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3.3.2

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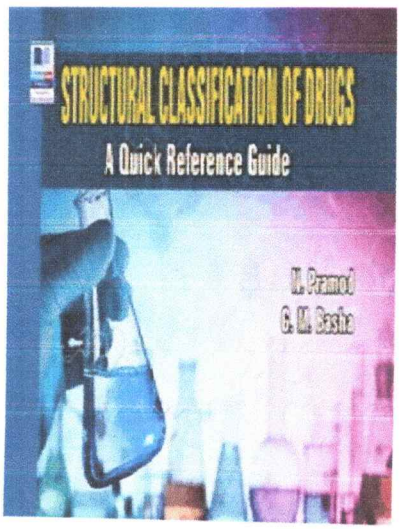

Structural Classification of Drugs: A Quick Reference Guide

By Nayanapalli Pramod and G M Basha

182 pages 19 minutes

This book is written to make the students get rid of the phobia in medicinal chemistry. I don't say that you can learn classification of drugs in medicinal chemistry at a glance with the help of this book but this book will help you to practice the structures in classification of drugs
repeatedly. This book will save much of your time in acquiring knowledge in medicinal chemistry. I can assure that this book will help both in competitive exams like GPAT and also in university exams. I can confidently say this book will definitely bring confidence to every student in medicinal chemistry. I encourage advices and suggestions for progress in future.

Medical All categories

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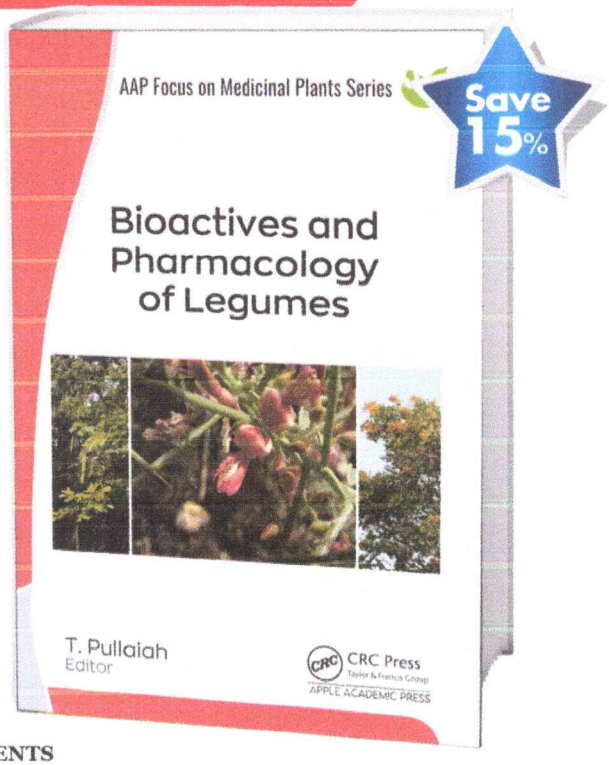
About the author

AAP **New Book Announcement**

Bioactives and Pharmacology of Legumes

Available April 2023



Editor: T. Pullaiah, PhD
Former Professor, Department of Botany, Sri Krishnadevaraya University, Andhra Pradesh, India

In this comprehensive desk reference, a variety of bioactives and therapeutics from the legume family (Fabaceae or Leguminosae) are thoroughly detailed. For each species included in the volume, a brief introduction is given, and the plant's bioactive compounds are listed and their chemical structures shown, followed by their pharmacological activities.

Many of these plants have medicinal activities that include antiviral, antimicrobial, antioxidant, anticancer, anti-inflammatory, and antidiabetic, hepatoprotective, nephroprotective, cardioprotective, and more activities. The biochemical characteristics of the 37 plants included, such as the type of starch, protein, and fibers, can be exploited as binders, excipients, thickeners, and dispersants in the formulation of various products in the pharmaceutical industry. The published literature on the pharmacological activities on each species is reviewed and presented in a concise and clear manner.

Bioactives and Pharmacology of Legumes will be an important source book for pharmaceutical researchers, scientists, and others in development of new drugs.

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Contents continued on side 2

CHAPTER 28

COMPREHENSIVE REVIEW OF THE PHYTOCHEMISTRY AND PHARMACOLOGY OF THE PLANT *ANTIRRHINUM MAJUS*

PASALA PRAVEEN KUMAR[1], N. V. L. SIRISHA MULUKURI[2], and S. PARVEEN[3]

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**Corresponding author. E-mail: praveenpharmaco@gmail.com;*

ABSTRACT

Snapdragaon is the common name for *Antirrhinum majus*, which is a very popular flowering plant due to its traditional potentialities like used in the treatment of scurvy, liver disorders and tumors and ulcers. It also acts as a diuretic agent. Modern medicine is giving impetus to explore the plant due to its supreme active constituents like flavonols, flavones, pigments, various aromatic acids along with derivatives. The current chapter deals with various constituents and different biological activities of the plant.

Biomolecules and Pharmacology of Medicinal Plants, Volume 1: T. Pullaiah (Ed.)

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CHAPTER 17

APIUM GRAVEOLENS L. (FAMILY: APIACEAE)

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17.1 INTRODUCTION

Apium graveolens L. belongs to the family Apiaceae. It is commonly known as Celery, Wild Celery. The vernacular names include Bari ajmod (Hindi), Bodiajamoda, Ajmud (Marathi), Bodiajamodia (Gujarati), Ugra-gandhika, Vastamoda, Hayagandha, Brahmakoshi (Sanskrit) and Jangali jwanu (Nepali). Celery is a biennial plant; leaves are pinnate to bipinnate with rhombic leaflets 3–6 cm long and 2–4 cm broad with creamy white flowers at a diameter of 2 to 3 mm obtained in the form of compound dense umbels. It contains ovoid to globose seeds with 2 mm long and wide, 1.5-(De Vilmorin and Roger, 1950). Initially, Celery cultivated in Europe, especially in Italy, France as a food plant. Later on, the cultivation is continued in different countries like Algeria, Sweden, Egypt, Ethiopia, and Saudi Arabia.

Wet celery leaves intended to treat stomach and liver problems. Widely used for various menstrual problems and kidney stones. Traditionally it has been used to treat spasm and stomach problems in addition to diuretic, laxative, and sedative actions (Abdulrahman et al., 2017).

