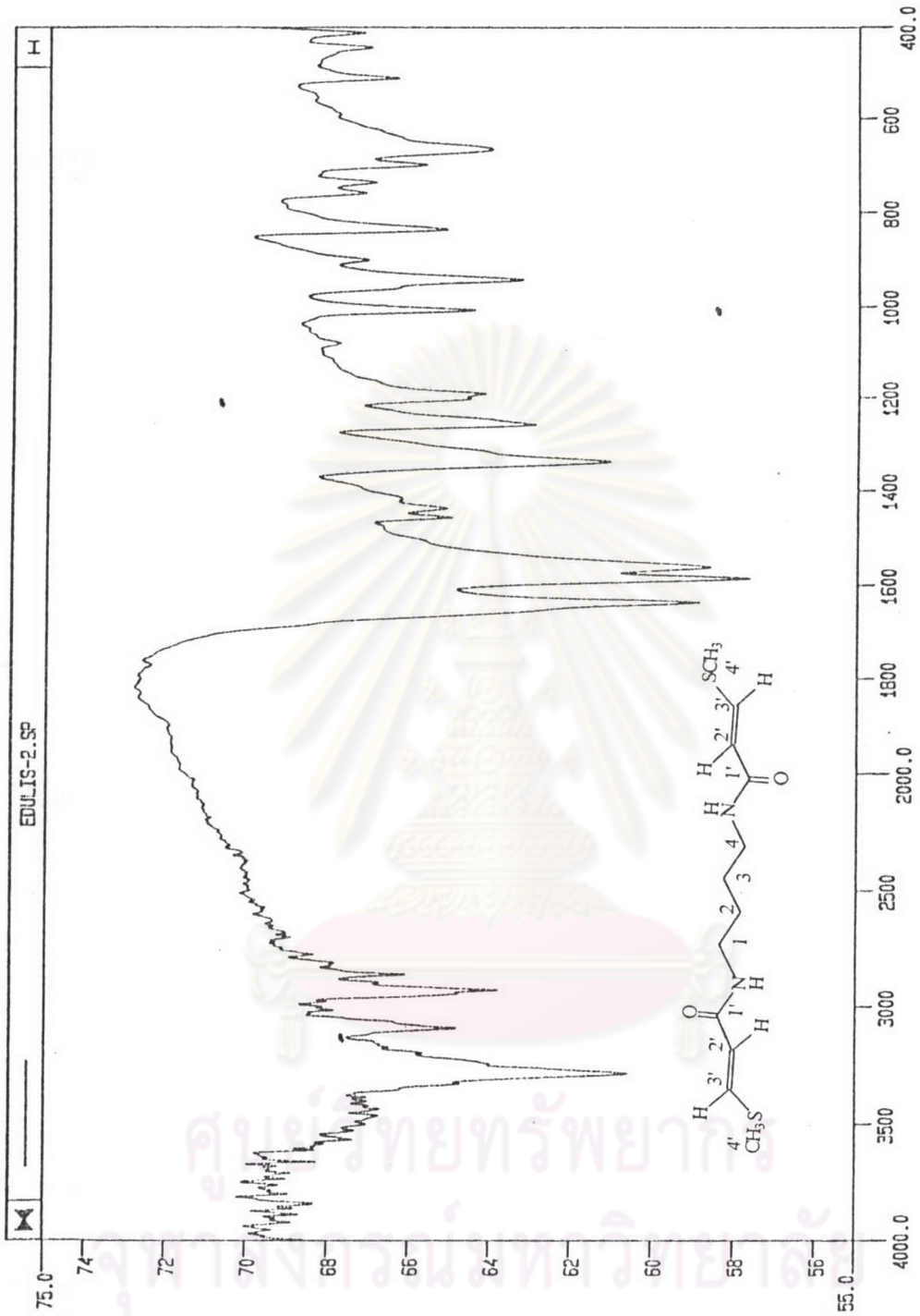


Figure 28 IR spectrum of ED03 (KBr disc)  
CH-1

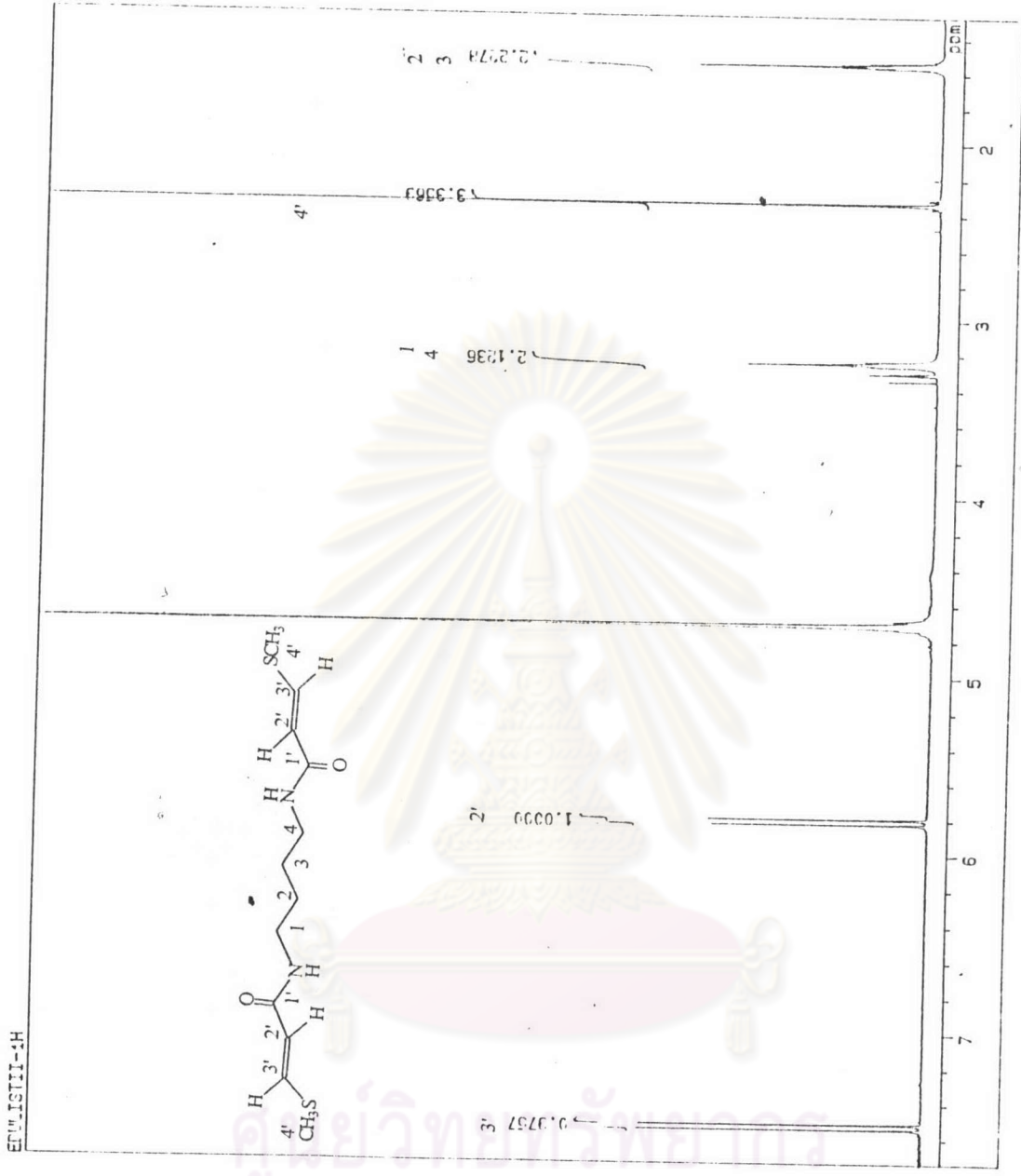


Figure 29 The 500 MHz <sup>1</sup>H NMR spectrum of ED03 (in CD<sub>3</sub>OD)

จุฬาลงกรณ์มหาวิทยาลัย  
ศูนย์วิทยาศาสตร์

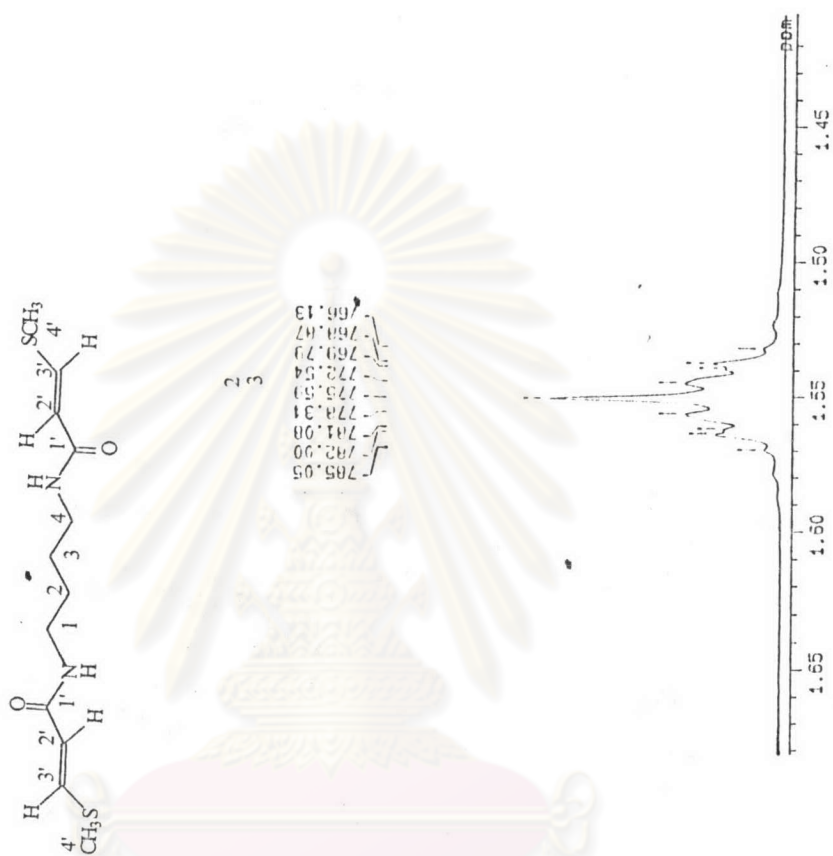


Figure 30 Expansions of the 500 MHz  $^1\text{H}$  NMR spectrum of ED03 (in  $\text{CD}_3\text{OD}$ )

