3.4.1
DETAILS OF COLLABORATIVE ACTIVITIES (2022-23)

LIST OF COLLABORATIVE ACTIVITIES FOR FACULTY EXCHANGE, STUDENT EXCHANGE, INTERNSHIP, FIELD TRIP, ON-JOB TRAINING, RESEARCH

Academic Year 2022-23

Sr No.	Title of the collaborative activity	Number of collaborations/ linkages	Nature of activity	Activity Date/Duration
1	Research paper publications	15	Collaborative research with other institutes resulted in paper publications (No. of publications-22)	One year
	Patent Publications	01	Collaborative research with other institutes resulted in patent (No. of publications-2)	One year
2	Faculty exchange	13	Faculty attended seminar/webinar/FDP/workshop/training (No. of seminar attended- 18)	One day to two months
		05	Faculty as resource person (No. of faculty- 03)	One day
3	Field Trip	02	Institute (No of visit-2)	One day
Total no. of collaborations		**36**		

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Number of Collaborative Activities (Research Paper/Patent Published) (2022-23)

DETAILS OF COLLABORATIVE PAPER PUBLICATIONS

Sr no	Title of paper	Name of Author/s	Year, Volume, Issue, Page no	Name of journal	Collaborating Institute & Industry	ISSN number
1	Resveratrol and Its Natural Analogues Inhibit RNA Dependant RNA Polymerase (RdRp) of Rhizopus oryzae in Mucormycosis through Computational Investigations	Ismail Celik, **Mithun Rudrapal**, Pradeep Kumar Yadalam , Shankargouda Patil, **Sanjay G. Walode & Dhiraj V. Panke**	2022, 43(5) 4426-4443	Polycyclic Aromatic Compounds	Department of Chemistry, M. S. Ramaiah Institute of Technology, Bengaluru	1563-5333
2	Development and evaluation of antifungal soap with herbal antibacterial properties.	**Vibhavari M. Chatur** , Anuj N. Nahata , Prachi S. Pipada , Aniket K. Pacharne , Shubham Patil , Nazma M. Ansari , **Sanjay G. Walode**, Shashikant N. Dhole	2022, 9(7) 67-74	European Journal of Molecular & Clinical Medicine	PES Modern College of Pharmacy, Moshi, Pune.	2515-8260
3	Protective Effects of Diets Rich in Polyphenols in Cigarette Smoke(CS)-Induced Oxidative Damages and Associated Health Implications.	**Mithun Rudrapal,** J. Khairnar, Atul R. Bendale, Ranjan Kumar Sahoo, Rani S. Kankate, Randa Mohamed Ismail, Johra Khan, Prashanta Kumar Deb, Payal Kesharwani, Shiv Kumar Prajapati	2022, 11, 1217, 1-20	Antioxidants	MET's Institute of Pharmacy, Bhujbal Knowledge City, Nashik	2076-3921
4	Anthelmintic Potential Of Aqueous And Organic Extract Of Seeds Of Samanea saman (Merr)	Atul Baravkar, Nitin Aher, Ramdas Kale, Vitthal Chopade, **Vishnu Neharkar**, Makarand Puri, Padmanabh Deshpande	2023, 14 (3), 2285-2288	Journal of Pharmaceutical Negative Results	Modern College of Pharmacy Nigdi, Pune	0976-9234
5	Sonocrystallization: emerging approach for solubility enhancement of poorly aqueous soluble drug molecules	Prashant Ghode, **Shweta Ghode**, Atul Sayare, Asawari Pachauri, Sarita Chavan, Pratibha Hole, Anil Tankar	2022, 20 (16) 369-382	NeuroQuantology	JSPM Rajarshi Shahu college of Pharmacy and research, Tathwade, pune	1303-5150
6	Common Indian Medicinal Plants As Emerging Wound Healing Agents: Deep Insights Into	**Shweta P. Ghode**, Prashant D. Ghode, **Harshada H. Puranik** and Atul S. Sayare	2023, 14(1) 218-243	International journal of pharmaceutical	JSPM Rajarshi Shahu college of Pharmacy and research, Tathwade,	2320-5148

	Applications And Mechanisms			sciences and research	pune	
7	Development And Evaluation Of Antidiabetic Polyherbal Tablet Using Medicinal Plants Of Traditional Use	**Ms. R. C. Kolhe**, Rajesh Y. Chadhari	2023, 15,2,	International Journal of Current Pharmaceutical Research	Loksevak madhukarrao Chaudhari College of Pharmacy, Jalgaon	0975-7066
8	Synthesis, cytotoxicity, PDGFR inhibitory activity and docking Study of novel 2-aminoquinoline-3-carboxamide derivatives as Potential anticancer agents	Ganesh S. Mhaske, Ashim Sen , Ashish Shah , Dhanya Sen, Ganesh R. Phadtare ,Shyam S. Awate , Pramod H. Sakpal , Rahul H. Khiste ,**Vishnu S. Neharkar**	2023, 12(1) 292-305	European Chemical Bulletin	Department of Pharmacy,Sumandeep Vidyapeeth Deemed to be University,Vadodara, Gujrat	2063-5346
9	Antidiabetic Evaluation Of Isolated Compounds From Pomegranates (Punica Granatum) Peels In Alloxan-Induced Diabetic Rat Model	Bindurani L G P Ram, **Vishnu S Neharkar**	2022, 11 (8) 1880-1886	International Journal of Food and Nutritional Sciences	SGMSPM's Dnyanvilas College of Pharmacy Dudulgaon PCMC Pune	2319-1775
10	A Juxtaposition of Anterior Cervical Interbody Anastomosis With And Without Instrumental Blending	Dr. Yogesh Khandalkar, Dr. A Muhammed Anzar, Dr Somi Reddy, Dr. Rahul Agarwal, Dr. Vishnu Neharkar, Dr. Sagar Gurnani, Dr. Harsh Raithatha, **Dr. Aniket Garud**	2022, 20(19) 248-263	NeuroQuantology	Department of Orthopaedics, Dr. D.Y. Patil Medical College, Pimpri, Pune	1303-5150
11	Solubility Enhancement and Preparation of Antifungal Gel of Lawsone	Atul Sayare, Pallavi Kamble, Prashant Ghode, **Shweta Ghode**, Vrushali Pawar, Shivani Yeole, Pranjali Mashakhetri	2023, 26 (4) 1776-1780	Research Journal Of Pharmacy and Technology	JSPM Rajarshi Shahu college of Pharmacy and research, Tathwade, pune	0974-360X
12	Development and validation of RP-HPLC method for simultaneous estimation of Amitriptyline Hydrochloride and Propranolol Hydrochloride in pharmaceutical dosage form	Akanksha Gajmal, Ganesh S Andhale, **Vishnu S Neharkar**, **Kishori Hol**, Sapana M Nagare	2022, 20 (13) 1401-1410	NeuroQuantology	Allard College of Pharmacy, marunji, Pune	1303-5150

13	Design, Docking, Insilco ADME Prediction Of Novel Indole Based Benzamide ScaffoldsTargeting For Estrogen Receptor Alfa In Af-2Domain For Effective Anticancer Treatment	**B. J. Warude**, Dr. V. A. Chatpalliwar, S. N. Wagh, **Dr. V. S. Neharkar**, Dr. S. N. Deshmukh, Dr. R. Mhetreand Dr. **A.A.Garud**	2022, 13(5)2 959-2976	Journal of Pharmace utical negative results	S.S.D.J. College of Pharmacy, Neminagar,Ch andwad, Nashik	2229-7723
14	Design, docking, MD simulation and in-silco ADMET prediction studies of novel indole based benzamides targeting estrogen receptor alfa positive for effective breast cancer therapy	**Bhagyashri J. Warude** Sandip N. Wagh , Vivekanda A. Chatpalliwar , Merve Yildirim , Ismail Celik , **Mithun Rudrapal**, , **Aniket A. Garud**, **Vishnu S. Neharkar**	2023, 70 (2) 307-316	Pharmaci a	S.S.D.J. College of Pharmacy, Neminagar,Ch andwad, Nashik	2603-557X
15	Preliminary pharmacognostic, physicochemical and phytochemical evaluation of Sansevieria cylindrica leaves	Sunil Shewale, Vaishali Undale, Maruti Shelar, Vrushali Bhalchim, Mohini Kuchekar, **Bhagyashri Warude**, Vikas Wawale	2022, 13(1) 1253-1271	Journal of pharmace utical negative result	Modern College of Pharmacy, Nigdi.	2229-7723
16	Beforehand and aftermath of plating on anterior cervical spinal blend	Dr. Yogesh Khandalkar, Dr. A Muhammed Anzar, **Mrs. Bhagyashree Warude**, Dr. Ravindra B. Patil, Dr. Swati N. Deshmukh, **Ms. Priyanka Chhajed, Dr. Aniket Garud**	2022, 20(9) 5536-5545	Neuro Quantolo gy	Department of Orthopaedics, Dr. D.Y. Patil Medical College, Pimpri, Pune,	1303-5150
17	Embelin isolated from Embelia ribes derived silver nanoparticles and is application in breast cancer nanomedicine	Rutika Jagtap, **Aniket Garud, Bhagyashri Warude,** Shubhangi Puranik	2023, 73(3) 403-411	Materials today - proceedin gs	Modern College of Arts, Science and Commerce, Shivajinagar, Pune,	2214-7853
18	Formulation and Appraisal of innovative acyclovir emulsion	Ms. Sadhana Pawar, Mr. Pankaj Neje, Ms. SaimaShaikh, Ms. Shrishti Mukkirwar, **Mr. Anand Kakde**, Dr. Raksha Mhetre, **Dr. Aniket Garud**	2022, 20,(11) 6968-6980	Neoro Qunatolo gy	PES Modern College of Pharmacy, Moshi, Pune	1305-5150

19	Study Of The Properties And Behaviors Of Nanoparticles And Their Potential Applications In Medicine And Catalysis	Dr. Nidhi Jain, Dr.Swati N. Deshmukh , Vanita Gade, Payal Pansare, Trupti Kajale, **Manisha Khaire,** Harshada Gaikwad, Aarti Gaikwad	2023, 14, 3	Journal of pharmaceutical negative results	CAYMET's Siddhant College of Pharmacy, Sudumbare, Pune.	2229-7723
20	Waste to Wealth: An approach to HAp synthesis by different methods.	Arati Patil, **Anand Kakde**, Anuj Nahata, Dr Vinod Mokale, Dr N.H.Aloorkar, Pravin Parhad, Dr. Mital Patel and **Dr. Aniket Garud**	2023 12(10) 6154-6176	European chemical bulletin	Laddhad College of Pharmacy, Yelgaon, Buldana,	2063-5346
21	Novel film forming spray from tea tree leaves with special emphasis on development, formulation and evaluation	Swati Deshmukh, Vanita Gade, **Aniket Garud**, Rahul Dumbare, **Bhagyashri Warude**, Sunita maharaj, swapnil Girme, Sunita Shewalkar	2022,6 (5)517 9-5184	Journal of positive school psychology	Siddhant college of pharmacy, Sudumbare, Pune	2717-7564
22	Evaluation of novel topoisomerase II inhibitors as anti-cancer agents through advanced computational strategies	**Mrs. Bhagyashree Warude**, Mr. Amol B. Kumbhar, Dr. Jeevan Dhumal, **Ms. Priyanka Chhajed,** Amrita Verma Pargaien, Dr. Manisha Savaliram Kedar, Dr. Swati N. Deshmukh, **Dr. Aniket Garud** .	2022, 20 (19), 264-294	Neuroquantology	RJSPM's College of Pharmacy, Duldulgaon, Moshi Alandi Road, Pune	1303-5150

॥ विद्ययाऽमृतमश्नुते ॥

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POLYCYCLIC AROMATIC COMPOUNDS
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Resveratrol and Its Natural Analogues Inhibit RNA Dependant RNA Polymerase (RdRp) of *Rhizopus oryzae* in Mucormycosis through Computational Investigations

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ABSTRACT

Mucormycosis (or black fungus infection) is a life-threatening, but rare fungal infection with predominant occurrence in immunosuppressed patients following the SARS-CoV-2 infection. *Rhizopus oryzae* (*R. O.*) causes about 70% of all cases of mucormycosis. RNA dependent RNA polymerase (RdRp) is a key fungal protein implicated in the genome replication and multiplication of *R. oryzae*. In view of biological significance of resveratrol (RES), rich in grape skin extract, on various microbial infections and inflammatory diseases including gum infections and periodontitis, our present study was aimed at *in silico* investigation of RES and its two natural analogues, piceatannol (3,5,3′,4′-tetrahydroxy-*trans*-stilbene, PIC), and 3,5,4′-trimethoxy-*trans*-stilbene (TMS) for their development as successful antifungal agents targeting the *R. O.* specific RdRp to combat the deadly mucormycosis. Due to the unavailability of the three-dimensional structure of *R. O.* RdRp in the Protein Database Bank (PDB), the protein structure of RdRp was modeled using the target sequence of RT/Duplex (Set-Met) (PDB ID: 6AR3, 3.41 Å) by homology modeling. Using the modeled structure of *R. O.* RdRp, docking and molecular dynamics (MD) simulation studies were carried out in Schrödinger suite version 2021-2 software. The findings of docking, MD simulations and MM-PBSA binding energies conclude that the RES, PIC and TMS possess predictable and stable binding affinity/interactions to the *R. O.* RdRp. These bioactive compounds could potentially inhibit the activity of *R. O.* RdRp. Further, density function theory (DFT) analysis (B3LYP, 6-311 G* basis set) was performed, and results of DFT analysis indicate that the compound PIC could be a more potential inhibitor for *R. O.* RdRp over RES. In *in silico* drug-likeness and ADMET prediction studies, all of the compounds exhibited acceptable drug-likeness, the Lipinski's rule of five and pharmacokinetic parameters. Finally, it can be concluded that RES and its two natural analogues, PIC and TMS are the potential inhibitors of *R. O.* RdRp based on docking, MD and DFT studies.

ARTICLE HISTORY
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KEYWORDS
Mucormycosis; SARS-CoV-2; *R. oryzae*; RNA dependent RNA polymerase; resveratrol; antifungal

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DEVELOPMENT AND EVALUATION OF ANTIFUNGAL SOAP WITH HERBAL ANTIBACTERIAL PROPERTIES

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ABSTRACT

Herbal products have become increasingly important worldwide in medical and economic terms. Antifungal herbal antibacterial soap of Luliconazole were prepared & evaluated for dermal infection along with the addition of the oils and the extract of A*zadirachtaindica, Ocimum tenuiflorum, Aloe barbadensis miller, Santalum album.* The API used for the preparation of antifungal herbal antibacterial soap belongs to the antifungal class of azoles, inhibits the enzyme lanosterol demethylase, which is required for the production of ergosterol, which is a major component of the fungal cell membrane. It is mainly used in the treatment of skin infections such as athlete's foot, jock itch, and ringworm. The physicochemical parameters of formulations (Physical evaluation, pH, Foaming ability and foam stability) were determined. The results showed that the formulation have pH level nearly equal to skin pH, foaming index was excellent. The %drug release, % drug content, % solid content and microbial study was performed for API.

Keywords: Luliconazole, Herbal soap, Aloe Vera, Dermal infections

INTRODUCTION:

Luliconazole is an azoleantifungal that works by preventing the growth of the fungus. [1]

The skin diseases are common among all age groups and can be due to exposure towards microbes, chemical agents, biological toxin present in the environment, and also to some extend due to malnutrition [2]. Fungal infections are contagious and spread easily just close contact or sharing a comb or hairbrush with the infected person. They can be controlled in their initial stage by proper medications [1]. In this research the herbal medicated soap containing API, aloe vera gel, sandalwood oil, Neem oil, and Tulsi oil has shown the antibacterial and antifungal activity.

Sandalwood (*Santalum album)*

Sandalwood essential oil has many traditional uses. For centuries, East Indian sandalwood oil has been a popular ingredient in Ayurvedic medicine, the folk medicine of India. It's also

antioxidants

MDPI

Review

Protective Effects of Diets Rich in Polyphenols in Cigarette Smoke (CS)-Induced Oxidative Damages and Associated Health Implications

Mithun Rudrapal [1,*,†], Siddhartha Maji [2,†], Shiv Kumar Prajapati [2], Payal Kesharwani [2], Prashanta Kumar Deb [3], Johra Khan [4,5], Randa Mohamed Ismail [4,6], Rani S. Kankate [7], Ranjan Kumar Sahoo [8], Shubham J. Khairnar [9] and Atul R. Bendale [10]

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Abstract: Cigarette smoking has been responsible for causing many life-threatening diseases such as pulmonary and cardiovascular diseases as well as lung cancer. One of the prominent health implications of cigarette smoking is the oxidative damage of cellular constituents, including proteins, lipids, and DNA. The oxidative damage is caused by reactive oxygen species (ROS, oxidants) present in the aqueous extract of cigarette smoke (CS). In recent years, there has been considerable interest in the potential health benefits of dietary polyphenols as natural antioxidant molecules. Epidemiological studies strongly suggest that long-term consumption of diets (fruits, vegetables, tea, and coffee) rich in polyphenols offer protective effects against the development of cancer, cardiovascular diseases, diabetes, osteoporosis, and neurodegenerative diseases. For instance, green tea has chemopreventive effects against CI-induced lung cancer. Tea might prevent CS-induced oxidative damages in diseases because tea polyphenols, such as catechin, EGCG, etc., have strong antioxidant properties. Moreover, apple polyphenols, including catechin and quercetin, provide protection against CS-induced acute lung injury such as chronic obstructive pulmonary disease (COPD). In CS-induced health problems, the antioxidant action is often accompanied by the anti-inflammatory effect of polyphenols. In this narrative review, the CS-induced oxidative damages and the associated health implications/pathological conditions (or diseases) and the role of diets rich in polyphenols and/or dietary polyphenolic compounds against various serious/chronic conditions of human health have been delineated.

