Probiotics and Prebiotics

Scientific Aspects

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Probiotics are products aimed at delivering living bacterial cells to the gut ecosystem of humans and other animals, whereas prebiotics are non-digestible carbohydrates delivered in food to the large bowel to provide fermentable substrates for selected bacteria. Food scientists and nutritionists have accepted, relatively uncritically, the concepts underlying the use of probiotics and prebiotics in the promotion of health. Microbiologists and medical practitioners have viewed these products more sceptically. Much more scientific and medical validation of probiotic/prebiotic use is required. This will entail the use of sophisticated analytical methodologies. Knowledge of the gut microbiota has increased dramatically during the past decade thanks largely to the results obtained from the application of nucleic acid-based methodologies. Because of the availability of improved technologies, detailed studies of the two principal kinds of probiotic/prebiotic bacteria, members of the genera *Lactobacillus* and *Bifidobacterium*, can be made. While well-established scientists continue to make important contributions to probiotic/prebiotic research, it is notable that younger scholars are playing a vital role in developing scientific concepts related to the field. Several of these emerging leaders have contributed chapters to this book that therefore represents a state-of-the-art compendium of fundamental science related to early 21st century probiotic/prebiotic research.

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