

## Low Protein “Toddler” Milk

Teagasc researchers, in collaboration with UCC, have developed a method for production of a low-protein milk product, in reduced and full-fat formats, based on a modified cow’s milk, tailored to meet toddlers’ nutritional needs in developed countries but usable by the whole family. We are seeking a commercial partner within the infant nutrition/dairy industry to optimise and commercially exploit this technology.

### Summary

Toddlers in the Western World typically have a far greater intake of protein than they need, and studies have shown a significant association between high protein intake in early childhood and a later risk of obesity. Teagasc researchers, guided by pediatrician and commercial expertise within Food for Health Ireland research programme, have developed a method for production of a modified cow’s milk product, tailored to meet such toddler’s nutritional needs, but which can also cater for the whole family.

### Problem Addressed

Dairy products play an important role in toddler nutrition and are by far the lowest cost source of dietary calcium and riboflavin. However, infants in the Western World have an average protein intake of approximately 2.5g/Kg of body weight/day, which exceeds the recommended intake of 1–1.5g/Kg of body weight/day., Observational data increasingly indicates a link between high protein intake during early childhood and a risk of obesity in later life. Many such toddlers are fed formulated toddler milk with altered nutritional and taste profile when compared to natural milk, and at a premium cost to consumers. To date there has been an absence of natural milk product alternatives in this growing and premium toddler market, which this technology aims to address.

### Solution

This invention relates to a process enabling the production of a novel, natural, reduced-fat (or full-fat), low-protein dairy product from cow’s milk, which has been tailored to meet a toddler’s nutritional needs. As the product is based on cow’s milk it has a superior taste, and is much closer to natural cow’s milk, than competing formulated toddler milk and may be cheaper to produce. Hence this novel product should represent an opportunity for the producer, and end-user, to benefit from such an innovation.

### Competitive Advantage of Technology

1. A natural low-protein alternative to modified cow’s milk that has a comparable taste, composition and appearance to regular bovine milk, as a potentially viable alternative to formulated toddler milk.
2. This modified cow’s milk is suitable for consumption by the whole family.
3. This resulting milk product can be produced in fresh, Ultra-High Temperature (UHT) and powder formats and the process technology should be easily scalable and transferable to industry.

### Stage of Development

A prototype modified cow’s milk has been scaled up at pilot plant level, and limited sensory analysis undertaken.

### Opportunity

Teagasc wish to partner with a company/companies in the infant nutrition and/or dairy industry to optimise and commercialise this process and resulting product, through a collaborative/licensing arrangement.

### Intellectual Property Status

Patent application filed by Teagasc and UCC, “A Dairy Product” ( WO 2017/108989).

### Funding

UCC, Food Health Ireland (Enterprise Ireland)

### How to Proceed:

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