

NMR studies on modified RNA and DNA molecules

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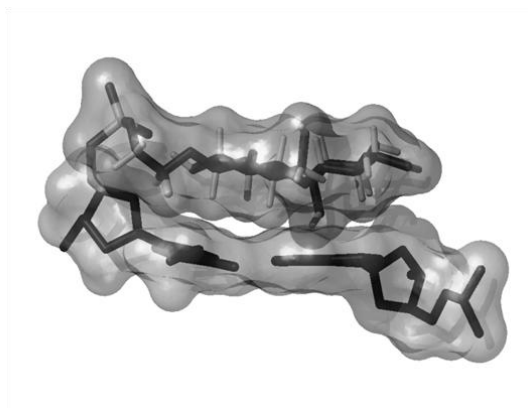
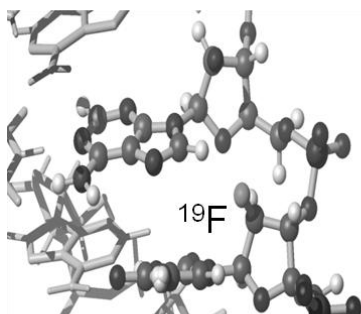
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Advances in synthetic chemistry afford new nucleic acids with intriguing properties. Some are interesting because they mimic natural DNA lesions, while others have possible medical applications in anti-sense therapy or for RNA interference. Finally, some have applications in the fascinating new field of Synthetic Biology. During the last few years, we have carried out structural studies on several modified nucleic acids in close collaboration with synthetic chemistry groups.

In this communication we will present some of our results on modified quadruplexes, and hybrid duplexes. We will pay particular attention to our studies on fluorine-modified nucleic acids, which are very attractive compounds as potential siRNA drugs. These compounds are also interesting because they give us the opportunity to use ¹⁹F NMR spectroscopy, a technique of a rather limited use in the nucleic acids field.

Finally, we will show examples on how a judicious combination of NMR and synthetic chemistry permits the study of weak DNA-ligand interactions.



References:

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