



Criteria: 3 Research, Innovations and Extension	
Key Indicator 3.3	Research Publication and Awards
Metric No.3.3.1	Number of papers published per teacher in the Journals as notified on UGC website during the last five years




3.3.1.1 Number of research papers published in the Journals as notified on UGC website during the last five years.

Year	2022-23	2021-22	2020-21	2019-20	2018-19
Number of Publications	11	04	02	10	00

Formula:

$$\frac{\text{Number of publications in UGC notified journals during the last five years}}{\text{number of full time teachers during the last five years}}$$

Data Verified by:

 IQAC Coordinator	
 Principal	



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Key Indicator 3.3		Research Publication and Awards	
Metric No. 3.3.1		Number of research papers published per teacher in the Journals as notified on UGC website during the last five years	
File Description		Additional Information	





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3.3.1 Number of research papers published per teacher in the Journals as notified on UGC website during the last five years

Sr. No.	Details of Document
1.	Research Publications of 2022-23
2.	Research Publications of 2021-22
3.	Research Publications of 2020-21
4.	Research Publications of 2019-20
5.	Research Publications of 2018-19





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INDEX

Sr. No.	Details	Page No.
1.	Summary	1-7
2.	Academic Year 2022-23	8-19
3.	Academic Year 2021-22	20-24
4.	Academic Year 2020-21	25-35
5.	Academic Year 2019-20	36-38



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NAAC Criteria 3: Research Extension and Innovation

3.3.1 Research Publications & Awards

3.3.1.1. Research Papers

Academic Year	Title of Paper	Name of Author	Department of the Teacher	Title of journal	Year of Publication	ISBN/ISSN Number	Link to website of the Journal	Link to article / abstract of the article	Is it listed in UGC Care list/Scopus/Web of Science/other, mention
2022-2023	Docking a tool for evidence based herbal formulation Development: a review	Dr. S.A. Pishawikar Miss. Arati Varne	Pharmaceutical Chemistry	International Journal of Pharmacy and Pharmaceutical Research	2022	2349-7203	www.ijppr.humanjournal.com	https://ijppr.humanjournals.com/wp-content/uploads/2022/10/41-DOCKING-A-TOOL-FOR-EVIDENCE-BASED-HERBAL-FORMULATION-DEVELOPMENT-A-REVIEW.pdf	Yes/NO
	Current Review on Pharmacological activities of Citrullus Colocynthis (Fruit, root and seed)	Ms. Pratibha Gavarkar	Pharmaceutical Chemistry	International Journal of Pharmacy and Pharmaceutical Research	2022	2349-7203	https://ijppr.humanjournal.com/	https://ijppr.humanjournals.com/wp-content/uploads/2022/10/16-MEDICINAL-PLANTS-USED-IN-RHEUMATOID-ARTHRITIS.pdf	Yes/NO
	Medicinal Plants used in Rheumatoid Arthritis	Ms. Pratibha Gavarkar	Pharmaceutical Chemistry	International Journal of Pharmacy and Pharmaceutical Research	2022	2349-7203	https://ijppr.humanjournal.com/	https://ijppr.humanjournals.com/wp-content/uploads/2022/10/16-MEDICINAL-PLANTS-USED-IN-RHEUMATOID-ARTHRITIS.pdf	Yes/NO





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Lagerstroemia speciosa	Ms. Pratibha Gavarkar	Pharmaceutical Chemistry	International Journal of Pharmacy and Pharmaceutical Research	2022	2349-7203	https://ijppr-humanjournal.ais.com/	https://ijppr-humanjournal.com/wp-content/uploads/2022/10/35-1-lagerstroemia-speciosa-1.pdf	Yes/NO
Antinociceptive Investigation of Rhabdium chronic pain induced by Freund's adjuvant in mice	Ms. Pratibha Gavarkar	Pharmaceutical Chemistry	Research Journal of Pharmacy and Technology.	2023	0974-360X	https://ijpponline.org/110mc.aspx	10.52711/0974-360X.2023.090006	Yes/No
An overview on Ajwain (Trachyspermum Ammi): Pharmacological Activity and Medicinal Benefits	Ms. Rutuja Shah	Pharmaceutics	International Journal of Pharmacy and Pharmaceutical Research	2022	2349-7203	https://ijppr-humanjournal.ais.com/	https://ijppr-humanjournal.com/wp-content/uploads/2022/10/4.-AN-OVERVIEW-ON-AJWAIN.pdf	Yes/NO
Formulation and evaluation of piper betel leaf and Trachyspermum ammi leaf foot spray	Ms. Rutuja Shah	Pharmaceutics	International Journal of Pharmacy and Pharmaceutical Research	2022	2349-7203	https://ijppr-humanjournal.ais.com/	https://ijppr-humanjournal.com/wp-content/uploads/2022/10/10.-Formulation-and-Evaluation-of-Piper-Betel-leaf-and-Trachyspermum-ammi-Leaf-Foot-Spray.pdf	Yes/NO
A systematic review on chemical actives from natural Sources for cancer treatment	Ms. Arati Varne	Pharmaceutical Chemistry	International Journal of Pharmacy and Pharmaceutical Research	2022	2349-7203	https://ijppr-humanjournal.ais.com/	https://ijppr-humanjournal.com/wp-content/uploads/2022/10/6.-A-SYSTEMATIC-REVIEW-ON-CHEMICAL-ACTIVES-FROM-NATURAL-SOURCES-FOR-CANCER-TREATMENT.pdf	Yes/NO





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	A review on action of phytochemicals on protease enzyme as antiviral agents	Ms. Arati Varne	Pharmaceutical Chemistry	International Journal of Pharmacy and Pharmaceutical Research	2022	2349-7203	https://ijppr.humanjournals.com/	https://ijppr.humanjournals.com/wp-content/uploads/2022/10/5-A-Review-On-Action-Of-Phytochemicals-On-Protease-Enzyme-As-Antiviral-Agents.pdf	Yes/NO
	Green Anticancer Drugs	Ms. Rutuja Shah	Pharmaceutics	International Journal of Pharmacy and Pharmaceutical Research	2022	2349-7203	https://ijppr.humanjournals.com/wp-content/uploads/2020/04/23-GREEN-ANTICANCER-DRUGS.pdf	https://ijppr.humanjournals.com/wp-content/uploads/2020/04/23-GREEN-ANTICANCER-DRUGS.pdf	Yes/NO
	Design and Development of Novel ligands against cancer	Ms. Arati Varne	Pharmaceutical Chemistry	International Journal of Research in Pharmacy and Allied Science (IJRPAS)	2023	2583-6544	https://ijrphas.com/	https://idealpublication.in/wp-content/uploads/2022/12/D-ESIGN-AND-DEVELOPMENT-OF-NOVEL-LIGANDS-AGAINST-CANCER.pdf	Yes/NO
2021-2022	Design, Synthesis of Mannich Bases Derivatives of Thiosemicarbazide and their Evaluation for Anticancer Activity using Potato Disk Bioassay Method	Dr. S.A. Pishawkar Miss. Arati Varne	Pharmaceutical Chemistry	International Journal of Pharmaceutical Research	2022	2231-2919	https://journalajpri.com/index.php/IJPR/article/view/6154	10.9734/ijpr/2022/v34i027B36007	Yes/NO





