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Probiotic and prebiotic properties of lactic acid bacteria isolated from cassava fermentations

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Abstract. This work was a preliminary investigation of the putative prebiotic and probiotic properties of lactic acid bacteria (*Lactobacillus* sp., *Pediococcus* sp.) isolated from cassava and sorghum fermentations. Exopolysaccharides produced by a small number of isolates were tested for their ability to stimulate *Bifidobacterium*, but not *Escherichia coli* or *Clostridium perfringens*. At the same time, a number of isolates were screened for basic probiotic properties (resistance to stomach acidity and bile) and for production of specific anti-microbial agents. Results showed that EPS produced by some isolates was fermented by *Bifidobacterium*, but not by *Escherichia coli* or *Clostridium perfringens*. At the same time the basic probiotic properties of resistance to stomach acidity and bile could be demonstrated. Some isolates also produced anti-microbial compounds. In the present study, however, isolates producing EPS with prebiotic properties were not those producing anti-microbial compounds. Although considerable substantiation is required, isolates of lactic acid bacteria (LAB) from cassava and sorghum fermentations appear to have considerable potential as both probiotic and prebiotic ingredients in foods. These properties could be exploited either to enhance the nutritional value of existing foods, such as cassava, or in development of new food products based on traditional foods.