

REFERENCES

- Amin, I., Zamaliah, M. M., & Chin, W. F. (2004). Total antioxidant activity and phenolic content in selected vegetables. *Food Chemistry*, 87(4), 581-586.
- Andrade, M. T., Lima, J. A., Pinto, A. C., Rezende, C. M., Carvalho, M. P., & Epifanio, R. A. (2005). Indole alkaloids from *Tabernaemontana australis* (Muell. Arg) Miers that inhibit acetylcholinesterase enzyme. *Bioorganic and Medicinal Chemistry*, 13, 4092-4095.
- Anon, J.B. (2010). Upper respiratory infections. *American Journal of Medicine*, 123 (4), 16-25.
- Arambewela, L.S.R., & Ranatunge, T. (1991). Indole alkaloid from *Tabernaemontana divaricata*. *Phytochemistry*, 30, 1740-1741.
- Arlorio, M., Locatelli, M., Travaglia, F., Coisson, J.D., Del Grosso, E., & Minassi, A., et al. (2008). Roasting impact on the contents of clovamide (*N*-caffeoyl-L-DOPA) and the antioxidant activity of cocoa beans (*Theobroma cacao* L.). *Food Chemistry*, 106, 967-975.
- Atta-ur-Rahman & Choudhary, M.I. (1995). Diterpenoid and steroidal alkaloids. *Natural Product Reports*, 12, 361-379
- Atta-ur-Rahman, Daulatabadi, A., & Muzaffar, A. (1984). The isolation and structure of lahoricine, a new indolenine alkaloid from *Ervatamia coronaria*. *Z Naturforsch*, 39, 1289-1291.
- Atta-ur-Rahman & Muzaffar A. (1985). The isolation and structure of ervaticine -A new alkaloid from *Ervatamia coronaria*. *Heterocycles*, 23, 2975-2978.
- Atta-ur-Rahman, Muzaffar, A., & Daulatabadi, N. (1983). The isolation and structure of Mehranine-A new indole alkaloid from *Ervatamia coronaria*. *Naturforsch*, 38 (12), 1700-1701.
- Atta-ur-Rahman, Muzaffar, A., & Daulatabadi, N. (1985). Ervatinine, an indole alkaloid from *Ervatamia coronaria*. *Phytochemistry*, 24, 2473-2474.
- Atta-ur-Rahman, Muzaffar, A., & Daulatabadi, N. (1986). Isolation and structure of stapfinine-A new indole alkaloid from *Ervatamia coronaria*. *Phytochemistry*, 25, 1781.
- Ayafor, J.F., Tchuendem, M. H. K., & Nyasse, B. (1994). Novel bioactive diterpenoids from *Aframomum aulacocarpus*, *Journal of Natural Product*, 57, 917-923.
- Ayres, G.H. (1949). Evaluation of accuracy in photometric analysis. *Analytical Chemistry*, 21, 652-657.

- Azlim, A.A.A., Ahmed, J.K.C., Syed, Z.I., Mustapha S.K., Aisyah, M.R., & Kamarul R. K. (2010). Total phenolic content and primary antioxidant activity of methanolic and ethanolic extracts of aromatic plants' leaves. *International Food Research Journal*, 17, 1077-1084.
- Bahattacharyya, N., & Kepnes, L.J. (1999). The microbiology of recurrent rhinosinusitis after endoscopic sinus surgery. *Archives of Otolaryngology- Head and Neck Surgery*, 125, 1117-1120.
- Balandrin, M.F., Klocke, J.A., Wurtele, E.S., & Bollinger, W.H. (1985). Natural plant chemicals: Sources of Industrial and Medicinal material. *Science*, 228, 1154-1160.
- Behera, B.K., Neerja, M., Mukta, A., & Sharma, D.K. (1995). Production of petroleum hydrocarbons, fermentable sugars and ethanol from *Tabernaemontana divaricata*: A new fuel crop and renewable resource of energy. *Energy Conversion and Management*, 36, 281-288.
- Bennett, R. N., & Wallgrove, R.M. (1994). Tansley review no. 72. Secondary metabolites in plant defence mechanisms. *New Phytologist*, 127, 617-633.
- Benzie, I.F., & Strain, J.J. (1999). Ferric reducing/antioxidant power assay: Direct measure of total antioxidant activity of biological fluids and modified version for simultaneous measurement of total antioxidant power and ascorbic acid concentration. *Methods in Enzymology*, 299, 15-27.
- Bisset, N.G. & Nwaiwu, J. (1984). Quaternary alkaloids of *Tinospora* species. *Planta Medica*, 48 (4), 275-279.
- Blois, M.S. (1958). Antioxidant determinations by the use of a stable free radical. *Nature*, 181, 1199-1200.
- Bolger, W.E. (1994). Gram negative sinusitis: An emerging clinical entity. *American Journal of Rhinology*, 8, 279-84.
- Bose, P. K. (1958). On some biochemical properties of natural coumarins. *Journal of Indian Chemistry Society*, 58, 367-375.
- Boutet, S. C., Disatnik, M. H., Chan, L. S., Iori, K. & Rando, T. A. (2007). Regulation of Pax3 by proteasomal degradation of monoubiquitinated protein in skeletal muscle progenitors. *Cell*, 130, 349-362.
- Brabec, M.H., & Bernstein, I.A. (1981). In: Reeves A.C., (Ed.), *Toxicology: principles and practice* (Vol. I, p. 30). New York: John Wiley & Sons.
- Bradford, P. G. & Awad, A. B. (2007). Phytosterols as anticancer compounds. *Molecular Nutrition and Food Research*, 51, 161-170.

- Brand-Williams, W., Cuvelier, M.E., & Berset, C. (1995). Use of a free radical method to evaluate antioxidant activity, *Lebensmittel-Wissenschaft und-Technologie/Food Science and Technology*, 2, 25-30.
- Brinkworth, R. I., Stoermer, M.J., & Fairlie, D.P. (1992). Flavones are inhibitors of HIV-1 proteinase. *Biochemical and Biophysic Research Communications*, 188, 631–637.
- Brook, I. (1981). Bacteriological features of chronic sinusitis in children. *Journal of the American Medical Association*, 246, 967–991.
- Brook, I. (1989). Bacteriology of chronic maxillary sinusitis in adults. *Annals of Otology, Rhinology, and Laryngology*, 98, 426–428.
- Brook, I. (2001). Sinusitis-overcoming bacterial resistance. *International Journal of Pediatric Otorhinolaryngology*, 58, 27-36.
- Brook, I. (2005). The role of anaerobic bacteria in sinusitis . Review-Oral & dental bacteriology & infection. *Anaerobe*, 12 (1), 5-12.
- Brook, I., Frazier, E.H., & Gher, Jr, M.E. (1996). Microbiology of periapical abscesses and associated maxillary sinusitis. *Journal of Periodontology*, 67, 608–610.
- Brown, G. C. (1995). Reversible binding and inhibition of catalase by nitric oxide. *European Journal of Biochemistry*, 1, 188-191.
- Brownlee, H. E., McEuen, A.R., Hedger, J., & I. M. Scott. (1990). Antifungal effects of cocoa tannin on the witches' broom pathogen *Crinipellis pernicioso*. *Physiological and Molecular Plant Pathology*, 36, 39-48.
- Burdick, E. M. (1971). Carpaine, an alkaloid of *Carica papaya*. Its chemistry and pharmacology. *Economic Botany*, 25, 363-365.
- Burkill, I.H. (1935). *Dictionary of the Economic products of the Malay Peninsula* (Vol. 2, pp. 2163-2166). London.
- Burkill, I.H. (1966). *A Dictionary of the Economic Products of the Malay Peninsula*. Volume I &II. Ministry of Agricultered Co-operatives, Kuala Lumpur.
- Burkill, I.H. (1996). The useful plants of West Tropical Africa, Royal Botanic Garden. *Ken*, 2, 29-30.
- Butler, L. G. (1988). Effects of condensed tannin on animal nutrition. In R. W. Hemingway and J. J. Karchesy (Eds.), *Chemistry and significance of condensed tannins* (pp. 553). New York: Plenum Press.
- Cai, Z. Y., & Yan, Y. (2007). Pathway and mechanism of oxidative stress in Alzheimer's disease. *Journal of Medical Colleges of PLA*, 22(5), 320-324.