ศูนย์วิทยทรัพยากร  
จุฬาลงกรณ์มหาวิทยาลัย

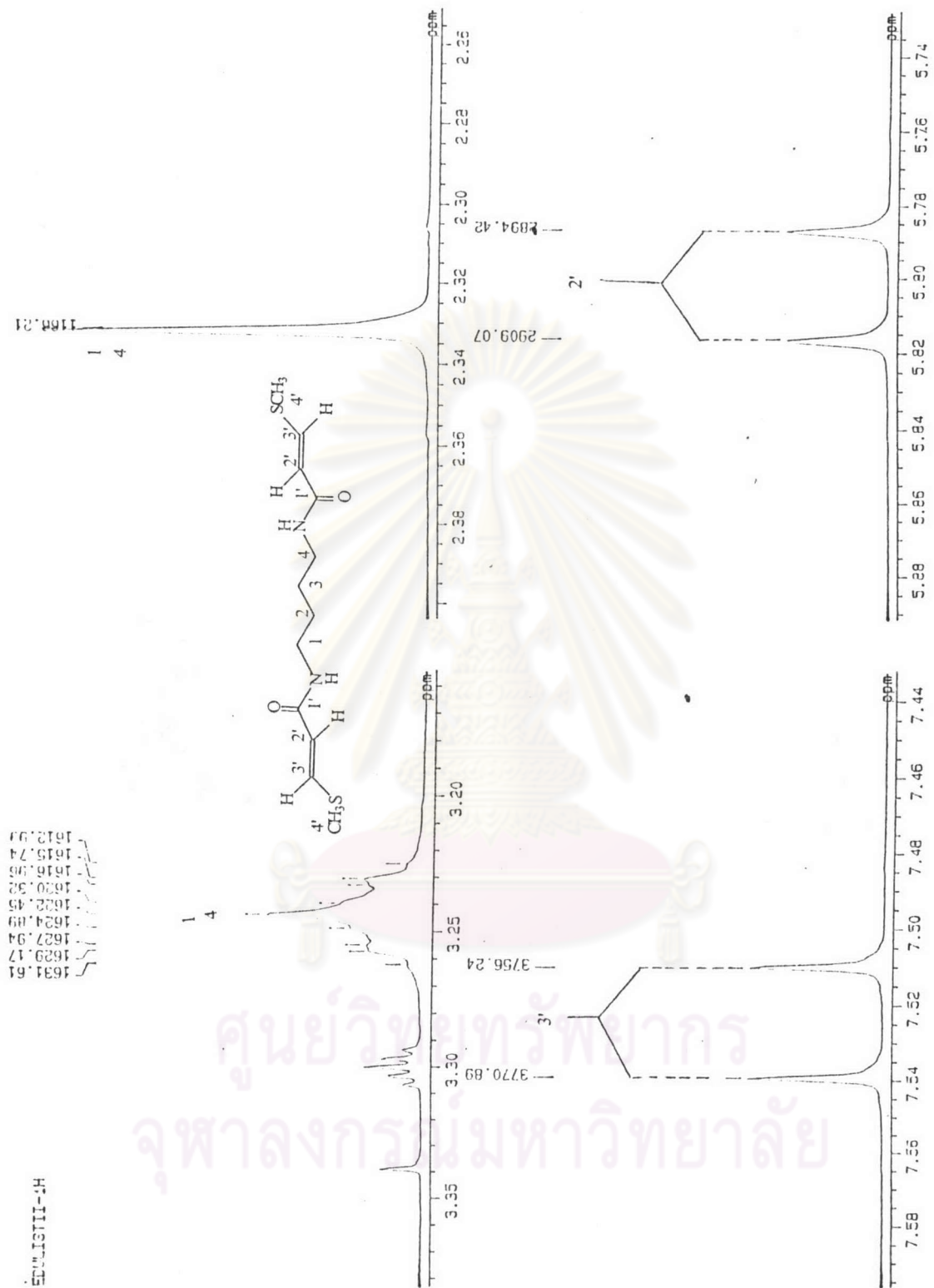


Figure 30 Expansions of the 500 MHz <sup>1</sup>H NMR spectrum of ED03 (in CD<sub>3</sub>OD)

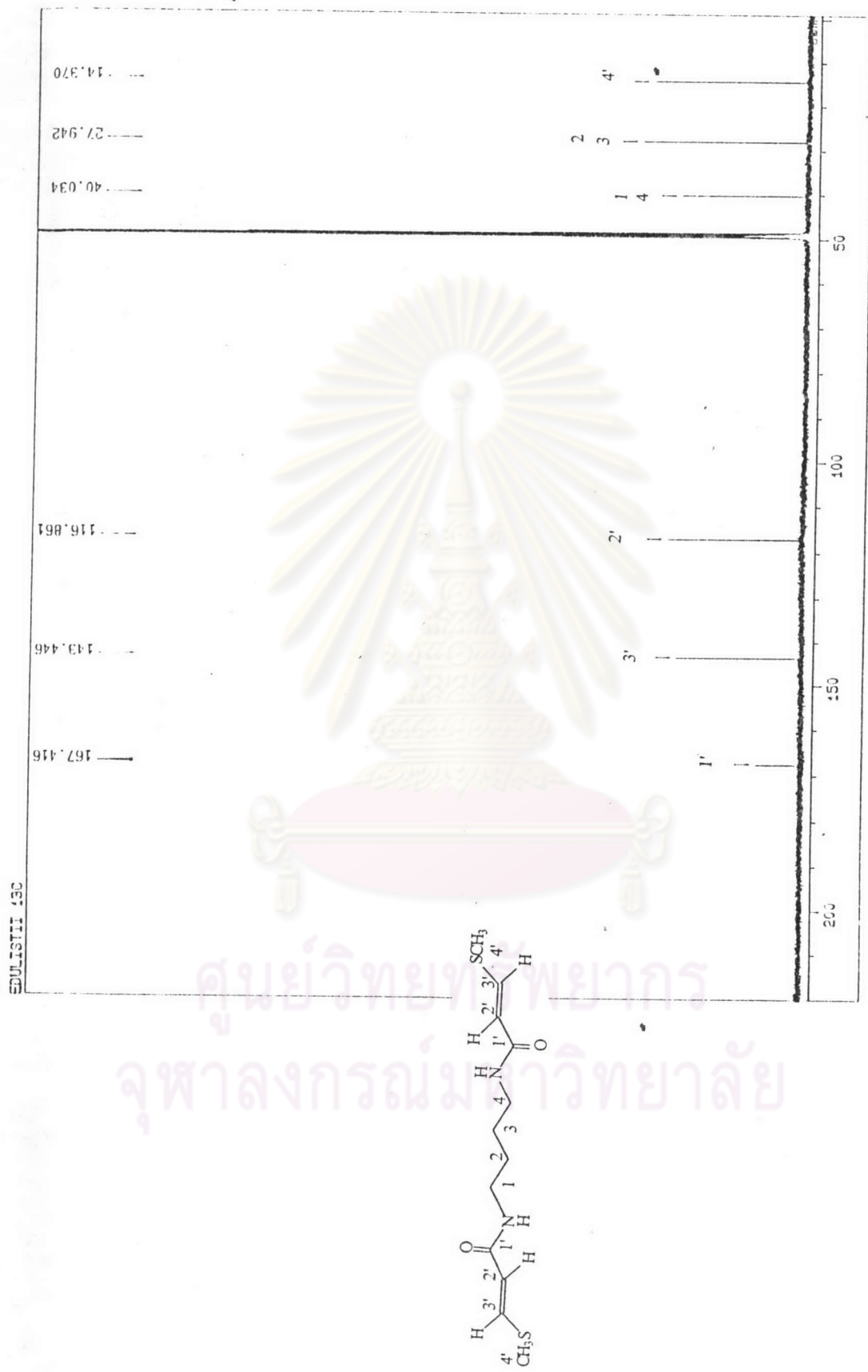


Figure 31 The 125 MHz <sup>13</sup>C NMR spectrum of ED03 (in CD<sub>3</sub>OD)

