

CONTENT

3.3.2

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

INDEX

S.No	Content	Page No.
1	<u>Summary of books and chapters in edited volumes</u>	1
2	<u>Additional documents of book chapters published</u>	2-15
3	<u>Summary of paper presented in conference proceedings</u>	16-18
4	<u>Additional documents of paper presented conference proceedings</u>	19-32

Summary of books and chapters in edited volumes



Shree Chanakya Education Society's
Indira College of Pharmacy, Pune

"Redefining Pharmacy Education"

NAAC: B++

Approved by PCI, AICTE, New Delhi, Affiliated to SPPU & MSBTE, Recognized by Govt. of Maharashtra

Summary

List of the books and chapters in edited volumes

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

Sl. No.	Name of the teacher	Title of the book/chapters published	Name of Publisher
Publishing Year 2020-21			
1	Dr. Suvarna P. Ingale	Pharmacotherapy of Neurochemical Imbalances in: Advances in Neuropharmacology: Drugs and Therapeutics	Apple Academic Press
2	Dr. Suvarna P. Ingale	Cysteine in Alzheimer's Disease: Redox Regulation of Protein Functions. In: Quality Control of Cellular Protein in Neurodegenerative Disorders.	IGI Global, February 2020.
3	Mr. Shubham V. Pawar	Codrugs: Optimum Use through Prodrugs (Recent Advancement in Prodrugs)	CRC Press Taylor and Francis Group
Publishing Year 2021-22			
4	Dr. Madhur Kulkarni	Pharmacokinetics & Toxicokinetic Considerations	Acedemic press
5	Dr. Madhur Kulkarni, Ms Roopal Bhat & Dr Suvarna Ingale	Book: Drug Delivery Technology Herbal Bioenhancers in Pharmaceuticals Chapter: Herbal bioenhancers in cancer drug delivery	De Gruyter STEM
6	Dr. Manasi Wagdarikar	BOOK :Ayurvedic remedies for the disease of microbial origin CHAPTER: Ayurvedic remedies for Dadru Kushta Page No. 131-147	Acedemic Decipher press
7	Mrs. Meghna Dabhadkar/Dr. Anagha Joshi	BOOK: Ayurvedic Remedies for Candidiasis & Tuberculosis CHAPTER: Ayurvedic remedies for Tuberculosis Page No: 123-139	Acedemic Decipher press
8	Dr. Anagha Joshi/Dr. Pooja S. Janardan	BOOK :Ayurvedic remedies for the disease of microbial origin CHAPTER 12: Ayurvedic remedies for Hepatitis Page No. 151-166	Acedemic Decipher press
9	Dr. Shraddha P. Devarshi/Dr. Anagha Joshi	BOOK :Ayurvedic remedies for the disease of microbial origin CHAPTER 12: Ayurvedic remedies for Tuberculosis Page No. 151-166	Acedemic Decipher press



Dr. Anagha M. Joshi
Principal (Principal)
Indira College of Pharmacy
Tathawade, Pune - 411033.

1/32

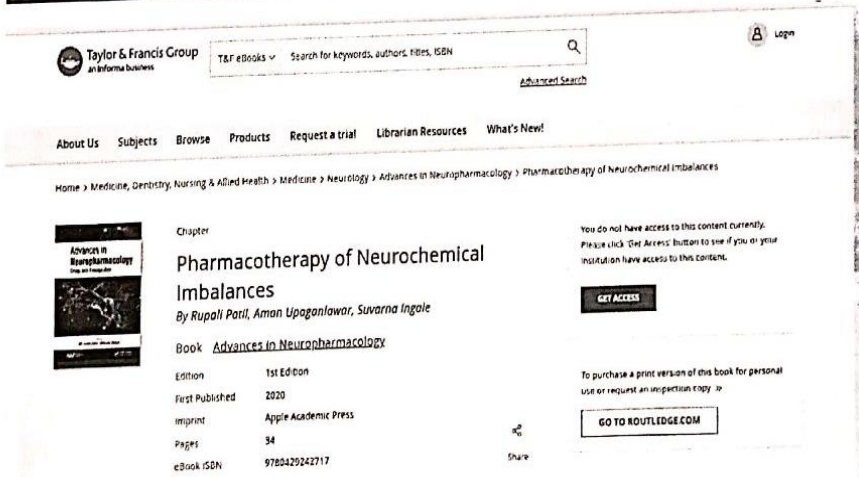
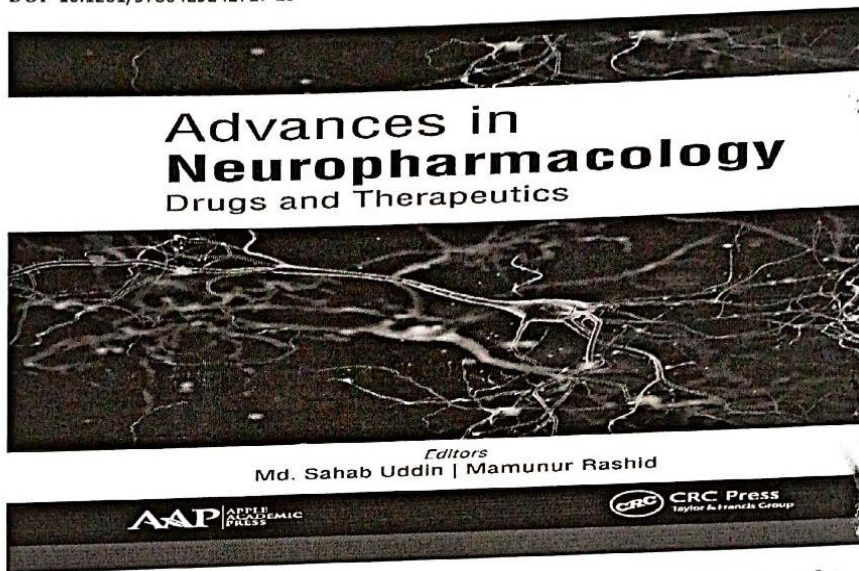
[Back to Index](#)

Additional documents of book chapters published

Publishing Year 2020-21

Author- Dr. Suvarna P.Ingale

DOI- 10.1201/9780429242717-25



ABSTRACT



SCES'S Indira College of Pharmacy, Pune

PRINCIPAL Indira College of Pharmacy Tathawade, Pune - 411033.

2/32

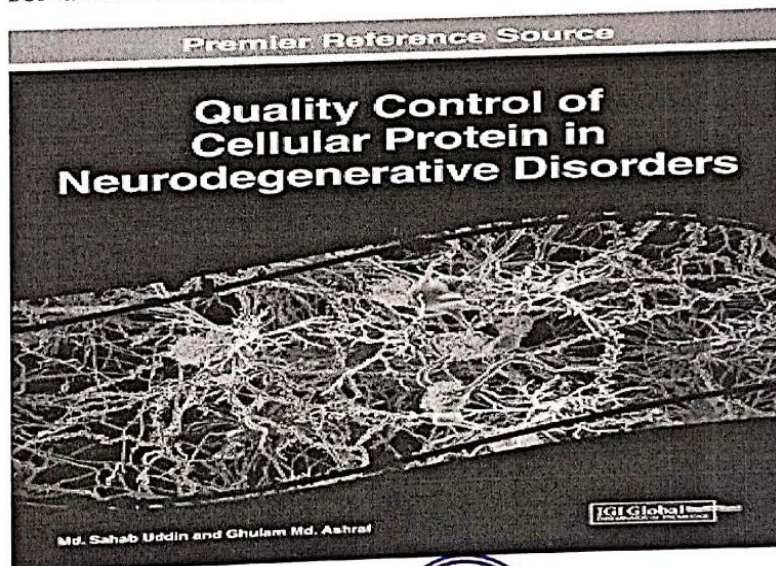
Back to Index

Contents

12. Antidepressant Drugs.....	283
Vishvas Walia and Anish Gang	
13. Antipsychotic Drugs.....	297
Harleen Kaur, Ranveek Kaur, Varsha Rani, Kamshika Sharma, and Pawan Kumar Maurya	
14. Antiepileptic Drugs.....	317
Ajay Gupta and Sagar Singh	
15. Local Anesthetics.....	351
Elisa González-Durán, Luis García-García, M. Pilar López-Serranillos, and Francesca Gómez-Olivier	
16. General Anesthetics.....	389
Aman Upgantiswar, Abhijita Sherkar, and Chandrabekhar Upsoni	
17. Alcohol Pharmacology and Pharmacotherapy of Alcoholism.....	417
Manoj Govindarajulu, Sachin Ranesh, Elery Jones, Viduth Suppansamam, Timothy Mauer, and Marabhisaran Dhonasekaran	
18. Cognition Enhancers.....	447
Ranveek Kaur, Rashi Rajput, Sachin Kumar, Harleen Kaur, Rachana, and Manisha Singh	
19. Opioids Analgesics and Antagonists.....	465
Rachana, Tanya Gupta, Saumya Yadav, and Manisha Singh	
20. Drugs of Abuse and Addiction.....	485
Shalini Mans, Chhatar Kalbia, and Aarushi Singh	
21. Therapeutic Gases for Neurological Disorders.....	513
Rachana, Tanya Gupta, Saumya Yadav, and Manisha Singh	
PART III: Miscellaneous Drugs.....	537
22. Pharmacotherapy of Neurochemical Imbalances.....	539
Rupali Patel, Aman Upgantiswar, and Suvarna Ingale	
23. Evaluation Models for Drug Transport Across the Blood-Brain Barrier.....	573
Chiranjeev Sabu and K. Prasad	
24. Therapeutic Potentials of Nanomedicine for Brain Disorders.....	593
Himani Chaurasia, Vishal K. Singh, Vivek K. Chaturvedi, Richa Mishra, and Vishal Srivastava	
Color Insert of Illustrations.....	A - II

Author- Dr. Suvarna P. Ingale

DOI- 10.4018/978-1-7998-1317-0.ch013



Mjel

PRINCIPAL
Indira College of Pharmacy
Tathawade, Pune - 411033.



SCES'S Indira College of Pharmacy, Pune

3/32

[Back to Index](#)



The screenshot shows the IGI Global website interface. At the top, there is a navigation bar with the IGI Global logo and the tagline 'PUBLISHER OF TIMELY KNOWLEDGE'. Below the navigation bar, there is a search bar and a list of menu items including 'Books', 'Journals', 'e-Collections', 'Open Access', 'Publish with Us', 'Resources', 'Catalogs', 'About Us', 'Newsroom', and 'Special Offers'. The main content area displays a book listing for 'Cysteine in Alzheimer's Disease: Redox Regulation of Protein Functions'. The listing includes the book cover, the title, authors (Savarna P. Ingale, Poojai Patil, Sir Dr. M. S. Gosavi, Aman B. Upaganilawar), and a 'Buy Instant PDF Access' button with a price of \$37.50. There is also an 'Add to Cart' button and a 'Free Content' button.

Abstract

Alzheimer's disease (AD) is characterized by an excessive loss of neurons in the hippocampus and neocortex due to abnormalities in protein marks, Aβ peptide and tau protein in the form of abnormal protein aggregations or deposits in neurons. Recently, oxidative/nitrosative stress has been identified as an important feature of neurodegeneration in AD. Cysteine-dependent proteins are known to be associated with the neurodegenerative process. Such cysteine-dependent enzymes include proteases, antioxidant enzymes, kinases, phosphatases, and also nonenzymatic proteins such as ubiquitin, cysteine as a structural part of the catalytic site. This chapter deals with the role of cysteine in keeping redox balance through its role in oxidative stress and post-translational modification of proteins causing protein misfolding or protein aggregation during neurodegeneration associated with AD.

Chapter Preview

Section 4
Regulation of Neuronal Proteostasis in Neurodegeneration

Chapter 12
Cellular Cysteine Network and Neurodegeneration 303
 Shubhangi H. Patwar, MGV Pharmacy College, Panchavati, India
 Vishal S. Gulecha, School of Pharmaceutical Sciences, Sandip University, India
 Manoj S. Mahajan, SNJB's SSDJ College of Pharmacy, Chandwad, India
 Aman B. Upaganilawar, SNJB's SSDJ College of Pharmacy, Chandwad, India
 Chandrashekhar D. Uposani, SNJB's SSDJ College of Pharmacy, Chandwad, India

Chapter 13
Cysteine in Alzheimer's Disease: Redox Regulation of Protein Functions 326
 Savarna P. Ingale, Indira College of Pharmacy, India
 Rupali Patil, Sir Dr. M. S. Gosavi College of Pharmaceutical Education and Research, India
 Aman B. Upaganilawar, SNJB's SSDJ College of Pharmacy, Chandwad, India

Chapter 14
Molecular Chaperones in Neurodegeneration: Mechanisms of Regulation in Cellular Proteostasis 354
 Mukesh Pandey, Department of Pharmaceutics, Delhi Institute of Pharmaceutical Sciences and Research, India
 Jahangir Nabi, Department of Pharmaceutical Sciences (Pharmacology Division), Faculty of Applied Sciences and Technology, University of Kashmir, Srinagar, India
 Nahida Tabassum, Department of Pharmaceutical Sciences (Pharmacology Division), Faculty of Applied Sciences and Technology, University of Kashmir, Srinagar, India
 Fahem Hyder Pottoo, Department of Pharmacology, College of Clinical Pharmacy, Imam Abdulrahman Bin Faisal University, Saudi Arabia
 Reetika Khatik, Hefei National Laboratory of Physical Sciences at the Microscale, Hefei National University, China
 Nisar Ahmad, Department of Pharmaceutics, College of Clinical Pharmacy, Imam Abdulrahman Bin Faisal University, Saudi Arabia

Handwritten signature

PRINCIPAL
 Indira College of Pharmacy,
 Tathawade, Pune - 411033.



