SREE DATTHA INSTITUTE OF PHARMACY

(Accredited by NAAC, Approved by AICTE & PCI, New Delhi, Affiliated to JNTUH)

SOUVENIR

(ETRAPS-2023)

AICTE SPONSORED NATIONAL CONFERENCE

on January 27 & 28 - 2023

"EMERGING TRENDS AND RECENT ADVANCES IN PHARMACEUTICAL SCIENCES" (ETRAPS-2023)



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Hearty Welcome
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ORIENTATION DAY PROGRAM




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MESSAGE

FROM CHAIRMAN
SREE DATTHA GROUP OF EDUCATIONAL INSTTITUTIONS



It gives me immense pleasure that Sree Dattha Institute of Pharmacy is organizing AICTE Sponsored National Conference on January 27th and 28th, 2023 at Sree Dattha Institute of Pharmacy, Sheriguda, Ibrahimpatnam, Hyderabad. The theme of the conference is **"Emerging Trends and Recent Advances in Pharmaceutical Sciences". (ETRAPS-2023).**

I trust ETRAPS-2023 will become the platform for Researchers, Pharmacy Professionals, Scientists and Specialists to meets and showcase their findings in various fields of pharmaceutical sciences. I also expect this conference will help combat the bottlenecks and expand the horizons of Researchers, Scientists and Pharmacy Professionals to lead for the betterment of pharmaceutical sector and society.

The success of this Conference is solely belongs to the participants for their advanced preparations, AICTE for its contribution and the organizers for their efforts, time and contribution, Eventually I express my special thanks and appreciation to pharma fraternity.

I extend my best wishes for the grand success of this conference.

Sri G. Panduranga Reddy
Chairman
Sree Dattha Group of Educational Institutions
Hyderabad

MESSAGE

FROM VICE- CHAIRMAN
SREE DATTHA GROUP OF EDUCATIONAL INSTTITUTIONS



I am delighted that Sree Dattha Institute of Pharmacy is Hosting the AICTE Sponsored Natural Conference "Emerging Trends and Recent Advances in pharmaceutical science" 2023" (ETRAPS-2023), in our campus.

As the world Population grows and ages, it is observed new diseases and aliments are on the rise at an alarming rate. This opens venues for development of new drugs and medicine in the field of pharmaceutical sciences. Along with these changing times, there is a need for advancement in research.

I hope ETRAPS -2023 becomes on platform for the Pharma fraternity to discover innovative solutions to these challenges. I extend my warm welcome to the Participants and appreciate the organizing team for the taking the initiative to conduct this conference.

-Best wishes-

Dr. G.N.V. Vibhav Reddy
Vice Chairman,
Sree Dattha Group of Educational Institutions,
Hyderabad

MESSAGE

FROM PRINCIPAL
SREE DATTHA INSTITUTE OF PHARMACY



It gives me immense pleasure to be a part of this hosting team of AICTE sponsored Nnational Conference on **"Emerging Trends and Recent Advances in Pharmaceutical Sciences" (ETRAPS-2023).** The conference intends to bring together scientists, researchers and practitioners to discuss concerns related to various advance techniques in Pharmaceutical science and technology. I take this opportunity to welcome all the delegates of the conference. On behalf of whole ETRPS 2023 team, I would like to thank all the authors, sponsors and keynote speakers for their support and co-operation. The rapid development in technologies and changes in lifestyle impose various issues in many countries. The conference ETRAPS 2023 has been crafted to challenge the hurdles and we are fortunate to have leading speakers to share their experience and perspectives to achieve smart solutions through their innovation. I hope that the conference serves as a locus for interdisciplinary, a space for discourse and collaboration. I would like to express my appreciation to the conference team for their dedicated efforts to materialize the conference. I hope all the participants will have a fruitful and beneficial experience. Finally, I congratulate faculty, student representatives and participant for their efforts in organizing and participating in this conference and wish the conference all the success.

Dr. S.A. Sreenivas
Principal,
Sree Dattha Institute of Pharmacy,
Hyderabad

MESSAGE

FROM KEY SPEAKER



It gives me an immense pleasure to be a part of the AICTE Sponsored National Conference on **"Emerging Trends and Recent Advances in Pharmaceutical Sciences" (ETRAPS-2023).** I strongly believe that this conference will provide tools and knowledge to overcome significant problems appearing in our industry and society by identifying innovative ideas and technologies introduced by the researchers and students. The success of this conference will encourage us in introducing many more initiatives for innovative trends in the coming years. I wish the ETRAPS-2023 a great success.

Dr. M. Sunitha Reddy
Professor and Head of the Department
Centre for Pharmaceutical Sciences,
JNTU Hyderabad

MESSAGE

FROM KEY SPEAKER



It gives me pleasure to know that Sree Dattha Institution of Pharmacy, Hyderabad is organizing National Conference on **"Emerging Trends and Recent Advances in Pharmaceutical Sciences" (ETRAPS-2023).** I am sure that the interaction of participants throughout the nation, nationally renowned counterparts will go a long way in knowledge sharing to help Industry, Society to grow and to compete nationally. This conference will be a grand success and extend my best wishes for the success of this conference. I congratulate the Institute on preceding this wonderful step.

Dr. B. Dinesh Kumar
Former Scientist G,
ICMR-National institute of Nutrition,
Hyderabad

MESSAGE

FROM KEY SPEAKER



The conference titled AICTE Sponsored National Conference on **"Emerging Trends and Recent Advances in Pharmaceutical Sciences" (ETRAPS-2023)** provides a platform for discussions on various technical topics related to pharmacy as well as science and technology. This is a conference of national significance. The proceedings represent scholarly work of advanced and innovative thinkers and educators from around the nation. It is felt that it is only through the exchange of information that one can hope to keep up with the rapidly changing world around us. I wish all the delegates, a great educational and informative experience at the conference. My best wishes to the organizers of the conference.

Mujeebuddin Shaik
Founder and CEO
Clinosol Research Pvt Ltd, Hyderabad

MESSAGE

FROM KEY SPEAKER



The conference is an international platform for sharing new perspectives in the areas of science and technology with transforming context. Many educators share their experiences, practices, and perspectives to accelerate educational changes in the environment of today's world that is always in a state of flux. The papers, discussions, and interactions during the conference will bring forth multiple viewpoints and address issues of critical importance. My best wishes to all participants of the conference to make the most out of this event by learning innovative and advanced technologies.

G. Arvind
Head R&D – Sr.
Vice-President, Celon Laboratory
Pvt Ltd., Hyderabad

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ABOUT SREE DATTHA INSTITUTE OF PHARMACY

Sree Dattha Institute of Pharmacy, established in the year 2005 under the aegis of Vyjayanthi Educational Society, represents a rich tradition of excellence in pharmaceutical sciences based education. A premier-league institution among the affiliates of JNTUH under Sree Dattha Institutions owes its vision to Sri G. Panduranga Reddy, the Chairman of our institutions.

It is approved by All India Council for Technical Education, New Delhi, Pharmacy Council of India, New Delhi & Affiliated to Jawaharlal Nehru Technological University, Hyderabad. This institution also accredited by NBA and NAAC. It is having well established animal house for the experimentation on animals as per the guidelines and IAEC is approved by CPCSEA, New Delhi.

Well experienced and highly qualified faculties, separate hostel facility for boys & girls, state-of-the-art laboratories with practical oriented teaching, library with national & international journals and book bank facility, internet facility with e-learning, campus selection, coaching for national level examinations for P.G. studies, assistance in overseas studies, ragging free and student friendly atmosphere are some of the salient features of our institution.

The institution provides coaching in English Communication, remedial coaching for academically weak students, special training in Pharmacy equipment handling for UG and PG students, Student mentoring for all courses, Hospital and Clinical training for Pharm. D & Pharm. D (PB) students.

ABOUT THE AICTE CONFERENCE

The pharmaceutical science is a dynamic and rapidly changing field that combines a wide range of scientific disciplines. The themes of “Emerging Trends and Recent Advances in Pharmaceutical Sciences” helps the participants to “Imagine, Innovate and Inspire” and share their views and exchange knowledge in research field of pharmaceutical science. This conference will bring researchers, academicians and industry experts on a common platform to exchange knowledge, experience and research innovations for the betterment of human life. The objectives of this conference are to provide an interdisciplinary forum for delegates engaged in the full spectrum of research, development, application and to discuss the current status and recent developments in Pharmaceutical Sciences and their allied fields like Artificial intelligence, Robotics, Advance instrumentation. In addition, the Seminar will provide excellent opportunities to review the recent development and technological applications covering wide range of topics. Themes have been selected to accommodate wide range of interests to facilitate interdisciplinary interactions in academic fields and technology.

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Professor, Sree Dattha Institute of Pharmacy

PROGRAM SCHEDULE

Day-1 (27th January 2023, Friday)

Time/Session	
09:00 – 10:00 AM	Registration
10:00 – 11:00 AM	Inaugural
11:00 – 12:10 AM	Scientific Session-I
12:10 – 12:30 AM	Tea Break
12:30 – 01:30 PM	Scientific Session-II
01:30 – 02:30 PM	Lunch Break
02:30 – 04:00 PM	Poster/Oral Session I
04:00 – 04:20 PM	Panel Discussion
04:20 – 04:40 PM	Tea Break

Day-2 (28th January 2023, Saturday)

Time/Session	
09:00 – 10:30 AM	Poster/ Oral /Model Session-II
10:30 – 11:30 AM	Scientific Session-III
11:30 – 11:50 AM	Tea Break
11:50 – 01:00 PM	Scientific Session IV
01:00 – 02:00 PM	Lunch Break
03:30 – 04:30 PM	Cultural events, Prize Distribution & Valedictory

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PHARMACEUTICAL ANALYSIS

A NEW VALIDATED RP-HPLC METHOD FOR DETERMINATION OF ROSUVASTATIN IN BULK AND ITS PHARMACEUTICAL DOSAGE FORM

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ABSTRACT : (SDIP -NC-ETRAPS-2023-01)
Objective: A simple, reliable, sensitive and isocratic RP-HPLC method was developed for the determination of Rosuvastatin present in bulk and its pharmaceutical formulations. Methodology: Rosuvastatin exhibited retention time at 6.796 min in mobile phase methanol: phosphate buffer pH 3.0 in the ratio of 40:60 at flow rate of 1.0 ml/ min and obeyed linearity in the concentration range of 10-250 μg/ml. The method was chosen after several trials with various proportions of phosphate buffer and methanol i.e. 50:50, 30:70 and at different pH values i.e. 2.5, 3.45, 4.28. A mobile phase consisting of methanol and buffer pH 3 in the ratio of 40 + 60 was selected to achieve best chromatographic peak and sensitivity. The modalities adopted in experimentation were successfully validated as per ICH guidelines. Result and Discussion: From the linearity studies it was found that the drug obeys linearity within the concentration range of 10-250 mg/ml for Rosuvastatin. From the results shown in precision, it was found that % RSD is less than 2%; which indicates that the proposed method has good reproducibility. From the accuracy studies, it was found that the percentage recovery values of pure drug from the pre-analyzed solutions of formulations were in between 99.4676 – 100.1451%, which indicates that the method was accurate and also reveals that the commonly used excipients and additives present in the pharmaceutical formulations were not interfering in the proposed method. The system suitability parameters also reveal that the values were within the specified limits for the proposed method. The absence of additional peaks in the chromatogram indicates non-interference of the common excipients used in the tablets. The lower limit of detection and the limit of quantitation were found to be 10.47 and 31.72μg/ml respectively. Conclusion: This demonstrates that the developed HPLC method is new, simple, linear, accurate, robust, sensitive and reproducible. Thus, the developed method can be easily used for the routine quality control of bulk and tablet dosage forms.
Keywords: RP-HPLC, Rosuvastatin, ICH

QUALITY BY DESIGN APPROACH: AN OVER VIEW ON FORMULATION, DEVELOPMENT AND EVALUATION OF PHARMACEUTICAL PRODUCTS

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ABSTRACT : (SDIP -NC-ETRAPS-2023-02)
Quality by Design is an imaginative approach to ensuring pharmaceutical product quality. It explains how Quality by Design can be used to ensure pharmaceutical quality. This review defines and highlights some of the features of Quality by Design. Each unit operation's process parameters and quality characteristics are determined. Pharmaceutical Quality by Design's benefits, possibilities, and steps are discussed. It is based on ICH Guidelines Q8 and Q9 for pharmaceutical development and Q10 for pharmaceutical quality systems. It also goes over how Quality by Design is used in pharmaceutical expansion and manufacturing. The goal of pharmaceutical development is to create a high-quality product and manufacturing method that consistently performs as expected. It also compares end-of-life testing product quality to Quality by Design product quality. The ICH Guidelines serve as the foundation for Quality by Design.. QbD is the future of product and process improvement, and as such, it leads to continuous product and process improvement and creation.
Keywords: Quality by Design, Quality target product profile, Critical quality attributes (CQA), Design space.

RP- HPLC METHOD FOR SIMULTANEOUS ESTIMATION OF SACUBITRIL AND VALSARTAN IN PRESENCE OF KNOWN IMPURITIES

M. Hima Bindu
Research Scholar, Department of Pharmaceutical Analysis,
GITAM deemed to be University

ABSTRACT : (SDIP -NC-ETRAPS-2023-03)
Impurity profiling provides crucial data regarding the toxicity, safety, various limits of detection and limits of quantitation of several organic and inorganic impurities, usually accompany with APIs and finished products. There is strong requirement to have unique specifications/standards with regard to impurities. Phosphate buffer prepared by 2.95 grams of KH2PO4 and 5.45 grams of K2HPO4 was weighed and taken into a 1000ml beaker, dissolved and diluted to 1000ml with HPLC water and pH was adjusted to 9 with orthophosphoric acid. The resulting solution was sonicated and filtered. Mobile phase prepared by the mixture of above buffer 250 ml (25%) and 750 ml of acetonitrile (HPLC grade-75%) and degassed in ultrasonic water bath for 5 minutes. Filter through 0.22 µ filter under vacuum filtration. Mobile phase was used as the diluent. In present study Sacubitril and Valsartan simultaneously estimated by HPLC, good linearity obtained for both drugs with Correlation coefficient of 0.999 and 0.999 for sacubitril and valsartan respectively. The results for precision, recovery and ruggedness were within limits. Hence the method was successfully applied for degradation studies. Hence the developed method suitable for the routine analysis and quality control and percentage degradation of pharmaceutical preparations containing these drugs either individually or in combination.
Keyword : API, KH2PO4, HPLC.

STABILITY INDICATING METHOD DEVELOPMENT AND VALIDATION FOR SIMULTANEOUS ESTIMATION OF LOPINAVIR AND RITONAVIR BY USING RP-HPLC

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ABSTRACT : (SDIP -NC-ETRAPS-2023-04)
For the simultaneous estimate of Lopinavir and Ritonavir in pharmaceutical dosage form, an easy, accurate, and precise approach was established. Chromatogram was processed using Kromasil C18 (250mm, 4.6mm, 5). At a flow rate of 1.0 ml/min, mobile phase containing phosphate buffer and acetonitrile in the ratio 40:60 was passed through the column. The temperature stayed at 30 °C. Optimized wavelength for Lopinavir and Ritonavir was 310nm. Retention time of Lopinavir and Ritonavir were found to be 2.214 min and 3.163 min. %RSD of the Lopinavir and Ritonavir were and found to be 0.6 and 0.3 respectively. %Recover was Obtained as 99.64% and 99.56% for Lopinavir and Ritonavir. LOD, LOQ values were obtained from regression equations of Lopinavir and Ritonavir were 0.20ppm, 0.61ppm and 0.08ppm, 0.24ppm respectively. Ritonavir's regression equation is y = 7745x + 22310 while that for lopinavir is y = 11440x + 7469. Retention durations were reduced, and the run time was also reduced, making the method created straightforward and affordable to use in standard Quality control tests in industries.
Keywords : Lopinavir, Ritonavir, Regression equation, RP-HPLC

METHOD DEVLOPMENT AND VALIDATION OF SELECTED DRUGS IN BIORELEVENT DISSOLUTION MEDIUM BY USING RP-HPLC TECHNIQE

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ABSTRACT : (SDIP -NC-ETRAPS-2023-05)
A new method was established for estimation of Aliskiren by RP-HPLC method by using Biorelevent Dissolution Media (FaSSIF). The chromatographic conditions were successfully developed for the separation of Aliskiren by using Agilent column (4.6×150mm) 5µ, flow rate was 1.0 ml/min, mobile phase ratio was Phosphate buffer: meoH (25:75% v/v), detection wavelength was 270 nm. The instrument used was WATERS HPLC Auto Sampler, Separation module 2695, photo diode array detector 996, Empower-software version-2. The retention times were found to be 2.182 mins. The % purity of Aliskiren was found to be 98.56%.The system suitability parameters for Aliskiren such as theoretical plates and tailing factor were found to be 4343.2, 1.6. The analytical method was validated according to ICH guidelines (ICH, Q2 (R1)). The linearity study of Aliskiren was found in concentration range of 20µg-100µg and correlation coefficient (r2) was found to be 0.999, % recovery was found to be 98.96%, %RSD for repeatability was 0.3, % RSD for intermediate precision was 0.8. The precision study was precision, robustness and repeatabilty.LOD value was0.439 and LOQ value was 1.466. Hence the suggested RP-HPLC method can be used for routine analysis of Aliskiren in API and Pharmaceutical dosage form Biorelevant dissolution media.
Key words : Agilent column, Aliskiren, RP-HPLC.

STANDARDIZATION OF JATYADI GHRITA BY HPTLC METHOD

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Dept. of Pharmaceutical Chemistry Institute of Pharmacy & Technology, Salipur, Odisha

ABSTRACT : (SDIP -NC-ETRAPS-2023-06)
Standardization of herbal formulation is essential in order to asses the quality of drugs for therapeutic value. According to an estimate of world Health Organization (WHO) nearly 80% of population of developing countries relies on traditional medicine. Jatyadi Ghrita was found in authentic book like Ayurvedic formulary of India and used as a topical product prescribed for the treatment of all kind of wounds of the body. It is a polyherbal preparation containing eleven ingredients. In this research paper an attempt has been made to develop standardization method for some of the ingredients of Jatyadi Ghrita. Quantitative estimation and stability was done by HPTLC methods using Glycyrrhetinic acid, Ursolic acid, Karanjin, Curcumin, Berberine and kutkin as markers which are major constituents of formulation. A standard laboratory reference sample of Jatyadi Ghrita and four marketed samples were evaluated as per methods. Data has been provided to demonstrate applicability of the methods to standardization of Jatyadi Ghrita.
Keywords : Standardization,jatyadi ghrita, HPTLC

A NEW RP-HPLC METHOD DEVELOPMENT AND VALIDATION FOR THE SIMULTANEOUS ESTIMATION OF ALLANTOIN HYDROQUINONE AND TRETENOIN IN PURE FORM AND MARKETED DOSAGE FORM

Shankar Cheruku, Genukuntla Shirisha
Department of Pharmaceutical Analysis, Teegala Ram Reddy College of Pharmacy, Meerpet, Hyderabad, Telangana-500097, India.

ABSTRACT : (SDIP -NC-ETRAPS-2023-07)
A new, precise, accurate, specific, rugged and sensitive, isocratic RP-HPLC stability indicating method has been developed and subsequently validated for the determination of Allantoin Hydroquinone and Tretenoin in API and pharmaceutical dosage forms as per ICH guidelines. The separation achieved on a reversed phase Zorbax C18 (250 mm x 4.6 mm) 5µm Particle size Column as a stationary phase and Mobile phase, Methanol: Phosphate Buffer pH-4.2 (80:20 v/v) and other conditions optimized were: flow rate (1.0 ml/minute), wavelength (250 nm), Run time was maintained at seven minutes. The retention time for Allantoin Hydroquinone and Tretenoin was found to be 2.46 min and 4.32 min respectively. The stability of the drug was determined by studying the degradation of the drug under acidic, alkaline, peroxide, neutral, heat and UV conditions. The developed method was found to be linear in the range of 20-100µg/ml for of Allantoin Hydroquinone and 40-120µg/ml for of Tretenoin with a correlation coefficient (r2) of 0.999. Recovery of Allantoin Hydroquinone and Tretenoin was found to be in the range of 98-102% which confirms the accuracy of the method. The percentage purity of Allantoin Hydroquinone and Tretenoin in pharmaceutical dosage form was found to be 99.87%. The limit of detection and the limit of quantification were found to be 0.75µg/ml and 3.30µg/ml respectively for of Allantoin Hydroquinone and 1.56µg/ml and 6.28µg/ml respectively for Tretenoin.
Keywords : Allantoin Hydroquinone, Tretenoin, RP-HPLC, sensitivity, linearity, ICH Guidelines.

ESTIMATION OF ROSIGLITAZONE MALEATE IN BULK AND FORMULATION BY USING UV - SPECTROSCOPIC AREA UNDER CURVE METHOD

Ms Snigdha Rani Behera, Associate Professor
School of Pharmacy, ARKA JAIN University, Jamshedpur, Gamharia, Jharkhand.

ABSTRACT : (SDIP -NC-ETRAPS-2023-08)
The objective of the current study is to estimate Rosiglitazone Maleate using the area under curve (AUC) method in UV-visible spectrophotometer. For this purpose the wavelength range 290-340 nm was selected. The entire project was conducted using distilled water as a solvent. Linearity was found for the method in the concentration range of 1-80 mg/ml (R2= 0.9998). The currently used approach was discovered to be concise and linear, and it can be used for routine quality control analysis for spectrophotometric estimation of Rosiglitazone Maleate in bulk.
Keywords : Rosiglitazone Maleate, Area under curve, Antidiabetic, λmax.

QbD-BASED DESIGN AND CHARACTERIZATION OF MUCOADHESIVE MICROSPHERES OF QUETIAPINE FUMARATE WITH IMPROVED ORAL BIOAVAILABILITY AND BRAIN BIODISTRIBUTION POTENTIAL

Someshwar komati
Department of Pharmaceutics, University College of Pharmaceutical Sciences, Palamuru University, Mahaboobnagar, Telangana 509001, India

ABSTRACT : (SDIP -NC-ETRAPS-2023-09)
The present work aims to discuss on Quality by Design based development and characterization of the sustained release mucoadhesive microspheres of quetiapine fumarate. The microspheres were prepared by non-aqueous solvent evaporation process. Factor screening study was carried out using fractional factorial design for identifying the influential factors. Systematic optimization of microspheres was accomplished by Box-Behnken design and characterized for particle size, entrapment efficiency, in vitro drug release and ex vivo mucoadhesion strength, which indicated that microspheres were consequence to be spherical and free flowing in nature. The microspheres exhibited high drug entrapment efficiency and in vitro drug release in a sustained manner, which was considered to be dependent on the concentration of rate controlling polymers. Ex vivo wash-off test on microspheres indicated good mucoadhesive property on excised goat intestinal mucosa. Out of all the accepted formulation, F6 was referred as the optimized formulation. In vivo pharmacokinetic and brain biodistribution study revealed significant increase in the levels of drug in blood plasma and brain homogenates from the optimized formulation vis-à-vis the pure drug suspension. Overall, current study corroborated significant improvement in the biopharmaceutical attributes of quetiapine fumarate from mucoadhesive microspheres, which can be effectively used for management of depression and schizophrenia.
Keywords : Quality by design, Box-Behnken design, Particle size, Quetiapine.

STABILITY INDICATING RP-UPLC METHOD DEVELOPMENT AND VALIDATION FOR THE QUANTITATION OF DRVN IN TABLET FORMULATION

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2Department of Pharmacy, Gitam School of Pharmacy, Rudraram, Patancheru, Medak, Telangana, India - 502329.

ABSTRACT : (SDIP-NC-ETRAPS-2023-10)
Objective: The goal of this study is to provide a simple, accurate, and precise stability indicating technique for quantifying doravirine (DRVN) in tablet dosage form using UPLC. Methodology: Chromatography was executed on an HSSC18 (100 mm x 2.1 mm, 1.8mm) reverse phase column with an isocratic elution of buffer acetonitrile, methanol and 0.01 N Potassium dihyrogen orthophosphate (pH-4.5) in the composition of 40:25:35% V/V at a flowing rate of 0.30ml/min. The column oven temperature was kept at 30.0°C, as well as the wavelength detection was processed at 238 nm. Results and Discussion: Retention time of DRVN was found to be 0.91min. Repeatability of the method was determined in the form of %RSD and the value was 0.33. The percentage mean recovery of the method was found to be 99.57%. LOD, LOQ values obtained from regression equation of DRVN were 0.71 and 2.31 mg/ml respectively. Regression equation and correlation coefficient values of DRVN were y = 17003x + 7203.1 and 0.9997. Drug was subjected for acid, peroxide, photolytic, alkali, neutral and thermal degradation study and the results shown that the percentage of degradation was found between 6.12% and 8.96%. Conclusion: Retention time and total run time of the drug was decreased and the developed method was simple and economical. So, the developed method can be adopted in industries as a regular quality control test for the quantification of DRVN.
Keywords : Doravirine, UPLC, Accuracy, Linearity, Validation, Stability study.

AN INNOVATIVE ANALYTICAL APPROACH FOR ESTIMATION OF REMDESIVIR IN AN INJECTABLE DOSAGE FORM BY RP-HPLC METHOD

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ABSTRACT : (SDIP-NC-ETRAPS-2023-11)
An innovative reversed phase liquid chromatographic assay and validation method for Remdesivir in an Injectable dosage form were carried out using X Bridge C18 (250mm×4.6mm, 5µm particle size) column with mobile phase consists Methanol: Water (90:10, v/v) with flow rate 1mL/min at 255nm. Remdesivir were eluted at 2.854 mins. Validation was performed as per ICH guidelines, which shows linearity 10-60 µg/mL with regression equation y=89466x+57161 of Remdesivir with R2 was 0.999. Accuracy was obtained to be 99.1-99.8% and precision which shows %RSD is 0.21% which is less than 2%. Intermediate precision between day 1 and 2 which shows %RSD is 0.05% and 0.76% respectively which is less than 2%. LOD and LOQ having 0.54 µg/mL and 1.64 µg/mL respectively. This method was applicable for routine analysis and other scientific research in pharmaceutical production.
Keywords : Remdesivir, Validation, Accuracy, Precision ICH guidelines.

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PHARMACEUTICS

A CONSIZED REVIEW ON CHRONOPHARMACOKINETICS

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ABSTRACT : (SDIP-NC-ETRAPS-2023-01)
Chronopharmacokinetics investigates the variations in drug plasma levels as a function of time of a day and the mechanism responsible for time dependent variations. It also involves the study of temporal changes in drug absorption, distribution, metabolism and excretion with respect to time of administrations. A rough 24 hrs cycle driven endogenously in biochemical, physiological, or behavioural process is called circadian rhythm. Chronopharmacokinetics helps in understanding the chronotherapy related to hypertensive and cardiac diseases. The impact of drugs on circadian rhythm should not be neglected. On the other hand, new special drug delivery system can be used to synchronize drug concentration according to circadian rhythms. Thus, the time of administration of a drug is an important source of variation which must be taken into account of pharmacokinetics. Chronopharmaceuticals can identify the proper dosing time and this amelioration will lead to improved progress and diffusion of pharmacotherapy. Chronopharmaceuticals coupled with nanotechnology could be the future of drug delivery system, and leads to safer and more efficient disease therapy in the future. It is emerging as a new therapeutic option and benefits have been established in long term studies with clinical outcomes.

Keywords: Absorption, Distribution, Metabolism, Circadian rhythm, Chronopharmaceuticals

FORMULATION DEVELOPMENT AND QUALITY CONTROL OF PINEAPPLE FRUIT JAM AS AN IMMUNE BOOSTER

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ABSTRACT : (SDIP-NC-ETRAPS-2023-02)
Objective: The objectives of present study include, to formulate and development of pineapple fruit jam from Ananas comosus L. Material and method: Pineapple fruits from local market optimum maturity good nature were brought to the local area of the Bagalkot. In the laboratory study was carried out and firstly the top leaves are cut off then outer layer of peeled is removed, then inner plup taken out from fresh fruit and cut it into small pieces using stainless steel knife subjected for juice extraction and further the jam was prepared using the following ingredients Pineapple fruit, sugar, citric acid and water (if necessary). Result and discussion: The prepared jam was evaluated for the following parameters like Flake sheet test, colour test, water activity test, total soluble solids, sensory evaluation, titratable acidity test, pH and taste. All these parameters were found to be in the acceptable range.

Keywords : Ananas comosus, Pineapple, Citric acid, Sugar.

DRUG DISCOVERY AND DEVELOPMENT

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ABSTRACT : (SDIP-NC-ETRAPS-2023-03)
In the fields of drugs, biotechnology and medical specialty, drug discovery is that the method by that new candidate medications square measure discovered. It is a process which aims at identifying a compound therapeutically useful in curing & treating disease. The idea for a new development can come from a variety of sources which include the current necessities of the market, new emerging diseases, academic and clinical research, commercial sector, etc. New drug development process must continue through several stages in order to make a medicine that is safe, effective, and has approved all regulatory requirements. The process of drug discovery involves the identification of candidates, synthesis, screening and assay for therapeutic efficacy. Once a target for discovery has been chosen, the pharmaceutical industries or the associated academic centres work on the early processes to identify the chemical molecules with suitable characteristics to make the targeted drugs. Once the drug shows value in these tests, then it will begin the process of drug development which prior to clinical trials. Developing a new drug is quite expensive and tedious. From initial discovery to final marketing of medicine is long and challenging task. It takes about 12-15 years from discovery to approve the medicine, and it almost required an investment of US $1 Billion. This article provides a brief outline of the processes of new drug discovery and development.
Keywords : Clinical trials, Therapeutic efficacy, Synthesis.

