2nd INTERNATIONAL CONFERENCE ON FOSTERING INTERDISCIPLINARY RESEARCH IN HEALTH SCIENCES 2019
14th - 15th SEPTEMBER 2019
AIMST UNIVERSITY, MALAYSIA

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"The new Health Sciences building will provide a central facility for all pharmacy instruction and research."
- Robert Simmons -

I am exultant to perceive that CONFNEXT Raipur, India in collaboration with AIMST University is organizing the 2nd INTERNATIONAL CONFERENCE ON FOSTERING INTERDISCIPLINARY RESEARCH IN HEALTH SCIENCES on 14 & 15 September 2019. I wish to extend my warmest welcome to all of you to our Green Campus.

On behalf of AIMST University, I would like to express my appreciation to the organizers, committee members, guest speakers, presenters, participants and staff for their hard work and relentless effort to make this conference a success.

Best wishes for a productive and enjoyable conference. Thank you.

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EMERITUS PROFESSOR DR. HARCHARAN SINGH SIDHU
Chief Executive & Vice-Chancellor
Chief Patron - ICFIRHS 2019
AIMST University, Malaysia
Raipur, September 09, 2019

MESSAGE

It is my pleasure to invite all of the great scientists, academicians, young researchers, delegates and students from all over the world to attend the "2nd International Conference on Fostering Interdisciplinary Research in Health Sciences (ICFIRHS 2019)" from September 14-15, 2019 AIMST University, Malaysia organised by confnext.

Conference on Fostering Interdisciplinary Research in Health Sciences shares an insight into the recent research and cutting-edge technologies, which has gained immense interest with clinical practice, organisation and delivery of health services, health policy, translational science (covering the social and behavioural science of innovation and adoption), digital health and the patient experience, young and brilliant researchers, delegates and talented student communities.

Health sciences meetings aims to bring together scientists from different arena of research attributes and aptitudes to materialize the dream of interdisciplinary research which is more targeted and oriented. I am conclusive that the participating group of scientists and researchers from all over the world will be present to exchange breakthrough ideas relating to health sciences.

It will promote culminating research and to globalize the quality research in general, thus making discussions, presentations more internationally competitive and focusing attention on the recent outstanding achievements in the field of Health Sciences, and future trends and needs.

Since this conference covers very global aspects on health sciences from fundamental issue to practical application of the principle of health sciences, anyone interested in future progress of health sciences should not miss.

We’re looking forward to an excellent meeting with great scientists from different countries around the world and sharing new and exciting results in Health Sciences, which will be held in Malaysia, from September 14-15, 2019.

With best wishes.

(Keshari Lal Verma)
Greetings!

As President, Pharmacy Council of India, I congratulate the team of Confnext, India and AIMST University, Malaysia for organizing 2nd International Conference on “Fostering Interdisciplinary Research in Health Sciences” (ICFIRHS 2019) at the AIMST University, Malaysia on 14-15th, September, 2019.

The theme selected “Fostering Interdisciplinary Research in Health Sciences” is the need of the hour and is beneficial for understanding and resolving complex public health problems. The importance of developing good relationships between researchers from different disciplines is particularly important for facilitating successful interdisciplinary research.

This conference highlights numerous Scientific discoveries and major milestones in management of health sciences and socio-economic health concerns and global health challenges. I am confident that all participants and delegates will enjoy their scientific bon voyage and stay in AIMST University, Malaysia. This will help to contribute to their vibrancy with and with enriched discussions around the theme, developing professional knowledge exchange, insights and collaborations.

We look forward to welcome you to this exciting International Conference with great scientists from different countries around the world and sharing new and exciting results in health sciences.

Looking forward towards great scientific congregation witnessing conducive interdisciplinary confederation.

With warm regards

Dr. B. Suresh
President, Pharmacy Council of India
New Delhi, India
Message

Dear Delegates and Guests

I am personally delighted to welcome all perspicacious invitees for the 2nd International Conference on Fostering Interdisciplinary Research in Health Sciences (ICFIRHS) to be held from 14-15th September 2019 jointly hosted by AIMST University, Malaysia and CONFNEXT, Raipur Chhattisgarh, India. The 2nd (ICFIRHS) 2019 with the theme “Interdisciplinary Research in Health Sciences”. I am convinced that the conference will definitely provide a platform to the participating delegates to discuss important issues to develop new knowledge and research in the pharmaceutical and health sciences.

As Research in Pharmaceutical and health Sciences has always been interdisciplinary and multifaceted, the new challenges continue to emerge in this arena; there is no better time than the present to prepare for the future together.

Opportunities and challenges in terms of health sciences needs of the society and the expertise required to formulate the strategies to face these challenges are manifold. This international conference will bring together leading researchers, professionals, academicians, universities, industry expert and scientists in the domain of interest from around the world. I strongly believe this international conference will impart beneficial aspects and help to launch new initiatives.

I heartily welcome all the distinguished Speakers, scholars, researchers and the participants. I congratulate the AIMST University, Malaysia and CONFNEXT, Raipur Chhattisgarh, India for organizing this conference with successful accomplishment of objectives.

I am positive that the deliberation and interactive session during this conference will drive the researchers and students to greater heights in the years to come.

Looking forward to meet you all

With best wishes

Prof. Shailendra Saraf
My heartfelt wishes for grand success of 2nd International Conference on Fostering Interdisciplinary Research in Health Sciences (ICFIRHS) 2019” on 14th-15th September, 2019 organized at AIMST University, Malaysia
Dear Organizers

I congratulate Confnext and the Faculty of Medicine at AMIST University, Malaysia for organizing an International Conference on “Fostering Interdisciplinary Research in Health Sciences” (ICFIRHS-2019). Complexity of health sciences and disease mechanisms require application of multidisciplinary technologies and interdisciplinary expertise for understanding pathogenesis of the disease.

Recent scientific advancements and availability of advanced tools & technologies have resulted into a paradigm shift in research on health sciences and new drug discovery. This conference shall provide a common platform to bring the experts and researchers from different disciplines of science together and generate opportunities for multidisciplinary collaborative research in health sciences.

I am highly honored to be a part of this mission and look forward to participate in this conference. I would share my experiences and research on “Multidirectional paradigm for new drug discovery from natural products resources: challenges & opportunities”.

With best wishes to the organizers of ICFIRHS-2019 and delegates attending the conference.

Yours sincerely

(Babu L. Tekwani Ph.D.)
Distinguished Fellow & Chair Infectious Diseases
Division of Drug Discovery
Southern Research Birmingham AL USA
"Science is a way of thinking more than it is a body of knowledge"
- Carl Sagan -

I have been in a transport of delight knowing that AIMST University is collaborating with CONFNEX Raipur, India in organizing the 2nd INTERNATIONAL CONFERENCE ON FOSTERING INTERDISCIPLINARY RESEARCH IN HEALTH SCIENCES 2019. It gives me immense pleasure inviting all of you to AIMST University.

I would like to take this opportunity to express my gratitude and appreciation to CONFNEX Raipur, India for their dedication and effort in making this conference a triumph. With that, I am also extending my appreciation to the committee members, guest speakers, presenters, participants and staff.

Thank you and I wish the conference a great success.

HON. COL. (CD) SNR. ASSC. PROF. DR. KATHIRESAN SATHASIVAM
Registrar
Commandant (Civil Defense)
Patron – ICFIRHS 2019
AIMST University, Malaysia
Dear all

I am extremely excited to welcome all renowned speakers, guests, delegates and participants to be the part of 2nd International Conference on “Fostering Interdisciplinary Research in Health Sciences (ICFIRHS) 2019.

I am hopeful that the success of this event will further motivate us to organize such events promoting interdisciplinary research among the young budding researchers.

Looking forward to meet and welcome you all at AIMST University, Malaysia.

Best wishes

Dr. S.J. Daharwal
On behalf of the organizing committee, I am honored and delighted to welcome you to AIMST University, Malaysia for the 2nd INTERNATIONAL CONFERENCE ON FOSTERING INTERDISCIPLINARY RESEARCH IN HEALTH SCIENCES 2019 from 14 – 15 September 2019. This conference is organized by AIMST University, Malaysia and CONFNEXT Raipur, India. This year’s conference includes a wide range of topics on Health Sciences.

As the conference chairperson of ICFIRHS2019, I know that the success of the conference depends ultimately on the team who has worked with us in planning and organizing and I believe we can get the ultimate benefit from this conference.

In advance I wish to extend a warm welcome to all delegates from various countries for this coming ICFIRHS2019. I realize that you are fully dedicated to this conference and I do hope you will also take some time to enjoy your time in Malaysia with its tropical setting, friendly people and multi-cultural cuisine.

I hope that you find the event informative and enjoyable.

Mr. M. Bala Sundaram
Senior Lecturer - Faculty of Medicine
Chairman - ICFIRHS 2019
AIMST University, Malaysia
I am extremely delighted to welcome all the esteemed guests, plethora of speakers and delegates to CONFNEXT 2nd International Conference on “Fostering Interdisciplinary Research in Health Sciences (ICFIRHS) 2019” on 14th-15th September, 2019 organized at AIMST University, Malaysia.

The need for interdisciplinary research appears to be indispensable and contemporary need of the hour. Due to the complexity of human health, emphasis is increasingly being placed on the need for conduct of multidisciplinary and/or interdisciplinary health research. The availability of new techniques and technologies to answer important medical questions is accelerating at a breathtaking pace.

I am hopeful that all of you will have wonderful exposure to the scientific deliberations by esteemed intellects from around the globe and great stay at AIMST University, Malaysia.

With best wishes

Dr. Deependra Singh
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Sinouvassane Djearamane*; Ling Shing Wong; Yang Mooi Lim; Poh Foong Lee
sinouvassane@utar.edu.my; lingshing.wong@newinti.edu.my; ymlim@utar.edu.my; leepf@utar.edu.my
1Department of Biomedical Science, Faculty of Science, Universiti Tunku Abdul Rahman, Kampar, 31900, Perak, Malaysia
2Life Science Division, Faculty of Health and Life Sciences, INTI International University, Nilai 71900, Negeri Sembilan, Malaysia
3Department of Pre-Clinical Sciences, Faculty of Medicine and Health Sciences, Universiti Tunku Abdul Rahman, Bandar Sungai Long, 43000, Selangor, Malaysia
4Department of Mechanical and Material Engineering, Universiti Tunku Abdul Rahman, Bandar Sungai Long, 43000, Selangor, Malaysia

ABSTRACT:
Background: Zinc oxide nanoparticles (ZnO NPs) are extensively used in industrial and personal care products. Such massive usage of ZnO NPs has created residues that contaminate the aquatic environment. Remarkably, microalgae have a greater ability to accumulate and uptake the metallic NPs into their biomass. Consumption of microalgae as a food supplement which has adsorbed NPs in the biomass could cause health hazards to the consumers. Hence, it is essential to screen the contamination of ZnO NPs in microalgal food. Objective: The present study has investigated the cellular uptake and the corresponding morphological changes in nutritional supplement microalga Haematococcus pluvialis. Methods: The scanning electron microscopy energy dispersive X-ray spectroscopy (SEM-EDX) was used to identify the cellular uptake of ZnO NPs in algal cells, while inductively coupled plasma optical emission spectrometry (ICP OES) was performed to quantify the cell associated-zinc in algal cells. The extracellular and intracellular changes in algal cells resulting from the treatment of ZnO NPs were demonstrated through optical, scanning and transmission electron microscopic studies. Results: SEM EDX spectrum demonstrated the surface accumulation of ZnO NPs in algal biomass and ICP OES results reported a significant (p < 0.05) dose- and time-dependent accumulation of zinc in algal cells from 24 h at ZnO NPs (10 - 200 µg/mL). The microscopic studies showed cellular aggregation, cell membrane rupture, cell leakage, destruction of photosynthetic system and photosynthetic pigments. Discussion: The present study reported the significant cellular accumulation of ZnO NPs in algal cells and the corresponding surface and intracellular changes. Conclusion: The study has successfully screened the contamination of ZnO NPs in the nutrient microalga with quantification of the metal accumulated in the biomass.

KEYWORDS: Haematococcus pluvialis, nutrient microalga, zinc oxide nanoparticles, cellular accumulation
Does Proprioception of knee improve after various forms of training in Osteoarthritis of Knee?

Naresh Bhaskar Raj, Soumendra Saha, Srilekha Saha, Hazliza Razali, 
Nur Yanti Haryana Othman
bnaresh@unisza.edu.my
School of Rehabilitation Sciences; Faculty of Health Sciences; Universiti Sultan Zainal Abidin;
Gong Badak Campus 21300; Kuala Nerus; Terengganu Darul Iman; Malaysia.

ABSTRACT:
The present study was aimed to investigate the role of various forms of training in improving the proprioception of the knee joint in patients with osteoarthritis of knee. Sixty participants (male and female) with knee Osteoarthritis of Grade II & III (Kellgren-Lawrence criteria) in the age range of 50-73 years were recruited from the Department of Orthopedics, Hospital Universiti Sains Malaysia. The recruited participants were taken to the Exercise and Sports science laboratory and the laboratory of School of Medical Sciences, Universiti Sains Malaysia for baseline assessment. The level of proprioception was assessed with the aid of isokinetic device BIODEX 4 System Pro. The participants were randomly categorized into four groups (Gr.) (Viz. Gr. A, Gr. B, Gr. C and Gr. D) and thus each group consisted of 18 participants. Gr. A participants received Conventional Physiotherapy consisting of strengthening exercises; stretching exercises and range of motion exercises. Gr. B received Isokinetic Training at velocities of 90° and 150°/second. Gr. C participants received EMG Biofeedback training with Mega ME 6000 device and Gr. D participants received a combined intervention of isokinetic training and EMG Biofeedback. The training protocol was designed for 25 - 30 minutes per session; 2 sessions per week for 10 weeks (20 sessions). The assessment was done after 5th week of training (mid term) and after 10th week of training (post) following baseline assessment protocol. A follow up assessment was performed after the 14th and 18th week to assess the after effect of training. Meanwhile the participants were not given any training after the 10 week period. They were also advised not to get engaged in any sort of physical training, exercise or sport programme. Repeated measure of ANOVA revealed that, all interventions helped in improving the proprioception of the knee joint however post hoc analyses implicated that a combined intervention of Isokinetic Training and EMG biofeedback was beneficial in enhancing proprioception than the conventional physiotherapy (P<.05).

KEYWORDS: Knee Osteoarthritis, Proprioception , Isokinetic Training, Knee
ABSTRACT:

Background: Patellofemoral pain syndrome (PFPS) is one of the most common musculoskeletal disorder in the knee. It affects both athletes and no athletes. Although there is growing evidence to support the inclusion of hip abductor and external rotator muscle strengthening along with the traditional quadriceps strengthening in the rehabilitation of individuals with PFPS, patients continue to experience pain and dysfunction. There are still limited studies conducted to determine the type of hip muscle strengthening strategies that may be helpful functionally to improve the outcome in the sedentary population with PFPS.

Objectives: The primary objective of the study is to compare the additional effect of concentric hip abductor and external rotators strengthening and the additional effect of eccentric hip abductor and external rotators strengthening in reducing pain & improving the functional status in patients with Patellofemoral pain syndrome.

Study Design: A single-blinded, randomised controlled trial.

Methods: 180 sedentary male and female patients between 18 and 40 years of age (25.40 ± 6.67), with a diagnosis of PFPS, were distributed randomly into 3 groups: Control Group (n = 60) consisting of knee strengthening program (control group) ; Concentric strengthening group (n=60) consists of concentric hip abductor and external rotator strengthening and knee strengthening ; Eccentric strengthening group (n=60) consists of eccentric hip abductor and external rotator strengthening and knee strengthening. All patients underwent baseline assessment session, followed by a 6-weeks exercise program and were reassessed at the end of the session. An 11-point numeric pain rating scale, the Lower Extremity Functional Scale, the Anterior Knee Pain Scale and isometric strength evaluation for the hip abductor and external rotator were used as outcome measures.

Results: Most of the subjects are females 72 % and only 28% is males. At baseline, demographic of height, weight and BMI; pain and functional assessment data were similar between groups. All the three groups showed a significant improvement in the LEFS, the AKPS, the NPRS and isometric hip strength (p<0.05), however, the eccentric hip strengthening group showed higher mean values on AKPS (33 ± 9), LEFS (27 ± 6), and NPRS (3 ± 0.95) compared to concentric hip strengthening and control group. The MCID value demonstrated in Eccentric hip strengthening group for AKPS (33.1%), LEFS (34.3%), NPRS (34.1%) and the concentric hip strengthening group AKPS (26.7%), LEFS (26.7%), NPRS (26.9%) were higher than the control group.
Conclusions: In the rehabilitation of PFPS, eccentrically strengthening of hip abductors and external rotators in addition to knee strengthening is more efficient in reducing pain and increasing knee function compared to concentrically strengthening hip abductor and external rotators in addition to knee strengthening.

KEYWORDS: Patellofemoral pain syndrome; anterior knee pain; hip; knee; eccentric; concentric: muscle strengthening.
Respiratory muscle strength training and pulmonary function changes in subjects with Chronic neck pain

M. Balaganapathy, Twisha S. Kansara
principal.arip@charusat.ac.in
Ashok & Rita Patel Institute of Physiotherapy, CHARUSAT Campus, Changa, Anand, Gujarat

ABSTRACT:
Introduction: Chronic neck pain, being one of the most common complain among many people have led to many musculoskeletal problems with mean overall general population of approximately 23%. Patients with chronic neck pain complains of weakness and fatigue of cervical muscles, reduced cervical mobility, impaired proprioception, postural abnormalities, poor pulmonary function and psychological compromised. Chronic neck pain may lead to reduced lung volume and chest wall compliance. Respiratory pressure meter and pulmonary function test is required to measure the respiratory muscle strength and pulmonary functions respectively. Respiratory training improves respiratory muscle strength. With the help of inspiratory muscle trainer and positive expiratory pressure, there can be improvement in the respiratory parameters of patients with chronic neck pain. As a result, whenever functions are compromised, extended rehabilitation is required for respiratory parameters. Hence this study was done to know the effect of inspiratory muscles strength, effect of expiratory muscles strength in subjects with chronic neck pain and also the changes in pulmonary functions in subjects with chronic neck pain.

Methodology: A total of 40 subjects were recruited according to inclusion and exclusion criteria. 20 subjects were allocated in control group and 20 subjects in experimental group. Both the groups were assessed for NPRS, NDI, MIP, MEP, FVC, FEV1/FVC, PEFR, SVC and MVV. Both the groups received the standard treatment for neck pain that includes interferential current therapy and stretching of neck muscles like trapezius, scalene and sternocleidomastoid. But the experimental group received additional treatment to standard treatment which included respiratory training with inspiratory muscle trainer and positive expiratory pressure. Pre and post assessment were taken. Intervention period was for about 4 weeks.

