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3.3.1 Number of research papers published per teacher in the Journals notified on UGC website during the last five years

CALENDER YEAR 2020

S.No.	Title of paper	Name of the author/s	Department	Name of journal	ISSN number
1	Design and Development of Chitosan Polycaprolactone Nanoparticles of Ritonavir	A.Lakshmana Rao	Pharmaceutical chemistry	The Pharma Review.	0973-399X
2	Obsessive Compulsive Disorder And Its Care-Review	Sk.Aminabee	Pharmacology	International Journal Of Research In Pharmacy And Chemistry	2231-2781
3	Obsessive Compulsive Disorder And Its Care-Review	A.Lakshmana Rao	Pharmaceuitical chemisrty	International Journal Of Research In Pharmacy And Chemistry	2231-2781
4	Simultaneous estimation of naltrexone and bupropion in pharmaceutical dosage form by using UV spectroscopy	Sai Datri A	Pharmaceutical analysis	World Journal of Biology Pharmacy and Health Sciences	2582-5542
5	Simultaneous estimation of naltrexone and bupropion in pharmaceutical dosage form by using UV spectroscopy	A.Lakshmana Rao	Pharmaceuitical chemisrty	World Journal of Biology Pharmacy and Health Sciences	2582-5542

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6	Synthesis and Insilico Characterization of Some Novel 3, 4 - Dihydropyrimidin -2-(1h)-Thione Derivatives	B Satya Sree	Pharmaceuitical chemisrty	Journal of Pharmaceutical and Medicinal Chemistry	2395-6615
7	Synthesis and Insilico Characterization of Some Novel 3, 4 - Dihydropyrimidin -2-(1h)-Thione Derivatives	A.Lakshmana Rao	Pharmaceuitical chemisrty	Journal of Pharmaceutical and Medicinal Chemistry	2395-6615
8	In Vivo Antioxidant Activity of Different Fractions of Indigofera Barberi Against Paracetamol-induced Toxicity in Rats	Sk.Aminabee	Pharmacology	Turkish Journal of Pharmaceutical Sciences	2148-6247
9	In Vivo Antioxidant Activity of Different Fractions of Indigofera Barberi Against Paracetamol-induced Toxicity in Rats	A.Lakshmana Rao	Pharmaceuitical chemisrty	Turkish Journal of Pharmaceutical Sciences	2148-6247
10	Development and Validation of a Stability Indicating RP-HPLC Method for Simultaneous Estimation of Teneligliptin and Metformin	A.Lakshmana Rao	Pharmaceuitical chemisrty	Turkish Journal of Pharmaceutical Sciences	2148-6247

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11	In vitro Anthelmintic Impact of Various Extracts of Pavetta tomentosa Root on Pheretima posthuma and in-silico Molecular Docking Evaluation of some Isolated Phytoconstituents	P. Bharghav Bhushan	Pharmaceuitics	Indian Journal of Pharmaceutical Education and Research	0019-5464
12	In vitro Anthelmintic Impact of Various Extracts of Pavetta tomentosa Root on Pheretima posthuma and in-silico Molecular Docking Evaluation of some Isolated Phytoconstituents	A.Lakshmana Rao	Pharmaceuitical chemisrty	Indian Journal of Pharmaceutical Education and Research	0019-5464
13	Pharmacognostical Study And Preliminary Phytochemical Investigation Of Dechaschistia Crotonifolia Wight & Arn	p. Raveesha	Pharmacognosy	Journal of Global Trends in Pharmaceutical Sciences	2230-7346
14	Pharmacognostical Study And Preliminary Phytochemical Investigation Of Dechaschistia Crotonifolia Wight & Arn	A.Lakshmana Rao	Pharmaceuitical chemisrty	Journal of Global Trends in Pharmaceutical Sciences	2230-7346
15	Synthesis And Antibacterial Activity Of Mannich Bases Containing Morpholine Moiety	D.Alekya	Pharmachemistry	International Journal of Research in Ayush and Pharmaceutical Sciences.	2456-9909

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16	Synthesis And Antibacterial Activity Of Mannich Bases Containing Morpholine Moiety	A.Lakshmana Rao	Pharmaceuitical chemisrty	International Journal of Research in Ayush and Pharmaceutical Sciences.	2456-9909
17	Formulation And Evaluation Of Ondansetron Hcl Soft Logenzes By Using Natural Sweetner	T.Sravani	Pharmaceuitics	Journal of Interdisciplinary Cycle Research	0022-1945
18	Formulation And Evaluation Of Ondansetron Hcl Soft Logenzes By Using Natural Sweetner	A.Lakshmana Rao	Pharmaceuitical chemisrty	Journal of Interdisciplinary Cycle Research	0022-1945
19	Simultaneous Estimation Of Metformin Hydrochloride And Glimepiride In Bulk And Tablet Dosage Form By Uv Spectrophotometry	K.Parimala	Pharmaceutical analysis	Journal of interdisciplinary cycle research	0022-1945
20	Simultaneous Estimation Of Metformin Hydrochloride And Glimepiride In Bulk And Tablet Dosage Form By Uv Spectrophotometry	A.Lakshmana Rao	Pharmaceuitical chemisrty	Journal of interdisciplinary cycle research	0022-1945
21	Stability Indicating RP-HPLC Method For Simultaneous Estimation Of Pitavastatin And Ezetimibe In Pure And Tablet Form	A.Lakshmana Rao	Pharmaceuitical chemisrty	Journal of interdisciplinary cycle research	0022-1945
22	Pharmaceutical Waste Management	Sk.Aminabee	Pharmacology	Journal of interdisciplinary cycle research	0022-1945

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23	Pharmaceutical Waste Management	A.Lakshmana Rao	Pharmaceuitical chemisrty	Journal of interdisciplinary cycle research	0022-1945
24	Advance of pharmacology due to intervention of 3D human organs	Sk.Aminabee	Pharmacology	Journal of interdisciplinary cycle research	0022-1945
25	Advance of pharmacology due to intervention of 3D human organs	A.Lakshmana Rao	Pharmaceuitical chemisrty	Journal of interdisciplinary cycle research	0022-1945
26	Stability-Indicating Rp-Hplc Method For Simultaneous Estimation Of Sofosbuvir, Velpatasvir, And Voxilaprevir In Bulk And Tablet Dosage Forms	A.Lakshmana Rao	Pharmaceuitical chemisrty	Journal of interdisciplinary cycle research	0022-1945
27	Comparative Study of Anti-arthritic Activity of ethanol Extract of Myxopyrum smilacifolium B. and of Pamburus missionis S	P. Raveesha	Pharmacognosy	Journal of interdisciplinary cycle research	0022-1945
28	Comparative Study of Anti-arthritic Activity of ethanol Extract of Myxopyrum smilacifolium B. and of Pamburus missionis S	A.Lakshmana Rao	Pharmaceuitical chemisrty	Journal of interdisciplinary cycle research	0022-1945
29	Antioxidant Activity of Ethanolic Leaf Extract of *Pamburus missionis* Swingle	P.Raveesha	Pharmacognosy	Journal of Interdisciplinary Cycle Research	0022-1945
30	Antioxidant Activity of Ethanolic Leaf Extract of	A.Lakshmana Rao	Pharmaceutical Chemistry	Journal of Interdisciplinary Cycle Research	0022-1945

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	Pamburus missionis Swingle.				
31	Evaluation of *In-Vitro*&*In-Vivo* Anticoagulant Activity of *Blumea Balsamifera* Leaves.	Sk.Aminabee	Pharmacology	Journal of Interdisciplinary Cycle Research	0022-1945
32	Evaluation of *In-Vitro*&*In-Vivo* Anticoagulant Activity of *Blumea Balsamifera* Leaves.	Dr A Lakshmana Rao	Pharmaceutical Chemistry	Journal of Interdisciplinary Cycle Research	0022-1945
33	Phytochemical and *In-Vitro* Evaluation of Anti-oxidant Activity of *Mansoa alliacea* Leaves	Sk.Aminabee	Pharmacology	Acta Scientific Pharmaceutical Sciences.	2581-5423
34	Phytochemical and *In-Vitro* Evaluation of Anti-oxidant Activity of *Mansoa alliacea* Leaves	Dr A Lakshmana Rao	Pharmaceutical Chemistry	Acta Scientific Pharmaceutical Sciences.	2581-5423
35	Anthelmintic Activity of *Mansoa alliacea* against *Pheretima posthuma*: *In vitro* and *In silico* Approach. *Thai Journal of Pharmaceutical Sciences*.	Sk.Aminabee	Pharmacology	Thai Journal of Pharmaceutical Sciences.	1905-4637
36	Anthelmintic Activity of *Mansoa alliacea* against *Pheretima posthuma*: *In vitro* and *In silico* Approach. *Thai Journal of Pharmaceutical Sciences*.	Dr A Lakshmana Rao	Pharmaceutical Chemistry	Thai Journal of Pharmaceutical Sciences.	1905-4637