OVERVIEW ON ADVANCED QUALITY CONTROL TEST FOR TABLETS

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ABSTRACT : (SDIP-NC-ETRAPS-2023-04)
Because of its durability and patient acceptance, the tablet is the most often utilised dosage form out of all those that are available. These pharmaceutical tablets must fulfil a number of conditions in order to be sold as a high-quality medication. Tablets must be durable enough to withstand the strains of transportation, packing, and patient and pharmacist handling. The mechanical strength of tablets is assessed using a combination of simple failure and erosion tests, and more sophisticated engineering tests. The main factors that affect a drug's quality in a dosage form are its safety, potency, efficacy, stability, patient acceptability, and regulatory compliance. Quality control for a pharmaceutical tablet must be considered from the start of the product development process. At the product design and formulation stage, along with the quality goal, the physical, chemical, and biological criteria that the product must fulfil to satisfy quality requirements must be defined. Pharmaceutical tablet quality control tests are conducted in accordance with pharmacopoeia specifications once the production process is complete to ensure that the quality parameters are within acceptable ranges or not. The purpose of this study is to offer in-process and finished product quality control tests for pharmaceutical tablets according to pharmacopoeias. In this study we also include quality assessment of five brands of paracetamol tablets since standard quality parameters are essential for a better quality of the product.
Keywords : Pharmaceutical tablets, Pharmacopoeia, Finished product quality control, quality parameters

MUCOADHESIVE DRUG DELIVERY SYSTEM

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ABSTRACT : (SDIP-NC-ETRAPS-2023-05)
Mucoadhesive drug delivery system interact with the mucous layer covering the mucosal epithelial surface and mucin molecules and thereby it increases the residence time of the dosage form at the site of absorption In recent years, mucoadhesion drug delivery system has shown remarkabl interest for increasing the residence time at the site where it is applied and to expedite contact of dosage form with the underlying mucosa, mainly to promote absorption and elevate the percentage bioavailability of drug to it's extensive surface area and a higher rate of blood. This could be assessed in delivering and enlarging number high molecular weight molecules like protein and peptides. Mucoadhesive controlled drug delivery system are valuable, since they are not only a controlled but also target release and this site specific delivery. The prospect of this presentation is to present comprehensive information related to mucoadhesion and mucoadhesive drug delivery system This presentation gives a highlighted view of all aspects of Mucoadhesive drug delivery system.
Keywords : Mucoadhesion, mechanism of mucoadhesion, factors affecting mucoadhesion.

NANOPARTICLE DRUG DELIVERY SYSTEMS AND THEIR APPLICATIONS AS TARGETED THERAPIES FOR TRIPLE NEGATIVE BREAST CANCER

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ABSTRACT : (SDIP-NC-ETRAPS-2023-06)
The therapeutic effect of highly malignant triple negative breast cancer (TNBC) is negatively affected by the formation of tumor cell resistant clone and the severe toxicity of chemotherapy drugs to normal tissues. In accordance with research findings, in the comprehensive targeted therapy of TNBC, the nano delivery system effectively suppresses and kills tumor cells on the basis of its unique targeting properties as well as the ability to co-load, deliver, and release chemotherapeutic drugs, active gene fragments and immune enhancing factors, etc. When combined with photothermal ablation therapy, the synergism and toxicity reduction effect of chemotherapy drugs, the inhibition of tumor proliferation related genes as well as activation of immune system can be achieved. Nanoparticle delivery systems present a totally new way of drug design and usage, and change the pharmacokinetic characteristics of conventional chemotherapeutic drugs with significantly reduced adverse effects of some otherwise very toxic chemo drugs via targeted delivery. In this paper, a detailed review was carried out focusing on the research progress of nanoparticle delivery system in the comprehensive targeted therapy of TNBC. We also summarize the merits, shortcomings, perspectives and future developments of nanoparticle-drug delivery systems.
Keywords : TNBC, Tumor Cells, Targeted Drug Delivery

ADVANCED APPROACH TO TRANSETHOSOMES OF TRANSDERMAL DRUG DELIVERY SYSTEM

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ABSTRACT : (SDIP-NC-ETRAPS-2023-07)
Mucoadhesive drug delivery system interact with the mucous layer covering the mucosal epithelial surface and mucin molecules and thereby it increases the residence time of the dosage form at the site of absorption In recent years, mucoadhesion drug delivery system has shown remarkabl interest for increasing the residence time at the site where it is applied and to expedite contact of dosage form with the underlying mucosa, mainly to promote absorption and elevate the percentage bioavailability of drug to it's extensive surface area and a higher rate of blood. This could be assessed in delivering and enlarging number high molecular weight molecules like protein and peptides. Mucoadhesive controlled drug delivery system are valuable, since they are not only a controlled but also target release and this site specific delivery. The prospect of this presentation is to present comprehensive information related to mucoadhesion and mucoadhesive drug delivery system This presentation gives a highlighted view of all aspects of Mucoadhesive drug delivery system.
Keywords : Mucoadhesion, mechanism of mucoadhesion, factors affecting mucoadhesion.

DESIGN, DEVELOPEMENT IN VITRO & IN VIVO CHARACTERIZATION OF GASTRO RETENTIVE FLOATING DRUG DELIVERY SYSTEM

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ABSTRACT : (SDIP-NC-ETRAPS-2023-08)
The aim of the present study was to develop floating matrix formulation of Flucloxacillin to maintain constant therapeutic levels of the drug for over 12 hours. Various grades of natural polymers and celluloses were employed as polymers. Flucloxacillin dose was fixed as 125 mg. total weight of the tablet was considered as 300 mg. polymers were used in the concentration of 15, 30 and 45 mg concentration. All the formulations were passed various physicochemical evaluation parameters and they were found to be within limits. Whereas from the dissolution studies it was evident that the formulation (F9) showed better and desired drug release pattern i.e., 99.75 % in 12 hours. It followed zero order release kinetics mechanism.
Keyword: Flucloxacillin, Guar Gum, Micro Crystalline Cellulose, Sodium CMC, HPMC 4M, Sustained Release Tablets..

DESIGN, OPTIMIZATION, AND CHARACTERIZATION OF COMBINED ETHOSOMAL TRANSDERMAL PATCH OF GLIMEPIRIDE AND DULOXETINE DRUG REGIMEN FOR DIABETES AND ASSOCIATED NEUROPATHIC PAIN MANAGEMENT

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ABSTRACT : (SDIP-NC-ETRAPS-2023-09)
Background: Diabetic neuropathic pain is the most prevalent type of neuropathic pain and a major consequence of diabetes. A wide range of medications, whether administered alone or in combination, have been found to dramatically decrease neuropathic pain. Objective: This study aimed to develop the glimepiride (GLM) and duloxetine (DUL) ethosomal transdermal drug delivery patches to prolong and improve the discharge of the drug regimen to treat diabetics as well as neuropathic pain associated with it. Methods: Using the solvent casting method, DUL and GLM ethosomal dispersions were formulated by a 32 factorial design. A total of nine formulations were developed considering ethanol (X1) and phospholipid (X2) independent factors, and the formulation was optimized based on entrapment efficiency (Y1) and particle size (Y2). Moreover, size, surface charge, and % entrapment efficiency were characterized. The ethosomal formulations converted into patches were characterized by thickness, folding endurance, in vitro penetrability, and ex vivo skin permeability. Results: The results of thickness, % moisture content, % moisture uptake, and folding endurance were in an acceptable range for all formulations. Based on the in vitro penetrability and ex vivo skin permeability profile, formulation F9 was considered optimized, extending the cumulative drug release of more than 60 % up to 24hrs and skin permeability of more than 200 μg/cm2. Conclusion: The investigation showed that the medication increment transdermal fix of GLM and DUL was a promising path for the therapeutic management of diabetes and diabetic neuropathic pain.
Keywords : Duloxetine, Ethosomes, Glimepiride, Phospholipid 32 factorial design, Transdermal delivery, Ex-vivo permeability.

FORMULATION AND EVALUATION OF IBRUTINIB NANOSPONGES INCOPORATED TABLET

Author name: **M. Viswaja**
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ABSTRACT : (SDIP-NC-ETRAPS-2023-10)
Mm: The present investigation was undertaken to prepare polymeric nanosponges of an anti-cancer drug ibrutinib to achieve controlled and improved drug release.
Methods: Nanosponges using a polymer (ethyl cellulose, poloxamer 188 and eudragit RL 30 D) and polyvinyl alcohol as a cross-linker were prepared successfully by the emulsion solvent evaporation method. Prepared nanosponges were evaluated for particle size, zetapotential, entrapment efficiency and in-vitro drug release. Nanosponges with good drug release were formulated into tablets and evaluated for miromeritic properties, post compression parametrs and in-vitro release and final optimised formulation was characterised for globule size, zetapotential, FTIR, SEM and stability studies.

Results : The nanosponges' particle sizes were discovered to range between 86.31 nm and 162.4 nm, the Zeta Potential ranges from -22.1 to -29. It was discovered that the drug entrapment efficiency ranged from 92.21 to 99.23% and Formulation F18 exhibited the highest drug release rate of 99.73% in 12h and was discovered to demonstrate good, satisfying results. The tablet formulation's micromeritic and post compression parameters were examined, and it was discovered that F18 had good flow qualities. F18 had a mean globulesize of 133.6 nm, a zeta potential of -22.1 mV, and SEM images revealed a sphere-like structure. The complexation of ibrutinib and the amorphous condition of the medication and formulation were confirmed by the FT-IR, and stability investigations to be stable for three months.

Conclusion: Hence, Ibrutinib loading into nanosponges made using the emulsion solvent evaporation process thus successfully boosted and controlled the drug release.

Key words : Ibrutinib, Nanosponges, Anti-cancer agents, Poloxamer 188, Eudragit RL 30 D

FORMULATION AND EVALUATION OF FLURBIPROFEN TABLETS AS A COLON TARGETED DRUG DELIVERY SYSTEM USING CHITOSAN AS POLY CARRIER

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ABSTRACT : (SDIP -NC-ETRAPS-2023-11)

Colon targeted drug delivery system (CTDDS) is most prioritised to treat wide range of local diseases such as Ulcerative colitis (UC), Crohn's disease (CD), Inflammatory bowel syndrome (IBS) and Colonic cancer etc. In CTDDS the drug releases from the system locally allowing topical treatment to take place. Therefore, side effects can be minimised. Additionally, colon is the potential site for absorption of drug to reach target site through systemic circulationand treats non-colonic conditions in the body. The most simple and convenient way, oral colon target delivery system is selected is in order to achieve this. For the successful targeted drug delivery to colon via the gastrointestinal tract requires the protection of the drug from being degraded or modified or released in stomach and small intestine. The system after reaching colon then controlled and prolonged release rate of drugin proximal colon is ensured. The aim of the present study is to formulate and evaluate colon targeted tablets of flurbiprofen (NSAID) using polysaccharide chitosan as a carrier. The mixture of all ingredients was evaluated for incompatibility study by Fourier transform infrared spectroscopy (FTIR). The tablet was prepared by the wet granulation technique and embedded in the matrix of chitosan followed by the coat of polymer eudragit S 100. All the batches of matrix tablet (F1-F8) were subjected for pre and post compression studies for its suitability as colon specific drug delivery system. Of all formulations F5 has given best result of sustained drug release for prolonged periods of time as it contains suitable concentrations of drug and carrier.

Keywords : Colon targeted drug delivery, local diseases, Flurbiprofen, polysaccharide Chitosan, Coating material eudragit S 100

FORMULATION AND EVALUATION OF BUPIVACAINE PRONIOSOME LOADED ORABASE FOR DENTAL ANAESTHESIA

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ABSTRACT : (SDIP-NC-ETRAPS-2023-12)
The main objective is to develop proniosomes loaded orabase for enhanced permeation and sustain release of bupivacaine for dental anaesthesia. Various Bupivacaine (bup) proniosomal gels were formulated employing various surfactants, span 20 was best formulation and significant for loading in to orabase. The formulations were scrutinized for entrapment efficiency, optical microscopy, in vitro diffusion and release studies, mucoadhesive strength, ex-vivo permeation studies and drug-excipient interactions were determined by FTIR spectroscopy. Considering best entrapment efficiency with span 40 (85.63%) and optimum vesicle shape, along with drug permeation (31.6% for 24 h) the formulation F(BUP)1 was selected and optimized for loading into orabase. The F1 (BUP) loaded orabase exhibited significant release over 7 hr, and permeation profiles exhibited nearly two-fold increased flux i.e 8.06 μg/cm2/hr in comparison with control. Good mucoadhesive strength was observed for proniosomal orabase 3719 dynes/cm2. No evidence of incompatibility amongst formulation components from FTIR studies. SEM images revealed the particle size range from 50μm to 100μm for proniosomal orabase. Orabase can be an effective carrier for proniosomes with enhanced permeation and sustain release for dental anaesthesia.
Keywords : Bupivacaine, Proniosomal gel, Orabase, Entrapment efficiency, Dental anaesthesia, Permeation.

FORMULATION AND EVALUATION OF MUCOADHESIVE DOSAGE FORM LOADED WITH AN ANTI HYPERLIPIDEMIC DRUG

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ABSTRACT : (SDIP-NC-ETRAPS-2023-13)
The main aim of the present study is to develop transferosomal formulations containing an anti lipedemic drug. The drug used in the formulation is atarovastatin with less bioavailability of 56% and and it undergoes extensive hepatic metabolism. Inorder to improve its bioavailability they ate formulated as Transferosomes which can improve the patient compliance by delivering the drug through the trandermal route. Soyalecithin is used as a phospholipid where as Tween 60, Tween 80, Span 60 and Span 80 are used as edge activators. Out of 6 formulations F2 formulation showed more entrapment efficiency. The reason behind this is due to the presence of more phospholipids and as the surfactant concentration increases drug release will be rapid. As our main aim is to enhance the bioavailability this can be achieved by optimizing the concentrations of phospholipid and surfactant one can attain a controlled release of drug through this drug delivery system.
Keywords : Transferosomes, Soyalecithin, Tween 60, Tween 80, Span 60 , Span80.

FORMULATION AND EVALUATION OF A NOVEL ORAL OSMOTIC PUMP TABLET FOR CITALOPRAM HYDROBROMIDE

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ABSTRACT : (SDIP-NC-ETRAPS-2023-14)
Controlled delivery systems provide desired concentration of drug at the absorption site permitting the maintenance of plasma concentrations within the therapeutic range and reducing dosing frequency. Controlled Release products provide significant benefits over immediate-release formulations including greater effectiveness in the treatment of chronic conditions, reduced side effects, and greater patient compliance due to a simplified dosing schedule. The side effects of various drugs can be reduced by using a controlled-release dosage form. Such a dosage form avoids the crests and troughs associated with repeated daily oral administration, leading to side effects because of higher crests. To overcome these problems, one of the most interesting ones is osmotic drug delivery, which utilizes the principles of osmotic pressure for the delivery of drugs in both oral and parental routes. This study describes the preparation and in vitro evaluation of elementary osmotic pump tablets of Citalopram (ant depressive drug) with the objective of achieving controlled release over a prolonged period with reducing the dose-related side effects like somnolence, sinus tachycardia, dizziness, over-sweating, in rare cases amnesia, convulsions, hyperventilation, cyanosis, ECG changes, and acute renal failure.
Keywords : Controlled delivery systems, Elementary Osmotic pump (EOP), Citalopram Hydrobromide, serotonin reuptake inhibitor.

ADVANCED COVID VARIANTS

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ABSTRACT : (SDIP-NC-ETRAPS-2023-15)
Omicron Sub-variant BF-7. BF.7 is a lineage of the omicron variant BA.5.It is highly transmissible variant with a short incubation period. It also has a capacity to cause relapse and can infect even vaccinated individuals. For us, the omicron wave looked milder because the population was protected with previous infection had vaccination. Many people died but those who survived had better immunity. There is no transparent path of transmission linking omicron to its predecessors. Instead the variant has an unusual array of mutation. The variant is believed to have a reproduction number of 10 to18. 6- which means a person infected with BF.7 is likely to transmit the virus between 10 and 18.6 other people. This latest Sub- variant BF.7 has been detected in many countries including India, UK, Germany, France and United States. The first case of BF.7 variant has 4.4- fold higher neutralization resistance than the original Wuhan virus. This means the antibodies from the vaccination are not effective enough against the virus. This new variant presents symptoms similar to upper respiratory infection including fever, sore throat, runny nose and cough. It is believed that low immunity due to previous infections can be one of the major reasons behind the surge. "COVID IS NOT OVER YET" we should be prepared to manage any situation.
Keywords : BF-7, BA.5.

FORMULATION AND EVALUATION OF TRANSFEROSOMES LOADED WITH AN ANTI-HYPERTENSIVE DRUG

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ABSTRACT : (SDIP-NC-ETRAPS-2023-16)
The primary goal of this research is to create transferosome formulations that contain an antihyperlipidemic medication. Simvastatin, the medication employed in the formulation, has a low bioavailability of 60% and undergoes substantial hepatic degradation. These are the deformable nano-vesicles which can deliver both hydrophilic and hydrophobic drugs through transdermal route to enhance the Bioavailability of drugs which undergoes extensive hepatic metabolism when given through oral route which can increase patient compliance. Transferosomes are prepared and characterized by various evaluation tests like SEM analysis, vesicular size, surface morphology. After all evaluations done, Out of 12 formulations F2 formulation showed more entrapment efficiency. The reason for this is that there are more phospholipids present, and as the surfactant concentration rises, medication release becomes more rapid. Our main goal is to improve bioavailability, which can be accomplished by optimising the concentrations of phospholipid and surfactant in this drug delivery system, resulting in a controlled release of drug.

Keywords : Transferosomes; soyalecithin; Tween 60; Tween 80; Span 60; Span80.

PREPARATION AND EVALUATION OF QUERCETIN LOADED BOVINE SERUM ALBUMIN COATED WITH IRON OXIDE NANOPARTICLES

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ABSTRACT : (SDIP-NC-ETRAPS-2023-17)
Quercetin, a plant pigment is a potent antioxidant flavonoid and more specifically a flavonol, chemo preventive activity. The aim of study was to develop quercetin loaded bovine serum albumin coated with iron oxide nanoparticles with reduced the particle size, enhanced dissolution rate. Quercetin loaded bovine serum albumin coated with iron oxide nanoparticles were prepared by co-precipitation method. Drug and polymer interaction studies by FT-IR. The different formulations were evaluated by entrapment efficiency and in-vitro dissolution studies and characterized by particle size, poly dispersity index, zeta potential. The optimised formulation followed by SEM. β- Cyclodextrin and Polyethylene glycol enhance the solubility of quercetin and also have an impact on the poorly soluble bioflavonoid like quercetin. As the concentration of polyethylene glycol increased particle size also increased to some extent and iron oxide nanoparticles also played an important role in reducing in the particle size which is evident from particle size batch F-4, which was 2771nm. Out of all formulations, formulation F-2 has highest entrapment efficiency of 78.40% when compared to other formulations. This is due to optimum polymer concentrations when compared to other formulations. In vitro dissolution studies was conducted for Quercetin loaded nano formulations and the drug release was observed and the highest drug release.

Keywords : Quercetin, Iron oxide nanoparticles, bovine serum albumin, characterisation, in-vitro drug release

A REVIEW ON NANOSPONGES AND POLYMERS USED IN THEIR PRODUCTION

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ABSTRACT : (SDIP-NC-ETRAPS-2023-18)
Nanosponges are a novel targeted drug delivery technology. Nanosponges are cross-linked polymers that are nano structured within a three-dimensional network. They are mainly used as controlled drug delivery systems for pharmaceutical applications. In cancer applications, these nanosponges' complexes are drug-loaded and release targeting peptides that are tightly bound to the radiation-induced cell surface layer of tumour receptors. Upon contact, the nanosponges adhere to the surface of tumour cells and begin to release drug molecules. Nanosponges also have the potential for the treatment of SARS-CoV-2. Such nanosponges are derived from membranes of human cells/tissues that are naturally attacked by SARS-CoV-2. These nanosponges can bind and destroy viruses and induce clinical improvement through cytokine neutralization. Thus nanosponges can successfully protect hosts from any kind of invading cells. Methods used for Preparation of Nanosponges include Solvent Method, Emulsion Solvent Method, Ultrasound -Assisted Synthesis, Melting Method, Loading of the Drug into Nanosponges. They can be quickly biodegraded. These are self-sterilizing because bacteria cannot pass through their 0.25-micron average pore size, improved elegance, and augmented compositional long-term stability.
Keywords : Nanosponges, Polymers, Co-polymers, Cross-linkers, Polymerisation.

POTENTIAL OF DIFFERENT SOLID DISPERSION TECHNIQUES TO ENHANCE THE SOLUBILITY AND DISSOLUTION RATE OF PALBOCICLIB

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ABSTRACT : (SDIP-NC-ETRAPS-2023-19)
The main objective of the present investigation was to improve the Solubility and Dissolution rate of Palbociclib a poorly water-soluble drug by solid dispersion techniques. Methodology: The solid dispersions of Palbociclib were prepared by three different techniques namely surface solid dispersion (SSD1- SSD15), melt granulation (MG1-MG15) and liquisolid compacts (LSC1-LSC9). Prepared solid dispersions have been evaluated for various properties. The best optimized formulation was chosen based on in-vitro release studies and the optimized formulation, which showed the highest dissolution rate was further characterized for FTIR, XRD, surface morphology and stability studies. Invivo studies are performed using rat model.
Results & Discussion: The study showed that prepared solid dispersion has shown satisfactory results for all the evaluated parameters. The solubility of Palbociclib was found to be more from solid dispersions compared to pure drug. The rate of drug release was found to be higher in all the prepared solid dispersions and among all, solid dispersions prepared by

Melt granulation technique with highest drug release exhibited by MG 3 of 99.68% and the hierarchy from the dissolution results follows the rank order MG 3>LSC 1>SSD 3. The optimized formulation MG 3 was then characterized for FTIR which disclosed no specific interactions between drug and excipients and XRD, SEM results showed the amorphous form of Palbociclib in the formulation. The stability studies proposed that MG 3 formulation was stable over 3 months. Invivo studies displayed higher extent of absorption in case of formulation compared to pure drug which confirmed enhancement of Palbociclib bioavailability. The study concludes that the solid dispersion of Palbociclib prepared using Melt granulation technique showed enhanced solubility and Dissolution rate of drug.

Keywords : Palbociclib, SSD, MG, FTIR, XRD.

A REVIEW ON BIOFLAVANOIDS IN THE TREATMENT OF SYSTEMIC LUPUS ERYTHEMATOSUS

Author : **Lakshmi Rajita Kotta1,** Naga Chandrika Pallam 2, Dr.A.Vijaya Laksmi3
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ABSTRACT : (SDIP-NC-ETRAPS-2023-20)

An autoimmune disorder called systemic lupus erythematosus happens when the immune system destroys its own tissues, resulting in severe degenerative changes and pervasive inflammation in the organs some of which are affectedIt has a potential influence on the blood vessels, brain, kidneys, skin, joints, and skin. Citrus fruits, rose hips, and other plants contain a variety of yellow chemical compounds known as bioflavonoids, can help mammals maintain their capillary walls' sensitivity to permeation and pressure changes. These complex compounds found primarily in citrus fruits (Vitamin C) and roses (Quercitrin).Some of the latest trends in the treatment of Systemic lupus erythmatosus are: Flavonoids suppress Pseudomonas aeruginosa Virulence, Activating CD11b, which in systemic lupus erythematosus controls TLR-dependent inflammation and autoimmunity, Flowers from Kalanchoe pinnate are a rich source of T cell-suppressive Flavonoids, nobiletin , a citrus Flavonoid, Citrus flavonoids reduce bacterial cell-cell interactions suppresses production and gene expression of matrix metalloproteinase9, biofilm production, and type III secretion, whereas luteolin, a flavonoid, prevents basophils from activating AP-1.

Keywords : Systemic lupus erythematosus, autoimmune disease, Bioflavonoids,T cell-suppressive flavonoids, Kalanchoe pinnate.

PRUSSIAN BLUE AS AN ANTIDOTE FOR THALLIUM POISONING-A LIFE SAVING INNOVATION

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ABSTRACT : (SDIP-NC-ETRAPS-2023-21)

Prussian Blue (PB) was first developed in 1704 and used as an inorganic pigment. A work in the 1960s investigated the use of PB as an antidote for thallium poisoning and a decorporation agent for radio cesium. There are two forms of PB, ferric (III)

hexacyanoferrate (II) and potassium ferric (III) hexacyanoferrate (II). PBI is used to treat patients with internal contamination of radioactive cesium, radioactive thallium and non-radioactive thallium, to increase their rates of elimination. PBI is Dark blue in color, insoluble ion exchange resin. PB breaks the entero-hepatic cycle by binding cesium in the gut so that the bound cesium is not reabsorbed and gets eliminated with PB in feces. India has been declared as a Nuclear State, there are 22 nuclear reactors placed at 7 nuclear power plants. India's vulnerability to nuclear accidents like Fukushima Nuclear accident in Japan is very high. Also a possible nuclear detonation cannot be denied. Many radionuclides are produced during a nuclear fission reaction, and Cs-137 is most significant among all.Cs-137 mimics potassium ion and it gets incorporated in the cells/tissues very easily. Hence, there is an unmet need of the drug in India. Till date, only PBI has been reported as an antidote of Cs-137.

Keywords : Prussian Blue, Radionuclide, Enterohepatic, Antidote

POLYMERIC NANOPARTICLES AS DRUG DELIVERY SYSTEMS FOR DEMENTIA

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ABSTRACT : (SDIP-NC-ETRAPS-2023-22)
Dementia affects around 50 million people worldwide and it is one of the main causes of disability and dependency. The incidence of dementia is projected to increase rapidly over the next several decades. However, despite these increased number of people suffering from this syndrome, available pharmacological treatments are highly limited. Nanotechnological approaches could constitute the key to deliver drugs effectively to the target site in a prolonged manner and avoiding undesired adverse effects. Polymeric nanoparticles are one of the most promising drug delivery systems, being able to encapsulate a wide variety of compounds. Several studies had been made using nanoparticles, especially for Alzheimer's disease. This chapter analyses the different types of dementia and provides a critical and global vision of the main polymers used to develop polymeric nanoparticles and their specific applications for dementia. An overview about functionalization strategies employed for the treatment of dementia is also carried out.

Keywords : Polymeric nanoparticles, Dementia ,Alzheimer's disease , Nanomedicine

RECENT ADVANCES IN MESOPOROUS SILICA NANOPARTICLE-MEDIATED DRUG DELIVERY FOR BREAST CANCER TREATMENT

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ABSTRACT : (SDIP-NC-ETRAPS-2023-23)
Breast cancer (BC) currently occupies the second rank in cancer-related global female deaths. Although consistent awareness and improved diagnosis have reduced mortality in recent years, late diagnosis and resistant response still limit the therapeutic efficacy of chemotherapeutic drugs (CDs), leading to relapse with consequent invasion and metastasis. Treatment with CDs is indeed well-versed but it is badly curtailed with accompanying side

effects and inadequacies of site-specific drug delivery. As a result, drug carriers ensuring stealth delivery and sustained drug release with improved pharmacokinetics and biodistribution are urgently needed. Core–shell mesoporous silica nanoparticles (MSNPs) have recently been a cornerstone in this context, attributed to their high surface area, low density, robust functionalization, high drug loading capacity, size–shape-controlled functioning, and homogeneous shell architecture, enabling stealth drug delivery. Recent interest in using MSNPs as drug delivery vehicles has been due to their functionalization and size–shape-driven versatilities. With such insights, this article focuses on the preparation methods and drug delivery mechanisms of MSNPs, before discussing their emerging utility in BC treatment. The information compiled herein could consolidate the database for using inorganic nanoparticles (NPs) as BC drug delivery vehicles in terms of design, application and resolving post-therapy complications.

Keywords : Breast cancer, Chemotherapeutic drugs, Metastasis, Mesoporous silica nanoparticles.

FORMULATION, OPTIMIZATION AND EVALUATION OF EFAVIRENZ BY SELF EMULISFYING DRUG DELIVERY SYSTEM (SEDDS)

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ABSTRACT : (SDIP-NC-ETRAPS-2023-24)

The aim of the present study was to formulate and optimize the self-emulsifying drug delivery systems (SEDDS) of Efavirenz by use of 32 Factorial Designs to enhance the oral absorption of Efavirenz by improving its solubility, dissolution rate, and diffusion profile. SEDDS are the isotropic mixtures of oil, surfactant, co-surfactant and drug that form oil in water when introduced into the aqueous phase under gentle agitation. Materials and methods: Solubility of Efavirenz in different oils, surfactants, and co-surfactants was determined for the screening of excipients. Pseudo-ternary phase diagrams were constructed by the aqueous titration method, and formulations were developed based on the optimum excipient combinations with the help of data obtained through the maximum micro emulsion region containing combinations of oil, surfactant, and co-surfactant. The formulations of SEDDS were optimized by 32 Factorial Designs. Results: The optimum formulation of SEDDS contains 33.33% Pumpkin Oil, 52.66 % Tween 20, and 14.01% Propylene Glycol as oil, surfactant, and co-surfactant respectively. The SEDDS was evaluated for the following drug content, self-emulsification time, rheological properties, zeta potential, in vitro diffusion studies, thermodynamic stability studies, and in vitro dissolution studies. An increase in dissolution was achieved by SEDDS compared to pure form of Efavirenz.

