

REFERENCES

- Albert, F. and Haitham, AL-SA'DONI. S- Nitrosothiols: a class of nitric oxide-donor drugs. *Clinical Science*. 2000; 98: 507-520.
- AOAC, 1990. Official Methods of analysis, 952.03, 15th edn. Association of Official Analytical Chemists, Washington, DC.
- Aoki, Y., Yanagisawa, Y., Yazaki, K., Oguchi, H. Protective effect of vitamin E supplementation on increases thermal stability of collagen in diabetic rats. *Diabetologia*. 1992; 35: 913-16.
- Aruoma, O.I. and Halliwell, B. Free radicals in sport In : Sports nutrition : Minerals and Electrolytes. CRC Press Inc. Florida 1995; 122: 758-759.
- Asakura, T., Nakamura, Y., Inoue, N., Murata, M., Homma, S. Characterization of zinc-chelating compounds in instant coffee. *Agricultural and Biological Chemistry*. 1990; 54(4): 855-862.
- Badami, S., Moorkoth, S., Rai, S.R., Kannan, E., Bhojraj, S. Antioxidant activity of *Caesalpinia sappan* heartwood. *Biol Pharm Bull*. 2003; 26(11): 1534-1537.
- Babior, B.M. Oxygen dependent microbial killing by phagocytes. *N Engl J med*. 1978; 298: 659-688.
- Bae, I.K., Min, H.Y., Han, A.R., Seo, E.K., Lee, S.K. Suppression of lipopolysaccharide-induced expression of inducible nitric oxide synthase by brazilin in RAW 264.7 macrophage cells. *European Journal of Pharmacology*. 2005; 513: 237-242.
- Balogh, N., Gaal, T., Ribiczeyne, P.S.Z., Petri, A. Biochemical and antioxidant change in plasma and erythrocytes of pentathlon horses before and after exercise. *Veterinary Clinical Pathology*. 2001; 30(4): 214-8.
- Benzie, I.F.F. and Strain, J.J. The Ferric Reducing Ability of Plasma (FRAP) as a Measure of "Antioxidant Power": The FRAP Assay. *Analytical Biochemistry*. 1996; 229: 15-27.

- Buchko, G.W., Wagner, J.R., Cadet, J., Raoul, S., Weinfeld, M. Methylene blue-mediated photooxidation of 7,8-dihydro-8-oxo-2'-deoxyguanosine. *Biochem Biophys Acta*. 1995; 1263:17-24.
- Cao, G., Alessio, H.M., Culter, R.G. Oxygen-radical absorbance capacity assay for antioxidants. *Free radical Biol Med*. 1993; 14: 303-311.
- Cao, G. and Prior, R.L. Comparison of different analytical. Methods for assessing total antioxidant capacity of human serum. *Clin Chem*. 1998; 44(6): 1309-1315.
- Caulfeild, J.L. The chemistry of nitric oxide-induced deamination and cross-linking of DNA. Massachusetts Institute of Technology. Ph.D. Thesis. 1997: 110-153
- Chance, B., Sies, H., Boveris, A. Hydroperoxide metabolism in mammalian organs. *Physiol Rev*. 1979; 53: 527-605.
- Chen, X. and Ahn, D.U. Antioxidant activities of six natural phenolics against lipid oxidation induced by Fe^{3+} or ultraviolet light. *Journal of the American Oil Chemists' Society*. 1998; 75: 1717-1721.
- Chenzang, Z., Guy, D., Chenshan, Y., Haifeng, C., Rongliang, Z., Zhongjian, J., Bo-Tao, F. *In vitro* protection of DNA from Fenton reaction by plant polyphenol verbascoside. *Biochimica et Biophysica Acta*. 2005; 1723: 114-123.
- Cherallier, A. The encyclopedia of medicinal plants. New York: DK publishing, INC 1996.
- Crofford, L.J., Wilder, R.L., Ristimaki, A.P. Cyclooxygenase-1 and -2 expression in rheumatoid synovial tissue: effects of interleukin-1 β , phorbol ester, and corticosteroids. *J. Clin Invest*. 1994; 197: 1095-1101.
