

REFERENCES

- 1 Nair, K.P.P. The agronomy and economy of black pepper (*Piper nigrum* L.)-The “King of Spices”. *Advances in Agronomy*. **2004**, 82, 271-389.
- 2 [Online]. Available: <http://www.pepperindia.com> (2010, August, 8).
- 3 [Online]. Available: http://en.wikipedia.org/wiki/Black_pepper (2010, July, 1).
- 4 [Online]. Available: <http://www.mdidea.com/products/new/new06809.html> (2010, August, 8).
- 5 [Online]. Available: http://www.uni-graz.at/~katzer/engl/Pipe_nig.html (2010, June, 13).
- 6 Barceloux, D.G. Medical Toxicology of Natural Substances: Foods, Fungi, Medicinal Herbs, Toxic Plants, and Venomous Animals. Hoboken, NJ: John Wiley & Sons, **2008**, 71-76.
- 7 [Online]. Available: <http://www.globalprovince.com/spicelines/index9-05.htm>. (2010, August, 8).
- 8 Epstein, W.W.; Netz, D.F.; Seidel, J.L. Isolation of Piperine from Black Pepper. *J. Chem. Ed.* **1993**, 70, 598-599.
- 9 Ikan, R. In Natural Products: A Laboratory Guide, 2nd ed.; Academic Press, **1991**, 233.
- 10 Ghoshal, S.; Prasad, B.N.K.; Lakshmi, V. Antiamoebic activity of Piper longum fruits against *Entamoeba histolytica* in vitro and in vivo. *J. Ethnopharmacol.* **1996**, 50, 167-170.
- 11 Hiwale, A.R.; Dhuley, J.N.; Naik, S.R. Effect of co-administration of piperine on pharmacokinetics of β -lactam antibiotics in rats. *Indian J. Exp. Biol.* **2002**, 40, 277-281.

- 12 Janakiraman, K.; Manavalan, R. Studies on effect of piperine on oral bioavailability of Ampicillin and Norfloxacin. *Afr. J. Trad. CAM.* **2008**, *5*, 257-262.
- 13 Khan, I.A.; Mirza, Z.M.; Kumar, A.; Verma, V.; Qazi, G.N. Piperine, a Phytochemical Potentiator of Ciprofloxacin against *Staphylococcus aureus*. *Antimicrob. Agents Chemother.* **2006**, *50*, 810-812.
- 14 Kapil, A. Piperine: A potent inhibitor of *Leishmania donovani* promastigotes in vitro. *Planta Med.* **1993**, *59*, 474-476.
- 15 Singh, I.P.; Jain, S.K.; Kaur, A.; Singh, S.; Kumar, R.; Garg, P.; Sharma, S.S.; Arora, S.K. Synthesis and Antileishmanial activity of Piperoyl-Amino Acid Conjugates. *Eur. J. Med. Chem.* **2010**, *45*, 3439-3445.
- 16 Veerareddy, P.R.; Vobalabonia, V.; Nahid, A. Formulation and evaluation of oil-in-water emulsions of piperine in visceral leishmaniasis. *Pharmazie.* **2004**, *59*, 194-197.
- 17 Raay, B.; Medda, S.; Mukhopadhyay, S.; Basu, K.M. Targeting of piperine intercalated in mannose-coated liposomes in experimental leishmaniasis. *Ind. J. Biochem. Biophys.* **1999**, *36*, 248-251.
- 18 Kumar, S.; Narain, U.; Tripathi, S.; Misra, K. Syntheses of Curcumin Bioconjugates and Study of Their Antibacterial Activities against beta-Lactamase-Producing Microorganisms. *Bioconjugate. Chem.* **2001**, *12*, 464-469.
- 19 Reen, R.K.; Wiebel, F.J.; Singh, J. Piperine inhibits aflatoxin B1-induced cytotoxicity and genotoxicity in V79 Chinese hamster cells genetically

- engineered to express rat cytochrome P4502B1. *J. Ethnopharmacol.* **1997**, *58*, 165-173
- 20 Tsukamoto, S.; Cha, B.C.; Ohta, T. Dipiperamides A, B and C: bisalkaloids from The white pepper *Piper nigrum* inhibiting CYP3A4 activity. *Tetrahedron.* **2002**, *58*, 1667-1671.
- 21 da Silva Ferreira, W.; Freire-de-Lima, L.; Saraiva, V.B.; Alisson-Silva, F.; Mendonca-Pre-viato, L.; Previato, J.O.; Echevarria, A.; de Lima, M.E.F. Novel 1,3,4-thiadiazolium-2-phenylamine chlorides derived from natural piperine as trypanocidal agents: Chemical and biological studies. *Bioorg. Med. Chem.* **2008**, *16*, 2984-2991.
- 22 Ribeiro, T.S.; Freire-de-Lima, L.; Previato, J.O.; Mendonca-Previato, L.; Heise, N.; de Lima, M.E.F. Toxic effects of natural piperine and its derivatives on epimastigotes and amastigotes of *Trypanosoma cruzi*. *Bioorg. Med. Chem. Lett.* **2004**, *14*, 3555-3558.
- 23 Bhardwaj, R.K.; Glaeser, H.; Becquemont, L.; Klotz, U.; Gupta, S.K.; Fromm, M.F. Piperine, a Major Constituent of Black Pepper, Inhibits Human P-glycoprotein and CYP3A4. *J. Pharmacol. Exp. Ther.* **2002**, *302*, 645-650.
- 24 Mittal, R.; Gupta, R.L. In vitro antioxidant activity of piperine. *Methods. Find. Exp. Clin. Pharmacol.* **2000**, *122*, 271-274.
- 25 de Paula, V.F.; Barbosa, L.C.D.; Demuner, A.J.; Pilo-Veloso, D.; Picanco, M.C. Synthesis and insecticidal activity of new amide derivatives of piperine. *Pest. Manag. Sci.* **2000**, *56*, 168-174.
- 26 Koul, S.; Koul, J.L.; Taneja, S.C.; Dhar, K.L.; Jamwal, D.S.; Singh, K.; Reen, R.K. Structure- Activity Relationship of Piperine and its Synthetic