Conclusion: Overall, this study suggests that the dissolution and oral bioavailability of Efavirenz could be improved by SEDDS technology.

Keywords : 32 Factorial Designs, Efavirenz, Pumpkin Oil, Tween 20, Propylene Glycol, self-emulsifying drug delivery systems.

DEVELOPMENT OF SILVER NANOPARTICLES USING CURCUMA VAMANA RHIZOMES EXTRACT AN IN-VITRO ANTICANCER ACTIVITY

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ABSTRACT : (SDIP-NC-ETRAPS-2023-25)
Objective: The purpose of this study was to determine the potential to arrest the uncontrolled cell proliferation of MCF-7 cell lines by biosynthesized silver nanoparticles (AgNPs) from EE of C.vamana. Methods: Synthesis of AgNPs was successfully achieved by using EE of C.vamana by eco-friendly and a cheaper method.. In this study, we used EE of C.vamana for biosynthesizing silver nanoparticles which reduce silver ions into CV-AgNPs. The obtained CV-AgNPs were characterized by UV, FTIR, DLS, SEM and EDAX analysis. They were further analyzed for their anticancer activity. Result & Discussion: Formation of Silver nanoparticle with phyto-chemicals was confirmed by UV-Vis spectra by observing peak absorption at 431.0, 425.0 and 415.5 nm. FT-IR spectroscopy showed the capping of silver which was due to phenols and alkaloids by observing the intensity of peaks. Dynamic light scattering of the prepared formulations revealed all the formulation were within nano range, SN1 showed average particle diameter 91.8nm.MTT assay of optimized formulation CV-AgNPs (SN1) compared with EE of C.vamana showed a dose dependent anticancer activity against MCF-7 cell lines. The IC50 values reported as 574.6µg/ml for EE of C.vamana and 30.316µg/ml for CV.AgNPs. Apoptosis studies of formulation CV-AgNPs showed higher early apoptosis as compared to EE of C.vamana.
Keywords : MCF-7, AgNPs, Uv, FTIR, SEM

DEVELOPMENT AND EVALUATION OF NANOSPONGES BASED BUCCAL TABLETS FOR DELIVERY OF QUERCETIN USING BOX-BEHNKEN DESIGN

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ABSTRACT : (SDIP-NC-ETRAPS-2023-26)
The current research is aimed at developing Nanosponges Based Buccal Tablets for Delivery of Quercetin for enhanced solubility, oral bioavailability, controlled release followed by in vivo and in vitro evaluation. Based on the preliminary trials a 3-factor, 3-level Box-Behnken design was employed. Five types of nanosponges from β-cyclodextrin (NS1-NS5) were purposely designed. Quercetin was loaded into nanosponges by freeze drying method. The prepared nanosponges were characterized and formulated into tablets and evaluated. The particle sizes of quercetin-loaded nanosponges are in between 36.45 to 135.27 nm, encapsulation efficiency of 42.37 to 88.44 % and drug release% at 6h of 53.04 to 82.64 %. In-vitro release studies showed that more than 90 % of drug released from nanosponge formulations as compared to only around 45% from free drug suspension after 24 h. The FTIR, DSC and XRPD studies confirmed the interaction of Quercetin with nanosponges. TEM image revealed the spherical structure of drug loaded nanosponges. The drug loaded in the nanosponge structure can be retained and released slowly over time. The nanosponges were formulated in to tablets and evaluated for weight variation, hardness, friability and disintegration studies and obtained satisfactory results. In-vitro release of drug from tablet

showed controlled release behavior for a period of 24 h. The percentage of quercetin released from nanosponges buccal tablets after was 99.75 percent and stability studies indicated no significant changes within 6months.In vivo pharmacokinetic studies of quercetin nanosponges buccal tablets were carried out in male wister rats. At any time, point, the drug plasma concentrations in animals administrated with optimised nanosponges buccal tablets was higher than that of pure drug. Cmax of the quercetin optimised nanosponges buccal tablets 6.27±0.06ng/ml was significant ($p<0.05$) as compared to the pure drug suspension formulation 3.07±0.086 ng/ml. Tmax of both optimised nanosponges buccal tablets formulation and pure drug was 4.0±0.07 and 0.5±0.08 h, respectively. AUC0-∞ infinity for quercetin optimised nanosponges buccal tablets formulation was higher (38.54±0.65 ng.h/ml) than the pure drug suspension 7.84±1.08 ng.h/ml. Statistically, AUC0-t of the optimised nanosponges buccal tablets formulation was significantly higher ($p<0.05$) as compared to pure drug suspension formulation. Higher amount of drug concentration in blood indicated better systemic absorption of quercetin from optimised nanosponges buccal tablets formulation as compared to the drug suspension formulation. It is concluded that cyclodextrin based nanosponges showed superior complexing ability with increased solubility of poorly soluble Quercetin and tablets made for controlled drug delivery, which can reduce dosing frequency.

Keywords : Buccal delivery , Nanosponges , Box Behnken design , β cyclodextrin ,

MICROEMULSION SYSTEM FOR THE EFFECTIVE MANAGEMENT OF SKIN AILMENTS

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ABSTRACT : (SDIP-NC-ETRAPS-2023-27)
Microemulsions and nanoemulsions are lipid-based pharmaceutical systems with a high potential to increase the permeation of drugs through the skin. Although being isotropic dispersions of two nonmiscible liquids (oil and water), significant differences are encountered between microemulsions and nanoemulsions. Microemulsions are thermodynamically stable o/w emulsions of mean droplet size approximately 100–400 nm, whereas nanoemulsions are thermodynamically unstable o/w emulsions of mean droplet size approximately 1 to 100 nm. Their inner oil phase allows the solubilization of lipophilic drugs, achieving high encapsulation rates, which are instrumental for drug delivery. In this review, the importance of these systems, the key differences regarding their composition and production processes are discussed. While most of the micro/nanoemulsions on the market are held by the cosmetic industry to enhance the activity of drugs used in skincare products, the development of novel pharmaceutical formulations designed for the topical, dermal and transdermal administration of therapeutic drugs is being considered.

Keywords : Microemulsions, Nanoemulsions, Skin drug delivery, Skin bioavailability

FORMALATION AND EVALUATION OF EUTERPE OLERACEA FOR NASAL ADMINISTRATION ONTO TREAT SUPRA VENTRICULAR TACHYCARDIA

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ABSTRACT : (SDIP-NC-ETRAPS-2023-28)
Obective: The present study was planned to develop nasal gel for the treatment of supra ventricular tachycardia. The objective of the present investigation was to develop a mucohadhesive in-situ gel with reduced nasal mucocillary clearance to improve the local effect of polyhebral extract in the treatment of supra ventricular tachycardia. The prolonged residence of drug formulation in the nasal cavity is one of the most importance of intranasal drug delivery. The prepared formulation was subjected for gelling temperature, gelling time, viscosity, gel strength, pH, drug content, mucoadhesive strength, spread ability and irritancy studies. METHODS: In the study the Chitosan based mucoadhesive in-situ nasal gels containing Euterpe Oleracea extract were used having antioxidant and anti-inflammatory effect. A polyherbal in-situ hydrogel was designed and evaluated by and mixing of chitosan, poly ethylene glycol (PEG 400) and xantham gum with a small amount of hydroxyproply methylcellulose (HPMC K4M) and carbopol 934. RESULTS: The mucohadhesive gel after being administration in to nasal cavity to get transformed in to solution at body temperature, which diminished nasal cavity mucocillary clearance and prolonged duration of action. The in-situ herbal gel prepared by combination of different concentration of HPMC K4M or carbopol or xantham gum and chitosan produce the better and effective gel. The findings of evaluation parameters indicate the nasal in-situ gel to solution. Conclusion: The concluded that in-situ gel to herbal drug (Eutrepe oleracea) to over com first pass metabolism to overcome first pass metabolism to improve the bioavaibility. The mcoadhesive in-situ gel system is a promising approach for the intra nasal drug delivery system
Keywords : Eutrepe oleracea, HPMC, Carbopol, In-situ gel, Chitosan, Xanthan gum, Benzalkonium chloride.

FORMULATION AND EVALUATION OF ANTICOAGULANT MAGNETIC NANOPARTICLES

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ABSTRACT : (SDIP-NC-ETRAPS-2023-29)
Magnetic nanoparticles are the class of nanoparticles that can be manipulated by using magnetic fields. These particles consisting of two components; a magnetic material like iron, nickel, cobalt, and a chemical component with functionality mainly with biocatalytic or biorecognition properties. Amazing phenomena exhibited by magnetic nanoparticles include superparamagnetism, high field irreversibility, and high saturation magnetization. Anticoagulant reffered as blood thinners that are chemicals which stops or slow down blood coagulation, extending the clotting time, these are used to treat thrombotic diseases. anticoagulant drugs which are recently used are warfarin, heparin, apixaban, enoxaparin. anticoagulant used as coating agent to magnetic nanoparticles, they act as both anticoagulant agent and wound-healing agent. Magnetic nanoparticles are prepared by using chemical coprecipitation method.
Key words : Magnetic nanoparticle, Biorecognition, Anticoagulant, Wound-healing agent.

GEMCITABINE-LOADED FOLIC ACID TAGGED LIPOSOMES : IMPROVED PHARMACOKINETIC AND BIO-DISTRIBUTION PROFILE

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ABSTRACT : (SDIP-NC-ETRAPS-2023-30)
Background: Gemcitabine (GEM) is found effective in the treatment of many solid tumors. However, its use is restricted due to its small circulation half-life, fast metabolism and low capacity for selective tumor uptake. Folate receptors (FRs) have been recognized as cellular surface markers, which can be used for cancer targeting. PEGylated liposomes decorated with folic acid have been investigated for several anticancer agents not only to extend plasma half-life but also for tumor targeting via folic acid receptors which overexpressed on tumor cell surface.
Objective: Therefore, the objective of the present study was to prepare GEM-loaded folic acid tagged liposomes to improve the pharmacokinetics and tumor distribution of GEM. Methods: The blank folate-targeted liposomes composed of HSPC/DSPE-mPEG2000/DSPE-mPEG-Folic acid were prepared first by thin film hydration technique. GEM was then loaded into liposomes by remote loading technique. The optimized liposomal formulations were evaluated in vitro for GEM release using dialysis technique, HeLa cell uptake using FACS technique, and cytotoxicity using MTT dye reduction assay. The comparative in vivo pharmacokinetic and biodistribution characteristics of radiolabeled (99mTc-labeled) plain GEM solution, and all liposomal formulations (conventional:CLs; stealth: SLs; folate targeted: FTLs) were evaluated in mice model. Results: GEM-loaded FTLs showed sustained release profile, efficient uptake by HeLa cells and greater cytotoxicity. Further, FTLs displayed significantly improved pharmacokinetics, and biodistribution profile of loaded GEM. Conclusion: In conclusion, the developed GEM-loaded folic acid receptor-targeted liposomal formulation could be a promising and potential alternative formulation for further development.
Keywords : Gemcitabine (GEM), Liposomes, Folic acid, Folate receptor, Drug delivery, Cancer.

IN-VITRO COMPARATIVE STUDY AND QUALITY ANALYSIS OF DIFFERENT MARKETED BRAND OF METFORMIN HYDROCHLORIDE TABLETS AVAILABLE IN HYDERABAD WITH BRAND AVAILABLE IN JAN AUSHADHI STORES

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ABSTRACT : (SDIP-NC-ETRAPS-2023-31)
Metformin hydrochloride is an oral anti-diabetic drug used mainly to treat type II diabetes mellitus and available as several brands in the market which make it difficult to select the safe, effective and economic one. The aim of this research work was to check, compare and evaluate the quality standards of different brands of Metformin hydrochloride tablets available in local market of Hyderabad with brand available in Jan aushadhi stores (MET-3)

India. Eight brands of Metformin tablets (500mg) were selected and evaluated comparatively for their physical and chemical parameters as per official method. The physiochemical equivalence of all the tablet brands were assessed through evaluation of both official and nonofficial standards such as size, shape, uniformity of weight, friability, hardness, disintegration, assay and dissolution rate. All the Eight brands of Metformin hydrochloride tablets including brand available in Jan aushadhi stores (MET-3) fulfilled the official I.P. specification. It was concluded that the generic drug of metformin available in Jan aushadhi Kendra (MET -3) which price is almost 70% less than the others seven brands of Metformin Hydrochloride is officially similar to the other seven brand of same drug that are available in Hyderabad meet the I.P. specification for quality control analysis and interchangeable.

Keywords : Jan aushadhi stores, Hardness, Disintegration, Generic drug, Brand drug

FORMULATION AND EVALUATION OF SWELLING MATRIX TABLETS OF METFORMIN

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ABSTRACT : (SDIP-NC-ETRAPS-2023-32)

Metformin is a biguanide antihyperglycemic agent and first-line pharmacotherapy used in the management of type-II diabetics. When metformin conventional tablets are administered along with food rather than on an empty stomach, peak plasma concentrations are higher and extent of absorption of the drug is increased. Systemic bioavailability is about is 40-60%. The maintenance of a constant plasma level is important in ensuring desired therapeutic response. Since the half-life of metformin is approx. 6.5 hours, multiple doses are needed to maintain a constant plasma concentration for a good therapeutic response and improved patient compliance. It has also been reported that metformin absorption in duodenum and jejunum is directly proportional to the dose availability. It has low bioavailability due to its first pass metabolism. Usually, Antidiabetic dose of metformin range from 500 to 2000 mg/day in divided doses. Swellable tablets were used to increase the gastric resistance time of dosage forms. Such dosage forms are better because they reduce the inter-subject variability in absorption and lower probability of dose dumping by reducing frequency of dosing. In the present study, the natural polymers are used for the formulation of swellable tablets. Tablets were prepared by direct compression method using the natural polymer. Results: The preparation of swellable matrix tablets of Metformin Hydrochloride with controlled release property employing Araucaria Columnaris crude gum, Gum Kondagogu, Gum Karaya in different concentrations for sustained release behavior is done. The release of Metformin Hydrochloride was found to be affected by the concentration of the polymer used in the preparation. As the concentration of the polymer i.e., crude gum is increased the swelling matrix of the tablet is increased. Different concentrations of drug and polymer (1:0.25, 1:0.75, 1:1) ratios are used. The formulation in which the polymer ratio is high the swelling property is enhanced and sustained release property is observed for 12hrs. The polymer Araucaria Columnaris shows high swelling property with Metformin drug compared with other polymers used in the above formulations.

Conclusion: Swellable tablets of Metformin Hydrochloride were prepared using crude extract of Gum Kondagogu and Gum karaya in the formulations failed to retard release of over long period (12hrs). The combination of drug and crude extract of Araucaria Columnaris in the ratio 1:1 can be successfully employed for formulating extended-release tablet of Metformin hydrochloride.

Keywords : Metformin hydrochloride, Natural polymers,Araucaria columnaris, Gum karaya, Gum kondagogu

A REVIEW ON NANOSUSPENSION DRUG DELIVERY SYSTEM: AN INNOVATIVE APPROACH FOR POORLY AQUEOUS SOLUBLE DRUGS

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ABSTRACT : (SDIP-NC-ETRAPS-2023-33)

Solubility, the freedom of the drug from its route of administration, is the key factor for drug efficacy. Most of recently discovered drugs are insoluble in water and hence poorly absorbed with reduced bioavailability that lead to more production efforts. Due to their flexible characteristics and specific advantages, nanosuspensions has introduced as promising technique for effective hydrophilic drugs delivery. The reduction into the submicron range of drug particles leads to a major increase in rate dissolution and thus improves bioavailability of the drug. Nanosuspension involves colloidal dispersed submicron particles of the pharmaceutical active drug ingredient in liquid-phase stabilized with a surfactant. By oral and non-oral route of administration, nanosuspensions can be administered. Study focuses on different preparation methods with advantages and disadvantages, characterization techniques, and implementations. Surprisingly large proportion of new drug candidates emerging from drug discovery programs are water insoluble, and therefore poorly bioavailable, leading to abandoned development efforts. These so-called 'brickdust' candidates can now be rescued by formulating them into crystalline nanosuspensions. In the process of overcoming issues involving solubility, additional pharmacokinetic benefits of the drugs so formulated have come to be appreciated. As such, insolubility issues of the past have provoked a paradigm change, which now offers novel solutions for innovative drugs of the future.

Keywords: Nanosuspension, Particle Size Reduction, Solubility Improvement, Bioavailability enhancement.

BIODEGRADABLE MATERIAL AS An ECO-FRIENDLY PHARMACEUTICAL PACKAGING MATERIAL

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ABSTRACT : (SDIP-NC-ETRAPS-2023-34)
Eco friendly pharmaceutical packaging materials are the safe materials for environment which enclose pharmaceutical product in any of the dosage forms. They may be derived from natural resources, like starches, proteins etc. that inflict little or nearly no harm on the environment and the environment dependent species. This review highlight the eco-friendly materials, their classification, uses, advantages and finally summarizes the scope and future need in respect of pharmaceutical packaging. Classification has been done under several categories based on their uses, chemical constituents and the type of raw material used for its manufacturing. This review, details all the above-mentioned aspects and the responsibility of pharmaceutical sector for progressive development of such eco-friendly packaging.
Keywords : Dosage forms, Starches, Proteins.

PHARMACEUTICAL DOSAGE FORM DESIGN, DEVELOPMENT AND CLASSIFICATION

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ABSTRACT : (SDIP-NC-ETRAPS-2023-35)
Background: Pharmaceutical formulations are complex systems consisting of number of excipients and active pharmaceutical ingredients. The formulation of drugs for pediatric and geriatric patients provides some additional challenges in terms of compliance and therapeutic efficacy so the Drugs must be properly formulated for administration to patients, regardless of age. Objective: The purpose of this article was to review the physical, chemical, and biological characteristics of drug substances and also to understand different types of dosage form and their classification based on routes of administration and Pysical form of the dosage form. Methods: Information for the current article was collected from a literature study, technical meetings, and the presentations at professionals from the books review and Publications of the author and Professional society meetings. Results and Discussion: The formulation and the correct design of a pharmaceutical dosage form requires consideration of the physical, chemical, and biological characteristics of all pharmaceutical ingredients and the drug substances. Preformulation factors include physical properties such as particle size, partition coefficient, dissolution, and drug stability. Conclusion: The successful development and formulation of a dosage form includes multiple considerations involving the drug, compliance, packaging, and stability, as well considerations of patient for taste, palatability and the route of administration.
Keywords : Dosage form, Classification, Pharmaceutical ingredients.

FORMULATION AND EVALUATION OF TANNIC ACID EYE DROP FOR THE TREATMENT OF ENDOPHTHALMITIS

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ABSTRACT : (SDIP-NC-ETRAPS-2023-36)

Penicillium citrinum is a member of Penicillium genus of anamorphic, mesophilic fungi. It is usually responsible for fungal infection in humans that includes endophthalmitis and pneumonitis type of conditions. These conditions are rarely seen in non-immune deficient patients. Seasonal fruits are generally consumed to boost immunity during Covid-19 pandemic. According to review of literature, tannic acid considerably decreases load of P. digitatum, using in vitro agar and orange model. Tannins, are naturally found polyphenolic substances, those have proven ability to reduce load of fungal infection caused by P. citrinum from developing a mycelium and spores. In current study we had tried to evaluate the impact of tannic acid on P. citrinum using orange model as a preliminary test. In-vitro results indicated that tannic acid reduces the load of fungal infection and severity of grey mould infection on citrus fruit by more than 60%. Further this we had tried to formulate and evaluate eye drop using tannic acid as an active substance. Results indicated that the prepared formulation`s lambda max was found to be 276 nm, and it was found to be clear solution and isotonic in nature. In future, we are planning to perform experiment in-vivo so as to gain protection from different fungal species and also to formulate aerosol formulation for same. That may be used for treatment of fungal infection in human lungs.

Keywords : Penicillium citrinum, Tannin, Citrus fruit.

FORMULATION AND EVALUATION OF GRANISETRON HYDROCHLORIDE SUBLINGUAL FILM

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ABSTRACT : (SDIP-NC-ETRAPS-2023-37)

Sublingual films are well known for its rapid onset of action with enhanced patient agreement. The section of drug absorbed through the sublingual blood vessels by-passes the first-pass metabolism and the bioavailability of the loaded is improved considerably. Difficulty in swallowing, inaccessibility for water to swallow the conventional oral solid dosage forms and unexpected motion sickness are some of the situations that demand the development of sublingual films of Granisetron Hydrochloride. Our aim is to design and develop fast dissolving sublingual films of Granisetron Hydrochloride, with the prime objective to release the drug quickly from the film to facilitate oral absorption. The sublingual films of Granisetron Hydrochloride was prepared by solvent casting method and evaluated for weight variation and thickness of the film, folding survival test, visual appearance, disintegration time and in vitro dissolution. A gradual increase in weight of the film was observed with increase in the concentration of the polymer. The observed disintegration time of the films was in the range of 13.40–13.64 Seconds. Folding endurance was found to be within the range of 71–77 which indicates that film has good flexibility. The formulation (B3) released about 86.42±0.23% of the Granisetorn hydrochloride within 105 seconds. The newly developed fast dissolving sublingual films of Granisetron Hydrochloride had exhibited faster release of the drug in the in vitro conditions with reliable strength and endurance.

Keywords: Granisetron Hydrochloride, Bioavailability, Sublingual.

FORMULATION AND EVALUATION OF ORODISPERSIBLE TABLETS OF IBUPROFEN USING SUPERDISINTEGRANTS

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ABSTRACT : (SDIP -NC-ETRAPS-2023-38)
The present research was focused to develop orodispersible tablets of ibuprofen using different super disintegrating agents. Ten different formulations of fast dissolving tablets of Ibuprofen were successfully prepared using Sodium Starch glycolate, Plantago ovata, Xanthan gum, Guar gum, Locust bean gum and Cross povidone by direct compression method. The tablets were evaluated for parameters like thickness, hardness, friability, in-vitro dispersion time, wetting time, water absorption ratio, percentage drug content and in vitro drug release studies. Among all the Ten tablet formulations the formulation containing Plantago ovate seed mucilage used as super disintegrant had showed better results when compared to other formulations. The disintegration time for the optimized formula F5 was found to be 19 sec. In vitro release drug release of optimized formulation of Ibuprofen orodispersible tablet of F5 was found to be 98.86% drug release within 45 min. So finally it has been concluded that among all super disintegrating agents used Plantago ovate seed mucilage a natural super disintegrant is the best super disintegrating agents for the formulation of orodispersible Tablets.
Keywords : Orodispersible, Thickness, Hardness, Friability.

FORMULATION AND EVALUATION OF DASATINIB NANOSUSPENSIONS

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ABSTRACT : (SDIP -NC-ETRAPS-2023-39)
Dasatinib is one among the several first-line anti-cancer drugs, generally classified as BCS Class-II drug with a half-life of 3-4 hrs. It possess poor solubility and low bioavailability.In spite of having good therapeutic efficacy, less research on dasatinib and thus, dasatinib is selected for the present research work.To limit this drawback, nanotechnology has proven to show a promising result in drug delivery. In order to improve its bioavailability and therapeutic performance, polymers such as Eudragit RS, HPMC K-100, Polaxomer-188 are selected for this study.Dasatinib nanosuspensions were prepared by combination method of precipitation–ultrasonic homogenization. The nanosuspensions were evaluated and characterized by various physicochemical parameters such as Particle size, Zeta potential, drug entrapment efficiency, invitro drug diffusion.Entrapment efficiency for all the formulations were measured.Highest eentrapment (79.5%) was measured in formulation-F2.Zeta potential was performed using Malvern Zeta sizer and the particle size of formulation-F2 was found to be 465.4nm, and the zeta potential of formulation-F2 was found to be -19.6mv. In-vitro diffusion studies for dasatinib nanosuspensions were performed by diffusion cell apparatus. The highest in-vitro drug release was achieved when equivalent amounts of poloxamer-188 and HPMC K100(F2) was taken. F2 has shown 88.7% of drug release over a period of 24hrs and from the release kinetics graphs it is evident that F2 follows zero order. The drug release rate of dasatinib nanosuspensions is more when compared with the pure drug.
Keywords : BCS class II drug, HPMC K-100, Polaxomer-188.

FORMULATION AND EVALUATION OF HERBAL MOUTH RINSE FROM BAEL, TULSI, EUCALYPTUS AND LIQUORICE FOR BETTER ORAL HYGIENE

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ABSTRACT : (SDIP -NC-ETRAPS-2023-40)
Mouth rinse is an aqueous solution that is typically used for its antibacterial, deodorising, refreshing effects and dentistry. Plaque-associated oral disease affects a large proportion of the population and is regarded as one of the leading causes of tooth loss across the world. India has many disparities in oral health care, with 95% of the Indian population suffering from periodontal disease. The present study aimed to formulate and evaluate a mouth rinse from bael, tulsi, eucalyptus and liquorice for better oral hygiene. There are three batches are prepared, among from this the best formulation of mouth rinse right now is F3.It is stable for long-term storage in terms of pH, Colour, and odour .The formulation's pH was found to be to be 6.2. There is no growth of microorganism in the formulation. The antibacterial activity of different concentrations of mouth rinse was determined using the agar diffusion method. The inhibition result for S.aureus was determined to be 13mm for 60µl, 12 mm for 40µl, and 10 mm for 20µl, respectively.The zone of inhibition results indicated that this herbal mouth rinse was an effective plaque inhibitor. The extract of polyherbal utilized for the study because of their antibacterial, antinflammatory and antioxidant activity.
Keywords : Mouth rinse, Plaque, Antibacterial, Periodontal

PHARMACEUTICAL CHEMISTRY

DEVELOPMENT OF POTENTIAL INHIBITORS AGAINST SARS-CoV-2 FROM HERBAL PLANTS OF ROSACEAE FAMILY: INSILICO DOCKING STUDY

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ABSTRACT : (SDIP -NC-ETRAPS-2023-01)
The coronavirus disease 2019 (COVID-19) pandemic is the universal life frightening epidemic disease, elicited by SARS-CoV-2, is an incomparable world health disaster. Therapeutic choices for treatment are still very scant and a challenging one. The drug discovery and design by conventional methods comprises the painstaking research time with vast economy that is not simply met by present pandemic conditions. The main aim of this study is to discover and identify the most effective and capable molecules from herbals against the two targets i.e., Protease & RdRp of SARS-CoV-2 via insilico docking screening of various species belong to Rosaceae family. The binding affinities were determined by structure based molecular docking study and the reports revealed that all phytochemical constituents showed good affinity towards the target than standard N3 inhibitor. Among all the docked phytochemicals, Multiflorin B showed good interaction with Protease & RdRp with a docking score value of -6.975 & -5.471 kcal/mol respectively. Based on the G score value, the compound Multiflorin B showed high specificity against the Protease target. The

stability of the protein-ligand complexes was performed by MD simulations study. The pharmacokinetic and the toxicity studies were executed that showed the safety of the constituents. The present study indicated that the various active phytochemical constituents from Rosaceae family could inhibit SARS-CoV-2 and they can be repurposed against SARS-CoV-2.

KeyWords : SARS-CoV-2, RdRp, Protease, Rosaceae, Insilico docking studies, MD Simulation, ADMET studies

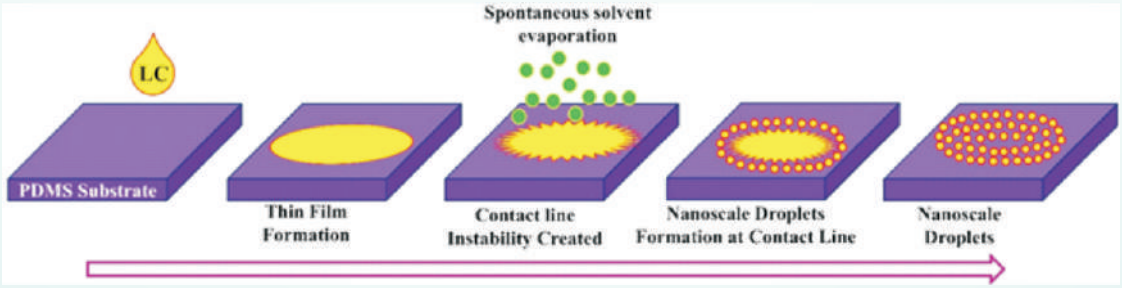
PREPARATION OF HIGH-DENSITY LIQUID CRYSTAL NANOSCALE DROPLETS FOR TEMPERATURE & SOLVENT SENSOR APPLICATIONS

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ABSTRACT : (SDIP-NC-ETRAPS-2023-02)

In general, liquid crystal (LC) molecules possess both crystal like orientational order and liquid-like flow properties due to their existence between the crystal and liquid phases. Therefore, creating LC nanoscale droplets from its thin films by conventional methods is a challenging task. However, there is great thrust in developing LC nanoscale droplets due to their importance in many advanced applications. Here, the preparation of highly concentrated liquid crystal nanoscale droplets is shown by contact line instability caused by rapid solvent evaporation at the three-phase contact line of a thin film.For this, initially, dilute solutions (0.1% - 0.9% (w/v)) of LC (4-Cyano-4'-pentylbiphenyl) material is dissolved in a solvent (n-hexane), then these solutions were drop-cast (2 μl volume) onto a polydimethylsiloxane (PDMS) substrate. In this step, the LC solution spreads over the surface and forms a thin film. After film formation, LC nanoscale droplets are directly created due to contact line instability caused by rapid solvent evaporation from the film. It starts at the three-phase contact line of the film and continues through the middle of the film.Different solvents with different vapor pressures were studied to determine how solvent evaporation affects the formation of nanoscale droplets. Chloroform, hexane and toluene are mainly used.In addition, a study was also carried out to explore the effect of different surfaces on the formation of nanoscale droplets. The surfaces used here are essentially, chemically hydrophobic & hydrophilic, and chemically periodic hydrophobic & hydrophilic patterns.