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37	*In-silico* Strategies of Some Selected Phytoconstituents from Zingiber officinale as SARS CoV-2 Main Protease (COVID-19) Inhibitos.	Dr A Lakshmana Rao	Pharmaceutical Chemistry	Indian Journal of Pharmaceutical Education and Research	0019-5464
38	*In silico* Identification of Potential Inhibitors from *CInnamon* against Main Protease and Spike Glycoprotein of SARS CoV-2.	Dr A Lakshmana Rao	Pharmaceutical Chemistry	Journal of Biomolecular Structure and Dynamics	1538-0254
39	Isolation of Antibiotic Producing Bacteria from Pond Soil, Gudlavalleru.	A.Lakshmana Rao	Pharmaceutical Chemistry	International Journal of Research in Ayush and Pharmaceutical Sciences.	2456-9909
40	Recent Advances in Cancer Therapy	A. Lakshmana Rao	Pharmaceutical Chemistry	International Journal of Life Science and Pharma Research	2250-0480
41	Recent Advances in Cancer Therapy	Shaik Aminabee	Pharmacology	International Journal of Life Science and Pharma Research	2250-0481
42	In silico Identification of Potential Inhibitors from CInnamon against Main Protease and Spike Glycoprotein of SARS CoV-2	A. Lakshmana Rao	Pharmaceutical Chemistry	Journal of Biomolecular Structure and Dynamics	1538-0254

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Design and Development of Chitosan Polycaprolactone Nanoparticles of Ritonavir

Swapna Velivela[1*], Nikunja Basini Pati[1], Ravindra Babu Baggi[1] & Lakshmana Rao Atmakuri[2]

Abstract: *Polymeric nanoparticles have been considered as promising drug delivery systems for variety of drugs like anticancer agents, biological macromolecules and vaccines. Various polymers have been used in the formulation of nanoparticles for drug delivery research to increase therapeutic benefit, while minimizing the side effects. Nanoparticles mediated targeting plays an important role in inhibiting inflammation, angiogenesis and tumor progression. Especially polymeric nanoparticles have greater deal that provides numerous properties such as simple to synthesize, inexpensive biocompatible, biodegradable, non-toxic, non-immunogenic and water soluble for an effective drug delivery and drug targeting. The main applications of nanotechnology in medicine are materials and devices for diagnosis and for drug delivery.*

The aim of this study is to formulate the Ritonavir loaded nanoparticles of polycaprolactone chitosan, cross linked with Tween 80 for antiretroviral therapy, in order to enhance the bioavailability and to reduce the dose frequency. Formulations of Ritonavir loaded nanoparticle were prepared by double emulsion solvent evaporation and solvent diffusion methods. Fourier transmission infrared spectroscopy studies indicated no chemical interaction between drug and polymer. In vitro release studies were performed by the dialysis membrane method. All the drug loaded batches were followed first order and sustained drug release over a period of 24 hrs.

Introduction

Nanoparticles are colloidal polymeric particles of sizes below 1cm with a therapeutic agent either disposed in a polymeric matrix or encapsulated in polymer[1-2]. The term polymeric particles have been used for this purpose such as poly(lactic acid), poly(glycolic acid), polycaprolactone, polysaccharides, proteins and polypeptides depending on the type of material or carrier used[3]. Polymeric nanoparticles offer a promising solution by encapsulation chemotherapy of drugs and have been shown to reduce toxicity by providing a protective housing for the drug that limits its interaction with healthy cells[4]. As a result the pharmacokinetic properties of the particles stay as long as the drug entrapped within the carrier until the release is desired. The potential benefits of such delivery devices include controlled and long term release rates; prolonged bioactivity, reduced side effects, increase patient compliance due to decreased administration frequency and the ability to codeliver multiple drugs with synergistic effects at the same site[5-7].

Most anti-viral drugs which are in use suffers drawbacks of frequent administration, short half-life, peak plasma concentration fluctuations, high first pass metabolism which leads to low patient compliance. There is always a need of development of controlled and sustained drug delivery systems with site specificity to achieve effective plasma concentration without significant plasma drug concentration fluctuations.

Ritonavir is a protease used as antiretroviral agent for the treatment of HIV-infection alone or in combination with other protease inhibitors[8]. Biological half-life of Ritonavir is 3-5 hours, leads to higher peak plasma concentration fluctuations in the form of conventional dosage form. Moreover it is primarily absorbed from stomach[9]. Preparation and evaluation of nanoparticles Ritonavir was done for improving the drug bioavailability by prolongation of gastric residence time.

[1]Pulla Reddy Institute of Pharmacy, Domadugu (V), Gummadidala (M), Sangareddy District, Telangana., [2]V. V. Institute of Pharmaceutical Sciences, Gudlavalleru (P & M), Krishna District, Andhra Pradesh. *Email: swapna.velivela@gmail.com*

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Review Article

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OBSESSIVE COMPULSIVE DISORDER AND ITS CARE-REVIEW

Shaik Aminabee*, Dasari Durga Jayashree and Atmakuri Lakshmana Rao

Department of Pharmacology, V. V. Institute of Pharmaceutical Sciences, Gudlavalleru, Andhra Pradesh, India.

ABSTRACT

Obsessive-compulsive disorder (OCD) features a pattern of unreasonable thoughts and fears (obsessions) that lead you to do repetitive behaviours (compulsions). These obsessions and compulsions interfere with daily activities and cause significant distress. You may try to ignore or stop your obsessions, but that only increases your distress and anxiety. Ultimately, you feel driven to perform compulsive acts to try to ease your stress. Despite efforts to ignore or get rid of bothersome thoughts or urges, they keep coming back. This leads to more ritualistic behaviour, the vicious cycle of OCD. OCD often centres on certain themes. To ease your contamination fears, you may compulsively wash your hands until they're sore and chapped. If you have OCD, you may be ashamed and embarrassed about the condition, but treatment can be effective.

Keywords: Obsessive compulsive disorder, Serotonin, Anti-depressant and Abnormal behaviour.

INTRODUCTION

If anyone who is constantly or repetitively involved in excessive, unreasonably behaviours like cleaning, hand washing or rearranging. Then that person is suffering from obsessive compulsive disorder (OCD). It is a psychiatric & chronic disorder characterized by obsessive thoughts and compulsive actions, such as cleaning, checking, counting, or hoarding. Obsessive compulsive disorder (OCD), one of the anxiety disorders. OCD occurs in a small percentage of populations worldwide in every culture. The individual who suffers from OCD pattern behaviour senseless and distressing but extremely difficult to overcome (Jenike, 2004). Often the person carries out the behaviours to get rid of the obsessive thoughts. But this only provides short-term relief. Not doing the obsessive rituals can cause great anxiety and distress. OCD is related to anxiety and intrusive thoughts (obsessions) that often result in repetitive behaviour (compulsions). Well many of us do suffer from mild form of this where we realize that our behaviours are little abnormal or stupid but these behaviours can be controlled voluntarily. Obsessions are persistent and recurrent thoughts that cause emotional distress, such as disgust or anxiety (Lysaker et al., 2000). Many OCD sufferers realize that their actions are unreasonable, but are unable to gain control through logic or reasoning.

Examples of obsessions include: Fear of contamination or germs, an irrational need for symmetry or order and aggressive thoughts about oneself or others.

Compulsions are mental urges to repeat certain behaviours to reduce or prevent a feared situation. In the most severe cases, this ritualistic repetitive behaviour may fill the day, making it impossible to perform other routines (Kessler et al., 2005). Examples of compulsions include: Excessive hand washing or cleaning and arranging and rearranging objects in a specific way etc.

These behaviours generally are intended to ward off harm to the person with OCD or others. Some people with OCD have regimented rituals while others have rituals that are complex and changing. Performing rituals may give the person with OCD some relief from anxiety, but it is only temporary. The old belief that OCD was the result of life experiences has been weakened by the growing evidence that biological factors are a primary contributor to the disorder. The fact that OCD patients respond well to specific medications that affect the neurotransmitter serotonin suggests he disorder has a neurobiological basis. This OCD can also have seen in teen (Angst et al., 2005). Actually, the

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(RESEARCH ARTICLE)

Simultaneous estimation of naltrexone and bupropion in pharmaceutical dosage form by using UV spectroscopy

Sai datri A *, Lakshmana rao A , Ramnadh B , Valli devi B , Dhana lakshmi CH and Vikas CH

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Publication history: Received on 14 January 2020; revised on 28 January 2020; accepted on 29 January 2020

Article DOI: https://doi.org/10.30574/wjbphs.2020.1.1.0005

Abstract

A sensitive and validated method has been developed for simultaneous estimation of Naltrexone and Bupropion in pharmaceutical dosage form by using UV Spectroscopy, without prior separation, by four different techniques (Simultaneous Equation, Absorbance Ratio method, Dual Wavelength Method and Derivative Spectroscopic Method). The work was carried out on Shimadzu electron UV1800 double beam UV-Visible spectrophotometer. The absorption spectra of reference and test solutions were carried out in 1 cm matched quartz cell over the range of 200 - 400 nm. The linearity ranges for Naltrexone and Bupropion were 2-10 µg/ml. The results of the analysis have been validated statistically and by recovery studies. The proposed procedures are rapid, simple, require no preliminary separation steps and can be used for routine analysis of both drugs in quality control laboratories.

