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Beta Cell Growth in Tcf-1 Deficient Mice - Study GBCO2541

Genomics Study Specifications

Study Name	Beta Cell Growth in Tcf-1 Deficient Mice
Contact Name	Markus Stoffel (The Rockefeller University)
Publication	http://www.ncbi.nlm.nih.gov/pubmed/16330324
My Strategies	Return to My Strategies page
Classification	Targets and roles of transcriptional regulators
Links	Biomaterials Graph ArrayExpress
BCBC Release Date	August 30, 2006
Public Release Date	August 30, 2006
Citation	Akpinar P, Kuwajima S, Krützfeldt J, Stoffel M. Tmem27: a cleaved and shed plasma membrane protein that stimulates pancreatic beta cell proliferation. Cell Metab. 2005. 2:385-97
Synopsis	Study Description | Goals | Approaches | Results | Conclusions | Related Studies Mutations in several transcription factors lead to a subtype of type 2 diabetes called maturity-onset diabetes of the young (MODY), which are characterized by autosomal dominant inheritance, an early age of disease onset, and development of marked hyperglycemia with a progressive impairment in insulin secretion (Shih and Stoffel, 2002). The most frequent form of MODY is caused by mutations in the gene encoding hepatocyte nuclear factor-1a (HNF-1a, TCF1). Mutant mice with loss of Tcf1 function as well as transgenic mice expressing a naturally occurring dominant-negative form of human TCF1(P291fsinsC) in pancreatic beta cells develop progressive hyperglycemia due to impaired glucose-stimulated insulin secretion (Hagenfeldt-Johansson et al., 2001; Yamagata et al., 2002). Importantly, these mice exhibit a progressive reduction in beta cell number, proliferation rate, and pancreatic insulin content. These data indicate that Tcf-1 target genes are also required for maintenance of normal beta cell mass. In this study we sought to identify target genes of Tcf-1 that may be responsible of mediating beta cell growth by comparing gene expression profiles of Tcf-1 knock-out and wild-type littermates in isolated pancreatic islets.
Platform types	Expression microarray, Expression
Platforms	Show platform Affymetrix MG_U74B Show platform Affymetrix MG_U74A
Study Design Type	• genetic_modification_design
Study Factors	Show study factors
Study Assays	Show study assays

Access Status

This resource is publicly viewable.

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Primary contributor: Stoeckert Lab

Resource Tags

Affymetrix MG_U74Av2, GSE3544, Hnf1a, Hnf1-alpha, HNF1 homeobox A, Tcf1, Tmem27, transmembrane protein 27

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Resource History & Actions

Approved on Aug 30, 2006
Last modified on Aug 02, 2011

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Related resources

BCBC

No matching resources

Other Consortia

No matching resources

Data courtesy of dkCOIN. Only public resources are displayed.

Access to Study Data

This Study Data is publicly available to all users.

Gene List(s)

Use the following form(s) to refine the parameters and add the gene list to a strategy:

Tcf-1 KO versus Wild Type mouse islets (U74Av2)

|Fold Change| Greater Than: 1.5

Confidence Level: High Confidence / All Results

For a microarray experiment a result with high confidence has a confidence level of at least 80%.

For a ChIP-chip experiment a result with high confidence has a confidence level of at least 90% and all fold changes are positive.

Reference (Denominator): NA

Find Genes

Tcf-1 KO versus Wild Type mouse islets (U74Bv2)

Genome Browser

There are no genome browser tracks currently available for this study.

Lists of Locations

There are no genomic location datasets currently available for this study.

Repositories

Stoeckert Lab

Request this resource

Stock #: *Not provided*
Availability Notes: *Not provided*

Comments

There are no comments for this entry.

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