TITLE:ESSENTIAL OIL OF *STYRAXBENZOIN* (BENJOIM) AS ANTIBACTERIAL AGENT.

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The Benzoin is a tree native to South-East Asia, which produces various compounds used in the manufacture of perfumes, beverages and food industries, as well as being popularly used as an antiseptic and healing agent. The essential oil of this plant is obtained through the gum extracted from the bark and is insoluble in water, it has in its composition substances such as benzoic acid, cinnamic acid, styrol and venylin. This work aims to contribute to the study of antimicrobial activity of benzoin essential oil on bacteria of clinical, environmental and antibiotic resistant isolates. In this way, the antimicrobial effect of this substance was evaluated in four bacterial strains assigned by Fundação Oswaldo Cruz, Rio de Janeiro,Fiocruz of Rio de Janeiro: *Escherichia coli (ATCC 25922)*, *Staphylococcus aureus (ATCC 25923)*, *Salmonella enterica (ATCC 13076)* and*Pseudomonas aeruginosa (ATCC 15442).*The bacterial inoculums were initially standardized according to the scale 0,5 McFarlandfor further use in determining the minimum inhibitory concentration (MIC) and the minimum bactericidal concentration (MBC) of Benzoin essential oil. The broth microdilution technique was chosen for determination of MIC and MBC according to the protocol of Clinical and laboratory Standards Institute(CLSI, 2009). The essential oil used was obtained by extracting steam from the wood resin of the *Styrax benzoin* tree.The results showed that the essential oil of Benzoin has a bactericidal action against all the strains evaluated, with *S. aureus* being more sensitive, with a MIC of only 0.78 µL/mL and MBC of 1.56 µL/mL.The bacteria *S. aureus*, *S.enterica* and *P. aeruginosa* showed inhibition with the concentration of 3,12 µL / mL of the essential oil and a MBC with 6.25 µL/mL, except *P. aerugionosa* where bactericidal effect was observed only in the concentration of 12.5µL/mL.The latter bacterium is resistant to the antibiotic ampicillin and is only sensitive to gentamicin in concentrations higher than 0.39µg/mL.The fact that Benzoin essential oil inhibits growth and present bactericidal activity for the tested strains is an excellent alternative for the control of diseases triggered by these bacteria.

Keywords:natural antimicrobials, minimum inhibitory concentration, minimum bactericidal concentration, antibiotic resistance.

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