Appendix-I

Nagaon Education Society's
Gangamai College of Pharmacy
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Affilated to KBC North Maharashtra University
Website:- www.gcp.org.in EmailID:- nesgangamai.pharmacy@rediffmai
Phone No. (02562) 243181 Fax:- 243081

3.2.1 Average number of research paper published per teacher in the journal :

SL. No.	Name of theTeacher	Title of the Paper	Year of Publication	ISBN/ISSN Number of Procedding	Affilating institute at the time of Publication	Name of the Publisher
1.	Dr. V. M. Shastry	Development And Validation Of Uv-Visible Spectrophotometric Method For Estimation Of Cilnidipine And Telmisartan In Bulk And Dosage Form	2017	2231-6876	Gangamai College of Pharmacy	Indo American Journal of Pharmaceutical Research
2.	Dr. Sufiyan Ahmad Raees Ahmad	Qualitative and quantitative characterization of phytoconstituents from stem bark of *Stereospermumcolais*Buch		-	Gangamai College of Pharmacy	SPER Journal of Analysis and Drug Regulatory Affairs
3.	Mr. Sajjad Ansari	Analytical method development and validation for the simultaneous estimation of Nebivolol and Valsartan by RP-HPLC in bulk and tablet dosage forms		0974-6943	Gangamai College of Pharmacy	Journal of Pharmacy Research
4.	Dr.TabrejMujawar	Analytical method development and validation for the simultaneous estimation of Metformin and Teneligliptin by RP-HPLC in bulk and tablet dosage forms		0974-6943	Gangamai College of Pharmacy	Journal of Pharmacy Research
5.	Mr. Vishal Lad	Androgenic Alopecia: Current		2278-4357	Gangamai College of	World Journal Of Pharmacy

		And Dosage Form				
2.	Dr. Sufiyan Ahmad Raees Ahmad	Development And Validation Of Uv Visible Spectrophotometric Method For Estimation Of Aceclofenac And Tramadol In Bulk And Dosage Form		2320-5148	Gangamai College of Pharmacy	International Journal of Pharmaceutical Sciences & Research
3.	Mr. Gopichand Bhoi	Sweet Wormwood In The Treatment Of Breast Cancer		2231-6876	Gangamai College of Pharmacy	Indo American Journal of Pharmaceutical Research
4.	Mr. Vishal Lad	Formulation And Evaluation Of Vanishing Herbal Cream Of Crude Drugs		2349-7750	Gangamai College of Pharmacy	Indo American Journal of Pharmaceutical Sciences
5.	Mrs. NamitaJadhav	Formulation And Evaluation Of Vanishing Herbal Cream Of Crude Drugs	**2018**	2349-7750	Gangamai College of Pharmacy	Indo American Journal of Pharmaceutical Sciences
6.	Mr. ChandrakantSuryawanshi	Formulation And Evaluation Of Vanishing Herbal Cream Of Crude Drugs		2349-7750	Gangamai College of Pharmacy	Indo American Journal of Pharmaceutical Sciences
7.	Mr. Vinod Wagh	Formulation And Evaluation Of Vanishing Herbal Cream Of Crude Drugs		2349-7750	Gangamai College of Pharmacy	Indo American Journal of Pharmaceutical Sciences
8.	Mr. Amit Sinhal	Formulation And Evaluation Of Vanishing Herbal Cream Of Crude Drugs		2349-7750	Gangamai College of Pharmacy	Indo American Journal of Pharmaceutical Sciences
9	Mrs.**Rajeshwari**	Rifampicin: Anti Tubercular Drug: An Overview		2349-7750	Gangamai college of pharmacy	Indo American Journal of Pharmaceutical Sciences
10	Mr.vaibhavkute	Rifampicin: Anti Tubercular Drug: An Overview		2349-7750	Gangamai college of pharmacy	Indo American Journal of Pharmaceutical Sciences
2019-20						
1.	Dr. Sufiyan Ahmad Raees Ahmad	Development and validation for the simultaneous		2349-5162	Gangamai College of Pharmacy	Journal of Emerging

	ShalakaBorse	Evaluation Of Fast Dissolving Film Of Pantaprazole Sodium		2319-5878	ege of Pharmacy	Journal of Modern Pharmaceutical Research
8.	Mr. Muzzamil Hussain	A Review on: A New Pandemic, Causes, Clinical Manifestation and Diagnosis, Prevention and Control of Novel Coronavirus Disease (COVID-19) During the Early Outbreak Period		2348-7704	angamai College of Pharmacy	Journal of Hospital Pharmacy
9.	KundanDeore	Causes, Prevention And Control Of Sari Disease - A Review		2278 – 4357	Gangamai College of Pharmacy	World Journal Of Pharmacy And Pharmaceutical Sciences
10.	Dr.A.U.Tatiya	A Review On Natural Gums And Mucilage Used As Suspending Agents In Various Suspension		2394-3211	Gangamai College of Pharmacy	European Journal Of Pharmaceutical And Medical Research
11.	Ms. Shweta Yadav	Method Development And Validation Of Rp-Uplc Method For The Estimation Of Amlodipine And OlmesartanMedoxomil In Tablet Formulation		**2319-5878**	Gangamai College of Pharmacy	International Journal Of Modern Pharmaceutical Research
12.	Mrs. RajeshwariPatil	A Review On Natural Gums And Mucilage Used As Suspending Agents In Various Suspension		2394-3211	Gangamai College of Pharmacy	European Journal Of Pharmaceutical And Medical Research
13.	Mr. V. S. Bagul	A Review On Natural Gums And Mucilage Used As		2394-3211	Gangamai College of Pharmacy	European Journal Of Pharmaceutical

		Suspending Agents In Various Suspension				And Medical Research
14.	Mr. V. G. Kute	A Review On Natural Gums And Mucilage Used As Suspending Agents In Various Suspension		2394-3211	Gangamai College of Pharmacy	European Journal Of Pharmaceutical And Medical Research
2021-22						
1.	Dr. Sufiyan Ahmad	Rp-Hplc Analytical Method Development And Validation For The Simultaneous Estimation Of Lamivudine And Stavudine In Bulk And Tablet Dosage Forms		E-ISSN 2348-1269, P-ISSN 2349-5138)	Gangamai College of Pharmacy	International Journal Of Research And Analytical Reviews
2.	Mr. Muzzamil Hussain	Formulation and Evaluation of Sustained Release Tablets of Metoprolol Succinate		Print ISSN 0976-4585; Online ISSN 2277-1573	Gangamai College of Pharmacy	Advances in Bioresearch
3.	Mr. Sajjad Ansari	Formulation and Evaluation of Sustained Release Tablets of Metoprolol Succinate		Print ISSN 0976-4585; Online ISSN 2277-1573	Gangamai College of Pharmacy	Advances in Bioresearch
4.	Ms. Shweta Yadav	Development And Validation Of An Rp- Hplc Method For Estimation Of Chlorpheniramine Maleate And Phenylephrine In Pharmaceutical Dosage Form	**2021**	2394-3211	Gangamai College of Pharmacy	European Journal Of Pharmaceutical And Medical Research
5.	Ms. ChetnaGavale	Development And Validation Of An Rp- Hplc Method For Estimation Of Chlorpheniramine Maleate And Phenylephrine In Pharmaceutical Dosage Form		2394-3211	Gangamai College of Pharmacy	European Journal Of Pharmaceutical And Medical Research
6.	Dr. A. U.	Method		0975-1459	GangamaiColl	Journal of

		estimation of Sofosbuvir and Ledipasvir by UV spectrophotometer method in bulk and tablet dosage forms				Technologies and Innovative Research
2.	Dr.TabrejMujawar	Development and validation for the simultaneous estimation of Sofosbuvir and Ledipasvir by UV spectrophotometer method in bulk and tablet dosage forms	**2019**	2349-5162	Gangamai College of Pharmacy	Journal of Emerging Technologies and Innovative Research
2020-21						
1.	Dr.Sufiyan Ahmad Raees Ahmad	Break the Chain of Coronavirus Disease (Covid-19) Infection: A Review	**2020**	0976 – 044X	Gangamai College of Pharmacy	International Journal of Pharmaceutical Sciences Review and Research
2.	Mr. Vinod Wagh	Enhancement Of Solubility And Dissolution Rate Of Famotidine With Hydrophilic Polymers By Solid Dispersion Technique		E-ISSN: 0975-8232; P-ISSN: 2320-5148	Gangamai College of Pharmacy	International Journal of Pharmaceutical Sciences and Research
3.	Mr. NandvishalDeore	A Review-Diagnosis, Prevention And Control Of Depression		2278 – 4357	Gangamai College of Pharmacy	World Journal Of Pharmacy And Pharmaceutical Sciences
4.	Mr. TusharSalunkhe	A Review-Diagnosis, Prevention And Control Of Depression		2278 – 4357	Gangamai College of Pharmacy	World Journal Of Pharmacy And Pharmaceutical Sciences
5.	Mr. Vishal Lad	Causes, Prevention And Control Of Sari Disease - A Review		2278 – 4357	Gangamai College of Pharmacy	World Journal Of Pharmacy And Pharmaceutical Sciences
6.	Mrs. Asif Ansari	Antibacterial and Antifungal Activities from Leaf Extracts of Mimusopselengi Linn.		-	Gangamai College of Pharmacy	International Journal of Pharmacognosy and Phytochemical Research
7.	Mrs.	Formulation And			GangamaiColl	International

