

# 3.3.1 Number of research papers published per teacher in the Journals notified on UGC CARE listduring the year 2019-2020

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Calendar Year of publication	ISSN number		nition in UGC enlicital Object Identificate / Link to article / paper / abstract of the article	
Antibacterial, Antioxidant And Cytotoxic Activity Of Bacterial Carotenoids Isolated From Rhodopseudomon as Palustris Krpr01 And Krpr02	Rama Koyyati, Karunakar Rao Kudle And Pratap Rudra Manthur Padigya	Biochemistry	International Journal of Pharmaceutical Sciences and Research	2019	2278 – 4357	https://ijpsr.com/	bft- article/antibacter i al-antioxidant- and-cytotoxic- activity-of- bacterial- carotenoids- i solated-from- rhodopseudomo nas-palustris- krpr01-and- krpr02/	Yes
Formulation Development And Evaluation Of Pulsatile Release Tablets Of Celecoxib Containing Hpmc, Sodium Alginate And Ethyl Cellulose	Dr. C. Sadak Vali*, Dr. S. Siva Prasadl, N. M. Vageesh2, Vadduri Swati3, B. Nageswara Naik4	Pharmaceutics	World Journal Of Pharmacy And Pharmaceutical Sciences	2019	2278 – 4357	https://www.wjpp s.com/	archgate.net/pub lication/3442093 26 World Journ al of Pharmacy and Pharmace utical Sciences FORMULATIO N DEVELOPM ENT AND EV ALUATION OF PULSATILE RELEASE TAB LETS OF CEL	
Antibacterial Activity Of The Novel Fatty Acyl Conjugates Of Rosuvastatin	Arifa Begum Sk *, Swathi Goud S *, Shailaja Ch, Sindhu K,	Pharmaceutical Chemistry	Journal of scientific research in pharamcy	2019	2277- 9469	https://www.isrpo nline.com/	https://www .jsrponline.c om/	Yes



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Ethnobotanical Survey Of Medicinal Plants Used In The Treatment Of Urolithiasis In Warangal Rural, Telangana, India	T. Mahender*, A. Sai Sreeja, M. Anvesh, D. Ramakrishna and M. Meghana	Pharma chemistry	World Journal of Pharma ceutical Research	2020	2277- 7105	https://w ww.wjpr.n et/	https://ww w.wjpr.net/ abstract file /14066	Yes
An Update And Literature Review: Benzimidazoles As Anti Cancer Agents		Pharma chemistry	World Journal of Pharma ceutical Research	2020	2277- 7105	https://w ww.wjpr.n et/	https://www.wipr.net/abstract_file/14250	Yes

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(Research Article)



# INTERNATIONAL JOURNAL PHARMACEUTICAL SCIENCES AND RESEARCH



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# ANTIBACTERIAL, ANTIOXIDANT AND CYTOTOXIC ACTIVITY OF BACTERIAL CAROTENOIDS ISOLATED FROM *RHODOPSEUDOMONAS PALUSTRIS* KRPR01 AND KRPR02

Rama Koyyati, Karunakar Rao Kudle and Pratap Rudra Manthur Padigya \*

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### Keywords:

Microbial pigment,
Anoxygenic phototrophic bacteria,
Rhodopseudomonas palustris,
Antibacterial activity, DPPH assay,
Cytotoxic activity