Results: After a 4 week intervention, results showed that there is a significant improvement in NPRS, NDI, MIP, MEP, SVC and MVV. But the results showed no significance for FVC, FEV1/FVC and PEFR. In intragroup NPRS and NDI showed a significant value of p = 0.00. Whereas for MIP and MEP it showed the same result of p = 0.00. SVC was found to be significant for experimental group and between group. The intergroup for MVV is p = 0.008 and that for intragroup (between group) is p = 0.000.

Conclusion: Respiratory parameters are found to be reduced in subjects with chronic neck pain. So along with standard treatment, respiratory training can be added to the rehabilitation protocol for subjects with chronic neck pain.

KEYWORDS: Chronic neck pain, respiratory muscle strength, pulmonary functions, respiratory training.
Effect Of Continuous Passive Motion (CPM) On Mobility Functions In Total Knee Arthroplasty

Gokarakonda Sree Vamsi
vamsi@aimst.edu.my
AIMST UNIVERSITY

ABSTRACT:
Title: Effects of continuous passive motion (CPM) on mobility functions in total knee arthroplasty (TKA) – A pilot study.
Introduction: Total Knee arthroplasty (TKA) is a common intervention that can enhance the quality of life for patients with knee osteoarthritis. The primary focus of early rehabilitation is ambulation and regaining Range of motion (ROM) in the knee joint.
Objective: To analyse the effects of continuous passive motion on functional mobility of patients with total knee arthroplasty.
Experimental method:
Study design: Pilot study (Quasi experimental design)
Sample size: A sample of 10 subjects who underwent unilateral TKA was recruited.
Inclusion criteria:
Acute TKA on 2nd Post-operative day
Exclusion criteria:
Patients in ICU.
Results  CPM ROM SIX MIN.WALK TEST

Discussion:
The results of this study indicate considerable difference in six minute walk test between two groups. The study had shown there was no significant difference between CPM and exercise and only exercises.

Conclusion:
The significance in six minute walk test infers that there is improvement in functional outcomes of TKA subjects. However, comparison of ROM indicated that CPM does not effect on knee range mobility.

KEYWORDS: total knee arthroplasty, continuous passive motion, range of motion, mobility function
ABSTRACT:
Medicinal plant used as traditional medicine practice is a term applied to pre-scientific system that process of medical knowledge, which is passed through generations to generation from one Vaidhya to another. It refers to the beliefs, claims, herbal medicine preparation and practices in alleviating disease and disorders among the tribal populations like Oraon, Hill Korwa, Nageshia and Gond. Some valuable information was gathered about the local medicinal plants and their uses. Traditionally, the area remains unexplored and no comprehensive account of local traditional knowledge is available, the importance of recording of the usage of plants in this region is especially imperative because of rapid loss of forest wealth and traditional wisdom. This paper presents the local medicinal plants of Surguja district. The paper highlights the indigenous medicinal plants for the treatment of various types of diseases among the different tribes. Plant species are enumerated in alphabetical order along with families, local names; botanical name followed by their uses.

The primary objective of this study is to present a database on indigenous knowledge on medicinal plants used for disease among the local traditional healers of Surguja district. A survey on the plants used for disease was carried out during the period 2018-2019 and information regarding the different types of plants used parts of the plants, mode of administration was collected from 09 villages of the district. The present study reveals that the rural tribal people are well versed with the nature and natural resources around them. In the present study, it has been found that about 20 species of plants belonging to different families have been used traditionally by the people of the study area. It is concluded that even though the accessibility of the modern system of medicine for simple and complicated diseases is available, many people in the studied area still continue to depend on medicinal plants, for the treatment of different types of diseases. like Migraine, Pneumonia, Kidney, Mouth Ulcer, Snake Poison and Fever. The need of the hour is to harness this traditional knowledge and preserve this knowledge for the betterment of future mankind.

KEYWORDS: Tribal Population, Forest Wealth, Medicinal Plant, Disease, Treatment
Polar and Non-Polar Solvent Extracts Posses of Differential Antioxidant Activity of Medicinal Mushroom (Pleurotus florida)

Nagendra Kumar Chandrawanshi, Mausmi Dhangar, S. K. Jadhav
chandrawanshi11@gmail.com
School of Studies in Biotechnology; Pt. Ravishankar Shukla University; Raipur (Chhattisgarh) Pincode 492010 India

ABSTRACT:
Pleurotus florida is an edible mushroom. It is known to contain a wide variety of bioactive compounds with high nutritional and medicinal values. Due to the wide diversity of compounds in the mushroom, recent research focused on employing different solubility to the solvent used for the extraction process. The present study used various polar and non-polar solvents for extract preparation. We report here the comparison of antioxidant activity of extracts of P. florida from eight various solvents, including normal water (Milli-Q), hot water 600C, hot water 800C, ethanol, chloroform, diethyl ether, acetone, and aldehyde, etc. The extracts were evaluated for their antioxidant activities using the different process such as DPPH (2, 2-diphenyl-1-picrylhydrazyl hydrate), Chelating effect assay, Reducing power assay and Total phenolic antioxidant capacity method. The maximum value was obtained from the water extract and the lowest one was from the acetone extract. Furthermore, the non-polar solvent extract (chloroform) showed the strongest DPPH radical scavenging activity (78.65%), similarly, the highest chelating effect recorded for diethyl ether (72.04%), the maximum reducing effect found for formaldehyde (97.14%) at 50 µg/µl. The current study shows that Oyster mushroom demonstrated strong antioxidant potency. Therefore these studies recommend that the P. florida species might be used as high-quality sources of natural antioxidants and also used for drug development in a pharmaceutical product.

KEYWORDS: Medicinal mushroom, Solvent, Antioxidant potency, scavenging activity.
Evaluation of antimicrobial activity of different solvent extracts of Archidendron pauciflorum (Jering)

Jeevandran Sundarasekar, Tan Soo Fang, Parasuraman Subramaniam, Sundram Karupiah
jeevan@aimst.edu.my; soofang96@gmail.com; parasuraman@aimst.edu.my; sundram@aimst.edu.my
School of General and Foundation Studies, AIMST University, Jalan Bedong – Semeling, 08100 Bedong, Kedah Darul Aman, Malaysia;
Faculty of Pharmacy, AIMST University, Jalan Bedong – Semeling, 08100 Bedong, Kedah Darul Aman, Malaysia.

ABSTRACT:
The use of herbal medicines has been recently growing in countries worldwide including Malaysia. Archidendron pauciflorum (A. pauciflorum), commonly recognised as Dogfruit or Jering (Malaysia), is native to Southeast Asia. It is economically important due to wide variety of uses such as food, flavouring agent, dye and for its medicinal properties. In ethno medicine uses in Malaysia, pounded leaves and bark of A. pauciflorum are used to treat toothache, gum pains, chest pains, skin ailments and also to treat wounds. The aim of this study is to evaluate the in vitro antimicrobial activity of different solvent extracts derived from A. pauciflorum seeds. The A. pauciflorum seeds were extracted with ethanol, chloroform and hexane solvents. The antimicrobial screening was carried out via agar well diffusion technique. Minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) of the extracts were also determined. Antimicrobial screening carried out by agar well diffusion method revealed that only ethanol extract showed mild zone of inhibition against Bacillus cereus, Escherichia coli and Pseudomonas aeruginosa and no inhibitions for hexane and chloroform extracts. A. pauciflorum extracts also does not display any zone of inhibition for Candida albicans. A. pauciflorum seeds were proved to show poor antimicrobial activity against tested Gram positive and Gram negative bacteria as well as fungus. However, reports show that isolated lectin compound from the seeds of Archidendron jiringa Nielsen has antibacterial and antifungal activity. Future studies may be conducted to extract the active compound and evaluate the pharmacology properties of this seeds.

KEYWORDS: Archidendron pauciflorum, plant extract, antimicrobial activity, minimum inhibitory concentration, minimum bactericidal concentration
Rapid, sensitive and closed-tube detection of plant DNA virus through PCR

Afaque Quraishi
drafaque13@gmail.com
Pt. Ravishankar Shukla University, Raipur (India)

ABSTRACT:
The polymerase chain reaction (PCR) is used for amplification of specific DNA sequences. It is a highly sensitive and reliable technique for viral detection. In the present study, a rapid assay was developed for the indexing of banana bunchy top virus (BBTV). Primer pairs were designed to target the coat protein gene sequences of BBTV for PCR. The BBTV symptomatic and asymptomatic samples from the field-grown banana and in vitro cultures too were diagnosed for the virus infection. BBTV infection could efficiently spot by using SYBR green I, in the PCR mixture. The BBTV could diagnose in the closed-PCR tubes where the amplified products emitted strong fluorescence under the UV trans-illumination without performing the gel electrophoresis. The method developed may be used for the other single-locus PCR reactions.

KEYWORDS: BBTV, DNA isolation, In vitro, Musa, PCR, SYBR green I
Melatonin and Glutathione Attenuates Lead and Acid rain Toxicity by Regulating Gene Expression of antioxidants in Trigonella foenum graecum L.

Roseline Xalxo, Jipsi Chandra, S. Keshavkant
roselinalxo90@gmail.com; jipsi.biotech@gmail.com; skeshavkant@gmail.com
School of Studies in Biotechnology, Pt. Ravishankar Shukla University, Raipur 492 010, India

ABSTRACT:
Lead and acid rain are principal abiotic stress factors that limit the growth, development, metabolic activity, and crop productivity. The present study was intended to scrutinize the responses of Trigonella foenum graecum L. (Fenugreek) to combined exposure of lead (1200 ppm) and simulated acid rain (SAR, pH 3.5) and, potential roles of melatonin (MT) and glutathione (GSH) in enhancing tolerance of Fenugreek to lead and SAR stress. In the current research, the attenuation potencies of MT and GSH was investigated in terms of growth, biomass, leakage of electrolytes/membrane stability, total chlorophyll, reactive oxygen species (ROS), malondialdehyde (MDA), lipoxygenase (LOX), protein and expression of defensive genes that are modulated by lead and SAR toxicity. The results showed that co-application of MT and GSH along with lead and SAR improved the growth and development of seedlings, stabilized the cell membrane integrity, reduced ROS accumulation [superoxide radical and hydrogen peroxide] MDA content and LOX activity, enhanced protein accumulation and up-regulated the gene expressions of catalase and superoxide dismutase, significantly. Considering the observations, it can be concluded that MT and GSH can be utilized as efficient agents for improving tolerance of Fenugreek seedlings towards co-stress of lead and SAR.

KEYWORDS: Antioxidants, Gene expression, Glutathione, Lead, Melatonin, Simulated acid rain.
Anticancer potential of flavonoids: Recent updates and future avenues

Sushama Sahu, Ashish Saraf
sushama.pradhan1@gmail.com
Department of Biological & Chemical Sciences, MATS University Raipur, Chhattisgarh, India

ABSTRACT:
Flavonoids are the polyphenolic, low molecular weight phyto-constituents originated from natural source as secondary metabolism of plants or synthesized in laboratory. They have been shown exhibit a wide range of biological activity, which is clutching researchers towards its vital benefits. They have been reported to possess antiallergic, antioxidant, anti-inflammatory, antimutagenic, cardioprotective and anti-carcinogenic activities. However, the present work emphasizes specifically on chemoprotective and chemotherapeutic activities flavonoids. Flavonoid possesses the ability to deregulate development and progression of cancer. Flavonoids such as apigenin, quercetin naringenin, taxifolin, catechin, apiforol and leucocyanidin, malvidin, genistenin etc have been successfully exploited for treatment of different types of cancer including colon cancer (Caco-2, HT-29, IEC-6, HCT-15 cell lines), lung cancer (SK-LU1, SW900, H441, H661, haGo-K-1, A549 cell lines), leukemia (HL-60, K562 cell lines), breast cancer (MCF-7 cell lines) etc. Present work focuses on structural characteristics, and therapeutic potential of flavonoids cancer prevention and treatment.

KEYWORDS: Anticancer, flavonoids, cancer, phyto-constituents
Comparative phytochemical screening and antibacterial activity of flower, leaf and root extracts of Spilanthes acmella (L.)

Veeu Joshi, Prof. S. K. Jadhav
vinu.jsh@gmail.com; jadhav9862@gmail.com
1Center for Basic Sciences, Pt. Ravishankar Shukla University, Raipur;
2SoS in Biotechnology Pt. Ravishankar Shukla University, Raipur (C.G.), India

ABSTRACT:
Spilanthes acmella (L.) is a well known medicinal plant which is commonly recognized as Akarkara. It is used by the tribes for its toothache relieving properties and for curing various other ailments. The plant has been reported to possess alkamide spilanthol as the active principle accounting for most of its pharmacological activities. The present study deals with the comparative phytochemical screening and determination of antimicrobial activity of ethanol, ethyl acetate, chloroform and petroleum ether extracts of the flower, leaf and root part of S. acmella. The extracts were tested against three gram positive (Staphylococcus aureus, Actinomyces howellii and Lactobacillus acidophilous) and one gram negative bacteria (E. coli) by Agar Well Assay method and the zones of inhibition were measured. The results revealed the presence of phenols, flavonoids, terpenoids, alkaloids, saponins, carbohydrates and proteins in the extracts. Flower extracts were found to be a rich source of phytochemicals as compared to leaf and root extracts. Maximum antibacterial activity was observed against gram positive bacteria by the ethanol extract of flowers followed by leaf and root extracts. But only chloroform extract of the flower showed moderate activity against gram negative bacteria. The present studies proved that the plant has the potential to be developed as the source of antibacterials.

KEYWORDS: Antibacterial, Phytochemicals, Toothache, Medicinal plant, Ethanol extract
Role of silver nanoparticles in revival of aged seeds

Jipsi Chandra, Jeabunnisha Khan, Roseline Xalxo, S. Keshavkant
School of Studies in Biotechnology, Pt. Ravishankar Shukla University, Raipur 492 010, Chhattisgarh, India
jipsi.biotech@gmail.com; jeabunnisha@gmail.com; roselinexalxo90@gmail.com; skeshavkant@gmail.com

ABSTRACT:
Nanoparticles (NPs) and nano-technological applications have accomplished a great attention worldwide, in various sectors including agriculture. In a number of instances, NPs has been applied to scavenge/ameliorate various stresses, promote seed germination/plant growth responses. In order to stimulate this propensity, the development of sustainable eco-friendly processes for NP production is of utmost importance. Therefore, in the present study, silver NP (AgNP) was synthesized following both chemical and green methods, and was assessed for their ameliorative efficiencies against accelerated ageing-induced injuries in Cicer arietinum. Synthesized NPs were initially characterized using standard methods such as dynamic light scattering (DLS)/ zetasizer, fourier transform infrared spectroscopy (FTIR) and UV-Vis spectroscopy. Experimental results revealed various physiological and biochemical alterations in accelerated ageing treated Cicer arietinum seeds along with over accumulations of reactive oxygen species and consequent decline in the gene expression/activities of key defensive genes. However, exogenous application of AgNPs provided tolerance against ageing-induced damages by compensating the cellular redox homeostasis via enhancing the levels/ expression patterns of antioxidants genes and reducing cytotoxicity in Cicer arietinum.

KEYWORDS: Antioxidants, Biological synthesis, Chemical synthesis, Gene expression, Reactive oxygen species.
Design, Synthesis and Bio-Evaluation of Indoline-2-ones as Novel anticancer hybrids
Prashant Chaudhari, Sanjay Bari, Pritam Jain, Vinod Ugale
prashantniperk@gmail.com; sbbari@rediffmail.com; pritash79@yahoo.com; vinod.ugale@rediffmail.com
Department of Pharmaceutical Chemistry, R. C. Patel Institute of Pharmaceutical Education & Research Shirpur, Dist- Dhule, Maharashtra, India;
H. R. Patel Institute of Pharmaceutical Education & Research Shirpur, Dist- Dhule, Maharashtra, India

ABSTRACT:
A combined in-silico pharmacophore based, and structure based virtual screening is done to identify novel potential c-KIT inhibitors using Schrodinger’s Maestro 9.0 molecular modeling suite. An atom-featured 3D QSAR model was built using previously reported c-KIT inhibitors containing indolin-2-one scaffold. The developed 3D QSAR model ADHRR.24 was found to be statistically significant (R2=0.9378, Q2=0.7832) and instituted to be robust enough with good predictive accuracy, confirmed by external validation approaches, Y-randomization & GH approach [GH score 0.84 and Enrichment factor (E) 4.964]. The present QSAR model was further validated by the OECD principle 3, in that applicability domain (AD) was computed using a ‘Standardization approach’. Molecular docking was studied on the c-KIT receptor (PDB ID: 3G0E).

Molecular hybrids of indolin-2-ones fused with 1, 3, 4-thiadiazolyl scaffold were synthesized. The present eco-friendly synthesis was achieved through use of green catalyst viz. β-cyclodextrin-SO3H in water. The catalyst was recovered and utilized for three run with almost similar reaction yield. Project work was aimed to afford the titled derivatives using recyclable green catalyst and under benign solvent as water.

Human Cancer Cell Lines study was performed through National Cancer Institute (NCI) NIH’s, NCI-60 Human Tumor Cell Line Screen Program, USA. Anticancer activity was performed by Sulforhodamine B (SRB) assay. The compounds IIIc, IIIg, IIIh showed a very promising anticancer activity against Leukemia, Melanoma, Breast cancer, Renal cancer, Non-small cell line Lung cancer panel cell lines.

KEYWORDS: Indolin-2-one, Pharmacophore, 3D QSAR, Synthesis, Green Chemistry
Development of Liposomal Encapsulated Quercetin for wound healing

Rajendra Jangde
rjangdepy@gmail.com
University Institute of Pharmacy, Pt. Ravishankar Shukla University, Raipur, Chhattisgarh, India 492010

ABSTRACT:
A wound is defined as a defect or break in the skin, resulting from physical or thermal damage or as a result of the presence of an underlying medical or physical condition. We aimed to develop a biocompatible, biodegradable and controlled release of quercetin loaded liposomal formulation. Liposomes quercetin (Qu) were prepared thin-film hydration method by optimizing ratio of active drugs and soya phospholipids. The prepared liposomes was characterized by in vitro studies like in vitro release study, particle size, wound contraction, excision wound model. Histopathological study showed significant (p<0.06) increase in fibroblast cells, collagen fibers and blood vessels formation. All parameters such as wound contraction, tensile strength, histopathological and biochemical parameters- hydroxyproline content, protein level, etc. were observed significant (p<0.06), SEM study of liposomes is porous morphology, wound contraction 95.52±0.37% , diffusion coefficient=1.71×10^-5 cm²/s, in vitro release study 95.32%.Present results suggest an accelerated re-epithelialization under moist wound environment with delivery of quercetin effective at different stages of wound healing cascade with minimum disturbance of wound bed. It provides a direct continuous or sustained release of the antimicrobial and debriding agent at the wound surface.

