REFERENCES

- Alam, M.S., Qasim, M.A., Kamil, M. and Ilyas, M. 1986. Sorbifolin 6-galactoside from Garcinia andamanica. Phytochemistry 25(12): 2900-2901.
- , Kamil, M. and Ilyas, M. 1987. 4'-Hydroxywogonin-7-neohesperidoside from Garcinia andamanica. Phytochemistry 26(6): 1843-1844.
- Ampofo, S.A. and Waterman, P.G. 1986. Xanthones from three Garcinia species.

 Phytochemistry 25(10): 2351-2355.
- Aplin, R.T., Blasdale, J.H.C., Halsall, T.G. and Hornby, G.M. 1967. The isolation of cycloartenol and 24-methylenecycloartenol from false kola nuts (*Garcinia kola* Heckel). J. Chem. Soc. (C) 246-248.
- Asai, F., Tosa, H., Tanaka, T. and linuma, M. 1995. A xanthone from pericarps of Garcinia mangostana. Phytochemistry 39(4): 943-944.
- Asano, J., Chiba, K., Tada, M. and Yoshii, T. 1996. Cytotoxic xanthones from Garcinia hanburyi. Phytochemistry 41(3): 815-820.
- Babu, V., Ali, S.M., Sultana, S. and Ilyas, M. 1988. A biflavonoid from Garcinia nervosa Phytochemistry 27(10): 3332-3335.
- Bakana, P., et al. 1987. Structure and chemoterapeutical activity of a polyisoprenylated benzophenone from the stem bark of Garcinia huillensis.

 J Ethnopharmacol 21: 75-84.
- Balasubramanian, K. and Rajagopalan, K. 1988. Novel xanthones from Garcinia mangostana, structures of BR-xanthone-A and BR-xanthone-B.

 Phytochemistry 27(5): 1552-1554.
- Bandaranayake, W.M., Selliah, S.S., Sultanbawa, M.U.S. and Ollis, W.D. 1975.

 Biflavonoids and xanthones of Garcinia terpnophylla and G. echinocarpa.

 Phytochemistry. 14: 1878-1880.
- Bennett, G.J. and Lee, H.H. 1988. The biosynthesis of mangostin: the origin of the xanthone skeleton. J. Chem. Soc., Chem. Commum. 9:619-620.

- Bennett, G.J. and Lee, H.H. 1989. Xanthones from Guttiferae. Phytochemistry 28 (4): 967-998. Budzikiewiez, H. Djerassi, C. and Williams, D.H. 1964. Structrue elucidation of natural products by mass spectrometry Vol. II: steroids, terpenoids, sugars and miscellaneous classes. San Francisco: Holden-Day Inc. H. Wilson, J.M. and Djerassi, C. 1963. Mass spectrmetry in structural and stereochemical problems. XXXII. Pentacyclic triterpenes. J. Am. Chem. Soc. 85: 3688-3699. Chen, F.C., Lin, Y.M. and Hung, J.C. 1975a. A new biflavanone glucoside from Garcinia multiflora. Phytochemistry 14:818-820. Lin, Y.M. and Hung, J.C. 1975b. Phenolic compounds from the heartwood of Garcinia multiflora. Phytochemistry 14:300-303. Cotterill P.J. and Sheimmann, F. 1978. Extractives from Guttiferae. Part 34. Kolaflavanone, a new biflavanone from the nuts of Garcinia kola Heckel. Applications of ¹³C nuclear magnetic resonance in elucidation of the structures of flavonoids. J. Chem. Soc. (Perkin I) 532-538. , Scheinmann, F. and Puranik, G.S. 1977. Phenolic compounds from the heartwood of Garcinia indica. Phytochemistry 16: 148-149. Crichton, E.G. and Waterman, P.G. 1979. Manniflavanone, a new 3.8-linked flavanone dimer from the stem bark of Garcinia mannii. Phytochemistry 18:53-1557. Fukuyama, Y., Kamiyama, A., Mima, Y. and Kodama, M. 1991. Prenylated xanthones from Garcinia subelliptica. Phytochemistry 30(10): 3433-3436. , Kaneshi, A., Tani, N. and Kodama, M. 1993. Subellinone, a
- Goh, S.H., Jantan, I, Gray, A.I. and Waterman, P.G. 1992. Prenylated xanthones from Garcinia opaca. Phytochemistry 31(4): 1383-1386.

