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3.3

RESEARCH PUBLICATION AND AWARDS

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3.3.1

Number of research papers per teacher in the journals notified on UGC care list during the last five years

(ACADEMIC YEAR 2021-22)

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Research papers published per teacher in the Journals notified on UGC care list during AY 2021-22

S.No	Title of paper	Name of the author/s	Departme nt of the teacher	Name of journal	Year of publicati on	ISSN number	Link to the recognition in UGC enlistment of the Journal /Digital Object Identifier (doi) number		
							Link to website of the Journal	Link to article / paper / abstract of the article	Is it listed in UGC Care list
1	A Comparative Study on Safety and Efficacy of Desvenlafaxine Versus Sertraline in Depression	Pradeep Battula	Pharmacy Practice	Cureus journal of medical sciences	2022	2168-8184	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8971119/pdf/cureus-0014-00000022717.pdf	https://pubmed.ncbi.nlm.nih.gov/35371643/	yes
2	A Study on Prescribing Patterns and Assessing the Functional Outcomes in Cerebral Stroke Patients	Pradeep Battula	Pharmacy Practice	Journal of Pharmaceutical Research International	2022	2456-9119	https://journaljpri.com/index.php/JPRI/article/view/35824	https://journaljpri.com/index.php/JPRI/article/view/35824	Yes
3	Silybin phytosome attenuates cerebral ischemia-reperfusion injury in rats by	P Praveen Kumar	Pharmacology	Journal of Biochemical and Molecular Toxicology	2022	1099-0461	https://onlinelibrary.wiley.com/journal/10990461	https://doi.org/10.1002/jbt.23073	Yes

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	suppressing oxidative stress and reducing inflammatory response: In vivo and in silico approaches								
5	Molecular docking and in vivo immunomodulatory activity of Albizia procera bark on doxorubicin induced immunosuppressive rats.	P Praveen Kumar	Pharmacology	Journal of King Saud University – Science	2022	1018-3647	https://www.journals.elsevier.com/journal-of-king-saud-university-science	https://doi.org/10.1016/j.jksus.2022.101828	Yes
6	Identification of bioactive molecules from Triphala (Ayurvedic herbal formulation) as potential inhibitors of SARS-CoV-2 main protease (Mpro) through	P Praveen Kumar	Pharmacology	Journal of King Saud University – Science	2022	1018-3648	https://www.journals.elsevier.com/journal-of-king-saud-university-science	https://doi.org/10.1016/j.jksus.2022.101826	Yes

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	computational investigations.								
7	In silico Drug Repurposing for the Identification of Antimalarial Drugs as Candidate Inhibitors of SARS-CoV-2.	P Praveen Kumar	Pharmacology	Anti-Infective Agents	2022	2211-3525	https://benthamscience.com/journals/anti-infective-agents/	10.2174/2211352519666211202141143	Yes
8	Atorvastatin ascorbic acid cocrystal strategy to improve the safety and efficacy of atorvastatin	P Praveen Kumar	Pharmacology	Pharmacia	2022	4280296	https://pharmacia.pensoft.net/	DOI 10.3897/pharmacia.69.e80072	Yes
9	RP-HPLC method for the simultaneous analysis of ambroxol hydrochloride and nitazoxanide in API and tablet dosage form	N.Madana Gopal	Pharmaceutical Analysis	AIP Conference Proceedings	2022	1551-7616	https://aip.scitation.org/journal/apc	https://aip.scitation.org/doi/abs/10.1063/5.0070416	Yes

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10	In-vivo Genotoxicity of Synthesized Phyto-chemical and Chemical Silver Nanoparticles – A comparative study	Siva Sanker Reddy.L	Pharmaceutical Analysis	Bulletin of Environment, Pharmacology and Life Sciences	2022	2277-1808	https://bepls.com/spl(1)2022.html	https://bepls.com/special_issue(1)2022/194	Scopus
11	Antidiabetic and hepatoprotective activity of a novel polyherbal preparation against streptozotocin-induced diabetes rats and its formulation into a tablet dosage form	B. Mohammed Ishaq	Pharmaceutical analysis	Asian Journal of Pharmaceutical Research and Health Care	2022	2250-1444 (Print), 2250-1460 (Online)	https://www.ajprhc.com/temp	https://www.ajprhc.com/backissues.asp	Scopus

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Cureus

Open Access Original Article

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A Comparative Study on Safety and Efficacy of Desvenlafaxine Versus Sertraline in Depression

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Abstract

Background

Depression is one of the most predominant mental health issues that are prevalent now. Therefore, many clinical trials were being conducted to find the safest, most effective, and tolerable anti-depressant. This study aims to compare desvenlafaxine and sertraline regarding their safety and efficacy in treating depression.

