



Children's Education Society (Regd.)

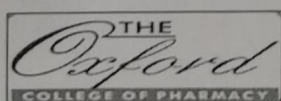
# The Oxford College of Pharmacy

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*P. Padma*  
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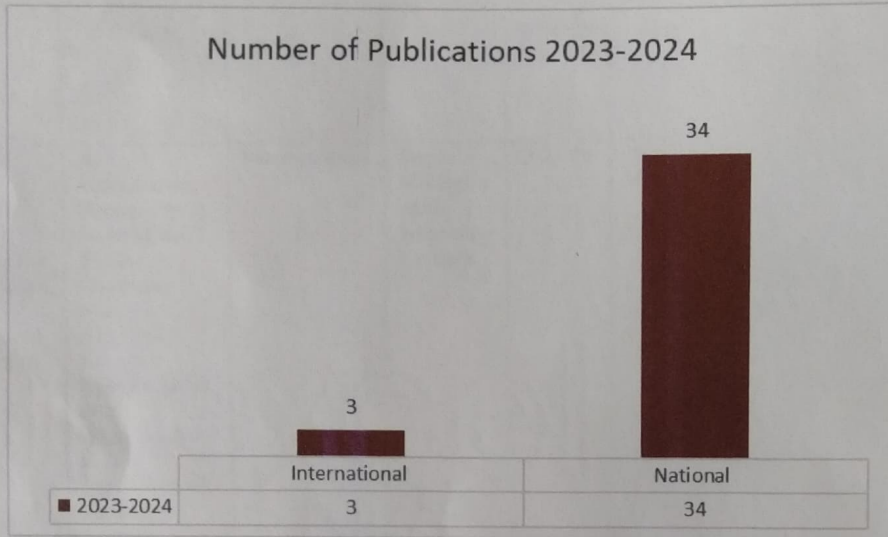


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## Number of research papers published per teacher in the Journals notified on the UGC CARE list during 2023-2024



Calendar year	International	National	Grand Total
2023-2024	3	34	37

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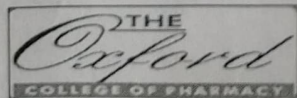
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Number of research papers published per teacher in the Journals notified on UGC CARE list for the academic year 2023-2024

S. No	Title of paper	Name of the author/s	Department of the teacher	Name of journal	Calendar Year of publication	ISSN number	Link to the recognition in UGC enlistment of the Journal/Digital Object Identifier (doi)		
							Link to website of the Journal	Link to article / paper / abstract of the article	Is it listed in UGC Care list
1	Evaluation of the cardioprotective activity of summer savory ( <i>Satureja hortensis</i> L.) extract in experimental rats with Isoproterenol-induced myocardial infarction	A. Muthukumar, Noopur Joyce, Swati Mittal, Tsering Choezom, Mansour Almuqbil, Keserla Bhavani, Moneer E. Almadani, Kuntal Das, Fuzail Ahmad, Farhana Yasmin	Pharmacology	Journal-of-king-saud-university-science	2023-24	1018-3647	<a href="https://www.sciencedirect.com/journal/elsevier">Journal of King Saud University - Science   ScienceDirect.com by Elsevier</a>	<a href="#">Evaluation of the cardioprotective activity of summer savory (<i>Satureja hortensis</i> L.) extract in experimental rats with Isoproterenol-induced myocardial infarction - ScienceDirect</a>	Science Direct
2	Surgical Excision of Fibroadenoma in a 19-Year-Old Female: A Case Report Utilizing Circumareolar Incision	Aishwarya Rakesh, Poomachandra Somwarpet Manjunatha and A. Muthukumar	Pharmacology	<a href="#">Journal of Young Pharmacists</a>	2023-24	0975-1483 0975-1505	<a href="https://jyoungpharm.org/8021/#">https://jyoungpharm.org/8021/#</a>	<a href="#">Surgical Excision of Fibroadenoma in a 19-Year-Old Female: A Case Report Utilizing Circumareolar Incision   Journal of Young Pharmacists (jyoungpharm.org)</a>	WOS
3	Targeting Neurological Disorders with Stilbenes: Bridging the Preclinical-Clinical Gap	Md. Zamshed Alam, Begh, Jishan Khan, Mehrukh Zehravi, Sherouk Hussein Sweilam, A. Dinesh Raja, A. Muthukumar, M Akiful Haque, Nihar Ranjan Kar, Laliteshwar Pratap Singh, B. Dharani Priya, Mohammed Ali Alshehri, Irfan Ahmad,	Pharmacology	International Journal of Biological Sciences	2023-24	1449-2288	<a href="#">International Journal of Biological Sciences</a>	<a href="#">Targeting Neurological Disorders with Stilbenes: Bridging the Preclinical-Clinical Gap - PubMed</a>	PubMed

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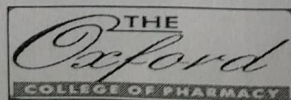
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		Sojin Kang, Seungjoon Moon, Moon Nyeo Park, Talha Bin Emran1,Bongl ee Kim							
4	In Silico Investigation of Chemical Components of <i>Fragaria ananassa</i> Species as Aphrodisiac Agents for Erectile Dysfunction	Sadishkumar S, Vimal Kumar S, Mohith SN, Prathiba R, Abilash S, Mahesh AR*	Pharmaceutica l Chemistry	Research J. Pharm. and Tech	2023-24	0974- 3618 0974- 360X	RJPT - Research Journal of Pharmacy and Technology ( <a href="http://rjptonline.org">rjptonline.org</a> )	RJPT - In Silico Investigation of Chemical Components of <i>Fragaria ananassa</i> Species as Aphrodisiac Agents for Erectile Dysfunction ( <a href="http://rjptonline.org">rjptonline.org</a> )	SCOPUS
5	Pharmaceutical assessment and pharmacological evaluation of chia seed extract-aloe vera transemulgel	Shaik Neelufar Shama, S. Radha, Kannan Kilavan Packiam, Prabin Kumar Mishal, KR Prasanna, Suvarnalakshmi Gunturu, Harika Balya, Nagendra Prasad Kosuri, Santanu Kumar Hotta, G Venkata Nagaraju	Pharmaceutica l Chemistry	African Journal of Biological Sciences	2023-24	2663- 2187	African Journal of Biological Sciences ( <a href="http://afjbs.com">afjbs.com</a> )	African Journal of Biological Sciences ( <a href="http://afjbs.com">afjbs.com</a> )	SCOPUS
6	A REVIEW – “SYNTHESIS AND BIOLOGICAL ACTIVITIES OF 1,3,4-OXADIAZOLE”	Pradeepa Prasad*, Bhavya Sri S, Dhanasekar M K, Hemanth Kumar E, Nisha S, Pratik Jain.	Pharmaceutica l Chemistry	Internatio nal Journal of All Research Education & Scientific Methods	2023-24	2455- 6211	<a href="http://ljaresm">ljaresm</a>	A Review- “Synthesis and Biological Activities of 1,3,4- Oxadiazole”	UGC
7	Enhancing transdermal drug delivery for Rheumatoid arthritis: A review on penetration enhancers	R Navyasree, Vikram T, Gururaj S Kulkarni, Padmaa M Paarakh, Muthukumar	Pharmaceutics	Internatio nal Journal of research in pharmacy and pharmace utical sciences	2023-24	2455- 698X	<a href="https://www.pharmacyjournal.in/">https://www.pharmacyjournal.in/</a>	<a href="https://www.pharmacyjournal.in/archives/2024/vol9/issue3/9039">https://www.pharmacyjournal.in/archives/2024/vol9/issue3/9039</a>	Yes
8	Nanotechnology-based mucoadhesive drug delivery systems: A comprehensive review	Ranjita Ramesh Shetty, Vikram T, Gururaj S Kulkarni, Padmaa M Paarakh, Muthukumar A	Pharmaceutics	Internatio nal Journal of research in pharmacy and pharmace utical sciences	2023-24	2455- 698X	<a href="https://www.pharmacyjournal.in/">https://www.pharmacyjournal.in/</a>	<a href="https://www.pharmacyjournal.in/archives/2024/vol9/issue3/9037">https://www.pharmacyjournal.in/archives/2024/vol9/issue3/9037</a>	Yes

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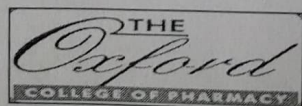
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9	Advancements In Sintered Tablet Technology : A Comprehensive Review	Vikram T Choudhary, Vijay Kumar R, Gururaj S Kulkarni, Padmaa M Paarakh	Pharmaceutics	International Journal of Pharmaceutical Sciences	2023-24	0975-4725	<a href="https://www.ijpsjournal.com/">https://www.ijpsjournal.com/</a>	<a href="https://www.ijpsjournal.com/article/Advancements+In+Sintered+Tablet+Technology++A+Comprehensive+Review+">https://www.ijpsjournal.com/article/Advancements+In+Sintered+Tablet+Technology++A+Comprehensive+Review+</a>	Yes
10	From Nature To Treatment: A Comprehensive Review Of Natural Polymers In Diabetes Mellitus Therapy	Sonali Milan Nalwade, Vikram T Choudhary, Gururaj S Kulkarni, Padmaa M Paarakh, Muthukumar A	Pharmaceutics	International Journal of Pharmaceutical Sciences	2023-24	0975-4725	<a href="https://www.ijpsjournal.com/">https://www.ijpsjournal.com/</a>	<a href="https://www.ijpsjournal.com/article/From+Nature+To+Treatment+A+Comprehensive+Review+Of+Natural+Polymers+In+Diabetes+Mellitus+Therapy++">https://www.ijpsjournal.com/article/From+Nature+To+Treatment+A+Comprehensive+Review+Of+Natural+Polymers+In+Diabetes+Mellitus+Therapy++</a>	Yes
11	Mucoadhesive buccal formulation for anti-migraine agents: A comprehensive review	Badepalli Reddaiah Reddy, Divya S Kumar Gururaj S Kulkarni, Padmaa M Pararakh, Muthukumar A	Pharmaceutics	International Journal of Research in Pharmacy and Pharmaceutical Sciences	2023-24	2455-698X	<a href="https://www.pharmacyjournal.in/">https://www.pharmacyjournal.in/</a>	<a href="https://www.pharmacyjournal.in/pdf?refno=9038">https://www.pharmacyjournal.in/pdf?refno=9038</a>	Yes
12	An overview on anti bacterial herbal cream	Benguluri Ramesh Tejaswini, Divya S Kumar Gururaj S Kulkarni, Padmaa M Pararakh, Muthukumar A	Pharmaceutics	International Journal of Research in Pharmacy and Pharmaceutical Sciences	2023-24	2455-698X	<a href="https://www.pharmacyjournal.in/">https://www.pharmacyjournal.in/</a>	<a href="https://www.pharmacyjournal.in/pdf?refno=9035">https://www.pharmacyjournal.in/pdf?refno=9035</a>	Yes
13	A Comprehensive review of herbal and synthetic wound healing creams	Jawaharmaniya rasan S, Divya S Kumar Gururaj S Kulkarni, Padmaa M Pararakh, Mulla Ujma Riyaz	Pharmaceutics	International Journal of Pharmaceutical Sciences	2023-24	0975-4725	<a href="https://www.ijpsjournal.com/">https://www.ijpsjournal.com/</a>	<a href="https://www.ijpsjournal.com/article/A+Comprehensive+Review+Of+Herbal+And+Synthetic+Wound+Healing+Creams">https://www.ijpsjournal.com/article/A+Comprehensive+Review+Of+Herbal+And+Synthetic+Wound+Healing+Creams</a>	Yes
14	Comparative study of antibacterial herbal gels with chlorhexidine gel for gum disorders	Sneha M, Divya S Kumar, Gururaj S Kulkarni, Padmaa M Pararakh, Muthukumar A	Pharmaceutics	International Journal of Dental Research	2023-24	2664-9055	<a href="https://www.pharmacyjournal.in/pdf?refno=9035">https://www.pharmacyjournal.in/pdf?refno=9035</a>	<a href="https://www.pharmacyjournal.in/archives/2024/vol9/issue3/9032">https://www.pharmacyjournal.in/archives/2024/vol9/issue3/9032</a>	Yes
15	Phytosomes pharmaceutical delivery system : A Comprehensive Review	Nalagatla Sunandha, Gururaj S Kulkarni, Padmaa M Pararakh, Muthukumar A	Pharmaceutics	International Journal of Research in Pharmacy and Pharmaceutical Sciences	2023-24	2455-698X	<a href="https://www.pharmacyjournal.in/">https://www.pharmacyjournal.in/</a>	<a href="https://www.pharmacyjournal.in/pdf?refno=9034">https://www.pharmacyjournal.in/pdf?refno=9034</a>	Yes
16	Comparative analysis of herbal and non	Swetha Yoganandan	Pharmaceutics		2023-24	0975-4725	<a href="https://www.ijpsjournal.com/">https://www.ijpsjournal.com/</a>	<a href="https://www.ijpsjournal.com/article/Co">https://www.ijpsjournal.com/article/Co</a>	Yes