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ABSTRACT: The microbial pigments have more applications than synthetic pigments and are easily biodegradable and safe to use. Among all bacteria, the anoxygenic phototrophic purple non-sulfur bacteria have more applications and can synthesize different pigments. In this present study, bacterial carotenoids were isolated from the two novel strains of Rhodopseudomonas palustris and evaluated its applications. The antibacterial activity was studied by zone inhibition method. The pigment A1 and A2 showed more antibacterial activity against gram-negative and gram-positive bacteria. In-vitro antioxidant activity of bacterial pigments and bacterial extracts were evaluated by DPPH assay. The pigment A2 and Rp. KRPR02 showed more radical scavenging activity. The percentage inhibition of DPPH radical for pigment A2 (82.74  $\pm$  4.49) and bacterial extract of Rp. KRPR02 bacteria (83.33 ± 5.46) is almost nearer to the percentage inhibition of DPPH radical for standard (ascorbic acid) which is  $96.41 \pm 1.81$ . In-vitro cytotoxic activity was studied by MTT assay and found that the pigments showed cytotoxic activity against the HeLa cell line, DU145 cell line, MCF7 cell line and Miapaca -2 cell line. The pigments were found to have significant antibacterial, antioxidant and cytotoxic activity, thus can be used as potential biological agents in medicine.

**INTRODUCTION:** Pigments are colorants which are produced from plants, animals, microorganisms and can also be synthesized by chemicals synthetically. The pigments have many applications in industries <sup>1</sup> (food, textile, paper, cosmetic, plastic, paint) agriculture, biology <sup>2, 3, 4</sup> (antibiotics, antimicrobial agents, anticancer agents) *etc.* Now a day's pigments produced from the living organisms gained more importance as the synthetic pigments are toxic and show harmful effects like carcinogenicity <sup>5</sup>, mutagenicity <sup>6</sup>, teratogenicity, genotoxicity <sup>7</sup>, cytotoxicity, neurotoxicity and have harmful impact on the ecosystem.



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The microbial productions of pigments are in many ways superior to the pigments produced from the plants and animal sources due to several reasons such as their rapid growth rate, easy downstream processing, cost-effectiveness, independent of season and geographical conditions, controllable, more stable and safe to use <sup>8, 9</sup>. Microbial pigments can be produced from bacteria, algae, fungi and protozoa.

Pigments produced from microbes possessing different shades of colors like yellow, purple, pink, bluish red orange. red. pigments Microorganisms produce various pigments like carotenoids, bacteriochlorophylls a & b, melanins, flavonoids, quinines, prodigiosins, phenazines and more specifically monascins, violacein or indigo <sup>10</sup>. They possess various biological activities like antimicrobial, anticancer. inflammatory, antiproliferative, anti-obesity and are used as bio-indicators 11, 12.

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### WORLD JOURNAL OF PHARMACY AND PHARMACEUTICAL SCIENCES

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Research Article

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# FORMULATION DEVELOPMENT AND EVALUATION OF PULSATILE RELEASE TABLETS OF CELECOXIB CONTAINING HPMC, SODIUM ALGINATE AND ETHYL CELLULOSE

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### **ABSTRACT**

Pulsatile drug delivery systems are time controlled release systems which releases the active pharmaceutical ingredient in preprogrammed time after a predetermined lag time. Chronotherapeutics is a discipline of science which deals with treatment of disease based on circadian rhythm and pathological state of disease. The aim of the present work was to develop and evaluate oral pulsatile delivery system of Anti-inflammatory drug, Celecoxib. Pulsatile drug delivery systems release the drug after fixed lag time in CVS disorders, diabetes mellitus, bronchial asthma, rheumatoid arthritis and ulcers. Celecoxib is a NSAID used in relieving of pain in rheumatoid arthritis. Pulsatile tablets consists of core and coat layers. Core tablets were prepared

using super disintegrant and core tablets were then press coated with release rate retarding polymers. Drug and excipient compatibility was carried out by using FTIR studies. Press coated pulsatile release tablets of celecoxib were evaluated for hardness, thickness, friability, weight variation, disintegration time wiff dissolution. Dissolution tests of Press coated pulsatile release tablets of celecoxib were conducted in USP dissolution apparatus containing M.

