MICROWAVE SYNTHESIS AND QUANTITATIVE DETERMINATION OF PHARMACOLOGICALLY ACTIVE OF 3,5-DIBROMO-N-PHENYLANTHRANILIC ACIDS BY TWO-PHASE TITRATION

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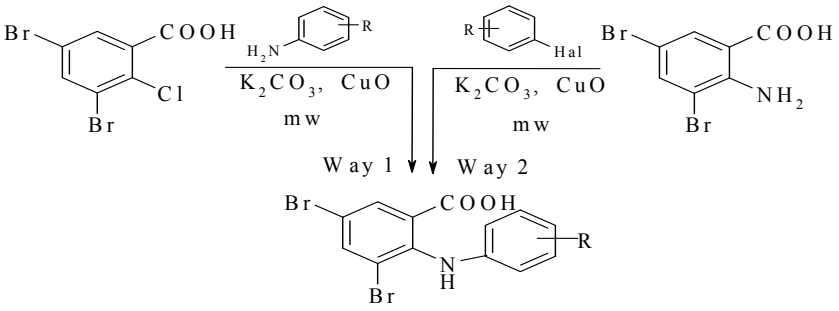
According to the literature derivatives of anthranilic acids are the parent compound for the synthesis of many drugs with different pharmacological actions, and the method of their quality control has significant drawbacks, including significant time.

The aim of our work was to develop a method for the synthesis of 3,5-dibromo-N-phenylanthranilic acids under microwave irradiation and also to develop an express method of their quantitative determination.

The synthesis of 3,5-dibromo-N-phenylanthranilic acids was carried out by reacting of 3,5-dibromo-2-chlorobenzoic acid with arylamines (way 1) and arylation of 3,5-dibromoanthranilic acid by substituted of halogen benzene (way 2) among the n-amyl alcohol, in the presence of copper oxide, and potassium carbonate, in the microwave reactor at 180 °C:



For the quantitative determination of synthesizing acids was developed the method by the two-phase titration. The method consists in the direct titration with 0.1 M solution of NaOH of the two-phase system, consisting of the organic phase, which contains the analyzed substance (not soluble in water) and the aqueous phase, where the indicator - phenolphthalein. This extraction equilibrium is disturbed and the sodium salt of 3,5-dibromo-N-phenylanthranilic acid passes into the aqueous phase. The experimentally selected n-octanol, as organic phase, which had the highest solubility of the test compounds. These data of quantify of the new compounds by two-phase titration, characterized by a high accuracy and representativeness. The relative error of this method is less than 0.5%. Given technique an express, reliable, and favorably differs from the method of potentiometric titration.

The synthesized 3,5- dibromo-N-phenylanthranilic acid have been subjected to pharmacological screening for anti-inflammatory, analgesic, diuretic, antibacterial and antifungal activity, and exceeded the activity of reference drugs.