Worm Gene May Improve Diet

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The solution to meat-lovers' health woes may come from a worm, according to research published this week in the scientific journal Nature.

A team of Harvard researchers, led by Harvard Medical School Associate Professor of Medicine Jing X. Kang, have taken a gene from the nematode worm and inserted it into mice, increasing the ratio of good fat (omega 3) to bad fat (omega 6) Down the road, they hope to use this innovation to make healthier meat, milk, eggs and other animal products.

"Fatty acid consumption in the western diet is unbalanced—there is too much omega 6 fats, and too little omega 3 fats," said Kang. "We have converted the less helpful fats into the more helpful ones."

Kang said that the Western diet incorporates twenty times too much omega 6 fat, which can lead to serious health problems such as heart disease and cancer.

According to Kang, it is difficult to consume the right amounts of healthy fat because practical all vegetable oil—except canola and olive oil—contains high amounts of omega 6 fatty acid.

Most animals cannot produce omega 3 fat on their own, but algae, nematode worms, and plants synthesize their own healthy fat, and the genetically modified animals could diversify human sources of the good fat.

Kang's successful splicing of the nematode worm gene has already received high praise from many scientific experts.

The mice started to make healthy omega 3 fat from omega 6 fat, achieving the ideal ratio of 1 to 1 omega 6 to omega 3 in their bodies and appearing healthier overall, according to Kang.

"We are confident that we can do the same thing in other livestock, like cows or pigs," Kang said. "We need to collaborate with some other party—you need a farm setting. However, our next immediate target is fish."

Scientists believe that such a plan is not only plausible, but probable, despite worries about genetically altered foods.

"This discovery could not be more timely," according to George L. Blackburn, Abraham Chair in Nutrition Medicine at Harvard Medical School and Director of the Center for the Study of Nutrition Medicine at Beth Israel Deaconess Medical Center.

“The public is going to accept the food, just as in the plant field we have [genetically altered] plants that are resistant to infection,” he said. “It may be a problem in Europe, but to the average American, taste, price and health are the things on his mind.”

“It’s one of the most important things that’s happened in years,” said Cynthia J. Kenyon, Boye Professor of Biochemistry and Biophysics at the University of California San Francisco, an expert on nematode genetic splicing. “If it’s shown to be beneficial, I think people will eat it... I would, if I was assured that the animals wouldn’t be hurt.”

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