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### POSTER ABSTRACTS



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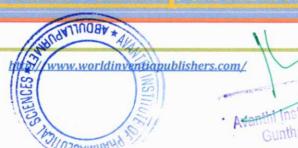
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### ANTIBACTERIAL ACTIVITY OF THE NOVEL FATTY ACYL CONJUGATES OF ROSUVASTATIN

Arifa Begum SK\*, Swathi Goud S\*, Shailaja Ch, Sindhu K, Balakrishna, Charan, Ravi Teja and Sree Vasudha K

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#### ABSTRACT

 $m{F}$ atty acid-conjugating drugs has been developed as a popular strategy to extend the stability of therapeutic agents, improve oral bioavailability, improve targeting to the lymphatic system, to enhance tumor targeting, reduce toxicity and also for a improvement of number of different therapeutic actions, e.g antibacterial activity, anti cancer etc. Rosuvastatin belongs to a stable polar methane-sulphonamide group provides low lipophilicity and enhanced ionic interaction with HMG-CoA reductase enzyme thus improving its binding affinity to this enzyme. Despite its therapeutic potential, the low oral bioavailability of rosuvastatin (20%) suggests that novel approaches are at high requirement in order to improve national heart health. Tagging of the drug to lipophilic carriers improves their efficacy by enhancing their cellular uptake and membrane transport. Falling into the category of chemicallymodified drugs, are esters of fatty acids that are lipophilic in nature. Based on the above observations it was planned to design fatty acid conjugates of Rosuvastatin and screen them for the antibacterial activity. The results of antibacterial activity suggest that the Stearic acid conjugated derivative (5), was more active against Gr+ve bacteria with zone of inhibition of 11mm which is almost comparable to Norfloxacin with zone of inhibition of 16mm at 100μM concentrations. The results thereby implicate that the Stearic acid conjugate of rosuvastatin may be a potential antibacterial agent against Gr +ve strains. To gain insights on the molecular interactions the molecular docking studies were also performed. Good correlation was observed between antibacterial activity and in silico studies.

KEYWORDS: Rosuvastatin, Fatty acyl Conjugates, Anti bacterial activity, Molecular Docking.

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### Antioxidant and HPTLC fingerprinting analysis of Desmostachya bipinnata

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Abstract: In current investigation, a popular ayurvedic crude drug Desmostachya bipinnata also known as darbha was studied for in-vitro antioxidant activity. The drug has been identified by HPTLC fingerprint analysis. The dried rhizome and roots were pulverized into fine powder. Required quantity of powder was employed for successive extraction by using soxhlet apparatus. The successive extracts were used for HPTLC fingerprint investigations, while the Hydro-alcoholic extract was prepared separately for antioxidant studies. A silica gel 60F254 TLC precoated aluminium plates (10 x 10 cm, layer thickness 0.2mm, Merck, Mumbai) were employed as a stationary phase. About 1µL of the sample was applied on the TLC plate under a stream of nitrogen using a semiautomatic spotter and the bands were detected employing a deuterium lamp. The chromatographic conditions were optimized and estimations were performed on a stationary phase, pre coated silica gel60 F254 aluminum sheets (10 x10) which were prewashed with the n-hexane (for n-hexane extract), chloroform (for chloroform extract) and methanol (for methanol extract) and dried in air. Then the plated were saturated with the respective mobile phases for 30 minutes and the migration distance allowed was 72mm. The wave length scanning was performed at 254nm for n-hexane extract and 366nm for chloroform and methanol extract. The source of radiation was deuterium lamp emitting a continuous UV spectrum between 190-400nm. The samples were spotted and developed at 25±2°C. The HPTLC finger prints of n-hexane, chloroform and methanol extracts were developed employing following mobile phases respectively. a) Hexane: ethyl acetate: acetic acid (8:2:0.5 v/v) at 254 nm. b) Toluene: ethyl acetate: acetic acid (8:2:0.2 v/v,) at 366 nm. c) Toluene: ethyl acetate: acetic acid (8:2:0.2 v/v) at 366 nm. The results of the antioxidant study revealed that the plant extract possess effective antioxidant activity. HPTLC fingerprints were developed for rapid identification, authentication and control of adulteration of this crude drug, which is used as one of the ingredient in several ayurvedic formulations.

