

Antimicrobial activity of pyrazine and quinoxaline N,N'-dioxide heterocyclic compounds

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The nitrogen heterocyclic organic compounds 1,4 dioxide pyrazine and quinoxaline derivatives have been widely studied due to their potential use as synthetic drugs. The thermochemical study of three *N,N'*-dioxides: 2,3,5-trimethylpyrazine-1,4-dioxide, tetramethylpyrazine-1,4-dioxide and 6-chloro-2,3-dimethylquinoxaline 1,4-dioxide has been recently developed in order to establish relationships among the energetical, structural and reactivity properties [4,5]. Several studies have reported their pharmacological activity, particularly as antimicrobial agents [1,2,3]. It has also been established a relation between energetical and structural properties and biological activity, once these compounds present *N* – oxide bonds, increasing their oxidative capacity.

The present work reports the study of antimicrobial activity for those compounds against the bacteria *Geobacillus stearothermophilus*, *Staphylococcus aureus*, *Streptococcus agalactiae*, *Escherichia coli* and also against the yeasts *Saccharomyces cerevisiae* PYCC 4072, *Candida albicans* PYCC3436^T, *Candida tropicalis* PYCC, *Issatchenka Orientalis* PYCC. The determination of the minimal inhibitory concentration (MIC), points to an antimicrobial activity and the preliminary results indicate that these compounds may be potential candidates as antimicrobial drugs with clinical, agriculture or food industries applications.

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