Keywords : Liquid crystal, PDMS substrate, Contact line instability, Dewetting, and Nanoscale droplets



AN IN SILICO METHOD TO ASSESS THE EFFECTIVENESS OF DIETARY FLAVONOIDS AND THEIR CONTRIBUTION TO ALZHEIMER'S DISEASE

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ABSTRACT : (SDIP-NC-ETRAPS-2023-03)
Alzheimer's disease (AD) is a fatal neurological condition that causes ongoing neuronal deterioration in later life. Amyloid beta and tau protein buildup, a factor in the development of senile plaques and tangles, characterises the aetiology of disease progression. Additionally, it was noted that AD patients' nutritional status was poor and frequently ignored in research studies. The focus of the current research is on consuming foods that are rich in natural antioxidants because they can protect the brain from oxidative and inflammatory damage. The best ligand for binding to the AChE receptor is theaflavin-3'-gallate. Pharmacophoric research was done to determine the potential of various compounds as drug candidates. Since the pharmaceutical industry has always been interested in compounds from natural sources, a small amount of these compounds added to synthetic drugs will ensure minimal side effects while maximising efficacy. To prevent brain damage and enhance cognitive abilities, food items like hazelnuts, green tea, black tea, pistachio nuts, walnuts, cocoa mix, and coffee should be included more frequently in the diets of both healthy people and AD patients.
Keywords : Alzheimer's disease, neuronal deterioration, Antioxidant, theaflavin-3'-gallate.

COMBINING MOLECULAR DOCKING AND MOLECULAR DYNAMICS STUDIES FOR S-EQUOL FOR ERβ AGONIST ACTIVITY

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ABSTRACT : (SDIP-NC-ETRAPS-2023-04)
Isoflavones are bioactive compounds that are similar in chemical structure to 17-β-estradiol and also exhibit mild estrogenic properties, often referred to as phytoestrogen. Soybean and other plants are a source of isoflavones like daidzein and genistein which are metabolized to S-Equol by much bacterial flora in the intestine. S-Equol is an isoflavandiol estrogen that shows potent affinity towards the G-protein coupled estrogen receptor-β. In the present study, extra precision molecular docking of 32 isoflavone compounds was performed. By considering the docking score, binding affinity, and economical parameters, one of the top-ranked isoflavones was selected for 100ns molecular dynamics simulation and was compared with the standard drug. HIE 475, PHE 356, ARG 346, and LEU 339 are catalytic pocket residues that are responsible for the activation of ER-β. Based on the MD results and literature we found that S-Equol is potent ER-β Against.
Keywords : Isoflavones, ER-β, Molecular docking, Molecular dynamics simulation.

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3D PRINTING TECHNOLOGY IN PHARMACEUTICALS

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ABSTRACT : (SDIP-NC-ETRAPS-2023-05)
The 3D printing technology is also known as Additive Manufacturing process. It is making three dimensional solid objects from a digital life. Manufacturing companies typically design object models using a special type of computer software known as a computer-aided design (CAD) package. Once complete, the object model is saved as a stereolithography (STL) or an additive manufacturing file (AMF) format.3D printing softwares like Strata, Blender, Auto desk Maya etc are used for 3D printing of pharmaceuticals
3D printing technology is a new chapter in pharmaceutical manufacturing has gained vast interest in the recent past as it offers significant advantages over traditional pharmaceutical processes. The application in the 3D printers is one of the most revolutionary and powerful tool for customization and personalization of pharmaceutical formulations. Key players in the 3D printing drug market are Aprecia, Extended biosciences, FabRx printed, GlaxoSmithKline, Astrazeneca, Merck. 3D printers have many advantages over the conventional manufacturing for tablets.
Conclusion
3D printing has the potential development, manufacturing and dispensing of medicines. The world is forever changing with the help of 3d printing for medical purposes today is beyond astonishing but what the future holds is unknown, however it is certain additive manufacturing will be a large corporate in solving problems It could be a boon for personalized medicine.
Keywords : Additive manufacturing, Computer aided design, Stereolithography, Customization, Personalization

IN-SILICO MOLECULAR DESIGN OF PYRROLOTRIAZINE CONTAINING HETEROCYCLE SCAFFOLDS AS POTENTIAL ANTI-INFLAMMATORY AGENTS

By THADURI BINDU, Dr. D. MOHANTY
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ABSTRACT : (SDIP-NC-ETRAPS-2023-06)
Over the past few years, there has been an upsurge in the use of anti-inflammatory drugs. Pyrrolo [2,1-f] [1,2,4] triazine containing heterocycle is an eminent structural motif. The presence of heteroatoms at specific positions forms hydrogen bonds and interactions with surrounding amino acid residues has an ability to provide selectivity. Molecular docking is an in-silico structure-based method widely used in drug discovery which enables the identification of novel compounds of therapeutic interest and predicting ligand-target interactions at a molecular level. Discovery Studio visualizer, PyRx, and Pymol, were utilized to study binding affinity. Designed pyrrolo [2,1-f] [1,2,4] triazine containing heterocycles were tested for TNF-alpha (PDB ID:2AZ5) which revealed potential binding affinity at -8.2 to -9.1 kcal/mol when compared with Diclofenac as the reference drugs which showed binding affinity at -7.4 kcal/mol. Swiss ADME was employed to study the oral bioavailability.

BOILED Egg visualizations, and ADMET investigated by the pkCSM and PreADME online web server. Lipinski's rule of five is not violated by any designed compounds. Because of their decisive binding modes, excellent bioavailability and great pharmacokinetic characteristics, pyrrolo [2,1-f] [1,2,4] triazine containing heterocycles will be potential scaffold to explore the anti-inflammatory activity. Hence designed compounds will be further used for synthesis.

Keywords : Anti-inflammatory activity, Pyrrolotriazine, Molecular Docking

IN SILICO DOCKING STUDIES OF HINOKITIOL WITH ABEMACICLIB AND ALPELISIB AGAINST HUMAN EPIDERMAL GROWTH FACTOR RECEPTOR 2 (HER2) TO TARGET BREAST CANCER

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ABSTRACT : (SDIP -NC-ETRAPS-2023-07)

Cancer is fundamentally a disease of disordered gene expression. Breast cancer is a well known and most common cancer worldwide. The protein – ligand interaction plays a imporatant role in structural based drug designing for disease. Hinokitiol (HIOL) is also known as β- thujaplicin, is found in the heartwood of cupressaceous plants and naturally occurring tropolane derivative is a known biochemical target other than the fact that it induces apoptosis. The docking scores of the active constituents are compared against the standard drugs. The 3D structures of the constituents of Abemaciclib, Alpelisib and Hinokitiol are obtained from PubChem compound. The target for docking studies is selected as Human epidermal growth factor receptor 2 (HER2). Docking analysis is done by initially selecting the target for the disease and followed by obtaining the 3D structure of Human epidermal growth factor receptor 2 (HER2) (PDB ID: 1S78A) from protein data bank. The HER2 was docked with the above said drugs and based upon the lipin rule, rerank score and mol dock score we chosen the hinokitiol having good interaction with receptor molecule and docking studies has been carried out through Molegro Virtual Docker (MVD).

CEFTRIAXONE INDUCED EAAT-2 TRANSCRIPTION CONFORMATIONAL DYNAMICS OF NF-KB AND AN INTERACTION ANALYSIS STUDY OF POST DOCKED NF-KB - DNA COMPLEX USING HADDOCK

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ABSTRACT : (SDIP -NC-ETRAPS-2023-08)

Excitotoxicity, depletion of energy metabolites and ionic imbalance are the major factors involved in neuro-degeneration mediated through EAAT-2 dysfunction in ischemic insult. Recent studies have revealed that ceftriaxone expresses EAAT-2 via NF-kB signaling pathway, stimulation of EAAT-2 expression in the ischemic and excitotoxic conditions that

could provide potential benefits to control neuro-degeneration and prevent further brain damage. In this study we have predicted the in-silico model for interaction between NF-kB and EAAT-2 promoter region to rule out the conformational changes for the expression of EAAT-2 protein. Using homology-built model of NF-kB, we identified ceftriaxone-induced conformational changes in gene locus -272 of DNA where NF-kB binding with EAAT-2 promoter region through protein-DNA docking calculation. The interaction profile and conformational dynamics occurred between ceftriaxone pre-docked and post-docked conformations of NF-kB with DNA employing HADDOCK 2.2 web server followed by 50 ns long all atom explicit solvent molecular dynamics simulations. Both the protein and DNA exhibited conformations with modest changes in HADDOCK score, energy terms (desolvation energy (Edesolv), Van Der Waal energy (Evdw), electrostatic energy (Eelec) restraints energy (Eair), buried surface area, RMSD, RMSF, radius of gyration, hydrogen bonding, total and potential energies when ceftriaxone pre- and post-docked NF-kB conformations were bound to DNA. Hence, these conformational changes could be the reason for EAAT-2 expression through ceftriaxone specific binding pocket of -272 of DNA.
Keywords : Glutamate, NF-kB, Ceftriaxone, EAAT-2 expression, HADDOCK, molecular dynamics, protein-DNA

MICROCEPHALY

Jupaka rohith

ABSTRACT : (SDIP-NC-ETRAPS-2023-09)

Microcephaly is a congenital disorder characterized by an abnormally small head and brain size. It is caused by a genetic mutation or abnormal brain development during pregnancy, most commonly due to viral infections such as Zika and rubella. Symptoms of microcephaly can vary greatly depending on the severity of the condition, but may include intellectual disability, developmental delays, seizures, and abnormal facial features.

Diagnosis of microcephaly is typically made through physical examination and measurement of the head circumference. Imaging studies such as CT or MRI can also be used to assess brain size and structure. Genetic testing can be used to identify specific genetic mutations that may be causing the condition. Treatment for microcephaly is primarily supportive and may include physical therapy, occupational therapy, speech therapy, and special education services. Medications may also be used to manage seizures and other symptoms. In some cases, surgery may be necessary to correct cranial deformities. There is no cure for microcephaly and the long-term prognosis depends on the severity of the condition. Those with mild microcephaly may have normal intelligence and development, while those with severe microcephaly may have significant intellectual disability and developmental delays. Prevention of microcephaly primarily involves preventing the underlying causes, such as viral infections during pregnancy. Women who are pregnant or planning to become pregnant should take precautions to avoid infection and should be screened for viruses such as Zika. Overall, microcephaly is a rare but serious congenital disorder that can have a significant impact on both the affected individual and their family. Research into the causes and treatment of microcephaly is ongoing and may lead to better understanding and management of this condition in the future

HETEROCYCLIC COMPOUNDS AS A MIRACLE FOR TYPE II DIABETES

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ABSTRACT : (SDIP-NC-ETRAPS-2023-10)
A serious metabolic disorder known as diabetes mellitus (DM) is caused by hyperglycemia, which is currently increasing globally. Due to their significant role in the treatment of chronic diseases like diabetes mellitus, the usage of synthetic drugs has increased during the past two decades. Drugs including thiazolidinone, azole, chalcone, pyrrole, and pyrimidine, as well as their derivatives, have been researched for their basic structural components. Various enzymes, including a-glycosidase, a-amylase, and agalactosidase, have been tested against the common medication acarbose. The investigated moieties were represented in both in vitro and in vivo models. Auto Dock and molecular operating environment (MOE) software were used to perform molecular docking of the investigated compounds as antidiabetic agents. On the active sites of enzymes associated with diabetes, the amino acids Asp349, Arg312, Arg439, Asn241, Val303, Glu304, Phe158, His103, Lys422, and Thr207 exhibited interactions with ligand molecules. Data on the synthesis of heterocyclic compounds using various methods and their potential for treating diabetes were organized in this review. However, more research, such as toxicological and pharmacokinetic investigations, should be conducted before moving forward with clinical trials.
Keywords : DM, MOE, Asp349, Arg312, Arg439.

INSIGHTS ON ROLE OF POTENTIAL ANTIBIOTICS TO FIGHT COVID-19: A MOLECULAR DOCKING APPROACH

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ABSTRACT : (SDIP-NC-ETRAPS-2023-11)
Rapid spread of SARSCoV-2 disease and the identification of effective therapeutic agents is a major challenge for clinicians nowadays. The present work was initiated with an objective a) To evaluate the COVID-19 inhibitory activity of potential antibiotics using in silico docking studies b) Repurposing the existing antibiotics for the treatment of dreadful viral infections. In silico docking studies were carried out using Swiss dock and recent version of Auto Dock 4, which has the basic principle of Lamarckian genetic algorithm. The important docking evaluation parameters such as binding energy and the interacting amino acids were determined for the selected ligands. The crystal structures of COVID-19, main protease (PDB ID: 6M03), nucleocapsid phosphoprotein dimerization C-terminal (PDB ID: 6YUN) and the spike like protein receptor binding domain (PDB ID: 2GHV) downloaded from protein data bank were used as the targets. In this perspective, all the ligands were prepared for the docking evaluation. Remdesivir, a reported drug to fight COVID-19 was used as the standard. The results showed that Rifampicin showed excellent binding energy comparable to the standard. These molecular docking analyses could lead to the further development to identify the potent inhibitors for the treatment of severe acute respiratory syndrome Coronavirus 2.
Keywords : Severe acute respiratory syndrome Coronavirus 2, SARSCoV-2Molecular docking, Autodock, Antibiotics, COVID-19, Rifampicin

DESIGN OF NEWER PYRIDINE LINKED PYRAZOLE DERIVATIVES AS POSSIBLE E. COLI FABI INHIBITORS

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Department of Pharmaceutical Chemistry and Analysis, School of Pharmaceutical Science, Vels Institute of Science, Technology & Advanced Studies

ABSTRACT : (SDIP-NC-ETRAPS-2023-12)
A novel derivatives of 5-[(2-aminophenyl)diazenyl]-4-[2-(pyridin-4-yl)hydrazinylidene]-2,4-dihydro-3H-pyrazol-3-one were synthesized and anti-Escherichia coli activity were screened. Based upon the spectral data of the newly synthesized were characterized. The design of the novel compounds was done using in-silico methodology. The lead, pyridyl pyrazole derivatives was identified by Virtual screening technique. By using Lead optimization, the pharmacokinetic behavior was predicted and binding interactions were analyzed by docking studies. Antibacterial activity was performed by agar well diffusion method by using Escherichia coli NCIM2918. Activity profile were compared to the standard ofloxacin. So, in the antibacterial screening for representative compounds, the chloro, methoxy and acid substituted derivatives showed significant activity.
Keywords: anti-Escherichia coli, in-silico, pyridyl pyrazole derivatives.

DESIGN OF NEWER PYRIDINE LINKED PYRAZOLE DERIVATIVES AS POSSIBLE E. COLI FABI INHIBITORS

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ABSTRACT : (SDIP-NC-ETRAPS-2023-13)
A novel derivatives of 5-[(2-aminophenyl)diazenyl]-4-[2-(pyridin-4-yl)hydrazinylidene]-2,4-dihydro-3H-pyrazol-3-one were synthesized and anti-Escherichia coli activity were screened. Based upon the spectral data of the newly synthesized were characterized. The design of the novel compounds was done using in-silico methodology. The lead, pyridyl pyrazole derivatives was identified by Virtual screening technique. By using Lead optimization, the pharmacokinetic behavior was predicted and binding interactions were analyzed by docking studies. Antibacterial activity was performed by agar well diffusion method by using Escherichia coli NCIM2918. Activity profile were compared to the standard ofloxacin. So, in the antibacterial screening for representative compounds, the chloro, methoxy and acid substituted derivatives showed significant activity.
Keywords: anti-Escherichia coli, in-silico, pyridyl pyrazole derivatives.

SYNTHESIS, ANTIMICROBIAL, AND ANTITUBERCULAR ACTIVITIES OF NOVEL N-PYRAZOLYLBENZAMIDE DERIVATIVES

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ABSTRACT : (SDIP-NC-ETRAPS-2023-14)
The current study investigated the antimicrobial and antitubercular activities of novel –

Pyrazolyl Benzamide derivatives. The study includes the synthesis, characterization, and ligand-based molecular docking of the designed molecules. Synthesis of N-Pyrazolyl Benzamide derivatives involves a two-step process in which 5-amino pyrazole (3) intermediate is produced by the condensation reaction of aryl hydrazine (1) and β-keto nitrile (2) in acidic conditions. The final N-Pyrazolyl Benzamide derivatives (5a-n) were synthesized by the reaction involving amide coupling between 5-amino pyrazole (3) and various substituted benzoyl halides (4a-n). The compounds (5a-n) were tested for antimicrobial activity against two gram-negative strains (E. coli and S. Typhi), two gram-positive strains (S. aureus and B. subtilis) and M. tuberculosis MTB H37Rv (ATCC 27294) strains were used for evaluating antitubercular activity. Molecular docking studies of designed derivatives were performed with the Schrodinger glide package against mycobacterial pantothenate synthetase (PDB ID: 4MQ6). All the tested compounds displayed moderate to good antimicrobial and antitubercular activity against the selected strains of bacteria. All the docked molecules were found occupying the active site and established a minimum of two hydrogen bond interactions in molecular docking studies.

PREPARATION OF HIGH-DENSITY LIQUID CRYSTAL NANOSCALE DROPLETS FOR TEMPERATURE & SOLVENT SENSOR APPLICATIONS

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ABSTRACT : (SDIP -NC-ETRAPS-2023-15)
In general, liquid crystal (LC) molecules possess both crystal like orientational order and liquid-like flow properties due to their existence between the crystal and liquid phases. Therefore, creating LC nanoscale droplets from its thin films by conventional methods is a challenging task. However, there is great thrust in developing LC nanoscale droplets due to their importance in many advanced applications. Here, the preparation of highly concentrated liquid crystal nanoscale droplets is shown by contact line instability caused by rapid solvent evaporation at the three-phase contact line of a thin film. For this, initially, dilute solutions (0.1% - 0.9% (w/v)) of LC (4-Cyano-4'-pentylbiphenyl) material is dissolved in a solvent (n-hexane), then these solutions were drop-cast (2 μl volume) onto a polydimethylsiloxane (PDMS) substrate. In this step, the LC solution spreads over the surface and forms a thin film. After film formation, LC nanoscale droplets are directly created due to contact line instability caused by rapid solvent evaporation from the film. It starts at the three-phase contact line of the film and continues through the middle of the film. Different solvents with different vapor pressures were studied to determine how solvent evaporation affects the formation of nanoscale droplets. Chloroform, hexane and toluene are mainly used. In addition, a study was also carried out to explore the effect of different surfaces on the formation of nanoscale droplets. The surfaces used here are essentially, chemically hydrophobic & hydrophilic, and chemically periodic hydrophobic & hydrophilic patterns.

Keywords : Liquid crystal, PDMS substrate, Contact line instability, Dewetting, and Nanoscale droplets

SYNTHESIS, BIOLOGICAL EVALUATION OF SOME NOVEL SUBSTITUTED - 1, 3-THAIZINES

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ABSTRACT : (SDIP-NC-ETRAPS-2023-16)
In the present investigation, a new series of 2-amino-4-phenyl-6H-1, 3-thiazine indolin-2-one derivatives were synthesized from 1,3-thiazine derivatives. In the beginning acetophenone which underwent Claisen - Schmidt condensation, it was dissolved in ethanol and various substituted aromatic aldehydes were added in the presence of basic media to afford chalcones. Further these formed various chalcones were subjected to cyclocondensation with thiourea, in ethyl alcohol, catalyzed by aqueous potassium hydroxide to afford 1, 3-thiazine derivatives. Now these 1,3-thiazine derivatives were refluxed with substituted isatin and glacial acetic acid in ethanol to afford 2-amino-4-phenyl-6H-1,3-thiazine indolin-2-one derivatives. The structures of the newly synthesized compounds have been characterized by their infrared, proton nuclear magnetic resonance, 13Carbon nuclear magnetic resonance, mass spectral data and elemental analysis. These newly synthesized compounds were screened for their antibacterial activity. The in vitro antibacterial activity has been carried out by cup plate method and minimum inhibitory concentration value was determined for the titled compound by agar streak dilution method.
Key words : Claisen-Schmidt; Schiff Base; Thiazine Derivatives; Antibacterial Activity.

COVALENT INHIBITORS: A RATIONAL APPROACH TO DRUG DISCOVERY

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ABSTRACT : (SDIP-NC-ETRAPS-2023-17)
Covalent inhibitors are acknowledged as a crucial element in the development of new medications and therapies. About 30% of the medications currently on the market are covalent inhibitors, a development that has occurred since covalent inhibitors were first discovered in the late 18th century. The many benefits of covalent inhibitors exceed the early worries about possible off-target toxicity. As a result, ongoing research is described, particularly for cancer targets. This review's objective is to give a brief historical overview and concentrate on recently created covalent inhibitors, including structural details and examples on difficult targets.
Keywords : covalent inhibitors, off-target toxicity, cancers targets, crucial element.

DOCKING OF COVALENT TARGETS FOR DRUG DISCOVERY

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ABSTRACT : (SDIP-NC-ETRAPS-2023-18)
: Worldwide, medicinal chemists and computational scientists are now more actively looking for covalent agents as a result of the ongoing acceptance of covalent medications in recent years for the treatment of disorders. In terms of computational language, molecular docking, a common tool to investigate the interaction of a ligand and a protein target, does not account for the formation of a covalent bond. As such, the growing use of these traditional programs to covalent targets in early drug discovery practice is a matter of serious concern. We therefore aimed to inform the docking community about the realization of covalent docking and the existence of suitable programs in this thorough analysis to make their future virtual screening activities on covalent targets worthwhile and scientifically rational. The unintentional discovery of covalent compounds and their singular capacity to provide complete and irreversible inhibition of drug targets has led to a paradigm shift away from noncovalent therapies in the treatment of disease. A better knowledge of their inhibitory processes and the creation of new covalent binders for 'undruggable' targets, has led to a significant advancement in the field of covalent targeting. Since docking experiments replicate biological occurrences, they have developed through time and contributed significantly to drug discovery by elucidating the molecular and geometrical transitions involved in biomolecular systems

Keywords : medicinal chemists, drug target, virtual screening, covalent docking, undruggable.

AN IN-SILICO METHOD TO ASSESS THE EFFECTIVENESS OF DIETARY FLAVONOIDS AND THEIR CONTRIBUTION TO ALZHEIMER'S DISEASE

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ABSTRACT : (SDIP-NC-ETRAPS-2023-19)
Alzheimer's disease (AD) is a fatal neurological condition that causes ongoing neuronal deterioration in later life. Amyloid beta and tau protein buildup, a factor in the development of senile plaques and tangles, characterises the aetiology of disease progression. Additionally, it was noted that AD patients' nutritional status was poor and frequently ignored in research studies. The focus of the current research is on consuming foods that are rich in natural antioxidants because they can protect the brain from oxidative and inflammatory damage. The best ligand for binding to the AChE receptor is theaflavin-3'-gallate. Pharmacophoric research was done to determine the potential of various compounds as drug candidates. Since the pharmaceutical industry has always been interested in compounds from natural sources, a small amount of these compounds added to synthetic drugs will ensure minimal side effects while maximising efficacy. To prevent brain damage and enhance cognitive abilities, food items like hazelnuts, green tea, black tea, pistachio nuts, walnuts, cocoa mix, and coffee should be included more frequently in the diets of both healthy people and AD patients.

Keywords: Alzheimer's disease, neuronal deterioration, Antioxidant, theaflavin-3'-gallate.

PREPARATION AND EVALUATION OF SILVER NANOPARTICLES FOR ANTIBACTERIAL AND ANTIOXIDANT ACTIVITY BY GREEN CHEMISTRY

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ABSTRACT : (SDIP-NC-ETRAPS-2023-20)
The field of nanotechnology is one of the most active research now a days in modern material science and technology. Eco-friendly methods of green mediated synthesis of nanoparticles are the present research in the limb of nanotechnology. The present work focused on the synthesis of nanoparticles from 1mM AgNO3 solution through aqueous leaf extract of Azadirachta indica and Phyllanthus emblica linn. Silver nano particles are prepared with plant extracts of neem and amla. The prepared silver nano particles are evaluated for their antimicrobial and anti oxidant activity and compare the results with plant extracts of neem and amla. In case of antimicrobial activity, the observed zone of inhibition is greater for silver nanoparticles when compared to plant extracts of neem and amla. The antioxidants has the capacity to decrease the absorbance of H2O2. As the concentration of plant extract increases, absorbance of H2O2 decreases and antioxidant activity also increases.
Key words: Nanotechnology, Silver nanoparticles, antimicrobial activity, antioxidant activity,zone of inhibition, absorbance.
Materials and Preparation : Silver nitrate, leaves of neem and amla, Nutrient agar medium, hydrogen peroxide,phosphate buffer. Preparation Silver nitrate solution is prepared and added to plant extract. After incubating for 24 hours it is evaluated for formation of silver nanoparticles by appearance of brownish grey colour. These silver nanoparticles and plant extract are evaluated for antibacterial and antioxidant properties.
Results : The zone of inhibition of microbial growth is more for silver nanoparticles than plant extracts of neem and amla.
Antioxidant activity increases as concentration of plant extract increases and absorbance of h2o2 decreases.
Conclusion : In case of antimicrobial activity, the observed zone of inhibition is greater for silver nanoparticles when compared to plant extracts of neem and amla. The antioxidants has the capacity to decrease the absorbance of H2O2. As the concentration of plant extract increases, absorbance of H2O2 decreases and antioxidant activity also increases.

PHARMACOGNOSY

PHYSIOCHEMICAL CHARACTERISTICS SYNTHESIS

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ABSTRACT : (SDIP-NC-ETRAPS-2023-01)
OBJECTIVE : Physicochemical analysis has evaluated the particular chemical properties of test substances , which have been identified as key structural components contributing to penetration, irritation, sensitization , to predict a chemical's environmental fate, human toxicity, or ecotoxicity.

METHODS : This study illustrated the effects of synthesis methods, namely , co-precipitation (CP) , hydrothermal (HT) , and ethylene glycol assisted solvothermal method (ET), on the physiochemical properties and Hg0 capture capability of MnO2-CeO2 mixed oxides, a downward trend in the Hg0 removal efficiency from ca. 100 % to lower than 40% was presented as the temperature increased. The adsorbent synthesized using EG method, Hg0 removal efficiency first increased to the peak value of ca. 87 % at 200oC and then declined with the temperature increasing to 250oC, direct oxidation of the physically adsorbed Hg0 to HgO , which , to some extend , explained the higher Hg0 removal efficiency of the adsorbents synthesized using CP and HT methods at lower temperatures. Plentiful surface acid sites promoted the physisorption of Hg0 , which was beneficial for the next Hg0 oxidation step and constituted an important reason for the elevated high temperature Hg0 adsorption capability of the adsorbent prepared via EG method. During the Hg0 capture process , chemisorption dominated with Mn4+ acting as an active site to oxidize Hg0 and Ce4+ functioning as a promoter to accelerate the regeneration of Mn4+.
RESULT : Chemical properties dominate in the adsorbent high-temperature Hg0 removal performance. Acidity plays an important role in the capture of Hg0 as the temperature increases. Mn4+ acts as an active site to oxidize Hg0 with Ce 4+ boosting the regeneration of Mn3+.
KEYWORDS : Hg0 capture; Oxidative ability ; Acid sites ; Preparation method ; MnO2 – CeO2.

