Elucidation of the Deterministic Properties of the Optimal Probiotic Microorganisms

Gordeichyk, Arseniy

Nobel Prize winner Ilia Mechnikof said that the dependence of the intestinal microbes on the food makes it possible to adopt measures to modify the flora in our bodies and to replace the harmful microbes by useful microbes. In current research project we tested probiotic properties of L.lactis, L.mesenteroides, L.raffinolactis & L.plantarum selected from homemade diary. Major probiotics properties include:viability and adhesion index, resistance to gastric acids, bile acids and digestive enzymes, antagonist activity and resistance to antibiotics. Antagonist activity was determined ?.albicans, P.aeruginosa, S.aureus, B.cereus and P.vulgaris. Resistance to gastric acid was determined by 1:1 mixing of 24h culture with gastric juice for 2 h. with CFU assay at 37?. Resistance to bile acid was determined by culture with 0,3, 1, 2,5 and 5% bile for 24h at 30?. Growth curves were determined at 30C in agar CFU assay, sampling every 2 h. Lactic acid formation was determined by Turner degrees titration, sampling every 3h. Enzyme activity was determined by ??? ZYM test. Results indicate that L.raffinolactis is resistant to doxycycline, meropenem, norphloxacin, streptomycin, cephazolin, furazolidone and fucidine. High adhesion index was shown by L.raffinolactis & L.plantarum. L. lactis and L.plantarum were resistant to bile acids where. Gastric juice resistance was shown by L.raffinolactis–67%, L.plantarum–90%, L.mesenteroides–78%. Antagonist activity was shown by L.plantarum. Up to 204°? acid generation and fastest proliferation was recorded in L.plantarum. Strains of L.raffinolactis and L.plantarum synthesized 7 enzymes. Based on the obtained results isolated strains of L.raffinolactis and L.plantarum are selected as potent antibiotic resistant probiotic microorganisms.

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