

Abstract

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Study program: Specialist on Laboratory Methods

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Title of diploma thesis: *In vitro* screening of novel potentially active antibacterial compounds II

Key words: antibiotics, bacteria, resistance, minimal inhibitory concentration, bacterial susceptibility to antibiotics

This diploma thesis deals with testing of the efficacy of new antimicrobial agents on selected representative bacteria. The work consists of a theoretical part and a practical part. The theoretical part includes the history and the present of antibiotics describing current issues and the layout of the antibiotic policy in the Czech Republic and in the world. It deals with the characteristics of drugs, below which are described their importance, division, effects, resistance. Furthermore, this part of work describes detailed mechanism of action for two selected groups of compounds. Last but not least, this work portrays the methods that are used to determine the sensitivity of bacteria to antibiotics.

The practical part deals with the description of the whole work process, including the characteristics of used bacterial strains and the list of tested substances. The results gained are evaluated and their detailed protocols are presented in the annex.