Parameter-1 Total number of research paper publications by Faculty/ students Staff with institutional Affiliation in the year 2024-25 in indexed journals.

Parameter-2 Cumulative citation scores of research papers published in the year 2024-25 in indexed journals.

S. No.	Name of Author/Research Paper Publisher	Designation	Faculty PCI Registration No	TeacherID No	TitleoftheResearchPaper	Nameof Journal	Yearof Publishing	Database	Citation Index for the published Paper	Quartile Category of Journal
1	Yennam Dastagiri Reddy	Professor	051345/A1	BH-P-24-1597847662	InSilicoandInVivoStudies ofβ-SitosterolNanoparticles as a Potential Therapy for Isoprenaline- Induced Cognitive Impairment in Myocardial Infarction, TargetingMyeloperoxidase	Pharmaceuticals	2024	Category-1	SCOPUS	Q2
2	N. Yella Subbaiah	AssistantProfessor	055456	BH-P-23-63102	Synthesis, Characterization andAnticonvulsantActivity OfSustitutedImidazolinone Derivatives	Pharmaceutical Chemistry	2024	Category-1	SCOPUS	Q4
3	NMadana Gopal	Associate Professor	054225/A1	BH-P-24-64044	Metoprolol succinate and Olmesartanmedoxomilspiked in human plasma for simultaneous estimation of antihypertensive drugs using RP-HPLC	Frontiersin Health Informatics	2024	Category-1	SCOPUS	Q4
4	Battula Pradeep	Associate Professor	1475	BH-P-25-48511	Efficacy of Hypoglycaemic Agents in Type-2 Diabetes MellituswithAssociatedCo-Morbidities: A Prospective ObservationalStudy	IndianJournal of Natural Sciences	2024	Category-1	SCOPUS	Q4

PRINCIPAL
Santhiram College of Pharmacy
NH-40,Nandyal-518501,A.P.

5	Battula Pradeep	Associate Professor	1475	BH-P-25-48511	Aquestionnaire-basedstudyto assesstheknowledge,attitude, and practices of antimicrobial resistanceamongPharmD students	Tropical Journal of Pharmaceutical Research	2024	Category-1	SCIE, SCOPUS	Q3
6	N Madana Gopal	Associate Professor	054225/A1	BH-P-24-64044	InSilicoMolecularDocking Of EssentialOilforAntibacterial activity	African journal of biological sciences	2024	Category-1	SCOPUS	Q4
7	C.Parimala	AssistantProfessor	116839/A1	BH-P-25-51033	Analytical method developmentandvalidationfor simultaneous estimation of cilnidipine and metprololsuccinatein bulk and tablet formulation by RP-HPLC method	Journal of xidian university	2024	Category-1	SCOPUS	Q3
8	C.Parimala	AssistantProfessor	116839/A1	BH-P-25-51033	Developmentandvalidationof UV spectroscopic method for the estimation of fidaxomicin in bulk and formulation and studyitsdegradationbehaviour	high technology letters	2024	Category-1	SCOPUS	Q4
9	M Manorama	AssistantProfessor	77247/A1	BH-P-24-587657	AnalyticaMethod Development&Validationfor simultaneous estimation of Cilnidipine & Metoprolol succinate in bulk & tablet formulation by RP-HPLC method	Journal of xidian university	2025	Category-1	SCOPUS	Q3
11	R NageswaraRao	Associate Professor	061511/A1	BH-P-23-63083	Method Development and Validation for the Estimation ofPosaconazoleandItsForced DegradationStudiesby RP-HPLC.	High Technology Letters	2024	Category-1	SCOPUS	Q4

PRINCIPAL
Santhiram College of Pharmacy
NH-40,Nandyal-518501,A.P.

12	Rajan Ethiraj Ugandar	Professor	11792	BH-P-23-5277050	Identification of Established Drugs for Contemporary IndicationsAHospitalBased Study.	International Journal of Advancement in Life Sciences Research	2025	Category-1	SCOPUS	Q4
13	R Nageswara Rao	Associate Professor	061511/A1	BH-P-23-63083	AssessmentofDapagliflozin by Using HPLC- Method Development, Validation and Stability Indicating Studies	Journal of Neonatal Surgery	2025	Category-1	SCOPUS	Q4
14	R Nageswara Rao	Associate Professor	061511/A1	BH-P-23-63083	Green Synthesis and Biological Evaluation of Substituted1,3,4-Oxadiazoles ThroughEthylChloroformate and 2-Amino-5-Nitrothiazole	African Journal of Biomedical Research	2024	Category-1	SCOPUS	Q3
15	Niranjan Kumar Raghupathi	Associate Professor	93859/A1	BH-P-25-44256	Potential preventative impact of aloe-emodin nanoparticles on cerebral stroke-associated myocardial injury by targeting myeloperoxidase: InsupportingwithInsilicoandIn vivo studies	Heliyon	2024	Category-1	SCIE	Q1
16	Bharga va Reddy	Associate Professor	0042	BH-P-25-47374	Obesity Associated Diabetes mellitusandit'sHealthrelated outcomes in a Tertiary care Hospital	World Journal of Pharmacy and Pharmaceutical Sciences	2025	Category-1	Webof science	Q1
17	Bharga va Reddy	Associate Professor	0042	BH-P-25-47374	Bilateral Emphysematous pyelonephritisandcystitisin aDiabetesmellitus patient	Indian Journal of Scientific Development and Research	2025	Category-1	Webof science	Q1

PRINCIPAL
Santhiram College of Pharmacy
NH-40,Nandyal-518501,A.P.

18	Bharga va Reddy	Associate Professor	0042	BH-P-25-47374	A Rare Association Sjogrens syndrome presenting with communicatingHydrocephalus -ACase Report	International journal of Pharmacy and Pharmaceutical Research	2025	Category-1	Webof science	Q1
19	L. Siva Sanker Reddy	Professor	053485/A1	BH-P-23-5106856	AssessmentofDapagliflozin by Using HPLC- Method Development, Validation and StabilityIndicating studies	Journal of Neonatal Surgery	2025	Category-1	SCOPUS	Q4
20	L. Siva Sanker Reddy	Professor	053485/A1	BH-P-23-5106856	Method Development and Validation for the Estimation ofPosaconazoleandItsForced DegradationStudiesbyRP-HPLC.	High Technology Letters	2024	Category-1	SCOPUS	Q4
21	L. Siva Sanker Reddy	Professor	053485/A1	BH-P-23-5106856	Green Synthesis and Biological Evaluation of Substituted1,3,4-Oxadiazoles ThroughEthyl Chloroformate and2-Amino-5-Nitrothiazole	African Journal of Biomedical Research	2024	Category-1	SCOPUS	Q3
22	Rajan Ethiraj Ugandar	Professor	11792	BH-P-23-5277050	The Zika Virus: Epidemiology, Pathogenesis, and Prevention.	Official journal of Epidemiology Foundation of India	2024	Category-2	UGC CARE	Q2
23	Rajan Ethiraj Ugandar	Professor	11792	BH-P-23-5277050	Epidemiology, Clinical Features, and Molecular Characteristics of Human Metapneumovirus(HMPV):A Meta-Analysis.	Journal of the Epidemiology Foundation of India.	2025	Category-2	UGC CARE	Q3
24	Rajan Ethiraj Ugandar	Professor	11792	BH-P-23-5277050	Emerging trends in nanomedicine: Diagnostic and therapeutic applications	AIP Conference proceedings	2025	Category-1	SCOPUS	Q4

PRINCIPAL
Santhiram College of Pharmacy
NH-40,Nandyal-518501,A.P.

25	Rajan Ethiraj Uganda r	Professor	11792	BH-P-23-5277050	Nanotechnology in drug delivery: Targeted Therapies for Precision Medicine	AIP Conference proceedings	2025	Category 1	SCOPUS	Q4

PRINCIPAL
Santhiram College of Pharmacy
NH-40,Nandyal-518501,A.P.

https://africanjournalofbiomedicalresearch.com/index.php/AJBR
Afr. J. Biomed. Res. Vol. 27(4s) (November 2024); 2065 - 2070
Research Article

Synthesis, Characterization And Anticonvulsant Activity Of Sustituted Imidazolinone Derivatives

Dr. B. Siva Kumar[1], Dr. B. Naga Sudha[2], Dr. L.Shiva Sanker Reddy[3], R. Nageswara Rao[4], Dr. K. Ilango[5], N. Yella Subbaiah[6*]

[1,5]Department of Pharmaceutical Chemistry, Tagore College of Pharmacy, Rathinamangalam – 600127, Chengalpattu (Dt), Tamil Nadu, India.
[2]Department of Pharmaceutical Chemistry, CES College of Pharmacy, JNTU Ananthapuramu, Kurnool-518218, Andhra Pradesh, India
[3,4,6*]Department of Pharmaceutical Chemistry, Santhiram College of Pharmacy, JNTU Ananthapuramu, Nandyal-518501, Andhra Pradesh, India.

***Correspondence:** N. Yella Subbaiah
Email: yellasubbaiah27@gmail.com*

Abstract
The reaction of glycine with benzoylchloride gave 2-benzamidoacetic acid (**1**) which on reaction with substituted benzaldehydes in presence of acetic anhydride and anhydrous sodium acetate gave 4-benzylidene-2-phenyloxazol-5(4H)-one derivative (**2a-h**). The 2, 4-di nitro chlorobenzene on reaction with hydrazine hydrate gave 2, 4-dinitrophenylhydrazine (**II**) which on reaction with 4-benzylidene-2-phyenyloxazol-5(4H)-one (**2a-h**) in presence of pyridine yielded the final series of (Z)-4-benzylidene-1-((2,4-dinitrophenyl)amino)-2-phenyl-1H-imidazol-5(4H)-one (**3a-h**) respectively. All newly synthesized compounds were characterized on the basis of IR, ^{1}H NMR and Mass spectral data and screened for their anticonvulsant activity.

***Author for correspondence: Email:** yellasubbaiah27@gmail.com*

Received: 05-11-2024 *Accepted: 22-11-2024*

DOI: https://doi.org/10.53555/AJBR.v27i4S.4003

© 2024 The Author(s).
This article has been published under the terms of Creative Commons Attribution-Noncommercial 4.0 International License (CC BY-NC 4.0), which permits noncommercial unrestricted use, distribution, and reproduction in any medium, provided that the following statement is provided. "This article has been published in the African Journal of Biomedical Research"

Introduction

Imidazolone and oxazolones are a representative class of heterocyclic compound with wide variety of interesting properties such as antimicrobial[1-3], anti-inflammatory, anticancer, anticonvulsant, antitumor and cardiotonic activity.Considering the above discussion, herein we report the synthesis of novel imidazolinone derivatives from the oxazolones with anticonvulsant activity[4-6].

Oxazolones (**2a-h**) was treated with 4-nitobenzohydrazide (**II**) in pyridine to get imidazolinone (**3a-h**) derivatives. All the compounds synthesized were characterized on the basis of their analytical and spectral data such as IR, ^{1}H NMR and Mass analysis and were screened for their anticonvulsant activity.

In present investigation 4-benzylidene-2-phenyloxazol-5(4H)-one (**2a-h**) and 4-nitrobenzamide (**II**) was used as starting materials and it was prepared according to earlier reported method[7-8].

Anticonvulsant activity

Acute toxicity study

Acute toxicity study will be performed for the synthesized imidazolinone derivatives to ascertain safe dose by acute oral toxic class method of organization of

PRINCIPAL
Santhiram College of Pharmacy
NH-40,Nandyal-518501,A.P.

Frontiers in Health Informatics
ISSN-Online: 2676-7104
www.healthinformaticsjournal.com
2024; Vol 13: Issue 3
Open Access

Metoprolol succinate and Olmesartan medoxomil spiked in human plasma for simultaneous estimation of antihypertensive drugs using RP-HPLC

Dattatraya B. Thorat[1], K. Mrudula Devi[2], Nisha Rawat[3], Dommaraju R Aruna Kumari[4], Sudheer Moka[5], D. Meena[6], Vinod Kumar Kondreddy[7], Shilpa Savata Kolhe[8], N Madana Gopal[9*]

[1]Assistant Professor & HOD, Pravara Rural Education Society's, Institute of Pharmacy, Loni-413713, Ahmednagar, Maharashtra, 413713, India
[2]Associate Professor, Department of Chemistry, Aditya University, Surampalem, Andhra Pradesh, India
[3]Assistant Professor, GRD Institute of Management and Technology, Dehradun, Uttarakhand, 248001, India
[4]Associate Professor, Seven Hills College of Pharmacy, Tirupati, Andhra Pradesh, 517561, India
[5]Analytical Specialist, Dr Reddys's Laboratories, Hyderabad, Telangana, 500049, India
[6]Assistant Professor, Seven Hills College of Pharmacy, Tirupati, Andhra Pradesh, 517561, India
[7]Associate Professor, Raghavendra Institute of Pharmaceutical Education and Research Anantapur, Andhra Pradesh, 515721, India
[8]Professor, Vishal Institute of Pharmaceutical Education and Research ale Junnar, Pune Maharashtra, 412411, India
[*9]Associate Professor, Santhiram College of Pharmacy, Nandyal, Andhra Pradesh, 518112, India
***Corresponding author: N Madana Gopal**, Associate Professor, Santhiram College of Pharmacy, Nandyal, Andhra Pradesh, 518112, India

Cite this paper as: Dattatraya B. Thorat, K. Mrudula Devi, Nisha Rawat, Dommaraju R Aruna Kumari, Sudheer Moka, D. Meena, Vinod Kumar Kondreddy, Shilpa Savata Kolhe, N Madana Gopal (2024) Metoprolol succinate and Olmesartan medoxomil spiked in human plasma for simultaneous estimation of antihypertensive drugs using RP-HPLC. *Frontiers in Health Informatics, 13* (3), 4506-4519

ABSTRACT:

Introduction: *To create a quick, precise, and economical HPLC approach for the simultaneous quantification of metoprolol succinate and olmesartan medoxomil in a combination tablet formulation, a simultaneous equation technique has been devised.*

Materials and Methods: *The method uses acetonitrile as a solvent and is based on calculations that allow for simultaneous analysis of both medications. Olmesartan medoxomil and metoprolol succinate have absorption peaks in acetonitrile at 225 nm.*

Results: *Olmesartan medoxomil and metoprolol succinate showed linearity at concentrations of 5 and 25 µg/ml and 4 and 20 µg/ml, respectively. To find the medicine amounts, the simultaneous equations method was used. For metoprolol succinate, the average recovery time was 97.72 ± 2.009 hours, and for olmesartan medoxomil, it was 98.02 ± 1.28 hours..*

Conclusion*: This method makes it easy, accurate, and precise to find both and olmesartan medoxomil metoprolol succinate at the same time in pharmaceutical tablet format. Recovery studies and statistical evidence support the research's findings.*

PRINCIPAL
Santhiram College of Pharmacy
NH-40,Nandyal-518501,A.P.

Indian Journal of Natural Sciences www.tnsroindia.org.in ©IJONS

Vol.15 / Issue 84 / Jun / 2024 International Bimonthly (Print) – Open Access ISSN: 0976 – 0997

RESEARCH ARTICLE

Efficacy of Hypoglycaemic Agents in Type-2 Diabetes Mellitus with Associated Co-Morbidities: A Prospective Observational Study

Pradeep Battula[1]*, S Sai Harshini[2], M Srivani[2], G Vijaya Kumar[3] and Setlem Sai Venkata Krishna[4]

[1]Associate Professor, Department of Pharmacy Practice, Santhiram College of Pharmacy, Nandyal, (Affiliated to Jawaharlal Nehru Technological University Anantapur) Andhra Pradesh, India.
[2]Pharm.D Internship, Department of Pharmacy Practice, Santhiram College of Pharmacy, Nandyal, (Affiliated to Jawaharlal Nehru Technological University Anantapur) Andhra Pradesh, India.
[3]Associate Professor, Department of General Medicine, Santhiram Medical College and General Hospital, Nandyal, (Affiliated to Dr Y.S.R University of Health Sciences) Vijayawada, Andhra Pradesh, India.
[4]Assistant Professor, Department of Pharmacy Practice, Santhiram College of Pharmacy, Nandyal, (Affiliated to Jawaharlal Nehru Technological University Anantapur) Andhra Pradesh, India.

Received: 17Aug 2023 Revised: 20 Mar 2024 Accepted: 24 May 2024

***Address for Correspondence**
Pradeep Battula
Associate Professor,
Department of Pharmacy Practice,
Santhiram College of Pharmacy, Nandyal,
(Affiliated to Jawaharlal Nehru Technological University Anantapur)
Andhra Pradesh, India.
Email: doctorbattulapradeep@gmail.com

This is an Open Access Journal / article distributed under the terms of the **Creative Commons Attribution License** (CC BY-NC-ND 3.0) which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. All rights reserved.

ABSTRACT

Diabetes mellitus has been a known disease for a long time and has now become a modern-day epidemic, recognized as a global health issue. Our study aimed to bring attention to the current prescribing trends and effectiveness measures for type 2 diabetes mellitus patients with co-morbid conditions. The study was conducted for six months; the Department of General Medicine at Santhiram Medical College and General Hospital conducted an observational study based in the hospital. The study analysed prescriptions for 165 patients, of which 63.03% were males and 36.9% were females. The majority of the patients were between the ages of 51 and 65. It is essential to note that Hypertension and Diabetes were often co-morbid, with the latter affecting a significant proportion of the global population. Of the various oral hypoglycaemic agent combinations available, the metformin-glimepiride 2mg combination is the most commonly prescribed, accounting for 19.39% of such prescriptions. Additionally, Metformin is the most widely prescribed drug among oral hypoglycaemic agents. When it comes to managing diabetes mellitus, experts recommend the use of combination therapy. Our recent study has

75417
PRINCIPAL
Santhiram College of Pharmacy
NH-40,Nandyal-518501,A.P.

Tropical Journal of Pharmaceutical Research January 2025; 24 (1): 103-108
ISSN: 1596-5996 (print); 1596-9827 (electronic)

Available online at http://www.tjpr.org
http://dx.doi.org/10.4314/tjpr.v24i1.14

Original Research Article

A questionnaire-based study to assess the knowledge, attitude, and practices of antimicrobial resistance among PharmD students

Bhupalam Pradeep Kumar[1], Pradeep Battula[2]*, Mulla Saddar Basha[2], KE Krishna Murthi[2], Varada Lakshmi Narasimha[2], Rachiti Daiva Prasad[2], Kamani Yashashwini Reddy[2], Viswabrahmin Prathibha[2]

[1]Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research (RIPER) – Autonomous, Anantapur, Andhra Pradesh, India. [2]Department of Pharmacy Practice, Santhiram College of Pharmacy – Autonomous, Nandyal, Andhra Pradesh, India

For correspondence:* ***Email:* *doctorbattulapradeep@gmail.com*

Sent for review: 4 January 2024 *Revised accepted: 16 January 2025*

Abstract

Purpose: *To evaluate the knowledge, attitude, and practices (KAP) regarding antibiotic use and antimicrobial resistance (AMR) among Doctor of Pharmacy (PharmD) students in selected institutions in India.*
Methods: *A cross-sectional study using a structured questionnaire was conducted among 292 fourth-, fifth-, and sixth-year PharmD students across various institutions.*
Results: *The findings revealed adequate knowledge (mean score 5.87 ± 1.34) and a positive attitude (mean score 7.05 ± 1.20) among participants, but practices were notably poor (mean score 4.08 ± 1.24).*
Conclusion: *These results highlight the need for enhanced educational interventions and practical training for PharmD students to improve antibiotic stewardship and patient care outcomes.*

Keywords: *Antimicrobial resistance, Attitude, Doctor of Pharmacy, Knowledge, Practice*

This is an Open Access article that uses a funding model which does not charge readers or their institutions for access and distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/4.0) and the Budapest Open Access Initiative (http://www.budapestopenaccessinitiative.org/read), which permit unrestricted use, distribution, and reproduction in any medium, provided the original work is properly credited.

Tropical Journal of Pharmaceutical Research is indexed by Scopus, Chemical Abstracts, Embase, Index Copernicus, EBSCO, African Index Medicus, JournalSeek, Directory of Open Access Journals (DOAJ), African Journal Online, Bioline International, Open-J-Gate and Pharmacy Abstracts

INTRODUCTION

Antibiotics have been a cornerstone of modern medicine, often referred to as "magic bullets" for their role in combating infectious diseases and saving lives [1]. However, the global misuse of antibiotics—including overuse, self-medication, and inappropriate prescribing—has led to the emergence of antimicrobial resistance (AMR) [2-4]. AMR, characterized by microorganisms' decreased sensitivity to antibiotics, has significant implications, including prolonged hospital stays, increased healthcare costs, and elevated morbidity and mortality rates [5-6].

The World Health Organization (WHO) has identified AMR as a critical global health threat. Projections suggest that by 2050, AMR could result in approximately 10 million deaths annually, disproportionately affecting low- and middle-income countries. Addressing AMR requires robust diagnostic infrastructure, surveillance, stringent regulatory frameworks, and enhanced education among healthcare

PRINCIPAL
Santhiram College of Pharmacy
NH-40, Nandyal-518501, A.P.

© 2025 The authors. This work is licensed under the Creative Commons Attribution 4.0 International License

https://doi.org/10.48047/AFJBS.6.Si4.2024.2395-2401

African Journal of Biological Sciences
Journal homepage: http://www.afjbs.com
Research Paper Open Access

IN SILICO MOLECULAR DOCKING OF ESSENTIAL OIL FOR ANTIBACETERIAL ACTIVITY

Priyanka Tiwari[1], N Madana Gopal[2], Preety Choudhary[3], Mamatha Devi A.B[4], Chole Pranjali Bajrang[5], Kumarbhai G. Gamit[6], Dipansu Sahu[7], Kinjal H Shah[8]*

1. Assistant Professor, KLE college of Pharmacy, 2nd Block, Rajajinagar, Bengaluru, Karnataka 560010
2. Assoc professor, Santhiram college of Pharmacy,Nandyal
3. Associate Professor, Goel Institute of Pharmaceutical Sciences, Faizabad road, Lucknow- 226028
4. Assistant Professor, Department of Chemistry, Maharani's science college for women (Autonomous),Mysore-570005
5. Research Scholar, CHRIST (Deemed to be University), Bangalore 560029
6. Assistant Professor, Government Science College, Vankal.
7. Associate Professor, Shree Naranjibhai Lalbhai Patel College Of Pharmacy, Umrakh, Pin 394601
8. Principal And Professor, S. S. Agrawal Institute Of Pharmacy, Agrawal College Campus,Veeranjali Marg,GandeviRoad,Navsari, 396445

Corresponding Author: Dr.Kinjal H Shah
Designation and Affliction: Principal And Professor, S. S. Agrawal Institute Of Pharmacy, Agrawal College Campus,Veeranjali Marg,GandeviRoad,Navsari, 396445
Email Id:kinjaljasani9783@gmail.com

Article History
Volume 6, Issue Si4 2024
Received: 30 May 2024
Accepted : 30 June 2024
Doi:
10.48047/AFJBS.6.Si4.2024.2395-2401

ABSTRACT: Over the past few years, a great deal of scientific research has focused on the quest for naturally occurring antimicrobials found in plants. This study aimed to evaluate the Lemmon gras essential oil's in vitro antibacterial activity and in silico toxicity against strains of bacteria. First, the essential oil was dissolved in a solution of tween 80 and dimethyl sulfoxide (DMSO). The antibacterial action was evaluated using the minimum bactericidal concentration (MBC), which was determined by the depletion in nutrient agar (NA) technique with aliquots of 10µL of the MIC, MIC × 2, and MIC × 4. The minimum inhibitory concentration (MIC) was determined from the microdilution in double-concentrated brain heart infusion broth (BHI). In Only the Citronellol, Geraniol, and Citral fractions showed a hazardous potential in the in silico toxicology investigation. Nonetheless, there was no indication of toxicity in the Citral fraction. Consequently, in comparison to other substances frequently used in the treatment of bacterial infections, lemon grass essential oil exhibits adequate antibacterial activity and a low potential oral toxicity.
Keywords: Lemon grass Essential oil, Antibacterial activity, In-silico

PRINCIPAL
Santhiram College of Pharmacy
NH-40,Nandyal-518501,A.P.