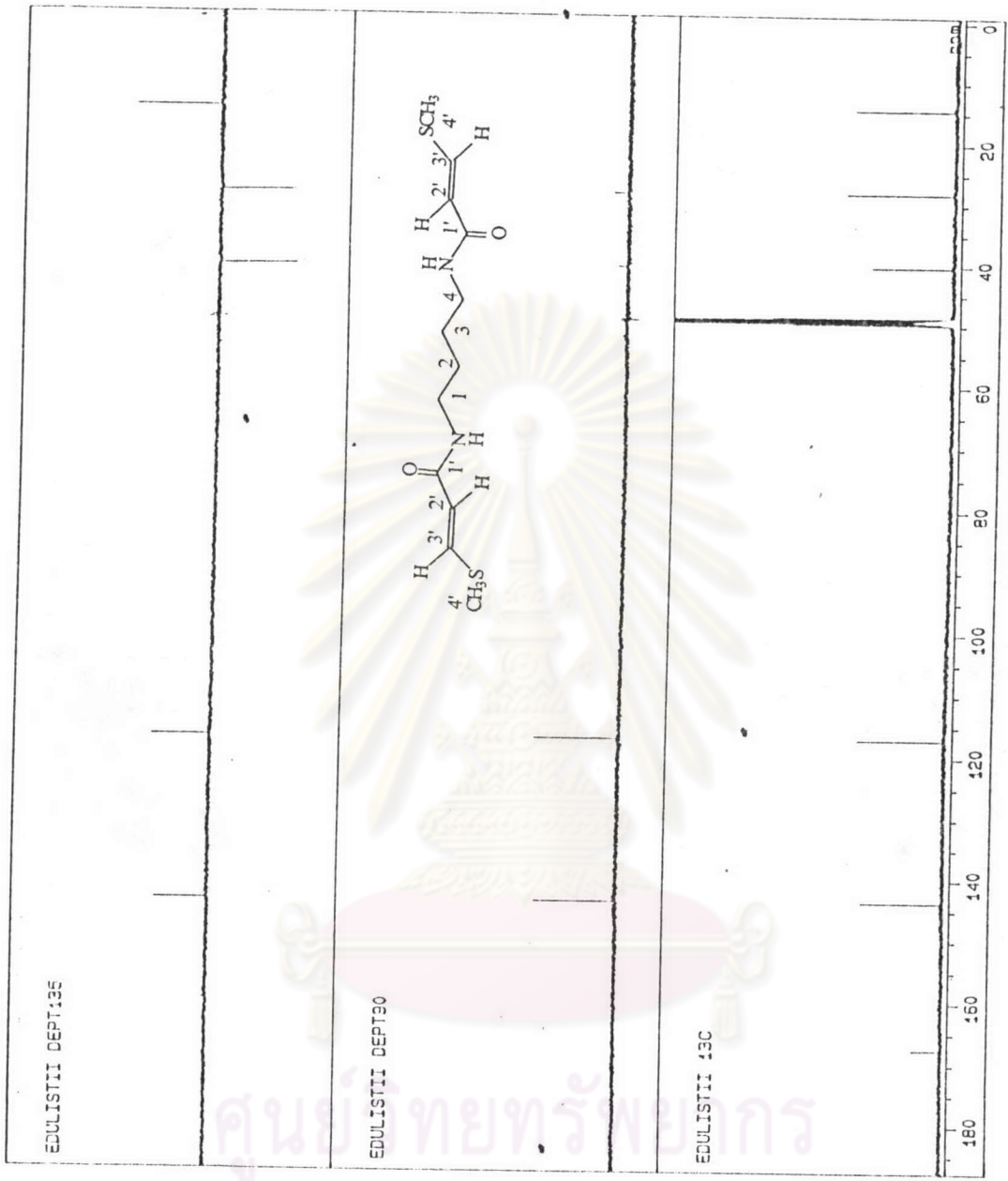


Figure 32 The 125 MHz <sup>13</sup>C-DEPT NMR spectra of ED03 (in CD<sub>3</sub>OD)

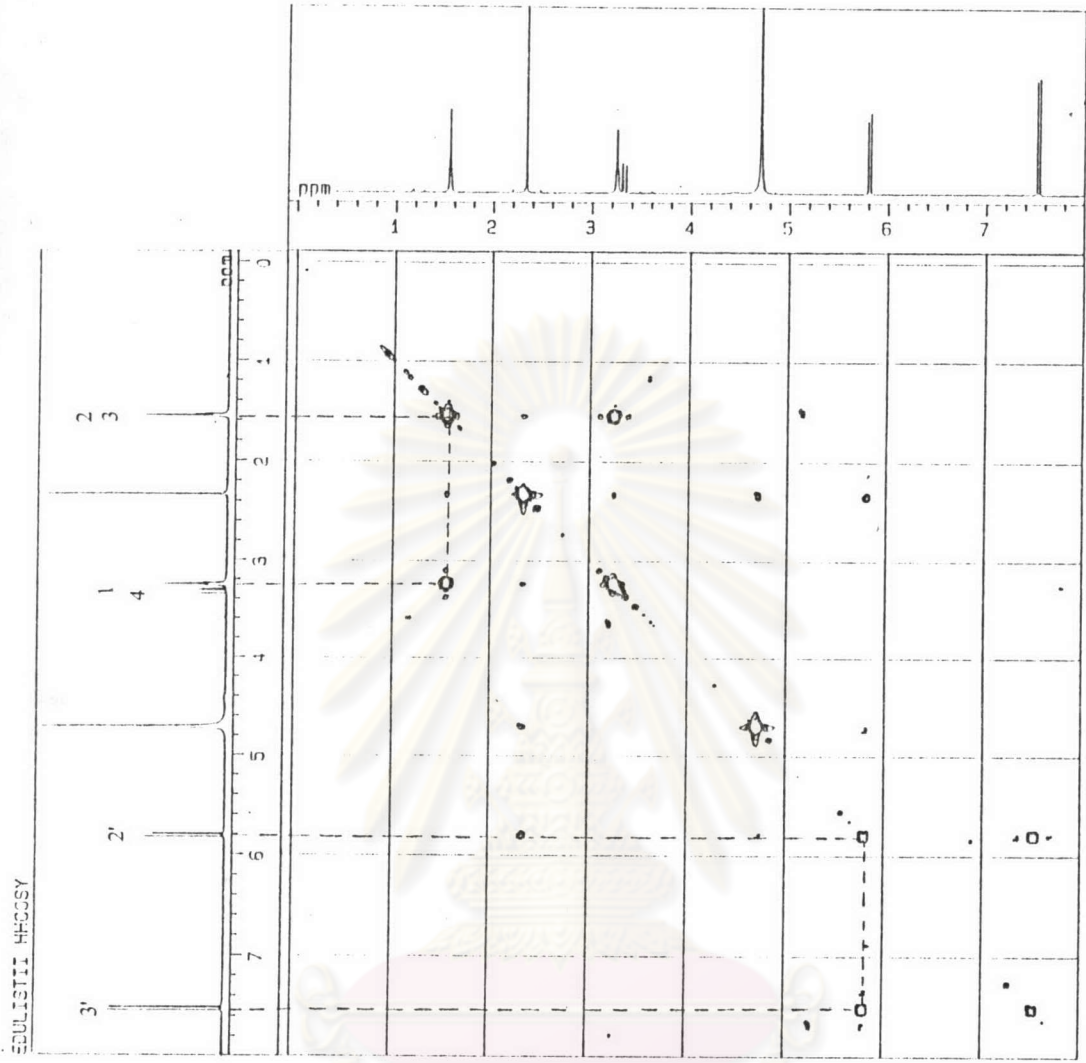


Figure 33 The 500 MHz <sup>1</sup>H-<sup>1</sup>H COSY spectrum of ED03 (in CD<sub>3</sub>OD)

ศูนย์วิทยทรัพยากร  
จุฬาลงกรณ์มหาวิทยาลัย



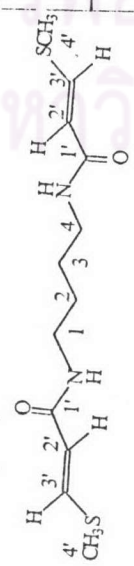
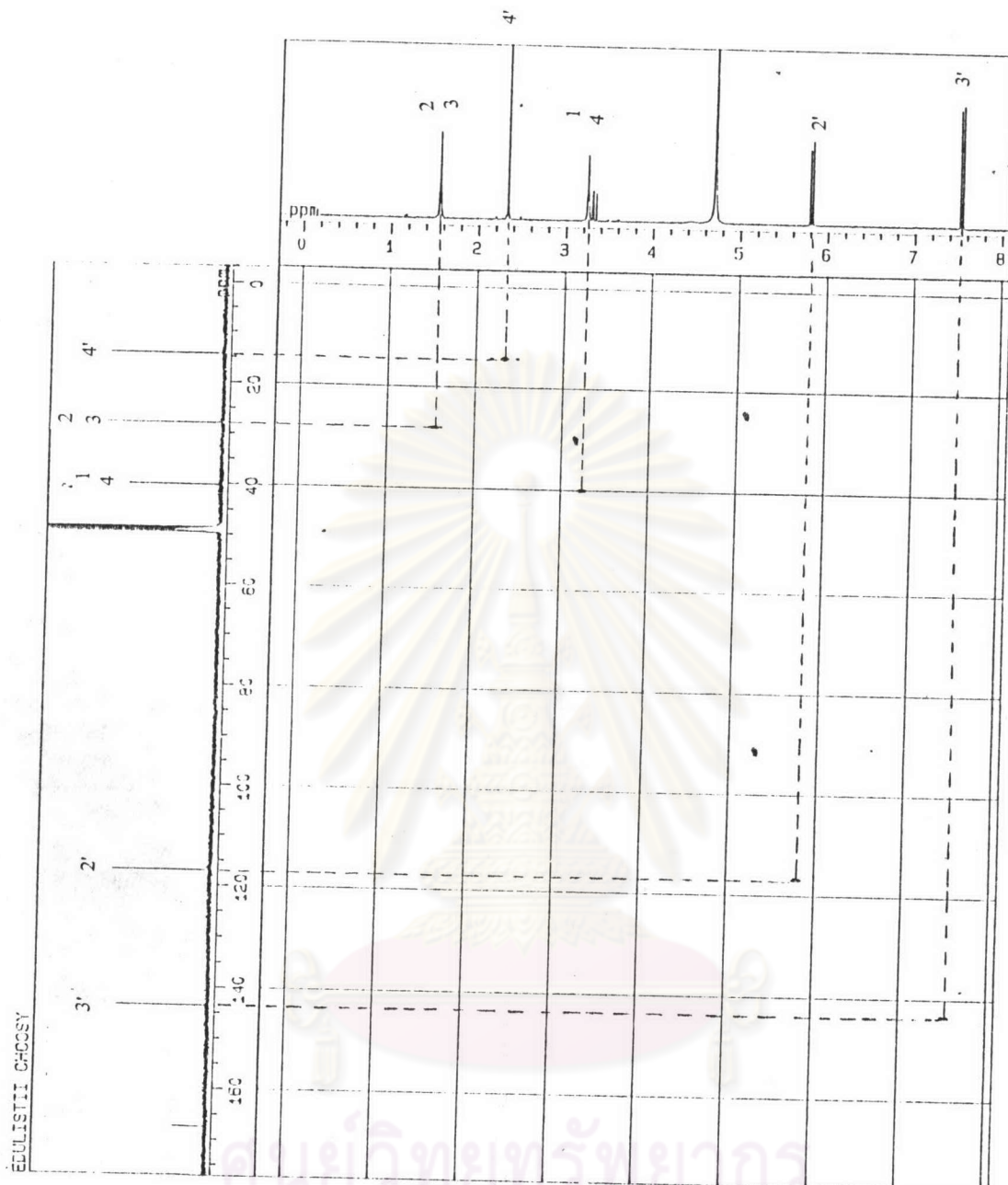


