

# Bharati Vidyapeeth College of Pharmacy, Kolhapur

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## Criterion 3

### Research, Innovations and Extension

Key Indicator 3.3	Research Publication and Awards
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<b>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</b>
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## 3.3- Research Publication and Awards



### Documents Uploaded

Sr. No	Particulars	Page No
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	1-40

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### 3.3.2.1. Total number of books and chapters in edited volumes/books published and papers in national/ international conference proceedings year wise during last five years

Year	2022-23	2021-22	2021-20	2019-20	2018-19
Number	10	09	4	4	5

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### 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

Sl. No.	Name of the teacher	Title of the book/chapters published	National / International	Calendar Year of publication	Name of the publisher	Link
1.	T. V. Chavan	Administration of Nanovaccines By Transdermal Drug Delivery System - Current And Future Perspectives	International	2023	South Asian Publication	<a href="http://saap.org.in/payment?bookid=31">http://saap.org.in/payment?bookid=31</a>
2.	F. A. Tamboli	Pharmaceutics	National	2023	Lierature Light	<a href="https://literaturesli ght.com/press-release-pharmaceutics/">https://literaturesli ght.com/press-release-pharmaceutics/</a>
3.	A. J. Shinde, H. N. More, R. J. Jarag	Diclofenac Potassium Tablet for Colon Targeting: Formulation	International	2023	Lamberts Academic Publication	<a href="https://www.amazon.co.uk/Diclofenac-Potassium-Tablet-Colon-Targeting/dp/6206181219">https://www.amazon.co.uk/Diclofenac-Potassium-Tablet-Colon-Targeting/dp/6206181219</a>
4.	P. B. Choudhari	In vitro anticancer activity gallic acid nanoparticles on colon cancer cell colo 205In The	International	2023	Nova Publishing	<a href="https://novapublishers.com/shop/the-chemistry-of-gallic-acid-and-its-role-in-health-and-disease/">https://novapublishers.com/shop/the-chemistry-of-gallic-acid-and-its-role-in-health-and-disease/</a>

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		Chemistry of Gallic Acid and Its Role in Health and Disease				
5.	A. A. Hajare	Research Methodology and Biostatistics	National	2023	Nirali Publications	<a href="https://pragationline.com/research-methodology-and-biostatistics-second-sy-year-m-pharm-semester-3-2/">https://pragationline.com/research-methodology-and-biostatistics-second-sy-year-m-pharm-semester-3-2/</a>
6.	H. N. More	Mannich Bases of Thiosemicarbazide: The Mutual Prodrugs as Anti-Infective Agents	International	2023	BP International	<a href="http://eprint.subtopublish.com/id/eprint/2878/">http://eprint.subtopublish.com/id/eprint/2878/</a>
7.	M .S. Bhatia	Synthesis of Glycoconjugates in Potentiating Pharmacological and Pharmaceutical Activity	International	2023	Intech open	<a href="https://www.intechopen.com/chapters/85592">https://www.intechopen.com/chapters/85592</a>
8.	N R Jadhav	Advanced hydrogel-based platform for ocular drug delivery	International	2023	Elsevier Publications	<a href="https://www.sciencedirect.com/science/article/abs/pii/S09780443152641000117">https://www.sciencedirect.com/science/article/abs/pii/S09780443152641000117</a>
9.	A. A. Hajare	Modern Pharmaceutics	National	2023	Nirali Publications	<a href="https://bookstation.in/products/9788119117345">https://bookstation.in/products/9788119117345</a>
10.	D V Mahuli	Pharmaceutical Technology And Process	National	2023	AGPH Books Publication	<a href="https://literatureslight.com/press-release-pharmaceutics/">https://literatureslight.com/press-release-pharmaceutics/</a>

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11.	A. A. Hajare	A text book of Pharma Marketing Management	National	2022	Career Publications	<a href="https://www.amazon.in/Textbook-Pharma-Marketing-Management-Hajare/dp/B09XXBP79D">https://www.amazon.in/Textbook-Pharma-Marketing-Management-Hajare/dp/B09XXBP79D</a>
12.	A. J. Shinde, H. N. More	Design And Development of Mucoadhesive Microspheres	International	2022	Lamberts Academic Publication	<a href="https://www.amazon.com.au/DESIGN-DEVELOPMENT-MUCOADHESIVE-MICROSPHERES/dp/6200325898">https://www.amazon.com.au/DESIGN-DEVELOPMENT-MUCOADHESIVE-MICROSPHERES/dp/6200325898</a>
13.	A. J. Shinde, H. N. More	Formulation And Evaluation Of Expandable Gastroretentive Tablet	International	2022	Lamberts Academic Publication	<a href="https://www.amazon.com/FORMULATION-EVALUATION-EXPANDABLE-GASTRORETENTIVE-TABLET/dp/6200276544">https://www.amazon.com/FORMULATION-EVALUATION-EXPANDABLE-GASTRORETENTIVE-TABLET/dp/6200276544</a>
14.	H. N. More, F. A. Tamboli	Practical Handbook of Herbal Drug Technology	National	2022	Pritam Publications	<a href="https://www.pritampublications.com/view-products/76/Pharmacy/B-Pharm-6th-Semester-Practical-Books/Practical-Handbook-of-Herbal-Drug-Technology">https://www.pritampublications.com/view-products/76/Pharmacy/B-Pharm-6th-Semester-Practical-Books/Practical-Handbook-of-Herbal-Drug-Technology</a>
15.	A. J. Shinde, H. N. More, F. A.	Validation of Spectrophotometric Method	International	2022	Lamberts Academic Publication	<a href="https://www.amazon.de/-/en/Anilkumar-">https://www.amazon.de/-/en/Anilkumar-</a>

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	Tamboli	for Simultaneous estimation in combined dosage form				<a href="http://Shinde/dp/620549891X">Shinde/dp/620549891X</a>
16.	H. N. More, F. A. Tamboli	Ayurvedic remedies of tuberculosis, in Ayurvedic remedies for candidiasis and tuberculosis	National	2022	Academic Decipher Press, Mumbai	<a href="https://drive.google.com/file/d/1o-lfIMacw9i4IH0fDneviZoaZt0XD2dR/view?pli=1">https://drive.google.com/file/d/1o-lfIMacw9i4IH0fDneviZoaZt0XD2dR/view?pli=1</a>
17.	H. N. More, F. A. Tamboli	Ayurvedic remedies for Adenovirus diseases in Ayurvedic remedies of diseases of microbial origin	National	2022	Academic Decipher Press, Mumbai	<a href="https://drive.google.com/file/d/1VDA5OVW7MWA4hWi7qVmU5YepYeBAWlz8/view">https://drive.google.com/file/d/1VDA5OVW7MWA4hWi7qVmU5YepYeBAWlz8/view</a>
18.	N R Jadhav	Polymeric Nanoplatforms for the Targeted Treatment of Prostate Cancer	International	2022	SpringerLink	<a href="https://link.springer.com/chapter/10.1007/978-3-031-14848-4_16">https://link.springer.com/chapter/10.1007/978-3-031-14848-4_16</a>
19.	D A Bhagwat	Self-nano Emulsifying Formulations: An Encouraging Approach for Bioavailability Enhancement and Future Perspective	International	2022	Intech open	<a href="https://www.intechopen.com/chapters/84978">https://www.intechopen.com/chapters/84978</a>
20.	A. A. Hajare	Pharmaceutical Regulatory Science	National	2021	Nirali Publications	<a href="https://bookstation.in/products/9789390596300">https://bookstation.in/products/9789390596300</a>

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21.	A. A. Hajare	Pharmaceutical Product Development	National	2021	Nirali Publications	<a href="https://bookstation.in/products/9789354510229">https://bookstation.in/products/9789354510229</a>
22.	A. A. Hajare	Physical Pharmaceutics-I	National	2021	Nirali Publications	<a href="https://bookstation.in/products/9789388194174?_pos=3&amp;_sid=b6e42ad8e&amp;_ss=r">https://bookstation.in/products/9789388194174?_pos=3&amp;_sid=b6e42ad8e&amp;_ss=r</a>
23.	N. R. Jadhav	Textbook of Nanobiology, Nanoscience and Nanotechnology	National	2021	Kindle Publications	<a href="https://www.amazon.com/Textbook-Nanobiology-Nanoscience-Nanotechnology-Namdeo/dp/B09HG2RW6V">https://www.amazon.com/Textbook-Nanobiology-Nanoscience-Nanotechnology-Namdeo/dp/B09HG2RW6V</a>
24.	A. A. Hajare	Biostatistics and Research Methodology	National	2020	Nirali Publications	<a href="https://bookstation.in/products/9789390506163">https://bookstation.in/products/9789390506163</a>
25.	A. A. Hajare	Community Pharmacy and Management	National	2020	Nirali Publications	<a href="https://bookstation.in/products/9789354517075">https://bookstation.in/products/9789354517075</a>
26.	A. A. Hajare	Industrial Pharmacy-II	National	2020	Nirali Publications	<a href="https://bookstation.in/products/9789389944860?variant=44084754219300">https://bookstation.in/products/9789389944860?variant=44084754219300</a>
27.	A. J. Shinde, H. N. More	Development of lornoxicam microsponges gel for topical application	International	2020	Lamberts Academic Publication	<a href="https://www.amazon.in/Development-Lornoxicam-Microsponges-Topical-">https://www.amazon.in/Development-Lornoxicam-Microsponges-Topical-</a>



