



## REFERENCES

- Adibatti, N.A. *et al.*. A pyridine alkaloid from *Ceropegia juncea*.. Phytochemistry 30 (1991): 2449-2450.
- Admad, V.U., Usmanghani, K., and Rizwani, G.H. New pregnane glycosides from *Caralluma tuberculata*.. J. Nat. Prod. 51 (1988): 1092.
- Aebi, A., and Reichstein, T. Glycosides of the leaves of *Cryptostegia grandiflora*. Helv. Chim. Acta. 33 (1950): 1013-1034. Chemical Abstracts 45: 1614 h
- Ageta, H., and Ageta, T. Ericaceous constituents: seventeen triterpenoids isolated from the buds of *Rhododendron macrocephalum*. Chem. Pharm. Bull. 32 (1984): 369-372.
- Ali, M., and Bhutani, K.K. Alkaloids from *Tylophora indica*.. Phytochemistry 28 (1989): 3513-3517.
- \_\_\_\_\_. Minor alkaloids of *Tylophora hirsuta*.. Phytochemistry 26 (1987): 2089-2092
- Allgeier, H. Struktur der Drebyssobiose, Lilacinobiose und Viminose. Helv. Chim. Acta. 51 (1968): 668-682.
- Al-Said, M.S., Hifnawy, M.S., Mc Phail, A.T., and Mc Phail, D.R. Ghalakinoside, A cytotoxic cardiac glycoside from *Pergularia tomentosa*. Phytochemistry 27 (1988): 3245-3250.
- Anjansyula, V., Row, L.R. The triterpenes of *Calotropis gigantea*. Current Sci. 37 (1968): 156-157. Chemical Abstracts 68: 93480y.
- Askri, M., Bui, A.M., and Mighri, Z. Study of medicinal plants of Tunisia: Chemical study of roots of *Periploca laevigata* (Asclepiadaceae). J. Soc. Chim. Tunis. 8 (1982): 23-28. Chemical Abstracts 98: 195002f.
- Askri, M., Bui, A.M., Mighri, Z., Das, B.C., and Hylands, P.T. Medicine plants of Tunisia: The Structure of periplocadiol, a new elemene type sesquiterpene isolated from the roots of *Periploca laevigata*.. J. Nat. prod. 52 (1989): 792-796. Chemical Abstracts 112 : 4548p.
- Avato, P. Essential oil of *Thapsia garganica*. Planta Medica 57 (1991): 585-586.
- Avisch, E., Tamm, Ch. and Reichstein, T. Die glykoside der wurzel von *Pachycarpus lineolatus* (Decne.) Bullock (Order *P. schweinfurthii* (N.E. Br.) Bullock). Helv. Chim. Acta. 42 (1959): 1014-1052.
- Baas, W.J. Dihydronyctanthic acid methyl ester and other 3, 4-seco-pentacyclic triterpenoids from *Hoya lacunosa*. Phytochemistry 22 (1983): 2809-2812.

- Baas, W.J., and Ivonne E.M. van Berkel. 3, 4-Seco-Triterpenoid acids and other constituents of the leaf wax of *Hoya naumanii*. Phytochemistry 30 (1991): 1625-1628.
- Backer, C.A., Bakhuizen van den Brink, R.C. Flora of Java. Vol.II. Netherlands: N.V.P. Noordhoff-Groningen, 1965.
- Badami, R.C., Shanbag, M.R. Seed oil from ornamental plants. Component acids of six seed oils. J. Oil Technol. Ass. India 4 (1972): 125-127. Chemical Abstracts 78: 99453v.
- Barth, F.W., Timell, T.E. J.A.C.S. 80 (1958): 6320. Annual Index of the Reports on Plant Chemistry (1958): 51.
- Bauer, S., Masler, L., Bauerova, O., and Siki, D. Experientia (1961):15. Annual Index of the Reports on Plant Chemistry (1961): 127.
- Baytop, O.T., Tanker, M., Oner, N., and Tekman, S. Sugars of the glycoside of the root of *Marsdenia erecta*. Nature 184 (Suple. No.17, 1959): 1319. Chemical Abstracts 54: 10070d.
- Bedoukian, P.Z. Perfumery and Flavoring Synthetics. 2nd. Amsterdam.London: Elsevier Publishing Company, 1967.
- Bentham, and Hooker, J.D. The Families of Flowering Plants. Vol.I Dicotyledons. Oxford: Clarendon Press, 1969.
- Berger, S., Junior, P., and Kopanski, L. Structural revision of pregnane ester glycosides from condurango cortex and new compounds. Phytochemistry 27 (1988): 1451-1458.
- Berthold, R., Wehrli, W., and Reichstein, T. Cardenolides from *Periploca nigrescens*.. Helv. Chim. Acta. 48 (1965)<sub>a</sub>: 1634-1658. Chemical Abstracts 64: 18029f.  
 \_\_\_\_\_. The cardenolides of *Parquetina nigrescens*. The constitution of 5 new cardenolides. Helv. Chim. Acta. 48 (1965)<sub>b</sub>: 1659-1665.
- Bhutani, K.K., Ali, M., and Atal, C.K. Alkaloids from *Tylophora hirsuta*. Phytochemistry 23 (1984): 1765-1769.
- Bhutani, K.K., Sharma, G.L., and Ali, M. Plant based antiamebic drugs; Part I. Antiamoebic activity of phenanthroindolizidine alkaloids; Common structural determinants of activity with emetine. Planta Medica 53 (1987): 532-536.
- Binkert, J., Schindler, O., and Reichstein, T. Die glykoside der knollen von *Raphionacme burkei* N.E.Br. Helv. Chim. Acta. 43 (1960): 1984-2014.

- Blinova, K.F., Mitroshina, E.A., Shatokhina, R.K. Pharmacognostic study of the Siberian swallow wort *Antitoxicum sibiricum*. Tr. Leningrad Khim. Farm.Inst. 26 (1968): 124-130. Chemical Abstracts 73: 63234g.
- Boesel, R., and Schilcher, H. Composition of essential oil of *Agropyrum repens* rhizome. Planta Medica.55 (1989): 399-400.
- Bowen, I.H., and Patel, Y.N. Acridone alkaloids and other constituents of the leaves of *Atalantia ceylanica*. Planta Medica 53 (1987): 73-75.
- Budzikiewicz, H., Djerassi, C., and Williams, D.H. Structure Elucidation of Natural Products by Mass Spectrometry. Vol. II: Steroids, Terpenoids, sugars, and miscellaneous classes. San Francisco: Holden-Day, Inc. , 1964.
- Capro, M., and Saa, J.M. (-) Antofine: A phenanthroindolizidine from *Vincetoxicum nigrum*. J. Nat. Prod. 52 (1989): 389-390.
- Cardona, M.L., Fernandez, M.I., Pedro, J.R., and Valle, A.A. Flavonoids and others constituents from *Onopordon macrocanthum*. Planta Medica 53 (1987): 506.
- Carman, R.M., Combe, R.G., and Watson, T.R. The cardiac glycosides of *Gomphocarpus fruticosus* R.Br. Aust. J. Chem. 17 (1964): 573-577.
- Castro, V.A., Garcia, A., Gonzales, G., Hernandez, R, and Suarez, E. A 3,4-seco-triterpene form *Caralluma buchardii*. Phytochemistry 19 (1980): 2210-2212.
- Cellarius, H.J., and Zechner, L. Glycosidic components of *Asclepias syriaca* roots. Sci. Pharm. 35 (1967): 132-156 (Ger). ; 35 (4) Glycosidic components of *Asclepias syriaca* seeds. Sci. Pharm. 35 (1967): 276-287 (Ger). Chemical Abstracts 68: 57402r; :57403s.
- Chandler, R.F., Coombe, R.G., and Watson, T.R. The digitanols of the root bark of *Calotropis procera* R.Br. Aust. J.Chem. 21 (1968): 1625-1631.
- Chandrashekar, V., Seshadri, T.R. Components of *Tylophora indica*. Current Sci. 37 (1968): 432-433. Chemical Abstracts 69: 84064j.
- Chatterjee, R.C., and Bhattacharyya, B.K. Isolation of  $\beta$ -sitosterol from *Hemidesmus indicus*. J. Indian. Chem. Soc. 32 (1955): 485-486. Chemical Abstracts 50 : 5237a.
- Cheung, H.T.A., and Watson ,T.R. Structure of aspecioside from the Monarch Butterfly larvae food-plants. J. Chem. Soc. Perkin. Trans.I (1986): 61-65.
- Cheung, H.T.A., Nelson, C.J.,and Watson, T.R. New glucoside conjugates and other cardenolide glycosides from the Monarch Butterfly reared on *Asclepias fruticosa* L. J. Chem. Soc. Perkin Trans. I (1988): 1851-1857.

- Chisholm, M. J., and Hopkins, C.Y. 11-Octadecenoic acid and other fatty acids of *Asclepias syriaca* seed oil. Can. J. Chem. 38 (1960): 805-812.
- Chopra, R.N., Dutta, A.T., Chatterjee, N.R., and N.DE. Chemical and pharmacological investigation of *Periploca aphylla*. Arch. Pharm. 275 (1937): 192-195. Chemical Abstracts 31: 4769 4.
- Cornforth, J.W. On the structure of sarcostin. Chemistry and Industry (1959): 602-603.
- Craib, W.G., and Kerr, A.F.G. Florae Siamensis Enumeratio. Vol. III part I, pp. 1-9. Bangkok: The Auspices of the Siam Society, 1951.
- Devon, T.K. and Scott, A.I. Handbook of Naturally Occurring Compounds. Vol.II. Terpene. New York: Academic Press, 1972
- Dassanayake, M.D., and Fosberg, F.R. A Revised Handbook to the Flora of Ceylon. Vol.IV. New Delhi: Amerind Publishing, 1983.
- Deepak, D., Khare, M.P., and Khare, A. A pregnane ester glycoside from *Periploca calophylla*. Phytochemistry 24 (1985): 1037-1039. Chemical Abstracts 103: 85035h.
- \_\_\_\_\_. A pregnane ester diglycoside from *Periploca calophylla*. Phytochemistry 24 (1985)<sub>b</sub>: 3015-17.
- Dominguez, X.A., and Torres, M.V. Terpenoids of the arial parts of *Asclepias latifolia*. Phytochemistry 11 (1972): 848
- Dominguez, X.A., Marroquin, J., Olguin, L.M., Morales, F., and Valdez, V.  $\beta$ -Amyrin juarezate a novel ester from *Marsdenia pringlei* and triterpenes from *Asclepias linaria*. Phytochemistry 13 (1974): 2617-2618.
- Domingues, X.A., Rojas, P., Collins, V., and Morales, M.del R. Phytochemical study of eight Mexican plants. Econ. Botany 14 (1960): 157-159. Chemical Abstracts 55: 4672d.
- Doskotch, R.W., Malik, M.Y., Hufford, C.D., Malik, S.N., Trent, J.E., and Kubelka, W. Antitumor agents V: Cytotoxic cardenolides from *Cryptostegia grandiflora* (Roxb.) R.Br. J. Pharm. Sci. 61 (1972): 570-573. Chemical Abstracts 77: 28806f.
- Douis, G.S., Sanduja, R., Euler, K.L., and Alam, M. Steroidal and triterpenoidal constituents of *Cryptostegia madagascariensis*. J. Chem. Soc. Pak. 7 (1985): 135-136. Chemical Abstracts 103: 120023b.
- Dutta, A.T., Ghosh, S., and Chopra, R.N. Chemical examination of the roots of *Hemidesmus indicus*. Arch. Pharm. 276 (1938): 333-340. Chemical Abstracts 32: 8689<sup>6</sup>.



- Dutta, S.K., Sharma, B.N., and Sharma, P.V. A new nicotinoyl glucoside from *Cryptolepis buchanani*. Phytochemistry 19 (1980): 1278
- \_\_\_\_\_. Buchananine, A novel pyridine alkaloids from *Cryptolepis buchanani*. Phytochemistry 17 (1978): 2047-2048.
- Dwuma-Badu, D. *et al.* Constituents of west african medicinal plants XX: Quinoline from *Cryptolepis sanguinolenta*. J. Pharm. Sci. 67 (1978): 433-434. Chemical Abstracts 89: 87139m.
- El-Said, F., Sofomora, E.A., Salami, M.A., and Sainsbury, M. Isolation of friedelin from *Secamone afzelii*. Phytochemistry 10 (1971): 1940
- Ekundayo, O., Ajaiyeoba, E., Aiyelaagba, O., and Stahl-Biskup, E. Volatile oil constituents of *Dennettia tripetala*. Planta Medica 58 (1992): 386-387.
- Eppenberger, U., Kaufmann, H., Strocklin, W., and Reichstein, T. Die glykoside der samen von *Stapelia gigantea* N.E.Br. Helv. Chim. Acta. 49 (1966): 1492-1504.
- Eppenberger, U., Vetter, W., and Reichstein, T. *ibid.* 49 (1966): 1505. Annual Index of the Reports on Plant Chemistry (1966): 181.
- Etherington, T., Herbert, R.B., and Jackson, F.B. Fluoroquinoline alkaloids from *Tylophora asthmatica*. Phytochemistry 6 (1977): 1125-1126.
- Federici, E., Galeffi, C., and Nicoletti, M. Constituents of *Araujia sericifera*. J. Nat. Prod. 51 (1988): 189-190.
- Fonseca, G., Rodriguez-Hann, L., Tablero, M., Rodriguez, A., and Arreguin, B. Labriformin, A cardiac glucoside from *Asclepias glaucescens*. J. Nat. Prod. 54 (1991): 860-862.
- Frerejacque, M. Chemical constituents of *Menabea venenata*. Compt. Rend. Soc. Biol. 248 (1959): 2382-2384. Chemical Abstracts 53: 15212a.
- Fukuoka, M., and Mitsuhashi, H. Components of *Stephanotis japonica* Makino. Chem. Pharm. Bull. 16 (1968): 553-555.
- \_\_\_\_\_. Studies on the constituents of Asclepiadaceae plants. XXIV. Structure of Stephanol. Chem. Pharm. Bull. 17 (1969): 2448-2454
- Gailly, E. Chemical study of *Chlorocodon whiteii* Bull. Soc. Chim. Biol. 2 (1947): 823-824. Chemical Abstracts 42: 2320 g.
- Gellert, E., Raymond-Hamet, and Schlittler, E. Constitution of the alkaloid cryptolepine. Helv. Chim. Acta. 34 (1951): 642-651. Chemical Abstracts 45: 9547g.
- Ghorbani, M., Kaloga, M., Frey, H.-H., and Eich, E. Phytochemical reinvestigation of *Xysmalobium undulatum* roots (Uzara). Planta Medica 56 (1990): 550.

- Gibbs, D. Chemotaxonomy of the flowering plants. Vol.I. Montreal and London: McGill-Queen's University Press, 1974.
- Goodwin, T.W., and Mercer, E.I. Introduction to Plant Biochemistry. 2nd ed. Oxford: Pergamon Press, 1983.
- Golab, T., Jager, H., and Reichstein, T. Die cardenolide der wurzeln von *Pachycarpus distinctus* (N.E.Br.) Bullock. Helv. Chim. Acta. 43 (1960): 2035-2058.  
 \_\_\_\_\_ ibid. 43 (1960): 2035. Annual Index of the Reports on Plant Chemistry (1960): 98-99.
- Golab, T., Trabert, C.H., Jager, H., and Reichstein, T. The digitaloid substance of *Pentopetia androsaemifolia* Decne. Helv. Chim. Acta. 42 (1959): 664-675. Chemical Abstracts 58: 27408b.
- Gomez, C.G., Gomez, F.G.Y, Swiatopolk-Mirski, A. Utilization of rubber from *Asclepias syriaca* of Spanish origin. Farmacognosia (Madrid) 20 (1960): 205-214. Chemical Abstracts '55: 17059i.
- Gonnet, J.F., Kozjek, F., and Favre-Bonvin, J. Les flavonols D' *Asclepias syriaca*. Phytochemistry 12 (1973): 2773-2775.
- Govindachari, T.R., Lakshmikantham, M.V., Pai, B.A., and Rajappa, S. Chemical examination of *Tylophora asthmatica*-III. The complete structure of tylophorine. Tetrahedron 9 (1960): 53-57.
- Govindachari, T.R., Pai, B.R., Ragade, I.S., Rajappa, S., and Viswanathan, N. Structure of Tylophorinine. Chemistry and Industry (1960): 966.
- Groeneveld, H.W., Bert van den Berg, Elings, J. C., and Seykens, D. Cardenolide biosynthesis from malonate in *Asclepias curassavica*. Phytochemistry 29 (1990): 3479-3486.
- Guenther, E. The Essential Oils. Vol. I. History Origin in Plants. Princeton: D. Van Nostrand Company, Inc. , 1960.
- Halim, A.F., Zaghoul, A.M., Ebeid, K.A., and Hayashi, K. New pregnane glycosides from *Stapelia variegata*. Planta Medica 55 (1989): 630-631.
- Hanlidou, E., Kokkalou, E., and Kokkini, S. Volatile constituents of *Achillea grandifolia*. Planta Medica 58 (1992): 105-107.
- Hayashi, K., and Mitsuhashi, H. Components of cortex cundurango. Chem. Pharm. Bull. 16 (1968): 2522-2524.  
 \_\_\_\_\_ On a tentative structure of Wilforine. Chem. Pharm. Bull. 20 (1972): 2065-2067.

- Hayashi, K. *et al.* On the pregnane glycosides from the plants belonging to the genus *Cynanchum* (Asclepiadaceae). Tennen Yuki Kagobutsu Toronkai Koen Yoshishu 28(1986): 216-223. Chemical Abstracts 106: 135258t.
- Hayashi, K., Iida, I., Nakao, Yumiko, Nakao, Yoshihiro, and Kaneko, K. Four pregnane glycosides, Boucerosides AI, AII, BI and BII, from *Boucerosia Aucheriana*. Phytochemistry 27 (1988): 3919-3924.
- Hayashi, K., Kakao, A., and Mitsunashi, H. Studies on the constituents of Asclepiadaceae plants. XXVI. Isolation of a new glycoside from *Dregea volubilis* (L.) Benth. Chem. Pharm. Bull. 17 (1969): 2629-2632.
- Hayashi, K., Nakagawa, T., Wada, K., Yoshimura, S., Tsukamoto, S., Narita, H., and Mitsunashi, H. Studies on the constituents of Asclepiadaceae plants. The oligosaccharides and the  $^{13}\text{C}$  NMR of Asclepiadaceae. Tennen Yuki Kagobutsu Toronkai Koen Yoshishu 26 (1983): 204-211. Chemical Abstracts 95: 135778p.
- Haznagy, A., Toth, L., and Szendrei, K. Beitrag zu den untersuchungen der inhaltsstoffe von *Cynanchum vincetoxicum*. II. Planta Medica 15 (1967): 194-200.
- \_\_\_\_\_. Effective substances of the root of *Cynanchum vincetoxicum*. III. Acta Pharm. Hung. 37 (1967): 186-190. Annual Index of the Reports on Plant Chemistry (1967): 168.
- Heble, M.R., and Chadha, M.S. Steroids in cultured tissue and mature plant of *Hemidesmus indicus*. Z. Pflanzenphysiol. 89 (1978): 401-406. Chemical Abstracts 89: 21196v.
- Hooker, J.D. Flora of British India. Vol. IV. India: M/s Bishen Singh Mahendra Pal Singh and M/s Periodical Experts, 1973.
- Horii, Z.I., Ohkawa, K., and Iwata, C. On the structure of Kidjolanin and the position of the esterlinkage of Periplogenin. Chem. Pharm. Bull. 20 (1972): 628-629.
- Huber, H., Blindenbacher, F., Mohr, K., Speiser, P., and Reichstein, T. ibid. 34 (1951): 46. Annual Index of the Reports on Plant Chemistry (1959): 93.
- Hussain, R.A., Kim, J., Hu, T.-W., Pezzuto, J.M., Soejarta, D.D., and Kinghorn, A.D. Isolation of a highly sweet constituent from *Cinnamomum osmophloeum* leaves. Planta Medica 52 (1986): 403-404.
- Idem. ibid. 48 (1965): 1659. Annual Index of the Reports on Plant Chemistry (1965): 155.

- Itokava, H., Xu, J., and Takeya, K. Pregnane glycosides from an antitumor fraction of *Periploca sepium*. Phytochemistry 27 (1988)<sub>a</sub>: 1173-1179.
- \_\_\_\_\_. Studies on chemical constituents of the antitumor fraction from *Periploca sepium*: IV. Structures of new pregnane glycosides periplocosides A, B and C. Chem. Pharm. Bull. 36 (1988)<sub>b</sub>: 982-987. Chemical Abstracts 109: 79558p.
- \_\_\_\_\_. Study on chemical constituents of the antitumor fraction from *Periplaca sepium*: II. Structures of new pregnane glycosides periplocosides D, E, L, and M. Chem. Pharm. Bull. 36 (1988)<sub>c</sub>: 2084-89 Chemical Abstracts 109: 156043w.
- \_\_\_\_\_. Studies on chemical constituents of the antitumor fraction from *Periploca sepium*: V. Structures of new pregnane glycosides, Periplocosides, J, K, F and O. Chem. Pharm. Bull. 36 (1988): 4441-4446. Chemical Abstracts 110: 170260s.
- Jin, Q.D., Zhou, Q.L., and Mu, Q.Z. Two new pregnane oligoglycosides from *Dregea sinensis* var. *corrugata*. J. Nat. Prod. 52 (1989): 1214-1220.
- Jolad, nand D., Bates, R.B., Cole, J.R., Hoffmann, J.J., Siahaan, T.J., and Timmermann, B.N. Cardenolides and a lignin from *Asclepias subulata*. Phytochemistry 25 (1986): 2581-2590.
- Kaur, K.J., Khare, M.P., and Khare, A. A novel polyhydroxy pregnane ester from *Orthenthera viminea*. Phytochemistry 27 (1988): 1809-1811.
- \_\_\_\_\_. A novel pregnane ester tetraglycoside from *Orthenthera viminea*. J. Nat. Prod. 48 (1985): 928-932.
- Kawanishi, K., Hashimoto, Y., Qiang, W., and Zhenwen, X. Separation of the pentacyclic triterpenes tylophenols A and B from *Tylophora kerrii*. Phytochemistry 24 (1985): 2051-2054.
- Keeton, J.F. and Keogh, M. Triterpenes of *Sarcostemma* Asclepiadaceae. Phytochemistry 14 (1975): 290-291.
- Kennard, O., Fawcett, J.K., Watson, D.G., and Kerr, K.A. Hirundigenin and anhydrohirundigenen, Two natural 15-oxasteroids of plant origin. Chemical and x-ray investigation. Tetrahedron Letters 35 (1968): 3799-3804.
- Khan, A.Q., Ahmed, Z., Kazmi, S.N.-ui-H.K., and Malik, A. A new pentacyclic triterpene from *Calotropis procera*. J. Nat. Prod. 11 (1988): 925-928.
- Khan, A.Q., and Malik, A. A steroid from *Calotropis procera*. Phytochemistry 28 (1989): 2859-2861.

- Khare, M.P., Shah, B.B. Structure of buehanin, a new cardenolide from *Cryptolepis buehanani* Roem.& Schult. J. Nepal Chem. Soc. 3 (1983): 21-30. Chemical Abstracts 103: 157298w.
- Khare, N.K., Khare, M.P., and Khare, A. Two pregnane ester glycosides from *Pergularia pallida*. Phytochemistry 23 (1984): 2931-2935.
- Khare, N.K., Kumar, R., Khare, M.P., and Khare, A. A novel pregnane derivative from *Sarcostemma brevistigma*. J. Nat. Prod. 50 (1987): 600-603.
- Kirk, R.E., and Othmer, D.F. Encyclopedia of Chemical Technology. Vol. II. New York: The International Encyclopedia, 1948.
- Kitagawa, I., Zhang, R.-S., Park, J.D., Back, N.I., Takeda, Y., Yoshikawa, M., and Shibuya, Chem.Pharm. Bull. 40 (1992) :2007-2013.
- Komissarenko, N.F., and Bagirov, R.B. Chemical study of *Periploca graeca*. Izv. Akad. Nauk Azerb. SSR. SER. Biol. Nauk. 5 (1969): 122-127. Chemical Abstracts 73: 123456t.
- Komissarenko, N.F., Bagirov, R.B., Khvorost, P.P., and Ivanov, V.D. Coumarins and cardenolides from *Periploca sepium*. Khim. Prir. Soedin 1 (1983): 102-103. Chemical Abstracts 98: 194978g.
- Konda, Y. *et al.* A new modified steroid, hancopregnane, and a new monoterpene from *Cynanchum hancockianum*. J. Nat. Prod. 55 (1992): 1118-1123.
- Kokkalou, E. The constituents of the essential oil from *Lavandula stoechas* L. growing wild in Greece. Planta Medica 54 (1988)<sub>a</sub>: 58-59.
- \_\_\_\_\_. Composition of the volatile oil from *Acinos suaveolens*. Planta Medica 54 (1988)<sub>b</sub>: 340-342.
- Kowalewski, Z., and Drost, K. Chromatographic research of alkaloids in the roots and leaves of *Asclepias syriaca*. Poznan. Tow. Przyjaciol Nauk. Wyd. Lek., Pr. Kom. Farm. 5 (1966): 75-83. Chemical Abstracts 66: 102485s.
- Kozjek, F., and Lebreton, P. C.R. Acad.Sci. 264 (1967): 2409. Annual Index of the Reports on Plant Chemistry (1967): 169.
- Kozjek, F. Farm.Vestn. (Ljubljana) 20 (1969): 125. Chemical Abstracts 72: 118449
- Krishna, G., Shinde, G.V., Shingare, M.S., Khare, A., and Khare, M.P. A pregnane ester tetraglycoside from *Dregea lanceolata*. Phytochemistry 29 (1990): 2961-2964.
- \_\_\_\_\_. Two pregnane ester tetraglycosides from *Dregea lanceolata*. J. Nat. Prod. 53 (1990): 1399-1405.

- Krivenchuk, P.E. A chemistry study of the oil of *Asclepias cornuti* seeds. Trudy Khar'kov Farmatsevi. Inst. (1, 1957): 194-197. Referat. Zhur. Khim., Biol.Khim. (1959) Abtr. No. 2530. Chemical Abstracts 53: 15224.
- Lecomte, H., and Humbert, H. Flore Generale de L' Indo-Chine. Paris: Masson Et Cie, Editeures, 1912-1936.
- Leung, A.Y. Encyclopedia of Common Natural Ingredients Used in Food, Drugs and Cosmetics. New York: John Wiley & Sons, 1980.
- Li, X., Peng, J., and Onda, M. Alkaloids from *Cynanchum hancockianum* (Maxim.) Al. Iljinski. (Asclepiadaceae). Heterocycles 29 (1989): 1797-1808.
- LO, K.-L., Chou, Y.-S., Huang, H., Wang, C.-K., and Yang, T.-H. The cardiotoxic effect of curassavicin isolated from *Asclepias curassvica*. Yao Hsueh Hsueh Pao 11 (1964): 80-84. Chemical Abstracts 61: 3574.
- Lou, H., Li, X., Zhu, T., and Li, W. Sinaptic acid esters and a phenolic glycoside from *Cynanchum hancockianum*. Phytochemistry 32 (1993): 1283-1286.
- Luckner, M. Secondary Metabolism in Microorganisms, Plants, and Animals. New York: Springer-Verlag Berlin Heidelberg, 1990
- Lynn, K.R. Four lysozymes from latex of *Asclepias syriaca*. Phytochemistry 28 (1989): 1345-1348.
- Mahran, G.H., Wanba, S.K., and Saber, G.H. Phytochemical study of *Solenostemma argel* leaves I. Isolation of two crytalline substances. Bull. Fac. Pharm. 6 (1967): 191-198. Chemical Abstracts 74: 10308y.
- Mahato, S.B., Nandy, A.K., and Roy, G. Review article number 67 triterpenoids. Phytochemistry 31 (1992): 2199-2249.
- Manavalan, R., and Mithal, B.M. Constituents of the aerial parts of *Leptadenia eyrotechnica*. Planta Medica 39 (1980): 95.
- Manni, P.E., and Sinsheimer, J.E. Constituents from *Gymnema sylvestre* leaves. J. Pharm. Sci. 54 (1965): 1541-1544.
- Marks, W.H., Fong, H.H.S., Tin-Wa, M., and Farnsworth, N.R. Cytotoxic principles of *Parquetina nigrescens*. J. Pharm. Sci. 64 (1975): 1674-1676. Chemical Abstracts 83: 190395s.
- Martin, R.A., Lynch, S.P., Schmitz, F.J., Pordesimo, E.O., Toth, S., and Horton, R.Y. Cardenolides from *Asclepias asperula* subsp. *capricornu* and *A. viridis*. Phytochemistry 30 (1991): 3935-3939.
- Mascre, M., and Paris, R. "Cisse-novo" An odoriferous plant of French West Africa Ann. pharm. franc. 5 (1947): 228-231. Chemical Abstracts 42: 1022e.



- Maslennikova, V.A., Tursunova, R.N., and Abukakirov, N.K. Khim. Priv. Soedin. 5 (1969): 329. Annual Index of the Reports on Plant Chemistry (1969): 174.
- Mathela *et al.* Chemical varieties of essential oils from *Elsholtzia polystachya* from two different locations in India. Planta Medica 58 (1992): 376-379.
- Mauli, R., Tamm, Ch., and Reichstein, T. Die glykoside von *Glossostelma spathulatum* (K. Schum.) Bullock. Helv. Chim. Acta. 40 (1957): 305-323.
- Mc Lafferty, F.W. Interpretation of Mass Spectra. California: University Science Books, 1980.
- Mc. Lean, R.C., and Ivimey-Cook, W.R. Textbook of Theoretical Botany. Vol. II. London: Longman Green and Co. , 1965.
- Melin, D. Changes in flavonoid compounds of *Periploca graeca* during aging.I. climbing branches. Ann Sci. Univ. Besa con. Botan. 19 (1963): 55-60. Chemical Abstracts 61: 13627d.
- \_\_\_\_\_. Flavonoids of vegetative stems of *Periploca graeca*. Phytochemistry 14 (1975): 2363-2369. Chemical Abstracts 84: 40787c.
- \_\_\_\_\_. Paper Chromatography of the flavonoid content of leaves of *Periploca graeca*. Ann. Sci. Univ. Besancon. Botan. 20 (1964): 87-93. Chemical Abstracts 64: 1007d.
- Miller, L.P. Phytochemistry. Vol. II. New York: Van Nostrand Reinhold Company, 1960.
- Mitsuhashi, H., and Shimizu, Y. On the structure of pergularin. Chem. Pharm. Bull. 12 (1964): 1523-1525.
- \_\_\_\_\_. On the Structure of cynanchogenin. Chem. Pharm. Bull. 7 (1959): 949-951.
- \_\_\_\_\_. Studies on the constituents of Asclepiadaceae plants I. On the components of *Cynanchum caudatum* Max. Chem. Pharm. Bull. 8 (1960): 313-317.
- \_\_\_\_\_. Studies on the constituents of Asclepiadaceae plants. IV. The structure of cynanchogenin. Chem. Pharm. Bull. 10 (1962): 719-724.
- Mitsuhashi, H., and Tomimota, K. Components of *Periploca aphylla*: Constituents of asclepiadaceous plants. Shoyakugaku Zaaahi 25 (1971): 7-10. Chemical Abstracts 75: 148512n.
- Mitsuhashi, H., Hiroshige, T., Takemori, I., Shimizu, Y., Nomura, T., and Yamada, E. Studies on the constituents of Asclepiadaceae plants.IX. On the components of *Cynanchum caudatum* Max. Chem. Pharm. Bull. 10 (1962): 818-822.