HERBAL FORMULATION

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ABSTRACT : (SDIP -NC-ETRAPS-2023-02)
Herbal formulations mean a dosage form consisting of one or more herbs or processed herbs in specified quantities to provide specific nutritional, cosmetic benefits meant for use to diagnose, treat, mitigate diseases of human beings or animals, alter the structure or physiology of human beings or animals. Herbal formulations contain an active substance or herbal substance or herbal preparation or herbal substance in combination with one or more herbal preparations. Herbal formulations are obtained by subjecting herbal substances to treatments such as extraction, distillation, expression, fractionation, purification, concentration or fermentation include comminuted or powdered. Whole, fragmented or cut plants, plants parts, algae, fungi, lichen in an unprocessed, usually dried form but sometimes fresh were used in the preparations of herbal formulations. Herbal substances are precisely defined by the plant part used and the botanical name according to the binomial system (genus, species, variety and author). Markers are chemically defined constituents or groups of constituents of a herbal substance, a herbal preparation or a herbal medicinal product which are of interest for control purpose independent of whether they possess any therapeutic activity. Markers serve to calculate the quantity of herbal substance or herbal preparation in the herbal formulations if the markers have been quantitatively determined in the herbal substance or herbal preparations. Characterization of herbal formulations which includes are design and development, pharmacopeial tests and acceptance criteria, periodic testing, release, shelf-life acceptance criteria, in-process tests, alternative procedures, evolving technologies, reference standard and statistical concepts.
Keywords : Dosage form, Binomial system, markers

ANTIMICROBIAL POTENCY OF ETHANOLIC EXTRACT OF MUNTINGIACALABURA

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ABSTRACT : (SDIP-NC-ETRAPS-2023-03)
Muntingia Calabura (MC) is versatile medicinal plant and powerful antioxidant and reported for board spectrum biological activity. Review of literature revealed that biological actions of MC due to their enriched phytochemicals .present work is to prepare Etabolic Extract of Muntingia Calabura (EEMC) and investigated for in vitro free radical scavenging activity by DPPH assay in-vitro anti-inflammatory activity by protein restoration assay and antibacterial activity. The results demonstrate that EEMC had power full antioxidant activity and anti inflammatory activity and also mild antibacterial activity against respiratory pathogens .antioxidant activity due to their enriched flavonoid content and also good indicator for wide spectrum biological activity.
Keywords : Antioxidant, Anti-inflammatory, Muntingia Calabura

PHYTOCHEMICAL INVESTIGATIONAND PHARMACOLOGICAL SCREENING OF SOME SELECTEDMEDICINAL PLANTS

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ABSTRACT : (SDIP-NC-ETRAPS-2023-04)
Herbal medicine is a very ancient form of healthcare known to mankind. In fact, herbalmedicine is the establishment of modern medicine.World Health Organization (WHO) estimates that around 4 billion peoplecomprising of 80 % of the world population, are currently dependent on herbalmedicine for some or the other aspect of primary health care.Diabetes mellitus is a disorder that affects the body's ability to make or use insulin.Insulin is a hormone produced in the pancreas that helps transport glucose. Anti-diabetic activity of Costusspicatus commonly called as Indian Head Ginger, Spiked Spiralflag. Two flavonoldiglycosides, tamarixetin 3-O-neohesperidoside, kaempferide3-O-neohesperidoside and the known quercetin 3-O-neohesperidoside, together with sixother known flavonoids were isolated from the leaves of Costusspicatus. Animals fasted overnight and diabetes was induced by single intraperitoneal injection of STZ (45mg/kg body weight) prepared in 0.1 M Citrate buffer at pH 4.5. Citrate buffer in place of Streptozotocin was injected to control rats. After 72 hours of STZ injection, (taken as 0th day) fasting blood glucose levels of each animal was analyzed. Animals among the fasting blood glucose levels > 200 mg/dl were consider. The rats were separated into 5 groups and each group consisted of 6 rats and the duration of treatment was 45 days. Group I: Animals fed among the distilled water (negative control). Group II: Diabetic animals fed among the distilled water (positive control). Group III: Diabetic animals fed among the Glibenclamide (5mg/kg/b.w./day). Group IV:Diabetic animals fed among the ECS (300 mg/ kgb.w./day). Group V: Diabetic animals fed among the ECS (500mg/kg/b.w./day). Before (0th), during (28st) and at the end of treatment

(45th), body weight, fasting plasma glucose levels, SGOT, SGPT and ALP levels were measured. Plasma glucose levels were determined by Ortho Toluidine reagent method. SGOT, SGPT and ALP levels were measured from serum separated from the blood which was collected from the retro-orbital plexuses of the rats of all groups under light ether anaesthesia using a semiautomatic biochemical analyzer with commercially available biochemical kits.The obtained data were analyzed using the SPSS program, version 24. Data were figured as mean ± SE (for data of the biological study n=10, where for data of the in vitro study 3 replicates were used). ANOVA test was used to compare results among groups and P < 0.05 was significant. There are as yet numerous plants which have different restorative qualities yet not investigated and utilized. Plants contain numerous novel mixes with therapeutic qualities which need logical investigation. Several chemicals which are derived from plants acts as a drug is currently used.

Keywords : Anti-diabetic activity, Costusspicatus, Glibenclamide, SGOT, SGPT, ALP

PHYTOCHEMICAL SCREENING OF HERBAL PLANTS FOR SKIN CARE POTENTIAL

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ABSTRACT : (SDIP -NC-ETRAPS-2023-05)
Skin diseases are numerous and a frequently occurring health problem affecting all ages from the neonates to the elderly and cause harm in number of ways. Maintaining healthy skin is important for a healthy body. Many people may develop skin diseases that affect the skin, including cancer, herpes and cellulitis. Some wild plants and their parts are frequently used to treat these diseases. The use of plants is as old as the mankind. Natural treatment is cheap and claimed to be safe. It is also suitable raw material for production of new synthetic agents. Herbal therapy for skin disorders has been used for thousands of years for herbal self-medication. Specific herbs and their uses developed regionally, based on locally available plants and through trade in ethnobotanical remedies. Similarly, there is a lack of scientific review of phytochemicals that are used in cosmetic preparations. This study attempts to emphasize the need for Phytochemical screening of Herbal plants for skin care potentialherbal cosmetics.

Keywords : Herbal cosmetics, Plant extracts, Therapeutic activities, Phytochemical screening, herbal medicine

ANTI-BACTERIAL EFFECTS OF GREEN SYNTHESISED ZNO NPS FROM PAJANELIA LONGIFOLIA LEAF AGAINST DIABETIC FOOT INFECTED MULTIDRUG-RESISTANT BACTERIAL STRAINS

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ABSTRACT : (SDIP -NC-ETRAPS-2023-06)
Antimicrobial resistance (AMR) in antibiotics is risking the treatment of diseases around the world. For last few decades, green nanotechnology has paid much attention in researchers due to the biosynthesis of nanoparticles with immense biological effects in eco-friendly manner. Objectives: The present study investigates the antibacterial potential of Pajanelia longifolia mediated green synthesis of ZnO nanoparticles (ZnO NPs) against Multidrug-

resistant organisms (MDROs) isolated from pus samples of Diabetic wounds. Methodology: Antibacterial assessment was performed by disc diffusion assay and the bactericidal/bacteriostatic effect was assessed by minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC). Time–kill kinetics that examined the dynamics of the antimicrobial activity relative to time, Protein leakage that evaluated the release of protein metabolites on contact and Fluorescence-activated cell sorting (FACS) analysis that confirmed bacterial cell death was performed at 1x MIC and 2x MIC concentrations of green synthesised ZnO NPs. Cytotoxicity by MTT assay was assessed on Human Embryonic Kidney epithelial cells (HEK-293). Result and Discussion: Biosynthesised ZnO NPs at an average size of about 11.12 ± 0.38 nm exhibited excellent antibacterial effects with the MIC and MBC values were in the range of 50 µg/mL to ≤200 µg/mL and 100 µg/mL to ≤200 µg/mL, respectively. Time–kill assays demonstrated a significant decrease in the growth of all species >90% decrease in viable count within 6 h. Protein leakage and Flow cytometric analysis confirmed cell death of MDROs with reduced cytotoxic effects on HEK-293 cells. This study provides a vital insight towards the development of a new antimicrobial agent for treating antimicrobial resistant-microbes.

Keywords : ZnO NPs; Pajanelia longifolia; Antibacterial activity; MIC/MBC; Flow cytometry; Cytotoxicity

A REVIEW ON BIOFLAVANOIDS IN THE TREATMENT OF SYSTEMIC LUPUS ERYTHEMATOSUS

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ABSTRACT : (SDIP -NC-ETRAPS-2023-07)
An autoimmune disorder called systemic lupus erythematosus happens when the immune system destroys its own tissues, resulting in severe degenerative changes and pervasive inflammation in the organs some of which are affectedIt has a potential influence on the blood vessels, brain, kidneys, skin, joints, and skin. Citrus fruits, rose hips, and other plants contain a variety of yellow chemical compounds known as bioflavonoids, can help mammals maintain their capillary walls' sensitivity to permeation and pressure changes. These complex compounds found primarily in citrus fruits (Vitamin C) and roses (Quercitrin).Some of the latest trends in the treatment of Systemic lupus erythmatosus are: Flavonoids suppress Pseudomonas aeruginosa Virulence, Activating CD11b, which in systemic lupus erythematosus controls TLR-dependent inflammation and autoimmunity, Flowers from Kalanchoe pinnate are a rich source of T cell-suppressive Flavonoids, nobiletin , a citrus Flavonoid, Citrus flavonoids reduce bacterial cell-cell interactions suppresses production and gene expression of matrix metalloproteinase9, biofilm production, and type III secretion, whereas luteolin, a flavonoid, prevents basophils from activating AP-1.

Keywords : Systemic lupus erythematosus, Autoimmune disease, Bioflavonoids, T cell-suppressive flavonoids, Kalanchoe pinnate.

A COMPREHENSIVE REVIEW ON ETHNOBOTANICAL, PHYTOCHEMICAL, THERAPEUTIC AND PHARMACEUTICAL USES OF LUFFA CYLINDRICA: A CUCURBITANS

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ABSTRACT : (SDIP-NC-ETRAPS-2023-08)
A priceless source of novel biological active compounds is found in the traditional system of medicine, which makes use of huge variety of plants with varied medicinal and physiological significances. The tropical and subtropical fibrous creeper Luffa cylindrica, "sponge gourd", a vegetable ,fruits of which are consumed by people throughout the world. Various parts of the plant are employed in cosmetics and medicines. L. cylindrica is indeed a worldwide plant with variety of nutraceutical as well as therapeutic uses. Historically, the plant has been used to cure a wide range of conditions also there are laboratory proven diversified pharmacological actions such as antiemetic, antidiabetic, antiviral, oxytocics, anticancer, antipyretic, anti-inflammatory, antifungal, antibacterial, anthelmintic, anti-inflammatory, antioxidant activity, and hepato-protective effects. According to a phytochemical analysis of Luffa cylindrica, the plant contains a variety of compounds that are good for one's health, including flavonoids, phenolic acids, ribosome-inactivating proteins, and carotenoids. The structural-function link of type I ribosome inactivating proteins suggests that luffa cylindrica - has antitumor and antiviral potential also. Luffa cylindrica plays a pivotal role in pharmaceutical as well as cosmetic sector along with it, it has varied scope in other industrial applications. Luffa cylindrica is widely used as a natural and cheap biosorbent for a pollutant removal. The current article is an updated review of the traditional and ethnobotanical uses, phytochemical constituents pharmacological actions, along with its formulations and industrial applications of L. cylindrica.
Keywords : Luffa cylindrica, ethanobotanical, antiviral, anti-tumor

DEVELOPMENT OF ANTIDIABETIC POTENTIAL FOR THE PLANTS OF COSTACEAE FAMILY

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ABSTRACT : (SDIP-NC-ETRAPS-2023-09)
Diabetes mellitus is one of the major health problems in the world, the incidence and associated mortality are increasing. Inadequate regulation of the blood sugar imposes serious consequences for health. Conventional antidiabetic drugs are effective, however, also with unavoidable side effects. On the other hand, medicinal plants may act as an alternative source of antidiabetic agents. This study focuses on antidiabetic plants of Costaceae family, along with their bioactive constituent, chemically characterization, and plant-based diets for diabetes management. There is minimal scientific data about the mechanism of action of the plant-based product has been found. The purpose of this study is to highlight anti-diabetic plants and plant-derived bioactive compounds that have anti-diabetic properties.
Keywords : Diabetes mellitus, medicinal plants, antidiabetic, hypoglycemic

ANTI-INFLMMATORY MEDIATED ANTI-HEMORRHOIDAL ACTIVITY OF SELECTED INDIAN MEDICINAL PLANT EXTRACTS ON CROTON OILI NDUCED HEMORRHOIDS IN ALBINO RATS.

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ABSTRACT : (SDIP-NC-ETRAPS-2023-10)
BACKGROUND : Hemorrhoids or Piles are abnormal masses of dilated blood vessels in swollen tissue that occurs internally and externally around the anus which may be bleeding, painful and itching. It has become a major socio economic problem affecting millions of people globally.
OBJECTIVE : Treatment for hemorrhoids in modern medicine was still in infancy. So, far there is no appropriate anti- hemorhhoidal agent. Hence, in the present study anti - hemorrhoidal activity of ethanolic leaf extract of Lawsonia inermis (ELEMO) and ethanolic whole plant extract of Tridax procumbens was studied (EWETP) was studied on croton induced hemorrhoidal rats.
Methods : Intra rectal application of croton oil has developed hemorrhoids in albino rats by elevating inflammatory markers like recto anal coefficient, serum TNFα, interleukin-6, blood percentage of neutrophils and. extravasation in rats.
Results: Ethanolic leaf extracts ELEMO and EWETP in both low dose and high dose was found to reduce inflammatory markers in albino rats has exhibited significant anti-hemorroidal property. Whereas, croton oil in positive control animals has raised all the inflammatory markers compared to normal control animals. The research has provided a scientific base for inflammation as the major pathway for development of hemorrhoids. In conclusion it has classified ethanolic leaf extracts Lawsonia inermis and Tridax procumbens as potential anti-inflmmatory mediated and anti-hemorrhoidal agents.
KEYWORDS : PILES, ENGORGED RECTAL VIENS, HAEMORRHOIDS, TNF-α, IL-6.

A COMPREHENSIVE REVIEW ON PROMISING ANTI-CANCER, ANTIINFLAMMATORY, ANTI-MICROBIAL, NATURAL ANTHRAQUINONE – EMODIN

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ABSTRACT : (SDIP-NC-ETRAPS-2023-11)
6-methyl-1,3,8-trihydroxyantraquinone, emodin an orange powder, is a typical anthraquinone found in roots, and rhizomes of various plants, fungi, and lichens exhibiting a wide spectrum of biological activities, such as anticancer, antibacterial, anti-microbial, anti-inflammatory, anti-mutagenic, immunomodulatory, diuretic, antiulcer, antinociceptive, antihyperlipidemic, cholesterol-lowering, and antiseptic properties. Emodin is widely used because of its drug likeliness characteristics, fewer side effects, low cost, and ease of availability. In the present review, we emphasized on the sources, chemical properties, anti-cancer, anti-inflammatory, anti-microbial properties, metabolism, and toxicities of emodin

from 1996 to till date. As inflammation is the root cause of various diseases including cancer. It shows anti inflammatory activity through different mechanisms such as TNF, NF-kb, 5-LOX, IL-6 etc. Emodin also inhibits cell growth in several types of cancer cells and regulates genes and proteins related to the control of cell apoptosis, cell invasion, metastasis, and cell cycle arrest. The majority of infectious diseases are bacterial in origin and many infectious bacteria have become resistance to anti-bacterial activity, hence anti-microbial testing is important and emodin shows promising anti-microbial activity against HSV-1, HSV-2, S. aureus and E. coli etc,. Emodin belongs to the BCS class II drugs hence; formulations are prepared by using a novel drug delivery system to improve its bioavailability.

Keywords : Emodin, anti-cancer activity, anti-inflammatory property, anti-microbial activity, metabolism, toxicity.

A REVIEW ON WOUND HEALING PLANTS AND ITS CHEMICAL NATURE

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ABSTRACT : (SDIP -NC-ETRAPS-2023-12)

Our skin is the key to our survival, sensing the environment, maintaining physicochemical and thermal homeostasis, acting as a reservoir of essential nutrients, providing passive and active defence, and responding to trauma and injury. Plants play a key role in wound management and it is being used by humans since millennia. For millions of people across Asia, Africa, the Middle East, and Latin America, traditional medicines derived from local plants, animals, and natural products are the mainstay of wound care. Aloe vera applied to wounds for over 5000 years by Egyptians, Romans, indigenous peoples of Africa Asia, and the Americas, Aloe vera continues to be a first-line treatment for burns, ulcers, and surgical wounds. Other traditional plants reported to cure wounds include extracts of different plant parts like leaf, root, flowers, stem and whole plant of Arctium lappa,Astragalus propinquus Rehmannia glutinosa, Ampelopsis japonica, Calendula officinalis, Celosia argentea, Centella asiatica, Commiphora myrrha, Daphne genkwa,Panax ginseng,Salvia miltiorrhiza, Sanguisorba officinalis, Wedelia trilobata, Gingko biloba, Morinda citrofolia, Lycopodium serratun, Sesamum indicum, Euphorbia hirta, Kaempferia galanga, Trigonella foenum-graecum, curcuma longa etc . The chemical constituents contributing to wound healing properties include a wide range but not limited to Curcumin, vitamin A, proteins, Glycyrrhizin, glycyrrhetini, Asiatic acid, asiaticoside madecassoside, madecassic acid, Mimosine (an alkaloid), sitosterol, amino acids, linoleic acid, tannins, polyphenols, and oleic acid, 5-Hydroxyimidacloprid, desnitroimidacloprid, 6-chloronicotinic acid, olefin, Flavonoids, theanine and caffeine. Santalin A and B, savinin, calocedrin, pterolinus K and L, and pterostilbenes, Coumarins, naphthoquinone, flavonoids, sterols, triterpene, and xanthones, Patulitrin, diketones, spicigerin, -sitosterol, stigmasterol, hen- triacontane, octasanol, and prosogerin A, B, C, and D, Mimosine (an alkaloid), sitosterol, Papain, vicenin-2, beta-carotene, Biophenolics, Oleuropein secoiridoid, Luteolin. Much research has been centered on wound care, with emphasis on new therapeutic methods and the advancement of acute and chronic wound treatment techniques in Ayurveda (herbal). New formulas, dressings, and medicinal plant composition are being explored by researchers for developing cost effective, efficient, stable, and sustainable delivery system for the management/treatment of wounds.

Key words : Wound healing , burns, Aloe vera, chemical constituents, wound management.

AN OVERVIEW ON HERBAL COSMETICS AND COSMECEUTICALS IN THE TREATMENT OF SKIN INFECTIONS

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ABSTRACT : (SDIP-NC-ETRAPS-2023-10)
Cosmetics are the products which are applied on the skin for cleansing, beautification and promoting attractiveness and altering the appearance. Cosmeceuticals are hybrid products i.e., cosmetics mixed with pharmaceuticals in which drug are used to cure acne, anti-wrinkle effects, protect from sun burn gives anti-tanning effect, improves complexation, delayed effect of ageing and improve skin textures, etc. The cosmetics can be prepared from either synthetic materials or semisynthetic or herbal materials. The synthetic cosmetics are easily available and are cheaper than herbal cosmetics. But the synthetic cosmetics may or may-not be compatible with every skin type and can show harmful or toxic effects to the skin or other parts. Whereas the herbal cosmetics are more compatible with any types of skin and have less or no unwanted side effects. The herbal cosmetics contains parts of plants either root, stem, leaves, flowers, fruits or seeds which contains active phytochemicals which are responsible for curing of certain diseases. A series of medical plants are present like neem, turmeric, Chandan, Aloe vera, green tea, carrot etc provides medicinal effects on skin infection. In this article a brief review of herbal cosmetics and cosmeceuticals used in treatment of skin infections are being discussed.
Keywords : Herbal cosmetics, skin infection, cosmeceuticals.

PHARMACOLOGY

CAMPOMELIC DYSPLASIA

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ABSTRACT : (SDIP-NC-ETRAPS-2023-01)
Campomelic dysplasia is a severe disorder that affects development of the skeleton, reproductive system, and other parts of the body. This condition is often life-threatening in the newborn period. The term "campomelic" comes from the Greek words for "bent limb." Affected individuals are typically born with bowing of the long bones in the legs, and occasionally, bowing in the arms. This also called as Campomelic dwarfism or Campomelic syndrome or Camptomelic dysplasia. The prevalence of campomelic dysplasia is uncertain; estimates range from 1 in 40,000 to 200,000 people. Newborns suffering from campomelic dysplasia often die soon after birth as a result of respiratory insufficiency, but about 10 % of individuals survive. Mutations in or near the SOX9 gene cause campomelic dysplasia. This gene provides instructions for making a protein that plays a critical role in the formation of many different tissues and organs during embryonic development. The SOX9 protein regulates the activity of other genes, especially those that are important for development of the skeleton and reproductive organs. Campomelic dysplasia is inherited in an autosomal dominant pattern, which means one copy of the altered gene in each cell is sufficient to cause

the disorder. Most cases result from new mutations in or near the SOX9 gene and occur in people with no history of the disorder in their family. Rarely, affected individuals inherit a chromosome abnormality from a parent who may or may not show mild signs and symptoms of campomelic dysplasia. Campomelic dysplasia treated by Orthopedic treatments including surgery, Craniofacial surgery, Respiratory care and Urologic surgery.

Key Words : Campomelic dysplasia, SOX9 gene, Craniofacial surgery.

ACROCALLOSAL SYNDROME

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ABSTRACT : (SDIP -NC-ETRAPS-2023-02)

Acrocallosal Syndrome, A rare polymalformative syndrome characterized by agenesis of corpus callosum (CC), distal anomalies of limbs, minor craniofacial anomalies and intellectual disability. This disease is Autosomal recessive inheritance. The other names of this condition is ACLS, Hallux duplication, postaxial polydactyly, and absence of corpus callosum, Schinzel acrocallosal syndrome, Schinzel syndrome 1. Symptoms may start to appear as a Newborn. Mutations in the KIF7 gene have been found to cause acrocallosal syndrome. Mutations in another gene, GLI3, can also cause features of this disorder. Frequent symptoms include Aplasia/Hypoplasia of the corpus callosum, Hypertelorism, intellectual disability, Macrocephaly, Postaxial hand polydactyly, Dandy-Walker malformation, Prominent occiput, Sloping forehead, Triphalangeal thumb. Extra fingers and toes are common in people with acrocallosal syndrome. The extra digits can be on the same side of the hand or foot as the pinky or little toe (postaxial polydactyly) or on the same side as the thumb or great toe (preaxial polydactyly). Some affected individuals also have webbed or fused skin between the fingers or toes (syndactyly). Distinctive facial features that can occur with acrocallosal syndrome include widely spaced eyes (hypertelorism) and a high, prominent forehead. Many affected individuals also have an unusually large head size (macrocephaly). In summary Research on rare diseases is necessary to increase medical understanding. Research can shed light on a disease's typical symptoms and its progression. Additionally, it may result in a quicker diagnosis or better medical care and treatment. It might potentially aid in the discovery of treatments for disorders that are more widespread.

Key Words: Corpus Callosum, KIF7, GLI3, Macrocephaly

EFFECT OF CURQFEN® ON IBOTENIC ACID INDUCED MEMORY IMPAIRMENT IN RATS

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ABSTRACT : (SDIP -NC-ETRAPS-2023-03)

Introduction : Curcumin (CC), a major component extracted from the rhizome Curcuma longa. It has wide range of biological activities, including anti-inflammatory, anti-oxidant, anti-infection and antitumor properties. CurQfen® (CF) is a unique product from the Akay Flavours and Aromatics Pvt.Ltd, Cochin, Kerala, CF is an enhanced bioavailable form of Curcumin.

Objectives : In the present study an attempt is made to investigate the possible protective effect of CF using Ibotenic acid (IBO) induced dementia and brain-lesions.

Methodology : Male Wistar albino rats were treated p.o with CF (200 and 400mg/kg), Curcumin (CC) 400mg/kg daily for 14 days. Ibotenic acid (IBO 5µg/µl, ICV) was used to induce memory impairment. The neurotransmitter levels were assessed by UV spectro photometrically and neuronal damages was assessed by taking histopathology of brain. The behavioral parameters were analysed by radial arm maze and morris water maze.

Results and Discussion :
The study showed that IBO significantly increased (P<0.001) the brain levels of acetyl cholinesterase, nitrite, malondialdehyde and glutamate while CF and CC restored it. The number of entries and escape latency in treatment groups (CF&CC) were reduced as compared with IBO. The working memory and learning memory errors were enhanced following IBO treatment, while CF and CC significantly reduced them. It is concluded that treatment with CF offers a protection against IBO induced dementia and brain-lesions, as evidenced by the brain levels of neurotransmitters and histopathology, and also from the behavioral parameters assessed by radial arm maze and morris water maze.

MUCORMYCOSIS: AN OVERVIEW

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ABSTRACT : (SDIP-NC-ETRAPS-2023-04)
Mucormycosis is a disease caused by an increasing number of Mucorales species. These fungi are widely distributed in nature and feed on several types of decaying organic matter. Usually, a primary airborne infectious condition develops in the upper or lower airways and is linked to sinusitis, rhinocerebral mucormycosis, or pulmonary infection as a clinical manifestation. The spread of infection to the skin, brain, and other locations is less frequent, but if patients don't undergo aggressive surgical and medical treatment, the infection will frequently directly spread to neighboring areas. Diabetes-related ketoacidosis, neutropenia, protein-calorie malnutrition, and iron overload, with or without concurrent deferoxamine usage, are risk factors for the development of mucormycosis. The most typical places where mucormycosis appears are the sinuses (39%), lungs (24%), skin (19%), brain (9%), and gastrointestinal system (7%); however, it can also spread to other sites (6%). Randomized, controlled therapy studies have not been carried out due to the rarity of mucormycosis. Although posaconazole (POSA) and isavuconazole (ISAV), the active ingredients of the prodrug isavuconazonium sulfate, are newer triazoles, they may be beneficial in treating patients who are resistant to or intolerable to LFAB. On May 19, 2021, India announced mucormycosis as a notifiable disease under the Epidemic Diseases Act 1897. The next 10 years are anticipated to be a time of significant research into mucormycosis, which should open up new possibilities for diagnostics, immunological surveillance, and the development of antifungal drugs. efficient clinical studies. This is significant since the outcome of mucormycosis is impacted by delayed therapy.
Keywords : Isavuconazole, Posaconazole, Rhinocerebral mucormycosis, Xenosideraphore, Iron chelators.

CARCINOID SYNDROME

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ABSTRACT : (SDIP-NC-ETRAPS-2023-05)
Carcinoid syndrome is caused by a carcinoid tumor that secretes serotonin or other chemicals into your bloodstream. Carcinoid tumors occur most often in the gastrointestinal tract, including your stomach, small intestine, appendix, colon and rectum. when an advanced tumor spreads (metastasizes) to the liver itself, it may secrete chemicals that aren't neutralized before reaching the bloodstream. Most people who experience carcinoid syndrome have an advanced cancer that has spread to the liver. Carcinoid syndrome causes problems with the heart valves, making it difficult for them to function properly. As a result, the heart valves may leak. Signs and symptoms of carcinoid heart disease include fatigue and shortness of breath. Carcinoid heart disease can eventually lead to heart failure. Surgical repair of damaged heart valves may be an option. Carcinoid crisis causes a severe episode of flushing, low blood pressure, confusion and breathing difficulty. Carcinoid crisis can occur in people with carcinoid tumors when they are exposed to certain triggers, including anesthetic used during surgery. Urine may contain a substance made when your body breaks down serotonin. An excess amount of this substance could indicate that your body is processing extra serotonin, the chemical most commonly excreted by carcinoid tumors. CT scan of abdomen, because most carcinoid tumors are found in the gastrointestinal tract. Treatments may include, surgery, Medications to block cancer cells from secreting chemicals like octreotide (Sandostatin) and lanreotide (Somatuline Depot), Peptide receptor radionuclide therapy (PRRT) combines a drug that seeks out cancer cells with a radioactive substance that kills them, Radiofrequency ablation delivers heat through a needle to the cancer cells in the liver, causing the cells to die.
Key Words : Carcinoid syndrome, Octreotide, Lanreotide, PRRT

ABETALIPOPROTEINEMI

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ABSTRACT : (SDIP-NC-ETRAPS-2023-06)
Abetalipoproteinemia is a rare, inherited disorder of lipid metabolism. It is characterized by the absence of a protein called apolipoprotein B100 (ApoB100) in the blood, which is essential for the absorption of certain fats and fat-soluble vitamins. Symptoms of this condition typically begin in infancy and include failure to gain weight and grow at the expected rate (failure to thrive), a yellowish discoloration of the skin (xanthomas), and problems with coordination and movement (ataxia). Other symptoms may include diarrhea, abdominal pain, and a fatty, foul-smelling stool. In addition, individuals with this condition are at increased risk for developing certain types of anemia.
The underlying cause of abetalipoproteinemia is a mutation in the gene that encodes the ApoB100 protein. As a result, individuals with this condition are unable to absorb fats and fat-soluble vitamins, leading to a range of health problems. Treatment focuses on providing adequate nutrition and supplementing with fat-soluble vitamins. In some cases, a low-fat diet may be recommended. Further research is needed to better understand the effects of this condition and to develop more effective treatments.
Key Words: Apolipoprotein B100, Xanthomas, Ataxia.

