3.3.2. Number of research paper published per teacher in the journals notified on UGC care list during the 2022-2023

S.No.	Title of paper	Name of the author/s	Department of the teacher	Name of journal
1	Enhancing the dissolution profile of carbamazepine extended-release tablets for the treatment of convulsions by using varioussolid dispersion techniques	V Anilkumar	Pharmaceutics	European Chemical Bulletin
2	Development and standardization of herbal bath powder for skin whitening and dirt removal by using low-cost indigenous technology	V Anilkumar	Pharmaceutics	World Journal of Pharmaceutical Research
3	Development and standardization of herbal bath powder for skin whitening and dirt removal by using low-cost indigenous technology	Dr M D Dhanaraju	Pharmaceutics	World Journal of Pharmaceutical Research
4	Formulation and evaluation of self microemulsifying drug delivery system of carvedilol.	V Anilkumar	Pharmaceutics	European Chemical Bulletin
5	Formulation and evaluation of self microemulsifying drug delivery system of carvedilol.	Vankayala Devendiran sundar	Pharmaceutics	European Chemical Bulletin
6	Formulation and evaluation of self microemulsifying drug delivery system of carvedilol.	Vijayalakshmi Rajendran	Pharmaceutical Analysis	European Chemical Bulletin

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7	Formulation and evaluation of self microemulsifying drug delivery system of carvedilol.	Dr. M D Dhanaraju	Pharmaceutics	European Chemical Bulletin
8	A study on the efficacy of tranexamic acid among pregnant women in reducing blood loss in lower segment ceasrean section	Dr. Somasundaram Ramachandran	Pharmacology	International Journal of Health Science
9	The concept of cancer translational research-A Review	Dr S Ramachandran	Pharmacology	Journal of Population Therapeutics & Clinical Pharmacology
10	The concept of cancer translational research-A Review	Dr. Ramam Sripada	Pharmacy Practice	Journal of Population Therapeutics & Clinical Pharmacology
11	The concept of cancer translational research-A Review	Dr. P. Himasree	Pharmacy Practice	Journal of Population Therapeutics & Clinical Pharmacology
12	The concept of cancer translational research-A Review	Dr. Lakshmi Himaja	Pharmacy Practice	Journal of Population Therapeutics & Clinical Pharmacology
13	Comparison of efficacy among the migrarine patients prescribed with Flunarizine, Propranolol and Petasites in the Management of severity of pain and disability	Dr. S Ramachandran	Pharmacology	Journal of Population Therapeutics & Clinical Pharmacology

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14	Comparison of efficacy among the migrarine patients prescribed with Flunarizine, Propranolol and Petasites in the Management of severity of pain and disability	Dr. Ramam Sripada	Pharmacy Practice	Journal of Population Therapeutics & Clinical Pharmacology
15	Novel Clarithromycin loaded self emulsifying drug delivery system for amplification of solubility and oral bioavailability	Dr. Vankayala Devendiran sundar	Pharmaceutics	Der Pharma Chemica
16	Novel Clarithromycin loaded self emulsifying drug delivery system for amplification of solubility and oral bioavailability	Dr. M.D. Dhanaraju	Pharmaceutics	Der Pharma Chemica
17	Novel Clarithromycin loaded self emulsifying drug delivery system for amplification of solubility and oral bioavailability	Dr. Vijayalakshmi Rajendran	Pharmaceutical Analysis	Der Pharma Chemica
18	Novel Clarithromycin loaded self emulsifying drug delivery system for amplification of solubility and oral bioavailability	Dr M.D Dhanaraju	Pharmaceutics	Der Pharma Chemica
19	Utility of different lipids and effect of Soya Lecithin on sustained delivery of Zidovudine via biodegradable solid lipid microparticles: Formulation and in-vitro characterization	Dr. Vankayala Devendiran sundar	Pharmaceutics	Indian Journal of Pharmaceutical Eduaction and Research
20	Utility of different lipids and	Dr. R. Vijayalakshmi	Pharmaceutical	Indian Journal of

