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PG-01

ANTIBACTERIAL ACTIVITY OF ETHANOL EXTRACT OF *POUZOLZIA ZEYLANICA (L)* BENN

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The current study investigated presence of antibacterial activity of ethanolic extract of *Pouzolzia zeylanica (L) Benn* which was tested by using cup plate method. The results revealed that ethanolic extracts of concentration 1000 μg/ml showed antibacterial activity against both gram-positive and gram-negative organisms such as *Bacillus subtilis, Bacillus megaterium*, *Staphylococcus aureus, Pseudomonas aeruginosa, Escherichia coli, Shigella dysentariae* and *Salmonella typhi.* The extract showed very good antibacterial activity against *Staphylococcus aureus* and *Escherichia coli.*

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PG-02

EVALUATION OF WOUND HEALING ACTIVITY OF POLYHERBAL FORMULATION OF *AZADIRCHTA INDICA, CASSIA FISTULA, ALLIUM SATIVUM AND EUCALYPTUS GLOBULUS*

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Cassia fistula L. (Amaltas) belonging to family 'Leguminosae' and *Azadirchta indica* (Neem) belonging to the family 'Meliaccae' are evergreen plants of the tropics and sub-tropics. *Eucalyptus globulus* belongs to family 'Myrtaceae' and *Allium sativum* belongs to family 'Liliaceae'. In present investigation, polyherbal formulation of *Azadirchta indica, Cassia fistula, Allium sativum* and *Eucalyptus globulus* was investigated for its wound healing activity. Hydroalcoholic extracts of the leaves of *Azadirchta indica* contain glycosides, flavonoids, tannins, carbohydrates, phenolic compounds. Hydroalcholic extracts of the leaves of *Cassia fistula* contain flavonoids, tannis, carbohydrates, phenolic compounds and proteins. Hydroalcholic extracts of the leaves of *Eucalyptus globulus* contained terpenoids, resins and hydroalcholic extracts of the leaves of *Allium sativum* contained glycosides and sterols. For the excision wound study, each group containing six animals (150-200 g) were selected and circular wound of about 2.5 cm (500 sqm) diameter were made on depilated dorsal thoracic region of rats under light ether anaesthesia in semi-aseptic condition and observed throughout the study. The animals were housed individually. The extracts (10%) were formulated as ointment in emulsifying base and was applied on the wound once daily for 16 days starting from the day of wounding. Suspension of extract was prepared and given orally once daily for 16 days. The observation of percentage wound closures were made on 4th, 8th, 12th and 16th post wounding days and also epithelization, size and shape of scar were noted.

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PG-03

ETHNOMEDICINAL PLANTS USED AGAINST JAUNDICE IN BANGLADESH AND ITS ECONOMICAL PROSPECTS

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In Bangladesh, traditional plant-based medicines have always been used to treat hepatitis and jaundice. In the present investigation, we focused on medicinal plants used to treat jaundice and hepatitis. About 95 plant species belonging to about 75 family were found to be used against jaundice or hepatitis by the traditional healers. The most important plant species are - *Alocasia indica, Aloe barbadensis, Asparagus racemosus, Averrhoa carambola, Bixa orellana, Boerhaavia diffusa, Cucumis sativus, Cajanus Cajan, Cassia fistula, Eclipta alba, Hemidesmus Indicus, Lagenaria siceraria, Mentha arvensis, Momordica charantea ,Oroxylum Indicum, Saccharum officinarum, Tamarindus indica* etc. The ethno medicinal inventory is presented by plant name, local name, family, chemical constituents, parts used and distribution in bangladesh.