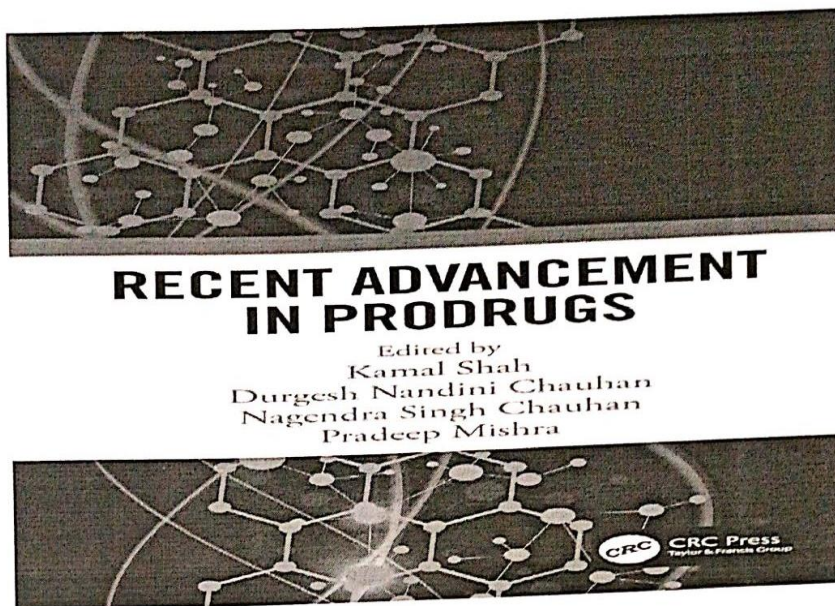
SCES'S Indira College of Pharmacy, Pune

4/32

[Back to Index](#)

Author -Mr.Shubham V.Pawar

DOI- 10.1201/9780429328275-



Taylor & Francis Group
an informa business

T&F eBooks Search for keywords, authors, titles, ISBNs



Login

Advanced Search

About Us Subjects Browse Products Request a trial Librarian Resources What's New!

Home > Bioscience > Pharmaceutical Science > Drug Discovery > Recent Advancements in Prodrugs > Codrugs: Optimum Use through Prodrugs



Chapter
Codrugs: Optimum Use through Prodrugs
By Suneeta Dhanshwar, Poorvashree P. Jashi, Shubham Pawar

You do not have access to this content currently.
Please click Get Access button to see if you or your institution have access to this content.

GET ACCESS

Book Recent Advancement in Prodrugs

Edition: 1st Edition
Year Published: 2020
Imprint: CRC Press
Pages: 45
ISBN: 9780429328275

To purchase a print version of this book for personal use or request an inspection copy, go to:

GO TO ROUTLEDGE.COM

Handwritten signature

ABSTRACT

Selection of candidates for codrug designing is from same or different therapeutic categories. Similarly, the

PRINCIPAL
Indira College of Pharmacy
Tathawade, Pune - 411033.



SCES'S Indira College of Pharmacy, Pune

S/32

[Back to Index](#)

THE NEW

TABLE OF CONTENTS

Chapter 1 | 19 pages
Recent Advancements in New Drug Design and Development of Prodrugs
By Kamal Shah, Gaurav Krishna, Jeetendra Kumar Gupta, Durgesh Nandini Chauhan, Nagendra Singh Chauhan, Pradeep Mishra

GET ACCESS

Abstract v

Chapter 2 | 45 pages
Codrugs: Optimum Use through Prodrugs
By Suneela Dhaneshwar, Poorvashree P. Joshi, Shubham Pawar

GET ACCESS

Abstract v

Chapter 3 | 25 pages
Role of Prodrugs in Drug Design
By Asadullah Madni, Sobia Noreen, Afifa Shafique, Abdur Rahim, Muhammad Sarfraz, Attia Afzal

GET ACCESS

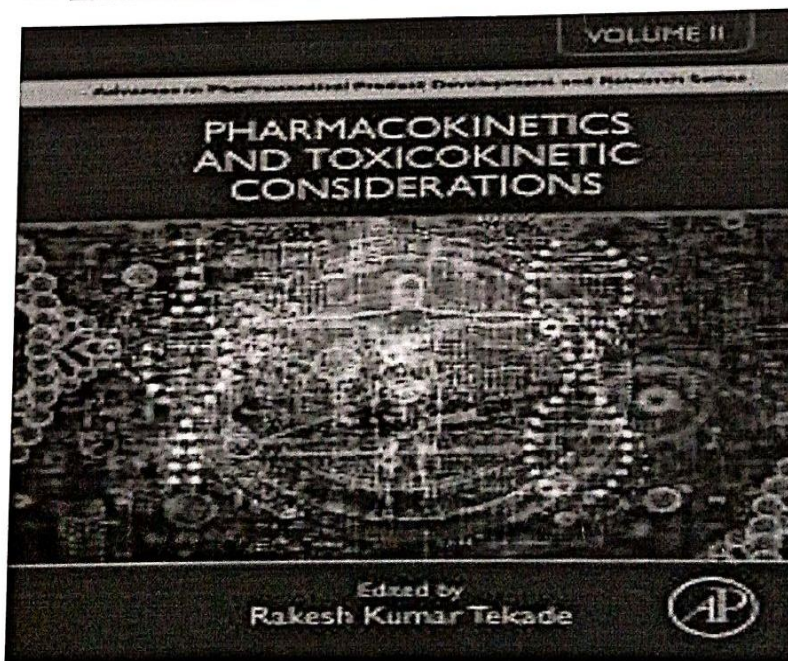
Abstract v

Chapter 4 | 19 pages
Prodrugs for Enhancement of Lipophilicity

Publishing Year 2021-22

Author- Dr.Madhur Kulkarni

DOI- https://doi.org/10.1016/B978-0-323-98367-9.00005-6



Handwritten signature

6/32

SCES'S Indira College of Pharmacy, Pune PRINCIPAL Indira College of Pharmacy, Tathawade, Pune - 411033.



Back to Index

View PDF | Access through your Institution | Purchase PDF | Search |

SCES'S INDIRA PHARMACY
Volume 2 in Advances in Pharmaceutical Product Development and Research
2022, Pages 73-118

Chapter 4 - Toxicogenomics in drug safety assessment

Suryanarayana Polaka¹, Nupur Vasdev¹, Sivarama Raju², Vanshali Makwana³, Jyoti Prakash Rajput⁴, Madhur Kulkarni⁵, Mukhika Tekale⁶, Prakash Sengupta⁷, Manoj Chandra Sharma⁸, Rakesh Kumar Tekale⁹

Show more

Add to Mendeley | Add Share | Cite

https://doi.org/10.1016/B978-0-12-81607-9-00005-8

Get rights and content

Abstract

Toxicogenomics is the study of toxicity evaluation using a combination of genomics, bioinformatics, and other high-throughput techniques. It helps in the drug development process by evaluating the risk assessment to enhance the speed of the process and to decrease the chances of drug failure at later stages. In this regard, different bioinformatics tools are being developed for evaluating toxicogenomics, and by employing these tools, a variety of toxicities can be understood upon genomic modifications. This chapter reviews toxicogenomics alterations and different methods of detecting the genomic modifications upon chemical or environmental pollutant exposure.

Outline

4.1. Introduction

4.2. Role of toxicogenomics in the prediction of human toxicity

4.3. Benefits and applications of toxicogenomics in the drug development process

4.4. Different bioinformatics methods for the study of toxicogenomics

4.5. Role of complementary DNA microarray technology

4.6. Use of animal models and assays for the study of toxicogenomics

4.7. Direction systems for toxicogenomics

4.8. Environmental toxicology leading to genotoxicity

4.9. Future directions of toxicogenomics in drug safety

4.10. Conclusion

References

3.7.3 Necroptosis signal transduction 63

3.5 Necroptosis counteracts tumor cells resistance to apoptosis 65

3.6 Conclusion 66

Abbreviations 67

References 68

4. Toxicogenomics in drug safety assessment 73

Suryanarayana Polaka, Nupur Vasdev, Sivarama Raju, Vanshali Makwana, Jyoti Prakash Rajput, Madhur Kulkarni, Mukhika Tekale, Prakash Sengupta, Manoj Chandra Sharma and Rakesh Kumar Tekale

4.1 Introduction 74

4.1.2 Importance of toxicogenomics in drug development 74

4.2 Role of toxicogenomics in the prediction of human toxicants 75

4.10 Conclusion 90

Abbreviations 91

References 91

5. Understanding the concept of signal toxicity and its implications on human health 99

Mukhika Tekale, HariPura Koppoetti, Mukesh Chandra Sharma, Kuldeep Kapoor, Pratik Sengupta, Manoj Kumar and Rakesh Kumar Tekale

5.1 Introduction 100

5.2 Signal toxicity 101

5.2.1 Receptor-mediated signal toxicity at the target site 102

5.3 Endocrine-disrupting chemicals 104

5.3.1 Endocrine-disrupting chemicals modes of action 105

Article Metrics

Captures

Reprints 2

PDFs

View details

FEEDBACK

7

Myel

PRINCIPAL
Indira College of Pharmacy
Tathawade, Pune - 411033.



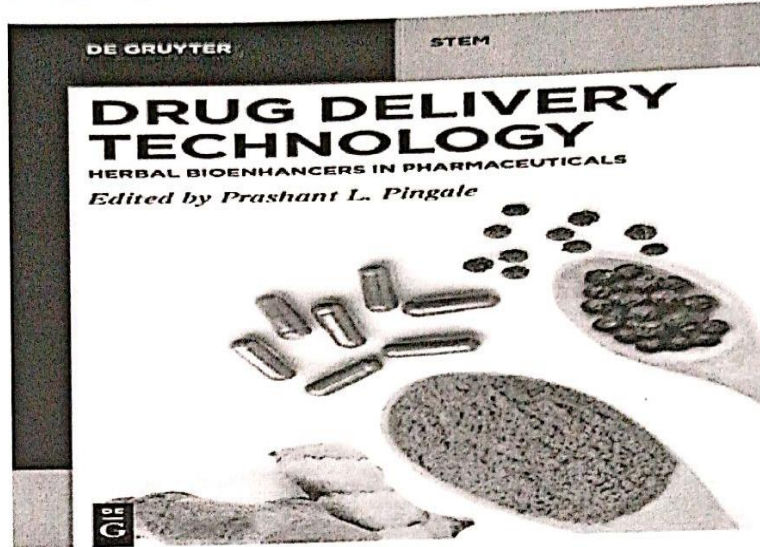
SCES'S Indira College of Pharmacy, Pune

7/32

[Back to Index](#)

Author- Dr. Madhur Kulkarni, Ms Roopal Bhat & Dr Suvarna Ingale

DOI- OL36768169M



Kindle Store | Kindle apps | Kindle & Scribd



Drug Delivery Technology: Herbal Bioenhancers in Pharmaceuticals (De Gruyter STEM) Kindle Edition

by Prashant L. Pingale (Author) | Format: Kindle Edition

Kindle Edition	Paperback
₹5,508.15	from ₹5,417.50

Bioenhancers have been used in Ayurveda historically and are now being investigated for their pharmacological efficacy. Herbal bioenhancers work on the gastrointestinal tract to improve absorption and drug bioavailability by acting on the drug metabolic process. Many herbal drugs show low activity due to their poor lipid solubility or improper molecular size. Piperine, gingerol, resveratrol, quercetin, curcumin, glycyrrhizin, alicin, eugenol, ginsenoside and others are able to enhance the bioavailability of active pharmaceuticals. The book details various uses of herbal bioenhancers in a single comprehensive text.

Print length	Language	Publisher	Publication date	File size	Page No.
385 pages	English	De Gruyter	21 March 2022	4839 KB	Enabled

Kindle Price: ₹ 5,508.15

Includes this content: Delivery via Amazon Appstream, Amazon India-Pacific, Holdings, Private, Limited

Add to bookshelf

Buy now

Deliver to: Kindle Cloud Reader

Buy for others

Give as a gift or purchase for a team or group.

Quantity: 1

Buy for others

Send a free sample

Deliver to: Kindle Cloud Reader

Myek

Product details
Principal
Indira College of Pharmacy
Tathawade, Pune - 411033.



