

## REFERENCES

- Abu-Tarboush HM and Ahmed SAB. 1996. Studies on karkade (*Hibiscus sabdariffa*): protease inhibitors, phytate, in vitro protein digestibility and gossypol content. *Food Chem.* 56:15-9.
- Adegunloye BJ, Omoniyi JO, Owolabi OA, Ajagbonna OP, Sofola OA and Coker HA. 1996. Mechanisms of the blood pressure lowering effect of the calyx extract of *Hibiscus sabdariffa* in rats. *Afr J Med Med Sci.* 25:235-8.
- Adetutu A, Odunola OA, Owoade OA, Adeleke OA and Amuda OS. 2004. Anticlastogenic effects of *Hibiscus sabdariffa* fruits against sodium arsenite-induced micronuclei formation in erythrocytes in mouse bone marrow. *Phytother Res.* 18:862-4.
- Ajay M, Chai HJ, Mustafa AM, Gilani AH and Mustafa MR. 2007. Mechanisms of the anti-hypertensive effect of *Hibiscus sabdariffa* L. calyces. *J Ethnopharmacol.* 109:388-93.
- al-Harbi MM, Osman AM, al-Gharably NM, al-Bekairi AM, al-Shabanah OA, Sabah DM and Raza M. 1995. Effect of desferrioxamine on cisplatin-induced nephrotoxicity in normal rats. *Chemotherapy.* 41:448-54.
- Ali BH, Mousa HM and El-Mougy S. 2003. The effect of a water extract and anthocyanins of *Hibiscus sabdariffa* L on paracetamol-induced hepatotoxicity in rats. *Phytother Res.* 17:56-9.
- Ali MB, Salih WM, Mohamed AH and Homeida AM. 1991. Investigation of the antispasmodic potential of *Hibiscus sabdariffa* calyces. *J Ethnopharmacol.* 31:249-57.

- Amin A and Hamza AA. 2005. Hepatoprotective effects of Hibiscus, Rosmarinus and Salvia on azathioprine-induced toxicity in rats. *Life Sci.* 77:266-78.
- Amin A and Hamza AA. 2006. Effects of Roselle and Ginger on cisplatin-induced reproductive toxicity in rats. *Asian J Androl.* 8:607-612.
- Appenroth D, Frob S, Kersten L, Splinter FK and Winnefeld K. 1997. Protective effects of vitamin E and C on cisplatin nephrotoxicity in developing rats. *Arch Toxicol.* 71:677-83.
- Atessahin A, Yilmaz S, Karahan I, Ceribasi AO and Karaoglu A. 2005. Effects of lycopene against cisplatin-induced nephrotoxicity and oxidative stress in rats. *Toxicology.* 212:116-23.
- Badary OA, Abdel-Maksoud S, Ahmed WA and Owieda GH. 2005. Naringenin attenuates cisplatin nephrotoxicity in rats. *Life Sci.* 76:2125-35.
- Baek SM, Kwon CH, Kim JH, Woo JS, Jung JS and Kim YK. 2003. Differential roles of hydrogen peroxide and hydroxyl radical in cisplatin-induced cell death in renal proximal tubular epithelial cells. *J Lab Clin Med.* 142:178-86.
- Baliga R, Zhang Z, Baliga M, Ueda N and Shah SV. 1998. *In vitro* and *in vivo* evidence suggesting a role for iron in cisplatin-induced nephrotoxicity. *Kidney Int.* 53:394-401.
- Brunold C, Deters A, Knoepfel-Sidler F, Hafner J, Muller B and Hensel A. 2004. Polysaccharides from *Hibiscus sabdariffa* flowers stimulate proliferation and differentiation of human keratinocytes. *Planta Med.* 70:370-3.
- Burdon RH and van Knippenberg PH. 1991. *Laboratory techniques in biochemistry and molecular biology: techniques in free radical research.* 1<sup>st</sup> edition, ELSEVIER, UK.

