ISSN **0975-4393 (Print)**
2349-2988 (Online)
DOI:

Vol. 13| Issue-02|
April - June| 2021

Available online at
www.anvpublication.org

Research Journal of Science and Technology
Home page *www.rjstonline.com*

REVIEW ARTICLE

A Review on Analytical Methods for estimation of Apremelast in Bulk, Pharmaceutical Formulation and in Biological Samples

Akash Shelke*, Someshwar Mankar, Mahesh Kolhe
Department Of Quality Assurance Techniques, Prvara Rural College Of Pharmacy,
Pravaranagar, Tal- Rahta, Dist- Ahmednagar 413736, India
*Corresponding Author E-mail: **shelkeakash2014@gmail.com**

ABSTRACT:
Apremilast is approved by USFDA in 2014.It is used in treatment of psoriatic arthritis and other conditions like atopic dermatitis and plaque psoriasis.It is act as an anti-inflammatory agent. It is phthalimide derivative and belongs to class 4 category of BCS system.It is a phosphodiesterase-4 (PDE-4) inhibitor. Analytical methods plays an important role to describe physico- chemical properties of drug.Due to low solubility and low permeability analytical method development and formulation becomes challenging. Till date, there are no standard test methods available to analyze Apremilast. So, a review of the analytical methods for apremilast is carried out. Here we discussed latest analytical methods for estimation of apremilast in bulk, Pharmaceuticals dosage form and in biological samples.In that we study methods like HPLC, UV-Visible spectroscopy, HPTLC, UPLC and mostly used hyphenated technique LC-MS.This review will be helpful for the researcher who is working on apremilast.

KEYWORDS: Apremilast, HPLC, PDE-4, LC-MS etc.

INTRODUCTION:
Apremilast is chemically named as *N*-[2-[(1*S*)-1-(3-ethoxy-4-methoxyphenyl) -2-(methylsulfonyl)ethyl]-1,3-dioxo-2,3-dihydro-1*H*-isoindol-4-yl]acetamide. It has an empirical formula of C22H24N2O7S, and a molecular weight of 460.5 g mole−1.[1] FDA approval for this molecule was received on 21 March 2014 in the USA toward the first-line treatment of psoriatic arthritis. OtezlaVR, an oral preparation is marketed by Celgene Corporation. Apremilast tablets are manufactured and marketed in various doses—10 mg, 20 mg and 30 mg.[2,3,4] In the year 2017, the Drug Controller General of India also approved Apremilast for marketing in India.[5]

It is soluble in many organic solvents such as acetonitrile and DMSO, but insoluble in aqueous media. It is utilized for the healing of certain types of Psoriasis and Psonatic arthritis.[6] It may also be utilized for other immune system associated inflammatory diseases. APR is a selective inhibitor of the enzyme phosphodiesterase 4 and stops spontaneous production of TNF-alpha from human rheumatoid synovial cells is taken by mouth.[7,8] Patent EP2276483 B1 demonstrates a number of polymorphic forms of Apremilast, i.e., Forms A, B, C, D, E,F and G. Patent EP3455209A1 describes the preparation method for various crystalline (solid) forms of Apremilast i.e., Form-M, Form-N, Form-O and Form-P, Crystallineform II.[9,10] Apremilast is a phthalimide derivative. It is a white to pale yellow, non-hygroscopic powder that is practically insoluble in water and buffer solutions in a wide pH range, but is soluble in lipophilic solvents such as acetone, acetonitrile, butanone, dichloromethane, and tetrahydrofuran.[11]

ISSN **0975-4393 (Print)**
2349-2988 (Online)
DOI:

Vol. 13| Issue-02|
April - June| 2021

Available online at
www.anvpublication.org

Research Journal of Science and Technology
Home page *www.rjstonline.com*

REVIEW ARTICLE

Therapeutic potential of hibiscusrosa sinensis- A review

Mohini Shelke*, Shraddha Parjane, S.D Mankar, Dr.S.S.Siddheshwar
Pravara Rural College of Pharmacy, Pravaranagar A/P Loni-413736, Tal-Rahata, Dist-Ahmednagar (M.S)
*Corresponding Author E-mail: **sdmankar655@gmail.com**

ABSTRACT:
Hibiscus sinensis is an annual/Perennial plant belongs to Malvaceae family commonly referred to as "roselle" famous for its medicinal value found world wide and native to West and East Africa, South-East Asia, Northeastern India. Roselle is cultivated in humid and warm climate. The plant consist phytoconstituents like malic, citric, tartaric, allo-hydroxycitric acid also reach in vitamin C, Vitamin A.Roselle is popular for it's therapeutic and nutritional value. Seeds, leaves, fruits and roots are utilized in herbal medicine for hair growth treatment. The Roselle, having various medically important compounds called photochemical, is documented for its nutritional and medicinal properties. Many parts of Roselle including seeds, leaves, fruits and roots are utilized in various foods also as in herbal medicine as a possible non-pharmacological treatment. In the treatment of various medical conditions, including several cardiovascular diseases, helmentic disease and cancer, different extracts from Roselle play an important role. Phytochemical research has reported that flavonoids, tannins, terpenoids, saponins, and alkaloids are the most bioactive compounds responsible for their medicinal effects. Experiments from recent studies have shown that different types of extracts from all Hibiscus. The components of rosa sinensis showed a good range of beneficial effects, such as hypotensive, anti-pyritic, anti-inflammatory, anti-cancer, antioxidant, anti-bacterial, anti-diabetic, wound healing, and abortifacient activities. Hibiscus rosa sinensis has been utilized in many herbal mix and drinks. This review plan to highlight the therapeutic application of Hibiscus rosa sinensis.

KEYWORDS: Hibiscus sinensis, Malvaceae, hypotensive

INTRODUCTION:
Roselle Description Hibiscus has 300 species distributed around the world in tropical andsubtropical regions and is used as ornamental plants. Studies have shown that certain Hibiscus species have some medicinal properties, of which roselle is one. Usually, Hibiscus sinensis is known as "red sorrel" or "roselle. “Even though permeable soil is that the best, Roselle can adapt to a spread of soil during a warmer and more humid climate.[1]A part of the Malvaceae family, Hibiscus sinensis is a well-known medicinal plant with a worldwide reputation. In most warm countries, such as India, Saudi Arabia, Malaysia, Indonesia, Thailand, the Philippines, Vietnam, Sudan, Egypt and Mexico, the plant is also found.[2,3] Roselle is especially cultivated to be consumed and therefore the main producers of Roselle blossoms are Egypt, Sudan, Mexico, Thailand and China. Other hibiscus varieties are planted for his or her fibers they produce. Hibiscus is belongs to the Malvaceae family, and its scientific name is China rose. it's an evergreen which is approximately 150-270 cm tall . It’s strong branches and trunk; the leaves are dark green, shiny, smooth, and oval-shaped. [(3, 4)] This plant doesn't bear any fruit. Flowers are found in various shades e.g. red, white, yellow, and orange. Red hibiscus flowers are quite common and widely used for medicinal purposes. This drink is usually consumed iced, and is usually sweetened. it's a sour flavor and bears some resemblance to fruit juices. Although the dried tea seems like it's made up of petals, it's actually made up of the sepals (calyces), the tiny structures at the bottom of the flower. Many species of hibiscus are grown ornamentally, but the species roselle (also referred to as roselle) is that the commonest one utilized in herbal teas. China rose, or China rose, is additionally

ISSN **0975-4393 (Print)**
2349-2988 (Online)
DOI:

Vol. 13| Issue-02|
April - June| 2021

Available online at
www.anvpublication.org

Research Journal of Science and Technology
Home page *www.rjstonline.com*

REVIEW ARTICLE

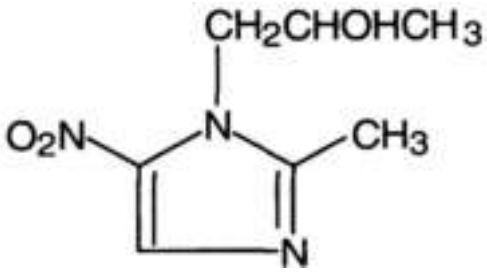
Development and validation of RP-HPLC method for estimation of Secnidazole in API and Pharmaceutical Dosage Form

Akash Shelke*, Someshwar Mankar, Mahesh Kolhe
Department Of Quality Assurance Techniques, Prvara Rural College Of Pharmacy,
Pravaranagar, Tal- Rahta, Dist- Ahmednagar 413736, India
*Corresponding Author E-mail: **Shelkeakash2014@gmail.com**

ABSTRACT:
Objective of the present work is to develop and validate a simple, cost effective, sensitive and fast HPLC method for the analysis of Secnidazole. A Merck-Hitachi HPLC system with Peerless Basic C18 (50mm x 4.6mm x 3µm) column is employed for the analysis using buffer: methanol (80:20, v/v) as mobile phase. Signal from Secnidazole is detected at 310nm by UV Spectrophotometer. The proposed method is fully validated and found to be linear over a workable drug concentration, accurate, precise and robust. This fast and inexpensive method is suitable for research laboratories as well as for quality control analysis in pharmaceutical industries.

KEYWORDS: Secnidazole, HPLC, 5-Nitroimidazole, methanol.

INTRODUCTION:
Secnidazole is a next-generation 5-nitroimidazole antimicrobial agent. It isapproved for used in Europe, Asia, South America and Africa. Recently in the USA as a single-dose (2 gm) treatment of bacterial vaginosis (BV). (1) Bacterial vaginosis (BV) is one of the common vaginal infections among women. Bacterial vaginosis (BV) is one of the common causes of abnormal vaginal discharge which enhances the acquisition and transmission of a range of sexually transmitted infections.The usual treatment for BV is metronidazole; hence 30% of women have recurrence within 60 to 90 days after treatment. There are some studies which assessed the effect of secnidazole on BV. (2, 3)
It is have structural similarity with other 5-nitroimidazoles, but displays improved oral absorption and prolong elimination half-life than antimicrobial agents in this class. It is useful against many anaerobic Gram-positive and Gram-negative bacteria and protozoa. In September 2017, FDA granted approval to secnidazole under the market name Solosec as a single-dose oral treatment for BV. The antimicrobial therapy is only intended to treat or prevent infections that are proven or strongly suspected to be caused by susceptible bacteria. (4)



SECNIDAZOLE

ISSN **0975-4393 (Print)**
2349-2988 (Online)
DOI:

Vol. 13| Issue-02|
April - June| 2021

Available online at
www.anvpublication.org

Research Journal of Science and Technology
Home page *www.rjstonline.com*

REVIEW ARTICLE

Review on Analytical Methods for Estimation of Vildagliptin in Bulk and Pharmaceuctical Dosage form.

Vaishnavi Aher, S. D. Mankar, G.S. Shinde
Department of Quality Assurance Technique, Pravara Rural College Of Pharmacy,
Pravaranagar, Tal: Rahata, dist: Ahmednagar 413736, India.
*Corresponding Author E-mail: **vaishnaviaher44 Hgmail.com**

ABSTRACT:
vildagliptin is approved by usfda in 2007. Vildagliptin s- l-[n-(3-hydroxy-1-adamantyl) glycyl] pyrrolidine-2-carbonitrile is associate degree oral anti-hyperglycaemic agent (anti-diabetic drug) of the new dipeptidyl peptidase-4 (dpp-4) substance category of medicine. The present work categorical the new easy, accurate, precise analytical methodology for the determination of vildagliptin in bulk and pharmaceutical indefinite quantity kind. Analytical techniques play a decisive role by providing solutions like improvement. This paper could be a review and classification of the various analytical techniques that are the foremost widely-used in determination common provision issues .pharmaceutical analysis plays an awfully outstanding conspicuous role in quality assurance similarly as internal control of bulk medication and pharmaceutical formulations. Fast increase in pharmaceutical industries and production of drug in numerous components of the globe has brought an increase in demand for brand new analytical techniques within the pharmaceutical industries. As a consequence, analytical methodology development has become the essential activity of study. Recent development in analytical ways has been resulted from the advancement of analytical instruments.

KEYWORDS: Introduction of Vildagliptin, Pharmaology, Pharmacokinetics, Analytical Methods.

INTRODUCTION:
Vildagliptin is associate degree oral anti-diabetic drug, potent dipeptide proteolytic enzyme IV (DPP-IV) matter for the treatment of diabetes [1, 2]. it's with chemicals [5]-1- 2-(3- Hydroxyadamantan- l-ylamino) acetylj pyrrolidine- 2-carbonitrile.[3] DPP-IV inhibitors represent a brand new category of oral anti -hyperglycaemic agents to treat patients with type-2 diabetes [4].DPP-IV inhibitor improves abstinence and postprandial glycaemic management while not hypoglycaemia or weight gain. Vildagliptin inhibits the inactivation of GLP-1 and GIP by DPP-IV, permitting GLP-I and GIP to heighten the secretion of hormone within the beta cells and suppress endocrine unleash by the alpha cells of the islets of Langerhans within the pancreas [5, 6]. Literature survey disclosed that few analytical ways square measure used for estimation of Vildagliptin however there's no analytical methodology for the determination of Vildagliptin from its pharmaceutical dose type. because of lack of revealed liquid natural process ways for VDG, therefore the aim of this work was to develop a reversed-phase liquid natural process (RP-LC) methodology that may be appropriate for the determination of VDG from its pharmaceutical dose type. The projected methodology iseasy, accurate, duplicatable and appropriate for routine determination of Vildagliptin from its pharmaceutical dose type. [7,8].

DEVELOPMENT AND VALIDATION OF SIMULTANEOUS ESTIMATION OF FIMASARTAN AND CHLORTHALIDONE BY RP-HPLC

Akshay S. Kasabe*, Prof. H.S Bhawar[1] and Prof. S.D. Magar[2]

Department of Pharmaceutical Chemistry, Pravara Rural College Of Pharmacy, Pravaranagar, Tal- Rahata Dist- Ahmednagar

ABSTRACT:

Aim: The purpose of this study to developed a novel, validate and simple method for the estimation of Chlorthalidone and Fimasartan potassium trihydrate in pharmaceutical dosage form by RP-HPLC method. As now only one method has been reported for this method. The Chlorthalidone and Fimasartan this are use as anti-hypertensive agent

Method: The Chromatographic separation performed by RP-HPLC on column Zodiac C18, (150mm x4.6 mm ID, particle size 5µm) using Methanol: Phosphate buffer pH 3.0 (70: 30% v/v) as a mobile phase with flow rate 1.5ml /minute. Detection is carried out by UV detector at 230 nm wavelength. Individual wavelength of Chlorthalidone and Fimasartan is 230nm and 240 nm respectively.

Results: Validation parameter performed accuracy, precision, linearity, ruggedness, robustness, LOD, LOQ all are found within range. The retention time was found to be 2.3 min and 5.2 min for Chrorthalidone and Fimasartan potassium trihydrate respectively. In linearity study value of correlation coefficient was found to be 0.999 and 1 for Chrorthalidone and Fimasartan potassium trihydrate respectively

Conclusion: A simple, accurate, specific, precise and robust, gradient RP-HPLC method was developed for the simultaneous estimation of fimasartan and chlorthalidone in bulk drug and tablet dosage form. The method was validated according to ICH Q2 (R1) guidelines, in which results of validation were found within the specified limits. Hence, on basis of obtained results, it can be conclude that, the proposed method can be used for routine laboratory analysis.

KEYWORDS: Chlorthalidone, Fimasartan, RP-HPLC, Precise & Estimation

ISSN 2231–5667 (Print)
2231–5675 (Online)
DOI: 10.52711/2231-5675.2021.00039

Vol. 11 | Issue-03|
July - September |2021

Available online at
www.anvpublication.org
www.asianpharmaonline.org

Asian Journal of Pharmaceutical Analysis
Home page *www. ajpaonline.com*

REVIEW ARTICLE

An Overview on Estimation of Lacidipine from Bulk and Formulation

Dr. Nachiket S. Dighe, Mayur Bhosale, Pallavi B. Gaikwad*
Department of Pharmaceutical Chemistry, PRES's Pravara Rural College of Pharmacy, Loni, MS, India.
*Corresponding Author E-mail: **pallavigaikwad927@gmail.com**

ABSTRACT:
Lacidipine is a calcium channel blocker used in treatment of cardiac arrhythmia. Several methods had been reported for the estimation of lacidipine from bulk and formulations. Here in this an attempt is made to summarize the different methods used along with their specifications. Every method reported for the analysis had its own advantages over the other methods. As per the industrial scalability HPLC is the most useful and effective method for the estimation of Lacidipine from bulk and formulations.

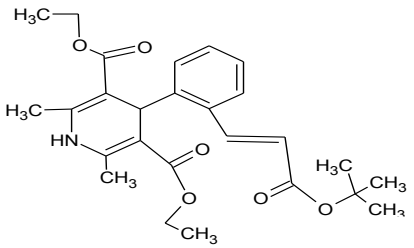
KEYWORDS: Lacidipine, Separation, Analytical methods, Validation, Pharmaceutical dosage form.

INTRODUCTION:

Lacidipine is a 1, 4 dihydropyridine class of a drug and is widely used as a calcium channel blocker andused as anti- anginal drug and antihypertensive drug. It shows anti-atherosclerotic and antioxidant effects. Lacidipine is available in tablet form and is marketed under various brand names such as Caldine, Lacimen, Lacipil, Midotens, and Motens. It has long duration of action because of its high degree of lipophilicity.[1] Lacidipine has a molecular formula of $C_{26}H_{33}NO_6$ and a molecular weight of 455.54g/mol[2]. It shows some physicochemical properties. Like Solubility, i.e. Lacidipine is slightly soluble in water and it is more soluble in solvents such as ethanol, methanol, acetone, Dimethyl Sulphoxide (DMSO). Lacidipine absorbs light in the wavelength at 240nm. It is highly sensitive to the action of temperature and light.[3] It attempt has to develop new UV method for its estimation in bulk and pharmaceutical formulations withtheir good accuracy, simplicity, precision and economy.

Received on 08.03.2021 Modified on 25.04.2021
Accepted on 27.05.2021
Asian J. Pharm. Ana. 2021; 11(3):223-226.
DOI: 10.52711/2231-5675.2021.00039

Trans form is used in therapy.[4] Lacidipine or its metabolite inhibits the angiotensin converting enzyme (ACE) and other hormone receptors or ion channels.[5] Various methods have been reported for the quantitative and qualitative determination of Lacivas 2mg tablets including spectrophotometry. Whereas RP-LC was used for the stability study of Lacidipine towards light, temperature and humidity.[6] It undergoes extensive first-pass hepatic metabolism having shown result to a low oral bioavailability was found about 10%. It has high degree of lipophilicity because of its long duration of action. Lacidipine estimatedby various analytical methods. LC-DAD, UPLC-TMS, HPTLC, HPLC, LC-MS, UV and Electrochemical methods to develop a new Ultra violet spectrophotometric method used for identification of Lacidipine in pharmaceutical dosage form.



Structure of Lacidipine

International Journal for Pharmaceutical Research Scholars (IJPRS)

V-10, I-4, 2021 ISSN: 2277 - 7873

REVIEW ARTICLE

NOVEL NEW RESEARCH STRATEGIES OF BENZIMIDAZOLE DERIVATIVES: A REVIEW

Sonali Pawar[1]*; Rohit Jaysing Bhor*[*1]*; Sagar Magar*[2]

[1]Department of Pharmaceutical Chemistry, Pravara Rural College of Pharmacy Pravaranagar, Tal-Rahata, District-Ahmednagar, Maharashtra, India

[*2]Department of Pharmaceutical Chemistry, Pravara Rural College of Pharmacy Pravaranagar, Tal-Rahata, District-Ahmednagar, Maharashtra, India Lakshmi Narain Collage of Pharmacy (RCP), Indore, India

Manuscript No: IJPRS/V10/I4/00001, Received: 01/12/2021, Accepted: 03/12/2021, Published: 30/12/2021

ABSTRACT

Benzimidazole is an example of aromatic heterocyclic organic compound. It is a bicyclic compound. It contains the fusion of benzene with imidazole which ultimately gives a privileged structure. Benzimidazole and its derivatives play an important role in the medicinal chemistry and drug discovery with many pharmacological activities. Substitution of various chemicals on benzimidazole nucleus gives important synthetic product and strategy in the drug discovery process. Benzimidazole derivatives contain versatile nitrogen containing heterocyclic compounds. The methods for the synthesis of benzimidazole and its derivatives have become a focus of synthetic organic scientist, Benzimidazole and its derivatives were used as building blocks for the important therapeutic compounds in medicine. Benzimidazole nucleus plays a very important role as a therapeutic agent. Benzimidazole and its derivatives exhibit pharmacological activities such as antimicrobial, antiviral, anticancer, anti-inflammatory, analgesic activity, anti-ulcer, anti-diabetic activity etc. Benzimidazole nucleus gives active sites for the reaction like 2 and 5 position which gives potent therapeutic agents. The present review covers the chemistry and pharmacological activities of substituted benzimidazole. In the present review, benzimidazole derivatives with different synthetic derivatives and their pharmacological activities are given. The main aim of review is to help medicinal chemists for the development of SAR on benzimidazole for each activity and to review the work reported, chemistry and pharmacological activities of benzimidazole derivatives during past years.

KEYWORDS

OPD, Antimicrobial, Antiviral, Anti-inflammatory, Analgesic Activity, Anti-ulcer, Anti-diabetic Activity

INTRODUCTION

*Address for Correspondence:
ROHIT JAYSING BHOR,
Department of Pharmaceutical Chemistry,
Pravara Rural College of Pharmacy,
Pravaranagar, Maharashtra,
India.

Benzimidazole is an example of aromatic heterocyclic organic compound. The new method of benzimidazole based on poly heterocycles draw the attention of pharmacists from last few decades[1]. It has important pharmocophore in medicinal chemistry and pharmacology. Benzimidazole and its derivatives are an example of bicyclic compound consisting of the fusion of benzene with imidazole[2]. The structure of

JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue
JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)
An International Scholarly Open Access, Peer-reviewed, Refereed Journal

"DEVELOPMENT AND VALIDATION OF RP-HPLC METHOD FOR ESTIMATION OF TENOXICAM IN ITS BULK AND PHARMACEUTICAL DOSAGE FORM."

Somnath Rasane *, Hemlata Bhavar, Sagar Magar

Department of Pharmaceutical Chemistry, Pravara Rural College of Pharmacy, Pravaranagar

Tal-Rahata, Dist- Ahmednagar

ABSTRACT:

The present study describes a simple, accurate, precise and cost-effective reverse phase High Performance Liquid Chromatographic method for estimation of tenoxicam in their pharmaceutical dosage form. The separation was carried on Kromasil, C18, 250 mm X 4.6 mm, 5 µm. Detection was done using UV detector at isocratic point 368 nm. The developed method employed mobile Acetonitrile: Buffer (60: 40 % v/v), with flow rate 1.0 ml/min. High linearity of the developed method was confirmed over concentration range 1-8 µg/ml for tenoxicam with the correlation coefficient of 0.999. The Percentage RSD for precision of the method was found to be less than 2%. The percentage recoveries for tenoxicam was found to be in range 98.00-102.00 w/v. Peaks was obtained at retention time 2.9 min for for tenoxicam. By using all the above parameters, a simple, accurate, precise and cost-effective method were developed, optimize and validate.

KEYWORDS: RP-HPLC, Method optimization , development, tenoxicam .

INTRODUCTION:

Analytical chemistry is the analysis of material samples to gain an understanding of their chemical composition and structure. During last few decades, analytical chemistry has witnessed extensive development in terms of sophistication, quantitation and Instrumentation. Consequently, newer analytical techniques (such as hyphenated techniques FTIR, GCMS, LCMS, HPLC, HPTLC etc.) and their areas of

A REVIEW ON DEVELOPMENT AND VALIDATION OF SIMULTANEOUS ESTIMATION OF FIMASARTAN AND CHLORTHALIDONE BY RP-HPLC

Akshay S. Kasabe*, Prof. H.S Bhawar[1] and Prof. S.D. Magar[2]

Department of Pharmaceutical Chemistry, Pravara Rural College Of Pharmacy, Pravaranagar, Tal- Rahata Dist- Ahmednagar

ABSTRACT:

Chlorthalidone and Fimasartan is used in combination in the prevention and treatment of Antihypertensive agent and is available in the market as tablet dosage form. The existing available literature reports explain there are different analytical methods available for estimation of Chlorthalidone and Fimasartan individually but only one analytical method is reported for the Quantitative Simultaneous Determination of this formulation Hence present study having wide scope for the development of such method of Quantification. The different analytical methods include RP-HPLC, UV Spectrophotometric method, HPTLC, were available for estimation of Chlorthalidone and Fimasartan.

KEYWORDS: Chlorthalidone, Fimasartan, RP-HPLC & Quantification

INTRODUCTION:

Introduction to method development and method validation Method development includes the adaptation of existing methods or to make the small changes to make new method which can be used for estimation of the drugs from there dosage form, The developed method must be validated as per ICH or USP guideline. The choice of analytical methodology is based on many considerations, such as: chemical properties of the analyte and its concentration, sample matrix, the rate and cost required for the analysis, type of measurements i.e., quantitative or qualitative and the number of samples. There is need to determine whether the results are acceptable or not. Method validation is the process by which the analytical method or technique is acceptable for its application is proved. Analytical methods development and validation play important roles in the discovery, development, and manufacture of pharmaceuticals. There is a great need for development of new analytical methods for quality evaluation of new emerging drugs. In the development and validation of a new analytical procedure, the choice of analytical instrumentation and methodology should be based on the intended purpose use and scope of the analytical method.

Development And Validation of Stability Indicating RP – HPLC Method for Estimation for Bupropion HCL from Bulk.

[1]Snehal Aher*, [2] Prof. H. S. Bhawar, [3]Prof. S. D. Magar.
[1]Research Scholar, M. Pharm, Pravara Rural College of Pharmacy Pravaranagar,
[2,3]Assistance Professor, Pravara Rural College of Pharmacy Pravaranagar,
Tal- Rahata, Dist-Ahmednagar, India.

ABSTRACT:

The objective of the present analytical research work was to developed and validate RP -HPLC method for the estimation of Bupropion HCL in bulk and dosage form. This RP- HPLC method for the Bupropion HCL was developed by using a Kromasil C18, (250 mm X 4.6 mm i.d.) 5µm. maintained at room temperature as a stationary phase and Acetonitrile: 20 mM ammonium acetate buffer solution (80:20) as a mobile phase. The mobile phase was maintained at a flow rate 1.0 ml/min and volume of injection is 20µl.The Retention time of Bupropion HCL was 5.10min. The detection dispensed using UV Spectrophotometer at 252 nm. This method was validated in accordance with ICH guidelines. For this method for the filter study the PVDF filter and Nylon filter is employed for Bupropion HCL were found to be linear in the concentration range 10,50,100,125, and150µg/ml respectively. Regression coefficient was found well within acceptance limit for proposed range. Accuracy of the method was determined by representing recovery study and the results were found in the range of 98.0% to 102.0%.in this method the precision is represent by preparing six test sample. The % RSD was found to be 0.239% which indicated superior precision of the developed method. Bupropion HCL shows significant degradation in acid degradation comparatively more degradation was found in Base degradation and no degradation found in thermal degradation, photolytic degradation, Peroxide degradation for Bupropion HCL it shows that the degradation product does not Interfere with analytical determination.

Keywords: Bupropion HCL, HPLC method, Acetonitrile, 20 mM ammonium acetate buffer solution.

