NOVI DERIVATI IZOINDOLINA: SINTEZA, MEHANIZAM I KRISTALNA STRUKTURA
NOVEL ISOINDOLINE DERIVATIVES: SYNTHESIS, MECHANISM AND CRYSTAL STRUCTURE

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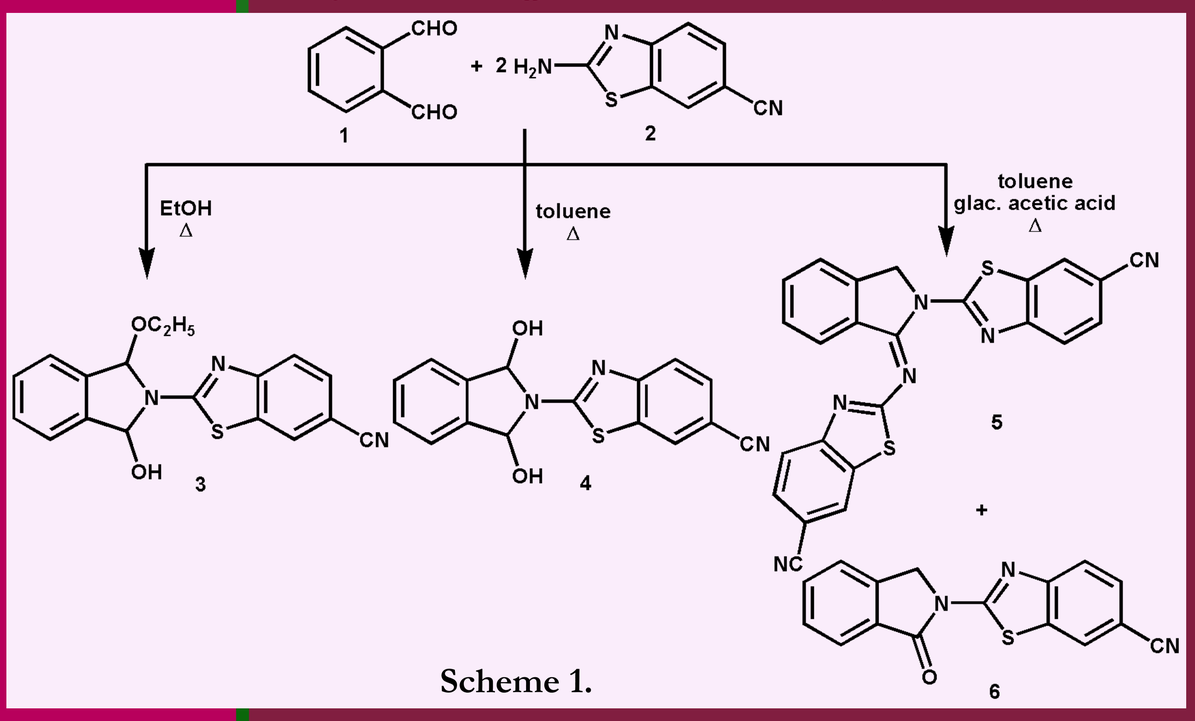
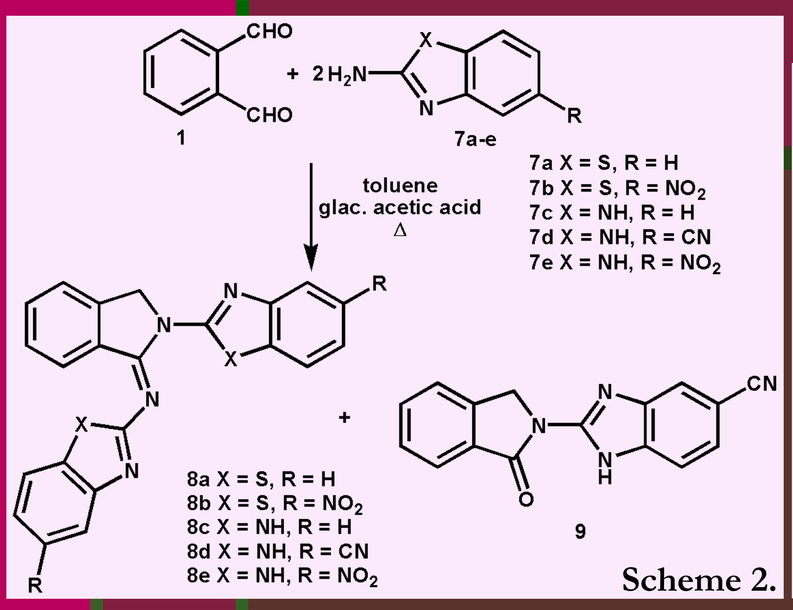
Heterocyclic compounds containing isoindoline skeletons have been found interesting to synthetic and medicinal organic chemists due to their presence in number of natural and synthetic bioactive compounds as well as their application in herbicide and dye industries. They are also useful intermediates in organic synthetic chemistry and have an application as ligands in coordination and organometallic chemistry.

