ANTIMYCOBACTERIAL ACTIVITY OF SOME 1-R-2-OXO-4-HYDROXY-1,2,5,6,7,8-HEXAHYDROQUINOLINE-3-CARBOXYLAMIDES DERIVATIVES

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Introduction. Tuberculosis (TB) represents one of the leading causes of morbidity and mortality worldwide. Development of new potential drugs is essential because of the existence of latent TB and expansion of drug-resistant TB forms (multidrug-resistant and extensively drug-resistant tuberculosis). Despite the achievements of modern pulmonology, the problem of developing and creating highly effective anti-mycobacterial agents for the treatment of tuberculosis remains essential. Furfuryl-quinoline derivatives deserve special attention. This is a promising class of condensed heterocyclic systems, which are similar to natural and synthetic analogues exhibiting many pharmacological effects.

Aim. The aim were to study the anti-mycobacterial action of 1-furfuryl-2-oxo-4-hydroxy-1,2,5,6,7,8-hexahydroquinoline-3-carboxylic acids derivatives.

Materials and Methods. The furfuryl-quinoline derivatives used in this study were prepared by the reaction of the amidation of ethyl ester 1-furfuryl-2-oxo-4-hydroxy-1,2,5,6,7,8-hexahydroquinoline-3-carboxylic acids. The structural properties of the compounds were confirmed by nuclear magnetic resonance, mass spectrometry, and infrared analyses, and the purity was established by elemental analyses.

Results and discussions. The introduction of a furfuryl substituent in position 1 of hexahydroquinoline nucleus leads to a significant increase the antimycobacterial action. The presence of thiazolyl-2-amide fragments can be assumed to be a positive factor, whereas alkyl or alkoxy-groups as well as para-substituents regardless of their nature, are completely deactivate the molecule.This study extends earlier reports regarding the in vitro efficacies of the furfuryl-quinoline derivatives against *Mycobacterium tuberculosis*. Derivatives of 1-furfuryl-2-oxo-4-hydroxy-1,2,5,6,7,8-hexahydroquinoline-3-carbox-amides were tested in vitro against a broad panel of single-drug-resistant *M. tuberculosis* strains. The susceptibilities of these strains to some compounds were comparable to those of strain $H_{37}Rv$, as indicated by the ratios of MICs for resistant and nonresistant strains, supporting the premise that furfuryl-quinoline derivatives have a novel mode of action unrelated to those of the currently used antitubercular drugs.

Conclusions. Conducted screening creates conditions for further in-depth study of the most active substances among this class of chemical compounds and provides opportunities for the development of a potential antimycobacterial drug.

INFLUENCE OF EXTRACT FROM THE STEVIA LEAVES ON INDICES OF LIPID PEROXYDATION UNDER EXPERIMENTAL DIABETES MELLITUS TYPE II IN RATS

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Introduction. It is proved that diabetes mellitus is a heterogeneous multifactor disease. The concept of diabetes mellitus type II development is based on the presence of two fundamental defects – insulin resistance and dysfunction of β-cells of pancreas, at that both factors aggravating each other.

An important role in pathogenesis of diabetes mellitus also belongs to activation of processes of free radical oxidation (FRO), in particular pro-oxidant and antioxidant imbalance that leads to an excess of free radicals and accumulation of highly toxic products. FRO is an integral part of many vital processes occurring in the body at all the levels. Excessive amounts of oxygen free radicals is released by activated macrophages