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PHARMACEUTICAL CHEMISTRY-ABSTRACTS

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SRCP/AICTE/DDND/PCHEM-37

DESIGN SYNTHESIS AND EVALUATION OF CHLORO THIAZIDE DERIVATIVES

Ms.K.V. Divya Jyothi *, S.K.Aliya I.Priyanka, D.P.Preethi, M.Lakshmi Sai Lahari, K.Preethi

Santhiram College of Pharmcy, Nandyal, AP, India

ABSTRACT:

Hydrochlorothiazide and chlorthiazide are high potent diuretics used in treatment of hypertension. In recent research trends shows that chlorthiazide derivatives are used in osteoporosis and also has antimicrobial activity against various bacterial species, In this view a series of Chlorthiazide Derivatives were designed, synthesized six compounds by condensing chloroacetyl chloride with chlorthiazide by using ethanol as a solvent refluxed at 60 c temperature formed compound is taken as intermediate further refluxed and condensed with Aromatic amines there by formation of substituted chlorthiazide derivatives, (Ctd-1, Ctd-2, Ctd-3, Ctd-4, Ctd-5, Ctd-6) and confirmed by the physical and chemical properties, IR, NMR spectra's. Screened for Antibacterial activity.

Keywords: Antibacterial, Chlothiazide , Chloroacetylchloride .

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SRCP/AICTE/DDND/PCHEM-38

SYNTHESIS, CHARACTERIZATION AND BIOLOGICAL EVALUATION OF NEWER SCHIFF'S BASE DERIVATIVES

Mrs.K.Maheswari *, A. Naga mallika, A. Mounika, J. Sai mounika, M. Gladys, S. Sony ruksana

Santhiram College of Pharmcy, Nandyal, AP, India

ABSTRACT:

Eight newer 3-amino acetophenone containing schiff base derivatives(SSP, S1, S2, S3, S4, S5, S6, S7, S8) were prepared by three steps. All derivatives were characterized by TLC and physical studies like ^{1}H NMR and MASS spectral studies was done . Among all derivatives SSP, S1, S3, S4 derivatives got good spectral result. For theoretical prediction, anti-bacterial screening was done by agar well diffusion method. From that S1, S2, S3, S4 derivatives showing good Anti-bacterial activity (in 0.01µg to 0.05 µg)),Synthesized derivatives were compared against the standard drug. Showing some similar results to standards.

Key words: 3-amino acetophenone, pyridine, hydrazine hydrate, ethyl chloroformate, ethanol.

SRCP/AICTE/DDND/PCHEM-39

SYNTHESIS, CHARACTERIZATION AND EVALUATION OF NOVEL ANTHRAQUINONE DERIVATIVE FOR ITS ANTIMICROBIAL ACTIVITY

Mr .T.Venkat Ramaiah*, D. Jubeda, G.Manogna, G. Pravallika , J. Jayaraju, M. Kiran Kumar

Santhiram College of Pharmcy, Nandyal, AP, India

ABSTRACT:

The present work deals with the synthesis of novel Anthra quinone derivatives and biological screening for their In-vitro anti-microbial activity.The development of new anti-microbial resistance which is a growing global healthcare problems due to the loss of efficacy of first line antibiotics. Many pathogens are developing resistance to multiple drugs. The major resistance overall issues being related to the Enterococcus faecium ,Staphylococcus aureus, klebsieua pneumoniae, Acinetobacterbaumannil, Pseudomonas aeruginose pathogens etc..,More than 2.8 million antibiotic resistance infectious occurs in the US each year and more than 3500 people die as a result.

In the present study various Anthraquinone derivatives were prepared by the condensation process with various acylated aromatic and aliphatic amines in the presence of ethanol as solvent. The acylated aromatic and aliphatic amines are prepared from various aromatic and aliphatic by treating with chloroacetylchloride .Ten Anthraquinone derivatives[1-10] are synthesized and characterized by NMR and IR spectral data.

All the synthesized compounds were tested for in-vitro anti-microbial activity by taking Phenol as standard. Compounds 1,3,6,8,9 are showing moderate antimicrobial activity.

Key words: Anthraquinone, acylated aromatic and aliphatic amines, chloro acetylchloride, **in-**vitro anti-microbial activity.

PHARMACEUTICAL ANALYSIS-ABSTRACTS

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SRCP/AICTE/DDND/PA-09

ANALYTICAL METHOD DEVELOPMENT AND VALIDATION OF ALLPURINOL AND LESINURAD BY RP HPLC SIMULTANEOUS ESTIMATION METHOD

Dr B Mohammed Ishaq*, Ms. Shaik Hakeem Afreen.
Santhiram College of Pharmacy, Nandyal, Kurnool, AP, India

ABSTRACT

Objective:

A precise and accurate and stabilized method has been developed for the bulk & pharmaceuticals containing Allopurinol and Lesinuard by simultaneous method using RPHPLC.

Methods: The method developed by RPHPLC column make Inertsil ODS 150*4.6*5µ using Phosphate buffer pH 3.0 and acetonitrile in 70:30 v/v as diluent and Mobile phase. The standard and sample are prepared in 225 and 150 ppm respectively. 10 µl of sample and standard are individually injected and detected at 255nm using PDA detector.

Discussion:

Retention time for Allopurinol and Lesinuard at 4.931 and 5.961 having good number of theoretical plates and resolutions. The method is validated as per ICH guidelines. % Assay at 99.63 and 99.95% and System Suitability asymmetric factor at
1.29 and 1.22, range between 75 – 375 ppm and 50-250 ppm and r^2 0.999 for both, Precision, intermediate precision and method precision lies in %RSD <2. The recovery study for 50%, 100% and 150% by spiking sample and recovered 99.60 and 100.15% Sensitivity of LOQ at 0.27 and 0.18, LOD at 0.09 and 0.06 ppm. The stability studies conducted by stressing acid, alkali, peroxide, thermal and light and all study shows <10% of degradation as per specified guidelines.

Conclusion:

The analytical method developed is simple, rapid and sensitive for the simultaneous estimation of Allopurinol and Lesinuard in API and Indian marketed formulations and the method is validated as per ICH and the method is applicable to use to study of these in academic research, Pharmaceutical Industry, BA/BE study, Invitro dissolution studies.

