

NAAC CRITERIA 01: Curricular Aspects

1.3.2 - Number of courses that include experiential learning through project work/field work/internship during the year

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MET's Institute of Pharmacy,

Bhujbal Knowledge City, Adgaon- 422 003,

Dist: Nashik (M.S.), India.

M. Pharm Research Project 2022-23 List

Sr. No.	Name of the student	Specialization of the students	Title of dissertation	Name of the guide	Certificate link_Principal_Guide_student
1	Shashwat Changale	Pharmaceutics	Synthesis and Characterization of Surface Modified Silymarin Loaded Mesoporous silica Nanoparticles	Dr. M. P. Patil	https://drive.google.com/file/d/1vdLLmBp117RYRdnJ74mfZVy9_crNVjlm/view?usp=drive_link
2	Poonam Yogesh Patil	Pharmaceutics	Dissolution enhancement of Ambrisentan by cocrystallization technique	Dr. M. P. Patil	
3	Sakshi P. Kedare	Pharmaceutics	Development and evaluation of topical cream containing quercetin by using Shatadhauta Ghrita as a base	Dr. M. P. Patil	
4	Sampada D. Darade	Pharmaceutics	Formulation development and evaluation of anti-acne gel loaded with curcuma amada and nicotinamide	Dr. M. P. Patil	
5	Yadnya mahendra Gite	Pharmaceutics	Formulation and evaluation of skin brightening and rejuvenating serum	Dr. Sanjay J Kshirsagar	
6	Harshada P. Dhak	Pharmaceutics	Formulation and evaluation of Herbal spray for the management of Diaper rashes	Dr. S.J.Kshirsagar	
7	Snehal D. Kandalkar	Pharmaceutics	Formulation development and evaluation of Herbal Roll-on for the treatment of Burning feet syndrome	Dr. S. J. Kshirsagar	
8	Bharat Tukaram Agiwale	Pharmaceutics	Formulation and Evaluation of hibiscus rosa sinesis hair gel in the treatment of premature hair greying	Dr. S. P. Ahirrao	
9	Deepali Deepak Zoman	Pharmaceutics	Phytochemical Screening, antioxidant activity And Efficacy evaluation of herbal hair dye In preventing premature hair greying	Dr. S. P. Ahirrao	
10	Sarika Valmik Algat	Pharmaceutics	Formulation and evaluation of polyherbal based formulation for Prevention of grey hair	Dr. S. P. Ahirrao	
11	Pratibha Sukdev Maurya	Pharmaceutics	"FORMULATION AND EVALUATION OF HERBAL NUTRCELITICAL CHOCOLATE FOR PRIMARY DYSMENORRHEA"	Dr. S. P. Kakad	
12	Shalaka Shashikant Dhikale	Pharmaceutics	Accelerated stability studies of efavirenz nanosuspnesion with method development, validatoion, eneregy of activation and force degradation study	Dr.S.P.Kakad	
13	Mr.Chetan Sonawane	Pharmaceutics	"INTRANASAL DELIVERY OF TOCOPHERYL ACETATE NANOEMULSION FOR THE MANAGEMENT OF OXIDATIVE STRESS IN THE CNS RELATED DISORDER AND NEURODEGENERATION.	Dr.Smita Prakash Kakad	
14	Jadhav Vivek Sanjay	Pharmaceutics	Characterization of Curcumin Incorporated Caesalpinia Pulcherrima Galactomannan / Orange oil Antimicrobial Emulsion Film	Dr. Nilima Thombre	
15	Dhavale Sandhya Hiranman	Pharmaceutics	To Evaluate Prebiotic Potential of Caesalpinia Pulcherrima Galactomannan	Dr. Nilima Thombre	
16	Yojna Kuwar	Pharmaceutics	Formulation, Optimization and Evaluation of Minoxidil Nanogel	Dr. D. S. Bhambere	
17	Amruta Anil Mandlik	Pharmaceutical Quality Assurance	A comprehensive study on development and evaluation of menstrual cramp relieving herbal gummy formulation	Dr. Sanjay J. Kshirsagar	
18	Chikhale Shubham Shamrao	Pharmaceutical Quality Assurance	Development and evaluation of curcumin loaded nanoparticles for the treatment of diabetic retinopathy	Dr. S.J.Kshirsagar	
19	Ms. Dipansi Thembharn	Pharmaceutical Quality Assurance	Design, Development and Functional Potential Evaluation of Fish Feed from Agricultural Waste.	Dr.Gitanjali S. Deokar	
20	Mr. Anand Gaikwad	Pharmaceutical Quality Assurance	Model Dependent and Model Independent Dissolution Profiling studies to evaluate the performance of Eudragit RSPO and RLPO in Tablet Dosage forms Using Bio- Relevant Media Simulations	Dr.Deokar G.S	
21	Krishna Khamkar	Pharmaceutical Quality Assurance	Extraction, Characterization, and Functional Assessment of Lepidium sativum seed Mucilage (Garden Cress Seeds): Exploring Prebiotic Potential and Super disintegrant Application in Tablets	Dr.Deokar GS	
22	Hammad Mohammad Athar	Pharmaceutical Quality Assurance	Isolation and Characterization of Bioactive Peptide from Sprouted and Non-Sprouted Seeds of Finger Millet: A Comparative Study.	Dr.Gitanjali Deokar	
23	Shweta Sonawane	Pharmaceutical Quality Assurance	Formulation Development and Optimization of Polyherbal Dusting Powder for the Treatment of Bedsores	Dr. Sunita Narendra Surse	
24	Ms. Priyanka Sananse	Pharmaceutical Quality Assurance	Formulation and Evaluation of herbal jellies for motion sickness from Zingiber officinale	Dr. Sunita Narendra Surse	

25	Saniya Shaikh	Pharmaceutical Quality Assurance	Stability Indicating HPLC Method for Remoglifozine etabonate: Degradation Studies, characterization and ADME/Tox Evaluation	Dr. S. S. Sonawane
26	Rohit Koli	Pharmaceutical Quality Assurance	Analytical Assessment of Budesonide and Dicerin in bulk and pharmaceutical formulation: Stability-indicating RP-HPLC method development and validation as per ICH guidelines	Dr. S. S. Sonawane
27	Pratiksha Mandlik	Pharmaceutical Quality Assurance	Development and validation of HPLC method for simultaneous estimation of sofosbuvir and velpetasvir using quality by design approach	Dr. S. S. Sonawane
28	Jadhav Abhishek Ravindra	Pharmaceutical Quality Assurance	Design and evaluation of fast dissolving tablet containing diclofenac sodium using caesalpinia pulcherrima galactomannan as a natural superdisintegrant	Dr. Nilima Thombre
29	Jogdand Rhutuja Ravi	Pharmaceutical Quality Assurance	Formulation and Evaluation of Caesalpinia Pulcherrima galactomannan hydrogel for colon specific drug delivery system	Dr. Nilima Thombre
30	Prajakta Thorat	Pharmaceutical Quality Assurance	Formulation And Evaluation of Skin brightening polyherbal Face Serum	Dr Santosh Chhajed
31	Akshata Bairagi	Pharmaceutical Quality Assurance	Formulation, Optimization and Evaluation of Bilayer Tablet of Antiviral Drugs	Dr. D. S. Bhambere
32	Gupta Ashutosh R	Pharmaceutical Chemistry	Design, Synthesis and Pharmacological evaluation for anticonvulsant activity of few 4- quinazolinone derivatives	Dr. Dinesh D.Rishipathak
33	Jain Bhagyshri P	Pharmaceutical Chemistry	Synthesis and pharmacological evaluation of few 2- substituted benzimidazoles and benzthiazoles	Dr. Dinesh D.Rishipathak
34	Shinde Kanchan S	Pharmaceutical Chemistry	Synthesis and Pharmacological Evaluation of anticonvulsant activity of few oxazepindione derivatives	Dr. Dinesh D.Rishipathak
35	Pooja Abhang	Pharmaceutical Chemistry	Synthesis, Molecular Docking Studies and Cytotoxic Screening of Novel 2-Substituted Benzimidazole Derivatives	Dr.Rani Kankate
36	Kamini Bhalerao	Pharmaceutical Chemistry	Synthesis, Characterization and Evaluation of Cytotoxic activity of Some Benzimidazole-Oxazole Derivatives	Dr. Rani S. Kankate
37	Yogesh Wankhede	Pharmaceutical Chemistry	Synthesis,Molecular Docking and Evaluation Of Cytotoxic Activity of Benzimidazole- Thiazole Derivatives	Dr. Rani S. Kankate
38	Suyog Wagh	Pharmaceutical Chemistry	Development And Validation of Stability Indicating HPLC Method for Estimation of Ivacaftor In Bulk And Tablet	Dr Santosh S. Chhajed
39	Manisha Gaikwad	Pharmaceutical Chemistry	Design Synthesis And Chharacterization of 2-thiooxothiazolidine-4-one As PPARgamma Agonist in search of antidiabetic agent	Dr Santosh S. Chhajed
40	Vaishnavi Khairnar	Pharmaceutical Chemistry	Development and Validation of stability indicating HPLC method for estimation of antigonadotropic drug danazol in bulk and capsule	Dr. S. S. Sonawane
41	Hrushikesh Bhadane	Pharmaceutical Chemistry	Design synthesis and computational studies of triazole analogues insearch of antifungal agents	Dr Santosh Chhajed
42	Naveed Ahmed Raees Ahmed	Pharmacology	Evaluation of neuroprotective effects of Salicin and Stevioside in chronic constriction injury induced peripheral neuropathy	Dr Pavan Udavant
43	Apurva Torane	Pharmacology	Evaluation of antidepressant activity of Stevioside and Zingerone by chronic unpredictable stress model in wistar rats	Pavan Bhausheeb Udavant
44	Simona D'Souza	Pharmacology	Evaluation of Neuroprotective effect of Salicinand Stevioside in experimental animal model of streptozotocin induced diabetic neuropathy.	Dr. Pavan B. Udavant
45	Nishigandha Kiran Salunke	Pharmacology	Efficacy study of Oregano oil in experimentally induced dislipidemic rats	Dr. Neelam Laxman Dashputre
46	Kadam Jayesh Digamber	Pharmacology	Effect of Nano particulate system of Genistein and Diadzein against N-Nitroso-N-Methyl Urea induced breast cancer in female wistar rats	Dr. Neelam Laxman Dashputre
47	Patil Surbhi Bhalchandra	Pharmacology	Development and Evaluation of Naringenin nanoparticles as a potential treatment for Letrozole induced polycystic ovarian syndrom	Dr. Neelam Laxman Dashputre

Date: 09/05/2023

MET/IOP/M.Ph/2022-23/50

To
Deputy Registrar,
PG Admission,
Savitribai Phule Pune University,
Pune

Subject: Submission of Research Proposal for Ph.D. in **Pharmaceutics, Pharmacology and Pharmaceutical Chemistry** of MET's Institute of Pharmacy, Bhujbal Knowledge City, Adgaon, Nashik.

College Puncode: CPHN018080

Ref.: PGS/1436, Dated: 22/03/2023

Respected Sir,

With reference to the subject cited above, presentations on research proposal of Ph.D. candidate were conducted on 09/05/2023 at MET's Institute of Pharmacy, Bhujbal Knowledge City, Adgaon, Nashik as per the norms laid by Savitribai Phule Pune University. We are submitting herewith the documents mentioned in enclosures.

Details of the Student:

Sr. No.	Application ID	Name of the Students	Subject	Name of the Guide
01	22030119268	Sarika Gorakhanath Shinde	Pharmaceutics	Dr. D. S. Bhambere
02	22030032736	Priyanka Rajendra Adavardkar	Pharmaceutics	Dr. D. S. Bhambere
03	22030046421	Ragini Dnyaneshwar Jagzap	Pharmaceutics	Dr. S. J. Kshirsagar
04	22030122808	Pooja Arjun Shinde	Pharmaceutics	Dr. G. S. Deokar
05	22030109476	Devyani Pravin Chavan	Pharmaceutics	Dr. S. P. Ahirrao
06	22030105234	Suchita Bhaskar Khairnar	Pharmaceutics	Dr. S. P. Ahirrao
07	22030034841	Ukhade Snehal Sampat	Pharmaceutical Chemistry	Dr. S. S. Sonawane
08	22030061716	Bhagwat Haribhau Garje	Pharmacology	Dr. P. B. Udavant
09	22030110474	Hemant Vishnu Raut	Pharmacology	Dr. P. B. Udavant

Kindly do the needful and oblige.
Thanking you.

Dr. S. J. Kshirsagar

PRINCIPAL

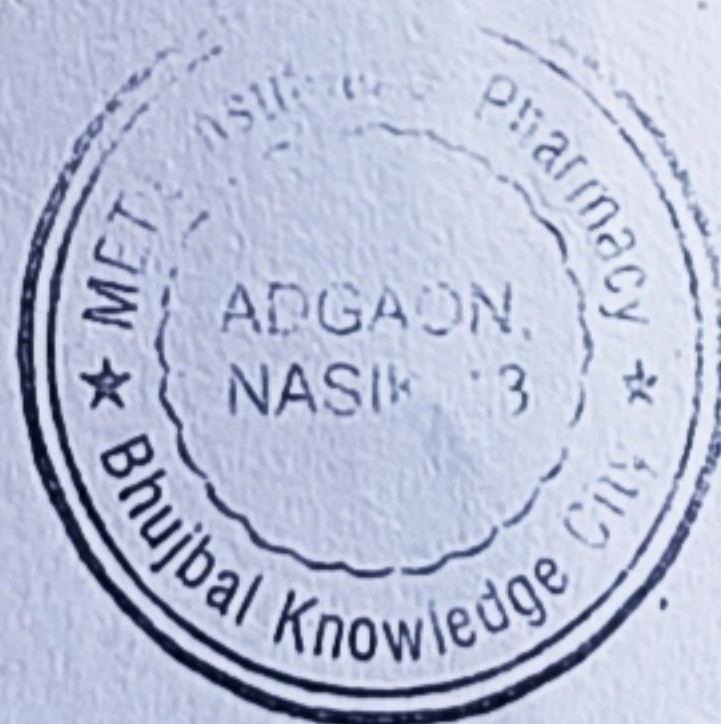
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Adgaon, Nashik-3.

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09/05/23

MET's Institute of Pharmacy

Bhujbal Knowledge City, Adgaon- 422 003,

B. Pharm Final Year Project 2022-23 List

Sr . No.	Name of the student	Name of Guide	Title of the Project	Department	Link For Certificate (Guide & Principal Sign)
1	Aayush Ikhankar	Dr. S. J. Kshirsagar	Poly herbal Lubricating Powder for Bed Sores	Pharmaceutics	https://drive.google.com/file/d/1_DeQ-n3H4U2BU4QA4V7j9dFJgqs3l_sH/view?usp=drive_link
2	Yannawar Shruti Bhiku				
3	Wagh Vaibhav Maruti				
4	Atharva Sanas				
5	Sayali Shirsathe	Dr. M. P. Patil	Herbal anti mouth ulcer gel: development and evaluation	Pharmaceutics	
6	Vaibhav Dhumal				
7	Tanmayee Ghule				
8	Durugar Chaitanya				
9	Bhagyashri Dhakite	Dr. N. A. Thombre	Application of natural colour in cosmetic formulation	Pharmaceutics	
10	Ahire Pratiksha Arjun				
11	Tamkhane Harshada Vijay				
12	Sujay jayant aher				
13	Anuja Atul Shreshtha	Dr. Deepak S. Bhambere	Formulation and Evaluation of Menoxidil Nanosuspension for Hair Regrowth In Adregenic Alopecia	Pharmaceutics	
14	Janhavi Sanjay Ganore				
15	Viraj Patil				
16	Darade Namrata Sanjay				
17	Ankit Umesh Desale	Dr. Umesh D. Laddha	Oral supplements for Diabetes and Cardiovascular Complications	Pharmaceutics	
18	Patil Harshada Suren				
19	Mrunal Suryanwanshi Kamalakar				
20	Ritvik Chaudhari				
21	Smriti singh	Dr. S. P. Ahirrao	Comparative Study of Chemical and Herbal Hair Dyes: A survey	Pharmaceutics	
22	Prajakata Sahane				
23	Meeta Ramaiya				
24	Aishwarya Sangmanere				
25	Ankita Naikwade	Dr. G. S. Deokar	Formulation and development of herbal prebiotic edible lip colour	Pharmaceutics	
26	Juveria Jilani Shaikh				
27	Tejas Mahajan				
28	Mandlik Shruti Nandu				
29	Sakshi Sharad aher	Mr. A. B. Jadhav	Development and evaluation of gluten free low carbohydrate containing multi mineral protein powder	Pharmaceutics	
30	Chaitali Chaudhari				
31	Pratiksha Nikam				
32	Shruti vijay kakad				
33	Prajakta Ramesh Landge	Dr. S. P. Kakad	Formulation and development of organic leave in hair conditioner	Pharmaceutics	
34	Khaire Kajal Nilesh				

35	Sneha rajendra shimpi	Dr. S. F. Karau	Formulation and development of organic leave in hair conditioner	Pharmaceutics
36	Reva sandeep kulkarni			
37	Rushikesh Sonawane	Mr. Mayur Sawant	Formulation and Development of Herbal Hair Gel	Pharmaceutics
38	Rahul manoj jadhav			
39	Pratiksha Mahale			
40	Akash Dilip Shelar			
41	Saad Ansari	Mr. A. S. Deore	Immuno-Therapy and Its Application in Cancer Studies	Pharmaceutical Chemistry
42	Shaikh Farhan Sajjad			
43	Shaikh md sufiyan			
44	Viraj Sunil sonawane			
45	Ritesh Santosh Kamble	Ms. Vaidehi Gaidhani	Determination of antifungal activity of Calatropis procera by action of flavanoids	Pharmaceutical Chemistry
46	Yash Raghuvanshi			
47	Nandan Somani			
48	Yash Hadge			
49	Deshpande Siddhesh	Mr. P. B. Pawar	Formulation of Sitopaladi Lozenges	Pharmacognosy
50	Shelke Hemant Sanjay			
51	Sumesh Pagare			
52	Rautmale nikhil govind			
53	Jadhav Shubham Rajkumar	Dr. S. S. Sonawane	Use of Simple, Effective, Economic Disposal Method for Unused or Residual Antibiotics - A step Towards Prevention of Antibiotic Resistance	Pharmaceutical Chemistry
54	Roshan suresh Jadhav			
55	Bhavin Gavit			
56	Akash Vishnu Patil			
57	Sakshi Suresh Zalte	Mr. S. J. Khairnar	Evaluation of Antidepressant Effect of <i>Merremia dissecta (jacq.) Hallerf.</i> , by Behavioral Animal Model	Pharmacology
58	Gosavi Shreya			
59	Pratiksha vijay patil			
60	Shriram bhanudas			
61	Rushikesh Malode	Dr. R. S. Kankate	Preparation and Evaluation of Polyherbal Antidiabetic Formulation	Pharmaceutical Chemistry
62	Joshi Rutuja			
63	Chinmay Suryawanshi			
64	Chaitanya Chaudhari			
65	Aher kundam Dayaram	Dr. P. B. Udavant	Formulation and evaluation of powder for stress relief and sleep booster for mental health	Pharmacology
66	Janhavi Raut			
67	Shreya Rajesh Shivade			
68	Pagar Chanchal Sanjay			
69	Anuja Subhash Gaikhe	Dr. N. L. Dashputre	Multinutritional Herbal Chocolates	Pharmacology
70	Ruchika Jadhav			
71	Snehal Santosh Devkar			
72	Suhasi Dande			
73	Karuna thorat	Dr. A. B. Tapanpure	Formulation and Evaluation of hearbal fast dissolving tablet of Allicin	pharmacology
74	Ajay jadhav			
75	Mayur Fatangare			
76	Shraddha Ghumare			
77	Saurabh Prakash Sanap	Dr. S. N. Surse	"Preparation and Evaluation of Tropical Polyherbal Formulation For Wound Healing	Pharmacognosy
78	Vaishnavi Bombale			
79	Vaibhav pawar			

80	Kawale pooja vishnu			
81	Pagar Shraddha Dipak	Mr. S. S. Ghodke	"Healthy Living Habits - Juice Formulation"	Pharmaceutical Chemistry
82	Prerana Dilip Chavan			
83	Pranita Kharde			
84	Falak Rutuja Jagannath			
85	Ahire Yogita Vijay	Dr. S. S. Chhajed	Herbal Skin Brightening gel	pharmaceutical chemistry
86	Vaishnavi Holgade			
87	Dhikale Uttam			
88	Yash Kulkarni			
89	Rushikesh Bhutada	Dr. S. N. Surse	Packaging Material – Recycled And Biodegradable	Pharmacognosy
90	Barke Sarvesh Balu			
91	Pratiksha Dhikale			
92	Nilam Uttam Bagul			
93	Khode Rutuja	Dr. D. D. Rishipathak	Formulation and evaluation of <i>Withania coagulance</i> fruit Extract gel	Pharmaceutical Chemistry
94	Shraddha Pagare			
95	Smita Mahendra Ahire			
96	Dhanshri Nitin Patil			
97	Kunal Ashok Talane	Mr. R. U. Shelke	Herbal Fruit and Veggie Cleanser	Pharmaceutical Chemistry
98	Rohan Badhe			
99	Laxman Wankhede			
100	Siddhesh Keshav Patil			
101	Pawar Bhagyashree	Ms. Saniya Bhalerao	Chewwable tablet for Halitosis	Pharmaceutics
102	Swara Manish Koranne			
103	Pote Sakshi Appasaheb			
104	Rushikesh Malokar			
105	Godse Gajanan	Mr. S. D. Sonkamble,	Herbal Calcium Supplement for Hypocalcemia	Pharmacognosy
106	Abhinav Fargade			
107	Khode Rutuja			
108	Pagare Shraddha			
109	Sakshi Vijay Mandlik	Mr. Prathmesh Kothawade	Topical Herbal Analgesic Roll on for menstrual cramp	Pharmaceutics
110	Riya Nitin Raskar			
111	Chaitali Barhate			
112	Vishwa Patni			
113	Omkar Shashikant Patil	Mr. R. S. Ahire	The Formulatin of Herbal Mouthwash for Gingivitis	Pharmaceutical Chemistry
114	Kokane kailas			
115	Omkar Borlepwar			
116	Sandip Jadhav			
117	Dipak ghule			
118	Dhanke Kaustubh			
119	Abhishek Kakrale	Mr. R. R. Sable	Formulation and evaluation of antimicrobial herbal tablet soap	Pharmaceutics
120	Ajinkya Gavali			
121	Prajwal sanjay jadhav			
122	Sandhan Om Ravindra			



CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, **“Synthesis and Characterization of Surface Modified Silymarin Loaded Mesoporous Silica Nanoparticles ”** submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (Pharmaceutics), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003**, during the academic year 2021-2023 by **Mr. Shashwat Mahesh Changale**, under the guidance and supervision of **Dr. Moreshwar P. Patil**.

This dissertation is now ready for examination.

Place: Nashik

Date 14/6/2023

Dr. S. J. Kshirsagar

Principal

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003



CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, **“Synthesis and Characterization of Surface Modified Silymarin Loaded Mesoporous Silica Nanoparticles”** submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (Pharmaceutics), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003**, during the academic year 2021-2023 by, **Mr. Shashwat Mahesh Changale**, under my guidance and supervision.

This dissertation is now ready for examination.

Place: **Nashik**

Date: **14/6/2023**

Dr. Moreshwar P. Patil

Guide,

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003



DECLARATION

I hereby declare that the dissertation entitled “**Synthesis and Characterization of Surface Modified Silymarin Loaded Mesoporous Silica Nanoparticles**” is based on the work carried out by me in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003** during the academic year 2021-2023 under the guidance and supervision of **Dr. Moreshwar P. Patil**.

