

B. Pharmacy
Semester- VII



ABSTRACT BOOK

PRACTICE SCHOOL (BP706PS)



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R&D Cell and IQAC

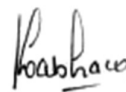
P.R. PATIL INSTITUTE OF PHARMACY
Talegaon (S.P.), Wardha, Maharashtra- 442 202

Preface

It is with great pleasure that we present this abstract book, a culmination of the research endeavours undertaken by the B. Pharmacy students, 7th semester, Subject- Practice School (BP706PS), of P.R. Patil Institute of Pharmacy, Talegaon (S.P.), Dist-Wardha. This compilation is a testament to the institute's commitment to fostering a culture of innovation and research excellence.

The Research and Development (R&D) cell and Internal Quality Assurance Cell (IQAC) have played a pivotal role in guiding and mentoring our students throughout their research journey. The abstracts presented in this book showcase the diversity and depth of research conducted by our students, spanning various facets of pharmaceutical sciences.

We are proud of our student's achievements and acknowledge the tireless efforts of our faculty members who have contributed to the development of this abstract book. We hope that this compilation will serve as a valuable resource, inspiring future research endeavours and contributing to the advancement of pharmaceutical sciences.



Dr. K.B. Gabhane

Principal

P.R. Patil Institute of Pharmacy
Talegaon (S.P.), Dist- Wardha (MS)

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Abstract-1

To study various extraction process with respect to turmeric (*Curcuma longa*)

A.V. Ghode, A.G. Jare, A.P. Patil and A.R. Wagdare

Supervisor- Dr. Nilesh B. Banarase**Abstract:**

Turmeric, also known as haldi, is one of the most commonly used crude drugs in both raw and extract forms for the treatment of a wide range of illnesses, including pain, inflammation, and anticancer. To obtain the specific pharmacological effect of the crude drug, the use of an extract of that specific drug is increasingly popular to achieve the desired therapeutic effect. The extract is nothing but simply a concentrated portion of the drug's key active ingredients. The extracts can be prepared using a variety of polar and non-polar solvents, resulting in a variable amount of soluble constituents in that specific solvent through various extraction processes. As a result of the variety of types and constituents, therapeutic applications may differ. As a result, it is necessary to determine the amount of active chemical constituents expressed through a specific extraction method and solvent. This determination is made through an examination of extractive values. In this study, we determined the extractive values of turmeric powder using a variety of extraction methods, including reflux extraction, decoction, digestion, infusion, and maceration with water as a solvent. We found that temperature is most likely one of the key parameters governing extractive values.

Keywords: Turmeric, extractive values, solubility, temperature.

Abstract-2

The hidden dangers: A review of hazardous chemicals in cosmetic

H.P. Belore, K.R. Surywanshi and L.S. Patke

Supervisor- Ms. Samruddhi S. Khonde**Abstract:**

Cosmetic products are used more than any other personal care product, and many cosmetic products contain harmful chemicals that can cause serious health problems in humans. This narrative review focused on some of the common toxic chemicals that are present in cosmetics including parabens, phthalates, synthetic fragrance and preservative as well as their possible deleterious effects. Long-term contact with these chemicals has been associated with skin irritation, allergic reactions, endocrine disruption and cancer. These chemicals are hazardous as the study mentions, outlining several diseases and disorders that they might eventually lead to dermatitis, hormonal unbalances as well as long-term health risks. Moreover, the review describes safer alternatives to replace these harmful cosmetic ingredients and encourages natural and/or organic materials in cosmetics. Ultimately, with the growing demand for ingredient transparency and a move towards safer alternatives to harmful products will help minimize health risks arising from cosmetics. As consumers, we need to protect skin health by choosing natural and sustainable options with minimal exposure to harmful chemicals.

Keywords: Hazardous chemicals, diseases, alternative chemicals, formulation, toxicity.

