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Nucleosides, Nucleotides and Nucleic Acids

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C-5 Substituted Pyrimidine Nucleosides, Synthesis of 5-Alkylglycoside Deoxyuridine and Uridine Analogs VIA Organopalladium Intermediates

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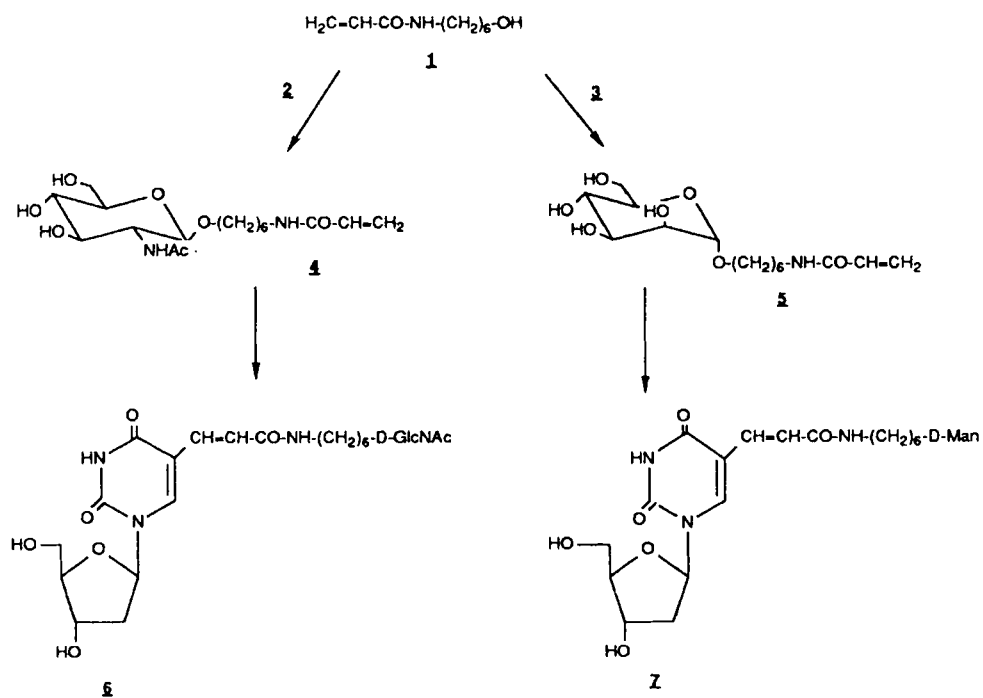
C-5 SUBSTITUTED PYRIMIDINE NUCLEOSIDES. SYNTHESIS OF
5-ALKYLGLYCOSIDE DEOXYURIDINE AND URIDINE ANALOGS VIA
ORGANOPALLADIUM INTERMEDIATES

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In this communication, we report a chemical synthesis of 5-alkyl glycoside (β -D-2-acetamido-2-deoxyglucopyranoside and α -D-manno pyranoside) uridine derivatives. These compounds could have importance in molecular genetics as affinity reagents, since it is expected that these modified nucleosides and nucleotides have strong non-bonding interactions with lectins and thus could be selectively retained on such a column.

In a preliminary study, the glycosides 4 and 5 were prepared by condensation of the activated aglycon 1 with the oxazoline 2 and perbenzoylated bromomannose 3, respectively. The resulting glycosides 4 and 5 on reaction with organomercurial pyrimidine in presence of palladium as catalyst gave the corresponding 5-alkylglycoside deoxyuridine derivatives 6 and 7.



This reaction was extended to the synthesis of monophosphate (dUMP and UMP) and triphosphate (dUPT and UTP) derivatives.