Place: **Nashik**


Mr. Shashwat Mahesh Changale

Date: **14/06/23**



CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, “**Dissolution Enhancement of Ambrisentan By Cocrystallization Technique**” submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (Pharmaceutics), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003**, during the academic year 2021-2023 by **Ms. Poonam Yogesh Patil**, under the guidance and supervision of **Dr. Moreshwar P. Patil**.

This dissertation is now ready for examination.

Place: Nashik

Date 31/07/2023



Dr. S. J. Kshirsagar

Principal

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003



CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, **“Dissolution Enhancement of Ambrisentan By Cocrystallization Technique”** submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (Pharmaceutics), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003**, during the academic year 2021-2023 by **Ms. Poonam Yogesh Patil**, under my guidance and supervision.

This dissertation is now ready for examination.

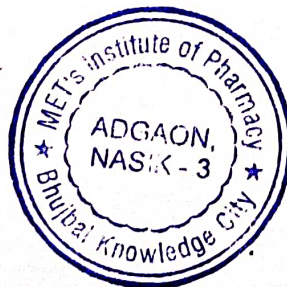
Dr. Moreshwar P. Patil.

Guide,

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003

Place: **Nashik**

Date: **14/07/2023**





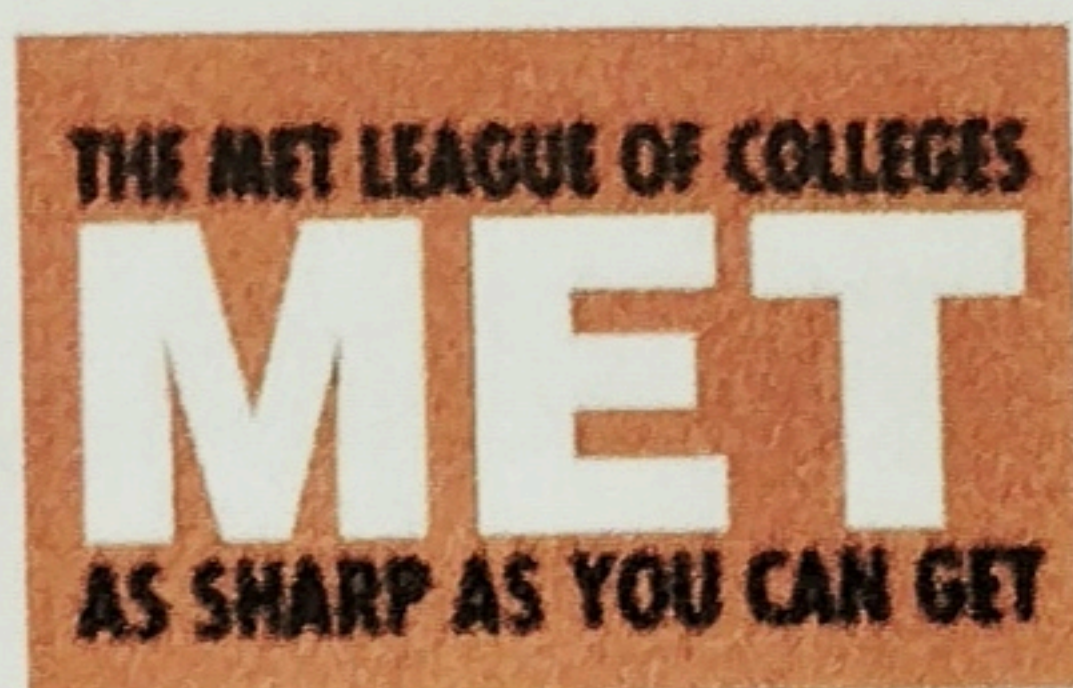
DECLARATION

I hereby declare that the dissertation entitled “**Dissolution Enhancement of Ambrisentan By Cocrystallization Technique**” is based on the work carried out by me in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003** during the academic year 2021-2023 under the guidance and supervision of **Dr. Moreshwar P. Patil**.

Place: Nashik

Date: 14/07/2023


Ms. Poonam Yogesh Patil



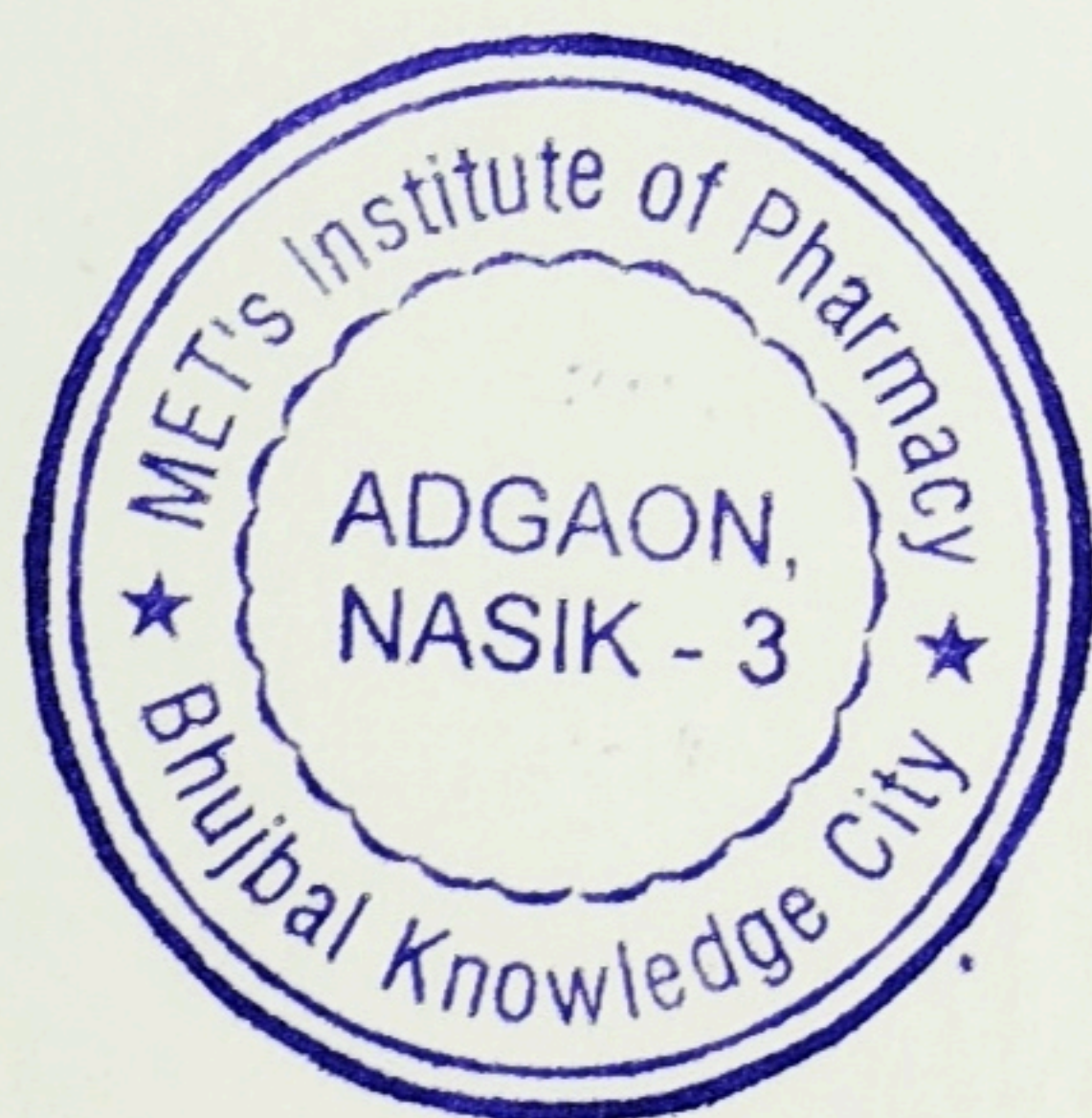
CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, **“Development and Evaluation of Topical Cream Containing Quercetin by using Shatadhauta Ghrita as a Base”** submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (Pharmaceutics), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003**, by **Ms. Sakshi Pramod Kedare**, under the guidance and supervision of **Dr. M. P. Patil**.

This dissertation is now ready for examination.

Place: **Nashik**

Date **3/7/23**



Dr. S. J. Kshirsagar

Principal

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003



CERTIFICATE

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This dissertation is now ready for examination.

Dr. M. P. Patil

Guide,

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003

Place: **Nashik**

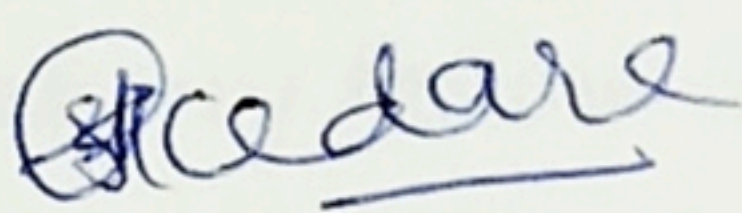
Date: **3/7/2023**

DECLARATION

I hereby declare that the dissertation entitled “**Development and Evaluation of Topical Cream Containing Quercetin by using Shatadhauta Ghrita as a Base**” is based on the work carried out by me in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003** under the guidance and supervision of **Dr. M. P. Patil**.

Place: **Nashik**

Date: **03/07/2023**


Sakshi Pramod Kedare

**“Formulation development and evaluation of anti-acne gel
loaded with *Curcuma amada* and nicotinamide”**

A Dissertation Submitted To

Savitribai Phule Pune University, Pune

**In the Partial Fulfillment of Requirements for the Award of
Degree of**

MASTER OF PHARMACY

IN

PHARMACEUTICS

In the Faculty of Science and Technology

BY

MISS SAMPADA D. DARADE

Guide

Dr. MORESHWAR P. PATIL



BHUJBAL KNOWLEDGE CITY

MET's INSTITUTE OF PHARMACY

ADGAON, NASHIK-422003

2021-2023



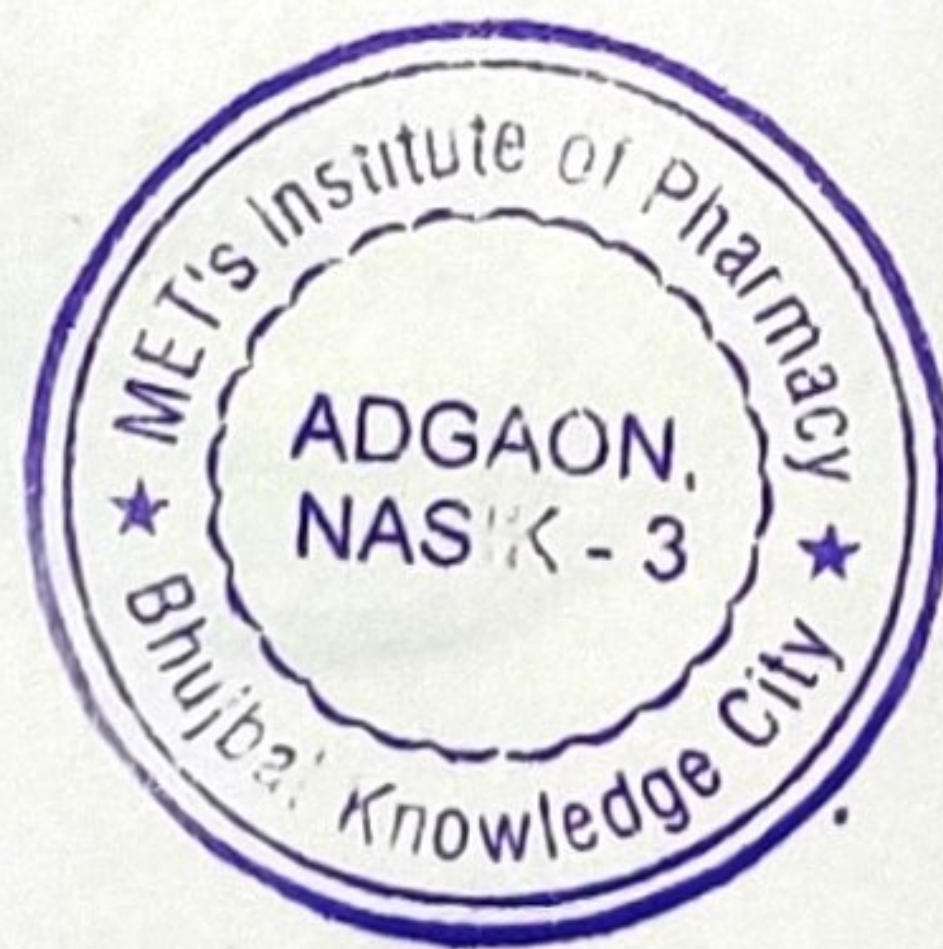
CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, **“Formulation development and evaluation of anti-acne gel loaded with *Curcuma amada* and nicotinamide”** submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (Pharmaceutics), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003**, by **Miss Sampada D. Darade**, under the guidance and supervision of **Dr. Moreshwar P. Patil**.

This dissertation is now ready for examination.

Place: **Nashik**

Date: **24/7/23**



A handwritten signature in blue ink, appearing to read "S. J. Kshirsagar".

Dr. S. J. Kshirsagar
Principal

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003



CERTIFICATE

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This dissertation is now ready for examination.

Place: **Nashik**

Date: **8/7/2023**



Dr. Moreshwar P. Patil

Guide,

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003



DECLARATION

I hereby declare that the dissertation entitled "**Formulation development and evaluation of anti-acne gel loaded with *Curcuma amada* and nicotinamide**" is based on the work carried out by me in the laboratories of **Bhujbal Knowledge City, MET's Institute of Pharmacy, Adgaon, Nashik-422003** under the guidance and supervision of Dr. Moreshwar P. Patil.

Name of student

Miss Sampada D. Darade

Place: Nashik

Date: 08/07/2023



CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, **“Formulation and Evaluation of Skin Brightening and Rejuvenating Serum”** submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (Pharmaceutics), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003**, during the academic year 2021-2023 by **Ms. Yadnya Mahendra Gite**, under the guidance and supervision of **Dr. Sanjay J. Kshirsagar**. This dissertation is now ready for examination.

Place: **Nashik**

Date: **01/08/2023**

Dr. S. J. Kshirsagar

Principal

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003



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Place: **Nashik**

Date: **01/08/2023**

Dr. Sanjay J. Kshirsagar

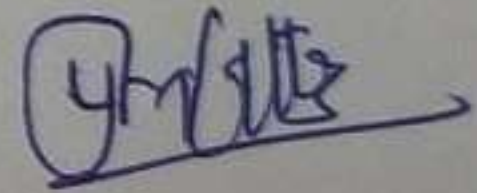
Research Guide

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003

DECLARATION

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Place: **Nashik**



Miss. Yadnya Mahendra Gite

Date: **01/08/2023**



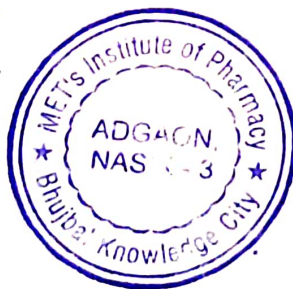
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This is to certify that the research work presented in this dissertation entitled, **“Formulation and evaluation of herbal spray for the management of diaper rashes”** submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (Pharmaceutics), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003**, by **Ms. Harshada Prabhakar Dhak**, under the guidance and supervision of **Dr. Sanjay J. Kshirsagar**.

This dissertation is now ready for examination.

Place: Nashik

Date 31/7/2023



Dr. S. J. Kshirsagar

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Adgaon, Nashik- 422003



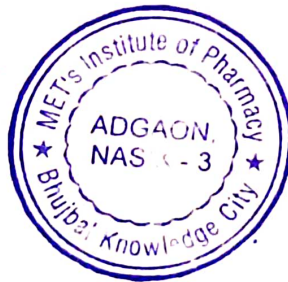
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Place: Nashik

Date: 31 / 7 / 2023



Dr. Sanjay J. Kshirsagar

Guide

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DECLARATION

I hereby declare that the dissertation entitled “**Formulation and evaluation of herbal spray for the management of diaper rashes**” is based on the work carried out by me in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003** under the guidance and supervision of **Dr. Sanjay J. Kshirsagar**.



Place: **Nashik**

Harshada Prabhakar Dhak

Date: **31/7/2023**



CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, "Formulation, development and evaluation of herbal roll-on for the treatment of burning feet syndrome" submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (Pharmaceutics), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET's Institute of Pharmacy, Adgaon, Nashik-422003**, by **Ms. Snehal Dattaprasad Kandalkar**, under the guidance and supervision of **Dr. Sanjay J. Kshirsagar**.

This dissertation is now ready for examination.

Place: **Nashik**

Date: 31/07/2023



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Place: **Nashik**

Date: **31/07/2023**



Dr. Sanjay J. Kshirsagar

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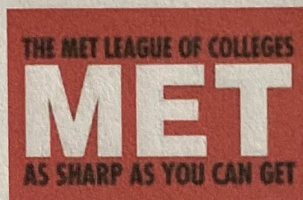
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Place: **Nashik**

Date: **31/07/2023**


Ms. Snehal Dattaprasad Kandalkar



CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, **“Formulation and evaluation of hibiscus rosa sinensis hair gel in the treatment of premature hair greying”** submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (Pharmaceutics), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003**, by **Mr. Bharat Tukaram Agiwale**, under the guidance and supervision of **Dr. Sapana P. Ahirrao**.

This dissertation is now ready for examination.

Place: **Nashik**

Date **17/08/2023**

Dr. S. J. Kshirsagar

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Adgaon, Nashik- 422003

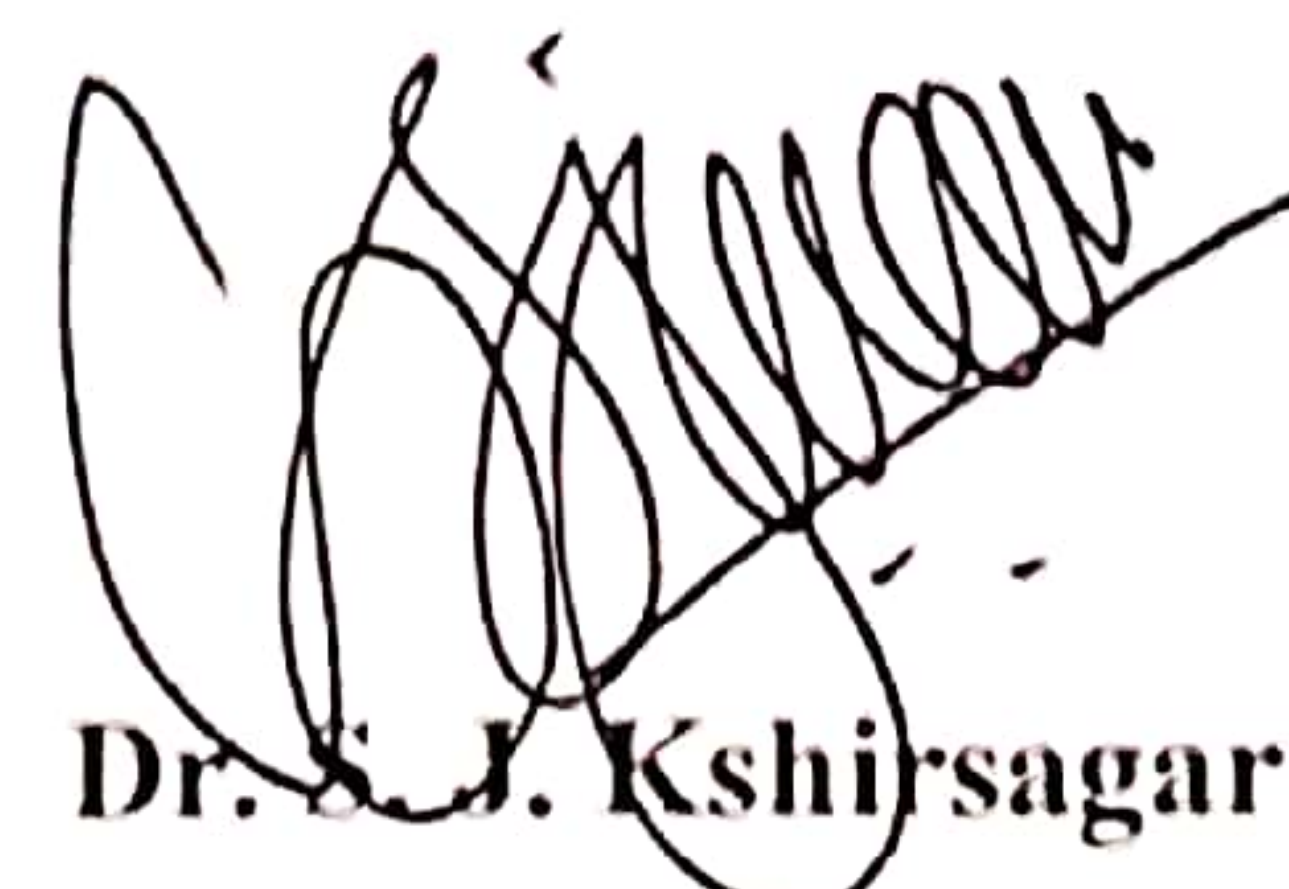
CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, **“Phytochemical screening, Antioxidant Activity, and Efficacy Evaluation of Herbal Hair Dye in Preventing Premature hair greying”** submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (Pharmaceutics), in the Faculty of Pharmaceutical Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003**, by Miss. Deepali Deepak Zoman, under the guidance and supervision of **Dr. Sapana. P. Ahirrao**.

This dissertation is now ready for examination.

Place: Nashik

Date 6/7/23



Dr. S. J. Kshirsagar

Principal

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003



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This dissertation is now ready for examination.


Sapana P. Ahirrao

Place: **Nashik**

Bhujbal Knowledge City

MET’s Institute of Pharmacy,

Adgaon, Nashik- 422003

Date: **06/07/2023**



**“Phytochemical screening, Antioxidant Activity, and
Efficacy Evaluation of Herbal Hair Dye in Preventing
Premature hair greying”**

A Dissertation Submitted To

Savitribai Phule Pune University, Pune

**In the Partial Fulfillment of Requirements for the Award of
Degree of**

**MASTER OF PHARMACY
IN
PHARMACEUTICS**

In the Faculty of Science and Technology

BY

Deepali Deepak Zoman

Guide

Sapana. P. Ahirrao



BHUBAL KNOWLEDGE CITY

MET'S INSTITUTE OF PHARMACY

ADGAON, NASHIK-422003

2021-2023

DECLARATION

I hereby declare that the dissertation entitled “Phytochemical screening, Antioxidant Activity, and Efficacy Evaluation of Herbal Hair Dye in Preventing Premature hair greying” is based on the work carried out by me in the laboratories of Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003 under the guidance and supervision of Dr. Sapana. P. AHIRRAO.


Deepali Deepak Zoman

Place: Nashik

Date: 06/07/2023

**“FORMULATION AND EVALUATION OF
POLYHERBAL BASED HAIR
FORMULATION FOR PREVENTION OF GREY HAIR”**

**A Dissertation Submitted To
Savitribai Phule Pune University, Pune
In the Partial Fulfillment of Requirements for the Award of
Degree of**

MASTER OF PHARMACY

IN

PHARMACEUTICS

In the Faculty of Science and Technology

BY

SARIKA VALMIK ALGAT



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**Dr. SAPANA. P. AHIRRAO
BHUJBAL KNOWLEDGE CITY
MET's INSTITUTE OF PHARMACY
ADGAON, NASHIK-422003**

2021-2023



CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, **“FORMULATION AND EVALUATION OF POLYHERBAL BASED HAIR FORMULATION FOR PREVENTION OF GREY HAIR.”** submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (Pharmaceutics), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET's Institute of Pharmacy, Adgaon, Nashik-422003**, by **Ms.Sarika Valmik Algat**, under the guidance and supervision of **Dr. Sapana. P. Ahirrao**.

