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Synthesis of C- and N-Nucleosides and Use of Distance Geometry Approach for the Evaluation of *In Vitro* Antiviral Activity

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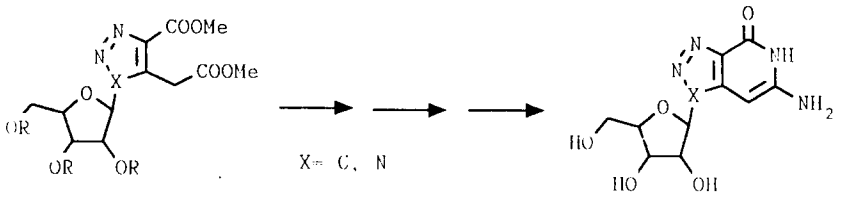
1,3-Dipolar cycloaddition reactions of 2,3,5-tri-O-benzoyl-β-D-ribofuranosyl azide and protected 5-(β-D-ribofuranosyl)-2H-tetrazoles with allenes and acetylenes were utilized for a synthesis of appropriately substituted pyrazolo and v-triazolo intermediates. These were further transformed into 3-deaza guanosine analogs. A three dimensional receptor model of parainfluenza virus type 3 developed by Ghose *et al.*, J.Med.Chem.32,746(1989), using a distance geometry approach to analyze the *in vitro* antiviral activity of several novel ribonucleosides, was used. On the basis of atomic physicochemical properties *i.e.* hydrophobicity, molar refractivity and charge density, the interaction energy of minimum energy conformations of 22 compounds with hypothetic virus active site were evaluated.



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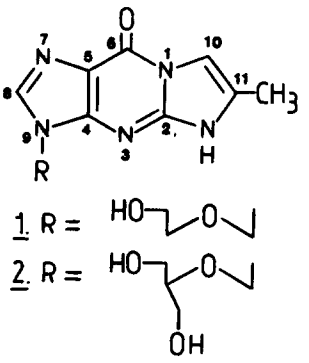
Synthesis and Properties of Novel Derivatives of 1,N-2-Bridged Acyclovir and DHPG. B. Golankiewicz and T. Ostrowski. Institute of Bioorganic Chemistry of the Polish Academy of Sciences, 61-704 Poznań, Poland.

It has been found recently that the modification of two potent antivirals, acyclovir and DHPG, with 1,N-2 isopropeno bridge results in the compounds (1,2) of enhanced selectivity.[1a,b] Methyl group at the position 11 of 1 and 2 is important for their antiviral activity. Corresponding unsubstituted compounds are 10-100 times less active.[1b] In connection to the above, a series of novel 1,N-2--bridged analogues bearing various substituents at the 8, 10 and 11 position of 1 is now synthesized and characterized. The compounds substituted with i.a. Br,F,CH_3, $C(CH_3)_3$, C_6H_5, p-BrC_6H_4, p-$C_6H_5C_6H_4$ are aimed to yield i) further improvement of the selectivity, ii) fluorescent antivirals. The susceptibility of the appended ring towards oxidation is found to be dependent upon the substitution.



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