

## **Safety assessment of two new lactobacillus strains as probiotic for human using a rat model**

### **ABSTRACT**

Two previously isolated *Lactobacillus* strains (*L. fermentum* HM3 from human milk and *L. buchneri* FD2 from fermented dates), intended as probiotic for human, were assessed for their safety using acute and subacute oral toxicity tests in rats. In addition, their effects on cecal microflora and harmful bacterial enzymes ( $\beta$ -glucuronidase and  $\beta$ -glucosidase) of the tested animals were also determined. The results showed that *L. buchneri* FD2, *L. fermentum* HM3, or a mixture of them were safe up to a level of  $10^{10}$  CFU/kg BW/day in a 14-day or 28-day treatment period. Both strains were well tolerated and there were no observed adverse effects on growth, feed consumption, cellular blood components and vital organs of the treated animals. The *Lactobacillus* strains were also able to reduce harmful intestinal bacterial enzymes, and decrease pathogenic bacterial populations while increasing beneficial bacterial populations. These results suggest that the two *Lactobacillus* strains are safe and could be potential probiotic for human.

**Keyword:** Safety assessment; Lactobacillus strains; Probiotic; Human; Rat model