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PG-04

ANTIOXIDANT AND ANTIMICROBIAL ACTIVITY OF TWO SPECIES OF *CURCUMA* - A COMPARATIVE STUDY

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A comparative study was done to the antimicrobial and antioxidant activity of the rhizomes of *Curcuma aromatica* and *Curcuma zeodaria*. Antimicrobial activity was carried out by minimum inhibitory concentration (MIC) method and cup-plate method. Among the extracts tested for *Curcuma aromatica*, hydroethanolic extracts at 1000 µg/ml showed good activity against Bacillus cereus but were nearly inactive against gram negative bacterial and fungal strain tested whereas aqueous extract was found to be inactive against all the micro-organism tested. Hydroethanolic extracts of *Curcuma zedoaria* showed potent antibacterial activity against *Bacillus cereus* and moderate activity against *Klebsiella pneumonia*, and *Candida albicans* but had poor activity against other strains tested. All other extract did not show antimicrobial activity against selected microorganisms. In the case of MIC, hydro-ethanolic extract of *Curcuma aromatica* inhibited *Bacillus cereus* at 15.625 µg/ml, *Klebselia pneumonia* was inhibited at 62.5 µg/ml and *Candida albicans* at 125 µg/ml. Hydro ethanolic extract of *Curcuma zeodaria* inhibited *Bacillus cereus* at 31.25 µg/ml where as *Klebselia pneumonia* and *Candida albicans* were inhibited at 125 µg/ml. Antioxidant studies were carried out by DPPH, nitric oxide method and reducing power method. Both hot and cold maceration product of hydroethanolic extract of *Curcuma aromatica* rhizome showed potent antioxidant activity. Extracts of *Curcuma zeodaria* showed moderate to poor antioxidant activity. Extracts of *Curcuma aromatica* were further subjected to *in vivo* antioxidant studies using TBARS, SOD and CAT method which showed appraising antioxidant effect with significant reduction in TBARS level and elevation in SOD and CAT levels. Results revealed that *Curcuma aromatica* proved to be better antioxidant than *Curcuma zeodaria* whereas *Curcuma zeodaria* is a good antimicrobial as compared to *Curcuma aromatica*.

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PG-05

EVALUATION OF *IN VITRO* AND *IN VIVO* ANTIHEPATOTOXIC ACTIVITY OF *GYMNEMA SYLVESTRE* USING D-GALACTOSAMINE AS AN INTOXICANT

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The present study was conducted to evaluate the hepatoprotective activity of different extracts of leaves of *Gymnema sylvestre*. Qualitative phytochemical analysis of the plant extract showed the presence of majority of compounds like alkaloids, carbohydrates, flavonoids, terpienoids, glycosides, proteins, amino acids, phenolic compounds and tannins. Among the two extracts, the hot hydro-alcoholic extract showed high phenol content 6.51±0.231 mg/g of gallic acid and high total favonolid content 89.51±0.100 mg/g of quercetin. Antioxidant potential was evaluated using DPPH method, total antioxidant capacity and reducing power ability of the hydro-alcoholic extract that resulted showing potent activity. The freshly prepared rat hepatocytes were treated with different concentration of hydro-alcoholic extract. The effect produced by the extract at the concentration of 200, 400 and 600 μg/ml was found to be effective antihepatotoxic against the D-galactosamine induced hepatotoxicity, whereas the concentration of 800 μg/ml was found to be cytotoxic. A significant increase in the levels of AST, ALT, ALP, total bilirubin, direct bilirubin ($P<0.001$) was observed. The cells treated with the hydro-alcoholic extract of *Gymnema sylvestre* showed a significant restoration of the altered biochemical parameters towards the normal ($P<0.001$) when compared to D-galactosamine treated groups and were found to be dose dependent. A similar result was obtained when D-galactosamine intoxicated hepatocytes were treated with silymarin.

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PG-06

ANTIOXIDANT AND ANTIDIABETIC ACTIVITIES FROM LEAF EXTRACTS OF *STREBLUS ASPER* LOUR.