KEYWORDS: Quercetin, Liposomes, Wound healing
Traditional Herbal Formulation used by tribes of Madhya Pradesh for the treatment of gynecological disorders

Sumeet Dwivedi, Shweta Shriwas
sumeet_dwivedi2002@yahoo.com; shwetashriwas18@gmail.com
Department of Pharmacognosy & Biotechnology, Swami Vivekanand College of Pharmacy, Indore (M.P.)-India; Faculty of Pharmacy Dr. A.P.J. Abdul Kalam University, Indore (M.P.)-India

ABSTRACT:
Gynecological disorders are very common among the Indian women and are more prone in tribes due to various factors among which unhygienic is one of the major cause. These disorders include vaginitis, vagionosis, yeast infections, menstrual disorders, pelvic disorders etc. The tribes are inhabitants of Madhya Pradesh. They utilize a large number of plant species occurring wild as well as cultivated in the state as traditional herbal medicine in various diseases and ailments. This investigation was undertaken to explore and record the medicinal herbs used in prevention and treatment of gynecological disorders by tribes of Madhya Pradesh. Random crossover study was performed to collect the information. The author has gathered first-hand information on 10 plant species (Achyranthes aspera Linn. (Root), Calonyction muricatum G. Don (Pedicle), Clitoria ternatea Linn. (Roots), Ipomoea paniculata (L.) R. Br., (Leaves), Lepidium sativum (Seeds), Guizotia abyssinica (L.f.) Cass. (Roots), Michelia champaca Linn. (Flowers), Punic a granatum Linn. (Roots), Plumeria pudica Jacq. (Leaves) and Ziziphus mauritiana Lam. (Leaves)) and their mode of therapeutic uses from the tribes and other experienced tribal’s. Also, the method of preparation along with dose duration has been documented and recorded. The present study has brought of light some interesting data on potential medicinal plants which will be screened for determining their therapeutic and pharmacodynamic properties.

KEYWORDS: Gynecological disorders, Herbs, Herbal Formulation, Madhya Pradesh, Tribes
Colon Targeted Controlled Porosity Osmotic Pump of Curcumin

Kumar Guarve, Geeta Deswal, Ashwani Dhingra
drkg79@gmail.com
Guru Gobind Singh College of Pharmacy, Yamuna Nagar

ABSTRACT:
Colon Targeted Controlled Porosity Osmotic Pump of Curcumin The present study was aimed to develop microbially triggered colon targeted controlled porosity osmotic pump tablet using curcumin as model drug. The effect of various formulation variables namely the level of solubility modifier in core, level of hydrophilic and hydrophobic plasticizers in semipermeable membrane, level of pore former (guar gum) in semipermeable membrane, concentration of cellulose acetate in semipermeable membrane coating layer was studied. Release studies revealed that controlled porosity osmotic pump tablet of curcumin prevented the release in the upper GIT and specifically released the drug in colon. The drug release from the developed formulations was found inversely proportional to the level of solubility modulating agent in core compartment, hydrophobic plasticizers in semipermeable membrane and concentration of cellulose acetate in semipermeable membrane. As the proportion of guar gum was increased in coating solution, decrease in release rate of drug in small intestine and increase in release rate in colon was observed. This colon-specific drug delivery with the combinations of polysaccharides and enteric polymer with the degradation mechanisms based on pH and flora had a high potential for colon-specific drug delivery.

KEYWORDS: guar gum; colon targeting; curcumin; semipermeable membrane,
FORMULATION OF LOSARTAN POTASSIUM MICROSPHERES USING QUALITY BY DESIGN APPROACH

Shailesh Sharma, Nimrata Seth
shailesh.bela@gmail.com; director@copbela.org
Amar Shaheed Baba Ajit Singh Jujhar Singh Memorial College of Pharmacy, BELA

ABSTRACT:
In the present study, statistical experimental design approach was applied for preparing microspheres of losartan potassium by emulsion solvent evaporation technique using Eudragit RS100 as polymer. Central Composite design (CCD) was used for designing various formulations to investigate the effect of various formulation variables for obtaining an optimized formulation. The values of coefficients of the linear equations obtained by applying multiple regression analysis indicated that independent variables had significant effect on dependent variables. Based on these findings, optimized formulation of microspheres obtained with Eudragit RS100 with drug:polymer ratio of 2.756 and stirring speed of 1065.22 rpm showed spherical microparticles of uniform size (114.33 ± 1.27µm), with satisfactory percent yield (77.37 ± 1.97%) and entrapment efficiency (77.94 ± 1.62 %). The developed optimized batch of microspheres ensured 78.36 ± 1.05% release after 12 hours. The analysis of dissolution kinetic modeling revealed that the value of regression coefficient was found to be higher for koresmeyer –peppas and zero order model i.e. r² = 0.976 and 0.980 respectively. From the results of various in-vitro evaluation parameters, it was concluded that optimization plays an important role in designing of dosage forms with desired performance characteristics. Thus, the use of design of experiments statistical tools in development of optimized formulation was found to be a better option for carrying out experimentation so that the effect of different formulation variables can be studied simultaneously in fewer trials. This could be useful in extracting more useful information hence, making the research more economical and efficient.

KEYWORDS: Losartan Potassium, Microspheres, Eudragit, Optimization, Central composite design
Preparation and evaluation of extended release matrix tablets of nebivolol in combination of lipid-based solid dispersion and HPMC hydrogel

Utpal Jana¹*, Babita Sarangi²

jana.utpal@gmail.com

¹Department of Pharmaceutics, School of Pharmacy, Chouksey Engineering College, Bilaspur - 495004, Chhattisgarh, India;
²Department of Pharmacy, Annamalai University, Annamalai Nagar, Tamil Nadu, India

ABSTRACT:

Oral administration of poorly soluble drugs presents a significant challenge because of their irregular absorption in the gastrointestinal tract and low bioavailability. The nebivolol a classical beta blocker frequently used for the treatment of cardiovascular disorder shows poor oral bioavailability leads to frequent dosing. To improve the bioavailability of nebivolol the novel matrix tablet is developed in combination with lipid based solid dispersion and HPMC hydrogel. The solid dispersion will help to improve the solubility of the nebivolol and HPMC matrix will help to release the drug in extended manner. The developed matrix tablets are evaluated for in vitro drug release and kinetic study. The solid dispersion of nebivolol showed good solubility whereas the dissolution study of the matrix tablet showed extended release of the drug for 18 h. The incorporation of HPMC improved the stability of the tablets after storage. The drug release data of the matrix tablets was fitted well to the Korsmeyer–Peppas model with n value of 0.78, which suggested the mechanism of drug release by diffusion and erosion controlled. The finding suggested the combination of lipid based dispersion and HPMC hydrogel matrix tablets of nebivolol may further be explored for in vivo evaluation and its scalability.

KEYWORDS: Extended release matrix tablets, nebivolol
Transepidermal conveyance of herbal bioactive incorporated O3FA based nanolipid carriers into hydrogel for treatment of psoriasis

Krishna Yadav, Deependra Singh, Manju Rawat Singh.
ky8264@gmail.com; deependraiop@gmail.com; manjursu@gmail.com
University Institute of Pharmacy, Pt. Ravishankar Shukla University, Raipur, Chhattisgarh,492010, India;
University Institute of Pharmacy, Pt. Ravishankar Shukla University, Raipur, Chhattisgarh,492010, India;
University Institute of Pharmacy, Pt. Ravishankar Shukla University, Raipur, Chhattisgarh,492010, India

ABSTRACT:
Psoriasis is a chronic immune disorder of altered pathophysiology of skin represented by hyperproliferation and deprived parting of keratinocytes. The accessible treatment procedures, with the current single medication treatment can't treat the indications because of deprived absorption and denied skin infiltration whereas causing side effects on long term. Thus, deliverance of the therapeutics with a mix of two diversely compelling bioactives in a lipid based nanocarrier would be a creative way to deal with limitation of synthetic drug related untoward impacts with effective tranepidermal targeting. Bioactives i.e. curcumin, quercetin stacked nanosized lipocarriers were created and streamlined to accomplish the focusing on objectives. Plain and medication loaded lipocarriers were evaluated for spectral, microscopic investigation for shape and surface morphology, zeta potential, drug capture and for loading. The optimized lipocarriers were then independently fused into a nanogel structure and characterized further. The curcumin and quercetin loaded lipocarriers demonstrated 63.143±1.12% and 31.118±2.11% cumulative medication release from lipocarrier during 72 hours while decrease in medication release (28.60±2.13% and 19.14±1.52%) for curcumin and quercetin lipocarrier gel was seen because of extra deterrents determined by gel matrix. The skin penetration and dermis-epidermis drug distribution studies demonstrated that lipocarriers can fundamentally improve bioactives infiltration through skin in contrast with free medication while effectively giving medication deposition to dermis layer. In conclusion hydrogel fused nanolipocarrier can demonstrate to be a promising carrier for the safe dermal conveyance and retention of curcumin and quercetin for viable treatment and control of provocative and proliferative conditions in psoriasis.

KEYWORDS: psoriasis, bioactive, nanolipo carrier, hydrogel.
Effective Management of Manufacturing Defects to Avoid Product Recalls: A Challenge to Pharmaceutical Industry

Girish Pai K, Abhinaya N
girish.pai@manipal.edu
Department of Pharmaceutics, Manipal College of Pharmaceutical Sciences, Manipal Academy of Higher Education, Manipal, Karnataka, India.

ABSTRACT:
Good Manufacturing Practices (GMPs) and Standard Operating Procedures (SOPs) forms the backbone of any professionally managed pharmaceutical industry. Despite having GMP systems and SOPs in place, regulators/FDAs are finding faults and wrong doing by pharmaceutical firms and identify the manufacturing defects in marketed brand or generic medicines which ultimately leads to product recall from the market. Recently, product recalls issues are becoming major threat of doing business in regulated markets. Product recalls damages the reputation, patient’s perception about company/generic brand and FDAs treat these companies negatively. Manufacturing defects can be avoided by proper training of manufacturing staff, updating existing equipment, automation and identifying the probable root cause for any such manufacturing defects coupled with 100% inspection of manufactured products before release to markets. In the current study, we have captured a critical manufacturing defects of a liquid oral suspension of Erythromycin Estolate. The primary label on bottle did not have any Batch over coding information. The over coding detail is essential as it provides information about Batch Number, Manufacturing date and Expiry date. The probable root causes are investigated, and remediation is suggested in this case.

KEYWORDS: GMP, SOP, Product recalls
A perceptive study to endorse the nutritional aspects of Pearl Millet (Pennisetum Glauccum L) and formulated recipes

Arun A
arunarticle2016@gmail.com
Vels Institute of Science Technology and Advanced Studies

ABSTRACT:
Objective: Millets the have been cultivated and used for centuries back and their usage is now has been diminished and been portrayed as animals fodder. Pearl Millet has been one among the coarse millet been lost its actual value the study is to restore, enhance and infuse pearl millet (Pennisetum glaucum L) into commonly consumed recipes. Method: It comprises two segments firstly bringing out the view points of the panellist about pearl millet and secondly evaluating the organoleptic qualities and analyzing the nutritious facts of the recipes being developed or infused with pearl millet Result: The sensory evaluation and nutritional analysis of the recipes were analyzed exhibiting the mean score for sensory attributes are satisfactorily accepted and the recipes are rich in protein and minerals Conclusion: The study concluded that organoleptic acceptance and the healthy point of views of the panelists shows the pearl millet can be considered as a functional ingredient in regular diet. Recommendation of this millet into day to day diet will bring back the healthy generations

KEYWORDS: Nutrition, Pearl Millet, Recipe, Restore
The Importance of CD44 as a Tumor Biomarker and Drug Target in Cancer Therapy

Rahul Singh, Rohit Dutt
rahil.singh1@gdgoenka.ac.in; rohit.dutt@gdgoenka.ac.in
GD Goenka University, Sohna Gurgaon Road Gurgaon

ABSTRACT:
CD44 is a hyaluronan (HA)-binding glycoprotein that is highly expressed in cancers and regulates metastasis via CD44 recruitment to the cell surface. CD44 expression is altered during cellular malfunctioning in the process of tumor progression. CD44 has CD44s standard and CD44v variant forms. These CD44v (v1-v10) variants forms are useful as a diagnostic marker of malignancy and may be consider as a potential target for cancer therapy. CD44, also known as mesenchymal stem cell marker, is actively involved in the maintenance of microenvironemnt of hematopoietic stem cell (HSC), maintenance of quiescence, apoptosis resistance and homing. Heamtopoietic stem cell (HSC) and Leukemia stem cell (LSC) share many common “stem-cell like” features. LSCs are key factor in disease progression and relapse. As a conventional therapy, TKIs (Tyrosine Kinase Inhibitors) are, very effective in the reduction of tumor mass but also show frequent fail to eliminate LSC residing in the secured bone marrow niche. Thus, there is a unmet requirement for combination therapy that targets bulk disease to remove LSC in order to prevent disease progression. In this study, we discussed the promising activity of anti-CD44 monoclonal antibody which blocks the HA-binding domain and initiate the apoptosis process for tumor cells.

KEYWORDS: CD44, Glycoprotein, Anti-CD44, CD44s standard, Cd44v variant, Stem cell marker, Cancer Progression, Metastasis, HA binding domain, HSC Hematopoietic stem cell, LSC Leukemic stem cell, Homing, Apoptosis, Quiescence
A Survey On Knowledge Of Autism Spectrum Disorder Among The Healthcare And Non Healthcare Professionals Of A Private Institute In Kedah, Malaysia

Nandini Kumari Katta¹, Sudheesh Mani Kakknuth², Huan Wen Xin³, Jasmyn Tiong Syn Ern⁴, Hikari Tham Yen Hui⁵, Teenu Vijayan⁶

¹Lecturer in Paediatric Dentistry, Faculty of Dentistry, AIMST University, KEDAH-08100, Malaysia.
²Lecturer in Oral Surgery, Faculty of Dentistry, AIMST University, KEDAH-08100, Malaysia;
³Student, Faculty of Dentistry, AIMST University, Kedah-08100, Malaysia
⁴Student, Faculty of Dentistry, AIMST University, Kedah-08100, MALAYSIA.
⁵Student, Faculty of Dentistry, AIMST University, KEDAH-08100, MALAYSIA
⁶Public health dentist, Bangalore institute of dental sciences-560027 India.
nandinikatta@gmail.com

ABSTRACT: Background:
Early detection and timely referral of Autistic children for interventions is the hallmark in the treatment of this condition. Lack of knowledge, inaccurate and obsolete beliefs contribute to current disparities in the early diagnosis and services offered throughout Malaysia and globally. It is essential to analyse the baseline knowledge about childhood autism before designing the programs directed towards bridging the knowledge gap in community level education. This study assessed the baseline knowledge about childhood autism among the healthcare and non-healthcare professionals of a private institute in Kedah, Malaysia. 

Methods: A total of 150 healthcare and non-healthcare professionals participated in this study. The study was conducted using Knowledge about childhood autism among health workers (KCAHW) questionnaire by Muideen O Bakare et al, 2008. The questionnaire was modified according to the sample involved into 12 item self administered questionnaire to cater to both health care and non health care professionals. 

Results: KCAHW questionnaire interestingly showed low level of awareness among both the healthcare and non-healthcare professionals. Significant misunderstandings of some of the salient features of autism were present in all the professional groups.

Conclusion: Diagnosis of autism is based on a combination non-medical tests, observation and professional judgment and frequent parent interviews. Having knowledge about autism can help in early diagnosis of the condition at an earlier stage and intervene it. This study concluded that there is a profound need for continued education of all the professionals across disciplines with regards to Autism. 

KEYWORDS: Autism, Knowledge, Education, Diagnosis
Progression of retinal dysfunction following sodium iodate administration in a rat model: An electrophysiological and histological assessment

Avin Ee-Hwan Koh, Hiba Amer Alsaeedi, Munirah binti Abd Rashid, Chenshen Lam, Mohd Hairul Nizam Harun, S. Suresh Kumar, Min Hwei Ng, Hazlita Mohd Isa, Sue Ngein Leow, Kong Yong Then, Mae-Lynn Catherine Bastion, Pooi Ling Mok

Department of Biomedical Science, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, Malaysia;
Department of Medical Microbiology and Parasitology, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, Malaysia;
Department of Ophthalmology, Faculty of Medicine, Universiti Kebangsaan Malaysia Medical Centre, 56000 Cheras, Kuala Lumpur, Malaysia;
Genetics and Regenerative Medicine Research Center, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, Malaysia;
UPM-MAKNA Cancer Research Laboratory, Institute of Bioscience, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, Malaysia;
Tissue Engineering Centre, Universiti Kebangsaan Malaysia Medical Centre, 56000 Cheras, Kuala Lumpur, Malaysia;
Department of Ophthalmology, Hospital Sultanah Aminah, 80100 Johor Bahru, Johor, Malaysia;
Department of Clinical Laboratory Sciences, College of Applied Medical Science, Jouf University, Sakaka, P.O Box 2014 Aljouf Province, Kingdom of Saudi Arabia

ABSTRACT:
Retinal degeneration in the eye is caused by the death of retinal cells, and it occurs as a result of various retinopathies. In recent years, various animal models have been developed to study on the efficacy of different treatment strategies to prevent retinal degeneration. The sodium iodate (NaIO3)-induced model is one that has been used to assess such treatments. Here, we characterize the progression of retinal cell death upon systemic administration of NaIO3, and assessed its impact on retinal dysfunction via electrophysiology and histology. Sprague-Dawley rats were first injected with several doses of NaIO3 (0 – 80 mg/kg) and assessed over 7 d. An electroretinogram was used throughout the study to measure the rat visual response under increasing light intensities (0.003 – 3.0 cd.s/m²). Upon completion, histological sections were produced and further examined by immunohistochemical staining of retinal cell protein expression (RHO, RPE65, and PKC-α).
The results showed that retinal dysfunction occurred as early as two days after treatment with doses from 40 mg/kg and above. Electrophysiological responses in the retina plummeted for all tested light intensities (**** $P \leq 0.0001$). Structural lesions were present throughout the retina. The expression of RPE65 and RHO also reduced, showing the loss of key retinal cells. 40 mg/kg was the minimum dose needed to induce retinal degeneration. The experiment was extended to 60 d with the selected dose and no improvement in any tested parameters were observed. Here, we described the progression of NaIO3-induced retinal dysfunction, and highlighted its importance during model development for therapeutic studies.

**KEYWORDS:** Retinal Degeneration; Sodium Iodate; Retinal Pigment Epithelium; Photoreceptors; Electroretinography
A Morphometric Study Of Lumbar Lordosis In Malaysian Population

balajismch@gmail.com
Research fellow, Masters’ of Science Human Anatomy, Faculty of Medicine, AIMST University, Kedah Malaysia

ABSTRACT:
Evaluation of lumbar lordosis angle (LLA) is a pre-requisite in the assessment of spinal health. Any variation in the normal spinal curvature is known to adversely affect the posture resulting in low back pain. WHO has been emphasizing on the increasing incidence of obesity and its contribution to musculoskeletal disorders. Statistics released by NHMS and MOH Malaysia, also reflect a rise in obesity and low back pain in Malaysian population. Understanding the factors that adversely affect the LLA can help in designing effective screening and rehabilitation protocols for susceptible subjects. In the present observational study, LLA of Malaysian adults was observed and recorded from digital x-ray. Lumbar lordosis angle was measured from the x-rays (lateral view) of 86 Malaysians adults. The mean LLA was measured between L1 and S1 using the Cobb’s method. The variations in the LLA with respect to age, gender, body mass index (BMI), waist to hip ratio and low back pain (LBP) were recorded and analysed using SPSS. Mean LLA was observed to be significantly higher in females and subjects with increased waist to hip ratio (indicating abdominal obesity). Variations in the LLA with respect to age, BMI and LBP were not found to be significant. Mean LLA observed in this study will provide a baseline reference value for Malaysian population. It can also be beneficial to physiotherapists and orthopaedicians for a general evaluation of lumbar spine and recommendation of rehabilitation measures.

