



Panchakshri Shivacharya Trust's
CHANNABASWESHWAR PHARMACY COLLEGE (DEGREE)

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Approved by:- Govt. of Maharashtra, PCI, New Delhi, Affiliated to:- S.R.T.M. University, Nanded, MSBTE, Mumbai.

DVV Clarification

3.3.2_2 b Conference Paper Proceeding

Papers Proceedings in National/International Conference

Sr. No.	Name of the teacher	Title of the paper	Title of the proceedings of the conference	Name of the conference	National / International	Calendar Year of publication	Affiliating Institute at the time of publication	Name of Publisher
1.	Dr. V. B Panchabhai	Review on: Respiratory Infection	Current trends in Multidisciplinary Research	2nd International Conference on Current trends in Multidisciplinary Research	International	2022	Channabasweshwar Pharmacy College (Degree), Latur	Asian Journal of organic and Medicinal Chemistry
2.	Dr. S. B. Gholve	Mucormycosis: An Incisive Review	Recent Scenario of Pharmacy and Pharmacological Sciences	One Day Indo-Malaysian Conference on "Recent Scenario of Pharmacy and Pharmacological Sciences"	International	2022	Channabasweshwar Pharmacy College (Degree), Latur	SBSPPM, B.Pharmacy College, Ambajogai
3.	Dr. A. N. Deshpande	Design of Some 2-Phenyl	Recent Scenario of Pharmacy and	One Day Indo-Malaysian	International	2022	Channabasweshwar Pharmacy College	SBSPPM, B.Pharmacy College, Ambajogai



		Chromane Derivatives as New Potential Tyrosinase Inhibitors by In Silico Approach	Pharmacological Sciences	Conference on "Recent Scenario of Pharmacy and Pharmacological Sciences"			(Degree), Latur	
4.	Dr. A. N. Deshpande	Determination of Heavy Metals in Some cosmetic available in Locally Markets of Marathwada Region	Recent Scenario of Pharmacy and Pharmacological Sciences	One Day Indo-Malaysian Conference on "Recent Scenario of Pharmacy and Pharmacological Sciences"	International	2022	Channabasweshwar Pharmacy College (Degree), Latur	SBSPPM, B.Pharmacy College, Ambajogai
5.	Dr. V. B. Panchabhai	Estimation of Ricinus Communis Extract for the medication of Jaundice	Recent Scenario of Pharmacy and Pharmacological Sciences	One Day Indo-Malaysian Conference on "Recent Scenario of Pharmacy and Pharmacological Sciences"	International	2022	Channabasweshwar Pharmacy College (Degree), Latur	SBSPPM, B.Pharmacy College, Ambajogai
6.	Dr. S. B. Gholve	Asthma: A Review	Recent Scenario of Pharmacy and Pharmacological Sciences	One Day Indo-Malaysian Conference on "Recent Scenario of Pharmacy and Pharmacological Sciences"	International	2022	Channabasweshwar Pharmacy College (Degree), Latur	SBSPPM, B.Pharmacy College, Ambajogai



7.	Dr. S. B. Gholve	UV Spectrometric Method Development and Validation for the Determination of Sodium Cromoglycate in Bulk and Dosage Form	Recent Scenario of Pharmacy and Pharmacological Sciences	One Day Indo-Malaysian Conference on "Recent Scenario of Pharmacy and Pharmacological Sciences"	International	2022	Channabasweshwar Pharmacy College (Degree), Latur	SBSPM, B. Pharmacy College, Ambajogai
8.	Dr. V. B. Panchabhai	Comparative Study of Dipeptidyl Peptidase-4 Inhibitors and Sulphonylureas	Recent Scenario of Pharmacy and Pharmacological Sciences	One Day Indo-Malaysian Conference on "Recent Scenario of Pharmacy and Pharmacological Sciences"	International	2022	Channabasweshwar Pharmacy College (Degree), Latur	SBSPM, B. Pharmacy College, Ambajogai
9.	Dr. O. G. Bhusnure	Nano Liposomes: Being Good Approach for Treating Anemia	Recent Scenario of Pharmacy and Pharmacological Sciences	One Day Indo-Malaysian Conference on "Recent Scenario of Pharmacy and Pharmacological Sciences"	International	2022	Channabasweshwar Pharmacy College (Degree), Latur	SBSPM, B. Pharmacy College, Ambajogai
10.	Dr. S. N. Nagoba	Design Development and	Current Trends in Multidisciplinary Research	2nd International Conference on	International	2022	Channabasweshwar Pharmacy College (Degree), Latur	Asian Journal of organic and Medicinal Chemistry



		Characterization of Polyherbal Gel Containing Hair Rejuvenating Herbs						
11.	Dr. S. M. Vijayendra Swamy	Osteoarthritis : Management	Current Trends in Multidisciplinary Research	2nd International Conference on Current Trends in Multidisciplinary Research	International	2022	Channabasweshwar Pharmacy College (Degree), Latur	Asian Journal of organic and Medicinal Chemistry
12.	Dr. S. N. Nagoba	Formulation and Evaluation of 6-Mercaptopurine Loaded Lipid-Polymer Hybrid Nanocarrier	Current Trends in Multidisciplinary Research	2nd International Conference on Current Trends in Multidisciplinary Research	International	2022	Channabasweshwar Pharmacy College (Degree), Latur	Asian Journal of organic and Medicinal Chemistry
13.	Dr. S. N. Nagoba	Formulation and Evaluation of Green Tea Extract Niosomal Gel for Acne Vulgaris	Current Trends in Multidisciplinary Research	2nd International Conference on Current Trends in Multidisciplinary Research	International	2022	Channabasweshwar Pharmacy College (Degree), Latur	Asian Journal of organic and Medicinal Chemistry
14.	Dr. S. N. Nagoba	Formulation and Evaluation of Nanocochleates Containing	Current Trends in Multidisciplinary Research	2nd International Conference on	International	2022	Channabasweshwar Pharmacy College (Degree), Latur	Formulation and Evaluation of Nanocochleates Containing



		Methotrexate						Methotrexate
15.	Dr. S. N. Nagoba	Preparation, Characterization on and Evaluation of Carbon Nanotubes Containing Fluconazole for Topical Drug Delivery	Current Trends in Multidisciplinary Research	2nd International Conference on Current Trends in Multidisciplinary Research	International	2022	Channabasweshwar Pharmacy College (Degree), Latur	Asian Journal of organic and Medicinal Chemistry
16.	Dr. S. N. Nagoba	Nano Liposomes: Being Good Approach for Treating Anemia	Current Trends in Multidisciplinary Research	2nd International Conference on Current Trends in Multidisciplinary Research	International	2022	Channabasweshwar Pharmacy College (Degree), Latur	Asian Journal of organic and Medicinal Chemistry
17.	Dr. S. N. Nagoba	Formulation and Evaluation of Oro dispersible Film Containing Atorvastatin Calcium by Using Natural Polymer	Current Trends in Multidisciplinary Research	2nd International Conference on Current Trends in Multidisciplinary Research	International	2022	Channabasweshwar Pharmacy College (Degree), Latur	Asian Journal of organic and Medicinal Chemistry
18.	Ms. V. M. Gaikwad	Formulation and Evaluation of Fast Dissolving	Current Trends in Multidisciplinary Research	2nd International Conference on Current Trends in	International	2022	Channabasweshwar Pharmacy College (Degree), Latur	Asian Journal of organic and Medicinal Chemistry



		Oral Film of Promethazine		Multidisciplinary Research				
19.	Mr. S. S. Hindole	Transdermal Patches: An Advanced Route of Drug Delivery-A Review	Current Trends in Multidisciplinary Research	2nd International Conference on Current Trends in Multidisciplinary Research	International	2022	Channabasweshwar Pharmacy College (Degree), Latur	Asian Journal of organic and Medicinal Chemistry
20.	Dr. V. B. Panchabhai	Herbal Medicinal Plants as Alternative to Conventional Therapies for Asthma	Novel Research and Development	International Journal of Novel Research and Development (IJNRD)	International	2022	Channabasweshwar Pharmacy College (Degree), Latur	International Journal of Novel Research and Development
21.	Mr. A.B. Swami	Study on Effect of Concentration of Emulsifying Agents in Emulsion	Social Science, Management and Technology	3rd International Conference on Social Science, Management and Technology in Covid Era	International	2022	Channabasweshwar Pharmacy College (Degree), Latur	Asian Journal of organic and Medicinal Chemistry
22.	Mr. A.B. Swami	An Overview on: Lipid-Polymer Hybrid Nanocarriers as New Drug Delivery Approach	Current Trends in Multidisciplinary Research	2nd International Conference on Current Trends in Multidisciplinary Research	International	2022	Channabasweshwar Pharmacy College (Degree), Latur	International Journal of Advance and Innovative Research
23.	Mr. A.B.	Formulation and	Current Trends in	2nd International	International	2022	Channabasweshwar	Asian Journal of