Abstract-3

The role of nutraceutical in the management of cardiovascular diseases and diabetes mellitus

S.S. Gaikwad, S.R. Veladi and T.R. Thombare

Supervisor- Mr. Ashish Chaudhari**Abstract:**

Cardiovascular diseases (CVD) and diabetes mellitus (DM) are significant global health concerns. They both represent a key public health problem worldwide. Nutraceutical, defined as food or part of food that provides health benefits, as well as by isolated nutrients and dietary supplements. They have emerged as adjuncts in the management of these conditions. The main aim of this current paper was to examine the impact of nutraceutical in relation to the management of cardiovascular diseases and diabetes mellitus. The mechanisms by which nutraceutical exert their effects include improving insulin sensitivity, modulating lipid profiles, reducing oxidative stress, and regulating inflammatory responses highlighting recent advancements, key mechanisms, and future directions, emphasizing the need for well-designed clinical trials to establish standardized guidelines for nutraceutical use in managing cardiovascular diseases and diabetes mellitus. This article also reviews the evidence supporting the efficacy of various nutraceutical in preventive medicines and their potential therapeutic benefits.

Keywords: Nutraceutical, cardiovascular diseases (CVD), diabetes mellitus (DM), dietary supplements

Abstract-4

Cosmetics and cancer: Identifying risk and safer alternatives

A. Kandalkar, A. Malankar, A. Kadu and A. Thakre

Supervisor- Dr. Koshish B. Gabhane

Abstract:

The relentless human pursuit of beauty has been a timeless endeavour, with cosmetics playing a vital role in enhancing appearance and promoting skin health. Defined by the Act of Food, Drug and Cosmetic 1938, cosmetics encompass a wide range of over-the-counter products that cleanse, beautify, and alter appearance without affecting structure or function. Modern cosmetics have evolved beyond their traditional beauty role, now addressing various skin conditions and incorporating a multitude of chemicals, including water, emollients, humectants, surfactants, preservatives, antioxidants, and ultra-violet filters. However, it is essential that these formulations contain only safe substances, used within allowable ranges, to ensure the well-being of consumers. This project delves into the world of cosmetics, examining their composition, benefits, and safety parameters, to provide a comprehensive understanding of the beauty industry's impact on human health and well-being.

Keywords: Cosmetics, cancer, formulation, comprehensive understanding, safe substances.

Abstract-5

Review on herbal peel off mask –An approach to anti-aging and skincare

N. Band, N. Samarth and M. Sonare

Supervisor- Mr. Mahesh S. Gadge**Abstract:**

Herbal cosmetics are deeply rooted in ancient practices to enhance beauty and minimize acne problems like acne, pigmentation, dryness, wrinkles and anti-aging effects etc. These products offer a spectrum of physiological benefits, including anti-acne, brightening, anti-inflammatory, moisturizing, antioxidant and anti-aging properties, all while minimizing adverse reactions. Herbal formulations have gained widespread global appeal. Time-tested Indian herbs like Turmeric, Fenugreek, saffron, Neem, sandalwood, etc., have been integral part of skincare rituals for centuries. Fenugreek is known for its anti-aging properties and is used to reduce blemishes and dark circles. Neem is known for its anti-fungal characteristics and aid in the lighting of acne scars. Saffron is used for skin brightening and skin moisturizing. Turmeric is used as an anti-inflammatory and antioxidant. In these research, multiple herbs are used for the formulation of peel-off mask. In this article we study anti-aging property of fenugreek peel off mask.

Keywords: Multi herb peel of mask, fenugreek, saffron, neem, anti-acne.

Abstract-6

A Review on standardisation of polyherbal drug

P. Patil, N. Chavan, P. Deole, P. Umap and P. Harne

Supervisor- Ms. Farah M. Khan

Abstract:

The world is witnessing an unprecedented growth in the usage of herbal products. India is a mother hub for natural herbs based science. Herbal drug technology is used for converting botanical materials into medicines, where standardization and quality control with proper integration of modern scientific techniques and traditional knowledge is important. For global harmonization WHO specific guidelines for the assessment of the safety, efficacy and quality of herbal medicines are of utmost importance. Standardization of drug means confirmation of its identity, quality and purity throughout all phases of its cycle. An overview covering the different techniques involved in standardization of crude/ finished compound drugs so far, e.g. macroscopic methods, microscopic methods, physical methods, chemical methods. Herbal formulations have reached extensive acceptability as therapeutic agents for several diseases.

Keywords: WHO guideline, polyherbal drug, standardization, quality control.

