THERAPEUTICS

NPARR 2(3), 2011-0339, Phytochemical screening and in-vivo antipyretic activity of the methanol leaf-extract of Bombax malabaricum DC (Bombaceae)

To investigate the antipyretic activity of the methanol extract of Bombax malabaricum leaves (MEBM) in rats. Baker's yeast was used to induce fever in Wistar rats which were divided into four groups. The animal groups were thereafter administered MEBM (200 mg/kg), MEBM (400 mg/kg), paracetamol (reference standard, 150 mg/kg) and 1% Tween 80 (control), respectively. The body temperature of the rats was measured rectally over a period of 8 h. MEBM was also phytochemically screened for alkaloids, steroids, carbohydrates, tannins, fixed oils, proteins, triterpenoids, deoxy-sugar, flavonoid, cyanogenic and coumarin glycosides. MEBM (200 mg/kg and 400 mg/kg) significantly reduced yeast-induced pyrexia (p<0.05, p<0.01, respectively). Phytochemical tests showed the presence of steroids, carbohydrates, tannins, triterpenoids, deoxy-sugars, flavonoids and coumarin glycosides. The methanol extract of Bombax malabaricum leaves possesses significant antipyretic activity [Hossain, E., Mandal, S.C. and Gupta, J.K. (Department of Pharmaceutical Technology, Jadavpur University, Kolkata700 032, India), Tropical Journal of Pharmaceutical Research, 2011, 10(1), 55-60].

NPARR 2(3), 2011-0340, An evaluation of diuretic activity of Morinda citrifolia (Linn) (Noni) fruit juice in normal rats

Morinda citrifolia (Noni fruit) juice, a proven antioxidant when evaluated for nephroprotective effects in a murine model was noted to produce a high volume of urine formation. Hence it was evaluated for its diuretic potential in normal rats. The study was conducted in saline primed Wistar albino rats (n=6) using frusemade (10 mg/kg) as the reference diuretic drug with two oral doses, 5mg/kg and 10mg/kg respectively. Urine volume and electrolytes (Sodium, Potassium and Chloride) excretion was estimated at the end of 24 hours and data was analyzed by Kruskall Wallis and Mann Whitney tests. P<0.05 was considered as statistically significant. Noni fruit juice statistically increased the volume of urine (6.82 ±1.18ml/100g/24hr and 7.87±1.15ml/100gm/24hr) in a dose dependent manner increasing the diuretic index to 2.04 and 2.36 for 5ml/kg and 10ml/kg dose ranges respectively. However, there was a statistical significant decrease in sodium ion excretion (70.1±14.3 m.mol/L at 5ml/kg and 41.97±9.3 m.mol/L at 10ml/kg) when compared to the control (107±5.18 m.mol/L). Though there was a similar decrease in potassium excretion it was not statistically significant. These findings indicate that the probable increase in urine formation might be due an aquaretic action of Noni fruit rather than a natruretic effect and further studies with larger doses and longer duration are warranted [Shenoy, J.P., Pai, P.G.*, Shoeb, A., Gokul, P., Fulani, A. and Kotian, M.S. (Department of Pharmacology, Kasturba Medical College, Manipal University, Mangalore, Karnataka, India), International Journal of Pharmacy and Pharmaceutical Sciences, 2011, 3(2), 119-121].

NPARR 2(3), 2011-0341, Antidiabetic potential of unripe Carissa carandas Linn. fruit extract