- Calvo, A.M., Wilson, R.A., Bok, J.W., & Keller, P.N. (2002). Relationship between secondary metabolism and fungal development. *Microbiology and Molecular Biology Reviews*, 66, 447–59.
- Cavin, A., Hostettmann, K., Dyatmyko, W., & Potterat, O., (1998). Antioxidant and lipophilic constituents of *Tinospora crispa*. *Planta Medica*, 64, 393–396.
- Chabot, F., Mitchell, J. A., Gutteridge, J. M. C., & Evans, A. M. (1998). Reactive oxygen species in acute lung injury. *European Respiratory Journal*, 11, 745–757.
- Chang, S., Tan, C., Frankel, E. N., & Barrett, D. M. (2000). Low-Density Lipoprotein Antioxidant Activity of Phenolic Compounds and Polyphenol Oxidase Activity in Selected Clingstone Peach Cultivars. *Journal of Agricultural and Food Chemistry*, 48 (2), 147-151.
- Chattipakorn, S., Pongpanparadorn, A., Pratchayasakul, W., Pongchaidacha, A., Ingkaninan, K., & Chattipakorn, N. (2007). *Tabernaemontana divaricata* extract inhibits neuronal acetylcholinesterase activity in rats. *Journal of Ethnopharmacology*, 110, 61-68.
- Choudhary, M.I., Ismail, M., Shaari, K., Abbaskhan, A., Sattar, S.A., Lajis, N.H., et al (2010). Cis-Clerodane-type furanoditerpenoids from *Tinospora crispa*. *Journal of Natural Products*, 73, 541–547.
- Cichewicz, R. H., & Thorpe, P.A. (1996). The antimicrobial properties of chile peppers (*Capsicum* species) and their uses in Mayan medicine. *Journal of Ethnopharmacology*, 52, 61–70.
- Ciocoiu, M., Badescu, M., & Paduraru, I. (2007). Protecting antioxidative effects of vitamins E and C in experimental physical stress. *Journal of Physiology and Biochemistry*, 63(3), 187-194.
- Colegate, S.M. & Molyneux, R.J. (1993). *Bioactive Natural Products. Detection, Isolation and Structural Determination* (pp. 3-8). London: CRC Press.
- Conforti, F., Statti, G., Uzunov, D. & Menichini, F. (2006). Comparative chemical composition and antioxidant activities of wild and cultivated *Laurus nobilis* L. leaves and *Foeniculum vulgare* subsp. *Piperitum* (Ucria) coutinho seeds. *Biological and Pharmaceutical Bulletin*, 29 (10), 2056-2064.
- Cowan, M.M. (1999). Plant products as antimicrobial agents. *Clinical Microbiology Review*. 12(4), 564-582.
- Crapo, J. D., Oury, T., Rabouille, C., Slot, J. W. & Chang, L. Y. (1992). Copper, zinc superoxide dismutase is primarily a cytosolic protein in human cells. *Proceedings of National Academy of Sciences USA*, 89(21), 10405-10409.

- Cross, C. E., Halliwell, B., Borish, E. T., Pryor, W. A., Ames, B. N., Saul, R. L., et al. (1987). Oxygen radicals and human disease. *Annals of International Medicine*, 107 (4), 526-545.
- Da Sil Va, N.H., De Melo, A.A., Casado, M.M.C.V., Hendriques, A.T., Wandscheer, D.C. & Da Sil Va, O.E. (1984). Indole alkaloids with potential endocrine activity. *Review Institute of Antibiotic Federal University of Pernambuco. Recife*, 22 ½, 27-32.
- Dagino, D., Schripsema, J., & Verpoorte, R. (1995). Terpenoid indole alkaloid biosynthesis and enzyme activities in two cell lines of *Tabernaemontana divaricata*. *Phytochemistry*, 39, 341-349.
- Dagino, D., Schripsema, J., Peltenburg, A., & Verpoorte, R. (1991). Capillary gas chromatographic analysis of indole alkaloids; investigation of the indole alkaloids present in *Tabernaemontana divaricata* cell suspension culture. *Journal of Natural Product*, 54, 1558-1563.
- Daniel, M., & Sabnis, S.D. (1978). Chemotaxonomical studies in *Apocynaceae*. *Journal of Experimental Biology*, 16, 512-513.
- Danieli, B., & Palmisano, G. (1986). In Brossi, A. (Ed.), *The Alkaloids* (Vol. 27, Chapter 1, pp. 1-130). London: Academic Press.
- Danielson, S. R., & Anderson, J. K. (2008). Oxidative and nitrative protein modifications in Parkinson's disease. *Free Radical Biology and Medicine*, 44, 1787-1794.
- De Pasquale, R., Germanò, M.P., Keita, A., Sanogo, R., & Iauk, L. (1995). Antiulcer activity of *Pteleopsis suberosa*. *Journal of Ethnopharmacology*, 47, 55-58.
- Demain, A.L., & Fang, A. (2000). The natural functions of secondary metabolites. *Advances in Biochemical Engineering/ Biotechnology*, 69, 1-39.
- Dhar, M.L., Dhar, M.M., Dhawan, B.N., Mehrotra, B.N., & Ray, C. (1968). Screening of Indian plants for biological activity: *Part - I. Indian Journal of Experimental Biology*, 6, 232-247.
- Dilhuydy, J.M., & Patients, O. (2003). Attraction to complementary and alternative medicine (CAM): A reality which physicians can neither ignore nor deny. *Bulletin Cancer*, 90, 623-628.
- Dingchao, H., Zhiduan, Q., Liye, H., & Xiaodong, F. (1994). The protective effects of high-dose ascorbic acid on myocardium against reperfusion injury during and after cardiopulmonary bypass. *Journal of Thoracic and Cardiovascular Surgery*, 42, 276-278.
- Dinis, T.C., Madeira, V.M., & Almeida, L.M. (1994). Action of phenolic derivatives (acetoaminophen, salicylate and 5-aminosalicylate) as inhibitors of membrane lipid

- peroxidation and as peroxy radical scavengers. *Archives Biochemistry and Biophysic*, 315, 161-169.
- Diplock, A.T. (1997). Will the 'good fairies' please prove to us that Vitamin E lessens human degenerative diseases?. *Free Radical Research*, 27, 511-32.
- Dogru, H., Delibas, N., Doner, F., Tuz, M., & Uygur, K. (2001). Free radical damage in nasal polyp tissue. *Otolaryngology, Head and Neck Surgery*, 124, 570-572.
- Doughari, J.H. (2006). Antimicrobial activity of *Tamarindus indica* Linn. *Tropical Journal of Pharmaceutical Research*, 5(2), 597-603.
- Droge, W. (2002). Free radicals in the physiological control of cell function. *Physiological Reviews*, 82, 47-95.
- Duke, J. A. (1985). *Handbook of medicinal herbs*. Boca Raton, Fla: CRC Press.
- Edeoga, H.O., Okwu, D.E., & Mbaebie, B.O. (2005). Phytochemical constituents of some Nigerian medicinal plants. *African Journal of Biotechnology*, 4, 685-688.
- Egykparawya, M.S., & Aboutabl, E.A. (1979). Phytochemical studies of *Abrus precatorius* alkaloids. *Journal of Pharmacological Science*, 20, 241.
- Elford, B.C. (1986). L-glutamine influx in malaria; infected erythrocytes; a target for antimalarials. *Parasitology Today*, 2, 309-312.
- Eloff, J.N. (1998). Which extractant should be used for the screening and isolation of antimicrobial components from plants. *Journal of Ethnopharmacology*, 60, 1-8.
- Evans, Jr. R.D., Sydnor, J.B., Moore, W.E.C., Moore, G. R., Manwaring, J. L., Brill, A. H., et al. (1975). Sinusitis of the maxillary antrum. *New England Journal of Medicine*, 293, 735-739.
- Fernandez, M. A., Garcia, M. D., & Saenz, M. T. (1996). Antibacterial activity of the phenolic acids fraction of *Scrophularia frutescens* and *Scrophularia sambucifolia*. *Journal of Ethnopharmacology*, 53, 11-14.
- Finegold, S.M., Flynn, M.J., Rose, F.V., Jousimies-Somer, H., Jakielaszek, C., McTeague M, et al. (2002). Bacteriologic findings associated with chronic bacterial maxillary sinusitis in adults. *Clinical Infection Disease*, 35, 428-33.
- Freiburghaus, F., Kaminsky, R., Nkunya, M.H.H., & Brun, R. (1996). Evaluation of African medicinal plants for their *in vitro* trypanocidal activity. *Journal of Ethnopharmacology*, 55, 1-11.
- Freixa, B., Vila, R., Vargas, L., Lozano, N., Adzet, T., & Caniguera, S. (1996). Screening for antifungal activity of nineteen Latin America plants. *Phytotherapy Research*, 12(6), 427-430.