1.Introduction:

Bupropion HCL chemically (±)-2-(tert-butylamino)-1-(3-chlorophenyl) propan1one, previously known as an atypical antidepressant and smoking cessation aid it acts as a nor epinephrine and dopamine reuptake inhibitor as well as α3 , β4 nicotinic receptor antagonist.[1,2] Mechanism of action of bupropion is a norepinephrine/dopamine-reuptake inhibitor (NDRI)that exert is pharmacological effect by weakly inhibiting the enzyme involving in the uptake of the neurotransmitter norepinephrine and dopamine from the synaptic cleft, therefore prolonging their duration of action within the neuronal synapse and the downstream effects of these neurotransmitters. More specifically, bupropion binds to the norepinephrine transporter (NET) and the dopamine transporter (DAT). [3,4]

"DEVELOPMENT AND VALIDATION OF RP-HPLC METHOD FOR ESTIMATION OF VINPOCETINE IN ITS BULK AND PHARMACEUTICAL DOSAGE FORM"

Nayan pardeshi*, H.S Bhawar and S.D Magar

Department of Pharmaceutical Chemistry, Pravara Rural College Of Pharmacy

Pravaranager ,Tal Rahata , Dist. Ahmednager 413736, INDIA

ABSTRACT: The present study describes a simple, accurate, precise and cost-effective reverse phase High Performance Liquid Chromatographic method for estimation of vinpocetine in their pharmaceutical dosage form. The separation was carried on Kromasil, C18, 250 mm X 4.6 mm, 5 µm. Detection was done using UV detector at isocratic point 228 nm. The developed method employed mobile Acetonitrile: Buffer (90:10 % v/v), with flow rate 1.0 ml/min. High linearity of the developed method was confirmed over concentration range 5-75 µg/ml for vinpocetine with the correlation coefficient of 0.999. The Percentage RSD for precision of the method was found to be less than 2%. The percentage recoveries for vinpocetine were found to be in range 98.00-102.00 w/v. Peaks was obtained at retention time 6.4 min for Vinpocetine. By using all the above parameters, a simple, accurate, precise and cost-effective method were developed, optimize and validate. Some method by HPLC and UV, FTIR are already reported in vinpocetin drug .

KEYWORDS: RP-HPLC, Method Optimization, development, Validation, vinpocetine

INTRODUCTION

Pharmaceutical analysis, a branch of pharmacy, plays a very significant role in quality control of pharmaceuticals through a rigid check on raw materials used in manufacturing of formulation and on finished products. Analytical chemistry has since long, occupied an important place in the development of science and technology. It is primarily concerned about determining the qualitative and quantitative composition of material under study. The qualitative analysis gives us the information about the nature of sample by knowing about the presence or absence of certain components (https://naturalmedicines.therapeuticresearch.com).The quantitative analysis deals about the content present in the sample. The development in analytical sciences has been more significant and prominent in recent years than the past. This helped to develop new methods of analysis. In pharmacy analytical chemistry is responsible for developing sensitive, reliable and more accurate methods for the estimation of drug in pharmaceutical dosage form. Quality assurance is a wide-ranging concept covering all matters that

IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

A review: Analytical method for determination of Azelastine Hcl in pharmaceutical dosage form

Mule Akshay Rajendra[1]*, Bhor Rohit Jaysing[2], Dighe Amol[3]

[1]Department of Pharmaceutical Chemistry, Pravara Rural College Of Pharmacy, Pravaranagar, Tal-Rahata, Dist- Ahmednagar,413736 , Maharashtra, India.

Abstract

Azelastine is among the most frequently used drugs; however, knowledge and solid data about its metabolites are scarcely found in literature. By oxidation of azelastine with H_2O_2, these *N*-oxides were now prepared in racemic form for the first time and were fully characterized. Their structure was additionally confirmed by a single crystal X-ray analysis. Both *N*-oxides were found to be non-cytotoxic in SRB assays.

Keyword:

Instrumentation and methods TGA/DTG and DTA, Differential Scanning Calorimetry (DSC), Mass spectrometry electron impact (MS-EI), Measurement of Entrapment Efficiency, FTIR.

Introduction

Azelastine-HCl, 4-(4-chlorobenzyl)-2-[(4RS)-1- methylhexahydro1H-azepin-4-yl] phthalazin-1(2H)-one hydrochloride [1]. It is an intranasal antihistamine indicated for use in patients with seasonal allergic rhinitis (SAR) and non-allergic vasomotor rhinitis (VMR). It is also used topically in the symptomatic relief of allergic conditions including rhinitis and conjunctivitis[2]. Emedastine difumarate, is 1H-benzimidazole, 1-(2-ethoxyethyl)-2-(hexahydro-4-methyl-1H-1, 4- diazepin-1-yl), (E)-2- butenedioate (1:2) [3]. It is a second generation antihistamine used in eye drops to treat allergic conjunctivitis [4]. The available methods for analysis of azelastine-HCl in pharmaceutical dosage forms and biological fluids are volumetric like UV

Journal of the Maharaja Sayajirao University of Baroda
ISSN: 0025-0422

EMPAGLIFLOZIN AND LINAGLIPTIN: AN ANALYTICAL REVIEW

Bulbule L. D. Department Pharmaceutical Chemistry, Pravara Rural College of Pharmacy, Pravaranagar, Tq. Rahata, Dist. Ahmednagar. 413736, Maharashtra.

Godge R.K. Department Pharmaceutical Chemistry, Pravara Rural College of Pharmacy, Pravaranagar, Tq. Rahata, Dist. Ahmednagar. 413736, Maharashtra.

Mr. Magar S.D Department Pharmaceutical Chemistry, Pravara Rural College of Pharmacy, Pravaranagar, Tq. Rahata, Dist. Ahmednagar. 413736, Maharashtra.

Abstract:
Empagliflozin and Linagliptin is a once-daily sodium-glucose co-transporter-2 (SGLT-2) inhibitor and Dipeptidyl peptidase-4 (DPP-4) inhibitor fixed-dose combination product that is approved in the U.S by FDA as an adjunct to diet and exercise in adults with type2 diabetes under the trade name Glyxambi and Trijardy XR. Empagliflozin and Linagliptin improve glycemic parameters and possess a very low intrinsic hypoglycemia risk. Sodium-glucose co-transporter 2 inhibitors (SGLT-2) inhibit glucose reabsorption in the proximal renal tubules and Dipeptidyl peptidase-4 inhibitors (DPP-4) improve glucose metabolism by inhibiting the enzyme that degrades incretin leading to increased insulin secretion. Glyxambi is approved by FDA used to lower the blood sugar level along with a balanced diet and proper exercise. Trijardy XR is a newly FDA-approvedtablet used in the treatment of type2 diabetes mellitus. This article reviews simple, efficient, distinct, particular, and meticulous analytical methods like HPLC, HPTLC, UV spectroscopy, Liquid Chromatography-Mass spectrometry, and spectrofluorimetric methods developed. In this article various analytical, stability studies, bio-analytical methods,and impurity profiling methods for Simultaneous estimation of Empagliflozin and Linagliptin are reviewed. This review gives brief and collaborative data about analytical validating parametersgiven by ICH for Empagliflozin and Linagliptin in combination.
Keywords: Anti-diabetic,Chromatography, Diabetes Mellitus, Empagliflozin, HPLC, Linagliptin, Xanthine.

Introduction:
Empagliflozin is the hypoglycemic agent used to treat high blood sugar levels caused by Type2 diabetes mellitus. EGN is an orally bioavailable competitive inhibitor of sodium-glucose co-transporter-2 of (SGLT2) with antidiabetic activity. By oral administration, Empagliflozininhibits SGLT2 within the kidneys, thereby suppressing the reabsorption process of glucose within the PCT, due to the inhibition of SGLT2 excretion of glucose through urine is enhanced,and that leads to a decrease in the plasma glucose level. Inhibition of SGLT2 within the kidneys conjointly suppresses the renal reabsorption of 1, 5-anhydroglucitol (1,5AG). Empagliflozin is available in the market under the brand name Jardiance, which is a formulation used along with diet and regular exercise to treat Type2 diabetes mellitus.FDA Approves Empagliflozin to treat Type 2 diabetes by 01-Aug-2014. It was found to be Empagliflozin has reduced the risk of cardiovascular death in an adult with type2 diabetes so by 02-Dec-2016 FDA approved the use of Empagliflozin in cardiac disease.EGN is available in a combination of Metformin in type2 diabetes treatment[1, 2, 3].
Linagliptin is a highly potent, oral dihydropurinedione-based inhibitor of Dipeptidyl peptidase 4 (DPP-4), with hypoglycemic activity i.e. reduce high blood sugar levels. Linagliptin is a long-acting DPP-4 inhibitor among itself.Linagliptin is an inhibitor of Dipeptidyl peptidase-4 and plays a major role in the degradation of glucagon-like peptide-1 (GLP-1), a very important GIT secretion or hormone i.e. incretin that will increase glucose-dependent insulin secretion by the duct gland or pancreas. By prolonging the impact of GLP-1, Linagliptin increases insulin level and lowers glucose, thereby rising glycemic management in patients with type2 diabetes mellitus. FDA approved, by 02-May-2011, the Linagliptin may be administered in the treatment of diabetes mellitus with a balanced diet and exercise.By 17-Aug-2012, FDA approves updated prescribing information for the Tradjenta tab for add-on therapy to insulin adults with type 2 diabetes. Linagliptin is marketed in 05 mg tablets under the brand name Tradjenta. It is available in fixed-dose combination with metformin under the name Jentadueto and with Empagliflozin marketed under the name Glyxambi. [4]

Glyxambi is a Novel fixed-dose combination of Linagliptin and Empagliflozin for type2 diabetes Mellitus:
The Linagliptin and Empagliflozin are sold in combination under the brand name Glyxambi. Glyxambi is the only diabetes treatment in the U.S. in the combination of dual mechanisms of action of SGLT-2 inhibitor and DPP-4 inhibitor. Glyxambi tablet is available in the market containing either 10 mg or 25 mg of Empagliflozin and 5 mg of Linagliptin. SGLT-2 inhibitors increase glucose excretion through the urine via blocking sodium-glucose cotransporter-2. DPP-4 inhibitors work by inhibiting the incretin hormone degradation by DPP4, incretin stimulates the lowering of blood sugar and elevates insulin secretion through the beta cell of the pancreas. [5] FDA approved by02-February-2015 FDA Glyxambi tablet for the treatment of diabetes mellitus in adults [6] Glyxambi tablet is not used in the treatment of patients having diabetes insipidus. [7]

International Journal of Pharmaceutical Science Invention
ISSN (Online): 2319-6718, ISSN (Print): 2319- 670X
www.ijpsi.org Volume 10 Issue 9 ǁ September 2021 ǁ PP. 19-27

A Review on Biologiv|Cal Activity of "Benzimidazole as a Imidazole Derivatives"

KOMAL SABALE; ROHIT JAYSING BHOR*[1]; MAYUR BHOSALE
[1]*Department of Pharmaceutical Chemistry, Pravara Rural College of Pharmacy Pravaranagar, Tal-Rahata, District-Ahmednagar, Maharashtra, India*
[*2]*Department of Pharmaceutical Chemistry, Pravara Rural College of Pharmacy Pravaranagar, Tal-Rahata, District-Ahmednagar, Maharashtra, India*
[2]*Department of Pharmaceutical Chemistry, Pravara Rural College of Pharmacy Pravaranagar, Tal-Rahata, District-Ahmednagar, Maharashtra, India*
Corresponding Authors Name: Rohit Jaysing Bhor[1]*
Mailing Address of Author: B-10, Lane 2, Musale vasti, Hasanapur road, Loni (B.K.), Tal: Rahata, District: Ahmednagar, Maharashtra.

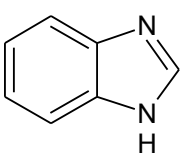
ABSTRACT:
Benzimidazole is an example of heterocyclic organic compound. It is a bicyclic compound or derivatives of imidazole. It contains the fusion of benzene with imidazole heterocylic ring which ultimately gives a privileged structure. Benzimidazole and its derivatives play an important role in the medicinal chemistry and drug discovery with many pharmacological activities. Substitution of various chemicals on benzimidazole nucleus gives important synthetic product and strategy in the drug discovery process. Benzimidazole nucleus plays a very important role as a therapeutic agent. Benzimidazole and its derivatives gives a pharmacological activities such as antimicrobial, antiviral, anticancer, antiinflammatory, analgesic activity, anti-ulcer, anti-diabetic activity etc. Benzimidazole nucleus always gives active sites for the reaction like 2 and 5 position which gives potent therapeutic agents. The present review covers the chemistry and pharmacological activities of substituted benzimidazole. In the present review, benzimidazole derivatives with different synthetic derivatives and their pharmacological activities are given. The main aim of review is to help medicinal chemists for the development of SAR on benzimidazole and its derivatives for each activity during 10 years.

KEY WORDS: *OPD; antimicrobial; antiviral;, antiinflammatory; analgesic activity; anti-ulcer; anti-diabetic activity*

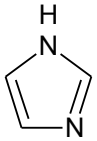
Date of Submission: 08-12-2021 Date of acceptance: 23-12-2021

I. INTRODUCTION:

Imidazole and Benzimidazole is an example of aromatic heterocyclic organic compound. The new method of preparation for benzimidazole based on poly heterocycles draw the attention of pharmacists from last few decades[1]. Imidazole and Benzimidazole have important pharmocophore in medicinal chemistry and pharmacology. Benzimidazole and its derivatives are an example of bicyclic compound consisting of the fusion of benzene with imidazole [2]. The structure of benzimidazole and imidazole are given below;



1*H*-benzimidazole



1*H*-imidazole

Structure 1

It gives magical properties with many pharmacological properties. Imidazole and Benzimidazole possess many biological activities such as anti- microbial, anti-fungal, anti-histaminic, anti-inflammatory, anti-viral, anti-oxidant, anti-cancer, anti-ulcerative[3-6] etc so that Imidazole and Benzimidazole having important moiety for the development of molecules of pharmaceutical interest. Many benzimidazole derivatives having heterocyclic building blocks are due to the structural similarity to purine nucleobase. It selectively inhibits the

ISSN **0975-4393 (Print)**
2349-2988 (Online)
DOI:

Vol. 13| Issue-03|
July - September| 2021

Available online at
www.anvpublication.org

Research Journal of Science and Technology
Home page *www.rjstonline.com*

REVIEW ARTICLE

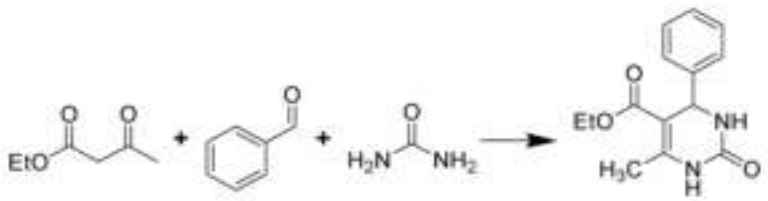
Recent Progress on Synthesis and Bio-activities of Tetrahydropyrimidine-2-one derivatives

Mayur S. Bhosale*, Dr. K. Sarvanan, Dr. N. S. Dighe
Department of Pharmaceutical Chemistry, Pravara Rural College of Pharmacy,
Pravaranagar, 413 736 Dist- Ahmednagar (M.S.) India.
*Corresponding Author E-mail: **mayur.bhosale@pravara.in**

ABSTRACT:
This review covers up synthesis, characterization and Pharmacological activities of various derivatives of 1,2,3,4-Tetrahydropyrimidine-2-one, including recent mechanistic advances, new building blocks and new pharmacological disclosures. Tetrahydropyrimidines (THPs) are one of the most important systems among the heterocycles. These compounds reported to have less toxicity to human and animals. Various synthesis strategies have been reported for different derivatives of Tetrahydropyrimidines, mainly these involves Biginelli reaction (condensation) consisting of one pot synthesis of 1,2,3,4-Tetrahydropyrimidine derivatives using urea, β-keto ester and aldehyde. These derivatives also forms important part as intermediate in the manufacture of various Pharmaceuticals. Techniques such as infrared spectroscopy, liquid chromatography-mass spectrometry, ^{1}H NMR and ^{13}C NMR spectrometry along with single crystal X-ray diffraction has been reported for structural characterization of these derivatives. U.S. National Library of Medicines, NIH and European PMC have reported many these derivatives. Some of derivatives have reported to have promising anti-bacterial, cytotoxic, antifungal, anti-inflammatory activities. Recently Ultrasound and Microwave promoted synthesis has shown promising results in synthesis of these derivatives. Many exciting prospects await for its exploitation in this fields.

KEYWORDS: 1,2,3,4-Tetrahydropyrimidine-2-one, Biginelli reaction, urea, thiourea, anti-inflammatory activity, antibacterial.

INTRODUCTION:
Pietro Biginelli synthesed 3,4-dihydropyrimidin-2(l/-&ones first time in 1893 by a simple one-pot condensation reaction of an aromatic aldehyde, urea and ethyl acetoacetate in ethanolic solution. This efficient approach to partly reduced pyrimidines, termed the Biginelli reaction or condensation was largely ignored n the following years, and therefore, also the synthetic potential of these multi-functionalized dihydropyrimidines (henceforth denoted as Biginelli compounds) remained unexplored[1]. In recent years, however, interest in these compounds has significantly increased, and the scope of the original cyclocondensation reaction has been widely extended by variation of all three components.



Schematic representation of Biginelli reaction

International Journal of Pharmaceutical Science Invention
ISSN (Online): 2319-6718, ISSN (Print): 2319- 670X
www.ijpsi.org Volume 10 Issue 9 ǁ September 2021 ǁ PP. 33-38

An Overview on "Symptoms, Causes and Treatment of Upper Respiratory Tract Infections"

ROHIT JAYSING BHOR*[1]; MAHESH KOLHE[2]; SAGAR MAGAR[2];
*[1]*Department of Pharmaceutical Chemistry, Pravara Rural College of Pharmacy Pravaranagar, Tal-Rahata, District-Ahmednagar, Maharashtra, India*
[2]*Department of Pharmaceutics, Pravara Rural College of Pharmacy Pravaranagar, Tal-Rahata, District-Ahmednagar, Maharashtra, India*
[2]*Department of Pharmaceutical Chemistry, Pravara Rural College of Pharmacy Pravaranagar, Tal-Rahata, District-Ahmednagar, Maharashtra, India*
Corresponding Authors Name: Rohit Jaysing Bhor[1]*

ABSTRACT:
Upper respiratory tract infections (URTIs) are most common infections in humans and animals also, approximately in 2015; there are 17.2 billion cases of URTIs are estimated to have occurred. Early diagnosis is very essential to avoid the severe morbidity and the risk of hospitalization associated with many URTIs. Identification of the various pathogens before antibiotic therapy is initiated is still problematic. Several factors that affect the patient and widespread occurrence of URTIs may be attributed to breathing of contaminated air, direct contact with infected people, overcrowded places, cigarette smoking and exposure to pathogens. Upper respiratory tract infections (URTIs) may be characterized by a group of disorders which include common cold, pharyngitis, tonsillitis, epiglottitis, sinusitis, bronchitis, rhinitis infections. An upper respiratory tract infection (URTIs) was caused by many virus or bacterial infections or both. This review paper has been aimed to discuss the symptoms, causes, transmission of infections, types of various URTIs and its treatment.

KEYWORDS: *Upper respiratory tract Infections, Causes, NSAID, Antibiotics*

Date of Submission: 13-12-2021 Date of acceptance: 27-12-2021

I. INTRODUCTION:

An upper respiratory infection affects the upper part of respiratory system. Upper respiratory infection includes patient sinuses and throat. Upper respiratory infection symptoms include a runny nose, sore throat and cough. These infections affect the respiratory system which causes problem in breathing it can affects patient sinuses. It gives acute infection. In 2015; there are 17.2 billion cases of URTIs are estimated to have occurred. As per record of 2014; URTI causes 3,000 deaths, down from 4,000 in 1990. In Upper respiratory infection affects throat and sinuses. The infection of Upper respiratory includes Common cold, Epiglottitis, Laryngitis, Pharyngitis (sore throat) and Sinusitis (sinus infection).

Symptoms of URTI:
There are different types of upper respiratory infection can cause different symptoms. It may include;

1. Coughing
2. Discomfort in the nasal passages
3. Fever
4. More mucus
5. nasal congestion
6. Pain or pressure within the face
7. Runny nose
8. Sneezing
9. Difficulty in breathing
10. Headache
11. loss of sense

Causes of URTI:
An upper respiratory infection caused by both viruses and bacteria. Some examples of Virus and Bacteria given below;

Journal of the Maharaja Sayajirao University of Baroda
ISSN: 0025-0422

PHARMACOGNOSTIC, PHYTOCHEMICAL STUDY & ANALGESIC ACTIVITY ON *Phyllanthus urinaria* STEM

Babasaheb Shingare* Department of Pharmacognosy, Pravara Rural College of Pharmacy, Pravaranagar, Maharastra.

Priya S. Rao Department of Pharmacognosy, Pravara Rural College of Pharmacy, Pravaranagar, Maharastra.

Dattaprasad N. vikhe Department of Pharmacognosy, Pravara Rural College of Pharmacy, Pravaranagar, Maharastra.

Abstract:
The genus [L] Phyllanthus necessary plant belong to family of Phyllanthaceae and have variant species wide distributrd in state and as well world wild[1].The species of phyllanthus likewise as tree,herbs and shurbs that unit of mensuration phytochemically and pharmacologically further necessary valuable as they contain varied bioactive chemical s (3). Previous scientific information indicate that over five hundred chemical compounds (phytochemicals) ar isolated from species of the genus Phyllanthus (1). it's attention-grabbing to notice that crude extracts obtained from species of Phyllanthus have restrictive effects on the hepatitis virus (HBV). Previous reviews loosely highlight the biological activities of Phyllanthus species, principally from P. amurus Schum. & Thonn., P. emblica L. or P. niruri L. (3). However, there's not any specific and careful review of P. urinaria. to produce scientific proof for P. urinaria bioscience and ancient uses, recent scientific studies specialize in its chemical constituents and their biological properties. Therefore, this review provides data concerning P. urinaria likewise as comprehensive data concerning the standard use of P. urinaria, its phytochemicals and their biological activities. It as well includes biological studies each in vitro and in vivo on varied extracts of P. urinaria, analysis of pure compounds and run data.

Introduction:
Phyllanthus urinaria was historically use flavourer drugs mention medical practices developed by native ethnic individuals victimization natural herbs. totally different world locations have their own history of ancient drugs. for instance, writing drugs originated from geographical region, Unani Chinese drugs (TCM) originated from China (1). historically flavourer drugss square measure employed in folks medicine for the treatment of assorted health complications as well as inflammatory, cancerous, diabetic, hypertensive, and vessel diseases (1). medicative plants square measure wealthy sources for brand new drug discovery as proved by some recent medication that square measure from plant-derivedcompounds/derivatives (3).as an example, success victimization classic ancient medication includes hydroxy acid and artemisinin, presumably the foremost effective healthful natural products ever found. The employment of ancient healthful information within the drug discovery method ends up in new medical specialty and identifies leads that endure clinical trials (4). In general, it"s believed that ancient medicines area unit safe and harmless as compared with trendy medicine though this is often rarely strictly tested. Indications that the natural product extracts area unit effective The genus Phyllanthus (L.) belongs to a family of flowering plants Phyllanthaceae and consists of quite one thousand species cosmopolitan in numerous bioactive elements of the globe (1). The species of this genus as well as trees, herbs and shrubs that area unit pharmacologically valuable as they contain numerous bioactive compounds (3). Previous scientific information indicate that quite five hundred chemical compounds (phytochemicals) are isolated from species of the genus Phyllanthus (1). It"s fascinating to notice that crude extracts obtained from species of Phyllanthus have repressive effects on the virus hepatitis virus(HBV). Previous reviews loosely highlight the biological activities of Phyllanthus species, Phyllanthus from P. amurus Schum. & Thonn., P. emblica L. or P. niruri L. (3,1] However, there"s no specific and careful review of P. urinaria. To supply proof for P. urinaria ethnopharmacological and ancient uses, recent scientific studies concentrate on its chemical constituents and their biological properties. Therefore, this review provides data regarding standard use of P. urinaria, its phytochemicals and their biological activities. It conjointly includes biological studies each in vitro bot in vitro and vivo on numerous extracts of P. urinaria, analysis of pure compounds and run data Pharmacological activity of phyllanthus urinaria
About phyllanthus urinaria plant:it is an erect,slender ,branched ,glabrous herb ,10,35 cm high,obtuse;stipules lanceolate. Stem more or less crimson red ,leaves with wide asymmetric base,purplish rimmed,5-20mm long and 1-7mm wide with mucronulate *Phyllanthus urinaria* (L.) is an annual perennial herbal species found in tropical Asia, America, China, and the Indian Ocean islands. *P. urinaria* is used in folk medicine as a cure to treat jaundice, diabetes, malaria, and liver diseases. This review provides traditional knowledge, phytochemistry, and biological activities of *P. urinaria*. The literature reviewed for this article was obtained from the Web of Science, SciFinder, PubMed, ScienceDirect, and Google Scholar journal papers published prior to December 2017. Phytochemical investigations reveal that the plant is a rich source of lignans, tannins, flavonoids, phenolics, terpenoids, and other secondary metabolites. Pharmacological activities include anticancer, hepatoprotective, antidiabetic, antimicrobial, and

Journal of the Maharaja Sayajirao University of Baroda
ISSN: 0025-0422

PHYTOCHEMICAL STUDY AND ANXIOLYTIC POTENTIAL OF *Martyniaannua* LINN SEEDS

Ashvini S. Bankar* Department of Pharmacognosy, Pravara Rural College of Pharmacy Pravaranagar, Loni- 431 736, Maharashtra, India.

Ravindra S. Jadhav Department of Pharmacognosy, Pravara Rural College of Pharmacy Pravaranagar, Loni- 431 736, Maharashtra, India.

Dattaprasad N. Vikhe Department of Pharmacognosy, Pravara Rural College of Pharmacy Pravaranagar, Loni- 431 736, Maharashtra, India.

Santosh B. Dighe Department of Pharmacology, Pravara Rural College of Pharmacy Pravaranagar, Loni- 431 736, Maharashtra, India.

Abstract:
Martyniaannua Linn belongs to Family Martyniaceae and is known as Hathajori, Bichu, Ulat-kanta in Hindi, and Vinchu in Marathi. Major Phyto-constituents found in this plant are glycosides, phenols, carbohydrates, tannins, anthocyanins, flavonoids proteins, steroids alkaloids, and terpenoids. *Martyniaannua*is used for the treatment of several disorders including skin disease, cough, inflammation, fever, scorpion bite, sore throat. It also shows antibacterial, antioxidant immunomodulator, anthelmintic, antibacterial, analgesic, anti-venom, antipyretic, anti-convulsion, antifertility, antidiabetic, and wound healing activities. The present study was focused on pharmacognostical and physicochemical aspects of the plant. In the current study ethanolic and petroleum ether extract of seeds of *Martyniaannua*was evaluated for finding various phytoconstituents in it. Further these extract were evaluated for anxiolytic activity on swiss albino mice using elevated plus maze model and compared it with standard diazepam. Both ethanolic and petroleum ether extract of seeds of *Martyniaannua*were found to bepromising anxiolytic agent.
Keywords: *Martyniaannua*, Anxiolytic activity, Elevated plus maze model.

1. Introduction:

Plants are the greatest bio-resource for their wide variety of chemical compounds which are important for different biological functions and use as herbal medicines which havea beneficiary role in pharmacology. India is one of the leading countries in Asia regarding the wealth of herbal Medicines and introduces a large number of plant species in Ayurveda (2000 species), Siddha (1121 species), Unani (751 species),and Tibetian (337 species). Traditional AyurvedicMedicinal plants are being used in medicine for the treatment of different human diseases.(1)80% of the people living in rural areas depend on the medicinal herb as a primary health care system according to World Health Organization. The United States report nearly 1 in 5 adults taking any herbal product. Herbal medicine was the only medicine for most of history. Even 59% of the listings in the US Pharmacopeia were from herbal products as recently as 1890. Although thousands of herbal products are available over the counter and commonly used by patients, many herbs are primarily of historical interest in the United States.The leaves, seeds, roots, flowers, stem,and herb can be any form of a plant or plant product. The plant is macerated with water, alcohol, or other solvents to extract some of the chemicals; the extracted product contains chemicals, such as sterols, alkaloids, fatty acids, glycosides, flavonoids, saponins, and others. These plants can either be sold raw or as extracts.(2)

Martyniaannua Linn belongs to Family Martyniaceae is commonly found in dense clumps, rubbish heaps on roadsides, moist, dry wastelands throughout India especially in the Western Ghats. It is also native to tropical and sub-tropical regions of America, Mexico, Burma, and West Pakistan(3–8).

