National Conference on
"Recent Advances in Herbal Drug Technology"

26 & 27 March 2010

Organized By:

Lakshmi Narain College of Pharmacy,
Bhopal

Plenary Lectures

Plenary Lecture	**Topic**
Plenary Lecture –I Speaker- Prof .M. D. Kharya Head, Department of Pharmaceutical Sciences, Dr. H. S. Gour Central University, Sagar	**“Frontiers Of Biotechnology”**
Plenary Lecture –II Speaker- Prof .A.K. Pathak Head, Department of Pharmacy, B.U. , Bhopal	**“Recent Advances in Herbal Drug Technology”**
Plenary Lecture –III Speaker- Dr. Karunakar Shukla Associate Professor, Mahakal Institute of Pharmaceutical Studies Ujjain	**"WHO Guidelines for Standardization of Herbal Drugs"**
Plenary Lecture –IV Speaker- Dr. S. S. Deshpande Prof. in Pharmacology, KBIPER, Gandhinagar (Guj.)	**Phytopharmacological Screening of Anti ulcer Drugs**

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O-1

EFFECT OF VARIOUS EXTRACTS OF *TECTONA GRANDIS* LINN. BARK ON MAST CELL DEGRANULATION

D.V. Goswami[1], M.J. Patil[2], S. A. Nirmal[3], Anuj Modi[4] and Mansingh Vishvakarma[1]

[1]Department of Pharmacognosy, Smt. Vidyawati College of Pharmacy, Jhansi (U.P.)

[2] Department of Pharmacognosy, M.M. College of Pharmacy, Pune (M.S.)

[3]Department of Pharmacognosy, Pravara Rural College of Pharmacy,Pravaranagar (M.S.)

[4] Department of Pharmacognosy, Adina College of Pharmacy, Sagar (M.P.)

Abstract: *Tectona grandis* Linn. (Verbenaceae) is an important medicinal plant commonly known as sagwan. The bark of this plant is acrid and useful in the treatment of bronchitis. Aim of the present study is to validate traditional asthmatic action of the bark. Dried powdered bark was extracted using petroleum ether, ethyl acetate, ethanol and mark left was reflected with water to produce petroleum ether, ethyl acetate, ethanol and aqueous extracts. Swiss albino mice were divided into 6 groups, used for the study. Result showed that ethyl acetate extract produce significant ($p<0.001$) reduction in degranulation of mast cell and offered significant protection as compared to standard drug disodium chromoglycate when challenged with clonidine indicating mast cell stabilizing activity.

dgoswamipharma@gmail.com

O-2

Toward the Synthesis and Biological Screening of Natural Peptide - Dianthin D

R. Dahiya*, A.K.Yadav, M. Sharma

Department of Pharmaceutical Chemistry, NRI Institute of Pharmacy, Bhopal – 462 022, Madhya Pradesh, India.

Abstract: Dianthin D is a natural cyclic heptapeptide, isolated from chinese medicinal plant *Dianthus superbus*. Prompted by the medicinal properties of plant-derived cyclic polypeptides as well as to obtain a natural peptide in good yield, the present study was directed toward the synthesis of dianthin D employing solution-phase technique.

The cycloheptapeptide molecule was synthesized by cyclization of linear heptapeptide unit Boc-L-ser-L-leu-L-pro-L-pro-L-ile-L-phe-gly-OMe which was in turn, prepared via carbodiimide coupling of tripeptide unit Boc-L-ser-L-leu-L-pro-OMe and tetrapeptide unit Boc-L-pro-L-ile-L-phe-gly-OMe after suitable deprotection at carboxyl and amino terminals using LiOH and TFA respectively. During peptide synthesis, three different carbodiimides, DCC and EDC.HCl were utilized as coupling agents and TEA, NMM and pyridine were used as bases.

Structure of dianthin D was confirmed by spectral as well as elemental analysis. Pentafluorophenyl ester was proved to be better for the activation of acid functionality of linear heptapeptide unit. Pyridine was found to be a good base for intramolecular cyclization of linear peptide fragment in comparison to TEA or NMM. On pharmacological screening, it was observed that synthesized cyclopeptide exhibited potent bioactivity against dermatophytes *M. audouinii* and *T. mentagrophytes* with MIC of 6 μg/mL. Good activity against Gram-negative bacteria and moderate antihelmintic activity against earthworms were also observed for synthesized cyclopolypeptide.

rajivdahiya77@rediffmail.com

O-3

Design Of Aloe vera Cosmetic Herbal Hydrogel

Gupta Udit[1], Omray L.K.[2*], Yadav Reetesh[3], Soni V. K.[3], Patil Shailendra[4], Gajbhiye Asmita[4], Agrawal G. P.[4]

[1]Poona College of Pharmacy, Bharati Vidyapeeth Deemed University, Erandwane, Pune-411038,
Maharashtra State, India; [2]Sagar Institute of Pharmaceutical Sciences, Sironja, Sagar (M.P.) - 470228, India;
[3]Shri Ram Institute of Technology (Pharmacy), Jabalpur, 482003, (M.P.), India
[4]Department of Pharmaceutical Sciences, Dr. Hari Singh Gour Universtiy, Sagar (M. P.) 470003, India.

Abstract: Aloe vera has gained attention over the last several decades due to its medicinal properties. Aloe vera is also termed as nature's gift due to its appreciable contributions. Aloe vera contains carbohydrate polymers, notably glucomannas, alongwith a range of organic and inorganic components such as vitamins and minerals. Numbers of herbal formulations of aloe vera are available in market. However, these formulations contain very less quantity of aloe vera and herbal component and claiming a wonderful herbal formulation. Present study deals with the development and characterization of aloe vera cosmetic herbal hydrogel formulations using aloe vera leaf and other natural component. Present investigation deals with the development of aloe vera cosmetic herbal hydrogel formulations using aloe vera leaf, acacia, hydroxy propyl methyl cellulose (HPMC), gelatin, glycerine, tartaric acid, potassium sorbate and sodium benzoate. Aloe vera liquid was prepared by heating at low temperature and the hydrogel was prepared by simple dissolving method of other ingredients in a specific manner. Four formulations were developed which differ in the ratio of hydrogel forming polymers. Formulation AV1, AV2, AV3 and AV4 were composed of acacia, HPMC, gelatin in the ratio of 1:1:1, 1:2:1, 2:1:1 and 1:1:2 respectively. All the formulations were evaluated for rheology, viscosity, transparency, smoothness, density, pH and microbial growth. On the basis of evaluation parameter formulation AV4 was selected as developed formulation. It is also concluded that aloe vera cosmetic herbal hydrogel may be used for cosmetic purpose.

Email:lkomray@rediffmail.com

O-4

Antimicrobial Activity Of Hydro- Alcoholic Extract OF *Lens cullinaris* SEEDS.

Sachan Amitkumar, Bhatt Deepika, Jain Sanjay, Sachan Sumit

Smriti College of Pharmaceutical Education, Indore (MP)- 452010.

Abstract:

Traditionally medicinal plants have been used for many years as topical and internal preparation in the treatment of fungal and bacterial diseases. There are various topical and systematic synthetic drugs available in the market but they possess various adverse effects like itching, redness, skin peeling, photosensitivity, diarrhoea, dyspepsia etc. Infact majority of them are contradicted when taken systemically in some conditions like pregnancy. Thus, researchers relentlessly pursue their quest to identify new plants with antimicrobial properties. In this continuation, the *Lens cullinaris* seeds were evaluated for the antimicrobial activity using a hydro-alcoholic extract on various strains like *Escherichia coli*, *Pseudomonas aeruginosa*, *Serratia marcescens*, *Staphylococcus aureus*, *C. albicans (3471 & 3557)*, *C. tropicalis* and found to be effective over a wide range of concentration as 0.5, 1, 2.5, 5, 10, 20, 40, 60, 80 mg/ ml. The results were recorded as zone of inhibition (in mm). The results showed the proportional increases in MIC v/s concentration of drug. On the above basis, it can be concluded that *Lens cullinaris* possesses good antimicrobial potential over a wide range of organisms and thus, proves its traditional claims.

deepikabhatt@gmail.com

O-5

Anti-hyperglycaemic activity of ethanolic extract of *Swertia chirayata* and *Trigonella Foenum graecum*

Tomar V[1]., Kannojia P., Garud N., Garud A., Jain N

[1]Institute of Professional Studies, College of Pharmacy, Gwalior (M.P)

Abstract:

The main aim of the work was to focus the anti-hyperglycaemic activity of *Swertia chirayata* leaves and *Trigonella Foenum graecum* seeds. These two plants are widely used for the cure of diabetes from the time immemorial. The present study was to evaluate the ethanolic extract of *Trigonella Foenum graecum* seeds and whole plant of *Swertia chirayata* for its antihyperglycaemic activity in normal and alloxan induced diabetic rats at the dose level of 250mg/kg. The animals were safe upto 2000mg/kg confirmed by the acute and oral toxicity studies. Both the extracts showed a significant reduction in blood glucose concentration. On the other hand, combined suspension of extract of *Swertia chirayata* and *Trigonella Foenum graecum* showed minimum blood glucose level on 7th day.

Keywords: Trigonella Foenum graecum , Swertia chirayata, Anti-hyperglycaemic activity, alloxan diabetic rats.

vivek.tmr81@gmail.com

O-6

Free Radical Scavenging Activity Of *Scindapsus Officinalis* Fruits

Ankita Tiwari[1], Umesh Telrandhe[1], Avinash Gahane[1], Vaibhav Uplanchiwar[1], Mahendra Singh[2],

[1]Adina Institute of Pharmaceutical Sciences, Sagar, 470002, M.P. (India)
[2] Pharmacognosy Department, Vels College of Pharmacy, Pallavaram, Chennai,

ABSTRACT

In the present study, coarse powder of *Scindapsus officinalis* (Roxb.) Schott. fruit was extracted successively using hexane, chloroform, ethyl acetate and 50% ethanol. The ethyl acetate and 50% ethanolic extracts were investigated for its antioxidant activity by using nitric oxide and DPPH radical scavenging methods. The IC_{50} value was also calculated. Ascorbic acid was used as a standard. Both 50% ethanolic and ethyl acetate extract were found to exert concentration dependent free radical scavenging activity but former extract was more effective than the later on. The highest free radical scavenging activity by *Scindapsus officinalis* fruit extracts was observed at concentration of 1000 µg/ml.

KEY WORDS: *Scindapsus officinalis* (Roxb.) Schott. Antioxidant, Free radicals, IC_{50} Value.

avinashgahane@gmail.com

O-7

DART-MS ANALYSIS OF CHEMICAL CONSTITUENTS OF CLOVE BUDS

Shivi Krishna, Kushagra Nagori, Brijesh Kumar, Y.Kumar

I.T.S. Paramedical Pharmacy College, Ghaziabad, U.P.
Sophisticated Analytical Instrumentation Facility, CDRI, Lucknow, U.P.

Abstract: The applicability of new mass spectrometric technique DART-MS (Direct Analysis in Real Time Mass Spectrometry) has been studied in the analysis of buds of Clove (Syzygium aromaticum). The ethanolic extract of the Clove buds was fractionated by using different solvents. The fractions were subjected to the analysis using DART-MS. Two chemical constituents were identified on the basis of their $[M+H]^+$ peaks at 439.368 [EUGENIN] and 165.084 [EUGENOL] and the exact mass calculations were also made. Thus, DART-MS provides a means of very rapid analysis of the chemical constituents of Clove.

Key words: DART-MS, clove, fractionated, eugenol, eugenin.

kushagranagori13@yahoo.co.in

O-8

Chromosomal aberration and tissue protection of C*lerodendron- inerme* (l.) gaertn leaves

Ravindra Kumar Chourasiya*[1], Prateek Kumar Jain[3], Naraynan Ganesh[2], Siva Sunder Nayak[1] and Ram Kishore Agrawal[3]

[1]College of Pharmaceutical Sciences, Mohuda, Berhampur, Orissa, India.

[2]Jawahar Lal Nehru Cancer Hospital and Research Centre, Bhopal, (M.P.), India.

[3]Department of Pharmaceutical Sciences, Dr. Hari Singh Gour University, Sagar (M.P.), India.

Abstract

The present study was carried out to elucidate the potential of petroleum ether and methanolic extract of *Clerodendron inerme* (L.) Gaertn leaves on genomic stability and tissue protection using F1 hybrid mice (C57BL male and Swiss albino female). The dried powdered leaves of *Clerodendron inerme* were extracted successively with petroleum ether and methanol in soxhlet apparatus. The methanol extract yield 15.7% w/w and petroleum ether extract yield 3.0% w/w respectively. Results revealed that when the *Clerodendron inerme* methanolic extract (CIME) was given alone and with radiation therapy (4 Gy), it was noticed that the intestinal tissues were protected better by methanolic extract 500mg/kg BW orally in mice as compared to test groups and radiation control group. Methanolic extract showed good results in intestinal tissue protection but the percentage chromosomal aberration was not well appreciated in comparison to petroleum ether extract which showed good activity in percentage chromosomal aberration and the total removal of aberrated chromosome.

Key words *Clerodendron inerme* (L.) Gaertn.; Radiation protection; Chromosomal aberration; Tissue protection; F1 hybrid mice.

meet_chourasiya@yahoo.com

O-9

Antiparasitic activity of *Cocculus hirsutus* L growing around Bundelkhand region in India

Sandeep Mehra, Jaishree Dubey and Dola Bhowmik

Department of Botany, Lab of Phycology
Dr. H. S. Gour University Sagar, M.P.

ABSTRACT

The antiparasitic activity of the drupe extracts of *Cocculus hirsutus* L. (Menispermaceae) growing in Argentina was tested against a tapeworm and an earthworm, showing to be better against tapeworms than the standard piperazine phosphate, which is used in the treatment of Cestoda infections.

Keywords: *Cocculus hirsutus* L.; Antiparasitic; Tapeworm; Earthworm

Email Id: - **sandeep.micro2001@gmail.com**

O-10

Formulation and Evaluation of Polyherbal Ointment

RohitRaj Kashyap*, K. Shukla and S. C. Mahajan

Herbal drug technology laboratory, Mahakal Institute of Pharmaceutical Studies, Ujjain (M.P.) India 456664

ABSTRACT

Allopathic medicines are very costly. In contrast, herbal medicines are very cheap. This cost effectiveness makes them all the more alluring. Herbal medicines can be brought without prescription and they are available in all most all health stores. Some herbs can even be grown at home. For certain ailments, herbal medicines are considered to be more effective than allopathic medicines and do not have any side effects, as they are free from chemicals. They are also milder than allopathic medicines**.**

Ointments are semisolid preparation for application to the skin and usually contain a medicament. The aim of present study was to formulate and evaluate a polyherbal ointment containing ethanolic extract of *Azadirachta indica, Lawsonia alba, Terminalia bellirica, Catharanthus roseus,* the chemical constituents of herbs contains tannins, terpenoids, triterpenoids and flavonoids are known to promote wound healing process. Simple ointment base USP was used as base in a concentration of 10 % w/w and formulated by fusion method. The extract of all drug are taken in equal ratio of 1:1:1:1 which make equal contribution to total 10 % w/w of simple ointment base USP. The ointment was characterized by colour, odour, pH, consistency and spreadability. The formulated ointment show good result in characterization.