- Frusciante, L., Barone, A., Carputo, D., Ercolano, M. R., Rocca, F. D., Esposito, S. (2000). Evaluation and use of plant biodiversity for food and pharmaceuticals. *Fitoterapia*, 71, 66-72
- Fukada, N., Yonemitsu, M., & Kimura, T. (1983). Studies on the constituents of the stems of *Tinospora tuberculata* Beumee. *Chemical and Pharmaceutical Bulletin*, 34, 2868-2872
- Fukada, N., Yonemitsu, M., Kimura, T., Hachiyama, S., Miyahara, K., & Kawasaki, T. (1985). *Chemical and Pharmaceutical Bulletin*, 33, 4438
- Fulton, D.C., Kroon, P.A., & Threlfall, D.R. (1994). Enzymological aspects of the redirection of terpenoid biosynthesis in elicitor-treated cultures of *Tabernaemontana divaricata*. *Phytochemistry*, 35, 1183-1186.
- Gaetani, G. F., Galiano, S., Canepa, L., Ferraris, A. M., & Kirkman, H. N. (1989). Catalase and glutathione peroxidase are equally active in detoxification of hydrogen peroxide in human erythrocytes. *Blood*, 73, 334-339.
- Galati, G., Chan, T., Wu, B., & O'Brien, P. J. (1999). Glutathione-dependent generation of reactive oxygen species by the peroxidase-catalyzed redox cycling of flavonoids. *Chemical Research in Toxicology*, 12, 521-525.
- Gibbons, S. (2003). An overview of plant extracts as potential therapeutics. *Expert Opinion on Therapeutic Patents*, 13(4), 489-497.
- Glikilich, R.E., & Metson, R. (1995). The health impact of chronic sinusitis in patients seeking otolaryngologic care. *Otolaryngology, Head and Neck Surgery*, 113,104-9.
- Goh, S.H., Chuah, C.H., Mok, J.S.L. & Soepadmo, E. (1994). *Malaysian Medicinal Plants for the Treatment of Cardiovascular Disease*. ASEAN-Australia Economic Cooperation Project. Institute of Advanced Studies, University of Malaya (pp. 163). Kuala Lumpur: University of Malaya.
- Goh, S.H., Hock, C.C., Mok, J.S.L., & Soepadmo, E. (1995). *Malaysian Medicinal Plants for the Treatment of Cardiovascular Disease*. Kuala Lumpur: Pelanduk Publication, Sdn Bhd.
- Gottlieb, O.R. (1990). Phytochemicals: Differentiation and function. *Phytochemistry*, 29, 1715-1717.
- Green, R.J. (2004). Antioxidant Activity of Peanut Plant Tissues. Masters Thesis, North Carolina State University, USA.

- Gülçin, I., Berasvili, D., & Gepdiremen, A. (2005). Antiradical and antioxidant activity of total anthocyanins from *Perilla pankinensis decne*. *Journal of Ethnopharmacology*, *101*, 287–293.
- Gupta, M., Mazumdar, U. K., Gomathi, P., & Kumar, R. S. (2004). Antioxidant and Free Radical Scavenging Activities of *Ervatamia coronaria* Stapf. Leaves. *Iranian Journal of Pharmaceutical Research*, *2*, 119-126.
- Gurib-Fakim, A. (2006). Medicinal plants: Traditions of yesterday and drugs of tomorrow. *Molecular Aspects of Medicines*, *27*, 1-93.
- Gutteridge, J.M.C. (1995). Lipid peroxidation and antioxidants as biomarkers of tissue damage. *Clinical Chemistry*, *41*, 1819–1828.
- Halliwell, B. (1992). Reactive oxygen species and the central nervous system. *Journal of Neurochemistry*, *59*, 1605-1623.
- Halliwell, B. (1995). Oxygen radical, nitric oxide and human inflammatory joint disease. *Annals of the Rheumatic Diseases*, *54*, 505-510.
- Halliwell, B., & Gutteridge, J.N.C. (1999). Hydrogen peroxide. In: Halliwell, B., Gutteridge, J.M.C. (Eds.), *Free Radicals in Biology and Medicine* (pp. 82-83). Oxford: Oxford University Press.
- Hammer, K.A., Carson, C.F., & Riley, T.V. (1999). Antimicrobial activity of essential oils and other plant extracts. *Journal of Applied Microbiology*, *86*, 985-990.
- Harrison, D., Gongora, M. C., Guzik, T. J., & Widder, J. (2007) Oxidative stress and hypertension. *Hypertension*, *1*, 30-44.
- Hasimah, A., Abdul Karim, A.G., & Lailt, D. (1991). In vitro production of alkaloids from *Tinospora crispa* L. In: *Medicinal products from tropical rain forests, Proceedings of the conference held on May 13-15 at Forest Research Institute Malaysia, Selangor*. Selangor: Forest Research Institute Malaysia.
- Haslam, E. (1996). Natural polyphenols (vegetable tannins) as drugs: possible modes of action. *Journal of Natural Product*, *59*, 205–215.
- Henriksen, T., Mahoney, E. M. & Steinberg, D. (1983) Enhanced macrophage degradation of biologically modified low density lipoprotein. *Arteriosclerosis*, *3*, 149-159.
- Henriques, A.T., Melo, A.A., Moreno, P.R., Ene, L.L., Henriques, J.A., & Schapoval, E.E. (1996). *Ervatamia coronaria*: chemical constituents and some pharmacological activities. *Journal of Ethnopharmacology*, *50*, 19-25.
- Hesse, M. (2002). *Alkaloids: Nature's Curse or Blessing?*. Wiley-VCH.

- Houghton, P. J., Woldemariam, T.Z., Khan, A.I., Burke, A., & Mahmood, N. (1994). Antiviral activity of natural and semi-synthetic chromosome alkaloids. *Antiviral Research*, 25, 235–244.
- Houghton, P.J., Hylands, P.J., & Mensah, A.Y. (2005). In vitro tests and ethnopharmacological investigations: wound healing as an example. *Journal of Ethnopharmacology*, 100, 100-107.
- Hoult, J. R. S., & Paya, M. (1996). Pharmacological and biochemical actions of simple coumarins: natural products with therapeutic potential. *General Pharmacology*, 27, 713–722.
- Hsu, J., Lanza, D.C., & Kennedy, D.W. (1998). Antimicrobial resistance in bacterial chronic sinusitis. *American Journal of Rhinology*, 12, 243-248.
- Hsu, Y.T. (1967). Study on the Chinese drugs used as cancer remedy. *Journal of Southeast Asian Research*, 3, 63-66.
- Imlay, J.A., Chin, S.M., & Linn, S. (1988). Toxic DNA damage by hydrogen peroxide through the Fenton reaction *in vivo* and *in vitro*. *Science*, 240, 640–642.
- Ingkaninan, K., Changwijit, K., & Suwanborirux, K. (2006). Vobasinyli boga bisindole alkaloids, potent acetylcholinesterase inhibitors from *Tabernaemontana divaricata* root. *Journal of Pharmacy and Pharmacology*, 58, 847-852.
- Ingkaninan, K., Temkitthawon, P., Chuenchom, K., Yuyaem, T., & Thongnoi, W. (2003). Screening for acetylcholinesterase inhibitory activity in plants used in Thai traditional rejuvenating and neurotonic remedies. *Journal of Ethnopharmacology*, 89, 261-264.
- Iwata, K. (1986). Drug resistance in human pathogenic fungi. In: Iwata, K. & Vanden Bossche, H. (Eds.), *In vitro and In vivo evaluation of Antifungal Agents Held In Tokyo (Japan) on 19-22 June, 1985* (pp: 65-70:). Amsterdam Elsevier Science Publishers.
- ICS-UNIDO (International Centre for Science and High Technology United Nations Industrial Development Organization) (2006). *Compendium of Medicinal and Aromatic Plants*, Volume 11.
- Jordan, M.A., & Leslie, W. (2004). Microtubules as a target for anticancer drugs. *Nature Reviews Cancer*, 4(4), 253–65.
- Kahkonen, M.P., Hopia, A.I., Vuorela, H.J., Rauha, J., Pihlaja, K., Kujala, S.T., et al. (1999). Antioxidant activity of plant extracts containing phenolic compounds. *Journal of Agricultural Food Chem.*, 47, 3954-3962.