This dissertation is now ready for examination.

Place: Nashik

Date 6/7/23

Dr. S. J. Kshirsagar

Principal

Bhujbal Knowledge City
MET's Institute of Pharmacy,
Adgaon, Nashik- 422003




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This dissertation is now ready for examination.

Place: Nashik

Date: 6/07/23


Dr. Sapana P. Ahirrao

Guide

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003

DECLARATION

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Place: Nashik

Date: 06/07/23


Sarika Valmik Algat

Acknowledgments

I would like to thank all people who have helped and inspired me during my M. Pharm research study. It is a pleasure to convey my gratitude to them. All in my humble acknowledgment.

In the first place I want to give special thanks to my respected and esteemed guide, Dr. Sapana. P. Ahirrao, for her guidance during my research and study at Bhujbal Knowledge City MET Institute of Pharmacy. The current work would not have been possible without her expert guidance and scholarly supervision during the course of this investigation. In addition, She was always accessible and willing to help students with her research. They have instilled in me self-confidence and patience, which made me to accomplish the research problems successfully.

I am very much thankful to Shri Samir Bhujbal, Trustee, MFT and Smt. Shefali Bhujbal, Chief Administrator Bhujbal Knowledge City for providing infrastructure and all the necessary facilities for this research work.

I gratefully acknowledge Dr. Sanjay J. Kshirsagar, Principal, Bhujbal Knowledge City, MET Institute of Pharmacy. Many thanks go in particular to Dr. Sapana. P. Ahirrao, Dept of Pharmaceutics.

I express my wholehearted gratitude to Dr. M. P. Patil, HOD Pharmaceutics and special thanks to my classmates for their help during my research work and for giving me such a pleasant time when working together with them.

My deepest gratitude goes to my family for their unflagging love and support throughout my life. I am indebted to my father Mr. Valmik Raghunath Allgat, for their love and care. I cannot ask for more from my mother, as she is simply perfect. I have no suitable word that can fully describe my family everlasting love to me.

Finally, I would like to thank everybody who was important to the successful realization of thesis, as well as expressing my apology that I could not mention personally one by one

Place: Nashik


sarika valmik algat

Date: 6/7/23

Dedicated to

Every challenging work needs self-efforts as well as guidance of elders especially those who were very close to our heart. My humble effort I

dedicate to my sweet and loving
FATHER & MOTHER,

Whose affection, love, encouragement and
prays of day and
night make me able to get such success and

honor,
MY GUIDE

To Whom, I Will Remain Indebted for Giving
New
Shape And Path to My Life

MY FRIENDS

For Their Valuable Help and Trust



**“FORMULATION AND EVALUATION OF HERBAL
NUTRCEUTICAL CHOCOLATE FOR PRIMARY
DYSMENORRHEA”**

A Dissertation Submitted To

Savitribai Phule Pune University, Pune

In the Partial Fulfillment of Requirements for the Award of

Degree of

MASTER OF PHARMACY

IN

PHARMACEUTICS

In the Faculty of Science and Technology

BY

Ms. PRATIBHA SUKDEV MAURYA

Guide

DR. SMITA P. KAKAD

BHUJBAL KNOWLEDGE CITY



MET's INSTITUTE OF PHARMACY

ADGAON, NASHIK-422003

2021-2023



CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, **“FORMULATION AND EVALUATION OF HERBAL NUTRACRUTICAL CHOCOLATE FOR PRIMARY DYSMENORRHEA ”** submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (**Pharmaceutics**), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003**, by **Ms. PRATIBHA SUKDEV MAURYA**, under the guidance and supervision of **Dr. SMITA P. KAKAD**.

This dissertation is now ready for examination.

Place: **Nashik**

Date **31-07-2023**

Dr. S. J. Kshirsagar

Principal

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003



CERTIFICATE

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This dissertation is now ready for examination

Place: **Nashik**

Date: **31-07-2023**

A handwritten signature in blue ink, appearing to read "Smita P. Kakad".

Dr. Smita P. Kakad

Bhujbal Knowledge City
MET's Institute of Pharmacy,
Adgaon, Nashik- 422003

DECLARATION

I hereby declare that the dissertation entitled "**Formulation and evaluation herbal nutraceutical chocolate for primary dysmenorrhea**" is based on the work carried out by me in the laboratories of **Bhujbal Knowledge City, MET's Institute of Pharmacy, Adgaon, Nashik-422003** under the guidance and supervision of **Dr. Smita P. Kakad**

Place: **Nashik**


Ms. Pratibha Sukdev Maurya

Date: 31-07-2023

ACKNOWLEDGMENTS

I am immensely grateful to the individuals and institutions that have been instrumental in the successful completion of my M. Pharma research. Their unwavering support and guidance have been invaluable, and I would like to express my deepest appreciation.

*I express my gratitude to **Dr. Smita P. Kakad** for her invaluable expertise, encouragement, and feedback in shaping the research direction and quality. Their unwavering support throughout the journey is deeply appreciated.*

*I am very thankful to **Shri Samir Bhujbal**, Trustee, MET, and **Smt. Shefali Bhujbal**, Chief Administrator, **Bhujbal Knowledge City**, for providing infrastructure and all the necessary facilities for this research work.*

*I gratefully acknowledge **Dr. Sanjay J. Kshirsagar**, Principal, **Bhujbal Knowledge City**, **METs Institute of Pharmacy**.*

*I express my wholehearted gratitude and special thanks to my **Friends** for their help during my research work and for giving me such a pleasant time when working together with them.*

*My deepest gratitude goes to my family for their unflagging love and support throughout my life. I am indebted to my father, **Mr. Sukdev K. Maurya**, and **Mrs. Chandrarekha S. Maurya**, for their love, support, and blessings. I have no suitable word that can fully describe my family's everlasting love for me.*

A sincere tribute to the animals killed for scientific research I thank everyone who contributed to making this project a worthwhile endeavour, both those I have already thanked and those I may have forgotten to mention. I hope they continue to inspire me as I embark on this new chapter of my life.

Place: Nashik

Date: 31-07-2023



Ms. Pratibha Sukdev Maurya



Dedicated to

GOD

Who is always kind to me

MY BELOVED PARENTS,

*Whose affection and love are infinite with me in
adversity and prosperity*

MY GUIDE,

*To whom, I will remain indebted for giving new
shape and path to my life*

MY FRIENDS,

For their valuable help and trust

**“ACCELERATED STABILITY STUDIES OF
EFAVIRENZ NANOSUSPENSION WITH METHOD
DEVELOPMENT, VALIDATION, ENERGY OF
ACTIVATION AND FORCE DEGRADATION
STUDY”**

A Dissertation Submitted To

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**In the Partial Fulfillment of Requirements for the Award of
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MASTER OF PHARMACY

IN

QUALITY ASSURANCE TECHNIQUE

In the Faculty of Science and Technology

BY

SHALAKA SHASHIKANT DHIKALE

Guide

DR. SMITA PRAKASH KAKAD



**BHUJBAL KNOWLEDGE CITY
MET's INSTITUTE OF PHARMACY
ADGAON, NASHIK-422003**

2021-2023

CERTIFICATE



This is to certify that the research work presented in this dissertation entitled, "Accelerated Stability Studies of Efavirenz Nanosuspension with Method Development , Validation, Energy of Activation and Force Degradation Study" submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (Quality Assurance Technique), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET's Institute of Pharmacy, Adgaon, Nashik-422003**, by **Ms Shalaka Shashikant Dhikale**, under the guidance and supervision of **Dr. Smita Prakash Kakad**.

This dissertation is now ready for examination.

Place: **Nashik**

Date: **3/8/2023**

A handwritten signature in blue ink, appearing to read "Dr. S. J. Kshirsagar", is written over a faint, illegible stamp.

Dr. S. J. Kshirsagar

Principal

Bhujbal Knowledge City
MET's Institute of Pharmacy,
Adgaon, Nashik- 422003



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This dissertation is now ready for examination.

Place: **Nashik**

Date: **03/08/2023**

Dr. Smita Prakash Kakad

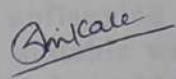
Guide,

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003

DECLARATION

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Place: Nashik


Ms Shalaka Shashikant Dhikale

Date: 03/08/2023

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Finally, I would like to thank everybody who was important to the successful realization of thesis, as well as expressing my apology that I could not mention personally one by one.

Place: Nashik

Date: 14/08/23



Chetan Ramrao Sonawane

DECLARATION

I hereby declare that the dissertation entitled **“Intranasal delivery of tocopheryl acetate nanoemulsion in the management of oxidative stress in the CNS related disorder.”** is based on the work carried out by me in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003** under the guidance and supervision of **Dr. Smita P. Kakad**



Mr. Chetan Ramrao Sonawane

Place: Nashik

Date: 14/08/23



CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, **"Intranasal delivery of tocopheryl acetate nanoemulsion in the management of oxidative stress in the CNS related disorder."** submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (specialization), in the Faculty of Science and Technology, Savitribal Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET's Institute of Pharmacy, Adgaon, Nashik-422003**, by **Mr. Chetan Ramrao Sonawane**, under my guidance and supervision of **Dr. Smita P. Kakad**.

This dissertation is now ready for examination.

Dr. Smita P. Kakad

Guide,

Bhujbal Knowledge City
MET's Institute of Pharmacy,
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Place: Nashik

Date: 14-08-2023

Evaluated by

Dr. Smita P. Kakad
22/8/23

Dr. Smita P. Kakad



CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, **"Intranasal delivery of tocopheryl acetate nanoemulsion in the management of oxidative stress in the CNS related disorder"** submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (Pharmaceutics), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of Bhujbal Knowledge City, MET's Institute of Pharmacy, Adgaon, Nashik-422003, by Mr. Chetan Ramrao Sonawane, under the guidance and supervision of Dr. Smita P. Kakad. This dissertation is now ready for examination.

Place: Nashik

Date : 14/08/23

A handwritten signature in black ink, appearing to read 'S. J. Kshirsagar', written over a horizontal line.

Dr. S. J. Kshirsagar
Principal

Bhujbal Knowledge City
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Adgaon, Nashik- 422003



CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, **“Characterization of Curcumin Incorporated *Caesalpinia pulcherrima* Galactomannan/Orange oil Antimicrobial Emulsion Film”** submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (specialization), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003**, by Mr. Vivek Sanjay Jadhav, under the guidance and supervision of **Dr. Nilima A. Thombre.**

This dissertation is now ready for examination.

Place: Nashik

Date 28/6/23

Dr. S. J. Kshirsagar

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MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003



CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, "**To Evaluate Prebiotic potential of *Caesalpinia pulcherrima* Galactomannan**" submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (specialization), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET's Institute of Pharmacy, Adgaon, Nashik-422003**, by **Ms. Sandhya Hiranman Dhavale**, under the guidance and supervision of **Dr. Nilima A. Thombre**.

This dissertation is now ready for examination.

Place: **Nashik**

Date **28/6/23**

Dr. S. J. Kshirsagar

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MET's Institute of Pharmacy,
Adgaon, Nashik- 422003

**“FORMULATION, OPTIMIZATION AND EVALUATION
OF MINOXIDIL NANO GEL”**

A Dissertation Submitted To

Savitribai Phule Pune University, Pune

**In the Partial Fulfillment of Requirements for the Award of
Degree of**

MASTER OF PHARMACY

IN

PHARMACEUTICS

In the Faculty of Science and Technology

BY

MS. YOJANA ANANDA KUWAR

GUIDE NAME

DR. DEEPAK S. BHAMBERE



BHUJBAL KNOWLEDGE CITY

MET's INSTITUTE OF PHARMACY

ADGAON, NASHIK-422003

2021-2023



CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, **“Formulation, Optimization and Evaluation of Minoxidil Nanogel”** submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (specialization), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003**, by Ms. **Yojana Ananda Kuwar**, under the guidance and supervision of **Dr. Deepak S. Bhambere**. This dissertation is now ready for examination.

Place: **Nashik**

Date:

Dr. S. J. Kshirsagar

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Adgaon, Nashik- 422003



CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, **“Formulation, Optimization and Evaluation of Minoxidil Nanogel”** submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (specialization), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003**, by **Ms. Yojana Ananda Kuwar**, under my guidance and supervision. This dissertation is now ready for examination.

Place: **Nashik**

Date: **26/07/2023**

Dr. Deepak S. Bhambere

Guide,

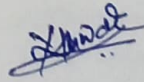
Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003

DECLARATION

I hereby declare that the dissertation entitled "Formulation, Optimization and Evaluation of Minoxidil Nanogel" is based on the work carried out by me in the laboratories of Bhujbal Knowledge City, MET's Institute of Pharmacy, Adgaon, Nashik-422003 under the guidance and supervision of Dr. Deepak S. Bhambere.

Place: Nashik

Date: 26/07/2023



NAME

Yojana Ananda Kuwar



CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, **“A Comprehensive Study on Development And Evaluation of Menstrual Cramp Relieving Herbal Gummy Formulation”** submitted in the partial fulfilment of the requirement for the degree of Master of Pharmacy, (Quality Assurance Techniques), in the Faculty of Pharmaceutical Sciences, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003**, by **Miss. Amruta Anil Mandlik**, under the guidance and supervision of **Dr. Sanjay J. Kshirsagar**

This dissertation is now ready for examination.

Dr. Sanjay J. Kshirsagar

Principal

Bhujbal Knowledge City

MET’s Institute of Pharmacy,

Adgaon, Nashik- 422003

Place- **Nashik**

Date- **31/7/23**





CERTIFICATE

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This dissertation is now ready for examination.

Dr. Sanjay J. Kshirsagar

Research Guide

Bhujbal Knowledge City

MET’s Institute of Pharmacy,

Adgaon, Nashik- 422003

Place- **Nashik**

Date- **31/7/23**

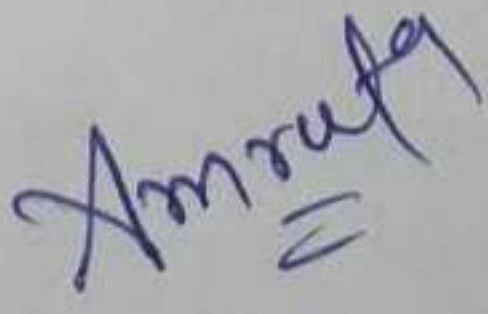


Handwritten signature/initials

DECLARATION

I hereby declare that the dissertation entitled "**A Comprehensive Study on Development And Evaluation Of Menstrual Cramp Relieving Herbal Gummy Formulation**" is based on the work carried out by me in the laboratories of **Bhujbal Knowledge City, MET's Institute of Pharmacy, Adgaon, Nashik-422003** under the guidance and supervision of **Dr. Sanjay J. Kshirsagar**

Place: **Nashik**


Miss. Amruta Anil Mandlik

Date: **31/07/23**



CERTIFICATE


This is to certify that the research work presented in this dissertation entitled, "Development and evaluations of curcumin-loaded nanoparticles for the treatment of diabetic retinopathy" submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (specialization), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET's Institute of Pharmacy, Adgaon, Nashik-422003**, by **Mr. Chikhale Shubham Shamrao**, under the guidance and supervision of **Dr. Sanjay J. Kshirsagar**.

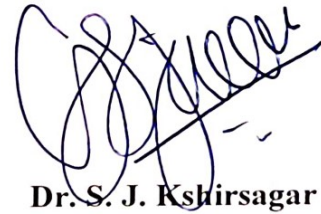
This dissertation is now ready for examination.

Place: Nashik

Date 31/07/2023




27/08/2023
(Dr. Anil Patil)



Dr. S. J. Kshirsagar

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Adgaon, Nashik- 422003



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This dissertation is now ready for examination.

Place: Nashik

Date: 31/07/2023



Name of the guide

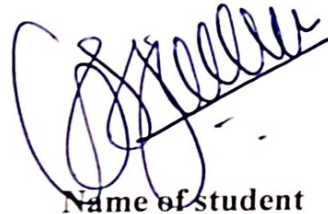
Dr. Sanjay J. Kshirsagar.
Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003



DECLARATION

I hereby declare that the dissertation entitled “Development and evaluations of curcumin-loaded nanoparticles for the treatment of diabetic retinopathy” is based on the work carried out by me in the laboratories of Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003 under the guidance and supervision of Dr. Sanjay J. Kshirsagar and Dr. Umesh D. Laddha.

Place: Nashik



Name of student

Date: 31/07/2023

Mr. Chikhale Shubham Shamrao



CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, **“Design, Development, and Functional Potential Evaluation of Fish Feed from Agricultural Waste”** submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (Pharmaceutical Quality Assurance), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003**, by **Ms. Dipansi Indrasing Tembharne**, under the guidance and supervision of **Dr. Gitanjali S. Deokar**.

This dissertation is now ready for examination.

Place: Nashik

Date 25/7/23

Dr. S. J. Kshirsagar

Principal

Bhujbal Knowledge City
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Adgaon, Nashik- 422003



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This dissertation is now ready for examination.

Place: Nashik

Date: 25/7/2023


Dr. Gitanjali S. Deokar

Guide,

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Adgaon, Nashik- 422003



CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, **“Model-Dependent and Model-Independent Dissolution Profiling Studies to Evaluate the Performance of Eudragit RSPO and RLPO in Tablet Dosage Forms Using Bio-relevant Media Simulations.”** submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (Pharmaceutical Quality Assurance), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003**, by **Mr. Anand Vasant Gaikwad**, under the guidance and supervision of **Dr. Gitanjali S. Deokar**.

This dissertation is now ready for examination.

Place: Nashik

Date 31/07/2023



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*R. G. ...
R. K. ...*



CERTIFICATE

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This dissertation is now ready for examination.

Place: Nashik

Date: 31/07/2023




Dr. Gitanjali S. Deokar

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Adgaon, Nashik- 422003



CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, “**Extraction, characterization and functional assessment of *Lipedium sativum* seed mucilage. (Garden cress seeds): Exploring prebiotic potential and super disintegrant application in tablet**”. submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (Pharmaceutical Quality assurance), in the Faculty of Pharmaceutical Sciences, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003**, by **Mr. Krishna G. Khamkar** under the guidance and supervision of **Dr. Gitanjali S. Deokar**

This dissertation is now ready for examination.

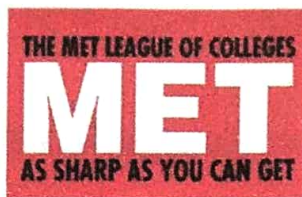
Place: **Nashik**

Date **31/07/2023**

Dr. S. J. Kshirsagar

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Bhujbal Knowledge City
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CERTIFICATE

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This dissertation is now ready for examination.

Dr. Gitanjali S. Deokar

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Place: **Nashik**

Date: **31/07/2023**



CERTIFICATE

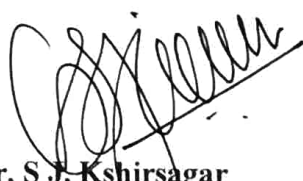
This is to certify that the research work presented in this dissertation entitled, “Isolation and Characterization of Bioactive Peptide from Sprouted and Non-Sprouted Seeds of Finger Millet: A Comparative Study” submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy ,Pharmaceutical Quality Assurance, in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune was carried out in the laboratories of **Bhujbal Knowledge City MET’S Institute of Pharmacy, Adgaon, Nashik-422003**, by **Mr. Hammad Mohammed Athar**, under the guidance and supervision of **Dr. Gitanjali S.Deokar**.

This dissertation is now ready for examination.

Place: **Nashik**

Date: **25/7/23**




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MET’S Institute of
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Nashik- 422003



CERTIFICATE


This is to certify that the research work presented in this dissertation entitled, "Isolation and Characterization of Bioactive Peptide from Sprouted and Non-Sprouted Seeds of Finger Millet: A Comparative Study" submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy, Pharmaceutical Quality Assurance, in the Faculty of Pharmaceutical Sciences, Savitribai Phule Pune University, Pune was carried out in the laboratories of **Bhujbal Knowledge City MET'S Institute of Pharmacy, Adgaon, Nashik-422003**, by **Mr. Hammad Mohammed Athar**, under my guidance and supervision.

This dissertation is now ready for examination.

Place: **Nashik**

Date: **25-07-2023**




Dr. Gitanjali S. Deokar

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Quality Assurance
(HOD)

Bhujbal Knowledge
City MET'S Institute
of Pharmacy, Adgaon,
Nashik- 422003



CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, **“Formulation Development and Optimization of Polyherbal Dusting Powder for the Treatment of Bedsores”** submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (Quality Assurance Techniques), in the Faculty of Pharmaceutical Sciences, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003**, by Ms. **Shweta Ishwar Sonawane**, under the guidance and supervision of **Dr. Sunita N Surse**.

This dissertation is now ready for examination.

Place: **Nashik**

Date: **31/1/2023**

Dr. S. J. Kshirsagar

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Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003



CERTIFICATE

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This dissertation is now ready for examination.

Place: **Nashik**

Date: **31/07/2023**

Dr. Sunita N Surse


Guide,

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003

DECLARATION

I hereby declare that the dissertation entitled “**Formulation Development and Optimization of Polyherbal Dusting Powder for the Treatment of Bedsores**” is based on the work carried out by me in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003** under the guidance and supervision of **Dr. Sunita N Surse**.

Place: **Nashik**


Shweta Ishwar Sonawane

Date: **31/07/2023**



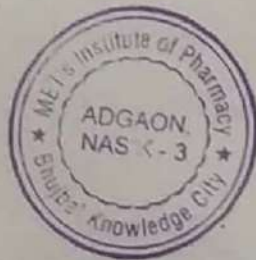
CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, "Formulation and Evaluation of Herbal Jellies for Motion Sickness from *Zingiber Officinale*" submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (specialization), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET's Institute of Pharmacy, Adgaon, Nashik-422003**, by **Ms. Priyanka P. Sananse**, under the guidance supervision of **Dr. Sunita N. Surse**.

This dissertation is now ready for examination.

Place: Nashik

Date 20/7/23



Dr. S. J. Kshirsagar

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Bhujbal Knowledge City
MET's Institute of Pharmacy,
Again, Nashik- 422003

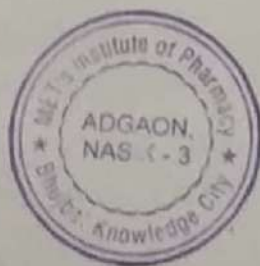


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Place: Nashik

Date: 17/07/2023



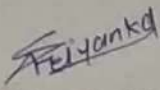
Dr. Sunita N. Surse

Bhujbal Knowledge City
MET's Institute of Pharmacy,
Adgaon, Nashik- 422003

DECLARATION

I hereby declare that the dissertation entitled "" is based on the work carried out by me in the laboratories of **Bhujbal Knowledge City, MET's Institute of Pharmacy, Adgaon, Nashik-422003** under the guidance and supervision of **Dr. Sunita N. Surse.**

Place: **Nashik**


Ms. Priyanka P. Sananse

Date: **14-07-23**



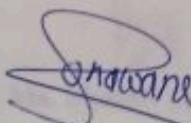
CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, **“Stability indicating HPLC method for Remogliflozin etabonate: Degradation studies, Characterization and ADME/Tox Evaluation”** submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (specialization), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003**, by **Ms. Shaikh Saniya Zakir**, under my guidance and supervision.