Keywords: cigarette smoke; oxidative damage; dietary polyphenols; COPD; cardioprotective; bioavailability

Original Article

Anthelmintic Potential Of Aqueous And Organic Extract Of Seeds Of Samaneasaman (Merr)

Atul Baravkar[1*] , Nitin Aher[2] , Ramdas Kale[3] , Vitthal Chopade[4] , VishnuN eharkar[5] , Makarand Puri[6] , Padmanabh Deshpande[7]

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DOI: 10.47750/pnr.2023.14.03.295

Abstract

The aim of this research study was to evaluate aqueous and organic extracts of seeds of Samaneasaman (Merr)for their anthelmintic activity using Indian adult earthwormPheretimaposthuma.Different concentrations of aqueous and organic extract ranging from 10 to 100 mg/ml were made and tested on said earthworm. These extracts were tested for bioassays which include time for paralysis and time for death of the worms. Aqueous as well as organic extract of seeds does notexhibited strong anthelmintic activity at concentration of 100 mg/ml. Lower concentrations also did not produced significant anthelmintic activity. The standard reference drug which is used for comparing anthelmintic activity of these extracts was piperazine citrate at concentration of 10 mg/ml.Both aqueous and organic extracts of seeds of Samaneasamanwere evaluated for and showed no potential anthelmintic activity.

KEYWORDS Anthelmintic activity, Extraction, Piperazine citrate.Samaneasaman, Pheretimaposthuma.

INTRODUCTION:

Helminthiasis is a worm infestation of humans and other animals even life stock and crops affecting health and food production respectively and has impact on global economic factor.[1] The worms which causes helminthiasis are called as helminths and the drugs which are used for treating helminthiasis are nothing but anthelmintics.[2]There are various types of worms such as hook worms, fluke worms, round worms, tape worms which causes helminthiasis. The names are given according to their shapes. The major organs which get affected in helminthiasis are stomach and intestine and major symptoms of sever helminthiasis include diarrhea, abdominal pain, general malaise and impaired cognitive development. Chronic helminthiasis by hook worm lead to intestinal bleeding and anemia.[3]Pheretima is a genus of earthworms. Pheretima posthuma are long cylindrical shaped worms having length of 15-30 cm. they are mostly found in moist soil and responsible for vegetables and humus. Their life span is 3 to 10 years.[4]

SamaneaSamannMerr (familyFabaaceae) commonly known as rain tree is easily available and widely spread plant in the world. It is widely cultivated throughout Mediterranean region and all tropical regions including temperate, tropical and subtropical regions due to its higher commercial scale.

Scientific classification of Taxonomy Kingdom: Plantae, Order: Fabales, Family: Fabaceae, Genus: SamaneaSaman, Species: S.saman and exhibits the synonym names of Samaneasamansuch as Albiziasaman, Enterolobiumsaman, Inga saman, Pithecellobiumsaman,and Mimosa saman.[5]

Downpour tree is effortlessly known for its qualities like umbrella-molded cover. Downpour tree is filled in the open and ordinarily arrives at 15-25m (50-80ft) in level. Samaneasaman is quite possibly of the main plant in the Pacific as an overhanging tree on little ranches and along street side regions in parks and field. The downpour tree is filled in the tropical climate and its wood has restricted need for cut bowls, make wood, and fuel wood. The leaves and cases of downpour tree are utilized as food because of the great nutritive substance and nitrogen

Sonocrystallization: Emerging Approach for Solubility Enhancement of Poorly Aqueous Soluble Drug Molecules

Prashant D. Ghode[1*], Shweta P. Ghode[2], Atul S. Sayare[1], Asawari D. Pachauri[1], Sarita T. Chavan[1], Pratibha M. Hole[1], Nikita D. Bachhav[1]Anil N Tankar[1]

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ABSTRACT

Drugs solubility and permeability both affect how bioavailable they are when taken orally. Insufficient bioavailability is frequently demonstrated by the low solubility and low dissolution rate of weakly water soluble medications in gastrointestinal fluids. An innovative particle engineering process called sonocryatallization involves applying ultrasonic energy to a soft or viscous molten mass that is disseminated in an immiscible liquid, thereby producing crystals having a large surface area which facilitates better drug dissolution. This review article comprehensively highlights the recent reports of solubility enhancement of a variety of drugs belonging to classes such asnon-steroidal anti-inflammatory drugs (celecoxib, flurbiprofen, ibuprofen, ketoprofen, naproxen, piroxicam), antihyperlipidemic drugs (fenofibrate and simvastatin), miscellaneous drugs (oxcarbazepine, progesterone, salbutamol, and rosiglitazone), and natural products (curcumin and plumbagin) through (melt)-sonocrystallization approach. This article will definitely provide great help to formulators and/or researchers involved in developing or applying emerging techniques for enhancing the aqueous solubility of drug molecules.

Keywords: Sonocrystallization, Solubility Enhancement, Techniques, Mechanism, Drugs, BCS
DOI Number: 10.14704/NQ.2022.20.16.NQ88041 **NeuroQuantology2022;20(16):369-382**

1. INTRODUCTION

When a medicine is ingested, its delivery mechanism dissolves into gastric or intestinal fluids, where it then penetrates gastrointestinal cell membranes to be absorbed. Drugs' solubility and permeability both affect how bioavailable they are when taken orally. To acquire the correct drug concentration in plasma for the intended pharmacological reaction, solubility is a crucial factor. According

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COMMON INDIAN MEDICINAL PLANTS AS EMERGING WOUND HEALING AGENTS: DEEP INSIGHTS INTO APPLICATIONS AND MECHANISMS

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COMMON INDIAN MEDICINAL PLANTS AS EMERGING WOUND HEALING AGENTS: DEEP INSIGHTS INTO APPLICATIONS AND MECHANISMS

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ABSTRACT: Any bodily harm, such as damage to the skin's epidermis and disruption of its normal architecture and function, is referred to as a wound. The significance of wound healing has been known since ancient times. Several attempts have been made to design innovative wound dressings composed of the finest materials for speedy and successful wound healing. Medicinal herbs greatly aid the wound healing process. Many researchers have concentrated in recent decades on creating innovative wound dressings that combine medicinal plant extracts or their purified active components, which might be utilized instead of standard wound dressings. Several researchers have looked at the mechanisms of action of different herbal medicines in the wound healing process. This work aims to emphasize and examine the mechanical viewpoint of wound healing mediated by natural compounds. Some herbal medications stimulate re-epithelialization, angiogenesis, granulation tissue development, and collagen fiber deposition by increasing the production of vascular endothelial growth factor (VEGF) and transforming growth factor (TGF-α). Other wound dressings containing herbal medicines decrease the production of tumour necrosis factor-α (TNF-α), interleukin-1β (IL-1β) and inducible nitric oxide synthase (iNOS), resulting in anti-oxidant and antiinflammatory characteristics at different stages of the wound healing process. Aside from the growing public interest in traditional and alternative medicine, using herbal medicine and natural products for wound healing has a number of advantages over using conventional medicines, including greater effectiveness due to multiple mechanisms of action, anti-bacterial activity, and long-term wound dressing safety.

Keywords: Anti-bacterial activity, Anti-oxidant activity, Anti-inflammatory activity, Herbal medicine, Natural products, Wound healing

INTRODUCTION: It is a worldwide problem to design and produce an adequate wound dressing for treating acute and chronic wounds.

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Original Article

DEVELOPMENT AND EVALUATION OF ANTIDIABETIC POLYHERBAL TABLET USING MEDICINAL PLANTS OF TRADITIONAL USE

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ABSTRACT

Objective: The aim of the present study is to develop and evaluate poly herbal tablet prepared for management of diabetes with enhanced disintegration time.

Methods: The polyherbal extract prepared using methanolic extract of selected traditionally used medicinal plants such as *Adenanthera pavonina, Kigelia africana, Parkia biglandulosa* and *Syzygium jambos*e (1:1:1:2) was evaluated in the alloxan monohydrate induced diabetic rat model. The polyherbal tablets were prepared by wet granulation method with excipients microcrystalline cellulose, dicalcium phosphate dehydrate and sodium starch glycolate. After preformulation studies tablets were evaluated by using weight variation, hardness, friability and disintegration time. The diabetic rats treated with polyherbal extract were compared with the diabetic control rats group.

Results: Positive results were obtained in the observed parameters, thus favoring the use of the plants. Pre-formulation study revealed that all the evaluated parameters were found to be within the acceptable limits. The weight variation of the formulated tablets was 1.43 % RSD. The disintegration time of the formulations was found to be 9.50 minutes. The tablets also underwent accelerated stability over the period of three months. No marked changes were observed in all the parameters evaluated during three months of accelerated stability study.

Conclusion: Laboratory-scale preparation of polyherbal tablet can lead to new powerful and stable oral dosage formulations for diabetes mellitus and lighten the synergistic area of action of herbs.

Keywords: Medicinal plants, *Adenanthera pavonina, Kigelia africana, Parkia biglandulosa*, *Syzygium jambose*, Polyherbal tablet

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INTRODUCTION

Plants have played a unique integral role in providing food, medicine, clothing, shelter, etc. Natural products have been extensively explored to discover new drugs [1]. In fact, plants have been used for medicinal purpose since 5000 y [2]. Approximately 70-90% of the population in developing countries continues to use ancient drugs based on plant extracts [3]. The inherent usefulness of traditionally used medicinal plants should be encouraged for worldwide reception and for the benefit of humanity. Scientific assessment and authentication of traditional medicine are being essential to open any other possibilities for the development of alternate medicine and therapeutic approaches [4]. The most influential and promising elements are the secondary metabolite present in the plants [5]. Secondary metabolites of plant origin are molecules or macromolecules biosynthesized in plants, including alkaloids, glycosides, tannins, lignans, etc. that have a variety of beneficial therapeutic uses for humans, such as their antiallergics, antitumor, antioxidants, anti-inflammatory, antidiabetic activity [6]. Plants are always are the presentative source of medicine as many more drugs which are used presently have been derived from them directly or indirectly [7]. There is a large collection of plants with antidiabetic potential only some of these have been scientifically proven and many more have yet to be explored and tested [8]. The prevalence of diabetes mellitus is increasing compared to recent years; therefore, various researches are being to discover a better medicine to cure this disease [9]. Herbal medicines are usedin treating diabetes mellitus has become important throughout the world. The world Health Organization has also suggested and authorized this drilling, particularly in countries where access to treating diabetes is not enough. There is widespread interest in using natural products with antidiabetic activity, by virtue of side effects related to the usage of insulin and oral hypoglycemic agents. The available literature shows that there are more than 400 species of plants that show hypoglycemic activity [10]. Current diabetes mellitus medications emphasisonmonitoring to control blood glucose levels of the blood to a normal level. During the treatment modern synthetic drugs causes side effects with some serious medical complication. Hence, acts as savior as an alternative medication treatment as traditionally used medicines have been used since long time [6].

This study has focused on four plants which are *Adenanthera pavonina, Kigelia africana*, *Parkia biglandulosa* and *Syzygium jambose* to developed new polyherbal formulation useful to treat diabetes mellitus. *Adenanthera pavonina* belongs to the Mimosaceae family, commonly known as the red-beaded tree. It is an important medicinal plant of the "Indian subcontinent". Various parts of Adenanthera pavonina being traditionally used plants, have been used in the treatment of gout, diabetes, diarrhea, asthma, inflammation, rheumatism, tumors and ulcers and as a tonic [11]. Earlier phytochemical research has shown that the leaves contain octacosanol, dulcitol, beta-sitosterol glycosides, flavones and Stigmasterol and the alcoholic extract of the leaves contains an alkaloid. It is reported to have a large number of flavonoids, mainly gallic acid, terpenoids, tannins, sterols (beta-sitosterol, beta-sitosterol-3β-D-glucoside), triterpinoids (nonacosane and entriacontane) and saponins (sapogenins) [12, 13]. *Kigelia Africana* (Bignoniaceae), known as the african sausage tree, is traditionally used as medicinal planteffective for a wide range of therapeutic activities, such as antidiabetic, anticancer, antimalarial, antibacterial, analgesic, antileprotic and antidiarrheal, anti-inflammatory, anti-urolithiasis, antioxidant, etc. [14], Whereas several compounds have been recognized from the plant such as lupeol, β-sitosterol, sitosteryl β-D-glucoside, canofilol, pomolic acid, hydroxypomolic acid, iridoids, naphthoquinones and coumarins with potential pharmacological activity [15, 16]. *Parkia biglandulosa* is a large, beautiful, evergreen tree known as the badminton ball tree because of its brown beaded flower heads that resemble a badminton ball [17]. Preliminary qualitative tests revealed the presence of plant metabolites such as carbohydrates, alkaloids, tannins, flavonoids, saponins, and glycosides. The secondary metabolites present in *Parkia biglandulosa* provide a basis for its traditional uses [18]. Various plants of parkia species are traditionally used to treat different ailments, such as diabetes, diarrhea, wounds, hypertension, cough, chronic hemorrhoids, conjunctivitis, and measles [19]. *Syzygium jambos* (Myrtaceae) has traditionally been used to treat asthma, chronic

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SYNTHESIS, CYTOTOXICITY, PDGFR INHIBITORY ACTIVITY AND DOCKING STUDY OF NOVEL 2-AMINOQUINOLINE-3-CARBOXAMIDE DERIVATIVES AS POTENTIAL ANTICANCER AGENTS

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Abstract

The goal of this work was to synthesize new substituted 2-aminoquinoline-3-carboxamide derivatives from substituted anilines utilizing the Vilsmeier-Haack reaction, and then to test these compounds for in vitro anticancer activity and molecular docking in order to identify prospective lead molecules. Substituted aniline, acetanilide, 2-chloro-3-carbaldehyde to carboxylic acid as well as coupling provide the lead compounds and were characterized by physical and spectral methods. In vitro cytotoxicity testing was done by using MTT assay method. Research on the binding interaction of the most effective drugs was conducted using AutoDock molecular docking tool. Novel Series of substituted 2-aminoquinoline-3-carboxamide derivatives have been synthesized as well as verified utilizing different spectral methods for example mass spectrometry, carbon-13 nuclear magnetic resonance, nuclear magnetic resonance, and infra-red. In a cytotoxicity testing vs a breast cancer cell line, synthesized compounds showed some potential (MCF-7). Four derivatives 6b, 6c, 6j, and 6o were shown to have more efficacy than Sunitinib in an in vitro cytotoxicity assessment research. Moreover compounds 6b, 6c, 6j, and 6o exhibited higher binding score at platelet-derived growth factor receptor active sites (PDB: 5GRN) compared with standard sunitinib. This article described the synthesis of sixteen novel substituted aniline results in substituted 2-aminoquinoline-3-carboxamide derivatives. The results showed that compounds 6b, 6c, 6j, and 6o exhibited promising anticancer activity. Sunitinib is currently the only approved inhibitor of PDGFR; however the 2-aminoquinoline-3-carboxamides showed promise as a more selective alternative. The above findings were also supported by molecular docking studies.These findings may serve as models for future research and derivatization, opening the door to the development of effective and precise PDGFR inhibitors.

Key words: Docking study, Quinoline-3-carboxamides, Vilsmeier–Haack reaction Synthesis, Cytotoxicity.

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Antidiabetic Evaluation Of Isolated Compounds From Pomegranates (Punica Granatum) Peels In Alloxan-Induced Diabetic Rat Model

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ABSTRACT

Pomegranates fruits have innumerable health benefits and its implication in diseases cure have been widely recognized since ancient time. Moreover, pomegranate fruits, seeds and peels are intensively used in traditional medicine as a natural therapy. It contains numerous valuable ingredients such as flavonoids, ellagitannin, punicalagin, ellagic acid, vitamins and minerals. The principal constituents including punicalagins and ellagitannin are responsible for immeasurable health benefits due to its strong antioxidant activity. Additionally, constituents of pomegranate show health promoting effect through the modulation of physiological and biochemical pathways. Recent evidences suggested that pomegranates fruits, peels extract revealed the decrease in blood glucose level when compared with non-treated diabetic rodents. In this way, the current investigation work was affirmed that the extract has significant hypoglycaemic impact.

Keywords- Pomegranates, Punica granatum, Antidiabetic activity, Alloxan induced, hypoglycaemic activity.

Introduction

Punica granatum L (pomegranate) is a deciduous shrub, native to Iran. Pomegranate has extensively been used as a source of traditional medicine. Pomegranate fruit has medicinal properties such as anti-inflammatory and antibacterial activities. The pomegranate seed oil has inhibitory effect on skin and breast cancers. The pomegranate seed oil has phyto estrogenic compounds and the fruit is rich in phenolic compounds with strong antioxidant activity. The fruit and bark of pomegranate are used against intestinal parasites, dysentery, and diarrhoea. The juice and seeds are considered a tonic for throat and heart. It is used to stop nose and gum bleeds and treating haemorrhoids. Today, Punica granatum L. as a fruit

Original Research Article

A JUXTAPOSITION OF ANTERIOR CERVICAL INTERBODY ANASTOMOSIS WITH AND WITHOUT INSTRUMENTAL BLENDING.