Carissa carandas commonly known as Karanda have a long history of use in traditional system of medicine. It is used by tribal healers of Western Ghat region of Karnataka as hepatoprotective and antihyperglycemic. However, no scientific data is available to validate the folklore claim. The present study has been designed to evaluate its unripe fruit for the antidiabetic activity. In the present study, methanol extract of unripe fruits and its fractions were studied for its antidiabetic potential. The methanol extract and its fractions were screened for antidiabetic activity in alloxan induced diabetic rats. The polyphenolic, flavonoid and flavanone contents of methanolic extract and its fractions were also determined and correlated with its antidiabetic activity. The experimental data indicated that the methanol extract and its ethyl acetate soluble fraction has significantly lowered the elevated blood glucose levels by 48% (p<0.001) and 64.5% (p < 0.001) respectively at dose level of 400 mg/kg per oral after 24 h as compared to diabetic control. In order to assess the role of polyphenolic components in the relevant activity, polyphenolic and flavonoid contents were determined. The polyphenolic and flavonoid content of methanol extract and its ethyl acetate soluble fraction were found to be 15.8 ± 1.2 mg and
18.55 ± 0.34 mg (gallic acid equivalent/g extract) and flavonoid content 2.92 ± 0.03 mg and 1.534 ± 0.30 mg (rutin equivalent/g extract), respectively. The increased antidiabetic potential of ethyl acetate fraction over methanol extract is due to its partial purification achieved by fractionation which resulted in increase in degree of polymerization and segregation of secondary metabolites [Itankar, P.R., Lokhande, S.J., Verma, P.R., Arora, S.K., Sahu, R.A., Patil, A.T.* (Department of Pharmaceutical Sciences, Pharmacognosy and Phytochemistry Division, Rashtrasant Tukadoji Maharaj Nagpur University, Amravati Road, Nagpur 440 033, Maharashtra, India), Journal of Ethnopharmacology, 2011, 135(2), 430-433].

**NPARR 2(3), 2011-0342, Hypoglycemic, antidiabetic and toxicological evaluation of *Momordica dioica* fruit extracts in alloxan induced diabetic rats**

The aim of the study was to evaluate the antidiabetic effect of *Momordica dioica* fruit extracts in alloxan induced diabetic wistar rats. Aqueous extract of *Momordica dioica* (AEMD) showed maximum fall (52.8%) in 0 to 1 h Fasting Blood Glucose (FBG) in Glucose Tolerance Test (GTT) compared to hexane (39%), chloroform (37.2%) and ethanol (37.7%) extract in normal healthy rats. Since AEMD exhibited maximum hypoglycemic activity as compared to other extracts, it was further studied for antidiabetic effect in diabetic rats. The oral Effective Dose (ED) of AMED was 200 mg kg⁻¹ body weight which produced a fall of 57.5% (p<0.001) in diabetic rats. The 200 mg kg⁻¹ body weight AMED once daily for 21 days reduced the elevated Blood Glucose (FBG) by 64.8% (p<0.001), Post Prandial Glucose (PPG) by 76.9% (p<0.001) and glycosylated hemoglobin (HbA1c) by 37.6% (p<0.001). Urea, creatinine and urinary sugar, total protein, AST, ALT, alkaline phosphatase and bilirubin activities were also reduced after AEMD treatment in diabetic rats. Above 3 g kg⁻¹ b.wt was Lethal dose of AEMD i.e., 15 times of ED indicating high margin of safety. Our study suggests possible use of aqueous extract of fruits of *M. dioica* for the management of diabetes mellitus [Singh R., Seherawat, A, Sharma, P. (Department of Zoology, Bundelkhand University, Jhansi, India), Journal of Pharmacology and Toxicology, 2011, 6(5), 454-467]

**NPARR 2(3), 2011-0343, Alleviation of fluoride-induced hepatic and renal oxidative stress in rats by the fruit of *Limonia acidissima***

We report an investigation into the antioxidative effect of *Limonia acidissima* (LA) fruit powder on fluoride-induced hepatic and renal oxidative stress in rats administered 100 ppm NaF (45.2 ppm F ion) in their drinking water. LA fruit powder was mixed with the diet at 2.5, 5.0, and 10.0 gram percent levels for four weeks, after which the antioxidant status of the liver and kidneys was assessed by measuring the levels of lipid peroxidation by thiobarbituric reactive substances (TBARS), total ascorbic acid (TAA), and reduced glutathione (GSH), along with decreased activities of catalase (CAT), superoxide dismutatse (SOD), and glutathione peroxidase (GPx). LA produced a significant (p <0.05) dose-dependent decrease in the levels of TAA and GSH, and also the activities of CAT, SOD, and GPx, along with an elevation in the TBARS concentration. These results indicate that LA fruit powder has considerable antioxidant activity as a nutritional supplement and offers protection against F-induced hepatic and renal oxidative stress [Vasant, R.A., Narasimhacharya, A.V.R.L.* (Laboratory for Animal Sciences, Department of Biosciences, Sardar Patel Maidan, Sardar Patel University, Vadtal Road, Satellite Campus, Vallabh Vidyanagar 388120, Gujarat, India), Fluoride, 2011, 44(1), 14-20].

