

TITLE: MINIMUM INHIBITORY CONCENTRATION (MIC) OF *Cinnamomum cassia* AND *Origanum vulgare* ESSENTIAL OILS FRONT A FIVE MICROORGANISMS STANDARD

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ABSTRACT:

The use of natural antimicrobials such as extract, essential oil of plants among others, are studied in several areas, such as pharmaceutical and food. In foods the use of these antimicrobials is considered as a natural food additive, and may reduce the use of chemical additives in controlling microorganisms both pathogenic and deteriorating. There is a growing interest in the use of these antimicrobials, since many of them are considered safe by the Food and Drug Administration (FDA) and biodegradable. Thus, knowing the importance of studies related to antimicrobial potentials, tests were designed to test the minimum inhibitory concentration (MIC) of two essential oils (*Cinnamomun cassia* and *Origanum vulgare*) against five standard microorganisms, *Candida albicans* ATCC 90028, *Staphylococcus aureus* ATCC 23235, *Escherichia coli* ATCC 25922, *Pseudomonas aeruginosa* ATCC 27853 and *Salmonella* sp. ATCC 13076 by the microplate dilution method used at the following concentrations: 1000; 500; 250; 125; 62.5; 31.25; 15.6; 7.8 µg/ml. The essential oils were purchased from the company FERQUIMA and have a purity seal. To characterize the oils, the chromatography was performed using a gas chromatograph coupled to mass spectrometry (GC-MS 2010 Ultra). The result of the chromatography revealed that the essential oil of *Cinnamomum cassia* and *Origanum vulgare* has five major components in its composition, the main compound being Cinnamaldehyde (79.93%) and Carvacrol (63.63%) respectively. In this study the MIC for all the microorganisms tested was 250 µg/mL for both essential oils, except for the microorganism *Salmonella* sp. Which presented 125 µg/mL for the oil *Origanum vulgare*. The results of the MIC indicate that both oils presented potential for antimicrobial activity, and that further studies should be performed with other methodologies and applications.

Keywords: *Cinnamomum cassia*, *Origanum vulgare*, essential oil, antimicrobial activity.