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EVALUATION OF SKETETAL ACTIVITY OF TECOMA STANS ON ISOLATED FROG'S RECTUS ABDOMINUS MUSCLE

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ABSTRACT

Tecoma stans, the yellow bells Plants belonging to the family Bignoniaceae. It height ranges from 2 to 4 meters. It is an important medicinal herb throughout India. Among all parts from Plant-seeds, roots and bark are the most important parts which are used Medicinally. Skeletal muscle activity of Tecoma stans leaves extract were studied in the green frog (Rana hexadactyla) by the rectus abdominis muscle preparation. Tecoma stans leaves extract with distilled water 1µg/ml, 10µg/ml and 100µg/ml concentrations. The result indicated that more potent skeletal muscle activity on frog's rectus abdominus muscle.

KEYWORDS: *Tecoma stans, skeletal muscle activity, acetyl choline,*

INTRODUCTION

Plants are Cultured everywhere not in specific place It useful to human health and well being. The plant is fast growing plant with 30 feet in height contents yellow flowers and leaves with green. The t. stan is useful to treat diabetes in mostly countries like Mexico, India and America and the roots are used to treat diuretic and Anti-fungal. The first prefer for this plant is herbal medicines.[1-5]

Figure 1: *Tecoma Stans* plant.

T. stan has various pharmacological Activities anti-oxidant, anti diabetic, anti-fungal, anti-cancer, anti-hyperlipidemic, anti-micribial activities.

1. **Anti-oxidant:** The presents of Tannins in the extracts of bio-activities to posses' potent anti-oxidant activity.
2. **Anti-spasmodic effect:** This effect can be evaluated by using segment of ileum from rat with trade solution. The TLE dose dependently which indicate calcium channels are involved in this spasmolytic effect.
3. **Anti-microbial activity:** The extract of leaf was tested on Bacteria. The extract of phenolic content was showed its anti-microbial activity.
4. **Anti-fungal acitivity:** The extract of t.stan was tested against two species of fungi (sporothrix schenckii and fonsecaea pedrosoi) Shows best effective anti-yeast and anti-fungal activity.
5. **Anti-diabetic activity:** TAE sub-chronic admin reduces triglycerides and cholesterol without modifying fasting glucose. The chemical composition of extract was analyzing their content of phenols, flavonoids and alkaloids reputed as to be responsible for hypo-glycemic properties of many anti diabetic.
6. **Wound healing property:** The methanol extract of t.stans leaf was possess significant wound healing property.[6-11]

MATERIALS AND METHODS

Collection of Plant material

Tecoma stans leaves were collected from the botanical garden of vaageswari institute of pharmaceutical sciences, karimnagar, Telangana.

Preparation of plant extract

1kg of *Tecoma stans* leaves were obtained, washed and dried. The collected dried leaves, pulverized by a mechanical grinder, sieved through 60 mesh and was soxhalation with Ethanol for 5-10 cycles. The final product was dried and weighed.[12]

Effect of Fenugreek *Tecoma stans* leaves extract on the skeletal muscle of the frog. Since the antimigraine drugs were reported to have skeletal muscle activity, so this experiment was attempted to assess the effect of *Tecoma stans* leaves and seeds extracts on the frog rectus abdominis muscle preparation. The experiment was carried as per the method described by Kulkarni.[13]

Frogs weighing 20-25 g were used in this study. The frog was stunned and decapitated and the spinal cord was destroyed. A frog was pithed and the skin of the anterior and abdominal wall was cut by a midline incision and then it was cut laterally to expose the anterior abdominal wall the two rectus were seen running from the base of sternum. The muscles were cut across just above the sternum at its base and the pair of muscles attached to it were dissected and transferred to a dish containing frog ringer solution at room temperature. The muscles were then carefully cleaned and one of them was trimmed to the desired size and mounted in an organ bath filled with ringer solution at room temperature and aerated by stream of fine bubbles emerging near the bottom of the bath. Isotonic contractions were recorded using gimbel lever with a sideways writing point. The lever was balanced for a tension of approximately 2-5g. An extra load of approximately 1g on the long arm was supplied because sometime the lever may not return to the base line after washing. The drug period allowed for stabilization was 30 minutes during which the muscle was subjected to 1g stretch. At 0^{th} min - the kymograph was started after raising the extra load; in the 1^{st} min- the drug was added and in the 2^{nd} min- the kymograph was stopped. The tissue was washed and allowed to relax by applying an extra load. At the 5^{th} min- the lever point was brought to the base line and the next cycle was started. After recording the graded responses to different log dose of acetylcholine, the *Tecoma stans* leaves and seeds extracts was added and their effects upon acetylcholine induced contractions as well as the effect of its own in the tissue was studied.[14,15]

RESULTS

S. No.	DRUG	Dose(mcg/ml)	Height(mm)	Response
1	Acetylcholine	1	3	Increased
2	Acetylcholine	2	6	Increased
3	Acetylcholine	4	8	Increased
4	Acetylcholine	8	9	Increased
5	Acetylcholine	16	13	Increased
6	ditubocuraine	4	-	_
7	Techoma Stans Leaves Extract	1	3	Increased
8	Techoma Stans Leaves Extract	10	5	Increased
9	Techoma Stans Leaves extract	100	8	Increased
10	Acetylcholine +Techoma Stans Leaves Extract	1 1	6	Increased
11	Acetylcholine +Techoma Stans Leaves Extract	1 10	9	Increased
12	Acetylcholine +Techoma Stans Leaves Extract	1 100	11	Increased

DISCUSSION

The T.stans leaves extract was found to have skeletal muscle activity with the concentrations of 1 µg/ml, 10µg/ml, and 100µg/ml. When the activity was compared between the standard drug i.e, Acetylcholine and test drugs T.stans. The activity of the standard drug is more compare to test drugs and it is above to reach with the standard drug. The skeletal muscle activity was evaluated first by the acetylcholine of different doses like 1 µg/ml, 2 µg/ml, 3 µg/ml, 4 µg/ml and 8 µg/ml and with d-tubocuraine of dose about 16 µg/ml. The acetylcholine were shown more activity by increasing the dose response whereas, the drug d-tubocuraine has shown no effect and no action it neither contraction nor depolarization because it inhibits muscular contraction induced by the application of acetylcholine.

The effect of acetylcholine and T.stans leaves extract were compared and the result shown the more active response with the acetylcholine. Thus, the present investigation proves that fenugreek seeds extract and fenugreek leaves extract were have good skeletal muscle activity alone and combination with acetylcholine and it produces the significant skeletal muscle activity at high concentration.

CONCLUSION

This study finally concluded that the Tecoma stans shows good skeletal muscle activity on frog's rectus abdominus muscle. It *was* selected for further investigation, involving bioassay guided fractionation, in order to isolate the constituents responsible for the effect of the plant.

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