DEPARTMENT OF SCIENCE & TECHNOLOGY, NEW DELHI

SPONSORED

NATIONAL SEMINAR

ON

INVESTIGATION OF ETHANO-MEDICINAL PLANTS USED BY ETHNIC GROUP OF CHHATTISGARH

19-20th October 2013

ABSTRACT BOOK

Organized By
Columbia Institute of Pharmacy, Raipur, CG
Near Vidhan Sabha, Tekari, Raipur (CG) 493111
www.columbiaiop.ac.in
INSTITUTE
Columbia Institute of Pharmacy is promoted by Janpragati Education Society (JPES). It is managed by a duly constituted Governing body. The Pharmacy institute was established in 2004-05. The motto was to impart value based education in the field of pharmacy. Here efforts are made to craft such health care professionals who would provide exemplary services for the welfare of mankind. Columbia Institute of Pharmacy has a beautiful campus at Tekari (Near Mandhar Colony), 14 Km away from Raipur and 4 Km away from Chhattisgarh Vidhan Sabha. The institute has a glorious building with spacious class rooms. Our laboratories are well equipped with sophisticated instruments. The library houses more than 9000 books and number of national and international journals. The institute has a brilliant Medicinal Plants garden, CPCSEA approved Animal House. Our faculties are well qualified and experienced; they come from different parts of country and they are our prime asset.

SEMINAR
This DST sponsored National Seminar, entitled “Investigation of ethano-medicinal plants used by ethnic group of Chhattisgarh”, is envisaged to bring about an interaction of the scientist with the academicians that will help in the development of pharmacy profession. The land of Chhattisgarh has its own unique flora & fauna. This land is greatly gifted by its various medicinal plants. These medicinal plants have been used by the various tribes of Chhattisgarh for the treatment of various diseases since time immortal. These tribes have great knowledge about many medicinal plants but due to lack of contact with the primitive society this knowledge remains unrevealed. This seminar is thus based to explore those folk medicinal plants which have many therapeutic properties but is untouched because of fewer studies over it.

OBJECTIVE
• To motivate the young scientists for research in ethano-medicinal plants
• To aware the science fraternity about the IPR of ethano-medicinal plants
• To facilitate the standardization technique among the students and scientist regarding some extinct and endangered ethano-medicinal plants
• To promote documentation of ethanic practices used by ethnic group of Chhattisgarh
ORGANIZING COMMITTEE

- **Chief Patron**: Mr. Kishore Jadwani
- **Patron**: Mr. Harjeet Singh Hura
- **Advisor**: Dr. Amit Roy, Mr. Surendra Saraf
- **Convener**: Dr. Ravindra Pandey
- **Co-Convener**: Dr. Rishi Paliwal, Dr. Trilochan Satapathy
- **Organizing secretary**: Dr. Shiv Shankar Shukla
- **Scientific committees**: Dr. Ram Sahu, Mr. Vijay Singh, Mr. Sanjib Bahadur, Mr. Suman Saha
- **Treasurer**: Mr. S. P. Rao
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**Contact:**

**Dr. Ravindra Kumar Pandey**  
Convener  
Email: cip.seminar@gmail.com, ravindraiop@gmail.com  
Mob: 9826229321, 7566063313  
Columbia Institute of Pharmacy, Raipur, CG  
Near Vidhan Sabha Tekari, Raipur, Chhatisgarh, India  
Telephone 07721-266302/03  
FAX 07721-266302/  
Visit us at: www.columbiaiop.ac.in
I am happy to know that Columbia Institute of Pharmacy is organizing DST Sponsored National Seminar on “Investigation of Ethano-Medicinal Plants Used by Ethnic Group of Chhattisgarh” on 19-20th Oct 2013.

I am sure that according to the theme of the seminar, students of the college and the participants of the event will be highly benefited by the exchange of ideas among them. I hope seminar would be a source of new knowledge on the subject for all the participants.

I wish the seminar a grand success.

(Mr. Kishore Jadwani)
Chairman, JPES
It gives me immense pleasure to know that Columbia Institute of Pharmacy is holding National Seminar on “Investigation of Ethano-Medicinal Plants Used by Ethnic Group of Chhattisgarh” on 19-20th Oct 2013 funded by DST, New Delhi. I hope that seminar’s title is matching face of the global scientific development and need of the hour. I expect that this thought provoking seminar would not only be beneficial for upcoming research scholars, also provide an opportunity to set higher aims taking a glimpse of latest development in concerning field.

Wishing very best for the huge success of the seminar.

(Harjeet Singh Hura)
Secretary, JPES
WELCOME...MESSAGE

This is matter of great pleasure for us to welcome all the delegates and participants in this DST sponsored National Seminar, who came from different parts of country. We hope that event will be useful and thought provoking for budding scientist working in the area of ethno medicinal research. The financial support of DST, New Delhi is duly acknowledged, who provide us opportunity to conduct this seminar in our college. We wish that all participants of this seminar will contribute to make the event successful.

Best Regards,

[Dr. Ravindra Pandey]          [Dr. Shiv Shankar Shukla]
Convenor                      Organizing Secretary


POSTER PRESENTATIONS
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Hepatoprotective activity of 95% ethanolic extract of roots of *Pisonia grandis* R.Br. was studied against paracetamol induced hepatic injury in wister rats. In addition, anti-inflammatory activity was studied by in vitro models. Pre-treatment with 95% ethanolic extract (P.G.) reduced the biochemical markers of hepatic injury like serum glutamate pyruvate transaminase, serum glutamate oxaloacetate transaminase, alkaline phosphatase, bilirubin, cholesterol, and tissue glutathione (GSH) levels. Histopathological observations also revealed that pretreatment with P.G. protected the animals from paracetamol induced liver damage. Similarly the ethanolic extract of P.G. was evaluated for anti-inflammatory activity in rats at dose level of 250mg/kg in carrageenin induced paw oedema mercury displacement method. The ethanolic extract showed significant reduction in paw oedema as less compared to standard drug i.e. Indomethacin.
This ethnomedical literature survey is part of an on-going study in New York City investigating Dominican and Chinese healing systems and the herbal treatments used for the following women’s conditions: uterine fibroids (benign tumors of uterine smooth muscle); menorrhagia (excessive uterine bleeding); endometriosis (growth of endometrial tissue outside of the uterus); and hot flashes (sudden brief sensations of heat commonly experienced during menopause). The objectives of this survey were: (1) to search literature on medicinal plants used in the Dominican Republic and identify those used for the above listed conditions and their symptoms; (2) to compare the use between herbal treatments reported in the literature with those prescribed by Dominican healers in New York City; and (3) to evaluate the extent to which healers may have changed their use of plants in order to adapt to availability in the New York City environment. A total of 87 plant species were reported in the Dominican literature for these conditions and symptoms. Nineteen species overlapped from the literature survey and the fieldwork with Dominican healers in New York City, representing 29% (n = 65) of the plants prescribed by healers in New York City. This study offers a model to investigate changes in plant use as people migrate to urban centers where they are surrounded by diverse cultures, healing systems, and new environments.
Present study was designed to screen the in vitro antioxidant and antifilarial effect of aqueous extract of flowers of Azadirachta indica. Aqueous extracts of flowers was screened at 20–100 µg/ml for in vitro macrofilaricidal activity by MTT (3-[4,5-dimethylthiazol-2-yl]-2,5-diphenyl tetrazolium bromide) reduction assay and antioxidant activity by DPPH (2, 2-diphenyl-1-picrylhydrazyl) radical scavenging activity. Antioxidant and antifilarial activity of aqueous extract revealed a dose dependent positive response. The finding of the present study given away that aqueous extract of flowers of Azadirachta indica possesses a promising antioxidant property and antifilarial activity. This indicates that the Azadirachta indica can be a potential source of agents that can be used for reducing oxidative stress generated during filariasis.
ABSTRACT

OBESITY: A SWEET RISER OF FACTORS TOWARDS THE CHRONIC DISEASES

Anurag Pandey*, Bhupender Singh, Gurmeet Singh, Balpreet Singh

DDM College of Pharmacy
Gondpur Banehra Upper Distt. Una (H.P.)

Obesity is a complex metabolic disorder that involves central and peripheral nervous system which is associated with the numbers of mediators such as Leptin, Ghrelin, POMC, CCK, Adipokines etc that leads progression of obesity. Leptin is one of the major factors whose alteration bells the alarm for the obesity. Obesity is mainly raised by increase in energy intake and decrease in energy expenditure, leading to energy imbalance. Obesity is slowly progressive chronic inflammation and hence inflammatory mediators such as Adipokines, Cytokines, TNF-α, Inteleukins etc are involved in the obesity. Environmental factors and Life styles such as decrease in physical activities, lack of sleep are some that are responsible for the progression of obesity. Fat diets and other mediators that alter leptin are one of the responsible factors that cause obesity. Genetic factors such as CCK, APO enzyme, POMC etc has also contributed a lot in development of obesity. While the factors are responsible for the development of obesity their co morbidities such as hypertension, diabetes mellitus, depression, migraine, stroke, infertility etc that are associated with the obesity are major topic of concern while some of genetic syndromes are Prader-willi, Bardet-biedl, Cohen and MOMO are key diseases which are alarming world due to their highly death rate.
Leprosy is a chronic infectious disease caused by Mycobacterium leprae bacillus. It was considered to be an incurable disease for ages. The leprosy bacilli are transmitted either by inhalation or by direct contact into an open wound from an infected individual. Those who acquire the condition have frequently been in prolonged contact with infected individuals. 5 million people around the world are infected with Mycobacterium leprae. Hansen’s disease is more frequently in Asia, Africa, Latin America, and Pacific Islands. Many Hansen cases in developed countries affect people who have emigrated from developing countries. Now-a-days leprosy is a vanishing disease although we can meet it principally in the tropical zone countries. This review article represents different plants of Chhattisgarh which are used in the treatment of leprosy. Some of these plants are clinically investigated such as Achyranthes aspera, Centella asiatica, Hemidesmus indicus, Hydnocarpus anthelmintic and Smilax ornate. Apart from these plants, about 50 plants are present in Chhattisgarh which are used as traditional system of medicine to cure leprosy. Extensive literature review reveals that all the plants are found in the different regions of Chhattisgarh. The present review aims to create awareness about these medicinal plants of Chhattisgarh.
Preparation and characterization of herbal topical formulation containing *Psoralea Corylifolia* extract for treatment of Eczema

Bina Gidwani, Amber Vyas

University Institute of Pharmacy, Pt. Ravishankar Shukla University

According to WHO, 75% of the plant products and derived compounds are used in modern medicine. According to Ayurveda, there are total 44 species of *Psoralea*. The species *Psoralea Corylifolia* belongs to family Leguminoceae and is widely used in the treatment of skin diseases. Triterpenoid is the major active constituent responsible for pharmacological activity. In present work, aqueous extract of seeds of *Psoralea* was used for treatment of eczema. Oil-in-water cream was formulated and evaluated for various parameters like pH, viscosity, rheological behavior and in-vitro drug release study. The patient study was conducted considering the length of lesion, rate of exudation and itching as evaluation parameters. On the basis of results, it is concluded that the plant possesses a broad spectrum of biological activities.
Antiproliferative and Antioxidant Activity of *Hymenodictyon excelsum* Stem Bark in Ehrlich Ascites Carcinoma Bearing Mice

Biswakanth Kar\(^1\)\(^2\), Abhimanyu Nepal\(^2\), Pallab Kanti Haldar\(^2\), Upal Kanti Mazumder\(^2\)

\(^1\)Indira Gandhi institute of Pharmaceutical sciences, Bhubaneswar, Odisha-753 015
\(^2\)Department of Pharmaceutical Technology, Jadavpur University, Kolkata, India-700 032

E-mail: biswa_kanth2005@yahoo.co.in

**Background:** *Hymenodictyon excelsum* Wall. (*H. excelsum*) is found in rocky areas like root hills of the Himalayas and north hill forest of Sikkim and Kampong regions of India. It has been widely used in traditional systems of medicine for treatment of astringent febrifuge, fever and antitumor.

The present study was carried out to investigate the antitumor effects of methanol extract of *H. excelsum* stem bark parts against Ehrlich ascites carcinoma (EAC) in Swiss albino mice.

**Material and methods:** Twenty four hours after intraperitoneal inoculation of tumor (EAC) cells in mice, *H. excelsum* was administered at 50 and 100 mg/kg body weight for nine consecutive days. On day 10 half of the mice were sacrificed and rest were kept alive for assessment of increase in life-span. The antitumor effect of *H. excelsum* was assessed by evaluating tumor volume, packed cell count, viable and non-viable tumor cell count, median survival time and increase in life-span of EAC bearing hosts. Hematological profiles and serum biochemical parameters were estimated. Further, antioxidant properties were assessed by estimating lipid peroxidation, reduced glutathione, superoxide dismutase and catalase.

**Results:** *H. excelsum* extract was shown significant (*p* <0.001) decrease in tumor volume, packed cell volume and viable cell count and also increased the life span of tumor bearing mice. Hematological and *in vivo* antioxidant parameters were significantly restored towards normal level in treated mice as compared to EAC control in a significant manner.