- Cao G and Cutler RG. 1993. High concentrations of antioxidants may not improve defense against oxidative stress. *Arch Gerontol Geriatr.* 17:189-201.
- Cao G, Sofic E and Prior RL. 1997. Antioxidant and prooxidant behavior of flavonoids: structure-activity relationships. *Free Radic Biol Med.* 22:749-60.
- Chaichit C. 2004. *Thai herbs and herbal products*. 1<sup>st</sup> edition, Thailand The National Identity office, Thailand.
- Chang YC, Huang HP, Hsu JD, Yang SF and Wang CJ. 2005. Hibiscus anthocyanins rich extract-induced apoptotic cell death in human promyelocytic leukemia cells. *Toxicol Appl Pharmacol.* 205:201-12.
- Chen CC, Hsu JD, Wang SF, Chiang HC, Yang MY, Kao ES, Ho YC and Wang CJ. 2003. *Hibiscus sabdariffa* extract inhibits the development of atherosclerosis in cholesterol-fed rabbits. *J Agric Food Chem.* 51:5472-7.
- Chewonarin T, Kinouchi T, Kataoka K, Arimochi H, Kuwahara T, Vinitketkumnuen U and Ohnishi Y. 1999. Effects of roselle (*Hibiscus sabdariffa* Linn.), a Thai medicinal plant, on the mutagenicity of various known mutagens in *Salmonella typhimurium* and on formation of aberrant crypt foci induced by the colon carcinogens azoxymethane and 2-amino-1-methyl-6-phenylimidazo[4,5-b]pyridine in F344 rats. *Food Chem Toxicol.* 37:591-601.
- Choie DD, Longnecker DS and del Campo AA. 1981. Acute and chronic cisplatin nephropathy in rats. *Lab Invest.* 44:397-402.
- Chu G. 1994. Cellular responses to cisplatin. The roles of DNA-binding proteins and DNA repair. *J Biol Chem.* 269:787-90.

- Cluzel J, Abbas A, Plazonnet B, Aiache J-M and Doly M. 2002. Investigation of ocular healing and anti-inflammatory activities of *Hibiscus sabdariffa* in rabbits. *Invest Ophthalmol Vis Sci.* 43:4220.
- Dafallah AA and al-Mustafa Z. 1996. Investigation of the anti-inflammatory activity of *Acacia nilotica* and *Hibiscus sabdariffa*. *Am J Chin Med.* 24:263-9.
- Daley-Yates PT and McBrien DC. 1984. Cisplatin metabolites in plasma, a study of their pharmacokinetics and importance in the nephrotoxic and antitumour activity of cisplatin. *Biochem Pharmacol.* 33:3063-70.
- Davidson WD and Sackner MA. 1963. Simplification of the Anthrone Method for the Determination of Inulin in Clearance Studies. *J Lab Clin Med.* 62:351-6.
- de Zwart LL, Meerman JH, Commandeur JN and Vermeulen NP. 1999. Biomarkers of free radical damage applications in experimental animals and in humans. *Free Radic Biol Med.* 26:202-26.
- Dobyan DC, Levi J, Jacobs C, Kosek J and Weiner MW. 1980. Mechanism of cisplatin nephrotoxicity: II. Morphologic observations. *J Pharmacol Exp Ther.* 213:551-6.
- Donald WS and Gerhard G. 2000. *The kidney physiology and pathophysiology.* 3<sup>rd</sup> edition, Williams and Wilkins, USA.
- Dotan Y, Lichtenberg D and Pinchuk I. 2004. Lipid peroxidation cannot be used as a universal criterion of oxidative stress. *Prog Lipid Res.* 43:200-27.
- Duh P-D and Yen G-C. 1997. Antioxidative activity of three herbal water extracts. *Food Chem.* 60:639-45.