Abstract-7

Herbal face toner - nature touch skin care

M. Dhage, N. Pawar, S. Keche and N. Bawankule

Supervisor- Ms. Trusha R. Gurnule

Abstract:

Herbal Cosmetics are safe, fewer adverse effects, and wider market acceptance, natural medicines are becoming more and more popular than artificial formulations. The creation and assessment of a topical drug delivery system are the main objectives of this project, which highlights the natural components' long-lasting and precise activity. Using natural components including aloe vera, neem, papaya, tulsi, and amla, the study seeks to create an herbal face toner with astringent, relaxing, and soothing properties. To ensure its effectiveness and safety, the toner's physicochemical characteristics such as stability, pH, and surface tension are evaluated. Because they are non-toxic and less likely to cause allergic responses, herbal cosmetics are becoming more and more popular. This study concludes with a thorough analysis of face toners, including their formulation procedures, modes of action, and dermatological advantages.

Keywords: Natural remedies, face toner, natural ingredients, herbal cosmetics, dermatological benefit.

Abstract-8

Ayurvedic baby wipes: A natural approach to infants care

T.G. Agrawal, U.P. Pote and V.N. Sabale

Supervisor- Mr. Mohit A. Raut**Abstract:**

In infant's diapered area, the continuous exposure to moisture and irritants from urine and faeces weakens the stratum corneum layer, making the skin more susceptible to irritation. Baby wipes undergoes a variety of tests to ensure the safety and effectiveness including: In vitro eye irritation test, On skin wiping test, Antibacterial test Microbiological test, Human patch test. Ensuring effective removal of residues from urine and faeces, maintaining gentle contact with skin, using products that are free from potential irritants and contaminants and that can support the acid mantle of the skin can help promote skin health. As a safer and more environmentally friendly alternative to conventional baby wipes, Ayurvedic baby wipes are an excellent choice for parents seeking a natural and holistic approach to baby care. While disposable baby wipes have been shown to be effective and smooth at cleaning infant skin, even the skin of premature infants, there is growing public concern regarding their safety and tolerability. Not all products are made the same, as differences exist in manufacturing processes, ingredients, materials, safety, and quality testing. Therefore, it is important that healthcare professionals have accessible evidenced-based information on the safety and tolerability of common ingredients found in baby wipes to optimally educate their patients and families. Herein, we provide a review on best practices for ingredient selection, safety, and efficacy of baby wipes.

Keywords: Ayurvedic, baby wipes, natural, infants, skin.

Abstract-9

To study the extraction process of garlic and chemical analysis using TLC and UV visible spectroscopy

S.A. Pakde, S.R. Ambulkar and P.S. Ghatol

Supervisor- Dr. Vivek G. Pete

Abstract:

Allium sativum, commonly known as 'garlic' has long been used as an antibacterial agent that can actually inhibits growth of infectious agents and at the same time protect the body from the pathogens. This study was conducted to determine the antibacterial activity of soap from garlic extract using the paper-disc method and Kirby-Bauer antibacterial sensitivity test against *Staphylococcus aureus* and *Escherichia coli*, and to determine the physical properties of garlic soap and the presence of saponin through phytochemical screening. Garlic soap showed antibacterial activity against *E. coli* and *S. aureus*. Mean zone of inhibition was numerically higher in plate extract obtained using garlic soap (14.70mm-18mm), compared to commercial soap. Result of phytochemical screening showed the extract from garlic contains saponin, which is an important ingredient for making soap. Physical properties showed unpleasant odour, dirty white color, smooth texture and pH range of 6.5-7.5. Further studies to determine the potential of garlic soap in the other strains of bacteria.

Keywords: *Allium sativum*, UV analysis, antibacterial, skin care.

