UMBELLIFERONE 7-β-D-GLUCOSIDE FROM DRY PREPARATIONS OF TEA

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The yellow pigment and preparation "vitamin P" is a dry extract of the tea plant [1, 2]. From these preparations we have isolated white acicular crystals with mp 220-221°C, $[\alpha]_D^{20}$ −84.5° (c 0.1; ethanol), R_f 0.65 showing a blue color on a paper chromatogram [BAW (4:1:5) system] on being sprayed with 10% KOH; the IR spectrum of the substance showed the following absorption bands, cm^{-1}: 3100 (OH), 1725 (CO of an α-pyrone), 1610 (aromatic double bonds), 1580, 1520, 1460. It is soluble in water and ethanol and insoluble in ether and chloroform.

The acid hydrolysis of the sugar moiety led to the formation of glucose and an aglycone with mp 231-232°C, appearing on paper chromatograms at the level of an authentic sample of umbelliferone; it gave no depression of the melting point with umbelliferone. The IR spectrum of the aglycone was also identical with that of umbelliferone [3, 5] and their UV spectra coincided.

On comparing the indices obtained with those given in the literature [4], it can be seen that the substance that we isolated is umbelliferone 7-β-D-glucoside (skimmin).

After the acid hydrolysis of the yellow pigment and the preparation "vitamin P," traces of a second substance of coumarin nature were found in the aglycone part which appeared on paper chromatograms at the level of scopoletin.

This is the first time that coumarins have been found in tea preparations.

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