Figure 34 The 500 MHz <sup>13</sup>C-<sup>1</sup>H COSY spectrum of ED03 (in CD<sub>3</sub>OD)

ศูนย์วิทยาศาสตร์  
จุฬาลงกรณ์มหาวิทยาลัย

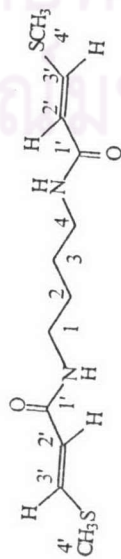


Figure 35 The 500 MHz  $^1\text{H}$ - $^{13}\text{C}$  HMBBC spectrum of ED03 (in  $\text{CD}_3\text{OD}$ )

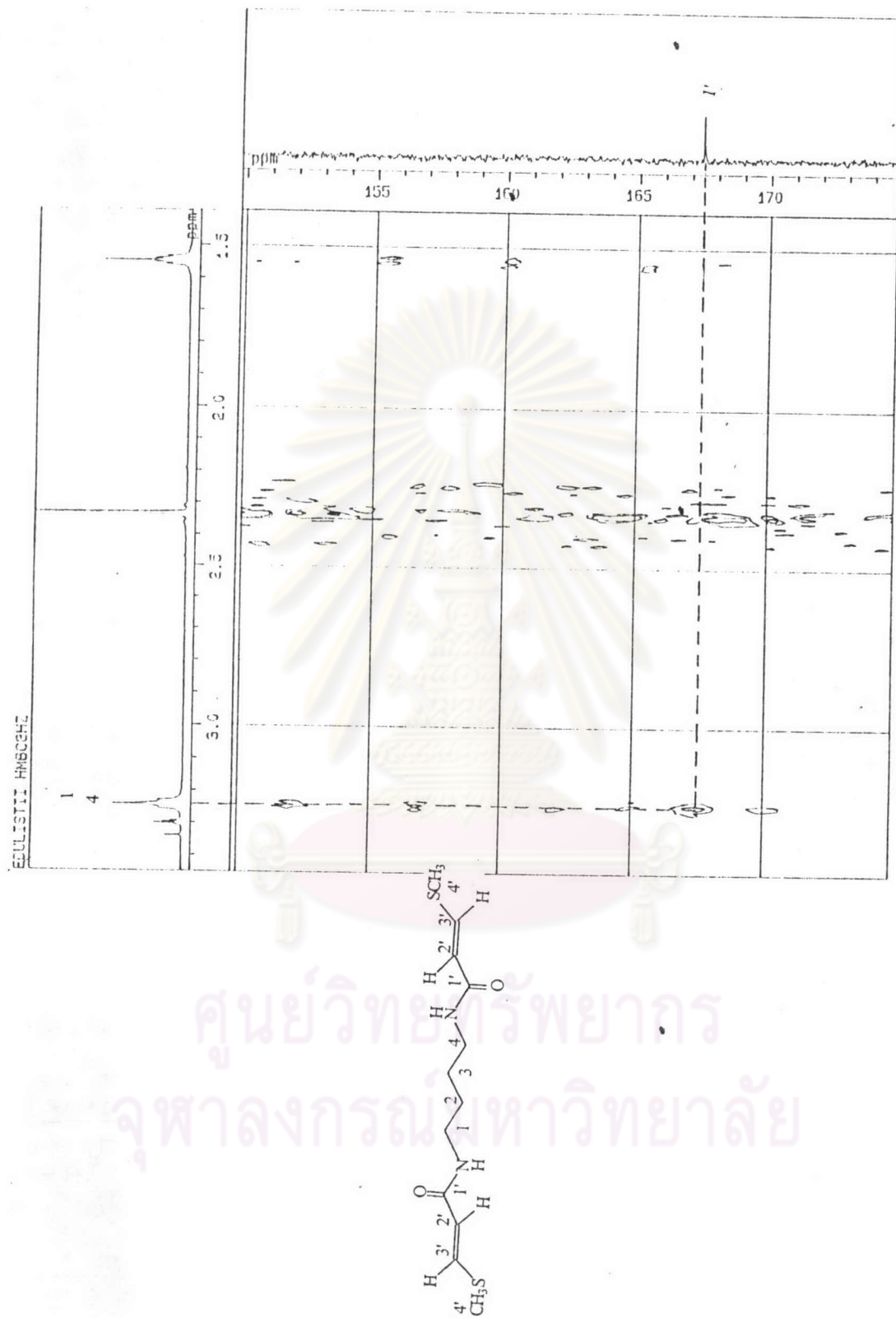
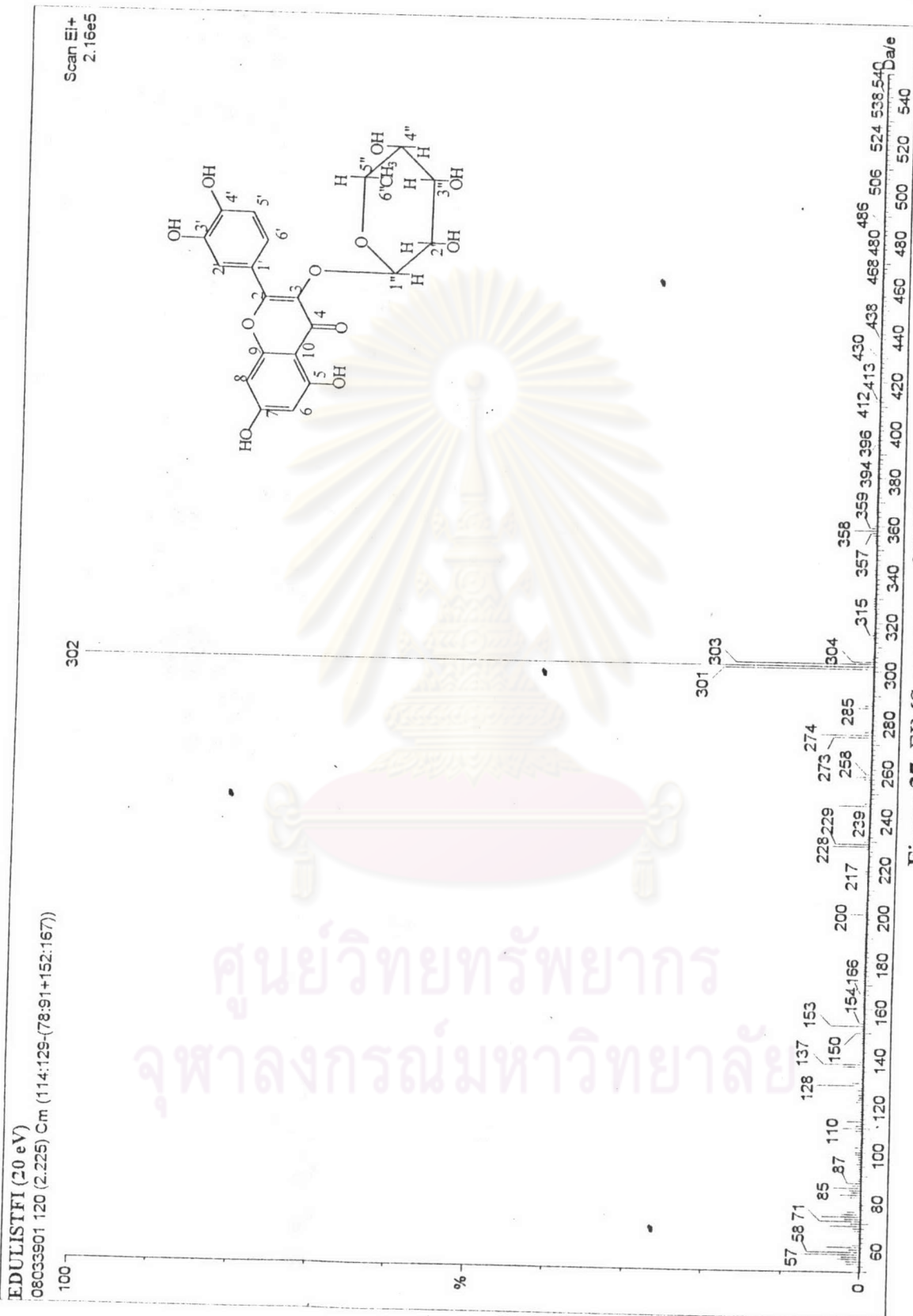


Figure 36 Expansions of the 500 MHz  $^1\text{H}$ - $^{13}\text{C}$  HMBC spectrum of ED03 (in  $\text{CD}_3\text{OD}$ )