This dissertation is now ready for examination.

Place: Nashik

Date: 24/7/23



Dr. Sandeep S. Sonawane

Guide,
Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003



CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, **“Stability indicating HPLC method for Remogliflozin etabonate: Degradation studies, Characterization and ADME/Tox Evaluation”** submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (Quality Assurance Techniques), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003**, by **Ms. Shaikh Saniya Zakir**, under the guidance and supervision of **Dr. Sandeep S. Sonawane**.

This dissertation is now ready for examination.

Place: Nashik

Date: 24/7/23

Dr. S. J. Kshirsagar


Principal

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003

DECLARATION

I hereby declare that the dissertation entitled "**Stability indicating HPLC method for Remogliflozin etabonate: Degradation studies, Characterization and ADME/Tox Evaluation**" is based on the work carried out by me in the laboratories of **Bhujbal Knowledge City, MET's Institute of Pharmacy, Adgaon, Nashik-422003** under the guidance and supervision of **Dr. Sandeep S. Sonawane**.

Place: Nashik


Ms. Shaikh Saniya Zakir

Date: 24/7/23



CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, **“Analytical Assessment of Budesonide and Diacerein in Bulk and Pharmaceutical Formulation: Stability-Indicating RP-HPLC Method Development and Validation as per ICH Guidelines”** submitted in the partial fulfilment of the requirement for the degree of Master of Pharmacy, (Quality Assurance Techniques), in the Faculty of Pharmaceutical Sciences, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003**, by **Mr. Rohit Sanjay Koli**, under the guidance and supervision of **Dr, Sandeep S. Sonawane**.

This dissertation is now ready for examination.

Place- Nashik

Date- 03/07/23

Dr. S. J. Kshirsagar

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MET’s Institute of Pharmacy,
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This dissertation is now ready for examination.

Place- **Nashik**

Date- **03/07/23**

Dr. Sandeep S. Sonawane

Research Guide

Bhujbal Knowledge City

MET’s Institute of Pharmacy,

Adgaon, Nashik- 422003

Acknowledgments

I would like to thank all the people who have helped and supported me during my Master of Pharmacy Research Work. It is a pleasure to convey my gratitude to them all in my humble acknowledgments.

I would like to express my deep and sincere gratitude to my research guide Dr. Sandeep S. Sonawane for his guidance during my research study at Bhujbal Knowledge City MET's Institute of Pharmacy. The current work would not have been possible without his guidance and supervision during the course of this investigation. In addition, he was always available when I needed his help in my research work. His love always instilled in me self-confidence, which made me accomplish the research problems successfully.

I am thankful to P.O. in charge, Dr. M.P. Patil, MET's Institute of Pharmacy Bhujbal Knowledge City, for his guidance during research and study at Bhujbal Knowledge City MET's Institute of Pharmacy.

I am thankful to my parents, Mr. Prakash K. Sanjay and Mrs. Sushila K. Sanjay, for their love and support throughout my life. I have no beautiful word that can describe their everlasting love to me.

I hereby declare that the dissertation entitled "**Analytical Assessment of Budesonide and Diacerein in Bulk and Pharmaceutical Formulation: Stability-Indicating RP-HPLC Method Development and Validation as per ICH Guidelines**" is based on the work carried out by me in the laboratories of **Bhujbal Knowledge City, MET's Institute of Pharmacy, Adgaon, Nashik-422003** under the guidance and supervision of **Dr. Sandeep S. Sonawane**.

My deepest gratitude goes to my colleagues for giving me such a pleasant time when working together with them.

I'm also thankful to Mr. Prakash Sanjay Sir for providing the drug Diacerein from Wako Pure Chemical Industries Pvt. Ltd.

My deepest gratitude goes to my parents for their willing love, care, sacrifices and support throughout my life. I have no beautiful word that can describe their everlasting love to me.

Finally, I would like to thank everybody who was involved in my research work.

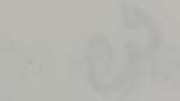
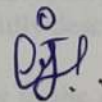
Place: Nashik

Mr. Rohit Sanjay Koli

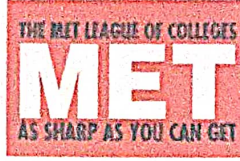
Date: 03/07/23

Place: Nashik

Date: 03/07/23



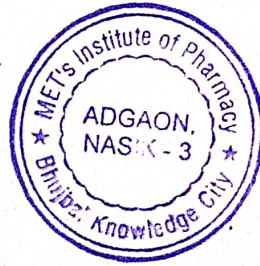
Mr. Rohit Sanjay Koli



CERTIFICATE

This is to certify that the research work presented in this dissertation entitled,
“Development and validation of HPLC method for simultaneous estimation of Sofosbuvir and Velpetasvir using Quality by Design Approach” submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (specialization), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003**, by **Ms. Pratiksha Dnyaneshwar Mandlik**, under the guidance and supervision of **Dr. Sandeep S. Sonawane**.

This dissertation is now ready for examination.



Place: **Nashik**

Date **31/07/2023**

Dr. S. J. Kshirsagar

Principal

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003



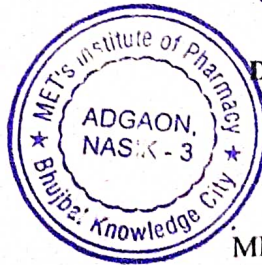
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This dissertation is now ready for examination.

Place: Nashik

Date: 31/07/2023



Dr. Sandeep S. Sonawane

Research Guide,

Bhujbal Knowledge City

MET’s Institute of Pharmacy,

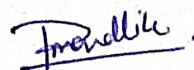
Adgaon, Nashik- 422003

DECLARATION

I hereby declare that the dissertation entitled “**Development and validation of HPLC method for simultaneous estimation of Sofosbuvir and Velpetasvir using Quality by Design Approach**” is based on the work carried out by me in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003** under the guidance and supervision of **Dr. Sandeep S. Sonawane**.

Place: **Nashik**

Date: **31/07/2023**



Ms. Pratiksha D. Mandlik



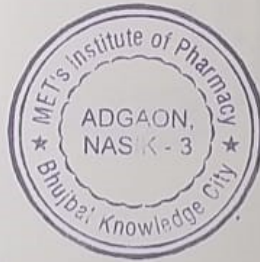
CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, "**Design And Evaluation Of Fast Dissolving Tablet Containing Diclofenac Sodium Using *Caesalpinia pulcherrima* Galactomannan As A Natural Superdisintegrant**" submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (Quality Assurance Techniques), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET's Institute of Pharmacy, Adgaon, Nashik-422003**, by **Mr. Jadhav Abhishek Ravindra**, under the guidance and supervision of **Dr. Nilima A. Thombre**.

This dissertation is now ready for examination.

Place: Nashik

Date: 22/07/23



Dr. S. J. Kshirsagar

Principal

Bhujbal Knowledge City
MET's Institute of Pharmacy,
Adgaon, Nashik- 422003



DECLARATION
CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, **“Formulation and evaluation of hydrogel from *Caesalpinia pulcherrima* galactomannan for colon-specific drug delivery system”** submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (specialization), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003**, by **Ms. Rhutuja Ravi Jogdand**, under my guidance and supervision(**Dr. Nilima A. Thombre**). This dissertation is now ready for examination.

Place: Nashik

Place: Nashik

Name of the guide

Date: 08/07/2023



Dr. Nilima A. Thombre

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003



CERTIFICATE

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Place: Nashik

Date 31/7/23



Dr. S. J. Kshirsagar

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Bhujbal Knowledge City
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Adgaon, Nashik- 422003



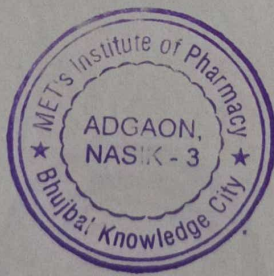
CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, **“Formulation And Evaluation Of Polyherbal Skin Brightening Face Serum”** submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (Quality Assurance Technique), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003**, by **Ms. Prajakta Sanjay Thorat**, under the guidance and supervision of **Dr. Santosh S. Chhajed**.

This dissertation is now ready for examination.

Place: **Nashik**

Date: 22/07/23



Dr. S. J. Kshirsagar

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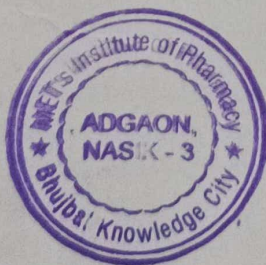
CERTIFICATE

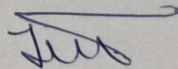
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This dissertation is now ready for examination.

Place: **Nashik**

Date: 22/07/23




Dr. Santosh S. Chhajed

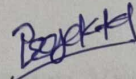
Guide,

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003

DECLARATION

I hereby declare that the dissertation entitled **“Formulation And Evaluation Of Polyherbal Skin Brightening Face Serum”** is based on the work carried out by me in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003** under the guidance and supervision of **Dr. Santosh S. Chhajed.**

Place: **Nashik**


Ms Prajakta Sanjay Thorat

Date: **22/07/23**

**“Formulation, Optimization and Evaluation of Bilayer Tablet of
Antiviral Drugs”**

**A Dissertation Submitted To
Savitribai Phule Pune University, Pune**

**In the Partial Fulfillment of Requirements for the Award of
Degree of**

MASTER OF PHARMACY

IN

Quality Assurance Techniques

IN THE FACULTY OF

SCIENCE AND TECHNOLOGY

BY

AKSHATA A. BAIRAGI

GUIDE

Dr. D. S. Bhambere



**BHUJBAL KNOWLEDGE CITY
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ADGAON, NASHIK-422003**

2021-2023



CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, **“Formulation, Optimization and Evaluation of Bilayer tablet of Antiviral drugs”** submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (Quality Assurance Techniques), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003**, by **Mr/Ms/Ms. Akshata Bairagi** under the guidance and supervision of **Dr. D. S. Bhambere**.

This dissertation is now ready for examination.

Place: **Nashik**

Date: **25 | 7 | 23**

Dr. S. J. Kshirsagar
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MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003



CERTIFICATE

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This dissertation is now ready for examination.

Place: **Nashik**

Date: **24/07/2023**

Dr. D. S. Bhambere

Guide

DECLARATION

I hereby declare that the dissertation entitled **“Formulation, Optimization and Evaluation of Bilayer tablet of Antiviral drugs.”** is based on the work carried out by me in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003** under the guidance and supervision of **Guide.**

Place: **Nashik**


Akshata A. Bairagi

Date: **24/07/2023**

**“DESIGN, SYNTHESIS AND PHARMACOLOGICAL
EVALUATION FOR ANTICONVULSANT ACTIVITY OF
FEW 4-QUINAZOLINONE DERIVATIVES”**

A Dissertation Submitted To

Savitribai Phule Pune University, Pune

In the Partial Fulfillment of Requirements for the Award of

Degree of

MASTER OF PHARMACY

IN

PHARMACEUTICAL CHEMISTRY

In the Faculty of Science and Technology

BY

Mr. ASHUTOSH R. GUPTA

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Dr. DINESH D. RISHIPATHAK



**BHUBAL KNOWLEDGE CITY
MET's INSTITUTE OF PHARMACY**

ADGAON, NASHIK-422003

2021-2023



CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, **“Design, Synthesis And Pharmacological Evaluation For Anticonvulsant Activity Of Few 4-Quinazolinone Derivatives”** submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (Pharmaceutical Chemistry), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003**, by **Mr. Ashutosh R. Gupta**, under the guidance and supervision of **Dr. Dinesh D. Rishipathak** This dissertation is now ready for examination.

Place: **Nashik**

Date: **14/7/23**

Dr. S. J. Kshirsagar

Principal

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003




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Place: **Nashik**

Date: **18/07/23**


Dr. Dinesh D. Rishipathak

Guide,

Bhujbal Knowledge City
MET's Institute of Pharmacy,
Adgaon, Nashik- 422003

Acknowledgments

I would like to thank all people who have helped and inspired me during my M. Pharm research study. It is a pleasure to acknowledge all to my family and friends.

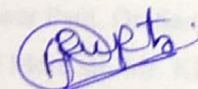
DECLARATION

I am grateful to God for giving me the strength to successfully complete my research work and for making my efforts which many a times did oscillate.

I hereby declare that the dissertation entitled "**Design, Synthesis and Pharmacological Evaluation for Anticonvulsant Activity Of Few 4-Quinazolinone Derivatives**" is based on the work carried out by me in the laboratories of **Bhujbal Knowledge City, MET's Institute of Pharmacy, Adgaon, Nashik-422003** under the guidance and supervision of **Dr. Dinesh D. Rishipathak**.

My research work is a result of my own efforts and I appreciate and acknowledge the help and support given by my family and friends, which made me to complete the research work successfully. I am really grateful to my parents for giving me the golden opportunity to do this wonderful project on this topic which also helped me during my research work.

My thanks go to my parents for their support and encouragement during my research work and to my friends for their help and support during my research work.



Ashutosh R. Gupta

Place: **Nashik**

Date: **13/07/23**

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Acknowledgments

I would like to thank all people who have helped and inspired me during my M. Pharm research study. It is a pleasure to convey my gratitude to them all in my humble acknowledgment.

I am grateful to God for giving me the strength to successfully conduct my research work and for sustain my efforts which many a times did oscillate.

I am very much thankful to Shri. Samir Bhujbal, Trustee, MET and Dr. Shefali Bhujbal, Chief Administrator Bhujbal Knowledge City for providing infrastructure and all the necessary facilities for this research work.

I gratefully acknowledge **Dr. Sanjay J. Kshirsagar**, Principal, Bhujbal Knowledge City, MET's Institute of Pharmacy. I express my sincere respect and heartfelt gratitude to my guide **Dr. Dinesh D. Rishipathak** for his invaluable support, constructive feedback, cooperation and suggestions time to time in successfully completing the research work. He has been exemplary and visionary mentor that is worthy of emulation. I appreciate and treasure everything he taught me. He has instilled in me self- confidence and patience, which made me to accomplish the research problems successfully. I am really grateful to my mentor for giving me the golden opportunity to do this wonderful project on this topic which also helped me doing lot of new research things.

Many thanks go in particular to Dr. Santosh S. Chhajed, Dr. Moreswar Patil, Dr. Sandeep Sonawane and Non-teaching staff Mr. Eknath Shinde Sir, Mr. Amol More sir, Mr. Kishor Ahire sir for their valuable suggestions and kind help.

My individual acknowledgement goes to Hrishikesh, Suyog, Bhagyashri, Manisha, Pooja, Kanchan. I am deeply indebted to all my pharmacology and pharmaceutics friends for their valuable advice, suggestions for corrections, modifications and improvement did enhance perfection in my project work. Thanksfor tolerating my idiosyncrasies and creating unique distinction in my life.

Thank you to every person who has ever told me I can't. Collective acknowledgments are also owed to my all M. Pharm buddies and Juniors, my B. Pharm friends. My warm gratitude goes to for all your help, guidance and support during 2 Years. Last but not least I wish to avail myself this opportunity to express a sense of gratitude and love to my beloved

parents for their support, strength, help and everything else. It is small token of my gratitude for just being by my side in this life and making it all worthwhile.

I express my sincere respect and gratitude to my mommy and papa for encouraging me and I am richly blessed to have you in my life.

Finally, I apologize all other unnamed who helped me in various ways to the successful realization of thesis.

Place: Nashik

Date: 13/07/23



Mr. Ashutosh R. Gupta



CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, **“Synthesis and Pharmacological Evaluation for few 2-substituted Benzimidazoles and Benzthiazoles”** submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (specialization), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003**, by **Ms. Bhagyashri Praphulla Jain**, under the guidance and supervision of **Dr. Dinesh D. Rishipathak** .

This dissertation is now ready for examination.

Dr. S. J. Kshirsagar

Principal

Bhujbal Knowledge City
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Adgaon, Nashik- 422003

Place: **Nashik**

Date: **31-07-2023**





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This dissertation is now ready for examination.

Place: **Nashik**

Date: **31-07-2023**

Dr Dinesh D. Rishipathak

Guide,

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003





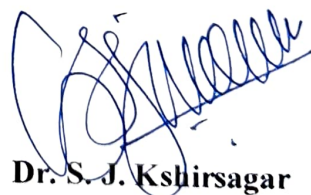
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This dissertation is now ready for examination.

Place: **Nashik**

Date **5/7/2023**



Dr. S. J. Kshirsagar

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Bhujbal Knowledge City
MET's Institute of Pharmacy,
Adgaon, Nashik- 422003



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This dissertation is now ready for examination.

Dr. Dinesh D. Rishipathak

Guide,

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003

Place: **Nashik**

Date: **5/7/2023**



CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, **“Synthesis, Molecular Docking Studies and Cytotoxic Screening of Novel 2-Substituted Benzimidazole Derivatives”** submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (specialization), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003**, by **Ms. Pooja Sharad Abhang**, under the guidance and supervision of **Dr. Rani S. Kankate**.

This dissertation is now ready for examination.

Place: **Nashik**

Date **10/07/23**

A handwritten signature in black ink, appearing to read "Dr. S. J. Kshirsagar", written over a horizontal line.

Dr. S. J. Kshirsagar

Principal

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003



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This dissertation is now ready for examination.

Guide

Dr. Rani S. Kankate

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003

Place: **Nashik**

Date: **10/07/23**

DECLARATION

I hereby declare that the dissertation entitled “**Synthesis, Molecular Docking Studies and Cytotoxic Screening of Novel 2-Substituted Benzimidazole Derivatives**” is based on the work carried out by me in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003** under the guidance and supervision of **Dr. Rani S. Kankate**.

Place: **Nashik**


Ms. Pooja S. Abhang

Date: 10/07/23

**“SYNTHESIS, CHARACTERIZATION AND
EVALUATION OF CYTOTOXIC ACTIVITY OF SOME
BENZIMIDAZOLE-OXAZOLE DERIVATIVES”**

A Dissertation Submitted To

Savitribai Phule Pune University, Pune

**In the Partial Fulfillment of Requirements for the Award of
Degree of**

MASTER OF PHARMACY

IN

PHARMACEUTICAL CHEMISTRY

In the Faculty of Science and Technology

BY

Ms. KAMINI PANDURANG BHALERAO

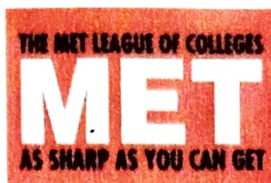


Guide

Dr. RANI S. KANKATE

**BHUJBAL KNOWLEDGE CITY
MET's INSTITUTE OF PHARMACY
ADGAON, NASHIK-422003**

2021-2023



CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, **“Synthesis, characterization and evaluation of cytotoxic activity of some benzimidazole-oxazole derivatives”** submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (specialization), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003** during the academic year 2021-2023 by Ms. **Kamini Pandurang Bhalerao**, under the guidance and supervision of **Dr. Rani S. Kankate**

This dissertation is now ready for examination.

Place: **Nashik**

Date **14/7/23**

Dr. S. J. Kshirsagar

Principal

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003



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This dissertation is now ready for examination.

Dr. Rani S. Kankate

Guide,

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003

Place: **Nashik**

Date: **13.07.2023**

DECLARATION

I hereby declare that the dissertation entitled “**Synthesis, characterization and evaluation of cytotoxic activity of some benzimidazole-oxazole derivatives**” is based on the work carried out by me in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003** during the academic year 2021-2023 under the guidance and supervision of **Dr. Rani S. Kankate.**

Place: **Nashik**

Date: **13.07.2023**

Bhalerao.
Kamini Pandurang Bhalerao

**“SYNTHESIS, MOLECULAR DOCKING AND
EVALUATION OF CYTOTOXIC ACTIVITY OF
BENZIMIDAZOLE-THIAZOLE DERIVATIVES”**

A Dissertation Submitted To

Savitribai Phule Pune University, Pune

In the Partial Fulfillment of Requirements for the Award of

Degree of

MASTER OF PHARMACY

IN

PHARMACEUTICAL CHEMISTRY

In the Faculty of Science and Technology

BY

Mr. YOGESH SITARAM WANKHEDE

Guide

DR. RANI KANKATE



**BHUJBAL KNOWLEDGE CITY
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2021-2023**



CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, **“Synthesis, Molecular Docking and Evaluation Of Cytotoxic Activity Of Benzimidazole-Thiazole Derivatives”** submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (Pharmaceutical Chemistry), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003**, by **Mr. Yogesh Sitaram Wankhede**, under the guidance and supervision of **Dr. Rani Kankate**.

This dissertation is now ready for examination.

Place: Nashik

Date: 10/07/23

Dr. S. J. Kshirsagar

Principal

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003



CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, **“Synthesis, Molecular Docking and Evaluation Of Cytotoxic Activity Of Benzimidazole-Thiazole Derivatives”** submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (Pharmaceutical Chemistry), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003**, by **Mr, Yogesh Sitaram Wankhede** , under my guidance and supervision.

This dissertation is now ready for examination.

Place: Nashik

Date: 10/07/23

Dr. Rani Kankate

Research Guide,

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003

DECLARATION

I hereby declare that the dissertation entitled “**Synthesis, Molecular Docking and Evaluation of Cytotoxic Activity of Benzimidazole-Thiazole Derivatives**” is based on the work carried out by me in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003** under the guidance and supervision of **Dr. Rani Kankate**.

Place: Nashik


Mr. Yogesh Sitaram Wankhede

Date: 09/07/23



CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, **“Development and validation of stability indicating HPLC method for estimation of Ivacaftor in bulk and tablet ”** submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (specialization), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003**, by **Mr. Suyog Sanjay Wagh**, under the guidance and supervision of **Dr. Santosh S. Chhajed**.

This dissertation is now ready for examination.

Place: **Nashik**

Date: **5/7/23**

Dr. S. J. Kshirsagar

Principal

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003



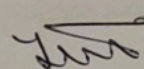
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This dissertation is now ready for examination.

Place: **Nashik**

Date: **27-6-23**

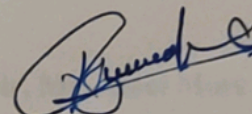

Dr. Santosh S. Chhajed

Research Guide,

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003

DECLARATION

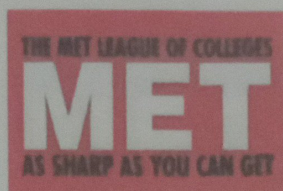
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Mr. Suyog S Wagh

Place: **Nashik**

Date: **21-6-23**



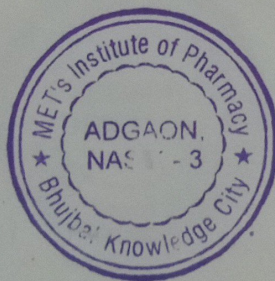
CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, **“Design, Synthesis and Characterization of 2-thioxothiazolidin-4-one as per PPAR gamma Agonists in the search of Antidiabetic Agents ”** submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (Pharmaceutical Chemistry), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003**, by **Ms. Manisha S. Gaikwad**, under the guidance and supervision of **Dr Santosh S. Chhajed**.

This dissertation is now ready for examination.

Place: **Nashik**

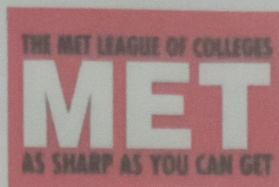
Date **12/07/2023**



Dr. S. J. Kshirsagar

Principal

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Again, Nashik- 422003



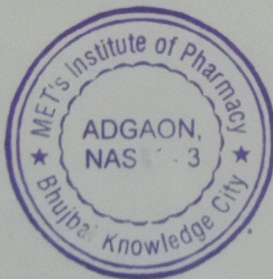
CERTIFICATE

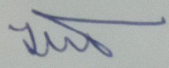
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This dissertation is now ready for examination.

