TOLERANCE OF COMMERCIAL PROBIOTICS SIMULATED GASTRIC pH AND BILE IN THE HUMAN GASTROINTESTINAL TRACT

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ABSTRACT

The objectives of this study are to enumerate the viable cell count of the probiotic strains in the commercial cultured milk drinks that labeled as sample V and N, to evaluate the survivability of probiotics strains in low pH and bile of sample V and N, and to compare the suitability of consumption between sample V and N of commercial cultured milk drink products. Two samples of cultured milk drink: sample V and N were tested for the viabilities on MRS agar at 37°C for 48 hours. The tests were performed simulated as human gastric pH and bile conditions. The neutral PBS (pH 7.2) was use to perform serial dilution and for total viable counts. Acid tolerance tests were conducted with pH 1.5, 3.0 and 6.0 with the interval of 0, 1.5, and 3.0 hours. After the acid treatment, the cells were being centrifuged and washed for the continuation of the bile tolerance test. Four bile concentrations were studied, whereby 0% as the control, 0.3%, 1% and to 2% (w/v) as the maximum concentration. Sample V has met the recommendation of 10^6 CFU/ml with a viable cell count of 8.08±0.04 log CFU/ml, while sample N did not meet the level. The strains survivability varied upon the acid condition and bile concentration. Sample V was able to withstand the acid and bile test better than sample N. Sample V is a better choice than sample N for consumer consumption.