**Conclusion:** The methanol extract of *H. excelsum* exhibits significant antitumor and antioxidant activity in EAC bearing mice.
TREATMENT OF SICKLE CELL DISEASE USED MEDICINAL PLANT AVAILABLE IN CHHATTISGARH: A REVIEW

Chandraprakash Dwivedi, Rishi Paliwal, Trilochan Satapathy

Department of Pharmaceutics, Columbia Institute Of Pharmacy, Raipur, 493 111, C.G, India
Email: dubeypharma91@Gmail.Com

Sickle cell disease (SCD) is known to be one of the diseases wrecking most parts of the globe without any discrimination of ethnic or racial standards. The people have learnt to manage the problem using plants which are God’s gift of nature. In Chhattisgarh state sickle cell disease is reported in many tribal communities. Some of these tribes reside in Jawwara, Dugali, Nagari, Sihawa, which are the remote forest areas of Dhamtari. They totally dependent on forest and forest produce for their livelihood and ailments. Gond is the dominant tribe of C.G. as well as of India, Halba is an advance tribe and Kamar tribe is declared as one of the most primitive tribe of India in sixth five year plan traditional herbal medicines and use wild vegetables fruits and foods such as under ground rhizome of Curcuma angustifolia (Tikhur) fresh tuberous roots of Abelmoschus crinitus (Dotokand) flowers of Indigofera cassoides (Ghirgholi) and boiled seeds of Dolichos biflorus (Kulthi), unripened fruits of Carica papaya (Papita) and Musa paradisica (Kela) to improve their general health conditions. In traditional herbal medicines the whole plants as decoction of Andrographis paniculata. (Bhuineem) dried roots of Scoparia dulcis boiled, tubers of Dioscorea sps, dried powder of Chlorophyrtum tuberosum (Safed Musli) are used for general health problems.Crude extracts from plants have been used in treating an array of diseases since ancient times although, the bioactive components of such plants remain largely unknown. This review seeks to spotlight the intervention of medicinal plants in the management of Sickle Cell Disease (SCD) by traditional healers and the underlying principles in their usage. It is characterized by a variety of symptoms including, shortness of breath, heart palpitations, abdominal pains, aches and pains in the muscle. Phytochemicals in the plant extracts have the therapeutic activity and is used in traditional practice by the traditional healers. Many plant extracts have been used to bring about reversal of the sickled erythrocytes in vitro.
EVALUATION OF HYPOGLYCEMIC POTENTIAL OF *Solanum xanthocarpum* WITH PHYSICOCHEMICAL AND STANDARDISATION PARAMETERS.

Chandrasekher Sahu¹*, Khemkaran ahirwar ²

¹. Royal College of Pharmacy, ².Columbia Institute of Pharmacy Raipur, C.G.

csahu38@gmail.com,khempharma@yahoo.co.in

Diabetes mellitus is a metabolic disorder characterized by elevation of blood sugar level. The Incidence of diabetes mellitus is on rise all over the world, the antidiabetic potential of aqueous extract of *Solanum xanthocarpum* Schrad. Aqueous extract of the matured fruits as a traditional medicine for the treatment of diabetes mellitus. Fruits were studied in normal and streptozotocin-induced diabetic rats. The blood glucose levels were measured at 1, 4, 8, 16 and 24 hours after the treatment. An acute oral toxicity study for the extract was carried out in mice and the LD50 value was found to be 5.2 g/kg. The preliminary phytochemical analysis and the study revealed different parameters of the crude drug which will be useful in identification and control of adulterations. Extraction of *Solanum xanthocarpum* was shade-dried and powdered. Powdered fruit was extracted with water with the help of soxhlet apparatus. The crude extract was dissolved in normal saline prior to the experiment and used. TLC of an ethanol extract has been developed in the mobile phase of Chloroform: Methanol (9:1) and observed under UV 366 nm. These parameters will be useful in authentification and dentifying the adulterants and quality control of raw drugs. Whole plant of *Solanum xanthocarpum* exhibits a set of diagnostic characters.
REGULATORY APPROVAL OF CONTROLLED RELEASE FORMULATIONS

Chitrangad *, Rishi Paliwal, Sandeep Tiwari, Bibekanand Meher
Columbia Institute Of Pharmacy, Raipur, 493 111, C.G, India
Email: chitrangadhirwani @gmail.Com

Controlled release dosage forms cover a wide range of prolonged action formulation which provides continuous release of their active ingredients at predetermined rate and for a predetermined time. Controlled release drug delivery systems are rapidly expanding from the originally marketed depot injections to include many types of new oral delivery systems, intrauterine devices, transdermal drug delivery systems, implantable pumps. The are controlled release drug delivery system is evolving so rapidly that it is necessary to go beyond definitions, regulations and data requirements. Accompanying this rapid development in delivery systems has been an equally rapid expansion in terminology. A discussion of regulatory assessment is usually limited to providing an explanation of the governing regulations, how they should be implemented and the type of studies that should be conducted in order to provide the required data. The justification for regulatory approval of controlled release formulations of established and new drug entities should be solely on the scientific documentation for that drug in the terms of safety and efficacy.
FORMULATION AND EVALUATION OF MOUTH DISSOLVING TABLETS OF CELECOXIB

Daljit Masih¹*, Rajesh Gupta²

1. J.J.T. University, Chudela, Jhunjhunu, Rajasthan.
2. Sri Sai College of Pharmacy, Pathankot (Badhani), Punjab

Mouth dissolving tablets of Celecoxib presents the formulator with significant challenges due to its low aqueous solubility problem, and common side effects such as dyspepsia, nausea, diarrhea, constipation and gastritis. Present study investigates the possibility for development of a direct compression mouth dissolving tablet of Celecoxib using some super-disintegrant. The tablet was characterized by hardness, friability, drug content, wetting time, weight variation, water absorption ratio, *in-vitro* disintegration and *in-vitro* drug release. All formulation depicted satisfactorily disintegration and dissolution profile. The hardness, friability, weight variation, wetting time, and drug content analysis of tablets was also exhibited the satisfactory result. It was also found that the superdisintegrants are effective at an optimum concentration, on increasing the ratio of Crospovidone and Sodium starch glycolate concentration above their optimum concentration this enhance the gelling effects of formulation.
IMMUNOMODULATORY ACTIVITY OF DIFFERENT SEED EXTRACTS OF
*MADHUCa LONGIFOLIA* (KOEING).

Dayananda Bhoumik
Oriental College of Pharmacy, Opp. Patel Nagar, Raisen Road, Bhopal – 462022 (M.P.)

The aim of present study was to investigate the immunomodulatory action of aqueous extracts of *Madhuca longifolia* (Koeing) seeds in experimental models of immunity. Cellular immunity was carried out by neutrophil adhesion test and carbon clearance assay. Aqueous dose was selected by OECD guidlince administered at 200 and 300 mg/kg orally. The extract at 200 and 300 mg/kg produced significant increases in adhesion of neutrophil and an increase phagocytic index in carbon clearance assay. Among the different doses, higher dose was more effect in cellular immunity. From the above findings, it is concluded that aqueous extract possesses potential for augmenting immune activity by cellular mechanism more at higher dose than lower dose.
The state of Chhattisgarh has a sizable tribal population existing in the still surviving Eastern Highland Deciduous forests of Maikal and Satpura range. Though it has undergone varying degree of changes, a substantial population can be seen striving in primitive conditions & practices. Of such groups, Baiga are the most prominent, followed by Bhil and Khond. Living close to nature, the tribals have acquired unique knowledge about the properties and uses of wild plants, most of which are not known to the outside world. Exhaustive field work in tribal villages with a macro-level perspective brought forth interesting revelations from the panorama of their lives. The present work highlights useful Ethnobotanical information about the uses of wild plants by the tribals of Chhattisgarh for Medicinal purposes. After certain failures of modern synthetic molecules’ utility [eg; Cumulative Toxicity, Non-availability of potent ligands for specific targets (Alzheimer, Neoplasm, Hepatitis) etc.] arises an alternative source for drug discovery, where ‘Folk Knowledge’ serves as an indigenous depot. Still, only a little is explored by the researchers and establishment of Pharmacological & Phytochemical along with proper Validation of key properties are necessary. Plants such as *Ampelocissus latifolia* for Fracture, *Leptadenia reticulate* for Gangrene, *Asphodelus tenuifolius* for Kidney Stone etc. of Bastar region have shown miracles compared to modern medicines, thereby reflecting their need for commercialization. Apart from medicinal purposes tribals also used them as Food, Excipients, Cosmetics etc. Thus, folk wisdom, if subjected to scientific scrutiny, could benefit humankind in many ways.
MEDICINAL PLANTS USED BY TRADITIONAL HEALERS IN
JASHPUR DISTRICT OF CHHATTISGARH

Gayatri deshlare, Shekhar Verma,
Faculty of Pharmaceuticals science ,SSTC-SSGI, Junwani Bhilai
[Chhattisgarh ]

An ethnobotanical survey was undertaken to record information on medicinal plant from traditional healers in Jaspur district and to identify the medicinal plant used for treating diseases. A field survey was conducted from November 2008 to June 2010 by performing interviews through semi-structured oral interviews with 40 selected traditional healers, 28 were male and 12 were female. The age of the healer was between 24 years and 66 years. The plants identified according to different references concerning the medicinal plant of C.G. and adjoining areas and further confirmation from C.G. State medicinal plant board Raipur C.G. The investigation revealed that the traditional healers used 55 species of plants distributed in 51 genera belonging to 33 families to treat various diseases. The document medicinal plants were mostly used to cure skin diseases, diabetes, weakness, cough and cold, poison bite, diarrhea, asthma, fever, menstrual disorder, oral diseases, fracture and jaundice. Tuberculosis. In the study, the most dominant family was liliaceae and leaves were most frequently used for treatment of diseases.
AN OVERVIEW OF ANTIDIABETIC HERBAL MEDICINE

Gayatri Patel*, Mr. Sanjib Bahadur

Columbia Institute of Pharmacy, Tekari, Raipur (C.G.)

Diabetes is a disease in which the body does not make any insulin or can't use the insulin it does make as well as it should. Insulin is a hormone made in the body. It helps glucose (sugar) from food enter the cells where it can be used to give the body energy. Without insulin, glucose remains in the blood stream and cannot be used for energy by the cells. Antidiabetic herbs help in control or reduction of high levels of glucose in the blood in case of diabetes mellitus. There are different types of diabetes herbs, and their use depends on the nature of the diabetes, age and situation of the person. The NAPRALERT database lists over 1200 species of plants representing 725 genera in 183 families extending from the marine algae and fungi with antidiabetic activity. The importance of antidiabetic plants in the development of economic and effective treatment for diabetes, currently estimated to affect over 30 million people worldwide, has been recognized by the World Health Organization.
INDIGENOUS KNOWLEDGE OF ETHNOMEDICINAL PLANTS FOR TREATING SKIN DISEASES

Ghanshyam Sahu*, Shekhar Verma

Faculty of Pharmaceutical Sciences, SSTC-SSGI, Junwani, Bhilai, Chhattisgarh State

Finding healing powers in plants is an ancient thought. Plant derived substances have recently become of great interest owing to their versatile applications. A number of medicinal plants, traditionally used for over 1000 years named rasayana are present in herbal preparations of Indian traditional health care systems. In Indian systems of medicine most practitioners formulate and dispense their own recipes. In Chhattisgarh tribes and forest dwellers from a considerable part of the population. A large number of tribal communities live in remote and inaccessible parts of the forests. Most of these tribal communities are largely dependent on plant species for curing their ailments. Living close to the nature, these tribals have acquired unique knowledge about the use of wild flora. The tribal and rural populations of Chhattisgarh largely depend on medicinal plants for their health care as well as for their livestock. This attracted the attention of several botanists that lead to an array of reports on ethno medicine. Medicinal plants are the main sources of chemical substances with potential therapeutic effects. The use of medicinal plants for the treatment of many diseases is associated with folk medicine from different areas of the Chhattisgarh.
BOTANY, ETHNOMEDICINAL, PHARMACOLOGICAL AND THERAPEUTIC APPLICATIONS OF STRYCHNOS POTATORUM LINN

Gotmi Sharwan, Mukesh Kumar Singh, Shiv Shankar Shukla
Department of Pharmacology, Columbia Institute of Pharmacy, Village Tekari Raipur C.G.
E-mail: gsgopima20@gmail.com

*Strychnos potatorum* also known as clearing-nut tree is spread throughout the tropical and sub-tropical regions of the world. It has been highly reported in Ayurveda, Siddha and Unani systems of medicine. Some of the chief constituents found in the plant are strychnine, diaboline, isomotiol, sitosterol, stigmasterol and compresterol. The plant has been exclusively used as antimicrobial, nephroprotective, antidiabetic, antiarthritic, anti-inflammatory, antidiarrheal, hepatoprotective, antiulcerogenic, antinociceptive, antipyretic and contraceptive. Traditionally, it has been also used as stomachic, demulcent and emetic. The plant is also utilized for the treatment of various eye diseases, respiratory diseases, kidney complaints, and gonorrhoea. The seeds of the tree are commonly used in traditional medicine as well as purifying water in India and Myanmar.
ANTIMICROBIAL EVALUATION FOR SCHIFF BASES CONTAINING IMIDAZO [2,1-β]-1,3,4-OXADIAZOLES: SOME NEWER ASPECTS

Harish Rajak*, Sanjay Kumar Tiwari, Rakesh Kumar, Avineesh Singh, Vijay Kumar Patel, Deepak K Jain and JS Dangi
SLT Institute of Pharmaceutical Sciences, Guru Ghasidas Vishwavidyalaya (A Central University), Bilaspur-495 009 (CG), India.
*Presenting author: Dr. Harish Rajak; E-mail: harishdops@yahoo.co.in

In an endeavor to discover new drug candidates with better antimicrobial activity, a novel series of Schiff bases containing imidazo[2,1-β]-1,3,4-oxadiazole ring were synthesized and evaluated for antibacterial and antifungal activity. The structures of the compounds were elucidated using elemental analysis, IR, 1H-NMR and 13C-NMR spectral data. The antimicrobial potential of synthesized compounds were evaluated against *Escherichia coli*, *Staphylococcus aureus*, *Bacillus subtilis*, *Staphylococcus epidermidis*, *Pseudomonas fluorescens*, *Aspergillus niger* and *Candida albicans* using disk diffusion method. The MIC of the all the synthesized compounds were calculated by plotting concentration of the compounds and their respective zone of inhibition in http://www.agardiffusion.com web tool. Majority of the compounds were found to possess a broad spectrum of antimicrobial activities against all the pathogenic microorganisms tested including *Pseudomonas fluorescens* and *Candida albicans* responsible for nosocomial infection. A comparison of antibacterial and antifungal activities shown by synthesized compounds indicates that antibacterial activities have upper edge on the antifungal activities in terms of their zone of inhibitions and MIC values. In conclusion, a novel series of Schiff bases containing imidazo[2,1-β]-1,3,4-oxadiazole ring were synthesized and their antimicrobial activity was evaluated using experimental methods cum web tools. Structure activity relationship among the synthesized compounds was also studied.
ANTIBACTERIAL STUDY (INVITRO) OF *RAUWOLFIA SERPENTINA* PLANT EXTRACT AGAINST E.COLI.