Keywords: Naltrexone; Bupropion; UV spectroscopy; Validation

1. Introduction

Chemically, Naltrexone (Figure 1) is (1S,5R,13R,17S)-4-(*cyclopropylmethyl*)-10,17-*dihydroxy*-12-oxa-4-aza *pentacycl* [9.6.1.$0^{1,13}$.$0^{5,17}$.$0^{7,18}$]*octadeca*-7(18),8,10-trien-14-one [1]. It is a derivative of noroxymorphone that is the N-cyclopropylmethyl congener of Naloxone. It is a narcotic antagonist that has been proposed for the treatment of heroin addiction. The FDA has approved Naltrexone for the treatment of alcohol dependence.

Chemically, Bupropion (Figure 1) is 2-(*tert-butylamino*)-1-(3-chlorophenyl) *propan*-1-one [2]. It is a norepinephrine/dopamine-reuptake inhibitor. It is used most commonly for the management of Major Depressive Disorder, Seasonal Affective Disorder and as an aid for smoking cessation. Thus, the two drugs have effects on two separate areas of the brain involved in the regulation of food intake: the hypothalamus (appetite regulatory center) and the mesolimbic dopamine circuit (reward system) and combinational intake of these two medicines helps in chronic weight management [3].

Literature survey reveals that some Spectrophotometric [5] and HPLC [4-8] methods have been reported for the estimation of Naltrexone and Bupropion in pharmaceutical formulations.

The aim of this paper was to explore the possibility of using techniques of simultaneous equation method, dual wavelength method, isosbestic point method and derivative spectroscopic method for quantifying Naltrexone and Bupropion simultaneously in their mixture forms. The proposed methods are simple, convenient, precise, accurate, and economical than the reported method and validated as per ICH guidelines [7].

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(RESEARCH ARTICLE)

Simultaneous estimation of naltrexone and bupropion in pharmaceutical dosage form by using UV spectroscopy

Sai datri A *, Lakshmana rao A , Ramnadh B , Valli devi B , Dhana lakshmi CH and Vikas CH

Department of Pharmaceutical Analysis, V. V. Institute of Pharmaceutical Sciences, Gudlavalleru, A.P., India.

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Keywords: Naltrexone; Bupropion; UV spectroscopy; Validation

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Chemically, Bupropion (Figure 1) is 2-(*tert-butylamino*)-1-(3-chlorophenyl) *propan*-1-one [2]. It is a norepinephrine/dopamine-reuptake inhibitor. It is used most commonly for the management of Major Depressive Disorder, Seasonal Affective Disorder and as an aid for smoking cessation. Thus, the two drugs have effects on two separate areas of the brain involved in the regulation of food intake: the hypothalamus (appetite regulatory center) and the mesolimbic dopamine circuit (reward system) and combinational intake of these two medicines helps in chronic weight management [3].

Literature survey reveals that some Spectrophotometric [5] and HPLC [4-8] methods have been reported for the estimation of Naltrexone and Bupropion in pharmaceutical formulations.

The aim of this paper was to explore the possibility of using techniques of simultaneous equation method, dual wavelength method, isosbestic point method and derivative spectroscopic method for quantifying Naltrexone and Bupropion simultaneously in their mixture forms. The proposed methods are simple, convenient, precise, accurate, and economical than the reported method and validated as per ICH guidelines [7].

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Original Article

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Synthesis and Insilico Characterization of Some Novel 3,4 -Dihydropyrimidin -2-(1h)-Thione Derivatives

B Satya Sree[1], A Lakshmana Rao[2], B Smiley[3], BC Lakshmanjee[4], G Rajesh[5], K Bhargavi[6]

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Abstract

Various novel 3,4-dihydropyrimidin-2-(1H)-thione derivatives were prepared by using substituted benzaldehydes, ethylacetoacetate and thiourea in the presence of ammonium molybdate and acetic acid at a temperature of 80-90°C to give corresponding titled compounds in good yields. The synthesized compounds were characterized by physical properties and spectral studies (IR, 1H-NMR) and for all the titled compounds physical data like LogP values and biological properties were predicted by using molinspiration soft ware.

Keywords: Substituted benzaldehydes, ethylacetoacetate, thiourea, ammonium molybdate and acetic acid.

Introduction

Heterocyclic systems possessing pyrimidine moiety exhibit a number of interesting biological activities such as antiviral, antimicrobial[1,2] anti-fungal,[3] anti-inflammatory, analgesic[4] diuretic and anticonvulsant activities. It is also evident from the literature that dihydropyrimidinones are equally important in terms of pharmacological activities such as calcium channel blockers[5] antifungal and antihypertensive agent.[6] Racemic dihydropyrimidinone is reported to be an allosteric inhibitor of human kinesin and unlike taxanes, it is nontoxic to neuron cells.[7]

Therefore, it seems promising to synthesize some new substituted 3,4-dihydropyrimidin-2-(1H)-thiones using compounds like urea, ethylacetoacetate and aromatic aldehydes like tolualdehyde, benzaldehyde, etc. We present here our results on the design of newly substituted 3,4-dihydropyrimidin-2-(1H)-thiones emphasizing in particular the presence of aromatic nucleus at the 4th position of 3,4-dihydropyrimidine ring with benzaldehyde, 4-methylbenzaldehyde, 4-hydroxybenzaldehyde, 4-methoxybenzaldehyde and 4-flourobenzaldehyde.

Aim and objectives:

- ✓ The heterocyclic derivatives possess a wide range of biological properties and they act as anthelmintic, antitumor, analgesic, anticancer, antiinflammatory, antibacterial and antifungal activity.
- ✓ Our aim is to synthesize the title compounds viz. 5-ethoxycarbonyl-6-methyl-4-phenyl-3,4-dihydropyrimidin-2(1H)-thione derivatives, by following the scheme mentioned in the experimental part.
- ✓ To characterize all the synthesized compounds by physical (Molecular weight, Molecular formula, Melting point, Recrystallization, Rf value) and spectral data.

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- ✓ To characterize all the synthesized compounds by physical (Molecular weight, Molecular formula, Melting point, Recrystallization, Rf value) and spectral data.

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ORIGINAL ARTICLE

In Vivo Antioxidant Activity of Different Fractions of *Indigofera Barberi* Against Paracetamol-induced Toxicity in Rats

Sıçanlarda Parasetamol ile İndüklenen Toksisiteye Karşı *Indigofera Barberi*'nin Farklı Fraksiyonlarının *İn Vivo* Antioksidan Aktivitesi

Shaik AMINABEE[1]*, Atmakuri Lakshmana RAO[1], Maram Chinna ESWARAIAH[2]

[1]V. V. Institute of Pharmaceutical Sciences, Department of Pharmacology, Gudlavalleru, India
[2]Anurag College of Pharmacy, Department of Pharmacognosy, Kodad, India

ABSTRACT

Objectives: To evaluate the *in vivo* antioxidant activity of chloroform extract fractions of *Indigofera barberi* (whole plant) against paracetamol-induced toxicity in rats.

Materials and Methods: For 7 days, rats were treated with different chloroform extract fractions and toxicity was induced with a single dose of paracetamol by intraperitoneal injection. The group of animals pretreated with 100 mg/kg p.o of fraction D of *Indigofera barberi* improved significantly in terms of hepatic superoxide dismutase (SOD), catalase and peroxidase activities, and glutathione levels compared to the control group.

Results: The hepatic SOD, catalase, peroxidase activities, and glutathione levels in the animal groups treated with paracetamol were 33.6±0.09 µ/mg protein, 5.5±0.23 µ/mg protein, 0.131±0.15 µ/mL, and 46.1±5.81 µM, respectively. Hepatic SOD, catalase, peroxidase, and glutathione in the fraction D treated group were 61.8±0.07 µ/mg protein, 10.6±0.16 µ/mg protein, 0.913±0.23 µ/mL, and 87.6±1.4 micro molar, respectively. Therefore, the present study revealed that fraction D of *Indigofera barberi* has significant in vivo antioxidant activity and can be used to protect tissue from oxidative stress.

Conclusion: From the results, fraction D of *Indigofera barberi* at a dose of 100 mg/kg, p.o., improved the SOD, catalase and peroxidase activities, and glutathione levels significantly. Based on this study, we can conclude that fraction D of *Indigofera barberi* possesses *in vivo* antioxidant activity and can be employed in protecting tissue from oxidative stress.

Key words: *Indigofera barberi*, paracetamol, silymarin, radical scavenging

ÖZ

Amaç: Sıçanlarda parasetamol ile indüklenen toksisiteye karşı *Indigofera barberi*'nin (tüm bitki) kloroform ekstre fraksiyonlarının *in vivo* antioksidan aktivitesinin belirlenmesi.

Gereç ve Yöntemler: Yedi gün boyunca sıçanlara farklı kloroform ekstrakları uygulanmıştır ve toksisite intraperitoneal tek doz parasetamol uygulaması ile indüklenmiştir. 100 mg/kg p.o. fraksiyon D ile ön uygulaması alan hayvanlar hepatik süperoksit dismutaz (SOD), katalaz ve peroksidaz aktiviteleri ve glutatyon düzeyleri açısından kontrol grubuna göre belirgin bir şekilde iyileşmişlerdir.