- Cullis, P.M., Malone, M.E., Merson-Davies, L.A. Guanine radical cations are precursors of 7,8-dihydro-8-oxo-2'-deoxyguanosine but are not precursors of mediate strand breaks in DNA. *J. Am. Chem. Soc*. 1996; 118: 2775-2781.
- Culter, R.G. and Rodriguez, H. Critical Review of Oxidative Stress and Aging. *Advances in Basic Science, Diagnostics and Intervention*. 2003; 1: 134-136.
- Davies, M.J., Fomi, L.G., Willson, R.L. Vitamin E analogue Trolox C. *Biochem J*. 1988; 255: 513-522.
- Decon, P.C. and Tannenbaum, S.R. Reactive nitrogen species in the chemical biology of inflammation. *Biochemistry and Biophysics*. 2004; 423: 12-22.

- Desai, H.K., Gawad, D.H., Jjoshi, B.S., Parthasathy, P.C., Ravindranath, K.R., Saindane, M.T., Sidhave, A.R., Viswannathan, N. Chemical investigation of Indian plants: Part X. *Indian J. Chem.* 1977; 5B3: 291-293.
- DeWitt, D.L. and Smith, W.L. Primary structure of prostaglandin G/H synthase from sheep vesicular gland determined from the complementary DNA sequence. *Proc Natl Acad Sci USA*. 1988; 85: 1412-1416.
- Dibattista, J.A., Martel-Pelletier, J., Fujimoto, N., Obata, K., Zafarullah, M., Pelletier, J.P. Prostaglandin E₂ and E₁ inhibit cytokine-induced metalloprotease expression in human synovial fibroblast. *Lab Invest*. 1994; 71: 270-277.
- deRojas-Walker, T., Tamir, S., Ji, H., Wishnok, J.S. Tannenbaum, S.R. Nitric oxide induced oxidative damage in addition to deamination in macrophage DNA. *Chem. Res. Toxicology and Environmental Mutagenesis*. 1995; 8: 473-477.
- Domena, J.D., Timmer, R.T., Dicharry, S.A., Mosbaugh, D.W. Purification and properties of mitochondrial uracil-DNA glycosylase from rat liver. *Biochemistry*. 1988; 27: 6742-6751.
- Eiserich, J.P., Hristova, M., Cross, C.E., Jones, A.D., Freeman, B.A., Halliwell, B., Vliet, A. Formation of nitric oxide-derived inflammatory oxidants by myeloperoxidase in neutrophils. *Nature*. 1998; 391: 393-397.
- Esserich, J.P., Estevez, A.G., Bamberg, T.V., Ye, T.Z., Chumley, P.H., Beckman, J.S., Freeman, B.A. Microtubule dysfunction by posttranslational nitro-tyrosination of alpha-tubulin: a nitric oxide-dependent mechanism of cellular injury. *Proc Natl Acad Sci USA*. 1999; 96: 6365-6370.
- Fantone, J.C. and Ward, P.A. Inflammation. *Pathology 3rd*. 1999: 36-75.
- Fantone, J.C., Kunkel, S.L., Ward, P.A. Suppression of immune complex vasculitis permeability by vasoactive inflammation mediators. *J immunol*. 1980; 125: 2591-2596.
- Feldberg, W. and Gupta, K.P. Pyrogen fever and prostaglandin-like activity in cerebrospinal fluid. *J Physiol*. 1973; 228: 41-53.
- Freeman, B.A.; Crapo, J.D.; Biology of disease : Free radicals and tissue injury. *Lab Invest*. 1982; 47(5): 412-426.
- Fridovich, I. The biology of oxygen radicals. *Science*. 1978; 201(8): 875-880.

- Fridovich, I. Superoxide radical and superoxide dismutase. *Annu Rev Biochem.* 1995; 64: 97-112.
- Fukuyama, N., Takebayashi, Y., Hida, M., Ishida, H., Ichimori, K., Kakazawa, H. Clinical evidence of peroxynitrite formation in chronic renal failure patients with septic shock. *Free Radic. Biol. Med.* 1997; 22: 771-774.
