

B6.129X1-*Ppargc1a*^{tm1Dpk}/J

Stock No: **009662**

 Congenic, Targeted Mutation

Typically mice are recovered in 10-14 weeks. Contact Customer Service to place an order or for more information.

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exercise capacity, increase sensitivity to cold temperatures and in adults, heavier body weights and increased percent body fat. This mutant mouse strain may be useful in studies of mitochondrial respiration and physiology, muscle physiology, and energy metabolism.

Donating Investigator

Daniel Kelly, Burnham Institute for Medical Research

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GENETIC OVERVIEW

Genetic Background

Generation

Ppargc1a^{tm1Dpk}

Alele Type

Targeted (Null/Knockout)

Gene Symbol

Ppargc1a

Gene Name

peroxisome proliferative activated receptor, gamma, coactivator 1 alpha

VIEW GENETICS

RESEARCH APPLICATIONS

Metabolism Research
Cell Biology Research
Cardiovascular Research
Research Tools

VIEW ALL RESEARCH APPLICATIONS

BASE PRICE

Starting at:

\$2,854.50 Domestic price Cryo Recovery

V I E W P R I C E L I S T

Details

Detailed Description

Mice that are homozygous for the targeted mutation are viable and fertile. During the generation of this allele, a 3' homologous recombination and insertion occurred with a duplication of exon 3 between exons 5 and 6. The exon 3 insertion, which was confirmed by RT-PCR, results in a mutant transcript that encodes a truncated protein due to a stop codon at amino acid 255. Normal gene product (mRNA) containing an exon 5?6 border is not detected. If the truncated protein gene product is stable, it could theoretically have some activity, given that it would contain nuclear receptor-interacting domains and the amino-terminal activation domain. Total body weights for homozygotes are reduced 15-20% for the first week after birth, but become normal by 3 weeks of age. By 18 weeks of age, homozygotes have heavier body weights and increased percent body fat than wildtype controls. Heart and slow twitch skeletal muscle (gastrocnemius, soleus) weights are lower in homozygotes than controls. Electron microscopy analysis reveals lower density and smaller mitochondria in soleus muscle. The state 3 (ADP-stimulated) mitochondrial respiration rate is diminished. Overall activity is decreased and thigmotaxis behavior is increased. Mutant mice exhibit reduced strength, activity endurance capacity, muscle fatigue and reduced cardiac output. Homozygotes are more sensitive to cold temperatures. 24 hour fasting results in hepatic steatosis. 4.5 month old homozygous females exhibit increased body weight, but normal glucose tolerance and insulin sensitivity on standard chow diet. Female homozygotes on high fat chow exhibit mildly increased glucose tolerance and insulin sensitivity. Histological examination of the parietal cerebral cortex, hippocampus, brainstem and basal ganglia reveals microvacuolation. This mutant mouse strain may be useful in studies of mitochondrial respiration and physiology, muscle physiology, and energy metabolism.

Development

Control Suggestions

Selected References

Genetics

Ppargc1a^{tm1Dpk}

⊖ Disease/Phenotype

[+ Disease Terms](#)

[+ Research Areas By Phenotype](#)

[+ Mammalian Phenotype Terms by Genotype](#)

[+ References](#)

⊖ Technical Support

C O N T A C T T E C H N I C A L S U P P O R T

Genotyping Protocols

Standard PCR:[Ppargc1a STD PCR](#)

QPCR:[Ppargc1a](#)

[Genotyping resources and troubleshooting](#)

Breeding Considerations

When maintaining a live colony, these mice can be bred as homozygotes.

[Additional Breeding and Husbandry Support](#)

Citation

When using the B6.129X1-*Ppargc1a*^{tm1Dpk}/J mouse strain in a publication, please [cite the originating article\(s\)](#) and include JAX stock #009662 in your Materials and Methods section.

Animal Health Reports

[Facility Barrier Level Descriptions](#)

Production of mice from cryopreserved embryos or sperm occurs in a maximum barrier room, [G200](#)

⊖ Pricing & Availability



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Domestic International

Pricing effective for USA, Canada and Mexico shipping destinations

CRYORECOVERY - DOMESTIC PRICING

SERVICE/PRODUCT	DESCRIPTION	PRICE
Cryo Recovery	Heterozygous for Ppargc1a<tm1Dpk>	\$2,854.50

RELATED PRODUCTS AND SERVICES

Frozen Mouse Embryo	B6.129X1-Ppargc1a<tm1Dpk>/J	\$2595.00
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The Jackson Laboratory has rigorous genetic quality control and mutant gene genotyping programs to ensure the genetic background of JAX® Mice strains as well as the genotypes of strains with identified molecular mutations. JAX® Mice strains are only made available to researchers after meeting our standards. However, the phenotype of each strain may not be fully characterized and/or captured in the strain data sheets. **Therefore, we cannot guarantee a strain's phenotype will meet all expectations.** To ensure that JAX® Mice will meet the needs of individual research projects or when requesting a strain that is new to your research, we suggest ordering and performing tests on a small number of mice to determine suitability for your particular project. We do not guarantee [breeding performance](#) and therefore suggest that investigators order more than one breeding pair to avoid delays in their research.

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[Use of MICE by companies or for-profit entities requires a license prior to shipping.](#)

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Phone: 207-288-6470

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