Bulgular: Parasetamol uygulanan grupta hepatik SOD, katalaz, ve peroksidaz aktiviteleri ve glutatyon düzeyleri sırasıyla 33,6±0,09 µ/mg protein, 5,5±0,23 µ/mg protein, 0,131±0,15 µ/mg protein ve 46,1±5,81 µM olarak bulunmuştur. Fraksiyon D uygulanan grupta hepatik SOD, katalaz ve peroksidaz aktiviteleri ve glutatyon düzeyleri sırasıyla 61,8±0,07 U/mg protein, 10,6±0,16 µ/mg protein, 0,913±0,23 µ/mg protein ve 87,6±1,4 µM bulunmuştur. Bu nedenle, bu çalışma *Indigofera barberi*'de elde edilen fraksiyon D'nin belirgin bir *in vivo* antioksidan aktivitesi olduğunu ortaya koymuştur ve dokuyu oksidatif stresten korumak için kullanılabilir.

Sonuç: Bu sonuçlar, 100 mg/kg, p.o. dozda *Indigofera barberi*'den elde edilen fraksiyon D, SOD, atalaz ve peroksidaz aktiviteleri ve glutatyon düzeylerini belirgin bir şekilde düzeltmiştir. Bu çalışmaya dayanarak, *Indigofera barberi*'den elde edilen fraksiyon D'nin *in vivo* antioksidan aktivitesinin olduğu sonucuna varabiliriz ve dokuyu oksidatif stresten korumak için kullanılabileceği söylenebilir.

Anahtar kelimeler: *Indigofera barberi*, parasetamol, silimarin, radikal süpürücü

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Conclusion: From the results, fraction D of *Indigofera barberi* at a dose of 100 mg/kg, p.o., improved the SOD, catalase and peroxidase activities, and glutathione levels significantly. Based on this study, we can conclude that fraction D of *Indigofera barberi* possesses *in vivo* antioxidant activity and can be employed in protecting tissue from oxidative stress.

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Sonuç: Bu sonuçlar, 100 mg/kg, p.o. dozda *Indigofera barberi*'den elde edilen fraksiyon D, SOD, atalaz ve peroksidaz aktiviteleri ve glutatyon düzeylerini belirgin bir şekilde düzeltmiştir. Bu çalışmaya dayanarak, *Indigofera barberi*'den elde edilen fraksiyon D'nin *in vivo* antioksidan aktivitesinin olduğu sonucuna varabiliriz ve dokuyu oksidatif stresten korumak için kullanılabileceği söylenebilir.

Anahtar kelimeler: *Indigofera barberi*, parasetamol, silimarin, radikal süpürücü

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ORIGINAL ARTICLE

Development and Validation of a Stability Indicating RP-HPLC Method for Simultaneous Estimation of Teneligliptin and Metformin

Teneligliptin ve Metformin Eş Zamanlı Tahmininde RP-HPLC Yöntemini Gösteren Stabilitenin Gelişimi ve Doğrulanması

Rajani VETAPALEM[1]*, Rajendra Prasad YEJELLA[2], Lakshmana Rao ATMAKURI[3]

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[3]Vallabhaneni Venkatadri Institute of Pharmaceutical Sciences, Department of Pharmaceutical Analysis, Gudlavalleru, India

ABSTRACT

Objectives: The main objective of the present work is to develop a simple, precise, specific and stability method indicating reverse phase high performance liquid chromatography method for simultaneous estimation of teneligliptin and metformin in bulk and tablet dosage form.

Materials and Methods: The analysis was performed with a Kromasil C18 column (250×4.6 mm, 5 µm) at 30°C using buffer: acetonitrile: methanol (65:25:10, v/v/v) as mobile phase. The detection was carried out with a flow rate of 1.0 mL/min at 254 nm.

Results: The retention time of teneligliptin and metformin was 2.842 min and 2.017 min, respectively. The linearity range was 5-30 µg/mL for teneligliptin and 125-750 µg/mL for metformin. The forced degradation studies were performed as per the guidelines of the The International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use under acidic, alkaline, oxidative, thermal, photostability, and neutral conditions.

Conclusion: This method was successfully validated for all the parameters and could detect the the correct amounts of active drug substance in formulations that are available in the market. This developed method in the present study could be successfully employed for the simultaneous estimation of teneligliptin and metformin in bulk and tablet dosage form.

Key words: Teneligliptin, metformin, RP-HPLC, validation, stability studies

ÖZ

Amaç: Bu çalışmanın temel amacı, teneligliptin ve metformini bulk ve tablet dozaj formunda eş zamanlı belirlemek için kolay, kesin, özgün ve kararlı bir ters faz yüksek performanslı sıvı kromatografisi yöntemi geliştirmektir.

Gereç ve Yöntemler: Analiz, hareketli faz olarak tampon: asetonitril: metanol (65:25:10, h/h/h) kullanılarak 30°C'de Kromasil C18 kolonu (250×4,6 mm, 5 µm) kullanılarak gerçekleştirilmiştir. Saptama 1,0 mL/dak akış hızında 254 nm'de gerçekleştirilmiştir.

Bulgular: Teneligliptin ve metformin alıkonma süresi sırasıyla 2,842 dk ve 2,017 dk olarak bulunmuştur. Doğrusallık aralığı, teneligliptin için 5-30 µg/mL ve metformin için 125-750 µg/mL'dir. Zorunlu bozunma çalışmaları asit, alkali, oksidatif, termal, fotostabilite ve nötr koşullar altında Beşeri İlaçlar için Teknik Gereksinimlerin Uyumlaştırılması Uluslararası Konseyi'nin kılavuzlarına göre yapılmıştır.

Sonuç: Bu yöntemdeki tüm parametreler başarıyla doğrulanmıştır ve yöntem piyasadaki formülasyonlardaki etkin maddelerin doğru miktarlarını belirleyebilir bulunmuştur. Bu çalışmada geliştirilen yöntem, teneligliptin ve metforminin hammadde ve tablet dozaj formunda eş zamanlı tahmini için başarıyla kullanılabilir.

Anahtar kelimeler: Teneligliptin, metformin, RP-HPLC, validasyon, stabilite çalışmaları

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Original Article

In vitro Anthelmintic Impact of Various Extracts of *Pavetta tomentosa* Root on *Pheretima posthuma* and *in-silico* Molecular Docking Evaluation of some Isolated Phytoconstituents

Dintakurthi Sree Naga Bala Krishna Prasanth[1,*], Siva Prasad Panda[2], Atmakuri Lakshmana Rao[3], Nayudu Teja[4], Veenam Bhavya Naga Vani[3], Tera Sandhya[5], Pathange Bharghava Bhushan Rao[4]

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ABSTRACT

Background: The current study assesses the anthelmintic impact of root extracts of *Pavetta tomentosa* on *Pheretima posthuma* compiled by molecular docking analysis of phytocompounds steemed from the plant with the β-Tubulin (PDB ID: 1SA0). **Methods:** In this study, *P. tomentosa* root was subjected to extraction using methanol and water. *In vitro,* anthelmintic activity was assessed by utilizing the *Pheretima posthuma* and *in silico* molecular docking was executed making use of Autodock 4.0. **Results:** The outcomes revealed that the methanolic extract has the most significant dose-dependent anthelmintic activity at various doses, followed by aqueous extracts of root. Amongst all the substances, β-eudesmol revealed the most effective docking rating of -6.53, which is nearer to Albendazole, i.e., -6.79, ensuring that β-eudesmol has a strong binding fondness in between protein and ligand. **Conclusion:** From the examinations, a conclusion can be drawn that the anthelmintic activity of *P. tomentosa* root in both *in vitro* and *insilico* assays. The information sustains β-eudesmol to be a useful anthelmintic compound beneficial to future clinical examinations.

Key words: *In-silico*, Autodock 4.0, *Pavetta tomentosa,* β-eudesmol, Albendazole, ADME/T.

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INTRODUCTION

Considering that the beginning of the human world, alternative medicine with healing has been made use of in the therapy of numerous disorders.[1] According to the WHO, eighty percentile of the populace of a few Asian countries rely on conventional medicine in their day-to-day elements of healthcare.[2] About twenty-five percentile of the arbitrary drugs consist of plant-derived components and also about 120 active constituents are presently made use of in pharmaceutical products.[3]

The last fifty years of research study has offered a couple of medications made use of to treat human helminthiases infection; nevertheless, in lasting usage, lots of parasites are revealing resistance to these medications. The factor given for the reduced activity can be either due to the heritable changes (epigenetic or genetic) lack of ability of anthelmintic versus a populace of parasites or decrease in time to which medical therapy uses its impact. The usage of the plant can play an essential function in antihelmintic drug-target recognition.[4,5]

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Original Article

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INTRODUCTION

Considering that the beginning of the human world, alternative medicine with healing has been made use of in the therapy of numerous disorders.[1] According to the WHO, eighty percentile of the populace of a few Asian countries rely on conventional medicine in their day-to-day elements of healthcare.[2] About twenty-five percentile of the arbitrary drugs consist of plant-derived components and also about 120 active constituents are presently made use of in pharmaceutical products.[3]

The last fifty years of research study has offered a couple of medications made use of to treat human helminthiases infection; nevertheless, in lasting usage, lots of parasites are revealing resistance to these medications. The factor given for the reduced activity can be either due to the heritable changes (epigenetic or genetic) lack of ability of anthelmintic versus a populace of parasites or decrease in time to which medical therapy uses its impact. The usage of the plant can play an essential function in antihelmintic drug-target recognition.[4,5]

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Journal of Global Trends in Pharmaceutical Sciences

PHARMACOGNOSTICAL STUDY AND PRELIMINARY PHYTOCHEMICAL INVESTIGATION OF *DECHASCHISTIA CROTONIFOLIA WIGHT & ARN.*

Raveesha Peeriga *, Atmakuri Lakshmana Rao, G. Ooha Deepika, G. Divya, Ch. Monika, G. Bhargavi

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ARTICLE INFO

Key Words

Dechaschistia crotonifolia Wight & Arn., flavonoids, Libriform, Stellate Trichomes.