- Fulkerson, J.P. and Damiano, P. Effect of prostaglandin E₂ on adult pig articular cartilage slices in culture. *Clin Orthop.* 1983; 179: 266-269.
- Geng, Y., Blanco, F.J., Cornelisson, M., Lotz, M. Regulation of cyclooxygenase-2 expression in normal human articular chondrocytes. *J Immunol.* 1995; 155: 769-801.
- Gheldrof, N. and Engeseth, N.J. Antioxidant capacity of honeys from various floral sources based on the determination of oxygen radical absorbance capacity and inhibition of *in vitro* lipoprotein oxidation in human serum samples. *J Agric Food Chem.* 2002; 50: 3050-3055.
- Ghiselli, A., Natella, F., Guidi, A. Beer increase plasma antioxidant capacity in human. *J Nutr biochem.* 2000; 11: 76-80.
- Giacosa, A. and Filiberti, R. Free radicals, oxidative damage and degenerative diseases. *European Journal of Cancer Prevention.* 1996; 5: 307-312.
- Glazer, A.N. Phycoerythrin fluorescence-based assay for reactive oxygen species. *Methods Enzymol.* 1990; 185: 161-168.
- Ham, A.J.L. and Liebler, D.C. Vitamin E oxidation in rat liver mitochondria. *Biochemistry.* 1995; 34: 5754-5761.
- Halliwell, B. and Gutteridge, J.M.C. Free radicals in biology and medicine (second edition). Clarendon press, Oxford. 1989.
- Halliwell, B. Reactive oxygen species in living systems: source, biochemistry and role in human disease. *Am J Med.* 1991; 91: 3C-145-3C-255.
- Halliwell, B. Free radical and antioxidant: A personal view. *Nutr Rev.* 1994; 52: 253-265.
- Halliwell, B. Antioxidants. In present knowledge in nutrition 7th (edited by Ziegler EE and Filer LJ, JR). Washington, DC: International Life Science Institute. 1997: 596-603.

- Halliwell, B. and Gutteridge, J.M.C. Free radicals in biology and medicine 3rd ed. Oxford University Press. 1999.
- Havsteen, B. Flavonoids: A class of natural products of high pharmacological potency. *Biochemical Pharmacology*. 1983; 32(7): 1141-1148.
- Hikino, H., Taguchi, T., Fujimura, H., Hiramatsu, Y. Antiinflammatory principles of *Ceasalpinia sappan* wood and of *Haematoxylon campechianum* wood. *Planta Medica*. 1977; 31: 214-220.
- Hughes, E.D., Ingold, C.K., Ridd, J.H. Nitrosation, diazotization, and deamination, *J Chem Soc*. 1958: 58-98.
- Hwang, G.S., Kim, J.Y., Chang, T.S., Jeon, S.D. Effect of brazilin on the phospholipase A₂ activity and changes of intracellular free calcium concentration in rat platelets. *Arch Pharm Res*. 1998; 21: 774-778.
- Issekutz, A.C. and Movat, H.Z. The effect of vasodilator prostaglandins on polymorphonuclear leukocyte infiltration and vascular injury. *Am J Pathol*. 1982; 107: 300-309.
- Ischiropoulos, H. Biological tyrosine nitration: a pathological function of nitric oxide and reactive oxygen species. *Arch Biochem Biophys*. 1998; 356: 1-11.
- Jacob, R.A. and Burri, B.J. Oxidative damage and defense. *Am J Clin Nutr*. 1996; 63: 985S-990S.
- Jang, D. and Murrell, G.A.C. Nitric oxide in arthritis. *Free radic Biol Med*. 1998; 24: 1511-1519.
- Jantan, I.B., Kang, Y.H., Surh. D.Y., Han, B.H. Inhibition effects of Malaysian medicinal plants on the platelet-activating factor (PAF) recertor binding. *Nat Prod Sci*. 1996; 2: 86-89.
- Jessup, W. α -Tocopherol consumption during low-densitylipoprotein oxidation. *Biochem J*. 1990; 265: 399-405.