Methodology

The patients who were diagnosed with depressive disorder according to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) criteria were included in the study and were divided into two groups. The severity of depression in these patients was evaluated using Beck Depression Inventory and Hamilton depression scale (HAM-D) before and after the treatment (four weeks).

Results

About 64% of the study sample were males, and 36% were females, with 77% of the patients in the desvenlafaxine group taking 100 mg dosage and about 74% patients taking 50 mg dosage in the sertraline group. The patients in both groups showed statistically significant ($p < 0.00001$) improvement after using these drugs.

Conclusion

Both desvenlafaxine and sertraline showed their efficacy in treating depression by improving the clinical outcome in patients. Sertraline was marginally better in clinical results. Finally, it is advisable to carry out more randomized trials to improve the patient's quality of life.

Categories: Neurology, Psychiatry, Psychology
Keywords: becks depression inventory and ham-d scales, dsm-v criteria, depression, desvenlafaxine, sertraline

Introduction

In a person's lifetime, the estimated occurrence of at least one episode of major depressive disorder is about 17% [1]. This occurrence causes psychiatrists and physicians to encounter this disorder often in their clinics. Patients suffering from depression not only experience difficulties in their social functioning but also have impaired work output [2-3]. All this has led to the recognition of depression as the fourth most leading disability globally [4]. It has been established that the primary choice in the management of depression is pharmacotherapy [5]. Antidepressants are also used to treat chronic pain, which can result in depression [6-7]. The prescriptions for treating depression mainly include second-generation antidepressants like selective serotonin reuptake inhibitors (SSRIs), serotonin and norepinephrine reuptake inhibitors (SNRIs), and other drugs that selectively target neurotransmitters [8]. SSRIs are also combined with antipsychotics to treat bipolar depression [9]. Depression is most commonly treated in three divided stages - acute, continuation, and maintenance phases [10]. From the presentation of symptoms to eliciting a clinical response comprises the acute phase. It has now been recommended to have at least six months of continuation therapy. In the maintenance phase, the psychiatrist aims to prevent the occurrence of another episode [11-12].

The improved safety and tolerability of SSRIs and SNRIs caused them to gain popularity in treating depression over the older tricyclic antidepressants [13]. Sertraline belongs to SSRIs which inhibit only serotonin reuptake. At the same time, desvenlafaxine has dual-acting properties as it can block the reuptake of serotonin and norepinephrine and belongs to SNRIs [14-15]. It has been found that there is dysregulation of serotonin and norepinephrine neurotransmitter systems in patients suffering from depression [16].

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Journal of Pharmaceutical Research International

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A Study on Prescribing Patterns and Assessing the Functional Outcomes in Cerebral Stroke Patients

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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Short Research Article

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ABSTRACT

Cardiovascular diseases and Cerebro-vascular diseases account for majority of the burden of NCDs. Stroke is one the major component of these, posing public health challenges. 1 in 6 people suffer with stroke in their life time. The impact of stroke can be short or long term, depending on which part of the brain is affected and how quick it is treated. This hospital based case study was undertaken with aim to study the prescribing pattern and the functional outcomes in cerebral stroke. Study was carried out in the Santhiram Medical hospital, Nandyal, Andhra Pradesh, India.

Methodology: Patients visiting the neurology clinic were asked to answer the questionnaire covering functional outcomes by using functional assesment scales to determine the clinical status of the patient; Most of the patient's data were collected from case sheets. A total of 150 patients were included in the observational study. Data from case sheets were analysed to assess the prescribing pattern and the questionnaires like mRS, SSQOLS, MMSE scales were used to interview the stroke patients to assess the functional outcomes.

