

## SECOND CONSENSUS WORKSHOP ON NOVEL FOOD

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### Abstract

Food and health, consumer and scientist – living apart together

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Foods are no longer only considered by consumers in terms of taste and nutrition but also in terms of their ability to provide specific benefits above and beyond their basic nutritional value. Functional foods have become an important and rapidly expanding segment of the food market as processed food manufactures seek to improve market share by promoting the health benefits provided by functional ingredients in their products. Science has been expanding its knowledge of how foods influence consumers in relation to specific health parameters. Functional foods targeted towards improving the balance and activity of the intestinal microbiota currently provides the largest segment of functional food market in Europe, Japan and Australia.

The gastro-intestinal tract and its activities hold high promises for future foods. The alimentary tract is the primary site of food conversion and uptake but it is also the site of local / systemic disorders, as well as intense immunological function. The gut is the human body's most metabolically active organ and it is colonized by a myriad of microbes. Microbes contribute towards food conversion, digestion, communication with the host and induction of specific biological responses that contribute towards many critical physiological functions. Hence, the gut represents the site where host well-being is mostly affected by food intake both directly and through modulating the interplay between gut microbes and the host.

A number of steps are essential in the development of efficacious functional foods. A prerequisite for mechanistic studies of action is an understanding of the composition and activity of the intestinal microbiota as well as interactions with the host in both healthy and diseased individuals. High-throughput molecular methods are required to examine the intestinal microbiota and to track the location and activity of probiotic strains in the intestinal tract. An understanding of the mechanisms by which probiotics exert beneficial effects on human health allows selection of strains with appropriate traits for hypothesis-driven clinical studies. The safety of new strains must be demonstrated before they are used in human clinical trials. An important area of research is technologies to maximise the stability of functional traits of probiotics during manufacture, formulation, storage and in the intestinal tract. Additionally, the efficacy of products may be enhanced by exploiting synergistic interactions between functional ingredients, as is potentially the case with synbiotics. Finally, an understanding of the most appropriate

methods to communicate the benefits of the functional foods to consumers and the influence of health messages on consumer choice is essential to ensure that products are appropriately applied and targeted to benefit specific populations. Furthermore, unfortunately numerous food scandals in Europe during the past few years have undermined consumers' trust in safety of foods. Especially novel types of foods such as functional foods can perhaps encounter more prejudice than previously anticipated.

Health is, although important, only one reason behind food choices and other factors often decide choices. Good taste and sensory quality can be experienced directly and they are known to be the key factors in repeated choices. Even with foods aimed for health, the taste has to be good for gaining consumers' acceptance. The future appeal of probiotic products depends on their ability to provide consumers the benefits they promise at the moment. This requires research that provides necessary evidence to back up the possible health claims made in these products. The true challenge is to make the knowledge produced by science understandable and feasible for the consumer. Consumers' everyday thinking and scientific thinking differ in their reasoning. Consumer thinking is based on dichotomic judgements and approximation, whereas scientific thinking uses probabilities and accepts a certain amount of uncertainty. Consumers' trust on the information depends on the source and content of message. Producers of probiotic foods have to be careful in ensuring that this trust exists and is gradually built.

There exists a plethora of questions that remain to be answered in terms of consumer awareness and the best methods to convey health messages. How to communicate the gut health messages effectively to consumers with varying age and cultural background remains one of the key issues. Furthermore, how to create and sustain trust between manufacturers and consumers, so that messages will be received rather than ignored. Although scientists and manufactures invest a lot of effort into establishing the functional properties of different probiotic strains and products, consumers may not be aware of these differences. Food applications that bring relief to diseases may combine the idea of food and medicine in a way that is difficult for consumers to accept. Finding a place for these kind of foods in the daily food system may be another hurdle for consumer appreciation. These questions must be addressed to ensure that scientific achievements can be translated into appropriate set of products which will be accepted and consumed and thus have a role in improving human health.