



References

ภาษาไทย

กรมเศรษฐกิจการพาณิชย์. กรม. รายงานผลการศึกษาโครงการศึกษาวิจัยตลาดพืชสมุนไพรและเครื่องเทศ 1-2 พระนคร : กรมเศรษฐกิจการพาณิชย์กระทรวงพาณิชย์, 2532.

ชัยโย ชัยชาญทิพยุทธ. สมุนไพร. ลำดับที่ 2 กรุงเทพมหานคร : จุฬาลงกรณ์มหาวิทยาลัย, 2524

พยอม ดันดีวัฒน์. เครื่องเทศ. ม.ป.ท. , 2528

สมพร ทิรัญรามเดช. สมุนไพรใกล้ตัว ตอนที่ 3 เชียงใหม่ : คณะเภสัชศาสตร์ มหาวิทยาลัยเชียงใหม่, 2525.

ภาษาอังกฤษ

Barber, M.S., Hardisson, A., Jackson, L.M., and Weedon, B.C. Studies in Nuclear Magnetic Resonance, Part IV Stereochemistry of the Bixins. J.Chem. Soc. (1961) : 1625

Bartho, L., Holzer., Lembeck, F., and Szolosanyi, J. Evidence that the contractile response of the guinea-pig ileum to capsaicin is due to release of substance P. J. Physiol. 332 (1982) : 157

Benett, D.J., and Kirby, G.W. Constitution and biosynthesis of capsaicin. J. Chem. Soc. (1968) : 442

Camara, B., Bardat, F., and Moneger, R. Sites of biosynthesis of carotenoids in Capsicum Chromoplasts. Eur. J. Bio.Chem. 127 (1982) : 255

- Camara, B. Carotenoid biosynthesis in vitro conversion of violaxanthin to capsorubin by a chromoplast enriched fraction of capsicum fruits. Biochem. Biophys. Res. Comm. 93 (1980) : 113
- Camara, B., and Moneger, R. Carotenoids biosynthesis. In vitro conversion of antheraxanthin to capsanthin by a chromoplast enriched fraction of capsicum fruits. Biochem. Biophys. Res. Comm. 99 (1981) : 1117
- Christopher, J. Carotenoids as colorants and vitamin A precursors New York : Academic press, 1981.
- Chrombie, L., Dandegaonker, S.H., and Simpson, K.S. Amides of vegetable origin, part IV. Synthesis of capsaicin. J. Chem. Soc. (1955) : 1025
- DeCecco, J.J. Gas-liquid chromatography determination of capsaicin. J. Assoc. Off. Anal. Chem. 59 (1976) : 1
- Eshbaugh, U.H., Guttman, S.T., and Mclead, M.J. The origin and evaluation of domesticated Capsicum species. J. Ethnobiol. 3 (1983) : 49
- Frossberg, A. Lingen, C. Ernster, L., and Lindberg, O. Modification of X-irradiation syndrome for lycopene. Exp. Cell Res. 16 (1959) : 7
- Fujiwake, H., Suzuki, T., Oka, S., and Iwai, K. Enzymatic formation of capsaicinoid from vanillylamine and iso-type fatty acid by cell free extracts of *Capsicum annum.* Agric. Biol. Chem. 44 (1980) : 2907
- Fukuda, K., Fujiwara, M. Effect of capsaicin on the guinea-pig isolated atrium. J. pharm. pharmacol. 21 (1969) : 622
- Gal, I.C. Neurere Angaben uber capsaicin. Experientia 21 (1965) : 363
- Goodman, D.S., and Huang, H.S. The intestinal absorption and metabolism of vitamin A and β -carotene in man. J. Clin. Invest 45 (1966) : 1615
- Iwai, K., Suzuki, T., Fujiwake, H., and Oka, S. Simultaneous microdetermination of capsaicin and its four analogues by using high-performance liquid chromatography and gas chromatography-mass spectrometry. J. Chromatogr. 172 (1979) : 303

- Jancso-Gaber, A., Szolcsanji, J., and Janeso. N. Irreversible impairment of thermoregulation induced by capsaicin and similar pungent substances in rat and guinea-pigs. J. physiol. 206 (1970) : 495
- Jensen, R.J., Meleod, M.S., Eshbaugh, W.H., and Guttman, S.I. Numerical taxonomic analysis of allozymic variation in capsicum Taxon 28 (1979) : 315
- Jurenitsch, J., David, M., Heresch, F., and Kubelka, W. Detection and identification of new pungent compounds in fruits of capsicum. Planta Med. 36 (1979) : 61
- Jurenitsch, J. and Kampelniehler, I. Rapid determination of nonylic acid vanillyamide and other capsaicinoids in capsicum fruits and extracts by means of Ag⁺-complexation high-performance liquid chromatography. J. Chromatogr. 193 (1980) : 101
- Jurenitsch, J., Kubelka, W., and Jentzsch, K. Identification of cultivated taxa of capsicum, taxonomy, anatomy and composition of pungent principle, Plant. Med. 35 (1979) : 174
- Kawada, T., Watanabe, T., Katsura, K., Takami, H., and Iwai, K. Formation and metabolism of pungent principle of capsicum fruits. XV. Microdetermination of capsaicin by high-performance liquid chromatography with electrochemical detection. J. Chromatogr. 329 (1985) : 99
- Kraus, K., and Stahl, E. Microthermic application on thin layer and its use in the control of drugs. (Determination of capsaicin). Ceskoslovenska Farmacie 18 (1969) : 535
- Kenneth, H. ed. Official method of analysis of the association of official analytical chemists. 15th. Association of official analytical chemists, Inc., 1990.
- Krinsky, N.I. Carotenoids. Basil : Birkhaeuser, 1971.
- Lee, K.R., Suzuki, T., Kobashi, M., Hasegawa, W., and Iwai, K. Quantitative microanalysis of capsaicin, dihydrocapsaicin and nordihydrocapsaicin using mass fragmentography. J. Chromatogr. 123 (1976) : 179

