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ANTI-INFLAMMATORY, AND, ANTI ANALGESIC, EVALUATION, OF EUPHORBIA MILLI, LEAF, EXTRACTS

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ABSTRACT

The present work explores the analysis of anti-inflammatory activity and anti- analgesic activity lives of the *Euphorbia milii* and the leaf extract of the *Euphorbia milii* Ethanol petroleum ether and Water solvent used to extract.

INTRODUCTION

The *Euphorbia milii* plant to family Euphorbiaceae as a plant in largest one of medicinal plants used most parts of distributed countries Pakistan and China, *Euphorbia milii* are used many purposes many countries, Nepal is the latex used in treat Sprains and China it is used in cancer treatment and Hepatitis. Euphorbia milii crud drug leaf extract as a various fraction contained excellent activity analgesic and anti-inflammatory on the dose animal Rats are look into the possibility to explore as a potential source of bioactive principle., *Euphorbia milii* Family Euphorbiaceae, Euphorbia red flower. the Leaf is a green color, and this medicinal plant is used in various types Herbal medicine (HM) is the complementary and alternative medicine, which in recent times is increasing widespread population all over the world and gradually streaming toward integration into the mainstream healthcare systems. The use of Herbal Medicine cuts across gender, social and racial classes in both developing and developed countries of the world. Due to the increasing popularity of Herbal Medicine, stakes in the world markets (local and international) are also rapidly increasing and the annual sale is rapidly approaching 62 billion. An important driver in this use includes low cost, the wide acceptance due to its status of being a natural product with the acclaim of low toxicity, efficacy in certain challenging diseases, flexibility in its accessibility and preparation.

Herbal Medicine includes preparations of biologically active natural products that consist largely of herbs or herbal materials. Some recipes may contain materials such as fungal and

bee products, as well as minerals (kaolin, bentonite), ash, shells, insects, animal parts and are used for the maintenance of health and management of various diseases.

Benefits of herbal medicine include herbs, herbal materials, herbal preparations, finished herbal products that contain as active ingredients parts of plants or other plant materials, or combinations and are used especially for the prevention and treatment of diseases. Herbal Medicine remains a major component of primary healthcare in many rural African and Asian communities. It also constitutes an integral part of the culture of many societies of the world. Many herbs and herbal recipes have a long traditional history of folk uses and claims of health benefits. Scientific research has shown that Herbal Medicine contains complex chemical compounds that are responsible for the pharmacological activities which correspond to health benefits and or toxicity they elicit. The dosage form of herbal medicines varies widely depending on such factors as the type of disease to be treated, route of application, patient, culture, and even philosophical backgrounds. In homes and traditional medicine clinics, Herbal Medicine are prepared often from fresh or dried herbs which are commonly made into infusions, decoctions, poultices, powders to be poured into open wounds or incorporated into native beverages, puddings, and so on. Conventional commercial Herbal Medicine products are commonly available as pills, capsules, tablets, powders/granules, creams, and ointments. The presentation of Herbal Medicine in pharmaceutical dosage forms is expected to enhance accurate dosing. Safety and efficacy in other important factors overriding the use and commercialization of Herbal Medicine. The quality of herbal products is essentially dependent on the safety and efficacy of the herbal material and relation to the intrinsic chemical components, type of contaminants as well as production processing. The chemical compounds that are contained in herbal materials have shown a wide range of benefits in the management of various diseases including challenging diseases/conditions such as HIV/AIDS, cancer, sickle cell disease, malaria, and other infectious diseases All the

activities of Herbal Medicines benefits and toxicities are linked to the presence of especially the secondary metabolites. The increasing attention on Herbal Medicine has also stimulated increased research in this area resulting in more information as far as efficacy and folk claims are concerned.

Many research efforts have corroborated claims resulting in the commercialization of many herbal products and their nomination as leads in the development of pharmaceutical drugs. The limited knowledge on these products has made information on the therapeutic benefits and side effects very limited thus heightening the doubt of their health benefits It is also common knowledge that many people use Herbal Medicine concurrently with pharmaceutical drugs and for much Herbal Medicine information on the likely outcome of this practice is not available because no study has been carried out. Hence, there is a need for information regarding the likely outcomes of the interactions of sundry Herbal Medicine and the commonly used conventional medicines. Also, in the USA, about 40% of the adult population has used herbal medicine.

In modern medicines, plants occupy a very important place as the raw material for some important drugs. Synthetic drugs are effective in controlling different diseases but these synthetic drugs are out of reach of millions of people and have various side effects. It is estimated that around 70,000 plant species have been used for medicinal purposes. The herbs provide the starting material for the synthesis of conventional drugs. India recognizes more than 2500 plant species having medicinal value, Sri Lanka around 1400 and Nepal around 700.2. This review intends to provide an overview of the chemical constituents and pharmacological actions of *Euphorbia* Plants require carbon, hydrogen, and oxygen, plus other naturally occurring elements that are taken from the soil. These elements are considered Essential, as in their absence all plants are unable to complete a normal life cycle. Essential elements may be considered either macronutrients or micronutrients, depending on the quantity Normally required. Each essential element has a role to play in the biochemistry and physiology of the plant.

MATERIALS AND METHODS

Chemicals

Petroleum Ether, Ethanol. n Hexane, Ethyl acetate. Acetic acid. Formic acid. Acetone. Ethyl alcohol. Chloroform. Organic solvent obtained from Bareilly.

