ABSTRACT

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Title of diploma thesis: *In vitro* screening of potential antimycobacterial compounds against fast growing strains of *Mycobacterium* genus

The aim of this work is to determine the efficacy of new compounds for possible treatment of tuberculosis in the future. A microdilution broth method with already proven procedure on *Mycobacterium aurum* and *Mycobacterium smegmatis* strains was used to determine the minimum inhibitory concentration of compounds.

The theoretical part summarizes the epidemiological situation of recent years with global trends in the incidence and mortality of tuberculosis in the world and in the Czech Republic, including prospective plans for remediation in the time horizon. Mycobacteria are described in the main representation with *M. tuberculosis*. Tuberculosis disease - its history, forms, diagnosis and treatment with antituberculotics, which are divided according to the use lines, new drugs and drugs in development.

The experimental part contains qualitative and quantitative methods of testing mycobacteria and captures the microdilution broth method used in this measurement in detail. It includes tested strains of bacteria and their basic properties. Last but not least, this section contains information on tested compounds and antituberculotic standards. At the end of the experimental part is the equipment and procedure of testing mycobacteria summarized. All obtained measurements are processed and evaluated in the thesis.

Key words: Mycobacteria, Tuberculosis, Antituberculotics, Microdilution broth method, Minimum inhibition concentration