- Jibiki, I., Hashimoto, S., Maruoka, S., Gon. Y., Matsuzawa. A., Nishitoh. H., Ichijo, H., Horie, T. Apoptosis signal-regulating kinase 1-mediated signaling pathway regulates nitric oxide-induced activator protein-1 activation in human bronchial epithelial cells. *Am J Respir Crit Care Med*. 2003; 167: 856-861.

- Jones, D.P., Coates, R.J., Flagg, E.W. Glutathione in food listed in the National Cancer Institute's Health Habit and History Food Frequency Questionnaire. *Nutr Cancer*. 1992; 17: 57-75.
- Kennedy, L.J., Moore, K., Caulfield, J.L., Tannenbaum, S.R., Dedon, P.C. Quantitation of 8-oxoguanine and strand breaks produced by four oxidizing agents. *Chem. Res. Toxicology and Environmental Mutagenesis*. 1997; 10: 386-392.
- Kerwin, J.F., Lancaster, J.R., Feldman, P.L. Nitric oxide: a new paradigm for second messengers. *J Med Chem*. 1995; 38: 4343-4362.
- Kim, D.S., Baek, N.I., Oh, S.R., Jung, K.Y., Lee, I.S., Lee, H.K. NMR assignment of brazilin. *Phytochemistry*. 1997; 46: 177-178.
- Kim, Y.M., Kim, S.G., Khil, L.Y., Moon, C.K. Brazilin stimulates the glucose transport in 3T3-L1 cells. *Planta Medica*. 1995; 61: 297-301.
- King, P.A., Anderson, V.E., Edward, J.O., Gustafson, G., Plumb, R.C., Suggs, J.W. A stable solid that generates hydroxyl radical upon dissolution in aqueous solution: Reaction with proteins and nucleic acid. *J Am Chem Soc*. 1992; 114: 5430-5432.
- Kluger, M.J. Fever: role of pyrogens and cryogens. *Physiol Rev*. 1991; 71: 93-127.
- Kong, S.K., Yim, M.B., Stadtman, E.R., Chock, P.B. Peroxynitrite disables the tyrosine phosphorylation regulatory mechanism: lymphocyte-specific tyrosine kinase fails to phosphorylate nitrated cdc2(6-20)NH₂ peptide. *Proc Natl Acad Sci USA*. 1996; 93: 3377-3382.
- Kris-Etherton, P.M., Hecker, K.D., Bonanome, A., Coval, S.M., Binkoski, A.E., Hilpert, K.F., Griel, A.E., Etherton, T.D. Bioactive compounds in foods: Their role in the prevention of cardiovascular disease and cancer. *American Journal of Medicine*. 2002; 113(9): 71-88.
- Kujubu, D.A., Feltcher, B.S., Varnum, B.C. A phorbol ester tumor promoter-inducible mRNA from Swiss 3T3 cells encodes a novel prostaglandin synthase/cyclooxygenase homologue. *J Biol Chem*. 1991; 266: 12866-12872.
- Kunkel, S.L., Thrall, R.S., Kunkel, R.G. Suppression of immune complex vasculitis in rats by prostaglandin. *J Clin Invest*. 1979; 64: 1525-1529.
- Kurzrok, R. and Lieb, C. Biochemical studies of human semen: action of semen on the human uterus. *Proc Soc Exp Biol*. 1931; 28: 268-272.

- Laloue, H., Weber-Lofti, F., Lucai-Danila, A., Gullemat, P. Identification of ascorbate and guaiacol peroxidase in needle chloroplasts of spruce tree. *Plant Physiol Biochem.* 1997; 35: 341-346.
- Lancaster, J.R. A tutorial on the diffusibility and reactivity of free nitric oxide. *Nitric oxide.* 1997; 1: 18-30.
- Landino, L.M., Crews, B.C., Timmons, M.D., Marrow, J.D., Marnett, L.J. Peroxynitrite, the coupling product of nitric oxide and superoxide, activates prostaglandin biosynthesis. *Biochemistry.* 1996; 93: 15069-15074.
- Lipsky, P.E. and Isakson, P.C. Outcome of specific COX-2 inhibition in rheumatoid arthritis. *J Rheumatol.* 1997; 24: 9-14.