Results: Our study presents that there is a minimal Modified Rankin Scale (MRS) score progress in patients. MRS, SSQOL, MMSE scales, which showed improvement in the quality of life and cognition in stroke patients after treatment.

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RESEARCH ARTICLE

WILEY

Silybin phytosome attenuates cerebral ischemia-reperfusion injury in rats by suppressing oxidative stress and reducing inflammatory response: In vivo and in silico approaches

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Abstract

The present study was aimed to develop silybin phytosome (SIBP) and evaluate its effectiveness against cerebral ischemia-reperfusion (CIR) injury in rats. Initially, SIBP was prepared and characterized with Fourier transform-infrared spectroscopy, differential scanning calorimetry, and scanning electron microscopy. Drug loading and entrapment efficiency of SIBP were also calculated. High-performance liquid chromatography was used to carry out bioavailability studies of SIBP. Adult Wistar rats were divided randomly into five groups. The CIR injury was induced after 14 days of pretreatment by occlusion of bilateral common carotid arteries for 30 min followed by 4 h of reperfusion. Biochemical estimation, histopathological studies, and in silico studies were carried out. Bioavailability studies revealed that SIB concentration was increased to twofolds in SIBP-treated rats. SIBP treatment significantly increases superoxide dismutase and glutathione levels while it decreases monoaldehyde, tumor necrosis factor-α (TNF-α), and interleukin 6 (IL-6) levels in both the hippocampus and cortex of the SIBP-treated CIR-injured rats. Histopathological studies reveal SIBP treatment alleviates cortex cell death and arrangement of CA1 neurons in CIR-injured rats. In silico studies against proteins (TNF-α and IL-6) involved in cerebral ischemia revealed that silybin (SIB) exhibits strong binding interaction with the target proteins when compared to thalidomide which was used as the positive control. Phytosome increase SIB bioavailability and SIBP treatment showed promising results when compared to treatment with SIB only. Based on our study, we conclude that phytosome is a suitable drug delivery agent to the brain for SIB as SIBP treatment was able to provide neuroprotective action against CIR injury.

KEYWORDS

anti-inflammatory, antioxidant, cerebral ischemia, phytosomes, silybin

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Original article

Molecular docking and *in vivo* immunomodulatory activity of *Albizia procera* bark on doxorubicin induced immunosuppressive rats

Praveen Kumar Pasala [a,*], L. Siva Sankar Reddy [a], N. Silvia [b], Y. Dastagiri Reddy [a], A. Sampath [c], N. Dorababu [d], N.V.L. Sirisha Mulukuri [e], Sunil Kumar K.T. [b], M. Sri Chandana [b], C. Madhusudhana Chetty [a], Atul R. Bendale [f], Mithun Rudrapal [g]

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ABSTRACT

Objective: To study the immunomodulatory potential of *Albizia procera* (AP) bark using *in vivo* models and by *in silico* approach.
Methods: *In silico* models involved to study binding affinity of AP bioactive molecules on immune modified proteins such as Human NF-kappa B p52 (NFkB P_{52}), human tumor necrosis factor-alpha (TNF-α). *In vivo* studies to evaluated immunomodulatory activity of ethanolic extract AP bark (EEAP) Doxorubicin (DOX) induced immunosuppressive rats.
Results: Docking results showed AP bioactive molecules 3-O-[α-L-arabinopyranosyl-(1 2)-β- → D fucopyranosyl - (16) - 2 - acetamido - 2 - deoxy- β - → Dglucopyranosyl] echinocystic acid (Compound 1), 3-O-[α-L-arabinopyranosyl-(12)-β- → D fucopyranosyl - (16) - 2 - acetamido - 2 - deoxy- β - → Dglucopyranosyl] acacic acid lactone (Compound 2), Catechin, Quercetin, Isoquercetin were showed immune modulatory activity due to high binding affinity and H bonding interaction with active sites of NFkB P_{52}, TNF-α, without H bonding on anti-inflammatory cytokines IL 10. Based on docking Compound 1, Compound 2, Catechin, Quercetin, Isoquercetin were concluded as immunomodulatory potential candidate. EEAP exhibited a dose related incline in cell count of total leukocyte, neutrophils, and lymphocytes. The suppressive outcome of DOX on these cells was not reflected in EEAP treated rats. It enhanced the rate of clearance of the carbon particles in dose dependent manner from the blood circulation in both normal rats and in the immunosuppressive rats. Delayed type of hypersensitivity test (DTH) results showed an increase in footpad thickness of paw significantly in response to antigen, as an impact of EEAP treatment stimulatory response is observed on lymphocytes along with other essential cells of reaction and thus increased the cell mediated immunity.
Conclusion: AP improves the immune function in DOX induced immunosuppressive rats.