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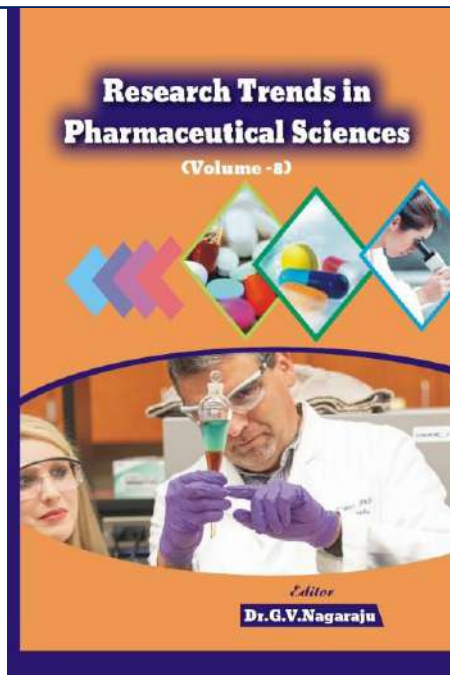
						<a href="#">Application/dp/6202519193</a>
28.	P.B .Choudhari, N. M. Bhatia, M. S. Bhatia	Characterization of pharmaceutical nanocarriers: in vitro and in vivo studies in Nanomaterials for Drug Delivery and Therapy	International	2019	Elsevier Publications	<a href="https://www.sciencedirect.com/science/article/abs/pii/S09780128165058000163">https://www.sciencedirect.com/science/article/abs/pii/S09780128165058000163</a>
29.	A. A. Hajare	Practical Industrial Pharmacy -I	National	2019	Nirali Publications	<a href="https://www.kopykitab.com/Sample-PDF-A-Practical-Book-Of-Industrial-Pharmacy-I-by-Dr-Ashok-A-Hajare-Mr-Sandip-M-Honmane?pdf_url=https://content.kopykitab.com/ebooks/2020/04/49018/sample/sample_49018.pdf&amp;pid=49018">https://www.kopykitab.com/Sample-PDF-A-Practical-Book-Of-Industrial-Pharmacy-I-by-Dr-Ashok-A-Hajare-Mr-Sandip-M-Honmane?pdf_url=https://content.kopykitab.com/ebooks/2020/04/49018/sample/sample_49018.pdf&amp;pid=49018</a>
30.	A. J. Shinde, H. N. More	Mucoadhesive Gastroretentive Tablets of Diltiazem Hydrochloride	International	2019	Lamberts Academic Publication	<a href="https://www.amazon.co.jp/-/en/Anilkumar-Shinde/dp/6200277354">https://www.amazon.co.jp/-/en/Anilkumar-Shinde/dp/6200277354</a>
31.	A. A. Hajare	Industrial Pharmacy-I	National	2019	Nirali Publications	<a href="https://bookstation.in/products/9789389533064">https://bookstation.in/products/9789389533064</a>
32.	A. A. Hajare	Pharmaceutical Engineering	National	2019	Nirali Publications	<a href="https://bookstation.in/products/978">https://bookstation.in/products/978</a>

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## RESEARCH TRENDS IN PHARMACEUTICAL SCIENCES (VOLUME -8)

Editor

**Dr. G.V. Nagaraju**

*Research Trends In Pharmaceutical Sciences (Volume -8)*

### ADMINISTRATION OF NANOVACCINES BY TRANSDERMAL DRUG DELIVERY SYSTEM - CURRENT AND FUTURE PERSPECTIVES

**Rushikesh B. Katkar\***

*Department of Pharmaceutics  
Ashokrao Mane Institute of Pharmaceutical Sciences and Research  
Kolhapur, Maharashtra, India.*

**Dr. Abhijeet Shashikant Kulkarni**

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**Rajesh V. Kulkarni**

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**Sumit A. Shinde**

*Department of Pharmaceutical Chemistry  
Ashokrao Mane Institute of Pharmaceutical Sciences and Research  
Kolhapur, Maharashtra, India.*

**Trishul Vilas Chavan**

*Department of Pharmaceutical Chemistry  
Bharati Vidyapeeth College of Pharmacy, Kolhapur  
Maharashtra, India.*

**Abstract:**

*Nanovaccines have emerged as a promising approach to enhance vaccination strategies, leveraging the power of nanotechnology to improve immune responses and vaccine efficacy. In recent years, the administration*

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## Authors List

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**Rajeshwar V. Kshirsagar** M. Pharm, Ph.D., is presently working as Assistant Professor in Pharmaceutics at College of Pharmacy, SRM University, Nanded (MS). He has more than 15 years of teaching and research experience. His research interests include drug delivery systems and natural excipients. He has successfully guided more than 70 M. Pharm students and currently 02 Ph.D. students pursuing their doctoral thesis under his supervision. He has published 1 book and 28 publications in reputed international and national peer-reviewed journals. To his credit, he has one granted Australian Patent and one Indian Patent. He has successfully completed one Innovative research project under UGC XII Plan.

**A. Tamboli**, M. Pharm., Ph. D., is a Head, Department of Pharmacognosy, Bharati Vidyapeeth College of Pharmacy, Kolhapur, Maharashtra, India who received his Ph. D. degree in Pharmacy from the Shivaji University, Kolhapur. He has more than 23 years of teaching and research experience. He has guided a number of graduate students with more than seventy publications in National and International refereed journals, fetched many project grants from AICTE. He is having professional experience as Convener/Chief Editor/ Chair/ Co-chair/ Member Scientific Committee / Resource Person/ Referee to evaluate etc. in conferences/ Seminars/ Workshops in Pharmacy. He is a Life Member of APTI. He serves as an Editorial member of more than 15 National and International refereed journals. He is the recipient of AMIP's 6th Award for Excellence in Education 2022, the Faculty of the year award 2020 and 2021, by vmedulife services Pune, and Best researcher award, by VDGOD Professional Association Ooty, India.

**Ramling G. Patrakar** M. Pharm., Ph. D., is presently working as Principal at Nootan College Of Pharmacy, Mahankal. He has completed his M. Pharmacy from J.S.S. College of Pharmacy, Ooty, Tamilnadu and from SRM University, Nanded. He has more than 17 years of teaching and research experience. He has published 26 papers in National and International journals. He has attended more than 30 National and International conferences. He has successfully completed the course on IPR conducted by WIPO Worldwide IP, Geneva in 2008.

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## PHARMACEUTICS: DESIGN OF DOSAGE FORMS AND DRUG DEVELOPMENT

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PHARMACEUTICS: DESIGN OF DOSAGE FORMS AND DRUG DEVELOPMENT

DR. ABHINANDAN R. PATIL  
DR. RAJESHWAR V. KSHIRSAGA  
DR. FIROJ A. TAMBOLI  
DR. RAMLING G. PATRAKAR

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Anilkumar Shinde  
Ravindra Jarag  
Harinath More

## Diclofenac Potassium Tablet for Colon Targeting: Formulation

Diclofenac Potassium Tablet for Colon Targeting



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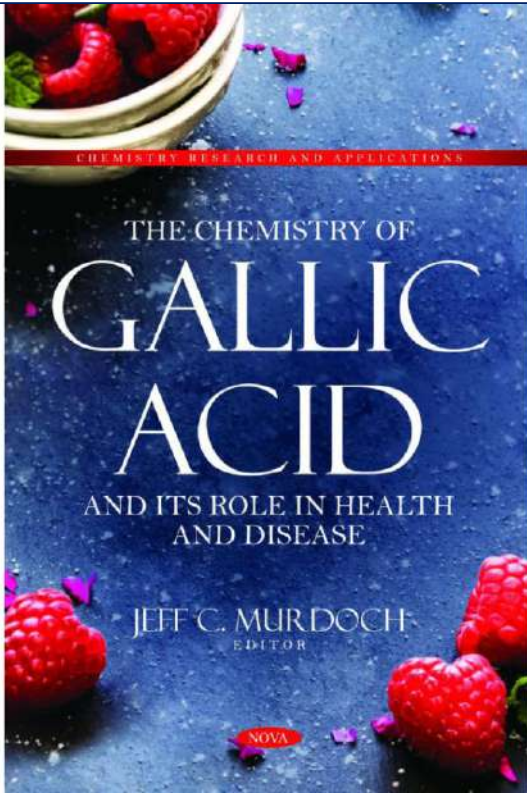
The present study was to formulate tablet of Diclofenac potassium using the hydrophilic polymer hydroxy propyl methyl cellulose (HPMC), Hydroxypropyl Cellulose (HPC), Ethyl Cellulose(N22), Cross Povidone and Sodium Starch Glycolate as a superdisintegrants and Instacoat EN super II as a enteric coat to the colone specific tablet. A 33 randomized full factorial design, 3 level and 3 factors were used. The concentration of Hydroxy propyl cellulose (H1), concentration of HPMC K4M (D2) and concentration of Ethyl cellulose (D3) were selected as independent variables. The percentage drug release at 12 hours (Q12), percentage friability and hardness of tablet were selected as dependent variables for optimization study. The core, press coat tablets were compressed by rotatory tablet machine evaluated with different parameters like diameter, thickness, average weight, hardness, friability, kinetic release data. Hardness of tablets was found to be in the range of 7-8 kg/cm<sup>2</sup>. The enteric coated tablets containing diclofenac potassium released 38.12 % at the end of 12 hrs by in vitro release study.



Dr. Anilkumar J. Shinde, M.Pharm Ph.D he started career in Pune university, Pune as Lecturer in Pharmaceutics & younged in teaching since 1994. Presently he is working as Associate Professor in Pharmaceutics Department at Bharati Vidyapeeth College of Pharmacy, Kolhapur.