HERBAL FORMULATION

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ABSTRACT : (SDIP-NC-ETRAPS-2023-07)
Herbal formulations means a dosage form consisting of one or more herbs or processed herbs in specified quantities to provide specific nutritional, cosmetic benefits meant for use to diagnose, treat, mitigate diseases of human beings or animals, alter the structure or physiology of human beings or animals. Herbal formulations contain an active substance or herbal substance or herbal preparation or herbal substance in combination with one or more herbal preparations. Herbal formulations are obtained by subjecting herbal substances to treatments such as extraction, distillation, expression, fractionation, purification, concentration or fermentation include comminuted or powdered. Whole, fragmented or cut plants, plants parts, algae, fungi, lichen in an unprocessed, usually dried form but sometimes fresh were used in the preparations of herbal formulations. Herbal substances are precisely defined by the plant part used and the botanical name according to the binomial system (genus, species, variety and author). Different herbal formulations are tinctures, extracts, essential oils, expressed juices and processed exudates. Markers are chemically defined constituents or groups of constituents of a herbal substance, a herbal preparation or a herbal medicinal product which are of interest for control purpose independent of whether they possess any therapeutic activity. Markers serve to calculate the quantity of herbal substance or herbal preparation in the herbal formulations if the markers have been quantitatively determined in the herbal substance or herbal preparations. Characterization of herbal formulations which includes are design and development, pharmacopoeial tests and acceptance criteria, periodic testing, release, shelf-life acceptance criteria, in-process tests, alternative procedures, evolving technologies, reference standard and statistical concepts.

KEYWORDS: Dosage form, Binomial system, Markers

GENE THERAPY

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ABSTRACT : (SDIP-NC-ETRAPS-2023-08)
The ability to make site specific modifications to human genome has been an objective in medicine since the recognition of the gene as the basic unit of heridity.Ever since it was introduced as a hypothesis in the 1960s,gene therapy has gone on to become a medical wonder that promises relief from the likes of parkinson's disease and multiple sclerosis.The therapy is possible through advances of genetics and bioengineering that enabled manipulating vectors for delivery of extrachromosomal material to target cells.One of the main focuses of this technique is the optimization of delivery vehicles(vectors) that are mostly plasmids,nanostructured or viruses. InVivo studies in somatic cells showed satisfactory results with approved protocols in clinical trials.The consequences of gene transfer into humans are still unknown and will require intensive investigations on the part

of investigators and regulatory bodies.Recent enhancements in gene therapy resulted in better control of gene integration and expression.Some product have shown clear evidence of therapeutic efficacy.Severe combined immune deficiency(SCID) was one of the first genetic disorders to be treated succesfully with gene therapy.In some trial of patients with a form of degenerative blindness called LCA(Leber congential amaurosis),gene therapy greatly improved vision for atleast a few years.In a small trial patients having hemophilia,researchers succesfully used an adeno-associated viral vector to deliver a gene for Factor IX,the missing clotting protien,to liver cells.After treatment most of the patients made atleast some Factor IX,and they had fewer bleeding incidents.Theoretically,GENE THERAPY is the permanent solution for genetic diseases.But it has several complexities at its current stage,it is not accessible to most people due to its huge cost.Overcoming all its hurdles it would change our lives forever.

KEYWORDS: Gene integration, Human genome,Plasmids,Clinical trials.

A NEW PART OF THE BRAIN'S WASTE DISPOSAL SYSTEM- "SUBARACHNOID LYMPHATIC-LIKE MEMBRANE (SLYM)"

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ABSTRACT : (SDIP-NC-ETRAPS-2023-09)
Despite centuries of study, there are still mysteries in human anatomy. Particularly in recent years, improved imaging and analysis techniques have allowed scientists to identify a number of novel structures within the human body. A new anatomical structure, subarachnoid lymphatic-like membrane (SLYM) is a recently discovered by Møllgård and his colleagues, that is part of the brain's waste disposal system. The discovered fourth meningeal layer which compartmentalizes the subarachnoid space into two functional compartments. The subarachnoid lymphatic-like membrane is only a few cells thin layer, which renders it invisible using current clinical neuroimaging techniques. The SLYM separates the subarachnoid space into two distinct compartments by forming a barrier that forbids solutes larger than 3 kDa from going through. The membrane is morphologically similar to peripheral mesothelial membranes and it is rich in myeloid cells, thus it likely has a significant role in the response to inflammation. It has also been proposed that physical injury to this thin tissue layer could alter CSF flow, and could explain the prolonged neuroinflammation and the increased risk of developing conditions such as Alzheimer disease after closed head injury. The discovery of a fourth layer of the meningeal membrane is therefore of significance beyond fluid transport. Now further research is required to determine the impact of the SLYM membrane and its abnormalities on neurological disorders, brain function, and the entry of active chemicals into the brain.

Keywords: SLYM, Subarachnoid, 3kDa, CSF, Alzheimer.

A DEEP INSIGHT INTO DYSBIOSIS LEADING TO NEURONAL INFLAMMATION IN PARKINSON'S DISEASE

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ABSTRACT : (SDIP-NC-ETRAPS-2023-10)
Several studies have highlighted the roles played by the gut microbiome in central nervous system diseases. Clinical symptoms and neuropathology have suggested that Parkinson's disease may originate in the gut, which is home to approximately 100 trillion microbes. Alterations in the gastrointestinal microbiota populations may promote the development and progression of Parkinson's disease. Here, we reviewed existing studies that have explored the role of intestinal dysbiosis in Parkinson's disease, focusing on the roles of microbiota, their metabolites, and components in inflammation, barrier failure, microglial activation, and α-synuclein pathology. We conclude that there are intestinal dysbiosis in Parkinson's disease. Intestinal dysbiosis is likely involved in the pathogenesis of Parkinson's disease through mechanisms that include barrier destruction, inflammation and oxidative stress, decreased dopamine production, and molecular mimicry. Additional studies remain necessary to explore and verify the mechanisms through which dysbiosis may cause or promote Parkinson's disease. Preclinical studies have shown that gastrointestinal microbial therapy may represent an effective and novel treatment for Parkinson's disease; however, more studies, especially clinical studies, are necessary to explore the curative effects of microbial therapy in Parkinson's disease.
Keywords : Parkinson's disease, intestinal dysbiosis, α-synuclein, inflammation

ATRIAL FAILURE OR INSUFFICIENCY: A NEW SYNDROME AND ROLE OF PCSK9 GENE ON IT

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ABSTRACT : (SDIP-NC-ETRAPS-2023-11)
Atrial dysfunction, widely considered a marker or consequence of other heart diseases, is a relevant clinical entity, which is why it is justified to define atrial failure or insufficiency as "a new syndrome that all cardiologists should be aware of". Atrial failure or insufficiency is any atrial dysfunction (anatomical, mechanical, electrical and rheological, including blood homeostasis) that causes impaired function, heart symptoms, and a worsening of quality of life (life expectancy) in the absence of significant valvular or ventricular abnormalities. The use of PCSK9 inhibitors has been investigated as a potential therapeutic strategy for atrial failure or insufficiency. PCSK9 inhibitors are a class of drugs that reduce the activity of proprotein convertase subtilisin/kexin type 9 (PCSK9), an enzyme involved in cholesterol metabolism. By inhibiting PCSK9, these drugs can reduce levels of LDL cholesterol and the risk of heart failure (atrial failure), improving cardiovascular outcomes. In a recent study, researchers demonstrated that PCSK9 inhibition can improve atrial function in a mouse model of atrial failure and fibrillation. Also, two ongoing or planned studies, ARCADIA and AMIABLE, will seek to determine whether anticoagulation in patients with elevated cardiovascular risk scores and any of these atrial disorders that have not yet led to atrial fibrillation could reduce the incidence of stroke. Further studies are needed to assess the safety and efficacy of PCSK9 inhibitors in people with atrial failure.
Keywords : PCSK9, LDL cholesterol, Atrial failure

STANDARDIZATION OF AYURVEDIC FORMULATION CHURNA- A REVIEWA

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ABSTRACT : (SDIP -NC-ETRAPS-2023-12)
Plants have used since ancient ages for relieving pain and treatments. Ayurveda the oldest system of Indian medicine which uses herbs has a key role to play in health care system. Various ayurvedic formulations like Asavas, Aristas, Churna, Bhasma, Gutika etc are in place for administration. The quality control of herbal crude drug formulation is important in justifying their acceptability in modern system of medicines. WHO has emphasized the need to ensure quality control of medicinal plants products by using modern techniques and by applying suitable standards and parameters. Churnas are single or combination of herbal powders Which are simple and easy to administer. In the present study the standardization parameters like authentication, organoleptic , physico-chemical, physical, microscopical evaluation , flow properties of powders , methods employed to detect heavy metals, pesticide residues and shelf life determination are reviewed in detail for churnas. The standardization of churnas ascertains the safety, efficacy and acceptance of the product in global market.
Key words : Churnas, physico - chemical, heavy metals, shelf life, pesticide residue

CANCER TREATMENT-GOLD NANO TECHNOLOGY

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ABSTRACT : (SDIP -NC-ETRAPS-2023-13)
Cancer is a disease in which abnormal cell divide uncontrollably and destroy body. Nanotechnology facilitates conjugated nanoparticle and allows easy detection of early stages of the disease these particles allow targeting cancer drugs they are generally low in proportions. Nanoparticles are small in size,they are bio safe ,loading of drugs and physical therapy have been increased. Cancer nano therapeutics are rapidly progressing and being implemented to solve several limitations of targeting,lack of water solubility,poor oral bio availability and low therapeutics indices.a wide range of nanomaterials based on organic, inorganic,lipid or glycan compounds as well as synthetic polymers has been utilized for the development and improvement of new cancer therapeutics.

DEVELOPMENT OF BIOSYNTHESIZED SILVER NANOPARTICLES FROM CINNAMOMUM TAMALA FOR WOUND HEALING ACTIVITY.

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ABSTRACT : (SDIP-NC-ETRAPS-2023-14)

Objective : The current study aims to create Biosynthesized silver nanoparticles from Cinnamomum tamala hydroalcoholic extract, followed by an assessment of the activity of the nanoparticles in promoting wound healing in wistar albino rats.

Methodology : Ecofriendly Biosynthesized silver nanoparticles were developed by using hydroalcoholic extract of Cinnamomum tamala and 1mM aqueous silver nitrate solution by microwave irradiation. Further Biosynthesized silver nanoparticles subjected to antimicrobial and antioxidant. Formulated silver nanoparticles gel of Cinnamomum tamala was evaluated for wound healing potential on excision and incision wound inflected in wistar albino rats.

Results & Discussion : Phytochemical examination of hydroalcoholic extract of Cinnamomum tamala revealed that the presence of alkaloids, Flavonoids, glycosides, carbohydrates, tannins and phenolic compounds. By quantitative estimation of hydroalcoholic extract of Cinnamomum tamala exhibit the presence of alkaloids 250mg/g, Flavonoids 105mg/g and polyphenols 62.5mg/g. The nanoparticles have particle size of 18.23nm. The TEM images confirmed the silver nanoparticles were poly dispersed. Silver nanoparticles exhibit the noticeable antimicrobial potency against P.epidermidis and animal study revealed the excision and incision treatment with formulation contain green synthesized silver nanoparticles showed enhanced wound healing potential in wistar albino rats by the end of 21st days.

COMPARATIVE EVALUATION OF CLINICAL SIGNS AND SYMPTOMS IN ORAL SUBMUCOUS FIBROSIS (OSMF) PATIENTS WITH THE USE OF POLYHERBAL MEDICATION : FROM ANCIENT TO RECENT THERAPEUTICS.

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ABSTRACT : (SDIP-NC-ETRAPS-2023-15)

Introduction : India alone accounts for one third of the world's oral cancer. Being commonest, premalignant condition oral submucous fibrosis reported with malignant transformation rate of 4.5% to 7.6%. A wide range of treatment modalities have been proposed for OSMF but none have proved curative to reduce the morbidity and mortality. Therefore present study is planned using combination of Haridra, cinnamon and black pepper in 3:2:1 proportion Aim: Comparative evaluation of clinical signs and symptoms in OSMF before and after treatment with Polyherbal Preparation .Objectives: To evaluate pre-treatment and post treatment degree mouth opening, burning sensation of mouth and cheek flexibility in OSMF patients, with Polyherbal Preparation.Methodology: 05 patients suffering from oral submucous fibrosis received Polyherbal Preparation tablet 500 mg two times in a day for 06 month.Results: All five patients showed improvement in mouth opening. Improvement in burning sensation and cheek flexibility was recorded by VAS (visual analogue scale).Conclusion: Studies conducted in vitro and vivo on extract of Haridra, cinnamon and black pepper proved chemopreventive, anti-inflammatory, antioxidant in arresting the malignant potential.Thus intervention by polyherbal therapy will help to reduce the malignant conversion without toxic effect on other system of the human body.

Key words : OSMF, turmeric,cinnamon, black pepper

SCREENING OF ANTICONVULSANT EFFECT OF NICORANDIL IN RATS

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ABSTRACT : (SDIP-NC-ETRAPS-2023-16)
Objective : the objective of present study was to evaluate the antiepileptic activity of Nicorandil

Methodology : The maximal electroshock induced convulsion in animals represents grand mal type of epilepsy. The Nicorandil delayed the onset and reduced the duration of convulsion in MES and PTZ induced convulsion models and can be used as an adjuvant therapy against cognitive deficit in convulsions.

Results and discussion : The Nicorandil also shows significant decrease in lipid peroxidation level and increase in reduced glutathione level, indicates that Nicorandil possess good antioxidant activity. Also Nicorandil significantly increased the level of inhibitory neurotransmitter GABA levels. Hence it can be concluded that the Nicorandil possesses good anticonvulsant activity. Further studies are needed to explore the mechanism as well as the active principle responsible for the anticonvulsant activity of Nicorandil.
KEYWORDS : Nicorandil, maximal electroshock induced convulsion, PTZ induced convulsion.

NEPHROPROTECTIVE AND ANTI-INFLAMMATORY ACTIVITY OF STEMS OF MURRAYA KOENIGII

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ABSTRACT : (SDIP-NC-ETRAPS-2023-17)
Objective : The main objective of the present study was Nephroprotective and anti-inflammatory activity of stems of Murraya koenigii.
Methodology : The preliminary phytochemical investigations will be carried out with the petroleum ether, chloroform, ethanolic and aqueous extracts of stems of Murraya koengii for qualitative identification of phytoconstituents present with each extract and test were carried out by following standard methods. All the chemicals and reagents used were of analytical grade. Anti-inflammatory activity was performed by carrageenan induced paw oedema and Nephrpotective activity was performed by Gentamicin Induced Nephrotoxicity in albino Wistar rats.
Results and Discussion: EEMK and AEMK were subjected for phytochemical screening and found to contain tannins, sterols, flavonoids, glycosides and alkaloids triterpines in ethanolic and aqueous extracts. In the present study both the extracts significantly reduced the nephrotoxicity and inflamation. Both nephrotoxicity and inflammation may be due to generation of inflammatory mediators by oxidative stress
Keywords: Murraya koengii, carrageenan induced paw oedema, Nephrotoxicity, Gentamicin

GROWTH IN BIOSIMILAR ADOPTION

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ABSTRACT : (SDIP-NC-ETRAPS-2023-18)
Biosimilars are biological products that are highly similar to and have no clinically meaningful differences from an already approved reference product. The adoption of biosimilars has been on the rise in recent years due to their ability to provide a more affordable alternative to expensive biologic drugs. The growth in biosimilar adoption can be attributed to several factors, including increased regulatory support, growing awareness among healthcare professionals and patients, and the increasing price pressure on healthcare systems. Regulatory support for biosimilars has been a major driver of their adoption. The FDA has been taking steps to streamline the approval process for biosimilars, making it easier for manufacturers to bring these products to market. Additionally, the FDA has been working to increase the transparency of the biosimilar approval process, which has helped to build trust in these products among healthcare professionals and patients. Another key factor in the growth of biosimilar adoption has been the increasing awareness of these products among healthcare professionals and patients. As more information becomes available about the safety and efficacy of biosimilars, more healthcare professionals are becoming comfortable with prescribing these products to their patients. Additionally, patients are becoming more aware of the cost-saving potential of biosimilars, which is helping to drive demand for these products. The increasing price pressure on healthcare systems is also playing a role in the growth of biosimilar adoption. As healthcare costs continue to rise, more and more healthcare systems are looking for ways to cut costs. Biosimilars offer an affordable alternative to expensive biologic drugs, which is helping to drive their adoption. In conclusion, the growth in biosimilar adoption is being driven by several factors, including increased regulatory support, growing awareness among healthcare professionals and patients, and the increasing price pressure on healthcare systems. As these factors continue to drive the adoption of biosimilars, we will likely see even more growth in this area in the coming years.

Keywords : FDA, Biosimilars Adoption

EVALUATION OF HEPATOPROTECTIVE ACTIVITY OF PHYLLANTHUS DEBILLS ROOT EXTRACT AGAINST CCL4-INDUCED HEPATIC DAMAGE IN WISTAR RATS.

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ABSTRACT : (SDIP-NC-ETRAPS-2023-19)
The present study aims to investigate the Hepatoprotective effect of Phyllanthus debills ethanolic bark extract in CCL4 induced Hepatotoxicity. Hepatotoxicity was induced in wistar male rats by administering three doses of CCI4 (30% in olive oil,1 ml/kg body weight i.p.) at intervals of 72 h. These animals were treated with two doses of extracts (100 and 200 mg/kg) as a suspension in 1% sodium CMC once daily for 10 days using intragastric tube and

Silymarin (25 mg/kg) orally using an intragastric tube once daily for 10 days. Normal control animals were administered with vehicle (1 ml/kg p.o.) daily for 10 days using an intragastric tube and received olive oil (1 ml/kg i.p) three doses at intervals of 72 h. At the end of the experimental period, all rats were anesthetized to collect blood for the assessment of biochemical parameters and then sacrificed to collect the liver for weighing. Hepatotoxicity was evaluated by measuring the serum levels of aspartate aminotransferase (AST), alanine aminotransferase (ALT), alkaline phosphatase (ALP), bilirubin (total and direct), malondialdehyde (MDA), total protein (TP), triglycerides (TG), total cholesterol, very low-density lipoprotein (VLDL-c), low-density lipoprotein (LDL-c), high-density lipoprotein (HDL-c), urea, creatinine, and uric acid. Based on the results obtained in this study, the administration of Phyllanthus debills before exposure to the administration of CCl4 conferred favourable hepatoprotective effect in rats. The treatment with ethanolic extract of Phyllanthus debills (200 mg/kg) exhibits a significant hepatoprotective effect by ameliorating CCl4-induced alterations of these biochemical parameters. Hence, Phyllanthus debills could be a potential medicinal herb that can be used in the future to prevent liver intoxication.

GREEN SYNTHESIS AND CHARECTERIZATION OF SILVER NANOPARTICLES OF WITHANIA SOMNIFEA

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ABSTRACT : (SDIP-NC-ETRAPS-2023-20)
The metal nanoparticle synthesis is highly explored the field of nanotechnology. The biological methods seem to be more effective because of slow reduction rate and polydispersity of the final products. The main aim of this study is too the rapid and simplistic synthesis of silver nanoparticles by Withania somnifera Linn. at room temperature. The exposure of reaction mixtures containing silver nitrate and dried leaf powder of W. somnifera resulted in reduction of metal ions within 5 minutes. The extracellular synthesized silver nanoparticles were characterized by zeta potential and scanning electron microscopy. As we concluded, this type of naturally synthesized sliver nanoparticle could be a better green revolution in medicinal chemistry.
Key words : withania somnifea, silver nanoparticles, zeta potential and scanning electron microscopy.

KRAS: A THERAPEUTIC TARGET FOR PANCREATIC CANCER THERAPY

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ABSTRACT : (SDIP-NC-ETRAPS-2023-21)
: The most frequently mutated oncogene family in human cancer is made up of the RAS genes (HRAS, KRAS, and NRAS). The development of anti-RAS medicines is a key priority for cancer research due to the greatest RAS mutation rates associated with the top three cancers that lead to death in the United States (lung, colorectal, and pancreatic cancer). Despite extensive research spanning more than three decades, no efficient RAS inhibitors have yet to be made available to cancer patients. There is new hope that unbeatable RAS may eventually be defeated thanks to the painful lessons learnt from previous failures and

new ideas and techniques. We concentrate on KRAS since it is mutated in 84% of RAS-mutant tumors. The most RAS-dependent malignancy is pancreatic ductal adenocarcinoma (PDAC), which has a prevalence of KRAS mutations that is about 100%. We discuss KRAS's function in PDAC as a driver and a therapeutic target.

Keywords : anti-RAS medicine, pancreatic ductal adenocarcinoma, therapeutic target, mutation, KRAS.

A REVIEW AN ISATIN, ISATIN DERIVATIVES AND THEIR PHARMACOLOGICAL ACTIVITY

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ABSTRACT : (SDIP -NC-ETRAPS-2023-22)
Isatin or 1H-indole-2, 3-dione is an indole derivative. Isatin is an important class of heterocyclic compounds. Recently, heterocyclic compounds analogues and their derivatives have attracted strong interest in medicinal chemistry due to their biological and pharmacological properties. The majority of known molecules are heterocyclic and heterocycles dominate the fields of biochemistry, medicinal chemistry, dyestuffs and photographic. Isatin has also been found to be plants, animals and fungi. Isatin exists in two forms, lactam form and lactimform. Both are derivatives of 2, 3-dihydroindole. This is an example for amido-imidol tautomeric system. It may be prepared from cyclizing the condensation product of chloral hydrate, aniline and hydroxylamine in sulfuric acid. This reaction is called the sandmeyer isonitrosoacetanilide isatin synthesis. Isatin have been identified as interesting compounds that are collaborate with various biological activities. The purpose of this review is to provide information on the pharmacological activities of isatin and its derivative. The structure has offered a high value of diversity that is proven useful for the development of new medicinal drugs and improved potency, less toxicity and good pharmacological activity. Isatin has a wide varity of pharmacological activities such as an antimicrobial, anticancer, antiviral, anticonvulsant, anti-inflammatory and analgesic etc. The aim of this review is to provide the recent efforts of scientists in pharmacological screening of isatin, important and synthesis of isatin derivatives, pharmacological action of isatin and their biological activity.

A COMPREHENSIVE REVIEW ON PRECOCIOUS PUBERTY

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ABSTRACT : (SDIP -NC-ETRAPS-2023-23)
Precocious puberty is defined as the onset of physical, psychological, and behavioural changes of puberty at an age earlier than is considered normal. The precise cause of precocious puberty is not always clear, but it is thought to be caused by a combination of genetic, environmental and lifestyle factors. This review will provide an overview of the current understanding of precocious puberty, including its prevalence, diagnosis, treatment and impact on physical, psychological and emotional development.

Prevalence : Precocious puberty is a relatively rare condition, affecting 1-2% of children. It is more common in girls, who are more likely to experience the physical, psychological and

behavioural changes of puberty at an earlier age than boys. It is also more prevalent in some ethnic groups, particularly African Americans, and may be associated with certain medical conditions or genetic disorders.

Diagnosis : The diagnosis of precocious puberty is based on physical, psychological and behavioural changes that are observed in the child. Blood tests and imaging studies may also be used to confirm the diagnosis.

Treatment : The goal of treatment for precocious puberty is to slow or halt the development of secondary sexual characteristics and to ensure normal physical growth and development. Treatment typically involves medications designed to suppress the production of hormones that drive puberty. Other treatments may include psychological counselling and lifestyle modifications.

Impact on Physical, Psychological and Emotional Development : Physically, children with precocious puberty may experience early physical maturation and growth, which can lead to health problems such as obesity and early osteoporosis. Psychologically, children with precocious puberty may experience increased anxiety and depression, as well as difficulty in social situations. Emotionally, they may experience feelings of isolation, guilt and shame.

Conclusion : Precocious puberty is a rare condition that can have a range of effects on physical, psychological and emotional development. It is important for health care providers to be aware of the signs and symptoms of precocious puberty so that it can be accurately diagnosed and treated. Treatment should be tailored to the individual needs of the child and include medical, psychological and lifestyle interventions.

Key Words : Precocious puberty, genetic disorder, counselling, osteoporosis

ROLE OF DYSBIOSIS IN THE DEVELOPMENT OF PSORIASIS

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ABSTRACT : (SDIP-NC-ETRAPS-2023-24)
Psoriasis is a chronic inflammatory skin disease associated with epidermal keratinocyte hyperplasia and epidermal immune cell over-activation. Compositions of both local skin and gut microbiome are linked to modulation of inflammation and disease severity in psoriasis. Owing to the situation that different bacteria may elicit differential immune or inflammatory responses from epidermal immune cells and keratinocytes, and to-date no single pathogen was highlighted to be responsible for psoriasis, disruption of homeostasis (dysbiosis) in the original microbial ecosystems may create a disease-promoting environment, and as a whole may be a primary causal factor. Several studies have provided evidence that the dominant IL-23/IL-17 pathogenesis pathway is regulated by metabolites produced by gut and skin microbiota. And also some studies provided evidence for the significant influence of psoriasis treatments on the skin and gut microbiome and a positive influence of orally administered probiotics on the course of this dermatosis. Further research is needed to determine the influence of the microbiome on the development of inflammatory skin diseases. The changes in microbiome under psoriasis treatment can serve as a potential biomarker of positive response to the administered therapy.

Keywords : Psoriasis ; Microbiota;Probiotics

OPTIMIZATION AND EVALUATION OF TRANSFEROSOMAL GELS BY EMPLOYING NATURAL SURFACTANTS IN THE MANAGEMENT OF OSTEOARTHRITIS

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ABSTRACT : (SDIP-NC-ETRAPS-2023-25)
Osteoarthritis is the most commonly occurring rheumatologic problem and type of arthritis with the prevalence of 22%- 39% in India. Osteoarthritis is most commonly affects the joints in the knees, hands, hips, feet and spine. It primarily affects the elderly population. As per the WHO, worldwide 9.6% of men and 18.0% of women over 60 years of age have symptomatic Osteoarthritis. The topical formulation has good penetration would provide more therapeutic benefit when compared to oral administration. Moreover, the dose required to provide therapeutic action via transdermal drug delivery is expected to be less than the oral route. The main objective of the current research work was to optimize and evaluate the BCS class II drugs loaded transfersomal gel to overcome the drawbacks associated with oral administration. As these are BCS class-II drugs, the oral bioavailability of the drugs are poor, which leads to administration of high therapeutic doses. Along with above drawback the selected drugs are showing gastrointestinal adverse effects. To overcome the problems associated oral solid dosge forms, transfersomal gels might provide targeted drug delivery by permeation of drug into deeper layers of skin without any measurable loss by avoiding pre systemic circulation
Keywords : Osteoarthritis, Transfersomes, Gel, optimization, skin, dose, transdermal

FORMULATION AND EVALUATION OF NIOSOMES TO TREAT PSORIASIS

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ABSTRACT : (SDIP-NC-ETRAPS-2023-26)
Niosomes are a novel drug delivery systems that encapsulate the active drug in a vesicles, with using non ionic surfactant which is hydrated with or without addition of cholesterol ,which are unilamellar or multilamellar bilayer vesicles .Niosomes are extremely tiny , almost microscopic. Drugs that are both hydrophilic & lipophilic can be entrapped . Psoriasis is an autoimmune skin condition that itches, hurts and inflames the skin . The most typical form is plaque psoriasis. It results in skin that is thick and scaly. Treatment for psoriasis can help in managing the symptoms even though there is no cure , anywhere on the body including the elbows , knees, face, fingernails ,toenails ,inside of the mouth . scalp , genitals , lowerback , palms and feet, might be developed psoriasis rash . In the present investigation , Antipsoriatic drugs like cyclosporine, methotrexate ,apremilast, infliximab are used as niosomal carriers for the treatment of psoriasis disease. Niosomes are utilised for topical administration , allowing the medicines to reach pathologic skin areas, with the least amount of systemic absorption .DRUG LOCALIZATION can be achieved by using niosomes.
KEY WORDS : Niosomes, Psoriasis , Autoimmune skin disease

MONOCLONAL ANTIBODIES IN THE CANCER THERAPY

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ABSTRACT : (SDIP-NC-ETRAPS-2023-27)
Monoclonal antibody-based immunotherapy is now considered to be a main component of cancer, alongside surgery, radiation and chemotherapy. Monoclonal antibodies possess a diverse set of clinically relevant mechanisms of action. In addition, antibodies can directly target the tumor cells while simultaneously promoting the induction of long-lasting anti tumor immune response. The multifaceted properties of antibodies as therapeutic platform have lead to the development of new cancer treatment strategies that will have major impacts on cancer care. This review focuses on the known mechanisms of action, current clinical applications for the cancer treatment cancer and mechanisms of resistance of monoclonal antibody therapy. We futher discuss how monoclonal antibody-based strategies have moved towards enhancing anti tumor immune response by targeting immune cells instead of tumor antigens as well as some of the current combination therapies.
KEYWORDS : Antibody-dependent cellular cytotoxicity [ADCC], cancer, immune checkpoint blockade [ICB], immunology, monoclonal antibody.

SYNTHESIS AND ANTIMICROBIAL ACTIVITY OF SILVER NANOPARTICLES USING LEAF EXTRACT OF SENNA HIRSUTA

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ABSTRACT : (SDIP-NC-ETRAPS-2023-28)
Objective : In this study, silver nanoparticles (AgNPs) was prepared using an aqueous Senna hirsuta leaf extract. Senna hirsuta is a large upright herbaceous plant and its leaves are rich in various chemical constituents such as saponins, tannins, alkaloids, flavonoids, anthraquinones.

Methods : The green synthesized silver nanoparticles were characterized using UV visible spectrophotometer, particle size, zeta potential, energy diffraction X-ray (EDAX), FTIR, transmission electron microscopy (TEM), and further evaluated the antimicrobial effect. Various gram-positive and gram-negative bacteria were used for antimicrobial study and compared zone of inhibition and minimum inhibitory concentrations (MIC) between green synthesized AgNPs and aqueous leaf extract of Senna hirsuta.