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The ethanolic extract from leaves of *Streblus asper* Lour. was screened for *in vitro* antioxidant activity and antidiabetic activity. The in vitro antioxidant activity was evaluated using DPPH and H_2O_2 for their radical scavenging property. The data were expressed as IC_{50} and compared with that of ascorbic acid and tocoferol that served as reference standard. The leaf extracts showed an IC_{50} of 1.01mg/ml and 700 μg/ml as compared to the standards ascorbic acid and tocoferol that showed an IC_{50} of 4nm and 215 μg/ml respectively. Anti-diabetic activity was evaluated by the significant reduction in serum glucose levels in alloxan induced hyperglycemic rats treated with leaf extract (200 and 400 mg/kg body weight), and the standard drug glibenclamide (10 mg/kg body weight). The leaf extract produced significant anti-hyperglycemic effect similar to the standard drug glibenclamide

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PG-07

ANTIDIARRHOEAL ACTIVITY OF *CALOTROPIS PROCERA* R. BR. ROOTS

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Calotropis procera R. Br. (Asclepidaceae) is a shrub which is widely distributed in the world. The plant is used in the treatment of many diseases and disorders both in humans and veterinary application. The present work was undertaken to investigate the phytochemical constituents and antidiarrhoeal activity of ethanolic extract of root. Qualitative chemical tests were carried out for the ethanolic extract and the result revealed the presence of alkaloids, flavanoids, saponins, sterols, glycosides, and terpenes. The antidiarrhoeal activity of ethanolic extract of root (200 mg/kg Body weight) of *Calotropis procera* against castor oil induced diarrhoea in experimental animal was carried out and exhibited significant result which was compared to that produced by a standard antidiarrhoeal drug, lopramide 200 μg/kg.

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PG-08

CHEMICAL INVESTIGATION OF *TYLOPHORA HIRSUTA*

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The present work comprises of phytochemical investigation of *Tylophora hirsuta*. Many pharmacological activities had been reported earlier about the alkaloid which is present in the genus of Tylophora. The plant material is extracted with 95% ethanol. Then, it was fractionated by using various solvent. The qualitative tests were carried out on various extracts. Alcoholic extract showed high presence of alkaloids. Isolation was carried out by utilizing chromatographic techniques.

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PG-09

HERBAL PLANTS USED IN H_1N_1 INFLUENZA (SWINE FLU)

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Swine flu is a respiratory disease caused by viruses that infect the respiratory tract of pig and results in nasal secretions, a barking-like cough, decreased appetite, and listless behavior. Swine influenza virus was first isolated from pig in 1930 in the US and has been recognized by pork producers and veterinarians to cause infections in pigs worldwide. Swine flu symptoms are similar to other strains of flu-body aches, fatigue, headache and chills. However, early reports show that high fevers are less common, while nausea and diarrhea are more common with swine flu. Even though we have advanced medicines today, the risk is still great-particularly for the poor. Our country could face outbreaks of swine flu and seasonal flu at the same time, making it more difficult to contain and treat the diseases. There are anti-viral medications that work well against swine flu; the most common is Tami flu. There are some herbal remedies which are used for treatment of swine flu such as Kalmegh, Chirata, Garlic, Giloy, wild Thyme, and *Echinacea purpurea*, Tulsi, Triphala, Black Piper, Punarnava, Ginseng etc., Mostly, the leaves and roots are used for medicinal purposes.

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PG-10

PHYTOCHEMICAL SCREENING OF *CASSIA FISTULA*

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The pods of *Cassia fistula* are used as a highly effective moderate laxative that is also safe for children. Earlier investigations reported the isolation of rhein, fistulic acid, 3-formyl-1-hydroxy-8-methoxy-anthraquinone, sitosterol, *n*-triacontanyl lignocerate from its pods. As a part of our continuing chemical study on this plant, four compounds were isolated and identified on the basis of chemical and spectral data. Immature and developing pods of *Cassia fistula* were collected. Dried pods were powdered and extracted exhaustively with methanol and eluted with solvents with their increasing polarity comprising of petroleum ether, benzene, ethyl acetate, methanol and their mixtures. The elution of the column was monitored by TLC. Four new fatty acids named hexacosane, 4-oxatricosane, t-butyltritetraacontanoate, methyl tricosanoate were isolated from the pods of *Cassia fistula*. On the basis of chemical and spectral evidences, the structures of the above compounds were established.

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PG-11

CHEMICAL INVESTIGATION OF *INDIGOFERA ASTRAGALINA*

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In present investigation, *Indigofera astragalina* was chosen as a plant and the plant material was extracted with 95% alcohol by cold maceration. In extract, some qualitative tests were performed for further studies in which triterpenoids, tannins, alkaloids, flavanoids were found to be present. Now, fractionation was carried out by utilizing column chromatography.

