NATIONAL CONFERENCE
ON
NOVEL TOOLS AND TREATMENT APPROACHES IN HEALTH CARE SYSTEM

CONFERENCE PROCEEDING
Organized by
Faculty of Pharmacy
Integral University
Lucknow – 226026
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TUESDAY 3rd March 2015
NATIONAL CONFERENCE
ON
NOVEL TOOLS AND TREATMENT APPROACHES IN HEALTH CARE SYSTEM

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WE ARE THANKFUL TO THE EDITORS OF INTERNATIONAL JOURNAL OF PHARMACEUTICAL SCIENCES AND RESEARCH FOR COVERING THE CONFERENCE PROCEEDINGS OF NATIONAL CONFERENCE ON NOVEL TOOLS AND TREATMENT APPROACHES IN HEALTH CARE SYSTEM ORGANIZED BY FACULTY OF PHARMACY INTEGRAL UNIVERSITY LUCKNOW ON 3RD MARCH 2015
MESSAGE

Frequent changes are occurring everyday on a global level. In order to keep pace with swift advancement of technology we need to develop tools, which forms the essential part of any field and thus we are able to achieve excellence in it. I am very pleased that the faculty of Pharmacy acknowledges the importance of the developing tools and approaches for treatment in health care system by organizing a National Conference.

Integral University, being a seat of excellent learning in various discipline, is marching ahead to achieve the goal in various fields. This target can only be obtained by continuously and rigorously working to attain the best.

Integral University is driven by a vision and mission to make the country progressive, flourish and prosperous in all walks of life. We aim to achieve this by exploiting state-of-the-art technology in a befitting manner, which will of course be fruitful to humanity. Radical changes have become a part of human life style to survive and to attain excellence, therefore, we need to change and to adapt to the new environment. In the present scenario, the Integral University, covering all aspects, provides all necessary infrastructure, talented faculty members and over and above the environment, which helps in grooming the students to face the world. We strive hard to excel in emerging technologies by encouraging and getting all its faculties and students engaged in various activities which not only benefits the individuals but also the entire University. I wish a grand success of the Conference.

I congratulate the organizing secretary Dr. Juber Akhtar and his whole team for organizing the event.

S.W. Akhtar  
(Vice Chancellor)

E-mail: info@integraluniversity.ac.in. Web: www.integraluniversity.ac.in
MESSAGE

Date – 28.02.2015

It gives me immense pleasure to note that the Faculty of Pharmacy, Integral University is organizing National Conference on “Novel Tools and Treatment Approaches in Health Care System” on 3rd March 2015. The topic chosen by the Organizing Committee of the Conference is self explanatory. Pharma field is growing very significantly in all areas of health care systems. Day by day some new disease is coming into existence so it needs more attention of pharmacists towards the development of new tools, diagnostic kits, drugs, etc.

I congratulate the Organizing Secretary, Dr. Juber Akhtar and his whole team for organizing the event on such a broad topic.

(S. M. Jafri)
Chief Academic Consultant

E-mail : info@integraluniversity.ac.in. Web : www.integraluniversity.ac.in
Message

It is a real pleasure that the Department of Pharmacy is organizing a national conference on 3rd March 2015.

It is expected that latest pharmaceutical technologies will be discussed and described in this conference and it will open new horizons in this branch of knowledge. Pharmacy and pharmacology play a very important role in human growth and development and it is the need of the time to study this subject and explore new secrets in this field.

I am sure this conference will be successful in all respects and will prove to be a new feather in Pharmacy Department’s cap.

My best wishes for the success of this programme and my hearty congratulation to the organizers of the same.

Prof. (Dr.) T. Usmani

[Signature]
MESSAGE

Registrar
Integral University

National Conferences have always been the heap of knowledge on significant issues, which have been befitting the students to enhance their wisdom. The Conference on “Novel Tools and Treatment Approaches in Health Care System” will open every path to everyone to walk on and to gain knowledge for better health-care system.

I heartily congratulate the Organizing Secretary and the steering committees who have initiated this momentous event. The focus on this year’s first Conference “Health Care System” has been chosen very carefully and thoughtfully so that the intellectuals, academicians, policy makers and researchers come close to each other with concrete proposals.

On this very important occasion I share my best wishes with Dr. Juber Akhtar and his whole team who have been working hard for months to make this Conference a huge success.

I am sure this Conference will add another chapter in the glorious past of this great seat of learning.

[Signature]
Prof.(Dr.) I.A. Khan
Registrar

E-mail : info@integraluniversity.ac.in.  Web : www.integraluniversity.ac.in
Dear Dr. Jubber,

I am pleased to convey the following.

The health care services are beginning to be heavily demanded by a vast section of our population. It is a challenge for any establishment to cater to such an exponential rise in demand. The researchers and scientists working in the field of health services are under obligation to propose and demonstrate novel tools and techniques that promise easy and affordable treatment. This conference comes at an opportune moment and provides a platform for sharing and developing ideas for affordable health care. I congratulate the organizers for addressing a very important issue and hope that the participants leave the conference much enlightened and emboldened with new and novel ideas. I extend my best wishes for the success of the conference.

Regards

Nadeem
It is a happy moment for me that the Faculty of Pharmacy is organizing a one day conference on ‘Novel Tools and Treatment Approach in Health Care System’. Pharmacists all around the world is one of the most important health care professional group. Medical and Pharmaceutical Sciences have made rapid progress and to cope with the same, pharmacist in the health team has to be highly knowledgeable. Pharmacist have worked very hard with sincere dedication to achieve respectable position. Profession of Pharmacy has progressed from a dispensing to pharmaceutical care and today they are leader in research, drug designing and development, pre-clinical evaluation of drugs for determining the safety and actively participating in the clinical evaluation of drugs to determine the efficacy. Pharmacist has a crucial role in manufacturing, analysis and research and development department of the drug industry.

All this has been possible because of extensive changes in the pharmacy curriculum to provide the requisite knowledge and training in every aspect of drugs like pharmacotherapy, clinical pharmacy, hospital pharmacy, community pharmacy and regulatory affairs

In India, we have yet to establish a strong Hospital Pharmacy/Pharmaceutical Care/Clinical Pharmacy department in our hospitals to fully utilize the potential of trained pharmacists for better patient care. The West took a lead in this direction and even our nearby Middle East countries have a fully developed Hospital Pharmacy department for both teaching and patient care. We are lacking this facility in our hospitals. This is proving a bottleneck for our pharmacists in providing patient care service within the country and abroad.

We at Integral University are lucky to have a teaching hospital of 300 bed and a very competent and co-operative group of staff members. We will soon start a collaborative teaching in pharmaceutical care and hospital pharmacy. This has also helped us to start a Pharm.D course. At the same time we have to take stock on our side. Our students must have a sound basic knowledge in pharmacy subjects to apply in patient care. Our students should judge themselves that how much they have learnt rather than how much has been lectured.

I congratulate Dr. Juber Akhtar Head of the Department of Pharmacy and the whole faculty and staff of the Faculty of Pharmacy for the untiring efforts to make this seminar successful.

I wish it a grand success.
DR. HUMA MUSTAFA
Joint Director (Biotechnology)
Council of Science & Technology, UP
Lucknow.

MESSAGE

Despite the growing needs of populations around the world for care and delivery of services, as well as disease control, quality diagnostics, and secure records, there remains a void in literature of a complete reference that covers the latest technological advancements and innovations within the healthcare field. The health information related to their concepts, methodologies, tools, and applications would provides researchers, administrators, and medical practitioners and academicians with a complete understanding of the development of applications and concepts in clinical, patient, and hospital information systems. There is a demand for a resource that encompasses the most pertinent research in health information systems, healthcare technologies, and telemedicine.

I am happy to know that Faculty of Pharmacy, Integral University, Lucknow is organizing the National conference on topic entitled “Novel Tools and Treatment Approaches in Health Care System”. I understand that the workshop will be quite informative and useful to the upcoming scientists, students of graduate as well as post graduate level and all the participants. I congratulate the organizers for holding forth such a workshop and also wish them all the best.
I wish the workshop a great success.

(HUMA MUSTAFA)
Dr. Sajal Srivastava
Dy. Director & Head
AIP, AMITY UNIVERSITY UTTAR PRADESH
Lucknow Campus

Message

I am pleased to note that the Faculty of Pharmacy, Integral University is organizing a National Conference on “Novel Tools and treatment Approaches in Health Care System” on 3rd March 2015. There have been major advances in discovery of new drugs in recent years, providing unprecedented opportunities to provide medical relief to patients. So here the role of pharmacy professionals is central. Their domain covers right from discovery and development to post marketing management of the medicines and other health care products. The professionals who promote and transfer benefit of their expertise to the patients. I believe that the conference will build the bridge between information and information seeker.

I congratulate the organizers for organizing the event on such an interesting topic.

Dr. Sajal Srivastava
MESSAGE

The Holy Quran has been described as a health-giving medicine for the diseased hearts. God-Almighty has said: “There hath come unto you an exhortation from your Lord. A balm for that which is in the breasts”. (10:57) and said: “And we reveal of the Quran that which is a healing and a mercy for believers”. (17:82)

“Education imparted by heart can bring revolution in the society” - Abul Kalam Azad

It come into view that the pendulum of pharmaceutical sciences is gradually fluctuating more towards life sciences, applied medical and healthcare sciences, biotechnology and information technology. The stipulate of soaring quality pharmaceuticals, introduction of new invention of drugs, promising biotechnological methods for the production of enormously efficacious drugs, increased understanding of etiology of diseases due to advances in biology, the availability of sophisticated biomedical equipments and instruments for diagnosis and devices for the effective treatment of diseases demands greater responsibilities on pharmacists working in industry, hospitals and community.

The pharmacy educational institutions should work together with new attitude, vision and serendipity. Universities, Govt. regulatory bodies and pharmaceutical and healthcare industries have big role to play. Knowledge based and sophisticated technology based developments will present many more challenges and opportunities than today and before. Pharmacy students have much to learn and much more to do.

We at Integral University have more than 300 bedded teaching hospital with competent and co-operative group of staff members. We are starting a collaborative teaching in pharmaceutical care and hospital pharmacy and starting a Pharm.D course from session 2015. I am thankful to our Vice-chancellor Prof. S. W. Akhtar, Chief academic consultant Prof. S. M. Iqbal, Pro Vice-Chancellor Prof. T. Usmani, our Dean Prof. (Dr.) H. H. Siddiqui and all my colleagues and staff members for their blessings, coordination and efforts to make this conference successful.

I wish it a grand success.

Dr. Juber Akhtar
Assistant Professor & Head
Faculty of Pharmacy
MESSAGE

Pharmacy has been the backbone of the health care system worldwide. In order to improve the health care system, pharmacy profession and pharmacists should be involved in all aspects. It will enhance employment generation and treatment approaches. India and particularly North East part of India faces a lot of challenges in health care system.

It is indeed very relevant that a National Conference on “Novel tools & treatment approaches in health care system” is being held at Faculty of Pharmacy, Integral University Lucknow 3rd March 2015. The conference has received a huge response and received many research papers, and organizers have selected only quality papers for inclusion in the proceeding of the conference. It is heartening to note that a number of papers have been received from different universities and colleges across all India.

It is also a matter of pleasure that Faculty of Pharmacy, Integral University is organizing a national conference first time since faculty established.

Professor Shubhini A. Saraf and many other senior researchers will deliver invited talks in the conference. I hope that the deliberations in the conference will help researchers from academia and industry and the conference will provide a platform for initiating collaborative research projects.

I wish the conference all success.
Mr. Kuldeep Singh

Joint organizing Secretary
Assistant Professor
Faculty of Pharmacy, Integral University

MESSAGE

It gives me great pleasure to welcome all delegates, guests and speakers to national Conference at faculty of Pharmacy Integral University.
Discovering, developing, producing and marketing products that improve health and save lives are all parts of working in the Pharmaceutical sector.
The pharmaceuticals (Pharma) industry is reliant on multi-disciplinary, cutting edge research to produce unique, innovative products and on large teams of sales people backed up by sophisticated marketing skills.
The overwhelming response to our call-for-papers indicates the popularity of this conference.
Thanks to this response, all important fields of health care system, technology and exploitation have been covered by the contributions.
To further contribute to this knowledge pool, several invited sessions have been organised.
Further, there will also be special sessions on oral presentations which shall open the mind of the researchers beyond one’s own field by looking into complementary fields.
I would like to express my heartfelt thanks to all authors for their outstanding contributions and, in particular, the members of the scientific committee for their competent evaluation of the large number of submissions. I would also like to convey my sincere respect and heartfelt thanks to all committee members for providing all the support and valuable scientific advice.
It will be a really exciting for us to create a state of art scientific programme to provide enthusiasm of education and learning for all. We assure you that the memories of this novice scientific feast at Conference at faculty of Pharmacy Integral University Lucknow will be a memorable event.
FROM THE DESK OF SCIENTIFIC COMMITTEE

Respected Professionals and Dear students, we welcome and extend our warm wishes to all attendees of “National Conference on Novel Tools and Treatment Approaches in Health Care System” being organized on 3rd March 2015 at Faculty of Pharmacy, Integral University, Lucknow (U.P).

In this collection of scientific abstracts, we have comprehensive collection of articles for oral and poster presentation related to health care issues and its management or treatment using herbal and other novel tools, personalized health care, herbal and synthetic drug design, including various types of drug delivery systems, etc.

Our aim is to provide a platform to research personnel, academicians, scientist and other health care professionals, including our pharmacy professionals to share their knowledge and experience.

We express our sincere thanks to all the delegates. Your feedback is welcome for any possible corrections.
Chief Patron

Prof. S. W. Akhtar
Hon’ble Vice Chancellor
Integral University
Lucknow – 226024

Patron

Prof. S. M. Iqbal
Chief Academic Consultant
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Prof. Shubhini A Saraf

Professor and Head,
Department of Pharmaceutical Sciences,
Babasaheb Bhimrao Ambedkar Central University,
Lucknow.

Shubhini A. Saraf did her bachelors, masters as well as doctoral degrees in pharmacy from Department of Pharmaceutical Sciences, Dr. H. S. Gour University, Sagar. She is a Professor of Pharmaceutics and Dy Director, USIC, ex-Dean, School of Biosciences and Biotechnology, Babasaheb Bhimrao Ambedkar Central University, Lucknow. She was also earlier Director, EMRC- BBAU, Lucknow as well as BBDNITM, Lucknow. She has more than 22 years of teaching and research experience.

Her area of interest is lipoidal nanotechnology and she has presented her work on nanotechnology in many forums in India as well as abroad. She is the recipient of two prestigious national awards. She is a reviewer for various journals and has been associated with academic work and various committees of different Governing bodies. She is a life member of IPA, APTI, IPGA, LASAI and Society of Pharmacovigilance and an active healthcare professional.
Core Shell Type Nanoparticles- A novel treatment approach

Shubhini A Saraf

Professor and Head, Department of Pharmaceutical Sciences, BBAU, Lucknow

The focus of nanoparticle design over the years has evolved toward more complex nanoscopic core–shell architecture using a single delivery system to combine multiple functionalities within nanoparticles. Core–shell-type lipid–polymer hybrid nanoparticles (CSLPHNs), which combine the mechanical advantages of biodegradable polymeric nanoparticles and biomimetic advantages of liposomes, have emerged as a robust and promising delivery platform. In CSLPHNs, a biodegradable polymeric core is surrounded by a shell composed of layer(s) of phospholipids. The hybrid architecture can provide advantages such as controllable particle size, surface functionality, high drug loading, entrapment of multiple therapeutic agents, tunable drug release profile, and good serum stability.

Hybrid nanoparticles containing lipid shell and polymeric core was prepared and the drug (dapsone) was loaded in both polymer and lipid. The formulations having low particle size and long-term physical stability were prepared successfully using modified nanoprecipitation method. The formulation of Hybrid nanoparticle was optimized by the factorial design method. The HNs finally converted into topical gel using carbopol 940 as gelling polymer drug was also incorporated in the gelling vehicle to complete 5% w/w strength. The hybrid nanoparticulate gel represented an extremely effective, non-irritant carrier for anti-acne therapy. The gel of optimised formulation has the potential to localize the drug at the site and could be useful for site-specific delivery of drugs to the skin.

Hybrid nanoparticles are the alternative platform for drug delivery. This particle design uses an integrative approach by combining two classes of nanocarriers, e.g. polymeric nanoparticles and liposomes or any such nanocarriers. These particles have several beneficial features for treating various diseases, particularly cancers. HNs are promising because they have the potential to deliver multiple drugs simultaneously from a single platform. Specifically, incorporating two drugs into the core and coat can offer a viable approach to treating multi drug resistant and life-threatening diseases. Topical delivery can also be explored for various skin diseases like psoriasis, leprosy, dermatitis etc.
INVENTING THE FUTURE OF E – HEALTH

Dr Huma Mustafa

Joint Director (Biotechnology) Council of Science and Technology Lucknow

Information and communication technologies (ICT) are leading to a progressive blossoming of automation in the health sector. The e-health involves the use of information and communications technologies to improve health in general and the healthcare system. Healthcare, one of the largest industries in the world, suffers from some inefficiencies and inequities in both service provision and quality. Some of these problems are due to the poor management of the information flows. In this respect, there are business opportunities for e-health. But to understand what the future holds for e-health, we need to find a precise definition of the concept and identify the possible sources of business.
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OP - 01

Anti-stress activity of *Myristica fragrans* in experimental model of rodents

Arpita Sikdar, **Gireesh Kumar Singh**
*Rajiv Gandhi South Campus, Banaras Hindu University, Barkachha, Mirzapur-231 001*

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**Abstract:** *Myristica fragrans* Houtt., commonly known as Jaiphal and Javitri in India, belongs to the family Myristicaceae. Nutmeg has been mentioned in classical Ayurvedic text to possess diverse therapeutic and bioactive values. Recent studies have indicated anxiolytic, antidepressant, anti oxidant, hypolipidemic, aphrodisiac and anti microbial activity of *Myristica fragrans*. Considering these findings, current experimental study evaluated possible “Anti-stress activity of 50 % ethanolic dried extract of *Myristica fragrans* (EMF) in chronic unpredicted stress model of rodents. Adult Charles Foster rats were used as test animal. 14 days unpredicted random stress procedure including soiled cage, food and water deprivation for 24 hr, tilted cage, continuous 24 hr bright light exposure, cold water swim session and foot shock was used. EMF at the dose level 100 mg/kg and 200 mg/kg suspended in 0.3% CMC was administered orally throughout the test period. *Panax ginseng* extract (100 mg/kg) was used as standard adaptogen. Stress-induced ‘behavioural despair’ test and cognitive dysfunction test were used to assess the anti stress activity. Estimation of plasma corticosterone was also done using ELISA. The results showed that treatment of EMF prevented stress induced perturbations like depression and cognitive dysfunction in dose dependent manner. The elevated level of plasma corticosterone was also restored by PMF at both the dose administered. The findings of this study indicate that *Myristica fragrans* may have anti-stress activity.

**Keywords:** *Myristica fragrans*, ELISA, *Panax ginseng* extract

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OP - 02

Development of wound healing ointment from *Tridax procumbens*

**Irfan Aziz**

1Azad Institute of Pharmacy and Research, Lucknow
2National Botanical Research Institute, Lucknow

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**Abstract:** The objective of the present study was to develop wound healing ointment of *Tridax procumbens* (Family: Compositae) by using excision wound model with the help of
various parameters. The leaves extract of (50% ethanolic) *Tridax procumbens* was evaluated for wound healing activity. The extract was formulated as an ointment (water soluble ointment base) containing the extract 5%, 10% and 15% w/w. The parameters evaluated in excision wound were hydroxyproline, wound contraction area, epithelization time and collagen estimation in SD rats. The ointment showed the dose dependent and significant (P<0.001) activity in excision as the level of hydroxyproline was increased when compared to control. The 15% ointment promotes better wound healing as epithelization process significantly accelerated (P<0.001) and increased collagen quantity was compared to control. The 15% ointment of *Tridax procumbens* showed significant wound healing activity.

**Keywords:** *Tridax procumbens*, hydroxyproline, wound healing ointment

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**OP - 03**

Comparative effect of agomelatine versus escitalopram on glycemic control and symptoms of depression in patients with type 2 diabetes mellitus and depression

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**Abstract:** Depression is approximately twice as prevalent in adults with type 2 diabetes mellitus (T2DM) than in those without diabetes. A bidirectional relationship exists between T2DM and depression. There is dearth of research on comparative suitability of different antidepressant agents in persons with T2DM and depression. To compare the effects of Escitalopram and Agomelatine on glycemic control and symptoms of depression in patients with T2DM and depression. A randomized, open label, parallel groups study was conducted. In one group, subjects were administered Escitalopram (upto 20 mg) & in second group subjects were administered Agomelatine (upto 50 mg) along with antidiabetic agents as per ADA (American Diabetes Association), 2013 guidelines. Depression was assessed using HDRS (Hamilton Depression Rating Scale) and MADRS (Montgomery Asberg Depression Rating Scale); glycemic control was assessed by estimating fasting blood glucose, post prandial blood glucose and glycosylated haemoglobin using auto analyzer at 0, 1 and 2months. All baseline parameters were similar in the 2 groups. The Escitalopram group showed a significant reduction in blood glucose (fasting & postprandial) & glycosylated
haemoglobin; as compared to Agomelatine group at 1 and 2 months. Also, the HDRS and MADRS total scores of Escitalopram group at the end of 1 month (9.3 and 14.95 respectively) and 2 months (8.85 and 13.6 respectively) decreased significantly from baseline as compared to the Agomelatine group at the end of 1 month (16.85 and 21.9 respectively) and 2 months (15.6 and 21.15 respectively). From the above findings, it can be inferred that Escitalopram seems to be a better alternative than Agomelatine in terms of glycemic control and control of symptoms of depression when being prescribed to patients suffering from T2DM and depression.