	effect of Soya Lecithin on sustained delivery of Zidovudine via biodegradable solid lipid microparticles: Formulation and in-vitro characterization	Rajendran	Analysis	Pharmaceutical Eduaction and Research
21	Chemometric-assisted UV method for quantisation of Perindopril and Losartan in tablet dosage form	Dr M.D. Dhanaraju	Pharmaceutics	Der Pharma Chemica
22	Chemometric-assisted UV method for quantisation of Perindopril and Losartan in tablet dosage form	Dr. Vankayala Devendiran sundar	Pharmaceutics	Der Pharma Chemica
23	Chemometric-assisted UV method for quantisation of Perindopril and Losartan in tablet dosage form	Dr. R.Vijayalakshmi Rajendran	Pharmaceutical Analysis	Der Pharma Chemica
24	Green synthesis of zinc oxide nanoparticles, Characterization, antibacterial and cytotoxicity against HepG2 cells using Syringodium isoetifolium	Dhanaraju Kavitha	Pharmaceutical Chemistry	Journal of Research in Pharmacy
25	Green synthesis of zinc oxide nanoparticles, Characterization, antibacterial and cytotoxicity against HepG2 cells using Syringodium isoetifolium	Dr. Thiyagarajan Deepan	Pharmaceutical Analysis	Journal of Research in Pharmacy
26	Green synthesis of zinc oxide nanoparticles, Characterization, antibacterial and cytotoxicity	Dr M.D. Dhanaraju	Pharmaceutics	Journal of Research in Pharmacy

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	against HepG2 cells using Syringodium isoetifolium			
27	Phytochemical Screening and Pharmacological evaluation of Tecoma Gaudichaudi	Dr. V Alekhya	Pharmacognosy	Bulletin of Pharmaceutical Sciences
28	Phytochemical Screening and Pharmacological evaluation of Tecoma Gaudichaudi	Dr. Thiyagarajan Deepan	Pharmaceutical Analysis	Bulletin of Pharmaceutical Sciences
29	Biomedical application of nanomaterials in the advancement of nucleic acid therapy: Mechanistic challenges, delivery strategies, and therapeutic applications	Dr. Vankayala Devendiran sundar	Pharmaceutics	International l Journal of Biological Macromolecules
30	Biomedical application of nanomaterials in the advancement of nucleic acid therapy: Mechanistic challenges, delivery strategies, and therapeutic applications	Dr. R. Vijayalakshmi Rajendran	Pharmaceutical Analysis	International Journal of Biological Macromolecules
31	A new stability indicating RP-HPLC method development and validation of for simultaneous estimation of Velpadasvir and Sofosbuvir	N.V.N. Koteswara Rao	Pharmaceutical Analysis	Gas science Journal

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ENHANCING THE DISSOLUTION PROFILE OF CARBAMAZEPINE EXTENDED-RELEASE TABLETS FOR THE TREATMENT OF CONVULSIONS BY USING VARIOUS SOLID DISPERSION TECHNIQUES

R.E. Ugandar[1*], D.Maheswara Reddy[2], Bhumika Chandrakar[3], Priyanka Sinha[4], G. Chandra Shekhara Rao[5], Mrutyunjaya Satpathy[6], Anilkumar.V[7], Sandeep Gupta[8]

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Abstract

Carbamazepine (CBZ) is an anti-epileptic drug (BCS Class Ⅱ) and is widely used in the treatment of epilepsy and neuropathic pain. This drug is having low solubility in biological fluids, which results poor bioavailability (BA) after oral administration. So, the aim of present work is to enhance the solubility and dissolution rate of CBZ by using solid dispersion techniques. CBZ improves the solubility by Melting method, Solvent evaporation method and co-grinding method of solvent dispersion technique. These methods were prepared by using PEG 6000 in different concentrations i.e,(1.01, 1:03,1:05,1:07,1:09). FTIR and DSC are used to determine any compatibilities present in between drug and excipients. For the developed formulations evaluation parameters like %weight variations, Hardness, Friability was performed. FTIR and DSC show that the drug was stable in solid dispersions and there was no interaction. The *In-vitro* drug release for F3 formulations was found to be 80.13% in 12 hrs which was prepared by melting method. The *In-vitro* drug release for marketed tablet (Tegretol) was found to be 77% in 12 hrs. The obtained best formulation shows better release than marketed tablet i.e, (Tegretol ER). *In-vitro* drug release kinetics of best formulation follows the zero order and non-fickian transport mechanism. The prepared solid dispersions were observed that increased in the saturation solubility and dissolution rate of CBZ than that of pure drug. The present study concluded that formulation of CBZ extended-release tablets by melting method in solid dispersion technique were is highly effective for enhancing solubility of the drug.

Keywords: Solubility, Carbamazepine, melting method, solvent evaporation method, co-grinding.