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PG-12

HERBAL FORMULATIONS

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Herbal medicines are popular as remedies for diseases by vast majority of world's population. These are considered as safe since they are natural products. Medicinal plants have always been considered a healthy source of life for all people. Therapeutic properties of medicinal plants are very useful in healing various diseases and the advantage of these medicinal plants is being 100% natural. Herbal formulations have reached widespread acceptability as therapeutic agents in India include nootropics, antidiabetics, hepatoprotective agents and lipid lowering agents. Herbal formulation may contain excipients in addition to active ingredients. It can also help to lose weight naturally. Herbs should be converted into suitable formulations to be taken by a patient. Herbal medicine has proven to be successful for regular illnesses and they are also cost effective. Nowadays people are being bombarded with thousand of unhealthy products, the level of sensibility in front of diseases is very high and that's why the use of medicinal plants can represent the best solution. Herbal remedies tend to heal without suppressing symptoms, and used in the correct dosage are perfectly safe and have no side effects. Choice of herbal formulation depends on identity of the plant, plant parts being used, compounds to be extracts and the form in which it is applied and the effect to be achieved.

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PG-13

EFFECT OF ETHANOLIC EXTRACT OF *KIGELIA PINNATA* FRUIT ON THE URINARY RISK FACTORS OF CALCIUM OXALATE UROLITHIASIS IN RATS DURING EXPERIMENTAL HYPEROXALURIA

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Urolithiasis is one of the third most common afflictions found in humans. The effect of oral administration of ethanolic extract of *Kigelia pinnata* fruit on calcium oxalate urolithiasis has been studied in male Wistar albino rats. Ethylene glycol feeding resulted in hyperoxaluria as well as increased renal excretion of calcium, magnesium and phosphate. Supplementation with ethanolic extract of *Kigelia pinnata* fruit significantly reduced the elevated urinary oxalate, uric acid and phosphate. The increased deposition of stone forming constituents in the kidneys of calculogenic rats was also significantly lowered by ethanolic extract of *Kigelia pinnata* fruit. The results indicated that the ethanolic extract of *Kigelia pinnata* fruit was endowed with antiurolithic activity.

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PG-14

MEDICINAL PLANTS WITH ANTIDIABETIC POTENTIAL

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Since ancient times, plants have been an exemplary source of medicine. Ayurveda and other Indian literature mention the use of plants in treatment of various human ailments. Medical plants play an important role in the management of diabetes mellitus especially in developing countries where resources are meager. Oral hypoglycemic agents like sulphonylureas and biguanides are still the major players in the management of the disease but there is growing interest in herbal remedies due to the side effects associated with the oral hypoglycemic agents. Herbal medicines have been the highly esteemed source of medicine throughout human history. Some of these herbal plants and their active chemical constituents which have a role in the management of diabetes mellitus are compiled here and discussed in present study.

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PG-15

PHARMACOGNOSTIC EVALUATION AND SCREENING OF HYPOGLYCEMIC EFFECT OF *CITRUS MEDICA* LINN. SEEDS IN AN ANIMAL MODEL

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The aim of the study was to assess the anti-diabetic activity of *Citrus medica* Linn. on streptozotocin induced diabetes in rats. It can be concluded from the data that petroleum ether extract of *Citrus medica* Linn. had antidiabetic activity as it lowered serum glucose level in diabetic rats. It also showed hypocholesterolemic and hypolipidemic activities by decreasing level of serum cholesterol, triglycerides, LDL and VLDL in diabetic rats. To use *Citrus medica* Linn. seeds as antidiabetic and hypolipidemic agent, there is need of its long term studies, isolation of compound and to elucidate the exact mechanism of action so as to develop it as a potent antidiabetic drug.