		Perspectives & Treatments			Pharmacy	And Pharmaceutical Sciences
6.	Mr. Vinod Wagh	Androgenic Alopecia: Current Perspectives & Treatments		2278-4357	Gangamai College of Pharmacy	World Journal Of Pharmacy And Pharmaceutical Sciences
7.	Dr. Amol Landge	Androgenic Alopecia: Current Perspectives & Treatments		2278-4357	Gangamai College of Pharmacy	World Journal Of Pharmacy And Pharmaceutical Sciences
8.	Mrs. NamitaJadhav	Androgenic Alopecia: Current Perspectives & Treatments		2278-4357	Gangamai College of Pharmacy	World Journal Of Pharmacy And Pharmaceutical Sciences
9.	Mr. ChandrakantSuryawanshi	Evaluation Of Hair Growth Promoting Activity Of IndigoferaTinctoria Linn. In Male Wistar Rats		2278-4357	Gangamai College of Pharmacy	World Journal Of Pharmacy And Pharmaceutical Sciences
10.	Mr. TusharSalunkhe	Evaluation Of Hair Growth Promoting Activity Of IndigoferaTinctoria Linn. In Male Wistar Rats		2278-4357	Gangamai College of Pharmacy	World Journal Of Pharmacy And Pharmaceutical Sciences
11.	Mr. Gopichand Bhoi	Evaluation Of Hair Growth Promoting Activity Of IndigoferaTinctoria Linn. In Male Wistar Rats		2278-4357	Gangamai College of Pharmacy	World Journal Of Pharmacy And Pharmaceutical Sciences
12.	Mr. Amit Sinhal	Evaluation Of Hair Growth Promoting Activity Of IndigoferaTinctoria Linn. In Male Wistar Rats		2278-4357	Gangamai College of Pharmacy	World Journal Of Pharmacy And Pharmaceutical Sciences
2018-19						
1.	Dr. V. M. Shastry	Development And Validation Of Uv Visible Spectrophotometric Method For Estimation Of Aceclofenac And Tramadol In Bulk		2320-5148	Gangamai College of Pharmacy	International Journal of Pharmaceutical Sciences & Research

	Tatiya	Development and Validation for the Simultaneous Estimation of Tizanidine and Aceclofenac by (UHPLC) RP-HPLC in Bulk and Tablet Dosage Forms			ege of Pharmacy	Pharmaceutical Sciences & Research

Principal
Nagaon Education Society's
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Nagaon, Tal.Dist. Dhule

INDO AMERICAN JOURNAL OF PHARMACEUTICAL RESEARCH

DEVELOPMENT AND VALIDATION OF UV-VISIBLE SPECTROPHOTOMETRIC METHOD FOR ESTIMATION OF CILNIDIPINE AND TELMISARTAN IN BULK AND DOSAGE FORM

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Keywords
Cilnidipine And Telmisartan,
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UV Spectroscopy.

ABSTRACT

Simple, rapid, sensitive, precise and specific UV spectrophotometric method for the determination of Cilnidipine (CIL) and Telmisartan (TEL) in bulk drug and pharmaceutical dosage form were developed and validated. A simple double beam UV spectrophotometric method has been developed and validated with different parameters such as linearity, precision, repeatability, limit of detection (LOD), Limit of Quantification (LOQ), accuracy as per ICH guidelines. UV-visible spectrophotometric method, measurement of absorption at maximum wavelength in 10 ml acetonitrile and volume make with water solvent system as reference CIL and TEL were found to be at 203 nm and 241nm respectively. The drug obeyed the Beer's law and showed good correlation. Beer's law was obeyed in concentration range 0.5-2.5 µg/ml for Cilnidipine and 2-10µg/ml for Telmisartan respectively with correlation coefficient was 0.999. The LOD and LOQ of CIL were found to be 0.317 (µg/ml) and 0.96 (µg/ml), TEL were found to be 0.67 (µg/ml) and 5.086 (µg/ml), respectively. Percentage assay of CIL and TEL in tablets. The proposed method is precise, accurate and reproducible and can be used for routine analysis of CIL and TEL in bulk and pharmaceutical dosage form.

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Research Article
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Analytical method development and validation for the simultaneous estimation of Nebivolol and Valsartan by RP-HPLC in bulk and tablet dosage forms

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ABSTRACT

The objective of this work is to develop a rapid, precise, accurate and sensitive reverse phase liquid chromatographic method for the simultaneous estimation of Nebivolol and Valsartan in tablet dosage form. The separation was carried out on Youngline (S.K.) Gradient System UV Detector, Equipped with Reverse Phase (Agilent) C18 column (4.6mm x 150mm; 5µm), a SP930Dpump, a 20µl injection loop and UV730D Absorbance detector and running autochro-3000 software. The retention time of Nebivolol and Valsartan were found to be retention time at 3.383min and 6.100min, respectively. The linear dynamic range was 5-25µg/ml for nebivolol and 80-400µg/ml for valsartan. Percentage recoveries for Nebivolol and Valsartan were 100.53- 100.27% and 101.40-102.57 %, respectively. All the analytical validation parameters were determined and found in the limit as per ICH guidelines, which indicates the validity of the method. The method was statistically validated and %RSD was found to be less than 2 indicating high degree of accuracy and precision. Hence proposed method can be successfully applied for the simultaneous estimation of Nebivolol and Valsartan in marketed formulation.

KEY WORDS: Simultaneous, Nebivolol, RP-HPLC and Dosage Forms.

1. INTRODUCTION

Nebivolol (NEBI) is chemically known as 1-(6-fluoro-3, 4-dihydro-2H-1-benzopyran-2-yl)-2-{[2-(6-fluoro-3,4-dihydro-2H-1-benzopyran-2-yl)-2-hydroxyethyl] amino}ethan-1-ol **(Figure 1)**. It is a highly cardioselective vasodilatory beta1 receptor blocker used in treatment of hypertension. Nebivolol is a selective β1-receptor antagonist. Activation of â1-receptors by epinephrine increases the heart rate, blood pressure and the heart consumes more oxygen. Nebivolol blocks these receptors which reverses the effects of epinephrine, lowering the heart rate and blood pressure. In addition, beta blockers prevent the release of renin, which is a hormone produced by the kidneys which leads to constriction of blood vessels. At high enough concentrations, this drug may also bind beta 2 receptors [11].

Valsartan (VAL) is chemically known as (2S)-3-methyl-2-[N-({4-[2-(2H-1, 2, 3, 4-tetrazol-5-yl) phenyl] phenyl} methyl) pentanamido] butanoic acid. Valsartan is an ARB that selectively inhibits the binding of angiotensin II to AT1, which is found in many tissues such as vascular smooth muscle and the adrenal glands **(Figure 2)**. This effectively inhibits the AT1-mediated vasoconstrictive and aldosterone-secreting effects of angiotensin II and results in a decrease in vascular resistance and blood pressure [12]. Different analytical methods have been reported in the literature for the assay of nebivolol in pharmaceuticals and include spectrophotometry, TLC, HPLC, HPTLC, LC-MS[13-19].

The present investigation reports a simple UV spectrophotometric method for the analysis of nebivolol in bulk as well as in tablet dosage form. The developed method was validated as per ICH guidelines [20].

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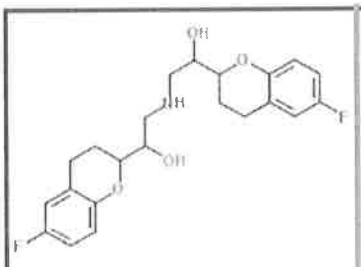

Fig. 1: Chemical Structure of Nebivolol

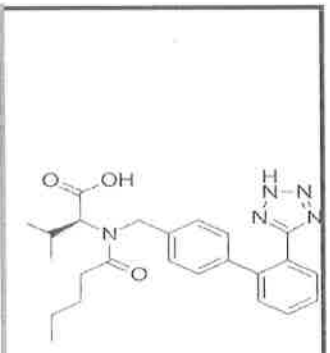

Fig. 2: Chemical Structure of Valsartan

Research Article

SPER Publications and Solutions Pvt. Ltd.

Qualitative and quantitative characterization of phytoconstituents from stem bark of *Stereospermum colais* Buch

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ABSTRACT

Upon the qualitative analysis work on *Stereospermum colais* stem bark belongs to family Bignoniaceae, the phytochemical constituents such as steroids, carbohydrates, triterpenoids, phenolic compounds, coumarins, flavonoids, saponins, anthraquinones, proteins, and lipids were identified in stem bark of *S. colais*. Quantitative analysis of phenols, flavonoids, and triterpenoids was further performed. The active phytoconstituent was analyzed using thin-layer chromatography (TLC) and preliminary phytochemical screening of stem bark; from the methanolic extracts of stem bark showed various phytoconstituents such as flavonoids, phytosterols, saponins, and coumarins. Some important inorganic elements such as iron, chloride, potassium, phosphate, nitrate, and sulfate were identified by total ash analysis additionally. The quantitative determination of total phenolic content (72.5 mg/g), total flavonoid content (70.53 mg/g), and total triterpenoid content (12.68 mg/g) was performed using the same extract. In addition, for further purification of identified chemical constituents, TLC was performed and it showed remarkable results. The methanolic extract of *S. colais* stem bark contains beta-sitosterol and lupeol which are very useful therapeutically mostly to treat diabetes and heart diseases.

Keywords: Phytochemical, phytoconstituents, qualitative and quantitative screening, stem bark of *Stereospermum colais*

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Introduction

The plant have various phytochemical constituents such as phenolic acids, terpenoids, lignins, stilbenes, tannins, vitamins, amines, betalains, alkaloids, flavonoids, quinones and coumarins, and other metabolites, which are rich in antioxidant activity.[1,2] Studies have manifested that a lot of these antioxidant compounds have anticarcinogenic, antimutagenic, anti-viral activity, anti-inflammatory, antiatherosclerotic, antitumor, and antibacterial activities.[3,4] Treatment with natural antioxidants has beneficial effects such as reduced risks of cancer, cardiovascular disease, diabetes, and other diseases. The natural phytochemicals presentare present in stem barks, fruits, oilseeds, beans, berry crops, tea, herbs, and vegetables.[5,6] In a going years, phytochemicals (secondary metabolites) having unknown pharmacological activities. These have been generally studied as a source of therapeutic agents.[7]

There is an obstruction in the use of traditional medicines worldwide due to imperfection of quality and quantity and safety and efficacy information on traditional medicines. The imperfection of research data is not only due to lack of methodologies for the evaluation of herbal medicines but also due to health policies.[8] The plant contains a number of active chemical and therapeutically active constituents. Therefore, in modern systems of medicine, it is very important to study the quality control of herbal medicines for their active chemical constituents to satisfy new belief of curious, compulsion of standardization of herbal medicine.[9,10] *Stereospermum colais* has a wide range of medicinally active compounds in it, earlier studies which deal with qualitative and quantitative analysis have been done on the root, fruit, and leaf parts of the *S. colais* plant.

