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Transcription profiling of wild type and PGC-1alpha KO liver and skeletal muscle - Study GBCO2380

Genomics Study Specifications

Study Name	Transcription profiling of wild type and PGC-1alpha KO liver and skeletal muscle
Contact Name	Bruce Spiegelman (Dana-Farber Cancer Institute)
Publication	http://www.ncbi.nlm.nih.gov/pubmed/15454086
My Strategies	Return to My Strategies page
Classification	Targets and roles of transcriptional regulators
Links	 Biomaterials Graph  ArrayExpress
BCBC Release Date	April 13, 2009
Public Release Date	April 13, 2009
Citation	Lin J, Wu PH, Tarr PT, Lindenberg KS, St-Pierre J, Zhang CY, Mootha VK, Jäger S, Vianna CR, Reznick RM, Cui L, Manieri M, Donovan MX, Wu Z, Cooper MP, Fan MC, Rohas LM, Zavacki AM, Cinti S, Shulman GI, Lowell BB, Krainc D, Spiegelman BM. Defects in adaptive energy metabolism with CNS-linked hyperactivity in PGC-1alpha null mice. Cell. 2004. 119:121-35

Synopsis**Study Description**

Goals

Approaches

Results

Conclusions

Related Studies

PGC-1alpha; is a coactivator of nuclear receptors and other transcription factors that regulates several metabolic processes, including mitochondrial biogenesis and respiration, hepatic gluconeogenesis, and muscle fiber-type switching. We show here that, while hepatocytes lacking PGC-1alpha; are defective in the program of hormone-stimulated gluconeogenesis, the mice have constitutively activated gluconeogenic gene expression that is completely insensitive to normal feeding controls. C/EBPbeta; is elevated in the livers of these mice and activates the gluconeogenic genes in a PGC-1alpha-independent manner. Despite having reduced mitochondrial function, PGC-1alpha; null mice are paradoxically lean and resistant to diet-induced obesity. This is largely due to a profound hyperactivity displayed by the null animals and is associated with lesions in the striatal region of the brain that controls movement. These data illustrate a central role for PGC-1alpha; in the control of energy metabolism but also reveal novel systemic compensatory mechanisms and pathogenic effects of impaired energy homeostasis.

Platform types

Expression, Expression microarray

Platforms

Show platform Affymetrix
MG_U74A


Study Design Type

- genetic_modification_design
- growth_condition_design
- organism_part_comparison_design
- stimulus_or_stress_design


Study Factors

Show study factors

Access Status

 This resource is publicly viewable.


Request this Resource

 Request from a repository

Primary contributor: [Stoekert Lab](#)


Resource Tags

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Resource History & Actions

Approved on Apr 13, 2009
Last modified on Jan 17, 2012

 Login to edit or request an edit

Related resources**BCBC**

No matching resources

Other Consortia

No matching resources

Data courtesy of [dkCOIN](#). Only public resources are displayed.

Study Assays

Show study assays

Access to Study Data

This Study Data is publicly available to all users.

Gene List(s)

There are no gene lists currently available for this study.

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.

 Login to add comments