Key words: *Azadirachta indica, Lawsonia alba, Terminalia bellirica, Catharanthus roseus* and ointment, wound healing potential.

E.mail:-karunakarshukla@gmail.com
rohitraj.kashyap@gmail.com

O-11

Formulation & evaluation of herbal hand wash

M. Bhawsar*, K. Shukla and S. C. Mahajan

Herbal drug technology laboratory, Mahakal Institute of Pharmaceutical Studies, Ujjain (M.P.) India 456664

Abstract:-

Skin being the most exposed part of our body requires protection from skin pathogens. Many chemical antiseptic for hand washing purpose are now available in market as alcohol based sanitize, clorhexidrine products etc. they are more effective but having some adverse effects. Their frequent use can lead to skin irritation and also resistance among pathogens. The aim of the study is to formulate and evaluate the herbal hand wash containing *Aloe barbadensis* gel, leaves extract of *Azadirachta indica* and fruits extract of *Lagenaria siceraria*. In the present study an attempt has been made to developed the quality control parameters of crude drug used in formulation as per WHO guidelines and to evaluate the parameter of herbal hand wash.

Key words: *Azadirachta indica* , *Lagenaria siceraria*, *Aloe baradensis, Herbal hand wash*

karunakarshukla@gmail.com

O-12

"PREPARATION AND EVALUATION OF FLOATING DRUG DELIVERY SYSTEM"

*Prashant Khemariya, Mohit Bhargava, Sanjay K. Singhai

Lakshmi Narain College of Pharmacy, Bhopal M.P.

ABSTRACT

The objective of this research work was to formulate and evaluate the floating drug delivery system containing Ofloxacin as a model and to optimize the drug release profile. Ofloxacin is a freely water-soluble drug and is having absorption only in upper part of GI tract (up to jejunum); it is suitable to develop floating drug delivery, sustained release tablet. The developed formulation is equivalent to conventional marketed products in view of its' in vitro release. The release of Ofloxacin based on hydroxy propyl methyl cellulose (HPMC), crosspovidon, sodium bicarbonate and carbopol. The tablets were prepared by Dry granulation method. The compressed tablets were evaluated for various parameters like hardness, friability, weight variation, drug content uniformity. Invitro release evaluated by using USP-I (Basket) apparatus containing 0.1 N HCl. The optimized formulation containing Ofloxacin 800 mg, HPMC (K-15-M) 5 mg, xanthan gum (12.5-24 mg), and aerosol (1 mg) Mg Stearate (9+4 mg) and sodium bicarbonate 80 mg has displayed almost zero order release kinetics with a floating lag time of between 10 sec. to 56 sec. Finally, one optimized formula for each, batches were selected and studied in detail such as effect of formulation variables namely, different excipients, different polymers, and concentration of polymer etc.

Keywords: Sustained release; gastro retentive- floating tablet; Ofloxacin; formulation; evaluation; physical parameters; in vitro release; stability

tinku_pharma@yahoo.co.in

O-13

Anti-ulcer activity of *Desmodium triflorum* leaves extract

Singh N.,[1] Jain N[1]., Gupta P[2]., Mehta SC[3]., Gaur R[1]., Dakhre A[4]., Singh AP[4].

[1]Pranav Institute of Pharmaceutical Science &Research, Gwalior (M.P.)-India

[2] Ravishankar college of pharmacy, Bhopal (MP)

[3]Department of Pharmacology, G.R.Medical College, Gwalior (M.P.)

[4]IPS-College of Pharmacy, Gwalior (M.P.)

Abstract: The anti-ulcer activity of methanolic extract of *Desmodium triflorum* (MEDT) leaves was investigated in pylorus ligation and ethanol induced ulcer models in albino rats. In both models the common parameter determined was ulcer index. MEVG at doses of 250 mg/kg p.o produced significant inhibition of the gastric lesions induced by Pylorus ligation induced ulcer & Ethanol induced gastric ulcer .The extract (250 mg/kg) showed significant ($P<0.01$) reduction in free acidity and ulcer index as compared to control. This present study indicates that MEDT have potential anti ulcer activity in the both models. These results may further suggest that hydro-alcoholic extract was found to possess antiulcerogenic as well as ulcer healing properties, which might be due to its antisecretory activity.

Keywords: *Desmodium triflorum,* Pylorus ligation, Ulcer index, Omeprazole.

namrata.singhms@gmail.com
kanaujia.pushpendra@gmail.com

O-14

FORMULATION DEVELOPMENT OF RIFAMPICIN CR MATRIX TABLET WITH DIFERENT VISCOSITY GRADES OF HPMC

Rahul Pokharna

Lakshmi Narain College of Pharmacy, Bhopal (M.P.)

Abstract

Tuberculosis (TB), widely occurring, is still one of the most deadly infectious diseases worldwide. Rifampicin is a well-known candidate for its excellent antitubercular activity. But it suffers from such many drawbacks as a poorly soluble drug, short half-life, severe adverse effects of the drugs during long-term therapy, pH-dependent degradation, potential bioavailability problems associated with drugs, and poor patient compliance.

Design and development of controlled release (CR) formulations has been and continues to be of greater interest to formulation scientists and pharmaceutical industry. They offers many advantages, such as improved patient compliance, less dose, minimized side effects, reduced or no fluctuation of drug in the blood, and cost effectiveness.

Therefore in this present research work, an attempt was made to formulate and characterize hydrophilic controlled release matrix tablets of rifampicin have been formulated using Hydroxypropyl methylcellulose (HPMC) polymer (medium and high viscosity) by direct compression method. Influence of formulation variables such as drug: HPMC ratio, viscosity grade of HPMC on the formulation characters and drug release has been studied. Our results indicated that the release rate of the drug and the mechanism of release from the HPMC matrices are mainly controlled by the drug:HPMC ratio and viscosity grade of the HPMC. The formulations were found to be stable and reproducible.

rahulpokharna222@yahoo.co.in

O-15

Development of quality control parameters for Marketed Ayurvedic formulation "Kankadi Taila"-A traditional cosmetic formulation

Mughisa Nagori*, Ritu Priya Mahajan, D.K. Mishra, K. Shukla and S.C. Mahajan

Herbal drug technology laboratory, Mahakal Institute of Pharmaceutical Studies, Ujjain (M.P.)

Abstract:

Kankadi Taila is the Ayurvedic preparations, official in Ayurvedic formulary of India and used from long time in cases *Vyangu* (dark shade on the face due to stress or excessive exercise, hyper pigmentation of the skin), *Nilica* (mole), and *Mukhroga* (Disease of mouth).The aim of this study is to improve the acceptability of Kankadi Taila, an Ayurvedic formulation across the world by developing certain quality control parameters and fingerprinting by following the WHO guidelines for traditional formulations. Three Marketed formulation of Kankadi Taila were investigated to develop its quality control parameters. All formulation were physiochemically evaluated for phyto-constituents, fat content, appearance, pH, viscosity, refractive index, saponification value, acid value and spreadability. To ensure the safety of the formulation, microbial contamination by bioburden level and limits of heavy metals like arsenic, cadmium and lead were determined. The results of all formulation were found in close proximity with each other. The methods used for determination of quality control of Kankadi Taila found to be precise, reproducible and can be considered for routine quality control of the formulation.

Keywords: Kankadi Taila, quality control parameters and fingerprints.

karunakarshukla@gmail.com

O-16

MICROENCAPSULATION OF HERBAL EXTRACT FOR MICROBIAL RESISTANCE IN HEALTHCARE TEXTILES

***Khan Amreen, Soni Amit, Giri Akhand Rachana, Pathak A.K.**
Department of Pharmacy, B.U., Bhopal

ABTRACT

Microencapsulation a manufacturing in which active agent is contained in microcapsules suspended in a liquid.To protect the mankind from pathogens and to avoid cross infection , a special finish like antimicrobial finish has become necessary. Antimicrobial finish has been imparted to the cotton fabrics using extract of neem and Mexican daisy by direct application and by microencapsulation using pad-dry-cure method. To enhance the durability of antimicrobial finish to number of washes , the microencapsulation of herbal extracts has been done using phase separation/coacervation. Microencapsules are produced using herbal extracts as core and acacia as wall material. It is observed that the microencapsulated herbal extracts possess a very good resistance for microbes even after 15 washes.

sonam.enterprises@gmail.com

O-17

Pharmacovigilance of Herbal Medicines: Current Status and Future Strategies

Deepak* Namdev , Manish Nikhra , Sarika Shrivastava

Lakshmi Narain College of Pharmacy, Bhopal.

Abstract:

Pharmacovigilance means the science and activities relating to the detection, assessment and understanding and prevention the adverse effects or any other possible drug-related problems, related to herbal, traditional and complementary medicines. Herbal formulations have reached widespread acceptability as therapeutic agents for diabetics, arthritics, liver diseases, cough and cold, memory enhancement throughout the world. Herbals are traditionally considered harmless and increasingly being consumed by people without prescription. Systematic data on the incidence of traditional medicine-associated adverse effects are not available due to many complex issues including; products with multiple ingredients, poor standardization, lack of clinical trials, variation in manufacturing processes, contamination, adulteration and misidentification of herbs etc. Pharmacovigilance for herbal medicines is in its infancy and monitoring the safety of herbal medicines presents unique challenges as such preparations are available from a wide range of outlets where no healthcare professionals are available. The legal status and approval mechanism of herbal medicine also vary from country to country. World Health Organization has set specific guidelines for the assessment of the safety, efficacy and quality of herbal medicines as a prerequisite for global harmonization. The Medicines and Healthcare Products Regulatory Agency's, UK has launched 'yellow card' scheme for ADR reporting for monitoring the safety of herbal medicines. Indian drug regulation has not yet fully integrated traditional herbal medicine into all aspects of health care system. Herbal pharmacovigilance should be implemented in Indian herbal regulatory system to access various aspects of ADR, delayed or acute toxicities, allergies etc associated with single herb and/or polyherbal formulation. Modified spontaneous reporting forms are to be designed following WHO template to collect information on suspected ADRs of herbal medicines aiming to achieve the ultimate goal of safer and more effective treatment available to patients. This review aims to provide a comprehensive and critical overview of the current state of pharmacovigilance for herbal medicines at national and global levels. This article explores the in depth challenges associated with herbal pharmacovigilance considering emerging issues and recommendations to improve safety monitoring for herbal medicines in the future.

"""""""""""""""""""""""""""""""SAFE MEDICINE-SAFE LIFE"""""""""""""""""""""""""""""""

deepak.namdev89@gmail.com

O-18

Antioxidant Studies of Different Plant Parts of *Mimosa rubicaulis*

Sameer Bhatt*, Mohd.Aijazurrahman ansari, Shubha Vaidya, A.K.Jain

Sagar Institute of Pharmaceutical Sciences, Sagar

Abstract: The petroleum ether, chloroform and methanol crude extracts of the two different plant parts (aerial part and root) of Mimosa rubicaulis (Mimosaceae) were screened for antioxicant activity. The methanol crude extract of the aerial part was screened in vitro for antioxidant activity using the 1, 1-diphenyl-2-picrylhydrazyl-hydrate (DPPH) free radical scavenging assay, the methanol crude extract of the aerial part showed moderate antioxidant activity (IC50 296.92µg/ml) compared to ascorbic acid(IC50 131.29 µg/ml). The overall experimental results suggest the biologically active constituents present in the methanolic extract of Mimosa rubicaulis and justify its use in folkloric remedies.

Key Words: Mimosa rubicaulis, Mimosaceae,, DPPH, Antioxidant.

sameer.pharma2009@gmail.com

O-19

Formulation and Evaluation of Natural Hair Dye

Vinit Shivane, K. Shukla and S. C. Mahajan

Herbal drug technology laboratory, Mahakal Institute of Pharmaceutical Studies, Ujjain (M.P.) India 456664

Abstract

There are various reasons which are responsible for colour change of hair like genetic influence, effect of environmental factors etc. Though permanent, semi permanen, temporary and synthetic dyes are available in different colour ranges, but they have some disadvantages as they produce hypersensitivity reactions in some individuals. In the present investigation various types of powder and extract of *Lawsonia inermis* (Henna), *Embilica officinalis* (Amla), *Cinnamomum zeylanicun* (Cinnamon) and *Coffea arabica* (Coffee) were evaluate for their colouring effect. Henna, Amla, Cinnamon, and Coffee was found to be produces reddish brown color. Various powder of crude drug and their extract have been evaluated for their colouring effect.

Keyword: - Natural hair dye, Henna, Amla, Coffee, Cinnamon.

E.mail:-karunakarshukla@gmail.com, rohitraj.kashyap@gmail.com

O-20

Evaluation of Antidiarrhoeal Activity of Hydroalcoholic Extract of *Ageratum conyzoides* Linn.

Jain Ashutosh Pal*, Jain Priyanka, Jain Sonali, Jain Preeti, Jain Nitin Kumar

Bhagyoday Tirth Pharmacy College, Sagar

Abstract

The leaves of *Ageratum conyzoides* has been used in traditional medicine for the treatment of diarrhoea. Thus the hydroalcoholic extract of leaves *Ageratum conyzoides* (Asteraceae) was investigated for its antidiarrhoeal property to substantiate folkloric claim. The hydroalcoholic extract of Ageratum conyzoides, at dose (250 & 500 mg/kg) was investigated for antidiarrhoeal activity in castor oil and magnesium sulphate induced diarrhoea. Results were compared to standard drug loperamide (3 mg/kg). To understand the mechanism of its antidiarrhoeal activity, its effect was further evaluated on intestinal transit and castor oil induced intestinal fluid accumulation (enteropooling) with using standared drug atropine sulphate. The reduction in total number of diarrhoeal faeces and total weight of faeces was found to be 54.98% and 70.11% respectively. Extract produced profound decrease in intestinal transit (39.66%) and significantly inhibited castor oil induced enter pooling comparable to that of intraperitonial injection of standard drug atropine sulphate. The results showed that the hydroalcoholic extract of Ageratum conyzoides have a significant antidiarrhoeal activity and supports its traditional uses in herbal medicine.