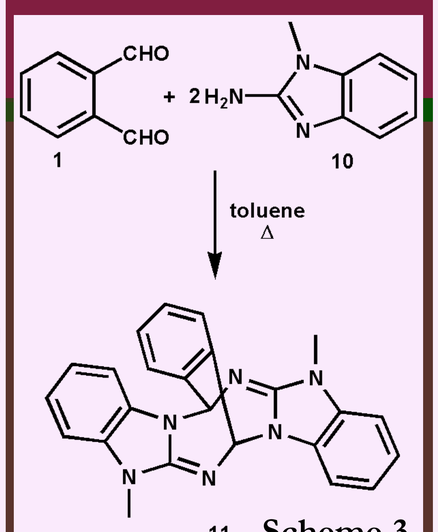
We previously reported the condensation reaction between *o*-phthalaldehyde and substituted anilines and amino-pyridines where the isolated products were expected 2-aryl-1-(*N*-arylimino)isoindolines. However, in the reaction with bicyclic heteroaromatic amines such as 2-aminobenzothiazole and 2-aminobenzimidazole derivatives, different products were obtained depending of the solvent and other reaction conditions as it is shown in Scheme 1 and 2. Surprisingly, condensation of *o*-phthalaldehyde and *N*-methyl-2-aminobenzimidazole did not give isoindoline ring but differently rearranged molecule 11 (Scheme 3).



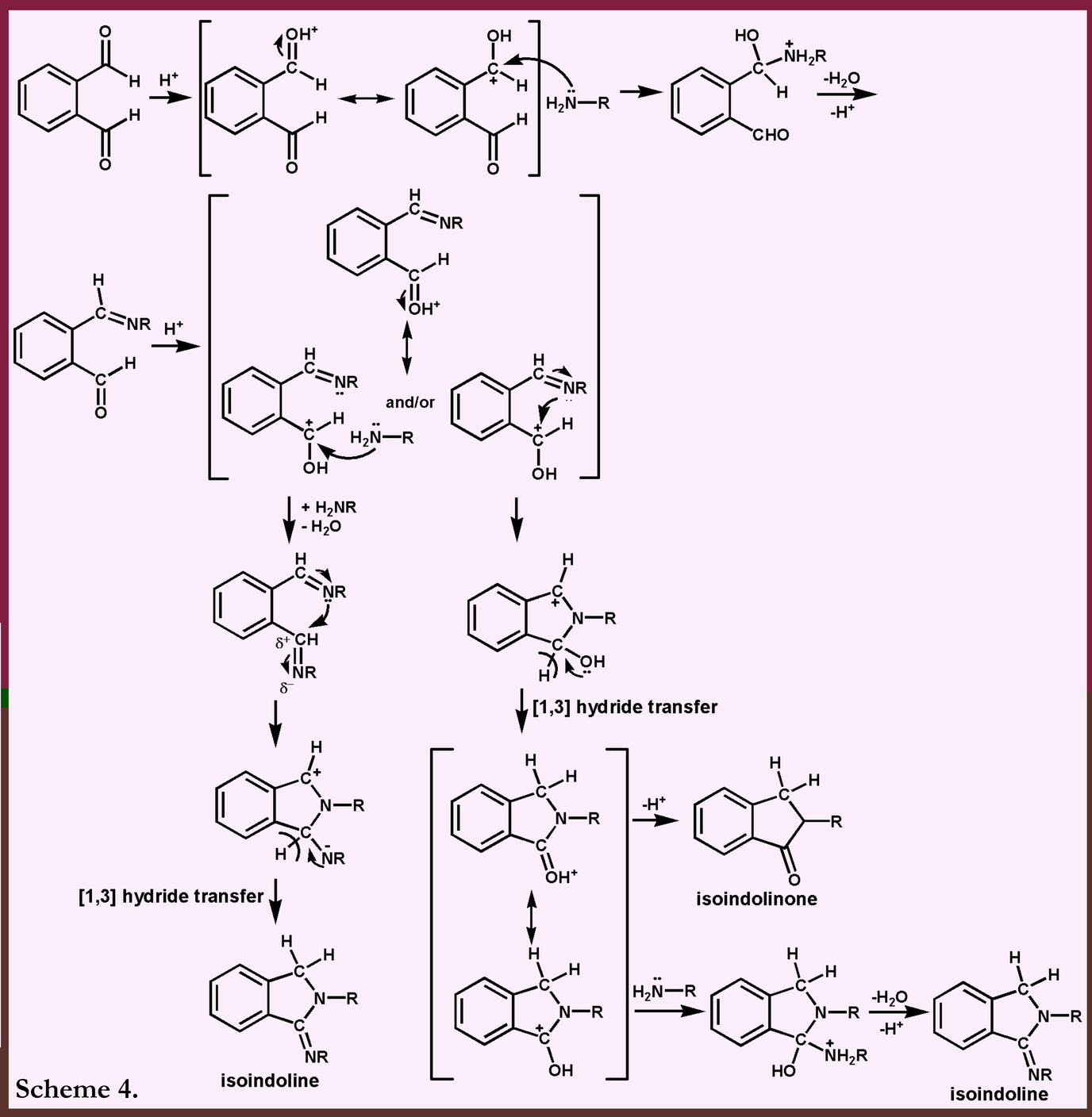
Scheme 1.