- Livrea, M.A., Tesoriere, L., Freisleben, H.J. Vitamin A as an antioxidant. In: Cadenas, E.; Packer, L., eds. *Handbook of antioxidants.* New York : Marcel Dekker. 1996: 63-68.
- Lindahl, T. and Andersson, A. Rate of chain breakage at arurinic sites in double-stranded deoxyribonucleic acid. *Biochemistry.* 1972; 11: 3618-3623.
- Loeb, L.A. and Preston, B.D. Mutagenesis by apurinic/aprimidinic sites. *Ann Rev Genet.* 1986; 20: 201-230.
- MacMillan-Crow, L.A., Crow, J.P., Thompson, J.A. Peroxynitrite-mediated inactivation of manganese superoxide dismutase involves nitration and oxidation of critical tyrosine residues. *Biochemistry.* 1998; 37: 1613-1622.
- Maestro, R.F. An approach to free radicals in medicine and biology. *Acta Physiol Scand.* 1980; 492: 153-168.
- Marcocci, L., Maguire, J.J., Droy-Lefaix, M.T., Packer, L. The nitric oxide scavenging property of Ginkgo biloba extract EGb761. *Biochem Biophys Res Commun.* 1994a; 201: 748-755.
- Mahan, L.K. and Stump, S.E. *Food, nutrition & diet therapy* 9th ed. W.B. Saunders company. 1996.
- McCue, P. and Shetty, K. Role of carbohydrate-cleaving enzymes in phenolic antioxidant mobilization from whole soybean fermented with *Rhizopus oligosporus*. *Food Biotechnol.* 2003; 17(1): 27-37.

- Mckenna, R., Kezdy, F.J., Epps, D.E. Kinetic analysis of the free radical-induced lipid peroxidation in human erythrocyte membranes: evaluation of potential antioxidants using cis-parinaric acid to monitor peroxidation. *Anal Biochem.* 1991; 196: 443-450.
- Meister, A. and Anderson, M.E. Glutathione. *Ann Rev Biochem.* 1983; 52: 711-760.
- Metsa-Ketela, T. Luminescent assay for total peroxyl radical-trapping antioxidant activity of human blood plasma. Stanly, P. and Kricka, L. editors. *Bioluminescence and Chemiluminescence: Current Status*. Wiley: Chichester: UK, 1991. P. 389-392.
- Metsa-Ketela, T. and Kirkkola, A-L. Total peroxyl radicaltrapping capability of human LDL. *Free Rad Res Commun.* 1992; 16S: 215.
- Michael, P.M. Nitric oxide and cell death. *Biochimica et Biophysica Acta.* 1999; 1411: 401-414.
- Miller, M.J.S., Sandoval, M., Ribbons, K.A., Mannick, E.E. Nitric oxide and cell death in inflammation. In Laskin JD, Laskin DL ed. *Cellular and Molecular Biology of Nitric oxide*. New York, NY. Marcel Dekker Press. 1999: 247-267.
- Miller, N.J., Rice-Evens, C., Davies, M.J., Gopinathan, V., Milner, A. A novel method for measuring antioxidant capacity and its application to monitoring the antioxidant status in premature neonates. *Clin Sci.* 1993; 84: 407-412.
- Milton, A.S. and Wendlandt, S. Effects on body temperature of prostaglandins of the A, E and F series on injection into the third ventricle of unanaesthetized cats and rabbits. *J Physiol.* 1973; 18: 325-336.
- Minch, S.J., Veenhuizen, A.W., Monahan, J.B. Characterization of a monoclonal antibody that neutralizes the activity of prostaglandin E₂. *J Immunol.* 1995; 155: 4437-4444.
- Mitchell, R.N. and Contran, R.S. Acute and chronic inflammation. *Robbins Basic Pathology* 7th. 2003: 33-59.
- Moncada, S., Vane, J., Ferreira, S.H. Prostaglandins, aspirin-like drugs and the edema of inflammation. *Nature.* 1973; 246: 217-219.
