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List of National/International papers published-Academic year 2017-2018

S. NO	Title of Paper	Name of Author	Department of Teacher	Name of Journal	Year of Publication	ISSN /ISBN number
1.	Physicochemical And Preliminary Phytochemical Studies On Aristolochia Indica Linn Roots	P.Satheesh Kumar	Pharmacognosy	International Journal Of Phytopharmacology	2017-2018	0975 – 9328
2.	Antihyperglycemic And Antihyperlipidemic Activities Of Ethanolic Extract Of Aristolochia Indica Roots In Streptozotocin - Nicotinamide Induced Diabetic Rats	P.Satheesh Kumar	Pharmacognosy	International Journal Of Biological & Pharmaceutical Research	2017-2018	0976 - 3651
3.	Formulation And Evalution Of Aceclofenac Sustained Delease Matrix Tables	S. Chandra	Pharmaceutics	International Journal Of Advanced Pharmaceutical Science	2017-2018	2456-8147
4.	Formulation And Evaluation Of Lornoxicam Dispersible Tablets	S. Chandra	Pharmaceutics	International Journal Of Advanced Pharmaceutical Science	2017-2018	2456-8147

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5.	Antidiabetic Activity Of Senna Surattensis In Alloxan-Induced Diabetic Rats	E.Thilagam	Pharmacognosy	Asian Journal Of Pharmaceutical And Clinical Research	2017-2018	2455-3891
6.	Pharmacological Evaluation Of Ethanolic Extract Of Leaves Of Memecylon Kollimalayanum	P.Kalaiselvi	Pharmaceutical analysis	American journal of pharmacy and health research	2017-2018	2321-3647

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Research Article

PHYSICOCHEMICAL AND PRELIMINARY PHYTOCHEMICAL STUDIES ON *ARISTOLOCHIA INDICA* LINN ROOTS

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ABSTRACT

The present communication attempts to evaluate the physicochemical and preliminary phytochemical studies on the root of *Aristolochia indica* Linn, belongs to family Aristolochiaceae. *Aristolochia indica* is a perennial climber shrub with woody base stocks. The young roots are light brown in color and are fairly smooth. The chemical constitution for *Aristolochia indica* is Aristolic acid, Aristolactam I, Aristololide, Aristolochic acid –I, Cepharadione A, Aristolindiquinone. The plant is used as emmenagogue, abortifacient, anti-neoplastic, anti-septic, anti-inflammatory, anti-bacterial and phospholipase A2 inhibitor. The plant is commonly known as snakeroot or birthwort and has been used traditionally for snakebite and postpartum infections respectively. As there is no detailed standardization work reported on root, the physicochemical parameters, preliminary phytochemical constants are carried out. The study revealed specific identities for the particular crude drug which will be useful in identification and control to adulterations of the raw drug.

Key words: *Aristolochia indica* Linn, Physicochemical Studies, Preliminary Phytochemical Studies.

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INTRODUCTION

Aristolochia indica Linn (AI), is annual slender herb. A slender perennial twiner. Root 10-12.5 cm long, linear-oblong to obovate-oblong abruptly or gradually obtusely acuminate. The young roots are light brown in color and are fairly smooth. The chemical constitution for *Aristolochia indica* is Aristolic acid, Aristolactam I, Aristololide, Aristolochic acid –I, Cepharadione A, Aristolindiquinone. The plant is used as emmenagogue, abortifacient, anti-neoplastic, anti-septic, anti-inflammatory, anti - bacterial and phospholipase A2 inhibitor. The plant is commonly known as snakeroot or birthwort and has been used traditionally for snakebite and postpartum infections respectively. The root is stimulant, tonic and emmenagogue; employed in malarial fever, intermittent fevers and useful in pains in the joints, given to children for flatulence and dyspepsia (Khare CP, 2007; Panda H, 2004; Khare CP, 2016).

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MATERIALS AND METHODS

Plant material

Root of *Aristolochia indica* Linn was collected from Kolli Hills, Nammakal District,Tamil Nadu, India. Taxonomic identification was made from botanical survey of India, Coimbatore. The root was stored in the Pharmacognosy Department Herbarium, JKKMMRF's - Annai JKK Sampoorani Ammal College of Pharmacy, B. Komarapalayam, Tamil Nadu.

