Anti-inflammatory, analgesic and antipyretic effects of methanol extract from *Bauhinia racemosa* Linn.

The bark and leaves of ***Bauhinia racemosa* Linn.** (Hindi – *Kachnal*) are reported to be medicinally important in the traditional system of medicine and are used extensively for the treatment of inflammation, headache, fever, tumours, skin infection, disease of the blood, dysentery and diarrhoea. The scientists at Department of Pharmaceutical Technology, Jadavpur University, Kolkata, India investigated the anti-inflammatory, analgesic, and antipyretic effects of 50, 100 and 200mg/kg body wt of methanol extract of the stem bark (MEBR).

The effects of MEBR on the acute and chronic phases of inflammation were studied in carrageenan, dextran and mediators (histamine and serotonin)-induced paw oedema and cotton pellet-induced granuloma, respectively. Analgesic effect of MEBR was evaluated in acetic acid-induced writhing and hotplate tests. Antipyretic activity of MEBR was evaluated by yeast-induced hyperpyrexia in rats. The anti-oedema effect of MEBR was compared with 10mg/kg of Indomethacin orally. In acute phase of inflammation, a maximum inhibition of 44.9, 43.2, 44.8 and 45.9% ($P<0.001$) was noted at the dose of 200mg/kg body wt after 3hours of treatment with MEBR in carrageenan, dextran, histamine and serotonin-induced paw oedema, respectively. Administration of MEBR (200mg/kg body wt) and Indomethacin (10mg/kg body wt) significantly ($P<0.05$) decreased the formation of granuloma tissue induced by cotton pellet method at a rate of 50.4 and 56.2%, respectively. The extract also inhibited peritoneal leukocyte migration in mice. The MEBR also produced significant ($P<0.01$) analgesic activity in both models. Further, the MEBR potentiated the morphine- and aspirin-induced analgesic in mice. Treatment with MEBR showed a significant ($P<0.01$) dose-dependent reduction in pyrexia in rats. The results suggest that MEBR possess potent anti-inflammatory, analgesic and antipyretic activity [Gupta M, Mazumder UK, Sambath Kumar R, Gomathi P, Rajeshwar Y, Kakoti BB and Tamil Selven V, Anti-inflammatory, analgesic and antipyretic effects of methanol extract from *Bauhinia racemosa* stem bark in animal models, *J Ethnopharmacol,* 2005, **98**(3), 267-273].

Anti-diarrhoeal activity of *Butea monosperma* (Lam.) Kuntze

Many plants conveniently available in India are used in traditional folklore medicine for the treatment of diarrhoea and dysentery. A team of scientists at KP College of Pharmacy, Thiruvannamalai, India, Faculty of Pharmaceutical Sciences, Guru Jambheshwar University, Hisar, India and Faculty of Pharmacy, Jamia Hamdard (Hamdard University), Hamdard Nagar, New Delhi, India evaluated the anti-diarrhoeal activity of ethanol extract of stem bark of ***Butea monosperma* (Lam.) Kuntze** in several experimental models of Wistar albino rats. The extract inhibited castor oil induced diarrhoea and PGE_2 (prostaglandin E2) induced enteropooling in rats; it also reduced gastrointestinal motility after charcoal meal administration. The results obtained establish the efficacy and substantiate the use of this herbal remedy as a non-specific treatment for diarrhoea in folk medicine [Gunakkunru A, Padmanaban K, Thirumal Pritila J, Parimala G, Vengatesan N, Gnanasekar N, Perianayagam James B, Sharma SK and Pillai KK, Anti-diarrhoeal activity of *Butea monosperma* in experimental animals, *J Ethnopharmacol*, 2005, **98** (3), 241-244].

