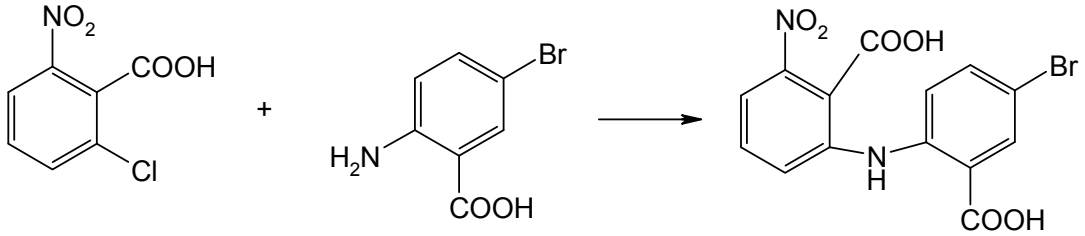
SYNTHESIS, METHODS OF ANALYSIS AND BIOLOGICAL ACTIVITY OF 6-NITRO-N-(2'-CARBOXY-4'-BROMOPHENYL)ANTHRANILIC ACID

Ivanova K.S., Yeromina Z.G.
The National University of Pharmacy, Kharkiv, Ukraine
medchimia@mail.ru

The most important task of pharmacy is to create a highly effective and non-toxic drugs. The group of aromatic acids, in particular N-phenylanthranilic acids and their derivatives, is promissing chemical scaffolds for drugs development; effective medicines have been created on their basis (mefenamic and flufenamic acids, and their salts, diphtorant, antral etc.). Besides the significant biological activity N-phenylanthranilic acids also show a high chemical reactivity due to the presense of carboxyl and secondary amino groups, and it gives possibility to obtain their diverse functional derivatives with new pharmacological properties.

6-Nitro-N-(2'-carboxy-4'-bromophenyl)anthranilic acid has been chosen as an object for our research.

6-Nitro-N-(2'-carboxy-4'-bromophenyl)anthranilic acid (3) has been synthesized by the reaction of 2-chlor-6-nitro-benzoic acid (1) with 5-bromanthranilic acid (2) in the presence of the CuO and K_2CO_3 as catalysts and at temperature 180-200^oC:



1 2 3

The structure of the synthesized compound was confirmed by elemental analysis, IR, UV, ^{1}H-NMR spectroscopy, and their purity was proved by thin-layer chromatography.

Identification for this substance has been proposed using UV-spectrophotometry and chemical methods. The method of alkalimetry has been chosen for assay of the compound.

It has been found experimentally that the synthesized acid possess anti-inflammatory, analgesic, diuretic, antifungal activities. The substance exhibits low toxicity (LD_{50} in mice > 6500 mg/kg).

The conducted researches show promising results in search of biologically active compounds among derivatives of 6-nitro-N-phenylanthranilic acid.