- Kam, T.S., & Anuradha, S. (1995). Voafinine and N1-methylvoafinine, novel aspidosperma alkaloids from *Tabernaemontana*. *Natural Product Letters*, 7, 191-195.
- Kam, T.S., & Pang, H.S. (2004). Conodularine, a new biologically active bisindole alkaloid from *Tabernaemontana divaricata*. *Heterocycles*, 63, 845-850.
- Kam, T.S., Anuradha, S., & Loh, K.Y. (1996). Voafinidine and voalenine, a novel indoles of the aspidosperma alkaloids from *Tabernaemontana*. *Natural Product Letters*, 8, 49-53.
- Kam, T.S., Choo, Y.M., & Komiyama, K. (2004). Biologically active ibogan and vallesamine derivatives from *Tabernaemontana divaricata*. *Chemistry and Biodiversity*, 1, 646-656.
- Kam, T.S., Loh, K.Y., Lim, L.H., Loong, W.L., Chuah, C.H., & Wei, C. (1992). New alkaloids from the leaves of *Tabernaemontana divaricata*. *Tetrahedron Letter*, 33, 969-972.
- Kam, T.S., Pang, H.S., & Lim, T.M. (2003). Biologically active indole and bisindole alkaloids from *Tabernaemontana divaricata*. *Organic and Biomolecular Chemistry*, 1, 1292-1297.
- Kaminski, K.A., Bonda, T. A., Korecki, J., & Musial, W. J. (2002). Oxidative stress and neutrophil activation – the two keystones of ischemia/reperfusion injury. *International Journal of Cardiology*, 86, 41.
- Karlsson, J. (1997). *Antioxidants and Exercise*. USA: Human Kinetics.
- Kaul, T.N., Middletown, E. Jr., & Ogra, P.L. (1985). Antiviral effect of flavanoids on human viruses. *Journal of Medical Virology*, 15, 71-79.
- Keating, G. J., & O’Kennedy, R. (1997). The chemistry and occurrence of coumarins. In R. O’Kennedy & R. D. Thornes (Eds.), *Coumarins: biology, applications and mode of action* (p. 348). New York: John Wiley & Sons, Inc.
- Kim, J.K., Noh, J.H., Lee, S., Choi, J.S., Suh, H., Chung, et al. (2002). The first total synthesis of 2,3,6-tribromo-4,5-dihydroxybenzyl methyl ether (TDB) and its antioxidant activity. *Bulletin of Korean Chemical Society*, 23(5), 661-662.
- King, S. R., & Tempesta, M.S. (1994). From shaman to human clinical trials: the role of industry in ethnobotany, conservation and community reciprocity. *Ciba Foundation Symposium*, 185, 197–206.
- Kirthikar, K.R., & Basu B.D. (1975). *Indian Medicinal Plants* (Vol. 2, pp. 842-844). India: Bishen Mahendra Pal Singh Dehradun.
- Kirthikar, K.R., & Basu, B.D. (1998). *Indian Medicinal Plants Vol.III*. Dehradun: Bishen Singh Mahendra Pal Singh, 577-578.

- Kitagawa, I., Mahmud, T., Yokota, K.I., Nakagawa, S., Mayumi, T., Kobayashi, M., et al. (1996). Indonesian medicinal plants. XVII. Characterization of quassinoids from the stems of *Quassia indica*. *Chemical and Pharmaceutical Bulletin*, 44, 2009-2014.
- Knaggs & Andrew, R. (2001). The biosynthesis of shikimate metabolites (1999). *Natural Product Reports*, 18(3), 334–55.
- Kondo, K., Kurihara, M., Fukuhara, K., Tanaka, T., Suzuki, T., Miyata, N. et al. (2000). Conversion of procyanidin B-type (catechin dimer) to A-type: evidence for abstraction of C-2 hydrogen in catechin during radical oxidation. *Tetrahedron letter*, 41, (4), 485-488.
- Kongkathip, N., Dhumma-upakorn, P., Kongkathip, B., Chawanoraset, K., Sangchomkaeo, P., & Hatthakitpanichakul, S. (2002). Study on cardiac contractility of cycloecalenol and cycloecalenone isolated from *Tinospora crispa*. *Journal of Ethnopharmacology*, 83, 95–99.
- Kongsaktragoon, B., Tamsiririrkkul, R., Suvitayavat, W., Nakornchai, S., & Wongkrajang, Y. (1994). The antipyretic effect of *Tinospora crispa* Mier ex. Hock F. & Thoms, Mahidol University. *Journal Pharmaceutical Science*, 21(1), 1–6.
- Kosem, N., Han, Y.H., & Moongkarndi, P. (2007). Antioxidant and cytoprotective activities of methanolic extract from *Garcinia mangostana* hulls. *Science Asia*, 33, 283–292.
- Kroon, P.A., & Threlfall, D.R. (1997). Squalene synthase from cell suspension cultures of *Tabernaemontana divaricata*. *Phytochemistry*, 45, 1157-1163.
- Kubo, I., Muroi, H., & Himejima, M., (1992). Antimicrobial activity of totarol and its potentiation. *Journal of Natural Product*, 55, 1436-1440.
- Kudou, S., Fleury, Y., Welti, D., Magnolato, D., Uchida, T., Kitamura, K., et al. (1991). Malonyl isoflavone glycosides in soybean seeds (*Glycine max* (L.) Merrill). *Agricultural and Biological Chemistry*, 55, 2227-2233.
- Kumar, S., Verma, N. S., Pande, D., & Srivastana, P. S. (2000). *In vitro* regeneration and screening of berberine in *Tinospora cordifolia*. *Journal of Medicinal & Aromatic Plant Sciences*, 22, 61.
- Kuo, Y.C., Sun, C.M., Tsai, W.J., Ou, J.C., Chen, W.P., & Lin C.Y. (1999). Blocking of cell proliferation, cytokines production and genes expression following administration of Chinese herbs in the human mesangial cells. *Life Science*, 64, 2089-2099.
- Larson, R.A. (1988). The antioxidants of higher plants. *Phytochemistry*, 27(4), 969-978.

- Lee, J., Koo, N., & Min, D.B. (2004). Reactive oxygen species, aging, and antioxidative nutraceuticals. *Comprehensive Reviews in Food Science and Safety*, 3, 21–33.
- Leeuwenberg, A.J.M. (1991). *A revision of Tabernaemontana. The old world species*. Part I, Royal Botanic Gardens, kew:whitstabee litho Ltd., Whitstable, United Kingdom.
- Leung, R.S., & Katial, R. (2008). The Diagnosis and Management of Acute and Chronic Sinusitis. *Primary Care: Clinics in Office Practice*, 35(1), 11–24.
- Lew, D., Southwick, F.S., Montgomery, W.W., Weber, A.L., & Baker, A.S. (1983). Sphenoid sinusitis: A review of 30 cases. *The New England Journal of Medicine*, 309, 1149–1154.
- Lily, M.B. (1981). *Medicinal Plants of East and South East Asia : Attributed properties and uses*. London: Academic Press.
- Loewen, P.C. (1992). In Scandalios, J. (ed.), *Regulation of bacterial catalase synthesis*. In Scandalios, J. (ed.), *Cold Molecular Biology of Free Radical Scavenging Systems* (pp. 96-116). Spring Harbor, NY: Cold Spring Harbor Laboratory Press.
- Lourens, A.C.U., Reddy, D., Baser, K.H.C., Viljoen, A.M., & Van Vuuren, S.F. (2004). *In vitro* biological activity and essential oil composition of four indigenous South African *Helichrysum* species. *Journal of Ethnopharmacology*, 9, 253-258.
- Lu, P. Y., Wen, J., & Ju, W. M. (2000). Chemical constituents from the oil of *Thelephora ganbajun* Zang. *Natural Product Research and Development*, 13, 39-41.
- Lu, Y., & Foo, L.Y. (2000). Antioxidant and radical scavenging activities of polyphenols from apple pomace, *Food Chemistry*, 68, 81-85.
- Luijendijk, T.J.C., Nowak, A., & Verpoorte, R. (1996). Strictosidineglucosidase from suspension cultured cells of *Tabernaemontana divaricata*. *Phytochemistry*, 41, 1451-1456.
- Madhujith, T., & Shahidi, F. (2006). Optimization of extracting antioxidative constituents of six barley cultivars and their antioxidant properties. *Journal of Agricultural Food Chemistry*, 54 (21), 8048-8057.
- Mairura, F.S., & Schmelzer, G.H. (2006). *Tabernaemontana crassa* Benth. In: Schmelzer, G.H. & Gurib-Fakim, A. (Editors). *Medicinal plants/Plantes médicinales 1*. (Vol 11, Issue 1). PROTA, Wageningen, Netherlands.
- Mandal, M., & Mukherji, S. (2001). A study on the activities of a few free radicals scavenging enzymes present in five road side plants. *Journal of Environmental Biological*, 22, 301–305.
- Mapleston, R.A., Stone, M.J., & Williams, D.H. (1992). The evolutionary role of secondary metabolites. *Gene*, 115, 151–157.