Preparation of leaf Extracts

Euphorbia milii plants are collected from village Rohtapur Aonla Bareilly U.P. 243302/and authenticated by Arti Garg. Scientist-E (Ref, No BSI/CR/2020-21/405) DATE 26/02/2021 and accession no 105182 by the botanical survey of India, Allahabad. Leaves are dried at room temperature without sunlight and ground powder is used in the grinder, Powder was extracted in petroleum ether. Ethanol. water acetone All types of extracts were evaporated using a rotary evaporator and hot air oven used on dried. And resulted in crud extract preserved in packed containers and tightly closed containers cap and further analysis.

Anti-Inflammatory Activity

Carrageenan Paw Edema Model: The rats with a weight ranging from 150-180g were orally administered for 7 days 30 rats with different concentrations of test drug extract (leaves of *Euphorbia milii*). A suspension of 0.1ml carrageenan (type IV, 1% w/v in saline solution) was injected in the sub plantar region of the left hind paw of the rats. 0.1ml saline solution as a control. The vehicle carboxyl methylcellulose 1% w/v (0.1 ml) was used for the control group of rats. The reference drug ibuprofen (10mg/kg) was administered orally after 20 minutes of the carrageenan injection as an anti-inflammatory agent. The hind paw volume was measured according to the method. The volume of Edema in each rat was calculated from the initial and final volume of the hindfoot The percentage inhibition of the increase in the volume of the injected foot Edema was calculated for each animal group by the following formula:

$$\text{Paw Edema inhibition} = (Vc - Vt)/Vc \times 100$$

Where Vc =mean increase of paw volume control Animals; Vt = mean increase of paw volume of treated Animals.

Anti- Analgesic Activity

Eddy's Hot Plate Model

In this model, the experimental rats were randomly distributed into four groups comprising four experimental rats in each group. All animals were introverted from feed 2 h before the beginning of the experiment. Pre-testing of Experimental Rats on Eddy's hot plate kept at 55 °C ± 0.1 °C was then performed. Experimental Rats displaying latency time greater than 15 s were omitted from the experiment. In our study, none of the Experimental rats displayed

latency time greater than 15 s in pre-testing examination so there was no exclusion. The groups were injected with the following: group I was injected sterile NS 10 ml/kg; group II was given tramadol 20 mg/kg; group III and IV, EMEE 200 mg/kg and 400 mg/kg via i.p. route of administration, respectively. Thirty minutes after administration of corresponding treatment, the Experimental rats were placed on Eddy's hot plate and latency time (time for which Experimental rats remained on the hot plate without licking or flicking of hind limb or jumping) was then measured for 1 min and recorded.

RESULTS AND DISCUSSION

Anti-inflammatory Activity

Carrageenan Paw Edema model

Effect of inflammation of Rats of Ethanolic Extract of the leaves of *Euphorbia milii*

Treatment	Dose (mg/kg)	60 min	120 min	180 min	Inhibition (%)
Control	-	0.61±0.012	0.65±0.033	0.72±0.011	66.69
Standard	10	0.46±0.01	0.33± 0.014*	0.24±0.011	65.68
EMBED	100	0.52±0.011*	048±0.011*	0.43±0.14*	36.95
EMBED	200	0.53±0.014**	0.45±0.010**	0.36±0.020**	47.14
EMBED	400	0.56±0.005**	042±0.011**	0.35±0.088**	49.44

Data are expressed as mean± SEM: n=6 in each group. Values in parenthesis are percentage inhibition in comparison to control group compared to control group (One-way ANOVA Followed by Dunnett's test); *: P ≤0.05 and **:P ≤0.01.

Analgesic Activity

Eddy hot's Plate

Table No. 5.8: Analgesic activity of ethanolic extract of the leaves of *Euphorbia milii.*

Treatment Group (DOSE)	Pre-Drug Reaction Time of Sec	20 MIN	60 MIN	90 MIN	P-Value
Control Group (Normal Saline) 2ml/Kg)	3.32± 0.407	3.32± 0.257	3.58 ±0.491	3.41 ±0.375	0.650
Group 2 (Tramadol 20 Mg/Kg)	3.50 ±0.631	4.421± 0.860	8.57± 1.743	11.7± 1.685	0.00001
Group 3 (EMEE200mg/Kg)	3.16± 0.515	4.00± 0.446	5.41 ±1.020	7.82 ±1.570	0.00001
Group 4 (EMEE400mg/Kg)	3.5± 1.319	4.50± 0.893	6.49± 1.377	9.32± 1.365	0.00001

Results Expressed as Mean±SD, N=6, P-Value Is Significant. 0.001 Is Highly Significant. Followed By one ANOVA Followed by Dunnett's test); *: P ≤0.05 and **:P ≤0.01.

Analgesic property demonstrated as latency time after different time intervals of dose administration and b percentage analgesia of plant extract ($n = 4$). Asterisk shows the significant difference ($p < 0.05$) between the treated group and the control.

CONCLUSION

In the pharmacological study, anti-inflammatory and anti-analgesic activities were performed.

There was no sign and symptoms of acute toxicity and mortality up to 2000 mg/kg body weight were found during the experimental period. In anti-inflammatory activity ethanolic extract of *Euphorbia milii* showed significant effect at 400mg/kg, using ibuprofen as standard drug. In Anti-analgesic activity, the ethanolic extract of *Euphorbia milii* 400mg/kg showed a significant effect.

The studies suggest that contains medicinal important secondary metabolites which have disease protective properties. This study will help in the identification of a suitable monograph, determining the quality and purity of a crude extract, and laying down pharmacopeia standards for the formulation.

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