Researchers takes up battle against 'bad cholesterol'

Professor Richard Lehner and his collegues have managed to stop the secretion of the precursor to low-density lipids (LDL) in mice

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University of Alberta researcher Dr Richard Lehner and his team are quickly approaching the development of a new wonder drug to reduce levels of bad cholesterol in the human body.

While products already exist on the market that prevent the cellular uptake of cholesterol, Lehner, who serves as director of the U of A Group in Molecular and Cell Biology of Lipids, and his team have gone a step further by identifying a technique that stops the secretion of the precursor to low-density lipids (LDL)—the so-called bad cholesterol.

Genetically manipulated mice were used as a testing standard to demonstrate the effectiveness of the newly identified inhibitor—and so far, he said, the results look very promising. Not only did these mice have lower levels of bad cholesterol, they also had reduced levels of free fatty acids within their blood plasma and tissues.

"The uptake of free fatty acids can cause havoc in these cells and tissues and in certain cases may lead to insulin de-sensitivity," Lehner explained. To add to this feat, there have been no adverse symptoms observed in the mice.

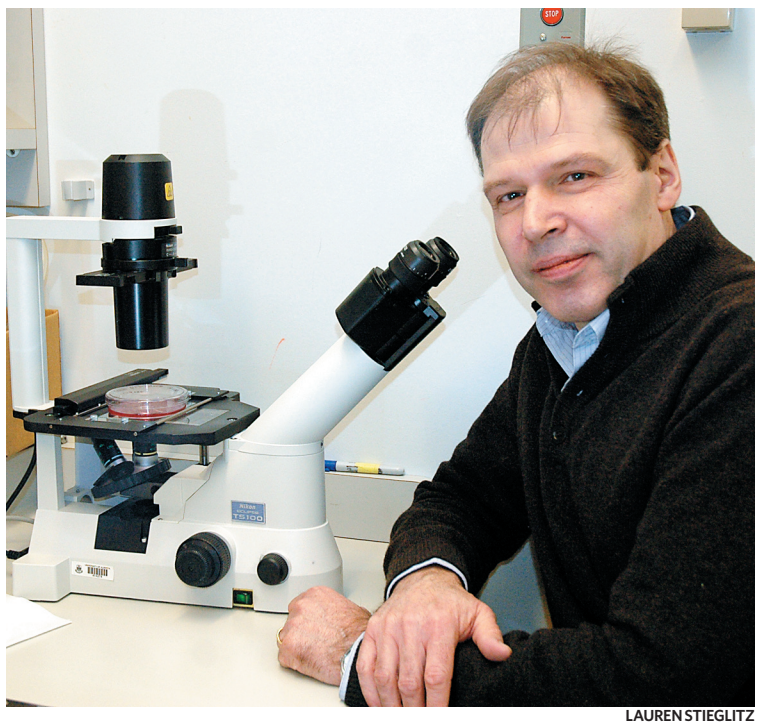
However, Lehner added that the demographic at risk of cholesterol-related health conditions being broadened to include nearly all age groups. He warned of the risk of high cholesterol affecting even youth as diets high in fatty foods coupled with an inactive lifestyle lead to increased risk of obesity, diabetes, and potential heart disease.

"Obesity is strongly associated with excessive triglyceride storage in tissues such as the liver, so all populations are affected, including children, by the increase in obesity."

The novelty of the breakthrough is in the inhibitor's ability to treat the problem at the source by "inhibiting the secretions of the precursors to LDLs," and also in being able to deal with the host of peripheral symptoms related to fat storage such as insulin resistance and free fatty acid deposition.

Moreover, Lehrer noted that research is constantly being impacted by the overlapping nature of science, and he said that this recent success is the culmination of an ongoing collaborative effort with contributors from both the Molecular and Cellular Biology of Lipids Research Group (MCBL) and the new Alberta Diabetes Institute.

The development of any new drug is a long process. Lehner and his team of researchers have used an experimental drug on mice, but he stressed that "the future is to link up with companies to produce a drug and test whether it can be used in humans."



LAUREN STIEGLITZ

FIGHTING THE FAT Dr Lehner and his team are setting out to beat cholesterol.