- Leete, E., and Louder, C.L. Biosynthesis of capsaicin and dihydrocapsaicin in *Capsicum frutescens*. J. Am. Chem. Soc. 90 (1968) : 6837
- Lord, C.E., Tirimanna, A.S. A quantitative study of the carotenoid pigment of Sri Lanka chillies (*Capsicum annum*). Mikrochimica Acta. 4 (1976) : 469
- Lorenz, O.A., and Maynard, D.N. KNOH's handbook for vegetable growers, New York : Willy, 1980.
- Mathews, M.M. The relationship between carotenoid pigment and resistant to radiation in non-photosynthetic bacteria. Nature. 203 (1964) : 1092
- Molnar, J. pharmacologic effects of capsaicin, the sharp tasting principle in paprika. Arzneimittel-Forschung. 5 (1965) : 718
- Muller-Stock, A., Joshi, R.K., and Buchi, J. Gas Chromatographic separation of natural capsaicinoid mixture and identification using mass and NMR spectrum analysis 1 Substance of capsicum. Pharm. Acta. Helv. 47 (1972) : 7
- Muller-Stock, A., Joshi, R.K., and Buchi, J. Studies on the content of substance in capsicum. 4 Quantitative determination of total contents of hot substances in the crude drug by means of UV-spectrophotometry. Pharm. Acta. Helv. 48 (1973) : 504
- Munzel, K., and Fuller, W. Coloration of fatty suppositories with carotenoid-dyes. Pharm. Acta. Helv. 44 (1961) : 108
- Neumann, D. On the biosynthesis of capsaicin. Naturwissenschaften 53 (1966) : 131
- Naponitaya, W. Effects of capsaicin in combination with diets of varying protein content on the duodenal absorptive cells of the rat Am. J. Digest. Dis 19 (1974) : 439.
- Pokharkar, D.S., Dethé, M.D. Gas-liquid chromatographic studies on residues of endosulfan of chilli. J. Euvars Sci. Heal. 16 (1981) : 439
- Pankar, D.S., and Magar, N.G. New method for determination of capsaicin by using multi-band thin layer chromatography. J. chromatogr. 144 (1977) : 149
- Rangoonwala, K. On the biosynthesis of capsaicin. Pharmazie. 24 (1969) : 177

- Sadayoshi, K. and Masagi, F. Studies on the pungent principle of capsicum. Agric. Biol. Chem. 34 (1970) : 1970
- Saria, A., Lembeck, F. and Skofitsch, G. Determination of capsaicin in tissues and separation of capsaicin analogues by high-performance liquid chromatography. J. Chromatogr. 208 (1981) : 41
- Simpson, K.L., Nakayama, T.O., and Chichester, C.O. Carotenoid biosynthesis in *Rhodotorala glutinis*. J. Bacteriol. 88 (1964) : 1688
- Spanyar, P, and Blazorich, M. A thin-layer chromatographic method for the determination of capsaicin in grown paprika. Analyst. 94 (1969) : 1084
- Stewart, I., and Wheaton, T.A. Continuous of flow separation of carotenoids by liquid chromatography. J. Chromatogr. 55 (1971) : 325
- Sticher, O., Soldati, F., and Joshi, R.K. High-performance liquid chromatographic separation and quantitative determination of capsaicin, dihydrocapsaicin, nordihydrocapsaicin and homodihydrocapsaicin in natural capsaicinoid mixtures and *Fractus capsici*. J. Chromatogr. 166 (1978) : 221
- Szolcsanyi, J., and Bartho, L. Advancement of Physiological Science Budapest : Akademiaikia de, 1980.
- Szolcsanyi, J., Jancso-Gabor, A., and Joo, F. Functional and fine structural characteristics of the sensory neuron blocking effects of capsaicin Kauny. Asch. Pharmacol. 287 (1975) : 157
- The joint committee of the pharmaceutical society and the society for analytical chemistry on the method of assay of crude drug. Analyst. 84 (1959) : 603
- Toda, N., Usui, H., Nishio, N., and Fugiwara, M. Cardio-vascular effects of capsaicin in dogs and rabbits. J. Pharmacol. Exp. Ther. 181 (1972) : 512
- Todd, Jr., Bensinger, M., and Biffu, T. TLC screening techniques for the quanlitative determination of natural and synthetic capsaicinoids. J. Chromatogr. Sci. 13 (1975) : 577

- Tumova, T., Simova, M., and Kirkova, M. Quantitative determination of capsaicin in ointments. Pharmazie. 34 (1979) : 448
- Van Horne, K.C. ed. Sorbent Extraction Technology. Harbor City, Analytichem International. 1990.
- Windlolz, M. ed. The Merck Index, 9 th ed New Jersey : Merck Co., 1976
- Winek, C.L., Markie, D.C., and Shanor, S. Pepper sauce toxicity. Drug Chem. Toxicolo. 5 (1982) : 99.
- Youngken, W. Pharmacognosy. 3 th ed Philadelphia : Lipincott Co., 1950.

VITA



Mr. Vaivat Boonyamanop was born on October 21, 1965 in Bangkok, Thailand. He received his Bachelor of Science in Pharmacy in 1988 from Prince of Songkla University, Songkhla, Thailand. At present, he is a hospital pharmacist of Samutprakarn Hospital, Samutprakarn, Thailand