Place: **Nashik**

Date: **12/07/2023**



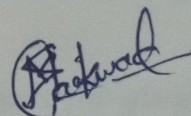

Dr Santosh S. Chhajer

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003

DECLARATION

I hereby declare that the dissertation entitled "**Design, Synthesis and Characterization of 2-thioxothiazolidin-4-one as per PPAR gamma Agonists in the search of Antidiabetic Agents**" is based on the work carried out by me in the laboratories of **Bhujbal Knowledge City, MET's Institute of Pharmacy, Adgaon, Nashik-422003** under the guidance and supervision of **Dr Santosh S. Chhajed**.

Place: **Nashik**



Ms. Manisha S. Gaikwad

Date: **12/07/2023**

**“DEVELOPMENT AND VALIDATION OF STABILITY
INDICATING HPLC METHOD FOR ESTIMATION OF
ANTI-GONADOTROPIC DRUG DANAZOL IN BULK
AND CAPSULE”**

A Dissertation Submitted To

Savitribai Phule Pune University, Pune

**In the Partial Fulfillment of Requirements for the
Award of Degree of**

MASTER OF PHARMACY

IN

PHARMACEUTICAL CHEMISTRY

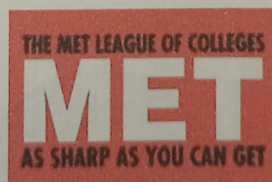
In the Faculty of Science and Technology

BY

VAISHNAVI VIJAY KHAIRNAR

Guide

DR. SANDEEP S. SONAWANE



**BHUIBAL KNOWLEDGE CITY
MET's INSTITUTE OF PHARMACY
ADGAON, NASHIK-422003**

2021-2023



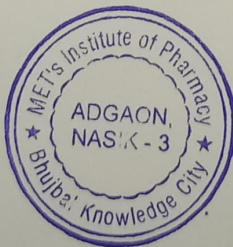
CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, **“Development And Validation Of Stability indicating HPLC Method For Estimation Of Anti-Gonadotropic Drug Danazol In Bulk And Capsule”** submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (Pharmaceutical Chemistry), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003**, by **Ms. Vaishnavi Vijay Khairnar**, under the guidance and supervision of **Dr, Sandeep S. Sonawane**.

This dissertation is now ready for examination.

Place: **Nashik**

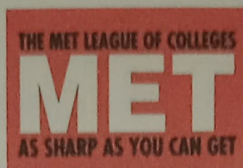
Date **31/07/2023**



Dr. S. J. Kshirsagar

Principal

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003



CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, **“Development And Validation Of Stability Indicating HPLC Method For Estimation Of Anti-Gonadotropic Drug Danazol In Bulk And Capsules”** submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (Pharmaceutical Chemistry), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003**, by **Ms. Vaishnavi Vijay Khairnar**. under my guidance and supervision.

This dissertation is now ready for examination.

Place: Nashik

Date: 31/07/2023

Dr. Sandeep S. Sonawane

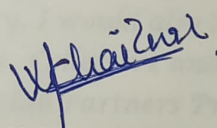
Research Guide,

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003

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Place: **Nashik**


Ms. Vaishnavi Vijay Khairnar

Date: **31/07/2023**



CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, **“Design, Synthesis, Computational Studies and Characterization of Triazole Analogue In Search of Antifungal Agent”** submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (Pharmaceutical Chemistry), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003**, by **Mr.Hrushikesh B. Bhadane**, under the guidance and supervision of **Dr. Santosh S. Chhajed**. This dissertation is now ready for examination.

Place: **Nashik**

Date: **10/7/23**

A handwritten signature in black ink, appearing to read "Dr. S. J. Kshirsagar".

Dr. S. J. Kshirsagar

Principal

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003



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Place: **Nashik**

Date: **10/07/23**

A handwritten signature in blue ink, appearing to read "Santosh S. Chhajed".

Dr. Santosh S. Chhajed

Guide,

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003

Acknowledgments

I would like to thank all people who have helped and inspired me during my M. Pharm research study. It is a pleasure to convey my gratitude to them all in my humble acknowledgment.

In the first place I want to give special thanks to my respected and esteemed guide **Dr. Santosh S. Chhajed**, for their guidance during my research and study at Bhujbal Knowledge City MET's Institute of Pharmacy. The current work would not have been possible without their expert guidance and scholarly supervision during the course of this investigation. In addition, they were always accessible and willing to help students with their research. They have instilled in me self-confidence and patience, which made me to accomplish the research problems successfully.

I am very much thankful to **Shri. Samir Bhujbal**, Trustee, MET and **Mrs. Shefali Bhujbal** Chief Administrator Bhujbal Knowledge City for providing infrastructure and all the necessary facilities for this research work. I gratefully **Deore sir, Shinde sir**, for their valuable suggestions and kind help. Collective acknowledge to **Principal** Bhujbal Knowledge City, MET's Institute of Pharmacy.

Many thanks goes in particular to **Dr. Sanjay Kshirsagar sir, Dr. Santosh Chhajed sir, Dr. Sandeep Sonawane sir**, and individual acknowledgments are also owed to my lab buddies i.e. **Yogesh, Vaishnavi, Ashutosh, Suyog, Manisha, Pooja** etc. I express my wholehearted gratitude and special thanks to my colleagues for giving me such a pleasant time when working together with them.

My deepest gratitude goes to my family for their unflinching love and support throughout my life. I am indebted to my father, for his care and love. I cannot ask for more from my mother, as she is simply perfect.

Finally, I would like to thank everybody who was important to the successful realization of thesis, as well as expressing my apology that I could not mention personally one by one.

Place: Nashik


Hrushikesh B. Bhadane

Date: 10/07/23

DECLARATION

I hereby declare that the dissertation entitled "**Design, Synthesis, Computational Studies and Characterization of Triazole Analogue In Search of Antifungal Agent**" is based on the work carried out by me in the laboratories of **Bhujbal Knowledge City, MET's Institute of Pharmacy, Adgaon, Nashik-422003** under the guidance and supervision of **Dr. Santosh S. Chhajed**.



Hrushikesh B. Bhadane

Place: **Nashik**

Date: 10/07/23

**“EVALUATION OF NEUROPROTECTIVE EFFECTS OF
SALICIN AND STEVIOSIDE IN CHRONIC
CONSTRICTION INJURY (CCI) INDUCED
PERIPHERAL NEUROPATHY”**

A Dissertation Submitted To

Savitribai Phule Pune University, Pune

**In the Partial Fulfillment of Requirements for the Award of
Degree of**

MASTER OF PHARMACY

IN

PHARMACOLOGY

In the Faculty of Science and Technology

BY

Mr. NAVEED AHMAD RAEES AHMAD



Guide

Dr. PAVAN B. UDAVANT

BHUJBAL KNOWLEDGE CITY

MET's INSTITUTE OF PHARMACY

ADGAON, NASHIK-422003

2021-2023



CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, **“Evaluation of Neuroprotective Effects of Salicin and Stevioside in Chronic Constriction Injury (CCI) Induced Peripheral Neuropathy”** submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (**Pharmacology**), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003**, during the academic year 2021-2023 by **Mr. Naveed Ahmad Raees Ahmad**, under the guidance and supervision of **Dr. Pavan B. Udavant**.

This dissertation is now ready for examination.

Place: **Nashik**



Date: 8/8/2023

Dr. S. J. Kshirsagar

Principal

Bhujbal Knowledge City
MET's Institute of Pharmacy,
Adgaon, Nashik- 422003



CERTIFICATE

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This dissertation is now ready for examination.

Place: **Nashik**

Date: **25 / 7 / 2023**

Dr. Pavan B. Udavant

Guide,

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003



DECLARATION

I hereby declare that the dissertation entitled “**Evaluation of Neuroprotective Effects of Salicin and Stevioside in Chronic Constriction Injury (CCI) Induced Peripheral Neuropathy**” is based on the work carried out by **me** in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003** during the academic year 2021-2023 under the guidance and supervision of **Dr. Pavan B. Udavant**.

Place: **Nashik**


Mr. Naveed Ahmad Raees Ahmad

Date: **25 / 07 / 2023**

**“EVALUATION OF ANTIDEPRESSANT ACTIVITY OF
STEVIOSIDE AND ZINGERONE BY CHRONIC
UNPREDICTABLE STRESS MODEL IN WISTAR RATS”**

A Dissertation Submitted To

Savitribai Phule Pune University, Pune

In Partial Fulfillment of Requirements for the Award of Degree of

MASTER OF PHARMACY

IN

PHARMACOLOGY

In Faculty of Science and Technology

BY

Ms. APURVA PRAMOD TORANE

Guide

Dr. PAVAN B. UDAVANT



**BHUJBAL KNOWLEDGE CITY
MET's INSTITUTE OF PHARMACY**

ADGAON, NASHIK-422003

2021-2023



CERTIFICATE

This is to certify that the research work presented in this dissertation entitled,
“ Evaluation of antidepressant activity of stevioside and zingerone by chronic unpredictable stress model in wistar rats ” submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (Pharmacology), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003** during the academic year 2021-2023 by **Ms. Apurva Pramod Torane** , under the guidance and supervision of **Dr. Pavan B. Udavant** .

This dissertation is now ready for examination.

Place: Nashik

Date 11/8/23

Dr. Sanjay J. Kshirsagar

Principal

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
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This dissertation is now ready for examination.

Place: Nashik

Date: 27/7/2023

Dr. Pavan B. Udavant

Associate Professor

Bhujbal Knowledge City
MET's Institute of Pharmacy,
Adgaon, Nashik- 422003

DECLARATION

I hereby declare that the dissertation entitled “**Evaluation of antidepressant activity of stevioside and zingerone by chronic unpredictable stress model in wistar rats**” is based on the work carried out by me in the laboratories of **MET’s Institute of Pharmacy, Bhujbal Knowledge City , Adgaon , Nashik-422003** during the academic year 2021-2023 under the guidance and supervision of **Dr. Pavan B. Udavant .**

Place: Nashik

Date: 27/07/2023



Ms. Apurva Pramod Torane

Acknowledgments

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*In the first place I want to give thanks to my respected and esteemed guide **Dr .Pavan Udavant** and many thanks to **Prof .Rahul Sable Sir** for their guidance during my research study at Bhujbal Knowledge City ,Met's Institute of Pharmacy .The current work would not have been possible without their expert guidance and supervision .I appreciate and treasure everything they have taught and guided us .I am grateful to my mentor for support and guidance in my research work .*

*I am very much thankful to **Shri Samir Bhujbal** ,trustee, and **Smt .Shefali Bhujbal** , chief administrator Bhujbal Knowledge City for providing infrastructure and all the necessary facilities for this research work .*

*I gratefully acknowledge **Dr. Sanjay Kshirsagar** ,Principal Bhujbal Knowledge City ,MET's Institute of Pharmacy .Many thanks goes in a particular to **Dr. Neelam Dashputre** , **Dr .Anjali Tajanpure** ,**Prof .Shubham Khairnar** and Non -teaching staff **Mr. Vaibhav Gangurde** ,**Mr. Ashok** for their kind help which is required for carrying out the work project .This project is not the result of an individual effort but is the product of collective wisdom and experience of all those who have shared their views far beyond those found within covers of book .*

*I would like to thank my colleagues **Naveed** , **Nishigandha** ,**Kamini** ,**Prasad** ,**Sumit** ,**Prajakta** ,**Simona** ,**Surabhi** and **Amruta** for their help and support throughout my work .*

My deepest gratitude goes to my family for their unflagging love and support throughout my journey .I m really grateful to them for their support and care .

I appreciate and treasure whatever I have learned ,finally I would like to thank all of them who played supportive role in this journey .

Place: Nashik

Ms. Apurva Pramod Torane

Date :

Dedicated to ...

My Parents ,

For their support ,care and trust

The Guide ,

For guidance and support

All Those,

**Who have supported mi endlessly
in this journey**

**“Evaluation of Neuroprotective effect of Salicin and
Stevioside in experimental animal model of STZ induced
Diabetic Neuropathy”**

**A Dissertation Submitted To
Savitribai Phule Pune University, Pune
In the Partial Fulfillment of Requirements for the Award of
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MASTER OF PHARMACY

IN

PHARMACOLOGY

In the Faculty of Science and Technology

BY

SIMONA ELEUTERIO D’SOUZA

Guide

DR. PAVAN B. UDAVANT



**BHUIBAL KNOWLEDGE CITY
MET’s INSTITUTE OF PHARMACY
ADGAON, NASHIK-422003**

2021-2023



CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, “**Evaluation of Neuroprotective effect of Salicin and Stevioside in experimental animal model of STZ induced Diabetic Neuropathy**” submitted in the partial fulfillment of the requirement for the degree of Master of Pharmacy (Pharmacology), in the Faculty of Science and Technology, Savitribai Phule Pune University, Pune; was carried out in the laboratories of **Bhujbal Knowledge City, MET’s Institute of Pharmacy, Adgaon, Nashik-422003**, by **Ms. Simona Eleuterio D’Souza**, under the guidance and supervision of **Dr. Pavan B. Udavant**.

This dissertation is now ready for examination.

Place: Nashik

Date 20/7/23



Dr. S. J. Kshirsagar

Principal

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003



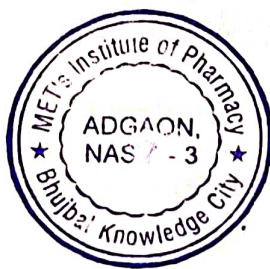
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This dissertation is now ready for examination.

Place: Nashik

Date: 17/7/2023



Dr. Pavan B. Udavant

Guide,

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003

**“Efficacy study of Oregano oil in experimentally induced
dyslipidemic rats”**

**A Dissertation Submitted To
Savitribai Phule Pune University, Pune
In the Partial Fulfillment of Requirements for the Award of
Degree of**

MASTER OF PHARMACY

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PHARMACOLOGY

In the Faculty of Science and Technology

BY

Nishigandha Kiran Salunke

Guide name

Dr. N. L. Dashputre



**BHUJBAL KNOWLEDGE CITY
MET's INSTITUTE OF PHARMACY
ADGAON, NASHIK-422003
2022-2023**



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This dissertation is now ready for examination.

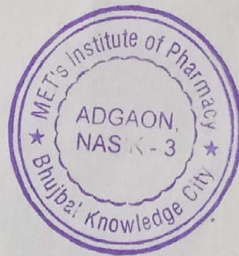
Place: **Nashik**

Dr. S. J. Kshirsagar

Principal

Bhujbal Knowledge City
MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003

Date **31/7/2023**





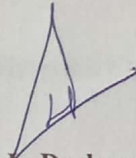
CERTIFICATE

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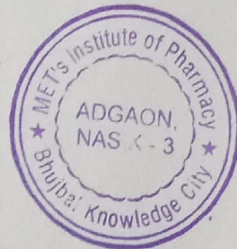
Place: Nashik

Date: 31/7/2023


Dr. N. L. Dashputre.

Guide,

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MET’s Institute of Pharmacy,
Adgaon, Nashik- 422003



DECLARATION

I hereby declare that the dissertation entitled "**Efficacy study of Oregano Oil in experimentally induced dyslipidemic rats**" is based on the work carried out by me in the laboratories of **Bhujbal Knowledge City, MET's Institute of Pharmacy, Adgaon, Nashik-422003** under the guidance and supervision of **Dr. N. L. Dashputre.**

Nishigandha Kiran Salunke

Place: **Nashik**

Date: 31/7/2023

Acknowledgments

I would like to thank all the people who have helped and inspired me during my M. Pharm research study. It is a pleasure to convey my gratitude to them all in my humble acknowledgment.

In the first place I want to give special thanks to my respected and esteemed guide **Dr. N. L. Dashputre and many thanks to Dr. A. B. Tajanpure ma'am** for their guidance during my research and study at Bhujbal Knowledge City MET's Institute of Pharmacy. The current work would not have been possible without their expert guidance and scholarly supervision, during the course of this investigation. In addition, they were always accessible and willing to help students with their research. They have always instilled in me self-confidence and patience, which made me accomplish the research problems successfully.

I am very much thankful to Shri Samir Bhujbal, Trustee, MET and Smt. Shefali Bhujbal, Chief Administrator Bhujbal Knowledge City for providing infrastructure and all the necessary facilities for this research work.

I gratefully acknowledge **Dr. Sanjay Kshirsagar**, Principal, Bhujbal Knowledge City, MET's Institute of Pharmacy. Many thanks goes in particular to **Dr. P. B. Udavant, Prof. Rahul Sable, Prof. Shubham Khairnar** and Non-teaching staff **Mr. Vaibhav Gangurde, Mr. Ashok** for their valuable suggestions and kind help which is required for carrying out the project work. This project is not the result of an individual effort but is the product of collective wisdom and experience of all those who have shared their views far beyond those found within covers of book.

I express my whole hearted gratitude and special thanks to my colleagues **Prasad, Sumit, Mayuri, Kalyani, Vidya, Sakshi, Apurva, Kamini** for giving me such a pleasant time when working together with them.

My deepest gratitude goes to my family for their unflinching love and support throughout my life. I have no suitable word that can fully describe their everlasting love to me.

Finally, I would like to thank everybody who was important to the successful realization of my thesis, as well expressing my apology that I could not mention personally one by one.

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Date: 31/7/2023

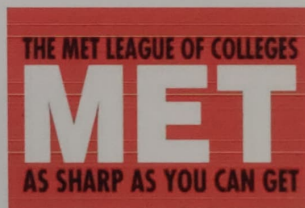
Nishigandha K. Salunke
Name of the student

**EFFECT OF NANOPARTICULATE SYSTEM OF
GENISTEIN AND DAIDZEIN AGAINST N-NITROSO-N-
METHYLUREA INDUCED BREAST CANCER IN
FEMALE WISTAR RATS**

**A DISSERTATION SUBMITTED TO
SAVITRIBAI PHULE PUNE UNIVERSITY, PUNE
IN THE PARTIAL FULFILLMENT OF
REQUIREMENTS FOR THE AWARD OF DEGREE OF
MASTER OF PHARMACY**

**IN
PHARMACOLOGY
IN THE FACULTY OF SCIENCE AND TECHNOLOGY
BY**

KADAM JAYESH DIGAMBAR



GUIDE

**DR. NEELAM L. DASHPUTRE
BHUIBAL KNOWLEDGE CITY
MET'S INSTITUTE OF PHARMACY
ADGAON, NASHIK – 422003**

2021-2023



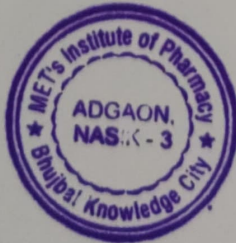
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This dissertation is now ready for examination.

Place: **Nashik**

Date: **04/08/2023**



Dr. Sanjay J. Kshirsagar
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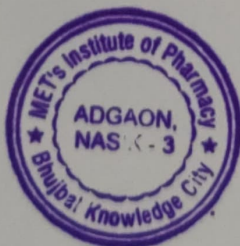
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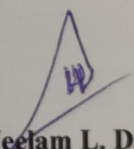
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This dissertation is now ready for examination.

Place: **Nashik**

Date: 04/08/2023




Dr. Neelam L. Dashputre
Guide,

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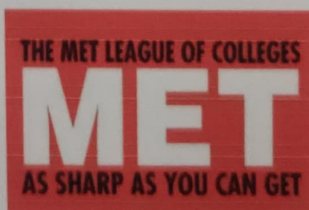
**DEVELOPMENT AND EVALUATION OF
NARINGENIN NANOPARTICLES AS A POTENTIAL
TREATMENT FOR LETROZOLE-INDUCED
POLYCYSTIC OVARIAN SYNDROME IN FEMALE
WISTAR RATS**

**A DISSERTATION SUBMITTED TO
SAVITRIBAI PHULE PUNE UNIVERSITY, PUNE
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REQUIREMENTS FOR THE AWARD OF DEGREE OF
MASTER OF PHARMACY**

**IN
PHARMACOLOGY
IN THE FACULTY OF SCIENCE AND TECHNOLOGY**

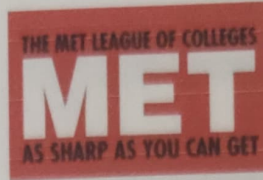
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PATIL SURABHI BHALCHANDRA**

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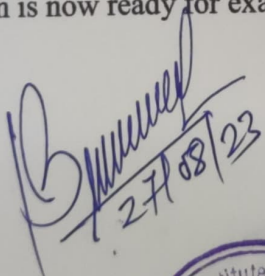
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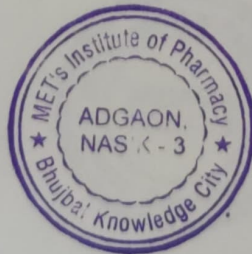
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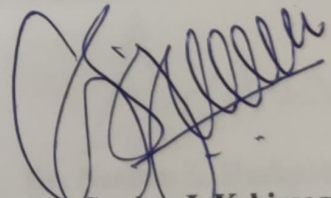
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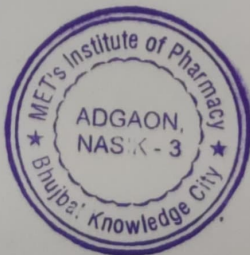


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Place: **Nashik**

Date: 28/07/23



28/07/23
Dr. Neelam L. Dashputre

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1.	Ragini Dnyaneshwar Jagzap Guide : Dr. Kshirsagar Sanjay Jayprakash 	Topic Approved and Admitted w.e.f. 09/05/2023 as follows :- Development of Lipid Based Drug Delivery System for Reducing Effect of Food on Drug Absorption

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1.	Pooja Arjun Shinde Guide : Dr. Deokar Gitanjali Sambhajirao 	Topic Approved and Admitted w.e.f. 09/05/2023 as follows :- Isolation, Nanobased Modulation and Characterization of Antimicrobial Peptides from Plant Seeds to Address Antimicrobial Resistance

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1.	Devyani Pravin Chavan Guide : Dr. Ahirrao Sapana Prabhakar 	Topic Approved and Admitted w.e.f. 09/05/2023 as follows :- Formulation and Evaluation of Nanoparticles based Antifungal Topical Drug Delivery System

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Sr.No.	Name of the candidate & Name of the Guide	Remarks
1.	Suchita Bhaskar Khairnar Guide : Dr. Ahirrao Sapana Prabhakar 	Topic Approved and Admitted w.e.f. 09/05/2023 as follows :- Development of Formulation for Effective Management of Premature Hair Greying

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1.	Ukhade Snehal Sampat Guide : Dr. Sonawane Sandeep Suresh 	Topic Approved and Admitted w.e.f. 09/05/2023 as follows :- Pharmaceutical Analysis Combined with in- silico Therapeutic and Toxicological Profiling of Drugs and its Adducts to Support Modern Drug Discovery

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The Ph.D. cases forwarded by your Institute/Centre were placed before the Research & Recognition Committee in Pharmacology (Science and Technology) held on 02/08/2023. The decision/s of Research & Recognition Committee are as follows :

Sr.No.	Name of the candidate & Name of the Guide	Remarks
1.	Bhagwat Haribhau Garje Guide : Dr. Udavant Pavan Bhausahab 	Topic Approved and Admitted w.e.f. 09/05/2023 as follows :- Evaluation of Anticancer Potential of Some Phytoconstituents in Experimental Models

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Sr.No.	Name of the candidate & Name of the Guide	Remarks
1.	Hemant Vishnu Raut Guide : Dr. Udavant Pavan Bhausahab 	Topic Approved and Admitted w.e.f. 09/05/2023 as follows :- Exploration of Hepatoprotective Potential of Some Phytoconstituents in Experimental Animal Models

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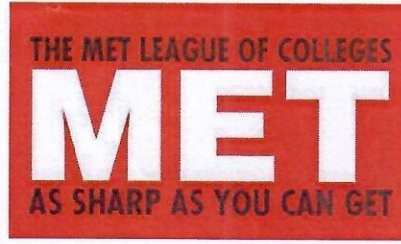
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Mumbai Educational Trust MET Institute of Pharmacy Addr: Bhujbal Knowledge City Adgav Ta: Nashik Dist:
Nashik



CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, “**Poly herbal lubricating powder for Bed Sores**” submitted in the partial fulfillment of the requirement for the degree of Bachelor of Pharmacy, Savitribai Phule Pune University, Pune was carried out in the laboratories of **MET’s Institute of Pharmacy, Bhujbal Knowledge City, Adgaon, Nashik 422003** during the academic year 2022-2023 by **Mr. Aayush D. Ikhankar** under the guidance and supervision of **Prof. Mayur P. Sawant**. This dissertation is now ready for examination.

