

REFERENCES

- Ali, A., Botha, J., and Tiruvoipati, R. (2014). Fatal skin and soft tissue infection of multidrug resistant *Acinetobacter baumannii*: A case report. *International Journal of Surgery Case Reports*, 5(8), 532-536.
- Armstrong, G.L., Conn, L.A., and Pinner, R.W. (1999). Trends in infectious disease mortality in the united states during the 20th century. *JAMA*, 281(1), 61-66.
- Arunrattiyakorn, P., Suksamrarn, S., Suwannasai, N., and Kanzaki, H. (2011). Microbial metabolism of α -mangostin isolated from *Garcinia mangostana* L. *Phytochemistry*, 72(8), 730-734.
- Aukkanimart, R., Boonmars, T., Sriraj, P., Songsri, J., Laummaunwai, P., Waraasawapati, S., Boonyarat, C., Ratanaswan, P., and Boonjaraspinyo, S. Anthelmintic, anti-inflammatory and antioxidant effects of *Garcinia mangostana* extract in hamster opisthorchiasis. *Experimental Parasitology*, 2008),
- Auranwiwat, C., Trisuwan, K., Saiai, A., Pyne, S.G., and Ritthiwigrom, T. (2014). Antibacterial tetraoxxygenated xanthones from the immature fruits of *Garcinia cowa*. *Fitoterapia*, 98(0), 179-183.
- Bauer, K.H. *Coated pharmaceutical dosage forms fundamentals, manufacturing techniques, biopharmaceutical aspects, test methods, and raw materials*. 1998; Available from: <http://catalog.hathitrust.org/api/volumes/oclc/38180356.html>.
- Berger, J., Reist, M., Mayer, J.M., Felt, O., Peppas, N.A., and Gurny, R. (2004). Structure and interactions in covalently and ionically crosslinked chitosan hydrogels for biomedical applications. *European Journal of Pharmaceutics and Biopharmaceutics*, 57(1), 19-34.
- Chae, H.-S., Oh, S.-R., Lee, H.-K., Joo, S.H., and Chin, Y.-W. (2012). Mangosteen xanthones, α -and γ -mangostins, inhibit allergic mediators in bone marrow-derived mast cell. *Food Chemistry*, 134(1), 397-400.
- Charernsriwilaiwat, N., Rojanarata, T., Ngawhirunpat, T., Sukma, M., and Opanasopit, P. (2013). Electrospun chitosan-based nanofiber mats loaded

- with *Garcinia mangostana* extracts. International Journal of Pharmaceutics, 452(1–2), 333-343.
- Chen, L.-G., Yang, L.-L., and Wang, C.-C. (2008). Anti-inflammatory activity of mangostins from *Garcinia mangostana*. Food and Chemical Toxicology, 46(2), 688-693.
- Choi, Y.H., Han, S.Y., Kim, Y.-J., Kim, Y.-M., and Chin, Y.-W. (2014). Absorption, tissue distribution, tissue metabolism and safety of α -mangostin in mangosteen extract using mouse models. Food and Chemical Toxicology, 66(0), 140-146.
- Chomnawang, M.T., Surassmo, S., Wongsariya, K., and Bunyapraphatsara, N. (2009). Antibacterial Activity of Thai Medicinal Plants against Methicillin-resistant *Staphylococcus aureus*. Fitoterapia, 80(2), 102-104.
- Cui, J., Hu, W., Cai, Z., Liu, Y., Li, S., Tao, W., and Xiang, H. (2010). New medicinal properties of mangostins: Analgesic activity and pharmacological characterization of active ingredients from the fruit hull of *Garcinia mangostana* L. Pharmacology Biochemistry and Behavior, 95(2), 166-172.
- Felton, L.A. (2013). Mechanisms of polymeric film formation. International Journal of Pharmaceutics, 457(2), 423-427.
- Gan, C.-Y. and Latiff, A.A. (2011). Extraction of antioxidant pectic-polysaccharide from mangosteen (*Garcinia mangostana*) rind: Optimization using response surface methodology. Carbohydrate Polymers, 83(2), 600-607.
- Gillett, T.R., Meads, P.F., and Holven, A.L. (1949). Measuring Color and Turbidity of White Sugar Solutions. Analytical Chemistry, 21(10), 1228-1233.
- Guo, S. and DiPietro, L.A. (2010). Factors Affecting Wound Healing. Journal of Dental Research, 89(3), 219-229.
- Ibrahim, M.Y., Hashim, N.M., Mariod, A.A., Mohan, S., Abdulla, M.A., Abdelwahab, S.I., and Arbab, I.A. α -Mangostin from *Garcinia mangostana* Linn: An updated review of its pharmacological properties. Arabian Journal of Chemistry, 2012,
- Ibrahim, M.Y., Hashim, N.M., Mohan, S., Abdulla, M.A., Abdelwahab, S.I., Arbab, I.A., Yahayu, M., Ali, L.Z., and Ishag, O.E. (2015). α -Mangostin from