Key words: *Ageratum conyzoides*, antidiarrhoeal activity, castor oil, atropine sulphate.

jain.palashutosh@gmail.com

O-21

Evaluation of anti-inflammatory activity of *Andrographis paniculata* leaves *extract* in Wister rats

Pradeep Keshwani, Hemant Nagar, D.K Jain, H.S. Chandel

Truba Institute of Pharmacy, Bhopal

ABSTRACT:

In spite of tremendous development in the field of synthetic drugs during recent era, it is found that these drugs have some or other side effects, whereas plant still hold their own unique place by having no side effects. Therefore, a systematic approach should be made to find out the efficacy of plat against inflammation so as to exploit them as herbal anti-inflammatory agents. Androgrphis paniculata belonging to family accanthaceae has a great reputation on the tribal folklore, as alone of the best remedy for malaria. In present study an attempt has been made to study the anti-inflammatory activity of ethanolic extract of *Andrographis paniculata* using carageenin induced paw edema method in rats. The present study establishes strong anti-inflammatory activity in andrographis paniculata.

hemant_nagar81@yahoo.co.in

O-22

EFFECT OF VARIOUS EXTRACTS OF *TECTONA GRANDIS* BARK ON DELAYED TYPE OF HYPERSENSITIVITY

Priyanka Jain*[1], Anuj Modi[1], M.H. Shaikh[2], Sanchita Baronia[3], Narendra Yadav[3]

[1]Department of Pharmacognosy, Adina institute of pharmaceutical science, Sagar (M.P)

[2]Department of Pharmacognosy, Pravara Rural College of Pharmacy, Loni. (M.S.)

[3]Department of Pharmacognosy, Smt Vidyawati College of Pharmacy, Jhansi (U.P.)

Abstract*:* Tectona Grandis, Family Verbenaceae is a large scrambling evergreen shrub. Aim of the present study is to evaluate immunomodulatory action of the leaves. Dried powdered leaves was extracted using petroleum ether, chloroform, ethyl acetate, ethanol and mark left was extracted with water. Swiss albino mice divided into various groups were immunized with SRBC (20%, s.c.). Cyclophosphamide (50 mg/kg, p.o.) was administered after primary immunization and after 1 hr of administration of extract. Footpad oedema in mice was used for detection of cellular immune response. On 7th day, the thickness of right hind footpad was measured using digital vernier caliper. Footpad reaction was assessed after 24 hr i.e. on 8th day, in terms of increase in the thickness of footpad due to oedema caused as a result of hypersensitivity reaction. In the Immunosuppressed groups, where the immunity was suppressed by administration of Cyclophosphamide, petroleum extract administration showed marked potentiation of DTH response in terms of significant increase ($p<0.001$) compare to all other extracts. Increase in DTH response to SRBC is indicative of a stimulatory effect of Tectona Grandis extract on the lymphocytes and accessory cell types involved in the expression of this reaction. It can be concluded that the petroleum ether extract may be used as an immuno-adjuvant during the therapy of cytotoxic drugs and to obtain relief in case of general immunodeficiency disorders.

pharmaanuj@gmail.com

Poster Presentation

P-1

Simple Spectrophotometric Analytical Method for Frusemide in Tablets by Application of Mixed-hydrotropy.

Mehrotra A.[a], Maheshwari R.K.[b]

[a]NRI Institute of Pharmaceutical Sciences, 3, Sajjan Singh Nagar, Raisen Road, Bhopal (M.P.) India 462021.

[b]Department of Pharmacy, Shri G. S. Institute of Technology and Science, 23 Park Road, Indore (M.P.) India 452002.

Abstract:

Concentrated aqueous solutions of various hydrotropic agents like sodium salicylate, sodium acetate, sodium citrate, sodium benzoate, urea, nicotinamide have been observed to enhance aqueous solubilities of a large number of poorly water soluble drugs. The present study describes the spectrophotometric analysis of tablets of frusemide by application of mixed hydrotropic solubilization method. Frusemide is a poorly water soluble drug. There was more than 15-fold enhancement in aqueous solubility of frusemide in a solution of blend of 30% urea, 13.6% sodium acetate and 11.8% sodium citrate (as compared to its aqueous solubility). This solvent mixture was employed to solubilize the drug from the fine powder of tablet formulations. The selected λ_{max} for spectrophotometric estimation was 330nm. The hydrotropic agents and additives used in the manufacture of tablets did not interfere in the analysis. Proposed method is new, rapid, simple, accurate and reproducible. Statistical data proved the accuracy, reproducibility and the precision of the proposed method.

archana.mehrotra@rediffmail.com

P-2

Current Trends in Alternative Medicine Use

Nenu Jain

Laxmi Narain College of Pharmacy, Bhopal

Abstract

This paper reviews the anti-diabetic effects of dietary ginger and data of this study suggest that ginger and garlic are insulinotropic rather than hypoglycemic while overall anti-diabetic effects of ginger are better than those of garlic, at least in this experimental condition. Much better anti-diabetic effects of ginger and garlic may be obtainted when feeding is with a normal rather than a HF-containing diet to investigate extract fractions and single constituents of a herbal drug in various bioassays and compare the results obtained with those from the herbal raw drug or extract. Since the pharmacological role of garlic (Allium sativum) in prevention and treatment of cancer and arteriosclerosis has received increasing attention and thorough investigations into the molecular mechanisms of action of garlic compounds are lacking, allicin and ajoene have been investigated in two new in vitro models. The first used an apoptosis inducing model, whereas the second was done with the inducible nitric oxide syntheses (iNOS) from human macrophages.

1- In the first experiment it could be shown that ajoene induces apoptosis in human leucemic cells, but not in peripheral mononuclear blood cells of healthy donors. Ajoene increased the production of intracellular peroxide in dose and time dependent fashion, which could be partially blocked by

Pre incubation of the human leucemic cells with the anti-oxidant N-acetyl-cysteine

This result suggests that ajoene might induce apoptosis via the stimulation of peroxide production and activation of the nuclear factor kB. The underlying molecular mechanisms of its anti-tumor action.

2-In the second experiment in a systematic screening of various constituents of plants with suggested diuretic, spasmolytic and anti hypertensive activity for Ca-channel blocking activity using papillary muscles from the right ventricles of guinea pighearts

In vitro studies suggest that various bioactive constituents of **Allium sativum** (garlic) inhibit platelet function.The extent, however, to which dietary doses of garlic influence platelet function remains unknown. Therefore, we tested the effect of raw garlic on platelet function using point-of-care monitoring devices sensitive for cyclooxygenase I-inhibition and platelet adhesion..

In the present study, commercial preparations containing extracts of turmeric, artichoke, devil's claw and garlic or salmon oil were investigated for protection against degenrative diseases.The antioxidant capacity of the garlic preparation was poor in the Trolox equivalent antioxidant capacity (TEAC)assay..

nenu1989@yahoo.com

P-3

Role of Chemopreventive Agent in Cancer Therapy

Ravi Gupta

Laxmi Narain College of Pharmacy, Bhopal

Abstract

Tumorigenesis or carcinogenesis is a multi-step process that is induced primarily by carcinogens leading to the development of cancer. Extensive research in the last few years has revealed that regular consumption of certain fruits and vegetables can reduce the risk of acquiring specific cancers. Phytochemicals derived from such fruits and vegetables, referred to as chemopreventive agents include genistein, resveratrol, diallyl sulfide, S-allyl cysteine, allicin, lycopene, capsaicin, curcumin, 6-gingerol, ellagic acid, ursolic acid, silymarin, anethol, catechins and eugenol. Because these agents have been shown to suppress cancer cell proliferation, inhibit growth factor signaling pathways, induce apoptosis, inhibit NF-κB, AP-1 and JAK-STAT activation pathways, inhibit angiogenesis, suppress the expression of anti-apoptotic proteins, inhibit cyclooxygenase-2, they may have untapped therapeutic value. These chemopreventive agents also have very recently been found to reverse chemoresistance and radioresistance in patients undergoing cancer treatment. Thus, these chemopreventive agents have potential to be used as adjuncts to current cancer therapies.

ravi.is.gupta1@gmail.com

P-4

Production and Engineering of Terpenoids in Plant Cell Culture

Poonam kashyap* Hemlata Sharma

Shri Rawatpura Inst. of Pharmacy, Datia(MP)

Abstract

Terpenoids are a diverse class of natural products that have many functions in the plant kingdom and in human health and nutrition. Their chemical diversity has led to the discovery of over 40,000 different structures, with several classes serving as important pharmaceutical agents, including the anticancer agents paclitaxel (Taxol) and terpenoid-derived indole alkaloids. Many terpenoid compounds are found in low yield from natural sources, so plant cell cultures have been investigated as an alternate production strategy. Metabolic engineering of whole plants and plant cell cultures is an effective tool to both increase terpenoid yield and alter terpenoid distribution for desired properties such as enhanced flavor, fragrance or color. Recent advances in defining terpenoid metabolic pathways, particularly in secondary metabolism, enhanced knowledge concerning regulation of terpenoid accumulation, and application of emerging plant systems biology approaches, have enabled metabolic engineering of terpenoid production.

This poster reviews the current state of knowledge of terpenoid metabolism, with a special focus on production of important pharmaceutically active secondary metabolic terpenoids in plant cell cultures. Strategies for defining pathways and uncovering rate-influencing steps in global metabolism, and applying this information for successful terpenoid metabolic engineering, are emphasized.

Keywords:- Terpenoids, metabolic engineering, etc.

poonam.py08@gmail.com

P-5

"AYURVEDA IN DIABETES THERAPY"

RAGHUWANSHI, VIRENDRA S. & ALI MOH. , SHUKLA SHIVAKANT,

Laxmi Narain College of Pharmacy, Bhopal

ABSTRACT

Diabetes mellitus describes a group of complex metabolic disorders with a partial or absolute insufficiency of insulin secretion and with various degrees of insulin resistance. These disorders are generally characterized by chronic hyperglycemia and glucose intolerance. There are two major type of diabetes: type 1– the insulin dependent diabetes mellitus (IDDM) and type 2- the non-insulin dependent diabetes mellitus. According to ayurveda, diabetes is a metabolic kapha type of disorder in which diminished functioning of agni leads to a tendency toward high blood sugar. (Ayurveda recognizes 24 forms of the disease commonly classified under Prameha - 4 are due to Vata dosha, 6 are due to Pitta dosha, and 10 are caused by Kapha dosha. The main causes of these diseases are fat, urine, and Kapha buildups due to foods, liquids and lifestyle.

Ayurvedic practitioners attack diabetes using a multiprong approach. First, they address diet modification, eliminating sugar and simple carbohydrates, and emphasizing complex carbohydrates. Protein is limited, since excessive intake can damage the kidneys. Fat is also limited because there is often a deficiency of pancreatic enzymes, making fat digestion difficult. Since many diabetics have autoantibodies, a cleansing program is instituted. Panchakarma is typically used for this purpose. This begins with herbal massages and an herbal steam sauna, followed by fasting to cleanse the body. This is followed by an herbal purge for the liver, pancreas, and spleen. Colon therapy is next, first to cleanse the digestive tract and then to reconstitute the system.

Ayurvedic practitioners also use several herbal preparations for diabetics. Exercise is another cornerstone of ayurvedic treatment of diabetes. Yoga and breathing exercises are traditionally used.

cool.virendra100@gmail.com

P-6

Prepration of Jelly from Dietary Fibre Isolated from *Cassia fistula and Tamarindus indica Seeds*

SHARMA TANU * , GARG SHIVANGI , S. JHA & SHARMA ABHISHEK

LAXMI NARAIN COLLEGE OF PHARMACY BHOPAL

ABSTRACT

The increase in diabetic, obesity and gastro intestinal disorder has increased the demand of dietery fibre products . Five jelly formulations were prepared using Pectin , *Tamarindis indica* soluble fibre (TSF) and *Cassia fistula* soluble fibre (CSF) either combination or alone and stored at 4 degree celcius and 43 degree celcius from first to sixty days for evaluation of shelf life . Jelly samples were evaluated for physical and sensory properties . Pectin and the combination of dietry fibres had reduced syneresis as compared to the TSF Jelly . The combination of TSF with CSF resulted in to an appreciably higher moisture content and lower total soluble content in comparison of Pectin combinations . The overall acceptability , odour , taste, texture , spredability and sensory attributes for TSF and CSF combination averaged 4.5-.75 in a 5- point hedonic scale consumer acceptance study. There are medical studies about the benefits of DF consumption such as falling serum collestrol concentration , lowering the risk of coronary heart disease , reducing blood pressure , aiding weight control , improving glycemic control , reducing the risk of certain types of cancer and improving gastro intestinal functions as a result fibres from different sources and compositions are been obtained and DF fortification of foods is increasing . The use of a DF , which combines the physiological properties of the fibre with other properties such as high water holding capacity
(WHC) , provides an intresting area of application .

vaibhavhclinfo@yahoo.com

P-7

Evaluation of Anti-inflammatory Activity of Methanolic Extract of *Mitragyna parvifolia* (Roxb) Korth Leaves

Jain Ashutosh Pal, JainVishal , Jain Anshul Rasiya Saloni, Jain Kumar Nitin

Bhagyoday Tirth Pharmacy College, Sagar

ABSTRACT

Inflammation is fundamentally a protective response, the ultimate goal of which is to get rid of organism of the initial cause of cell injury. Without inflammatory checked, wounds never heal, and injured organ might remain permanent festering sores. Herbal approach usually have been pursued because of these therapies are generally and produce fewer side effects than synthetic pharmaceuticals. So the aim of present work is to evaluate the anti-inflammatory activity of methanolic extract of *Mitragyna parvifolia* (Roxb.) korth. The oral administration of MEMP up to 5000 mg/kg did not produce any toxic effect and no mortality was observed in mice. The preliminary phytochemical test showed the presence of alkaloid, steroids and saponin in the methanolic leaves extract of the plant. The MEMP at dose of 125, 250 and 500 mg/kg were evaluated for anti-inflammatory activity by using carrageenin induced hind paw oedema in rats, xylene induced ear odema in mice and cotton pellet induced granuloma in rats.

It was be concluded from the result obtained in the present investigation *Mitragyana parvifolia* (Roxb) korth possess significant dose-depended anti-inflammatory activity. ($p<0.01$)

ajain0525@yahoo.in

P-8

Antimicrobial Activity of Hydro alcoholic Extract of *Syzygium Cumini*

Abhishek Sharma, Itushree Dewnath* Arushi Shrivastava*, Dheeraj Pathak, Rahul Goriya.

Lakshmi Narain College of Pharmacy, Bhopal.

ABSTRACT

The antimicrobial activity of *Euphorbia hirta, Eugenia jambolana. Punica granatum, Prunus amygdalus Jasminum pubescens,* leaves extract was investigated. The hydro alcoholic extract obtained by soxhlet apparatus were found to be active against Candida krusie and some multi-resistant strains of *E.coli, B.subtiluis, Streptococcus aurecus, S.crocus*. Its hydro alcoholic extract were found to be active against candida krusie and its inhibition zone appears with 14.7 -+0.3mm and its minimum inhibitory concentration appears at 70 µ gm/ml. The use of this species to treat infectious diseases stimulated the investigation of the antimicrobial activity of *Euphorbia hirta, Eugenia jambolana. Punica granatum, Prunus amygdalus, Jasminum pubescens*, leaves against standard and multi drug resistant gram positive and gram negative bacteria as well as against yeast.

dhirajpathak2004@gmail.com

P-9

Quality Control of Herbal Medicine

Mithun Jain,

Lakshmi Narain College of Pharmacy, Bhopal.

Quality control of herbal medicines is a tedious and difficult job. Herbal medicines differ from that of the conventional drugs and so some innovative methods are coming into being for the sake of quality assessment of herbal drugs.

