**Novel probiotic strains of Dadih origin maintain intestinal itegrity and modulate immune function**

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Specific probiotic strains of Dadih origin play an integral role in both innate and humoral immunity by means of immunostimulatory and immunoregulatory properties, through secretion of cytokines to help direct naïve helper T cells towards either a Th1 dominant, cell-mediated immune response or towards a Th2 dominant, and humoral immune response. In animal models of Balb/c mice sensitized with ovalbumin (OVA), orally administered probiotic *Lactobacillus plantarum* IS-10506 at 109 cfu/day for 2 weeks, decreased allergic reaction through enhancement of the TH1 and Treg immune responses and forming a new TH1-TH2 equilibrium without reducing the level of TH2, involving TLR2 and TLR 4.In rodent model, intestinal brush border injury of Wistar Rats induced by *LPS E.coli* wasadministrated with 109 cfu/day *Lactobacillus plantarum* strain IS-10506 or IS-20506 for 2 weeks regulates main component of mucus layer as shown by significant enhancement of tight junction proteins composition, the Galectin-4, Myosin-1 a, Occludin and ZO-1 expression and MAP kinase pathways showed by the increasing ERK1/MAP kinase and JNK/MAP kinase expression, support the improvement of intestinal integrity. Novel probiotic *L. plantarum* IS-10506 communicate with the host by modulating key signaling pathways, such as MAP kinase. In human, supplementation of *Lactobacillus plantarum* IS-10506 at 1010 cfu/day for 21 days to adult living with HIV significantly increased CD4+ counts, while supplementation 1010 cfu/day *L. plantarum* IS-10506 for 90 days to young children significantly improved fecal sIgA. In conclusion, probiotic *Lactobacillus plantarum* strain IS 10506 and strain IS-20506 have immunostimulatory and immunoregulatory properties, normalization of gut mucosal dysfunction, and down-regulation of hypersensitivity reactions and able to repair intestinal brush border.

**Key words:** probiotic, *L. plantarum* strains, intestinal epithelial cell, brush border repairment, immune-stimulation, immune-regulation