- Mitsuhashi, H., Nomura, T., Shimizu, Y., Takemori, I., and Yamada, E. Studies on the constituents of Asclepiadaceae plants.VIII. On the componenes of *Metaplexis japonica* Makino.1.Chem. Pharm. Bull. 10 (1962): 811-817.
- Mitsuhashi, H., Sato, T., and Nomura, T. ibid 13 (1965): 267. Annual Index of the Reports on Plant Chemistry (1965): 155.
- Mitsuhashi, H., Takemori, I., Shimizu, Y., Nomura, T., and Yamada, E. Studies on the constituents of Asclepiadaceae plants.VI. On the components of *Marsdenia tomentosa* Decne. Chem. Pharm. Bull. 10 (1962): 804-808.
- Mitsuhashi, H., Mizuta, Y. Y.Z. 89 (1969): 1352. Annual Index of the Reports on Plant Chemistry (1969): 174.
- Miyakawa, S., Yamaura, K., Hayashi, K., Kaneko, K., and Mitsuhashi, H. Five glycosides from the Chinese drug " Tong-Guang-San ": The stems of *Marsdenia tenacissima*. Phytochemistry 25 (1986): 2861-2865.
- Msonthi, J.D., Toyata, M., Marston, A., and Hostettmann, K. A novel phenolic glycoside from *Mondia whytei*. Planta Medica 55 (1989): 618.
- Mulchandani, N.B., and Venkatachalam, S.R. Alkaloids of *Pergularia pallida* Phytochemistry 15 (1976): 1561-1563.
- \_\_\_\_\_. Tylophorinicine, A phenanthroindolizidine alkaloid from *Tylophora asthmatica* and *Pergularia pallida*. Phytochemistry 23 (1984): 1206.
- Mulchandani, N.B., Iyer, S.S., and Badheka, L.P. Structure of tylophorinidine: a new potential antitumour alkaloid from *Tylophora asthmatica* plants. Chemistry and Industry (1971): 505-506.
- Murti, P.B.R., and Seshadri, T.R. Chemical components of roots of *Decalepis hamiltonii* (Makali veru): I. Chemical composition of the roots. Proc. Indian Acad. Sci. 13A (1941): 221-232. Chemical Abstracts 35: 6618<sup>9</sup>.
- \_\_\_\_\_. Chemical components of roots of *Decalepis hamiltonii* (Makali veru): II. Preparation of inositol by solvent extraction. Proc. Indian Acad. Sci. 13A (1941): 263-265. Chemical Abstracts 35: 6619<sup>1</sup>.
- \_\_\_\_\_. Chemical components of roots of *Decalepis hamiltonii* (Makali veru): III. Comparison with *Hemidesmus indicus* (Indian Sarsaparilla). Proc. Indian Acad. Sci. 13A (1941): 399-403. Chemical Abstracts 36: 1735<sup>3</sup>.
- Nasciments, J.M. Cardenolides in leaves of *Asclepias glaucophylla*. Rev. Part. Quim. 6 (1964): 97-107. Chemical Abstracts 64: 5449f.
- Nascimento, J .M., Tamm, C., Jagar, H., and Reichstein, T. Die glykoside der wurzeln von *Asclepias glaucophylla* Schlechter. Helv. Chim. Acta. 47 (1964): 1775-1792.

- Neimann, G.J. Flavonoids and other phenolics in leaves of *Hoya* species. Planta Medica 39 (1980): 221.
- Nikaido, H., Shimizu, Y., and Mitsuhashi, H. Components of *Boucerosia aucheriana* Decne. Chem. Pharm. Bull. 15 (1967): 725-726.
- Nomura, T., and Mitsuhashi, H. Components of *Metaplexis japonica* Makino. Chem. Pharm. Bull. 20 (1972): 1344-1347.
- Nomura, T., Fukai, T., and Kuramochi, T. Components of *Metaplexis japonica* Makino VII. Structure of a new 7-oxygenated pregnane derivative. Planta Medica 40 (1981): 206-207.
- Noor, F., Ahmed, A., Imtiazuddin, S.M., and Khan, B. A triterpenoid from *Leptadenia pyrotechnica*. Phytochemistry 32 (1993): 211-212.
- Novak, M. and Salemink, C.A. The essential oil of *Erythroxylum coca*. Planta Medica 53 (1987): 113.
- Oberai, K., Khare, M.P., and Khare, A. A pregnane ester diglycoside from *Hemidesmus indicus*. Phytochemistry 24 (1985): 2395-2397.
- \_\_\_\_\_. A pregnane ester diglycoside from *Sarcostemma brevistigma*. Phytochemistry 24 (1985)<sub>a</sub>: 1341-1344.
- \_\_\_\_\_. A pregnane ester triglycoside from *Sarcostemma brevistigma*. Phytochemistry 24 (1985)<sub>b</sub>: 3011-3013.
- Ogundaini, A.O., and Okafor, E.O. Isorhoifolin, a flavonoid glycoside from *Periploca nigrescens* leaves. Planta Medica 53 (1987): 391. Chemical Abstracts 107: 172500g.
- Ogunkoya, L. Application of mass spectrometry in structural problems in structural problems in triterpenes. Phytochemistry 20 (1981): 121-126.
- Padhy, S.N., Mahato, S.B., and Dutta, N.L. Triterpenoids from the roots of *Hemidesmus indicus*. Phytochemistry 12 (1973): 217-218. Chemical Abstracts 78: 94835m.
- Pailer, M., and Streicher, W. Alkaloids from *Vincetoxicum officinale*. Monatsh. Chem. 96 (1965) : 1094-1102. Chemical Abstracts 63 : 16774b.
- Patricic, J. Farm.Glas. 23 (1967): 3. Chemical Abstracts 67: 8686.
- Petricic, J. Arch. d. Pharm. 299 (1966): 1007. Annual Index of the Reports on Plant Chemistry (1966): 180.
- Piatak, D.M., Patel, J., Totten, C.E., Swenson, R.P., Brown, P., and Pettit, G.R. Cell growth inhibitory glycosides from *Asclepias amplexicaulis*. J. Nat. Prod. 48 (1985): 470-471.

- Platonova, T.F., Kuzovkov, A.D., and Massagetov, P.S. Alkaloids of Asclepiadaceae. Zhur. Obshchei Khim. 28 (1958) :3131-3133. Chemical Abstracts 53: 7506c.
- Polonia, J., Kuritzkes, A., Jager, W., and Reichstein, T. ibid. 42 (1959): 1437. Annual Index of the Reports on Plant Chemistry (1959): 92.
- Pongboonrod, S. Maithet Mueang Thai. Bangkok: Kasembanakij Press, 1950.
- Porter, J.W. and Spurgeon, S.E. Biosynthesis of Isoprenoid Compounds. Vol. I. New York: John Wiley and Sons, 1981.
- Poucher, C.T., and Behnke, J. The Aldrich Library of <sup>13</sup>C and <sup>1</sup>H FT NMR Spectra Vol.II. Aldrich Chemical Company, Inc., 1993.
- Poucher, W.A. Perfumes, Cosmetics and Soaps. Vol.I The Raw Materials of Perfume. London: Chapman and Hall, 1974.
- Pradhan, B.P., Mukhopadhyay, M.M. Chemical investigation *Finlaysonia obovata* Wall. J. Indian Chem. Soc. 62 (1985): 629. Chemical Abstracts 104: 126584c.
- Prakash, K., Sethi, A., Deepak, D., Khare, A., and Khare, M.P. Two pregnane glycosides from *Hemidesmus indicus*. Phytochemistry 30 (1991): 297-299.
- Purushothaman, K.K., Vasanth, S., Connoll, J.D., and Rycroff, D.S. New sarverogenin and isorarverogenin glycosides from *Cryptolepis buchanani*. Rev. Latinoam. Quim. 19 (1988): 28-31. Chemical Abstracts 109: 208149q
- Qiduan, J., Qianlan, Z., and Quanzhang, M. A pregnane triglycoside ester from *Dregea sinensis* var. *corrugata*. Phytochemistry 28 (1989): 1273-1275.
- Qiu, S.X., Zhang, Z.X., and Zhou, J. Steroidal glycosides from the root of *Cynanchum versicolor*. Phytochemistry 28 (1989): 3175-3178.
- Qiu, S.X., Zhang, Z.X., Yong, L., and Zhou, J. Two new glycosides from the roots of *Cynanchum versicolor*. Planta. Medica 57 (1991): 454-456.
- Rao, D.V., and Rao, E.V. Constituents of the bark of *Marsdenia volubilis*. Phytochemistry 8 (1969): 1609.
- Rao, G.S., and Sinsheimer, J.E. Structure of Gymnemagenin. Chem. Comm. (1968): 1681-1682.
- Rao, K.V., Willson, R.A., and Cummings, B. Alkaloids of *Tylophora* I. : Isolation of six new alkaloids. J. Pharm. Sci. 59 (1970) 1501-1502.

- \_\_\_\_\_. Alkaloids of *Tylophora* III. : New alkaloids of *Tylophora indica* (Burm) Merrill and *Tylophora dalzellii* Hook.f. J. Pharm. Sci. 60 (1971): 1725-1726.
- Rao, M.G.S., and Iyengar, M.S. 4-Methoxy-resorcylaldehyde from the roots of *Decalepis namiltonii*. Perfumery Essent. Oil Record 14 (1923): 300-301. Chemical Abstracts 17: 3490<sup>3</sup>.
- Rasool, N., Ahmad, V.U., and Malik, A. Terpenoids from *Pentatropis spiralis*. Phytochemistry 30 (1991): 1331-1332.
- Rasool, N., Khan, A.Q., Ahmad, V.U., and Malik, A. A new cycloartane-type triterpene from *Pentatropis spiralis*. J. Nat. Prod. 54 (1991): 889-892.
- Raymond-Hamet. *Menabea venenata* Bailon. Compt. Rend. Soc. Biol. 21 (1936): 1027-1029. Chemical Abstracts 30: 4994<sup>9</sup>.
- \_\_\_\_\_. Some physiological properties of the alkaloid of *Cryptolepis sanguinolenta*. Compt. Rend. Soc. Biol. 126 (1937): 768-770. Chemical Abstracts 32: 2211<sup>6</sup>.
- Reichstein, P., Stocklin, W., Reichstein, T. Versuche zur strukturermittlung der cardenolide F, H, I, T und U aus *Glossostelma carsoni* (N.E.Br.) Bullock. Helv. Chim. Acta. 50 (1967): 2139-2147.
- Reichstein, P., Kaufmann, H., Stoecklin, W., Reichstein, T. Die Glykoside der wurzeln von *Glossostelma carsoni* (N.E.Br.).Bullock. Helv. Chim. Acta. 50 (1967): 2114-2138.
- Reichstein, T. Chemische rassen von *Strophanthus sarmentosus* P. DC. Planta Medica 11 (1963): 293-302.
- Reinhold, L., Harborne, J.B., and Swain, T. Progress in Phytochem. Volumn 5. Oxford: Pergamon Press, 1978.
- Reynolds, W.F., McLean, S., and Poplawski. Total assignment of <sup>13</sup>C and <sup>1</sup>H spectra of three isomeric triterpenol derivatives by 2D NMR: An investigation of the potential utility of <sup>1</sup>H chemical shifts in structural investigation of complex natural products. Tetrahedron 42 (1986): 3419-3428.
- Richards, J.H., and Hendrickson, J.B. The Biosynthesis of Steroids, Terpenes, and Acetogenins. New York: W.A.Benjamin, Inc. , 1964.
- Rodriguez- Hahn, L. and Fonseca, G. The cardenolide content of *Asclepias linaria*. Phytochemistry 12 (1991): 3941-3942.
- Saber, A.H., Mahran, G.H., Rizkallah, M.M. Bull. Fac. Pharm. 7 (1968): 91. Chemical Abstracts 73: 63160.

- Sady, M. B., and Seiber, J. N. Chemical differences between species of *Asclepias* from the intermountain region of North America. Phytochemistry 30 (1991): 3001-3003.
- Sakuma, S., Ishizone, H., Kasai, R., Kawanishi, S., and Shoji, J. Constituents of Chinese crude drug "Wujiapi" III. On the structure of glycoside G and K of Bei-Wujiapi. Chem. Pharm. Bull. 19 (1971): 52-59.
- Sakuma, S., Kawanishi, S., Shoji, J., and Shibata, S. Constituents of Chinese crude drug "Wujiapi" I. Studies on the aglycones of steroidal glycosides of Pei-Wujiapi. (1). Chem. Pharm. Bull. 16 (1968): 327-331.
- Salgues, R. Performed  $C_nH_{2n+2}$  hydrocarbons in plant tissues. Compt. rend. congr. soc. Savantes Paris et depts. Sect. sci. 83e, Aix et Marseille (1958): 393-400. Chemical Abstracts 55: 17772.
- Sanduja, R., Lo, W.Y.R., Euler, K.L., Alam, M., and Morton, J.F. Cardenolides of *Cryptostegia madagascariensis*. J. Nat. Prod. 47 (1984): 260-265. Chemical Abstracts 101: 20572v.
- Saner, A., and Allgeier, H. Struktur der Marssectobiose. Helv. Chim. Acta. 52 (1969): 1655-1661.
- Saner, A., Stockel, K., and Reichstein, T. Glykoside von *Marsdenia erecta* R.Br. 2. Mitteilung: Versuche zur strukturbestimmung der genine. Helv. Chim. Acta. 55 (1972): 1221-1242.
- Sawlewicz, L., Weiss, Ek., and Reichstein, T. Helv. Chim. Acta. 50 (1967): 504. Annual Index of the Reports on Plant Chemistry (1967): 167.
- \_\_\_\_\_. Helv. Chim. Acta. 50 (1967): 530. Annual Index of the Reports on Plant Chemistry (1967): 167.
- Schaub, F., Kaufmann, H., Stoecklin, W., and Reichstein, T. Die pregnanglykoside der oberirdischen teile von *Sarcostemma viminalis* (L.) R.Br. Helv. Chim. Acta. 51(1968): 738-767.
- Schaub, F., Stoecklin, W., and Reichstein, T. Die struktur der genine G (12-O-Benzoyl-desacetylmethylgenin) und H (Di-O-Benzoyl-viminolon) aus den stengeln von *Sarcostemma viminalis* (L.) R.Br. Helv. Chim. Acta. 51 (1968): 767-772.
- Schenker, E., Hunger, A., and Reichstein, T. The glycosides of *Periploca nigrescens*. Helv. Chim. Acta. 37 (1954): 1004-1036. Chemical Abstracts 49: 10335b.



- Schmid, W., Nehlinger, H.P., Tamm, Ch., and Reichstein, T. Die glykoside der worzein und samen von *Pachycarpus schinzianus* (Schltr.) N.E.Br. Helv. Chim. Acta. 42 (1959): 72-121.
- Scott, A.I. Interpretation of the UV Spectra of Natural Products. Oxford, London: Pergamon Press, 1964.
- Seiber, J.N., Nelson, C.J., and Lee, S.M. Cardenolides in the latex and leaves of seven *Asclepias* species and *Calotropis procera*. Phytochemistry 21 (1982): 2343-2348.
- Seiber, J.N., Roeske, C.N., and Benson J.M. Three new cardenolides from the milk weeds *Asclepias eriocarpa* and *A. labriiformis*. Phytochemistry 17(1978): 967-970.
- Seo, S., Tomita, Y., and Tori, K. Carbon-13 spectra of urs-12-enes and application to structural assignments of components of *Isodon japonicus* Hara Tissue cultures. Tetrahedron Letters (1, 1975): 7-10.
- Seshadri, T.R., and Vydeeswaran, S. Chemical constituents of *Daemia extensa* (roots). Current Sci. 40 (1971): 594.
- Sethi, A., Deepak, D., Khare, M.P., and Khare, A. A novel pregnane glycoside from *Periploca calophylla*. J. Nat. Prod. 51 (1988): 787-790.
- Shah, B.B., Khare, M.P. *Cryptolepis buchmani* Roem.& Schult. A new source of sarmentogenin. J. Nepal Chem. Soc. 1(1981): 103-107. Chemical Abstracts 103: 157297v.
- Shaw, A.H.K. A Dictionary of Flowering Plants and Ferns 8th ed. Cambridge: University Press, 1988.
- Sholichin, M.S., Yamasaki, K., Kasai, R., and Tanaka, O. <sup>13</sup>C Nuclear magnetic resonance of lupane-type triterpenes, lupeol, betulin and betulinic acid. Chem. Pharm. Bull. 28 (1980): 1006-1008.
- Shoji, J., Kawanishi, S., Sakuma, S., Okino, H., and Sano, M. A new acetylbiase from steroidal glycosides of "Pei-Wujiapi". Chem. Pharm. Bull. 16 (1968): 2308-2310.
- Sierp, D., Stoecklin, W., Reichstein, T. Components of *Margaretta rosea* roots. Helv. Chim. Acta. 53 (1970): 27-47(Ger). Chemical Abstracts 72: 75639k.
- Silverstein, R.M., Bassler, G.C. and Morrill, T.C. Spectrometric Identification of Organic Compounds. 4th ed. New York: John Wiley & Sons, 1981.
- Smitinand, T. Thai Plant Names (Botanical names-vernacular names) 2nd.ed. Funny Publishing, 1980.
- Simonsen, J., and Ross, W.C.J. The Terpenes. Cambridge: University Press, 1957.

- Singh, B., Rastogi, R.P. Chemical investigation of *Asclepias curassavica*. Indian J. Chem. 7 (1969): 1105-1110. Chemical Abstracts 72: 35718d.
- Singhal, S., Khare, M.P., and Khare, A. Cissogenin, A pregnane genin from *Marsdenia tenacissima*. Phytochemistry 19 (1980)<sub>a</sub>: 2427-2430.
- \_\_\_\_\_. Tenasogenin a pregnane ester from *Marsdenia tenaciissima*.. Phytochemistry 19 (1980)<sub>b</sub>: 2431-2433.
- Sinsheimer, J.E., and McIlhenny, H.M. Structure of gymnamine: a trace alkaloid from *Gymnema sylvestre* leaves. Chemistry and Industry (1 July, 1972): 537-538.
- Solaculu, T., and Herrmann, G. Presence of a new glucoside and a new hydrolytic enzyme in the bark of *Periploca graeca*. Compt. Rend. Soc. Biol. 117 (1934): 1138-1140. Chemical Abstracts 29: 2198<sup>6</sup>.
- Solaculu, T., Herrmann, G., Mavrodin, A., and Georges, H. The odoriferant principle of the plant *Periploca graeca*. J. Pharm. Chim. 22 (1935): 548-556. Chemical Abstracts 30: 454150.
- Srivastava, O.P., Khare, A., and Khare, M.P. Structure of Calocin. J. Nat. Prod. 45 (1982): 211-215.
- \_\_\_\_\_. Triterpenoids of *Periploca calophylla*. J. Nat. Prod. 46 (1983): 458-461. Chemical Abstracts 99: 155240w.
- Srivastava, S., Khare, M.P., and Khare, A. Cardenolide diglycosides from *Oxystelma esculentum*. Phytochemistry 32 (1993): 1019-1021.
- \_\_\_\_\_. Cardenolide tetraglycoside from *Oxystelma esculentum*. Phytochemistry 30 (1991): 301-303.
- Stoeckel, K., Reichstein, T. Glycosides of *Vincetoxicum hirsutinaria*. Sci. Pharm. 37 (1969): 47-49 (Ger).
- Stoeckel, K., Stoecklin, W., and Reichstein, T. Helv. Chim. Acta. 52 (1969): 1175. Annual Index of the Reports on Plant Chemistry (1969): 176.
- Stoll, A., and Renz, J. Periplocin, the true cardiac glucoside of *Periploca graeca*. Helv. Chim. Acta. 22 (1939): 1193-1208. Chemical Abstracts 34: 1326<sup>3</sup>.
- Stumpf, P.K. and Conn, E.E. The Biochemistry of Plants. Vol. IV. New York: Academic Press, 1980.
- Subramanian, S.S., and Nair, A.G.R. Chemical components of the follicles of *Leptadenia reticulata*. Current Sci. 37 (1968): 373-374. Chemical Abstracts 69: 49774u .
- \_\_\_\_\_. Flavonoids of some asclepiadaceous plants. Phytochemistry 7 (1968): 1703-1704.

- Sugama, K., and Hayashi, K. A glycoside from dried roots of *Cynanchum paniculatum*. Phytochemistry 27 (1988): 3984-3986.
- Sugama, K., Hayashi, K., Mitsushashi, H., and Kaneko, K. Studies on the constituents of Asclepiadaceae plants LXVI. The structures of three new glycosides cynapanosides A, B, and C, from the Chinese drug "Xu-Chang-Qing", *Cynanchum paniculatum* Kitagawa. Chem. Pharm. Bull. 34 (1986): 4500-4507.
- Summons, R.E., Ellis, J., and Gellert, E. Steroidal alkaloids of *Marsdenia rostrata*. Phytochemistry 11 (1972): 3335-3339.
- Tabulated phytochemical reports. Phytochemistry 11(1975): 1467-1468.
- Takayanaki, H. *et al.* The crystal and molecular structures of hancokinol and hancolupenone from *Cynanchum hancockianum* (Maxin.) Al. Iljinski. (Asclepiadaceae). Chem. Pharm. Bull. 39 (1991): 1234-1237.
- Tanaka, T., Tsukamoto, S., and Hayashi, K. Pregnane glycosides from *Boucerosia aucheriana*. Phytochemistry 29 (1990): 229-237.
- Thakur, S., Das, P., Itoh, T., Imai, K., and Matsumoto, T. Latex extractables of *Calotropis gigantea*. Phytochemistry 23 (1984): 2085-2087.
- Tiwari, K.N., Khare, A., Khare, M.P. Orgogenin, A pregnane derivative from *Orthenthera viminea*. Phytochemistry 24 (1985): 2391-2394.
- Toth, L., Haznagy, A., and Makay, Zs. Beitrag zu den untersuchungen der inhaltstoffe von *Cynanchum vincetoxicum* VI. Planta Medica 17 (1969): 35.
- Toth, L., Haznagy, A., and Snatzke, G. Compounds with triterpene structure in *Vincetoxicum*.. Herba Hung. 8 (1969): 145-147. Chemical Abstracts 72: 11484 s.
- Trivedi, R., Khare, A., and Khare, M.P. A pregnane ester oligoglycoside from *Oxystelma esculentum*. Phytochemistry 28 (1989): 1211-1213.
- \_\_\_\_\_. A pregnane ester tetraglycoside from *Oxystelma esculentum*. Phytochemistry 27 (1988): 2297-2300.
- \_\_\_\_\_. A pregnane triglycoside from *Oxystelma esculentum*. Phytochemistry 29 (1990): 3967-3970.
- Tronchet, J., and Melin, D. Comparison by paper chromatography of flavonoids of the twining organs of *Convolvulus sepium* and *Periploca graeca*. Bull. Soc. Hist. Nat. Doubs. 64 (1962): 41-47. Chemical Abstracts 59: 3083c.
- Tschesche, R., and Brathg, K.-H. Ber. 85 (1952): 1042. Annual Index of the Reports on Plant Chemistry (1959): 51.

- Tschesche, R., Forstmann, D., and Rao, V.K.M. Ber. 91(1958): 1204. Annual Index of the Reports on Plant Chemistry (1958): 51.
- Tschesche, R., Freytag, W., and Snatzke, G. Ber. 92 (1959): 3053. Annual Index of the Reports on Plant Chemistry.(1959): 51.
- Tschesche, R., Ruhsen, M.-E., and Snatzke, G. Ber. 88 (1955): 686. Annual Index of the Reports on Plant Chemistry (1959): 91.
- Tschesche, R., and Snatzke, G. Ann. 636 (1960): 105. Annual Index of the Reports on Plant Chemistry (1960): 98.
- Tsukamoto, S. *et al.* Studies on the constituents of Asclepiadaceae Plants LXIV. The structure elucidation of cynafogenin. Chem. Pharm. Bull. 34 (1986): 1337-1339.
- Tsukamoto, S., Hayashi, K., and Kaneko, K. Studies on the constituents of Asclepiadaceae plants. part 67. Further studies on glycosides with a novel sugar chain containing a pair of optically isomeric sugars, D- and L-cymarose from *Cynanchum africanum*. J. Chem. Soc. Perkin Trans.I (1988): 2625-2631.
- Tsukamoto, S., Hayashi, K., Kaneko, K., and Mitsuhashi, H. Studies on the constituents of Asclepiadaceae plants LXV. The optical resolution of D- and L-cymaroses. Chem. Pharm. Bull. 34 (1986): 3130-3134.
- Utkin, L.M., and Serebryakova, A.P. New flavone glycoside from *Antitoxicum funebre*. Khim. Prir. Soedin. 2 (1966): 319-321 (Russ.). Chemical Abstracts 66: 76266z.
- Van Beek, T.A., Verpoorte, R., Svendsen, A.B., and Fokkens, R. Antimicrobially active alkaloids from *Tabernaemontana chippii*. J. Nat. Prod. 48 (1985): 400-423.
- Venkateswara, R., Narendra, N., Viswamitra, M.A., And Vaidyanathan, C.S. Cryptosin, A cardenolide from the leaves of *Cryptolepis buchanani*. Phytochemistry 28 (1989): 1203-1205.
- Viswanathan, N., and Pai, B.R. Alkaloids of *Tylophora mollissima*. J. Nat. Prod. 4 (1985): 997-998.
- Windholz, M., ed. The Merck Index. 10th ed. An Encyclopedia of Chemicals, Drugs, and Biologicals. U.S.A.: Merck & Co., Inc., 1983.
- Watson, T.R. The cardiac glycosides of *Asclepias fruticosa*. Colloq. Int. Centre Nat. Rech.Sci. 144 (1966): 173-179. Chemical Abstracts 67: 117200q.

- Wiegrebe, W., Faber, L., Brockmann, H.Jr., Budzikiewicz, J., and Krueger, U. Ann. 721 (1969): 154. Annual Index of the Reports on Plant Chemistry (1969): 174.
- Xu, J., Takeya, K., and Itokawa, H. Pregnanes and cardenolides from *Periploca sepium*. Phytochemistry 29 (1990): 344-346.
- Yamagishi, T., and Mitsunashi, H. Structures of ikemagenin and isoikemagenin. Chem. Pharm. Bull. 20 (1972): 2070-2071.
- \_\_\_\_\_. The structure of caudatin. Chem. Pharm. Bull. 20 (1972): 625-626.
- Yamagishi, T., Hayashi, K., Kiyama, R., and Mitsunashi, H. Structure of glycocynanchogenin, a novel polyoxypregnane. Tetrahedron Letters 39 (1972): 4005-4008.
- Zhang, Z.X., Zhou, J., Hayashi, K., and Kaneko, K. Atratosides A, B, C and D, steroid glycosides from the root of *Cynanchum*. Phytochemistry 27 (1988): 2935-29941.
- Zorina, A.D., Matyukhina, L.G., and Ryabinin, A.A. Triterpenes in some plant species. Khim. Prirodn. Soedin. Akad. Nauk Uz. SSR. 2 (1966): 291. Chemical Abstracts 66: 487h.