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DEVELOPMENT AND STANDARDIZATION OF HERBAL BATH POWDER FOR SKIN WHITENING AND DIRT REMOVAL BY USING LOW-COST INDIGENOUS TECHNOLOGY

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ABSTRACT

The skin, the largest organ in the human body, is crucial in protecting the body from pathogenic, chemical, thermal, and mechanical threats. Otherwise, all of these things may have an effect on the body's physiological status. The skin is a mirror of an individual's physical appearance, and maintaining it perfectly is critical due to the skin's continuous exposure to UV radiation. Cosmetics not only improve the appearance of the skin, but they also boost the lifetime of good health by preventing skin disorders. The skin care products nourish the skin's health, texture, and integrity, while also hydrating and retaining skin elasticity. Synthetic skin treatments contain ingredients that are not always eco-friendly and are thus commercially unviable. Some prior art skin products may contain ingredients that are potentially damaging to the skin. The biological processes of the skin are impacted by herbal cosmetic ingredients, which also provide the nutrients needed for healthy skin. Natural skin-care products are hypoallergenic and rapidly absorbed by the skin's superficial layers. The development and standardization of a herbal bath powder for skin whitening employing low-cost indigenous technology is the main objective of the present study work. Commercially available shade-dried turmeric, zeera powder, rice flour, green gram flour, orange peel, and other natural powders are employed. All natural powdered ingredients were initially sieved by using #120 mesh, accurately weighed powders, and geometrically blended for equal preparation before

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Section A-Research paper
ISSN 2063-5346

FORMULATION AND EVALUATION OF SELF MICROEMULSIFYING DRUG DELIVERY SYSTEM OF CARVEDILOL

Vankayala Devendiran Sundar [1*], Vijayalakshmi Rajendran[2]

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ABSTRACT

The current work involves preparation and evaluation of self-micro emulsifying drug delivery system of carvedilol, a nonselective beta blocker and alpha-1 blocker. Oral self-micro-emulsifying drug delivery system of Carvedilol were prepared by studying the solubility in different oils, surfactants and co-surfactants and formulations were prepared using mixtures of oils, surfactants, and cosurfactants in various proportions. Based on the solubility study, the optimized self-micro-emulsifying drug delivery system of carvedilol was prepared using Acrysol El 135 as oil phase and tween 20 and transcutol P as surfactant and co-surfactant, respectively. SMEDDS of Carvidilol were prepared with good self-emulsification efficiency and having globule size in nanometric range which may be physiologically stable. The optimized formulation consisting of Carvidilol (20mg), Capmul MCM (14.40%w/w), Tween 80 (27.20% w/w) and Propylene glycol (54.40% w/w) exhibited faster release profiles with a rapid rate of emulsification. The optimized SMEDDS formulation of Carvidilol showed a significant increase in oral absorption compared to the marketed product. The exposure (Cmax and AUClast) of developed SMEDDS was found to be comparatively higher (1.54 fold) than reference marketed product indicating better rate and extent of absorption than reference formulation.

Keywords: Carvidilol, Formulation, Release profiles, Emulsification

INTRODUCTION

Amongst the available various dosage forms, oral delivery systems are preferred for chronic treatment. The potent lipophilic molecules which are used in the chronic oral treatment, exhibits low bioavailability owing to their poor aqueous solubility. Nearly 40 % of new drug candidates

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A study on the efficacy of tranexamic acid among pregnant women in reducing blood loss in lower segment cesarean section

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Journal of Population Therapeutics & Clinical Pharmacology

REVIEW ARTICLE
DOI: 10.47750/jptcp.2023.30.09.026

The Concept of Cancer Translational Research - A Review

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ABSTRACT

The translational research is a multidisciplinary research model which includes the process of discovering the concepts of research by using basic science and applying that knowledge with in the clinical praxis. This model appears to be well constructed and highly systematic and it bridges the concept of basic research and the clinical practice. This research paradigm is one of the basis for developing translational medicine which leads to progression of evidence based medicine to solve the public health issues. In this review, the concept of translational research along with various stages, cancer therapeutics & prevention, the main reasons for inadequate therapeutics along with contemporary and future perspectives were discussed. The terminal goal of translational research is to identify the therapeutic guidelines and regimes which are highly effective with low toxicity. The evolution of biotechnology lead to the development of indisputable chances for ameliorating the ability to diagnose, treat and prevent the neoplasms. Preclinical investigations are undergoing for latest developments and advancements in the molecular biology or molecular targeted therapies which lead to the increased identification of the latest agents for treatment. For the expected quality of oncological practice large variety of molecular tumor characteristics and their supporting models will be helpful for allowing continuous reassessment of human malignancies at molecular level. In conclusion, translational research can be used to improve the public health outcomes and can develop the therapeutic and preventive strategies regarding various diseases or disorders and can provide cost benefit health care analysis. Thus, consistent efforts in translational research stimulate the logical and reasonable inventions in the field of multidisciplinary cancer research in future.