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PG-16

PHYTOCHEMICAL SCREENING AND ANTIMICROBIAL ACTIVITY OF *CUCUMIS MELO* SEEDS

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Now a days, herbal drugs become more popular instead of allopathic medicines because they possess lesser side effects and are economical to use. In present study, seeds of *Cucumis melo* have been extracted by hot and cold maceration by using nonpolar and hydro alcoholic solvent and extracts were dried by using freeze dryer. The phytochemical investigation of the extracts revealed the presence of volatile oil, tannins and flavanoids. The antimicrobial activity have been performed and found that the hydroalcoholic extract obtained from cold maceration was active against the strains of *Staphylococcus aureus* and *E. coli* on the concentration ranges from 30 - 90 μl by using agar dilution assay. Ciprofloxacin and Erythromycin were used as standard drugs. All the extracts were failed to show any significant activity against fungal strains. Further investigation of active principle and biological activity of this plant may be useful for mankind.

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PG-17

ESTIMATION OF TOTAL PHENOLS AND FLAVONOIDS IN EXTRACTS OF *PULSATILLA NIGRICANS* AERIAL PARTS AND ANTIOXIDANT ACTIVITY STUDIES

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The present investigation was undertaken to estimate total phenols and flavonoids in methanol extract of *P. nigricans* aerial parts, and its ethyl acetate fraction. *In vitro* antioxidant activity was also evaluated in the methanol extract and ethyl acetate fraction using DPPH method. Quantitative determination of total phenols was done on the basis of a standard curve of gallic acid and linearity of the calibration curve was achieved between 6.25 to 100 μg/ml concentration for gallic acid (r^2 = 0.9926). Quantitative determination of total flavonoids was done on the basis of a standard curve of rutin and linearity of the calibration curve was achieved between 10 to 160 μg/ml concentration for rutin (r^2 = 0.9998). Ethyl acetate fraction was found to contain 3 times the content of flavonoids in comparison to methanol extract, whereas phenolic content in methanol extract was approximately similar to ethyl acetate fraction. A significant antioxidant activity, *i.e.* mean inhibition of DPPH radical was observed in methanol extract and ethyl acetate fraction at the concentration of 10 μg/ml and 5 μg/ml respectively. A slight increase in antioxidant activity was observed in methanol extract as well as ethyl acetate fraction in concentration dependent manner. Maximum percentage inhibition of DPPH achieved by methanol extract and ethyl acetate fraction were 88.80% and 89.72%, respectively, at concentration of 80 μg/ml. Finally, it is suggested that polyphenols are responsible for antioxidant activity.

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PG-18

LEUCAS CEPHALOTES AND ITS BIOPOTENTIAL

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Leucas cephalotes (Lamiaceae) is as annual herb growing widely in India. It is used in the treatment of anti-filarial, anti-inflammatory, antioxidant, hepatoprotective, antimicrobial and anti-diabetic. The *Leucas cephalotes* (Roth) Spreng whole herb contains new labdane, Nor labdane and abietone-type, diterpenes named leucasdins A (1), B (2), C (3), five sterols and eight flavones. The plant shows several pharmacological activities such as hepatoprotective, anti-inflammatory, anti-diabetic, anti-filarial and anti-oxidant. Review summaries phytochemical and pharmacological investigation carried out on the plant *Leucas cephalotes*.

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PG-19

QUERCETIN: THE ANXIOLYTIC CONSTITUENT OF *PULSATILLA NIGRICANS*

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The present investigation was undertaken with an objective to isolate anxiolytic constituent(s) from the plant following antianxiety activity-directed-fractionation using standard chromatographic techniques. The column chromatography of polyphenol fraction, obtained from methanol extract of *P. nigricans* aerial parts, yielded seven sub-fractions (F_1-F_7). These sub-fractions, separately suspended in a suitable vehicle, were administered orally to mice, and the activity was compared with that observed in the control group as well as with the group treated with the standard anxiolytic drug diazepam. Among the sub-fractions tested, maximum anxiolytic activity was observed in the F_5 at the dose of 50 mg/kg, *p.o.* which was at par with that of diazepam as is evident from statistical equivalence between the results of this dose and that manifested by diazepam. The column chromatography of bioactive F_5 yielded three subfractions $F_{5.1}$, $F_{5.2}$ and $F_{5.3}$. These subfractions were also subjected to antianxiety activity. Among the subfractions tested, maximum anxiolytic activity was observed in the $F_{5.3}$ at the dose of 25 mg/kg, *p.o.* which was statistically equivalent to the one exhibited by diazepam. Preparative thin layer chromatography of $F_{5.3}$ yield two major constituents PS_1 and PS_2, PS_1 and PS_2 were also subjected to antianxiety activity at a dose of 10 mg/kg, *p.o.* and PS_2 exhibited significant antianxiety activity. The structure of PS_2 was elucidated by UV, IR and NMR data and characterized as quercetin. It is concluded that quercetin is responsible for anxiolytic effects of *P. nigricans*.

