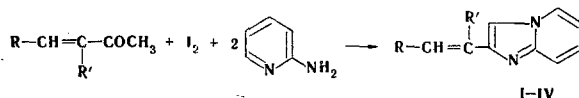


β -SUBSTITUTED 2-VINYLMIDAZO[1,2-a]PYRIDINES
FROM UNSATURATED KETONESN. O. Saldabol, L. L. Zeligman,
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2-Substituted and 2,3-disubstituted imidazo[1,2-a]pyridines can be obtained by heating alkyl aryl ketones, iodine, and 2-aminopyridine in an organic solvent with subsequent treatment of the resulting β -ketoalkylpyridinium iodides with sodium bicarbonate [1].

In the present communication, we demonstrate that the use of α, β -unsaturated alkyl ketones in this reaction gives the previously undescribed 2- $[\beta$ -aryl(hetaryl)vinyl]imidazo[1,2-a]pyridines.



The compounds (I-III) obtained by this method are identical to samples prepared by the Chichibabin method [2] by reaction of the appropriate unsaturated halo ketones [3, 4] with 2-aminopyridine. The presence of absorption bands at 700 cm^{-1} in the IR spectra of III and IV indicates that they have the cis conformation. The PMR spectrum of III also confirms the assumed structure.

EXPERIMENTAL

A 10-mmole sample of an α, β -unsaturated methyl ketone, 10 mmole of iodine, and 20 mmole of 2-aminopyridine were stirred in 100 ml of benzene for 3 h. The benzene solution was then decanted, and the residual mass was heated and treated with 30 g of NaHCO_3 and 500 ml of water. The reaction products were removed by filtration and recrystallized from dimethylformamide (I, II, and IV) or alcohol (III) (see Table 1).

TABLE 1. Characteristics of the Compounds Obtained^a

Compound	R	R'	Obtained by the new method		Obtained by the Chichibabin method		Empirical formula
			mp, °C	yield, %	mp, °C	yield, %	
I	$\text{C}_4\text{H}_2\text{NO}_3^b$	Cl	212—213	80	214—215	33	$\text{C}_{13}\text{H}_8\text{ClN}_3\text{O}_3$
II	$\text{C}_4\text{H}_2\text{NO}_3^b$	CH_3	186—188	45	189—191	49	$\text{C}_{14}\text{H}_{11}\text{N}_3\text{O}_3$
III	C_6H_5	H	152—154	23 ^c	152—154	46	$\text{C}_{15}\text{H}_{12}\text{N}_2$
IV	$4\text{-O}_2\text{NC}_6\text{H}_4$	H	250—252	49	—	—	$\text{C}_{15}\text{H}_{11}\text{N}_3\text{O}_2$

^aSatisfactory analytical data were obtained for all of the compounds. ^b5-Nitro-2-furyl. ^cExtracted from the reaction mixture with hot n-octane.

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