Triterpenoid saponin from the leaves of *Careya arborea* exhibits antileishmanial activity

The researchers at Indian Institute of Chemical Biology, Jadavpur, Kolkata, India isolated triterpenoid saponin, designated as arborenin and characterized as 3-O-β-D-glucopyranosyl(1→2)-β-D-glucopyranosyl-2α, 3β-dihydroxy-taraxast-20-en-28-oic acid, together with desacylescin III from bioguided-fractionation of the methanol extract of the leaves of ***Careya arborea* Roxb.** The structures were determined on the basis of extensive 2D NMR spectroscopic analysis. The saponin showed *in vitro* antileishmanial activity against *Leishmania donovani* (strain AG 83) [Mandal Debayan, Panda Nilendu, Kumar Shrabanti, Banerjee Sukdeb, Mandal Nirup B and Sahu Niranjan P, A triterpenoid saponin possessing antileishmanial activity from the leaves of *Careya arborea*, *Phytochemistry*, 2006, **67**(2), 183-190].

Molecular properties and prebiotic effect of inulin obtained from Globe artichoke

Inulin has been used successfully to replace fat in table spreads, baked goods, fillings, dairy products, frozen desserts and dressings. Commercially available inulins are obtained mainly from chicory, Jerusalem artichoke and dahlia. Although Globe artichokes (***Cynara scolymus* Linn.**) possess high inulin content (3% of fresh wt), its properties and possible applications are less well known than those from other sources probably because the flowers of the plant are usually eaten as a vegetable. Researchers at Spain have designed a protocol for the isolation and purification of inulin from artichoke waste materials (bracts) from the canning industry. Therefore, isolation of a by-product with high added value, such as inulin, from these industrial wastes is of commercial interest. The process was carried out exclusively in aqueous medium, without the addition of any organic solvents, which is environmentally friendly in itself and could be of importance for the use of this inulin in foods.

During experiment a high molecular weight inulin has been prepared from artichoke agroindustrial wastes using environmentally benign aqueous extraction procedures. Physico-chemical analysis of the properties of artichoke inulin was carried out. Its average degree of polymerization was 46, which is higher than for Jerusalem artichoke, chicory and dahlia inulins. GC–MS confirmed that the main constituent monosaccharide in artichoke inulin was fructose and its degradation by inulinase indicated that it contained the expected β-2, 1-fructan bonds. The FT-IR spectrum was identical to that of chicory inulin. These data indicate that artichoke inulin will be suitable for use in a wide range of food applications. The health-promoting prebiotic effects of artichoke inulin were demonstrated in an extensive microbiological study showing a long lasting bifidogenic effect on *Bifidobacterium bifidum* ATCC 29521 cultures and also in mixed cultures of colonic bacteria [López-Molina Dorotea, Navarro-Martínez María Dolores, Melgarejo Francisco Rojas, Hiner Alexander NP, Chazarra Soledad and Rodríguez-López José Neptuno, Molecular properties and prebiotic effect of inulin obtained from artichoke (*Cynara scolymus* L.), *Phytochemistry,*2005, **66**(12), 1476-1484].

Anti-cataract activity of *Pterocarpus marsupium* bark and *Trigonella foenum-graecum* seeds extract

A team of researchers at Department of Pharmacology and Dr Rajendra Prasad Center for Ophthalmic Sciences, All India Institute of Medical Sciences, New Delhi, India assessed the effect of three antidiabetic plants on the development of cataract in rats. An aqueous extract of ***Pterocarpus marsupium* Linn.** bark (Hindi – *Vijaysar*) (1g/kg/day), ***Ocimum sanctum* Linn.** leaves (Hindi– *Tulsi*) (200mg/kg/day) and alcoholic extract of ***Trigonella foenum-graecum* Linn.** seeds (Hindi – *Methi*) (2g/kg/day) were given to alloxan (120mg/kg) diabetic rats until the development of cataract. Serum glucose and body weight were monitored at regular intervals while cataract was examined through naked eye as well as slit lamp at 75, 100 and 115 days after alloxan administration. Administration of all the three plant extracts exerted a favourable effect on body weight and blood glucose, the effects were best with ***P. marsupium*** followed by ***T. foenum-graecum*** and ***O. sanctum***. On the course of cataract development former two plants exerted anti-cataract effect evident from decreased opacity index while *tulsi* failed to produce any anti-cataract effect in spite of significant antihyperglycemic activity [Vats V, Yadav SP, Biswas NR and Grover JK, Anti-cataract activity of *Pterocarpus marsupium* bark and *Trigonella foenum-graecum* seeds extract in alloxan diabetic rats, *J Ethnopharmacol*, 2004, **93**(2-3), 289-294].