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ABSTRACT

			Trauma		Degenerative		Others		Number of levels Fused			Anatomic Levels of Fusion				Fusion Rate			Speed of Fusion				Outcome			Loss of cervical lordosis/Segmental Kyphosis	
Sr.	Age	Sex	Instrumented	Non instrumented	Instrumented	Non instrumented	Instrumented	Non Instrumented	Single	2 Levels	3 or More	C3-C4	C4-C5	C5-C6	C6-C7	Fusion	Pseudoarthrosis	Doubtful	At 6 Month	At 9th Month	At 12th Month	At 18th Month	Excellent	Good	Fair	Seen	Not Seen
1	65	M	Y	N	N	N	N	N	Y	N	N	N	N	Y	N	Y	N	N	Y	N	N	N	N	Y	N	N	N
2	30	M	N	N	N	Y	N	N	Y	N	N	N	N	Y	N	Y	N	N	Y	N	N	N	N	Y	N	N	Y
3	41	M	N	N	Y	N	N	N	N	N	Y	N	N	Y	N	Y	N	N	N	Y	N	N	N	N	N	N	Y
4	31	M	Y	N	N	N	N	N	N	Y	N	N	N	N	Y	Y	N	N	Y	N	N	N	N	N	Y	N	Y
5	55	M	N	N	Y	N	N	N	Y	N	N	N	N	N	Y	Y	N	N	N	N	Y	N	Y	N	N	N	Y
6	58	M	N	N	N	Y	N	N	Y	N	N	Y	N	N	N	Y	N	N	Y	N	N	N	N	N	N	N	Y
7	72	M	N	N	Y	N	N	N	N	Y	N	N	N	N	N	Y	N	N	N	Y	N	N	N	N	N	N	Y
8	25	M	Y	N	N	N	N	N	N	Y	N	N	N	Y	N	Y	N	N	Y	N	N	N	N	Y	N	N	Y
9	36	M	N	Y	N	N	N	N	Y	N	N	N	N	N	Y	Y	N	N	N	Y	N	N	N	Y	N	N	Y
10	70	M	N	N	Y	N	N	N	Y	N	N	N	Y	N	N	Y	N	N	Y	N	N	N	N	N	N	N	Y
11	44	M	N	N	N	Y	N	N	Y	N	N	N	N	Y	N	Y	N	N	Y	N	N	N	N	N	Y	N	Y
12	32	M	Y	N	N	N	N	N	N	Y	N	N	N	N	N	Y	N	N	Y	N	N	N	N	Y	N	N	Y
13	49	M	N	N	N	Y	N	N	Y	N	N	N	N	Y	N	N	Y	N	Y	N	N	N	N	Y	N	N	Y
14	53	M	N	N	N	Y	N	N	Y	N	N	N	N	Y	N	Y	N	N	Y	N	N	N	N	N	N	N	Y
15	22	M	N	N	N	Y	N	N	Y	N	N	N	N	N	Y	Y	N	N	N	Y	N	N	N	N	N	N	Y
16	27	F	Y	N	N	N	N	N	Y	N	N	N	N	Y	N	Y	N	N	Y	N	N	N	N	N	N	N	Y
17	39	F	N	N	N	Y	N	N	Y	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	Y	N	N	Y
18	62	F	N	N	Y	N	N	N	Y	N	N	N	N	N	N	Y	N	N	Y	N	N	N	N	Y	N	N	Y
19	50	F	N	N	N	N	N	Y	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	Y	N	N	N	Y
20	46	F	N	N	N	Y	N	N	N	Y	N	N	N	Y	N	N	N	Y	N	Y	N	N	N	Y	N	Y	N

Major dictum of the study was to investigate the efficacy of anterior cervical discectomy, iliac crest bone grafting, and fixation with anterior self-locking titanium cervical plates. In the field of spinal surgery, anterior cervical decompression and interbody fusion are frequently used to treat a range of problems that fall under the headings of traumatic injuries, cancer tumours, degenerative disc disease, Tuberculosis, and other ailments. An established surgical procedure for treating cervical degenerative disease, anterior cervical spine surgery has a high success rate and has been shown to have great long-term outcomes. The rationale for many surgical treatments is still debatable, and serious consequences that could result in neurological dysfunction or fatalities are possible. A six-month follow-up period was included in a prospective research of 20 patients of anterior cervical interbody fusions performed at our institute, Dr. D.Y. Patil Medical College, Hospital and Research Centre, Pimpri, Pune, between June 2018 and August 2020. According to a predetermined performa, a thorough history and clinical

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RESEARCH ARTICLE

Solubility Enhancement and Preparation of Antifungal Gel of Lawsone

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ABSTRACT:

Lawsone is the principle colouring compound of Henna, *Lawsonia inermis* Linn. (Fam. Lythraceae). Lawsone shows low bioavailability because it is insoluble in water and less soluble in other solvents. The objectives of the study were to increase the solubility and dissolution rate of lawsone using by forming β-cyclodextrin (β-CD) inclusion complex and formulating this into a gel formulation for topical use. **Method:** The inclusion complex were prepared by taking lawsone to β-CD weight ratios of 1:1, 1:2, 1:4 and 1:8. By this technique solubility and dissolution rate of lawsone wassignificantly increased. The inclusion complex was characterized by FTIR and DSC. **Results:** Antifungal activity of lawsone gel was evaluated on *Candida albicans* fungi. The *in-vitro* drug release study was performed on goat skin. Antifungal activity of lawsone and β-CD complex (1:2) showed the biggest zone of inhibition as compared to other inclusion complexes. **Conclusion:** The antifungal activity of gel of inclusion complex of lawsone and β-CD showed significant antifungal activity.

KEYWORDS: Lawsone, β-cyclodextrin, Inclusion complex, Carbopol 940, Gel, Antifungal activity.

INTRODUCTION:

Henna, *Lawsonia inermis* Linn. (Fam. Lythraceae) contains a red-orange coloured compound, known as Lawsone (2-hydroxynaphthalene-1,4-dione) (Figure 1)[1]. It has limited solubility in water at 0.2%, soluble in ethanol, methanol, ethyl glycol and dimethyl formamide[2]. Henna is well known to be useful in treating skin infections like tinea and also possess antibacterial property which is mainly due to the lawsone content[3]. But lawsone has very low bioavailability because of its limited water solubility and rapid rate of elimination from the body[4].

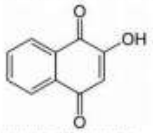

Figure 1: Chemical Structure of Lawsone

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Cylodextrin (CD) inclusion complexation is one of the approaches used to enhance the solubility and bioavailability of poorly water soluble drugs[5]. There are numerous examples in the literature of β-CD complexes of drugs used to improve solubility and bioavailability[6,7].

Therefore, the key objective of present study was to prepare and evaluate the inclusion complex of lawsone using β-CD to increase the solubility and bioavailability of the drug. Another objective of this study was to prepare a topical gel by using lawsone-β-CD inclusion complex and to evaluate its antifungal activity.

MATERIALS AND METHODS:

Chemicals and reagents:

Standardized lawsone (99%) was obtained from Sigma Aldrich, India. β-CD, carbopol-940, polyethylene glycol, triethanolamine, methyl paraben, propyl paraben, ethanol were purchased from Thermosil Fine Chem Industries, Pune, India. Distilled water was used throughout this work.

Development and validation of RP-HPLC method for simultaneous estimation of Amitriptyline Hydrochloride and Propranolol Hydrochloride in pharmaceutical dosage form.

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ABSTRACT:

Reverse phase high performance liquid chromatography method has been developed and validated for simultaneous estimation of Amitriptyline Hydrochloride and Propranolol Hydrochloride in dosage form. This method uses C18 agilent column with 4.6 x 250mm length and 5µm particle size of packing material. Mobile phase is methanol: water pH 6 with TEA (70:30) with 1ml/min flow rate and 20µl volume injected. UV detection was carried out at 216 nm and the column temperature is 250C. The retention time of Amitriptyline Hydrochloride was 3.882 min. and 6.384 min of Propranolol Hydrochloride. The method is validated and calibration curve observed was linear in the concentration range of 5-25µg/ml for Amitriptyline Hydrochloride and 20-100µg/ml for Propranolol Hydrochloride. The method is validated for linearity, accuracy, precision, limit of detection and quantification, ruggedness and robustness.

Key Words: Amitriptyline Hydrochloride, Propranolol Hydrochloride, RP-HPLC, UV Detection.

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1. INTRODUCTION

Amitriptyline Hydrochloride is tricyclic antidepressant drug and is approved for the treatment of major depression.[1] It is 3-(10,11-dihydro-5Hdibenzo[a,d]cyclohept-5-ylidene) propyl dimethylamine hydrochloride. It increase noradrenergic or serotonergic neurotransmission by blocking norepinephrine or serotonin transporter at presynaptic terminals.[2] It contain tricyclic ring system with an alkyl amine substituent on the central ring. may cause sedation.[3] Propranolol Hydrochloride is a non-selective β-adrenergic antagonist with no intrinsic sympathomimetic activity. It is used in the hypertension, angina pectoris, myocardial infraction and cardiac arrhythmias.[4] It is highly lipophilic and absorbed after oral administration.[5] Propranolol Hydrochloride (RS)-1-[(1- methyl ethyl) amino]-3-(napthalen-1-yloxy) propan-2-hydrochloride is antihypertensive. It competitively blocks both B1

Original Article

Design, Docking, Insilco ADME Prediction Of Novel Indole Based Benzamide Scaffolds Targeting For Estrogen Receptor Alfa In Af-2 Domain For Effective Anticancer Treatment

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Abstract

Aim: To discover some novel indole based benzamide scaffold and their screening through in silico approach.

Background: Designed 7-substituted -1-(4-(piperidine-1-yl methoxy)benzyl)-1H-indole-3-carboxamide derivatives targeting on ERα modulators, several interactions between the ligand and amino acid residues that would probably elicit fruitful modulation of the receptor using 4XI3 pdb of ERα.

Objective: Studied in silico novel molecules of 7-substituted -1-(4-(piperidine-1-yl methoxy)benzyl)-1H-indole-3-carboxamide derivatives and test their abilities to modulate ER-α through human cell line cultures as anti-breast cancer agent.

Method: Designed novel 7-substituted -1-(4-(piperidine-1-yl methoxy) benzyl)-1H-indole-3-carboxamide derivatives and in silico method involved to study their virtual screening for the receptor modulation by molecular docking studies using Auto-dock Vina in PyRx. To determine the binding interactions for best-fit conformations in AF-2 binding site of the ERα receptor studied using Discovery studio visualizer (DSV) and ADME predictions by Swiss ADMET.

Result : The result based on the docking studies, The designed ligands B73bi, B73axiv B73bvi ,B73av, B73avi, B73avi, B73axiv, B74ai B74ai and B74bxiv have shown better Binding Affinity than rest, as compare with the standard drug Bazedoxifene (Baz). The observed result explained the presence of substitution at 7^{th} position of the benzamide on indole scaffold containing alkyl, ester, amide, N,N diamine groups shows promising interactions like BZD. Therefore, B73aiii carrying halide (G Score= -10.3), B73av carrying methoxy benzoate (G Score = -9.9), B73axiv carrying ethoxy (G Score= -9.4) were found to interact suitably with the active amino acid residues in the targeted cavity where reported interaction with the standard to be involved.

Conclusion: The most promising substituted benzamide analogue on indole can be synthesized and evaluated to verify the ani-cancer activity for breast cancer.

PHARMACIA

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Research Article

Design, docking, MD simulation and *in-silco* ADMET prediction studies of novel indole-based benzamides targeting estrogen receptor alfa positive for effective breast cancer therapy

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Abstract

Breast cancer is one of the most common malignancies in women, afflicting millions of lives each year. Our current study suggests that the development of the most promising 7-substituted -1-(4-(piperidine-1-yl methoxy)benzyl)-1H-indole-3-carboxamide derivatives results in potent anticancer agents through *in-silico* investigations. The molecular docking was performed against estrogen receptor alpha (ER-α) positive (PDB ID: 3UUD) of breast cancer cells to anticipate the binding modes of the designed compounds and the likely mode of action. The interactions between the ligands and amino acid residues were thoroughly elucidated. The stability of the docked protein-ligand complexes was further confirmed by 100 ns molecular simulations methods. From *in-silico* studies, indole-based benzamides exhibited satisfactory physicochemical, drug-likeness and toxicity properties. To conclude, the most promising substituted benzamide analogs on the indole ring could serve as a possible modulator against ER-α positive breast cancer.

Keywords

breast cancer, estrogen receptor alpha, indole scaffold, benzamide, bazedoxifene, docking, molecular dynamics, swiss admet

Introduction

Breast cancer (BC) affects women globally at any age after puberty with increasing incidence in the future. Human breast cancer is the second largest cause of death in women. In 2020, there was 2.3 million women diagnosed with BC, with 685 000 deaths worldwide. As of the end of 2020, there were 7.8 million active instances of BC in women over the previous five years. Around 50% of BC develops in women due to BC risk factors other than gender, such as being female or being over the age of 40. Obesity, radiation exposure, excessive alcohol and tobacco consumption, reproductive disorders, and a family history of BC are all risk factors for BC (Ginsburg et al. 2020; Stoltenberg et al. 2020). Estrogen and the estrogen receptor (ER) are known to be prominent drivers of breast carcinogenesis and progression. In the case of estrogen-sensitive BC, the first-line treatment was hormonal therapy (Ariazi et al. 2006; Stein et al. 2006; Yager and Davidson 2006; Stingl 2011; Yue et al. 2013; Shoda et al. 2015; Ouellet et al. 2016). ER is in charge of managing the record of atomic DNA, which is thought to be a big part of breast malignant growth signal generation and provides a book biomarker of BC (Sotiriou et al. 2013). Selective estrogen receptor modulators (SERMs) that act on the ER, have been used in the clinical treatment of BC. SERMs are designed to compete with endogenous estrogens in order to regulate the activation of eestrogen receptors (Huang et al. 2010). Ligand demonstrates an ER-mediated mechanism of action regulated by two distinct activation functions (AFs), AF-1 at the N terminus and AF-2 in the ligand-based domain (LBD). Growth factors regulate AF-1 activity via the MAP kinase pathway, whereas AF-2 activity is regulated by ligand binding to ER. According to recent structural studies, ligands modulate AF-2 activity by directly changing the structure of the LBD. A conformational change involving the translocation of helix-12, which is located on the C-terminus of the LBD, is requisite for AF-2 action (Shiau et al. 1998). SERMs bind to the ER and can function as receptor agonists or antagonists by altering receptor conformation and modifying co-activators (Jordan 2007; Swaby 2007; Pinkerton and Thomas 2014). Tamoxifen and raloxifen are two examples of SERMs that have been used in first and second line clinical treatment for ER resistant BC (Egea et al. 2000; Miller et al. 2001; Lindsay et al. 2009; Singla et al. 2018; Hendy et al. 2019; Tsuji et al. 2022).

The work presented here is based on the structure-based drug design (Srinivasan et al. 2017; Pang et al. 2018) which has focused on the computational investigation of indole-based benzamides targeting the AF-2 domain of ER (Brzozowski et al. 1997; Lavecchia and Di Giovanni 2013; Xiong et al. 2017). The entire ER protein consists of five different domains. Stimulation function 1 (AF-1) is found in domain A/B (N-terminal), and it participates in ER transcriptional activity by changing conformation in response to oestrogen activation (Lionta et al. 2014; Alsayari et al. 2017). The crystal structure (PDB ID: 3UUD) of the homo dimer estrogen receptor alpha (ER-α) represents a human estrogen receptor-ligand-binding domain in complex with estrogen. It provides a suitable guiding template for studying the binding interactions of designed ligands within the AF-2 cavity where interactions can be viewed up to the proximity of 0.02 Å (Martinkovich et al. 2014).

Bazedoxifene (BSD, 1H-indo-5-ol, 1-[[4-[2(hexahydro-1H-azepin-1-yl)ethoxy]methyl] acetic acid, 2-(-4-hydroxyphenlyl)-3-methyl) is an indole derivative and third-generation SERM, which acts as an estrogen receptor antagonist in breast cancer (Huang et al. 2010; Sotiriou et al. 2013). This novel indole derivative functioned as a first-hand scaffold to work on and prepare congeners that would have similar binding properties in AF2 domain and modulate the transcriptional effects of ER-α. The chemical structure of the bazedoxifene is given in Fig. 1 (Riggs and Hartmann 2003).

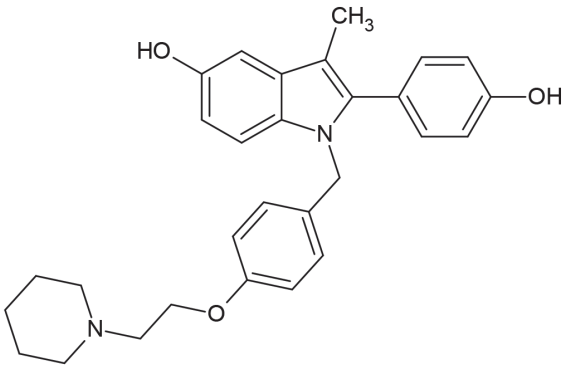

Figure 1. Chemical structure of bazedoxifene.

In designing, the scaffold of indole-based analogues involves substitution at the 7th position with benzamide, 3rd position with amide group and 3□ position with different alkyl group with ester and alkyl halide functional group and 1st position substituted with 1-((4ethylphenoxy)methyl)piperidine and 1-((4ethylphenoxy)ethyl)piperidine is mentioned in Table 1. The important amino acid residues (3UUD) that have been comprehensively studied and reported to constitute partly the AF-2 domain of ER-α, are His 524, Arg 394, Leu 428 (conventional hydrogen interactions), Met 343, Met 421, Thr 347, Leu 349, Glu 353, Gly 521 (van der Waals force of attractions), and Phe 404 (Pi –Pi stack interactions) have been reported between estrogen hormone and ER-α in 3UUD (Makar et al. 2020).

