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Ramnagar Dist. Hanumakonda- 506001, (T.S)

Book published in the year 2019-2020

Sl. No.	Name of the teacher	Title of the book/chapters published	National / International	Calendar Year of publication	Name of the publisher
1	Dr.Y.Shravan Kumar	Taste masked Oral Disintegrating Tablets of Tolterodine Tartrate	International	2019-2020	Lambert Publisher
2	Dr. E. Venkateshwarulu	Evaluation of Pharamacological and Biological activities of Thiazole tagged Bastin Hydrazones	International	2019-2020	Lambert Publisher

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Papers presented in Conference

Title of the paper	Title of the proceedings of the conference	Name of the conference	National / International	Calendar Year of publication
Formulation and evaluation of ketaconazole bilayered nail patches to treat fungal infections	Recent trends in Pharmaceutical Sciences and Research	Recent trends in Pharmaceutical Sciences and Research	National	2019
Formulation and evaluation of ornidazole sustained release dental inserts	Recent trends in Pharmaceutical Sciences and Research	Recent trends in Pharmaceutical Sciences and Research	National	2019
Design, synthesis and evaluation of novel paba linked piperazine derivatives targeting cholinestirase as anti alzheimer agents	Recent trends in Pharmaceutical Sciences and Research	Recent trends in Pharmaceutical Sciences and Research	National	2019

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Formulation and evaluation of amoxicillin dental inserts	Recent trends in Pharmaceutical Sciences and Research	Recent trends in Pharmaceutical Sciences and Research	National	2019
Formulation and evaluation of cetirizine oral disintegrating tablets with different superdisintegrating agents	Recent trends in Pharmaceutical Sciences and Research	Recent trends in Pharmaceutical Sciences and Research	National	2019
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Formulation and evaluation of cetrizine lozenges	Recent trends in Pharmaceutical Sciences and Research	Recent trends in Pharmaceutical Sciences and Research	National	2019
Formulation and evaluation of chlorphenaramine maleate transdermal patch	Recent trends in Pharmaceutical Sciences and Research	Recent trends in Pharmaceutical Sciences and Research	National	2019

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Formulation and evaluation of riboflavin floating tablets	Recent trends in Pharmaceutical Sciences and Research	Recent trends in Pharmaceutical Sciences and Research	National	2019
A review on cubosomal drug delivery	Recent trends in Pharmaceutical Sciences and Research	Recent trends in Pharmaceutical Sciences and Research	National	2019
Design, synthesis, characterization and evaluation of some novel ciprofloxacin schiff bases as antibacterial agents	Recent trends in Pharmaceutical Sciences and Research	Recent trends in Pharmaceutical Sciences and Research	National	2019

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Synthesis, characterization and evaluation of new thiazole derivatives as anthelmintic agent	Recent trends in Pharmaceutical Sciences and Research	Recent trends in Pharmaceutical Sciences and Research	National	2019
Synthesis, characterization and evaluation of antibacterial activity of pyrimidine-schiff bases and their amines	Recent trends in Pharmaceutical Sciences and Research	Recent trends in Pharmaceutical Sciences and Research	National	2019
Synthesis and evaluation of mannich bases as antibacterials by conventional and microwave methods	Recent trends in Pharmaceutical Sciences and Research	Recent trends in Pharmaceutical Sciences and Research	National	2019
Phytochemistry and pharmacological exploration of chenopodium album: current and future perspectives	Recent trends in Pharmaceutical Sciences and Research	Recent trends in Pharmaceutical Sciences and Research	National	2019
Anticoagulant induced peptic ulcer disease in cardiogenicgeriatric patients	Recent trends in Pharmaceutical Sciences and Research	Recent trends in Pharmaceutical Sciences and Research	National	2019

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Overview of pentavalent vaccination	Recent trends in Pharmaceutical Sciences and Research	Recent trends in Pharmaceutical Sciences and Research	National	2019
A case report on parkinsonism and role of clinical pharmacist in patient counseling	Recent trends in Pharmaceutical Sciences and Research	Recent trends in Pharmaceutical Sciences and Research	National	2019
Role of clinical pharmacist in explaining insulin delivery devices in type-i and advanced type-iidiabetes mellitus	Recent trends in Pharmaceutical Sciences and Research	Recent trends in Pharmaceutical Sciences and Research	National	2019
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Neuroprotective effect of psidium guajava (guava) leaf extracts on cerebral ischemic reperfusion injury induced cognitive impairment in rats	Recent trends in Pharmaceutical Sciences and Research	Recent trends in Pharmaceutical Sciences and Research	National	2019
Formulation and evaluation of self micro emulsifying drug delivery system (smedds) of efavirenz	Recent trends in Pharmaceutical Sciences and Research	Recent trends in Pharmaceutical Sciences and Research	National	2019
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Insilico screening of C3 heterocyclic-substituted ciprofloxacin derivatives on enoyl acp reductase	Recent trends in Pharmaceutical Sciences and Research	Recent trends in Pharmaceutical Sciences and Research	National	2019
Synthesis of some novel derivatives of substituted benzothiazoles as diuretic agents	Recent trends in Pharmaceutical Sciences and Research	Recent trends in Pharmaceutical Sciences and Research	National	2019
In vitro anthelmintic activity of operculina turpethum on indian earthworm eisenia foetida	Recent trends in Pharmaceutical Sciences and Research	Recent trends in Pharmaceutical Sciences and Research	National	2019
Comparative study on chemical constituents, antioxidant and anti-inflammatory activities of selected species of ocimum	Recent trends in Pharmaceutical Sciences and Research	Recent trends in Pharmaceutical Sciences and Research	National	2019
Antihyperglycemic and hypolipidemic activity of latex powder of euphorbia caducifolia in experimental diabetes	Recent trends in Pharmaceutical Sciences and Research	Recent trends in Pharmaceutical Sciences and Research	National	2019
Evaluation of effect of kodo millet(paspalum scrobiculatum) on bioavailability of metformin in alloxan induced diabetic rats	Recent trends in Pharmaceutical Sciences and Research	Recent trends in Pharmaceutical Sciences and Research	National	2019
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Enhancement of solubility and bioavailability of Clopidogrel by self-nanoemulsifying drug delivery system	International conference and b2B on Pharmaceutical research and development	International conference and b2B on Pharmaceutical research and development	International	2018
Formulationa and charecterization of Itraconazole Solid dispersion	Indo African conference	Indo African conference	International	2018

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TASTE MASKED ORAL DISINTEGRATING TABLETS OF TOLTERODINE TARTRATE

The work presented in the book is useful for both academia and industry. Tolterodine Tartrate Oral Disintegrating Tablets were prepared by direct compression method using superdisintegrants, evaluated their preformulation and tabletting properties.Taste evaluation studies revealed that the metallic taste of Tolterodine Tartrate was completely masked by using eudragit EPO. This work is supported by Management, Vaagdevi College of Pharmacy, Warangal, Andhra Pradesh, India.

Shravan Kumar Yamsani
Dr. Y. Shravan Kumar is currently working as Associate Professor at Vaagdevi College of Pharmacy. He received DST travel grant to attend AAPS conference held at U.S.A. in 2010. He has publications in several National and International journals. He has contributed book chapters in "Advances in Drug Delivery" Vol I, II & III and "Cosmeceuticals".

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Natural products, isolated from medicinal plants, have an important role in the discovery of novel compounds for drug development, especially in developing countries. However, in human history medicinal plants may be consumed with little or no evidence of pharmacological properties. Ruta [Graveolens L.] Isatine was discovered by Erdmann and Laurent in 1840 as a product of the oxidation of indigo with nitric and chromic acids. It is a synthetically versatile substrate used for the synthesis of a variety of heterocyclic compounds, such as indoles and quinolines, and as a raw material for drug synthesis. It is found in plants of the Isatis genus, Couroupita guianensis Aubl, Calanthe discolor Lindl and also secreted from the parotic gland of Bufo frogs.

Pharmacological & Biological Activities

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Evaluation of Pharmacological and Biological Activities

Of Thiazole Tagged Isatin Hydrazones

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OP-1: BUCCAL DELIVERY OF ENALAPRIL MALEATE: FORMULATION DEVELOPMENT AND IN VITRO CHARACTERIZATION

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Background: Novel drug delivery, as an alternative to conventional therapy provides enormous scope for the optimization of treatment in various medical complications. Enalapril maleate, an anti-hypertensive ACE inhibitor has low bioavailability (40-60%). Buccal route could be explored to be a better option for such rational drug delivery for drugs proven less effective by standard remedial procedures.

