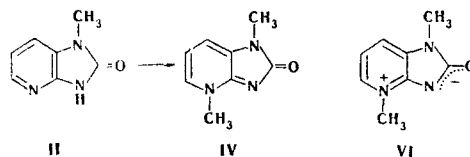


2-KETO-4-METHYLIMIDAZO[4,5-b]PYRIDINE

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The first representatives of 4-substituted 1,4-dihydro-2-keto-2H-imidazo[4,5-b]pyridines (III and IV, respectively) were obtained by the successive action of methyl iodide and alkali on 1,3-dihydro-2-keto-2H-imidazo[4,5-b]pyridine (I) and its 1-methyl derivative (II). In contrast to the isomeric 1,3-dihydro-1,3-dimethyl-2-keto-2H-imidazo[4,5-b]pyridine (V) [1], IV is insoluble in nonpolar solvents and has a very high melting point. The elevated frequency of the C=O bond (1672 cm^{-1} as against 1725 cm^{-1} for V) also indicates the substantial intramolecular polarization of IV. These properties may be best reflected by structure VI.



EXPERIMENTAL

1,4-Dihydro-2-keto-4-methyl-2H-imidazo[4,5-b]pyridine (III). This compound was obtained in 90% yield as long prisms from alcohol with mp $253-254^\circ$. Found: N 27.96%. $\text{C}_7\text{H}_7\text{N}_3\text{O}$. Calculated: N 28.17%.

1,4-Dihydro-1,4-dimethyl-2-keto-2H-imidazo[4,5-b]pyridine (IV). This compound was obtained in 93% yield as long rods from alcohol with mp $285-286^\circ$. Found: N 25.62%. $\text{C}_8\text{H}_9\text{N}_3\text{O}$. Calculated: N 25.75%.

LITERATURE CITED

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