ANALYTICAL METHOD DEVELOPMENT AND VALIDATION FOR SIMULTANEOUS ESTIMATION OF CILNIDIPINE AND METOPROLOL SUCCINATE IN BULK AND TABLET FORMULATION BY RP-HPLC METHOD

M.Manorama, K. Bindu madhavi, B. Vishnu vandhana, C. Parimala devi
Santhiram college of pharmacy,nandyal.

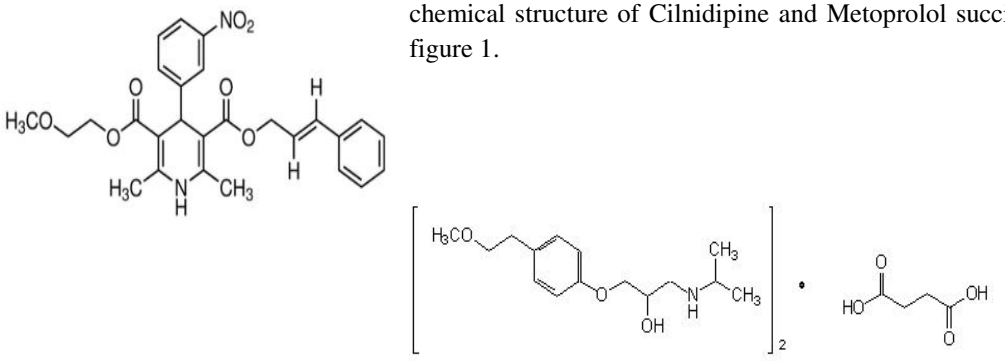
Abstract:
The present work involves a new method was established that is development and validation of RP-HPLC method for the estimation of cilnidipine and metoprolol succinate in their combination dosage form. In this HPLC method X-Terra C18 column (250 X4.6 mm ID) was used as SP and phosphate buffer, Acetonitrile in the ratio of 40: 60 as a MP was used. The flow rate was 1.2ml/min. & isobestic point of both drugs were quantified at 254 nm. The retention time for cilnidipine and metoprolol succinate was found to be 2.5mins and 10.5 mins respectively. The analytical method was validated according to ICH guidelines21 (ICH, Q2 (R1)). The linearity for Cilnidipine and Metoprolol Succinate was found in concentration range of 1-10µg/ml & 5-100µg/ml and Correlation coefficient (R^2) value for both drugs was found to be 0.999, % recovery was found to be 99.6 to 100.00. RSD for method precision was 0.21& 0.11. Hence the suggested RP-HPLC method can be used for routine analysis of Cilnidipine and Metoprolol Succinate in API and Pharmaceutical dosage form.

Key words: cilnidipine and metoprolol succinate, method development, validation, HPLC.

Introduction

Cilnidipine is the calcium channel blocker. It blocks the L-type calcium channels in blood vessels and the N-type calcium channels in sympathetic nerve endings. It also dilates arterioles & used in treatment of hypertension. Chemically it is noted as 1, 4-Dihydro-2, 6-dimethyl-4-(3-nitrophenyl)-3, 5- pyridine Carboxylic acid-2-methoxy ethyl (2E)-3-phenyl-propenyl ester. Metoprolol succinate (MET) is a cardio selective drug used alone or combination with other medicines to treat hypertension and various cardiovascular disorders. The action of Metoprolol succinate is mediated through the β1-selective adreno receptor blockage, thus causing reduction in heart rate and cardiac output. Its chemical name is described as (±) 1- (isopropyl amino)-3-[p-(2 methoxy ethyl) phenoxy]-2-propanol succinate (2:1)

The chemical structure of Cilnidipine and Metoprolol succinate were shown in the figure 1.



Cilnidipine Metoprolol succinate

Fig: 1- Chemical structure of Cilnidipine and Metoprolol Succinate

Based on various referred journals literature we quantify the selected combination drugs in its category. So, an attempt has been made to develop an accurate, precise and economically reliable RP-HPLC method for the simultaneous estimation of combination the current research. In this the method was developed and explained by validation parameters according to ICH guidelines.

PRINCIPAL
Santhiram College of Pharmacy
NH-40,Nandyal-518501,A.P.

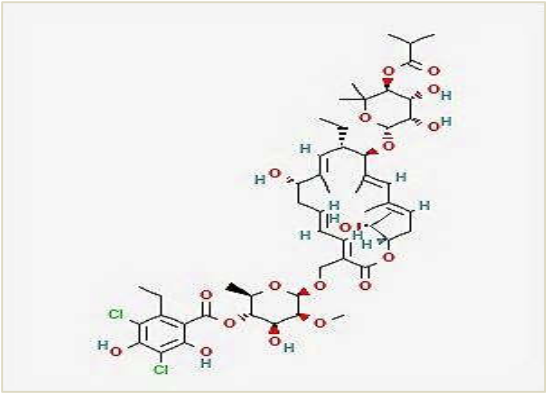
DEVELOPMENT AND VALIDATION OF UV SPECTROSCOPIC METHOD FOR THE ESTIMATION OF FIDAXOMICIN IN BULK AND FORMULATION AND STUDY ITS DEGRADATION BEHAVIOUR

C.Parimala Devi[1], Shaik Muneer, G.Parvathi, A.Ammulu, K.Suguna,
Dept. of Pharmaceutical Analysis, Santhiram College of Pharmacy, Nandyal, Andhra Pradesh, India

ABSTRACT:
A simple, accurate, precise, robust and stability indicating UV spectroscopic method was developed for the determination of Fidaxomicin (FDX) in bulk & formulation and to monitor the Degradation behavior of the drug as per ICH Guidelines. FDX was subjected to different stress conditions as per ICH guidelines. The current method has been developed for the analysis of the drug in the presence of the degradation product and carried method validation as per ICH Q2 (R1). FDX in ethanol 95%v/v shown maximum absorbance at 244nm.The method was found linear in the range of 10-50 mcg/ml, withLOD and LOQ values as 1.14 ng/mL and 3.42 ng/mL respectively. The recovery studies shown non-interference of excipients with drug and was found within 98- 102%. The mean % assay was found to be 101.92%. Degradation studies of FDX were well studied in all stress conditions andthe amount of degraded drug was calculated. The proposed method is found simple, meticulous, robust and stability indicating can be used for routine analysis of Fidaxomicin in bulk and its formulation.
KEYWORDS: Fidaxomicin, Method development, Validation, Degradation, Stability studies

I.INTRODUCTION:

Fidaxomicin (FDX) is a fermentation product obtained from the Actinomycete Dactyl sporangium aurantiacum. It is a macrolide antibacterial drug that inhibits RNA synthesis by binding to RNA polymerases, bactericidal against C. difficile in vitro, and demonstrates a post-antibiotic effect vs. C. difficile of 6- 10 hrs.[41-44]. Fidaxomicin has minimal systemic absorption following oral administration, with plasma concentrations of Fidaxomicin and OP-1118 in theng/mL range at the therapeutic dose. Fidaxomicin is primarily transformed by hydrolysis at the isobutyryl ester to form its main and microbiologically active metabolite, OP-1118. Metabolismof Fidaxomicin and formationof OP-



1118 are not dependent on cytochrome P450 (CYP) enzymes. The pharmacokinetic parameters of FDX and its main metabolite OP-1118 following a single dose of 200 mg in healthy adult males (N=14). Fidaxomicin is slowly absorbed and metabolized 6 days in the liver and mainly excreted by feces.

Review of literature was well explained by collecting wide no of articles from the refereed journals for the quantification of selected drug in its category in single analyte. It also explainsthe derivative of broad-spectrum antibiotics using different spectroscopic methods. From the reported methods as very, few articles are present selection of drug was made. An attempt was made in the current study todevelop a novel stability indicating, cost effective, precise and robust one. Experimental investigation studies were explained by materials and methods used in the study. Various grades of chemicals and instruments were used for the study. It also explains the preparation procedures of standard and sample solutions of the drug. Further developed method was explained by various procedures for validation parameters in accordance to ICH guidelines.

PRINCIPAL
Santhiram College of Pharmacy
NH-40,Nandyal-518501,A.P.

ANALYTICAL METHOD DEVELOPMENT AND VALIDATION FOR SIMULTANEOUS ESTIMATION OF CILNIDIPINE AND METOPROLOL SUCCINATE IN BULK AND TABLET FORMULATION BY RP-HPLC METHOD

M.Manorama, K. Bindu madhavi, B. Vishnu vandhana, C. Parimala devi
Santhiram college of pharmacy,nandyal.

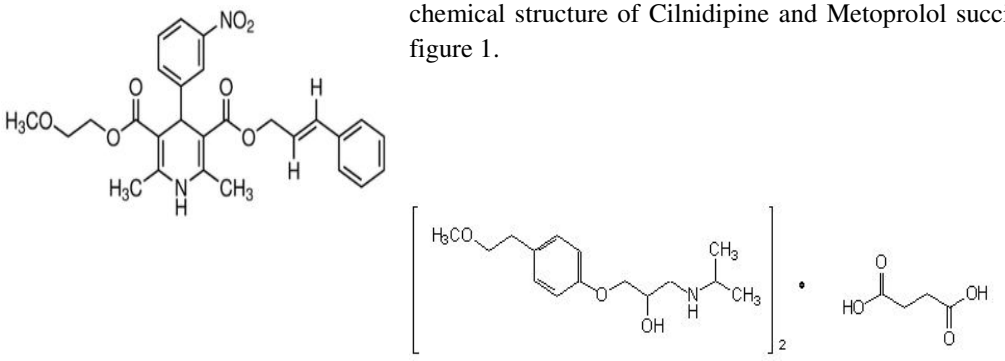
Abstract:
The present work involves a new method was established that is development and validation of RP-HPLC method for the estimation of cilnidipine and metoprolol succinate in their combination dosage form. In this HPLC method X-Terra C18 column (250 X4.6 mm ID) was used as SP and phosphate buffer, Acetonitrile in the ratio of 40: 60 as a MP was used. The flow rate was 1.2ml/min. & isobestic point of both drugs were quantified at 254 nm. The retention time for cilnidipine and metoprolol succinate was found to be 2.5mins and 10.5 mins respectively. The analytical method was validated according to ICH guidelines21 (ICH, Q2 (R1)). The linearity for Cilnidipine and Metoprolol Succinate was found in concentration range of 1-10µg/ml & 5-100µg/ml and Correlation coefficient (R^2) value for both drugs was found to be 0.999, % recovery was found to be 99.6 to 100.00. RSD for method precision was 0.21& 0.11. Hence the suggested RP-HPLC method can be used for routine analysis of Cilnidipine and Metoprolol Succinate in API and Pharmaceutical dosage form.

Key words: cilnidipine and metoprolol succinate, method development, validation, HPLC.

Introduction

Cilnidipine is the calcium channel blocker. It blocks the L-type calcium channels in blood vessels and the N-type calcium channels in sympathetic nerve endings. It also dilates arterioles & used in treatment of hypertension. Chemically it is noted as 1, 4-Dihydro-2, 6-dimethyl-4-(3-nitrophenyl)-3, 5- pyridine Carboxylic acid-2-methoxy ethyl (2E)-3-phenyl-propenyl ester. Metoprolol succinate (MET) is a cardio selective drug used alone or combination with other medicines to treat hypertension and various cardiovascular disorders. The action of Metoprolol succinate is mediated through the β1-selective adreno receptor blockage, thus causing reduction in heart rate and cardiac output. Its chemical name is described as (±) 1- (isopropyl amino)-3-[p-(2 methoxy ethyl) phenoxy]-2-propanol succinate (2:1)

The chemical structure of Cilnidipine and Metoprolol succinate were shown in the figure 1.



Cilnidipine Metoprolol succinate

Fig: 1- Chemical structure of Cilnidipine and Metoprolol Succinate

Based on various referred journals literature we quantify the selected combination drugs in its category. So, an attempt has been made to develop an accurate, precise and economically reliable RP-HPLC method for the simultaneous estimation of combination the current research. In this the method was developed and explained by validation parameters according to ICH guidelines.

PRINCIPAL
Santhiram College of Pharmacy
NH-40,Nandyal-518501,A.P.

Int J Adv Life Sci Res. Volume 7(4) 172-180
https://doi.org/10.31632/ijalsr.2024.v07i04.015

International Journal of Advancement in Life Sciences Research

Online ISSN: 2581-4877

Journal homepage http://ijalsr.org

Original Article

Effectiveness of Progesterone Treatment Among Pregnant Women in a Tertiary Care Teaching Hospital

R. E. Ugandar[1*], J. Karthiki[2], Tati Reddy Navyasree[2], G. Swetha[1], D. Nagalakshmi[1], D. Tejavathi[1], D. Haseena[1]

[1] Department of Pharmacy Practice, Santhiram College of Pharmacy, Nandyal 518501, Andhra Pradesh, India.
[2] Department of Obstetrics and Gynecology, Santhiram Medical College and General Hospital, Nandyal 518502, Andhra Pradesh, India.

**Correspondence E-mail: reugandar@gmail.com*

Abstract

Progesterone is essential for the maintenance of pregnancy. Threatened abortion and recurrent miscarriage are the common complications of pregnancy. This study conducted to determine the effectiveness of progesterone supplementation in preventing miscarriage in cases of threatened abortion and recurrent miscarriages, aiming to extend pregnancy beyond 24 weeks in these women. The objectives of this study are to identify the number of pregnant women treated with progesterone, to know the choice of progesterone formulation prescribed for threatened abortion and previous history of miscarriage, and to determine the effectiveness of progesterone treatment among patients with threatened abortion and previous history of miscarriage. The results showed that a total of 107 cases were treated with progesterone, Among the majority of the cases were threatened abortion cases 50 (46.42%), followed by previous history of miscarriage cases 26 (24.29%), previous history of preterm birth cases 15 (14%), primi gravida cases 12 (11.21%) and short cervix cases 4 (3.7%). The outcome of this study determines that, out of 50 (46.42%) threatened abortion cases, 46(92%) women successfully continued their pregnancies to proceed beyond 24 weeks, and 4(8%) cases got abortion. Among 26 (24.29%) previous history of miscarriage cases 25 (96.1%) women successfully continued their pregnancies and 1(3.8%) got an abortion. It also demonstrates the rate of abortion was reduced in women treated with progesterone supplementation.

Keywords: miscarriage, preterm birth, primi gravida threatened abortion, progesterone, short cervix.

Introduction

Progesterone is an endogenous steroid hormone that is generally produced by the adrenal cortex as well as the gonads, which consist of the ovaries and the testes. The ovarian corpus luteum secretes progesterone during the first ten weeks of gestation, and the placenta follows in the later phases of pregnancy (Lou *et al.*, 2021). Progesterone possesses a variety of uses throughout pregnancy and is certainly a pivotal hormone for maintaining pregnancy. Among these are the induction of secretory changes necessary for successful implantation and maintenance of a normal pregnancy, which eases and makes the uterus's endometrium more open to the early embryo; and the induction of uterine quiescence, which suppresses myometrial contractility by enhancing nitric oxide conflation in the endometrium (Duan *et al.*, 2010).

Besides its endocrine effects, progesterone plays an immunomodulating role. Several studies have demonstrated that progesterone blocks mitogen-stimulated lymphocyte proliferation, prolongs allograft survival, modulates antibody production, decreases the oxidative burst of monocytes, reduces the production of proinflammatory cytokines by macrophages in response to bacterial

Received on :24th June 2024; Revised version received on :24th September 2024; Accepted :30th September 2024

PRINCIPAL
Santhiram College of Pharmacy
NH-40,Nandyal-518501,A.P.

METHOD DEVELOPMENT AND VALIDATION FOR THE ESTIMATION OF POSACONAZOLE AND ITS FORCED DEGRADATION STUDIES BY RP-HPLC

K Raghavendra
Department of Mathematics, Humanities and Science, G Pulla Reddy Engineering College, Kurnool-518007, A.P., India
R. Nageswara Rao*
Department of Pharmaceutical Analysis, Santhiram College of Pharmacy, Panyam, Nandyal-518501, A.P., India.
Dr L Sivashankar Reddy
Department of Pharmaceutical Analysis, Santhiram College of Pharmacy, Panyam, Nandyal-518501, A.P., India.
Dr. D. Madhuri
Department of Pharmaceutical Analysis, Creative Educational Society's College of Pharmacy, Kurnool, Andhra Pradesh.
S Khaja Basha
Department of Pharmaceutical Analysis, Creative Educational Society's College of Pharmacy, Kurnool, Andhra Pradesh.

ABSTRACT:

The objective of the present work is method development and validation for the estimation of posaconazole and its forced degradation studies by RP-HPLC. A simple, rapid, accurate, precise, robust, and reproducible RP-HPLC method was developed for the estimation of posaconazole. The method was developed by using an inertsil ODS-3V column with a mobile phase comprising of ACN: 2% IPA in the ratio of 80:20 at a flow rate of 1 ml/min, and the effluents were monitored at 260 nm using a PDA detector. Chromatograms are eluted at a retention time of 3.9 min (±0.5). The R^2 was found to be 0.999. The accuracy was carried out and results were within 98-102 %, and the % Relative Standard Deviation was found to be <2%. The detection limit and quantitation limit were found to be 0.29 µg/ml and 0.90 µg/ml, respectively. The drug was exposed to acid, base, peroxide, and water degradation conditions, and these samples were determined. The results suggested that the proposed method gives good resolution peaks within short time analysis (<5 min) and a high percentage of recovery. The %RSD of each parameter lies within the limits (<2%). The statistical analysis proved that the proposed method is precise, accurate, simple, and rapid for the estimation of posaconazole by RP-HPLC.

Keywords: Posaconazole, RP-HPLC, ICH guidelines, Validation and Degradation.

1. INTRODUCTION

Posaconazole is a synthetic systemic triazole antifungal agent. It is used to treat invasive infections in severely immunocompromised patients, those with acquired immunodeficiency syndrome, and hemopoietic stem-cell transplant recipients [1-2]. Posaconazole is 4-{4-[4-(4-{[(3R,5R)-5-(2,4-difluorophenyl)-5-(1H-1,2,4-triazol-1-yl methyl) -tetrahydrofuran-3-yl] methoxy} phenyl) piperazin-1-yl] phenyl}-2-[(1S,2S)-1-ethyl-2-hydroxy-propyl]-2,4-dihydro-3H-1,2,4-triazol-3-one (Fig.1) [3-4] is a triazole antifungal drug, approved by the Food Drug Administration in 2006 and characterized for the broader spectra of action between triazoles, besides the less potential of interactions. It is the 1st azole agent to prove activity upon the zygomycetes, a difficult-to-treat family that involves *Mucor* and *Rhizopus* species. According to a review of literature, it was known that analytical methods like HPLC and UPLC methods are available for the determination of Posaconazole as alone or in composite with other antifungal drugs in plasma and serum [5-10]. So an attempt was made to develop a simple, precise, sensitive, rapid, and accurate method for the posaconazole detection using an economical mobile phase that is ecofriendly and validate the method by using RP-HPLC.

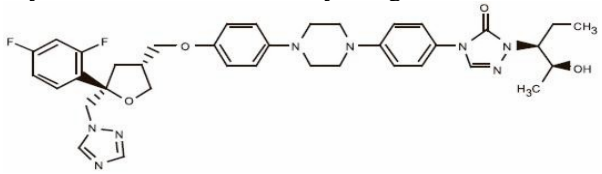


Fig. 1: Structure of Posaconazole

PRINCIPAL
Santhiram College of Pharmacy
NH-40,Nandyal-518501,A.P.

Int J Adv Life Sci Res. Volume 8(1) 76-88
https://doi.org/10.31632/ijalsr.2025.v08i01.007

International Journal of Advancement in Life Sciences Research

Online ISSN: 2581-4877

Journal homepage http://ijalsr.org

Original Article

Identification of Established Drugs for Contemporary Indications: A Hospital Based Study

A. Sai Keshava Reddy, I. Madhan Mohan, N. Sree Dharani, U. Aswini, U.Kalyan Kumar, R.E.Ugandar*

Department of Pharmacy Practice, Santhiram College of Pharmacy, Nandyal-518501, Andhra Pradesh-INDIA

Corresponding Author's Email: reugandar@gmail.com

Abstract

Drug repurposing offers a cost-effective and time-efficient alternative to traditional drug development by identifying new therapeutic uses for established drugs. This study aimed to identify established drugs with potential new indications, examine changes in drug categories, and observe variations in dosage and frequency. A cross-sectional study was conducted over six months at Santhiram Medical College and General Hospital, Nandyala, across multiple specialised departments, including Neurology, Cardiology, and Gastroenterology. Patients aged 18–60 years were included, and 157 case files were analysed. Prescriptions were cross-referenced with subjective and objective evidence, excluding those aligned with either. The study was approved by the Institutional Ethics Committee (Ref. No. IEC/SRMC/SRCP/RESEARCH/006/2023, dated 29.08.2023). The results identified nine contemporary-indicated drugs, with Aspirin (27.39%) and Dapagliflozin (21.01%) being the most frequent. Seven drugs, including Atorvastatin, Gabapentin, Levetiracetam, and Flupirtine maleate, showed changes in indication categories, while Sildenafil and Tadalafil retained their original categories. Aspirin demonstrated dosage modifications, and both Aspirin and Sildenafil displayed changes in frequency between old and new indications. The findings revealed notable shifts in categorisation, dosage, and frequency, offering insights into the evolving therapeutic roles of these drugs. In conclusion, this study highlights the potential of drug repurposing, identifying promising candidates for new indications and emphasising the need for further clinical validation to ensure safety and efficacy. These results provide a valuable foundation for advancing drug repurposing research to benefit healthcare systems and patients.

Keywords: *Contemporary Indications, Drug Repurposing, Established Drugs*

Introduction

Drug Repurposing (DR) is sometimes referred to as therapeutic switching, drug recycling, drug redirection, drug retasking, drug re-profiling, and drug repositioning (Rao *et al.*, 2022). It can be described as the process of finding new pharmacological indications for previously discovered, underutilised, experimental, already-marketed, and FDA-approved drugs and then using those newly developed drugs to treat conditions unrelated to their intended therapeutic uses (Rudrapal, Khairnar & Jadhav 2020). The concept of drug repurposing is quite new, evidently emerging in 2004 with an article published by Ash Burn and Thor. They described the process of finding new uses for already existing drugs as drug repurposing (Jourdan *et al.*, 2020). Most notably, there are currently limited options for the majority of the 6,000–8,000 rare diseases, with only 5% of diseases having an approved treatment option. The development of new therapies for rare diseases is often challenging due to factors such as limited patient populations, disease complexity, lack of understanding of disease pathobiology, and high development costs. Therefore, drug repurposing has the potential of being time- and cost-efficient,

Received on :5th August 2024; Revised version received on :10th November 2024; Accepted: 15th November 2024

PRINCIPAL
Santhiram College of Pharmacy
NH-40,Nandyal-518501,A.P.

