**Effect of microencapsulated Probiotic *L.plantarum* IS-10506 supplementation on immune response and diarrhea incidence of Indonesian**

**pre-school Children**

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**ABSTRACT**

A randomized double blind placebo controlled pre-post trial has been conducted to Indonesian children aged 12-24 months. There were two groups, placebo and probiotic group of 12 children each. Microencapsulated *L.plantarum* IS-10506 was supplemented at 1010 cfu/day to probiotic group for 90 days. Anthropometric measurement, fecal sIgA and plasma TGF- were being assessed by ELISA at baseline and endline after 90 days supplementation. A significant decreased of diarrhea incidence was observed (p< 0.05), and 88.9 % subjects in probiotic group increased the sIgA level, while in placebo group only 45.5 % increased the sIgA after 90 days supplementation. Increment of TGF- was found in 66.7 % subjects of probiotic group, while in placebo group, only 27.3 %. *Lactobacillus plantarum* IS-10506 at 1010 cfu/day significantly decreased diarrhea incidence after 90 days supplementation and showed immunomodulatory properties both humoral and cellular immune response.

Keywords : probiotic, *L. plantarum* IS-10506, immune response, diarrhea incidence