

Biotechnology and human health: The use of bifidobacteria spp. in dairy products

Ara Kanekanian

School of Health Sciences, Cardiff Metropolitan University, UK

Interest in the consumption of food products containing probiotic bacteria, a health promoting intestinal microflora, has seen a large increase in Europe especially in the last two decades. Their popularity, especially the Lactobacilli and the Bifidobacteria has been apparent mostly with dairy products such as fermented milk drinks and yogurts. The use of probiotics was extended to other dairy and food products such as cheese, ice cream, fruit juices, bread etc. Extending the range of products is possible when new strains and micro- or nano-encapsulation are applied which could protect the probiotics from unfavorable surrounding environment. The growth of probiotics is usually slow and it is important to encourage their growth and survival to keep them within the recommended population number of 10^7 - 10^{10} cfu/g. Improving the growth of probiotics can be achieved by using prebiotics, which are preferentially utilized by probiotics. Research has shown that the use of prebiotics such as inulin and fructo-oligosaccharides up to 5% enhance the growth and survival of the probiotics during the shelf life of the product. It was found that a low level of milk protein hydrolysis up to 4% using trypsin could also improve their growth. Bifidobacterium animalis ssp lactis (BB12) inoculated in partially hydrolyzed UHT skim milk in the presence of prebiotics shown to have a faster growth rate and better survival ratio up to 28 days stored at 5°C when compared with the control. It is vital that the marketed probiotic products should contain the desirable number of the organisms throughout the shelf life of the product to offer the health benefits anticipated from such products.

Biography

Ara Kanekanian gained his PhD from Reading University – UK in 1983. He has been in academia for over 20 years with main interest in protein chemistry and fermentation technology and with over 10 years experience in the food industry and consultancy. He is a member of the publication committee of the International Journal of Dairy Technology and has several scientific publications. Current research activities include, milk allergy, immune modulation in colostrum and microencapsulation of nutraceuticals. He is editing a book titled "Milk & dairy products as functional foods" commissioned by the society of dairy technology –UK to be published by Wiley-Blackwell in 2012.

akanekanian@cardiffmet.ac.uk