Harish Shah, T.S. Easwari, Prabhat Upadhyay, Vivek Tiwari, Shailesh Diwakar.

Deptt. of Pharmacy, IIMT College of Medical Sciences, Ganga Nagar, Meerut (U.P.)

The Present Study Deals with the antibacterial effect of plant extract of *Rauwolfia serpentina*. The Alcoholic extract was prepared in Ethyl alcohol & tested against gram negative bacteria E. coli. Agar and Disc diffusion method was used for the microbiological study. The plant extract was taken in four dilution 25%, 50%, 75% and 100% and bacterial lawn was prepared in nutrient agar media. Whatman filter paper disc 5mm diameter was used for extract absorbance, after that filter paper disc was impregnated on nutrient agar media with the help of sterile forcep. The Petri plates incubate in BOD incubator at 36°C for 48 hours. After incubation results indicate that the plant extract actively killed E. coli organism on 50% Concentration, observed 15mm of Zone of inhibition. Antibiotic control which is showing 16mm zone of inhibition. On behalf of this study we can say that *Rauwolfia serpentina* plant extract is effective against E. coli organism and have very close to antibiotic potential against this pathogen.
MEDICINAL PLANTS OF CHHATTISGARH STATE

Heeralal Kaushal*, Chaman Lal, Shekhar Verma

Faculty of Pharmaceutical Sciences, SSTC-SSGI, Bhilai, 490020 Chhattisgarh

Herbal medicines used for the treating of various diseases are of significant value throughout the world. Among the plant diversity some of them have great potential to treat many diseases which are referred as medicinal plants. The main aim of the present study is to focus on the diversity for the medicinal plants used by the tribal’s and other community of the Chhattisgarh. Herbals of Chhattisgarh state is used to treat wide range of disease. These are very popular among rural as well as urban people. Local herbals of different part of state plays vital role to produce wide variety of dosage form.
PLANT-BASED INSECT REPELLENTS: A REVIEW

HIMESH KUMAR NAYAK,
COLUMBIA INSTITUTE OF PHARMACY TEKARI RAIPUR ((C.G.)

Email-himeshkumar24@gmail.com

Plant-based repellents have been used for generations in traditional practice as a personal protection measure against host-seeking mosquitoes. Knowledge on traditional repellent plants obtained through ethnobotanical studies is a valuable resource for the development of new natural products. Recently, commercial repellent products containing plant-based ingredients have gained increasing popularity among consumers, as these are commonly perceived as “safe” in comparison to long-established synthetic repellents although this is sometimes a misconception. To date insufficient studies have followed standard WHO Pesticide Evaluation Scheme guidelines for repellent testing. There is a need for further standardized studies in order to better evaluate repellent compounds and develop new products that offer high repellency as well as good consumer safety. This paper presents a summary of recent information on testing, efficacy and safety of plant-based repellents as well as promising new developments in the field.
A REVIEW ON ANTIHYPERLIPIDEMIC ACTIVITY OF NERIUM INDICUM LEAVES EXTRACTS IN HYPERLIPIDEMIC RATS

JYOTSANA BHAWARKAR*, TRILOKAN SATPATHY

COLUMBIA INSTITUTE OF PHARMACY, TEKARI, RAIPUR

The aim of this review was investigate the possible antihyperlipidemic effect of petroleum ether, chloroform, ethanol and extracts of Nerium indicum leaves in triton induced and atherogenic diet induced hyperlipidemic rats. A comparison was also made between the action of Nerium indicum leaves extracts and a known antihyperlipidemic drug simvastatin. Oral administration of 500mg/kg body wt of the chloroform extract of Nerium indicum leaves exhibited a significant reduction in serum lipid parameters like total cholesterol, triglycerides, low density lipoprotein, very low density lipoprotein and increase in high density lipoprotein in hyperlipidemic rats in comparison with hyperlipidemic control in both model.
The present study was conducted to investigate the duration dependent spermicidal activity of the hydro-ethanolic (1:1) composite extract of Acacia Leucophloea root and Ficus Racemosa bark at a ratio of (1:1) and at a dose of 200mg/kg, 400mg/kg and 800mg/kg body weight on male wistar strain rats. Acacia Leucophloea root and Ficus Racemosa bark were collected from Raigarh district in Chhattisgarh. Both plants have phytoconstituents consist of terpenoids, flavanoids, glycosides and saponins present in it. Composite extract were administered orally at different dose level for 21 days. Epididymial sperm count, sperm motility, testosterone estimation, cholesterol estimation and histopathology study of testis. Dose of 800mg/kg showed significance decrease in sperm count, sperm motility, testosterone, cholesterol estimation and histology of testis showed disruption of sertoli cells and seminiferous tubules. The composite extract (1:1) at a ratio of (1:1) at a dose of 800mg/kg is good prospect for spermicidal agent.
Indian Medicinal Plants as a Source of Antioxidants

Kuashal Prasad Mishra*, Shyam Bihari Sharma, Sunisha Kulkarni
School of Studies in Pharmaceutical Sciences, Jiwaji University, Gwalior, Madhya Pradesh, INDIA

E-mail of corresponding author: - kaushal04@gmail.com

In recent years, there is a tremendous interest in the possible role of nutrition in prevention of disease. In this context, antioxidants especially derived from natural sources such as Indian medicinal plants and herbal drugs derived from them require special attention. Antioxidants neutralize the toxic and ‘volatile’ free radicals. Antioxidants have many potential applications, especially in relation to human health, both in terms of prevention of disease and therapy. Various antioxidants may prevent and/or improve diseased states. These include the intracellular antioxidant enzymes and the dietary or oral supplements in the form of vitamin C, vitamin E, ß-carotene, zinc and selenium. Antioxidants also can act at different levels of protection such as prevention, interception and repair. Indian medicinal plants provide a rich source of antioxidants. A review of literature shows that there are over 40 Indian medicinal plants showing antioxidant abilities at various levels of protection. The medicinal plants that show significant antioxidant activity. There are also a number of ayurvedic formulations containing ingredients from medicinal plants that show antioxidant activities. There are still a large number of plants and ayurvedic formulations whose antioxidant activities need to be examined in relation to their potential therapeutic and related beneficial properties. More recent assays also should be included to study the antioxidant properties of medicinal plants or their chemical constituents. This will greatly help in identifying more potent compounds with potential applications in prevention and/or therapy of human ailments. Newer approaches utilizing collaborative research and modern technology in combination with established traditional health principles will yield rich dividends in the near future in improving health, especially among people who do not have access to the use of costlier western systems of medicine.
Epilepsy is a major neurological disorder and up to 5% of the world population develops epilepsy in their lifetime. The current therapies of epilepsy with modern antiepileptic drugs are associated with side effects, dose-related toxicity and teratogenic effects and approximately 30% of the patients continue to have seizures with current antiepileptic drugs therapy. So there is great need of new drugs from herbal origin with good efficacy and no side effects. Aim of the present study was to evaluate sleep potentiation and anticonvulsant effect of ethanolic extract of aerial parts of *Passiflora incarnata* belonging to family *Passifloraceae* against Swiss male albino mice. Acute toxicity studies were carried out to evaluate the drug’s toxicity and to determine the minimum lethal dose of the drug extract. The sleep potentiation effect of extract (50 and 100mg/kg, i.p.) significantly increased pentobarbital (45mg/kg, i.p.) induced sleeping time in a dose dependent manner. The anticonvulsant effect of *Passiflora incarnata* extract at the dose of 100 and 200mg/kg, i.p. was examined against pentylenetetrazole (PTZ, 80 mg/kg, i.p.) induced seizure which significantly delayed (p< 0.05) the onset of convulsions. Diazepam (2.0 mg/kg, i.p.) was used as reference drug. It can be concluded from the study that the anticonvulsant effects of the ethanolic extract of aerial parts of *P. incarnata* may be via non-specific mechanisms. However, extensive studies are needed to evaluate the precise mechanism and the safety profile of the plant as a medicinal remedy for convulsive disorders.
Herbal cosmetics have growing demand worldwide, as it lacks of side effects as compared to synthetic products. Currently the herbal market is $160 billion globally annually. Herbal hair oil is the most widely used cosmetic product in Indian society. Herbal hair oils are formulated by using various herbs and herbal extracts which are beneficial for stimulating growth of hair, prevention of baldness, discoloration of hairs, hair fall and other types of hair diseases. In Indian market there are various herbal hair oils available, but these are not effectively sufficient to cure hair related problem. Therefore, in order to meet the requirement of an effective herbal hair oil we formulated a herbal hair oil which was evaluated with some leading brands of herbal hair oil available in the local market. In the above study the objective was to evaluate the formulated herbal oil in comparison with established brands of hair oil on the basis of its physical, chemical and biological parameters stated as per monographs and standards prescribed by Bureau of Indian Standards. The result of the study was significant showing the potentiality of formulated hair oil in curing hair related disorders.
ANTI DIABETIC ACTIVITY IN AQUEOUS EXTRACT OF Albizia lebbeck FLOWER

Manoj Kumar1* and J.S Dangi1

1SLT Institute of Pharmaceutical Sciences, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)
*Corresponding author E mail: mrmanojkumar1@yahoo.co.in

Diabetes is a common disease. There are many medications used in the treatment of diabetes, which have limitations of their own, so many herbal medicines have been recommended for the treatment of diabetes. The forest flora of Chhattisgarh is rich with wide varieties of medicinal plants. Further, tribal belt people of Chhattisgarh mainly rely on this medicine. Further in our plant survey for the search for anti-diabetic agents, we found that many plants are used by traditional healers for the treatment of diabetes. One of the plants is Albizia lebbeck. The flower decoction of this plant has been used as anti-diabetic, so an attempt has been made to explore it scientifically. Preliminary phytochemical screening, total phenolic content, oral glucose tolerance test and anti-diabetic activity performed on rats. Oral glucose tolerance test with single dose of extracts at 200 and 100 mg/kg on rats reveals that the dose of 200 mg/kg produced a maximum fall of 18.76 % at 60 min after glucose administration. The effect of extracts on fasting blood glucose levels shows a significant decrease in the fasting blood in a dose dependent manner.
ADVERSE OUTCOMES OF CHINESE MEDICINES USED FOR THREATENED MISCARRIAGE: A SYSTEMATIC REVIEW AND META-ANALYSIS.

Meenakshi Jaiswal

Institute of pharmaceutical sciences, Guru Ghasidas Vishwavidyalaya, Bilaspur (CG)-495009

Threatened miscarriage is very common in early pregnancy. Chinese medicines have been widely used to prevent spontaneous pregnancy loss. However, the safety of Chinese medicines is still unknown. A systematic review was performed to identify and describe adverse events of Chinese medicines used for threatened miscarriage.

Clinical studies of Chinese medicines for threatened miscarriage were selected. Primary outcomes were occurrence of adverse effects or toxicity of Chinese medicines. Secondary outcomes were failure of treatment and adverse pregnancy and perinatal outcomes.

