Analysis of the Effectiveness and Antimicrobial Capabilities Against Bacterial Pathogens of Lactobacillus sp. and Other Strains Found in Probiotics

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In an attempt to improve gut flora, many individuals purchase and self-administer various brands of probiotics. The manufacturers of these goods claim that the bacteria in these probiotics are better than the ones humans have naturally--that they have the ability to promote and maintain the growth of “good bacteria,” aid in the eradication of “bad bacteria,” and assist in the achievement of overall good health. This research sets out to prove if there is any truth to these claims. To achieve this, three commercially available brands of probiotics were cultured in Nutrient Broth (NB) and placed in a competition study with Escherichia coli, Micrococcus luteus, and Candida albicans, which are all opportunistic pathogens, C. albicans being a common member of the human gut flora. To facilitate this competition study, the three bacteria were acquired and diluted in sterile nutrient broth to a turbidity 0.5 McFarland (1.5 x 108CFU/ml). Nutrient Agar plates were inoculated with the bacteria. Yeast Malt Agar (YMA) plates were also inoculated with the C. albicans; this was done because YMA is the optimum growth medium for yeast. Filter paper discs were soaked in a NB containing one of the three probiotics tested. Control plates contained discs soaked in only the NB. The plates were then allowed to grow overnight, and the zones of inhibition, if any, were measured. Zones of inhibition are indicative of the probiotics having antimicrobial capabilities against the yeast and bacteria. A lack indicates the opposite. These findings, collectively, are indicative of several things, such as the truth to claims offered by the manufacturers, our bodies capability to take up the bacteria within the probiotics, and the viability of the cultures within the capsules.

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