EVALUATION OF THE ROLE OF THE REGULATOR BmoR ON VIRULENCE AND SURVIVAL OF *B. fragilis* THROUGH MOLECULAR ANALYSIS AND PHENOTYPIC CHARACTERISTICS.

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Bacteroides fragilis is the most commonly anaerobic bacteria isolated from infectious processes of endogenous origin, particularly in the gastrointestinal and respiratory tract and female genital tissue. This microorganism can act in the body as a commensal, but also as a pathogen, this versatility is coupled with the expression of virulence factors, such as the capsular polysaccharide complex that contributes to its prevalence in anaerobic infection. Aerotolerance seems to contribute to the interaction with the host and its perpetuation during an infection, since the *B. fragilis* can survive exposure to the O_2 for up to 72 hours. During oxidative stress about 45% of the genes of this organism have its expression changed. One of these genes is the *bmoR* that belongs to the family of transcriptional regulators MarR. Therefore, this study aims to evaluate the role of the regulator in BmoR virulence and survival of *B. fragilis* through molecular analysis and phenotypic characteristics. In this work, strains of *B. fragilis* isolated from clinical samples and normal feces were tested regarding the resistance to oxidative stress, in assays such as difusion test of O_2 in semi-solid medium, disk-diffusion test of hydrogen peroxide and biofilm formation. In addition, the prevalence of *bmoR* gene in strains was analyzed by PCR. The results obtained showed little variation in growth inhibition among the different strains in disk-diffusion test of hydrogen peroxide and the diffusion test of the O_2 , indicating that these strains respond similarly to these oxidative agents. Biofilm formation was variable and correlates positively with clinical strains. These tests show that the gene *bmoR* acts similarly in different strains of the microorganism, showing that its main function may be to resist the stresses caused by oxidizing agents. Cloning and heterologous expression of the gene *bmoR* in strain BL21 of *E. coli* was performed and demonstrated by SDS-PAGE. Electrophoretic mobility shift assays (EMSA) demonstrated that the protein BmoR binds to a region upstream of the gene *bmoR* and possibly self-regulates. The results of this study can be the key to improve the techniques of control and intervention in cases of infections, in view of the increased *Bacteroides fragilis* resistance to current antibiotics.

Key words: *B. fragilis,* MarR, *bmoR,* oxidative stress.

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