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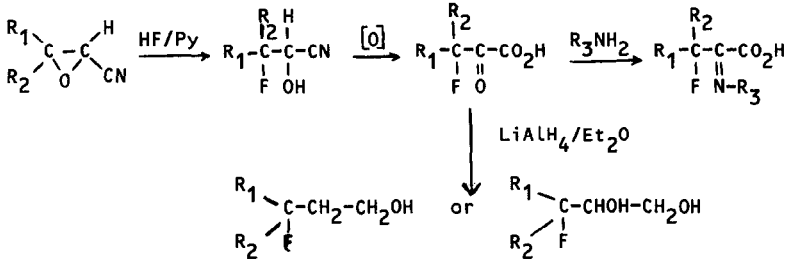
STUDY OF REACTIVITY OF 3-FLUORO-2-OXO ACID DERIVATIVES. SYNTHESIS OF FLUORINATED ALCOHOLS, SCHIFF BASES, OXIMES, HYDRAZONES AND QUINOXALINE DERIVATIVES

M. Remli, A. I. Ayi, R. Condom and R. Guedj*
Laboratoire de Chimie Structurale Organique, Université de Nice, Parc Valrose, 06034 Nice Cédex (France)

Ring opening of 2,3-epoxynitriles with hydrogen fluoride in pyridine gives 3-fluoro-2-hydroxynitriles in good yields. Oxidation of the fluorocyanhydrins by the Jones'reagent provides a good method of the preparation of fluoro pyruvic acid derivatives. These compounds have been found to be versatile intermediates leading to a variety of new classes of monofluorinated products, e.g. fluoroalcohols, fluoro Schiff bases, oximes, hydrazones, such as :



We wished to convert these intermediates (e.g. Schiff bases, oximes and hydrazones) to the corresponding fluorinated amino acids.
When 2-keto-3-fluoro acid derivatives are treated with O-phenylenediamine, different products could be isolated depending of the starting compounds. Thus when ethyl 2-keto-3-fluoro-3-methylbutanoate and ethyl 2-keto-3-fluoro-3-methylpentanoate react with O-phenylenediamine, 3-fluoroalkyl-2-hydroxyquinoxalines are obtained.