Genetically engineered cow makes anti-allergy milk

Reuters

(Reuters) - Researchers in New Zealand have genetically engineered a cow to produce milk with very little of a protein that causes an allergic reaction in some children.

They hope the technique, which uses a process called RNA interference that reduces the activity of certain genes without eliminating it completely, can be used to control other traits in livestock.

With mothers breastfeeding less, cows' milk is an increasing source of protein for babies, but the different composition of cows' milk can cause an allergic reaction.

"In developed countries, 2-3 percent of infants are allergic to cows' milk proteins in the first year of life," the researchers said in a paper published in the Proceedings of the National Academy of Sciences.

Anower Jabed and colleagues at the New Zealand government-run AgResearch company said their genetically modified cow produced milk with a 96 percent reduction in the protein beta-lactoglobulin (BLG), a component known to cause allergic reactions.

While there are dairy industry processes that can reduce the allergenic potential of normal milk, they are expensive and can result in a bitter taste.

Another gene manipulation technique using a process called homologous recombination could theoretically knock out, rather than suppress, the gene that produces BLG but the researchers said that, so far, this has not worked.

Bruce Whitelaw, professor of animal biotechnology at the University of Edinburgh, said the New Zealand research "offers a good example of how these technologies can be used to provide alternative strategies to current manufacturing process".

He said that although RNA interference has been shown to work in manipulating plants and worms, "it has not worked in livestock before".

Whitelaw told Reuters that aside from accentuating or reducing genetically determined characteristics in farm animals, such as growth rate, the technique could be used to improve defence against infection.

"Time will tell how widely applicable RNA interference will be in GM livestock. But this is certainly a milestone study in this field," he said.

(Reporting by Chris Wickham; Editing by Dan Lalor)

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