Keywords: *Chemotherapy, Oncology, Palliative care, Translational Research*

INTRODUCTION

The translational research is a multidisciplinary research model which includes the process of discovering the concepts of research by using basic science and applying that knowledge with in the clinical praxis. This model appears to be well constructed and highly systematic and it bridges the concept of basic research and the clinical practice. This research paradigm is one of the basis for developing translational medicine which leads to progression of evidence based medicine to solve the public health issues. The main aim of the translational research is to promote patient centered care and to develop the preventive measures which help to offer the effective health care services.

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The translational research is a multidisciplinary research model which includes the process of discovering the concepts of research by using basic science and applying that knowledge with in the clinical praxis. This model appears to be well constructed and highly systematic and it bridges the concept of basic research and the clinical practice. This research paradigm is one of the basis for developing translational medicine which leads to progression of evidence based medicine to solve the public health issues. In this review, the concept of translational research along with various stages, cancer therapeutics & prevention, the main reasons for inadequate therapeutics along with contemporary and future perspectives were discussed. The terminal goal of translational research is to identify the therapeutic guidelines and regimes which are highly effective with low toxicity. The evolution of biotechnology lead to the development of indisputable chances for ameliorating the ability to diagnose, treat and prevent the neoplasms. Preclinical investigations are undergoing for latest developments and advancements in the molecular biology or molecular targeted therapies which lead to the increased identification of the latest agents for treatment. For the expected quality of oncological practice large variety of molecular tumor characteristics and their supporting models will be helpful for allowing continuous reassessment of human malignancies at molecular level. In conclusion, translational research can be used to improve the public health outcomes and can develop the therapeutic and preventive strategies regarding various diseases or disorders and can provide cost benefit health care analysis. Thus, consistent efforts in translational research stimulate the logical and reasonable inventions in the field of multidisciplinary cancer research in future.

Keywords: *Chemotherapy, Oncology, Palliative care, Translational Research*

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Journal of Population Therapeutics & Clinical Pharmacology

REVIEW ARTICLE
DOI: 10.47750/jptcp.2023.30.09.026

The Concept of Cancer Translational Research - A Review

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RESEARCH ARTICLE
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Comparison Of Efficacy Among the Migraine Patients Prescribed With Flunarizine, Propranolol And Petasites In The Management Of Severity Of Pain And Disability

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ABSTRACT

Aim: To compare the efficacy among the migraine patients prescribed with flunarizine, propranolol and petasites in the management of severity of pain and disability.

Methods: A total of 90 patients who were recruited in this study were categorized into three groups i.e., group A, B & C where flunarizine, propranolol and petasites were prescribed respectively. The severity of pain and disability among the three groups were assessed by using the visual analogue scale (VAS) and migraine disability assessment test (MIDAS questionnaire) before and after the treatment with respective drugs.

Results: Among the group-A subjects, the mean VAS score was observed to be 8.46 (±2.01) before the treatment and was reduced to 4.43 (±1.67) with a mean score difference of 4.03 ($p<0.0001$*) where as in case of group-B subjects, the mean VAS score was observed to be 8.33(±1.93) before the initiation of the treatment and was reduced to 5.40 (±1.65) with a mean score difference of 2.93 ($p<0.0001$*) and in case of group-C subjects, the mean VAS score was observed to be 7.83 (±1.87) before the initiation of treatment and was reduced to 5.26 (±2.01) with a mean score difference of 2.57 ($p<0.0001$*). Among the group-A subjects, the mean MIDAS score was observed to be 15.67 (±5.38) before the initiation of the treatment and was reduced to 11.0 (±4.16) with a mean score difference of 4.67 ($p=0.0004$*) whereas in case of group-B subjects, the mean MIDAS score was observed to be 12.07 (±3.99) before starting the treatment and was reduced to 7.9 (±2.64) with a mean score difference of 4.17 ($p<0.0001$*) and in case of group-C subjects, the mean MIDAS score was observed to be 13.77 (±5.40) before the initiation of the treatment and was reduced to 9.83 (±5.20) with a mean score difference of 3.94 ($p=0.0056$*).

