

Short Communication

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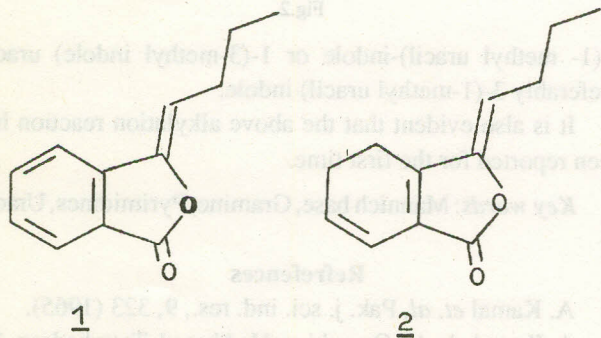
Lactones from *Pituranthos tortus*M. ABDEL-MOGIB, S. N. AYYAD*, M. A. METWALLY AND
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Pituranthos tortus (family Umbelliferae) is used in Egypt as flavouring agent, the tender parts are eaten fresh to bring good appetite. In the folk medicine, it is used as diuretic [1].

The roots of *P. tortus* were investigated by Karl Ernst and Barbara for polyacetylenes [2]. In this paper, we present the result of the investigation of the aerial parts.

The air-dried aerial parts (1 kg, collected from Cairo-Alexandria desert road, 70 km from Cairo, in Nov. 1989, (identified in the Herbarium of Botany Department, Faculty of Science, Mansoura University, Egypt) were extracted at room temperature with petroleum ether/ether/methanol (1:1:1). The extract was defatted with cold methanol giving 7 gm defatted material, which was chromatographed on silica gel CC to give 3 fractions. The main component of the first



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fraction (360 mg, eluted with petroleum ether/ether 9:1) was found to be β -bisabolene. One-fifth of the second fraction (280 mg, eluted with petroleum ether/ether 3:1) was separated by TLC (silica gel, petroleum ether/ether 9:1) to give myristicin (8 mg, R_f 0.52) and ligusticum lactone **1** (12 mg, R_f 0.34). The third fraction (900 mg, eluted with petroleum ether/ether 1:1) was purified by HPLC (RP 8, MeOH/H₂O 9:1) to give ligustilide **2** (300 mg, R_t 2.2 min).

Chromatographic separation of the extract of the aerial parts afforded β -bisabolene [3], the phenylpropanoid myristicin [4] and 2 γ -lactones, C₁₂H₁₂O₂ and C₁₂H₁₄O₂, both gave ν_{\max} CHCl₃ at 1740 cm⁻¹ and a singlet in the ¹³C-NMR at 167.6 ppm. ¹³C-NMR spectrum of lactone **2** showed the presence of three C=C double bonds, in addition to the C=O bond, indicating a bicyclic compound. ¹H-NMR of lactone **1** showed *o*-disubstituted benzene ring, in addition to an olefinic triplet at δ 5.64, indicating four C=C double bonds. All spectral data were found to be in agreement with ligusticum lactone **1**, isolated previously [5] from *Ligusticum acutilobum* (family Umbelliferae) and ligustilide **2**, isolated previously [6] from *Cnidium officinale* (family Umbelliferae).

Key words: *Pituranthos tortus*, Umbelliferae, Ligusticum lactone.

References

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