Results and discussion : The silver nanoparticles Senna hirsuta leaf extract was performed UV-Visible at different time intervals and the observed intensity of peak was increased by increasing the duration of synthesizing silver nanoparticles and showed λmax at 436–446 nm with a broad peak. The particle size of the synthesized AgNPs was found 28.3 nm. The TEM study revealed that nanoparticles are nanosized and spherical in shape. The EDAX

study revealed that the extract was used successfully capped the AgNPs. The Zone of inhibition of AgNPs was found more compared to the extract. The silver nanoparticles showed efficient antimicrobial activity compared to others due to their vast surface area providing better contact with the cell wall of microorganisms.

Conclusion : From the results, it can be concluded that the green synthesized nanoparticles showed a better antimicrobial effect compared to the plain aqueous extract of Senna hirsuta.

Keywords : Green synthesis, Senna hirsuta, Silver nanoparticles, EDAX, Antimicrobial activity

UNRAVELLING THE PATHOGENESIS OF MYASTHENIA GRAVIS AND LAMBERT-EATON SYNDROME

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ABSTRACT : (SDIP-NC-ETRAPS-2023-29)
Myasthenia gravis is a neuromuscular autoimmune disorder, where antibodies are produced against the 2 main proteins present on the muscle, like Nm type Receptors and Muscle Selective Tyrosine Kinase (MUSK) proteins. Nm receptors are associated with repolarization and hyperpolarization and MUSK proteins are responsible for maintaining the proper concentration of Nm receptors, hence the release of the antibodies results into the failure of their function, which leads to no contraction of muscles and subsequently causes paralysis. The hallmark of myasthenia gravis is painless weakness, diplopia, and difficulty in swallowing.
Lambert-Eaton syndrome is also an auto-immune disorder, where the main cause lies within the pre-synaptic membrane. As antibodies are produced against the voltage-gated calcium channels, present on pre-synaptic membrane, the channels are inhibited. Leading to the impairment in the release of acetylcholine from the pre-synaptic membrane. The end result being absence of contraction of muscles.
Since cholinesterase enzyme breaks down the released acetyl choline into acetic acid and choline. the inhibition of cholinesterase enzyme facilitated by anti-cholinesterases remains the first line drug therapy for myasthenia gravis. Plasma pheresis is the best procedure for the treatment of Lambert Eaton Syndrome, which is carried out by examining plasma.
Key Words : MUSK, Myasthenia Gravis, Lambert-Eaton Syndrome, Cholinesterases, Plasma Pheresis

POLYCYSTIC OVARIAN SYNDROME AND ITS MANAGEMENT

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ABSTRACT : (SDIP-NC-ETRAPS-2023-30)
Hyperandrogenism and persistent anovulation are two characteristics of the complex condition known as polycystic ovarian syndrome (PCOS). Affected women in reproductive age range from 6% to 20%, depending on the diagnostic criteria, PCOS symptoms start to show up in the early pubertal years. Inconsistent menstrual periods, anovulation, and acne are traits of both PCOS and normal female pubertal development. The complex intertwined pathophysiology makes it difficult to identify the triggering factors. The majority of clinical

data that are accessible describe observations and results in adult women. Different diagnostic criteria for PCOS in adolescent girls have been defined; however the Rotterdam criteria are accepted for adult women. Menstrual irregularity, clinical hyperandrogenism, and/or hyperandrogenemia are diagnostic indicators in adolescent girls. PCOS in teenage girls can be diagnosed without the use of pelvic ultrasound results. Even prior to a confirmed diagnosis, As it is a big reason of infertility in this era and medications having many side effects on women's body. In this review we have discussed about the management of PCOS.

KEY WORDS : PCOS, INFERTILITY, ANDROGEN, MENSTRUAL CYCLE, YOGA, FOOD

POTENTIAL INDICATORS AND RECENT DEVELOPMENT IN BREAST CANCER TREATMENT

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ABSTRACT : (SDIP-NC-ETRAPS-2023-31)

Breast cancer is a type of cancer that develops in the cells of the breast. It is the most common form of cancer among women worldwide, and it can also occur in men, although this is less common. According to the World Health Organization (WHO), in 2020, there were 2.3 million women diagnosed with breast cancer and 685 000 deaths globally. Risk factors for breast cancer include being female, increasing age, family history of breast cancer, genetic mutations such as BRCA1 and BRCA2, previous history of breast cancer, exposure to radiation, early onset of menstruation, late menopause, not having children or having them later in life, and certain lifestyle factors such as alcohol consumption and obesity. The potential indicators of breast cancer include, ER (estrogen receptor), is a protein that binds to estrogen and is found in many types of breast cancer cells. PR (progesterone receptor), is a protein that binds to progesterone and is also found in many types of breast cancer cells. The presence of both ER and PR can indicate that the cancer is hormone-sensitive and may respond to hormone therapy. HER2 (human epidermal growth factor receptor 2), is a protein that is overexpressed in some types of breast cancer cells. High levels of Ki67 in a tumor can indicate that the cancer is more aggressive and may have a poorer prognosis. Mutations in the p53 gene can lead to uncontrolled cell growth and the development of cancer. It's important to note that these markers are used in conjunction with other diagnostic tools such as imaging, clinical examination and biopsy to diagnose and stages the cancer.

Some recent developments include, Immunotherapy, researchers are investigating the use of immunotherapy, which uses the body's own immune system to fight cancer, in the treatment of breast cancer. This includes using drugs that target immune checkpoint proteins, such as PD-1 and CTLA-4, to enhance the immune response against cancer cells. Targeted therapy, Scientists are developing new drugs that target specific genetic mutations or proteins found in breast cancer cells. Personalized medicine, advances in genetic sequencing and other technologies have led to an increased understanding of the genetic and molecular changes that occur in breast cancer. Early detection, researchers are working on developing new methods for early detection of breast cancer, including the use of biomarkers in blood or other body fluids, as well as imaging techniques such as MRI. Metastasis, research is also focusing on ways to prevent and treat breast cancer that has spread to other parts of the body (metastasis). This includes the identification of new therapeutic targets and the development of drugs that can block the process of metastasis. In conclusion, research in the field of breast cancer is ongoing and aims to improve diagnosis, treatment, and overall outcomes for patients.

Key Words : BRCA1, BRCA2, HER2, ER, PR, p53, Ki67

CYTOTOXICITY OF TAXILLUS TOMENTOSUS AND SPILANTHES CALVA IN DIFFERENT CANCER CELL CULTURES IN VITRO

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ABSTRACT : (SDIP-NC-ETRAPS-2023-32)
Cancer is one of the leading diseases to cause death globally. Most of the synthetic drugs used to treat cancer are having serious side effects. So, there is a need to develop the drugs which are used to treat cancer with little side effects.
Objectives : This can led to investigate the plant products having less side effects, for their anticancer activity.

Methadology : The present investigation evaluated the in vitro toxicity of leaf extracts and fractions of Spilanthes calva and Taxillus tomentosus in 5 totally different neoplastic cell cultures, like HeLa (cervical cancer cells), HEK 293 (kidney cancer cells), MCF-7 (breast cancer cells), A549 (lung cancer cells) and Hep G2 (hepatic cancer cells) by 3-(4,5-dimethyl thiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT) and lactate dehydrogenase (LDH) release assays.

Results & Discusions : Among all the test extracts and fractions, petroleum ether and n-hexane fractions of Spilanthes calva, and ethyl acetate and n-hexane fractions of Taxillus tomentosus have been shown maximal cytotoxic activities against all tested cell cultures. The IC50 values of SCPEF, SCNHF and TTEAF were found to be 41.79, 42.26 and 41.01 µg/mL on HEK 293 cells, which were very close to standard drug PCTXL has been found to be 35.22 µg/mL on HEK 293 kidney cancer cells. The TTNHF IC50 value was found to be 39.29 µg/mL which is comparable with the standard PCTXL 39.18 µg/mL on A549 lung cancer cells.
Key-words : Cancer, cytotoxicity, cell line, extract, LDH

FISH SKIN TREATMENT FOR SKIN BURNS

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ABSTRACT : (SDIP-NC-ETRAPS-2023-33)
The basic concept for treatment of burn with animal skin is an innovation medication policy where these skin are kept on the burner area for several days for recovery. Among the fish skin treatment is a recent innovation by Brazillian researchers. The fish shin is placed on the burnt area which most and allow the transfer of collagen to promotes healing. The treatment is an alternate and easy method than gauze bandage, which needs regular changing and is also often painful, when they tested clinically on human.

Keywords : Bum, Clinical trials, Collagen, fish skin, Medication

CURRENT ADVANCES AND TRENDS IN THE TREATMENT OF DEPRESSION

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ABSTRACT : (SDIP-NC-ETRAPS-2023-34)

Depression is a common mental health condition characterized by persistent feelings of sadness and loss of interest in activities. Treatment for depression typically includes a combination of therapy and medication. In recent years, there have been several advances and trends in the treatment of depression. One of the most significant advances has been the development of new antidepressants, such as selective serotonin reuptake inhibitors (SSRIs) and serotonin-norepinephrine reuptake inhibitors (SNRIs). These medications work by increasing the levels of certain neurotransmitters in the brain, which can help to alleviate symptoms of depression. Another trend in the treatment of depression is the use of psychotherapy, specifically cognitive-behavioral therapy (CBT). This therapy helps individuals identify and change negative thought patterns and behaviors that may contribute to their depression. Research has shown that CBT can be as effective as medication in treating depression, and it may be a good option for individuals who are hesitant to take medication or who do not respond well to it. In recent years, there has also been an increased focus on using technology to treat depression. Several apps and online programs have been developed that can provide therapy, support, and education to individuals with depression. These tools can be particularly useful for individuals who live in remote areas or who have difficulty accessing in-person therapy.

Additionally, there has been a growing interest in the use of non-pharmacological interventions, such as mindfulness light therapy and exercise, as adjunctive treatments for depression. Mindfulness-based interventions, such as Mindfulness-based Stress Reduction (MBSR) and Mindfulness-based Cognitive Therapy (MBCT), are effective in reducing symptoms of depression. Light therapy, also known as phototherapy, involves exposing a person to bright artificial light. This type of therapy is often used to treat seasonal affective disorder (SAD) and other forms of depression. Similarly, regular exercise has been shown to have antidepressant effects and be beneficial for treating depression. There has been a significant increase in the use of ketamine and other psychedelic compounds as treatment for depression. These treatments, which are still in the early stages of research, have shown promise as rapid-acting antidepressants, particularly for individuals with treatment-resistant depression.

In conclusion, there have been several advances and trends in the treatment of depression in recent years, including the development of new antidepressants, the use of psychotherapy, the use of technology, the use of non-pharmacological interventions, and the use of ketamine and other psychedelic compounds. These advances and trends have expanded the options available to individuals with depression and have the potential to improve the effectiveness of treatment.

Keywords : SSRIs, SNRIs, CBT, MBSR, MBCT, SAD.

MICROWAVE ASSISTED BIOSYNTHESIS OF SILVER NANOPARTICLES FROM ACHYRANTHES ASPERA FOR BURN WOUND HEALING ACTIVITY

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ABSTRACT : (SDIP-NC-ETRAPS-2023-35)

Objective : The aim of the present work is to develop a silver nanoparticle (SNP) using aqueous leaf extract of Achyranthes Aspera extract for burn wound healing.

Methods : Aqueous Extraction of Achyranthes Aspera leaves was done and used for silver nanoparticle biosynthesis. The synthesized nanoparticles were characterized by UV, FTIR, DLS and TEM, SNPs of least particle size were studied for, antioxidant and antimicrobial activity and optimized silver nanoparticles were formulated into gel and their burn wound healing potential were studied.

Results : The study revealed that the formation of silver nanoparticles was confirmed by UV-Visible spectroscopy. Biosynthesized silver nanoparticles were below 100nm. TEM revealed that particles were spherical with smooth surface. The study revealed that synthesized silver nanoparticles formulation showed significant wound healing activity by improving wound contraction in rat model and this activity further evidenced by histopathological evaluation.

Conclusion : The present investigation concluded that the silver nanoparticles were capped with biomolecules of Achyranthes Aspera which is responsible for enhancing the burn wound healing activity of plant extract.

DRUG INDUCED VASCULITIS

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ABSTRACT : (SDIP-NC-ETRAPS-2023-36)

An increasing number of therapeutic agents have been associated with a vasculitis syndrome. This usually involves small vessels, primarily capillaries, venules, and arterioles in leukocytoclastic vasculitis, small-vessel disease similar to an antineutrophil cytoplasmic antibody-related vasculitis, or mid-sized muscular arteries in a polyarteritis-like picture. Antineutrophil cytoplasmic antibodies are present in many cases of vasculitis regardless of the size of the vessel involved. Monoclonal antibodies used to treat many autoimmune disorders have become the most common agents associated with drug-induced vasculitis. Important advances in epigenetics, genetics, and neutrophil apoptosis are providing new insights into the pathogenesis of both drug-induced vasculitis and idiopathic vasculitis. Although management has not changed significantly in the past few years where withdrawal of the offending agent is the primary intervention, increasing awareness of drug-induced vasculitis can lead to earlier diagnosis and prevention of severe organ damage and fatalities.
Keywords: Leukocytoclastic vasculitis, Monoclonal antibodies, Neutrophil apoptosis, idiopathic vasculitis.

VITILIGO – THE CHALLENGING COLOR

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ABSTRACT : (SDIP-NC-ETRAPS-2023-37)
The main objective of the presentation is to focus mainly on the problems faced by the vitiligo patients. Vitiligo is condition where the skin losses its natural ability to synthesize melanocytes of the skin and results in depigmentation and colored patches in the affected area. Now-a-day this disease became common among both adults and children, about 0.5-2% of people are affected by Vitiligo. It can be described as autoimmune disease and multiple mechanisms have been described for melanocyte destruction in vitiligo cases. The main causes for the disorder are Oxidative stress, hereditary condition, environmental factors, Innate immunity and Adaptive immunity. Currently many treatments are available for the treatment though they are effective to some extent, but none ensure complete recovery. Because of the depigmentation and colored patches on the skin it leads to inferiority complex and discrimination among the patients. Melanocyte synthesis can be enhanced by UV Phototherapy after application of vitiligo creams, where repeated exposure of skin to the UV light may leads to the skin cancer. Topical corticosteroid can be used as part of treatment to stop the spread of white patches with possible improvement and side effects ranging from atrophy to hypertrichosis. Calcineurin inhibitors can help in treating the smaller patches with adverse side effects being lymphoma and skin cancer.
Conclusion : Most of the treatments available for the treatment of vitiligo are time taking and high risk to the skin, there is a need to develop herbal formulations that are effective in short time period with minimal side effects

ROLE OF INFLAMMATORY MARKERS IN CARDIOVASCULAR RISK ASSESSMENT

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ABSTRACT : (SDIP-NC-ETRAPS-2023-38)
Background : Inflammatory processes are clearly implicated in the etiology of vascular disease and in its sequelae. Current risk prediction models based on traditional risk factors have the ability to predict long-term CV risk in many individuals. Extensive research is under way to identify novel risk factors that can improve our ability to accurately predict CV risk, identify new targets for therapy and improve current prognostic algorithms.

Aim and objective : Hence the aim of present study was to analysis inflammatory markers in the cardiovascular disease by evaluating the effect of the new biochemical markers such as hs-CRP and serum amyloid A protein (SAA) in the study population.
Methodology: Total of 100 healthy volunteer and test population were selected, particulars were recorded. Evaluation of inflammatory markers was conducted by standard methods.

Result and discussion: The test population shows a significant change in the BMI, Cholestrol, HbA1C, systolic and diastolic BP. The present study shows a significant increase

in the level of hsCRP ((t=-21.34, p<0.001) in the tests population (4.92 ± 2.04) when compare to the control population (0.541 ± 0.258) and a significant difference (t=-19.04, p<0.001) between SAA (mg/L) level of tests (4.76 ± 1.38) and control population (1.849 ± 0.658). Elevated levels of inflammatory markers, particularly hs-CRP and SAA indicate an increased risk of coronary heart disease.

Conclusion : In conclusion, our findings suggest that high levels of inflammatory markers are associated with an increased risk of coronary heart disease; hence they can be used for the early prediction of coronary heart diseases.

PHARMACY PRACTICE

FORMULATION OF GEL CONTAINING PHASEOLUS VULGARIS L. EXTRACT AND TO EVALUATE IT'S EFFICACY IN THE MANAGEMENT OF INFLAMMATION- A SINGLE ARM OPEN LABELLED CLINICAL STUDY

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ABSTRACT : (SDIP-NC-ETRAPS-2023-01)

Objective : The research works objective was to develop and test a gel that contained anthocyanin of Phaseolus vulgaris L. extract and to study it's anti-inflammatory activity. Material and Method: By macerating Phaseolus vulgaris L. with 1% HCl (v/v) in methanol as the solvent, anthocyanin was extracted from the seed coat. Anthocyanin gels were produced utilizing a variety of polymers, including carbopol-940, sodium-CMC, chitosan, and other ingredients, including ethanol, lavender oil, propylene glycol, methyl paraben, and propyl paraben. All of the formulations of anthocyanin gel were studied for FTIR, pH, viscosity, spreadability, extrudability, drug content, and in-vitro drug release studies. The optimal formulation was then carried through a clinical investigation. Result and Discussion: Formulations for anthocyanin gels can be made utilising various gelling agents, such as carbopol-940, sodium-CMC, chitosan at different concentrations. Gel formulated using Chitosan (F3) showed better results of composition with decreased viscosity, enhanced extrudability, and a respectable amount of drug release. Formulation F3 by 2% of chitosan was best choice for anti-inflammatory activity in clinical study. Hence, Anthocyanin proved it's potential for inflammation that implies moderate to marked improvement with significant results in subjects.

Keywords : Phaseolus vulgaris L, Carbopol-940, Sodium-CMC, FTIR, Chitosan

ASSESSMENT OF PARENTS KNOWLEDGE, ATTITUDE AND PRACTICE ABOUT CHILD VACCINATION IN SELECTED RURAL AREAS OF KALABURAGI DISTRICT

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ABSTRACT : (SDIP-NC-ETRAPS-2023-02)

Vaccines have thrived as one of the most successful health interventions that have diminished occurrence of infectious diseases and improved quality of life in the population. Improving infant immunization coverage and timeline is a key health policy objective in many developing countries. Parenteral decisions regarding vaccination are very vital for increasing the vaccination rate and parent compliance to the immunization schedule.The present study was taken to analyze the extent of parent's KAP towards child vaccination such that it can be correlated with the immunization status of their children, among native participants from rural areas of Kalaburagi district and also to educate them regarding the vaccination schedule and importance of vaccination. A Six months Community based; Prospective, Cross-Sectional study was conducted at selected villages in rural areas of Kalaburagi district. Parents were enrolled into the study by considering the study criteria. Demographic details and other relevant data were collected at pre-test. There after the parents were given structured education by giving leaflets along with pictorial presentations. One month after the pre-test, in post-test the impact of structured education was re-assessed by means of same questionnaires. A total of 631 parents from 10 selected rural areas were enrolled in the study out of which 611 parents completed the study and 20 parents did not complete the study. It was evident that 470(76.92%) children's immunization was completed according to schedule, 73(11.95%) children's immunization was not complete according to schedule and 68(11.13%) parents did not know whether child immunization was complete according to schedule or not. The pre and post-test KAP score was assessed using SPSS software and Chi- Square test was performed to analyze the Statistical significance. In pre-test the knowledge score was 59.11%; the attitude score was 76.54%; the practice score was 78.49%. In post-test the knowledge score got increased to 99.49%; the attitude score was increased to 99.04%; the practice score was also increased to 95.33%. The study was statistically significant at p-value of <0.01. This study showed that good perception regarding childhood immunization among parents had led to improved practice of immunization in their children. These are the problems which are needed to be addressed to achieve vaccination coverage of 100%. Health care workers at the gross root level must be trained and through them the importance of childhood vaccination must be disseminated to all rural areas.

Keywords : KAP- Knowledge, Attitude and Practice, SPSS.

A RIVIEW ON ARTIFICIAL INTELLIGENCE (AI) IN DRUG DISPENSING AND ACCOUNTABILITY

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ABSTRACT : (SDIP-NC-ETRAPS-2023-03)

Background and objective : Technology has a great impact in today's medical field and thereby in pharmacies.The pharmacy activities like drug dispensing should be done with accountability. Theseactivitiesare replacing by technology in recent years. Accurate drug dispensing and accountable usage of artificial intelligence enhances patient safety. Thisstudy gives an idea on the Artificial Intelligence and how it is used in each step of the drug dispensing procedure with accountability. AI is the reception of calculations and programming to immediatehuman attention or awareness in the assessment of complicated clinical information. The AI decreases the problems related to drug dispensing and also makes processdone easier. Pharmacy demands attention to use artificial intelligence and a pharmacist should be careful while using it in a pharmacy. The introduction of Artificial intelligence increases the efficiency of works in the pharmacy and increase technological growth makes pharmacists jobs done faster. It reduces labour cost and has capability of multitasking. AI and machine learning in drug dispensing, drug discovery are reforming drug development processes in healthcare and its accountable use can lead to enhanced workflow and better patient experience. Conclusion: We cannot think about the future without "Artificial Intelligence" (AI).So artificial intelligence should be introduced and use it with accountability is a necessity in modern life and in future.

Key Words : Artificial Intelligence" (AI), Drug dispensing, Accountability

ECTOLIFE ENVISIONS ON ARTIFICIAL INTELLIGENCE ON ARTIFICIAL WOMB FACILITY

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ABSTRACT : (SDIP-NC-ETRAPS-2023-04)

An artificial womb or artificial uterus is a device that would allow for extracorporeal pregnancy by growing a fetus outside the body of an organism that would normally carry the fetus to term. EctoLife by Hashem Al-Ghaili unfolds as a huge sci-fi inspired facility with 75 state-of-the-art labs, each hosting up to 400 growth pods or artificial wombs that replicate the exact conditions found inside a woman's uterus. A single facility can incubate 30,000 lab-grown babies a year in an infection-free environment. Every growth pod is equipped with sensors that monitor vital signs like heartbeat, oxygenation saturation, temperature, breathing, and blood pressure, while an AI system monitors physical features and picks up on any potential genetic abnormalities. Moreover, to ensure and support healthy growth, babies are steadily and sustainably 'maintained' by two central bioreactors. The first bioreactor pumps nutrients, vital hormones, antibodies, growth factors, oxygen, and an amniotic-like liquid solution through an artificial umbilical cord.

Keywords : Ectolife, Aftificial womb, Artificial Intelligence, Possibility of Artificial Gestation, Bio Bag, Ectogenesis.

ADHD AND LEARNING DISABILITY IN CHILDREN AS CLINICAL PERSPECTIVES

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ABSTRACT : (SDIP-NC-ETRAPS-2023-05)
The purpose of the study was to investigate the relationship between the attention deficit hyperactivity disorder (ADHD) and Learning disability (LD) in children. ADHD and LD are the most commonly used diagnoses for children who experience academic and behavioral difficulties. ADHD is a behavioral disorder characterized by impulsivity, inattention and hyperactivity. There are 3 major types of ADHD; that is ADHD combined type, impulsive / hyperactive type and inattentive and distractible type. Likewise learning disability is a neurological condition that influences the brain's capacity to send, get and process data. LD has 5 types; that is dysgraphia, dyscalculia, dyspraxia, dyslexia and non-verbal learning disorder. The causes of ADHD and LD are genetic factors, environmental factors such as alcoholism, and causes during pregnancy such as premature birth etc. Most common symptoms are forgetfulness, lack of attention, distraction, poor study skills etc. There are many diseases are comorbid with ADHD and LD are depression, anxiety, speech problems, hearing problems, vision problems etc. Diagnosis is done by based on symptoms, EEG, self-assessment, interview and physical exam etc. Treatment methods includes; the psychosocial treatment, behavioral treatment, cognitive training, development of attention process, diet and physical exercise. Both ADHD and LD impact on the life of the children like low self-esteem, poor psychosocial health, emotional impact on family life and poorer overall quality of life. Also positively impact on certain creative achievements. ADHD and LD are difficult to distinguish without a proper diagnosis. Most common LD in children with ADHD is dyslexia.
Keywords : Attention deficit hyperactivity disorder (ADHD), Learning disability (LD), EEG, psychosocial treatment.

FORMULATION OF GEL CONTAINING PHASEOLUS VULGARIS L. EXTRACT AND TO EVALUATE IT'S EFFICACY IN THE MANAGEMENT OF INFLAMMATION- A SINGLE ARM OPEN LABELLED CLINICAL STUDY

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ABSTRACT : (SDIP-NC-ETRAPS-2023-06)
Objective : The research works objective was to develop and test a gel that contained anthocyanin of Phaseolus vulgaris L. extract and to study it's anti-inflammatory activity.
Anthocyanin proved it's potential for inflammation that implies moderate to marked improvement with significant results in subjects.

Material and Method : By macerating Phaseolus vulgaris L. with 1% HCl (v/v) in methanol as the solvent, anthocyanin was extracted from the seed coat. Anthocyanin gels were produced utilizing a variety of polymers, including carbopol-940, sodium-CMC, chitosan, and other ingredients, including ethanol, lavender oil, propylene glycol, methyl paraben, and propyl paraben. All of the formulations of anthocyanin gel were studied for FTIR, pH, viscosity, spreadability, extrudability, drug content, and in-vitro drug release studies. The optimal formulation was then carried through a clinical investigation.

Result and Discussion : Formulations for anthocyanin gels can be made utilising various gelling agents, such as carbopol-940, sodium-CMC, chitosan at different concentrations. Gel formulated using Chitosan (F3) showed better results of composition with decreased viscosity, enhanced extrudability, and a respectable amount of drug release. Formulation F3 by 2% of chitosan was best choice for anti-inflammatory activity in clinical study. Hence,

COMBINATION OF BEHAVIOURAL COUNSELLING AND NICOTINE REPLACEMENT THERAPIES FOR SMOKING CESSATION: A CASE REPORT

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ABSTRACT : (SDIP-NC-ETRAPS-2023-07)
Consumption of tobacco is considered very normal or per se cool in 21st century, majorly in the form of smoking in urban population and smokeless in the form of rural population. It is also one of the leading cause for developing oral cancer. Besides oral cancer, many other health related issues also occurs. Each year, about half a million instances of head and neck cancer are diagnosed, making it major cause of death or morbidity. Tobacco is consumed in different forms which includes cigarette, water pipe, medwakh (Arabic traditional pipe), cigar, smokeless tobacco (sweika), electronic cigarettes and heat-not-burn tobacco. Individuals from all age groups are involved starting from 6 years to elder. Along with management of the diseases caused by tobacco, nicotine replacement therapies, counselling and behavioural management courses for tobacco cessation are also conducted. And it has been proved that this combination of therapy is successful in getting rid from tobacco products. This research paper highlights a case history of 45year old patient who had a history of smoking habits who managed to quit using behavioural management approaches. Complete Oral health rehabilitation protocols were followed which included Scaling and root planning that led to the recovery of gingival inflammation and maintenance of Oral hygiene. The patient was on Proper Oral hygiene prophylactic measures of using 0.2% chlorhexidine mouth wash and modified stillman techniques of brushing to improve the circulation in gingiva. The patient was also kept on multivitamins and antioxidants for protection against free radicals. The Tobacco Cessation approaches should be promoted among the health care service providers for creating a significant reduction in the habits associated diseases among the population.

Keywords : tobacco cessation, nicotine replacement therapy, behaviour counseling

ASSESSMENT OF PARENTS KNOWLEDGE, ATTITUDE AND PRACTICE ABOUT CHILD VACCINATION IN SELECTED RURAL AREAS OF KALABURAGI DISTRICT

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ABSTRACT : (SDIP-NC-ETRAPS-2023-08)

Vaccines have thrived as one of the most successful health interventions that have diminished occurrence of infectious diseases and improved quality of life in the population. Improving infant immunization coverage and timeline is a key health policy objective in many developing countries. Parenteral decisions regarding vaccination are very vital for increasing the vaccination rate and parent compliance to the immunization schedule.The present study was taken to analyze the extent of parent's KAP towards child vaccination such that it can be correlated with the immunization status of their children, among native participants from rural areas of Kalaburagi district and also to educate them regarding the vaccination schedule and importance of vaccination. A Six months Community based; Prospective, Cross-Sectional study was conducted at selected villages in rural areas of Kalaburagi district. Parents were enrolled into the study by considering the study criteria. Demographic details and other relevant data were collected at pre-test. There after the parents were given structured education by giving leaflets along with pictorial presentations. One month after the pre-test, in post-test the impact of structured education was re-assessed by means of same questionnaires. A total of 631 parents from 10 selected rural areas were enrolled in the study out of which 611 parents completed the study and 20 parents did not complete the study. It was evident that 470(76.92%) children's immunization was completed according to schedule, 73(11.95%) children's immunization was not complete according to schedule and 68(11.13%) parents did not know whether child immunization was complete according to schedule or not. The pre and post-test KAP score was assessed using SPSS software and Chi- Square test was performed to analyze the Statistical significance. In pre-test the knowledge score was 59.11%; the attitude score was 76.54%; the practice score was 78.49%. In post-test the knowledge score got increased to 99.49%; the attitude score was increased to 99.04%; the practice score was also increased to 95.33%. The study was statistically significant at p-value of <0.01. This study showed that good perception regarding childhood immunization among parents had led to improved practice of immunization in their children. These are the problems which are needed to be addressed to achieve vaccination coverage of 100%. Health care workers at the gross root level must be trained and through them the importance of childhood vaccination must be disseminated to all rural areas.