## APPENDIX



a) Hexane : Diethylether (10 : 1)

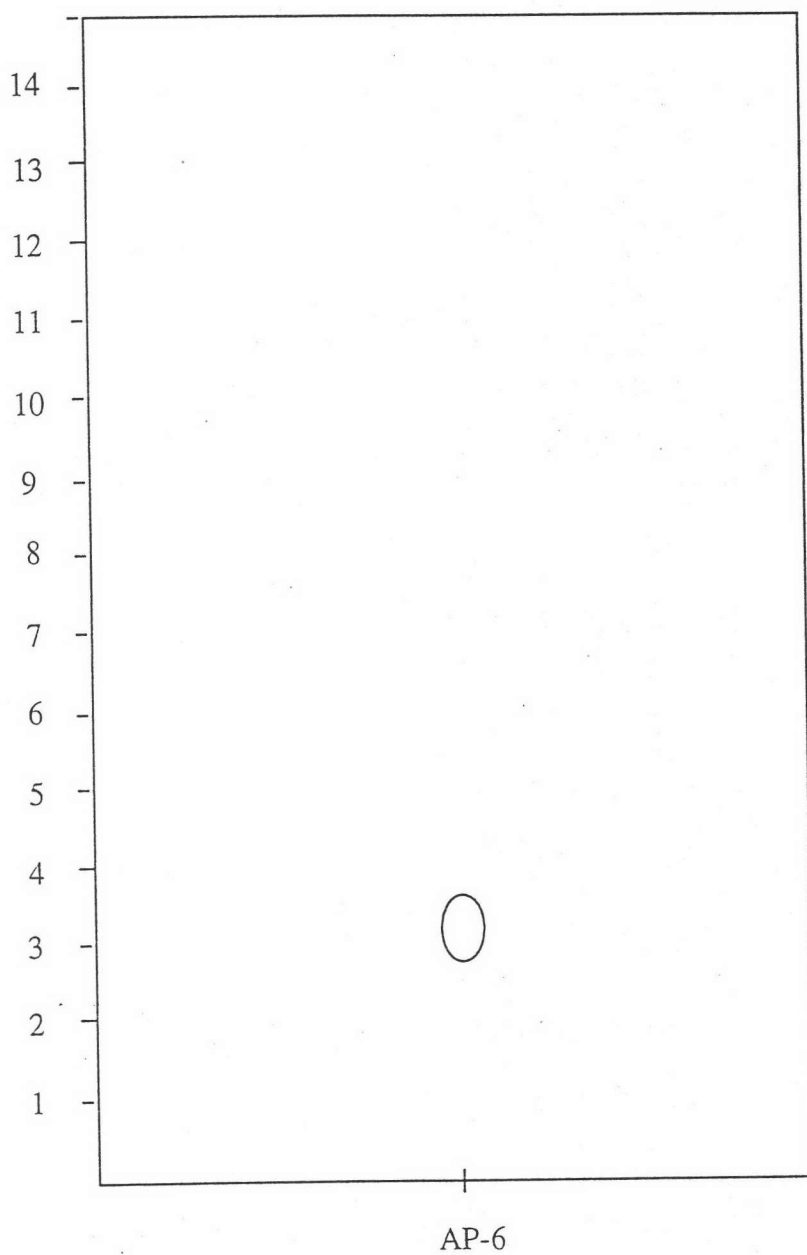


Figure 3.1 Thin-layer chromatogram of AP-6

b) Hexane :  $\text{CHCl}_3$  (2 : 1)

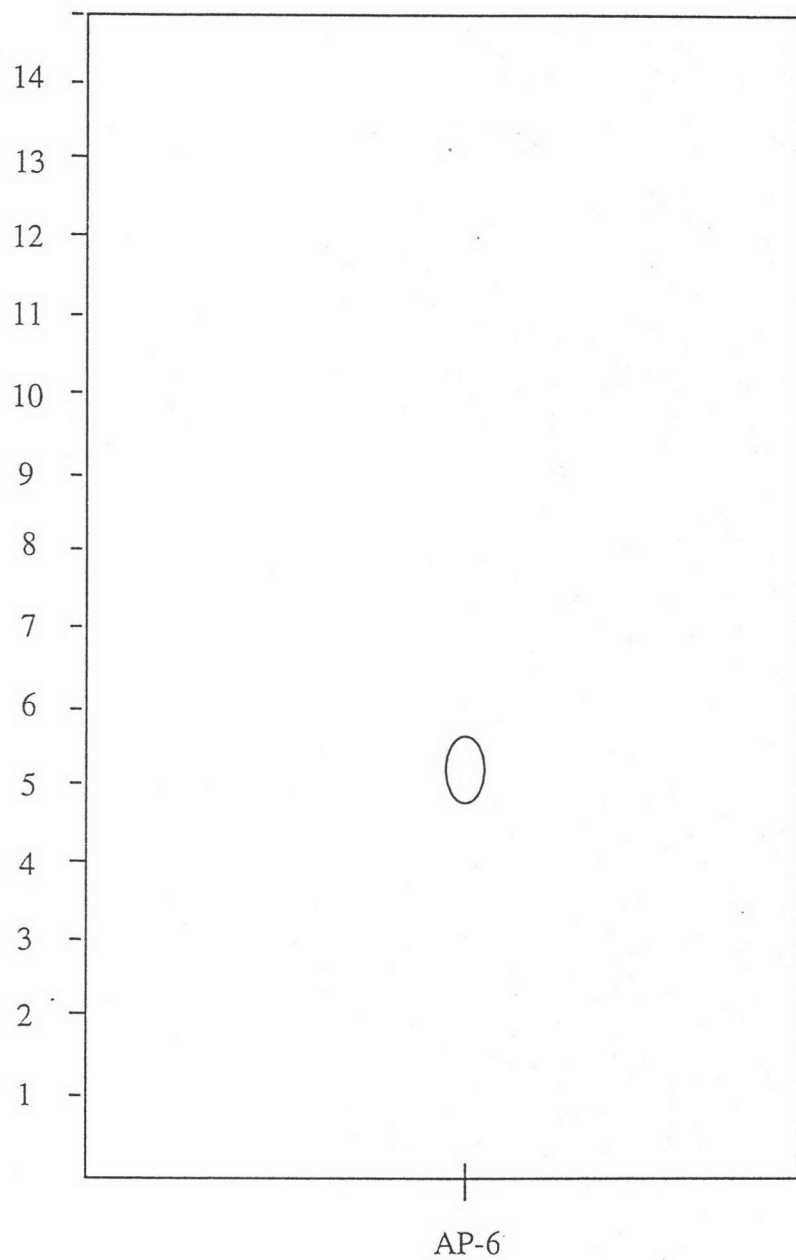


Figure 3.2 Thin-layer chromatogram of AP-6

c) Petroleum ether :  $\text{CH}_2\text{Cl}_2$  (2 : 1)

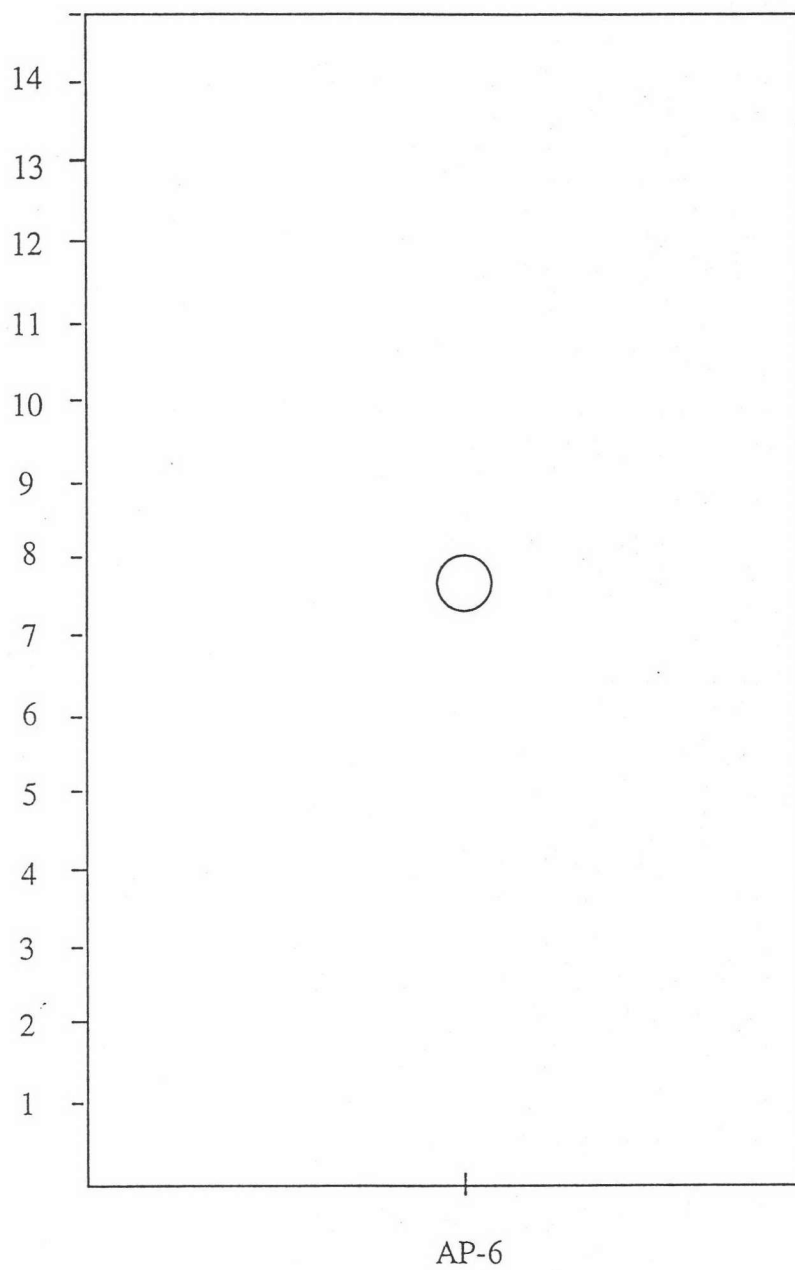


Figure 3.3 Thin-layer chromatogram of AP-6

d) Hexane :  $\text{CH}_2\text{Cl}_2$  (1 : 1)

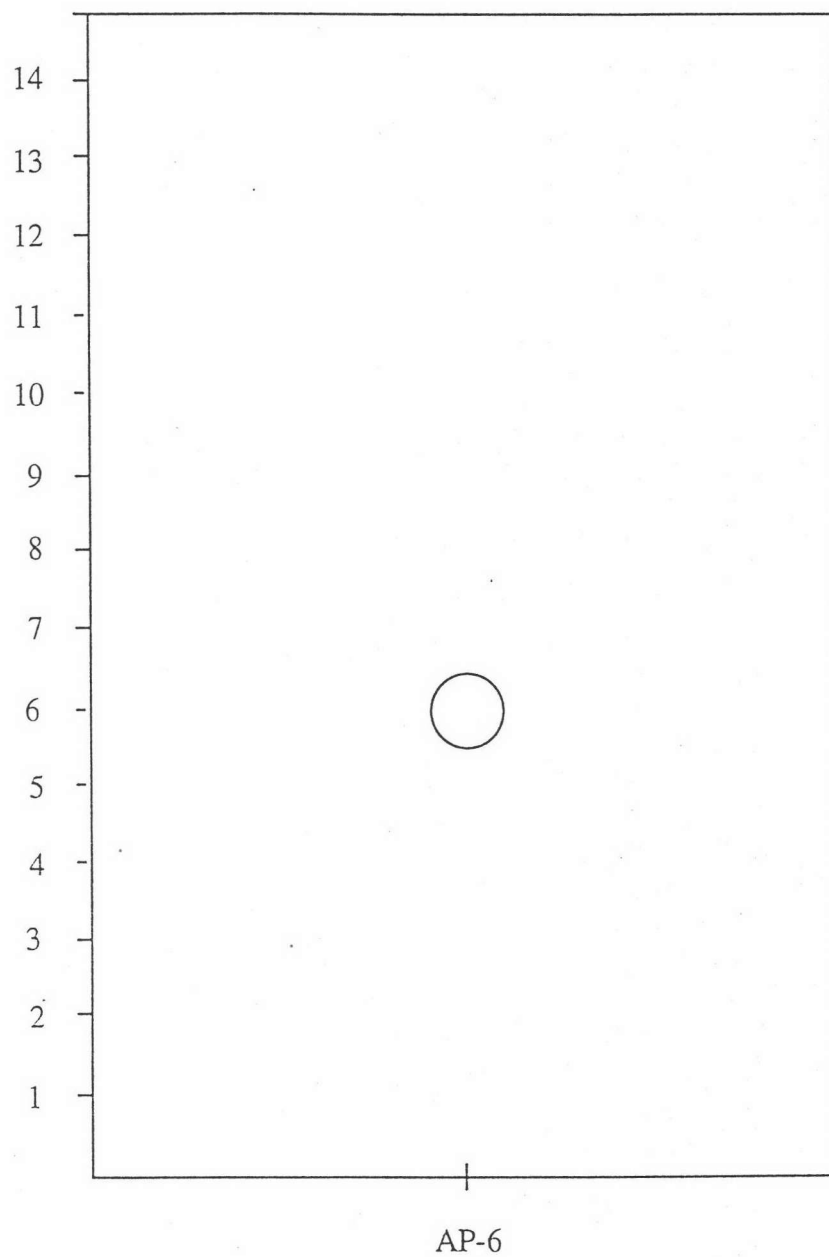


Figure 3.4 Thin-layer chromatogram of AP-6

e) Hexane : Ethyl acetate (10 : 1)

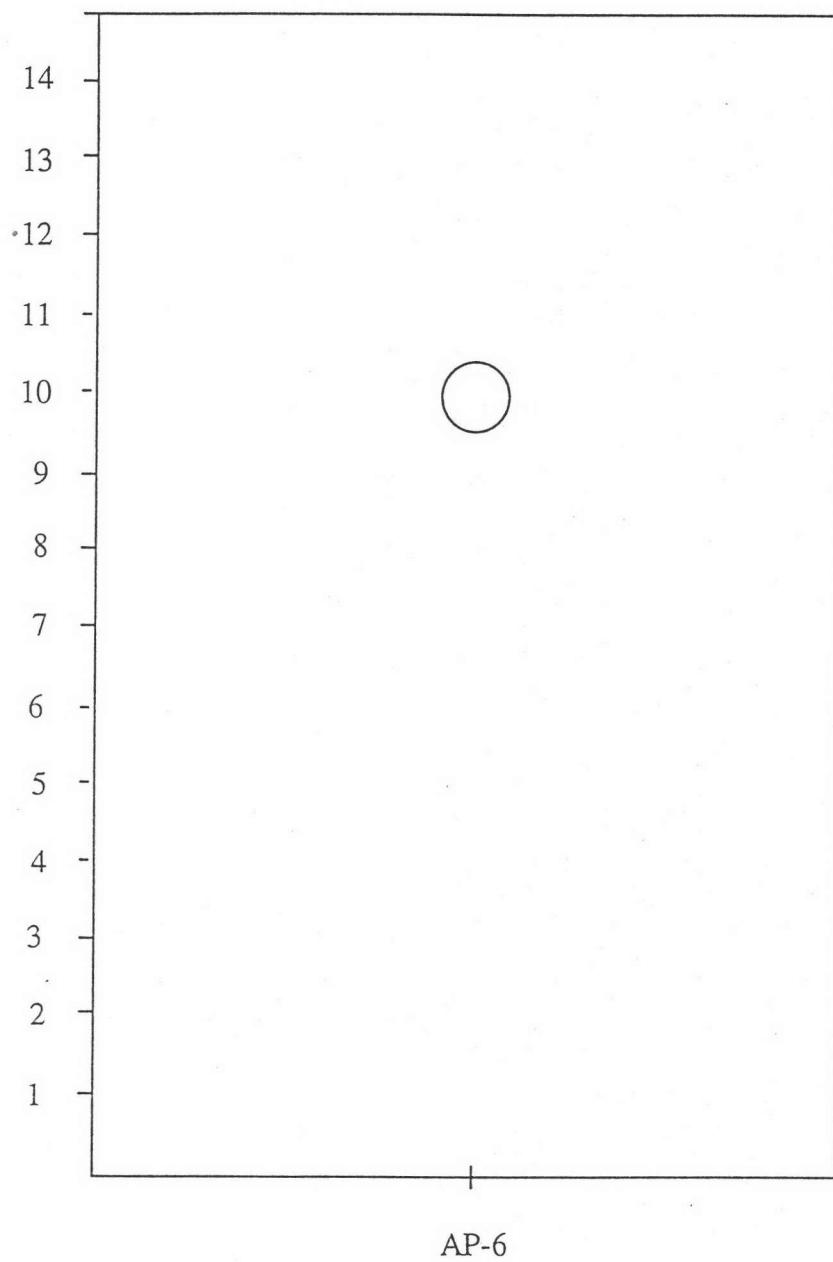


Figure 3.5 Thin-layer chromatogram of AP-6

a) Cyclohexane : Benzene (1 : 2)

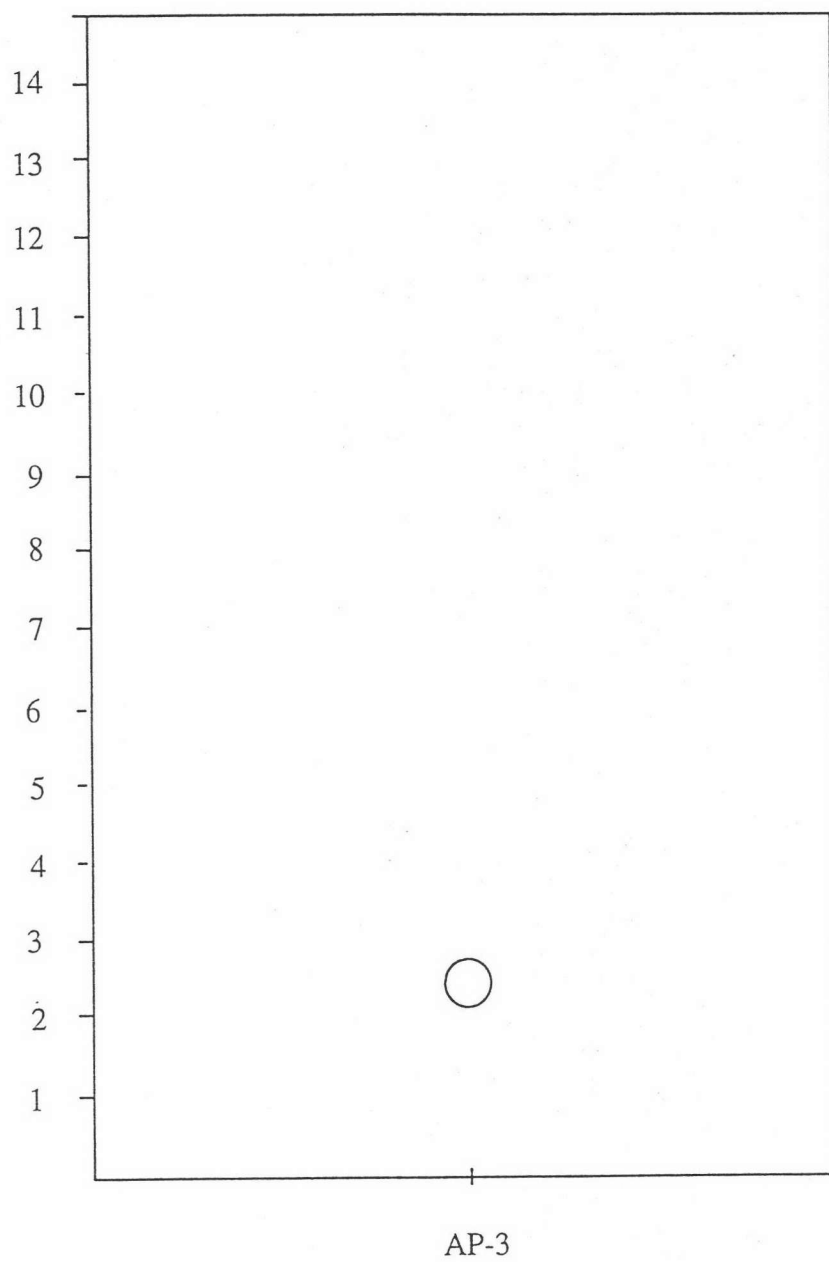


Figure 3.6 Thin-layer chromatogram of AP-3



b) Cyclohexane :  $\text{CH}_2\text{Cl}_2$  (4 : 1)

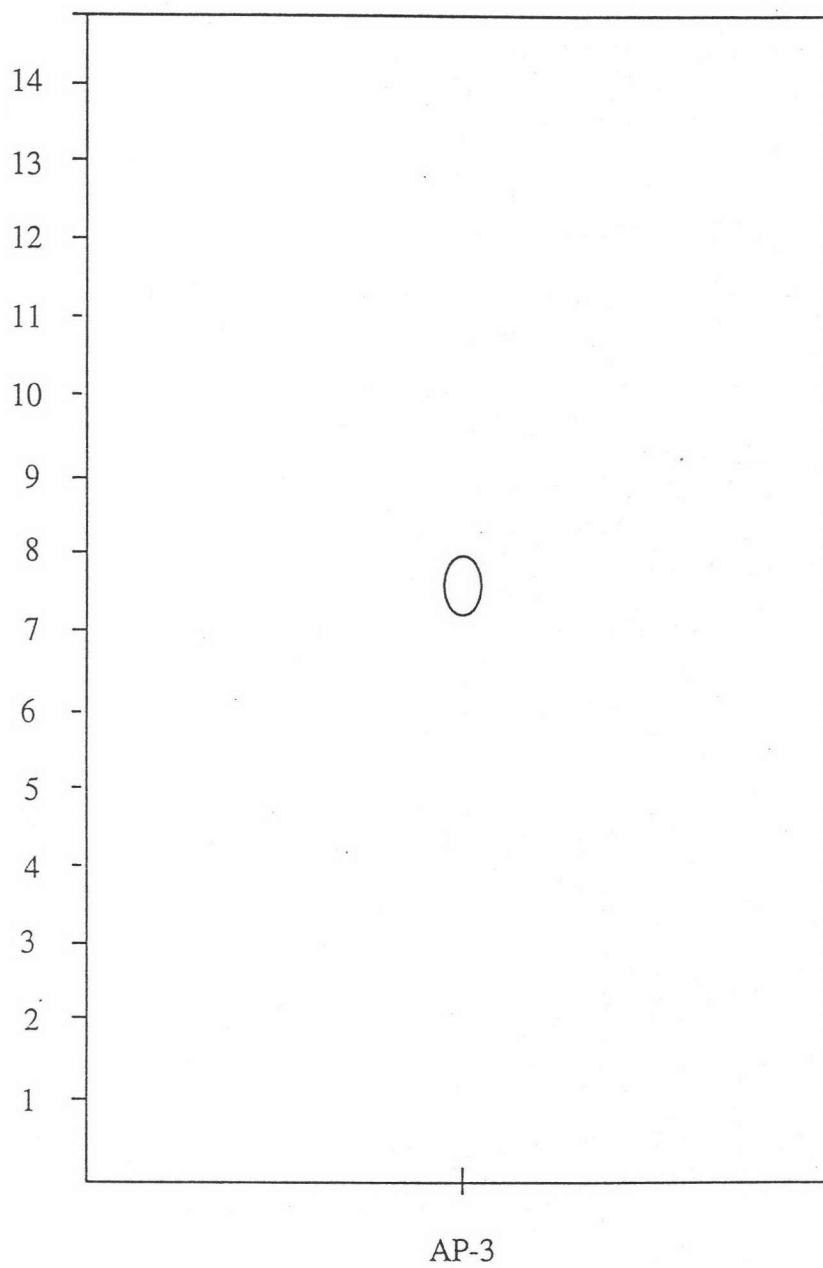


Figure 3.7 Thin-layer chromatogram of AP-3

c) Hexane :  $\text{CHCl}_3$  (4 : 1)

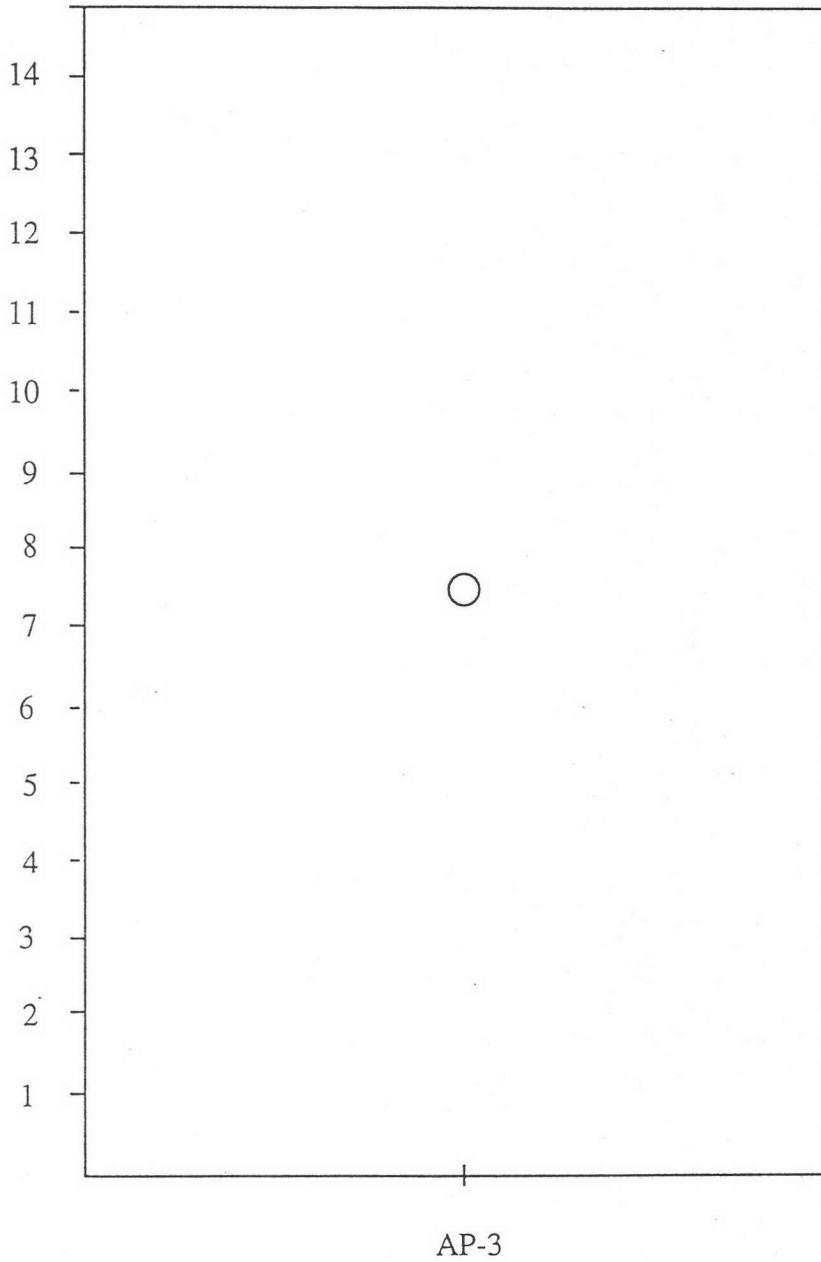


Figure 3.8 Thin-layer chromatogram of AP-3



d) Petroleum ether :  $\text{CH}_2\text{Cl}_2$  (10 : 1.5)

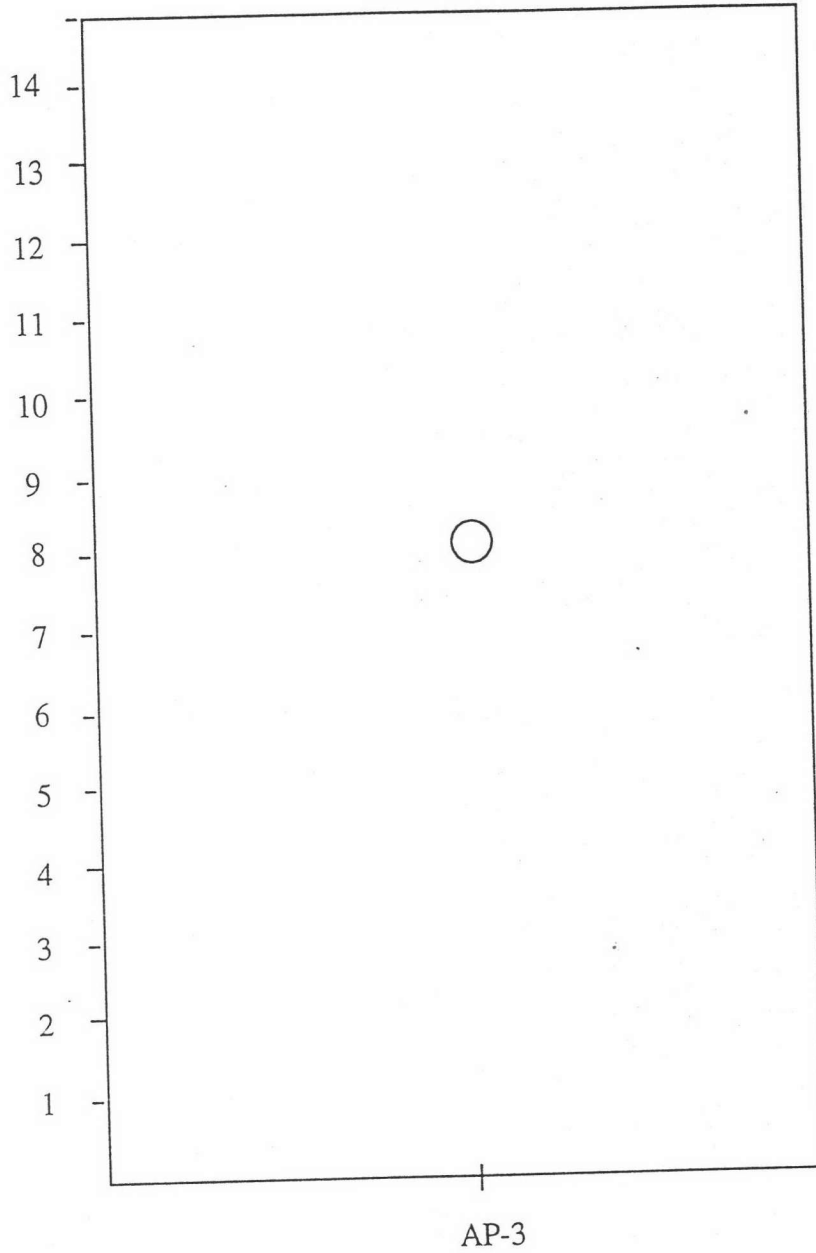


Figure 3.9 Thin-layer chromatogram of AP-3

e) Cyclohexane : Ethyl acetate (20 : 1)

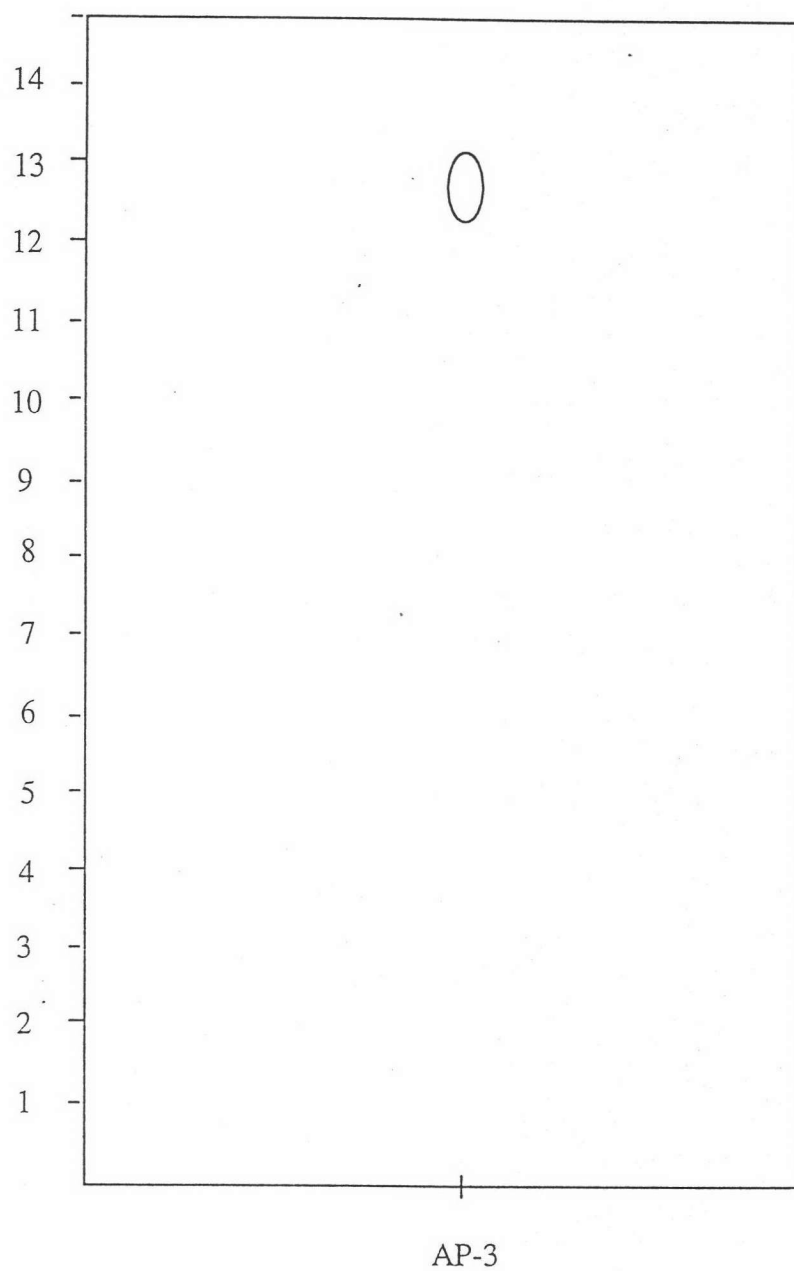


Figure 3.10 Thin-layer chromatogram of AP-3

a) Cyclohexane :  $\text{CH}_2\text{Cl}_2$  (4 : 1)