Journal of Neonatal Surgery
ISSN(Online): 2226-0439
Vol. 14, Issue 5s (2025)
https://www.jneonatalsurg.com

OPEN ACCESS

Assessment of Dapagliflozin by Using HPLC- Method Development, Validation and Stability Indicating Studies

L. Siva Sanker Reddy[1], R. Nageswara Rao[*2], K Raghavendra[3], Kumar Raja Jayavarapu[4], B. Indumathi[5], N. Madan Gopal[6], S. Muneer[7], B. Ushasree[8], L.A. Rama Prasad[9], Sampath Ayyappa G[10]

[12678]Santhiram College of Pharmacy, NH-40, Nerawada, Nandyala, Andhra Pradesh, 518112, India, Department of Pharmaceutical Analysis.

[3]Department of Mathematics, Humanities and Science, G Pulla Reddy Engineering College, Kurnool-518007, A.P., India.

[4]Department of Pharmaceutical Analysis, Professor & Principal, Mother Teresa Pharmacy College, Sathupalli, Telangana

[5]Santhiram Medical College, Department of Biochemistry, NH 40, Nandyala, Andhra Pradesh 518501, India.

[9]A-17, Cooperative Industrial Estate, Balanagar, Hyderabad, Telangana 500037, and India is the address of JLS Laboratories Pvt. Ltd.

[10]Department of Quality Assurance, Aura Biosciences, Boston, MA 02135.

***Corresponding Author:**

Associate Professor, Santhiram College of Pharmacy, Department of Pharmaceutical Analysis.

Email ID: pharmanag@gmail.com

Cite this paper as: L. Siva Sanker Reddy, R. Nageswara Rao, K Raghavendra, Kumar Raja Jayavarapu, B. Indumathi, N. Madan Gopal, S. Muneer, B. Ushasree, L.A. Rama Prasad, Sampath Ayyappa G, (2025) Assessment of Dapagliflozin by Using HPLC- Method Development, Validation and Stability Indicating Studies. *Journal of Neonatal Surgery*, 14 (5s), 74-80.

ABSTRACT

This project's main objective is to develop and validate an RP-HPLC technique for dapagliflozin, an anti-diabetic medication that reversibly inhibits the human Sodium-Glucose Co-Transporter (SGLT2). The method should be easy to use, precise, and accurate. Methanol, ethanol, and isopropyl alcohol are among the organic solvents that dissolve it effectively. A p-value of 12.6 is provided. This experiment made use of the Column-C18 (5µm; 4.6×250mm). Acetonitrile and 1% IPA were combined in an 80:20 (v/v) ratio to create the selected mobile phase. 10 µg/ml was the injection volume, and 1.0 ml/min was the flow rate. A duration of retention of 2.9 minutes at 30°C was measured at 224 nm. With a r^2 value of 0.9995, the range of linearity was found to be 5-100 µg/ml. A range of 98-102% was seen for the recovery. The respective limits of detection were 0.62 ɛg/ml and 0.2 ɛg/ml. The stress test results demonstrate that even in the presence of degradants, the method was still able to identify the medication.

Keywords: *Dapagliflozin, Assay, stability studies, validation, ICH Guidelines.*

1. INTRODUCTION

Dapagliflozin1 is an oral, reversible inhibitor of the human sodium-glucose co-transporter 2 (SGLT2), the main transporter in charge of renal glucose reabsorption. It reduces glucose reabsorption and inhibits the Sodium-Glucose Co-Transporter 2, both of which contribute to better glycaemic management in type 2 diabetic patients. The selection of Dapagliflozin as a single medicine for analysis was based on the fact that there were just three articles reported on this drug.

In 2015, Jeyabaskaran et al.2 published the analytical technique for RP-HPLC Dapagliflozin estimation. The stationary phase was Column-Hypersil BDS C18 (250 x 4.6 x 5 µm), and the mobile phase liquids were Acetonitrile: 0.1% OPA buffer (50:50 v/v). The instrument was set to a flow rate of 1.0 millilitres per minute, and the elution time was determined to be 2.226 minutes. With an R2 of 0.9998, the linearity range that was stated was 25–150µg/ml. The Wave length of 245nm was considered, LOD (0.04µg/ml) and LOQ- (9.121µg/ml) was also reported. Mitali *et al.*[3] in 2017 reported similar mobile phase except OPA buffer replaced with phosphate buffer and the ratio of mobile phase was (40:60 v/v). The column employed was C_{18} (4.6mm, 150mm, 5µm). The Flow rate-was set at 1ml/min for which the retention time was reported as 3.160 min at the selected wavelength of 222nm. There was a small change in the linearity range (50-150 µg/ml) with a R^2 = 0.999 than the earlier reported method. The reported LOD, LOQ were - 5.14µg/ml and 15.6µg/ml respectively. Mante *et al.*[4] in 2018

PRINCIPAL
Santhiram College of Pharmacy
NH-40,Nandyal-518501,A.P.

https://africanjournalofbiomedicalresearch.com/index.php/AJBRr
Afr. J. Biomed. Res. Vol. 27 (September 2024); 918- 937

Research Article

Green Synthesis and Biological Evaluation of Substituted 1,3,4-Oxadiazoles Through Ethyl Chloroformate and 2-Amino-5-Nitrothiazole

L. Siva Sanker Reddy[1*], O. Sreevidya[2], N.Yella Subbaiah[1], B.Siva Kumar[3], K Ilango[3*], G.Sampath Ayyappa[4], R.Nageswara Rao[5]

[1]Department of Pharmaceutical Chemistry, Santhiram College of Pharmacy, Nandyal, Kurnool-518501, Andhra Pradesh, India.*
[2]Department of Pharmaceutical Chemistry, Creative Educational Society's College of Pharmacy, Chinnatekur, Kurnool-518002, Andhra Pradesh, India.
[3]Department of Pharmaceutical Chemistry, Tagore College of Pharmacy, Rathinamangalam, Chennai-600127, Tamilnadu, India.*
[4] Department of Quality Assurance, Aura Biosciences Inc, 80 Guest St, Boston, MA, 02135.
[5] Department of Pharmaceutical Analysis, Santhiram College of Pharmacy, Nandyal, Kurnool-518501, Andhra Pradesh, India.

ABSTRACT
A systematic investigation of the Oxadiazole class of heterocyclic leads has revealed their significant role in medicinal chemistry. The prevalence of Oxadiazole-containing pharmacologically active agents has underscored the necessity for elegant and efficient methods to synthesize these heterocyclic lead molecules. To this end, a series of Thiazole Schiff's bases were prepared from 2-amino-5-nitro thiazole through the addition of ethyl chloroformate, followed by treatment with hydrazine hydrate to obtain the hydrazide derivative. Subsequently, the hydrazide derivative reacted with various aromatic aldehydes to yield Schiff's bases. These Schiff's bases then underwent ring closure to form Oxadiazole derivatives in the presence of acetic anhydride. The structures of the compounds were confirmed by IR and ^{1}H NMR analysis. The novel moiety Compound **4a** was identified as a promising antioxidant activity.

Keywords: 2-amino-5-nitro thiazole; Molecular Docking; Oxadiazole; Schiff's base; Thiazole.

***Author for correspondence:** shiva_s_rl@yahoo.co.in, ilangok67@gmail.com*

Received: 12/06/2024, Accepted: 20/07/2024

DOI: https://doi.org/10.53555/AJBR.v27i1S.1547

© 2024 The Author(s).
This article has been published under the terms of Creative Commons Attribution-Noncommercial 4.0 International License (CC BY-NC 4.0), which permits noncommercial unrestricted use, distribution, and reproduction in any medium, provided that the following statement is provided. "This article has been published in the African Journal of Biomedical Research"

INTRODUCTION

Thiazoles have been reported to possess an array of pharmacological activities such as antioxidant[1], anti-inflammatory[2], antibacterial[3], antitumor[4], anti-convulsant[5] and 2-amino thiazole derivatives showed potent antioxidant activity[6]. 1,3,4-Oxadiazole[7-12] and 1,2,4-Oxadiazole[13-14] were synthesised by various methods. Oxadiazoles have been reported to possess an array of pharmacological properties including anti-oxidant[15], anti-inflammatory[16], antibacterial[17], analgesic[18], anticancer[19]and antifungal activity[20].

The most popular method to synthesize 1,3,4-oxadiazoles uses acid hydrazides as substrates that undergo reaction with aromatic aldehydes, carboxylic acids and nitriles[21]. Another

PRINCIPAL
Santhiram College of Pharmacy
NH-40,Nandyal-518501,A.P.

Heliyon 10 (2024) e33154

Contents lists available at ScienceDirect

Heliyon

journal homepage: www.cell.com/heliyon

Research article

Potential preventative impact of aloe-emodin nanoparticles on cerebral stroke-associated myocardial injury by targeting myeloperoxidase: In supporting with *In silico* and *In vivo* studies

Praveen Kumar Pasala [a], Niranjan Kumar Raghupathi [b], Deepak A. Yaraguppi [c], Ranadheer Reddy Challa [d], Bhaskar Vallamkonda [e], Sheikh F. Ahmad [f], Yeswanth Chennamsetty [b], P.V. Kamala Kumari [g], Prasanth DSNBK [h,*]

[a] *Department of Pharmacology, Raghavendra Institute of Pharmaceutical Education and Research, JNTUA, Anantapuramu, Andhra Pradesh, 515721, India*
[b] *Department of Pharmacology, Santhiram College of Pharmacy, JNTUA, Nandyal, 518112, Andhra Pradesh, India*
[c] *Department of Biotechnology, KLE Technological University, Hubli, Karnataka, 580031, India*
[d] *Department of Formulation and Development, Quotient Sciences, 3080 McCann Farm Dr, Garnet Valley, PA, 19060, USA*
[e] *Department of Pharmaceutical Analysis, Odin Pharmaceutical LLC, Somerset, NJ, 08873, USA*
[f] *Department of Pharmacology and Toxicology, College of Pharmacy, King Saud University, Riyadh, 11451, Saudi Arabia*
[g] *Department of Pharmaceutics, Vignan Institute of Pharmaceutical Technology, Duvvada, Visakhapatnam, India*
[h] *School of Pharmacy & Technology Management, SVKM's Narsee Monjee Institute of Management Studies (NMIMS), Polepally SEZ, TSIIC, Jadcherla, Mahbubnagar, Hyderabad, 509301, India*

ARTICLE INFO

Keywords:
Aloe emodin
Aloe emodin nanoparticles
Myeloperoxidase
Antioxidant
Molecular dynamics
Molecular docking

ABSTRACT

The present study examined the potential neuroprotective effects of aloe-emodin (AE) nanoparticles on the cerebral stroke-associated target protein myeloperoxidase (MPO). We investigated the binding interactions between AE and MPO through molecular docking and molecular dynamics simulations. Molecular docking results indicated that AE exhibited a binding energy of −6.9 kcal/mol, whereas it was −7.7 kcal/mol for 2-{[3,5-bis(trifluoromethyl)benzyl]amino}-*n*-hydroxy-6-oxo-1,6-dihydropyrimidine-5-carboxamide (CCl). Furthermore, molecular dynamics studies demonstrated that AE possesses a stronger binding affinity (−57.137 ± 13.198 kJ/mol) than does CCl (−22.793 ± 30.727 kJ/mol), suggesting that AE has a more substantial inhibitory effect on MPO than does CCl. Despite the therapeutic potential of AE for neurodegenerative disorders, its bioavailability is limited within the body. A proposed hypothesis to enhance the bioavailability of AE is its conversion into aloe-emodin nanoparticles (AENP). The AENPs synthesized through a fabrication method were spherical with a consistent diameter of 104.4 ± 7.9 nm and a polydispersity index ranging from 0.525 to 0.586. In rats experiencing cerebral stroke, there was a notable increase in cerebral infarction size; abnormalities in electrocardiogram (ECG) and electroencephalogram (EEG) patterns; a decrease in brain and cardiac antioxidant activities; and an increase in myeloperoxidase levels compared to those in normal rats. Compared with AE treatment, AENP treatment significantly ameliorated cerebral infarction, normalized ECG and EEG patterns, enhanced brain and cardiac antioxidant activities, and reduced MPO levels in stroke rats. Histopathological evaluations revealed pronounced alterations in the rat hippocampus, with pyknotic nuclei, disarray and loosely packed cells, deterioration of cardiac muscle

* Corresponding author.
E-mail addresses: dsnbkprasanth@gmail.com, dsnbk.prasanth@nmims.edu (P. DSNBK).

https://doi.org/10.1016/j.heliyon.2024.e33154
Received 28 March 2024; Received in revised form 6 June 2024; Accepted 14 June 2024
Available online 15 June 2024
2405-8440/© 2024 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC license (http://creativecommons.org/licenses/by-nc/4.0/).

PRINCIPAL
Santhiram College of Pharmacy
NH-40,Nandyal-518501,A.P.

WORLD JOURNAL OF PHARMACY AND PHARMACEUTICAL SCIENCES
SJIF Impact Factor 8.025
Volume 13, Issue 10, 529-542 Research Article ISSN 2278 – 4357

OBESITY-ASSOCIATED DIABETES MELLITUS AND ITS HEALTH-RELATED OUTCOMES IN A TERTIARY CARE CENTER

Mulla Saddar Basha[1]*, C. Bhargava Reddy[1], Katama Ediga Krishnamurthy[1], N. V. Naga Dharani[1], P. Bhagya Lakshmi[1] and G. Vijay Kumar[2]

[1]Department of Pharmacy Practice, Santhiram College of Pharmacy, Nandyal-518112, Andhra Pradesh, India.

[2]Department of General Medicine, Santhiram Medical College and General Hospital, Nandyal-518501, Andhra Pradesh, India.

Article Received on
02 August 2024,

Revised on 23 August 2024,
Accepted on 12 Sept. 2024

DOI: 10.20959/wjpps202410-28274

***Corresponding Author**
Mulla Saddar Basha
Department of Pharmacy Practice, Santhiram College of Pharmacy, Nandyal-518112, Andhra Pradesh, India.

ABSTRACT

Background: The current study aims to evaluate prevalence of Obese-diabetics, Diabetes Mellitus risk factors and complications by assessing prescription and lifestyle modifications along with the SF–36 questionnaire, which measures Quality of Life. **Materials and Methods:** This study was a cross-sectional observational study. Patients are selected and categorized based on their Body Mass Index score and questioned about Diabetes Mellitus risk factors and complications. Patients' Quality of Life is assessed using the SF-36 questionnaire, which contains eight specific sub-domains, and one additional item (Health change status). A Higher SF-36 score indicates better functioning and suggests the best Quality of Life of patients. **Results:** The prevalence of Obese-diabetic patients is 136(56.43%). The risk factors of Diabetes Mellitus are observed, which shows individual Prevalence for factors like Alcohol 60(24.9%), Smoking 57(23.65%), Low physical activity 193(80.08%), Blood pressure 74(30.71%), and Age 194(80.5%). The complication of Diabetes Mellitus was observed which shows individual Prevalence for Cardiovascular Diseases 23(9.54%), Nephropathy 23(9.54%), Retinopathy 111(46.06%), and Limb Amputation 4(1.66%). Quality of Life of patients is significantly associated with physical functioning, emotional problems, energy, pain, and social functioning. **Conclusion:** Quality of Life is significantly associated with Gender, Education, Occupation and dietary habits of obese-diabetic people. Clinical pharmacist intervention assistance is required to improve the quality of life of Obese-diabetic patients to reduce further

PRINCIPAL
Santhiram College of Pharmacy
NH-40, Nandyal-518501, A.P.

Bilateral Emphysematous Pyelonephritis and Cystitis in A Diabetic Mellitus Patient

Kotha Naga Poojitha[1], Mulla Saddar Basha[2], C Bhargava Reddy[3]

[1]Department of Pharmacy Practice,
Santhiram College of Pharmacy, Andhra Pradesh, India

Abstract

Emphysematous Urinary Tract Infections (EUTIs) are Uncommon, chronic, suppurative infections that attack different regions of the urinary system. A severe necrotizing infection affecting the upper urinary system, emphysematous pyelonephritis (EPN) involves the renal parenchyma, Gas production in the collecting system, perinephric tissue, or renal parenchyma is a common consequence of this illness. Gas-fermenting bacterial and fungal infections are the source of the uncommon disease condition known as emphysematous cystitis. Clinical symptoms are nonspecific, and unexpected imaging results frequently provide diagnostic hints. We report a case of a 54-year-old female presenting with generalized weakness with uncontrolled diabetes mellitus (DM) and hypertension in the last 20 years. The most common risk factor, present in more than 90% of individuals with EPN diagnosis, is diabetes mellitus. Without undergoing any surgical procedure, the patient was provided with intravenous antibiotic treatment, and two weeks later, she was stable and discharged.

Keywords: Emphysematous pyelonephritis, cystitis, Diabetes Mellitus, Renal parenchyma, Urinary Tract Infections

Introduction

Among Emphysematous Urinary Tract Infections (EUTIs) Emphysematous Pyelonephritis and cystitis are characterized by gas buildup, which is most likely the result of lactate and glucose being fermented by microorganisms such as Klebsiella pneumoniae and Escherichia coli are the most prevalent infectious organisms, occurring in 20% to 24% and 49% to 67% of cases respectively[1]. Gas accumulation produces gases like nitrogen, hydrogen, and carbon dioxide. Because of elevated tissue glucose levels, reduced oxygen delivery to the kidneys, and microvascular dysfunction, uncontrolled diabetes mellitus can lead to the spread of germs and the advancement of the disease[2]. Blockages in the urinary tract can worsen an infection by decreasing tissue perfusion and renal blood flow. We describe a case of a middle-aged female patient with poorly uncontrolled diabetes who presented with dysuria and fever. It was found that she had bilateral emphysematous pyelonephritis and cystitis caused by Escherichia coli, which was treated with antibiotics[3].

Case Presentation

A 54-year-old female patient was admitted to the hospital two weeks back with hypertension and poorly uncontrolled diabetes mellitus with chief complaints of fever for 3 days and is associated with fever, vomiting, and a history of dysuria. History shows that she underwent Percutaneous transluminal coronary angioplasty (PTCA), two shunts in situ, and she had diabetes and hypertension for the last 20 years and was on regular medication prescribed by the physician. The hypoglycemic therapy includes Insulin and oral hypoglycemic agents- Tab. Dapagliflozin and tab. Sitagliptin, where she was suffering from uncontrolled diabetes mellitus(400mg/dl); CAD with PTCA regimen includes Tab. Clopidogrel 150mg, Tab. Atorvastatin 40mg, and Tab. Nicorandil 2.6mg. The physician suggested CT-KUB PLAIN impression reveals echogenic debris and multiple air pockets in bilateral pelvicalyceal system which is suggestive for emphysematous pyelonephritis and low-level internal echoes with air pockets noted in the lumen of urinary bladder which is suggestive of emphysematous cystitis. diagnosed with Bilateral emphysematous pyelonephritis and Bilateral emphysematous cystitis. And other laboratory investigations include complete blood picture, complete urinary

PRINCIPAL
Santhiram College of Pharmacy
NH-40,Nandyal-518501,A.P.

International Journal of Pharmacy and Pharmaceutical Research (IJPPR)
Volume 31, Issue 2, February 2025 **ijppr.humanjournals.com** ISSN: 2349-7203

A Rare Association: Sjogren's Syndrome Presenting with Communicating Hydrocephalus - A Case Report

Bhargava Reddy. C, Hemavathi.Kuruba, Vineela Reddy. Meruva, Renuka. Sollapuram, Pavan Kalyan.L.N

Department of Pharmacy Practice Santhiram college of Pharmacy, Nandyal-518501, Kurnool District, Andhra Pradesh, India.

Received: 2025-2-07 Revised: 2025-2-18 Accepted: 2025-2-25

ABSTRACT:

Sjogren syndrome is a long-term autoimmune systemic condition. Cerebrospinal fluid buildup in the brain is known as communicating hydrocephalus. was identified in a female patient, age 18, who had keratopathy, cough, vomiting, bleeding, hypokalaemia, and mild hyperaemic discharge. A combination of laboratory tests and MRI and ultrasound scans is used to confirm the diagnosis. Palliative care, antibiotics, antipsychotics, and ophthalmic medications were all part of the treatment. It includes making lifestyle adjustments and managing the right electrolyte levels for those with hydrocephalus syndrome.

Keywords: Sjogren's syndrome, communicating hydrocephalus, autoimmune disease.

INTRODUCTION:

A Chronic, systemic autoimmune disease, sjogrens syndrome is characterised by lymphocytic infiltration of exocrine glands[1] mainly the lacrimal and salivary glands. Symptoms like dry eyes (Xerophthalmia) and dry mouth (xerostomia) are the result of this. In order to make a diagnosis, eye tests, sialometry, and the identification of particular circulating antibodies in the serum are used to assess oral and ocular symptoms[2]. Systemic medical therapy with immunosuppressive and biological drugs may be used to treat moderate to severe instance, depending on the affected organ systems and clinical symptoms[3]. Hydrocephalus is defined as the abnormal accumulation of cerebrospinal fluid (CSF) within the cerebral ventricles due to CSF flow restriction, inadequate absorption, or excessive production. Dandy characterised hydrocephalus in adults in 1913 as communicating and non-communicating (obstructive), but it is currently divided into four types: obstructive, communicating, hypersecretory, and normal pressure hydrocephalus (NPH)[4]. Endoscopic Third Ventriculostomy (ETV) may be an effective treatment for communicating hydrocephalus, Endoscopic Third Ventriculostomy may be a useful treatment for communicating hydrocephalus, according to the new hydrodynamic perspective of the condition. Therefore, it is a suitable substitute for shunting [5].

CASE PRESENTATON:

An 18-year-old woman was hospitalized due to cough, vomiting, fever spikes, loose motions, haemorrhoids, and hypokalemia. Additionally, the patient is experiencing sleep disturbances, hands and feet burning, weakening of both upper and lower limbs, and a decreased in appetite and food intake. During the physical examination, the patient appears tired but cooperative despite not having any past medical or social history. Increased TWBC, polymorphs, and decreased lymphocytes were observed in the CBP as evidenced by the patient's anaemia, and CRP was significantly elevated. The serum creatinine levels in RFT is elevated, while the MRI-BRAIN PLAIN displays a dilated ventricular system and mild communicating hydrocephalus. The abdominal ultrasound examination demonstrates turgid kidneys in the B/L area with increased parenchymal thickness, mild hydronrephritis, and F/S/O pyelonephritis. Found to have primary Sjogren's syndrome and communicating hydrocephalus.

DISCUSSION:

The immune system targets certain body areas in Sjogren syndrome. Inflammation and dryness in the brain and other bodily areas are brought on by the immune system. A clinical presentation of cough, vomiting, loose motions, bleeding, and hypokalemia was observed in a female patient, age 18. In addition, the patient is exhibiting reduced appetite and food intake, burning, hands and feet, upper and lower limb weakness, and sleep difficulties.

PRINCIPAL
Santhiram College of Pharmacy
NH-40,Nandyal-518501,A.P.