Materials and methods

Molecular docking

The molecular docking software, AutoDock Vina (Virtual screening tool) was employed for the docking study, and the Biovia Discovery Studio visualizer was used to study the 2D and 3D interactions of the ligand-receptor complex after docking. Molecular docking analyses were performed via the CB-Dock server (http://clab.labshare.cn/cb-dock/php/) (Liu et al. 2020). CB-Dock automatically

Original Article

Preliminary pharmacognostic, physicochemical and phytochemical evaluation of *Sansevieria cylindrica* leaves

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Abstract

Background: *Sansevieria cylindrica* (*S. cylindrica*) Bojer ex Hook. (Asparagaceae) is an indoor ornate plant. The plant was conventionally utilized by the local healers during deliberate, and accidental injuries. The pharmacognostic study of this plant with different parameters was very poorly explored. Hence, the present investigation was carried out to explore, and evaluate different characteristics of the plant. **Aim:** To explore the preliminary pharmacognostic, physicochemical, phytochemical, microscopic, and phytoconstituents potential of *S. cylindrica* leaves for authentication of the plant. **Method:** The morphology, and microscopic properties of plant leaves were evaluated. The herbal standardization was then carried out based on physicochemical parameters including ash values, extractive values, and fluorescence analysis. The qualitative evaluation of phytoconstituents was performed using different chemical tests followed by quantitative estimation of important phytochemical, and analytical profiling of extract. **Result:** The macroscopy has studied for the basic features like colour, size, odor, shape, taste, surface, and fracture of plant leaves. The microscopical study confirms the presence of vessels, vascular bundles, lignified fibers, and calcium oxalate crystals etc. Physicochemical evaluation showed less quantity of inorganic matter present in the plant. Preliminary phytochemical analysis confirms the presence of glycosides, phenolic compounds, tannins, saponins, flavonoids, steroids, and carbohydrates. Instrumental analysis has given an idea about the identification, and confirmation of various phytoconstituents in the extract. **Conclusion:** The result of the present study can be meaningfully used as a reference for the standardization, and quality control of *S. cylindrica* and for the authentication, and preparation of monograph of the plant.

Keywords: *Sansevieria cylindrica,* Asparagaceae, pharmacognostic, phytochemical, physicochemical study.

1. INTRODUCTION

The utilization of medicinal plants against various health issues is a historical practice in many developing countries, and this kind of knowledge has been transmitted among communities from one generation to other[1]. Medicinal plants are considered a potential source of raw materials, which are used for the manufacturing allopathy drugs. Many of the bioactive constituents of plants are being explored through their synergistic effect with chemicals and using synthetic chemistry to develop new drugs[2-3]. The medicines derived from plants are relatively considered safe, and affordable as compared to the synthetic alternatives offering profound therapeutic benefits[4]. However, in developed countries, the use of alternative medicines is always restricted because of a lack of documented evidence to its various assessment, and quality control measures[5]. Hence, its standardization through appropriate depiction of its pharmacognostic, physicochemical, and phytochemical parameters is a crucial stage to confirm the reproducible quality of herbal medication to aid us to justify its safety, and effectiveness.

BEFOREHAND AND AFTERMATH OF PLATING ON ANTERIOR CERVICAL SPINAL BLEND

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ABSTRACT

In the field of spine surgery, anterior cervical decompression and interbody fusion are frequently used to treat a wide range of illnesses like degenerative disc disease, traumatic conditions, tuberculosis, and tumours. The prime motto of the research paper is to provide the detail account of cervical fusion plating technique and to provide the proper inclusion exclusion criteria along with the case study to interns and specialist doctors. Our reports suggest up to 87% recovery and paper provides the steps of surgery as well as the follow Up Protocol and parameters to be accessed during the same. In final conclusion we can suggest technique as a game changer in mentioned state of affairs for the betterment of the patient.

Keywords: cervical fusion plating, frontal cervical spinal blend, degenerative disc disease, traumatic cervical conditions, cervical tuberculosis, and cervical tumours.

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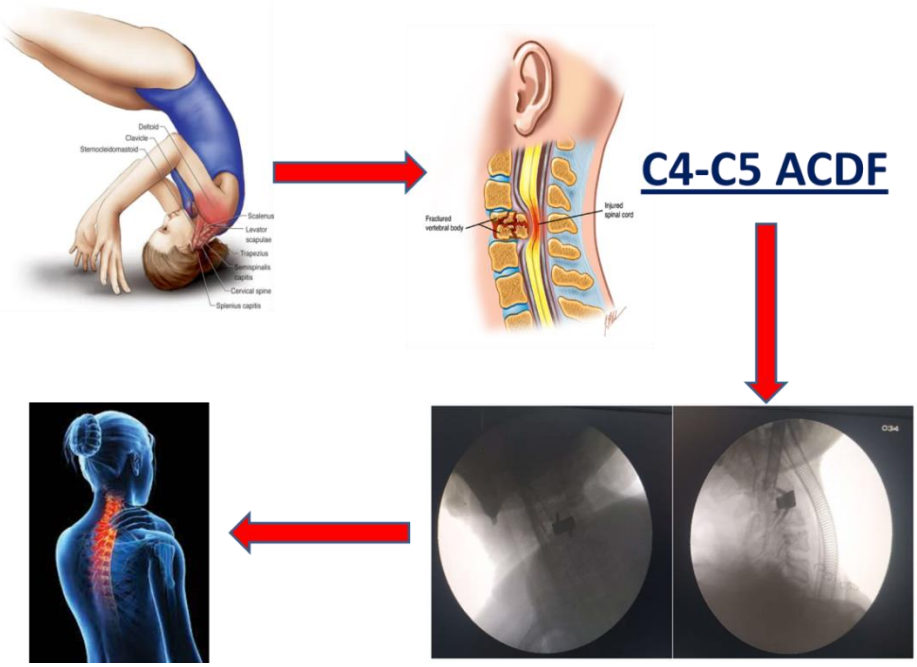

INTRODUCTION

Surgery to remove a herniated or degenerative disc from the neck is called an anterior cervical discectomy and fusion (ACDF). To access and remove the disc, a cut is made near the throat. The bones above and below the disc are fused together with the use of a graft. Between 1950 and the beginning of 1960, Bailey-Badgley, Smith-Robinson, and Cloward developed the anterior cervical discectomy and fusion (ACDF) procedure.

Although this method has a few minor technical issues, the most concerning issues are pseudoarthritic segmental healing, fracture from graft compression, kyphotic segmental deformations, and graft dislocation. Placing an anterior plate on the treated section has proven effective in minimising these problems. The stiff plate construction let the segment be mechanically fixed firmly and hastened bone recovery. By dramatically lowering problems such graft resorption, compression fractures, graft displacement leading to pseudoarthritic healing, and kyphotic angulation, anterior plates have shown promising results.(1,2,3)

In the field of spine surgery, anterior cervical decompression and interbody fusion are frequently used to treat a wide range of illnesses that fall under the following categories.

- Degenerative disc disease
- Traumatic conditions
- Tuberculosis
- Tumours
- Miscellaneous

Facet arthrosis, decreased intervertebral disc height, narrowing of neural foramina, osteophyte production, and disc degeneration are all symptoms of cervical spine degeneration. The cervical nerve's roots may be impinged upon by one or more discs, resulting in cervical radiculopathy symptoms. Paraesthesia, motor weakness, and discomfort along the distribution of one (monoradiculopathy) or several (polyradiculopathy) cervical nerve roots are some of the symptoms that may be present.(4,5,6,7,8)

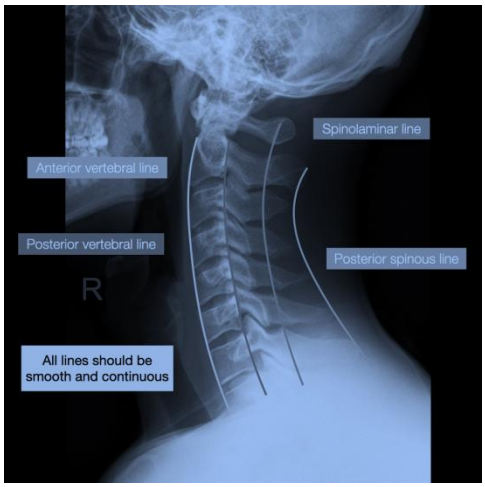

Figure 1. Normal Cervical Spine Anatomy

In their research on 51 cervical radiculopathy patients who were observed for two years, Lees and Tumer found that 25% had cervical symptoms that persisted or worsened, 30% had mild symptoms, and 45% had only one episode without recurrence. spinal disc The worst result was caused by bilateral deterioration. The evolution of cervical for a limited number of people, disc damage is linked to ongoing pain, disability, and poor outcomes. patients' subgroup.

In 120 patients with cervical disc disease, Clarke & Robinson reported that they found that individuals with cervical myelopathy rarely experienced spontaneous reversal of neurological impairment. 75% of patients experienced an episode during which new symptoms and indicators of myelopathy progression occurred. 5% of patients had a quick beginning followed by a protracted period of stability, while 20% experienced a slow, constant course of the disease without phases of remission.(9,10,11,12). In our Study we found the similar results for pain and inflammation.

AIMS AND OBJECTIVES

To study the efficacy of fusion with anterior cervical discectomy, iliac crest bone grafting with or without fixation with anterior self-locking titanium cervical plates.

MATERIALS AND METHODS

Our facility at OT of Dr. D.Y. Patil Medical College, Hospital and Research Centre, Pimpri, Pune, does anterior cervical interbody fusions. According to a predetermined performa, a

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Embelin isolated from *Embelia ribes* derived silver nanoparticles and its application in breast cancer nanomedicine

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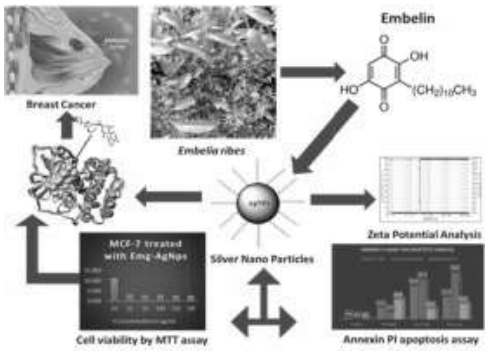
Abstract

Breast cancer is one of the most predominant cancers in female claiming millions of lives every year. Our current research work proposes that the synthesis of silver nanoparticles using phytochemical constituent Embelin from *Embelia ribes* fruits provides significant result as a potent anticancer agent along with its probable mechanism of action depicted by molecular docking. UV–Visible spectroscopy was used to characterise Embelin-AgNPs, and the maximum absorbance was recorded at 374.5 nm. Particle size determination indicated monodispersity of nanoparticles; particle size recorded as 25–30 nm and zeta potential analysis well explained the stability of the nanoparticles. *In vitro* cytotoxicity study was done by MTT assay on MCF-7 cell line. Embelin-AgNPs induced apoptosis in MCF-7 cells as measured by the Annexin-V PI apoptosis assay. To predict the binding mode of ligand and receptor and probable mechanism of action in-silico study was done against ER alpha and HER2 receptors of breast cancer cells by molecular

docking and it has revealed Embelin could act as potential modulator against ER positive and HER2 positive breast cancers.

Graphical abstract



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Introduction

Cancer defines to a large and lethal, heterogeneous group of diseases with an underlying pathology identified by uncontrolled cellular growth. As cancer cells evades the growth suppressor signals, they turn out to be proliferative and invasive, eventually shows metastasis.[1] Breast cancer is still one of the leading causes of death among women worldwide and it is a type of tissue cancer which mainly involves inner layer of milk glands or lobules and ducts.[2] As per the statistics, breast cancer has accounted for 11.7 percent of all cancer cases in 2020, with approximately 685,000 fatalities. The World Health Organization lists a number of other risk factors, including heavy drinking and smoking, a family history of breast cancer, radiation exposure, reproductive history, early menopause, obesity and lack of physical activity, frequent miscarriages, and hormonal therapy used after menopause. Despite significant progress in understanding disease biology and various treatment aids including surgery, radiation therapy, chemotherapy and targeted therapy, effective breast cancer care has yet to be attained.[3] Number of side-effects, non-specificity, a high cost involved in treatment, re-occurrence and metastasis of cancer makes conventional therapies unsuitable.[4] Thus, there is an intent need to discover unique, target-oriented, safe, and low-cost therapeutic drug.

The development of nanotechnology, which provides remarkable solutions to cope with life-threatening disorders, has boosted advancement in the field of medical science. Nanotechnology is a multidisciplinary field comprising of biology, chemistry, and physics attributing to number of unique properties such as high surface area to volume ratio.[5] Metal nanoparticles (particle size smaller than 100nm) have a wide range of applications due to a variety of unique characteristics. Different chemical and physical methods such as chemical reduction of metals, photochemical reduction, and electrochemical processes are widely used for synthesis of nanoparticles.[6] However, these production techniques are labour-intensive, costly and potentially harmful to the environment and living organisms. The alternate, eco-friendly and cost- effective approach which have gained importance in past few years is ‘Green synthesis’ method of nanoparticles

Formulation and Appraisal of innovative acyclovir emulsion

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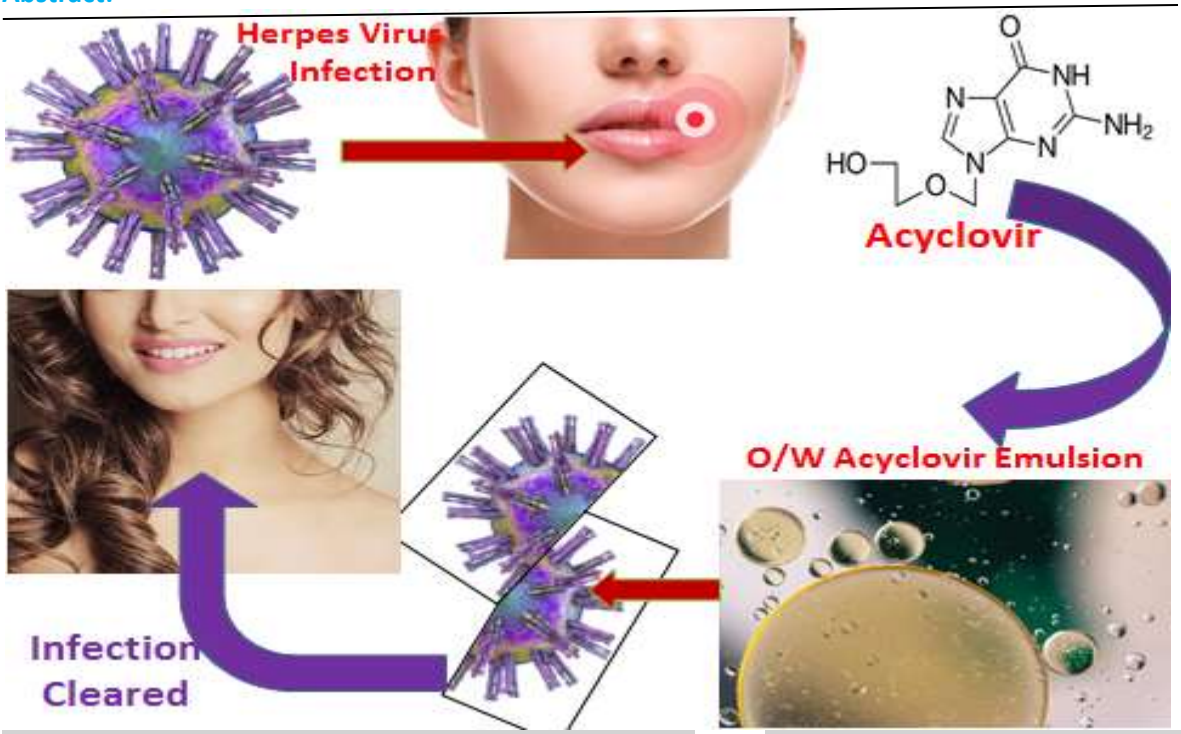
Abstract:



Introduction: The main aim is to develop a formulation whichis an effective and easy-to-use product with good penetration property and a safe, stable, efficacious, patient compatible product product like emulsion.for Oral Herpes or cold sores is an infection caused by Herpes Simplexis a viral disease that can lead to painful sores on the lips and mouth (oral herpes) and anogenital area (generally referred to as "herpes"). Herpes Virus (HSV) Type 1 was responsible for the former and Type 2 for the latter. The combination of ingredients in the formulation aids in good stability, better penetration property and quicker healing.

Materials and methods: For the treatment of Herpes Simplex Virus (HSV) types 1 and 2, acyclovir is an effective antiviral medication. The treatment of varicella-zoster virus infections is also helped by this medication. There are several acyclovir products available on the market, including tablets, ointments,

and intravenous injections. The acyclovir analysis technique used in pharmaceutical preparations is covered in this article. Studies conducted prior to formulation assisted in creating an acceptable dose form. Acyclovir formulation of emulsion can be examined using FTIR and UV-Vis spectrophotometry.
Results and Discussions:UV spectroscopy confirmed the maximum at 251 nm. Experimental results showed that the drug's melting point is 2460C, confirming that it is acyclovir.
Conclusion: We can conclude that the methods and procedures used to create a new formulation of acyclovir for cold sores (cold sores) have been successfully developed and tested.
Key words: *Acyclovir, Herpes simplex virus, HSV-1 & HSV-2,*
DOINumber:10.14704/nq.2022.20.11.NQ66693 **NeuroQuantology2022;20(11):6968-6980**

Introduction:

Herpes simplex virus, also known as HSV, is classified into 2 forms, HSV-1 and HSV-2, commonly known as herpes, is an oral to oral or sexually transmitted disease in which HSV- 1 can cause oral and genital herpes. But HSV-2 is only known to cause sexually transmitted herpes. According to WHO, about 3.7 billion people under the age of 50 are infected with HSV-1, of which about 491 million are infected with HSV-2, accounting for (67%) and (13%) of the total cases, respectively. Oral herpes caused by HSV-1 is usually asymptomatic, but symptoms of an HSV-1 infection include painful blisters or sores called herpes and other symptoms include tingling and accompanying itching, burning sensation around the infected parts of the mouth. [23]

1) **Treatment :**Treatment of herpes involves the use of antiviral drugs, the most effective and commonly used are acyclovir, valacyclovir, and famciclovir. Because herpes doesn't have a cure, these medications help prevent the severity and recurrence of symptoms. The daily dose of acyclovir for the treatment of genital herpes is approximately 200-400 mg, 4-5 times a day, and for topical treatment of herpes labialis and 400 mg orally twice a day. Recurrent lesions around the lips can be irritating, so a quick and effective solution is needed, usually the use of topical 5-cyclovir ointment.
2) **Formulation :**Emulsion is a heterogeneous system consisting of one immiscible liquid dispersed in another in the form of droplet. Such system possesses minimal stability because of droplet but we can increase stability by using emulsifying agent or emulsifiers. Emulsion can increase stability of many drugs that are unstable in aqueous solution. It improves penetration, spreadability and prolongs drug action.Commercially, many dosage forms are available for the treatment of herpes. It is recommended that people with active symptoms of oral herpes abstain from sexual activity, oral contact, and sharing objects contaminated with saliva. Since HSV-1 and HSV-2 can be transmitted even without obvious symptoms, creating a recipe without unnecessary contact with other parts of the body, such as fingers hands, eyes, etc.