Key Words: Allopurinol, Lesinuard, Method Development, RP – HPLC, Validation, ICH etc.

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SRCP/AICTE/DDND/PA-10

METHOD DEVELOPMENT AND VALIDATION FOR THE SIMULTANEOUS E STIMATION OF IVACAFTOR AND LUMACAFTOR IN PURE AND MARKETE D FORMULATION BY RP-HPLC

Mr. D. CHINABABU*, Mr.K. BABU
Santhiram College of Pharmacy,Nandyal,Kurnol, AP. India

Abstract:

A new simple, specific RP-HPLC method has been developed for the simultaneous determination of Ivacaftor in combination with Lumacaftor in pharmaceutical formulation. This method developed on Hypersil ODS C18(4.6×250mm,5µ particle Size) analytical column, a mobile phase of methanol: KH2PO4 buffer pH 3 adjusted with ortho phosphoric acid in ratio(70:30 v/v). The flow rate was 1.2 ml/min and PDA detector detected wavelength at 256 nm. The retention times for Ivacaftor and Lumacaftor were 2.9 min and 3.5 min respectively. The method was validated and shown to be linear. The linearity range for Ivacaftor and Lumacaftor were 20-100µg/ml & 10-30µg/ml respectively. The Percentage recovery for Ivacaftor and Lumacaftor are ranged between 99.13–100% and 99.31–100% respectively. The correlation coefficients values of Ivacaftor and Lumacaftor was observed 0.999. The relative standard deviation for six replicates is always less than 2%. The Statistical analysis proves that the method is suitable for routine analysis of Ivacaftor and Lumacaftor as a bulk drug and in pharmaceutical formulation.

Key words: Ivacaftor, Lumacaftor, RP-HPLC and Validation.

SRCP/AICTE/DDND/PA-11

STABILITY INDICATING RP-HPLC METHOD DEVELOPMENT AND VALIDATION FOR SIMULTANEOUS ESTIMATION OF TRANEXAMIC ACID AND MEFENAMIC ACID IN TABLET DOSAGE FORM

Mr. S.Venu *, M. Charitha
Santhiram College of Pharmacy, Nandyal, Kurnool, AP. India

ABSTRACT

Background:
A simple, accurate and precise HPLC method for simultaneous determination of Tranexamic Acid and Mefenamic Acid in pure and tablet dosage form has been developed.
Aim: To develop and validate analytical method for simultaneous estimation of Tranexamic Acid and Mefenamic Acid in pharmaceutical formulation by RP-HPLC. Materials and Methods: HPLC of Analytica manual Injection and Isocratic solvent mode with C18 Column (4.6 mm I.D. × 250 mm, 5 µm) was used for chromatographic separation. It contains Rheodyne injector and UV Detector (D2 lamp). Mobile phase consists of Acetonitrile: Water: Methanol (60:20:20v/v) and flow rate adjusted was 1ml/min. Wavelength selected for detection was 230nm and injection volume was 10 µl.
Results and discussion: By using the developed method, retention time of Tranexamic Acid and Mefenamic Acid was found to be 3.8 min and 2.8min respectively. The method has been validated for linearity, accuracy and precision. Linearity of Tranexamic Acid and Mefenamic Acid were in the range of 66.6– 330µg/ml and10–50µg/ml respectively.
Conclusion: The developed HPLC method offers several advantages such as rapidity, usage of simple mobile phase and easy sample preparation steps. Further, improved sensitivity makes it specific and reliable for its intended use. Hence, this method can be applied for the analysis of pure drug and pharmaceutical dosage forms. From the present study it can be concluded that the proposed method is simple, sensitive, precise, specific, accurate and reproducible. Results of validation parameters demonstrated that the analytical procedure is suitable for its intended purpose and meets the criteria defined in ICH Q2R1.

Keywords: Tranexamic Acid, Mefenamic Acid, Simultaneous Estimation, RP- HPLC, Validation etc.

SRCP/AICTE/DDND/PA-12

STABILITY INDICATING METHOD DEVELOPMENT AND VALIDATION FOR ACLIDINIUM AND FORMETEROL IN ROTAHALERS BY RP HPLC

Dr NDVR Saradhi*, Ms. Dushara Mounica.
Santhiram College of Pharmacy, Nandyal, Kurnool. AP. India

ABSTRACT

A simple and sensitive method has been developed for the inhalator rotacaps containing Aclidinium and Formeterol by simultaneous method using RPHPLC. The DIKMA Sprusil C18 4.6*150, 5µ column and 0.1% OPA and Acetonitrile in 30:70 volumes as mobile phase, the sample and standard solutions were prepared in 340 and 12 PPM, 20µl volume injection protruded into the HPLC system arrange a binary pump and PDA detector, the both drugs were identified at 280nm at retention time of 1.965 and 3.826 respectively. The method is validated for system suitability, System Precision, Intermediate precision were found RSD with 2.0. The Accuracy of the spiked blank were assayed between 99.74 and 100.53 respectively for Aclidinium and Formeterol and the Linearity with a correlation coefficient of 0.999 at 85-680 PPM and 3-24 PPM, LOD at 0.10 and 0.16 PPM and LOQ at 0.34 and 0.53 PPM respectively. Robustness and ruggedness were within the limit of ICH guidelines of Q2R1. All the degradation studies conducted and the results lies within the guidelines Limits. Hence the method developed is stable, economical, precise, accurate, and specific for the analysis of Aclidinium and Formeterol in bulk and formulations by RP
– HPLC.

Key Words: Aclidinium, Formeterol, RP – HPLC, Validation, ICH etc.

SRCP/AICTE/DDND/PA-13

NEW HPLC METHOD DEVELOPMENT FOR THE ESTIMATION OF VALBENAZINE USING BULK AND PHARMACEUTICAL DOSAGE FORM

Mr.D.Venkatesh *, M. Swetha.
Santhiram College of Pharmacy, Nandyal, Kurnnol. AP. India.

