LETTER TO THE EDITOR:

XANTHOTOXOL (XT) - A POTENT 5-HT ANTAGONIST

Sir,

Xanthotoxol (XT), 8-hydroxy psoralen a crystalline substance obtained from the plant *Angelica archangelica* has hypotensive (author’s unpublished observations), cardio-inhibitory (4), anticholinesterase (5) and antiadrenergic and CNS depressant activities (6). The present communication reports the anti-5-Hydroxytryptamine (5-HT) activity.

Rat isolated fundal strip preparation was bathed in Krebs solution kept at 37 ± 0.5°C. The tracings were recorded on smoked drum with a frontal writing lever, having 8-fold magnification and loaded with 1.5 g tension. The bath capacity was 15 ml and the preparation was bubbled with O₂. 5-HT responses were registered for 90 sec and XT contact time was 15 min. 5-HT dose-response curves were obtained in the absence and presence of different concentrations of XT.

XT (1.48 x 10⁻⁵, 4.9 x 10⁻⁵ and 1.48 x 10⁻⁴ g/ml) elicited graded contractile responses. The effects of two concentrations are shown in Fig. 1 and 2 (n = 8). XT (1.48 x 10⁻⁵ and 4.9 x 10⁻⁴ g/ml) exhibited a graded inhibition of responses to 5-HT (3.2 x 10⁻⁹, 6.5 x 10⁻⁹, 9.9 x 10⁻⁹, 1.3 x 10⁻⁸, 1.9 x 10⁻⁸ and 2.6 x 10⁻⁸ g/ml). There was no reduction of the maxima (Figs. 1 and 2) suggesting a competitive nature of antagonism of XT to 5-HT. Responses to lower concentrations of 5-HT (6.5 x 10⁻⁹ g/ml) were blocked less than those to higher concentrations (2.6 x 10⁻⁸ g/ml).

In view of the above study, it is tempt to propose that XT might be used as a potential anticholinergic agent.

Navrangpura, 2
The above letter is written on behalf of
Sethi, O. and to Or
1. Brodie, E. norepinephrine
2. Brodie, J. P. the brain
3. Costa, F. neurohumors
5. Sethi, O. crystalline
6. Sethi, O. Xanthotoxol and to Dr.

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Fig. 1: Rat isolated fundal strip

At 1, 2, 3, 4, 5, 6 and 7 administration of 5-HT. 6.5 x 10⁻⁹, 9.9 x 10⁻⁹, 1.3 x 10⁻⁸, 1.9 x 10⁻⁸, 2.6 x 10⁻⁸ g/ml respectively was added to the bath. At XT, Xanthotoxol (1.48 x 10⁻⁵ g/ml) was present in the bath.

At 7 after wash, note the abrupt downwards shift of the base line to its original place in the absence of XT.
In view of the potent peripheral anti-5-HT activity of XT demonstrated in the present study, it is tempting to suggest that the CNS depressant activity of XT (6) may be due to its antagonism to 5-HT at the CNS level as reported for reserpine and related drugs (1,2,3).

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References