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9/18/23, 10:52 AM The Chemistry of Gallic Acid and Its Role in Health and Disease - Nova Science Publishers

#### Chapter 6. Gallic Acid: A Potential Antidiabetic Agent

Suraj Tarihalikar, Venkatesh Kumbhar, Poomima Sankpal and Sachinkumar Patil  
Ashokrao Mane College of Pharmacy, Peth-Vadgaon, Kolhapur, Maharashtra, India

#### Chapter 7. Gallic Acid: A Potential Anti-Tumor Agent

Pranali Pangam, Swapnali Patil, Poomima Sankpal and Sachinkumar Patil  
Ashokrao Mane College of Pharmacy, Peth-Vadgaon, Kolhapur, Maharashtra, India

#### Chapter 8. In Vitro Anticancer Activity Gallic Acid Nanoparticles on Colon Cancer Cell Colo 205

Dr. Poomima Sankpal<sup>1</sup>, Dr. Sachinkumar Patil<sup>2</sup>, Mr. Pramod B. Patil<sup>3</sup>, Rajanikant Ghotane<sup>4</sup>, Dr. Prafulla Choudhari<sup>5</sup> and Sanket Rathod<sup>6</sup>  
<sup>1</sup>Ashokrao Mane College of Pharmacy, Peth-Vadgaon, Kolhapur, Maharashtra, India  
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#### Chapter 9. Pharmacognosy of Gallic Acid and Its Co-crystals

Sanchay Jyoti Bora<sup>1</sup>, PhD, Riju Kakati Sarma<sup>2</sup>, PhD, and Purabi Samah<sup>3</sup>, PhD  
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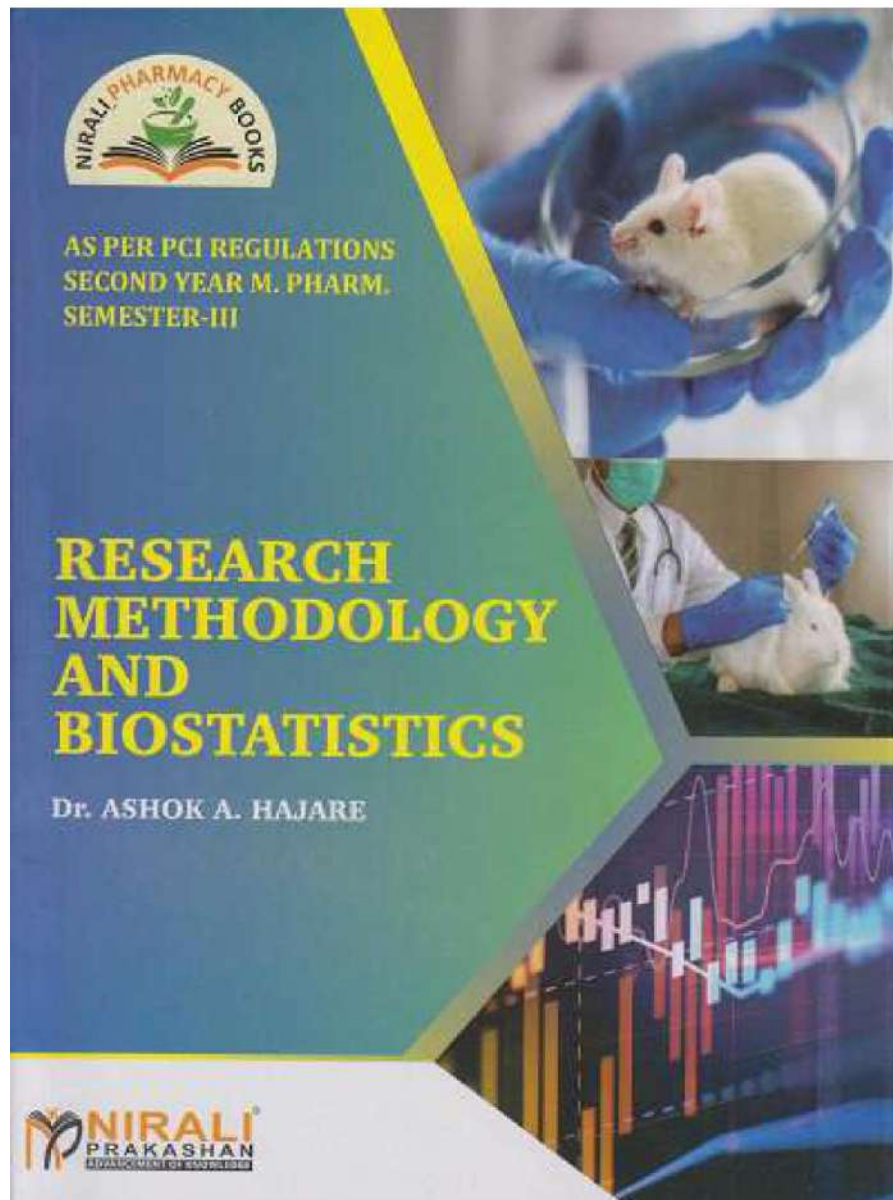
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### Mannich Bases of Thiosemicarbazide: The Mutual Prodrugs as Anti-Infective Agents

Sachin A. Pishawikar ; Harinath N. More ; Ravindra B. Kumbhar ; Sujeet V. Salokhe

Novel Aspects on Pharmaceutical Research Vol. 8, 21 August 2023, Page 49-61.

<https://doi.org/10.9734/bpi/napr/v8i0155A>

Published: 2023-08-21

View Article

#### Abstract

This chapter highlights about Mannich Bases of Thiosemicarbazide. The biological activity of Mannich bases, a structurally heterogeneous class of chemical compounds that are generated from various substrates through the introduction of an aminomethyl function by means of the Mannich reaction, is surveyed, with emphasis on the relationship between structure and biological activity. The mannich base is an end product in the mannich reaction, which is nucleophilic addition reaction of a non-enolizable aldehyde and any primary or secondary amine to produce resonance stabilized imine (iminium ion or imine salt). First variety of mannich bases were synthesized using aldehyde, ketones and secondary amines having aliphatic, aromatic, cyclic and heterocyclic nature using mannich reaction. To create mannich bases of thiosemicarbazide as a mutual prodrug, the synthesized bases were condensed with thiosemicarbazide. Utilizing IR and H-NMR, produced molecules were structurally characterized. Complexity in the reactant's structure causes changes in reaction time, temperature, and end product yield percentage. Screening of compounds for anti-infectivity was performed in the form of anti-microbial activity using *Escherichia Coli* (8739) *Staphylococcus aureus* (25923), anti-fungal activity using *Aspergillus niger* (16404), *Candida albicans* (10231) using BHI (brain heart infusion) broth dilution method and anti-tubercular activity by micro plate Alamar Blue assay (MABA). Structural complexity plays significant role in time required, temperature conditions and % yield of compounds synthesized.

**Keywords:** Prodrug; antifungal; antimicrobial; brain heart infusion; mannich base; thiosemicarbazide



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## Nanotechnology in Ophthalmology

2023, Pages 305-320

### Chapter 19 - Advanced hydrogel-based platform for ocular drug delivery

Sopan N. Nangare<sup>1</sup>, Jidnyasa R. Pantwalawalkar<sup>2</sup>, Namdeo R. Jadhav<sup>2</sup>, Petra O. Nnamani<sup>3</sup>, Zamir G. Khan<sup>1</sup>, Pravin O. Patil<sup>1</sup>, Sanjaykumar B. Bari<sup>1</sup>