SCES'S Indira College of Pharmacy, Pune

8/32

[Back to Index](#)

Contents

List of contributing authors — VII

Namita D. Desai, Niserga D. Sawant, Pratima A. Talke

Chapter 1

Biopotentiality using herbals: novel approach for poorly bioavailable drugs — 1

Surendra Agrawal, Pravina Gurjar, Ayushi Agarwal

Chapter 2

Herbal bioenhancers in microparticulate drug delivery — 27

Amarjitsing Rajput, Satish Mandlik, Shipa Dawre, Deepa Mandlik,

Prashant Pingale, Shital Butani

Chapter 3

Herbal bioenhancers in nanoparticulate drug delivery system — 45

Shashikant B. Bagade, Shivane Vyas, Amit B. Page, Kiran D. Patil

Chapter 4

Role of herbal bioenhancers in tuberculosis and drug delivery thereof — 87

Madhur Kulkarni, Roopal Bhat, Suvarna Ingale, Abhijit Date

Chapter 5

Herbal bioenhancers in cancer drug delivery — 103

Rupali A. Patil, Krutika H. Pardeshi, Harshal P. Chavan, Sunil V. Amrutkar

Chapter 6

Pharmacotherapeutics and pharmacokinetics of herbal bioenhancers — 149

Vaibhav Bhamare, Rakesh Amrutkar, Vinod Patil, Chandrashekhar Upasani

Chapter 7

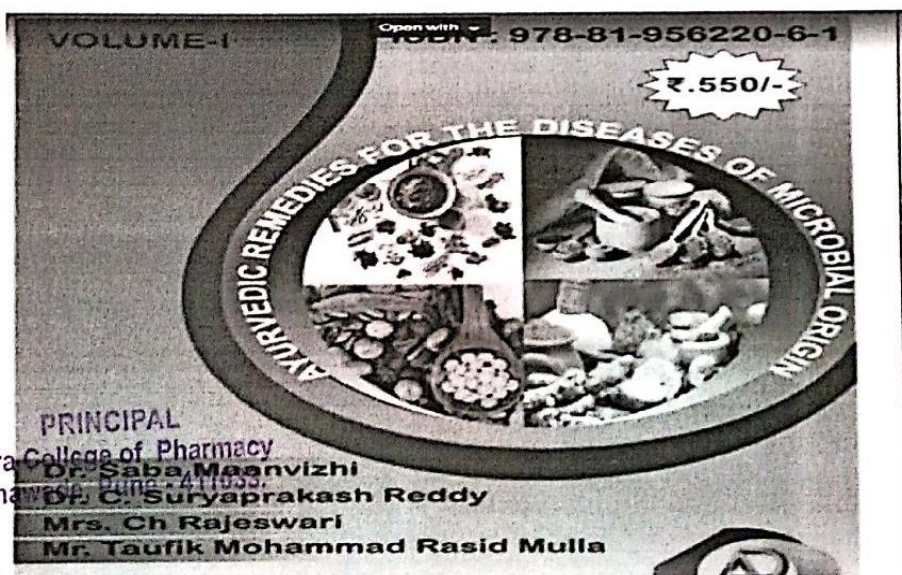
Growing impact of herbal bioenhancers in pharmaceutical industries — 191

Deepa Mandlik, Satish Mandlik, Amarjitsing Rajput

Chapter 8

Herbal bioenhancers and improvement of the bioavailability of drugs — 211

Dr. Manasi Wagdarikar, Dr. Anagha Joshi



Myel

PRINCIPAL
Indira College of Pharmacy
Tathawade, Pune - 411033.
Dr. Saba Manvizi
Dr. C. Suryaprakash Reddy
Mrs. Ch. Rajeswari
Mr. Taufik Mohammad Rasid Mulla



SCES'S Indira College of Pharmacy, Pune

9/32

[Back to Index](#)

AYURVEDIC REMEDIES FOR THE TREATMENT OF MICROBIAL DISEASES

Published by
Academic Decipher Press, Mumbai
Website: <https://academicdecipher.in/>
WhatsApp No. 7400253569
Email: admin@academicdecipher.in,
academicdecipher.in@gmail.com

© Copyrights reserved

The text of this publication or any part thereof should not be copied, reduced, used, photocopied or transmitted in any language or stored in any information storage device including but not limited to computer, laptop, CD, pen drive, hard disc, email drive, mobile, etc for distribution or use without prior permission of the publisher, editors and authors. Breach of this condition is liable to legal action.

Edition: Feb 2022

Price: Rs.550/-

ISBN: 978-81-956220-6-1

Every effort has been made to avoid the errors in this publication. In spite of this the errors may have crept in. Any mistake, error or discrepancy so noted and shall be brought to our notice will be taken care in next edition. The publisher take no responsibility with regards to the accuracy of information contained in this book and cannot accept any legal responsibility of any errors or omissions.

Exclusively marketed & distributed by Academic Decipher Press, Mumbai. For sale in India and abroad.

**ACADEMIC DECIPHER MUMBAI
CONTENT**

1. AYURVEDIC REMEDIES FOR ACNE VULGARIS.....	1
2. AYURVEDIC REMEDIES FOR ADENOVIRUS DISEASES.....	11
3. AYURVEDIC REMEDIES FOR ANTHRAX.....	20
4. AYURVEDIC REMEDIES FOR ATHLETE'S FOOT.....	32
5. AYURVEDIC REMEDIES FOR BRUCELLOSIS (MALTA FEVER).....	37
6. AYURVEDIC REMEDIES FOR CANDIDIASIS.....	50
7. AYURVEDIC REMEDIES FOR CHICKENPOX.....	67
8. AYURVEDIC REMEDIES FOR CHOLERA.....	88
9. AYURVEDIC REMEDIES FOR CORONA VIRUS (COVID-19).....	95
10. AYURVEDIC REMEDIES FOR CUTANEOUS CANDIDIASIS.....	116
11. AYURVEDIC REMEDIES FOR DADRU KUSHITA.....	131
12. AYURVEDIC REMEDIES FOR DENGUE.....	148
13. AYURVEDIC REMEDIES FOR DERMATOPHYTOSIS.....	171
14. AYURVEDIC REMEDIES FOR FURUNCLE (BOILS).....	182
15. AYURVEDIC REMEDIES FOR GONORRHEA.....	198
16. AYURVEDIC REMEDIES FOR LEPROSY.....	213

Ayurved

PRINCIPAL
Indira College of Pharmacy
Tathawade, Pune - 411033.

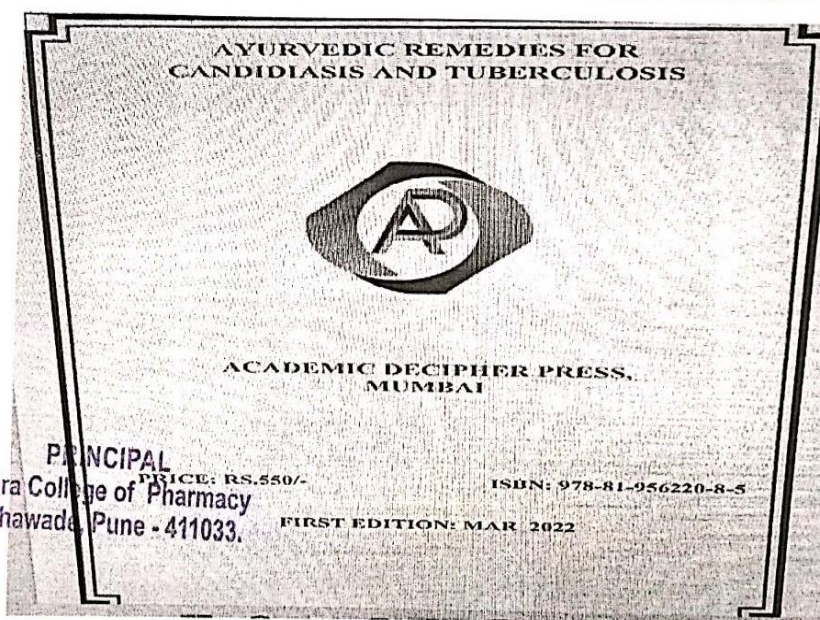
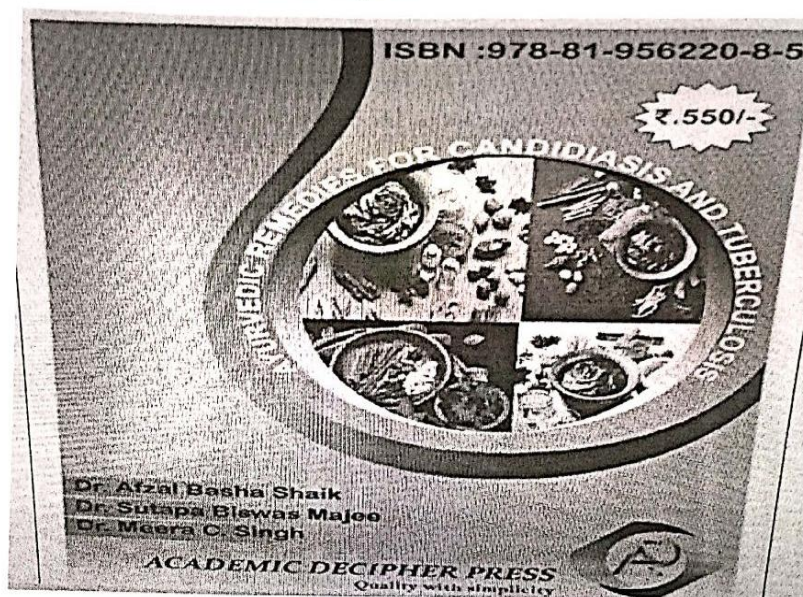


SCES'S Indira College of Pharmacy, Pune

10/32

[Back to Index](#)

Author- Mrs.Meghna Dabhadkar, Dr.Anagha Joshi



PRINCIPAL
Indira College of Pharmacy
Tathawade, Pune - 411033.



SCES'S Indira College of Pharmacy, Pune

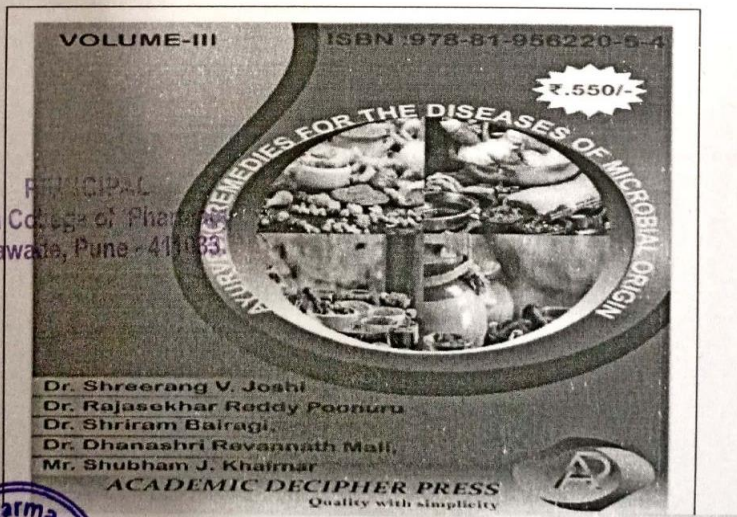
11/32

[Back to Index](#)

ACADEMIC DECIPHER MUMBAI

CHAPTER NUMBER	AUTHORS OF THE CHAPTER	PAGE NUMBER
1	DR. AMOL TATODE, DR. MILIND UMEKAR, MS ABHIDHA DESHPANDE, MS. MUSKAN MOTWANI, MR. SARVESH FULKE	1
2	DR. A. KRISHNA SAILAJA*, DR. SUMAKANTILM, A.SAI SUMANYA, SNEHA KHATHUN, K. SNEHA	15
3	DR. APARNA PALSHEKAR, DR. SUPRIYA SHIDHAYE, MS. SURUTI PATIL, MS. ANJALI WAYBASTI, MS SHUBHANGI YAMGAR, MS. DIVYA KAREPAKA, MS.MAHENDR ANSARI	31
4	DR. SUTAPA BISWAS MAJEE, MS. AMRITA DAS, MR.SAUMYAJYOTHI DAS, MS. TATHAMBIKA TEJESWINI SEN	43
5	DR. SHAIK AFZAL BASHA, RALLABANDI NAVEEN CHAND, DEVARAKONDA SARATH CHANDRA, SHAIK ABDUL KARIMULLA	61
6	MR. RAVIRAJ PRAJAPATI, DR.LALIT LATA JHA, MR.VIJAY MOHAN MISHRA, MR. PAPPU KUMAR, MR.SAURABH JAIN,MR. CHIRAG SINGH	78
7	DR. MEERA SINGH, DR. SANJAY SAWANT, MISS.SHWETA TAKAWALE, MISS SUPRIYA HINGANE, MR. KRISHNA SARDA	86
8	PROF. UTKARSH NAGVEKAR, DR. SUNIL HARER, MS.PRIYANKA PATIL, MS. KAJAL MOHITE, MS.BHAKTI MUFAR	101
9	DR. FEROZ A TAMBOLI, DR. HARINATH N MORE, SHUBHAM J KAMBLE, SRUSHI S DHANAL, ANAGHA S AJAGEKAR	113
10	MRS. MEGHNA DHABHADKAR, DR. ANAGHA JOSHI, MR. GAURAV PATIL, MR. KRISHIKESH KHEDKAR, MS. ANAMIKA GAVHAR	123
11	MR. SHUBHAM KHAIRNAR, DR. SANJAY KSHIRSAGAR, MR. DIPTANSHU KASAR, MR. JIVAN PATIL, MR. RAHUL GAVAKE, MR. ATUL MUTHAL	140
12	DR. P. HYMA, DR. V. JYOTHI, MARRI RUTHIKA RATNA VENI, APURVA MAMIDIPALLI, TINGAM HARRINI	152

