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Stereospecific Synthesis and Antiviral Evaluation of Purine Nucleoside L-Enantiomers: β-L-Ara-A, 3'-Deoxy-β-L-Ribo-A and β-L-Lyxo-A

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With regard to nucleoside analogues modified on the sugar moiety, recent attention has been given to L-enantiomers due to the finding that some of them are endowed with potent antiviral activity.[1]

As a part of our current work on these antipodal compounds,[2] several hitherto unknown purine L-nucleosides have been stereospecifically synthesized by a multi-step reaction from L-xylose, and their antiviral properties were examined in cell cultures. These compounds include: 9-β-L-arabinofuranosyladenine (β-L-Ara-A) and 3'-deoxy-9-β-L-ribofuranosyladenine (3'-Deoxy-β-L-Ribo-A) [the mirror images of Vidarabine and Cordycepin, respectively], as well as 9-β-L-lyxofuranosyladenine (β-L-Lyxo-A).

The chemical synthesis of the reported compounds and the results of their biological studies will be discussed in detail.

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The Synthesis and Biological Evaluation of Phosphate Triester Alkyl Lysophospholipids (ALPs) as Potential Antineoplastic and Anti-HIV Agents

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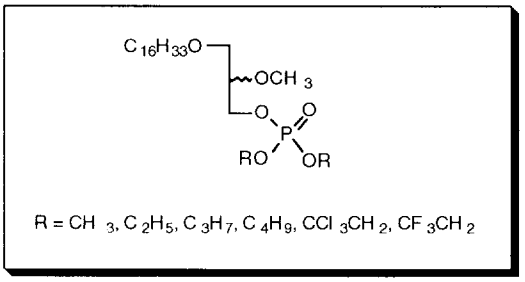
Modified phospholipids are known as antineoplastic agents. On the other hand, some phospholipid compounds were reported to show anti-HIV activity. It was discovered that very simple alkyl phosphatidyl N-methyl ethanolamines have a selective anti-HIV effect. In the poster, the preperatipn of simple symmetric phosphate triesters of ALP will be described. The assay of their inhibition of DNA synthesis of mammalian cells showed that the compounds are generally inhibitory towards DNA synthesis in the micromolar range. The biological testing results for anti-HIV activity will be presented.



R = CH_3, C_2H_5, C_3H_7, C_4H_9, CCl_3CH_2, CF_3CH_2