Abstract-10

Intra nasal delivery of herbal medicine for nasal decongestant

P. Tumsare, P. Patil and P. Badwaik

Supervisor- Mr. Vaibhav Dapurkar

Abstract:

Nasal decongestants are the most potent medications in reducing nasal obstruction. Despite their widespread use, local and systemic adverse reactions are common. This article focuses on the pharmacology of these drugs in light of the latest knowledge on nasal pathophysiology. The ultra-structural anatomy of the nasal mucosa explains the complexity of possible interactions between sympathomimetic, imidazole derivatives, and the sub mucosal layer. Nasal obstruction is one of the most frequent clinical issues that otorhinolaryngologists encounter daily in both adults and children. All potential predisposing conditions for nasal obstruction are documented, along with the best methods for diagnosing them through nasal functionality tests. Active anterior rhinomanometry, acoustic rhinometry, and the determination of mucociliary transport time, together with nasal endoscopy, represent the gold standard for accurate diagnosis and patient follow-up. An updated review of the most significant works in this field and the optimal treatment protocol to avoid adverse effects, such as rhinitis medicamentosa, are provided.

Keywords: Sympathomimetic, otorhinolaryngologists, anterior rhinomanometry, acoustic rhinometry.

Abstract-11

Review on study the sop for handling of equipments used in formulation and evaluation of cosmaceuticals

D.V. Wankhade, H.P. Bayaskar, J.S. Keche and K.S. Ranotkar

Supervisor- Mr. Kunal Takarkhede

Abstract:

The operating procedure of equipment used in formulation and evaluation in the cosmetics industry is covered in this manuscript. It covers handling, risk management, requirements, standards, and maintenance of equipment as well as its benefit and purpose, as well as designing SOPs and procedures. Weighing balance, microscope, pH meter, Brookfield viscometer, UV spectroscopy, homogenizer, and Soxhlet apparatus are among the equipment discussed. This review manuscript explores a number of articles and provides an overview of those articles by outlining the SOP's accountabilities, preparation, procedure, operation, and application, as well as the objectives behind their creation and the safe and efficient operation of any process to ensure that the procedures are carried out correctly and in order.

Keywords: Standard Operating Procedure (SOP), cosmaceuticals, equipments, overview.

Abstract-12

Plant derived antioxidant: Significance in skin health and ageing process

Y.D. Murarkar, A.V. Chaudhari and A.S. Mande

Supervisor- Ms. Smita R. Mankar**Abstract:**

Cosmetics, derived from the Greek word "kosmtikos," have evolved from ancient practices into sophisticated formulations aimed at enhancing beauty and health. This study explores the role of herbal cosmetics and plant-derived antioxidants in skin health and the aging process. Antioxidants, pivotal in neutralizing free radicals, prevent oxidative stress and cellular damage, contributing to anti-aging, skin texture improvement, and wrinkle reduction. Plant-derived antioxidants such as polyphenols, carotenoids, and ascorbic acid play a crucial role in neutralizing free radicals, which are unstable oxygen molecules that cause oxidative stress, leading to cellular damage and aging. Furthermore, this research highlights the role of natural antioxidants in combatting intrinsic and extrinsic skin aging mechanisms, including oxidative stress induced by UV radiation and environmental pollutants. Modern advancements in antioxidant cream formulations, incorporating ingredients like *Moringa oleifera*, *Jatropha multifida*, and *Euphorbia hirta*, showcase promising results in reducing oxidative damage and improving skin health. This comprehensive study underscores the importance of natural, plant-based ingredients in addressing skincare challenges while advocating for further research and clinical trials to unlock the full potential of herbal cosmetics.

Keywords: Herbal cosmetics, antioxidant, oxidative stress, plant extracts, skin aging.

Abstract-13

Review on: Use of nanostructured lipid carriers (NLCs) in cosmaceuticals

K. Patre, M. Thakare and M. Ghatare

Supervisor- Ms. Gayatri K. Bahatkar**Abstract:**

Nanostructured lipid carriers [NLCs] are novel drug delivery system that have gained huge significance in cosmaceuticals industry due to their qualities such as high drug loading capacity, improved stability and increased skin penetration. NLCs has been found to be comparatively more efficient and effective than first generation nanoparticles i.e. SLNs overcoming its drawbacks .These NLCs are solid lipid matrix mixed with a liquid lipid, resulting in a distinct structure allowing better drug entrapment and release characteristics . They have been employed as carriers in cosmaceuticals to improve transport and its performance on the targeted site. NLCs are advanced approach in Targeted Drug Delivery System, having characteristics like better penetration into skin, improved absorption and rapid onset of action including elimination of first pass metabolism. This review article will provide an overview of types of NLCs, its method of preparation, cosmaceuticals benefits on NLC, its current use in cosmetics, interaction with skin and factors affecting permeation of NLC through skin etc. Furthermore, its mechanism of action is also discussed

Keywords: Nanostructured Lipid Carriers [NLCs], Solid Lipid Nanocarriers [SLN], targeted drug delivery, skin permeation, cosmaceuticals benefits.

