International Journal of Science and Research (IJSR)
ISSN: 2319-7064
SJIF (2022): 7.942

Anti-Inflammatory and Anti-Analgesic Activity, Acute Toxicity Studies *Tecomaria capensis*

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Abstract: ***The plant leaves solvent extracts and thin layer chromatography was also performed. In pharmacological evaluation results of anti inflammation and anti-analgesic activity were found significant at 400 mg /kg of ethanolic extract of leaves of Tecomaria capensis.***

Keywords: Anti Inflammatory, Anti Analgesic, Toxicity

1. Introduction

Tecoma capensis is **a scrambling shrub that produces magnificent red, orange, or yellow flowers, which have a distinctly tubular shape and measure about 7.5 centimeter's in length**. These flowers are arranged in clusters. The oval leaves have blunt serrations.

Tecoma capensis is a species of flowering plant in the family Bignoniaceae, native to southern Africa. Despite its common name, it is not closely related to the true honeysuckle. Tecoma capensis has been in cultivation for many years and is often used for hedging as a scrambling shrub. It can be propagated from cuttings or by removing rooted suckers during the active growth phase. It can be planted in a semi-shade to full sun. In cold areas, young plants should be protected from frost. To keep this shrub clean and tidy, it must be pruned back in late winter to promote new growth and flowers. The application of balanced fertilizer after pruning will enhance growth and flowering. Propagation instruction Pharmacognosy deals with the study of crude drugs of vegetable and animal origins. The subject concern includes biochemical, therapeutic, and economic features of the subject concerned including biological, as been deve a ly due to drugs and their derivatives. Modern pharmacognosy has been developed rapidly naturally; es which includes the development o: improvements made in the technology of isolation procrformane's daughter techniques such as column, paper, thin layer, gas-liquid, high-performance liquid, and cor current chromatography. These methods have allowed the rapid isolation of previously difficult compoundsobtained by classical procedures. The most important factor in this has been the development of new spectroscopic techniques which are used to identify the structures of these isolated compounds. Various active compounds have been isolated from herbs that are used in modem medicine. With the innovation of synthetic organic chemistry, most of the active constituents of flora, used in remedies have been synthesized. However, despite the phenomenal process in the area of the development of new drugs from synthetic sources and the appearance of antibiotics as major therapeutic agents, plants continue to provide the basic raw materials for some of the most important drugs**.**

The World Health Organization (WHO) estimates that about 80 % of the populations living in developing countries about entirely on traditional medicine for their primary healthcare needs. In almost all traditional medicine, medicinal plants play a major role and comprise the backbone of traditional medicine. With the emerging interest in the world to adopt and study the traditional system and exploit their potential based on different healthcare systems, the evaluation of the rich heritage of traditional medicine is essential

The role of medicines in traditional communities

The study of traditional medicines and their manufacture has much to offer to socio-cultural studies and constitutes a meeting point of almost any imaginable human interest: material, social, political, and emotional. They also play their many roles at different social and Political organization levels: in international policy and funding, national politics, and ideology and identity construction vehicles. Ultimately medicines affect the private lives of individual patients, e. g, in the context of a consultation with a healthcare provider they are the conduit through which ill health is transformed into good health. In the context of the family, buying medicine for a relative can emit care. Within a religious context, medicines may be seen as gifts to the holy leaders

Ethno Medicinal Uses of *Tecomaria capensis*

Tecomaria capensis (Cape Honeysuckle, Kaapse Kanferfoelie, Telangana) is used for **fevers, pain, sleeplessness, chest ailments, diarrhea, dysentery, and stomach pains**. It also has magical uses and is a popular ornamental plant in eco-gardens

2. Material and Methods

Chemical

Organic solvent Ethyl Acetate, Chloroform, Water, Methanol, Hydro Alcoholic, etc., and every type of chemical used as a working time activity

Preparation of leaf extract

The plant Tecoma capensis has been selected and the plant collected leaves and dried at room temperature without sunlight ground powder is used in the grinder, and the powder was extracted hydrochloric evaporated and used a rotary evaporator and hot air oven used dried, and resulted in crud extract preserved in packed containers and tightly closed container cap and then further analysis,

3. Result and Discussion

Successive Extraction

The fresh leaves were taken, the ***Tecomaria capensis***n cut into pieces, shade-dried, and coarse powder. The coarse powder was extracted with different solvents as per increasing polarity by using the differential method in the Soxhlet

Pharmacological Studies:

Acute Oral Toxicity

Acute oral toxicity Is the adverse effect occurring within a short time of oral administration of a single dose of a substance or multiple-dosegiven within 24 hours. The highest attainable dose of 2000 mg/kg will be used as per the organization for economic cooperation and development (OECD) guideline 423. three rats, each sequentially dosed at an interval of 48 hours, will use for the test once daily cage side observation includes changes in skin fur mucus membrane (nasal), eyes autonomic salivation, lacrimation perspiration, piloerection, urinary incontinence, and defecation) and central nervous system (drowsiness, gait, tremors, and convulsion) changes. Mortality, if any, will be determined over3 weeks.