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2020-2021	Phyto Pigment as colour Complex - Forming Agent in Novel Colorimetric Method development for estimation of Ropivacaine using Phyto pigments	Mr. Rahul Adnaik Mr. Swapnil Patil	Pharmacology	Journal of Current Pharma Research	2022	2230-7303	https://jepr.humanjournal.com/wp-content/uploads/2022/04/2-Swapnil-Patil-Sachin-Pishawikar-Rahul-Adnaik-Pratibha-Adnaik.pdf	Yes/NO
	Formulation and Evaluation of Turmeric Emulgel	Ms. Rutuja Shah	Pharmaceutics	Asian Journal of Pharmacy and Technology	2022	2231-5713	https://ajpronline.com/	Yes/NO
	Post covid Calamity – Mucormycosis: An overview	Ms. Rutuja Shah	Pharmaceutics	Asian Journal of Research in Pharmaceutical Sciences	2021	2231-5659	https://ajprsonline.com/Home.aspx	Yes/NO
2020-2021	Biochemical Profiling of Antifungal Soap Activity of Betel Leaf Extract And Garlic Oil By In Vitro Method	Mrs. Rutuja Shah Mrs. P. R. Adnaik, Dr. R.S. Adnaik	Pharmaceutics	National	2020	2231-5691	https://asianjpr.com/Home.aspx	Yes/NO
	Treatment on Polycystic Ovarian disease	Poonam Patil Rutuja R Shah2,	Pharmaceutics	International Journal of Pharma And Chemical	2020	2395-3411	https://www.ijpaer.com/archives23.html	Yes/NO





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2019-2020	Artificial Intelligence Boon For Human Being	Mrs. Rutuja Shah Mrs. P. R. Adnaik, Dr. R. S. Adnaik	Pharmaceutics	International Journal of Pharmacy And Pharmaceutical Research	2019	2349-7203	https://ijppr-humanjournals.com/articles/artificial-intelligence-boon-for-human-being/	https://www.google.com/search?q=Artificial+Intelligence+Boon+For+Human+Being+rutuja+shah&q=Artificial+Intelligence+Boon+For+Human+Being+rutuja+shah&rlz=C3121C1H1w6wUyBggAEELUYOTIHC AFQIRgADlBGjM4MjIwajBqMTWoAgivwAgE&sourceid=chrome&ie=UTF-8	Yes/NO
	Molecular docking assessment of Cissus Quadrangular for Antimalarial activity	Swapnati Thorat Mrs. P. R. Adnaik	Pharmaceutical Chemistry	International Journal of Pharmacy And Pharmaceutical Research	2019	2349-7203	https://ijppr-humanjournals.com/wp-content/uploads/2020/04/34-MOLECULAR-DOCKING-ASSESSMENT-OF-CISSUS-QUADRANGULAR-FOR-ANTI-MALARIAL-ACTIVITY.pdf	https://www.google.com/wp-content/uploads/2020/04/7-NOVEL-LIGAND-DOCKING-STUDIES-OF-GINGER-TO-ANALYZING-POTENTIAL-ACHE-INHIBITORS-FOR-ALZHEIMER%E2%80%A2%E2%80%99S-DISEASE.pdf	Yes/NO
	Novel Ligand based docking studies of Ginger to analyzing potential ache inhibitors for Alzheimers disease	Vyankesh R Dharanagutikar Pratibha R. Adnaik	Pharmaceutical Chemistry	International Journal of Pharmacy And Pharmaceutical Research	2020	2349-7203	https://ijppr-humanjournals.com/wp-content/uploads/2020/04/7-NOVEL-LIGAND-DOCKING-STUDIES-OF-GINGER-TO-ANALYZING-POTENTIAL-ACHE-INHIBITORS-FOR-ALZHEIMER%E2%80%A2%E2%80%99S-DISEASE.pdf	Yes/NO	





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In-Silico Evaluation of Wound Healing Potential of Euphorbia Tithymaloides	Mrs. P. R. Adnank, Dr. R.S. Adnank	Pharmaceutical Chemistry	Research Journal of Medicinal Plants	2020	1819-3455	https://scielo.br.net/home.php?issn=1819-3455	https://scielo.net/abstract?doi=gmp.2020.133.143	Yes/NO
Formulation And Development of Modified Release Biphasic Compressed Tablet of Propranolol Hydrochloride"	Rutuja Shah, Prabhla Adnank, Rahul Adnank	Pharmaceutics	International Journal of Pharmacy And Pharmaceutical Research	2020	2456-6470	https://www.ijstnd.com/ijstnd.com/	https://www.ijstnd.com/papers/ijstnd38190.pdf	Yes/NO
Impact and Applications of Chitosan Polymer in various drug delivery systems	Rutuja R. Shah,	Pharmaceutics	International Journal of Pharmacy And Pharmaceutical Research	2020	2349-7203	https://www.ijstnd.com/ijstnd.com/	https://ijppr.humanajournals.com/wp-content/uploads/2020/04/5-IMPACT-AND-APPLICATIONS-OF-CHITOSAN-POLYMER-IN-VARIOUS-DRUG-DELIVERY-SYSTEMS.pdf	Yes/NO
Need for Regulatory aspects of Cosmeceuticals	Shah Rutuja R, Adnank Rahul S	Pharmaceutics	International Journal of Pharma And Chemical Research	2020	2349-7203	https://www.ijstnd.com/ijstnd.com/	https://ijppr.humanajournals.com/wp-content/uploads/2020/04/15-NEED-FOR-REGULATORY-ASPECTS-OF-COSMECEUTICALS.pdf	Yes/NO
Formulation and evaluation of Triclosan containing Anti Acne cream	Rutuja R. Shah	Pharmaceutics	International Journal of Pharma And Chemical Research	2020	2395-3411	www.ijppr.com	https://ijppr.com/files/18-1-2020/02.pdf	Yes/NO





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Comparative Evaluation Study of Solubility Enhancement	Rutuja R. Shah	Pharmaceutics	International Journal of Pharma And Chemical Research	2020	2349-7203	https://www.ijstrd.com/	https://ijppr.humanajournals.com/wp-content/uploads/2020/04/3-2-COMPARATIVE-EVALUATION-STUDY-OF-SOLUBILITY-ENHANCEMENT-FOR-BICALUTAMIDE-BY-SLN-AND-SOLID-DISPERSION-METHOD.pdf	Yes/NO
Review on extraction, Characterization and Medicinal activity of Okra Mucilage	Rutuja Shah	Pharmaceutics	International Journal of Pharmacy And Pharmaceutical Research	2020	2349-7204	https://www.ijstrd.com/	https://ijppr.humanajournals.com/wp-content/uploads/2020/04/3-5-REVIEW-ON-EXTRACTION-CHARACTERIZATION-AND-MEDICINAL-ACTIVITY-OF-OKRA-MUCILAGE.pdf	Yes/NO



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Research Publications of 2022-23

**DOCKING A TOOL FOR EVIDENCE BASED HERBAL FORMULATION
DEVELOPMENT: A REVIEW**

22-23

Sachin A. Pishawikar, Aarti A. Varne, Kajal K. Mohite

①

*Anandi Pharmacy College, Kalambe Tarf Kale, Dist. Kolhapur, India***ABSTRACT**

Markets are getting flooded with numerous herbal formulations based on ethno information. Major problem with these formulations is extensive use of herbs is done but there is lack of information related to their probable mechanisms of action. Virtual screening methods can play significant role in design and development of authentic new herbal formulations to satisfy the numerous clinical needs with known mechanism of action. The aim of the present review is, how molecular docking of active constituents identified in the studied herbs can be done on selected targets, by which identification of probable mechanism of action by which they show desirable pharmacology activity can be done. If mechanism is known naturally authenticity of herbal formulation is going to increase.

