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USE OF FORMATION OF IONIC ASSOCIATIONS WITH AZO DYES IN THE EXPRESS ANALYSIS OF VASCULAR-TYPE CALCIUM CHANNEL BLOCKERS (USING THE EXAMPLE OF AMLODIPINE)

In modern pharmaceutical practice, there is a growing need for fast, simple, and cost-effective methods for quality control of medicinal products. This is especially true for mass-marketed drugs, in particular vascular-type calcium channel blockers, which include amlodipine. Despite the widespread use of highly efficient instrumental analysis methods, their application in express control conditions is limited due to the high cost of equipment and the complexity of sample preparation.

The aim of the study was to theoretically and experimentally substantiate the possibility of using reactions of formation of ionic associates of amlodipine with azo dyes for rapid analysis of drugs.

The object of the study is amlodipine as a representative of dihydropyridine calcium channel blockers. The subject of the study is the reactions of formation of ionic associates of amlodipine with anionic azo dyes and their analytical characteristics.

The work investigated the interaction of amlodipine in an acidic medium with a number of azo dyes (tropeolines, chrome dark blue, Congo red, methyl yellow, bromophenol blue, eriochrome black T). The formation of chelate complexes of associates with Fe^{3+}, Cu^{2+} and Ag^{+} ions in two-phase systems water-chloroform and methanol-tetrachloromethane was also studied.

It has been established that amlodipine, as a weak base with a tertiary amino group, forms stable ionic associates with anionic azo dyes in an

acidic environment. The obtained associates are characterized by intense color and clear spectral maxima, which allows them to be used for qualitative identification of the drug. An additional fluorescent effect was discovered in systems of ionic associates [1] and chelate complexes, the possible mechanism of its occurrence and the analytical feasibility of its application were substantiated.

The proposed methods can be used as a scientifically substantiated addition to pharmacopoeial methods in the system of intra-pharmacy and expert quality control of medicinal products. They are characterized by ease of implementation, availability of reagents and suitability for rapid analysis.

As a result of the work, it can be concluded that the reactions of formation of ionic associates of amlodipine with azo dyes are a promising basis for the development of express methods for the analysis of vascular-type calcium channel blockers and can be successfully implemented in pharmaceutical analytical practice.

References

1. Шишкін І. О., Нікітін О. В., Гельмбольдт В. О. Ідентифікація амонієвих гексафторосилікатів з використанням хімічних методів аналізу // Одеський медичний журнал. – 2023. – № 4 (185). – С. 94–98.