Since stem bark part is also medicinally active part, but not a single study has been performed on stem bark part of the *S. colais* plant,

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Source of Support: Nil, **Conflict of Interest:** None declared.

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Research Article
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Analytical method development and validation for the simultaneous estimation of Metformin and Teneligliptin by RP-HPLC in bulk and tablet dosage forms

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ABSTRACT

An accurate, precise and reproducible high performance liquid chromatographic method was developed for quantitative estimation of Metformin and teneligliptin simultaneously in tablet dosage forms. Younglin (S.K.) gradient System UV Detector and C_8 (Agilent) column with 250mm x4.6 mm i.d. and 5µm particle size. Methanol : water 0.05 % OPA (50:50) was used as the mobile phase for the method. The detection wavelength was 235 nm and flow rate was 0.7 ml/min. In the developed method, the retention time of Metformin and Teneligliptin were found to be 2.1 min and 7.6 min. The developed method was validated according to the ICH guidelines. The linearity, precision, range, robustness was within the limits as specified by the ICH guidelines. Hence the method was found to be simple, accurate, precise, economic and reproducible. So the proposed methods can be used for the routine quality control analysis of Metformin and Teneligliptin simultaneously in tablet dosage forms.

KEY WORDS: Metformin and Teneligliptin, method development, validation, simultaneous estimation, HPLC.

1. INTRODUCTION:

Teneligliptin (TEN) is chemically described as {(2S,4S)-4-[4-(3-methyl-1phenyl-1H-pyrazol-5-yl) piperazin-1-yl] pyrrolidin-2-yl} (1,3-thiazolidin-3-yl) methanone hemipentahydrobromide hydrate is a dipeptidyl peptidase inhibitor **[Figure 1]**. TEN slows the inactivation of incretin hormones, thereby increasing bloodstream concentrations and reducing fasting and postprandial glucose concentrations in a glucose-dependant manner in patients with type 2 diabetes mellitus. The inhibition of DPP-4 increases the amount of active plasma incretins which helps with glycemic control [1-2].

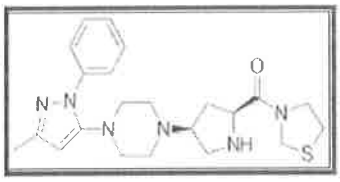

Fig.1: Structure of Teniligliptin

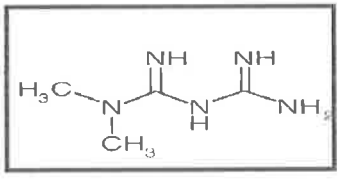

Fig. 2: Structure of Metformin

Metformin hydrochloride (MET) is 1,1-dimethylbiguanide hydrochloride, a biguanide antidiabetic **[Figure 2]**. It is given orally in the treatment of type 2 diabetes mellitus and is the drug of choice in overweight patients. They do not stimulate insulin release but require that some insulin be present in order to exert their antidiabetic effect. Possible mechanism of action includes the delay in the absorption of glucose from the GIT and increase in insulin sensitivity and glucose uptake in to cells and inhibition of hepatic gluconeogenesis [3-6].

For effective control of blood sugar in diabetic patients more than one medication is required. TEN shows effective control of blood sugar when combined with MET. Literature survey reveals various analytical methods for the estimation of TEN and MET individually using UV spectrophotometry [7-9], HPLC [10-12], HPTLC [13-15] and LC-MS/MS [16]. Moreover, many methods were reported for the estimation of MET along with other drugs in combined formulation [17-20]. However, the development of simultaneous estimation of TEN and MET in combined dosage form has not yet been reported by any method. Hence, this manuscript is the first to describe the development and validation of some simpler, sensitive, precise, accurate and cost effective UV spectroscopic methods for the simultaneous determination of TEN and MET in combined tablet formulation. Proposed methods possess several advantages which are as follows; methods describe very simple standard and sample preparation procedure, wide concentration range with high sensitivity and all the developed methods were validated as per ICH guidelines.

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EVALUATION OF HAIR GROWTH PROMOTING ACTIVITY OF INDIGOFERA TINCTORIA LINN. IN MALE WISTAR RATS

Vishal Lad*, Chandrakant Suryawanshi, Amit Sinhal, Tushar Salunkhe, Vinod Wagh and Gopichand Bhoi

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ABSTRACT

Alopecia is a dermatological disorder with psychosocial implications on patients with hair loss. Indigofera tinctoria Linn. is a well-known Ayurvedic herb with purported claims of hair growth promotion. In the reported work attempts were undertaken to evaluate petroleum ether and ethanol extract of Indigofera tinctoria Linn. for their effect on promoting hair growth in albino wistar rats. The extracts were incorporated into oleaginous cream (water in oil cream base) and applied topically on shaved denuded skin of albino rats. The time (in days) required for hair growth initiation as well as completion of hair growth cycle was recorded. Minoxidil 2% solution was applied topically and served as positive control for comparison. Hair growth initiation time was significantly reduced to half on treatment with the extracts, as compared to control animals. The time required for complete hair growth was also significantly reduced. Quantitative analysis of hair growth after treatment with petroleum ether extract (5%) exhibited greater number of hair follicles in anagenic phase, which were higher as compared to control. The result of treatment with 2 and 5% petroleum ether extracts were better than the positive control minoxidil 2% treatment.

KEYWORDS: Alopecia, Hair growth, Indigofera tinctoria, Anagen, Telogen, Minoxidil.

INTRODUCTION

Hair is one of the vital parts of the body derived from ectoderm of skin, is protective appendages on the body and considered accessory structure of the integument along with sebaceous glands, sweat glands and nails. They are known as epidermal derivatives as they originate from the epidermis during embryological development. Hair is an important of the overall appeal of the human body. Alopecia, is dermatological disorder that has been

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ANDROGENIC ALOPECIA: CURRENT PERSPECTIVES & TREATMENTS

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ABSTRACT

Androgenetic alopecia (AGA) is the most common form of hair loss in men and women. Determining factors appear to be genetic predisposition coupled with the presence of sufficient circulating androgens. The prevalence of this condition is high and although there are no serious direct health consequences, the loss of scalp hair can be distressing. Knowledge of the pathogenesis of androgenetic alopecia has increased markedly in recent years. Pre-programmed follicles on the scalp undergo a transformation from long growth (anagen) and short rest (telogen) cycles, to long rest and short growth cycles. This process is coupled with progressive miniaturisation of the follicle. These changes are androgen dependent and predominantly due to the binding of dihydrotestosterone (DHT) to the androgen receptor (AR). Of the many treatments available for androgenetic alopecia, only two (finasteride and minoxidil) have been scientifically shown to be useful in the treatment of hair loss. However, these therapies are variable in their effectiveness. Hair transplantation is the only current successful permanent option, and it requires surgical procedures. Several other medical options, such as antiandrogens, ketoconazole, herbal therapy, Laser and light therapies are reported to be beneficial. Management of expectations is crucial and the aim of therapy, given the current therapeutic options, is to slow or stop disease progression with contentment despite patient expectations of permanent hair regrowth.

KEYWORDS: Androgenetic alopecia, Androgen, Androgen receptor, Dihydrotestosterone, Minoxidil, Finasteride.

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DEVELOPMENT AND VALIDATION OF UV VISIBLE SPECTROPHOTOMETRIC METHOD FOR ESTIMATION OF ACECLOFENAC AND TRAMADOL IN BULK AND DOSAGE FORM

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Keywords:

Aceclofenac, Tramadol, Method development, Validation, UV spectrophotometric, Dosage forms

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ABSTRACT: Objective: Simple, rapid, sensitive, precise and reproducible specific UV spectrophotometric method for the determination of Aceclofenac (ACE) and Tramadol (TRM) in bulk drug and pharmaceutical dosage form were developed and validated. **Methods:** A simple double beam UV spectrophotometric method has been developed and validated with different parameters such as linearity, precision, repeatability, limit of detection (LOD), Limit of Quantification (LOQ), accuracy as per ICH guidelines. **Results:** UV-visible spectrophotometric method, measurement of absorption at maximum wavelength in 10 ml methanol and volume make with water solvent system as reference ACE and TRM were found to be at 203 nm and 241 nm respectively. The drug obeyed the Beer's law and showed good correlation. Beer's law was obeyed in concentration range 5 - 25 µg/ml for ACE and 2 - 10 µg/ml for TRM respectively with correlation coefficient was 0.999. The LOD and LOQ of ACE were found to be 4.7862 µg/ml and 14.50 µg/ml, TRM were found to be 2.0518 µg/ml and 6.2176 µg/ml, respectively. Percentage assay of ACE and TRM in tablets. **Conclusion:** The proposed method is simple, precise, accurate and reproducible can be used for routine analysis of ACE and TRM in bulk and tablet dosage form.

INTRODUCTION: Aceclofenac (ACE) is chemically [(2, 6-dichlorophenyl) amino] phenyl-acetoxyacetic acid **Fig. 1** is used as an effective non-steroidal anti-inflammatory drugs (NSAIDs) derived from the phenylacetic acid with pronounced anti-inflammatory, analgesic and antipyretic properties [1, 2]. Tramadol hydrochloride (TRM) is chemically (IRS, 2RS)- 2- [(dimethyl amino) methyl]- l- (3-methoxyphenyl) cyclo-hexanol hydrochloride [3] **Fig. 2**.

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Tramadol HCl is a synthetic, centrally acting analgesic with no anti-inflammatory activity and one of the most interesting and useful weak opioids for treatment of moderate to moderately severe pain with weak µ-receptor agonist properties and noradrenergic and serotonergic neurotransmission effects [4, 5, 6, 7, 8, 9, 10, 11].

The review of literature revealed that many analytical methods involving UV Spectro-photometric [12, 13] RP-HPLC, [14, 15, 16] HPTLC [17] and UPLC [18] have been reported for TRM individually and in combination with other drugs. UV spectrophotometric methods have been reported for determination of ACE in single or in combination with other drugs [19, 20]. Spectrophotometric methods for simultaneous estimation of ACE with other drugs also reported [21, 22].