- el-Saadany SS, Sitohy MZ, Labib SM and el-Massry RA. 1991. Biochemical dynamics and hypocholesterolemic action of *Hibiscus sabdariffa* (Karkade). *Nahrung*. 35:567-76.
- Falade OS, Otemuyiwa IO, Oladipo A, Oyedapo OO, Akinpelu BA and Adewusi SR. 2005. The chemical composition and membrane stability activity of some herbs used in local therapy for anemia. *J Ethnopharmacol*. 102:15-22.
- Farombi EO and Fakoya A. 2005. Free radical scavenging and antigenotoxic activities of natural phenolic compounds in dried flowers of *Hibiscus sabdariffa* L. *Mol Nutr Food Res*. 49:1120-8.
- Field MJ, Bostrom TE, Seow F, Gyory AZ and Cockayne DJ. 1989. Acute cisplatin nephrotoxicity in the rat. Evidence for impaired entry of sodium into proximal tubule cells. *Pflugers Arch*. 414:647-50.
- Francescato HD, Costa RS, Rodrigues Camargo SM, Zanetti MA, Lavrador MA and Bianchi MD. 2001. Effect of oral selenium administration on cisplatin-induced nephrotoxicity in rats. *Pharmacol Res*. 43:77-82.
- Frank T, Janssen M, Netzel M, Strass G, Kler A, Kriesl E and Bitch I. 2005. Pharmacokinetics of anthocyanidin-3-glycosides following consumption of *Hibiscus sabdariffa* L. extract. *J Clin Pharmacol*. 45:203-10.
- Gong JG, Costanzo A, Yang HQ, Melino G, Kaelin WG, Jr., Levrero M and Wang JYJ. 1999. The tyrosine kinase c-Abl regulates p73 in apoptotic response to cisplatin-induced DNA damage. *Nature*. 399:806-9.
- Gonzalez VM, Fuertes MA, Alonso C and Perez JM. 2001. Is cisplatin-induced cell death always produced by apoptosis? *Mol Pharmacol*. 59:657-63.

- Greggi Antunes LM, D'Arc C, Darin J and Bianchi MDLP. 2000. Protective effects of vitamin C against cisplatin-induced nephrotoxicity and lipid peroxidation in adult rats: a dose-dependent study. *Pharmacol Res.* 41:405-11.
- Greggi Antunes LM, Darin JDAC and Bianchi MdLP. 2001. Effects of the antioxidants curcumin or selenium on cisplatin-induced nephrotoxicity and lipid peroxidation in rats. *Pharmacol Res.* 43:145-50.
- Gutteridge JM. 1995. Lipid peroxidation and antioxidants as biomarkers of tissue damage. *Clin Chem.* 41:1819-28.
- Haji Faraji M and Haji Tarkhani A. 1999. The effect of sour tea (*Hibiscus sabdariffa*) on essential hypertension. *J Ethnopharmacol.* 65:231-6.
- Hansawasdi C, Kawabata J and Kasai T. 2000. Alpha-amylase inhibitors from roselle (*Hibiscus sabdariffa* Linn.) tea. *Biosci Biotechnol Biochem.* 64:1041-3.
- Hansawasdi C, Kawabata J and Kasai T. 2001. Hibiscus acid as an inhibitor of starch digestion in the caco-2 cell model system. *Biosci Biotechnol Biochem.* 65:2087-9.
- Heitzer T, Wenzel U, Hink U, Krollner D, Skatchkov M, Stahl RA, MacHarzina R, Brasen JH, Meinertz T and Munzel T. 1999. Increased NAD(P)H oxidase-mediated superoxide production in renovascular hypertension: evidence for an involvement of protein kinase C. *Kidney Int.* 55:252-60.
- Herrera-Arellano A, Flores-Romero S, Chavez-Soto MA and Tortoriello J. 2004. Effectiveness and tolerability of a standardized extract from *Hibiscus sabdariffa* in patients with mild to moderate hypertension: a controlled and randomized clinical trial. *Phytomedicine.* 11:375-82.