KEYWORDS: Lumbar lordosis; BMI; W/H ratio; LBP
Effect Of Selective Cox-2 Inhibitors On Castor Oil Induced Diarrhea In Rats

S. B. Bhawar, B. M. Patil
sbbhawar@rediffmail.com
Pravara Rural College of Pharmacy Loni

ABSTRACT:
Secretory diarrhea can result from bacterial toxins, reduced absorptive surface area caused by disease or resection, luminal secretagogues circulating secretagogues & medical problems that compromise regulation of intestinal function. Antidiarrheal agents remove secretagogues from the intestinal tract, stimulate fluid absorption, and inhibit electrolyte movements.
Castor oil is an effective laxative. Perfusion of the rat intestine and colon with ricinoleic acid, the active constituent of castor oil, produces fluid and electrolyte accumulation. Ricinoleic acid increases mucosal permeability of intestine and the production of cyclic AMP. The aim of present study was to investigate the role of COX-2 in the diarrhea and secretory response to castor oil. Ricinoleic acid reversed net water absorption into net secretion. It markedly increased the PGE content in the gut lumen suggesting prostaglandin (PG) involvement in the action of ricinoleic acid. Further studies supported that indomethacin, an inhibitor of COX, that synthesizes PGs, significantly inhibited castor oil induced diarrhea. Therefore it is clear that PG is involved in the mechanism of diarrhea induction by castor oil in rats. Further studies suggest that in GIT, COX-1 acts as constitutive PG producer, thereby protecting mucosa whereas COX-2 mRNA and protein have been shown to be induced rapidly in inflammatory sites of the stomach and colon. Thus, COX-2 derived PG presumably plays a role in the repair process of gastritis, ulcers and colitis. Recent data suggests that celecoxib, a selective COX-2 inhibitor reduces diarrhea, a side effect of an anticancer agent, CPT-11.
In the present study, we have studied the effects of selective COX-2 inhibitors celecoxib and rofecoxib on castor oil induced diarrhea and fluid and electrolyte secretion in anesthetized rat colon in order to understand contribution of COX-2 derived PG in castor oil induced fluid and electrolyte secretion. We conclude that castor oil induced diarrhea and secretory effects may involve COX-2 regulated pathway. This study implicate that COX-2 may be a target for the treatment of diarrhea associated with prostaglandin release.

KEYWORDS: Diarrhea, Prostaglandin, castor oil, Celecoxib, Rofecoxib, Indomethacin
e- Pravaracare: An initiative for Digitalization in Community Pharmacy to Maintain Health Record

Santosh B Dighe
sbdigheprcop@gmail.com
Department of Pharmacology,
Pravara Rural College of Pharmacy, Pravanagar

ABSTRACT:
Today, community pharmacists play an vital role in any country as they take responsibility for patient’s medicine related needs for access to healthcare. However, in asian counties, only the supply of medicines is the core activity of the community pharmacist. Most community pharmacists in the India still hardly provide patient-oriented service. The role of the pharmacists in the community, and with it their medicine management, may change in the wake of the rapid growth of domestic medicine output and national healthcare expenditure. The digitalization will help to collect the patient medication record from birth to till date. This collected information will be saved to server and will be available 24X7 for patients and physician. These digital medical records databases will become more cost-effective and result in improved patient outcomes.

Healthcare professionals using data-driven health records will be on the cutting edge of providing patient care; using these tools, they will be able to catch human error, track therapies, monitor effectiveness of treatments, and make predictions about outcomes throughout the entire course of a patient’s lifetime. With respect to the profession of medicine and malpractice, using digital medical records in software allows for increased oversight and lowered liability.

e- Pravaracare is android software which will help us to maintain the digital record of patient.

KEYWORDS: Keyword: e- Pravaracare, digitalization, community pharmacy, health record
Mucoadhesive nanostructured lipid carrier for tailoring ocular drug delivery in keratomycosis

Ishwari Choudhary, Preeti K. Suresh
ishu.faith.1204@gmail.com; suresh.preeti@gmail.com
University Institute of Pharmacy Pt. Ravishankar Shukla University Raipur C.G. India.
University Institute of Pharmacy Pt. Ravishankar Shukla University Raipur C.G. India

ABSTRACT
Keratomycosis represents one of the major causes of infectious keratitis that has a worldwide distribution ranging from 17-36%. Regional distributions of corneal ulcers in India are 7.3% in Northern India, 32% in East India, 38.9% in West India and 32% - 39.8% in Southern India. This variation in the incidence of keratomycosis in Indian population is predictable and can be attributed to the fact that it is more common in the tropical and subtropical regions than in the temperate regions.

The ocular surface has high vulnerability to potential environmental, physical and biochemical insult due to its anatomical location and functional attributes. For most of the diseases of the anterior segment, topical instillation of eye drops is the preferred and conventional route of treatment. But after eye drop administration the contact time of the drug on the ocular surface is only a few minutes, leading to poor bioavailability issues.

The present study to cases on new aspects of mucoadhesion interaction and antifungal drugs used in ocular therapies, with unique prominence on the advances cognizable in nanostructured lipid carrier system.

KEYWORDS: Ophthalmic delivery, mucoadhesive system, keratomycosis, NLCs, Ocular.
Influence of Gender on Learning Style Preferences among Undergraduate Students of Various Disciplines of Education
Sherly Deborah G, Theingi Maung Maung, Usha Kumari, Diwakar Aiyaloo, Harini Narayanam
visitsherls@gmail.com; drtheingi68@gmail.com; ushaharischandran@gmail.com; drdiwakar52@gmail.com; nihari83@gmail.com
AIMST University, Semeling, 08100 Bedong, Kedah, Malaysia.

ABSTRACT:
Learning style refers to gathering, processing, interpreting, organizing, and thinking of various information. Each student acquires information through different learning styles. In the contemporary, it is essential for the students to know their own learning style so that they can involve actively in processing information and thus maximizing their learning process. The aim of our study was to analyze the influence of gender on learning style preferences among undergraduate students of various disciplines of education from selected Indian universities. This cross sectional study was conducted in selected Indian universities. Final year students of various disciplines of education who were willing to participate in the study were selected. After obtaining their consent for participation, hard copies of VARK questionnaire including the demographic details was administered to the students to analyze their preferred learning styles. In general, there is no gender difference in preference style on visual, aural and kinesthetic learning but female students show more preference on read/write learning than males. In BE and BDS, male students mostly prefer visual learning style than female counterparts. However, visual learning is more preferred by female students in other disciplines (BBA, BPT, BALLB, B.Sc Nursing). Therefore, this study will help in empowering the students to learn more effectively by having an insight on the study skills suggested for their preference modality.

KEYWORDS: Learning Styles, VARK questionnaire, Gender
Identification of traditional herbal water recipes to minimize the usage of plastic water bottles at hospitality sector

J. Yuvaraj, Arun A
yuvaraj71626@gmail.com; arun_asan1979@yahoo.com
Vels Institute of Science Technology and Advanced Studies

ABSTRACT:
Background: Water - the elixir of life is also being a medium to spread many communicable diseases. The scarcity and lack of safe drinking water have been the cause for high prevalence of death rate than war or terrorism in the world. Objective: The study reviews effects of water pollution, usage and ailing effects of plastics in provision of safe drinking water at hospitality sector and gives alternative and initiative suggestions to overcome those environmental crises by formulating natural and traditional methods of water treatment to serve healthy herbal water.

Method: Natural ayurvedic ingredients apt for treating water are explored, a systematic method of water treatment is formulated with the identified ingredients. The water is served to 30 panelist members with no regard to their age or gender. The opinion about their preference towards the organoleptic quality of the served water is recorded. The test is done with water from various part of the city.

Result: Water samples being served have a good score of acceptance among the panelist members Nannari water (Sample 1) has the prime acceptance than other samples.

Conclusion: The study exposes treating water with these natural ingredients inhibits infectious organism present in water and improves the micronutrients and nutritional value of drinking water. Besides promoting the human health it also reduces the usage of plastics and sustains the environmental wellness.

KEYWORDS: Drinking Water, Plastic Bottles, Tradition, Ingredient
Mechanism of Fibrinolytic Disorders in Obesity
Ibrahim, KK1,3, Hasnah, Buhari2, Yoke, Keong Y2, Sabariah, M Noor1*
nanamarye2009@gmail.com; md_sabariah@upm.edu.my
1Department of Pathology, Faculty of Medicine and Health Sciences, University Putra Malaysia (UPM);
2Department of Human Anatomy, Faculty of Medicine and Health Sciences, University Putra Malaysia (UPM);
3Department of Haematology, School of Medical Laboratory Sciences, College of Health Sciences, Usmanu Danfodiyo University (UDU), Sokoto, North-Western, Nigeria.

ABSTRACT:
Normally, endothelium produces and releases substances that regulate and maintain the aggregation of platelet, coagulation and fibrinolytic systems. Fibrinolytic system represents a vital mechanism responsible for the protection against endothelial dysfunction and subsequent intravascular thrombosis. Molecular links between coagulation and fibrinolytic systems allow localize and accurate removal of fibrin deposits while ensuring constant blood flowing and preventing blood loss. Fibrinolytic system acts to coordinate the interaction of activators, zymogens, enzymes, cofactors and receptors, and inhibitors to dissolve fibrin deposition at any site of injury without systemic adverse effects. During tissue repair, inflammation or haemostasis, fibrin must be removed to restore the normal tissues structures and functions. The association between obesity, endothelial dysfunction, haemostatic factors and impaired fibrinolysis explained that obesity is characterized by the increased levels of circulating von Willebrand factor (vWF), fibrinogen, tissue factors (TF), factor VII, VIII and FX, further contributing to a hypercoagulable state. The Impairment of fibrinolytic system in obesity has been attributed to elevated secretion of vascular endothelial plasminogen activator inhibitor (PAI-1), abnormal thrombin activatable fibrinolytic inhibitor (TAFI) and enhanced platelet activation which is linked to the development of thrombosis progressing to cardiovascular diseases. This article reviews the molecular mechanisms involved in fibrinolytic disorders associated with obesity. The endothelial dysfunction and associated thrombosis leading to cardiovascular diseases are discussed. Developing effective physical activity and lifestyle modifications are the initial strategies to minimize obesity and its related metabolic syndromes.

KEYWORDS: Keywords: obesity, endothelial damage, fibrinolytic disorders, thrombosis, the linking mechanisms.
A Cadaveric Based Morphometric Analysis Of The Obturator Nerve In Thigh Region Of Malaysian Cadavers

Shuvagata Aditya, Savinaya, Jagadeesh, Kartik Saxena
drshuvagata.lopa@gmail.com; savinayabelvai@gmail.com; drdjayadessh@gmail.com; drkartiksaxena@gmail.com
AIMST University, Kedah, Malaysia

ABSTRACT:

Background:
The obturator nerve is one of the very important nerves of the thigh region, which has importance in the field of Anatomy and in various clinical fields.

Objective:
This study was the first attempt to analyze the distances of the obturator nerve exit zone (ONEZ) of the obturator foramen (OF), from the various important landmarks of thigh region, involving Malaysian cadavers.

Materials and methods:
This study was conducted on seventy eight adult, cadaveric and disarticulated, lower limb specimens of both genders. All measurements were recorded with the help of digital Vernier caliper.

Results:
The average distance from the anterior-superior iliac spine (ASIS) to the ONEZ of OF was 107.86 mm ± 6.81 (right) & 106.73 mm ± 6.50 (left). The mean distance from the pubic tubercle (PT) to the ONEZ of OF was 29.99 mm ± 3.90 (right) & 27.05 mm ± 3.50 (left). The mean shortest distance from the inguinal ligament (IL) to the ONEZ of OF was 16.93 mm ± 1.04 (right) & 17.15 mm ± 1.05 (left). The average length of the IL from the ASIS to the point 3 was 93.97 mm ± 6.89 (right) & 95.66 mm ± 6.39 (left). The mean length of IL from the PT to point 3 was 21.24 mm ± 2.79 (right) & 20.99 mm ± 2.13 (left). The average length of the obturator nerve exposed between the ONEZ of OF and the adductor longus was 38.75 mm ± 3.16 (right) & 40.47 mm ± 2.68 (left). The mean shortest distance from the ONEZ of OF and the femoral artery was 29.71 mm ± 1.03 (right) & 26.33 mm ± 1.07 (left).

Conclusion:
This knowledge will not only help the future researchers but will also go a long way in assisting the clinicians in preventing iatrogenic nerve injuries.

KEYWORDS: Obturator nerve, obturator nerve exit zone (ONEZ), obturator foramen (OF), anterior-superior iliac spine (ASIS), pubic tubercle (PT).
Current Scenario on Pending Abbreviated New Drug Application’s Suitability Petition

Goli Vinitha¹, Mukesh Dua², Muddukrishna BS¹

krishna.mbs@manipal.edu

¹Department of Pharmaceutical Quality Assurance, Manipal College of Pharmaceutical Sciences (MCOPS), MAHE, Manipal, Karnataka, India;
²Associate Vice President, Regulatory affairs, Biological E Limited, Telangana, India

ABSTRACT: Suitability Petition (SP) is a petition (request) to Food and Drug Administration to permit the filing of an Abbreviated New Drug Application for a drug that differs from the Reference Listed Drug. According to FDA, response timeline is 90 days. While submitting the Suitability petition to the FDA the applicant should submit in the following format: a) Action Requested, b) Statement of Grounds, c) Environmental Assessment d) Economic Impact e) Certification by applicant. A type of citizen petition submitted in compliance with 21 CFR 10.30 requesting FDA to approve or disapprove a specific change. If FDA approves a SP, the generic manufacturer can file for approval of ANDA or 505(b) 2 or 351k application for the requested change. Suitability Petition contains information of the RLD and Proposed change (Comparisons) by Generics.

KEYWORDS: ANDA, FDA, Suitability Petition
The awareness of text neck in medical and dental undergraduate students and correlation of smartphone usage related neck postures and profession-related ergonomic postures leading to early development of text neck symptoms.

Sudheesh Kakunath Mani, Nandini Kumari Katta, Gary Saw Jun Tiek, Goh Jun Jie, Goh Pei Yee
sudheeshkm7@gmail.com
AIMST University, Malaysia

ABSTRACT:
Purpose Excessive usage of smartphones and other handheld devices with unfavorable neck postures can lead to a medical condition known as text neck. Medical and dental students who are already prone to profession related musculoskeletal disorders may be predisposed to text neck symptoms early due to a synergistic effect. The purpose of this study was to evaluate the awareness of text neck among medical and dental professionals and also to correlate whether their professional work posture acts as a risk factor for development of text neck symptoms.
Experimental method: A total sample of 300 participants from BDS and MBBS were randomly selected and administered a structured questionnaire containing 5 sections related to smartphone usage and professional work.
Result: Smartphones were the most commonly used handheld device and a significant amount of time was spent on using them. The awareness level among both groups were found to be insufficient. The number of students who experienced smartphone usage related and professional work induced musculoskeletal pain were insignificant group.
Conclusion: Though a direct correlation between the smartphone related neck pain and professional ergonomics was not obtained, it was worth noting that a few samples experienced musculoskeletal pain related to both entities. The young age group of samples may be a factor for the insignificant results as they have an excellent adaptive capacity. Further research is needed overcoming the drawbacks of the current study given the current scenario of technological developments and excessive use of smartphones which is on rise at an alarming pace.

KEYWORDS: Text neck, Musculoskeletal disorder, Smartphone, Dental, Medical
In-vivo activity of nano-vesicular 5-alpha reductase enzyme inhibitor following topical delivery for the treatment of androgenic alopecia

Shweta Ramkar, Preeti K. Suresh, Ravishankar Pandey
shwetaramkar@gmail.com, suresh.preeti@gmail.com, rspandey1@gmail.com
University Institute of Pharmacy, Pt. Ravishankar Shukla University, Raipur, India- 492010; SLT Institute of Pharmaceutical Sciences, Guru Ghasidas Vishwavidyalaya, Bilaspur, Koni, India – 495009

ABSTRACT:

Object: Androgenic alopecia (AGA) is the loss of hair mainly due to the action of dihydrotestosterone (DHT) on its receptors in the hair follicle. Dutasteride is a 5-α reductase inhibitor indicated for the treatment of men with AGA. On the administration of dutasteride via oral route, it may produces systemic side effects related to sexual functions. Topical administration of dutasteride using lipid based carrier systems can improve and expand the current therapeutic range and can avoid the systemic side effects of the drug.

Method: In-vivo testing of hair growth need to be developed to formulate the topically applied formulation. Using testosterone injection androgenic alopecia was developed in the male albino rats of two months in age. Rats were shaved and formulations containing drug were applied on them. Hair density was the main factor of growth considered, followed by general hair growth appearance of the rat. Hair density was evaluated at the beginning of the study and 21 days after the last dosing of testosterone injection as well as formulations. Result: Result shows that the topically formulated nano-vesicle formulation was more effective than the other comparative formulations and it achieved an increased rate of hair growth and increased hair density. Dutasteride reduces the conversion of testosterone to DHT in the hair follicles and thus diminishes the activation of androgenic receptor by the higher affinity androgen.

KEYWORDS: AGA, 5-alphareductase enzyme, Testosterone, DHT, Topical, Nano-vesicle.
Phytochemical Screening, Total Flavonoid And Phenolic Content Assays Of Various Solvent Extracts Of Musa Sapientum

Thant Zin1*, U.S. Mahadeva Rao1, M. Bala Sundaram2

victortz51@gmail.com, raousm@gmail.com, balabcaimst@gmail.com

1Faculty of Medicine, Universiti Sultan Zainal Abidin (UniSZA), Kota campus, 20400 Kuala Terenganu, Terenganu, Malaysia.
2Faculty of Medicine, AIMST University, Semeling 08100, Sungai Petani, Malaysia.