Keywords: Herbal formulations, Virtual screening, molecular docking, pharmacology activity

HUMAN



**CURRENT REVIEW ON PHARMACOLOGICAL ACTIVITIES OF CITRULLUS
COLOCYNTHIS (FRUIT, ROOT & SEED)**

Gavarkar Pratibha S^{*1}, Chavan Rajshri S², Patil Suraj R¹

1. Anandi B. Pharmacy College, Kalambe Tarf Kale, Dist. Kolhapur, India.

2. PDEA's SGR Sable College of Pharmacy, Saswad, Pune, India.

ABSTRACT

Citrullus colocynthis (L.) Schrad (*C. colocynthis*), often known as Colocynth, is a wild species of the Cucurbitaceae family. The goal of today's research is to look at the phytochemical composition, pharmacological properties, cytotoxicity, and antioxidant activity of various plant elements. Traditional remedies have a higher level of interest as a result of increased health awareness and knowledge of the side effects of synthetic capsules. Medicinal plants provide remedies for a wide range of ailments, as well as basic to advanced living requirements. This has increased demand for herb-based medications by bringing ethnomedicinal studies into the forefront. *Citrullus colocynthis* is an herbaceous plant that contains a variety of nutrients that are important for overall health. in which the anti-diabetic activity is exceptional It appears that more research is needed to evaluate these findings.

Keywords: - *Citrullus colocynthis*, health aspects, traditional uses, herbal medicine



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MEDICINAL PLANTS USED IN RHEUMATOID ARTHRITIS

③

Pratibha S. Gavarkar¹, Rajashree S. Chavan²

1. Dept. of Pharmaceutical Chemistry, Anandi Pharmacy College, Kalambe Tarf Kale Tal-Karveer, Dist- Kolhapur, Maharashtra, India.

2. Dept. of Pharmaceutical Chemistry, Seth Govind Raghunath Sable College of Pharmacy, Saswad, Tal- Purandar, Dist- Pune, Maharashtra, India.

ABSTRACT

Rheumatoid arthritis is a chronic, inflammatory disorder that can affect numerous tissues and organs, but predominantly attacks synovial joints. The activity develops an inflammatory response the sheath around the joints and the inflammation of synovial cells. The aim in this review is to assemble all obtained data on anti-arthritis activity of plants and natural products. Different plant species have been recognized as active services of phytochemicals with anti-arthritis properties.

Keywords: - Rheumatoid arthritis, anti-arthritis activity, herbal plant, inflammatory

HUMAN





LAGERSTROEMIA SPECIOSALS

Ms. Pratibha S. Gavarkar¹, Dr. R. S. Chavan²

22-23
④

1. Anandi Pharmacy College, Kalambe Tarf Kale, India.
2. Seth Govind Raghunath Sable College of Pharmacy, Saswad, India.

ABSTRACT

Sumatra, especially in the northern Liverworts family Lepidoziaceae variety Sumatra Inadequate Report. Therefore, the aim of this study is to explore diversity Taman Eden 100 Natural Tourist Park, Lepidoziaceae in North Sumatra. Was explored the study runs along the hiking trails of the site. Species identification is based on these Morphological characters. Thirteen species of Lepidoziaceae were identified, of which 2 are Genus: Bazania (11 species), and Lepidozia (2 species). There were species of Lepidoziaceae found as epiphyte on tree trunks, decaying wood and soil. The most common species are found the study found Bazaniatridans, while Bazaniapectinata was a rare species.

Keywords: - Bazzania, Marchantiophyta, Diversity, Central Java.





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Antinociceptive Investigations of Rubiadin in Chronic pain induced by Freund's adjuvant in mice

Article in *Research Journal of Pharmacy and Technology* · January 2023

DOI: 10.17148/RJPT.23010006

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RESEARCH ARTICLE

Antinociceptive Investigations of Rubiadin in chronic pain induced by Freund's adjuvant in mice

Prakash M. Somade¹, Pramod Anil Patil², Suraj N. Mali³, Pratibha S. Gavarkar⁴
Rohan Sharadanand Phatak¹, Rajashree S. Chavan⁵, Atul R. Chopade²

¹Krishna Institute of Medical Science "Deemed to be University", Karad-415539, Maharashtra

²Rajarambapu College of Pharmacy, Kasegaon, District – Sangli, Maharashtra, 415404, India

³Department of Pharmaceutical Sciences and Technology, Birla Institute of Technology Mesra, Ranchi, (Jharkhand) 835 215 India.

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⁵Principal, Seth Govind Raghunath Sable College of Pharmacy, Saswad, Dist- Punc, Tal- Purandar 412301.

*Corresponding Author E-mail: prithvirajpatil87@gmail.com

ABSTRACT:

Main aim of study is to investigate the Rubiadin effects in mice model of chronic inflammation and pain. Complete Freund's adjuvant (CFA) inflammatory model was used for investigation of chronic hypersensitivity. Prior CFA inflammation, Von Frey filaments and acetone induced cold sensitivity test was used to evaluate hypersensitivity, respectively. The paw edema was measured using digital plethysmometer. Intraperitoneally administered Rubiadin (100 and 200 mg/kg) prior testing reduced CFA induced mechanical hypersensitivity. Rubiadin reduces evoked acetone cold hypersensitivity. Compared with vehicle, Rubiadin reduces paw edema too. Rubiadin reduced mechanical hypersensitivity significantly when administered two times a day from first to fifth day and from ninth to tenth day. In conclusion study revealed Rubiadin anti-nociceptive activity in chronic pain and also might be potential for effective management of pain.

KEYWORDS: Rubiadin; CFA; antinociceptive activity.

1. INTRODUCTION:

Rubiadin, is a anthraquinone that has been isolated from *Rubia cordifolia* Linn roots belonging to family-Rubiaceae and good number of activities have been reported regarding its isolation, characterization, analysis and formulation.¹⁻⁷ The plant *Rubia cordifolia* bears anti-inflammatory, immunomodulatory, anticonvulsant and anti-tumor activities.⁸⁻¹⁰ Rubiadin has been evaluated by our research groups for its analgesic activities.¹¹ In view of the above points, Rubiadin was evaluated for its role in modulation of chronic pain.

2. MATERIAL AND METHODS:

2.1 Drugs and reagents- The Rubiadin [chemically it is 1,3-dihydroxy-2-methylanthracene-9,10-dione] purchased from (Product code: R004, Lot. no.: T19D079; CAS No: 117-02-2) Natural Remedies Pvt. Ltd., Bangalore. Rubiadin purity was determined by the manufacturer via HPLC certifying purity above 94.80%. CFA purchased from Sigma (St Louis, MO). Indomethacin purchased from Elder pharma. Analytical grade chemicals and reagents were used in this study.

2.2 Animals- Swiss female mice (weighing in between 25 to 35 g were utilized with freely available food and water. The mice kept under standard environment and fed with standard pellet diet. Food and water were given freely throughout the entire experiments. Approval was obtained from the Institutional Animal Ethics reference number- RCP/18-19/CPCSEA/P-20. The experiments were carried as per CPCSEA ethical guidelines.





**AN OVERVIEW ON AJWAIN (*TRACHYSPERMUM AMMI*):
PHARMACOLOGICAL ACTIVITY AND MEDICINAL BENEFITS**



Aditya Khedekar, Prathmesh Tivale, Rutuja R. Shah

Anandi B. Pharmacy College, Kalambe Tarf Kale, Dist. Kolhapur, India.

ABSTRACT

Trachyspermum ammi L. (Apiaceae) is a crucial medicinal, aromatic and spice plant commonly called ajwain. Ajwain with its characteristic aromatic smell and spicy taste is widely used as a spice in curry. Several studies have already been done to validate its various activities. This study was conducted to validate the anti-bacterial and anti-fungal properties of methanolic and hexane seed extracts of two ajwain genotypes commonly grown in India. The findings showed significant antimicrobial activity in seed extract. The fruit has stimulant, antispasmodic and carminative properties and is employed as a vital remedy for flatulence, atonic indigestion, diarrhea, abdominal tumors, abdominal pain, hemorrhoids, bronchial problems, loss of appetite, galactogog, asthma and amenorrhea. Medically, it's been shown to own various medicinal properties like antifungal, antioxidant, antibiotic, antihypertensive, antispasmodic, broncho-dilating actions, ulcers.