1. Introduction

Protection mechanism that is active in defending the host from destructive foreign microorganisms is the vertebrate immune system, which has very essential surveillance control to track the integrity of host tissues (Delves et al., 2017). The characteristic feature of immunomodulator to regulate diseases is to elicit the excitation or suppression of immune responses. Literature suggests that several conventional medicines play a pivotal role in increase

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Original article

Identification of bioactive molecules from *Triphala* (Ayurvedic herbal formulation) as potential inhibitors of SARS-CoV-2 main protease (Mpro) through computational investigations

Mithun Rudrapal [a,*], Ismail Celik [b], Johra Khan [c,d,*], Mohammad Azam Ansari [e], Mohammad N. Alomary [f], Fuad Abdullah Alatawi [p], Rohitash Yadav [g], Tripti Sharma [h], Trina Ekawati Tallei [i,j], Praveen Kumar Pasala [k], Ranjan Kumar Sahoo [l], Shubham J. Khairnar [m], Atul R. Bendale [n], James H. Zothantluanga [o], Dipak Chetia [o], Sanjay G. Walode [a]

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ABSTRACT

Severe acute respiratory syndrome coronavirus disease (SARS-CoV-2) induced coronavirus disease 2019 (COVID-19) pandemic is the present worldwide health emergency. The global scientific community faces a significant challenge in developing targeted therapies to combat the SARS-CoV-2 infection. Computational approaches have been critical for identifying potential SARS-CoV-2 inhibitors in the face of limited resources and in this time of crisis. Main protease (M^{pro}) is an intriguing drug target because it processes the polyproteins required for SARS-CoV-2 replication. The application of Ayurvedic knowledge from traditional Indian systems of medicine may be a promising strategy to develop potential inhibitor for different target proteins of SARS-CoV-2. With this endeavor, we docked bioactive molecules from *Triphala*, an Ayurvedic formulation, against M^{pro} followed by molecular dynamics (MD) simulation (100 ns) to investigate their inhibitory potential against SARS-CoV-2. The top four best docked molecules (terflavin A, chebulagic acid, chebulinic acid, and corilagin) were selected for MD simulation study and the results obtained were compared to native ligand X77. From docking and MD simulation studies, the selected molecules showed promising binding affinity with the formation of stable complexes at the active binding pocket of M^{pro} and exhibited negative binding energy during MM-PBSA calculations, indication their strong binding affinity with the target protein. The identified bioactive molecules were

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Anti-Infective Agents

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Research Article

In silico Drug Repurposing for the Identification of Antimalarial Drugs as Candidate Inhibitors of SARS-CoV-2

Author(s): Praveen Kumar Pasla*, Pugazhenthan Thangaraju, Sree Sudha T.Y., Sri Chandana M. and Rizwaan Abbas S.

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Abstract

Background: Coronavirus disease (COVID-19) is a severe acute respiratory condition that has affected millions of people worldwide, indicating a global health emergency. Despite the deteriorating trends of COVID-19, no drugs are validated to have substantial efficacy in the potential treatment of COVID-19 patients in large-scale trials.