Objective: The present study aims at the formulation development and evaluation of bioadhesive buccal films of Enalapril Maleate using various rate controlling polymers and determines their effect on mechanical and release properties of the drug.

Methods: Mucoadhesive buccal films were prepared by employing carbopol, HPMC and Eudragit RSPO by solvent casting. Various physico-chemical evaluation tests along with in vitro and ex vivo permeation testing were performed as per the pharmacopoeial specifications.

Results: Satisfactory results were obtained for physico-mechanical testing, surface evaluation and swelling studies of the formulations. The mucoadhesive strength and force of adhesion increased with the content of the hydrophilic, bioadhesive polymers in the formulation. In vitro and ex vivo permeation studies data has shown 96% drug release where the drug polymer ratio is 1:4 over a period of 8 hours.

Conclusion: From the results, it can be concluded that for effective delivery of Enalapril, buccal mucoadhesive delivery can be a promising choice and an accessible therapeutic option in the treatment of long term hypertension.

Keywords: Buccal delivery, Mucoadhesion, rate controlling polymers, Enalapril maleate.

OP-2: DESIGN AND DEVELOPMENT OF CIPROFLOXACIN COLON SPECIFIC DRUG DELIVERY SYSTEM

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Background: The matrix tablets of colon targeting antibacterial agent Ciprofloxacin were prepared by direct compression method using natural gums like Sesbania gum, Locust bean gum, Pectin and Eudragit RS100 as enteric polymer. All the formulations were evaluated for preformulation studies, showed good compliance with the Pharmacopoeial standards. In *in vitro* studies all the formulations showed greater than 12 hrs of drug release in 7.4 pH. The optimized formulation F2 dissolution studies was performed in 0.1 N HCl, 6.8 and 7.4 pH (Sesbania) have shown better release i.e 99.61% in 48 hrs and following zero order with drug release mechanism of Non-fickian diffusion (n=0.54).

Objective: The objective is to formulate enteric coated tablets to prevent the drug release in acidic conditions of the stomach.

Method: Ciprofloxacin matrix tablets were prepared by direct compression method using 11 mm punch.

Results: In *in vitro* studies all the formulations showed greater than 12 hrs of drug release in 7.4 pH. The optimized formulation F2 (1:1 ratio) dissolution studies was performed in 0.1 N HCl, 6.8 and 7.4 pH (Sesbania) have shown better release i.e 99.61% in 48 hrs.

OP-5: FORMULATION AND EVALUATION OF BILAYER PUSH-PULL OSMOTIC PUMP TABLET OF CAPTOPRIL

Ganesh Kumar Gudas*, D.V.R.N. Bhikshapathi[1]
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The aim of the present work was to design and evaluate Push-Pull Osmotically Controlled Drug Delivery system of Captopril. Push pull osmotic tablets are bilayered tablets consisting of pull layer (drug layer) and push layer (polymer layer) coated with semi permeable membrane containing water leaching pore forming agents. Captopril is an oral antihypertensive agent which belongs to BCS class II drug with half life of 2-4 hours. Main objective to formulate this system was to achieve zero order release. The present study was also aimed to develop a system that would reduce the frequency of dosing and thus increase patient compliance. In this study an attempt was made to design formulations with varying concentration of polymers. Opadry CA was used as film forming polymer. Mannitol was used as osmotic agent. This system was developed in two stages: (a) Formulation of core tablet & (b) coating of tablet core. Core tablets were evaluated for content uniformity, hardness, & weight variation while coated tablets were evaluated for film thickness and In Vitro release study. All the post compression and precompression parameters showed within limits. The drug- polymer interaction was also studied by conducting FTIR. Selected formulation F1 having Polyox N-80 52% successfully retarded drug release for 24hrs and drug release follows Zero order kinetic with R2 value of 0.977. The Korsmeyer Peppas equation showed the R2 value to be 0.928 and' n' value was 0.596 following Zero Order & Anomalous (Non Fickian Diffusion). The stability studies were carried out at 400C/75%RH for 90 days. There was no significant change in the physical property during the stability period.

Keywords: Push-Pull Osmotically Controlled Drug Delivery system, Bi-layered tablets.

OP-6: FORMULATION AND EVALUATION OF KETACONAZOLE BILAYERED NAIL PATCHES TO TREAT FUNGAL INFECTIONS

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Background: Ketaconazole was formulated as bilayered patches to provide control release of Drug to treat the fungal infections caused by dermatophytes (Trychophyton mentagrophytes) and Candida species to nails. This type of formulations affect permeation through the nail and it can contribute to therapeutic efficacy of drug. In this study Ketaconazole patches were prepared for ease in application. As nail is poorly perfused tissue so the local permeation mechanism of Ketaconazole makes more suitable to formulate as patches.

Objective: The main objective of this study is to formulate and evaluate Ketaconazole bilayered patches to treat fungal infections caused by dermatophytes and Candida species to nails using polymers and permeation enhancers at different concentrations.

Methods: By Solvent Casting method using polymers like HPMC and Ethyl cellulose and PEG 600 as plasticizer and permeation enhancers like Eucalyptus oil, Emu oil, Lemon grass oil and Clove oil are used. Results: According to evaluation data of Ketaconazole bilayered patch from F1 to F13, F13 (Lemon grass oil) formulations shows more drug release were selected as optimized respectively.

Conclusion: The formulations applied once for the ex-vivo studies for 3 days (72hrs).Nail accumulation data was found in the range more than MIC which is used in treatment of fungal infections.

Keywords: Nail patches, HPMC, Ethyl cellulose, Lemon grass oil, Fungal infections.

OP-7: FORMULATION AND EVALUATION OF ORNIDAZOLE SUSTAINED RELEASE DENTAL INSERTS

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Background: Ornidazole a antimicrobial drug used to treat certain types of vaginal, urinary tract and interstitial infections.

Objective: The objective of this study is to formulate and evaluate the dental inserts by using drug candidate to sustained release of drug in order to improve patient compliance, reduce dosing frequency, better therapeutic efficacy and less side effects, reduce the risk of dose dumping as well as also to avoid the first pass metabolism.

Method: The dental inserts were prepared using various polymers and in combination with the different ratios of polymers. The evaluation parameters like thickness, drug content, content uniformity, moisture reuptake, weight variation, swelling studies and erosion studies of the optimized inserts were studied.The *in-vivo* studies were conducted for determining the reduction of pocket depth in human volunteers.

Results: The system containing ethyl cellulose and hydroxyl methyl propyl cellulose K100M (4:1) formulation F6 was optimized because drug release was sustained up to 120 hrs with respect to other formulations. Optimized formulation follows first order kinetics and Peppas release kinetics via fickian diffusion. There was no swelling, itching, irritation and the reduction of pocket depth was absorbed in in-vivo studies.

Conclusion: The study concluded that dental inserts can extend the release of Ornidazole for many hours also enhanced bioavailability, further it also helps in avoiding the first pass effect. The observations of *in vivo* studies were done, there was no itching, irritation, swelling and reduction in pocket depth was observed.

Keywords: Ornidazole, dental inserts, pocket depth, antimicrobial

separately with benzoylglycine by heating in acetic anhydride over freshly fused sodium nitrate. The product obtained in each of such a reaction was purified by recrystallization and characterized as 4-arylidene-2-phenyloxazolin -5-one. The later product was subjected to condensation reaction with ethylenediamines or *o*-phenylenediamine to get the respective derivatives which were then subjected to cyclization reaction to get compounds of interest.

Results : 5-Aylidino-7-phenyl-imidazoline (3,4-a)-2,3 -dihydroimidazole and 5-benzylidene-7-phenyl-imidazoline (3,4-a)-2,3 -dihydroimidazole were synthesized and characterized by spectral analysis.

Keywords : Imidazolines, benzaimidazoles.

OP-16: DESIGN, SYNTHESIS AND EVALUATION OF NOVEL PABA LINKED PIPERAZINE DERIVATIVES TARGETING CHOLINESTIRASE AS ANTI ALZHEIMER AGENTS

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Background: A number of heterocyclic derivatives containing nitrogen have been used as versatile scaffolds in drug development. Piperazine is one of the heterocyclic compounds with remarkable pharmacological activities. P-amino benzoic acid and piperazine derivatives were found to possess the biological activities like, anti-microbial, anti-depressant, anti-convulsant, anti-parkinson and as Anti-alzhimer and as anti-oxidant. Due to its potent and significant biological activities it has great pharmaceutical importance; hence, the synthesis of these compounds is of considerable interest.