Journal of Neonatal Surgery
ISSN(Online): 2226-0439
Vol. 14, Issue 5s (2025)
https://www.jneonatalsurg.com

OPEN ACCESS

Assessment of Dapagliflozin by Using HPLC- Method Development, Validation and Stability Indicating Studies

L. Siva Sanker Reddy[1], R. Nageswara Rao[*2], K Raghavendra[3], Kumar Raja Jayavarapu[4], B. Indumathi[5], N. Madan Gopal[6], S. Muneer[7], B. Ushasree[8], L.A. Rama Prasad[9], Sampath Ayyappa G[10]

[12678]Santhiram College of Pharmacy, NH-40, Nerawada, Nandyala, Andhra Pradesh, 518112, India, Department of Pharmaceutical Analysis.

[3]Department of Mathematics, Humanities and Science, G Pulla Reddy Engineering College, Kurnool-518007, A.P., India.

[4]Department of Pharmaceutical Analysis, Professor & Principal, Mother Teresa Pharmacy College, Sathupalli, Telangana

[5]Santhiram Medical College, Department of Biochemistry, NH 40, Nandyala, Andhra Pradesh 518501, India.

[9]A-17, Cooperative Industrial Estate, Balanagar, Hyderabad, Telangana 500037, and India is the address of JLS Laboratories Pvt. Ltd.

[10]Department of Quality Assurance, Aura Biosciences, Boston, MA 02135.

***Corresponding Author:**

Associate Professor, Santhiram College of Pharmacy, Department of Pharmaceutical Analysis.

Email ID: pharmanag@gmail.com

Cite this paper as: L. Siva Sanker Reddy, R. Nageswara Rao, K Raghavendra, Kumar Raja Jayavarapu, B. Indumathi, N. Madan Gopal, S. Muneer, B. Ushasree, L.A. Rama Prasad, Sampath Ayyappa G, (2025) Assessment of Dapagliflozin by Using HPLC- Method Development, Validation and Stability Indicating Studies. *Journal of Neonatal Surgery*, 14 (5s), 74-80.

ABSTRACT

This project's main objective is to develop and validate an RP-HPLC technique for dapagliflozin, an anti-diabetic medication that reversibly inhibits the human Sodium-Glucose Co-Transporter (SGLT2). The method should be easy to use, precise, and accurate. Methanol, ethanol, and isopropyl alcohol are among the organic solvents that dissolve it effectively. A p-value of 12.6 is provided. This experiment made use of the Column-C18 (5µm; 4.6×250mm). Acetonitrile and 1% IPA were combined in an 80:20 (v/v) ratio to create the selected mobile phase. 10 µg/ml was the injection volume, and 1.0 ml/min was the flow rate. A duration of retention of 2.9 minutes at 30°C was measured at 224 nm. With a r^2 value of 0.9995, the range of linearity was found to be 5-100 µg/ml. A range of 98-102% was seen for the recovery. The respective limits of detection were 0.62 ɛg/ml and 0.2 ɛg/ml. The stress test results demonstrate that even in the presence of degradants, the method was still able to identify the medication.

Keywords: *Dapagliflozin, Assay, stability studies, validation, ICH Guidelines.*

1. INTRODUCTION

Dapagliflozin1 is an oral, reversible inhibitor of the human sodium-glucose co-transporter 2 (SGLT2), the main transporter in charge of renal glucose reabsorption. It reduces glucose reabsorption and inhibits the Sodium-Glucose Co-Transporter 2, both of which contribute to better glycaemic management in type 2 diabetic patients. The selection of Dapagliflozin as a single medicine for analysis was based on the fact that there were just three articles reported on this drug.

In 2015, Jeyabaskaran et al.2 published the analytical technique for RP-HPLC Dapagliflozin estimation. The stationary phase was Column-Hypersil BDS C18 (250 x 4.6 x 5 µm), and the mobile phase liquids were Acetonitrile: 0.1% OPA buffer (50:50 v/v). The instrument was set to a flow rate of 1.0 millilitres per minute, and the elution time was determined to be 2.226 minutes. With an R2 of 0.9998, the linearity range that was stated was 25–150µg/ml. The Wave length of 245nm was considered, LOD (0.04µg/ml) and LOQ- (9.121µg/ml) was also reported. Mitali *et al.*[3] in 2017 reported similar mobile phase except OPA buffer replaced with phosphate buffer and the ratio of mobile phase was (40:60 v/v). The column employed was C_{18} (4.6mm, 150mm, 5µm). The Flow rate-was set at 1ml/min for which the retention time was reported as 3.160 min at the selected wavelength of 222nm. There was a small change in the linearity range (50-150 µg/ml) with a R^2 = 0.999 than the earlier reported method. The reported LOD, LOQ were - 5.14µg/ml and 15.6µg/ml respectively. Mante *et al.*[4] in 2018

PRINCIPAL
Santhiram College of Pharmacy
NH-40,Nandyal-518501(A.P.)

METHOD DEVELOPMENT AND VALIDATION FOR THE ESTIMATION OF POSACONAZOLE AND ITS FORCED DEGRADATION STUDIES BY RP-HPLC

K Raghavendra
Department of Mathematics, Humanities and Science, G Pulla Reddy Engineering College, Kurnool-518007, A.P., India
R. Nageswara Rao*
Department of Pharmaceutical Analysis, Santhiram College of Pharmacy, Panyam, Nandyal-518501, A.P., India.
Dr L Sivashankar Reddy
Department of Pharmaceutical Analysis, Santhiram College of Pharmacy, Panyam, Nandyal-518501, A.P., India.
Dr. D. Madhuri
Department of Pharmaceutical Analysis, Creative Educational Society's College of Pharmacy, Kurnool, Andhra Pradesh.
S Khaja Basha
Department of Pharmaceutical Analysis, Creative Educational Society's College of Pharmacy, Kurnool, Andhra Pradesh.

ABSTRACT:

The objective of the present work is method development and validation for the estimation of posaconazole and its forced degradation studies by RP-HPLC. A simple, rapid, accurate, precise, robust, and reproducible RP-HPLC method was developed for the estimation of posaconazole. The method was developed by using an inertsil ODS-3V column with a mobile phase comprising of ACN: 2% IPA in the ratio of 80:20 at a flow rate of 1 ml/min, and the effluents were monitored at 260 nm using a PDA detector. Chromatograms are eluted at a retention time of 3.9 min (±0.5). The R^2 was found to be 0.999. The accuracy was carried out and results were within 98-102 %, and the % Relative Standard Deviation was found to be <2%. The detection limit and quantitation limit were found to be 0.29 µg/ml and 0.90 µg/ml, respectively. The drug was exposed to acid, base, peroxide, and water degradation conditions, and these samples were determined. The results suggested that the proposed method gives good resolution peaks within short time analysis (<5 min) and a high percentage of recovery. The %RSD of each parameter lies within the limits (<2%). The statistical analysis proved that the proposed method is precise, accurate, simple, and rapid for the estimation of posaconazole by RP-HPLC.

Keywords: Posaconazole, RP-HPLC, ICH guidelines, Validation and Degradation.

1. INTRODUCTION

Posaconazole is a synthetic systemic triazole antifungal agent. It is used to treat invasive infections in severely immunocompromised patients, those with acquired immunodeficiency syndrome, and hemopoietic stem-cell transplant recipients [1-2]. Posaconazole is 4-{4-[4-(4-{[(3R,5R)-5-(2,4-difluorophenyl)-5-(1H-1,2,4-triazol-1-yl methyl) -tetrahydrofuran-3-yl] methoxy} phenyl) piperazin-1-yl] phenyl}-2-[(1S,2S)-1-ethyl-2-hydroxy-propyl]-2,4-dihydro-3H-1,2,4-triazol-3-one (Fig.1) [3-4] is a triazole antifungal drug, approved by the Food Drug Administration in 2006 and characterized for the broader spectra of action between triazoles, besides the less potential of interactions. It is the 1st azole agent to prove activity upon the zygomycetes, a difficult-to-treat family that involves *Mucor* and *Rhizopus* species. According to a review of literature, it was known that analytical methods like HPLC and UPLC methods are available for the determination of Posaconazole as alone or in composite with other antifungal drugs in plasma and serum [5-10]. So an attempt was made to develop a simple, precise, sensitive, rapid, and accurate method for the posaconazole detection using an economical mobile phase that is ecofriendly and validate the method by using RP-HPLC.

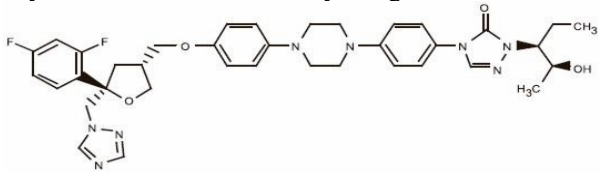


Fig. 1: Structure of Posaconazole

PRINCIPAL
Santhiram College of Pharmacy
NH-40,Nandyal-518501,A.P.

https://africanjournalofbiomedicalresearch.com/index.php/AJBRr
Afr. J. Biomed. Res. Vol. 27 (September 2024); 918- 937

Research Article

Green Synthesis and Biological Evaluation of Substituted 1,3,4-Oxadiazoles Through Ethyl Chloroformate and 2-Amino-5-Nitrothiazole

L. Siva Sanker Reddy[1*], O. Sreevidya[2], N.Yella Subbaiah[1], B.Siva Kumar[3], K Ilango[3*], G.Sampath Ayyappa[4], R.Nageswara Rao[5]

[1]Department of Pharmaceutical Chemistry, Santhiram College of Pharmacy, Nandyal, Kurnool-518501, Andhra Pradesh, India.*
[2]Department of Pharmaceutical Chemistry, Creative Educational Society's College of Pharmacy, Chinnatekur, Kurnool-518002, Andhra Pradesh, India.
[3]Department of Pharmaceutical Chemistry, Tagore College of Pharmacy, Rathinamangalam, Chennai-600127, Tamilnadu, India.*
[4] Department of Quality Assurance, Aura Biosciences Inc, 80 Guest St, Boston, MA, 02135.
[5] Department of Pharmaceutical Analysis, Santhiram College of Pharmacy, Nandyal, Kurnool-518501, Andhra Pradesh, India.

ABSTRACT
A systematic investigation of the Oxadiazole class of heterocyclic leads has revealed their significant role in medicinal chemistry. The prevalence of Oxadiazole-containing pharmacologically active agents has underscored the necessity for elegant and efficient methods to synthesize these heterocyclic lead molecules. To this end, a series of Thiazole Schiff's bases were prepared from 2-amino-5-nitro thiazole through the addition of ethyl chloroformate, followed by treatment with hydrazine hydrate to obtain the hydrazide derivative. Subsequently, the hydrazide derivative reacted with various aromatic aldehydes to yield Schiff's bases. These Schiff's bases then underwent ring closure to form Oxadiazole derivatives in the presence of acetic anhydride. The structures of the compounds were confirmed by IR and ^{1}H NMR analysis. The novel moiety Compound **4a** was identified as a promising antioxidant activity.

Keywords: 2-amino-5-nitro thiazole; Molecular Docking; Oxadiazole; Schiff's base; Thiazole.

***Author for correspondence:** shiva_s_rl@yahoo.co.in, ilangok67@gmail.com*

Received: 12/06/2024, Accepted: 20/07/2024

DOI: https://doi.org/10.53555/AJBR.v27i1S.1547

© 2024 The Author(s).
This article has been published under the terms of Creative Commons Attribution-Noncommercial 4.0 International License (CC BY-NC 4.0), which permits noncommercial unrestricted use, distribution, and reproduction in any medium, provided that the following statement is provided. "This article has been published in the African Journal of Biomedical Research"

INTRODUCTION

Thiazoles have been reported to possess an array of pharmacological activities such as antioxidant[1], anti-inflammatory[2], antibacterial[3], antitumor[4], anti-convulsant[5] and 2-amino thiazole derivatives showed potent antioxidant activity[6]. 1,3,4-Oxadiazole[7-12] and 1,2,4-Oxadiazole[13-14] were synthesised by various methods. Oxadiazoles have been reported to possess an array of pharmacological properties including anti-oxidant[15], anti-inflammatory[16], antibacterial[17], analgesic[18], anticancer[19]and antifungal activity[20].
The most popular method to synthesize 1,3,4-oxadiazoles uses acid hydrazides as substrates that undergo reaction with aromatic aldehydes, carboxylic acids and orthoesters. Another

PRINCIPAL
Santhiram College of Pharmacy
NH-40,Nandyal-518501, A.P.

pharmaceuticals

MDPI

Article

In Silico and *In Vivo* Studies of β-Sitosterol Nanoparticles as a Potential Therapy for Isoprenaline-Induced Cognitive Impairment in Myocardial Infarction, Targeting Myeloperoxidase

Partha Saradhi Tallapalli [1], Yennam Dastagiri Reddy [1], Deepak A. Yaraguppi [2], Surya Prabha Matangi [3], Ranadheer Reddy Challa [4], Bhaskar Vallamkonda [5], Sheikh F. Ahmad [6], Haneen A. Al-Mazroua [6], Mithun Rudrapal [3], Prasanth Dintakurthi Sree Naga Bala Krishna [7,*] and Praveen Kumar Pasala [8,*]

1 Department of Pharmacology, Santhiram College of Pharmacy, JNTUA, Nandyal 518112, Andhra Pradesh, India; saradhitallapalli@gmail.com (P.S.T.); dastu1984@gmail.com (Y.D.R.)
2 Department of Biotechnology, KLE Technological University, Hubli 580020, Karnataka, India; deepak.yaraguppi@gmail.com
3 Department of Pharmaceutics, School of Biotechnology and Pharmaceutical Sciences, Vignan's Foundation for Science, Technology & Research, Guntur 522201, Andhra Pradesh, India; prabhalsurya@gmail.com (S.P.M.); rsmrpal@gmail.com (M.R.)
4 Department of Formulation and Development, Quotient Sciences, 3080 McCann Farm Dr, Garnet Valley, PA 19060, USA; ranadheerrc@gmail.com
5 Department of Pharmaceutical Analysis, Odin Pharmaceutical LLC, Somerset, NJ 08873, USA; bhaskar718@gmail.com
6 Department of Pharmacology and Toxicology, College of Pharmacy, King Saud University, Riyadh 11451, Saudi Arabia; halmazroua@ksu.edu.sa (H.A.A.-M.)
7 School of Pharmacy & Technology Management, SVKM's Narsee Monjee Institute of Management Studies (NMIMS), Polepally SEZ, TSIIC, Jadcherla 509301, Andhra Pradesh, India
8 Department of Pharmacology, Raghavendra Institute of Pharmaceutical Education and Research, JNTUA, Anantapuramu 515721, Andhra Pradesh, India
* Correspondence: dsnbkprasanth@gmail.com (P.D.S.N.B.K.); praveenpharmaco@gmail.com (P.K.P.)

check for updates

Citation: Tallapalli, P.S.; Reddy, Y.D.; Yaraguppi, D.A.; Matangi, S.P.; Challa, R.R.; Vallamkonda, B.; Ahmad, S.F.; Al-Mazroua, H.A.; Rudrapal, M.; Dintakurthi Sree Naga Bala Krishna, P.; et al. *In Silico* and *In Vivo* Studies of β-Sitosterol Nanoparticles as a Potential Therapy for Isoprenaline-Induced Cognitive Impairment in Myocardial Infarction, Targeting Myeloperoxidase. *Pharmaceuticals* **2024**, *17*, 1093. https://doi.org/10.3390/ph17081093

Academic Editor: Usama Ammar

Received: 22 July 2024
Revised: 3 August 2024
Accepted: 8 August 2024
Published: 21 August 2024

Copyright: © 2024 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https://creativecommons.org/licenses/by/4.0/).

Abstract: Objective: This study aimed to compare the effects of β-sitosterol nanoparticles (BETNs) and β-sitosterol (BET) on cognitive impairment, oxidative stress, and inflammation in a myocardial infarction (MI) rat model using in silico and in vivo methods. Methods: β-Sitosterol (BET) and myeloperoxidase (MPO) ligand-receptor binding affinities were evaluated using Autodock Vina for docking and Gromacs for dynamics simulations. BET nanoparticles, prepared via solvent evaporation, had their size confirmed by a nanoparticle analyzer. ISO-induced cognitive impairment in rats was assessed through Morris water maze and Cook's pole climbing tests. Oxidative stress, inflammation, and cardiac injury were evaluated by measuring GSH, SOD, MDA, MPO, CkMB, LDH, lipid profiles, and ECGs. Histopathology of the CA1 hippocampus and myocardial tissue was performed using H&E staining. Results: In silico analyses revealed strong binding affinities between BET and MPO, suggesting BET's potential anti-inflammatory effect. BETN (119.6 ± 42.6 nm; PDI: 0.809) significantly improved MI-induced cognitive dysfunction in rats ($p < 0.001$ ***), increased hippocampal GSH ($p < 0.01$ **) and SOD ($p < 0.01$ **) levels, and decreased hippocampal MDA ($p < 0.05$ *) and MPO levels ($p < 0.01$ **). BETNs also elevated cardiac GSH ($p < 0.01$ **) and SOD ($p < 0.01$ **) levels and reduced cardiac MPO ($p < 0.01$ **), CkMB ($p < 0.001$ **) and LDH ($p < 0.001$ **) levels. It restored lipid profiles, normalized ECG patterns, and improved histology in the hippocampal CA1 region and myocardium. Conclusions: Compared with BET treatment, BETNs were more effective in improving cognitive impairment, oxidative damage, and inflammation in MI rats, suggesting its potential in treating cognitive dysfunction and associated pathological changes in MI.

Keywords: β-sitosterol nanoparticle; myeloperoxidase; cognitive impairment; myocardial infarction; molecular simulation

PRINCIPAL
Santhiram College of Pharmacy
NH-40,Nandyal-518501,A.P.

REVIEW ARTICLE

The Zika Virus: Epidemiology, Pathogenesis, and Prevention

RE Ugandar, A Sai Keshava Reddy
Department of Pharmacy Practice, Santhiram College of Pharmacy, Nandyal, Andhra Pradesh

CORRESPONDING AUTHOR
Dr RE Ugandar, Department of Pharmacy Practice, Santhiram College of Pharmacy, Nandyal, Andhra Pradesh
Email: reugandar@gmail.com

CITATION
Ugandar RE, Reddy ASK. The Zika Virus: Epidemiology, Pathogenesis, and Prevention. Journal of the Epidemiology Foundation of India. 2024;2(4):182-184.
DOI: https://doi.org/10.56450/JEFI.2024.v2i04.004

ARTICLE CYCLE
Received: 15/11/2024; Accepted: 10/12/2024; Published: 31/12/2024

This work is licensed under a Creative Commons Attribution 4.0 International License.
©The Author(s). 2024 Open Access

Abstract

Zika Virus (ZIKV), a member of the Flaviviridae family, has emerged as a significant public health concern due to its rapid spread and association with severe neurological complications, including microcephaly in new-borns and Guillain-Barre syndrome in adults. This review aims to provide a comprehensive overview of the Zika virus, covering its epidemiology, pathogenesis, clinical manifestations, and strategies for prevention and control. By synthesizing current research and data, we highlight the need for on-going vigilance and research to mitigate the impact of this virus on global health.

Keywords

Zika virus, Epidemiology, Pathogenesis, Prevention, Microcephaly, Guillain-Barre Syndrome

Introduction

Zika virus (ZIKV) was first identified in Uganda in 1947, but it remained relatively obscure until a series of outbreaks in the Pacific and the Americas from 2007 onwards highlighted its potential for widespread transmission and severe health impacts. The virus is primarily transmitted by Aedes mosquitoes, particularly Aedes aegypti and Aedes albopictus, although sexual transmission and vertical transmission from mother to foetus have also been documented. The resurgence of ZIKV in recent years, particularly its association with severe congenital anomalies and neurological disorders, underscores the importance of understanding its biology, transmission dynamics, and preventive measures.

Material & Methods

This review is based on a comprehensive literature search conducted in scientific databases, including PubMed, Scopus, and Web of Science, using keywords such as "Zika virus," "epidemiology," "pathogenesis," "clinical manifestations," and "prevention." Relevant articles published between 2000 and 2023 were included. Data were extracted and synthesized to provide a detailed narrative on the various aspects of ZIKV.

Results & Discussion

Epidemiology

Zika virus is endemic to tropical and subtropical regions, with major outbreaks occurring in Africa, Southeast Asia, the Pacific Islands, and the Americas. The largest outbreak occurred in Brazil in 2015-2016, leading to a

PRINCIPAL
Santhiram College of Pharmacy
NH-40,Nandyal-518501,A.P.

REVIEW ARTICLE

Epidemiology, Clinical Features, and Molecular Characteristics of Human Metapneumovirus (HMPV): A Meta-Analysis

Rajan Ethiraj Ugandar, Dasari Lakshmi, Kandukuri Nandini, Peddi Phaneendra, Pendela Preethi

[1]Department of Pharmacy Practice, Santhiram College of Pharmacy, Nandyal, Andhra Pradesh-India

CORRESPONDING AUTHOR

Dr Rajan Ethiraj Ugandar, Professor and Head, Department of Pharmacy Practice, Santhiram College of Pharmacy, Nandyal-518501. Andhra Pradesh-India.

Email: reugandar@gmail.com

CITATION

Ugandar RE, Lakshmi D, Nandini K, Phaneendra P, Preethi P. Epidemiology, Clinical Features, and Molecular Characteristics of Human Metapneumovirus (HMPV): A Meta-Analysis. Journal of the Epidemiology Foundation of India. 2025;3(1):11-21.

DOI: https://doi.org/10.56450/JEFI.2025.v3i01.004

ARTICLE CYCLE

Received: 19/01/2025; Accepted: 05/03/2025; Published: 31/03/2025

This work is licensed under a Creative Commons Attribution 4.0 International License.

©The Author(s). 2025 Open Access

ABSTRACT

Human Metapneumovirus (HMPV) was first described in 2001 in the Netherlands and has become an important pathogen in the Pneumoviridae family, causing significant paediatric and adult respiratory infections worldwide. This review synthesizes the clinical manifestations, genetic diversity, epidemiology, and pathogenesis of the virus based on findings of more than two decades' worth of research. HMPV is not only highly infectious, but it carries a burden in the form of its tendency to result in severe respiratory disease in children, the elderly, and the immunocompromised, often causing lengthy hospitalizations and remarkable expenditures in healthcare. Unlike RSV, HMPV has defined age-related infection patterns and a unique genetic architecture, with the G glycoprotein that is highly variable making subclassification and antigenicity dependent upon this variation. Current subtypes (such as A2b1) demonstrate the scourge of the virus's adaptability and thus raise obstacles to its vaccine development. HMPV pathogenetically infects ciliated epithelial cells, disrupting mucociliary function, producing robust inflammatory responses, and worsening disease severity. Advanced molecular diagnostics and therapeutic approaches have nonetheless been accompanied by little progress in developing specific antiviral treatments or vaccines, a need underscored by the urgency of such focused research and public health interventions. Finally, these findings are integrated to achieve a complete picture of HMPV and to progress future research and clinical approaches regarding this important respiratory pathogen.

KEYWORDS

Human metapneumovirus, Pneumoviridae, Respiratory Tract Infections, Pneumonia, Viral Bronchiolitis, Epidemiology, Genetic Variation, Virus Classification, Glycoproteins, Antigenic Variation and Host-Pathogen Interactions

PRINCIPAL
Santhiram College of Pharmacy
NH-40,Nandyal-518501,A.P.