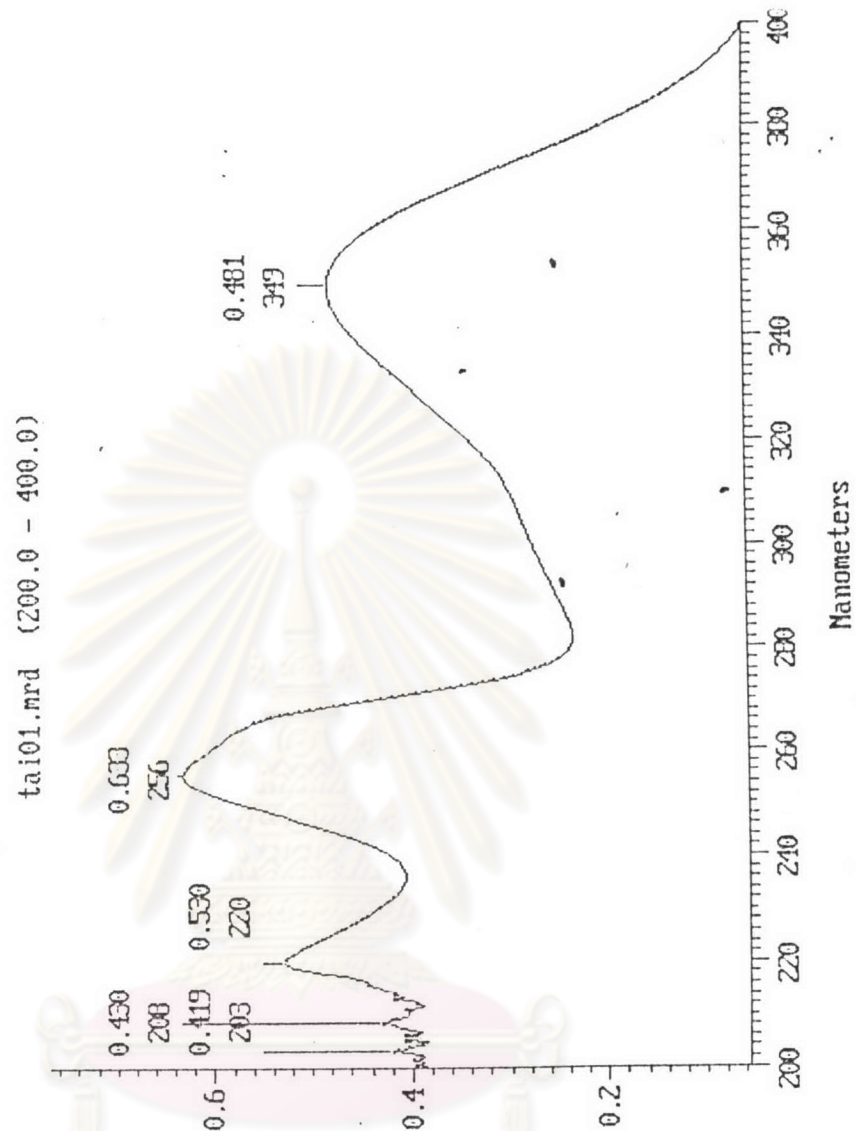
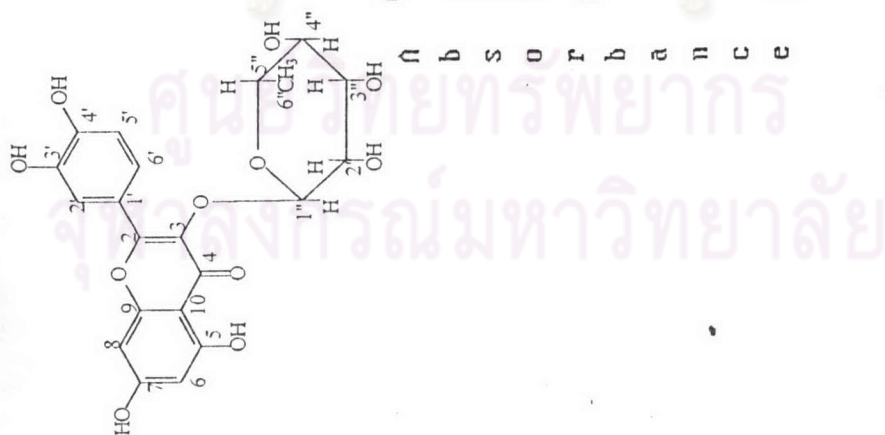


Figure 38 UV spectrum of ED04 (in MeOH)

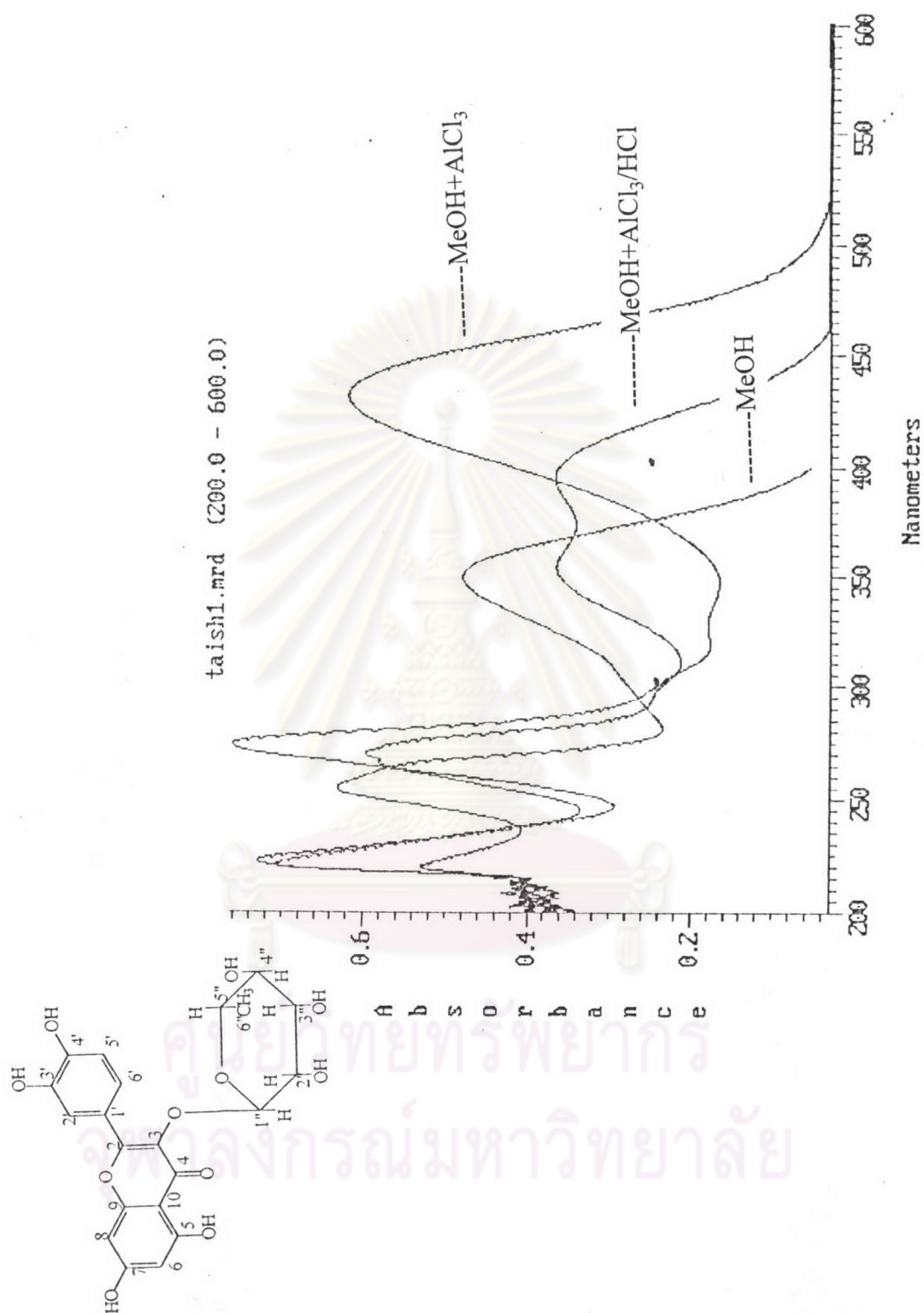


Figure 39 UV spectrum of ED04 (in MeOH, MeOH+AlCl<sub>3</sub>, MeOH+AlCl<sub>3</sub>/HCl)

tai02sh3.mrd (200.0 - 600.0)

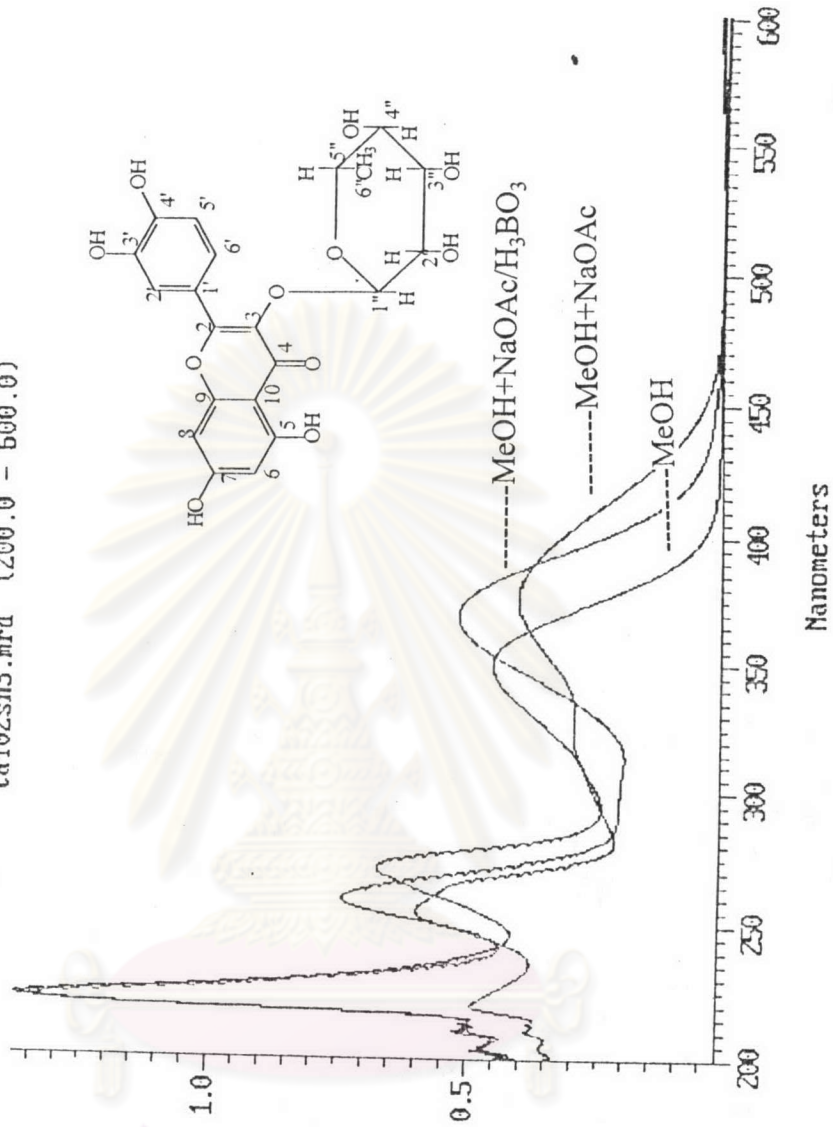


Figure 40 UV spectrum of ED04 (in MeOH, MeOH+NaOAc, MeOH+NaOAc/H<sub>3</sub>BO<sub>3</sub>)