Thirty-two relevant articles included 9 randomized controlled trials, 1 quasi-randomized controlled trial and 2 controlled trials comparing Chinese medicines alone or combined medicines with pharmaceuticals and 20 case series with no controls. Sample sizes of each study were generally small. There was variation in Chinese medicine formulation, dosage and duration of treatment. In the pooled randomized controlled trials, dry mouth, constipation and insomnia (2-10%) and intervention failure (3.1-22.3%), diabetic complications (3%), preterm delivery (5%) and neurodevelopmental morbidity (1.8%) were recorded. Meta-analysis demonstrated that intervention failure was significantly lower in the combined Chinese medicines groups than in the Western medicines controls (relative risk = 0.46; 95% confidence interval: 0.30-0.70, I(2)= 0%). No significant differences were found between these groups for adverse effects and toxicity or for adverse pregnancy and perinatal outcomes. Studies varied considerably in design, interventions and outcome measures, therefore conclusive results remain elusive. In the absence of placebo-controlled trials, the safety of Chinese medicines for the treatment of threatened miscarriage is unknown. Rigorous scientific and clinical studies to assess the possible risks of Chinese medicines are needed.
When everything is getting digital and technologies in the medical field are advancing why the important part of medicine shall i.e. prescription should remain old and traditional. Here we have the better way to utilize the UID card as our national health card. The entire pharmacy professional can upgrade their knowledge by using one card. The card will be beneficial for their patient regarding his medical history and drug interaction. For the industry personnel it will be beneficial regarding collecting data about disease and drug used in local territory as well as on the vast population. This card also monitor the prescriber regarding the unnecessary prescribing the drug. Selling of misbranded and spurious drug can also be monitored by this.
WOUND HEALING: A HERBAL APPROACH

Mukesh K. Nag, Satish Patel, Deependra Singh

University Institute of Pharmacy,
Pt. Ravishankar Shukla University, Raipur
Tel: +919827937700
Email: mukesh.pharm@gmail.com

Wound healing is a natural process that instigates with injury and ended with scar formation. Healing of chronic wounds is a worldwide problem. Nature endow with great number of plants that show noteworthy wound healing activities. These natural resources are wealthy target for the development of alternatives to modern synthetic drugs. Researchers and scientist would like to extend newer drugs from natural assets. A variety of drugs of plant, mineral, and animal origin are explained in the Ayurveda for their wound healing properties under the term Vranaropaka. Mostly of these drugs are of herbal origin. The blending of traditional and modern knowledge can formulate superior drugs for wound healing with minimum side effects. Plants are potent wound healers because they promote the repair mechanism in the normal and natural way. The healing process can be physically observed by considering the rate of contraction of the wound, period of epithelisation, tensile strength, histopathology, and weight of granuloma in different wound models in animals.
Evaluation of antimicrobial property in methanolic extract of ethanomedicinal plant -
Madhuca latifolia (Roxb.) bark

Nirmala Patel¹, Sudhish Rai², Surendra Saraf³, Susheela Patel³

¹Columbia College of Pharmacy, Near Vidhan Sabha, Tekari, Raipur, Chhattisgarh-493111
²School of Pharmacy, Chouksey Engineering College, Bilaspur (C.G.), India
³Shri Rawatpura Sarkar Institute of Pharmacy, Kumhari, Durg (C.G.) India

Corresponding Author
E mail: patel.nirmala04@gmail.com

The medicinal plants form the only easily accessible health care alternative for the most of our population in rural and tribal areas & also offer solutions to the major concerns of human mankind. Madhuca latifolia Roxb. commonly known as Mahua is an Indian medicinal plant traditionally used for a number of curative & healing purposes. Bark of Mahua is used in tonsillitis, gum troubles, diabetes, ulcers, & rheumatism. The present studies were carried out to evaluate the antimicrobial property of methanolic extract of Madhuca latifolia Roxb. (MEML) bark. The antimicrobial property was studied against gram positive (S. aureus) and gram negative (E. coli) bacteria using well diffusion method for zone of inhibition & serial dilution method for MIC (minimum inhibitory concentration). MEML showed significant antibacterial property when compared to the standard drug (Ciprofloxacin). But when compared the extract for their potency in particular organism it was found that MEML was most effective against gram positive bacteria (S. aureus) followed by gram negative (E. coli). In conclusion, the present studies provide preliminary data for antimicrobial property of Madhuca latifolia Roxb. bark and validate traditional claims regarding the plant use in treatment of many bacterial infections.
Synthesis of Some New Mono, Bis-Indolo[1, 2-c]quinazolines: Evaluation of their Antimicrobial Studies

Nivrati Jain*, Hashim Mansoori, Prateek Kumar Jain

Department of Pharmaceutical Chemistry
ADINA Institute of Pharmaceutical Sciences, Sagar- 470002 (M.P.)-India

Correspondence Email: jain.nivrati1311@gmail.com

A convenient three-step strategy is proposed for the synthesis of mono and bis-indolo[1,2-c]quinazolines from 2-(2-aminophenyl)indole and various aryl aldehydes. The newly synthesized compounds were characterized by elemental analysis, IR, 1H NMR, 13C NMR, and mass spectroscopic investigation. All the derivatives were screened for antibacterial (S. aureus, B. subtilis, S. pyogenes, S. typhimurium, E. coli, K. pneumonia) and antifungal (A. niger, C. albicans, T. viridae) activities by cup plate method. Among the compounds tested, mono-indolo[1,2-c]quinazolines exhibited good antibacterial activities while 6-(2-pyridyl)indolo[1,2-c]quinazoline and 6-(2-thienyl)indolo[1,2-c]quinazoline also showed notable antifungal activity. Especially, 6-(5-indolo[1,2-c]quinazolin-6-yl-2-thienyl)indolo[1,2-c]quinazoline and 6-(6-indolo[1,2-c]quinazolin-6-yl-2-pyridyl)indolo[1,2-c]quinazoline exhibited stronger antibacterial as well as antifungal activity against all tested strains.
Phyllanthus niruri: A traditional plant used by ethnic group of Chhattisgarh for liver disorder

Parag Jain*, S.Prakash Rao, Vijay Singh, Ravindra Pandey, Shiv Shankar Shukla

Columbia Institute of Pharmacy, Near Vidhan Sabha, Village Tekari, Raipur, C.G

Phyllanthus niruri Linn. is small herb well known for its ethanomedicinal, phytochemical and pharmacological properties. Traditional name of Phyllanthus niruri is bhumi amlaki of family Europhorbiaceae. In Chhattisgarh it usually grows during second week of June and starts bearing fruits up to mid July or August. Its root, leaves, fruits, milky juice, and whole plants are used as medicine. The active compounds phyllanthin and hypophyllanthin have been isolated from leaves. It holds a reputed position in both Ayurvedic and Unani systems of medicine. It is mainly used for the treatment of hepatitis. It significantly normalizes activity of liver enzymes. Along with that it has variety of uses viz. lipid lowering action, antidiabetic action, antifungal action, anti malarial action, anti spasmodic action, analgesic activity, and chromosome aberration inhibition. The present review summarizes information concerning the morphology, ecology, ethanopharmacology, phytochemistry, biological activities and clinical applications reports of Phyllanthus niruri and aims to provide sufficient baseline information for future works and commercial exploitation.
ECZEMA (ATOPIC DERMATITIS) is a common chronic inflammatory conditions of the skin. It is an allergic disorder affecting a large proportion of the population throughout the world. It is medically treated with the help of topical steroids, creams, ointments, and the administration of immunomodulators in severe cases. The aim of the present study was to carry out anti-eczema activity of the medicinal and traditional jackfruit plant, Artocarpus heterophyllus, and to determine the anti-inflammatory activity of jackfruit leaf using extraction, screening, and invivo methods.
ABS-35

THE PHYTOPHARMACEUTICAL STUDY OF RICINUS COMMUNIS

Pradeep Dandotiya, Pramod Narwariya, Shivaji Rao, Shubham Dhurvey, Rupendra Goyal, Suman Jain

Department of SOS in Pharmaceutical Sciences, Jiwaji University, Gwalior, M.P. — 474011 India.

*Corresponding Author, E Mail : - dandotiyap4@gmail.com

The castor oil plant, *Ricinus communis*, is a plant species of the Euphorbiaceous (the evolution of this plant family is relatively unexplored the sole member of the genus “Ricinus and of the sub tribe Ricininae. Its seed is the castor bean which, despite its name, is not a true bean. Castor seed is the source of castor oil, which has a wide variety of uses. The seeds contain between 40% and 60% oil that is rich in triglycerides, mainly ricinolein. The use of castor seed oil in India has been documented since 2000 BC for use in lamps and in local medicine as a laxative, purgative, and cathartic in Unani, Ayurvedic and other ethno medical systems. Traditional Ayurvedic medicine considers castor oil the king of medicinals for curing arthritic diseases anus, hemorrhoids; arteries, I veins; eye treatments; febrifuges; lactation stimulants (incl. veterinary); menstrual cycle; paralysis, epilepsy, convulsions, spasm; pulmonary troubles; skin, mucosa different uses of the plant has been prescribed in the ayurveda as well there is a depth mystery in the various use of castor oil plant nature endivour us with enormous rich floura funa still a lot of study has to be performed on the ever growing plant with enormous power to treat and cure from various alignment.
ETHNOMEDICINAL PLANTS IN CHHATTISGARH FOR TREATMENT OF SKIN DISEASES

Pragyashila Bhatpahri*, Mr. Shashikant Chandrakar
Pharmaceutics, Columbia Institute of Pharmacy, Raipur
Email: pragyashilabhatpahri@gmail.com

The Chhattisgarh state of India is one of the best representatives of the Deccan Peninsular bio-geographic zonethat obtains biodiversity rich deciduous forests. About 44% geographical area of Chhattisgarh state is under various types of forests with rich plant diversity, of these many species are of ethnobotanical importance. Skin diseases are of common occurrence among the rural masses due to poor hygienic conditions, poor sanitation facility and contaminated water. Traditional herbal medicines used by different communities play an important role in alleviating skin diseases like Abscess, Boils, Burn treatment, Cuts, wounds, Eczema, Itching, Leprosy, Ring worm, Scabies, Skin disease, Chicken-pox and pimples.
Antibacterial Activity of Ariel part of Andrographis paniculata

Prashant Tiwari*¹, H. Shah², R.Pandey¹, S. S. Shukla¹, Raj K.Tiwari¹

* Corresponding Author

1. Post graduate research scholar, Columbia Institute of Pharmacy, Raipur, C.G.
2. Department of Pharmacognosy, IIMT college of Medical Sciences, Meerut, U.P.

Kalmegh is the aerial part of Andrographis paniculata (Acanthaceae) growing in the tropical & subtropical part of India, Srilanka & China. It is used as bitter-tonic, anthelmintic, antibiotic & in treatment of dysentery. The plant contains bitter principles Andrographolide, & Kalmeghin. The present study deals with extraction of aerial part by soxhlet with solvents chloroform, methanol, water and screening of antibacterial activity against two bacteria E. coli and B. subtilus. The active extract of aerial part subjected to Pharmacognostic study, proximate analysis and antibacterial screening. The study (antibacterial screening) shows the methanolic extract have the maximum zone of inhibition.
Potential of Traditional Herbs of Chhattisgarh Region in combating Depression

Prashant Tiwari, Shubhangi Dwivedi
School of Pharmacy, Chouksey Engineering College, Bilaspur-495004, India.
Email: ptc_ptc15@rediffmail.com

As per the statistical report of WHO, about 450 million people suffer from mental or behavioural disorder. This accounts for about 12.3% of the global burden of diseases, and is predicted to rise up to 15% by 2020. Depression is an extremely common psychiatric condition, for which a variety of petrochemical theories exist and a number of synthetic antidepressant drugs are available in practice, however their effectiveness vary among population and does not hold true. Herbs have been used as food and for medicinal purposes for centuries. The paper throws a spotlight on various herbs possessing antidepressant properties which may be an valuable adjuncts in the management of depression in human. The aim of this research work is to explore putative biological actions of natural antidepressant plant, Eucalyptus Occidental widely available in Chhattisgarh region in diminishing neurological disorders. The finding concludes that both Standard drug (Imipramine) and Eucalyptus Occidental is significantly reducing the duration of immobility in experimental models as compared to the animals of control group. Overall on totality study reveals the potentiality of E. Occidentalis as an adjuvant in the treatment of depression.
The term” Nutraceutical” was coined from nutrition and pharmaceutical in 1989 by Stephen De Felice, MD founder and chairman of Foundation for Innovation In Medicine . According to De Felice, ‘A nutraceutical is defined as any food or part of food which provides health benefits including prevention and treatment of disease’. Since the term was coined by De Felice, the meaning has been modified by Health Canada which defines nutraceuticals as a product isolated from food and generally sold in medicinal forms not usually associated with food and demonstrated to have a physiological benefit or provide protection against chronic diseases. Nutraceuticals have emerged as a necessity for consumers in developed and in developing countries. Nutraceuticals in the recent years have witnessed a tremendous increase in the interest among the consumers due to their potential of providing health benefits. Nutrients, herbals, and dietary supplements are major constituents of nutraceuticals. There were multiple laws and regulations covering the foods in India but there was no single law that could have significantly regulated the Nutraceuticals. In 2006 the Indian government passed Food Safety and Standard Act to integrate and streamline themany regulations regarding nutraceuticals, foods and dietary supplements. Worldwide Regulatory authorities are focusing on the product quality and safety as these are meant for human consumption. In Indian context, along with FSSA, the nutraceuticals producers must be in tune with product evaluation and types of licenses required to import or manufacture a product in market and requirements of label claims.
The present work was designed to assess antimicrobial activity of the dichloromethanolic extract of leaves of Cissampelos Pareira. Firstly, phytochemical screening of the leaves of the plant were assessed with various solvent, which gave the confirmation of carbohydrate and alkaloids as their major chemical constituent. The antimicrobial activity of the extract was assessed by disc diffusion method using six microbial strains. In the present study leaf extract of the plant exhibited antimicrobial activity against six strains of Staphylococcus aureus, Bacillus subtilis, Escherichia coli, Pseudomonas aeruginosa, Aspergillus niger and Candida albicans. The effect was compared with that of standard loaded antibiotic loaded discs of Ciprofloxacin, 5 µg/ disc. Finally the petridishes were incubated at 37°C. for 24 hours. After the incubation period zone of inhibition produced by standard and samples were measured using vernier caliper. It was clearly observed that leaf extract exhibited more antimicrobial activity against B. subtilis.
For decades, Diabetes researchers have been searching for ways to replace the insulin-producing cells of the pancreas that are destroyed by a patient's own immune system. Now it appears that this may be possible. Each year, diabetes affects more people and causes more deaths than breast cancer and AIDS combined. Diabetes is the seventh leading cause of death in the United States today, with nearly 200,000 deaths reported each year. The American Diabetes Association estimate that nearly 16 million people, or 5.9 percent of the United States population, currently have diabetes. Diabetes is actually a group of disease characterized by abnormally high levels of the sugar glucose in the bloodstream. This excess glucose is responsible for most of the complication of diabetes, which include blindness, kidney failure, heart disease, strokes, neuropathy, and amputations.
ANTIOXIDANT ACTIVITY OF ETHANOLIC EXTRACT OF LEAVES OF *ARDISIA SOLANACEA* IN RATS

Rajesh Choudhary, Anshuli Jain and Pradeep Kumar Samal

Institute of Pharmaceutical Sciences, Guru Ghasidas Vishwavidyalaya, Bilaspur, Chhattisgarh, India, 495009.

