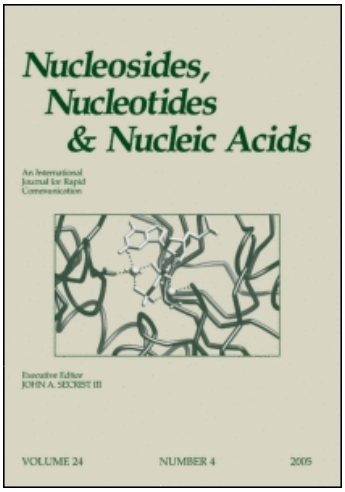

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Pyranosyl - Oligonucleotides

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PYRANOSYL - OLIGONUCLEOTIDES

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Pentopyranosyl-oligonucleotides, constitutional isomers of RNA containing the aldopentose units in the pyranose (instead of furanose) form and the phosphodiester bridges between the positions 4' and 2' (instead of 5' and 3') are being studied in our laboratories in the context of a systematic investigation directed towards a chemical etiology of nucleic acid structure. The primary aim of these studies is to collect factual information that may bear on the problem of why Nature, in evolving a genetic system, had chosen RNA and not some alternative system, such as one from RNA's close structural neighborhood. In addition, investigations of this type are expected to extend insights into the relationships between structure and base pairing properties of the natural nucleic acids.

The lecture gave a survey on the pairing properties of the pentopyranosyl oligonucleotide systems investigated so far and has focussed on a major lesson to be derived from these studies, namely, the importance of interstrand (versus intrastrand) base stacking for oligonucleotide base pairing properties.

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