**Keywords:** Agomelatine, type 2 diabetes mellitus, Escitalopram, MADRS

**OP - 04**

**Antibacterial activity of methanolic extract of *Ipomoea sepiaria* and isolated compound**

*Narendra Kumar Singh*, Virendra Pratap Singh

1Ayurveda Pharmacy Laboratory, Rajiv Gandhi South Campus, Banaras Hindu University, Barkachha, Mirzapur-231001

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**Abstract:** *Ipomoea sepiaria* Koenig Ex. Roxb. (Convolvulaceae) commonly known as Lakshmana in Sanskrit, is distributed throughout the India, Ceylon, Malaya and Formosa. Tubers of *Ipomoea sepiaria* are sweet, cooling, alterative, uterine tonic and aphrodisiac. The plant is also used for the treatment of burning sensation, general debility & sterility in women, hyperdypsia, constipation and diabetes by the ethnic groups in India. A compound ISPE-2 was isolated from the methanolic extract of *Ipomoea sepiaria* (MEIS). On the basis of spectroscopic data (UV, FT-IR, $^1$H-NMR, $^{13}$C-NMR and Mass spectra) the structure of compound ISPE-2 was confirmed as dodecyl-p-coumarate. Antibacterial activity of MEIS and ISPE-2 were performed by disc diffusion method on Mueller-Hinton agar media using bacteria *Staphylococcus aureus*, *Bacillus subtilis*, *Escherichia coli* and *Pseudomonas aeruginosa*. Standard drug ciprofloxacin (10 µg/mL) was used as positive control. MEIS at the dose of 50 and 100 mg/mL inhibited the growth of both Gram positive and Gram negative bacteria. Isolated compound ISPE-2 showed moderate antibacterial activity. Minimum dose of ISPE-2 (50 µg/mL) was found effective against both Gram + ve but ineffective against
Gram – ve bacteria, while showed moderate activity at the dose of 100 and 150 µg/mL. Ciprofloxacin (10 µg/mL) was used as positive control showed higher activity as compared to MEIS and ISPE-2. MIC values of MEIS for Gram + ve and Gram – ve bacteria were found to be 12.5 mg/mL and 25 mg/mL respectively. MIC value of isolated compound ISPE-2 for both Gram +ve and Gram –ve bacteria was found to be 50 µg/mL.

Keywords: Ipomoea sepiaria, hyperdypsia, spectroscopic data

OP - 05

Molecular docking studies of selected natural compounds of Solanacea family for their antiangiogenic potential against VEGFR2 as the target protein.

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Abstract: The additive and synergistic effects of phytochemicals in fruits and vegetables have been proposed to be responsible for their potent antioxidant and anticancer activities. The benefit of a diet rich in fruits and vegetables is attributed to the complex mixture of phytochemicals present in these and other whole foods. The major problem in any type of cancer is metastasis and angiogenesis. Tumours do not grow progressively unless they induce a blood supply from the surrounding stroma. Cancers that lack angiogenesis remain dormant. The tumour angiogenic switch seems to be activated when the balance shifts from angiogenic inhibitors to angiogenic stimulators. This remains a major problem as to how to combat the situation of blood vessel formation in dormant cancerous cells. Answering this problem a research strategy have been developed to target various angiogenic pathways and the receptors (VEGFR) of angiogenic signaling molecules with the use of natural phytochemicals extracted from specifically Solanacea family, using insilico approach. In the work presented herein, an insilico approach using docking of the receptor site of target protein VEGFR2 with 17 different compounds (phytochemicals) of Solanaceae family has been performed for prediction of potent drug target. Eight phytochemicals (Solasodine, Sobatum, Tomatidine,
Luteolin, Diosgenin, Physalin A, Withaferin A, Withanolide A of Solanaceae family showed the best binding energy and interaction (-15.81 kcal/mole, -9.86 kcal/mole, -9.18 kcal/mole, -9.23 kcal/mole, -9.94 kcal/mole, -10.68 kcal/mole, -10.99 kcal/mole) in comparison to the other selected compounds with target receptor proteins. The docking complexes obtained from above results helped us to better understand the interaction potential among these compounds. These selected compounds on the basis of their binding energy will further be carried to the next step of structural analog designing.

**Keywords:** VEGFR, Solanaceae family, molecular docking

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OP - 06

**Phytochemical investigation of Wrightia tinctoria (Roxb.) R.Br.**

**Nishat Fatima**¹²*, Jamal Akhtar Ansari¹², Mohammad Kaleem Ahmad¹, Homa Jilani Khan¹², Abdul Rahman Khan², Zulfiqar Ali², Abbas Ali Mahdi¹

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**Abstract:** *Wrightia tinctoria* Roxb. (R.Br.) is a small deciduous tree of the family Apocynaceae distributed in Central India, Burma, and Timor. This plant is extensively used in the Indian system of medicine. The aim of the present work was to investigate the preliminary phytochemical analysis of alcoholic crude extract of *W. tinctoria* bark. Alcoholic extract (Yield 19.14% w/w) of *W. tinctoria* bark was prepared by maceration under controlled temperature and pressure with the help of rotatory evaporator. The phytochemicals were identified by qualitative analysis according to slightly modified standard methods given by Sofowara (1993), Trease and Evans (1989) and Harborne (1973). The phytochemical i.e. alkaloid (by Mayer, Wagner, Dragendorff test ), steroids, saponins, reducing sugars (Fehling, Barfoed, Benedict test), tannins (ferric chloride test), flavonoids, glycoside (Legals test) and coumarines were investigated in alcoholic bark extract. The qualitative phytochemical investigation of alcoholic *W. tinctoria* bark extract revealed the presence of alkaloid, steroidal saponins, reducing sugar, tannins, flavonoids, terpenoids and absence of glycoside, coumarines. Our findings provided that tested plant contain medicinally important
compounds and it justifies *W. tinctoria* use in the traditional medicine for the treatment of various ailments.

**Keywords:** *W. tinctoria*, phytochemicals, bark, alcoholic extract.

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**OP - 07**

**A study of pregabalin, tramadol, their combination and *Nigella sativa* in neuropathic pain in rats**

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**Abstract:** The objective of present study was to compare analgesic activity of pregabalin, tramadol, their combination and *Nigella sativa* in cisplatin induced peripheral neuropathy painin rats. Animals were divided into 6 groups of 6 Wistar rats each. Ethanolic extract of *Nigella sativa*, pregabalin, tramadol, their combination were given orally in Wistar rats in which neuropathy was induced by cisplatin i.p. injections for 4.5 weeks. Single dose of drugs given and pain assessment was done by soft touch, crude touch, Eddy’s hotplate and tail flick analgesiometer at 0, 30, 60, 90, 120 and 240 minutes. There was no significant difference in tramadol and pregabalin analgesic activity. Also, pregabalin and tramadol combination did not show significant difference from pregabalin and tramadol alone. The acute effect of a single dose of Nigella sativa is inferior to those of pregabalin or tramadol which show better analgesic activity independently. Combination of pregabalin & tramadol does not confirm additional analgesic effect. We conclude that *Nigella sativa* shows analgesic effect on cisplatin induced neuropathic pain in rats which was not clinically comparable to pregabalin and tramadol. Further studies are required to advocate clinical use of *Nigella sativa* in neuropathic pain.

**Keywords:** *Nigella sativa*, pregabalin, tramadol, neuropathy
OP - 08

Renoprotective Effect of Ocimum Sanctum In Comparison With Olmesartan Medoxomil and Pitavastatin in Metformin Treated Diabetic Rats

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Abstract: Diabetes is associated with various comorbidities like nephropathy, neuropathy and dyslipidemia. We studied the effect of Ocimum sanctum in comparison to Olmesartan medoxomil, Pitavastatin and their combination in prevention of this comorbidity. Male Wistar rats were given streptozotocin (40mg/kg intraperitoneally) after overnight fasting to induce diabetes and were randomly divided into five groups as follows:

GROUP 1 - Control- Metformin (94.5mg/kg/day)
GROUP 2 - Metformin (94.5mg/kg/day) + Ocimum sanctum (250 mg/kg/day)
GROUP 3 - Metformin (94.5mg/kg/day) + Olmesartan medoxomil(1.80 mg/kg/day)
GROUP 4 - Metformin (94.5mg/kg/day) + Pitavastatin (0.18 mg/kg/day)
GROUP 5 - Metformin (94.5mg/kg/day) + Olmesartan medoxomil (1.80 mg/kg/day) + Pitavastatin (0.18 mg/kg/day)

The effects of Metformin, Ocimum sanctum, Olmesartan medoxomil, Pitavastatin and their combination on blood glucose and renal function test parameters were assessed. The rats were sacrificed at the end of the study and the kidney was dissected for histopathological analysis. All the groups showed decrease in fasting plasma glucose and HbA1c. Serum urea and creatinine were increased in group taking Metformin alone. However, significant improvement in all the parameters studied was seen when Ocimum sanctum, Olmesartan or Pitavastatin were added. Histopathological examination of kidney showed mesangial proliferation, tubular swelling, thickened glomerular basement membrane, hypertrophy in glomerular tufts and hydropic degeneration in control group and improvement in these in all the treatment groups. The best results were seen in Ocimum sanctum and Olmesartan+Pitavastatin group. Metformin alone does not prevent derangement of renal function and histological changes in the kidney in diabetes mellitus. These changes can be prevented by addition of ARB and statin or Ocimum sanctum.

Keywords: Ocimum sanctum, Metformin, Olmesartan
Formulation and evaluation of domperidone sustained release tablet

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Abstract: In order to overcome the drawbacks of conventional drug delivery systems like short half-life, unavoidable fluctuations, typical peak-valley plasma concentration-time profile, and several technical advancements have led to the development of controlled drug delivery system. Sustained release dosage forms are designed to release a drug at a predetermined rate by maintaining a constant drug level for a specific period of time with minimum side effects. Domperidone is a specific blocker of dopamine receptors. It speeds GIT peristalsis, causes prolactin release, and is used as antiemetic and tool in the study of dopaminergic mechanisms. It has strong affinities for the D2 and D3 dopamine receptors, which are found in the chemoreceptor trigger zone, located just outside BBB, which regulates nausea and vomiting. The research work was design for sustained release of matrix tablets of Domperidone using different polymers i.e. Acrypol-974P, HPMC K100 M & HPMC-5CPS after proper biocompatibility studies. The prepared matrix tablets of Domeperidone were characterized for shape, dimension, weight variation, entrapment efficiency, swelling index, friability & in vitro release using 0.1 m HCL. Different parameters were optimized, to obtain effective matrix tablets with maximum drug release. The cumulative percent drug released for N-1 to N-6 were 86.30 %, 84.73%, 79.97%, 74.62%, 73.17% and 72.19% respectively. The developed formulations were therapeutically efficacious, stable, non-irritant and provided sustained release of the drug. Stability studies showed that 40˚C is optimum temperature for storage. From the experimental finding, it is concluded that: Polymer HPMC-5CPS is a promising agent for formulation. Formulations N-4 and N-5 showed maximum cumulative percent drug release. An increase in the amount of polymer to the formulations enhanced the drug release.

Keywords: Matrix tablet, Polymer, Sustained release, HPMC
OP - 10

In vitro free radical scavenging activity of *Operculina turpethum* L. stems methanolic extract

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**Abstract**: The aim of this study was to evaluate the free-radical scavenging capacity of methanolic extract of *Operculina turpethum* stem. *O. turpethum* stem methanolic extract (OTSM) was screened for DPPH Radical scavenging activity in a concentration dependent manner. The ascorbic acid was used as reference standard. The percent inhibition of DPPH free radical values of OTSM were 54.50%, 68.68%, 82.41%, 89.01% and 91.86%, for 25 µg/ml, 50 µg/ml, 100 µg/ml, 200 µg/ml and 400 µg/ml respectively. The percent reduction and IC50 values were calculated using standard method. The IC50 values of the ascorbic acid and OTSM were found to 0.68 µg/ml and 22.8 µg/ml, respectively in DPPH assay. The results obtained showed that the stem of *O. turpethum* has potent to anti-scavenging property. Further investigations are also needed to identify the lead molecule and exact mechanism of action.

**Keywords**: *O. turpethum*, Antioxidant, DPPH.

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OP – 11

Biogenic Terbium Oxide Nanoparticles as the Vanguard against Osteosarcoma

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**Abstract**: The green synthesis of inner transition metal nanoparticles is a daunting task and for the first time it has been achieved using fungus, *Fusarium oxysporum*. In this study, biocompatible terbium oxide nanoparticles (Tb$_2$O$_3$Nps) were synthesized by incubating Tb$_4$O$_7$ with biomass of fungus *Fusarium oxysporum*. Multiple physical characterization
techniques involving ultraviolet-visible and photoluminescence spectroscopy, SAED, TEM and zeta potential confirmed the production, purity, optical & surface characteristics, crystalline nature, size & shape distribution and stability of nanoemulsion of Tb$_2$O$_3$Nps. These Tb$_2$O$_3$Nps were found to inhibit the propagation of MG-63 and Saos-2 cell lines with an IC$_{50}$ value of 0.102 µg/ml remaining non toxic up to a concentration of 0.373 µg/ml towards primary osteoblasts. Cell viability decreased in a concentration dependent manner when exposed to 10 nm Tb$_2$O$_3$Nps at concentrations between 0.023-0.373 µg/ml. Cell toxicity was evaluated by observing changes in cell morphology, cell viability, oxidative stress parameters and FACS analysis. Morphological examinations of cells revealed cell shrinkage, nuclear condensation, and formation of apoptotic bodies. A significant increase in levels of ROS within the cells were observed indicating generation of oxidative stress. Flow-cytometric studies indicated that the response was dose dependent and had a threshold effect.

**Keywords:** Biosynthesis, Tb$_2$O$_3$ nanoparticles, cytotoxicity, *Fusarium oxysporum*, Osteosarcoma.

**OP-12**

**Potential of in vitro grown Nigella sativa L. cultures under elicitation on inhibition of bacterial pathogens**

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**Abstract:** Spices have been used since ancient times not only as an agent to uplift the flavor, aroma and taste of the food but also as a preservative and moreover as phytotherapeutics. *Nigella sativa* L. is a medicinally important spice and herb of Ranunculaceae family is commonly known as black seed. The different medicinal properties of *N. sativa* are attributed to it because of myriad of metabolites like i.e. thymoquinone (TQ), thymodydroquinone (THQ) and thymol (THY) etc. This study was undertaken to elucidate the antibacterial effect of different extracts of *N. sativa* epicotyl suspension culture under biotic and abiotic elicitation against five different bacterial strains and to determine the concentration of TQ which is regarded as a potent antibacterial agent in the cultures with highest antibacterial
activity. Among the three different concentrations of Pectin and Manganese chloride (MnCl₂) 5 mg/l, 10 mg/l and 15 mg/l the lower concentrations facilitated the cell growth. In vitro antibacterial results revealed that control, MnCl₂ and pectin suspension extracts inhibited the growth of *E. coli*, *S. typhi* and *S. aureus* on a higher degree. Control and pectin 15 mg/l elicitated cultures followed the same pattern and inhibited the growth of *E. coli* and *B. cereus* at a higher degree with the lowest MIC 1.65±0.8; 1.80±0.3, 2.01±0.5, 2.07±0.6 µg ml⁻¹ respectively. MnCl₂ 10 mg/l elicited suspension also proved to be a potent inhibitor followed with lowest MIC against *E. coli* and *S. typhimurium* i.e. 1.65±0.8 and 2.09±0.4 µg ml⁻¹ respectively when compared to the epicotyl explant extract. The LC-MS/MS quantification showed that the in vitro produced cultures of *N. sativa* showed a 1.44, 1.53 and 1.57 fold of increase in TQ concentration in pectin 15 mg/l, control and MnCl₂ elicitated cultures respectively when compared to the epicotyl explant content.

**Keywords:** *Nigella sativa*, pectin, MnCl₂, Thymoquinone, LC-MS/MS
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PS-1

A literature review of the medicinal properties of *Salvia haematodes* linn.

Mohammad Shawwal *, Badruddeen, Mohammad khushtar, Azizur Rahman, Akhlaque Khan
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**Abstract:** This literature review aims to evaluate literature and research surrounding *Salvia haematodes* and its traditional and modern therapeutic uses, pharmacology and methods of preparation. The pharmacology, traditional and modern uses will be considered for each therapeutic action and current research will be critically reviewed to evaluate *Salvia haematodes*’s clinical potential. It has been traditionally used for different medical purposes as cardiac disorder, seminal debility, nervine tonic, and gout but in modern pharmacology is value in the management of mild to moderate Alzheimer’s, against migraine, this plant act on the brain are called Nootropic, antioxidant activities, anti-microbial activity, anti-lipoyxenase, anti-cholinesterase activities, anti-proliferative activities, aphrodisiac activities, dose-dependent effect of *Salvia haematodes* roots on reproductive function and copulatory behaviour in male rats, memory enhancing activities.

**Keywords:** *Salvia haematodes*, pharmacological investigation, memory enhancers.

PS-2

Coronavirus

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**Abstract:** Coronaviruses are species in the genera of virus belonging one of two subfamilies Coronavirinae and Torovirinae in the family- Coronaviridae. The genomic size of corona range from approximately 26-32 kilobases .The name coronavirus is derived from the Latin word corona meaning “crown or halo” and refers to the characteristic appearance of virions under electron microscopy. Coronavirus were first described in 1960s from nasal cavity of patients with the common cold. These viruses were subsequently named human corona virus 229E and human corona virus OC43. Coronavirus primarily infect the upper respiratory and GIT of mammals and birds. Corona viruses causes significantly percentage of all common cold in human adult. Corona virus can even cause Pneumonia. These viruses have a protein known as the Replicase encoded in its genome which allows the RNA viral genome to be
transcribed into new RNA copies using the host cell machinery. The replicase is the first protein to be made once the gene encoding the replicase is translated, the translation as a nested transcript. Coronaviruses having been recognized as causing pathological conditions in veterinary medicine since the early 1970s, except for avian infectious bronchitis, the major related disease have mainly intestinal disease have mainly an intestinal location. The most recent common ancestor of the Coronavirus has been placed at 10000 year before the patient. Corona viruses are named for the crown like spikes on their surface. There are four main sub-groupings of corona virus known as alpha, beta, gamma and delta. Corona virus first recognized in China in November 2002.Common human coronavirus usually cause mild to moderate upper-respiratory tract illnesses of short duration. Symptoms may include running nose, cough, sore throat and fever. There are currently no vaccines available to protect against human coronavirus infection. Nose and throat swabs are the best specimens for detecting common human corona viruses, serological testing requires collection of blood specimens.

PS-3

Novel Tools in Characterization of Solid State Structure

Faculty of Pharmacy, Integral university, Lucknow

Abstract: The field of solid state characterization is central to the pharmaceutical industry, as drug products are produced as solid materials. Selection of the optimum solid form is a critical aspect of the development of pharmaceutical compounds, due to their ability to exist in more than one form or crystal structure (polymorphism). These polymorphs exhibit different physical properties which can affect their biopharmaceutical properties. The analytical methods used for characterization of solid forms are Fusion methods (Hot Stage Microscopy), Differential Scanning Calorimetry (DSC/DTA), Thermogravimetric analysis (TGA), Infrared Spectroscopy (IR), X-Ray Diffraction (XRD), Scanning Electron Microscopy (SEM), Particle Sizing, Surface Area and Density measurements, etc. In thermal analytical techniques, the basic principle is that heating or cooling can initiate dynamic changes in solid state properties of a material. The use of IR Spectroscopy for solid state characterization includes identification, quantification and characterization of crystal form. XRD is a widely used tool for both qualitative and quantitative analysis of different solid state forms. The
SEM provides information related to topographical features, morphology, phase distribution, compositional differences, and crystal structure and crystal orientation. The size and shape of the particles can affect the bulk properties, product performance, stability and appearance of the end product, so particle sizing is required. Surface area can be measured by Adsorption method or Air Permeability method. Density can be measured by using Liquid or Gas Displacement method. Details of above mentioned methods will be discussed in the full article.