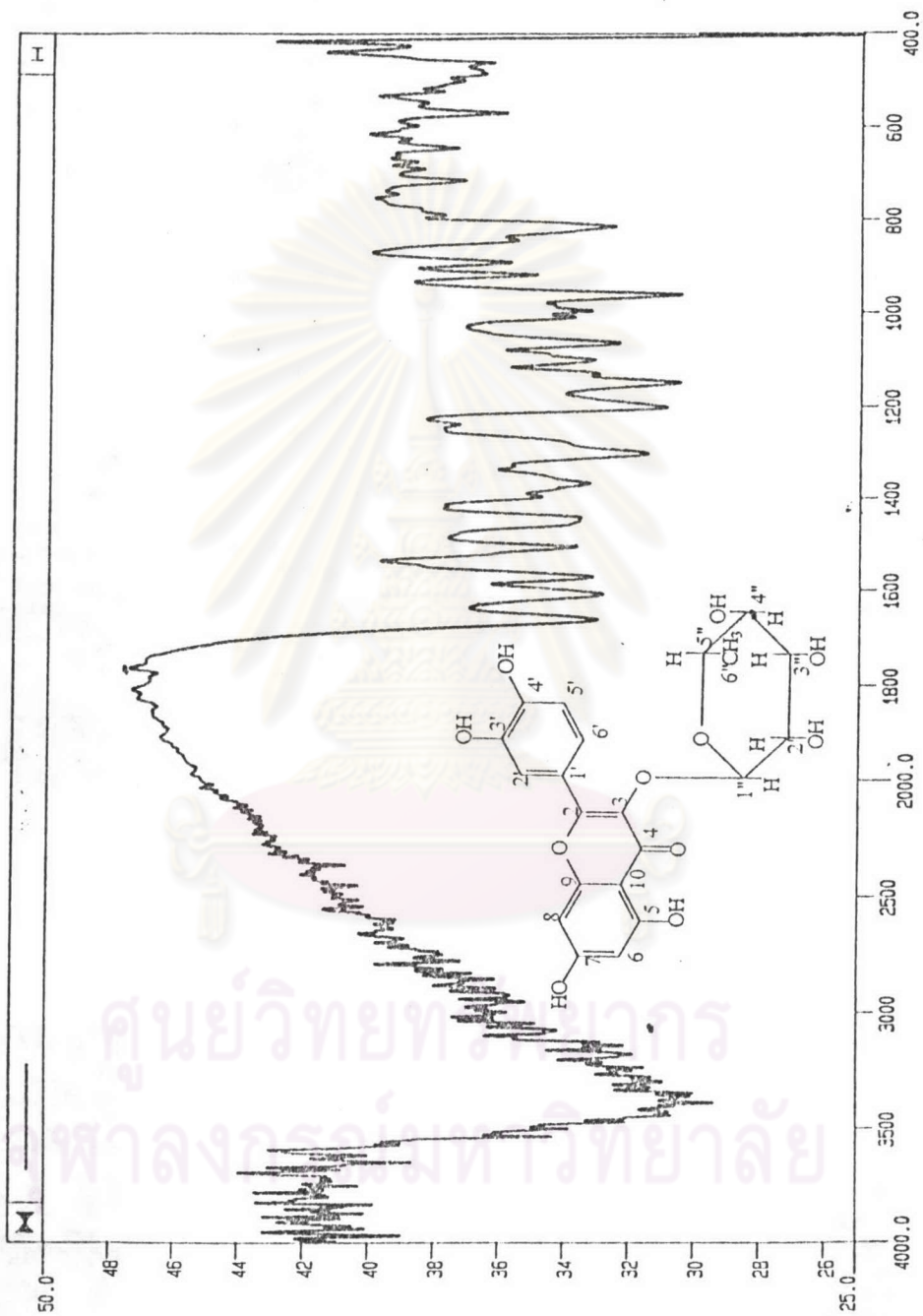


Figure 41 IR spectrum of ED04 (KBr disc)



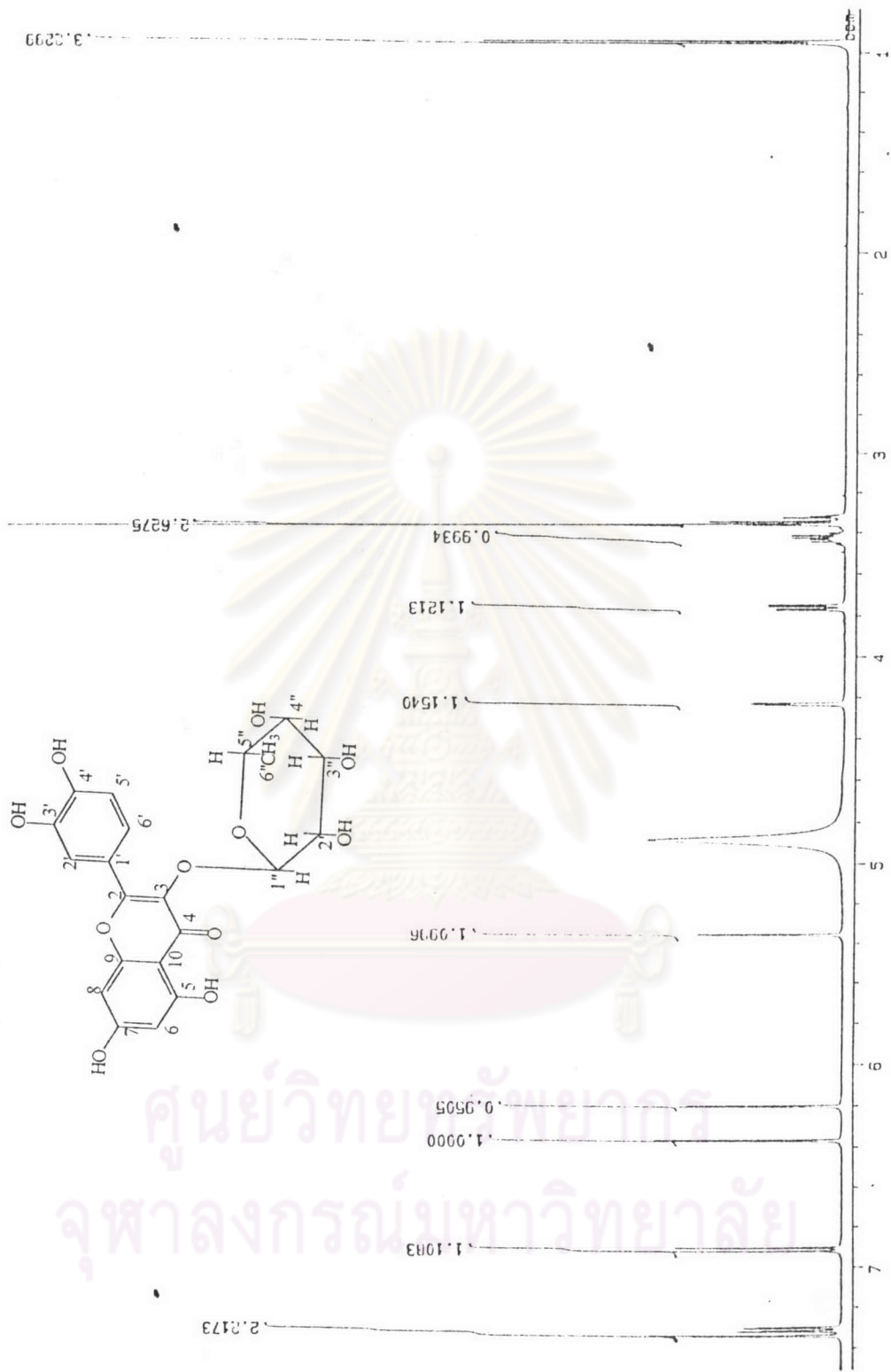


Figure 42 The 500 MHz <sup>1</sup>H NMR spectrum of ED04 (in CD<sub>3</sub>OD)

