ALKILATION OF (±)-CIS-3-(BENZIMIDAZOL-2-IL)-1,2,2-TRIMETHYLCYCLOPENTANECARBOXILIC ACID IN ODER TO SYNTHESIZE NEW BIOLOGYCALLY ACTIVE COMPOUNDS

Davydov E. M., Marchenko M. V., Piskarova Ye. D.
Scientific supervisor: Tsapko Ye. O.
National University of Pharmacy, Kharkiv, Ukraine
evgentsapko@ukr.net

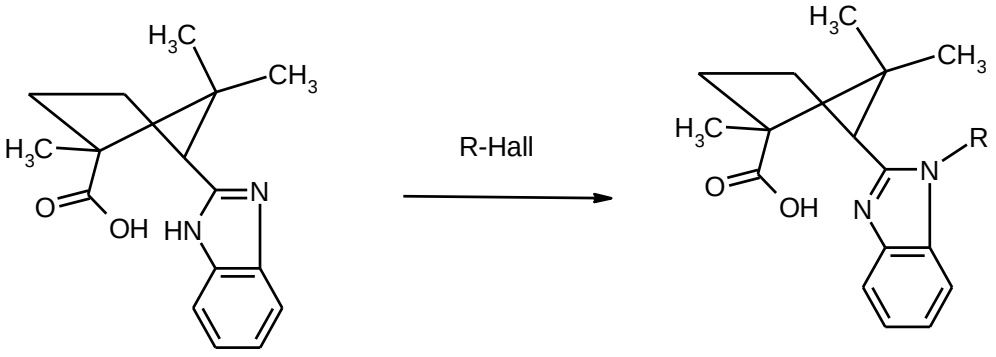
Introduction. The (±)-cis-3-(benzimidazol-2-il)-1,2,2-trimethylcyclopentanecarboxylic acid **1** (scheme) is an active substance of antidiabetic drug diacamph. It has been shown in pharmacological tests diacamph also exhibits hypolipidemic, antioxidant, anti-atherogenic, reparative and nootropic effects in addition to hypoglycemic and antidiabetic action. Taking into account the considerable potential of biological activity of the mentioned structure, we consider it expedient to expand a number of derivatives of diacamph. Since there is no data on derivatives of diacamph with substituents in the benzimidazole-core in the literature we have chosen the path of modifying diacamph by alkylation at the nitrogen atom.

Aim. The aim of this work is synthesis of N-alkil derivatives of acid **1** and study their physico-chemical properties.

Results and discussion. (±)-Cis-3-(1-R-benzimidazol-2-il)-1,2,2-trimethylcyclopentanecarboxylic acids **2** have been obtained by interaction between acid **1** and alkil halides in aqueous or hydro-alcoholic media. We used a common alkil halides such as halogen alkanes, halogen alkenes, chloroacetic acid and its amides.

Acids **2** were obtained with 55-90% yields and their structures were confirmed by ^{1}H NMR spectroscopy. The purity determination of the substrates was accomplished by TLC.

Scheme



1 **2**

Conclusion. The row of N-alkil derivatives of (±)-cis-3-(benzimidazol-2-il)-1,2,2-trimethylcyclopentanecarboxylic acids has been synthesed. Physico-chemical properties of the substances obtained have been studied.

ORGANIC SUBSTANCES IN EARTH ATMOSPHERE

Dinar Aabla, Atmane Yassine, Elauam Fatimazahra
Scientific supervisor: assoc. prof. Brizitskaya O.A.
National University of Pharmacy, Kharkiv, Ukraine
yassinoatmane@gmail.com

Introduction. The first layer of the atmosphere from the surface of the Earth is a non-equilibrium chemically active system. It continuously processes occur, causing a change in the concentration of impurities in atmospheric air.

Aim. In our work, the task was set to analyze the nutrient and geological emissions of organic substances into the environment and their transformations. The information was taken from the free Internet resources.