- Markowicz Bastos, D.H., Saldanha, L.A., Catharino, R.R., Sawaya, A.C.H.F., Cunha, I.B.S., Carvalho, P.O., *et al.* (2007). Phenolic antioxidants identified by ESI-MS from Yerba Maté (*Ilex paraguariensis*) and green tea (*Camelia sinensis*) extracts. *Molecules*, *12*, 423–432.
- Marston, A., Maillard, M., & Hostettmann, K. (1997). The role of TLC in the investigations of medicinal plants of Africa, South America and other tropical regions. *GIT Laboratory Journal 1*, 36-39.
- McCall, M. R. & Frei, B. (1999). Can antioxidant vitamins materially reduce oxidative damage in humans?. *Free Radical Biology and Medicine*, *26*, 1034 –1053.
- McQuaid, K. E., & Keenan, A. K. (1997). Endothelial barrier dysfunction and oxidative stress: roles for nitric oxide? *Experimental Physiology*, *82*(2), 369-76.
- Meir, S., Kanner, J., Akiri, B., & Hadas, S.P. (1995). Determination and involvement of aqueous reducing compounds in oxidative defense systems of various senescing leaves. *Journal of Agricultural and Food Chemistry*, *43*, 1813.
- Meneghini, R. (1988). Genotoxicity of active oxygen species in mammalian cells. *Mutation Research*, *195*, 215-230.
- Meyer, J. J. M., Afolayan, A. J., Taylor, M. B., & Erasmus, D. (1997). Antiviral activity of galangin from the aerial parts of *Helichrysum aureonitens*. *Journal of Ethnopharmacology*, *56*, 165-169.
- Mielke, M. M., & Lyketsos, C. G. (2006). Lipids and the pathogenesis of Alzheimer's disease: is there a link? *International Review of Psychiatry*, *18*(2), 173.
- Mitscher, L.A., Leu, R., Bathala, M.S., Wu, W., & Beal, J.L. (1972). Antimicrobial agents from higher plants. Introduction, rationale, and methodology. *Lloydia*, *35*, 157-166.
- Mohammed, S. A. K. (2011). Gastroprotective Effect of *Tabernaemontana divaricata* (Linn.) R.Br. Flower Methanolic Extract in Wistar Rats, *British Journal of Pharmaceutical Research 1*(3): 88-98.
- Molyneux, P. (2004). The use of the stable free radical diphenylpicryl-hydrazyl (DPPH) for estimating antioxidant activity, *Journal of Science and Technology*, *26*(2), 211-219.
- Moser, M. (1987). Cost containment" in the management of hypertension. *Annals of Internal Medicine*, *107*(1), 107–109.
- Mueller, C.F., Laude, K., McNally, J.S. & Harrison, D.G. (2005). ATVB in focus: redox mechanisms in blood vessels. *Arteriosclerosis, Thrombosis, and Vascular Biology*, *25*, 274-278
- Muhammad, Z., & Mustafa, A.M. (1994). *Traditional Malay Medicine Plants*. Kuala Lumpur: Fajar Bakti.

- N'guessan, J. D., Dinzedi, M. R., Guessennd, N., Coulibaly, A., Dosso, M., Djaman, A.J. et al. (2007). Antibacterial Activity of the Aqueous Extract of *Thonningia sanguinea* Against Extended-Spectrum- β - Lactamases (ESBL) Producing *Escherichia coli* and *Klebsiella pneumoniae* Strains. *Tropical Journal of Pharmaceutical Research*, 6 (3), 779-783.
- Nadel, D.M., Lanza, D.C., & Kennedy, D.W. (1998). Endoscopically guided cultures in chronic sinusitis. *American Journal of Rhinology*, 12, 233–241.
- National Institute of Science Communication, Council of Scientific and Industrial Research (2000). *The Wealth of India* Vol.III. New Delhi.
- NCCLS (2000). *Performance standards for antimicrobial disk susceptibility tests*. Approved standard, 7th ed, NCCLS document M2-A7. NCCLS, Wayne, Pa.
- Neube N.S, Afolayan A.J., & Okoh A.I. (2008). Assessment techniques of antimicrobial properties of natural compounds of plant origin: Current methods and future trends. *African Journal of Biotechnology*, 7(12), 1797-1806.
- Newman, J.D., & Chappell, J. (1999). Isoprenoid biosynthesis in plants: Carbon partitioning within the cytoplasmic pathway. *Critical Review in Biochemistry and Molecular Biology*, 34, 95–106.
- Noor, H., & Ashcroft, S.J.H. (1989). Antidiabetic effects of *Tinospora crispa* in rats. *Journal of Ethnopharmacology*, 27(1-2), 149–161.
- Nor Aziyah, B., Amirin, S., & Zaimi Asmawi (2001). *Effects of constituents of Tinospora crispa on cardiovascular activity*. Proceeding of NSF Workshop, Kuala Lumpur
- Nuutila, A. M., Puupponen-Pimia, R., Aarni, M., & Oksman-Caldentey, K. M. (2003). Comparison of antioxidant activities of onion and garlic extracts by inhibition of lipid peroxidation and radical scavenging activity. *Food Chemistry*, 81, 485-493.
- Ogunleye, D.S., & Ibitoye, S.F. (2003). Studies of antimicrobial activity and chemical constituents of *Ximenia Americana*. *Tropical Journal of Pharmaceutical Research*, 2(2), 239-241.
- Ohloff, G. (1994). *Scent and fragrances: The fascination of odors and their chemical perspectives*. Springer, Berlin.
- Ono, K., Nakane, H., Fukushima, M., Chermann, J.C., & Barre-Sinoussi, F. (1990). Differential inhibitory effects of various flavonoids on the activities of reverse transcriptase and cellular DNA and RNA polymerases. *European Journal of Biochemistry*, 190, 469–476.
- Ordenez, A. A. L., Gomez, J. D., Vattuone, M. A & Isla, M. I. (2005). Antioxidant activities of *Sechium edule* (Jacq.) Swartz extracts. *Food Chemistry*, 97, 452–458.

- Oyaizu, M. (1986). Studies on products of browning reaction prepared from glucoseamine. *Japanese Journal of Nutrition*, 44, 307-314.
- Ozcelik, B., Lee, J.H., & Min, D.B. (2003). Effects of light, oxygen, and pH on the absorbance of 2,2,-diphenyl-1-picrylhydrazyl. *Journal of Food Science*, 68, 487-490.
- Padilla, E., Ruiz, E., Redondo, S., Gordillo-Moscoso, A., Slowing, K., & Tejerina, T. (2005). Relationship between vasodilation capacity and phenolic content of Spanish wines. *European Journal of Pharmacology*, 517 (1-2), 84–91.
- Paolisso, G. & Giugliano, D. (1996). Oxidative stress and insulin action: is there a relationship? *Diabetologia*, 39, 357-363.
- Parekh, J., Jadeja, D., & Chanda, S. (2005). Efficacy of Aqueous and Methanol extracts of some medicinal plants for potential antibacterial activity. *Turkish Journal of Biology*, 29, 203-210.
- Parekh, J., Karathia, N., & Chanda, S. (2006). Screening of some traditionally used medicinal plants for potential antimicrobial activity. *Indian Journal of Pharmaceutical Science*, 68(6), 832-834.
- Patch, C. S., Tapsell, L. C., Williams, P. G., & Gordon, M. (2006). Plant sterols as dietary adjuvants in the reduction of cardiovascular risk: theory and evidence. *Journal of Vascular Health and Risk Management*, 2, 157-162.
- Pachaly, P., Adnan, A.Z., & Will, G. (1992). NMR-Assignments of N-Acylaporphine alkaloids from *Tinospora crispa*. *Planta Medica*, 58(2), 184-187.
- Pathak, S.K., Jain, D.C., & Sharma, R.P. (1995). Chemistry and biological activities of the Genera *Tinospora*, a review. *International Journal of Pharmacuetics*, 33 (4), 277-287.
- Pawelka, K.H., & Stockigt, J. (1983). Indole alkaloids from cell suspension cultures of *Tabernaemontana divaricata* and *Tabernanthe iboga*. *Plant cell reports*, 2, 105-107.
- Pearlman, AN., & Conley, D.B. (2008). Review of current guidelines related to the diagnosis and treatment of rhinosinusitis. *Current Opinion in Otolaryngology, Head and Neck Surgery*, 16(3): 226–30.
- Peres, M. T. L. P., Monache, F.D., Cruz, A.B., Pizzolatti, M.G., & Yunes. R.A. (1997). Chemical composition and antimicrobial activity of *Croton urucurana* Baillon (Euphorbiaceae). *Journal of Ethnopharmacology*, 56, 223–226.
- Perez, M.B., Calderon, N.L., & Croci, C.A. (2007). Radiation-induced enhancement of antioxidant activity in extracts of rosemary (*Rosmarinus officinalis* L.). *Food Chemistry*, 104(2), 585-592.

