

## B6.129S4(FVB)-*Ppargc1a*<sup>tm1Brsp</sup> /J

Stock No: 008597 | PGC-1alpha KO

 Congenic, Targeted Mutation

Live mice available in varying quantities. Ask Customer Service for details.

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knock-out mutation exhibit some postnatal lethality, impaired mitochondrial function and gluconeogenesis, are hypermetabolic, hyperactive, and sensitive to cold temperatures. This mutant mouse strain may be useful in studies of metabolic homeostasis, resistance to obesity, hyperactivity and behavior, mitochondrial impairment and neurodegeneration, and heart failure.

### Donating Investigator

Bruce M Spiegelman, Dana-Farber Cancer Institute/Harvard Medical School

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## GENETIC OVERVIEW

### Genetic Background

### Generation

N10+N1F11  
(2020-03-19 00:00:00)

### *Ppargc1a*<sup>tm1Brsp</sup>

### Alele Type

Targeted (Null/Knockout)

### Gene Symbol

*Ppargc1a*

### Gene Name

peroxisome proliferative activated receptor, gamma, coactivator 1 alpha

VIEW GENETICS

## RESEARCH APPLICATIONS

Diabetes and Obesity Research  
Cardiovascular Research  
Metabolism Research  
Developmental Biology Research  
Research Tools

VIEW ALL RESEARCH APPLICATIONS

## BASE PRICE

Starting at:

\$255.00 Domestic price for female 4-week

333.51 Domestic price for breeder pair

VIEW PRICE LIST

### Details

#### Detailed Description

Mice that are homozygous for this targeted mutation are fertile, normal in size and do not display any gross physical or behavioral abnormalities. Approximately half of homozygotes exhibit postnatal lethality. The Donating Investigator reports maintaining homozygous pups at a higher temperature (77°F) increases their survival. No gene product (mRNA or protein) is detected by RNA hybridization, real-time PCR analysis of skeletal muscle or liver, or Western blot analysis of brown fat. Histological examination of the brown fat from homozygotes reveals abnormal accumulation of large lipid droplets. Examination of brain tissue shows spongiform lesions and gliosis. When fed a high fat diet homozygotes have increased insulin sensitivity, glucose tolerance and reduced body weight. After 24 hours of fasting, homozygotes develop mild hypoglycemia. Mutants have impaired mitochondrial function and gluconeogenesis and are hypermetabolic as well as hyperactive. Homozygotes are unable to survive exposure to 4°C for more than 6 hours. Exaggerated startle response, stimulus induced myoclonus, dystonic posturing, and limb clasping are also observed. Transverse aortic constriction (TAC) results in dilated cardiomyopathy and development of heart failure. The Donating Investigator reports that heterozygote X heterozygote crosses yields less than the expected Mendelian ratio (the observed ratio is 1 homozygote in 8); and homozygous mice are more likely to have litters disappear or die after birth. This mutant mouse strain may be useful in studies of metabolic homeostasis, resistance to obesity, hyperactivity and behavior, mitochondrial impairment, neurodegeneration, and heart failure.

#### Development

#### Control Suggestions

#### Selected References

### Genetics

## – Disease/Phenotype

+ Disease Terms

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+ Research Areas By Phenotype

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+ Mammalian Phenotype Terms by Genotype

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+ References

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## – 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<sup>tm1Brsp</sup>](#)

Standard PCR:[Ppargc1a<sup>tm1Brsp</sup>](#)

[Genotyping resources and troubleshooting](#)

### Dietary Information

LabDiet® 5K52 formulation (6% fat)

### Breeding Considerations

When maintaining a live colony, these mice can be bred as homozygotes, however approximately 50% of homozygotes exhibit postnatal lethality. The Donating Investigator reports maintaining homozygous pups at a higher temperature (77°F) increases their survival; heterozygote X heterozygote crosses yields less than the expected Mendelian ratio (the observed ratio is 1 homozygote in 8); and homozygous mice are more likely to have litters disappear or die after birth.

### [Additional Breeding and Husbandry Support](#)

#### Mating System

+/+ sibling x Heterozygote

#### Citation

When using the PGC-1alpha KO mouse strain in a publication, please [cite the originating article\(s\)](#) and include JAX stock #008597 in your Materials and Methods section.

### Animal Health Reports

[Facility Barrier Level Descriptions](#)

 [AX10 \(Standard\)](#)

## 🔍 Pricing & Availability



Live mice available in varying quantities. Ask Customer Service for details.