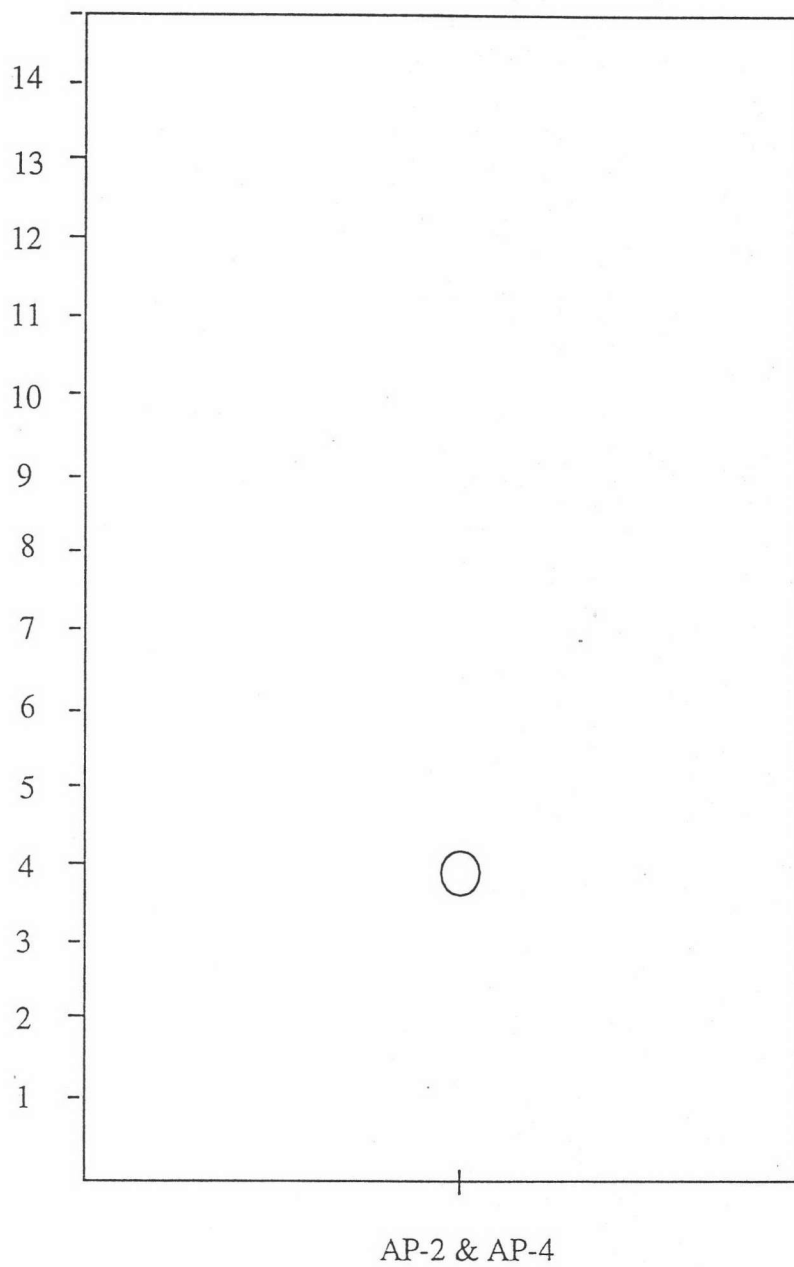


Figure 3.11 Thin-layer chromatogram of AP-2 & AP-4

b) Petroleum ether :  $\text{CH}_2\text{Cl}_2$  (10 : 1.5)

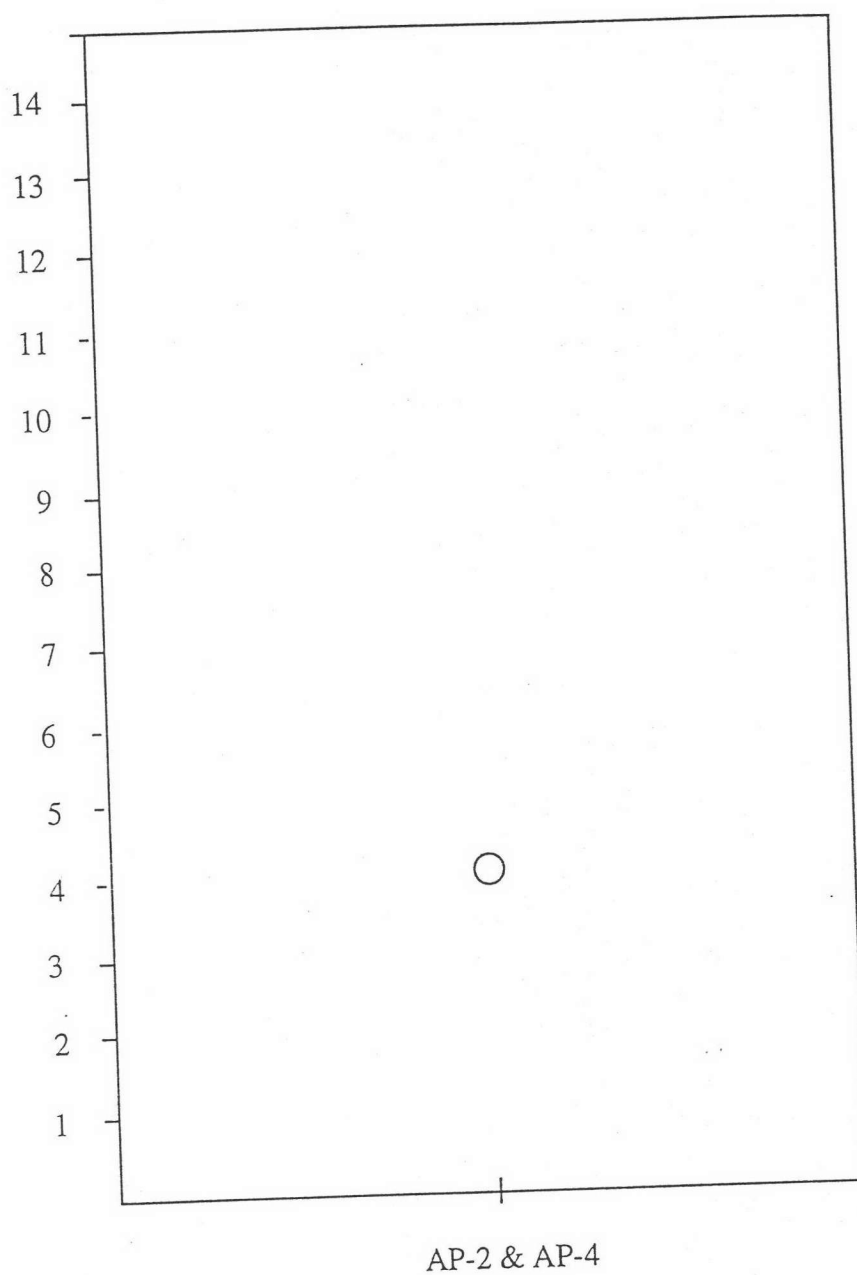


Figure 3.12 Thin-layer chromatogram of AP-2 & AP-4

c)  $\text{CHCl}_3$  : Benzene (1 : 3)

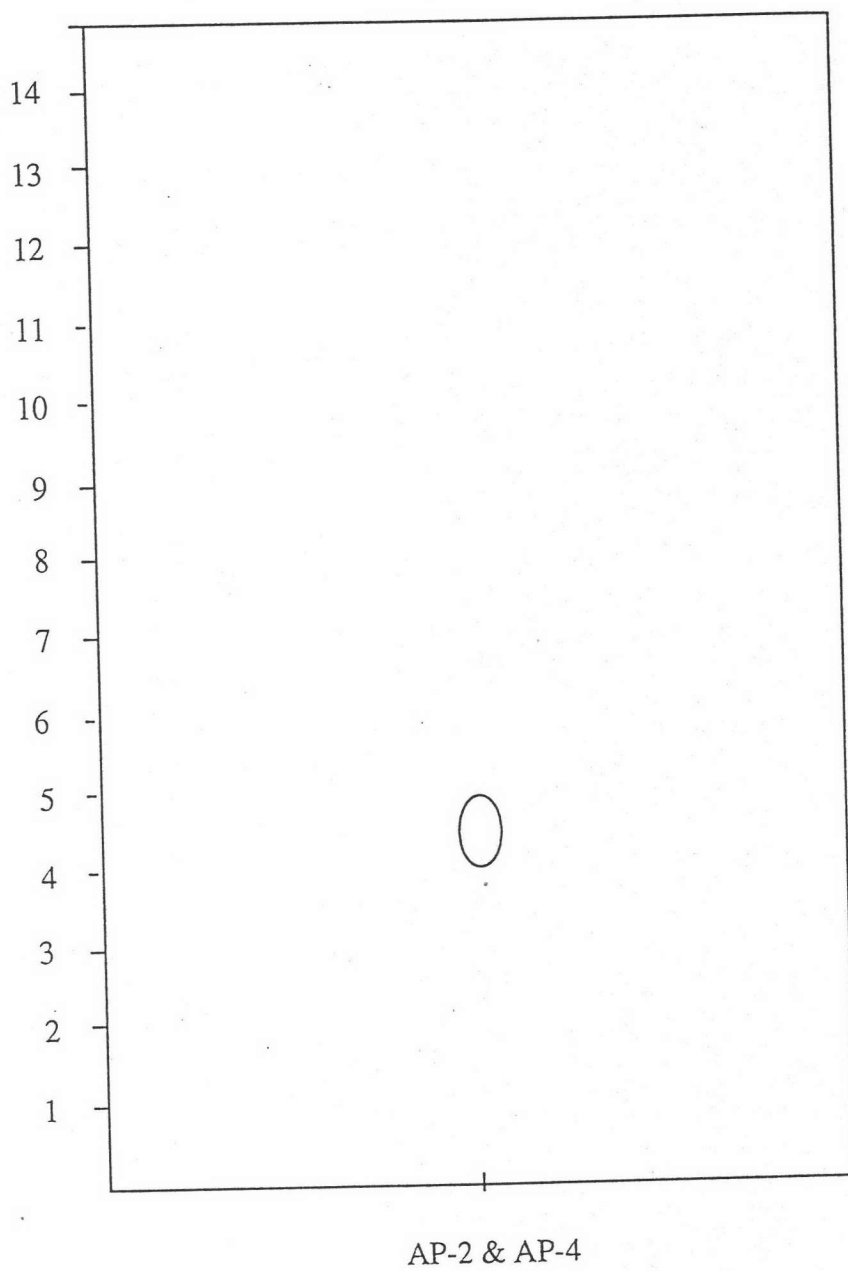


Figure 3.13 Thin-layer chromatogram of AP-2 & AP-4

d) Hexane :  $\text{CHCl}_3$  (4 : 1)

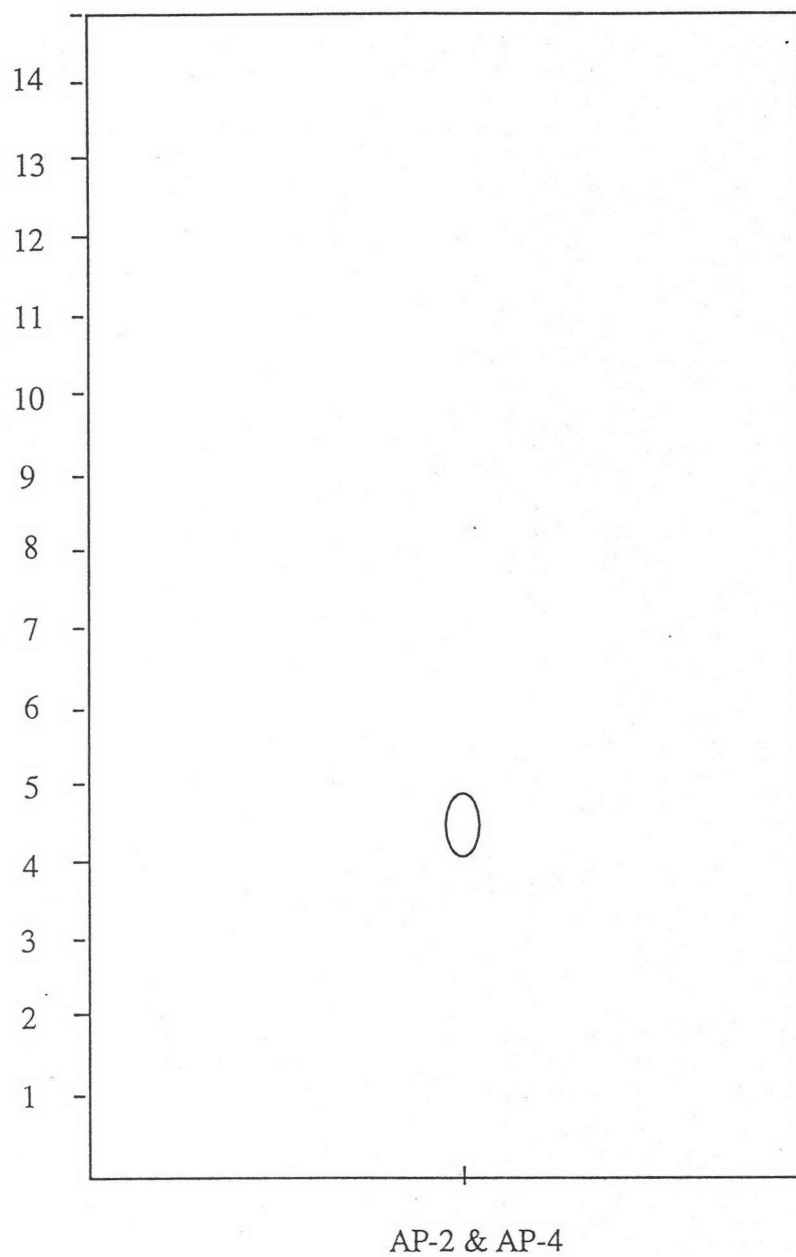


Figure 3.14 Thin-layer chromatogram of AP-2 & AP-4



e) Petroleum ether : Ethyl acetate (10 : 1)

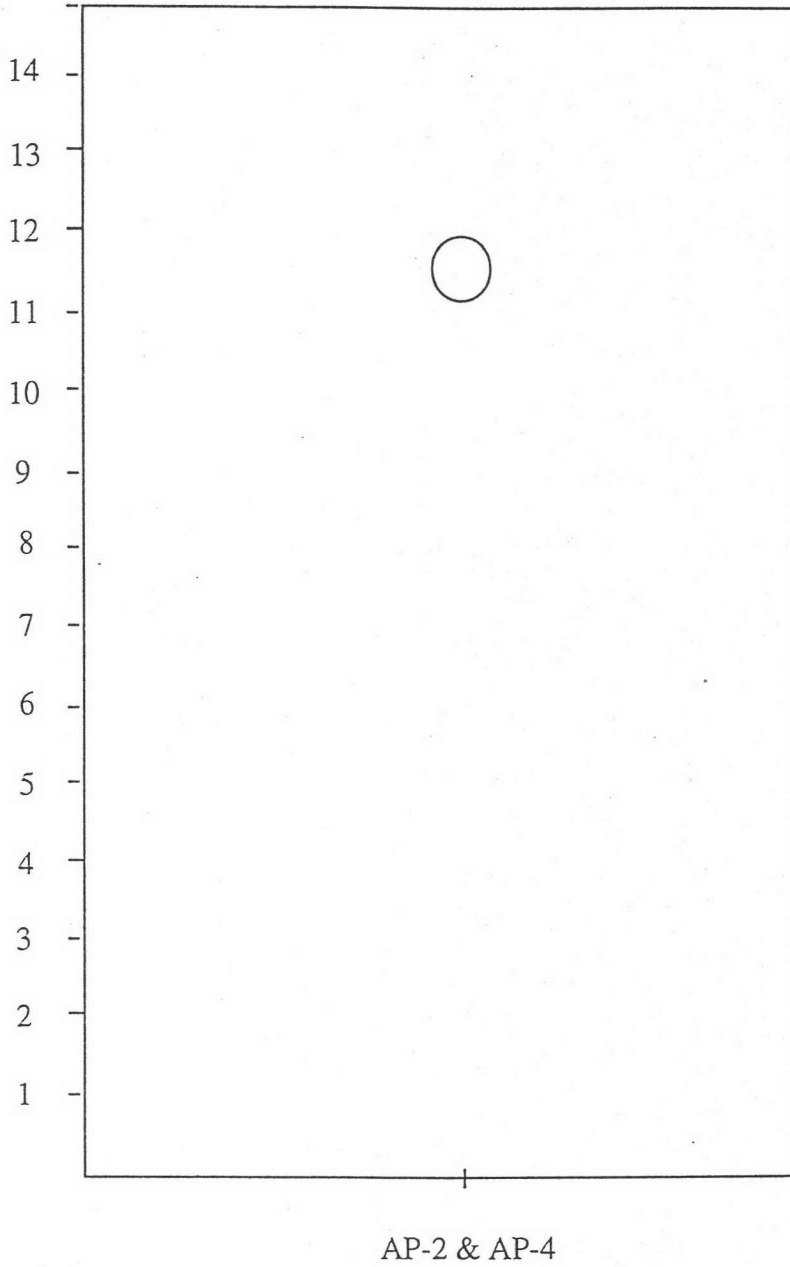


Figure 3.15 Thin-layer chromatogram of AP-2 & AP-4

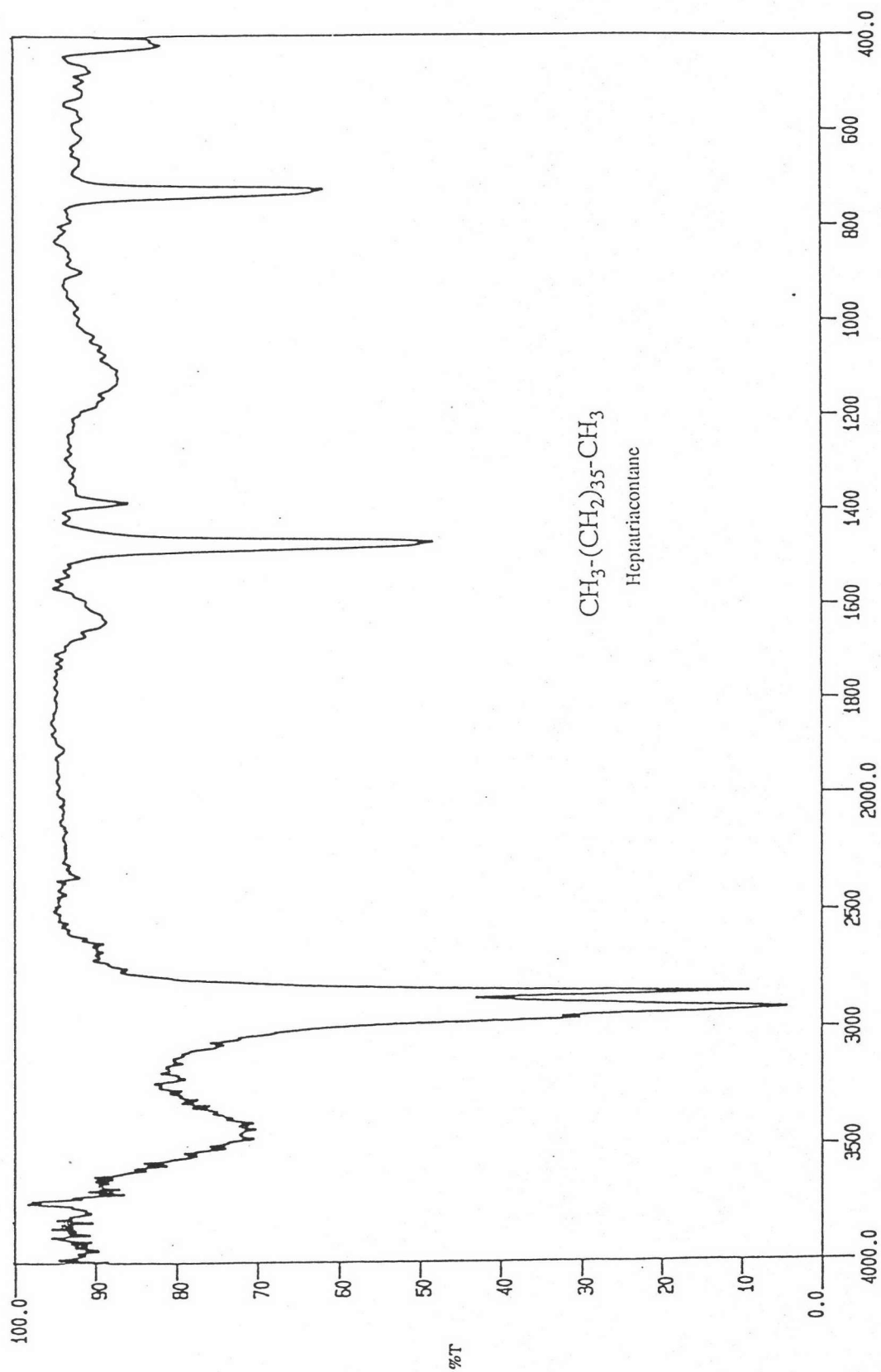
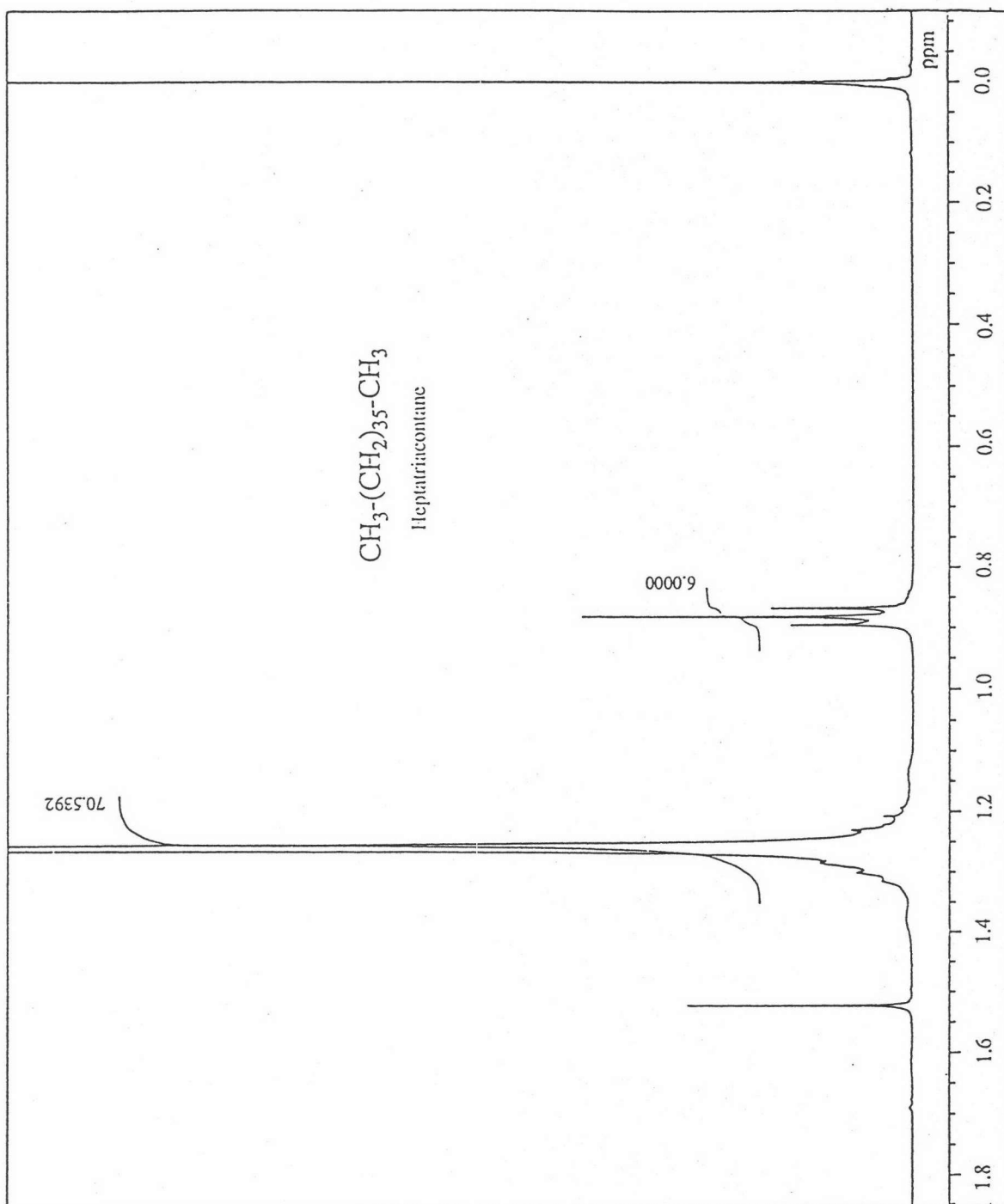