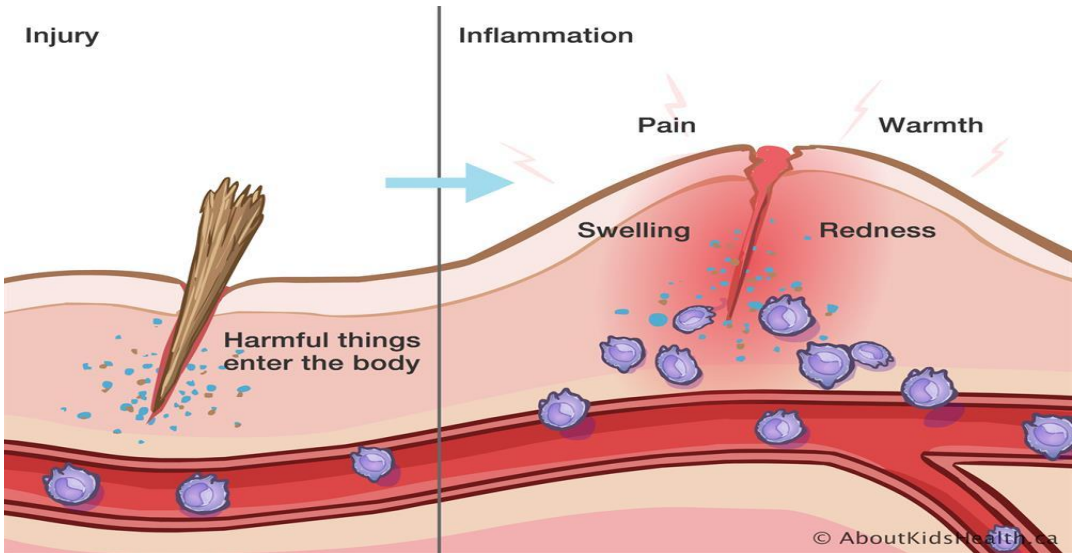

Figure of Inflammation

Anti-Inflammatory Activity: Effect of Ethanolic Extract of Leaves on Inflammation of *Tecomaria capensis* Rats

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
TCE	100	0.52±0.011*	048±0.011*	0.43±0.14*	36.95
TCE	200	0.53±0.014**	0.45±0.010**	0.36±0.020**	47.14
TCE	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 the control group (One-way ANOVA Followed by Dunnett's test); *: P ≤0.05, **: P ≤0.01, and ***: P ≤ 0.001

Analgesic Activity

Eddy hot's Plate

The ER was randomly distributed into five groups comprising four ER in each group. All animals were introverted from fed 2 h before the beginning of the experiment. Pre-testing of ER on Eddy's hot plate kept at 55 °C ± 0.1 °C was then performed. ER displaying latency time greater than 15 s was omitted from the experiment. In our study, none of the ER displayed latency time greater than 15 s in the pre-testing examination so there was no exclusion. The groups were injected with the following: group I was injected with sterile NS 10 ml/kg; group II was given tramadol 20 mg/kg; groups III, IV, and V were Ghauri et al. Future Journal of Pharmaceutical Sciences (2021) 7: 34 Page 3 of 10 given EG 50, 100, and 200 mg/kg via i. p. route of administration, respectively. Thirty minutes after administration of the corresponding treatment, the ER was placed on Eddy's hot plate and latency time (time for which ER remained on the hot plate without licking or flicking of hind limb or jumping) was then measured for 1 min and recorded.

Analgesic activity of extract of the

Treatment Group (DOSE)	Pre-Drug Reaction Time of Sec	20 MIN	60 MIN	90 MIN	P-Value
Control Group (D/W2ml/Kg)	3.32± 0.407	3.32± 0.257	3.58 ±0.491	3.41 ±0.375	0.650
Group 3 (IND 25 Mg/Kg)	3.50 ±0.631	4.421± 0.860	8.57± 1.743	11.7± 1.685	0.00001
Group 3 (HS200mg/Kg)	3.16± 0.515	4.00± 0.446	5.41 ±1.020	7.82 ±1.570	0.00001
Group 4 (HS400mg/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. Fischer Extract Test Followed By ANOVA

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

The peripheral analgesic activity was estimated by the acetic acid-induced writhing model and the number of Writhings was counted for 60 s and 20 min after injection of 1% acetic acid to all groups. The difference between the number of writhing in the control and treatment groups was then calculated and the percentage of analgesia was determined. Plant extract produces a 27% decrease at 50 mg/kg, 41% at 100 mg/kg, and 46% at 200 mg/kg dose in writhing response when compared with the control group. The maximum analgesic strength of the plant extract for peripheral analgesic activity was found to be 46% at a dose strength of 200 mg/kg as compared to 64% for indomethacin taken as standard Peripheral analgesic potential demonstrated by the number of writings and b as percentage analgesia of plant extract for 20 min after I. P. Analgesic activity

The study demonstrated that the plant extracts ***Tecomaria capensis*** Revealed substantial peripheral as well as central analgesic traits, at a dose strength of 200 mg/kg. The central analgesic property was evaluated and the plant extract displayed a dose-dependent increase in latency time of lifting the paw on Eddy's hot plate and the analgesic potential was found to be 61% at 200 mg/kg dose as compared to 86% for reference drug tramadol 20 mg/kg. The results for latency time were recorded at 0, 20, and 60 min

4. Conclusion

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

In anti-inflammatory activity ethanolic extract showed si***Tecomaria capensis*** significant effect at 400mg/kg, using ibuprofen as the standard drug.

In anti-analgesic activity, the ethanolic extract of 400mg/kg showed ***Tecomaria capensis***d a significant effect.

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

Acknowledgments

First I thank **God Shiv Bhole Nath** and my family PARENTS MY Father **MR. DOD RAJ VERMA,** AND Other members for giving me patience, courage, and abundant blessings power conducting the study, and helping me in every walk with all that I have got.

I take this opportunity to express my deep sense of gratitude, and respect to my esteemed teacher and guide, **AND friend, TEJ PAL PALI, SHIVAM VERMA, and Rekha verma** for their support guidance, and encouragement throughout this work. I am extremely thankful for providing me with all the necessary facilities to complete my research.

Last but not least my deepest gratitude goes to my parents and my family in for their continuous encouragement support, and interest throughout my studies.

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