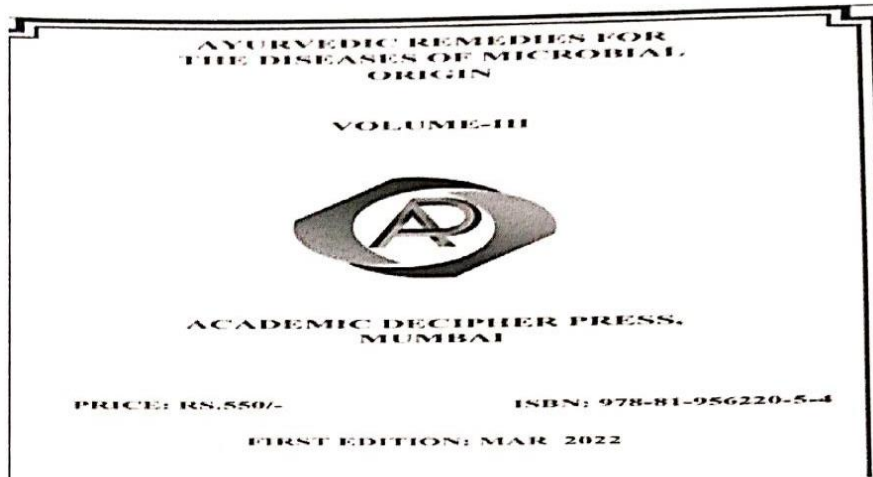
Author – Dr.Pooja S. Janardan, Dr.Anagha M.Joshi



SCES'S Indira College of Pharmacy, Pune

12/32

[Back to Index](#)



AYURVEDIC REMEDIES FOR THE DISEASES OF MICROBIAL ORIGIN VOLUME-III

ACADEMIC DECIPHER MUMBAI
CONTENT

1. AYURVEDIC REMEDIES FOR LEPROSY	1
2. AYURVEDIC REMEDIES FOR RHEUMATOID ARTHRITIS	12
3. AYURVEDIC REMEDIES FOR SCALP INFECTION	23
4. AYURVEDIC REMEDIES FOR SEBARRHEIC DERMATITIS.....	34
5. AYURVEDIC REMEDIES FOR SWINE FLU.....	47
6. AYURVEDIC REMEDIES FOR TINEA INFECTIONS.....	68
7. AYURVEDIC REMEDIES FOR TINEA CORPORIS	91
8. AYURVEDIC REMEDIES FOR TUBERCULOSIS.....	99
9. AYURVEDIC REMEDIES FOR TYPHOID.....	116
10. AYURVEDIC REMEDIES FOR URINARY TRACT INFECTIONS...	123
11. AYURVEDIC REMEDIES FOR VAGINAL CANDIDIASIS.....	139
12. AYURVEDIC REMEDIES FOR VIRAL HEPATITIS	150
13. AYURVEDIC REMEDIES FOR VULVOVAGINAL CANDIDIASIS.....	166
14. AYURVEDIC REMEDIES FOR YEAST INFECTION FROM ANTIBIOTIC ..	189
15. AYURVEDIC REMEDIES FOR ZIKA VIRUS.....	199

By ch

Principal
Indira College of Pharmacy
Tathawade, Pune - 411033.

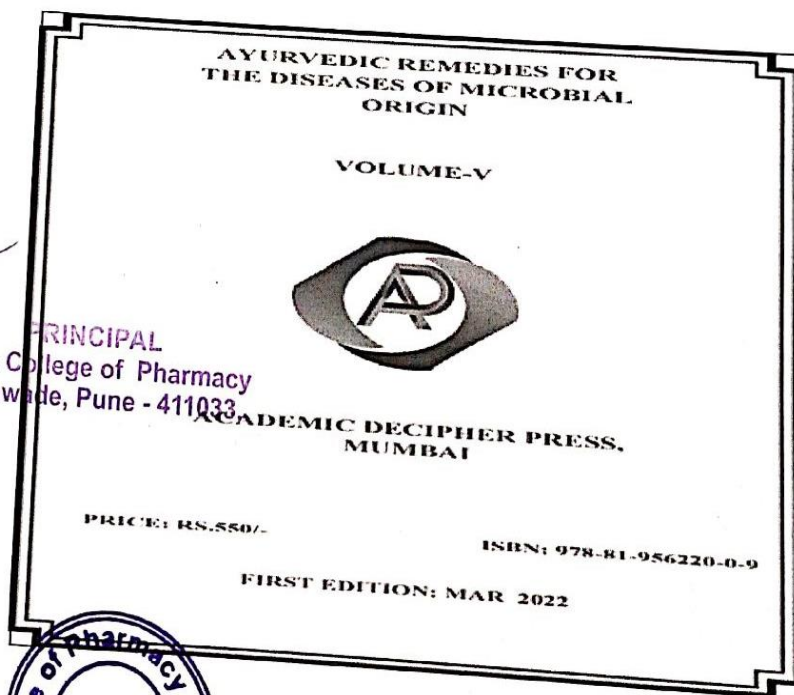
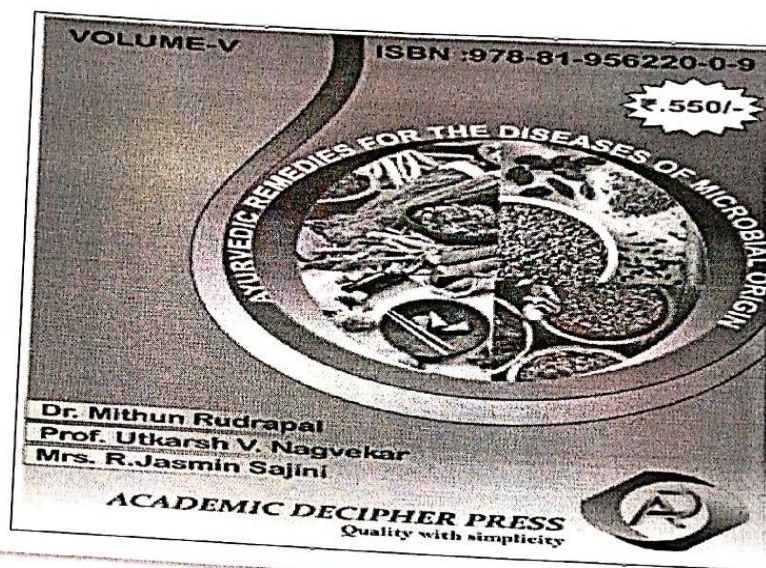


SCES'S Indira College of Pharmacy, Pune

13/32

[Back to Index](#)

Author- Dr.Shraddha P.Devarshi/Dr. Anagha Joshi



14/32

SCES'S Indira College of Pharmacy, Pune

[Back to Index](#)

ACADEMIC DECIPHER MUMBAI	
CONTENT	
1. AYURVEDIC REMEDIES OF COVID-19	1
2. AYURVEDIC REMEDIES OF DENGUE FEVER	21
3. AYURVEDIC REMEDIES OF FUNGAL INFECTION	36
4. AYURVEDIC REMEDIES OF LEPROSY	45
5. AYURVEDIC REMEDIES OF MUCORMYCOSIS	53
6. AYURVEDIC REMEDIES OF PEPTIC ULCER DISEASE	72
7. AYURVEDIC REMEDIES OF PNEUMONIA	83
8. AYURVEDIC REMEDIES OF PULMONARY TUBERCULOSIS	94
9. AYURVEDIC REMEDIES OF RINGWORM	105
10. AYURVEDIC REMEDIES OF TUBERCULOSIS	115
11. AYURVEDIC REMEDIES OF URINARY TRACT INFECTIONS	131
12. AYURVEDIC REMEDIES OF VAGINAL CANDIDIASIS	141
13. AYURVEDIC REMEDIES OF VARIOUS INFECTIONS	151
14. AYURVEDIC HOME REMEDIES AS IMMUNOSTIMULANTS	164

Mjel

PRINCIPAL
 Indira College of Pharmacy
 Tathawade, Pune - 411033.



SCES'S Indira College of Pharmacy, Pune

15/32

[Back to Index](#)

Summary of paper presented in conference proceedings



Shree Chanakya Education Society's

Indira College of Pharmacy, Pune

"Redefining Pharmacy Education"

NAAC: B++

Approved by PCI, AICTE, New Delhi, Affiliated to SPPU & MSBTE, Recognized by Govt. of Maharashtra

Summary

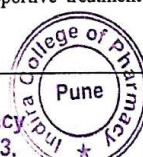
List of papers published in national/ international conference

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

S.NO	Name of the presenter	Title of the Poster	Name of the Conference
A.Y 2017-2018			
1	Dr. Anagha M. Joshi	An Analytical Method Development for Analysing Release & Permeation Profile Of Drug When Co-ordinated With Medicated Wines Containing One Or More Ingredients Of Trikates	Innovation 2017, Regional Research Conference Organized by Savitribai Phule University held at STES's Smt. Kashibai Navale College Of Pharmacy, Kondhwa
2	Madhur Kulkarni/Meghna Dabhadkar	Development of in-situ gel formulation of potassium nitrate for dentin hypersensitivity	17th International symposium of controlled release society- Indian Chapter on Advances in Technology and Business Potential of New Drug Delivery systems
3	Madhur Kulkarni/ Nisha Goge	Development of self-nanoemulsifying drug delivery system of capsanthin	17th International symposium of controlled release society- Indian Chapter on Advances in Technology and Business Potential of New Drug Delivery systems
4	Madhur Kulkarni/ Nikhil Khadkikar	Development of anti-dandruff gel formulation of fenugreek leaves extract	17th International symposium of controlled release society- Indian Chapter on Advances in Technology and Business Potential of New Drug Delivery systems
A.Y 2018-2019			
5	Dr. Shraddha P. Devarshi	Quality of Life in Beta-Thalassemia patients: A review	Indian Congress of Pharmacy Practice 2018 & 3rd Convention of the Indian Association of Colleges of Pharmacy
6	Dr. Archana M. Karnik	Formulation development and evaluation of bilayer tablets of Cilostazol and Aspirin	Excipients – The Key Drivers in Formulation Success
7	Dr. Vishakha Hastak	Formulation and evaluation of fast dissolving oral films of metoprolol tartrate	National Seminar on Excipients – The key drivers in formulation success organized by CRS
8	Dr. Vishakha Hastak/Dr. Madhur Kulkarni	Formulation and evaluation of mixture of bovine colostrum microspheres and probiotics for supportive treatment of ulcerative colitis	National Seminar on Excipients – The key drivers in formulation success organized by CRS

16/32

PRINCIPAL
Indira College of Pharmacy
Tathawade, Pune - 411033.

