

ABSTRACT

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Title of diploma thesis: Oxadiazoles as Potential Drugs II.

My work was focused on finding new potential drugs with antibacterial and antifungal activity, from the reason of increasing microbial resistance against current drugs. 3-Pyrazin-2-yl-1,2,4-oxadiazole was chosen as the structural scaffold for the research.

In the theoretical part of this diploma thesis I have reviewed various procedures of the preparation of 1,2,4-oxadiazoles. The methods of preparation have been assorted according to the starting material used.

In the experimental part of this study several different ways of preparation to synthesize these compounds were explored and then improvement of reaction conditions in order to gain the pure product in good yields were tested.

None of compounds has been reported so far. They have been characterized by IR and NMR spectra and by melting points as well. Their purity was checked by TLC and elemental analysis.

Six of the synthesized compounds have been tested *in vitro* for their antibacterial and antifungal activity. One of the compounds has shown medium antifungal activity and another one has shown medium activity against *Mycobacterium smegmatis* and *M. aurum*.