Martyniaannua Linn is an herbaceous, stout, erect, branched, fleshy herb growing to a height of 0.25–1 m, and covered with dense glandular sticky hairs. The stems are erect and usually woody at the base and its branches are fistular, terete, with viscid patent-glandular hairy (**Fig. 1A)**. Leaves are kidney-shaped, opposite and decussate with lamina reniform, 15–23 cm wide, cordate, sinuate lobed, flaccid, acute at the apex, base cordate, margins entire to shallow sinuate to be toothed, palmately veined, petiole 9–14 cm long, and sticky-topped glandular hairs present on both the upper and lower leaf blade surfaces (**Fig. 1A)**.

Flowers are bisexual, zygomorphic, pentamerous, hypogynous, bracts oblanceolate; bracteoles elliptic, bell-shaped, purplish-white, with dark purple markings and ill-smelling having axillary racemose inflorescence. *Pedicels* are 1–2 cm long, with thickening. *The calyx* is approximately 15–20 mm long. *Corolla* is funnel form, 5-lobed, campanulate, and spotted on the inner anterior side surface, with the spots yellow, pink, or purple, approximately 55–65 mm overall, the tube is approximately 35–45 mm long. *Stamens* 2 fertile, 3 sterile, free; *filaments*filiform; *anthers*dithecous, dorsifixed, longitudinal dehiscing. *Sepals* 5, free, elliptic.*Ovary* superior, ovoid, bilocular with one ovule in each locule on the parietal placentae; *style* terminal; *stigma* bifid.

Pollen of plant belonging to Martyniaceae family is pale yellow-white, solitary, apolar, radially symmetrical, spheroidal, and

Journal of the Maharaja Sayajirao University of Baroda
ISSN: 0025-0422

PHARMACOGNOSTIC, PHYSICOCHEMICAL, PHYTOCHEMICAL AND EVALUATION OF ABORTIFACIENT ACTIVITY OF *Calotropis gigantea* LEAF

Snehal D. Lad* Department of Pharmacognosy, Pravara Rural College of Pharmacy, Pravaranagar, Loni-431 736, Maharashtra, India.

Priya S. Rao Department of Pharmacognosy, Pravara Rural College of Pharmacy, Pravaranagar, Loni- 431 736, Maharashtra, India.

Dattaprasad N. Vikhe Department of Pharmacognosy, Pravara Rural College of Pharmacy, Pravaranagar, Loni- 431 736, Maharashtra, India.

Santhosh B. Dighe Department of Pharmacognosy, Pravara Rural College of Pharmacy, Pravaranagar, Loni- 431 736, Maharashtra, India.

Abstract:
Calotropis gigantea is a medicinal plant. *Calotropis gigantean* is belonging to the family Asclepidiaceaes. *Calotropis gigantea* is resident in, India, China, Pakistan, Nepal, BoocBooc in Somalia and tropical Africa, Cambodia, Indonesia, Malaysia, the Philippines, Thailand, Sri Lanka.This herb produced large amount of latex hence generally it called as giant milk weed. *Calotropis gigantea* is known for a multiplicity of pharmacological activity in traditional medicinal system and utilizes to treatthe various disease. This plant is reported for its various pharmacological activities like: hepatoprotective, pregnancy interceptive properties, pro-coagulant, analgesic, antimicrobial, antioxidant, anti-pyretic, insecticidal, cytotoxicity, wound healing, Antivenom activity, CNS activity. This study is combined information about the ethnobotany, pharmacology, phytochemistry, Pharmacognosticof the *Calotropis gigantea leaf.*
Keywords: *Calotropis gigantea,* Pharmacognostic, physicochemical, phytochemical, glycoside, flavonoids.

Introduction:
The herbs, shrub and medicinal plant are used as medicines form long time in over all world. Now a days, as much as 75% of the world's population depends on traditional medicine as primary health care needs. Ayurveda is acomplex system of healing that origin in India country before thousands of years ago. Herbal mixture and formulations combine the benefits of multiple herbs, which generally produce a synergistic action, minimization the potential side effects of a single herb. Herbs having a various unique quality that are limited in traditional medicine, such asanti-viral, immunoregulation properties, anti-cancer. Herbs are avery good alternative to antibiotics in the treatment of infectious diseases, with large antibacterial effects, antifungal and antiviral actions. A number of herbal formulations used for ananti-cancer therapies detoxification agent, antioxidants. The present work objectives are to investigate indigenous plants used in protection against cognitive dysfunction in India.[1]
plant name in different language Hindi: Gauri akavana, Aka, Mandara English: Madar Sanskrit: Svetarka Malayalam: Vella Erukku. Distribution of*Calotropis gigantea* is a large shrub growing to 4 m (13 ft) tall. Flowers of this plantis waxy. colour the flower is white and lavender. Petals are holds to the stamens and five pointed petals having crown like structure available in small and large shape. Hence it called as the crown flower. The plant has oval, faint green leaves and milky stem. The latex of *Calotropis gigantea* contains cardiac glycosides mainly 3 types, fatty acids and calcium oxalate.[2]Geographical Source of *Calotropis gigantea*whole plant found allover India upto an altitude of 900m is including the Andman. *Calotropis gigantea* plant is found in dry waste places.It available in state of India in which is Rajasthan and Panjab, Kanniya kumara, West Bengal and Assam.[3]Chemical Constituent present in *Calotropis gigantea* plant is α-amyrin, β-amyrin, taraxasterol and its ψ-isomer taraxasteryl isovalerate, taraxasteryl acetate, gigantin, giganteol, isogiganteol, β-sitosterol and wax. cardiac glycosides, seven oxypregnane-oligoglycosides, calotroposides A to G, akundarin, 0.45% uscharin, 0.15% calactin, 0.15% calotoxin also consists α βcalotropeol, β-amyrin. Latex also consists glutathione and proteoclstic enzyme.In 1980 the two scientist Pal and Sinha had isolated crystals and discoveredthe Calotropins D1 and D2 from *Calotropis gigantea*and studied the properties. The new constituent present oxypregnane, oligoglycosides named as Calotropis A,calotropis B was isolated from the root of *Calotropis gigantea.*[4]

Materials and method
Plant MaterialCollection and authentication of plant material:
The Leaves of *Calotropis gigantea* plant (Family: Asclepiadaceae) was collected from local area, Loni. Authentication of plant on basis of Pharmacognostic study and organoleptic characteristics was done by Department of Botany and Research Center Padmashri Vikhe Patil College of Arts, Science and Commerce, Pravaranagar, Maharashtra, India. Letter no. Ref. No. PVPC/Bot/2020/HD14.
Chemical and reagents

Journal of the Maharaja Sayajirao University of Baroda
ISSN: 0025-0422

PHYTOCHEMICAL, PHARMACOGNOSTICAL STUDY AND ANTI-INFLAMMATORY ACTIVITY OF *Mundulea Seriacea* STEM-BARK

Sagar K. Sabale* Department of Pharmacognosy, Pravara Rural College of Pharmacy, Pravaranagar, Loni-413 736, Maharashtra, India.

Ravindra S. Jadhav Department of Pharmacognosy, Pravara Rural College of Pharmacy, Pravaranagar, Loni-413 736, Maharashtra, India.

Dattaprasad N. Vikhe Department of Pharmacognosy, Pravara Rural College of Pharmacy, Pravaranagar, Loni-413 736, Maharashtra, India.

Santosh B. Dighe Department of Pharmacognosy, Pravara Rural College of Pharmacy, Pravaranagar, Loni-413 736, Maharashtra, India.

Abstract:
Authenticated Mundulea sericea stem-bark were Soxhlet extracted to obtain ethanolic extract.Pharmacognostical evaluation were done for bark and its powder. Microscopical characters were found to cork cells, sclereids, prismatic crystals, tracheid's, phloem fibre, crystal sheath, xylem vessels.Phytochemical tests were conducted for methanolic extract and were found to contain alkaloids, glycosides, tannins, carbohydrates, terpenoids, flavonoids, phenolic acids, saponins, steroids, etc. The qualitative estimation of the phytochemical was also being observed. Total phenolic, flavonoid, terpenoids and tannin contents were evaluated.In vivo anti-inflammatory activity was conducted for both aqueous and methanolic extract using carrageenan rat paw edema model were found to significantly decrease the paw edema indicating anti-inflammatory effect.
Keywords: Mundulea sericea; Fabaceae; anti-inflammatory, medicinal plant.

Introduction:

Herbal remedies as well as alternative medicines are used throughout the world and in the past herbs often represented the most original sources of different drugs (Cooper EL,2004; Cooper EL,2005; TsaoJCI et al, 2005). The plant kingdom has provided a different kind of source of medicinal plants firstly used in their crude forms as herbal teas, ointments, liniments, syrups, infusions, and powders. Evidence of use of various herbal remedies goes back some 60000 years to a burial site in a cave in northern Iraq, which was uncovered in year 1960 (Solecki R et al, 1975). Today, approximately 80% of immunosuppressive, antimicrobial, cardiovascular, and anticancer drugs are of plant origin (M. Gordaliza et al, 2009). Nowadays, humans cannot live well without medicine and treatment, particularly in the developed countries. Although drug discovery has been driven by a variety of technology platforms, which can also expedite the development of therapeutic agents from herbal medicines, drug development remains a lengthy process with a low rate of success in addition to huge capital investment (C. J. Barden et al, 2010).

Material and methods

Collection of plant material

Thestembarkof*Mundulea Sericea*plant(Family: Fabaceae)wascollectedfrom Kolhar, BK, Ahmednagar, Maharashtra, India.The plant sample was identified and authenticated at the herbarium of Department of Botany and Research Centre, Padmashri Vikhe Patil College of Arts, Science and Commerce, Loni, Pravaranagar-413 713.With the Ref No: PVPC/Bot/2020-21/HD-17.

Chemicals and Reagents

Varioustype of chemical and reagents were used to carry out the research work.

Preparation of Mundulea Seriacea Stem-Bark extract

TheBark of *Mundulea Seriacea*was collected. Then dried itand this driedstembark then pulverized in grinder to make coarse powder which used for the extraction.

- Method: Soxhlet extraction
- Solvent: Ethanol.

Taking the 100gm of powder drug of*Mundulea Seriacea*barkand extracted with 100ml ethanol at 70 c for48 hrs continuously. After the48 hrs of extraction, round bottom flask was cooled at room temperature and the extract were filter and collected.Evaporated by using rotary evaporator. Then dried this extract and store at 4degree c until further use.

Journal of the Maharaja Sayajirao University of Baroda
ISSN: 0025-0422

DEVELOPMENT OF HERBAL OINTMENT FROM *Bauhinia racemose* LEAVES FOR WOUND HEALING ACTIVITY

Shaikh S Habeeba* Department of pharmacognosy, Pravara Rural College of Pharmacy, Pravaranagar, Maharashtra, India, pin-413736.

Ravindar S Jadhav Department of pharmacognosy, Pravara Rural College of Pharmacy, Pravaranagar, Maharashtra, India, pin-413736.

Dattaprasad N Vikhe Department of pharmacognosy, Pravara Rural College of Pharmacy, Pravaranagar, Maharashtra, India, pin-413736.

Santosh B Dighe Department of pharmacology, Pravara Rural College of Pharmacy, Pravaranagar, Maharashtra, India, pin-413736.

Abstract:
Since prehistorictimes, people investigate the nature particularly medicinal plants in search of new drugs. Medicinal plants are used by 80% of the world population for their essential health needs.The medicinal plants are very rich source of numerous pharmacologically active molecules. The scientists are currently focusing on the Phytochemicals to treat numerous ailments affecting the mankind. *Bauhinia racemosa*belonging to family Caesalpiniaceaeis widely used as religious purpose or as traditional medicine for treating various ailments. It has anti-inflammatory, antifungal, antimicrobial and antioxidant properties. The phytochemical analysis of Ethanolic, Hydroaclholic and petroleum ether extract was done.The Loss on drying ash value testing was done and which signify the purity and quality of drug and nature of phytocompounds present in the extract.The powdered of *Bauhinia racemosa* was extracted with different solventin the Soxhlet extractor or macerated. The residue yielded a greenish brown sticky mass obtained. The preliminary phytochemical analysis of the different extract showed the presence of tannins, alkaloids, flavonoids. For the wound healing activity were excision model used. The both extract ointment that is ethanolic and petroleum ether extract ointment show the wound healing activity. But in compare to both of ethanolic extract ointment showed more active than the petroleum ether extract ointment.
Key words: Pharmacognostical study, extraction, phytochemical screening, total tannin content, wound healing activity, excision model.

Introduction:
In today's era herbal products mostly used because it is safe in contrast to the synthetics that are regarded as unsafe to human and environment. Although herbs had been priced for their medicinal flavouring and aromatic qualities for centuries, the synthetic products of the modern age surpassed, for a while. Now, people are returning to the natural products with hope of safety and security [1].
The plant *B. racemosa* is typically reaching a height of 6–12m and their branches spread 3–6m outwards. The leaves are broader than long, having size 2-5cm by 2.5- 6.3cm, divided a little less than half way down into two rounded lobes. The surface is green and slightly cordate, clothed more or less densely beneath with grey pubescence and base is usually cordate. The flowers have five-petaled and having diameter is 7.5– 12.5cm.the flowers shade yellow or white in shade and are often fragrant.The plant bark acrid, astringent and is used in the treatment of headache, fever, skin diseases, blood diseases, dysentery and diarrhea. On decoction of the bark is recommended as a useful wash for ulcers [2]. Leaves extract of the plant revealed the analgesic, anti-pyretic, antiinflammatory, anti-spasmodic, anthelmintic and antimicrobial activity and also it has anti-tumor qualities and is widely used in Ayurveda to treat first stage cancer. The aim of the present investigation has been to analyse the important phytochemical nature of the leaves of *Bauhinia racemosa* [3].

Journal of the Maharaja Sayajirao University of Baroda
ISSN: 0025-0422

PHARMACOGNOSTIC AND PHYTOCHEMICAL STUDY OF PLANT *Dyerophytum indicums* BARK (PLUMBAGINACEAE)

Dattaprasad. N. Vikhe* Department of Pharmacognosy, Pravara Rural College of Pharmacy, Pravaranagar-413736.

A. P. Marwar Department of Pharmacognosy, Pravara Rural College of Pharmacy, Pravaranagar-413736.

Rahul Kunkulol Department of Pharmacognosy, Pravara Rural College of Pharmacy, Pravaranagar-413736.

Priya S. Rao Department of Pharmacology, PIMS- DU, Loni -413736.

Abstract:
Recent investigation aims to Study the Pharmacognostic and phytochemical potential of plant *dyerophytum indicum*, Plants were authenticated; collected, dried and the extraction of powdered drug extract was done by using organic solvents like Ethyl acetate, Methanol, Pet. Ether, Ethanol. In the morphological study the colour, odour, taste, size, shape & fracture was performed. The microscopical study of bark shows the presence of Lignified Cells, Pericyclic Fibers, and Stone Cells, Starch Grains, Calcium Oxalate Crystals and the part were identified by using various micro chemical reagents. The bark of *dyerophytum indicum* was subjected for the determination of Ash value, moisture content, extractive value, phenolic content & total tannin content The preliminary phytochemical screening was done for various extracts and in preliminary phytochemical test the barks extract showed presence of carbohydrate, alkaloids, flavonoids, tannins and terpenoids.
Keywords: *Dyerophytum indicum*, Microscopy, Morphology, Extraction, phytochemical tests.

Introduction:
The term‘Pharmacognosy’ was coined by German scientist Seydler in 1815. The pharmacognosy was derived from Greek word *Pharmalcon* (a drug which is meant for dried herb) and *gnosis* (to acquire knowledge). [1] Hence, pharmacognosy, which literally means knowledge of drugs of pharmaceuticals. Existence of human on earth is possible only because of plant kingdom and plants play a vital role in sustaining human life. Nature has always followed symbiotic relationship with human [2]. *Dyerophytum indicum* found in dense forest areas near bushes on dry rocks on mostly hilly places, *Dyerophytum indicum* is present in arid region’s waste land and some time is found on marine shores including salty planes, particularly in tropical Asia and at some places of western Asia [3].

Plant was first reported in Oman and they listed *Dyerophytum indicum*as endangered species. Flowers are red in color, bloom all the year. Individual flower is up to ½ inches. *Dyerophytum indicum* belonging to family Plumbaginaceae is a rare and endemic to area of Sangamnert aluka. Tribal use this plant in abortion [4]. Authenticity of the medicinal use is not revealed from any kind of literature.

Fig 1:Dyerophytum indicum (Gibbs ex Wight) Kuntze

Journal of the Maharaja Sayajirao University of Baroda
ISSN: 0025-0422

PHARMACOGNOSTIC CHARACTERIZATION AND PHYTOCHEMICAL SCREENING OF *Achyranthes aspera*

Shinde Ganesh S * Pravara Rural College of Pharmacy, Loni, Tal-Rahata, Dist-Ahmednagar.

Rao Priya S Pravara Rural College of Pharmacy, Loni, Tal-Rahata, Dist-Ahmednagar.

Marawar A P Pravara Institute of Medical Sciences (Deemed University), Loni.

Kunkulol Rahul Pravara Institute of Medical Sciences (Deemed University), Loni.

Abstract:
Achyranthes Aspera Linn is well known drug in Ayurvedic system and home remedies. The present study deals with Pharmacognostic evaluation of roots of Achyranthes Aspera Linn. Macroscopic and microscopic examination of roots part, observation and differential Micro chemical test has being carried out for Authentification of sample. Physiochemical values such as moisture content, percentage of total ash, acid insoluble ash, acid soluble ash,extractive value pertoleum ether,ether soluble extractive,ethanol soluble extractive,water soluble extractive were calculated as well as colour reaction of powder and extract is being performed.The Phytochemical test reveals the presence of Sterol, Flavoniods Glycosides, Protein, Tannin and Carbohydrates. The present observation will help in pharmacognostic identification and standardization of drug in crude form and distinguish the drug from its adulteration.
Keywords: *Achyranthes Aspera* Linn, Ayurvedic, pharmacognostic, phytochemical, root.

Introduction:

Herbal drug play an important role in health care programme in developing countries.Ancient Indian literature incorporates broad importance of medicinal plants and consider all parts to be important as medicinal substance [1]. Achyranthes aspera linn is erect,annual ,perennial herb with 1-2 M in height with woody base found on roadside. Achyranthes Aspera has benn mentioned in Manuscript of Ayurvedic and Chinese Medicine [2].It is described in "Nigantus " as Pugetive, Digestive and Pungent. A decoction of plant is used as diuretic in renal dropsy and general anasarca [2]. Decoction of root is uefull in cough ,Pneumonia, and kidney stones and in large dose used as ecbolic. The ash is used in hemorrhoids [4].The plant is used as expectorant,anodyne,depurative,bronchitis,and menstrual disorder[5].In Chittoor district of Andhra Pradesh the tribals used medicine in treatment of epilepsy and the Payasam made of its seed in milk is used as remedy in diseased brain [6].
The plant is good source of trace element and each trace element has its individual impact in structural and functional integrity [7].The work is effort to establish microscopic, Macroscopic and chemical standardization of Achyranthes Aspera. The present work will provide beneficial information towards quality of drug and standardization of drug.

Material and method

Material

Fresh Sample of Plant of Achyranthes Aspera is collected from Shirdi Taluka Rahata District Ahmednagar (Maharashtra) and Shade dried at room temperature. The plant is Authenticated from Biological Survey of India, Pune by Mrs. Priyanka A. Ingle, Scientist 'C' by comparing morphological features. (Ref. No. BSI/WRC/100-1/Tech11/2019/46 Dated on 22thOctober 2019).

Method

1. **Pharmacognostic Study**

Macroscopic Study

The Macroscopic Study such as Size,shape,colour,odour,margin,texture were studied for morphological characterization.

Microscopic Study

In Microscopic study the section of root was taken and stain with different microchemical reagents like Phloroglucinal:HCL,Sudan red III, Dil Hydrochloric acid and observed under microscope.[8,9].

Physiochemical Evaluation

The various physiochemical test like ash value,extractive value and loss on drying was performed according to WHO guideline on quality control on medicinal plant materials.

Phytochemical Screening

The Preliminary phytochemical screening is carried out as per WHO guidelines on quality control of medicinal plants[10].

Powder microscopy

Powder microscopy were performed the powdered characteristics of leaves shows lignified cells, pericyclic fibers, stone cells, cuticles, calcium oxalate crystals. [11] .

2. **Phytochemical Study**

Journal of the Maharaja Sayajirao University of Baroda
ISSN: 0025-0422

FORMULATION OF HERBAL OINTMENT FOR ASSESSMENT OF WOUND HEALING ACTIVITY FROM *Launaea Sarmentosa* LEAVES

Kamble Shubhangi. C* Department of Pharmacognosy, Pravara Rural College of Pharmacy, Pravaranagar Loni- 413736, Maharashtra, India.

R. S. Jadhav Department of Pharmacognosy, Pravara Rural College of Pharmacy, Pravaranagar Loni-413736, Maharashtra, India.

S. R. Vikhe Department of Pharmacognosy, Pravara Rural College of Pharmacy, Pravaranagar Loni-413736, Maharashtra, India.

Abstract:
Launaea sarmentosa has been extensively used as a nutrient herb in traditional Vietnamese remedies for the treatment of various diseases. *Launaea sarmentosa* (Wild.) are widely used plants in Asian folk and traditional medicines. In the present study, we have tried to find out the Phytoconstituents, wound healing activity of the Ethanolic extracts of these plants. It's been showed that totally different a part of *Launaea sarmentosa* species as well as leaves, flowers, seed, root, and aerial half possess ethno botanic values *Launaea sarmentosa* could be a crawl herb, native to coastal areas in India, Africa (east coast, Mauritius, and South Asia etc.
Keywords: *Launaea sarmentosa* (Asteraceae), Ethanolic extract, Phytoconstituents.

Introduction:
Nature continually acts as an excellent supply rescue for creature by providing totally different remedies from its plants, animals, and different sources to cure all ailments of mankind. The Several species of plants containing substances of healthful price area unit comprised from the kingdom Plantae, that area unit however to be explored. [1]

Fig. 1 Parts of the *Launaea sarmentosa*

The genus *Launaea sarmentosa* (Wild), domestically called Pathari. It is a prostate, creeping, fleshy, perennial herb that is found on sandy beaches and is distributed across Mozambique, South Africa, Madagascar, Seychelles, Reunion, Mauritius, and India at an altitude vary of zero to fifteen m.[2] The leaves, stems, barks, flowers and underground elements of healthful plants are most often used for traditional medicines. Disease-treating formulations and treatment were supported healthful plants from ancient time, that practiced by the the normal physicians. [3] *Launaea sarmentosa* is additionally according to possess tonic, soporific, diuretic, and aperient properties employed as a substitute for genus Taraxacum (Taraxacum officinale). [4] These studies enclosed of pharmacognostical analysis. Phytochemicals like Tannins, Flavonoids, Terpanoids, Steroids, Alkaloids, and Glycosides showed antimicrobial, anthelmintic, antidiarrheal activity. [5, 2]

MATERIAL AND METHODS
Plant material-
1. Collection and drying
Leaves of *Launaea Sarmentosa* were collected of local area form Sakur. Cleaned and dried at room temperature in shade and away from direct sunlight. The dried leaves were coarsely powdered in grinder. Large difference in partical size of crude drug result in long extraction time as the course partical increase the extraction time and fine powdered material was sieved through 60-120 mesh to remove fines and large particles and the powder was subjected for further study.
2. Authentication –
The *Launaea Sarmentosa* plant was authenticated at PVP college from Loni.
6.2 Pharmacognostic study-
The Pharmacognostic study of leaves of *Launaea Sarmentosa* macroscopic, microscopic and physiochemical parameter were studied.

Journal of the Maharaja Sayajirao University of Baroda
ISSN: 0025-0422

PHARMACOGNOSTIC, PHYTOCHEMICAL & ANTI- INFLAMMATORY ACTIVITY OF *Ougeinia ojjeneinensis* LEAVES

Swati S. Shete* Department of Pharmacognosy, Pravara Rural College of Pharmacy, Pravaranagar, Maharashtra, India pin-413736.

Ravindra S Jadhav Department of Pharmacognosy, Pravara Rural College of Pharmacy, Pravaranagar, Maharashtra, India pin-413736.

Sunayana R Vikhe Department of Pharmacognosy, Pravara Rural College of Pharmacy, Pravaranagar, Maharashtra, India pin-413736.

Santosh B Dighe Department of Pharmacology, Pravara Rural College of Pharmacy, Pravaranagar, Maharashtra, India pin-413736.

Abstract:
Plant *Ougeinia oojeinensis* (fabaceae) commonly known as tanish or sadan generally found in sub-tropical areas of India. This study was designed to investigate the Pharmacognostic, Phytochemical & Anti- inflammatory activity of *Ougeinia oojeinensis* leaves by using standard procedure. Pharmacognostic evaluation recovds macroscopy,microscopy,Ash values,Extractive values Foaming index under physicochemical parameters.Phytochemical result revealed the presence of carbohydrates, alkaloids, saponins, triterpenoids, phenols, flavonoids in ethanolic extract of *Ougeinia oojeinensis* leaves . The ethanolic extracts of the leaves of *Ougeinia oojeinensis* was successively extracted for anti-inflammatory activity. This study was also designed to investigate the anti-inflammatory potential of an ethanolic leaves extract of *Ougeinia oojeinensis* in rats after administration (50mg/kg, 100mg/kg, 200mg/kg) Their effects were evaluated by carrageenan-induced paw edema (acute inflammatory model).The oral administration of ethanolic extract 200mg/kg exerted potent anti-inflammatory activity by reducing paw edema it was comparable with the standard drug, diclofenac sodium (12.5mg/kg).
Keywords: *Ougeinia oojeinensis*, Flavanoids, Triterpenoids, Saponins, Carbohydrates.

1. Introduction:

According to the World Health Organization (WHO), medicinal plants would be the best source to obtain a variety of drugs and active compounds. Therefore, such plants should be investigated to understand their properties, safety and efficiency. The indigenous system of medicine namely Ayurvedic, Siddha and Unani has been in existence for several centuries . This system of medicine supports the need of more than 70% of population residing in the rural areas[1]. WHO estimate that, about 80% of the population in the developing countries depends directly on plants for its medicine [2]. In the last few decades there has been an exponential growth in the field of herbal medicine and these drugs are gaining popularity both in developing and developed countries because of their natural origin and less side effects[3].

Ougeinia oojeinensisis an herb found all around the world, and all parts of India mostly in the outer Himalayas and sub-Himalayan tracts from Jammu to Bhutan. It is upto 12 meter in height with short crooked trunk, leaves are pinnately trifoliate, leaflets large, rigidity coriaceous, terminal broadly elliptic or roundish. Flowers are white or pink in short fascilate racemes. Pod is linear, elongate and flat. Seeds are compressed reniform, light brown in color. The bark was deeply cracked, outer surface greenish white, shallow fissured, fissures longitudinal narrow and long. Bark having an acrid with a sharp cooling taste, and astringent, specific odor [4-5].