The aim of research was to evaluate the antioxidant activity of ethanolic extract of leaves of *Ardisia solanacea* (ASEE) by using carbon tetrachloride (CCl₄) intoxicated rat liver as the experimental model. Oral administration of ASEE at two doses level 100 mg/kg and 200 mg/kg, for 9 days, the rate of production of liver antioxidant enzyme like malondialdehyde (MDA), glutathione peroxidase (GPx), superoxide dismutase (SOD) and catalase (CAT) in rats compared to the CCl₄ treated group. ASEE at two doses level 100 mg/kg and 200 mg/kg possesses significantly (P<0.001) reduced MDA and increased GPx, SOD and CAT in dose dependent manner. Phytochemical screening revealed the presence of phytoconstituents such as alkaloids, carbohydrates, flavanoids, saponins, tannins, phenolic compounds and steroids, which may be attributed to observed antioxidant activity. The findings provide further studies on isolation of active secondary metabolites and its pharmacological evaluation.
Plants of ethno medicinal importance have contributed for the development of many new pharmacologically effective molecules/chemical entities to modern medicine. Chhattisgarh, the state having one of the richest biodiversity of its flora in its forest, with numerous tribal inhabitants, is able to contribute a lot from ethno medicine to the ailing humanity. Healing of chronic lower extremity wounds is a global problem, especially in developing countries where traditional medicine is often used by the people in remote places. Chhattishgarh has a rich tradition of plant based knowledge pertinent to healthcare. *Cordia macleodii* Hook. (Boraginaceae), an ethnomedicinal plant which recently has been highlighted for its wound healing activity. A large number of traditional herbal wound healers exist belonging to the tribal community and are utilizing local plants in ethno-medicinal practices prevalent in the different area of Chhattisgarh and resulted in the documentation of many medicinal plant species belonging to different families and genera. The study underlines the potentials of the ethno botanical research and the need for the documentation of traditional ecological knowledge pertaining to the medicinal plant utilization for the greater benefit of mankind in different regions. This study is an attempt to gather the information on the existing ethno botanical knowledge base and document the traditional claims toward the development of safe and effective herbal drugs for wounds.
EVALUATION OF PHOTOPROTECTIVE EFFECT OF HERBAL CREAM
AGAINST UV-INDUCED OXIDATIVE DAMAGE IN MICE

Ram Kumar Sahu*, Amit Roy, Shashikant Chandrakar

Columbia Institute of Pharmacy, Tekari, Raipur-493111 (C.G.), India

E-mail addresses: ramsahu79@yahoo.co.in

Skin care formulations are used almost regularly and universally in different forms to enhance beauty. The human skin is a very sensitive organ and easily affected by UV radiation. Now herbal cosmetics have gained much recognition and became popular among people due to devoid of side effects commonly seen with synthetic products. The aim of the present was to study the protective effects of herbal skin care cream comprising extracts of Curcuma longa, Mangifera indica, Coriandrum sativum, Mentha arvensis and Daucus carota against ultraviolet (UV) –induced oxidative damage in mice. The herbal cream was prepared by incorporating the different concentration of various ethanol extracts in cream base. The mice were divided into three groups of six animals each. Group I was un-irradiated control (neither UV exposure nor any treatment received). Group II was irradiated control and received 5 min UV exposure twice a day. Groups III received both UV exposure and treatment with herbal extracts containing creams, 4 h. prior to UV exposure. The degree of protection was quantified using biochemical tests (catalase, lipid peroxidation and glutathione level) and histopathological assessment. The results showed that cream treatment reduced the effect of UV light-induced photoaging on mice skin by decreasing malondialdehyde (MDA) level and increasing glutathione (GSH) and catalase level compared to UV-irradiated control group. Histopathological evaluation also indicated a photo-protective effect on the herbal creams treated mice skin as no signs of histological changes were seen after UV exposure. This study has confirmed the photo-protective effect of herbal extracts containing creams for skin photoaging.
TOTAL PHENOLIC CONTENTS AND ANTIOXIDANT ACTIVITIES OF SOME SELECTED ANTICANCER MEDICINAL PLANTS FROM CHHATTISGARH STATE, INDIA

Ritesh Jain¹, Sanmati Kumar Jain²

¹ School of Pharmacy, Chouksey Engg. College Bilaspur, C. G., India-495009
² SLT Institute of Pharmaceutical Sciences, Guru GhasidasVishwavidyalaya (Central University), Bilaspur, C.G, India-495009
E.mail: cgherbsnhealth@gmail.com

India having a rich heritage of traditional medicine constituting with its different components like Ayurveda, Siddha and Unani. Botanicals constitute of major part of these traditional medicines. Considerable attention has been focused on anticarcinogenic and antioxidants agents that occur naturally because antioxidants are being identified as anticarcinogens. On this aspect the present study has been designed to explore the antioxidant activity of some medicinal plants traditionally used in treatment of cancer in Chhattisgarh (Herbal state) of India. The ethanolic extracts of five medicinal plants including Artocarpus heterophyllus, Alangium salvifolium, Buchanania lanzan, Sesbania grandiflora and Wrightia tinctoria were evaluated for their total phenolic content and in-vitro antioxidant activity by 1, 1’-diphenyl-2-picrylhydrazyl (DPPH) radical scavenging method, reducing power assay and total antioxidant capacity (Phosphomolybdenum reduction Assay). All five plants show antioxidant activity but Buchananialanzan found to be most effective antioxidant.

Key words: Antioxidant, anticarcinogenic, Artocarpus heterophyllus, Alangium salvifolium, Buchananialanzan, Sesbania grandiflora, Wrightiatinctoria.
A study on the traditional uses of ethnomedicinal plant species was carried out in the Rajnandgaon and Durg district of Chhattisgarh state with the major objective of identifying different ethnomedicinal plant species associated with some sacred groves distributed all over the district. Information on medicinal value was collected from local elderly people residing in the vicinity of sacred groves and also from the traditional healers called 'Vaidyas'. The paper describes distribution and local/traditional uses of the 50 medicinal plants belonging to 40 genera and 23 families, out of these 29 species are trees, 11 herbs, 7 shrubs, 3 climbers and 2 palms. These identified plants need protection from the biotic pressure. Various plant parts, such as bark (16), leaves and fruit (15 each), root (12), seed (9), whole plant (6), gum (5), flowers and stem (3 each), sap, wood and rhizome (2 each), bulb, oil and latex (2 each), pod (2) and bud, tadi, thorn and resin (1 each) were used for treatment of different ailments.
STANDARDIZATION AND EVALUATION OF HERBAL DRUGS

Goyal Rupendra Kumar, Jain Suman
SOS in Pharmaceutical Sciences, Jiwaji University, Gwalior (M.P.) 474011
Goyalrk09@gmail.com

Standardization of drug means confirmation of its identity and determination of its quality and purity and detection of nature of adulterant by various parameters like morphological, microscopical, physical, chemical and biological observations. The subject of herbal drug standardization and evaluation is massively deep and wide. World Health Organization (WHO) has defined herbal medicines as finished labeled medicinal product that contain active ingredients, aerial or underground parts of the plant or other plant material or combinations. In older times, vaidyas used to treat patients on individual basis, and prepare drug according to the requirement of the patient. Now-a-days newer and advanced methods are available for standardization of herbal drugs like fluorescence quenching, combination of chromatographic and Spectrophotometric methods, biological assays, use of biomarkers in fingerprinting. Bioassays can play an important role in the standardization of herbal drugs. Various parameters for evaluation of herbal drugs are being introduced for their efficacy and safety like antioxidant activity, lipid Peroxidation inhibitory activity, wound healing activity etc.
STABILIZATION OF LYOPHILIZED ADSORBED RHBSAG ON ALUMINUM HYDROXIDE ADJUVANTS

S. Minz, R. S. Pandey

Institute of Pharmaceutical Sciences, Guru Ghasidas Vishwavidyalaya, Bilaspur, Chhattisgarh, 495009.

Lyophilisation is a well-known formulation approach used in the pharmaceutical industry for the stabilization of expensive, liquid biologic products such as vaccines. During lyophilisation, liquids are frozen and subsequently dried in vacuum. This study is focusing on the effect of freeze drying on the physical state of the vaccine containing adjuvant aluminum hydroxide. Aluminum compounds are currently the most commonly used adjuvants. Freezing or lyophilisation of aluminum adjuvant adsorbed vaccines can result in a loss of potency of the adjuvant. But it can be protected by using the cryoprotectant. The physical appearance of unprotected adjuvant alters after freezing which induces changes in the structure and morphology of the adsorbent. And the structure and integrity was studied by the FTIR and SDS-PAGE.
PHARMACOLOGICAL EVALUATION AND ANTI-FERTILITY ACTIVITY OF JATROPHA GOSSYPIFOLIA (EUPHORBIACEAE) IN RATS

Sachin Jain1*, Gajendra Pratap Choudhary2, Dinesh Kumar Jain1

1Department of Pharmacognosy, College of Pharmacy, IPS Academy, Indore MP INDIA 452012

2School of Pharmacy, Davi Ahilya Vishwavidyalaya, Indore MP INDIA 452012

Objectives: Pharmacological and anti-fertility activity evaluation of Jatropha gossypifolia in rats. Methods: The anti-fertility activity of the extracts of Jatropha gossypifolia in rats was evaluated using two experimental animal models. Estrogenic activity was evaluated in immature female rats using ethinyl estradiol as standard. Anti-implantation and early abortifacient activity was performed in female Wistar rats by determining the number of implantations and implantation resorptions. Results: In estrogenic activity evaluations, the ethanolic and aqueous extracts offered significant estrogen-like activity at 400 mg kg⁻¹ p.o. by increasing the uterine weight compared to vehicle control group. Ethanolic extract (400 mg kg⁻¹, p.o.) treatment significantly decreased the number of implants and increased the number of resorptions compared to vehicle control group. Conclusion: The results of the present study provide the evidence of the anti-fertility activity of Jatropha gossypifolia as claimed in the traditional use. The results are in consistent with the literature reports related to anti-fertility effect of flower extracts of Jatropha gossypifolia.
DISCOVERY OF NOVEL LEADS FROM CHHATTISGARH’S ETHNOBOTANICAL MEDICINAL PLANTS FOR THE TREATMENT OF NEURODEGENERATIVE DISEASES

Sanjay Kumar Bharti * and Debarshi Kar Mahapatra

Department of Pharmaceutical Chemistry, School of Pharmaceutical Sciences, Guru Ghasidas Vishwavidyalaya (A Central University), Bilaspur (C.G.), India

*E-Mail: sanjay.itbhu@gmail.com

The use of medicinal plant products in the form of household formulations, or traditional Indian medicinal systems has been in practice for a long time. Efforts made during the past few decades by systematic experimental and clinical studies have confirmed that several of these products are indeed therapeutically potent, not only in treating cough and cold, but also diseases of the CNS, including neurodegenerative diseases, for which only symptomatic treatment is available so far. Although all active principles and their mode of action are not yet precisely defined, available data on their neuropharmacological activity indicate that they could be sources of better therapy for diseases for which treatment is not yet fully developed. Extracts prepared from many medicinal plants contain a variety of bioactive molecules. People are using herbal medicines from centuries for safety, efficacy, cultural acceptability and lesser side effects. Plant and plant products have utilized with varying success to cure and prevent diseases throughout history. Due to side effects of synthetic products, herbal products are gaining popularity in the world market. This article summarizes the salient features of new therapeutic leads from Chhattisgarh’s Ethnomedicinal Herbal sources for treatment of various types of neurodegenerative diseases. Efforts made in using existing knowledge on several popular medicinal plants, particularly those utilized in the Chhattisgarh Tribal Medicines and Folklore Systems discussed in light of recent research. A few promising plants such as Asparagus racemosus, Bacopa monnieri, Centella asiatica, and Mucuna pruriens are worth for exploring novel leads development for successful neuroprotection.
THE PHARMACOLOGICAL MECHANISM OF ANGIOTENSIN CONVERTING ENZYME INHIBITION BY GREEN TEA, ROOIBOS AND ENALAPRILAT – A STUDY ON ENZYME KINETICS

Sanjay Singh*, Rajendra Tyagi, Ramniwas Rawat, Harendra Pal Singh

SOS in Pharmaceutical Science, Jiwaji University, Gwalior, M.P. – 474011 India.

