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**BOVINE BETA-LACTOGLOBULIN: THE ROLE IN COW MILK ALLERGY
IN INFANTS**

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Hypersensitivity to cow milk proteins is frequently observed during infancy and is believed to be an antigenic response to milk proteins that are absorbed through the immature intestinal mucosa. This hypothesis has been verified by identifying the proteins following *in vitro* digestibility of milk and determining the presence of such proteins in the serum of infants with cow milk allergy.

In Sri Lanka, over 80 per cent of milk is consumed in the form of powdered milk in contrast to other countries where fresh milk is popular. The high keeping quality, availability, and the popular notion that powdered milk is less of a health hazard compared to fresh cow milk has led to increased powdered milk consumption.

Fresh cow's milk, human milk and six cow milk formulae were subjected to *in vitro* proteolytic digestion in pepsin (1%) at pH 2 and trypsin (1%) at pH 8. Following the initiation of the *in vitro* digestive process, aliquots were collected at 0, 0.5, 1, 2, 3, 4, 6 and 24 hour and subjected to SDS-PAGE. Protein analysis by SDS-PAGE indicated that most cow milk proteins were completely digested in 4 hours but beta-lactoglobulin remained undigested even after 24 hours. Human milk is devoid of beta-lactoglobulin. All human milk proteins were completely digested by the proteolytic enzymes.

Immunoblotting studies using rabbit anti-bovine beta-lactoglobulin indicated the presence of bovine beta-lactoglobulin only in the sera of infants with cow milk allergy and not those individuals without an allergic reaction despite the consumption of cow milk. Beta-lactoglobulin was not present in the serum of infants on human milk. The results indicate that the cow milk whey protein, beta-lactoglobulin is poorly digested and may play a role in the hypersensitive reaction in infants following its entry into circulation.