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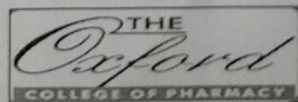
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	herbal lozenges	,Gururaj S Kulkarni, Padmaa M Pararakh, Surinder kaur, Muthukumar A		International Journal of Pharmaceutical Sciences			<a href="#">com/</a>	<a href="#">mparative+Analysis+Of+Herbal+And+Non+Herbal+Lozenges+</a>	
17	A prospective review on transthesomal gel as carrier for enhancing transdermal delivery	Mohammad Amin Yatoo ,Gururaj S Kulkarni, Padmaa M Pararakh,Muthukumar A, Amit singh, Sneha M, Harsha K M, Vijay Kumar R	Pharmaceutics	International journal of advance research and innovative ideas in education	2023-24	2395-4396	<a href="https://ijarjie.com/Default.aspx">https://ijarjie.com/Default.aspx</a>	<a href="https://ijarjie.com/FormDetails.aspx?MenuScriptId=223525">https://ijarjie.com/FormDetails.aspx?MenuScriptId=223525</a>	Yes
18	A review on herbal medicine plants are used for the treatment of eye disorders	Manoj A N,Divya S Kumar,Gururaj S Kulkarni, Padmaa M Pararakh,Muthukumar A	Pharmaceutics	International journal of	2023-24	2395-4396	<a href="https://ijarjie.com/Default.aspx">https://ijarjie.com/Default.aspx</a>	<a href="https://ijarjie.com/AdminUploadPdf/AdminUploadPdf/ADMIN_UPLOAD_PDF_A_REVIEW_ON_HERBAL_MEDICINE_PLANTS_ARE_USED_FOR_THE_TREATMENT_OF_EYE_DISORDERS_ijarjie24968.pdf">https://ijarjie.com/AdminUploadPdf/AdminUploadPdf/ADMIN_UPLOAD_PDF_A_REVIEW_ON_HERBAL_MEDICINE_PLANTS_ARE_USED_FOR_THE_TREATMENT_OF_EYE_DISORDERS_ijarjie24968.pdf</a>	Yes
19	A Comprehensive review of ophthalmic formulations for ocular diseases	Harsha K M ,Gururaj S Kulkarni, Padmaa M Pararakh,Muthukumar A	Pharmaceutics	TIJER- International research journal	2023-24	2349-9249	<a href="https://www.tijer.org/">https://www.tijer.org/</a>	<a href="https://tijer.org/tijer/track.php?rid=154670">https://tijer.org/tijer/track.php?rid=154670</a>	
20	A Comprehensive review on history ,pathogenesis ,and treatment innovations for melasma	Adithi P,Monica N,Nasiba N K ,Nidhi Shree S,Nikshep N .S,P Jeevitha	Pharmaceutics	International journal of pharmaceutical sciences	2023-24	0975-4725	<a href="https://www.ijpsjournal.com/">https://www.ijpsjournal.com/</a>	<a href="https://www.ijpsjournal.com/article/A+Comprehensive+Review+On+History%2C+Pathogenesis%2C+And+Treatment+Innovations+For+Melasma+">https://www.ijpsjournal.com/article/A+Comprehensive+Review+On+History%2C+Pathogenesis%2C+And+Treatment+Innovations+For+Melasma+</a>	Yes
21	Advances in bioavailability enhancement technique for poorly aqueous soluble drugs- Comprehensive review	Adithi P,Chaitra K ,Chandana N,Deepthi R, Dhruva R.Nadig	Pharmaceutics	International journal of pharmaceutical sciences	2023-24	0975-4725	<a href="https://www.ijpsjournal.com/">https://www.ijpsjournal.com/</a>	<a href="https://www.ijpsjournal.com/article/Advances-in-bioavailability-enhancement-technique-for-poorly-aqueous-soluble-drugs-comprehensive-review">https://www.ijpsjournal.com/article/Advances-in-bioavailability-enhancement-technique-for-poorly-aqueous-soluble-drugs-comprehensive-review</a>	Yes
22	Transdermal drug delivery system:A Review	Akhila C ,Anusha R,S,Anusha T.,Anwar Mulla ,Arun Biradar,Adithi P	Pharmaceutics	International journal of pharmaceutical sciences	2023-24	0975-4725	<a href="https://www.ijpsjournal.com/">https://www.ijpsjournal.com/</a>	<a href="https://www.ijpsjournal.com/article/Transdermal+Drug+Delivery+System+A+Review">https://www.ijpsjournal.com/article/Transdermal+Drug+Delivery+System+A+Review</a>	Yes
23	Polymeric Excipients in Pharmaceutical Formulations:A Comprehensive Review	C .Arun ,Arya Krishna, Banupriya,C .Bhuvaneshwar i,C. Povindar ,P Adithi	Pharmaceutics	International journal of pharmaceutical research	2023-24	2456-4494	<a href="https://ijprjournal.com/">https://ijprjournal.com/</a>	<a href="https://www.ijprjournal.com/current-issue.php?issueid=51&amp;title=Polymeric%20Excipients%20in%20Pharmaceutic">https://www.ijprjournal.com/current-issue.php?issueid=51&amp;title=Polymeric%20Excipients%20in%20Pharmaceutic</a>	Yes

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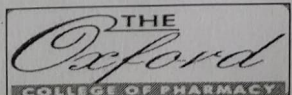
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				and applications				al%20Formulations%20%20A%20Comprehensive%20Review	
24	A Comprehensive review on the roll of herb mouth freshners in the management of halitosis	Adithi P ,Samarpith Nath,Sandra SS,Sanjana R,Sapna S Kumar	Pharmaceutics	International journal of innovative science and research technology	2023-24	2456-2165	<a href="https://www.ijisrt.com/">https://www.ijisrt.com/</a>	<a href="https://ijisrt.com/assets/upload/files/IISRT24AUG100.pdf">https://ijisrt.com/assets/upload/files/IISRT24AUG100.pdf</a>	Yes
25	Evaluation and Formulation of Different Types of Cream	R. Uma Prabha, Balakrishnan. S, Gowdham.T, Harsha. R, Hemanth Kumar. P, Madhanprasad. M	Pharmaceutics	International Journal of All Research Education and Scientific Methods (IJAREM).	2023-24	2455-6211	<a href="https://www.ijaresm.com/">https://www.ijaresm.com/</a>	<a href="https://www.ijaresm.com/uploaded_files/document_file/R_Uma_Prabha.._Lc10.pdf">https://www.ijaresm.com/uploaded_files/document_file/R_Uma_Prabha.._Lc10.pdf</a>	Yes
26	A Brief Review on Floating Drug Delivery System	Mrs. R. Uma Prabha, Mithun N, Mansioza, Meghana S, Meghana Nadgir S N, Monika Reddy S	Pharmaceutics	International Journal of All Research Education and Scientific Methods (IJAREM).	2023-24	2455-6211	<a href="https://www.ijaresm.com/">https://www.ijaresm.com/</a>	<a href="https://www.ijaresm.com/search?x=2&amp;y=5&amp;keyword2=A+Brief+Review+on+Floating+Drug+Delivery+System">https://www.ijaresm.com/search?x=2&amp;y=5&amp;keyword2=A+Brief+Review+on+Floating+Drug+Delivery+System</a>	Yes
27	A Comprehensive review in integrating lifestyle modification to manage diabetes mellitus & its comorbidities	Jenisha K, Chaithra , Chandana , Deepthi, Dhruva ,Nadig Gagana	Pharmacy Practice	International journal of pharmaceutical science	2023-24	0975-4725	<a href="https://www.ijpsjournal.com">https://www.ijpsjournal.com</a>	<a href="https://www.ijpsjournal.com/assetsbackoffice/uploads/article/A+Comprehensive+Review+On+Integrating+Lifestyle+Modifications+To+Manage+Diabetes+Mellitus++Its+Comorbidities+.pdf">https://www.ijpsjournal.com/assetsbackoffice/uploads/article/A+Comprehensive+Review+On+Integrating+Lifestyle+Modifications+To+Manage+Diabetes+Mellitus++Its+Comorbidities+.pdf</a>	Yes
28	Assesment of self efficacy in pain intensity and quality of life in patients with Rheumatoid arthritis	Bhuvaneshwari , Bindu, Rajdeep Kour, Christina James, Jenisha K	Pharmacy Practice	YMER	2023-24	0044-0477	<a href="https://ymerdigital.com">https://ymerdigital.com</a>	<a href="https://ymerdigital.com/uploads/YMER231007.pdf">https://ymerdigital.com/uploads/YMER231007.pdf</a>	YES
29	Managing urinary tract infection in pregnant women:pathogen,risk and antibiotic therapies.	Jeena Susan, Arun C. , Arya Krishna, Banupriya D. , Bhuvaneshwari C., C. Povindhar	Pharmacy Practice	International journal of pharmaceutical science	2023-24	9754-725	<a href="https://www.ijpsjournal.com/">https://www.ijpsjournal.com/</a>	<a href="https://www.ijpsjournal.com/article/Managing+Urinary+Tract+Infections+In+Pregnant+Women%3A+Pathogens%2C+Risks%2C+And+Antibiotic+Therapies+">https://www.ijpsjournal.com/article/Managing+Urinary+Tract+Infections+In+Pregnant+Women%3A+Pathogens%2C+Risks%2C+And+Antibiotic+Therapies+</a>	Yes
30	A Comprehensive guide on anthelmintic activity of herbal	Padmaa M Paarakh, Chaithra k,	Pharmacognosy	International Journal Of	2023-24	0975-4725	<a href="https://www.ijpsjournal.com/">https://www.ijpsjournal.com/</a>	<a href="https://www.ijpsjournal.com/assetsbackoffice/uploads/article">https://www.ijpsjournal.com/assetsbackoffice/uploads/article</a>	

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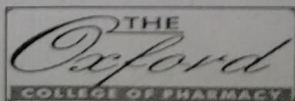


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	plants and formulations	Varshitha A, Vidyashree R, Vinod Kumar B, G, Yashaswini M U, Hardeek G		Pharmaceutical Sciences				<a href="#">e/A+Comprehensive+Guide+On+Anthelmintic+Activity+Of+Herbal+Plants+And+Formulations.pdf</a>	
31	Comprehensive Review On Pharmacological Activities Of Thespesia Populnea Soland And Pongamia Pinnata Linn	Chaithra K.*, Pallavi S., Preethu K., Rakshitha S., Sadaf Farooq, Sahana H. S	Pharmacognosy	International Journal Of Pharmaceutical Sciences	2023-24	0975-4725	<a href="https://www.ijpsjournal.com/">https://www.ijpsjournal.com/</a>	<a href="https://www.ijpsjournal.com/article/Comprehensive+Review+On+Pharmacological+Activities+Of+Thespesia+Populnea+Soland+And+Pongamia+Pinnata+Linn">https://www.ijpsjournal.com/article/Comprehensive+Review+On+Pharmacological+Activities+Of+Thespesia+Populnea+Soland+And+Pongamia+Pinnata+Linn</a>	Yes
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33	Various Dental problems and herbs involved in their treatment	Pavithra Devi, Padmaa M. Paarakh, Swathi Jana, Tejashwini N., Tharun K., Thyagaraj, Trisha Lokesh	Pharmacognosy	International Journal Of Pharmaceutical Sciences	2023-24	0975-4725	<a href="https://www.ijpsjournal.com/">https://www.ijpsjournal.com/</a>	<a href="https://www.ijpsjournal.com/article/Various+Dental+problems+and+herbs+involved+in+their+treatment">https://www.ijpsjournal.com/article/Various+Dental+problems+and+herbs+involved+in+their+treatment</a>	Yes
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35	The tardigrade phenomenon: Insights into extreme adaptations and their applications in medicine and industry- A review	Madhu Chandra M, Ankitha Nidhi Reddy, A Muthukumar, Purushotham M, Padmaa M Paarakh, Noopur Srivastava	Pharmacology	Indian Journal of Natural Sciences	2023-24	0976-0997	<a href="https://tnsroindia.org.in/index.html">https://tnsroindia.org.in/index.html</a>	<a href="https://tnsroindia.org.in/index.html">https://tnsroindia.org.in/index.html</a>	Yes
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37	Nanocarriers for Delivery of Anticancer	Umme Hani, Vikram T.	Pharmaceutics	Pharmaceutics	2023-24	1999-4923	<a href="https://www.mdpi.com/j">https://www.mdpi.com/j</a>	<a href="https://www.mdpi.com/1999-4923">https://www.mdpi.com/1999-4923</a>	Yes



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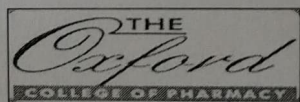
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Drugs: Current Developments, Challenges, and Perspectives	Choudhary , Mohammed Ghazwani , Yahia Alghazwani , Riyaz Ali M. Osmani , Gururaj S. Kulkarni , Hosakote G. Shivakumar , Shahid Ud Din Wani and Sathishbabu Paranthaman					ournal/phar maceutics	4923/16/12/1527	
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Research Article

## A Comprehensive Guide On Anthelmintic Activity Of Herbal Plants And Formulations

Padmaa M Paarakh ,Chaithra K\*, Varshitha A, Vidyashree R, Vinod Kumar B G, Yashaswini M U, Hardeek G

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### ABSTRACT

Helminthiasis is the intestinal parasitic infection which is caused due to worms like nematodes and platyhelminthes. These organisms spread widely in human beings (host) by feeding on the host's nutrition inside the intestine. This article mainly speaks about the herbal drugs and formulations used for the treatment of helminthic infection. They actively reproduce by feeding on the host tissues including blood. The various worms which cause helminthiasis are Tapeworm, Roundworm and Hookworm. There are different types of herbal formulations in this article which include tablets, syrups, suspensions, some of them are single herbal and others are polyherbal formulations. At present many herbal formulations are widely available in the market due to their less side effects and easy availability of herbs. The herbal plants listed in this article have been reported for anthelmintic activity and details like method of extraction, pathological activity and common uses of herbs namely *Punica granatum* Linn, *Carica papaya* Linn, *Azadirachta indica*, *Ziziphus mauritiana*, *Cissus quadrangularis*, *Curcuma longa*, *Zingiber officinale*, *Ficus indica*, *Achyranthes aspera*, *Allium sativum*, *Cucurbita pepo*, *Thespesia lampas*.

### INTRODUCTION

Helminth infections are one of the most common parasitic infections which are affecting a large portion of the human population. In developing countries the parasitic infection causes a larger threat to public health which leads to anemia, eosinophilia, malnutrition and even death if untreated [1]. Males are more prone to helminth

infections than that of females. More than 24% of the total population depends on the native frameworks of medication such as Ayurveda, Unani & Sidha in India. Plants with anthelmintic activity were surveyed by Akhtar et al, the survey inferred over 90% of restorative specialists from higher plants. Even today, customary

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Review Article

## Comprehensive Review On Pharmacological Activities Of *Thespesia Populnea* Soland And *Pongamia Pinnata* Linn

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### ABSTRACT

In the global context, herbs and herbal medicines are often associated with nutraceuticals and are extensively utilized for treating a wide range of ailments. This review emphasizes on various Phyto-constituents and pharmacological action of *Thespesia populnea* Soland (Malvaceae) and *Pongamia pinnata* Linn (Fabaceae). Both plants, which originated in India, exhibit a diverse array of phytochemical compounds in their different parts, including alkaloids, flavonoids, glycosides, tannins, terpenes, saponins, phenols, phytosterols, steroids, and proteins, showcasing multiple therapeutic activities such as anti-bacterial, anti-inflammatory, anti-oxidant, anti-ulcer, wound healing, analgesic, anti-convulsant, anti-malarial, anti-diabetic, and anthelmintic effects. The primary aim of this analysis is to evaluate the utilization of distinct plant parts for various curative purposes.