Phytochemistry 33(2): 483-485.

polyisoprenylated phloroglucinol derivative from Garcinia subelliptica.

- Govindachari, T.R., Kalyanaraman, P.S., Muthukumaraswamy, N. and Pai, B.R. 1971. Xanthones of Garcinia mangostana Linn. <u>Tetrahedron</u> 27: 3919-3926.
- Gunatilaka, A.A.L., de Silva, A.M.Y.J., Sotheeswaran, S. 1982. Minor xanthones of Hypericum mysorense. Phytochemistry 21(7): 1751-1753.
- M.I.M. 1984. Terpenoid and biflavonoid constituents of Calophyllum calaba and Garcinia spicata from Sri Lanka. Phytochemistry 23(2): 323-328.
- , Sriyani, H.T.B. and Sotheeswaran, S. 1984. Quaesitol, a phenol from Garcinia quaesita. Phytochemistry 23(11): 2679-2681.
- Sriyani, H.T.B., Sotheeswaran, S. and Waight, E.S. 1983. 2,5-Dihydroxy-1,6-dimethoxyxanthone and biflavonoids of Garcinia thwaitesii.

 Phytochemistry 22(1): 233-235.
- Gustafson, K.R., et al. 1992. The guttiferones, HIV-inhibitory benzophenones from Symphonia globulifera, Garcinia livingstonei, Garcinia ovalifolia and Clusia rosea. Tetrahedron 48(46): 10093-10102.
- Harrison, L.J., Leong, L.S., Sia, G.L., Sim, K.Y. and Tan, H.T.W. 1993. Xanthones from Garcinia forbesii. Phytochemistry 33(3): 727-728.
- Heupel, R.C., Sauvaire, Y., Le, P.H., Parish, E.J. and Nes, W.D. 1986. Sterol composition and biosynthesis in sorghum: importance to developmental regulation. <u>Lipids</u> 21(1): 69-75.
- Holloway, D.M. and Scheinmann, F. 1975. Phenolic compounds from the heartwood of Garcinia mangostana. Phytochemistry 14: 2517-2518.
- Hussain, R.A., Owegby, A.G., Parimoo, P. and Waterman, P.G. 1982. Kolanone, a novel polyisoprenylated benzophenone with antimicrobial properties from the fruit of *Garcinia kola*. <u>Planta Med.</u> 44: 78-81.
- and Waterman, P.G. 1982. Lactones, flavonoids and benzophenones from Garcinia conrauana and Garcinia mannii. Phytochemistry 21(6): 1393-1396.

1971.

Ilvas, M., Kamil, M., Parveen, M. and Khan, M.S. 1994. Isoflavones from Garcinia nervosa. Phytochemistry 36(3): 807-809. Iinuma, M, Tosa, H., Tanaka, T. Asai, F. and Shimano, R. 1995a. Three xanthones from root bark of Garcinia subelliptica. Phytochemistry 38(1): 247-249. , Tosa, H., Tanaka, T., Asai, F. and Shimano, R. 1995b. Two xanthones with a 1,1-dimethylallyl group in root bark of Garcinia subelliptica. Phytochemistry 39(4): 945-947. , Tosa, H., Tanaka, T., Asai, F. and Shimano, R. 1995c. xanthones from the root bark of Garcinia subelliptica. Heterocycles 40(1): 279-284. , Tosa, H., Tanaka, T., Shimano, R., Asai, F. and Yonemori, S. 1994. Two xanthones from root bark of Garcinia subelliptica. Phytochemistry 35(5): 1355-1360. Iribarren, A.M. and Pomilio, A.B. 1985. Sitosterol 3-O-α-D-riburonofuranoside from Bauhinia candicans. Phytochemistry 24(2): 360-361. Iwu, M. and Igboko, O. 1982. Flavonoids of Garcinia kola seeds. J. Nat. Prod. 45: 650-651. Jackson, B., Locksley, H.D. and Scheimmann, F. 1969. Extractives from Guttiferae. Part XIII. Isolation and structure of five xanthones from Garcinia