- Moore, J., Hao, Z., Zhou, K., Luther, M., Costa, J., Yu, L. Carotenoid, tocopherol, phenolic acid, and antioxidant properties of maryland-grown soft wheat. *J Agri Food Chem.* 2005; 53(17): 6649-6657.

- Nguyen, T., Brunson, D., Crespi, C.L., Penman, B.W., Wishnok, J.S., Tannenbaum, S.R. DNA damage and mutation in human cells exposed to nitric oxide in vitro. *Proc Natl Acad Sci.* 1992; 89: 3024-3030.
- Nieto, F.J., Iribarren, C., Comstock, G.W., Culter, R.G. Uric acid and serum antioxidant capacity: a reaction to atherosclerosis? *Atherosclerosis.* 2000; 148: 131-139.
- Niki, E. Vitamin E: α -tocopherol In: Cadenas, E.; Packer, L. eds. Handbook of antioxidants. New York: Marcel Dekker. 1996: 3-25.
- Nirajan-Reddy, V.L., Ravikanth, V., Jansi-Lakshmi, V.V.N.S., Suryannarayan-Murty, U., Venkateswarlu, Y. Inhibitory activity of homoisoflavonoids from *Caesalpinia sappan* against *Beauveria bassiana*. *Fitoterapia.* 2004; 74: 600-602.
- O'Keefe, R.J., Crabb, I.D., Puzas, J.E., Rosier, R.N. Influence of prostaglandins on DNA and Matrix synthesis in growth plate chondrocytes. *J Bone Min Res.* 1992; 7: 397-404.
- Olson, J.A. Vitamin A, retinoids, and carotenoids In: Shils, M.E., Olson, J.A. Modern nutrition in health and disease. 8th ed. vol. 1. Philadelphia : Lea & Febiger. 1994; 287-307.
- Packer, L., Hiramatsu, M., Yoshikawa, T. Antioxidant food supplements in human health. Academic press, San Diego. 1999.
- Pelligrini, N., Riso, P., Porrini, M. Tomato consumption dose not effect the total antioxidant capacity of plasma. *Nutrition.* 2000; 16: 268-271.
- Pelletier, J.P., Dibattista, J.A., Roughley, P., McCollum, R., Martel-Pelletier, J. Cytokines and inflammation in cartilage degradation. *Rheum Dis Clin North Am.* 1993; 19: 545-568.
- Pelletier, J.P., Lascau-Coman, V., Jovanovic, D., Fernandes, J.C., Manning, P., Connor, J.R., Currie, M.G., Martel-Pelletier, J. Selective inhibition of inducible nitric oxide synthase in experimental osteoarthritis is associated with reduction in tissue levels of catabolic factors. *J Rheumatol.* 1999; 26: 2002-2014.
- Pieri, C., Marra, M., Moroni, F., Recchioni, R., Marcheselli, F. Melatonin: a peroxyl radical scavenger more effective than vitamin E. *Life Sciences.* 1994; 55(15): 271-276.
- Poli, G. Introduction serial review: reactive oxygen and nitrogen in inflammation. *Free Radic Biol Med.* 2002; 33: 301-302.

- Portanova, J.P., Zhang, Y., Anderson, G.D. Selective neutralization of prostaglandin E₂ blocks inflammation, hyperalgesia, and interleukin 6 production *in vivo*. *J Exp Med*. 1996; 184: 883-891.
- Prapon, W. Oxidative stress and apoptosis. Food and nutrition: The challenge in 21th century. Nutrition conference 97; 1997 November 21; Nakhonpathom: Institute of Nutrition, Mahidol University.
- Punchard, N.A. and Kelly F.L.; editors. Free radicals: a practical approach. Oxford university press. New York. 1996.
- Puchtler, H., Meloon, S.N., Waldrop, F.S. Application of current chemical concepts to metal-hematein and -brazilin stains. *Histochemistry*. 1986; 85: 353-364.
- Rajak, S., Banerjee, S.K., Sood, S., Dinda, A.K., Gupta, Y.K., Gupta, S.K., Maulik, S.K. *Emblica officinalis* causes myocardial adaptation and protects against oxidative stress in ischemic-reperfusion injury in rats. *Phytother Res*. 2004; 18(1): 54-60.