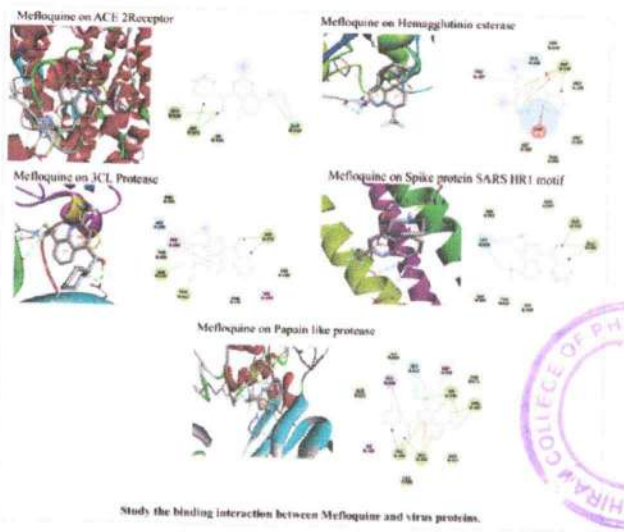
Methods: This study aimed at identifying potential antimalarial candidate molecules for the treatment of COVID and evaluating the possible mechanism of action by in silico screening method. In silico screening studies on various antimalarial compounds, like amodiaquine, chloroquine, hydroxychloroquine, mefloquine, primaquine, and atovaquone, were conducted using PyRx and AutoDoc 1.5.6 tools against ACE 2 receptor, 3CL protease, hemagglutinin esterase, spike protein of SARS HR1 motif, and papain-like protease virus proteins.

Results: Based on PyRx results, mefloquine and atovaquone were found to have higher docking affinity scores against virus proteins compared to other antimalarial compounds. Screening report of atovaquone exhibited affirmative inhibition constant for spike protein of SARS HR1 motif, 3CL protease, and papain-like protease.

Conclusion: In silico analysis reported atovaquone as a promising candidate for COVID 19 therapy.

Keywords: Coronavirus disease (COVID-19), antimalarial drugs, in silico, PyRx and AutoDoc 1.5.6 tools, virus proteins, ACE receptor.

Graphical Abstract



Study the binding interaction between Mefloquine and virus proteins.

PHARMACIA

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Research Article

Atorvastatin ascorbic acid cocrystal strategy to improve the safety and efficacy of atorvastatin

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Abstract

The study was aimed to investigate the effect of dissolution enhancement on the hypolipidemic effect and hepatotoxicity of the drug in hyperlipidemic rats. Atorvastatin ascorbic acid cocrystals were prepared by phase solution methods and characterized by Fourier transformation infrared spectroscopy, differential scanning calorimetry, scanning electron microscopy, X-Ray powder diffraction. Results of characterization confirmed that atorvastatin ascorbic acid cocrystals exhibited particle size was 221 nm. In *in vitro* study, results of dissolution test showed that the release of atorvastatin was increased to 1.6 folds. From *In vivo* study results, it was observed that in atorvastatin ascorbic acid cocrystals treated rats, serum total cholesterol, triglycerides, liver transaminase levels were significantly decreased, and liver glutathione activity was increased. In conclusion, atorvastatin ascorbic acid cocrystals therapy exhibited less hepatotoxicity in presence of ascorbic acid when compared to atorvastatin alone therapy and also the efficacy of therapy was improved.

Keywords

cocrystal technology, atorvastatin, ascorbic acid, atorvastatin ascorbic acid cocrystals

Introduction

Atorvastatin is a synthetic lipid modifier that has been approved for atherosclerosis and cardiovascular disease as an effective therapy. It acts by inhibiting β-hydroxy β-methylglutaryl CoA reductase, which results in lower serum total and LDL cholesterol, apoB and triglyceride levels while increasing HDL cholesterol levels. The drug has poor water solubility with a recorded solubility value of 0.011 mg/L with low solubility and a high intestinal clearance and metabolism of the first pass. The drug has a narrow absorption window in accordance with the biopharmaceutical classification system (Davis 2005). In addition to its narrow absorption window, the acidity (pKa 4.33) of the drug led to poor solubility and dissolution in the acidic environment of the upper GIT, thereby increasing the number of doses required to achieve therapeutic benefits, but leading to hepatic abnormalities

RP-HPLC method for the simultaneous analysis of ambroxol hydrochloride and nitazoxanide in API and tablet dosage form