Figure 3.16 IR Spectrum of AP-1

Figure 3.17  $^1\text{H}$  NMR Spectrum of AP-1

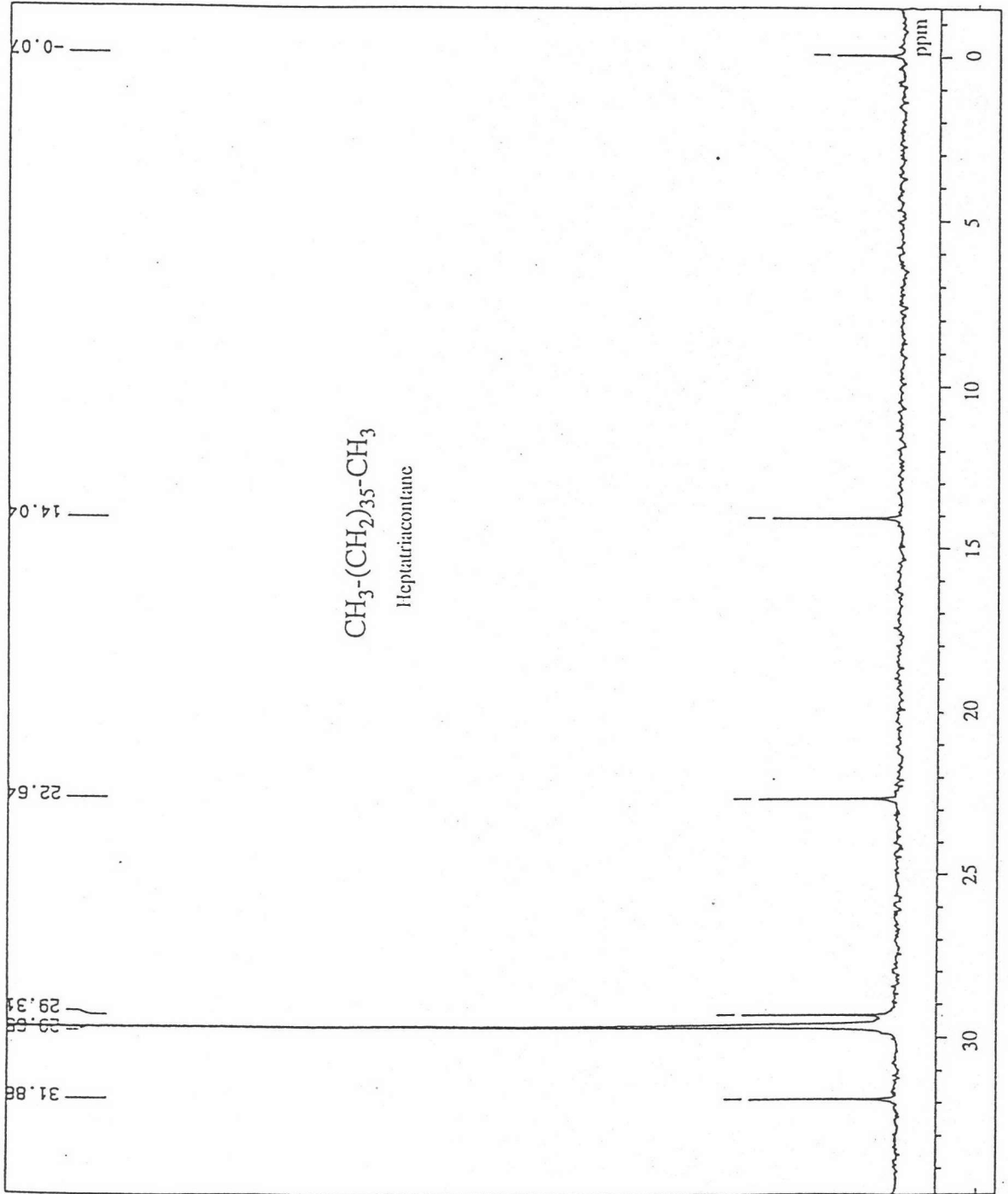


Figure 3.18  $^{13}\text{C}$  NMR Spectrum of AP-1



Heptatriacontane

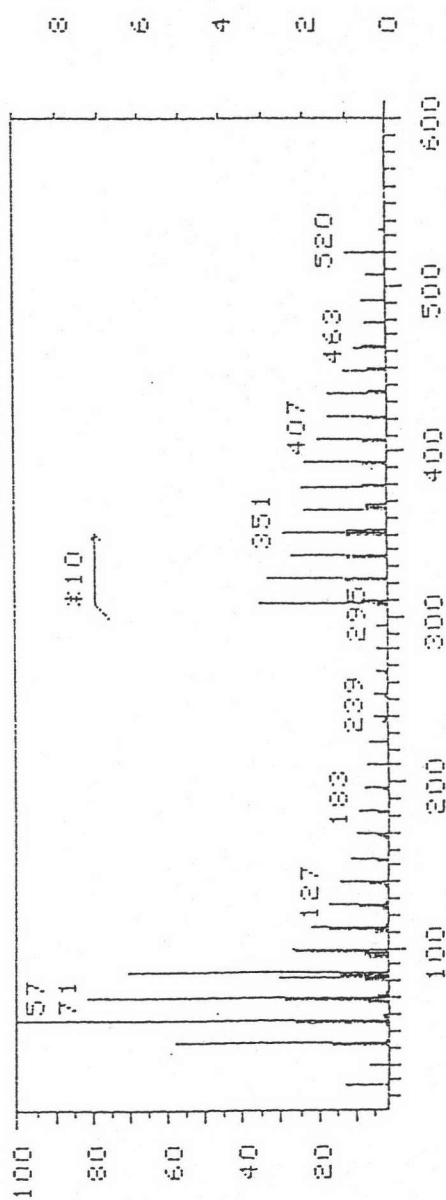


Figure 3.19 Mass Spectrum of AP-1

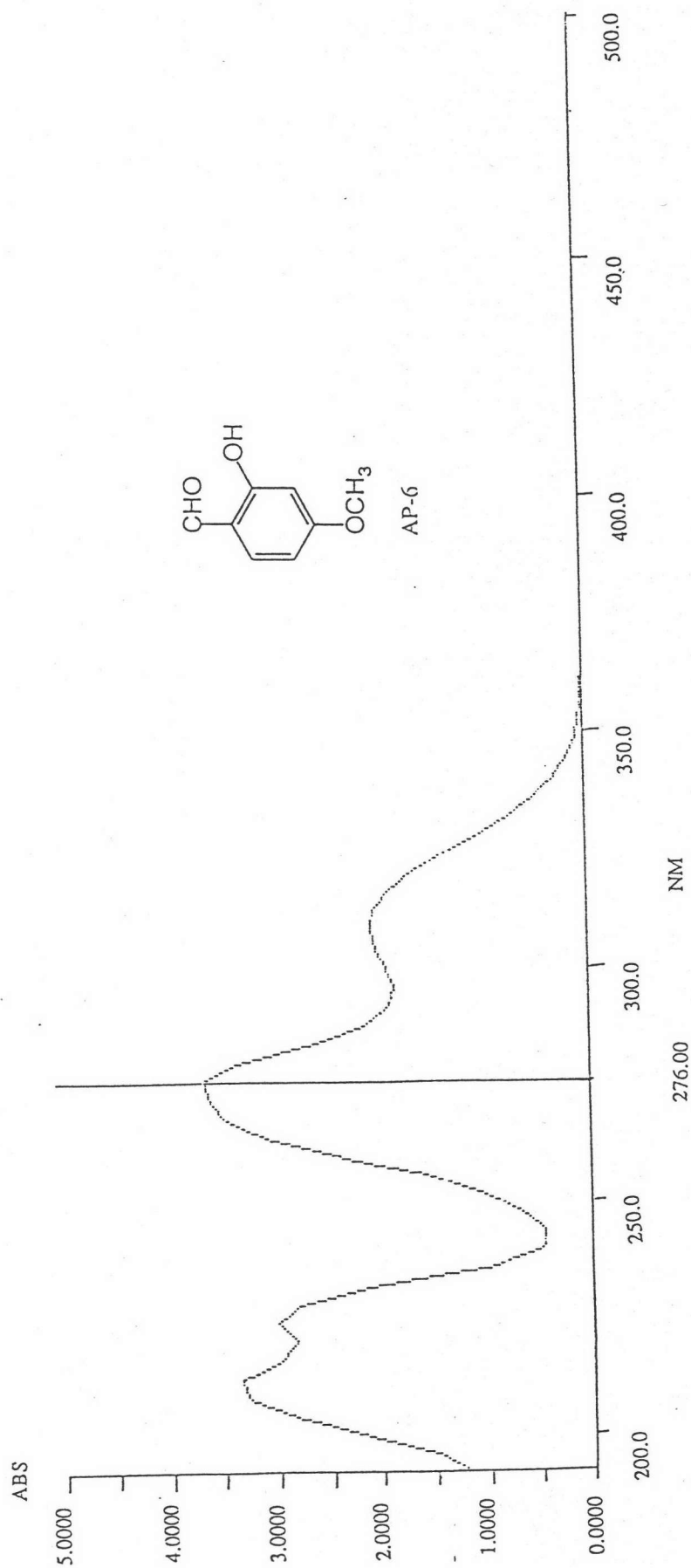


Figure 3.20 UV Spectrum of AP-6

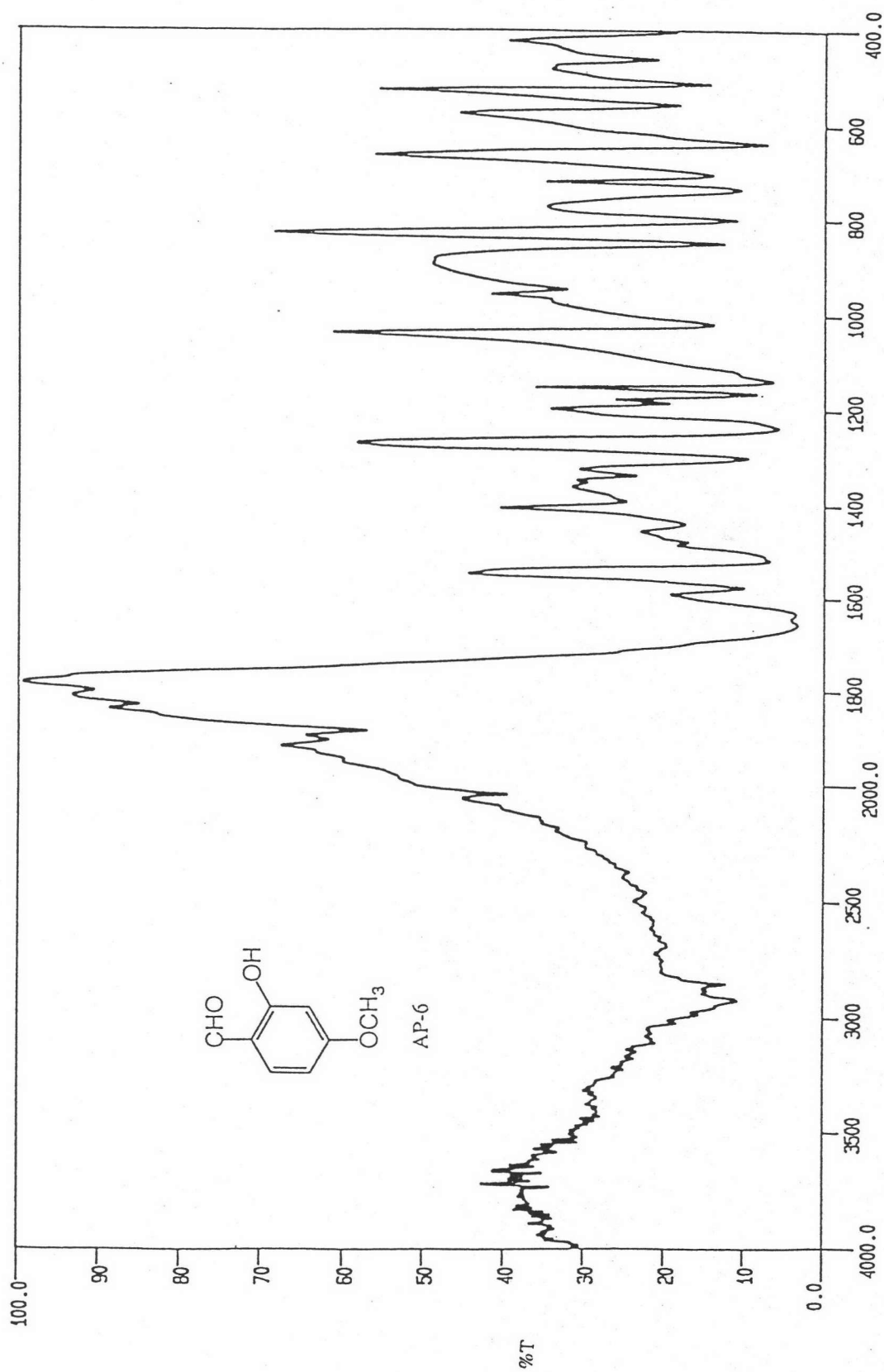
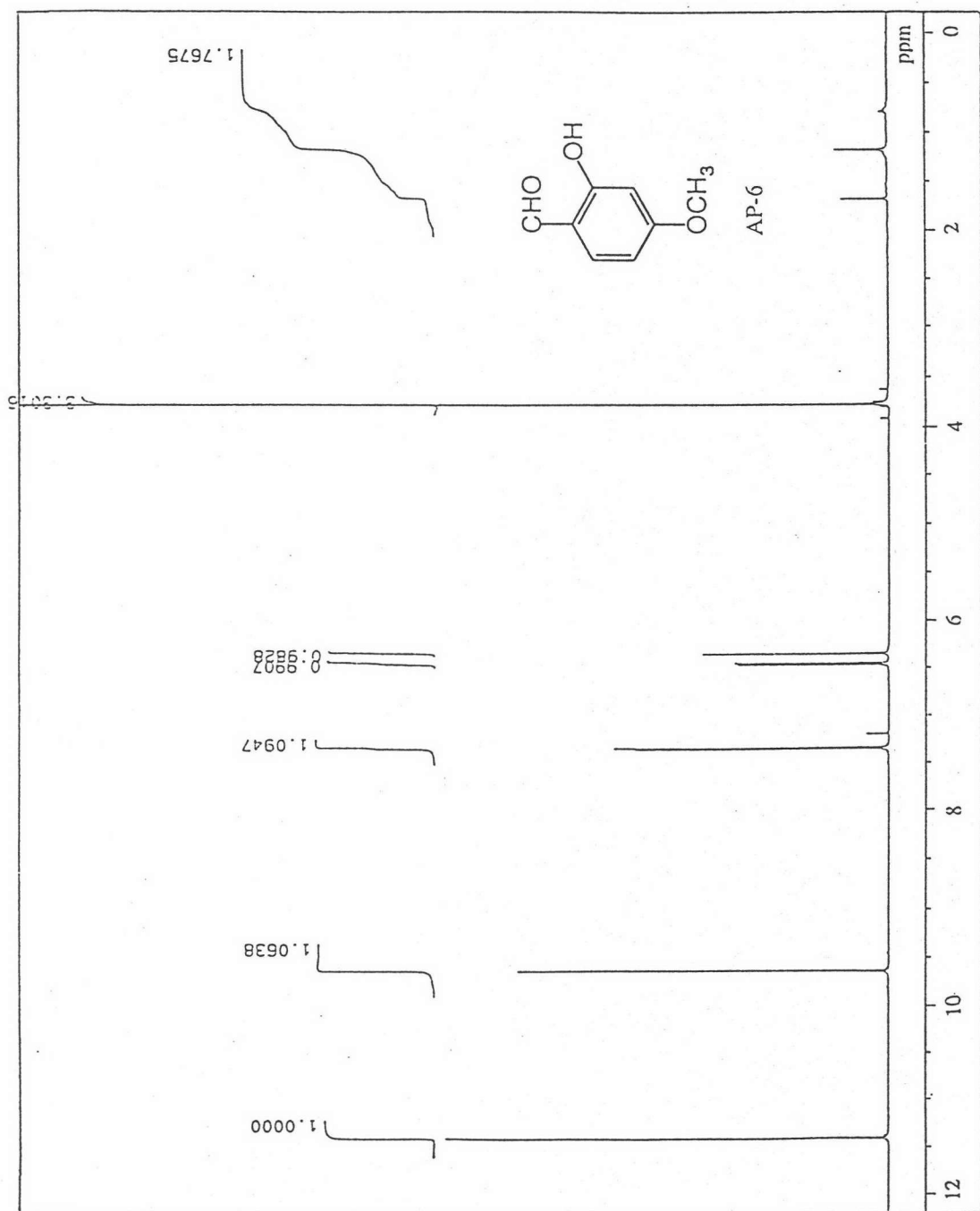
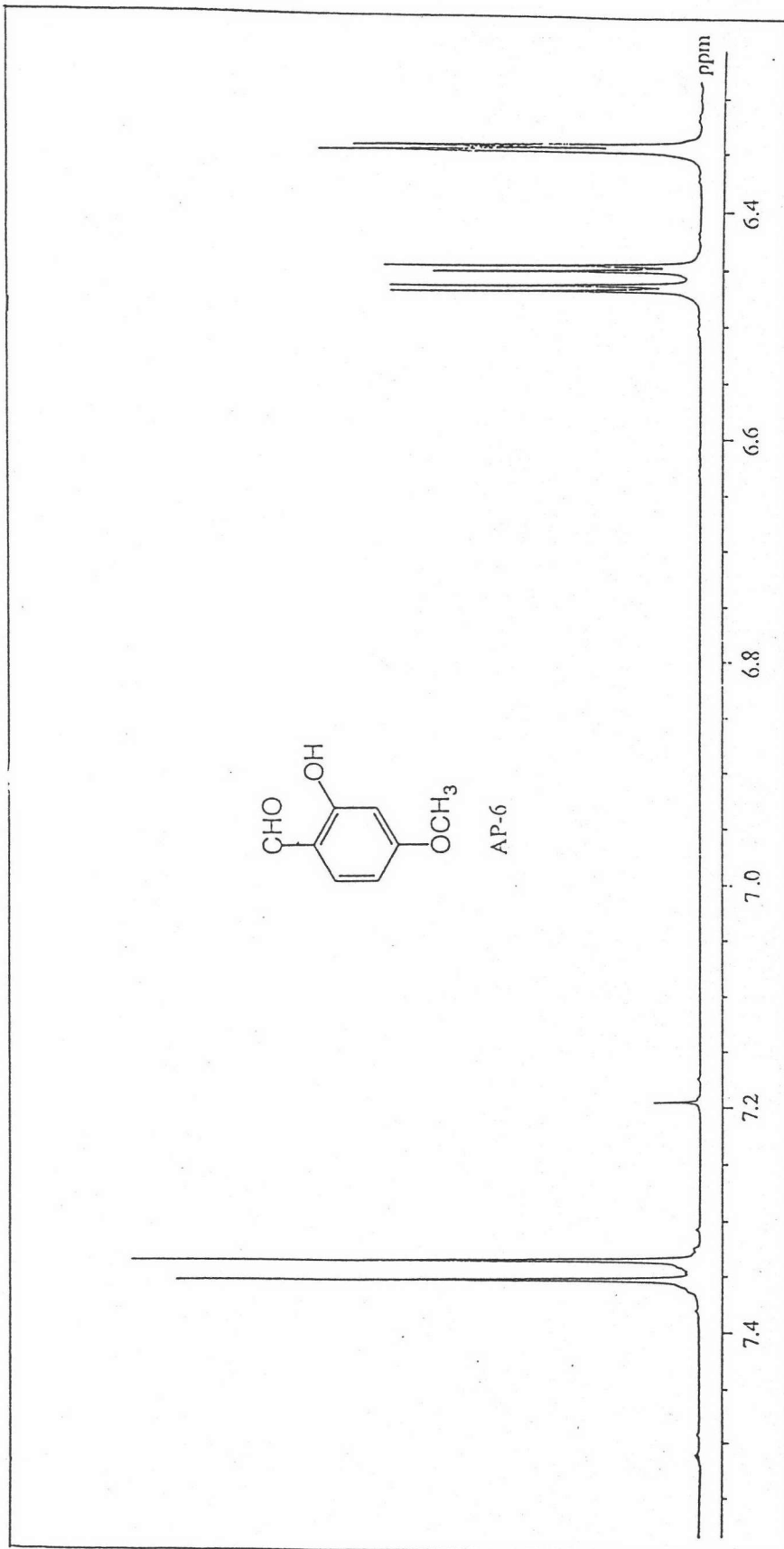
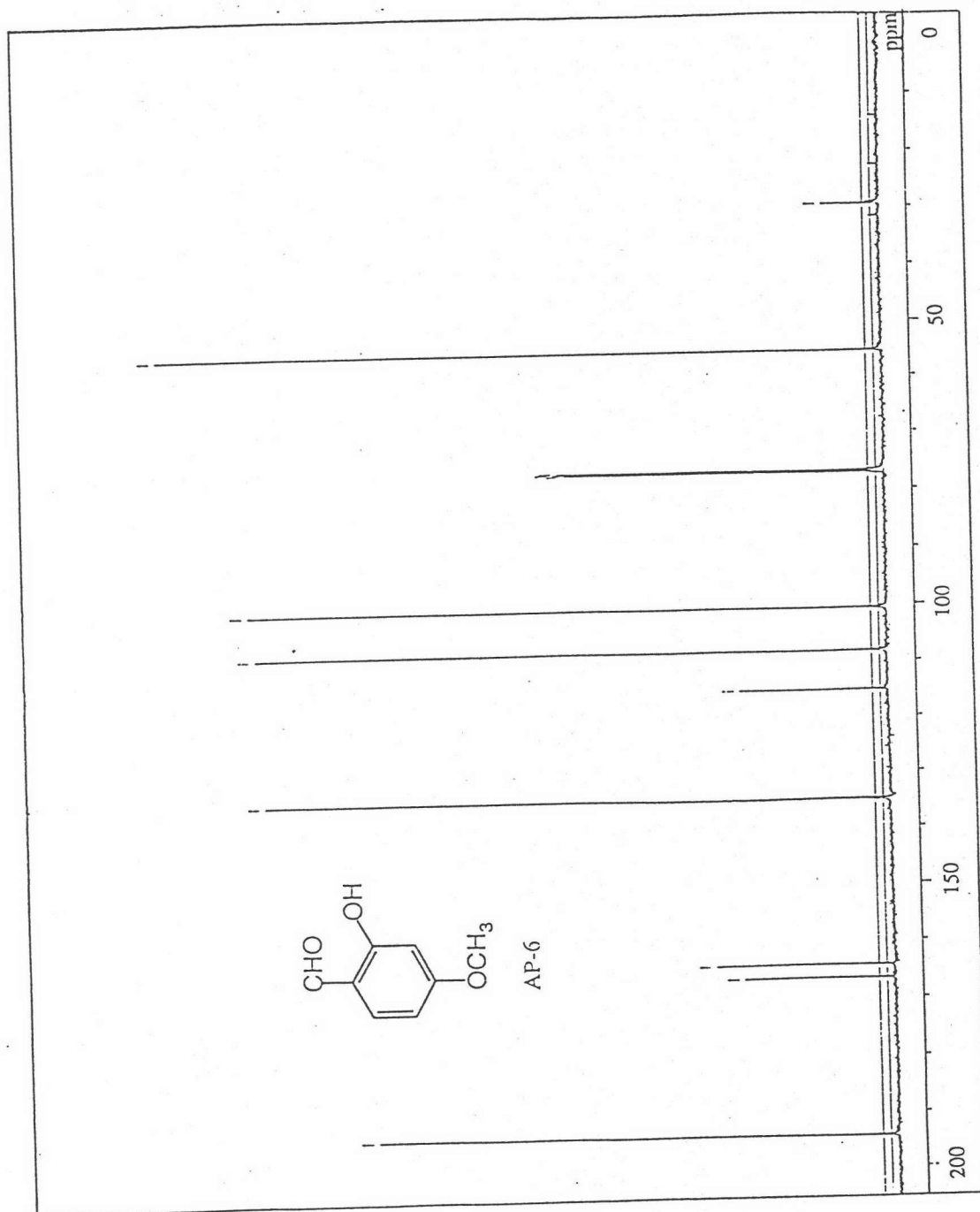