Conclusion: In this study, a highest reduction of the mean VAS score and mean MIDAS score was observed in the group-A subjects who were prescribed with flunarizine when compared to the group-B and group-C subjects who were prescribed with propranolol and petasites respectively. It is the responsibility of the clinical pharmacists to get involved in the pharmaceutical care of the migraine

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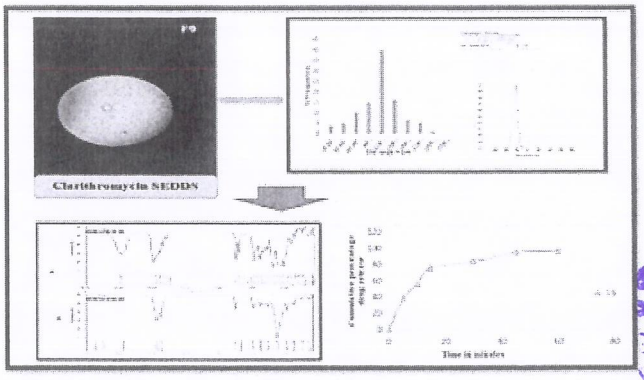

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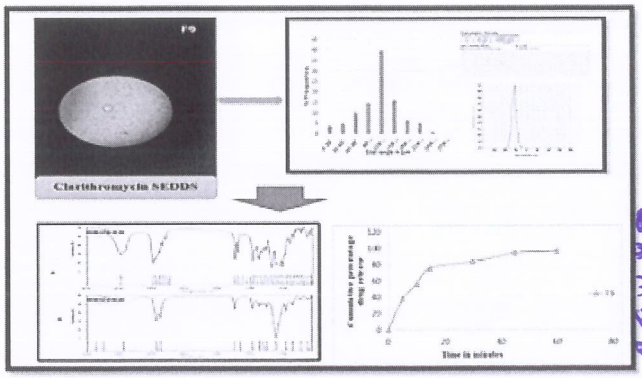

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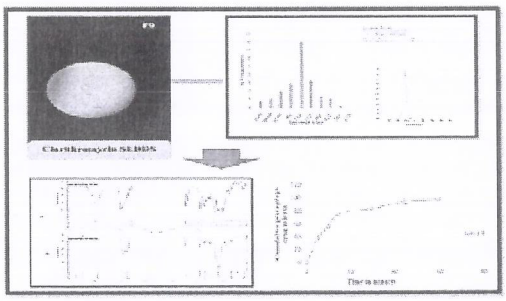

Keywords: Self-emulsifying drug delivery system; Clarithromycin; Cremophor EL; Self-emulsification'; Liquid SEDDS; Macrolide antibiotic

Original Article

Utility of Different Lipids and Effect of Soya Lecithin on Sustained Delivery of Zidovudine via Biodegradable Solid Lipid Microparticles: Formulation and *in-vitro* Characterization

Nandhakumar Sathyamoorthy[1,*], Vankayala Devendiran Sundar[2], Vijayalakshmi Rajendran[3], Navyashri Sirikonda[2], Harikrishnan Narayanaswamy[1]

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ABSTRACT

Background: Zidovudine (Azidothymidine, AZT) is widely used in the treatment of Acquired Immuno Deficiency Syndrome (AIDS) and related conditions, either alone or in combination with other antiviral agents to combat HIV. AZT is a Biopharmaceutical Classification System (BCS) class III drug and has various disadvantages. Thus, AZT is a potential candidate for delivery *via* lipid-based drug delivery system. **Materials and Methods:** In the present work, solid lipid microparticles (SLMs) of Zidovudine were developed for sustaining the drug release, to overcome or to reduce the hepatic metabolism and to ensure optimal bioavailability. A total of sixteen formulations of Zidovudine loaded solid lipid microparticles in two groups viz., one with tripalmitin and another with trimyristin were prepared by emulsion-solvent evaporation method. **Results:** The average particle size and entrapment efficiency of the prepared SLM varied between 5.48 μm-10.64 μm and 46.92 % and 58.39% respectively. The release of zidovudine from the SLM varied between 70.47% and 100% at the end of 24 hrs. 80% of the drug release which is required for obtaining the optimal therapeutic concentration was achieved by SLM 8. **Conclusion:** Formulation SLM 8 was considered best with maximum sustainability in the drug release along with maintaining therapeutic optimum. The formulation was found stable under stressed conditions.

Keywords: Zidovudine, Azidothymidine, AIDS, Solid lipid microparticles, Tripalmitin, Trimyristin.

