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INDEX

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Synthesis and study of 3-methyl-6H-indolo [2,3-b] quinoxalines

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Indolo[2,3-b]quinoxalines is formed when indole and quinoxaline fragments combine to form an heterocycle. These heterocyclic systems are interesting for research due to the properties like antiviral, antitoxic activity, as well as powerful intercalators exhibiting cytotoxic and interferon-inducing activity. State of art literature data analysis shows that, acyl or alkyl substituents at the nitrogen atom of the indole fragment is necessary for the manifestation of biological activity. Methods of synthesizing such compounds are complex and not numerous, so the search for new methods is still relevant. We have studied the reaction of alkylisatins and benzoylisatin with 4-methylbenzene-1,2-diamine, which in one stage results in the derivatives of 6H-indolo- [2,3-b] quinoxaline with a substituent at the nitrogen atom of the indole fragment. We have found that, the condensation of alkyl and benzoylisatins with 4-methylbenzene-1,2-diamine in glacial acetic acid which proceeds stereo-selectively results in the formation of 3-methyl-6R-indolo [2,3-b] quinoxalines. Hence, by the methyl group oxidation previously unknown indolo [2,3-b] quinoxaline carbaldehydes have been received, and by the nitro group reduction - the corresponding indoloquinoxaline amines were obtained.

Biography

Simurova N V is an Associate Professor in Organic Chemistry department, National University of Food Technologies of Ukraine. She has previously worked as a Synthetic Organic Chemist at the Institute of Organic Chemistry of the National Academy of Sciences of Ukraine. She is the author of over 50 scientific publications and textbooks on organic synthesis of medicines.

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