

# ARC Dairy Innovation Hub – Research Themes

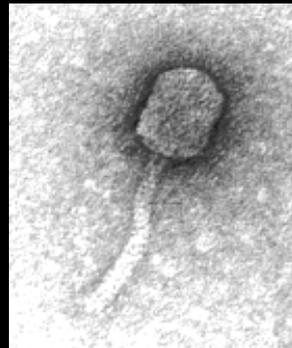
## Biocontrol

The *Biocontrol* theme, led by Dr Mark Turner and Dr Nidhi Bansal at the University of Queensland, will use a unique combination of microbiology and food engineering to determine whether the antimicrobial activity of benign microbes can be used to prevent contamination and growth of unwanted micro-organisms. Current preservation and microbial control methods have limitations as they use either chemical preservatives or caustic solutions to keep the surfaces of processing equipment clean. With the recent approval of the P100 anti-*Listeria monocytogenes* phage for use in Australia, a path is now clear for the development of novel “**green preservative**” approaches for foods. The first of two parallel projects will seek to isolate bacteriophage that selectively attack spore forming bacteria responsible for colonisation of high heat dairy processing equipment. This can result in the contamination of milk powder. The second project will focus on screening a collection of benign lactic acid bacteria isolated from vegetables and fruits for anti-fungal properties, with a view to incorporating them in or on the surface of cheese products to prevent mould growth. Lactic acid bacteria are natural components of cheese and would allow manufacturers and consumers to achieve longer shelf life without resorting to non-dairy ingredients. These approaches will address important aspects of processing efficiency, waste reduction and shelf-life extension.

*Some Lactobacilli have antifungal properties and can suppress the growth of mould. They may have the potential to extend shelf life of sliced or shredded dairy products once opened*



*Can we use phage to control spore formers in high heat dairy manufacturing processes?*



### Key Collaborations with other Hub projects

The biocontrol theme will commence in the second year of the five year ARC Dairy Innovation Hub program. The UQ microbiology team will closely collaborate with the DIAL microbiology team and dairy industry partners in developing applications for the green preservative approach.

#### Contact

Dr Mark Turner, T +61 7 3365 5764, E [m.turner2@uq.edu.au](mailto:m.turner2@uq.edu.au)

Dr Nidhi Bansal, T +61 7 3365 1673, E [n.bansal@uq.edu.au](mailto:n.bansal@uq.edu.au)