### INTRODUCTION

According to WHO, herbal medicine and phytonutrients are referred as nutraceuticals, which are becoming more prevalent worldwide with numerous people using these products in various national healthcare systems to treat a wide range of ailments<sup>1</sup>. An herb is a plant having medicinal, aromatic and palatable properties. Herbal medicines comprised of parts of plants or crude plant extracts consisting of various chemical constituents, which exert synergistic effect in combination. Any part of the plant like leaves

bark, flower, fruit, root and seeds can be used for their therapeutic value<sup>2</sup>. As per WHO, around seventy-eighty % of the world populace, especially in developing nations, people prefer non-conventional medication as their primary healthcare<sup>3</sup>. There are many benefits of herbs, few of them are mentioned below in fig 1. Herbal formulations containing combination of multiple-plant extracts are preferred over single plant extracts as drugs in the indigenous system of medicine. These formulations are used to treat diversity of sickness. Since plants are tangled

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## Review Article

# A Review On Various Herbs Used As Anti-Fungal And Anti-Microbial Agents

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## ABSTRACT

Skin is a continuously renewing and largest organ in human body which is a main physical barrier to avoid any infections caused by toxic substances or foreign organisms. Epidermis is a formidable barrier in the skin which resists the penetration of any foreign components while retains the nutrients, moisture inside the body. In the post antibiotic era the issue of resistance not only refers to antibiotics but also antifungals and hence there is a urgent need to for new antifungals and antimicrobials. Natural prescriptions normally will generally have numerous wide synergistic or corresponding activity on physiological frameworks simultaneously which are for the most part in a similar general helpful bearing and frequently vague. The substances which acts against various fungal infections refers to as antifungal agents common examples for herbal antifungals include datura metel, senna leaf, olive leaf, henna, cissus quadrangularis, thyme, cumin etc. The substances which act against various microbial infections refers to as antimicrobial agents common examples for herbal antimicrobials include castor leaf, dwarf copper leaf, cinnamon, oregano etc. Phenols, triterpenoids, terpenoids, alkaloids, saponins, glycosides, steroids, essential oil, volatile oil, tannins are few important phytoconstituents which acts against various microbial and fungal infections.

## INTRODUCTION

Since ancient times natural plant products are used for their medicinal values, these natural plant-based products comprise many components which are the major sources for novel biologically active components [1]. Medicinal plants are been used globally as an effective and powerful drugs because comparatively these medicinal plants are

inexpensive and remains stable for a long period of time at normal room temperature [2]. Plant kingdom is considered to be a rich source of organic compounds many of which are being used for medicinal purposes. In traditional system there are many crude drug substances which have many beneficial effects in treating diseases or disorders [3]. The World Health Association (WHO) has

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## Review Article

# Various Dental problems and herbs involved in their treatment

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### ABSTRACT

Herbal medicines is has been used rapidly all over the world anonymously. People prefer herbal medicines over allopathic as its symbolises safety and less side effects. The herbs are used for their phytochemical constituents, flavour, scent and their therapeutic properties. Oral health is referred as the overall health of the teeth, gums, and mouth. Some herbs play major role in treating toothache, tooth sensitivity and other dental problems. Pain and discomfort caused which may affect a person's ability to eat including a decreased self esteem. Herbs like clove, neem, tea tree oil, peppermint, sage etc are mentioned in the article. There are various dental disorders like gingivitis, oral cancer, dental caries, dental abscess, tooth erosion, peridontal disease, dental plaque, bleeding gums. They can be treated with herbal extracts in the earlier stage of the diseases. Oral diseases are generally caused due to improper oral hygiene, inadequate nutrition intake, sugar consumption, tobacco use, alcohol use. Even if herbs are used for the various dental problems, the proper dosage should be used by an individual.

### INTRODUCTION

A man without a proper oral health cannot define him as a healthy person . Oral diseases, a priority conditions due to their complications in treating them and severity of pain formed. Oral health was linked with the internal organ system such that any changes in the internal system was indicated by the oral health . In this generation most of the causes for their poor oral health was caused due improper way of dental care. Tooth diseases are the most common diseases which can be cured by herbs

before it reaches the severe stage. The most common cause for the several tooth diseases are due to improper oral hygiene or less nutrition intake. There are plenty of herbs which are used in the treatment of dental diseases. Synthetic forms of herbs are used in the preparation of allopathic drugs. Extractions of herbs are used for the relieving of pain. Herbs are any part of material that are used for their antibacterial, anti inflammatory, antimicrobial, antifungal, antiviral, anti ulcerative activity. Herbs are used in their

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## Evaluation of the cardioprotective activity of summer savory (*Satureja hortensis* L.) extract in experimental rats with Isoproterenol-induced myocardial infarction

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Antioxidants

### ABSTRACT

**Background:** Myocardial infarction (MI) is a serious heart ailment that requires cutting-edge remedies for effective treatment. This study examines the possible cardioprotective effects of a hydroalcoholic extract from *Satureja hortensis* L. (HASH) in rats with isoproterenol (ISO) induced myocardial infarction.

**Methods:** The rats were pretreated orally with hydroalcoholic extract of *Satureja hortensis* low (200 mg/kg), high dose (400 mg/kg), and metoprolol (10 mg/kg), in their respective groups for 30 days, followed by two subcutaneous doses of isoproterenol (ISO). Blood was obtained to measure biochemicals such as creatine kinase-MB (CK-MB), Troponin I, Alanine transaminase (ALT), Aspartate transaminase (AST), and lactate dehydrogenase (LDH), and an electrocardiogram (ECG) of a rat was recorded after the experiment. Myocardial integrity was examined histopathologically, and malondialdehyde (MDA) levels and antioxidant enzyme concentrations were assessed using heart tissue homogenate.

**Results:** Rats with myocardial infarction caused by ISO displayed significantly ( $P < 0.001$ ) augmented CK-MB, Troponin I, LDH, AST, and ALT levels with aberrant ECG patterns, and alteration in cardiac mass as well as enhanced oxidative stress marker levels. Besides, biochemical results were validated by myocardium histology. Pre-treatment of animals with a high dose (400 mg/kg) of HASH or standard cardioprotective agent (metoprolol) prevented the ISO-induced alterations in the above parameters to a significant ( $P < 0.01$ ) level as well as metabolic derangements and functional alterations.

**Conclusions:** Our research suggests that HASH pre-treatment has cardioprotective action and can prevent myocardial toxicity caused by ISO. Therefore, *Satureja hortensis* L. extract might be a promising therapeutic plant that can be further investigated for potential cardioprotective properties.

### 1. Introduction

Ischemic heart disease (IHD), characterized by a significant reduction in myocardial blood supply, leads to myocardial necrosis. This condition is reported to impact the heart's mechanics, electrical properties, structure, and biochemistry (Del Buono et al., 2022; Asdaq et al., 2021; Beshel et al., 2022). On a global scale, cardiovascular ailments,

including heart attacks and strokes, accounted for a substantial 17.9 million mortality in 2019, representing 32 % worldwide. Additionally, coronary artery disease (CAD) affects approximately 1.72 % of the world's population (Del Buono et al., 2022). Moreover, IHD is emerging as a significant health issue in the Gulf Council nations including Saudi Arabia, where it is thought to be the primary cause of more than 45 % of fatalities (Tash et al., 2023). The INTERHEART and INTERSTROKE

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P. Padua

# Surgical Excision of Fibroadenoma in a 19-Year-Old Female: A Case Report Utilizing Circumareolar Incision

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## ABSTRACT

This case report presents the surgical management of a fibroadenoma in the left breast of a Nineteen-year-old female. The patient was exposed with the complaint of a palpable lump in her left breast, prompting further investigations. Ultrasonography revealed the presence of a lesion consistent with fibroadenoma. Subsequently, the patient underwent surgical excision of the lesion to alleviate discomfort and address diagnostic concerns. The procedure involved a Circumareolar incision followed by meticulous dissection and excision of the fibroadenoma lump. Postoperative evaluation confirmed successful removal of the lesion with resolution of associated symptoms. This case uplifts the importance of prompt diagnosis and appropriate management of benign breast masses in young patients to alleviate anxiety and ensure optimal positive outcomes.

**Keywords:** Young Female Patients, Fibroadenoma, Ultrasonography, Surgical excision, Postoperative.

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## INTRODUCTION

The most prevalent carcinoma of the breast in teenage girls is fibroadenoma, which is also possible at any point in life but is particularly prevalent in those within the age range of twenty and forty.<sup>1</sup> In children and adolescents, fibroadenomas constitute thirty to fifty percent of noticeable mammary heaps, whereas in a comparable age bracket, surgically eliminated lumps in the breast are 44-94%.<sup>2</sup> It often manifests as a circumscribed malignancy that is therapeutically perceptible as a spherical, elastomeric bulge that flexes. Fortunately, quiescent plaques are typically revealed by mammography when the tumor looks like a precise ball.<sup>3</sup> Having fibroadenomas boosts one's likelihood of acquiring cancer in the breast by approximately two to three times.<sup>4</sup> The probability of contracting malignancy in the breast by fibroadenoma is assumed to be durable, unlike the elevated risk of breast cancer linked to other harmless mammary ailments such as idiopathic hyperplasia, which may eventually drop.<sup>5</sup> The hazard of fibroadenoma spires at a highly youthful age (20-30 years) and then the hazard diminish dramatically at postmenopausal time. It is uncertain what causes fibroadenoma specifically.<sup>6</sup> Nevertheless, several research studies demonstrate that estrogen affects the growth of fibroadenomas.<sup>7</sup> Taking an oestrogen-progesterone

birth control pill prior to retirement and having more live babies reduce the likelihood of fibroadenoma.<sup>8</sup> The number of cases of fibroadenoma and the body's mass index are also (a study showed its relation with a group of BMIS 25-30 kg/m<sup>2</sup>).<sup>9,10</sup>

## CASE PRESENTATION

A 19-year-old female attended herself to a medical practitioner with complaints of a movable lump discovered during self-examination of her left breast, which she noticed without any associated pain. The patient, concerned about the presence of the lump, sought medical advice. Upon initial evaluation, the medical practitioner noted the absence of any other concerning symptoms. A palpable lump led to the performance of further investigations as necessary. Based on the subjective evidence provided by the patient, a decision is made to proceed with breast ultrasonography to assess the nature and characteristics of the detected lump. The ultrasonography revealed the presence of a well-defined lesion measuring approximately 3x2 cm in the left breast. The lesion appeared firm and was found to be mobile upon palpation. (As shown in Figure 1). There is evidence of two well-defined homogenous hypoechoic solid lesions with smooth margins and high resistance type of internal vascularity at the left breast (2.8\*2.0 cm at 10 o'clock position) and (1.1\*0.9 cm at 4 o'clock position). Positively, the typical architecture of breast parenchymal cells was not distorted.

Following the clinical diagnosis of fibroadenoma, specimen excision for biopsy is initiated. It accomplished the presence of

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Review

# Targeting Neurological Disorders with Stilbenes: Bridging the Preclinical-Clinical Gap

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## Abstract

Neurological disorders (NDs) encompass a range of debilitating conditions that affect the nervous system, including prevalent illnesses such as Alzheimer's disease, Parkinson's disease, and ischemic stroke. Despite significant ongoing studies, effective therapeutic strategies to halt or slow down the progression of these illnesses are still lacking. Stilbenes, a class of natural polyphenols, have shown potential as candidates for therapeutic strategies due to their capacity to protect the nervous system. Preclinical studies have provided strong evidence that stilbenes can regulate many cellular pathways implicated in neurodegeneration, with resveratrol being a well-studied compound that has shown the ability to reduce oxidative damage, promote neurogenesis, and enhance mitochondrial function - crucial for maintaining brain health. In preclinical animal models, initial research has also shown promise in additional substances such as piceatannol and pterostilbene. Furthermore, clinical studies have explored the therapeutic benefits of stilbenes in NDs. Despite promising results in preclinical research, the use of stilbenes in clinical trials is currently limited, with most studies focusing on resveratrol. Although several clinical studies have demonstrated the beneficial impact of resveratrol supplementation on brain health and degenerative consequences, other investigations have yielded ambiguous findings, underscoring the urgent need for more comprehensive and precisely planned clinical research. This study delves into the potential benefits of stilbenes as neuroprotective agents for NDs. It emphasizes the need for more clinical research to enhance our understanding of their therapeutic effectiveness in specific patient groups.

Keywords: Stilbenes; Chemistry; Neurological disorders; Preclinical studies; Clinical studies

## 1. Introduction

Neurological disorders (NDs) encompass a diverse group of debilitating conditions that affect the nervous system, including the brain, spinal cord, nerves, and muscles. These disorders are





Review

# Nanocarriers for Delivery of Anticancer Drugs: Current Developments, Challenges, and Perspectives

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**Abstract:** Cancer, the most common condition worldwide, ranks second in terms of the number of human deaths, surpassing cardiovascular diseases. Uncontrolled cell multiplication and resistance to cell death are the traditional features of cancer. The myriad of treatment options include surgery, chemotherapy, radiotherapy, and immunotherapy to treat this disease. Conventional chemotherapy drug delivery suffers from issues such as the risk of damage to benign cells, which can cause toxicity, and a few tumor cells withstand apoptosis, thereby increasing the likelihood of developing tolerance. The side effects of cancer chemotherapy are often more pronounced than its benefits. Regarding drugs used in cancer chemotherapy, their bioavailability and stability in the tumor microenvironment are the most important issues that need immediate addressing. Hence, an effective and reliable drug delivery system through which both rapid and precise targeting of treatment can be achieved is urgently needed. In this work, we discuss the development of various nanobased carriers in the advancement of cancer therapy—their properties, the potential of polymers for drug delivery, and recent advances in formulations. Additionally, we discuss the use of tumor metabolism-rewriting nanomedicines in strengthening antitumor immune responses and mRNA-based nanotherapeutics in inhibiting tumor progression. We also examine several issues, such as nanotoxicological studies, including their distribution, pharmacokinetics, and toxicology. Although significant attention is being given to nanotechnology, equal attention is needed in laboratories that produce nanomedicines so that they can record themselves in clinical trials. Furthermore, these medicines in clinical trials display overwhelming results with reduced side effects, as well as their ability to modify the dose of the drug.