*Corresponding Author, E Mail : - dandotiya4@gmail.com

Green tea [Camellia sinensis L.] and Rooibos (Aspalathus linearis Dahlg.) inhibit angiotensin-converting enzyme (ACE) [in vivo]. The ACE inhibitor enalaprilat has been described previously as a competitive inhibitor and sometimes as a non-competitive inhibitor. The aim of this study was to investigate the pharmacological mechanism of ACE inhibition of green tea and Rooibos by enzyme kinetics, and to compare this with enalaprilat. A michaelis-Menten kinetics and Line weaver – Burk graph showed mean values of Vmax = 3.73 microM and Km = 0.71 microM for green tea, of Vmax = 6.76 micro M and Km=0.78 microM for Rooibos, of Vmax=12.54 microM and Km=2.77 microM for enalaprilat, and of Vmax =51.33 microM and Km=9.22 microM for the PBS control. Incubating serum with green tea or Rooibos saturated with zinc chloride did not change the inhibitory effect. Enalaprilat preincubated with zinc chloride showed a decrease in the inhibitory effect. In conclusion, green tea, Rooibos and enalaprilat seem to inhibit ACE activity using a mixed inhibitor mechanism.
DEVELOPMENT OF DUAL DRUG LOADED NANOSYSTEM FOR COMPLETE WOUND MANAGEMENT

Sanju Dewangan, Dr. Deependra singh

University Institute of Pharmacy, Pt. Ravishankar Shukla University, Raipur (C.G.)

sanju.dewangan21@gmail.com

Wound healing is a complex phenomenon, involving a number of well-orchestrated processes, including regeneration of parenchyma cells, migration and proliferation of both parenchymal and connective tissue cells, synthesis of ECM (extracellular matrix) proteins. The delivery of most of Neomycin antibiotic is a their good physicochemical features good aqueous solubility, low bioavailability, complete absorption from gastrointestinal tract, short half life, associated side and adverse effects and poor patient compliance, these all factors led to diminish their therapeutic response and efficiency. Use of dual approach of Neomycin for nanosystem will provide new hope for combating such issues. The formation of inclusion complex with neomycin and their derivatives could improve/enhance the solubility, bioavailability, dissolution, stability of neomycin antibiotic drugs. Loading these complexed drugs into nanosystem would provide the desired release (sustained/controlled/targeted) at specified site and time. This approach can be utilized for oral, topical delivery of drugs. In present work, the oral delivery of antibiotic agent is achieved through this approach with enhanced therapeutic effect. In future, it would be possible to treat most of the life threatening diseases by utilizing such approaches with modifications.
REGULATORY ASPECTS AND APPROVAL OF ETHNOMEDICINAL HERBAL DRUGS IN EASTERN REGION

Shailendra Kumar Kela¹, Khemkaran Ahirwar¹
¹Columbia Institute of Pharmacy, Tekari Raipur, (C.G.)
Email- kelashailendra@gmail.com

Historical and current studies are indicating that the Eastern region of the Mediterranean has been distinguished from other regions by a rich inventory of complementary alternative medicine (CAM), in particular herbal medicine. In addition, some of these herbs are unusual or even endangered species. In regard to the status of the know-how of herbalists, unfortunately, herbal medicine in Chhattisgarh region is mostly prescribed by ethno pharmacologists symptomatically—based on signs and symptoms alone, rather than as a result of a full perceptive of the underlying disease. The WHO has published guidelines in order to define basic criteria for evaluating the quality, safety, and efficacy of herbal medicines aimed at assisting national regulatory authorities, scientific organizations and manufacturers in this particular area. Furthermore, the WHO has prepared pharmacopeia monographs on herbal medicines and the basis of guidelines for the assessment of herbal drugs. Phytotherapeutic agents or phytomedicines are standardized herbal preparations consisting of complex mixtures of one or more plants which are used in most countries for the management of various diseases. Many herbal drugs are prepared by maceration, percolation or distillation (volatile oils). Quality control and standardization of herbal medicines involve several steps. However, the source and quality of raw materials play a crucial role in guaranteeing the quality and stability of herbal preparations. The recent advances which occurred in the processes of purification, isolation and structure elucidation of naturally occurring substances have made it possible to establish appropriate strategies for the analysis of quality and the process of standardization of herbal preparations in order to maintain as much as possible the homogeneity of the plant extract. Among others, thin-layer chromatography, gas chromatography, high-performance liquid chromatography, mass spectrometry, infrared-spectrometry, ultraviolet/visible spectrometry, etc., used alone or in combination, can be successfully used for standardization and to control the quality of both the raw material and the finished herbal drugs.
ORNAMENTAL PLANTS OF CHHATTIGARH HAVE A SIGNIFICANT ROLE IN VARIOUS DISEASES

Shani Gupta*, Sanjay Mire, Vikas Kant, Mukesh Sharma

Rungta Collage of Pharmaceutical Sciences and Research, Kurud-Road Kohka, Durg,
Chhattisgarh

Plants have been used both in the prevention in cure of various disease of humans and their pets. With the advent of human civilization, many systems of therapy have been developed primarily based on plants. Ayurveda, Homeopathy, Sidda, Unani are our traditional systems of medicines. The present papers deals with the study of 35 ornamental plants planted in the gardens or as avenue tree, along with some cultivated plants, with their medicinal significance. Ornamental plants have several medicinal use like Kanher is used as anti-arrhythmic, Alu is used as an antileprotic and Gulab is used in cosmetic preparation like that so many plants Kevda, Zendu, Kinjal, etc. have medicinal significance.
STEVIA REBAUDIANA- A GIFT FOR DIABETICS

Shashank Shekhar Singh*

Columbuia Institute of Pharmacy, Raipur (C.G.)

Stevia rebaudiana bertoni is a natural sweetener and the leaves of it are the source of diterpene glycoside namely stevioside and rebaudioside which are 300 times sweeter than cane sugar. Among the stevioside and rebaudioside, stevioside stands first in the sweetner form, utilization and commercial value. It can be used in multiple health diseases and traditionally the leaves of Stevia are used as sugar substitute. Stevia has high nutritive value as it is non calorie sweetner containing calcium phosphorous, sodium, magnesium, zinc, vitamin A, vitamin C, proteins and other nutrients. They are ideal for both diabetics and phenylketonuria (PKU) patients. They are also good for obese persons who are intending to lose weight by avoiding sugar supplements in their diets. Moreover, no allergic reactions have been reported.
ABS-56

TAMARAINDUS INDICUM AND TERMINALIA CHEBULA TWO IMPORTANT ETHNIC SPECIES OF CHHATTISGARH

Shikha Srivastava*, Dr Manju Singh

Pt Ravishankar Shukla University, University Institute Of Pharmacy Raipur(C.G), 492010

The Indian system of medicines have identified 1500 medicinal plants, of which 500 species are commonly used in preparation of Ayush drugs. Chattisgarh state shares and caters 17% of the total requirement of raw materials for Ayush industries. Herbal remedies would become increasingly important as people seek natural remedies and gentler, safer products to deal with the prevention of ill health and promotion of good health. India, with its diversified biodiversity has tremendous potential and a natural advantage in this emerging area. Tamaraindus indicum and Terminalia chebula are two important ethnomedicinal plant of Chattisgarh which are utilized for varied activities. Tamaraindus indicum contain polysaccharides, lipids, protein, fibre and sugar and Terminalia chebula contains tannic acid, chbulinic acid, gallic acid etc. Tamarin are mainly used as food additives, sauce industry as a digestive and in oil and paint industries, while harra is used as purgative, stomachic, in asthma, piles, cough and eye disorders.
Liposomes are biodegradeable, colloidal and spherical vesicles (0.05-5.0 µm in diameter) composed of a bilayer membrane entrapping an aqueous core. Liposome membranes can be composed of naturally-derived phospholipids with mixed lipid chains and a variation of head groups or of pure synthetic lipids with defined acyl chains and head groups. The phospholipids align themselves side-by-side with their lipophilic heads orienting themselves towards each other. Drugs with widely varying lipophilicities can be encapsulated in the liposomes, either in the phospholipids bilayer, in the entrapped aqueous volume or at bilayer interface. Liposomes usually formed from phospholipids have been used to change the pharmacokinetic profile of not only drugs, but herbs, enzymes etc. Liposomal based drug delivery is advantageous specifically in enhancing the therapeutic index of anti-cancer agents, either by increasing the drug concentration in the tumour cells and by decreasing the exposure to normal cells. Various targeting strategies can be exploited using liposomal drug delivery. A variety of herbal liposomal formulations have been reported for herbal drugs where liposome are able to enhance product performance by solubility enhancement, improving bioavailability, targeting at site of action and prolonged release of drug.
EFFECT OF OCIMUM SANCTUM AND AZADIRACTA INDICA ON THE FORMULATION OF ANTIDANDRUFF HERBAL SHAMPOO POWDER

Shubha thakur*, Sandeep Tiwari . Shashikant Chandrakar

Columbia Institute Of Pharmacy, Raipur, 493 111, C.G, India
Email :shubha.1777@rediff.com

Now a day Herbal cosmetics are widely used when compared to synthetic cosmetics. In hair cosmetics, synthetic cosmetics lead to various side effects such as toxicity to eye, over drying of hair and deposition of salt on hair shaft. Dandruff is a major problem in hair. In this study, the antidandruff herbal shampoo powder was formulated and evaluated various tests such as swelling index, foaming index, Antimicrobial activity and eye and skin irritation test etc. This study was designed to determine the antidandruff activity on the formulated herbal shampoo powder. The herbal shampoo powder was formulated using natural ingredients with Ocimum sanctum (Tulsi) and Azadiracta indica (Neem). Both are having antidandruff action. Thus the present study revealed that the antidandruff activity of Ocimum sanctum and Azadiracta indica against strains of G + Organism, strains of G – Organism and fungal organism such as candida albicans.
MEDICINAL PLANTS OF CHHATTISGARH WITH ANTI-SNAKE VENOM PROPERTY: A REVIEW

Shubham Tiwari, Suraj Jaiswal, Bivha Dey

School Of Pharmacy, Chouksey Engg. College Bilaspur

Snake bite is a major health hazard that leads to high mortality and great suffering in victims. Since the last century, antivenom immunotherapy is the only specific treatment against snake venom envenomation. However, antiserum does not provide enough protection against venom-induced hemorrhage, necrosis, nephrotoxicity and often develops hypersensitivity reactions. The remedies are of great interest since they may have recognizable therapeutic or toxic effects and are steeped in cultural beliefs that invariably conflict with formal health care practices. The study of the interaction between plants and people is invaluable in discovering new herbal medicines and plant-derived drugs. Chhattisgarh has a rich tradition of the usage of medicinal plants. Many Chhattisgarh medicinal plants are mentioned in literature, which are used to treat snakebite victims especially in the rural areas. However, only a few species have been scientifically investigated and still less had their active components isolated and characterized both structurally and functionally. This article presents a review of Chhattisgarh plants showing properties against snake venoms which were assayed in research laboratories, correlating them with ethnopharmacological studies. The present study was aimed at conserving largely herbal drug knowledge and availing to the scientific world the plant therapies used as antivenom in the society.
Nicotine addiction is the second leading cause of death worldwide. The serotonin pathway has been implicated in nicotine dependence and may influence smoking cessation. The review throws a spotlight on the neurobiology of nicotine addiction, the neural mechanisms of addictive drugs that can be localized to a variety of brain regions and neuronal circuitry underlying the progressive increase in nicotine relapse. Relapse can be modeled in laboratory animals by using conditioned place which is widely used from decades. This study examines the role of selective serotonin reuptake inhibitors in relapse to nicotine dependence using different inhibitors via herbal approaches for e.g. Rhodiola rosea, arabadopsis thaliana, Juglans nigra and Carya tomentosa, Musa paradisiaca, Ananas comosus, Musa acuminata, Actinidia delicosa, and Solanum lycopersicum would be found effective in termination of smoking habits. Thus, herbal drugs can be novel approach in reducing nicotinic level in relation to human health of Chhattisgarh and its therapeutic efficacy can be achieved via developing its novel drug delivery system to achieve its therapeutic effect.
SCOPE OF ETHNOMEDICINE IN HEALTH CARE SYSTEM IN INDIA

Shyam Bihari Sharma*1, Suman Jain1, Sunisha Kulkarni1, Vaibhav Srivastava2

1School of Studies in Pharmaceutical Sciences, Jiwaji University, Gwalior, M.P.
2Nagaji Institute of Pharmaceutical Science, Sitholi, Gwalior, M.P.