	Swami	Evaluation of 6-Mercaptopurine Loaded Lipid-Polymer Hybrid Nanocarrier	Multidisciplinary Research	Conference on Current Trends in Multidisciplinary Research			Pharmacy College (Degree), Latur	organic and Medicinal Chemistry
24.	Mr. A.B. Swami	Formulation and Evaluation of Herbal Gel for Aphthous Ulcer	Current Trends in Multidisciplinary Research	2nd International Conference on Current Trends in Multidisciplinary Research	International	2022	Channabasweshwar Pharmacy College (Degree), Latur	Asian Journal of organic and Medicinal Chemistry
25.	Mr. A.B. Swami	Formulation and Evaluation of Nanocochleates Containing Methotrexate	Current Trends in Multidisciplinary Research	2nd International Conference on Current Trends in Multidisciplinary Research	International	2022	Channabasweshwar Pharmacy College (Degree), Latur	Asian Journal of organic and Medicinal Chemistry
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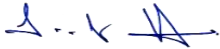


		of Polyherbal Gel Containing Hair Rejuvenating Herbs		Research				
28.	Dr. S. B. Gholve	Method Development and Validation for Related Impurity of Rabeprazole Sodium in Pharma Drug Substance	Recent Trends in Pharmaceutical, Medical and Applied Sciences	International Conference on Recent Trends in Pharmaceutical, Medical and Applied Sciences for Global Development (RTPMASCD-2021)	International	2021	Channabasweshwar Pharmacy College (Degree), Latur	Pharma Medical Sciences development society (PMSDS)Rampur, U.P.,India
29.	Mr. A.B. Swami	Formulation and Evaluation of Topical Microemulgel Containing Terbinafine Hydrochloride	Social Science, Management and Technology	2nd International Conference on Social Science, Management and Technology in Covid Era	International	2021	Channabasweshwar Pharmacy College (Degree), Latur	International Journal Biology, Pharmacy and Allied Sciences
30.	Mr. A.B. Swami	Formulation and Evaluation of Transdermal Patch Containing Antihistaminic Drug Bilastine	Social Science, Management and Technology	2nd International Conference on Social Science, Management and Technology in Covid Era	International	2021	Channabasweshwar Pharmacy College (Degree), Latur	International Journal Biology, Pharmacy and Allied Sciences



31.	Mr. A.B. Swami	Identification of Phytoconstituents in Magnifera Indica and Syzygium Cumini Extract	Global Issues in Multidisciplinary Academic Research	International Conference on Global Issues in Multidisciplinary Academic Research	International	2021	Channabasweshwar Pharmacy College (Degree), Latur	International Journal Biology, Pharmacy and Allied Sciences
32.	Dr. S. B. Gholve	Method Development and Validation for the Estimation of Impurities in Telmisartan by liquid Chromatograph	Innovations in Pharma Industry, Education and Research	4th International Conference on "Innovations in Pharma Industry, Education and Research." (IPIER 2020)	International	2020	Channabasweshwar Pharmacy College (Degree), Latur	Anurag Group of Institution, Telangana
33.	Mr. N. S. Shaikh	Formulation, Development and Evaluation of Nanosponges for topical Application	Drug Discovery and Development: Lab to Clinic	International Conference on "Drug Discovery and Development: Lab to Clinic." (DDDL-2020)	International	2020	Channabasweshwar Pharmacy College (Degree), Latur	School of Pharmacy, S.R.T.M. University, Nanded.
34.	Mr. N. S. Shaikh	Insulin Therapy	Vishwa Pharma-2018	5th National Level Paper Presentation in Vishwa Pharma-2018	National	2018	Channabasweshwar Pharmacy College (Degree), Latur	Shivlingeshwar College of Pharmacy, Almala




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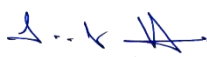
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1. Name of the teacher:

Dr. Panchabhai V. B., Year of publication: 2022

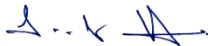



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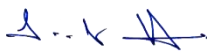



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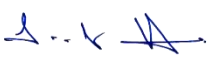
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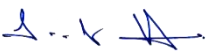



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10. Name of the teacher:

Dr. Nagoba S. N., Year of publication: 2022



The certificate features a central text area with a decorative background of gold and grey geometric patterns. On the left, there is a globe logo for the Indian Academicians and Researchers Association. On the right, there is a gold seal for ISO 9001:2015 certification. The text is centered and includes the name of the participant, the title of their paper, and the date of the conference. A QR code is located in the bottom left corner, and a signature and name of the conference convener are in the bottom right corner.

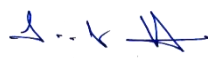
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DESIGN DEVELOPMENT AND CHRATERIZATION OF POLYHERBAL GEL CONTAINING HAIR REJUVENATING HERBS

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Design Development and Chraterization of Polyherbal Gel Containing Hair Rejuvenating Herbs

Wadde Malika Sharnappa, Nagoba Shivappa N* and Swami Avinash B

Department of Pharmaceutics, Channabasweshwar Pharmacy College (Degree), Latur, Maharashtra, India

ABSTRACT

The objective of the present research work was to develop polyherbal gel containing four different hair rejuvenating herbs i.e. **Bhringraj** (Eclipta Alba) family: Astraceae as a "KING OF HAIR" for rejuvenating quality, **Brahmi** (B. monnieri) family: Scrophulariaceae as antimicrobial, **Amla** (Embilca officinalis) Indian Gooseberry enriched of vitamin C provide boosted nutritional quality, promote hair growth and **Fenugreek** (Trigonella Foenum Graecum) family: Fabaceae used as hair tonic. The polyherbal gel is formulated using various excipients such as gelling agents like Carbapol 934, and Xanthan Gum, methyl paraben as preservative, polyethylene glycol (PEG) as penetration enhancer, PVP as stabilizer, triethanolamine to adjust the pH, glycerin as humectant and water are used as solvent. The prepared gel was subjected for physical evaluation i.e., color, appearance, spreadability, pH, viscosity, In-vitro diffusion study, FT-IR study and stability study. Based on results batch F6 was found best stable polyherbal gel.

Keywords: Brahmi, Amla, Fenugreek, Bhringraj, In-vitro diffusion study, Stability study

INTRODUCTION

Traditionally, hair loss was treated with the topical application of different herbal remedies, which were a result of long years of observation and painstaking effort by holistic practitioners. In traditional Indian system of medicine many plants and herbal formulations are reported for hair growth promotion as well as improvement of quality of hair, but lack of sound scientific backing and information limits their use. In present study, the main objective is to formulate and evaluate polyherbal gel containing hair rejuvenating herbs for hair growth activity which can overcome the problems of hair in a natural way.

Herbs chosen for the study are Bhringraj, Brahmi, Amla and Fenugreek. Plants are selected for this purpose on the basis of their reported activity i.e. Emblica Officinalis and Trigonella have antioxidant activity, anti-lice, antidandruff activity as well as hair growth and soothing effects, which promote hair follicle formation whereas Ecliba Alba show antimicrobial activity because it contain coumestans like wedelolactone, desmethylwedelolactone, furanocoumarins, oleanane and taraxastane glycosides. So main objective is to formulate and evaluate the polyherbal gel containing hair rejuvenating herbs for hair growth activity which can overcome the problems of hair in a natural way as synergistic effect.

MATERIALS AND METHODS

The herbal drugs Bhringraj, Brahmi, Amla and Fenugreek are obtained from 'Vital Herbs'. Carbapol 934, Xanthan gum, Glycerin, PVP, Methyl paraben, Polyethylene glycol, Triethanolamine were received from Loba chemie laboratory, Vikas pharma, Goregaon, Hi media Laboratories, Ozone international Mumbai, Molychem, Mumbai respectively. All other ingredients used were of analytical grade.

PREFORMULATION STUDY

Organoleptic Characteristics

All drugs were tested visually for its physical appearance.

Solubility Study

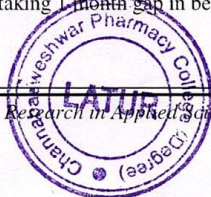
Solubility of all drugs was tested in the various solvents (water, methanol, ethanol, etc) at room temperature by adding additional amount of drugs in solvent till supersaturation.

Spectroscopic Study

All drugs have been calibrated using UV spectroscopy individually and based on this one isocratic point was chosen further to carry out drug analysis as we have developing polyherbal gel.

FTIR Study


Drug excipient compatibility study was conducted using FTIR. Combination of all drugs and excipients was taken in 1:1 ratio and tested twice taking 1 month gap in between. Results were observed for any interaction.