Close contact with a person who is exuding the virus, who may or may not have an active lesion, commonly at a mucosal surface or in genital or oral secretions, is how the infection is typically spread. If the virus comes into touch with skin surfaces that are vulnerable, infection results. Additionally, it may result in symptoms like fever and muscle aches, making it difficult to eat and drink. This results in insufficient nutrition intake, which then causes weakness and dehydration. [1]

Acyclovir (ACV, 9-(2-hydroxyethoxymethyl)guanine, is a guanine derivative with antiviral activity and commonly used in the treatment of herpes.It is a potent antiviral agent used as a highly specific inhibitor for herpes viruses (HSV) types 1) and 2 [3–7]. 'herpes simplex types 1 and 2, show anti-inflammatory effects similar to that of the parent compounds ACV and ganciclovir used to treat infections associated with Herpes simplex virus I & II and varicella zoster virus Also shown

Original Article

Study Of The Properties And Behaviors Of Nanoparticles And Their Potential Applications In Medicine And Catalysis

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Abstract

Our Research "Study of the properties and behaviors of nanoparticles and their potential applications in medicine and catalysis" is a Nanotechnology fundamentally affects medication as of late, its application being alluded to as nanomedicine. Nanoparticles have specific properties with biomedical applications; nonetheless, in certain circumstances, they have shown cell harmfulness, which has caused concern encompassing their clinical use. In this audit, we center around two angles: first, we sum up the kinds of nanoparticles as per their compound arrangement and the overall qualities of their utilization in medication, and second, we survey the uses of nanoparticles in vascular modification, particularly in endothelial brokenness connected with oxidative pressure. This condition can prompt a decrease in nitric oxide (NO) bioavailability, thus influencing vascular tone guideline and endothelial brokenness, which is the main stage in the improvement of cardiovascular illnesses. Consequently, nanoparticles with cancer prevention agent properties might further develop vascular brokenness related with hypertension, diabetes mellitus, or atherosclerosis.

KEY: properties, behaviors, nanoparticles, potential, applications, medicine, catalysis.

Introduction

The development of nanotechnology and its combination with different trains, for example, biomaterial science, cell and atomic science, and medication, alluded to as nanomedicine, stand out of biomedical exploration because of its likely applications in the analysis and therapy of illnesses. Nanoparticles (NPs) are the principal framework utilized in nanomedicine, as theranostic specialists with high sub-atomic explicitness [1-3]. Because of their size (1-100 nm), nanoparticles have a huge surface region to-volume proportion, which permits them to ingest high amounts of medications [4] and to be spread effectively all through the circulation system [5]. Their bigger surface region gives them extraordinary qualities, as it works on their mechanical, attractive, optical, and reactant properties, subsequently expanding their potential pharmacological use [4].

Concentrates on the likely impacts and advantages of NPs in sicknesses including oxidative pressure are getting developing consideration. Cardiovascular gamble factors, for example, hypercholesterolemia or hypertension advance the age of receptive oxygen species (ROS), which prompts the oxidative pressure seen in provocative sicknesses, for example, atherosclerosis [6]. Consequently, the support and advancement of cell reinforcement

Section A-Research paper

Waste to Wealth: An approach to HAp synthesis by different methods.

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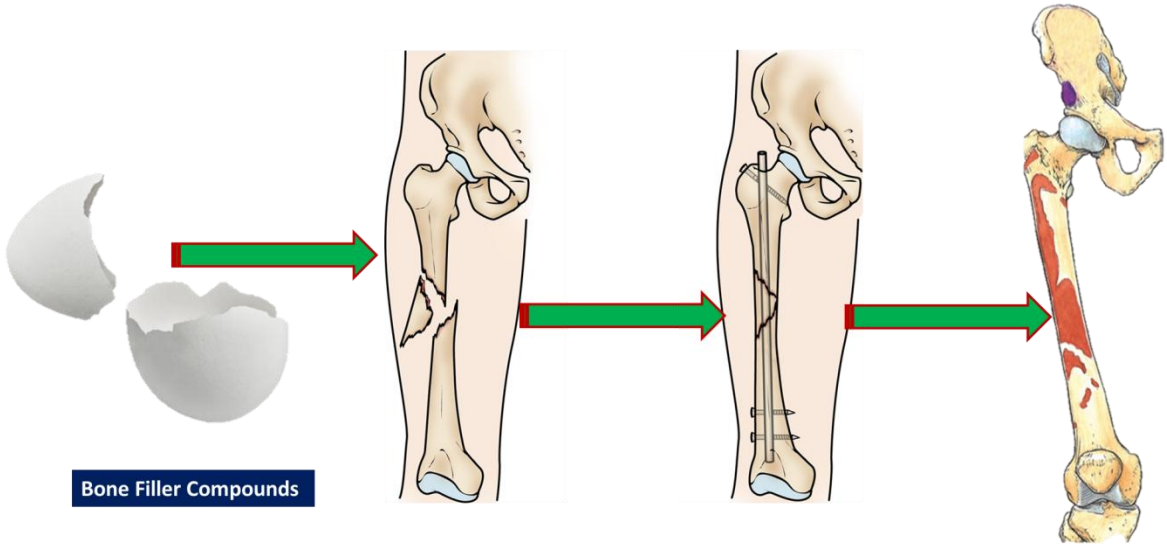
Abstract-Waste materials are an important source for the recovery and extraction of various valuable compounds. Transforming these wastes into valuable compounds require various techniques and approaches. It is the requirement to design various functional bioactive substitute materials that are able to survive the harsh and diverse conditions within the human body. Biomaterials are gaining increased importance due to their applicability to ageing population and treating diseases. Biomaterials acts to restore, repair or to replace any tissue that has been damaged in the body thus increasing the life expectancy. Hydroxyapatite (HAp) is one of the biomaterials obtained from the natural waste materials. It is universally used in biomedical because of its bioactivity, biocompatibility, remarkable oestoconduction property, etc. HAp is receiving importance in orthopaedic implants and also in dental materials. This review outlines the various methods of extraction of HAp from various natural sources like marine, aquatic, mammalian, shell, plant and algae. The Ca/P, crystallinity, particle shape, size, morphology and clinical studies are also discussed.



Keywords: *Hydroxyapatite, Natural Product Chemistry, Bio-waste, Bio-implants, Natural Resources*

Journal of Positive School Psychology
2022, Vol. 6, No. 5, 5179 – 5184

http://journalppw.com

Novel Film Forming Spray from Tea Tree Leaves with Special Emphasis on Development, Formulation and Evaluation

Swati N. Deshmukh[1]*, Vanita Gade[1], Aniket Garud[2]*, Rahul Dumbre[1], Bhagyashri Warude[2], Sunita Maharaj[1], Swapnali Girme[1] and Sunita Shewalkar[1]

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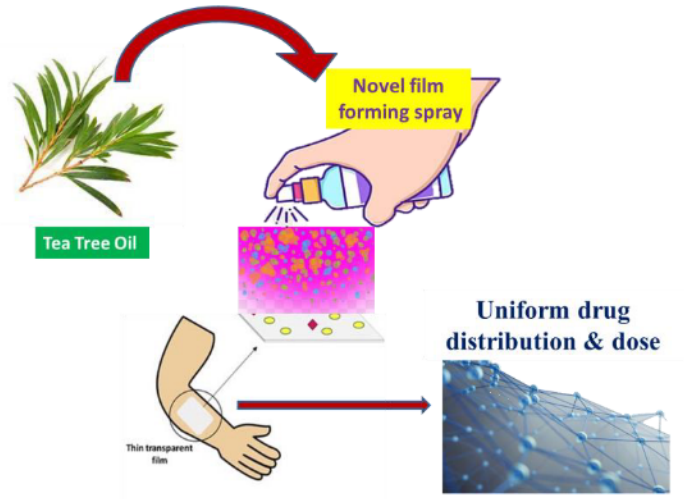
ABSTRACT

The dictum of this study was to develop topical film forming spray having tea tree oil which might increase wound healing. Film-forming sprays supply several benefits compared to standard topical preparations as a result of they will give uniform drug distribution and dose, increased bioavailability, lower incidence of irritation, continuous drug unleash, and accelerated wound healing through wet management. Film-forming sprays comprises polymers and excipients that improve the characteristics of preparations and enhance the soundness of active substances. every style of chemical compound and excipient can turn out films with completely different options. Therefore, the varied sorts of polymers and excipients and their analysis standards ought to be examined for the event of alot of best kind of film-forming spray. The chosen literature enclosed analysis on formulation and analysis of film forming spray victimization polymers and plasticizers as film-forming matrices for potential medical use. This text discusses the categories and concentrations of polymers and excipients, sprayer varieties, evaluations, and significant parameters in decisive the sprayability and film characteristics. Ultimately we have a tendency to conclude that the developed film forming spray formulations were clear, sleek and versatile in physical look. The analysis studies were conferred ability to evaporate speedily on applies, hydrogen ion concentration becomes like that of traditional skin offered of lower skin irritation. Spray is a lot of convenient to use, may be applied simply therefore improve patient acceptance and compliance.

Keywords: Tea Tree leaves, Melaleuca alternifolia, Novel film forming spray, topical drug delivery



INTRODUCTION

Injuring the skin increases the risk of infection by damaging the protective layer. This can further cause systemic infections and increase the level of complications1 Local routes of drug delivery, targeting systemic or local effects, offer several benefits, including avoidance of first-pass metabolism, low pH and enzymatic

Original Research Article

Evaluation of novel topoisomerase II inhibitors as anti-cancer agents through advanced computational strategies.

Mrs. Bhagyashree Warude[1], Mr. Amol B. Kumbhar[2], Dr. Jeevan Dhumal[2], Ms. Priyanka Chhajed[1], Amrita Verma Pargaien[3], Dr. Manisha Savaliram Kedar[4], Dr. Swati N. Deshmukh[5] and Dr. Aniket Garud[*1].

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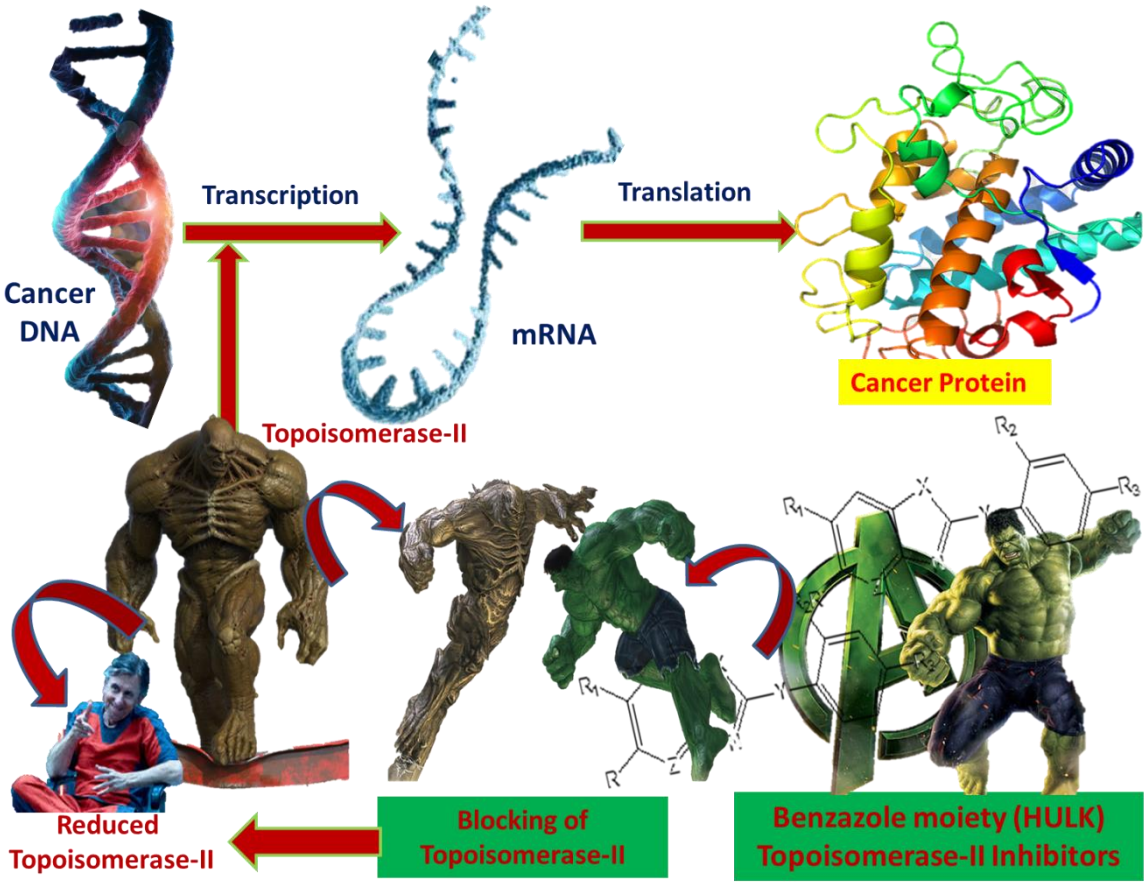
Abstract:



Over the past ten years, there have been a surprising number of advancements in the discovery of anticancer drugs. The development of selective topoisomerase II inhibitors has been a constant endeavour for more than 30 years. Eukaryotic cells require the enzyme DNA topoisomerase II to function. The DNA helix's topology is altered. The enzyme has a biological advantage, but it also has a pharmacological benefit because many anticancer drugs choose to target it. We have improved the benzazole moiety by employing molecular modelling studies in an effort to generate effective and harmless anti-neoplastic medicines. Results of 2D and 3D QSAR experiments for a series of 23 compounds are presented in this study. Results of 2D and 3D QSAR investigations for a series of 23 compounds including 5, 6-substituted-2-(2,4-disubstituted phenyl)-H-Benzazole derivatives are presented in this work. Using the partial least squares approach and principle component analysis, 2D QSAR experiments generated significantly effective prediction models with high cross-validated r2 values of 0.7308 & 0.8443, respectively. Using the SA-KNN approach, 3D QSAR studies generated r2 of 0.7647 and q2 of 0.5551. Molecular modelling studies, such as 2D, 3D QSAR and docking studies, were carried out to gain detailed insights of the steric, electrostatic, and hydrophobic features required around the benzazole pharmacophore in order to better understand the relationship between structure and biological activity and to optimise the pharmacophore for design for New Chemical Entities (NCEs) with the better selectivity and subsequently better potency. In order to ensure the Drug like pharmacokinetic profile of the designed NCEs with the aid of Schrodinger Inc. software, docking and ADME properties of benzazole analogues were examined. Results were found to be comparable with standards and indicated that benzazole analogues have good binding affinity for topoisomerase II enzyme at ATP binding site using 1zxm pdb. Adenosine nucleotide triphoshete was reported to bind more selectively in the active binding pocket of 1ZXM enzyme and was compared to marketed medication Novobiocin in 4 out of 20 constructed NCEs.

In conclusion, the theoretical justification for pharmacophore optimization was confirmed, and it will now undergo wet lab work, specifically manufacturing and biological testing utilising the cell line assay. This paper will show the results of the current research activity and the in-depth research studies.

Key Words: Topoisomerase II inhibitor, Benzoxazole derivatives, LeadGrow, NCEs, 2D QSAR, 3D QSAR, Docking.