Place: **Nashik**

Date: 26-04-2023

Dr. Sanjay. J. Kshirsagar

Principal

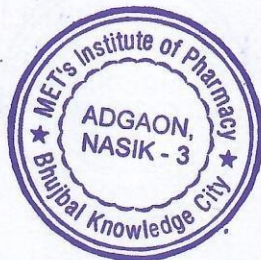
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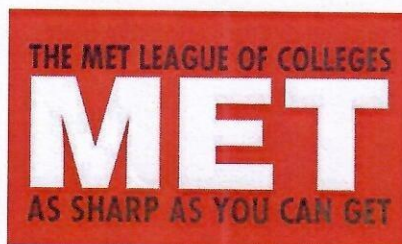
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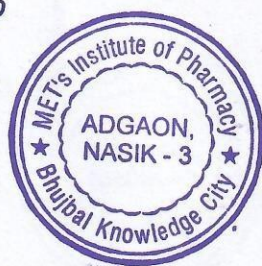


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Date: 26-4-2023



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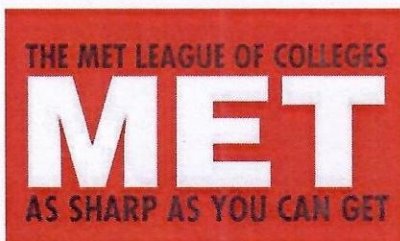
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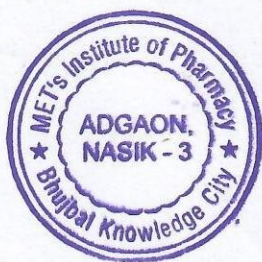


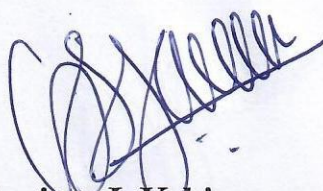
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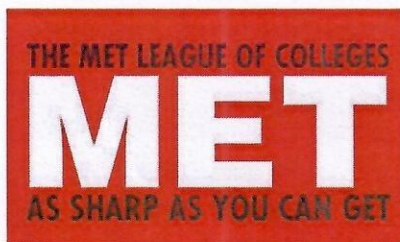



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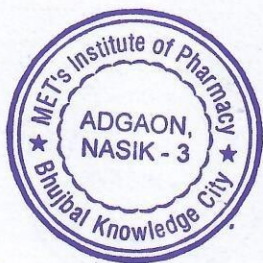


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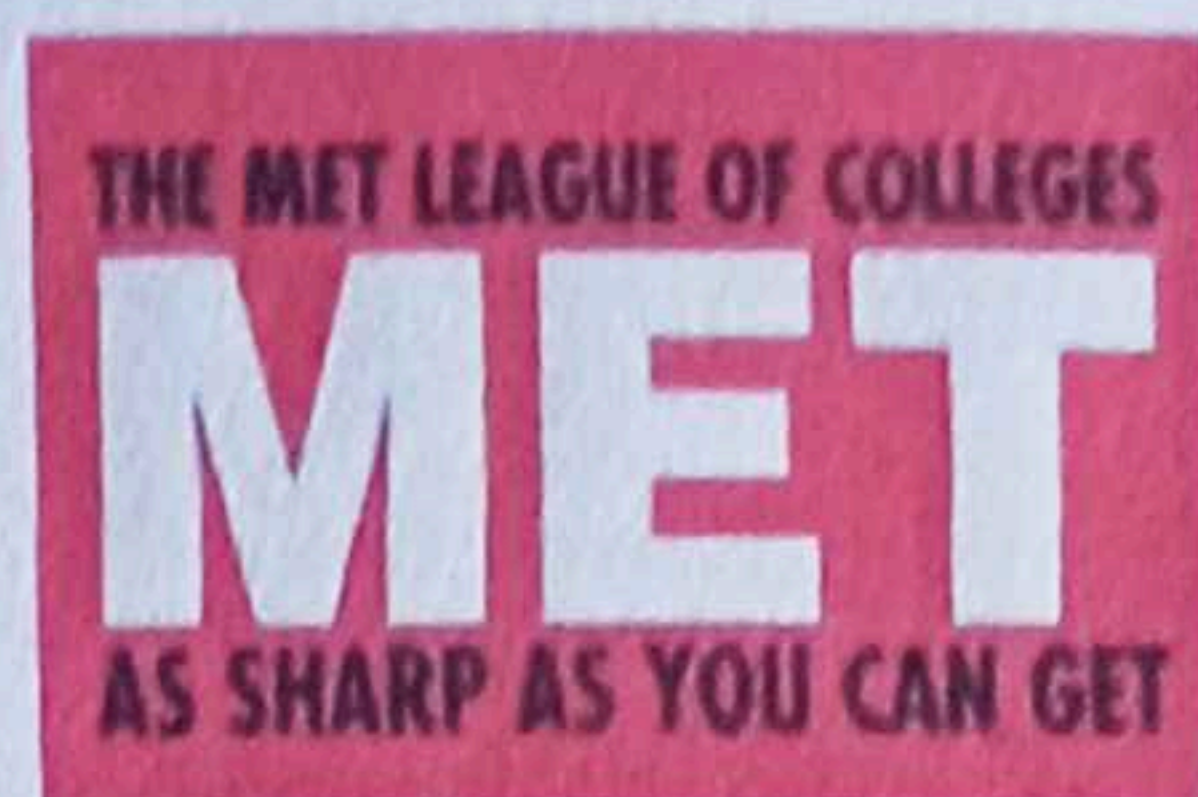


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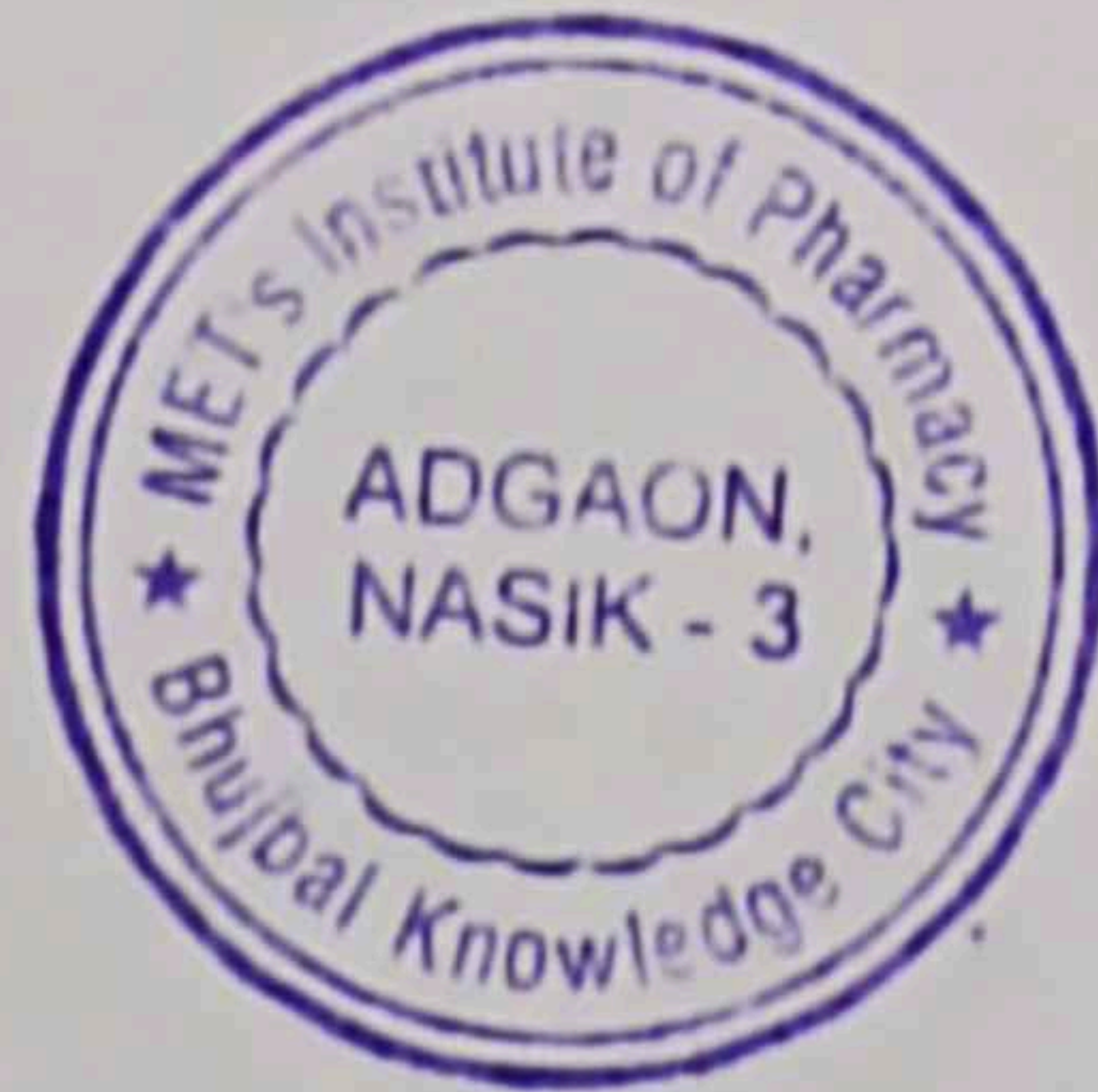


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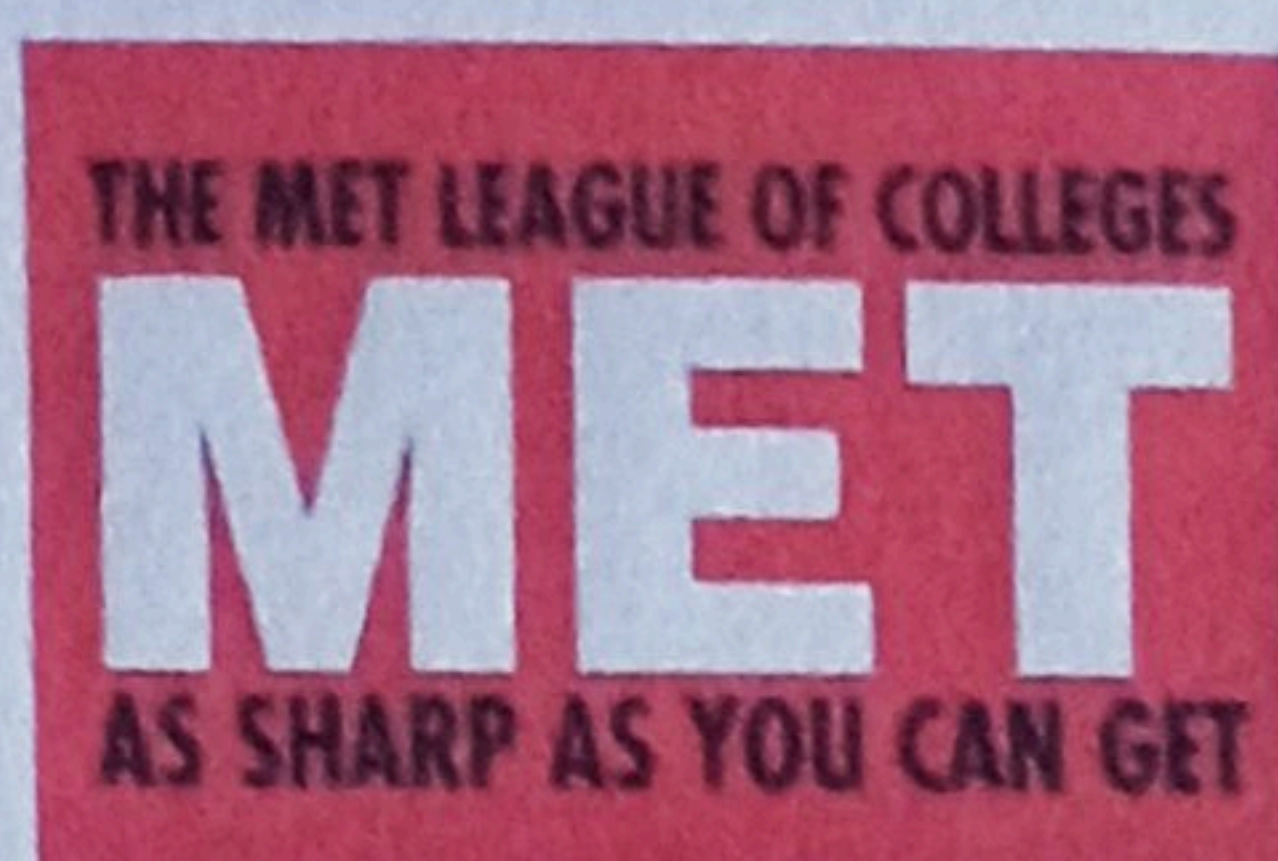


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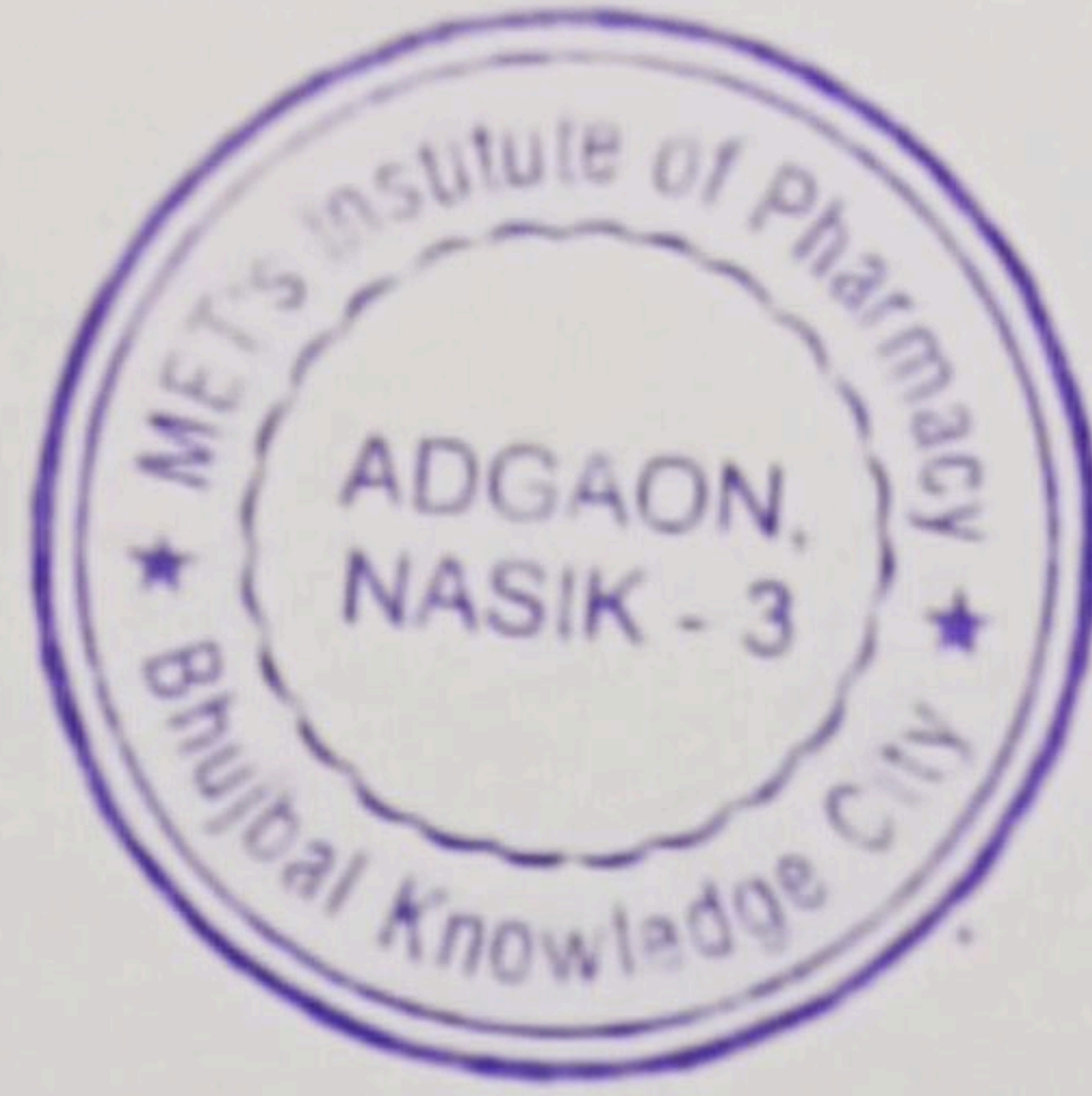
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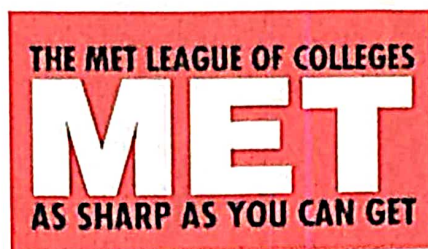
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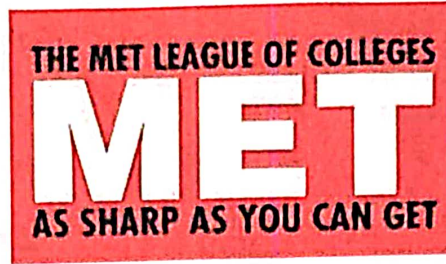
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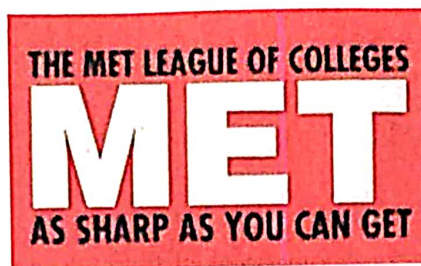
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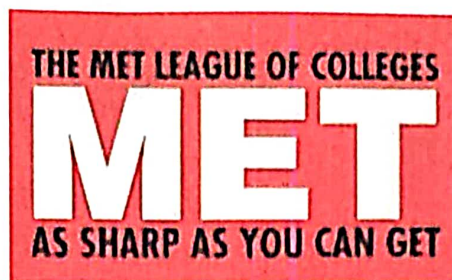
Place: Nashik

Date: 03/05/23

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Dr. UMESH LADDHA

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Place: Nashik

Date: 28/04/2023

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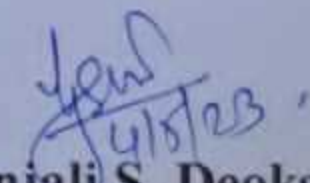


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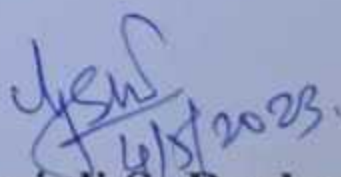
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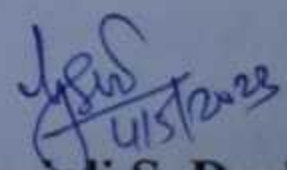


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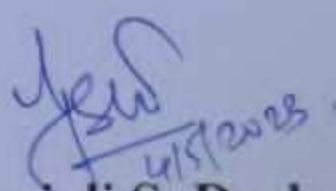


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Pharmacy, Bhujbal Knowledge City, Adgaon, Nashik 422003** during the academic
year 2022-2023 by **Ms. Sakshi S.Aher.** under the guidance and supervision of **Mr.
Abhish Jadhav.**

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Date: 9/5/2023.

Dr. S. J. Kshirsagar

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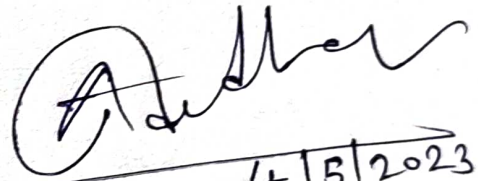
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Mr.Abhish Jadhav

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Date: 9/5/2023

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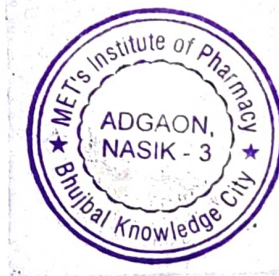
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This dissertation is now ready for examination.