11. Name of the teacher:

Dr. Vijayendra Swamy S. M., Year of publication: 2022

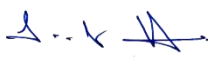



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12. Name of the teacher:

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Formulation and Evaluation of 6-Mercaptopurine Loaded Lipid-Polymer Hybrid Nanocarrier

Dande Pradnyarani A, Nagoba Shivappa N^{*}, Swami Avinash B, Sayyad Firdos J, Waghmare Kanchan R, Sayyed Simakousar N and Jaishatte Arti A

Department of Pharmaceutics, Channabasweshwar Pharmacy College (Degree), Latur, Maharashtra, India

ABSTRACT

The purpose of the present study is to formulate and evaluate 6-mercaptopurine loaded Lipid-Polymer Hybrid Nanocarrier (LPHNC) for site specific drug delivery. 6-mercaptopurine is a purine antagonist it inhibits DNA synthesis by inhibiting purine containing nucleotides. Firstly, 4 batches of LPHNCs were prepared by employing single step emulsion solvent evaporation method consisted of drug, polycaprolactone (PCL), Hydrogenated soya phosphatidylcholine (HSPC), soya lecithin, Poloxamer 188, organic solvent. All batches evaluated for %EE, drug content, in-vitro drug release and on the basis of this F2 batch was found to be optimized batch. The optimized batch was also subjected for SEM, Zeta potential and accelerated stability study.

Keywords: 6-Mercaptopurine, LPHNCs, HSPC, in-vitro drug release, accelerated stability study

1. INTRODUCTION

The use of cytotoxic drugs in their free form to inhibit cell division of cancer cells or to kill cancer cells i.e. chemotherapy still remains the choice of treatment in cancer. Although the anticancer agents have improved patient survival rate, their treatments are not effective enough due to non-specific toxicity, unfavorable pharmacokinetics, less bioavailability, dose dependent side effects etc. Due to these threats, nanocarriers have been attempted for cancer therapy as quite encouraging systems. In last decades, nanotechnology has emerged as most promising tool in the pharmaceutical field for development of novel drug carrier system providing versatile clinical application and scale-up for industrial production. Lipid and polymer nanocarriers are two different drug delivery systems which have been approved by US FDA for clinical use.

Lipid nanocarriers are biocompatible, biodegradable, harmless or less toxic and non-immunogenic. However, Lipid nanocarrier have some drawbacks like physical and chemical instability during storage and content leakage. The polymer nanocarriers provides stability in biological fluids and during storage, ability to offer some limitations like polymer cytotoxicity, less biocompatibility. Recently, Lipid and polymer based nanocarriers have been merged together to integrate the benefits and to overcome the possible drawbacks of both of them and developed a newer system namely Lipid-Polymer Hybrid Nanocarrier (LPHNCs).LPHNCs has overcome the drawbacks like content leakage, toxicity and provide benefits like controlled drug release, stability during storage, increased circulation time and bioavailability. 6-mercaptopurine is a purine antagonist it interfere with DNA of cancerous cell and stops the cell division at S phase, it is used in treatment of Leukemia. But it's poor aqueous solubility and permeability limits the clinical application of 6-mercaptopurine. This problem might be overcome by use of LPHNC.

MATERIALS AND METHODS

A. Materials

6-Mercaptopurine was purchased from HiMedia Laboratories Pvt. Ltd., Thane, Hydrogenated Soya Phosphatidylcholine(HSPC), soya lecithin was gifted by lipidome Lifesciences, Gujrat, Polycaprolactone received from Biochemika, other reagents used were analytical grade.

B. Methods

1. Preformulation:

Physical appearance of drug

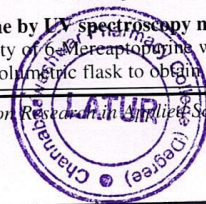
6-mercaptopurine was observed for colour, odour, nature etc.

Solubility study

The solubility of drug was determined by adding an excess amount of drug to test tube containing 2ml of solvents (water, warm ethanol, PBS 6.8) and kept at room temperature for 24hrs.

Estimation of 6-mercaptopurine by UV spectroscopy method

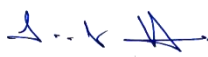
For stock solution, 10 mg quantity of 6-mercaptopurine was dissolved in warm ethanol and volume made up to 100ml with PBS 6.8 in 100 ml volumetric flask to obtain 100µg/ml solution. From this, aliquots of 0.2, 0.4, 0.6,



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Formulation and Evaluation of Green Tea Extract Niosomal Gel for Acne Vulgaris

Mundhe Renuka M¹, Nagoba Shivappa N^{2*}, Vattamwar Gauri S³, Waghmare Kanchan R⁴, Awale Sumit R⁵, Jadhav Pawan P⁶, Kalburge Mayuri V⁷, Bhosale Sujata B⁸ and Shaikh Saif S⁹

^{1,2,3,4,5,6}Department of Pharmaceutics, Channabasweshwar Pharmacy College, Latur, Maharashtra, India

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ABSTRACT

The present study was to formulate and evaluate the green tea extract loaded niosomal gel using different grades of surfactants such as span and tween for the preparation of niosomes. The main objective of the study was to enhance the antioxidant activity of the formulation. The green tea extract contains polyphenolic compounds such as catechins (30% to 40%) which shows three different activities such as antioxidant, anti-inflammatory and antibacterial activity which are beneficial for the treatment and management of different grades of acne and reduction of lesion count. The standardization of green tea extract sample was done using TLC plate method. Niosomes were prepared by Thin-layer hydration method. Niosomes are prepared with different ratios of drug: cholesterol: surfactant (1:1:2, 1:1:3). The all niosomal dispersion was evaluated for entrapment efficiency, drug content, in-vitro drug release. F6 batch is considered as optimized with in-vitro drug release (71.95 for 12 hr), entrapment efficiency (81.31), drug content (89.74) which is converted to gel. Optimized batch were also evaluated for surface morphology and charge behaviour of done Scanning electron microscopy (SEM). Zeta-potential. Niosomal gel was evaluated for spreadability, viscosity, drug content. Niosomal gel was prepared using Carbopol 934 (0.5%), HPMCK15 (0.5%), propylene glycol, triethanolamine, glycerol and distilled water. The niosomal gel was also evaluated for its antioxidant activity with the help of DPPH test used ascorbic acid as positive control. the niosomal gel showed 51.01% DPPH radical scavenging activity. Optimized batch were subjected for stability study.

Keywords: Niosome, Green tea extract, TLC, Span, Tween, SEM, Zeta-potential, DPPH.

1. INTRODUCTION

Drug delivery system DDS is a new advanced system of drug delivery now a days. It consists of Nano particles liquid crystal vesicles which are biocompatible and produces higher efficiency by helping reduction in development of new drugs. DDS also helps to reduce the problems associated with the drugs. Niosomes are vesicles formed by self-assembly of non-ionic surfactant, they are vesicular delivery systems which are formed via aqueous dispersion of non-ionic surfactant films. The basic process of preparation is the same i.e. hydration by aqueous phase of the lipid phase which may be either a pure surfactant or a mixture of surfactant with cholesterol. Reducing the size of drug carriers to a nanoscale has many benefits including: (1) improving the pharmacokinetics and biodistribution of therapeutic agents, (2) reducing toxicity by accumulation of the drug in the target site, (3) facilitating drug passage between the cells and (4) increasing their retention time in biological systems that increase the efficacy of the drug.

Niosomes are preferred over other bilayer structures due to chemical stability. Bio-degradability, biocompatibility. Low production cost, low toxicity, and easy storage and handling. Acne vulgaris in patients may start during adolescence and persist or have onset in adulthood. Acne has various psychosocial effects that impact patients is quality of life. Plant extracts have been widely used as topical applications for various skin conditions, the EGCG is a potent antioxidant found in green tea extract (camellia sinensis). EGCG received increased attention because of its anti-inflammatory, anti-microbial properties which are beneficial for the treatment of acne vulgaris but due to its hydrophilic nature it has low skin permeation. To overcome this problem the use of nanocarriers such as niosomes one of the best option as it has vesicular system which helps to transfer the hydrophilic as well as lipophilic moieties across the skin membranes. It also increases the retention time of active substances on the stratum corneum and epidermis solving the problem of penetration of active substance. It also increases the retention time of active substances on the stratum corneum and epidermis solving the problem of penetration of active substance. These may act depot to controlled release of drug to give effective action for longer duration because of which the frequency of application may reduce.

