NEW SYNTHESIS 1,3,4-OXADIAZOLES OF AMINO ACID VIA ELECTROPHILIC ACTIVATION OF NITROALKANES IN PPA

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Recently our research group has reported efficient synthesis of 1,3,4-oxadiazoles, containing different substituents in **2** and **5** positions via electrophilic activation of nitroalkanes in polyphosphoric acid and further cyclocondensation with acylhydrazides [1]. We wondered about the possibility of expanding of employing of this reaction using various amino acids (**1**) on the way to 1,3,4-oxadiazoles with an amino group (**2**) in the alpha position (**Figure 1**). This reaction was found to take place at 120 °C in good yields (50-80%).

R¹, R², R³ = H, Alk, Ar

Fig. 1.

Thus, as a result of the study, the reaction of alpha amino acid hydrazides in a PFC medium with activated nitroalkanes under mild conditions, including cyclocondensation, was discovered.

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References

- [1] Aksenov A. V., Khamraev V., Aksenov N. A. et al. RSC advances 2019, 9 (12), 6636-6642.