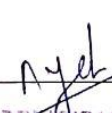

[Back to Index](#)



Shree Chanakya Education Society's

Indira College of Pharmacy, Pune*"Redefining Pharmacy Education"***NAAC: B++**

Approved by PCI, AICTE, New Delhi, Affiliated to SPPU & MSBTE, Recognized by Govt. of Maharashtra

9	Ms.Poonam Karekar	Enhancement of stability of ginger oil extract by loading into solid lipid nanoparticles	National Seminar on Excipients – The key drivers in formulation success organized by CRS
10	Dr.Amir Saikh	Solubility enhancement of poorly water soluble drug by solid dispersion	National Seminar on Excipients – The key drivers in formulation success organized by CRS
11	Dr.Vishakha Hastak/Dr.Madhur Kulkarni	Development and evaluation of antimicrobial patch containing mixture of tridax procumbens and nyctanthes arbortristis leaves extract	National Seminar on Excipients – The key drivers in formulation success organized by CRS
12	Dr..Madhur Kulkarni	Development and evaluation of taste masked dry syrup formulation of potassium chloride (KCl)	National Seminar on Excipients – The key drivers in formulation success organized by CRS
13	Dr.Amir Saikh	Solubility enhancement of celecoxib using different solubilization approaches	National Seminar on Excipients – The key drivers in formulation success organized by CRS
A.Y 2019-2020			
14	Dr..Madhur Kulkarni	Ivrt of acyclovir semisolid formulations using immersion cells: study of effect of test and formulation variables	18th International symposium of controlled release society- Indiar Chapter on Advances in Technology and Business Potential of New Drug Delivery systems
15	Dr.Madhur Kulkarni/ Roopal Bhat	Chronomodulated delivery system of metoclopramide hydrochloride: an effective therapy for gastric paresis and morning sickness	18th International Symposium of Controlled Release Society - Indian Chapter
16	Mrs.Rutuja Kamble	Repurposing Drugs for the COVID-19: A New Perspective	 PRINCIPAL Indira College of Pharmacy Tathawade, Pune - 411033
A.Y 2020-2021			
17	Dr. Madhur Kulkarni/ Ms. Roopal Bhat	Effect of borneol on permeability of BCS Class III drug in self nanoemulsifying drug delivery system	19th International Symposium on Advances in Technology and Business Potential of Novel Drug Delivery Systems

17/32


[Back to Index](#)



Shree Chanakya Education Society's
Indira College of Pharmacy, Pune

"Redefining Pharmacy Education"

NAAC: B++

Approved by PCI, AICTE, New Delhi, Affiliated to SPPU & MSBTE, Recognized by Govt. of Maharashtra

18	Mrs. Rutuja Kamble	Pharmaceutical intellectual property rights: Current Perspective of Modern India	International e-Poster Competition on "Emerging Trends in IPR"
19	Dr. Madhur Kulkarni	To compare quality of granules of ibuprofen obtained from super gran TM and rapid mixer granulator	19th International Symposium on Advances in Technology and Business Potential of Novel Drug Delivery Systems
20	Ms Nitisha Soni	Development and characterization of pegylated liposomes for oral delivery of insulin	"Translational Research for Nanomedicine"(oral Presentation)
21	Dr. Mansi Wagdarikar/ Dr.Madhur Kulkarni	Application of dissolution for evaluation of taste masking effect of Primaquine Phosphate complex developed with ion exchange resins	DRPI 2021 (Oral Presentation)
22	Ms Roopal bhat/ Dr.Madhur Kulkarni	Comparative in vitro dissolution of itraconazole marketed formulations: Cause and Effect analysis	Dissolution Research Presentation: India 2021 (Oral Presentation)
23	Dr.Madhur Kulkarni	Repurposing niclosamide for Covid-19 treatment	Pharmaceutical research and innovations to tackle future healthcare arena
24	Mrs. Rutuja Kamble	Molecular docking,ADMET study & computational investigation of 1,5-diphenyl-2,4-disubstituted-1H-Imidazole.	Clinical Pharmacy Practice and Research (ICPPR-2022)



Anagha W. Joshi
Dr. Anagha W. Joshi
PRINCIPAL

Indira College of Pharmacy
Tatva (Principal) 411033.

18/32

[Back to Index](#)

Additional documents of paper presented conference proceedings

A.Y 2017-18

Author- Madhur Kulkarni/Meghna Dabhadkar

P-056

Development of *in-situ* gel formulation of potassium nitrate for dentin hypersensitivity

Dabhadkar M.M, Kulkarni M.C, Katedeshmukh R.G
SCES Indira College of Pharmacy, Niramaya, New Mumbai Pune Highway, Tathawade, 411033

Poster No: 056

Introduction

Dentin Hypersensitivity (DH) when sharp pain arising from exposed dentin in response to different stimuli.

Commonest causes of Sensitized Teeth

Objectives:
 • To formulate *in-situ* gel formulation of potassium nitrate for DH.
 • To evaluate the *in-situ* gel formulation of potassium nitrate for DH.
 • To evaluate the *in-situ* gel formulation of potassium nitrate for DH.

Methods

Factor	Level 1	Level 2	Level 3
pH	4.5	5.5	6.5
Viscosity (cps)	2410	2410	2410
Gelation (min)	110	110	110
Adherence (min)	14.30	14.30	14.30
Spreadability (g/cm ² /sec)	5.55	5.55	5.55
Drug Content (%)	99.71	99.71	99.71

• *In-situ* gel formulations were prepared using different concentrations of potassium nitrate.

• A pre-clinical study was conducted to evaluate the *in-situ* gel formulation of potassium nitrate for DH.

• The *in-situ* gel formulations were evaluated for pH, viscosity, gelation time, adherence, spreadability and drug content.

• The results of the study are presented in the following table.

Results

Fig. 1 Surface response plots for Viscosity and Gelation time

Fig. 2 3D surface plot

Parameter	Value
pH	4.5
Viscosity (cps)	2410
Gelation (min)	110
Adherence (min)	14.30
Spreadability (g/cm ² /sec)	5.55
Drug Content (%)	99.71

Fig. 3 Evaluation parameters of Optimized Formulation

- Increase in concentration of polymer causes increase in viscosity of the formulation.
- Increase in concentration of polymer decreases the gelation time.
- Formulation prepared using 27% potassium nitrate and 0.3% potassium alginate showed highest adherence and lowest gelation time.
- Formulation 11 showed the response in desired range and the adherence showed the desirable feature of *in-situ* gel for the formulation indicating it is an optimized one.

Conclusions

The optimized *in-situ* gel formulation containing 27% potassium nitrate, 0.3% potassium alginate and 0.3% potassium alginate showed good mechanical, biological, adherence, drug release and gel formation at physiological temperature in oral cavity.

References

1. Wadhwa, R. (2017). *In-situ* gel formulations: A Review. *Journal of Pharmacy and Bioequivalence*, 10(1), 1-11.
2. Patel, R., Vaidya, K., Patel, J. (2017). Development and evaluation of *in-situ* gel for dentin hypersensitivity. *International Journal of Pharmaceutics*, 454(1-2), 101-110.



PRINCIPAL
 Indira College of Pharmacy
 Tathawade, Pune - 411033

19/32

SCES'S Indira College of Pharmacy, Pune

[Back to Index](#)

Author- Madhur Kulkarni/ Nisha Goge

DEVELOPMENT OF SELF NANO EMULSIFYING DRUG DELIVERY SYSTEM OF CAPSANTHIN

Kulkarni M. Goge N., Hastak V
SCES Indira College of Pharmacy, Niramaya, New Mumbai Pune Highway, Tathawade, Pune-411033

P-066

Introduction

Capsanthin, an intensely red coloured pigment isolated from the red ripe fruit of paprika (*Capsicum annuum L.*) is a carotenoid having very potent thermo-preventive activity. However, its application as a natural colourant and as an antioxidant is limited by its very poor aqueous solubility.

Aim

To develop self nano emulsifying drug delivery system (SNEEDS) of capsanthin in order to improve its aqueous solubility and rate and extent of dissolution.

Methods

Solubility studies: Solubility of capsanthin in various oils, surfactants and co-surfactants was determined by shake flask method.

Construction of ternary phase diagram: The ternary phase diagram was constructed for Caplex 300, Cremophor RH 40 and Capmul MCM by dilution method.

Preparation of SNEEDS with capsanthin: Caplex 300, Cremophor RH 40, Capmul MCM and BHT (0.5%) in different ratios mixed for 15 min.

30 mg capsanthin was dissolved by warming and sonication.

Formulations were observed for isotropicity and were stored at 2-8°C until further use.

Characterization of SNEEDS formulations:

- Self emulsification time (500 ml, 50 rpm, 37°C USP type II Dissolution apparatus)
- Transmittance (%) (UV spectrophotometer)
- Robustness to dilution
- Robustness to dilution
- Zeta potential (mV) (Delta Nano C)
- In vitro drug release (100 ml, 0.1 N HCl, 60 rpm, 37°C USP type I Dissolution apparatus)
- Cloud point (°C)
- Globule size (nm) (Photon correlation spectroscopy Nanophox Sympa tec)

Evaluation

Results

Solubility studies

Oil	Solubility (mg/ml)	Surfactant	Solubility (mg/ml)
Caplex 300	74.4 ± 1.45	Cremophor RH 40	0.42 ± 0.24
Castor oil	55.14 ± 1.62	Solutol HS 15	0.18 ± 0.11
Co-Surfactant (mg/ml)		K-TPGS	2.45 ± 1.09
Capmul MCM	23 ± 0.74		

Figure 1. Ternary phase diagram of Caplex 300, Cremophor RH 40 and Capmul MCM

Evaluation of SNEEDS

F-number	Cloud point (°C)	Globule size (nm)	Zeta potential (mV)	Drug content (%)
F1	78 ± 0.81	48.37	-2.72	98.22 ± 0.45
F2	74.9 ± 2.87	137.24	-1.38	97.38 ± 0.57
F3	87.1 ± 1.82	41.77	-2.81	99.15 ± 0.52
F7	74.5 ± 2.08	98.17	-0.93	98.36 ± 0.89
F8	78.5 ± 1.25	70.68	-2.44	98.24 ± 0.88
F9	72 ± 1.43	234.81	-1.53	98.08 ± 0.74

Figure 2. In vitro drug release study of pure drug and SNEEDS formulations

Conclusion

SNEEDS of capsanthin prepared using optimized concentration of Caplex 300, Cremophor RH 40, Capmul MCM showed remarkably enhanced solubility and dissolution rate as compared to pure drug.

References

- Datta, et al. "Design and evaluation of self-nanoemulsifying drug delivery systems (SNEEDS) for cefepodoxime proxetil." *International Journal of Pharmaceutics* 329 (2007).
- Macka, et al. "Cancer chemopreventive activity of carotenoids in the fruits of red paprika *Capsicum annuum L.*" *Cancer Letters* 172 (2001).



PRINCIPAL
 Indira College of Pharmacy
 Tathawade, Pune - 411033.

20/32

SCES'S Indira College of Pharmacy, Pune

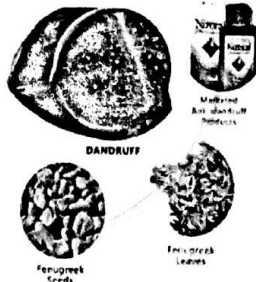
Back to Index

Author-Madhur Kulkarni/ Nikhil Khadkikar

DEVELOPMENT OF ANTI-DANDRUFF GEL FORMULATION OF FENUGREEK LEAVES EXTRACT

Mr. Khadkikar N.J., Dr. (Mrs.) Kulkarni M.C., Mrs. Hastak V., Mr. Jadhav V.S.
SCES Indira College of Pharmacy, Niramay, New Mumbai-Pune Highway, Tathawade, Pune, Maharashtra, India: 411033

INTRODUCTION



AIM
To develop Fenugreek based formulation for the treatment of dandruff.

PREPARATION OF EXTRACTS

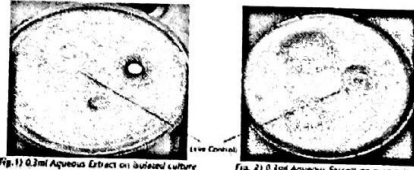
```

graph TD
    Fenugreek --> Seeds
    Fenugreek --> Leaves
    Seeds --> Aqueous_Extract[Aqueous Extract]
    Seeds --> Ethanollic_Extract[Ethanollic Extract]
    Leaves --> Aqueous_Extract
    Leaves --> Ethanollic_Extract
    Aqueous_Extract --> AMI[Anti microbial Activity on isolated culture of Malassezia furfur]
    Ethanollic_Extract --> AMI
    Aqueous_Extract --> AMP[Anti microbial Activity on Pure culture of M. furfur (MTCC1374)]
    Ethanollic_Extract --> AMP
    
```

Medium- Sabourauds Agar Culture- M. furfur Incubation- 24hrs at 32°C

EVALUATION OF EXTRACTS

A. ZOI shown by aqueous and ethanollic extract of fenugreek leaves on isolated and pure cultures MTCC1374 culture of M Furfur



B. Qualitative analysis (Phytochemical evaluation)

Test	Observation
Molisch test	Carbohydrates present
Ninhydrin test	Amino acids present
Brown test	Proteins present
Droghdauff test	Alkaloids present
Harwood test	Flavonoids present

C. Quantitative analysis (Total Flavonoid Contents)

- The crude aqueous extract yielded the highest total flavonoid content (22.85 ± 2.47 µg/ml)
- Quercetin was used as standard


FORMULATION DEVELOPMENT

A. Selection of gelling agent- Cellulose derivatives like various grades of HPMC, HPC, Sodium CMC, Chitosan, Na Alginate, Carbopol etc

EVALUATION OF ANTI-DANDRUFF GEL FORMULATIONS

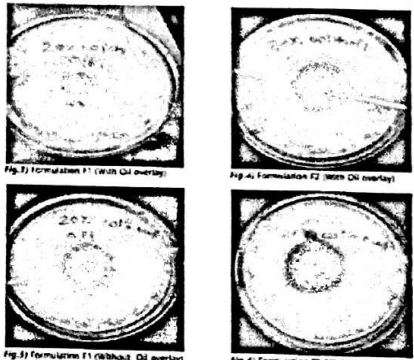
Formulation	Viscosity	Flavonoid Release
Sodium alginate	2.5	3.5
Carbopol	8	8
Povidone	0.5	0.1
Methylcellulose	0.2	0.2
Chitosan	0.2	0.2
PolyM water	1000	0.170

A. Cumulative Flavonoid Release



B. Evaluation of anti-dandruff gel formulations

C. Anti dandruff activity of gel formulations.



CONCLUSION

- The formulated gel (F2) using (2.5%) sodium alginate as a gelling agent and 30% aqueous extract showed effective viscosity, spreadability, assay, flavonoid release properties along with good zone of inhibition in both the method (with and without overlay of oil)
- Aqueous extract of the *Trigonella foenum graecum L* showed anti-dandruff activity against *Malassezia furfur*.
- Aqueous extract of *Trigonella foenum graecum L* was incorporated in to gel formulation showed promising anti-dandruff activity.