2. MATERIALS

Green tea extract was gift sample from SA Herbal Bioactives LLD, M.P. Cholesterol was obtained from Research lab & Chem. Industries Mumbai. Span and tween from Lobachem, Mumbai. Dichloromethane,

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Formulation and Evaluation of Nanocochleates Containing Methotrexate

Sayyad Firdos J, Nagoba Shivappa N*, Swami Avinash B, Dande Pradnyarani A, Waghmare Kanchan R, Sayyed Simakousar N and Jaishatte Arti A

Department of Pharmaceutics, Channabasweshwar Pharmacy College (Degree), Latur, Maharashtra, India

ABSTRACT

The aim of the present study is to formulate and evaluate Nanocochleates containing Methotrexate for the treatment of lung cancer. Methotrexate inhibit DHFR enzyme which is required in synthesis of tetrahydrofolate. The objective of the study is to prepare methotrexate nanocochleate (BCS IV) which provide targeted delivery of drug. Firstly 4 batches of liposomes were prepared using soyalecithin, HSPC and cholesterol and organic solvent by modified thin film hydration method from this on basis of entrapment efficiency, drug content and % in vitro drug release batch F3 was optimized for nanocochleate preparation. Nanocochleates were prepared by trapping method using calcium chloride as bridging agent and it was evaluated for drug content, % entrapment efficiency, in vitro drug release and stability studies.

Keywords: Methotrexate, Liposomes, Nanocochleate, Stability study

INTRODUCTION

Nanocochleates are rod shaped, cigar like structure formed by interaction of lipid vesicles and divalent cation such as Ca^{++} , Mg^{++} . There are two steps involved in the formation of Nanocochleates; first is formation of liposomes and second is formation of nanocochleates by addition of calcium chloride to the formed liposomes. Nanocochleates differ from liposomes as they are rigid-rod shaped structure and have water free interior. As they have water free interior they are less susceptible to oxidation. Nanocochleate is potential drug delivery system as it has many advantages such as easy and safe production, less side effects, biocompatibility and targeted drug delivery. Nanocochleates encapsulate hydrophobic, hydrophilic, positively and negatively charged drug molecule.

Anticancer treatments have many problems and they are overcome by the formulation of Nanocochleates. Nanocochleates deliver the drug to the cancer cell and increase bioavailability and decreases side effects. Methotrexate inhibit DHFR an enzyme that participates in tetrahydrofolate synthesis. Conversion of dihydrofolate to tetrahydrofolate is catalyzed by DHFR. Folic acid is required for synthesis of nucleoside thymidine which is essential in DNA synthesis. Methotrexate is used in treatment of both small and non-small lung cancer. Poor solubility, undesirable side effects associated with it are overcome by formulation of methotrexate nanocochleates.

MATERIALS AND METHODS

Materials

Methotrexate was received as gift sample from Samex Overseas Gujarat, Soyalecithin and HSPC was gifted by Lipidome Lifesciences, Gujarat. Cholesterol was purchased from Research Lab Fine Chem Industries, Mumbai. Other chemicals, reagents and solvents used are sodium chloride, disodium hydrogen phosphate, potassium dihydrogen phosphate, chloroform and ethanol are of analytical reagent grade.

METHODS

Formulation of Liposomes by Thin Film Hydration Method

Modified thin film hydration technique was used for the liposomal formulations. Four batches of liposomes were prepared by using Methotrexate (API), Soyalecithin, HSPC and organic solvents as shown in table no.1. Lipid phase (Phospholipids:Cholesterol = 2:1) was dissolved in 10 ml organic solvent (Chloroform:Ethanol,1:1) in 250 ml RBF containing 4mm glass beads for vortexing. The organic solvent was evaporated under vacuum using rotary flash evaporator, which allows the formation of thin dry lipid film on walls of RBF. This system was maintained at vacuum and 45°C for 10 min, for the complete removal of organic solvent. Methotrexate was dissolved in 15 ml of hydrating media (PBS 7.4) and it was then added to the flask containing liposome vesicles. It was vortexed for 1 hr and the formed liposomes are sonicated for the reduction in size and kept overnight to mature the liposomes.



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Preparation, Characterization and Evaluation of Carbon Nanotubes Containing Fluconazole for Topical Drug Delivery

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ABSTRACT

Carbon nanotubes (CNTs) have emerged worldwide because of their remarkable properties enlarging their field of applications and having an innovative platform for controlled and targeted drug release in several biomedical applications. Carbon nanotube is one of the most efficient dispersed nano-systems with narrow size distribution ranges from 10-240 nm. Carbon nanotubes possess the remarkable electrical, mechanical, thermal conductivity which enables carbon nanotubes to be functionalized to enhance the solubility as well as biocompatibility of poorly bioavailable drugs. Further it can be converted to normal conventional system which is easy to use such as nanotube based gel. The purpose of this study is to formulate a stable carbon nanotube based topical gel containing Fluconazole; having low solubility and high permeability (BCS Class-II), to improve its solubility and hence cutaneous deposition to give local effect. Initially the functionalization of pristine nanotubes was done using PEG-400. Ten batches (F1-F10) of drug loaded functionalized nanotubes was prepared using ethanol and water (1:1) which was tested for % drug loading and high drug loaded batch was selected for conversion to gel (NTG1-NTG7) with carbopol 934 and HPMC-E50 as gelling agent in a various concentrations. Formulations were evaluated for FTIR studies, % drug loading. From the result obtained, F10 formula shows better drug loading and considered as optimized, which is converted to nanotube based gel and evaluated for appearance, pH, spreadability, viscosity, in vitro drug release study etc. Results of gel formulation are obtained as bluish black gel with pH 6.3 - 6.6, spreadability 37.18 - 69.52 gm.cm/sec, viscosity 14800-18942 cps & NTG5 shows highest 89.88% drug diffused while NTG3 shows lowest 70.23% drug diffused. Optimized formulation was subjected for stability studies as per ICH guidelines. Nanotube gel have the potential applications in pharmaceutical industries because of high surface area, the higher rate of absorption; diffusion/ dissolution.

Key words: Fluconazole, Pristine nanotubes, PEG-400, % Drug loading, % Drug diffusion, stability study etc.

INTRODUCTION


Topical drug delivery means an application of drug through skin to treat or cure the skin ailments. These types of system are generally used for local skin infections like fungal infections. Topical preparations are used for the localized effects at the target site of their application by morality of drug penetration into the underlying layers of skin or mucous membranes. Various topical formulations are to be administered like powders, cream, solutions, gel, and even medicated adhesive tapes. The topical drug delivery system usually used for protect the drug holding preparation to the skin to directly treat cutaneous disorders or the cutaneous signs of a common ailment or disease with the intent of sequestering the pharmacological action or other effect of drug to the surface of the skin or within the skin. Topical activities may or may not require intracutaneous penetration or deposition. Topical delivery refers to the transfer of bioactive ingredients across the skin and into the systemic circulation. Dermatological products applied to skin is diverse in formulation and range in consistency from liquid to powder but the most popular products are semisolid preparation. Within the major group of semisolid preparations, the use of gels has expanded in pharmaceutical preparations. These are superior in terms of use and patient acceptability. In unkindness of many advantages of gels, a major limitation is in the delivery of hydrophobic drugs. So to overcome this limitation, carbon nanotube gels are prepared and used so that even a hydrophobic therapeutic moiety can enjoy the unique properties of gels.

The choice of different novel drug delivery system has been used in which carbon nanotube plays an essential role in delivering the active pharmaceutical ingredient at the target organ or site. Carbon nanotubes (CNTs) are made up of graphite sheets rolled up into cylindrical tubes with a nanometre diameter, are relatively new allotrope since its first discovered in 1991 by Sumioliijima a Japanese scientist. Carbon nanotubes (CNTs) possess remarkable electrical, mechanical, optical, thermal and chemical properties. In order to solve the problem of solubility and to improve the biocompatibility, by using functionalization techniques the surface

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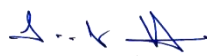

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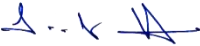



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Formulation and Evaluation of Fast Dissolving Oral Film of Promethazine Theoclate

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ABSTRACT

Aim of the present study was to develop and evaluate fast dissolving oral film containing Promethazine Theoclate. Fast dissolving oral films deliver drug directly in the vascular system via salivary secretion and bypasses the hepatic first pass metabolism, dose of the drug also reduces significantly. Fast dissolving films were prepared using solvent casting method, hydrophilic polymers were selected as film forming agents such as HPMC-K15, HPMC-E15 and PEG-400 was used as plasticizer to give flexibility to the films. In FTIR study no interaction was observed between drug and the excipients. After preparation of film, the drug loaded films evaluated for weight variation, thickness, pH, disintegration time, dissolution time & in-vitro drug release studies. Among the formulations [F1 – F8], formulations F2 and F5 formulations was selected the best formulation as its maximum drug content, disintegration drug release releases was superior than other formulations. Among F2 and F5 formulations, formulation F2 was found to be best formulation compared to F5 formulations. Drug loaded films with both the polymers were stable under 40°C/75% RH conditions.

