SYNTHESIS OF IMIDAZO[1,2-a]QUINOXALINE

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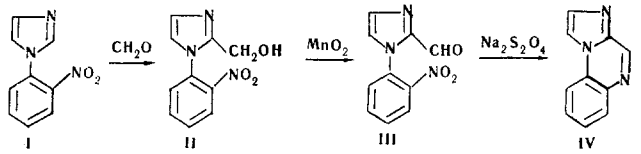
We have synthesized the previously undescribed imidazo[1,2-a]quinoxaline (IV) from 1-(o-nitrophenyl)-imidazole (I).



The position of the CH_2OH group in II was proved by converting it through 2-amino derivative V to 2-hydroxymethyl-1-phenylimidazole [1]. Compound IV is formed directly by reduction of III with sodium hydrosulfite in 5% ammonium hydroxide.

EXPERIMENTAL

1-(o-Nitrophenyl)-2-formylimidazole (III). This was obtained in 79% yield as pale-yellow prisms with mp 102-103° (from benzene) by oxidation of II at 20° with active manganese dioxide in acetone for 4 days. Found %: C 55.3; H 3.0; N 19.2. $C_{10}H_7N_3O_3$. Calculated %: C 55.3; H 3.2; N 19.3. IR spectrum: 1760 cm^{-1} (CHO).

Imidazo[1,2-a]quinoxaline (IV). Compound III was reduced with sodium dithionite at 95°. The IV was extracted with chloroform and purified by chromatography on aluminum oxide to give 50% of colorless needles with mp 124° (from benzene). Found %: C 70.7; H 4.6; N 24.9; mol. wt. (Rast) 162. $C_{10}H_7N_3$. Calculated %: C 71.0; H 4.2; N 24.8; mol. wt. 169; pK_a 4.6 (in 50% alcohol). UV spectrum (in methanol): λ_{max} 315 nm (log ε 4.03), λ_{min} 266 (log ε 3.2).

Compound IV was stable to the action of acids and alkalis and formed a monopicrate with mp 250° (decomp.).

o-Aminophenyl-2-hydroxymethylimidazole (V). This was obtained in 92% yield as colorless needles with mp 165.5° (from alcohol) by reduction of II with stannous chloride in hydrochloric acid. Found %: C 63.6; H 5.8; N 22.1. $C_{10}H_{11}N_3O$. Calculated %: C 63.5; H 5.8; N 22.2.

LITERATURE CITED

1. A. M. Simonov and L. M. Sitkina, Khim. Geterotsikl. Soedin., No. 1, 116 (1967).

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