ABSTRACT:
Flavonoids represent the most common and widely distributed group of plant phenolics and are abundant in foods; quercetin and rutin are the flavonoids most abundantly consumed. Musa sapientum is one of the well-known plants of the Musaceae family that have been used in traditional medicine since hundred years to alleviate various diseases and health problems. The objective of this research is to conduct the preliminary phytochemical screening, total flavonoid and phenolic contents assays of various solvent extracts of tepal of Musa sapientum. Phytochemical screening was carried out according to the method of Trease and Evans, total flavonoid content was measured by the aluminium chloride colorimetric assay and total phenolic content was estimated spectrophotometrically by Folin-Ciocalteau method. Preliminary phytochemical screening reveals the presence of phenolics, flavonoids, alkaloids, tannins, terpenoids in all the three different extracts (methanolic, ethanolic and aqueous). Polar solvents are frequently used for recovering polyphenols from plant matrices. The most suitable solvents are aqueous mixtures containing ethanol, methanol, acetone, and ethyl acetate. Tepal methanolic extract has the richest content of both phenolics and flavonoids i.e. (5.17 mg GAE/g and 0.36 mg QE/g) respectively, and aqueous extract was the least i.e. (2.02 mg GAE/g and 0.214 mg QE/g). All the extracts were not significantly different with one another (p>0.05). It can be hypothesised that the high contents of phenolic compounds of tepals of Musa sapientum indicated that these compounds contribute to the antioxidant activity and can be regarded as promising plant species for natural sources of radical scavenging activity with potential value for treatment of many life threatening diseases. The process of extraction and identification of active principles responsible for the free radical scavenging property of tepal extract of Musa sapientum through bioactivity guided fraction is under progress in order to understand the possible mechanism of action. Utilization of this tepal will be of advantage to mankind and increased in its consumption will help in prevention of chronic life style diseases.

Keywords: Musa sapientum, Phenolics, Flavonoids, Alkaloids, Tannins, Terpenoids.
Escalating Focus Of Indian Medicinal Plants In Treating
The Worldwide Health Issue: Diabetes

Akhilendra Tiwari, Rajiv Saxena, Neelesh Malviya, Naveen Chaudhary
akhilendratiwari81@gmail.com
Mandsaur University, Mandsaur

ABSTRACT:
The incidences of lifestyle diseases are very common and large proportion of population is getting affected. The cases of diabetes, obesity and cardiovascular diseases had shown enormous progression in the last decade and evolved as the most focused area of drug discovery and formulating research. Herbal medicines are also contributing as an alternative therapy, due to their vast efficiency in disease management and also these medicines have less or none side effects. Indian herbs are getting popularity with the scientific exploration of its rich flora and fauna for anti diabetic potential. Many Indian medicinal plants are worldwide used in herbal preparations and people are striving them for the achievement of good health in case of chronic cases of diabetes also. Plants like Eugenia jambolana, Allium cepa, Pterocarpus marsupium, Syzigium cumini, Trigonella foenum graecum, Gymnema sylvestree etc are few extensively explored plants. The search of new molecule and phytopharmaceutical from many such Indian herbs for the effective treatment and management of diabetes is the thrust area of research. Many anti diabetic polyherbal formulations prepared from Indian medicinal plants are also available in the market and becoming the preferred choice in the long term treatment and management of diabetes. The global acceptance had laid to the development and growth of many new herbal preparation industries and now they are also contributing a major share in the health care product market both globally as well as in the domestic market.

KEYWORDS: Key words: Indian medicinal plants, alternate therapy, diabetes, herbal preparation industries
In Vivo Antidiabetic Effects Of Aqueous Methanolic Bark And Leaf Extract Of Avicennia Marina

Saminathan Kayarohanam, Ashok Kumar Janakiraman, Vetriselvan Subramaniam
ashok@ucsiuniversity.edu.my; drvetriselvan@mahsa.edu.my
Faculty of Bio-economy and Health Sciences Geomatika University College, Kuala Lumpur, Malaysia

ABSTRACT:
Objective: The objective of the study was to investigate the in vivo antidiabetic effects in the aqueous methanolic extract of bark and leaf part of Avicennia marina.
Methods: The animals were separated into five groups and each group has six number of Wister rates and a total number of 30 Wister rats (24 diabetic surviving rats, 6 normal control rats) were used. Antidiabetic potential of leaf and bark extracts of Avicennia marina was studied with Streptozocin - Nicotinamide injected type II diabetic model. Estimate the effect of Avicennia marina leaf and bark extract on body weight (g.), Serum glucose level (mg/dL), haemoglobin, glycosylated haemoglobin (HbA1C) and total protein level of normal and diabetic rats.
Results: The increased body weight, decreased blood glucose, glycosylated haemoglobin and other biochemical parameters level were observed in diabetic rats treated with bark and leaf extract of Avicennia marina compared to diabetic control rats. The diabetic rats treated with both parts of the plant extracts were produced the significant reduction in blood glucose level. This indicates the bark and leaves part of the plant extract was able to possess the ability to manage glucose level as well as controlling muscle wasting.
Conclusion:
In conclusion, the present study clearly demonstrates that the Avicennia marina leaf and bark extract the lowering blood glucose action in diabetic condition. Further, unambiguous mechanisms and sites of these activities and isolation of active constituent of the extract are still to be determined.

KEYWORDS: Avicennia marina, antidiabetic, Streptozocin
Phytochemical Screening Of Crude Extracts Of Some Indian Medicinal Plants With Special Emphasis On Their Antidibetic Activity

Tulsidas Nimbekar, Co-author, Ashish Jain, Pradeepkumar Mohanty, Adeshkumar Meshram

tnimbekar@gmail.com

Presenting author- Bajiraoji Karanjekar College of Pharmacy, Sakoli, Dist. Bhandara, Maharashtra 441802 India
Co-author- School of Pharmacy, LNCT University Bhopal M.P. India
School of Pharmacy, LNCT University Bhopal M.P. India
Dr. Arun Motghare college of pharmacy, Kondha, Bhandara, Maharashtra- India

ABSTRACT:
The present scientific investigation deals with the extraction of some Indian medicinal plants include, Manilkara hexandra Roxb. stem bark (Sapotaceae), Strychnous Potatorum Linn. dried seeds (Loganiaceae), Salacia reticulata Wight. stem bark (Celastraceae) and identification of chemical constituents by using preliminary phytochemical tests. The extracts were screened for their potential in-vitro anti-diabetic studies so as to ensure the biological potency of the plant. The study also includes qualitative screening of the phytonutrients, Free radical scavenging activity by DPPH assay method and assessment of total antioxidant activity by phosphor-molybdate assay method were evaluated. From the study we revealed that the all plants contain various classes of secondary metabolites and also possess a moderate anti-diabetic activity in terms of alpha amylase inhibition.

KEYWORDS: Manilkara hexandra, Strychnous Potatorum, Salacia reticulata, Anti-diabetic activity, Alpha amylase inhibition.
Global Scenario In The Use Valuable Indian Herbal Medicines For Effective Management Of Obesity

Akash Tiwari, Rajiv Saxena, Neelesh Malviya
bholu22@rediffmail.com
Mandsaur University, Mandsaur

ABSTRACT:
Nutrition and life style related disorders like obesity, diabetes, sleep disorders, hypertension etc. are one of the major causes of deaths and other illnesses in many of the developed countries. The modernization of our diet with high energy, high lipid containing foods is a major cause and less physical work or energy expenditure have encroached in our daily routine. Both the urban as well as rural population of world is facing the similar challenges. The differences is, rural population is not aware of the causes and even do not know the best practices to come out of it and the urban population is not much working on resolving the situation may be due to adaptation of the lifestyle, scarcity of time, work pressure and stress. Indian herbs have scientifically been explored to find out the more effective and economic way to treat obesity. The hypolipidaemic activity of many Indian herbal medicines like Pongamia glabra Vent. Commiphora wightii (Arn.), Pterocarpus marsupium Roxb, Celastrus paniculatus Willd, Aegle marmelos (Linn) etc. have been evaluated and many herbs like Dioscorea bulbifera Linn. have shown hunger depression activity. The continuous research on ethnopharmacological evidences on anti obesity potential of Indian herbal drugs has drag the attraction of many Pharmaceutical Industries. The popularizations of the alternate medicines worldwide have gain tremendous focus since the last decade for the effective management of obesity by the use of Indian herbs both in developed as well as developing country.

KEYWORDS: lifestyle disorder, Obesity, Indian herbs, hypolipidaemic activity
Self-managing Diabetes Mellitus Using Crude Herbs Among Patients: A Cross-sectional Study

Chee Yan, L; Anisshaonn, V; Loganathan, A
lcyceline96@gmail.com; anissha@1utar.my; annal@utar.edu.my
Department of Allied Health Sciences, Faculty of Science, Universiti Tunku Abdul Rahman, Kampar, 31900, Perak, Malaysia

ABSTRACT:
Globally and in Malaysia, the prevalence of diabetes mellitus (DM) is on the rise. Although modern medicine obtained positive impacts, yet there are certain limitations encountered in the management of DM due to medications adverse effects and non-compliance by the patients themselves. In previous studies, herbs have been valued as a supplement in treating DM. Hence, this study aimed to determine the use of crude herbs by patients in managing DM. The descriptive-based cross-sectional study design was employed among patients attending KlinikKesihatan Kampar, Perak. A self-designed questionnaire was utilized to interview patients aged 18-year-old and above with DM condition. The data was analysed using SPSS ver. 25. A total of 106 DM patients were recruited from January till March 2019. The prevalence of herbs users among DM patients was 26.4%. The socio-demographic details of DM patients were: aged between 56 - 65 years old, females (62.3%), Malay ethnicity (45.3%), possesses secondary education (48.1%) and housewife (55.7%) with no incomes (77.4%). A total of 22 types of crude were identified used by DM patients for self-managing DM, for example, bitter gourd (Momordica charantia) and apple (Mallus pumila). The fruits decoction of bitter gourd was used to reduce glucose level while blended apple in a form of juice was used to reduce blood sugar, blood pressure and increase the fullness of the stomach. In conclusion, the present study stresses the need to ensure healthcare professionals awareness about the use of herbs while treating DM and help the DM patients to make an informed decision on the crude herbs.

KEYWORDS:
Diabetes mellitus, Crude herbs
Development of fingerprinting methods (UV, HPLC & HPTLC) in Navasaya Churna

Dr Nirmal Dongre
dongrenirmal@gmail.com
Institute of Pharmaceutical Sciences, SAGE University, Indore Madhya Pradesh, India

ABSTRACT:
Ayurvedic formulations are available in variety of dosage form i.e. solid, semisolid and liquid dosage forms. The most popular ayurvedic formulation is solid dosage form and has captured a major share of world market in ayurvedic formulations. Formulation such as churna, gutika, and vati has gained popularity due to convenience of administration, stability and uniformity. The present work is designed to develop fingerprinting methods of formulations Navasaya Churna which is official in Ayurvedic Formulary of India, Ayurvedic Pharmacopoeia of India and cited in standard traditional literature of ayurveda i.e. Shusrut Samhita, Bhasaijya Ratnavali, Charak Samhita etc. The selected formulation is mentioned in list of essential ayurvedic drugs recommended by Central Council of Ayurveda. Navasaya Churna, is formulation which are manufactured on large scale and used frequently by the physician of the country whereas are described in classical Ayurvedic text and are manufactured by the state pharmacies for their use in Ayurvedic hospitals and dispensaries Selective and efficient analytical methods are required not only for quality assurance but also for authentication of herbal formulations. A simple, rapid and valid UV, HPLC, HPTLC fingerprint method has been developed. The estimation was carried out with three laboratory batches and one marketed formulation of Navasaya Churna and crude drug containing piperine, plumbagin, gallic acid and tannic acid for UV and piperine, gallic acid and plumbagin for HPLC and HPTLC

KEYWORDS: Churna, Fingerprinting methods, Ayurveda, Piperine.
In vitro studies of NLCs based topical hydrogel for co-delivery of dually acting bioactives for effective treatment of psoriasis

Manju Rawat Singh, Deependra Singh
manjursu@gmail.com; deependraiop@gmail.com
University Institute of Pharmacy, Pt. Ravishankar Shukla University, Raipur, Chhattisgarh, 492010, India;
University Institute of Pharmacy, Pt. Ravishankar Shukla University, Raipur, Chhattisgarh, 492010, India

ABSTRACT:
Psoriasis is a complicated immune-related skin disorder of atypically separating keratinocytes. The topical treatment approaches, with the current medication treatment, are lavish in focusing on ailment indications because of poor retention and denied skin infiltration causing untoward impacts. In the present examination, two diversely acting bioactives were stacked in nanosized NLCs for accomplishing the targeting parts of meds and portrayed for size, shape, surface morphology, entanglement, and medication loading. Improved medication stacked NLCs were then independently consolidated into the gel and studied further. Both the bioactives stacked NLCs demonstrated appropriate medication release from lipocarrier during 72 hours while the decrease in medication discharge was seen because of extra obstructions indicated by gel network. The in-vitro studies demonstrated that NLCs fundamentally improved medication infiltration through the skin and successfully control the incendiary and proliferative signs of psoriasis.

KEYWORDS: psoriasis, hyper proliferation, keratinocytes, bioactives, curcumin, NLCs based gel.
Contraceptive Action Of Neem Leaf Extracts On Spermicidal Activity In Human & Rat Spermatozoa

Nripendra Singh
nripendra2007@gmail.com
Department of Pharmaceutics, VBS, Purvanchal University, Jaunpur, Uttar Pradesh, India - 222003.

ABSTRACT:
In the midst of the global epidemics of both unwanted pregnancies and sexually transmitted infections (STIs), possibilities that provide protection with minimal side effects are ideal. Therefore demand is increasing for vaginal contraceptives which protect from infection too. The spermicidal activity was determined using a modified method of Sander and Cramer. The extract was mixed with sperm suspension containing sperm. The mixture was mounted on the stage of Polarized microscope for 20 s at 100x (oil immersion) and observed for motile sperm. The spermicidal activity of novel aqueous neem extract on rat spermatozoa was same as in case of human spermatozoa. The MEC of NANE was found to be 2.5 mg/ml and 5 mg/ml in rat and human spermatozoa respectively. The present study reveals the novel, single step, cost effective contraceptive preparation and evaluation of its in-vitro spermicidal effect in human as well as rat spermatozoa.

KEYWORDS: Contraceptive; Neem leaf extract; Novel method of extraction; In-vitro spermicidal activity in human spermatozoa.
Development of validated Chemical fingerprint for an ancient herb used in Ayurvedic formulation

Ravindra Kumar Pandey, Swati Dubey, Beena Gidwani
ravindraiop@gmail.com
Columbia Institute of Pharmacy, Tekari, Near Vidhan Sabha, Raipur, Chhattisgarh, INDIA. PIN-493111

ABSTRACT:
Dasmularistha is a most trusted ayurvedic formulation among the ayurvedic medicines. Dasmularistha is mentioned throughout the ancient literature of ayurvedic medicine and used for postpartum disorders, postpartum depression, and sluggish uterus. A simple, sensitive, selective, precise and robust high-performance thin-layer chromatographic (HPTLC) method was developed and validated for the determination and routine analysis of apigenin in a Traditional Indian formulation (Dasmularistha) & its crude drug extracts. The validation parameter of developed HPTLC Method was found to be reproducible. Analysis was performed on TLC aluminium plates pre-coated with silica gel 60F-254 as the stationary phase. Linear ascending development was carried out in twin trough glass chamber saturated with mobile phase consisting of toluene: ethyl acetate: formic acid (6:2:2). Camag TLC scanner III was used for spectro densitometric scanning and analysis in absorbance mode at 265 nm. The system was found to give compact spots for apigenin (Rf value of 0.39 ±0.02). The HPTLC linear regression analysis data for the calibration plots showed good linear relationship (r² = 0.9995±0.0003) in the concentration range 200–600 ng spot−1 with respect to peak area, moreover the method was validated for precision, recovery, robustness and ruggedness according to the International Conference on Harmonization (ICH) guidelines. The apigenin content was quantified and estimated from the formulation & the Gmelina arborea plant part. Statistical analysis of the data showed that the method is reproducible and selective for the quantitative determination of apigenin.

KEYWORDS: Dasmularistha, HPTLC, Validation
Development and Characterization of A Herbal Formulation of Plant Extract for Treatment of Filariasis

Roman Kumar Aneshwari, Vishal Jain.
romaneshwari2588@gmail.com
University Institute of Pharmacy, Pt. Ravishankar Shukla University, Raipur (C.G.) , India

ABSTRACT:
Filariasis is caused by a group of parasitic worms that are transmitted through the bites of infected mosquitoes. Globally, 947 million people in 54 countries are at a risk of getting affected by filariasis. The purpose of the present work is to determine antifilarial effect of a plant extract with the help of in-vitro model and formulate and evaluate novel herbal formulation of the plant Tephrosia purpurea extract for effective treatment of filariasis. The formulation was prepared using the plant ethanolic extract in different ratio and different materials. The formulation was evaluated using the following parameters like appearance, pH, Spreadability, drug release, rheological properties, extrudability useful for effective treatment of filariasis. The flavonoids content found in the plant are more effective to show better antifilarial effect. In future; in-vivo study on different animals models can further prove the effectiveness of formulation for treatment of filariasis.

KEYWORDS: Herbal formulation, flavonoids, Tephrosia purpurea, MTT
Phyto-pharmacological significance of Abelmoschus moschatus Medik.: An indigenous medicinal herb of India

Abhishek Dwivedi, Sumeet Dwivedi
abhiherbal@gmail.com; sumeet_dwivedi2002@yahoo.com
Department of Pharmacognosy, Sri Sathya Sai Institute of Pharmaceutical Sciences, RKDF University, Bhopal, (M.P.) - India;
Department of Pharmacognosy & Biotechnology, Swami Vivekanand College of Pharmacy, Indore (M.P.) – India

ABSTRACT:
India has a rich treasure of medicinal plants due to the diversity of agro-climatic conditions spread over the country from tropical to temperate zones, costal plains to high attitudes and semi-arid to highly humid evergreen forests, therefore, it is an advantageous position to produce a number of crude drugs. Abelmoschus moschatus Medik. is an aromatic and medicinal plant in the Malvaceae family, commonly known as ambrette or musk mallow or kasturi bhendi which is native to India. It is an erect hispid herbaceous trailing herb that grows up to 1.5m tall with a long slender tap root. The present study is related to the phyto-pharmacological significance of Abelmoschus moschatus Medik. a indigenous medicinal and oil yielding plant of India. The selected plants are either used by the traditional practitioners for its effect or cultivated in large quantity for its oil and have been scientifically proven for its beneficial effects. In India, roots, leaves and seeds of ambrette are considered valuable traditional medicines. The bitter, sweet, acrid, aromatic seeds are used as a tonic and are considered cooling, aphrodisiac, opthalmic, cardiotonic, digestive, stomachic, constipating, carminative, pectoral, diuretic, stimulant, antispasmodic, deodorant, and effective against kapha and vata, intestinal complaints, stomatitis; and diseases of the heart. According to Unani system of medicine seeds allay thirst, cure stomatitis, dyspepsia, urinary discharge, gonorrhea, leucoderma and itch. Roots and leaves are cures for gonorrhea. The seeds are valued for the volatile oil present in the seeds. Seed analysis report 6% mucilage, 11.1 % moisture, 31.5 % crude fiber, 14.5 % lipids, 13.4 % starch, 2.3% protein, 5% resins and 0.2 to 0.6% volatile oil.