- Cratoxylum arborescens: An in vitro and in vivo toxicological evaluation. *Arabian Journal of Chemistry*, 8(1), 129-137.
- Kaomongkolgit, R., Jamdee, K., Pumklin, J., and Pavasant, P. (2013). Laboratory evaluation of the antibacterial and cytotoxic effect of alpha-mangostin when used as a root canal irrigant. *Indian Journal of Dentistry*, 4(1), 12-17.
- Keshani, S., Daud, W.R.W., Nourouzi, M.M., Namvar, F., and Ghasemi, M. (2015). Spray drying: An overview on wall deposition, process and modeling. *Journal of Food Engineering*, 146(0), 152-162.
- Khonkarn, R., Okonogi, S., Ampasavate, C., and Anuchapreeda, S. (2010). Investigation of fruit peel extracts as sources for compounds with antioxidant and antiproliferative activities against human cell lines. *Food and Chemical Toxicology*, 48(8–9), 2122-2129.
- Koh, J.-J., Qiu, S., Zou, H., Lakshminarayanan, R., Li, J., Zhou, X., Tang, C., Saraswathi, P., Verma, C., Tan, D.T.H., Tan, A.L., Liu, S., and Beuerman, R.W. (2013). Rapid bactericidal action of alpha-mangostin against MRSA as an outcome of membrane targeting. *Biochimica et Biophysica Acta (BBA) - Biomembranes*, 1828(2), 834-844.
- Kolter, K., Dashevsky, A., Irfan, M., and Bodmeier, R. (2013). Polyvinyl acetate-based film coatings. *International Journal of Pharmaceutics*, 457(2), 470-479.
- Krishnan, P. (2006). The scientific study of herbal wound healing therapies: Current state of play. *Current Anaesthesia & Critical Care*, 17(1–2), 21-27.
- Lazarus, G.S., Cooper, D.M., Knighton, D.R., Margolis, D.J., Percoraro, R.E., Rodeheaver, G., and Robson, M.C. (1994). Definitions and guidelines for assessment of wounds and evaluation of healing. *Wound Repair and Regeneration*, 2(3), 165-170.
- Lee, L.-T., Tsai, Y.-F., Hu, N.-Y., Wang, C.-W., Huang, K.-K., Hsiao, J.-K., Shih, Y.-C., and Munekazu, I. (2013). Anti-arthritis effect of mangostins from G. Mangostana. *Biomedicine & Preventive Nutrition*, 3(3), 227-232.
- Li, G., Petiwala, S.M., Nonn, L., and Johnson, J.J. (2014). Inhibition of CHOP accentuates the apoptotic effect of α -mangostin from the mangosteen fruit

- (*Garcinia mangostana*) in 22Rv1 prostate cancer cells. Biochemical and Biophysical Research Communications, 453(1), 75-80.
- Li, J., Chen, J., and Kirsner, R. (2007). Pathophysiology of acute wound healing. Clinics in Dermatology, 25(1), 9-18.
- Michael, R.H. and Isaac, G.-S., *Aqueous Polymeric Coating for Modified-Release Oral Dosage Forms*, in *Aqueous Polymeric Coatings for Pharmaceutical Dosage Forms, Third Edition*. 2008, CRC Press. p. 47-66.
- Mizushina, Y., Kuriyama, I., Nakahara, T., Kawashima, Y., and Yoshida, H. (2013). Inhibitory effects of α -mangostin on mammalian DNA polymerase, topoisomerase, and human cancer cell proliferation. Food and Chemical Toxicology, 59(0), 793-800.
- Naczk, M., Townsend, M., Zadernowski, R., and Shahidi, F. (2011). Protein-binding and antioxidant potential of phenolics of mangosteen fruit (*Garcinia mangostana*). Food Chemistry, 128(2), 292-298.
- Nadkarni, P.D., Kildsig, D.O., Kramer, P.A., and Bunker, G.S. (1975). Effect of surface roughness and coating solvent on film adhesion to tablets. Journal of Pharmaceutical Sciences, 64(9), 1554-1557.
- Panickar, K.S., *Chapter 1 - Anti-Inflammatory Properties of Botanical Extracts Contribute to Their Protective Effects in Brain Edema in Cerebral Ischemia*, in *Bioactive Nutraceuticals and Dietary Supplements in Neurological and Brain Disease*, R.R.W.R. Preedy, Editor. 2015, Academic Press: San Diego. p. 3-15.
- Pedraza-Chaverri, J., Cárdenas-Rodríguez, N., Orozco-Ibarra, M., and Pérez-Rojas, J.M. (2008). Medicinal properties of mangosteen (*Garcinia mangostana*). Food and Chemical Toxicology, 46(10), 3227-3239.
- Rawat, S., Singh, R., Thakur, P., Kaur, S., and Semwal, A. (2012). Wound healing Agents from Medicinal Plants: A Review. Asian Pacific Journal of Tropical Biomedicine, 2(3, Supplement), S1910-S1917.
- Romier-Crouzet, B., Van De Walle, J., During, A., Joly, A., Rousseau, C., Henry, O., Larondelle, Y., and Schneider, Y.-J. (2009). Inhibition of inflammatory mediators by polyphenolic plant extracts in human intestinal Caco-2 cells. Food and Chemical Toxicology, 47(6), 1221-1230.

