Abstract

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Title of diploma thesis: Synthesis of substituted arylguanidines as potential drugs XIII.

The ever increasing number of bacterial strains resistant to the currently used antibiotics intensifies the demand for new structures with antibacterial activity. Similarly, the high mortality of immunocompromised individuals caused by pathogenic fungi requires the synthesis of new drugs with antifungal activity.

At the Department of Organic and Bioorganic Chemistry, the Faculty of Pharmacy, Charles University has been studying for many years with the potential antifungal and antibacterial activity of arylguanidins, which has been linked to this work.

Two series of derivatives of arylguanidines, totaling seven substances in four-step synthesis were synthesized in the thesis. In the first step, a sulfide was formed by the reaction of substituted chloronitrobenzene and thiol. The nitro group was reduced to the amino group in the next step. The aniline formed was converted to anilinium chloride using gaseous hydrogen chloride. At the last step of the synthesis, anilinium chloride reacted with cyanamide to form arylguanidine.

Antifungal and antibacterial tests were performed on the synthesized substances at the Department of Biological and Medical Sciences of the Faculty of Pharmacy, Charles University.