Keywords: fast dissolving oral film, Promethazine theoclate, Solvent casting method, motion sickness, BCS class

INTRODUCTION

Oral drug delivery is one of the most preferred and accepted route of drug delivery, due to easy administration, patient compliance and cost effectiveness. Fast dissolving oral film is one of the recent formulations given through oral route. The oral film is a dosage form that employs a water dissolving polymer which allows the dosage form to quickly hydrate by the saliva, adhere to mucosa, and disintegrates within a few seconds, dissolves and releases medication when placed on tongue or oral cavity. Oral film is used for local action in mouth such as toothaches, oral ulcer, sore throat, cold or local anaesthetic etc. Many drugs like cough remedies, antiasthmatics, antihistaminic, erectile dysfunction drugs, motion sickness drugs, gastrointestinal disorders, nausea, pain and CNS drugs can be incorporated in oral film. Paediatric and geriatric patients have difficulty to take tablet orally because of fear of choking, difficulty in swallowing tablets. To overcome the issues related to tablets, a new drug delivery system for the oral delivery of the drugs, was investigated which is known as Fast dissolving films.

Promethazine theoclate is **BCS Class II**, H1 antihistaminic drug mainly used in the treatment of motion sickness and postoperative emesis. It has 25% bioavailability due to its poor aqueous solubility which is the major limiting factor for its absorption and delayed onset of action. Various formulations of Promethazine theoclate are available in the market for oral administration. The development of fast dissolving oral films containing **Promethazine Theoclate** offers an alternative to conventional tablets, syrups and injections for the treatment of emetics.

MATERIALS AND METHOD

Promethazine theoclate was obtained from MBH raw Pharma, mulund, Mumbai. HPMC E15, HPMC K-15 were received from Loba Chemie lab Vikas pharma Goregaon, PEG400, citric acid, aspartame, strawberry flavor and Tween-80 used were of analytical grade.

PREFORMULATION STUDY:

Organoleptic properties: Promethazine theoclate sample which is supplied from MBH raw pharma Pvt. Ltd. Mulund, Mumbai was closely observed for physical appearance.

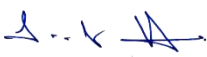
Solubility study: For the purpose of solubility, additional amount of drug is added in the solvent (methanol, Phosphate buffer, distilled water, ether) at room temperature and kept for 24 hrs with rare shaking. The supernatant was taken and evaluated by using shimadzu UV1800 double beam spectrophotometer.

Fourier transforms Infra-red Spectroscopy (FTIR) study: Compatibility of drug with excipients was determined by FTIR study. Combination of drug and excipients was taken in 1:1 ratio and observed for any interaction.

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Dr. Panchbhai V.B., Year of publication: 2022

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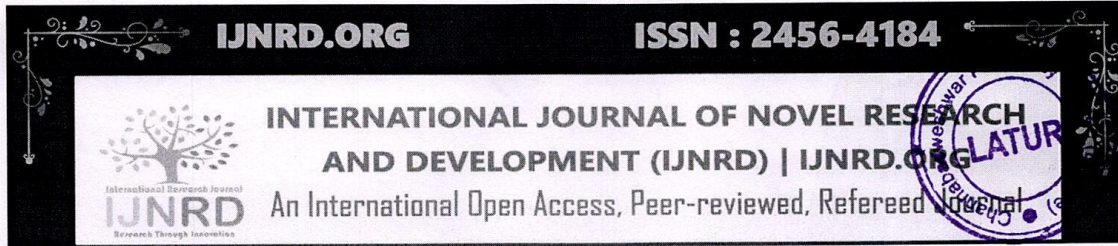
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HERBAL MEDICINAL PLANTS AS ALTERNATIVE TO CONVENTIONAL THERAPIES FOR ASTHMA

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ABSTRACT

Current synthetic drugs used in pharmacotherapy of asthma are unable to act at all the stages and targets of asthma. Asthma is a chronic inflammatory disease of the airways which caused by reversible airflow obstruction and bronchospasm. Asthmatic patients are suffered from wheezing, coughing, chest tightness and trouble breathing. In the present article, medicinal plants with their active chemical constituent and possible mechanism of action. This paper highlights some herbs have shown interesting results in various target specific biological activities such as bronchodilation, mast cell stabilization, anti-anaphylactic, anti-inflammatory, anti-spasmodic, anti-allergic, immunomodulatory and inhibition of mediators such as leukotrienes, lipoxigenase, cyclooxygenase, platelet activating, phosphodiesterase and cytokine, in the treatment of asthma. Synthetic drugs used for the treatment of asthma and allergy in India but more side effects are reported. Albuterol (ProAir HFA, Ventolin HFA, others) and levalbuterol are the synthetic drugs used for the treatment of asthma. The most common side effects of inhaled preventer medication (inhaled corticosteroids) are a hoarse voice, sore mouth and throat, and fungal infections of the throat. To overcome this side effects used herbal alternatives employed in asthma are proven to provide symptomatic relief and assist in the inhibition of asthma disease progression also.

Keyword: Asthma, Control of asthma, Herbal therapy, Medicinal plants.

1. INTRODUCTION

According to Global initiative for Asthma (GINA) guidelines, Asthma is a heterogeneous disease, usually characterized by chronic airway inflammation. It is defined by the history of respiratory symptoms such as wheeze, shortness of breath, chest tightness and cough that vary over time and in intensity, together with variable expiratory airflow limitation.


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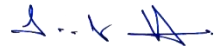
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Dr. Tazyn Rahman
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Study on Effect of Concentration of Emulsifying Agents in Emulsion

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The main aim of research work was the development of emulsions by changing type, varying concentration of emulsifying agent and to study its effect on stability of emulsion. Emulsions are biphasic dosage form and are usually unstable; to make it stable it is necessary to add emulsifying agent regardless of its type i.e. oil soluble or water soluble. Research comprises formulation of total 9 batches of emulsion using 3 different emulgents i.e. acacia, tragacanth and sodium lauryl sulphate. The emulsion was prepared by dry gum method by using mortar - pestle. All 9 formulations were evaluated for parameters like appearance, pH, spreadability, viscosity and stability. Results showed all batches appeared as turbid milky white except formulation containing acacia appeared as brown turbid. pH of all batches were ranged from 4.1 to 6.0. Viscosity obtained is in the range of 1208 to 1600 centipoise. Spreadability of all formulations was found to be within range of 8.56 to 33.56 g.cm/min. The stability studies of all batches were conducted for 1 month with exposure to daylight and at 4°C in refrigeration. Stability study conducted shows that all batches were stable at 4°C however exposure to daylight makes them unstable except formulation containing tragacanth.

Keywords: Emulsion; Dry gum method; acacia; tragacanth; stability study

INTRODUCTION

An emulsion is a thermodynamically unstable system consisting of at least two immiscible liquid phases one of which is dispersed as globules in the other liquid phase; stabilized by a third substances called emulsifying agent. Emulsifying agent are the substance added to an emulsion to prevent the coalescence of the globules of the dispersed phases. They act by reducing the interfacial tension between the two phases and forming of a stable emulsion.

An emulsifier is a substance which stabilizes an emulsion commonly surfactant. So it is needed to characterize the emulsion with respect to its stability by change in type and concentration of emulgent into emulsion. The aim of the research is to develop emulsions by changing type, varying concentration of emulsifying agent and to study its effect on stability of emulsion.

MATERIALS & METHODS

Materials

Following are the materials required

A] Chemicals: Sodium lauryl sulphate, Acacia and Tragacanth was obtained from Himedia laboratories Pvt. Ltd., Mumbai. & Lobachem. And all other chemicals such as liquid paraffin, sodium benzoate vanillin, chloroform and glycerin, used are of analytical grade.

B] Apparatus: Mortar – pestle, weighing balance, beaker, measuring cylinder, butter paper, spatula, glass rod, etc.

METHODS

Formulation of Emulsion:

Emulsions were formulated using dry gum method by using mortar and pestle. Total 9 formulations were prepared by making primary emulsion in the ratio of 3:2:1 of oil, water and gum. First of all, emulgent were taken in dry mortar and mixed in oil; triturated both in clockwise direction with the help of pestle. Then other organoleptic excipients like flavor, preservatives and viscosity modifier were added to the primary emulsion and triturated. Finally, the volume was made up to 50 ml with purified water. Ingredients and quantities taken were mentioned in table no. 2.

