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Research Article

**EVALUATION OF SKELETAL MUSCLE ACTIVITY OF
METHANOL EXTRACT OF *TECOMA STANS SEEDS* (METSS)
ON ISOLATED FROG'S RECTUS ABDOMINUS MUSCLE**

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Abstract:

Skeletal muscle activity of Methanol Extract of Tecoma stans Seeds (METSS) was studied on the green frog (Rana hexadactyla) by the rectus abdominus muscle preparation. Methanol Extract of Tecoma stans Seeds (METSS) with distilled water 1µg/ml, 10µg/ml and 100µg/ml concentrations. The result indicated that the treatment of Methanol Extract of Tecoma stans Seeds (METSS) alone and combination with acetylcholine produce skeletal muscle activity. Thus from the present study it was concluded that Methanol Extract of Tecoma stans Seeds (METSS) have good skeletal muscle activity alone and in combination with Acetylcholine.

Keywords: Skeletal muscle activity, Methanol Extract of Tecoma stans Seeds (METSS), Rana hexadactyla, Acetylcholine.

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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 tecoma stans 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.



Image No.1 : *Tecoma stans* plant and Seeds

Tecoma stans has various pharmacological Activities anti-oxidant, anti-diabetic, anti-fungal, anti-cancer, anti-hyperlipidemic, anti-microbial 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 spasmodic 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 *Tecoma stans* 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 *Tecoma stans* leaf was possess significant wound healing property.

7. Skeletal muscle activity : The *Tecoma stans* plant extracts possess good skeletal muscle activity. [1]

Recent research was done on the plant extracts by using animal model shows good medicinal significance alone and in combination with allopathic drugs. So here I plan to evaluate the effect of Methanol Extract of *Tecoma stans* Seeds (METSS) on skeletal muscle contraction by using the isolated Frog rectus abdominus muscle preparation. [2-7].

MATERIALS AND METHODOLOGY:**Collection of plant materials and extraction procedure**

Seeds were dried under shade for 10 days. Dried Seeds were subjected to grinding in Grinder to 40 mesh size and a powder was obtained and stored at room temperature. The powder material was soxhalation with methanol at room temperature for 5 days. After 5 days, the extract was transferred into china dish. A semi solid extract was obtained; The extract was kept in the refrigerator for complete experiment. The Methanol Extract of *Tecoma stans* Seeds (METSS) were prepared by dissolving known volume of distilled water (1 μ g/ml, 10 μ g/ml and 100 μ g/ml concentrations) just before starts the experiment.

EFFECT OF METHANOL EXTRACT OF *TECOMA STANS* SEEDS (METSS) ON THE SKELETAL MUSCLE OF THE FROG

This experiment was attempted to assess the effect of Methanol Extract of *Tecoma stans* Seeds (METSS) on the frog rectus abdominis muscle preparation. The experiment was carried as per method described by Kulkarni (The text book of experimental pharmacology).

Frogs weighing 20-25 gm 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 muscle 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 2-5 gm. An extra load of approximately 1gm on the long arm was supplied because some time the lever may not return to the base line after washing. The drug period allowed for stabilization was 30 min during which the muscle was subjected to 1gm stretch. At 0th min – the kymograph was started after raising the extra load; in the 1st min –the drug was added and in the 2nd min - the kymograph was stopped. The tissue was washed and allowed to relax by applying an extra load. At the 5th min- the lever point was brought to the base line and the next cycle was started. After recording the graded responses to different long dose of acetylcholine, the Methanol Extract of *Tecoma stans* Seeds (METSS) was added and their effect upon acetylcholine induced contraction as well as the effect of its own in the tissue was studied. [8-12].

RESULTS:

Table 1: Skeletal muscle activity of Acetylcholine, d-tubocuraine, METSS, Acetylcholine+ METSS

S.N O	DRUG	DOSE ($\mu\text{g/ml}$)	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	d-tubocuraine	4	-	-
7	METSS	1	3	Increased
8	METSS	10	8	Increased
9	METSS	100	12	Increased
13	Acetylcholine + METSS	1 1	6	Increased
14	Acetylcholine + METSS	1 10	11	Increased
15	Acetylcholine + METSS	1 100	13	Increased

DISCUSSION:

The Methanol Extract of *Tecoma stans* Seeds (METSS) was found to have skeletal muscle activity with the concentration of 1µg/ml, 10µg/ml, and 100µg/ml.

When the activity was compared between the standard drug i.e, Acetylcholine and test drugs Methanol Extract of *Tecoma stans* Seeds (METSS). The activity of the standard drug is more compare to test drugs and it is above reach with the standard drug.

The skeletal muscle activity was evaluated first by the acetylcholine of different doses like 1µg/ml, 2µg/ml, 4µg/ml, 8µg/ml and 16µg/ml and with d-tubocuraine of dose about 4µg/ml. The acetylcholine were 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 by the application of acetylcholine.

Then skeletal muscle activity is evaluated by using test drugs Methanol Extract of *Tecoma stans* Seeds (METSS) of using different doses like 1ug/ml, 10ug/ml and 100ug/ml. For both the test drugs the response have been increased.

Thus, the present investigation proves that Methanol Extract of *Tecoma stans* Seeds (METSS) were have good skeletal muscle activity alone and combination with acetylcholine and it produces the significant skeletal muscle activity at high concentration.

CONCLUSION:

The Methanol Extract of *Tecoma stans* Seeds (METSS) was found to good skeletal muscle activity with different concentrations. When the activity was compared between the standard drug i.e, acetylcholine and test drugs Methanol Extract of *Tecoma stans* Seeds (METSS). The activity of the standard drug is more compare to test drugs.

The skeletal muscle activity is evaluated by using test drugs Hibiscus leaves extract of using different doses like 1 g/ml, 10 g/ml and 100 g/ml. for both the tests drugs the response have

been increased. The effect of acetylcholine and Methanol Extract of *Tecoma stans* Seeds (METSS) were compared and the results show the more active response with the acetylcholine rather than the Methanol Extract of *Tecoma stans* Seeds (METSS).

This study finally concluded that the effect of Methanol Extract of *Tecoma stans* Seeds (METSS)

and combination of Methanol Extract of *Tecoma stans* Seeds (METSS) and acetylcholine were shown good skeletal muscle activity.

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