- Hirunpanich V, Utaipat A, Morales NP, Bunyaphatsara N, Sato H, Herunsalee A and Suthisisang C. 2006. Hypocholesterolemic and antioxidant effects of aqueous extracts from the dried calyx of *Hibiscus sabdariffa* L. in hypercholesterolemic rats. *J Ethnopharmacol.* 103:252-60.
- Hirunpanich V, Utaipat A, Morales NP, Bunyaphatsara N, Sato H, Herunsalee A and Suthisisang C. 2005. Antioxidant effects of aqueous extracts from dried calyx of *Hibiscus sabdariffa* Linn. (Roselle) in vitro using rat low-density lipoprotein (LDL). *Biol Pharm Bull.* 28:481-4.
- Hou DX, Tong X, Terahara N, Luo D and Fujii M. 2005. Delphinidin 3-sambubioside, a Hibiscus anthocyanin, induces apoptosis in human leukemia cells through reactive oxygen species-mediated mitochondrial pathway. *Arch Biochem Biophys.* 440:101-9.
- <http://www.chemcases.com/cisplat/cisplat12.htm>
- <http://www.raise.com>
- Hussaini D, Orisakwe O, Akunyili D, Njan A, Akumka D and Udemezue O. 2004. Subchronic administration of nigerian species of aqueous extract of *Hibiscus sabdariffa* calyx in rats did not produce cardiotoxicity. *Eur Bull Drug Res.* 12:1-5.
- Itzhaki RF and Gill DM. 1964. A Micro-Biuret Method for Estimating Proteins. *Anal Biochem.* 9:401-10.
- Jacoby H, Wnorowski G, Sakata K and Maeda H. 2000. The effect of MGN3 on cisplatin and adriamycin induce toxicity in the rat. [cited; Available from: <http://www.publishedresearch.com/MGN3?THE%20RAT.htm>]

- Jeong JC, Hwang WM, Yoon CH and Kim YK. 2001. Salviae radix extract prevents cisplatin-induced acute renal failure in rabbits. *Nephron*. 88:241-6.
- Jonadet M, Bastide J, Bastide P, Boyer B, Carnat AP and Lamaison JL. 1990. *In vitro* enzyme inhibitory and *in vivo* cardioprotective activities of hibiscus (*Hibiscus sabdariffa* L.). *J Pharm Belg*. 45:120-4.
- Jones TW, Chopra S, Kaufman JS, Flamenbaum W and Trump BF. 1985. Cis-diamminedichloroplatinum (II)-induced acute renal failure in the rat. Correlation of structural and functional alterations. *Lab Invest*. 52:363-74.
- Kim MS, Kim JK, Kim HJ, Moon SR, Shin BC, Park KW, Yang HO, Kim SM and Park R. 2003. Hibiscus extract inhibits the lipid droplet accumulation and adipogenic transcription factors expression of 3T3-L1 preadipocytes. *J Altern Complement Med*. 9:499-504.
- Kim YK, Byun HS, Kim YH, Woo JS and Lee SH. 1995. Effect of Cisplatin on Renal-Function in Rabbits: Mechanism of Reduced Glucose Reabsorption. *Toxicol Appl Pharmacol*. 130:19-26.
- Kim YK, Jung JS, Lee SH and Kim YW. 1997. Effects of antioxidants and Ca<sup>2+</sup> in cisplatin-induced cell injury in rabbit renal cortical slices. *Toxicol Appl Pharmacol*. 146:261-9.
- Kirdpon S, Nakorn SN and Kirdpon W. 1994. Changes in urinary chemical composition in healthy volunteers after consuming roselle (*Hibiscus sabdariffa* Linn.) juice. *J Med Assoc Thai*. 77:314-21.



