OXIDATIVE CONDENSATION OF 2-ETHYLNYLBENZIMIDAZOLE

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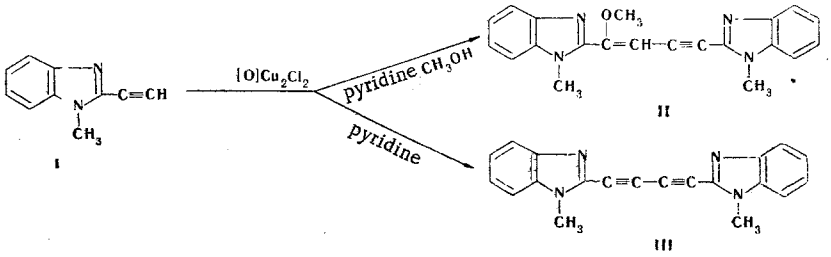
The oxidative condensation of 1-methyl-2-ethynylbenzimidazole (I) in pyridine–methanol in the presence of cuprous chloride (by shaking in an oxygen atmosphere for 2-3 days) does not give the expected diacetylene III but rather methoxyvinylacetylene II [as yellow plates with mp 204° (from dioxane)], which was isolated chromatographically on aluminum oxide in chloroform. The yield was 59%. IR spectrum: 2208 (C≡C), 1625 cm^{-1} (C=C).



Diyne III is formed under the same conditions in the oxidative condensation of benzimidazole I in pyridine with cuprous chloride in the absence of methanol. The product was obtained as light-grey plates with mp > 350° (from dimethyl sulfoxide) in 65% yield. The results of elementary analysis of II and III were in agreement with the calculated values.

Methoxyvinylacetylene II is apparently formed as a result of the addition of a molecule of alcohol to diyne III at the instant of its formation. In contrast to acetylene I, diyne III does not react with methanol in liquid ammonia in the presence of sodium metal (see [1]) or in pyridine with cuprous chloride.

LITERATURE CITED

1. I. I. Popov, A. M. Simonov, and A. A. Zubenko, Khim. Geterotsikl. Soedin. (1975, in press).

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