ABSTRACT

A new precise, accurate, rapid method has been developed for the estimation of Valbenazine pharmaceutical dosage form by HPLC .From results the proposed method is highly sensitive, precise and accurate and it successfully applied for the quantification of API content in the commercial formulations of Valbenazine Educational institutions and Quality control laboratories A simple and selective HPLC method is described for the determination of Valbenazine Chromatographic separation was achieved on a Phenomenex C18 (250×4.6 ×5µ) using mobile phase consisting Acetonitrile : Water : Triethylamine buffer (60: 40: 0.5%) v/v with detection of 264 nm. Linearity was observed in the range 50-150 µg /ml for Valbenazine (r^2 =0.999) for the amount of drugs estimate.

KEY WORDS: Valbenazine, Acetonitrile : Water : Triethylamine buffer (60: 40: 0.5%) v/v.

SRCP/AICTE/DDND/PA-14

ANALYTICAL METHOD DEVELOPMENT AND VALIDATION OF QUETIAPINE FUMARATE IN BULK AND ITS DOSAGE FORM BY USING RP – HPLC

Ms.A.Subhasini *, Mr. Nakka. Prasad.
Santhiram College of Pharmacy,Nandyal, Kurnool. AP. India

ABSTRACT:

RP-HPLC was a simple, precise and reliable technique for the determination of Quetiapine fumarate from marketed bulk tablets. The RP-HPLC analysis was carried out on Hyper chrome ODS-BP 5µm column (4.6mm × 200mm) using a mobile phase 0.1% Orthophoshoric acid and Acetonitrile (80:20v/v) with pH 5.5. Quetiapine fumarate quantify UV detector at 210nm. The retention time of the Quetiapine fumarate was found to be 2.6 min. The linearity of the drug concentration ranges from 20-400µg/ml. The limit of detection and limit of quantification were intended at 3.70µg/ml and 12.35µg/ml. The precision, accuracy, specificity, robustness and degradation studies were validated.

KEY WORDS: Quetiapine fumarate, phase 0.1% Orthophoshoric acid and Acetonitrile (80:20v/v).

SRCP/AICTE/DDND/PA-15

METHOD DEVELOPMENT AND VALIDATION OF STABILITY INDICATING MESALAMIE IN BULK AND ITS PHARMACEUTICAL DOSAGE FORMS BY USING RP-HPLC

Dr. M.Sreenivasulu*, Ms. Yerasi. Niharika.

Santhiram College of Pharmacy, Nandyal, Kurnool, AP, India.

ABSTRACT

Background: It is an anti-inflammatory drug. It is used to treat inflammatory bowel disease such as ulcerative colitis and mild to moderate Crohn's disease.

Objective: To develop a simple, precise, method for the analysis of pure form and pharmaceutical product of Mesalamine.

Method: A new stability indicating method was developed for the determination of validation parameters like System suitability, Specificity, Linearity, Accuracy, Precision, Assay, LOD, LOQ, and Robustness.

Results: The method optimized for its regular analysis by HPLC and the PDA detector set as 210nm. The column dimensions used were chromospheres 4.6X250mm, 5µ particle size, the flow rate maintained at 1ml/min. The mobile phase used was Methanol and ortho - phosphoric acid in the ratio 50:50 v/v. The retention time for the standard and sample were obtained at 2.73 minutes. Linearity range was 2.5µg/mL-15µg/mL and R^2 value was 0.999. The accuracy, precision and robustness results were obtained within the limits as per ICH guidelines. The LOD and LOQ values were obtained 0.2085µg/mL and 0.6951µg/mL. The method was ability towards applied stress conditions.

Conclusion: The method was validated as per the regulatory requirements of ICH under Q2R1 guidelines which satisfy our goal to quench the thirst of Developing newer analytical technique for Mesalamine and method is suitable to use in pharmaceutical industry and academics for its regular estimation in Quality control and research area.

Key words: Mesalamine, anti-inflammatory, Methanol, ortho-phosphoric acid

SRCP/AICTE/DDND/PA-16

STABILITY INDICATING METHOD DEVELOPMENT AND VALIDATION FOR SALBUTAMOL SULPHATE IN PURE AND ITS TABLET DOSAGE FORM BY USING RP-HPLC

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ABSTRACT

Salbutamol sulphate comes under the category of anti- asthmatic and belongs to a class of drugs known as bronchodilators, it is a model short acting ß2- receptor agonist used as a bronchodilator to manage asthma and other chronic obstructive airway diseases, various methods have been reported we have determined Salbutamol by RP-HPLC method.

Objective: Salbutamol was selected to develop a simple, precise, and stability indicating for the determination of Salbutamol Sulphate by RP-HPLC method.

Method: A new stability indicating method was developed for the determination of validation parameters like system suitability, specificity, linearity, accuracy, precision, LOD, LOQ, Robustness, and assay.

Results: In RP-HPLC, for the determination the solvent used is methanol and HPLC water (70:30v/v) .The column used was intersil ODS C_{18} column 250 mm × 4.6 mm× 5µ Shimadzu and detected at 225nm. The retention time was at 2.98 min at the run time of 5 min. The % assay was found to be 99.42%

Conclusion: It was concluded that the developed method and validated RP-HPLC method was seems to be simple, accurate, precise method which can be used for routine analysis of Salbutamol in bulk and dosage formulations.

Key words : Salbutamol, anti- asthmatic, RP-HPLC

SRCP/AICTE/DDND/PA-17

ANALYTICAL METHOD DEVELOPMENT AND VALIDATION OF VALACYCLOVIR HYDROCHLORIDE IN BULK AND TABLET DOSAGE FORM BY RP-HPLC

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ABSTRACT

Valacyclovir was helpful to treat herpes viruses including genital herpes, cold sores and shingles (herpes zoster).A new analytical method was developed for the determination of valacyclovir hydrochloride by HPLC in bulk and tablet dosage forms was developed. The method was optimized by using C18 column and mobile phase Methanol: 0.1% OPA solution (65:35) at a flowrate of 0.8ml/min and the drug was eluted from the column at
2.89 mins. The optimized method detected the drug valacyclovir hydrochloride at 254nm. The method was validated as per the ICH Q2 R1 guidelines and validate method for its system suitability, precision, accuracy, Linearity, specificity, sensitivity, LOD, LOQ and robustness. The study was extended for its stability conditions by subjecting with acid, alkali, peroxide & light degradations. The linearity range was 10µg/ml to 60µg/ml and correlation coefficient r^2 was 0.9992. The method was found to be simple, rapid, accurate and selective can be used for regular analysis.

Key Words: valacyclovir hydrochloride, RP-HPLC, Validation.