DOI Number: 10.48047/nq.2022.20.19.NQ99024 **NeuroQuantology2022; 20(19):264-294**

Introduction-

A nuclear enzyme called TOPOISOMERASE II (topo II) is essential for untying DNA tangles in the chromosomes during chromosome segregation and replication, transcription, and cell division. It is a homodimer in its active state and a 170 kDa protein. Using a double-strand-passage mechanism, the

DETAILS OF COLLABORATIVE PATENT PUBLICATIONS

Sr No.	Name of Inventor	Date of publication	Title of Invention	Collaborating institute
1	Dr. Sameer H. Lakade	27/01/2023	"Sol-Gel Strategy For Synthesis of Mesoporous Alumina And Passive Loading Approach For Direct Delivery of 5-Fluorouracil	P. E. Society's Modern College of Pharmacy, Sector 21, Yamunanagar, Nigdi, Pune
2		30/12/2022	Facile Synthesis of Ordered Mesoporous Γ Alumina With Tunable Structural Properties	P. E. Society's Modern College of Pharmacy, Sector 21, Yamunanagar, Nigdi, Pune

Dr. S. G. Walode
PRINCIPAL
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Patent Search

Invention Title	"SOL-GEL STRATEGY FOR SYNTHESIS OF MESOPOROUS ALUMINA AND PASSIVE LOADING APPROACH FOR DIRECT DELIVERY OF 5-FLUOROURACIL"
Publication Number	04/2023
Publication Date	27/01/2023
Publication Type	INA
Application Number	202221072221
Application Filing Date	14/12/2022
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	CHEMICAL
Classification (IPC)	B82Y0005000000, A61K0009510000, A61K0049000000, A61P0035000000, A61K0009160000

Inventor

Name	Address	Country	Nationality
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Dr. Praveen Digambar Chaudhari	P. E. Society's Modern College of Pharmacy, Sector 21, Yamunanagar, Nigdi, Pune – 411044, Maharashtra	India	India
Mr. Laxman B. Ingole	P. E. Society's Modern College of Pharmacy, Sector 21, Yamunanagar, Nigdi, Pune – 411044, Maharashtra	India	India
Dr. Sameer H. Lakade	RMD Institute of Pharmaceutical Education and Research, Pune, 411019, Maharashtra	India	India

Applicant

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Dr. Minal Tejram Harde	P. E. Society's Modern College of Pharmacy, Sector 21, Yamunanagar, Nigdi, Pune – 411044, Maharashtra	India	India
Dr. Praveen Digambar Chaudhari	P. E. Society's Modern College of Pharmacy, Sector 21, Yamunanagar, Nigdi, Pune – 411044, Maharashtra	India	India

Abstract:

The present invention relates to a process of synthesis of mesoporous alumina from Cetyl trimethyl ammonium bromide (CTAB) surfactant using sol-gel technique. The synthesized mesoporous alumina acts as a carrier for Controlled release /Sustained release of drugs, use as a carrier for Tumour targeting applications, Gene therapy applications, Photodyanamic therapy, Agents for magnetic resonance imaging and carrier for drug delivery of molecules. The passive loading approach was used for the encapsulation of 5-Fluorouracil (5FU) within the pores of the mesoporous nanostructure of MA. The entrapment efficiency was calculated using UV-Vis spectrophotometric analysis and was found to be 36%. The in vitro dissolution study indicated the gradual release of 5FU for up to 5 h compared to free 5FU. Cytotoxicity assay confirms prominent inhibition potential of 5FU at lower doses and shows synergistic potential.

Complete Specification

DESC:FIELD OF THE INVENTION

The present invention relates to a method for synthesis of mesoporous alumina from and its application for controlled release drug delivery of anticancer drug like 5-Fluorouracil, Specifically, the method involves the sol-gel technology, it is a wet chemical technique that uses either a chemical solution or colloidal particles to produce and integrated network. The present invention offers an advantages in drug delivery of anti-cancer drugs through mesoporous alumina.

BACKGROUND OF THE INVENTION

Mesoporous material is a material containing pores with diameter between 2 to 50 nm. Metal oxide nanoparticles are attractive material and have a well-defined shape, greater surface area, greater pore volume and an overall narrow size distribution. Large surface area of mesoporous alumina particles can accommodates the large quantity of model drug (or guest molecule). The main advantage of using such metal precursors is their easy decomposition that can be achieved in solution, and under mild condition. This allows the control of the particles size; shape and surface area and a mono disperse assembly of particles having the desired properties.

Composite colloidal particles consist of at least two types of materials, often with one on the outside and another in the center of the particle. These composite particles combine different material properties such as specific bio-chemical, optical, electrical, magnetic and mechanical properties. The mesoporous alumina are not only biocompatible but are also known for actively promoting the tissue regeneration via physico-chemical routes.

View Application Status

पेटेंट कार्यालय
शासकीय जर्नल

OFFICIAL JOURNAL
OF
THE PATENT OFFICE

निर्गमन सं. 52/2022	शुक्रवार	दिनांक: 30/12/2022
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पेटेंट कार्यालय का एक प्रकाशन
PUBLICATION OF THE PATENT OFFICE

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :16/12/2022

(21) Application No.202221072921 A
(43) Publication Date : 30/12/2022

(54) Title of the invention : FACILE SYNTHESIS OF ORDERED MESOPOROUS γ ALUMINA WITH TUNABLE STRUCTURAL PROPERTIES

(51) International classification :B01J0037000000, B01J0035000000, B01J0035100000, B82Y0030000000, C01B0032050000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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4)Dr. Sameer H. Lakade
Address of Applicant :R. M. Dhariwal Institute of Pharmaceutical Education and Research, Pune, Maharashtra ---------- ----------

(57) Abstract :
The present invention relates to a process of synthesis of mesoporous - alumina using a sol–gel strategy is studied by using dodecyltrimethylammonium bromide surfactant as a novel structure directing template with aluminium chloride as an inorganic metallic precursor. Development of the mesoporous structure is confirmed by the results of a BET (Brunauer-Emmett-Teller) for porous structural properties like pore size and size distribution, transmission electron microscopy (TEM) for nano-scale morphology, scanning electron microscopy (SEM) for surface morphology, energy dispersive X-ray Analysis (EDX) for presence of alumina, X-ray diffraction (XRD) for bulk crystallinity, Fourier transform-infrared spectroscopy (FT-IR) for confirming its prime characteristics peaks of functional groups. Elemental analysis and X-ray diffraction revealed the formation of -Al2O3 after calcination at 700°C. Results of characterization study revealed the successfully synthesized MeAl which showed excellent stability with an expanded surface area suitable for carrier material for drug delivery system

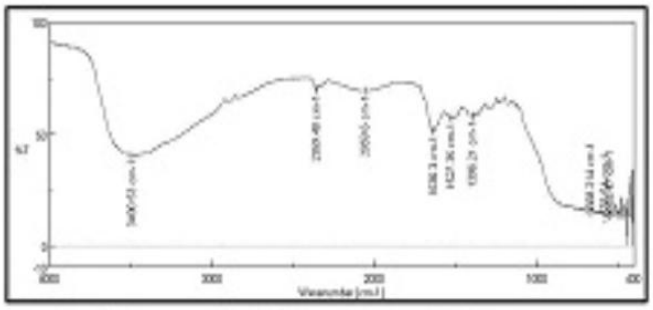

Fig.1 FTIR spectra of synthesized mesoporous γ alumina

No. of Pages : 29 No. of Claims : 4

I

Number of Collaborative Activities (Faculty Exchange) (2022-23)

SEMINAR/WORKSHOP/WEBINAR/FDP ATTENDED BY FACULTY

Sr no	Date	Name of faculty	Type of event	Title	Organization Institute
1	2/2/23 to 3/2/23	Dr. Shweta P. Ghode	State level workshop	Industry-Institute Linkages	Rajarshi Shahu College of Pharmacy & research, Tathwade, Pune.
2	1/3/23 to 5/3/23	Dr. Rohini C. Kolhe	National level FDP	Innovation, Research and IPR- Journey Towards Excellence	BVB's Sardar Patel College of Engineering & Shri Sant Gadgebaba College of Engineering & Technology, Bhusawal
3	21/2/23 to 22/2/23		State level workshop	Implementation of NEP 2020 SWAYAM MOOCs	JSPM Charak College of Pharmacy & Research, Wagholi, Pune
4	10/2/23 to 11/2/23	Dr. S. P. Ghode Dr. S. H. Lakade Dr. V. S. Nehrkar Dr. P. S. Chaudhari Dr. P. N. Chhajed Dr. R. C. Kolhe Mr. R. P. Raut Dr. A. A. Garud Mrs. H. H. Puranik Mr. S. D. Rede Ms. T. A. Sande Mr. A. P. Kakde Mr. D. V. Panke Ms. B. J. Warude	State level seminar	Multidisciplinary Education: Application of CADD in Teaching & Research	Rasiklal M. Dhariwal Institute of Pharmaceutical Education & research, Chinchwad, Pune
5	26/0523	Mrs. Manisha Khaire	National webinar	Intellectual property on Artificial intelligence and Machine learning	Dept of computer science, Shri Bhagwan mahaveer Jain first grade college, KGF
6	27/02/23	Ms. Harshada H. Puranik	Internation al conference	Emerging trends in pharmaceutical care in digital era	Modern Colleg of Pharmacy, Nigdi, Pune in collaboration with Operant Pharmacy Federation
7	13/02/23 to 14/02/23		National level workshop	Adoption of guidelines on NHEQF and curriculum framework and credit system for four year undergraduate programme	Dr. D. Y. Patil college of pharmacy, Akurdi
8	13/06/22 to 18/06/22		National e-worskshop	Innovation and Intellectual property Rights	Innovative Technology Enabling Centre CSIR-IMMT, Bhubneshwar
9	28/12/22		Webinar	Opportunities in Pharmacy & Research	AISSMS College of Pharmacy, Pune

10	18/06/22	Ms. Harshada H. Puranik	Online Impact lecture series session-I	Innovation and IPR	IIC Santhiram college of pharmacy, nandyal in association with AICTE and MHRD
11	15/12/22 to 21/12/22		National level expert talk series	Health and Society-Classical and Temporary Approaches	Innovative Technology Enabling Centre CSIR-Institute of minerals and material technology, Bhubneshwar
12	11/03/23 to 28/05/23		Internation al FDP	Emerging trends in phyto-pharmaceutical research	Dr. D. Y. Patil Institute of pharmaceutical Sciences and Research, Pimpri, Pune
13	12/09/22		National FDP	Assessment strategy for OBE: mapping and Attainment	AISSMS college of pharmacy, Pune
14	20/09/22		National webinar	Quality sustenance and quality improvement: issues and challenges	AISSMS college of pharmacy, Pune in collaboration with NAAC
15	14/01/23		seminar	Interdisciplinary research in pharmacy: NEP 2020 perspective	Vivekanand education society's college of pharmacy, chembur, Mumbai and konkan gyanpeeth rahul dharkar college of pharmacy and research institute, karjat
16	23/03/23 to 25/03/23		National level e-FDP	Effective research proposal and manuscript writing	Sir Dr. M. S. Gosavi college of pharmaceutical Education and Research, nashik
17	20/09/22	Ms. Warude Bhagyashri	National webinar	Quality sustenance and quality improvement: issues and challenges	AISSMS college of pharmacy, Pune in collaboration with NAAC
18	12/09/22		National FDP	Assessment strategy for OBE: mapping and Attainment	AISSMS college of pharmacy, Pune

Rasiklal M. Dhariwal Institute of Pharmaceutical Education & Research ★ Chinchwad, Pune-19 Section 1 PU/PN/Pharm/ 448/2014

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Dr. Trupti Deshpande
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Principal

One Week National Level Faculty Development Program on

" INNOVATION, RESEARCH AND IPR - JOURNEY TOWARDS EXCELLENCE "

from 1st March 2023 — 5th March 2023

CERTIFICATE OF COMPLETION

PRESENTED TO :

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for successfully completing the One Week Online **National Level Faculty Development Program on "INNOVATION, RESEARCH AND IPR - JOURNEY TOWARDS EXCELLENCE"** held from 1st March 2023 — 5th March 2023 organized by BVB's Sardar Patel College of Engineering, Mumbai & HSM's Shri. Sant Gadge Baba College of Engineering & Technology, Bhusawal in collaboration with SAE India Western Section, Institution's Innovation Council, Indian Institution of Industrial Engineering and Federation of Education Leaders and Administrators under IQAC of SPCE, Mumbai and SSGBCOE&T, Bhusawal.

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Dr. Santosh Rane
Convener
Former Dean Academics and Faculty,
SPCE Mumbai

Dr. Rahul Barjibhe
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SSGBCOE&T Bhusawal

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Jangam

Dr. Sampada S. Jangam
Co-ordinator

Dr. Sagar B. Wankhede
Principal

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॥ पढमं नाणं तओ दया ॥

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For his / her precious presence as **Delegate** at Two days state level seminar on

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Multidisciplinary Education : Application of CADD in Teaching and Research

sponsored by Savitribai Phule Pune University.

10th & 11th February 2023

Mrs. Harshada H. Puranik
Co-ordinator

Dr. Sanjay G. Walode
Principal, RMDIPER

ESTD : 8/9/1927

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Dr. Sanjay G. Walode
Principal, RMDIPER

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Dr. Sanjay G. Walode
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10th & 11th February 2023

Mrs. Harshada H. Puranik
Co-ordinator

Dr. Sanjay G. Walode
Principal, RMDIPER

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Dr. Vishnu S. Nehrkar

For his / her precious presence as **Delegate** at Two days state level seminar on

"Implementation of National Education Policy - 2020"

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10th & 11th February 2023

Mrs. Harshada H. Puranik
Co-ordinator

Dr. Sanjay G. Walode
Principal, RMDIPER

Sri Bhagawan Mahaveer Jain First Grade College

Geetha Road, Robertsonpet, K.G.F

Accredited by NAAC with B+ Grade

Department of Computer Science

Certificate No.: MN3EJQ-CE000288

Certificate of Participation

This is to certify that

Mrs.Manisha Pradeep Khaire

SJVPM's Rasiklal M.Dhariwal Institute of Pharmaceutics education and research, Chinchwad,Pune-411019

Has Successfully participated in National Webinar on "Intellectual Property on Artificial Intelligence and Machine Learning" conducted by Department of Computer Science, SBMJFGC, KGF on 26/05/2023

Machine Learning

Mr. Siddaram S
HOD, Dept. of Comp. Sci

Dr. Rekha Sethi
Principal

International Conference

on

'EMERGING TRENDS IN PHARMACEUTICAL-CARE IN DIGITAL ERA'

Organized By

MODERN COLLEGE OF PHARMACY, NIGDI, Pune

In Collaboration with

OPERANT PHARMACY FEDERATION

CERTIFICATE

This is to certify that ~~Prof.~~ / ~~Dr.~~ / ~~Mr.~~ /Ms. /~~Mrs~~ HARSHADA HERAMB PURANIK has Presented his/her e-poster Titled Emergence of advanced medication services : digital therapeutics and telemedicine in the International Conference on 'EMERGING TRENDS IN PHARMACEUTICAL-CARE IN DIGITAL ERA' held at Progressive Education Society's, Modern College of Pharmacy, Nigdi, Pune in Collaboration with Operant Pharmacyt Federation 27th February 2023. His / Her participation is Greatly Appreciated.

Dr. Sunita Pawar
COORDINATOR
HOD -PharmD, MCOP

Dr. Vikram Choudhary
FOUNDER & DIRECTOR
Operant Pharmacy Federation

Dr. Pravin D. Chaudhari
CONVENER & PRINCIPAL
Modern College of Pharmacy, Nigdi

Dr. Gajanan R. Ekbote
PATRON
Chairman, Progressive Education Society

Dr. D. Y. Patil Pratishthan's

Dr. D. Y. Patil College of Pharmacy, Akurdi, Pune

Organised

SAVITRIBAI PHULE PUNE UNIVERSITY

Sponsored Two Days National Level Workshop on

"IMPLEMENTATION OF NATIONAL EDUCATIONAL POLICY 2020"

CERTIFICATE

This is to certify that Dr./Mr./Mrs./Ms. Harshada Heramb Puranik *has participated as Resource person/ Delegate/ Volunteer/ Member organizing committee in Savitribai Phule Pune University sponsored Two Days National level workshop on "Adoption of guidelines on NHEQF and curriculum framework and credit system for four-year undergraduate programme" under IQAC CELL of Dr. D. Y. Patil College of Pharmacy, Akurdi, Pune conducted on 13th and 14th February 2023. His/Her active participation is deeply appreciated.*

DR. D. S. SHIRODE
CONVENER

DR. N. S. VYAWAHARE
CHIEF CONVENER

NeWIPR2022/CSIR-IMMT/InTEC326

InTEC
Innovative Technology Enabling Centre

IMMT

NeW IPR 2022

CSIR-IMMT LEARN PRACTICE PROMOTE PROTECT PROFIT InTEC
IP for ALL

6 Days
24 Experts
4 h/day

NeW IPR-2022

One Week National e-Workshop on Innovation & Intellectual Property Rights

Innovative Technology Enabling Centre (InTEC)
CSIR-Institute of Minerals and Materials Technology, Bhubaneswar-751013

CERTIFICATE OF PARTICIPATION

This is to certify that Mrs.Harshada Heramb Puranik of Rasiklal M Dhariwal Institute of Pharmaceutical Education and Research Chinchwad Pune has participated in the NeW IPR 2022 e-Workshop organized by Innovative Technology Enabling Centre (InTEC), CSIR-IMMT, Bhubaneswar during June 13-18, 2022

Dr. T. Pavan Kumar, Convener
NeW IPR 2022 e-Workshop

Dr. A.K. Sahu, CEO-InTEC
CSIR-IMMT, Bhubaneswar

Prof. S. Basu, Director
CSIR-IMMT, Bhubaneswar

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College ID No. PU / PN / Pharm / 117 / (1996)
Accredited by NAAC with 'A' Grade

Certificate

This is to certify that **Mrs.Harshada Heramb Puranik** has attended International FDP organised by, AISSMS College of Pharmacy,Pune on**"OPPORTUNITIES IN PHARMACY AND RESEARCH"** on 28th December 2022.

Dr.T.S.Chitre **Mrs.M.S.Shah**
Webinar Coordinator

Dr. M.C. Damle
IQAC Coordinator

Dr. Ashwini R. Madgulkar
Principal

SANTHIRAM COLLEGE OF PHARMACY

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Ministry of Education Government of India | MoE's INNOVATION CELL (GOVERNMENT OF INDIA) | INSTITUTION'S INNOVATION COUNCIL (Ministry of HRD Initiative) | AICTE

AICTE SPONSORED IIC – IMPACT LECTURE SERIES 2022-23

CERTIFICATE

This is to certify that Mrs.Harshada Heramb Puranik of Rasiklal M Dhariwal Institute of Pharmaceutical Education and Research Chinchwad Pune participated in Online Impact Lecture Series Session – I on "INNOVATION AND IPR" Organized by IIC, Santhiram College of Pharmacy, Nandyal in association with AICTE and MHRD, MOE's innovation cell (MIC), Govt. of India on 18th June 2022.