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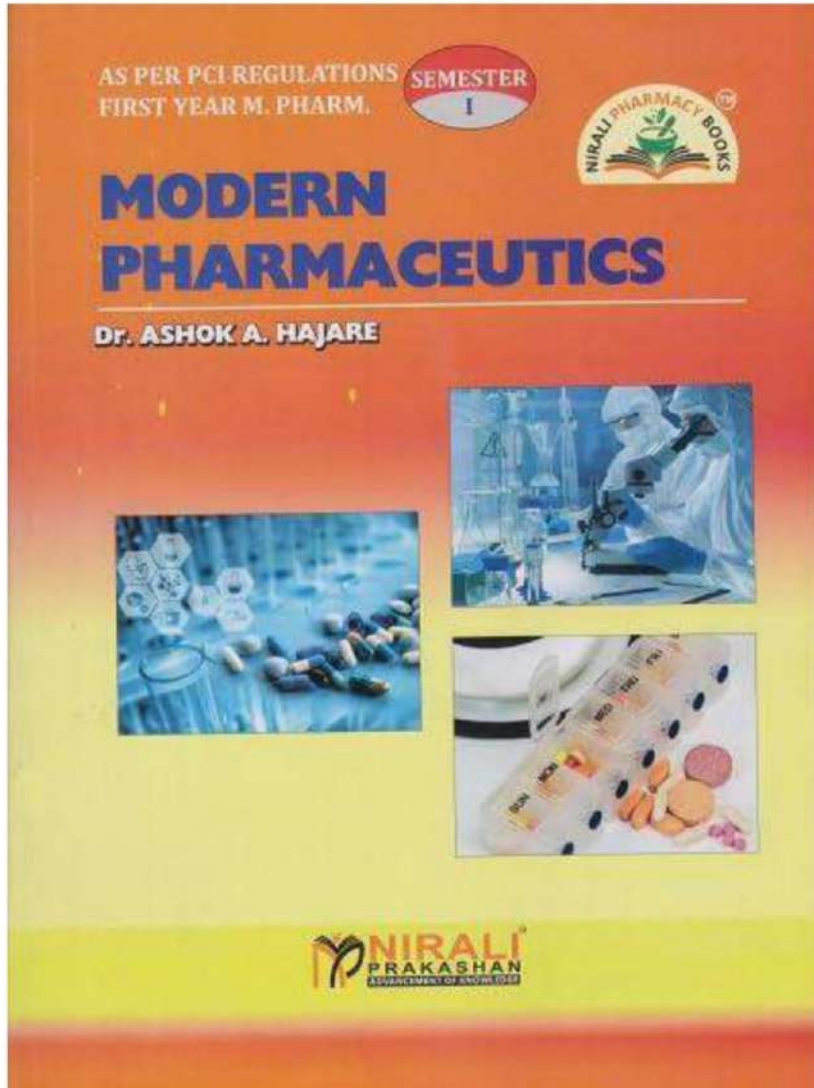
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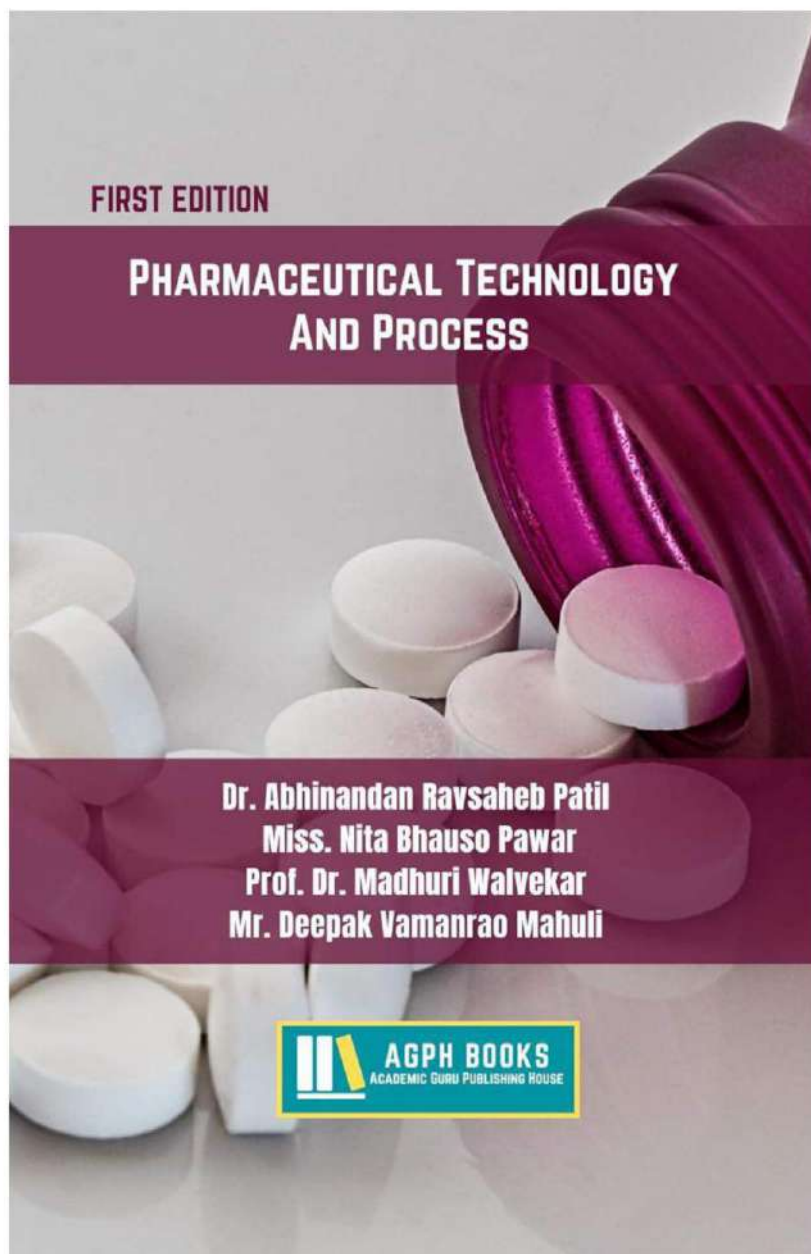
Since inception, the physiological barriers that appear in the ophthalmic cavity have made it troublesome to deliver drug molecules. As an outcome, an alternate dosage form for active delivery to the desired target is necessitated. The utilization of hydrogel in the management of eye illnesses is currently piquing the interest of academic researchers. Principally, a polymer-based cross-linked network of aqueous gels provides abundant benefits including better patient compliance, biocompatibility, release control, targeted delivery, and many more. The current book chapter provides an impression of ocular drug delivery, formulation, and therapeutic considerations for hydrogels. Herein, the preference of polymers for hydrogel development based on biocompatibility and biodegradability criteria has been mentioned. Following that, the stimuli-responsive hydrogels—temperature, ions, pH, etc., and nonstimuli-responsive ones have been addressed. Fascinatingly, the formation of hydrogel offers satisfactory viscosity and good mucoadhesion that helps to improve the ocular residence time. Moreover, it shows good transcorneal permeation that overcomes the restrictions of a physiological barrier. In addition, it exhibits no irritation to ocular tissues confirming the biocompatibility and safety of hydrogels for ocular applications. The reported hydrogels for ocular drug delivery offer prolonged release with diverse release kinetics that helps to augment the therapeutic effect of actives. Essentially put, smart hydrogels may effortlessly overcome the limits of traditional dosage forms such as eye drops, ointments, lenses, etc. Consequently, the introduction of hydrogel in an ocular therapeutic delivery system represents a significant advancement in the biomedical discipline. This book



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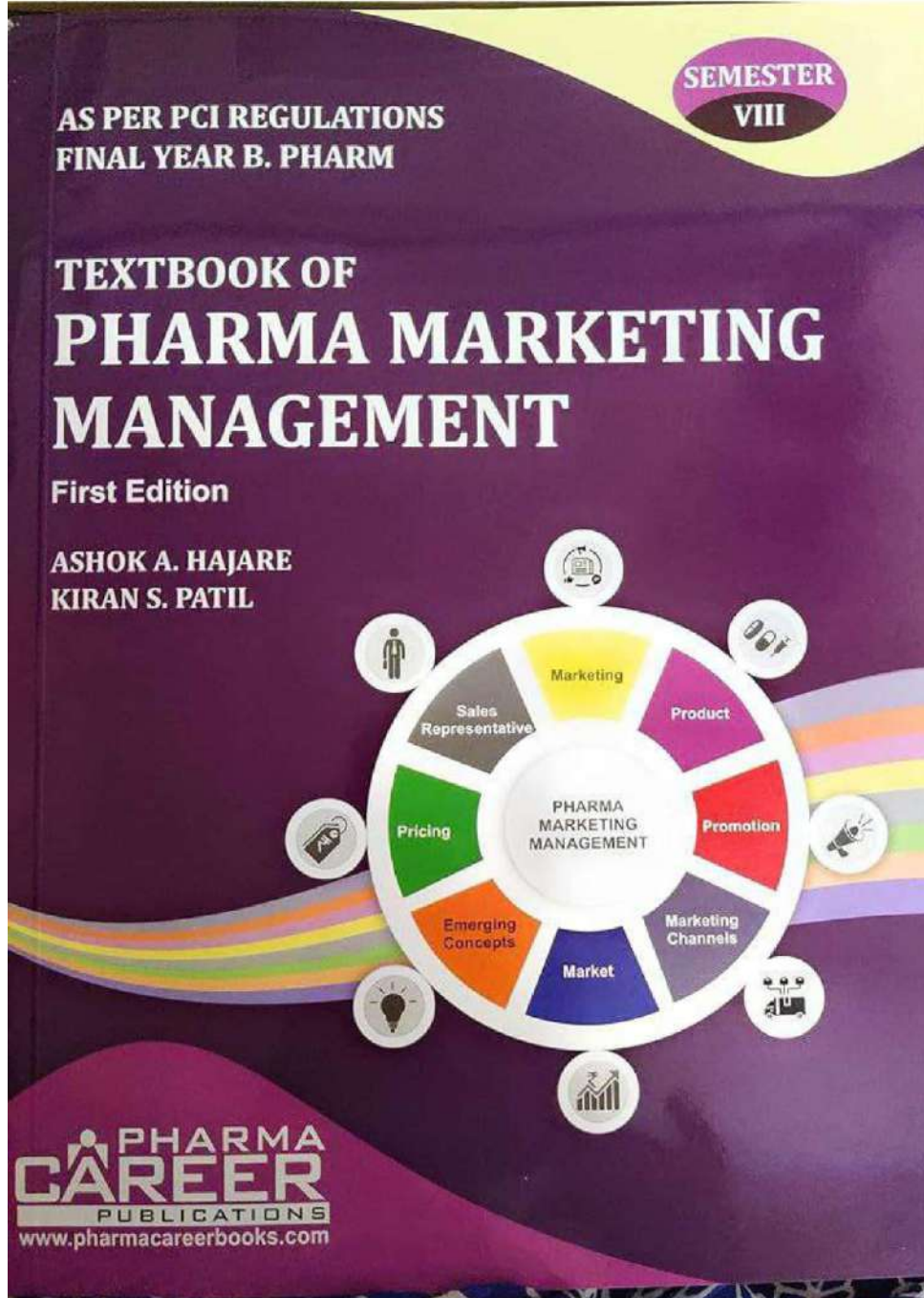
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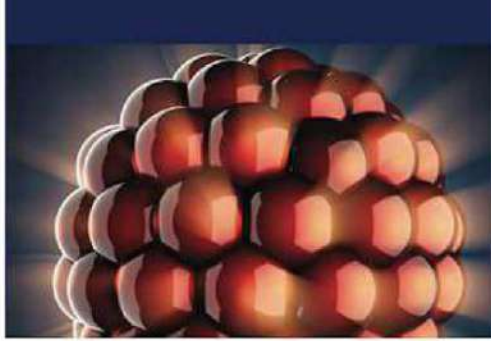
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## DESIGN AND DEVELOPMENT OF MUCOADHESIVE MICROSPHERES