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Research Article

ANTIHYPERGLYCEMIC AND ANTIHYPERLIPIDEMIC ACTIVITIES OF ETHANOLIC EXTRACT OF *ARISTOLOCHIA INDICA* ROOTS IN STREPTOZOTOCIN - NICOTINAMIDE INDUCED DIABETIC RATS

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ABSTRACT

The aim of the present study was done to evaluate the antihyperglycemic, antihyperlipidemic activities of ethanolic extract of *Aristolochia Indica* Linn root (EEAI) in streptozotocin (STZ) - nicotinamide (NC) induced diabetic rats. Antihyperglycemic effect was assessed in EEAI using diabetic rats (200 and 400 mg/kg) and glibenclamide (5 mg/kg) orally administered daily for 28 days. Fasting blood glucose (FBG) and body weight was determined weekly basis up to 28 days. On the 28th day, various biochemical parameters were estimated. The two doses of EEAI shows significantly decrease ($p<0.01$) in blood glucose levels. The effect was more pronounced in 400 mg/kg (66.11%) than 200 mg/kg (64.98%). In addition, decreased HbA_1C and improved Hb level were evidenced clearly in diabetic rats. Simultaneously, improvements in serum lipid profile, serum liver profile in diabetic rats were also evidenced clearly. Moreover, body weight was increased in diabetic rats. The EEAI is capable of managing hyperglycemia and complications of diabetes in STZ - NC induced diabetic rats. Hence this plant may be considered as one of the potential sources for the isolation of new oral antihyperglycemic agent(s).

Key Words: Antihyperglycemic; Antihyperlipidemic; *Aristolochia indica;* Nicotinamide; Streptozotocin.

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INTRODUCTION

Diabetes mellitus (DM) is a chronic metabolic disorder characterized by elevated blood glucose level resulting from defects in insulin secretion, insulin action or both. According to a projection of the International Diabetes Federation (IDF), estimates that the numbers of diabetic patients in India were 382 million in 2013. It is projected to increase to 592 million by 2035 (IDF, 2013). Medicinal plants used by folk medicinal healers are successfully used in many countries to control diabetes, and have become the most important sources for seeking a safe, specific and effective hypoglycemic agent (Ibeh BO and Ezeaja MI, 2011). Moreover, many hypoglycemic components have been obtained from the medicinal plants, mainly including flavonoids, alkaloids, polysaccharides, saponins, terpenoids and unsaturated

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FORMULATION AND EVALUATION OF ACECLOFENAC SUSTAINED RELEASE MATRIX TABLETS

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ABSTRACT

Non Steroidal Anti-inflammatory drugs (NSAIDs) are considered to be the first-line treatment for rheumatoid arthritis, osteoarthritis and spondylitis. Aceclofenac is the drug which comes under Non – steroidal anti – inflammaory drugs. It is a newer derivative of Diclofenac with low gastrointestinal complications. The short biological half-life (3-4h) and dosing frequencies more than one every day make Aceclofenac a perfect contender for sustained release. For reduction in the frequency of administration and to improve patient compliance, a once-daily sustained release formulation of Aceclofenac is desirable.Sustained release oral conveyance frameworks are intended to accomplish therapeutically effective concentration of medication in in the systemic circulation over an extended period of time. The primary objectives of sustained release drug delivery are to ensure safety and enhancement of efficacy of drug with improved patient compliance. So the use of these dosage forms is increasing in treatment of acute and chronic diseases as they maintain the concentration of drug in plasma above minimum effective concentration and below the minimum toxic level for extended period of time. Thus, sustained drug delivery results in optimum drug therapy with reduced frequency of dosing and side effect. The release of aceclofenac from sustained release tablet of various formulations varied according to the ratio and degree of the polymer has an impact on . Matrix system is widely used for the purpose of Sustained release. Various SR oral dosage forms like osmotic systems membrane, matrices systems and controlled system have been developed. A intense research has focused on the design of Sustained Release system for poorly water soluble drugs. Hydrophobic waxes have been extensively investigated for sustained release of drug. It is used due to its flexibility to obtain a desirable drug release profile. It is cost effectiveness and has broad regulatory acceptance. It provides good stability at varying pH and effective retarding blending used . Waxes, lipids and related materials form matrices that control release through both pore diffusion and erosion.

