

Get more from dairy byproducts

UC Davis is seeking graduate student funding for research benefitting dairy processors

UC DAVIS RESEARCH

Researchers in the Department of Food Science and Technology at UC Davis have been studying oligosaccharides for nearly a decade, starting with human milk and, more recently, bovine milk. They have shown that breast-fed infants have lower risks of gastrointestinal, respiratory, and other infectious diseases due to the oligosaccharides present in breast milk (compared with formula-fed infants). Oligosaccharides also affect cognitive development in infants, as they are essential nutrients for developing brains.

A gift of \$50,000 will support a graduate student for one year

The same oligosaccharides that improve human health from breast milk are found in the whey stream from cheese-making. New analytical techniques have allowed UC Davis researchers to isolate the oligosaccharides in small quantities. The challenge is how to isolate sufficient amounts of the important oligosaccharides from the whey stream. Being able to do this on an industrial scale would provide exciting new opportunities

RESEARCH GOALS

- **Develop** the best methods to separate and identify useful oligosaccharides in bovine milk and whey
- **Produce** sufficient food-grade quantities of bovine-derived oligosaccharides for functional and clinical testing
- **Evaluate** the oligosaccharides for use in human health products through pre-clinical human studies

for dairy processors to produce health-promoting oligosaccharides.

OPPORTUNITY FOR INDUSTRY

Dairy food processors send thousands of pounds of valuable complex sugars down the drain each day with the whey. If these complex sugars—oligosaccharides—could be captured from the waste stream, processors could have an additional revenue source and many people could enjoy better health.

Once funded, the graduate students will focus on the goals listed above. This research will determine if bioactive oligosaccharides can be extracted from dairy streams in sufficient quantities to benefit the dairy industry and human health. If oligosaccharides from whey streams are shown to improve health, as predicted, they could be used in new or innovative food products for people with compromised intestinal functions (infants, hospital patients, people on antibiotics, the elderly, and others).