KEYWORDS: Abelmoschus moschatus; Phytochemistry; Pharmacology; Traditional uses
Medical Tourism in India: A Contemporary Study

Susheel Kumar Indurkar, Pawan Kataria
ski2406@gmail.com; thepawankataria@gmail.com
Institute of Management, Pandit Ravishankar Shukla University, Raipur, Chhattisgarh, India

ABSTRACT:
Medical Tourism is the activity of travelling to other countries to obtain superior medical treatment, healthcare or wellness by highly skilled doctors at affordable costs, combined with leisure, fun and relaxation. Medical Tourism is trending in India and medical tourist patients from all parts of the world are flocking in. This study aims to identify the major medical treatment methods and understand the opinions and problems of foreign tourist patients regarding medical tourism in India. This study would be useful to determine the various factors which influence the decision-making, growth and development of medical tourism in India. Structured interview schedule has been used to collect the primary data from foreign medical tourist patients in the mega metropolitan cities in India using purposive sampling method. Findings reveal that factors such as low cost, easy accessibility, high scale and range of treatments provided by India differentiate it from other medical tourism destinations in the world. There are several internationally accredited hospitals equipped with the latest facilities and technologies to cater to the needs of the medical tourists. Indian hospitals have expert doctors and staff to provide cost-efficient and quick medical treatments and surgeries, while providing assistance in getting and extending medical visa. This paper also recommends some strategies for further promoting medical tourism to build and promote the image of India as a high quality medical tourism destination. The growth in India’s medical tourism market shall serve as a boon for several associated industries including hotels, medical equipment and pharmaceuticals.

KEYWORDS: Medical Tourism, Hospital, Healthcare, Travel, Tourist Patient.
5-Fluorouracil encored PLGA nanoparticles for treatment of colorectal cancer

Sunil K Jain, Aditya Nath Pandey
suniljain25in@yahoo.com
Institute of Pharmaceutical Sciences, Guru Ghasidas Vishwavidyalaya (A Central University), Bilaspur (C.G.) 495 009, INDIA

ABSTRACT:
Colorectal cancer (CRC) is a frequently detected cancer worldwide. Wheat germ agglutinin (WGA) conjugated polylactic-co-glycolic acid (PLGA) nanoparticles loaded with 5-fluorouracil (5-FU), were prepared and evaluated under in vitro conditions. Nanoparticles (NPs) were investigated for particles size, size distribution, zeta potential, surface morphology, percent drug entrapment and in vitro release of drug in the simulated intestinal fluid. Optimized NPs formulation was conjugated with WGA and further characterized by WGA conjugation efficiency, mucoadhesion, and cytotoxicity study. A decreased zeta potential i.e. -17.9±1.4 mV was observed after conjugation with WGA, demonstrated that deviations in the particle charge of NPs were owing to lectin(s) conjugation. WGA conjugated nanoparticles sustained the drug release significantly (p<0.05) over a period of 24 h when compared to the marketed formulation of 5-FU. The Higuchi type drug release kinetics was perceived from NPs, i.e. the release was mainly diffusion controlled. WGA conjugated PLGA NPs indicated considerable inhibition of colon cancer cells (HT-29 and Colo 205) in comparison with non-conjugated nanoparticles and pure drug solution. A measurable number of counts of 99mTc-tagged WFUNP3 formulation after 24h study period suggested retention of nanoparticles for a prolonged period of time in the colonic region. The blood plasma level was found to be prolonged and was detectable up to 24 h with conjugated formulations. The enhanced bioavailability and eliminated half-lives of 5-FU formulation was observed in the present study which is attributed to the WGA conjugation with designed formulations. These results suggested that WGA conjugated PLGA nanoparticles could be considered as a promising carrier for the treatment of colorectal cancer. Results suggest that the WGA conjugated NPs are more efficient carrier as compared to non-conjugated NPs for the effective management of colorectal cancer.

KEYWORDS: 5-Fluorouracil, Nanoparticles, PLGA, Wheat germ agglutinin, Gamma scintigraphy
Antibacterial Properties Of Zinc Oxide Nanoparticles On Pseudomonas aeruginosa

Ling Shing Wong, Yang Mooi Lim, PohFoong Lee, Sinouvassane Djearamane
lingshing.wong@newinti.edu.my; ymlim@utar.edu.my; leepf@utar.edu.my; sinouvassane@utar.edu.my
Department of Biomedical Science, Faculty of Science, Universiti Tunku Abdul Rahman,
Kampar, 31900, Perak, Malaysia

ABSTRACT:
In the recent days, the involvement of nanotechnology into other aspects has brought advancement in environmental and medical approach. Nanotechnology has emerged as a promising technique for various biomedical applications. Zinc oxide nanoparticles (ZnO NPs), as one of the metal nanoparticles, are widely used to treat bacteria causing skin and wound infections due to their antibactericidal effect. The current study was aimed to determine the antibacterial properties of ZnONPs on the skin and wound infection causing Gram-negative bacterium Pseudomonas aeruginosa through investigating the growth inhibitory and morphological changes caused by ZnO NPs on P. aeruginosa. The growth inhibitory effects of ZnO NPs on P. aeruginosa at 24 h was determined through percentage reduction in turbidity and colony counts upon treating with increasing concentrations of ZnO NPs from 5 to 150 μg/mL. Fourier transform infrared (FTIR) analysis was performed to confirm the functional groups involved in the binding of ZnO NPs on bacterial cell wall. Scanning electron microscopy (SEM) was done to identify the morphological changes in the bacterial cells. The results showed typical dose dependent and significant (p<0.05) growth inhibition on P. aeruginosa for all the tested concentrations of ZnO NPs from 5 to 150 μg/mL at 24 h. FTIR spectrum exhibited the involvement of biomolecules from bacterial cell wall in surface binding of ZnO NPs on bacterial cells. SEM images revealed the alterations in cell membrane, cell membrane rupture and cell fragmentation. Hence, the present study illustrated the antibacterial effects of ZnO NPs on P. aeruginosa through growth inhibition, cell membrane damage and cell fragmentation.

KEYWORDS: Antibacterial activity, Zinc oxide nanoparticles, growth inhibition, Pseudomonas aeruginosa
Formulation of nanocarrier system for the management of cancer via combination chemotherapy regimen

Narendra Kumar Lariya, Santram Lodhi, Abhishek Dwivedi, Amrendra Pratap Yadav
narendralariya@gmail.com; srlodhi78@gmail.com; abhishek.rkdfuniversity@gmail.com; amrendrapharma2009@gmail.com
Faculty of Pharmacy, RKDF University, Bhopal, Madhya Pradesh 462033 India

ABSTRACT:
Combination drug therapy for cancer treatment is accepted worldwide due to the generation of synergistic anticancer effects; restrain in multidrug resistance (MDR) or tumor resistance by different mechanisms of action and minimization of dose-dependent toxicity. Nanostructure lipid carrier system can provide a more effective approach to targeting cancer by focusing on the vascular, tissue, and cellular characteristics that are unique to solid tumors. In the present study, folic acid-conjugated (FA) nanostructured lipid carrier (NLC) co-delivering Gemcetabine (Gem) and Paclitaxel (Taxol) FA-Gem-Taxol-NLC was developed with the aim to overcome the multidrug resistance (MDR) cancer therapy. FA-Gem-Taxol-NLCs were prepared by using emulsion-evaporation method and extensively characterized for particle size, polydispersity index, zeta potential, and % entrapment efficiency which were found to be 197 ± 1.8 nm, 0.223 ± 0.05, +22.9 ± 0.2 mV and 87.9 ± 0.3% (Taxol) and 88.8 ± 0.4% (Gem) respectively. In vitro drug release study of optimized formulation was carried out using dialysis tube method. FA-Gem-Taxol-NLCs showed 78.8 and 76.8% (cumulative drug release) of Gem and Taxol respectively after 72 h in PBS (pH 7.4)/methanol (7:3), while in the case of FA-conjugated Gem-Taxol-loaded NLCs, cumulative drug release was recorded as 81.2 and 81.7% for Taxol and Gem respectively in 72 h in PBS (pH 4.0)/methanol (7:3). Further, the formulation(s) were evaluated for ex vivo cytotoxicity study. The cytotoxicity assay in human non-small-cell lung cancer cell line A549 revealed lowest GI50 value of FA-Gem-Taxol-NLCs which was 1.08 ± 0.013 μg/ml, followed by Gem-Taxol-NLCs and Gem-Taxol solution with GI50 values of 3.22 ± 0.022 and 3.86 ± 0.006 μg/ml, respectively. Findings indicated that the folic acid-conjugated Taxol and Gem co-loaded NLCs exhibited lower GI50 values as compared to unconjugated Taxol and Gem co-loaded NLCs; thus, they have relatively potential anticancer efficacy against resistant tumor. The future perspective of this study are focused on the fact that NLCs based combination drug delivery system can be attractive approach for the treatment of cancer by increasing its therapeutics efficiency.

KEYWORDS: Nanostructure lipid carrier, Gemcetabine, Paclitaxel, Multidrug resistance cancer
Nanochloroquine augmented drug delivery and overwhelmed drug resistance in Plasmodium falciparum parasites

Gorakshnath Paunikar, Lalit Pund
goraksh_pharma@rediffmail.com; lalitsworld2007@gmail.com
Mouda College of Pharmacy, Mouda, Dist. Nagpur, Maharashtra, India;
Taywade College of Pharmacy, Koradi, Nagpur, Maharashtra, India.

ABSTRACT:
Chloroquine diphosphate (CHQ) is primarily used for the treatment of Plasmodium falciparum malaria at the dose of 500mg orally or 10mg/kg parenterally. However, point mutations in Plasmodium falciparum chloroquine resistance transporter (PfCRT) protein and Plasmodium falciparum multidrug resistance protein 1 (Pfmdr1) localized in digestive vacuole membrane, are responsible for CHQ resistance. Therefore, in present investigation, dextran nanoparticles bearing chloroquine diphosphate (CHQ-DEX-NPs) were formulated by solvent diffusion method of size below 70nm with zeta-potential of -20.1±3.2mV. FT-IR, DSC and PXRD techniques confirmed the successful loading of drug in nanomatrix system with amorphous attributes. In vitro drug release analysis indicated the Higuchi pattern with diffusion controlled drug release. The IC50 of CHQ-DEX-NPs in sensitive (3D7) and resistant (RKL9) Plasmodium falciparum strains was estimated to be 0.031-μg/ml and 0.13-μg/ml significantly lower than 0.059-μg/ml and 0.36-μg/ml of CHQ. The augmented therapeutic efficacy of CHQ-DEX-NPs may be credited to deposition of tailored nanoparticles in food vacuoles of malaria parasites owing to the affinity of parasite towards DEX that consequently lower the drug resistance and improved the therapeutic index. In conclusion, CHQ-DEX-NPs must be evaluated under a set of stringent in vivo parameters to establish its therapeutic efficacy in preclinical model.

KEYWORDS: chloroquine diphosphate, nanomatrix, dextran,
Effect Of Co Delivery Of Verapamil With Paclitaxel And Cisplatin Solid Lipid Nanoparticles For Treatment Of Ovarian Cancer

Dr. R. C. Doijad
kipdean@rediffmail.com
Krishna Institute of Pharmacy, Karad, Maharashtra India

ABSTRACT:
Paclitaxel and Cisplatin are antineoplastic agent used to treat aggressive forms of ovarian, lung, head, neck, breast carcinoma, acute leukemia and treat testicular cancer. This study was aimed to design and characterize Paclitaxel loaded solid lipid nanoparticles (SLNs) and Cisplatin loaded solid lipid nanoparticles (SLNs) to achieve site specificity, reduce toxicity and sustained release pattern. Paclitaxel loaded SLNs were fabricated by microemulsion followed by probe sonication technique. In this study 32 full factorial design was employed for optimizing the concentration of lipid as Stearic acid and surfactant (soya lecithin) for the nanoparticles. The optimization was done by studying the dependant variable of particle size and % entrapment efficiency. Similarly prepared Cisplatin SLNs. The SLNs of paclitaxel and Cisplatin met all the requirements of a colloidal drug delivery system. In vitro study showed sustained release profile Therefore, in this study, we have attempted to screen therapeutic output of the strategy of co-administration of Verapamil, as P-gp modulator and anti-cancer agent, with the combination therapy of Paclitaxel SLNs and Cisplatin SLNs against ovarian cancer. It was postulated that P-gp is a family of proteins which alter the cell permeability resulting in the escape of the drugs from the tumors which often led to diminished efficacy of the drugs. Verapamil being inhibitor of P-gp is believed to reverse this effect and increased retention of the drugs at tumor site. The present study was conclusive of this postulation. The tissue distribution of Paclitaxel and Cisplatin was significantly increased by co-administration of Verapamil.

KEYWORDS: Paclitaxel, Cisplatin, Solid Lipid nanoparticles, optimization, 32 Full Factorial Design, Particle size, Verapamil.
Development of Drug Loaded Lipid Nano-Vesicular Nasal to Brain Delivery System for the Treatment of Alzheimer’s Disease

Ashutosh Pareek, Aaushi Pareek, Yashumati Ratan, Vivek Jain, Mahendra S. Ashawat
pashutosh@banasthali.in; ashu83aadi@gmail.com
Department of Pharmacy Faculty of Science and Technology Banasthali Vidyapith Banasthali-304022, Rajasthan (India)

ABSTRACT:
Purpose: Alzheimer’s disease (AD) is the major cause of neurodegenerative dementia globally and has occurrence rates more than 30% in the persons having age over 80 years. Competent drug treatment strategies are still inadequate and in recent past, more or less all the screened drugs failed to exhibit significant therapeutic effect in clinical trials. A major reason of failure is very low drug availability in the brain due to their limited uptake or passage through BBB. The nasal route appeared as the most promising, suitable and alternative approach for brain drug delivery, that bypasses the BBB and deliver the drug directly to the brain from the nasal cavity. Hence, the present study envisaged to develop lipid nano vesicular drug delivery to the brain through nasal route to increase the bioavailability and half-life of the drug.

Methods: Drug loaded Lipid Nano vesicular system (LVS) was prepared using different proportions of surfactant, cholesterol and Stearylamine (SA). The prepared formulations were subjected to various in vitro evaluation tests like determination of particle size, zeta potential, entrapment efficiency, drug polymer compatibility study, drug release study and stability study. The optimized nasal to brain drug delivery system was also subjected to in vivo pharmacokinetic study, brain uptake study, nasal ciliotoxicity study and behavioral study using Morris Water Maze Test (MWMT) to confirm safety, increased brain availability and therapeutic potential of optimized formulation.

Results: The particle size of prepared lipid nano vesicular formulations was found in between 178-240 nm. The particles size directly depends on the surfactant and cholesterol concentration. The entrapment efficiency of prepared formulations was found to be 60.24 to 74.93%. In vitro drug release study suggested that all the prepared formulations showed anomalous drug release (n = 0.78-0.87) and Highest linearity for Korsmeyer-Peppas model. In vivo pharmacokinetic and brain uptake study in wistar rates also revealed that drug concentration in Brain tissues was found significantly higher for the optimized formulations in comparison to conventional formulation given orally; while it was significantly less for nano vesicular formulation in plasma samples during the experimental period. The AUC of drug in LVS formulation (intra nasal) was half of the conventional drug solution administered orally. The AUC of drug in optimized LVS preparation was found to be seven times higher then its conventional solution administered orally.
Furthermore, in MWMT untreated rats showed a significant increase on escape latency compared to drug loaded LVS group (p < 0.01). In addition, rats treated with optimized formulation revealed an improvement on spatial learning memory compared with conventional solution. This indicated that the developed lipid nano vesicular systems constitute a suitable strategy for the delivery of drugs for Alzheimer's disease.

**Conclusion:** The results of in vitro and in vivo study revealed that the optimized formulations were safe and exhibited sustained delivery of the drug into the brain tissue. In conclusion, developed drug loaded lipid nano-vesicular nasal to brain delivery system could be a promising alternative towards a better treatment of Alzheimer's disease.

**KEYWORDS:** Lipid Nano-Vesicular, Nasal to Brain Delivery System, Alzheimer’s Disease
Formulation and Evaluation of Bexarotene Based Liposomal Topical Gel

Neelam Sharma, Surajpal Verma
pharmneela@gmail.com; shailesh.bela@gmail.com
Amar Shaheed Baba Ajit Singh Jujhar Singh Memorial College of Pharmacy, BELA (Ropar) Pb.
140111 India
Department of Pharmaceutical Sciences, Lovely Professional University, Jalandhar Punjab

ABSTRACT:
Bexarotene is a novel and special synthetic selective retinoid receptor agonist drug. It is accessible for a treatment for CTCL. The aim of the present study is to prepare liposomes of bexarotene. These prepared liposomes were further incorporated into the topical gel. Liposomes were formed in Rota-evaporator by mechanical dispersion method comprising of drug, soya phosphatidylcholine (1-3% w/v) and cholesterol (1% w/v) in numerous batches with distinctive lipids. The prepared liposomes were evaluated for particle size, transmission electron microscopy (TEM), entrapment efficiency and drug release. The promised LIPO F11 formulation was incorporated in the carbapol gel. The prepared gels were evaluated for appearance, extrudability, viscosity, drug content, homogeneity grittiness, spreadability and pH. The in vitro release profile was also evaluated for gel. The Carpool gel (1.5% w/v) shown best results amongst others in terms of stability. The promised gel was non greasy, free from grittiness and homogenous in nature. The prepared gel shown viscosity 4286.9 cps and drug content was found to be more than 93%. The prepared gel was fond to be non-irritant and having pH near to 7. In the drug release it was observed the maximum amount of the drug was deposited in the skin. The liposomal gel was found to be a good option for treatment of CTCL over the conventional topical gel in terms of removal of skin patches, minimize the reoccurrence and reduces the progress of disease.

KEYWORDS: CTCL, Bexarotene, Liposomes, Hydrogel
Development and characterization of nanocomposite clay-polymer based transdermal gels of Aceclofenac

Raut Sushil Yadaorao, Srinivas Mutalik
sushilraut01@gmail.com; ss.mutalik@manipal.edu
Manipal College of Pharmaceutical Sciences

ABSTRACT:
Aceclofenac is an NSAID, used to treat pain and inflammation. The oral administration of aceclofenac causes gastrointestinal side effects that could be overcome by administering the drug via transdermal route. We aimed to develop and characterize the nano-composite clay based transdermal gels of aceclofenac. FTIR characterization of drug with nano-composite clays indicated absence of any drug-clays interaction. Clay gels were formulated by using plain Montmorillonite (MMT) and Laponite (LP), also in combination with polymers such as HPMC K15 and Carbopol 940. Among all the MMT formulations, MMT1 (5% concentration of MMT) was optimized and among Laponite formulations LP1 (5% concentration of Laponite) was optimized based on their better drug release in 12 hours. The probable reason is HPMC K15 and Carbopol 940 forms a covalently cross linked gel networks which are irreversible systems. This mechanism is hindering the drug release from the formed clays, whereas in the MMT clays form a reversible system of physically bonded gels which helps to a better drug release property. For the optimized formulations, ex vivo release studies were performed and excellent flux was observed for MMT1 than LP1 formulation. Skin irritancy studies and anti-inflammatory studies were performed for these optimized formulations. Skin irritation studies confirm that there was no sign of erythema or oedema and also suggested the compatibility of gels with skin also no sign of behavioral changes were observed during the gel application and after the gel application. Thus, aceclofenac loaded nanocomposite clay gels were successfully developed and evaluated for anti-inflammatory effect.

