FLAVONOIDS FROM *Arnica foliosa*

V. L. Shelyuto, N. T. Bubon,
V. I. Piotukh, and L. P. Smirnova

UDC 547.972

Arnica foliosa Nutt. (leafy arnica), family Compositae, was collected in the nursery of the Vitebsk Medical Institute in the flowering period. Chromatographic analysis using color reactions [1] showed that the flowers of the plant contained nine substances of flavonoid nature.

To isolate the total flavonoids the flowers were extracted with hot ethanol. The extract was evaporated in vacuum to a syrupy consistency, diluted with water, and treated with carbon tetrachloride. The flavonoids were extracted from the aqueous solution with diethyl ether, ethyl acetate, and n-butanol. The concentrated ethereal extract was chromatographed on a polyamide sorbent. Elution with chloroform–ethanol gave four individual substances of flavonoid nature; three of them had mp 310-311°C (mp of the acetate 199-200°C), 328-330°C (mp of the acetate 223-224°C), and 270-273°C (mp of the acetate 182-185°C).

The substances isolated were identified on the basis of UV, IR, and NMR spectroscopy, mixed melting points, and the products of alkaline degradation as quercetin, luteolin, and kaempferol, respectively.

The fourth substance, on a chromatographic study in various solvent systems with markers, proved to be apigenin.

Chromatography of the ethyl acetate fraction on Kapron yielded a substance with mp 258-260°C, λ_{max} 257, 268, 351 nm (ethanol), $[\alpha]_D$ − 54.8° (c 0.6; formamide). Acid hydrolysis of the substance gave luteolin and D-glucose, which were identified by paper chromatography. On the basis of the results of elementary analysis and of UV and NMR spectroscopy, the substance was identified as luteolin 7-β-D-glucopyranoside [2].

In a chromatographic investigation of the butanol fraction, we found four substances of flavonoid nature, the study of which is continuing.

LITERATURE CITED

1. V. A. Bandyukova, Rast. Res., 596 (1965).
2. A. A. Nasudari, V. A. Kompantsev, É. T. Oganesyan, and A. L. Shinkarenko, Khim. Prirodn. Soedin., 392 (1972).

Vitebsk Medical Institute, All-Union Scientific-Research Institute of Medicinal Plants, Moscow. Translated from Khimiya Prirodnykh Soedinenii, No. 4, pp. 541-542, July-August, 1976. Original article submitted February 16, 1976.

This material is protected by copyright registered in the name of Plenum Publishing Corporation, 227 West 17th Street, New York, N.Y. 10011. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, microfilming, recording or otherwise, without written permission of the publisher. A copy of this article is available from the publisher for $7.50.