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Dr. S. J. Kshirsagar

Place: **Nashik**

Date: 8/6/23

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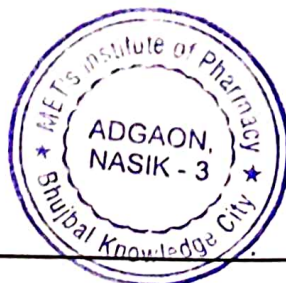
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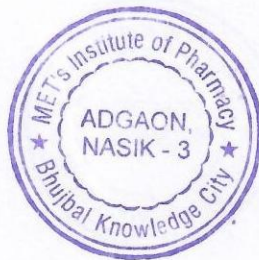


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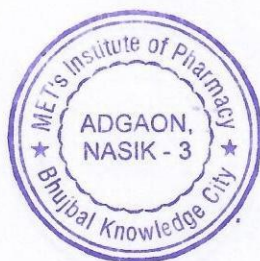
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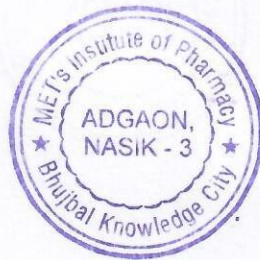
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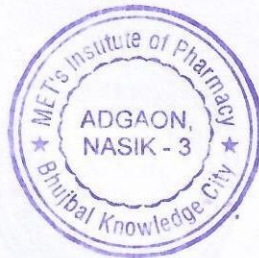
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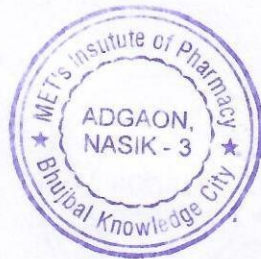
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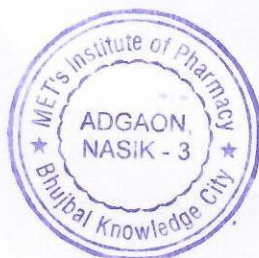
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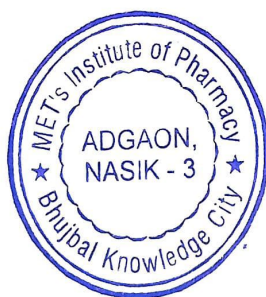
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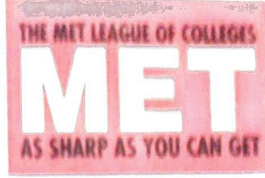
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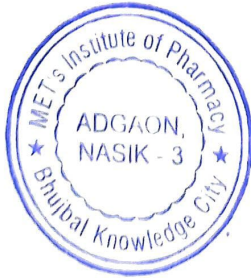
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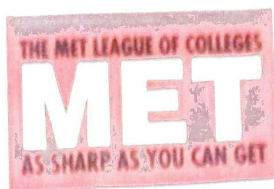



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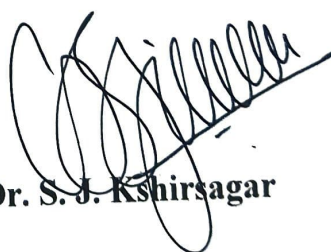
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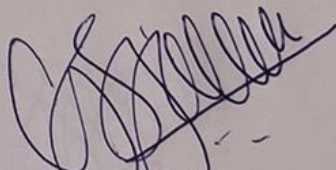
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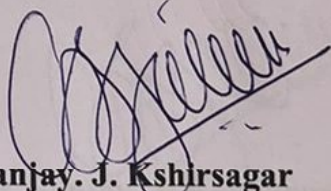
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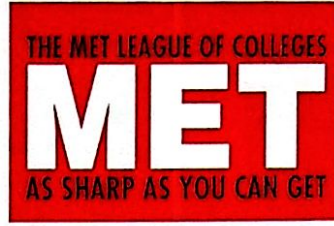
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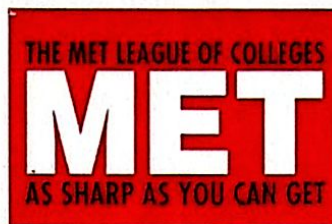
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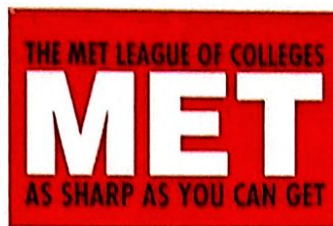
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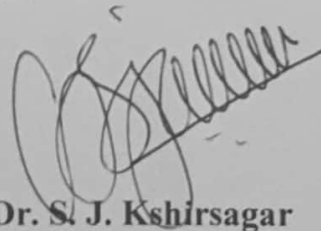
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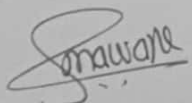
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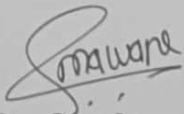
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Dr. Sandeep S. Sonawane

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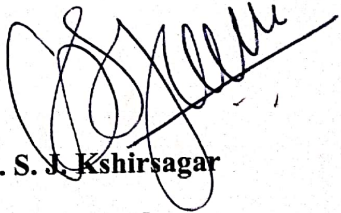
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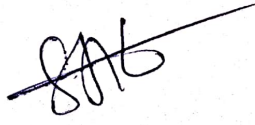
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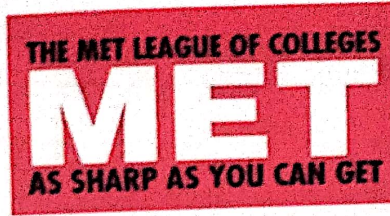
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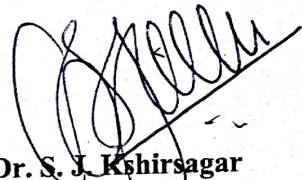
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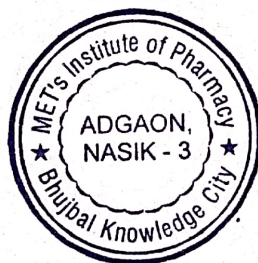


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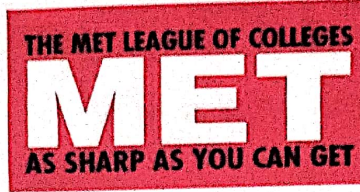
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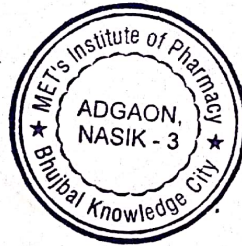


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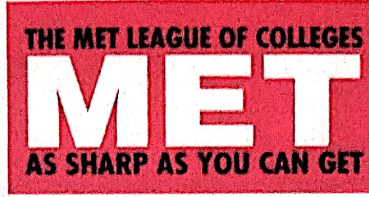
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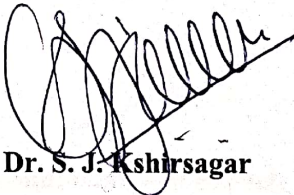
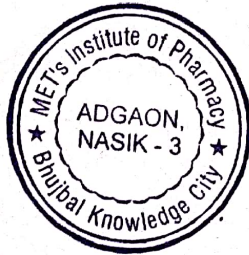


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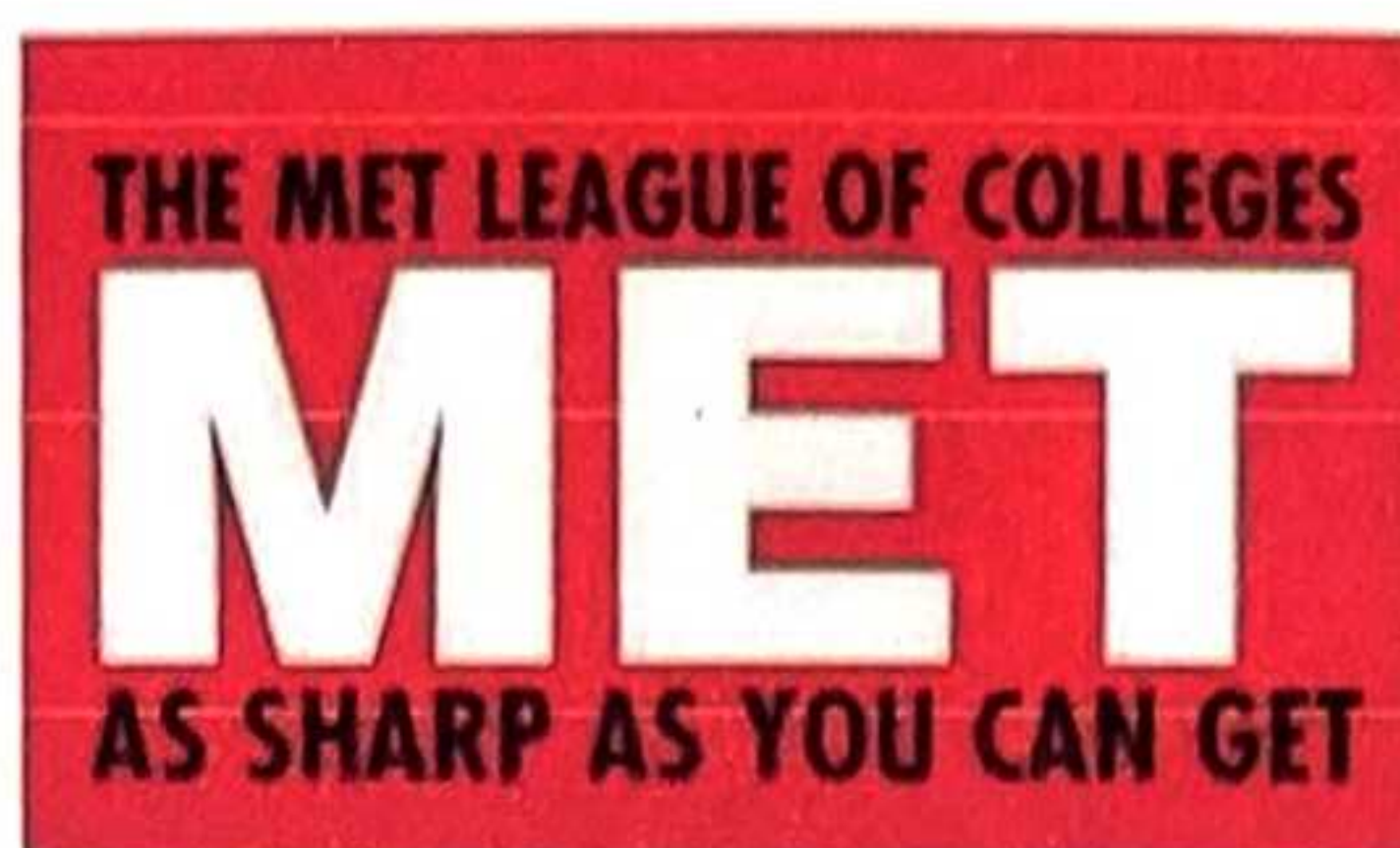
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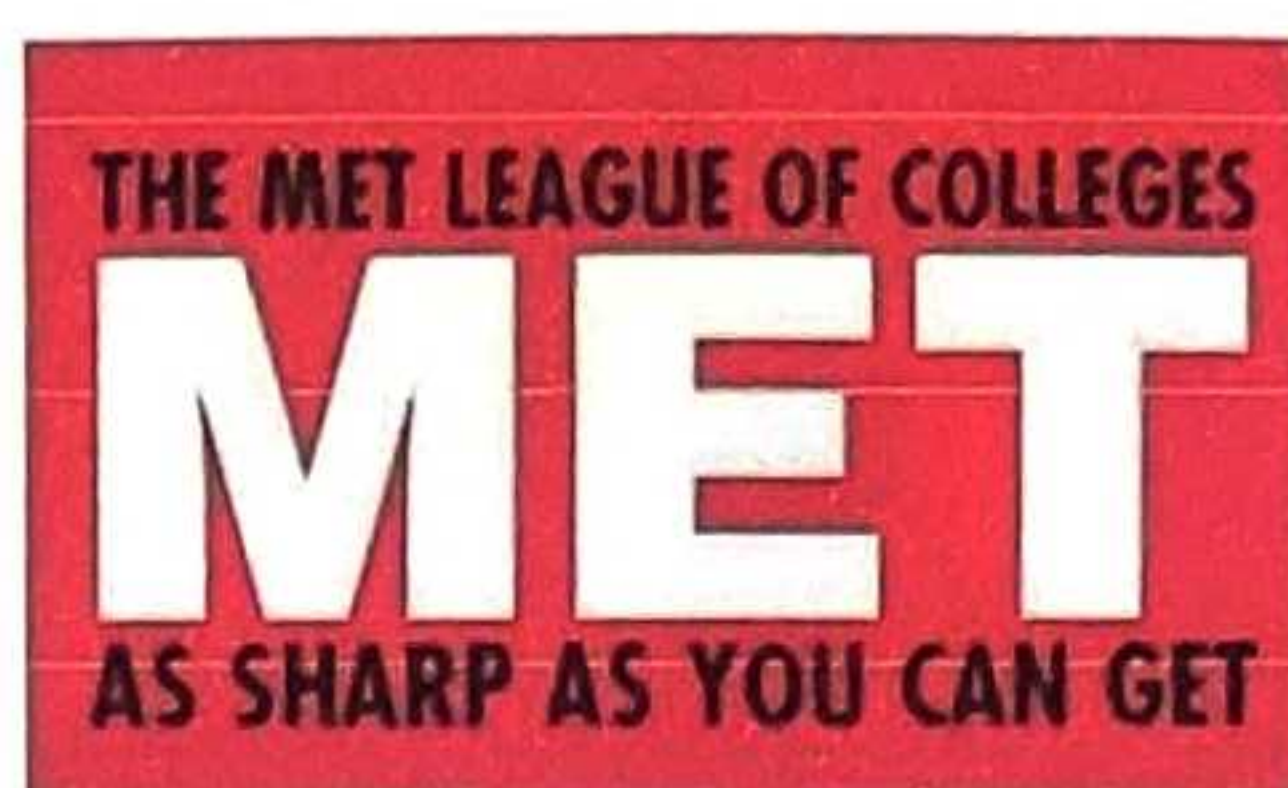
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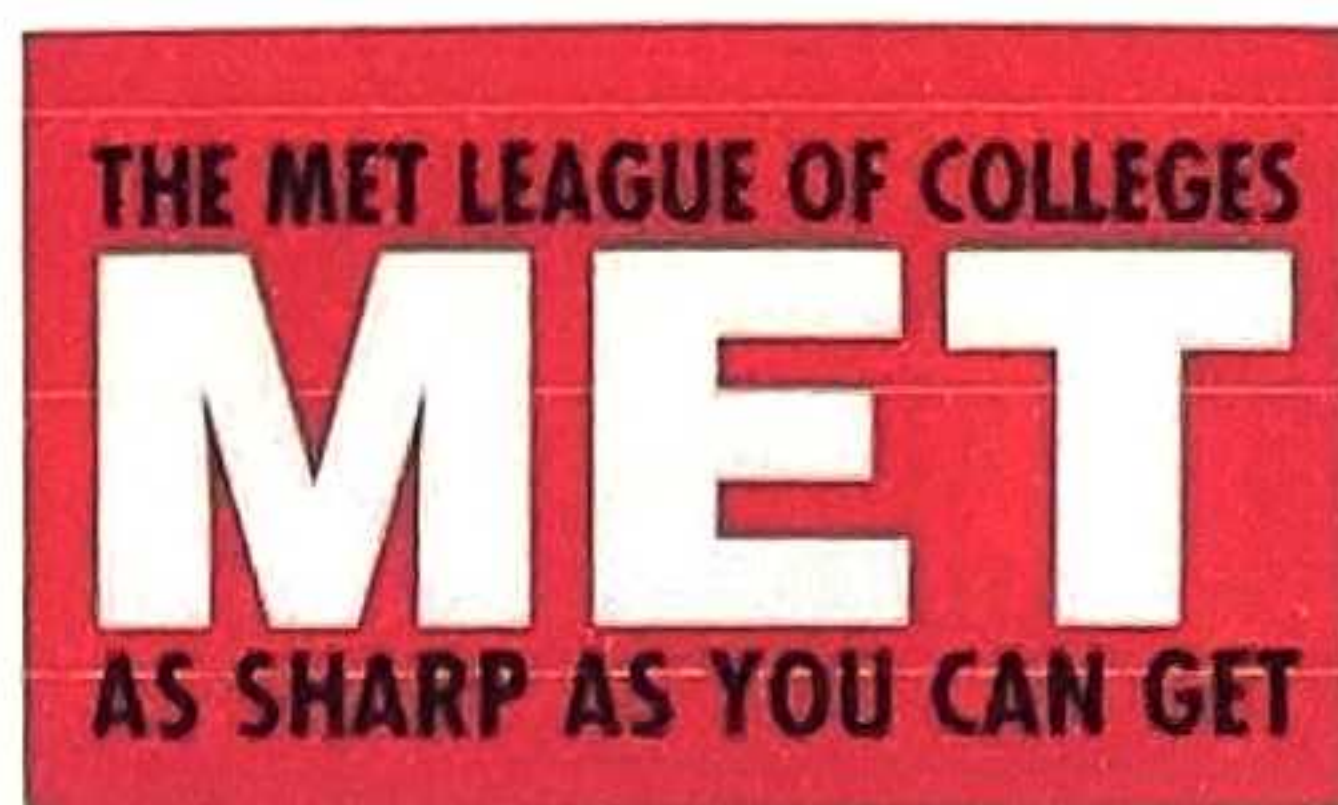



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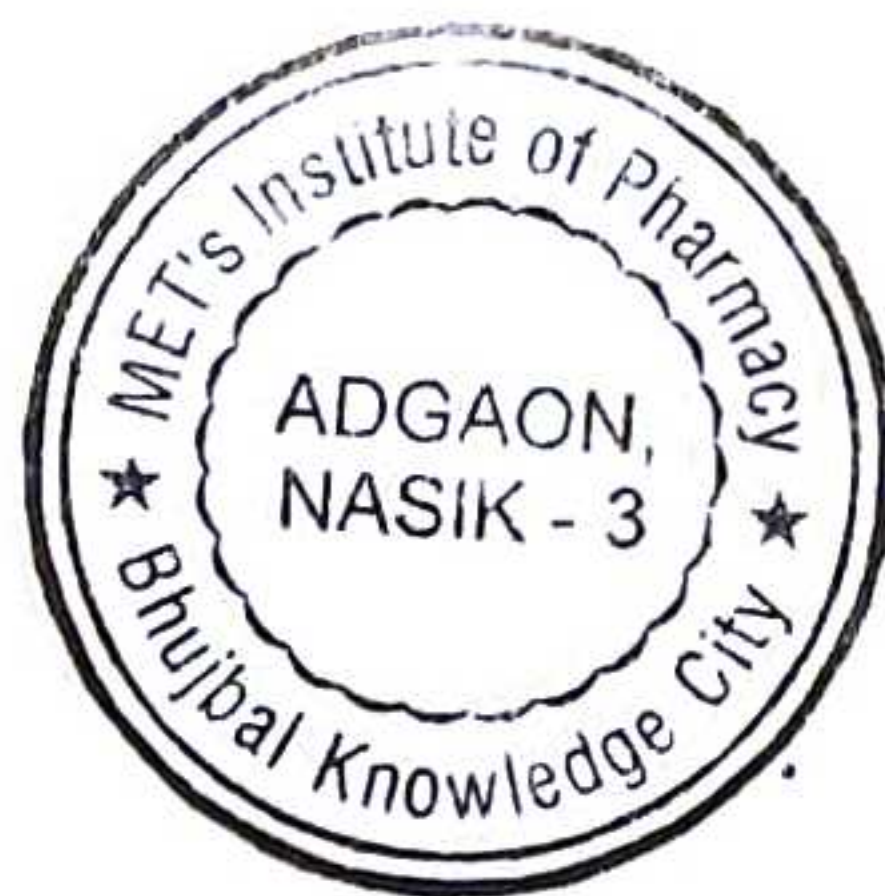


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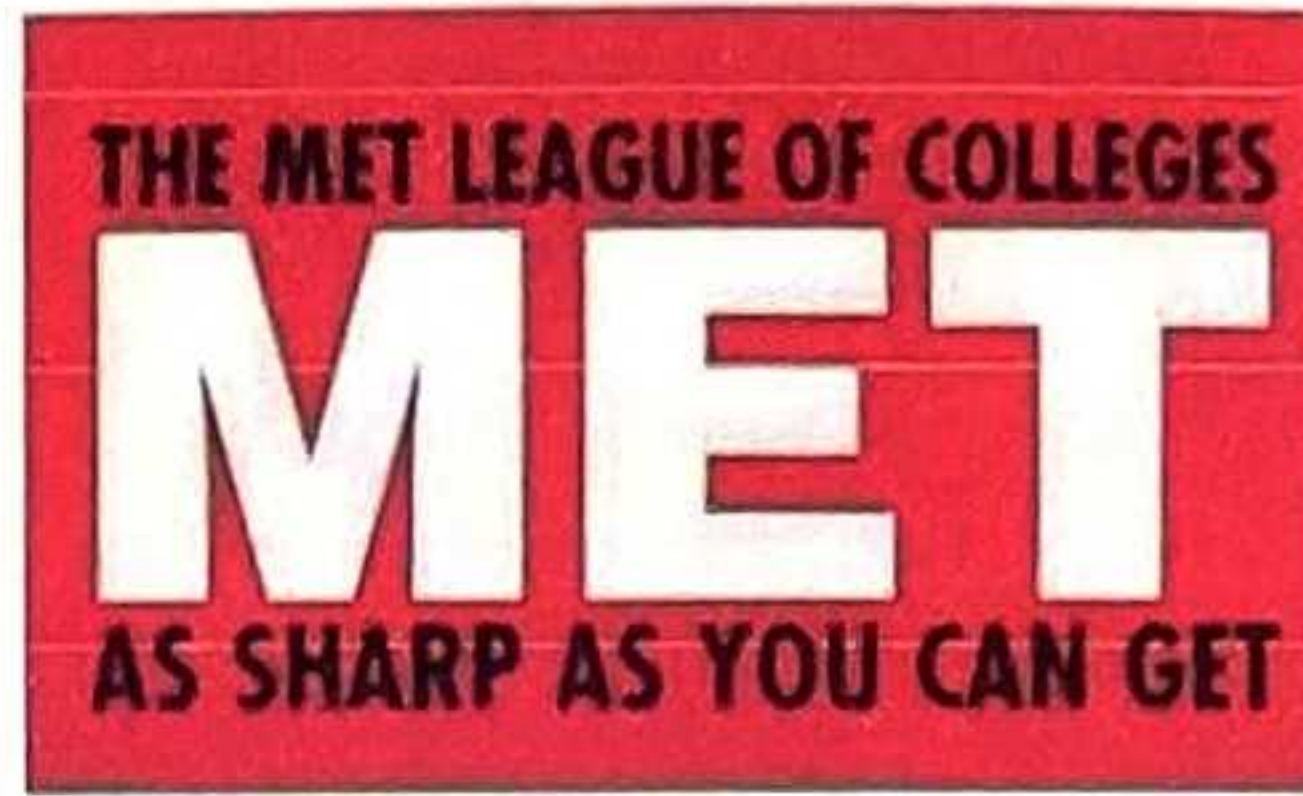