KEYWORDS: Aceclofenac, nanocomposite clays, transdermal gels, polymer
Synthesis and Characterization of silver nanoparticles using aqueous extract of Barlaria longiflora leaves and their biological activities.

Jothi Muniyandi M, Jayachitra A
joyan05@rediffmail.com; jchitralab@gmail.com
Department of Biochemistry, Meenakshi Mission Hospital and Research Centre, Madurai, Tamilnadu, India;
Department of Biotechnology, School of Biotechnology, Madurai Kamaraj University, Madurai, Tamilnadu, India.

ABSTRACT:
Bio-nanotechnology has emerged up as integration between biotechnology and nanotechnology for developing biosynthetic and environmental friendly technology for synthesis of nanomaterials. In the present study, application of aqueous extract from the traditional plant Barlaria longiflora L as an efficient bio product form green synthesis of silver nanoparticles (AgNPs). Characterization of synthesized nanoparticles is accomplished through UV spectroscopy, XRD, transmission electron microscopy, and scanning electron microscopy. The functional groups of synthesized nanoparticles were identified by Fourier transform infrared spectroscopy. The bio nanoparticles were showed antibacterial activity against both gram positive and gram negative bacterium, respectively Escherichia coli and Staphylococcus aureus. Bio nanoparticles were also found to decrease the cell viability of MCF7 cell lines in vitro with IC50 values of 57.96 μg/ml and act as a controlling agent of human breast cancer. The present results revealed that biologically synthesized AgNPs exhibited multifunctional properties and used against human cancer.

KEYWORDS: Barlaria longiflora, silver nanoparticles, antibacterial activity, cell lines, human breast cancer.
Formulation Development Of Self-Nanoemulsifying Drug Delivery Systems Of Rifampicin

Vamshi Krishna Tippavajhala; Sharel Rency D Almeida
krissrcm@gmail.com; sharelrencyd@gmail.com
Department of Pharmaceutics, Manipal College of Pharmaceutical Sciences, Manipal Academy of Higher Education, Manipal, Karnataka, India.

ABSTRACT:
Rifampicin (RIF) is a broad-spectrum antibiotic used as a first line agent in the treatment of mycobacterial infections belongs to BCS class II (low solubility and high permeability). The lipid-based formulation approaches like self-nanoemulsifying drug delivery systems (SNEDDS) for oral drug delivery systems have several benefits such as enhanced solubility, permeability, reduced pre-systemic metabolism, and increased drug apparent solubility; all these factors will result in enhanced oral bioavailability of drugs with a low water solubility. So the aim of this research work is to enhance the solubility of rifampicin by the approach of self-nanoemulsifying drug delivery systems. Methodology includes pre-formulation studies, formulation development, optimization, and evaluation. Formulation development was done by using ternary phase diagrams and the formulations were optimized by Design-Expert® software version 11 using 3 level full factorial design. Evaluation of the formulations was done using parameters like particle size, polydispersity index, zeta potential, percentage transmittance, self-emulsification and dispersibility, viscosity, drug content, in vitro drug release and thermodynamic stability. Optimized formulation containing 1.5 mL of oil and 3.6 mL of Smix exhibited a particle size of 12.80 nm, PDI of 0.245, and was stable on dilution giving a clear dispersion which dispersed within 1 minute. These SNEDDS achieved around nine fold increment in the solubility and improved dissolution characteristics of rifampicin when compared to pure drug.

KEYWORDS: Self-nanoemulsifying drug delivery systems, Solubility enhancement, Rifampicin
Nanoconstructs containing supramolecular complex of carboxymethylepi-β-CD – ursolic acid for treatment of Skin Carcinoma

Amber Vyas1*, Bina Gidwani2
ambervyas@gmail.com, beenagidwani@gmail.com
1University Institute of Pharmacy, Pt. Ravishankar Shukla University, Raipur (C.G.)
2Columbia Institute of Pharmacy, Tekari, Raipur (C.G.)

ABSTRACT:
Skin carcinoma is reported to have 45% of new cases annually. Although treatment with chemotherapy leads to relief, but contributes to extensive adverse and side effects. Natural terpenoids are gaining more importance due to various advantages over synthetic drugs. Ursolic acid is a natural pentacyclic triterpenoids insoluble in water. Polymeric derivatives of natural cyclodextrins have higher complexing and solubilizing efficiency. Supramolecular inclusion systems of ursolic acid with carboxymethyl epichlorohydrin-β-cyclodextrin were prepared by kneading, co-evaporation and freeze-drying method. These inclusion systems were characterized by spectroscopy and chromatographic techniques. The complexes were then encapsulated into nano constructs lipiodal carriers. These were prepared using glyceryl behenate and miglyol as solid and liquid lipid. The main objective of present work was to utilize dual concept of Cyclodextrin complexation and nanotechnology in single delivery system. Complexation led to enhancement of aqueous solubility of ursolic acid. Optimization of nanolipoidal carriers was done by response surface methodology and was evaluated for mean particle size, zeta potential, entrapment efficiency, drug-loading and drug release study. The particle size of optimized NLCs was found to be 97.12 nm with zeta potential of -37.4 mV. In-vitro release studies showed a biphasic behaviour with higuchi’s release. Entrapment efficiency and drug loading capacity was found to be 92.6 and 21% respectively; with spherical shape and non-aggregated particles. The success of this approach contributed towards improvement in delivery of BCS class II drugs there by decreasing the dose and side-effects and increasing the therapeutic activity. Complexation and nanotechnology together in a system led to synergistic effect.

KEYWORDS: polymerized cyclodextrin, nanostructured lipid carriers, topical delivery, optimization.
Development and characterization of Mannosylated Naringenin loaded nanovesicular delivery system for Skin Carcinoma

Nikita Verma; Swarnlata Saraf

nikitaverma510@gmail.com ; swarnlatasaraf@gmail.com

University Institute of Pharmacy, Pt. Ravishankar Shukla University Raipur, Chhattisgarh ; University Institute of Pharmacy, Pt. Ravishankar Shukla University Raipur, Chhattisgarh

ABSTRACT:
Skin cancer has obtained various characteristics over the past decades. The solar radiation that contains ultraviolet rays is the prime causative factor of causing skin cancer. In this present research work, the thin film hydration method was applied for development of Naringenin loaded vesicles with much enhanced loading properties and improves incorporation of corresponding drugs. At the same time, the Quadratic model that help of the Response Surface Method was applied to observe the effects of some specific parameters maintained in the development of nanovesicles. Here, the sonication time was 15 min and delivery system F6 (with Drug:lipid ratio 1:45) provided optimum drug entrapment ability which is about 82.09± 0.34 % . The optimized formulation for average size was almost 112.04 nm with zeta potential averaging -24.4 mV. Naringenin is a dietary flavonoid possessing multidimensional properties that is used in various other diseases including viral infection, bacterial infection, diabetes mellitus, and cancer. All outcomes supports the view that Naringenin loaded nanovesicles has high entrapment and drug loading abilities.

KEYWORDS: Naringenin, Nanovesicles, Mannosylated
Assessment of therapeutic potential of steroidal nano formulation for effective treatment of psoriasis
Madulika Pradhan; Ajazuddin; Amit Alexandar; Manju Rawat Singh; Deependra Singh
madhulika.pradhan1@gmail.com
Rungta College of Pharmaceutical Sciences and Research, Kohka-Kurud Road, Bhilai, Chhattisgarh, India, 490024

ABSTRACT:
Psoriasis is an autoimmune, inflammatory skin disorder affecting about 2-5% population worldwide. Fluticasone propionate (FP), is a potent class of steroid, frequently prescribed for the topical therapy of psoriasis. Objective of the present study was to fabricate and assess therapeutic potential of Fluticasone propionate enriched nanogel for effective treatment of psoriasis. In the present study, FP-NLCs were successfully developed, optimized and evaluated. Particle size and zeta potential of nanocarrier was found to be 123±82 nm and zeta potential was found -38.6±38. FP-NLCs enriched nanogel and plain FP-gel were further developed which exhibited acceptable pH, viscosity and spreadability required for topical delivery. Prolonged drug release from nanogel was reported. Ex vivo skin retention studies revealed that FP bound inside the NLCs (nanogel formulation) exhibited significantly higher (p<0.05) retention of drugs in deeper layers as compared to free drug (plain FP-gel). Drug penetration to the deeper layer was also verified by CLSM study. No skin irritation was reported using nanogel. FP-NLCs nanogel also presented significantly higher (p<0.05) in vivo efficacy than plain FP-gel formulation in terms of % orthokeratosis and drug activity. In addition nanogel was found stable throughout the phase of stability study. Present findings established enhanced therapeutic potential of developed nanogel for the topical therapy of psoriasis.

KEYWORDS: Fluticasone propionate, topical delivery, psoriasis, skin, nanogel
A smart dual approach for delivery of methotrexate and PABA to colon specificity for treatment of colorectal cancer

Dr Rajeev Kumar Sharma; Prof(Dr)N.V.Satheesh Madhav; Prof(Dr.)A.K.Sharma

rk.sharma@dituniversity.edu.in; director.pharmacy@dituniversity.edu.in;
ashoksharmapharm@yahoo.com

Asst Professor, DIT University, Dehradun - 248009, Uttarakhand, India; Director, DIT University, Faculty of pharmacy, Dehradun, Uttarakhand; Vice Chancellor, SBS University, Balawala

**ABSTRACT:**
Colorectal cancer is a major health problem worldwide. It is the second most common in women, 9.4% of all cancer cases) and third most common cancer in men (10.0% of all cancer cases). Colon cancer ranks 8th and rectal cancer ranks 9th among men. As on date the drugs which are used for the management of carcinoma requires major high dose and more number of frequency of administration, uncertainty in reaching to target site preferably to colon region which offers economical burden to patient which may leads to progression of cancerous development state that causes severe complication that may leads to the highly critical untreatable conditions. In current scenario effective therapeutic management of colorectal carcinoma by chemotherapy approach offers a substantial side effects and economic burden to patients along with non compliance due to the uninvited adverse, side effects and withdraw symtoms to the patient during and after therapeutic management. The main objective of our research work is to prepare Methotrexate azo adduct with PABA for colon targeting. Methotrexate PABA azo adduct was synthesized and the effect of enzyme azo reductase was examined on the release rate of Methotrexate and PABA in the gastrointestinal contents of rats. By using this approach two drugs can be targeted at the same time in the colon so as to treat the colorectal cancer. The azo adduct did not release drug in acidic environment of stomach, but when the azo adduct drugs will enter into colon the enzyme azo reductase break the azo bond and releases the dual drugs. By using these approaches two drugs can be released at same time in colon. The azo adduct was characterized by IR,NMR and mass spectral analysis. It was further subjected for evaluating its colon targeting property by in-vitro method using rat fecal matter. The cytotoxic and acute toxicity studies of the compound were also performed which reveals that the methotrexate PABA azo adduct is safe for use to colon for the treatment of colorectal cancer.

**KEYWORDS:** Carcinoma, Methotrexate, Azoreductase and PABA
Synthesis and antibacterial activity of Azetidinone derivatives of 2-(3-oxo-2,3-dihydro-4H-1,4-pyridoxazin-4-yl)acetohydrazide

Amar Deep Ankalgi; MS Asawat; Vinay Pandit and M.S. Ranawat
amarchemlogin@gmail.com
Laureate Institute of Pharmacy, Kathog- Jwalamukhi-Himachal Pradesh, India; Bhupal Nobles’ College of Pharmacy, Sevashram North, Udaipur, Rajasthan, India

ABSTRACT:
2H-1,4-pyridooxazin-3(4H)-one was synthesized by condensation of 2-amino-3-hydroxy-pyridine with chloroacetyl chloride by using standard procedure. Esterification with ethylchloroacetate and further condensation with hydrazine hydrate produced hydrazide of 2H-1,4-pyridooxazin-3(4H)-one. Schiff base derivatives of 2H-1,4-pyridoxazin-3(4H)-one were synthesized by the acid catalyzed condensation 2-(3-oxo-2,3-dihydro-4H-1,4-pyridoxazin-4-yl)acetohydrazide with various aldehyde and ketones derivatives. Further, refluxing with chloroacetyl chloride resulted in Azetidinone derivatives. Synthesized derivatives (5a-5j) were characterized by FT-IR and PMR spectroscopy. The Screening of in vitro antimicrobial activity of the synthesized compounds were carried out by using cup-plate method. 5h and 5j were found to be potent against certain bacterial strains.

KEYWORDS: 2H-1,4-pyridoxazin-3(4H)-one, Schiff base, antibacterial
Neuroprotective effect of gold containing organic compounds nano formulation against animal models of Alzheimer’s disease: An overview

Shiv Kumar Kushawaha; Mahendra Singh Ashawat; Puneet Kumar;
shiv.kushawaha@gmail.com

Department of Pharmacology, Laureate Institute of Pharmacy, Kathog, Distt. Kangra, H.P. (India), 176031; Department of Pharmaceutics, Laureate Institute of Pharmacy, Kathog, Distt. Kangra, H.P. (India), 176031; Department of Pharmaceutical Sciences & Technology, Maharaja Ranjit Singh Punjab Technical University, Bathinda (India), 151001

ABSTRACT:
Alzheimer’s is elderly people associated disease with the changes in amyloid-β peptide leads to cognitive impairment and dementia. This ultimately results in difficulty in day to day work and poor quality of life. Dementia is a syndrome characterized by disturbance of multiple brain functions including memory, thinking, calculation, and orientation. Unfortunately, only a few treatments have been proved to be able to reduce AD symptoms, but none of them result able to halt the disease progression. Notably, Ayurveda is the ancient Indian system of medicine such as Charaka-Samhita (approximately 1500BC), Ashtang - Hridaya (approximately 500 AD), various herbal preparations described along with several metallic preparations. Which have been used for the treatment of different body ailments or disease. A very famous preparation commonly known as Swarna Prashana, composed of gold have been described as a potent formula for the improvement of the cognitive impairment. The administration of gold in its metallic form is having very low lipid solubility and may show nephrotoxicity, hepatotoxicity. Hence, researchers developed new organic gold complex namely, auranofin and aurothioglucose, their properties and toxicity profile greatly change. Even though, these drugs are already FDA approved which have been utilized for treatment of arthritis. The aim of this review is to prepare a nano formulation for overcoming not only adverse side effects but also improve their lipophilicity along with bioavailability and further help to study the neuroprotective effect of gold containing organic compounds in Alzheimer disease as nanoparticles have tendency to cross the BBB easily.

KEYWORDS: Alzheimer’s disease, Amyloid-β, Swarna Prashana, Organic gold, Nano formulation
**Synthesis, Molecular Docking of Novel Isatin-thiadiazole derivatives as Anticancer Agents**

Sanjay Bari; Prashant Chaudhari; Pritam Jain; Vinod Ugale

sbbari@rediffmail.com; prashantniperk@gmail.com; pritash79@yahoo.com; vinod.ugale@rediffmail.com

H. R. Patel Institute of Pharmaceutical Education & Research Shirpur, Dist- Dhule, Maharashtra, India;

Department of Pharmaceutical Chemistry, R. C. Patel Institute of Pharmaceutical Education & Research Shirpur, Dist- Dhule, Maharashtra, India

**ABSTRACT:**
Indolin-2-ones (Isatins) are very successful at cancer therapy involving receptor tyrosine kinases as target bio-molecules. Sunitinib is the prototype of this molecular scaffold which got US FDA approval. But resistance and high risk of cardiotoxicity is the major concerns for these molecules. It is indeed to discover the novel anticancer molecules targeting single or multiple receptor tyrosine kinases like VEGFR-1 (also known as FLT1), VEGFR-2 (also known as FLK1/KDR), VEGFR3 (also known as FLT4), PDGFRα, PDGFRβ, c-kit, FLT3, RET, and c-KIT, from the same scaffold i.e. indolin-2-ones.

We have optimized a new synthetic route towards the synthesis of 3-((5-(phenylthio)-1,3,4-thiadiazol-2-yl)imino)indolin-2-one derivatives (IVa-m) though C-S coupling of thiadiazoles with Aromatic moiety, using Bis(triphenylphosphine)palladium(II)dichloride as catalyst. The synthesized molecules are obtained with high yields (≥ 86%) and structurally elucidated by FT-IR, MS, 1H NMR, 13C NMR, CHNS analysis. Human Cancer Cell Lines study was performed through National Cancer Institute (NCI) NIH’s, NCI-60 Human Tumor Cell Line Screen Program, USA. Anticancer activity was performed by Sulforhodamine B (SRB) assay. The compounds showed a very promising anticancer activity against leukemia, melanoma, breast cancer, renal cancer, non-small cell line Lung cancer panel cell lines. Molecular docking was studied on the c-KIT receptor (PDB ID: 3G0E) using Glide 5.0, Schrodinger’s Maestro 9.0 molecular modelling suite.

**KEYWORDS:** Indolin-2-one, Thiadiazole, Thioetherification, NCI, Anticancer Activity
Development of validated high-performance thin layer chromatography for quantification of rutin in different species of the Asclepiadaceae family

Dr. Sanjay J. Daharwal
sjdaharwal@gmail.com
University Institute of Pharmacy, Pt. Ravishankar Shukla University, Raipur -492010 CG India

ABSTRACT: The root of Hemidesmus indicus commonly known as Indian Sarsaparilla, is used traditionally to treat a wide variety of illnesses including rheumatism, leprosy, impotence, urinary tract and skin infections. The root is also used for anticancer, antioxidant, anti-inflammatory, antipyretic, analgesic, antimicrobial, antidiabetic activity. Calotropis gigantea is commonly known as Madar which is used for analgesic activity, antipyretic activity, CNS activity, anti-inflammatory activity, anti-diarrhoeal activity, free radical scavenging activity, antimicrobial activity etc. This study was undertaken to quantify rutin in Hemidesmus indicus and Calotropis gigantea. Rutin is an important biomarker component present in the Asclepiadaceae family. A specific and rapid high-performance thin layer chromatography method was developed for analysis of rutin. The method involved separation on the silica gel 60 F254 plates using the mobile phase of n-hexane: chloroform: methanol. The method showed good linear relationship in the range 100-500 ng/spot with $r^2=0.9984$. The limit of detection and limit of quantification were 24.38 ng/spot and 73.89 ng/spot, respectively. The proposed validated high-performance thin layer chromatography method was found to be an easy to use, accurate and convenient method that could be successfully used for standardization and quality assessment of herbal material as well as formulations containing different species of the Asclepiadaceae family.