Keywords: Desmostachya bipinnata, HPTLC fingerprinting, Antioxidant activity, DPPH.

#### I. INTRODUCTION

At present, herbal medicine represents one of the most important fields of traditional medicine all over the world. To promote the proper use of herbal medicine and to determine their potential as sources for new drugs, it is essential to study medicinal plants having folklore reputation in a more intensified way. A huge number of the world's population have exclusively been used medicinal plants for centuries as remedies for human diseases [1] Knowledge of the chemical constituents of plants is desirable because such information will be value for the synthesis of complex chemical substances. Phytochemical screening of plants has revealed the presence of numerous chemicals including alkaloids, flavonoids, tannins, steroids, glycosides and saponins. Secondary metabolites from plant serve as defense mechanisms against predation by many microorganisms, insects, herbivores and oxidative stress [2]. Oxidative stress induced ROS and free radicals are believed to be major cause of physiological disorders like Alzheimers, Parkinson's, arthritis, atherosclerosis, coronary heart diseases, emphysema, gastric ulcer, diabetes mellitus, cirrhosis, aging and cancer. Presence of a multitudes of vitamins, polyphenols, flavonoids, tannins and phenolic acids in natural extracts of vegetables, fruits, herbs, spices and medicinal plants and inverse relationship between these natural antioxidants and the risk of oxidative diseases has caused spurt in extensive research and have been described to possess biological activities such as antioxidant, anti-inflammatory, oestrogenic, cytotoxic, antitumor [3]. Desmostachya bipinnata Stapf (Family: Poaceae) locally named English name- Sacrificial Grass (smaller var.), Ayurvedic name- Kusha, Suuchyagra, Yagyabhuushana, Kshurapatra, Siddha/Tamil name-Tharubai, that is widely distributed throughout the plains of India in hot and dry places. The roots of plant are cooling, diuretic, galactagogue, emollient, aphrodisiac, astringent, used for menorrhagia, diarrhea, dysentery, skin disease liena and vesical calculi, asthma, jaundice, dysurea, bleeding piles, burning

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### International Journal of Pharmacy & Therapeutics

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Research article

# FORMULATION AND CHARACTERIZATION SENNOSIDES LOADED MICROSPONGES

### A. Anil kumar\*, K. Raja Sheker, G. Abhilash, B. Naveen, M.Purushothaman

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### ABSTRACT

In present study, the modifications was to implement the drug delivery system to attain drug control release are applied topically from the past few years. The drug delivery system is altered by the micro sponges. The micro sponge method is used for the preparation of prescription products, sunscreen products, cosmetics and over the counter drugs. The preparation of Sennosides microsponges was performed and evaluated which was easy and has an advantage of nullifying solvent toxicity. It was observed that as drug: polymer ratio increased, particle size decreased. Microsponge formulation FS2 showed a good physical parameter study and was used for formulating into gel, incorporated in the carbopol.

Key Words:- Sennosides, Micro gels, Loading capacity.

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### INTRODUCTION

In present study, the modifications was to implement the drug delivery system to attain drug control release are applied topically from the past few years. The drug delivery system is altered by the micro sponges. The micro sponge method is used for the preparation of prescription products, sunscreen products, cosmetics and over the counter drugs. The drug components are protected by micro sponges of patent, porous and polymeric microspheres. The micro sponge size of 5-300um in diameter and the particles which are small in

size and inert spheres not able to enter through the skin. Avoid the excessive drug compounds in the skin by micro sponge system. The micro sponge particles are collected in the crannies and tiny nooks in order to transfer the drug components into the skin. The conventional dosage forms such as ointments, powders, creams, gels and lotions are prepared by the micro sponge method.