Keywords: *Trachyspermum amm* , Ajwain, Thymol, Antimircobial, Antifungal





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**FORMULATION AND EVALUATION OF PIPER BETEL LEAF AND
TRACHYSPERMUM AMMI LEAF FOOT SPRAY**

Surabhi N. Shah*, Rutuja R Shah, Anita B. Bishnoi

Anandi Pharmacy College, Kalambe Tarf Kale, Tal. Karveer, Dist. Kolhapur, India.

ABSTRACT

The most common problem nowadays is related to the Foot odour, which is one of the things that is quite disruptive to appearance. One of the causes of foot odour is the presence of bacteria, especially the bacteria *Bacillus subtilis*. Present work was focused on developing herbal antibacterial foot spray. Presently we have used ethanol extract of Piper betel leaf and *Trachyspermum ammi*, commonly known as khaupan and Ajwain Leaf, as the traditional Indian ayurvedic document describes several of its medicinal properties including as an effective antibacterial agent. The spray form was chosen because of its easy and pleasant use. This study aims to make a foot odor control product in the form of a spray with 3 concentrations of Betel leaf and Ajwain ethanol extract, 0.5%, 1.0% and 1.5% to study the antibacterial activity. The results showed that this ethanolic extract can be formulated into foot spray preparation with the results of the organoleptic examination of the three formulas are clear liquid and yellow slightly green color. This formula had a good appearance, fast-drying, non-greasy and thin coating on the skin surface after application. The pH of the preparation is in the range 5.10-5.92. In formula 3 (F3) with a concentration of 1.5% Betel and Ajwain ethanol extract, it has a strong bacterial inhibition zone with an average inhibition zone diameter of 12.5 mm.

Keywords: - Foot Spray, Ajwain, Odour Control, Betel Leaf





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**A SYSTEMATIC REVIEW ON CHEMICAL ACTIVES FROM NATURAL
SOURCES FOR CANCER TREATMENT**

Rushikesh S. Mane, Prthamesh A. Patil, Aarti A. Varne

Anandi B. Pharmacy College, Kalambe Tarf Kale, Dist. Kolhapur, India.

8

ABSTRACT

Cancer, a severe metabolic syndrome, is the leading cause of mortality and morbidity worldwide and the numbers of cases are continuously rising. A natural product in chemoprevention is beneficial, because of fewer side effects and low toxicity profile compared to compounds of synthetic origin. In the present review, we summarize natural products with chemo preventive activities against cancer target. We also covered targets of cancer Vascular endothelial Growth factor Receptor (VEGFR), epidermal growth factor receptor (EGFR) and Poly(ADP-ribose) polymerase-1 and their mechanism of action. The present review may provide information on the use of these compounds for the prevention of cancer.

Keywords: - Phytochemicals; Chemotherapy; Targets



**A REVIEW ON ACTION OF PHYTOCHEMICALS ON PROTEASE ENZYME
AS ANTIVIRAL AGENTS****Varun M. Chothe*, Pritam S. Uffure, Aarti A. Varne***Anandi Pharmacy College Kalambe Tarf Kale, India.***ABSTRACT**

Recent worldwide outbreaks of viral infections have increased the thirst to discover and introduce antiviral agents to combat it. The bioactive compounds obtained from plant sources, especially flavonoids have protease inhibition activities so these may be most effective for control of viral infections. A natural product used in prevention of viral infection is beneficial, because of fewer side effects and low toxicity profile compared to compounds of synthetic origin. In the present review, we summarize natural products with preventive activities against viral infection. In addition, we also covered conventional therapy used for treating viral diseases with their mechanism of action. The present review may provide information on the use of these compounds for the prevention of viral diseases

Keywords: - Antiviral agents; Protease enzyme; phytochemicals; targets



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GREEN ANTICANCER DRUGS

22-23
odd

Sahil Patil, Pranav Aundhkar, Rutuja Shah, Pratibha Adnaik, Rahul Adnaik

Anandi Pharmacy College, Kalambe Tarf Kale, Tal Karveer, Dist Kolhapur

ABSTRACT

Cancer is a frightful disease and represents one of the biggest health-care issues for the human race and demands a proactive strategy from cure. Plants are reservoirs for novel chemical entities and provide a promising line for research on cancer. Nevertheless, plants and the plant-derived product is a revolutionizing field as these are simple, safer, eco-friendly, low cost, fast and less toxic as compared with conventional treatment methods phytochemicals are selective in their functions and especially on the tumor cells without affecting normal cells. Phytochemicals are considering suitable candidates for anticancer drug development due to their pleiotropic action on the target event with multiple manners. The research is in progress for the developing potential candidates (those can block or slow down the growth of cancer cells without any side effects) form these phytochemicals furthermore; drugs for cancer treatment and their limitations have also been discussed.

Keywords: - cancer, phytochemicals, pleiotropic action, tubulin.





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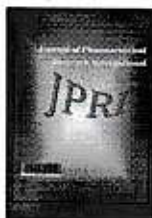
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Research Publications of 2021-22



27-22 (1)

Design, Synthesis of Mannich Bases Derivatives of Thiosemicarbazide and their Evaluation for Anticancer Activity using Potato Disk Bioassay Method

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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Original Research Article

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ABSTRACT

Mannich bases and thiosemicarbazide individually are known to show verity of pharmacological activities such as anti-inflammatory, anticancer, antifilarial, antibacterial, antifungal, anticonvulsant, anthelmintic, antitubercular, analgesic, anti-HIV, antimalarial, antipsychotic, antiviral and so forth. As novel attempt in present work in first step synthesis of verity of mannich bases is done using structurally different types of aldehyde, ketones and amines. The condensation of synthesized mannich bases is done with thiosemicarbazide to form a novel class of compounds called mannich bases of thiosemicarbazide. Use of bioassay is one of the ways of carrying out preliminary investigation of activity. A. tumefaciens induced potato disc tumor assay has been used to investigate anticancer activity of synthesized compounds. The compounds B2, B4, B25, B26, B28, B29 and B30 have shown same or better inhibitory activity compared to Gemcitabine used as standard.

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Human Journals

Research Article

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21-22 - (2)

Phyto Pigment as Colour Complex-Forming Agent in Novel Colorimetric Method Development for Estimation of Ropivacaine Using Phyto Pigments

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An International Peer Reviewed Journal For Pharmacy, Medical & Biological Science
DOI: 10.25166 CODEN: JCPRD6 NLM ID: 101744065

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Submitted: 22 February 2022
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Published: 30 March 2022

Keywords: ropivacaine, spectrophotometry, Keto-enol, tautomerism *Delonix regia*; validation.

ABSTRACT

Introduction: Anthocyanin group of compounds constitute color pigments having polyphenolic nature which is similar to synthetic dyes like methyl orange, Bromocresol green used in colorimetric methods of quantitative analysis. *Delonix regia* flowers provide a pink color pigment which we thought can be used as a color complex-forming agent.

Objective: In the present work a novel attempt has been made to develop a simple, accurate, and precise colorimetric method using *Delonix regia* flowers pigment for quantitative estimation of ropivacaine

Methodology: Pink color pigment was extracted using the hydroalcoholic mixture. Phytochemical identification, stability study was carried out. Stock and working solutions of ropivacaine were prepared in methanol. The concentration range in final-colored solutions was adjusted in the range of 4 to 20 µg/ml.

Result: The maximum absorbance for the colored complex between *Delonix regia* flowers extract and ropivacaine was measured at 613. Beer's law was followed in the range of 4 to 20 µg/ml. with a correlation coefficient of 0.9994, while the LOD and LOQ were found to be 0.2681 and 0.7962 respectively.