Fig. 1: *Ougeinia oojeinensis*

Journal of the Maharaja Sayajirao University of Baroda
ISSN: 0025-0422

PHYTOCHEMICAL STUDY AND ANXIOLYTIC ACTIVITY OF *Hibiscus cannabinus* LEAVES

Chitrarekha A Jadhav* Department of Pharmacognosy, Pravara Rural College of Pharmacy, Loni, Pravaranagar, Maharashtra, India ,413736.

Ravindra S Jadhav Department of Pharmacognosy, Pravara Rural College of Pharmacy, Loni, Pravaranagar, Maharashtra, India ,413736.

Sunaina R Vikhe Department of Pharmacognosy, Pravara Rural College of Pharmacy, Loni, Pravaranagar, Maharashtra, India ,413736.

Santosh B Dighe Department of Pharmacology, Pravara Rural College of Pharmacy, Loni, Pravaranagar, Maharashtra, India ,413736.

Abstract:
As a result of high experience from the past generations, today, all over the world's cultures have an extensive knowledge of herbal medicine. Traditional medicines have great importance in our culture. *Hibiscus cannabinus* plant has therapeutic used in traditional system of medicines in India. *Hibiscus cannabinus* L. (Malvaceae) is an herbaceous annual plant with high potential. This plant contains different phytoconstituents such as Alkaloids, Carbohydrates, steroids, tannins, phenols, proteins, saponins. This information described and discussed the chemical constituents, pharmacognostic and phytochemical study of Hibiscus cannabinus leaf.
Keywords: *Hibiscus cannabinus,* phytoconstituents, phenolic content, Pharmacognostic study

Introduction:
Traditional herbal medicines are naturally occurring; plant-derived substances with minimum or no industrial processing that have been used to treat illness within local or regional healing processes. Traditional herbal medicines are getting importance in global health debates [1]. Herbal medicines involve the use of various plant parts such as seeds, berries, roots, leaves, bark, or flowers for medicinal purposes [2]. Traditional herbal medicinal practice has been known for centuries in different parts of the world. Herbal medicines are gaining interest because they are cost effective and eco-friendly nature [3]. Traditional medicine, including herbal medicine, provide their knowledge and practice of herbal healing for the prevention, diagnosis and elimination of physical, mental or social imbalance [4]. The pharmacological studies explain that plant have anticancer, antiulcer, antidiabetic, anthelmintic, antibacterial, immunological, hypolipidemic and antioxidant, haematinic and hepatoprotective effects. Plant consists of fat, alkaloids, carbohydrates, glycosides, flavonoids [5]. The complex mixture of an extract from an herbal product may contain organic compounds such as fatty acids, sterols, alkaloids, flavonoids, saponins, glycosides, tannins, lignans, terpenes, peptides and carbohydrates and determination of the bioactive component(s) is very difficult [6].
Due to the demand for fibrous material in whole world, global shortage of trees in many areas and environmental awareness, non-woods have become one of the important alternative sources of fibrous material for the 21st century [7]. Hibiscuss cannabinus is one of the most potential sources of fiber in the cottage industry in world. Recently kenaf production has been increased throughout the world for its elevated fiber content [8]. This plant was traditionally prescribed in traditional folk medicine in Africa and India; reported to contain several active phytoconstituents such as tannins, saponins, polyphenolics, alkaloids, lignin's, essential oils and steroids [9]. *Hibiscus cannabinus* L. (Malvaceae) is a woody to herbaceous annual plant .It produced large cream coloured flowers characterized by a reddish purple or scarlet throat, which are popular in the western world as "Kenaf" and widely grown as a fibre crop [10].

Plant profile
Taxonomic classification:
Kingdom: Plantae
Subkingdom: Viridiplantae
Infrakingdom: Streptophyta
Super division: Embryophyta
Division: Tracheophyta
Subdivision: Spermatophytina
Class: Magnoliopsida
Superorder: Rosanae

Journal of the Maharaja Sayajirao University of Baroda
ISSN: 0025-0422

PHARMACOGNOSTIC, PHYTOCHEMICAL STUDY AND ANTI-INFLAMMATORY ACTIVITY OF *Lantana camara* FLOWER

Chaitali S. Andhale* Department of Pharmacognosy, Pravara Rural College of Pharmacy, Pravaranagar, Loni-413736, Maharashtra, India.

Priya S. Rao Department of Pharmacognosy, Pravara Rural College of Pharmacy, Pravaranagar, Loni-413736, Maharashtra, India.

Sunaina R. Vikhe Department of Pharmacognosy, Pravara Rural College of Pharmacy, Pravaranagar, Loni-413736, Maharashtra, India.

Abstract:
The review was designed to investigate the traditional uses, chemical constituents and pharmacological effects of Lantana camara. In the current review, databases including Web Science, Pub Med, were searched to investigate the chemical constituents and pharmacological effects of Lantana camara.
The plant contained alkaloids, glycosides, steroids, saponins, flavanoids, coumarins, tannins, carbohydrates, hydroxyanthraquinones, anthraquinone glycosides, proteins, phytosteroids, fixed oils, fats, and triterpenoids. Previous pharmacological studies revealed that Lantana camara possessed antimicrobial, antiparasitic, anxiolytic, gastrointestinal, hypoglycemic, cardiovascular, antioxidant, anticancer, anti-inflammatory, analgesic, wound healing, antiurolithiatic, hepatoprotective, reproductive, anti-hemorrhoidaletc activity and many other effect.
Keyword: Lantana camara, Phytochemical, Alkaloid , Glycosides.

Introduction:

The genus of Lantana camara from the Verbenaceae family, *Lantana camara* was introduced in India, for its ornamental and attractive nature (1,2). It is also used for the treatment of cold, fever, chiken pox, asthma, ulcers, swellings, eczema , tumors, high blood pressure, catarrhal infection, tetanus, rheumatism, malaria, etc. The traditional use of the plant mainly anti- inflmmatory, antiinsecticidal, antidiarrheal, anticancer, antimalarial, wound healing property.
Lantana plant belong to the group of triterpenoids, flavonoids and other compound. Lantadenes A Lantandene B, Lantadene C are the major constituents of *Lantana camara* (Red flower varity) leaves (3,4,5).

Material and methods

Collection of plant material

The Flower of *Lantana camara* plant (Family: Verbeneacae) was collected form local area, Loni Ahmednagar, Maharashtra, India. The Plant Sample Was terminological identified and Authenticated at the Department of Botany and Research Centre, Padamashri Vikhe Patil Collage of Arts , Science and Commerce, Loni, Pravaranagar -413713 With the Ref.No.
PVPC/Bot/2020-21/HD-13.

Chemical & Reagents

To carry out whole research work various chemicals and reagents were used.

Preparation *of Lantana camara* Flower Extract

The drug of *Lantana camara* flower was collected. Then cleaned and dried at room temperature in shade and away from direct sunlight. The dried flowers were coarsely powdered in grinder.
Method: Soxhlet Extraction Solvents:Using solvent Methanol
The dried Flower was crushed to powder 100 gm of *Lantana camara* flower were extracted with Methanol at 80°C. temperature, for 24 hrs, in a 500 ml round bottom flask.
After 24 hrs of extraction, round bottom flask was cooled to room temperature and the extract were filtered and collected and After completion of extraction, the extract itself in round bottom flask (RBF) was evaporated to the half of total extract and then by taking small-small amount of extract from RBF into the porcelain dish, concentrated the extract on water bath and dried and stored at 4°C until further use.

Journal of the Maharaja Sayajirao University of Baroda
ISSN: 0025-0422

PHARMACOGNOSTICAL, PHYTOCHEMICAL STANDARDIZATION AND ANTICONVULSANT ACTIVITY STUDY OF *Sesbania grandiflora* FLOWERS

Shamali Sanjay Dange* Pravara Rural College of Pharmacy, Pravaranagar, Maharashtra, India.

Ravindra Jadhav Pravara Rural College of Pharmacy, Pravaranagar, Maharashtra, India.

SunayanaVikhe Pravara Rural College of Pharmacy, Pravaranagar, Maharashtra, India.

Santosh Dighe Pravara Rural College of Pharmacy, Pravaranagar, Maharashtra, India.

Abstract:
In the India there is a good biodiversity in plants. Plants based medicinal products used as integrated part of treatment on most of traditional systems of medicines. Sesbania grandiflora is a plant which used traditionally for many medicinal used which belongs in family Fabaceae. Present study was about investigated the Physicochemical and Phytochemical studies on selected plant such as Sesbania grandiflora. For the study Soxhlet apparatus was used for extraction of plant materials with using water, ethanol and chloroform as extractive solvents. Standard chemicals and methods were used for the qualitative determination of plant S. grandiflora flowers extract. The study investigation was followed to determine the presence of chemical compound in flowers part of plant as well as to investigate the quality of drug. Result found that the different flower extract may presence of alkaloids, steroids, tannins, sterols, flavonoid etc. The pentylenetetrazol (PTZ) induced seizure model was used for testing anticonvulsant activity of ethanolic, aqueous and chloroform extracts(100mg/kg) of Sesbania grandiflora flowers. The extracts significantly (*$p < 0.01$) reduced the duration of convulsion and delay onset of seizure. The study results that Sesbania grandiflora flowers has anticonvulsant activity.
Keywords: Sesbania grandiflora, flowers, Fabaceae, phytochemical screening, physicochemical parameters, Anticonvulsant activity.

Introduction:

Herbal medicinal plants used as a traditional medicine by humans from ancient civilization. Now a day's most of the world population depends on herbal medicines or used mostly herbal medicines for treatment of various diseases. The whole plant as well as different parts of plant used as therapeutic agent in different systems of medicine. *Sesbania grandiflora* plant having a therapeutic medicinal value which used whole or different part as a medicine in different dosage forms (1).
Dosage forms of plant which directly or indirectly effective on human and animals for that effectiveness of medicinal plant standardization procedure is mostly used. Standardization is required because many of people used various dosage forms to treat different types of diseases for better potency of dosage forms mainly depends on quality of raw materials which used to formulate dosage forms. In various medicinal plants contains various activephytochemical which may be toxic in nature so the standardization required in order to decrease the incidence of toxicity and to increase the quality, potency and effectiveness of herbal drugs (2, 3). *Sesbania grandiflora* having two flower species that is white flowers and purple flowersin that white flower's species found nontoxic in nature and the purple flowers species is highly toxic in nature (4). Sesbania plant which including in family fabaceae. The plant iscommonly known as a Sesban, agate etc. In the world it is located in India, East Asia, Malaysia, and Indonesia. The height of tree is about 1-4 m tall and short lived with quick growing. The plant having different vernacular names like Sesban, hadge, agate,gallo,picoetc(5, 6, 7).In *Sesbania grandiflora* plant contains many phytochemical like Alkaloids, saponines, carbohydrates, flavanoids, steroids, triterpens, tannins, phenolic compounds etc(8-9).As per literature the phytochemicals present in flower part of plant are mainly cyaniding, delphinidine, glucoside, tannins, keampferol, proteins, oleanolic acid, grandiflora etc.(10).There is no or less report present for standardization so that qualitative standardization of flower of *Sesbania grandiflora* was estimated as per standard guidelines. As per literature study several pharmacological activities reported for the flowers of *sesbania grandiflora*.*Sesbania grandiflora* is a traditional medicinal plant used for treatment of various disorders including seizures. The *Sesbania grandiflora* flowers has not been studied in depth for its anticonvulsant activity. In below study we have evaluated anticonvulsant activity on flowers of *sesbania grandiflora*. (13)

Material and method:

Chemical and Reagents:

The standard drugs and chemicals wereobtained from pravara rural college of pharmacy Pravaranagar, Loni, were having analytical grades and highest purity.

Collection and Authentication of plant materials:

The white flower of *Sesbania grandiflora* was collected from local areas of Loni, Ahmednagar district, Maharashtra, India.The authentication done by **Dr. A.S. Wable**, Asst. Professor and research guide, Dept. of Botany of research center PadmashriVikhe

Journal of the Maharaja Sayajirao University of Baroda
ISSN: 0025-0422

PHARMACOGNOSTIC PHYTOCHEMICAL STUDY AND ANTITUSSIVE ACTIVITY OF *Cordia sinensis* LEAVES

Ajit D. Navale* Department of Pharmacognosy, Pravara Rural College of Pharmacy, Pravaranagar Loni-413736, Maharashtra, India.

Priya S. Rao Department of Pharmacognosy, Pravara Rural College of Pharmacy, Pravaranagar Loni-413736, Maharashtra, India.

Sunaina R. Vikhe Department of Pharmacognosy, Pravara Rural College of Pharmacy, Pravaranagar Loni-413736, Maharashtra, India.

Santosh B. Dighe Department of Pharmacognosy, Pravara Rural College of Pharmacy, Pravaranagar Loni-413736, Maharashtra, India.

Abstract:
The objectives of the study is to conduct a systemic evaluation of the medicinal value of leaves of cordia sinensis which includes the macroscopic characterization, Physiochemical evaluation, Preliminary phytochemical screening and the experimental Antitussive activity. *Cordia sinensis* leaves was studied for the Pharmacognostical, Phytochemical and another methods which are used for the standardization of these plant material. Also the ethanol extract of leaves was evaluated for the antitussive activity study using Ammonia induced cough model in Wistar rats at oral doses. The Preliminary phytochemical screening of extract was done to determine the presence of Phytoconstituents in extract which shows presence of Alkaloids, Glycosides, Flavonoids, steroids, triterpenoids, tannins, phenols, sterols, saponins as well as yhe Antitussive activity of *Cordia sinensis* leaves extract shows significant antitussive effect in experimentally induced ammonia model in rats comparable to the standard drug and provides pharmacological evidence as antitussive agent.

1. Introduction:

Herbal medicine continues to be the principal health care provider for roughly 75-80 percent of the all world's population, firstly in the developing countries. This could be due to the prevalent misunderstanding of herbal medications have no negative effects and are inexpensive and world widely available. Herbal medicine is used more than anywhere else in the earth, according to the World Health Organization (WHO). Herbal medicine is used more than everywhere else on the planet in the world. (S.K.Pal et al., 2003)

Cordia is a genus in the Boraginaceae family, with over 300 species found worldwide, especially in warmer climates. Several uses in traditional medicine have been described for distinct Cordia species, according to a literature review. Because of the genus Cordia's ethno pharmacological and chemotaxonomic value, we decided to look at the chemical contents of one of its species, Cordia sinensis, a medicinal plant found in the drier portions of Saudi Arabia, Africa, and India C. sinensis bark is used to treat stomach and chest problems. A review of the literature found that relatively little phytochemical research on C. sinensis has been done thus far. The primary toxicity was identified in the ethyl acetate soluble sub-fraction of a methanolic extract of this plant in the brine shrimp mortality test. A pharmacological analysis of this fraction indicated that it had strong antioxidant properties. (Nawal Al-Musayeib et.,al 2011). C. sinensis have a light green with small size. ; The C. sinensis had Flowers sweet scented, calyx glabrous. Fruit yellow; orange or bright red, mucilaginous and edible.

Thus the present investigation aims towards the Pharmacognostical evaluation, determination of physicochemical parameters, preliminary phytochemical screening and the antitussive activity of ethanol extract of cordia sinensis leaves.

2. Materials and methods

2.1Collection and Authentication of plant material:

Cordia sinensis leaves, which belong to the Boraginaceae family, were collected in wakla Aurangabad, Maharashtra, India. At the Department of Botany and Research Centre, Padmashri Vikhe Patil College of Arts, Science and Commerce, Loni, Pravaranagar-413 713, the plant sample was terminologically recognized and authenticated. PVPC/Bot/2020-21/HD-31 is the reference number.

2.2 Chemicals and reagents

To carry out whole research work using Plant *Cordia sinensis* (leaves part) various chemicals and reagents were used.

2.3 Processing and solvent extraction

The drug of *Cordia sinensis* leaves was collected. Then the dried leaves material is crushed in grinder. The fine powder of the drug was used for Soxhlet-extraction. Powdered leaves sample of drug *Cordia sinensis* were extracted using organic solvents like chloroform & Ethanol for six hrs by hot continuous Extraction method (Fig. 1). After completion of Soxhlet extraction, the extract

Journal of the Maharaja Sayajirao University of Baroda
ISSN: 0025-0422

PHARMACOGNOSTICAL, PHYTOCHEMICAL STUDY AND ANTI-INFLAMMATORY ACTIVITY OF *Benincasa hispida* LEAVES

Chaitali D. Wani* Department of Pharmacognosy, Pravara Rural College of Pharmacy, Pravaranagar, Loni-413 736, Maharashtra, India.

Priya S.Rao Department of Pharmacognosy, Pravara Rural College of Pharmacy, Pravaranagar, Loni-413 736, Maharashtra, India.

Sunaina R. Vikhe Department of Pharmacognosy, Pravara Rural College of Pharmacy, Pravaranagar, Loni-413 736, Maharashtra, India.

Santosh B. Dighe Department of Pharmacology, Pravara Rural College of Pharmacy, Pravaranagar, Loni-413 736, Maharashtra, India.

Abstract:
From the thousands of years, the use of *Benincasa hispida* fruit from Cucurbitaceae family is for medicinal purpose. It is very popular vegetable for nutritional purposes. The fruit of *Benincasa hispida i*s mostly use for various type of medicinal problem as like respiratory system, gastrointestinal problem, heart diseases, urinary function and diabetes. The plant shows many pharmacological activities as central nervous effect, anti-oxidant, anti-inflammatory, analgesic, anti-asthmatic, diuretic, nephron protective, antidiabetic, hypolipidemic and antidepressant etc. This plant mainly in Asian communities is mostly use as food because of its nutrition and medicine value. There are lot of study on the fruit part of this plant so that's why now this research article present the Pharmacognostic account as well as physicochemical evaluation, which shows the effect in the treatment of disease by using the leaf part of this plant. Leaf of this plant is also having the various medicinal use. So, the *Benincasa hispida* leaves is phytochemically evaluated using the ethanol extract of leaves to show which secondary metabolite are present and to check the anti-inflammatory activity. The result shows presence of alkaloids, tannins, phenol and flavonoids. So, the leaves of *Benincasa hispida* responsible for different pharmacological activity.
Keywords: *Benincasa hispida*, Physicochemical, Alkaloids, Tannin, Flavonoids, Phenol, Anti-inflammatory activity.

Introduction:

NATURE is the best source of the medicine. There are many sources as plant, animal and minerals which are obtained from the nature and this are helpful for treating various disease. Medicinal plants are presently in demand and their acceptance is increasing progressively[1]. From this growing medicinal plant use the *Benincasa hispida* is the most popular plant use for the medicinal purpose and pharmacological activity[2]. Plants are reservoir of potentially useful chemical compound which serve as drug. So, the herbal medicine is promising choice over modern synthetic drugs. They show very less side effect[3]. The fruit of *Benincasa hispida* is mainly contain flavonoids, terpenoids, carbohydrates, alkaloids and phenol etc. So, it is useful in the various disease treatment as like bleeding disorder, epilepsy, insanity and nervous disorder[4]. A lot of work has been done on the various parts of the *Benincasa hispida* but there is no any record on the pharmacognostic parameter of leaves. Also, the physicochemical and phytochemical evaluation helps to show which secondary metabolites are present in leaves and due to presence of this secondary metabolite such as alkaloids, flavonoids, tannins and phenol of leaves of *Benincasa hispida* is helpful in showing various pharmacological activities.

Material and methods

Collection of plant material

The leaves of *Benincasa hispida* plant (Family- Cucurbitaceae) was collected from the local area of Loni (BK) Ahmednagar, Maharashtra, India. The plant was authenticated at the herbarium of Department of Botany and Research Centre, Padmashri Vikhe Patil College of Arts, Science and Commerce, Loni, Pravaranagar-413 713. With the Ref No: PVPC/Bot/2020-21/IID-15.

Chemicals and Reagents

Various type of chemical and reagents were used to carry out the research work.

Preparation of Benincasa *hispida* leaves extract

The leaves of *Benincasa hispida* was collected. Then dried it and this dried leaves then pulverized in grinder to make coarse powder which used for the extraction.

- Method: Soxhlet extraction
- Solvent: Ethanol.

IJRAR.ORG E-ISSN: 2348-1269, P-ISSN: 2349-5138

INTERNATIONAL JOURNAL OF RESEARCH AND ANALYTICAL REVIEWS (IJRAR) | IJRAR.ORG

An International Open Access, Peer-reviewed, Refereed Journal

A BRIEF REVIEW ON VARIOUS ANALYTICAL METHODS FOR ESTIMATION OF LEVETIRACETAM IN BULK AND TABLET DOSAGE FORM.

Ms. Khemnar C.S.[1*], Mr. Kolhe M.H.[2]

1. **Research Scholar, Pravara Rural College of Pharmacy, Pravaranagar, MH, India.**
2. **Professor, Pravara Rural College of Pharmacy, Pravaranagar, MH, India.**

ABSTRACT:

Levetiracetam is an antiepileptic medication that is used to treat partial onset epilepsy, myoclonic seizures, and tonic-clonic seizures. Etiracetam is the S-enantiomer. (S)- 2-(2-oxopyrrolidin-1-yl) butanamide is its chemical name. It works as a neuromodulator by attaching to SV2A (synaptic vesicle glycoprotein 2A) and inhibiting presynaptic calcium channels, lowering neurotransmitter release. The goal of this review paper was to compile appropriate UV Spectroscopic and RP-HPLC methods for analysing Levetiracetam in single and mixed dosage forms. Linearity, Range, Accuracy, Precision, Limit of detection, Limit of Quantification, Ruggedness, and Robustness were used to validate the developed methods in accordance with ICH Q2 R1 criteria. All of the reported analytical procedures produce findings that are within the acceptable range.

Keywords: Levetiracetam, RP-HPLC, UPLC, analytical method, validation.

1. INTRODUCTION:

Anti-epileptic drug levetiracetam is used to treat seizures in epilepsy patients. It can be used alone or in combination with other medications to treat adults and children. It works to prevent seizures as long as you keep taking it.

Levetiracetam belongs to the pyrrolidine class of drugs and is used to treat a variety of seizures caused by epilepsy. It was approved for usage in the United States for the first time in 1999, and it is structurally and mechanistically distinct from other anti-epileptic medications (AEDs). Levetiracetam has a broad therapeutic index and is unlikely to cause or be affected by pharmacokinetic interactions. These properties make it a better alternative than other AEDs, which are known for having narrow therapeutic ranges. [1-3]

ISSN 2581-6217

World Journal of Pharmaceutical Science & Technology

Journal homepage: www.wjpst.com

Original Research Article

DEVELOPMENT AND VALIDATION OF A RP HPLC METHOD FOR THE SIMULTANEOUS ANALYSIS OF LOPINAVIR AND RITONAVIR IN TABLETS DOSAGE FORM.

Shubham Mhaske *[1], Suhas Siddheshwar[2], Mahesh Kolhe[3]

1. Department Of Quality Assurance Techniques, Pravara Rural College Of Pharmacy, Pravaranagar, Tal- Rahta, Dist- Ahmednagar 413736, India
2. Department Of Quality Assurance Techniques, Pravara Rural College Of Pharmacy, Pravaranagar, Tal- Rahta, Dist- Ahmednagar 413736, India
3. Department Of Quality Assurance Techniques, Pravara Rural College Of Pharmacy, Pravaranagar, Tal- Rahta, Dist- Ahmednagar 413736, India

Address for correspondence:

Shubham Mhaske, Department Of Quality Assurance Techniques, Pravara Rural College Of Pharmacy, Pravaranagar, Tal- Rahta, Dist- Ahmednagar 413736, India

E-mail- mhaskeshubham663@gmail.com

Received: 19-03-2021, Revised: 30-04-2021, Accepted: 01-05-2021

ABSTRACT

The objective of this review study is to analyze simple, accurate, precise and rapid stability indicating HPLC method for simultaneous determination of Lopinavir and Ritonavir in combined dosage forms.

A validated stability indicating reversed phase high-performance liquid chromatographic method was developed for the quantitative determination of two antiviral drugs viz. lopinavir (LPV) and ritonavir (RTV) on Phenomenex – Luna, C18 (250 x 4.6 mm i.d., 5µ) column using mobile phase composition of Buffer: Acetonitrile (55: 45 % V/V) at a flow rate of 1.5 ml/min.

Quantification was achieved with ultraviolet detection at 255nm. The retention time obtained for ritonavir was at 10.92 min and for lopinavir was at 13.23 min. This method has been validated and shown to be specific, sensitive, precise, linear, accurate, rugged, robust and fast.

Formulation and evaluation of vesicular delivery of curcumin for topical application

Gauravi A. Ghorpade*, Ravindra B. Laware, Santosh B. Dighe, Mahesh H. Kolhe

Department of Quality Assurance Techniques, Pravara Rural College of Pharmacy, Loni, Maharasthra, India.

Corresponding Author

Gauravi Ghorpade
Pravara Rural College of Pharmacy
A/P- Loni Bk, Tal- Rahata,
Dist- Ahmednagar, Maharashtra
India
Mobile No: 8975896271
Email : gaurighorpade1998@gmail.com

ABSTRACT

Curcumin has wide spectrum of therapeutic and prophylactic activities. But curcumin has problem of poor aqueous solubility, stability and less bioavailability. One of the approaches to overcome these problems, is to prepare in niosomal drug delivery of curcumin. The present study was aimed to development, characterize and optimize vesicular Drug Delivery System of curcumin. Niosomes of curcumin were prepared by TFH method using cholesterol and one of three non ionic surfactants- Span20, 40 and 60. Efficiency of entrapment was found to be maximum for niosomes prepare with span 60 (75.8%). The vesicle size was found between 406 to 464 nm with niosomes of span-20 resulting in bigger vesicles. Zeta potential value of all the noisome formulation was observed to be close to -30mv, indicating moderate niosome stability. Curcumin niosomal gel formulation with the optimized excipient ratio was prepared using Carbopol 940. The pH of the gel formulations was found to be in the range of 6.79 to 6.94. The highest efficiency of entrapment was observed with CUR 60-5 gel formulation. In *In-vitro* diffusion study, Plain curcumin gel has showed cumulative percentage release of 94% at the end of 9 hours, while niosomal gel –Cur 20-3, Cur 40-4 and Cur-60-5 showed 82.21, 81.69 and 77.78 % release respectively at end of 24 hours. Gel formulations were found to be more stable at storage temperature 4°C. It is concluded from the study that TFH method is useful for the successful incorporation of curcumin into niosomes. The niosome gel of curcumin showed prolonged control release of drug and enhanced penetration across the diffusion membrane.

Keywords: Curcumin, non ionic surfactant, Vesicular drug delivery, carbopol

REVIEW ARTICLE

Analytical Technique for Carvedilol and Ivabradine Determination from Pure and Pharmaceutical Dosage Forms: A Review

Chavan P. B.*, Kolhe M. H., Dhamak K. V., Bhor R. J.

Department of Quality Assurance Technique, Pravara Rural College of Pharmacy, Pravaranagar, Ahmednagar, Maharashtra, India

Received: 13th April, 2022; Revised: 28th August, 2022; Accepted: 03rd September, 2022; Available Online: 25th September, 2022

ABSTRACT

Carvedilol and ivabradine is a drug combination used to treat cardiovascular diseases like hypertension, chronic stable angina pectoris and, chronic heart failure. Both are different in their mode of action. Carvedilol prevents exercise-induced tachycardia via inhibition of beta-adrenoreceptor carvedilol, which also acts on alpha-1 adrenergic receptors and reduces blood pressure. In case of a higher dose also shows antioxidant and calcium channel blocking activity. Ivabradine is a heart rate-reducing drug that works by blocking cardiac pacemaker currents (If) selectively and specifically. The major goal of this review paper is to emphasize the characteristics of carvedilol and ivabradine, such as their pharmacological profiles, mechanisms of action, pharmacokinetic and pharmacodynamic studies, and previously described analytical methodologies for carvedilol and ivabradine determination. Various methods such as UV spectroscopy High-performance liquid chromatography (HPLC), Reverse phase -High performance liquid chromatography (RP-HPLC), Ultra-performance liquid chromatography (UPLC), Mass Spectrometry (MS), High-performance thin layer chromatography (HPTLC). is the most accurate easy method for estimation.

