OMICS Group Conferences
Accelerating Scientific Discovery

2nd International Conference and Exhibition on
Nutritional Science & Therapy

July 15-17, 2013 Courtyard by Marriott Philadelphia Downtown, USA

Modern molecular-applied approaches to probiotic construction

Shenderov B.A
Gabrichevsky Research Institute of Epidemiology and Microbiology, Russia

According to author/s opinion (1997) probiotics are live microbes or compounds of any origin that being administrated in adequate amounts confer a health benefit via optimization of physiological functions, regulator, metabolic and/or behavior reactions associated with activity of host indigenous microbiota. This report analyzes the molecular-applied approaches and technologies that can improve traditional probiotics and/or create the basis for construction of novel probiotics in the main: e.g. searching for probiotic strains among non-traditional dominant fila or among symbiotic microbes of ancient primitive animal organisms or affecting novel targets; prebiotics on the basis of bacterial exopolysaccharides, fungi or insect chitins; symbiotics consisting of a combination of strains possessing biocompatibility and/or participating in the realization of specific physiological functions or biochemical reactions in consecutive order; synbiotics containing combination of live microbes, prebiotics and metabiotics; formulation of metabiotics which are structural components, metabolites and/or signaling molecules of probiotic (symbiotic) microbes with determined chemical structure and proved health benefit activity; creation of simple and complex auto-probiotics on the basis of auto-strains isolated from personal indigenous microbiota and intended to the same individual. Besides, it will be shortly discussed the advantages and defects of gene engineering probiotics with specifically directed health beneficial effects, methods of transplantation of fecal content, probiotics prepared by the use of synthetic biology tools, the use of microecological engineering for stabilization and formation microbiota in pregnancy and infants.

Biography

Shenderov B.A., MD (1963), Doct Med Sci (1976) is a Professor of Microbiology (1979), Active Member of New-York Academy of Science (1996), Main Researcher at GN Gabrichevsky MRIEM, Project Director of a Program "Health through Nutrition in the ASVOMED (Russia), Scientific Expert of Russian Humanities Fund, President of International Society of Gnotobiology (IAG), member of Editorial Board or Committee of six Russian and International Scientific Journals. He has published more than 250 papers (10 books, 30 inventions) in the fields of Medical Microbial Ecology, Bacterial Genetics & Epigenetics, Functional foods, Probiotics, and Biotechnology.