Objective: To synthesize the substituted PABA linked piperazine derivatives and to recrystallize, characterize them by Rf, m.p, FTIR, 1H NMR data.

Methods: The molecular property prediction of all the synthesized compounds by using Lipinski's rule of 5, Molsoft, OSIRIS molecular property explorer, PASS, Docking softwares. All the compounds were synthesized by conventional method. The synthesized compounds were evaluated for their anti alzheimer's activity by using swiss albino rats.

Results: All the compounds showed good percentage yields, and obeyed the Lipinski's rule. They were non-toxic, drug like, more active and showed good binding affinities when compared with the standard drug (Donepezil). The compounds 5c was more potent and compound 5j was equipotent when compared to Donepezil.

Conclusion: The compounds 5c and 5j shows the good results in the molecular property prediction and biological evaluation.

Key words: Piperazine, Alzheimer's activity, swiss albino, Molecular Docking.

OP-19: SYNTHESIS, MOLECULAR PROPERTIES PREDICTIONS AND BIOLOGICAL ACTIVITY OF AZO DERIVATIVES

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Background: Azo compounds are involved in a number of biological reactions. Molecular absorption, distribution, metabolism and excretion (ADME) play primary role in drug discovery and development. Objective: To Predict the molecular properties using Molsoft, Molinspiration, Osiries, Swiss ADME, PkCSM Soft ware's. To synthesize, purify and characterize the designed compounds by simple methodology. To evaluate their biological activity.

Methods: Molecular properties prediction using Molsoft, Molinspiration, Osiries, Swiss ADME, PkCSM Software's. Synthesized designed compounds and purified by recrystallization and chromatographic techniques and characterized by IR, NMR and Mass spectral analysis. Synthesized compounds were screened for antimicrobial activity and Antioxidant activity.

Results : All the compounds followed the Lipinski 'Rule of five' and showing good oral bioavailability. Compound 3(a), 3(b), (3e) showed good anti bacterial activity and compound 3c, 3d, 3f, 3g, 6a-b shown moderate activity. Antioxidant activity using DPPH method, IC50 values are less than the standard that is 3.41.

Conclusion: The success of azo colorant is due to the simplicity of their synthesis by diazotization and azo coupling. The compounds which are showing good oral bioavailability score were synthesized cheaply because the starting materials are readily available and inexpensive. Hence, the consideration on synthesized compounds is to screen for anti microbial activity against *Escherichia coli and Bacillus subtilis.* Compounds 3(a), 3(b), (3e) showed good anti bacterial activity, 3c, 3d, 3f, 3g, and 6a-b have shown moderate activity. Antioxidant activity values of all the compounds are less than the standard value.

OP-20: A FACILE SYNTHESIS, ANTIMICROBIAL ACTIVITY OF 1-(1H-BENZO[D] IMIDAZOL-2-YL)-6, 7-DIHYDRO-7-METHYLTHIAZOLO [5,4-D]PYRIMIDINE-2,5(1H,4H)-DITHIONE

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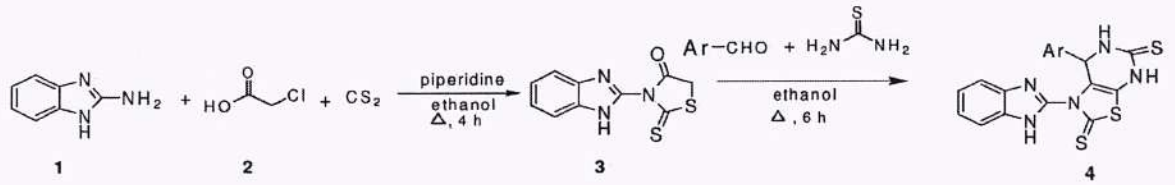
Background: Thiazolopyrimidines have become attractive targets in organic synthesis due to their significant biological activities[1]. Several research groups have contributed to the development of methods of synthesis of thiazolopyrimidines.

Objectives: Benzimidazole constitutes an important class of heterocyclic compounds possessing diverse pharmaceutical activities[2]. Therefore, due to wide range of therapeutic value of thiazolopyrimidines and benzimidazole, in the current investigation, the synthesis of benzimidazole substituted thiazolo- pyrimidines have been undertaken [3].

Method: The reaction of 2-aminobenzimidazole **1**, with chloroacetic acid, and carbondisulfide in the presence of piperidine in ethanol furnished the corresponding 3-(1*H*-benzo[*d*]imidazol-2-yl)-2-thioxothiazolidin-4-one 3 in

good yields. Cyclocondensation of 3-(1*H*-benzo[*d*]imidazol-2-yl)-2-thioxothiazolidin-4-one 3 with aromatic aldehydes and thiourea in ethanol furnished the corresponding 1-(1*H*-benzo[*d*]imidazol-2-yl)-6,7-dihydro-7-methylthiazolo[5,4-*d*]pyrimidine-2,5(1*H*,4*H*)-dithiones4.



1 2 3 4

In conclusion an efficient atom-economical and simple method for the preparation of library of 1-(1*H*-benzo[*d*]imidazol-2-yl)-6,7-dihydro-7-methylthiazolo[5,4-*d*]pyrimidine-2,5(1*H*,4*H*)-dithiones 4 has been described using readily available starting materials.

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OP-21: SYNTHESIS OF SOME NOVEL DERIVATIVES OF SUBSTITUTED BENZOTHIAZOLES AS DIURETIC AGENTS

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Background: A number of heterocyclic derivatives containing nitrogen have been used as versatile scaffolds in drug development. Benzothiazole is one of the heterocyclic compounds with remarkable pharmacological activities. Derivatives of benzothiazole were found to possess the biological activities like Anticonvulsant, Antimicrobial, Antiviral, Antihypertensive, Anticancer, Anti-inflammatory and as Diuretic. Due to its potent and significant biological activities it has great pharmaceutical importance; hence, synthesis of this compound is of considerable interest. **Objective:** To synthesize the 2-benzylideneamino-1,3-benzothiazloe-6-sulfonamide Schiff base derivatives and to recrystallize, characterize them by m.p, Rf, FTIR, 1H NMR, MASS data.

Methods: The molecular property prediction of all the synthesized compounds by using Lipinski's rule of 5, PASS, OSIRIS molecular property explorer, Molsoft, Docking softwares. All the compounds were synthesized by conventional method and were evaluated for diuretic activity by using male Wistar rats.

Results: All the compounds were found to obey the Lipinski's rule, non-toxic and drug like they were synthesized in good yields and showed the good binding affinities compared to the standard drug, Acetazolamide. The compounds IIIb and IIIe exhibited significant diuretic activity when compared with the standard drug (Acetazolamide).

Conclusion: The compounds IIIb and IIIe displayed good results in the molecular property prediction and biological evaluation.

Key words: Thiazoles, Diuretic activity, Schiff base, Molecular Docking.

OP-22: SYNTHESIS, BIOLOGICAL ACTIVITY AND MOLECULAR DOCKING STUDIES OF METAL COMPLEXES OF 4-PHENYL-2-(2-(PYRIDIN-4-YLMETHYLENE) HYDRAZINYL)THIAZOLE DERIVATIVES

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A novel Schiff base ligand (L_1) was prepared through condensation of 2-(pyridin-4-ylmethylene) hydrazinecarbothioamide and 2-Bromoacetophenone in the ratio of 1:1. A new series of Fe (III), Cu (II), Ni (II) and Zn (II) metal complexes of the Ligand, $Fe(III)L_2Cl_2$, $Cu(II)L_2Cl_2$, $Ni(II)L_2Cl_2$, $Zn(II)L_2Cl_2$ in the ratio of 2:1 were synthesized and characterized by elemental analysis, ^1H NMR, ^{13}C NMR, mass, UV-visible, FT-IR, and electron spin resonance spectroscopic studies. All the synthesized ligand and its Metal complexes were screened for their antimicrobial activity. The metal complexes showed pronounced activity against the tested bacterial strains compared to the ligand. In addition, metal complexes displayed good antioxidant activities. The complexes were also screened for their cytotoxic activity by MTT assay against MCF7 and Hela cell lines. They showed good to moderate activity against the cell lines. These values were correlated with the molecular docking studies.

Keywords: Cytotoxicity, microbial activity, molecular docking.