- Perez, R.M. (2003). Antiviral Activity of Compounds Isolated From plants. *Pharmaceutical Biology*, 41, 107–57.
- Perrett, S., Whitfield, P.J., Sanderson, L., & Bartlett, A. (1995). The plant molluscicide *Millettia thonningii* (Leguminosae) as a topical antischistosomal agent. *Journal of Ethnopharmacology*, 47, 49–54.
- Perry, L. (1980). Official uses of flowering plants and ferns. In: *Medicinal Plants of East and Southeast Asia*. The Massachusetts Institute of Technology Press, MA.
- Piccirillo, J.F. (2004). Acute bacterial sinusitis. *New England Journal of Medicine*, 351, 902–10.
- Pierrefiche, G., & Laborit. H. (1995). Oxygen free radicals, melatonin, and aging. *Experimental Gerontology*, 30 (3-4), 213-227.
- Pitard, J. (1933). Apocynaceae. Paris: Flore Generale de l'Indochine.
- Powers, S. K., & Lennon, S. L. (1999). Analysis of cellular responses to free radicals: focus on exercise and skeletal muscle. *Proceedings of Nutrition Society*, 58, 1025-1033.
- Poulsen, C., Pennings, E.J.M., & Verpoorte, R. (1991). High-performance liquid chromatographic assay of anthranilate synthase from plant cell cultures. *Journal of Chromatography*, 547, 155-160.
- Prachayasakul, W., Pongchaidecha, A., Chattipakorn, N. & Chattipakorn, S. (2008). Ethnobotany & ethnopharmacology of *Tabernaemontana divaricata*. *Indian Journal Medical Research*, 127, 317-335.
- Prior, R.L., Wu, X.L., & Schaich, K. (2005). Standardized methods for the determination of antioxidant capacity and phenolics in foods and dietary supplements. *Journal of Agricultural and Food Chemistry*, 53(10), 4290-4302.
- Quisumbing, M. (1978). *Medicinal Plants of the Philippines* (p. 1262). Quezon City, Philippines: Katha Publishing Co., Inc.
- Raffauf, R.F. (1996). *Plant Alkaloids: A Guide to Their Discovery and Distribution*. New York: Hawkworth Press, Inc.
- Raghuvanshi, S.S., & Chatthan, A.K.S., (1969). Cytomorphological studies of artificially induced tetraploids of *Catharanthus roseus*. *Phyton-International Journal of Experimental Botany*, 13, 141-151.
- Raj, K., Shoeb, A., Kapil, R.S., & Popli, S.P. (1974). Alkaloids of *Tabernaemontana divaricata*. *Phytochemistry*, 13, 1621-1622.

- Ramas-Valdivia, A.C., Van der Heijden, R., & Verpoorte, R. (1998). Isopentenyl diphosphate isomerase and prenyltransferase activities in rubiaceous and apocynaceous cultures. *Phytochemistry*, 48, 961-969.
- Rao, K.V., Sreeramulu, K., Gunasekar, D., & Ramesh, D. (1993). Two new sesquiterpene lactones from *Ceiba pentandra*. *Journal of Natural Product*, 56, 2041-2045.
- Rastogi, K., Kapil, R.S., & Popli S.P. (1980). New alkaloids from *Tabernaemontana divaricata*. *Phytochemistry*, 19, 1209-1212.
- Rastogi, R. P. (1998). *Compendium of Indian Medicinal Plants*. (Vol. 1, pp. 497), CSIR Publication, India.
- Rauha, J., Remes, S., Heinonen, M., Hopia, A., Kähkönen, M., Kujala, T., et. al. (2000). Antimicrobial effects of Finnish plant extracts containing flavonoids and other phenolic compounds. *International Journal of Food Microbiology*, 56(1), 3-12.
- Reyburn, H., Mtove, G., Hendriksen, I., & Von Seidlein, L. (2009). Oral quinine for the treatment of uncomplicated malaria. *British Journal of Medicine*, 339.
- Rhodes, M.J.C. (1994). Physiological roles for secondary metabolites in plants: some progress, many outstanding problems. *Plant Molecular Biology*, 24, 1-20.
- Rice-Evans, C. A., & Packer, L. (Eds.). (2003). *Flavonoids in Health and Disease* (2nd ed., pp 568). New York, NY: CRC Pr.
- Rice-Evans, C. A., Miller, N. J., & Paganga, G. (1997). Antioxidants properties of phenolic compounds. *Trends in Plant Science*, 2(4), 152-259.
- Rice-Evans, C. A., Miller, N. J., Bolwell, G. P., Bramley, P. M., & Pridham, J. B. (1995). The relative antioxidant activities of plant-derived polyphenolic flavanoids. *Free Radical Research*, 22(4), 375-383.
- Rockova, L., Majekova, M., Kost, D., & Stefek, M. (2004). Antiradical and antioxidant activities of alkaloids isolated from *Mahonia aquifolium*. Structural aspects. *Bioorganic and Medicinal Chemistry*, 12, 4709-4715.
- Rohmer, M., Knani, M., Simonin, P., Sutter, B. & Sahn, H. (1993). Isoprenoid biosynthesis in bacteria: a novel pathway for the early steps leading to isopentenyl diphosphate. *Biochemical Journal*, 295, 517-524.
- Rojas Hernandez, N. M., & Diaz, P. C. (1977). Fungal activity of various alkaloids isolated from *Catharanthus roseus* G. Don. *Revista Cubana de Medicina Tropical*, 29, 147-152.
- Rojas, A., Hernandez, L., Pereda-Miranda, R., & Mata, R. (1992). Screening for antimicrobial activity of crude drug extracts and pure natural products from Mexican medicinal plants. *Journal of Ethnopharmacology*, 35, 275-283.

- Rosser, B. G., Gores, G. J. (1995). Liver cell necrosis: cellular mechanisms and clinical implications. *Gastroenterology*, *108*, 252 – 275.
- Salie, F., Eagle, P.F.K., & Lens, M.H.J. (1996). Preliminary antimicrobial screening of four South African Asteraceae species. *Journal of Ethnopharmacology*, *52*(1), 27-33.
- Sanchez-Moreno, C., Larrauri, J.A, & Saura-Calixto, F. (1999). Free radical scavenging capacity and inhibition of lipid oxidation of wines, grape juices and related polyphenolic constituents. *Food Research International*, *32*, 407-412.
- Sanchez-Moreno, C., Satne-Gracia, M. T., & Frankel, E. N. (2000). Antioxidative activity of selected Spanish wines in corn oil emulsions. *Journal of Agricultural and Food Chemistry*, *48*, 5581-5587.
- Sanders, C.C., & Sanders W.E. Jr. (1992). β -Lactamase resistance in gram-negative bacteria: global trends and clinical impact. *Clinical Infectious Disease*, *15*, 824-839.
- Santos, D., David, M., Almeida, Camila, M., Lopes, Peporine, N., et al. (2006). Evaluation of the Anti-inflammatory, Analgesic and Antipyretic Activities of the Natural Polyphenol Chlorogenic Acid. *Biological and Pharmaceutical Bulletin*, *29*, 2236-2240.
- Sato, M., Fujlwara, S., Tsuchiya, H., Fujil, T., Iinuma, M., Tosa, H., & Ohkawa, Y. (1996). Flavones with antibacterial activity against cariogenic bacteria. *Journal of Ethnopharmacology*, *54*, 171-176.
- Scalbert, A. (1991). Antimicrobial properties of tannins. *Phytochemistry*, *30*, 3875-3883.
- Scherz-Shouval, R., & Elazar. Z. (2007). ROS, mitochondria and the regulation of autophagy. *Trends Cell Biology*, *17*(9), 422-427.
- Schultz, J. C. (1988). Tannin-insect interactions. In R. W. Hemingway and J. J. Karchesy (Eds.), *Chemistry and significance of condensed tannins* (p.553). New York, N.Y: Plenum Press.
- Scott, M. D., Lubin, B. H., Zuo, L., & Kuipers, F. A. (1991). Erythrocyte defense against H₂O₂: Preeminent important of catalase. *Journal of Laboratory and Clinical Medicine*, *118*, 7-16.
- Sekiguchi, J., & Gaucher, G.M. (1977). Conidiogenesis and secondary metabolism in *Penicillium urticae*. *Applied and Environmental Microbiology*, *33*, 147–158.
- Selvanayagam, Z.E., Gnavavendhan, S.G., Chandrasekharan, P., Balakrishna, K. & Rao, B.R. (1994). Plants with antisnake venom activity. A review on pharmacological and clinical studies. *Fitoterapia*, *65*(2), 99-111.
- Shahidi, F. (2000). Antioxidants in food and food antioxidants. *Nahrung*, *44*, 158-163.