Analogues for their Inhibitory Potentials of Rat Hepatic Microsomal Constitutive and Inducible Cytochrome P450 Activities. *Bioorg. Med. Chem.* **2000**, 8, 251-268.

27 Venkatasamy, R.; Faas, L.; Young, A.; Raman, A.; Hider, R. Effects of piperine analogues on stimulation of melanocyte proliferation and melanocyte differentiation. *Bioorgan. Med. Chem.* **2004**, 12, 1905-1920.

28 Ribeiro, T.S.; de Lima, L. F.; Previato, J. O.; Previato, L. M.; Heise, N.; de Lima, E. F. Toxic effects of natural piperine and its derivatives on epimastigotes and amastigotes of *Trypanosoma cruzi*. *Bioorg. Med. Chem.* **2004**, 14, 3555-3558.

29 Mishra, S.; Narain, U.; Mishra, R.; Misra, K. Design, development and synthesis of mixed bioconjugates of piperic acid-glycine, curcumin-glycine/alanine and curcumin-glycine-piperic acid and their antibacterial and antifungal properties. *Bioorg. Med. Chem.* **2005**, 13, 1477-1486.

30 Jingfen, H.; Gereltu, B.; Ruke, B.; Zhariget, S.; Narisu, B.; Xuesi, C.; Xiabin, J. Synthesis and anti-hyperlipidemic activity of a novel starch piperinic ester. *J. Carbohydr. Polym.* **2008**, 71, 441-447.

31 Dubey, S.K.; Sharma, A.K.; Narain, U.; Misra, K.; Pati, U. Design, synthesis and characterization of some bioactive conjugates of curcumin with glycine, glutamic acid, valine and demethylenated piperic acid and study of their antimicrobial and antiproliferative properties. *Eur. J. Med. Chem.* **2008**, 43, 1837-1846.

32 โชคชัย โชคบัณฑิต. การสังเคราะห์สารใหม่เอสเทอร์ที่คล้ายพิเพอริน. วิทยานิพนธ์วิทยาศาสตร์ มหาวิทยาลัยเชียงใหม่ (เคมี), มหาวิทยาลัยเชียงใหม่ เชียงใหม่, **2550**.

- 33 Phichai, N. Synthesis and Bioactivities Testings of Some Piperine Derivatives. M.S. Thesis, Chiang Mai University, **2008**.
- 34 Parmar, V.S.; Jain, S.C.; Bisht, K.S.; Jain, R.; Taneja, P.; Jha, A.; Tyagi, O.D.; Prasad, A.K.; Wengel, J.; Olsen, C.E.; Boll, P.M. Phytochemistry of the genus *Piper*. *Phytochemistry*. **1997**, *46*, 597-673.
- 35 Baramée, A.; Coppin, A.; Mortuaire, M.; Pelinski, L.; Tomavoc, S.; Brocard, J. Synthesis and invitro activities of ferrocenic aminohydroxynaphthoquinones against *Toxoplasma gondii* and *Plasmodium falciparum*. *Bioorg. Med. Chem.* **2006**, *14*, 1294–1302.
- 36 Damljanović, I; Vukićević, M; Vukićević, R. A simple synthesis of oximes. *Monatshefte für chemie*. **2006**, *137*, 301-305.
- 37 Xiaoliang, L; Jitai, L. Synthesis of ketoximes under ultrasound irradiation. *Chemical Journal on Internet*. **2006**, *8*, 57.
- 38 Kad, G.L.; Bhandari, M.; Kaur, J.; Rathee, R.; Singh, J. Solventless preparation of oximes in the solid state and *via* microwave irradiation. *Green Chemistry*. **2001**, *3*, 275–277.
- 39 Chandarana, H.; Baluja, S.; Chanda, S.V. Comparison of antibacterial activities of Selected Species of Zingiberaceae Family and Some Synthetic Compounds. *J. Biol.* **2005**, *29*, 83-87.
- 40 Sreenivasan, S.; Ibrahim, D.; Kassim, M.J.N.M. *International Journal of Natural and Engineering Sciences I*. **2007**, *3*, 115-117.
- 41 Reid, K.F. *Properties and reactions of bonds in organic molecules*. London: Longmans, 1968.