MUCOADHESIVE MICROSPHERES



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Biodegradable microspheres are one of the most useful devices to deliver materials in an effective, prolonged and safe manner. Mucoadhesion is a novel area of interest in the design of drug delivery systems to maintain the dosage form at the site of action or absorption and to facilitate intimate contact of the dosage form with underlying absorption surface to improve and enhance bioavailability. Repaglinide is a meglitinide analogue used as oral hypoglycaemic drug and having very low  $t_{1/2}$  (~ 1hr), 56% bioavailability. It is totally absorbed from GI, so it is the need to increase its t<sub>max</sub> time, by formulating with HPMC K4M, sodium alginate and Carbopol 934 P. Sodium alginate microspheres for an anti diabetic drug, repaglinide, were prepared by ionic-gelation method and investigated for its various physicochemical and release properties. Incorporation of HPMC K4M and Carbopol 934 P in the formulations affected the mucoadhesion, % water absorption, shape and release pattern of the formulations. Drug release from the microspheres followed zero order kinetics. The prepared batches were found to sustained the release of the drug for 12 hours.



Dr. Anilkumar J. Shinde, M.Pharm Ph.D (Pharmacy) from Shivaji University, Kolhapur. Presently he is working as Associate Professor in Pharmaceutics Department at Bharati Vidyapeeth College of Pharmacy, Kolhapur. He is approved U.S. PG & Ph.D teacher of Shivaji University, Kolhapur. He has 65 research papers & 5 review articles & one patent granted.



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## FORMULATION AND EVALUATION OF EXPANDABLE GASTRORETENTIVE TABLET



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The present study was to maintain the levels of diltiazem hydrochloride within a desired range, reduction in its dosing frequency and increase bioavailability. The tablets were formulated by using of 32 factorial design, the effect of independent variables X1 (concentration of hydroxy propyl methylcellulose K100) and X2 (concentration of sodium carboxymethylcellulose) on swelling index and drug release was studied. Tablets were prepared by direct compression method using 13 mm punch on rotary tablet machine. Physical properties of compressed tablets such as hardness, friability, content uniformity, swelling index were determined. The swelling index of optimized batch varied between 114.21 and 220.41 %. The percentage drug release of optimized batch was 15.60% at 1 h and 71.97% at 12 h. From the drug release kinetic study, Peppas model was found to be best fit. Infrared spectrum showed that there was no interaction between drug and polymers in the formulation. The sustained drug release pattern was successfully achieved through the formulation of expandable gastroretentive tablets.



Dr. Anilkumar J. Shinde, M. Pharm Ph.D he started career in Pune university, Pune as Lecturer in Pharmaceutics & younged in teaching since 1994. Presently he is working as Associate Professor in Pharmaceutics Department at Bharati Vidyapeeth College of Pharmacy, Kolhapur. He has 55 research papers & international Nigerian patent granted on solid.

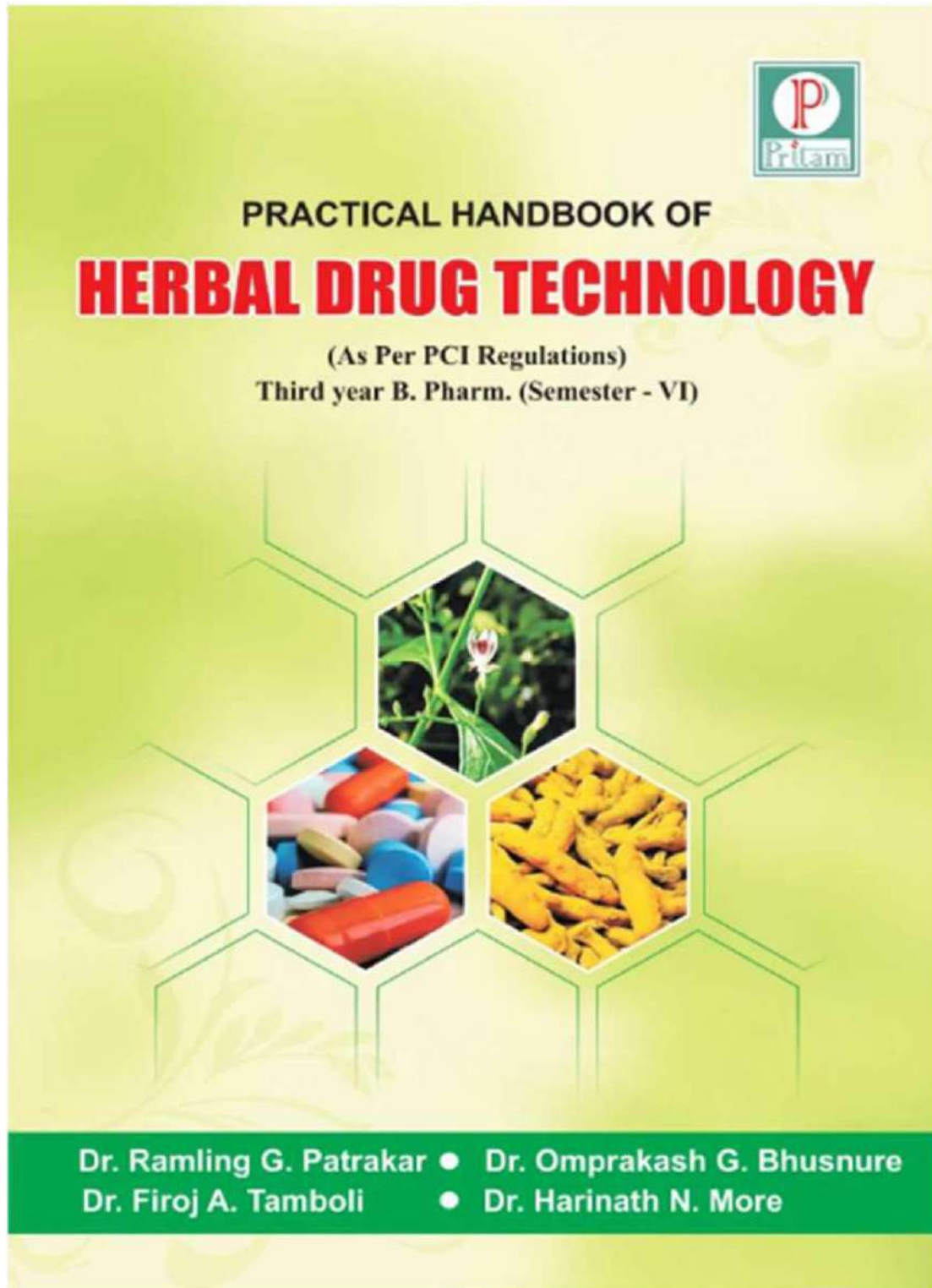


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## VALIDATION OF SPECTROPHOTOMETRIC METHODS

VALIDATION OF SPECTROPHOTOMETRIC METHODS  
FOR SIMULTANEOUS ESTIMATION IN COMBINED  
DOSAGE FORM



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Two simple, accurate and reproducible spectrophotometric methods have been developed for the simultaneous estimation of Norfloxacin and Tinidazole in pharmaceutical dosage forms. The first method involves determination using the AUC Method (Area Under Curve Method); the sampling wavelengths selected are 272-282 nm and 313-323 nm over the concentration ranges of 2-12 µg/mL and 3-18 µg/mL for Norfloxacin and Tinidazole respectively. The second method involves determination using the Q-Analysis Method (Absorbance Ratio Method); the sampling wavelengths selected are 277 nm and 318 nm over the concentration ranges of 2-12 µg/mL and 3-18 µg/mL for Norfloxacin and Tinidazole respectively. The results of the analysis were validated statistically and recovery studies were carried out as per ICH guidelines.