Keywords: Analytical method, Carvedilol, Heart failure, HPLC.

International Journal of Drug Delivery Technology (2022); DOI: 10.25258/ijddt.12.3.62

How to cite this article: Chavan, PB, Kolhe, MH, Dhamak, KV, Bhor, RJ, Analytical Technique for Carvedilol and Ivabradine Determination from Pure and Pharmaceutical Dosage Forms: A Review. International Journal of Drug Delivery Technology. 2022;12(3):1305-1310.

Source of support: Nil.

Conflict of interest: None

INTRODUCTION

Heart failure (HF) is a serious public health issue. It has a considerable clinical, social, and economic impact, owing to significant functional limits and decreased patient quality of life. Increased adrenergic tone, altered autonomic regulation of the cardiovascular system, activation of the renin-angiotensin-aldosterone system, and diminished peripheral blood flow are all pathophysiological pathways that cause HF. In patients with ischemic heart disease, studies have indicated that a combination of ivabradine plus beta-blocker such as carvedilol improves exercise tolerance more than beta-blockade alone. Ivabradine works by blocking the enzyme that causes the heart to beat faster. If channel enhances event-free survival in heart failure patients with and without a sufficient beta-blocker.[1] 1-(carbazol-4-yloxy-3-[2-(O-methoxy phenoxy) ethyl]amino] carvedilol -2-propranol is a novel drug that is used to treat hypertension and heart failure (CHF).[2] It completely blocks adrenergic stimulation of beta receptors within the myocardium (beta 1 receptors) and within bronchial and vascular smooth muscles (beta 2 receptors) and to a lesser extent alpha 1 receptors within the vascular smooth muscle. Carvedilol works to lower systolic and diastolic blood pressure by lowering total peripheral resistance. Cardiac function is generally preserved and heart rate is either unchanged or decreased slightly.[3] Ivabradine is a unique cardiac medicine that was approved by the Food and Drug Administration (FDA) in April 2015 to help people with stable, symptomatic chronic heart failure avoid hospitalization.[4] Ivabradine works by blocking the hyperpolarization-activated cyclic nucleotide-gated (HCN) channel, which is responsible for pacemaker generation through the If current in the SA node, therefore decreasing the diastolic contraction if the SA node is up to date. The If current channels do play a role in the creation of spontaneous activity in pacemaker cells, as well as mediating autonomic HR control.[5,6] Several countries, including the United Kingdom, Australia, Saudi Arabia, and the United States, have allowed its use. The medicine has received approval in 108 countries and is available in 93 others. The majority of these nations are members of the European Union. The medicine has been approved in 12 Middle Eastern nations, including Saudi Arabia. These nations have approved the 5 and 7.5 mg film-coated tablet dosages (twice a day).[7] In clinical practice, bradycardia,

*Author for Correspondence: pruthvirajchavan69150@gmail.com

RESEARCH ARTICLE

Stability Indicating Method Development and Validation of Carvedilol and Ivabradine in Bulk and its Formulation by Reverse Phase High Performance Liquid Chromatography Method

Chavan P. Badrinath, Kolhe M. Hari, Dhamak K.Vithhalrao

Department of Quality Assurance Technique, Pravara Rural College of Pharmacy, Ahmednagar, Maharashtra India.

Received: 22nd April, 2022; Revised: 28th August, 2022; Accepted: 05th September, 2022; Available Online: 25th September, 2022

ABSTRACT

A simple, sensitive, precise, specific, rapid, accurate, and novel reverse phase high performance liquid chromatography (RP- HPLC) method for determining carvedilol (CAR) and ivabradine (IVA) in bulk and its formulation has been developed validated. RP-HPLC performed the chromatographic separation on column C18 (4.6 mm x 2.5 cm, 5 µm) using acetonitrile: buffer pH 2.0 (60:40) pH of this buffer was adjusted to 2.0 with ortho-phosphoric acid, as a mobile phase. The flow rate was fixed at 0.90 mL/min. UV detection was operated at 275 nm, and injected volume was 20 µL. The retention time was found to be 2.931 for ivabradine and 3.370 for carvedilol. The RSD for ivabradine and carvedilol's precision is within a limit of less than 2%, which indicates that the given method is highly precise.

Regarding the accuracy, the percentage recovery of the drug ivabradine is 99.48, and 98.19% for carvedilol, linearity of carvedilol and ivabradine ranged from 25–100 ppm and 20–80 ppm, respectively. The calibration curve shows good range and linearity. The correlation coefficient of carvedilol and ivabradine was 0.9987 and 0.9991, respectively. Limit of detection (LoD) and Limit of quantitation (LoQ) were found to be 3.79 ppm and 11.50 ppm for carvedilol and 2.47 ppm and 7.48 ppm for ivabradine, respectively. The acid, base, UV, and thermal stress studies presented the formation of a variety of degradation products; the given method showed good accuracy, linearity, precision, and robustness for analyzing the drug combination in bulk and its pharmaceutical formulations.

Keywords: Carvedilol, Ivabradine, Method development and validation, RP-HPLC, Stability study.

International Journal of Drug Delivery Technology (2022); DOI: 10.25258/ijddt.12.3.70

How to cite this article: Chavan PB, Kolhe MH, Dhamak KV. Stability Indicating Method Development and Validation of Carvedilol and Ivabradine in Bulk and its Formulation by RP-HPLC Method. International Journal of Drug Delivery Technology. 2022;12(3):1350-1356.

Source of support: Nil.

Conflict of interest: None

INTRODUCTION

Carvedilol is an antihypertensive drug chemically; it is named 1-(9H-Carbazol-4-yloxy)-3-[[2-(2-methoxyphenoxy) ethyl] amino] propan-2-ol.[1-3] It is a third-generation non-selective beta blocker that competitively blocks beta 1, beta 2, and alpha 1 adrenoreceptor.[4,5] it is also used for the treatment of hypertension, CHF (congestive heart failure), and ischemic heart diseases (Figure 1).[2,5]

It is white or almost white solid powder at room temperature[6], and which is completely soluble in DMSO (Dimethyl sulfoxide), methanol, sparingly soluble in isopropanol and ethanol, and slightly soluble in ethyl ether; practically insoluble in water and dilute acidic solution.[3]

Ivabradine is a cardiac medication chemically it is named as 3-[[3-[(7S)-3,4-dimethoxy-7-bicyclo [4.2.0] octa-1,3,5-trienyl] methyl-methylamino] propyl]-7,8-dimethoxy-2,5-dihydro-1H-3-benzazepin-4-one (Figure 2).[7,8] it reduces heart rate and use in treating heart failure patients. Ivabradine is selectively inhibited, if (funny channel), located in a sinoatrial node which controls the diastolic depolarization.[9-11]

It is white-slightly yellow powder it is soluble in some organic solvent such as ethanol, Dimethyl sulfoxide (DMSO), dimethyl formamide.

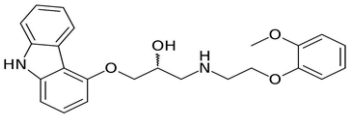


Figure 1: Structure of Carvedilol

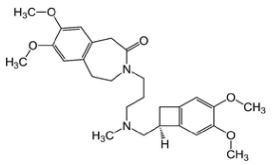


Figure 2: Structure of Ivabradine

**Author for Correspondence: pruthvirajchavan69150@gmail.com*

International Journal for Pharmaceutical Research Scholars (IJPRS)

V-10, I-4, 2021 ISSN: 2277 - 7873

REVIEW ARTICLE

NOVEL NEW RESEARCH STRATEGIES OF BENZIMIDAZOLE DERIVATIVES: A REVIEW

*Sonali Pawar[1]; Rohit Jaysing Bhor[*1]; Sagar Magar[2]*

[1]Department of Pharmaceutical Chemistry, Pravara Rural College of Pharmacy Pravaranagar, Tal-Rahata, District-Ahmednagar, Maharashtra, India

[*2]Department of Pharmaceutical Chemistry, Pravara Rural College of Pharmacy Pravaranagar, Tal-Rahata, District-Ahmednagar, Maharashtra, India Lakshmi Narain Collage of Pharmacy (RCP), Indore, India

Manuscript No: IJPRS/V10/I4/00001, Received: 01/12/2021, Accepted: 03/12/2021, Published: 30/12/2021

ABSTRACT

Benzimidazole is an example of aromatic heterocyclic organic compound. It is a bicyclic compound. It contains the fusion of benzene with imidazole which ultimately gives a privileged structure. Benzimidazole and its derivatives play an important role in the medicinal chemistry and drug discovery with many pharmacological activities. Substitution of various chemicals on benzimidazole nucleus gives important synthetic product and strategy in the drug discovery process. Benzimidazole derivatives contain versatile nitrogen containing heterocyclic compounds. The methods for the synthesis of benzimidazole and its derivatives have become a focus of synthetic organic scientist, Benzimidazole and its derivatives were used as building blocks for the important therapeutic compounds in medicine. Benzimidazole nucleus plays a very important role as a therapeutic agent. Benzimidazole and its derivatives exhibit pharmacological activities such as antimicrobial, antiviral, anticancer, anti-inflammatory, analgesic activity, anti-ulcer, anti-diabetic activity etc. Benzimidazole nucleus gives active sites for the reaction like 2 and 5 position which gives potent therapeutic agents. The present review covers the chemistry and pharmacological activities of substituted benzimidazole. In the present review, benzimidazole derivatives with different synthetic derivatives and their pharmacological activities are given. The main aim of review is to help medicinal chemists for the development of SAR on benzimidazole for each activity and to review the work reported, chemistry and pharmacological activities of benzimidazole derivatives during past years.

KEYWORDS

OPD, Antimicrobial, Antiviral, Anti-inflammatory, Analgesic Activity, Anti-ulcer, Anti-diabetic Activity

INTRODUCTION

*Address for Correspondence:
ROHIT JAYSING BHOR,
Department of Pharmaceutical Chemistry,
Pravara Rural College of Pharmacy,
Pravaranagar, Maharashtra,
India.

Benzimidazole is an example of aromatic heterocyclic organic compound. The new method of benzimidazole based on poly heterocycles draw the attention of pharmacists from last few decades[1]. It has important pharmocophore in medicinal chemistry and pharmacology. Benzimidazole and its derivatives are an example of bicyclic compound consisting of the fusion of benzene with imidazole[2]. The structure of

Sys Rev Pharm 2022; 13(3): 291-295
A multifaceted review journal in the field of pharmacy
E-ISSN 0976-2779 P-ISSN 0975-8453 / DOI: 10.31858/0975-8453.13.3.291-295

Review Article

Hydralazine and Isosorbide Dinitrate: An Analytical Review

Laxman D Bulbule*, RK Godge, Sagar Magar
Department of Pharmaceutical Chemistry, Pravara Rural College of Pharmacy, Maharashtra, India

Article History: *Submitted: 02.02.2022* *Accepted: 23.02.2022* *Published: 02.03.2022*

ABSTRACT

Hydralazine is antihypertensive agent which is smooth muscle relaxant helps to treat high blood pressure. Hydralazine comes in a class of medications called vasodilators. It works by relaxing the blood vessels so that blood can flow more easily through the body. Isosorbide Dinitrate is antianginal agent which is used to prevent chest pain in patients with a certain heart condition (coronary artery disease). This medication belongs to a class of drugs known as nitrates. It works by relaxing and widening blood vessels so blood can flow more easily to the heart. This is the literature review of developed various analytical method for validation and estimation of Hydralazine, Isosorbide Dinitrate in combination. The analytical method like RP-HPLC (Revere Phase High Performance Liquid Chromatography), quality by design, Ultraviolet (UV) Spectrophotometry, Simultaneous Equation Method (SEM), stability indicating method were reported for Hydralazine Hydrochloride, Isosorbide Dinitrate. These analytical methods can be used for qualitative and quantitative estimation of Isosorbide Dinitrate and Hydralazine Hydrochloride in single dosage form as well as in combination with other drugs.

Keywords: Antianginal, Antihypertensive, HPLC (High Performance Liquid Chromatography), Hydralazine, Isosorbide nitrate

***Correspondence:** Laxman D Bulbule, Department of Pharmaceutical Chemistry, Pravara Rural College of Pharmacy, Maharashtra, India, E-mail: laxmanbulbule11@gmail.com

ABBREVIATIONS

HLZ: Hydralazine Hydrochloride; ISD: Isosorbide Dinitrate; RP-HPLC: Revere Phase High Performance Liquid Chromatography; CGMP: Cyclic Guanosine Mono Phosphate; PKG: Protein Kinase-G; NO: Nitric oxide; V-HeFT: Vasodilator-Heart Failure Trial; CHF: Cardiac Heart Failure; A-HeFT¬: African-American Heart Failure; DBH: Dopamine Beta-Hydroxylase

INTRODUCTION

In the 1950s Hydralazine was developed as a malaria treatment, along this hydralazine showed antihypertensive ability. Hydralazine chemically, 1-Hydrazinophthalazine and derived from Phthalazine. Hydralazine is orally bioavailable vasodilator. It relaxes (widens) veins and arteries, which make it easier for your heart to pump. It is sold under the brand name Apresoline to treat high blood pressure and heart failure. It also used as Antihypertensive agent in case of preeclampsia. It comes under the class of Smooth muscle relaxant. The mechanism of its action, Hydralazine is direct arteriole vasodilator. The mode of action is relates with intracellular calcium homeostasis. It inhibits Inositol trisphosphate (IP3)-induced release of calcium from the smooth muscle cells sarcoplasmic reticulum, it also inhibit myosin phosphorylation within the arterial smooth muscle. This results in the reduction in peripheral vascular resistance and leads to a compensatory baroreceptor-mediated release of epinephrine and norepinephrine, this cause increase in venous return and cardiac output. Hydralazine may cause stimulation of the sympathetic nervous system and that may cause tachyphylaxis and tachycardia, so it is sometimes given with a beta-blocker or diuretic for better patient tolerance (McComb MN, *et al.*, 2016).

The metabolism of Hydralazine takes place in liver *via* polymorphic acetylation. Slow acetylators needs lower doses of the drug. Both the acetylated drug and unchanged drug are excreted in the urine and feces (Kirsten R, *et al.*, 1998). In the clinical studies it was found to be HLZ shows more effective together with Isosorbide Dinitrate, for the treatment of people of African descent. HLZ shows instant effect within the time period of 15 min and last up to 6 hours. It is administered by not only orally but also injected into vein (Stuart MC, *et al.*, 2009).

Isosorbide Dinitrate chemically known as 1, 4:3, 6-dianhydro-D-glucitol-2, 5-dinitrate, which is a nitrate ester and a glucitol derivative. Isosorbide Dinitrate is antianginal agent used to prevent chest pain from less supply of blood to heart i.e. angina pectoris and also used to treat heart failure and esophageal spasms. It is sold under the brand name Isordil and Sorbitrate. The clinical study says that ISD is useful in heart disorder due to systolic dysfunction along with hydralazine (Chavey WE, *et al.*, 2008). It can be used sublingually at the time of attack as well as orally for chronic prophylaxis.

Isosorbide is a nitrate that shows its pharmacologic activity by releasing Nitric Oxide (NO) and an Endothelium-Derived Relaxing Factor (EDRF). Nitric oxide is endogenously produced in the cell in endothelium to dilate the blood vessels. Isosorbide Dinitrate undergoes bioactivation process in the cell organelle endoplasmic reticulum *via* cyt-P450 (cytochrome P450) enzymes to release nitric oxide (Daiber A and Münzel T, 2015), this NO activates the enzyme soluble guanylyl cyclase in the vascular smooth muscles, this result in increasing the levels of intracellular cyclic Guanosine Monophosphate (cGMP) and the associated protein kinases such as cGMP-dependent protein kinases (cGK-I). The cGMP activates the Myosin Light Chain Phosphatase (MLCP). This MLCP cause dephosphorylation of the myosin light chain. CGMP-cGK-I inhibits the Inositol-1, 4, 5-trisphosphate (IP3)-dependent calcium release, so intracellular calcium level is decreased (Etter EF, *et al.*, 2001; Lincoln TM, *et al.*, 1994). Due to the decreased level of intracellular calcium inhibits the Myosin Light Chain Kinase (MLCK) (Divakaran S and Loscalzo J, 2017). The MLCK with the unphosphorylated myosin light chain, causes the myosin head to detach from the actin component of the smooth muscle, resulting in smooth muscle relaxation and causing widening of vessel (Daiber A and Münzel T, 2015).

LITERATURE REVIEW

History of BiDil

BiDil is the first Drug combination approved by Food and Drug Administration (FDA) marketed for a single racial-ethnic group. Hydralazine and Isosorbide Dinitrate is the fixed dose combination sold under the brand name BiDil. The BiDil is approved by

International Journal of All Research Education and Scientific Methods (IJARESM), ISSN: 2455-6211
Volume 10, Issue 5, May-2022, Impact Factor: 7.429, Available online at: www.ijaresm.com

Anti-Acne Powder Show Antibacterial Activity

Avishkar Tonde[1], Arpita Turakane[2], Tejas Todmal[3], Prof. Sagar magar[4]

----------**********----------

ABSTRACT

The main objective of work is to formulate anti-acne powder to comfort acne problem on face. The ingredient in powder is herbal and total safe & non harmful for face powder user. The powder preparation can be evaluated by physical properties and microbial properties. Physical properties include particle size, surface area, bulk density, tap density, bulk volume, tap volume, hausner's ratio, carr's index. The antimicrobial activity is checked by cup plate method .It's antimicrobial activity checked on organisms like Pseudomonas aeruginnosa. The mixture of culture of micro-organisms were use for the microbial assay by well diffusion cup plate method .The microbes were cultured in well suitable culture media for their growth. The sample is dissolved in well proportion. The sample is placed in various concentrations in different pores in cup plate method, the Petri plate kept for incubation at 37 Celsius for 48 hrs for growth of bacterial culture. After incubation period the zone of inhibition were measured to rectify the efficacy of various concentration of sample. The powder shows smoothing effect, not Itching, Antibacterial properties and is comfortable to use.

Keywords: Anti-acne powder, Herbal Powder, Germicidal powder.

INTRODUCTION

Powder: A powder is homogenous mixture of fine divided particulate material in dried form .

Properties of powder:

1) Powder is homogenous mixture.
2) The onset of action of powder drug is rapid.
3) The small children or elderly patient can easily take powder.
4) Powder are more easy to carry than the liquid dosage form.

Advantages of powder:

1) Good chemical stability as compared with fluids.
2) Easy to carry of powder as compare to liquid dosage form.
3) Powder formulation is economically cheaper than another formulation.
4) It is used for both internally and externally.

Disadvantage of powder:

1) Drugs have bitter taste, nausea and unpleasant taste cannot so be administered in powder form .
2) Drug which gets affected by atmospheric condition are not suitable for dispensing
3) Quantity less than 100mg cannot be weighed conviently.
4) Deliquesent and hygroscopic drug cannot be dispensed in powder form.

Classification of powder:

1) Bulk powder for Internal Use
2) Bulk powder for external use
3) Powder Enclosed in cachet
4) Compressed powder

How to Cite:
Magar, S. D., & Pawar, P. Y. (2022). In silico ADMET screening & molecular docking of some 1-(5-(4-chlorophenyl)-1,3,4-oxadiazol-3(2H)-yl) ethanone derivatives to be developed as triple mutant T790M/C797S EGFR inhibitors. *International Journal of Health Sciences*, *6*(S3), 10432–10451. https://doi.org/10.53730/ijhs.v6nS3.9448

In silico ADMET screening & molecular docking of some 1-(5-(4-chlorophenyl)-1,3,4-oxadiazol-3(2H)-yl) ethanone derivatives to be developed as triple mutant T790M/C797S EGFR inhibitors

Sagar D. Magar
Department of Pharmaceutical Chemistry, Dr. Vitthalrao Vikhe Patil Foundation's, College of Pharmacy, Ahmednagar, Maharashtra, 414111, India
*Corresponding author email: sagarmagar2010@gmail.com
Orcid ID: https://orcid.org/0000-0001-8467-849X

Dr. Pratap Y. Pawar
Department of Pharmaceutical Chemistry, Dr. Vitthalrao Vikhe Patil Foundation's, College of Pharmacy, Ahmednagar, Maharashtra, 414111, India

***Abstract*---** EGFRs' high expression and/or adaptive activation coincides with the pathogenesis and development of many tumors, making them appealing candidates for both diagnosis and therapy. Several strategies for targeting these receptors and/or the EGFR-mediated effects in cancer cells have been established. A lot of in silico models are developed for prediction of chemical ADMET properties. However, it is still not easy to evaluate the drug-likeness of compounds in terms of so many ADMET properties. In present study, we have designed some 1-(5-(4-chlorophenyl)-1, 3, 4-oxadiazol-3(2H)-yl) ethanone derivatives to be developed as potential EGFR inhibitors for the treatment of cancer. The designed derivatives were screened through Lipinski rule, Veber's rule, ADMET analysis, drug-likeness properties and molecular docking. We concluded that all the compounds sm1, sm2, sm3, sm8, sm9, sm10, sm11, sm12, sm13, sm14, sm15, sm18, and sm19 were found to possess drug-likeness properties and therefore were subjected for molecular docking studies. From molecular docking studies it was observed that Molecules Sm3, Sm8, Sm9, Sm10, Sm12, and Sm2 had formed either three or two conventional hydrogen bonds with EGFR enzyme and hence selected for synthesis which can be developed further to get more promising molecules for the treatment of cancer.

***Keywords*---**EGFR, angiogenesis, cancer, ADMET, molecular docking.

JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue

JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)

An International Scholarly Open Access, Peer-reviewed, Refereed Journal

"DEVELOPMENT AND VALIDATION OF RP-HPLC METHOD FOR ESTIMATION OF TENOXICAM IN ITS BULK AND PHARMACEUTICAL DOSAGE FORM."

Somnath Rasane *, Hemlata Bhavar, Sagar Magar

Department of Pharmaceutical Chemistry, Pravara Rural College of Pharmacy, Pravaranagar

Tal-Rahata, Dist- Ahmednagar

ABSTRACT:

The present study describes a simple, accurate, precise and cost-effective reverse phase High Performance Liquid Chromatographic method for estimation of tenoxicam in their pharmaceutical dosage form. The separation was carried on Kromasil, C18, 250 mm X 4.6 mm, 5 µm. Detection was done using UV detector at isocratic point 368 nm. The developed method employed mobile Acetonitrile: Buffer (60: 40 % v/v), with flow rate 1.0 ml/min. High linearity of the developed method was confirmed over concentration range 1-8 µg/ml for tenoxicam with the correlation coefficient of 0.999. The Percentage RSD for precision of the method was found to be less than 2%. The percentage recoveries for tenoxicam was found to be in range 98.00-102.00 w/v. Peaks was obtained at retention time 2.9 min for for tenoxicam. By using all the above parameters, a simple, accurate, precise and cost-effective method were developed, optimize and validate.

KEYWORDS: RP-HPLC, Method optimization , development, tenoxicam .

INTRODUCTION:

Analytical chemistry is the analysis of material samples to gain an understanding of their chemical composition and structure. During last few decades, analytical chemistry has witnessed extensive development in terms of sophistication, quantitation and Instrumentation. Consequently, newer analytical techniques (such as hyphenated techniques FTIR, GCMS, LCMS, HPLC, HPTLC etc.) and their areas of

Content available at: https://www.ijcrips.com/current-issue

International Journal of Current Research and Innovation in Pharma Sciences

Journal homepage: https://www.ijcrips.com/

Research Article

Development and Validation of RP HPLC Method for Estimation of Deferiprone and Its Related Impurity in Pharmaceutical Dosage Form.

Shweta Ubale*[1], Mayur Bhosale[1], Dr. S. K. Parajne[1]

[1]*Department of pharmaceutical chemistry, Pravara rural college of pharmacy, Loni, Ahmednagar, Maharashtra, India.*

ARTICLE INFO

Article history:
Received 08-06--2022
Accepted 13-06-2022
Available online 16-06-2022

Keywords:
Deferiprone,
Maltol impurity,
Method validation,
RP HPLC.

ABSTRACT

The aim of this study is to develop a new, precise, sensitive, simple, efficient, selective and accurate high-performance liquid chromatographic method for the separation and determination of Deferiprone and its impurity in capsule dosage form. An extensive literature survey revealed no method for estimation of the above said. The chromatographic separation was achieved on Agilent Zorbax Bonus-RP (250 x 4.6 mm, 5 µ) with a mobile phase composed of Methanol: 0.1% O-Phosphoric acid (10:90, % v/v) in 1000 ml of Methanol: Water (50: 50, % v/v) using a diluent. gradient program at a flow rate of 1 mL/min with UV detectation at 280 nm. The developed method was validated as reported by ICH guidelines. The linearity of the calibration curve for Deferiprone and its process-related impurity in the concentration range of 4.0-6.0µg/ml was good. There exists a qualitative correlation between peak area and analyte concentration. The retention time for Deferiprone was found to be 2.29 min and its impurity was 8.65 min. Relative standard deviation values for Deferiprone is 0.45 and its process-related impurity is 0.17. All the results reveal that the proposed method was found to be highly sensitive, simple, precise, accurate, and fast. A large number of samples can be analyzed in a shorter time due to shorter retention times, so it can be successfully applied for routine analysis of Deferiprone and related maltol impurity in bulk and pharmaceutical dosage forms.

INTRODUCTION:

Deferiprone is in a class of medicines called iron chelators. Deferiprone is used for the management of Thalassemia major. Thalassemia most important takes place when a child inherits mutated two genes, one from every parent. Most importantly, children born with thalassemia expand the signs of intense anaemia within the first year of life. They cannot produce normal, personal hemoglobin and experience continual fatigue. They may also fail to thrive [2]. Deferiprone binds to iron in the blood. It treats and help to prevent too much iron in the blood. It helps to prevent and treat too much iron in the blood caused by blood transfusions [8]. Deferiprone is an associate iron chelator that binds to metal ions (iron III) and forms a 3:1 (deferiprone: iron) stable complex and is then eliminated within the urine.

*** Corresponding author.**
E-mail address: shwetarubale97@gmail.com
Shweta Ubale

[Doi: 10.1000/ijcrips/2022/04]

Deferiprone is a lot of selective for iron during which alternative metals like zinc, copper, and aluminum have a lower affinity for deferiprone. [3,5] Deferiprone is chemically 3-hydroxy-1,2-dimethyl pyridine-4-one with molecular formula C7H9NO2 [1,5]. Unwanted chemicals present within the formulation and active pharmaceutical ingredient which affects the quality, safety, and efficacy of the medicinal products are called impurity. A significant aspect of ensuring the safety of medicinal products is the qualification of impurities. [4] Literature survey revealed that few analytical methods have been reported for the estimation of deferiprone alone or in combination with other drugs by ultraviolet (UV) spectrometry high-performance liquid chromatography (HPLC) and LC-mass spectrometry. However, there is no reported method about the separation and determination of deferiprone impurity. Hence, an attempt was made to develop simple, accurate, precise, and sensitive HPLC method for estimation of deferiprone in the presence of its above-mentioned impurity.