### MATERIALS & PREFORMULATION

Sennosides were supplied by the herbal store in the locality and was authenticated. It is dried and powdered properly and extracted with Ethanol using Soxhlet. It is then filtered and the crude filtrate is collected. This is used as such in further experiments. Carbopol- 940, Ethyl cellulose (EC), poly vinyl alcohol (PVA), Dichloro methane and Tri-ethanol amine are purchased from SD fine chem Ltd. Pure drug and polymer (ethyl cellulose) and their physical mixture were examined by Fourier Transform Infrared (FT-IR) spectra. The spectra were recorded in a Thermo-IR 200 FTIR spectrophotometer. Potassium bromide pellet method was employed and background spectrum was collected under identical conditions. Each spectrum was derived from 16 single average scans collected in the range of 400-4000 cm-1 at the spectral resolution of 20 cm-1.



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# STUDIES ON ANTIULCER ACTIVITY OF ROOTS OF Solanum Melanoxylon

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### ABSTRACT

Humans find food and medicines from nature which were used to treat and heal many ailments. The anti-ulcer activity of methanolic extract of roots of *Solanum melanoxylon* (solanaceae) was investigated in Pyrolus ligation ulcer and Ethanol induced ulcer models in Wistar albino rats. The methanolic extract of *Solanum melanoxylon* at doses of 200 mg/kg p.o, 400 mg/kg p.o, showed dose dependant significant inhibition of the gastric lesions in both the models. The extract showed significant (P<0.01) reduction in gastric content volume, free acidity and ulcer index when compared to control. Results prove that methanolic extract was found to possess anti-ulcerogenic as well as ulcer healing properties, which might be due to its anti-secretory activity.

KEY WORDS: Melanoxylon, Ethanol induced, Pylorus.

#### INTRODUCTION

Gastric ulcer, one of the most widespread, is believed to be due to an imbalance between aggressive and protective factors. Ulcer is caused due to the continuously exposure of gastric mucosa to potentially injurious agents such as acid, pepsin, bile acids, food ingredients, bacterial products (Helicobacter pylori) and drugs. These agents have been implicated in the pathogenesis of gastric ulcer, including enhanced gastric acid and pepsin secretion [1], inhibition of prostaglandin synthesis and cell proliferation growth, diminished gastric blood flow and gastric motility. Drug treatment of peptic ulcers is targeted at either counteracting aggressive factors (acid, pepsin, active [2], platelet aggravating factor leukotrienes, endothelins, bile or exogenous factors including NSAIDs) or stimulating the mucosal defences [3] (mucus, bicarbonate, normal blood flow, prostaglandins (PG), nitric oxide). The goals of treating peptic ulcer disease are to relieve pain, heal the ulcer and prevent ulcer recurrence. Currently there is no cost-effective treatment that meets all these goals. Hence, efforts are on to find a suitable treatment from natural product sources.

Solanum melanoxylon belongs to family solanaceae. The berries of the plant are used a vegetable for food in Southern

India. It has been reported to contain Solasodine glycosides, Solasonine, Solamargine, Khasianine and Solakhasoside (1) have been isolated from berries of *Solanum khasianum*, the structure of Khasianine, Tomatine and Solasonine has been elucidated<sup>20</sup>. Many pharmacological activities had been reported from the plant. The leaves were proven to show antidiabetic activity, hepatoprotective activity. In the present research, the antiulcer activity of *Solanum melanoxylon* had been studied.

### MATERIALS AND METHODS Plant material

The fresh roots of Solanum melanoxylon was collected from Tirumala hills, Chittore district, Andhra Pradesh during the month of November. The fresh roots of Solanum melanoxylon were shade dried and ground to coarse powder. The powdered material was then subjected to Soxhletion using methanol in a soxhlet extractor. The extract obtained was dried at 45°C to get a semisolid mass named (MESM) was used for further studies.

