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The role of bioactive peptides and probiotics in human health

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Abstract

Interest in bioactive compounds from food in general is on the increase especially for their health benefits. Most of the bioactive compounds are naturally present in foods or in the case of bioactive peptides could be the result of hydrolysis by digestive enzymes especially those from protein or by the growth of probiotics. This research work investigated the release of some of the bioactive peptides from milk protein. These peptides varied in length and the amino acid sequence. The health benefits of the crude protein hydrolysates and the low molecular weight peptides were examined. The health benefits included their effect as antihypercholesterolemic, Antihypertensive as well as for their antioxidant activities. In all these cases there were noticeable effects when these peptides were used. In vitro studies showed a 78.5% reduction in cholesterol, a 50% in ACE inhibitory activities and 19.6% in antioxidant activity. Further investigation for the activity of some special peptides produced from specific milk protein fraction such as β-Casein was undertaken for their potential as anticarcinogenic compound. The initial results of this investigationindicated a small but not significant reduction in the proliferation of pancreatic and colonic cancer cell lines. However, the results are encouraging and further research is ongoing to improve their potential.

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. He has also been working for 10 years in the food industry and undertook several consultancy and turnkey projects related to food and dairy processing within Europe and the Middle East. He is a member of the publication committee of the International Journal of Dairy Technology and has published several scientific and technical papers. Other research activities include milk allergy, immune modulation and growth factors in colostrum, micro- and nano-encapsulation of nutraceuticals. Currently, he has been participating in several European projects regarding bioactive compounds in food for their health benefits as antioxidants, anti-inflammatory, antihypercholesterolemic, antihypertensive and anticarcinogenic agents. He is also editing a book titled “Milk and Dairy Products as Functional Foods” commissioned by the Society of Dairy Technology – UK to be published by Wiley-Blackwell in 2013.