

Novel Indigenous Probiotics from Dadih: Survival, Immune Response and Nutritional Status

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By definition, probiotics supposed to survive in the gut, strain and dose dependent, provide health benefit to the host. The term probiotic encompasses live microbes and safe for intended use and have documented health effects. Two novel probiotics of dadih origin have been studied for 24 years, in *in vitro*, *in vivo*, and human studies mostly in children. The survival of encapsulated *L.plantarum* IS-10506 was much higher than the free cells, and encapsulation technique protects viability of cells reaching GI tract. The proven dose for *Lactobacillus plantarum* IS-10506 is 10^{10} cfu/day, while *Enterococcus faecium* IS-27526 is 10^8 cfu/day. The efficacy of the strains is on enhancing immune response, especially humoral immune response as well as balancing Th1/Th2 in allergic subjects and improving nutritional status, especially body weight and serum zinc in apparently healthy and immunocompromised subjects. No adverse effects were recorded during the intervention studies, confirming the safety of novel indigenous probiotic strains. Strain *L. plantarum* IS-10506 showed ability in repairing bursh border damage in rat model. Development of probiotic based functional foods are challenging, and promising for food microbiologist and food technologist in response to more health conscious consumer attitude for the development of the Indonesian probiotic market.

Keywords: Novel indigenous probiotics, dadih, survival, immune response, nutritional status

Biography:

Ingrid S Surono, MSc, PhD, graduated from Food Technology Department, Faculty of Agricultural Technology, Bogor Agricultural University in 1980. She earned MSc in Dairy Microbiology and Food Processing from Asian Institute of Technology (AIT), Bangkok-Thailand, in 1984. PhD was obtained from The United Graduate School, Gifu University-Japan, in 1996. She dedicated herself to probiotic research since 1992, and her research interests are in child nutrition, functional foods and food safety. In 2009, she attended Workshop on Management of Microbial Hazard in Food organized by

European Chair in Food Safety Microbiology, hosted by the Laboratory of Food Microbiology Graduate School VLAG, Wageningen University, The Netherland. There are 30 international published papers in peer reviewed journals mainly on probiotics, and she is also a reviewer of British Journal of Nutrition, Beneficial Microbes, Appetite, Springer plus, and some national journals. She is co-promoter of 12 PhD students from Post Graduate Programs at Faculty of Medicine Airlangga University, Faculty of Medicine University of Indonesia, Faculty of Human Ecology Bogor Agricultural University, and Faculty of Public Health of Airlangga University and of Andalas University. She supervised 11 MSc Students from Faculty of Medicine/ Seameo Recfon University of Indonesia, Faculty of Human Ecology, Bogor Agricultural University, and Faculty of Mathematics and Sciences, Airlangga University, and supervised more than 40 under graduate students. She has published 7 books, and wrote 2 chapters in text book published by CRC and Springer, and wrote 3 chapters in Encyclopedia of Dairy Sciences. She actively involved as a member of expert team at National Agency of Drug and Food Control Republic of Indonesia (NADFC) especially in Food Safety and member of task force on Probiotics and Prebiotics Guidelines. She is an author of Probiotic, Microbiome and Functional Foods, published in 2016 in Indonesian. She was a visiting Professor at Functional Foods Forum, University of Turku-Finland, during 2004-2006. In 2011, Science and Technology Award have been granted to her from Toray Foundation. In 2012, she was nominated as ten best researcher of Ristek Kalbe Science Award 2012. Two awards of Third best winner of Oral Presenter at the XXXII International Congress on Microbial Ecology in Health & Disease in Athens, Greece, and at FASEB Summer Research Conference, Carefree, Arizona, USA, in 2010 and 2011, respectively have been recorded. A patent on Probiotic has been granted in 2010. She also serves as Advisory Council of Swedish South Asian Network on Fermented Foods (2009 - present time). She is President of Indonesian Scientific Society for Probiotics and Prebiotics (ISSPP), and one of Scientific Members at Danone Institute Indonesia since 2013-present time, and appointed as Head of Food Technology Department, Faculty of Engineering, Bina Nusantara University, Alam Sutera Campus, Tangerang, Indonesia (2013-present time).