Modifications of Triterpenic Acids and Coumarins with Polyalcohols and Carbohidrates

A. F. Artamonov, M. P. Irismetov, B. J. Dzhiembaev, F. S. Nigmatullina, M. T. Aldabergenova

Institute of Chemical Sciences MS-AS RK, 106, Valikhanov street, 480100, Almaty, Kazakhstan,

fax (3272)-61-57-65. E-mail: adm@chem.academ.alma-ata.su

A number of natural triterpenic acids and coumarins are biologically active substances which produce different effects on biological organisms. Therefore, preparation of new derivatives of plant acids with polyalcohols and carbohydrates is of great importance. It is an urgent task at present, since hydroxylation of the triterpenic and coumarinic acids allows to increase the solubility in water, to decrease the toxic action, to ensure an active transfer of substances, to preserve, to intensify or even to change their physiological activity.

Triterpenic acids – glycyrrhetic, isolated from roots of liquorice (*Glycyrrhiza glabra L*), 18-dehydroglycyrrhetinic, produced by modifying glycyrrhetinic acid, and coumarins – caratavic and galbanic acids, isolated from roots of Ferula plants (*F. Caratavica Rgl., F. Gummosa Boiss*), were used as initial natural compounds for syntheses.

The present paper describes syntheses of monoesters of triterpenic and coumarinic acids with glycerol, mono- and di-esters of the D-sorbitol with glycyrrhetinic and 18–dehydroglycyrrhetinic acid, mono- and di-esters of the caratavic and galbanic acids with sucrose by transesterification reaction. The structure of esters, isolated with the help of column chromatography in silica gel, is proved by spectrum data (IR-, UV-, ^{1}H- and ^{13}C-NMR).

While testing the biological activity some of the compounds showed anticancer and antimicrobial activity.

Novosibirsk Institute of Organic Chemistry. All Contents Copyright © 1998