Fingerprint analysis approach using chromatography has become the most potent tools for quality control of herbal medicines because of its simplicity and reliability. It can serve as a tool for identification, authentication and quality control of herbal drugs.

Quality control of herbal medicines is a tedious and difficult job. Herbal medicines differ from that of the conventional drugs and so some innovative methods are coming into being for the sake of quality assessment of herbal drugs.

Fingerprint analysis approach using chromatography has become the most potent tools for quality control of herbal medicines because of its simplicity and reliability. It can serve as a tool for identification, authentication and quality control of herbal drugs.

mithun.jain25@gmail.com

P-10

Nyctanthes arbor-tristis Linn- A Immunostimulant

Manju Choudhary and Anamika Raghuwanshi

Lakshmi Narain College of Pharmacy, Bhopal, M.P.

Abstract

Nyctanthes arbor-tristis (**Night-flowering Jasmine**) is a species of *Nyctanthes*, native to southern Asia, from northern Pakistan and Nepal south through northern India and southeast to Thailand. It is a shrub or a small tree growing to 10 m tall, with flaky grey bark. The leaves are opposite, simple, 6–12 cm long and 2–6.5 cm broad, with an entire margin. The flowers are fragrant, with a five- to eight-lobed white corolla with an orange-red centre; they are produced in clusters of two to seven together, with individual flowers opening at dusk and finishing at dawn. The fruit is a flat brown heart-shaped to round capsule 2 cm diameter, with two sections each containing a single seed.*Nyctanthes arbor-tristis* L. (Oleaceae), a plant widely used in the traditional medicinal systems of India, has recently been reported to possess hepatoprotective, antileishmanial, antiviral and antifungal activities. In the present study strong stimulation of antigen specific and non-specific immunity, as evidenced by increases in humoral and delayed type hypersensitivity (DTH) response to sheep red blood cells (SRBC) and in the macrophage migration index (MMI), has been demonstrated in mice fed with 50% ethanolic extract of seeds, flowers and leaves of this plant. Maximum activity was found in the seeds in which the active principle(s) appear to be mainly associated with lipids. In flowers and leaves, however, the major activity was found in the aqueous fraction of the 50% ethanol extract. The immunostimulant substance(s) found in *N. arbor-tristis* L. are likely to play a role in its antiamoebic, antileishmanial, antiviral and certain other activities.

Keywords: *Nyctanthes arbor-tristis*; Immunostimulant screening; Ayurveda

choudharymanju20@gmail.com

P-11

Use of Herbal Excipients in Novel Drug Delivery

Sawner Swati & Shrivastav Sarika

Lakshmi Narayan College of Pharmacy,Bhopal

The use of natural excipients to deliver the bioactive agents has been hampered by the synthetic materials. However advantages offered by these natural excipients are their being non-toxic, less expensive and freely available. The performance of the excipients partly determines the quality of the medicines. The traditional concept of the excipients as any component other than the active substance has undergone a substantial evolution from an inert and cheap vehicle to an essential constituent of the formulation.Natural polysaccharides are extensively used for the development of solid dosage forms.Pectins, starch, guar gum, amylase and karaya gum are a few polysaccharides commonly used in dosage forms.

Bioadhesive sodium alginate microspheres of metoprolol tartrate for intranasal systemic delivery are prepared to avoid the first-pass effect, as an alternative therapy to injection, and to obtain improved therapeutic efficacy in the treatment of hypertension and angina pectoris.

swati_sawner@yahoo.com

P-12

Evaluation of antianxiety activity of *Abelmoschus esculentus* in Wister rats

Pradeep Keshwani, Hemant Nagar, Sharad P. Pandey, H.S. Chandel

TRUBA Institute of Pharmacy, Bhopal

ABSTRACT:

Anxiety is a relatively permanent state of worry and nervousness occurring in a variety of mental disorders, usually accompanied by compulsive behavior or attacks of panic. In present developing nation it is most common condition .So in present study it was planned to investigate the antianxiety activity of leaves and fruit extract of Abelmoschus esculentus in Wister rat using plus maze method. A. Esculentus (Malvaceae) usually used as a vegetable having the demulcent action it is also reported that the seed of the fruit may be used in the treatment of spasm and the capsule can be used to treat cathedral infection and gonorrhea. The powders of leaves and fruit of A. esculentus were extracted by maceration extraction process using ethanol as solvent. The present study indicate that the extract of leaves and fruit showed anti-anxiety activity, at the same time the fruit extract showed more anti-anxiety activity as compare to leaves extract.

hemant_nagar81@yahoo.co.in

P-13

Hypoglycaemic Activity of Fenugreek Seed Extract

Rahul Mourya, Savita Sharma, Smarti Chand

Lakshmi Narayan College of Pharmacy, Bhopal

The term hypoglycemia is literally translated as low blood sugar. Hypoglycemia occurs when blood sugar (or blood glucose) concentrations fall below a level necessary to properly support the body's need for energy and stability throughout its cells.

The **in vivo** hypoglycaemic activity of a dialysed fenugreek seed extract (FSE) was studied in alloxan (AXN)-induced diabetic mice and found to be comparable to that of insulin ($1.5\,U\,kg^{-1}$). FSE also improved intraperitoneal glucose tolerance in normal mice.The mechanism by which FSE attenuated hyperglycaemia was investigated **in vitro**. FSE stimulated glucose uptake in CHO-HIRc-mycGLUT4eGFP cells in a dose-dependent manner. This effect was shown to be mediated by the translocation of glucose transporter 4 (GLUT4) from the intracellular space to the plasma membrane.These effects of FSE on GLUT4 translocation and glucose uptake were inhibited by wortmannin, a phosphatidylinositol 3-kinase (PI3-K) inhibitor, and bisindolylmaleimide 1, a protein kinase C (PKC)-specific inhibitor.

In vitro phosphorylation analysis revealed that, like insulin, FSE also induces tyrosine phosphorylation of a number of proteins including the insulin receptor, insulin receptor substrate 1 and p85 subunit of PI3-K, in both 3T3-L1 adipocytes and human hepatoma cells, HepG2. However, unlike insulin, FSE had no effect on protein kinase B (Akt) activation.

These results suggest that **in vivo** the hypoglycaemic effect of FSE is mediated, at least in part, by the activation of an insulin signalling pathway in adipocytes and liver cells.

chandsmriti18@gmail.com

P-14

Novel Herbal Drugs Delivery Systems- "Phytosomes"

Kanika Sharma*, Anil Pandey, Ankit Geete

Lakshmi Narain College of Pharmacy, Bhopal

A large number of herbal drugs possess the wide spectrum of therapeutic activity. But the potential use of these herbal drugs is limited due to their poor absorption and poor bioavailability after oral administration. The bioavailability can be improved by the use of delivery systems, which can enhance the rate and the extent of drug solubilizing into aqueous intestinal fluids as well as the capacity to cross the lipid rich biomembranes. Phospholipid based drug delivery systems have been found promising for the effective and efficacious herbal drug delivery. Complexing the polyphenolic phytoconstituents in molar ratio with phosphatidylcholine results into a new herbal drug delivery system- "Phytosome". Phytosomes show better pharmacokinetic and therapeutic profile than conventional herbal extracts. This article reviews the current status of phytosomal research and its potential application in hepatoprotective and antihepatotoxic activity.

KEYWORDS: Phytosome, phospholipid complex, herbal drug delivery, phosphatidylcholine.

kanusharma007@gmail.com

P-15

Investigation of Tannin and Oxalic Acid Content in Different Parts of *Terminalia arjuna* (Arjuna) Bark

Nidhi Gunwal, Neeta Rai, Moiuddin Siddiqui, Rajat Kheri

Lakshmi Narain College of Pharmacy, Bhopal

Abstract

Terminalia Arjuna (Arjuna) which belongs to family combretaceae grows near river or streams and some times in the shallow stream bead and river bead in central India. Modern physicians and Ayurvedic physicians have considered it as a cardiac tonic. It has been found in clinical evaluation that arjuna is beneficial in coronary heart disease, heart failure and possibly hypercholesterolenimia. Antibacterial, antimeutrigenic and antioxidant activities have also been reported by the some. These property increases the demand of arjuna in India and world wide. Of this demand about 95 % is covered by the wild which is collected in a pattern which is not concomitant with sustainable harvesting practice. Harvesting technique and time governs the quality of the bark. Also part of the plant and harvesting method has direct relation with impact on plant. Keeping above in to consideration studies were carried out to investigate the % of Tannin and Oxalic acid in different parts of arjuna plant (in Trunk, Branch, Twing) Which showed variation in Tannin from 6.32 – 13.03 and in oxalic acid from 10.08 – 18.46. Important information is obtained from study to get better quality of T. Arjuna bark on sustainable basis.

kherirajat@gmail.com

P-16

Resveratrol A Natural Antioxidant or Magical Sward

Shailendra Kumar Shukla, Yadunath Tripathi,Sanjay Tiwari & Rajat Kheri

Lakshmi Narain College of Pharmacy, Bhopal

Abstract

Phytoalexine are usually produced by plants whenever they are attached by pathogens such as bacteria or fungi and on oxidative stress due to external attack, to protect themselves from disease, one such example is Resveratrol (trans-resveratrol) which are produced naturally. It was discovered for the first time in 1963 in the roots of Japanese Knotweed followed by in red wine in 1992 hence was given a name of redwine molecule. After its discovery to exhibit a large no. of therapeutic and life saving properties in human, animal and in plants it became a uniquemoity which was produced naturally. Experiments were performed on rats and mouse and it was found to exhibit huge no. of properties namely anti cancer (breast cancer) anti-inflammatory, blood sugar lowering and other beneficial cardiovascular effects. In humans blood sugar lowering property have been identified using (3-5 g) of extremely high dose. Also fewer cases of chest pain, asthma symptoms and lower back pain relief have been noticed along with large cases of weight loss anti aging and fight against diseases related to blood vessel of heart are main in humans. In plants they have exhibited property of immunity development hence they are called as natural antioxidant. It has also been found to active in every stage of cancer no matter it is initial tumor or tumor propagation stage in mice. Studies are further required to see whether the case is the same in humans also or not.

kherirajat@gmail.com

P-17

Rubefacients as Alternate Analgesics

Rajni Dubey & Rajat Kheri

Lakshmi Narain College of Pharmacy, Bhopal

Abstract

There are many substances by which pain of human body can be relieved out of them one such substance is rubefacient, which relieves pain by the mechanism of counterirritant effect and via transient potential ion channels. This substance is used externally, it increases the blood circulation in capillaries by dilating them hence causes redness of skin. It is very vital for the patient not able to take analgesic due to sensitivity of their body against them or when they are taking other medication as well which may be antagonist to analgesics. The common body parts in which they are used extensively are joints, muscles tendons and in non-articular musculoskeletal conditions. They are also being employed in conjunction with other therapies like support bandages, rest, oral analgesics, compressions etc which have proven very useful world wide. Hence keeping in mind its wide range of application on human body we have discussed some forms of rubefacients (and drugs which are related to them) commonly used along with their property. The most commonly used is sensur oil and the drugs which are related to them are peppermint, camphor and wintergreen oil.

kherirajat@gmail.com

P-18

Bactericidal Property of Medicinal Plants

Rajat Kheri, Nirmal Jain & Nidhi Jain

Lakshmi Narain College of Pharmacy, Bhopal

Abstract

Methanolic extracts of some medicinal plants were taken via agar well diffusion method to investigate bio control of bacterial pathogens. Pseudomonas syringe which is causal agent of seeding disease, in greenhouse sorghum plants is the most spread in greenhouse and in open field sorghum crops in the world. Hence to improve crop development natural extract having microbial activity of some medicinal plants were studied. Methanolic extract of plants having inhibitory effect with different MICs were tested against bacterial pathogen P. syringe which belong to family Pseudomonadaceae which is gram negative rod shaped bacteria. Seeding disease, bacterial blight of lilac, bacterial canker of cherry and tomato speech disease etc are caused by it which to a greater extent have been inhibited by use of these medicinal plant, methanolic extract.

kherirajat@gmail.com

P-19

Miscellaneous Properties of Genistein

Khooshboo Ansari, Bhagwan Shivhare

Lakshmi Narain College Of Pharmacy, Bhopal

Abstract

There are some isoflavonoid which are multipurpose out of them one is Genistein, which posses a large no. of functional property that is very useful for human community. The properties that make it valuable are it contributes to colour in plants, it protects plants against bacterial and fungal infection which makes it to serve like a plant hormone for is cell regulation. It has been discovered by scientists that health benefits are produced by isoflovones which are released from food product (soya products) such as tofu and soyamilk. There are various isoflovones out of them genistein is the one which has shown a wide range of activities in experimental studies and also in animal models. Though it is having a large variety of properties like tyrosine kinase inhibiting, antioxidant and oesterogenic or antioestrogenic activities further research are still going on it for its effects against oxidative stress and related disorders. Already some of its property has been identified in the scientific world such as anticancer, lipid lowering, ant diabetic, ant radiation, against eye disease, against photo damage, obesity and as immune system enhancer a lot more are still to be discovered for human.

P-20

Pharmacognostic Studies and Isolation of Hesperidin from *Citrus limetta* Linn. Peel

Jeevan Patidar, K. Shukla and S. C. Mahajan

Herbal drug technology laboratory, Mahakal Institute of Pharmaceutical Studies, Ujjain (M.P.) India 456664

ABSTRACT

Citrus fruits have been widely used as nutritive food and curative agents for variety of ailments, the *Citrus limetta* is one of them belonging to the family Rutaceae. The peels of citrus Limetta fruit were reported to have a great nutritional as well as medicinal value. The sweet lemon peel possess anti-microbial, anti-cancer, anti-oxidant, anti-venom, diuretic, anti-inflammatory , anti-fertility and anti-histaminic activity due to presence of various phytoconstituents and vitamins like Flavonoids , Carbohydrates, Vitamin P, Vitamin C. Hesperidin is a flavanone glycoside abundantly found in citrus fruits. Hesperidin may be associated with potential benefits in the prevention of diseases, such as decreasing capillary permeability, anti inflammatory, antimicrobial and anti carcinogenic effects. Hesperidin deficiency has been linked to abnormal capillary leakiness as well as pain in the extremities causing aches, weakness and night leg cramps. Supplemental hesperidin also helps in reducing excess swelling in the legs due to fluid accumulation.

The current study was carried out to provide requisite pharmacognostical details according to the WHO guideline, to identify the plant of interest from crowd which includes-morphological evaluation, microscopical evaluation, determination of ash value, extractive value, foaming index, swelling index, loss on drying, and extraction of hesperidin.