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ABSTRACT

Dechaschistia crotonifolia Wight & Arn. (Ebaenaceae) is commonly grown in the deciduous forests of penincular India. The name *Dechaschistia* is derived from Greek word "deka" meaning ten and "schistos" meaning cleft as it consists of 10 celled locucidal capsule Genus. The current study is to evaluate pharmacognostical aspects and preliminary analysis of chemical constituents along with physical parameters findings of stem and root of *Dechaschistia Crotonifolia Wight & Arn.* to establish the standardization of this particular plant. Pharmacognostical examination was carried out in terms of macroscopical and microscopical aspects. Preliminary phytochemical investigation was carried over for the presence of primary and secondary metabolites and physical parameters were also evaluated viz., Ash values, extractive values, foreign organic matter, crude fibre content etc., The structural features of stem and root of *Dechaschistia crotonifolia Wight & Arn.* were figured out. The preliminary phytochemical examination revealed the presence of flavonoids, steroids and other inorganic compounds. The physical parameters were examined like ash values (6.4%), Acid insoluble ash (1.5%), water soluble ash (3.2%), moisture content (8.1%) and crude fibre content (3.4%). The pharmacognostical findings of *Dechaschistia Crotonifolia Wight & Arn.* helps to pursue the research in the way of ethanobotanical aspects and phytochemical study helps to ensure the quality and minimizes the adulteration the crude drug.

INTRODUCTION

Plant materials remain an important component in combating serious diseases in the world; for the therapeutic approach to several pathologies. Interest in medicinal plants has been overwhelming in the recent times especially as an important source of medication/health care. By 2000, World Health Organization had assessed that 80% of inhabitants of the world were estimated who were only relies on traditional medicines for the needs of primary health care and it also presumed that the major portion of traditional Healing involves by utilizing the extracts or active constituents of plants [1]. The Trinorcadalenes, parviflorals A and B (1 and 2), and four bis-trinorcadalenes, parviflorals C–F (3–6), together with the known trinorcadalenes, syriacusins, scopoletin and stigmasterol were isolated from roots of Decaschistia parviflora . Their structures were established by spectroscopic techniques and further their structures were confirmed by a single-crystal X-ray crystallographic analysis [2].

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Research Article

SYNTHESIS AND ANTIBACTERIAL ACTIVITY OF MANNICH BASES CONTAINING MORPHOLINE MOIETY

D.Alekhya*, A.Lakshmana Rao, D.Prasanth, D.V.S.Girija Sowmya, Ch.Vijaya Lakshmi, Ch. Raja

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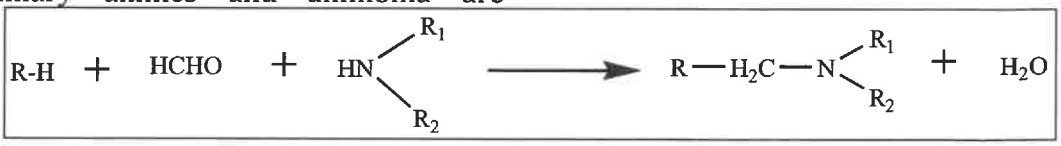
Keywords: 4-nitro acetophenone, substituted benzaldehydes, morpholine, mannich reaction, in vitro antibacterial activity.

ABSTRACT

A variety of morpholine derivatives as mannich bases were prepared through mannich reaction by reacting 4-nitro acetophenone as compound containing active hydrogen, substituted benzaldehyde and morpholine as secondary amine compound. All the synthesized compounds structures were characterized by physical analysis data and spectral analysis data (IR and ^{1}H-NMR spectral analysis). The newly synthesized compounds were evaluated for their antibacterial activity against *Staphylococcus aureus, Bacillus subtilis, Escherichia coli and Pseudomonas aeruginosa* in comparision with standard drug Streptomycin. However the antibacterial activity of the synthesized compounds against the tested organisms was found to possess good to moderate activity.

INTRODUCTION

The mannich reaction is an example of nucleophilic addition of an amine to a carbonyl group followed by dehydration to the schiff base. The mannich reaction is also considered as a condensation reaction. In the mannich reaction, primary or secondary amines or ammonia, are employed for the activation of formaldehyde. The mannich reaction is a three component condensation reaction in which a compound containing an active hydrogen atom is allowed to react with formaldehyde and an amine derivative. Secondary amines rather than primary amines and ammonia are employed; the resulting product (mannich base) is an amine compound having the N atom linked to the R substrate through a methylene group. The mannich reaction can be presented by the following reaction. The essential feature of the reaction is the replacement of the active hydrogen atom by an aminomethyl or substituted aminomethyl group. The R-H moiety symbolizes the active hydrogen component which includes ketones, aldehydes, acids, esters, phenols, acetylenes, α-picolines, nitroalkanes and quinolines.



Mannich bases have gained importance due to their application in antibacterial activity[1,2] and other applications are in agro chemicals such as plant growth regulators[3]. Moreover N-bridged heterocyclic derivatives show important antibacterial activity[4]. The aminoalkylation of aromatic substrates by the Mannich reaction is of considerable importance for the synthesis and modification of biologically active compounds[5]. Mannich bases have several biological activities such as antimicrobial[6] and anticancer[7]. Morpholine derivatives were

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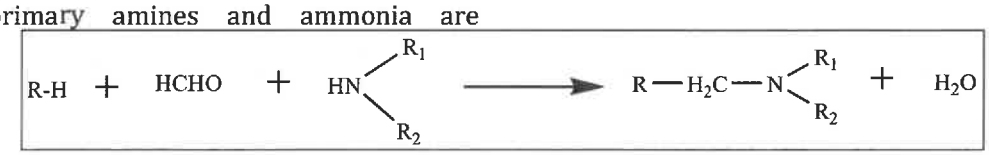

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FORMULATION AND EVALUATION OF ONDANSETRON HCl SOFT LOGENZES BY USING NATURAL SWEETNER

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1Department of Pharmaceutics, V. V. Institute of Pharmaceutical Sciences, Gudlavalleru, Andhra Pradesh, India.

Abstract:

In the present investigation an attempt was made to formulate the medicated lozenges of ondansetron hydrochloride. Ondansetron hydrochloride was used to treat chemotherapy induced nausea and vomiting. Although several formulations were available in the market, still there is a need of more variant dosage forms which acts more effectively. The benefits of the present work are to increase oral bioavailability of the drug by increasing the retention time of dosage form. The lozenges were prepared by heating and congealing method by employing poly ethylene glycol 1500 as matrix base, stevia (natural sweetner), xanthan gum (polymer), sodium carboxy methyl cellulose (polymer), hydroxy propyl methyl cellulose K100M (polymer) along with other excipients. The prepared medicated lozenges were characterized for drug content uniformity, hardness, weight variation, thickness, friability, *in-vitro* disintegration and dissolution by pharmaceutical standard methods. Accelerated stability studies were conducted as per ICH guidelines, it was found that there wasn't any substantial interaction between the drug and excipients. Formulation was tested for drug excipient interaction by subjecting to IR spectral analysis. Accelerated stability studies were carried out as per ICH guidelines for some selected formulations, which indicated that these formulations were stable at accelerated storage conditions.

Keywords: Lozenges, Ondansetron HCl, Antiemetic, Stevia, Chemotherapy.

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SIMULTANEOUS ESTIMATION OF METFORMIN HYDROCHLORIDE AND GLIMEPIRIDE IN BULK AND TABLET DOSAGE FORM BY UV SPECTROPHOTOMETRY

K. Parimala[1]*, A. Lakshmana Rao[2], K. Navya[3], K. Sai prasanna[4], K.. Jony Susanna[5] & K. Sravani[6]

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Abstract:

A simple, accurate, rapid and precise UV Spectrophotometric method has been developed using 0.1N sodium hydroxide as a solvent for the simultaneous estimation of Metformin Hydrochloride (MET) and Glimepiride (GMP) in pharmaceutical dosage form. Metformin hydrochloride exhibits absorption maximum at 231 nm and Glimepiride shows absorption maximum at 227 nm. The Linearity was observed in the concentration range of 2-10 µg/ml for MET and GMP. The precision of method was determined by performing intra-day and inter-day study. The accuracy of method was confirmed by recovery studies. The analytical method was validated for various parameters as per ICH guidelines. The proposed method was found to be simple and can be used for the routine analysis for estimation of MET and GMP in bulk and tablet dosage forms.

Key words: Metformin Hydrochloride, Glimepiride, UV Spectrophotometry, Estimation, Dosage form

INTRODUCTION

Metformin hydrochloride (Fig. 1) is chemically N,N-dimethyl-imidodicarbonimidic diamide, monohydrochloride. It is an oral anti hyperglycemic agent, indicated for the treatment of type-2 diabetes, polycystic ovarian syndrome. Metformin decreases blood glucose levels by decreasing hepatic glucose production, decreasing intestinal absorption of glucose, and improving insulin sensitivity by increasing peripheral glucose uptake and utilization. These effects are mediated by the initial activation by Metformin of AMP-activated protein kinase (AMPK), a liver enzyme that plays an important role in insulin signaling, whole body energy balance, and the metabolism of glucose and fats. Activation of AMPK is required for Metformin's inhibitory effect on the production of glucose by liver cells.