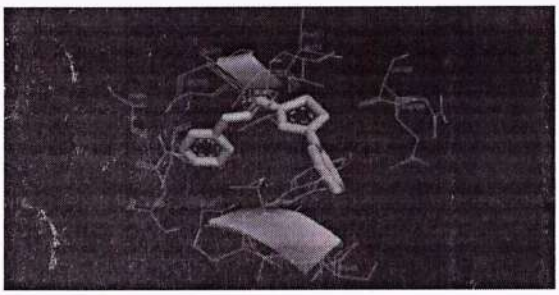

Fig: Binding poses and interaction 4-phenyl-2-(2-(pyridin-4-ylmethylene)hydrazinyl)thiazole ligand to binding site of MurB receptor (PDB id: 1 MBT).

OP-23: SYNTHESIS AND ANTI MICROBIAL ACTIVITY OF TETRAZOLOQUINOXALINE CONTAINING PYRAZOLEANALOGUES

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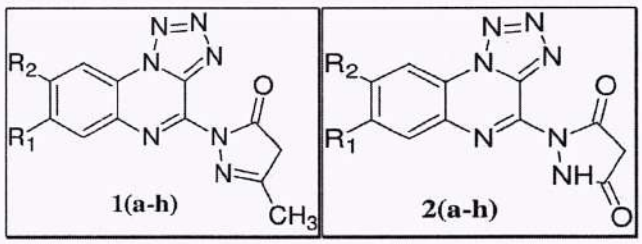
Pyrazoles have been the recent target of numerous methodologies, mostly due to their prevalence as scaffolds in synthesis of bioactive compounds and reactions in different media. Pyrazole and their derivatives are found to have profound biological activity. In the present work some novel substituted 5-methyl-2-(tetrazolo[1,5-*a*]quinoxalin-4-yl)-2,4-dihydro-3*H*-pyrazol-3-ones **1(a-h)** and substituted 1-(tetrazolo[1,5-a]quinoxalin-4-yl) pyrazolidin-3,5-diones**2(a-h)** have been synthesized. These derivatives are synthesized by treating 4-hydrazinyl tetrazolo[1,5-a]quinoxalines with ethylacetoacetate and diethyl malonate in acetic acid solution. All the synthesized compounds were characterized by IR, 1H-NMR and Elemental Analysis. All the newly synthesized derivatives were evaluated for anti-microbial activity on different micro-organisms *(E.coli, S. aureus,A.niger, C.albicans).* The investigation of anti-fungal and anti-bacterial screening data revealed that some of the newly synthesized compounds showed potent anti-bacterial activity against **1e** and **2e** against *E. Coli* (16 and 18 mm), *S. aureus*

(18, 17 mm), at 20µg/ml respectively. The compounds **1f, 1h, 1f** have shown significant zone of inhibition against both bacterial strains tested.



OP-24: SYNTHESIS OF IAA BY ENDOPHYTIC FUNGI ISOLATED FROM LITSEA GLUTINOSA, AN ETHNO MEDICINAL PLANT

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Endophytic fungi are the microorganisms that are present inside plant tissues for at least part of their life cycle without causing any disease symptoms in their host. Almost all plants are able to colonize endophytes. The choice of the plant to be used for exploring endophytes is important. Medicinal plants are reported to harbour endophytes, and have the capacity to produce various bioactive secondary metabolites in the form of natural products. In this study, 22 fungal endophytes were isolated from *Litsea glutinosa,* an ethno medicinal plant. Out of the 22 fungal isolates 8 were screened for their ability to synthesize IAA. Promotion of plant growth is the major contribution of fungal symbiosis, through the production of ammonia and phytoharmones, especially Indole Acetic Acid (IAA). In the present study, synthesis of IAA was estimated by the method suggested by Bentley (1977) and Ahmed (2005). *Trichoderma viride* followed by *Aspergillus terreus* and *Gliocladium solani* synthesized maximum amount of IAA. *Fusarium oxisporum, Verticillium dahliae, Curvularia sp* and *Aspergillus ochraceus* synthesized moderate amount of IAA respectively and *Penicillium citrinum* synthesized least amount of IAA. From the above findings, the fungal endophytes have the capacity to synthesize IAA, which is beneficiary for the host plants for its growth and development by enhancing the cell elongation, cell division and tissue differentiation.

OP-25: OLEANOLIC ACID CONTENT IN HAIRY ROOT CULTURE OF LANTANA CAMARA

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Back ground: *Lantana camara* is a weed flowering ornamental plant belonging to the family verbenaceae.Several compounds have been isolated from this plant especially triterpinoids.Oleanolic acid is a triterpenoid and present rich in roots of *Lantana camara.* Oleanolic acid showing number of pharmacological activities like anti tumer, analgesic activity etc.

Objectives: The main objective of this study to determine the effect of different media on accumulation of oleanolic acid in hairy root culture of *Lantana camara.*

Methods: *Lantana camara* hairy roots were induced by using *Agrobacterium rhizogenes* strain A4. Effect of different liquid media like Morishige and skoog (MS), gamborg (B5) with full and half strength (1/2 MS, 1/2 B5)

were investigated on hairy roots biomass production and accumulation of oleanolic acid content. *Lantana camara* plant also cultivated in field and 6 months field grown plants also investigated for oleanolic acid content.

Results: In different media the highest Biomass ofthe fresh weight and dry weight in the cultures grown in 1/2 MS medium. HPLC analysis also revealed that highest Oleanolic acid content in roots cultured in ½ MS medium under dark conditions. It was about tenfold higher compare to roots of field grown mother plants.

Conclusion: *Lantan camara* hairy roots were induced successfully and highest root biomass, oleanolic acid accumulation is observed in ½ MS medium.

Keywords: Hairy roots, oleanolic acid, Lantana camara, Agrobacterium rhizogenes.

OP-26: EVALUATION OF α-AMYLASE AND α-GLUCOSIDASE ENZYME INHIBITORY ACTIVITIES OF TRICHURIELLA MONSONIAE BENNET

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Background: One of the antidiabetic therapeutic strategies is inhibition of carbohydrate digesting enzymes such as α-amylase and α-glucosidase.

Objectives: To evaluate the α-amylase and α-glucosidase enzyme inhibitory activities of *Trichuriella monsoniae*

Methods: In the present study methanolic extract and its two fractions(ethyl acetate and n-butanol) of whole plant of Trichuriella monsoniae were evaluated for their effect on α- amylase and α-glucosidase enzymes using in vitro assays. Results: n-butanol fraction shown the prominent α-amylase and α-glucosidase enzyme inhibitory activities(IC_{50} 4.09mg/ml and 3.30mg/ml respectively) than methanolic extract and its ethyl acetate fraction, and it was well comparable with the standard drug acarbose (for α-amylase IC_{50} 3.62mg/ml and for α-glucosidase IC_{50} 2.19mg/ml). Further, the total phenolic and flavonoid contents were estimated.

Conclusion: The results suggest that *Trichuriella monsoniae* with a great potential to control postprandial hyperglycemia might be a novel resource for the management of type2 diabetes.

KEYWORDS: Porcine pancreatic α- amylase, Yeast α- glucosidase, polyphenols, flavonoids.

OP-27: FORMULATION AND EVALUATION OF ANTI-ACNE CREAM USING *Solanum tuberosum*

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Acne is chronic inflammatory skin condition that causes spots and pimples on various parts of the body; they are of different types like white heads, black heads, cysts, nodules etc. Acne is caused by various factors like environmental conditions, hormonal changes, food habits, bacterial infections, and stress etc. It is said that potato consists of an ingredient called azleic acid which acts on skin to remove tan and to solve many of the skin problems such as acne. The project is aimed to formulate the potato and beet root dried powder in to cream, where beet root contains betaine which acts as an anti oxidant to prevent oxidation of potato powder due to polyphenol oxidase

enzyme. The anti-acne cream was prepared by using fusion method and the prepared cream was easily spreadable, shiny and was non irritant with a good consistency. The results stated that pH of the cream was within the limits and was suitable for application on skin. The cream was subjected to stability studies by storing at different temperature conditions such as room temperature, 4°C and 45°C. Results for three weeks were obtained stating no significant change in the appearance, odour, colour, pH and various parameters of the, thus it confirms the stability of the product. The antioxidant activity of beetroot was performed to know the concentration and activity of beetroot by H_2O_2 method and the concentration of that beetroot scavenging was used in the formulation. This prepared anti acne cream was suitable to treat acne and was easy to apply and wash off.

Keywords: Acne, Azleic acid, betaine, polyphenol oxidase, potato, beetroot.

OP- 28: *IN VITRO* ANTHELMINTIC ACTIVITY OF OPERCULINA TURPETHUM ON INDIAN EARTHWORM EISENIA FOETIDA

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Background: Helminth born diseases are related with pitiable management practices and improper control strategies. The medicinal plants contain various secondary metabolites which are responsible for their anthelmintic activity.