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ANTI-INFLAMMATORY ACTIVITY OF METHANOLIC EXTRACT OF *BARLERIA PRIONITIS* LINN. LEAVES

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Barleria prionitis Linn. (Acanthaceae) is used in traditional medicines to treat infection related ailments. This study investigated the anti-inflammatory activity of methanolic extract of *Barleria Prionitis* Linn. leaves by using carrageenan induced rat paw edema model. Extract was given at doses 125 mg/kg, 250 mg/kg and 500 mg/kg. Ibuprofen was used as reference standard. 250 mg/kg extract showed significant results. The results demonstrated the therapeutic potential of this plant as anti-inflammatory agent.

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ANTI-ARTHRITIC ACTIVITY OF *CALOTROPIS PROCERA* HYDROALCOHOLIC EXTRACT

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The present study was carried out to investigate the effects of *Calotropis procera* (Asclepiadaceae) on adjuvant arthritis (AA) of rat. AA was induced by metatarsal footpad injection with complete Freund's adjuvant in albino Wistar rats. The inflammatory reaction was evaluated by hind paw swelling, polyarthritis index, weight of body and immune organ. Serial evaluation was carried out on days 1, 7, 14, 21 and 28 after creation of inflammation. 90% aqueous ethanolic extract of *Calotropis procera* root bark at the two dose levels of 100-200 mg/kg, once daily for 28 days exhibited significant ($P < 0.001$) protective effect against complete Freund's adjuvant induced arthritis. Oral administration of test extract produced a dose dependent decrease in paw volume (62.2% and 77.7% inhibition) in test extract 100/200 mg/kg respectively as compared with day of peak inflammation. The administration of *Calotropis procera* extract inhibited the inflammatory response and restored the weight of body of AA rats. Thus the protective effect against CFE by *Calotropis procera* indicated its medicinal value in treatment of arthritis.

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EVALUATION OF THE EFFICACY OF EXTRACT OF *FOENICULUM VULGARE* IN UROLITHIASIS ON WISTAR RATS

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Present investigation reports the evaluation of the efficacy of extract of *Foeniculum vulagare* in urolithiasis induced by ethylene glycol on Wistar rats. Ethylene glycol (0.75%) in drinking water was fed to induce urolithiasis on Wistar rats. The effect of oral administration of extract of *Foeniculum vulagare* seed on calcium oxalate urolithiasis has been studied and is compared with the effect of oral administration of cystone as standard on Wistar rats. Ethylene glycol feeding resulted in hyperoxaluria as well as increased renal excretion of calcium and phosphate. Supplementation with extract of *Foeniculum vulagare* seed significantly reduced the elevated urinary oxalate, showing a regulatory action on endogenous oxalate synthesis. The results indicated that the seed of *Foeniculum vulagare* is endowed with antiurolithiatic activity

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STANDARDIZATION AND REGULATION OF HERBAL DRUGS - A GLOBAL CONCERN

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The use of herbal drugs for the prevention and treatment of various health aliments has been in practice from time immemorial. Even today, 70% of modern medicines are of herbal origin. Standards for herbal drugs are being developed worldwide but as yet there is no common consensus as to how these should be adopted. There is still a need of standardization and harmonization of herbal medicines globally. The present article focuses on the regulations in herbal medicines in different countries primarily USA, European Union, India, China and Japan. This article also highlights the guidelines given by regulating authorities like WHO and ICH for herbal medicines.