METHODS:

Chemicals and reagents:

Content available at: https://www.ijcrips.com/current-issue

International Journal of Current Research and Innovation in Pharma Sciences

Journal homepage: https://www.ijcrips.com/

Research Article

STABILITY INDICATING RP-HPLC METHOD DEVELOPMENT AND VALIDATION OF CAPMATINIB IN BULK AND TABLET DOSAGE FORM

Dhone Suresh*[1], S.K.Parjane[1], Mayur Bhosale[1]

[1]*Department of pharmaceutical chemistry, Pravara rural college of pharmacy, Loni, Ahmednagar, Maharashtra, India.*

ARTICLE INFO

Article history:
Received: 10-06--2022
Accepted: 18-06-2022
Available online: 25-06-2022

Keywords:
Capmatinib,
RP-HPLC,
Method Development,
Validation

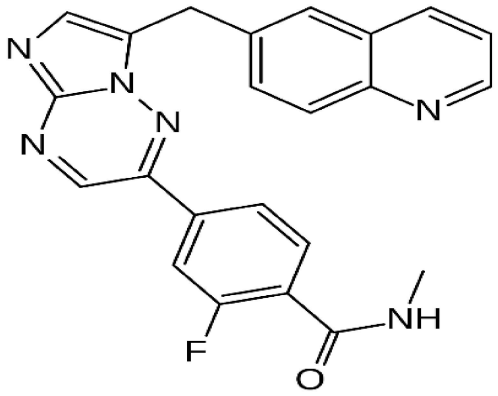
ABSTRACT

The stability indicating method was developed and validated for estimation of Capmatinib. The mobile phase was consisting of Acetonitrile : methanol (60:40).The linearity range of Capmatinib was found to be 2-10µg/ml. The calibration curve was plotted and regression equation of Capmatinib was found to be y = 791970x + 4780.7 with correlation coefficient (r 2) of 0.9993. Detection was done at 252 nm and the retention time of Capmatinib was found to be 3.8 min with the flow rate of 1.0 ml/min. From accuracy study % recovery of Capmatinib was found in the range of 98.89-100.29 % which is in the limits accordingly the ICH guidelines. The method was found to be simple, linear, rapid, accurate, precise, reproducible and robust. The % RSD was found within limit as per ICH guidelines. The result showed that proposed chromatographic method was suitable for the accurate, precise and rapid determination of Capmatinib in its bulk form and pharmaceutical dosage form.

INTRODUCTION:

Capmatinib is a small molecule kinase inhibitor targeted against c-Met (a.k.a. hepatocyte growth factor receptor [HGFR]), a receptor tyrosine kinase that, in healthy humans, activates signaling cascades involved in organ regeneration and tissue repair. Aberrant c-Met activation - via mutations, amplification, and/or overexpression - is known to occur in many types of cancer, and leads to overactivation of multiple downstream signaling pathways such as STAT3, PI3K/ATK, and RAS/MAPK. Mutations in MET have been detected in non-small cell lung cancer (NSCLC), and the prevalence of MET amplification in epidermal growth factor receptor tyrosine kinase inhibitor (EGFR-TKI)-naive patients with NSCLC has been reported to be 1.4% - 21%. This co-occurrence has made c-Met a desirable target in the treatment of NSCLC.[1]

Aberrant activation of c-Met has been documented in many cancers, including non-small cell lung cancer (NSCLC). Mutations that result in the skipping of _MET_ exon 14 lead to the formation of a mutant c-Met with a missing regulatory domain - these mutant proteins have a reduced ability to negatively regulate, leading to a pathological increase in their downstream activity. Capmatinib inhibits the phosphorylation of both wild-type and mutant variants of c-Met triggered by the binding of its endogenous ligand, hepatocyte growth factor - in doing so, it prevents c-Met-mediated phosphorylation of downstream signaling proteins, as well as the proliferation and survival of c-Met-dependent tumor cells.[2-4]



Structure: Capmatinib

*** Corresponding author.**
E-mail address: sureshdhone35@gmail.com
Dhone Suresh.

[Doi: 10.1000/ijcrips/2022/05]

Content available at: https://www.ijcrips.com/current-issue

International Journal of Current Research and Innovation in Pharma Sciences

Journal homepage: https://www.ijcrips.com/

Review Article

Overall Review On: Effective Therapeutic benefits of Microalgae: Spirulina.

Pankaj Sonawane[1]*, Mayur Bhosale[1], Tejshri Tambe[1], Sonali Shinde[1]

[1]*Department of pharmaceutical chemistry, Pravara Rural College of Pharmacy, Pravaranagar A/p. Loni - 413736, Tal - Rahata, Dist - Ahmednagar.*

ARTICLE INFO

Article history:
Received 22-06--2022
Accepted 04-07-2022
Available online 12-07-2022

Keywords:
Spirulinaplantesis,
cyanobacterium,
C-phycocyanin,
anti-inflammatory,
anticancer

ABSTRACT

Known as the superfood, Spirulinaplatensis, a blue-green algae, has stood out in the natural world as a source of nutrition for man for hundreds of times owing to its high content of protein, carbohydrates, vitamins and minerals. In addition, it's also known to retain several pharmacological effects of which one of the most prominent is its effective against inflammation and fever. Spirulina spp. is belongs to the family of Oscillatoriaceae, which having different natural exertion. Spirulinaplatensis (SP) is rich in bioactive composites with numerous medicinal benefits it cyanobacterium rich in proteins, polyunsaturated amino acids, and bioactive composites, similar as C-phycocyanin, which has anti-inflammatory and antioxidant activity and possible lipid and glucose metabolism effects.Spirulinaplatensis (SP) is a filamentous cyanobacterium microalgae with potent salutary phyto-antioxidant,anti-inflammatory causes reduction in prostaglandin E2 and anti-cancerous properties.The present study aimed to probe to pharmacological conditioning of spirulinaplantensis.

INTRODUCTION

Spirulina, blue green algea has been used since ancient times as a source of food because of its high protein and nutritive value. The chemical composition of spirulina indicates that it has phenolic acid, tocopherol, beta carotene which are known to parade antioxidant effects. Other species of spirulina like spirulinafusiformis retain potent antiviral exertion, anticancer effect acts as Immunity enhancer and antioxidant effect.(1,2) It's safety and efficacity for mortal consumption has also been established ththroug various pharmacological and toxicological studies. The Spirulinafusiformis also retain anti-inflammatory against adjuvant convinced arthritis and prostaglandin E2 and they're popular submissive source of complete protein supplement.(3) Spirulina species have also been reported to be carotenoids and other micronutrients are abundant in this natural source .

Up most of the earlier studies were concentrated on the nutritive values of Spirulina because of its excellent salutary contents. It's naturally low in cholesterol, calories, fat and sodium and consists of large amounts of carbohydrate nine important vitamins and at least fourteen minerals.(4) But its most noteworthy nutritional property can be attributed to a stunning 60 protein content, which is a chance advanced than in any food. Accordingly, it has been successfully used in the malnutrition of children.(5)

Anticancer property has been attributed to one its factors, phycocyanine. One former study had demonstrated a picky inhibition of cyclooxygenase-2 (COX2) by C-phycocyanin, a biliprotein from Spirulina species.(06,07,08)

Figure 1: Spirulina plantesis

*** Corresponding author.**
Mayur Bhosale
E-mail address: mayur.bhosale@pravara.in

Content available at: https://www.ijcrips.com/current-issue

International Journal of Current Research and Innovation in Pharma Sciences

Journal homepage: https://www.ijcrips.com/

Research Article

FORMULATION AND EVALUATION OF NATURAL LIPSTICKS PREPARED FROM DELONIX REGIA PETALS EXTRACT

Mayur Bhosale*[1], Nale Sakshi[1], Mane Ankita[1], Mane Rushikesh[1]

[1]*Pravara rural college of pharmacy, Loni, Ahmednagar, Maharashtra, India.*

ARTICLE INFO

Article history:
Received: 22-06--2022
Accepted: 04-07-2022
Available online: 31-07-2022

Keywords:
Delonix Regia,
Herbal lipsticks,
Formulation of lipstick,
Evaluation test.

ABSTRACT

Lipstick uesd to import an attractive colour and glossy moisture appearance to lips. Lipstick is a Cosmetic Product Containing Pigments, oils, waxes and emollient that apply colour, texture and protection to the lips. . With this aim and objectives, an attempt was made to formulate natural lipsticks by using coloring pigments of Delonix Regia petals and the lipsticks were evaluated for their organoleptic properties such as spreading, hardness, shine and gloss and found to be satisfactory product to give attractive beauty .The preparation of this lipsticks with the natural ingredients like Delonix Regia petals Carrot root, Olive oil, Ripe fruit powder of shikakai. Due to various adverse effects of available synthetic preparation, the present work was conceived by us to formulate a herbal lipsticks having minimal or no side effects Delonix Regia Flower Petals are uesd For Lipstick. The plant shows diverse therapeutic prospective such as Antifungal,Antibacterial,Antioxidant,Antiemetic,Antiinflamatory,Antimalarial,Wound healing and Anticarcinogenic potential it is repair cracked lip .it is act as a natural moisturizer.

INTRODUCTION:

Delonix regia is a species of flowering plant in the bean family Fabaceae, sub family Caesalpinioideae native to Madagascar. It is noted for its fern-like leaves and flamboyant display of orange-red flowers over summer. In many tropical parts of the world, it is grown as an ornamental tree and in English it is given the name royal poinciana, flamboyant, flame of the forest, or flame tree(one of several species given this name) The flowers of Delonix regia are large, with four spreading scarlet or orange-red petals up to 8 cm (3 in) long, and a fifth upright petal called the standard, which is slightly larger and spotted with yellow and white. They appear in corymbs along and at the ends of branches. The naturally variety flavedo (Bengali: Radhachura) has yellow flowers.[1] The pods are green and flaccid when young and turn dark-brown and woody. They can be up to 60 cm (24 in) long and 5 cm (2 in) wide. The seeds are small, weighing around 0.4 grams (6.2 grains) on average.

The compound (doubly pinnate) leaves have a feathery appearance and is a characteristic light, bright green. Each leaf is 30–50 cm (12–20 in) long with 20 to 40 pairs of primary leaflets or pinnae, each divided into 10–20 pairs of secondary leaflets or pinnules. Pollen grains are elongated, approximately 52 µm in size. The royal poinciana requires a tropical or near-tropical climate, but can tolerate drought and salty conditions. It prefers an open, free-draining sandy or loamy soil enriched with or genic matter. A Familiar Ornamental tree with a spreading foliage, It is considered as one of the most beautiful Flowering tree of topical and Subtropical Climate. The flower varies From Orange Colour to bright Red. The leaf Foliage has a delicate, fine, Feathery Look. It grows well in climate.

Figure No. 01 Delonix Regia tree & Flowers

*** Corresponding author.**
E-mail address: mayurbhosale2399@gmail.com
Mayur Bhosale*.

IJMPR 2022, 6(2), XXX-XXX

International Journal of Modern Pharmaceutical Research
www.ijmpronline.com

ISSN: 2319-5878
IJMPR
Review Article
SJIF Impact Factor: 5.273

A REVIEW ON "CIPROFLOXACIN (CF) AS A QUINOLONE ANTIBIOTIC"

Sagar Navanath More*, Rohit Jaysing Bhor, Mayur S. Bhosle and Mahesh Kolhe

Department of Pharmaceutical Chemistry, Pravara Rural College of Pharmacy Pravaranagar, Tal-Rahata, District-Ahmednagar, Maharashtra, India.

Received on: 15/01/2022
Revised on: 05/02/2022
Accepted on: 25/02/2022

***Corresponding Author**
Sagar Navanath More
Department of Pharmaceutical Chemistry, Pravara Rural College of Pharmacy Pravaranagar, Tal-Rahata, District-Ahmednagar, Maharashtra, India..
smore0283@gmail.com

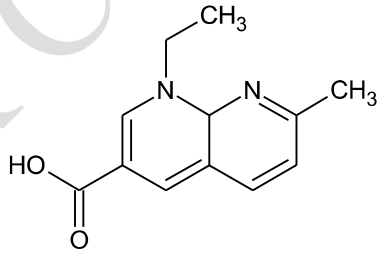
ABSTRACT

Ciprofloxacin (CF) is antibiotics and it sold as topmost selling drug. This drug is available at a cheap cost. This drug is used to treat many bacterial infections. Many researcher and scientists are working on Ciprofloxacin (CF) drug for various applications. This drug gives effect on different drug delivery systems. The main objective of review paper is to highlight the details of pure drug Ciprofloxacin (CF) and its delivery systems along with current research on Ciprofloxacin (CF) drug. In this review; we focused on history of CF, pharmacokinetics, mechanism of action for CF, types of dosage of Ciprofloxacin available in the market with their cost. It also highlighted drug to drug interactions with their adverse drug reactions of CF. The few drug delivery systems (DDS) of Ciprofloxacin (CF) were developed in the second decade.

KEYWORDS: Ciprofloxacin, Drug to Dug interactions; Pharmacokinetics.

INTRODUCTION

Quinolone antibiotic is an example of large group of broad spectrum bactericidal drug. These drugs are bicyclic in nature. Quinolone antibiotic are used in human and veterinary medicine to treat bacterial infection, as well as in animal. Mostly all quinolone antibiotics in use are flouro quinolones. It contains fluorine atom in their chemical structure.[1-3] They are effective against all gram positive and Gram negative bacteria. Fluoroquinolones are synthetic antibacterial agents structurally related to nalidixic acid4. See the below structure of nalidixic acid with IUPAC name.



1-ethyl-7-methyl-1,8a-dihydro-1,8-naphthyridine-3-carboxylic acid

Nalidixic acid

They give various physical and chemical favorable properties such as excellent bioavailability, good tissue penetrability, and low adverse and toxic effects. Fluoroquinolones drugs are potentially used in the treatment of urinary tract infection and prostatitis. Fluoroquinolones are also employed against bacterial enteric infections, biliary tract infections, sexually transmitted diseases.[5-7] There are many derivatives of Fluoroquinolone like Ciprofloxacin. In this review we focus on ciprofloxacin drug; this drug is available in the market in cheap cost. It is used in the treatment of bacterial infection. This drug is an example of fluoroquinolones category or fluoroquinolones derivatives.[8] This drug is an example of broad spectrum second generation antibacterial agent. Ciprofloxacin is used in the treatment of mostly gram negative bacteria; urinary tract infections, skin, ophthalmic, respiratory, bone and joint, intra abdominal infections bacterial diarrheal infections and periodontal pathogens.[9-10] See the below structure of Ciprofloxacin with IUPAC name.

ISSN 0976-495X (Print)
2321-5763 (Online)
DOI:

Vol. 13| Issue-03|
July - September| 2022

Available online at
www.anvpublication.org

Asian Journal of Management
Home page *www.ajmjournal.com*

RESEARCH ARTICLE

Overall Review on: Current scenario in Waste Managment System

Mayur Bhosale[1]*, Someshwar Mankar[1], Pratik Malvade[2], Sayli Chavan[3]
Deparment of Pharmaceutical Chemistry, Pravara Rural College of Pharmacy, Pravaranagar A/p. Loni - 413736, Tal - Rahata, Dist - Ahmednagar.
*Corresponding Author E-mail: **mayur.bhosale@pravara.in**

ABSTRACT:
There are several concerns with the management of pharmaceutical waste. In this paper we included types of waste, regulatory bodies involved in management of waste material and waste management strategy. Because of the dangers, pharmaceutical waste cannot be disposed of like conventional waste and requires special handling, whether it comes from a hospital, clinic, pharmacy, or private household. A waste product may become a by-product, joint product or resource through an invention that raises a waste product's value above zero. Pharmaceutical waste is a form of medical waste that includes unused medications, over-the-counter personal care products, and sometimes accessories such as sharps, used test strips, and other supplies. In order to safely handle and dispose of waste it is necessary to understand the specific hazards of the waste product, and the ability of a given disposal technique to manage them. Examples include municipal solid waste (household trash/refuse), hazardous waste, wastewater (such as sewage, which contains bodily wastes (feces and urine) and surface runoff), radioactive waste, and others.

KEYWORDS: Waste product, Pharmaceutical waste, disposal technique.

1. INTRODUCTION:
Waste includes items that people no longer use. Also, wastes are those that people tend to discard due to their hazardous properties. It is very important that the wastes are properly discarded to avoid them going into the landfill. They can be in different forms such as household rubbish, sewage, car waste, and garden waste. Many people donate vast amounts of pharmaceutical drugs to help those affected by natural disasters and conflicts. However, many of these donations may cause problems due to their intended recipients' lack of knowledge about the drugs and their shelf life. Waste streams from a healthcare facility can vary widely. Some of these include unused drugs, old syringes, and broken or discarded instruments. For minimization and treat this potentially harmful waste various treatment options available.

Donated drugs may be mismanaged due to their shelf life or have been poorly stored. Also, when used for development assistance, the donated drugs may end up in the hands of local authorities or be discarded carelessly. The discovery of various pharmaceuticals in various forms in drinking water and surface waters around the country has raised concerns about their potential negative effects on human health.

Pharmaceutical waste is disposed of in most hospitals according to specified procedures. However, it is possible that the trash will have negative environmental consequences. Proper disposal of pharmaceutical waste is an important aspect of a hospital's environmental management. This process involves carefully analysing and managing the different items that are commonly used in hospitals. Frequently used prescription drugs, consisting of epinephrine, warfarin, and nine chemotherapeutic agents, are regulated as dangerous waste underneath the Resource Conservation and Recovery Act (RCRA). Failure to conform to hazardous waste rules through improperly managing and doing

ISSN: 2641-1784

Research Article

Advance in Environmental Waste Management & Recycling

Metabolism of Arsenic in Human by AS3MT Gene

Pratik V. Malvade[1], Mayur S. Bhosale[1], Sayli R. Chavan[2], Dhanashri B. Bhagat[2]

[1]*Department of Pharmaceutical Chemistry, Pravara Rural College of Pharmacy, Pravaranagar, 413736, Dist- Ahmednagar (M.S.) India.*

[2]*Pravara Rural College of Pharmacy, Pravaranagar, Maharashtra, India (413736)*

***Corresponding author**
Malvade Pratik Vijay, Department of Pharmaceutical Chemistr, A/p Loni Bk., Tq. Rahata, Dist. Ahmednagar, Maharashtra, India 413736.

Submitted: 31 Jul 2022; **Accepted**: 27 Aug 2022: **Published**: 05 Sep 2022

Citation: *Pratik V. Malvade., Mayur S. Bhosale., Sayli R. Chavan., Dhanashri B. Bhagat,. (2022). Metabolism of Arsenic in Human by AS3MT Gene. Adn Envi Was Mana Rec, 5(3),255-262.*

Abstract

The AS3MT may be the most significant protein for the methylation of chemical elements species. The transfer of methyl radical from S-adenosyl-L-methionine (AdoMet) to powerfulness arsenical (AsIII) is catalyzed by the AS3MT that is critical for arsenic metabolism in humans. Since the AS3MT genetic polymorphism is linked to arsenic resistance, the association between the single ester polymorphism (SNP) and AS3MT inorganic arsenic (iAs) metabolism is being studied. Additionally, we tend to compared chemical action properties of recombinant human AS3MT and AS3MT/M287T. In reaction S-adenosylmethionine, arsenite, or methylarsonous acid (MAsIII) as substrates and endogenous reductants, together with glutathione (GSH), a thioredoxin enzyme (TR) system and tris(2-carboxyethyl) pesticide complex (TCEP). By victimization of either TR or Trx or NADPH or TCEP, AS3MT catalyzes the conversion of iAsIII to MAsIII then to methyl radical sonic acid (MAsV), dimethylarsinous acid (DMAsIII), and diethylarsinic acid (DMAsV). The Cys156 and Cys206 gift in similarity model forms the binding website for AsIII. Cys32 and Cys61 are linked by disulphidebond. The most important product in the initiative of methylation is MAsIII which remains sure to protein until it gets methylated. The product is a lot of hepatotoxic and more malignant neoplastic disease powerfulness methyl arsenicals, however, arsenic undergoes oxidation and reduction as enzyme-bound intermediates.

Keywords: Genetic Mutation, Arsenic Metabolism, AS3MT, MAsIII, DMAsIII

Introduction

As humans get evaluated they get custom-made to the surrounding environment. The adaption happens i.e. mutation [1, 2]. Mutation allows organisms to metabolize toxic things [3]. The peoples can still metabolise low level. Scientists found that due to more consumption of arsenic water, the body has developed a genetic ability to metabolize arsenic. Scientists found that peoples of Andes can do metabolism arsenic [4].

Arsenic can comeinbody from drinking water sources such as Inorganic Arsenic (iAs) in AsIII or As^{V} i.e. arsenite or arsenate [5, 6]. The As^{III} (Arsenite) species are AsO_3-, $HAsO_3^{2-}$, $H_2AsO_3^-$ and H_3AsO_3, while As^{V} (Arsenate) species are: AsO_4^{III-}, $HAsO_4^{2-}$, $H_2AsO_4^-$ and H_3AsO_4. Group I type compounds i.e. inorganic arsenic [7]. The safe levelof arsenic indrinking water is 10 µg/L as per WHO [8]. High arsenic exposure can show effects like skin pigmentation, hyperkeratosis, and cancer of bladder, liver, and kidney which may cause deaths [9, 10].

The arsenic metabolises by dual pathways, which are oxidative methylation and reductive methylation. During metabolism arsenic transformed to Methylarsenite (MAs^{III}), Dimenthylarsenite ($DMAs^{III}$), and sometimesmaybee to Trimethylarsine ($TMAs^{III}$) by the enzyme As^{III} S-adenosylmethionine methyltransferase (SAM) [11, 12]. In the gastrointestinal tract the Methylarsenite (MAs^{III}), Dimenthylarsenite ($DMAs^{III}$) are get methylated to form Monomethylarsonic acid (MMA) and dimethylarsinic acid (DMA). MMA and DMA are less toxic than both MAs^{III} and $DMAs^{III}$ so they are readily excreted through urine, where they get oxidized abiotically to MAs^{V} and $DMAs^{V}$ [13]. When the MAsV and $DMAs^{V}$ levels increase in the urine is an indication of Arsenic related diseases [14]. The distribution of arsenic metabolites in urine is 10–30% iAs, 0-11% MAs and 26-30% DMAs, but this distribution can vary from individual to individual [15]. Single Nucleotide Polymorphisms in the hAS3MT gene are linked. Most SNPs have little effect on health, however the M287T SNP in

International Journal of Pharmaceutical Science Invention
ISSN (Online): 2319-6718, ISSN (Print): 2319- 670X
www.ijpsi.org Volume 11 Issue 5 ǁ Sep. –Oct. 2022 ǁ PP. 28-36

Review On "Synthesis Of Pyrazine;Imidazolidine-2,4-Dione And Pyrimidines And Its Derivatives"

POOJA MOTILAL RATHOD*[1]; ROHIT JAYSING BHOR[1]; MAYUR BHOSALE[2]; SOMNATH VIKRAM WADGHANE[3]; MAHESH KOLHE[4]

*[1]*Department of Pharmaceutical Chemistry, Pravara Rural College of Pharmacy Pravaranagar, Tal-Rahata, District-Ahmednagar, Maharashtra, India*

[1]*Department of Pharmaceutics, Pravara Rural College of Pharmacy Pravaranagar, Tal-Rahata, District-Ahmednagar, Maharashtra, India*

[2]*Department of Pharmaceutical Chemistry, Pravara Rural College of Pharmacy Pravaranagar, Tal-Rahata, District-Ahmednagar, Maharashtra, India*

[3]*Department of Pharmaceutical Chemistry, Pravara Rural College of Pharmacy Pravaranagar, Tal-Rahata, District-Ahmednagar, Maharashtra, India*

[4]*Department ofPharmaceutics, Pravara Rural College of Pharmacy Pravaranagar, Tal-Rahata, District-Ahmednagar, Maharashtra, India*

CORRESPONDING AUTHORS NAME:RATHOD POOJA MOTILAL[1]*

ABSTRACT:
Pyrazine; Imidazolidine-2,4-dione and Pyrimidines are an example of aromatic heterocyclic organic compound. It is a monocyclic compound. They can be obtained naturally or it can be synthesized in laboratory. Pyrazine; Imidazolidine-2,4-dione and Pyrimidines and its derivatives play an important role in the medicinal chemistry and drug discovery with many pharmacological activities. Substitution of various chemicals on Pyrazine; Imidazolidine-2,4-dione and Pyrimidines nucleus gives important synthetic product and strategy in the drug discovery process. These derivatives contain versatile nitrogen containing heterocyclic compounds. These heterocylic compounds and its derivatives were used as building blocks for the important therapeutic compounds in medicine. Their nucleus plays a very important role as a therapeutic agent.They exhibit pharmacological activities such as antimicrobial, antiviral, anticancer, antiinflammatory, analgesic activity,anti-ulcer, anti-diabetic activity etc. Their nucleus gives active sites for the reaction like 2 and 5 position which gives potent therapeutic agents. The main aim of review is to help medicinal chemists for the development of SAR on Pyrazine; Imidazolidine-2,4-dione and Pyrimidines for each activity and to review the work reported, chemistry and pharmacological activities of Pyrazine; Imidazolidine-2,4-dione and Pyrimidines derivatives during past years. The major aim for this article is review on Pyrazine and Pyrimidines synthesis and the biological activity. Pyrazine as a heterocylic compound was commonly found in plants, animals, insects, marine organisms and microorganisms. Pyrazine, Pyrimidines anditsderivativeswere commonly used inindustriesmainly forflavorandpharmaceuticalapplications.

KEYWORDS: *Pyrazine; Pyrimidines; Biginelli reaction; HMDS; DMF*

Date of Submission: 29-10-2022 Date of acceptance: 12-11-2022

I. INTRODUCTION

The chemistry of heterocyclic compounds (N, S, and O containing compounds)is important for the discovery of some novel drugs. Amino acids, alkaloids, vitamins, hormones, hemoglobin, and many synthetic drugs and dyes contain heterocyclic ring systems[1-3]. There are large numbers of synthetic heterocyclic compounds like pyrimidines, Pyrrole, pyrrolidine, furan, thiophene, piperidine, pyridine, Imidazolidine, imidazole and thiazole and they gives significant biological activity. Among these Pyrimidines, Imidazolidine and Pyrazine are of great interest[4-6].The discovery of pyrimidines by the scientist Scheele; he isolated uric acid in 1776, fused pyrimidine chemistry started. Pyrimidine and Pyrazineare a six membered heterocyclic ring with two nitrogen (N) atoms in their ring. It is a colorless compound, having molecular formula of $C_4H_4N_2$ and molecular weight of 80 Dalton having melting point 22.5^oC and boiling point 124^oC[7-9]. Pyrimidine and Pyrazine is a weaker base than Pyridine. Only one of the nitrogen atoms of the Pyrimidine and Pyrazine can be alkylated by alkylating agents[10], but with tri ethyl oxoniumboro fluoride both nitrogen atoms can be alkylated. Pyrazine is commonly known as 1, 4- diazine. It has 6 membered heterocyclic compounds with two nitrogen atoms in *para* position. It having 6π- electron-deficient and resembles in planar configuration. Pyrimidine and Pyrazine both

Journal of Cardiovascular Disease Research

ISSN: 0975-3583,0976-2833 VOL12,ISSUE06,2021

Research Article

Comparative Synthetic Study, *in silico* Screening and Biological Evaluation of some Substituted Tetrahydropyrimidine-2-thione Derivatives as Potential DHFR Inhibitors

M. S. Bhosale[1*], K. Saravanan[2]

[1]Department of Pharmaceutical Chemistry, Bhagwant University, Ajmer.

***Corresponding Author Email:** mayurbhosale2399@gmail.com*

Received: 15 Nov 2021; Revised: 05 Dec 2021; Accepted and Published: 19 Dec 2021

Abstract

In present study we have selected pyrimidine scaffold to design and develop some DHFR inhibitors as potential antibacterial and antifungal agents. The designed derivatives were first screened through ADMET property calculations and then those possess drug-likeness properties were subjected for the molecular docking studies. The derivatives which were found to be significant DHFR inhibition potential were subjected for the synthesis followed by spectral analysis and biological evaluation. From this virtual screening, it was concluded that all the compounds possess drug-like properties and hence were subjected to molecular docking studies. The selected derivatives were synthesized and subjected for *in vitro* biological evaluation.The comparative study for synthesis of the derivatives such as conventional, ultrasonic, microwave synthesis was carried out. It was also observed that yield of the compound was very good in microwave assisted synthesis i.e. 80.50% which is almost 30-40% more than that of the conventional and ultrasonic method. In mass spectrum it was observed that, product obtained through microwave method was completely pure and did not displayed any peak of starting material, whereas product obtained through conventional and ultrasonic method showed presence of starting material. Therefore we concluded that the microwave assisted synthesis method is most suitable for the synthesis of tetrahydropyrimidine-2-thione derivatives through Biginelli reaction. We hereby report that,all the compounds **B1, B2, B3, B4, B5, B6, B7** and **B8** were found to be are potent and can be developed further to get more promising molecules for the treatment of bacterial & fungal infections.