**NPARR 2(3), 2011-0344, Antiproliferative and antioxidant activities of *Juglans regia* fruit extracts**

Cancer chemopreventive action of walnut [*Juglans regia* L. (Juglandaceae)] has been explored. This study evaluated antiproliferative and antioxidant activities of walnut. Materials and methods: Various fractions of walnut extract have been screened for antiproliferative activity against human cancer cell lines using the MTT assay. All these fractions have also been evaluated for total phenolic content, antioxidant activity, and reducing power capacity. Chloroform and ethyl acetate fractions exhibited a high level of antiproliferation against HepG-2, liver cancer cell line (IC50=9 and 15 µg/mL, respectively). Exhibiting high phenolic content, antioxidant activity, and potent antiproliferative activity, walnut may act as a cancer chemopreventive agent [Negi, A.S., Luqman, S, Srivastava, S., Krishna, V., Gupta, N.,...
NPARR 2(3), 2011-0345, Effects of *Silybum marianum* (L.) Gaertn seeds extract on dermatophytes and saprophytes fungi in vitro compare to clotrimazol

During recent years, increasing side effects for syntactic drugs have been motivated by more researchers for finding new compounds of the plant with antifungal activity. Dried fruits extract of *Silybum marianum* contain flavonoid compounds and until now, no studies have been conducted on the antifungal activates of methanolic extract of this plant. In this study, inhibitory potential of *S. marianum* methanolic extract on dermatophytes and saprophytes fungi was investigated in vitro compare to clotrimazol. Antifungal activities of *S. marianum* seeds extract were evaluated against pathogens (*Trichophyton mentagrophytes, Epidermaphyton folicosom, Microsporum canis*) and saprophytes (*Aspergillus niger, Candida albicans*) fungi with different methods such as, disc diffusion (60, 30, 15, 7.5, 3.2 and 1.6 mg extract per disc), pour plate and broth (50, 25, 12.5, 6.2, 3.1, 1.5 mg ml-1 extract in medium). Concentration of clotrimazol as a control was 10 µg ml-1. Our results showed that, *S. marianum* seeds extract prevents the growth of dermatophytes more than saprophytes fungi. The best inhibitory effects of extract (6.2 mg ml-1) in *Microsporum canis* and *Epidermaphyton folocosom* cultures were achieved by porplate and broth methods that were similar to our results with 10 µg ml-1 clotrimazol. No inhibitory effects were observed in *Aspergillus niger* and *Candida albicans* cultures. With attention to our finding, components of the *Silybum marianum* extract have antifungal effects on the growth of dermatophytes [Salehi, M., Hasanloo, T., Mehrabian, S. and Farahmand, S. (Instructor Department of Biology, Payammur University, Ghom, Iran), *Pharmaceutical Sciences*, 2011, 16(4), 203-210].

NPARR 2(3), 2011-0346, Ethnobotanical aspects of *Rauvolfia serpentina* (L.) Benth. ex Kurz. in India, Nepal and Bangladesh

*Rauvolfia serpentina* has long being used in India for the treatment of snakebites, hypertension, high blood pressure and mental illness. The present review deals with the extensive amount of work undertaken in recent years at different parts of the Indian subcontinent to explore the use of this plant in the treatment of different ailments by the tribals or the aboriginals as a part of their ethnomedical system. Different ethnic groups use this plant to treat snake, insect and animal bite, mental illness, schizophrenia, hypertension, blood pressure, gastrointestinal diseases, circulatory disorders, pneumonia, fever, malaria, asthma, skin diseases, scabies, eye diseases, spleen diseases, AIDS, rheumatism, body pain, veterinary diseases etc. This plant is also being used to prepare fermented food products [Dey, A. and De, J.N.* (Department of Botany, Charuchandra College, Kolkata, India), *Journal of Medicinal Plant Research*, 2011, 5(2), 144-150].