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FORMULATION AND EVALUATION OF VANISHING HERBAL CREAM OF CRUDE DRUGS

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Abstract:

The purpose of present study was to formulate & evaluate vanishing herbal cream. Herbal cream offer several advantages over other creams. Method carried out to prepare herbal cream was very simple. Firstly oil phase was prepared, the mixture of stearic acid, potassium hydroxide & sodium carbonate were melted separately at 70^{0}C. Secondly aqueous phase was prepared, mixture of alcoholic extract of crude drugs, & glycerin, perfume & water heated at 70^{0}C. Then aqueous phase was added into oil phase at 70^{0}C with continuous stirring.

The above prepared herbal cream was evaluated. The physical parameters such as pH, homogeneity, appearance (colour), rubout (spreadability, wetness), type of smear, emoliency were determined. The herbal formulation showed good consistency, good spreadibilty, homogeneity, pH, non greasy and no evidence of phase separation. The herbal extract containing cream substantially increased skin elasticity, hydration and decreased the skin melanin. to form

Keywords: *Clove , Herb, Cream, Crude, Rubout*

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SWEET WORMWOOD IN THE TREATMENT OF BREAST CANCER

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Keywords
Artemisinin,
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ABSTRACT

Cancer is an abnormal growth of cells which tends to proliferate in an uncontrolled way and in some cases to spread. Many anticancer drugs are available in market with a lot of side-effects. So our objective is to introduced a drug "sweet wormwood" (Artemisia annua) that is 1,000 times better than chemotherapy. In chemotherapy, for every 5 cancer cells 1 normal cell may be destroyed but a recent study found that wormwood can kill up to 12,000 cancer cells for every 1 healthy cell it may affect. The active ingredient that makes sweet wormwood such a cancer healer is artemisinin. The special super concentrated compound of wormwood and iron can target cancer cells while leaving healthy cells alone. The compound is specially effective in combating breast cancer. Wormwood and iron together is said to act as a "Trojan horse", creating a literal "time bomb" for cancer cells. Cancer cells are not as successful as healthy cell in disposing of free floating iron molecules. This weakness causes the presence of iron in general to create stressful environment for cancer cells. This compound works on a general property of cancer cells, their high iron content. Breast cancer cells in particular can sometimes contain up to 15 times more iron receptors than surrounding cells, which is why this iron-artemisinin duo may have an even more profound effect on breast cancer. "Artemisinin reacted with iron to form free radicals which cause cell death". The artemisinin and its derivatives are toxic to the malarial parasites at nanomolar concentrations, causing specific membrane structural changes in the erythrocyte stage that kills the parasites. The WHO recommends artemisinin- based combination therapies as first line treatment for *P. falciparum* malaria because it reacts with the high levels of iron in the parasites to produced the free radicals which then destroy the cell walls of malarial- parasite. Act as anti malarial, anti parasitic, anti fungal, anti microbial, anti-inflammatory.

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Development and validation for the simultaneous estimation of Sofosbuvir and Ledipasvir by UV spectrophotometer method in bulk and tablet dosage forms

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ABSTRACT

Objective: In the present work, A Simple, rapid, sensitive, precise and reproducible specific UV spectrophotometric method for the determination of Sofosbuvir (SOFO) and Ledipasvir (LEDI) in bulk drug and pharmaceutical dosage form were developed and validated. **Methods:** A simple double beam UV spectrophotometric method has been developed and validated with different parameters such as linearity, precision, repeatability, limit of detection (LOD), Limit of Quantification (LOQ), accuracy as per ICH guidelines. **Results:** UV-visible Spectrophotometric method, measurement of absorption at maximum wavelength in 10 ml methanol and volume make with water solvent system as reference Sofosbuvir and Ledipasvir were found to be at 250 nm and 333 nm respectively. The drug obeyed the Beer's law and showed good correlation. Beer's law was obeyed in concentration range 8-40 µg/ml for Sofosbuvir and 2-10µg/ml for Ledipasvir respectively with correlation coefficient was 0.998. The LOD and LOQ of Sofosbuvir was found to be 0.047 µg/ml and 0.142 µg/ml, Ledipasvir were found to be 1.02 µg/ml and 3.11 µg/ml, respectively. Percentage assay of SOFO and LEDI in tablets. **Conclusion:** The proposed method is simple, precise, accurate and reproducible can be used for routine analysis of Sofosbuvir and Ledipasvir in bulk and tablet dosage form.

Keywords: Sofosbuvir, Ledipasvir, Method development, Validation, UV spectrophotometric, Dosage forms.

INTRODUCTION

Globally, 130-150 millions of people have chronic hepatitis C infection. A significant number of those who are chronically infected will develop liver cirrhosis or liver cancer. Gilead Sciences overcome most common related liver diseases by its Great invention (Harvoni). Harvoni (90 mg ledipasvir/400 mg sofosbuvir) approved by United States FDA. (Harvoni, 2016; Gilead Files, 2014) [1-2]. Chronic hepatitis C virus (HCV) infection is one of the most common etiologies of liver-related mortality throughout the world. Among the six HCV genotypes, genotype 1 was significantly more aggressive Among the

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RIFAMPICIN: ANTI TUBERCULAR DRUG: AN OVERVIEW

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Abstract:

The World Health Organization inspires the use of fixed dose combination (FDC) of rifampicin combination used with isoniazid, isoniazid with pyrazinamide or pyrazinamide with ethambutol for the treatment of tuberculosis. Hence, it's used worldwide for reducing the risk of emerging drug resistance. Rifampicin is one of the potent and broad spectrum antibiotics against bacterial pathogen. It works by inhibits the DNA dependent RNA polymerase activity by forming stable complex with enzyme. Here, the polymorphic form of rifampicin is describe by thermal study of rifampicin. The thermal behavior of two polymorphic forms of rifampicin was studied by DSC, FTIR, TGA, PXRD. The thermoanalytical results clearly showed the differences between the two crystalline forms. Polymorph I was the most thermally stable form and polymorph II was meta stable. On the DSC study of rifampicin it was shows the difference between both form on basis of melting point and exothermic and endothermic peak. The DSC curve of form I RMP shows the exothermic peak at the temperature between 240- 420°c and form II RMP shows the endothermic peak at temperature range between 183-188°c. By using the FTIR spectrum of form I RMP, it was shown that the absorption bands at approximately 3400 cm^{-1}, 1722 cm^{-1}, 1643 cm^{-1}, for the OH of the chain loop group, acetyl group, furanone group sufficient to characterize form I of RMP and form II of RMP, it was shown that the absorption bands at 3356 cm^{-1}, 1732 cm^{-1}, 1714 cm^{-1} for the OH group, furanone group and acetyl group are sufficient to differentiate form I and form II rifampicin. In TGA analysis of RMP both polymorphs shows TGA curve form I occurred at the temperature 224.17 °C and form II showed the temperature at 194.04 °C. Powder X-ray diffraction was used to test the polymorphic forms of solid-state rifampicin.

Keywords: *Rifampicin, thermal study, analytical study, multidrug resistance study, consequences.*

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RESEARCH ARTICLE

Antibacterial and Antifungal Activities from Leaf Extracts of *Mimusops elengi* Linn.

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ABSTRACT

This study was carried out with an objective to investigate the antibacterial and antifungal potentials of leaves of *Mimusops elengi* Linn. The aim of the study is to assess the antimicrobial activity and to determine the zone of inhibition of extracts on some bacterial and fungal strains. In the present study, the microbial activity of different extracts of leaves of *M. elengi* Linn. was evaluated for potential antimicrobial activity against medically important bacterial and fungal strains. The antimicrobial activity was determined in the extracts using agar disc diffusion method. The antibacterial and antifungal activities of different extracts of *M. elengi* Linn. were tested against two gram-positive *Staphylococcus aureus*, *Bacillus*, and two gram-negative *Escherichia coli*, *Xanthomonas* human pathogenic bacteria, and one fungal strain—*Candida albicans*. Zone of inhibition of different extracts were compared with that of standards like ampicillin for antibacterial activity and clotrimazole for antifungal activity. The results showed that the remarkable inhibition of bacterial growth was shown against the tested organisms. The phytochemical analyses of the plants were carried out. The microbial activity of the *M. elengi* Linn. was due to the presence of various secondary metabolites. Hence, these plants can be used to discover bioactive natural products that may serve as leads in the development of new pharmaceuticals research activities.

Keywords: *In vitro* antibacterial and antifungal activity, *Mimusops elengi* Linn., Phytochemical screening.

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INTRODUCTION

An infectious disease has become a serious problem for mankind, particularly in developing countries. It is the second-largest cause of death after cardiovascular diseases. The treatment of infectious diseases often fail because of the rise of drug-resistant microbes. Therefore, it is necessary to discover new antimicrobial drugs, especially from natural sources. Plants have a place and play an important role in therapy. This is evident by the fact that a number of drugs used today is derived from plant sources, which was initially used as medicinal herbs.[1]

Many medicinal plants are considered to be potential antimicrobial crude drugs as well as a source for novel compounds with antimicrobial activity, with possibly new modes of action. This expectation that some naturally occurring plant compounds can kill antibiotic-resistant strains of bacteria such as *Bacillus cereus*, *E. coli*, *Micrococcus luteus*, and *S. aureus* has been confirmed.[2]

Due to indiscriminate use of antimicrobial drugs, microorganisms have developed resistance to many antibiotics, and that has created immense clinical problems in the treatment of infectious disease strains of beta-lactam resistant *S. aureus*, methicillin-resistant *S. aureus* (MRSA) is posing a serious problem to hospitalized patients and their care providers. In addition, antibiotics are sometimes associated with adverse effect on host, which include depletion of beneficial gut and mucosal microorganism, immune-suppression, hypersensitivity, and allergic reaction. The drug-resistant bacteria have further complicated the treatment of infectious disease in immune-compromised, aids, and cancer patients, specially in the case of nosocomial infection. There is not only the loss of effect of antibiotic against multi drug-resistant

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Review Article

Break the Chain of Coronavirus Disease (Covid-19) Infection: A Review

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ABSTRACT

In December 2019, several patients from Wuhan, China were admitted with symptoms of pneumonia. As the number of patients presenting with similar symptoms started to rise, the causative agent was eventually isolated from samples. It was initially called the 2019 novel coronavirus (2019-nCoV) and has been recently relabelled as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2); the disease it causes has been named coronavirus disease 2019 (COVID-19). Coronavirus disease (COVID-19) is an infectious disease caused by a newly discovered coronavirus. special treatment. Older people, and those with underlying medical problems like cardiovascular disease, diabetes, chronic respiratory disease, and cancer are more likely to develop serious illness. The best way to prevent and slow down transmission is be well informed about the COVID-19 virus, the disease it causes and how it spreads. Protect yourself and others from infection by washing your hands or using an alcohol based rub frequently and not touching your face. The COVID-19 virus spreads primarily through droplets of saliva or discharge from the nose when an infected person coughs or sneezes, so it's important that you also practice respiratory etiquette (for example, by coughing into a flexed elbow). At this time, there are no specific vaccines or treatments for COVID-19. However, there are many ongoing clinical trials evaluating potential treatments. WHO will continue to provide updated information as soon as clinical findings become available. Since the virus is spreading worldwide, on March 31, 2020, the WHO officially described the COVID-19 outbreak as a pandemic.

