SYNTHESIS OF ANESTHESIN FROM P-AMINOBENZOIC ACID

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Among the many thousands of derivatives of p-aminobenzoic acid, a number of effective local anesthetics have been found - substances that suppress the sensitivity (excitability) of nerve endings. Its esters, such as anesthesin, novocaine and dicaine, successfully replace the alkaloid cocaine in the clinic, due to the imitation of its pharmacophoric (anesthesiophoric) group -N-(C)n-XC(=O)Ar, without causing painful addiction to the drug. Syntheses of these three medicinal compounds from p-nitrotoluene are known in the scientific literature.

Objective of the work. To synthesize anesthesin from p-aminobenzoic acid by esterification reaction with ethyl alcohol in laboratory conditions.

Results: 2.5 g of p-aminobenzoic acid, 2.5 ml of ethyl alcohol, 2-3 drops of concentrated sulfuric acid were placed in a distillation flask of a simple distillation unit. The synthesis was carried out on a water bath. The reaction mixture was brought to a boil and kept boiling for 10 minutes. After cooling the reaction mixture, a white precipitate, anesthesin, was observed to form at the bottom of the flask. The purity of the product yield directly depends on the purity of the initial reagents. After extracting the synthesized anesthesin from the reaction flask, a qualitative reaction for anesthesin was carried out. For this, 4-5 drops of HNO3 were added to the sample of synthesized anesthesin, and with caution the same amount of conc. H2SO4. The appearance of a yellow-green coloration of the solution is observed, which means the presence of anesthesin.

Conclusions: Thus, in laboratory conditions, the synthesis of anesthesin p-aminobenzoic acid with ethyl alcohol was carried out, the resulting product enters into a qualitative reaction.

REFERENCES

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