**Keywords:** Fusion Method, X-Ray Diffraction, Scanning Electron Microscopy, Thermogravimetric analysis

**PS-4**

**DOTS and DOTS-PLUS**

Zeeshan Ahamd*, Abdul Samad Basheer, Kuldeep Singh

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**Abstract:** The first WHO endorsed DOTS-Plus programmes began in 2000. At that time, the Green Light Committee (GLC) was established to promote access to high quality second-line drugs for appropriate use in TB control programmes. DOTS-Plus pilot projects have demonstrated the feasibility and effectiveness of MDR-TB treatment in less affluent countries. In 2002, the Global Fund to fight AIDS, TB, and Malaria (GFATM) started financing TB control programmes, including MDR-TB, thus greatly reducing the economic barrier to MDR-3 TB control. Since then, DOTS-Plus projects have multiplied rapidly. DOTS are a package of five points: Commitment of governments to a national tuberculosis programme. Detection of cases through case finding by sputum smear microscopy examination of patients with suspected tuberculosis in general health services. Standardized short course chemotherapy with the first line drugs isoniazid, rifampicin, pyrazinamide, and ethambutol (or streptomycin) for, at least, all smear positive cases of tuberculosis under proper conditions of case management. Regular, uninterrupted supply of all essential antituberculosis drugs. A monitoring system for programme supervision and evaluation. In addition: Mycobacterial cultures and drug susceptibility testing are not required. Treatment is started on the basis of symptoms or a positive smear. Second line drugs are not used. Three categories of treatment regimens exist; all are directly observed. In the developing world, mycobacterial cultures and susceptibility testing are generally not performed, so drug
resistance is not detected even if it is present. In DOTS-plus: Second line antituberculosis drugs (more toxic and expensive, and less effective, than first line drugs) are used. The regimen includes two or more drugs to which the isolate is susceptible, including one drug given parenterally for six months or more. Total duration of treatment 18-24 months; treatment is directly observed

Keywords: DOTS, AIDS, GFATM

PS-5

Blue Brain

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Abstract: Human brain is the most valuable creation of God. The IBM is now developing a virtual brain known as the Blue brain. We can say it as Virtual Brain i.e. an artificial brain, which is not actually a natural brain, but can act as a brain. It is possible by using a supercomputer, with a huge amount of storage capacity, processing power and an interface between the human brain and artificial one. We often face difficulties in remembering things such as people names, their birthdays, and the spellings of words, proper grammar, important dates, history facts, and etcetera. In the busy life everyone wants to be relaxed. Can’t we use any machine to assist for all these? Virtual brain may be a better solution for it. What will happen if we upload ourselves into computer, we were simply aware of a computer, or maybe, what will happen if we lived in a computer as a program? All are possible by supercomputers. The uploading is possible by the use of small robots known as the Nanobots. These robots are small enough to travel throughout our circulatory system. Traveling into the spine and brain, they will be able to monitor the activity and structure of our central nervous system. This information will be entered into a computer. Thus all the data stored in the entire brain will be uploaded into the computer could then it will continue to function as us. In conclusion, we will be able to transfer ourselves into computers at some point. Most arguments against this outcome are seemingly easy to circumvent. Despite the sheer complexity of such an Endeavour, it is predicted that the Blue brain project will be capable of this by the year 2023.

Keywords: Blue brain, IBM, Nanobots

PS-6
Role of Herbal Medicine in Treatment of Cardiac Disease

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Abstract: Cardioprotection and prevention of cell ischemia/necrosis have been therapeutic targets for a long time. New therapies are needed to treat myocardial ischemia because current treatment has only its own limitation on survival and annual costs. The fruit is reported to have hepatoprotective, purgative, choleretic, and hypotensive effects .In a clinical study, Terminalia belerica was found to possess antispasmodic, anti-asthmatic and antitussive effects .The fruit extracts of Terminalia belerica have been evaluated for antimutagenic, antimicrobial and anti-HIV-1 activity. The plant is known to lower the levels of lipid in hypercholesterolemic animals and thus prevent the development of atherosclerosis and myocardial infarction; Triphla and Terminalia belerica reduced the serum glucose level and showed marked antioxidant properties in alloxan-induced diabetic rats.Polyphenols with proteins may be the probable cause of the inhibitory.Gallic acid: 3,4,5-trihydroxybenzoic acid. Is demonstrable the hepatoprotective action extract of Terminalia belerica.The presence of saponins, triterpenoids, carbohydrates, tannins and proteins show the analgesic agent used in the management of chronic pain. Phenolic contents of T. bellerica having antioxidant activity.and reduced the level of cholestrol.and also reduced the serum trasminase, and bilirubin. Due to high efficacy and low toxicity and its anti-oxidant, anti-hyperlipedemic, Antihypercholesterolemic and cardiotonic effects, it will provide an accessible and cheap traditional medicine source for treatment of cardiac disease in developing countries.

Keywords: Terminalia belerica, Cardioprotective Activity.

PS-7

Synthesis of Polybutylene Linker Compounds of Pyrazolo [3,4-D] Pyrimidine.

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Pyrimidines are the most important member of all the diazines as these ring systems occurs widely in living organisms. Purines, uric acid, aloxan, barbituric acid and a
mixture of anti-malarial and anti-bacterials also contain the pyrimidine ring. Gabriel and Colman first isolated pyrimidine in 1899. A number of pyrazolo [3,4-d] pyrimidine analogs of theophylline and caffeine having benzyl and methyl groups have been synthesized. Some of these compounds have shown high order of xanthine-oxidase inhibitory activity. some substituted pyrazolo[3,4-d] pyrimidines showed antiviral activities while some showed antiallergic activities. Pyrimidine ring system were also found highly active as anti malarial of the various synthesized pyrimidine derivatives, 1-(4- chlorophenyl)-3-[4-(-2-diethyl amino- ethyl amino)-6 methyl 2-pyrimidinyl] guanidine has shown strong anti malarial activity against Plasmodium gallinicum in chicks. Trimethoprim and pyrimetamine also act strong inhibitor of dihydrofolatereductase (DHFR) and there by demonstrated anti-malarial activity. Pyrazolo [3,4-d]pyrimidine (which is isomeric with biologically important purine system) based compounds in which two such units are linked by ‘polybutylene linkers’ provide simple flexible models for understanding the nature of aromatic π–π interactions (APPI). Aromatic π–π interactions (APPI) constitute weak (~ 2 kcal/mol) interactions which play an important role in such diverse areas as protein folding, base-to-base stacking in DNA, host-guest binding in supramolecular assemblies.

Keywords: DHFR, trimethoprim, pyrimetamine

Herbal Drug Therapy For Cognitive Impairment

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Abstract: Nootropics are also referred as smart drugs, memory enhancers, and cognitive enhancers. They are reported to improve mental function such as cognition, memory, intelligence, motivation, attention and concentration. They are considered to be work by altering the availability of brains supply of neurochemicals, by improving the brains oxygen supply or by stimulating nerve growth. Some neurodegenerative disorder affects elder individuals. Evidences support use of Ginkgo biloba, Huperzine A, Galantamine, Melissa officinalis and Salvia officinalis for Alzheimer’s disease. Plantago ovate, Azadirachta indica, Bacopa monniera for Parkinsonism disease. St. John’s wort, Lavender, Bryophyllum Pinnatum, Clitoria ternatea and Saffron for depression; Passion flower, and Kava, for anxiety disorders; Valerian, and English Lavender for sleep disorders; Butterbur root for migraine; Withania somnifera possess both antistress as well as nootropic activity. The
extracts of some plants shows effect on phenobarbitone sodium induced sleep latency and sleeping time, motor coordination activity, locomotor activity, anxiolytic activity (light-dark model transition in mice, elevated zero maze), cerebral activator activity were evaluated. The ethanolic extract of *Nelumbo nucifera gaertner seeds* shows nootropic activity on Conditional avoidance response, Morri’s water maze for spatial learning, but it weakly acts on acetyl cholineesterase enzyme inhibitory activity. In In-vivo methods the inhibitory passive avoidance test were carried on animals to test the learning and memory capacity of animal by suppressing a particular behavior. Details of cognitive enhancers will be discussed in the full article.

**Keywords:** *Melissa officinalis*, *Withania somnifera*, Nootropic activity

**PS-9**

**Role of Herbal Drugs in Cancer Treatment**


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**Abstract:** Cancer is the name given to collection of related diseases in all types of cancer, some of the body’s cells begin to divide without stopping and spread into surrounding tissues. Cancer can start almost anywhere in the human body, which is made up of trillions of cells. Normally, human cells grow and divide to form new cells as the body needs them. When cells grow old or become damaged, they die, and new cells take their place. Cancer cells differ from normal cells in many ways that allow them to grow out of control and become invasive. Cancer is a genetic disease—that is caused by changes to genes that control the way our cells function, especially how they grow and divide. Genetic changes that cause cancer can be inherited from our parents. They can also arise during a person’s lifetime as a result of errors that occur as cells divide or because of damage to DNA caused by certain environmental exposures. Include substances, such as the chemicals in tobacco smoke, and radiation, such as ultraviolet rays from the sun. Each person’s cancer has a unique combination of genetic changes. The genetic changes that contribute to cancer tend to affect three main types of genes—proto-oncogenes, tumor suppressor genes, and DNA repair genes. These changes are sometimes called drivers ‘of cancer. Not every change in the body’s tissue is cancer. There are more than 100 types of cancer. A cancer that has spread from the place...
where it first started to another place in the body is called metastatic cancer. This review focuses on cancer and herbal drugs which are useful in cancer treatment.

**Keywords:** Cancer, etiology, carcinogenes, imaging techniques endoscopy.

**PS-10**

**Contribution of Dipeptidyl peptidase-4 (DPP-4) inhibitors in the treatment of Type 2 Diabetes with special reference to sexagleptins**

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**Abstract:** Saxagliptin is a dipeptidyl peptidase-4 inhibitor widely approved for the treatment of type 2 diabetes mellitus. Modulation of the effects of incretin hormones provides a novel mechanism of action for some of the newer therapies for patients with type 2 diabetes. Treatment with saxagliptin did not increase the risk of hypoglycaemia or cardiovascular outcomes relative to placebo or active comparators, and was generally weight neutral. In conclusion, saxagliptin is a useful option as add-on therapy to metformin, a sulfonylurea, a thiazolidinedione, or insulin (with or without metformin) in patients with type 2 diabetes who require combination therapy.

**Keywords:** Saxagliptin, DPP-4 inhibitors, type 2 diabetes

**PS-11**

**Heavy meatal Contamination in Locally made Plastic Bottles**

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**Abstract:** Plastic products are made by polymerization process in which additives are added to enable certain desired properties for a specific application. Fig.1 (OECD-2004) However, technological developments raised new issues with respect to the safety and health. Fig.2 (R.
In India there is several small scale and also some large-scale industries which are manufacturing plastics in unorganized way by using harmful additives above the permissible limits and these products are generally not tested by regulatory agencies for the purpose of safety. As a result, the life as well as the quality of products reduced. In this regard, a study was designed to ascertain the levels of Cd, Mn, Cu, Ni and Cr in locally made plastic bottles which were purchased from local markets of Lucknow, India, and analyzed by using atomic absorption spectrophotometer (AAS) to determine the metal concentrations. The results show that about 17.5% of the samples are unsafe for normal use and may be toxic.

Figure 1: Some commonly used additives in plastic industries

Figure 2: Some toxic effects of heavy metals

**PS-12**

**Combination of Herbal drug Glycyrrhiza glabra with Adhatoda vasica uses in different marketed formulations**

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**Abstract:** The Indian traditional system of medicine is a rich source of plants for the various maladies. As per World Health Organisation (WHO), nearly 90% of the population in developing countries uses plants as a primary source of treatment. There is a growing demand for plant based medicines, health products, pharmaceuticals, food supplements, cosmetics etc.
The formulation JOSHINA contains plant *Glycyrrhiza glabra* and *Adhatoda vasica* which is mentioned in Vedas. These plants are herbal remedy for treating cold, cough, whooping cough, chronic bronchitis and asthma, as sedative expectorant, antispasmodic anthelmintic, mild laxative, anti-arthritic, anti-inflammatory, anti-biotic, anti-viral, anti-ulcer, memory stimulant, anti-tussive, aphrodisiac, anti-mycotic, estrogenic, antioxidant, anti-caries agent, anti-neoplastic, anti-cholinergic, anti-diuretic, hypolipidemic agent. The herbal products JOSHINA is manufactured by Hamdard Laboratories and have clear recommendations against various diseases. The plant material is use in different forms such as fresh juice, decoction, infusion and powder; also given as alcoholic extract and liquid extract in different herbal formulation. Synergistic interactions between the components of mixtures of *Glycyrrhiza glabra* with *Adhatoda vasica* are play a vital role in therapeutic efficacy. The combine extract of *Glycyrrhiza glabra* and *Adhatoda vasica* will evalued to confirming the antitussive and mucolytic effect in comparision to marketed formulation of joshina.

**Keywords:** *Glycyrrhiza glabra*, *Adhatoda vasica*, JOSHINA, Herbal drugs, comparative study.

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**PS-13**

**Reforms in Healthcare Sector In India Needs 'Out Of The Box'**

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**Abstract:** Primary health care delivery needs to reinvent itself. Only then can India aim for universal health coverage. Health confers on people free from illness - and the ability to realize one's potential. Health is therefore best understood as the crucial basis for defining a person's sense of well being. Health care covers not merely medical care but also all aspects pro preventive care too. Nor can it be limited to care rendered by or financed out of public expenditure- within the government sector alone but must include incentives and disincentives for care themselves and care paid for by private citizens to get over ill health.
Where, as in India, private out-of-pocket expenditure dominates the cost financing health care, the effects are bound to be regressive. Heath care at its essential core is widely recognized to be a public good. The health of people is a distinct key issue in social policy discourse in every mature society often determining the deployment of huge society. They include its cultural understanding of ill health and well-being, extent of socio-economic disparities, reach of health services and quality and costs of care, and current bio-medical understanding about health and illness. In this article we are trying to present the reforms have been taken place from independence and the way ahead in future.

**Keywords** – Primary health care, medical care, Universal health coverage, biomedical

**PS-14**

**Hepatoprotective activity of the leaves of** *Elaeocarpus sphaericus* **in** Wistar rats

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**Abstract:** Liver diseases have become one of the major causes of morbidity and mortality in man and animals all over globe and hepatotoxicity due to drugs appears to be the most common contributing factor. About 20,000 deaths found every year due to liver disorders. *Elaeocarpus sphaericus* leaf ethanolic extract is claimed by some Philipinian herbalists to be traditionally useful in the management of hepatitis related jaundice. The alcoholic ethanolic extract of the plant contains so many chemical constituents including antioxidant, flavonoid and alkaloids like, quercetin and rudrakine, elaeocarpine, elaeocarpidine etc. The objectives of this study were to assess the possible hepatoprotective effect of the ethanolic extract on ethanol and carbon tetrachloride (CCl₄) induced hepatotoxicity. The hepatoprotective assessment was determined using Liver Function Test. In general toxicological assessment, the effects of the ethanolic extract on biochemical ratio assessment were performed on wistar rats (180-200 g) against Ethanol (30% v/v; 0.6 ml (0.5 gm)/100 g/day) and CCL₄ (1ml/kg) induced hepatotoxicity. The rats were divided into five groups. Group I Normal control, Group II Diseased control, Group III Diseased and Silymarin (25mg/kg), Group IV Disease and Ethanolic extract *Elaeocarpus sphaericus* 100mg/kg, Group V Disease and Ethanolic extract *Elaeocarpus sphaericus* 200mg/kg. Except the control group all groups were received
Ethanol daily for 21 days in first model and CCL₄ on 1ˢᵗ, 4ᵗʰ, 7ᵗʰ and 10ᵗʰ day and *Elaeocarpus sphaericus* ethanolic extract (100mg/kg and 200mg/kg) once daily for 10 days. Last day, all the rats were sacrificed under light anaesthesia, blood was collected and intensity of liver damage was compared by measuring biochemical parameters like SGOT, SGPT and ALP. The ethanolic extract showed hepatoprotective activity which might be attributed to decrease the level of different enzymes. Thus the plant extract must be useful in the treatment of liver disease.

**Keywords**: Ethanol and carbon tetrachloride (CCl₄), silymarin, *E. sphaericus*.

**PS-15**

*Curcuma longa*: Boon for Health Care System With Its Biomedical Application.

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**Abstract**: Turmeric is a spice derived from the rhizomes of *Curcuma longa*, which is a member of the ginger family (*Zingiberaceae*). Turmeric constituents include the three curcuminoids: Curcumin (diferuloylmethane; the primary constituent and responsible for its vibrant yellow color), demethoxycurcumin, and bisdemethoxycurcumin, as well as volatile oils (tumerone, atlantone, and zingiberone), sugars, proteins, and resins. In the Ayurvedic tradition, turmeric, or “haldi” as it is known in Hindi. Turmeric is considered to be one of the most important herbs in the Ayurvedic tradition. The medical use of turmeric goes back more than 5000 years. Today, India is the primary exporter of turmeric. For centuries, turmeric has been used as a spice, in preservation of food through its antioxidant mechanism, colouring agent in Indian food, as a yellow dye for textiles and, as well as a therapeutic agent in traditional Indian medicine to treat a wide variety of ailments, with no known side effects. Turmeric has been used historically as a component of Indian Ayurvedic medicine since 1900 BCE to treat a wide variety of ailments including those of the skin, pulmonary, and gastrointestinal systems, aches, pains, wounds, sprains, and liver disorders. Extensive research in the latter half of the 20th century has identified curcumin as responsible for most of the biological activity of turmeric. Curcumin has been shown to exhibit anti-oxidant, anti-inflammatory, anti-viral, anti-bacterial, anti-fungal, anti-cancer hyperlipidemic, woundhealing and hepato- protective activities and thus has a potential against various malignant diseases, diabetes, allergies, arthritis, Alzheimer’s disease, and other chronic
illnesses. Safety evaluation studies indicate that curcumin is well tolerated at a very high dose without producing any toxic effect.

**Keywords:** Turmeric, Curcumin, anti-inflammatory, anticancer

**PS-16**

**Piperazine derivatives- a novel approach towards aids**

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**Abstract:** The emergence of multidrug resistant HIV-1 strains and the inability of the HAART to eradicate HIV-1 virus from infected patients demand new drugs able to interfere with an alternative step of the replicative cycle. AIDS, one of the leading threats for human health worldwide, is a disease of the human immune system caused by the human immunodeficiency virus (HIV). In the search for new anti-HIV agents, efforts to discover compounds with new and diversified modes of action are still a challenging task. Transcription of the viral genome (integrated proviral DNA) into its mRNA is an essential step in the HIV-1 replication cycle and is considered to be a good potential target for chemotherapeutic intervention because it could allow the control of HIV-1 replication not only in acutely infected cells but also in chronically infected cells. There are several classes of antiretroviral agents that act on different stages of the HIV life-cycle. A series of substituted piperazine derived compounds have been synthesized and tested for antimicrobial activity. Some piperazine derivatives described in this review are promising anti-HIV agents because of piperazine derivatives bearing a heterocyclic moiety as PAF-antagonists and HIV-1 reverse transcriptase (HIV-1 RT) inhibitors with micromolar potency. Present study suggests that the piperazine derived compounds may serve as a new lead template for further modification to obtain therapeutically useful molecule for the treatment of HIV infection.

**Keywords:** Piperazine derivatives, AIDS, HAART, PAF-antagonists, HIV-1 reverse transcriptase inhibitors

**PS-17**

**Antiepileptic drug (Gabapentin) as therapeutic candidate for Alzheimer’s disease: A neuroinformatics study**

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Abstract: Previous studies have demonstrated an increased risk of epilepsy in patients with Alzheimer’s disease (AD). Sodium channel is one of the best targets in the treatment of epilepsy while β-secretase (BACE) has long been considered as a therapeutic target for AD. This study explores the molecular interactions between a Food and Drug Administration approved antiepileptic drug Gabapentin (Neurontin) with BACE and VSC to explore a possible link between the treatment of AD and epilepsy. Docking study was performed using ‘Autodock4.2’. Hydrophobic interactions play an important role in the correct positioning of Gabapentin within the catalytic site of VSC and BACE enzyme to permit docking. Hence, Gabapentin might act as a potent dual inhibitor of BACE and VSC. Gabapentin (Neurontin) could be expected to form the basis of future dual therapy against epilepsy associated neurological disorders.

Keywords: Alzheimer’s disease, Epilepsy, Voltage-gated sodium channel, β-secretase, Gabapentin

PS-18

PLANTIBODY

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Abstract: A plantibody is an antibody that produced by plants that have been genetically engineered with animal DNA. An antibody (also known as an immunoglobulin) is a complex protein within the body that recognizes antigens on viruses and other dangerous compound in order to alert the immune system that there are pathogens within the body. The transgenic plant become transformed with the DNA and produce antibodies that are similar to those inserted. The term plantibody and the concept are trademarked by the company biolex. A Plantibody is produced by insertion of antibody into a transgenic plant. The plantibodies are then modified by intrinsic plant mechanism (N-Glycosylation). Plantibodies are purified through processes such as filtration, immunofluorescence, Chromatography and diafiltration. Antibodies generated by plants are cheaper, easier to manage and safer to use than those obtained from animals. The application are increasing because recombinant DNA is very useful in creating proteins that are identical when exposed into the plants. The plantibodies is useful for treatment of illness such as immune disorders fact that the plantibodies also have no risk of spreading diseases to humans. Commercial use is not yet legalized, but clinical
trials are underway to implement the use of plantibodies for humans are injections. So far, companies have started conducting human tests of pharmaceutical products, creating plantibodies that includes: Hepatitis B vaccine, antibody to fight cavity causing bacteria, antibodies to prevent sexually transmitted diseases, antibodies for non-Hodgkins cell lymphoma, vaccine against HIV virus, anthrax vaccine (from tobacco), antibodies against Ebola virus.