Keywords: COVID-19, Causes, Prevention and control, outbreak, Review.

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INTRODUCTION

Over the last few decades, the world has seen the existence of new viruses that posed serious threats to global health. In late December 2019, several patients in Wuhan, China started reporting symptoms that resembled pneumonia. A new virus was identified and initially called the 2019 novel coronavirus (2019-nCoV). The World Health Organization (WHO) eventually changed the name of the virus to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). [1-5] The disease it causes has been named coronavirus disease 2019 (COVID-19). The SARS-CoV is a positive-stranded RNA virus that originates from the Coronaviridae family. Other viruses from the same family include the severe acute respiratory syndrome coronavirus (SARS-CoV), which appeared in 2002, and Middle East respiratory syndrome coronavirus (MERS-CoV), which was reported in 2012. [6]

In response to the outbreak, the Chinese Center for Disease Control and Prevention (China CDC) dispatched a rapid response team to accompany health authorities of Hubei province and Wuhan city to con duct epidemiological and etiologic al investigations. The WHO confirmed that the outbreak of the coronavirus epidemic was associated with the Huanan South China Seafood Marketplace, but no specific animal association was identified.[7] Scientists immediately started to research the source of the new coronavirus, and the first genome of COVID-19 was published by the research team led by Prof. Yong-Zhen Zhang, on 10 January 2020. [8] Within 1 month, this virus spread quickly throughout China during the Chinese New Year – a period when there is a high level of human mobility among Chinese people. Although it is still too early to predict susceptible populations , early patterns have shown a trend similar to Severe Acute Respiratory Syndrome (SARS) and Middle East respiratory syndrome (MERS) coronaviruses. Susceptibility seems to be associate d with age, biological sex, and other health conditions. [9] COV ID-19 has now been declared as a Public Health Emergency of International Concern by the WHO. [10] Since the virus is spreading worldwide, on March 11, 2020, the WHO officially described the COVID-19 outbreak as a pandemic.

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Antimicrobial Activity Of *Anacardium occidentale* On Some Microorganisms Associated With Dental Diseases.

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ABSTRACT

Dental disease has become a major problem in all over the world, and current antibiotics has almost become ineffective for its treatment. Hence there is a need to find alternative ways of treatment for dental disease. *Anacardium occidentale L.* having family Anacarddiaceae is frequently used to treat infections. *Anacardium occidentale* is a medium size tree spreading evergreen, much branched, costal sandy areas. There is different information on the pharmacological activitie of *Anacardium occidentale (*cashew tree) byproducts in various dental disease such as periodontal disease, dental plaque, dental biofilm bacteria etc. The objective of this review is the current knowledge on the phytochemestry and pharmacology of *Anacardium occidentale* is updated with some description of their uses in dental diseases.

Keywords: *Anacardium occidentale,* dental disease, periodontal disease, dental plaque, dental biofilm bacteria etc.

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A Review on: A New Pandemic, Causes, Clinical Manifestation and Diagnosis, Prevention and Control of Novel Coronavirus Disease (COVID-19) During the Early Outbreak Period

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ABSTRACT

The coronavirus disease (COVID-19) has been identified In December 2019, where several patients from Wuhan, Hubei Province, China were admitted with symptoms of pneumonia. The pneumonia caused by novel coronavirus (SARS-CoV-2 is a highly contagious disease. Most people who are infected get mild respiratory symptoms that will disappear on their own, but some people develop more severe illness, like pneumonia. The virus is transmitted through contact with an infected person or via respiratory droplets when an infected person coughs or sneezes. There is a higher risk of infection if you have been in an area where the virus is spreading, or if you have been in close contact with a person infected with the new coronavirus.The WHO has declared the ongoing outbreak as a global public health emergency.The virus originated in bats and was transmitted to humans through yet unknown intermediary animals in Wuhan, Coronaviruses cause a variety of diseases in mammals and birds ranging from enteritis in cows and pigs and upper respiratory disease chickens to potentially lethal human respiratory infections. The purpose of this document is to provide relevant information and guidelines on coronavirus outbreaks – and in particular the novel coronavirus SARS-CoV-2 and the diseases it produces, COVID-19 Here we provide a brief introduction to coronaviruses discussing their history and origin, Transmission of corona virus, symptoms, and current prevention, control and treatment strategies.

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ENHANCEMENT OF SOLUBILITY AND DISSOLUTION RATE OF FAMOTIDINE WITH HYDROPHILIC POLYMERS BY SOLID DISPERSION TECHNIQUE

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Keywords:

Factorial design, Famotidine, Kollidon, Povidone K30, Solid dispersion

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ABSTRACT: Objective: In the present study to enhance solubility and in vitro dissolution of poorly aqueous soluble drug Famotidine by preparing solid dispersions using the Kneading method. **Methods:** Solid dispersions of the drug were prepared by the kneading method using Kollidon and Povidone K30 (as a carrier). Eight different drugs: Carrier ratios were prepared by Factorial design taking three factors, i.e., the concentration of Famotidine (X1), Kollidon (X2), and Povidone K30(X3). **Results:** DSC, FTIR spectroscopy, powder X-ray diffraction (XRD), and SEM studies were used to characterize solid dispersions. In vitro release was carried out using the USP II dissolution apparatus. Multilinear regression analysis was applied to develop a mathematical model to estimate cumulative drug release. The batch F4 was found to be best batch as it showed maximum solubility and *in-vitro* dissolution after 30 min. Improvement in the dissolution behavior of solid dispersion batches was observed due to the conversion of a crystalline form of drug to amorphous form as confirmed by DSC, FTIR studies, and X-RD studies. SEM photographs of batch F4 showed porous nature of particle surface. **Conclusion:** Solid dispersion prepared via Kneading method was proved to be beneficial in enhancement of dissolution rate of poorly- aqueous soluble drug using hydrophilic carriers. Respectively, this model can further be utilized to design solid dispersions for desired release characteristics.

INTRODUCTION: Oral drug delivery is the simplest and easiest way of administering drugs. Because of the greater stability, smaller bulk, accurate dosage, and easy production, solid oral dosage forms have many advantages over other types of oral dosage forms. Therefore, most of the new chemical entities (NCE) under development are intended to be used as a solid dosage form that originates an effective and reproducible *in-vivo* plasma concentration after oral administration [1, 2].

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In fact, most NCEs are poorly water-soluble drugs and are not well absorbed after oral administration, which can detract from the drug's inherent efficacy [3, 4]. Consequently, if these drugs are not completely released in the gastrointestinal area, they will have a low bioavailability [5]. Therefore, one of the major current challenges of the pharmaceutical industry is related to strategies that improve the water solubility of drugs [6]. The techniques/approaches that have commonly been used to overcome drawbacks associated with poorly water-soluble drugs, in general, include micronization, salt formation, use of surfactants, and use of prodrug [7]. However, all these techniques have potential limitations. Solid dispersion is the most successful strategy to improve the drug release of poorly soluble drugs.

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FORMULATION AND EVALUATION OF FAST DISSOLVING FILM OF PANTAPRAZOLE SODIUM

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ABSTRACT

New drug delivery system for the oral delivery of drug, was developed based on the technology of the transdermal patch. It consists of a very thin oral strip which releases the active ingredient immediately after uptake into the oral cavity. The technique involved in the preparation of mouth dissolving film was solvent casting method in which aqueous solution I (Pantaprazole Sodium, Sodium Starch Glycolate, Ascorbic acid, Vanilla flavour and Saccharin) and aqueous solution II (HPMC E15 and Glycerine) was prepared in specific proportion in distilled water. Both solution I & II were mixed & stir for 1 hour & kept for 1 hour to remove all air bubbles. Then the mixture solution was poured into petridish & it was dried in oven at 40-50 0C for 7- 8 hours then film was removed from petridish and cut according to Size (square film: 2cm length, 2cm width). Pantaprazole is a highly potent proton pump inhibitor, chemically a weak base, it concentrates under the acidic conditions of parietal cell secretory canaliculi where it is converted to a cationic cyclic sulfonamide by rearrangement. This activated molecule binds to two site of hydrogen/potassium ATPase (proton pump) in the gastric parietal cells, inactivating the system, which in turn blocks the final step of secretion of hydrochloric acid by these cells, producing a long lasting effect.

KEYWORDS: Mouth Dissolving Film; Oraly dissolving Film; Oral Strip; Pantaprazole Sodium.

