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USE OF ¹⁹F NMR SPECTROSCOPY FOR STUDY OF THE DIFFERENT STEPS OF TRANSAMINATION MODEL REACTIONS

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The reaction products of pyridoxal-5'-phosphate (PLP) and p-fluorophenyl alanine were observed versus time using 1 H noise decoupled 19 F NMR signal in the 4-8 pD range, in D_0 at room temperature.

Several signals were observed whose chemical shifts are pH dependent. Two of them are seen at early times and regularly decreased, then an other signal appears, goes through a maximum and then disappears in the same time that two (one of them being splitted in two for a small pH range) increases and are finally the only signals for long reaction times.

This behaviour can be interpreted with the following equations:

where AA = pFPhCH(COOH)NH₂ PLP = 0 = CHPy, PMP : NH₂CH₂Py and Py : $P0_3^2$ -0 \bigcirc OH Ald = pFPhCH(COOH) N = CHPy Ket = pFPhC(COOH) = N - CH₂Py KA = pFPhCOCOOH

and where the underlined symbols contains aromatic fluorine. In the cited conditions <u>Ket</u> bas too low a concentration to be observed (it was nevertheless identified from KA and PMP).

Equilibrium 1 and 3 are fast at the NMR time scale. From measurements of interesting of signals $k_2(k - 2 \text{ being neglected})$ and k_4 can be measured versus pH. Comparison of k_2 values with those obtained from ordinary UV measurements are made.

Some more applications of these 19 F NMR measurements which are actually in progress will be presented.