

HYMENIN, ANOTHER SESQUITERPENE LACTONE IN *AMBROSIA MARITIMA*

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Ambrosia maritima L. (Asteraceae) is a widely distributed weed in southern parts of Egypt, Sudan, Senegal, and neighboring countries with similiar soils and climate. In Egypt, it is a popular medicinal plant (1,2) with promising potential as a molluscicidal agent. This plant, its extracts, and isolated and modified sesquiterpene lactones have been shown to be toxic to the snails representing the intermediate hosts of schistosomiasis (3-5) and fascioliasis (6). Two sesquiterpene lactones, damsine and ambrosin, have been isolated and characterized from *A. maritima* about 30 years ago (1,7,8), and recently, six additional lactones have been found in this plant species (9). Here we report the isolation of another structurally related sesquiterpene lactone, hymenin, a diastereoisomer of the recently (9) isolated lactone parthenin. Because this study examined a different plant population from that recently investigated (9), our finding suggests that populations of *A. maritima* produce either hymenin or parthenin, but not both, as was the finding for numerous populations of *Parthenium hysterophorus* (10).

EXPERIMENTAL

Air-dried, crushed plants (800 g) collected in Egypt (Lower Nile Delta) in 1980 by one of us (J.D.H.L.) were extracted with EtOH (95%). To the evaporated extract, boiling H₂O (500 ml) and CHCl₃ (4×500 ml) were added. To the combined CHCl₃ portions (2 liters), anhydrous MgSO₄ was added, filtered off 24 h later, and the filtrate evaporated to dryness. The residue was extracted with 500 ml of petroleum ether and 500 ml of 10% aqueous MeOH. Using two-directional tlc (10) and the vanillin spray reagent (11), sesquiterpene lactones appeared in the aqueous portion which was applied to a Si gel column (90×3 cm; 100-200 mesh) and eluted with 800 ml of CHCl₃-Me₂CO (6:1) and 400 ml of CHCl₃-Me₂CO (3:1). Ambrosin, damsine, and hymenin were identified by their ¹H-nmr spectra (Bruker, 250 MHz, CDCl₃) and tlc (R_f and color) (11) using authentic samples for comparison. Full details of the isolation and identification of the compounds are available on request to the senior author.

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