How to Cite:
Bhosale, M. S., & Saravanan, K. (2022). Comparative synthetic study, in silico screening and biological evaluation of some substituted tetrahydropyrimidine-2-one derivatives as potential DHFR inhibitors. *International Journal of Health Sciences*, *6*(S3), 2814–2834. https://doi.org/10.53730/ijhs.v6nS3.6198

Comparative synthetic study, in *silico* screening and biological evaluation of some substituted tetrahydropyrimidine-2-one derivatives as potential DHFR inhibitors

M. S. Bhosale
Department of Pharmaceutical Chemistry, Bhagwant University, Ajmer

K. Saravanan
Department of Pharmaceutical Chemistry, Bhagwant University, Ajmer

***Abstract*---**In present study we have selected pyrimidine scaffold to design and develop some DHFR inhibitors as potential antibacterial and antifungal agents. The designed derivatives were first screened through ADMET property calculations and then those possess drug-likeness properties were subjected for the molecular docking studies. The derivatives which were found to be significant DHFR inhibition potential were subjected for the synthesis followed by spectral analysis and biological evaluation. From this virtual screening, it was concluded that all the compounds possess drug-like properties and hence were subjected to molecular docking studies. The selected derivatives were synthesized and subjected for in vitro biological evaluation. The comparative study for synthesis of the derivatives such as conventional, ultrasonic, microwave synthesis was carried out. It was also observed that yield of the compound was very good in microwave assisted synthesis i.e. 73.24% which is almost 30-40% more than that of the conventional and ultrasonic method. In mass spectrum it was observed that, product obtained through microwave method was completely pure and did not displayed any peak of starting material, whereas product obtained through conventional and ultrasonic method showed presence of starting material. Therefore we concluded that the microwave assisted synthesis method is most suitable for the synthesis of tetrahydropyrimidine-2-one derivatives through Biginelli reaction. We hereby report that, all the compounds A1, A2, A3, A4, A5, A6, A7, and A8 were found to be are potent and can be developed further to get more promising molecules for the treatment of bacterial & fungal infections.

International Journal of Health Sciences ISSN 2550-6978 E-ISSN 2550-696X
Corresponding author: *Bhosale, M. S.; Email: mayurbhosale2399@gmail.com*
Manuscript submitted: 18 Dec 2021, Manuscript revised: 27 March 2022, Accepted for publication: 09 April 2022

WORLD JOURNAL OF PHARMACY AND PHARMACEUTICAL SCIENCES
SJIF Impact Factor 7.632
Volume 11, Issue 4, 520-531 Review Article ISSN 2278 – 4357

A REVIEW: SIMULTANEOUS EQUATION METHODS FOR THE ESTIMATION OF EBASTINE AND PHENYLEPHRINE HYDROCHLORIDE IN COMBINED TABLET DOSAGE FORM

Rahul Jadhav*, Dr. Sanjay B. Bhawar[1] and Mayur S. Bhosale[2]

Department of Quality Assurance Techniques, Pravara Rural College of Pharmacy, Pravaranagar, Tal-Rahata, Dist-Ahmednagar, 413736, India.

Article Received on
21 Jan. 2022,

Revised on 11 Feb. 2022,
Accepted on 03 March 2022

DOI: 10.20959/wjpps20224-21613

***Corresponding Author**
Rahul Jadhav
Department of Quality Assurance Techniques, Pravara Rural College of Pharmacy, Pravaranagar, Tal-Rahata, Dist-Ahmednagar, 413736, India.

ABSTRACT

New, easy, accurate and sensitive UV-spectrophotometric absorption adjustment simultaneous mathematical method and method are simultaneously designed Ebastine and Phenylephrine HCL dosage for bulk and dosage of combined tabletform. Methanol was used as a solvent. The wavelength selected for the absorption adjustment The route was 225 nm and 253 nm for Ebastine and Phenylephrine HCL respectively and for The case for the simultaneous mathematical model was 240 nm and 275 nm of Ebastine and Phenylephrine HCL respectively. The law of beer obeyed the mid range 4 - 40 µg / ml, in both drugs. Percentage of acquisition is obtained in the range of 100.42 - 101.27% Ebastine and 100.51 - 101.40% Phenylephrine HCL. Improved methods were validated statistically and by recovery studies. % RSD value found be less than 2. So the proposed methods are simple, accurate, economical, and fast accurate and can be used effectively in the simultaneous determination of Ebastine as well Phenylephrine HCL in bulk and in the form of an integrated tablet.

KEYWORDS: Ebastine, Phenylephrine HCL, Simultaneous equation method.

JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue
JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)
An International Scholarly Open Access, Peer-reviewed, Refereed Journal

A REVIEW ON ANALYTICAL METHOD DEVELOPMENT AND VALIDATION OF CAPMATINIB IN BULK AND DOSAGE FORM

Suresh Dhone*, Dr. R. K. Godge, M. S. Bhosale

Department of Pharmaceutical Chemistry, Pravara Rural College of Pharmacy, Pravaranagar, Tal - Rahata, Dist-Anmednagar-423107

ABSTRACT

Capmatinib is the first FDA-approved therapy for the treatment of non-small cell lung cancer cells with specific mutations (leading to a mesenchymal-epithelial junction such as exon 14 MET skipping). This work classifies a new rapid, accurate, and accurate analytical method for the determination of capmatinib in most and indeterminate amounts of pharmaceutical products. Analytical techniques play an important role in providing solutions such as development. This article will provide an overview and classification of the various analytical methods most commonly used to identify common supply problems. Pharmaceutical analysis has a unique role in quality assurance as well as in the internal control of most pharmaceutical drugs and preparations. The rapid rise of the pharmaceutical and pharmaceutical industries in many parts of the world has led to an increase in demand for new analytical methods in the pharmaceutical industry. As a result, the development of analytical methodology has become an important learning activity. Recent advances in analytical methods have resulted from advances in analytical tools.

KEYWORDS Introduction of Capmatinib, Pharmacology, Pharmacokinetics, HPLC Method.

INTRODUCTION

Capmatinib is a kinase inhibitor that targets the c-Met receptor tyrosine kinase in the treatment of small cell lung cancer by exon 14 MET bypass. Capmatinib is a small molecule kinase inhibitor targeted to c-Met (aka hepatocyte growth factor receptor [HGFR]), a receptor tyrosine kinase that activates signaling cascades associated with organ regeneration and tissue repair in healthy individuals. Aberrant activation of c-Met - due to mutations, amplification and / or overexpression - occurs in many types of cancer and leads to overactivation of many downstream signaling pathways, such as STAT3, PI3K / ATK and RAS / MAPK. MET mutations were detected in small cell lung cancer (NSCLC), and the prevalence of MET amplification in NSCLC patients not previously treated with epidermal growth factor receptor tyrosine kinase inhibitor (EGFR-TKI) was reported to be 1.4% - 21%. This co-occurrence makes c-Met a desirable target in the treatment of NSCLC. Capmatinib, manufactured by Novartis and sold under the tradename Tabrecta, received accelerated FDA approval on May 6, 2020 for the treatment of NSCLC in patients whose tumors have mutations that lead to mesenchymal-epithelial transition (MET) skip exon 14. [16]

The presence of the mutation must be confirmed an FDA-approved test, such as the FoundationOne CDx test (manufactured by Foundation Medicine, Inc.), which is approved by the FDA on the same day. Because this

WORLD JOURNAL OF PHARMACY AND PHARMACEUTICAL SCIENCES
SJIF Impact Factor 7.632
Volume 11, Issue 3, XXX-XXX Review Article ISSN 2278 – 4357

REVIEW ON ANALYTICAL METHOD DEVELOPMENT FOR ESTIMATION OF DEFERIPRONE FROM THE BULK DOSAGE FORM

Shweta Ubale*, Mayur Bhosale, Dr. S. K. Parajne and H.S. Bhawar

Department of Pharmaceutical Chemistry, Pravara Rural College of Pharmacy, Loni.

Article Received on
08 Jan. 2022,

Revised on 28 Jan. 2022,
Accepted on 18 Feb. 2022

DOI: 10.20959/wjpps20223-21473

***Corresponding Author**
Shweta Ubale
Department of Pharmaceutical Chemistry, Pravara Rural College of Pharmacy, Loni.
shwetarubale97@gmail.com,
shwetarubale@gmail.com,
mayur.bhosale@pravara.in,

ABSTRACT

Deferiprone is chemically 3-hydroxy-1,2-dimethyl pyridine-4-one[1,5] it is an oral iron-chelating agent used to treat transfusion-related, chronic iron overload. Deferiprone has been linked to a low rate of transitoryserum aminotransferase elevations during remedy and too rare cases of clinically apparent liver injury. It is an orally bioavailable bidentate ligand with iron-chelating activity. Deferiprone binds to iron in a 3:1 (ligand: iron) molecular ratio. By binding to iron, it can remove excess iron from the body. Deferiprone is a member of the class of 4-pyridones that is pyridine-4(1H)-one substituted at positions 1 and 2 by methyl groups and position 3 by a hydroxy group. A lipid-soluble iron-chelator used for the treatment of thalassemia. It has a role as a protective agent and iron chelator. Some analytical methods of quantitative determination of Deferiprone in a pharmaceutical formulation like UV, RP-HPLC, LC-MS/MS, HPLC MS/MS, UFLC.

KEYWORDS: Deferiprone, thalassemia major, UV, RP-HPLC.

INTRODUCTION

Thalassemia most important takes place whilst a toddler inherits mutated genes, one from every parent. Most importantly, children born with thalassemia expand the signs of intense anemia within the first year of life. They cannot produce normal, personal hemoglobin and experience continual fatigue. They might also fail to thrive.[2] Iron is thought to play a role in carcinogenesis in humans through the generation of oxygen free radicals. Iron, especially in its non-protein bound form reasons cellular harm with the aid of using collaborating in the generation of the hydroxyl radical, which is thought to be the principal effector of oxidative DNA damage and mutagenesis.[7] It helps to prevent and treat too much iron in the blood,[8]

WORLD JOURNAL OF PHARMACY AND PHARMACEUTICAL SCIENCES
SJIF Impact Factor 7.632
Volume 11, Issue 4, XXX-XXX Review Article ISSN 2278 – 4357

A REVIEW ON VALIDATION AND DEVELOPMENT OF STABILITY INDICATING RP-HPLC METHOD FOR DETERMINATION OF SAFINAMIDE

Wagh Mohit P.*, Dr. Parjane Smita A. and Prof. Bhosale Mayur S.

Department of Pharmaceutical Chemistry, Pravara Rural College of Pharmacy, Pravaranagar, 413736.

Article Received on
30 Jan. 2022,

Revised on 19 Feb. 2022,
Accepted on 11 March 2022

DOI: 10.20959/wjpps20224-21677

***Corresponding Author**
Wagh Mohit P.
Department of Pharmaceutical Chemistry, Pravara Rural College of Pharmacy, Pravaranagar, 413736.
mohitwagh97@gmail.com,

ABSTRACT

(S)-2-((4-((3-Fluorobenzyl)oxy benzyl amino) procainamide methanesulfonate is that the IUPAC name for safinamide mesylate. This formulation is recently created and employed in the treatment of Parkinson's illness. Safinamide is that the supplement of carbidopa associated L-dopa and this is often a mono-amino enzyme (MOA-B) matter. Safinamide mesylate may be a 2nd generation medication agent that has the medical specialty properties having interest of neurodegenerative disorder like palladium. Safinamide area unit moniterized by RP-HPLC, HPLC through the strategy development & validation method. Palladium is characterised deficiency of Dopastat. Safinamide (Xadago®) is associate orally active, selective, reversible amine oxidase-B matter with each dopaminergic and non-dopaminergic (glutamatergic) properties.

KEYWORDS: Parkinson's disease, safinamide, RP-HPLC.

INTRODUCTION

Chromatography was performed below, close conditions, with HPLC instrumentation (Waters Corporation, Milford, USA) consisted comprising quaternary 600 pump, a personal digital assistant detector and column C18 (250mm x four.6 mm i.e. five particle size) was used. A Rheodyne gizmo with a 20µl loop was used for the injection of the sample. The HPLC system was equipped with Empower package for processing. Sartorius muscle balance

A REVIEW: ANALYTICAL METHOD FOR DETERMINATION OF PREGABALIN AND ETORICOXIB IN PHARMACEUTICAL DOSAGE FORM

Rahul Godge, Akshay Chavan, Mayur Bhosale

Department of Pharmaceutical Chemistry, Pravara Rural College of Pharmacy, Pravaranagar, Tal-Rahata, Dist- Ahmednagar 413736, India

---

ABSTRACT

Pregabalin is an antiepileptic drug and used to block pain by acting with pain signals traveling by the damaged nerves and the brain. Etoricoxib (ETC) is a non-steroidal anti-inflammatory drug called COX-2 inhibitors. It acts as blocking the release of certain chemical substances that are responsible for pain and swelling.This review includes most recent analytical methods such as various spectroscopic methods (simultaneous estimation) and chromatographic methods (RP-HPLC, HPTLC) for determination of Pregabalin and Etoricixib in pharmaceutical dosage form.

INTRODUCTION

Pregabalin is an anxiolytic and anticonvulsant drug used to treatment of epilepsy, neuropathic pain, fibromyalgia, restless leg syndrome, and generalized anxiety disorder. Sold under brand name Lyrica.Pregabalin chemically named as (3S)-3-(Aminomethyl)-5-methylhexanoic acid. Whereas, Etoricoxib, is a selective COX-2 inhibitorsold under the trade name Arcoxia, from McOLSON Research Laboratories. Now it is approved in more than 80 countries worldwide but it is not approved in the US. Etoricoxib is NSAIDs. It is used totreeat rheumatoid arthritis, psoriatic arthritis, osteoarthritis, chronic low back pain, acute pain, and gout.

Pregabalin is an antiepileptic agent and it works by interfering with pain signals traveling through the damaged nerves and the brain and block pain. Etoricoxib is a non-steroidal anti-inflammatory drug (NSAID) called COX-2 inhibitorsreduces the generation of prostaglandins (PGs) from arachidonic acid.. It works by blocking the release of certain chemical substances

IJRAR.ORG E-ISSN: 2348-1269, P-ISSN: 2349-5138

INTERNATIONAL JOURNAL OF RESEARCH AND ANALYTICAL REVIEWS (IJRAR) | IJRAR.ORG

An International Open Access, Peer-reviewed, Refereed Journal

A REVIEW ON ANALYTICAL METHODS ESTIMATION OF SAXAGLIPTIN IN BULK AND IN PHARMACEUTICAL DOSAGE FORM

A REVIEW ON SAXAGLIPTIN TYPE TWO DIABETES MELLITUS

Jyoti R. Pawar[1]*, Dr.R.B. Laware[1], Mrs. K.V. Dhamak[1].

[1]Department of Qualiti Assurance Technique.

Pravara Rural College of Pharmacy, Pravaranagar, Tal-Rahata, Dist-Ahemdnagar 413737, India.

Abstract : Type two diabetes mellitus prevalence is high and growing rapidly. Very effectively used of saxagliptin drug for treatment of type two diabetes mellitus. The intestinal harmon, glucagon-like peptide-1(GLP-1); nutrient ingestion secreted in response, insuline secretion increases from pancreatic β-cells and from pancreatic α-cells reduces glucagon secretion. Several analytical methods used for determination of saxagliptin in bulk drug and pharmaceutical dosage form, including HPLC, HPTLC, LC-MC and UV. Saxagliptin is a highly potent and reversible, treatment of patients with type two diabetes mellitus dipeptidyl peptidase-4 inhibitor indicated. reduces both fasting and postprandial glucose and control clinical trials and work in monotherapy and in combination with Metformin ,TZDs and Salfonylureus, Dapagliflozin. Saxagliptin generally administered in tablet dosage form. These review article on analytical method studing on antidiabetic drugs.

Keywords **– RP-HPLC,saxagliptin,metformin,dapagliflozin, stability indicating.**

INTRODUCTION

Diabetes diagnosed and undiagnosed affects an estimated 382 million people worldwide and 29.1 million people in the united states(US) and rise to 440 million people by 2030[1]. In america state diagnosed 5,000 people with diabetes each day[2]. Saxagliptin (OnglyzaTM) is a selective ,potent, improving glycemic control in patients with type 2 diabetes (T2D) indicated once daily dipeptidylpeptidase-4 inhibitor[4].

Chemically saxagliptin is (1s, 3s, 5s)-2-[(2s)-2-Amino-2-(3 hydroxytricyclo [3.3,1.13,7] dec-1-yl) acetyl]-2-azabicyclo[3.10] hexane-3-carbonitrile[3]. It is the anti-diabetic (hypoglycemic) agent and class of dipeptidyl peptidase (DPP-4) inhibitor[3]. Saxagliptin is a selective dipeptidyl peptidase-4 (DPP-4) inhibitor and its approved for the management of type 2 diabetes (T2D) along with diet and exercise[4].The relationship between inpatient hyperglycemia (diabetes), and poor clinical outcomes has been demonstrated in several observational studies[5]. Saxagliptin is used to treatment of type-2 diabetes in the form of mono or combination of the other drugs[3]. The united states and various regions worldwide is currently approved in the addition to saxagliptin, sitagliptin and united states is not yet approved vildagliptin[4].

WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.084
Volume 11, Issue 3, 401-411. Review Article ISSN 2277– 7105

REVIEW ON PHARMACOLOGICAL PROPERTIES OF SAFFRON (CROCUS SATIVUS)

***Priyanka Sadaphal and *Kavita Dhamak**

Pravara Rural College of Pharmacy Pravaranagar, Ahmednagar, Maharashtra -413736.

Article Received on
30 Dec. 2021,

Revised on 20 Jan. 2022,
Accepted on 10 Feb. 2022

DOI: 10.20959/wjpr20223-23167

***Corresponding Author**
Priyanka Sadaphal
Pravara Rural College of Pharmacy Pravaranagar, Ahmednagar, Maharashtra - 413736.

ABSTRACT

In this review different pharmacological properties of saffron petal such as antibacterial, antispasmodic, immunomodulatory, antitussive, antidepressant, antinociceptive, hepatoprotective, renoprotective, antihypertensive, antidiabetic and antioxidant activity have been introduced. Clinical trials conducted on women with premenstrual syndrome showed that saffron could reduce suf-fering symptoms more than the placebo and similar to standard treatments. Saffron contains chemicals that might alter mood, kill cancer cells, decrease swelling, and act like antioxidants. Their antidepressants effects are also very evident. Crocus sativus (saffron) may inhibit the aggregation and deposition of amyloid bin thehuman brain and may therefore be useful in Alzheimer‟s disease (AD). It originated in Greece, where it was revered for its medicinal properties. Furthermore, advanced research is needed to elabo-rate the role of saffron in health management and its mechanism of action in the modulation of biological activities. Thus the aqueous extract of saffron can improvefertility, which may be attributed to crocetin and/or flavonoids contents of the extract. According to the obtained results saffron-based beverage is a suitable medium for the growth of lactic acid bacteria and production of functional beverages.

INTRODUCTION

(Crocus sativus) is among the important herb which is used as medication for several centuries in different parts of the world such as India, China, Spain, Italy, Greece, and in Iran. The stigmas of saffron used as a flavoring spice in the cooking, in different parts of the world.[1]

Review Article

Review Article on High-Performance Liquid Chromatography (HPLC) Method Development and Validation

Priya Sadapha*, Kavita Dhamak
Pravara Rural college of pharmacy, Pravaranagar (Loni BK), Ahmednagar, Maharashtra, India, 413736.
***Corresponding author's E-mail:** priyasadaphalb4u@gmail.com

Received: 05-02-2022; **Revised:** 14-05-2022; **Accepted:** 23-05-2022; **Published on:** 15-06-2022.

ABSTRACT

High-Performance Liquid Chromatography (HPLC) is a type of column chromatography that is commonly used in biochemistry and analysis to separate, identify, and quantify active chemicals. HPLC is the most often used separation technology for detecting, separating, and quantifying the drug. HPLC technique development and validation serve critical roles in novel drug discovery, development, and manufacturing, as well as a variety of other human and animal investigations. This review discusses the many processes involved in developing and validating an HPLC technique. The creation of an HPLC technique is influenced by the chemical structure of the molecules, the synthetic pathway, solubility, polarity, pH and pKa values, and the activity of functional groups, among other factors. Accuracy, accuracy, specificity, linearity, range, limit of detection, the limit of quantification, robustness, and system suitability testing are all included in the validation of an HPLC technique according to ICH Guidelines.

Keywords: Pressure Liquid Chromatography, Chromatography, Method validation, Method development.

QUICK RESPONSE CODE →

DOI: 10.47583/ijpsrr.2022.v74i02.003

DOI link: http://dx.doi.org/10.47583/ijpsrr.2022.v74i02.003

INTRODUCTION

High-Performance Liquid Chromatography, also known as High-Pressure Liquid Chromatography, is a type of column chromatography that is commonly used in biochemistry and analysis to separate, identify, and quantify active chemicals. It is a popular analytical technique for separating, identifying, and quantifying each element of a mixture. HPLC is a sophisticated column liquid chromatography technology.[1] The solvent normally flows through the column due to gravity, but in the HPLC process, the solvent is pushed under high pressures of up to 400 atmospheres so that the sample can be separated into different constituents based on differences in relative affinities. HPLC generally comprises a column that contains packing material (stationary phase), a pump that drives the mobile phase(s) through the column, and a detector that detects the molecule retention times.[2] The retention time is affected by the interactions between the stationary phase, the molecules being analyzed, and the solvent(s) utilized. The samples to be analyzed are added in small quantities to the mobile phase stream and are slowed by specific chemical or physical interactions with the stationary phase.[3] The amount of retardation is determined by the nature of the analyte as well as the composition of both the stationary and mobile phases. The retention time is the time it takes for a certain analyte to elute.[4]Any miscible combination of water or organic liquids is a common solvent. Gradient elution has been used to change the mobile phase composition during the analysis. The gradient separates analyte mixtures based on the analyte's affinity for the current mobile phase. The nature of the stationary phase and the analyte influence the choice of solvents, additives, and gradients.[5]

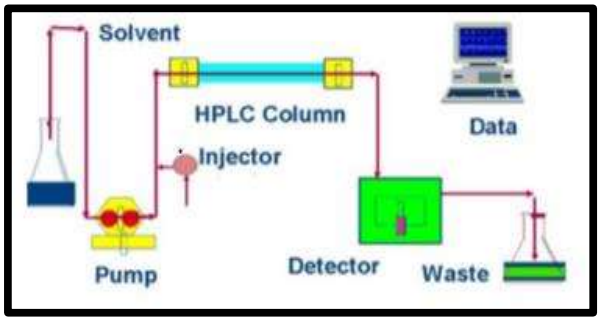


Figure 1: Flow Diagram of HPLC

Easy to fractionate the sample and purify [6]

TYPES OF HPLC

HPLC can be classified as follows:

Based on a scale of operation

Preparative HPLC and analytical HPLC [7]

Based on the principle of separation

Affinity chromatography, adsorption chromatography, size exclusion chromatography, ion-exchange chromatography, chiral phase chromatography.[8]

ISSN **0975-4393 (Print)**
2349-2988 (Online)
DOI:

Vol. 13| Issue-03|
July - September| 2021

Available online at
www.anvpublication.org

Research Journal of Science and Technology
Home page *www.rjstonline.com*

REVIEW ARTICLE

A Review on Analytical Method for Determination of Lamotrigine in Bulk and Pharmaceutical Dosage Form

Rutuja S Nalkar*, Suhas S Siddheshwar, Mahesh H Kolhe
Department of Quality Assurance Techniques, Pravara Rural College of Pharmacy, Pravaranagar, Tal: Rahata, Dist: Ahmednagar, Maharashtra, India, 413736.
*Corresponding Author E-mail: **rutujanalkar97@gmail.com**

ABSTRACT:
Lamotrigine is an anticonvulsant drug used in the treatment of epilepsy & bipolar disorder/major affective disorder (manic depression). Lamotrigine is and antiepileptic drug of phenyltriazine class. For epilepsy it is used to treat the partial seizures, primary and secondary tonic-clonic seizurers, and seizures associated with the Lennox-Gastuat syndrome and are chemically unrelated to the other anticonvulsants. Lamotrigine is an phenyltriazine that has comparatively few side-effects and it does not requires blood monitoring/observance in monotherapy. It additionally acts as a mood stabilizer. Common side-effects of lamotrigine include, nausea, sleepiness, headache, vomiting, trouble/bother with co-ordination and rash. Serious side-effects include in, lack of red blood cells, accumulated in risk of suicide, Stevens-Johnson syndrome and allergy. It issues that use of lamotrigine throughout pregnancy or breastfeeding it's going to lead/result in harm/damage.

KEYWORDS: Lamotrigine, RP-HPLC, HPLC, UV Spectroscopy.

INTRODUCTION:
Lamotrigine is chemically 6-(2,3-dichlorophenyl)1,2,4-triazine-3,5-diamine. Lamotrigine is an anticonvulsant drug which is used in the treatment of epilepsy and bipolar disorder. For epilepsy it is used to treat the partial seizures, primary and secondary tonic-clonic seizures, and seizures associated with the Lennox-Gastaut syndrome and are chemically unrelated to other anticonvulsants (due to Lamotrigine being a Phenyltriazine). Lamotrigine has relatively few side-effects and it does not require blood monitoring in monotherapy. Lamotrigine also acts as a mood stabilizer. It is an Antiepileptic drug (AED) of the phenyltriazine Class[1,2]. It is the first medicament since lithium approved by food and drug administration (FDA) for the maintenance and the treatment of bipolar type I disorder. Chemically it is unrelated to other anticonvulsants, lamotrigine has relatively few side-effects and does not require blood monitoring[3,4,5]

Table No.1: Drug profile of Lamotrigine

Drug name	Lamotrigine.
Drug category	Anti-epileptic agent.
Chemical formula	$C_9H_7Cl_2N_5$
IUPAC name	6-(2,3-dichlorophenyl)-1,2,4-triazine-3,5-diamine
Molecular weight	256.091gm/mol.
Melting point	220° C.
Half life	24 to 35 hrs.

ISSN **0975-4393 (Print)**
2349-2988 (Online)
DOI:

Vol. 13| Issue-03|
July - September| 2021

Available online at
www.anvpublication.org

Research Journal of Science and Technology
Home page *www.rjstonline.com*

REVIEW ARTICLE

A Review on Analytical Method for Determination of Venlafaxine HCL in Bulk and Pharmaceutical dosage form

Swamini A Dighe*, Suhas S Siddheshwar, Ganesh S Shinde
Department of Quality Assurance Techniques, Pravara Rural College of Pharmacy, Pravaranagar, Tal-Rahata, Dist-Ahmednagar, Maharashtra, India, 413736
*Corresponding Author E-mail: **digheswamini15@gmail.com**

ABSTRACT:
Venlafaxine HCl is one of the antidepressant agent which comes under the category of serotonin-norepinephrine reuptake inhibitor i.e SNRI. This medication is usually used to treat major depressive disorder in adult.It may help to improve the mood and energy level and also to regain the interest in daily activities in the depressed person.The present review focus on various approaches for the analysis on Venlafaxine in bulk and pharmaceutical dosage forms.The review represents the various analytical method like the RP-HPLC, HPTLC, UV Spectroscopy and Stability Indicating Methods which were used for the investigation of Venlafaxine in bulk and different dosage formulations.

