

Dairy bioactives: from paddock to functional food and dietary supplement

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Dairy foods have traditionally been considered a source of nutrition, particularly high quality protein, calcium and other minerals, and vitamins. In the last few decades, milk and other dairy foods have been maligned due to their saturated fat and cholesterol contents and the belief that these constituents increase the risk of coronary heart disease. There are several studies, which indicate that dairy products may not potentiate atherosclerosis (1)(2)(3). In fact there are factors in milk that may actively protect against heart disease such as calcium, bioactive peptides, folic acid, vitamin B₆, vitamin B₁₂ and conjugated linoleic acid (4).

A range of other activities has been demonstrated for dairy components. Milk proteins are an important source of bioactive peptides showing opioid and ACE-inhibitory activity (5). Lactoferrin has been shown to have a bifidus effect and antimicrobial activity. It also improves iron bioavailability. Glycomacropeptide, β -lactoglobulin, α -lactalbumin and casein phosphopeptides affect physiological functions (6). However many of the potential physiological effects come from in vitro studies and need to be confirmed in clinical studies.

Colostrum is rich in immunoglobulins, antimicrobial peptides and growth factors and is being examined for impact on a range of gastrointestinal conditions (7). Changes in farming practices and technology are necessary to allow the production of dairy bioactives. The emerging evidence for colostrum has led to the development of procedures for harvesting high quality colostrum from Australian dairy cows. The development of membrane technologies allows the fractionation of milk proteins to produce a range of products with potential impact on human health (8).

References

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