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A study of the tautomerism of the N-butyl-4(-)-methoxycarbonyl-pyrrolid-3-ones and their hydrochlorides

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Abstract

The tautomerism of N-butyl-2-methoxycarbonyl-4-methylpyrrolid-3-one (I), N-butyl-4-methoxycarbonylpyrrolid-3-one (II), N-butyl-4-methoxycarbonyl-2-methylpyrrolid-3-one (III), N-butyl-4-methoxycarbonylpyrrolid-3-one hydrochloride (IV), and N-butyl-4-methoxy-carbo-yl-2-methylpyrrolid-3-one hydrochloride (V) has been studied by UV and IR spectroscopy. It has been found that the esters I-V are highly ionized in aqueous and ethanolic solutions at concentrations of 10-2-10-3 M. On passing from methyl cyclopentran-1-one-2-carboxylate to the esters II and III the position of the equilibrium in heptane and CCl4 shifts in the direction of the keto form. On passing from the esters II and III to the esters IV and V, the position of the equilibrium shifts in the direction of the enol. Meyer's relationship is not satisfied for the esters II and III, while it is satisfied for the esters IV and V. Hypotheses have been put forward on the causes of the phenomena mentioned. © 1972 Consultants Bureau.

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