INTRODUCTION

Various bio-adhesive mucosal dosage forms have been developed, which includes adhesive tablets, gels, ointments, patches and more recently the use of polymeric films for buccal delivery, also known as oral thin films. (Jawahar N *et al.*, 2012; Reddy N *et al.*, 2012). A new oral fast dissolving dosage form such as the fast dissolving film has been developed which offers the combined advantages of ease of dosing and convenience of dosing in the absence of water.—Oral fast dissolving film is relatively a new dosage form in which thin film is prepared using hydrophilic polymers, which rapidly dissolves on tongue or buccal cavity. Oral Fast dissolving film (FDF) is also known as mouth dissolving films (MDF), oral strips, oro dispersible films (ODF)(Dhere P *et al.*, 2011). On placing mouth dissolving films in the mouth, saliva serves to rapidly dissolve the dosage form. The saliva containing the dissolved or dispersed medicament is then swallowed and the drug is absorbed in the normal way. Some drugs are absorbed from the mouth, pharynx and esophagus as the saliva passes down into the stomach & it may produce rapid onset of action. In such cases bioavailability of drug is significantly greater than those observed from conventional tablets dosage form. (Satoskar R Bhandarkar *et al.*, 2013; Sumitha C *et al.*, 2009; Thakur S *et al.*, 2013).

Ideal Characterisites of Fast Dissolving Drug Delivery System

- Require no water for administration
- Cost effective production methods
- Leave minimal or no residue in mouth
- Dissolve within a fraction of seconds
- Have a pleasant mouth feel (Saini S *et al.*, 2011; Arun A *et al.*, 2010).

Formulation

ODFs are fast disintegrating thin films having an area ranging from 5 to 20 cm2 in which drug is incorporated in the form of matrix using hydrophilic polymer. Active pharmaceutical ingredient can be incorporated up to 15 mg along with other excipients i.e., plasticizers, colorants, sweeteners, taste masking agents, etc. Plasticizer increases workability, spreadability and flexibility of films thereby reducing the glass transition temperature of polymers. (Arya A *et al.*, 2010)

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CAUSES, PREVENTION AND CONTROL OF SARI DISEASE - A REVIEW

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ABSTRACT

Surveillance for the clinical signs and symptoms of severe acute respiratory infection (SARI) is increasingly important. Humans, and viruses, can now easily circumnavigate the globe in less than 24 hours. I. Respiratory symptoms Fever (≥ 38.0 degrees Celsius)1 AND New onset of (or exacerbation of chronic) cough or breathing difficulty AND II. Evidence of illness progression Either radiographic evidence of infiltrates consistent with pneumonia, or a diagnosis of acute respiratory syndrome (ARDS) or severe ILI2 AND III. ICU/ventilation Admission to intensive care unit or other area of facility where critically ill patients are cared for OR mechanically ventilated AND IV. No alternative diagnosis within the first 96 hours of facility-stay Results of preliminary clinical and/or laboratory investigations, within the first 96 hours, cannot ascertain a diagnosis that reasonably explains the illness. Infection prevention and control (IPC) measures-Routine practices, Contact and droplet precautions, Gloves should be worn upon entering the patient's room, Facial protection (mask and eye protection, or face shield, or mask with visor attachment) should be used when within two meters of the patient, Airborne precautions.

KEYWORDS: SARI, COVID-19, MERS-CoV, PCRA.

INTRODUCTION

Coronaviruses are respiratory viruses and broadly distributed in humans and other mammals. Some causing illness in people and others that circulate among animals, including camels, cats and bats. Rarely, animal corona viruses can evolve and infect people and then spread between people such as has been seen with MERS and SARS. Although most human coronavirus infections are mild, the epidemics of the severe acute respiratory syndrome

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A REVIEW- DIAGNOSIS, PREVENTION AND CONTROL OF DEPRESSION

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ABSTRACT

Depression is a common mental disorder affecting more than 264 million people worldwide. The causes of depression include complex interactions between social, psychological and biological factors. Depression is a leading cause of disability worldwide and is a major contributor to the overall global burden of disease. More women are affected by depression than men. Depression can lead to suicide. There are effective psychological and pharmacological treatments for moderate and severe depression. Depending on the number and severity of symptoms, a depressive episode can be categorized as mild, moderate or severe. Effective community approaches to prevent depression include school-based programmes to enhance a pattern of positive thinking in children and adolescents.

INTRODUCTION

Depression is a common mental disorder affecting more than 264 million people worldwide. It is characterized by persistent sadness and a lack of interest or pleasure in previously rewarding or enjoyable activities. It can also disturb sleep and appetite; tiredness and poor concentration are common. Depression is a leading cause of disability around the world and contributes greatly to the global burden of disease. The effects of depression can be long-lasting or recurrent and can dramatically affect a person's ability to function and live a rewarding life.

The causes of depression include complex interactions between social, psychological and biological factors. Life events such as childhood adversity, loss and unemployment contribute to and may catalyse the development of depression.

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Advances in Bioresearch

ORIGINAL ARTICLE

Formulation and Evaluation of Sustained Release Tablets of Metoprolol Succinate

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ABSTRACT
Sustained release matrix tablets reduce the frequency of the dosing and increase the effectiveness of the drug by localization at the site of action, providing uniform drug delivery. The work aims to formulate Metoprolol Succinate sustained release matrix tablet using combination of HPMC K100M, Carbopol 934P and PVP K30. Metoprolol Succinate is a beta 1-selective (cardioselective) adrenergic receptor blocking agent, antihypertensive agent. It is having half-life of 3-7 hours with the usual oral dose of 25 to 100 mg once daily. An attempt was made to sustain the release of Metoprolol Succinate up-to 24 hrs using minimum amount of polymers. The Eight formulations were prepared using 2^3 factorial design. The tablets produced were evaluated for thickness, hardness, friability, weight variation, content uniformity and in vitro dissolution studies. The dissolution data obtained were fitted to the various kinetic models of dissolution. Model fitting depicted that the formulations followed Korsmeyer Peppas Equation. The similarity factor (f2) was found to be 51.69 for the developed formulation indicating the release was similar to that of the marketed formulation. Thus, a combination of HPMC K100M and Carbopol 934P sustained the release of Metoprolol Succinate for a period of 24 hrs. From this study it conclude that using the combination of HPMC K100M, Carbopol 934P and PVP K30 the Metoprolol Succinate SR tablet shows 85.010±0.784% of the cumulative drug release within 20 hours without burst release and followed Korsmeyer peppas model.
Keywords: *Metoprolol Succinate (MS), Matrix Tablet(MT), Sustained Release (SR), HPMC(Hydroxypropyl methyl cellulose).*

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INTRODUCTION

Metoprolol Succinate is a beta 1-selective adrenergic receptor blocking agent, antihypertensive agent [1]. The elimination half-life of Metoprolol Succinate is 3 to 7 hour. So frequent dosing of drug is necessary. A sustained-release formulation that would maintain plasma levels of the drug for 10 to16 hours might be sufficient for once-daily dosing of Metoprolol Succinate [2, 3]. The objective of study is to develop suitable formulae and procedure for the manufacture of sustained release Metoprolol Succinate tablets in a relatively economical way. To decrease the number of polymers used for Sustaining the release as compared to marketed product and to Study the effect of excipients (polymers) on Mechanism of Drug Release System. Sustained-release oral delivery systems are designed to achieve therapeutically effective concentrations of drug in the systemic circulation over an extended period of time [4, 5, 6]. Possible therapeutic benefits of a properly designed sustain release dosage form include low cost, simple processing, improved efficacy, reduced adverse events, flexibility in terms of the range of release profiles attainable and patient compliance [7,8].

So the Sustained Release tablet is suitable dosage form for Metoprolol Succinate. Many innovative methods have been developed for obtaining modified drug release. From the practical view point, hydrophilic matrix tablet is one of the least complicated approaches for developing modified release

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Review Article

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A REVIEW ON NATURAL GUMS AND MUCILAGE USED AS SUSPENDING AGENTS IN VARIOUS SUSPENSION

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ABSTRACT

Now a days, a large number of pharmaceutical excipients are obtained from natural sources. Nature has provided us a wide variety of materials to help improve and sustain the health of all living things either directly or indirectly. Gums and mucilage are widely used natural materials for conventional and novel dosage forms. These natural materials have advantages over synthetic ones since they are chemically inert, nontoxic, less expensive, biodegradable and widely available. Gums, Mucilage and their derivatives are a group of polymers extensively used in suspension as suspending agent in various drugs. The present review provides an overview of various aspects of natural suspending agent like general extraction method, physicochemical properties and characterization of gum and mucilage.

KEYWORDS: Gum and Mucilage, Advantages and disadvantages, literature on suspending agent.

INTRODUCTION

Excipients are used as inert vehicle and diluent in formulating a dosage form but in modern pharmaceutical dosage forms they often play different multi-functional roles. Pharmaceutical aid in drug formulations help to modify the drug release, improve stability of dosage form and bioavailability of the active pharmaceutical ingredient, enhance patient acceptability and ensure ease of manufacture. To meet the needs of advanced drug delivery system continuously new improved and modified excipients are developed.[1,2] As natural materials are cost effective, nontoxic, stable, easily available with less regulatory issues, eco-friendly, capable of multiple chemical modifications, degradable and compatible due to their natural origin, so they have been gaining lot of importance in the field of drug delivery.[3] The synthetic excipients are continuously being replaced with natural ones as recent trend toward the use of the vegetable and nontoxic products has increased. Today, a large number of naturally obtained pharmaceutical excipients are available. Like other natural products application of mucilage is increasing in industry so it has become necessary to explore the newer source of plant mucilage for industrial demand.

Some pharmaceutical active ingredients, pharmaceutical liquid dosage such as suspension and other disperse system thermodynamically not stable, thus it required for making in the dosage form. The suspending agent which reduces the rate of sedimentation and it not difficult to re dispersion of sediment particulate matter both by protective colloidal action. It improving the viscosity of the suspending medium. Gums and mucilage are also used as suspending agent and help to suspend insoluble solid substances in liquid formulations. They prevent immediate sedimentation and caking due to their colloidal character and high viscosity. Their high viscous nature makes gum and mucilage as a stabilizer of choice in suspension. The suspending property of mucilage and gums, which have already used in formulating pharmaceutical suspension.