**Keywords:** N-Glycosylation, Plantibodies, anthrax vaccine

PS-19

**A review: Medicinal properties of *Melissa officinalis***

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**Abstract:** This review aims to evaluate literature and research surrounding *Melissa officinalis* and its traditional and modern therapeutic uses, pharmacology and methods of preparation. The pharmacology, traditional and modern uses will be considered for each therapeutic action and current research will be critically reviewed to evaluate *Melissa’s* clinical potential. It has been traditionally used for different medical purposes as tonic, antispasmodic, carminative, diaphoretic, surgical dressing for wounds, sedative-hypnotic strengthening the memory, and relief of stress induced headache, but in modern pharmacology is value in the management of mild to moderate Alzheimer’s, against migraine and rheumatism, and antioxidant activities.

**Key words:** Melissa officinalis, pharmacology, antioxidant

PS-20

**Nanotechnological approaches of Herbal drugs used in Cancer Therapy.**

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**Abstract:** In the last few years there has been an exponential growth in the field of herbal medicine and these drugs are obtaining popularity both in developing and developed countries because of their natural origin and lesser side effects. Many traditional medicines in use and they are derived from medicinal plants, minerals and some organic matter. The World Health Organization (WHO) has listed 21,000 plants, which are useful for medicinal purposes around the world. Among these 2500 species are in India, out of which 150 species are used commercially on a fairly large scale. India is the largest producer of medicinal herbs.
and is called as botanical garden of the world. This review focuses on herbal drug preparations of nanoformulation used in the treatment of different chronic diseases conditions in the world. This paper will discuss the benefits with use of herbal nanoformulation as Anti-cancerous activity. The application of nanotechnology is enhancement for the bioavailability and nanomization of herbal drugs like nanocurcumin from *Curcuma longa*, nanopiperine from *Piperum nigrum*, nanoberberine from *Berberisaquifolium*, nanovincristine from *Vincarosea*, Podophylotoxin from *Podophyllumhexendrum*, Taxol from Taxus plant etc. The nanocarriers have been made of safe materials, including synthetic biodegradable polymers, lipids and polysaccharides. Nanomedicines can be developed either as drug delivery systems or biologically active drug products. It is indicated that nanotechnology is one of the fastest development of nanoformulation, the most potential and far-reaching high and new technology in current world. Nanoformulations is to increases the particles size and increase the surface area due to increases the bioavailability and reduces the side effect of herbal drugs and are useful for the treatment, diagnosis, monitoring and control of biological systems and have recently been referred to as nanomedicine.

**Keywords:** Herbal drugs, Nanotechnology, Bioavailability, Anti-Cancer.

**PS-21**

**Management of chemotherapy induced nausea and vomiting.**

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**Abstract:** For the past two decades, significant developments have been made in supportive care for the management of chemotherapy-induced nausea and vomiting (CINV). Nausea and vomiting, which is seen in almost 100% of patients, are considered as two of the most distressing side-effects of chemotherapy. Anti-emetic therapy has become integral to the management of patients with cancer. Ondansetron is the first to promise significantly for better control of the various emetic syndromes caused by cancer chemotherapy, with fewer side effects. Although the introduction of 5-HT3 receptor antagonist antiemetics has led to a significant reduction in the frequency of post-treatment vomiting, there has been an accompanying increase in the duration of post-treatment nausea. CINV have been classified into acute, delayed and anticipatory based on the time of onset. For moderately to highly emetogenic chemotherapy, standard prophylactic treatment is an antagonist for 5-HT3
receptors combined with dexamethasone for the acute phase, and dexamethasone with another agent for prevention of the delayed phase. Palonoestron (a 5-HT3R antagonist) and aprepitant (an antagonist for the protachykinin 1 receptor) have been introduced for the prevention of emesis. Other agents such as cannabinoids, gabapentin, and olanzapine might also be effective. Efforts to improve antiemetic control further are ongoing. Another class of antiemetics focuses on antagonism of the neurotransmitter substance P. Substance P exerts its effects by binding to the tachykinin neurokinin NK1 receptor. Symptom management has become a focus of clinical research, and development of personalised medicine should identify patients at increased risk of toxic effects because of molecular or biochemical factors, thus leading to changes in dose, early intervention, or use of alternative therapies.

**Keywords:** Chemotherapy, Vomiting, Ondansteron, Neurokinin, Dexamethasone.

**PS-22**

**Ustukhuddus (Lavandula stoechas Linn.) : A miracle plant**


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**Abstract:** There are various sources of drugs like plants, animals, marine etc. Among all these, plants are the main source of drugs. In pharmaceutical world herbal medicine has special place. Among medicinal plants *Lavandula stoechas* of Lamiaceae/Labiatae family is therapeutically very important. This is called Stoechas because it grows on stoechadas, a group of islands on South coast of Gaul near Massilia. *Lavandula stoechas* also known as “Ustukhuddus” in Unani system, “Alfazema” in Western India, “Romero Santo” in Spain. Unani physician uses the Ustukkuddus for therapeutic purpose since long time. It is also known as Galeenial herb because it’s medicinal value first described by Galen. It is also described in “Kitabul Hashaiash” by Dioscorides. Avicena, the Prince of Physicians, described it in his famous book “The Canon of Medicine”. The various study tells that it contain organic, inorganic substances and essential oil. Research is going on its new chemical constituents. Various pharmacological action of Lavandula stoechas have described in Unani literature like antiseptic, deobstruent, demulscent, phlegmagogue, nerve tonic, antianxiety, anticonvulsant, in numbness, trembling, mania, amnesia etc. In unani system it is described as “ Jaroobe dimagh” which means “broom of brain” because of its removing the black bile from brain, give strengthens and improves the intellect. In all traditionally uses of *Lavandula stoechas* few action get scientific status like antibacterial, blood purifying, adaptogenic,
hypotensive effect, cytotoxic and genotoxic effect, anticonvulsant, sedative, antispasmodic, hypoglycaemic activity, antianxiety etc. but many action are remain to evaluate. This study covers the phytochemistry, pharmacognostic character and pharmacological activities of *Lavandula stoechas*.

**Keywords:** Herbal medicine, *Lavandula stoechas*, Ustukkuddus, anticonvulsant, scientific status

PS-23

A Review on Recent Trends In Oral Drug Delivery Technologies

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**Abstract:** There are many ways to deliver drugs into the body, viz oral (through swallowing), sub mucosal (through buccal and sublingual mucosa), parenteral (through injection), transdermal (through skin), pulmonary (through inhalation) etc. Among these deliveries oral delivery (by swallowing) is widely accepted. In oral drug delivery, many scientific challenges and breakthrough technologies are required to generate novel dosage forms raising drug delivery to higher level. Controlled oral drug delivery is one which delivers the drug at a predetermined rate, for a specified period of time. The goal of many of the controlled oral-release systems was to achieve a delivery profile that would yield a high blood level of the drug over a long period of time. The two main advantages of controlled oral drug delivery systems are maintenance of therapeutically optimum drug concentrations in the plasma through zero-order release without significant fluctuations; and elimination of the need for frequent single dose administrations. With traditional oral drug delivery systems, the drug level rises after each administration of the drug and then decreases until the next administration. The key point with traditional drug administration is that the blood level of the agent should remain between a maximum value, which may represent a toxic level, and a minimum value, below which the drug is no longer effective. In view of this various new technologies has been introduced in controlled oral drug delivery are TIMERx, MASSRx &
COSRx, Precise technology, RingCap technology, The riform Technology, Accudep Technology, THREEFORM Technology, Disso Cube IDD Technology, Zydus Technology for poorly soluble drugs, Orasolv & Durasolv technology, Egalet Technology, Buccal Mucoadhesive systems, Periochips etc. Such systems offer numerous advantages over traditional methods of drug delivery, including tailoring of drug release rates, protection of fragile drugs and increased patient comfort and compliance.

**Keywords:** Controlled Drug Delivery; TIMERx; THREEFORM Technology; Buccal Mucoadhesive Systems.

**PS-24**

**Moringa Oleifera As A Sacred Medicinal Plant**

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**Abstract:** *Moringa oleifera* Lam. truly miracle tree belongs to family Moringaceae, is a medium sized tree. The Moringa tree have spread to most part of Asia, nearly the whole of Africa, South America, southern part of North America and some pockets in Europe. It is widely used as both nutritive herb and commercially with each part of the plant having utility. The plant provides a rich and rare combination of zeatin, quercetin, β-sitosterol, caffeoylquinic acid and kaempferol. This plant species has been found to display a wide variety of pharmacological activities. The flower of *M. oleifera* have stimulant, aphrodisiac, abortifacient, cholagogue property; or used to cure inflammations, muscle diseases and hysteria. Leaves are Purgative, applied as poultice to sores, used for piles, fevers, sore throat, bronchitis, eye and Ear infections, scurvy and catarrh; leaf juice is believed to control Glucose levels. Root contains Antilithic, rubefacient, laxative, abortifacient, vesicant, carminative, anti-inflammatory, stimulant in paralytic afflictions; act as a Cardiac/circulatory tonic. Stem bark is Rubefacient, vesicant and used to cure eye diseases and for the treatment of delirious patients; prevent enlargement of the spleen to destroy tumours. Traditionally, the plant is used as antispasmodic, stimulant, expectorant and diuretic. The present article describes various traditional and medicinal importance of the plant. Such herbal drug may provide potential similar effect as of compared to the conventional available synthetic drugs, with less or no side effects. The present review summarizes the referential information on this plant in order to provide current knowledge for future works.

**Keywords:** *Moringa oleifera*, Laxative, anti-inflammatory, kaempferol, Rubefacient etc.
Neuropharmacology
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Abstract: Neuropharmacology is the study of how drugs affect cellular function in the nervous system, and the neural mechanisms through which they influence behavior. There are two main branches of neuropharmacology: behavioral and molecular. Behavioral neuropharmacology focuses on the study of how drugs affect human behavior (neuropsychopharmacology), including the study of how drug dependence and addiction affect the human brain. Molecular neuropharmacology involves the study of neurons and their neurochemical interactions, with the overall goal of developing drugs that have beneficial effects on neurological function. Both of these fields are closely connected, since both are concerned with the interactions of neurotransmitters, neuropeptides, neurohormones, neuromodulators, enzymes, second messengers, co-transporters, ion-channels, and receptor-proteins in the central and peripheral nervous system. These interactions, researchers are developing drugs to treat many different neurological disorders, including pain, neurodegenerative disease such as Parkinson’s disease and Alzheimer’s disease. Psychological disorders, addiction and many others. Neuropharmacology is a very broad region of science that encompasses many aspects of the nervous system from single neuron manipulation to entire areas of the brain, spinal cord, and peripheral nerves. To better understand the basis behind drug development, one must first understand how neurons communicate with one another. The major receptors, ion channels and neurotransmitters manipulated through drug action and how people with a neurological disorders benefit from this drug action.

Keywords: Neuropharmacology, Alzheimer’s disease, Psychological disorders

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Abstract: In present scenario the carbon nanotubes are considered to be most researched objects because of its great potential application in both medical and non medical field. Structurally they are cylindrical objects consisting of graphene sheet of about 12 nm diameter and ending is capped consisting pentagonal rings. Carbon Nanotubes (CNTs) have become strongest candidates mainly in the field of biomedical engineering, biotechnology; defense research and pharmaceutical nanotechnology after their discovery in 1991. These are an important new class of technological materials that have numerous novel and useful properties. They have received very much attention as new classes of non materials. The potential application of carbon nanotubes are in drug delivery, diagnostics, and bio-sensing. Carbon nanotubes can also be used for vaccine delivery. The basic concept involves linking of the antigen to carbon nanotubes while retaining its conformation, thereby, inducing antibody response with the right specificity. The increasing interest shown by the nanotechnology researchers in this field, involves a great chance of exploring new applications of carbon nanotubes in upcoming years.

Keywords: Carbon Nanotube; Graphene; Bio-sensing; Antibody.

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Swine Flu: Clinical Management Protocol and Infection Control Guidelines

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Abstract: Swine influenza is a highly contagious viral infection of pigs. In India (2015) the morbidity rates was 14484 due to Swine influenza virus infections while mortality rates was 833 till 22nd Feb 2015, reaching 841 recently. Secondary bacterial infections can exacerbate the clinical signs following infection with Swine influenza virus. Swine influenza has significant economic impact on an affected herd. The Swine influenza virus is a type A orthomyxovirus with a segmented RNA genome. The type A Swine influenza viruses are further subdivided based on their haemagglutinin (H) and neuraminidase (N) proteins. Subtypes of Swine influenza virus that are most frequently identified in pigs include classical and avian H1N1, human (hu) H1N1 and H1N2, reassortant (r) H3N2, and rH1N1. Other subtypes that have been identified in pigs include rH1N7, rH3N1, H2N3, avian (av) H4N6, avH3N3, and avH9N2. Important clinical signs of Swine influenza virus infections are fever, coughing, sneezing,
nasal discharge, elevated rectal temperatures, lethargy, breathing difficulty, depressed appetite, diarrhea and vomiting. Clinical signs and nasal shedding of virus can occur within 24 hours of infection. Infection control measures at individual levels are as follows: Hand hygiene, respiratory hygiene/cough etiquette, and stay away from poultry, use of mask (N95), decontaminating contaminated surfaces, fomites and equipments. All the waste has to be treated as infectious waste and decontaminated as per standard procedures. Swine flu is a fatal disease; hence this review provides a precautionary step to overcome the disease.

**Keywords:** Swine influenza; Clinical signs; Type A orthomyxovirus; Neuraminidase proteins.

**PS-28**

**Swine Flu: Pandemic Outbreak**

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**Abstract:** H1N1 the causative agent of influenza, a contagious viral respiratory disease causing outbreaks in tropical and subtropical countries. Influenza A virus is comprised of two surface glycoprotein’s namely hemagglutinin (HA) and neuraminidase (NA) with 16 subtypes of HA and 9 subtypes of NA respectively. The virus was first isolated in North American (1930) by Shape, three main subtypes are H1N1, H3N2 and H1N2 that include classical swine H1N1, European avian-like H1N1, human-like H3N2, reassortant H3N2, and various genotype H1N2 viruses that are circulating in the swine population worldwide. The 2009 pandemic H1N1, new swine-origin influenza A virus, caused the latest human pandemic. This contagious respiratory disease is spread through inhalation of contaminated droplets or is transferred from a contaminated surface to the eyes, nose or mouth of a person. Early signs of H1N1 are flu-like, including fever, cough, headache, muscle and joint pain, sore throat and runny nose, and sometimes vomiting and diarrhoea. In severe conditions, it can lead to pneumonia and organ failure. The precautionary measures can be: Trash the tissue after using it. Wash your hands at regular intervals with disinfectants, don’t touch your mouth, nose, eyes after touching strangers and unknown surfaces. Best treatment in human is vaccination. Generics combination- Influenza vaccine (A&B), H1N1 Vaccine (Swine Flu). Brand Name- Agripal (Panacea Biotech Ltd.), Influgen (Lupin Laboratories Ltd.), Fiuarix (GSK Pharmaceuticals Ltd.). The two main antiviral agents used as Oseltamivir (Tamiflu),

**Keywords:** H1N1, Swine Flu, Influenza vaccine

**PS-29**

**Fibrinolytic enzyme secreted by bacillus sp.: novel tool for antithrombotic therapy**

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**Abstract:** In recent years, fibrinolytic enzymes from various sources including microorganisms, worms and animals, have been the subject of active researches because of their potential as novel agents preventing or treating cardiovascular diseases such as acute myocardial infarction and cerebral infarction by dissolving fibrin in blood vessels. Fibrinolytic enzymes from food-grade microorganisms such as *Bacillus* can be promising alternative for streptokinase. Nattokinase is the most well-known fibrinolytic enzyme produced by some *B. subtilis* strains. *Bacilli* secrete several proteases, including alkaline protease (subtilisin, encoded by apr), neutral protease (encoded by npr), bacillopeptidase F (encoded by bpr), Mpr (extracellular metalloprotease, encoded by mpr), Epr (extracellular protease, encoded by epr), and Vpr (extracellular serine protease, encoded by vpr). Among them, the enzyme responsible for the most fibrinolytic activity is subtilisin, a member of serine proteases. Currently, not enough in vivo clinical data are available on efficacies of fibrinolytic proteases and thus more in vivo studies are required in the future. One of the novel approaches for treatment of cardiovascular disease includes the screening of *Bacillus* strains from natural environments, including fermented foods, having strong fibrinolytic activity and can be used for the production of fermented foods which confer fibrinolysis upon consumption. Efforts to search such organisms should be continued, since most of the microorganisms in nature are still undiscovered. Protein engineering for the enzymes will be the next step to construct highly fibrinolytic and stable enzymes, where extensive research efforts are also needed in the future.

**Keywords:** *Bacillus*; cardiovascular diseases; Fibrinolytic enzyme; Nattokinase; protease.
Recent updates on Nanodelivery of bioactives in Liver Cancer

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Abstract: Cancer is caused due to the uncontrolled growth, proliferation and differentiation of abnormal cells in the body that may lead to malignancy in later stage of life. In developing countries it is becoming one of the leading causes of death and in many other parts of the world. Each year nearly 800,000 new Cancer cases are reported with the National Cancer Registry Programme of India. Cancers of the liver are one of the commonest cancers that occur in the world, the commonest of which is the hepatocellular carcinoma (HCC) is considered to be the 5th commonest cancer in the world. Several flavonoids based bioactives that appears to be effective in in-vitro studies at particular concentrations, often exhibit lower responses in case of in vivo studies even at higher concentration as revealed by many studies. It may require very high concentration of these bioactives for appropriate response, which indicates lower bioavailability (e.g. flavonoids based bioactives), following oral administration. Through nano delivery approaches higher quantity of drug could be absorbed and enhanced permeability and retention effect may also be achieved through Lipidic nanoparticles (Lipid droplet having less than 50nm) that can easily permeate in tumor region than normal tissues and possibly may cause selective targeting of the tumors. Novel lipid based nanoemulsion systems are experiencing a very active development as reflected by numerous publications and patents being granted on this system. On basis of above reports and literature review it is concluded that the active targeting of many types of cancers could be achieved by using Nano-delivery systems for many bioactive compounds.

Keywords: Liver Cancer, Tumor targeting, Nanodelivery systems, Bioactives, Nanoemulsion

In Vitro Screening Of A Polyherbal Formulation For Inhibitory Potential Against α-Glucosidase And α-Amylase

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Abstract: Diabetes mellitus (DM) is considered to be a serious health problem worldwide. In the development of Type 2 diabetes postprandial increase in the level of glucose is mostly encountered. Controlling this hike of sugar levels may contribute in the prevention of the disease. Some recent reports demonstrated that the postprandial state also contributes in the development of atherosclerosis and other cardiovascular diseases. Therefore decreasing postprandial hyperglycemia may prove to be a therapeutic approach which is possible by the inhibition α-glucosidase and α-amylase in the gastrointestinal tract. Hence, in the present study a poly-herbal formulation was evaluated for their α-glucosidase and α-amylase inhibitory efficacy the ingredients of which were taken from an Ayurvedic formulation, “Chandrakala Rasa”. Only the herbal drugs are taken from the formulation which includes Amalaki (Embelia officinalis Gaertn.), Ela (Elettaria cardemonum Maton.), Karpoor (Cinnamonum camphora Nees & Eberm.) and Shalmali (Bombax ceiba Linn.). The activity was compared with standard drug acarbose. The percentage inhibition of both the enzymes at 5, 10, 20, 40 and 80 μg/mL concentration of the formulation showed a concentration dependent reduction in percentage inhibition. At the highest concentration of 80μg/mL, the formulation showed a maximum inhibition of nearly 75.00% and 53.36 % of α-glucosidase and α-amylase respectively. The formulation shows significant inhibitory effect on both enzymes α-glucosidase and α-amylase. The IC$_{50}$ values were evaluated from the dose response curve of standard drug acarbose and the IC$_{50}$ value was found to be 32.91±4.03 μg/mL and 47.55±2.78 μg/mL respectively for α-glucosidase and α-amylase. Overall, our findings suggest that the formulation may limit the release of simple sugars from the gut and there by alleviate postprandial hyperglycaemia.

Keywords: Postprandial, Hyperglycaemia, α-glucosidase, α-amylase, Ayurvedic formulations

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Potent Nutraceutical Value And Therapeutic Activity Of Spondias Pinnata

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Abstract: Spondias pinnata Linn. (Anacardiaceae) is a well-known medicinal plant indigenous to South East Asian countries and widely distributed in tropical and subtropical region in India. The plant has been used intensively in many traditional herbal medicines across the globe. This plant has been known to possess antipyretic, antimicrobial, thrombolytic, anti-diabetic, ulcer-protective, anti-cancerous, anti-diarrhoeal, anthelmintic,
cytotoxic and hepatoprotective activity. It has also been reported that different parts of the plant is used as anti-thirst, anti-emetic, astringent, antiseptic, refrigerant, antidysenteric and as an anti-tubercular agent. The paste and lotion of bark extract when rubbed in the skin provides relief from sprain and strain. It is also useful in case of both articular and muscular rheumatism. It owes its different pharmacological activities to the wide range of phytoconstituents that are present in the plant. The plant is found to contain sterols, daucosterol, flavonoids, polysaccharides and gums, \( \beta \)-amyrin, oleanolic acid and amino acids like glycine, cystine, serine, alanine and leucine and acids like lignoceric acid. The fruit juice is highly acidic rich source of vitamins like ascorbic acid, thiamine, riboflavin and has nutraceutical potentiality due to the presence of minerals like potassium, iodine, iron, calcium etc. The green fruit is pickled in brine and it is commonly used in culinary preparations such as curries, condiments, jams, sherbet in countries where the tree grows naturally.

