Editorial

The functionality of dietary components, beyond provision of inherent nutritional benefits, has in relatively recent times become the focus of both lay and scientific interest. The imagination of the public has been captured by the concept that diet has a significant impact on health. The belief that one’s quality of life can be enhanced through manipulation of patterns of food intake has resulted in “prebiotic” and, most especially, “probiotic” becoming common or garden household terms, no longer scientific jargon.

In the scientific and medical literature, and in company portfolios, prebiotic and probiotic products are regularly associated with claims of prophylactic and therapeutic efficacy. These claims most commonly cite abilities to “balance” gut flora or to provide protection against infections, allergies, inflammatory bowel disease, irritable bowel syndrome, hypercholesterolemia, hypertension, or colon cancer. The agents capable of mediating these effects are diverse and comprise non-digestible oligosaccharides, beneficial bacteria or fungi, and combinations of these.

In many cases, these claims may not be supported by clinical evidence. However, there are notable exceptions where some of the best known lactobacilli strains (and consortia of bacterial and/or fungal strains) have shown significant potential in rigorously-performed clinical assessments. It is clear that the diversity of prebiotic substances, probiotic microbes, and the influences that they may respectively exert mean that any health-enhancement claims must be supported by experimental and clinical data. The future of functional food ingredients as alternatives, or adjuncts, to existing and emerging lifestyle and medical practice requires the adoption of this principle of evidence-based legitimacy. The early adopters of this principle are now emerging as the innovative (if sometimes market-led) providers of high-credence functional foods capable of nourishment and, where designated, protection and/or treatment of specific issues in healthcare in a newly defined “near pharma” market sector.

In Chapter One, Prof. O’Sullivan et al. [1] detail the emergence of probiotics as medical therapies while highlighting the necessity for randomised, double-blinded, placebo controlled clinical studies for validation of claims. Dr. Reid [2] expands on this theme by describing appropriate guidelines for the identification, characterization, manufacture, and clinical assessment of probiotic products in disease states suitable for their use. Chapter Three provides an informed synopsis by Prof. von Wright [3] of the regulatory environment in which European functional food industry operates. This summary also discusses how the European “take” on bioactive functional ingredients may differ from elsewhere. In Chapter Four, Dr. Michael Callanan [4] addresses the core technologies in the rapidly growing area of genomics, and their application to the molecular characterisation of probiotic bacteria and host-microbe interactions, while in Chapter Five Dr. Crittenden et al. [5] highlight the considerable levels of prebiotic- and probiotic-based academic and industry activity in Australia, New Zealand and the Asia-Pacific Region. In Chapter Six, Drs. Kullen and Bettler [6] detail the benefits of including prebiotic and probiotic agents in infant formula and in Chapter Seven Dr. Tuohy et al. [7] discuss approaches adopted in the evaluation of prebiotic efficacy.

References

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