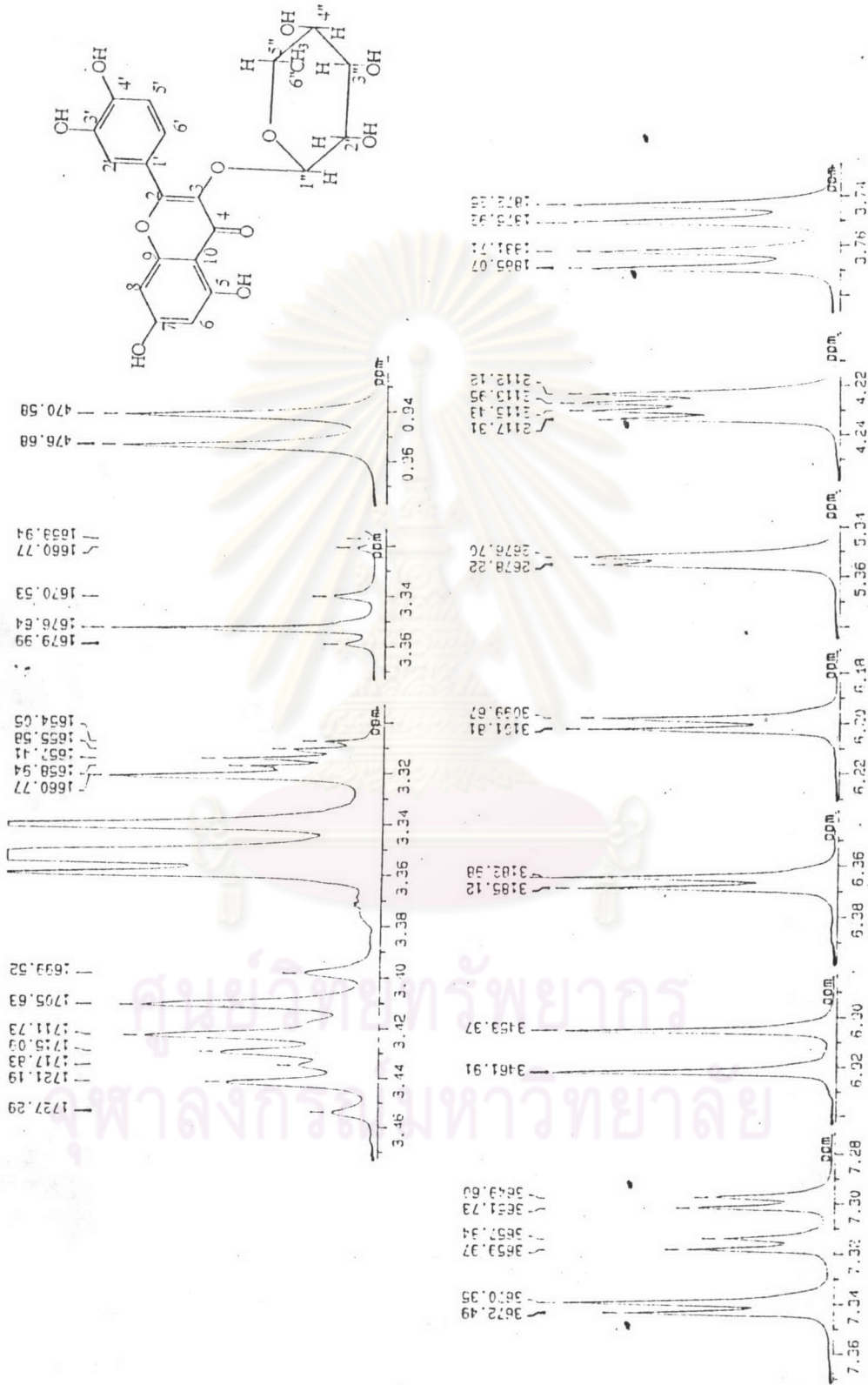


Figure 43 Expansions of the 500 MHz <sup>1</sup>H NMR spectrum of ED04 (in CD<sub>3</sub>OD)

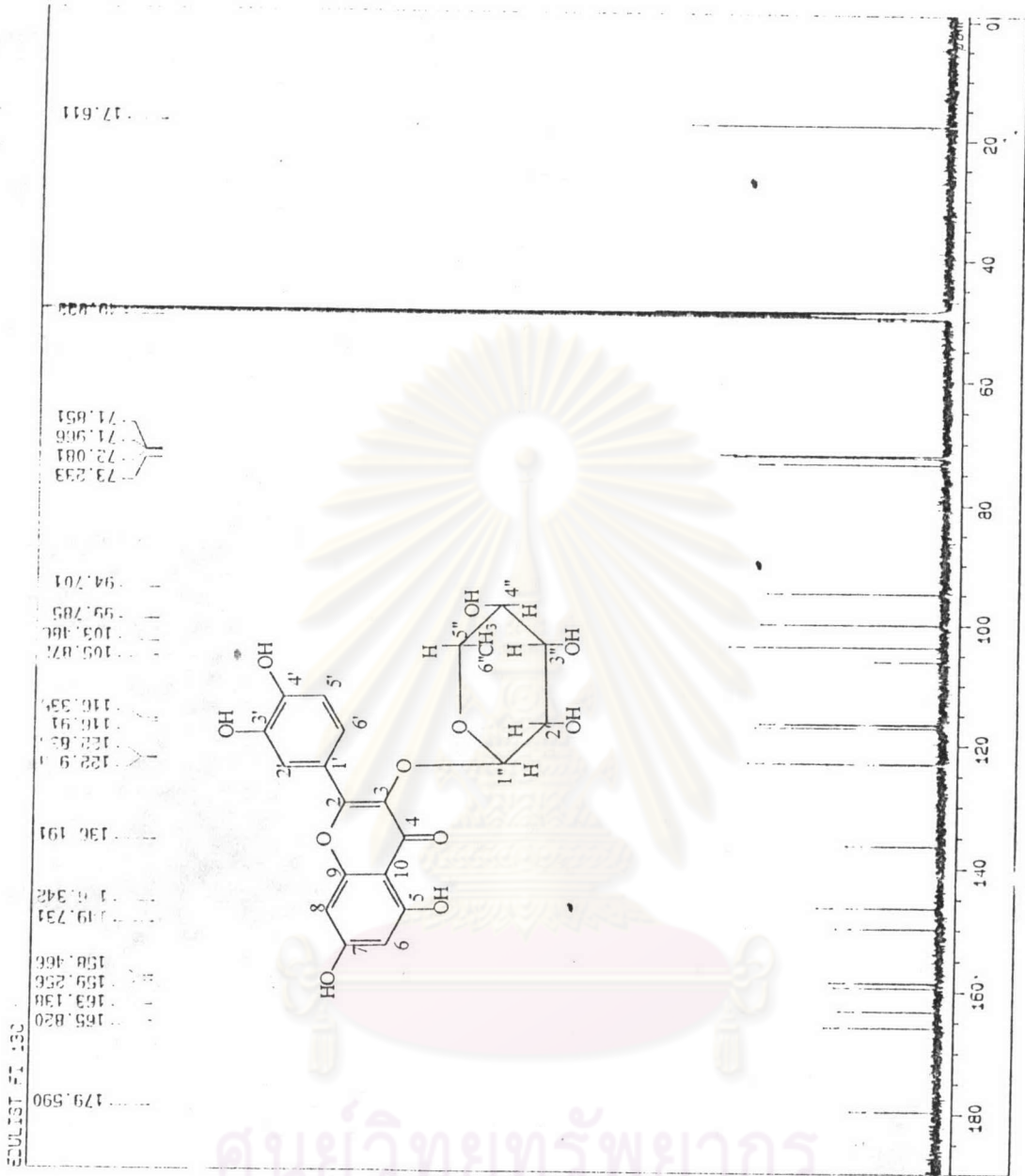


Figure 44 The 125 MHz <sup>13</sup>C NMR spectrum of ED04 (in CD<sub>3</sub>OD)

ศูนย์วิทยทรัพยากร  
จุฬาลงกรณ์มหาวิทยาลัย

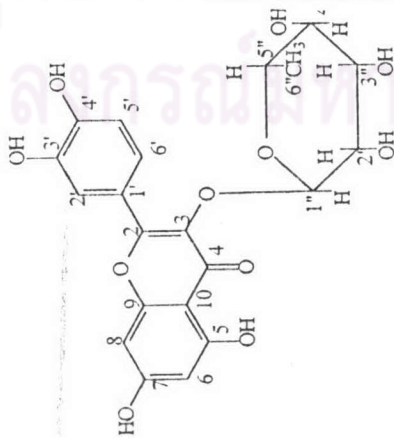
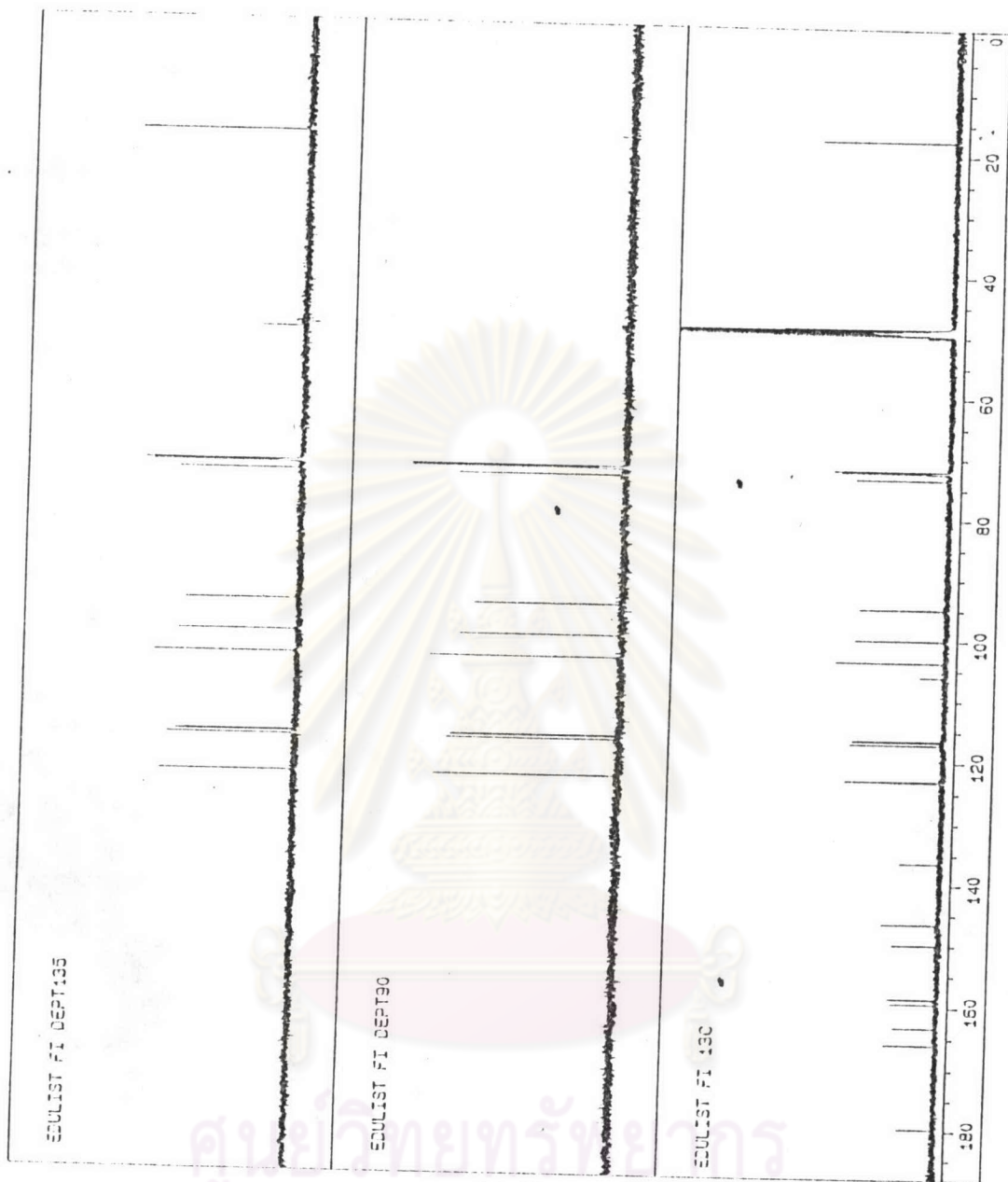