**KeyWords:** *Spondias pinnata*, nutraceutical value, therapeutic activity

**PS-33**

**Pharm. D.: a novel tool in health care system**


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**Abstract:** Health is very important thing for human. There are many types of diseases that affect the human health. To solve this problem there are many kind of health professional like doctors, nurses, pharmacists, physiotherapists etc. Inspite of these professionals this problem can’t be totally solved in the world. In India this is a giant problem because of lack of Physicians. Physicians have more burden of diagnose and treatment. To solve this problem Pharm.D. (Doctor of pharmacy), a professional doctor degree, come in existence at the University of Southern California School of Pharmacy in Los Angeles, California in 1950. In India it was introduced in 2008 by Goverment of India and pharmacy council of India. It is six year course in which five year of classroom and hospital based didactic study followed by one year of internship training in addition to ongoing practical and research project. It was introduced to get better clinical pharmacy services in India. It is a post graduate degree program.

**Keywords:** Human health, Pharm.D. Pharmacy council of India
Bioactive compound of *a. Campanulatus* and their antioxidant activity

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**Abstract:** Antioxidants are substances that protect the cells from damaging effects of the oxidative stress or acts as free radical scavengers in the body. Several plant constituent showed free radical scavenging or antioxidant activities. Therefore, the crude extracts of plant materials rich in antioxidants are increasingly of interest now a days. *Amorphophyllus campanulatus*(AC) is commonly known as *Suran*. The aim of present study was to identify antioxidant activities of AC plant extracts. Extracts of AC leaf, peel and pulp of fruit were subjected to assessment of its bioactive compound for total phenolic content, ascorbic acid, carotenoid, carbohydrate, protein content and antioxidant potential by superoxide anion radical scavenging activity (SARSA), free radical scavenging activity (FRSA), ferrous ion chelation activity (FTC), lipid peroxide radical scavenging activity and reducing power (RP). Total phenolic content, carotenoid and protein content were found higher in peel extract while ascorbic acid and carbohydrate content were found higher in leaves extract. Peel extract of AC showed lower IC\textsubscript{50} for SARSA and FRSA than other extract. Leaf extract of AC showed lower IC\textsubscript{50} for LPO and FTC than other extracts. The results indicate that suran peel and leaves are more important source of natural phytochemicals and may be used in herbal formulation and health care products.

**Keywords:** Phytochemical, Antioxidant, Reducing power

Emerging Challenges In Dry Powders Inhalation Technologies


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**Abstract:** Development of pharmaceuticals for inhalation is a particular challenge, as it involves the preparation of a formulation and the selection of a device for aerosol dispersion.
The lungs have lower buffering capacity than other delivery sites (e.g., the gastrointestinal tract or the blood), which limits the range of excipients that could enhance delivery outcomes. Treating respiratory diseases with inhalers requires delivering sufficient drug to the lungs to bring about a therapeutic response. For optimal efficacy, drug administration must be reliable, reproducible, and convenient. This goal can be achieved by a combination of formulation, metering, and inhaler design strategies. Inhaled drug delivery systems can be divided into 3 principal categories: pressurized metered-dose inhalers (pMDIs), DPIs, and nebulizers, each class with its unique strengths and weaknesses. This classification is based on the physical states of dispersed-phase and continuous medium, and within each class further differentiation is based on metering, means of dispersion, or design. Nebulizers are distinctly different from both pMDIs and DPIs, in that the drug is dissolved or suspended in a polar liquid, usually water. Nebulizers are used mostly in hospital and ambulatory care settings and are not typically used for chronic-disease management because they are larger and less convenient, and the aerosol is delivered continuously over an extended period of time. pMDIs and DPIs are bolus drug delivery devices that contain solid drug, suspended or dissolved in a nonpolar volatile propellant or in a dry powder mix (DPI) that is fluidized when the patient inhales.

**Keywords:** Dry Powder Inhalers; Nebulizers; pMDIs; Particle sizing.

**PS-36**

**Recent Trends in Transdermal Drug Delivery.**

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**Abstract:** Typical delivery systems can be utilized to achieve transdermal drug delivery. This involves the delivery of drugs through the skin barrier in order that they exert a systemic effect. This sort of transdermal drug delivery approach is commonly used in the treatment of dermatological conditions such as skin cancer, psoriasis, eczema and microbial infections, where the disease is located in the skin. Like many alternative routes of delivery, the skin has both benefits and limitations when compared to more conventional methods such as oral drug delivery. The conventional means of applying drugs to skin include the use of vehicles such as ointments, creams, gels, etc. More efficient means have been developed in recent times.
like ultrasound, laser radiation & photomechanical waves, magnetophoresis, thermophoresis, microneedle based devices & needleless injections. These methods involve the use of external energy to act as a driving force and/or act to reduce the barrier nature of the skin in order to enhance permeation of drug molecules in to the skin. Recent progress in these technologies has occurred as a result of advances in precision engineering, computing, chemical engineering and material sciences, which have all helped to achieve the creation of miniature, powerful devices that can generate the required clinical response.

**Keywords:** Transdermal drug delivery; Permeability; Efficacy; Thermophoresis.

**PS-37**

**Pediatric Cancer: An Overview**

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**Abstract:** Pediatric cancer is commonly known as childhood cancer. According to American cancer society about 16000 kids under age 20 diagnosed with childhood cancer in 2014. The main sign and symptoms are continued, unexplained weight loss, early morning vomiting, increased swelling or persistent pain in bones. Lumps especially in the abdomen, neck, chest, pelvis or armpits. Development of excessive bruising, bleeding or rashes. It also consist constant infection, a whitish colour behind the pupils, constant tiredness or noticeable paleness, vision changes which occur suddenly or persist, fever of unknown origin. It includes young adults between 15–19 years old. The most common cancers in children are leukemia (31%), brain tumors (26%), and lymphomas (10%). Less common childhood cancers are Neuroblastoma (6%, nervous system), Wilms tumor (5%, kidney), Non-Hodgkin lymphoma (4%), Rhabdomyosarcoma (3%), Retinoblastoma (3%), Osteosarcoma (3%), Hepatoblastoma and hepatocellular carcinoma. The number of new cases was highest among the 1–4 age groups, but the number of deaths was highest among the 10–14 age groups. Unlike many cancers of adults, there are no lifestyle-related risk factors that are known to influence a child’s risk of getting cancer. Very few environmental factors, such as radiation exposure, have been linked with childhood cancer risk. Even then, in many cases
exposure to radiation might be unavoidable, such as if the child needs radiation therapy to treat another cancer. If the child does develop cancer, it is important to know that it is extremely unlikely there is anything the child could have done to prevent it. Very rarely; a child might inherit gene changes that make them very likely to get a certain kind of cancer.

**Keywords:** Pediatric cancer, lymphomas, Hepatoblastoma

**PS-38**

**Xenotransplantaion Accommodating organs and study of Rejections**

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**Abstract:** Xenotransplantation chiefly involves the transplantation of nonhuman tissues or organs into human recipients. Xenogeneic materials, has the potential to constitute an alternative to material of human origin and bridge the shortfall in human material for transplantation. The organ transplanted are termed as grafts. These grafts were found to be rejected, however, because of unknown forces later which were identified as immune responses. No xenotransplantation trials have been entirely successful till date because of many obstacles arising from the response of the recipient’s immune system. This response is generally more extreme than in allotransplantations which results in rejection of the xenograft, and can be responsible for immediate death of the recipient. There are several types of rejection organ xenografts includes: Hyperacute rejection, Acute vascular rejection, Cellular rejection and Chronic rejection.

**Keywords:** Grafts, Immune system Xenotransplantation, Xenogenic.

**PS-39**

*Premna integrifolia* Linn. bark extract inhibit key-enzymes linked to type 2 diabetes (α-amylase and α-glucosidase) *in vitro*

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Abstract: The current study was performed to investigate in vitro hypoglycemic potential of the methanolic extract of the bark of Premna integrifolia Linn. (family Verbinaceae). Methanol extract was prepared by cold maceration method. Methanolic bark extracts and standard drug acarbose were evaluated for their α-amylase and α-glucosidase inhibitory effect by standard methods. Phytochemical analysis revealed that the methanolic extract showed inhibition on α-amylase and α-glucosidase inhibitory effect in a concentration dependant manner. Inhibitory activity of P. integrifolia on α-amylase was 78.12 ± 1.12% and on α-glucosidase was 72.95 ± 0.52%. The inhibitory activity of acarbose on α-amylase was 88.11 ± 0.47% and on α-glucosidase was 82.97 ± 0.35%. IC\textsubscript{50} values were calculated from the dose response curve which was found to be 39.83 ± 0.270µg /mL and 49.64 ± 0.13µg/mL for α-amylase and α-glucosidase respectively for the P. integrifolia. The in vitro analysis proves the use of P. integrifolia in lowering glucose absorption resulted in the reduction of post prandial blood glucose hike.

Keywords: Premna integrifolia, Postprandial, α-glucosidase, α-amylase.

PS-40

Beta Secretase (Bace-1): A Potent Therapeutic Neuroenzyme For Novel Treatment of Alzheimer’s Disease

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Abstract: Dementia is a major class of progressive neurological syndrome characterized by alternation of multiple brain function leading to lack of ability to think, orientation, comprehension, calculation and learning capacity and it’s strongly associated with Alzheimer disease (75%). This disease can be targeted through amyloid cascade hypothesis for novel drug discovery. Moreover Alzheimer disease caused by changes in amyloid beta (Aβ) peptide (37-42 amino acids) stability and aggression and further Aβ\textsubscript{42} peptide induces plaque formation which leads to pathogenesis and can be obviate through beta secretase or BACE-1 (A beta-site amyloid precursor protein enzyme of humans), Therefore in present study
molecular dynamics simulations (3D-QSAR and pharmacophore modelling) of two different methods of, Hiphop and Hypogen was employed to identify suitable inhibitors or its analogue of BACE-1 which may block amyloid pathogenesis and these investigation suggested that BACE-1 is a potent therapeutic neuroenzyme for novel treatment of Alzheimer’s disease.

**Key Words:** Neuroenzyme, Amyloid peptide, 3D-QSAR, BACE-1

PS-41

**Novel Egfr Tyrosine Kinase Inhibitors As Potential Anticancer Agents**

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**Abstract:** Protein kinases catalyze the phosphorylation of tyrosine, serine, and threonine residues in various proteins involved in the regulation of all functions. They can be broadly classified as receptor kinases such as EGFR (epidermal growth factor receptor), and non-receptor kinases. Inappropriate or uncontrolled activation of many of these kinases has been shown to result in uncontrolled cell growth. The EGFR protein tyrosine kinases have been identified as interesting targets for medicinal chemistry programs especially in cancer therapy. Compounds that inhibit the kinase activity of EGFR after binding its cognate ligand are of potential interest as new therapeutic antitumor agents. This article discuss the EGFR tyrosine kinase inhibitory activity of various compounds like thiazolyl-pyrazolines, thiazolyl-pyrimidines, pyrazolopyrimidines, pyrazolyl-thiazolinones, N-phenylsulfonylnicotinamides, schiff’s bases containing nitroimidazole, thiazolidinones, 4-arylaminquinazolines, 4-anilinoquinazolines, 4-anilinoquinoline-3-carbonitriles, pyrrolotriazines, 4-amino-6-aryliminopyrimidines, thienopyrimidines, metronidazole acid acyl sulfonamides, N-phenylsulfonylnicotinamide derivatives etc.

**Keywords:** epidermal growth factor receptor; tyrosine kinase inhibitor; anticancer.

PS-42

**Dendrimers - A Novel Tool in Health Care System**

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Abstract: The unique architectural design of dendrimers, high degree of branching, multivalency, globular architecture and well-defined molecular weight, clearly distinguishes these structures as unique and optimum nanocarriers in medical applications such as drug delivery, gene transfection, tumor therapy, diagnostics, etc. Nanoparticle drug-delivery systems are the popular ones as are able to increase the selectivity and stability of therapeutic agents. The bioactive agents can be easily encapsulated into the interior of the dendrimers or chemically attached i.e. conjugated or physically adsorbed onto the dendrimer surface, serving the desired properties of the carrier to the specific needs of the active material and its therapeutic applications. In addition to supplying a multivalent backbone for drug attachment, dendrimers also provide access to various new polymer architectures that are potentially relevant to drug delivery applications.

Keywords: Dendrimers; Nanocarriers; Transfection; Bioactive.

PS-43

Mycosporine like amino acids- potent UV screening bioactive compounds produced by cyanobacteria

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Abstract: Cyanobacteria, also known as Cyanophyta is a phylum of bacteria that obtain their energy through photosynthesis. Cyanobacteria are a photosynthetic, nitrogen fixing group that survives in wide variety of habitat, soil and water. UV-B irradiation has been found to have a large number of damaging effects on cyanobacteria. Proteins and DNA absorb UV-B irradiation, which makes them common targets for damage. Stress defence is carried out by the synthesis of UV-B absorbing compounds, antioxidants and extracellular polysaccharides. Cyanobacteria can protect themselves against UV-B radiation that does reach the cell by counter-acting the dangerous rays before they can cause damage. Cyanobacteria are able to overcome the toxicity of UVR or high photosynthetically active radiation (PAR) by synthesizing some UV-absorbing/screening compounds such as mycosporine like amino acids (MAAs). Synechococcus PCC7942 was exposed to UV-B radiation and enhancement of production of MAA’s was carried out through media optimization. MAAs are among those
natural photoprotective products induced by cyanobacteria in response to ultraviolet-B (UV-B; 280-315 nm) radiations. These are small (< 400 Da), colorless, water-soluble compounds composed of a cyclohexenone or cyclohexeniminine chromophore conjugated with the nitrogen substituent of an amino acid or its imino alcohol. Among natural substances isolated from cyanobacteria that could provide a great variety of biotechnological applications, MAAs are becoming promising due to their UV screening properties and potential antioxidant activities. MAAs are one of the valuable bioactive compounds that may be biotechnologically exploited in diverse ways. It has been investigated that the MAAs such as shinorine, porphyra-334 (P-334) and mycosporine-glycine (MG) can protect the human fibroblast cells from UV-induced cell death. Daniel et al. has reported that a mixture of P-334 and shinorine can suppress UV-induced aging in human skin and thus it may be potentially used in cosmetics and toiletries as UV protectors and activators of cell proliferation.

**Key words:** Mycosporine-like amino acids, UV screening, bioactive compound

**PS-44**

**Different methods for enhancement of solubilization and bioavailability of poorly soluble drugs.**

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**Abstract:** Solubility, the phenomenon of dissolution of solute in solvent to give a homogenous system, is one of the important parameters to achieve desired concentration of drug in systemic circulation for desired pharmacological response. Low aqueous solubility is the major problem encountered with formulation development of new chemical entities as well as for the generic development. The insufficient dissolution rate of the drug is the limiting factor in the oral bioavailability of poorly water soluble compounds. This review discusses carriers for solubility enhancement and different techniques for solubility enhancement. Various techniques are used for the enhancement of the solubility of poorly soluble drugs which include micronization, nanonization, sonocrystallization, supercritical fluid method, spray freezing into liquid and lyophilization, evaporative precipitation into aqueous solution, use of surfactant, use of co-solvent, hydrotropy method, use of salt forms, solvent deposition, solubilizing agents, modification of the crystal habit, co-crystallisation, complexation and drug dispersion in carriers. Selection of solubility improving method...
depends on drug property, site of absorption, and required dosage form characteristics. With the advent of chemistry and a high screening, the number of poorly water soluble compounds has increased solubility. A success of formulation depends on how efficiently it makes the drug available at the site of action. The purpose of this review article is to describe the techniques of solubilization for the attainment of effective absorption with improved bioavailability.

**Keywords:**Sonocrystallization, complexation, hydrotropy method

**PS-45**

*Phyllanthus emblica (Amla) the Pancea*

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**Abstract:** Amla, or Indian gooseberry, has been used by Indian doctors for many chronic conditions including blood sugar control. Amla is the Hindi name while in Sanskrit Amalaki. This edible fruit is well-known for its high content of vitamin C and its potent antioxidant activity, more potent than many other herbs. The botanical names are *Emblica officinalis* and *phyllanthus emblica*. Ayurvedic doctors have a great deal of experience with the use of Amla. Amla evaluating its role as an antioxidant, in ulcer prevention, for people with diabetes for mental and memory effects and its anti-inflammatory benefits. Amla is the most concentrated form of Vitamin C found in the plant kingdom, and when the whole fruit is used rather than an active ingredient, the Vitamin C is easily assimilated by the human body. The regular use of Amla-Berry can strengthen digestion, absorption and assimilation of food. People taking it notice that they can enjoy the taste of food better. It improves digestion but does not heat the body Amla Berry is ideal for calming mild to moderate, hyper acidity and other Pitta-related digestive problem. Amla-Berry helps purify the Rasa Dhatu (nutrient fluid) and Rakta Dhatu thus supporting the function of the liver. It also strengthens the liver. Amla Berry is good for the brain it is medhya nurturing for the mind and enhancing coordination among dhi, dhriti and smriti. The Amla-Berry helps pacify Kapha dosha as well. Therefore, Amla-Berry is a wonderful tonic for strengthening and nourishing the lungs. Amla-Berry pacifies Apana Vata, thus helping with the downward flow of energy in the body. They keep the function of
elimination regular and ease constipation. By balancing Apana Vata and by nurturing all the dhatus (body tissues), Amla-Berry also keeps menstruation regular and healthy. Thus Amla-Berry is very beneficial in the world medical till now.

**Keywords:** *Emblica officinalis*, Vitamin C, Amla-Berry

**PS-46**

*An In Vitro Study Of Antibacterial Activity Of Shadanga paniya*

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**Abstract:** For a long time, plants have been an important source of natural products for human health and also the cheapest and safer alternative sources of antimicrobials. Moreover synthetic drugs produce side effect to the users. The main cause of mortility and morbidity are the infectious diseases that represent the major health problem due to inadequate use of antibiotics as well as to bacterial resistance. Ayurveda is being practiced as healthcare system of medicine throughout the world and especially in South-East Asian countries. *Shadanga paniya* is a very famous Ayurvedic remedy for it. It relieves excessive thirst and burning sensation related to fever. It is the aqueous decoction (with 64 times water and reduced to half) of a polyherbal preparation containing equal amount of six herbs viz. Musta (*Cyperus rotundus* Linn.), Parpataka (*Fumaria vaillantii* Loisel.), Usheera (*Vetiveria zizanioides* Linn.), Chandana (*Santalum album* Linn.), Udeechya (*Andropogan vetiveria* Linn.), Nagara (*Zingiber Officinale* Rosc.). The aim of the present study was to investigate the antibacterial activity of *Shadanga Paniya*. Disc diffusion method was used for screening anti microbial activity of *Shadanga Paniya* against Gram-positive bacteria (*Staphylococcus aureus*, *Bacillus stearothermophilus*) and Gram-negative bacteria (*Escherichia coli*, *Pseudomonas aeruginosa*). The zone of inhibition was found to be 24.4mm and 20.83mm for *P. aeruginosa* and *E. coli* respectively. Moreover, 21.1mm and 23.75mm of the zone of inhibition were observed for the *S. aureus* and *B. stearothermophilus* respectively. Hence, the *in vitro* study expressed support for the use of this formulation as antimicrobial agent.

**Keywords:** *Shadanga paniya*, *B. stearothermophilus*, *S. aureus*
Antimicrobial activity of Amalakyadi churna
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Abstract: An antimicrobial is a substance that kills or inhibits the growth of microorganism such as fungi, viruses or protozoa. The present study is carried out to evaluate the antimicrobial activity of different solvents extracts (hexane, methanolic, ethyl acetate & aqueous) of Amalakyadi churna against bacterial pathogens and their phytochemical analysis which are responsible for antimicrobial activity. Herbal medicines are serving increasingly as nutritional supplements to fight or prevent common disease. Amalakyadi churna is polyherbal powder formulation which contains equal quantities of pericarp of Emblica officinale Gaertn. (amalaki), Terminalia chebula Ritz.(haritaki), Root of Plumbago zeylanica Linn (chitraka), fruit of Piper longum Linn. (pippali) and saindhava lavana. The formulation is advisable for the fever and dyspepsia. The aqueous extract of the Amalakyadi churna was examined for its antagonistic activity against Staphylococcus aureus, Escherichia coli, Bacillus cereus, Pseudomonas aeruginosa, Micrococcus luteus and Klebsiella pneumoniae. In vitro antimicrobial activity was performed by well diffusion method in MH agar. The extract showed a significant effect on the tested organisms. The extract showed maximum zone of inhibition against E. coli (17.6±1.15), whereas, lowest against K. pneumoniae (12.6±1.52). Crude extract showed maximum relative percentage inhibition against B. cereus (188.52%) and lowest relative percentage inhibition against M. luteus (24.92 %). Minimum Inhibitory Concentration (MIC) was measured by a modified agar well diffusion method. Extract showed 50, 25, 6.25, 3.1, 1.5 and 12.5 mg/mL MIC values for S. aureus, K. pneumoniae, B. subtilis, P. aeruginosa, M. luteus and E. coli respectively.