- Rampart, M. and Williams T.J. Polymorphonuclear leukocyte-dependent plasma leakage in the rabbit skin enhanced or inhibited by prostacyclin, depending on the route of administration. *Am J Pathol*. 1986; 124: 285-296
- Ryan, G.B. and Majno, G. Inflammation. *Kalamazoo*. 1977: 74-75.
- Re, R., Pellegrini, N., Proteggemnte, A., Pannala, A., Yang, M., Rice-Evans, C. Antioxidant activity applying an improved ABTS radical cation decolorization assay. *Free Radical Biology & Medicine*. 1999; 26: 1231-1237.
- Roberfroid, M. and Calderon, P.B. Free radicals and oxidation phenomena in biological systems. Marcel Dekker, INC. 1995.
- Rotruck, J.T., Pole, A.L., Genther, H.E., Hoekstra, W.G. Selenium: biochemical role as a component of glutathione peroxidase. *Science*. 1973; 179: 588-590.
- Salgo, M.G., Stone, K., Squadrito, G.L., Battista, J.R., Pryor, W.A. Peroxynitrite cause DNA nicks in plasmid pBR322. *Biochem Biophys Res Commun*. 1995; 210: 1025-1030.
- Seibert, K., Zhang, Y., Leahy, K. Pharmacological and biochemical demonstration of the role of cyclooxygenase 2 in inflammation and pain. *Proc Natl Acad Sci USA*. 1994; 91: 12013-12017.

- Shapino, R., Dubelman, S., Feinberg, A.M., Crain, P.F., McCloskey, J.A. Isolation and identification of cross linked nucleosides from nitrous-acid treated deoxyribonucleic acid. *J Am Chem Soc.* 1977; 99: 302-303.
- Shimada, K., Fujikawa K., Yahara K., Nakamura T. Anti-oxidative properties of xanthan on the autoxidation of soybean oil in cyclodextrin emulsion. *Journal of Agricultural and Food Chemistry.* 1992; 40: 945-948.
- Sies, H. and Stahl, W. Vitamin E and C, β -carotene, and other carotenoids as antioxidants. *Am J Clin Nutr.* 1995; 62: 1315S-1321S.
- Siegle, I., Klein, T., Backman, J.T., Saal, J.G., Nusing, R.M., Fritz, P. Expression of cyclooxygenase-1 and cyclooxygenase-2 in human synovial tissue: differential elevation of cyclooxygenase-2 in inflammatory joint diseases. *Arthritis Rheum.* 1998; 41: 122-129.
- Sjodin, B., westing, Y.H., Apple, F.S. Biochemical mechanisms for oxygen free radical formation during exercise. *Sport med.* 1990; 10(4): 236-254.
- Slater, T.F. Free radical mechanisms in tissue injury. *Biochem J.* 1984; 222: 1-15.
- Smith, W.L., Garavito, R.M., DeWitt, D.L. Prostaglandin endoperoxide H synthase (cyclooxygenase)-1 and -2. *J Biol Chem.* 1996; 271: 33157-33160.
- Sreejayan and Rao, M.N.A. Nitric oxide scavenging by curcuminoids. *J Pharm Pharmacol.* 1997; 49: 105-107.
- Stadler, J., Stefanovic-Racic, M., Biller, T.R., Curran, D.R.D., McIntyre, L.A., Georgescu, H.I., Simmons, R.L., Evans, C.H. Articular chondrocytes synthesize nitric oxide in response to cytokines and lipopolysaccharide. *J Immunol.* 1991; 147: 3915-3920.
- Strain, J.J. and Benzie, I.F.F. Diet and antioxidant defence. in Sadler, Strain, J.J. and Caballero, B. editors. Antioxidant in Encyclopedia of human nutrition. Benjamin Academic Press. 1999: 95-120.
- Szabo, C. and Ohshima, H. DNA damage induced by peroxynitrite: subsequent biological effects. *Biol Chem.* 1997; 1: 373-385.
- Tamir, S., Burney, S., Tannenbaum, S.R. DNA damage by nitric oxide. *Chem. Res. Toxicol.* 1996; 9: 821-827.

