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FLAVONOIDS FROM *Ammothamnus lehmannii*

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We have previously isolated phenolic acids from the plant *Ammothamnus lehmanni* Bge [1]. Continuing our investigation, from an ethyl acetate fraction of an alcoholic extract of the epigeal part of the plant collected in the flowering period in the Kenimekh region of Navoi province (close to the village of Kokcha), we have isolated another five flavonoids by column chromatography on silica gel with elution by chloroform–ethanol in various ratios.

Substance (I) with mp 328-331°C, M^+ 286 (acetate with mp 225-226°C) and substance (II) with mp 312-315°C, M^+ 302 (acetate with mp mp 196-198°C) were identified on the basis of IR, UV, PMR, and mass spectra and also by comparison with authentic samples, as luteolin and quercetin, respectively, [2, 3].

Substance (III) had mp 252-254°C, $[\alpha]_D^{20} - 40.8°$ (c 1.0; dimethylformamide). Acylation formed a heptaacetate with mp 122-124°C and acid hydrolysis led to luteolin and D-glucose.

On the basis of IR, PMR, and UV spectra with ionizing and complex-forming reagents, and also by direct comparison with an authentic sample, (III) was identified as luteolin 7-O-β-D-glucopyranoside (cynaroside) [3].

Substance (IV), with mp 226-229°C, $[\alpha]_D^{20} - 52°$ (c 0.4; methanol), on acid and enzymatic hydrolysis, gave quercetin and D-glucose. On the basis of IR and UV spectra and a comparison with the product obtained in the partial hydrolysis of rutin, this flavonoid was identified as quercetin 3-O-β-D-glucopyranoside (isoquercitrin).

Substance (V), with mp 194-197°C, $[\alpha]_D^{20} - 33.5°$ (c 0.2; methanol). Acid hydrolysis with 5% sulfuric acid formed quercetin, D-glucose, and L-rhamnose. On the basis of the results of UV, IR, and PMR spectroscopy and the production of quercetin on enzymatic hydrolysis with rhamnodiastase, and also by direct comparison with a authentic sample, compound (V) was identified as rutin [4].

This is the first time that these flavonoids have been isolated from *Ammothamnus lehmannii* Bge.

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