- Kruidering M, Van de Water B, de Heer E, Mulder GJ and Nagelkerke JF. 1997. Cisplatin-induced nephrotoxicity in porcine proximal tubular cells: mitochondrial dysfunction by inhibition of complexes I to IV of the respiratory chain. *J Pharmacol Exp Ther.* 280:638-49.
- Lee MJ, Chou FP, Tseng TH, Hsieh MH, Lin MC and Wang CJ. 2002. Hibiscus protocatechuic acid or esculetin can inhibit oxidative LDL induced by either copper ion or nitric oxide donor. *J Agric Food Chem.* 50:2130-6.
- Lieberthal W, Triaca V and Levine J. 1996. Mechanisms of death induced by cisplatin in proximal tubular epithelial cells: apoptosis vs. necrosis. *Am J Physiol.* 270:F700-8.
- Lin HH, Huang HP, Huang CC, Chen JH and Wang CJ. 2005. Hibiscus polyphenol-rich extract induces apoptosis in human gastric carcinoma cells via p53 phosphorylation and p38 MAPK/FasL cascade pathway. *Mol Carcinog.* 43:86-99.
- Lin LT, Liu LT, Chiang LC and Lin CC. 2002. *In vitro* anti-hepatoma activity of fifteen natural medicines from Canada. *Phytother Res.* 16:440-4.
- Lin WL, Hsieh YJ, Chou FP, Wang CJ, Cheng MT and Tseng TH. 2003. Hibiscus protocatechuic acid inhibits lipopolysaccharide-induced rat hepatic damage. *Arch Toxicol.* 77:42-7.
- Liu H and Baliga R. 2003. Cytochrome P450 2E1 null mice provide novel protection against cisplatin-induced nephrotoxicity and apoptosis. *Kidney Int.* 63:1687-96.
- Liu JY, Chen CC, Wang WH, Hsu JD, Yang MY and Wang CJ. 2006. The protective effects of *Hibiscus sabdariffa* extract on CCl<sub>4</sub>-induced liver fibrosis in rats. *Food Chem Toxicol.* 44:336-43.

- Liu KS, Tsao SM and Yin MC. 2005. *In vitro* antibacterial activity of reselle calyx and protocatechuic acid. *Phytother Res.* 19:942-5.
- Machlin LJ and Bendich A. 1987. Free radical tissue damage: protective role of antioxidant nutrients. *Faseb J.* 1:441-5.
- Mansour MA, Mostafa AM, Nagi MN, Khattab MM and Al-Shabanah OA. 2002. Protective effect of aminoguanidine against nephrotoxicity induced by cisplatin in normal rats. *Comp Biochem Physiol C Toxicol Pharmacol.* 132:123-8.
- Masuda H, Tanaka T and Takahama U. 1994. Cisplatin generates superoxide anion by interaction with DNA in a cell-free system. *Biochem Biophys Res Commun.* 203:1175-80.
- Matsushima H, Yonemura K, Ohishi K and Hishida A. 1998. The role of oxygen free radicals in cisplatin-induced acute renal failure in rats. *J Lab Clin Med.* 131:518-26.
- McCall MR and Frei B. 1999. Can antioxidant vitamins materially reduce oxidative damage in humans? *Free Radic Biol Med.* 26:1034-53.
- Megyesi J, Safirstein RL and Price PM. 1998. Induction of p21WAF1/CIP1/SDI1 in kidney tubule cells affects the course of cisplatin-induced acute renal failure. *J Clin Invest.* 101:777-82.
- Mernwongyard M. 1991. *Herbal user's guide.* 5<sup>th</sup> edition, Medical media, Bangkok.
- Mojiminiyi FBO, Dikko M, Muhammad BY, Ojobor PD, Ajagbonna OP, Okolo RU, Igboke UV, Mojiminiyi UE, Fagbemi MA, Bello SO and Anga TJ. 2007. Antihypertensive effect of an aqueous extract of the calyx of *Hibiscus sabdariffa*. *Fitoterapia.* 78:292-297.