Figure 45 The 125 MHz  $^{13}\text{C}$ -DEPT NMR spectrum of ED04 (in  $\text{CD}_3\text{OD}$ )

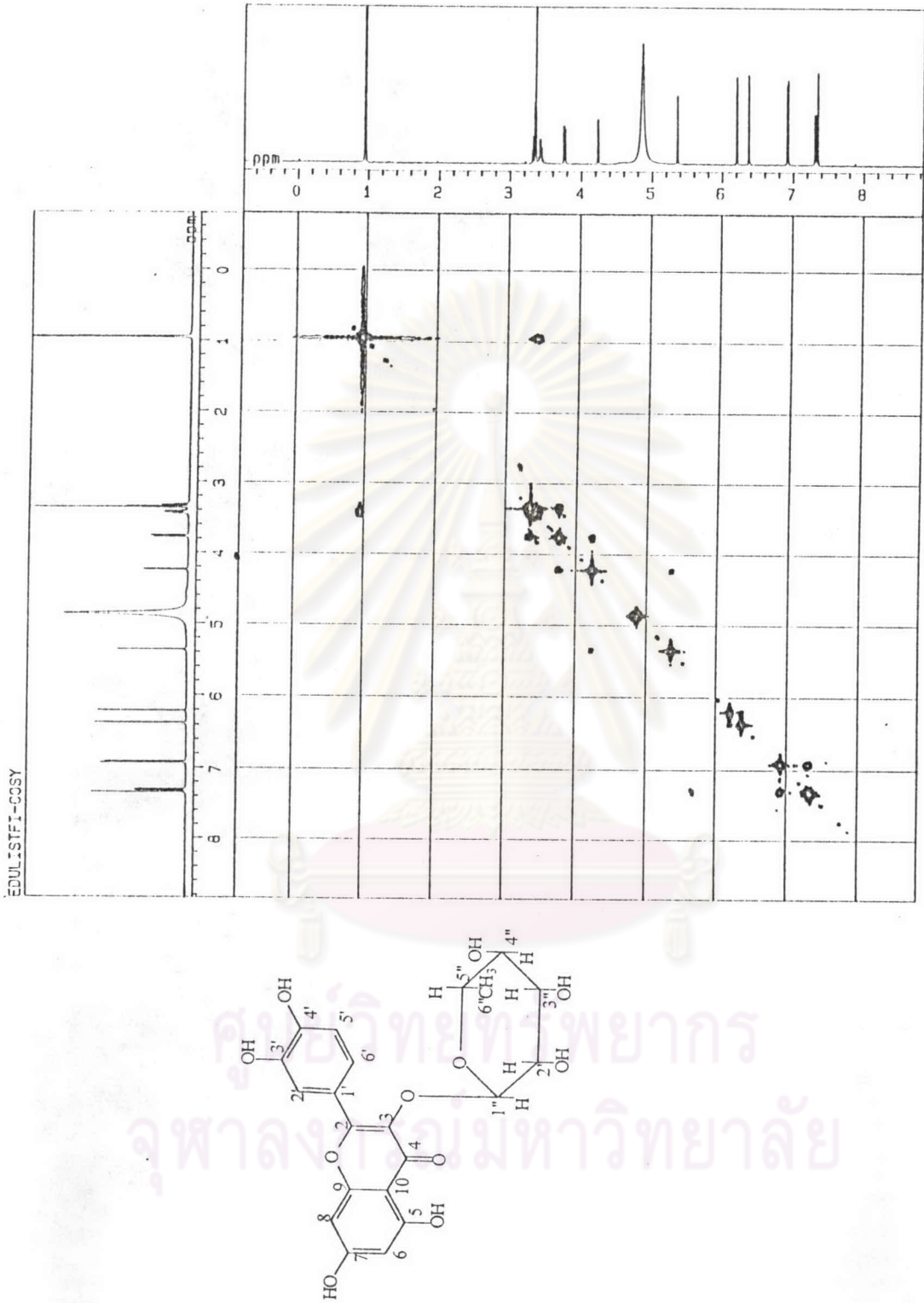


Figure 46 The 500 MHz <sup>1</sup>H-<sup>1</sup>H COSY spectrum of ED04 (in CD<sub>3</sub>OD)



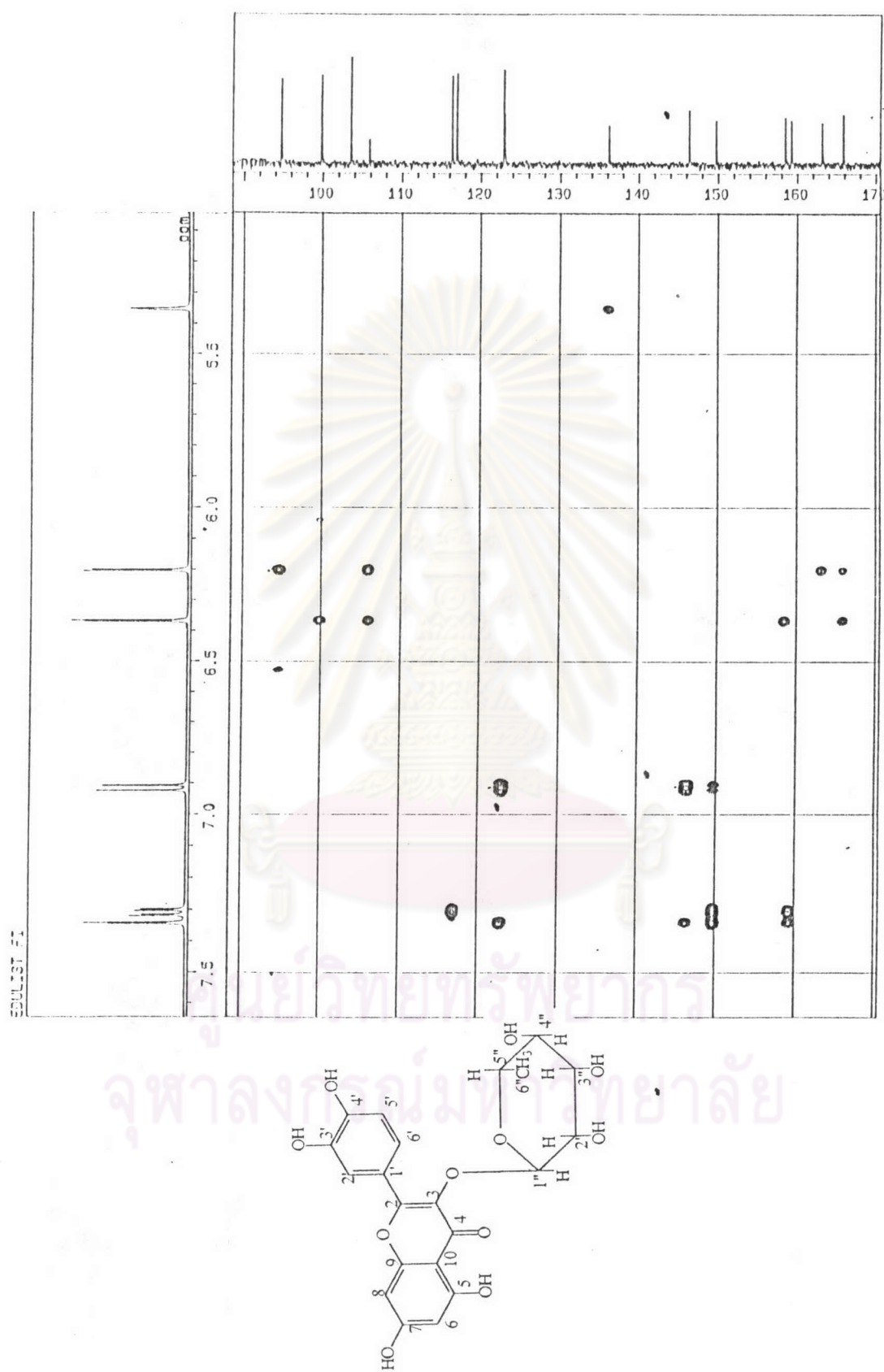


Figure 48 The 500 MHz  $^1\text{H}$ - $^{13}\text{C}$  HMBBC spectrum of ED04 (in  $\text{CD}_3\text{OD}$ )

**VITA**

Mrs. Srisuda Shamsub was born on August 17, 1965 in Ayutthaya, Thailand. She received her Bachelor of Sciences in Pharmacy in 1989 from the Faculty of Pharmaceutical Sciences, Chulalongkorn University.

She is now working as a food and drug specialist at Narcotic Control Division, Food and Drug Administration, Ministry of Public Health, Bangkok.



ศูนย์วิทยทรัพยากร  
จุฬาลงกรณ์มหาวิทยาลัย