

**THE EFFECTS OF WHITE TEA ON THE
GROWTH OF PROBIOTICS AND
PATHOGENIC BACTERIA**

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ABSTRACT

This study aimed (i) to investigate the effect of different concentration of white tea on the growth of probiotic *Lactobacillus casei* and pathogenic bacteria *Staphylococcus aureus* and *Salmonella*, and (ii) to assess the possible synergistic effect of white tea and probiotic *Lactobacillus casei* on the growth of pathogenic bacteria *Staphylococcus aureus*. The antimicrobial activity of white tea and the synergistic effect of white tea and probiotic against pathogenic bacteria were determined by the total viable cells count method. The tolerance characteristics of the probiotic and both the pathogenic bacteria towards white tea were determined at 37°C by exposing inoculated cells toward different concentration of tea (10, 20 and 40 mg/ml) for different incubation period (0, 3 and 6 hours). Results showed that the growth of probiotic was promoted whereas the growth of both the pathogenic bacteria was inhibited by white tea. However, the antimicrobial activity of white tea against *Salmonella spp.* was considerably lower. In general, gram-negative bacteria are more resistant to polyphenols than gram-positive bacteria. Lower viable cells count was observed in higher concentration of tea and the inhibitory effect was most pronounced after 6 hours of incubation. The number of viable cells was even lower in the presence of white tea in combination with probiotic suggesting a synergistic effect exists between white tea and probiotic.