

Abstract

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Title of Thesis: Evaluation of the activity of potential antimicrobial substances through the use of microdilution broth method

The aim of the present thesis was to test 35 substances and evaluate their antimicrobial activity. The substances were divided by their structure in 10 groups, it concerned carbamates and benzoates of salicylanilides, derivates of mercaptobenzothiazole and derivates of other structures. The substances were tested on 8 bacterial and 8 fungal strains.

We used microdilution broth method for testing. This method serves to quantitative determination of sensitivity of the strain to the tested substance, minimal inhibitive concentration (MIC) indicates the sensitivity rate of microb. The holes of microtitration plate were filled with growth medium, tested substance in gradually decreasing concentrations and suspension of the strain. MIC conforms to the concentration of the substance which suppresses the growth of the colony and its hole stayed clear after the incubation.

The strongest antibacterial effect was noticed by the substances of the 6th group (thiocarbamates of salicylanilides), they effected on gram-positive cocci, except the strain *Enterococcus faecalis* (EF). The substance SAL-1-Bz of the 10th group (derivates of different structures) had the strongest effect on EF. We did not find any substance effecting on gram-negative bars. The substances of the 2nd, 4th and 5th group did not show any antibacterial effect.

The strongest antimycotic effect showed again the substances of the 6th group (thiocarbamates of salicylanilides), they effected only on the strain *Trichophyton mentagrophytes*. The widest spectrum of effect had the substance ITAM-IMIN of the 10th group (derivates of different structures). It effected on all of the fungal strains. The substance of the 2nd, 4th, 5th, 7th and 8th group did not show any antimycotic effect.

We succeeded in founding effective as well as ineffective substances. The most sensitive bacterial strain was *Staphylococcus aureus*, the most sensitive fungal strain then *Trichophyton mentagrophytes*.