- Tannenbaum, S.R., Tamir, T., deRojas-Walker, J.S., Wish-nok. DNA damage and cytotoxicity by nitric oxide, in: Loeppky, R. N.; Micheda, C. J. Nitrosamines and Related N-Nitroso Compounds. *American Chemical Society*. 1994; 10: 120-135.
- Thomas, J.A. Oxidative stress, oxidant defense, and dietary constituents. In: Shils ME, Olson, J.A. Modern nutrition in health and disease. 8th ed. Philadelphia: Lea & Febiger. 1994; 1: 501-502.
- Van De Loo, F.A.J., Arntz, O.J., Van Enckevort, F.M.J., Van Zent, P.L.M.E., Van Den Berg, W. Reduced cartilage proteoglycan loss during zymozan-induced gonarthrosis in NOS2-deficient mice and in anti-interleukin-1-treated wild-type mice with unabated joint inflammation. *Arthritis Rheum*. 1998; 41: 634-646.
- Wayner, D.D.M., Burton, G.W., Ingold, K.U., Locke, S.J. Quantitative measurement of the total, peroxy radical-trapping antioxidant capacity of human blood plasma by controlled peroxidation. *FEBS*. 1987; 187(1): 33-37.
- Wayner, D.D.M., Burton, G.W., Barclay, L.R.C., Locke, S.J. The relative contribution of vitamin E, urate, ascorbate and proteins to the total peroxy radical-trapping antioxidant activity of human blood plasma. *Biochimica et Biophysica Acta*. 1987; 1987: 408-419.
- Wedmore, C.V. and Williams, T.J. Control of vascular permeability by polymorphonuclear leukocytes in inflammation. *Nature*. 1981; 289: 646-650.
- Weinberg, J.B. Nitric oxide and inflammation in autoimmune disorders. In Laskin JD, Laskin DL ed. *Cellular and Molecular Biology of Nitric oxide*. New York, NY. Marcel Dekker Press. 1999: 199-224.
- Weiss, S.J. Tissue destruction by neutrophil. *N Engl J Med*. 1989; 320: 365-376.
- Wetwittayaklung, P., Phaechamud, T., Keokitichai, S. The antioxidant activity of *Cesalpinia sappan* L. heartwood in various ages. *Naersuan University Journal*. 2005; 13(2): 43-52.
- Whitehead, T.P., Thorpe, G.H.G., Maxwell, S.R.J. Enhanced chemiluminescent assay for antioxidant capacity in biological fluids. *Anal Chim Acta*. 1992; 266: 265-277.
- Whitehead, T., Robinson, D., Syms, J., Hale, A. Effect of red wine ingestion on the antioxidant capacity of serum. *Clin Chem*. 1995; 41(1): 32-35.

- Wilhelmi, G. Ueber die pharmacologischen Eigenschaften von Irgapyrin, einem neuen Präparat aus der Pyrazolreihe. *Schweiz Med Wochenschr.* 1949; 79: 577-582.
- Williams, T.J. and Peck, M.J. Role of prostaglandin-mediated vasodilatation in inflammation. *Nature.* 1977; 270: 530-532.
- Winter, C.A., Risley, E.A., Nuss, G.W. Carrageenan-induced edema in the hind paw of the rat as an assay for anti-inflammatory drugs. *Proc Soc Exp Biol Med.* 1962; 111: 544-547.
- Yang, J-H., Mau, J-L., Ko, P-T., Huang, L-C. Antioxidant properties of fermented soy bean broth. *Food Chemistry.* 2000; 71: 246-254.
- Yanping, L., Yanhua, L., Dongzhi, W. Antioxidant activity of a flavonoid-rich extract of *Hypericum perforatum* L. *in vitro.* *J. Agric. Food. Chem.* 2004; 52: 5032-5039.
- Yermilov, V., Rubio, J., Becchi, M., Friesen, M.D., Pignatelli, B., Ohshima, H. Formation of 8-nitroguanine by the reaction of guanine with peroxynitrite *in vitro.* *Carcinogenesis.* 1995; 16: 2045-2050.