Keywords: Amalakyadi churna, Terminalia chebula, Klebsiella pneumoniae

Phytochemical Investigation and Characterization of Abrin Protein with Gel Electrophoresis from Seeds of Abrus Precatorius
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Abstract: The present study was undertaken with an objective to explore the hair growth activity of ethanol extract of Abrus precatorius seeds on male wistar albino rats. Abrus precatorius is commonly called as Ratti, belongs to family Fabaceae. Abrus precatorius is mainly found all through the plains of India, from Himalayas down to southern India and Ceylon. Most of the active constituents were found to be present in its seeds and on exhaustive literature survey it was found that sufficient activities on this plant have been done on seed part. Therefore, the present study was also planned to concentrate upon seed part which is a rich source of active chemical constituents. In the traditional medicine system, it has been mentioned that paste of the seeds of Abrus precatorius is used to treat alopecia but on exhaustive literature survey no scientific record was found for this activity; so the present study was undertaken to evaluate the hair growth activity and to check the authenticity of traditional claims. Pharmacological screening of ethanol extracts of seeds of Abrus precatorius showed significant hair growth activity which was slightly less effective in comparison to standard minoxidil. Isolation, characterization & study of mechanism of action by using gel electrophoresis of abrin in the treatment of alopecia could be another step forward to prove the utility of this constituent of plant Abrus precatorius.

Keywords: Abrus precatorius, alopecia, ethanol extract, gel electrophoresis

Review of efficacy of Nigella sativa against different components of Metabolic Syndrome

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Abstract: Metabolic syndrome (MS) is a combination of medical disorders linked to overweight, central obesity, insulin resistance, dyslipidemia and hypertension. Patients suffering from MS have increased chance of having ischemic heart diseases, stroke and type 2 diabetes. Nigella sativa (NS) also known as black seeds are a widely used medicinal plant worldwide. Nigella sativa has been used in the treatment and prevention of some common illnesses as it possesses antioxidant, anti-inflammatory, antifungal, antibacterial, and anticonvulsant, anti-hyperglycemic and nephroprotective effects. Nigella sativa has also demonstrated protective effects in various components of metabolic syndrome. We searched on PubMed using following terms: "Nigella sativa", "Metabolic syndrome", “Insulin resistance”, "Hypertension", "Dyslipidemia" and "Obesity". We found various studies which demonstrated the role of Nigella sativa on Metabolic Syndrome. A total of 45 studies dealing
with various components of metabolic syndrome were found. Eleven studies demonstrated its antihypertensive effects; ten studies were related to its anti-hyperglycemic properties and sixteen studies showed the beneficial effect of *Nigella sativa* on lipid profile and eight studies demonstrated its effect on obesity. *Nigella sativa* has therefore shown promising effects on all the parameters of metabolic syndrome. A beneficial role of *Nigella sativa* has been demonstrated on the various components of metabolic syndrome. This is inferred from results of studies on animal models of high fat as well as high carbohydrate diet induced metabolic syndrome. Similar results have been demonstrated in clinical trials. Hence it will prove to be worthwhile to study Nigella sativa and its active constituents.

**Keywords:** *Nigella sativa*, dyslipidemia, black seed

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**PS-50**

**Current Approaches in Molecular Diagnostics of Fungal Pathogens**

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**Abstract:** The capability to quick and accurate identification of fungal pathogens associated with contagious diseases has been a universal goal to achieve by diagnostic laboratories. During the past two decades, scientific advancements in the field of diagnostic microbiology have gradually evolved from traditional- or classic-based culture and identification approaches to more molecular oriented applications due to a technological revolution in molecular aspects of microbiology. Rapid detection techniques by nucleic acid amplification and its mutual association with automated and user-friendly softwares have significantly widened the area of diagnostic detections for the clinical microbiologist. Fungal pathogens can directly harm the host as being opportunistic pathogen and/or indirectly with its toxic metabolite. *Candida*, *Aspergillus*, *Cryptococcus*, *Histoplasma*, *Stachybotrys*, *Pneumocystis*, *Fonsecaea*, *Trichosporon*, etc. are the human pathogenic fungal agents that caused disease.
Early diagnosis can serve as a warning signal for the treatment of fungal diseases. Loop mediated isothermal amplification (LAMP) has been, a single tube DNA/RNA amplification technique, developed for not only rapid and sensitive diagnosis but also as an alternative system to conventional PCR. The cycling reactions result in the accumulation of $10^9$ to $10^{10}$-fold copies of target in less than an hour. The amplification products can be easily detected by visual assessment of turbidity, electrophoresis or by the naked eye. In addition, optimizing LAMP methods had provided enhanced specificity and sensitive detection methods. LAMP technology shows much potential to be adopted as part of point-of-care testing platforms by the micromation, computerization and combination with other technologies such as Lab-on-a-Chip and digital nucleic acid amplification. With its cost-effective and exhibit on-site applicability, LAMP may, in future, become a “gold standard” for fungal detections.

**Keywords:** Molecular diagnostics, LAMP technology, *Candida*

**PS-51**

**Mushroom and Its Medical Benefits**

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**Abstract:** Mushrooms have been used as food supplement from times immemorial not only for their flavor aroma and Nutritive values but also for their medicinal properties as evident from ancient literature. Fungi have proved to be medicinally important both in India and in Western Countries together with notes of traditional preparation of this folk medicine. Agaricoid Fungi used in the past have included the field mushroom (*Agaricus campestris* linn.) of which a dosage of 3-6g 2-3 times per day was said to provide a nutritious tonic giving energy and used against Tuberculosis Anti-inflammation and sinusitis. The fly agaric has long been considered to be the ancient “Soma”. The sclerotioid fungus called God’s bread or little man’s bread (*Mylitta lepidescens* Horan) was used by the Vaidues in Southern India for treatment of renal aliment and is considered to be a diuretic. Pleurotous- stripe is generally eccentric and pileus resupinate in some species. They have white or pigmented range fruiting bodies. They grow on wood, on dead or living Hosts. This genus contains most valuable edible mushroom(*P. sajor, P. ostreatus*). Pleurotus spp. are called oyster mushroom.
as it resembles shell of an oyster. In India it is called DHINGRI. Pleurotus spp. is antimicrobial, antiviral, antihuman immunodeficiency virus HIV, antineoplastic, antitumor, antimutagenic, antioxidant, hyperglycemic, hypotensive. Anti-Inflammatory, Hepatoprotective, hypcholesterolemic, immunomodulatory, anti-ageing. As such the mushroom fruting body, its mycelium and their extracts or concentrates have been considered a functional food as it has the potentiality to control many human ailments. Availability of high-tech methods should allow the researchers to explore novel metabolites from OM. In the era of Nomics it would be much easier to study mechanism of action with a biomarker based approach for upgrading Pleurotus from functional food to holistic medicine. As a constituent it is a good remady in the medical.

**Keywords:** Mushrooms, DHINGRI, *Mylitta lepidescens*

**PS-52**

**Anticancer activity of Cissus quadrangularis : An in-vitro 2D tumoroid model based study**

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**Abstract:** Cancer has a devastating impact on health around the world, especially in developing countries. Beside environmental factors, viral infections and life-style are responsible factors for its increasing frequency. Natural products are a frequent inspiration for the development of new anti-cancer drugs with better efficacy and safety profiles. *Cissus quadrangularis* (CQ) is a perennial rambling shrub of the grape family commonly known as “Hadjora” (in Hindi) probably native to India or Sri Lanka. It is one of the valuable medicines in the Indian Traditional Systems of Medicine because of the presence of several bioactive compounds. Therefore, in the present study we have generated HeLa (cervical cancer cell line) tumoroid culture *in vitro* 2D model for analyzing CQ extract response on the growth of HeLa tumoroid as well as monolayer culture of HeLa cells. We have primarily established an *in vitro* Tumoroid model and found that CQ extract inhibits the growth of tumoroid within 72 h. From the present findings we have observed that CQ extract significantly inhibits the growth of HeLa monolayer as well as 2D culture cells and finally
leads to cell death as revealed by phase contrast microscopy. Therefore, it can be concluded by the observation that CQ showed same susceptibility when compared with those grown on mono and two-dimensional HeLa cultures. Further we will explore the mechanism of action in support of its showed activity.

**Keywords:** ROS, Anticancer, Tumoroid.

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**PS-53**

*Cissus quadrangularis* linn. Stem ethanolic extract induces p53 dependent and bcl-2 mediated apoptosis: an *in-vitro* and *in-silico* study

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**Abstract:** *Cissus quadrangularis* Linn.commonly known as Hadjod (Family: Vitaceae) usually distributed in India and Sri Lanka has several bioactive compounds responsible for various metabolic and physiologic effects. The biological effects of *Cissus quadrangularis* ethanolic extract were evaluated on KB oral epidermoid cancer cell line in the present study. Anticancer potential of ethanolic extract of *Cissus quadrangularis* (CQ) stem against KB oral epidermoid cancer cells was evaluated in terms of morphological analysis, nuclei staining, liberation of ROS, mitochondrial membrane potential including p53 and Bcl-2 protein expression which reveals the process of apoptosis. Ethanolic extract of CQ stem has various bioactive compounds responsible for cancer cell morphological alteration, liberation of ROS, decreased mitochondrial membrane potential along with up-regulation of p53 and down-regulation of Bcl-2, which maybe the potential mechanism of its action for induction of apoptosis. Our data indicates that the CQ extract shows remarkable apoptotic effect which suggests that it could be a viable treatment for specific types of cancers.

**Keywords:** Anticancer, Apoptosis, ROS, KB cells.
Electronic Nose Applications In Medical Field
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Abstract: According to the research by World Health Organisation (WHO), 36 million people die each year due to various health problems. However, this number can be reduced if patients are detected early and treated properly. The expansion and use of electronic nose has many applications in the healthcare and a bio-medical field is rapidly to accelerate over the past 25 years. Many e-nose technologies have given answers or provided results of complex biomedical and healthcare problems. The purpose of this review is to present the use of e-nose in medical field, or how e-nose helps in detecting various diseases in human at early stage so that it can be cured easily. E-nose is a device which is being developed as systems for the detection of miscellaneous odours. These odours can be of food, drinks, cosmetics, medicines, etc. With the help of array of sensors placed inside it detection is possible. Various diseases like lung cancer, asthma in children, diagnosis of illness by breathe analysis, prostate cancer, bladder infection, liver cancer, anaerobic infection, yellow fever, smallpox, diabetes, typhoid, uremia, cholera, chronic hepatitis, and many more can be detected with the e-nose device. It is really helpful in medical field and it can save number of life’s. The growth of e-nose is increasing rapidly due to higher demand. Hence e-nose senses the odour emitted by body and can detects the possible disease (illness).

PS-55

Novel Approaches Used for Marine Drugs in Cosmeceutical Industry
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Abstract: The name cosmeceuticals is derived from cosmetics and pharmaceuticals, indicating that a specific product contains active ingredients. These cosmeceuticals are cosmetic products with biologically active ingredients maintaining to have medical or drug-like benefits. They are formulated not only to improve the skin's appearance but also to increase positive physiological effects at the cellular level. Because of the request of consumers, cosmeceutical products have become one of the fastest growing industries.
Simultaneously, it is necessary to determine novel bioactive substances with efficient, safe, and stable properties from natural sources for cosmeceutical development. Recently, marine resources have been demonstrated as a rich source of structurally diverse biologically active compounds with excessive cosmeceutical potential. It is a productive source of novel cosmeceuticals. Several compounds isolated from marine organisms exhibit various cosmeceutical activities such as antioxidant, antiinflammation, antiallergy, antiaging and antiwrinkling effect, tyrosinase and metalloproteinase inhibition, and ultraviolet protection. Cosmetic products formulated with seawater and sea creatures, such as marine collagen, astaxanthin, caviar and pearls. Sea beet peptide is used in skin whitening skincare. Sea fennel peptide has been developed as anti-blemish ingredients. Sea lavender peptide has a protective activity, making it ideal in anti-ageing and sun care formulations. Marine algae have gained much importance in cosmeceutical product development due to their rich bioactive compounds, chitosan as an antioxidant activity, marine fish and sponge derived collagens to regenerate and rejuvenates the skin, marine bioactive antimicrobial peptides. Cosmeceutical compounds derived from marine sources having activities with health benefits. It consists of a large number of phytochemical components combined together that have been isolated from various marine resources. This review focused on marine natural products and their potential for development identifies novel potent phytochemical compounds for cosmeceuticals purposes. For some years, marine-based ingredients have been a source of interest for different cosmeceuticals purpose.

Keywords: Marine Resources, Marine Cosmeceuticals, Marine Algae, Novel Approaches.

PS-56

**Antitubercular activity of lupeol derivatives**

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Abstract: Ethnopharmacologists, botanists, microbiologists, and natural-products chemists are combing the Earth for phytochemicals and “leads” which could be developed for treatment of infectious diseases. The aim of the present study was to isolate the lupeol from the plant euphorbia tiruccali and then synthesize the derivatives of lupeol which are investigated against tuberculosis. Lupeol, a pentacyclic triterpene, possesses diverse pharmacological and biochemical activities. A derivative of lupeol was allowed to react with
hydrazine hydrate and phenyl hydrazine in submitted reactions to get pyrazoline and phenyl pyrazoline derivatives. All the compounds entered for screening at the Tuberculosis Antimicrobial Acquisition and Coordinating Facility (TAACF) for their in vitro antibacterial activity against Mycobacterium tuberculosis H37Rv strain using Microplate Alamar Blue Assay (MABA) susceptibility test. The results expressed as MIC (minimum inhibitory concentration) in μg/mL. Among the 10 compounds, 4 compounds were found to have MIC values less than 10 μg/mL. this could be a good starting point to develop new lead compounds in the fight against tuberculosis. Newer substituted derivatives of lupeol were synthesized by firstly oxidation of lupeol to lupeol aldehyde followed by replacement of aldehydic group by various groups as pyrazoline, phenyl pyrazoline and oxazoline. These Pyrazoline and Oxazoline triterpenoids derived from lupeol were tested for their antitubercular activity against Mycobacterium tuberculosis strain H37Rv using the Microplate Alamar Blue Assay (MABA).

**Keywords:** Microplate Alamar Blue Assay, TAACF, Lupeol derivative

**PS-57**

Fabrication and Evaluation Of Chitosan Coated PLGA Nanoparticles Loaded With Docetaxel

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**Abstract:** The main objective of this study was to develop a polymeric drug delivery system for docetaxel (DTX), intended to be intravenously administered, capable of improving the therapeutic index of the drug and devoid of the adverse effects of docetaxel and tween 80. To achieve this goal nano carrier for nontoxic sustained systemic delivery of DTX were developed. DTX loaded poly(lactic-co-glycolic acid) (PLGA) nanoparticles were prepared by nanoprecipitaion method. Further coating of the polymeric nano carriers with hydrophilic polymer chitosan enhances the storage stability and prolongs systemic circulation. Chitosan is natural, non toxic, biodegradable polysaccharide and biocompatible polymer. The influence of different experimental parameters on the incorporation efficiency of docetaxel in the nanoparticles was evaluated. The data indicated that the methodology of preparation allowed the formation of spherical nanometric (<200 nm), homogenous and positively charged particles.
suitable for intravenous administration. Release profile of optimized DTX loaded CH coated formulation showed slow and sustain release of drug for longer period of time. The in-vitro cell uptake study data showed increased intensity of uptake in CH coated PLGA NPs in comparison of non-coated PLGA NPs. The optimized formulations were studied for % Haemolysis. The haemolytic behaviour of DTX was seen to be reduced when encapsulated in polymeric matrix. In vitro cell uptake in MCF-7 cells (human breast cancer cells) data showed that CH coated nanoparticles has more uptake intensity in comparison of non-coated PLGA nanoparticles formulation. Our results demonstrate that incorporation of DTX in nanoparticles and further coating it with chitosan strongly enhances the cytotoxic effect of the drug as compared to Taxotere, this effect being more relevant for prolonged incubation times. 

**Keywords:** Docetaxel, PLGA, Nanoparticle

**PS-58**

**Diabetic cardiomyopathy: a review**

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**Abstract:** Diabetes is recognized as a prevalent risk factor for cardiovascular morbidity and mortality. The core metabolic defects that mark diabetes, including impaired glucose tolerance, insulin resistance, and proinflammatory state leading to endothelial dysfunction forms the pathogenesis of diabetic cardiomyopathy. Hyperglycemia triggers series of maladaptive stimuli that result in myocardial fibrosis and collagen deposition. Hyperglycemia induced mitochondrial reactive oxygen species (ROS) is also a significant contributor. Moreover, increases in sympathetic tone with diabetes are associated with changes in cardiac and vascular functions. The ANS is responsible for modulating the activity of the sinus node (heart rate), ventricular (end systolic and diastolic volume) and blood vessels (systemic vascular resistance), and the dysfunction of the ANS may contribute to the development of arterial stiffness, left ventricular hypertrophy, and ventricular diastolic dysfunction and cardiac autonomic neuropathy; such changes forms the symptoms for cardiomyopathy. Arterial hypertension frequently coexists and exacerbates cardiac functioning. Echocardiography is the preferred diagnostic approach for diabetic cardiomyopathy. In addition, magnetic resonance imaging and spectroscopy along with contrast agents are now leading approaches in the diagnosis of myocardial fibrosis, and cardiac and metabolic changes. Also, serum biomarkers offer a clear picture of diabetes induced structural and functional changes in cardiac even at very early stages of the disease. Currently, there is no
specific treatment for diabetic cardiomyopathy. The pillars in the treatment of diabetic cardiomyopathy include lifestyle changes, intense glycemic control through diet, oral hypoglycemics and insulin, modification of risk factors for cardiovascular disease, and management of heart failure symptoms. Although glycemic control is the main therapeutic approach, newer treatment targets are currently being explored.

Keywords: Diabetic cardiomyopathy, diabetes, cardiovascular disease.

PS-59

Therapeutic uses of ergot alkaloids and its derivatives
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Abstract: Ergot alkaloids have always been known as toxic and disease causing but its acceptance and recognition as therapeutically active substance is not that old. These are the constituents of fungi of the genus claviceps which belongs to the order clavicipitales and to the class of Ascomycetes. Ergot alkaloids are 3-4, substituted indole derivative. The pharmacological effects of the ergot alkaloids is actually complex and variable. The action is the sum of effects of partial agonism or antagonism at andregenic, dopaminegenric and seratonergic receptors. Ergonovine is one of the lysergic acid amide alkaloid which is commercially available as water soluble maleate salt. It is a selective and moderately potent tryptaminergic receptor antagonist in various smooth muscles. It is supposed to be effective in direct stimulation of uterine smooth musculature. Methylergonovine and methysergide are synthetic and semisynthetic derivative. Methylergonovine plays similar role as ergonovine but methysergide indicates for the prophylaxis of vascular headaches. The peptide alkaloids are ergotamine, dihydroergotamine and bromocriptine. Ergotamine is partial agonist at different tryptaminergic receptors and clinically used against migraine and histaminic cephalagia. It acts by constricting the intercranial blood vessels and curbing the neurogenic inflammation. Dihydroergotamine is again semisynthetic and used for treating acute headaches. Bromocriptine, another semisynthetic derivative is a potent dopamine receptor. It stimulates pre-synaptic sites and post-synaptic sites which help in the release of dopamine. It is used in the treatment of hyperprolactactmenia and prolactinoma.a mixture of three ergot alkaloids; ergocristine, ergocriptine and ergocornine make ergotoxine. This is used against dementia which is age related. Altogether, the ergot alkaloid and its different derivatives show dramatic physiological effects and are of great medicinal value.

Keywords: Ergot alkaloids, Dihydroergotamine, bromocriptine
PS-60

**Ebola Virus Disease: Leading Cause of Death in Africa**

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**Abstract:** Currently various countries in Africa, including Liberia, Sierra Leone, Guinea, Nigeria, are facing disaster due to Ebola Virus Disease, which is primarily caused by Ebola virus. 2014 outbreak of Ebola associated viral hemorrhagic fever has 70% fatality rate. There are five strains of Ebola, four of which have caused the disease in humans: Zaire, Sudan, Tai Forest, and Bundibugyo. The fifth, Reston, was discovered in Virginia and has infected only monkeys. The animal host of Ebola is widely believed to be the fruit bat, although scientists haven't been able to confirm this. The virus only seldom makes the leap into humans. Ebola typically strikes like the worst and most humiliating flu you could imagine. The incubation period of Ebola is below 21 days; once the appearance of symptoms starts the person will be infective. People get the sweats, along with body aches and pains. Then they start vomiting and having uncontrollable diarrhea and experienced dehydration and sometimes patients go into shock and rarely do they bleed. As there is no specific vaccine, antiviral or drugs for treating Ebola resulting in large number of deaths. Most of the recent outbreaks occurred in remote areas of West Africa. Poverty, lack of awareness, access to health centres, human habitats taking its toll in spreading the disease in large scale. Few nucleotide analogues, protease inhibitors, receptor binding, monoclonal antibodies and anticoagulant therapies are exhibiting promising role in inhibiting the Ebola virus in various models. The Ebola virus is extremely rare. Compared to the leading causes of death in Africa, Ebola only accounts for a tiny fraction. People are much more likely to die from AIDS, respiratory infections, or diarrhea.