This review gives idea of gum and mucilage have more powerful excipients to be used in different kind of suspension containing active ingredients for its stability. It comments on the gum and mucilage obtained from various plant sources in different concentration and used as suspending agent.

SUSPENDING AGENTS

Suspending agent also known as thickening agents. They are stabilize suspensions. Gum and mucilage are the substances which immediately form colloidal dispersion with water because of its affinity with the dispersion medium and dispersed particles. They are used for decreasing the sedimentation rate of solute in suspension. The sedimentation rate is decrease by increasing the viscosity of liquid vehicle and decreases sedimentation

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DEVELOPMENT AND VALIDATION OF AN RP- HPLC METHOD FOR ESTIMATION OF CHLORPHENIRAMINE MALEATE AND PHENYLEPHRINE IN PHARMACEUTICAL DOSAGE FORM

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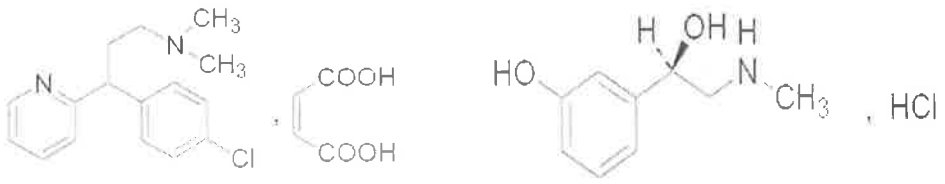
ABSTRACT

The main objective of this paper is to developed a simple, precise, accurate, and reproducible reversed phase high performance liquid chromatographic method for the quantitative determination of chlorpheniramine maleate and phenylephrine hydrochloride in pharmaceutical dosage form. A reversed-phase C-18 column (250 mm × 8 mm i.d., particle size 10 µm) column with mobile phase consisting of acetonitrile and phosphate buffer 55:45 (v/v) (pH 5.6 ± 0.02, adjusted with triethylamine) was used. The flow rate was 1.0 ml/ min and effluents were monitored at 255 nm. The retention times of chlorpheniramine maleate and phenylephrine were found to be 3.13 min and 4.58 min, respectively. The method was validated in terms of linearity, range, specificity, accuracy, precision, limit of detection (LOD) and limit of quantitation (LOQ). The linearity for both the drugs was found in the range of 10-70 µg/ml. The % recoveries of chlorpheniramine maleate and phenylephrine were found to be between 101.09 and 98.99. The proposed method was successfully applied to the estimation of chlorpheniramine maleate and phenylephrine in combined tablet dosage forms.

KEYWORDS: Chlorpheniramine maleate, phenylephrine, RP-HPLC, tablet dosage forms.

INTRODUCTION

Chlorpheniramine maleate (CM) chemically, 3-(4-chlorophenyl)-N, N-dimethyl-3-pyridin-2-ylpropan-1-amine is an antihistamine drug that is widely used in pharmaceutical preparations for symptomatic relief of common cold and allergic diseases. Phenylephrine (PE) chemically, (1R)-1-(3hydroxy-phenyl)-2-(methylamino) ethanol hydrochloride is used as a sympathomimetic. 1-4 The structures of CM and PE are shown in (Figure 1). Numerous UV, HPLC and HPTLC based methods have been reported for estimation of these drugs alone as well as in combination with other drugs in pharmaceutical dosage forms. 5-14 But no method had yet been reported for simultaneous estimation of these two drugs using HPLC in bulk drug and pharmaceutical dosage forms. Therefore, the present work was aimed to develop and validate a new RP- HPLC method for estimation of CM and PE in pharmaceutical dosage forms.



chlorpheniramine maleate (CM) **phenylephrine (PE)**

Figure 1: The structures of chlorpheniramine maleate (CM) and phenylephrine (PE).

MATERIALS AND METHODS

Chemicals and Reagents - Reference standards of CM and PE were procured as gift samples from Torrent Pharmaceutical (Gandhinagar, India). HPLC grade acetonitrile, water and triethylamine were obtained from Rankem, RFCL Limited, New Delhi, India. Potassium dihydrogen orthophosphate AR and ortho phosphoric acid AR grade were procured from Central Drug House (P) Limited, New Delhi, India.

Instrumentation- HPLC (Make: Shimadzu LC-2010AHT), Detector PDA or UV. Ultra-sonic Cleaner (Make: OSCAR), Weighing Balance. (Make: Mettler Toledo)

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METHOD DEVELOPMENT AND VALIDATION OF RP-UPLC METHOD FOR THE ESTIMATION OF AMLODIPINE AND OLMESARTAN MEDOXOMIL IN TABLET FORMULATION

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ABSTRACT

A new simple, accurate, precise and reproducible gradient phase ultra-performance liquid chromatography method was developed and fully validated for the estimation of Amlodipine Besylate and Olmesartan Medoxomil in pharmaceutical tablet dosage form gradientlly using acetonitrile: triethylamine buffer(pH4.0+0.5) as mobile phase and Acquity BEH C8 column (4.6x 150 mm,2.6µg) as stationary phase and chromatogram was recorded at 237nm at a flow rate of 0.4ml/min. The retention time of AML were 1.5to 2.8 and OLM 3.2 to 5.5 min respectively and showed a good linearity in the concentration range of 5-25µg/ml with a concentration coefficient (R) of 0.99956 and 0.99985 respectively. The developed UPLC method was validated with respect to specificity, linearity, precision, accuracy, ruggedness (reproducibility), robustness and stability. The recovery data was in the range of 98.0%to 102.0%. the proposed method was validated as per ICH guidelines and successfully as per ICH guidelines and successfully applied to the development and validation of AML and OLM in tablet formulation.

KEYWORDS: Amlodipine Besylate, Olmesartan Medoxomil, UPLC, new method development, validation.

INTRODUCTION

A simple, precise, rapid and accurate RP-UPLC method has been developed for the validation of olmesaratn medoxomil and amlodipine besylate in tablet formulations. The chromatographic separation was achieved on a Waters Symmetry C18 column (Acquity BEH C18, (50 x 2.1mm), 1.7µm) using Acetonitrile: Methanol: water mobile phase. Ortho phosphoric acid was used to adjust pH to 4.2, flow rate was 0.4 mL per minute.

Quantification and linearity were achieved at 254 nm over the concentration range of 20 µg per ml to 60 µg per ml of Amlodipine besylate and 40 µg per ml to 480 µg per ml of Olmesartan Medoxomil. The method was validated for specificity, linearity, accuracy, precision, LOD, LOQ and robustness. Olmesartan medoxomil is a prodrug that hydrolysed to olmesartan during absorption. It is an angiotensin II receptor antagonist used for hypertension and is chemically designated as 5-methyl-2-oxo-1,3-dioxolen-4-yl) methoxy-4-(1-hydroxy-1-methylethyl)-2-propyl-l-{4-[2-(tetrazol-5-yl)-phenyl]phenyl}methylimidazol-5 carboxylate. The Olmesartan Medoxomil drug is mainly used for hypertension in countries like Japan and US. The Medoxomil moiety, which is enclosed with this drug, has endogenous ester moiety responsible for releasing metabolites in the body. Olmesartan Medoxomil has a favorable safety and efficacy profile, with blood pressure-lowering effects comparable to those of other angiotensin receptor blockers (i.e., Losartan, Valsartan, Irbesartan).[2] Amlodipine besylate chemically designated as 2-[(2-aminoethoxy)-methyl]-4-(2-chlorophenyl) 1,4-dihydro-6-methyl-3,5-pyridine-dicarboxylic acid-3 ethyl-5 methyl ester, is a calcium channel blocker used to treat hypertension and angina. Amlodipine blocks the transmembrane influx of calcium ions into vascular smooth muscle and cardiac muscles. It is metabolized in the liver and the metabolites are mostly excreted in urine together with less than 10 % of a dose as unchanged drug. The pure Active Pharmaceutical Ingredient (API), used in this project, is manufactured by GLENMARK Company.The developed method has been validated by following several parameters as mentioned in ICH guideline.[13-15] i.e., linearity, specificity, accuracy, precision, robustness, ruggedness, stability.

MATERIAL AND METHOD

Chemicals and Equipment's

UPLC grade Acetonitrile and Methanol was purchased from Rankem Ltd, Mumbai. UPLC grade ortho phosphoric acid was purchased from from Rankem Ltd, Mumbai. Pure drug sample of AMLO and OLME was kindly supplied as a gift sample by R&D Laboratory,

RP-HPLC ANALYTICAL METHOD DEVELOPMENT AND VALIDATION FOR THE SIMULTANEOUS ESTIMATION OF LAMIVUDINE AND STAVUDINE IN BULK AND TABLET DOSAGE FORMS

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ABSTRACT

Objective: The day by day new combinations drugs are being introduced in market. Then the multiple therapeutic agents which acts at different sites are used in the management of various diseases and disorders are done. Thus it is necessary to develop methods for analysis with the help of number of analytical techniques which are available for the estimation of the drugs in combination. An accurate, precise and reproducible RP-HPLC method was developed for the simultaneous quantitative determination of Lamivudine (LVD) and Stavudine (SVD) in tablet dosage forms.

Methods: Agilent (S. K.) gradient system UV detector and C_{18} column with 250 mm x 4.6 mm i. d. and 5µm particle size Acetonitrile : OPA water (10 : 90 v/v) pH 3 was used as the mobile phase for the method. The detection wavelength was 265 nm and flow rate was 0.7 ml/min.

Results: In the developed method, the retention time of Lamivudine and Stavudine were found to be 3.86 min and 7.11 min. The The LOD and LOQ of Lamivudine was found to be 2.6316µg/ml and 7.9747µg/ml, Stavudine were found to be 0.2146 µg/ml and 0.6504 µg/ml, respectively. Percentage assay of LVD and SVD in tablets. The developed method was validated according to the ICH guidelines.

Conclusion: The developed method was validated according to the ICH guidelines. In this methods linearity, precision, range, robustness was within the limits as specified by the ICH guidelines. The method was found to be simple, accurate, precise, economic and reproducible. So, it is worthwhile that, the proposed methods can be successfully utilized for the routine quality control analysis LVD and SVD in bulk drug as well as in formulations.

