

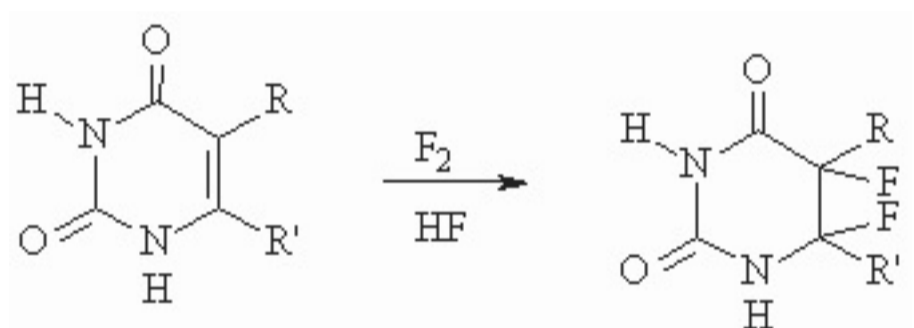
## REACTIONS OF 5,6-SUBSTITUTED URACYLS WITH ELEMENTAL FLUORINE AND PROPERTIES OF THUS PREPARED SUBSTANCES

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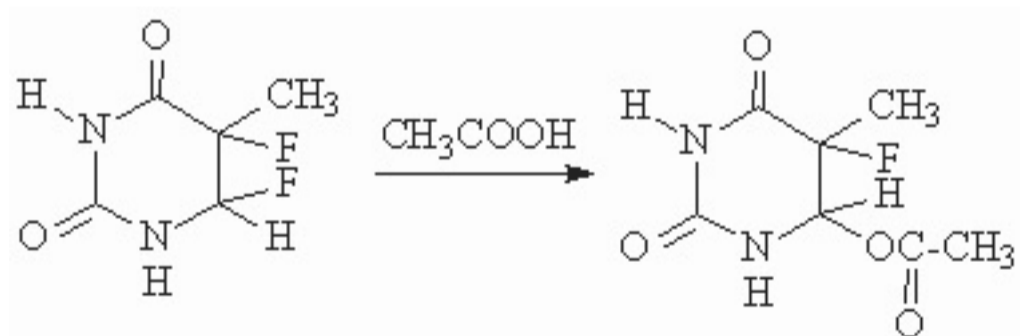
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The methods of thin-layer chromatography, liquid high-resolution chromatography, IR-, UV-, and NMR  $^1\text{H}$  and  $^{19}\text{F}$  spectroscopy were used to study the composition of the products resulting from the interaction between uracyl or 5,6-substituted uracyls (substituents were  $\text{CH}_3$ ,  $\text{F}$ ,  $\text{Cl}$ ,  $\text{Br}$ , or  $\text{NO}_2$ ) or 6-aza-uracyl and elemental fluorine in anhydrous hydrogen fluoride at variable reaction conditions and reagent concentrations.

It is shown that 5-fluorouracyl (uracyls) are not formed in the case of "6"-position of the substituent, when fluorine molecule is added to the double bond in positions 5, 6:

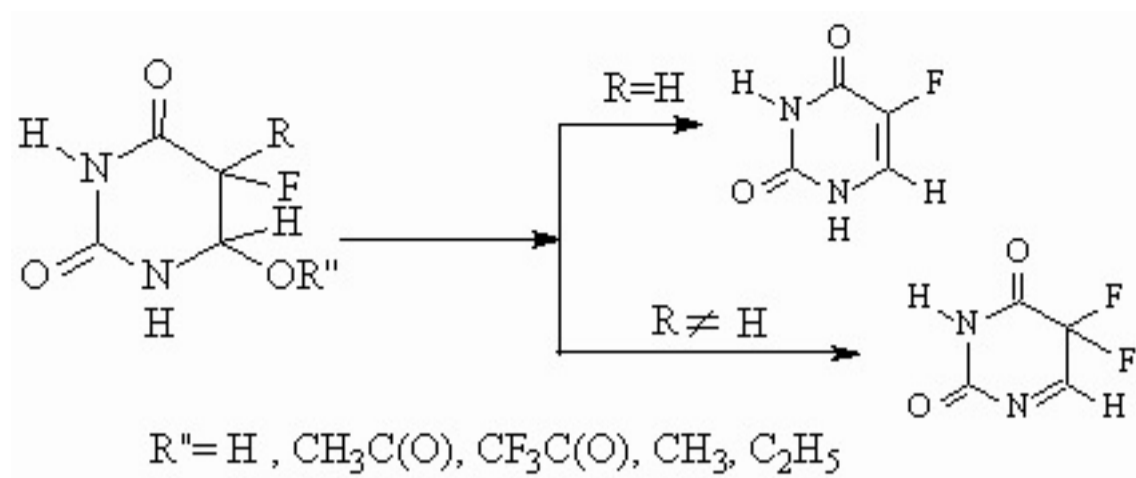


The resulting 5,6-difluoroderivatives of substituted uracyls are quite stable (with the exception of 6-azauracyl); their hydrolysis, alcoholysis and acydolysis results in 5-fluoro-6-substituted-5,6-dihydrouracyls, e.g.:



The structures of those products are confirmed by their counter-synthesis through the treatment of substituted uracyls with fluorine in appropriate solvents (water, alcohols, or carboxylic acids).

Those substances pyrolysis results in the formation of 5-fluorouracyl isomers, i.e.:



The fine structure of those substances is studied with the help of physico-chemical methods, and it is shown that some products of fluorine addition contain the mixture of cis- and trans-isomers.