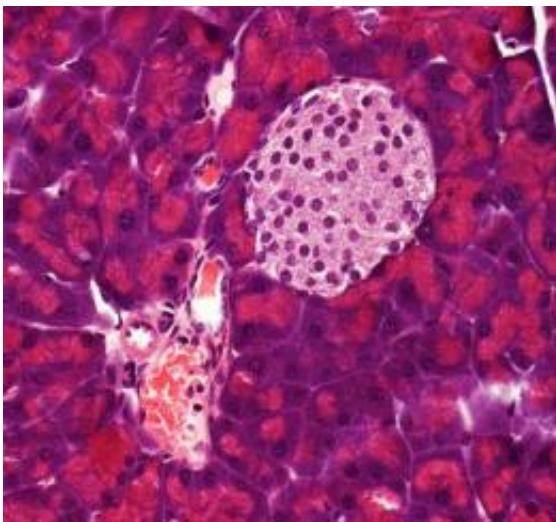


Scientists discover new mechanism for controlling blood sugar level

November 29 2010



This hematoxylin- and eosin-stained pancreatic slice illustrates an islet of Langerhans adjacent to a capillary. Credit: University of Leicester

Medical scientists at the University of Leicester have identified for the first time a new way in which our body controls the levels of sugar in our blood following a meal.

They have discovered the part played by a particular protein in helping to maintain correct blood sugar levels.

The breakthrough was made in the University of Leicester by a team led by Professor Andrew Tobin, Professor of Cell Biology, who is a

Wellcome Trust Senior Research Fellow. The research is published online ahead of print in the prestigious international scientific journal the [Proceedings of the National Academy of Sciences](#).

Professor Tobin said: "The work, which was done wholly at the University of Leicester, is focused on the mechanisms by which our bodies control the level of sugar in our blood following a meal.

"We found that in order to maintain the correct levels of sugar, a protein present on the cells that release insulin in the pancreas has to be active. This protein, called the M3-muscarinic receptor, is not only active but also needs to undergo a specific change. This change triggers insulin release and the control of [blood sugar](#) levels."

Professor Tobin added: "Without the change in the M3-muscarinic receptor protein sugar levels go up in the same way that we see in diabetes. We are of course testing if the mechanism of controlling sugar levels we have discovered is one of the mechanisms disrupted in diabetes. If this were the case then our studies would have important implications in [diabetes](#)."

More information: M3-muscarinic receptor promotes insulin release via receptor phosphorylation/arrestin-dependent activation of protein kinase D1 appeared in the Proceedings of the National Academy of Sciences (PNAS) www.pnas.org/content/early/2011/07/51107.abstract?ct=ct

Provided by University of Leicester

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