Scheme 2.



Scheme 3.



Scheme 4.

Analyzing the reaction conditions and resulting products, mechanisms of arising of isoindoline derivatives can be proposed (Scheme 4). The assumption is that the disubstituted imino isoindoline is formed in two steps, via the intermediate *o*-disubstituted Schiff base. This can be also confirmed by formation of compound 11 via pseudo Cleisen-Cope rearrangement of *o*-disubstituted Schiff base.

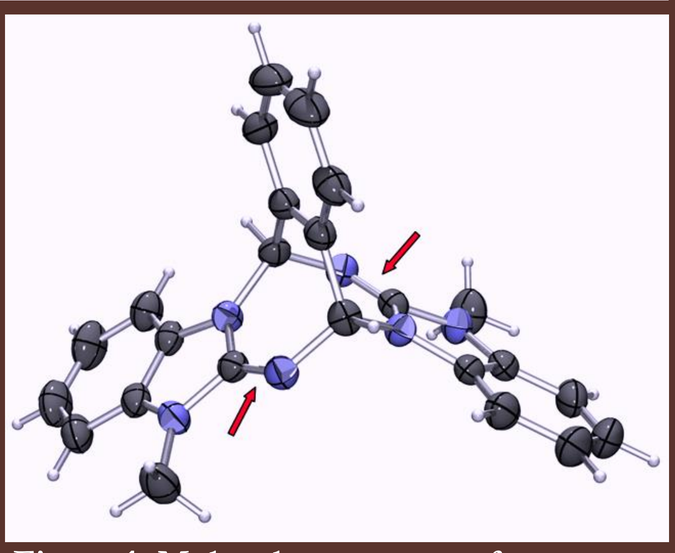


Figure 1. Molecular structure of compound 11.

Literature:

1. I. Sović, V. Stilinović, B. Kaitner, S. Kraljević Pavelić, M. Bujak, K. Čuljak, P. Novak, G. Karminski-Zamola, *J. Mol. Struct.* 1006 (2011) 259-265.
2. I. Sović, S. Kraljević Pavelić, E. Markova-Car, N. Ilić, R. Nhili, S. Depauw, M.-H. David-Cordonnier, G. Karminski-Zamola, *Eur. J. Med. Chem.* 87 (2014) 372-385.

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