Conclusion: It can be concluded that successful development of simple, accurate, sensitive, and reliable methods has been done for the estimation of ropivacaine.



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RESEARCH ARTICLE

Formulation and Evaluation of Turmeric Emulgel

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ABSTRACT:

The aim of the present research work was to investigate the potential of emulgel in enhancing the topical delivery of Turmeric. Emulgel formulations of Turmeric were prepared using Carbopol 934 as a gelling agent. The influence of the type of the gelling agent and the concentration of both the oil phase and emulsifying agent on the drug release from the prepared emulgel was investigated using. The main purpose of this research was to design to formulate and evaluate a topical gellified emulsions (Emulgel) of Turmeric by using high molecular weight water soluble polymer Carbapol 934. This Carbapol possesses very high viscosity, transparency, film forming properties at low concentration and reported to be useful in formation of gel with an objective to increase transparency and spreadability. All the prepared emulgel showed acceptable physical properties concerning color, homogeneity, consistency, spreadability, and pH value. The influence of the type of gelling agent on the drug release from the prepared emulgels was investigated and carbopol 934 showed good results not only in the drug release but also in physical evaluation parameters. From the drug release studies, F3 formulation showed 90.05% drug release in 6 h with good clarity and physical appearance and viscosity 2250cps. Stability studies showed that the physical appearance, rheological study, in vitro drug release, and anti-inflammatory activity in all the prepared emulgel remained unchanged upon storage for 3 months. It was finally concluded that the formulation F3 with 1%w/w Carbopol 934 was found to be more promising formulations as it shows better physicochemical characteristics and antiinflammatory activity compared to other formulations.

KEYWORDS: Turmeric, Emulgel, Topical gel, Anti-inflammatory.

INTRODUCTION:

Transdermal drug delivery system has been inexistence for a long time. In the past, the most commonly applied systems were topically applied lotions, creams and ointments for dermatological disorders. The occurrence of systemic side-effects with some of these formulations is indicative of absorption of the drugs through the skin, which lead to the idea of TDDS. In a broad sense, the term transdermal delivery system includes all topically administered drug formulations intended to deliver the active ingredient into the general circulation.

Transdermal therapeutic systems have been designed to provide controlled continuous delivery of drugs via the skin to the systemic circulation. Emulgel has emerged as a promising drug delivery system for the delivery of hydrophobic drug. When gel and emulsion are used in combined form they are referred as Emulgel. Emulsion in gel have emerged as one of the most interesting topical drug delivery system as it have dual release control system i.e. emulsion and gel. In fact, the presence of a gelling agent in the water phase converts a classical emulsion into an emulgel. Both oil-in-water and water-in-oil emulsions are used as vehicles to deliver various drugs to the skin. Emulsions possess a certain degree of elegance and are easily washed off whenever desired. They also have a high ability to penetrate the skin. Emulgel for dermatological use have several favorable properties such as being thixotropic, pseudoplastic, easily spreadable, easily removable,

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REVIEW ARTICLE

Post covid calamity- Mucormycosis: An overview

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ABSTRACT:

Corona virus disease (Covid-19) it had declared an emergency global pandemic^{1,2,3} that cause terrible effects on respiratory system and killing more than half billion lives.^{4,5,6} Diabetes has been reported as a risk factor for mucormycosis in 73.5% of cases in India.⁷ People with diabetes and obesity tend to develop more severe Covid-19 infections. This means they're more expected to take corticosteroids, which are frequently used to treat Covid-19. But the corticosteroids along with diabetes increase the risk of mucormycosis because it has been observed that peoples are affected with mucormycosis due to weekend immunity. Even a short course of steroid (5-14 days) results in mucormycosis.⁸ Mucormycosis, colloquially known as black fungus, is an infection from the mucormycetes group of fungi. The virus that causes Covid-19 can damage lung tissue and blood vessels, which could also increase susceptibility to different fungal infection. brain, causing headaches or seizures. So, damage to tissue and blood vessels from Covid-19 infection, treatment with corticosteroids, high background rates of diabetes in the population most brutally affected by the coronavirus are also getting affected by life threatening fungal infection called as mucormycosis. Several methods have deferred the mortality but still have a challenge in curing mucorales.

KEYWORDS: Covid-19, mucormycosis, diabetes, corticosteroids, immunity.

INTRODUCTION:

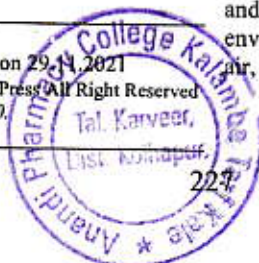
Wide range of unscrupulous bacterial and fungal infections accompanying COVID-19 (Coronavirus disease 2019 produced by severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2)).^{9,10,11} COVID-19 patients are co-infected by mainly Aspergillosis and Candida fungal pathogens.¹² People with diabetes and obesity tend to develop more severe Covid-19 infections. This means they're more expected to take corticosteroids, which are frequently used to treat Covid-19. But the corticosteroids along with diabetes increase the risk of mucormycosis. Even a short course of steroid (5-14 days) results in mucormycosis.⁸ A current summary of Covid-19-associated mucormycosis showed 94% of patients had diabetes, and it was poorly controlled in 67% of cases.

Nowadays number of cases is now much more probable to current wave of Covid-19 infections in India.¹³ Covid-19 patients infected with black fungus which is often termed as " mucormycosis " are reported from India.

The disease name "mucormycosis" was subsequently used by the American pathologist R. D. Baker to denote a mycosis caused by certain members of Mucorales.^{14,15}

Mucormycosis, previously known as zygomycosis, is the disease caused by the numerous fungi that belong to the fungal family "Mucorales".¹⁶ Fungi in this family are regularly found in the environment in soil, for example and are often allied with decaying organic material such as fruit and vegetables. Mucorales also found in decomposing food, bird and animal excretions, water and air around construction sites, and moist environments.¹⁷ They are more common in soil than in air, and in summer and fall than in winter or spring.^{18,19}

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19-20
①

Artificial Intelligence Boon for Human Being



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Rutuja Shah*, Pratibha Adnaik, Rahul Adnaik

Anandi college of B.Pharmacy, Kalambe Tarf Kale.

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Accepted: 29 November 2019
Published: 30 December 2019

Keywords: Artificial Intelligence, Cognitive Science, Medical Applications, Minimization of Risk

ABSTRACT

Presently article is focused on basic of artificial intelligence and its implementation in human benefits. We have discussed what is actual artificial intelligence, which are its different type and relation between psychological human behavior and artificially intelligent machine. Application of artificially intelligent machine in medical field like x-ray, zoography, MRI and endoscopic processes. Also discussed risk of human sacrifice can become over by development of such machineries. Developing generic mechanism for the robot to reason as of mental state as of in their human partner is one of the approach. Development of robots with the ability of developing sense to choose, act, interact and to make the decision is possible with the help of artificial intelligence.