Key words: Hesperidin, *Citrus limetta,*

E.mail:-karunakarshukla@gmail.com, jk_patidar@yahoo.com

P-21

APPLICATION OF HERBAL DRUGS IN DISORDERS CAUSED BY "CELLPHONES"

Mangal Pooja, Jain Nivrati & Sharma Ankita

Lakshmi Narain College of Pharmacy, Bhopal, M.P.-462021,India

Abstract:
Radiation from cell phones and telephone towers can cause health problems such as brain tumors, cancer, infertility, memory loss, depression, sleep and behavior problems.Cell phone radiation exposure is long-term, and its effects on the body, particularly the electrical organ, the brain.Now a days *herbal drugs* are widely used in the curing of disorders caused by cellphones.Drugs like Radix Curcume, Herba Agrimonia & Fructus Aurantii are collectively marketed under the tradename " Canelim Capsules" which are used in Brain Cancer.Other drugs viz.Hypericum perforatum,Passiflora incamata,Valerian,Lemon balm tea,etc are used in curing INSOMNIA.Thus through the use of herbal drugs we could efficiently cure the different diseses most efficaciously and precisely.The present abstract details out almost everything known about these interesting diseases along with their herbal cure.

pooja.achiever16@gmail.com

P-22

Microwave-Assisted Extraction – A Promising Extraction Technique for Natural Product

Shailenndra singh Narwaria

Lakshmi Narain College of Pharmacy, BHOPAL, M.P.-462021,INDIA

Abstract:

Since the last decade, there is enhanced interest for the use of Microwaves for the extraction of the constituents from plant material. The traditional techniques like maceration, percolation, decoction, etc., are time- and solvent- consuming. This review brings into prominence the importance of novel methods of extraction for delivering high quality product. The microwave-assisted extraction (MAE) technique is a promising technique which is highlighted by increased extraction yield, decreased time and solvent consumption; moreover the reproducibility is better. A brief theoretical background of the principles involved and the types of instruments used has been presented. The main parameters like microwave power, extraction time, solvents, temperature and matrix characteristics, etc., which influence the MAE have been discussed. The application of optimization techniques, such as Factorial Design, to MAE has been highlighted, with examples. The potential applications of this technique and its performance vis-à-vis that of classical techniques have been elucidated.

shailendrasinghnarwariya@gmail.com

P-23

Use of Biomarker in Herbal Technology

Sonakshi Chouhan,

Lakshmi Narain College of Pharmacy, BHOPAL

Abstract:

DNA-based molecular markers have proved their utility in fields like taxonomy, physiology, embryology, genetics or some other biological state of an organism.

Molecular biomarkers nowadays are widely used in herbal technology as number of constituents from the herbs can be used as biomarker and used for exhibiting diverse pharmacological activity.

Molecular biomarkers are widely used in producing genetic variation/genotyping many medicinal plants , in the determination of adulteration/substitution , in medicinal plant breeding , in food and neutraceuticals application such as identification of disease-resistant genes , diversity analysis of exotic germplasms , sex identification of dioeceous plant and in phylogenetic analysis. For chemical profiling various analytical methods such as thin layer chromatography and high performance liquid chromatography is commonly used but it is limited because of their variable source and chemical complexity. Thus for quantitative studies use of specific marker is preferred option. These markers together with DNA useful in various in-vitro and in-vivo herbal technology. Thus it is become a widely used practice today and in near future.

sonakshichauhan37@gmail.com

P-24

Sperm Immobilization activity of *Allium sativum* and Other Plant Extracts

Lokesh Yadav, Ritendra Singh & Ichchha Soni.,

Lakshmi Narain College of Pharmacy, BHOPAL

Abstract: Medicinal plants are the nature's gift to human being.It plays a vital role to preserve our health. There are many Indian medicinal plants, which were reported to possess antifertility property; they acted either by preventing implantation or by suppressing spermatogenesis.The correct investigation of possible spermicidal agents through screening a number of edible medicinal plants with antimicrobial activity is essential,for reducing various side effects in human beings.The present investigation had been carried out on screening a number of edible medicinal plants, namely Allium sativum (family Lilliaceae), Zingiber officinale (Zingiberaceae), Curcuma longa (Zingiberaceae), Curcuma amada (Zingiberaceae), Allium cepa (Lilliaceae) and so forth at an aim to identify active extracts for the future development of herbal spermicidal agents.The crude aqueous extract of the bulb of Allium sativum L. showed the most promising results by instant immobilization of the ram epididymal sperm at 0.25 g/mL and human ejaculated sperm at 0.5 g/mL. Sperm immobilizing effects were irreversible and the factor of the extract responsible for immobilization was thermostable up to 90.The crude aqueous extract of A. sativum bulb possesses spermicidal activity.

ritendra.lnct@gmail.com

P-25

PROTEOLYTIC ACTIVITY OF *GINGIBER OFFICINALE* AND *ANANAS COMOSUS* AGAINST ANKYLOSING SPONDILITIS

Abhishek Sharma, Dhiraj Pathak*,Rahul Goriya*,
Itushree Debnath & Arushi Shrivastava,

LAKSHAMI NARAIN COLLEGE OF PHARMACY,BHOPAL

ABSTRACT

Proteolytic activity of tuber part of *Gingiber officinale* and fruit of *Ananas comosus* were found to be active against Ankylosing spondilitis. Ankylosing spondilitis is a member of the group of the Spondyloarthritis, with a strong genetic predisposition. Complete fusion results in a complete rigidity of the spine, a condition known as bamboo spine. *Gingiber officinale* is one of the richest source of zingibain and *Ananas comosus* is the richest source of Bromelain which is having excellent power to control inflammation in autoimmune diseases. Gingiber also contain vitamin c which very useful to neutralize the free radical which are responsible for inflammation.

dhirajpathak2004@gmail.com

P-26

Curcuma zedoaria: A Antivenom Drug For Cobra Bite

Naveen Kanathe*, Mayank Agrawal, Amol Yadav

Lakshmi Narain College of Pharmacy, Bhopal

Abstract

Curcuma zedoaria is the name for a perennial herb and member of the genus Curcuma Linn., family Zingiberaceae. The plant is native to India and Indonesia. It was introduced to Europe by Arabs around the sixth century, but its use as a spice in the West today is extremely rare, having been replaced by ginger.Analytical supercritical fluid extraction (SFE) was used to investigate the chemical constituents of Curcuma zedoaria, a very useful Chinese herbal medicine. The qualitative and quantitative analysis of extracts was performed by gas chromatography with mass spectrometry. The effects of pressure, temperature and flow rate of the extracting fluid on the extraction efficiency of SFE were investigated quantitatively. It was found that at a fixed density, changing temperature in a given experimental range had no great influence on the distribution of SFE products, but that an appropriate increase of flow rate and fluid volume improves the extraction efficiency. SFE using supercritical carbon dioxide was a more efficient extraction technique than steam distillation.

naveenkanathe26@gmail.com

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Boerhavia diffusa- A Hepatoprotective Rejuvenator

Anamaya Dikshit & Nipun Shrivastava

LAKSHMI NARAIN COLLEGE OF PHARMACY, BHOPAL, M.P.

Abstract*: Boerhavia diffusa* Linn.(F: Nyctaginaceae) a medicinal plant, commonly called hog weed, is known as 'erimmirii' (which literally means water-food) and in Sanskrit as "**Punarnava**", is widely distributed over the tropical, subtropical and temperate regions of the world and is found throughout India and Brazil. It is traditionally used mostly in treating different ailments like asthma, urinary disorders, leucorrhea, rheumatism, and encephalitis. In addition different solvent extract of this plant proved to have different pharmacological activities viz. immunosuppressant, anti-diabetic, anti-oxidant, anti-cancer, analgesic, **hepatoprotective**, anti-viral, antifungal and antifibrinolytic activity.

Author Keywords: *Boerhavia diffusa* L; Hepatoprotective.

anamaya_dikshit414@yahoo.co.in

P-28

HERBAL DRUG STANDARDIZATION

Neeraj, Dhruv & Premshankar

Lakshmi Narain College of Pharmacy, Bhopal, M.P.

Abstract: The subject of herbal drug standardization is massively wide and deep. There is so much to know and so much seemingly contradictory theories on the subject of herbal medicines and its relationship with human physiology and mental function.For the purpose of research work on standardization of herbal formulations and neutraceuticals a profound knowledge of the important herbs found in India and widely used in Ayurvedic formulation is of utmost importance.

India can emerge as the major country and play the lead role in production of standardized, therapeutically effective ayurvedic formulation. India needs to explore the medicinally important plants. This can be achieved only if the herbal products are evaluated and analyzed using sophisticated modern techniques of standardization such as UV-visible, TLC, HPLC, HPTLC, GC-MS, spectrofluorimetric and other methods.

. Even when the chemical composition of a plant extract is known, the pharmacologically active moiety may not be. Environment, climate, and growth conditions influence composition, as does the specific part of the plant and its maturity. Monographs detailing standardization of active ingredients would improve the marketplace. Even if an herbal product is standardized to, for example, 4% of a constituent, the remaining 96% of ingredients is not standardized and may affect the product's solubility, bioavailability, stability, efficacy and toxicity. Just as controlled trials are necessary to establish safety and efficacy, manufacturing standards are required to ensure product quality.

Now a days newer and advanced methods are available for the standardization of herbal drugs like fluorescence quenching, combination of chromatographic and spectrophotometric methods, biological assays, use of biomarkers in fingerprinting etc. Bioassay can play an important role in the standardization of herbal drugs and can also become an important quality control method as well as for proper stability testing of the product.

neeraj.banke@gmail.com

P-29

Prospects and Future Perspectives of Herbal Medicine

Sahu Nishtha *, Kharya M. D.

Natural Products Research Laboratory, Dept. of Pharmaceutical Sciences, Dr. Hari Singh Gour Central University, Sagar – 470003, India

Abstract

Traditional medicine is the synthesis of therapeutic experience of generations of practicing physicians of indigenous systems of medicine. A vast majority of population particularly those living in villages depend largely on herbal medicines. Throughout the history of mankind, many infectious diseases have been treated with herbals. The traditional medicine is increasingly solicited through the tradipractitioners and herbalists in the treatment of infectious diseases. The rapid increase in consumption of herbal remedies worldwide has been stimulated by several factors, including the notion that all herbal products are safe and effective.

Keywords: Herbal Medicine, Plant, Infectious Disease, Perspectives, Remedies.

nishtha.sahu@gmail.com

P-30

AMAZING PLANT SEABUCKTHORN

**Abhishek Sharma, Deepak Nagpal*, Ramkumar Kirar,
Shahbaz Malik & Vijay Verma***

Lakshmi Narain College of Pharmacy, Bhopal.

Abstract:

Seabuckthorn plant is an amazing herbal source which is one of the richest in vitamin C , 18 amino acids, important trace elements (out of 14, 11 are present), omega-3, 6, 9 essential fatty acids, β carotene, vitamin E. Owing to these contents this traditional medicinal plant has found a wide important applications in remedies of various diseases and for nutritional purpose. So, this plant has a wide scope of researches and applications.

nagpaldeepak29@gmail.com

P-31

Anti- Cancer Properties of Artemisinin

Sufia javed

Lakshmi Narain College of Pharmacy, Bhopal.

Abstract: Artemisinin and its derivatives are well known antimalaria drugs and particularly useful for the treatment of infection of Plasmodium falciparum malaria parasites resistant to traditional antimalarials. Artemisinin has an endoperoxide bridge that is activated by intraparasitic heme-iron to form free radicals, which kill malaria parasites by alkylating biomolecules. In recent years, there are many reports of anticancer activities of artemisinins both in vitro and in vivo. Artemisinins have inhibitory effects on cancer cell growth, including many drug- and radiation-resistant cancer cell lines. The cytotoxic effect of artemisinin is specific to cancer cells because most cancer cells express a high concentration of transferrin receptors on cell surface and have higher iron ion influx than normal cells via transferrin mechanism. In addition, some artemisinin analogs have been shown to have antiangiogenesis activity. Artemisinin tagged to transferrin via carbohydrate chain has also been shown to have high potency and specificity against cancer cells. The conjugation enables targeted delivery of artemisinin into cancer cells. In this review, we discuss the anticancer activities and mechanisms of action of artemisinins and the transferrin-conjugate.

javed.sufia55@gmail.com

P-32

Role of ISSR marker in the Field of Pharmacognosy

Ajeet Pandey , Shivendra Pandey ,Rachna Akhand Giri & A.K.Pathak

Department of Pharmacy

Barkatullah University,Bhopal

Abstract:

ISSR(INTER SIMPLE SEQUENCE REPEAT)is one of the popular technique of DNA finger printing because of several reasons In many fields ISSR markers have proved their utility. There are many application of ISSR in various aspects of medicinal plant . ISSR based marker have utility in the field like genetics ,taxonomy physiology,embryology etc & recently the ISSR based marker have found wide applicability in pharmacognostic characterization of medicinal plants.As use of herbal medicines is increasing there is urgent need of newer technologies & its proper applications.In recent year, pharmacognosy has witnessed advent of such new technologies. The review provide detail list of plant wich are studied by ISSR marker and discuss some of the important application in medicinal plant research .

ajit.pandey07@gmail.com

P-33

DNA Microarrays in Herbal Drug Research

Sonam Patel

Lakshmi Narain College of Pharmacy, Bhopal.

Abstract: Natural products are gaining increased applications in drug discovery and development. Being chemically diverse they are able to modulate several targets simultaneously in a complex system. Analysis of gene expression becomes necessary for better understanding of molecular mechanisms. Conventional strategies for expression profiling are optimized for single gene analysis. DNA microarrays serve as suitable high throughput tool for simultaneous analysis of multiple genes. Major practical applicability of DNA microarrays remains in DNA mutation and polymorphism analysis. This review highlights applications of DNA microarrays in pharmacodynamics, pharmacogenomics, toxicogenomics and quality control of herbal drugs and extracts.

