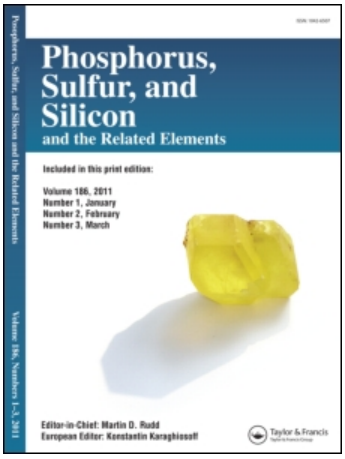

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Furanose Bicyclophosphites as Synthons of Modified Nucleoside Diphosphates

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FURANOSE BICYCLOPHOSPHITES AS SYNTHONS OF MODIFIED NUCLEOSIDE DIPHOSPHATES

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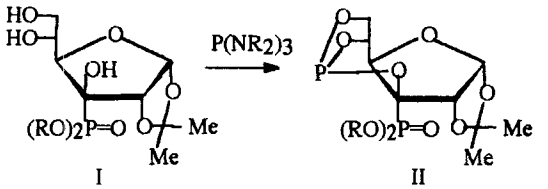
Previously we synthesized and examined in detail 1,2- alkylideneglucofuranose 3,5,6-bicyclophosphites; mono- and bicyclophosphates with peculiar chemical and physiological activity were obtained on their base [1]. During the study of their structural dependence, we modified the hydrocarbonic moiety, synthesiz-ed 1,2,3- and 3,5,6-bicyclophosphites and cyclophosphates of gulofuranose, and correlated their features with those of glucose analogues. Furthermore, an additional phosphonate moiety (obtained by a stereoselective reaction of an appropriate ketonic sugar with silylphosphites) was introduced into the glucofuranose 3,5,6-bicyclophosphite molecule to the third carbon atom. As a result, the monosaccharide matrix gained two functional groups containing tri- and fourcoordinated phosphorus.



The synthesized compounds make optically active ligands for enantioselective metallocomplex catalysts and can be synthons of modified nucleotides inhibiting tyrosinekinase and proteinkinase C. For example, on interaction of glucofuranose phosphito-phosphonates with hydrogen peroxide and other homolytic agents, the bicyclophosphite group undergoes a regioselective change to 3,5- or 3,6-cyclophosphate moiety. Thus, we obtained new modified analogues of cyclic nucleotides and 3'-nucleoside-phosphates in high yields.

REFERENCE

[1] M.P. KOROTEEV and E.E. NIFANTYEV, *Zh.Obchsh.Khim.*, **63**, 481 (1993).