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SRCP/AICTE/DDND/PA-18

METHOD DEVELOPMENT AND VALIDATION OF STABILITY INDICATING FEXOFINADINE HYDROCHLORIDE IN BULK AND ITS PHARMACEUTICAL DOSAGE FORMS BY USING RP-HPLC

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ABSTRACT

Background: It is an antihistaminic drug. used to treat seasonal allergic rhinitis including

, nasal drainage. Sneezing, runny nose, itchy, or watery eyes, hey fever and conjunctivitis (red, itchy eye).

Objective: To develop a simple, precise, method for the analysis of pure form and pharmaceutical product of Fexofenadine Hydrochloride.

Method: A new stability indicating method was developed for the determination and validation of Fexofenadine HCl. The validation parameters were studied system suitability, specificity, linearity, accuracy, precision, assay, LOD, LOQ, and robustness.

Results: The method optimized for its regular analysis by HPLC and the PDA detector set at 220 nm, The column dimensions used were chromospheres 4.6X250mm, 5µ particle size , the flow rate maintained at 1.2 mL/min. The mobile phase was used as Methanol and Water (HPLC grade) in the ratio 80:20. The retention time for the standard and sample was obtained at 2.963 minutes. Linearity range was 7.5 µg/mL - 45 µg/mL and R^2 value was 0.999. The accuracy, precision and robustness results were obtained within limits as per ICH guidelines. The LOD and LOQ values were obtained 0.603 µg/mL and 1.829 respectively. The method was shown ability towards applied stress conditions.

Conclusion: The method is validated as per the regulatory requirements of ICH under Q2R1 guidelines which satisfy our goal. Developed newer analytical technique for Fexofenadine hydrochloride and method is suitable to use in pharmaceutical industry and academics for its regular estimation in Quality control and research area.

Key words: Fexofenadine Hydrochloride, antihistamine, Methanol, Water

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SRCP/AICTE/DDND/PA-19

STABILITY INDICATING METHOD DEVELOPMENT AND VALIDATION FOR BILASTINE IN PURE AND PHARMACEUTICAL DOSAGE FORM USING RP-HPLC

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ABSTRACT

A simple, precise, rapid and reproducible method has been developed for the estimation of bilastine in API and pharmaceutical dosage form using RP-HPLC. The proposed method was developed using the mobile phase methanol:KH2PO4 buffer (pH 6.0) in the ratio of 70:30 v/v. The pH of the buffer was adjusted to 6.0 using KOH solution. The developed method was optimized on binary mode in shimadzu C18 column setting the flow rate at 1.2ml/min. The retention time of bilastine was found to be 5.126min with suitable number of theoretical plates and asymmetric factor. The optimized method was validated for accuracy, precision, robustness, and assay. More specially, the stability studies were also performed to the tablet dosage form. The proposed method was validated as per the ICH Q2R1 guidelines. The linearity was found to be in the range of 1.25µg/ml-10µg/ml. The correlation coefficient was found to be within the limits i.e., R^2= 0.999. The accuracy of the current method was being performed using the % recovery at three stages 50%, 100%, and 150% and was found to be 99.5126%, 100.2765% and 99.6714% respectively. The LOD and LOQ of the bilastine was found to be 0.292 µg/ml and 0.974µg/ml. The results of each validation parameters were found within the limits with no significant variations. Based upon the above results, the method is considered as simple, precise, rapid, and reproducible for the estimation of bilastine in API and pharmaceutical dosage form.

Key words: Bilastine, KH2PO4, HPLC, and validation parameters.

SRCP/AICTE/DDND/PA-20

STABILITY INDICATING METHOD DEVELOPMENT AND VALIDATION OF TEZACAFTOR AND IVACAFTOR IN THE API AND COMBINED DOSAGE FORMULATION BY RP-HPLC.

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ABSTRACT:

A simple and sensitive method development and validation of Tezacaftor and Ivacaftor was achieved using an X terra C18 column having 250*4.6 and 5 µ particles. The mobile phase employed is a mixture of 0.1% OPA and Methanol in 20:80 ratios. The mobile phase flowed through the column at 1 ml/min. the Tezacaftor and Ivacaftor standard and sample solutions are prepared in 150 and 225 ppm concentration and injected into the column and the retention were obtained at 2.03 and 2.529 min respectively for tezacaftor and ivacaftor. The method is validated as per the ICH for its system suitability, precision, accuracy, linearity, LOD, LOQ and Robustness and the entire results lie within the limit of ICH Q2R1 guidelines. The coefficient correlation for both 0.999 and the range is 50 – 150 ppm and 75 – 450 ppm for both drugs respectively. The LOD and LOQ S/N ratios found in less than 3 and 10. The robustness is by changing the flow rate change and an organic phase portion change in the mobile phase does not affect the method significantly. Finally the degradation studies conducted for its acid, alkali, light, thermal and oxidations and the product does not degrade not less than 10% as per guidelines.

Key words: Tezacaftor, Ivacaftor, OPA, Methanol.

SRCP/AICTE/DDND/PA-21

Method development and validation of rosuvastatin by using UV-Spectrophotometer

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ABSTRACT:

A simple, sensitive and selective UV method was developed and validated for the estimation of rosuvastatin. The method was developed on UV spectrometry, λmax was attained at 243 nm and optimized concentration was 8µg and absorbance was

0.432. The assay method was validated and linearity range was 0.995 µg -1.0 µg. The

% RSD of precision and accuracy was found to be <2. The %RSD of recovery studies were found to be in between 98-102%. Different stability studies were performed on the method Lod, Loq, Robustness. Limits of Lod and Loq <10. Limits of % assay of robustness was found to be 98-102%. The method was proved as stable towards all stability studies. Degradation studies were carried out in different condition acid, base. The limit of % assay was found to be 98-102%, % degradation was <10. The method was used for the routine analysis of rosuvastatin by using UV-Spectrophotometry. The LOD, LOQ, values were found to be, 0.034µg/ml, 0.089µg/ml.

Keywords: UV-Visible spectroscopy, Rosuvastatin, Stability studies, Degradation studies.