Dr. Anilkumar J. Shinde, M.Pharm Ph.D (Pharmacy) has 23 years experience in teaching & researching. Presently he is working as Associate Professor in Pharmaceutics Department at Bharati Vidyapeeth College of Pharmacy, Kolhapur. He has 65 research papers & 5 review articles published, International Nigerian patent granted with Dr. Petra Obioma Nnama

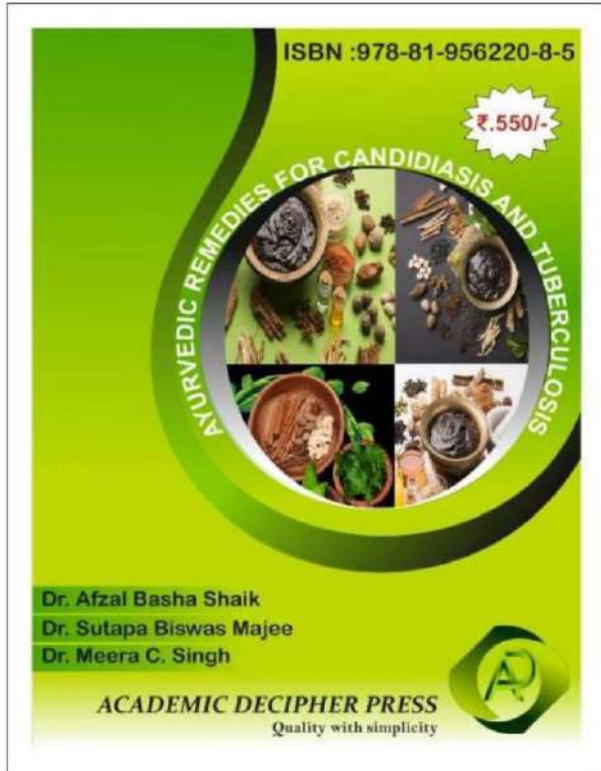


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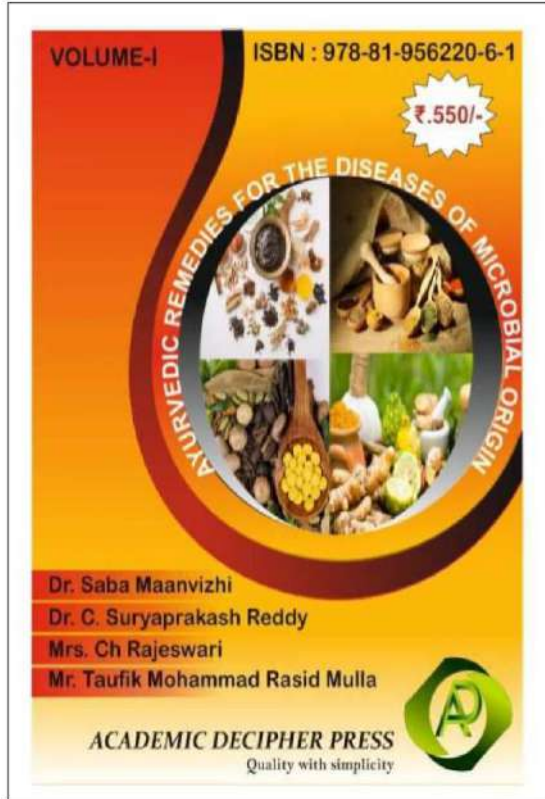
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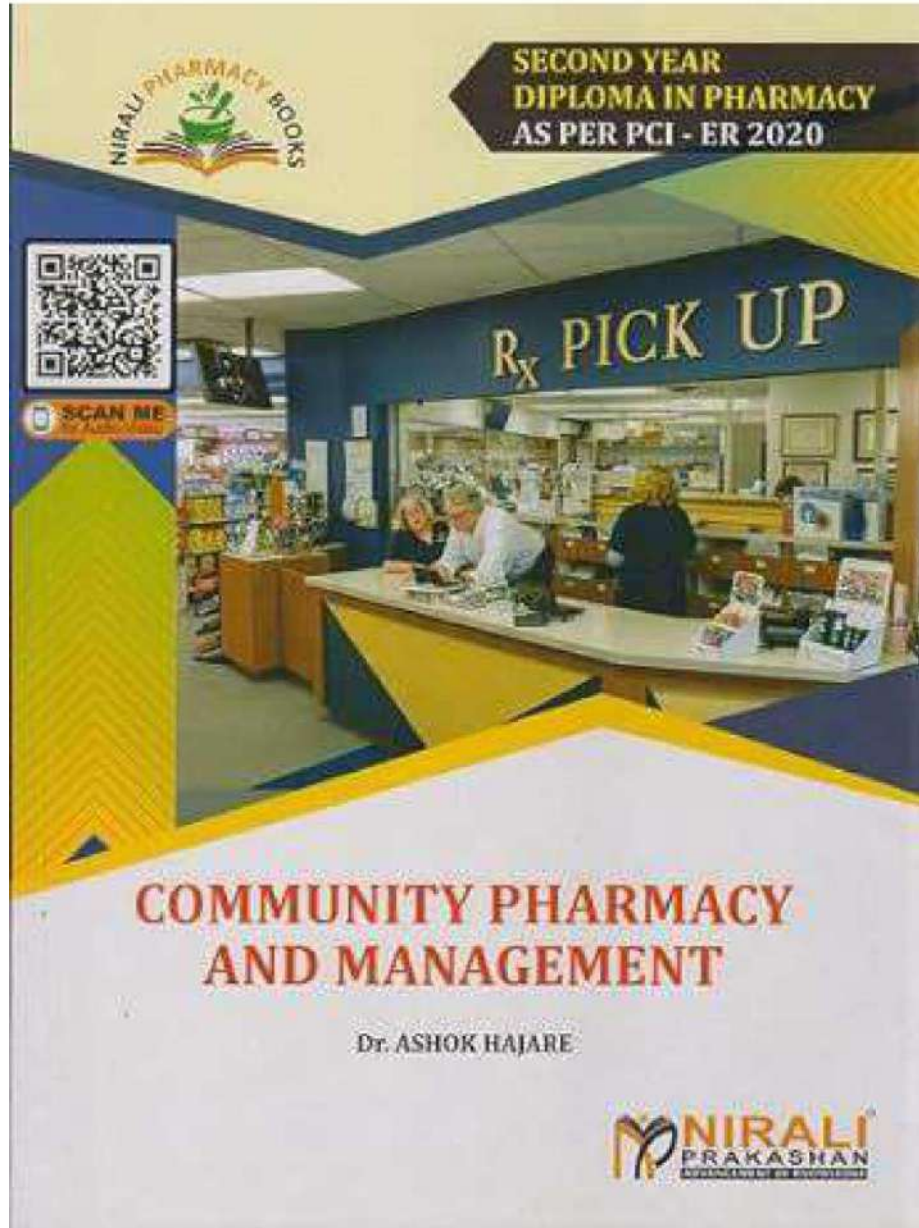
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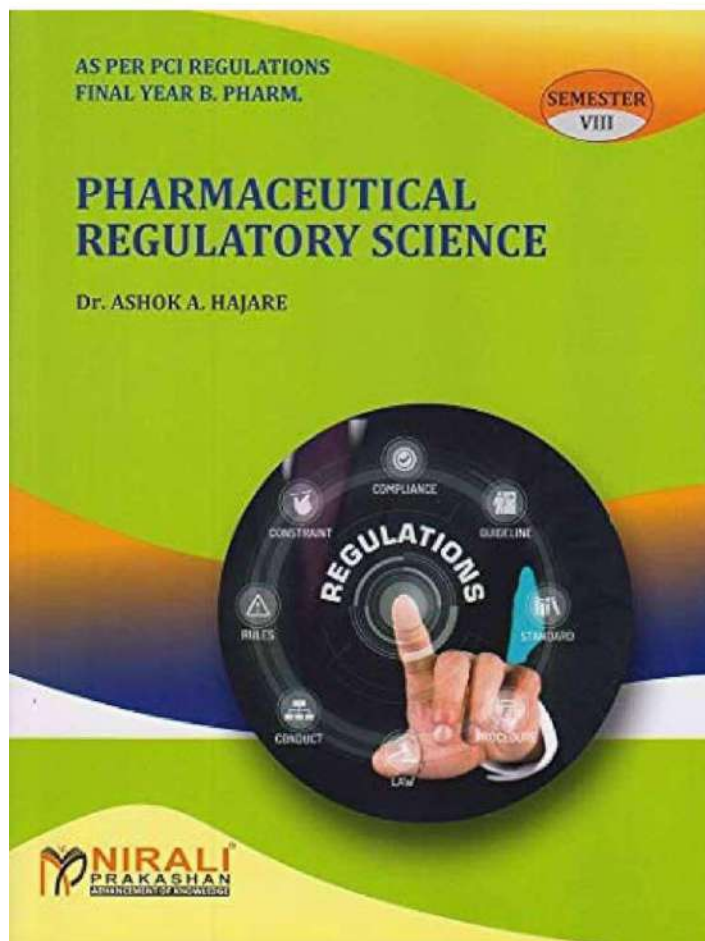
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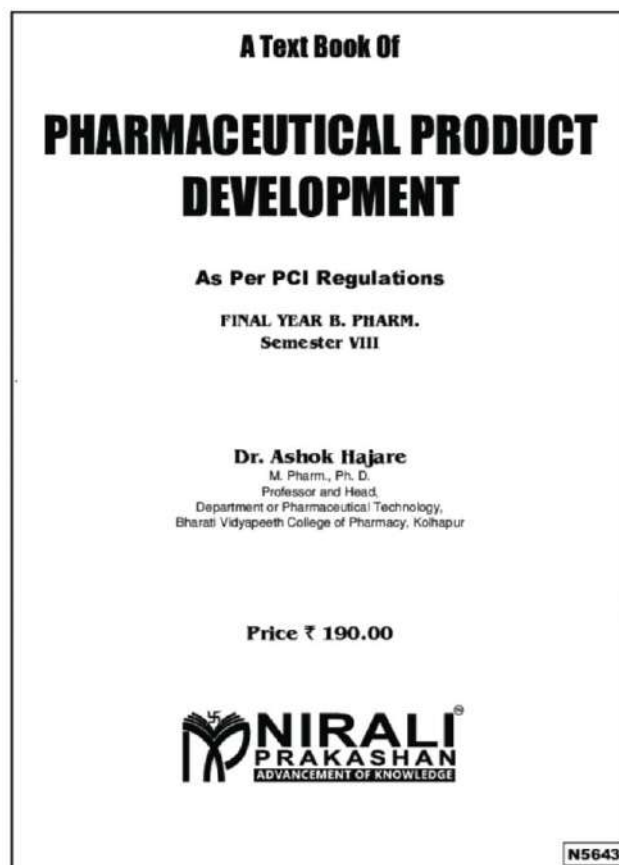
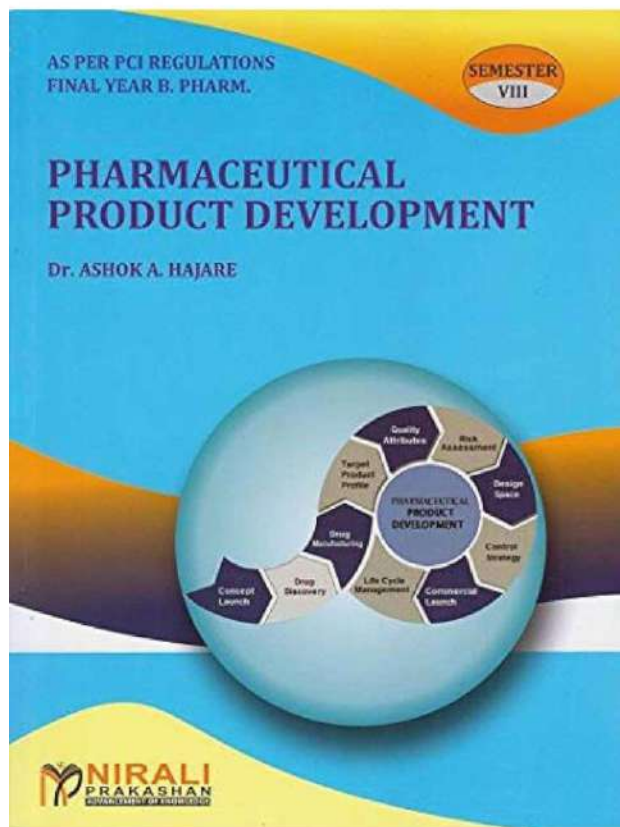
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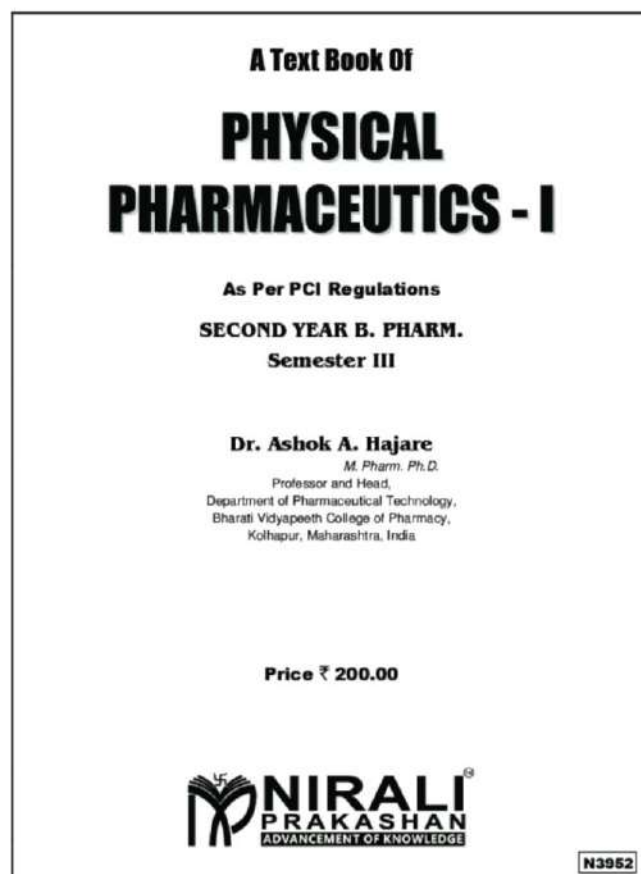
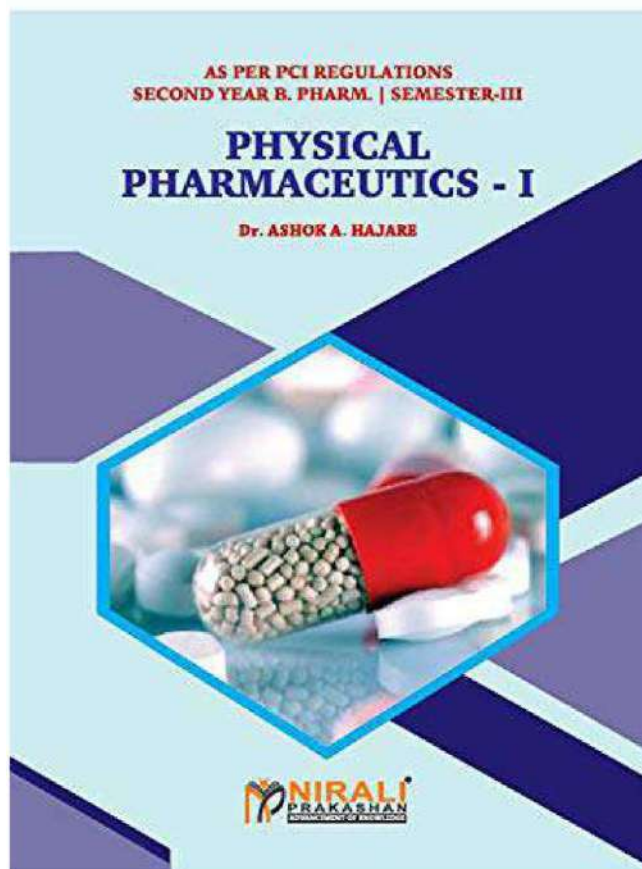
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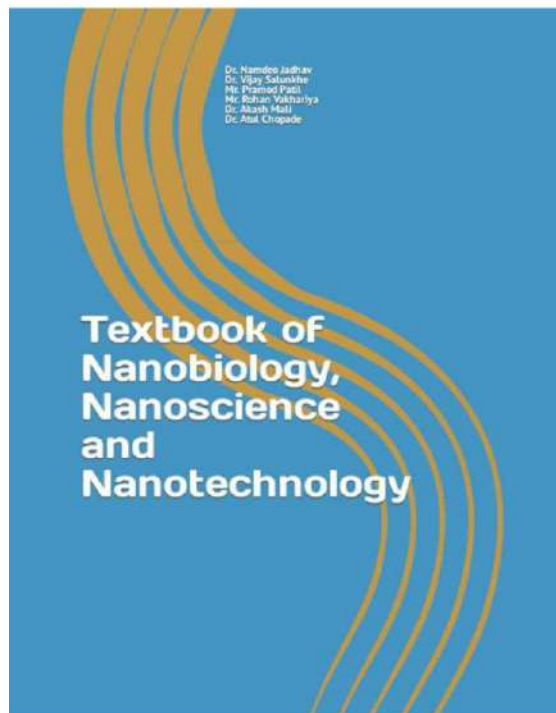




