DEACETYLLANATOSIDE A FROM THE LEAVES OF Digitalis ciliata

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In view of the large amount of digitoxigenin derivatives in the leaves of Digitalis ciliata Trautv. [1], we have continued work on their isolation.

The total polar glycosides of the leaves of the plant were separated by partition chromatography in a column of KSK silica gel (stationary phase water, mobile phase ethyl acetate) [2]. An individual glycoside was obtained in the form of white acicular crystals (from acetone) with mp 270-273°C $[\alpha]_D^{22}$ + 10° (c 0.78; ethanol). In the UV spectrum, $\lambda_{max}^{C_2H_5OH}$ 220 nm (log ε 3.94).

Acid hydrolysis of the glycoside (0.1 N H_2SO_4) gave an aglycone with mp 250-251°C, $[\alpha]_D^{22}$ + 18.7° (c 0.8; methanol), which was identified as digitoxigenin. In the carbohydrate fraction after the separation of the aglycone D-digitoxose was detected. Acid hydrolysi of the glycoside with Kiliani's mixture [3] gave D-glucose and D-digitoxose.

Enzymatic cleavage of the glycoside (enzyme from Helix pomatia) [4] yielded digitoxin with mp 247-250°C, $[\alpha]_D^{22}$ + 17° (c 1.03; chloroform) and D-glucose.

On the basis of the facts given we came to the conclusion that the glycoside isolated from the leaves of Digitalis ciliata is digitoxigenin bisdigitoxosidodigilanidobioside or deacetyllanatoside A [5-7]. A direct comparison of the glycoside with an authentic sample of deacetyllanatoside A, which we obtained by the saponification of lanatoside A confirmed their identity.

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