Abstract

The goal of the master's thesis was the synthesis and assessment of potential molecules against tuberculosis based on aromatic compounds containing nitro groups.

The thesis reviews tuberculosis and its therapy, in the theoretical part, followed by well-know and new nitro group containing antibiotics. The experimental part reports multitep synthesis from parent compounds – substituted benzoic acid, pyruvic acid and variously substituted anilines, which were evaluated for their antimycobacterial activity. The core structure of the prepared compound molecules is *N*-phenyl-2-[2-(3,5-dinitrobenzoyl)hydrazinylidene]propanamide, which was variously substituted on the benzene ring of *N*-phenylpropanamide. In case of four compounds, one nitro group was switched to the trifluoromethyl group.

Yields varied from 7 to 72 % and their minimum inhibitory concentrations (MIC) ranged from 4 to more than 1000 μmol/l. *N*-(4-Bromphenyl)-2-[2-(3,5-dinitrobenzoyl)hydrazinylidene]propanamide proved to be the most effective derivate.

Key words

Antibiotics, antimycobacterial activity, 3,5-dinitrobenzohydrazide, nitro group, synthesis, tuberculosis