Available

### Domestic **International**

Pricing effective for USA, Canada and Mexico shipping destinations

LIVE MOUSE			
AGE	SEX	GENOTYPE	PRICE
4 weeks	Female	Heterozygous for Ppargc1a <sup>tm1Brsp</sup>	\$255.00
	Male	Heterozygous for Ppargc1a <sup>tm1Brsp</sup>	\$255.00
4 weeks	Female	Wild-type for Ppargc1a <sup>tm1Brsp</sup>	\$78.51
	Male	Wild-type for Ppargc1a <sup>tm1Brsp</sup>	\$78.51
5 weeks	Female	Heterozygous for Ppargc1a <sup>tm1Brsp</sup>	\$255.00
	Male	Heterozygous for Ppargc1a <sup>tm1Brsp</sup>	\$255.00
5 weeks	Female	Wild-type for Ppargc1a <sup>tm1Brsp</sup>	\$78.51
	Male	Wild-type for Ppargc1a <sup>tm1Brsp</sup>	\$78.51
6 weeks	Female	Heterozygous for Ppargc1a <sup>tm1Brsp</sup>	\$255.00
	Male	Heterozygous for Ppargc1a <sup>tm1Brsp</sup>	\$255.00
6 weeks	Female	Wild-type for Ppargc1a <sup>tm1Brsp</sup>	\$78.51
	Male	Wild-type for Ppargc1a <sup>tm1Brsp</sup>	\$78.51
7 weeks	Female	Heterozygous for Ppargc1a <sup>tm1Brsp</sup>	\$255.00
	Male	Heterozygous for Ppargc1a <sup>tm1Brsp</sup>	\$255.00
7 weeks	Female	Wild-type for Ppargc1a <sup>tm1Brsp</sup>	\$78.51
	Male	Wild-type for Ppargc1a <sup>tm1Brsp</sup>	\$78.51
8 weeks	Female	Heterozygous for Ppargc1a <sup>tm1Brsp</sup>	\$255.00
	Male	Heterozygous for Ppargc1a <sup>tm1Brsp</sup>	\$255.00
8 weeks	Female	Wild-type for Ppargc1a <sup>tm1Brsp</sup>	\$78.51
	Male	Wild-type for Ppargc1a <sup>tm1Brsp</sup>	\$78.51
9 weeks	Female	Heterozygous for Ppargc1a <sup>tm1Brsp</sup>	\$255.00
	Male	Heterozygous for Ppargc1a <sup>tm1Brsp</sup>	\$255.00
9 weeks	Female	Wild-type for Ppargc1a <sup>tm1Brsp</sup>	\$78.51
	Male	Wild-type for Ppargc1a <sup>tm1Brsp</sup>	\$78.51
10 weeks	Female	Heterozygous for Ppargc1a <sup>tm1Brsp</sup>	\$255.00
	Male	Heterozygous for Ppargc1a <sup>tm1Brsp</sup>	\$255.00
10 weeks	Female	Wild-type for Ppargc1a <sup>tm1Brsp</sup>	\$78.51

	SEX	Wild-type for Ppargc1a <sup>tm1Brsp</sup>	Price
11 weeks	Female	Heterozygous for Ppargc1a <sup>tm1Brsp</sup>	\$255.00
	Male	Heterozygous for Ppargc1a <sup>tm1Brsp</sup>	\$255.00
11 weeks	Female	Wild-type for Ppargc1a <sup>tm1Brsp</sup>	\$78.51
	Male	Wild-type for Ppargc1a <sup>tm1Brsp</sup>	\$78.51
12 weeks	Female	Heterozygous for Ppargc1a <sup>tm1Brsp</sup>	\$255.00
	Male	Heterozygous for Ppargc1a <sup>tm1Brsp</sup>	\$255.00
12 weeks	Female	Wild-type for Ppargc1a <sup>tm1Brsp</sup>	\$78.51
	Male	Wild-type for Ppargc1a <sup>tm1Brsp</sup>	\$78.51

BREEDER PAIR			PRICE
SEX	GENOTYPE		
Female	Heterozygous for Ppargc1a <sup>tm1Brsp</sup>		\$333.51
Male	Wild-type for Ppargc1a <sup>tm1Brsp</sup>		
Female	Wild-type for Ppargc1a <sup>tm1Brsp</sup>		\$333.51
Male	Heterozygous for Ppargc1a <sup>tm1Brsp</sup>		

RELATED PRODUCTS AND SERVICES		
<a href="#">Frozen Mouse Embryo</a>	B6.129S4(FVB)-Ppargc1a<tm1Brsp>/J Frozen Embryo	\$2595.00

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### LICENSING INFORMATION

Phone: 207-288-6470

Email: [TechTran@jax.org](mailto:TechTran@jax.org)

## Related Strains

All

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