KEYWORDS: Hemidesmus indicus, Calotropis gigantea, Rutin, High-performance thin layer chromatography
Chromatographic and Spectroscopic analysis of Crisaborole

Pritam Jain, Vrushali Patil, Sanjay Surana
pritash79@yahoo.com
R C Patel Institute of Pharmaceutical Education and Research, Shirpur

ABSTRACT:
Objective: Novel, simple, rapid and reliable High-Performance Thin-Layer Chromatographic (HPTLC) and UV-spectroscopic area under curve (UV-AUC) methods were developed and validated for the analysis of Crisaborole in bulk and in Pharmaceutical formulation. Crisaborole is used as an anti-inflammatory agent.

Methodology: HPTLC separation was performed on aluminium plates precoated with silica gel 60RP-18F-254S as the stationary phase using Toluene: Methanol: formic acid (4.8:0.2:0.1 v/v) as mobile phase and HPTLC Quantitation of Crisaborole was done by UV detection at 251 nm. Quantification was reached by densitometric analysis at 251 nm over the concentration range of 300–1800 ng/band. The HPTLC method resulted into a compact and well resolved band for Crisaborole at retention factor (Rf) of 0.51 ±0.02. Linear regression analysis data for calibration of HPTLC method constituted a good linear relationship with regression coefficient; r²= 0.999. UV-AUC method applied area under curve was integrated in the wavelength range of 243.80-257.20 nm. The drug follows linearity in UV-AUC the concentration range 1-6 μg/mL with correlation coefficient value 0.999.

Significance: This study discovered the Novel analytical method on Crisaborole that can be beneficial for treatment of atopic dermatitis. This study will help the researchers to uncover the critical areas of analytical profile on Crisaborole that many researchers were not able to explore. Thus a new theory on High-Performance Thin-Layer Chromatographic (HPTLC) and UV-spectroscopic area under curve (UV-AUC) methods may be arrived at.

KEYWORDS: Crisaborole, HPTLC, UV-spectroscopic area under curve, Development and validation
Stability Indicating Assay Method Development and Validation of Simultaneous Estimation of Chlorzoxazone, Diclofenac Sodium and Paracetamol in Bulk Drug and Tablet By RP-HPLC

Krutika Patel, Sudheerkumar Verriboina, S.G. Vasantharaju
sgvasanth65@gmail.com
Manipal College of Pharmaceutical Sciences, Manipal Academy of Higher Education

ABSTRACT:
A simple, accurate, specific and stability-indicating RP-HPLC method was developed for simultaneous determination of chlorzoxazone, diclofenac sodium & paracetamol, using C18 Vydac Monomeric 120A (250 × 4.6 mm, 5μ) at 40°C. The mobile phase contains a mixture of 20mM potassium dihydrogen phosphate buffer (pH 6.2 adjusted with potassium hydroxide) and acetonitrile (30:70 v/v). The flow rate was 1ml/min and detection was carried out at 275 nm using PDA detector. The retention time of paracetamol, chlorzoxazone and diclofenac sodium were 3.28mins, 13.27mins and 15.61mins respectively. The analytical curve was linear over a concentration range of 0.65- 6.5μg/ml for paracetamol, 1-10 μg/ml for chlorzoxazone and 0.1-1 μg/ml for diclofenac sodium. The drugs in bulk and tablet were subjected to acid and alkali hydrolysis, oxidation, thermal and photolytic degradation. This method can be successfully employed for simultaneous quantitative analysis of Chlorzoxazone, Diclofenac sodium and Paracetamol in bulk drug and tablet formulation.

KEYWORDS: Chlorzoxazone, Diclofenac Sodium, Paracetamol, Stability indicating method, Stress testing, HPLC
A rapid verification method for identification and content of drug in a HMG Co-enzyme A reductase inhibitor using Mid-Infrared Spectroscopy

Shiv Shankar Shukla*, Swati Pandey, Ravindra Kumar Pandey
shivpharma007@gmail.com, dubey.swati326@gmail.com, ravindra56@rediffmail.com
Department of Pharmaceutical Analysis and Quality Assurance, Columbia Institute of Pharmacy, Tekari, Raipur, C.G.

ABSTRACT:
Objective: The proposed method consists of both identification and analyzing the drug content in the drug formulation and a solid drug formulation. Infra Red spectroscopy was performed using Diffuse Reflectance System (DRS) technique.
Method: Simvastatin was used as the drug formulation for the study using Mid-IR that offered reliable precision and accuracy. The minimum amount of drug content determined was 1 %w/w. The method was validated in accordance to International Conference on Harmonization for linearity accuracy, precision, robustness and selectivity.
Result: The linearity of the drug was found in the range 5µg/ml-30 µg/ml that exhibited a good correlation coefficient of 0.9986 for the selected wave number of 1600-1850 cm\(^{-1}\) denoting the carbonyl peak. The three marketed formulations of Simvastatin were analyzed for the % recovery and recovered drug were found to be in the range of 99.87%-101.39%. The % relative standard deviation for the accuracy, selectivity, precision were found within the acceptable limits (% RSD below 2%)
Conclusion: The presented work showed that the Diffuse Reflectance system has enormous areas in the analytical pharmacy for the determination of drug content and also useful for the drug that have solubility issues. Therefore this method can be the method of choice for determination of drug in Simvastatin dosage forms in industries and routine qualitative and quantitative analysis.

KEYWORDS: Diffuse reflectance spectroscopic measurements, Drug identification; Fourier transform infrared spectroscopy, Mid-IR Qualitative Analysis, HMG Co enzyme A reductase inhibitor.
A Review on Herbal Drug Standardization

Rahul Sharma; Sanyam Sharma; Anupam Sharma; Mahendra Singh Ashawat

raulsharmalth@gmail.com
Laureate Institute Of Pharmacy

ABSTRACT:
Herbal drugs are phytomedicines or phytopharmaceuticals sold as over the counter products in modern era in the dosage forms such as tablets, capsules and solution form. Standardization refers to confirmation of drug’s identity and determination of its quality and purity, detection and adulterants. Various common standardization parameters are, physical, chemical, morphological, microscopical and biological observation. Around eighty percentage of world population depends upon herbal medicines and products for vitality, rehabilitation and good health. Standardization is done to ensure the safety and efficacy of herbal product with reference to standard guideline.

KEYWORDS: Herbal drugs, standardization, Quality control
Synthesis and Anti-Oxidant Activities of Novel Triazole Substituted Phenothiazone Derivatives

Nachiket S. Dighe
nachiket1111@rediffmail.com
Pravara Rural College of Pharmacy; Pravaranagar; A/P- Loni Bk; Taluka -Rahata; Dist-Ahmednagar; 413736; India (MS)

ABSTRACT:
In this study a series of triazole substituted phenothiazone derivatives will be synthesized and evaluated for their antioxidant activity by DPPH and H2O2 method. The synthesized compound will be tested for purity which will be confirmed by, Melting point, IR, H-NMR spectra, CHN analysis among this Compounds showed significant antioxidant activity comparing with control drug Ascorbic acid. These works are useful in the future.

KEYWORDS: Antioxidant activity, DPPH Method, Phenothiazone, Triazole
Simultaneous Estimation of Methotrexate and Curcumin in Bulk Drug and Tablet Formulation by using UV-Visible Spectroscopy

Nitin Chaudhary; Pooja Kaushal; Amar Deep Ankalgi; M.S Ashawat.
nitin301673@gmail.com
Laureate Institute of Pharmacy, Kathog-Jawalamukhi-Himachal Pradesh, India.

ABSTRACT:
A simple, accurate, specific and precise UV spectrophotometric method for simultaneous estimation of methotrexate and curcumin in bulk drugs and tablet dosage form has been developed. This method was based on determination of Q – absorption value. Absorbance was measured at 274 nm (Isoabsorptive point) using 0.1 M sodium hydroxide as a solvent. Beer’s range were 1-10µg/ml for methotrexate and curcumin respectively. The method was validated using parameters such as linearity, precise, accuracy, limit of detection (LOD) and limit of quantitative (LOQ) according to ICH guidelines. The recovery studies gave satisfactory result indicating that none of the additives and excipients interfere in the assay method. The proposed methods can be used successfully in the quality control of bulk forms, pharmaceutical formulation and routine laboratory analysis.

KEYWORDS: Methotrexate, Curcumin, Q-absorption method, Validation.
Validation parameters in RP-HPLC and their Pharmaceutical significance

Pramod Kumar; Shweta Sharma; Aman Kapoor; Amar Deep Ankalgi
pk2127889@gmail.com
Laureate Institute of pharmacy kathog Kangra HP India

ABSTRACT:
Analytic method development and validation are key elements of any pharmaceutical method development program. HPLC analysis method is developed to identify, quantity or purifying compounds of interest. A validated analytical method ensures that it provides consistent, reliable and accurate data. The HPLC method is able to separate, detect and quantify the various drug and its related degradants and also detect the impurities. This method ensure the quality of the product. Analytical validation method is essential but time consuming. All the parameters described by the ICH guideline Q2 guidelines such as accuracy, precision, specificity and limit of detection, limit of quantitation, linearity, range and robustness are widely used to verify safety and efficacy of pharmaceutical formulation.

KEYWORDS: Validation, accuracy, LOD, ICH
Choice of preference over government or private healthcare service among Malaysian medical students

Theingi Maung Maung; Ong Poh Yeong; Ngo Nguk Keong; Ong Eileen; Ooi Xin Yi; Tan Pei Ye
drtheingi68@gmail.com
AIMST University

ABSTRACT:
Both public and private sectors are important players in Malaysia’s healthcare delivery system. The public sector is greatly subsidized and able to cover a wider range of functions. Comparably, the private sector offers mainly curative and rehabilitative services and is financed strictly on a non-subsidized, fee for service basis. This study aims to determine the health-seeking behaviour of medical students and the key factors which involves in the decision-making process. Cross sectional study is conducted in one of the private universities of Malaysia by using structured questionnaire and respondents are selected by random sampling. Out of 200 respondents, majority (71%) opt for private hospital compared to (29%) for government hospital. Majority of the respondents believed that accessibility to healthcare service, efficiency of healthcare providers, and cost of treatment were influencing factors for their choices. The shorter waiting time, cleaner environment are the favourable factors for the private hospitals although respondents aware about high cost of treatment in the private sector. In this study, availability of modern equipment, specialist services, doctor’s reputation, insurance facility, good location, easy transport and communication play major roles on overall hospital selection.

KEYWORDS: government, private, healthcare, medical students
Working Women and Health: A case study of the Nurses of Dr. Bhimrao Ambedkar Hospital of Raipur City

Lukeshwar Singh Gajpal
gajpal14@gmail.com
School of Studies in Sociology and Social work
Pt. Ravishankar Shukla University, Raipur(Chhattisgarh)
INDIA 492010

ABSTRACT:
Objectives of the study:
1. To study the socio-economic background of the working women.
2. To study the Impact of night duty on health of nurses of Raipur city.
Hypothesis: There is a significant co-relation between night shift duty and health problem of nurses.
Research Design: Exploratory cum descriptive research design.
Study area: The Raipur city which is the capital of Chhattisgarh state has been selected as study area.
The Sample: For this study 136 Nurses of Dr. Bhim Rao Ambedkar Hospital of Raipur City were purposively selected as respondent.
Tools of data collection: For the collection of primary data interview- schedule adopted as a tool and group discussion, observation technique has been also adopted for the collection of data.
Conclusion: It is tried to clarify through the study, what is the volume of health problems among nurses during the night duty. Findings of the study show that Nurses are facing more problem. It is clear from analysis of the data that Nurses are facing more problem related to health due to night shift services specially they were faced the physical problem, weakness in whole body, anaemia, B.P., gastric problem and problem related to maintaining food habit.

KEYWORDS: Health, women, socioeconomic
Research Productivity of Role of libraries in Pharmacy Education: A Bibliometric Analysis

Harish Kumar Sahu
hari197479@yahoo.in
School of Studies in Library & Information Science,
Pt. Ravishankar Shukla University, Raipur (Chhattisgarh) India

ABSTRACT: In pharmacy education, library use do appear self-regulating assistance to attractive outcomes of the society. Librarians’ role is also imperative to make students information literate related to pharmaceutical sciences. This objective of this study to know about the role of libraries and library professional’s experience in pharmacy colleges. The trend pharmacy publication such as the journals year and volume-wise distribution of articles, page length of the contributions, year wise references, country-wise distribution of articles, authorship patterns of research contributions, single author and multi authors of contributions and degree of collaboration have been studied. For the analysis of the study journal of controlled release journal 10 volumes containing 40 issues have been taken up. It is found that 388 papers were published during the period of study. The maximum number of articles (47) was published in 2012. The average degree of collaboration is 0.603. Pharmacy colleges have numerous seminar materials, sufficient journals, articles and conference papers. Almost all the pharmacy college libraries perform the data entry, circulation services. Some colleges maintain reports and database services (73.5%). Digital library initiative started in many colleges (75.2%). Very few colleges do have connecting networks like UGC Inflibnet (1.7%). Pharmacy colleges of this study have enough conventional collections, but latest modern technology like connecting network, security measures are to be developed. Since pharmacy graduates get involved in clinical aspects, drug information resources, learning tools and materials and databases for clinical aspects are also required in library.

KEYWORDS: Collections and facilities in library, Drug information source, Pharmacy education, Role of Library
A Critical Study of Crimes: Decriminalization of Narcotics Practice

Dr. Venudhar Routiya
venucgvs@gmail.com
School of Studies in Law, Pt. Ravishankar Shukla University, Raipur-492010 (C.G.) India

ABSTRACT:
This paper is based on secondary sources of research. The term decriminalization of Narcotics means to bring the drug problem out of the scope of criminal law and the purpose of introducing it is to reduced control and penalties compared to the existing law as well the illegal distributions and productions of drugs. Though, the major steps is to prevention and bring changes in society by providing clean environment as well awareness to addicted people related to the harmful use of drugs to make them understand the importance of life how it is fragile and to live it like it’s our last day. One principal role of decriminalization of Narcotic has been to provide specialized and preventive treatment services to drug addicts.

Narcotics have divided into two parts according to their effects in the human body which change the way of body works i.e. -
(1) A 'soft drug' is less addictive and considered less harmful to the body and to society as a whole.
(2) A 'hard' drug is harshly addictive and considered much more harmful to the body and society in general.

There are some other narcotic drugs i.e. - 'Psychoactive drugs' are drugs that change your feelings, your perceptions and/or your behavior. Psychoactive drugs bring about a chemical reaction in the brain causing feelings, thoughts and behaviour to be affected. A 'legal drug' is a drug that can be obtained either by prescription or over the counter and used in the prescribed and appropriate. An 'illegal drug' is a drug that is not approved by law for use in this country.

There are certain countries determined following approaches toward decriminalization of narcotics were identified-
1. Production, marketing and consumption of marijuana is legalized and regulated (Uruguay)
2. Drugs are prohibited but the sale and use of soft drugs is tolerated and regulated (Netherlands)
3. The personal possession and use of small number of drugs is not penalized while other drug-related activities are prohibited (Costa republic, Mexico, Portugal) and
4. Treatment and alternative punishment for minor drug offenses are allowed (Argentina, Australia, Brazil, New Zealand, and Norway).

Suggestions are as under:
1. It should be control over the neglected areas where farmers are engaged in illegal production of poppy plants with wheat due to lack of knowledge of harmful drugs.
2. It should be restricted the illegal distribution of drugs in hospitals and medicos for extra incomes without any proper prescriptions.

**KEYWORDS:** Criminal, Narcotic, acts
Impact of health in Economic Development of Chhattisgarh State

B. L. Sonekar
sonekarptrsu@gmail.com
School of Studies in Economics Pt. Ravishankar Shukla University, Raipur, Chhattisgarh, India

ABSTRACT:
In the 21st century, world is heading towards development in different dimensions, especially in the field of Science and technology. In the run of development, standard of living also changes round the globe. On one hand human beings enjoy these developments, at the same time what actually they pay for it, is their health. Now a days health is going to be a serious issue all over the globe to worry. Basically, it effects under developed and developing countries a lot. Recently many researches show that technological development and globalization also shares ample of health problems to its citizens. Some are incurable and new kinds of diseases came to light which effect the maximum population. These health problems have a great impact on the individuals’ economic condition which ultimately effect the nation’s development. The present research paper is factually a discussion paper, based on secondary data from national and state resources which discusses on the health issue and their impact on economic development of Chhattisgarh state. Chhattisgarh is a state with dense forest cover and many of these areas are conflict-affected, underserved areas are more where doctors are not available to work and lack of adequacy in other staff also. Government has been taking all possible steps to eradicate the problem by implementing health programs & planning. It is an attempt to know the impact of health on economic development, discussion of the problem and its solution as well. This paper analyses current health problems affecting economic development of state and its consequences on future which is going to take the shape of a burning issue in the coming future.

KEYWORDS: Health, Economic development, Chhattisgarh state
A STUDY ON IDENTIFYING FACTORS AFFECTING UNIVERSITY – INDUSTRY TECHNOLOGY TRANSFER – INDIAN PERSPECTIVE

Ramya Ravi a, Manthan D Janodia b

a. Department of Pharmaceutical Quality Assurance, Manipal College of Pharmaceutical Sciences Manipal Academy of Higher Education, Manipal – 576104. Email-ramya.ravi@manipal.edu
b. Department of Pharmacy Management, Manipal College of Pharmaceutical Sciences, Manipal Academy of Higher Education, Manipal – 576104. Email-manthan.j@manipal.edu

Abstract

Objectives: In recent years, there is a greater emphasis on transferring inventions and technologies originating from academia to industry through technology transfer/ licensing or commercialization. The efforts of the Government of India is to create socially useful technologies through university- industry technology transfer. The objective of the study is to examine and understand the enabling factors and barriers for technology transfer among Indian Universities.

Methods: Convenience sampling methods was used. Top ranked universities in India according to NIRF 2018 were approached to fill a structured questionnaire that was reviewed by experts. We carried out a pilot study among 13 universities to understand the barriers.

Results: The technology transfer is more prevalent in Public funded universities than private universities. The revenue generated from such activities is less than the research spent.

Conclusion: Though Indian universities have potential for research, the inadequate policies and lack of awareness on commercialization among the researchers is the barrier for knowledge dissemination from academia to industry. The lack of trust among the stakeholders and time constraint in deliverables by the researchers is considered the second barrier for commercialization of academic research. The probable solutions could be to create centralized repositories of technologies available at universities on a platform maintained by Government of India to provide the required assistance.

Key words: Technology commercialization, university- industry collaborations, technology transfer models, technology licensing.
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The University is established by Sri Sai Gramothan Samiti, Bhopal, Madhya Pradesh. The society was founded in 1995 and has ever since been active in carrying out various projects and activities in rural and underprivileged belts to promote education and provide quality health care services. The society has ever since established range of educational institutions in the field of Dental, Nursing, Ayurveda and CBSE affiliated school with modern facilities and state of the Art Infrastructures.

for more details CALL ON:
+91-8989080809
+91-8989010102

Bhopal City Office:
Mansarovar Public School,
Opp. Bima Kunj, Kolar Road,
Bhopal, Area Code - 462042

University Campus:
Bilkisganj, Sehore