

Synthesis of 2,9-dioxo-hexamethylindolino[4,5-e]indoline

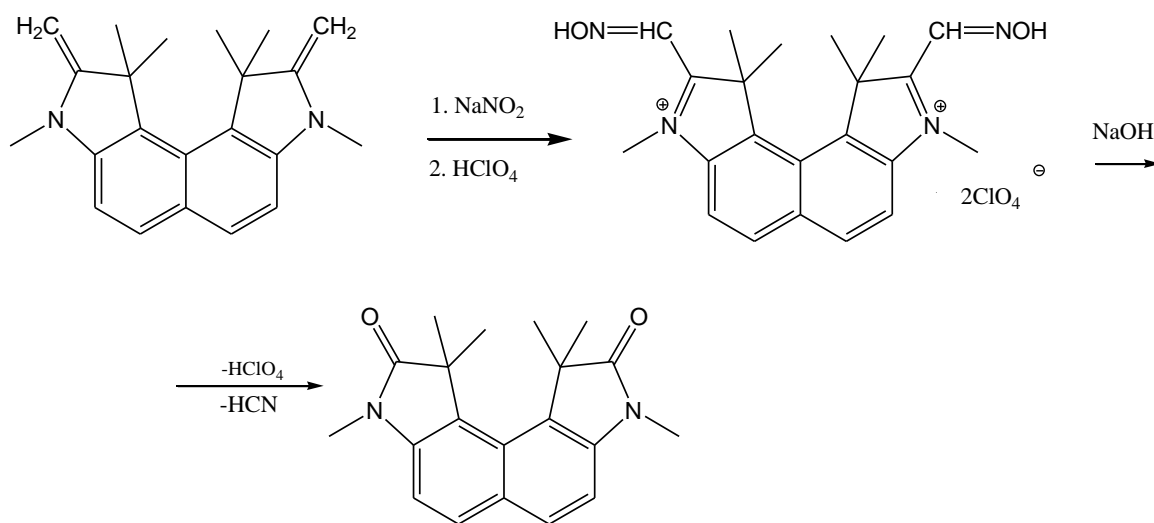
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In order to obtain dinitroso compound [1] we carried out the reaction of Fisher base analogue - hexamethyldimethylenindolino[4,5-e]indoline [2] with nitrous acid (solution of sodium nitrite in acetic acid). The reaction undergoes in two steps. At first step respective dioxime as salt of perchloric acid-diperchlorate was separated. The alcoholic solution of obtained salt was processed with solution of sodium hydroxide, afterwards instead of expected dinitroso compounds was formed symmetric 1,1,3,8,10,10-hexamethyl-2,9-dioxoindolino[4,5-e]indoline. In other words unlike of indole in case of indoloindole, with adding strong base, from perchlorate of dioxime with perchloric acid molecule of HCN is eliminated which leads to formation of symmetric 2,9-dioxo-indoloindole. Synthesized new structures is proofed with data obtained from IR, UV, ¹H-NMR, ¹³C- NMR and mass spectra.



References:

- [1] 2-Метилениндолиновые соединения, синтез и свойства. Итоги науки и Техники, серия Органическая химия, 1990, т. 14, -127 с.
- [2] Sh.A.Samsoniya, M.V.Trapaidze, N.N. Nikoleishvili, K.G.Japaridze, J.P.Maisuradze, and U. Kazmaier. Chemistry of Heterocyclic Compounds, 2010, Vol. 46, No. 8, pp. 1016-1019.