Wheat antioxidants suppress intestinal tumour activity

The team of scientists at Wichita State University, Kansas State University and Hudson Valley Community College, USA carried out studies on antioxidant properties of wheat which is associated with reduced risk of several forms of cancer. During this study 5 wheat varieties were compared, with low to high antioxidant potential, on their antitumour properties in Min mice. Diets with equal fibre content were fed as whole wheat or wheat bran for 10 weeks. Intestinal tumours were counted to determine tumour multiplicity and measured to determine tumour load. Mice fed whole wheat diets gained more weight than those fed wheat bran diets. Tumour multiplicity was reduced in the two groups fed wheat diets with the highest antioxidant potential. Tumour load was reduced in 4 of the wheat bran groups and in 2 of the whole wheat groups. Regression analysis revealed inverse relationships between dietary antioxidant potential and tumour multiplicity in whole wheat and wheat bran diet groups and tumour load in wheat bran diet groups. This study showed that antioxidant potentials of wheat in the diets was associated with their antitumour activity [Carter John W, Ronald Madl and Padula Frank, Wheat antioxidants suppress intestinal tumour activity in Min mice, *Nutr Res*, 2006, **26**(1), 33-38].

Tulsi ñ a potent therapeutic agent for peptic ulcer

Tulsi or Holy Basil, ***Ocimum sanctum* Linn.** is reported to possess anti-carcinogenic, anthelmintic, anti-septic, anti-rheumatic, anti-stress and anti-bacterial properties. Earlier studies have reported significant anti-ulcer activity in different parts of the herb, however, the choice of ulcer induction model vary from study to study. A team of scientists at Central Drug Research Institute, Lucknow, India evaluated its anti-ulcerogenic activity in cold restraint (CRU), aspirin (ASP), alcohol (AL), pyloric ligation (PL) induced gastric ulcer models in Sprague-Dawley rats, histamine-induced duodenal (HST) ulcer in guinea pigs and ulcer-healing activity, in acetic acid-induced (AC) chronic ulcer model. They found that *tulsi* leaves extract decreased the incidence of ulcers and also enhanced the healing of ulcers. At a dose of 100mg/kg was found to be effective in CRU (65.07%), ASP (63.49%), AL (53.87%), PL (62.06%) and HST (61.76%) induced ulcer models and significantly reduced free, total acidity and peptic activity by 72.58, 58.63, 57.6%, respectively and increased mucin secretion by 34.61%. Additionally, it completely healed the ulcers within 20 days of treatment in AC. It is observed that anti-ulcer effect may be due to its cytoprotective effect rather than antisecretory activity. Thus, *tulsi* found to possess potent anti-ulcerogenic as well as ulcer-healing properties and could act as a potent therapeutic agent against peptic ulcer disease [Dharmani Poonam, Kuchibhotla Vijay Kumar, Maurya Rakesh, Srivastava Sudhir, Sharma Sharad and Palit Gautam, Evaluation of anti-ulcerogenic and ulcer-healing properties of *Ocimum sanctum* Linn., *J Ethnopharmacol*, 2004, **93**(2-3), 197-206].

Evaluation of antimicrobial activity of *Cleome viscosa* and *Gmelina asiatica*

The ethanolic extracts of the leaves and flowers of ***Cleome icosandra* Linn.** syn. *C. viscosa* Linn. and roots of ***Gmelina asiatica* Linn.** were tested for antimicrobial activity by researchers of India and Ethiopia. The two plants exhibited a broad spectrum of antimicrobial activity, particularly significant against *Escherichia coli*, *Proteus vulgaris* and *Pseudomonas aeruginosa* and a moderate activity against *Bacillus subtilis* and *Staphylococcus aureus*. Only leaf extract of ***C. viscosa*** exhibited significant antifungal activity against pathogenic fungi *Rhizopus oligosporus* [Sudhakar M, Rao Ch V, Rao PM and Raju DB, Evaluation of antimicrobial activity of *Cleome viscosa* and *Gmelina asiatica*, *Fitoterapia*, 2006, **77** (1), 47-49].