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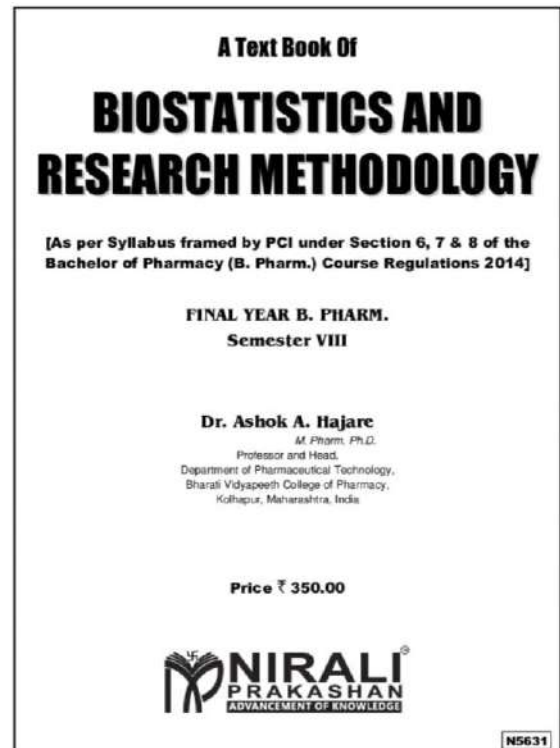
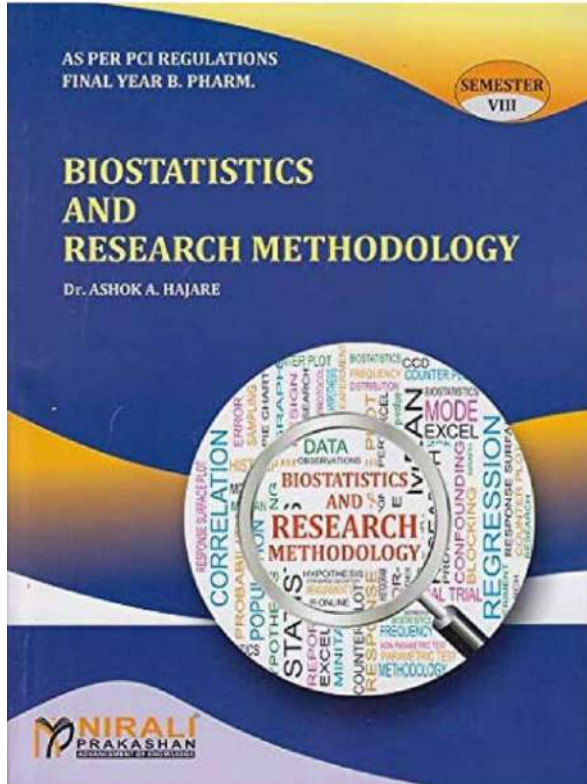
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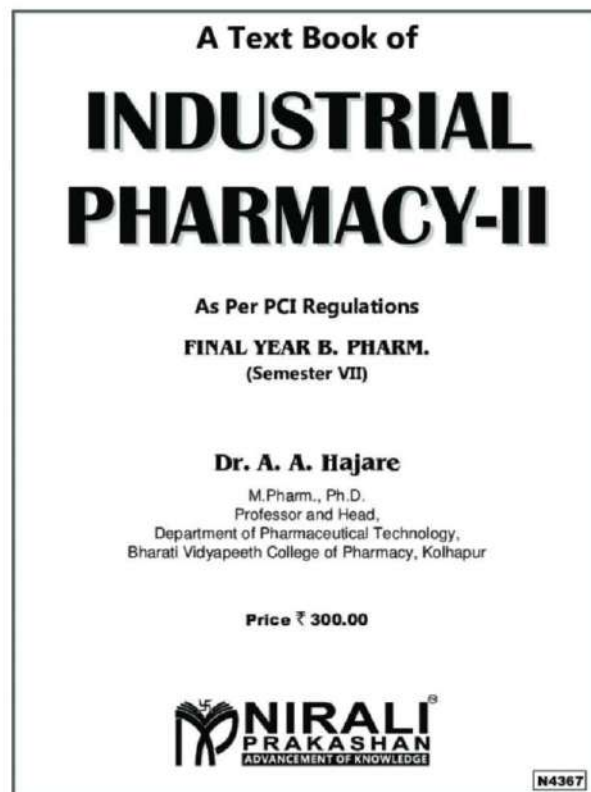
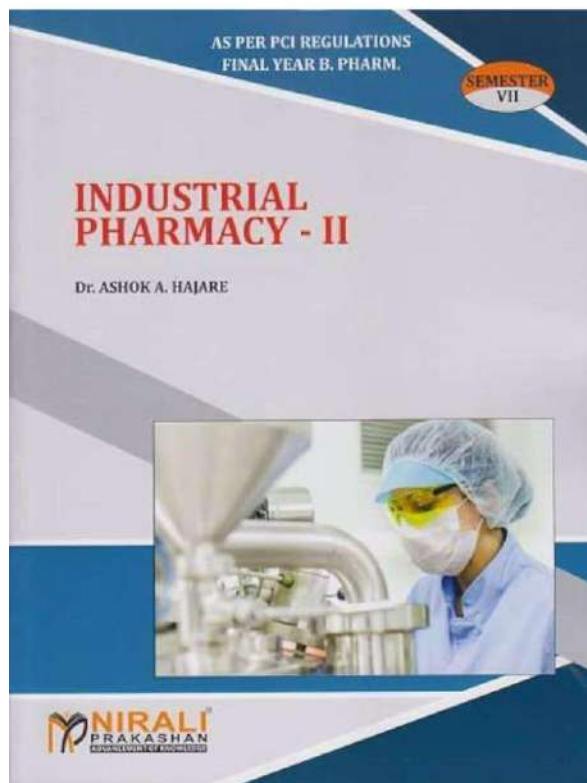
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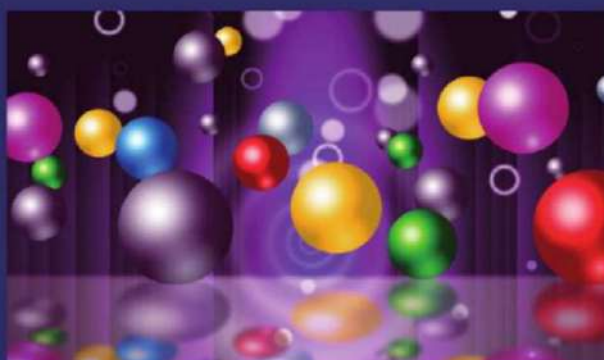
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The aim of the present study was to prepare microsponges gel formulation containing lornoxicam by quasi emulsion solvent diffusion method. Lornoxicam is a Non-steroidal anti-inflammatory drug used for the treatment of various inflammatory diseases. Microsponges were spherical, uniform in shape, between 19 to 136µm in diameter. The production yield, actual drug content and encapsulation efficiency was found in the range of 57.14±0.47 to 88.57±0.799%, 54.78±0.76 to 83.55±0.65%, and 65.73±0.35 % to 95.04±0.42 respectively. The results of compatibility studies FTIR, PXRD, DSC and accelerated stability studies showed that no chemical interaction with drug and excipients. The dermal observation of skin irritation study shows no sign of either erythema or edema after 24 hrs of application. In % inhibition was more in microsponges gel as compare with pure drug gel in anti-inflammatory activity. Formulation of lornoxicam microsponges provides better control over release of drug. This study presents a new approach based on microsp sponge drug delivery system for topical application.