Objectives: To explore the anthelmintic potential of the plant against Indian adult earthworms *Eisenia foetida*.

Methods: In the present study the roots/rhizomes of *Operculina turpethum* was successively extracted with microwaves assisted extraction using petroleum ether, ethyl acetate, methanol, hydro alcoholic and aqueous solvents to get respective extracts (OTPE, OTEE, OTME, OTHE and OTAE). All the extracts were subjected to preliminary phytochemicals screening for the detection of various pytoconstiutents. The anthelmintic activity was analyzed using Indian adult earthworms *Eisenia foetida* using piperazine citrate (PCT) as a standard drug.

Result: All the extracts (except aqueous extract) lead to paralysis and death of the earthworm. The OTPE extract exhibits significant anthelmintic activity at 10 mg/ml concentration by causing paralysis and death of earthworms and found to be more potent than PCT suspension. At a dose of 10 mg/ml PT and DT time for OTPE was recorded as (9.38 ± 1.82) and (54.93 ± 1.78) respectively while for standard piperazine citrate it was recorded as (22.96 ± 1.12) and (65.09 ± 1.23).

Conclusion: The roots/rhizomes of *Operculina turpethum* possess significant anthelmintic activity against Indian adult earthworms Eisenia foetida. Keywords: Operculina turpethum, Eisenia foetida, Piperzine citrate, Helminths.

ointment was prepared by incorporating *Astragalus* extract into the ointment base. Formulation was evaluated for its physicochemical parameters like colour, odour, pH, spreadability, extrudability, consistency, diffusion study, solubility, wash ability. Thus it could become a media to use the medicinal properties of *Astragalus* effectively and easily as a simple dosage form.

Key words: Astragalus membranaceus, white soft paraffin, cetosteryl alcohol, hard paraffin, Astragalus polysaccharide.

OP-31: PHYTOCHEMICAL INVESTIGATION AND EVALUATION OF ANTI MICROBIAL ACTIVITY OF ETHANOLIC FRUIT EXTRACT OF PRICKLY PEAR

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Background: Synthetic drugs are potentially toxic and are not free from side effects on the host. Therefore an attempt has been made to study the antimicrobial activity of plants. As plants and plant-based drugs are less toxic and have acceptable side effects.

Objective: The present study is about phytochemical investigation and evaluation of anti-microbial activity of ethanolic fruit extract of prickly pear.

Methods: The ethanolic fruit extract was extracted by using Soxhlet apparatus. Phytochemical screening was carried out qualitatively by color reactions with different reagents. The antimicrobial activity of the fruit extract was determined by applying Agar Disc diffusion method.

Results: The Phytochemical screening revealed the presence of Flavonoids, Alkaloids, Glycosides, Terpenoids, Tannins, Saponins, Cardiac glycosides and Carbohydrates. Ethanol extract of Prickly pear showed antimicrobial activity against *Staphylococcus aureus, Escherichia coli and Lactobacillus. MIC values about Staphylococcus aureus, Escherichia coli, Lactobacillus* were 20, 40, and 40 mg/ml respectively.

Conclusion: This study can be basis for the further research to find out more detail information regarding the relationship between the antimicrobial activity and other quantitative phytochemical contents. Keywords: Antimicrobial, phytochemical screening, Minimum Inhibitory Concentration.

OP- 32: COMPARITIVE STUDY OF ANTI-INFLAMMATORY ACTIVITY OF GYMNEMA SYLVESTRE LEAVES AND STEM EXTRACT IN RATS

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Background: *Gymnema sylvestre* commonly known as "gurmar"and has been widely used in Ayurvedic traditional medicines. *Gymnema sylvestre* leaves has been extensively used in Ayurvedic traditional medicine and is bitter, acrid, anti-diabetic, anti-inflammatory, laxative, Diuretic, anti-microbial, anti-oxidant, obesity, digestive and liver tonic. It is mainly used for anti-diabetic activity.

Objective: This study was aimed at providing pharmacological basis for its use in anti inflammatory by using *Gymnema sylvestre* leaves and stem.

Methods: Shade dried leaves and stem of *Gymnema sylvestre* were extracted with methanol and evaluated for anti- inflammatory activity. It contains constituents like Tannins and saponins which are responsible for anti-inflammatory activity. The methanolic extract of *Gymnema sylvestre* leaves and stems was extracted using Soxhlation and it was investigated for anti-inflammatory activity in albino rats using Formaldehyde induced paw edema method at a dose 100, 300 and 500 mg/kg.

Results: The gymnema extract showed Anti-inflammatory activity by inhibiting Cox, using formaldehyde assay. The methanolic extract of concentration 500 mg/kg decreased the paw edema volume by 67.42% within 4 h after administration, while standard drug decreased the paw edema volume by 80.33%.

Conclusion: It is concluded that the methanolic extract of *Gymnema sylvestre* showed predominantly significant activity which is comparable to the standard drug Ibuprofen.

Key words: Anti-inflammatory, Formaldehyde, Methanolic extract, Gymnema sylvestre.

OP-33: ANTIHYPERGLYCEMIC AND HYPOLIPIDEMIC ACTIVITY OF LATEX POWDER OF EUPHORBIA CADUCIFOLIA IN EXPERIMENTAL DIABETES

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Background: India is considered as the diabetic capital of the world. The study of plants having antihyperglycemic and hypolipidemic activities may give a new approach in the treatment of diabetes mellitus.

Objective: The study was intended to evaluate the antihyperglycemic and hypolipidemic activity of latex powder of *Euphorbia caducifolia* in alloxan-induced diabetic albino rats.

Materials and Methods: Diabetes was induced in albino rats by administration of alloxan monohydrate (150 mg/kg, i.p.). Rats were divided into 5 groups of 6 animals each. First group served as non-diabetic control, second group as diabetic control, third group as standard and was treated with 120 mg/kg of Nopal powder orally. Group 4 and 5 received 100 and 200 mg/kg body weight of Euphorbia caducifolia powder. Blood samples were analyzed for blood glucose on day 0, 1, 7, 14 and lipid profile on day 14.

Results: The *Euphorbia caducifolia* powder showed signifi cant reduction ($P<0.01$) in blood glucose level and serum lipid profile levels with 200 mg/kg body weight in alloxan-induced diabetic rats as compared with the control.

Conclusion: It is concluded that *Euphorbia caducifolia* powder is effective in controlling blood glucose levels and in improving lipid profile in diabetic rats.

Key words: *Euphorbia caducifolia,* hypoglycemia, hypolipidemia, Alloxan

OP-34: EVALUATION OF ANTI-ASTHMATIC ACTIVITY OF DRIED FRUITS OF PIPER NIGRUM

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Piper nigrum is a most widely used and known plant all over the world and is being traditionally used for the curing and treatment of various ailments in the body. It is generally used for curing various topical infections. The claim for the utility of this plant in the treatment of asthma has not been scientifically evaluated hence this dissertation is emphasized to explore the effect of plant energy source against asthma and its anti-allergic reactions.The evaluation was carried out with the ethanolic extract of dried fruits of Piper nigrum on anti- asthma and anti-allergic properties.On preliminary phytochemical evaluation Ethanolic Extract of Piper nigrum (EEPN) showed presence of various phytochemical constituents like flavonoids, glycoside phenols, tannins, resins, proteins, alkaloids, carbohydrates and fixed oils. The EEPN at two dose levels 200 mg/kg/p.o and 400 mg/kg/p.o and salbutamol 1mg/kg/s.c was administered for 14 days to the rats and it was identified that there is the significant reduction in PCD in standard and test group animals as compared to control animals. The EEPN at two dose levels significantly decreased total leucocytes count and DLC as compared with that of the standard group animals. This suggests that the extract have potent Anti- Asthmatic and allergic activity. From the above observations of the study performed it may be concluded that *Piper nigrum* extract was significant anti asthmatic activity due to its phytoconstituents.

Key Words: *Piper nigrum*, Anti-asthmatic, Anti-allergic, Salbutamol, Ethanolic extract.

OP-35: ASSESSMENT OF RISK FACTORS FOR DRUG RELATED PROBLEMS IN AMBULATORY PATIENTS

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Introduction: Drug related problems refer to the problems associated with the drug use, comprising wide range of clinical situations/emergencies i.e., significant drug related morbidity/mortality. Assessment of risk factors of drug related problems specific to an area in evaluation is essential in order to prevent avoidable drug related problems & consequent economic burden attributed to additional health care through strategizing ways to sort out drug related problems resulting from identified risk factors.