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RP-HPLC Method for the Simultaneous Analysis of Ambroxol Hydrochloride and Nitazoxanide in API and Tablet Dosage Form

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Abstract: Present work is aimed to develop a new simple, fat, rapid, accurate, efficient, and reproducible RP-HPLC method for the simultaneous analysis of Ambroxol Hydrochloride and Nitazoxanide in API& tablet dosage form. The chromatographic separation was performed using phenomenex C_{18} Column having dimensions of 4.6x250mm having particle size of 5µm, with mobile phase consisting of Buffer P^H-3.5 and Acetonitrile (40:60% v/v), flow rate was adjusted to 1.0ml/min and detection wavelength at 235 nm. The proposed method has been validated for linearity, range, precision, accuracy and robustness were within the acceptance limit according to the ICH Q2B guidelines. The retention times of Ambroxol Hydrochloride and Nitazoxanide were 2.985 mins and 5.581 mins respectively. The linearity was performed in the concentration in the range of 7.5 µg/ml to 45µg/ml and 25 µg/ml to 150 µg/ml and with a correlation coefficient of 0.999 and 0.999 respectively. % RSD for system precision was found to be 0.212 and 0.160% RSD for repeatability 0.2 and 0.12, % RSD for intermediate precision was 0.06 and 0.06 respectively. The % percentage purity of Ambroxol Hydrochloride and Nitazoxanide was found to be 99.93% and 99.35% respectively. The method was found to be robust even by change in the mobile phase ±5% in less flow condition.

INTRODUCTION

Ambroxol Hydrochloride is a secretolytic agent used for respiratory problems diseases with excessive mucus or viscid. It is a metabolite of bromhexine[2]. Chemically it can be represented as 4-[(2-amino-3,5-dibromophenyl)methylamino]cyclohexan-1-ol;hydrochloride with formula of $C_{13}H_{18}Br_2N_2O$, mass was 414.56 g/mol[3,4,5] (Fig 1). The physiochemical properties are white crystalline solid, odorless and is freely soluble in methanol, acetone, ethanol and tetrahydrofuran and very soluble in acetonitrile1,2 having melting point 81-82 ^0C[6,7,15]. Nitazoxanide chemically as (-N-(5-nitro-2-thiazoyal) salicylamide acetate) [1,13,14] (Fig. 2) with molecular

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ORIGINAL ARTICLE **OPEN ACCESS**

In-vivo Genotoxicity of Synthesized Phyto-chemical and Chemical Silver Nanoparticles – A comparative study

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ABSTRACT

The present study was designed to synthesize and characterize the phyto-chemical and chemical AgNps (Silver Nanoparticles) and their in vivo genotoxicity assessment along with silver ion in Swiss albino mice. Phytosynthesis (Green synthesis) of AgNps was achieved by using the hydro extract of A.indica leaves, whereas chemical synthesis of AgNps was achieved by reduction of sodium citrate. The AgNps were characterized by advanced analytical methods like DLS, TEM and FT-IR spectroscopy. Toxicity of AgNps on gene was assessed by the alkaline comet assayand the Chromosomal Aberration (CA) assay. It was observed that there was a significant impairment in nuclear DNA and chromosomal aberrations which indicate AgNps interaction with DNA. Bone marrow cells exhibit diverse susceptibility towards genotoxicity mediated by both investigated green and chemically synthesized AgNps. Chemical AgNps possess high susceptibility to induced DNA break, genome instability and more toxic in low dose at 40 mg/kg body weight than green AgNps. From the results of present study, it can be concluded that the chemical AgNps have potential genotoxicity than that of phyto-synthesized green silver nanoparticles. Thus, green AgNps can be preferred in anticancer activities and possible health aspects of AgNps can be monitored.

Keywords: Silver nanoparticles, Phyto-synthesis, Nanotoxicology, Genotoxicityand Comet assay.