Dr. Y. DASTAGIRI REDDY	Dr. L. SIVA SANKER REDDY	Dr. C. MADHUSUDHANA CHETTY
CO-ORDINATOR IIC	PRESIDENT, IIC	PRINCIPAL

CHEVALIER T. THOMAS ELIZABETH COLLEGE FOR WOMEN

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Internal Quality Assurance Cell (IQAC)

in association with

CSIR – Institute of Minerals and Materials Technology

Bhubaneswar, Odisha, India

Innovative Technology Enabling Center -InTEC

CERTIFICATE OF PARTICIPATION

Mrs. Harshada Heramb Puranik

Assistant Professor,

R. M. Dhariwal Inst. of Pharmaceutical Education and Research Chinchwad, Pune

has participated in the **National Level Expert Talk Series** on

Health and Society - Classical and Contemporary Approaches

held from **December 15, 2022 to December 21, 2022.**

Dr. T. Pavan Kumar
Senior Scientist and Manager
InTEC, CSIR-IMMT

Dr. S. Sridevi
Principal
CTTE College for Women

CERTIFICATE

OF PARTICIPATION

Harshada Heramb Puranik

has participated in the 03rd International Faculty Development Program **"Emerging Trends in Phyto-Pharmaceutical Research"** organized by Dr. D. Y. Patil Institute of Pharmaceutical Sciences and Research, Pimpri, Pune - 411 018 (MH) INDIA from 11 March to 28 May 2023. His / Her participation in this programme is highly appreciated.

Dr.Asha Thomas
Chief Coordinator

Dr. Sohan Chitlange
Principal

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Accredited by NAAC with A Grade

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Certificate of attendance

This is to certify that **Mrs.Harshada Heramb Puranik** has attended National FDP organised by IQAC, AISSMS College of Pharmacy in Academic Collaboration with APTI on **"ASSESSMENT STRATEGY FOR OBE: MAPPING AND ATTAINMENT"** on 12th September 2022.

Dr.T.S.Chitre **Mrs.M.S.Shah**
Webinar Coordinator

Dr. M.C. Damle
IQAC Coordinator

Dr. Ashwini R. Madgulkar
Principal

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Accredited by NAAC with A Grade

Certificate of Attendance

This is to certify that Mrs.Harshada Heramb Puranik has attended National Seminar on "Quality Sustenance and Quality Improvement: Issues and Challenges" organized by IQAC, AISSMS College of Pharmacy, Pune in Collaboration with NAAC, Bengaluru on 20th September 2022.

Dr. S. V. Gandhi	Mrs. A. N. Avalaskar	Dr. M.C. Damle	Dr. Ashwini R. Madgulkar
Webinar Coordinator		IQAC Coordinator	Principal

VIVEKANAND EDUCATION SOCIETY'S COLLEGE OF PHARMACY, MUMBAI
AND
KONKAN GYANPEETH RAHUL DHARKAR COLLEGE OF PHARMACY AND RESEARCH INSTITUTE, KARJAT

CERTIFICATE

OF PARTICIPATION

THIS IS TO CERTIFIY THAT

Mrs. Harshada Heramb Puranik

has participated in one day seminar on **" Interdisciplinary Research in Pharmacy: National Education Policy 2020 perspective"** organized by **Vivekanand Education Society's College of Pharmacy, Chembur, Mumbai and Konkan Gyanpeeth Rahul Dharkar College of Pharmacy & Research Institute, Karjat** on 14th January,2023

DR. SUPRIYA SHIDHAYE
Principal, VESCOP, Chembur, Mumbai

DR. MOHAN KALE
Principal, KGRDCP & RI Karjat, Raigad

Gokhale Education Society's

Sir Dr. M. S. Gosavi College of Pharmaceutical Education and Research,

Prin. T. A. Kulkarni Vidyanagar, College Road, Nashik-422005

CERTIFICATE OF APPRECIATION

This certificate is presented to

Dr./Prof./Mr./Ms./Mrs. Puranik Harshada Heramb (R. No. 568)

Of Rasiklal M Dhariwal Institute of Pharmaceutical Education and Research Chinchwad Pune

for participation in **Three Days National Level**

e-Faculty Development Program / e-Student Training Program On

"EFFECTIVE RESEARCH PROPOSAL AND MANUSCRIPT WRITING"

Under the aegis of **Internal Quality Assurance Cell (IQAC)@MSGCOPER, Nashik**

during **Thursday, 23rd to Saturday, 25th March 2023.**

Mr. S. S. Boraste	Mr. V. B. Jadhav	Dr. P. L. Pingale	Dr. S. V. Amrutkar
Organizing Secretary	Co-ordinator	IQAC Co-Ordinator & Co-convenor	Principal & Convenor

Certificate of Attendance

This is to certify that Bhagyashri Warude has attended National Seminar on "Quality Sustenance and Quality Improvement: Issues and Challenges" organized by IQAC, AISSMS College of Pharmacy, Pune in Collaboration with NAAC, Bengaluru on 20th September 2022.

Dr. S. V. Gandhi
Webinar Coordinator

Mrs. A. N. Avalaskar

Dr. M.C. Damle
IQAC Coordinator

Dr. Ashwini R. Madgulkar
Principal

FACULTY AS A RESOURCE PERSON/EVALUATOR

Sr no	Date	Name of faculty	particulars	Topic Delivered	Organized by
1	17/02/2023	Dr. Rohini C. Kolhe	Speaker	Patenting in drug development process	Rasiklal M. Dhariwal College of Pharmacy, Chinchwad, Pune
2	13/12/2022	Ms. Harshada H. Puranik	Speaker	Overview on Stereochemistry	Dr. D. Y. patil College of pharmacy, Akurdi, Pune
3	23/01/2023		Speaker	Enzymes	Indrayani Institute of Pharmacy, Talegaon Dabhade, Maval, Pune
4	17/02/2023		Chief guest & Judge	Oral paper presentation competition	Shankarrao Ursal College of pharmaceutical Sciences & Research Centre, Kharadi, Pune
5	23/03/2023	Dr Shweta P Ghode	Chief guest & Judge	Pharma model making competition	JSPM Rajarshi Shahu College of Pharmacy & research, Tathwade, Pune.

Rasiklal M. Dhariwal Institute of Pharmaceutical Education & Research Chinchwad Station, Pune-19 PU/PN/Pharma/465/2014

Dr. S. G. Walode
PRINCIPAL
Rasiklal M. Dhariwal Institute of Pharmaceutical Education & Research
Chinchwad Station, Pune-411019

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Rasiklal M. Dhariwal College of Pharmacy

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MSBTE CODE : 0613, DTE CODE : DPH 6499)

ESTD : 8/8/1627

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Mr. Fegade S. A.
Principal

Ref. No.: RMDCOP/2022-23/Feb/3032-A

Date : 16/02/2023

To,

Ms. Kolhe Rohini Chandrakant

Asst. Professor

SJVPM's Rasiklal M. Dhariwal Institute of Pharmaceutical Education and Research.

Chinchwad, Pune.

Subject:-Invitation for conducting **Professional Guidance Lecture.**

Respected Sir,

We are hereby pleased to invite you for **Professional Guidance Lecture** in our college for D. Pharmacy Students **on 17th Feb. 2023 Friday at 11.30 am** the lecture will be on topic **"Patenting in drug development process"** This lecture will surely helpful to our students to develop professional approach in themselves.

Please confirm the same.

Thanking You

Suchita

Mrs. Suchita Khot
TPO Incharge, RMDCOP

Yours Faithfully,

(Dr. Fegade S. A.)
PRINCIPAL
RASIKLAL M. DHARIWAL
COLLEGE OF PHARMACY
Chinchwad Station, Pune-411 019

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MSBTE CODE : 0613, DTE CODE : DPH 6499)

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Ph.: 020-27457683 Fax No. 020 - 27354633, Website : www.rmdcop.com, Email : rmdcop613@gmail.com / admin@rmdcop.com

Mr. Fegade S. A.
Principal

Ref. No.: RMDCOP/2022-23/Feb/9032-B

Date : 17/02/2023

To,

Ms. Kolhe Rohini Chandrakant

Asst. Professor

SJVPM's Rasiklal M. Dhariwal Institute of Pharmaceutical Education and Research.

Chinchwad, Pune.

Sub: Appreciation letter for **Professional Guidance Lecture.**

Respected Sir,

We have invited you for **Professional Guidance Lecture** in our college D. Pharmacy Students **on 17th Feb. 2023 Friday at 11.30 am** the lecture will be on topic **"Patenting in drug development process"** Thank you so much for accepting the invitation. This lecture will surely allow students to develop the skills necessary to succeed in their professional lives.

Thanking You

Yours Faithfully,

Suchita

Mrs. Suchita Khot
TPO Incharge, RMDCOP

(Dr. Fegade S. A.)
PRINCIPAL
RASIKLAL M. DHARIWAL
COLLEGE OF PHARMACY
Chinchwad Station, Pune-411 019

Dr. D. Y. Patil Pratishthan's

Dr. D. Y. PATIL COLLEGE OF PHARMACY

Dr. D. Y. Patil Educational Complex, Sector - 29, Pradhikaran, Akurdi, Pune 411 044.
Tel. : 020-27656141, Tel. Fax : 020-27656141
E-mail : info@dyppharmaakurdi.ac.in Web : www.dyppharmaakurdi.ac.in
Approved by : All India Council for Techinical Education, New Delhi
Pharmacy Council of India, New Delhi. Recognized by : Government of Maharashtra
Affiliated to Savitribai Phule Pune University, Pune

Dr. Sanjay D. Patil
President

Padmashree Dr. D. Y. Patil
Founder

Shri. Satej D. Patil
Vce-President & Chairman

Dr. N. S. Vyawahare
Principal

Ref. No. : DYPCOP/357A/2022
Date : 12/12/22

To,
Mrs. Harshada Puranik,
Assistant Professor
Rasiklal M. Dhariwal Institute of
Pharmaceutical Education and Research,
Chinchwad, Pune.

Subject: Invitation to conduct guest session on "Overview on Stereochemistry"

Dear Madam,

With reference to the above mentioned subject, we wish to invite you to conduct guest session on **"Overview on Stereochemistry"** in our college. We would prefer your session on **13/12/2022, Tuesday, at 11:00 am.**

Awaiting for a favorable response from you.

Thanking you.

Dr. D. Y. Patil College of Pharmacy Akurdi, Pune - 44.

Dr. N. S .Vyawahare
Principal
Dr. D. Y. Patil College of Pharmacy
Akurdi, Pune - 411 044.

Dr. D. Y. Patil Pratishthan's

Dr. D. Y. PATIL COLLEGE OF PHARMACY

Dr. D. Y. Patil Educational Complex, Sector - 29, Pradhikaran, Akurdi, Pune 411 044.
Tel. : 020-27656141, Tel. Fax : 020-27656141
E-mail : info@dyppharmaakurdi.ac.in Web : www.dyppharmaakurdi.ac.in
Approved by : All India Council for Techinical Education, New Delhi
Pharmacy Council of India, New Delhi. Recognized by : Government of Maharashtra
Affiliated to Savitribai Phule Pune University, Pune

Dr. Sanjay D. Patil
President

Padmashree Dr. D. Y. Patil
Founder

Shri. Satej D. Patil
Vce-President & Chairman

Dr. N. S. Vyawahare
Principal

Ref. No. : DYPCOP/357B/2022
Date : 13/12/2022

To,
Mrs. Harshada Puranik,
Assistant Professor
Rasiklal M. Dhariwal Institute of
Pharmaceutical Education and Research,
Chinchwad, Pune.

Dear Madam,

On behalf of management, staff and students I take the opportunity to express my sincere thanks and gratitude towards you for sparing your valuable time to conduct guest session on **"Overview on Stereochemistry"** at our College on 13/12/2022.

It has enlightened all the students.

Looking forward to strengthen our liaison with you.

Thanking You,

Yours Sincerely,

Dr. N. S .Vyawahare
Principal
Dr. D. Y. Patil College of Pharmacy
Akurdi, Pune - 411 044

Dr. D. Y. Patil College of Pharmacy Akurdi, Pune - 44.

Indrayani Vidya Mandir's
INDRAYANI INSTITUTE OF PHARMACY
Approved by PCI, New Delhi, Govt. of Maharashtra / DTE Mumbai Affiliated to Maharashtra State Board of Technical Education, Mumbai
Talegaon Dabhade, Tal. Maval, Dist. Pune - 410 507 Maharashtra, INDIA
Contact No. : 02114-223737
E-mail: ivm.iip2017@gmail.com | Website : www.indrayanividyamandir.org

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Estd.1965

Vice- President: Shri Gorakhanath R. Kalokhe
Dr. Deepak V. Shah
Treasurer : Shri Shailesh K. Shah

President: Shri Ramdas M. Kakade
Secretary: Shri Chandrakant D. Shete
Principal: Prof. Gulab S. Shinde
M. Pharm (Pharmacognosy)

Ref. No: - IVM/IIP/Invest Lecture/2022-23/811

Date: 21/01/2023

DTE Code-6903

MSBTE Code-1822

To,
Mrs. Harshada H. Puranik,
Assistant Prof,
Rasiklal M.Dhariwal's,
Institute of Pharmaceutical Education and research,
Chinchwad- Pune.

Subject: Invitation as a resource person for Subject Expert Lecture

Respected Madam,

The purpose of writing this letter is to invite you as a Resource person for Subject Expert Lecture on 23 of January 2023. We want to cordially invite you for same. It would be great honor for the institute if you accept the invitation.

Venue-IVM'S Indrayani Institute of Pharmacy, Talegaon Dabhade.
Time-10.30 a.m. to 12.30 p.m.

Thanks and regard

Indrayani Vidya Mandir's Indrayani Institute of Pharmacy
Talegaon Dabhade
Tal. Maval
Dist. Pune-410507
MSBTE CODE-1822

Mr. G. S. Shinde
Principal
IVM's Indrayani Institute of Pharmacy
Talegaon Dabhade, Tal. Maval, Dist. Pune-410507

Indrayani Vidya Mandir's
INDRAYANI INSTITUTE OF PHARMACY
Approved by PCI, New Delhi, Govt. of Maharashtra / DTE Mumbai Affiliated to Maharashtra State Board of Technical Education, Mumbai
Talegaon Dabhade, Tal. Maval, Dist. Pune - 410 507 Maharashtra, INDIA
Contact No. : 02114-223737
Estd.1965 **E-mail:** ivm.iip2017@gmail.com | **Website :** www.indrayanividyamandir.org
Vice- President: Shri Gorakhanath R. Kalokhe
Dr. Deepak V. Shah
Treasurer : Shri Shailesh K. Shah
President: Shri Ramdas M. Kakade
Secretary: Shri Chandrakant D. Shete
Principal: Prof. Gulab S. Shinde
M. Pharm (Pharmacognosy)

Ref. No: -IVM/IIP/GuestLecture/2022-23/814 **Date: 23/01/2023**

DTE Code-6903 **MSBTE Code-1822**

To,
Mrs. Harshada H. Puranik,
Assistant Prof,
Rasiklal M.Dhariwal's,
Institute of Pharmaceutical Education and research,
Chinchwad- Pune.

Subject: **Thanks giving letter**

Respected Madam,

In the context of above mentioned subject, I express my thanks for giving lecture on Enzymes topic which is useful to our students to get knowledge.

I really appreciate your endeavor and hope that this sound bond will become stronger in future. I once again thank you for this lecture which is delivered on 23/01/2023 at 10.30 am and expecting the same cooperation in future.

Thank and regards,

Indrayani Vidya Mandir's Indrayani Institute of Pharmacy MSBTE CODE-1822

Mr. G. S. Shinde
Principal
IVM's Indrayani Institute of Pharmacy
Talegaon Dabhade, Tal. Maval, Dist. Pune-410507

Pune District Education Association's
SHANKARRAO URSAL COLLEGE OF PHARMACEUTICAL SCIENCES AND RESEARCH CENTRE
Kharadi, Tal. Haveli, Dist. Pune - 411014
Approved by : All India Council for Technical Education, Pharmacy Council of India, New Delhi.
Affiliated to : Savitribai Phule Pune University (PU/PN/Pharm/384/2009), Code 1235
Recognised by : Government of Maharashtra
D.T.E. Institute Code : PH 6385 • Website : www.pdea-sucopsrc.org • E-mail : sucopsrc_2009@yahoo.co.in
Phone : 020-27011106 Fax. : 020-27013835

Date : 16/02/2023 Ref. No.: SUCOPSRC / 1015 / 2022-2023

To,

Prof. Harshada P uranik,

Shri. Jain Vidya Prasarak Mandal's

Rasiklal M. Dhariwal Institute of Pharmaceutical Education & Research,

Chinchwad, Pune – 411019

Subject: Invitation as Chief guest and Judge for Oral Paper Presentation competition on 17th Feb. 2023

Respected Madam,

Our college was established in 2009 with the prime aim of providing quality education in the Pharmaceutical Sciences. The college is conducting B. Pharm. course, M. Pharm. course with specializations in Pharmaceutics and Quality Assurance Techniques. The college has recognized as research center for Ph.D. in Pharmacy under the faculty of Science and Technology, Savitribai Phule Pune University, Pune.