Nanotechnology in Drug Delivery: Targeted Therapies for Precision Medicine

R.E Ugandar [1,a)], Kavita Khatana[2,b)],M.Ramya[3,c)],D.Sudha[4,d)], L.Raja[5,e)], Hirald Dwaraka Praveena[6,f)], M.Rajendiran[7,g)]

[1] *Department of Pharmacy Practice, Santhiram College of Pharmacy, Nandyala, Andhra Pradesh 518112, India.*
[2] *Department of Chemistry, Jamia Millia Islamia University, Okhla, Delhi 110025, India.*
[3] *Department of Electronics and Communication Engineering, S.A. Engineering College, Chennai, Tamil Nadu 600077, India.*
[4] *Department of Physics, R. M. K. Engineering College, Kavaraipettai, Tamil Nadu 601206, India.*
[5] *Department of Electronics and Communication Engineering, Sri Eshwar College of Engineering, Coimbatore, Tamil Nadu 641202, India.*
[6] *Department of Electronics and Communication Engineering, Mohan Babu University (Erstwhile Sree Vidyanikethan Engineering College), Tirupati, Andhra Pradesh 517102, India.*
[7] *Department of Computer Science and Engineering, Panimalar Engineering College, Chennai, Tamil Nadu 600123, India.*

Corresponding author: [a)]reugandar@gmail.com, [b)]bhatikavita77@gmail.com, [c)]ramya@saec.ac.in, [d)]sudhasaishash@gmail.com, [e)]raja.lece@sece.ac.in, [f)]hdpraveena@gmail.com, [g)]mrajendiran@panimalar.ac.in

31 July 2025 04:30:45

ABSTRACT: This targeted approach holds the promise of enhancing the precision and efficacy of drug delivery, ultimately reducing side effects and improving patient outcomes. The manipulation of nanoparticle properties has emerged as a cornerstone for the development of groundbreaking drug formulations characterized by enhanced solubility and stability. The burgeoning field of nanotechnology in drug delivery holds substantial promise for reshaping the future landscape of medicine. At its essence, nanotechnology in drug delivery revolves around harnessing particles at the nanometer scale, with the objective of refining drug delivery methods to be more efficient and effective. This approach transcends the mere utilization of nanoscale materials; it facilitates the precise and controlled targeting of therapeutic agents to predetermined sites. The adoption of nanotechnologies in drug delivery, spanning both organic and inorganic methodologies, has gained momentum, driven by the myriad benefits it offers in comparison to traditional methods. Key advantages encompass the augmentation of nanomaterial bioactivity through meticulous adjustments in size, shape, hydrophobicity, and surface characteristics. The success of drug delivery pivots on the strategic design of nanoparticles. Manipulating factors such as size, shape, surface chemistry, and surface area allows for the customization of various types of nanoparticles to optimize their advantages in drug delivery. The inherent properties of nanoparticles render them more effective for drug delivery in contrast to larger molecules. Nonetheless, a cautious approach is imperative in the utilization of nanoparticles within drug delivery systems to preclude potential toxicity concerns.

KEYWORDS: nanoparticles, drug formulations, drug delivery

INTRODUCTION

The integration of nanotechnology into drug delivery heralds transformative changes, ushering in a new paradigm for precision medicine. The unique properties of nanoparticles offer a conduit for targeted therapies that have the potential to revolutionize drug delivery methodologies. With the continuous progression of nanotechnology and precision medicine, the outlook for more effective and personalized treatment options for patients appears increasingly promising. This targeted approach holds the key to enhancing the precision and efficacy of drug

The 5th International Conference on Material Science and Applications
AIP Conf. Proc. 3300, 020019-1–020019-9; https://doi.org/10.1063/5.0277556
Published under an exclusive license by AIP Publishing. 978-0-7354-5222-0/$30.00

PRINCIPAL
Santhiram College of Pharmacy
NH-40,Nandyal-518501,A.P.

Emerging Trends in Nanomedicine: Diagnostic and Therapeutic Applications

R.E.Ugandar[1,a)], HP Jai Shanker Pillai[2.b)], S.Prema[3,c)], J.Juli Amala Rani[4,d)],

R.Raja[5,e)], Anu Swedha Ananthan[6,f)], D.Leela Rani[7,g)]

[1]*Department of Pharmacy Practice, Santhiram College of Pharmacy, Nandyala, Andhra Pradesh 518501, India.*
[2]*Department of Medical Laboratory Science, Komar University of Science and Technology, Sulaimaniyah, Kurdistan, Iraq.*
[3]*Department of Chemistry, PSNA College of Engineering and Technology (Autonomous), Dindigul, Tamil Nadu 624622, India.*
[4]*Department of Mathematics, Panimalar Engineering College, Chennai, Tamil Nadu 600123, India.*
[5]*Department of Electronics and Communication Engineering, Pandian Saraswathi Yadav Engineering College, Sivaganga, Tamil Nadu 630561, India.*
[6]*Department of Microbiology, Justice Basheer Ahmed Sayeed College for Women, Chennai, Tamil Nadu 600018, India.*
[7]*Department of Electronics and Communication Engineering, School of Engineering, Mohan Babu University (erstwhile Sree Vidyanikethan Engineering College), Tirupati, Andhra Pradesh 517102, India.*

Corresponding author: [a)]reugandar@gmail.com, [b)]drjaishankerpillai@gmail.com, [c)]premas@psnacet.edu.in, [d)]jesujuli@gmail.com, [e)]rajamdu2013@gmail.com,[f)]medmicroanu@gmail.com, [g)]dlrani79@gmail.com

31 July 2025 04:29:32

ABSTRACT: In recent years, nanotechnology has emerged as a highly promising field, particularly in its applications within medicine. The unique capability of nanoparticles to interact with biological systems at a molecular level has led to groundbreaking advancements in drug delivery and disease treatment. This exploration aims to delve into the growing trends of nanotechnology, focusing on its applications in the medical realm. The discussion will kick off with a definition of nanotechnology and its significance in the field of medicine. Subsequently, we will delve into the utilization of nanoparticles in drug delivery, emphasizing their potential in the treatment of conditions like cancer. Through this examination, our objective is to provide a comprehensive overview of the current landscape of nanotechnology in medicine and its transformative potential in the healthcare sector.

KEYWORDS: Nanomedicine, Diagnosis, Drug Delivery.

INTRODUCTION

The transformative impact of nanotechnology on various industries, particularly in the field of medicine, has been nothing short of revolutionary. Through the manipulation and engineering of materials at the nanoscale (typically ranging from 1 to 100 nanometers), nanotechnology has opened up incredible possibilities for advancements in diagnostics, treatments, drug delivery systems, and biomedical devices [1]. Nanotechnology's applications in medicine are diverse and continually evolving. It has facilitated breakthroughs in targeted drug delivery, imaging, regenerative medicine, and disease diagnostics by leveraging the unique properties and behaviors exhibited by materials at the nanoscale [1]. Nanoparticles, with sizes ranging from 1 to 100 nanometers, play a pivotal role in these applications, showing promise in drug delivery, imaging, and diagnostics [1]. However, as the field progresses, challenges such as toxicity, stability, and efficacy need to be addressed to fully unlock the potential benefits of nanoparticles in medicine

The 5th International Conference on Material Science and Applications
AIP Conf. Proc. 3300, 020003-1–020003-8; https://doi.org/10.1063/5.0277553
Published under an exclusive license by AIP Publishing. 978-0-7354-5222-0/$30.00

PRINCIPAL
Santhiram College of Pharmacy
NH-40,Nandyal-518501,A.P.

Phone : 08514 - 276211, 276212
Fax : 08514 - 276213

Email : srcp07hc@gmail.com
srcn07hc@yahoo.com
Web : www.srcpnandyal.edu.in

SANTHIRAM COLLEGE OF PHARMACY

Approved by AICTE & PCI, New Delhi - Affiliated to JNTUA, Anantapur
NH - 18, Nandyal, Kurnool District, Andhra Pradesh - 518501.

7.1&7.2 **Research papers published per teacher in the journals notified on UGC care list during AY 2023-2024**

Sl. No	Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISSN number	Link to the recognition in UGC enlistment of the Journal
1	Analytical method development and validation of Quetiapine Fumarate in API and dosage form by using RP-HPLC.	L.Siva shankar Reddy	Pharmaceutical Analysis	Oriental journal of Chemistry	2023	0970-020	http://www.orientjchem.org/vol39no4/analytical-method-development-and-validation-of-quetiapine-fumarate-in-api-and-dosage-form-by-using-rp-hplc/
2	Formulation and characterization of Carvedilol self emulsification drug delivery system	D. Maheshwara Reddy	Pharmaceutics	High Technology Letters	2023	1006-6748	https://gjstx-e.cn/volume-29-issue-7-july-)23/
3	Formulation and Characterization of Sparfloxacin loaded Niosomal In-Situ Gel for Ocular application	D. Maheshwara Reddy	Pharmaceutics	Journal of XIDIAN university	2023	1001-2400	https://xadzkjdx.cn/index.php/volume-17-issue-7-july-23/
4	In Silico Docking Studies, Synthesis, Characterization, and Antimicrobial Antimycobacterial Activity of Coumarinyl Oxadiazoles from Fatty Acids	N.Y.Subbaiah	Pharmaceutical Chemistry	Russian Journal of Bioorganic chemistry	2023	1068-1620	https://link.springer.com/article/10.1134/S1068162023060195
5	A novel RP-HPLC method development and validation for the determination of Azacitidine using	R.Nageswar Rao	Pharmaceutical Analysis	Oriental journal of Chemistry	2023	4996-5004	https://globalresearchonline.net/journalcontents/v54-1/03.pdf

PRINCIPAL
Santhiram College of Pharmacy
NH-40,Nandyal-518501,A.P.

Phone : 08514 - 276211, 276212
Fax : 08514 - 276213

Email : srcp07hc@gmail.com
srcn07hc@yahoo.com
Web : www.srcpnandyal.edu.in

SANTHIRAM COLLEGE OF PHARMACY

Approved by AICTE & PCI, New Delhi - Affiliated to JNTUA, Anantapur
NH - 18, Nandyal, Kurnool District, Andhra Pradesh - 518501.

	Hydrotrophic solvent by QBD						
6	Advancements in scaffolds based drug delivery system	K.Sampath kumar	Pharmaceutics	International Journal of Apllied Sciences	2023	2252-8814	https://journals.innovareacademics.in/index.php/ijap/article/view/48645/29081
7	Formulation and evaluation of Dextromethorphan loaded polymeric micellar oral dispersible tablets	K.Pavan Kumar	Pharmaceutics	Eur.Chem.Bull	2023	2301-2309	https://www.researchgate.net/publication/373173662_Formulation_And_Evaluation_Of_Dextromethorphan_Loaded_Polymeric_Micellar_Oral_Dispersible_Tabltes_Section_A-Research_Paper_Eur
8	Formulation and evaluation Pinacidil transdermal patches	K.Pavan Kumar	Pharmaceutics	Journal of XIDIAN university	2023	1001-2400	https://www.researchgate.net/publication/373173656_FORMULATION_AND_EVALUATION_OF_PINACIDIL_TRANSDERMAL_PATCHES
9	Evaluation and method development for quantification of Piperine in Hutabhugadi Churna by RP-HPLC	S.V.Suresh Kumar	Pharmacognosy	International joural of Ayurvedic medicine	2024	0976-5921	https://ijam.co.in/index.php/ijam/article/view/4794/1219
10	LC/MS-Based profiling of Hedyotis aspera whole plant methanolic extract and evaluation of its nephroprotective potential against Gentamicin-induced nephrotoxicity in rats supported by In silico	L.Siva shankar Reddy	Pharmaceutical Analysis	MDPI	2023	2079-7737	https://www.mdpi.com/2297-8739/10/11/552

PRINCIPAL
Santhiram College of Pharmacy
NH-40,Nandyal-518501,A.P.

Phone : 08514 - 276211, 276212
Fax : 08514 - 276213

Email : srcp07hc@gmail.com
srcn07hc@yahoo.com
Web : www.srcpnandyal.edu.in

SANTHIRAM COLLEGE OF PHARMACY

Approved by AICTE & PCI, New Delhi - Affiliated to JNTUA, Anantapur
NH - 18, Nandyal, Kurnool District, Andhra Pradesh - 518501.

11	Analytical method development, validation and stability indicating studies of Avanafil by using RP-HPLC technique	L.Siva shankar Reddy	Pharmaceutical Analysis	Journal of populati-on therapeutics and clinical Pharmacology	2023	2561-8741	https://jptcp.com/index.php/jptcp/article/view/2426
12	Analytical method development, validation and stability indicating studies of Secnidazole in API and Pharmaceutical Dosage form by using RP-HPLC technique	L.Siva shankar Reddy	Pharmaceutical Analysis	Journal of population therapeutics and clinical Pharmacology	2023	2561-8741	https://jptcp.com/index.php/jptcp/article/view/2427
13	Reverse phase –HPLC method development, validation and stability indicating studies of Deferasirox in its API and Pharmaceutical dosage form, Latin American Journal of Pharmacy	L.Siva shankar Reddy	Pharmaceutical Analysis	Latin American Journal of pharmacy	2023	2362-3853	ISSN 0326-2383
14	Unveiling the Cardioprotective Power: Liquid Chromatography–Mass Spectrometry (LC–MS)-Analyzed Neolamarckia cadamba (Roxb.) Bosser Leaf Ethanolic Extract against Myocardial Infarction	A.V.Badarinat h	Pharmaceutics	MDPI	2023	3722	https://pubmed.ncbi.nlm.nih.gov/37960078/

PRINCIPAL
Santhiram College of Pharmacy
NH-40,Nandyal-518501,A.P.

Phone : 08514 - 276211, 276212
Fax : 08514 - 276213

Email : srcp07hc@gmail.com
srcn07hc@yahoo.com
Web : www.srcpnandyal.edu.in

SANTHIRAM COLLEGE OF PHARMACY

Approved by AICTE & PCI, New Delhi - Affiliated to JNTUA, Anantapur
NH - 18, Nandyal, Kurnool District, Andhra Pradesh - 518501.

	in Rats and In Silico Support Analysis.						
15	Analytical method development and validation of Quetiapine Fumarate in API and Dosage from by using RP-HPLC,	R.Nageswar Rao	Pharmaceutical Analysis	Oriental journal of Chemistry	2023	2231-5039	https://www.orientjchem.org/vol39no4/analytical-method-development-and-validation-of-quetiapine-fumarate-in-api-and-dosage-form-by-using-rp-hplc/
16	Novasomes- A Novel vesicular carriers	K.Pavan Kumar	Pharmaceutics	Journal of XIDIAN university	2023	1001-2400	https://www.researchgate.net/publication/376169989_NOVASOMES_-A_NOVEL_NANO_VESICULAR_CARRIERS
17	Formulation and evaluation of Entacapone loaded cubosomal sustained release tablets	K.Pavan Kumar	Pharmaceutics	Journal of XIDIAN university	2023	1001-2400	https://www.researchgate.net/publication/374256966_FORMULATION_AND_EVALUATION_OF_ENTACAPONE_LOADED_CUBOSOMAL_SUSTAINED_RELEASE_TABLETS
18	A Prospective Observational Study on Assessment of Antibiotic Therapy in Renal Failure Patients with Infections	B.Pradeep	Pharmacology	Chettinad Health city Medical Journal	2024	2277-8845	https://www.researchgate.net/publication/383132640_A_Prospective_Observational_Study_on_Assessment_of_Antibiotic_Therapy_in_Renal_Failure_Patients_with_Infections
19	Efficacy of Hypoglycaemic Agents in Type-2 Diabetes Mellitus with Associated Co-	B.Pradeep	Pharmacology	Indian Journal of natural sciences	2024	0976-0997	ISSN: 0976 – 0997

PRINCIPAL
Santhiram College of Pharmacy
NH-40,Nandyal-518501,A.P.

Phone : 08514 - 276211, 276212
Fax : 08514 - 276213

Email : srcp07hc@gmail.com
srcn07hc@yahoo.com
Web : www.srcpnandyal.edu.in

SANTHIRAM COLLEGE OF PHARMACY

Approved by AICTE & PCI, New Delhi - Affiliated to JNTUA, Anantapur
NH - 18, Nandyal, Kurnool District, Andhra Pradesh - 518501.

	Morbidities: A Prospective Observational Study						
20	Design of experiment approach for method development and validation of Bilastine in pure and Pharmaceutical Dosage form using RP-UFLC	R.Nageswar Rao	Pharmaceutical Analysis	Oriental journal of Chemistry	2023	736-745	https://www.orientjchem.org/vol39no3/design-of-experiments-approach-for-method-development-and-validation-of-bilastine-in-pure-and-pharmaceutical-dosage-form-using-rp-uflc/
21	Unveiling the Cardioprotective Power: Liquid Chromatography–Mass Spectrometry (LC–MS) Analyzed Neolamarckia cadamba (Roxb.) Bosser Leaf Ethanolic Extract against Myocardial Infarction in Rats and In Silico Support Analysis	M.Praisy Gladys	Pharmacology	MDPI	2023	2079-7737	https://www.semanticscholar.org/paper/Unveiling-the-Cardioprotective-Power%3A-Liquid-Bosser-Kumar-Prasanth/e0566e1561d4d1ed8aee744f1276a6b010f414c8
22	Obesity-associated diabetes mellitus and its health related outcomes in a tertiary care centre	C. Bhargav reddy	Pharmacy practice	World journal of pharmacy and pharmaceutical sciences	2024	2278-4357	DOI: 10.20959/wjpps2024 10-28274

PRINCIPAL
Santhiram College of Pharmacy
NH-40,Nandyal-518501,A.P.

ORIENTAL JOURNAL OF CHEMISTRY
An International Open Access, Peer Reviewed Research Journal
www.orientjchem.org
Est. 1984
ISSN: 0970-020 X
CODEN: OJCHEG
2023, Vol. 39, No.(4):
Pg. 1040-1045

Analytical Method Development and Validation of Quetiapine Fumarate in API and Dosage form by Using RP–HPLC

SIVA SANKER REDDY LINGAREDDYGARI[1]*, NAGESWARA RAO RAVIKRINDHI[2], MADANA GOPAL NOOKALA[3], SHAIK MUNEER[4] and PRASAD NAKKA[5]

[1,2,3,4,5]Department of Pharmaceutical Analysis, Santhiram College of Pharmacy, Panyam, Nandyal, Andrapradesh, 518501, India.
*Corresponding author E-mail: shiva_s_rl@yahoo.co.in

http://dx.doi.org/10.13005/ojc/390430

(Received: May 27, 2023; Accepted: July 30, 2023)

ABSTRACT

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

Keywords: RP-HPLC, Quetiapine fumarate, Acetonitrile, 0.1% Orthophoshoric acid, Validation.

INTRODCUTION

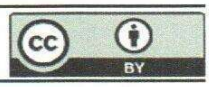
Quetiapine Fumarate is an Anti-psychotic agent and Anti depressive agent. It is designated chemically as a 2-[2-(4-Dibenzo [b, f][1,4] thiazepin-11-yl-1-piperazinyl) ethoxy] ethanol. The drug's solubility is in methanol, Ethanol, Water and higher soluble under acidic condition with pKa value-15.12 and 7.02 strongly basic PKa, half-life 6 h protein binding-83%, route of administration is oral, metabolism in liver and excretion by kidneys. The entire work was planned according to the ICH guidelines[1]. HPLC methods were reported in various journals-assay method[2], stability indicating method[3], isocratic method[4], and other RP-HPLC methods were taken into consideration for this study[5-12]. Many UV methods also exist for the estimation of Quetiapine, which one is referred in this context[13].

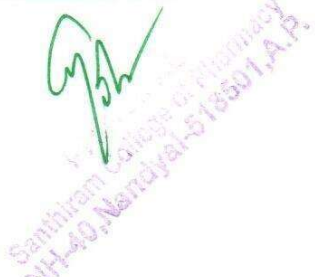
Methodology

Preparation of standard solution for system suitability

Accurately weighed 10 mg of Quetiapine, transferred into volumetric flask of 10 mL capacity and required quantity of mobile phase (0.1% OPA: ACN 80:20v/v) used to make up to the mark. The solution sonicated to be affirmative that the drug was dissolved. This solution was marked as the

This is an Open Access article licensed under a Creative Commons license: Attribution 4.0 International (CC- BY).
Published by Oriental Scientific Publishing Company © 2018





FORMULATION AND CHARACTERISATION OF CARVEDILOL SELF EMULSIFICATION DRUG DELIVERY SYSTEM (SEDDS)

A. Divya[1], D. Maheswara Reddy[1]*, K. Sampath Kumar[1]
Department Industrial Pharmacy, Santhiram College of Pharmacy, NH-40, Nandyal - 518501 A.P. India
Corresponding author: D. Maheswara Reddy, Assoc.Professor, Department of Pharmaceutics, Santhiram College of Pharmacy, Nandyal.

Abstract - The aim of the present investigation was to formulate and characterization of Carvediolol (CAR) self emulsifying drug delivery system (SEDDS) prepared by using peppermint oil, tween 80 as surfactant and PEG 400 as co-surfactant for improving its solubility and dissolution rate. Solubility of CAR in different oils, surfactants and co-surfactants was determined for the screening of excipients. Pseudoternary phase diagrams were constructed by the aqueous titration method, and formulations were developed based on the optimum excipient combinations with the help of data obtained through the maximum micro emulsion region containing combinations of oil, surfactant, and co-surfactant. The prepared formulation are assessed by various parameters such as Visual observation, Droplet size analysis and PDI, Zeta potential measurement, Drug loading efficiency, Self emulsification and drug precipitation studies, Phase separation study, Determination of emulsification time, Spectroscopy characterization of optical activity, Turbidity measurement, Viscosity determination, Cloud point measurement, Drug release study and its kinetics. The best formulation of SEDDS contains 10% peppermint oil, 90% Smix (tween 80, and polyethylene glycol 400). Formulation F9 found lower droplet size (169.7nm), PDI (0.2), and zeta potential (-24.8 mv) and % drug load (98.2 %). It was concluded that the smaller particle size and drug load more the release of drug which results in better bioavailability. The evaluation parameters of all formulation were found within the limits. The *in vitro* drug release from CAR SEDDS formulation were found to be 99.34% after 90 min. *In-vitro* drug release studies closely indicate that best formulation obey Higuchi kinetics and non-fickian diffusion. Overall, this study suggests that the dissolution and oral bioavailability of CAR could be improved by SEDDS technology.

Keywords: Carvediolol, self emulsifying drug delivery system, Pseudoternary phase diagrams, *In-vitro* drug release.

I. INTRODUCTION

The oral route is one of the most popular routes for chronic drug therapy; nevertheless, for poorly water soluble drugs, drug dissolution is often a rate-determining stage in the absorption processes. (1). Approximately 40% of commercial products have poorly soluble or lipophilic compounds, resulting in decreased oral bioavailability, significant intra and inter subject variability, and a probable dosage increase (2). Numerous technologies, such as solid dispersions, liposomes, the utilisation of cyclodextrins, nanoparticles, salt production, and so on, are used to overcome this problem (3-5).

Lipid base formulation (LBF) is a constructive method for increasing oral bioavailability of BSC class II drugs. Diverse types of LBF subsist such as emulsion, self-emulsifying drug delivery systems (SEDDS), self-micro-emulsion drug delivery systems (SMEDDS), self-nano-emulsion drug delivery systems (SNEDDS), solutions or suspensions of the drug in lipid medium (6). SEDDS are isotropic mixtures of naturals or synthetic oil, surfactants, with or without a co-surfactant. Upon mild agitation these systems can form fine oil in water emulsions in aqueous media, such as dissolution media or gastrointestinal fluids (7).

