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THE EFFECT OF AQUEOUS EXTRACT OF ORTHOSIPHON THYMIFLORUS ON ISOLATED SKELETAL MUSCLES

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ABSTRACT: *Effects of an aqueous extract of orthosiphon thymiflorus on acetyl choline induces contraction on isolated frog rectus abdominis muscle were studies. The aqueous extract of orthosiphon thymiflorus produced significant inhibitory effect on the dose response curve of acetyl choline. It is concluded that the aqueous extract of orthosiphon thymiflorus may exert an inhibitory effect on the skeletal muscle contraction and may be due to inhibition of the effect of acetylcholine at the receptor site.*

INTRODUCTION

Orthosiphon thymiflorus is a medicinal plant, slightly aromatic subshrub commonly seen in India, It is grown in Hills above 600m on the slopes, in crevices of rocks; more numerous by arable lands, etc [1-4].

The Genus, *Orthosiphon* contains 9 species; Pharmacological properties like antidiabetic, diuretic, antihepatotoxic antibacterial, hypertensive and antitumor activity of this genus, *Orthosiphon* have been reported by several workers [5-8]. But significant phytochemical and pharmacological screening works have not been reported

The present investigation has been designed to stud the effect of aqueous extract of *Orthosiphon thymiflorus* on isolated frog-rectus muscle preparation.

MATERIALS AND METHODS

Plant Material

Orthosiphon thymiflorus was collected from Tirunelveli district and confirmed in central siddha research unit, Tirunelveli and found to comply with all monographic specifications.

The aqueous extract was obtained by imbibitions, maceration and percolation process. 100G of the powdered plant material was moistened with 160ml of chloroform ate for 4 hours. Ten it was macerated with 341.5 ml if the menstrum for 24 hours. 264ml of the aqueous extract was collected from the percolator. The yield was about 14.2G of air-dried extract (14.2%)

Experimental

Isolated frog-rectus abdominis muscle was mounted in frog ringer solution at room temperature. The dose-response curves of acetyl choline Hcl were obtained as described by Ghosh9. The experiment as repeated in the presence of aqueous extract of *Orthosiphon thymiflorus*, added in the bath at varying doses (50,100,200,400 mg/ml respectively).

RESULTS

Aqueous extract of *Orthosiphon thymiflours* in all the dose tested, produced significant dose dependent inhibition of contraction n acetyl choline, the aqueous extract of orthosiphon thymiflours produced inhibitor effects at the doses of 50,100,200,400 mg/ml respective, and it was found to be of non-competitive type . (figure1).

DISCUSSION

The results, clearly show that an aqueous extract of *Orthosiphon thymiflorus* blocks the nicotinic actions of endogenous ligand, acetyl choline tat regulates the flow of ions though plasma membrace cannels

The natural endogenous ligand, acetyl choline is one of the synaptic transmitter, it is receptors transmits its signal across the plasma membrane n increasing transmembrane conductance of the relevant ion and thereby altering the electrical potential across it membrane, acetyl choline causes the opening of the ion channel in the nicotinic acetyl choline receptor (Ac R), Which allows Na + to flow sown its concentration gradient into cells, producing a localized excitatory postsynaptic potential- a depolarization, and excitation 10.

The inhibitory effect of aqueous of *Orthosiphon thymiflorus* may be due to blockage of the receptor-operated and thus preventing the entry of ions during depolarization of skeletal muscle by acetyl choline, the results of the present investigation suggest that an aqueous extract of orthosiphon thymiflours may exert an inhibitory effect on the skeletal muscle contraction and this ma e due to inhibition of the effect of acetyl choline at the receptor site.

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