

# Newly discovered gene regulates hyperglycemia-induced beta cell death in type 2 diabetes

May 31 2016

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It's no secret that over time, elevated levels of blood glucose (hyperglycemia) can induce the death of the pancreatic beta cells. The death of these cells, which are responsible for the production of insulin, underlies much of the pathology of diabetes. Exactly how and why they die is not fully understood, but a new research report published online in *The FASEB Journal* by a team of Korean scientists, suggests that a protein called, "TSPAN2" may play a key role hyperglycemia-induced beta cell death and might serve as a new therapeutic target.

"The prevalence of Type 2 diabetes is significantly increased nowadays," said Ik-Soon Jang, Ph.D., study author and senior scientist in the Division of Bioconvergence at the Korea Basic Science Institute in Seoul, South Korea. "Our study will be potentially helpful to develop the medicine for the treatment of type 2 diabetes."

To make this discovery, scientists grew human [pancreatic beta cells](#) in culture and analyzed their [gene expression patterns](#). They found that the [highly expressed genes](#) and proteins under hyperglycemic conditions can regulate cell death through various cell signals, but in general, the primary mechanisms of  $\beta$ -cell apoptosis includes signaling through FAS ligand and various pro-inflammatory cytokines.

"The revelation of a novel pathway related to the induction of pancreatic beta cells apoptosis could have exciting implications for future

treatments for Type 2 diabetes," said Thoru Pederson, Ph.D., Editor-in-Chief of *The FASEB Journal*. "If drugs that inhibit the loss of these cells can be developed, it may be possible to attenuate disease progression."

**More information:** The *FASEB Journal*, [DOI: 10.1096/fj.201600240RR](https://doi.org/10.1096/fj.201600240RR)

Provided by Federation of American Societies for Experimental Biology

Citation: Newly discovered gene regulates hyperglycemia-induced beta cell death in type 2 diabetes (2016, May 31) retrieved 9 April 2024 from <https://medicalxpress.com/news/2016-05-newly-gene-hyperglycemia-induced-beta-cell.html>

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