Carvedilol is an arylethanolamine and a racemic mixture of two enantiomers that contains a nonselective β-adrenergic blocking agent with α 1-blocking activity that is used in the treatment of angina pectoris, mild to moderate hypertension, and chronic heart failure. Carvedilol poorly dissolves in water that limits drug absorption and delays onset time (8, 9). SEDDS is a potential for improving the bioavailability of drugs with poor aqueous solubility. In our study Carvedilol SEDDS was evaluated to improve the dissolution rate, following by oral absorption of carvedilol.

The purpose of the study was to formulate a stable formulation of SEDDS to enhance the solubility, release rate, and oral absorption of the poorly water (BCS-II)- soluble drug, carvedilol.

II. MATERIALS AND METHODS

Carvediolol is procured from yarrow chem. Tween 80, PEG400 were procured from the Asian scientific. Other chemicals used were analytical grade.

Method:

Solubility studies:

The experiment aimed to ascertain the solubility of carvedilol in different oils and surfactants. In glass vials, a surplus of carvedilol was combined with 2 ml of selected vehicles and stirred with a glass rod for 30 minutes. Subsequently, the mixtures were allowed to equilibrate at 30°C for 48 hours in a water bath and then subjected

Formulation and Characterization of Sparfloxacin loaded Niosomal In-Situ Gel for Ocular application

J. Mohan Babu[1], D. Maheswara Reddy[1], K. Sampath Kumar[1], A. Sumana[1], K. Jyothi[1]
Department Industrial Pharmacy, Santhiram College of Pharmacy, NH-40, Nandyal - 518501 A.P. India
Corresponding author: D. Maheswara Reddy, Assoc.Professor, Department of Pharmaceutics, Santhiram College of Pharmacy, Nandyal.

Abstract - Niosomes, an emerging class of novel vesicular systems, are non-ionic surfactant vesicles which can entrap both hydrophilic and lipophilic drugs. Niosomes are incorporated into *In situ* gels for sustained release of drug and to prolong the residence time. The aim of present study is to formulate and characterization ocular niosomal *in situ* gels of sparfloxacin. Sparflocxacin is a fluoroquinolone antibiotic used in the treatment of bacterial infections. Niosomes were prepared using tween 80 as a surfactant in different ratios with cholesterol using Ethanol injection method and Ether injection method. They were evaluated for particle size, entrapment efficiency and zeta potential. Niosomes prepared using cholesterol and tween 80 in the ratio 1:3 showed good entrapment efficiency and less particle size with small PDI. The best formulation was formulated as *in situ* gels using Carbopol 974P and HPMC K4M and evaluated for gelling capacity, pH, viscosity, drug content and *in vitro* drug release with kinetics. The niosomal *in situ* gel is a viable alternative to conventional eye drops by virtue of its ability to enhance bioavailability through its longer precorneal residence time and ability to sustain drug release.

Keywords: Niosomes, Insitugel, Sparfloxacin, ether injection method, ethanol injection method.

I.INTRODUCTION

The human eye stands out as an exceptional organ, both in its anatomy and physiology, consisting of diverse structures, each serving independent functions that protect it from foreign substances. Due to its intricate nature, pharmaceutical scientists face numerous challenges when it comes to delivering drugs to the eye (1). The human cornea, composed of epithelium, stroma, and endothelium, poses a barrier to the entry of drug molecules into the eye (2). Therefore, formulators aim to overcome these protective barriers without causing any permanent tissue damage while bypassing restrictions.

In ophthalmic drug delivery systems, pharmacotherapeutics strive to achieve effective drug concentration at the targeted site for a sufficient duration to produce a response (3). Successfully delivering drugs while minimizing side effects is crucial in treating ocular diseases. Conventional methods like eye drops often suffer from poor ocular drug bioavailability due to anatomical and physiological constraints of the eye, impermeable corneal epithelium membrane, nasolacrimal drainage, and tears dynamics. Only a small percentage (1–10%) of topically applied drugs is absorbed, with the majority being absorbed systemically, leading to systemic side effects (4).

To address issues like poor bioavailability and therapeutic response caused by pulsed dosing and rapid tear turnover, a solution lies in in situ gel formation (4). In situ forming gels are liquid when instilled into the eye, but they rapidly gel in the eye's cul de sac, forming viscoelastic gels that adapt to environmental changes (5). This approach shows promise in overcoming the challenges of ophthalmic drug delivery.

Sparfloxacin is member of fluoroquinolone class of antimicrobial drugs. It is active against a wide range of Gram +ve and Gram -ve organisms, with chemical name 5-amino-1-cyclopropyl-7-[(3S,5R)- 3,5-dimethylpiperazin-1-yl]-6,8-difluoro-4- oxoquinoline-3-carboxylic acid and molecular formula $C_{19}H_{22}F_2N_4O_3$. (6)

The aim of the present research was to prepare sparfloxacin by loading in niosome vesicles and improve its retention time at the particular site of action by incorporating the drug-loaded niosome into pH sensitive in situ gel which significantly reduces dosage frequency hence increase patient compliance.

II. MATERIALS AND METHODS

Sparfloxacin, Cholesterol and Tween 80 are procured from yarrow chem. Pvt Lt.d. Carbopol 934P, HPMC are purchased from Loba chemicals. All other chemical are analytical grade.

Method:

Niosomes are prepared by ether injection and ethanol injection method. Weigh accurately respective quantity of cholesterol and tween80 along with add 3ml of methanol/ether then stirrer with magnetic

ISSN 1070-3632, Russian Journal of Bioorganic Chemistry, 2023, Vol. 49, No. 6, pp. 1389–1397. © Pleiades Publishing, Ltd., 2023.

In Silico Docking Studies, Synthesis, Characterization, and Antimicrobial Antimycobacterial Activity of Coumarinyl Oxadiazoles from Fatty Acids

B. Naga Sudha[a], *, N. Yella Subbaiah[a], B. Siva Kumar[b], and K. Ilango[c]

[a] *Department of Pharmaceutical Chemistry, Santhiram College of Pharmacy, JNTU, Anantapur, Nandyal, Andhra Pradesh, 518112 India*

[b] *Department of Pharmaceutical Chemistry, SRM College of Pharmacy, SRM Institute of Science and Technology, Kattankulathur, Chengalpattu (Dt), Tamil Nadu, 603203 India*

[c] *Department of Pharmaceutical Quality Assurance, SRM College of Pharmacy, SRM Institute of Science and Technology, Kattankulathur, Chengalpattu (Dt), Tamil Nadu, 603203 India*

**e-mail: drbnsudha@gmail.com*

Received February 8, 2023; revised March 4, 2023; accepted March 6, 2023

Abstract—This present study deals with the design and evaluation of novel coumarinyl oxadiazoles substituted fatty acids derivatives using synthetic approach and to screen for *in vitro* antimicrobial activity. A recent literature survey revealed that, coumarinyl oxadiazoles substituted fatty acids derivatives shown for their ability to improve biological activities The condensation of 2-oxo-2*H*-chromene-3-carbohydrazide with substituted fatty acids in the presence of phosphorus oxychloride yielded a variety of novel 5-*N*-alkyl-1,3,4-oxadiazole-2*H*-chromen-2-one derivatives. The structure of the newly synthesized compounds was validated by elemental analysis, IR, ^{1}H NMR, and mass spectrum data. Further, analysis of the drug-likeness property is predicted through five parameters like Lipinski rule, Ghose, Egan, Vebers, and Muegge rules. As molcular docking is normally used for understanding drug-receptor interaction. The above-derived compounds were subjected to molcular docking studies (4MFI, 5E2C, 6FBV, and 6NNE). The antibacterial and anti-mycobacterial properties of these substances were investigated. Compounds 3-(5-dodecyl-1,3,4-oxadiazol-2-yl)-2*H*-chromen-2-one and 3-(5-hexadecyl-1,3,4-oxadiazol-2-yl)-2*H*-chromen-2-one demonstrated considerable antibacterial activity against several tested bacterial strains in antimicrobial tests. In comparison to standard, compound 3-(5-(heptadec-8-en-1-yl)-1,3,4-oxadiazol-2-yl)-2*H*-chromen-2-one demonstrated excellent antitubercular action. This hypothesis provides a possible explanation of the enhanced biological activity of the derived compounds.

Keywords: coumarins, oxadiazoles, fatty acids, $POCl_3$, antimicrobial activity, antimycobacterial activity

DOI: 10.1134/S1068162023060195

INTRODUCTION

Coumarins are benzopyrone analogues that are found in abundance in nature [1]. Coumarins' fused heterocyclic framework has been utilized as a model scaffold for the synthesis of a wide range of analogues to study their biological activity. Coumarins have been shown to have a wide range of biological properties in the literature, including antioxidant [2], anticancer [3], vasorelaxant [4], antiviral [5], and anti-inflammatory activities [6, 7].

Lipids are a diverse category of molcules that include fats, oils, steroids, waxes, and other related substances [8, 9]. Lipids are essential in biological systems because they constitute the cell membrane, which serves as an automated barrier that separates a cell from its surroundings. Carboxylic acids with a hydrocarbon side chain are known as fatty acids. They are the most basic type of lipid. Dietary fats, lipids (fatty acids, triglycerides, cholesterol), essential fatty acids (linoleic and α-linoleic acids) are the macronutrient categories. Fats play an important role in maintaining caloric balance

PRINCIPAL
Santhiram College of Pharmacy
NH-40, Nandyal-518501, A.P.

Chapter - 1

Method Devolopment and Validation of Azacitidine in Pure and its Pharmaceutical Dosage form in Hydrotropic Solvents by using UV Spectroscopic Method

R Nageswara Rao, D. Madhuri, L Siva Sanker Reddy, S V Suresh Kumar, N Y Subbaiah, N Madana Gopal, V Ravikumar, P. Dilshad, R. Kedara Harmya Sri, U. Sangeetha, Y. Likitha and M. Kundana

Abstract

A simple, accurate, precise and sensitive spectroscopic method was developed for the estimation of Azacitidine. The estimation of, Azacitidine was carried out at the maximum absorbance at 265 nm. The method was found to be linear and obeys beers law in the concentration range 100-500µg/ml with a correlation coefficient 0.999, the developed method was validated as per ICH guidelines and was found to be accurate and precise. Thus the proposed method can be successfully applied for the estimation of Azacitidine.

Keywords: Azacitidine, UV spectroscopy, method development, ICH guidelines and validation

1. Introduction

Azacitidine is chemically 4-amino-1-Beta-D-ribofuranosyl-1,3,5-traizin-2(1H)-one. It is an Anti-neoplastic agent. Azacitidine is a nucleoside analogue of cytidine that specifically inhibits DNA methylation by trapping DNA methyl transferases. It was originally developed as a cytotoxic agent and an application to the FDA requesting its approval as such was turned down more than 25 years ago. Literature survey reveales that several methods have been available for the estimation of Azacitidine for stability indicating, impurities and other combination drugs usingUV Spectroscopy. The proposed method is more precise, accurate and specific for the quantitative determination of Azacitidine in pharmaceutical dosage forms.

Sanathiram College of Pharmacy NH-40, Nandyal-518501, A.P.

International Journal of Applied Pharmaceutics

ISSN- 0975-7058 Vol 15, Issue 6, 2023

Review Article

ADVANCEMENTS IN SCAFFOLD-BASED DRUG DELIVERY SYSTEMS: A COMPREHENSIVE OVERVIEW AND RECENT DEVELOPMENTS

SAMPATH KUMAR K.[1], MOTHILAL M.[2*]

[1]Department of Pharmaceutics, Santhiram College of Pharmacy, Nandyal-518501, Andhra Pradesh, India. [2]Department of Pharmaceutics, SRM College of Pharmacy, SRMIST, Kattankulathur-603203, Tamil Nadu, India
*Corresponding author: Mothilal M.; *Email: mothilam@srmist.edu.in

Received: 18 Jun 2023, Revised and Accepted: 12 Aug 2023

ABSTRACT

In the field of tissue engineering, there is a growing focus on developing strategies for the reconstruction of dysfunctional tissue models through the transplantation of cells using stable scaffolds and biomolecules. Recently, significant attention has been focused on the expansion of dynamically responsive platforms that mimic the extracellular environment, leading to the integration of tissues and organs. The successful regeneration or restoration of tissues relies on the presence of a scaffold that serves as a temporary framework for cell proliferation and extracellular matrix formation. Various methods, including solvent abstraction, freeze drying/abstraction/gelation, particle compression, and phase reversal, can be employed to fabricate scaffolds. In the context of drug delivery systems utilizing polymeric scaffolds, careful consideration of optimal parameters such as drug loading capacity is crucial. Biodegradable polymers and bioceramics are commonly utilized to fabricate scaffolds. This review provides an overview of the significance of scaffolds, the materials employed, and the fabrication techniques utilized in the expansion of scaffolds for sustained drug delivery and tissue engineering applications.

Keywords: Engineering, Delivery, Implant, Novel, Regeneration, Scaffold

© 2023 The Authors. Published by Innovare Academic Sciences Pvt Ltd. This is an open access article under the CC BY license (https://creativecommons.org/licenses/by/4.0/)
DOI: https://dx.doi.org/10.22159/ijap.2023v15i6.48645. Journal homepage: https://innovareacademics.in/journals/index.php/ijap

INTRODUCTION

Tissue engineering (TE) is the use of a blend of biomaterials, cells, and bioactive substances to replace or speed up the healing of injured or diseased tissue [1]. To restore or heal human tissues that have been harmed by ailment/injuries, thousands of clinical procedures are carried out every day. The injured tissue is traded by using donor graft tissues (autografts, allografts, or xenografts), but the main issues with this are a lack of donors or donation sites, disease transmission, graft rejection, pain and morbidity at the donor site, the amount of donor tissue that can be collected safely, and the probability of adverse immune reactions [2].

There are objectives for the regeneration of injured tissue by creating biological substitutions that restore, sustain, or enhance tissue function as opposed to substituting spoiled tissue with transplants, TE, or regenerative medicine [3, 4]. In the last two decades, TE and regenerative medicine have sparked scientific study and advance in this field [5]. Because they offer a temporal and space environment for cell enlargement and tissue growth, biodegradable (BDL) polymer scaffolds (SFDs) for TE have attracted a lot of interest [6, 7]. Scaffolding (SFDG) is the core component used to offer cells, medications, and genes to the body.

SFD, or "Scaffold for Drug Delivery," encompasses two main categories: drug-delivery SFDs and cell-delivery SFDs. Within the realm of cell/drug delivery, various types of polymeric SFDs have been developed. For instance, a typical 3D porous matrix (MTX) with a highly porous structure allows for rapid tissue growth and facilitates high cell seeding rates. Another option is an electro-spun or shuffled nanofiber (NFB) MTX, which provides a more physiologically accurate representation of the cellular environment. Additionally, a sol-gel transition hydrogel (HGL) that exhibits thermo sensitivity can be utilized as an SFD. Finally, a porous MSP (Microsphere) is another type of SFD that can be employed for drug or cell delivery. These diverse SFDs offer a range of options for researchers and practitioners seeking effective strategies for drug and cell delivery applications [8-10].

These have been used in TE for the prospect of usage as a cell transport carrier or supporting MTX, and they are already commonly used as sustained protein-discharge formulations [11]. The implantable forms of these polymeric SFDs are a conventional 3D porous/nanofibrous MTX, while the injectable forms are thermo-sensitive sol-gel transition HGL and porous microspheres (MSP).

This biological trinity supports TE tactics, which need the correct interplay of 3 components [12]:

The SFD is a vital component in tissue formation. It binds cells together, provides structural support, and guides their growth and development. Through its three-dimensional structure, the SFDG mimics the natural extracellular MTX, allowing cells to organize and form tissue-like structures. It also acts as a reservoir for biological signaling molecules, such as growth factors, which instructs cells to adopt specific tissue phenotypes and regulate their growth. The SFDG, along with cells and signaling molecules, creates an environment conducive to TE, facilitating the formation of functional and well-organized tissues.

Requirements for SFD for tissue engineering

An effective SFD for cell delivery requires specific qualities. It should possess the mechanical strength to protect cells from stresses while allowing biomechanical cues. The desired volume, shape, and strength are important, along with a highly porous structure that enables rapid tissue growth and high cell seeding densities. The SFD must be biocompatible, avoiding strong immunological or inflammatory responses. Additionally, it should support bio adsorption and provide physical structures that promote cell adhesion, interaction, and motility. These features are essential for a successful SFD in TE, facilitating cell integration and tissue formation [13, 14].

Requirements for SFD for drug delivery

A successful Scaffold for Drug Delivery (SFD) should possess key features for optimal drug delivery. It should enable uniform medication distribution, ensuring consistent drug release throughout its structure. The SFD should also have the capability to deliver the drug at a predetermined rate, allowing for controlled and sustained release. Additionally, the drug should remain stable within the SFD, retaining its therapeutic properties due to a low drug-binding affinity. Long-term stability, including biological activity, chemical structure, and physical parameters, is essential for reliable and effective drug delivery over an extended period. These characteristics collectively contribute to an efficient SFD for drug delivery applications [15, 16].

FORMULATION AND EVALUATION OF DEXTROMETHORPHAN LOADED POLYMERIC MICELLAR ORAL DISPERSIBLE TABLTES

P. Kavya[1], Pavankumar krosuri[1*]

Abstract

Dextromethorphan is a potent anti-tussive agent having low bio availability of 11%. The present research investigation was to prepare Polymeric micelles containing Dextromethorphan, nanotechnology-based drug delivery systems that enhance the solubility using different grades of Pluronic's F-68, F-188, F-407 respectively by solvent evaporation method. The Polymeric micelles so prepared were characterized for its particle size, Zeta potential, PDI, TEM analysis, Drug loading efficiency. Among various formulations PM9 showed greater drug loading efficiency i.e 90% and particle size of 50nm that will be further formulated into Oral Dispersible tablets using different super disintegrants like SSG, Cross povidone, Low- HPC, among various formulations F9 showed less disintegration time of 10 sec and maximum drug release of 98.89%. from the kinetic observations of optimized formulation F9, $R^2$of release data based on best curve-fitting method for selected ODT the drug release showed First order kinetics i.e R^2= 0.869 indicating that the drug release depends upon its concentration.

Keywords: Dextromethorphan, Polymeric micelles, nanotechnology, Oral dispersible tablets

[1]Department of Pharmaceutics, Santhiram College of Pharmacy, Nandyal, Andhra Pradesh, India

***Corresponding author:-** Pavankumar krosuri
*Department of pharmaceutics, Santhiram College of Pharmacy, Nandyal, Andhra Pradesh, India
E-mail: pavankumarmph@gmail.com

DOI: 10.48047/ecb/2023.12.si10.00277

PRINCIPAL
Santhiram College of Pharmacy
NH-40, Nandyal-518501, A.P.

FORMULATION AND EVALUATION OF PINACIDIL TRANSDERMAL PATCHES

Pavankumar krosuri[1]*, Maheswara reddy Dagada[1], Geethavani Gurrappagari[1], Geetha Dakka[1], Pavani BurraReddy[1], Babu Bonala[1].

1.Department of Pharmaceutics, Santhiram college of Pharmacy, Nandyal, A.P, India.

Corresponding author:Pavankumar krosuri

The present research work is an attempt to formulate and evaluate matrix type Transdermal patches of Pinacidil monohydrate in order to improve patient compliance by sustaining its action and by avoiding its gastrointestinal side effects. Transdermal patches of pinacidil monohydrate were developed with different ratios of hydrophobic polymers like Eudragit RS 100 and Ethyl cellulose T 50 (EC) polymer combinations by solvent evaporation technique. The Fourier transform infrared (FTIR) spectroscopy was used to confirm compatibility and to rule out any possible interactions between drug and polymers. Seven Transdermal patch formulations (F1, F2, F3, F4, F5, F6 and F7) consisting Eudragit RS 100 and Ethyl cellulose T 50 in the ratios of 1:1,4:1,1:4,3:2 & 2:3 respectively were prepared. All formulations carried 4 % w/v of Tween 80 as penetration enhancer and 10 % w/v of Dibutyl phthalate as plasticizer in dichloromethane and methanol (4:1) solvent system. Data of *in vitro* release from patches were fit in to different equations and kinetic models to explain release kinetics. From the kinetic studies it was found that the drug release showed zero order kinetics indicating that the drug release does not depends upon its concentration .Combination of polymers Eudragit RS 100 and Ethyl cellulose T 50 (2:3) showed better release for sufficiently long time. The developed Transdermal films prolonged release for 24 hrs and thus found useful to improve the patient compliance of Pinacidil monohydrate.

Key words: Ethyl cellulose T50, Eudragit RS 100, *in vitro*, Solvent evaporation technique; Transdermal patch.

Introduction :

"Transdermal drug delivery systems are defined as self-contained, discrete dosage forms which, when applied to the intact skin, deliver the drug, through the skin, at a controlled rate to the systemic circulation".

Formulations on skin can be classified into two categories according to the target site of action of the containing drugs. One has systemic action after drug uptake from the cutaneous micro vascular network, and the other exhibits local effects in the skin .

In the past two decades, transdermal drug delivery has moved from a clinical reality to the point where it represents a viable diagnostic tool diagnosis. The first challenge of creating effective transdermal system ultimately involves ensuring adequate drug permeability through the stratum corneum (SC) .

PRINCIPAL
Santhiram College of Pharmacy
NH-40,Nandyal-518501,A.P.

Published online in http://ijam.co.in ISSN No: 0976-5921

International Journal of Ayurvedic Medicine, Vol 15 (1), 2024: 257-263

Evaluation and method development for quantification of Piperine in *Hutabhugadi Churna* by RP- HPLC

Research Article

Suresh Kumar SV[1*], Karishma Banu D[1], Rajitha C[1], Kalyani B[1], Samel I[1], Mohammad Saief ES[1]

1. Department of Pharmacognosy,
Santhiram College of Pharmacy, Nerawada, Nandyal, Andhra Pradesh. India.

Abstract

Aim and Objective: The current work was aimed at preparing the *Hutabhugadi Churna* in the laboratory and evaluating the same including the method development for the estimation of a marker compound Piperine by using RP-HPLC. Methods: Prepared *Hutabhugadi churna* was subjected for macroscopic, physical, and chemical evaluation considering WHO guidelines. The methanolic extract was subjected for estimation of Piperine as marker using RP-HPLC. Results: The macroscopic characteristics like colour, odour and taste are recorded. The physical characteristics like loss on drying, ash value, extractive value, swelling index, foaming index, powder properties like angle of repose, bulk density, tapped density, compressibility index etc. were determined. Total phenolic content, total flavonoid content, preliminary phytochemical screening was also carried out. The results are compared with marketed formulation of *Hutabhugadi churna*. The retention time of the standard Piperine was found to be 5.517, while the Piperine in extracts of laboratory and marketed formulations was found to be was found to be 5.554 and 5.562 respectively. The concentration of Piperine in laboratory and marketed formulation was found to be 0.17 %w/w and 0.18 % w/w respectively. The method developed was also validated. Conclusion: The laboratory made *Hutabhugadi churna* and marketed formulation of *Hutabhugadi churna* was comparatively evaluated. The resulting data will be useful for the standardization of the Hutabhugadi churna, an Ayurvedic formulation.

Keywords: *Hutabhugadi churna*, Total phenolic content, Total flavonoid content, Preliminary phytochemical screening, Marker compound, RP-HPLC.

