(-)-SESAMIN FROM Eleutherococcus senticosus

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(-)-Sesamin, together with the lignane savinin, has recently been isolated from the roots of Acanthopanax sessiliflorum [1]. In order to broaden the raw materials base and to establish taxonomic relationships, we have studied Eleutherococcus senticosus, family Araliaceae. Ovodov et al. [2] have previously shown that the roots of this plant contain a glycoside the aglycone of which is the lignane (-)-syringaresinol. Nevertheless, sesamin was not found in a study of the chemical composition of the plant.

As we have established, (-)-sesamin forms part of the lipophilic fraction, which consists of four substances fluorescing in UV light. They are satisfactorily separated in a thin fixed layer of silica gel in the chloroform-methanol (4:1) system. These substances were isolated in group B in order of increasing R_{f} . Substance B_1 is the coumarin derivative isofraxidin (7-hydroxy-6,8-dimethoxycoumarin). The spot of substance B_2 fluoresces greenish-yellow and consists of a chromone. Substance B_3 fluoresces violet and is apparently a coumarin. (-)-Sesamin was detected on the chromatogram from its blue fluorescence and is denoted as substance B_4 . It is sometimes difficult to detect in the presence of a considerable amount of lipids.

We isolated (-)-sesamin from a chloroform extract of the roots of El. senticosus collected in the autumn of 1969 in the Maritime Territory. The comminuted air-dry roots (1 kg) of this plant were extracted with chloroform $(2 \times 2 \text{ liters})$ at room temperature. The combined extracts were evaporated in vacuum to dryness, and the residue was dissolved in petroleum ether $(70-100^{\circ}\text{ C})$ with heating in the water bath. The hot solution was decanted off in three portions of 20 ml each. On cooling, the solution deposited 0.23 g of a white finely-crystalline substance with mp 122.5°C. On recrystallization the (-)-sesamin formed colorless acicular or small white crystals readily soluble in chloroform, dichloroethane, ethyl acetate, and acetone, soluble in ethanol, and sparingly soluble in petroleum ether.

On the basis of the spectral investigation, substance B_4 was identified as (-)-sesamin. Its IR spectrum coincided completely with that of (-)-sesamin isolated from <u>A</u>. <u>sessiliflorum</u> and given by Freudenberg and Sidhu [3]. In the UV spectrum there are absorption maxima in the 236 and 385 nm regions (log ε 3.87 and 3.91).

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