Synthesis of new derivatives of 5(6)–acyl–2–(1–adamantyl)benzimidazoles and 5(6)–(1–adamantyl)–2–aminophenylbenzimidazoles

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The target synthesis and study of adamantane nitrogen containing new structures for viral and bacterial infection and against of other biologic agents in order to create new effected means is perspective and actual [1-4]. For the research of wide spectrum biological active new compounds the perspective objects are benzimidazoles and benzoxazoles with active functional groups. For this aim the synthesis of high effective mebendazole (mebenvet, vermoxe) and parbendazole drugs adamantane containing analogs were realized. Particularly, the synthesis of new derivatives of 5(6)-benzoyl-2-(1-adamantyl)benzimidazoles, 5(6)-(1-adamantyl)-2-aminophenylbenzimidazoles and benzoxazoles. 5(6)-benzoyl-2-(1-adamantyl)benzimidazoles were synthesized by interaction of 4-benzoyl-*o*-phenylen-diamine dihydrochloride with adamantane-1-carbonyl chloride in the area of abs. TGF and the obtained compounds cyclization in the area of $POCl_3$. Also by diamines direct interaction with adamantane containing carboxylic acids in the area of boiling $POCl_3$ and in case of 3-acetylaminoadamantane-1-carboxylic acids by heating in Wood bath in 225–250°C.

The synthesis of new derivatives of 5(6)-(1-adamantyl)-2-aminophenylbenzimidazoles were carried out by condensation 4-(1-adamantyl)-*o*-phenylendiamine dihydrochloride with aromatic aldehydes in the area of acetonitrile in presence of hydrochloric acid and hydrogen peroxide in the room temperature, or by boiling in the area of absolute ethanol/nitrobenzene. Also 4-(1-adamantyl)-*o*-phenylendiamines condensation reaction with p-aminobenzoic acid and p-acetylaminobenzoc acid in the area of heating polyphosphoric acid and polyphosphoric acid/xylene were carried out. The optimal conditions of the reaction were established, the corresponding benzimidazoles were isolated. The synthesized nitro derivatives reduction and obtained of amines acylation and aldehydes condensation were studied. The corresponding amides and Shiff bases were obtained.

The present project was supported by Shota Rustaveli National Science Foundation (Grant FR/154/6-420/13).

References

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