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EXTRACTION AND PURIFICATION OF PURE MOLECULES FROM THE HEARTWOOD OF *PTEROCARPUS SANTALINUS* (RED SANDALWOOD)

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Red sandalwood (raktachandana) is a light-demanding small tree growing to 8 m tall with a trunk 50-150 cm diameter. It is fast-growing when young, reaching 5 m tall in three years even on degraded soils. It is not frost tolerant, being killed by temperatures of -1°C. The leaves are alternate, 3-9 cm long, trifoliate with three leaflets. The flowers are produced in short racemes. The fruit is a pod 6-9 cm long containing one or two seeds. The wood has historically been valued in China, particularly during the Ming and Qing periods, referred to in Chinese as zitan. It has been one of the most prized woods for millennia. Due to its slow growth and rarity, furniture made from zitan is difficult to find and can be expensive. Between the 17th and 19th centuries in China, the rarity of this wood led to the reservation of zitan furniture for the Qing dynasty imperial household. In hinduism, this wood has been traditionally used as a sacred wood. The priests and higher class casts such as brahamin extensively use this wood on many of their rituals. In present work, extraction of red sandal wood was carried out with ethyl acetate, acetone and methanol by sonication method of extraction. Three fractions were carried out using column chromatography with the help of solvent ethyl acetate followed by elution.

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ISOLATION, CHARACTERIZATION AND NEUROPHARMACOLOGICAL INVESTIGATION OF ACTIVE COMPONENTS FROM THE FRUITS OF PLANT *SAPINDUS EMARGINATUS*

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Present study was designed to investigate neuropharmacological activity of *Sapindus emarginatus* on CNS. Methanolic extract of *Sapindus emarginatus* fruits was used as test sample. Phytochemical investigation of various extract was done and alkaloid, saponins triterpenoid, steroids, flavanoids phenols showed their presence. Thin layer chromatography, column chromatography techniques were used for the isolation of the active components and further the isolated components were characterized by various spectral analyses. *In vitro* anti-oxidant activity was carried out by using DPPH assay and hydrogen peroxide scavenging. The total phenolic content was determined and expressed in gallic acid equivalent. Acute toxicity was done on Sprague dawley rats and model used was haloperidol induced catatonia.

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PHYTOCHEMICAL INVESTIGATION, ANTIOXIDANT AND ANTI-INFLAMMATORY ACTIVITY OF *CARISSA CARANDAS*

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Present study was designed to investigate anti-inflammatory and antioxidant activity of *Carissa carandas*. Hydro-alcoholic extract of *Carissa carandas* was used for anti-inflammatory activity. Phytochemical investigation was done and alkaloids, sterols, phenol and flavanoids were found to be present. The various chromatography techniques are used for isolation of active components *i.e.* TLC, column chromatography. *In vitro* anti-oxidant activity was performed including DPPH assay and hydrogen peroxide scavenging. The total phenolic content was determined and expressed in gallic acid equivalent. The antioxidant property depended upon concentration and increased with increasing amount of the fractions. The free radical scavenging and antioxidant activities might be attributed to the presence of phenolic and flavonoids compounds present in the fractions. The model used in this study was croton oil induced ear edema.

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PLANTS HAVING ALDOSE REDUCTASE INHIBITORY ACTIVITY

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Aldose reductase is an enzyme normally present in theeye, kidney, myelin sheath, and also in other tissues. It is responsible for the conversion of glucose into a sugar alcohol called sorbitol by means of polyol pathway. Too much sorbitol trapped in eye and nerve cells lead to damage these cells in the form of neuropathy, nephropathy, cataracts and retinopathy. Aldose reductase inhibitors are the drugs that that inhibit the conversion of glucose into sorbitol hence used in the treatment of such diseases. A large number of aldose reductase inhibitors have been prepared synthetically, and some of them are used therapeutically. However, neither of them is satisfactory nor free from side effects. Here we include herbal plants such as *Ocimum sanctum, Withania somnifera, Curcuma longa, Azadirachta indica, Zingiber officinalis, Momordica charantia, Trigonella foenumgraceum, Mangifera indica, Eucalyptus deglupta, Syzygium malaccense, Eugenia borinquensis, Allium cepa, Cinnamomum cassia* and *Coptis japonica* etc., with less or no side effect, having aldose reductase inhibitory activity.