REFERENCES

- Pasricha V, Gupta R "Nutraceutical potential of Methi (*Trigonella foenum graecum L*) and Kasurimethi (*Trigonella corniculata L*)". *Journal of pharmacognosy and phytochemistry*; 3(4): 47-57 (2014).
- Pingili M, Vanga S, et al "Antifungal activity of plant extracts against dandruff causing organism *Malassezia furfur*". *International journal of bioassay*; 5.11:5047-5049 (2016).



PRINCIPAL
Indira College of Pharmacy
Tathawade, Pune - 411033.

A.Y 2018-19

Author- Dr. Shraddha P. Devarshi

Theme: Clinical Pharmacist:
Advancing Pharmacy
Practice and Patient Care

Indian Association
of Colleges of Pharmacy

INDIAN CONGRESS OF
PHARMACY PRACTICE - 2018
&
3rd CONVENTION OF THE INDIAN
ASSOCIATION OF COLLEGES OF PHARMACY

CERTIFICATE

THIS IS TO CERTIFY THAT

Prof. Dr. M. M. S. Shoraddha P. Devarshi, Indira College of Pharmacy,
Pune. has presented a Scientific Paper entitled

Quality of life in Beta-Thalassemia patients: A review.

in the scientific poster session of the Indian Congress of Pharmacy Practice - 2018 & 3rd Convention of The Indian Association of Colleges of Pharmacy held at Novotel Hyderabad Convention Centre, Hyderabad on 28th and 29th April, 2018.

Prof. K. Chinnaswamy
President
Indian Association of Colleges of Pharmacy
Chennai, TN

Dr. B. Suresh
President, Pharmacy Council of India,
New Delhi & Vice-Chairman, 201 Academy of
Higher Studies & Research, Pune, Karnataka

Dr. B. Jayakar
Secretary, IACP & IAPPC,
Mumbai
President, Indian Society
of Pharmaceutical Sciences, Bangalore

Dr. T. K. Ravi
Vice President, IACP & IAPPC,
College of Pharmacy, Sri Sathya Sai Institute
of Paramedical Sciences, Bangalore

Author- Dr. Archana M. Karnik

CRS
Indian Local Chapter

Controlled Release Society - Indian Chapter
National Seminar on

EXCIPIENTS - THE KEY DRIVERS IN FORMULATION SUCCESS

6th October, 2018
Certificate

This is to certify that

Dr. ARCHANA KARNIK
has participated in the symposium as a speaker/ poster presenter/ delegate/
organising committee member/ volunteer.

Co-Convenor
Dr. John D'souza
Tatyasaheb Kore COP
Warananagar

Co-Convenor
Dr. Madhur Kulkarni
SCES's Indira COP
Pune

Convener
Dr. Vandana B. Patravale
Institute of Chemical Technology
Mumbai

President
Dr. Anisha Pargal
CRS-Indian Chapter



PRINCIPAL
Indira College of Pharmacy
Tathawade, Pune - 411033.

22/32

SCES'S Indira College of Pharmacy, Pune

[Back to Index](#)

Author- Dr.Vishakha Hastak

FORMULATION AND EVALUATION OF FAST DISSOLVING ORAL FILMS OF METOPROLOL TARTRATE

Hastak V.S., Pathare V.S., Dajal A.N., Shah A.

89/2A "Niramay", SCES's Indira College Of Pharmacy, New Pune-Mumbai Highway, Tathwade, Pune-411033, Maharashtra, India
Email: shahakshay200018@gmail.com

Keywords: celecoxib, hydroxyl propyl beta cyclodextrin, fusion method, high speed homogenizer

Aim & objective: Metoprolol tartrate (meto) is commonly used as antihypertensive agent. The objective of present study is to develop fast dissolving oral films using hydrophilic polymers of Metoprolol tartrate which dissolves rapidly in mouth.

Methodology: Fast dissolving oral films of metoprolol tartrate were prepared by solvent casting method. Polymers like hydroxypropyl methylcellulose (HPMC) E15, HPMC E3, HPMC E5, polyvinyl pyrrolidone (PVP) K30, sodium alginate alone and in combination were investigated for the film forming capacity. For the fabrication of films, glycerin was used as a plasticizer, and aspartame was used as a sweetener. Drug-excipient interaction was investigated by FTIR and DSC study. Glycerin, aspartame were dissolved in a 5 ml of 50% v/v ethanol.

of meto were evaluated for average weight thickness, pH determination, percentage moisture absorption, percentage moisture loss, in-vitro disintegration time, drug content and in-vitro drug dissolution. Best formulation was evaluated for stability 40°C±2°C and 75%±5%.

Results: Fast dissolving oral film formulation containing HPMC E15 as film forming polymer was considered as optimum, with 82.17±0.75mg average weight, 0.14±0.01 mm thickness, excellent in-vitro disintegration time (49 seconds) and in-vitro cumulative percent drug dissolution more than 90% in 15 mins, compared to other formulations. The folding endurance was 105±3.6, drug content was 97±0.9%. It was observed that as the concentration of film forming polymers was increased, film forming capacity (up to certain limit) also

Author- Dr.Vishakha Hastak/Dr.Madhur Kulkarni

FORMULATION AND EVALUATION OF MIXTURE OF BOVINE COLOSTRUM MICROSPHERES AND PROBIOTICS FOR SUPPORTIVE TREATMENT OF ULCERATIVE COLITIS

Bhondve D., Kulkarni M., Hastak V., Dinde G., Gore S.

89/2A "Niramay", Indira College Of Pharmacy, New Pune-Mumbai Highway, Tathwade, Pune-411033, Maharashtra, India.
Email: dhanashree.bhondve169@gmail.com

Aim and objective: Present study was undertaken to develop a supportive treatment for ulcerative colitis (UC) comprising mixture of bovine colostrum (BC) microspheres and probiotics.

Methodology: Characterization of BC was done by SDS-PAGE and Kjeldhal's method. Laury method was used to construct the standard plot for the BC. Probiotic strains were isolated from marketed formulations such as Yakult® and Amul® ice cream and confirmed for their probiotic nature. BC and the isolated probiotic strains individually and in combination were subjected to determination of antimicrobial activity against the pathogenic strains of Escherichia coli, Salmonella paratyphi A and B, Bacillus subtilis, Proteus spp, Candida albicans, Pseudomonas aeruginosa, Klebsiella pneumoniae, Staphylococcus aureus. The isolated probiotic strain from Yakult showing

petroleum ether and then dried overnight. The microspheres were evaluated for flow properties, surface morphology, entrapment efficiency, in vitro drug release (in pH 1.2, 4.5 and 7.5 buffers) and accelerated stability studies. Culture of probiotic strain isolated from Yakult was freeze dried and the resulting powder was subjected to determination of viable count. The sachet formulation was developed using the mixture of BC microspheres equivalent to 500 mg BC and 100 mg freeze dried powder of probiotic (equivalent to 5.6 X 10⁶ CFUs).

Result and discussion: Total protein content of the BC by Kjeldhal method was found to be 44.86%. SDS PAGE studies showed the characteristic band at the 65 kDa, confirming the presence immunoglobulin G. BC alone and in combination with various strains of probiotics showed significant antimicrobial activity against the selected pathogenic strains. Mixture of BC and the



Nyel
PRINCIPAL

Indira College of Pharmacy
Tathwade, Pune - 411033.

Author- Ms.Poonam Karekar

ENHANCEMENT OF STABILITY OF GINGER OIL EXTRACT BY LOADING INTO SOLID LIPID NANOPARTICLES

Karekar P. S., Sawant P.M.

Affiliation: Indira College of Pharmacy, Pune, Maharashtra, India PIN- 411037

Email: poonam.karekar@indiraicp.edu.in

Aim: To develop and characterize ginger extract loaded solid lipid nanoparticles (SLNs) for enhancement of its stability.

Objectives:

1. To develop solid lipid nanoparticles (SLNs) of ginger oil.
2. To evaluate stability of the SLNs at accelerated conditions of temperature and humidity and also to evaluate the photo stability
3. To evaluate the antimicrobial potential of developed SLNs.

Methodology: Ginger oil loaded SLNs were prepared in four different batches (F1, F2, F3 and F4) by w/o/w type double emulsification method using cholesterol, polyvinyl alcohol (PVA) and different concentrations of egg albumin and Tween

months and Photo stability was performed by exposing the formulation to UV/fluorescence lamp for 6months.

Result and Discussion: The encapsulation efficiency of various batches of ginger oil loaded SLNs was in the range of 79.75 to 90.24%. The size ranges varied between 50 nm to 1000 nm. Zeta potential of all formulations was found to be negative, in the range of -44.52 to -49.37 mV. The F4 batch showing high entrapment efficiency and smaller size 182 nm was selected for further studies. FTIR spectra suggested that there were no significant structural changes or complexation reactions between drug and excipients. TEM image of SLNs showed the spherical shape with smooth surface and were observed in the size range of 100-200 nm. In vitro drug release study exhibited 95%

Author- Dr.Amir Saikh

SOLUBILITY ENHANCEMENT OF POORLY WATER SOLUBLE DRUG BY SOLID DISPERSION

Maharavay V.D., Jadhav S.V., Paratkar G.D., Shaikh A.A.

Nirumay, S.No. 89/24, SCES Indira College of Pharmacy, New Pune Mumbai Highway,

Tathawade, Pune, Maharashtra - 411031, India

E-mail: amirshahid13@gmail.com

Aim: The aim of present study was to enhancing the solubility of poorly water soluble celecoxib drug.

Objective: To increase the solubility of drug. Development of solid dispersion by using fusion method and high speed homogenizer method.

Introduction: Solubility is one of the important role in the formulations like parenteral. Celecoxib is the NSAID which exhibit antipyretic and analgesic activity by inhibit prostaglandin synthesis. It acts by blocking the synthesis of inflammatory prostanooids via COX-2 inhibition, celecoxib is poorly soluble in water and low dissolution rate so there is insufficient bioavailability, it is necessary to improve solubility of celecoxib. The study explores the solubility enhancement of celecoxib by using fusion method and high speed

solid dispersion crushed and kept in vacuum desiccators. In high speed homogenizer method, the required amount of CLX and HP-β-CD dissolved in methanol and mixed properly using homogenized by 10,000 rpm for 5 min the solvent removed at 60°C. Then dried mass pass through sieve #44 mesh size and stored in vacuum desiccators over anhydrous calcium chloride until used for studies.

Result: Solubility was increased by fusion method and high speed homogenizer method by complexation of HP-β-CD, maximum solubility was found to be 90.7 ± 1.2%, and DSC analysis of Celecoxib showed single endothermic event of fusion in temperature range 160.79-164.64°C. Increase in solubility observed due to the formation of 1:5 inclusion complex.

Conclusion: Using both fusion method and



Amir Saikh

PRINCIPAL

Indira College of Pharmacy
Tathawade, Pune - 411033.

24/32

SCES'S Indira College of Pharmacy, Pune

[Back to Index](#)

Author- Dr.Vishakha Hastak/Dr.Madhur Kulkarni

DEVELOPMENT AND EVALUATION OF ANTIMICROBIAL PATCH CONTAINING MIXTURE OF TRIDAX PROCUMBENS AND NYCTANTHES ARBORTRISTIS LEAVES EXTRACT

Kulkarni M, Hastak V, Singh N, Gaware D
 S9/24 "Niramay", SCE'S Indira College Of Pharmacy, New Pune-Mumbai Highway,
 Tathawade, Pune-411033, Maharashtra, India
 Email: tejashtreegaware20@gmail.com

Aim & objective: The purpose of this work was to develop antimicrobial patch containing mixture of aqueous extract of *Tridax procumbens* and *Nyctanthes arbortristis* leaves.

Methodology: Anti-microbial activity of aqueous & ethanolic extracts of leaves of *Tridax procumbens* and *Nyctanthes arbortristis* was checked against *Escherichia coli* (NCIM 2065), *Staphylococcus aureus* (NCIM 2079 and Methicillin resistant *S. aureus* (MRSA) (ATCC 43300) by well diffusion method. Qualitative and quantitative phytochemical evaluation of extract was performed. This was followed by checking anti-microbial activity of mixture of both the extract in 1:1 ratio. Topical antimicrobial patches containing 0.1 ml mixture of aqueous extracts of leaves of *Tridax procumbens* and *Nyctanthes arbor-tristis* was prepared by solvent casting method using hydroxypropyl methylcellulose (HPMC) K100 LV; polyvinyl pyrrolidone (PVP) K30 polymers in ratio 1:1. The prepared patch was evaluated for physicochemical

content, moisture loss, and *in vitro* flavonoid release studies. The antimicrobial activity of patch was tested against *E. coli*, *S. aureus* & MRSA. The formulation was packed in aluminium foil sachets and subjected to accelerated stability studies at 40 ± 2°C and 75 ± 5 % RH.