Aceclofenac sustained released tablets was developed using wax and polymer matrix in the different ratio. The evaluation of granules was carried for angle of repose, Hausner's ratio and Carr's compressibility index. The tablets were evaluated taking hardness, content of active ingredient, uniformity of weight, thickness for *in-vitro* dissolution studies into consideration. It results that if the concentration of wax or polymer increases, the hardness of tablet increases. That is the hardness of the tablet is directly proportional to the concentration of waxes present in the tablet and also if higher the concentration of wax then it showed the maximum sustained release activity. Formulation with bees wax and Carnauba wax in ratio 1:0.5 and were optimized based on *in-vitro* dissolution and hardness study. The dispersion of the drug in the wax and polymer network altered its dissolution profile at a pH of 6.8, thus making it possible to obtain a gradual and prolonged release, and it also helps to modulate the release pattern of the tablet.

Keywords: Aceclofenac, Wax or polymers, Prolonged release, Bees and Carnauba wax, HPMC, NSAID, Sustained release formulation.

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Formulation and Evaluation of Lornoxicam Dispersible Tablets

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ABSTRACT

Lornoxicam has been most recently used Non steroidal Anti-Inflammatory drug. The present investigation concerns the development and evaluation of dispersible tablets of Lornoxicam which after oral administration are designed to easily disintegrate and dissolve thus improving the bio-availability. The dispersible drug delivery system was developed using Sodium Starch glycolate, crospovidine and croscarmellose sodium as disintegrating agents by direct Compression method. The prepared tablets are evaluated in terms of their physical characteristics in vitro release, uniformity of dispersion test, wetting time, determination of moisture content by Karl fischer Apparatus. The results showed that the optimized formulation (F6) showed the disintegration time of 29 sec, percentage drug release of 99% at the end of 10 minutes which satisfied all the tablet evaluation parameters for dispersible tablet. Hence the tablet formulations found to be economical and easy to manufacture in large scale.

Keywords: Lornoxicam dispersible tablets, Non-steroidal Anti inflammatory drugs, Wetting Time, disintegration time

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Research Article

ANTIDIABETIC ACTIVITY OF *SENNA SURATTENSIS* IN ALLOXAN-INDUCED DIABETIC RATS

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ABSTRACT

Objective: *Senna surattensis* is a shrub plant which has been known for its diverse biological and pharmacological properties. This study is aimed to evaluate the antidiabetic activity of ethanolic extracts of *S. surattensis* (EESS) leaves in alloxan-induced diabetic rats.

Methods: Experimental diabetes was induced by injection of a single dose of alloxan (120 mg/kg, intraperitoneal). Adult male Wistar albino rats were divided into five groups; normal control, diabetic control, diabetic EESS (200 mg/kg body weight (bw), diabetic EESS (400 mg/kg bw), and diabetic glibenclamide (5 mg/kg bw). Extracts were treated concurrently for 21 days. Blood samples were collected and centrifuged for estimation of fasting blood glucose (FBG), bw, serum biomarkers, lipid profile, total protein, albumin, and glycosylated hemoglobin (HbA1C) contents.

Results: The increase in FBG, bw, liver biomarkers serum glutamic oxaloacetic transaminase, serum glutamic pyruvic transaminase, alkaline phosphatase, free fatty acid, phospholipids (PL), triglycerides, total cholesterol, low-density lipoprotein cholesterol, high-density lipoprotein cholesterol, total protein, albumin, and HbA1C content were recorded in diabetic control rats. Daily oral administration of EESS treatment significantly ($p<0.01$) reverted the levels of serum biomarkers and enzymes activities to near normal values. A similar reduction was produced in FBG after 21 days of extract administration which compared significantly ($p<0.01$) with the control group and glibenclamide treated groups.

Conclusion: The results suggest that EESS has anti-diabetic activity in diabetic rats, thereby justifying its traditional claim and augmenting it into the present system of medicine.

Keywords: *Senna surattensis*, Alloxan, Hyperglycemia, Diabetes mellitus, Hypolipidemic.