KEYWORDS: Lamivudine and Stavudine , method- development, validation, HPLC.

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Method Development and Validation for the Simultaneous Estimation of Tizanidine and Aceclofenac by (UHPLC) RP-HPLC in Bulk and Tablet Dosage Forms

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Abstract

An accurate, precise and reproducible RP-HPLC method was developed for the simultaneous quantitative determination of Tizanidine (TZN) and Aceclofenac (AFN) in tablet dosage forms. Agilent (S.K.) Gradient System UV Detector and C_{18} column with 100mm x 4.6 mm i.d and 5µm particle size Acetonitrile: ph Buffer (75:25v/v) pH 3 was used as the mobile phase for the method. The detection wavelength was 301 nm and flow rate was 0.8 ml/min. In the developed method, the retention time of Tizanidine and Aceclofenac were found to be 2.80 min and 6.58 min. The LOD and LOQ of AZN were found to be 0.028 µg/ml and 0.087 µg/ml, AFN were found to be 0.1272µg/ml and 0.3875µg/ml, respectively. The proposed method is The developed method was validated according to the ICH guidelines. The linearity, precision, range, robustness was within the limits as specified by the ICH guidelines. Hence the method was found to be simple, accurate, precise, economic and reproducible. The developed method was validated according to the ICH guidelines. In this methods linearity, precision, range, robustness were observed. The method was found to be simple, accurate, precise, economic and reproducible. So the proposed methods can be used for the routine quality control analysis of TZN and AFN in bulk drug as well as in formulations.

Keywords: Tizanidine, Aceclofenac, method- development, validation, RP-HPLC

INTRODUCTION

Tizanidine is Skeletal muscle relaxant and official in IP-2007, USP 30-NF 25. Aceclofenac is an anti-inflammatory class of drug And official in European Pharmacopoeia. Tizanidine and Aceclofenac are available in combined tablet dosage form as an Muscle Relaxant and analgesic. Aceclofenac relieves pain by stimulating cartilage synthesis, Tizanidine is a short acting drug for the management of spasticity. It is an agonist at a 2-adrenergic receptor site & reduces the spasticity by increasing presynaptic inhibition of motor neurons [1-2].

Tizanidine Hcl chemically is 5-chloro-N-(2-imidazolin-2-yl) 2,1,3-benzothiadiazol-4-yl-amine (Figure 1). Tizanidine is a short acting drug for the management of spasticity. It is an agonist at a 2-adrenergic receptor sites & presumably reduces spasticity by increasing [redacted]c inhibition of motor neurons. Aceclofenac chemically is 2-[2-[2-(2,6-Dichlorophenyl) amino phenyl] cetyl] oxyacetic acid (Figure 2). which is used as an effective NSAID having pronounced analgesic, antipyretic, anti-inflammatory property. It is belonging to developed NSAIDS of arylacetic acid type and structurally related to diclofenac. Aceclofenac-Tizanidine combination is more effective than aceclofenac alone and had a favourable safety profile in the treatment of acute low back pain and for rheumatic disorders. TZN & AFN is official in Indian Pharmacopoeia 2007 respectively [3-6].

Literature review reveals that, Tizanidine also reported in combination with other drugs Similarly, Aceclofenac is reported for spectrophotometric, RP-HPLC and simultaneous estimation with other combinations [7-12]. Since no spectrophotometric method is reported for simultaneous estimation of Tizanidine and Aceclofenac in combination therefore, the present work, a successful attempt has been made to estimate both these drugs simultaneously by to simple RP-HPLC methods development. The present study aimed to develop a simple, sensitive, short retention time and accurate RP-HPLC method for the simultaneous determination of both Tizanidine and Aceclofenac together in pure and tablet dosage forms with high sensitivity, selectivity that can be used for the routine analysis of production samples. Validation of the developed method done in accordance with ICH guidelines. [13]

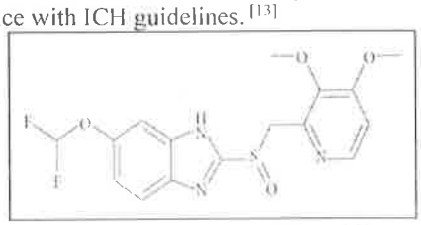

Figure 1: Structure of Tizanidine

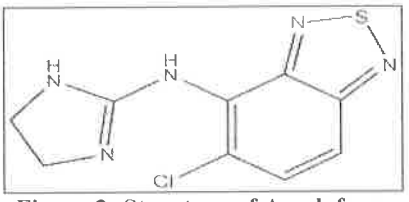

Figure 2: Structure of Aceclofenac

MATERIALS AND METHODS

Materials and Reagents

The analysis of the drug was carried out on Agilent (S.K.) gradient system UV detector. Equipped with reverse phase (Agilent) C_{18} column (4.6mm x 100mm; 2.5µm), a

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QbD Approach Method Development and Validation for the Simultaneous Estimation of Methotrexate and Folic acid by UV Spectrophometric and RP-HPLC in Bulk and Tablet Dosage Forms

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Abstracts:

An accurate, precise and reproducible UV Spectrophometric and RP-HPLC method was developed for the simultaneous quantitative determination of Methotrexate and Folic acid in tablet dosage forms with the help of QbD approaches. Agilent (S.K.) Gradient System UV Detector and C_{18} column with 100mm x 4.6 mm i.d and 5µm particle size Methanol: ph Buffer (75:25v/v) (pH 3.3 0.1% OPA with TEA) was used as the mobile phase for the method. The detection wavelength was 249 nm and flow rate was 1.0 ml/min. In the developed method, the retention time of Methotrexate and Folic acid were found to be 5.25 and 7.35min. The LOD and LOQ of Methotrexate were found to be 0.1272 µg/ml and 0.3875. Folic acid were found to be 0.028 µg/ml and 0.087 µg/ml, respectively. The proposed method is The developed method was validated according to the ICH guidelines. The linearity, precision, range, robustness was within the limits as specified by the ICH guidelines. Hence the method was found to be simple, accurate, precise, economic and reproducible. The developed method was validated according to the ICH guidelines. In this methods linearity, precision, range, robustness were observed. The method was found to be simple, accurate, precise, economic and reproducible. So the proposed methods can be used for the routine quality control analysis of Methotrexate and Folic acid in bulk drug as well as in formulations.

Keywords: QBD, RP-HPLC, UV, Methotrexate, Folic acid, development, validation.

INTRODUCTION

The ultimate goal of chemotherapy is a cure, suppression of every neoplastic cell require a true treatment. If treatment is not achievable, then the goal becomes control of the disease to extend survival and maintain the best quality of life. This allows the individual to maintain a normal existence with the cancer thus being treated as a chronic disease. In either case neoplastic cell burden is initially reduced, either by surgery or by radiation followed by chemo therapy immunotherapy or a combination of these treatment modalities. In advanced stages of cancer, the likelihood of controlling the cancer is far from reality and the goal is palliation. This mean that chemotherapeutic drugs may be used to relieve symptoms caused by the cancer and improve the quality of life, even though the drugs may not lengthen life. Treatment of cancer include log kill, pharmacologic sanctuaries, combinations of drugs – cytotoxic agents with qualitatively different toxicities, and with different molecular sites and mechanisms of action, are usually combined at full doses. This results in higher response rates, due to additives and potentiated cytotoxic effects, and non- overlapping host toxicities, advantages of drug combinations, treatment protocol. Some problems associate with chemotherapy like resistance, multidrug resistance, toxicity followed by common adverse effect, minimizing adverse effects, treatment include tumor.

Methotrexate is an antimetabolites which structurally related to normal compounds that exist within the cell. And interfere with purine /pyrimidine nucleotide precursors available by inhibit their synthesis, their maximum cytotoxic effect are in s-phase. The vitamin folic acid plays a central role in a variety of metabolic reactions involving the transfer of one carbon units and is essential for cell replication. Methotrexate is structurally related to folic acid and acts as an antagonist of that vitamin by inhibiting dihydrofolate reductase. Folic acid is obtained from dietary sources or from that produced by intestinal flora. It undergoes reduction to the tetrahydrofolate form via a reaction catalyzedby intracellular nicotinamide-adenine dinucleotide phosphate-dependent. Methotrexate enters the cell by active-transport processes that normally mediate the entry of N^5-Methyl-FH_4. Literature gave brief information of method development on bulk of methotrexate and folic acid followed validate that method as per ICH guideline on spectrophotometry and HPLC method over a QbD approach. Specific method are reported for the analysis and determination of MTX & FA in bulk and dosage form. The reported method is complex and time consuming hence there was a need for developing a validated method for estimation of MTX & FA in pharmaceutical dosage form [1-2].

Methotrexate (MTX), 4-amino-N10-methylpteroylglutamic acid (Figure 1)., is an antifolate drug, developed as the first targeted anticancer agent in 1940 [3]. It is administered at a high dose to treat several types of cancers, such as acute human leukemia, breast cancer, osteogenic sarcoma, head and neck carcinomas, prostate and bladder cancers [4-7]. It is also administered at a low dose as a remedy for a variety of autoimmune and inflammatory diseases, such as rheumatoid arthritis (RA), psoriasis, sarcoidosis, and systemic lupus erythematosus [8].

Folic acid chemically known as (2S)-2-[(4-{[(2,4-Diaminopteridin6yl) methyl] (methyl) amino} benzoyl) amino]pentanedioic acid (2S) 2 [[4[(2 Amino 4 oxo 1Hpteridin 6 yl) methyl amino] benzoyl] amino]

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Date: -

Criteria 3.2.2:	Number of books and chapters in edited volumes/books published and papers in national/ international conference-proceedings per teacher during last five years.
findings of DVV	NIL
Response/ Clarification	NIL

IQAC Coordinator

Co-Ordinator, IQAC
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Principal

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APPENDIX-I

3.2.2 Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during last five years

Sr. No	Name Of Teachers	Title of the book/chapter published	Title of the paper	Title of the proceeding conference	Name of the conference	National /international	Year of publication	ISSN/ISBN number of the proceeding	Name of the publisher	Affiliating institute at the time of publication
NIL										

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