- Shahidi, F. & Wanasundara, P.K.J.P.D. (1992). Phenolic antioxidants. *Critical Reviews in Food Science and Nutrition*, 32, 67-103.
- Shahimi, M. M. & Mohsien, S. S. (1979). Pharmacology of *Tinospora tuberculata*. 2nd SE Asian dan Western Pasific Regional Meeting of Pharmacologists, Jakarta.
- Shahimi, M.M & Mohsien, S.S. (1997). Effects of *Tinospora tuberculata* on oral glucose tests in rat. 3rd Scientific Meeting of MASPET, Kuala Lumpur.
- Sharma P, & Cordell G.A. (1988). Heyneanine hydroxyindolenine, a new indole alkaloid from *Ervatamia coronaria* var. plena. *Journal of Natural Product*, 51, 528-531.
- Sharma, D.K., & Prasad R. (1986). Biocrude and solid fuel from laticiferous plants. *Biomass*, 11, 75-79.
- Sharma, O.P. & Bhat, T.K. (2009). DPPH antioxidant assay revisited. *Food Chemistry*, 113, 1202-1205.
- Silberberg, M.S (2006). *Chemistry: The Molecular Nature of Matter and Change*, 4th ed. United States: McGraw-Hill
- Singh, U., & Jialal, I. (2006). Oxidative stress and atherosclerosis. *Pathophysiology*, 13(3), 129-142.
- Sloane, H.J., & William, S.G. (1977). Spectrophotometric accuracy, linearity and adherence to Beer's Law. *Applied Spectroscopy*, 31, 25-30.
- Socransky, S.S., & Manganiello, S.D. (1971). The oral microflora of man from birth to senility. *Journal of Periodontology*, 42, 485-496.
- Stamp & Nancy (2003). "Out of the quagmire of plant defense hypotheses". *The Quarterly Review of Biology*, 78, (1), 23-55.
- Starmans, U. P. & Nijhuis, H. H. (1996). Extraction of secondary metabolites from plants materials: A review. *Trends in Food Science & Technology*, 7(6), 191-197.
- Steinmetz, K. A., & Potter, J. D. (1996). Vegetables, fruits and cancer prevention. *Journal of the American Dietetic Association*, 96, 1027-1039.
- Stephan, B., Kyle, L., & Yong, X. (1997). Role of oxidative stress in the mechanism of dieldrin's hepatotoxicity. *Annals of Clinical and Laboratory Science*, 27(3), 196-208.
- Stern, J. L., Hagerman, A.E., Steinberg, P.D., & Mason. P.K. (1996). Phlorotannin-protein interactions. *Journal of Chemical Ecology*, 22, 1887-1899.
- Stone, M.J., & Williams, D.H. (1992). On the evolution of functional secondary metabolites (natural products). *Molecular Microbiology*, 6, 29-34.

- Sulaiman, M.R., Zakaria, Z.A., & Lihan, R. (2008). Antinociceptive and AntiInflammatory Activities of *Tinospora crispa* in Various Animal Models. *International Journal of Tropical Medicine*, 3, 66-69.
- Taesotikul, T., Panthong, A., Kanjanapothi, D., Verpoorte, R., & Scheffer, J.J.C. (1989). Hippocratic screening of ethanolic extracts from two *Tabernaemontana* species. *Journal of Ethnopharmacology*, 27 ½, 99-106
- Tanaka, M., Misawa, E., Ito, Y., Habara, N., Nomaguchi, K., Yamada, M. et al. (2006). Identification of five phytosterols from aloe vera gel as anti-diabetic compounds. *Biological and Pharmaceutical Bulletin*, 29, 1418-1422.
- Taniguchi, M., & Kubo, I. (1993). Ethnobotanical drug discovery based on medicine men's trials in the African savanna: Screening of east African plants for antimicrobial activity II. *Journal of Natural Product*, 56, 1539-1546.
- Tatli Seven, P., Seven, İ., Yılmaz, M., & Şimşek, Ü.G. (2008). The effects of Turkish propolis on growth and carcass characteristics in broilers under heat stress. *Animal Feed Science and Technology*, 146, 137-148.
- Taylor, M. (1987). English G.M, (Ed.) *Otolaryngology* (Vol 2, pp. 12-22). Philadelphia: Harper and Row.
- Taylor, R.S.L., Edel, F., Manandhar, N.P., & Towers, G.H.N. (1996). Antimicrobial activities of southern Nepalese medicinal plants. *Journal of Ethnopharmacology*, 50, 97-102.
- Tedesco, I., Russo, G.L., Nazzar, F., Russo, M. & Palumbo, R. (2001). Antioxidant effect of red wine anthocyanins in normal and catalase-inactive human erythrocytes. *Journal of Nutritional Biochemistry*, 12, 505-511.
- Toda, M., Okubo, S., Ikigai, H., Suzuki, T., Suzuki, Y., Hara, Y., et al. (1992). The protective activity of tea catechins against experimental infection by *Vibrio cholerae* O1. *Microbiology and Immunology*, 36, 999-1001.
- Trevino, R. J. (1996). Air pollution and its effect on the upper tract and on allergic rhinosinusitis respiratory. *Otolaryngology, Head and Neck Surgery*, 114, 239-241
- Trueba, G. P., Sanchez, G. M., & Giuliani, A. (2004). Oxygen free radical and antioxidant defense mechanism in cancer. *Frontiers in Bioscience*, 9, 2029-2044.
- Turrens, J. F. (2003). Mitochondrial formation of reactive oxygen species. *Journal of Physiology*, 552, 335-344.
- Ueda, J., Saito, N., Shimazu, Y., & Ozawa, T. (1996). A comparison of scavenging abilities of antioxidants against hydroxyl radicals. *Archives of Biochemistry and Biophysics*, 333, 77-84.