Jansen, P.C.M. 1992. Garcinia L. In E.W.M. Verheij and R.E. Coronel (eds.) Plant

Resources of South-East Asia No. 2 Edible fruits and nuts. p. 176

Indonesia: Prosea.

, Locksley, H.D., Scheinmann, F. and Wolstenholme, W.A.

Extractives from Guttiferae. Part XXII. The isolation and structure of four

novel biflavanones from the heartwoods of Garcinia buchananii Baker and

eugeniifolia Wall. J. Chem. Soc. (C) 16: 2201-2203.

G. eugeniifolia Wall. J. Chem. Soc. (C) 3791-3804.

Kabangu, K., Galeffi, C., Aonzo, E., Nicoletti, M. and Messana, I. 1987. A new biflavanone from the bark of *Garcinia kola*. Planta Med. 53: 275-277.

- Karanjagaokar, C.G., Radhakrishnan, P.V. and Venkataraman, K. 1967.

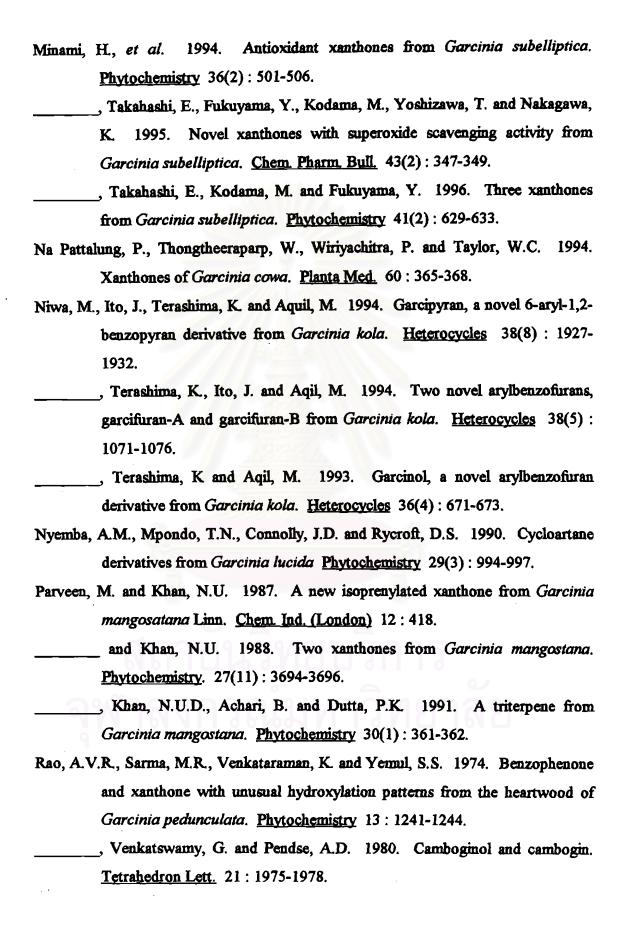
 Morelloflavone, a 3-(8-)flavonylflavanone, from the heartwood of Garcinia