Keywords: Drug discovery – evidence-based medicine – gene expression – genotyping – pharmacodynamics – transcription profiling

sonampatel13@yahoo.in

P-34

Extraction of Natural Complex Phenols and Tannins from Grape Seeds by Using Supercritical Mixtures of Carbon Dioxide and Alcohol

Abhishek Singh Parihar

Lakshmi Narain College of Pharmacy, Bhopal

Abstract: *Proanthocyanidins* are supposed to have some therapeutical properties as antioxidants and antineoplasics. Most of the *proanthocyanidins*, however, are not commercialized since their separation from natural sources is either very expensive or not well-known. In this work, the feasibility of application of mixtures of carbon dioxide and alcohol under supercritical conditions for selective extraction of some phenolic compounds from grape seeds has been studied, among them some low polymerized *proanthocyanidins*, their main monomer units, (+)-*catechin* and (−)-*epicatechin*, and some low molecular weight phenolic compounds, like gallic acid. An analytical-scale supercritical fluid extractor, whose operation was previously optimized, was used to carry out the experiments. A commercial concentrate of complex phenols and tannins from grape seeds was subjected to supercritical extraction in order to find the best operation conditions before directly extracting defatted milled grape seeds. The solvent capacity was found to increase with pressure and with the amount of alcohol used as cosolvent as expected. Such variation in solvent capacity could be used for design of a selective separation process where individual phenolic compounds or groups of them could be obtained. HPLC coupled with two types of detectors, diode array and mass spectrometry, was used for tentative identification and quantification of complex phenols and tannins in the extracts and in the raw materials used for extraction.

abhisheksingh200790@gmail.com

P-35

DNA Microarray in Herbal Drug Technology

Devidas Deshmukh[1], Vijay Singh Baghel[1], Deependra Shastri[1,] Durgesh Nandini[2], Nagendra Singh Chauhan[1*]

1. Department of Pharmaceutical Sciences, Dr. H. S. Gour University, Sagar, MP, India.
2. Sagar Institute of Pharmaceutical Sciences, Sagar. MP

Abstract

The role of natural products, herbal medicine, tribal and traditional medicines is being increasingly appreciated in recent years for the prevention and cure of human elements. Being chemically diverse they are able to modulate several targets simultaneously in a complex system. .For better understanding of molecular mechanisms, analysis of gene expression is necessary. DNA microarrays were developed in response to the need for a high-throughput, efficient and comprehensive strategy that can simultaneously measure all the genes, or a large defined subset, encoded by a genome.. DNA microarrays may provide a suitable high-throughput platform for research and development of drugs from natural products. In natural products a broad report are of chemical entities act together on multiple targets that makes it necessary to study the changes in expression of multiple genes simultaneously.

chauhan.nagendra@gmail.com

P-36

Drug Delivery Techniques for Herbal Actives

Deependra Shastri[1], Devidas Deshmukh[1], Vijay Singh Baghel[1], Durgesh Nandini[2], Nagendra Singh Chauhan[1*]

3. Department of Pharmaceutical Sciences, Dr. H. S. Gour University, Sagar, MP, India.
4. Sagar Institute of Pharmaceutical Sciences, Sagar. MP

Abstract

One of the advanced research areas of herbals includes use of advanced formulation techniques for delivering herbal actives. Various herbal drugs become less utilized due to their poor absorption and poor bioavailability after oral administration. The problem can be resolved by opting a suitable delivery system which can enhance the rate and extent of drug solubilizing into aquous body fluids as well as its ability to go through the lipophilic biomembranes. Here we have presented some of the techniques of Novel drug delivery systems for herbal extracts as a tool of improving the therapeutic indices and their efficacy. Development of phytosomes can be proved to be a efficient delivery system with numerous advantages over conventional. Herbal Transdermal Therapy (HTT) connects the ancient Ayurvedic formula with Novel technique of Allopathic system. Transdermal Marma Therapy (TMT); where mordern research of transdermal absorption meet the ancient practice of marma (massage & pressure to particular point) Nanoparticals, a newly emerging technology are subnanosized structures composing polymers. Herbal drug or drug extracts can be incorporated in the nanoparticles according to their properties. This technology has been effectively enhanced the bioavailability of many popular herbal extracts including milk thistle, Ginkgo biloba, grape seed, green tea, hawthorn, ginseng etc. .

chauhan.nagendra@gmail.com

P-37

Herbal Cosmetics

Vijay Singh Baghel[1], Deependra shastri[1], Devidas deshmukh[1], Durgesh Nandini[2], Nagendra Singh Chauhan[1*]

5. Department of Pharmaceutical Sciences, Dr. H. S. Gour University, Sagar, MP, India.
6. Sagar Institute of Pharmaceutical Sciences, Sagar. MP

Abstract: In the early of 19th century plant sources have become an untapped resource of medicinal properties. Plant has become a potential source for development of new drug entities for cosmeceuticals and pharmaceutical applications. With the increased risk of side effects from excipients, preservatives used in cosmetics, a consumer world looking toward naturally derived materials. The term cosmeceuticals to describe the OTC skin care products that claim therapeutic benefits by the addition of plant based active ingredients such as a-hydroxy acids, retinoic acid, ascorbic acid and co-enzymes to increase the skin elasticity, delay skin ageing by reducing the wrinkles, antioxidant property as protective against UV radiation and to check the degradation of the collagen respectively. These are applied topically in the form of creams, powders, lotions etc and also used in soaps , shampoos and perfumes for skin care, acne and hair growth and care.The herbs which are commonly used now-a-days are Aloe, Almond oil, Mehandi, Neem, Sandalwood oil, Coconut oil etc. Presenty Thuja Occidentalis and Gaultheria Fragmatisma are also used as natural skin care agent. Thuja plant is known to contain volatile oils, their leaves and stem extract was tried for their role as a natural sunscreen agent as it helps in UV absorption and used in whitening of skin

chauhan.nagendra@gmail.com

P-38

Nanotechnology Based on Drug Delivery

Jaya Tiwari , Vandna Shukla

Lakshmi Narain College of Pharmacy, Bhopal

Abstract:

The emergence of nanotechnology is likely to have a significant impact on drug delivery sector, affecting just about every route of administration from oral to injectable, according to specialist market research firm NanoMarkets.

And the payoff for doctors and patients should be lower drug toxicity, reduced cost of treatments, improved bioavailability and an extension of the economic life of proprietary drugs. *"This is an impressive list [but] also impressive is the fact that many of the categories of nano-enabled drug delivery systems are already close to or at the point of marketing,"* unlike many of the 'futuristic' applications claimed for nanomedicine.

NanoMarkets expects the dosing benefits of nano-enabled drug delivery systems to be extended to compounds used in treating both infectious disease and cancer, and has identified six types of drug delivery systems in which nanotechnology is likely to have a significant impact. For injectable drugs, nanotechnology is already generating new dosage forms that are easier to administer, more pleasant for the patient receive and confer a competitive advantage in the marketplace. A new anti-cancer drug delivery system which allows more targeted treatment and helps avoid the unsafe and unpleasant

side effects of chemotherapy is due to enter clinical trials in Europe and the US for use with anti-cancer drug paclitaxel.

aravendra_1587@yahoo.in

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Herbal Therapy for Liver Disease: The Therapeutic Challenges

Anurudh Gupta*, Sandeep K. Jain, Vaibhav Uplanchiwar, Anuj Modi, R. K. Jain

Department of Pharmacognosy, Adina Institute of Pharmaceutical Sciences, Sagar, M.P.

Abstract:

The liver is a major detoxifying organ invertebrate body which involves intense metabolic activities. Certain toxic chemicals and medicines can cause liver damage which has been recognised as toxicological problems like fibrogenesis, cancer, cirrhosis, hepatitis etc. A no. of reaction are involved in hepatic damage but mainly due to activation of some enzyme in Cytochrome P-450 such as CYP2E1 also leads to oxidative stress induced damage. Unfortunately, conventional or synthetic drugs used in the treatment of liver disorders are inadequate and sometimes can have serious side effects. In the absence of the reliable liver protective drugs in modern medicines there are number of herbal medicines in Ayurveda recommended for treatment of liver disorders. The various herbal drugs used for protective action are *Andrographis paniculata, Boerrhavia diffusa, Calotropis procera, Curculigo orchioides, Fumaria indica, Garcinia cambogia, Luffa acutangula.* There is no doubt that herbs contain chemically defined components that can protect liver from oxidative injury, blocks the fibrogenesis or inhibit the tumour growth. Biologically active molecule isolated from these herbal extracts can serve as a suitable primary compound for effective and targeted hepatoprotective drug.

Andrographis paniculata, Boerrhavia diffusa, Calotropis procera, Curculigo orchioides, Fumaria indica, Garcinia cambogia, Luffa acutangula

pharmaanuj@gmail.com

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Phytosomes: A Novel Drug Delivery System for Herbal Drugs

Garima Golandez*, Anuj Modi, Nirbhik Karan, Prarthna Diwakar,

Umesh B. Telrandhe, Vaibhav Uplanchiwar

Department of Pharmacognosy, Adina Institute of Pharmaceutical Sciences, Sagar (M.P.)

Abstract:

The term "phyto" means plant while "some" means cell-like. Phytosomes are advanced forms of herbal products that are better absorbed, utilized, and as a result produce better results than conventional herbal extracts. Based upon absorption only, the dosage level of a Phytosome is pretty close to the dosage recommendations typically given for the corresponding standardized herbal extracts. Phytosome process produces is a “little cell” whereby the valuable components of the herbal extract are protected from destruction by digestive secretions and gut bacteria. Phytosomes are produced via a patented process whereby the individual components of an herbal extract are bound to phosphatidylcholine - an emulsifying compound derived from soy (one of the component of human cell wall). The phospholipid molecular structure includes a water-soluble head and two fat-soluble tails, because of this dual solubility. Phytosome process has been applied to many popular herbal extracts including *Ginkgo biloba*, Grape seed, Hawthorn, Milk thistle, Green Tea, and Ginseng. Phytosomal drug delivery system is mainly used to deliver systemic antioxidant (mainly flavonoid and terpenoid component) and also used to treat the disease like blood pressure, liver disease, cancer, skin disease and to protect the brain lining.

pharmaanuj@gmail.com

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Synthesis and Pharmacological Evaluation of Glucopyranoside Conjugates of Naproxen

JAGDISH K. SAHU [a]* , A. KAUSHIK [a] , L. BANERJEE [b]

[a] Institute of Professional Studies College of Pharmacy, Gwalior – 474001, India

[b] Department Of Pharmaceutical Sciences, Dr. Hari Singh Gour Central University, Sagar – 470003, India

Abstract

Glucopyranoside Conjugates of Naproxen have been synthesized and evaluated for anti-inflammatory, analgesic and ulcerogenic activities. The results designate significant augmentation in analgesic and anti-inflammatory activity and diminution in gastrointestinal toxicity.

Keywords: Naproxen, Glucopyranoside, Analgesic activity, Anti-inflammatory activity, Ulcerogenicity.

* E-Mail: jagdish.pharmacist@gmail.com

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Phytosomes: A revolution in herbal drugs

Mohanish Sharma , Priyanka Jain , Amit Joshi and Anupam Pathak

Department of pharmacy, B.U., Bhopal

ABSTRACT: During the last few decades , much work has been directed towards the development of the elivery systems. In recent time this phenomena is also applied to the phytopharmaceuticals. Most of the phytoconstituents are water-soluble and possess multiple ring structure which leads to poor absorption in human body. These phytoconstituents can be associated with lipid moieties to absorb better in lipophilic environment known as PHYTOSOMES. Phytosomes are a new concept in herbal delievery systems. Clinical trials of phytosomes have shown increase in bio-availability of herbal extracts to maximize the amount of the herbs active ingredients utilized by the human body.

mohanish.dixit@gmail.com

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Currents trends in Phytopharmacolgy of Herbal Drug

Pritesh Patle , Mahesh Yadav & Sanjay Jaiswal

Lakshmi Narain College of Pharmacy, Bhopal

Abstract: Herbal medicines are the oldest remedies known to mankind. Herbs had been used by all cultures throughout history but India has one of the oldest, richest and most diverse cultural living traditions associated with the use of medicinal plants. In the present scenario, the demand for herbal products is growing exponentially throughout the world and major pharmaceutical companies are currently conducting extensive research on plant materials for their potential medicinal value. In many journals, national and international, we find an increasing number of research publications based on herbal drugs.

Many analysis-based studies regarding pharmacological research in India have been conducted in the past. Out of these, one study has shown an upward trend in indigenous drug research but there are only few studies on the exclusive analysis of herbal drug research in India. Therefore, the present study was undertaken to analyze the recent trends of herbal drug research in India keeping the Indian Journal of Pharmacology as a marker.

Herbal medicines form a major part of remedies in traditional medical systems such as Ayurveda, Rasa Sidha, Unani, and Naturopathy. Hence all animal and clinical studies on herbal medicines were reviewed. The data for the years 1981-1983 were taken as baseline for the comparison of recent herbal drug research trends.

The present study showed that interest has increased in herbal drug research in India, which supported the findings of Adithan (1996), with maximum utilization of the phytotherapeutic approach wherein crude plant preparations were used. The maximum work was observed with polyherbal preparations.

pritesh.patle@gmail.com

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PHYTOCHEMICAL AND PHARMACOLOGICAL SCREEING OF BUTEA MONOSPERMA

Kajal Jain Praveen Bhatt ,Sameer Gaharwar & D.K. Tiwari

Lakshmi Narain College of Pharmacy, Bhopal.

ABSTRACT

Butea monosperma, A plant of multipurpose use. It's each and every part contain's verious important chemical's, which shows various types of pharmacological actions. Therefore it is a multipurpose plant of great importance, its various parts which can be used are starts from the- root, stem, leaf, flower, seed, gum, fiber etc. these all parts can be used in various forms as dry powder, fodder, extract, juice, paste, solution and many as much as possible. Its various parts contains numerious important chemicals as butrin, isobutrin, butin, butein, coreopsin, isooreopsin, and many more which can show good effect in many disorders as inflammation, diabeties, fertility, stress, tendinitis, aching, joint disease and so on. It can be used traditionally and clinically both.

Pharmaceutically it can be also used as a gum, suspending agent , in lac productio

Kajal.jain95@yahoo.co.in

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Development of Quality control Parameters for an Siddha formulation- "Nilavakai Curanam"

Deepak Joge*, K. Shukla and S. C. Mahajan

Herbal drug technology laboratory, Mahakal Institute of Pharmaceutical Studies, Ujjain (M.P.) India 456664

ABSTRACT

Curanam are important group of formulations used by Siddha physicians to treat various types of diseases. The Nilavakai curanam (NC) is an herbal formulation used extensively in Siddha system of Indian Medicine, for the treatment of constipation and various gastric disorders. The Nilavakai curanam formulation consists of equal part of leaves of *Cassia angustifoli,* fruits of *Zingiber officinalis,* fruits of *Piper nigrum,* fruits of *Trachyspermum ammi*, and fruits of *Embelia ribes*. In the present study, an attempt has been made to develop Quality Control Parameters of Nilavakai curanam like extractive values, ash values, foreign matter, foaming index, swelling index, determination of pH value, micrometric parameters (bulk density, tapped density), essential oil content, loss on drying and preliminary phytochemical screening as per the method given in WHO guidelines. The results of all batches were found in close proximity with each other. Hence the developed parameters can be used as analytical tool for routine Quality Control of Nilavakai Curanam.

Key words: - *Cassia angustifolia, Zingiber officinalis, Piper nigrum, Trachyspermum ammi, and Embelia ribes*, Nilavakai curanam.

karunakarshukla@gmail.com

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Transgenic Plants: Green Revolution to Gene Revolution

***Swapnil Jain,** Dharmendra Sharma & Avinash Kumar Rajak,

Lakshmi Narain College of Pharmacy, Bhopal (M.P.)

ABSTRACT

Transgenic Crops describes the basics of genetic modification for agricultural purposes and a brief history of the technology and the governing policies surrounding it. This publication offers a brief overview of the main agricultural crops that have been genetically modified, the characteristics they express, and the market roles they play. Unintended consequences, economic considerations, and safety concerns surrounding the cultivation and dissemination of transgenic crops are also discussed. Biopharmaceutical aspects of transgenic crops are also briefly addressed. Economic, legal, and management concerns associated with these types of crops are addressed, regulatory aspects. Implications of transgenic technologies for sustainable agriculture are briefly addressed along with concluding remarks.