#### Animals

Wistar albino rats weighing 170-190g were taken and made them to acclimatize to the lab environment at 28°c

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# International Journal of Experimental Pharmacology

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# ACACIA VISCO-INVESTIGATIONS OF ACUTE AND CHRONIC TOXICITY

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### ABSTRACT

Acacia visco is a perennial tree found at higher elevations in northern Argentina, Bolivia, Chile and Peru. It has also been introduced to Africa. Common names for it include arca, visco, viscote, viscote blanco and viscote negro. It grows 6–25m tall and it has fragrant yellow flowers in the Spring. In Bolivia is found at an altitude of 1500–3000m. It has light to dark reddish brown twigs and small white flowers. It is cultivated for use in cabinetmaking. This study focuses on establishing the toxicity profile of the plant extract. The plant extract will be tested for acute and chronic toxicity as per OECD guidelines. The present investigation demonstrates that at doses consumed in the traditional medicine, the ethanol extract of Acacia visco L. may be considered as relatively safe, as it did not cause either any lethality or changes of in the general behavior in both the acute and chronic toxicity studies in rats.

Keywords: Acacia visco L, acute toxicity, chronic toxicity, lethal dose.

### INTRODUCTION

Acacia visco is a perennial tree found at higher elevations in northern Argentina. Bolivia. Chile and Peru. It has also been introduced to Africa. Common names for it include area, visco, viscote, viscoteblanco and viscote negro. It grows 6-25m tall and it has fragrant vellow flowers in the Spring. In Bolivia is found at an altitude of 1500-3000m. It has light to dark reddish brown twigs and small white flowers. It is cultivated for use in cabinetmaking [1]. Methanol extract of Acacia visco has been shown to have short-term and long-term antiinflammatory effects in lab rats.[6] Among the class of characterized from A. visco leaves. the triterpenoid lupeol, α-amyrin and β-amyrin may mainly responsible for the pharmacological activities. This study focusses on establishing the toxicity profile of the

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plant extract. The plant extract will be tested for acute and chronic toxicity as per OECD guidelines.

### MATERIALS AND METHODS

#### Plant Material

The Plant material of *Acacia visco L*. used for investigation was collected from a local store and were duly authenticated and the herbarium sample is deposited in the college library.

### Extraction

The plant material of Acacia visco L. was dried in shade, separated and made to dry powder. It was then passed through the 40 mesh sieve. A weighed quantity (100gm) of the powder was subjected to continuous hot extraction in Soxhlei Apparatus. The extract was evaporated under reduced pressure using rotary evaporator until all the solvent has been removed to give an extract sample. Percentage yield of ethanolic extract of Acacia visco L. was found to be 18.2 % w/w.

### Animals used

Albino wistar rats (150-230g) of either sex were

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# ANTI-ARTHRITIS ACTIVITY OF Solanum Nigrum IN EXPERIMENTAL ANIMAL MODELS

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#### ABSTRACT

The aim of this study was to assess the anti-arthritic activity of Solanum nigrum. Arthritis is induced in the albino rats by inducing the freunds complete adjuvant. The seeds of freunds adjuvant were coarsely powdered and extracted with ethanol (95%) and water using soxhlet. The effect of these plant extracts on arthritic rats were assessed by the various blood parameters and also taking the changes in paw volume. The SN suppressed the anti arthritic changes induced in rats and results were statically significant.

Keywords: Solanum nigrum, Anti-arthritic activity, Seed extract.

### INTRODUCTION

Solanum nigrum Linn. (Solanaceae) has traditionally used as simple rubefacient, diuretic, emetic, pneumonia, bronchitis, nerve stimulant and vesicant [1]. All the three extracts contain alkaloids, saponins and flavonoids etc. In our laboratory it was observed that crude extract of solanum exert anti-arthritic activity in rats. Pharmacological studies reported on the SN are anti-microbial [2], insulinotropic and anti- hyperglycemic [3]. Solanum nigrum has been traditionally used in India, Sri Lanka, Bangladesh and Pakistan for the treatment of inflammation and rheumatism. However, systematic study of this plant has not been carried out for the anti-arthritic activity.

#### MATERIALS AND METHODS

The seeds of fresh unadulterated S.nigrum were collected from the fields of Vikarabad. The air dried and powdered seeds of S.nigrum were successively extracted with alcohol in a soxhlet apparatus and macerated with water. The extract obtained was made free of any solvent by rotary evaporator at 40<sup>0</sup> C under reduced pressure, and dried in a vacuum oven.