Abstract-14

Herbal plants use in cosmetic preparation of fabaceae family& their uses

A.A.Ghirpunje, A.A.Sawarkar, A.D.Deshmukh and A.R.Wankhade

Supervisor- Dr. Vikrant L. Salode**Abstract:**

The Fabaceae family, encompassing a diverse range of plants, plays a significant role in the cosmetic industry due to its natural bioactive compounds. This study explores the application of selected Fabaceae species, including liquorice, tamarind, and mimosa, in cosmetics. These plants offer multifunctional benefits, including antioxidant, anti-inflammatory, skin-brightening properties. Liquorice, known for its glycyrrhizin and glabridin content, is widely utilized in products for reducing hyperpigmentation and soothing irritated skin. Tamarind, rich in phytoconstituents, provides hydration, exfoliation, anti-aging effects. Mimosa exhibits wound-healing and antimicrobial properties, making it ideal for sensitive and acne prone skin. Fabaceae plants are highly valued for their sustainability and adaptability, thriving in diverse climates while supporting biodiversity through nitrogen fixation. The study highlights the ecological and economic significance of these species, emphasizing their potential in sustainable cosmetic formulations. Advanced extraction methods allow for the isolation of bioactive compounds, enhancing their application in moisturizing, and skin-protective products. The global demand for natural and eco-friendly cosmetics underscores the relevance of this research. Compared to synthetic ingredients, Fabaceae-derived compounds are gentler on the skin and environmentally sustainable. However, challenges such as formulation stability and regulatory compliance must be addressed to optimize their commercial use. The findings support the growing trend toward "green beauty" and the use of plant-based alternatives in cosmetics. In conclusion, the Fabaceae family stands out for its versatility, offering safe and effective solutions for skincare and hair care. This study reinforces the importance of leveraging natural resources to meet consumer demands for sustainable and innovative cosmetic products.

Keywords: Fabaceae family, herbal cosmetics, bioactive compounds, skin benefits, sustainability.

Abstract-15

Practical aspects of novel drug delivery system

A. Nimkar, A. Chaukade and D. Ulhe

Supervisor- Dr. Chetan V. Ghulaxe**Abstract:**

Novel drug delivery system (NDDS) is an expression mainly associated with the formulation of new pharmaceutical forms which have optimized characteristics such as smaller particle size. A suitable drug delivery system aims to provide an effective therapeutic dose at the targeted site at the right time and at suitable intervals until the desired cure is achieved. NDDS is an expression mainly associated with the formulation of new pharmaceutical forms which have optimized characteristics such as smaller particle size. A suitable drug delivery system aims to provide an effective therapeutic dose at the targeted site at the right time and at suitable intervals until the desired cure is achieved. Traditional drug delivery methods, while effective in many cases, often face significant limitations. These include poor bioavailability, rapid clearance from the body and undesirable side effects. These challenges underscore the need for more advanced drug delivery systems to overcome these limitations and provide more effective, safe, and patient friendly treatment NDDS came into existence. NDDS can provide controlled and sustained release of drugs, target specific tissues or cells, and reduce the frequency of dosing. For example, targeted drug delivery systems can direct therapeutic agents specifically to diseased cells, minimizing exposure to healthy tissues and thereby reducing side effects. This review article will provide an overview of types of carriers use in NDDS, Application and Mechanism of nanocarriers transport throughout the systemic circulation reaching the specific target.

Keywords: Novel Drug Delivery System (NDDS), Microneedle (MN), Nanoparticles (NP), Enhanced Permeability and Retention (EPR).



P.R. PATIL Institute of Pharmacy, Talegaon (S.P.)

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Phone No.: +91-7219085491 / (07156) 236409

Website: <https://www.pdp-pharma.in/>

Email Id: prppharma@gmail.com

Postal Address: P. R. Patil Institute of Pharmacy,
Talegaon (S.P) Tq Ashti, Dist. - Wardha 442 202