- Umi Kalsom, Y., Horsten, S.F.A.J. & Lemmens, R.H.M.J. (1999). *Tinospora* Miers. In : dePadua, L.S., Bunyaphatsara, N., Lemmens, R.H.M.J. (Eds.). *PROSEA Plant Resources of Southeast Asia No. 12 (1). Medicinal and Poisonous Plants 1.*(pp. 479-484). Leiden, The Netherlands: Backhuys Publishers.
- Usman, H., Haruna, A.K., Akpulu, I.N., Ilyas, M., Ahmadu, A.A., & Musa, Y.M. (2005). Phytochemical and antimicrobial screenings of the leaf extracts of *Celtis integrifolia* Lam. *Journal of Tropical Bioscience*, 5(2), 72-76.
- Valko, M., Leibfritz, D., Moncol, J., Cronin, M. T., Mazur, M., & Telser, J. (2007). Free radicals and antioxidants in normal physiological functions and human disease. *International Journal of Biochemistry and Cell Biology*, 39, 44-84.
- Valko, M., Rhodes, C. J., Moncol, J., Izakovic, M., & Mazur, M. (2006). Free radicals, metals and antioxidants in oxidative stress-inducer cancer. *Chemical-Biological Interactions*, 160, 1-40.
- Van Beek, T.A. , Verpoorte, R., & Baerheim Sendsen, A. (1985) Antimicrobially active alkaloids from *Tabernaemontana chippii*. *Journal of Natural Products*, 48, 400-423.
- Van Beek, T.A., Verpoorte, R., Svendsen, A.B., Leeuwenberg, A.J., & Bisset, N.G. (1984). *Tabernaemontana* L. (Apocynaceae): a review of its taxonomy, phytochemistry, ethnobotany and pharmacology. *Journal of Ethnopharmacology*, 10, 1-156.
- Van Der Heidjen, R. (1989). Indole alkaloids in cell and tissue cultures of *Tabernaemontana* species. *Pharmaceutisch Weekblad, Scientific Edition*, 11, 239-241.
- Van Der Heijden, R., Hermans-Lokkerbol, A., De Kool, L.P., Lamping, P.J., Harkes, P.A.A., & Verpoorte, R. (1988). Pharmacognostical studies of *Tabernaemontana* species. Part 19. Accumulation of indole alkaloids in suspension culture of *Tabernaemontana divaricata*. *Planta Medica*, 54, 393-397.
- Van Der Heijden, R., Van Der Graff, G.M., Pennings, Ed. J.M., & Verpoorte, R. (1990). Formation and degradation of some aspidospermatan indole alkaloids in a suspension culture of *Tabernaemontana divaricata*. *Plant Physiology and Biochemistry*, 28, 351-358.
- Velioglu, Y.S., Mazza, G., Gao, L. & Oomah, B.D. (1998). Antioxidant activity and total phenolics in selected fruits, vegetables, and grain products. *Journal of Agricultural and Food Chemistry*, 46, 4113-4117.
- Verma, R. S., Mhta, A., & Srivastave, N. (2007). In vivo chlorpyrifos induces oxidative stress: attenuation by antioxidant vitamins. *Pesticide Biochemistry and Physiology*, 88(2), 191-196.

- Verpoorte, R. (1998). Exploration of nature's chemodiversity: the role of secondary metabolites as lead for drug development. *Drug Development Today*, 3, 232–238.
- Vijaya, K., & Ananthan, S. (1997). Microbiological screening of Indian medicinal plants with special reference to enteropathogens. *Journal of Alternative and Complementary Medicine*, 3, 13-20.
- Vijaya, K., Ananthan, S., & Nalini, R. (1995). Antibacterial effect of theaflavin, polyphenon 60 (*Camelia sinensis*) and *Euphorbia hirta* on *Shigella* spp.- a cell culture study. *Journal of Ethnopharmacology*, 49, 115-118.
- Vuillaume, M. (1987). Reduced oxygen species, mutation, induction and cancer initiation. *Mutation Research*, 186, 43-72.
- Wald, E.R., Guerra, N., & Byers, C. (1991). Upper respiratory tract infections in young children: duration of and frequency of complications. *Pediatrics*, 87, 129–133.
- Wan Omar Abdullah, (1998). *Perubatan Herba : Konsep dan Pendekatan*. Johor Bharu: Litra Ayu.
- Waterworth, P.M. (1978). Quantitative methods for bacterial sensitivity testing. In D. S. Reeves, I. Phillips, J. D. Williams & R. Wise (Eds.), *Laboratory Methods in Antimicrobial chemotherapy* (pp. 31-40). Edinburgh : Churchill-Livingstone.
- Wiseman, H., & Halliwell, B. (1996). Damage to DNA by reactive oxygen and nitrogen species: role in inflammatory disease and progression to cancer. *Biochemistry Journal*, 313, 17–29.
- World Health Organization (2003). *Guidelines on good agricultural and collection practices (GACP) for medicinal plants*. Geneva.
- Wright, C.W., Marshall, S. J., Russell, P. F., Anderson, M. M., Phillipson, J. D., Kirby, G. C., et al. (2003). *In vitro* antiplasmodial, antiamoebic, and cytotoxic activities of some monomeric isoquinoline alkaloids. *Journal of Natural Product*, 63, 1638–1640.
- Wu, W. N., Beal, J., Clark, G.W., & Mitscher, L. A. (1976) Antimicrobial agents from higher plants. Additional alkaloids and antimicrobial agents from *Thalictrum rugosum*. *Lloydia*, 39, 65–75.
- Wyk, V., & Wink, M. (2005). *Medicinal Plants of the World* (pp. 38-349). Pretoria, South Africa: Briza Pulications.
- Yamaji, K., Ishimoto, H., Usui, N., & Mori, S. (2005). Organic acids and water soluble phenolics produced by *Paxillus* species. *Mycorrhiza*, 15(1), 17-23.
- Yamamoto, T., Wakisaka, N., Sato, F. & Kato, A. (1997). Comparison of the nucleotide sequence of enteroaggregative *Escherichia coli* heat-stable enterotoxin 1 genes among diarrhea-associated *Escherichia coli*. *FEMS Microbiol Letters*, 147, 89-95.

- Yang, M., Wang, X., Guan, S., & Xia, J. (2007). Analysis of triterpenoids in *Ganoderma lucidum* using liquid chromatography coupled with electrospray ionization mass spectrometry. *American Society for Mass Spectrometry*, 18(5): 927-939.
- Yao, L.H., Jian, Y.M., Shi Jian, J., Tomas-Barberan, F.A., Datta, N., Singanusong, R., et al. (2004). Flavonoids in food and their health benefits. *Plant Foods for Human Nutrition*, 59, 113.
- Yen, G.C., & Chen, H.Y. (1995). Antioxidant activity of various tea extracts in relation to their antimutagenicity. *Journal of Agricultural and Food Chemistry*, 43, 27–32.
- Yepez, B., Espinosa, M., Lopez, S., & Bulanos, G. (2002). Producing antioxidant fractions from herbaceous matrices by superficial fluid extraction. *Fluid Phase Equilibria*, 194-197, 879-884.
- Yilmaz, T., Kocan, E. G., Besler, H. T., Yilmaz, G., & Gursel, B. (2004). The role of oxidants and antioxidants in otitis media with effusion in children. *Otolaryngology, Head and Neck Surgery*, 131, 797-803.
- Yoshikawa, M., Harada, E., Naitoh, Y., Inoue, K., Matsuda, H., Shimoda, H., et al. (1994). Development of bioactive functions in *Hydrangeae dulcis* folium. III. On the antiallergic and antimicrobial principles of *Hydrangeae dulcis* folium. (1) Thunberginols A, B and F. *Chemical and Pharmaceutical Bulletin*, 42, 2225–2230.
- Yusof, A. (2006). *Exercise-induced oxidative stress in erythrocytes*. PhD Thesis. University of Essex.
- Zalewski, P., Olszewski, J., Blaszczyk, J., et al. (2000). Antioxidant enzymatic activity in blood of patients with chronic hypertrophy of the maxillary sinuses and larynx and the carcinoma of larynx. *Otolaryngologia Polska*, 54, 141-144.
- Zetler, G, & Singbartl G. (1970). Inhibition of cardiac effects of noradrenaline by eleven indole alkaloids, two azepinoindoles, quinidine, quindonium, and propranolol. *Pharmacology*, 4, 129-142.
- Zetler, G., Lenschow, E., & Prenger-Berninghoff, W. (1968). Action of 11 indole alkaloids on the guinea pig heart *in vivo* and *in vitro*, compared with those of 2 synthetic azepinoindoles, quinidine and quindonium. *Naunyn Schmiedebergs Archives for Experiment Pathology and Pharmacology*, 260, 26-49.
- Zhang, Y., & Lewis, K. (1997). Fabatins: new antimicrobial plant peptides. *FEMS Microbiol. Letters*. 149, 59–64.
- Zhao, G., Xiang, Z., Ye, T., Yuan, Y. & Guo, Z. (2006a). Antioxidant activities of *Salvia miltiorrhiza* and *Panax notoginseng*. *Food Chemistry*, 99, 767-774.

- Zhao, H., Fan, W., Dong, J., Lu, J., Chen, J., Shan, L., et al. (2008). Evaluation of antioxidant activities and total phenolic contents of typical malting barley varieties. *Food Chemistry*, *107*, 296-304.
- Zhao, Q., Zhao, Y. & Wang, K. (2006b). Antinociceptive and free radical scavenging activities of alkaloids isolated from *Lindera angustifolia* chen. *Journal of Ethnopharmacology*, *106* (3), 408-413.
- Ziegler, R. G., Mayne, S. T., & Swanson, C. A. (1996). Nutrition and lung cancer. *Cancer Causes Control*, *7*, 157-177.
- Zwadyk, P. (1972). *Enterobacteriaceae* in *Zinsser Microbiology* (20th Ed.) (pp. 20-32). Stuttgart: George Thieme Verlag.