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PHARMACEUTICS ABSTRACTS

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SRCP/AICTE/DDND/PC-34

Formulation and Evaluation of Anti- Psoriatic activity of Semisolid dosage form containing *Nigella sativa* oil and crude extract of *Camellia sinensis*

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ABSTRACT:

Psoriasis was excess skin growth and inflammation through the result of interactions between the innate and adaptive immune systems. Topical and transdermal drug delivery systems offer several advantages over oral drug delivery systems these delivery systems include patch, gel, cream, ointment and lotion to treat psoriasis. The aim of this study was to develop anti psoriatic gel formulation containing *Nigella sativa* and *Camellia sinensis* for local and systemic delivery from transdermal route. There is a need to increase bioavailability, to reduce its dosing frequency, and achieve sustain release effect. *Camellia sinensis* leaves is extracted by using methanol as a solvent under reduce pressure and *Nigella sativa* oil obtained from seeds by the machine uses friction and continuous pressure, which contains a phyto-chemical constituents i.e., flavonols like myricetin, quercetin, kaempferol, linolenic acid, palmitic acid which helps to treat psoriasis from the literature review. The pre-formulation studies of drug and excipients interactions were carried out by pre-formulation techniques which showed no interactions. Different formulations of anti-psoriatic gels were prepared by using Carbopol 934p as gelling polymer and formulations we processed different steps for evaluation of formulated gels like Appearance, Homogenecity pH, Viscosity, Stability, Drug content, Skin irritation studies, *In-vitro* and I*n-vivo* drug diffusion studies and Spreadability, all results showed limited range only and research provided much better diffusion levels of drug for a prolonged period of time as well as significant anti-psoriatic activity in animal model.

Keywords: Psoriasis, Carbopol, *Camellia sinensis, Nigella sativa.*

SRCP/AICTE/DDND/PC-35

Development and evaluation of hard medicated lollipops with Ondansetron Hcl

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ABSTRACT:

The administration of drugs through oral route is the most common and the easiest way of administering a drug. However, paediatric, geriatric and bed ridden patient shows inconvenience swallowing conventional tablets or capsules due to difficulties in swallowing with lesser amounts of water with the medication, unable to tolerate the taste of many drugs when formulated as liquid dosage forms, resulting in poor patient compliance. Ondansetron hydrochloride is the hydrochloride salt of the racemic form of a Ondansetron carbazole derivative. It is a selective competitive serotonin 5-hydroxytryptamine type 3 (5-HT3) receptor antagonists with antiemetic activity. A lthough its mechanism of action has not been fully characterized, Ondansetron appears to competitive block the action of serotonin at 5HT3 receptor peripherally. In the gastrointestinal tract as well as centrally in the area postrema of the CNS, Where the chemo receptors trigger zone (CTZ) for the vomiting is located , resulting in the suppression of chemotherapy and radiotherapy-induced nausea and vomiting. Ondansetron is a serotonin antagonist, meaning its mechanism of action is blocking the serotonin receptor in the CTZ .this reduces the communication to the vomiting center in the brain and decreases the nausea and vomiting the patient experiences. Long term stability studies can be perform to assure quality of Ondansetron hydrochloride medicated lollipops. Clinical studies can be conducted for the approved batches

KEYWORDS: Ondansetron, 5-hydroxytryptamine, carbazole derivative

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SRCP/AICTE/DDND/PC-36

Formulation and Evaluation of Colon Targeted Drug Delivery System of Diloxanide Furoate Tablets

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ABSTRACT:

Diloxanide Furoate is a Dichloroacetamide derivative utilized for the treatment of various protozoal infections like amoebiasis. Colon targeted tablets were designed using pH sensitive polymers like Eudragit S100, Eudragit L 100,Cellulose acetate phthallate and Microbial degradation polymers like Guar gum,karaya gum , Xanthan gum at different concentrations. A comparison was done among them to prvent the prematurre drug release in the GI tract, the matrix formulation further taken for compression to test the suitabilityfor targeted drug delivery to the colon. All the matrix , compression coated formulations showed the desired physicochemical properties as per the official limits. The drug release studies were performed according to the USP paddle method by using 0.1N HCL for 2 hours, pH 7.4 phosphate buffer for 3 hours and pH 6.8 phosphate buffer upto 12 hours. A better controlled drug release was shown for Eudragit L 100 and Xanthan gum formulation. Based on the comparative drug release study amog two types of polymers the result showed Eudragit L 100 showed good dissolution profile to control the drug release . The release kinetics of the formulations was calculated indicated that the formulation followed zero order kinetics and the diffusion exponent value is > 1 indicating that it follows super case II transport mechanism

Key words :

Diloxanide Furoate,Amoebiasis,Diffusion Exponent,Supercase II transport mechanism.

SRCP/AICTE/DDND/PC-37

Formulation and Evaluation of Pulsatile Drug Delivery System of Tolterodine Core in Cup Tablets

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ABSTRACT:

Pulsatile Drug delivery system, the drug delivery based on circadian rhythm is recently gaining much attention worldwide. Keeping an objective Tolterodine Tartarate Pulsatile core-in-cup tablet was designed to deliver a rapid or transient and quantified drug after a predetermined lag period. Tolterodine Tartarate core tablet was prepared by direct compression method and is used to prepare a set of core-in-cup tablets with Swellable and Rupturable polymers like Pectin, Locust bean gum and HPMCK15M respectively with different proportions with impermeable cup ethyl cellulose. Tablets were evaluated for Precompression, Post compression and *in vitro* dissolution studies. The drug polymer interaction was studied by FTIR. The Precompression data of core/core-in-cup tablet were within the acceptable limit and they can be compressed directly into tablets. The hardness, friability and uniformity in weight and disintegration time results were in accordance with the standard limit. The lag time is dependent on rupturing property of Ethyl cellulose and swelling property polymers. In the Optimized formulation the best fit model was found to be Korsmeyer peppas with exponential 'n' value is > 1 indicates the drug release follows super case II transport mechanism. The initial burst release was observed after lag time and drug release was extended up to 11hrs for the optimized formulation. The *in vitro* drug release studies suggest that core-in-cup tablet prepared with ethyl cellulose and HPMC K 15 M shows a lag time of 4 hrs due to more swelling and delayed rupturing properties of HPMC K15M and ethyl cellulose.

KEYWORDS: Pulsatile Drug Delivery, Core-in Cup, Tolterodine Tartarate, Swellable and Rupturable Polymers.

