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**Beta Cell Growth in Tcf-1 Deficient Mice - Study GBCO2541****Genomics Study Specifications**

<b>Study Name</b>	Beta Cell Growth in Tcf-1 Deficient Mice
<b>Contact Name</b>	<a href="#">Markus Stoffel</a> (The Rockefeller University)
<b>Publication</b>	<a href="http://www.ncbi.nlm.nih.gov/pubmed/16330324">http://www.ncbi.nlm.nih.gov/pubmed/16330324</a>
<b>My Strategies</b>	<a href="#">Return to My Strategies page</a>
<b>Classification</b>	Targets and roles of transcriptional regulators
<b>Links</b>	 <a href="#">Biomaterials Graph</a>  <a href="#">ArrayExpress</a>
<b>BCBC Release Date</b>	August 30, 2006
<b>Public Release Date</b>	August 30, 2006
<b>Citation</b>	Akpinar P, Kuwajima S, Krützfeldt J, Stoffel M. <a href="#">Tmem27: a cleaved and shed plasma membrane protein that stimulates pancreatic beta cell proliferation</a> . 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.

<b>Platform types</b>	Expression microarray, Expression
<b>Platforms</b>	<div style="background-color: #800000; color: white; padding: 5px; text-align: center;">Show platform Affymetrix MG_U74B</div> <div style="background-color: #800000; color: white; padding: 5px; text-align: center;">Show platform Affymetrix MG_U74A</div>
<b>Study Design Type</b>	<ul style="list-style-type: none"> <li>genetic_modification_design</li> </ul>
<b>Study Factors</b>	<div style="background-color: #800000; color: white; padding: 5px; text-align: center;">Show study factors</div>
<b>Study Assays</b>	<div style="background-color: #800000; color: white; padding: 5px; text-align: center;">Show study assays</div>

**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:

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

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

## Genome Browser

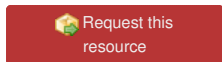
There are no genome browser tracks currently available for this study.

## Lists of Locations

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

## Repositories

### Stoeckert Lab



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

## Comments

There are no comments for this entry.