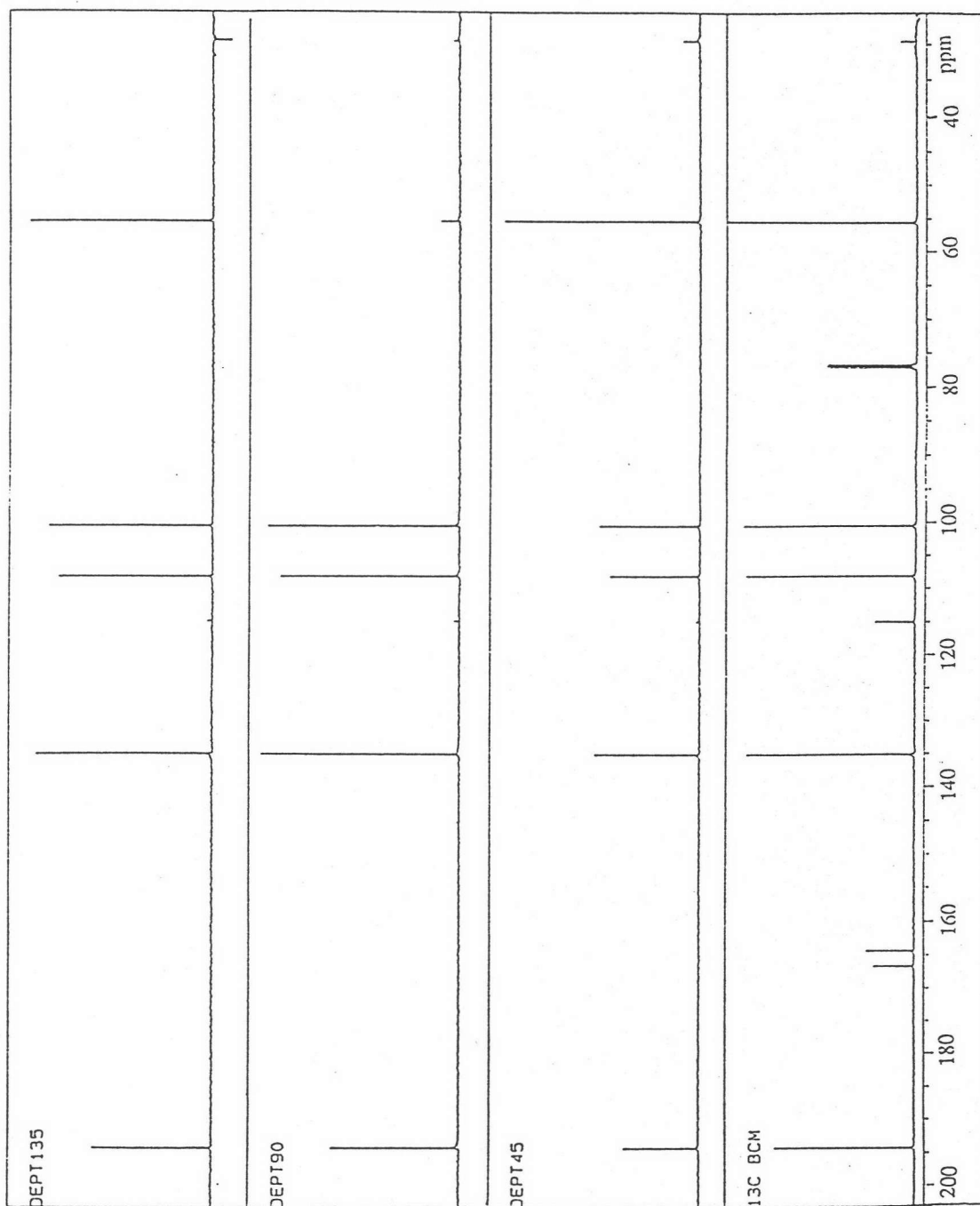
Figure 3.21 IR Spectrum of AP-6

Figure 3.22  $^1\text{H}$  NMR Spectrum of AP-6



Figure 3.23  $^1\text{H}$  NMR Spectrum (expansion) of AP-6

Figure 3.24  $^{13}\text{C}$  NMR Spectrum of AP-6

Figure 3.25  $^{13}\text{C}$  NMR Spectrum (DEPT) of AP-6

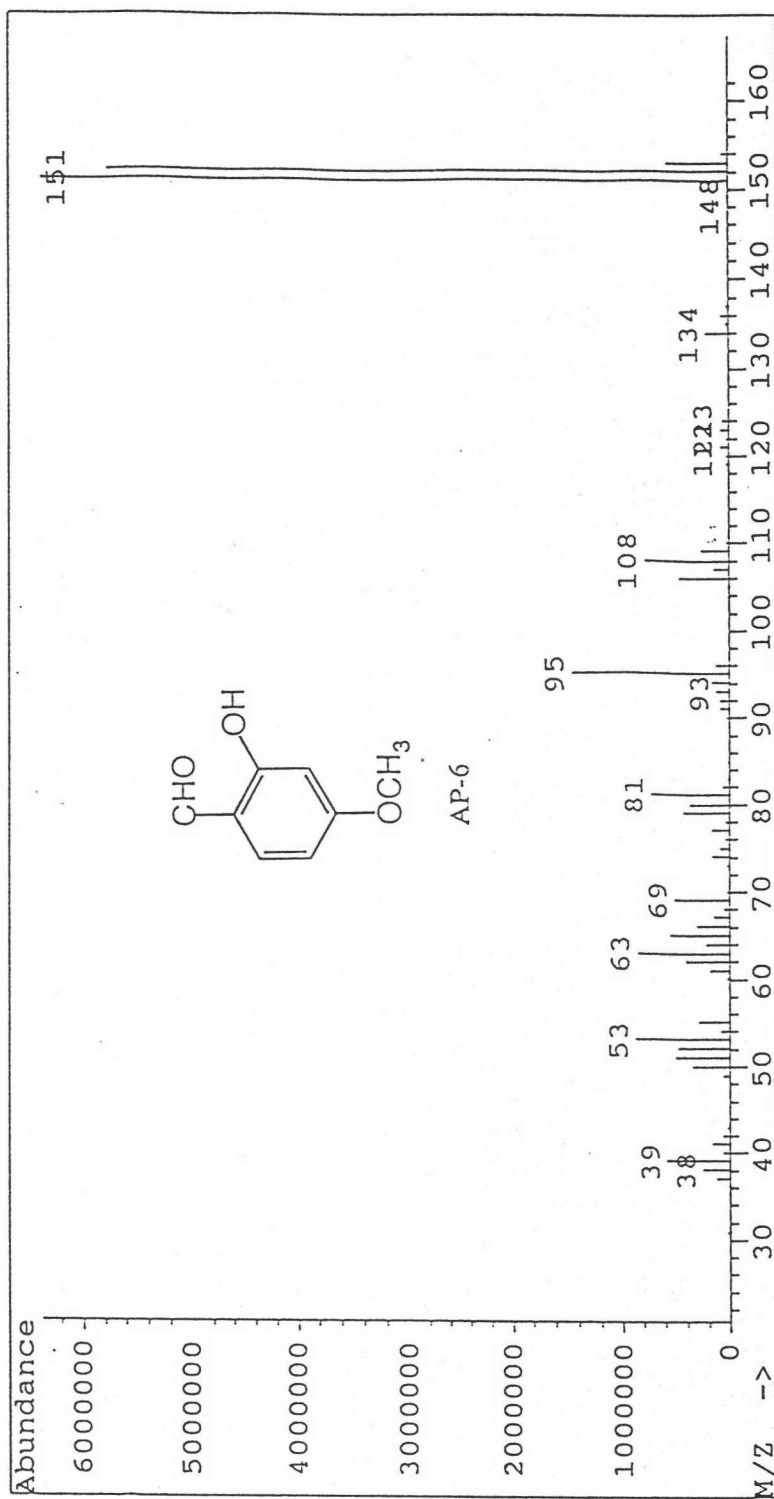


Figure 3.26 Mass Spectrum of AP-6

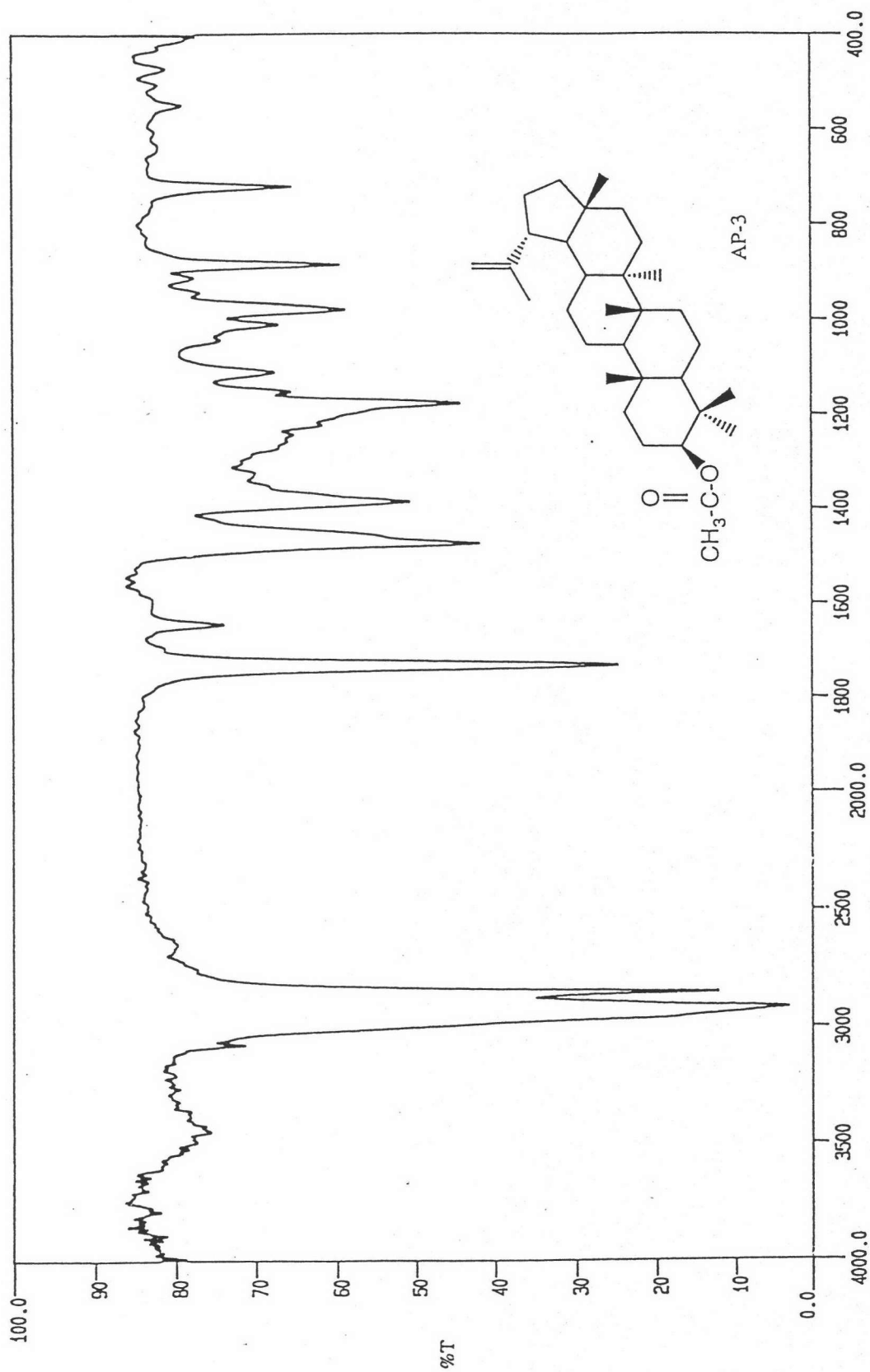
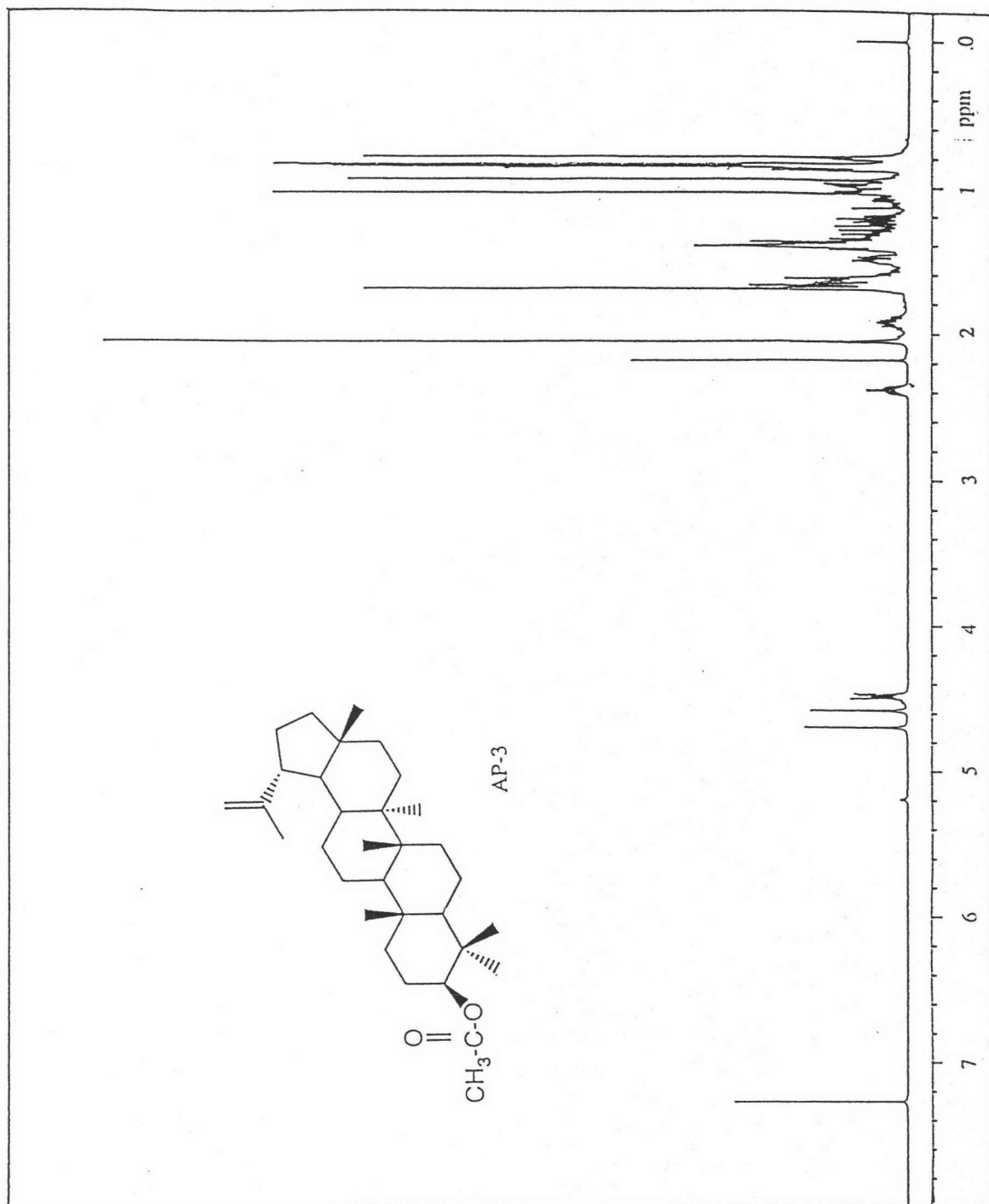
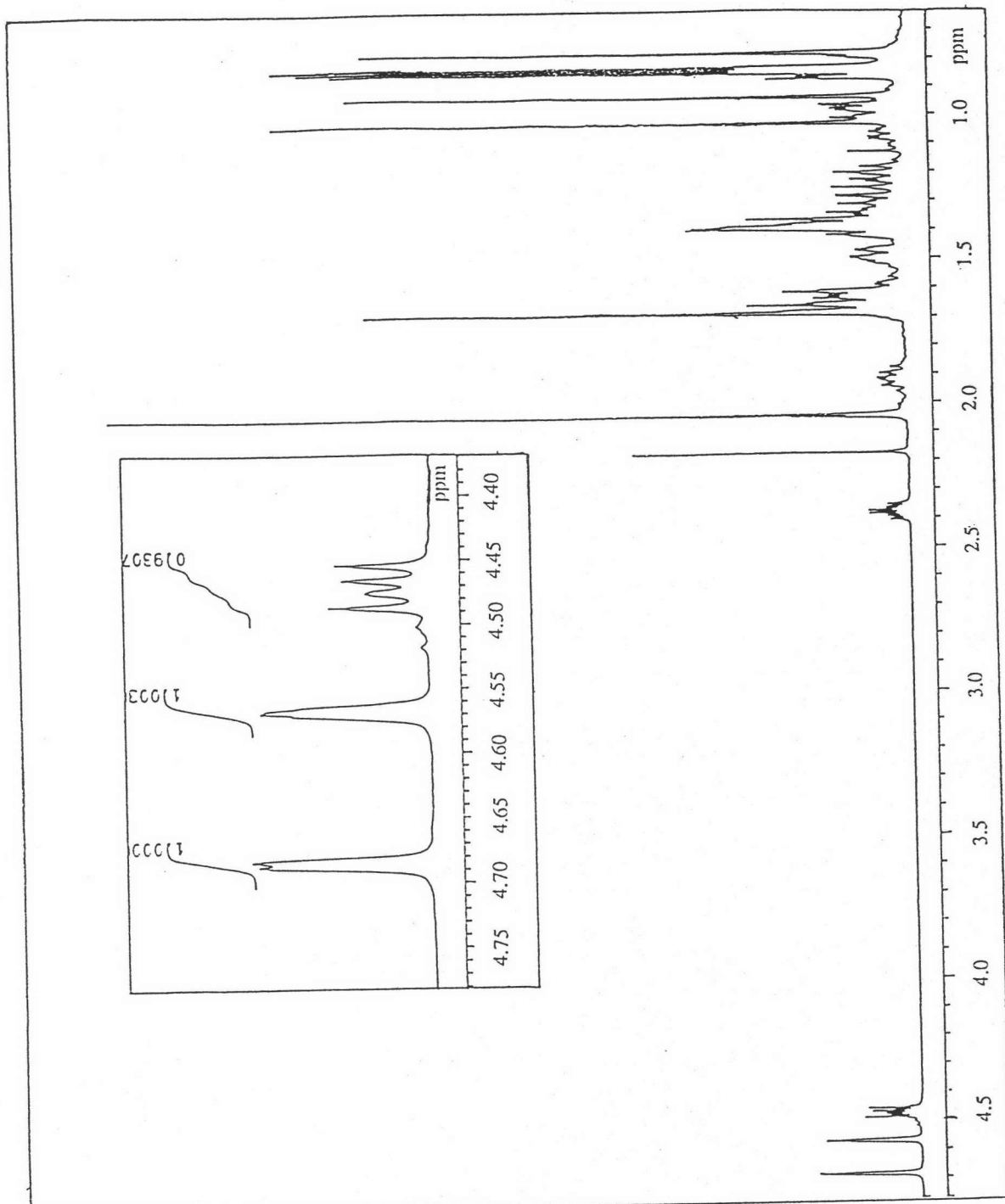


Figure 3.27 IR Spectrum of AP-3

Figure 3.28  $^1\text{H}$  NMR Spectrum of AP-3

Figure 3.29  $^1\text{H}$  NMR Spectrum (expansion) of AP-3

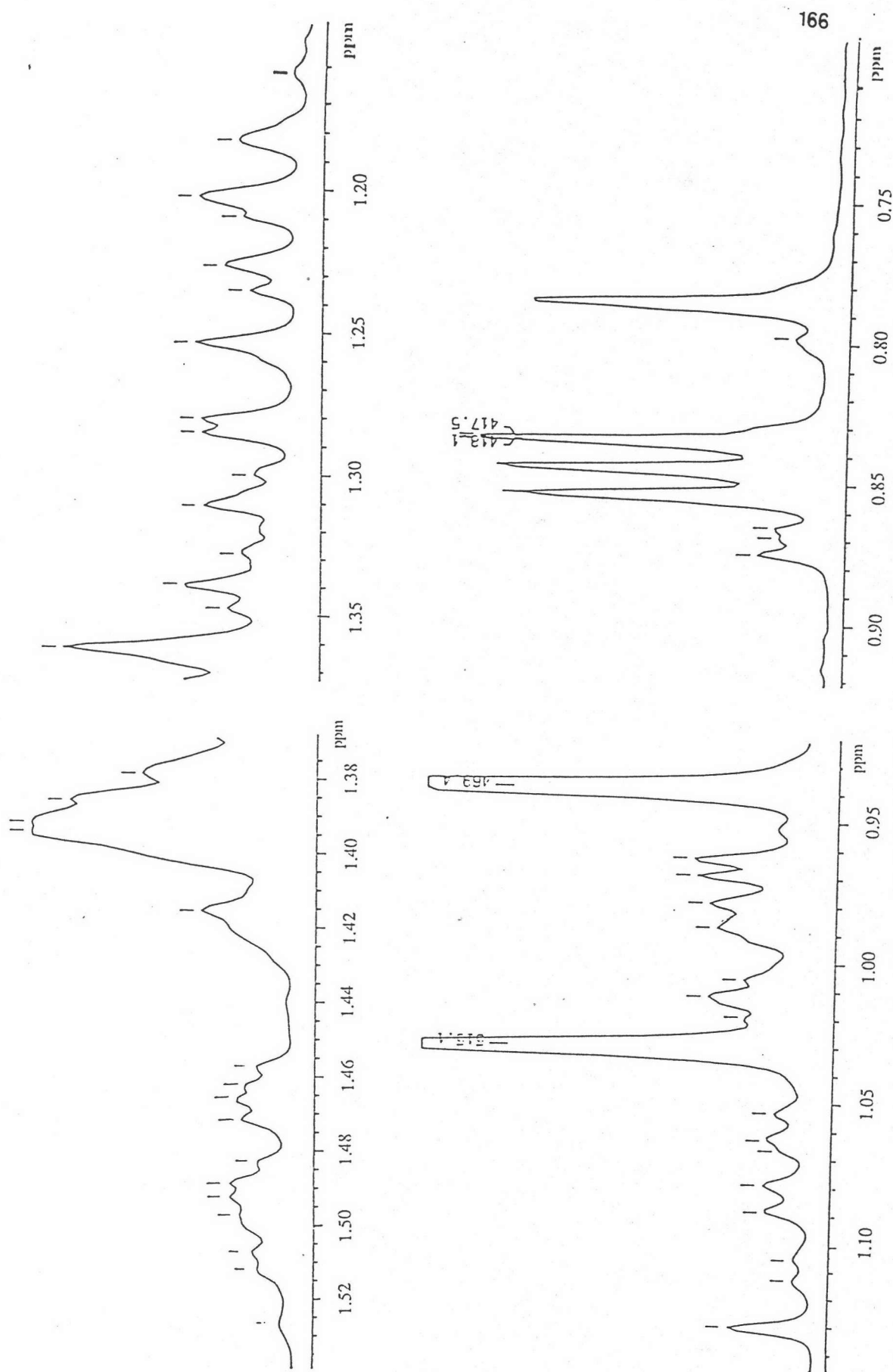
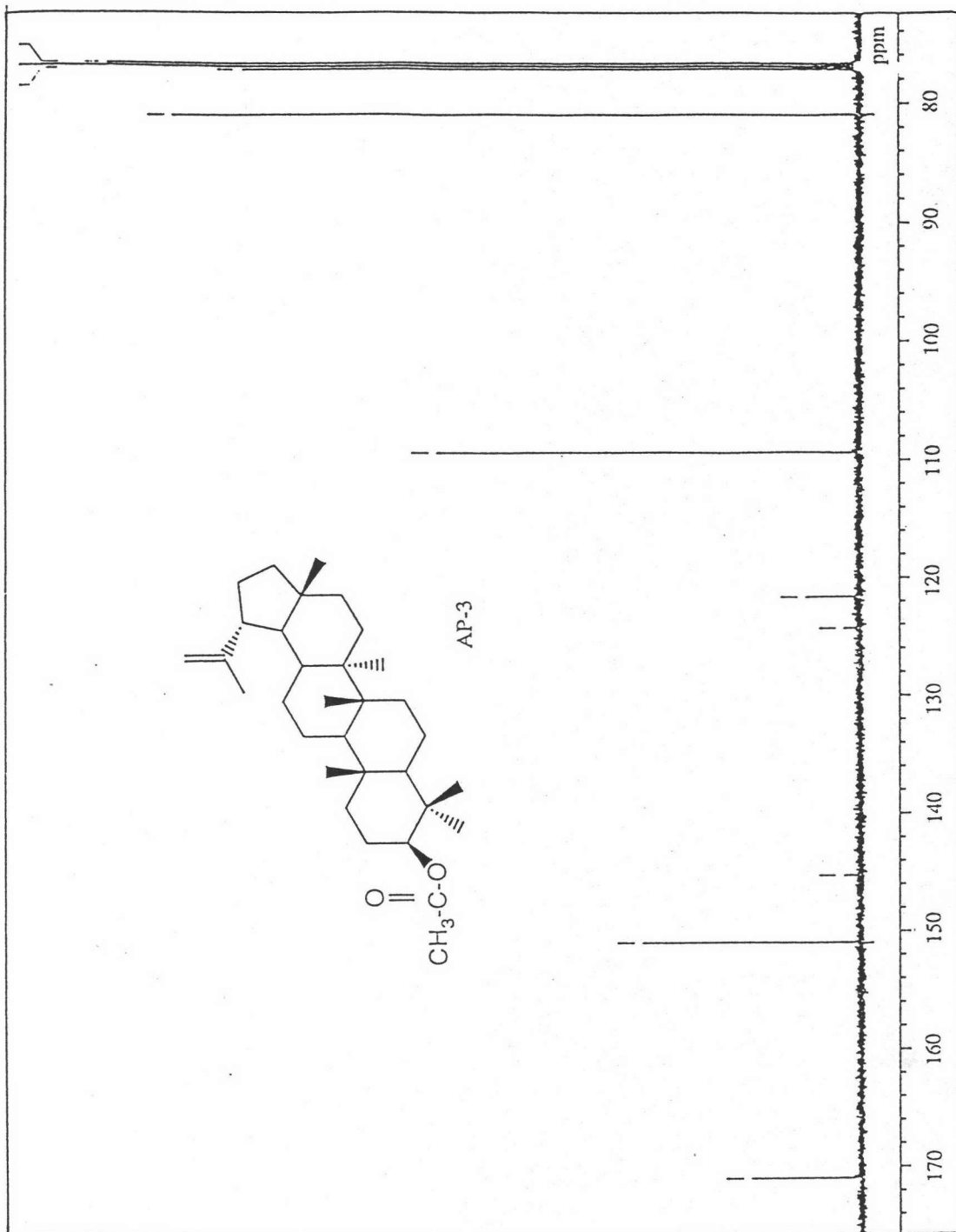
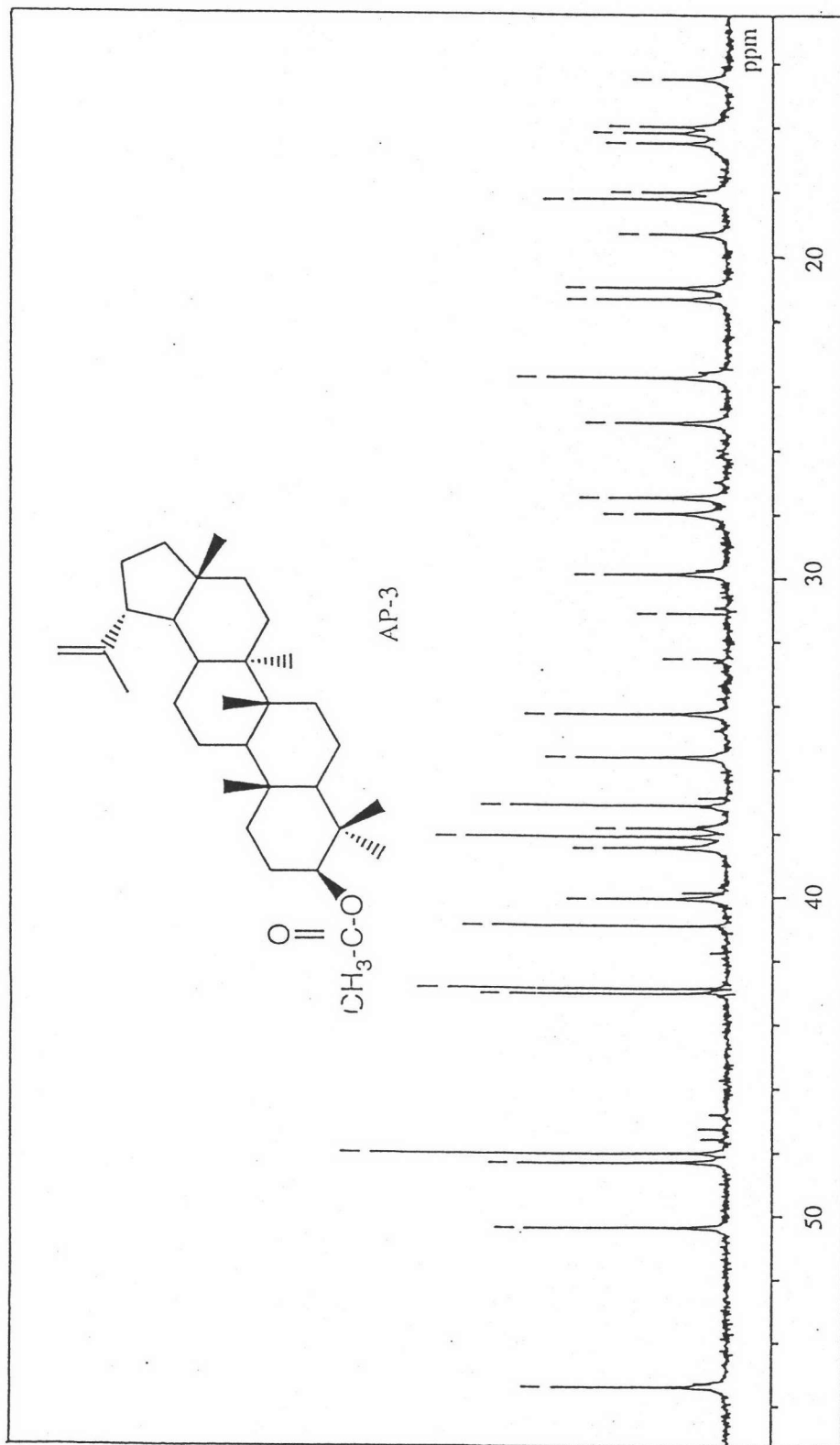


Figure 3.29  $^1\text{H}$  NMR Spectrum (expansion) of AP-3





Figure 3.30  $^{13}\text{C}$  NMR Spectrum of AP-3

Figure 3.31  $^{13}\text{C}$  NMR Spectrum (expansion) of AP-3

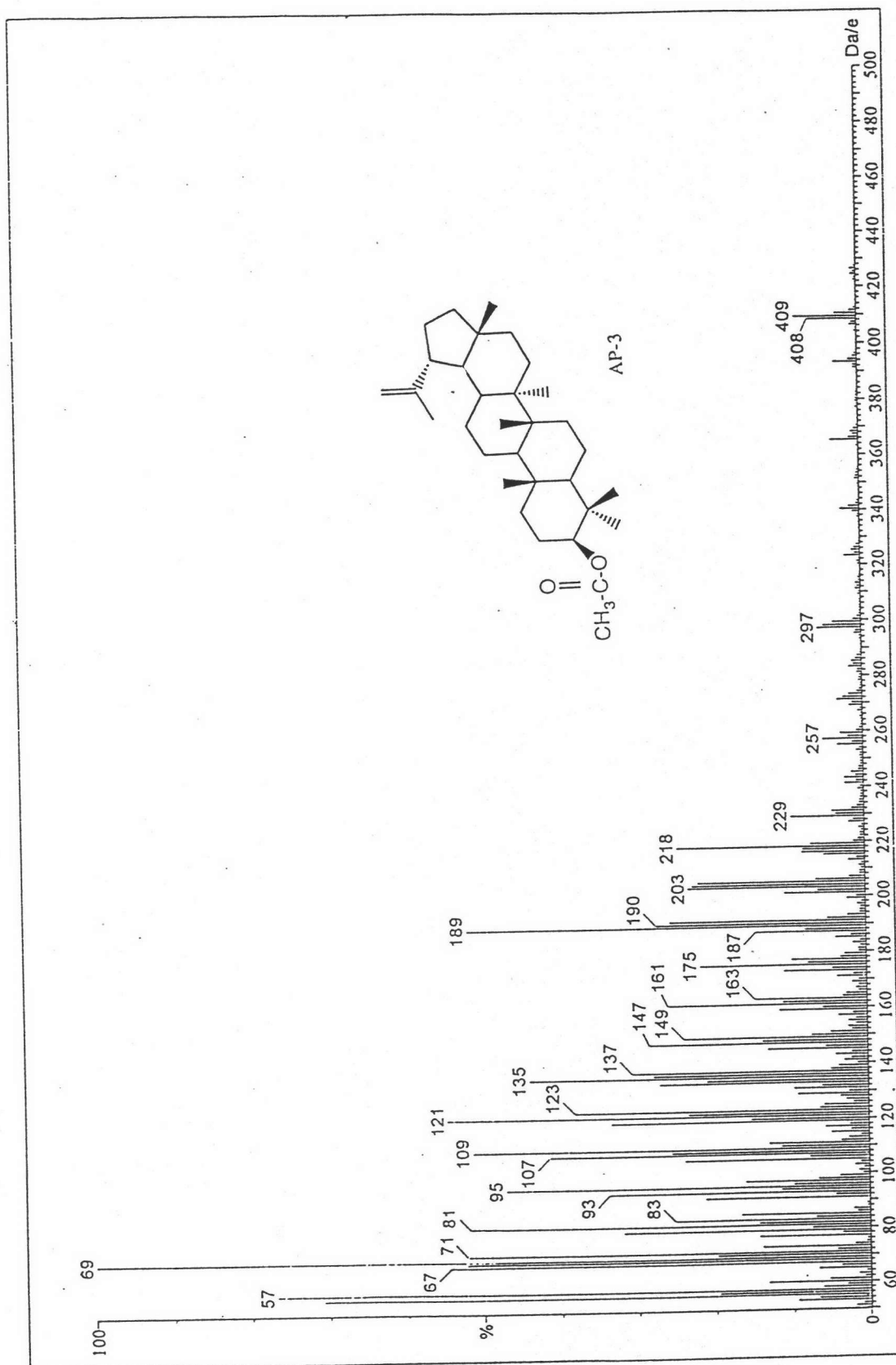


Figure 3.32 Mass Spectrum of AP-3

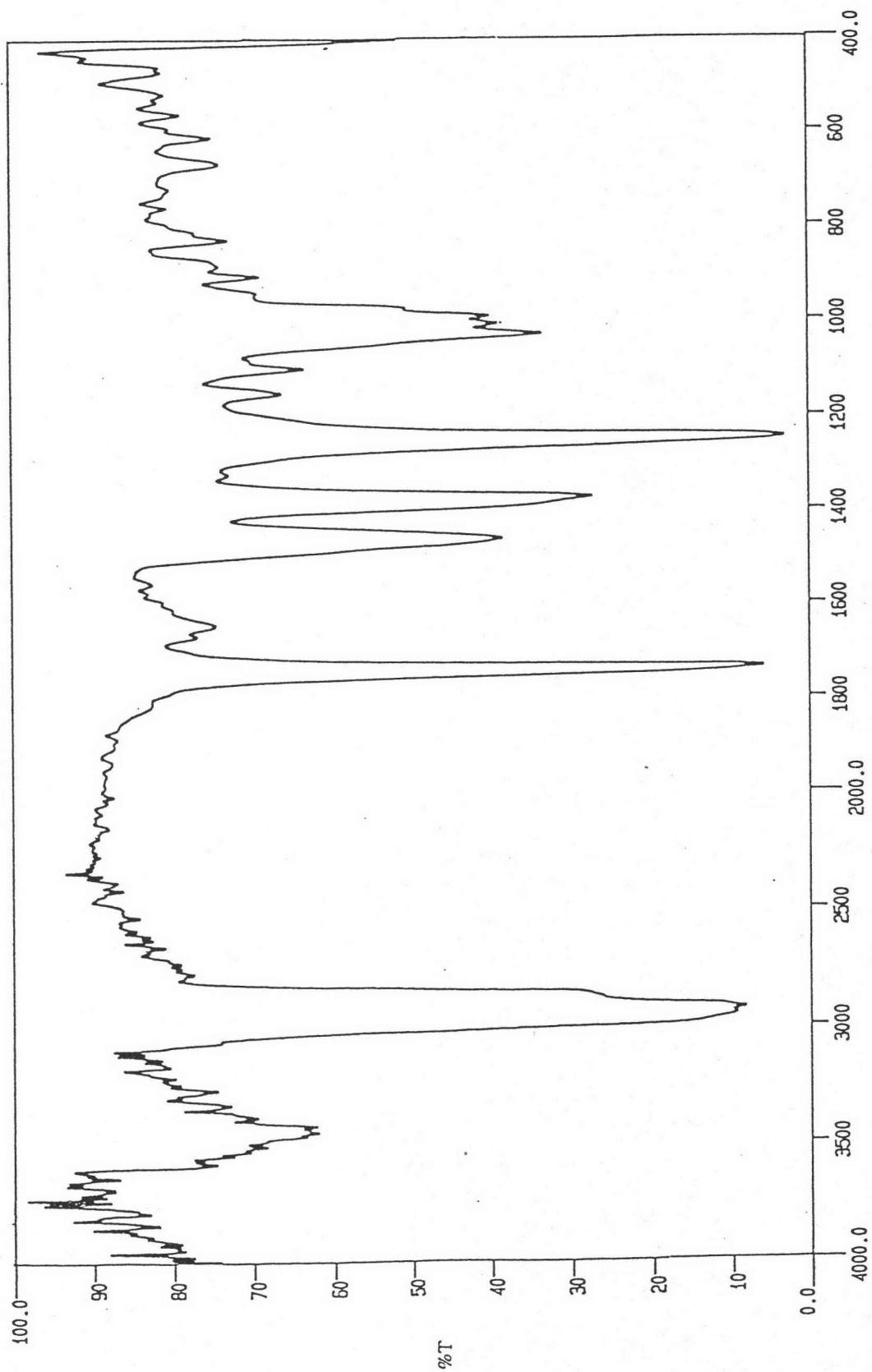
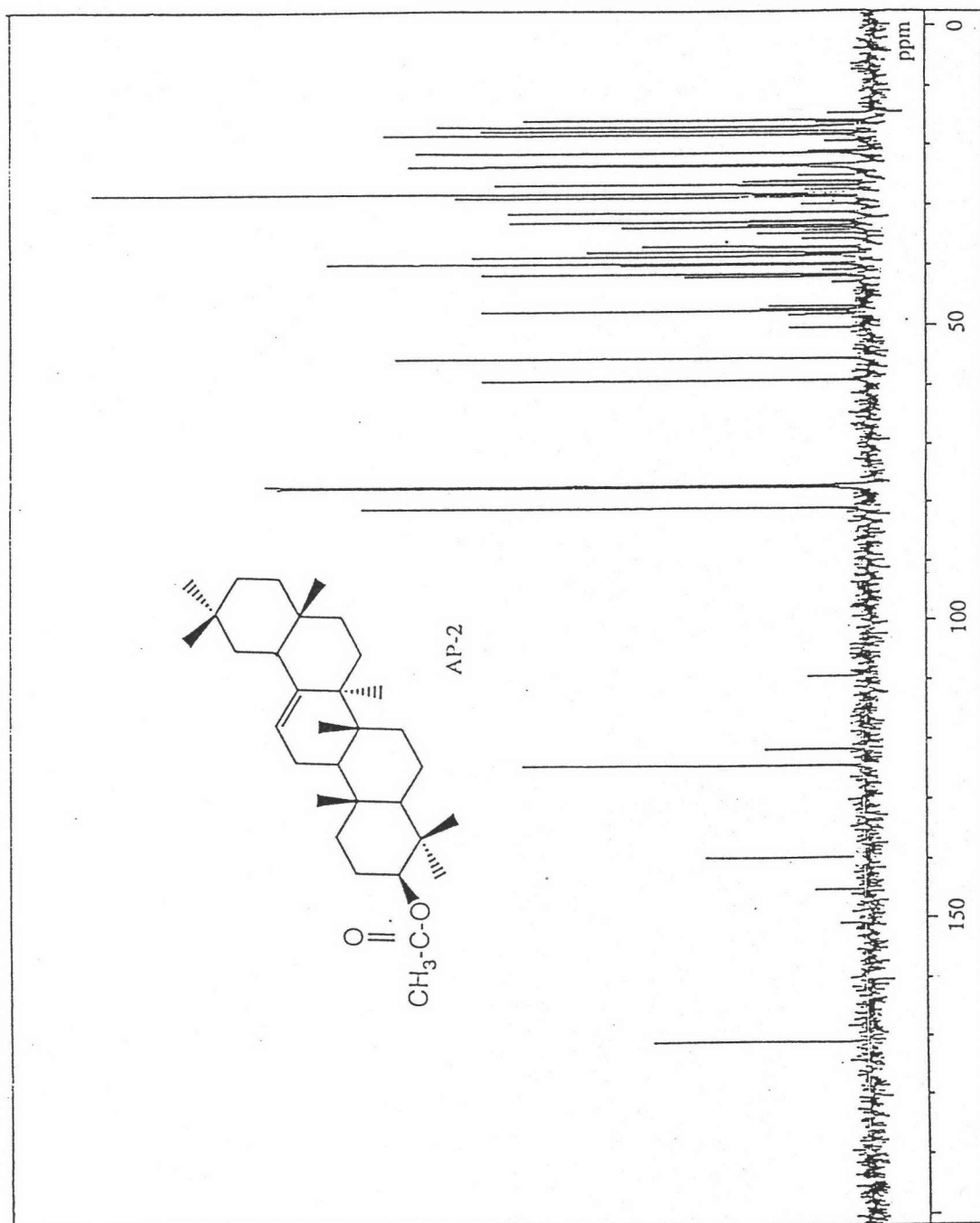
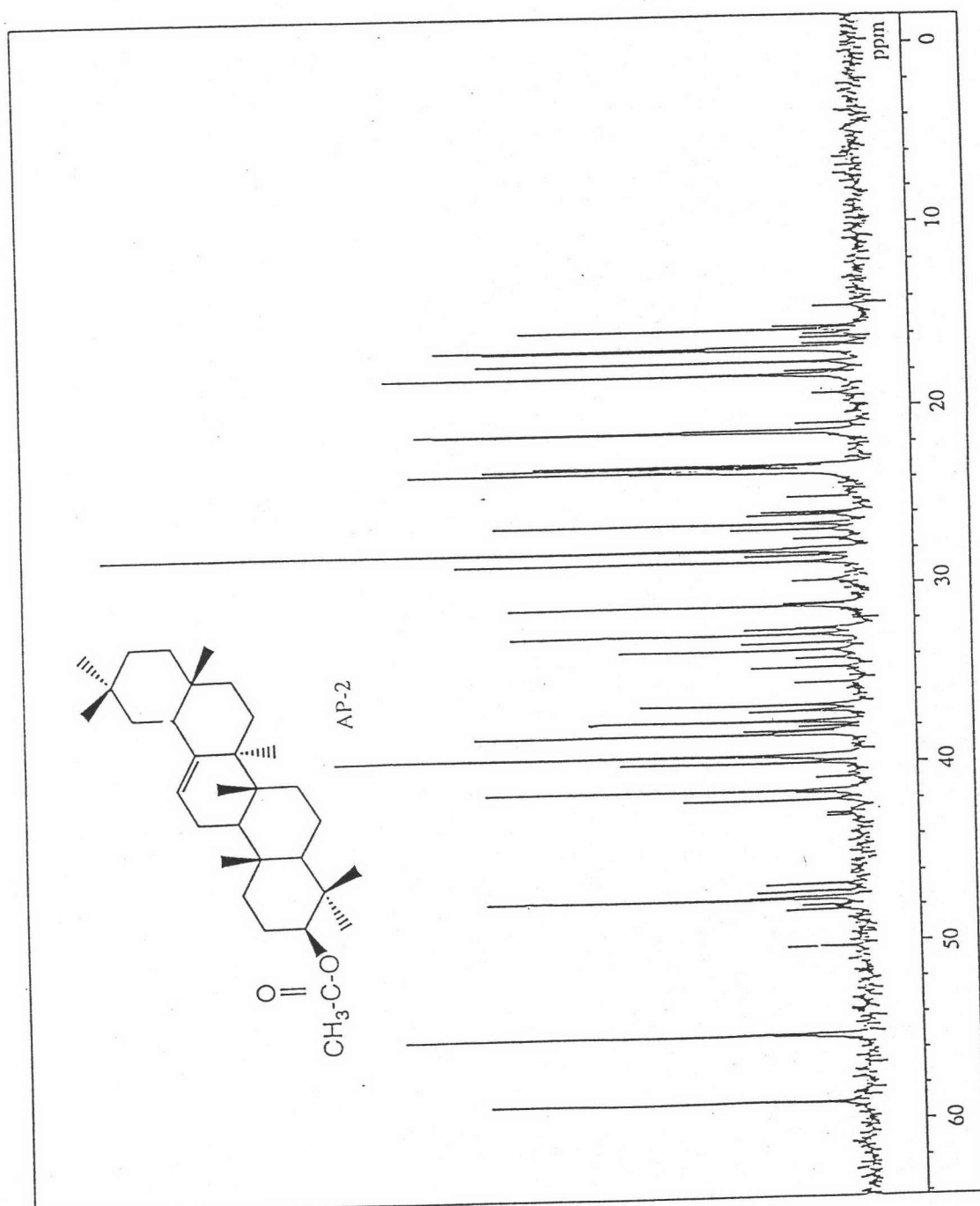