**Keywords:** cancer; drug delivery; nanomedicine; tumor metabolism; mRNA therapy



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## 1. Introduction

Cancer has been the second leading cause of death after cardiovascular diseases, and the number of cases continues to increase globally. Treatment options include surgery, chemotherapy, and radiotherapy. Among these, approximately 45% of cancers can be cured by surgery, while chemotherapy and radiotherapy can be used to treat a mere 5% of cancer patients [1]. The remaining cancer patients fail to recover. Conventional chemotherapy

## Enhancing transdermal drug delivery for Rheumatoid arthritis: A review on penetration enhancers

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### Abstract

One common inflammatory arthritis that affects extra-articular tissues such as the skin, lungs, and heart is called rheumatoid arthritis (RA). NSAIDs have a number of disadvantages despite being used for therapy on a regular basis. Transdermal medication administration has become a viable substitute, providing benefits over oral therapy such as avoiding the gastrointestinal system and improving patient adherence. The stratum corneum (SC), the skin's outermost layer, presents a substantial obstacle to drug absorption, constantly. Penetration enhancers, which can be synthetic or natural, are used to get around this. By lessening the SC's barrier qualities, these substances aid medication penetration of the skin. Sesame oil, turpentine oil, tulsi oil, terpenes, isopropyl myristate (IPM), oleic acid, Transcutol (TR), sucrose fatty acid esters, 1-menthol, and ethanol are just a few of the penetration enhancers that are examined in this review with an emphasis on their potential to improve the efficacy of topical formulations for RA.

**Keywords:** Penetration enhancers, Rheumatoid arthritis, enhancing, transdermal, skin barrier function

### Introduction

An autoimmune chronic condition is rheumatoid arthritis, characterized by a high degree of systemic inflammation that is chronic inflammatory condition that affects joints, notably the hands and feet. It occurs when the mechanism that protects the body, the immune system, turns on its own tissues in an attempt for immunity against illnesses as well as infections. This condition causes pain, edema, stiffness, and loss of function in the joints [1, 2]. Non-steroidal anti-inflammatory drugs NSAIDs such as indomethacin IND, celecoxib, etoricoxib, diclofenac (voltaren, cataflam, arthrotec), ibuprofen, naproxen, and meloxicam are now used in India to treat RA and disease modifying anti-rheumatic drugs, corticosteroids, biological DMARDs [2,3]. NSAIDs may cause side effects including gastrointestinal disturbances, ulcers, and increased risk of cardiovascular events. Transdermal administration of drugs is the most effective way to deliver NSAIDs in order to counteract their side effects when taken orally. Currently, transdermal drug delivery is becoming more widely recognized as an effective non-invasive drug administration technique. Convenient to use, less adverse effects, prolonged therapeutic activity, and increased patient compliance are some of its advantages. As shown in figure 1 the stratum corneum's SC) barrier function poses a difficulty to the drug delivery system (DDS); skin penetration enhancers are used in order to overcome this problem skin's limited permeability is the primary drawback to the development of transdermal products. Several novel compounds have been discovered as possible permeability enhancers for transdermal medication administration in an effort to overcome this barrier effect. The agents known as permeability enhancers are employed to temporarily decrease the skin's impermeability, and the Permeability enhancement is the degree to which a formulation efficiently improves the skin's or mucosa's permeability. [4]

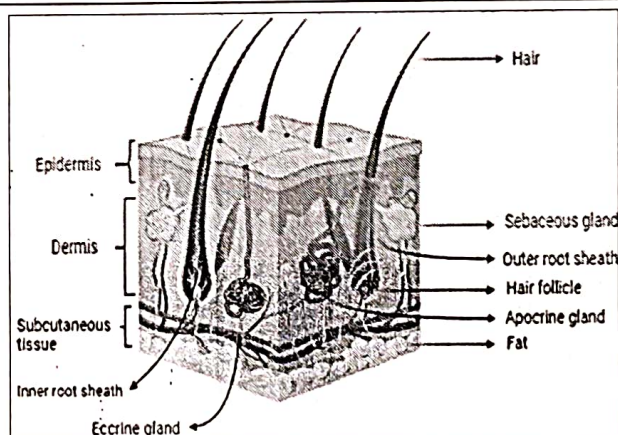


Fig 1: The structure of skin

### Skin as an obstacle against drug penetration

The skin defends the internal organs since it is the body's largest organ. Muscles, ligaments, and also other underlying tissues from radiation and mechanical harm as well as external chemicals. Keratinized squamous epithelium makes up the epidermis, the skin's outermost layer. Highly vascular dermis is the next layer which is made up of a thick layer of tightly packed fibroelastic connective tissue that has numerous sensory receptors. It provides food and support to the epidermis. The hypodermis, or subcutaneous layer, is beneath the dermis and is made up of various amounts of adipose tissue. This low permeability is mainly caused by the skin's outermost layer, the stratum corneum, which functions as a rate-limiting lipophilic barrier that prevents water loss and facilitates the absorption of both chemical and biological pollutants. Hair follicles (HFs), the stratum corneum (SC), and tight junctions (TJs) in the interfollicular epidermis comprise the mechanical barriers of the skin.



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## Nanotechnology-based mucoadhesive drug delivery systems: A comprehensive review

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### Abstract

Nanotechnology has the potential to revolutionise medicines through novel nanodevices. Nanotechnology is the study of matter at sizes ranging from 1 to 100 nm. Mucoadhesives could improve medication delivery systems. Mucoadhesive polymers could potentially be used to bypass physiological barriers in long term drug delivery. Nanoparticles are frequently employed due to their high drug loading capacity, potent stability, controlled release properties and surface modification for coating and ligand. Mucoadhesive tablets, pellets, films, sponges, suppositories, beads, wafers and hydrogels are some of the dosage forms that can improve mucoadhesion. The formulation base will be chosen based on the anticipated product profile, mode of administration, active pharmaceutical ingredient and the indication being treated. The current review article provides an in-depth discussion of several nanotechnology incorporated drug delivery techniques for improving mucoadhesive dosage forms that may be intended for buccal, sublingual, vaginal, rectal, nasal or gastrointestinal administration.

**Keywords:** Nanoparticles, mucoadhesives, controlled release, dosage forms, drug loading capacity, drug delivery systems

### Introduction

Recently significant emphasis is being paid to localised drug targeting for improved control over systemic drug delivery that involves concentrating a medicine or drug delivery system in a particular part of the body over an extended period of time. Mucoadhesive were initially employed in controlled administration of drugs in the early 1980s. The development of mucoadhesives has sparked the interest of many scientists towards the possibility of using these polymers to bypass physiological challenges in long term drug delivery. They render the therapy more efficient as well as secure for topical and systemic conditions<sup>[1]</sup>.

Bioadhesion is defined as any link established between two biological surfaces or a biological and synthetic surface. Bioadhesion denotes to the binding of polymers either natural or synthetic in the field of bioadhesive drug delivery. When a mucus based connection is formed, the words mucoadhesion and biological adhesion may be used simultaneously mucoadhesion occurs when two components, one of the two being in biological in origin remained together for extended periods of time by mucus; with the aid of interfacial forces<sup>[2]</sup>.

Mucoadhesive dosage forms might be intended for buccal, sublingual, vaginal, rectal, nasal or gastrointestinal delivery. Mucoadhesive tablets, pellets, films, sponges, suppositories, beads, wafers, hydrogels are some of the dosage forms that can enhance mucoadhesive properties. The formulation base will be determined depending on the intended product profile, the method of administration, the active pharmaceutical ingredient and the indication being treated.

At times an entirely novel name emerges to describe a developing scientific paradigm. Genetic engineering, biotechnology, combinatorial chemistry these are some of the past terms examples. Nanotechnology is a term frequently used to describe modern scientific and technological initiatives. Nanotechnology often known as nanoscience refers to study at scales of 100nm or less, as it is still developing field. Nanotechnology like other

technological advances has the ability to revolutionise therapies and diagnostics through innovative nanodevices<sup>[3]</sup>. Nanotechnology has become a growing field due to the expanded assistance provided by scientists in the academia business and federal sectors. The National Nanotechnology Initiative describes nanotechnology as the study and modification of matter at a scale of 1 to 100 nm, allowing for innovative applications<sup>[4]</sup>.

The pharmaceutical industry attempts to produce therapeutic compounds that may be given selectively to specific parts of the body, improving their therapeutic effectiveness<sup>[5]</sup>.

The current review article gives a comprehensive review of various nanotechnology incorporated drug delivery systems for improving bioavailability and enhancing therapeutic effect.

### Mucus Layer

Mucus is a highly visco elastic fluid that covers the gastrointestinal, lung, oral, nasal and genital tract epithelial surfaces. Mucus functions as a barrier for bacteria and for dangerous substances, protects the mucosal membranes from dehydration, and mechanical stress. Despite the nature and function of the mucus can vary depending on the part of the body. Mucus is composed primarily of water (up to 95%), lipids, small protein molecules and nucleic acids. Although high molecular weight glycoproteins known as mucins (MW from 0.5 KDa to 200 MDa) provide mucus its mechanical and viscoelastic properties<sup>[6]</sup>.

The large macromolecules referred as mucin possess a complicated extremely segregated structure that consists of polypeptide sections that have either little or no glycosylation distributed in between extremely glycosylated areas. Mucins possess molecular weights that can vary from 200 kD to 20–40 Mda<sup>[7]</sup>.

In biological systems mucin performs variety of functions the majority of which are linked to the movement, security, and protection of internal body surfaces<sup>[8]</sup>.



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Review Article

**Advancements In Sintered Tablet Technology : A Comprehensive Review**

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ABSTRACT

The pharmaceutical industry has found that sintering tablets is a potential method for creating solid dosage forms with better drug delivery properties. An extensive summary of the most current developments in sintered tablet technology is given in this article. The study starts out by explaining the basics of sintering with an emphasis on the production procedures, formulation techniques, a variety of sintering techniques are covered, including traditional thermal sintering and cutting-edge approaches like microwave and laser sintering. Their benefits and drawbacks in the production of tablets are also covered, as well as applications in drug delivery, ideal characteristics, sintering in pharmaceutical compacts, and the use of selective laser sintering (SLS) in the production of pharmaceuticals. Additionally, the review article sheds light on the many ways that sintered tablet technology is used in pharmaceutical formulations, including controlled-release, sustained-release; and immediate-release dosage forms. Addressing topics for additional study and development, the possible challenges as well as possibilities in transferring sintered tablet formulations from laboratory-scale to commercial manufacturing are also discussed.

INTRODUCTION

There has been a drastic and vast range of novel pharmaceutical substances and complications that is involved in marketing of acknowledges of the therapeutic benefits of

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## Review Article

# From Nature To Treatment: A Comprehensive Review Of Natural Polymers In Diabetes Mellitus Therapy

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## ABSTRACT

Diabetes mellitus (DM) is among the most severe and fatal diseases which cannot be transmitted. Insulin is commonly administered in the management of diabetes. Hyperglycemia, or elevated blood sugar, is a complication of diabetes mellitus, a chronic illness that is complicated and results from insufficiencies in the production, functioning, or combination. Many biodegradable and non-biodegradable polymers are currently being studied; however, non-biodegradable polymers have drawbacks such as toxicity, evacuation challenges, and inability to produce persistent insulin release over time. The majority of naturally produced polymers are currently used just like excipients in pharmaceutical compositions since they are often thought to be relatively safe in vivo. Multiple natural polymers, including proteins and polysaccharides, have recently been extensively researched as potential insulin mediums. The study highlights a wide range of naturally occurring polymers, including chitosan, alginate, gelatin, casein, pectin, cyclodextrin, dextran, and starch, demonstrating great potential towards treatment for diabetes-related problems. The natural polymers used to treat diabetes mellitus have been the subject of the present investigation, which has been successful in displaying a wide range of benefits, including enhanced encapsulation performance, blood glucose optimization, more persistent drug delivery, and patient acceptability. Additionally, a number of benefits like affordability, sustainability, safety, and accessibility to everyone support the continual improvement of a potential polymer incorporated insulin delivery system. In this review article an attempt has been made to demonstrate the use of natural polymers in improving the effectiveness of anti-diabetic formulation.

## INTRODUCTION

Diabetes mellitus (DM) has been recognized by man for over 2000 years<sup>1</sup>. Diabetes mellitus has been roughly pretentious to 451 million up until the present time.<sup>2</sup> Diabetes mellitus, a chronic

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## Mucoadhesive buccal formulation for anti-migraine agents: A comprehensive review

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### Abstract

The number of migraineurs worldwide has grown dramatically over the past thirty years, with only considerable differences in incidence rates among regions and countries. The two primary varieties of migraines are aura-accompanied and without an aura. Each has peculiar characteristics and causes. The oral route of administration is the most preferred route for drug delivery, even though there are several disadvantages, such as enzymatic breakdown and delayed absorption. Other modes of administration may be employed to provide potential solutions. In this review, attempts are made at differentiated drug delivery strategies that need to overcome the limitations of oral administration by examining mucoadhesive buccal formulations for anti-migraine drugs. The study presents a comprehensive evaluation of the uses of mucoadhesive buccal formulations on anti-migraine medications by gathering data from numerous sources, including research publications. The article analyses mucoadhesive buccal formulations used in tablets, films, patches, hydrogels, and ointments. Research samples have also been studied using the mucoadhesive buccal formulation of several anti-migraine medications, research-evaluated in the article. The article offers details of specific formulations that have been researched for various anti-migraine drugs and provides perspective on the potential of mucoadhesive buccal formulations for effective drug delivery.

**Keywords:** Migraine, anti-migraine, mucoadhesive buccal formulation, buccal films, patches

### Introduction

A severe throbbing and pulsing pain that comes and goes, usually on one side of the head, is the telltale sign of a migraine. This pain results from the activation of nerve fibres within the walls of blood vessels in the brain, specifically within the meninges a protective three-layered membrane enveloping the brain and spinal cord [1]. A thirty-year increase in migraine instances has been seen, with an age-standardized prevalence rate of 1142.54 per 100,000 population in 2019 compared to 62.6 million in 1990. From 1990 to 2019, there was a net drift of 0.089% in the prevalence rate of migraines, according to the widely applicable APC model. In high-middle SDI areas (South Asia, Oceania, and Latin America), the all-age prevalence rate for migraines was 1030.94 per 100,000 people; in low-middle SDI countries, it was 1242.37 per 100,000. At 1191.58 per 100,000 people, the age-standardized prevalence rate, on the other hand, was lowest in low SDI regions and highest in high SDI regions. The APC model's estimation of net drift outcomes shows similar trends. The top four nations in the world in terms of the number of migraine episodes were India (17.9 million), China (12.9 million), the United States (3.8 million), and Indonesia (3.5 million). Together, these countries accounted for 43.6% of all migraine events worldwide. The all-age prevalence rates in 2019 were most significant in Paraguay (1694.58 per

100,000 people) and lowest in Japan (727.36 per 100,000 people) [2].

