THE STRUCTURE OF CORGOINE

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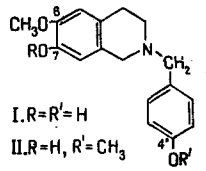
Previously, for the alkaloid corgoine isolated from Corydalis gortschakovii we proposed the structure (I). The positions of the hydroxy and methoxy groups in the ring were determined from the NMR spectrum [1]. In order to confirm this allocation of the functional groups taking into account the fact that in the isoquinoline part of the molecule the hydroxy groups possess weakened phenolic properties, we have attempted to pass from corgoine to sendaverine (II) by partial methylation with diazomethane. The course of the methylation was monitored by chromatography in a thin layer of silica gel [benzene–methanol–chloroform (5 : 1 : 1) system]. Sendaverine and its methyl ether were used as markers. However, the hydroxy group in the isoquinoline part was methylated far more rapidly than that at C-4'. The main intermediate was the monomethyl ether of corgoine (new methoxy group at C-7), and only a very small amount of sendaverine was formed. In view of this, and also of the absence of the necessary amount of corgoine we were unable to obtain sendaverine from the reaction mixture.

The debenzylation of sendaverine over palladium black led to 7-hydroxy-6-methoxytetrahydroisoquinoline, the authenticity of which was shown spectroscopically and by a comparison of the melting points of the base and its picrate with those given in the literature [2].

The analogous reaction with corgoine gave the same product, which confirmed the positions of the functional groups suggested previously.

It must be observed that the substance with the structure (I), which we have found in plants for the first time, was previously synthesized by Kametani et al. [3].



I. R=R'=H
II. R=H, R'=CH3

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