Methodology: A total 148 cases, where a correlation between past medication history and current complaints that resulted in Hospitalization was established, were included in the 6 months prospective study done in departments of General medicine, Dermatology, Pediatrics and Gastroenterology in tertiary care teaching hospital.

Results and Discussion: In this study Non-adherence (50.94%) and ADR (38.36%) are predominant among the identified drug related problems. Lack of knowledge about disease, its complications and possible adverse reactions with self- medication was identified to be the highly involved risk factor. Higher incidence of DRPs was observed with antimicrobial, inflammatory and immune modulators, CVS and CNS drugs.

Conclusion: In this study Non-adherence to prescribed therapy is found to be the DRP causing hospitalization at higher incidence. The most commonly involved risk factors are Lack of knowledge about disease, need of adherence to the therapy as prescribed & outcomes of treatment provided. Highly involved type of drug, person include prescribed drugs &patient respectively, appropriate patient counseling about use of prescribed medication & regular follow up is significant on clinical pharmacist's part in association with other health care professionals.

Keywords: Drug related problems, hospitalization, past medical history, clinical pharmacist & non-adherence.

OP-36: RISK FACTORS FOR MULTI-DRUG RESISTANT ORGANISMS IN DIABETIC FOOT ULCER: IMPACT OF GLYCEMIC CONTROL ON WOUND HEALING

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Background: Diabetic foot Ulcer (DFU) is one of the most significant complication of Diabetes. MDRO are defined as microorganisms that are resistant to two or more classes of antimicrobial agents.Poor Glycemic control with DFU delays wound healing. The present study was an attempt to correlate the risk factors and their association with the development of MDRO in DFU and the impact of Glycemic control on wound healing in DFU.

Objectives: To study risk factors for MDRO in DFU; Impact of Glycemic control on wound healing in MDRO

Method: In 100 patients hospitalized with microbiological specimens taken on admission and determined using culture and sensitivity testing. Potential risk factors for MDRO-positive specimens were examined using univariate analyses, logistic regression for MDRO presence and wound healing time. Prospective follow-up data from patients used to evaluate the influence of MDRO infection& Glycemic control on time to healing.

Results: MDRO isolated in 75 of 100patients.Poor Glycemic control, previous hospitalization, amputation history, antibiotic use history, ulcer size, necrotic ulcer, recurrent ulcers, higher grade ulcer, polymicrobial culture were associated with MDRO foot ulcers ($p < 0.1$).MDRO has no impact on wound healing. Logistic regression analysis indicated higher Grade of ulcer, poor glycemic control significantly delayed wound healing.

Conclusion: The prevalence of MDRO is alarmingly high in diabetic infected patients. Higher grade ulcers & recurrent ulcers are more prone to acquire MDROs. Positive MDRO status is not associated with wound healing. Higher grade of ulcer & poor glycemic control delays healing of foot ulcer.

Keywords: DFU, MDRO, Glycemic control, wound healing.

OP-41: ANTICATARACT ACTIVITY OF ETHANOLIC EXTRACT OF HELIOTROPIUM LEAVES ON GALACTOSE INDUCED CATARACT IN RATS

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Background: Anticataract activity of ethanolic leaf extract of *Heliotropium indicum* on galactose Induced cataract in rat was studied. Galactose was used to induce cataract in rats.

Method: The animals were divided into four groups of six animals each. Group I served as vehicle control received distilled water. Group II received 30% galactose diet served as cataract control and GroupIII and IV received 200mg/kg of ethanolic extract of *Heliotropium indicum* and Vitamin E 50mg/kg respectively along with galactose diet .All the above groups were treated for 40 days. On 41 days lenses were removed from the eyes of all the animals to assess the intensity of cataract by estimating glutathione, lens soluble protein, and the lens water content.

Results: The results showed that, in the group *Heliotropium indicum* and vitaminE treated animals treated animals there were significant increase in the lens glutathione, soluble protein and water content as compared to galactose control.

Conclusion: From the above results it was concluded the Heliotropium indicum leaf extract possessed protective action against galactose induced cataract in rats.

Keywords: Heliotropium indicum, Anticataract activity, Galactose, Vitamin E

OP-42: ARE HEALTHCARE WORKERS' MOBILE PHONES A POTENTIAL SOURCE OF NOSOCOMIAL INFECTIONS? REVIEW OF THE LITERATURE

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Mobile communication devices help accelerate in-hospital flow of medical information, information sharing and querying, and contribute to communications in the event of emergencies through their application and access to wireless media technology. Healthcare-associated infections remain a leading and high-cost problem of global health systems despite improvements in modern therapies. The objective of this article was to review different studies on the relationship between mobile phones (MPs) and bacterial cross contamination and report common findings. Thirty-nine studies published between 2005 and 2013 were reviewed. Of these, 19 (48.7%) identified coagulase-negative staphylococci (CoNS), and 26 (66.7%) identified *Staphylococcus aureus*; frequency of growth varied. The use of MPs by healthcare workers increases the risk of repetitive cyclic contamination between the hands and face (e.g., nose, ears, and lips), and differences in personal hygiene and behaviors can further contribute to the risks. MPs are rarely cleaned after handling. They may transmit microorganisms, including multiple resistant strains, after contact with patients, and can be a source of bacterial cross-contamination. To prevent bacterial contamination of MPs, hand-washing guidelines must be followed and technical standards for prevention strategies should be developed.

Key words: healthcare workers; mobile phones; bacteria; nosocomial infection; contamination.

Results: There was significantly increased oxidative stress and cholinesterase activity with cognitive decline in the hippocampus in rats of BCCAO group as compared to normal group ($p<0.05$). The animals treated with Donepezil, HEF and EF of PG prevented the biochemical changes significantly ($p<0.001$) and there was significant improvement in cognitive parameters compared to BCCAO group. Whereas HF and EAF fractions of PG were shown poor significant improvement in cognitive and biochemical parameters.

Conclusions: BCCAO led to hippocampal oxidative stress with corresponding cognitive decline. Memory improving effect and antioxidant property of PG HEF and EF markedly improves in a dose dependent manner, which may be responsible for the prophylaxis and treatment of global cerebral ischemia.

Keywords: Antioxidant, bilateral common carotid artery occlusion, cognitive impairment, oxidative stress, *Psidium guajava.*

OP-59: FORMULATION AND EVALUATION OF SELF MICRO EMULSIFYING DRUG DELIVERY SYSTEM (SMEDDS) OF EFAVIRENZ

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Background: Efavirenz is a Non-nucleoside reverse transcriptase inhibitor (NNRTI) which has poor aqueous solubility of 4-9µg/mL. Currently a number of technologies are available to deal with the poor solubility and bioavailability of insoluble drugs. One of the promising techniques is Self Micro Emulsifying Drug Delivery Systems (SMEDDS). Self Micro Emulsifying Drug Delivery System has gained more attention due to enhanced oral bio availability enabling reduction in dose, more consistent temporal profiles of drug absorption of adsorption, selective targeting of drug toward specific absorption window in GIT.

Objective: To improve the oral bioavailability of efavirenz by formulating in to Self Micro Emulsifying Drug Delivery System.

Methods: The SMEDDS Micro emulsifying region was identified by contracting ternary phase diagram of selected oils, surfactant and co surfactant using water titration method. The Optimized SMEDDS prepared using combination of Eucalyptus Oil, Tween 40and PEG 600. The Prepared Liquid SMEDDS were evaluated Particle size, Zeta potential, Percent transmittance and Drug content, self emulsification time. The optimized Liquid SMEDDS were converted in to Solid SMEDDS by adsorbing on to a Solid carrier b Cyclo dextrin. The solid SMEDDS evaluated flow properties and drug release studies.

Results: The results proved that prepared Solid SMEDDS have good flow properties and improved drug release profile (97.3± 1.96%).

Conclusion: Form the entire study it was concluded that there was an increase in both solubility and dissolution rate of Efavirenz. The significant increase in solubility and dissolution were observed in formation F4.9.

Keywords: Efavirenz, S-SMEDDS, L-SMEDDS, Solubility

OP-60: DESIGN AND EVALUATION OF VALACYCLOVIR FLOATING MICROSPHERES

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The aim of this study was to prepare floating microspheres by Emulsion solvent diffusion method. Valacyclovir HCl, having short biological half life of 30 minutes and its rapid elimination from the body, is ideally suited to be delivered through floating multiunit dosage form. Biocompatible polymers, Eudragit S100 and Ethyl cellulose were used along with drug in different proportions. The prepared six formulations (F1-F6) were characterized for their micromeritic properties, particle size, percentage yield, morphology, buoyancy studies, drug encapsulation efficiency, and In-vitro drug release studies. The formulated microspheres were free flowing. The optical microscopic studies revealed that the particles were of the size range of 95.03-152.48 µm. SEM studies indicated that the microspheres were porous and almost spherical in shape., In-vitro drug release studies indicated that F4 formulation prepared by using Ethyl cellulose showed more drug release when compared to other formulations. The data obtained in this study thus suggests that a microparticulate floating dosage form of Valacyclovir HCl can be successfully designed to give prolonged release of drug and hence improved bioavailability.