Keywords : KAP- Knowledge, Attitude and Practice, SPSS

ASSESSMENT OF EFFICACY OF DEXMEDITOMIDE ON POSTOPERATIVE PAIN AND ANALGESIC REQUIREMENT- A PROSPECTIVE STUDY

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ABSTRACT : (SDIP-NC-ETRAPS-2023-09)
The present study aims to assess pain score in 24 hours postoperative period using Visual Analogue Scale (VAS). To study total amount of analgesic requirement in the 24 hours postoperative period. The study was carried out in ASA I & II adult patients, 20–60years, of females, posted for elective laparoscopic gynecologic surgeries requiring general anesthesia and endotracheal intubation in Department of Anesthesiology, Durgabai Deshmukh Hospital and Research Centre. It was observed that patients having laparoscopic gynecological procedures, the results of this study show that dexmedetomidine considerably lowers postoperative pain and painkiller .The VAS pain ratings and rescue tramadol intake were lower in Group, which received dexmedetomidine, compared to Group , which received just saline until the 24th post operative hour.In 24 hours, rescue analgesia was necessary up to 5 times in the normal saline group, but only 3 times in the dexmedetomidine group. Over the course of 24 hours, fewer patients in Group C experienced pain and required rescue analgesia, showing that dexmedetomidine provided greater pain relief. According to our findings, Dexmedetomidine lowers postoperative pain as measured by a lower VASscore. Dexmedetomidine lowers the need for postoperative analgesics following laproscopic gynaecological operations, according to our research.
Keywords : Visual Analogue Scale, ASA I & II, Tramadol, Dexmedetomidine

SURVIVAL ANALYSIS IN MULTIDRUG RESISTANT TUBERCULOSIS IN A SOUTH INDIAN REGION

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ABSTRACT : (SDIP-NC-ETRAPS-2023-10)
Objectives: There is no concise information on the elements that contribute to death internationally, despite the availability of numerous factors illustrating the mortality in multidrug resistant tuberculosis. The factors detailing the mortality vary from different regions. Methodology: The objective of the research was to identify the variables influencing multi-drug resistant tuberculosis mortality in Telangana's Warangal district. A sample size of 296 people was used in the follow up of 24 months in this prospective study to identify the factors that predict mortality in patients with multidrug-resistant pulmonary TB. Mortality in patients was recorded by referring the medical sheets, and querying the healthcare facilitators' viz., National tuberculosis elimination program supervisors,

Auxiliary Nursing Midwifery. Statistical analysis: Binary logistic regression analysis was used to identify the anticipators for mortality. The dependent variable was the occurrence of event - mortality and the independent variables chosen from the available literature.

Results : Demography was presented in number and percentage. The predictors for mortality identified as low body weight of 16-30kg (p=0.002; aOR=10.43); comorbids (p=0.002; aOR=3.21); severe radiological manifestations at admission to hospital (p=0.001; aOR=6.98) and incompliance to treatment (p=0.0001; aOR=5.06) in the present study.

Conclusion : The factors identified for mortality in multidrug resistant tuberculosis patients are malleable and modifiable with timely follow-up of the patients. The results imply strengthening the anti-TB program with a multidisciplinary approach.

Keywords : multidrug resistant tuberculosis, Mortality, Anti-TB program

ACINETOBACTER BAUMANNII AN OPPORTUNISTIC BACILLI CAUSING DEADLY NOSOCOMIAL INFECTIONS-ACASE REPORT OF TWO PATIENTS WITH HIGHER ANTIBIOTIC RESISTANCE (XDR)

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ABSTRACT : (SDIP -NC-ETRAPS-2023-11)

Acinetobacter baumannii is an opportunistic bacterial infection primarily associated with hospital acquired pneumonia. It is a gram negative, MDR pathogen that causes nosocomial infections in Intensive care unit and immunocompromised patients with central venous catheters or mechanical ventilators. Nosocomial pneumonia accounts for 10-15%of all hospital acquired infections, usually presenting with sepsis and/or respiratory failure. Upto 50% of cases are acquired on intensive care units. Predisposing features include stroke, mechanical ventilation, chronic lung disease, recent surgery and previous antibiotic exposure. Acinetobacter baumannii has developed a broad spectrum of anti microbial resistance associated with high mortality rate over past several years and currently present a significant challenge in treating these infections. Physicians now rely on older agents such as polymyxins(colistin) for treatment. In first case, we present a female patient of 55 years old and 72years old male in second case, who developed hospital acquired pneumonia due to acinetobacter baumannii. These patients developed severe pneumonia, respiratory distress rapidly worsened and mechanical ventilation was applied. Fully sensitive Acinetobacter baumannii pneumonia was confirmed by ET culture and sensitivity test. Culture reports revealed extensively drug-resistant (XDR) and resistance to carbapenem.The patient was effectively treated with zavicefta(ceftazidine+avibactum) and colistin.This has showed increased frequency of recovery in these patient's.In this article we will review relevant strategies to aid with early identification and appropriate treatment of acinetobacter pneumonia while preserving antibiotic susceptibility. Thus our current efforts focus on addressing all the anti microbial resistance mechanisms described, with the objective of identifying the most promising therapeutic scheme.

Keywords : Acinetobacter baumannii, Antibiotic resistance, Hospital acquired pneumonia, Immunocompromised, Co-existing condition, XDR.

EVALUATION OF KNOWLEDGE ATTITUDE AND PRACTICE (KAP) ABOUT PHARMACOVIGILANCE (PV) AMONG COMMUNITY PHARMACISTS IN QASSIM, SAUDI ARABIA

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ABSTRACT : (SDIP-NC-ETRAPS-2023-12)

Background: Pharmacovigilance (PV) is an essential activity to detect Adverse Drug Reactions (ADRs). PV aims to reduce ADRs risk and ensure patient safety. Hence we aimed to evaluate knowledge attitude and practice (KAP) about PV among community pharmacists in Qassim, Saudi Arabia. Methods: A cross-sectional study was conducted by using a validated questionnaire after getting the ethical approval from Deanship of scientific research, Qassim University. Sample size was calculated based on total number pharmacist in Qassim area by using Raosoft, Inc. Statistical Package for the Social Sciences (SPSS) version 20 was used for data entry and analysis. Ordinal logistic regression is performed to know the predictors of knowledge, attitude and perception. A p-value of <0.05 was considered statistically significant. Results: A total of 209 community pharmacists had participated in the study. 62.9% of them defined the PV correctly and 59% of them defined ADR correctly. However only 17.2% knew about where to report ADRs. Interestingly majority of them (92.9%) reported that it is necessary to report ADRs and 73.8% of them were willing to report ADRs. 53.8% of the participants identified ADRs during their career. However only 21.9% reported ADRs. Barriers discouraging reporting ADRs, majority of them (85.6%) do not know how to report ADRs. Conclusion: Community pharmacists who participated in the study were knowledgeable about pharmacovigilance, and the attitude towards reporting ADRs was highly positive. However, number of reported ADRs was low because of lack of knowledge on how and where to report ADRs. Continuous education and motivation about ADR reporting and pharmacovigilance is warranted among community pharmacists for the rational use of medications and to limit the hazards of medications.

Keywords : PV, ADRs, KAP.

TO STUDY THE ANTIBIOTIC RESISTANCE IN URINARY TRACT INFECTION IN PREGNANT WOMEN

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ABSTRACT : (SDIP-NC-ETRAPS-2023-13)

UTI is caused by pathogenic invasion of the urinary tract which leads to Urothelium inflammation. In one ml of urine, the normal bacterial count is 1000. 1 million bacteria per ml of urine are found in UTI cases. Major reasons for UTI in pregnant women is changes in hormones which can also lead to microureteral reflux and excretory products of patient which contains more sugar, protein and hormones the changes may put the patient on high risk for UTI untreated, it may cause kidney infections (pyelonephritis), low birth weight of

baby and also premature birth. To find out antibiotic sensitivity/ susceptibility pattern against microbial pathogens in UTI, to assess patients with antibiotic resistance and to reduce overuse and misuse of antibiotics. Prospective study will be carried out in pregnant women with UTI to find out the resistance pattern of antibiotics in Durgabai Deshmukh Hospital and Research Centre, Vidhya nagar, Hyderabad. Among the total number of pregnant women (150) who are suffering with UTI taken for the study of antibiotic resistance,74% women are found to be highly resistant to ampicillin and 22% least resistant to nitrofurantoin based on the culture and sensitivity reports. From this study we have concluded that antibiotic showing maximum resistance is ampicillin and least resistance is nitrofurantoin. Hence nitrofurantoin can be given highest preference for the treatment of UTI in Pregnant women when compared to that of ampicillin.

Keywords : Pregnant women, UTI, Resistance, Nitrofurantoin, Ampicillin.

TO STUDY THE ANTIBIOTIC RESISTANCE IN URINARY TRACT INFECTION IN PREGNANT WOMEN

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ABSTRACT : (SDIP-NC-ETRAPS-2023-14)

AIM : To study the antibiotic resistance in urinary tract infection in pregnant women

INTRODUCTION : UTI is caused by pathogenic invasion of the urinary tract which leads to Urothelium inflammation. In one ml of urine, the normal bacterial count is 1000. 1 million bacteria per ml of urine are found in UTI cases. Major reasons for UTI in pregnant women is changes in hormones which can also lead to microureteral reflux and excretory products of patient which contains more sugar, protein and hormones the changes may put the patient on high risk for UTI untreated, it may cause kidney infections (pyelonephritis), low birth weight of baby and also premature birth.

OBJECTIVES : To find out antibiotic sensitivity/ susceptibility pattern against microbial pathogens in UTI, to assess patients with antibiotic resistance and to reduce overuse and misuse of antibiotics.

METHODOLOGY : Prospective study will be carried out in pregnant women with UTI to find out the resistance pattern of antibiotics in Durgabai Deshmukh Hospital and Research Centre, Vidhya nagar, Hyderabad.

RESULT: Among the total number of pregnant women (150)who are suffering with UTI taken for the study of antibiotic resistance,74% women are found to be highly resistant to ampicillin and 22% least resistant to nitrofurantoin based on the culture and sensitivity reports.

CONCLUSION : From this study we have concluded that antibiotic showing maximum resistance is ampicillin and least resistance is nitrofurantoin. Hence nitrofurantoin can be given highest preference for the treatment of UTI in Pregnant women when compared to that of ampicillin.

Keywords : Pregnant women, uti, resistance, nitrofurantoin, ampicillin.

A DOUBLE-BLIND, RANDOMIZED, MULTICENTRIC, ACTIVE CONTROLLED, PARALLEL GROUP, COMPARATIVE PHASE III STUDY TO EVALUATE THE EFFICACY AND SAFETY OF LEVOMILNACIPRAN ER VERSUS VENLAFAXINE HYDROCHLORIDE XR IN PATIENTS WITH MAJOR DEPRESSIVE DISORDER

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ABSTRACT : (SDIP-NC-ETRAPS-2023-15)
A mental disorder known as major depressive disorder (MDD), also known as clinical depression. Major depressive disorder is thought to be caused by a combination of genetic, environmental, and psychological factors, with genetic factors accounting for approximately 40% of the risk. Levomilnacipran and Venlafaxine hydrochloride are selective serotonin and norepinephrine reuptake inhibitors (SNRIs) used to treat major depression, generalised anxiety disorder, panic disorder, and social anxiety disorder. Levomilnacipran binds to human serotonin (5-HT) and norepinephrine (NE) transporters with high affinity. This dynamic control Parallel gathering stage III investigation provides strong evidence that levomilnacipran ER was as effective as Venlafaxine hydrochloride XR. It was also more secure and long-lasting than Venlafaxine hydrochloride XR. This finding suggests that Levomilnacipran ER was a positive feature as that of Venlafaxine. In patients with true depression, the dosages of Levomilnacipran 20 mg, 40 mg, 80 mg, and 120 mg were equivalent.
Keywords : MDD, SNRI, Levominacipram, Venlafaxine, Serotonin

A REVIEW ON PREVALENCE OF FUNGAL INFECTIONS IN PATIENTS WITH TYPE 2-DIABETES MELLITUS

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ABSTRACT : (SDIP-NC-ETRAPS-2023-16)
Diabetes is a chronic, metabolic disease characterised by elevated blood glucose level. As per the latest statistics by WHO, about 422 million people worldwide have Diabetes and the number of cases is only increasing. In developing countries, Infection is one of the three leading causes of death in patients with Diabetes. Poor glycaemic control and uncontrolled Diabetes increases the risk of recurrent infection including bacterial, viral and fungal infections. Diabetes especially uncontrolled Diabetes provides a favourable environment for fungi to thrive. Fungal infections are not serious in a healthy individual. But patients with compromised immune system as in Diabetes can end up with serious infections. Fungal colonisation in Diabetics is more prevalent than in non-diabetics. Common fungal infections in Diabetic patients are caused by Candidiasis, Mucormycosis and Aspergillosis species. Antifungal drug resistance is also a matter of concern. The cause for high resistance is unclear; it could be due to irrational use or easy availability or consumption without the clinician's advice. Early diagnosis and proper treatment are very important when fungal infections are suspected in diabetic patients. There is a need to increase the awareness among the Diabetic patients regarding this deadly infection and the alarming rate of antifungal resistance to reduce its impact on health and burden on society.
Keywords : Diabetes, Antifungal drug resistance, Candidiasis.

PHARMACEUTICS

FORMULATION AND EVALUATION OF POLY HERBAL VANISHING CREAM FOR THE TREATMENT OF PSORIASIS

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ABSTRACT : (SDIP-NC-ETRAPS-2023-01)
Psoriasis is genetically associated chronic and relapsing immune-Mediateddisease affecting about 100 million people worldwide. There are many synthetic drugs used to treat psoriasis topically, which includes corticosteroids, retinoids, anthralin and coal tar. These possess various side effects and brings about chronic illness when used for a long time. In ayurvedha and siddha, many herbs are described for their anti-psoriatic properties. These are safe to use for longterm. The rhizome of Sarsaparilla, tea tree oil, black cumin oil, cedarwood oil and mustard oil are used to prepare cream .They possess various other properties like antioxidant, antibacterial, antifungal, anti-inflammatory and wound healing. In this research, we formulated 6 creams using these ingredients indifferent combinations and concentrations. The prepared formulations were evaluated. Compatibility among ingredients, pH, viscosity, homogeneity, spreadability, irritability, washability, diffusion and dissolution studies, dye test, antibacterial and antifungal test, preservative efficacy were tested and results were recorded. Best among the formulation was subjected to In vivo antipsoriatic test in albino mice.All the formulations passed the evaluation tests. Formulation F3 and M3 possessed the best characteristics and had the most dissolution and antimicrobial activity. M3 possessed significant antipsoriatic activity. Cumulative PSAI score decreased in 3 weeks and epidermal thickness reduced remarkably.
KEYWORDS : Psoriasis, skin lesions, sarsaparilla, tea tree oil, cedarwood oil, polyherbal vanishing

A REVIEW ON PREPARATION AND DRUG DELIVERY SYSTEMS OF INSULIN

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ABSTRACT : (SDIP-NC-ETRAPS-2023-02)
Diabetes mellitus (DM) is a heterogeneous metabolic disorder characterized by chronic hyperglycemia. It is a metabolic disorder of glucose metabolism, and it is the most commonly occurring endocrinal disorder which affects almost each and every cell of the human body. It is mainly associated with insulin resistance to the body cells or by increased synthesis of glucose in the body or insufficient insulin production by pancreatic β-cells. There are approximately 3.5crore diabetics in India and this figure is expected to increase up to 5.2crore by 2025. The major types of DM are IDDM (Type-1) and NIDDM (Type-2).Insulin is a hormone containing 51 amino acids having 2-chains.
Chain-A have 21 amino acids and chain-B have 30 amino acids. Insulin preparations are the mainstay in management of type-1 and type-2 DM. Available insulin preparations are short acting, long acting or mixed action to mimic the physiological insulin secretion. Insulin drug delivery systems that currently available for administration are syringes, insulin infusion pumps, jet injections. Insulin syringe is most commonly used & and most economical of

all the delivery devices. The purpose of this review is about the efficacy and safety of various insulin preparations for management of DM are discussed. In addition the drug delivery systems are in use and various applications of various insulin devices and to focus more on insulin as a prim drug for the glycemic control.

Key words : Diabetes mellitus, Devices, DM, Insulin, Insulin drug delivery systems, Type-1 & Type-2, Short acting, long acting insulin

TRANSDERMAL DRUG DELIVERY SYSTEM FOR DIABETES MANAGEMENT

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ABSTRACT : (SDIP-NC-ETRAPS-2023-03)
Diabetes mellitus is a chronic disease in which there is an insufficient production of insulin by the pancreas, or the insulin produced is unable to be utilized effectively by the body. Diabetes affects more than 415 million people globally and is estimated to strike about 642 million people in 2040. Insulin injection and oral hypoglycemic agents remain the primary treatments in diabetes management. However, transdermal systems in diabetes management have gained increasing attention and emerged as a potential hope in diabetes management owing to the advantages that they offer as compared to invasive injection and oral dosage forms. This review presents the recent advances and developments in transdermal research to achieve better diabetes management. Studies have shown that these transdermal systems demonstrate higher bioavailability compared to oral administration due to the avoidance of first-pass hepatic metabolism and a sustained drug release pattern. Besides that, transdermal systems have the advantage of reducing dosing.
Skin, being the most extensive organ that receives one-third of the total blood supplied throughout the body, was not known to be a route of drug delivery for systemic drugs until the late 20th century over the last decade, the field of transdermal drug delivery has been gaining attention owing to its advantages. Overdosing becomes a concern due to fluctuation in peak plasma concentration of oral and parenteral administration, making it a challenge in monitoring effective plasma concentration. Transdermal drug delivery systems offer several benefits because drugs administered are able to bypass hepatic first-pass metabolism and factors that alter pharmacokinetics in the gastrointestinal tract. This significantly improves systemic bioavailability with reduced risk of side effects. This generally improves patient compliance as it is easy and convenient, as the drug is released at a predetermined rate over a prolonged period. This review presents the recent advances and developments in transdermal research to obtain better diabetes pharmacotherapy and management.

KEY WORDS : Diabetes mellitus, transdermal patch, Transdermal drug delivery systems

TRANSDERMAL PATCH FOR DIABETES MANAGEMENT

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ABSTRACT : (SDIP-NC-ETRAPS-2023-04)
Diabetes mellitus is a chronic disease in which there is an insufficient production of insulin by the pancreas, or the insulin produced is unable to be utilized effectively by the body. Diabetes affects more than 415 million people globally and is estimated to strike about 642million people in 2040. Insulin injection and oral hypoglycemic agents remain the primarytreatments in diabetes management. .However, transdermal systems in diabetes managementhave gained increasing attention and emerged as a potential hope in diabetes management owing to the advantages that they offer as compared to invasive injection and oral dosageforms. This review presents the recent advances and developments in transdermal research to achieve better diabetes management. Studies have shown that these transdermal systems demonstrate higher bioavailability compared to oral administration due to the avoidance of first-pass hepatic metabolism and a sustained drug release pattern. Besides that, transdermalsystems have the advantage of reducing dosing.Skin, being the most extensive organ that receives one-third of the total blood suppliedthroughout the body, was not known to be a route of drug delivery for systemic drugs untilthe late 20th century over the last decade, the field of transdermal drug delivery has beengaining attention owing to its advantages.
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KEY WORDS: Diabetes mellitus, transdermal patch, Transdermal drug delivery systems

ADVANCED IN MULTIPLE STIMULI RESPONSIVE DRUG DELIVERY SYSTEMS FOR CANCER THERAPY

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ABSTRACT : (SDIP-NC-ETRAPS-2023-05)
Cancer is a major obstacle to prolong life expectancy world wide in the 21 st century. International agency for research on cancer estimated that the global burden of cancer will be increasing with 21.4 million new cases and 13.2 million cancer related deaths every year by 2030.Nano medicines afford unique advantages in therapeutics intervention against tumours. Howeverconventional Nano medicines have failed to achieve the desired effect against cancers because of thepresence of complicated physiological fluids and the tumour

microenvironment. Stimuli – responsivedrug delivery systems have emerged as potential tools for advanced treatment of cancer. Versatile nano-carriers co-triggered by multiple stimuli in different levels of organisms (eg.extracorporeal, tumourtissue, cell, sub cellular organelles) have aroused wide spread interest because they can overcome sequential physiological and pathological barriers to deliver diverse therapeutic "payloads" to thedesired targets. Further more, multiple stimuli – responsible drug delivery systems (MSR-DDSs) offer a good platform for co-delivery of agents and reversing mutli drug resistance. This review affords acomprehensive overview on the landscape "of MSR-DDSs against tumours.

KEYWORDS - Multistimuli responsive nanoparticles, drug delivery, tumour microenvironment, oncotherapy

PHARMACOLOGY

COVID-19 COMPLICATION-ANTIMICROBIAL SHORTAGE IN INDIA

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ABSTRACT : (SDIP -NC-ETRAPS-2023-01)

The COVID-19 pandemic has infected millions over worldwide. It is imperative to study the post covid[short-term] and long covid[long-term] effects. It effects the different body systems like immune system, haematological system, pulmonary system, nervous system, mental health due to the over dosage of drugs [i.e., Drug toxicity].

During the COVID-19 pandemic situations, many people over the worldwide has taken Amphotericin-B with high dosage which effects the human body. It results in renal damage, abdominal pain, skin infection, cardiovascular risk and many such problems to the human systems which are causing sepsis. The threat of the drug

Shortages is most acutely experienced in low-income and middle-income settings, there consequences impact the quality and effectiveness of antimicrobials worldwide. It is important to consider the short- and longer-term consequences that corona virus have on antimicrobial use and Anti-fungal resistant infections. In India during pandemic black fungus outbreak caused shortage of antifungal drugs like amphotericin-B, fluconazole etc. More deaths are caused due to decreased treatment in both government health centres and private hospitals which left many patients untreated with relevant drugs (alternative drugs). Here, we have reviewed the therapeutic action, biological interaction with cell membrane, overdose of Amphotericin B drug toxicity, side effects, shortage of Amphotericin-B in India (use and misuse.)

Keywords - Covid-19 complications,Drug toxicity,Amphotericin-B.

CHEMOTHERAPHY FOR CANCER

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ABSTRACT : (SDIP-NC-ETRAPS-2023-02)
Cancer is one of the most deadly diseases in the world. With the rapid increase in the cases among the people worldwide the development of vaccines for cancer has became an important goal in the present day scenario. There are strong biological and Preclinical rationales for development of cancer vaccines. But the clinical translation of this treatment strategy was been challenging. However with the immense development in the technology world wide the precise vaccination for the cancer has not been yet developed. The previous clinical trials showed that this vaccine used target antigens or vaccine designs that inherently lacked sufficient immunogenicity to induce clinical responses. The interest and competition for the development of cancer vaccines has increasing due the rapid increment in the cases among the individuals with a hope that future generations vaccine strategies will enable people with cancer to develop long lasting antitumor immunity.
This review summarizes the success and failure in clinical development of cancer vaccines and address how this historical experiences and advancements in science and technology have shaped the efforts to improve vaccines and offer clinical perspective for future role of cancer vaccines
KEYWORDS : Cancer, chemotherapy, antiidiotype, dendritic cell vaccine, anti tumour immunity.

A CASE STUDY ON CELIAC DISEASE

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ABSTRACT : (SDIP-NC-ETRAPS-2023-03)
Celiac disease is a immune mediated enteropathy triggered by the ingestion of gluten in geneticallysusceptible individuals. Gluten is a major protein component of wheat ,rye and barley. The majorpredisposing genes are the histocompatability leucocyte antigen (HLA) - DQ2 and DQ8 genotypes foundin atleast 95 per cent of patients. Celiac disease is one of the most common life long disorders on worldwide basis effecting 0.5-1 per cent of the general population in the USA and other developed countries. The development of celiac enteropathy is paralleled by the appearance of serum antibodies, especially IgA class antitussive transglutaminases (antit TG) anti endomysial antibody (EMA) and antiglidin antibodies (Aga) and eventually clinical manifestations the clinical spectral of celiac disease is wide including cases with either typical intestinal features (chronic diarrhoea, weight loss etc.) or a typical extra intestinal features (anaemia, osteoporosis, neurological disturbances) and silent forms that are occasionally discovered because of serological screening.This case study gives an complete information about how celiac disease prevalence is increased in at risk conditions such as family history of celiac disease, autoimmune diseases especially type1 diabetes and thyroiditis. The aim of this review is to show how celiac disease is causing life threats to individuals.
KEY WORDS : Gluten sensitivity, endomysial, enteropathy, serological screening.

GENETIC ENGINEERING

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ABSTRACT : (SDIP-NC-ETRAPS-2023-04)

Genetic Engineering : The deliberate modificationof the characteristics of an organisam by manipulating its geneticmaterial. This involves in changing a single base pair (A-T or C-G) deleting a region of DNA or adding a new segment of DNA. This is a process that uses laboratory based technology to alter the DNA makeup of an organism.

Medical benefits : It is used in development of vaccines. The Human Pallioma Virus Vaccines was development through a process involving genetic engineering.It protects against various cancercs- cervical, anal, throat and vaginal that are caused by the virus. Positive **Impact :** Some beneficts of genetic engineering in agriculture are increased crop yield, reduced costs for food or drug production, reduced need for pesticides, enhanced nutrient composition and food quality, resistance topests and disease, greater food security and medical benefits to the world's growing population .

Key words : Single base pair, DNA, laboratory, Human Pallioma Virus vaccine, cancer, virus.

APPLICATIONS OF TEA POLYPHENOLS IN SKINCARE

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ABSTRACT : (SDIP-NC-ETRAPS-2023-05)

Dietary Polyphenols of tea show antioxidant, anti-ageing, anti-wrinkle, anti-acne, antimicrobial, anti-inflammatory and skin lightening properties which are beneficial for dermal tissue. This article explores the potential of topical application of Polyphenols fromteains kin care. The use of tea Polyphenols as a topically applied plant extract which can penetrate in the dermis has been well documented. The findings of these studies indicate that tea Polyphenols when used in anappropriate way and amount can be used to prevent skin related problems. Polyphenols are plant secondary metabolites and are commonly found in almost all plants. Polyphenols are compounds with high molecular weights divided into two group- first is condensed group made up of polymers of catechins and epicatechins and second is a hydrolysable group made up of polymers of gallic and egllagic acids. Polyphenols in plants Provides chemical defence against predators and ultra violet radiation.

KEYWORDS : Tea,polyphenols,UVradiation,skin restoration,topicalapplication.

RISK OF CARDIOVASCULAR DISEASE IN RHEUMATOID ARTHRITIS PATIENTS

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ABSTRACT : (SDIP-NC-ETRAPS-2023-06)

RHEUMATOID ARTHRITIS is a chronic inflammatory disorder affecting many joints ,including those inthe hands and feet. Despite rheumatoid arthritis (RA) therapy development has been in advance level today, it's mortality remains increasing In general

population. The mortality is mainly caused by early manifested arteriosclerosis and cardiovascular complications. Available evidences show this condition appears in early stage of the disease. Thus early detection and management of cardiovascular riskfollowed by control of this factors are necessary to reduce morbidity and mortality of rheumatoidarthritis patients. Cardiovascular disease is a common cause of death with higher number than cancer chronic lower respiratory tract disease and accident. It is estimated that 81,100,000 adults more than a 3rd inUS have one or more cvd . Every day 2300 patients die because of cvd which means one death in every38 seconds. This review is an overview of the risks faced by rheumatoid arthritis patients regarding the cardiovascular disease. Treatment for this RA is hydroxycholroquine,Methotrexate. One of the best waysto protect your heart is by taking the disease -modifying antirheumatic drugs (DMARD) your rheumatologist prescribes.

KEYWORDS : Rheumatoid arthritis, Atherosclerosis, Cardiovascular disease, hydroxycholroquine, Methotrexate.

PHARMACEUTICAL CHEMISTRY

DESIGN, SYNTHESIS AND ANTICANCER EVALUATION OF 1,2,4-OXADIAZOLE INCORPORATED (2-(OXAZOL)-1H-IMIDAZOLES

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ABSTRACT : (SDIP -NC-ETRAPS-2023-01)

A new series of 1,2,4-oxadiazole incorporated (2-(oxazol)-1H-imidazole derivatives 9a-j have developed and synthesized. Further, the newly prepared compounds (9a-j) compounds were evaluated for their preliminary anticancer properties against four human cancer cell lines like prostate cancer (PC3& DU-145), lung cancer (A549), and breast cancer (MCF-7) by using of MTT method and etoposide used as positive reference. The obtained results indicated that most of the tested compounds displayed excellent to moderate activity. Among all derivatives, six compounds 9a, 9b, 9c, 9d, 9e, and 9f exhibited more potent anticancer activity as etoposide

Keywords : Misonidazole, Imidazole, Proxazole, 1,2,4-Oxadiazole, and anticancer activity.




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