Introduction

Hutabhugadi churna is an Ayurvedic formulation reported in The Ayurvedic Formulary of India (1). It is also mentioned in *Sahasra yoga* and *Churnaprakarana*. The ingredients of *Hutabhugadi churna* (HC) include *Hutabhugadi* (*Plumbago zeylanica* L.), *Marica* (*Piper nigrum* L.), *Pippali* (*Piper longum* L.), *Ajamoda* (*Trachyspermum roxburghianum* (DC).), *Saindava lavanam* (Rock salt), and *Haritaki* (*Terminalia chebula* Retz). As per Ayurvedic Pharmacopoeia of India, it is an important formulation useful in treating digestive impairment (*Agni mandya*), oedema (*Sopha*), anemia (*Pandu*), and haemorrhoids (*Arsa*) (1).

Literature survey revealed the lack of standardisation data related to Hutabhugadi churna. The churna was screened for various pharmacological activities. Hence in the present study, the formulation was prepared in the laboratory and subjected to standardisation using various organoleptic, physical, and chemical evaluations. Further, the formulation was subjected to estimation of marker compound analysis using Piperine as a marker by RP-HPLC method. Compared the results with the marketed formulation of *Hutabhugadi churna*.

*** Corresponding Author:**
Suresh Kumar SV
Professor and Head,
Department of Pharmacognosy,
Santhiram College of Pharmacy, Nerawada, Nandyal,
Andhra Pradesh. India.
Email Id: sureshsolleti@gmail.com

Materials and methods

Preparation of *Hutabhugadi churna*:

Hutabhugadi Churna consists of 6 ingredients:

- *Plumbago zeylanica* L. (Chitrak),
- *Piper nigrum* L. (Marica),
- *Piper longum* L. (Pippali),
- *Trachyspermum roxburghianum (DC)* (Ajamoda),
- *Terminalia chebula* Retz (Haritaki), and
- Rock salt (Saindava lavana).

All the ingredients were procured from the local Ayurvedic shops. The identity of the drugs *Marica, Pippali,* and *Haritaki* was carried out in the laboratory as per Ayurvedic Pharmacopoeia of India. *Chitrak* was authenticated by Dr Madhava Chetty, a professor at the Department of Botany, Sri Venkateswara University Tirupathi. *Ajamoda* was authenticated at the National Institute of Science Communication & Policy Research (NISCPR), New Delhi. All the specimens are deposited in the college's Pharmacognosy laboratory for future reference.

Principal
Santhiram College of Pharmacy
NH-40, Nandyal-518501, A.P.

separations

MDPI

Article

LC/MS-Based Profiling of *Hedyotis aspera* Whole-Plant Methanolic Extract and Evaluation of Its Nephroprotective Potential against Gentamicin-Induced Nephrotoxicity in Rats Supported by In Silico Studies

Dsnbk Prasanth [1], Lingareddygari Siva Sanker Reddy [2], Tharani Dasari [3], Pamula Reddy Bhavanam [4], Sheikh F. Ahmad [5], Rahul Nalluri [6] and Praveen Kumar Pasala [7,*]

1 Department of Pharmacognosy, KVSR Siddhartha College of Pharmaceutical Sciences, Vijayawada 520010, Andhra Pradesh, India; dsnbkprasanth@gmail.com
2 Department of Pharmaceutical Analysis, Santhiram College of Pharmacy, Nandyal 518112, Andhra Pradesh, India; shiva_s_rl@yahoo.co.in
3 Department of Pharmacology, Santhiram College of Pharmacy, Jawaharlal Nehru Technological University Anantapur, Nandyal 518112, Andhra Pradesh, India; dasaritharani099@gmail.com
4 Department of Pharmaceutics, Nirmala College of Pharmacy, Atmakuru, Guntur District, Mangalagiri Mandal 522503, Andhra Pradesh, India; pamula1114@gmail.com
5 Department of Pharmacology and Toxicology, College of Pharmacy, King Saud University, Riyadh 11451, Saudi Arabia
6 Department of Chemistry, Texas A&M University-Kingsville, Kingsville, TX 78363, USA; rnalluri207@gmail.com
7 Department of Pharmacology, Raghavendra Institute of Pharmaceutical Education and Research, Jawaharlal Nehru Technological University Anantapur, Anantapuramu 515721, Andhra Pradesh, India
* Correspondence: praveenpharmaco@gmail.com

Abstract: Many high-altitude plants, such as *Hedyotis aspera*, need to be explored for their possible medicinal value. The current study explored the protective effect of *Hedyotis aspera* methanolic extract whole plant (HAME) against gentamicin-induced nephrotoxicity in rats. It profiled their phytocontents using HPLC-QTOF-MS/MS analytic methods. The LC-MS analysis of HAME revealed 27 compounds. Eight compounds followed Lipinski's rule of five and were found to be potential TNF-α inhibitors with binding affinities of −6.9, −6.3, −6.3, and −6.3 Kcal/mol, such as 14,19-Dihydroaspidospermatine, coumeroic acid, lycocernuine and muzanzagenin. All potential compounds were found to be safe according to the ADMET analysis. The in vitro 2,2-diphenyl-1-picrlhydrazyl (DPPH) assay assessed the antioxidant activity. The nephroprotective activity was assessed in rats using a gentamicin-induced nephrotoxicity model. The in vivo analysis involved histological examination, tissue biochemical evaluation, including a kidney function test, catalase activity (CAT), reduced glutathione (GSH) levels, superoxide dismutase (SOD), and the inflammatory mediator TNF-α. Based on DPPH activity, HAME showed a scavenging activity IC_{50} of 264.8 ± 1.2 µg/mL, while results were compared with a standard vitamin C IC_{50} of 45 ± 0.45 µg/mL. Nephrotoxicity was successfully induced, as shown by elevated creatinine and uric acid levels, decreased kidney antioxidant levels, and increased TNF-α in gentamicin-treated rats. The HAME treatment significantly reduced serum creatinine and uric acid levels, increased GSH ($p < 0.01$ **), CAT ($p < 0.01$ **), and SOD ($p < 0.001$ ***), and decreased TNF-α ($p < 0.001$ ***) in nephrotoxic rats. The histopathological examination of the groups treated with HAME revealed a notable enhancement in the structural integrity of the kidneys as compared to the group exposed to gentamicin. Biochemical, histopathological, and phytochemical screening of HAME suggests that it has nephroprotective potential, owing to the presence of 14,19-Dihydroaspidospermatine, coumeroic acid, lycopene, and muzanzagenin.

Keywords: *Hedyotis aspera* whole-plant methanolic extract; molecular docking; Wistar rats; nephroprotective effect; gentamicin

check for updates

Citation: Prasanth, D.; Reddy, L.S.S.; Dasari, T.; Bhavanam, P.R.; Ahmad, S.F.; Nalluri, R.; Pasala, P.K. LC/MS-Based Profiling of *Hedyotis aspera* Whole-Plant Methanolic Extract and Evaluation of Its Nephroprotective Potential against Gentamicin-Induced Nephrotoxicity in Rats Supported by In Silico Studies. *Separations* **2023**, *10*, 552. https://doi.org/10.3390/separations10110552

Academic Editor: Lina Raudonė

Received: 12 October 2023
Revised: 26 October 2023
Accepted: 29 October 2023
Published: 30 October 2023

Copyright: © 2023 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https://creativecommons.org/licenses/by/4.0/).

PRINCIPAL
Santhiram College of Pharmacy
NH-40, Nandyal-518501, A.P.

Journal of Population Therapeutics & Clinical Pharmacology

RESEARCH ARTICLE
DOI: 10.53555/jptcp.v30i10.2426

ANALYTICAL METHOD DEVELOPMENT, VALIDATION AND STABILITY INDICATING STUDIES OF AVANAFIL BY USING RP-HPLC TECHNIQUE

J. Sunayana[1], L. Siva Sanker Reddy[2]*, R. Nageswara Rao[3], S. Muneer[4], N. Madana Gopal[5], N. Yella Subbaiah[6], Shaik Ruksar[7], K. Maheshwari[8], C. Madhsudhana Chetty[9]

[1,2*,3,5,7,8]Department of Pharmaceutical Analysis, Santhiram College of Pharmacy, NH-40, Nandyal-518501, Andhra Pradesh, India.
[4,6]Department of Pharmaceutical Chemistry, Santhiram College of Pharmacy, NH-40, Nandyal-518501, Andhra Pradesh, India.
[9]Professor, Department of Pharmaceutics, Santhiram College of Pharmacy, NH-40, Nandyal-518501, Andhra Pradesh, India.

***Corresponding author:** - L. Siva Sanker Reddy
*Professor and Head of the Department, Department of Pharmaceutical Analysis, Santhiram College of Pharmacy, NH-40, Nandyal-518501, Andhra Pradesh, India. email: shiva_s_rl@yahoo.co.in
Mobile number: 9885697242

Abstract:
Objective: The project was aimed at developing an analytical method to quantify Avanafil drug either alone or in tablet formulation, including stability studies by practicing RP-HPLC technique.
Methods: The RP-HPLC technique was carried to work out an analytical method and inspecting consistency of the method by performing the different validation parameters. The degradation studies were performed under different physical and chemical conditions following the ICH guidelines. The column used was Inertsil ODS Column C_{18} (4.6×250mm)5µm.
Findings: In the course of stream lining the analytical method, we have clinched on to use the mobile phase with the combination of Methanol: 0.1% OPA (75:25v/v). The drug was detected at 246 nm in UV. The retention time was at 3.14 min and the linearity range of was from 0.5 µg/ml to 10µg/ml with the Regression coefficient calculated to be (R^2) 0.9978. The corresponding recognition limits (LOD and LOQ) was 0.02µg/ml and 0.08µg/ml respectively. Precision studies were carried out and the RSD values were found to be less than two. The degradation studies were successfully conducted.
Novelty: The significant advantages were reduction of retention time almost one minute less, the lower limit in linearity being at least 10 times less and the mobile phase used was quite cheaper than the reported methods. The other part was that, the usability of the method to quantify even though the drug was degraded nearly to 10 % in presence of the unknown degradants. The method is also sensitive, reproducible, quick and economical.

Keywords: Avanafil, Methanol, HPLC, Degradation studies, ICH Guidelines.

1. Introduction

The main objective of this project is to develop and validate a simple, precise and accurate method by using RP-HPLC method. Avanafil is chemically spelled as 4-{[(3-chloro-4-methoxyphenyl) methyl]amino}-2-[(2S)-2(hydroxymethylpyrrolidin-1-yl]-N-(pyrimidin-2-ylmethyl) pyrimidine-5

PRINCIPAL
Santhiram College of Pharmacy
NH-40, Nandyal-518501, A.P.

Journal of Population Therapeutics & Clinical Pharmacology

RESEARCH ARTICLE
DOI: 10.53555/jptcp.v30i10.2427

ANALYTICAL METHOD DEVELOPMENT, VALIDATION AND STABILITY INDICATING STUDIES OF SECNIDAZOLE IN API & PHARMACEUTICAL DOSAGE FORM BY USING RP-HPLC TECHNIQUE

K. Faiza Firdos[1], L. Siva Sanker Reddy[2]*, R. Nageswara Rao[3], S. Muneer[4], N. Madana Gopal[5], N. Yella Subbaiah[6], Shaik Ruksar[7], K. Maheshwari[8], C. Madhsudhana Chetty[9]

[1,2*,3,5]Department of Pharmaceutical Analysis, Santhiram College of Pharmacy, NH-40, Nandyal-518501, Andhra Pradesh, India.
[4,6,7,8]Department of Pharmaceutical Chemistry, Santhiram College of Pharmacy, NH-40, Nandyal-518501, Andhra Pradesh, India.
[9]Professor, Department of Pharmaceutics, Santhiram College of Pharmacy, NH-40, Nandyal-518501, Andhra Pradesh, India.

***Corresponding author:** L. Siva Sanker Reddy
*Professor and Head of the Department, Department of Pharmaceutical Analysis, Santhiram College of Pharmacy, NH-40, Nandyal-518501, Andhra Pradesh, India.
e mail: shiva_s_rl@yahoo.co.in, Mobile number: 9885697242

Abstract:
The project was aimed at developing an analytical method to quantify Secnidazole drug either alone or in tablet formulation, including stability studies with the aid of RP-HPLC technique. An analytical method was finalised and inspected consistency of the method by performing the different validation parameters like system suitability, specificity, linearity, accuracy, precision, LOD, LOQ, Robustness and assay. The degradation studies were performed under different physical and chemical conditions by following the ICH guidelines. The column used was Inertsil ODS Column C_{18} (4.6×250mm)5µm of Shimadzu.

The HPLC was Shimadzu make with UV PDA detector and model 20AD. In the stream lining the analytical method, we have settled on to use the mobile phase with the combination of Methanol: 0.1% OPA (90:10 v/v). The drug was detected at 314 nm on UV-Visible spectrophotometer. The retention time was at 2.953 min with the run time of 10 min. The linearity range of Secnidazole was from 2 µg/ml to 10µg/ml and the Regression coefficient calculated to be (R^2) 0.999. The corresponding recognition limits (LOD and LOQ) of the Secnidazole was 0.3µg/ml and 0.9µg/ml respectively. Precision studies were carried out and the RSD values were found to be less than two. The degradation studies were successfully conducted. The significant advantages were reduction of retention time at 1ml/min and the mobile phase used was quite cheaper than the reported methods. The other part was that, the usability of the method to quantify even though the drug was degraded nearly to 10 % in presence of the unknown degradants. The method is also sensitive, reproducible, quick and economical.

Keywords: Secnidazole, Methanol, OPA, HPLC, ICH Guidelines, Secnil.

PRINCIPAL
Santhiram College of Pharmacy
NH-40, Nandyal-518501, A.P.

Latin American Journal of Pharmacy
(formerly *Acta Farmacéutica Bonaerense*)

Lat. Am. J. Pharm. **42** (3): (2023)

Reverse Phase –Hplc Method Development, Validation And Stability Indicating Studies Of Deferasirox In Its Api And Pharmaceutical Dosage Form

M. Heena[1], L Siva sanker Reddy[1*], R. Nageswara Rao[1], S. Muneer[2], N. Madana Gopal[1], N. Yella Subbaiah[2], Shaik Ruksar[1], K. Maheshwari[1], M. Manorama[1], C. Madhsudhana Chetty[3]

[1]Department of Pharmaceutical Analysis, Santhiram College of Pharmacy, NH-40, Nandyal-518501, Andhra Pradesh, India.

[2]Department of Pharmaceutical Chemistry, Santhiram College of Pharmacy, NH-40, Nandyal-518501, Andhra Pradesh, India.

[3]Professor, Department of Pharmaceutics, Santhiram College of Pharmacy, NH-40, Nandyal-518501, Andhra Pradesh, India.

Abstract:

From the literature review, we have noticed the use of Acetonitrile, buffer and Ortho phosphoric acid(OPA) as the mobile phases for the analytical work of Deferasirox and the reported retention time was in between 8.7 to 6.4min at the flow rates of greater than 1ml/min. In the present work, we have used Methanol and 0.1% OPA (80:20v/v) as the mobile phase and the retention time was 6.2 minutes at the flow rates of 1.2ml/min. The Column was C18(4.6mm x 250mm:5µm) and detector was UV-PDA (λmax 247nm). Linearity concentrations were 10µg/ml to 50µg/ml(R2-0.9952). All the validation parameters and degradation studies complied with the limits of ICH Q2R1 guidelines. This developed method consumes nearly 50% less mobile phase with methanol and water containing OPA(0.1%) which are cheaper and environment friendly. Thus, the method can be advised to do the routine analysis of Deferasirox in its API and formulation.

Keywords: Deferasirox, Methanol, Validation, Ortho phosphoric acid.

Introduction

Deferasirox is a selective oral active chelator for iron (as Fe^{3+}). Deferasirox is designated chemically as a 4-[3,5-bis(2-hydroxyphenyl)-1,2,4-triazol-1-yl] benzoic acid. It is soluble in organic solvents such as Methanol, dimethyl formamide, practically insoluble in water. Deferasirox is a ferric iron non-chiral tridentate ligand; two molecules join with one Fe ion to create a complex. It is a very selective iron chelator that does not produce zinc or copper excretion. It is a powerful chelator that removes iron from the liver and heart, reversing hepatic fibrosis, and maintaining cardiac function. The empirical formula is $C_{21}H_{15}N_3O_4$ and molecular weight is 373.4g/mol. When compared to an intravenous dose, the absolute bioavailability (AUC) of Deferasirox tablets for oral suspension is 70%. Most of Deferasirox and its metabolites are eliminated in the faeces (84% of the dosage). Deferasirox and its metabolites are excreted in the urine in very small amounts (8% of the administered dose). Following oral dosing, the mean elimination half-life ($t_{1/2}$) varied from 8 to 16 hours[1-2].

PRINCIPAL
Santhiram College of Pharmacy
NH-40, Nandyal-518501,A.P.

plants

MDPI

Article

Unveiling the Cardioprotective Power: Liquid Chromatography–Mass Spectrometry (LC–MS)-Analyzed *Neolamarckia cadamba* (Roxb.) Bosser Leaf Ethanolic Extract against Myocardial Infarction in Rats and In Silico Support Analysis

Raghupathi Niranjan Kumar [1], Dsnbk Prasanth [2], Praisy Gladys Midthuri [1], Sheikh F. Ahmad [3], Attuluri Venkata Badarinath [4], Srikanth Kumar Karumanchi [5], Ramanjaneyulu Seemaladinne [6], Rahul Nalluri [7] and Praveen Kumar Pasala [8,*]

1 Department of Pharmacology, Santhiram College of Pharmacy, JNTUA, Nandyal 518112, Andhra Pradesh, India; niranjan3131@gmail.com (R.N.K.); praisygladys745@gmail.com (P.G.M.)
2 Department of Pharmacognosy, KVSR Siddhartha College of Pharmaceutical Sciences, Vijayawada 520010, Andhra Pradesh, India; dsnbkprasanth@gmail.com
3 Department of Pharmacology and Toxicology, College of Pharmacy, King Saud University, Riyadh 11451, Saudi Arabia
4 Department of Pharmaceutics, Santhiram College of Pharmacy, Nandyala 518112, Andhra Pradesh, India; avbadrinatha@gmail.com
5 Department of Pharmaceutical Chemistry, DKSS Institute of Pharmaceutical Science & Research (for Girls), Swami-Chincholi, Bhigwan 413130, Maharashtra, India; karumanchi002@gmail.com
6 Department of Chemistry and Biochemistry, Lamar University, Beaumont, TX 77705, USA; rseemaladinne@gmail.com
7 Department of Pharmacy, Texas A&M University, Kingsville, TX 78363, USA; rnalluri207@gmail.com
8 Department of Pharmacology, Raghavendra Institute of Pharmaceutical Education and Research, JNTUA, Anantapuramu 515721, Andhra Pradesh, India
* Correspondence: drpraveenp@riper.ac.in

check for updates

Citation: Kumar, R.N.; Prasanth, D.; Midthuri, P.G.; Ahmad, S.F.; Badarinath, A.V.; Karumanchi, S.K.; Seemaladinne, R.; Nalluri, R.; Pasala, P.K. Unveiling the Cardioprotective Power: Liquid Chromatography–Mass Spectrometry (LC–MS)-Analyzed *Neolamarckia cadamba* (Roxb.) Bosser Leaf Ethanolic Extract against Myocardial Infarction in Rats and In Silico Support Analysis. *Plants* **2023**, *12*, 3722. https://doi.org/10.3390/plants12213722

Academic Editors: Rosa Tundis and Monica Rosa Loizzo

Received: 10 October 2023
Revised: 25 October 2023
Accepted: 26 October 2023
Published: 30 October 2023

Copyright: © 2023 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https://creativecommons.org/licenses/by/4.0/).

Abstract: *Neolamarckia cadamba* (Roxb.) Bosser, a member of the Rubiaceae family, is a botanical species with recognized therapeutic properties. It is commonly used in traditional medicine to treat cardiac ailments and other disorders. However, the precise active constituents and the potential mechanisms by which they manage cardiovascular disorders remain unclear. Therefore, this study aimed to ascertain the bioactive components and investigate their underlying mechanisms of action. *N. cadamba* is used to treat cardiovascular disorders using the integrated metabolomic methodology. An HPLC-QTOF-MS/MS analysis determined the potential chemicals in the *N. cadamba* leaf ethanol extract (NCEE). A thorough investigation of the NCEE samples used in this study led to the identification of 32 phytoconstituents. Of the 32 compounds, 19 obeyed Lipinski's rule of five (RO5). A molecular docking study directed towards HMG-CoA reductase used 19 molecules. The reference drug atorvastatin indicated a binding energy of −3.9 kcal/mol, while the other substances, Cinchonain Ib and Dukunolide B, revealed binding energies of −5.7 and −5.3 kcal/mol, respectively. Both phytocompounds showed no toxicity and exhibited favorable pharmacokinetic properties. In vivo study results concluded that treatment with NCEE significantly reduced the cardiac myocardial infarction (MI) marker CK-MB and atherogenic risk indices, such as the atherogenic index plasma (AIP), cardiac risk ratio (CRR), and atherogenic coefficient (AC) in isoproterenol-induced MI rats. In MI rats, NCEE therapy significantly improved the antioxidant system of the heart tissue, as evidenced by the increased levels of GSH and SOD, lower levels of the oxidative stress marker MDA, and significantly decreased HMG-CoA activity. Additionally, electrocardiogram (ECG) signals from rats treated with NCEE resembled those treated with traditional atorvastatin to treat myocardial infarction. This study used H&E staining to show that administering NCEE before treatment reduced cardiac myocyte degeneration in rats with myocardial infarction, increased the presence of intact nuclei, and increased myocardial fiber strength. The potential cardioprotective effect observed in

PRINCIPAL
Santhiram College of Pharmacy
NH-40, Nandyal-518501, A.P.

ORIENTAL JOURNAL OF CHEMISTRY
An International Open Access, Peer Reviewed Research Journal
www.orientjchem.org
Est. 1984
ISSN: 0970-020 X
CODEN: OJCHEG
2023, Vol. 39, No.(4):
Pg. 1040-1045

Analytical Method Development and Validation of Quetiapine Fumarate in API and Dosage form by Using RP–HPLC

SIVA SANKER REDDY LINGAREDDYGARI[1]*, NAGESWARA RAO RAVIKRINDHI[2], MADANA GOPAL NOOKALA[3], SHAIK MUNEER[4] and PRASAD NAKKA[5]

[1,2,3,4,5]Department of Pharmaceutical Analysis, Santhiram College of Pharmacy, Panyam, Nandyal, Andrapradesh, 518501, India.
*Corresponding author E-mail: shiva_s_rl@yahoo.co.in

http://dx.doi.org/10.13005/ojc/390430

(Received: May 27, 2023; Accepted: July 30, 2023)

ABSTRACT

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

Keywords: RP-HPLC, Quetiapine fumarate, Acetonitrile, 0.1% Orthophoshoric acid, Validation.

INTRODCUTION

Quetiapine Fumarate is an Anti-psychotic agent and Anti depressive agent. It is designated chemically as a 2-[2-(4-Dibenzo [b, f][1,4] thiazepin-11-yl-1-piperazinyl) ethoxy] ethanol. The drug's solubility is in methanol, Ethanol, Water and higher soluble under acidic condition with pKa value-15.12 and 7.02 strongly basic PKa, half-life 6 h protein binding-83%, route of administration is oral, metabolism in liver and excretion by kidneys. The entire work was planned according to the ICH guidelines[1]. HPLC methods were reported in various journals-assay method[2], stability indicating method[3], isocratic method[4], and other RP-HPLC methods were taken into consideration for this study[5-12]. Many UV methods also exist for the estimation of Quetiapine, which one is referred in this context[13].