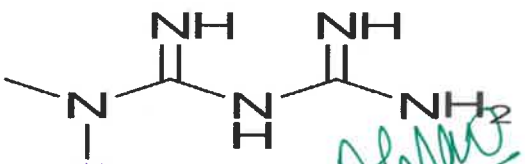

Fig. 1: Molecular Structure of Metformin

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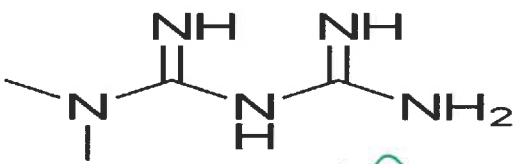

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Stability Indicating RP-HPLC Method for Simultaneous Estimation of Pitavastatin and Ezetimibe in Pure and Tablet Form.

Sharmila Donepudi[1]*, Sai Vani M S Pachigolla[2], Lakshmana Rao Atmakuri[3]

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Abstract:

Hyperlipidemia is one of the clinical conditions mainly associated with coronary heart disease.Use of Statins in combination with Ezetimibe proven to give better results in treatment of said conditions. The present work aims to develop a simple accurate and sensitive stability indicating method for estimation of Pitavastatin and Ezetimibe in pharmaceutical dosage form.The separation was achieved by using X-Bridge Phenyl (150×3.5µ, 4.6mm) column with a mobile phase consisting of 0.1% Formic acid and Methanol (30:70). The separation was monitored for 8min at 250nm using 1ml/min flow rate.The developed method was validated as per ICH Q2 (R1) guidelines. The method was linear over a concentration rangeof 1 to 15ppm and 5 to 75ppmfor Pitavastatin and Ezetimibe respectively and correlation coefficient was found to be 0.999 for the drugs.HPLC method developed for estimation of selected drugs in pure and have shown satisfactory, accurate and reproducible results (without any interference of recipients) as well, it is deduced that the

PHARMACEUTICAL WASTE MANAGEMENT

Sk. Aminabee[1], A. Lakshmana Rao[2], Alimunnisa[3], Shabana Begum[4], V.Bhavya Naga Vani[5], Abdul Shakira[6], Joshi[7].

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[6,7]Department of Pharmacy, V.V.Institute of Pharmaceutical Sciences, Guldavalleru.

ABSRACT: Pharmaceutical waste is any waste that contains medicinal drugs that are expired, unused, contaminated damaged or no longer needed and need to be disposed appropriately. Pharmaceutical waste management is essential in order to protect the humans and environment from the hazardous compounds. We need to find out the sources of these wastes and proper implementation of disposal procedures is also essential. Various disposal procedures are available for different pharmaceuticals and implement proper methods of disposal for it complete removal. Proper regulation of household Pharmaceutical waste is also quite essential. All multidisciplinary stake holders, government, NGO's, physician, pharmacist, patient, and public should work together to reduce burden of unused and expired medicine on environment.

KEY WORDS: Pharmaceuticals, disposal, methods, expired, house hold, contamination, environment and humans.

I. INTRODUCTION:

Pharmaceutical waste is potentially generated thorough a wide variety of activities is a health care facility including expired, unused, split and contaminated pharmaceutical products, drugs, vaccines, and sera that are no longer required and need to be disposed appropriately. The category includes discarded items such as bottles or boxes with residues, syringes, gloves, masks, and drug vials [1].

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Advance of pharmacology due to intervention of 3D human organs

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Abstract

3D organ models have gained attention in preclinical testing systems and in the alternative to animal testing. 3D printing is new, rapid expanding in health care system and many other areas. The development of human organ models is still in its minor state. Although have major drawbacks such as expensive and controversy over predictive value of various human conditions. The number of animals used in research has increased with the advancement and expansion of research and development in medical sciences. The tenderness, grief and death experienced by the animals during experiments have been a debating issue for a long time. Besides the major concern of ethics, there are few more disadvantages of animal experimentation like requirement of skilled manpower, time consuming protocols and high cost. Apart from all alternatives available here we are focusing on 3D Printing Technology which can be found more promising in near future than others because of its incredible contribution. The aim of this review to focus usage of 3D Printing Technology in various medical technology field as alternative of animal testing, which is expanding enormously and expected to solve various ailments in near future.

Key Words: 3D organs, preclinical testing, animal models.

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Stability Indicating RP-HPLC Method for Simultaneous Estimation of Velpatasvir, Sofosbuvir and Voxilaprevir in Tablet Dosage Form

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Comparative Study of Anti-arthritic Activity of ethanol Extract of *Myxopyrum smilacifolium B.* and of *Pamburus missionis S.*

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[2]Professor, Krishna University, Krishna District, A.P., India.

Abstract:

Ethanolic extract of *Myxopyrum smilacifolium Blume* and *Pamburus missionis Swingle* were made investigated for anti-arthritic activity by using CFA induced arthritis model. The study was carried out for 28 days where the animals were treated with 200 and 400 mg/kg ethanolic extract of leaves of *Pamburus missionis and Myxopyrum smilacifolium* after inducing arthritis in rats by Freund's adjuvant. Further on 28th day the rats were subjected for the evaluation of inflammatory parameters like paw volume, paw thickness and Knee diameter. Blood was retracted from each animal of retro-orbital venous plexus of rats and it is collected into vial containing EDTA which is subjected for biochemical parameters. Treatment with ethanolic extract of Myxopyrum smilacifolium showed significant ($P<0.05$) report at a dose of 400mg/kg body weight showed most potent and significant activity than *Pamburus missionis* and it is evidenced by analyzing the inflammatory parameter and biochemical parameters. Hence the current study revealed that ethanolic extract of Myxopyrum smilacifolium possesses more prominent antiarthritic activity than *Pamburus missionis*.

Keywords *Pamburus missionis, Myxopyrum smilacifolium, anti-arthritic,Complete Freunds Adjuvant*

Introduction

Myxopyrum smilacifolium Blume is a woody twining shrub belongs to the family Oleaceae, grows tropical and subtropical regions of Eastern Asia. It was used traditionally for the treatment of rheumatism etc., *Pamburus missionis Swingle.* is a shrub belonging to the family Rutaceae, grows in southern India, traditionally used for the treatment of rheumatism and fractures. The current study was to investigate the anti-arthritic activity of ethanolic extracts of *Myxopyrum smilacifolium* B. and *Pamburus missionis S.*

Material and Methods

Plant material

The leaves of both *Myxopyrum smilacifolium Blume* and *Pamburus missionis Swingle* were procured from botanical garden, Kerala and Talakona hills, Tirupati respectively. Both the plants were authenticated by V. Chelladurai, Former Research officer. Central Council of Research in Ayurveda and Siddha, Government Siddha medical College, Tamil Nadu. India and Prof. K. Madhava Shetty, Department of Botany, Sri Venkateswara University, Tirupati. Andhra Pradesh. India.

Preparation of extract

Myxopyrum smilacifolium Blume and *Pamburus missionis Swingle* leaves were shade dried and extracted by soxhlet apparatus using ethanol for 72hours. Further the extract was concentrated by rotary evaporator.

Evaluation of anti-arthritic activity

Animal

Healthy albino rats (150–200 g) were used for the study and all the animals were acclimatized under standard husbandry conditions, i.e., room temperature 22 ± 2 ^{0}C, relative humidity 45-55% and light dark cycle 12:12 hours. The animals were fed with commercial pellet rat feed and water ad *libitum*. All the animal experiments were strictly compiled with ethical standards of animal handling and approved by Institutional Animal Ethics Commitee.

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Antioxidant Activity of Ethanolic Leaf Extract of Pamburus Missionis Swingle.

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Abstract

The medicinal plants are an important source for fighting various ailments. The objective of this work is to evaluate the ethanolic leaf extract of plant *Pamburus missionis*. The leaves were dried and extracted by hot percolation process by using ethanol. Quantitative estimation for ethanolic leaf extract was carried out for various constituents like alkaloids, tannins, glycoside, flavonoids and Terpenoids. The evaluation of the invitro antioxidant activity is subjected by three different methods viz., 1,1 – di phenyl-2-picryl hydrazyl (DPPH) Model, Nitric Oxide (NO) Model and Hydrogen peroxide (H_2O_2) scavenging activity and it shown ethanolic leaf extract of Pamburus missionis ELPM is the most active extract with an IC50 inhibitory concentration value equal to 13.020, 8.78, 5.99 µg/ml. These results can be attributed to the importance, in this plant *Pamburus missionis*, due to presence of flavonoids, very good natural antioxidants.

1. Introduction

Pamburus missionis Swingle [1,2,3] is a small thorny shurb commonly called as kattunaranthi in tamil belonging to the family Rutaceae. Earlier investigations were reported that it contains imperatorin, coumarins, diterpenes, flavones and xanthotoxis, isopimpinellin, scopoletin and luvangetin[2,3]. Imbalance between reactive oxygen species (ROS) and antioxidant defences results in oxidative stress. Oxidative stress deregulates cellular functions and leads to pathological conditions like ageing, arthritis, asthma, diabetes, neurodegenerative diseases, Alzheimer's disease, Parkinson's dementia etc [4].