Key words: Transgene, Agricultural crops

swapndeep_jain@yahoo.co.in

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Formulation and evaluation of tablets of Ayurvedic churnas by using Natural Binder

Pratik Mahajan*, K. Shukla and S. C. Mahajan

Herbal drug technology laboratory, Mahakal Institute of Pharmaceutical Studies, Ujjain (M.P.) India 456664

ABSTRACT

Ayurveda is accepted as the oldest written medical system that is also supposed to be more effective in certain cases than modern therapies. The word ayurveda derived from 'ayur' meaning life and 'veda' meaning science. Thus, ayurveda literally means science of life. The Ayurvedic dosage forms are classified as: Solid Dosage Forms :(Pills,Gutika) Semi-solid Dosage Forms:(Avleha, Lepa) Liquid Dosage Forms:(Asava, Arista,Taila) Powder Dosage Forms: (Bhasma, Churna).

The dosage uniformity and patient compliance of ayurvedic powders can be increased by formulating them into tablets. In the present study tablets of srngyadi churnas were prepared by using *Plantago Ovata* mucilage as natural binder. Wet granulation technique was used for the preparation of granules. The binder concentrations used in formulation were 0.5, 1, and 2% w/w. the granules were evaluated for size variation, shape and angle of repose. Formulated tablets of churna were evaluated for hardness, friability, weight variation, disintegrations, and tablet thickness. 2% w/v binder concentration showed more optimum results as tablet binder. Increase in concentration of mucilage increases the hardness and decreases the disintegration time. This property of mucilage can

overcome the friability problems. The *Plantago Ovata* mucilage was found to be useful for the preparation of uncoated tablets, shows good binding ability.

Key words: Srngyadi Churnas, *Plantago Ovata* Mucilage, Binder, Tablet.

E.mail:-karunakarshukla@gmail.com

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PHARMACOGNOSTIC AND PRELIMINARY PHYTOCHEMICAL STUDIES OF *MIMOSA PUDICA* LINN. LEAVES

Kamlendra Kumar Mishra, Jiwan Patidar, K. K. Shukla, S. C. Mahajan

Mahakal Institute of Pharmaceutical Studies,
Behind Air Strip, Datana, Dewas Road, Ujjain-456 664

ABSTRACT

Plants have been widely used as curative agents for variety of ailments, the *Mimosa pudica* Linn. is one of them belonging to the family Mimosaceae. The whole plant of *M. pudica* were reported to have a great medicinal value. The plant possess anti-microbial, anti-convulsant, hyperglycemic, anti-oxidant, anti-venom, diuretic, anti-cancer, anti-diabetic, anti-fertility and anti-histaminic activity.

Current study was carried out to provide requisite pharmacognostical details according to the WHO guideline, to identify the plant of interest from crowd which includes- morphological evaluation, qualitative and quantitative microscopical evaluation, determination of ash value, extractive value, foaming index, swelling index, loss on drying, and presence of phytocostituents. The leaves extract showed presence of various constituents like alkaloids, glycosides, flavonoids and carbohydrates

kamal_mips@yahoo.co.in

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Determination of Sun Protection Factor of *Aloe barbadensis* Vs *Rosa damascene*

Prashant Singh

Lakshmi Narain College of Pharmacy BHOPAL

Abstract: The aim of this study was to evaluate the correlation between natural fresh aloe barbadensis gel and Rosa damascene as sun protective agent. The in-vitro sun protective factor of aloe barbadensis gel from plant leaf And Rosa damascene from fresh petals of rose flower is determined according to spectrophotometric method. Aloe barbadensis and Rosa damascene has been used for thousands of years to moisturize and protect the skin, as well as to heal sunburn and a host of other illnesses. Aloe is an antiseptic and antibiotic, and increases oxygenation of the skin. Aloe barbadensis and Rosa damascene were tested for their ultraviolet (UV) opacity potential. UV absorption profiles, sun protection factor (SPF), and percentage blocking of UVA and UVB were considered to test UV opacity potential. Both the extracts showed UV absorption and followed the same path in the wavelength range of 250–400 nm. The UV absorption ability of rose extracts is suggested to be because of the presence of flavonoid compounds within the extracts. However, it should be noted that in order to obtain an effective suncare product with high SPF values, these extracts could be used along with other synthetic antisolar agents.

Prashantstar2007@gmail.com

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Determining Antibacterial Potential of *Spirulina platensis*

Dola Bhowmik, Jaishree Dubey and SandeepMehra

Lab of Phycology, Dept. of Botany, Dr.H.S.Gour University, Sagar, M.P., India

ABSTRACT

The cyanobacterium *Spirulina platensis* was studied for evaluation of antimicrobial activity against six gram negative and four gram positive bacteria. *Proteus vulgaris* showed better activity which was nearer to that of the standard drug. Minimum activity was obtained in *Staphylococcus aureus*. It was also found during the study that gram negative bacteria were more susceptible as compared to gram positive bacteria. The minimum inhibitory concentration of *Spirulina* for the ten species of bacteria was also determined.

Keywords: antibacterial activity, cyanobacterium, gram positive, gram negative bacteria, minimum inhibitory concentration, standard drug.

Email id dola.micro@gmail.com,
dola25.micro@gmail.com

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Are Herbal Drugs Really Safe

Mishra Anshul*, Modi Anuj & Mishra Lalit

Adina Institute of Pharmaceutical Science, Sagar (M.P.)

Abstract:-

Herbs have a medicinal effect, but the effect is usually not nearly as strong as that of pharmaceutical drugs. This is because prescription drugs have been synthesized in a laboratory—taking the "active ingredient" found in some other form, usually plant based, and then concentrating the ingredient into a pill. Herbs usually are gentler because they are still in a more natural state, for example, roots, stems, bark, seed, etc. Even after they have been processed, the most active ingredients have not been separated from the other constituent parts.A marked growth in the worldwide phytotherapeutic market has occurred over the last 15 years. Insufficient data exist for most plants to guarantee their quality, efficacy and safety. The idea that herbal drugs are safe and free from side effects is false. Plants contain hundreds of constituents and some of them are very toxic, such as the most cytotoxic anti-cancer plant-derived drugs, digitalis and the pyrrolizidine alkaloids, etc. However, the adverse effects of phytotherapeutic agents are less frequent compared with synthetic drugs, but well-controlled clinical trials have now confirmed that such effects really exist. Harmonization and improvement in the processes of regulation is needed, and the general tendency is to perpetuate the German Commission E fin the domestication, production and biotechnological studies and genetic improvement of medicinal plants, instead of the use of plants harvested in the wild, will offer great advantages, since it will be possible to obtain uniform and high quality raw materials which are fundamental to the efficacy and safety of herbal drugs. A Chinese herb that demaged the Kidneys of dozens of dietus in 1990s appears to pack a second punch Cancer and pre cancerous lesions. This findings draw one of the strongest links yet between the use of an herbal product and cancer.The most important thing to remember is that if you want to use herbal medicines it is always safest to be under the care of a qualified herbalist**.** Several regulatory models for herbal medicines are currently

available including prescription drugs, over-the-counter substances, traditional medicines and dietary supplements.

anshul_mishra1985@yahoo.com

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FORMULATION, EVALUATION AND ANTIMICROBIAL ACTIVITY OF HERBAL DECONGESTANT

Barve N.,* Dwivedi S., Dwivedi S.K., Gupta S., Ghode P. and Kharia A.

Modern Institute of Pharmaceutical Sciences, Indore-452010, M.P.

Abstract

Herbs are mines of useful drugs and herbal products are gaining importance due to minimal side effects, easily availability of ingredients and cheap in comparison to available synthetic medicines. Decongestants are the preparations used to suppress cough and cold. Today when artificial and chemical ingredients are at very high prices, herbal preparations bring goodness of natural alternatives. These ecofriendly, herbal preparations are made from natural plant extracts that promises with new effectiveness without side effect. The present investigation was done to formulate herbal decongestant and to assess the antimicrobial activity of the formulations against four different strains using agar diffusion techniques. Standard drug of gentamycin sulphate was used as positive control and sterile water was used as a negative control.

herbal0914@rediffmail.com

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INVESTIGATION OF ANTIDIABETIC ACTIVITY OF *PONGAMIA PINNATA* LINN. LEAVES EXTRACTS

P. Porwal, S.Qureshi, D. K. Mishra, K. Shukla, S.C. Mahajan

Herbal drug technology laboratory, Mahakal Institute of Pharmaceutical Studies, Ujjain (M.P.) India 456664

Abstract

Diabetes mellitus is a wide spread disorder, which has been recognized in the history of medicine. Many plants were recommended for diabetes and recent investigations have affirmed the potential value for these treatments. The anti-diabetic activity of *Pongamia pinnata* Linn. leaves (Leguminosae) was investigated in a model of Alloxan-induced diabetic rats. Alloxan was administered at the dose of 150mg/kg (i.p.). Extracts (aqueous and alcoholic) were administered daily at the doses of 200mg/kg and 400mg/kg (p.o.). The aqueous extract of the drug showed significant dose dependent percentage blood glucose reduction in diabetic rats. The anti-diabetic effect of *Pongamia pinnata* was compared with the reference standard drug Glibenclamide (5mg/kg body weight) which showed significant decrease in blood glucose level. On the basis of this study we can conclude that *Ponagamia pinnata* Linn. Leaves have potent antidiabetic activity and can be used for treatment of diabetes.

porwalpiyush16@gmail.com

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MEDICATED CHEWING GUMS - A NOVEL OPTION

***Dharmendra Sharma**, Prashant Khemariya, Sarvesh Sharma,

Lakshmi Narain college of Pharmacy, BHOPAL

ABSTRACT

Chewing gums are mobile drug delivery systems. It is a potentially useful means of administering drugs either locally or systemically via, the oral cavity. The medicated chewing gum has through the years gained increasing acceptance as a drug delivery system. Several ingredients are now incorporated in medicated chewing gum, e.g. Fluoride for prophylaxis of dental caries, chlorhexidine as local disinfectant, nicotine for smoking cessation, aspirin as an analgesic, and caffeine as a stay alert preparation. Children in particular may consider chewing gum as more preferred method of drug administration compared with oral liquids or tablets. The use of medicated chewing gum is feasible as al local treatment of diseases of the oral cavity as well as treatment of systemic conditions.

Medicated chewing gum consists of a masticatory gum core with a coating that can be a film of polymers, waxes, sweeteners, sugar, flavors or colors. The pharmacologically active ingredients can be present in the core, in the coating or in both. Chewing gum today is gaining consideration as a “vehicle” or a “delivery system” to administer active principles that can improve health and nutrition but it’s potential as an “Alternative drug delivery system” has not been yet fully discovered and exploited. US market accounts for approx. 50% of world market for medicated chewing gums.

Key word: chewing gum, drug delivery system, synthetic gum.

dharmendrasharma55@yahoo.in

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Development of quality control methods and fingerprints for Intuppukana Churna: A reputed Ayurvedic formulation

Amit Khare , S.Qureshi, P. Porwal, K. Mishra, K. Shukla* and S.C. Mahajan

Herbal drug technology laboratory, Mahakal Institute of Pharmaceutical Studies, Ujjain (M.P.) India 456664

ABSTRACT

Churnas are important group of formulations used by Ayurvedic and Siddha physicians to treat various types of diseases. Intuppukana Churna is an important ayurvedic formulation, is official in Ayurvedic Formulary of India is combination of three reputed herbs, comprised fruits of *Piper longum*, *Cyminum cuminum, Terminalia chebula* and a salt Intuppu (Saindhva lavan). The formulation is dispensed for the disorder of dyspepsia and digestive systems. For development of quality control methods, extractive values, ash values, foaming index, swelling index, determination of pH value, micrometric parameters (bulk density, true density), total fiber content, essential oil content, loss on drying and preliminary Phytochemical screening were performed as per the method given in WHO guidelines. The results of all batches were found in close proximity with each other.

Spectrophotometric and high performance chromatographic (HPLC) methods were also developed for estimation of piperine form different laboratory batches of formulation. The results of studies performed on formulation found to be precise, reproducible and can be considered for routine quality control of the formulation.

karunakarshukla@gmail.com

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Herbal Remedies: A New Era for Psoriasis Diseases

Ravish Sahu [1]*,Ashish Dixit[1], Naveen Sharma[1],Amit Upadhya[1] ,Gyanesh Garg[1],Gurdeep Singh[1] , Pawan Tiwari[2] & Vimal Kumar[3]

1. *Shri Ramnath Singh Institute of Pharmaceutical Science & Research,,Sitholi Road,Gwalior (M.P.) India*
2. *Pranav Institute of Pharmaceutical Science & Research, Sitholi Road,Gwalior (M.P.) India*
3. *Lakshmi Narain College of Pharmacy, Raisen Road, Bhopal, (M.P.) 462021*

Abstract

The objective of this study was to review and explore the top 15 currently herbal remedies used and the historically used herbal remedies in the treatment of psoriasis. Psoriasis is undoubtedly distressing, affected individuals are typically otherwise healthy and thus well suited to thoughtful outpatient care. Recent advances in our understanding of psoriasis have provided parallel advances in topical treatments.Specifically herbals, there is limited scientific data regarding their benefits and interactions. About 75% of patients have mild-to-moderate psoriasis, amenable to topical treatment is lifetime controlling herbals remedies like Aloe, Cayenne, Chamomile, Dong Quai,Emu oil,Evening prime rose oil,Fish oil,Tea tree oil, Turmeric, Slippery elm,Wintergreen ,Shark cartilage,Milk thistle, Glucosamine,Flexseed oil are needed. Herbal remedies for treatment psoriasis diseases to overcome the adverse effect, antagonistic effect and bioavailability of drug.

Keyword: Psoriasis, Herbal remedies, Topical Treatment.

ravishsahumpharma@gmail.com

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REGULATION OF HERBAL MEDICINES WORLD WIDE

A. Khare, D. K. Mishra, K. Shukla and S.C. Mahajan

Herbal drug technology laboratory, Mahakal Institute of Pharmaceutical Studies, Ujjain (M.P.) India 456664

Mahakal Institute of Pharmaceutical Studies,Ujjain-456 664

ABSTRACT:

Herbal products are well established as phytomedicines in some countries, whereas in others their therapeutic claims are not allowed and regarded as foods.

The World Health Organization (WHO) has reviewed the regulatory control of herbal medicines in 50 countries. The Drugs Directorate has provided guidelines for the manufacture and sale of botanical products which fall into three categories: food supplements (no DIN required, no therapeutic claims); phytopharmaceuticals with full drug status (approved therapeutic indications, approved dosage, efficacy supported by scientific evidence, DIN required); traditional herbal medicines (self–medication only, efficacy supported from the herbal literature, approved therapeutic indications and dosage)(Leung, 1980).

