BRIEF COMMUNICATIONS

PREPARATION OF SHORT-CHAIN ANALOGS OF NATURAL POLYISOPRENOL MONOPHOSPHATE SUGARS

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Recently, the formation of polyisoprenyl derivatives of sugars from the corresponding nucleotide diphosphate sugars during the biosynthesis of carbohydrate-containing biopolymers in various materials of bacterial, vegetable, and animal origin has been established [1, 2].

Progress in the field of the study of the fine mechanism of biosynthesis is being promoted to no small degree of investigation on the directed synthesis of compounds modeling the natural structure of polyisoprenol phosphate sugars with a strictly determined structure and determination of the anomeric center.

Continuing to develop the stereospecific "ortho ester" method of synthesizing polyisoprenol phosphate sugars using unsubstituted prenol phosphates as phosphorylating agents, we have synthesized β-D-glucopyranos-1-yl citronellyl and geranyl phosphates — short-chain analogs of polyisoprenol phosphate sugars with an α-saturated and an α-unsaturated isoprenoid fraction, respectively. The opening of the dioxolane ring of α-D-glucose tert-butyl orthoacetate by the monophosphate of the alcohol, which was obtained as described previously [3, 4] was carried out in dry benzene at 19-20°C for 40 min followed by deacetylation. The products were isolated by preparative chromatography on silica gel.

In its physicochemical constants, the sodium salt of β-D-glucopyranos-1-yl citronellyl phosphate (55%) was identical with that obtained by our previous method [5].

The sodium salt of β-D-glucopyranos-1-yl geranyl phosphate was obtained with a yield of 53%; syrup, $[\alpha]_D^{20}$ +1.8°C (c 1.0; methanol). The result of elementary analysis corresponded to the calculated figures.

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