

Novel Probiotic *Lactobacillus* Species

Invention summary:

Novel probiotics of *Lactobacillus* species for use as commercial starter cultures

Technology overview:

Isolated probiotics/ industrially beneficial microorganisms from finger millet and banana varieties recommended by the Department of Agriculture Sri Lanka. The isolated microorganisms were phenotypically and biochemically characterized; *Lactobacillus* was selected for further investigation. Isolates were evaluated for their probiotic traits (tolerance to simulated human gut conditions: acid, Temperature, Bile, Enzymes and Inhibitory substances). The isolates were further investigated for their ability to aggregate and colonize in the intestine (in vitro). Safety of the isolates for live consumption was assessed. Bio-efficacy of selected isolates was studied for Antibacterial, Anticancer, Antifungal, Antioxidant, Cholesterol lowering and Cholesterol assimilation activities. Industrial potentiality of the isolates were assessed by survivability during processing and storage, The growth kinetics, acute and sub-chronic repeated dose oral toxicity in animal models was also carried out. Most promising isolates were identified genetically and gene sequences were deposited at the NCBI, USA.

Lactobacillus plantarum MF405176.1

Lactobacillus fermentum MF405134.1

Lactobacillus fermentum MF033346.1

Advantages of the new isolates:

- Rich in bio active properties
- Survive and colonize in complex gut conditions of humans

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