Table No. 2: Formulation table

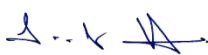
Ingredients	F1	F2	F3	F4	F5	F6	F7	F8	F9
Tragacanth (gm)	3	6	12	-	-	-	-	-	-
Acacia (gm)	-	-	-	3	6	12	-	-	-
SLS (gm)	-	-	-	-	-	-	3	6	12

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AN OVERVIEW ON: LIPID-POLYMER HYBRID NANOCARRIERS AS NEW DRUG DELIVERY APPROACH

Dande Pradnyarani A, Dr. Nagoba Shivappa N*, Swami Avinash B, Sayyad Firdos J, Waghmare Kanchan R and Sayyed Simakousar N

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ABSTRACT

In the era of nanomedicine, the lipid and polymeric nanocarriers are the most prominent nanocarriers to deliver both hydrophilic and hydrophobic drugs which shows high bioavailability. Current research on drug delivery system is focused on combined attributes of both polymer and lipid nanocarriers with respect to enhanced stability, biocompatibility, and cellular uptake i.e. lipid polymer hybrid nanocarrier (LPHNC) system. These are the potentially emerging new drug delivery approach. It comprises core-shell nanostructure which is made up of polymer and lipid used in the polymer nanocarriers and lipid nanocarriers respectively. The applications of LPHNCs include drug delivery for anticancer, antibiotic agents, delivery of genetic materials, vaccines and diagnostic imaging agents. The purpose of this review is to introduce LPHNCs which include it's structure, advantages, disadvantages, mechanism of drug release, methods of preparation, characterization and applications.

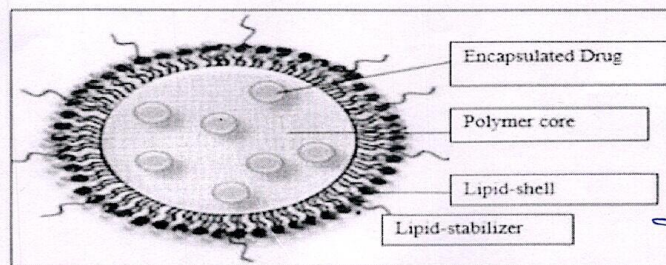
Keywords: Polymer, Lipid, Hybrid Nanocarrier, nanomedicine, drug release, hydrophilic and hydrophobic drugs.

1. INTRODUCTION

Now a day, in the pharmaceutical field, Nanotechnology is highly used for the drug delivery system as a transporting vehicle. Nanocarriers attract high devotion because of their capability to deliver the therapeutic agents through nanocarrier systems, including lipid-based Nanocarrier and polymer-based Nanocarriers which are the two most promising classes of Nanocarrier, as demonstrated by an increasing number of research reports, clinical trials, standard drug products. Both classes of nanocarrier have some benefits and limitations in terms of their physicochemical and biological properties. Lipids are broadly used in various drug delivery systems like liposomes, nanostructured lipid carriers, and solid lipid Nanoparticles. Most lipids are biocompatible, biodegradable, harmless or mildly toxic, and non-immunogenic for the systemic and non-systemic administration because it is derived from natural sources. However, the lipid-based Nanocarriers have some drawbacks like physical and chemical instability during storage and insufficient drug loading. Polymeric Nanocarriers are made from natural and synthetic polymers and have various advantages like lesser particle size, better stability in biological fluids, high drug loading capability, and the ability to offer controlled drug release rates. But the polymeric Nanocarriers also have some limitations like containing toxic organic solvents in the production process and polymer cytotoxicity. Thus, to overcome these limitations of polymer and lipid Nanocarriers a new generation delivery vehicle of therapeutics termed 'Lipid-Polymer Hybrid Nanocarrier' (LPHNCs) has been developed^[1-5,6].

1.1 Lipid-Polymer Hybrid Nanocarriers (Lphncs):

The LPHNCs comprise three components as shown in fig.no.1. They are 1) a polymer core in which the therapeutic substances are encapsulated, 2) an inner lipid layer enveloping the polymer core, the main function of which is to confer biocompatibility to the polymer core, and 3) an outer lipid-stabilizer or lipid-surfactant layer, which functions as a stealth coating that prolongs in vivo circulation time of LPHNCs, as well as providing steric stabilization^[5,6]



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Fig.No.1. Structure of Lipid-polymer hybrid nanocarrier (LPHNCs)

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Formulation and Evaluation of 6-Mercaptopurine Loaded Lipid-Polymer Hybrid Nanocarrier

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ABSTRACT

The purpose of the present study is to formulate and evaluate 6-mercaptopurine loaded Lipid-Polymer Hybrid Nanocarrier (LPHNC) for site specific drug delivery. 6-mercaptopurine is a purine antagonist it inhibits DNA synthesis by inhibiting purine containing nucleotides. Firstly, 4 batches of LPHNCs were prepared by employing single step emulsion solvent evaporation method consisted of drug, polycaprolactone (PCL), Hydrogenated soya phosphatidylcholine (HSPC), soya lecithin, Poloxamer 188, organic solvent. All batches evaluated for %EE, drug content, in-vitro drug release and on the basis of this F2 batch was found to be optimized batch. The optimized batch was also subjected for SEM, Zeta potential and accelerated stability study.

Keywords: 6-Mercaptopurine, LPHNCs, HSPC, in-vitro drug release, accelerated stability study

1. INTRODUCTION

The use of cytotoxic drugs in their free form to inhibit cell division of cancer cells or to kill cancer cells i.e. chemotherapy still remains the choice of treatment in cancer. Although the anticancer agents have improved patient survival rate, their treatments are not effective enough due to non-specific toxicity, unfavorable pharmacokinetics, less bioavailability, dose dependent side effects etc. Due to these threats, nanocarriers have been attempted for cancer therapy as quite encouraging systems. In last decades, nanotechnology has emerged as most promising tool in the pharmaceutical field for development of novel drug carrier system providing versatile clinical application and scale-up for industrial production. Lipid and polymer nanocarriers are two different drug delivery systems which have been approved by US FDA for clinical use.

Lipid nanocarriers are biocompatible, biodegradable, harmless or less toxic and non-immunogenic. However, Lipid nanocarrier have some drawbacks like physical and chemical instability during storage and content leakage. The polymer nanocarriers provides stability in biological fluids and during storage, ability to offer some limitations like polymer cytotoxicity, less biocompatibility. Recently, Lipid and polymer based nanocarriers have been merged together to integrate the benefits and to overcome the possible drawbacks of both of them and developed a newer system namely Lipid-Polymer Hybrid Nanocarrier (LPHNCs). LPHNCs has overcome the drawbacks like content leakage, toxicity and provide benefits like controlled drug release, stability during storage, increased circulation time and bioavailability. 6-mercaptopurine is a purine antagonist it interfere with DNA of cancerous cell and stops the cell division at S phase, it is used in treatment of Leukemia. But it's poor aqueous solubility and permeability limits the clinical application of 6-mercaptopurine. This problem might be overcome by use of LPHNC.

MATERIALS AND METHODS

A. Materials

6-Mercaptopurine was purchased from HiMedia Laboratories Pvt. Ltd., Thane, Hydrogenated Soya Phosphatidylcholine (HSPC), soya lecithin was gifted by lipidome Lifesciences, Gujrat, Polycaprolactone received from Biochemika, other reagents used were analytical grade.

B. Methods

1. Preformulation:

Physical appearance of drug

6-mercaptopurine was observed for colour, odour, nature etc.

Solubility study

The solubility of drug was determined by adding an excess amount of drug to test tube containing 2ml of solvents (water, warm ethanol, PBS 6.8) and kept at room temperature for 24hrs.

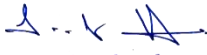
Estimation of 6-mercaptopurine by UV spectroscopy method

For stock solution, 10 mg quantity of 6-mercaptopurine was dissolved in warm ethanol and volume made up to 100ml with PBS 6.8 in 100 ml volumetric flask to obtain 100µg/ml solution. From this, aliquots of 0.2, 0.4, 0.6,

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Formulation and Evaluation of Herbal Gel for Aphthous Ulcer

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ABSTRACT

The aim of present study was to formulate and evaluate herbal gel containing liquorice root extract and cordia dichotoma leaves extract for prevention of aphthous ulcer also known as mouth ulcer or canker sores. Herbal oral gel formulation was designed by using liquorice root extract and cordia dichotoma leaves extract as a API with carbopol 934, sodium carboxy methyl cellulose, propylene glycol, methyl paraben, triethanolamine and required amount of distilled water. Carbopol 934 and sodium carboxy methyl cellulose as a gelling agent. The triethanolamine was added to maintain the pH (6.7-7.3) of oral mucosa. More than half of the world's population accepting the herbal medicine and major role of the herbal medicine including the use of plant extract and their active constituents. Herbal medicines are getting increasing patient compliance as they are avoiding typical side effects. Extracts of this herbal plants are useful in the treatment several health problems such as antiulcer, antibacterial, antioxidant, anti-inflammatory, antiviral, and antifungal. The herbal plants are useful for healing as well as for curing of human diseases due to presence of phytochemical constituents. Cordia diachotoma leaves extract showed some essential phytoconstitutions such as alkaloids, tannins, glycosides, starch, saponin, phenols, flavonoids, diterpens, protein and amino acid. Liquorice root extract and it's bioactive ingredients such as glycyrrhizin, glabridin, licochalcone A, licoricidine and licorisoflavan. It possesses potential beneficial effects in aphthous ulcer. The evaluation of herbal gel such as physical appearance, pH, viscosity, spreadability, homogeneity, drug content, in-vitro drug release and stability study. Developed herbal gel formulation was stable, safe and effective for the treatment of Aphthous ulcer.