 morella. Tetrahedron Lett. 33: 3195-3198.
- Karliner, J. and Djerassi, C. 1966. Terpenoids. LVII. Mass spectral and nuclear magnetic resonance studies of pentacyclic triterpene hydrocarbons. <u>J. Org.</u>
 <u>Chem.</u> 31: 1945-1956.
- Khalil, M.W. and Idler, D.R. 1980. Sterols of Scallop. III. Characterization of some C-24 epimeric sterols by high resolution (220 MHz) nuclear magnetic resonance spectroscopy. <u>Lipids</u> 15: 69-73.
- Krishnamurthy, N., Lewis, Y.S. and Ravindranath, B. 1981. On the structures of garcinol, isogarcinol and camboginol. <u>Tetrahedron Lett.</u> 22: 793-796.
- Lee, H.H. and Chan, H.K. 1977. 1,3,6-Trihydroxy-7-methoxy-8-(3,7-dimethyl-2,6-octadienyl)xanthone from *Garcinia cowa*. Phytochemistry 16: 2038-2040.
- Lewis, Y.S. and Neelakantan, S. 1965. (-)-Hydroxycitric acid the principal acid in the fruits of *Garcinia cambogia* DESR. Phytochemistry 4: 619-625.
- Lin, L.J., Lin, L.Z., Pezzuto, J.M., Cordell, G.A. and Ruangrungsi, N. 1993.

 Isogambogic acid and isomorellinol from Garcinia hanburyi. Magn. Res.

 Chem. 31(4): 340-347.
- Locksley, H.D., Moore, I. and Scheimann, F. 1966. Extractives from Guttiferae.

 Part III. The isolation and structure of symphoxanthone and globuxanthone from Symphonia globulifera L. J. Chem. Soc. (C) 2186-2190.
- Mahabusarakam, W., Wiriyachitra, P. and Taylor, W.C. 1987. Chemical constituents of Garcinia mangostana. J. Nat. Prod. 50(3): 474-478.
- Maillard, M., Adewunmi, C.O. and Hostettmann, K. 1992. A triterpene glycoside from the fruits of *Tetrapleura tetratera*. Phytochemistry 31(4): 1321-1323.
- Matsumoto, T., Nakagawa, M. and Itoh, T. 1984. 24α-Methyl-5α-cholest-7-en-3β-ol from seed oil of *Helianthus annuus*. Phytochemistry 23(4): 921-923.
- Mbafor, J.T. and Fomum, Z.T. 1989. Isolation and characterization of taxifolin 6-C-glucoside from Garcinia epunctata. J. Nat. Prod. 52(2): 417-419.



- Roberts, J.C. 1961. Naturally occurring xanthones. Chem. Rev. 61:591-605.
- Rubinstein, I., Goad, L.J., Clague, A.D.H. and Mulheirn, L.J. 1976. The 220 MHz

 NMR spectra of phytosterols. Phytochemistry 15: 195-200.
- Sahu, A., Das, B. and Chatterjee, A. 1989. Polyisoprenylated benzophenones from Garcinia pedunculata. <u>Phytochemistry</u> 28(4): 1233-1235.
- Sakai, S., Katsura, M., Takayama, H., Aimi, N., Chokethaworn, N. and Suttajit, M. 1993. The structure of Garcinone E. Chem. Pharm. Bull. 41(5): 958-960.
- Scott, A.I. 1964. <u>Interpretation of the ultraviolet spectra of natural products.</u>

 Germany: Pergamon Press Ltd.
- Sen, A.K., Sarkar, K.K., Mazumder, P.C., Banerji, N., Uusvuori, R. and Hase, T.A. 1980. A xanthone from *Garcinia mangostana*. Phytochemistry 19: 2223-2225.
- ______, Sarkar, K.K., Majumder, P.C. and Banerji, N. 1981. Minor xanthones of Garcinia mangostana. Phytochemistry 20: 183-185.
- ______, Sarkar, K.K., Mazumder, P.C., Banerji, N., Uusvuori, R. and Hase, T.A.