There are many investigations which have studied the effect of the plants and their antioxidant ingredients, their complications and achieved good results showing that effects of plants with high levels of antioxidants in the management of diabetes mellitus. The present study is focussed to investigate invitro antioxidant activity of ethanolic leaf extract of *Pamburus missionis Swingle.*

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Evaluation of in-Vitro & in-Vivo Anticoagulant Activity of Blumea Balsamifera Leaves

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Abstract:

The main components of sambong (*Blumea balsamifera*) are listed in this article. The whole plant and its crude extracts, as well as its isolated constituents, display numerous biological activities, such as antitumor, hepatoprotective, superoxide radicalscavenging, antioxidant, antimicrobial and anti-inflammation, anti-plasmodial, anti-tyrosinase, platelet aggregation, enhancing percutaneous penetration, wound healing, anti-obesity, along with disease and insect resistant activities. Although many experimental and biological studies have been carried out, some traditional uses such as rheumatism healing still need to be verified by scientific pharmacological studies, and further studies including phytochemical standardization and bioactivity authentication would be beneficial.

Keywords: Traditional Chinese Medicines; *Blumea balsamifera*; sambong; herbal authentication; photochemistry; biological activities.

INTRODUCTION:

Nowadays, herbal medicines are widely consumed and their sales have been rising significantly all over the world. According to the reports of the World Health Organization (WHO), to treat diseases over 80% of the populations in developing countries mainly rely on herbs, which are considered to be safer and more effective than synthetic drugs[1-3].

The *Blumea balsamifera* plant is also known as *sambong,* the leaves of this plant have been used a medicinal purpose in Asian countries like India. The *Blumea balsamifera* is belongs to *Genus Blumea.* The plant is grows in forest edges and under forests. The *balsamifera* is called as *"Ainaxiang"* in China.

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Volume 4 Issue 10 October 2020

Research Article

Phytochemical and *In-Vitro* Evaluation of Anti-oxidant Activity of *Mansoa alliacea* Leaves

SK Ameenabee[1], A Lakshmana Rao[2], P Suguna Rani[3], T Sandhya[4], N Teja[5]*, G Ashu[5], V Bhavya Naga Vani[6], CH Purna Durganjali[6] and N Pavani[7]

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Abstract

Mansoa alliacea Lam. (Family: *Bignoniaceae*) is a native plant from Amazonian basin in South America. Plant derivatives are used as an anti-inflammatory, anti-oxidant, antiseptic and anti-bacterial. The study was aimed to determine the pharmacognostic and phytochemicals present in *Mansoa alliacea.* Micro and Organoleptic characteristics of fresh and dried leaf samples had been examined. Physicochemical chemical variables have been done by using WHO suggested variables, preliminary phytochemical of leaf sample had been performed to identify the presence of alkaloids, flavonoids, tannins and phenols, and quinones using the ethanolic extract of the leaves of *M. alliacea.*

Keywords: *M. alliacea;* Alkaloids; Flavonoids; Tannins

Introduction

According to the World Health Organization [1], about 65% - 80% of the population in developing countries use medicinal plants to treat their health benefits. *Mansoa alliaceae* belongs to the Bignoniaceae family, which is used extensively by many of the indigenous peoples of Amazonia. It is commonly referred to as garlic and Ajossacha [2]. So far, phytochemical studies have shown that plants alkaloids, flavonoids, steroids, tannins and phenols are structurally diverse chemicals. Of modern herbal medicine in S, the plant has also become a popular treatment. America where arthritis, rheumatists, body aches and pain and muscle aches, injuries and pain are widely used. Blooms and flowers are made up of anti

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Original Article

Thai Journal of Pharmaceutical Sciences

Anthelmintic activity of *Mansoa alliacea* against *Pheretima posthuma*: *In vitro* and *In silico* approach

D. S. N. B. K. Prasanth[1], S. K. Aminabee[2], Atmakuri Lakshmana Rao[3], Nayudu Teja[5], Koti Bhargavi[5], Chigurupati Monika[5], Boppudi Pujitha[5], Tera Sandhya[4], Agastya Lalitha[6], Siva Prasad Panda[4]

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ABSTRACT

Objectives: *Mansoa alliacea* has been utilized to remedy many afflictions of humans. Literary works illustrate that it possesses numerous biological activities. Our analysis work aims to distinguish phyto-derived anthelmintic substances from *M. alliacea* against the enzyme β-tubulin and to consider the cause of its function in the molecular basis on *Invitro* and *Insilico* methods. **Materials and Methods:** In this study, *Manosa alliacea* was subjected to extraction using various solvents based on polarity and the extracts were analyzed by GC-MS. Then using Pheretima posthuma, *in-vitro* studies were done, and *insilico* studies have been conducted using PyRx tool. Subsequently, DruLiTo software was used to study drug-like predictions. **Results:** Tests showed that methanolic extract has the most important dose-dependent anthelmintic efficacy at various levels. By insilico studies, it shows that the four phytochemicals of *M. alliacea* are very likely against the β-tubulin. Utilizing contemporary strategies, these phyto-compounds from a natural origin might establish a reliable medication or support lead identification. **Conclusion:** Utilizing contemporary strategies, these phyto-compounds from a natural origin might establish a reliable medication or support lead identification. Identified hit compounds could be further taken for *in vitro* studies to examine their effectiveness versus helminths.

Keywords: Absorption; Distribution; Metabolism; Excretion and Toxicity, AutoDock, *Mansoa alliacea*, PASS, *Pheretima posthuma*, β-Tubulin

INTRODUCTION

Considering that the beginning of the human world, alternative medicine with healing has actually been made use of in the therapy of numerous disorders.[1] According to the WHO, 80 percentile of the populace of few Asian countries rely on conventional medicine in their day-to-day elements of healthcare.[2] About 25% of the prescribed drugs consist of plant-derived components, and also about 121 active substances are presently made use of in pharmaceutical products.[3]

The past 50 years of research study have offered a couple of medications made use of to treat human helminthiases infection; nevertheless, in lasting usage, lots of parasites are revealing resistance to these medications. The factor given for

Original Article

Thai Journal of Pharmaceutical Sciences

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Keywords: Absorption; Distribution; Metabolism; Excretion and Toxicity, AutoDock, *Mansoa alliacea*, PASS, *Pheretima posthuma*, β-Tubulin

INTRODUCTION

Considering that the beginning of the human world, alternative medicine with healing has actually been made use of in the therapy of numerous disorders.[1] According to the WHO, 80 percentile of the populace of few Asian countries rely on conventional medicine in their day-to-day elements of healthcare.[2] About 25% of the prescribed drugs consist of plant-derived components, and also about 121 active substances are presently made use of in pharmaceutical products.[3]

The past 50 years of research study have offered a couple of medications made use of to treat human helminthiases infection; nevertheless, in lasting usage, lots of parasites are revealing resistance to these medications. The factor given for

Original Article

In-silico Strategies of Some Selected Phytoconstituents from *Zingiber officinale* as SARS CoV-2 Main Protease (COVID-19) Inhibitors

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ABSTRACT

Background: *Zingiber officinale* (Zingiberaceae) has been utilized to remedy many afflictions of humans. Literary works illustrate that it possesses numerous biological activities. **Methods:** Today, research study intended to recognize the Phyto-derived anti-viral substances from *Zingiber officinale* against COVID-19 main protease enzyme and to understand the molecular basis of its activity. Methods: In the present study, 42 molecules obtained from *Z. officinale*, which are retrieved from the Pubmed database, are studied via docking study. Docking study was performed using Autodock vina and PyRx software. Afterwards, admet SAR, as well as Dru Li to servers, were made use of for drug-likeness prophecy. **Results:** Our study shows that the nine phytochemicals of *Z. officinale* are very likely against the main protease enzyme of COVID-19. Utilizing contemporary strategies, these phyto-compounds might use to establish a reliable medication from a natural origin. **Conclusion:** The substances identified potential as possible anti-virals. However, even more, *in-vitro* studies are needed to examine their effectiveness versus COVID-19.

Key words: *Zingiber officinale*, ADMET, PyRx, Physico-chemical, PASS analysis.