Methodology

Preparation of standard solution for system suitability

Accurately weighed 10 mg of Quetiapine, transferred into volumetric flask of 10 mL capacity and required quantity of mobile phase (0.1% OPA: ACN 80:20v/v) used to make up to the mark. The solution sonicated to be affirmative that the drug was dissolved. This solution was marked as the

This is an Open Access article licensed under a Creative Commons license: Attribution 4.0 International (CC- BY).
Published by Oriental Scientific Publishing Company © 2018

PRINCIPAL
Santhiram College of Pharmacy
NH-40, Nandyal-518501, A.P.

NOVASOMES – A NOVEL NANO VESICULAR CARRIERS

Authors: Pavankumar Krosuri*[1], R.Shaik Afreen[1], D.Venkata Sathwika[1], Sk.Arshiya[1], S.Neha Arsh[1], Mk. Gayathri[1], P. Nikitha Reddy[1]

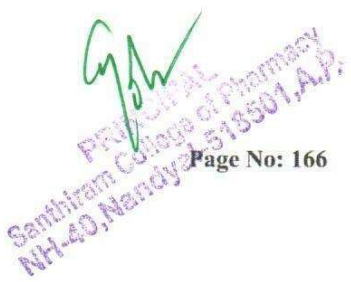
1.Department of Pharmaceutics, Santhiram College of Pharmacy, Nandyal, Andhrapradesh, India.
Corresponding authors mail : pavankumarmph@gmail.com.

Abstract :
A new and exciting class of Nanovesicles called Novasomes is intended for the delivery of drugs. These lipid-base nanocarriers have increased encapsulation efficiency and stability, among other benefits. It is made up of seven bilayer membranes that can absorb both soluble and insoluble materials in water. It can be prepared by the combination of Liposomes and Niosomes. Because of their degree of penetration, they are referred to as derma cosmetics. Applications for novasome have been discovered in a number of industries, including dermatology, chemistry, pharmacy, people care, and cosmetics. It assists in resolving liposome stability issues. The adjuvant novasome enhanced protection and immunogenicity. This abstract delivers into the basic properties, composition, and potential uses of novasomes, emphasizing how they could transform the beauty and pharmaceutical industries by enabling more precise and targeted Drug delivery. One key area of study and development is the potential use of novasomes for medicine delivery and targeting.

Keywords: Novasomes, Lipid based nanocarriers, Nanovesicles, Targeted Drug Delivery.

Introduction

One could refer to novasomes as liposomes or niosomes with enhanced structures. The hydrophobic membrane core of liposomes, which are spherical vesicles with a membrane made of phospholipids and cholesterol, allows for the encapsulation of an aqueous solution region and the incorporation of lipid-soluble drugs between the two lipid layers. The non-ionic surfactant vesicles known as niosomes can develop in aqueous conditions with or without the presence of lipids such as cholesterol. Novasomes are described as paucilamellar vesicles with a diameter of 200–700 nanometers, composed of two to seven bilayered membranes. These membranes occupy a vast amorphous core that contains hydrophilic—that is, water soluble—and hydrophobic—that is, water insoluble—drug compounds. Novasome provides activity with a prolonged release.The majority of traditional medications have low absorption and generate harmful systemic side effects. Novel, highly complex targeted mechanisms are needed for medication administration in order to prevent such systemic toxicity. Vesicular drug delivery systems are a promising way to get beyond the limitations of the traditional drug delivery system in the current drug discovery system and provide significant drug bioavailability through regulated distribution of therapeutic medications over a longer period of time. The IGI laboratory Novavax produced the patented technique known as Novasome. A modification of other comparable drug delivery systems, or an invention of the liposomal drug delivery system, are novasomes.The innate stability of Novasome micro vesicles is engineered to withstand a pH



FORMULATION AND EVALUATION OF ENTACAPONE LOADED CUBOSOMAL SUSTAINED RELEASE TABLETS

Pavankumar Krosuri*[1], SK.Munavar[1]

1.Department of Pharmaceutics, Santhiram college of pharmacy, Nandyal, Andhrapradesh, India.
Corresponding authors : Pavankumar Krosuri

Abstract:
Entacapone is a Anti-parkinsonian agent used for the treatment of parkinson's disease having low bio availability of 35%. The present research investigation was to prepare Cubosomes containing Entacapone, nanotechnology-based drug delivery systems that enhances the solubility using different grades of Pluronic's F-68, F-188, F-407 respectively by Emulsification method. The Cubosomes so prepared were characterized for its particle size, Zeta potential, PDI, TEM analysis, Entrapment efficiency. Among various formulations F3 showed greater entrapment efficiency i.e 98% and particle size of 100nm that will be further formulated into Sustainedrelease tablets using different polymers like Locust bean gum, Karaya gum, Xanthan gum, among various formulations,F9 showed maximum drug release of 98.88%. from the kinetic observations of optimized formulation F9, R2 of release data based on best curve-fitting method for selected SR tablets the drug release showed First order kinetics i.e R2= 0.968 indicating that the drug release depends upon its concentrationand the diffusion exponent values from korsmeyer peppas model is 1.22 indicating that the drug release follows supercase II transport mechanism.

Key words: Entacapone, Cubosomes, Nanotechnology, Sustained release tablets.

Introduction:

Parkinson's Disease

Parkinson's disease, a degenerative condition, is brought on by the loss of nerve cells in the substantia nigra, a region of the brain that regulates movement. Parkinson's disease is a condition where the ability to create an essential neurotransmitter called dopamine is lost due to the death or impairment of these nerve cells. According to studies, people with a loss of at least 80% of the substantia nigra's dopamine-producing cells experience the onset of Parkinson's disease symptoms.

Larsson is the author of the term cubosomes, which is akin to liposomes. Cubosomes are discrete, sub-micron-sized nanostructured particles that are part of the bicontinous cubic liquid crystalline phase. The capacity of the bicontinous cubic phases to adjust membrane curvature is one benefit they are providing. Cubosomes are liquid crystalline particles that self-assembled and have a solid-like rheology. A quarter state of matter may be liquid crystals.
Lipids, polymers, and surfactants—which are typically amphiphilic—make up these cubosomes. In this context, the term "bicontinous" refers to a division of two distinct water enclosures by surfactant bilayers.

PRINCIPAL
Santhiram College of Pharmacy
NH-40, Nandyal-518501, A.P.

Chettinad Health City Medical Journal
Volume 13, Issue 1 - 2024, Pg. No. 4-12
Peer Reviewed & Open Access Journal

Research Article

A Prospective Observational Study on Assessment of Antibiotic Therapy in Renal Failure Patients with Infections

Pradeep Battula[1], Somala Savithri[2], Kamini Poojitha[3], Y Saivani[4]

[1,2,3]Department of Pharmacy Practice, Santhiram College of Pharmacy, Nandyal, Andhra Pradesh, India.
[4]Department of Nephrology, Santhiram Medical College and General Hospital, Nandyal, Andhra Pradesh, India.
DOI: https://doi.org/10.24321/2278.2044.202402

I N F O

Corresponding Author:
Pradeep Battula, Department of Pharmacy Practice, Santhiram College of Pharmacy, Nandyal, Andhra Pradesh, India.
E-mail Id:
doctorbattulapradeep@gmail.com
Orcid Id:
https://orcid.org/0000-0002-2929-0019
How to cite this article:
Battula P, Savithri S, Poojitha K, Saivani Y. A Prospective Observational Study on Assessment of Antibiotic Therapy in Renal Failure Patients with Infections. Chettinad Health City Med J. 2024;13(1):4-12.

Date of Submission: 2023-05-05
Date of Acceptance: 2024-01-18

A B S T R A C T

Introduction: The combination of renal failure and infections is the primary cause of death. Effective drug treatment is crucial for managing these conditions and reducing illness and death risks.

Aim: The study aims to identify the type of microorganism causing kidney or renal infection, its sensitivity patterns and to assess the type of antibiotic prescribed in renal failure patients with infections.

Methods and Material: The study was conducted at Santhiram Medical College and General Hospital in Nandyal between November 2021 and April 2022. The study aimed to analyse the cases of 130 patients diagnosed with renal failure diseases and accompanying infections in the nephrology department. The study prospectively collected demographic data, diagnosis information, prescribing patterns, and culture sensitivity reports.

Results: In this study, males exhibited a higher likelihood of developing renal failure diseases, with an incidence rate of 65%, compared to females, who showed an incidence rate of 45%. Individuals who were 61–70 years old, regardless of gender, were at a heightened risk of developing renal failure diseases. The study also revealed the presence of 8 distinct microorganisms, with *E. coli* being the most prevalent cause of infection, contributing to 34.61% of cases.

Conclusions: Our research determined that infections in patients with renal failure are primarily caused by *E. coli* and Klebsiella microorganisms. Treatment typically involves prescribing antibiotics, with cefoperazone and sulbactam being commonly used. However, it was observed that doxycycline and levofloxacin are ineffective against all microorganisms. By analysing the total white blood cell count, it has been determined that cefoperazone-sulbactam is a more effective antibiotic for reducing infections.

Keywords: Acute Renal Failure, Antibiotics, Chronic Kidney Disease, Culture Sensitivity, Renal Failure

Principal
Santhiram College of Pharmacy
NH-40, Nandyal-518501, A.P.

Copyright (c) 2024: Author(s). Published by Advanced Research Publications

Indian Journal of Natural Sciences www.tnsroindia.org.in ©IJONS

Vol.15 / Issue 84 / Jun / 2024 *International Bimonthly (Print) – Open Access* *ISSN: 0976 – 0997*

RESEARCH ARTICLE

Efficacy of Hypoglycaemic Agents in Type-2 Diabetes Mellitus with Associated Co-Morbidities: A Prospective Observational Study

Pradeep Battula[1*], S Sai Harshini[2], M Srivani[2], G Vijaya Kumar[3] and Setlem Sai Venkata Krishna[4]

[1]Associate Professor, Department of Pharmacy Practice, Santhiram College of Pharmacy, Nandyal, (Affiliated to Jawaharlal Nehru Technological University Anantapur) Andhra Pradesh, India.
[2]Pharm.D Internship, Department of Pharmacy Practice, Santhiram College of Pharmacy, Nandyal, (Affiliated to Jawaharlal Nehru Technological University Anantapur) Andhra Pradesh, India.
[3]Associate Professor, Department of General Medicine, Santhiram Medical College and General Hospital, Nandyal, (Affiliated to Dr Y.S.R University of Health Sciences) Vijayawada, Andhra Pradesh, India.
[4]Assistant Professor, Department of Pharmacy Practice, Santhiram College of Pharmacy, Nandyal, (Affiliated to Jawaharlal Nehru Technological University Anantapur) Andhra Pradesh, India.

Received: 17Aug 2023 Revised: 20 Mar 2024 Accepted: 24 May 2024

***Address for Correspondence**
Pradeep Battula
Associate Professor,
Department of Pharmacy Practice,
Santhiram College of Pharmacy, Nandyal,
(Affiliated to Jawaharlal Nehru Technological University Anantapur)
Andhra Pradesh, India.
Email: doctorbattulapradeep@gmail.com

This is an Open Access Journal / article distributed under the terms of the **Creative Commons Attribution License** (CC BY-NC-ND 3.0) which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. All rights reserved.

ABSTRACT

Diabetes mellitus has been a known disease for a long time and has now become a modern-day epidemic, recognized as a global health issue. Our study aimed to bring attention to the current prescribing trends and effectiveness measures for type 2 diabetes mellitus patients with co-morbid conditions. The study was conducted for six months; the Department of General Medicine at Santhiram Medical College and General Hospital conducted an observational study based in the hospital. The study analysed prescriptions for 165 patients, of which 63.03% were males and 36.9% were females. The majority of the patients were between the ages of 51 and 65. It is essential to note that Hypertension and Diabetes were often co-morbid, with the latter affecting a significant proportion of the global population. Of the various oral hypoglycaemic agent combinations available, the metformin-glimepiride 2mg combination is the most commonly prescribed, accounting for 19.39% of such prescriptions. Additionally, Metformin is the most widely prescribed drug among oral hypoglycaemic agents. When it comes to managing diabetes mellitus, experts recommend the use of combination therapy. Our recent study has

PRINCIPAL
Santhiram College of Pharmacy
NH-40, Nandyal-518501, A.P.

ORIENTAL JOURNAL OF CHEMISTRY
An International Open Access, Peer Reviewed Research Journal
www.orientjchem.org
Est. 1984
ISSN: 0970-020 X
CODEN: OJCHEG
2023, Vol. 39, No.(3):
Pg. 736-745

Design of Experiment Approach for Method Development and Validation of Bilastine in Pure and Pharmaceutical Dosage form using RP-UFLC

L. SIVASANKER REDDY[1]*, R. NAGESWARA RAO[1], B. ISHAQ MOHAMMED[2], N. MADANA GOPAL[1], SHAIK MUNEER[1], Y. DASTAGIRI REDDY[3], D. CHINNA BABU[4] and K. SURENDRA[1]

[1]Department of Pharmaceutical Analysis, Santhiram college of pharmacy, NH-40, Nandyal-518501, Kurnool, Anadhra Pradesh, India.
[2]Department of Pharmacy, University of technology and applied sciences, Al-Khuwair, Muscat, Sultanate of Oman.
[3]Department of Pharmaceutics, Santhiram college of pharmacy, NH-40, Nandyal-518501, Kurnool, Anadhra Pradesh, India.
[4]Department of Pharmaceutical Analysis, Narayana college of pharmacy, Nellore, Anadhra Pradesh, India.
*Corresponding author E-mails: shiva_s_rl@yahoo.co.in

http://dx.doi.org/10.13005/ojc/390325

(Received: May 29, 2023; Accepted: June 10, 2023)

ABSTRACT

Background: Bilastine is a H1 receptor antagonist, used in the treatment of allergic urticaria, seasonal rhinitis, etc. Few journals have reported the analytical related work on bilastine drugs. Objective: The objective of the work is to develop a simple, precise, rapid, and reproducible method using design of experiments (DOE) and check the optimized conditions when run on UFLC would give the best method or not. Results: The DOE software was used to select optimized conditions with minimal runs. The central composite design was the best fit, with two variables that include flow rate and column temperature. A total of 13 runs gave optimum conditions of 1.2 mL/min flow rate, column temperature of 40°C and mobile phasemethanol: buffer (pH 6.0) in the ratio of 70:30 in the binary mode using the Shimadzu C18 column on an HPLC instrument. The retention time of bilastine was found to be 5.126min, the number of theoretical plates and asymmetric factor being within the limit. The proposed method was validated as per the ICH Q2R1 guidelines. The linearity was found to be in the range of 1.25 µg/mL-10 µg/mL. The correlation coefficient was found to be within the limits i.e., R^2=0.999. The accuracy of the current method was being performed using the %recovery at three stages 50%, 100%, and 150% and was found to be 99.5126%, 100.2765% and 99.6714% respectively. The LOD and LOQ of bilastine was found to be 0.292 µg/mL and 0.974 µg/mL. Conclusion: The DOE software reduced the number of trials, saving both time and solvent consumption. This method can be conveniently used with confidence for regular assay, which is a simple, precise, rapid, and reproducible one for the estimation of bilastine in pure and pharmaceutical tablet dosage form using UFLC.

Keywords: Bilastine, KH_2PO_4, RP-UFLC, ICH Q2R1 guidelines, DOE and Validation parameters.

This is an Open Access article licensed under a Creative Commons license: Attribution 4.0 International (CC- BY).
Published by Oriental Scientific Publishing Company © 2018

PRINCIPAL
Santhiram College of Pharmacy
NH-40,Nandyal-518501,A.P.

plants

MDPI

Article

Unveiling the Cardioprotective Power: Liquid Chromatography–Mass Spectrometry (LC–MS)-Analyzed *Neolamarckia cadamba* (Roxb.) Bosser Leaf Ethanolic Extract against Myocardial Infarction in Rats and In Silico Support Analysis

Raghupathi Niranjan Kumar [1], Dsnbk Prasanth [2], Praisy Gladys Midthuri [1], Sheikh F. Ahmad [3], Attuluri Venkata Badarinath [4], Srikanth Kumar Karumanchi [5], Ramanjaneyulu Seemaladinne [6], Rahul Nalluri [7] and Praveen Kumar Pasala [8,*]

1 Department of Pharmacology, Santhiram College of Pharmacy, JNTUA, Nandyal 518112, Andhra Pradesh, India; niranjan3131@gmail.com (R.N.K.); praisygladys745@gmail.com (P.G.M.)
2 Department of Pharmacognosy, KVSR Siddhartha College of Pharmaceutical Sciences, Vijayawada 520010, Andhra Pradesh, India; dsnbkprasanth@gmail.com
3 Department of Pharmacology and Toxicology, College of Pharmacy, King Saud University, Riyadh 11451, Saudi Arabia
4 Department of Pharmaceutics, Santhiram College of Pharmacy, Nandyala 518112, Andhra Pradesh, India; avbadrinatha@gmail.com
5 Department of Pharmaceutical Chemistry, DKSS Institute of Pharmaceutical Science & Research (for Girls), Swami-Chincholi, Bhigwan 413130, Maharashtra, India; karumanchi002@gmail.com
6 Department of Chemistry and Biochemistry, Lamar University, Beaumont, TX 77705, USA; rseemaladinne@gmail.com
7 Department of Pharmacy, Texas A&M University, Kingsville, TX 78363, USA; rnalluri207@gmail.com
8 Department of Pharmacology, Raghavendra Institute of Pharmaceutical Education and Research, JNTUA, Anantapuramu 515721, Andhra Pradesh, India
* Correspondence: drpraveenp@riper.ac.in

check for updates

Citation: Kumar, R.N.; Prasanth, D.; Midthuri, P.G.; Ahmad, S.F.; Badarinath, A.V.; Karumanchi, S.K.; Seemaladinne, R.; Nalluri, R.; Pasala, P.K. Unveiling the Cardioprotective Power: Liquid Chromatography–Mass Spectrometry (LC–MS)-Analyzed *Neolamarckia cadamba* (Roxb.) Bosser Leaf Ethanolic Extract against Myocardial Infarction in Rats and In Silico Support Analysis. *Plants* **2023**, *12*, 3722. https://doi.org/10.3390/plants12213722

Academic Editors: Rosa Tundis and Monica Rosa Loizzo

Received: 10 October 2023
Revised: 25 October 2023
Accepted: 26 October 2023
Published: 30 October 2023

Copyright: © 2023 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https://creativecommons.org/licenses/by/4.0/).

Abstract: *Neolamarckia cadamba* (Roxb.) Bosser, a member of the Rubiaceae family, is a botanical species with recognized therapeutic properties. It is commonly used in traditional medicine to treat cardiac ailments and other disorders. However, the precise active constituents and the potential mechanisms by which they manage cardiovascular disorders remain unclear. Therefore, this study aimed to ascertain the bioactive components and investigate their underlying mechanisms of action. *N. cadamba* is used to treat cardiovascular disorders using the integrated metabolomic methodology. An HPLC-QTOF-MS/MS analysis determined the potential chemicals in the *N. cadamba* leaf ethanol extract (NCEE). A thorough investigation of the NCEE samples used in this study led to the identification of 32 phytoconstituents. Of the 32 compounds, 19 obeyed Lipinski's rule of five (RO5). A molecular docking study directed towards HMG-CoA reductase used 19 molecules. The reference drug atorvastatin indicated a binding energy of −3.9 kcal/mol, while the other substances, Cinchonain Ib and Dukunolide B, revealed binding energies of −5.7 and −5.3 kcal/mol, respectively. Both phytocompounds showed no toxicity and exhibited favorable pharmacokinetic properties. In vivo study results concluded that treatment with NCEE significantly reduced the cardiac myocardial infarction (MI) marker CK-MB and atherogenic risk indices, such as the atherogenic index plasma (AIP), cardiac risk ratio (CRR), and atherogenic coefficient (AC) in isoproterenol-induced MI rats. In MI rats, NCEE therapy significantly improved the antioxidant system of the heart tissue, as evidenced by the increased levels of GSH and SOD, lower levels of the oxidative stress marker MDA, and significantly decreased HMG-CoA activity. Additionally, electrocardiogram (ECG) signals from rats treated with NCEE resembled those treated with traditional atorvastatin to treat myocardial infarction. This study used H&E staining to show that administering NCEE before treatment reduced cardiac myocyte degeneration in rats with myocardial infarction, increased the presence of intact nuclei, and increased myocardial fiber strength. The potential cardioprotective effect observed in

PRINCIPAL
Santhiram College of Pharmacy
NH-40, Nandyal-518501 A.P.

WORLD JOURNAL OF PHARMACY AND PHARMACEUTICAL SCIENCES
SJIF Impact Factor 8.025
Volume 13, Issue 10, 529-542 Research Article ISSN 2278 – 4357

OBESITY-ASSOCIATED DIABETES MELLITUS AND ITS HEALTH-RELATED OUTCOMES IN A TERTIARY CARE CENTER

Mulla Saddar Basha[1]*, C. Bhargava Reddy[1], Katama Ediga Krishnamurthy[1], N. V. Naga Dharani[1], P. Bhagya Lakshmi[1] and G. Vijay Kumar[2]

[1]Department of Pharmacy Practice, Santhiram College of Pharmacy, Nandyal-518112, Andhra Pradesh, India.

[2]Department of General Medicine, Santhiram Medical College and General Hospital, Nandyal-518501, Andhra Pradesh, India.

Article Received on
02 August 2024,
Revised on 23 August 2024,
Accepted on 12 Sept. 2024
DOI: 10.20959/wjpps202410-28274

***Corresponding Author**
Mulla Saddar Basha
Department of Pharmacy Practice, Santhiram College of Pharmacy, Nandyal-518112, Andhra Pradesh, India.

ABSTRACT

Background: The current study aims to evaluate prevalence of Obese-diabetics, Diabetes Mellitus risk factors and complications by assessing prescription and lifestyle modifications along with the SF–36 questionnaire, which measures Quality of Life. **Materials and Methods:** This study was a cross-sectional observational study. Patients are selected and categorized based on their Body Mass Index score and questioned about Diabetes Mellitus risk factors and complications. Patients' Quality of Life is assessed using the SF-36 questionnaire, which contains eight specific sub-domains, and one additional item (Health change status). A Higher SF-36 score indicates better functioning and suggests the best Quality of Life of patients. **Results:** The prevalence of Obese-diabetic patients is 136(56.43%). The risk factors of Diabetes Mellitus are observed, which shows individual Prevalence for factors like Alcohol 60(24.9%), Smoking 57(23.65%), Low physical activity 193(80.08%), Blood pressure 74(30.71%), and Age 194(80.5%). The complication of Diabetes Mellitus was observed which shows individual Prevalence for Cardiovascular Diseases 23(9.54%), Nephropathy 23(9.54%), Retinopathy 111(46.06%), and Limb Amputation 4(1.66%). Quality of Life of patients is significantly associated with physical functioning, emotional problems, energy, pain, and social functioning. **Conclusion:** Quality of Life is significantly associated with Gender, Education, Occupation and dietary habits of obese-diabetic people. Clinical pharmacist intervention assistance is required to improve the quality of life of Obese-diabetic patients to reduce further

PRINCIPAL
Santhiram College of Pharmacy
NH-40,Nandyal-518501,A.P.