### Categories of migraine

#### Migraine has two major categories

- 1. Migraine with aura:** A migraine with aura is a cluster of related neurological symptoms that often manifest before the headache stage. However, they can sometimes start later in the headache phase or persist. It is a collection of focused neurological, visual, sensory, linguistic, and motor symptoms that are reversible, progressively manifest, spread, and disappear. Between 15% and 1/3 of migraineurs report having an aura with their migraine [3,4].
- 2. Migraine without aura:** Without aura, migraine is more common and does not involve associated focal neurologic symptoms either before or during the headache. The underlying mechanism of migraine without aura is more intricate and is impacted by sociophysiological-environmental variables, sex, and genetics [3,5].

### Diagnosis

The diagnosis of migraine is based on the different criteria as mentioned in the table 1



## An over view on antibacterial herbal cream

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### Abstract

Creams are semisolid dosage forms that are frequently utilized for cosmetic and topical medication administration. Because of their special qualities and few adverse effects, herbal and antibacterial creams have become more and more popular. The creams were made via combining, slabbing, and triturating techniques, among other approaches. Organoleptic characteristics, pH, spreadability, homogeneity, emulsion type, homogeneity, ease of removal, viscosity, extrudability, identification of the kind of cream, and testing for anti-microbial susceptibility were all included in the evaluation of the creams. Herbal creams made with organic components including papaya, neem, turmeric, aloe vera, and tulsi have all demonstrated promise in healing rashes, eliminating acne and skin irritation, improving dry skin, and decreasing wrinkles. Antimicrobial creams with bioactive ingredients derived from different plants showed antibacterial action against germs like *Staphylococcus aureus* and *Escherichia coli*. The study shows that herbal and antibacterial creams can be used as secure and efficient substitutes for skincare products and medications. Antibiotic resistance and environmental damage brought on by synthetic medications may be resolved by using natural components in creams.

**Keywords:** Topical medication, antimicrobial susceptibility, herbal and antibacterial creams, skin infections, natural and pharmaceutical components

### Introduction

A topical prepare ion that is usually applied to the skin is called a cream [1]. Creams are also used for applying to mucous membranes, including the vaginal or rectum [2]. While even cosmetic creams are made using pharmacy-developed procedures and creams may be considered to be pharmaceutical items [1]. Creams are semisolid dosage forms which can be dissolved or dispersed in a suitable medium to contain one or more pharmacological substances. This word has historically been used to refer to semisolids that have a slight viscosity and can be produced as either water in oil or oil in water [3]. More recently, though, the phrase has been limited to goods manufactured of water washable, more visually appealing long-chain fatty acid or alcohol aqueous microcrystalline dispersions or oil-in-water emulsions. Drugs can be delivered vaginally using creams (such as Triple Sulfa Vaginal Cream). Sunburns are treated with creams. Cold cream can be useful for maintaining skin hydration throughout the year, particularly during the winter. These are some excellent home-made cold cream recipes. As winter approaches, skin problems become more prevalent. Your skin becomes parched and devoid of moisture. It extends, and over the lips and cheeks, little lines of crack occur. If appropriate maintenance is not applied, these fissures could get even redder. Using cold cream in the winter prevents skin issues from getting worse. There are so many cold creams on the market that it could be difficult to choose which one is best for your skin type. Skin problems can be effectively treated by making a cold cream at home using only natural components [1, 2]. The recipe for cold cream was devised in the second century by the Greek physician Galen credited with its discovery. He mixed rose petals with beeswax to create an emulsion. These were the

main moisturizing components within the chilled cream he created. This cream was also known by its vernacular moniker, Galen's cream. In addition to moisturizing the skin, cold creams are used to remove temporary tattoos and cosmetics. Tattoo marks are removed with a cotton ball once the cream has been applied. Cold cream is also used in the production of kid-friendly face paints [4].

### Herbal cream

The availability of herbal cosmetics has led to a rise in demand for cosmetics. The remarkable qualities and minimal incidence of adverse effects of herbal formulations are driving up their popularity. In addition, it gives the skin the nutrition and hydration it needs [5]. All that the herbal cream is an oil and water emulsion. Numerous organic components, such as neem, papaya, aloe vera, Tulsi, and turmeric, were used to make the herbal cream. These particular components were chosen because of their special attributes. Aloe vera is used externally to relieve acne and provide hydration. Asian cosmetics, like turmeric, help to brighten the complexion. It also possesses anti-inflammatory and antibacterial properties [6]. Neem is useful in the handling of eczema, dry skin, and psoriasis, among other skin disorders [7]. Tulsi is used to promote wound healing and give skin a glowing appearance. Apart from its health-promoting attributes, tulsi is suggested for the treatment of several ailments, including as skin diseases and coughs [8]. The well-known anti-inflammatory, anti-wrinkle, and enzyme-rich qualities of papaya are widely recognized. The primary goal is to create an herbal cream with several uses, such as moisturizing, reducing acne and skin irritation, reducing wrinkles, rashes, and dry skin [9].



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## Review Article

# A Comprehensive Review Of Herbal And Synthetic Wound Healing Creams

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## ABSTRACT

### Introduction:

The potential of medicinal plants and their extracts in stimulating wound healing is indicated by the abstracts and conclusions of several studies on herbal and commercially available wound healing creams. Combinations of various medicinal plant extracts have demonstrated good consistency, spreadability, and wound-healing capacity. Research has demonstrated how crucial natural sources are to creating the best possible wound care creams. Additionally, the efficient use of natural wound-healing materials has been aided by recent developments in skin delivery techniques. These results demonstrate the potential for safe and effective treatment options for a variety of wound types as well as the intriguing role of herbal creams in wound care.

### Body of abstract:

This review gives the researcher a thorough overview of the classification of wounds as well as a detailed classification of creams, benefits and drawbacks of creams. It gives researchers the comprehensive general instructions needed to make the creams. Additionally, it provides a comparison of commercially available herbal and synthetic wound healing lotions. It gives the researcher the steps needed to assess the creams.

### Conclusion:

This review provides you with detailed information about the Herbal and Synthetic creams.

## INTRODUCTION

Creams are topical drugs that can be administered topically to the skin. "Viscous liquid or semi-solid emulsions of either the oil-in-water or water-in-oil type" are what are referred to as creams. The

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## Comparative study of antibacterial herbal gels with chlorhexidine gel for gum disorders

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### Abstract

This review compares the benefits of antibacterial herbal gels to regular chlorhexidine gel. Many herbal extracts are available as gels to help maintain healthy dental hygiene. Poor oral hygiene is mostly caused by plaque formation and a rise in oral bacteria. Herbal gels like neem, clove oil, Bakul, babul, curry leaves, and others are effective at controlling plaque and reducing gingivitis, making them a safer alternative to chlorhexidine.

**Keywords:** Antibacterial herbal gel, chlorhexidine gel, dental plaque

### Introduction

About 95% of population in India suffering from dental plaque, in that only 50% of population use toothpaste, gels and mouthwashes and just 2% visit dentist [1]. Genetics, systemic factors, and oral hygiene all influence susceptibility to dental and periodontal illnesses. Plaque is the primary cause of gingivitis and periodontitis. Antibacterial substances are frequently found in chemical products to prevent the formation of plaque. Gels, toothpaste, mouthwashes, sprays, irrigators, chewing gum, and varnishes are all options for administering anti-plaque chemicals. Following toothpaste and mouthwash, gels are the most commonly used method for delivering antimicrobial ingredients [2].

The World Health Organisation (WHO) describes "health" as "the state of total physical, mental, and social well-being, instead of simply the absence of illness or infirmity." People with good dental health may maintain their ideal social and functional roles by having a functional and visually suitable

dentition. Oral health problems include changes in the form and function of the oro-facial region, such as having trouble speaking or biting food. As a result, a person's social well-being or quality of life suffers, either directly or indirectly.<sup>3</sup> There is an important connection between oral and general well-being. Individuals with poor dental health face potential risks that include infectious endocarditis, gastrointestinal problems in the elderly, heart disease, stroke, bacterial pneumonia, and premature birth. Periodontitis and other oral infections have been linked to cardiovascular issues. Oral bacteria may cause rheumatic fever and infective endocarditis in patients receiving organ transplants, as well as other systemic issues. Oral infections can trigger cardiovascular disease by a combination of three pathways: direct microorganism-induced atheroma formation in the endothelium, indirect host-mediated actions, or an inherited proclivity for pathogenesis [4]. Figure 1 shows that the effect of periodontitis to cardiovascular diseases.

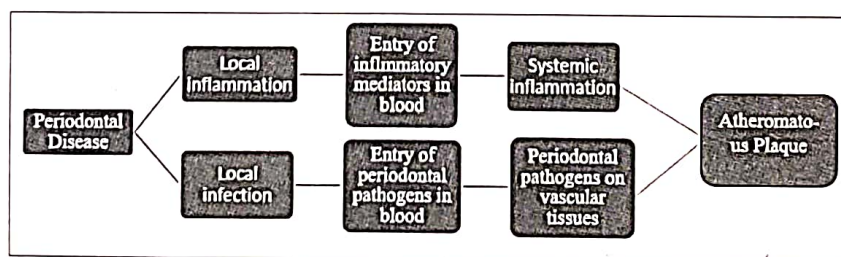


Fig 1: How periodontal diseases causes affect to cardiovascular issues

Dental caries, a progressive illness, is unique to mankind and one of the most prevalent cavities worldwide today. Dental strong acellular tissue gets harmed by acidic waste products produced by bacterial fermentation of dietary carbohydrates, specifically sucrose. It advances cautiously in most people due to an ecological imbalance in an equilibrium between minerals and oral biofilms, which are characterised by microbial activity, leading to changes in plaque pH triggered by infections, the production of acids, and the stabilising action of saliva and the surrounding tooth enamel [5].

Toothache was among the most prevalent explanation for oral pain. Yet, fractured teeth and exposed endodontic may result in endodontic hypersensitivity and dental pain. Untreated dental decay has been acknowledged as the most elementary root cause of toothache influencing everyday activities such as consuming food, studying, concentrating on delicate tasks, and so on. Multiple research studies on the impact of dental and face pain revealed that cavities in the tooth and challenges possess a direct impact on a community's quality of life [6].



### Phytosomes pharmaceutical delivery system: A comprehensive review

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#### Abstract

The unique "Phytosome" pharmaceutical delivery system, which overcomes problems with traditional drug administration methods, is the subject of this study's investigation. The goal is to get more knowledge about the advantages, possibilities, workings, elements, and characteristics of phytosomes as well as methods for assessing the transportation of medications that are placed into them. The study also covers advances in phytosome technology and approaches for creating phytosomal-loaded medicine delivery. According to the study's findings, the phytosome is superior to conventional herbal extracts in a number of ways, including improved stability, hepatoprotection, skin penetration, and systematic targeting. The therapeutic efficacy of the phytosome is significantly different from that of the standard *B. monnieri* extract. This study offers chances to improve operations and address issues related to the traditional kind of herbal medicine distribution system, which has significant implications for the pharmaceutical and herbal medicine industries.

**Keywords:** Technological developments, phytosomes, phospholipids, solubility, biological accessibility, drug transport, bioavailability, and botanical extracts

#### Introduction

"Phytosome" is a novel medicine delivery device that addresses issues with conventional drug administration techniques. "Some" means "like a cell," and "phyto" means "plant." To create phytosomes, which are lipid-compatible molecular assemblies that significantly increase the absorbance and biological accessibility of phospholipids, standardized plant-based chemicals that are soluble in water must be added [1].

The inventor of this phytosome method is indena. Phytosomes are herbal preparations that contain a single component of the herbal extract bound to phosphatidylcholine and polymer. This product outperforms conventional herbal extracts in terms of effectiveness [2].

The phytosome method has also been used to process many well-known botanical extracts, encompassing ginkgo biloba, ginseng, greentea, hawthorn, milkthistle and grapeseed. Because of their flavonoid and terpenoid components, these plant extracts are excellent candidates to phosphatidylcholine directly for binding. Certain components of herbal extracts can bind to phosphatidylcholine to form phytosomes. This procedure yields a more absorbable dose form with more potency than conventional herbal extracts [3].

Phytosome application in herbal medicine is highly advantageous. These include delivering the medication to the intended site of action, reducing harmful effects, controlling the drug's distribution by carrier system insertion, or altering the drug's molecular structure. Additionally, it is making medications more bioavailable [4]. Many of the main ingredients in herbal medicine, such as glycosides and flavonoids, are readily soluble in water. Nevertheless, the effectiveness of these ingredients is limited since they may be hydrophobic or only partially soluble, which results in reduced therapeutic benefit when administered topically. Many attempts have been made to

increase the medicine's bioavailability by forming it into a specific metabolic system; liposomes, phytosomes are two viable choices. When compared to traditional herbal extracts, the formulation development process using these methodologies may result in better bioavailability of herbal medications [5].

For herbal medications, phytosomes and naoemulsios offer a number of benefits, such as increased solubility and bioavailability, protection against toxicity, enhanced dispersion of tissue macrophages, stability, consistent delivery, and resistance to chemical and physical deterioration. As a result, there is a great deal of potential for improving the activity and solving issues related to the standard kind of herbal medication delivery system [6].