Aloe vera products for the treatment of distal limb dermatophilosis in horses

Dermatophilosis (Mud-fever) is a clinically important skin disease among cattle. The scientists at Hartpury College, University of the West of England, Hartpury, Gloucestorshire, UK did experiment by using acute naturally occurring dermatophilosis infections on the distal limbs of horses and ***Aloe vera* Linn.** an effective base for aromatherapy mixtures and compared it to an untreated control and a standard chemotherapeutic treatment over a period of five days along with a mixture of the two treatments. Aloe demonstrated very highly significant remission in infected lesion size compared to untreated controls and significantly larger regression when compared to the chemotherapeutic agent. No significant benefits were observed in combining the two treatments. This contrasts with the *in vitro* testing of chemotherapeutic agents and aloe against the causal organism of dermatophilosis which showed highly significant inhibition of *Dermatophilus congolensis* by some of the conventional treatments compared to aloe. Re-application of aloe *in vitro* brought no significant benefit compared to a single application and several aloe products were similar in bacterial inhibition. It was concluded that aloe was a valid treatment for distal limb dermatophilosis in horses in its own right, due to its combination of anti-bacterial activity and superior wound healing ability and that a single application of a common ***A. vera*** product was a suitable cost-effective treatment [Hill AL, Tippett CE, Smith S-J and Pippard CJ, The suitability of *Aloe vera* products for the treatment of distal limb dermatophilosis in horses, *Int J Aromather,* 2005, **15**(4), 169-176].

Hepatoprotective activity of *Terminalia catappa* Linn. leaves extract

Researcher's team at China evaluated the protective effects of chloroform extracts of ***Terminalia catappa* Linn.** leaves (TCCE) on carbon tetrachloride (CCl_4)-induced liver damage and the possible mechanisms involved in the protection were investigated in mice. They found that increases in the activity of serum aspartate aminotransferase and alanine aminotransferase and the level of liver lipid peroxidation (2.0, 5.7 and 2.8-fold) induced by CCl_4 were significantly inhibited by oral pretreatment with 20, 50 or 100 mg/kg of TCCE. Morphological observation further confirmed the hepatoprotective effects of TCCE. In addition, the disruption of mitochondrial membrane potential (14.8%), intramitochondrial Ca^{2+} overload (2.1-fold) and suppression of mitochondrial Ca^{2+}–ATPase activity (42.0%) in the liver of CCl_4-insulted mice were effectively prevented by pretreatment with TCCE. It can be concluded that TCCE have protective activities against liver mitochondrial damage induced by CCl_4, which suggests a new mechanism of the hepatoprotective effects of TCCE [Tang Xinhui, Gao Jing, Wang Yanping, Fan Yi-Mei, Xu Li-Zhi, Zhao Xiao-ning, Xu Xu Qiang and Qian Zhong Ming, Effective protection of *Terminalia catappa* L. leaves from damage induced by carbon tetrachloride in liver mitochondria, *J Nutr Biochem*, 2006, **17**(3), 177-182].

Antidiabetic property of fenugreek seed mucilage and spent turmeric

The scientists at Central Food Technological Research Institute, Mysore, India studied the beneficial effect of feeding fenugreek (***Trigonella foenum-graecum* Linn.**) seed mucilage and spent turmeric (***Curcuma longa* Linn.**) on diabetic status in Streptozotocin-induced diabetic rats. Diabetic rats lost weight but body weights were improved by feeding spent turmeric than fenugreek seed mucilage. In diabetic rats, a 30% improvement in urine sugar and urine volume profiles was observed with feeding fenugreek seed mucilage and spent turmeric. Fasting blood glucose showed a 26% and 18% improvement with fenugreek seed mucilage and spent turmeric feeding to diabetic rats, respectively. Fenugreek seed mucilage compared with turmeric was more effective in ameliorating diabetic state [Suresh Kumar G, Shetty AK, Sambaiah K and Salimath PV, Antidiabetic property of fenugreek seed mucilage and spent turmeric in streptozotocin-induced diabetic rats, *Nutr Res,* 2005, **25**(11), 1021-1028].