Result & Discussion: Aqueous extracts of both the leaves showed good antimicrobial activity (table no. 1) against selected microorganisms, which was compared against standard. There was significant difference ($p < 0.05$) between antimicrobial activity of ethanolic and aqueous extracts for both *T. procumbens* and *N. arbortristis*, against the selected strains. Significant synergistic activity was observed for the mixture of extracts as compared to either extract alone. The developed patch had folding endurance of 308±23, 0.28±0.003mm thickness, 91.94±0.85% of flavonoid content, 87.45% flavonoid release at the end of 6 hrs. The patch exhibited similar antimicrobial activity as the mixture of extracts. Stability studies indicated satisfactory physical and

Author- Dr..Madhur Kulkarni

DEVELOPMENT AND EVALUATION OF TASTE MASKED DRY SYRUP FORMULATION OF POTASSIUM CHLORIDE (KCL)

Gadre T, Tandale K, Kulkarni M, Anupuram S, Vishwakarma B
 Niramay, S.No. 89/2 A, SCES Indira college of Pharmacy, New Pune Mumbai Highway,
 Tathawade, Pune, Maharashtra-411033, India
 Email : tejashtreegaware20@gmail.com

Aim: The aim of the present study was to develop and evaluate taste masked dry syrup formulation of KCl.

Objectives –

1. Coating of KCl with Eudragit E 100, a pH sensitive amino alkyl methacrylate copolymer by means of fluid bed process
2. Development of dry syrup formulation of coated KCl
3. Comparison of developed formulation with marketed syrup for *in vitro* dissolution parameters and taste masking aspect.

Methodology: Fluid bed coating of KCl was performed using 4, 6, 10 and 15% coating solutions of Eudragit E100. Process parameters like spray rate, inlet air temperature, bed temperature and atomizing air pressure were optimized. The 4 lots of drug coated using solutions containing 4%, 6%, 10% and 15% of

Reconstituted formulation was subjected to organoleptic evaluation, redispersibility, sedimentation volume, assay and *in vitro* dissolution in both 0.1N HCl and 6.8 phosphate buffer on day 1, 2,3 and 7 of reconstitution. The developed formulation and the marketed syrup formulation were compared for their dissolution behavior and the palatability aspect using electronic taste sensing machine. Optimized formulation was filled in clear glass bottles, capped and subjected to accelerated conditions of 40±2 °C and 75% ±5% RH.

Results: Coating with 10% polymer solution (composition C3) enabled optimal fluid bed processing, higher entrapment of the KCl (81%) and better *in vitro* release profiles in 0.1N HCl and pH 6.8 phosphate buffer. Whereas, coating with higher concentration of polymer resulted in sticking and agglomeration of particles. *In*



Handwritten signature

PRINCIPAL

Indira College of Pharmacy
 Tathawade, Pune - 411033.

25/32

SCES'S Indira College of Pharmacy, Pune

[Back to Index](#)

Author- Dr.Amir Salkh

SOLUBILITY ENHANCEMENT OF CELECOXIB USING DIFFERENT SOLUBILIZATION APPROACHES

Maharnavar V.D, Swami V.M, Kulkarni V.V, Shaikh A.A
Niramay,S.No.89/2A, SCES Indira College of Pharmacy, New Pune Atambol Highway,
Tathawade, Pune, Maharashtra-411033, India
Email: swamivshwajee9@gmail.com

Aim: The aim of the present study was to enhance the solubility of celecoxib (CLX).

Objectives: Drug authentication and characterization by UV, DSC, XRD, FTIR; Increase in solubility of drug; Development of solid dispersion by using solvent evaporation and kneading methods.

Introduction: Solubility plays important role in various dosage form. CLX is NSAID exhibiting anti-inflammatory activity by inhibiting Cyclooxygenase-II, enzyme responsible for prostaglandin synthesis. CLX has very poor water solubility and thereby has lesser or insufficient bioavailability. Hence it is rational to improve solubility of CLX.

Methodology: Physical mixture was prepared by homogenous blending CLX and

under vacuum until the solid dispersion was dry. The dried mass was pulverized, passed through 44 # sieve and stored in a desiccator over anhydrous CaCl₂ until used for further studies.

Results: Solubility was increased by solvent evaporation method and kneading method by complexation of HP-β-CD, maximum solubility of CLX was found to be 94.74±0.7%. DSC analysis of CLX showed single endothermic event of fusion in temp range 160.79-164.64°C. Increase in solubility observed was due to formation of 1:5 inclusion complex.

Conclusion: Using both kneading method and solvent evaporation methods, solubility of given drug in water could be improved, significantly. Solvent evaporation method showed faster dissolution rate than kneading method it can be concluded that

AY 2019-2020

Author- Dr.,Madhur Kulkarni

IVRT OF ACYCLOVIR SEMISOLID FORMULATIONS USING IMMERSION CELLS: STUDY OF EFFECT OF TEST AND FORMULATION VARIABLES

Kulkarni M., Poidar S., Syed N., Marfatia A.
Niramay,S.No.89/2A, SCES Indira college of Pharmacy, New Pune Mumbai Highway, Tathawade, Pune,
Maharashtra-411033, India
Email: madhur.kulkarni@indiraicp.edu.in

Keywords: Acyclovir, Immersion Cells, IVRT, semisolid

Aim: The aim of the present work was to study the impact of test and formulation variables on in vitro release of acyclovir from its semisolid formulations employing Immersion Cells.

Objectives- 1. Study of variables like membrane, stirring rate, media volume, temperature, and size of Immersion cells on in vitro release of acyclovir from the innovator cream formulation. 2. Study of impact of formulation variables such as solvent concentration, method of preparation, consistency, cosolvent concentration on in vitro release of acyclovir. 3. Comparison of acyclovir release from various marketed formulations using the optimized IVRT method.

Methodology: Immersion Cells™ type A were used for optimizing IVRT method of acyclovir topical formulations. The USP Apparatus Type 2 (Electrolab F1T 081a) equipped with flat bottom 200 ml capacity flasks and mini spin paddles was used in the study. Alkaline borate buffer pH 9.2 was chosen as a receptor fluid. Effect of following variables was assessed on the release of acyclovir from its marketed cream formulation (Acicvir®-Cipla). Membrane type - Durapore™/Nitrocellulose/ Huroport™; Media volume- 150 mL/200 mL; Media temperature - 32°C/37°C; Paddle speed - 50/100/150 RPM; Immersion cell size- 0.5/2/4 cm². Different formulations prepared with changes in the compositions were F1 with same formula as marketed one (Acicvir-Cipla), F2 with the same formula but without the homogenization step, F3 without the use of solvent (Propylene glycol), F4- with higher solvent conc., F5-with altered composition of oil phase, F6 & F7- with polyethylene glycol 200 & 4000 respectively as solvents instead of propylene glycol. All the formulations were subjected to IVRT using Nitrocellulose membrane, 200 mL of the borate buffer maintained at 32°C and agitated at the rpm of 150. The cream was loaded in the immersion cell of 2 cm² and the study was performed for 6 h duration with withdrawal of 3 mL aliquots at 0.25, 0.5, 1, 2, 4 and 6 h intervals. Equal volume of the fresh receptor fluid was replaced at every sampling interval. The in vitro drug release rate was computed. Various marketed formulations of acyclovir were subjected to the IVRT using the method mentioned above. The release rates were compared statistically by one-way ANOVA at p ≤ 0.05 using Graphpad prism software (version)

Results: Nitrocellulose membrane showed greater release of the drug compared to Durapore and Huroport. Increase in the agitation speed from 50 to 100 to 150, the amount of acyclovir release increased linearly. Temperature of the receptor fluid had a significant impact on the release of the drug with higher temperature showing greater release. Media volume of 150 mL showed greater release per mL as compared to 200 mL owing to lesser dilution. As the cell size increased, the drug release also increased proportionately. The media volume of 200 mL at 32°C with 150 rpm paddle speed and cell size of 2 cm² employing Nitrocellulose membrane was considered as the optimum method for further studies.



Myer

PRINCIPAL

Indira College of Pharmacy
Tathawade, Pune - 411033.

26/32

SCES'S Indira College of Pharmacy, Pune

[Back to Index](#)

Author- Dr.Madhur Kulkarni/ Roopal Bhat

P 124

CHRONOMODULATED DELIVERY SYSTEM OF METOCLOPRAMIDE HYDROCHLORIDE: AN EFFECTIVE THERAPY FOR GASTRIC PARESIS AND MORNING SICKNESS

Bhat B., Shenoy S, Jain P, Kulkarni M

SCES Indira College of Pharmacy, New Mumbai Pune Highway, Tathawade, Pune, Maharashtra
Email: roopalbhat@gmail.com

Keywords: chronomodulated delivery, metoclopramide hydrochloride, gastric paresis, morning sickness, optimization

Aim: The aim of the study was to develop and evaluate chronomodulated delivery system of metoclopramide hydrochloride which could be used to combat early morning gastroesophageal reflux in pregnant women and prevent the symptoms of gastroparesis in diabetic patients.

Objectives: The objective of the current study were 1) Development of chronomodulated tablet formulation of metoclopramide hydrochloride using compression coating technique 2) Formulation optimization using design of experiments (DoE) approach. 4) Evaluation of the optimized formulation by in vivo studies.

Methodology: Core tablets of metoclopramide hydrochloride comprising lactose, microcrystalline cellulose, croscarellone were prepared using direct compression technique. The resulting tablets were subjected to evaluation of assay, content uniformity, disintegration time, in vitro drug release. Glycerol dibehenate and hydrogenated castor oil, both chemically inert and highly compatible lipids were used in combination with dicalcium phosphate for the preparation of compression coating layer. The levels of glycerol dibehenate, hydrogenated castor oil and dicalcium phosphate were optimized statistically using face centered cubic design to achieve the desired *in-vitro* drug release profile. Design Expert software 8.05 (Stat-Ease Inc., Minneapolis, MN, USA) was used for this purpose. Each factor was studied at 3 different levels (-1, 0 and +1). The targets set for response variables were NMT 10% drug release in 4 h, NLT 50% drug release in 4.5 h and NLT 85% release in 5 h. The formulation was prepared using the optimized formula suggested by the software and analyzed for the response parameters. The closeness of the actual response was compared with the theoretical response suggested by the software. The tablets were prepared in larger bulk as per the optimized formula and subjected to hardness, thickness, disintegration time and *in-vitro* release studies over the physiological pH range and stability studies. In vivo pharmacokinetic studies were performed for the formulation in the fasting as well as fed state in 12 healthy human volunteers. Reglan® tablets (10 mg strength) were used as the reference product. The parameters such as C_{max}, T_{max} and AUC were computed from log plasma drug concentration time profiles and subjected to determination of bioequivalence.

Author- Mrs.Rutuja Kamble

Certificate
OF PARTICIPATION

Dr. D. Y. Patil Unitech Society's
Dr. D. Y. Patil Institute of Pharmaceutical
Sciences and Research
Smt Tukaravi Nagar, Pimpri, Pune - 411 018 (MH) INDIA

National Level e-Poster Competition on "COVID-19 Pandemic"

Jointly Organized by Dr. D. Y. Patil Institute of Pharmaceutical Sciences and Research Pimpri and The Association of Pharmaceutical Teachers of India (APTI)

This is to certify that Mr/Ms/Mrs/Dr. Rutuja Sonawane
has participated in the National Level e-Poster Competition on "COVID-19 Pandemic", jointly Organised by Dr. D. Y. Patil Institute of Pharmaceutical Sciences and Research and The Association of Pharmaceutical Teachers of India. His / her participation in this event is highly appreciated.

Dr. Soham Chitlange
Principal, DYPIPSR

Dr. Raman Dang
Secretary, APTI

Dr. Pravin Chaudhari
President, APTI

Principal
Indira College of Pharmacy
Pune - 411033.

27/32

SCES'S Indira College of Pharmacy, Pune

[Back to Index](#)

AY 2020-2021

Author- Dr. Madhur Kulkarni/ Ms. Roopal Bhat

P-043

EFFECT OF BORNEOL ON PERMEABILITY OF A BCS CLASS III DRUG IN SELF NANOEMULSIFYING DELIVERY SYSTEM.

Qadri T¹, Kulkarni M², Bhat R¹

¹Bombay College of Pharmacy, Kalina, Santa Cruz (E), Mumbai-400098, India
²Niramay, S.No. R/2 A, SCES's Indira College of Pharmacy, New Pune Mumbai Highway, Tatharwade, Pune, Maharashtra-411033, India
 Email: rajashri2522@gmail.com

Keywords: SNEDDS, acyclovir, borneol, *ex vivo* permeation, P-gp substrate

Aim: To evaluate the effect of borneol on permeability of a BCS class III drug in self nanoemulsifying delivery system.