Key words: Gastro retentive system, Valacyclovir HCl, Eudragit S100, Ethyl Cellulose, Floating microspheres, Emulsion Solvent Diffusion Method.

OP-61: FORMULATION AND EVALUATION OF TASTE MASKED ORAL DISINTEGRATING TABLETS OF TOLTERODINE TARTRATE BY -CYCLODEXTRIN

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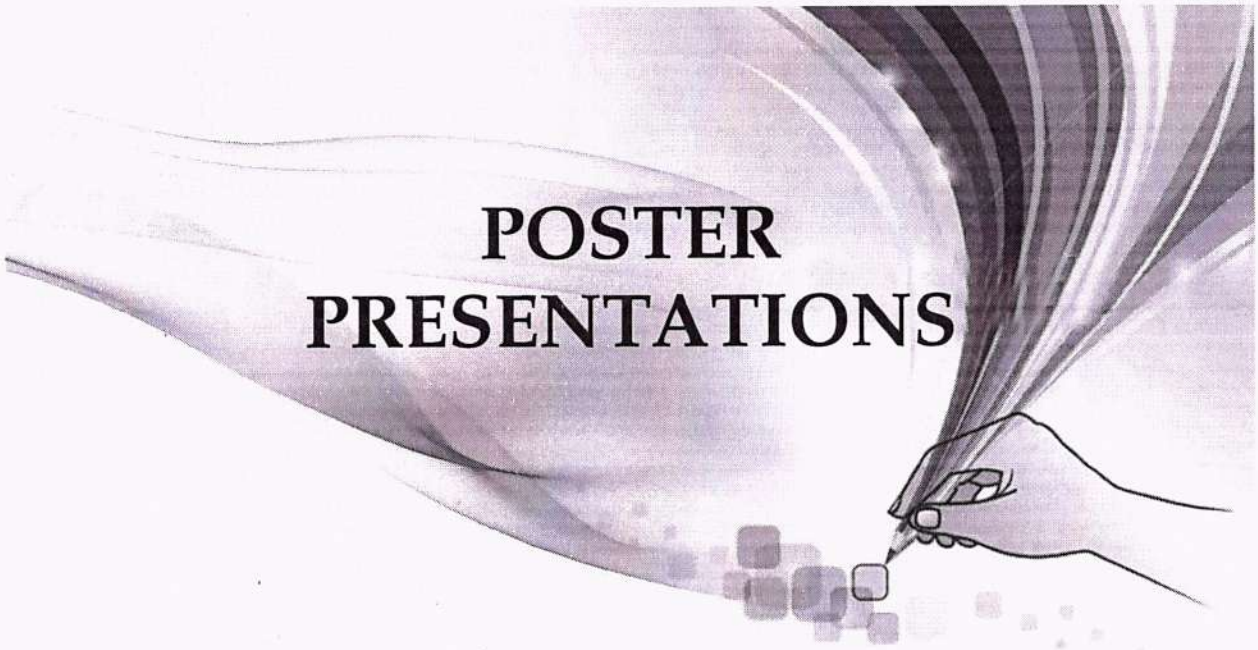
Tolterodine tartrate is competitive muscarinic antagonist used in the treatment of overactive bladder with symptoms of urinary frequency. In the present work, oral disintegrating tablets are formulated using Tolterodine tartrate and super disintegrants like crosspovidone, croscarmellose sodium and sodium starch glycolate individually and in combinations and the study aimed to mask the metallic taste of Tolterodine tartrate by complexing with β-cyclodextrin in three different ratios 1:1, 1:2, 1:3 and they are formulated by using optimized formula(F 14) and evaluated for *In Vitro* disintegration time, taste evaluation studies and *In Vivo* disintegration time. The formulated tablets were evaluated for various physio-chemical properties. Results demonstrated that F14 gave less disintegration time of 16.42±0.60 seconds and 1:3 ratio of Drug-polymer complex ODT's completely masked the metallic taste of drug.

Keywords: Oral disintegrating tablets, Tolterodine tartrate, ?-cyclodextrin, taste masking.



POSTER PRESENTATIONS

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PP-1: CONTROLLED RELEASE DRUG DELIVERY SYSTEM OF DILITIAZEM HYDROCHLORIDE

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Background: A Controlled drug delivery system delivers drug locally or systemically at predetermined rate for a specified period of time. Hydrophillic matrix systems are among most commonly used means for orally controlled drug delivery systems as they can reproduce a desirable drug profile and are cost effective. Diltiazem, sold under the trade name Cardizem among others, is a calcium channel blocker used to treat high blood pressure, angina, and certain heart arrhythmias. It may also be used in hyperthyroidism.

Objective: The aim of the present study was to prepare and characterize controlled release matrix tablets of Dilitiazem Hydrochloride using various hydrophilic and hydrophobic polymers in different proportions.

Method: Dilitiazem hydrochloride matrix tablets were prepared by direct compression method. For the preparation HPMC k-100 and Eudragit L-100 polymers used. The evaluation studies weight variation, hardness, thickness, in vivo studies are included.

Results: The evaluation studies for prepared dosage forms are weight variation-447mg, Hardness of tablet-5.1kg/cm2, Thickness of tablet-5.5mm, Percentage of drug release-99%, F3 Followed zero order-0.8860 and mechanism involved was korsemayes-0.8964, Higuchi-0.9219.

Conclusion: The results generated in this study best release profile F3 kinetics of drug release were function of polymer type, grade and concentration. Further studies require conform the results with in vivo experiments.

Keywords: Controlled drug delivery system, Calcium channel blocker, HPMC k-100, Eudragit L-100.

PP-2: DESIGN AND DEVELOPMENT OF PROPRANOLOL HYDROCHLORIDE TRANSDERMAL PATCHES: *IN VITRO* AND *EX VIVO* CHARACTERIZATION

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Background: Propranolol is a racemic mixture of 2 enantiomers where the S(-)-enantiomer has approximately 100 times the binding affinity for beta adrenergic receptors. Propranolol is used to treat a number of conditions but most commonly is used for hypertension.

Objective: Design and develop matrix type transdermal patches of Propranolol Hydrochloride which is an anti-hypertensive drug.

Methods: These matrix type transdermal patches were prepared by "Solvent Casting Technique" using drug, HPMC E15 and Eudragit L 100 in the ratio of 1:6, 1:6.5, 1:7, 1:7.5, 1:8, 1:8.5, 1:9, 1:9.5. All formulations carried 20%v/w of PEG-600 as plasticizer. The prepared patches were characterized for various physicochemical parameters like weight, thickness, folding endurance, drug content, percent moisture content, percent moisture absorption, *In vitro* drug release and *Ex vivo* permeation.

Results: Among this 1:9 ratio was found to be an optimized formulation and patches were prepared by using permeation enhancers (lemon grass oil, Eucalyptus oil, and clove oil). The cumulative amount of drug

release in 12hrs for F7 formulation showed maximum and used for that formulation skin permeation on Goat abdominal skin. FTIR studies showed no interaction between drug, polymer and other excipients.

Conclusion: The drug permeation kinetics followed "First order" and "zero order" profile with diffusion mechanism.

Keywords: Solvent casting, dispersion method, diffusion, HPMC E15, Eudragit L100, FTIR.

PP-3: DESIGN, OPTIMIZATION, PREPARATION AND EVALUATION OF DISPERSION GRANULES OF VALSARTAN AND FORMULATION INTO TABLETS

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Background: Valsartan (VAL) is a potent and specific competitive antagonist of the angiotensin-II AT1-receptor. It is used orally for the treatment of hypertension and has a low bioavailability. The formulation of solid dispersions by incorporating drugs into hydrophilic carriers has frequently been reported to increase the dissolution rate of poorly water-soluble drugs, often leading to improved drug bioavailability.

Objective: The objective of the present work undertaken was to enhance the solubility and dissolution rate of valsartan a poorly water soluble antihypertensive, by preparation of solid dispersion granules which would additionally allow easy compression into tablets.