- Sakagami, Y., Iinuma, M., Piyasena, K.G.N.P., and Dharmaratne, H.R.W. (2005). Antibacterial activity of α -mangostin against vancomycin resistant Enterococci (VRE) and synergism with antibiotics. *Phytomedicine*, 12(3), 203-208.
- Shao, R., Shi, Z., Gotwals, P.J., Koteliansky, V.E., George, J., and Rockey, D.C. (2003). Cell and Molecular Regulation of Endothelin-1 Production during Hepatic Wound Healing. *Molecular Biology of the Cell*, 14(6), 2327-2341.
- Suvarnakuta, P., Chaweerungrat, C., and Devahastin, S. (2011). Effects of drying methods on assay and antioxidant activity of xanthones in mangosteen rind. *Food Chemistry*, 125(1), 240-247.
- Tewtrakul, S., Wattanapiromsakul, C., and Mahabusarakam, W. (2009). Effects of compounds from Garcinia mangostana on inflammatory mediators in RAW264.7 macrophage cells. *Journal of Ethnopharmacology*, 121(3), 379-382.
- Tjahjani, S., Widowati, W., Khiong, K., Suhendra, A., and Tjokropranoto, R. (2014). Antioxidant Properties of Garcinia Mangostana L (Mangosteen) Rind. *Procedia Chemistry*, 13(0), 198-203.
- Tsai, C.-H., Tzeng, S.-F., Hsieh, S.-C., Lin, C.-Y., Tsai, C.-J., Chen, Y.-R., Yang, Y.-C., Chou, Y.-W., Lee, M.-T., and Hsiao, P.-W. (2015). Development of a standardized and effect-optimized herbal extract of Wedelia chinensis for prostate cancer. *Phytomedicine*, 22(3), 406-414.
- Vowden, K. and Vowden, P. (2014). Wound dressings: principles and practice. *Surgery (Oxford)*, 32(9), 462-467.
- Wang, J.J., Sanderson, B.J.S., and Zhang, W. (2011). Cytotoxic effect of xanthones from pericarp of the tropical fruit mangosteen (*Garcinia mangostana* Linn.) on human melanoma cells. *Food and Chemical Toxicology*, 49(9), 2385-2391.
- Wang, J.J., Shi, Q.H., Zhang, W., and Sanderson, B.J.S. (2012). Anti-skin cancer properties of phenolic-rich extract from the pericarp of mangosteen (*Garcinia mangostana* Linn.). *Food and Chemical Toxicology*, 50(9), 3004-3013.

- Yan, M., Li, G., Petiwala, S.M., Householter, E., and Johnson, J.J. (2015). Standardized rosemary (*Rosmarinus officinalis*) extract induces Nrf2/sestrin-2 pathway in colon cancer cells. Journal of Functional Foods, 13(0), 137-147.
- Zarena, A.S., Sachindra, N.M., and Udaya Sankar, K. (2012). Optimisation of ethanol modified supercritical carbon dioxide on the extract yield and antioxidant activity from *Garcinia mangostana* L. Food Chemistry, 130(1), 203-208.
- Zhou, H.-C., Lin, Y.-M., Wei, S.-D., and Tam, N.F.-y. (2011). Structural diversity and antioxidant activity of condensed tannins fractionated from mangosteen pericarp. Food Chemistry, 129(4), 1710-1720.

CURRICULUM VITAE

Name: Mr. Nattapol Boonmak

Date of Birth: April 14, 1991

Nationality: Thai

University Education:

2009–2012 Bachelor Degree of Engineering, School of Polymer Engineering, Suranaree University of Technology, Nakhon Ratchasima, Thailand

Presentations:

1. Boonmak, N.; and Supaphol, P. (2015, April 21) Preparation of Polyvinyl Acetate Loaded with Mangosteen Extract for Use as Antibacterial Spray Dressing. Proceedings of The 6th Research Symposium on Petrochemical and Materials Technology and The 20th PPC Symposium on Petroleum, Petrochemicals, and Polymers, Bangkok, Thailand.
2. Boonmak, N.; and Supaphol, P. (2015, May 20-22) Preparation of Polyvinyl Acetate Loaded with Mangosteen Extract for Use as Antibacterial Spray Dressing. Poster presentation at The Frontier Polymer Conference 2015, Riva del Garda, Italy.