#### Advantages of phytosomes

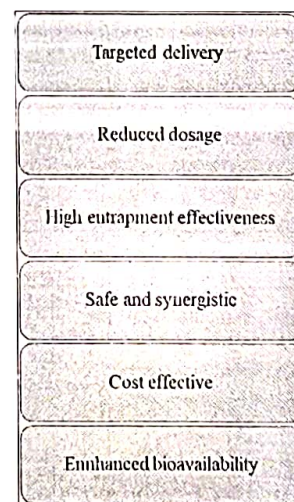


Fig 1: Advantages of phytosomes [7, 8]



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Review Article

## Comparative Analysis Of Herbal And Non Herbal Lozenges

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### ABSTRACT

One of the most common and superior unique dosage forms and oral candy products are lozenges. Since the 20th century, lozenges have been employed and are now manufactured economically. As an innovative method to administer medicines with both systemic and local reactions in the oral cavity, lozenges have a bright future. The lozenges are meant to be sucked and held in the mouth or pharynx. These include solid medicated, flavored, and sweetened base dose forms. The therapeutic lozenges offer the bonus of extending the dosage form's period of retention in the oral cavity, which improves bioavailability, reduces discomfort in the stomach, and reduces first-pass metabolism. The alteration eliminates the first pass metabolism and reduces stomach pain. These reviews offer examples of multiple herbal and synthetic lozenges collectively with their confirmed information and a lot encouraged products. This review include introduction, advantages, disadvantages, types and marketed products of the study.

### INTRODUCTION

The French term "losenge," which refers to a diamond-shaped geometric with four equal sides, is from where the name "losenge" comes. Developed in the pharmaceutical industry throughout the 20th century, pastilles and lozenges are currently produced for retail sales. Lozenges are combinations containing solid substances that are intended to dissolve in the mouth or throat.

They can be used to treat systemic drug

absorption, swallowing difficulties, throat infections, and local pain. They might include one or more drugs in the form of flavoring and sweetener. They can deliver medications in a variety of ways to the oral cavity's mucosal surface. When taken orally, lozenges are a more inventive and efficient dosage form. Lozenges were commonly used in the past for managing moderate sore throat irritation and pain, as well as

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# A PROSPECTIVE REVIEW ON TRANSETHASOMAL GEL AS CARRIER FOR ENHANCING TRANSDERMAL DELIVERY

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## ABSTRACT

Transethosomes are a kind of lipid-based nanosystem that have proven to be useful for for the administration of transdermal drugs because of their capacity to pierce the dense network of the stratum corneum. These soft and flexible nanosystems, which consist of phospholipid, ethanol, water, and an edge activator or permeation enhancer, can transport drug molecules. They can be made in a number of ways, such as hot, cold, thin-film hydration, and ethanol injection procedures. Transethosomes' tiny particle sizes allow them to pass through skin layers and ease of shape modification. Particle size, surface charge, entrapment efficiency, surface shape, drug content, and stability are some of the characteristics that define vesicles. NSAIDS, antifungals, antibiotics, and medications that can all be transdermally delivered using these vesicular systems.

**KEY WORDS:** Transethosomes; Analgesic activity; Vesicles; Edge activator

## 1. INTRODUCTION

Skin has received a great deal of attention in terms of medication penetration and permeation. Transdermal medication delivery is a well-established approach in the pharmaceutical business<sup>1</sup>. Transdermal drug delivery is a painless way of administering medications that involves putting a drug formulation to the skin: transdermal distribution is superior to traditional methods of drug delivery due to self-medication, excellent safety, higher patient compliance, avoidance of side effects and first pass metabolism, reduced frequency of dose, and more consistent plasma levels. However, The skin is composed of numerous layers, including the subcutaneous, dermal, and epidermal layers. The epidermis contains numerous horny layers composed of fat-based matrices that block the passage of both hydrophilic and heavy in molecular weight medicament molecules into the skin<sup>2</sup>. Nanocarriers can be delivered transdermally to improve local dermal effects as well as skin permeation for systemic performance<sup>3</sup>. Because of their closeness to cell membrane structure, vesicular nanocarriers have attracted a lot of interest recently for the administration of transdermal and topical drug applications. They consist of a lipid bilayer around an aquatic core, allowing them to include both hydrophilic and hydrophobic pharmaceutical substances<sup>4</sup>. Furthermore, These nanovesicles enable deep penetration into the epidermal layers and long-term drug release<sup>5</sup>. Researchers have spent decades studying various strategies for weakening or disrupting the permeation barrier and delivering drugs intact through the skin. Water, phospholipids, and ethanol are concentrated in high concentrations within vesicular structures known as ethosomal nanocarriers. They are specifically intended for therapeutic agent distribution via the skin or transdermal route<sup>6,7</sup>.

# A REVIEW ON HERBAL MEDICINE PLANTS ARE USED FOR THE TREATMENT OF EYE DISORDERS.

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## Abstract

*This review emphasises the historical significance and current applicability of herbal therapy in treating eye diseases. It looks at the topic in great detail. Eye problems need a variety of treatment options and are a major worldwide health concern. Combining modern scientific study with centuries-old traditional methods, herbal medicine has become a promising new field. The study examines the forms and prevalence of eye problems and emphasises the need for treatment alternatives that are accessible, safe, and effective. It addresses the fundamental ideas that underlie the therapeutic benefits of herbal medicine on ocular health, as well as possible modes of action and pharmacological characteristics. Herbal therapy provides a comprehensive approach to eye treatment that is in line with patient preferences and cultural customs, despite these obstacles. To fully utilise herbal medicine's potential in promoting ocular health, interaction between researchers, healthcare providers, and traditional healers is required. More studies and evidence-based practices are required to confirm the safety and effectiveness of herbal treatments for ocular disorders in a variety of populations.*

**Keywords.** : *herbal eye drops; eye disorders; traditional medicine; ocular health, inflammation*

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## Introduction

Ophthalmic products and eye drops are the pharmaceutical sterile products that are applied in eye and used for the prevention and treatment for various eye disorders. One of the most vital sense organs in the living world is the eye, and it remains crucial even as technology advances, with people depend heavily on their eyesight for a variety of functions.[1] Eye inflammation and its related complications are significant causes of vision loss.[2] Inflammatory eye disease is a broad category that includes anything from mild illnesses to life-threatening situations. The aetiology of the ocular inflammation may be infectious or non-infectious.[3] Thus, ocular inflammation and infection have the potential to cause blindness.[4] The pharmaceutical system continues to face difficulties in managing eye problems with chemical medications that have no adverse effects. Comparing the herbal medicinal plants to the present conventional medicines, the former are more readily available, less expensive, and have no negative effects.[5] A large percentage of people suffer from eye issues. The usual treatment for these issues is the use of steroids and antibiotics, yet long-term usage of these medications may have negative consequences.[6] Most of the time, there is inadequate scientific proof to justify the use of medicinal plants for modern medicine, yet the fact that hundreds of plants are used globally to prevent or treat disease.[7]

## Different herbal ophthalmic preparation

The composition of the herbal eye drop is designed to help with inflammatory and allergic disorders of the eyes. In comparison with expensive synthetic medications, which sometimes have negative side effects and are unaffordable for underprivileged individuals, they are more dependable, affordable, and cause less side effects. The effectiveness of several conventional herbal remedies in treating eye illnesses is currently being confirmed by contemporary research.[8]

The design and development of drug delivery systems, which contain herbal medicinal ingredients for the treatment of ocular disorders, has advanced significantly in the past few years. The drug delivery systems' morphological, physical, and chemical variances determine their affinity for herbal medicines with varying polarity, which in turn affects the dosage form's design and drug loading. delivery mechanisms with the ability to

# A Comprehensive Review of Ophthalmic Formulations for Ocular Diseases

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## Abstract

Ophthalmic disorders provide considerable problems for healthcare practitioners due to the sensitive nature of the ocular environment and the wide range of conditions seen. Creating suitable pharmacological formulations for eye therapy is critical to good management and treatment results. This comprehensive analysis will examine the numerous ophthalmic preparations used to treat ocular illnesses, including glaucoma, dry eye syndrome, conjunctivitis, cataracts, diabetic retinopathy, and macular degeneration. The study delves into the many types of ophthalmic formulations, such as eye drops, ointments, gels, inserts, and sustained-release systems, emphasizing their modes of action, pharmacokinetics, clinical effectiveness, safety profiles, and obstacles in ocular drug delivery. The focus is on recent advances in formulation technologies, including nanotechnology, microemulsions, and in-situ gel systems, which promise to improve medication bioavailability and patient compliance. The study also examines future possibilities and current trends in ophthalmic drug development, such as personalized medicine methods and innovative drug delivery techniques, which seek to improve treatment results and quality of life for patients with ocular disorders. Overall, this study gives significant insights into the present landscape of ophthalmic preparations and information for doctors, researchers, and pharmaceutical scientists involved in developing and optimizing ocular therapies.

**Keywords:** ophthalmic formulation; ocular disorder; ocular drug delivery; bioavailability.

## INTRODUCTION

The ophthalmic formulation extends the vehicle's contact duration with the ocular surface and delays medication removal. The low bioavailability and therapeutic responsiveness of standard ophthalmic solutions caused by precorneal medication elimination can be resolved using alternative ophthalmic formulations.<sup>1</sup> Precorneal loss characteristics, including tear interactions, unproductive absorption, retinal epithelial membrane impenetrability, and transient resident longevity in the cul-de-sac, all contribute to reduced drug bioavailability in ocular dosage forms. Due to biological and structural limitations, the eyes absorb only a tiny amount of the medications (1% or less). Changing ophthalmic drug administration's intensity, amount, or frequency can adjust its effective dosage: drug delivery and retention period on the eye's surface. Efforts for better ocular medication bioavailability have centered on lengthening drug occupancy time in the sac surrounding the conjunctiva and strengthening medication access through the cornea, the primary means of medication entering the eye.<sup>2</sup>

Local instillation is a critical, harmless approach for treating anterior disorders. Ninety percent of commercial ophthalmic products are administered using the traditional method, such as drops for the eyes. This might be due to the simplicity of management and adherence by patients.<sup>3</sup> Because of these factors, just under five percent of the drug supplied enters the eye. Including permeation enhancers/cyclodextrins or raising solution viscosity did not significantly improve results. Identifying and inhibiting medication efflux pumps has led to enhanced ocular drug absorption. However, continuous usage of these inhibitors may lead to adverse consequences.<sup>4</sup>

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## Review Article

# A Comprehensive Review On History, Pathogenesis, And Treatment Innovations For Melasma

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### ABSTRACT

A common skin condition 'melasma' which is signalized by the occurrence of dark, blotchy patches on sun-stroked areas, especially the face, particularly affecting women during their reproductive years. Despite its prevalence, the true cause of melasma has recorded to remain puzzled, with change in hormone, heat stroke, and genetic factors which has been identified as potential triggers. A comprehensive exploration of melasma is provided in this article, with its historical recognition as a distinct dermatological concern associated with altered hormones and environmental influences being traced. The classification of melasma is summarised in brief, that makes it easier to distinguish between transient and persistent types of its kind on the basis of pigmentation patterns and depth. The cross-work of genetic liability, hormonal fluctuations, and UV radiation in melasma's development is unravelled, highlighting its multifactorial nature. Different treatment methods and options are discussed, ranging from topical creams containing ingredients like kojic acid, azelaic acid, and hydroquinone to advanced therapies like chemical peels and laser treatments. The evaluation parameters and criteria for assessing the quality of topical creams, including their efficacy, safety, and tolerability, are also examined. Despite the challenges in managing melasma due to its complex etiology, ongoing research aims to explore alternative agents and combination therapies for improved outcomes, emphasizing the need for further investigations to enhance treatment strategies and ensure patient safety.

### INTRODUCTION

Melasma is a most commonly procured condition of hyperpigmentation issue, resulting in darker, blotchy and uneven skin tone on sun exposed areas, mainly observed on face. Women are more susceptible to this condition

in comparison to men. As it generally appears for the First time during reproductive age or pregnancy<sup>1</sup>. Originating from the Greek word "melas", referring black, characterising the patchy brown clinical representation. This skin ailment is also known as 'chloasma', 'mask of

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Review Article

## Advances in bioavailability enhancement technique for poorly aqueous soluble drugs- comprehensive review

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ABSTRACT

The limited water solubility of pharmacologically active molecules poses a constraint on their pharmacological potential. Despite the non-negotiable solubility parameter, various strategies are employed to augment bioavailability. Solubility and bioavailability are pivotal for optimal therapeutic effects at the target site. Overcoming the challenge of enhancing drug bioavailability and solubility is a significant focus in pharmaceutical formulations. In order to enhance the solubility of low water-soluble medicinal products, by means of a variety of techniques including particle size reduction, nanonization, pH correction, solid dispersion, complexation, cosolvency and hydrotropy. The objective is to elucidate techniques for effective absorption and heightened bioavailability.

INTRODUCTION

Bioavailability refers to the rate at which absorption occurs and extent of the drug remains in its unaltered form. It's a crucial parameter for achieving optimal drug concentration in systemic circulation, leading to a pharmacological response<sup>1</sup> The efficacy of a drug depends not just on its bioavailability, but also on the solubility of its molecules<sup>1</sup>. Solubility, which according to various concentration expressions like parts, percentage, molarity, molality, volume fraction and mole fraction are the highest quantities of solutes that can be dissolved in a given solvent.<sup>2</sup>

Solubility plays a essential role in drug liberation, impacting bioavailability. For effective drug absorption, the drug must be in solution form at the site of absorption. Drugs with poor bioavailability often exhibit inadequate aqueous solubility, slow dissolution rates, instability in physiological pH, limited permeation through biological membranes, and extensive first-pass metabolism<sup>3</sup>. Enhancing the bioavailability of drugs with low water solubility, Higher doses may be required, leading to adverse reactions and increased therapy costs, without achieving the desired pharmacological response<sup>4</sup>.

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## Review Article

# Transdermal Drug Delivery System: A Review

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### ABSTRACT

The development of the transdermal drug delivery system aimed to address the issues related to oral drug consumption. These systems usually involve applying medicated adhesive patches on skin to deliver medication directly into the bloodstream for targeted treatment. One significant advantage of these patches is their ability to release medication in a controlled manner, either through a porous membrane over a medication reservoir or via melting by body temperature, thin medication layers within the adhesive. This article seeks to explain the pros, cons, and important components of the transdermal drug patches, including polymers, permeation enhancers, backing laminates, and adhesives. Assessment criteria cover various aspects like chemical properties, adhesive effectiveness, and results from in vivo and in vitro studies. Recent advances in this area show a growing interest in transdermal delivery due to its potential to minimize side effects when compared to the other methods of administration.

