Synthesis of new Benzimidazolyl derivatives of Indolo[7,6-g]indole and Benzo[e]pyrrolo[3,2-g]indole

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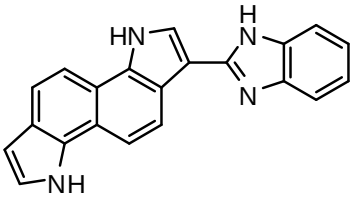
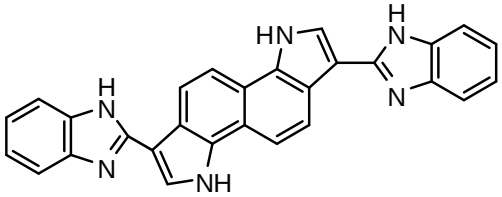
The reaction of 3-formyl-, 3,6-diformylindolo[7,6-g]indole [1] and 2,9-dicarboxybenzo[e]pyrrolo[3,2-g]indole [2] with o-phenylenediamine were studied. Condensation and simultaneous cyclization were carried out using different catalysis for determination of reaction optimal areas. As cyclization agents we used glacial acetic acid, polyphosphoric acid and phosphorus oxychloride. 3-(Benzimidazol-2-yl)- and 3,8-bis(benzimidazol-2-yl)-1H,6H-indolo[7,6-g]indole also 2,9-bis(benzimidazol-2-yl)-benzo-[e]pyrollo[3,2-g]indole were obtained and characterized. The proposed structures are in the agreement of data obtained from IR, UV, and proton NMR spectra.

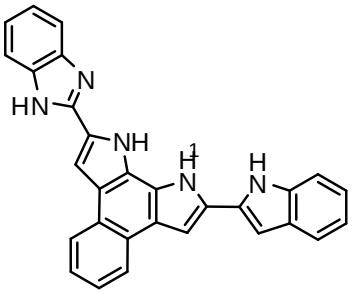
Thus, new poly-nuclei heterocyclic systems were obtained, which will be interesting at a chemical point of view as studying interconnection of different heterocycles in one molecule, and for further studies of biological activity.



3(ბენზიმიდაზოლ-2-ილ)-
1H,6H-ინდოლო[7,6-g]ინდოლი



3,8-ბის(ბენზიმიდაზოლ-2-ილ)-
1H,6H-ინდოლო[7,6-g]ინდოლი



2,9-ბის(ბენზიმიდაზოლ-2-ილ)-
1H,10H-ბენზო[e]პიროლო[3,2-g]ინდოლი

References:

[1] Sh. A. Samsoniya, M. V. Trapaidze, L. N. Kurkovskaya, Dzh. A. Kereselidze and N. N. Suvorov. Chemistry of Heterocyclic Compounds, 1980, vol. 16, № 11, 1139-1146.

[2]Sh. A. Samsonia, M. V. Trapaidze, N. A. Kuprashvili, A. M. Kolesnikov and N. N. Suvorov. Chemistry of Heterocyclic Compounds. 1985, vol. 21, № 9, 1016-1018.