**Keywords:** Ebola Virus, AIDS, Respiratory infections

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PS-61
A review on pharmacological, phytochemical properties and traditional uses of Aquilaria agallocha


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Abstract: Aquilaria agallocha Roxb, (Thymelaeaceae) is an evergreen plant of India (Assam), China and Tibet, commonly described as aloe wood or agarwood. Traditionally the bark, root, leaves of the plant is used for their medicinal properties as a folk medicine to treat inflammation, arthritis, vomiting, cardiac disorders, cough, asthma, leprosy, anorexia, headache and gout. This plant has been reported to possess pharmacological properties as anti-nociceptive, anti-microbial, lower hypersensitivity reactions, laxative, anti oxidant activity, CNS activity, sedative effect, anti-hyperglycaemic activity, thrombolytic, anti-diabetic, ulcer-protective, anti-cancerous, anti-diarrhoeal, and hepatoprotective activity. Therapeutic uses of the plant are acrid, anodyne, anti-asthmatic, anti-inflammatory, anti-diarrhoeal, anti-dysenteric, aphrodisiac, aromatic, astringent, bitter, cardiotonic, carminative, stimulant and fragrant. It helps in skin disorders and used in static condition, chronic ulcers and wounds, ringworm skin diseases and inflammatory and painful condition. It is beneficial in rheumatoid arthritis and osteoarthritis. It also relieves itching in pruritus, mouth freshener, carminative and appetizer. Agar Wood powder is given internally in rheumatoid arthritis, loss of appetite and other digestive ailments, improves blood circulation. It reduces cough and helps in bronchitis and asthma. It relaxes the bladder, helps in preventing bedwetting and polyuria. Because of its cooling effect, Agar wood is used in fevers associated with chills, both internally and externally. Oil massage with Agar wood oil is effective in rigors in fevers. It owes its different pharmacological activities to the wide range of phytoconstituents that are present in the plant. The plant is found to contain α-agarofuran, β-agarofuran agarol, aquillochin, agarospiril, baimuxinal and baimuxinic acid.

Keywords: Aquilaria agallocha, pharmacological, phytochemical properties, traditional use

PS-62

Management of pain and fever in different medicinal system

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Abstract: Pain is a subjective, multidimensional and unpleasant experience allied with actual or potential tissue damage comprising sensory, affective and cognitive components. The processing and interpretation of pain signals is a complex process that entails excitation of peripheral nerves, local interactions within the spinal dorsal horn, and the activation of ascending and descending circuits that comprise a loop from the spinal cord to supraspinal structures and finally exciting nociceptive inputs at the spinal level. Painkiller is member of diverse group of drugs used to relieve pain and to achieve analgesia. Fever is recognized as physiological response which is triggered by infectious stimuli. It is a complex physiologic response triggered by infectious or aseptic stimuli. Elevations in body temperature occur when concentrations of prostaglandin-E$_2$ (PGE$_2$) increases within certain areas of the brain. These elevations alter the firing rate of neurons that control thermoregulation in the hypothalamus. Although fever benefits the nonspecific immune response to invading microorganisms, it is also viewed as a source of discomfort and is commonly suppressed with antipyretic medication. Thus several traditional medicinal systems are available for the treatment of pain & fever like ayurveda, unani, chinese, homeopathic, physiotherapy & non-pharmacological procedures etc. Allopathic system of pain & fever treatment are frequently used but has many adverse effects like renal & liver dysfunction, ulceration, sedation, dizziness, nausea, vomiting, constipation, physical dependence, tolerance and respiratory depression etc. This study addresses the different medicinal systems and therapies used for the treatment of pain and fever.

Keywords: Pain, Fever, Allopathic, Herbal, Homeopathic, Unani

PS-63

The Economic Aspect of Personalised Medicine
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Abstract: Personalized medicine is a concept promoted as a new paradigm for health care delivery. Personalized medicine technologies can improve individual health by delivering the right dose of the right drug to the right patient at the right time but create challenges in deciding which technologies offer sufficient value to justify widespread diffusion. The relative importance of the key economic factors is examined including whether the reimbursement system is value or cost based, whether the therapeutic is already marketed, the strength of diagnostic intellectual property. 'Personalized medicine' promises to increase the
quality of clinical care and, decrease health-care costs. Despite this, only a handful of diagnostic tests have made it to market, with mixed success. Historically, the challenges in this field were scientific but with the maturation of the '-omics' sciences, it now seems that the major barriers are increasingly related to economics.

**Keywords:** Personalized medicine, Economic aspect

**PS-64**

**Liposome: A Promising Approach In Cosmaceuticals**

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**Abstract:** Like various other field liposome is also showing its benefits in the field of cosmaceuticals. Now a day's various renowned cosmetic companies are focusing towards liposome as a effective drug carrier for various cosmetic products. There are almost turnover of US$170 billion every year (according to Euro staf-May 2007). These are potential carrier for drugs, diagnostics, vaccines, nutrients and various other bioactive agents. And also shows enhanced delivery, low toxicity, and biocompatibility with the skin. This review article mainly focus on the various method of preparation of liposome like thin hydration method, ethanol injection, reverse phase evaporation etc and various other novel scalable methods, and after the preparation encapsulation efficiency, size, lamellarity, zeta potential, and stability can be characterize by various methods. That helps in the formation of highly therapeutically efficient and stable liposomal preparation.

**Keywords:** liposome, cosmeceuticals, carrier, topical application, method of preparation, characterization, therapeutic application,

**PS-65**

**A Review: Standardization And Preliminary Phytochemical Screening Of Annona Squamosa Leaves**

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Abstract: Plants are very important to humans not only due to aesthetic value but also because of food, life saving medicines and all the products derived from plants necessary for mankind. Plants are now being considered a future medicine bank for all the systems of medicine. One such plant is *Annona squamosa* commonly known as custard apple or sugar apple or Shareefa of family Annonaceae. A number of chemical constituents and medicinal properties have been reported as well as various standardization parameters have been studied by different workers. As a consequence of extensive investigation leaves of *Annona squamosa* reported to have alkaloids, glycosides, flavonoids, tannins and phenolic compounds. Due to the chemical constituents present in *Annona squamosa* it is found to possess antioxidant, antidiabetic, antibacterial and hepatoprotective activity.

Keywords: *Annona squamosa*, antioxidant, antidiabetic

PS-66

**Natural and Herbal Stress Remedies**

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Abstract: The normal steady state of the human body’s organ and tissue function is termed as homeostasis. One significant factor that may cause an upset to homeostasis is stress. It is a fundamental part of life that can have both positive and negative effects on an individual’s health. Stress is not a medical diagnosis, but severe stress that continues for a long time may lead to a diagnosis of depression or anxiety, or more severe mental health problems. According to the W.H.O survey out of every three persons in the world one person affecting with the stress. There are various interventions for mind-body healing. Certain psychological mind-body therapies are effective for reducing stress. Nurses can use these interventions in their daily practice to help patients alleviate their stress, as well as enable them to recover successfully from stress-related problems. Prescription anxiety medications, dull anxiety and the brain too much, and make it much harder to learn to cope with stress, while herbal and natural remedies keep your mind intact for learning to control stress and anxiety symptoms. Nature has bestowed our country with an enormous wealth of antistress plants. Some medicinal antistress plants are St. John's Wort, Skullcap, Chamomile, Catnip etc. This aim of
this review is a comprehensive selection of the herbs that may be effective for treating stress, as well as specific anxiety symptoms. It includes the herbs that are effective for stress itself, as well as several herbal remedies that are perfect for issues related to stress.

**Keywords:** Anti-stress, Medicinal plants, Homeostasis, Anxiety etc.

**PS-67**

**A Review on Different Antitussive Models In Experimental Animals**

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**Abstract:** Coughing can be produced in variety of animal models, including the guinea pig, cat, dog, mice and pig by using different cough models. Most of the mechanistic information on the cough reflex has been generated from animal models in which there is little or no airway pathology. There are various models available for inducing cough in experimental animals. Among available models the most common one is the inhalation of sulfur dioxide mixtures introduced by Friebel et al (1955). Apart from this there are certain other models which are used by different researchers like Intrapleural injection by Ernst (1938), the inflammation can be produced by intrapleural injection of iodine (Lugol’s solution), after which percussion of the chest wall produced a cough reaction. Eichler et al (1940) were the first to use irritating chemicals to stimulate coughing. Chemically cough can be induced by exposing animals to the mixture of irritating gas, vapour or aerosol with air. Winter et al. (1954) used ammonia vapour and sulfuric acid aerosol; Friebel et al. (1955) introduced the inhalation of sulfur dioxide mixtures; Gosswald (1958) used citric acid; Silvestrini et al. (1959) employed acrolein vapour; and Kroepfli (1950) blew soap powder against the tracheal mucosa. Each of these agents elicits cough by stimulation of chemoreceptor and each has its advantages and limitations. Another method for the production of cough by mechanical stimulation by Kase (1952) of the tracheal mucosa suitable for the measurement of antitussive action. Electrical stimulation by Schroeder (1951) is also a choice of method for inducing cough by attaching the electrodes to a vagal loop and through these; stimuli were applied in the unanaesthetized animal. Apart from antitussive screening their are various models also available for mucolytic and expectorant activity viz. estimation of bronchial
secretion, ammonium chloride method etc. The purpose of this review is the comparative evaluation of all antitussive models is to identify effective methods according to the need.

**Keywords:** Cough, Antitussive, Mucolytic, Expectorant, Cough Inducing Models.

**PS-68**

**An Extensive Review on Haldina Cordifolia**

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**Abstract:** Countless therapeutic plants correspond to a rich source of drugs independently or in combination have been suggested in various medical treaties for the restore to health of diverse diseases. *Haldina Cordifolia* belongs to Rubiaceae family is found in India, Ceylon, Thailand, and Burma; spread in varied deciduous forests used by conventional healers for the treatment of chronic cough, and uses in jaundice, tummy ache, fodder and swelling in stomach, The Roots are astringent and constipating, and are useful in diarrhea and dysentery. The bark is acrid, bitter, astringent, refrigerant, vulnerary, diuretic, demulcent, aphrodisiac and tonic. It is useful in vitiated conditions of pitta, wounds and ulcers, straangury, skin disease, gastropathy, fever and burning sensation. In the literature *Haldina cordifolia* is described as to have wide range of medicinal applications. It has been used as Anti-amoebic, Anti-inflammatory, Anti-nociceptive, and Antifertility. This paper explains the evidence based information regarding the Phytochemistry, Pharmacological activity and Medicinal Uses of these plants.

**Key words:** *Haldina Cordifolia*, Phytochemistry, Pharmacology, medicinal uses

**PS-69**

**Migraine & Its Management**


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**Abstract:** Migraine is a chronic neurological disease characterized by recurrent moderate to severe headaches often in association with a number of autonomic nervous system symptoms.
The word derives from the Greek ἡμικρανία (hemikrania), "pain on one side of the head", from ἡμι- (hemi-), "half", and κρανίον (kranion), "skull". Typically the headache affects one half of the head, is pulsating in nature, and lasts from 2 to 72 hours. Associated symptoms may include nausea, vomiting, and sensitivity to light, sound, or smell. The pain is generally made worse by physical activity. Up to one-third of people with migraine headaches perceive an aura: a transient visual, sensory, language, or motor disturbance which signals that the headache will soon occur. The risk of migraines usually decreases during pregnancy. The exact mechanisms of migraine are not known. It is, however, believed to be a neurovascular disorder. The primary theory is related to increased excitability of the cerebral cortex and abnormal control of pain neurons in the trigeminal nucleus of the brainstem. This Review focuses on migraine & Its Management.

**Keywords:** Migraine, Migraine Attack phase, Anti migraine.

**PS-70**

**Pharmacy-on-chip Electronic pill as a novel tool and treatment approach In health care system**

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**Abstract:** The technological development is leading the human life to be comfortable. It is also gaining important attention as per health concern as it has enhanced the survival of the patients. The development in technology has become a boon to the human beings. Electronic Pill is one such technology that is used to strive in opposition to deadly diseases by detecting diseases and abnormalities in the human body. These electronic pills are swallow-able or implantable in human body so as to detect biological signals or capture images that is to be used for diagnostic and therapeutic purposes. The sensor based electronic pills (capsules) are used in modern days to carryout complex treatments and hence are called to be Pharmacy-on-chip (POC). The concept involves having simple electronic devices that includes sensors, drug delivery systems or tissue simulating tools powered by the batteries. The technology has a range of applications in the detection of disease and abnormalities in medical research. The paper highlights and focuses the salient features of electronics based pills. The overall aim is to deliver enhanced functionality, reduced size and power consumption, through system-level integration on a common integrated circuit platform comprising sensors, analog and digital signal processing, and signal transmission.
**Keywords:** Electronic pill, Pharmacy-On-Chip, Sensors, Drug delivery system, Signal Processing, Power consumption.

**PS-71**

**Design of Low cost Arm Control Robotic moving wheel chair for Elderly & Physically Disabled Persons.**

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**Abstract:** This paper deals with the concept of design and implementation of a low cost model of an arm control moving chair using ATmega8. This moving chair has the ability to move forward, backward, left and right. This basically is done with the movement (tilt) of the accelerometer, and the chair stops when there is no movement of the accelerometer. The values of the three dimensional axis of the accelerometer can be varied and adjusted. The programming has been done through avr compilers and burned into the ATmega8. The ATmega8 receives the information from the accelerometer and transmits it back via RX and TX pins. ATmega8 has also been interfaced to motor driver IC-L293D, wherefrom the connections go to two motors to drive the wheels of the chair. This model has been successfully implemented at low cost and it will benefit physically challenged persons especially with poor background.

**Keywords:** ATmega8, IC-L293D, TX pins

**PS-72**

**Analysis of health hazard in semiconductor fabrication clean room**

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**Abstract:** The Semiconductor industry is one among the safer occupation in world. But deep environmental study of semiconductor industry is suffering from health hazard. Since Semiconductor industry uses verities of toxic compound, in manufacturing process of semiconductor wafer and chips and directly or indirectly, these semiconductor chips also uses in medical field as digital equipment. Chemicals use for semiconductor wafer or chip manufacturing, play a toxic role with person who is working in Clean room. Some toxic
effects come out due to long time working person in manufacturing clean room. It has been observed that Cancer, birth defect, asthma, renal defect or neural defect arise health hazards. Study shows toxic chemicals use in clean room as Arsine, Benzene, Cadmium, Hydrochloric Acid, Lead, Methyl chloroform, Toluene and Trichloroethylene are playing hazardous nature with human body. This analysis is subjected to; point out toxic nature of chemicals, with working person in semiconductor industry Clean Room and awareness of them.

**Keywords:** Clean Room, toxic compounds, Trichloroethylene

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**PS-73**

**Zoonoses: An Emerging Epidemic Crisis**

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**Abstract:** A zoonoses is communicable disease caused from vertebrate animals to humans. The agents responsible for zoonoses can be bacteria, virus, parasite. More than 60 percent of human infectious diseases are caused by pathogens shared with wild or domestic animals. So its prevention and control is top most priority. Emerging zoonoses are a growing threat to global health and have caused hundreds of billions of US dollars of economic damage in the past 20 years like an epidemics. The recent epidemics which can be faced are swine flu, bird flu etc. monitoring of pathogens is important. Identifying and ultimately addressing emergent cross-species infections will require a “One Health” approach in which resources from public veterinary, environmental, and human health function as part of an integrative system. Here we review the epidemiology of bovine zoonoses.

**Keywords:** Transmissible, vertebrate, Pathogens, zoonoses.

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**PS-74**

**Treatment and Management of GERD**

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Abstract: Gastroesophageal reflux disease (GERD), is a chronic symptom of mucosal damage caused by stomach acid coming up from the stomach into the esophagus. It is a digestive disorder that affects the lower esophageal sphincter (LES), the ring of muscle between the esophagus and stomach. Dietary and lifestyle choices may contribute to GERD. Certain foods and beverages, including chocolate, peppermint, fried or fatty foods, coffee, or alcoholic beverages, may trigger reflux and heartburn. Studies show that cigarette smoking relaxes the LES. The severity of GERD depends on LES dysfunction as well as the type and amount of fluid brought up from the stomach and the neutralizing effect of saliva. Various epidemiological studies show that there is regional difference on the aspect of prevalence and clinical manifestation. From the population-based studies, the prevalence of symptom-based GERD in Eastern Asia was found to be 2.5%-4.8% before 2005 and 5.2%-8.5% from 2005 to 2010. In Southeast and Western Asia, it was 6.3%-18.3% after 2005, which was much higher than those in Eastern Asia. There are many drugs available for treatment and management of GERD like Proton pump inhibitors (PPI) - pantoprazole, rabeprazole, dexlansoprazole esomeprazole, lansoprazole; H2 blockers - famotidine, ranitidine, nizatidine and antacids (acid neutralizing agents) - aluminum hydroxide, magnesium hydroxide, magaldrate, mucosal protective – sucralfate, colloidal bismuth subcitrate (CBS) etc. Among these PPIs are most commonly used drugs, but relapses are common and no drug is available for complete eradication of disease and drug side effects also pose a problem and there is a need of some promising drug for treatment of GERD.

Keywords: GERD, PPI, acid reflux

PS-75

USTUKHUDDOOS Lavandula stoechas Linn: Precious Medicinal Herb of Unani Medicine- an Overview

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Abstract: Ustukhudoos also known as Anisul Arwah or Mumsikul Arwah, has been in use since ancient period. Unani Physicians called it ‘broom of the brain; It is said to sweep away all Balgham (phlegm) impurities. It removes obstructions, strengthens brain powers expels brain crudities and clarifies the intellect. It is a perennial shrub up to 90 cm, grey-tomentose, leaves linear, entire sessile with somewhat revolute margins; flowers dark purple, about 4
mm long in dense short peduncle spike with terminal tuft of large purple bracts. Flowers situated in the axils of downy, heart shaped bracts. The drug has an agreeable odour resembling that of Lavender. Found in the Canaries, Portugal and east world. Throughout the Mediterranean region. Unani physician mentioned following action Munziye Balgham wa Sauda, Mushile Balgham wa Sauda, Muhallil, Mulattif, Mufatteh Sudad, Munaqqie Dimagh, , Muqavvie Asab, Dafae Nisyan, Muqavvie Ahsha Mufarreh wa Muqavvie Qalb. Full length paper will be presented in seminar.

Keywords: Ustokhudoos, Unani Medicine

PS-76

Formulation & Evaluation of Mucoadhesive Liquid Suppository for Colorectal Diseases

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Abstract: The present work was aimed at developing thermoreversible mucoadhesive liquid suppository of 5-Flourouracil (5-FU) for the treatment of colon cancer. Seventeen formulations were prepared using Poloxamer 407 in different ratios (14-21%), Poloxamer 188 (5%) and mucoadhesive polymers (Sodium alginate, HPMC, Pectin in various concentrations-1%, 1.5%, 2% respectively). The formulations were evaluated for gelation temperature, gelation time, adhesive strength and pH. The Optimised formulation P13 consisting of P 407(21%), P 188 (5%) and HPMC (1.5%) was further evaluated for drug content and in-vitro drug release. P13 showed a gelation temperature and gelation time of 37°C and 36-40 sec respectively with drug release of 90% in 4 hrs. The release followed Higuchi kinetics with Non-fickian diffusion mechanism.

Keywords: 5-Flourouracil, mucoadhesive, poloxamer 407

PS-77

A review of smart materials/tools used in the medical industry

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Abstract: Smart materials have an amazing potential for caring the pediatric patient. Many applications of smart materials in pediatric devices are already being developed. Even the early stage applications of shape-memory alloys, magnetostrictive materials and piezoelectrics for pediatric cardiovascular devices may begin to make a huge impact on our patients in the next decade. Enormous tools or smart materials have been synthesized for various uses in the field of medicines. Such smart materials have wide applications in modern medical industry. In this paper, some of such materials or tools have been presented with their applications and effects. The hydrogel technology is an integral part of human health system. The pharmaceutical industry has developed hydrogel based drug delivery system in an advanced manner by tuning the structure and changing the shape of the biopolymers. Another material, Nitinol is seen to exhibits a combination of properties, which make them suitable for the manufacture of self-expanding stents. Some of these properties are not possessed by other materials currently used to manufacture stents. Nickel-manganese-gallium and other (FSMAs) generate strains of up to 10%. These strains, due to magnetic field, affect the traditional shape memory alloys such as nitinol. Piezo-based sensors play an important role in transmission of heart sounds or signals. Piezo-based sensors could certainly make the stethoscope into a more visual and quantitative tool. A prototype peristaltic piezoelectric micro-pump system has also been described in this paper.