Madam, here we are organizing **Oral Paper Presentation competition** on the occasion of **61st National Pharmacy Week 2022-23**. Since you are an eminent expert in our pharma field, we take this opportunity to invite you as a **Chief Guest** for the Inaugural Function of this **Oral Paper Presentation competition on 17th Feb. 2023. at 10.00 am**. and we are also inviting you as judge for an Oral Paper Presentation competition.

We look forward to your presence and guidance. (For any query please contact to coordinator Vipul Dhasade-9970526436, email id: vipuldhasade2009@gmail.com)

Thanking You,

Yours Faithfully,

Dr. Ashok Bhosale
PRINCIPAL
P. D. E. A's
Shankarrao Ursal College of
Pharmaceutical Sciences & Research Centre
Kharadi, Pune-411014

Pune District Education Association's
SHANKARRAO URSAL COLLEGE OF PHARMACEUTICAL SCIENCES AND RESEARCH CENTRE
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Recognised by : Government of Maharashtra
D.T.E.Institute Code : PH 6385 | Website : www.pdeasubpharm.edu.in | E-mail : sucopsrc_2009@yahoo.co.in
Phone : 020 - 27013835

Date : 17/02/2023 Ref. No.: SUCOPSRC / 1017 /2022-2023

To,
Prof. Harshada P uranik,
Shri. Jain Vidya Prasarak Mandal's
Rasiklal M. Dhariwal Institute of Pharmaceutical Education & Research,
Chinchwad, Pune – 411019

Respected Madam,

At the outset, we wish to convey our sincere gratitude towards you for addressing as a chief guest and judge for Oral Paper Presentation competition on 17th Feb. 2023. Your valuable guidance to all students has rightly helped to update their knowledge.

We are looking forward to have such more interaction with you in the future.
Thanking you with regards.

Yours Sincerely,

Dr. Ashok Bhosale
PRINCIPAL
P D. E. A's
Shankarrao Ursal College of
Pharmaceutical Sciences & Research Centre
Kharadi, Pune-411014

॥उत्तम भेषज निर्माणार्थ कटिबद्धम्॥
JAYWANT SHIKSHAN PRASARAK MANDAL'S
RAJARSHI SHAHU COLLEGE OF PHARMACY & RESEARCH
(Approved by AICTE & PCI, Affiliated to SPPU &
Accredited by NAAC With 'A' Grade)
S. No. 82/2, Pune - Mumbai By Pass Highway, Tathawade, Pune 411 033.
Prof. Dr. T. J. Sawant
B.E. (Elec.), PGDM, Ph.D.
FOUNDER SECRETARY
E-mail : krkhandelwal@gmail.com Website : www.jspmrscopr.edu.in
Ph .: 8237076935/8237076936 Mob : 9822037623
DTE CODE :- PH6367
Dr. K. R. Khandelwal
M. Pharm, Ph. D.
PRINCIPAL

Ref.NO- RSCOPER/2370/Thanking letter/22-23 Dt - 23/3/23

To,

Dr.Shweta Prashant Ghode

Rasiklal M. Dharwal College of Pharmacy,

Pune.

Dear Madam,

On behalf of Jayawant Shikshan Prasarak Mandal's Rajarshi Shahu College of Pharmacy & Research, Tathawade, Pune-33. I am thankful for giving us an opportunity to serve you as a judge for Innovision 2023 " REPLICA" Pharma model competition at our institute on Thursday , 23/03/2023.

Thank you again for your valuable time & cooperation during the event.

Thanking you looking forward to further professional association in future.

J.S.P.M.'s Rajarshi Shahu College of Pharmacy & Research Tathawade Pune - 33.

(Dr. K. R. Khandelwal)
PRINCIPAL
Rajarshi Shahu College of Pharmacy & Research
Tathawade, Pune - 411 033.

Number of Collaborative Activities (Field Visit) (2022-23)

DETAILS OF FIELD VISIT

Sr no	Date	Institute visit	No of students participated
1	13/03/2023	PDEA's college of Ayurved and research centre, Pradhikaran, Nigdi, Pune	58
2	28/02/2023	National AIDs Research Institute, Bhosari, Pune	59

Dr. S. G. Walode
PRINCIPAL
Rasiklal M. Dhariwal Institute of Pharmaceutical Education & Research
Chinchwad Station, Pune-411 019

॥ पहले ज्ञान तब दया ॥
ESTD : 8/9/1927
Shri Jain VidyaPrasarakMandal's
Rasiklal M. Dhariwal Institute of
Pharmaceutical Education & Research
[Formerly Shri Fattechand Jain College of Pharmacy (B.Pharm.)]
Manikchand
Approved By PCI , AICTE New Delhi, DTE (PH-6823) & Affiliated to SavitribaiPhule Pune University (PU/PN/Pharm/465/2014)

Ref : RMDIPER/2022-23

Date : 13/03/2023

HERBAL GARDEN VISIT REPORT

Activity (Field Visit)	**Report on Herbal Garden Visit for B. pharm Second Year students**
Day & Date	Monday 13/03/2023
Time	10.00AM-1.00PM
Venue	"PDEA's College of Ayurved and Research center Pradhikaran, Nigdi, Pune
Description	A Herbal garden visit was organized to "PDEA's College of Ayurved and Research center Pradhikaran, Nigdi, Pune on 13th March 2023 for second year B. Pharm students. 58 (Fifty eight) students and two teachers visited the site. The aim was to show the students to acquire the knowledge of traditional systems of medicine and provide valuable opportunity to expand their knowledge in the field of holistic healing. Dr. Yogini Kulkarni, Dr. Ila Bhore, Dr. Lad Madam, Dr. Jitendra Tapaswi showed various medicinal plants maintained in the herbal plant section of the site and highlighted their importance, usefulness, and significance to the students and teachers. They also encouraged students to disseminate medicinal plant-related information to other students of the college. The students and the teachers all enjoyed the visit and found it informative and useful. **Importance of some herbs with their medicinal values** • Herbs such as black pepper, cinnamon, myrrh, aloe, sandalwood, ginseng, red clove, burdock, bayberry, and safflower are used to heal wounds, sores and boils. • Some herbs are also having antibiotic properties. Turmeric is useful in inhibiting the growth of germs, harmful microbes and bacteria. Turmeric is widely used as a home remedy to heal cut and wounds. • Ginger and cloves are used in certain cough syrups. They are known for their expectorant property, which promotes the thinning and ejection of mucus from the lungs, trachea and bronchi. Eucalyptus, Cardamom, Wild cherry and cloves are also expectorants.
Participation	58 students (B. pharm S.Y.) 02 staff members (Dr. Shweta P. Ghode and Mrs. Harshada H. Puranik)
Outcome	These herbal products are today being the symbol of safety in contrast to the synthetic drugs, that are regarded as unsafe to human being and environment. Although herbs had been priced for their medicinal, flavouring and aromatic qualities for centuries, the synthetic products of the modern age surpassed their importance, for a while. However, the blind dependence on synthetics is over and people are returning to the naturals with hope of safety and security. It's time to promote students globally.

Dr. Shweta P. Ghode & Mrs. Rohini Kolhe
Program Co-ordinator

Dr. Sanjay G. Walode
PRINCIPAL
Rasiklal M. Dhariwal Institute of
Pharmaceutical Education & Research
Chinchwad Station, Pune-411019

B. Pharm S.Y. students visited at College of Ayurved and Research center Pradhikaran, Nigdi, Pune for Herbal garden Visit

Dhariwal Institute of Pharmaceutical Education & Research
Chinchwad Station, Pune-19
PU/PN/Pharma/ 465/2014
Kasikhal M.

Dr. Jitendra Tapaswi guiding the students about Plants

Dr. Yogini Kulkarni and Dr. Ila Bhore showing the different verities of plants with their Ayurvedic names and medicinal uses

Dr. Lad madam, HOD, giving information about traditional medicinal plants

Felicitation of Dr. Rajkumar Bobade, Vice-Principal, College of Ayurved and Resea
Center Pradhikaran, Nigdi, Pune

HERBAL GARDEN VISIT

@

COLLEGE OF AYURVEDA AND RESEARCH CENTER, PRADHIKARAN, NIGDI, PUNE-44

DATE: 13TH MARCH 2023 **TIME: 9.45AM**

ATTENDANCE
SY.B.PHARM (2022-23)

Roll No	Student Name	Signature	Roll No	Student Name	Signature
1.	Abbad Yash Rajkumar		21	Dewasi Kailash Vanaram	
2.	Aditya Nagesh Kumbre		22	Dhilod Shantanu Sanjay	
3.	Aher Shrutika Rajesh		23	Diya Shah	
4.	Ambarkar Tejas Harivijay		24	Doke Ajit Prafulla	
5.	Ansari Ikram Minhaj		25	Dolaskar Avantika Manoj	
6.	Arti Sunil Thube		26	Doshi Akash Santosh	
7.	Bansode Shreya Prashant		27	Doshi Ketki Ashish	
8.	Bele Shreya Annasaheb		28	Falguni Sharad Petare	
9.	Bende Rasika Sunil		29	Fayyaj Jalal Shaikh	
10.	Bhokare Sanchit		30	Gadiya Siddhesh Dilip	
11.	Bobde Aadish Sarang		31	Gandhi Vaishnavi	
12.	Bora Dipak Vilas		32	Hipparkar Sneha Damodar	
13.	Borkar Sharvari Kumar		33	Jadhav Dipali Sadashiv	
14.	Chauhan Bipin		34	Jangale Dhanashri Sharad	
15.	Chordiya Shruti Sunil		35	Jangid Prakash Devilal	
16.	Choudhary Bhavesh Harish		36	Kadam Sayli Gurudas	
17.	Choudhary Kashish Dilip		37	Katariya Pranjal Manoj	
18.	Chougule Pranjali Prakash		38	Kinikar Aniket Sanjay	
19.	Chougule Priyadarshani		39	Kusekar Janhavi	
20.	Chuttar Nikhil Rahul		40	Lunawat Ronak Rajendra	Absent

41	Madake Shivani Balasaheb		55	Shaha Sakshi Aniket	
42	Madkar Pratik Suresh		56	Shriyash Haridas More	
43	Majage Sudarshan		57	Soni Srushti Jitendra	
44	Munot Gautam Navneet		58	Surana Shruti Sudeshkumar	
45	Nupur Nitin Barbare		59	Suryavanshi Vaishnavi	
46.	Oswal Prayash Pravin		60	Tanvi Vaibhav Redij	
47.	Patil Kiran Arun		61	Tate Manasi Keshav	
48.	Patil Sakshi Balasaheb		62	Thole SanyamVardhaman	
49.	Prajkta Paraskumar Parakh		63	Undare Gauri Abasaheb	
50.	Pratiksha Nitin Yewale		64	Upadhye Ayush Shrenik	
51.	Sankpal Prajakta Vikas		65	Upadhye Sujeet Sharad	
52.	Shah Mokshit Manojkumar		66	Wanare Sanket Sanjay	
53.	Shah Prathamesh Bahubali		67	Yadav Pooja Shivkumar	
54.	Shah Riya Rahul		68	Yadav Sakshi Santosh	

Dr. Shweta P. Ghode

Rasiklal M. Dhariwal Institute of Pharmaceutical Education & Research
Chinchwad Station, Pune-19
PU/PN/Pharma/
465/2014

Dr. Sanjay G. Walode
PRINCIPAL
Rasiklal M. Dhariwal Institute of
Pharmaceutical Education & Research
Chinchwad Station, Pune-411019

Ph. No -020-27459191 Fax No: 020 27354633/27457683 Email: rmdiper@gmail.com
Acharya Anand Rushiji Marg, Telco Road, D-2 / 60-61, Chinchwad, Pune-411 019

A INDUSTRIAL VISIT TO NATIONAL AIDS RESEARCH INSTITUTE, PUNE

In the early nineties it became evident that HIV was spreading widely in the country and the national efforts for its containment required multi-disciplinary research involving virology, immunology, microbiology, clinical research, epidemiology, field based trials and socio behavioral investigations. Knowledge about such deadly disease exclusively to HIV/AIDS research is important to pharmacy students. In view of this on the occasion of science day Rasiklal M. Dhariwal Institute of Pharmaceutical Education and Research, Chinchwad, Pune on Monday February 28/02/2023

organized visit to National AIDS Research Institute Bhosari, Pune. This visit was mainly focused to understand the procedures involved how our research in NARI evolved and especially in the areas of surveillance, capacity building, laboratory services and drug resistance studies. Owing to the pandemic all students were excited to know how NARI helped during Covid 19 vaccination development. We reach to our destination at 10.30 am, all were welcome by faculty of NARI. Initially we have been informed and guided about the basic information of institute thereafter students were splits into three groups. Each and every institute's research activities were guided by a Scientific Advisory Committee which includes eminent scientists from varied disciplines of NARI. Technical team explained about the facilities available inside the centre, their methods of operating. Students had chance to see the most expensive instruments available with the institute and learning experience about the maintenance of equipment and ethics considered during actual practice. Overall visit helped us in understanding the actual practical aspects of virology and immunology.

This Industrial visit will helpful in our students future practical Life & bring a positive change in their thinking & practical behaviour regarding Education & specializing technical skills. The visit ended by expressing our sincere gratitude to all scientist of NARI for making this visit remarkable. The total 59 students from third year B-Pharm of SJVPM's Rasiklal M. Dhariwal Institute of Pharmaceutical Education and Research, Chinchwad, Pune with three teaching faculty members were visited to National AIDS Research Institute. Dr. Sameer H. Lakade coordinated the event along with teaching faculty Mr. Raghunath. P Raut and Mr. Dhiraj Pankhe.

Dr. S.H.Lakade
T & P incharge

Rasiklal M. Dhariwal Institute of Pharmaceutical Education & Research ★ Chinchwad Station, Pune-19 PU/PN/Pharma/ 465/2014

Dr. S.G. Walode
PRINCIPAL
Rasiklal M. Dhariwal Institute of
Pharmaceutical Education & Research
Chinchwad Station, Pune-411019

Shri Jain VidyaPrasarakMandal's
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Manikchand

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T.Y.B.PHARM (2022-23)

Attendance of Industrial Visit (NARI)

Roll No.	Name of Student (Batch A)	Sign
1.	Agarwal Disha Sanjay	
2.	Annadate Ajay Mahavir	
3.	Bakliwal Chetan Mahavir	
4.	Bhajankar Leena Chandrashekhar	
5.	Bhor Pratik Sandeep	
6.	Bhujbal Durgesh Dattatraya	
7.	Birajdar Vishal Jaihind	
8.	Bolna Bhagyashree Nekaram	
9.	Chaudhary Suresh Shesharam	
10.	Chavan Sanika Mohan	
11.	Chobharkar Gajendrakumar Jinendrakumar	
12.	Choudhary Rajesh Ganeshram	
13.	Choudhari Smita Sudesh	
14.	Choudhary Pooja Khetaram	
15.	Choudhary Pramod Durgaram	
16.	Choudhary Suresh Pemaram	
17.	Choudhary Vinod Mohanlal	
18.	Chougule Diya Satish	
19.	Choutmal Jaydeep Ganeshrao	
20.	Dugad Jinesh Yogesh	
21.	Gadiya Krushikesh Santosh	
22.	Gandhi Preet Sameer	
23.	Ghule Abhishek Sanjay	

Ph. No -020-27459191 Fax No: 020 27354633/27457683 Email: rmdiper@gmail.com
Acharya AnandRushiji Marg, Telco Road, D-2 / 60-61, Chinchwad, Pune-411 019.

Roll No.	Name of Student (Batch B)	Sign
1.	Gundesha Lisha Ganesh	
2.	Habale Rohan Santosh	
3.	Jagdale Shruti Vitthal	
4.	Kaldate Kaustubh	
5.	Kalyankar Samruddhi Mahavir	
6.	Kasliwal Sakshi Uday	
7.	Khan Nasimakhatoon Anwarulhaq	
8.	Khivansara Sakshi Rajendra	
9.	Kote Pritam Mahavir	
10.	Landge Sarthak Somnath	
11.	Lokesh Salvi	
12.	Lunkad Sakshi Nilesh	
13.	Mahajan Taral Ratnakar	
14.	Maindarge Shubham Sunil	
15.	Mali Shashank Balaji	
16.	Maliyal Kanishka Narendra	
17.	Mehta Tejas Satyen	
18.	Mokashi Pranav Rohidas	
19.	Mutha Isha Vipul	
20.	Nahar Jay Pravin	
21.	Naram Pratik Sunil	
22.	Pande Samiksha Vijaykumar	
23.	Parihar Shravan Jagdish	

Rasiklal M. Dhariwal Institute of Pharmaceutical Education & Research
Chinchwad Station, Pune-19
PU/PN/Pharmal 465/2014

Roll No.	Name of Student (Batch C)	Sign
1.	Pathak Ravirajan Rajeevkumar	
2.	Pathare Ganesh Suryabhan	
3.	Patil Harshwardhan Kisan	
4.	Patil Prathamesh Vijay	
5.	Patil Pratiksha Bhimrao	
6.	Pawar Sumedh Laxmikant	
7.	Pinjarkar Bhushan Atul	
8.	Rachana Shah	
9.	Raskar Akshata Ankush	
10.	Ratadiya Mahima Yogesh	
11.	Sanghvi Jainam Jitendra	
12.	Sawargave Sateweli Sangmeshwar	
13.	Shah Atharva Deepak	
14.	Shah Dhruv Nilesh	
15.	Shinde Vaibhavlaxmi Dnyaneshwar	
16.	Solanki Harsh Dalpat	
17.	Soni Neha Santosh	
18.	Surve Sneha Vikas	
19.	Tambe Samruddhi Jayram	
20.	Tirthe Vaishnavi Govind	
21.	Tornekar Shivam Vijaykumar	
22.	Waje Prajyoti Rahul	
23.	Yadav Shivam Vinod	