### INTRODUCTION

Transdermal drug delivery systems (TDDS) are self-contained forms of medication that release drugs through the skin at a controlled rate into the bloodstream<sup>1,2</sup>. This method is effective for both local and systemic delivery of drugs. TDDS are designed to transport an effective dose of drug through the skin, avoiding issues like reduced effectiveness from liver metabolism<sup>3</sup>. The goal of

TDDS is to optimize drug absorption while minimizing retention and metabolism in the skin<sup>4</sup>. This delivery method ensures consistent drug release and avoids sudden spikes in drug levels that can cause side effects. Innovative drug delivery systems, including TDDS, have become popular for their benefits<sup>5</sup>.

**TABLE 1: Example of patches and their uses**

PATCH	USES
Nicotine patches	Smoking cessation
Nitroglycerine	Angina pectoris

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## Polymeric Excipients in Pharmaceutical Formulations: A Comprehensive Review

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### ABSTRACT

Pharmaceutical polymers serve as the core components in the formulation of pharmaceuticals in conventional and novel drug delivery system. This comprehensive overview includes the classification of distinct polymers based on either synthetic or natural origin, where polymers play a crucial role in pharmaceutical applications such as manufacturing, packaging and healthcare due to their versatile properties like durability, flexibility and conductivity. Their application span from binding agents in tablet formulations to controlling viscosity, liquid flow and certainly their uses in suspensions and emulsions. The current review article signifies different polymers that have been employed as primary agents to regulate the release rate of drugs from the formulations according to their implementations and the development of polymers in various dosage forms that includes tablets and capsules.

**Keywords:** Polymer, drug delivery system, emulsion, suspension, tablet, capsules.

### I. INTRODUCTION

Polymer comes from the Greek word poly, meaning "many," and mere, meaning "parts." These materials belong to a broad class that are composed of numerous small molecules called monomers that are joined to form lengthy chains known as macromolecules. They are significantly used as pharmaceutical dosage forms in drug delivery systems [1]. Different types of polymeric excipients are showcased, highlighting their unique functions in different drug delivery systems. Various polymers have the potential to enhance solubility, bio-degradability, viscosity, pH of dependency, advanced coatings, inhibition of crystallization and mucoadhesion. The modification of the drug release rate can be effectively achieved through the application of a polymer coating on oral pharmaceutical dosage forms [2].

Polymers are also used as a carrier medium in various pharmaceutical preparations. The primary objective of polymeric drug carriers is to deliver drugs to a specific site of action in the body, either by entrapping drug-activated windows molecules or chemically binding them [1,3]. In the domain of polymer science, Henri Braconnot arose as a pioneer in the field of subsidiary cellulose compounds during the year 1811 [4]. This weighty work can be thought of as one of the earliest critical commitments to the discipline. Consequently, in the last option part of the nineteenth century, the approach of vulcanization reformed the sturdiness of normal polymer elastic. This is undeniably a huge achievement as it presented the idea of semi-manufactured polymers to a more extensive crowd, subsequently preparing for additional progressions in the field [5].

### Excipients

Excipients, whether of natural or synthetic origin, constitute the majority of components in pharmaceutical formulations. Synthetic additives have become prevalent in contemporary pharmaceutical dosage forms, with lipids, carbohydrates, and proteins representing natural polymeric materials [5]. Polymers are frequently utilized as excipients in the pharmaceutical sector, where they help formulate dosage forms that are solid, liquid, or semi-solid. They perform various tasks as disintegrants, viscosity improvers, binders, matrix binders, release modifiers, film formers, thickeners, stabilizers, emulsifiers, muco-adhesives and suspending agents. They are used in particular in the production of solid monolithic matrix systems, implants, films, beads, micro particles, nanoparticles, inhalable and injectable systems as well as viscous liquid formulations. Polysaccharides and their derivatives form a category of polymers extensively employed in pharmaceutical formulations. In many instances, their inclusion significantly influences the mechanism and speed of drug release from the

# A Comprehensive Review on the Role of Herbal Mouth Fresheners in the Management of Halitosis

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**Abstract:-** Halitosis is an unpleasant odor in the oral cavity that stimulates poor oral health. The bad odor is a taboo that creates hesitation and embarrassment in society. This is not under the voluntary control of an individual. Various herbal ingredients are found to refresh the bad odor and provide cooling sensations. This review focus on the herbal mouth fresheners which are used to treat Halitosis or Oral malodour. The review gives an introductory of mouth Fresheners in combating halitosis, the traditional herbal ingredients and their efficiency in mouth Fresheners and additional potent benefits such as Antimicrobial, antioxidants, anti-inflammatory, antifungal and wound healing properties were explored. Mouth fresheners are found to show an instant therapeutic efficacy in reducing bad odor, giving a refreshment which lasts for some period of time. It has also been more advantageous to use herbal mouth fresheners when compared to artificial or synthetic ones. Understanding the role of mouth Fresheners in oral care highlights the overall well-being of the society. Hence, herbal mouth fresheners are the major requirement at present to combat the bad odor and to get instant effect which prevents the risk of hesitation, embarrassment, and anxiety with increased oral quality life of the people.

**Keywords:-** Halitosis, Herbal Ingredients, Instant, Mouth Freshner, Oral Malodour, Refreshment.

## I. INTRODUCTION

Mouth Fresheners or Halitosis masker is generally consumed to avoid the oral malodour and to get an instant therapeutic benefit. Mouth Fresheners can be formulated in the form of Spray, Granules, powder, strips, etc. Hydrated or dehydrated herbal ingredients are used in the preparation of herbal mouth fresheners which serve as nutritive and taste masking factor [1]. Foul smell from the mouth is the major warning of miserable oral health [2]. Oral hygiene products are utilized as additives that deliver to provide notable cooling sensation to customers, especially to mask the bad breath [3]. There are about 400 microorganisms in the mouth, which emit the smell from the oral cavity or respiratory tract. People are therefore recommended to use chewing gums, chocolates, mouth washes, freshner and frequent brushing to keep a distance from bad breath [4]. During the periods of intimacy, in public places or in close association with others bad odour is regarded as nauseating. Apart from poor oral hygiene and dental problems, smoking, alcohol and tobacco

also have a significant role in Halitosis. Overeating, starvation may also give rise to Halitosis [5]. Nutritional mouth Fresheners like Flaxseed, omega-3-fatty acid also provides the health benefits and economic Upliftment [6]. Herbal leaves comprise various biologically active components, which are accountable for antioxidant, antifungal, antibacterial, anti-inflammatory and chemo preventative activities, which are famous to mankind [7]. Oral cavity gives birth to disagreeable odour called Halitosis or Oral malodour. The crucial manifestation embraces psychosocial awkwardness and anxiety, Halitosis may seem simple and be ignored but it's very awful and causes long term effects [8]. Yet 50% of the public worldwide endures some or the other type of oral Halitosis [9]. The use of natural herbs in the formulation of herbal mouth freshner is been proven medically to avert the issue of bad breath and oral health, Mouth fresheners are used as astringent, deodorizing agents, treating dental caries, and to destroy the bacteria. Herbal mouth fresheners are designed to relieve pain and soothe irritation in mouth, to inhibit microorganisms, to reduce inflammation. Bacterial activity in an unclean mouth is the primary cause of bad breath. Hence the utilization of Antibacterial herbal mouth freshner enhances the oral quality life of the people [10]. Mouth fresheners and mouth washes are the majorly credited delivery means of Anti-microbial agents after toothpastes [11]. The impact factor of herbal formulation is that there are no unhealthy ingredients present in the preparation. Herbs are readily available and cost effective which improves the immunity and assist in healing of dental infections. The world Health report, 2003. culminated oral health as an essential ad integral element of general health. Therefore, the traditional use of herbal mouth freshner removes the infectious agent in mouth due to its antibacterial property [12]. Devoid of chemical ingredients in herbal mouth fresheners gives best results compared to chemical mouth spray [13].

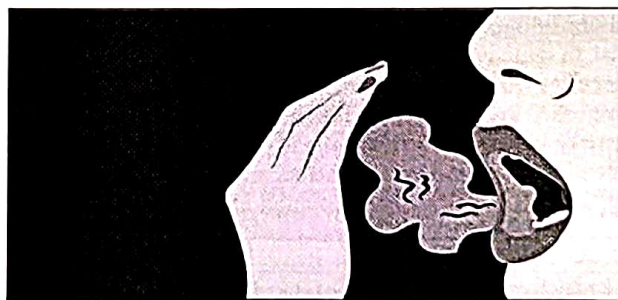


Fig 1 Bad Odor



# Evaluation and Formulation of Different Types of Cream

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## ABSTRACT

Creams are fluid-like treatments that have a homogeneous or semi-solid consistency and are meant for external application on the skin or other mucous membranes. They serve protective, therapeutic, or preventive purposes, particularly when an occlusive effect is unnecessary. These creams typically comprise one or more medicaments dissolved or dispersed in suitable bases, either hydrophilic or hydrophobic, ensuring compatibility with skin secretions. The demand for cosmeceuticals is experiencing rapid growth, fueled by factors like the introduction of new ingredients, financial incentives for successful product development, and consumers' desire for high-quality formulations. This burgeoning industry encompasses a wide range of products designed to enhance beauty, cleanse, alter appearance, and promote aesthetic appeal. Cosmetic creams, in particular, aim to address specific concerns such as wrinkle reduction, acne treatment, and oil control, catering to the diverse needs of consumers seeking to improve their skin's health and appearance. Throughout the development process of cosmetic creams, various properties are targeted, including anti-inflammatory, antioxidant, antiseptic, emollient, keratolytic, and antibacterial activities. These creams are meticulously crafted to provide not only cosmetic benefits but also therapeutic advantages, offering a holistic approach to skincare. Furthermore, the herbal cosmetic industry significantly contributes to the global demand for herbal products, given the evident rise in the herbal trade according to market data. This trend reflects consumers' growing preference for natural and plant-based ingredients in their skincare regimens, driven by an increasing awareness of the potential benefits of herbal formulations. As the industry continues to evolve, it is likely that we will witness even more innovations and advancements in cosmetic creams, meeting the ever-expanding demands of beauty and skincare enthusiasts worldwide.

**Keywords:** Creams, Anti-Oxidant, Emollient

## INTRODUCTION

Topical drug delivery refers to the act of applying a formulation containing a drug to the skin for the purpose of treating a skin-related manifestation of a common general disease. The objective is to confine the drug's pharmacological effects either on the surface of the skin or within the skin itself. Semi-solid formulations, such as foams, medicated powders, sprays, solutions, and certain medicated adhesive systems, are the dominant forms used in this method of drug delivery.

Topical creams are employed to enhance the solubility and bioavailability of therapeutic drugs, as well as to facilitate the transport of hydrophilic solutes to the skin's surface.[1,2]

Creams are fluid-like treatments that are homogenous or semi-solid and intended for external use on the skin or other mucous membranes. They serve protective, therapeutic, or prophylactic purposes, particularly when an occlusive effect is not required. These creams typically contain one or more medicaments dissolved or dispersed in suitable bases. Hydrophilic or hydrophobic bases are used to ensure compatibility with skin secretions. The demand for cosmeceuticals is rapidly expanding due to factors such as the availability of new ingredients, financial incentives for successful product development, and the consumers' desire for high-quality formulations. Meeting consumers' performance expectations and maintaining quality standards are crucial aspects of cosmetic formulation[1]

### Merits of Topical Drug Delivery:

- First pass metabolism prevention the reduction of hazards.



# A Brief Review on Floating Drug Delivery System

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## ABSTRACT

The review on sustained release drug targeting system is written to give an information regarding the polymeric advancement. Its main objective is to increase the drugs bio availability and control drug release. Floating drug delivery system (FDDS) are the less-density devices that be buoyant above the content of stomach & empty the stomach. It is also advantageous in site specific drug delivery and control fluctuations in plasma drug concentration. This overview also gives information regarding the different floating drug delivery system like effervescent systems, less density systems, muco adhesive systems and their mechanism of action. This evaluation also casts light on formulation of buoyant drug delivery system and also the estimation of low-density drug targeting system. Buoyant drug targeting system dose forms can be delivered to their site of action by different means of formulations like capsules, tablets with addition of desirable components as well with gas generating agents.

**Keywords:** Gastric motility, Gastro intestinal transit, Buoyancy, slow transit dosage forms, buoyant systems.

## INTRODUCTION

In the year of 1968, Davis was first introduced the floating drug delivery system, as those that have a mass density in comparison with the gastric material. They can also let go this medication continuously since they float for a long duration of time in abdomen.<sup>[1]</sup> Floating therapeutic delivery system have been specialised formulations design to stay on the gastric juice surface and with release drugs gradually over a lengthy period. These systems are extremely helpful for medications that own a tight digestion window or absorb predominantly in the duodenum or top portion of the duodenum. These consignment systems are those that enlarge the drug through the pylorus is compromised.<sup>[2]</sup> As outcome, the substance holds water and swells formerly it comes into contact upon the gastric fluid, keeping the dose form in the duodenum for an extended amount of period. Recently, therapeutic outcomes and patient compliance have improved significantly leading to the growth of innovative therapeutic delivery system.

The buoyant drug delivery system is promising as a method for extending the stomach residence duration and improving the digestibility of medication that has poor soaking up from the GI tract and low solubility FDDS has been a restricted success in the occurrence of medications along with less immersion windows right through the GIT.<sup>[2]</sup> In the growth of mouth related controlled DDS, part of the important summonses to be change the GI transit period. Gastric motility of medications is extremely adjustable & is based on the formulation and the fast state of the duodenum. Gastric emptying is unknown if there are any anatomical troubles & aspect like the bearing edibles. Although after many developments in therapeutic delivery, and the enteral route of the medication administration has good results and success because of the physiology of GIT because it can be designed easily in dosage form compared to another dosage form. Even after good results, research is going on for better and extending the time for release of drugs with controlled drug delivery.<sup>[3]</sup>

Different techniques are being established to reduce the frequency of doses and also to develop sustained relaxation. FDDS is a naquatically controlled less-density system with plenty of floatation to stay on the outside over the alimentary content along with remain floating in the duodenum exception of altering the stomach evacuation rate for an extended duration, this consequence in enhancing great control over serum drug level fluctuations. it Prolongs the food possession of a medication delivery system is attractive for accomplishing the higher drug effectiveness of the medicament substance. Some approaches to extending the time duration in gastric medication delivery systems are floating, non-floating magnetic swelling raft forming systems.<sup>[3]</sup>

## Floating Drug Delivery System

Buoy ante dictation targeting system is the class of gastro intestinal retention drug targeting systems. These therapeutic drug delivery systems own a low mass density system and persist floating in the duodenum exception of affecting the stomach emptying rate. These provide continuous dispensing of the drug because of their less densities ( $<1.004 \text{ g/cm}^3$ ).