Keywords: Liquorice root extract, Cordia Dichotoma leaves extract; Herbal gel; Aphthous ulcer.

INTRODUCTION

An oral ulcer is one of the most frequently encountered pathological conditions of the oral cavity in all type of patients. It is caused by the erosion or loss of the upper mucosal layer. These sores are generally painful and are found most frequently on the inside of the lips and cheeks. The etiology of oral ulcers is not yet clear and a variety of conditions are believed to play a role in their occurrence. A variety of viral, fungal, autoimmune, nutritional deficiencies, hormonal changes, psychological stress, malignancy and other factors have been implicated in their causation. The nature, site, duration and frequency of oral ulcers are sometimes determined by the underlying systemic condition if any (e.g. Inflammatory bowel disease). Trauma from a sharp tooth or an over hanging restoration, aggressive tooth brush, smoking could also result in ulcer formation.

A variety of treatments is available however use of herbal medicines is increasing due to its lesser or negligible side effects with improved health benefits. So, the aim of the present research is to formulate and evaluate gel containing herbal drugs i.e. *Cordia diachotoma leaves & Liquorice root extract*. Studies indicate that *Liquorice & Cordia diachotoma* both possesses antiulcer, antibacterial, antioxidant, antimalarial, anti-spasmodic, anti-inflammatory and anti-hyperglycemic properties. By using these herbal extracts attempt have been made to enhance the efficacy of herbal drugs by making it conventional gel drug delivery system. Hypothesizing that herbal gel will efficiently treat aphthous ulcer; herbal gel were developed and evaluated.

MATERIAL AND METHOD

Liquorice root extract and Cordia Dichotoma leaves extract was purchased from Vital Herbs Delhi, India. Carbopol 934 was received from Loba chem. Mumbai, India. Sodium carboxy methyl cellulose was received from Fine Chem. Industries Mumbai, India. Propylene glycol was received from Cosmo Chem. Pune. Methyl paraben was received from Ozone International Mumbai; India. Triethanolamine was received from Moly chem. Mumbai. All other reagents and chemical were analytical grade.

PREFORMULATION STUDY

Organoleptic Characteristics

All drugs were tested visually for its physical appearance.

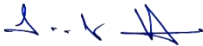
Solubility Profile:

Solubility is expressed in terms of "parts" (10 parts), representing the number of milliliters (ml) of the solvent, in which 1 gm of the solid is soluble. The solubility of liquorice extract and cordia dichotoma extract was

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The certificate features a globe logo for the Indian Academicians and Researchers Association (IARA) on the top left and an ISO 9001:2015 Certified Quality Management System logo on the top right. The main text is centered and reads: "2nd International Conference On Current Trends in Multidisciplinary Research Certificate of Participation". Below this, it states: "This is to certify that Prof. / Dr. / Mr. / Ms. Swami Avinash B has participated in the 2nd International Conference on Current Trends in Multidisciplinary Research organized by Indian Academicians and Researchers Association. He / She has presented the paper titled PREPARATION, CHARACTERIZATION AND EVALUATION OF CARBON NANOTUBES CONTAINING FLUCONAZOLE FOR TOPICAL DRUG DELIVERY". At the bottom left, there is a QR code and the website "www.iaraconference.com". At the bottom center, the "Conference Date" is listed as "17th July 2022". At the bottom right, there is a signature of "Dr. Tazyn Rahman" and his title "Conference Convenor, IARA Research Solutions Pvt Ltd, India".

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Preparation, Characterization and Evaluation of Carbon Nanotubes Containing Fluconazole for Topical Drug Delivery

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ABSTRACT

Carbon nanotubes (CNTs) have emerged worldwide because of their remarkable properties enlarging their field of applications and having an innovative platform for controlled and targeted drug release in several biomedical applications. Carbon nanotube is one of the most efficient dispersed nano-systems with narrow size distribution ranges from 10-240 nm. Carbon nanotubes possess the remarkable electrical, mechanical, thermal conductivity which enables carbon nanotubes to be functionalized to enhance the solubility as well as biocompatibility of poorly bioavailable drugs. Further it can be converted to normal conventional system which is easy to use such as nanotube based gel. The purpose of this study is to formulate a stable carbon nanotube based topical gel containing Fluconazole; having low solubility and high permeability (BCS Class-II), to improve its solubility and hence cutaneous deposition to give local effect. Initially the functionalization of pristine nanotubes was done using PEG-400. Ten batches (F1-F10) of drug loaded functionalized nanotubes was prepared using ethanol and water (1:1) which was tested for % drug loading and high drug loaded batch was selected for conversion to gel (NTG1-NTG7) with carbopol 934 and HPMC-E50 as gelling agent in a various concentrations. Formulations were evaluated for FTIR studies, % drug loading. From the result obtained, F10 formula shows better drug loading and considered as optimized, which is converted to nanotube based gel and evaluated for appearance, pH, spreadability, viscosity, in vitro drug release study etc. Results of gel formulation are obtained as bluish black gel with pH 6.3 - 6.6, spreadability 37.18 - 69.52 gm.cm/sec, viscosity 14800-18942 cps & NTG5 shows highest 89.88% drug diffused while NTG3 shows lowest 70.23% drug diffused. Optimized formulation was subjected for stability studies as per ICH guidelines. Nanotube gel have the potential applications in pharmaceutical industries because of high surface area, the higher rate of absorption; diffusion/ dissolution.

Key words: Fluconazole, Pristine nanotubes, PEG-400, % Drug loading, % Drug diffusion, stability study etc.

INTRODUCTION

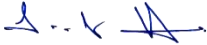
Topical drug delivery means an application of drug through skin to treat or cure the skin ailments. These types of system are generally used for local skin infections like fungal infections. Topical preparations are used for the localized effects at the target site of their application by morality of drug penetration into the underlying layers of skin or mucous membranes. Various topical formulations are to be administered like powders, cream, solutions, gel, and even medicated adhesive tapes. The topical drug delivery system usually used for protect the drug holding preparation to the skin to directly treat cutaneous disorders or the cutaneous signs of a common ailment or disease with the intent of sequestering the pharmacological action or other effect of drug to the surface of the skin or within the skin. Topical activities may or may not require intracutaneous penetration or deposition. Topical delivery refers to the transfer of bioactive ingredients across the skin and into the systemic circulation. Dermatological products applied to skin is diverse in formulation and range in consistency from liquid to powder but the most popular products are semisolid preparation. Within the major group of semisolid preparations, the use of gels has expanded in pharmaceutical preparations. These are superior in terms of use and patient acceptability. In unkindness of many advantages of gels, a major limitation is in the delivery of hydrophobic drugs. So to overcome this limitation, carbon nanotube gels are prepared and used so that even a hydrophobic therapeutic moiety can enjoy the unique properties of gels.

The choice of different novel drug delivery system has been used in which carbon nanotube plays an essential role in delivering the active pharmaceutical ingredient at the target organ or site. Carbon nanotubes (CNTs) are made up of graphite sheets rolled up into cylindrical tubes with a nanometre diameter, are relatively new allotrope since its first discovered in 1991 by Sumioliijima a Japanese scientist. Carbon nanotubes (CNTs) possess remarkable electrical, mechanical, optical, thermal and chemical properties. In order to solve the problem of solubility and to improve the biocompatibility, by using functionalization techniques the surface

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Design Development and Characterization of Polyherbal Gel Containing Hair Rejuvenating Herbs

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ABSTRACT

The objective of the present research work was to develop polyherbal gel containing four different hair rejuvenating herbs i.e. **Bhringraj** (Eclipta Alba) family: Astraceae as a "KING OF HAIR" for rejuvenating quality, **Brahmi** (B. monnieri) family: Scrophulariaceae as antimicrobial, **Amla** (Embilca officinalis) Indian Gooseberry enriched of vitamin C provide boosted nutritional quality, promote hair growth and **Fenugreek** (Trigonella Foenum Graecum) family: Fabaceae used as hair tonic. The polyherbal gel is formulated using various excipients such as gelling agents like Carbapol 934, and Xanthan Gum, methyl paraben as preservative, polyethylene glycol (PEG) as penetration enhancer, PVP as stabilizer, triethanolamine to adjust the pH, glycerin as humectant and water are used as solvent. The prepared gel was subjected for physical evaluation i.e., color, appearance, spreadability, pH, viscosity, In-vitro diffusion study, FT-IR study and stability study. Based on results batch F6 was found best stable polyherbal gel.