Mixture of Honey, Beeswax and Olive oil inhibits growth of *Staphylococcus aureus* and *Candida albicans*

Olive oil, beeswax and honey are natural materials that contain flavonoids, antioxidants and antibacterial ingredients that affect cytokine production by skin cells when applied topically. Honey stimulates the growth of wound tissue, hastens healing and causes debridement, as well as deodorizing wounds. Honey, beeswax and olive oil mixture (1:1:1, v/v) is useful in the treatment of diaper dermatitis, psoriasis and eczema.

Researchers at Dubai Specialized Medical Center and Medical Research Labs Islamic Establishment for Education, Dubai, United Arab Emirates carried out study to investigate the effect of honey mixture prepared by mixing natural honey, beeswax and olive oil on the growth of *Candida albicans* and *Staphylococcus aureus* growth isolated from human specimens and the effect of honey, olive oil or beeswax on growth of *S. aureus* and *C. albicans*. The following experiments were performed: 1) honey mixture was poured on holes made on plates seeded with *S. aureus* or *C. albicans*; 2) the microorganisms were cultured onto media made of honey mixture alone, nutrient agar–honey mixture and Sabouraud glucose agar–honey mixture [The concentration of honey mixture in nutrient agar or Sabouraud glucose agar was 12.5, 25, 33, 50 and 66% (v/v)]; and 3) honey, olive oil or beeswax was added onto nutrient agar or Sabouraud glucose agar at a ratio of 1:2 (v/v) and then were seeded with *S. aureus* or *C. albicans*. Clear zone of inhibition was observed around holes filled with honey mixture; 3.5 mm on media seeded with *C. albicans* and 4 mm on media seeded with *S. aureus*. No growth of either microorganism was obtained on media made of honey mixture alone. The minimum concentration of honey mixture in nutrient agar–honey mixture media required to inhibit *S. aureus* was 50 and 66% concentration was required to inhibit *C. albicans* growth onto Sabouraud glucose agar–honey mixture media. No growth of *S. aureus* or *C. albicans* was obtained on media containing honey whereas mild to moderate growth was obtained on media containing olive oil or beeswax.

Results showed that mixture of honey, olive oil and beeswax is safe and effective in the management of skin diseases. Honey is sticky when applied on the skin. Authors used olive oil to decline the viscosity of honey and to facilitate skin application. Beeswax was used as vehicle for preparation of the ointment. Furthermore, olive oil and beeswax application could have beneficial influence on skin lesions. In addition, the contents of the mixture might have a synergistic effect that needs further investigation. Olive oil prepared through cold press was used to avoid possible deleterious effects of heating or usage of chemicals during olive oil extraction on the natural components of the oil. Concomitant bacterial skin infections and inflammatory signs and symptoms associated with skin fungal infections contributed to the use of topical preparations that contain antifungal, antibacterial and corticosteroid ingredients. Honey mixture offers a possibility to treat skin diseases associated with bacterial infection and/or inflammatory mycosis without use of corticosteroid or antibiotic combinations [Al-Waili Noori S, Mixture of Honey, Beeswax and Olive Oil Inhibits Growth of *Staphylococcus aureus* and *Candida albicans*, *Arch Med Res*, 2005, **36** (1), 10-13].

Aloe linked to thyroid dysfunction

The researchers at University of Milan and Maggiore Hospital IRCCS, Milan, Italy found anecdotal evidence that ***Aloe vera*** **Linn.** plant juice has been associated with the thyroid imbalance or biochemical hypothyroidism in a female patient. This report is the first step in identifying a close temporal association between ***Aloe vera*** plant juice treatment and thyroid imbalance. Aloe juice treatment may have been related to the thyroid hormone alterations. The patient had not been taking any kind of drugs. Moreover, in an experimental animal model study, similar thyroid metabolism disorders have been found associated with Aloe treatment. After discontinuation of the treatment, the patient showed a brisk clinical improvement. The patient achieved a full clinical remission. At a 16-months follow-up, the patient's thyroid function was normal [Pigatto Paolo D and Guzzi Gianpaolo, Aloe Linked to Thyroid Dysfunction, *Arch Med Res*, 2005, **36** (5), 608].

