

# ABSTRACT

Charles University

Faculty of Pharmacy in Hradec Králové

Department of Biological and Medical Sciences

Study program: Specialist in Laboratory Methods

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Title of diploma thesis: *In vitro* screening of novel potentially active antimycotic compounds III

**Key words:** yeasts, moulds, antimycotics, mechanism of action of polyenes, microdilution broth method, MIC - minimal inhibition concentration.

The main topic of this diploma thesis is *in vitro* screening of new, potentially active antifungal compounds.

The introductory chapter in the theoretical part of the work is devoted to the epidemiology of fungal infections. The classification of micromycetes and the characteristics of the fungal eukaryotic cell are given below, focusing on composition of the plasma membrane and the cell wall. A separate chapter also deals with specific species of fungi and the diseases they cause. The main topic is drugs from the group of antifungals, where more attention is focused on polyene antifungals, their mechanism of action in detail and the emergence of resistance. An integral part are also the stages of development of new drugs and a list of novels developing antifungals. The final chapter describes the types of methods designed for *in vitro* evaluation of antimicrobial activity of compounds.

The experimental part is devoted to screening of newly synthesized compounds with potential antifungal activity. The microdilution broth method was used for evaluation, which is one of the most basic methods of testing antimicrobial susceptibility. At the end of the work are the results and overall evaluation of the research.