SRCP/AICTE/DDND/PC-38

FORMULATION AND EVALUATION OF SUSTAINED RELEASE MESALAMINE TABLETS

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ABSTRACT:

Sustained drug delivery (SDD) occurs when a polymer, whether natural or synthetic, is judiciously combined with a drug or other active agent in such a way that the active agent is released from the material in a predesigned manner. The release of active agent may be constant over a long period, it may be cyclic over a long period, or it may be triggered by the environment or other external events. The goal of many of the original sustained release systems was to achieve a delivery profile that would yield a high blood level of the drug over a long period of time. The development of sustained release formulation offers benefits like controlled administration of therapeutic dose at the delivery rate, constant blood levels of the drug, reduction of side effects minimizations of dosing frequency and enhancement of patient compliance. An anti-inflammatory agent, structurally related to the salicylates and non-steroidal anti-inflammatory drugs like acetylsalicylic acid, which is active in inflammatory bowel disease. It is considered to be the active moiety of sulphasalazine. Mesalamine is a white to pinkish powder compound with a molecular formula of $C_7H_7NO_3$ and a molecular weight of 153.137 $g.mol^{-1}$ .By studying all the experimental results of the prepared tablets it was concluded that Anti-inflammatory drug like Mesalamine is successfully formulated by dry granulation method using HPMC K4M and Sodium Alginate polymers.

KEY WORDS: Sustained release tablets, Mesalamine, anti inflammatory agent.

SRCP/AICTE/DDND/PC-39

FORMULATION AND EVALUATION OF DICLOFENAC SODIUM DRUG LOADED MICROSPHERES

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ABSTRACT:

Controlled drug delivery technology is concerned with systemic release of pharmaceutical agent to maintain a therapeutic level of drug in the body for a sustained period of time. Various approaches are used to develop controlled drug delivery systems. One such approach is using microspheres as carriers for drugs. There are many methods for preparation of microspheres among them ionotropic gelation method is one.

The aim of the present work was formulation and evaluation of microspheres by using ionotropic gelation method using different polymers at different concentrations.

Diclofenac sodium microspheres were prepared by dropping the drug containing the solution into sodium alginate. The droplets were formed by the ionotropic gelation technique. The microspheres were characterized by their particle size, % yield, morphology, swelling index, encapsulation efficiency, and in-vitro drug release. The release of drug from microspheres was greatly affected by drug concentration, polymer concentration, CaCl2 concentration, stirring time, and stirring speed.

The ionotropic gelation technique can be carried out under very mild conditions using simple equipments.

KEYWORDS: Controlled drug delivery system, Microspheres, Ionotropic gelation technique, Diclofenac sodium, polymer.

SRCP/AICTE/DDND/PC-40

FORMULATION AND EVALUATION OF CARBAMAZEPINE FAST DISSLOVING TABLETS BY USING SUPER DISINTEGRANTS

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ABSTRACT

The aim of this study was to improve the dissolution profile there by increase solubility from the results obtain from executed experiments it can be the Preformulation studies like angle of repose, carr's index, Hauser's ratio, bulk density, tapped density of carbamazepine had showed the better result compared to other formulations. The compatibility studies by FTIR showed that the drug carbamazepine with excipients like crospovidone, croscarmellose sodium and sodium starch glycolate do not interact in forming any other chemical entity. The peaks obtained in each combination of drug and super disintegrants are similar to the peaks of the drug's spectrum. Therefore, it indicated that there is no incompatibility between drug and excipients.. Among all the prepared formulations, showed the better drug release of 92% hence it can be stated that F6 is having satisfactory results. In-vitro drug release and disintegration compacts of F6 showed increase in dissolution rate and better disintegration time. From the results it was clearly understood that as the concentration of super disintegrant (croscarmellose sodium) increases to certain extent the release rate of drug was also rapid (improved solubility). On the basis of evaluating parameters, the optimized formulation may be used for effective management of Epilepsy, convulsions. This may improve the patient compliance by showing rapid action via disintegration without difficult in swallowing and side effects which will ultimately improve the therapeutic outcome.

Key words: carbamazepine, crospovidone

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SRCP/AICTE/DDND/PC-41

Formulation and Evaluation of Olsalazine Micro sponge Tablets

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ABSTRACT:

Olsalazine is an aminosalicylic acid derivative used for the treatment of ulcerative colitis. Olsalazine was loaded in microsponges to enhance its stability and reduction of drug dose. These microsponges were prepared by Quasi emulsion solvent diffusion method and Oil-Oil emulsion solvent diffusion method respectively. Evaluation parameters for microsponges prepared by both the methods were conducted. precompression parameters were conducted for blends prepared by two methods. Colon targeted tablets were designed using Microbial degradation polymers like Inulin, Locust bean gum and chitosan at different concentrations. Post compression parametres were conducted for all tablets prepared by two methods. All the formulations showed the desired physicochemical properties as per the official limits. The drug release studies were performed for all formulations prepared by two methods according to the USP paddle method by using 0.1N HCL for 2 hrs, pH 7.4 phosphate buffer for 3 hrs and pH 6.8 phosphate buffer upto 11 hrs.Among all formulations prepared by two methods A better controlled drug release of 98.56% was shown for OF3 using Inulin as polymer. Comparative drug release studies were conducted for OF3 and Marketed formulation. OF3 showed better Drug release of 98.56% compared to Marketed formulation(90.13%).Kinetic studies were conducted for Optimized formulation OF3 for Drug release mechanism.

The release kinetics of the Optimized formulation (OF3) indicated that the formulation followed zero order kinetics and the diffusion exponent 'n' value is 0.808 indicating that it follows Non fickian type of mechanism.

Key words : Olsalazine, Ulcerative colitis, Diffusion Exponent, Non fickian mechanism.

