Effects of Probiotics, Prebiotics, and Synbiotics on Human Health

Probiotic organisms are crucial for the maintenance of balance of human intestinal microbiota. Numerous scientific reports confirm their positive effect in the host's health. Probiotic microorganisms are attributed a high therapeutic potential in, e.g., obesity, insulin resistance syndrome, type 2 diabetes, and non-alcohol hepatic steatosis [207]. It seems also that probiotics may be helpful in the treatment of irritable bowel syndrome, enteritis, bacterial infections, and various gastrointestinal disorders and diarrhoeas. Probiotic microorganisms are also effective in the alleviation of lactose intolerance and the treatment of atopic dermatitis. A positive effect of probiotics in the course of various neoplastic diseases and side effects associated with anti-cancer therapies is also worth noting. Prebiotics may be used as an alternative to probiotics, or as an additional support for them. It turns out that the development of bio-therapeutic formulas containing both appropriate microbial strains and synergistic prebiotics may lead to the enhancement of the probiotic effect in the small intestine and the colon. Those "enhanced" probiotic products may be even more effective, and their protective and stimulatory effect superior to their components administered separately [208]. It seems that we will see further studies on combinations of probiotics and prebiotics, and further development of synbiotics. Future .studies may explain the mechanisms of actions of those components, which may confer a beneficial effect on human health

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