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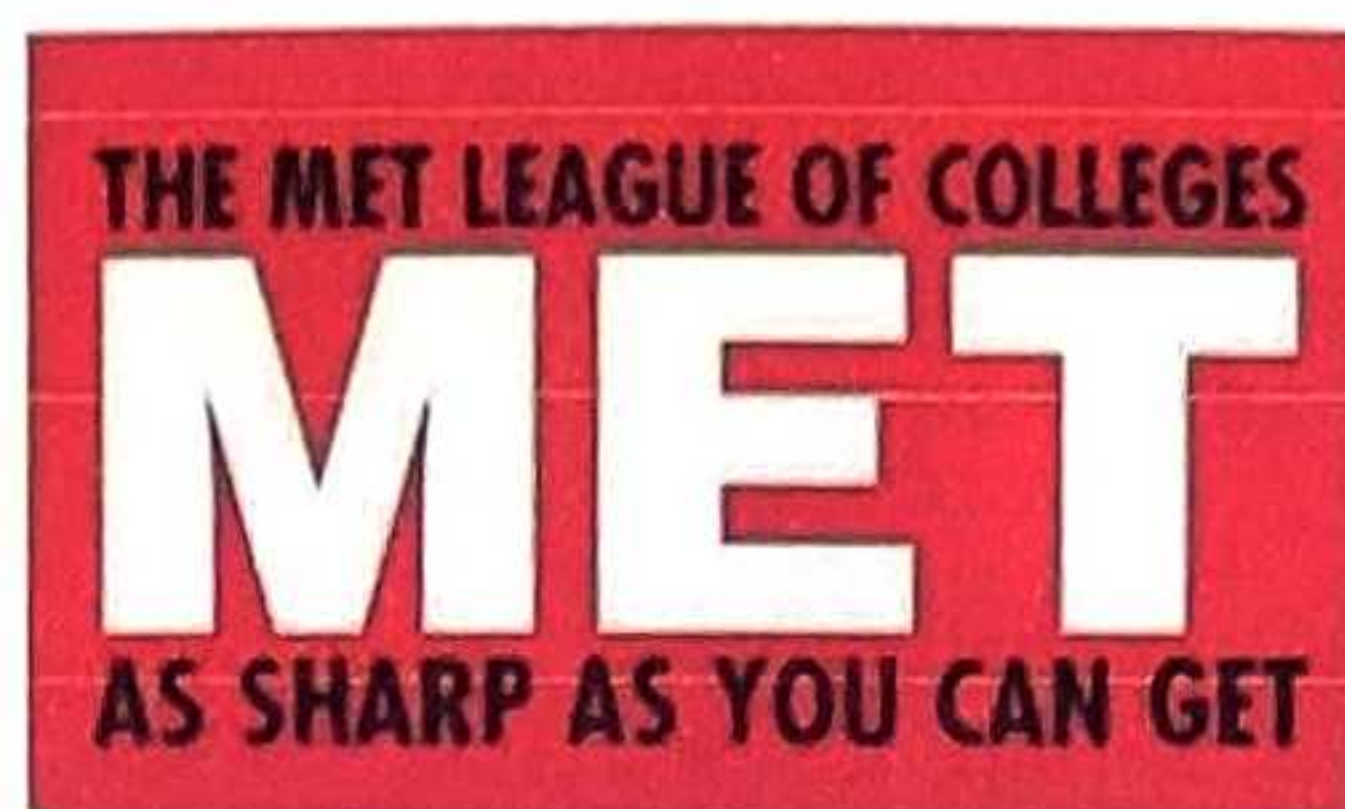
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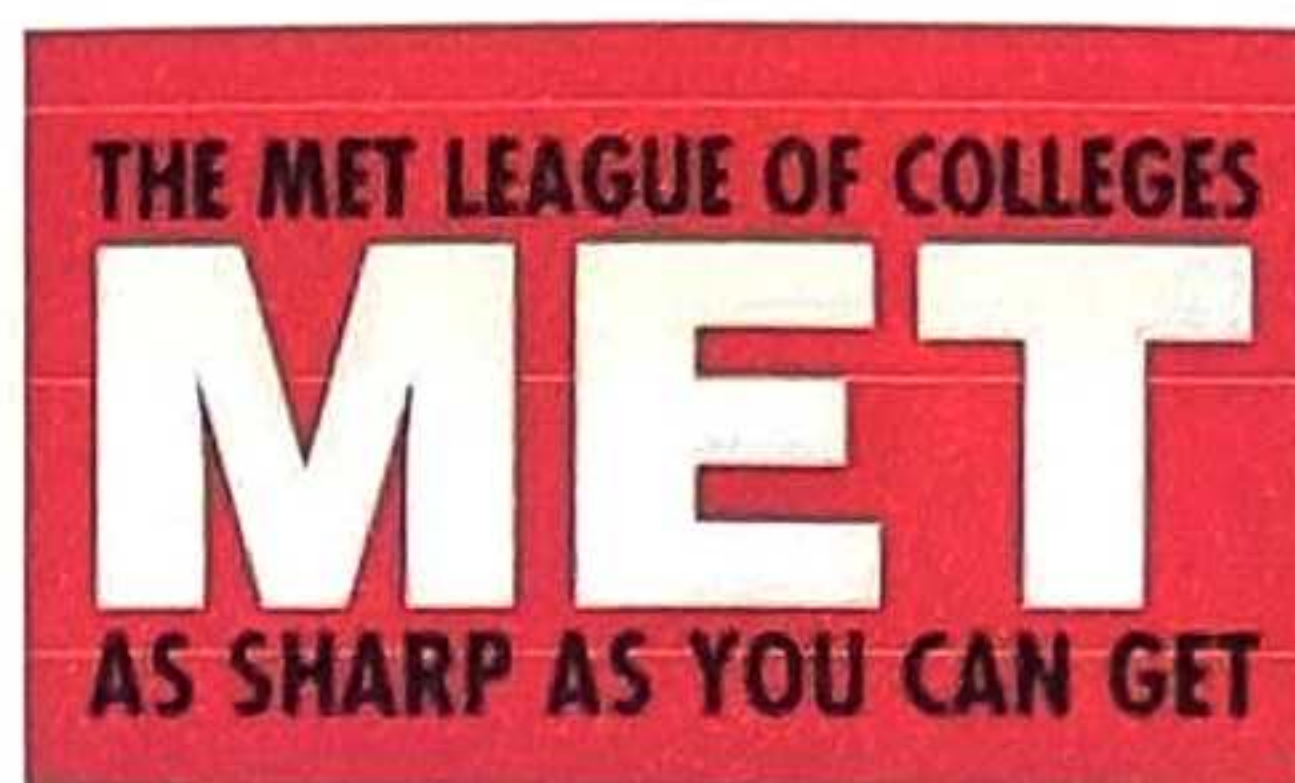


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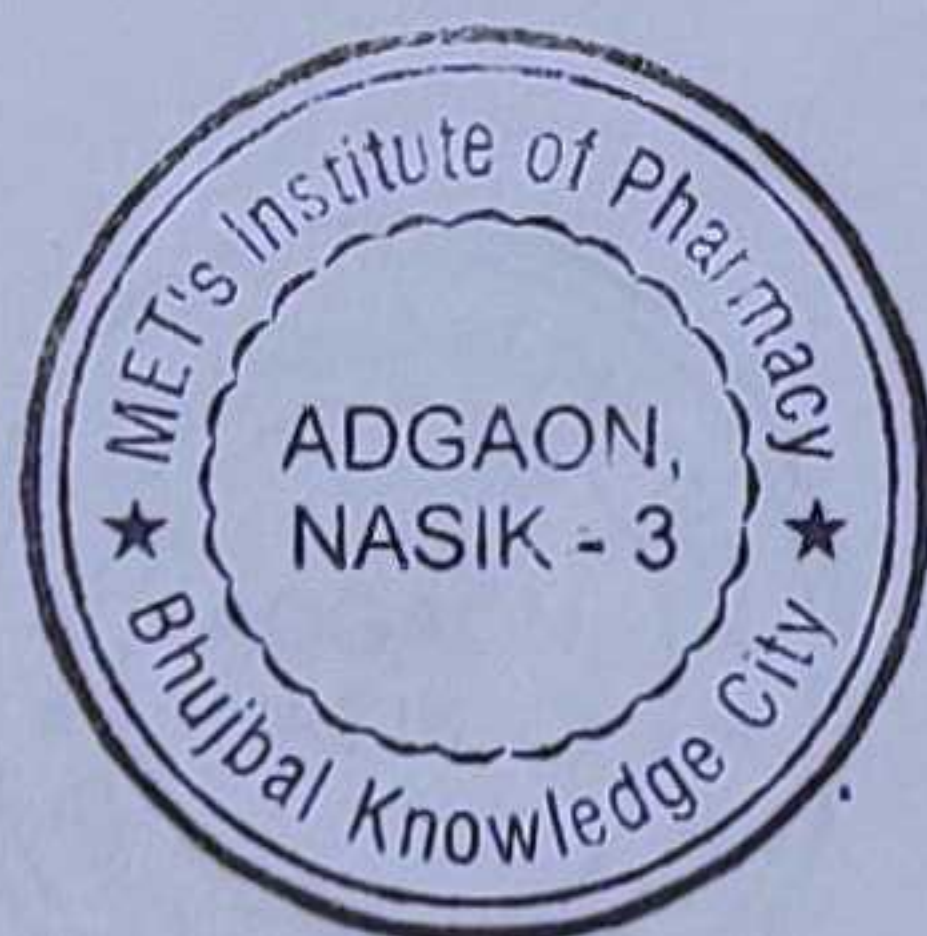


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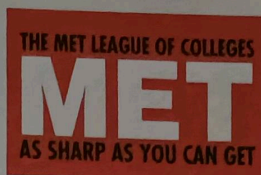


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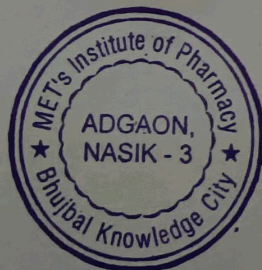
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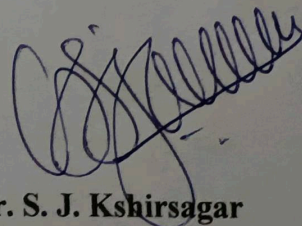
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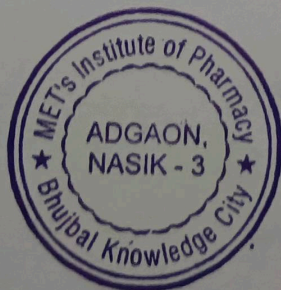
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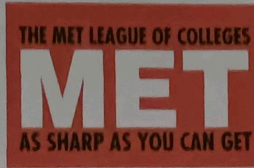


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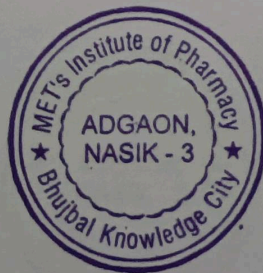
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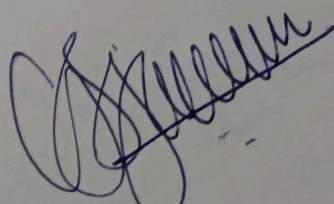
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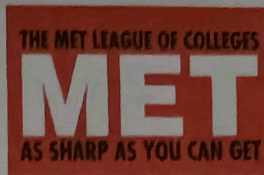



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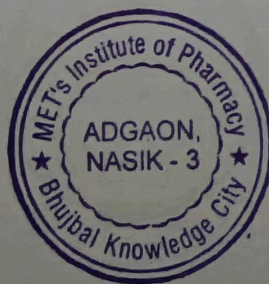
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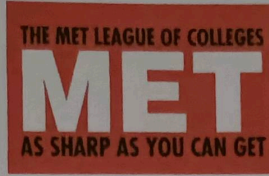


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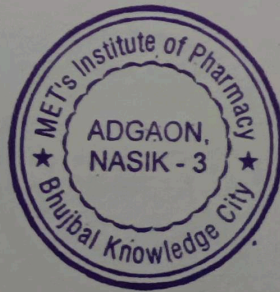
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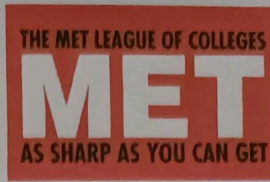


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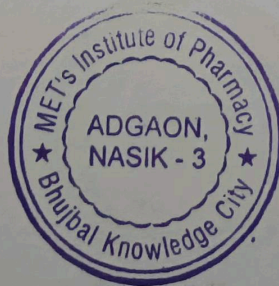
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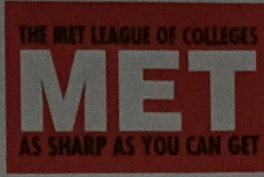


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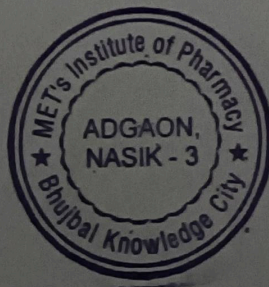
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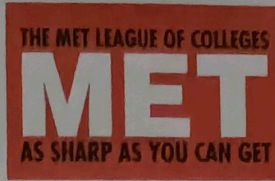


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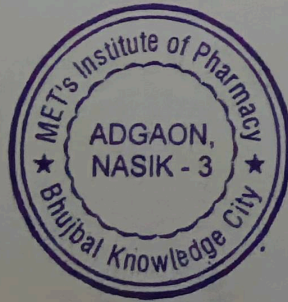
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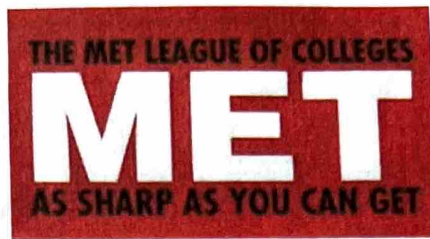
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Place: **Nashik**

Date: 4/5/23

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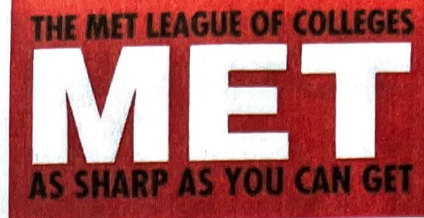
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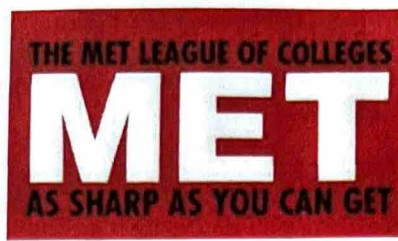
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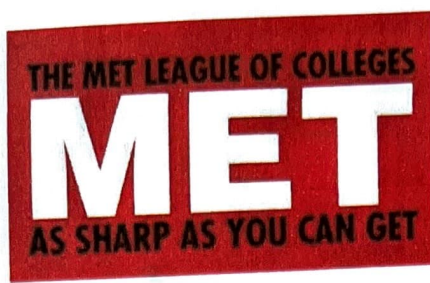
Date: 41/5/23

A handwritten signature in blue ink, appearing to read "Dr. Sanjay. J. Kshirsagar", is written over a horizontal line.

Dr. Sanjay. J. Kshirsagar

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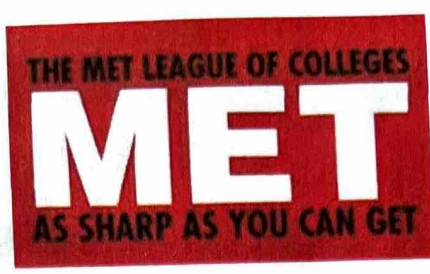
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Place: **Nashik**

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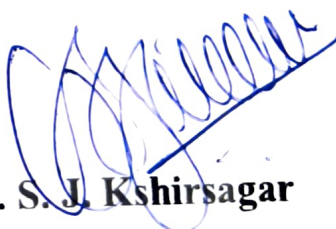
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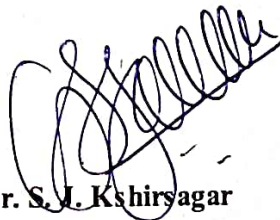
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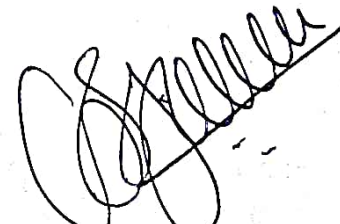
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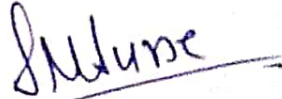
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Place: **Nashik**

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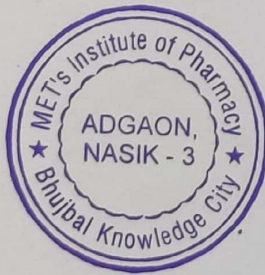
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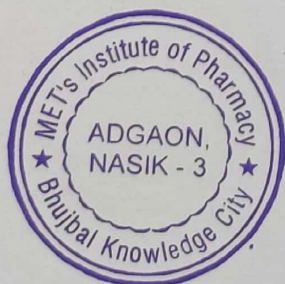
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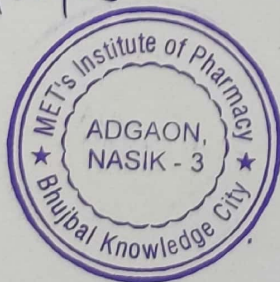


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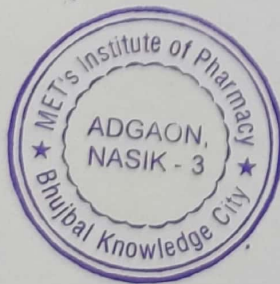


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HERBAL SKIN BRIGHTNING GEL

A Dissertation Submitted To

Savitribai Phule Pune University, Pune

**In Partial Fulfillment of Requirements for the Award of
Degree of**

BACHELOR OF PHARMACY

BY

Ms. Yogita V. Ahire

Mr. Vaibhav U. Dhikale

Ms. Vaishnavi K. Holgade

Mr. Yash B. Kulkarni

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This is to certify that the research work presented in this dissertation entitled, "**Herbal Skin Brightening Gel**" submitted in the partial fulfillment of the requirement for the degree of Bachelor of Pharmacy, Savitribai Phule Pune University, Pune was carried out in the laboratories of **MET's Institute of Pharmacy, Bhujbal Knowledge City, Adgaon, Nashik 422003** during the academic year 2022-2023 by **Ms. Yogita V. Ahire** under the guidance and supervision of **Dr. Santosh S. Chhajed and Ms. Smita Kothmire.**

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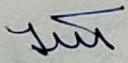
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This dissertation is now ready for examination.

Place: **Nashik**

Date: **9/05/2023**

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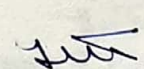
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Date: *09-05-2023*


Dr. Santosh S. Chhajed

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HERBAL SKIN BRIGHTNING GEL

**A Dissertation Submitted To
Savitribai Phule Pune University, Pune
In Partial Fulfillment of Requirements for the Award of
Degree of**

BACHELOR OF PHARMACY

BY

Ms. Yogita V. Ahire

Mr. Vaibhav U. Dhikale

Ms. Vaishnavi K. Holgade

Mr. Yash B. Kulkarni

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MS. SMITA KOTHMIRE



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2022-2023**



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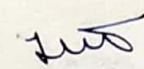
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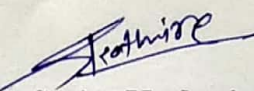
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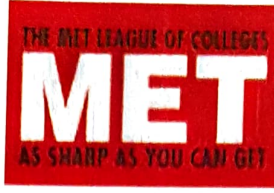
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Dr.D.D.Rishipathak

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Dr.D.D.Rishipathak

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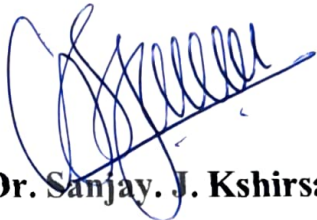
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Place: Nashik

Date: 27/04/2023


Dr. Sanjay. J. Kshirsagar

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Bhujbal Knowledge City
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Place: Nashik

Date: 27/4/23



[Signature]
27/4/23

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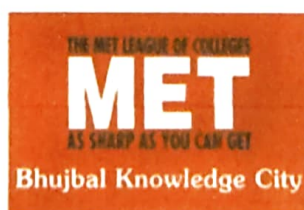
HERBAL FRUIT & VEGGIE CLEANSER
A DISSERTATION SUBMITTED TO
SAVITRIBAI PHULE PUNE UNIVERSITY, PUNE
IN PARTIAL FULFILLMENT OF REQUIREMENTS FOR THE
AWARD OF DEGREE OF
BACHELOR OF PHARMACY

BY

SR. NO.	NAME	ROLL NO.
1	MR. ROHAN NITIN BADHE	08
2	MR. SIDDHESH KESHAV PATIL	83
3	MR. KUNAL ASHOKRAO TALANE	116
4	MR. LAXMAN SHANKARRAO WANKHEDE	120

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PROF. RAKESH U. SHELKE

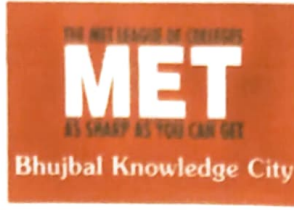


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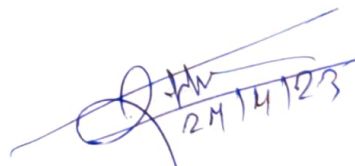
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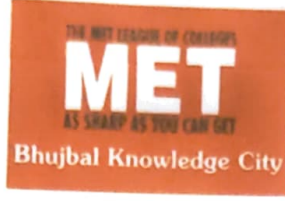
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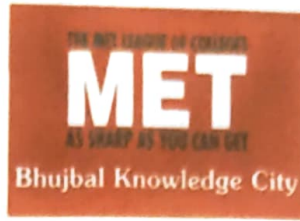
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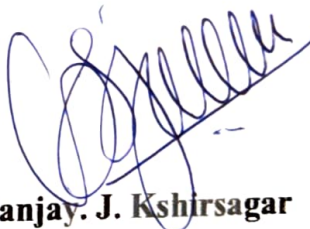
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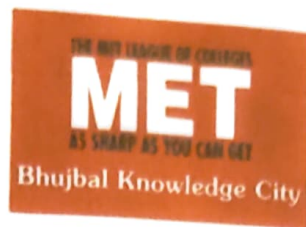
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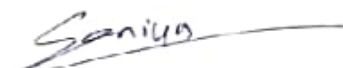
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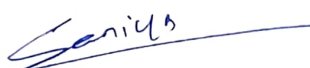
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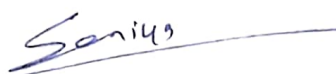
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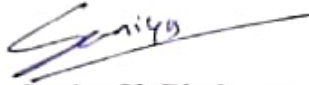
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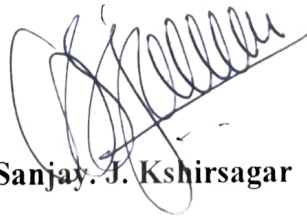
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Date: 27/04/2023




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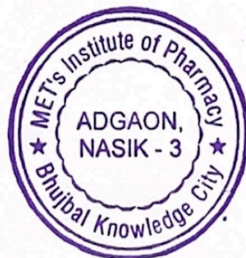
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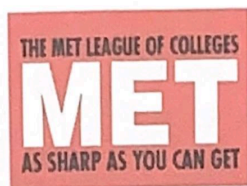


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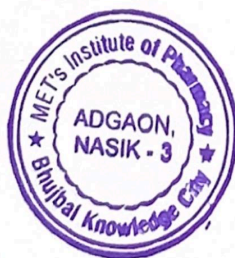
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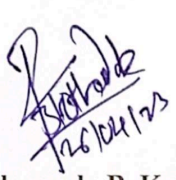
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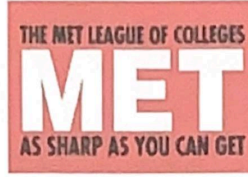
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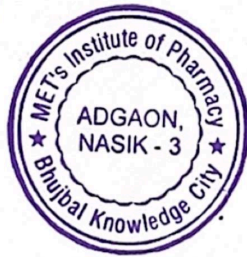
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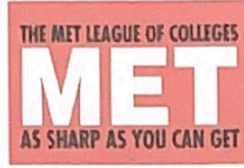


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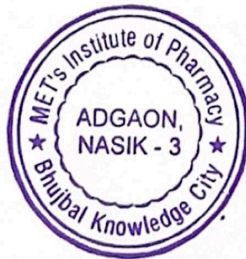
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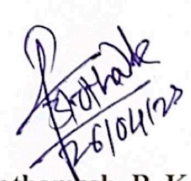
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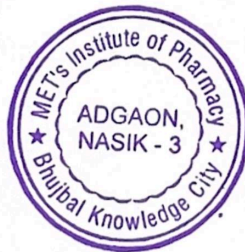
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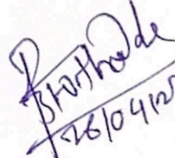
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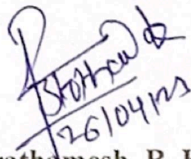
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CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, "**The Formulation of herbal mouthwash for Gingivitis**" submitted in the partial fulfillment of the requirement for the degree of Bachelor of Pharmacy, Savitribai Phule Pune University, Pune was carried out in the laboratories of **MET's Institute of Pharmacy, Bhujbal Knowledge City, Adgaon, Nashik 422003** during the academic year 2022-2023 by **Mr. Kaustubh K. Dhanke** under the guidance and supervision of **Mr. Rohan S. Ahire**.

This dissertation is now ready for examination.

A handwritten signature in blue ink, appearing to read "Rohan S. Ahire", with a long horizontal line extending to the right.

Mr. Rohan S. Ahire.

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Place: **Nashik**

Date: 20/09/2023



CERTIFICATE

This is to certify that the research work presented in this dissertation entitled, “**Formulation and Evaluation of Antimicrobial Herbal Tablet Soap**” submitted in the partial fulfillment of the requirement for the degree of Bachelor of Pharmacy, Savitribai Phule Pune University, Pune was carried out in the laboratories of MET’s **Institute of Pharmacy, Bhujbal Knowledge City, Adgaon, Nashik 422003** during the academic year 2022-2023 by **Mr. Ajinkya R. Gavali** under the guidance and supervision of **Prof. Rahul R. Sable**. This dissertation is now ready for examination.

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