PHARMACOGNOSY-ABSTRACTS

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SRCP/AICTE/DDND/PCG-11

FORMULATION AND EVALUATION OF POLYHERBAL BUCCAL PATCHES FOR CANKER SORE (MOUTH ULCER)

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Abstract:

The oral route is the most preferred route of drug delivery as it is convenient, inexpensive, and versatile. However, drug delivery by this route has certain disadvantages such as first-pass metabolism by the liver and gastrointestinal enzymatic degradation of the drug. Therefore, other transmucosal routes such as nasal, rectal, vaginal, ocular, and oral mucosa are being considered as alternatives to conventional oral dosage forms for drug delivery to avoid the above disadvantages associated with conventional oral delivery (i.e., tablets, capsules, syrups, etc.). Of these routes of delivery, the buccal oral mucosa has emerged as one of the target sites for administration of drugs in a wide variety of dosage forms, particularly for those drugs targeted for local delivery in the oral cavity and systemicabsorption. Drug consists of the dried roots of Glycyrrhiza gtabraLinn. (syn. Liquiritae officinalis Moench.), Fam. Fabaceae. The plant is cultivated in Punjab and sub-Himalayantracts. Triterpenoid saponin glycyrrhizin (2-9 %), a mixture of potassium and calcium salts of glycyrrhizinic acid. Include other triterpenoid sapononsviz.,glabranin A&B, Glycerrhetol, glabrolide, iso- glabrolide;viz., formononetin, glabrone, neoliquiritin, hispaglabridin A&B; coumarins viz., herniarin, umbelliferone; triterpene sterols viz., onocerin, β- amyrin, stigmasterol. The drug possesses potent demulcent, expectorant, and anti-inflammatory properties and these are attributed to the presence of glycyrrhizin. The selected formulation of gel and patch is to evaluate for antimicrobial activity against various gram positive and gram negitive bacteria. the plain gel and patch without the herbal extracts to shown any zone of inhibition .The formulations shows the significant antimicrobial activity against various bacteria and which would be benificial in the Mouth ulcer.

Key words: Glycyrrhiza gtabraLinn, Triterpenoid saponin glycyrrhizin, neoliquiritin

SRCP/AICTE/DDND/PCG-12

Formulation and Evaluation of Aqueous Gel powdered Guava leaves for Mouth ulcer Treatment

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ABSRACT:

A mouth ulcer (also termed an oral ulcer, or a mucosal ulcer) is an ulcer that occurs on the mucous membrane of the oral cavity [1,2]. They are painful round or oval sores that form in the mouth, mainly on the inside of the cheeks or lips. The biological source of Guava is *Psidium guajava*. It belongs to family Myrtaceae. Guava leaves contain both carotenoids and polyphenols like (+)-gallocatechin and leuco cyanidin. As some of these phyto chemicals produce the fruit skin and flesh color, guavas that are red-orange tend to have more polyphenol and carotenoid content than yellow-green ones. The work was concerned with the formulation and evaluation of pharmaceutical aqueous gel of powdered guava leaves for mouth ulcer treatment. FTIR was used to identify the characteristic functional group in the crude Guava leaves powder. Most important of these bioactive constituents of plants are steroids, terpenoids, flavanoids, alkaloids, tannins, saponin sand glycosides. Phytochemicals are used as templates for lead optimization programs, which are intended to make safe and efective drugs. The following procedures were adopted to test for the presence of various chemical constituents in extract. Developed gel formulations are suitable for mouth ulcer treatment. Natural remedies are more acceptable in the belief that they are safer with fewer side effects than the synthetic ones. Herbal formulations have growing demand in the world market.

Key words: Carotenoid, Terpenoids, gallocatechin, leuco cyanidin

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PHARMACOLOGY AND PHARMACY PRACTICE-ABSTRACTS

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SRCP/AICTE/DDND/PCOL-27

Nootropic and anti amnesic effect of *Dolichouspurpureus* aluminum chloride induced memory impairments in wrister rats

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ABSTRACT:

The plant *Dolichos purpureus* is a traditional medicine with tremendous therapeutic potential which finds it use in treatment of various ailments such as antibacterial, antioxidant, anti-inflammatory, antidiabetic, and anticancer activities. There are no reports that related to the use of this plant in treating patients with AD. Hence present study was aimed to scientifically evaluate the neuroprotective activity of the ethanolic extract of *Dolichos purpureus* seeds against aluminum chloride induced alzheimer's disease in experimental rats using three behavioural tests, elevated plus maze and Morris water-maze tests. In addition to this, biochemical evaluation for acetylcholinesterase activity and histopathological evaluation of brain were done.The results suggests that *Dolichos purpureus* (200mg/kg & 400mg/kg B.wt) extract used in this study shows significant improvement of various behavioral parameters like Reference, working memory errors, transfer latency and escape latency etc when compared to control group. EEDPS inhibited brain AChE enzyme, thereby elevating Ach concentration in brain homogenate and ultimately improved memory of rats. Further, more or less normal histological structure of the hippocampus and all amyloid plaques and neuro fibrillary tangles that are formed under the influence of aluminum chloride disappeared in the rats treated with EEDPS (200 & 400mg/kg). It can be concluded that our results strongly support the anti-amnesic potential of the ethanolic extract of the plant *Dolichos purpureus* and its use in traditional medicine.

Keywords: *Dolichos purpureus*, aluminum chloride, ethanolic extract, amnesia

SRCP/AICTE/DDND/PCOL-28

Nootropic and Anti-Amnesic effect of *cordia myxa* on aluminium chloride induced memory impairments in wrister rats

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ABSTRACT:

Aluminium (Al) is an important element which produces toxicity in the human system. Patients on dialysis or on long-term treatment with total parenteral nutrition have been shown to accumulate this metal in different organs. Increased amounts of aluminium have been reported in brain of subjects suffering from AD and having toxicological effects include encephalopathy, bone disease and anaemia. The neurotoxic oxidative damage of aluminum Chlorides (AlCl3) on brain of male albino rats exposed to the AlCl3 metal (1600 mg/L) were studied by Manal *et al.*, (2010). The data revealed a significant increase in acetylcholinesterase (AchE) activity and malondialdehyde content (MDA) while the enzymatic antioxidant activities as glutathione-s-transferase (GST), glutathione peroxides (GPX) and glutathione reductase (GR) were significantly decreased with marked histopathological changes as focal and diffuse gliosis with pericellular edema in cerebral cortex in addition to neurophagia and neuronal degeneration in aluminium treated group. Finally, Al is a possible contributing factor in AD82,83. In aluminium chloride induced alzheimer's the EECML shows a significant protection against the alzheimer's disease that is confirm by observing the various neurobehavioural parameters, AChE activity and histopathological analysis.

Key words: Aluminum Chloride, acetylcholinesterase.