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**MOLECULAR DOCKING ASSESSMENT OF *CISSUS QUADRANGULAR* FOR ANTI MALARIAL ACTIVITY**

19-20

②

*¹Swapnali A. Thorat, ¹Vyankatesh R. Dharanguttikar, ¹Mayur P. Sarode, ²Pratibha R. Adnaik, ²Rahul S. Adnaik

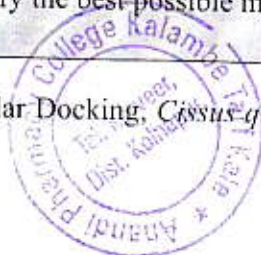
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ABSTRACT

Introduction: *Cissus quadrangularis* is a herb of phytosanitary origin. It has been used to treat inflammatory diseases. The local name *Cissus quadrangularis* is harbhanga. Photochemical probably bioactive, with useful medicinal properties. Even if modern studies, their benefits in anti-malarial have been emphatic. The bioactive phytoconstituents of *Cissus quadrangularis* Linn are studied *in silico* docking for different anti-malarial drug targets against the target Human Dihydrofolate Reductase (HDR) i.e. Saponin, Pallidol, and Quercetin. **Methods:** All the bioactive photochemical that showed expected activity and followed rules were docked into 1MVT and 1u5n protein receptor downloaded form (WWW.RCSB.COM). The structures were drawn using Vlife2D Draw software by modifying the ligands based on the 1MVT and 1u5n protein receptors. Using the same Vlife 3D Modules program, they were subjected to energy minimization using the Compute menu and then saved as Mol extension files which can be accessed via the docking interface. Software version of Vlife MDS 4.6.1 was used for study of molecular docking. **Result:** The docking findings were analyzed on the basis of interaction and hydrophobic relation between hydrogen bonds (H-bond) and Vander Waals (VDW), Aromatic interaction between ligand and receptor. **Conclusion:** Result of the study shows that saponin displayed the highest activity against 1MVT (HDR) with binding affinities of -68.82 and for 1u5n protein it predicts -61.71 respectively, helping to identify the best possible molecular target for malaria virus.

Keywords: - *In-silico* Molecular Docking, *Cissus quadrangularis* Linn, Anti-malarial Target Receptor.

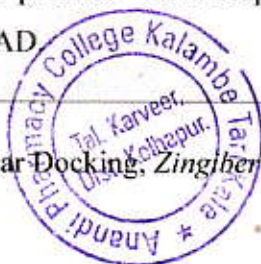


**NOVEL LIGAND –BASED DOCKING STUDIES OF GINGER TO ANALYZING
POTENTIAL ACHE INHIBITORS FOR ALZHEIMER'S DISEASE**

19-20

¹Vyankatesh R. Dharanguttikar^{*}, ¹Swapnali A. Thorat, ¹Sofiya R. Shaikh, ¹Manasi M. ³Savale, ²Pratibha R. Adnaik, ²Rahul S. Adnaik¹Rajarambapu College of Pharmacy Kasegaon, Sangli, 415404 India²Anandi Pharmacy College, Kalambe Tarf Kale, Tal Karveer, Dist Kolhapur**ABSTRACT**

Ginger (*Zingiber officinale*), despite being a regular dietary Nutritional supplement adding to the taste and aroma of foods, contains several potentially bioactive photochemical having valuable medicinal properties. Even if modern studies have emphasized their benefits in Alzheimer's disease. Hence the current research work seeks to utilize molecular docking studies for investigation of binding interactions between active ginger components i.e. Gingerol, Shagoal and Ginerol for various anti-Alzheimer drug targets. All the bioactive photochemical that show predicted activity and follows rules were docked into the receptor of 1QWC, 4ey5 downloaded form (WWW.RCSB.COM). The structures were drawn using Vlife2D Draw software based on the 1QWC, 4ey5E receptor by altering the ligands. After that, they were converted to 3D structures using the same Vlife 3D Modules software by which they were subjected to energy minimization using the Compute menu and then saved as Mol extension files which can be accessed using the docking interface. Vlife MDS 4.6.1 software version was used for molecular docking study. The docking results evaluated on basis hydrogen bonds (H-bond) and Vander Waals (VDW) Interaction and Hydrophobic bond, Aromatic Ligand's relationship with the receptor. The study result that Gingerol showed the maximum activity against the 1QWC (acetylcholine esterase) with the binding affinities of -49.72 and for 4ey5 protein, it predicts -49.44 respectively. This helps in identifying the best possible molecular target for AD.

Keywords: - *In-silico* Molecular Docking, *Zingiber officinale*, Alzheimer's disease



Research Article

In-silico Evaluation of Wound Healing Potential of *Euphorbia tithymaloides*

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Abstract

Background and Objective: The wound healing after the injury is a complex process by which the skin and the tissue under the skin fix themselves. *Euphorbia tithymaloides* has various therapeutic uses, such as antiprotozoa, anti-inflammatory, antiplasmodial, antimicrobial and so on. The goal of this study was to predict wound healing medicinal products with a focus on the *in silico* effect of chemical constituents on wound healing process. **Materials and Methods:** *In silico* molecular docking of reducing sugar present in *Euphorbia tithymaloides* was performed using two receptors of leukotriene such as structural basis of the proinflammatory signaling complex mediated by TSLP PDB ID: 4NN5, Crystal structure of the type-I interleukin-1 receptor complexes with interleukin-1beta PDB ID: 1ITB and second two receptor of NF- κ B which are Cryptic glucocorticoid receptor-binding sites pervade genomic NF- κ B response elements PDB ID: 5E69 and Structure-function analyses of the bacterial zinc metalloprotease effectors protein GtgA+ uncover key residues required for deactivating NF-B PDB ID: 6GGR. **Results:** As a result, D-Ribose has a dock score of -51.51 and -75.56 Kcal mol⁻¹ against TSLP and interleukin-1 receptor type-I in the first test. And second result D-Ribose dock score of -76.42 and -64.69 Kcal mol⁻¹ against two NF- γ B receptors that predicted interaction with selected protein structure via strong hydrogen bonding, with good docking score ensuring significant binding affinity with selected protein structure. **Conclusion:** The current research offers a significant approach to the reducing sugar derivative's structural requirements that would make it possible for the wound healing mechanism to interact with the receptors concerned.

Key words: *In-silico* molecular docking, inflammatory diseases, phytochemical, inflammatory mediators, signaling complex, pharmacological activities, vasoconstriction

Citation: Rahul S. Adnaik, Vyankatesh R. Dharanguttikar, Swapnali A. Thorat, Pratibha R. Adnaik, Prajakta D. Nayakal and Sanket S. Patil, 2020. *In-silico* evaluation of wound healing potential of *Euphorbia tithymaloides*. Res. J. Med. Plants, 14: 133-143.

Corresponding Author: Rahul S. Adnaik, Anandi Pharmacy College, Kalambe Tarf Kale, Kolhapur, Maharashtra, India

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Competing Interest: The authors have declared that no competing interest exists.

Data Availability: All relevant data are within the paper and its supporting information files.



Formulation and Development of Modified Release Biphasic Compressed Tablet of Propranolol Hydrochloride

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ABSTRACT

Quick/slow drug delivery system involves the use of compressed core, consisting of sustained release tablet, which is coated by compression over the whole surface with fast dispersible formulation. Propranolol hydrochloride, a non-selective beta-adrenergic blocker has widely used in the treatment of hypertension and angina pectoris with frequent administration. Aim of present study was to develop press-coated tablet system to achieve quick/slow release of the drug are the main purposes of biphasic drug delivery system to avoid frequent administration with increasing patient compliance and therapeutic efficacy. In this study immediate layer which was prepared using croscarmellose sodium, crospovidone and sodium starch glycolate which was compressed on core tablet prepared by using HPMC and Ethyl cellulose. Results showed that the immediate layer dissolved within four minutes and core tablet releases drug for 12 hrs in controlled manner with zero order release kinetics.