Distribution of anticancer drug camptothecin in *Nothapodytes foetida*

***Nothapodytes foetida* (Wight) Slemure** (syn. *Mappia foetida* Miers.) is abundant in the Western Ghats of India and a rich source of camptothecin and 9-methoxycamptothecin. Biological screenings have recognized that camptothecin and 9-methoxycamptothecin have promising anti-cancer activity. Camptothecin content in this plant is higher than in other plants and hence, it represents the most convenient source for large-scale isolation of this alkaloid. The continuous production of anti-cancer, anti-AIDS and other life saving drugs requires repeated collection of plant materials and consequently this leads to the serious problem of depletion of natural sources plants. However, seeds produced by this plant can be considered an important source of camptothecin, avoiding the harvesting of intact plants.

Researchers at Plant Biotechnology and Secondary Products Section, Nuclear Agriculture and Biotechnology Division, Bhabha Atomic Research Centre, Mumbai, India carried out studies to determine the concentrations of camptothecin and 9-methoxycamptothecin in various parts including seeds of ***N. foetida***. The bark contained 0.27% dry wt of camptothecin and 0.11% dry wt 9-methoxycamptothecin followed by the root, stem and leaves. Immature seeds contained higher concentrations of camptothecin (0.32% dry wt) and 9-methoxycamptothecin (0.16% dry wt) compared to mature seeds. Zygotic embryos of immature seeds contained 0.11% dry wt of camptothecin and 0.04% dry wt of 9-methoxycamptothecin. The highest concentration of camptothecin (0.42% dry wt) and 9-methoxycamptothecin (0.18% dry wt) were accumulated in the cotyledons of immature seeds. The present studies showed that camptothecin concentration was double in immature seeds than in mature seed (0.32% and 0.16% of camptothecin, respectively) and that this level is 5.3-fold higher than that of the leaves. The results suggest a chemical defense mechanism deployed by immature seeds to deter attacks by pathogenic microorganisms and herbivores [Fulzele Devanand P and Satdive Ramesh K, Distribution of anticancer drug camptothecin in *Nothapodytes foetida*, *Fitoterapia*, 2005, **76** (7-8), 643-648].

Cardiovascular effects of *Sida cordifolia* leaves extract

Sida cordifolia* Linn.** (Country-Mallow) is used in the folk medicine as antirheumatic, antipyretic, laxative, diuretic, antiinflammatory, analgesic, hypoglycaemic, antiasthmatic, in the treatment of nasal congestion and as aphrodisiac. The researchers of Brazil evaluated the cardiovascular activity of aqueous fraction of the hydroalcoholic extract of ***S. cordifolia leaves (AFSC) in rats, using direct blood pressure measurements in non-anaesthetized and anaesthetized rats. In normotensive non-anaesthetized rats was observed that AFSC (5, 10, 20, 30 and 40 mg/kg, i.v.) induced hypotension (6 ± 2; 8 ± 2; 11 ± 2; 19 ± 3 and 33 ± 3%, respectively) and bradycardia (0.3 ± 3; 13 ± 4; 38 ± 6; 64 ± 7 and 80 ± 5%, respectively). Hypotensive response was completely abolished after atropine (2 mg/kg; i.v.) but potentialized after hexamethonium (20 mg/kg; i.v.) (12 ± 2; 21 ± 5; 28 ± 3; 32 ± 2 and 32 ± 3%, respectively), while bradycardic response was completely abolished after atropine (2 mg/kg; i.v.) and attenuated with hexamethonium (20 mg/kg; i.v.) (1 ± 0.3; 5 ± 1; 7 ± 1; 7 ± 1 and 10 ± 1%, respectively). In hexamethonium treated rats, L-NAME significantly attenuated the hypotensive response (9 ± 2; 14 ± 1; 16 ± 1; 16 ± 2 and 22 ± 3%, respectively). In normotensive anaesthetized and vagotomized rats, hypotensive and bradycardic responses were significantly attenuated (0.5 ± 0.2; 1 ± 0.4; 3 ± 0.6; 4 ± 0.8 and 6 ± 1%, respectively, $n = 6$, and 7 ± 2; 12 ± 5; 15 ± 2, 17 ± 2 and 25 ± 3%, respectively). The anaesthesia with sodium thiopental did not affect the AFSC-induced responses when compared with those induced in non-anaesthetized rats (data not showed). In conclusion, the results obtained so far show that AFSC produce hypotension and bradycardia, mainly due to a direct stimulation of the endothelial vascular muscarinic receptor and indirect cardiac muscarinic activation, respectively [Medeiros IA, Santos MRV, Nascimento NMS and Duarte JC, Cardiovascular effects of *Sida cordifolia* leaves extract in rats, *Fitoterapia*, 2006, **77** (1), 19-27].