 1982. The structures of Garcinones A, B and C: three new xanthones from

 Garcinia mangostana. Phytochemistry 21(7): 1747-1750.
- Sarkar, K.K., Majumder, P.C. and Banerji, N. 1986. Garinone-D, a new xanthone from *Garcinia mangostana* Linn. <u>Ind. J. Chem.</u> 25B: 1157-1158.
- Singh, M.P., Parveen, N., Khan, N.U., Achari, B. and Dutta, P.K. 1991. Constituents of Garcinia xanthochymus. Fitoterepia 62(3): 286.
- Smithinand, T. 1980. <u>Thai plant name (Botanical names vernacular names).</u> 2nd ed. Bangkok: Funny Publishing.
- Sordat-Diserens, I., Hamburger, M., Rogers, C. and Hostettmann, K. 1992. Dimeric xanthones from Garcinia livingstonei. Phytochemistry 31(10): 3589-3593.
- _____, Marston, A., Hamburger, M., Rogers, C. and Hostettmann, K. 1989.

 Novel prenylated xanthones from Garcinia gerrardii Harvey. Helv. Chim.

 Acta 72: 1001-1007.
- _____, Rogers, C., Sordat, B. and Hostettmann, K. 1992. Prenylated xanthones from Garcinia livingstonei. Phytochemistry 31(1): 313-316.

- Roberts, J.C. 1961. Naturally occurring xanthones. Chem. Rev. 61: 591-605.
- Rubinstein, I., Goad, L.J., Clague, A.D.H. and Mulheirn, L.J. 1976. The 220 MHz

 NMR spectra of phytosterols. Phytochemistry 15: 195-200.
- Sahu, A., Das, B. and Chatterjee, A. 1989. Polyisoprenylated benzophenones from Garcinia pedunculata. <u>Phytochemistry</u> 28(4): 1233-1235.
- Sakai, S., Katsura, M., Takayama, H., Aimi, N., Chokethaworn, N. and Suttajit, M. 1993. The structure of Garcinone E. Chem. Pharm. Bull. 41(5): 958-960.
- Scott, A.I. 1964. <u>Interpretation of the ultraviolet spectra of natural products.</u>

 Germany: Pergamon Press Ltd.
- Sen, A.K., Sarkar, K.K., Mazumder, P.C., Banerji, N., Uusvuori, R. and Hase, T.A. 1980. A xanthone from *Garcinia mangostana*. Phytochemistry 19: 2223-2225.
- Garcinia mangostana. Phytochemistry 20: 183-185.
- , Sarkar, K.K., Mazumder, P.C., Banerji, N., Uusvuori, R. and Hase, T.A. 1982. The structures of Garcinones A, B and C: three new xanthones from Garcinia mangostana. Phytochemistry 21(7): 1747-1750.
- _____, Sarkar, K.K., Majumder, P.C. and Banerji, N. 1986. Garinone-D, a new xanthone from Garcinia mangostana Linn. <u>Ind. J. Chem.</u> 25B: 1157-1158.
- Singh, M.P., Parveen, N., Khan, N.U., Achari, B. and Dutta, P.K. 1991. Constituents of Garcinia xanthochymus. Fitoterepia 62(3): 286.
- Smithinand, T. 1980. Thai plant name (Botanical names vernacular names). 2nd ed.

 Bangkok: Funny Publishing.
- Sordat-Diserens, I., Hamburger, M., Rogers, C. and Hostettmann, K. 1992. Dimeric xanthones from *Garcinia livingstonei*. Phytochemistry 31(10): 3589-3593.
- ______, Marston, A., Hamburger, M., Rogers, C. and Hostettmann, K. 1989.

 Novel prenylated xanthones from Garcinia gerrardii Harvey. Helv. Chim.

 Acta 72: 1001-1007.
- Rogers, C., Sordat, B. and Hostettmann, K. 1992. Prenylated xanthones from Garcinia livingstonei. Phytochemistry 31(1): 313-316.

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