POLYPHENOLS OF Atraphaxis frutescens. III

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From a methanolic extract of the leaves of Atraphaxis frutescens, after the elimination of the substances described previously [1, 2] we have isolated three flavonoid glycosides by chromatography on polyamide.

Glycoside (1) formed a dark yellow powder with mp 250-251° C (aqueous methanol), $[\alpha]_D^{+29} - 48.9°$ (c 0.57; dimethylformamide).

Glycoside (2) formed light yellow needles with mp 238-240° C (aqueous methanol), $[\alpha]_D^{+23} - 77.1°$ (c 0.68; methanol).

Glycoside (3) formed yellow needles with mp 176-178° C (aqueous methanol), $[\alpha]_D^{+32°} - 53.5°$ (c 0.58; methanol).

Quantitative acid hydrolysis yielded the corresponding aglycones and D-glucose, which was identified by paper chromatography with a marker, in ratio of 1 : 1. The positions of the glucose in the glycosides, its β-form, and the pyranose nature of the ring were confirmed by UV spectroscopy, enzymatic hydrolysis with β-emulsin, the presence of characteristic absorption bands in the differential IR spectra, and molecular-rotation calculations [3]. On the basis of their physicochemical properties and chromatographic comparisons with markers, the aglycones were identified as, respectively, myricetin, quercetin, and kaempferol. A comparison of the results obtained with literature information [4-7] enabled the glycosides isolated from the leaves of A. frutescens to be identified as myricetin 3-β-D-glucopyranoside, quercetin 3-β-D-glucopyranoside, and kaempferol 3-β-D-glucopyranoside.

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