In India, the first National Health Policy 1983, mentions that India's rich tradition of health care should be included in national programmes. The National health Policy states that TM experts and medicines should be used to stabilize the population. The department of AYUSH, which started in 1995, regulates TM programmes. The government of India has an explicit and separate policy for Indian (traditional) medicine since 2002.Traditional medicine is also governed by the Drugs and Cosmetics Act, 1940. Licensing of manufacturers and the provisions of the Drugs Act are implemented by the state governments. GMPs are mandatory since 2002, although not exactly as recommended by WHO, but still they are based on them. Central and state governments are impressing upon manufacturing units to comply with GMP norms and to ensure quality standards.

karunakarshukla@gmail.com

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Herbal Therapy for Wounds

Parul Diwaker*, Pankaj Jain, Rahul Jain, Sunil k. Jain, Anuj Modi

Department of Pharmacognosy, Adina Institute of Pharmaceutical Sciences, Sagar

Abstract:

Wound healing is the process of repair that follows injury to the skin and other soft tissues.Wounds may result from trauma or from a surgical incision, pressure etc. Following injury, inflammatory response occurs and the cells below the dermis begin to increase collagen production. Later, the epithelial tissue is regenerated. The capacity of a wound to heal depends in part on its depth, as well as on the overall health and nutritional status of the diseased person. Herbs are used not only to treat the disease, but also in the enhancement of life physically, emotionally and spiritually reaction. Many herbs used in wound healing are *Acacia, Alovera, Berberis aristata, Carica papaya, Cassia fistula, Cinnamomum camphora, Crocus sativus.* Preparation available in the market based on synthetic/ chemical compounds possess sensitivity problems unlike herbal compounds. On the other hand these herbal preparations are devoid of such reactions.

pharmaanuj@gmail.com

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Standardization of Herbal Extract: Does HPTLC Analysis is Appropriate?

Rahul Jain, Sunil K. Jain, Shikha Singh, Anuj Modi, Vaibhav Uplanchiwar

Department of Pharmacognosy, Adina Institute of Pharmaceutical Sciences, Sagar

Abstract:

Quality, efficacy and safety studies are essentials for Drug Registration. These studies must study be performed in compliance with current international guidelines, which cover not only synthetic chemical entities but also phytopharmaceuticals.

Herbal extracts and its phytopharmaceuticals preparation are multicomponent system and it is questionable, whether a single component is characteristic of the preparation? This make standardization of herbal extract and its preparation more complicated. Thus, there arises the need to identify appropriate active principle or marker compounds (biomarker/active marker) to characterize the extracts. This is where; HPTLC analysis plays an important role in standardization (qualitative/quantitative estimation, finger print profiling) of herbal extracts and its preparation. Standardization by HPTLC is based on the fact that no two different components have same R_f value in same mobile phase.

pharmaanuj@gmail.com

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HERBAL DRUGS: A REMEDY FOR SWINE FLU

Sanjana Datta*, Renu Singh, Umesh B Telrandhe,
Vaibhav Uplanchiwar, Avinash Gahane

Department of Pharmacognosy, Adina Institute of Pharmaceutical Sciences, Sagar

Abstract:

Swine flu as indicated by name itself is a viral infection caused by Swine influenza virus (SIV) which has many strains like H1N2, H3N1, H3N2, and H2N3 etc. About 9,596 deaths have been reported worldwide by WHO due to swine flu infection. The first case of the flu in India was found on the Hyderabad airport on 13 May, when a man traveling from US to India was found H1N1 positive. As of 14 August 2009, 1193 cases of swine flu have been confirmed and 719 people have been discharged with 20 deaths. On 1, January 2010 the Indian government reported there had been 967 deaths from swine flu in the country. The spread of this deadly virus is not so fast in India as compared to other countries. This is just because the Indian's habit of using herbs in their foods and drinks. In this study an attempt has been made to make review on some preventive measures to stop spread of H1N1 flu in herbal way. Herbal drugs like turmeric, garlic, eucalyptus oil, guduchi and basil (tulsi) can use as preventive measure in case of swine flu.

Key Words: Swine flu, SIV, turmeric, garlic, eucalyptus oil, guduchi and basil, H1N1
E-Mail: umed_057@yahoo.co.in

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QUALITY ASSURANCE FOR CHINESE HERBAL FORMULAE

Maninder Singh Bagga*, Mayank Agrawal and Sanjana Datta

Adina Institute of Pharmaceutical Sciences, Sagar, 470002(M.P)

Abstract:

The employment of well characterized test samples prepared from authenticated, high quality medicinal plant materials is the key to reproducible herbal research. The present study aims to demonstrate a quality assurance program covering the acquisition, botanical validation, chemical standardization and good manufacturing practices (GMP) production of IBS-20, a 20-herb Chinese herbal formula under study as a potential agent for the treatment of irritable bowel syndrome. Methods of Purity and contaminant tests for the presence of toxic metals, pesticide residues, mycotoxins and microorganisms were performed. Qualitative chemical fingerprint analysis and quantization of marker compounds of the herbs, as well as that of the IBS-20 formula was carried out with high-performance liquid chromatography (HPLC). Extraction and manufacture of the 20-herb formula were carried out under GMP. Chemical standardization was performed with liquid chromatography-mass spectrometry (LC-MS) analysis. Stability of the formula was monitored with HPLC in real time. Results Quality component herbs, purchased from a GMP supplier were botanically and chemically authenticated and quantitative HPLC profiles (fingerprints) of each component herb and of the composite formula were established. An aqueous extract of the mixture of the 20 herbs was prepared and formulated into IBS-20, which was chemically standardized by LC-MS, with 20 chemical compounds serving as reference markers. The stability of the formula was monitored and shown to be stable at room temperature. Conclusion, a quality assurance program has been developed for the preparation of a standardized 20-herb formulation for use in the clinical studies for the treatment of irritable bowel syndrome (IBS). The procedures developed in the present study will serve as a protocol for other poly-herbal Chinese medicine studies.

Keywords: Botanical Validation, Qualitative Chemical Fingerprint Analysis, Irritable Bowel Syndrome.

avinashgahane@gmail.com

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PHYTOCHEMICAL STANDARDISATION OF HERBAL DRUGS AND POLYHERBAL FORMULATIONS

Mayank Agrawal*, Maninder Singh Bagga and Sanjana Datta

Adina Institute of Pharmaceutical Sciences, Sagar, 470002(M.P)

Abstract:

The recent global resurgence of interest in herbal medicines has led to an increase in the demand for them. Commercialization of the manufacture of these medicines to meet this increasing demand has resulted in a decline in their quality, primarily due to a lack of adequate regulations pertaining to this sector of medicine. The need of the hour is to evolve a systematic approach and to develop well-designed methodologies for the standardization of herbal raw materials and herbal formulations. In this chapter, various methods of phytochemical standardization, such as preliminary phytochemical screening, fingerprint profiling, and quantification of marker compound(s) with reference to herbal raw materials and polyherbal formulations, are discussed in detail and suitable examples are given.

Keywords: Preliminary Phytochemical Screening, Fingerprint Profiling, Quantification Of Marker Compound(S).

avinashgahane@gmail.com

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"RECENT TRENDS IN SUSTAINED DRUG DELIVERY SYSTEM - PELLETIZATION"

***Prashant Khemariya, Mohit Bhargava, Sanjay K. Singhai, Sarvesh Sharma**

Lakshmi Narain College of Pharmacy, Raisen Road, Bhopal, (M.P.) 462021

ABSTRACT

The purpose of present investigation was to formulative study for the development and *in vitro* evaluation of innovative Sustained drug delivery systems for Metformin Hydrochloride by using a recent technology i.e. Pelletization. Pellets are spherical agglomerated powders and can be prepared by various processes thus mechanism of pellets formations and not alike. Pelletization techniques widely used in pharmaceutical industries are direct Pelletization, extrusion spheronization, and layering. In the field of pharmaceuticals, sustained release systems have been widely used in oral medication. Pellets are filled in capsules or compressed into fast disintegrating tablets are multiple unit dosage forms, which offer several advantages over single unit dosage forms, such as independence of gastric emptying rate, increase in bioavailability, reduction in side effects, and possibility of combining incompatible drugs in a single unit. Pellets offer a high degree of flexibility in the design and development of oral dosage forms. Formulation of sustained release Pellets of Metformin was based on polymers components that have been modifying the release pattern (sustained release) of drug. The direct compression technique was followed to manufacture the Metformin HCl tablets. The tablets were evaluated for in process and finished product quality control tests i.e. appearance, dimensions (diameter and thickness), weight variation, hardness, friability, assay, drug content and *in-vitro* drug release.

Key Words: Sustained Release, Metformin HCl, Drug Release Kinetics Pelletization.

tinku_pharma@yahoo.co.in

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MOLECULAR MARKER IN HERBAL DRUG TECHNOLOGY

Pooja sethi*, Shiv narayan patel*,Bhagwan shiv hare*

Lakshmi Narain College of Pharmacy, Bhopal.

Herbal drug technology is used for converting botanical materials into medicines, where standardization and quality control with proper integration of modern scientific techniques and traditional knowledge is important.

The use of chromatographic techniques and marker compounds to standardize botanical preparations has limitations because of their variable sources and chemical complexity. DNA-based molecular markers have utility in the fields like taxonomy, physiology, embryology, genetics, etc. DNA-based techniques have been widely used for authentication of plant species of medicinal importance. Pharmacognosy mainly addresses quality-related issues using routine botanical and organoleptic parameters of crude drugs, with chromatographic and spectroscopic techniques. The new pharmacognosy includes all the aspects of drug development and discovery, where biotechnology-driven applications play an important role. Current focus on chemotype-driven fingerprinting and related techniques requires integration with genotype-driven molecular techniques so that an optimal characterization of botanical materials is possible. This review provides a brief account of various DNA-based technologies that are useful in genotyping and quick identification of botanicals with suitable examples.

pooja_sethi29@yahoo.in

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KEEP AWAY FROM SWINE FLU BY THE USE OF HERBS

Itushree Debnath* & D.K.Tiwari.

Lakshmi Narain College of Pharmacy, Bhopal.

ABSTRACT

"Swine flu a life threatening disease". A flu pandemic has indeed shrunk into a global village. This present paper is aimed to draw the attentions of the disease and its herbal treatment. What started as almost a "foreign disease" in some distant shore has crept in menacingly and is growing into a diabolical monster. But the sad fact remains that when so many people catch swine flu, some of them will develop severe disease and die.

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Formulation and Evaluation of Herbal Hair Oil

Namrata Parmar, K. Shukla and S.C. Mahajan

Mahakal Institute of Pharmaceutical Studies, Ujjain (M.P.)

Abstract

Herbal formulations have always attracted considerable attention because of their good activity and comparatively lesser or nil side effect as compared to synthetic drug. Tailas are preparations in which taila is boiled with prescribed kasayas (decoction) and kalkas (wet pills) of drugs according to formula. The present study involves preparation and evaluation of herbal hair oil using different crude drugs like *Emblica officinalis, Elclipta alba, Hibiscus rosa-sinensis, Magnefera indica,* seed of *Cucurbita popo having hair* growth potential and taking *Sesamum indicum* which also increase hair growth activity. The hair oil was characterized by morphological and physiochemical evaluation parameters like colour, odour, pH, acid value and saponification value. The study is to improve the acceptability of Taila, an Ayurvedic formulation across the world by developing certain quality control parameters by following the WHO guidelines for traditional formulations. The formulation was physiochemically evaluated for appearance, pH, saponification value, acid value and spreadibility. The results of formulation were satisfied. The methods used for determination of quality control of Taila found to be precise, reproducible and can be considered for routine quality control of the formulation.

Key words: Evaluation, hair oil, hair growth, herbal formulation

karunakarshukla@gmail.com

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STUDIES ON WOUND HEALING ACTIVITY OF GEL FORMULATION CONTAINING COW GHEE AND ALOEVERA

Rupali Nandanwar, Deepak singh Jayant and Rohit Gupta

Shri Rawatpura Sarkar Institute Of Pharmacy
NH-75, Kalapuram Datia (M.P.)

ABSTRACT

The present study aims to evaluate the wound healing activity of gel containing cow ghee and aloevera in rats. Incision wounds for tensile strength and excision wounds contraction along with the histopathological examination of the regenerated tissues were employed to investigate the wound healing potential. Topical application of the test formulation alone promoted the tensile strength (incision wounds) and wound contraction (excision wounds) showing healing potential comparable to framycetin sulphate cream (1%w/w). Histological examination reveals good keratinization, epithelization, fibrosis and collage nation indicative of the wound healing potential of gel. The present study thus offers a valuable insight into the claimed wound healing potential of the test formulation.

KEY WORDS: **Cow ghee, Aloevera and wound models**

deepak_sri72@yahoo.com

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Chemo-informatics :-"A New Era Of Drug Designing"

Onkar P Sharma[1], Prakash Narayan Pandey[1], , HimeshSoni [2]*,

[1] R. D. Memorial College of Pharmacy, Bhopal (M.P.)

[2]L. N.C. P. Bhopal (M.P.)

ABSTRACT

Drug discovery and development is in the midst of a critical transition, from a discipline dominated by empirical tests and brute force to one in which biological and chemical structural knowledge are exploited intelligently, using computational assistance. Chemo-informatics, the combination of chemical synthesis, biological screening, and data mining approaches used to guide drug discovery and development, chemo-informatics tools that allow for the rational selection of designed compounds with drug- like properties from an almost infinite number of synthetic possibilities, building smarter focused libraries for virtual and high- throughput screening and the exploitation of previously obtained discovery data to guide lead optimization efforts are all important.It is the application of information technology to help chemists investigate new problems and organize, analyze, and understand scientific data in the development of novel compounds, materials, and processes.Chemo-informatics focus on the information resources needed to optimize the properties of a ligand to become a drug. It helps in molecular modeling by generating 3D Structure, 3D Searching (pharmacophores) and finally docking.

himeshsoni@rediffmail.com

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Polyherbal Therapies

Anamika Singh Chauhan*, Deepak Dwivedi, Jitender Malik

R.D. Memorial College of Pharmacy, Bhopal

Polyherbal therapies (the combination of various types of agents from different plant sources) can be used to enhance efficacy. Polyherbal therapies have the synergistic, potentiative, agonistic/antagonistic pharmacological agents within themselves that work together in a dynamic way to produce therapeutic efficacy with minimum side effects. In the traditional system of Indian medicine, plant formulation and combined extracts of plants are used as drug of choice rather than individual. Advantage of the polyherbal formulation also minimizes the risk of development of drug resistance. Due to difficulties in identification of individual herbal ingredients from poly herbal formulation, the products find difficulty in getting registration in developed countries. The agency like World Health Organization has recommended the use of TLC fingerprinting as the method of identification of poly herbal formulation but this method is not foolproof for indicating the presence of each herbal ingredient in appropriate amounts. Attempts have also been made to use HPTLC/HPLC fingerprinting for identification of herbs from polyherbal formulation. The problem of identification of individual herbal ingredient from poly herbal formulation is the burning problem whose solution is coating the pellets of individual ingredients with acceptable food colour distinct from one another, mixing these different color pellets as per the formulation which can be filled either in hard gelatin capsule or can be suspended in syrup or may be dispensed in the form of granules only.

Keywords : Polyherbal, Potentiative, Resistance, Fingerprinting, Ingredients

himeshsoni@rediffmail.com