Keywords: Brahmi, Amla, Fenugreek, Bhringraj, In-vitro diffusion study, Stability study

INTRODUCTION

Traditionally, hair loss was treated with the topical application of different herbal remedies, which were a result of long years of observation and painstaking effort by holistic practitioners. In traditional Indian system of medicine many plants and herbal formulations are reported for hair growth promotion as well as improvement of quality of hair, but lack of sound scientific backing and information limits their use. In present study, the main objective is to formulate and evaluate polyherbal gel containing hair rejuvenating herbs for hair growth activity which can overcome the problems of hair in a natural way.

Herbs chosen for the study are Bhringraj, Brahmi, Amla and Fenugreek. Plants are selected for this purpose on the basis of their reported activity i.e. Emblica Officinalis and Trigonella have antioxidant activity, anti-lice, antidandruff activity as well as hair growth and soothing effects, which promote hair follicle formation whereas Eclipta Alba show antimicrobial activity because it contains coumestans like wedelolactone, desmethylwedelolactone, furanocoumarins, oleanane and taraxastane glycosides. So main objective is to formulate and evaluate the polyherbal gel containing hair rejuvenating herbs for hair growth activity which can overcome the problems of hair in a natural way as synergistic effect.

MATERIALS AND METHODS

The herbal drugs Bhringraj, Brahmi, Amla and Fenugreek are obtained from 'Vital Herbs'. Carbapol 934, Xanthan gum, Glycerin, PVP, Methyl paraben, Polyethylene glycol, Triethanolamine were received from Loba chemie laboratory, Vikas pharma, Goregaon, Hi media Laboratories, Ozone international Mumbai, Molychem, Mumbai respectively. All other ingredients used were of analytical grade.

PREFORMULATION STUDY

Organoleptic Characteristics

All drugs were tested visually for its physical appearance.

Solubility Study

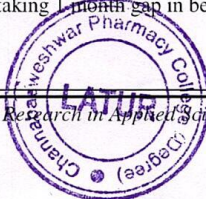
Solubility of all drugs was tested in the various solvents (water, methanol, ethanol, etc) at room temperature by adding additional amount of drugs in solvent till supersaturation.

Spectroscopic Study

All drugs have been calibrated using UV spectroscopy individually and based on this one isocratic point was chosen further to carry out drug analysis as we have developing polyherbal gel.

FTIR Study

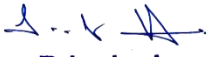
Drug excipient compatibility study was conducted using FTIR. Combination of all drugs and excipients was taken in 1:1 ratio and tested twice taking 1 month gap in between. Results were observed for any interaction.



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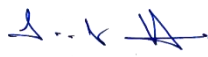



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**FORMULATION AND EVALUATION OF TOPICAL MICROEMULGEL
CONTAINING TERBINAFINE HYDROCHLORIDE**

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ABSTRACT

The aim of the present investigation is to develop and evaluate Terbinafine hydrochloride microemulgel. Terbinafine hydrochloride is FDA approved antifungal drug for treatment of topical fungal infection. It is a BCS class II drug; has poor bioavailability. Now, microemulgel has developed as one of the most interesting topical preparation in the field of pharmaceutical sciences. Microemulgel as a delivery system is advantageous to use such as ease of administration, increased residence time at applied site, steady drug release with improved bioavailability, better thermodynamic stability and high transdermal permeability over simple conventional formulations. The microemulgel of Terbinafine hydrochloride were prepared, using carbopol 940 and HPMC as a gelling agent, oleic acid as oil, parabens as preservative, tween 20 as emulgent and penetration enhancer. The prepared microemulgel formulation was inspected visually for appearance, spreadability, homogeneity, viscosity, pH, % drug content and In vitro diffusion studies. Results obtained has proved that development of terbinafine hydrochloride containing microemulgel will be more effective however its clinical efficacy must be understood using clinical trials.

Keywords: Microemulgel, Terbinafine hydrochloride, Carbopol 934, HPMC, penetration enhancer

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FORMULATION AND EVALUATION OF TRANSDERMAL PATCH CONTAINING ANTIHISTAMINIC DRUG BILASTINE

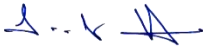

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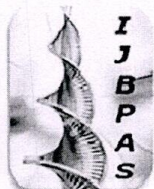

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**FORMULATION AND EVALUATION OF TRANSDERMAL PATCH
CONTAINING ANTIHISTAMINIC DRUG BILASTINE**

**GADEKAR PRASAD, NAGOBA SHIVAPPA N*, SWAMI AVINASH, DHIRAJ
SURYAWANSHI, ANUJ PORWAL, SHINDE VIJAY**

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<https://doi.org/10.31032/IJBPAS/2021/10.12.2025>

ABSTRACT

The present investigation was aimed to formulate and evaluate Matrix- type Transdermal delivery system containing an antihistaminic drug, Bilastine with different polymer concentration by the solvent casting technique & explore the effect of polymers on the in-vitro drug release of Bilastine across skin Matrix. The present investigation aims to formulate and evaluate of medicated skin patches for the treatment of Urticaria. Skin patches were prepared by using hydroxyl propyl methyl cellulose HPMC K100 and Eudragit RS 100 as polymers, ethyl cellulose as plasticizer, PEG-4000 as permeation enhancers and chloroform as solvent. Prepared patches were subjected to different evaluation studies in which permeation studies were performed by using Franz diffusion cell apparatus, folding endurance, thickness, weight variation, percentage moisture uptake, etc. The results showed that F5 batch found were optimized i.e. thickness 0.11mm, weight variation about 2%, folding endurance about 103 folds, moisture uptake 1.03%, and showing drug assay about 97.57% with drug release in first hour 9.12 and cumulative drug release of 75.71%. The stability study proved that optimized batch was stable at accelerated stability conditions.

Keywords: Transdermal, Urticaria, Permeation enhancer, In-vitro permeation study

INTRODUCTION

Topical therapy is highly desirable in treating skin allergies due to its localized effects, which results in minimal adverse systemic events and possibly

improved adherence. However, the effectiveness of topical therapies is limited by minimal drug permeability through the skin plate. Skin allergies are a very

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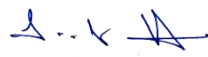
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**IDENTIFICATION OF PHYTOCONSTITUENTS IN *MANGIFERA INDICA*
AND *SYZYGIUM CUMINI* SEED EXTRACT**

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ABSTRACT

Fruits contain a diverse assortment of bioactive compounds such as alkaloids, tannins, glycosides, flavonoids, saponins, that possess many functional properties such as anti-inflammatory, anti-diabetic, antioxidant, anti-carcinogenic properties and also prevent against various degenerative and chronic diseases. Due to the presence of these compounds variety of fruits are known to exhibit many health benefits and disease-preventive characteristics. The isolation of these phytochemicals from plant involves the use of various extraction techniques. *Mangifera indica* (Mango) and *Syzygium cumini* (*Jamun*) are known to possess diverse phytochemicals, most of which are observed to be of health benefits. So, the present study aims to identify the presence of various phytochemicals that are present inherently in seed which is the base of generation of fruit.

Keywords: Alkaloids; flavonoids; tannins; *Mangifera indica*; *Syzygium cumini*

INTRODUCTION

The word "herb" has been derived from the Latin word, "herba" and an old French word "herbe". Nowadays, herb can be any form of a plant or plant product, including leaves, stems, flowers, roots, and seeds, as well as a non-

woody plant. These medicinal plants are also used as food, flavour, color, perfume, and also as medicine for therapeutic use.

Medicinal use of plants have been used from long before the prehistoric period. Ancient

32. Name of the teacher: Dr. Gholve S. B. , Year of publication: 2020



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CERTIFICATE

4th International Conference on
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This is to certify that ~~Dr./Mr./Mrs./Ms.~~ Gholve Sachin, Y.B. Choron College of Pharmacy has presented a Paper ~~Oral/Poster~~ session at 4th International Conference on "Innovations in Pharma Industry, Education and Research" (IPIER 2020) held on 27th & 28th Feb 2020, at School of Pharmacy, Anurag Group of Institutions, Hyderabad, Telangana, India.

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