The Binding Mechanisms of Probiotics Isolated from Commercial Yogurts

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Commercial yogurt is advertised as containing probiotics which improve a person's immune system. The Food and Drug Administration does not regulate the use of probiotics as a dietary supplement. Previous research, results show that probiotics contain binding mechanisms which allow for binding to Salmonella. To determine these mechanisms, probiotic isolates were tested with detergents of 1% Sodium Dodecyl Sulfate (SDS) and 2% of Triton X-100. Zinc nitrate and Calcium Chloride, which are binding enhancers, were also added to yogurt probiotics. Binding assays were performed with S. typhimurium yoogurt isolates and treatment variables. The assays were evaluated using Scanning Electron Microscopy. Yogurt A and Yogurt B probiotics were unable to bind with the S. typhimurium when treated with SDS and Triton X-100 because of disruption to surface proteins and outer cell membrane proteins. This suggests that the probiotic's binding mechanism is dependent on surface proteins and other function of the outer cell wall. Further research is needed to determine the specific membrane proteins involved and how to enhance binding properties.

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