Figure 3.33 IR Spectrum of AP-2

Figure 3.34  $^{13}\text{C}$  NMR Spectrum of AP-2

Figure 3.35  $^{13}\text{C}$  NMR Spectrum (expansion) of AP-2

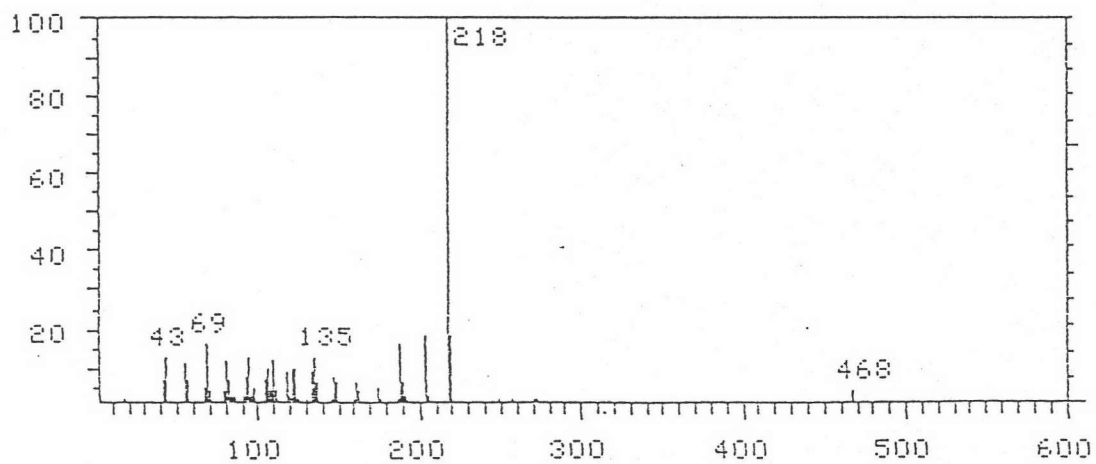
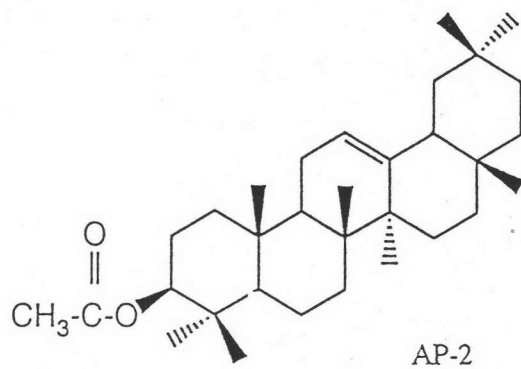


Figure 3.36 Mass Spectrum of AP-2



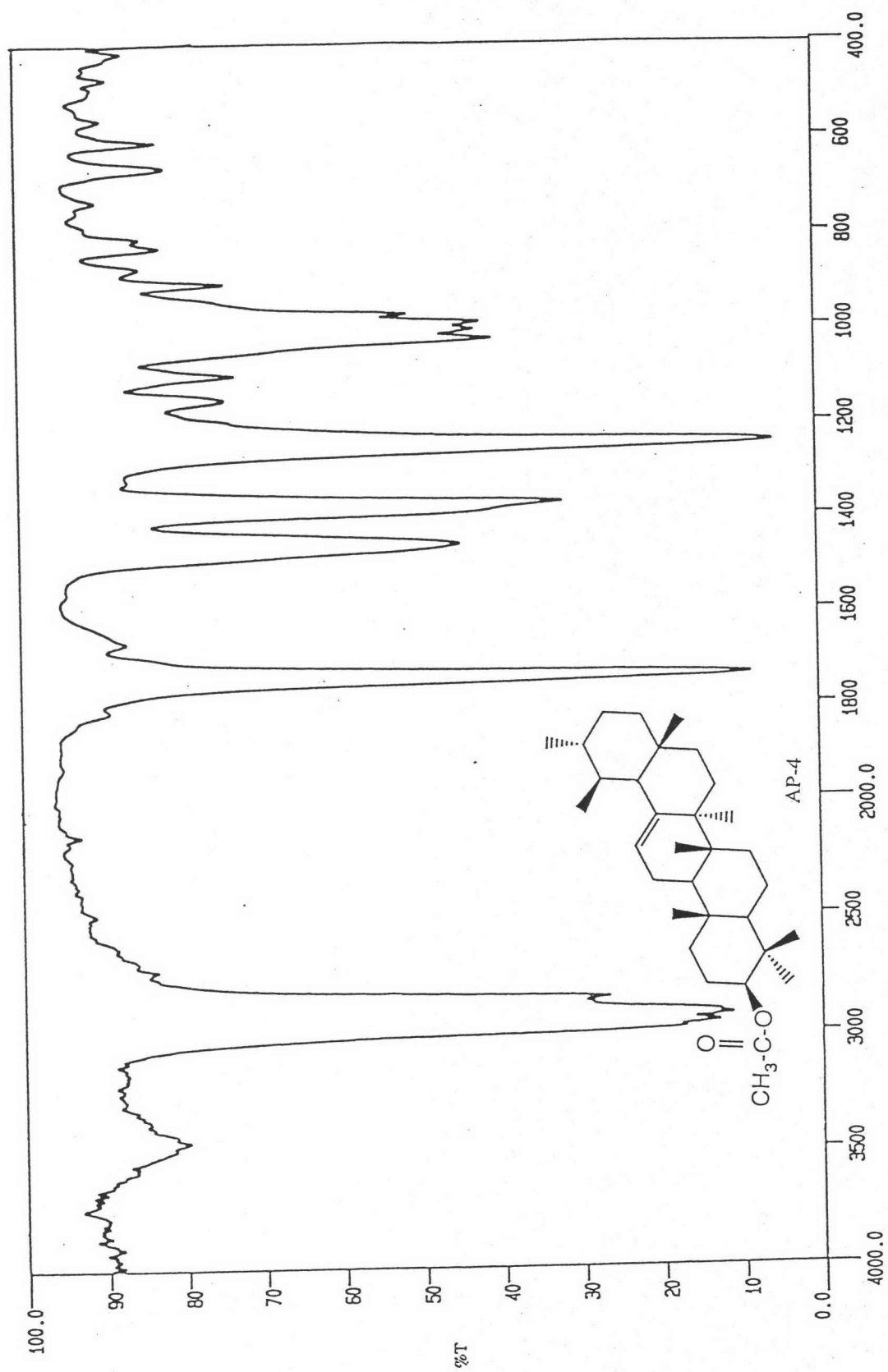
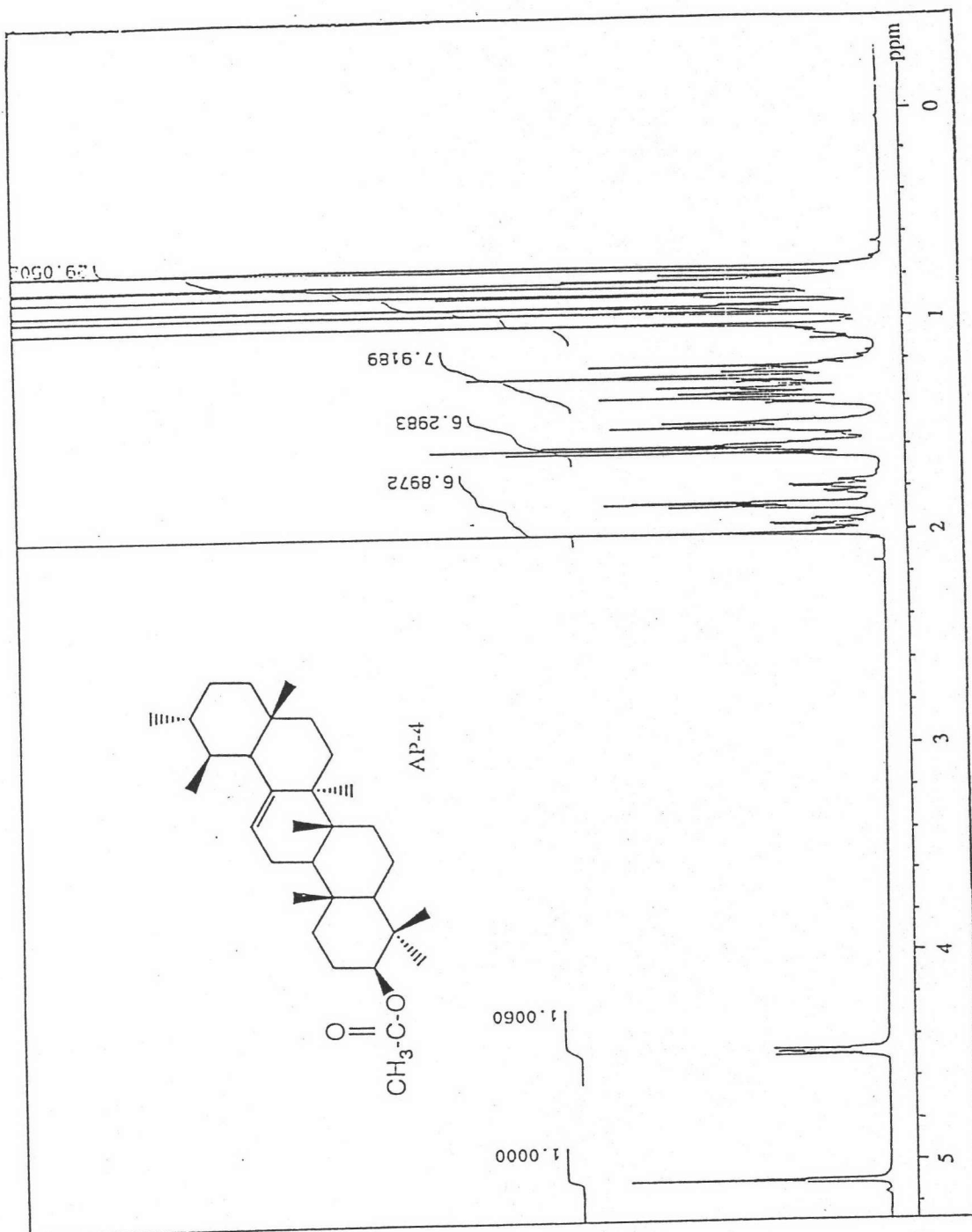
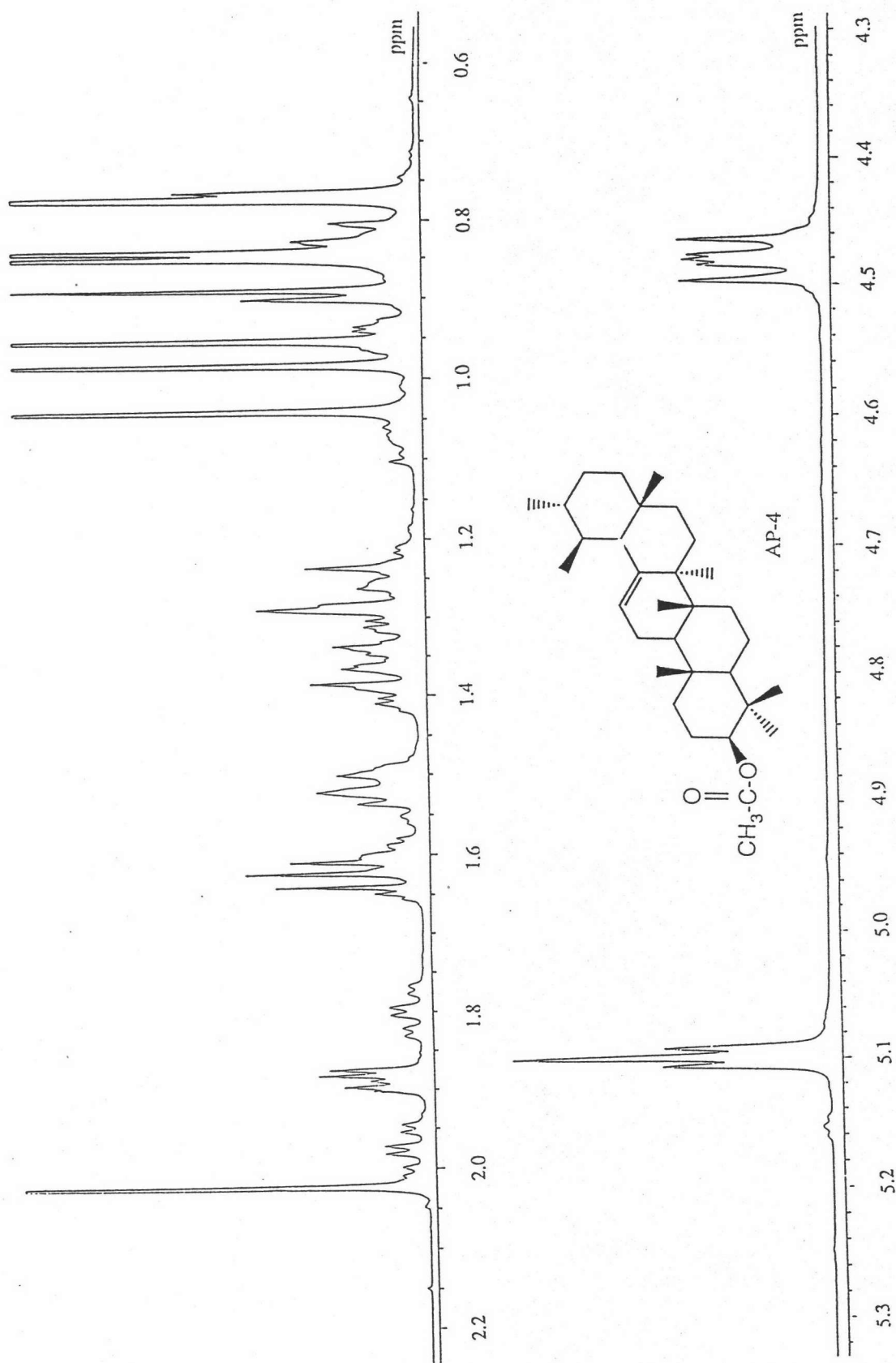
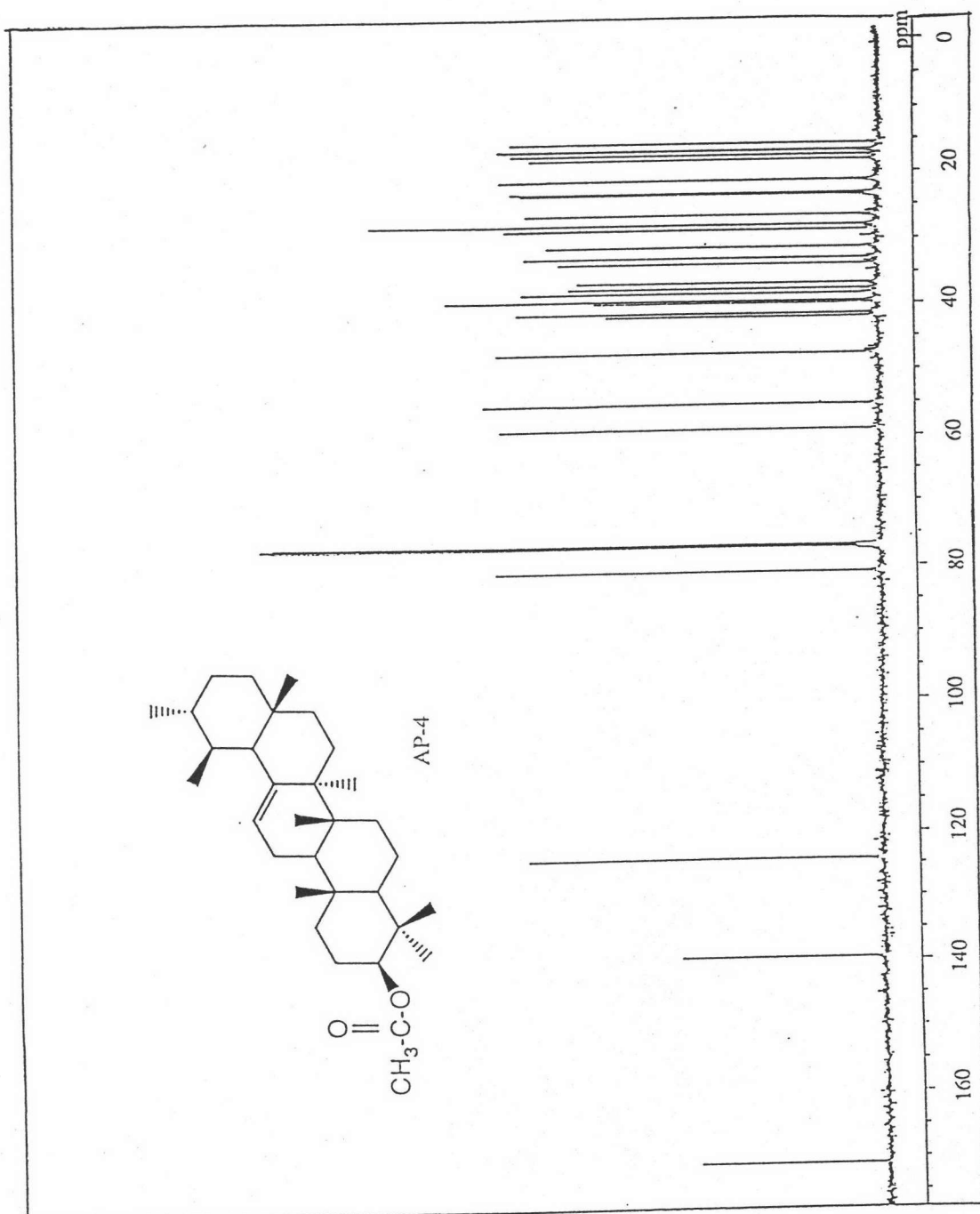
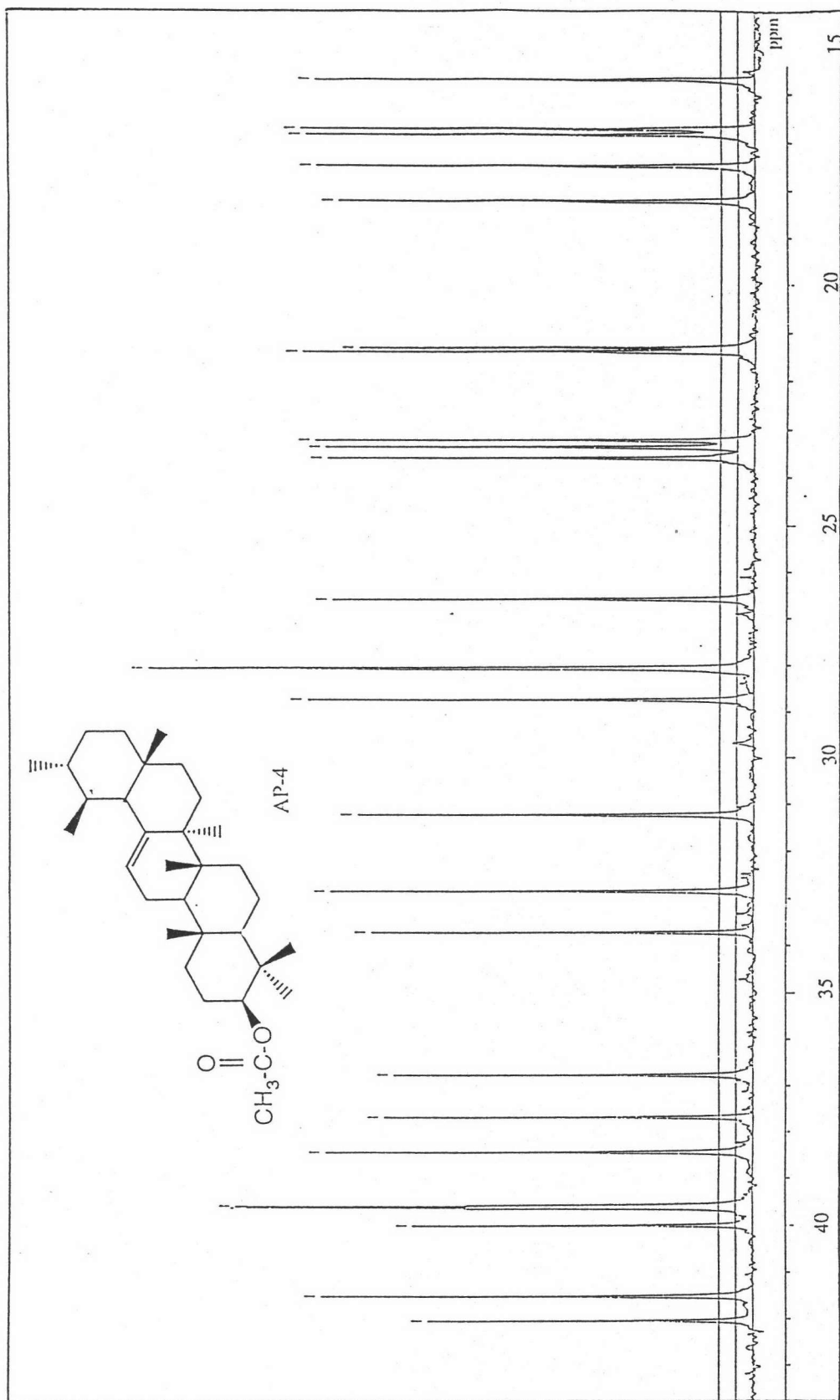


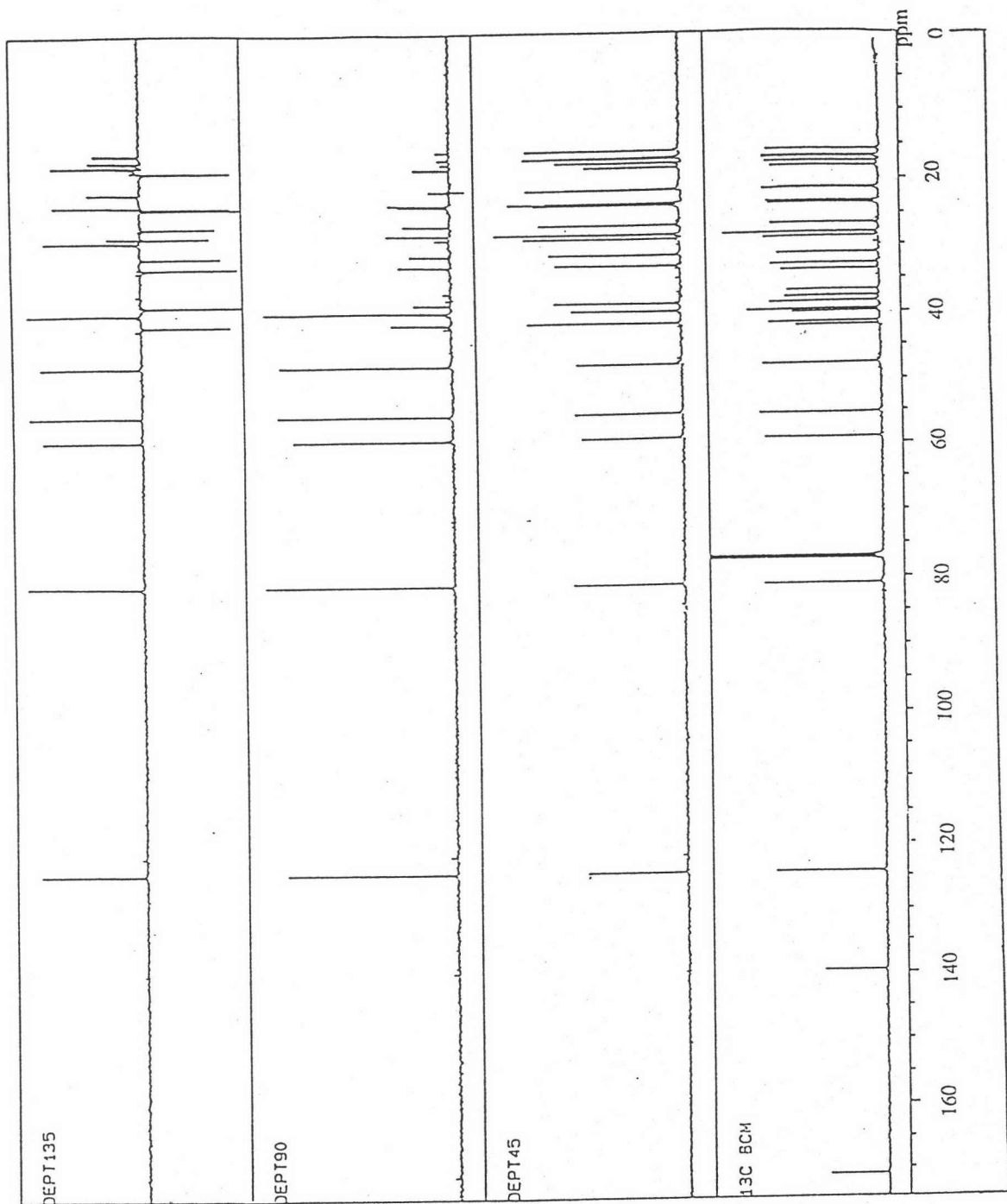
Figure 3.37 IR Spectrum of AP-4

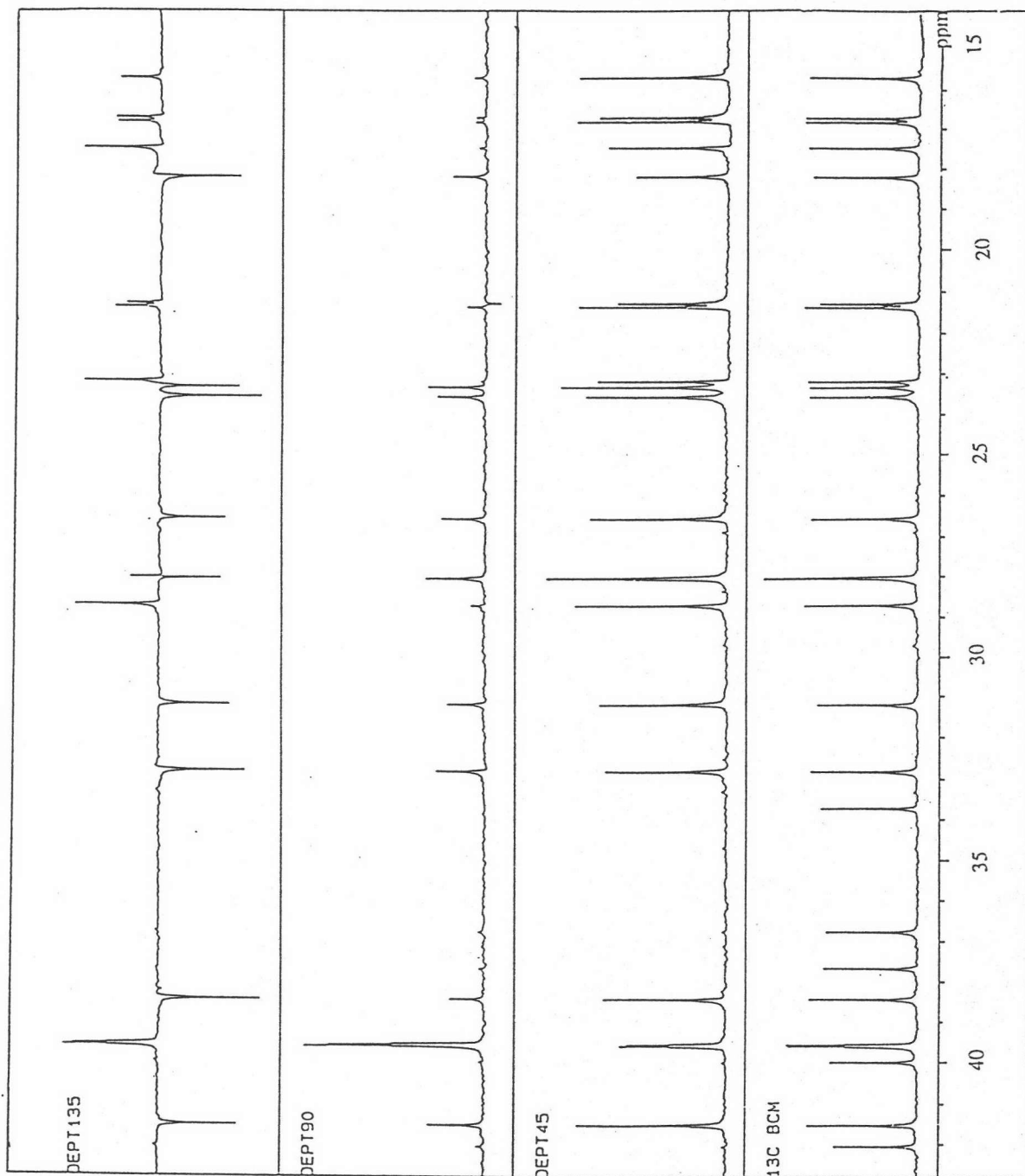
Figure 3.38  $^1\text{H}$  NMR Spectrum of AP-4