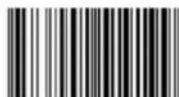
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Dr. Anilkumar J. Shinde, M.Pharm Ph.D (Pharmacy) from Shri Chhatrapati Shivaji Maharaj Vastu Sangrahalaya, Kolhapur. He has twenty years experience in marketing, teaching & research. Presently he is working as Associate Professor in Pharmaceutics Department at Bharati Vidyapeeth College of Pharmacy, Kolhapur. Approved UG, PG & Ph.D teacher., 55 research papers, one patent granted.

## DEVELOPMENT OF LORNIXICAM MICROSPONGES GEL FOR TOPICAL APPLICATION

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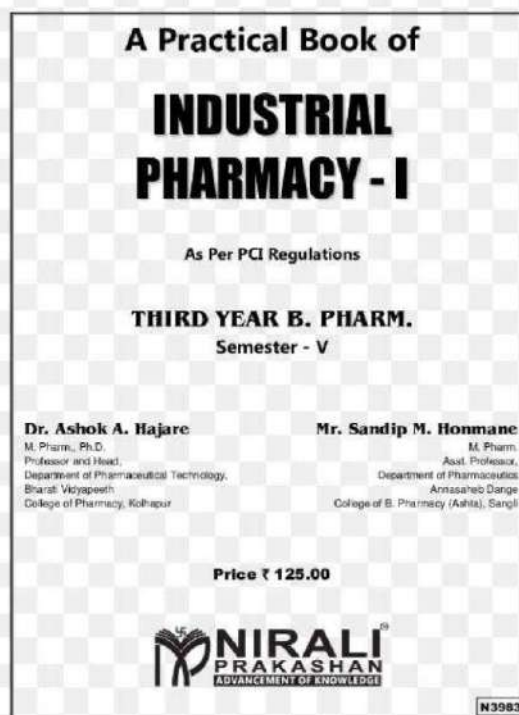
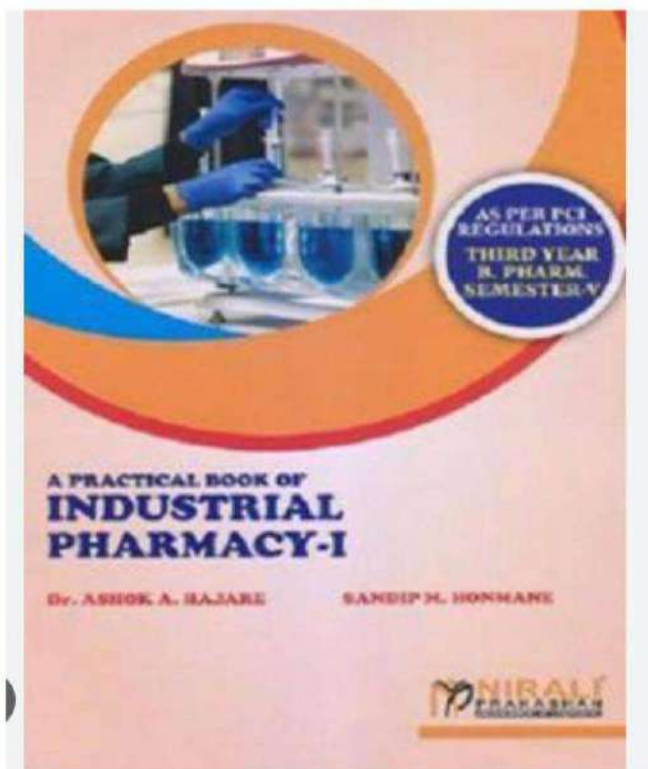
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The objective of present study was to formulate an oral mucoadhesive tablet of diltiazem hydrochloride. Investigate the effect of amount of HPMC K4M and sodium alginate on the sustained release and gastric residence time of dosage form. The mucoadhesive tablet prepared by direct compression method was used varying concentrations of HPMC K4M and Sodium alginate and (1:1, 1:1.5, 1:2) Drug and Polymer ratio. The formulations were evaluated and results revealed that FTIR studies showed no evidence of interactions between drug and excipients used. The mucoadhesive strength, residence time and drug content of formulation F3 was found to be  $26.35 \pm 1.15$  mg,  $>7.5$  hrs, and  $98.75 \pm 0.05$  % respectively. The formulation F3 exhibited sustained drug release i.e. 75.71% in 12 h. The in vitro release kinetics studies reveal that formulations fit well with zero order kinetics and mechanism of drug release is Super case II transport. The study was concluded that formulation of mucoadhesive tablets from the cumulative % drug release study reveals that increase in the concentration of adhesive polymers cause slow the drug release. Tablet of DTZ can be beneficial in treatment of hypertension.



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## Mucoadhesive Gastroretentive Tablet Of Diltiazem Hydrochloride



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