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INTRODUCTION

Solid lipid particles were first presented in the early 1990s as an alternative to emulsions, liposomes, and polymeric microparticles as a drug delivery mechanism.[1] Solid Lipid Microparticles (SLMs) are solid lipid particles that are roughly spherical and range in size from 1 to 1000 um.[2] Solid lipid microparticles have a better physicochemical stability than other lipid-based drug carriers, such as liposomes, and are easier to sterilize and scale-up.[3] The formulation of solid lipid microparticles (SLMs) for effective oral administration of biological medicines begins with the selection of appropriate lipid excipients with the right hydrophobicity and lipolysis propensity.[4] Zidovudine is a synthetic nucleoside analogue that is increasingly being employed as the cornerstone of antiretroviral therapy for HIV infection. Zidovudine is a nucleoside analogue that inhibits HIV reverse transcriptase. It is the (-)- enantiomer of 2', 3'-dideoxy-3'-thiacytidine.[5,6] Zidovudine (Azidothymidine, AZT) is widely used in the treatment of AIDS and similar illnesses, either alone or in combination

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Original Article

Utility of Different Lipids and Effect of Soya Lecithin on Sustained Delivery of Zidovudine via Biodegradable Solid Lipid Microparticles: Formulation and *in-vitro* Characterization

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ABSTRACT

Background: Zidovudine (Azidothymidine, AZT) is widely used in the treatment of Acquired Immuno Deficiency Syndrome (AIDS) and related conditions, either alone or in combination with other antiviral agents to combat HIV. AZT is a Biopharmaceutical Classification System (BCS) class III drug and has various disadvantages. Thus, AZT is a potential candidate for delivery *via* lipid-based drug delivery system. **Materials and Methods:** In the present work, solid lipid microparticles (SLMs) of Zidovudine were developed for sustaining the drug release, to overcome or to reduce the hepatic metabolism and to ensure optimal bioavailability. A total of sixteen formulations of Zidovudine loaded solid lipid microparticles in two groups viz., one with tripalmitin and another with trimyristin were prepared by emulsion-solvent evaporation method. **Results:** The average particle size and entrapment efficiency of the prepared SLM varied between 5.48 μm-10.64 μm and 46.92 % and 58.39% respectively. The release of zidovudine from the SLM varied between 70.47% and 100% at the end of 24 hrs. 80% of the drug release which is required for obtaining the optimal therapeutic concentration was achieved by SLM 8. **Conclusion:** Formulation SLM 8 was considered best with maximum sustainability in the drug release along with maintaining therapeutic optimum. The formulation was found stable under stressed conditions.

Keywords: Zidovudine, Azidothymidine, AIDS, Solid lipid microparticles, Tripalmitin, Trimyristin.

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Chemometric-Assisted UV Method for Quantisation of Perindopril and Losartan in Tablet Dosage Form

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In very recent days multivariate calibration techniques are used to resolve mixtures of double or triple compounds with similar spectral characteristics. In many cases, these multivariate methods for the study of spectral data have many more benefits like simple processing and cheaper analysis. These methods have been very often applied for quantitation of drugs, as HPLC methods are tedious and conventional spectroscopic methods were slow, expensive and complex. The work proposal describes new spectrophotometric methods for the concurrent estimation of Perindopril (PRN) and Losartan (LRN) in their mixtures and dosage form. The stated chemometric methods are multivariate techniques including PCR and PLS. These techniques employ the concentration statistics matrix, produced by using the several combinations containing the two drugs dissolved in methanol. The absorbance input matrix related to the concentration was deduced by studying the absorbance in between 200–350 nm at 1 nm intervals on the zero-order spectra which does not require any extraction steps. The accuracy values, precision, and linearity ranges of the methods have been tested, and analysing the combinations having the studied drugs has then been validated. The results confirmed the suitability of the recommended method for the accurate and highly precise analysis of Perindopril and Losartan in pharmaceutical preparations. These developed methods were applied exactly to the formulation mixture preparations without earlier treatment. Also, no expensive laboratory procedure is required. Moreover, the determined techniques are suitable for study without any of the excipient interference.

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Green Synthesis of Zinc Oxide Nanoparticles, Characterization, Antibacterial and Cytotoxicity Against HepG2 Cells Using *Syringodium isoetifolium*

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KEYWORDS: Zinc oxide nanoparticles, *Syringodium isoetifolium*, Green synthesis, Characterization, MTT assay, Cytotoxicity potential

1. INTRODUCTION

Nanotechnology has risen to eminence in technological progressions due to their tunable physicochemical characteristics like melting point, electrical and thermal conductivity, wettability, catalytic activity, and light absorption and scattering which result in enhanced performance than bulk equivalents. Nanoparticle synthesis is a potential area of nanobiotechnology research plays vital role to control the shape, size, and composition of nanoparticles, as each of these parameters plays a key role in deciding various applications [1]. Nanotechnology, as a new research area that encompasses a wide range of nanoscale technologies is playing a progressively significant part in the development of innovative methods for producing new products [2]. Herbal medications are becoming increasingly popular among the general public, with these "natural medicines" being seen as milder as and safer than their synthetic equivalents, with less side effects and adverse drug responses. Clinical evidence to support the use of herbal medicines as a treatment for a wide range of ailments. In addition to the foregoing, there are concerns about the deprived or indeterminate bioavailability of active phytochemical ingredients, with herbal medicine's *in vitro* shown potential not necessarily translating to beneficial *in vivo* therapeutic uses. Novel medication delivery technologies have the potential to overcome natural medicine's constraints.