Objectives: 1. Development of SNEDDS of acyclovir alone and in conjunction with borneol (BO).
 2. *Ex-vivo* permeability studies of acyclovir SNEDDS in presence and absence of borneol using goat and chicken ileum.

Methodology: SNEDDS were formulated by mixing of Captex 300E (oil), Cremophor RH 40 (a non-ionic surfactant) and Capmul® MCM (co-surfactant) in a vial followed by bath sonicating the mixture for 10min. BO was incorporated into the SNEDDS formulations in various concentrations and resulting formulations were named as BO3 (containing 300 mg of BO in 2.5g of SNEDDS), BO6 (600 mg in 2.5g of SNEDDS) and BO8 (800 mg in 2.5g of SNEDDS). HPLC method was developed for analyzing acyclovir during *ex vivo* permeation studies. The *ex vivo* permeability studies were performed by non-everted gut sac technique using goat and chicken ileum. The method was validated for a low permeation model drug, amoxicillin trihydrate and the studies were conducted on USP type II apparatus with 300ml. of the tyroside solution maintained at 37°C. RPM was set to 25 and aeration was maintained at 1bubble/sec. *Ex vivo* permeation of pure drug, drug incorporated in SNEDDS formulation and the drug incorporated in BO3, BO6 and BO8 formulations were compared.


Results and discussions: The *ex vivo* permeation of the model drug at the end of 3 hours was found to be 17% and 1.6% from goat and chicken ileum respectively. This low permeation indicated the established method is suitable for low permeation drug. The permeation results as shown in table indicates that SNEDDS in absence of BO was unable to enhance the permeation of acyclovir when compared with neat acyclovir solution whereas formulations BO6 and BO8 containing BO showed better drug permeation in both goat and chicken ileum models. Better drug permeation in goat model as compared to chicken model could be attributed to the greater diameter of goat ileum and thinner wall unlike chicken ileum. This indicated that different animal models show substantial difference in permeability and resulting bioavailability. % Permeation at the end of 3 hours

Goat Ileum	Acv solution	Acv in SNEDDS	Acv in borneol
BO3 formulation	45.25± 0.63	38± 0.43	35± 5.56
BO6 formulation	20.15± 0.089	13.02± 1.37	29.03± 4.30

Author- Mrs. Rutuja Kamble





International e-Poster Competition on "Emerging Trends in IPR"





Certificate of Participation
 Organized by
Seth Govind Raghunath Sable College of Pharmacy, Saswad

This certificate is awarded to
RUTUJA SONAWANE from **SCES INDIRA COLLEGE OF PHARMACY, PUNE.** hereby
 for successful participation in e-Poster competition in International e-Symposium
 on "Emerging Trends in IPR" organized on the Occasion of 80th Birthday (12th
 December) Celebration of Padmavibhushan Hon. Sharadchandra Pawar Saheb, Ex-
 Agriculture Minister, Govt. of India on 30/12/2020.


Dr.Smita Pawar
 Coordinator


Mrs.V.S.Galkwad
 Coordinator


Mr.S.V.Bhise
 Coordinator


Dr. Rajashri Pawar
 Made for free with Certify'em

PRINCIPAL
 Indira College of Pharmacy,
 Pune - 411033.

[Back to Index](#)

Author- Dr. Madhur Kulkarni

P-140

TO COMPARE QUALITY OF GRANULES OF IBUPROFEN OBTAINED FROM SUPER GRAN™ AND RAPID MIXER GRANULATOR

Hemant K., Kulkarni M., Bhondve D.
Niramay,S.No 89/2A, SCTS Indira college of Pharmacy, New Pune Mumbai Highway,
Yashwantra, Pune, Maharashtra-411033, India
E-mail: hiran@niramaypps@gmail.com

Keywords: Ibuprofen, Super Gran™, Rapid Mixer Granulator

Introduction: Super Gran™ is a mixer cum granulator developed and patented by Grassom Ltd which is characterized by presence of multiple stacked impeller blades and two scrapers. The special design of the granulator is expected to enhance the speed of dry mixing, wet granulation and wet milling compared to rapid mixer granulator. This technology is expected to enhance the uniformity of granulation.

Aim: The aim of the present study was to compare quality of granules of ibuprofen (ibu) prepared in Super Gran™ and rapid mixer granulator (rmg).

Objectives: 1. To prepare ibu granules using various diluents and granulating agents in Super Gran™ and rmg 2. To compare the granules obtained from both the granulators 3. To compare tableting characteristics of both the granules **Methodology:** The granules were prepared by wet granulation technique using various trial compositions (Table 1) for each composition, dry mixing and wet granulation were carried out in rmg (Bectochem) and Super Gran™. The resulting granules were compared for flow properties, proportion of fines and morphology. The granules were compressed into tablets using 12mm ø/c circular plain punches (Rimtek, Karmavati). The tablets were evaluated for appearance, weight variation, hardness, friability, disintegration time. *In vitro* release profiles (conducted as per USP monograph) were compared using Student's t test. 2⁵ Full Factorial design was used for optimization trials of ibu tablets in both SuperGran™ and rmg. Independent variables chosen were concentration of binders (maize starch and PVP K-30). The response variables were disintegration time (<3 mins) and *in vitro* release (not less than 80% within 60 mins). Total 7 trial runs (A1-A7 and S1-S7) suggested by Design Expert Software® (Version 11) were processed in both the granulators, granules were compressed and the tablets were evaluated for all the earlier mentioned parameters.

Experiment	Granularity by sieves					Disintegration time (min)	Hardness (N)	Friability (%)	In vitro release (%)
	40	60	80	100	120				
Flowability									
Proportion of fines									
Disintegration time									
In vitro release									

Author- Ms.Nitisha Soni

Indore Institute of Pharmacy

Indore - 462010, Madhya Pradesh, India

Certificate of Presentation

This is to certify that **MS. NITISHA SONI**, Assistant Professor, Indira College of Pharmacy presented work in an oral session entitled **Development and characterization of polyylated liposomes for oral delivery of insulin** in AICTE-sponsored Two-days E-conference on "Translational Research for Nanomedicine" held on 22nd and 23rd April, 2022 organized by Indore Institute of Pharmacy, Indore.

Dr. Pradip Datta
Coordinator

Dr. Sandeep K. Mishra
Coordinator

Arun Srinivasan
Coordinator



PRINCIPAL
 Indira College of Pharmacy
 411033.

Author- Dr. Mansi Wagdarikar/ Dr.Madhur Kulkarni



Author- Ms Roopal bhatt/ Dr.Madhur Kulkarni

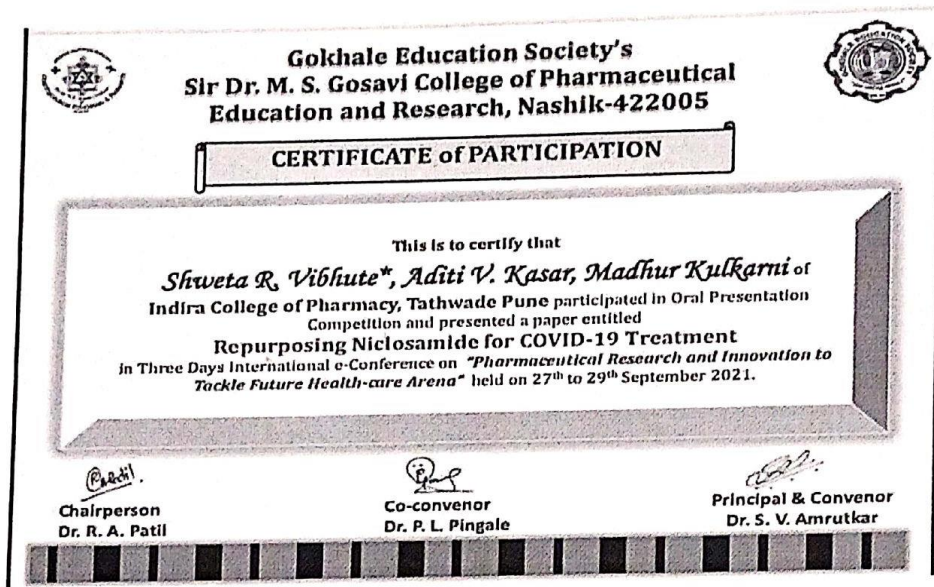


30/32

SCES'S Indira College of Pharmacy, Pune

[Back to Index](#)

Author- Dr.Madhur Kulkarni



Author- Ms. Roopal Bhatt

CRS
CONJUGATED RESEARCH SOCIETY
ANAND COLLEGE, CHANDER

LIPHILIC METFORMIN SALTS: DEVELOPMENT, CHARACTERIZATION, AND IN VITRO ANTI-CANCER ACTIVITY
Roopal Bhatt*, Hira K. Saeed, Rajesh Sutar, Prabhakar Patel, Sudipta Mullick, Alyssa E. Harada, Dana Lynn C. Koontz, Ingo Lang, and Abhijit A. Dore*
Department of Pharmaceutical Sciences, The Daniel K. Inoué College of Pharmacy, University of Hawaii at Hilo, Hilo, Hawaii 96720, United States
Department of Pharmaceutics, Shree Chhatrapati Education Society's Indira College of Pharmacy, Pune, Maharashtra 411033, India

INTRODUCTION
Metformin (M) is a first-line oral antidiabetic drug used to improve insulin resistance in type 2 diabetes mellitus (T2DM). It is a biguanide derivative that acts by decreasing hepatic glucose production and increasing peripheral glucose uptake. Metformin has been shown to have anticancer activity in various cell lines, including HepG2, MCF-7, and MDA-MB-231. However, its low oral bioavailability and poor water solubility are major limitations. Lipophilic metformin salts were developed to overcome these limitations.

OBJECTIVES
• To synthesize and characterize lipophilic metformin salts with various fatty acids and evaluate their in vitro activity.
• To check the in vitro anticancer activity of various lipophilic salts of metformin using HepG2, MCF-7, and MDA-MB-231 cell lines.
• To evaluate the in vitro anticancer activity of lipophilic metformin salts against HepG2, MCF-7, and MDA-MB-231 cell lines.

METHODOLOGY
Lipophilic metformin salts were synthesized by reacting metformin with various fatty acids (C12, C14, C16, C18, C20, C22) in the presence of a base. The resulting salts were characterized by FTIR, 1H NMR, and elemental analysis. The in vitro anticancer activity was evaluated using MTT assay against HepG2, MCF-7, and MDA-MB-231 cell lines.

RESULTS
The lipophilic metformin salts showed significantly higher cytotoxicity against HepG2, MCF-7, and MDA-MB-231 cell lines compared to the parent metformin drug. The IC50 values of the lipophilic salts were significantly lower than those of metformin, indicating enhanced anticancer activity.

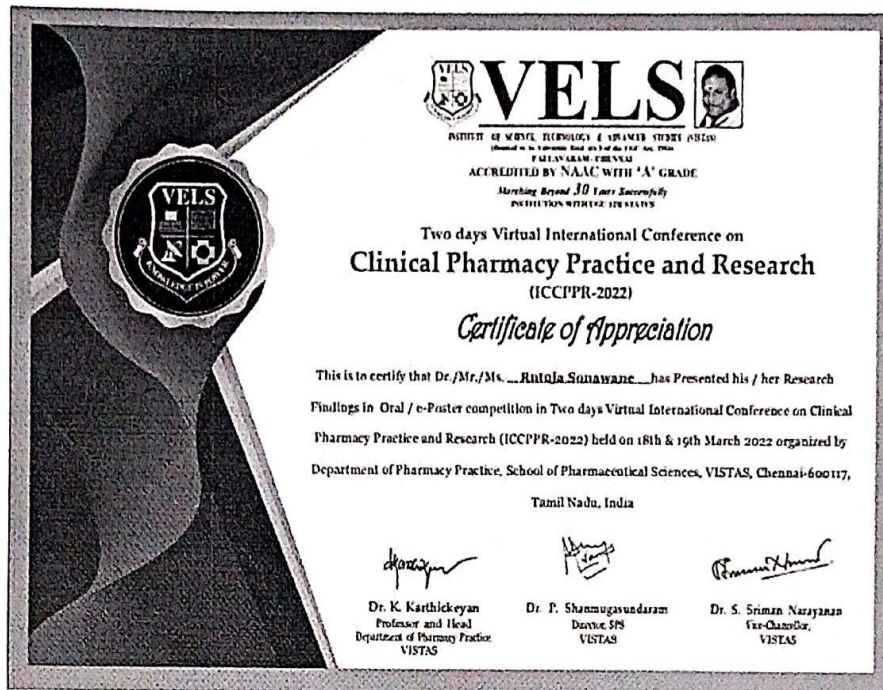
CONCLUSION
Lipophilic metformin salts showed significantly higher cytotoxicity against HepG2, MCF-7, and MDA-MB-231 cell lines compared to the parent metformin drug. This suggests that the lipophilic salts may be a promising approach for improving the anticancer activity of metformin.




Principal
Indira College of Pharmacy
Pune - 411033.

[Back to Index](#)

Author- Mrs. Rutuja Kamble




PRINCIPAL
Indira College of Pharmacy
Tathawade, Pune - 411033.