*E-mail of presenting author: shyam_mpharm06@rediffmail.com

A traditional health care practice of indigenous people pertaining to human health is termed as Ethno medicine. The knowledge of certain herbs, animals and minerals that have curative and palliative effects were transmitted from one generation to another and it is the outcome of bold experimentation through trial and error method over hundreds of years. Ethno medicine is the mother of all other systems of medicine such as Ayurveda, Siddha, Unani, Nature cure and even modern medicine. The traditional herbalists are part and parcel of the community and are often familiar with the details of each family and its environs, so that they are in a better position to deal with their day-to-day problems. The traditional medicinal knowledge is thought to be within every one’s reach and does not require any study or training to practice it. In some families almost all the members are acquainted with some part or other of herbal remedies. The traditional healers specialize in particular areas of their profession. Some medical practitioners are expert in bone setting, wound healing, poisonous bites, neurological disorders, etc. and some others in spiritual healing, especially the use of incantations while others combine both in their treatment. It is important to note that there is no doubt about the efficacy of herbal medicine among its users. Rural and urban poor people in India rely on herbal remedies since these are within their reach. In fact in remote areas this is the only source of health care available. In this context the contribution made by the traditional medicine to modern system of medicine is worth noting. The well-established drugs are among dozens that have been developed by the scientists after analysing the chemical constituents of plants traditionally used by tribals and villagers.
Dementia is a progressive neurological disease of the brain. It demolishes the vital brain cells, causing trouble with memory, thinking, and behavior, brutal enough to affect work, lifelong hobbies, and social life. Recognized factors in dementia include acetylcholine deficiency, free radicals, and inflammation of the brain tissue. Since, the drugs and natural remedies have been prescribed to enhance the memory and protect the memory functioning in dementia people. The traditional herbal medicine, numerous plants have been used to treat age related cognitive disorders. Which are today popular all over the world due to their proven effective qualities. The drugs acting on the brain are called as nootropic drugs. The natural memory enhancing drugs controlled the activity of acetyl cholinesterase (AChE). AChE modulates acetylcholine (ACh) to proper levels by degradation accordingly excessive AChE activity produce to constant Ach deficiency leads to memory and cognitive impairments. This natural agent inhibits the excessive AChE activity and protects the people suffering from dementia. The Indian medicinal plants are the most prolific sources for treatment of dementia. This review focuses on natural Indian medicinal plants used for treating and curing the dementia.
CLASSICAL ALTERNATIVE MEDICINES HAVE BEEN SUCCESSFULLY USED TO TREAT MANY DISEASES FOR CENTURIES. OF THESE, AYURVEDA IS THE MOST ANCIENT MEDICAL SYSTEM WITH AN IMPRESSIVE RECORD OF SAFETY AND EFFICACY. IT IS THOUGHT TO HAVE ORIGINATED IN VEDIC TIMES, AROUND 5,000 YEARS AGO, AND HAS EVOLVED THROUGH INTUITIVE, EXPERIMENTAL AND PERCEPTUAL METHODOLOGIES IN INDIA. THE MAIN OBJECTIVE OF AYURVEDA IS TO PROMOTE HEALTH AND PREVENT AILMENTS SO AS TO RELIEVE HUMANITY OF ALL CATEGORIES OF MISERY - PHYSICAL, MENTAL, INTELLECTUAL AND SPIRITUAL. HOMEOPATHY ARRIVED IN INDIA IN 1810, WHEN SOME GERMAN PHYSICIANS AND MISSIONARIES VISITED BENGAL AND DISTRIBUTED THEIR HOMEOPATHIC REMEDIES. IN 1973, THE CENTRAL COUNCIL OF HOMOEOPATHY WAS ESTABLISHED BY THE GOVERNMENT OF INDIA. THE SIDDHA MEDICINE IS A FORM OF SOUTH INDIAN TAMIL TRADITIONAL MEDICINE AND ITS CONCEPT IS TRACED BACK TO THE SANGAM PERIOD IN INDIA. OTHER COMPONENTS OF AYUSH SUCH AS YOGA AND NATUROPATHY ARE NOW BEING PRACTICED BY YOUNG AND OLD ALIKE TO PROMOTE GOOD HEALTH. APART FROM AYUSH, THERE ARE OTHER MEDICAL PRACTICES ADOPTED LOCALLY, ESPECIALLY BY THE RURAL PEOPLE, WHICH VARY FROM REGION TO REGION AND ARE KNOWN AS LOCAL HEALTH TRADITIONS (LHT). LOCAL HEALTH TRADITIONS REFER TO HEALTH PROMOTIVE, PREVENTIVE AND CURATIVE METHODS HAVING GENERAL ACCEPTANCE AND PREVALENCE AMONG HOUSEHOLDS OF DIFFERENT SOCIO-ECONOMIC STRATA. WHILE THESE HAVE COMMON ROOTS WITH THE INDIGENOUS TEXTUAL SYSTEMS, THEY DO NOT NECESSARILY CONFORM EXACTLY TO DIFFERENT ANCIENT HEALTH SYSTEMS AND THEIR TEXTS. THEY MAY BE PRACTICED BY THE HOUSEHOLDS THEMSELVES AS HOME REMEDIES OR THROUGH THE SERVICES OF VARIOUS TRADITIONAL AND FOLK PRACTITIONERS.
Diosgenin, a steroid sapogenin, is the product of hydrolysis by acids, strong bases, or enzymes of spooning, extracted from the tubers of Dioscorea and Trigonella foenum graecum. Diosgenin is a phytoestrogen, or a plant-based estrogen, that can be chemically converted into a hormone called progesterone. The sugar-free (aglycone), diosgenin is used for the commercial synthesis of cortisone, pregnenolone, progesterone, and other steroid products. Diosgenin was used to make the first birth control pills in the 1960s. It is used to treat disorders such as diabetes, high cholesterol, wounds, inflammation, menstrual cramps, nausea and morning sickness, osteoporosis, menopausal symptoms and gastrointestinal ailments. Recent studies suggest that Diosgenin may possess anticarcinogenic potential.
IMPORTANCE OF VALIDATION FOR ETHNO-MEDICINAL PLANTS OF CHHATTISGARH

Swati Dubey¹, Bibhas Pandit¹

¹Columbia Institute of pharmacy, Tekari, Raipur, C.G.

Email: dubeyswati326@gmail.com, bibhas.pandit@gmail.com

Medicinal plants being the main and most accessible form of therapy are less privileged in the global population up to the present day. The World Health Organization has given some recommendation to the nations, rich in herbal flora for the popularization of herbal medicine, particularly concerning scientific validation and preservation of ethno botanical knowledge of medicinal plants. Chhattisgarh being an herbal state of India has significantly rich in plants having medicinal importance. Apart from the species diversity, the state is also endowed with rich genetic diversity of various indigenous plants. As a consequence of that the rural peoples of Chhattisgarh used various herbal formulations prescribed by the ethnic practitioners. Eighty of world population is dependent on herbal drugs and to enter into the global market it is vital to maintain its quality. For the commercialization of these herbal drugs, there is an urge to follow a systemic validation process for each herbal drug. The quality of herbal drugs is the sum of all factors which contribute directly or indirectly to the safety, effectiveness and acceptability of the product. Presently the crude drugs are evaluated by various methods like botanical, chemical, spectroscopic and biological methods to determine the standards of the drugs and documented the same so as to promote the drug in the international market and provide it an international recognition and thus benefitting the economy of Chhattisgarh State.
IN-VITRO SCREENING FOR ANTIHELMINTHIC POTENTIAL OF TERPENOIDE-
RICH FRACTION FROM A TRADITIONAL INDIAN MEDICINAL PLANT-
ARTEMISIA ANNUA.

Sweety Lanjhiyana¹, SK Lanjhiyana².

Affiliations: ¹ Asso. Prof., School of Pharmacy, Chouksey Engg. College, Bilaspur-495001.
² Ass. Prof. Institute of Pharm.Sciences, Guru Ghasidas Vishwavidyalaya, Bilaspur-C.G.-
495009.

slanjh@gmail.com

The present study summerize the in-vitro antihelminthic potential of terpenoid-rich fraction of chloroform extract of Artemisia annua aerial parts (Family-Asteraceae) using Pheritima posthuma model. The different concentration range (viz.-10mg/ml, 20mg/ml, 30mg/ml, 40mg/mL) were prepared by dissolving terpenoid-rich fraction of chloroform extract in minimum quantity of DMF and making the volume up to the final volume with 0.9%w/v NaCl solution. One group was kept as control. All groups were evaluated against albendazole as reference drug. The average time for onset of immobility (min) and time of death (min) of worms of each group were observed. Irreversible paralysis or mortility was concluded when the Pheritima posthuma not regain their motility after transferring in to fresh media. The fraction showed significant effect at 40mg/ml concentration against the reference drug.
PHARMACOGNOSTIC STUDIES OF NEWLY DEVELOPED HYPOGLYCEMIC POLYHERBAL FORMULATION

Sweety Lanjhiyana\textsuperscript{1}, SK Lanjhiyana\textsuperscript{2}.

Affiliations: \textsuperscript{1} Asso. Prof., School of Pharmacy, Chouksey Engg. College, Bilaspur-495001. \textsuperscript{2} Ass. Prof. Institute of Pharm.Sciences, Guru Ghasidas Vishwavidyalaya, Bilaspur-C.G.-495009.

slanjh@gmail.com

The present studies was carried out to focus on the hypoglycemic activity of newly developed polyherbal formulation (EPHF) consisting of extracts of six medicinal herbs viz., Pongamia pinnata, Tinospora cardifolia, Aegel marmelos, Murraya koenigii, Aloe vera, and Elaeodendron glaucum in streptozotocin induced diabeties in experimental rats. The developed formulation was subjected to physico-chemical and phytochemical testings which will helpful in quality control of the herbal products. Further, the data revealed that the polyherbal formulation treated group showed the significant reduction in blood glucose level (BGL) in streptozotocin induced diabetic animals as compared to control. Experiment with developed hypoglycemic Polyherbal Formulation at dose 250 mg/kg to diabetic animals revealed significant reduction of BGL, HbA\textsubscript{1C}, TC, TG, LDL, creatinine, urea whereas significant elevated level of insulin and HDL was observed. The newly developed polyherbal formulation (EPHF) treated group showed elevation in the level of antioxidants enzymes in experimental rats. The present study proved that the developed novel pharmatherapeutics is showing potential antidiabetic and antioxidant properties which may be advantageous for the management diabetes mellitus and related complications.
ETHNOBOTANICAL STUDY OF ANTIDIABETIC PLANTS IN TRIBAL REGIONS OF CHHATTISGARH STATE (INDIA)

Sweety Lanjhiyana¹, SK Lanjhiyana².

Affiliations: ¹ Asso. Prof., School of Pharmacy, Chouksey Engg. College, Bilaspur-495001.
² Ass. Prof. Institute of Pharm.Sciences, Guru Ghasidas Vishwavidyalaya, Bilaspur-C.G.-495009.

slanjh@gmail.com

The probability to better cure, less side effects and easy affordability affect reliability and availability of ethanomedicinal plants. Diabetes mellitus is a chronic metabolic disease caused by insufficient secretion of insulin. Although modern drug therapy is available but alternative herbal drugs are needed because of the insufficiency of current therapies to manage all of the biochemical and metabolic complications of diabetes mellitus, and the high cost and poor availability of modern drugs for populations below poverty lines, specially in developing countries like India. The present study was planned to investigate antidiabetic potential of hydroalcoholic extracts of selected 9 medicinal plants of ethanomedicinal importance such as Aloe vera, Asparagus racemosus, Curcuma longa, Dioscorea deltoidea, Emblica officinalis, Gymnema sylvestre, Rauwolfia serpentina, Terminalia arjuna, Tinospora cordifolia in alloxan induced-diabetic model. The bioactive extracts were processed to develop a cost effective, standardized polyherbal formulation which may be helpful for the screening of real bioactive compounds for development of novel antidiabetic therapeutics on the basis of their mechanism of action.
INDIGENOUS KNOWLEDGE FOR TREATING SKIN DISEASE OF CHHATTISGARH (INDIA)

Takesh kumar* Ravi thakur, Parmeshwar Sahu, Shekhar verma

Faculty of Pharmaceutical Sciences, SSTC-SSGI, Junwani, Bhilai, Chhattisgarh

The present study mainly focuses on the study of indigenous knowledge for treating skin disease in some selected districts of Chhattisgarh. A total of 34 species belonging to 24 families were recorded. Majority of the plant species described in the present paper was used in the treatment of Abscess, Boils, Burn treatment, Cuts, wounds; Eczema, Itching, Leprosy, Ring worm, Scabies, Skin disease, Chicken-pox and pimples. Most of the herbal remedies were taken externally in the form of paste. All these plants and plant parts need to be evaluated through phyto and pharmacochemical investigations to discover their potentiality as drugs. There is an urgent need to explore and document the ethnomedicinal plants used by the tribal and other communities of Chhattisgarh before such valuable knowledge vanishes.
Leprosy, an infectious disease, caused by bacteria *Mycobacterium leprae* and *Mycobacterium lepromatosis* has been known since biblical times. The disease is associated with damage of the skin, nerve, limbs and eyes. It has a long incubation period and children are more susceptible. Common forms of leprosy are tuberculoid and lepromatous and a few intermediates. It is not very contagious and tentative mode of transmission is respiratory droplets. The disease is widespread throughout the tropical, subtropical and temperate regions of the world but is prevalent among the underprivileged of the third world countries. This review article represents different plants of Chhattisgarh which are used in the treatment of leprosy. Some of these plants are clinically investigated such as *Achyranthes aspera*, *Centella asiatica*, *Hemidesmus indicus*, *Hydnocarpus anthelmintic* and *Smilax ornate*. Apart from these plants, about 50 plants are present in Chhattisgarh which are used as traditional system of medicine to cure leprosy. Extensive literature review reveals that all the plants are found in the different regions of Chhattisgarh. The present review aims to create awareness about these medicinal plants of Chhattisgarh.
IN VITRO ANTIFILARIAL ACTIVITY OF *LANNEA GRANDIS* (DENNST.) ON *BRUGIA MALAYI*

