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TWO SESQUITERPENE LACTONES FROM *ABUTILON INDICUM*

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Key Word Index—*Abutilon indicum*; Malvaceae; sesquiterpene lactones; alantolactone and isoalantolactone.

Abstract—*Abutilon indicum* afforded two sesquiterpene lactones identified as alantolactone and isoalantolactone. This is the first report of the occurrence of these compounds in the genus *Abutilon* and in the family Malvaceae.

INTRODUCTION

Abutilon indicum L. is one of the best known drugs of the Indian Materia Medica [1–3]. In this communication, we wish to report, for the first time, the isolation of the two sesquiterpene lactones alantolactone and isoalantolactone from *A. indicum*.

RESULTS AND DISCUSSION

This constitutes the first report of the occurrence of alantolactone and isoalantolactone, two compounds originally isolated from *Inula racemosa* [4] and since found in many other composites, in the Malvaceae.

EXPERIMENTAL

The plant material was collected from the fields around Varnasi, India. It was identified by Prof. P. V. Sharma and Prof. S. K. Roy, both of Banaras Hindu University. A voucher specimen is deposited in our laboratory.

Isolation. The coarsely powdered plant material (3.5 kg) was extracted with petrol (60–80°) in Soxhlet apparatus for 36 hr. The defatted plant material was then extracted with alcohol for 36 hr. The extract was concd under red. pres to yield a crude semi-solid mass (200 g). This material was stirred with 6% HOAc (100 ml), kept overnight, and then extracted with $CHCl_3$ (4 × 50 ml). The $CHCl_3$ extract was chromatographed over a silica gel G column. Elution with petrol–C_6H_6 (9:1) followed by C_6H_6 affoorded greyish and colourless solids respectively. The greyish solid, on crystallization from MeOH, yielded grey flakes of alantolactone (mp 81–82°, 7 mg). The colourless solid, on crystallization from MeOH afforded colourless crystals of isoalantolactone (mp 111–112°, 2 g). On TLC, both compounds gave a deep orange colour spot with Dragendorff's reagent, R_f 0.82 and 0.64 (C_6H_6–MeOH, 49:1) respectively. These two known sesquiterpene lactones were identified by comparision (co-TLC, mmp) with authentic samples and characterized on the basis of their physical (mp, $[\alpha]_D$, UV, IR, ^1H NMR, MS) data. $NaBH_4$ and catalytic reactions gave the known dihydro-derivatives.

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