Methods: The dispersion granules were prepared using a hot melt granulation technique which involved preparation of a homogenous dispersion of valsartan in gelucire-50/13 melt, followed by its adsorption on to the surface of aeroperl-300pharma, an inert adsorbent. The formulation was further characterized by FTIR, DSC, XRD and SEM analysis.

Results: An appropriate statistical model was arrived at and a significantly enhanced dissolution rate and flow properties were exhibited with the optimized formulation. FTIR spectrum revealed some drug excipient interactions. DSC and XRD data indicated the retention of amorphous form of valsartan. SEM confirmed the homogeneity and surface adsorption of the gelucire50/13 melt on aeroperl-300pharma leading to enhanced surface area and thus dissolution rate. The in-vitro dissolution rate of these tablets was significantly better in comparison with marketed formulation.

Conclusion: In conclusion the statistical model enabled us to understand the effects of formulation variables on the dispersion granules of valsartan.

Keywords: Valsartan, dissolution, solubility dispersion granules, aeroperal.

Conclusion: Metronidazole mini-tablets Eudragit coated formulations can be promising system for the treatment of amoebiasis.

Keywords: Metronidazole, Eudragit S-100 and Eudragit L-100, Pectinase.

PP-15: FORMULATION AND EVALUATION OF GLIMEPIRIDE ORAL DISINTEGRATING TABLET

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Background: An orally disintegrating tablet (or)orally dissolving tablet (ODT) are the dosage form which differ from traditional tablets where they are designed to be dissolved on tongue rather than swallowed whole. It is used as an alternative dosage form for patients who experience dysphagia .Glimepiride is an orally active hypoglycaemic substance belonging to the sulphonyl urea group which is used for the treatment of diabetes by helping to control blood sugar levels(glucose).

Objective : The main objective of the research was to prepare fast disintegrating tablet of glimepiride using different super disintegrants as cross caramellose, sodium starch glycolate, cross providone.

Methods: Glimepiride oral disintegrating tablet were prepared by direct compression method using different concentrations of sodium starch glycolate, cross caramellose, cross providone super disintegrants used. The evaluation studies are included weight variation, thickness, hardness, wetting time, disintegration, dissolution and *in vivo* taste masking studies.

Results: The evaluation studies for prepared dosage form F4 Hardness of tablet 3.1kg/cm2, Thickness of tablet 2.3mm, Wetting time of tablet 12.8sec, Disintegration time of tablet 21 sec, Percentage of drug release 97%.

Conclusion: Among all the formulations F4 shows better drug release, wetting time and disintegration time. In this study it can be concluded that prepared optimized fast disintegrating tablets of glimepiride are the better option to treat diabetes.

Keywords: orally disintegrating tablet, hypoglycaemic substance, Superdisintegrants.

PP-16: FORMULATION AND EVALUATION OF HYDROCHLORTHIAZIDE ORAL DISINTEGRATING TABLETS

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Background: In the present work, oral disintegrating tablets of Hydrochlorthiazide were developed with a view to enhance the patient compliance and provide quick onset of action. Hydrochlorthiazide is the diuretic of the benzothiadiazine group and has proved very important in the management of mild to moderate hypertension. It inhibits sodium reabsorption in the distal convuluted tubules causing increased excretion of sodium and water as well as potassium and hydrogen ions. It is bitter taste and poorly solubility in water.

Objective: The main objective study was to formulate taste masked oral disintegrating tablets of Hydrochlorthiazide by using inclusion complex beta cyclodextrin to achieve a better dissolution rate and further improving the bioavailability of the drug.

thorvum.(Swartz) showed maximum antibacterial activity against *Staphylococcus aureus* and *Pseudomonas aeruginosa* and was also effective against other bacterial strains as compared to ethanol and aqueous extracts of leaves and fruits. The methanol leaf extract of *Solanum thorvum.*(Swartz) exhibited significant inhibition (71%) and (66%) against *Aspergillus fumigatus* and *Aspergillus flavus* respectively.

Conclusions: The methanol extract of the *Solanum thorvum.*(Swartz) leaves and fruits effective against selected bacterial and fungal strains. Its phytochemical contents have broad antimicrobial properties and the plant might be a novel source of antimicrobial drug.

Keywords: Methanol, ethanol, Antimicrobial, *Phytochemicals Solanum thorvum*

PP- 61: STUDIES ON PHYTOCHEMICAL ANALYSIS AND EVALUATION OF LEAF AND ROOT PARTS OF *ALOE VERA* (L.) BURM.F A MEDICINAL SHRUB FOR *IN VITRO* ANTIOXIDANT ACTIVITIES

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Back ground: *Aloe vera,* sometimes described as a "wonder plant," is a short-stemmed shrub. Aloe is a genus that contains more than 500 species of flowering succulent plants.

Objectives: To analyze qualitative and quantitative phytochemical and evaluate *in vitro* antioxidant properties of various alcoholic and aqueous extracts of leaf and root parts of *Aloe vera.*

Methods: Preliminary phytochemical analysis for alkaloids, cardiac glycosides, flavonoids, glycosides, phenols, resins, saponins, steroids, tannins, terpenoids and triterpenoids and quantitative phytochemical analysis for alkaloids, total phenolics, total flavonoids, tannins, saponins, and ascorbic acid were made by following standard procedures. *In vitro,* antioxidant properties were evaluated by assessing DPPHo, NOo and ABTSo+, radical scavenging abilities and assaying the reducing power, β-carotene, and antihemolytic activities by adapting standard methods.

Results: The quantitative phytochemical analysis of this species exhibited the presence of alkaloids, total phenolics, total flavonoids, tannins, saponins and ascorbic acid in considerable quantity. The in vitro antioxidant activity of the species

Conclusions: *Aloe vera* demonstrated that both the leaf and root parts have prominent antioxidant properties. From this study, it can be concluded that the species is effective in scavenging free radicals and has the potential to be a powerful antioxidant.

Keywords: *Aloe vera,* antioxidant, radical scavenging, in vitro

PP- 62: *IN VIVO* EVALUATION OF ANTI-INFLAMMATORY ACTIVITY OF TRIGONELLA FOENUM-GRAECUM L. SEEDS

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Background: *Trigonella foenum-graecum* (L), is an annual herb belonging to the family Papilionaceae and is commonly known as fenugreek. The green leaves and seeds of the plant are widely used as spice in food preparations and as ingredient in traditional medicine for various ailments.

Objective: The aim of the present work is to evaluate and compare the anti-inflammatory activity of different extracts of fenugreek seeds.

Material and methods: Fenugreek seeds were purchased from the local market and authenticated by botanist. The dried seeds were powdered and used for extraction. Pet ether and ethanol seed extract was prepared by hot percolation method using Soxhlet apparatus. The anti-inflammatory activity of pet ether and ethanol extracts was screened on healthy, adult albino rats of Wistar strain against carrageenan induced paw edema. Extracts at 2 doses 100mg/ kg body weight and 300mg/kg body weight were administered by oral route. Animals were observed individually after dosing at least once during the first 30 minutes, upto 4 hours and compared with standard group treated with Diclofenac sodium and control group.

Results and Conclusion: Pet Ether and ethanolic extracts of seeds have shown anti-inflammatory activity. Ethanolic extract of seed at a doses 100mg/kg and 300 mg/kg shown 83% reduced paw volume at 3rd hr. Ether extract of seed at 4th hour at a dose of 100mg/kg shown 83% activity and at a dose of 300mg/kg at 3rd hour shown 66.6% activity. These findings suggest that plant has much scope to work further to find out phyto constituents responsible for the anti-inflammatory activity.

Keywords: *Trigonella foenum-graecum,* Anti inflammatory activity, Carrageenan

PP-63: STUDIES ON ISOLATION AND IDENTIFICATION OF ASPERGILLUS SPECIES PRODUCING CITRININ TOXIN IN PEPPER (*CAPSICUM* SPP) FROM SELECTED MARKETS IN WARANGAL DISTRICT

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Back Ground: Isolation and identification of fungi causing decay in pepper fruits from three markets in Warangal District Telangana state, namely Kazipet, Warangal and Hanamkonda, High level and Wadata was carried out. Samples were collected in polythene envelopes and taken to the laboratory of Pigle Govt. Degree and P.G. College Warangal.

Objectives: The objective of study was to investigate the distribution of fungi with the incidence and toxigenicity of Citrinin -producing *Aspergillus* species infecting species.

Methods: For fungal isolation and Identification. They were surfaced sterilized in 5% NaOCl solution for 1 minute, rinsed in several changes of sterile distilled water and plated on Potato Dextrose Agar in Petri

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