- Mora Lde O, Antunes LM, Francescato HD and Bianchi Mde L. 2003. The effects of oral glutamine on cisplatin-induced nephrotoxicity in rats. *Pharmacol Res.* 47:517-22.
- Naziroglu M, Karaoglu A and Aksoy AO. 2004. Selenium and high dose vitamin E administration protects cisplatin-induced oxidative damage to renal, liver and lens tissues in rats. *Toxicology.* 195:221-30.
- Nualplub S and Hiranyachattada S. 2000-2001. Dose-response study of cisplatin on rat renal functions. *Thai Cancer J.* 26-27:15-22.
- Oboh G and Elusiyan CA. 2004. Nutrient composition and antimicrobial activity of sorrel drinks (soborodo). *J Med Food.* 7:340-2.
- Odigie IP, Ettarh RR and Adigun SA. 2003. Chronic administration of aqueous extract of *Hibiscus sabdariffa* attenuates hypertension and reverses cardiac hypertrophy in 2K-1C hypertensive rats. *J Ethnopharmacol.* 86:181-5.
- Ohkawa H, Ohishi N and Yagi K. 1979. Assay for lipid peroxides in animal tissues by thiobarbituric acid reaction. *Anal Biochem.* 95:351-8.
- Onyenekwe PC, Ajani EO, Ameh DA and Gamaniel KS. 1999. Antihypertensive effect of roselle (*Hibiscus sabdariffa*) calyx infusion in spontaneously hypertensive rats and a comparison of its toxicity with that in Wistar rats. *Cell Biochem Funct.* 17:199-206.
- Orisakwe O, Hussaini D, Orish V, Obi E and Udemezue O. 2003. Nephrotoxic effects of *Hibiscus sabdariffa* calyx in rats. *Eur Bull Drug Res.* 11:99-103.
- Owulade M, Eghianruwa K and Daramola F. 2004. Effects of aqueous extracts of *Hibiscus sabdariffa* calyces and *Ocimum gratissimum* leaves on intestinal transit in rats. *AJBR.* 7:31-3.

- Paolini M, Pozzetti L, Pedulli GF, Marchesi E and Cantelli-Forti G. 1999. The nature of prooxidant activity of vitamin C. *Life Sci.* 64:PL 273-8.
- Podmore ID, Griffiths HR, Herbert KE, Mistry N, Mistry P and Lunec J. 1998. Vitamin C exhibits pro-oxidant properties. *Nature.* 392:559.
- Perry JM. 1980. *Medicinal plants of East and Southeast Asia attributed properties and uses.* 1<sup>st</sup> edition, MIT Press, Cambridge.
- Rao M, Kumar MM and Rao MA. 1999. *In vitro* and *in vivo* effects of phenolic antioxidants against cisplatin-induced nephrotoxicity. *J Biochem (Tokyo).* 125:383-90.
- Rose BD and Rennke HG. 1994. *Renal pathophysiology.* 1<sup>st</sup> edition, Williams and Wilkins, USA.
- Said Ahmad M, Fazal F, Rahman A, Hadi SM and Parish JH. 1992. Activities of flavonoids for the cleavage of DNA in the presence of Cu(II): correlation with generation of active oxygen species. *Carcinogenesis.* 13:605-8.
- Sakagami H and Satoh K. 1997. Modulating factors of radical intensity and cytotoxic activity of ascorbate (review). *Anticancer Res.* 17:3513-20.
- Salah AM, Gathumbi J and Vierling W. 2002. Inhibition of intestinal motility by methanol extracts of *Hibiscus sabdariffa* L. (Malvaceae) in rats. *Phytother Res.* 16:283-5.
- Satoh M, Naganuma A and Imura N. 1992. Effect of coadministration of selenite on the toxicity and antitumor activity of cis-diamminedichloroplatinum (II) given repeatedly to mice. *Cancer Chemother Pharmacol.* 30:439-43.

Sergediene E, Jonsson K, Szymusiak H, Tyrakowska B, Rietjens IM and Cenas N.

1999. Prooxidant toxicity of polyphenolic antioxidants to HL-60 cells: description of quantitative structure-activity relationships. *FEBS Lett.* 462:392-6.

Shiraishi F, Curtis LM, Truong L, Poss K, Visner GA, Madsen K, Nick HS and

Agarwal A. 2000(a). Heme oxygenase-1 gene ablation or expression modulates cisplatin-induced renal tubular apoptosis. *Am J Physiol Renal Physiol.* 278:F726-36.

Shiraishi Y, Nagai J, Murakami T, Takano M. 2000(b). Effect of cisplatin on H<sup>+</sup>

transport by H<sup>+</sup>-ATPase and Na<sup>+</sup>/H<sup>+</sup> exchanger in rat renal brush-border membrane. *Life Sci.* 67:1047-58.

Shirwaikar A, Issac D and Malini S. 2004. Effect of *Aerva lanata* on cisplatin and

gentamicin models of acute renal failure. *J Ethnopharmacol.* 90:81-6.

