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In vitro evaluation on antilithiatic activity on *Hyptis suaveolens* (L.) leaves

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SUMMARY

A study was undertaken to evaluate the in vitro antilithiatic activity of soxhlet extract of leaves of *Hyptis suaveolens* (L.) The In vitro activity was determined by inhibition of calcium (titrimetric analysis) and phosphate (Colorimetric analysis) precipitation. Cystone (a marketed product) was used as reference drug for comparison. Ethanolic Extract of *Hyptis suaveolens* (L.) showed activity almost equivalent to cystone.

Key words : Antilithiatic, *Hyptis suaveolens* (L.), Cystone

India is one of the richest floristic regions of the world and has been a source of plants and their product. The plant *Hyptis suaveolens* (L.) family – Lamiaceae commonly known as Wilayati tulsi is used to treat various diseases. The leaves have been reported to posses medicinal properties and are used in inflammatory condition (Harbone, 1988), wound healing (Shirwaikar *et al.*, 2003), antimalarial agent (Zieglar *et al.*, 2002), Antioxidant (Shirwaikar *et al.*,2003), protease inhibitors (Aguirre *et al.*, 2004), antiplasmodial agent (Chukwujekwu *et al.*, 2005), anticancer (Mabberly, 1990) and antifertility (in female) agent (Oliver, 1986) for the treatment of colics, stomach ache and fever. The essential oil of leaves shows antimicrobial activity (Asekun *et al.*, 1999). However, antilithiatic activity have not been reported for the leaves. Therefore efforts were devoted in this direction.

Lithiasis is the condition marked by formation of calculi, which is formed by deposition of various calcium, phosphorus salts and antilitiasis is prevention of the formation of urinary calculi. A kidney stone is a solid piece of material that forms from (Khan, 1991) crystallization of excreted substances in the urine. The stone may remain in the kidney or break loose and travel down the urinary tract. A small stone may pass all of the way out of the body, but a larger stone can be stuck in ureter, the bladder, or the urethra. This may block the flow of urine and may cause great pain.

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MATERIALS AND METHODS

Plant material:

The leaves of *Hyptis suaveolens* (L.) were collected from Bundelkhand region, Jhansi (U.P.) and authenticated by Dr. H.B.Singh, Head Raw material and museum, NISCARE, New Delhi.

Chemical used :

Aqueus, Ethanol, Petrolium ether and methanol extracts of leaves of *Hyptis suaveolens* (L.) aqueous extract of cystone (Himalaya Health care Ltd.). TRIS buffer pH 7.4, 0.4 M Hydrochloric acid, 25 mm $Cacl_{2..}H_2O$, 25 mm $Na_2HO_{4.}H_2O$, 25 mm $Na_2C_2O_{4.}$

Preparation of extracts :

Hyptis suaveolens (L.) :

Extracts were prepared by exhaustive extraction of leaves in a soxhlet apparatus with distilled water, Ethanol, Pet ether and methanol, respectively and filtered, concentrated in vaccum up to 100 ml.

Cystone :

Aqueus extract was prepared by grinding a tablet to powder. This powder was mixed with 5 ml water and kept for 2-3 hrs and then centrifuged at 1000 rpm. The clear supernatant was used for the study. (Jethi *et al.*, 1984).

0.1 M TRIS Buffer (pG 7.4):

Solution A was 0.4 M TRIS [45.4 g of TRIS (Trihydroxy methyl) amino methane per 1000 ml] : Solution B was 0.4 M hydrochloric acid [33.6 ml of concentrated hydrochloric acid per 1000 ml] . A working solution was made up of 25 ml solution A, 20.7 ml solution