SURVIVAL OF PROBIOTIC STRAINS IN A SELECTED SUPPLEMENT CAPSULE TO LOW pH AND BILE

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ABSTRACT

This study was aimed to identify the viability of probiotic strains in stimulated human gastrointestinal. The experiments were conducted to enumerate the total viable cell counts of probiotic strains in a selected supplement capsule labeled as brand X and to investigate the survival of probiotic to low pH and different bile concentrations. Brand X was studied under the conditions that were similar to human gastric acid in stomach and human bile secreted in small intestine. The total viable cell counts were studied using PBS solution. For the acid tolerance test, the pH 3, pH 6 and pH 7.2 (control) were studied. The cell count of acid tolerance test were recorded at interval of 0 hours, 1.5 hours and 3 hours and were plated duplicate on MRS agar before incubated at 37^0C for 48 hours. While as for bile tolerance test, the cells were recovered after 3 hours of pH treatment were subjected into MRS broth with different bile concentrations (0%, 0.3%, 1% and 2%). The results of probiotic survival at the initial bile tolerance (0 hour) and after bile tolerance test (24 hours) were recorded after they were incubated at 37^0C for 48 hours. The probiotic strains in brand X had met the standard requirement count of at least 10^6 cfu/ml. The results obtained for bile tolerance test showed that the higher the concentration of bile; the lower the growth of cell bacteria at 0 hours. After 24 hours of incubation, cells that subjected at 2% bile concentration exceeded the number of cells that subjected at 0.3% and 1% of bile concentration. But the probiotic survived under all bile concentrations had also met the standard requirement count of at least 10^6 cfu/ml. Hence, results proved that probiotic strains in brand X able to tolerate to low pH and bile concentration.