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INTRODUCTION

Nanotechnology is solitary of the rapidly increasing interdisciplinary areas of science and technology. This technology has extensive applications in the fields including electronics, pharmaceutical industry and cosmetics preparation. The application of nanomaterials in various medicinal formulations and industrialized products is increased with a due concern for theirpossible toxic effects on biological systems. The reasons which might have acollision on interactions between the metal nanoparticles and bio-molecules have remarkably increased though not solved [1]. It is reported that AgNps exhibit potential antimicrobial activity [2,3] and because of this effect these were used in consumer products of textiles and shoes including, personal care, cosmetics, clothing, food storing products and skin cares as subcategories, which gets exposed to the human beings by dermal application or by oral administration [4]. Furthermore, silver nanoparticles were instantaneously used for various medicinal applications such as surgical sutures and silver-coated medical diagnostic devices [5] however at the point of time literature supposed that silver nanoparticles produce cytotoxicity and genotoxicity *in-vitro* [6]. Phytochemicals includes first and secondary metabolized products from plant physiology, such as, flavonoids, flavones, isoflavones, alkaloids, anthrocyanids, steroids, carotenoids, carbohydrates and polyphenols which arepotential materials for biological activities and are recognized as essential natural resources for the synthesis of metallic nanoparticles. Hence, Green synthesis of nanomaterials are harmless to the environment and also one can obtain stable nanoparticles [7]. The plant leaf extract of *Cinnamomum camphoral*[8],*Emblica offcinalis*[9], *Aloe vera* [10] and root extract of *Alfalfa* [11] were considered as a

Original Article

Antidiabetic and Hepatoprotective Activity of a Novel Polyherbal preparation against Streptozotocin-Induced Diabetes Rats and its Formulation into a Tablet Dosage Form

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ABSTRACT

Context: Diabetes is estimated to affect 79.4 million individuals in India by 2030. **Aim:** A polyherbal mixture containing hydroalcoholic extracts of Cinnamomum zeylanicum (CZ) bark, *Eugenia jambolana* (EJ) seed, *Vinca rosea* (VR) entire plant, and *Gymnema sylvestre* (GS) leaves was tested for anti-diabetic and hepatoprotective properties in different proportions. **Materials and Methods:** In normal and diabetic rats, the anti-diabetic and hepatoprotective efficacy was evaluated. Male and female Albino Wistar rats weighing 150–200 g were utilized in the experiment. Streptozotocin (60 mg/kg, i.p.) was used to induce diabetes. Group 1 acts as a normal control, Group 2 as a diabetic control, and Group 3 as a standard control, all animals of Group 3 were given Glibenclamide at a dose of 5 mg/kg p. o. Diabetic rats in groups 4–7 and 8–11 were given polyherbal preparations (PHPs) containing a combination of the above-mentioned plants in different proportions at doses of 200 and 400 mg/kg body weight, respectively, for dosage optimization and to determine the most efficacious and safe dose. The treatments were administered for a total of 28 days. Blood was drawn on the 7th, 14th, 21st, and 28th days to determine diabetic and hepatoprotective indicators such as body weight, blood glucose (BGL) levels, liver glycogen, total protein, urea, creatinine, serum glutamic oxaloacetic transaminase, and serum glutamic pyruvic transaminase. On the 28th day of the research, rats were sacrificed, and the pancreas examined for histological results. **Results:** BGL levels and serum liver enzymes were significantly reduced when a polyherbal mixture including CZ: EJ: VR: GS: 2: 1: 2: 2 at 400 mg/kg was administered. The optimum PHP ratio was then translated into tablet formulations (F1-F9) and tested for quality control characteristics. The weight, hardness, thickness, friability, and disintegration time of polyherbal tablets were all found to be within acceptable pharmacopeial parameters. Formulation F8, which included 20% sodium starch glycolate, had a disintegration time of 291 s. Formulation F8 was further tested for description, hardness, friability, and disintegration time during a 3-month accelerated stability testing. The results of a short-term stability investigation were likewise positive and comparable to the original formulation. **Conclusion:** As a result, the produced polyherbal formulation F8 may be utilized as a solid dosage form that is stable, patient-friendly, and cost-effective.

Keywords: *Antidiabetic, Cinnamomum zeylanicum, Eugenia jambolana, Gymnema Silvestre, hepatoprotective, Polyherbal, Vinca rosea*

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