KEYWORDS: Biphasic release; multiple unit dosage form; compressed tablets; Tablet characteristic, Tablet dissolution

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1. INTRODUCTION

Oral drug delivery is largest and oldest segment of the total drug delivery market.^{1,2} Since oral dosage form can be self administered by the patients they are more lucrative to manufacture.³ The term modified-release drug product is used to describe products that alter the timing and/or the rate of release of the drug substance. conventional dosage forms such as solutions, ointments, or promptly dissolving dosage forms as presently recognized". Several types of modified-release drug products are recognized.⁴

Generally, conventional controlled dosage forms delay the release of therapeutic system levels and do not provide rapid onset of action.⁵ To modify the release of drug from these systems, surface area exposed to fluid can be constrained by the addition of barrier layer to one or both side of the tablet.^{6,7,8} The controlled release drug delivery system can improve therapeutic efficiency and safety of drug by precise and temporal spatial placement in the body, thereby reducing both the size and number of doses required.⁹ When a single constant rate for drug release does not utterly satisfy the therapeutic objective, the quick/slow drug delivery system may be interesting alternative.¹⁰ This biphasic

release system can be achieved by the application of an immediate release layer to the conventional layered matrix tablet.¹¹ A quick/slow release system provides an initial burst of drug release followed by constant rate of release over a defined period of time. This type of system is used mostly when maximum relief needs to be achieved quickly, and it is followed by a sustained release phase to avoid repeated administration.¹² Suitable candidate drugs for this type of administration include non-steroidal anti-inflammatory drugs, antihypertensive, antihistaminic and anti allergic agents.¹³

Press-coating is absolute dry coating without solvent and heat use.¹⁴ Propranolol hydrochloride is a nonselective beta-adrenergic blocking agent,¹⁵ Propranolol hydrochloride undergoes extensive and highly variable hepatic first-pass metabolism following oral administration, with a reported systemic bioavailability between 15% and 23%.^{16,17,18} Propranolol hydrochloride was selected as a model drug here for the development of pH-independent extended release tablets.^{19,20} Hydrophilic polymer matrix systems are widely used for designing oral controlled drug delivery



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NEED FOR REGULATORY ASPECTS OF COSMECEUTICALS

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ABSTRACT

Nowadays a new hot topic in the cosmetic industry is 'Cosmeceuticals', which is the fastest growing segment of the natural personal care industry. Cosmeceuticals are the future generation of skincare. Cosmeceuticals have become the fastest-growing segment of the personal care industry. Cosmeceuticals are cosmetic products with biologically active ingredients purporting to have medical or drug like benefits. This paper will give information regarding current and future trends of cosmeceuticals.

Keywords: - Cosmeceuticals, Active ingredients, Personal Care, Skin Care.



Research Article

FORMULATION AND EVALUATION OF TRICLOSAN CONTAINING ANTI-ACNE CREAM

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ABSTRACT

Pimple, acne, sunburn mark and pigmentation are issues that affected every individual at least once during life time. Consumers have to search for a product that can cure the skin issue and grant them with a good and healthy skin such as anti-acne cream. Nevertheless, most of the anti-acne creams available in the market contain lots of chemicals that may have some kinds of side effects to the consumers. The present study was conducted to formulate and evaluate the anti-acne creams containing Triclosan. The antibacterial activity of the Triclosan and creams in different formulation were investigated using gram-positive bacteria (staphylococcus aureus, bacillus, pseudomonas aeruginosa) and gram-negative bacteria (klebsiella pneumoniae, proteus vulgaris) through disc diffusion method. The antibacterial potential of the Triclosan was studied with three different formulations (F1, F2, and F3). The Triclosan showed significant antibacterial activity against the entire tested organism. This activity was well maintained when the Triclosan was incorporated into the cream formulation. This formulated pastes can be successfully used for skin infection which including acne vulgaris.

Keywords: Acne, antibacterial activity, bacteria, cream.

1. INTRODUCTION

Skin is the most important part of our body. Now a day skin exposure to sun, dust so number of problems such as pimples, acne, sunburn marks and pigmentation. Acne is the most common and chronic skin problem¹. Acne is long-term skin disease that arises when hair sacs are blocked with departed skin cells². Acne vulgaris is a disease of pilosebaceous unit which is characterized inflammatory lesions (papules, nodes, pustules) and non-inflammatory (open and closed comedones). The condition usually starts at the age of 14 to 19 years. The word acne is obtained from "acme" which means "prime of life". A change in keratinisation pattern of hair follicle leads to blockage of sebum secretion. It is hypersensitivity to the stimulation of sebocytes and follicular keratinocytes by androgen leads to hyperplasia of sebaceous glands and seborrhea which characterize acne. The need of quality control for ayurvedic or herbal product is due to the fact that the preparation of drug according to the ancient method has been reduced due to the commercialization of ayurvedic pharmacy³.

Acne is the most common type of skin condition. It is most widespread among older children, teenagers and young adults. Around 80% of 11 to 30 year olds are affected by acne. Most acne cases in girls occur between the ages of 14 to 17 and in boys the condition is most common in

16 to 19 year-olds. Most people will experience repeated episodes, or flare-ups, of acne for several years before finding that their symptoms gradually start to improve as they get older. The symptoms of acne usually disappear when a person is in their twenties. However, in some cases, acne can continue into adult life, with approximately 5% of women and 1% of men over 25 continuing to experience symptoms⁴.

Triclosan block the active site of the enoyl-acyl carrier protein reductase enzyme (ENR), which is an essential enzyme in fatty acid synthesis in bacteria⁵. Triclosan inhibit the enzyme and hence prevent the bacteria from synthesizing fatty acid, which is necessary for building cell membranes and for reproducing. Since human do not have this ENR enzymes, triclosan has long been thought to be fairly harmless to them⁶. Triclosan is a very potent inhibitor and only a small amount is needed for powerful antibacterial action⁷.

Staphylococcus aureus and Propionibacterium bacteria responsible for acne isolated from acne patients⁸. Mostly people now more attracted toward the use of herbal formulation. According to WHO, there are four billion people use herbal medicine as a primary health care and convinced to be safe.



IMPACT AND APPLICATIONS OF CHITOSAN POLYMER IN VARIOUS DRUG DELIVERY SYSTEMS

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ABSTRACT

Chitosan is a versatile natural polymer. Many polymers have been used for delivery systems among them chitosan seems to be a better polymer because of remarkable properties such as non-toxic, biocompatible, biodegradable, high charge density, mucoadhesive properties, nonimmunogenic and noncarcinogenic. Therefore, chitosan has wide applications in biomedicine, wastewater treatment, cosmetics, and pharmaceuticals. This review highlight that research on chitosan-based systems containing various drugs for various therapeutic applications has increased in recent years. This short review is an attempt to emphasize the pharmaceutical applications of chitosan polymer in brief and satisfied the requirement of a review on this naturally derived polymer in the present scenario.

Keywords: - Chitosan, Natural polymer, Delivery systems, Therapeutic applications.





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**COMPARATIVE EVALUATION STUDY OF SOLUBILITY ENHANCEMENT
FOR BICALUTAMIDE BY SLN AND SOLID DISPERSION METHOD**

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ABSTRACT

The present study was carried out to comparative evaluation of solubility enhancement of Bicalutamide. Method for solid lipid nanoparticle preparation is a precipitation method and solid dispersion prepared by the hot plate method. Result expressed as an *in-vitro* release and drug content of Bicalutamide effectively gives by solid lipid nanoparticles than solid dispersion method. So Solid lipid nanoparticle is an effective method for Bicalutamide than solid dispersion.

Keywords: - Bicalutamide, Solubility enhancement, Solid-lipid nanoparticle



**REVIEW ON EXTRACTION, CHARACTERIZATION AND MEDICINAL
ACTIVITY OF OKRA MUCILAGE****Rutuja Shah, Surabhi Shah***Anandi Pharmacy College, Kalambe Tarf Kale, Tal Karveer, Dist Kolhapur***ABSTRACT**

Okra (*Abelmoschus esculentus* L.) is a flowering plant of the Malvaceae family which is also known as lady's finger, gumbo, banya or bania or commonly known as bhindi. Natural polymers have been used in different pharmaceutical formulations. They are easily available, non-toxic, biodegradable and cost effective to be used as pharmaceutical excipients. In present investigation, we have reviewed about method for extraction and characterization of mucilage (*Hibiscus esculentus*) and further characterized to be used as pharmaceutical excipient. Main focus of review was to study about anti cancer activity of okra mucilage. Different methods for isolation and physicochemical method for characterization was focused. Antioxidant activity as well as IR spectra determination was noted. Okra is rich in phenolic compounds with important biological properties like quaternary and Flavonol derivatives, Catechin Oligomers and hydroxycinnamic derivatives. Okra is also known for being high in antioxidants activity. Okra has several potential health beneficial effects on some of the important human diseases like cardiovascular disease, type 2 diabetes, digestive diseases and some cancers.