### Test animals

Albino rats of either sex weighing between (150- 200 g) were procured from central animal house for experimental purpose. The animals were acclimatized to laboratory conditions for 7 days. The animals were supplied with commercially available standard diet. Water was allowed ad libitum under hygienic conditions. The animals were grouped in cages in an air conditioned room at the temperature of 22 + 1°C with12 h light and dark cycle. The ethical guidelines for the investigation of the animals used in experiment were followed in all the tests.

### Acute oral toxicity studies

The acute toxicity of seeds extracts of Solanum nigrum were determined by using female albino rats of weight between (180-200) g, maintained under standard conditions. The animals were fasted for 12 hr prior to the experiments. Animals were administered with single dose of seeds extracts of Solanum nigrum (Linn.) and observed for its mortality up to 48 hr study period

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Review Article

### ETHNOBOTANICAL SURVEY OF MEDICINAL PLANTS USED IN THE TREATMENT OF UROLITHIASIS IN WARANGAL RURAL, TELANGANA, INDIA

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### ABSTRCTCT

Collection of plants is known as ethnobotanical survey. Collection of medicinal plants is known as ethobotanical survey of medicinal plants. They are important in our life. Urolithiasis is a third most common urinary tract problems after urinary tract infections. It may cause more pain due to the blockage of urine flow and serious health problems of urinary-tract obstruction and urinary tract infection. Ethnobotnical survey was conducted at Warangal rural district of telngana on medicinal plants used to treat urolithisis. The present survey provided information about 40 medicinal plants used to treat urolithiasis.

**KEYWORDS:** Urolithiasis, Ethnobotanical, Medicinal plants, Nephrolithiasis, Kidneystones.

### INTRODUCTION

Collection of medicial plants is known as ethnobotanical survey. They are important in our life. They cure illness without any side effects. [1-2] Urolithiasis is a third most common urinary tract problems after urinary tract infections. It is also called as nephrolithiasis and kidney stones. It is a condition characterized by the formation urinary calculi in the urinary tract. It is affecting 12% of world population. It is common disorder affecting 70 to 81% in males, 47 to 60% in females. Kidney stones having 5mm diameter can pass through urinary tract if kidney stones exceed more than 7mm diameter require surgical intervention. It may cause more pain due to the blockage of urine flow and serious health problems of urinary-tract obstruction and urinary tract infection.

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**Review Article** 

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### AN UPDATE AND LITERATURE REVIEW: BENZIMIDAZOLES AS ANTI CANCER AGENTS

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### ABSTRCTCT

Cancer is the most important dreadful diseases in the world. It is characterized by uncontrolled proliferation of cells. The women are more prone to cause the cancer compare to men. World wise the most of the peoples are suffering by breast, lung, and colorectal cancer. There are some factors responsible to cause the cancer they are genetical factors, behavioral risk factors, physicalrisk factors. Global data announced that there may be a chance to a rise 21.4 million cases per year with 13.2 million deaths by 2030. Benzimidazole and its are important heterocyclic compounds having wide variety of like pharmacological actions anticancer. acetylchlinesterase, antimicrobial, anti inflammatory, analgesic, antileishmanial activities

hence its attracts the researcher to develop many active compounds in medicinal chemistry. The present review reveals that many substituted benzimidazoles as anti cancer agents against many type of cancer celllines.

**KEYWORDS:** Antiancer, Benzimidazoles, Acetylchlinesterase, Pharmacological, Antileishmanial.

### INTRODUCTION

Cancer is one of the most important dreadful diseases in the world. It is characterized by uncontrolled proliferation of cells. The most effective cancers are breast, lung, and colorectal cancer. World wise one women in six womens, one men in eight mens are suffering from cancer during lifetime. Gobal data estimated there is chance to a rise 21.4 million cases per year with 13.2 million death by 2030. The main factors responcible for the development of

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