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ANTIDIABETIC POTENTIAL OF *SYZYGIUM CUMINI*

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The benzene, chloroform, alcohol and aqueous extracts of bark of *Syzygium cumini* are evaluated for anti-diabetic activity on alloxan induced diabetic rats at a dose of 200 mg/kg body weight. The acute toxicity was carried out as per the guidelines set by OECD, 423. The alloxan was induced in Wistar albino rats at the dose of 150 mg/kg body weight and after 72 h, the extracts of drug were administered at the dose of 200 mg/kg body weight. The effectiveness of extract was evaluated by measuring blood glucose level at a interval of 0 h, 1, 3, 5 and 7th of single dose in Wistar albino rats. The aqueous extracts of bark of Syzygium cumini showed significant anti-diabetic activity on alloxan induced diabetic rats when it was compared with glibenclamide as standard drug at the dose of 10 mg/kg body weight. The phytochemical investigation of drug showed the presence of sterol, tannin and flavonoids.

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GARLIC AS AN ANTICANCER AGENT

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Garlic (*Allium sativum*) is among the oldest of all cultivated plants. It has been used as a medicinal agent for thousands of years. Garlic produces effects such as antimicrobial, antithrombotic, hypolipidemic, antiarthritic, hypoglycemic and antitumor activity. A number of studies have demonstrated the chemopreventive activity of garlic by using different garlic preparations including fresh garlic extract, aged garlic, garlic oil and a number of organosulfur compounds derived from garlic. The chemopreventive activity has been attributed to the presence of organosulfur compounds in garlic. Mode of action includes its effect on drug metabolizing enzymes, antioxidant properties and tumor growth inhibition. Most of these studies were carried out in the animal models. Also, recent research has focused on the antimutagenic activity of garlic. Recently, it has been observed that aged garlic extract, but not the fresh garlic extract, exhibited radical scavenging activity. The two major compounds in aged garlic, S-allylcysteine and S-allylmercapto-L-cysteine, had the highest radical scavenging activity. In addition, some organosulfur compounds derived from garlic, including S-allylcysteine, have been found to retard the growth of chemically induced and transplantable tumors in several animal models. Therefore, the consumption of garlic may provide some kind of protection from cancer development.

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PHARMACOGNOSTIC EVALUATION OF *ANOGEISSUS LATIFOLIA* BARK POWDER

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Pharmacognostic standardization of crude drugs means evaluation of crude drug powder by using different parameters in order to evaluate quality and purity of drug powders. *Anogeissus latifolia* bark powder has been evaluated on the basis of organoleptic properties or external characteristic, physical characteristics, physico-chemical properties and phytochemical investigation. In the phytochemical investigation, sterol, flavonoids, tannin, carbohydrate and triterpenoids were found to be present.

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IN VITRO ANTIOXIDANT ACTIVITY OF *SARACA ASOCA* ROXB. DE WILDE EXTRACTS PREPARED BY DIFFERENT METHODS OF EXTRACTION

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Antioxidant potential of various extracts (ethanolic, hydroalcoholic and acetone) prepared by different extraction methods (soxhlet, ultrasonication assisted and microwave assisted extraction) of stem bark of *Saraca asoca* Roxb. De Wilde were studied by using DPPH (1,1-diphenyl-2-picryl hydrazyl) *in vitro* model. The highest IC_{50} value (193.88 μg/ml) showed by hydroalcoholic (ethanol 60%) extract prepared by soxhlet extraction method. The acetone extract prepared by ultrasonication extraction method exhibited the lowest IC_{50} value 97.82 μg/ml. The antioxidant property of the extracts may be due to high content of phenolic compounds, as the preliminary qualitative analysis of extracts showed the presence of glycosides, tannins, phenolic compounds etc.

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