KEYWORDS: Venlafaxine, RP-HPLC, HPTLC, UV Spectroscopy, Stability indicating.

INTRODUCTION:
Depression is one of the chronic, recurrent, and probably life-threatening disease that affects up to about 20% of the global population. [1-2] Depression is an immoderate general and impairing disease with an important social and economic outcome, most of the antidepressant agents are to be useful in the management of disorder, there are the some of the limitations of efficacy, because of various types of side effects can be experienced. Some of the harmful effects found to be risk for the life threathing arrhythmias, mostly in patients with early survive cardiac disease or after overdose direction. [3]

Venlafaxine is one of the new generation antidepressant, and it is usually categorized as a serotonin-norepinephrine reuptake inhibitor (SNRI) and the drug is showing effective anti-depressant properties, but it has been referred to as a serotonin-norepinephrinedopamine reuptake inhibitor, introduced by Wyeth in 1993.[4-6] Venlafaxine HCl is an orally active serotonin noradrenalin reuptake inhibitor which is used for the treatment of major depressive disorders. The successful treatment of depression mostly depends on the management of effective drug concentration level in the body for which a constant and uniform supply of the drug is required.[7] Venlafaxine affects on chemical messengers like neurotransmitters, serotonin, dopamine, and norepinephrine in the brain. Venlafaxine act by inhibiting the release or affecting the action of these neurotransmitters. [8]

Table No.1: Drug Profile of Venlaflaxine HCL

Drug name	Venlafaxine HCL
Category	Anti-depressant
Chemical Formula	$C_{17}H_{28}ClNO_2$
IUPAC Name	1-[2-(dimethylamino)-1-(4-methoxyphenyl)ethyl]cyclohexane-1-ol
Molecular weight	277.402 g/mol

ISSN 0975-2331 (Print)
0975-4385 (Online)
DOI: 10.52711/0975-4385.2021.00017

Vol. 13 |Issue-02|
April - June| 2021

Available online at
www.anvpublication.org
Research Journal of Pharmacognosy and Phytochemistry
Home page *www.rjpponline.org*

REVIEW ARTICLE

Review Paper on Ayush System of Medicine against COVID-19

Rahate Snehal Kishor[1], Bokand Mayur Rajendra[2], Bombale Mayur Ramhari[3], Dr. Suhas Shivaji Siddheshwar
Pravara Rural College of Pharmacy Pravaranagar, Ap- Loni BK- 413736
*Corresponding Author E-mail: **mayurbombale123@gmail.com**

ABSTRACT:
Coronaviruses got their name due to its structural look which was observed under a microscope. The virus consists of a core of genetic material surrounded by an envelope with protein spikes. This gives it the appearance of a crown. The word Corona means "crown" in Latin. Ayush is the aronym of the medical systems that are being practiced in India such as Ayurveda, Naturopathy, Unani, Siddha and Homeopathy. These systems are based on definite medicinal philosophies and represent a way of healthy living with established concepts on prevention of diseases and promotion of health. To overcome the coronavirus, Ayush system of medicine has contributed a huge role. Ayush system of medicine has proved beneficial results. Ayush system of medicine has shown great results with less side-effects than allopathy medicine.Ayush system of medicine has introduced kadha and arsenium album-30 against the corona pandemic disease. Corona kadha includes the ingredients such as elaichi,turmeric,cloves,black peppercorns,honey, jaggery,munakka,tulsi,cinnamon,etc which act as immunity boosters which boosts the immunity.Immunity helps to fight against the covid-19.Mechanism of kadha is immunity boosting.Arsenium album proved to be a immuno booster pill and reduces inflammation in lungs and restlessness during cold. It was largely used during a covid-19 pandemic as immunity booster used to treat diarhhoea. its water shown property on leukocytes used to treat mucosal inflammation,it also onced used to treat syphilis to treat cold flu etc. Kadha prevent fever and common infections.

KEYWORDS: Ayurvdic Kadha, Arcinicum album-303. Kwath.

INTRODUCTION:
World Health Organisation (WHO) has declared the coronavirus disease 2019 (COVID-19) a pandemic.. A pandemic is defined as "occurring over a wide The geographic area and affecting an exceptionally high proportion of the population." The last pandamic reported in the world was the H1N1 flu pandemic in 2009.

Ayush System of Medicine:
Ayush is the aronym of the medical systems that are being practiced in India such as Ayurveda, Naturopathy, Unani, Siddha and Homeopathy.

Received on 19.10.2020 Modified on 07.11.2020
Accepted on 20.11.2020
Res. J. Pharmacognosy and Phytochem. 2021; 13(2):103-106.
DOI: 10.52711/0975-4385.2021.00017

These systems are based on definite medicinal philosophies and represent a way of healthy living with established concepts on prevention of diseases and promotion of health.It is the oldest and most commonly used system of medicine.

Ayush System of Medicine Against Corona:
- Ayurvedic kadha

International Journal of All Research Education and Scientific Methods (IJARESM), ISSN: 2455-6211
Volume 10, Issue 3, March-2022, Impact Factor: 7.429, Available online at: www.ijaresm.com

A Review on Analytical Methods For Estimation of Vortioxetine In Bulk And Pharmaceutical Dosage Form

Aishwarya Anil Nirmal[1*], S. S. Siddheshwar[1], R.D. Ghogare[1]

[1]Department of pharmaceutical Quality Assurance Pravara Rural College of Pharmacy,Pravaranagar, Tal- Rahata,Dist.-Ahmednagar

***Corresponding Author Email Id:**aishwaryanirmal2015@gmail.com

----------**********----------

ABSTRACT

Vortioxetine is a novel antidepressant used for the treatment of major depressive disorder (MDD). Depression is a prevalent mental health illness thought to be caused by a serotonin and norepinephrine imbalance, as well as a variety of environmental, cognitive, and physical factors. Major depressive disorder (MDD) is a severe and disabling mental illness that is frequently accompanied by cognitive impairment. Attention, memory, executive function, and processing speed may all be affected by depression-related dysfunction. In vulnerable patients, acute serotonin (5HT) depletion impairs memory and mood. Tricyclic antidepressants, monoamine oxidase inhibitors, and selective serotonin and norepinephrine uptake inhibitors have traditionally been used to treat depression. Vortioxetine belongs to the serotonin modulator and stimulator family of antidepressants. The Fever method of analytical research has been reported for the estimation of the above drug. which are HPLC, RP-HPLC, UPLC-MS, HPLC-UV, and HPTLC. The objective behind this review work is to study the analyatical work done on Vortioxetine.

KEYWORDS:Vortioxetine, HPLC, RP-HPLC, UPLC-MS, HPLC-UV, HPTLC, LC-MS.

INTRODUCTION

Vortioxetine is a new antidepressant with several pharmacologic activities that was approved by the US Food and Drug Administration (FDA) in 2013 for the treatment of people with major depressive disorder (MDD). Like many antidepressants, vortioxetine is believed to work through direct modulation of receptor activity and inhibition of the 5-HT transporter. [(1).] Once a day, Vortioxetine is used once a day in doses ranging from 5 to 20 mg. The Vortioxetine pharmacokinetic profile is linear and dose-proportional, with a mean terminal half-life of approximately 66 hours and steady-state plasma concentrations typically attained within 2 weeks of treatment. Vortioxetine has an absolute oral bioavailability of 75%.There was no influence of meals on pharmacokinetics. [(2)]

According to the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-V), there are over 1000 different combinations of symptoms, showing that MDD is a fairly heterogeneous disorder. [(3)] Through, at least in part, 5-HT3 receptor antagonism, vortioxetine prevented the effect of stress on hippocampal long-term potentiation (LTP), rapidly increased hippocampal cell proliferation, and improved short-term episodic memory.[(4)]

Trintellix and Brintellix are the brand names for this medication. Lundbeck and Takeda are the firms that produce it. Vortioxetine is taken orally once a day, starting with a dose of 5 mg or 10 mg and increasing to a maximum of 20 mg, depending on the case's scenario under fed or fasting conditions. [(5)]

DRUG PROFILE: [(6,7,8,9,10)]

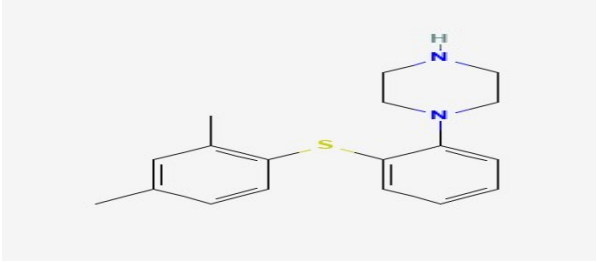


Fig. 1: Structure of Vortioxetine.2-[(2,4-dimethylphenyl)sulfanyl]phenyl}piperazine [(6)]

WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.084
Volume 11, Issue 2, 273-286. Review Article ISSN 2277– 7105

QUALITY BY DESIGN BASED APPROACH FOR ANALYTICAL METHOD VALIDATION

Bornare Snehal Laxman*, Shingote Vishakha Shankar and Suhas Siddheshwar

Department of Quality Assurance Technique, Pravara Rural College of Pharmacy, Pravaranagar, Tal: Rahta, Dist: Ahmednagar 413737, India.

Article Received on
23 November 2021,
Revised on 13 Dec. 2021,
Accepted on 03 Jan. 2022,
DOI: 10.20959/wjpr20222-22774

***Corresponding Author**
Bornare Snehal Laxman
Department of Quality Assurance Technique, Pravara Rural College of Pharmacy, Pravaranagar, Tal: Rahta, Dist: Ahmednagar 413737, India.

ABSTRACT

In the case of pharmaceutical processes, quality by design (QbD) is used to ensure a predetermined product quality. The International Conference on Harmonization (ICH) points Q8 (R1) (pharmaceutical development), Q9 (Quality risk management [QRM]), and Q10 (Quality risk management [QRM]) clarify the QbD concept unit of measurement (pharmaceutical quality system). According to the ICH Q8 (R1) guideline, "a systematic approach to development that begins with predefined objectives and stresses product and methodology understanding and methodology management, supported by strong science and QRM." The consequences of various input variables (e.g., methodological parameters and materials) of the merchandise development methodology on the end product were investigated using the QbD approach (active pharmaceutical ingredient or drug product). The late QbD method combines QRM principles with methodology and analytical technology (PAT). QbD paired with methodology analytical technology (PAT) tools improves methodology management and ensures that the unit of measurement for item quality attributes is regularly reached.

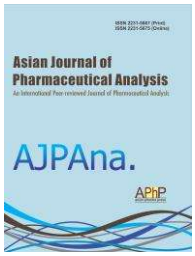
The QbD plan will also require an integrated and risk-based approach for reviewing the merchandise development methods in the future. Although using the QbD technique is not a legally binding requirement, regulatory authorities must provide flexibility in their pointers for producing the QbD-developed unit of measurement. Rising trends reflect an increased interest in quantifying and managing the impact of raw materials' features on methodology and product variability, as well as the emergence of retrospective QbD approaches in addition

ISSN 2231–5667 (Print)
2231–5675 (Online)
DOI: 10.52711/2231-5675.2022.00025

Vol. 12 | Issue-02|
April - June| 2022

Available online at
www.anvpublication.org
www.asianpharmaonline.org

Asian Journal of Pharmaceutical Analysis
Home page *www. ajpaonline.com*



RESEARCH ARTICLE

Analytical Methods for Estimation of Curcumin in Bulk, Pharmaceutical Formulation and in Biological Samples

Ganesh Bharskar, Someshwar Mankar, Suhas Siddheshwar
Department of Pharmacy, Pravara Rural College of Pharmacy, Pravaranagar.
*Corresponding Author E-mail: **ganeshb7748@gmail.com**

ABSTRACT:
Curcumin natural chemical constituents extracted from Curcuma longa has been extensively studied because of its various pharmacological properties, such as anti-inflammatory, antioxidant, anti-proliferative, antitumor, antibiotic, antiprotozoal, immunomodulatory and anticarcinogenic effects. Analytical methods play an important role to describe physicochemical properties of drug. Several techniques for estimating curcumin in turmeric powder and pharmaceutical formulations have been developed to improve the demand for analytical methods of curcumin. Various analytical methods for estimating curcumin (spectrophotometric, chromatographic, capillary electrophoresis, and biosensor approaches) have been fully reviewed and discussed in this study.

KEYWORDS: Analytical methods, Curcumin, HPTLC, RP-HPLC, UPLC–MS/MS, UV- spectrophotometer.

1. INTRODUCTION:
Curcumin was first isolated in 1815 and formulated into its crystalline form in 1870, and ultimately identified as 1,6-heptadiene-3,5-dione-1,7-bis(4-hydroxy-3-methoxyphenyl)-(1E,6E) or diferuloylmethane.[1] Curcumin (diferuloylmethane) is a polyphenol compound isolated from ground rhizomes of the plant (*Curcuma longa*) L. belongs to family Zingiberaceae found in South Asia.[2] It is insoluble in water and ether but soluble in various other organic solvents, such as, methanol, ethanol, glacial acetic acid, dimethylsulfoxide-acetone, and acetone, among others. Curcumin has a melting point of 183°C and acts as strong reducing agent stability, strong colouring (not for protein; once pigmented, it does not fade easily), light-, heat-, and iron ion sensitivity. Curcumin exists in enolic and b-diketonic forms due to keto-enol tautomerism of the molecule.

Received on 26.03.2022 Modified on 09.04.2022
Accepted on 17.04.2022
Asian J. Pharm. Ana. 2022; 12(2):142-148.
DOI: 10.52711/2231-5675.2022.00025

The absorption spectrum of Curcumin has two strong absorption bands, the first in the visible region of 410nm to 430 nm and the second band in the UV region with a maximum at 265nm.[3] There are also reports in the literature indicating therapeutic effects of Curcumin in diseases such as diabetes, HIV infection, multiple sclerosis, rheumatoid arthritis, Alzheimer's disease, and cystic fibrosis.[4] Turmeric is widely used in Ayurvedic medicine for its anti-oxidant, antiseptic, analgesic, antimalarial, and anti-inflammatory properties, in addition to its usage as a flavouring and colouring ingredient in formulations. Curcumin has long been used as a dietary supplement and is regarded as pharmacologically safe.[5] To design and develop an effective pharmaceutical formulation containing Curcumin for its various pharmacological activity and also there is need to develop and validate a newer analytical technique to analyse Curcumin in bulk and its dosage forms. So various analytical methods for estimation of curcumin in bulk and pharmaceutical formulation are estimation by HPLC, estimation by HPTLC, estimation by UPLC, estimation by UV spectrophotometer.

Research Article

Formulation and *in-vitro* Evaluation of Topical Antimicrobial Preparation

Ganesh Bharskar*, Suhas Siddheshwar
Department of Pharmacy, Pravara Rural College of Pharmacy, Pravaranagar, India.
***Corresponding author's E-mail:** ganeshb7748@gmail.com

Received: 09-07-2022; **Revised:** 24-09-2022; **Accepted:** 30-09-2022; **Published on:** 15-10-2022.

ABSTRACT

Due to the fact that medicinal plants are the most abundant source of the bioactive compounds utilised in both traditional and modern medicine, plant-derived compounds and herbal medicines have recently received significant interest due to their wide range of applications. The primary objectives of this study are to create an herbal ointment with antibacterial activity using *Adansonia digitata* and *Ocium sanctum* extracts. With the aid of A. digitata leaf extract and *Ocium sanctum* leaf extract, it is designed as an herbal ointment in this research study. Following formulation, the quality of the ointment was evaluated based on its irritancy, spreadability, consistency of the content, and stability. By employing the Agar cup plate method in an in vitro study, the antibacterial efficacy of herbal ointments containing extracts from *Adansonia digitata* and *Ocium sanctum* against bacteria like *Staphylococcus aureus* was determined. The findings of the zone of inhibition provided by the various extract ratios in ointment on *Staphylococcus aureus* were then compared to determine the most efficient combination. The goal of the current study is to formulate an herbal ointment and evaluate it utilising *Adansonia digitata* and *Ocium sanctum* extracts.

Keywords: *Adansonia digitata,* Herbal, *Ocium sanctum,* Ointment, *Staphylococcus aureus*, UV-Spectroscopy.

QUICK RESPONSE CODE →

DOI: 10.47583/ijpsrr.2022.v76i02.004

DOI link: http://dx.doi.org/10.47583/ijpsrr.2022.v76i02.004

INTRODUCTION

Herbal products are largely preferred to synthetic drugs due to their widespread availability as well as the vast empirical and accessible data regarding to their traditional use. However, modern scientific methods should be applied to validate the claims about the therapeutic effects of the plants, resulting in confirmation the traditional system of medicine.[1] Along with other dosage forms, herbal drugs are also formulated in the form of ointment. Medicated ointments contain a medicament dissolved, suspended or emulsified in the base.[2] *Adansonia digitata* is a native deciduous tree of African savannas belongs to Bombacaceae family, the bombax or kapok family. It is used in the treatment of bronchial asthma, dermatitis, sickle cell anemia, diuretic, anti-diabetic, diarrhoea, dysentery, laxative, hiccough in children, anti-oxidant, anti-inflammatory, antidote for poison, anti-trypanosome uses.[3]

Tulsi is an aromatic shrub in the basil family Lamiaceae (tribe ocimeae) that is thought to have originated in north central India and now grows native throughout the eastern world tropics.[4] The medicinal properties of tulsi have been studied in hundreds of scientific studies including *in vitro*, animal and human experiments. These studies reveal that Tulsi has a unique combination of actions that include: Antimicrobial (including antibacterial, antiviral, antifungal, antiprotozoal, antimalarial, anthelmintic), mosquito repellent, anti-diarrheal, anti-oxidant, anti-cataract, anti-inflammatory, chemo preventive, radioprotective, hepato-protective, neuro-protective, cardio-protective, anti-diabetic, anti-hypercholesterolemia, anti-hypertensive, anti-carcinogenic, analgesic, anti-pyretic, anti-allergic, immunomodulatory, central nervous system depressant, memory enhancement, anti-asthmatic, anti-tussive, diaphoretic, anti-thyroid, anti-fertility, anti-ulcer, anti-emetic, anti-spasmodic, anti-arthritic, adaptogenic, anti-stress, anti-cataract, anti-leukodermal and anti-coagulant activities.[5,6]

MATERIALS AND METHODS

Collection and authentication of Plant material

Leaves of *Adansonia digitata Linn*. (Family: Malvaceae) were collected from Medicinal Garden, Pravara Rural College of Pharmacy, Pravaranagar. The plant was authenticated by Department of Botany and Research centre, PVP College Loni with reference number PVPC/Bot/2021-22/121-1.

The ethanolic extracts of *Ocium sanctum* were collected from the Amsar Private Ltd., Indore, India.

Preparation of *A. digitata* leaves extract

The *Adansonia digitata* leaves were dried under shed and grinded into fine powder, using pestle and mortar. Then a 100g of the grinded powder was dissolved in 400 mL ethanol (70%), and incubated for 48 hours at room temperature. The extract was then filtered using maceration Method, and the supernatant was then boiled

Computers in Biology and Medicine 146 (2022) 105668

Contents lists available at ScienceDirect

Computers in Biology and Medicine

journal homepage: www.elsevier.com/locate/compbiomed

Computational investigation of benzalacetophenone derivatives against SARS-CoV-2 as potential multi-target bioactive compounds

Pukar Khanal [a,*,1], Vishal S. Patil [b,1], Vishwambhar V. Bhandare [b], Prarambh S.R. Dwivedi [a], C.S. Shastry [a], B.M. Patil [c], Shailendra S. Gurav [d], Darasaguppe R. Harish [b,**], Subarna Roy [b]

[a] Department of Pharmacology, NGSM Institute of Pharmaceutical Sciences (NGSMIPS), Nitte (Deemed to be University), Mangalore, 575018, India
[b] ICMR-National Institute of Traditional Medicine, Belagavi, Karnataka, 590010, India
[c] PRES's Pravara Rural College of Pharmacy Pravaranagar, Loni, 413736, Maharashtra, India
[d] Department of Pharmacognosy and Phytochemistry, Goa College of Pharmacy, Panaji, Goa, India

ARTICLE INFO

Keywords:
Benzalacetophenones
3CL^{pro}
COVID-19
Immune boost
Network pharmacology
PL^{pro}
Spike protein

ABSTRACT

Benzalacetophenones, precursors of flavonoids are aromatic ketones and enones and possess the immunostimulant as well as antiviral activities. Thus, benzalacetophenones were screened against the COVID-19 that could be lethal in patients with compromised immunity. We considered ChEBI recorded benzalacetophenone derivative (s) and evaluated their activity against 3C-like protease (3CL^{pro}), papain-like protease (PL^{pro}), and spike protein of SARS-Cov-2 to elucidate their possible role as antiviral agents. The probable targets for each compound were retrieved from DIGEP-Pred at 0.5 pharmacological activity and all the modulated proteins were enriched to identify the probably regulated pathways, biological processes, cellular components, and molecular functions. In addition, molecular docking was performed using AutoDock 4 and the best-identified hits were subjected to all-atom molecular dynamics simulation and binding energy calculations using molecular mechanics Poisson-Boltzmann surface area (MMPBSA). The compound 4-hydroxycordoin showed the highest druglikeness score and regulated nine proteins of which five were down-regulated and four were upregulated. Similarly, enrichment analysis identified the modulation of multiple pathways concerned with the immune system as well as pathways related to infectious and non-infectious diseases. Likewise, 3'-(3-methyl-2-butenyl)-4′-O-β-D-glucopyranosyl-4,2′-dihydroxychalcone with 3CL^{pro}, 4-hydroxycordoin with PL^{pro} and mallotophilippen D with spike protein receptor-binding domain showed highest binding affinity, revealed stable interactions during the simulation, and scored binding free energy of −26.09 kcal/mol, −16.28 kcal/mol, and −39.2 kcal/mol, respectively. Predicted anti-SARS-CoV-2 activities of the benzalacetophenones reflected the requirement of wet lab studies to develop novel antiviral candidates.

1. Introduction

Coronaviruses are a group of ribonucleic acid (RNA) viruses that cause respiratory diseases in humans ranging from mild to lethal [1]. Since December 2019, COVID-19 arose as a pandemic throughout the world and infected millions of populations causing significant deaths. In addition, no vaccine so far has been developed to be 100% effective against COVID-19. Therefore multiple approaches were adopted for prophylaxis like social distancing, self-sanitation, proper use of masks, and immune booster consumption. Further, it was observed that the majority of deaths in this pandemic occurred among patients with compromised immunity [2]. This is vastly observed in the subjects with infectious and non-infectious diseases, often due to compromised immunity [3,4]. All these evidences suggest that the fraction of the population with compromised immunity is at higher risk for COVID-19 infection. In contrast, although attempts were made to develop new drugs or better vaccines, these exercises are costly and time-consuming. Of course, some approaches that had been attempted so far include repurposing existing drug molecules like chloroquine, remdesivir, and ivermectin [5]. However, further investigations are still required to

* Corresponding author.
** Corresponding author.
E-mail addresses: pukarkhanal58@gmail.com (P. Khanal), drharish49@gmail.com (D.R. Harish).
[1] Equal contribution.

https://doi.org/10.1016/j.compbiomed.2022.105668
Received 1 March 2022; Received in revised form 22 May 2022; Accepted 23 May 2022
Available online 27 May 2022

How to Cite:
Laxman, B., Yojana, K., Chaitali, K., Shivam, K., Sagar, M., & Godge, R. K. (2022). A Rapid and Sensitive stability indicating Rp-HPLC method development for the quantitative analysis of empagliflozin & linagliptin in bulk & synthetic mixture. *International Journal of Health Sciences*, *6*(S3), 5526–5538. https://doi.org/10.53730/ijhs.v6nS3.7166

A Rapid and Sensitive stability indicating Rp-HPLC method development for the quantitative analysis of empagliflozin & linagliptin in bulk & synthetic mixture

Bulbule Laxman
Department of Pharmaceutical Chemistry, Pravara Rural College of Pharmacy, Pravaranagar, Tq, Rahata, Dist. Ahmednagar, Maharashtra. (413736)

Kunjir Yojana
Department of Pharmaceutical Chemistry, Pravara Rural College of Pharmacy, Pravaranagar, Tq, Rahata, Dist. Ahmednagar, Maharashtra. (413736)

Kolhe Chaitali
Department of Pharmaceutical Chemistry, Pravara Rural College of Pharmacy, Pravaranagar, Tq, Rahata, Dist. Ahmednagar, Maharashtra. (413736)

Kote Shivam
Department of Pharmaceutical Chemistry, Pravara Rural College of Pharmacy, Pravaranagar, Tq, Rahata, Dist. Ahmednagar, Maharashtra. (413736)

Magar Sagar
Department of Pharmaceutical Chemistry, Pravara Rural College of Pharmacy, Pravaranagar, Tq, Rahata, Dist. Ahmednagar, Maharashtra. (413736)

Dr. Rahul Keshav Godge
Assistant Professor, Pharmaceutical Chemistry Department, Pravara Rural College of Pharmacy Pravaranagar, Tal- Rahata, Dist- Ahmednagar, Maharashtra, India
*Corresponding author email: rahul.godge@pravara.in

***Abstract*---** An isocratic HPLC method was developed using, Shimadzu C18 column (250 mm × 4.6 mm, 5 µm) with an isocratic binary mobile phase consisting of Acetonitrile: Buffer in a ratio (80:20 v/v) pH 3.0 adjusted with Orthophosphoric acid and flow rate monitored at 0.80 ml/min. The UV detector was used for simultaneous analysis of two drugs at a common wavelength of 226 nm and each injection volume was 20 µl. The retention time for Empagliflozin and Linagliptin was found to be 3.714 min and 3.064 min, respectively. Empagliflozin and

IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

A Review: Analytical method for determination of Elbasvir and Grazoprevir in bulk, pharmaceutical dosage form and biological fluid

Miss.Yojana Kunjir*[1], Mr. Rahul Godge[2], Mr. Sagar Magar[3]

Department of Pharmaceutical Chemistry, Pravara Rural College of Pharmacy, Pravaranagar, Tal-Rahata, Dist- Ahmednagar 413736 India.

ABSTRACT:

Elbasvir/Grazoprevir (Zepatier) is a combination product with an FDA-approved indication for the treatment of chronic HCV genotypes (GTs)1and 4 in adults.Elbasvir is an NSSA inhibitor, preventing hepatitis C viral RNA replication and vision assembly.Median EC50 values range from 0.2 to 3600 pmol/L,based on genotype. Grazoprevir is a protease inhibitor of HCV NS3/4A that prevents cleavage of the polyprotein necnecessary for replication. Median EC50 values range from 0.16 to 0.8pmol/L.Analytical method play an important role in the physicochemical properties description. This review includes most recent analytical methods such as various spectroscopic methods (Simultaneous estimation, Mass Spectroscopy)and chromatographic methods (RP-HPLC, stability indicating HPLC)for determination of Elbasvir and Grazoprevir in various pharmaceutical dosage forms and biological fluid matrix were reported.

KEYWORDS: Elbasvir,Grazoprevir, RP-HPLC, UV-Visible spectroscopy, Synchronous Fluorescence spectroscopy

INTRODUCTION :

Hepatitis C is an infection caused by the hepatitis C virus (HCV) that attacks the liver and leads to inflammation. The World Health Organization estimates that about 3% of the world's population has been infected with HCV and that there are more than 170 million chronic carriers who are at risk of developing liver cirrhosis and/or liver cancer.[1] For almost 25 years, Pegylated interferon and ribavirin have been the cornerstone of treatment for this disease until the revolutionary development of protease inhibitors. This class of direct-acting antiviral agents has led to all oral HCV treatment regimens that have changed the strategies of hepatitis C treatment. [2]