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INTRODUCTION

Diabetes mellitus is a group of metabolic disorder is characterized by hyperglycemia and disturbances of carbohydrate, lipid, and protein metabolisms. Long-term hyperglycemia during diabetes causes glycation of body proteins that lead to secondary complications affecting kidney, eye, nerve, and arteries. It is considered as one of the five leading causes of death in the world [1]. Altogether diabetes has shadowed the spread of modern lifestyle, and it can be associated to surge overweight and sedentary inhabitants [2]. The global problem of diabetes mellitus stances massive social expenses and has chief implications for all healthcare structures. Diabetic dyslipidemia results in accumulation of excess free fatty acids (FFA), which are converted to triglycerides (TGs) in the liver. The consequence of fat accumulation is increased small dense low-density lipoprotein cholesterol (LDLc) and TGs levels and decreased high-density lipoprotein cholesterol (HDLc), which contributes to cardiovascular risk in diabetes. It is now well-known that the hyperlipidemia signifies a major risk factor for the premature development of diabetes and its complications.

Experimental models using animal provide clear clues for the understanding of the molecular and pathological state of diabetes mellitus and are valuable for the screening of drugs for the prevention and management of diabetes. The pathophysiology of diabetes involves a very complex cascade of several interrelated mechanisms. Alloxan is a universally used chemical to produce experimental diabetic animals in the labs for its ability to damage insulin-producing beta cells. It is generally accepted that free radicals generated by alloxan cause beta cell injury that is key to its part as a diabetogenic agent. As it has been widely accepted that alloxan selectively destroys the insulin-producing beta cells found in the pancreas; hence, it is used to induce diabetes in laboratory animals.

There is increasing demand by patients to use natural products with anti-diabetic activity due to side effects associated with the use of oral hypoglycemic agents. Many of the currently available oral hypoglycemic drugs possess a number of serious toxic effects [3]. Meanwhile, the management of diabetes mellitus without adverse effects is still a major challenge. Dietary involvement, mostly the practice of traditional medicine derived from natural sources, is a major strength in the management of diabetes [4].

Traditionally, a number of plants have been used in various herbal preparations in the management of diabetes and only a few of them have been proven scientifically. Plant drugs are considered to be less toxic and free from side effects than synthetic ones [5]. *Senna surattensis*. (*Caesalpiniaceae*) is commonly known as *Glaucous cassia* and distributed throughout India. It is commonly used in folk medicine as antihyperglycemic for the management of diabetes mellitus [6,7]. The plant is also known for its use in gonorrhea blennorrhea and jaundice. Bark, aerial parts and leaves are useful in for the management of diabetes and gonorrhea [8]. The plant found to contain anthraquinone, flavonol glycosides, chrysophanol, physcion, kaempferide, and quercetin [9]. The extracts of *S. surattensis* have been shown to have antimicrobial, antihyperlipidemic, antioxidant, and hepatoprotective activities [10-13]. We have also previously demonstrated the hypoglycemic effect of ethanolic extracts of *S. surattensis* (EESS) using *in vitro* models of diabetes mellitus [14]. Literature surveys have yielded scanty information on the pharmacological properties of *S. surattensis* for diabetes management. However, no systematic study was carried out on the leaf extracts of *S. surattensis* for its *in vivo* anti-diabetic activity using an animal model. Hence, the present study first time aimed to investigate the anti-diabetic activity of leaf extracts of *S. surattensis* using alloxan treated diabetic rats to ascertain the scientific basis for the use in the treatment of diabetes mellitus. Here, the antihyperglycemic

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Pharmacological Evaluation of Ethanolic Extract of Leaves of *Memecylon Kollimalayanum*

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ABSTRACT

The present studies emphasize the investigation on ethanolic extract of *Memecylon kollimalayanum*. (Family- Melastomataceae) leaves for its anti-diabetic activity in animal model. Alloxan induced diabetes model was used for the study. The pharmacological and acute toxicity studies of ethanolic extract was performed by following, OECD-423 guidelines (Acute toxic class method). No mortality or acute toxicity was observed upto 2000mg/kg of body weight. The standardized doses of 250, 500, 1000 and 2500 mg /kg 1 body weight of the extract were administered orally to normal and diabetic rats in order to define its hypo-glycemic potential. Results The Biological dose of extract *Memecylon kollimalayanum* dose was selected 200mg/kg and 400mg/kg in this dose possessed significant antidiabetic activity. This study shows that flavanoids present in this extract may be possibly responsible for the antidiabetic activities respectively. Histopathological studies on isolated pancreas revealed that ethanolic extract of *Memecylon kollimalayanum* reversed the changes which produced due to diabetes caused by Alloxan. The normal pattern of histology of pancreas was observed.

Keywords: Ethanolic Extract, OECD-423 guidelines

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