Tekeshwar Kumar, Vishal Jain

University Institute of Pharmacy, Pt. Ravishankar Shukla University Raipur, Chhattisgarh, India, 492 010

WHO recommended the regular use of traditional therapeutics of traditional medicinal plants that is already in pipeline served as a better medicinal activity although some pharmacological properties are to be explored. *Brugia malayi, Brugia timori* Wuchereria brancrofti are the common nematode parasite causes Human lymphatic filariasis. In the present study the ethanolic and aqueous extract of *Lannea grandis* leaves was explored as therapeutic aid as antifilarial agents. Both extract in different concentration ranging from 10-100 ng/ml were tested for their antifilarial activity either unaided or in combination diethyl carbamazine citrate (DEC) (0.3ng/ml) and or H$_2$O$_2$ (0.5mM). Antifilarial activity was assessed by motility inhibition method and MTT reduction assay with concentrations range 10-100 ng/ml for 2 to 36 hrs incubation periods for both extract, by comparing with control. Inhibitory concentration (IC$_{50}$) for the plant extract was found to 42.6ng/mL and 93.5ng/mL for ethanolic and aqueous extract respectively. Complete inhibition of motility was observed in motility assay where as in MTT reduction assay which gave >50% reduction for concentrations 100, 80, 60 and 40ng/ml at 4, 7, 11 and 16 hrs incubation periods respectively in a dose dependent manner (p<0.05) for ethanolic extract only.
HERBAL MEDICINE TREATMENT OF ASTHMA: A REVIEW

Udaychand *, Shiv Shankar Shukla, Ravindra Pandey, Ananta Choudhury

Columbia Institute of Pharmacy, Raipur, C.G, India
udaysahu26@Gmail.Com

In traditional systems of medicine, many plants have been documented to be useful for the treatment of various respiratory disorders including asthma. In the last two decades the use of medicinal plants and natural products has been increased dramatically all over the world. Current synthetic drugs used in pharmacotherapy of asthma are unable to act at all the stages and targets of asthma. However some herbal alternatives employed in asthma are proven to provide symptomatic relief and assist in the inhibition of disease progression also. The herbs have shown interesting results in various target specific biological activities such as bronchodilation, mast cell stabilization, anti-anaphylactic, anti-inflammatory, anti-spasmodic, anti-allergic, immune modulatory and inhibition of mediators such as leukotrienes, lipoxygenase, cyclooxygenase, platelet activating, phosphodiesterase and cytokine, in the treatment of asthma. This paper is an attempt to classify these pharmacological and clinical findings based on their possible mechanism of action reported. It also signifies the need for development of polyherbal formulations containing various herbs acting at particular sites of the pathophysiological cascade of asthma for prophylaxis as well as for the treatment of asthma.
ORALLY DISSOLVING STRIPS: A NEW APPROACH TO ORAL DRUG DELIVERY SYSTEM

Usha Dewangan *, Sandeep Tiwari . Shashikant Chandrakar

Columbia Institute of Pharmacy, Raipur, C.G, India
shubha.1777@rediff.com

Recently, fast dissolving films are gaining interest as an alternative of fast dissolving tablets. The films are designed to dissolve upon contact with a wet surface, such as the tongue, within a few seconds, meaning the consumer can take the product without need for additional liquid. This convenience provides both a marketing advantage and increased patient compliance. As the drug is directly absorbed into systemic circulation, degradation in gastrointestinal tract and first pass effect can be avoided. These points make this formulation most popular and acceptable among pediatric and geriatric patients and US markets. Many companies are utilizing transdermal drug delivery technology to develop thin film formats. In the present review, recent advancements regarding fast dissolving buccal film formulation and their evaluation parameters are compiled.
SPECIAL EMPHASIS ON CHHATTISGARH ‘THA HERBAL STATE’

Uttam sahu*Shekhar Verma

Faculty of Pharmaceutical Sciences, SSTC-SSGI, Junwani, Bhilai, Chhattisgarh

Chhattisgarh, the herbal state, is bestowed with a wealth of medicinal and aromatic plants, most of which have been traditionally used in Ayurveda, Yunani systems of medicines and tribal healers for generations. Chhattisgarh is rich in biodiversity. Many valuable and rare medicinal and aromatic plants have been reported from this state. Bastar, the southern plateau of Chhattisgarh, holds a reputed position in world biodiversity map for its unique biodiversity. The forests of Chhattisgarh are rich in herbs useful in treatment of common ailments to lethal diseases like blood cancer. Bhrmar mar for cancer, Satawar, Safed Moosli, Kali Moosli, Asgandh for promising tonic, Kukronda and Adusa for respiratory trouble, Gudmar and Sadasuhagan for Diabetes, Bramhi and Bach for memory, Kalmegh for chronic fever, Sarpagandha and Arjun for heart troubles are some examples of miracle herbs found in Chhattisgarh. Sanjivni booty, the miracle herb used for the treatment of Lakshman, grows in abundant in this state. Due to different Agro climatic regions, the medicinal flora vary from different regions. For example the flora of Bastar is entirely different from the flora of Sarguja. This uniqueness has made the Chhattisgarh even more rich in terms of natural forest resources.
The concept of standardization is widely accepted to establish standard criteria for consistency and quality control of specific herbal preparations. The Herbal medicinal products should be controlled by quality control systems, including standardization with marker compounds based upon legitimate science to ensure consistent high quality as well as valid efficacy and safety. The purpose of quality control is to ensure that each dosage unit of the drug product delivers the same amount of active ingredients and is, as far as possible, free of impurities. The selection of plant material and standardized manufacturing process the pattern and concentration of constituents of herbal medicinal products should be kept as constant as possible as this is prerequisite for reproducible therapeutic results.
ANTI-ULCER ACTIVITY OF THE METHANOLIC EXTRACT OF TETRASTIGMA THOMSONIANUM ON DIFFERENT EXPERIMENTAL ULCER MODEL IN RATS

Vedprakash Pathak*, Satyendra Uikey, Abhay Gupta, Nitesh Pachauri

SOS in Pharmaceutical Sciences, Jiwaji University, Gwalior, M.P. – 474011 India.

ved.pathak123@gmail.com

Tetrastigma thomsonianum (Vitaceae), popularly known as Nal tenga, Demshri or Nekung, is a herbaceous climber tree that grows abundantly in the islands and on river banks of the Brahmaputra in Assam. The plant is an edible variety and is being consumed by various local people of Assam. The plant is also found in Bihar, Manipur, Meghalaya, North Bengal. The aim of the present work was to evaluate the antiulcerogenic activity of methanolic extracts of leaf of *T. thomsonianum* on wistar albino rats. The antiulcer activity of methanolic extract (250 and 500 mg/kg, p.o.) was investigated on indomethacin and ethanol induced gastric ulcer model. Oral administration of indomethacin produced severe hemorrhagic lesions in glandular mucosa with ulcerative lesion of 12.25 ± 1.25 mm in animals pretreated with methanolic extract of *T. thomsonianum*, a significant inhibition of mucosal injury of 6.38 ± 0.85 mm (48% inhibition) and 4.13 ± 0.69 mm (66% inhibition) was observed with the different dose levels. The *T thomsonianum*, at the same doses, also reduced significant (p< 0.05) the formation of gastric lesions induced by ethanol. The methanolic extract of *T. thomsonianum* was analyzed by spectrometric methods and the main constituent of this extract was 11-ethoxy -3,4,4,11,12b,14,14b-heptanmethy 1-2,3,4,4a,6,8a,9,10,11,12b, 13,14,14a,14b-methanolic extract of *T thomsonianum* has potential antiulcer activity.
PHARMACOGNOSTIC STUDIES OF RHIZOME CURCUMA AMADA (LINN.)

Veena Singh*, S. J. Daharwal and Vijay Kumar Singh

University Institute of Pharmacy, Pt. RS university, Raipur, (C.G.)
Columbia Institute of Pharmacy, Raipur, (C.G)

During ethno medicinal practices, Medicinal plants constitute an effective source of traditional and modern medicines. The traditional healers utilize the variety of Curcuma for the treatment of various ailments. Curcuma amada (linn. ) family Zingiberaceae species are used by local people of chhatisgarh in different areas but is almost indistinguishable drug. The present work challenges to establish the vital pharmacognostic standards for evaluating the plant material of Curcuma amada( linn.)Various parameters, such as morphology, microscopy, physicochemical constants, and phytochemical profiles are documented and Major chemical constituents, extractive values of the entire parts of the plant is study and the significant diagnostic features are recorded.
Evaluation of *Curcuma caesia* Roxb. as Therapeutic Resources for Antioxidant and Cytotoxic Potential on Human Cervical Cancer (Hela) Cells.

Vikash Sharma

Columbia Institute of Pharmacy, Raipur (C.G.)

Cancer is the major leading cause of death throughout the world. Many natural drugs have been investigated and some are drugs are under investigation for their cytotoxic potential. *Curcuma caesia* Roxb. (Black haldi) is the plant of family zingibareceae and native to the north-east and central India. In this study acetone and hydroalcoholic extract of rhizome of *C.caesia* Roxb. Was evaluated Invitro for its cytotoxic and antioxidant potential. Both the extracts show good cytotoxic activity with IC50 value of 54.17 and 62.25 µg/ml respectively for Hydroalcoholic and acetone extract. Similarly it shows moderate antioxidant activity with IC50 value of acetone extract was 743.64 µg/ml, 826.88 µg/ml, 613.33 µg/ml and 75.68 µg/ml and for Hydroalcoholic extract was 533.43 µg/ml, 613.72 µg/ml, 515.30 µg/ml and 72.02 µg/ml Respectively by DPPH free radical scavenging activity, Reducing power assay, Superoxide free radical scavenging activity and Nitric oxide free radical scavenging activity. This activity of *curcuma caesia* Roxb. may be due to different active constituents like flavonoids present in the rhizome. Further study can be do in order to investigate the exact constituents responsible for the activity.
INVESTIGATION OF ETHANOMEDICINAL PLANTS USED BY ETHANOIC GROUP OF CHHATTISGARH

Vishal Thakur *, Uttam Sahu, Chameli Patel, Shekhar Verma, Gunjan Jeswani
Faculty of Pharmaceuticals science, SSTC-SSGI, Junwani Bilai, Chhattisgarh

An ethnobotanical survey was undertaken to record information on medicinal plants from traditional healers in Jashpur district and to identify the medicinal plants used for treating diseases. The plant specimens were identified according to different references concerning the medicinal plants of Chhattisgarh and adjoining areas and further confirmation from Chhattisgarh State medicinal plant board, Raipur (C.G.). The investigation revealed that, the traditional healers used 55 species of plants distributed in 51 genera belonging to 33 families to treat various diseases. The documented medicinal plants were mostly used to cure skin diseases, diabetes, weakness, Cough & cold, poison bites, diarrhea, asthma, fever, menstrual disorder, Oral diseases, Fracture, Jaundice and tuberculosis disorders. The most dominant family was Liliaceae and leaves were most frequently used for the treatment of diseases. This study showed that many people in the studied parts of Jashpur district still continue to depend on medicinal plants at least for the treatment of primary healthcare.
Phytochemical Screening and development of Herbal Shampoo From *Sapindus mukorossi* fruit.

Vivek Tiwari, Raj kumar tiwari, Prabhat Upadayay, Harish Shah.

Deptt. of Pharmacy, IIMT college of medical science, Ganga Nagar Meerut (U.P.)

*Sapindus mukorossi* is an important indigenous plant with lots of traditional value belonging to family *Sapindaceae*. It is commonly known as *Soap Nut* or *Reetha Tree* which is found in most of the hilly regions of India. Various Research Works were done the plant and reports. The presence of different bioactive compounds like aponin, Flavanoids, Triterpenoids, Phenolic extracts etc. In the present study the plant was evaluated for its Phytochemical screening like Ash Value, Acid Insoluble ash value, Water soluble ash and TLC profile of Saponin. Further the Herbal Shampoo was formulated with Fenugreek, Amla, Aloe vera and Natural preservatives and evaluated for Physical Appearance, Visual Inspection, pH, Percent of solid content, Dirt Dispersion, Cleaning agent, Detergency ability, Foaming ability, Foam stability, Skin sensitization test and Eye Irritation Test. It has been observed that Synthetic Preservative have sometimes the cause of adverse Effect compare to Herbal Preservatives. So it indicate the Herbal Shampoo better in Performance and Safer than the Synthetic.