Keywords: - Okra, Excipients, Antioxidant and Anticancer



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Research Publications of 2020-21



RESEARCH ARTICLE

**Biochemical profiling of Antifungal soap activity of betel leaf
(*Piper betle* L.) extract and Garlic oil by In vitro method**

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ABSTRACT:

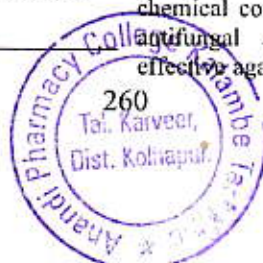
The most common problem in now days is related to the fungal infection. Present work was focused on developing herbal antifungal soap as of commercially available soap shows few of side effects to sensitive skin and are much costly. Presently we have used Piper betel leaf commonly known as betel leaf (khau pan) and garlic oil. The traditional Indian ayurvedic document describes several of its medicinal properties including as an effective antifungal agent. The present study was conducted to evaluate the secondary metabolite that contributes to its antifungal activity. In present work we have formulated antifungal soap of garlic oil and betel leaf extract with synergistic effect for the fungal infection. The different batches were formulated to study soap base effect in formulation and optimized batch was further used for herbal soap formulation. The formulation was evaluated and observed clear, good ability. The formulation of F3 batch shows best result of evaluation parameters as compare to F1 and F2. The optimized batch formulation of F3 showed good result. Microbial study has been done using microorganism such as *Proteus vulgaris*, *bacillus*, *klebsiella pneumoniae*, *Staphylococcus aureus*, *pseudomonas aeruginosa*, for measuring the effectiveness of an antimicrobial agent against fungi/bacteria grown in culture, the microorganism of the interest was swabbed uniformly across a culture plate. Then soap of 5X5 mm was placed on the surface of the agar. Then the plates were placed in the incubator for 24 hrs

KEYWORDS: Antifungal, Herbal Soap, Betel Leaf, Garlic Oil.

INTRODUCTION:

Skin infections cause by fungi is the most common and requires significant attention for treatment, and also to maintain a healthy skin thereafter. Most commercial soap available today in the market is incorporated with chemical agents having antimicrobial activity with potential depilatory properties on skin pathogens. The problem now is most people do not know the long term consequence of using the commercial soaps. The drawbacks of commercial soap, led people now to be more inclined toward the use of herbal formulations.

These problems of commercial soap have been reported to be successfully handled daily by using only what 'mother nature' has to offer to help you nourish your skin. Herbs are the natural products mostly found in the treatment of almost all diseases and skin problems owing to their high medicinal value, cost-effectiveness, availability and compatibility. Hence it can be used in soap base. Betel leaf possess strong aromatic flavor and have been long in use for the preparation of traditional Indian ayurvedic herbal in review. Many of researcher have proved antifungal activity of betel leaf extract. For the same purpose present study has been conducted to develop antifungal soap of crushed leaves extract, similarly from literature it was concluded that garlic oil also possess antifungal activity, one of the chemical constituent ajoene of garlic is responsible for antifungal activity. Ajoene has been shown to be effective against a variety of bacterial and fungal strains,



Research Article

TREATMENT ON POLYCYSTIC OVARIAN DISEASE**Poonam J patil^{1*}, Rutuja R Shah², Nayan Bhosale³,
Vaidhun Bhaskar¹ and Smita Nayak¹**¹Ghalot Institute of Pharmacy, Kopar Khairane, Navi Mumbai, Maharashtra, India.²Anandi Pharmacy College, Kalambe, Tarf Kale, Maharashtra, India.³Adarsh College of Pharmacy, Vita, Maharashtra, India.**ABSTRACT**

Polycystic ovary syndrome (PCOS) is the most common endocrine disorder in women. The clinical manifestation of PCOS varies from a mild menstrual disorder to severe disturbance of reproductive and metabolic functions. These could be ovulatory dysfunction-related infertility, menstrual disorders, or androgen-related symptoms. Weight loss improves the endocrine profile and increases the likelihood of ovulation and pregnancy. Normalization of menstrual cycles and ovulation could occur with modest weight loss as little as 5% of the initial weight. In PCOS, anovulation relates to low follicle-stimulating hormone concentrations and the arrest of antral follicle growth in the final stages of maturation. This can be treated with medications by an ayurvedic tablets containing drugs such as shatavari, shankhbhasma, guduchi satva. Chronic anovulation over a long period of time is also associated with an increased risk of endometrial hyperplasia and carcinoma, hirsutism, acne, alopecia which should be seriously investigated and treated. Alternative ayurvedic medicine has been emerging as one of the commonly practiced medicines for PCOS. In this research paper the treatment of PCOS with medicinal system namely Ayurveda, taken into account to get best curable medicinal system for PCOS. Ayurveda can be considered as best cure and promising treatment with no side effects.

Keywords: PCOS/PCOD, polycystic ovaries, syndrome, follicles, cysts, menses, ayurvedic treatment.

INTRODUCTION

Polycystic Ovarian Syndrome also known as PCOS OR PCOD (Polycystic Ovarian Disorder) is a very common hormonal disorder and a leading cause of female infertility worldwide. PCOS is also called as Stein-leventhal Syndrome after two doctors who first described it in 1935 PCOS is one of the most endocrinopathy affecting women. The Rotterdam 2003 criteria defines PCOS as incidence of any two of 3 key criteria namely, oligo ovulation hyper androgenism and polycystic ovaries(PCO). Polycystic Ovarian Syndrome is a condition in which women typically have many number of small cysts around the edge of their ovaries. Polycystic ovaries mean the ovaries containing a large number of cysts that are not bigger than 8mm and develop more follicles than normal very month. Polycystic ovary start maturing at least twice as many follicles compared normal most of which enlarge and mature but do not release an egg. The cysts are the egg containing follicles that do not develop properly because of hormone A imbalance.¹

Symptoms like irregular, infrequent periods within 3 or 4 years of starting menstruate lighter very heavy bleeding during period weight gain, excessive hair growth to varying degrees on face, chest, and lower abdomen. Moderate abdominal discomfort during periods, acne, and excessive skin growth on neck or in armpit also called as skin tags. Bone pain [arthralgia] and hair loss [alopecia], constipation, flatulence, and indigestion. PCOS is also called as polycystic ovary disease [PCOD]. Stein-leventhal syndrome, ovarian hyperthecosis and sclerocystic ovary syndrome.³

Hence in present work we have formulated tablets of herbal ingredients like Shatavari, Shankhbhasm and Guduchi satv. The name 'Shatavari' denotes 'the curer of hundred diseases.' The major active constituents of *Asparagus racemosus* are steroidal saponins, Isoflavones, asparagamine, racemosol, polysaccharides, mucilage, vitamins A, B1, B2, C, E, Mg, P, Ca, Fe, and folic acid present in roots, medicinally important, endangered, galactogogue this makes the herb antioxidant. Shankha Bhasma is an Ayurvedic medicine prepared from Conch shell. It is used in Ayurvedic treatment of gastritis, abdominal pain, malabsorption syndrome. It provides menstrual regularity.

Giloy Sat (also called Giloy Satva, Guduchi Satva and Amrita sat or Satva) is an ayurvedic herbal water extract prepared by macerations (cold soaking). It is used in Ayurvedic treatment of burning