Keywords: Hydrogel technology, FSMAs,

PS-78

A Review- H1N1 And H5N1 Influenza: Current Status And Future Prospects

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Abstract: Influenza viruses circulating in animals pose threats to human health. Humans can become ill when infected with viruses from animal sources, such as avian influenza virus subtypes H5N1 and H9N2 and swine influenza virus subtypes H1N1 and H3N2. The primary risk factor for human infection appears to be direct or indirect exposure to infected live or dead animals or contaminated environments. This event highlights the necessity for developing a new generation of influenza vaccines to counteract influenza disease. These vaccines must be manufactured for mass immunization of humans in a timely manner.
Poultry should be included in this policy, since persistent infected flocks are the major source of avian influenza for human infections. This class of vaccines induces a broadly protective immunity against antigenically distinct H5N1, can be manufactured rapidly, and may allow mass immunization of human and poultry. Recombinant adenoviral vectors derived from both human and non-human adenoviruses are currently being investigated and appear promising both in nonclinical and clinical studies. H5N1 avian influenza is an infectious disease of birds that can be spread to people, but is difficult to transmit from person to person. Almost all people with H5N1 infection have had close contact with infected birds or H5N1-contaminated environments. When people do become infected, the mortality rate is about 60%.

Keywords: Influenza viruses, H5N1, H9N2

PS-79

The Role Of The Pharmacist In Improving Asthma Care

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Abstract: Asthma is a chronic disease of the airways characterized by airway inflammation, increased responsiveness to a variety of stimuli, and airway obstruction that reverses spontaneously or as a result of appropriate therapy. Symptoms of asthma include cough, wheeze, tightness of the chest, shortness of breath, and increased sputum production. Pharmacists can be instrumental in providing patients with valuable resources to educate them about pharmacologic agents for treating and managing asthma. Pharmacists can educate patients about the proper use of inhalation devices, especially newly diagnosed patients who may be overwhelmed with diagnosis and treatment plans. As more treatment options and patient resources become available for controlling asthma, a collaborative effort between health care professionals and patients, coupled with patient education and stressing the importance of patient adherence, is fundamental for effectively controlling asthma. For
successful management of asthma, it is important that patients be thoroughly educated about their condition, know the warning signs of asthma attacks, know the factors that may trigger an attack, know how to manage attacks, adhere to their asthma plan, and know how to properly use the prescribed treatment. Results from various studies show that increasing awareness and promoting education about asthma can reduce the numbers of asthma-related hospitalizations, emergency department visits, missed days at school and work, and deaths.

Keywords: Asthma, Pharmacists,

PS-80

RBSK : A Novel Way for Child Health Screening
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Abstract: Rashtriya Bal Swasthya Karyakram is a new initiative aimed at screening over 27 Crore children from 0 to 18 years for 4 Ds -Defects at birth, Diseases, Deficiencies and Development Delays including Disabilities. Children diagnosed with illnesses shall receive follow up including surgeries at tertiary level, free-of-cost under NRHM. The task is gigantic but quite possible, through the systematic approach that RBSK envisages. Implemented in right earnest, it would yield rich dividends in protecting and promoting the health of our children. I sincerely hope that the States would accord utmost priority to it and thereby improve both survival and development of children. NRHM exemplifies a strong partnership between Central and State Governments and together we must ensure that flexibility to funding under the Mission is well utilized for prioritizing high impact health interventions. RBSK also signals a leap forward in the direction of universal health care with precedence accorded to those segments of population who need it most of all. I am confident that RBSK together with several other reproductive and child health initiatives under NRHM would bring long term health benefits to women and children.

Keywords: Rashtriya Bal Swasthya Karyakram, NRHM, RBSK
In Vivo Efficacy Of Ocimum Sanctum, Angiotensin Receptor Blocker Or Statin In Addition To Metformin On Glycemic Parameters In Diabetes Mellitus

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Abstract: Diabetes mellitus is a global health crisis. Angiotensin Receptor Blockers and Statins are given to patients of diabetes mellitus to prevent its long term complications. Since Ocimum sanctum has shown to possess several protective effects. We compared Ocimum sanctum with Olmesartanmedoxomil and Pitavastatin in diabetes. Streptozotocin induced diabetic rats were divided into five groups and given Normal saline, Ocimum sanctum (250 mg/kg/day), Olmesartanmedoxomil (1.80 mg/kg/day), Pitavastatin (0.18 mg/kg/day), or Olmesartanmedoxomil (1.80 mg/kg/day) + Pitavastatin (0.18 mg/kg/day) for 8 weeks. Glycemic parameters were assessed by fasting blood glucose, glycosylated hemoglobin and histopathological analysis of liver and heart. There was a reduction in the blood glucose levels in all groups at the end of 8 weeks with a maximum percentage reduction in the Olmesartan+Pitavastatin group. A reduction in glycosylated hemoglobin was seen in all the groups with maximum reduction in Ocimum sanctum group. Sections of liver and heart from Control group showed disrupted architecture. Ocimum sanctum and Olmesartan+Pitavastatin Group showed improvement in the architecture. We conclude that the addition of Ocimum sanctum or ARB along with statin in diabetics will help in more effective reduction of FPG and HbA1c and prevention of deleterious effect of diabetes on liver and heart.

Keywords: Ocimum sanctum, Angiotensin Receptor Blockers, Olmesartan

Technology and Application of Electronic Nose in Human Healthcare

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Abstract: Many diseases can be categorized by their characteristic odors, and their recognition will give diagnostic clues about the diseases guiding the laboratory analysis and have an effect on the selection of immediate medical aid. Electronic nose could be a device that can identify the precise chemical constituents associated with odor and also analyze the constituents. An electronic-nose instrument is totally different in operation principles and mechanisms as compared to the existing laboratory techniques and has provided accurate
solutions to the advanced clinical issues. These devices are non-invasive, easy to handle and have a quick response. They are found to be good as early detection screening tool. The need of this review includes measures to give a comprehensive analysis of recent analytic findings and developments of electronic-nose detector technologies. The review also gives an insight into the current and future potential of e-nose applications in clinical diagnosis.

**Keywords:** Electronic nose, e-nose applications

**PS-83**

**Solubility Enhancement Of Acyclovir: A Various Approaches**

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**Abstract:** Acyclovir is highly effective against herpes treatment, has low water solubility that limit its use for effective treatment of herpes. The aim of the present study was to increase water solubility of Acyclovir using individual [Solvent Deposition (SOD), Solid Dispersion (SD), Melt Sonocrystalization (MS) and Inclusion Complexation (IC)], double (SOD+SD, SOD+MS, SOD+IC, SD+MS, SD+IC, MS+IC), triple (SOD+SD+IC, SD+IC+MS, IC+MS+SOD, MS+SD+SOD) four (SOD+SD+IC+MS, SD+IC+MS+SOD, IC+MS+SOD+SD, MS+SOD+SD+IC) combination of methods. Increase in solubility of Acyclovir by Solvent Deposition method was found to be maximum (20.28) amongst the applied methods individually. The solubility was found to increase by 9.28, 19.89, and 10.89 respectively for double (SOD+SD), triple (IC+MS+SOD), four (MS+SOD+SD+IC) combination methods. The proposed method Solvent Deposition for increasing solubility for acyclovir might be efficient to increase its bioavailability to ensure the effective treatment of Herpes.

**Keywords:** Solvent Deposition, Acyclovir, Herpes

**PS-84**

**Anti-inflammatory Activity of Thymoquinone & Ocimum Sanctum in Carrageenan induced Paw Edema in Wistar Rats**

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**Abstract:** The study investigated the anti-inflammatory activity of Thymoquinone (TQ) and Ocimum Sanctum (OS) in Carrageenan induced paw edema in Wistar rats. The anti-inflammatory effect was evaluated using carrageenan-induced paw edema in rats. The results showed that TQ and OS significantly inhibited the paw edema in a dose-dependent manner. The anti-inflammatory activity of TQ and OS was found to be comparable to the standard drug diclofenac. The mechanism of action of TQ and OS may involve the inhibition of pro-inflammatory mediators such as prostaglandin E2 (PGE2) and cytokines.

**Keywords:** Thymoquinone, Ocimum Sanctum, Anti-inflammatory Activity, Carrageenan induced paw edema, Wistar Rats
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Abstract: Inflammation, which is basically a defense phenomenon often leads to serious pathological conditions. Currently, therapeutic options available to counter inflammation are not sufficient because of lack of efficacy and increased adverse effects. Thymoquinone is an active component of *Nigella sativa* and is known to possess multiple pharmacological activities. *Ocimum sanctum* natively known as Tulsi, or Holy Basil is an aromatic plant belonging to the family Lamiaceae. The study is conducted to demonstrate the comparative anti-inflammatory effects of Thymoquinone and *Ocimum sanctum*. We induced acute inflammation using carrageenan and histamine in wistar rats. Rats were given either Normal Saline, Thymoquinone (300mg/kg/day), hydro extract of *Ocimum sanctum*(500 mg/kg) or Indomethacin (15mg/kg/day) 1 hour before injection of phlogistic agent. Paw volume was measured by plethysmograph at 0min, 30min, 60min, 90min, 120min, 240min and 24hours. Subcutaneous injection of carrageenan produced greater amount of edema as compared to histamine. Thymoquinone (300mg/kg/day) significantly reduced edema volume in both models, as shown by 72.22% and 89.7% reduction in paw volume in Histamine induced and carrageenan induced paw edema formation, respectively. Similarly, *Ocimum sanctum* also showed significant reduction in the paw edema volume but however, the reduction was less when compared with Thymoquinone group. Standard control group Indomethacin was used to compare groups. In our study, both Thymoquinone & *Ocimum sanctum* possess significant anti-inflammatory effects but Thymoquinone has better anti-inflammatory effects than *Ocimum sanctum*. Indomethacin showed significant reduction in paw edema.

Keywords: *Ocimum sanctum*, *Nigella sativa*, Indomethacin

PS-85

**Nanotechnology:A Promising Approach For Cancer Therapy**

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Abstract: Nanotechnology is the application of science and engineering principles to make and utilize atoms and molecules in nanoscale-80,000 times smaller than width of Human hair. The world market is expected to reach $2.5 trillion by 2015 for products which contain nanoparticles. Nanomedicine is dominated by nanoparticulate drug delivery system because of their ability to cross biological barriers.
barriers, accumulate at tumor sites and increase drug solubility. In recent years, significant work have been donated to develop nanotechnology to enhance the delivery of anticancer drug to tumor site while minimizing its distribution and toxicity in healthy cells. Many developed innovative nanotechnology such as liposomes, nanoparticles, dendrines, nanoshells, nucleic based nanoparticles, superparamagnetic nanoparticles have been applied to deliver the specific anticancer drug. The resistance of chemotherapy is substantial clinical problem limiting the effectiveness of anticancer drug therapy because of microenvironment selection pressure, tumor cells can generate multi drug resistance (MDR). In order to overcome multi drug resistance, the nanotechnology for combination therapeutics has come increasing attention, drug delivery combined with various modulation (e.g. modulation of drug efflux, apoptotic threshold) and energy therapies (e.g. ultrasound, hyperthermia and photodynamic therapy) have shown significant promise in enhancing MDR cancer therapy. Nanotechnology holds the promising approach to change the practice of oncology, allowing easy and effective targeted therapies.

**Keywords:** MDR cancer therapy, Nanotechnology, superparamagnetic nanoparticles

**PS-86**

**Formulation And Evaluation Of Spray Dried Chitosan Nanoparticles For Lung Targeting**

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**Abstract:** The aim of present study was to formulate and characterize controlled release spray dried chitosan nanoparticles containing anticancer drug methotrexate for the treatment of lung cancer to overcome the problem of low bioavailability and frequent dosing. The batches were prepared by ionotropic gelation method using Chitosan with TPP (Tripolyphosphate) in the ratio of 3:1 (F1-F4) and 6:1 (F5-F8) respectively. The prepared formulations were examined for their drug entrapment (36.44±0.23 to 23.64 ±0.32%), drug loading (4.86±0.27 to 3.57±0.67%), particle size (351 to 6100 nm), zeta potential (10.5 to 21.2 mv) and *in vivo* drug release (67.64 ± 0.89 to 20.42±0.35 %). Formulation F1 with drug entrapment efficiency of 36.44 ± 23% and particle size 351nm was selected as the...
optimized batch. *In-vitro* drug release from F1 was found to be 67.64 ± 0.89% in 12 hrs. F1 was spray dried using lactose (F1L). The *In-vitro* drug release from F1L was found to be 57.48 ± 0.18% in 12 hrs. The drug release was best explained by zero order as the plot showed highest linearity. The Korsmeyer - Peppas release was governed by Anomalous (non-fickian) diffusion. Stability study of the optimized formulation (F1L) showed that the formulation was more stable at 5 ± 1°C than room temperature.

**Keywords:** Chitosan nanoparticles, Spray dried, Korsmeyer - Peppas

PS-87

**Modern Tooling Approach For Treatment In Diabetes: A Need Of The Hour**

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**Abstract:** Glucagon-like-peptide–1 (GLP-1) is an incretin secreted as a gut hormone by intestinal L cells. The GLP-1 stimulates the release of insulin from β-cells with the mechanism of increased expression of GLUT-2 and glucokinase. GLP-1 agonist (Lixisenatide, taspoglutide and liraglutide) increases the insulin secretion and decreases the blood glucose level. The proposed mechanism for the glycemic control is the elevation of the expression of GLUT-2 and glucokinase. The present is indulged to enumerate the pharmacological siblings of Lixisenatide (GLP-1 agonist) using modern day drug screening tools. The structurally similar compounds for Lixisenatide were retrieved from Drug data bank with the 70% similarity search criteria. Total of 8 number of drug molecule were retrieved, which are subsequently assessed for their binding energies with GLP-1 using virtual modeling tools (Auto Dock 4.2). Depending upon the binding scores of different drug molecules, Nafarelin was selected and hypothesized to have GLP-1 agonistic action and thereby hypoglycaemic effects. Henceforth, the present study proposed to evaluate the effect of Nafarelin on streptozotocin and nicotinamide induced diabetes, and subsequent GLUT-2 expression.

**Keywords:** Glucagon-like-peptide–1, GLUT-2 expression, Docking

PS-88

**QbD enabled Xanthan gum capped green synthesis of Optimized Gold nanoparticles**

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**Abstract:** During recent years the field of nanotechnology focus on gold nanoparticle which has led to early-phase clinical trials as promising therapeutics, photothermals, diagnostic, contrast media, radiosensitisers agents. There is also growing interest in utilization of gold nanoparticles as drug delivery of existing drugs especially cytotoxic drugs, to improve its pharmacokinetics parameters by reducing its non-specific side effects and to enable higher dose payload in affected tissues. Conventional method for synthesis of Gold nanoparticles utilize various chemicals which are very toxic for normal cells which limit its use, so here emphasis are now a day’s towards synthesis of Gold Nanoparticle through green route. Many natural agents however are explored in past as reducing agent including citric acid but these were not only lack in terms of stability but also they can’t hold drug with it so there use as in clinical study are not possible. Xanthan gum (XG) here selected which have dual role as reducing and stabilizing agent. These gums are also widely use in food, pharmaceutical and cosmetic industries because these are safe for internal consumption due to its high biocompatibility and boil degradability. In the present study, we explored the potential of XG in the synthesis of gold nanoparticles and effect of various formulation and process variables such as temperature, gum concentration, and gold concentration, are tested using QbD approach for synthesis of optimized Gold Nanoparticles.

**Keywords:** Xanthan gum, QbD approach, Gold Nanoparticles

**PS-89**

**RFID:** In the World of Health Care

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**Abstract:** The RFID (Radio Frequency Identification) is a decade old wireless technology based on radio frequencies and is a member of automatic identification and data capture (AIDC) family. Its first application was seen around in the year 1945 and in recent years numerous of applications have been evolved and is practically implemented in approximately each and every field. The motive of this work is to survey the different applications in present scenario in the field of healthcare.

**Keywords:** RFID, AID
PS-90

Neuroprotective activity of Cinnamon zeylanicumin against lead induced neurotoxicity in male wistar rats: An experimental study

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Abstract: The present study was aimed to investigate the neuroprotective activity of Cinnamon zeylanicum in on lead induced neurotoxicity. The experiment was carried out on 32 male wistar Rats (weight 180±20 g) were acclimatized for 1 week prior to experimental use. The animals randomly divided in to four groups. The 1st group serves as (control) was treated with distilled water and 2nd group with lead acetate at the doses of 3mg/kg b.wt./oral while 3rd and 4th groups were simultaneously treated with lead acetate (3mg/kg b.wt.) plus Cinnamon zeylanicumin (75mg/kg b.wt./oral) and lead acetate (3mg/kg b.wt.) plus vitamin-E (200mg/kg b.wt./oral) respectively for a period of 90 days. During the experiment, their physical, biochemical and neurobehavioral investigations have been done. The oral administration of Cinnamon oil on lead induced neurotoxicity in rats showed significant reduced in body weight, brain weight and neurobehavioral investigations of lead exposed group as compared to control. The level of lead was markedly elevated in blood (4.5 fold) of rats. This leads to enhancement of lipid peroxidation in brain with concomitant reduction in SOD, CAT and Gpx activities in brain. Simultaneously treatment with lead and Cinnamon oil resulted in marked improvement in our studied parameter. The results obtained were compared with vitamin E, as the standard antioxidant drug. Our study suggested that neuroprotective activity of Cinnamon oil significantly decrease the effect of lead exposure in brain.

Keywords: Cinnamon zeylanicum, lead induced neurotoxicity, CAT

PS-91

Tools In Clinical Pharmacology


Abstract: Biomedical imaging has been changing the way medicine is practiced ever since. Imaging techniques used in clinical pharmacology can be categorized as either functional or anatomical modalities. Functional modalities are capable of visualizing biological processes
within organs or tissues at a molecular level. Positron emission tomography (PET) and single photon emission computed tomography (SPECT) are well established tools, whereas optical imaging (fluorescence) is a novel and promising one. Structural morphology of organs or tissues can be investigated with anatomical techniques such as magnetic resonance imaging (MRI), X-ray computed tomography (CT) or ultrasound imaging. Furthermore there is the up-and-coming possibility to combine different imaging modalities such as PET/CT, SPECT/CT, and MRI/PET in order to match functional to anatomical information. In clinical studies, imaging endpoints might be closer to the cause of disease than rather non-specific physiological measures, such as vital signs, or biomarkers (distinctive biological or biologically derived indicators). Such endpoints allow accurate quantification of disease effects or some associated correlate and so potentially disease modifying drug effects can be detected earlier than with conventional methods. Currently, nuclear imaging techniques are the most advanced and widely used imaging modalities. In the discipline of clinical pharmacology, this review focuses on TOOLS use in clinical pharmacology.

Keywords: Positron emission tomography, single photon emission computed tomography, optical imaging, magnetic resonance imaging.

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A Review- Various Therapeutic Uses of Shivambu Kalpa

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Abstract: Human urine has strengthening and curative characteristics concerning many deficiencies. A mixture of potato and sulphur powder, mixed with heated, old urine helps against hair loss. One should rub this mixture into the scalp; this slows down loss of hair. All kinds of throat inflammation can be helped by gargling with urine to which a bit of saffron has been added. Trembling hands and knees can be helped by washing, and rubbing one's own warm urine into the skin directly after one has urinated. Drink your own water in the morning nine days together and it cures the scurvy, makes the body lightsome and cheerful. It is good against the dropsy and Jaundice, drunk as before. Wash your ears with it warm and it is good against deafness noises and most other ailments in the ears. Wash your eyes with your own water and it cures sore eyes and clears and strengthens the sight. Wash and rub your hands with it and it take away numbness, chaps and sores and makes the joints limber. Wash any green wound with it and it is an extraordinary good thing. Wash any part that itches and
it takes the itch away. More than any other method, urine therapy represents the principles of natural medicine. One's own urine is a specific medicine for anyone who is ill. It is made for him or her personally and is just right for what he or she needs at the present moment, because it changes its composition all the time.

**Keywords:** Gargling, Scurvy.

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**PS-93**

**Glycation assisted synthesized gold nanoparticles inhibit growth of bone cancer cells**

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**Abstract:** In this study, for the first time, we present an approach to synthesizing glycogenic (synthesis through glycation reaction) gold nanoparticles (glycogenic GNps) capped with previously glycated products (Schiff’s base, Heyns products, fructosylamine etc.) to combat the human osteosarcoma cell line (Saos-2), while leaving the normal human embryonic lung cell line (L-132) unaffected up to high concentration. This method also allowed us to tune and control the particle size by incubating gold solution at different points of reaction. Glycation involving glucose and HSA (Human Serum Albumin) was not able to reduce gold due to its very slow reaction rate and hence, inadequate reducing power generation but glycation involving fructose and HSA reduced gold into nanoparticles elegantly on the third day of glycation due to the high rate of reaction. The progress of the reaction was investigated by UV-Vis spectroscopy and NBT (Nitrobluetetrazolium) assay. Also, this study proved, directly, that glycation of HSA with fructose occurred at much faster rate than with glucose. These particles were characterized by UV-Vis Spectroscopy, Zeta potential, Transmission Electron Microscopy (TEM) and Scanning Electron Microscopy (SEM) and showed spherical shaped nanoparticles of 24.3 nm size in stable emulsion.

**Keywords:** Glycation; Gold Nanoparticles; Heyns product; Saos-2; L-132