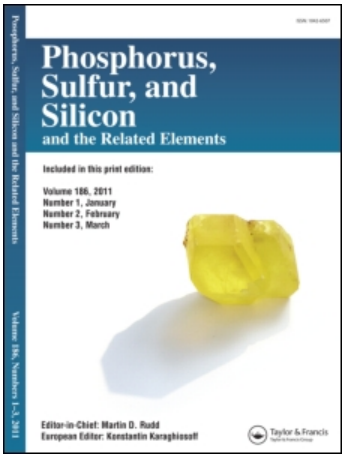

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Conformational Properties of the Phosphate Rings of Neutral Phosphoramidate Derivatives of Ribo- and 2'-Deoxyribonucleoside Cyclic 3',5'-Monophosphates

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Conformational Properties of the Phosphate Rings of Neutral Phosphoramidate Derivatives of Ribo- and 2′-Deoxyribonucleoside Cyclic 3′,5′-Monophosphates

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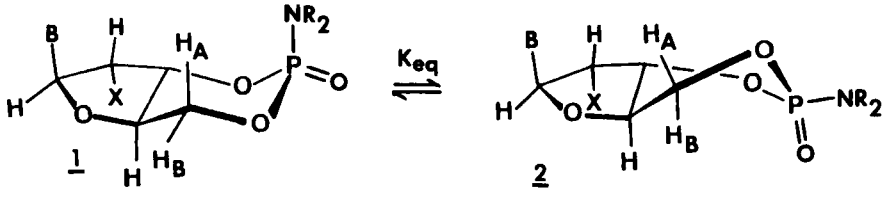
An investigation of the effects of changing the nature of X, nitrogen base (B), and amino substituent (R_2N) on the equilibrium 1 ⇌ 2 was carried out.



The influence of the above structural changes on the time-averaged coupling constants J_{AP} and J_{BP}, determined at 300 MHz, were used to follow changes in K_{eq}. With constant R_2N, small effects from variation of X and B were found. A large range in K_{eq} arose from changes in the steric size of R_2N. These results will be related to the question of the ease of chair to twist interconversion of the phosphate ring essential to the biological activities of the naturally occurring diesters, cAMP and cGMP.