INTRODUCTION

WHO has currently stated a typical emergency situation and also pandemic for the coronavirus (COVID-19) that has proactively propagating around the entire world. The virus SARS-CoV-2 can easily trigger signs and symptoms such as high temperature, coughing, pneumonia, queasiness, as well as exhaustion.[1] The epidemiological history of the infection was actually believed to derive from a seafood market in Wuhan, China. Having said that, the exact origin of the preliminary transmission to human beings is actually still unidentified. Presently, there is actually > 100 total genome patterns recognized in the NCBI GenBank, coming from over ten nations. The variant in between these series is actually much less than 1%.The SARS-CoV-2 has been identified as β-coronavirus causes severe respiratory tract infection in humans and utilize angiotensin-converting enzyme 2 (ACE2) receptors to infect humans.[3] Chinese experts separated SARS-CoV-2 and also sequenced the genome SARS-CoV2 on January 7, 2020.[4] The crystallized kind of COVID-19 primary protease (M_{pro}) was actually displayed through a Chinese scientist Liu et cetera (2020) that it is actually a possible medication aim at target protein for the inhibition of

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In silico identification of potential inhibitors from *Cinnamon* against main protease and spike glycoprotein of SARS CoV-2

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Communicated by Ramaswamy H. Sarma

ABSTRACT

Cinnamon has been utilized to remedy a lot of afflictions of humans. Literary works illustrate that it possesses numerous biological activities. Our research study is intended to recognize the phyto-derived antiviral substances from *Cinnamon* against COVID-19 main protease enzyme and to understand the *in silico* molecular basis of its activity. In the present study, 48 isolates compounds from *Cinnamon* retrieved from the PubMed database, are subjected to docking analysis. Docking study was performed using Autodock vina and PyRx software. Afterwards, admetSAR, as well as DruLiTo servers, were used to investigate drug-likeness prophecy. Our study shows that the nine phytochemicals of *Cinnamon* are very likely against the main protease enzyme of COVID-19. Further MD simulations could identify Tenufolin (TEN) and Pavetannin C1 (PAV) as hit compounds. Utilizing contemporary strategies, these phyto-compounds from a natural origin might establish a reliable medication or support lead identification. Identified hit compounds can be further taken for *in vitro* and *in vivo* studies to examine their effectiveness versus COVID-19.

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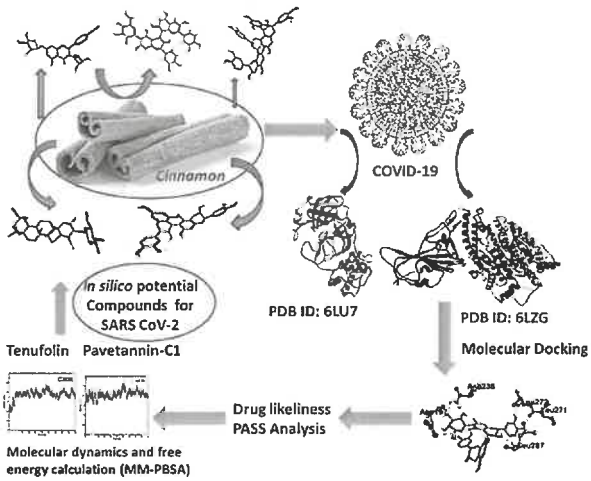
KEYWORDS
Cinnamon; SARS CoV-2; main protease; spike glycoprotein; autodock



1. Introduction

Several representatives of the Coronaviridae family circulate in the human community and typically induce moderate respiratory illness (Corman et al., 2019). In comparison, severe acute respiratory coronavirus syndrome (SARS-CoV) and Middle East respiratory coronavirus syndrome (MERS-CoV) are introduced from animals to humans and lead to serious respiratory diseases in affected persons, SARS and MERS,

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Research Article

ISOLATION OF ANTIBIOTIC PRODUCING BACTERIA FROM POND SOIL, GUDLAVALLERU

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Keywords: Crowded plate technique, *Actinobacteria*, primary screening, antimicrobial activity.

ABSTRACT

Soil being a major reservoir for microorganisms it is a source of interest for isolation of antibiotic producing organisms. The emergence of antibiotic resistance and need for better, broad spectrum antibiotics is always in high demand. In the present study, antibiotic producing bacteria were isolated from a local soil sample. Total ten soil samples were collected from local pond aseptically and subjected to serial dilution. Crowded plate technique was employed for the isolation of the colony. Total five isolated were isolated which exhibited zone of inhibition around the colony. The isolated colonies were subjected to morphological, microscopical and biochemical characterization. All five colonies were found to be gram positive, non-sporulating organisms and found they belong to the *Actinobacteria* class. The isolated colonies were subjected to screening for antimicrobial activity against *Escherichia coli, Pseudomonas aeruginosa, Staphylococcus aureus, Bacillus subtilis* and *Yeast* by perpendicular streak method. The primary screening results conclude that except one colony all have good antimicrobial activity. One colony found to be highly potential activity which had inhibition towards gram positive, gram negative, sporulating and fungal activity. This study may contribute in providing information on the antibiotic producing microorganisms in soil. Further characterization, purification, and structural elucidation are recommended to know the novelty, quality and commercial value of these antibiotics.

INTRODUCTION

Micro-organisms and their activities are crucially essential to for all intents and purposes all procedures on Earth. They play a major role in human life. One such application is antibiotic production. Antibiotics are chemotherapeutic agents, which are powerful tool in the clinical management of diseases. Of all antibiotics available in nature only few tend to useful based on their toxicity. In addition, the infectious bacteria tend to develop resistance for antibiotics in use. This make an urge to discover new antibiotics which have clinical application[1-3].

Soil being a major reservoir for microorganisms it is a source of interest for isolation of antibiotic producing organisms. Antibiotics are low molecular-weight (non-protein) molecules produced as secondary metabolites, mainly by microorganisms that live in the soil. While many antibiotics are known to exist, efforts to discover new antibiotics still continue. Hence, species such as Streptomyces, Bacillus and Penicillium have been researched constantly for their antibiotic production capability. Bacillus species, the predominant soil bacteria because of their resistant endospore formation and production of vital antibiotics[4]. The major antibiotics reported till date are from actinomycetes. With large number of genes encoding they offer a wide scope for exploring

SP-32

RECENT ADVANCES IN CANCER THERAPY

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[1]Department of Pharmacology, V. V. Institute of Pharmaceutical Sciences, GudlavalleruIndia

ABSTRACT

As per studies in 2015, about 90.5 million people had cancer. About 14.1 million new cases occur a year (not including skin cancer other than melanoma). It caused about 8.8 million deaths (15.7% of deaths). The most common types of cancer in males are lung cancer, prostate cancer, colorectal cancer and stomach cancer. The major cancer treatments are surgery and Radiotherapy which is being replaced by the other therapies like Virotherpay, Robot assisted therapy, Cancer therapy involved targeting proteins DNA double strand break repair, Liquid biopsies, Antiangiogenics, Targeted specific alterations.

Keywords: Cancer therapy, Chemotherapy, targeted therapy, virotherapy, antiangiogenics.

INTRODUCTION

Cancer is an important health problem in developed countries where is the second cause of death mainly associated with ageing of the population and lifestyle. Early diagnosis, universal access to health care and developments in these therapies has resulted in a significant improvement of cancer survival, being estimated that up to two thirds of cancer will be eventually cured with striking differences among tumors. Recent advances in cancer therapy are given below:

1. Surgery, radiotherpay and endocrine therapy are old bur effective anticancer therapies

Surgery is most effective in treatment of localized primary tumor and associated regional lymphatics. When used as a single treatment surgery cures more patients than any other individual form of cancer therapy because surgery operates by zero-order kinetics, in which 100% of excised cells are killed. Both processes are complementary. Surgery is playing an increasing role in specific clinical situation such as colorectal liver metastasis.

2. Molecular Alterations Targetting Specific

For almost a century, systemic therapy of cancer has been dominated by the use of cytotoxic chemotherapeutics. Most of these drugs are DNA-damaging agents that are designed to kill or inhibit rapidly dividing cells. They are often administered in single doses or short courses of therapy at the highest doses possible without any life-threatening levels of toxicity, called "Maximum Tolerated Dose" (MTD). The high doses of these MTD chemotherapy schedules require an extended treatment-free period to permit recovery of normal host cells[1].

3. Targeting the non-tumor cell: Antiangiogenic strategies

Angiogenesis, that is the construction of new vessels from the pre-existing vasculature, is a crucial event not only in physiological but also pathological conditions. In particular, tumor expansion is dependent on angiogenesis because tumor cells demand oxygen and nutrients to overcome hypoxia and starvation. Following tumor progression, cancer cells metastasis to the distant organs through this angiogenic vasculature[2].

4. Virotherapy

Virotherapy is another concept involving the use of oncolytic viruses that grow selectively in tumor cells to treat cancer. First, viruses, unlike drugs, respond to absent molecular targets such as the lack of interferon (IFN) or tumor supressor pathways[3].

5. Cancer therapy targeting proteins involved in DNA double-strand break repair

Poly-adenosine-diphosphate-ribose (PAR) polymerase (PARP) is a key player in this process. PARP transfers PAR chains covalently to itself and to acceptor proteins in the vicinity of the lesion upon detection

SP-32

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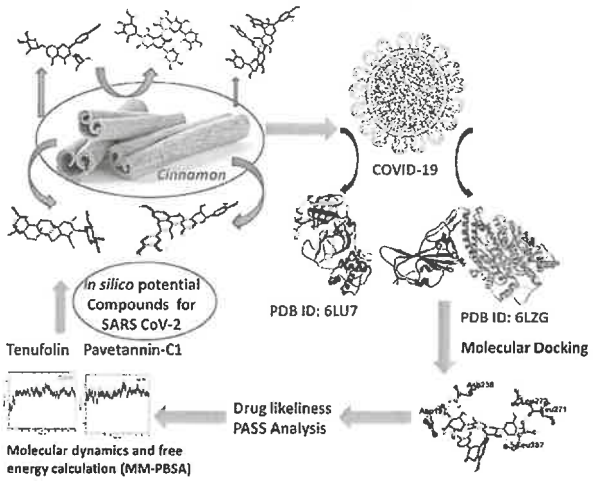

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