NEW METHOD FOR THE SYNTHESIS OF (N-FUROXANYL)HYDRAZONES

Dmitry M. Bystrov, Leonid L. Fershtat, and Nina N. Makhova

N.D. Zelinsky Institute of Organic Chemistry, Russian Academy of Sciences
47 Leninsky prosp., 119991 Moscow, Russian Federation

In recent years, enhanced efforts were directed to the synthesis of pharmacologically oriented structures comprising a framework capable of nitric oxide (NO) release, including 1,2,5-oxadiazole 2-oxides (furoxans), which are prone to the exogenous NO release in the presence of thiol cofactors [1]. Furoxan scaffold has attracted considerable attention due to high stability of the furoxan cycle under ambient conditions and absence of nitrate tolerance under continuous therapy [2]. The incorporation of the furoxan motif as potential NO donor into drug candidates with known pharmacological activity became now an efficient tool in the design of novel drug candidates and, as a result, new hybrid structures with various pharmacological activities were revealed [3].

In present work, a novel one-pot approach for the construction of previously unknown (N-furoxanyl)hydrazones 1 was developed. This method is based on a cascade of one-pot reactions including diazotization of initial aminofuroxans 2, in situ reduction of generated diazonium salts 3 and condensation of formed furoxanylhydrazines 4 with corresponding aldehydes. It is important to note that initial aminofuroxans are readily available compounds which can be easily synthesized on gram-scale according to our recently developed procedure [4].

![Reaction Scheme]

This work was supported by Russian Foundation for Basic Research (grant 19-03-00069).