By applying nanostructures and nanophases to diverse branches of study, nanotechnology is proven to bridge the gap between biological and physical sciences [3]. Researchers exhibited inordinate interest in using aqueous plant extract and microorganisms to synthesize metal and metal oxide NPs because they are environmentally friendly, stable, therapeutically adaptive, biocompatible and cost-effective. Natural

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PHYTOCHEMICAL SCREENING AND PHARMAOCOLOGICAL EVALUATION OF TECOMA GAUDICHAUDI

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Tecoma gaudichaudi is a tropical flowering plant in the Bignoniaceae family that is used to treat diabetes. The aim of this research was to evaluate antioxidant, anti-inflammatory, and antibacterial properties. Tecoma gaudichaudi ethanolic extract had considerable antioxidant activity. Antioxidant activity was measured using the DPPH assay, the radical scavenging method, and the superoxide assay. Antibacterial activity and antifungal activity were performed by cup plate method by using Ciprofloxacin as standard for antibacterial and antifungal activity. Ethanolic extract of Tecomo gaudichaudi shows significant antibacterial effect against S. Aureus, B. Subtilis, P. vulgaris and E. coli using ciprofloxacin (50µg/ml) as standard. Three alternative methods were used to calculate IC_{50} values for antioxidant activity. The IC_{50} values for T. gaudichaudi (21 g/ml) and ascorbic acid (12 g/ml) were obtained using the DPPH technique. For anti-inflammatory studies the extracts show remarkable zone of inhibition ranging from 58.97 to 72.35 µg/ml respectively compared to standard indomethacin. Steroids, saponins, flavonoids, triterpenes, and phenols are found in preliminary phytochemical investigation. In conclusion, ethanolic extract of Tecomo gaudichaudi shows significant antioxidant, anti-inflammatory and antibacterial properties.

Keywords: *DPPH, Hydroxy radical scavenging, Antibacterial, Anti-inflammatory, Tecoma gaudichaudi*

INTRODUCTION

Tecoma gaudichaudi DC (Bignoniaceae) is a synonym of *Tecoma castanifolia*, fast-growing shrub commonly found in India. The leaves are 8-15 cm long, flowers are golden yellow, borne in large terminal pinnacle. It is annual flowering plant that is used to heal a variety of diseases.[1,2] Literature survey reveals *T. gaudichaudi* posess various bioactive compounds such as flavonoids, alkaloids, steroids, saponins[3]. *T. gaudichaudi* has been used to treat diabetes, indigestion, infertility and erectile dysfunction[4]. The present study aims at Pharmacognostical, Phytochemical screening and to evaluate antioxidant, anti-inflammatory, antibacterial activities for *Tecomo gaudichaudi*.

MATERIALS AND METHODS

Collection of plant materials

The whole plant (aerial parts and roots) of *Tecoma gaudichaudi* was harvested in the month of September and washed thoroughly with water then dried, grinded to get coarse powder. The plant was authenticated by Prof. M. Venkaiah, Taxonomist, with voucher specimen no AV/TG/2016/2 as *Tecoma Gaudichaudi* DC. The ethanolic extract is taken and concentrated through maceration process and stored in airtight container.

Preliminary phytochemical screening

The extracts were dissolved in specific reagents through standard procedure[5] and analysed for presence of phytochemicals[6,7] such as steroids, triterpenes, saponins, flavonoids, phenols and iridoids.