RESEARCH ARTICLE***In Silico* Investigation of Chemical Components of *Fragaria ananassa* Species as Aphrodisiac Agents for Erectile Dysfunction**Sadishkumar S<sup>1</sup>, Vimal Kumar S<sup>2\*</sup>, Mohith SN<sup>1</sup>, Prathiba R<sup>1</sup>, Abilash S<sup>1</sup>, Mahesh AR<sup>3\*</sup><sup>1</sup>Department of Pharmacology, Faculty of Pharmaceutical Sciences,  
PES University, Bengaluru, Karnataka, India.<sup>2</sup>Department of Pharmacology, Al Shifa College of Pharmacy, Perinthalmanna, Malappuram, Kerala, India.<sup>3</sup>Department of Pharmaceutical Chemistry, The Oxford College of Pharmacy, Bengaluru, Karnataka, India.\*Corresponding Author E-mail: [svimalkumar79@gmail.com](mailto:svimalkumar79@gmail.com), [armahesh@hotmail.com](mailto:armahesh@hotmail.com)**ABSTRACT:**

Sterols, Polyphenols, and flavonoids have a major role in erectile dysfunction. The molecular docking of phytochemical constituents of *Fragaria ananassa* fruit with human phosphodiesterase 5 (1UDT), human arginase II (4I06), human aromatase (5JKV), D2 dopamine receptor (6CM4) compared with sildenafil citrate. Using BIOVIA Discovery studio, ligand clusters were prepared, and PyRX software was used for molecular docking (Auto dock-Vina). Using PyMOL, the Protein-Ligand Complex was generated, and the 2D- interactions were obtained from BIOVIA Discovery studio. Most of the Phyto-constituents showed better binding affinity than sildenafil citrate. All 58 components have better GI absorption which ranges from 0% to 100%. The physicochemical, pharmacokinetics (ADME), and toxicity properties of bioactive molecules were evaluated to confirm their drug-likeness property. Most of the fifty-eight components are non-toxic and hence this study concludes that only certain sterols, polyphenols, and flavonoids from *Fragaria ananassa* fruit shows significant effects on erectile dysfunction.

**KEYWORDS:** Sterols, Polyphenols, 1UDT, 4I06, 5JKV, 1UZE, Erectile dysfunction.**INTRODUCTION:**

Erectile dysfunction (ED) is a prevalent urological issue affecting men of all ages. It is characterized by the inability to achieve or sustain a sufficiently firm erection for satisfactory sexual intercourse. It's worth noting that ED often has multiple causes. Prompt diagnosis is crucial in distinguishing between psychological and organic origins.<sup>1</sup> Apart from organic factors, depression, performance anxiety, and other sexual concerns can contribute to ED. Cardiovascular conditions are significant contributors, particularly with advancing age, while conditions like diabetes mellitus and metabolic syndrome can disrupt the molecular processes supporting erections, affecting various organ systems and hastening erectile function decline.<sup>2</sup>

Global statistics indicate that more than 150 million men grapple with ED, a number projected to reach 322 million by 2025.<sup>3</sup> Type 2 diabetes mellitus is a major risk factor, with a threefold higher occurrence in diabetic individuals. Key regulatory components for smooth muscle relaxation vital for erectile function include cyclic amino monophosphate, nitric oxide, and cyclic guanosine monophosphate. Disruption in the balance of smooth muscle contraction and relaxation, caused by various factors, leads to impotence.<sup>4</sup>

Certain plant sterols, such as Sitosterol and Campesterol, activate receptors and hormones like testosterone, improving performance and libido. The amino acid arginine is essential for nitric oxide synthesis, enhancing blood flow.<sup>5</sup> Studies on L-arginase show potential in treating male infertility. Research on Purwoceng extracts suggests they raise testosterone levels. Researchers are continually exploring novel pharmacological solutions.<sup>6-8</sup>

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Research Paper

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## PHARMACEUTICAL ASSESSMENT AND PHARMACOLOGICAL EVALUATION OF CHIA SEED EXTRACT-ALOE VERA TRANSEMULGEL

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### ABSTRACT

In the current investigation, polyherbal emulgels were prepared using *Aloe vera* and ethanol extract of Chia seed in varying proportions to (15mg/ml, 20mg/ml and 30mg/ml) and mixing the prepared gel in emulsion prepared using span 20 and buffers at a varying ratios (1:2, 1:1 and 2:1). The formulations were subjected to pharmaceutical evaluation for pH, viscosity, stability drug content and invitro drug release. Study showed that CEG1, CEG2 and CEG3 showed better results in all the evaluation tests but CEG3 as found to be stable in the accelerated stability tests. *in vivo* anti-inflammatory and analgesic activity were performed on CEG3 using egg albumin induced paw edema and tail flick method. Results suggests that the prepared



## A Review- “Synthesis and Biological Activities of 1,3,4-Oxadiazole”

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### ABSTRACT

1,3,4 oxadiazole is a promising compound for its various biological activities and their importance in the fields of medicine, pharmacology, and agriculture. In this review we focused on numerous synthetic routes which demonstrate how adaptable and flexible the methods are for effectively producing the azole molecules. The review also explores various biological activity of compounds containing 1,3,4-oxadiazole, highlighting its antitubercular, antibacterial, antifungal, anti-inflammatory, and other pharmacological effects. In general, researchers and academics interested in the biological potential and synthesis of 1,3,4-oxadiazole molecules.

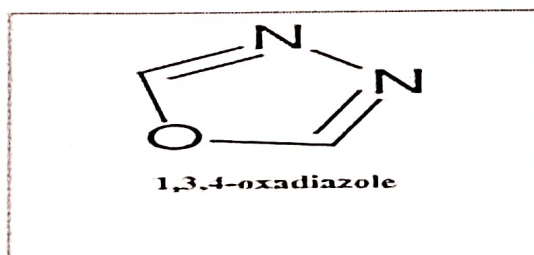
**Keywords:** 1,3,4 oxadiazole, Heterocyclic compound, Oxadiazole

### INTRODUCTION

Heterocyclic compounds are cyclic compounds with a carbon atom and other elements such as S, N, O etc as a member of its ring. Oxadiazole is a known heterocyclic compound with a five membered ring which contain one oxygen and two nitrogen in its ring. Oxadiazole is also consider to be a derivative of furan in which methane group (-CH=) is replaced with two pyridine type nitrogen atom(-N=). [1] In view of the broad spectrum of biological activity displayed by oxadiazole molecules they are frequently used as active agent in pharmacology and medicine. Oxadiazole molecules are used in agriculture as insecticides, herbicides and plant protection agents against disease cause by bacteria, viruses and fungi because of there potential biological activities. [2]1,3,4-Oxadiazole displays varities of biological properties such as Antibacterial, Antifungal, Antitubercular, Antiviral, Antidiabetes, Anti-Inflammatory, Analgesics. [3]. Additionally 1,3,4-Oxadiazole exhibits reduced lipophilicity, improved water solubility and improved metabolic stability, considering compound that contain carbonyl group, such as ester, amides, carbamates etc. 1,3,4-Oxadiazole compound also act as a bioisoters. [4].1,3,4-Oxadiazole nucleus shows essential building unit in several drugs and it also shows the broad spectrum of activity. [5]

#### Chemistry:

Of All the isomeric oxadiazole, Unsubstituted 1,3,4-Oxadiazole possesses the most stable isomeric structure. Lower alkyl derivatives and 1,3,4-oxadiazole are typically liquids with a boiling point of 150 °C. Melting point and boiling point increases in the aryl substitution when symmetrical derivatives are involved. The melting and boiling points of oxadiazole are considerably lowered when a different functional group is substituted at positions two and five. It is possible to ascertain 1,3,4-oxadiazole's water solubility using this kind of substituent on the heterocyclic ring. [6]







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## Review Article

# A Comprehensive Review On Integrating Lifestyle Modifications To Manage Diabetes Mellitus & Its Comorbidities

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### ABSTRACT

Non-insulin-dependent diabetes is already globally on the rise, with its prevalence steadily increasing, notably in developing countries like India. These are attributed to lifestyle changes — particularly physical inactivity and unhealthy eating, which are risk factors that can be modified. Available evidence indicates that increased physical activity reduces the risk of T2D. Equally important is the consumption environment that could help people engage in more healthy behaviour by making it easier for them to do so and this includes another rapid shift in nutrition: the consumption of diets high in refined grains, fat, sugar, sweetened beverages and low in fruits and vegetables. A multisectoral approach for promoting healthy diets and increasing physical activity is needed to stem the tides of the diabetes epidemic; however, such reforms require strong political will— if preventive measures are to be effective, they must also be sustainable as well as scalable. Diabetes is assumed to affect about 530 million adults when taking a global perspective, with a prevalence of 10.5 percent globally among adults aged between 20 to 79 years. Type 2 diabetes constitutes about 98 percent of global diabetics; this figure varies greatly between nations. According to an analysis of the National Health Interview Survey data (2016 and 2017), the average percentage rate was 8.5 for diagnosed type 2 diabetes among U.S adult populations. Other nationally representative databases like the Centre for Disease Control and Prevention Diabetes Surveillance System in revealed that in 2022, the overall estimated diagnosed diabetes prevalence was about 11.3 percent of adults (37.3 million people were out of these, there were previously known cases which numbered millions, leaving an estimated few undiagnosed cases-of whom approximately have type 2 diabetes). This has led to speculation regarding a potentially large increase in diabetic numbers due to numbers in childhood obesity being on the rise. Global data seem to support this worry as rates of the worldwide occurrence of type 2 diabetes among teenagers and young adults (15-39 years) increased from 117 to 183 per 100,000 population between 1990 and 2019.

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# ASSESSMENT OF SELF EFFICACY IN PAIN INTENSITY AND QUALITY OF LIFE INPATIENTS WITH RHEUMATOID ARTHRITIS

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## ABSTRACT:

**BACKGROUND INFORMATION:** The study sought to determine self-efficacy in pain severity and quality of life in rheumatoid arthritis patients. A cross-sectional investigation. The study included 76 participants with persistent pain, inflammation, or edema, and was carried out at the Oxford Medical College and Research Hospital. The following questionnaires were utilized in the study to assess self-efficacy in pain intensity and quality of life: ASES and QOL-RA

II. The associations suggested that people with chronic pain and high levels of self-efficacy may have lower pain intensity and a higher quality of life. Self-efficacy and quality of life are elements to consider when assessing patients suffering from chronic pain. **OBJECTIVE:** The key objective is to determine the self-efficacy in pain intensity, health-related quality of life and to evaluate the effect of structured education program through leaflets in patients with rheumatoid arthritis.

**METHODS:** Data of all the patients who have been admitted in the department of orthopedics during the period of 2022-2023 were collected. Demographical details (Name, Age, Gender, weight and history like family and social relationship) were recorded. Details of their functional



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## Review Article

# Managing Urinary Tract Infections In Pregnant Women: Pathogens, Risks, And Antibiotic Therapies

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### ABSTRACT

Urinary tract infections (UTIs) during pregnancy present significant challenges and risks to both maternal and fetal health. This study examines the etiology, epidemiology, risk factors, classification, signs, symptoms, preventive methods, and antibiotic treatment patterns of UTIs in pregnant women. UTIs, primarily caused by Symptomatic and Asymptomatic bacteria such as Escherichia coli and other gram-negative organisms, affect up to 10% of pregnancies, with symptomatic and asymptomatic bacteriuria being common classifications. Risk factors such as age, gravidity, gestational age, and genetic predispositions contribute to UTI susceptibility. Symptoms range from urinary discomfort to systemic illness, necessitating prompt treatment to avoid complications like preterm delivery and pyelonephritis. Hygiene practices, hydration, and antibiotic therapy, guided by culture and sensitivity reports, are vital for management. Notably, newer antibiotic agents targeting multidrug-resistant organisms show promise in treating UTIs, including aztreonam/avibactam, cefiderocol, and ceftazidime/avibactam. This comprehensive analysis underscores the importance of vigilance, timely intervention, and judicious antibiotic use in mitigating the impact of UTIs on maternal and fetal outcomes during pregnancy.

### INTRODUCTION

Urinary tract infection (UTI) is the broad term encompassing infection, affecting any part of the urinary tract (bladder, urethra, kidney). Women are more susceptible to UTIs compared to men, primarily due to lower urinary tract anatomy and its closeness to the reproductive organs [2]. UTIs

are prevalent among women, aged 18-40 making it one of the most common infections in this demographic. UTIs are often affiliated with multifarious vaginal infections and is commonly caused by pathogens arising from the alimentary canal. Generally, UTIs are categorized, based on

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To

Ankitha Nidhi Reddy<sup>1</sup>, Umme Habiba<sup>1</sup>, Madhu Chandra M<sup>1</sup>, Noopur Srivastavas<sup>2</sup>,  
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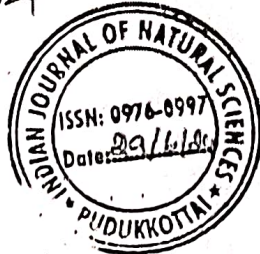
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To

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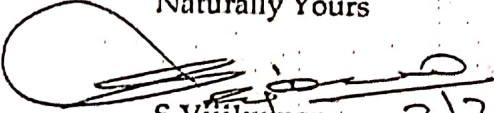
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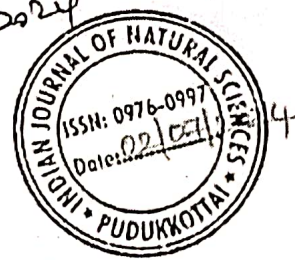
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Paper Title: Chia seeds: a comprehensive review.



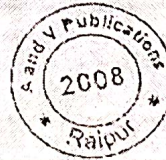
### Acceptance of Manuscript

With reference to your article titled 'Chia seeds: a comprehensive review' Author by Padmaa M Paarakh\*1, Suvanjali Mishra, Tanushree, Kavya R.S, Suman, Mudasir Pasha, Muthu Kumar A2. We wish to bring to your kind notice the following:

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Yours sincerely,



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