Medical Xpress

The anti-diabetic effects of sodium tungstate revealed

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The molecular mechanisms of tungstate activity in diabetes have been uncovered. Researchers writing in the open access journal *BMC Genomics* have identified the pathways through which sodium tungstate improves pancreatic function and beta cell proliferation.

A team led by Professor Ramon Gomis at the Hospital Clinic de Barcelona, Spain, studied the effects of sodium tungstate on pancreatic gene expression in a rat model of diabetes, in order to discover the mechanisms that control the partial pancreatic regeneration induced by this treatment.

He said, "A detailed description of the pathways involved in the pancreatic effects of tungstate is provided in our paper. Essentially, tungstate improves pancreatic function through a combination of hyperglycemia-independent pathways and through its own direct and indirect effects. In addition, the MAPK pathway has a key role in the tungstate-induced increase of beta cell proliferation".

Speaking about the results, Professor Gomis said, "We used sodium tungstate treatment of diabetic animals as a tool to search for genes and pathways implicated in pancreatic regeneration after an injury to the pancreas. This study identified genes with a key role in improving pancreatic plasticity, and these could be used as therapeutic targets for the future treatment of diabetes"

More information: Molecular mechanisms of tungstate-induced

pancreatic plasticity: a transcriptomics approach; Jordi Altirriba, Albert Barbera, Hector Del Zotto, Belen Nadal, Sandra Piquer, Alex Sanchez-Pla, Juan J Gagliardino and Ramon Gomis, *BMC Genomics* (in press), www.biomedcentral.com/bmcgenomics/

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