Figure 3.39  $^1\text{H}$  NMR Spectrum (expansion) of AP-4

Figure 3.40  $^{13}\text{C}$  NMR Spectrum of AP-4

Figure 3.41  $^{13}\text{C}$  NMR Spectrum (expansion) of AP-4

Figure 3.42  $^{13}\text{C}$  NMR Spectrum (DEPT) of AP-4

Figure 3.42  $^{13}\text{C}$  NMR Spectrum (DEPT) of AP-4

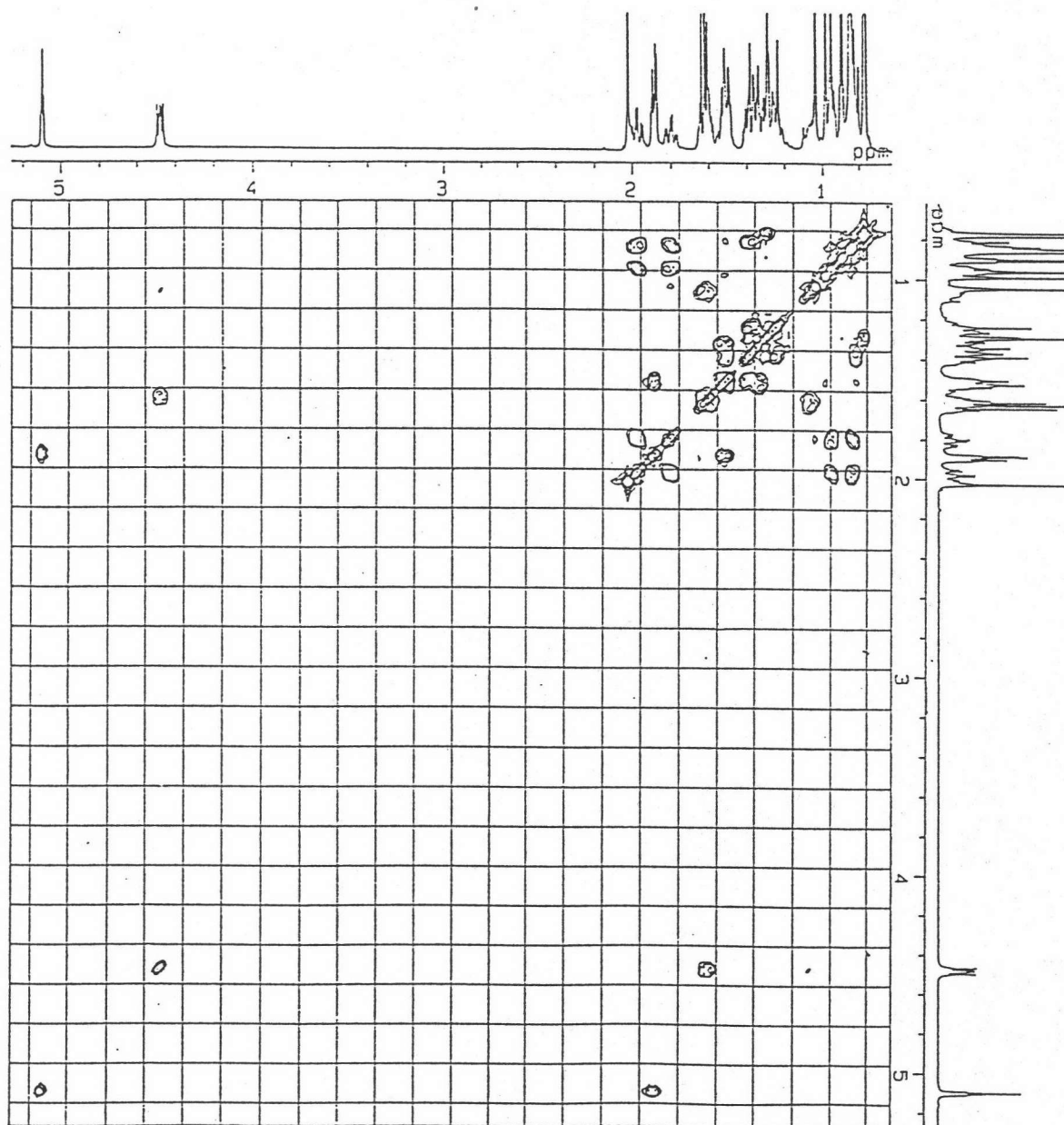


Figure 3.43 Two Dimension  $^1\text{H}$  NMR Spectrum (COSY) of AP-4



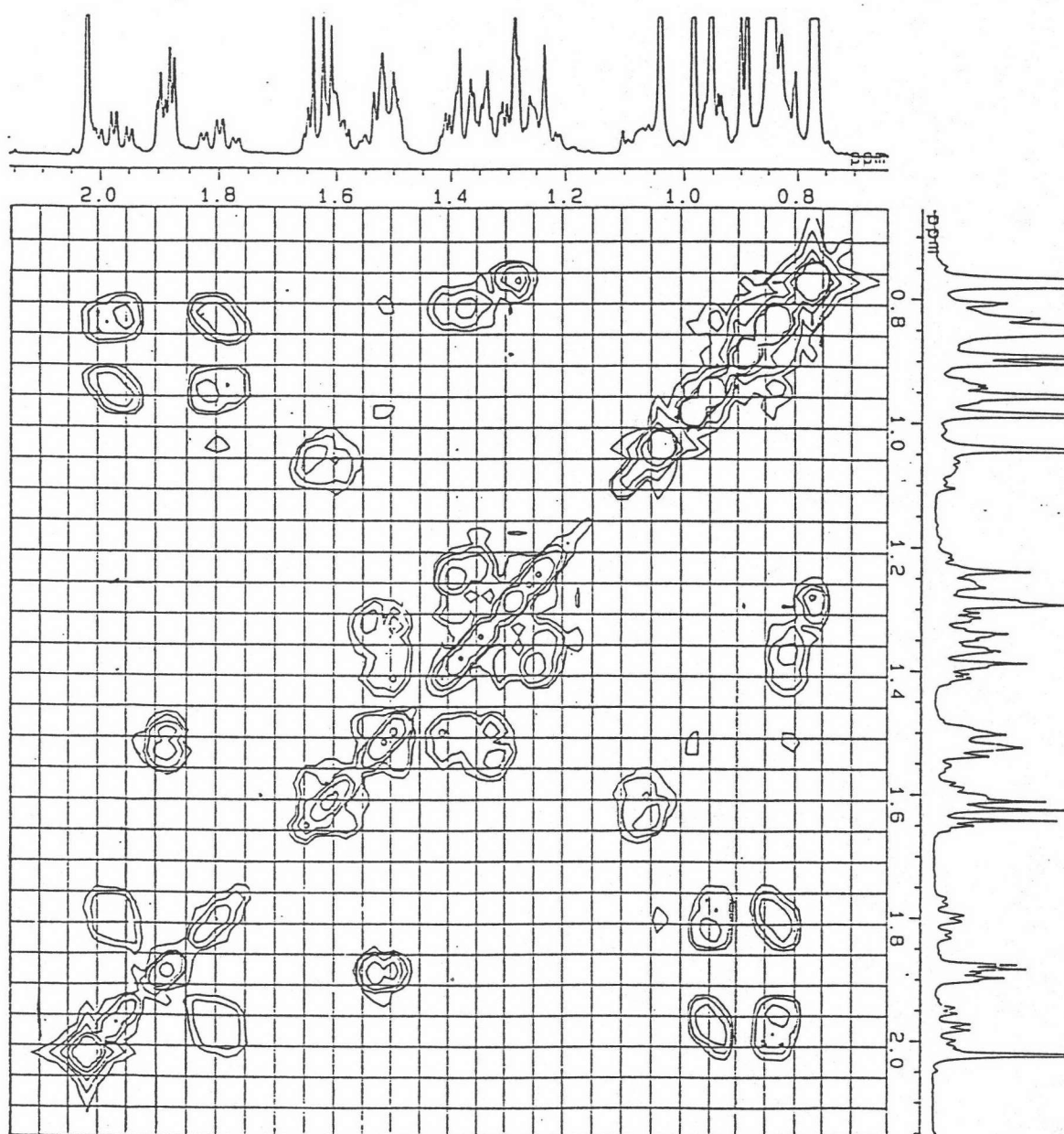


Figure 3.44 Two Dimension  $^1\text{H}$  NMR Spectrum (COSY) (expansion) of AP-4

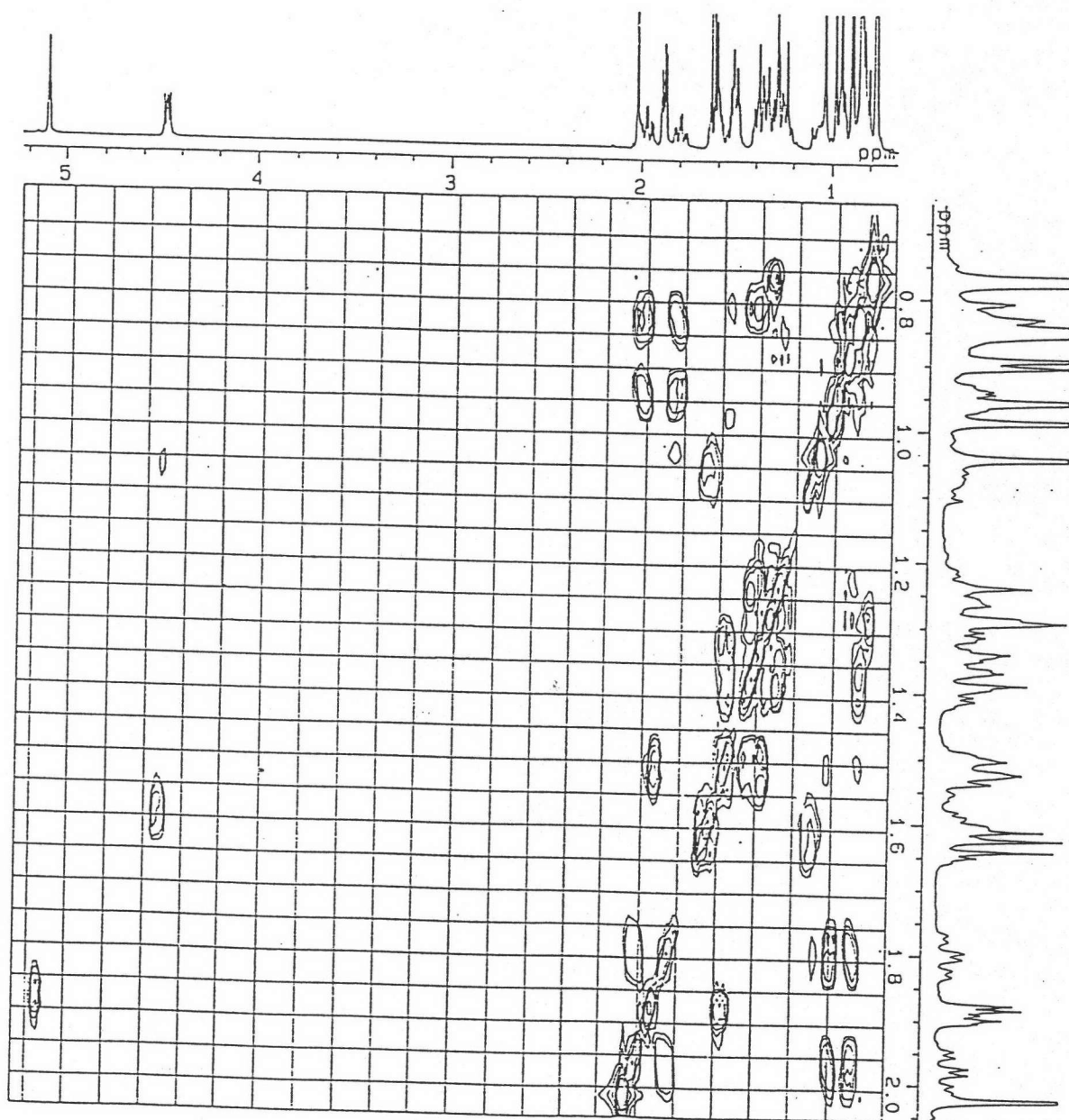


Figure 3.44 Two Dimension  $^1\text{H}$  NMR Spectrum (COSY) (expansion) of AP-4

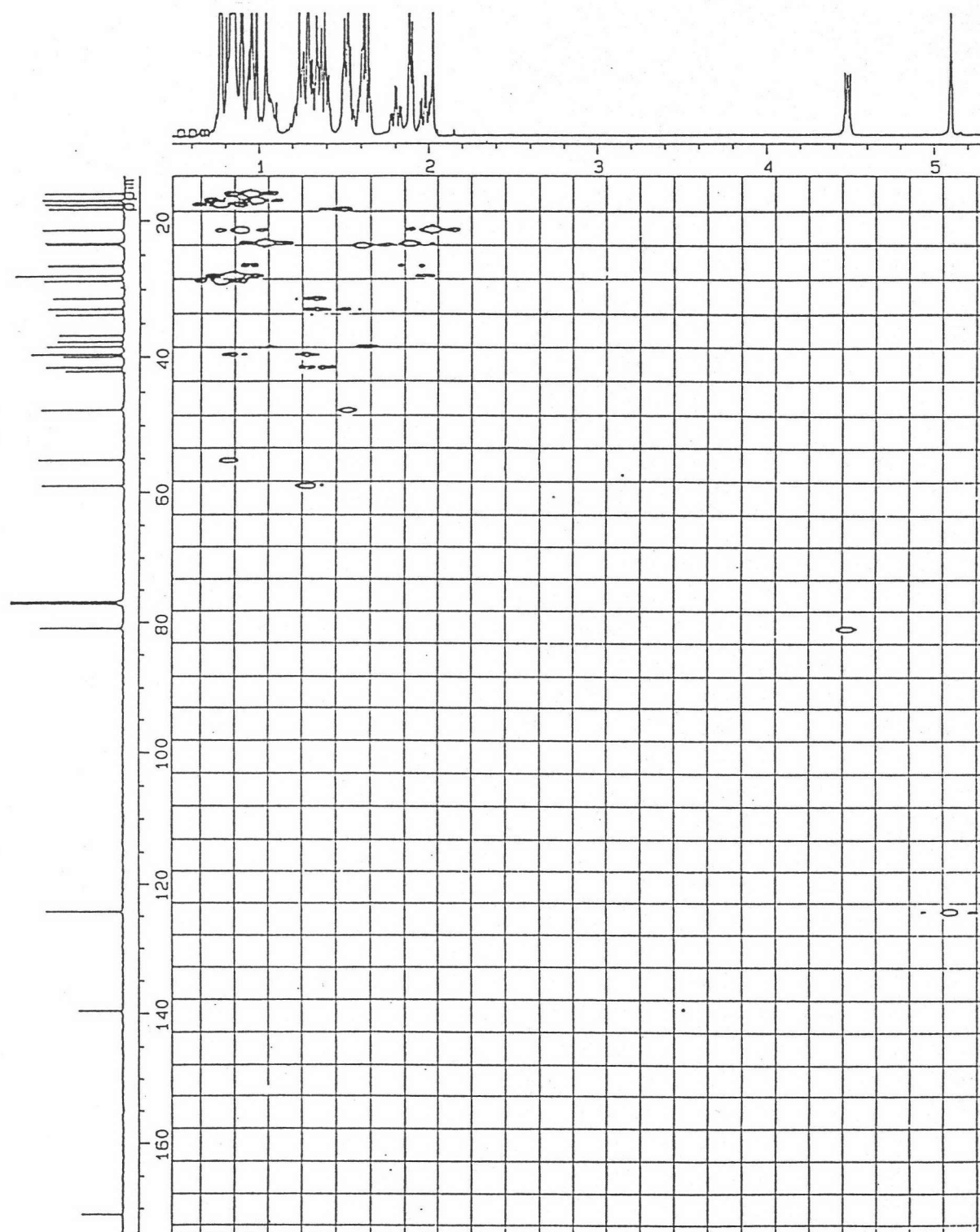


Figure 3.45. Two Dimension  $^1\text{H}$ - $^{13}\text{C}$  NMR Spectrum (HETCOR) of AP-4

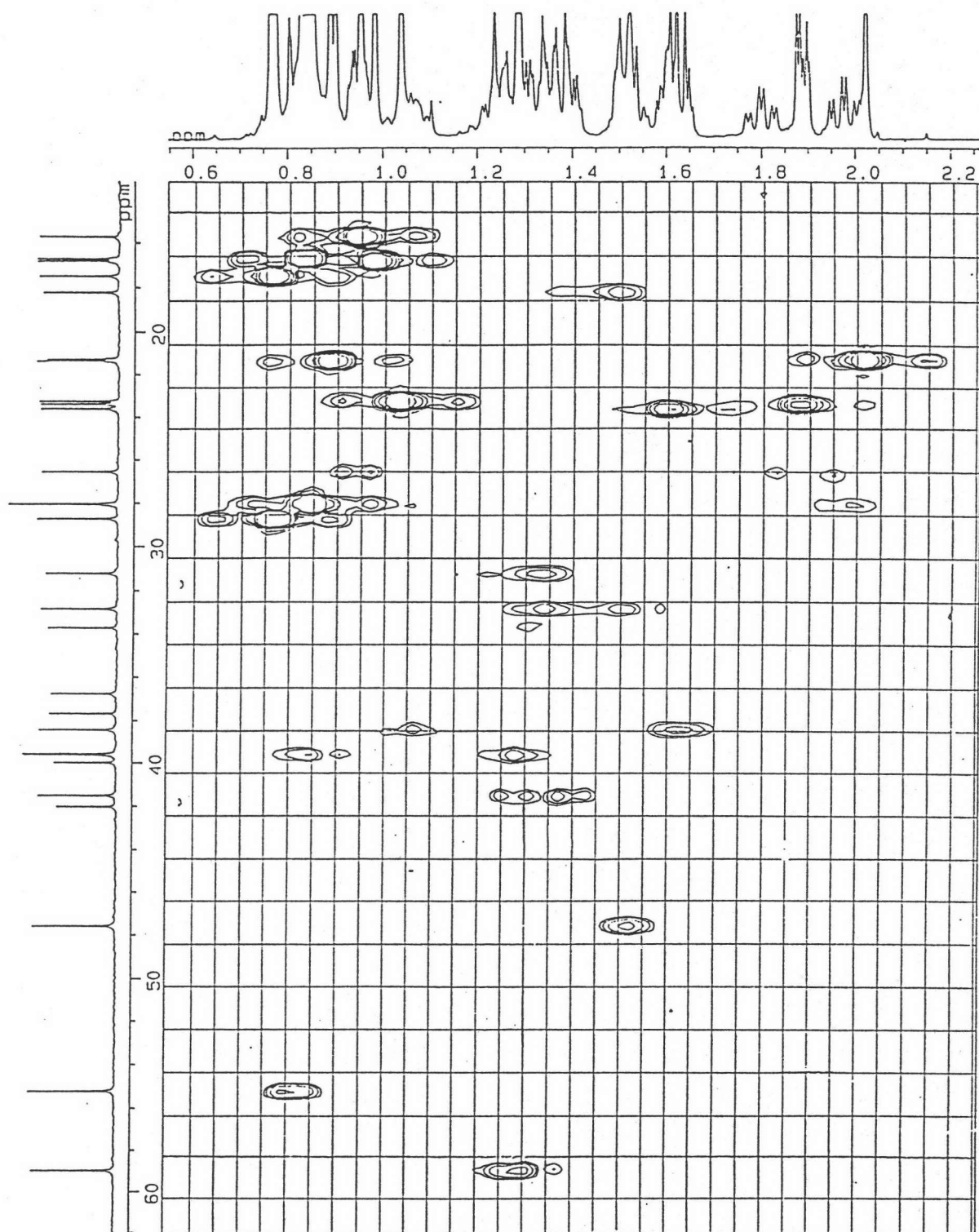


Figure 3.46 Two Dimension  $^1\text{H}$ - $^{13}\text{C}$  NMR Spectrum (HETCOR)  
(expansion) of AP-4

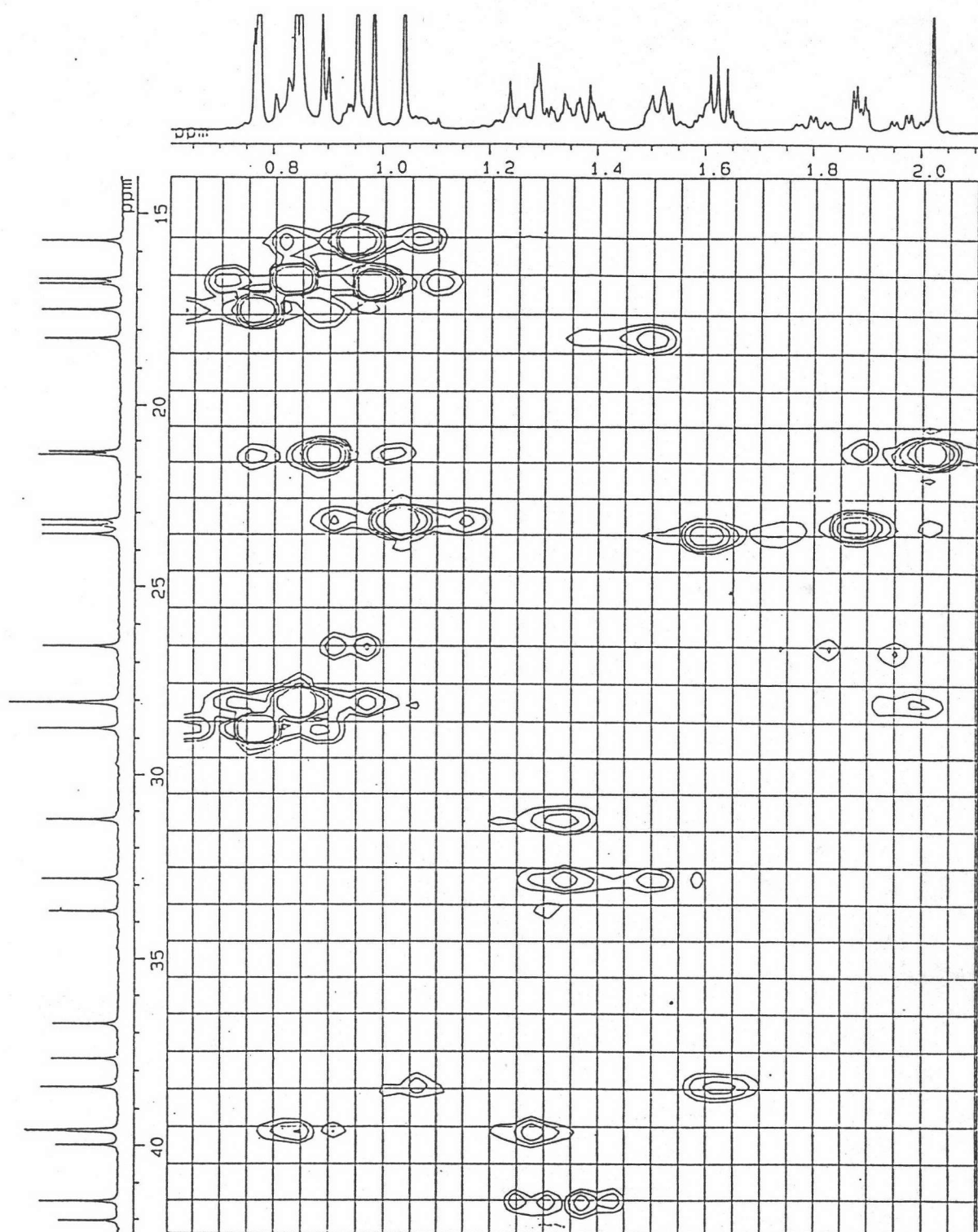


Figure 3.46 Two Dimension  $^1\text{H}$ - $^{13}\text{C}$  NMR Spectrum (HETCOR)  
(expansion) of AP-4



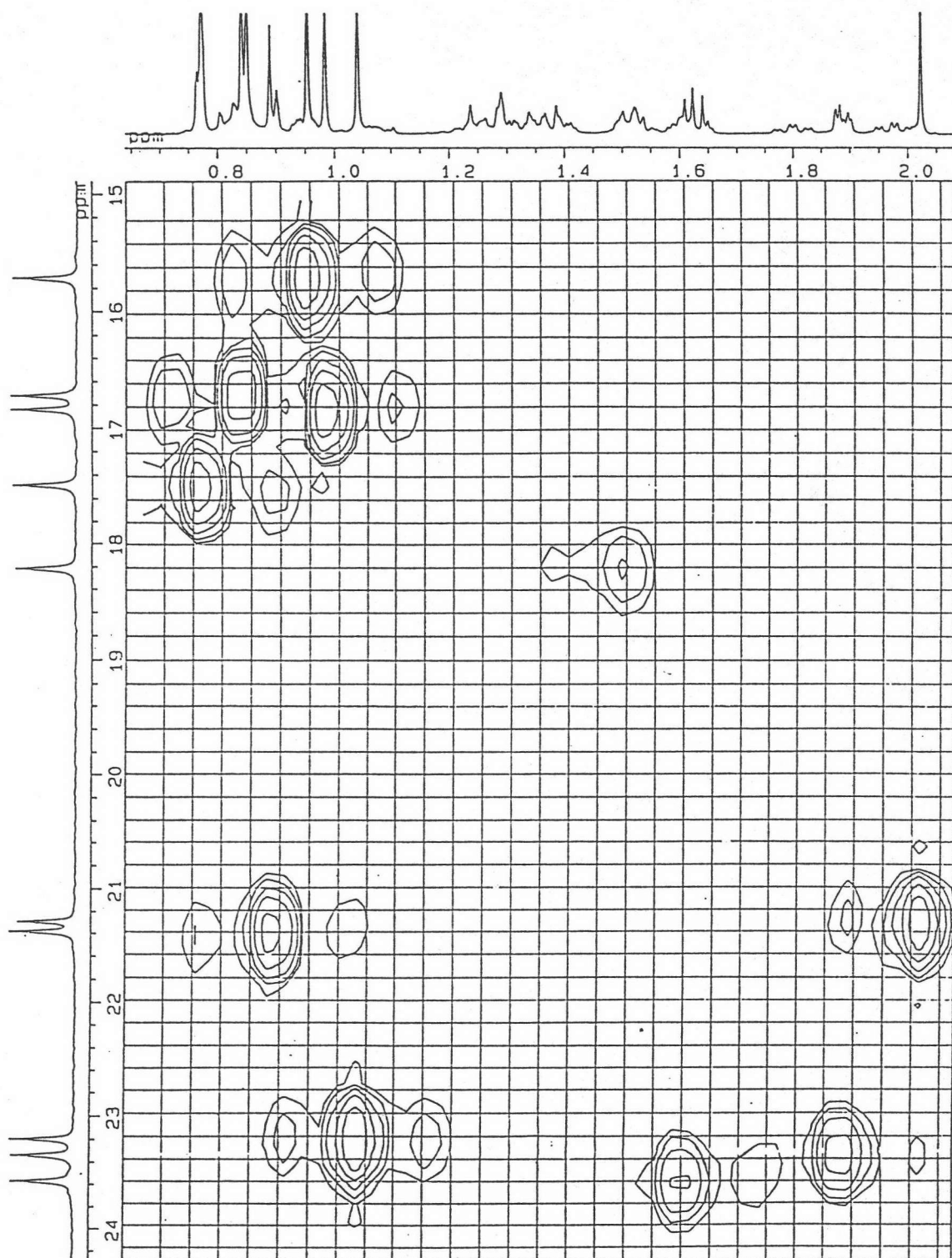


Figure 3.46 Two Dimension  $^1\text{H}$ - $^{13}\text{C}$  NMR Spectrum (HETCOR)  
(expansion) of AP-4

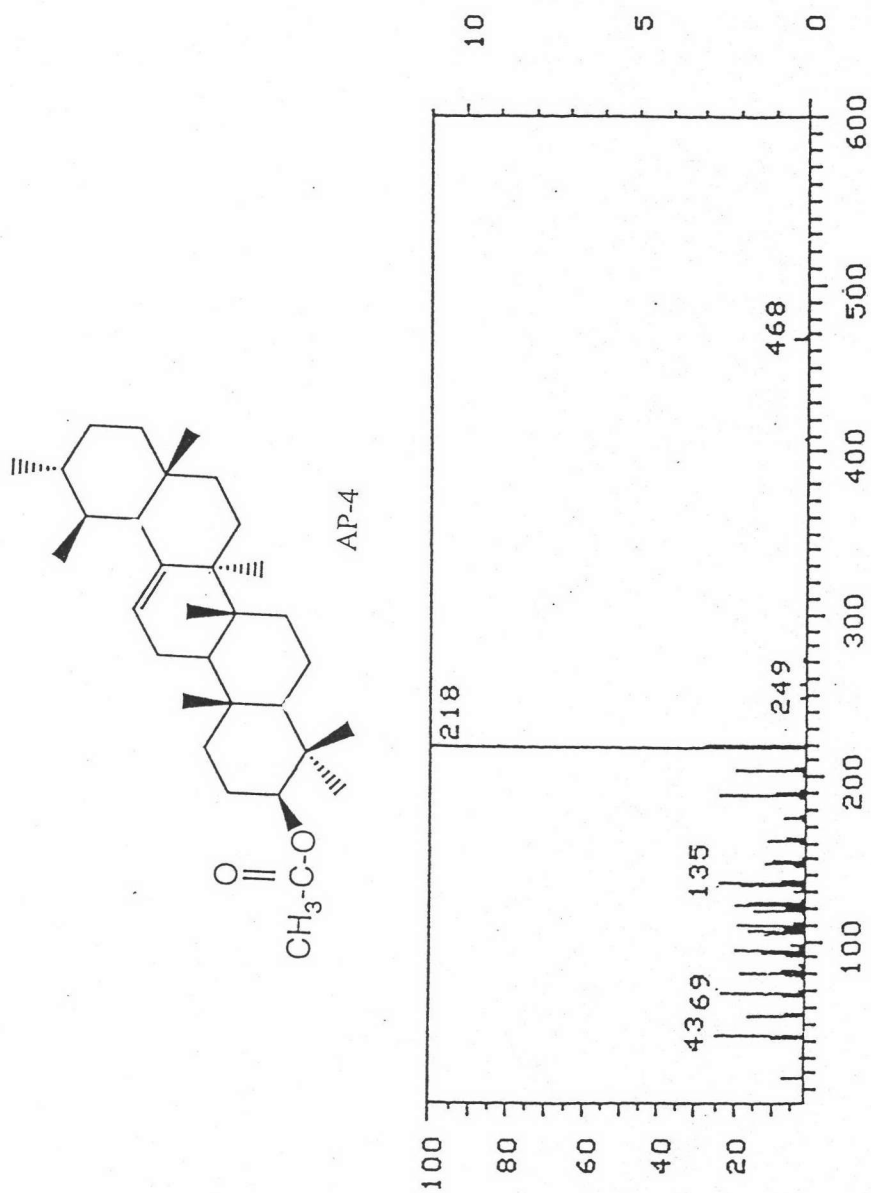


Figure 3.47 Mass Spectrum of AP-4 (EIMS)

## VITA

Miss Sunee Chansakaow was born on November 15, 1968 in Chiang Rai, Thailand. She received her Bachelor of Science in Pharmacy in 1991 from the Faculty of Pharmacy, Chiang Mai University, Chiang Mai, Thailand.