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PHYTOCHEMICAL SCREENING AND PHARMAOCOLOGICAL EVALUATION OF TECOMA GAUDICHAUDI

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Tecoma gaudichaudi is a tropical flowering plant in the Bignoniaceae family that is used to treat diabetes. The aim of this research was to evaluate antioxidant, anti-inflammatory, and antibacterial properties. Tecoma gaudichaudi ethanolic extract had considerable antioxidant activity. Antioxidant activity was measured using the DPPH assay, the radical scavenging method, and the superoxide assay. Antibacterial activity and antifungal activity were performed by cup plate method by using Ciprofloxacin as standard for antibacterial and antifungal activity. Ethanolic extract of Tecomo gaudichaudi shows significant antibacterial effect against S. Aureus, B. Subtilis, P. vulgaris and E. coli using ciprofloxacin (50µg/ml) as standard. Three alternative methods were used to calculate IC_{50} values for antioxidant activity. The IC_{50} values for T. gaudichaudi (21 g/ml) and ascorbic acid (12 g/ml) were obtained using the DPPH technique. For anti-inflammatory studies the extracts show remarkable zone of inhibition ranging from 58.97 to 72.35 µg/ml respectively compared to standard indomethacin. Steroids, saponins, flavonoids, triterpenes, and phenols are found in preliminary phytochemical investigation. In conclusion, ethanolic extract of Tecomo gaudichaudi shows significant antioxidant, anti-inflammatory and antibacterial properties.

Keywords: *DPPH, Hydroxy radical scavenging, Antibacterial, Anti-inflammatory, Tecoma gaudichaudi*

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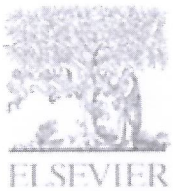

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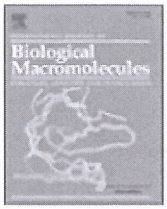

Review

Biomedical applications of nanomaterials in the advancement of nucleic acid therapy: Mechanistic challenges, delivery strategies, and therapeutic applications

Krishna Yadav [a], Kantrol Kumar Sahu [b], Sucheta [c], S. Princely Ebenezer Gnanakani [d], Pavani Sure [e], R. Vijayalakshmi [f], V.D. Sundar [g], Versha Sharma [h], Ruchita Antil [i], Megha Jha [h], Sunita Minz [j], Anindya Bagchi [k], Madhulika Pradhan [l,*]

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ARTICLE INFO

Keywords:
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Non-viral vector
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ABSTRACT

In the past few decades, substantial advancement has been made in nucleic acid (NA)-based therapies. Promising treatments include mRNA, siRNA, miRNA, and anti-sense DNA for treating various clinical disorders by modifying the expression of DNA or RNA. However, their effectiveness is limited due to their concentrated negative charge, instability, large size, and host barriers, which make widespread application difficult. The effective delivery of these medicines requires safe vectors that are efficient & selective while having non-pathogenic qualities; thus, nanomaterials have become an attractive option with promising possibilities despite some potential setbacks. Nanomaterials possess ideal characteristics, allowing them to be tuned into functional bio-entity capable of targeted delivery. In this review, current breakthroughs in the non-viral strategy of delivering NAs are discussed with the goal of overcoming challenges that would otherwise be experienced by therapeutics. It offers insight into a wide variety of existing NA-based therapeutic modalities and techniques. In addition to this, it provides a rationale for the use of non-viral vectors and a variety of nanomaterials to accomplish efficient gene therapy. Further, it discusses the potential for biomedical application of nanomaterials-based gene therapy in various conditions, such as cancer therapy, tissue engineering, neurological disorders, and infections.

1. Introduction

With the advent of cutting-edge biomedical technology, significant strides have been made in the prevention, diagnosis, and treatment of fatal diseases and conditions, including genetic anomalies [1,2]. However, not all diseases can be treated with pharmacological drugs, biologics, or peptide-based therapies. Typical pharmaceutical methods are ineffective against many genetic illnesses that manifest at birth or later in life [3]. As new therapeutic techniques become available, treatment plans have a better chance of eliminating the root causes as well as the symptoms [4,5].

NA therapy is one of the powerful processes of changing the genetic material of mutated cells to treat or improve patients' health [6]. The therapy delivers therapeutic NA and regulatory elements into the

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A NEW STABILITY INDICATING RP-HPLC METHOD DEVELOPMENT AND VALIDATION OF FOR SIMULTANEOUS ESTIMATION OF VELPATASVIR AND SOFOSBUVIR

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ABSTRACT

Objective: The principal objective of this study is to develop and validate a simple, precise, accurate and economically beneficial stability indicating RP-HPLC method for simultaneous estimation of sofosbuvir and velpatasvir in a bulk and tablet dosage form.

Methods: The present method was developed on a waters HPLC system using YMC HPLC Column (150 x 4.6 mm; 5µm particle size) by eluting with a mobile phase composition of (50:50 v/v) mixture of phosphate buffer and acetonitrile (ACN) and the pH was adjusted to 3 by using