Effect of alcoholic extract of *Tinospora cordifolia* on bone marrow precursor cells

Researchers at School of Biotechnology, Banaras Hindu University, Varanasi, India investigated the effect of *in vivo* administration of alcoholic extract of ***Tinospora cordifolia*** **(Willd.) Miers ex Hook. f. & Thoms.** whole plant (ALTC) on the proliferation and myeloid differentiation of bone marrow hematopoietic precursor cells in mice bearing a transplantable T cell lymphoma of spontaneous origin designated as Dalton's lymphoma (DL). Bone marrow cells (BMC) obtained from ALTC administered DL-bearing mice showed an enhanced BMC proliferation and colony forming ability *in vitro* in response to L929 conditioned medium as a source of colony stimulating factor (CSF). The number of granulocyte-macrophages colony (CFU-GM) was

predominantly higher in the cultures of BMC obtained from ALTC administered mice as compared to mice injected with Phosphate Buffered Saline (PBS) alone. An increase in the count of bone marrow derived macrophages (BMDM) from ALTC administered mice was also observed along with an increase in the count of tumour associated macrophages. The BMDM obtained from ALTC administered mice showed an enhanced response to signal of Lipopolysaccharides (LPS) for activation to produce IL-1 and TNF. Thus, ***T. cordifolia*** can influence the myeloid differentiation of bone marrow progenitor cells and the recruitment of macrophages in response to tumour growth *in situ* [Singh Sukh Mahendra, Singh Nisha and Shrivastava Pratima, Effect of alcoholic extract of Ayurvedic herb *Tinospora cordifolia* on the proliferation and myeloid differentiation of bone marrow precursor cells in a tumor-bearing host, *Fitoterapia*, 2006, **77** (1), 1-11].

Effect of aqueous *Euphorbia hirta* leaf extract on gastrointestinal motility

Euphorbia hirta **Linn.** (Hindi — *Dudhi*) has been used in traditional medicine for the treatment of cough, coryza, hay asthma, bronchial affections, bowel complaints, worm infestations, kidney stones and low milk yield. The whole plant has also been reported to possess antibacterial, antiamoebic, antifungal, antiviral, spasmolytic, antidiarrhoeic, sedative, anxiolytic, analgesic, antipyretic, anti-inflammatory, antimalarial and anti-hypertensive properties.

A study conducted at Department of Pharmacology and Toxicology, College of Veterinary Sciences, G. B. Pant University of Agriculture and Technology, Pantnagar, Uttaranchal, India revealed that aqueous leaf extract of ***E. hirta*** significantly and dose-dependently decreased the gastrointestinal motility in rats and mice. These findings may lend support to the traditional use of ***E. hirta*** in diarrhoea. It is also focused that the leaves of this plant possibly play a vital role in antidiarrhoeic activity of the whole plant as reported earlier [Hore SK, Ahuja V, Mehta G, Kumar Pardeep, Pandey SK and Ahmad AH, Effect

of aqueous *Euphorbia hirta* leaf extract on gastrointestinal motility, *Fitoterapia*, 2006, **77**(1), 35-38].