Silva CR, Greggi Antunes LM and Bianchi ML. 2001. Antioxidant action of bixin

against cisplatin-induced chromosome aberrations and lipid peroxidation in rats. *Pharmacol Res.* 43:561-6.

Smith H, Finkelstein N and Aliminosa L. 1945. The renal clearances of substituted

hippuric acid derivatives and other aromatic acids in dogs and man. *J Clin Invest.* 42:388-404.

Suboh SM, Bilto YY and Aburjai TA. 2004. Protective effects of selected medicinal

plants against protein degradation, lipid peroxidation and deformability loss of oxidatively stressed human erythrocytes. *Phytother Res.* 18:280-4.

- Sueishi K, Mishima K, Makino K, Itoh Y, Tsuruya K, Hirakata H and Oishi R. 2002. Protection by a radical scavenger edaravone against cisplatin-induced nephrotoxicity in rats. *Eur J Pharmacol.* 451:203-8.
- Tsai P-J, McIntosh J, Pearce P, Camden B and Jordan BR. 2002. Anthocyanin and antioxidant capacity in Roselle (*Hibiscus Sabdariffa* L.) extract. *Food Res Intern.* 35:351-6.
- Tseng TH, Hsu JD, Lo MH, Chu CY, Chou FP, Huang CL and Wang CJ. 1998. Inhibitory effect of Hibiscus protocatechuic acid on tumor promotion in mouse skin. *Cancer Lett.* 126:199-207.
- Tseng TH, Kao ES, Chu CY, Chou FP, Lin Wu HW and Wang CJ. 1997. Protective effects of dried flower extracts of *Hibiscus sabdariffa* L. against oxidative stress in rat primary hepatocytes. *Food Chem Toxicol.* 35:1159-64.
- Tseng T-H, Wang C-J, Kao E-S and Chu H-Y. 1996. Hibiscus protocatechuic acid protects against oxidative damage induced by tert-butylhydroperoxide in rat primary hepatocytes. *Chemico-Biological Interactions.* 101:137-48.
- Wang CJ, Wang JM, Lin WL, Chu CY, Chou FP and Tseng TH. 2000. Protective effect of Hibiscus anthocyanins against tert-butyl hydroperoxide-induced hepatic toxicity in rats. *Food Chem Toxicol.* 38:411-6.
- Wang Y, Aggarwal SK and Painter CL. 1999. Immunocytochemical and in situ hybridization studies of gastrin after cisplatin treatment. *J Histochem Cytochem.* 47:1057-62.
- Weijl NI, Hopman GD, Wipkink-Bakker A, Lentjes EG, Berger HM, Cleton FJ and Osanto S. 1998. Cisplatin combination chemotherapy induces a fall in plasma antioxidants of cancer patients. *Ann Oncol.* 9:1331-7.

- Winston JA and Safirstein R. 1985. Reduced renal blood flow in early cisplatin-induced acute renal failure in the rat. *Am J Physiol.* 249:F490-6.
- Wrobel K, Wrobel K and Urbina EM. 2000. Determination of total aluminum, copper, iron, manganese, and nickel and their fractions leached to the infusions of black tea, green tea, *Hibiscus sabdariffa*, and *Ilex paraguariensis* (mate) by ETA-AAS. *Biol Trace Elem Res.* 78:271-80.
- Yildirim Z, Sogut S, Odaci E, Iraz M, Ozyurt H, Kotuk M and Akyol O. 2003. Oral erdosteine administration attenuates cisplatin-induced renal tubular damage in rats. *Pharmacol Res.* 47:149-56.
- Zhang JG and Lindup WE. 1993. Role of mitochondria in cisplatin-induced oxidative damage exhibited by rat renal cortical slices. *Biochem Pharmacol.* 45: 2215-22.
- Zhang JG and Lindup WE. 1997. Cisplatin-induced changes in adenine nucleotides in rat kidney slices: amelioration by tiopronin and procaine. *J Pharm Pharmacol.* 49:1136-40.