

**B6;129X1-Car5a<sup>tm1Sly</sup>/J**

Stock No: 025331

 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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### Donating Investigator

William S Sly, Saint Louis University Medical Center

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## GENETIC OVERVIEW

Genetic Background

Generation

*Car5a<sup>tm1Sly</sup>*

**Alele Type**

**Gene Symbol**

**Gene Name**

Targeted (Null/Knockout)

*Car5a*

carbonic anhydrase 5a, mitochondrial

VIEW GENETICS

## RESEARCH APPLICATIONS

Metabolism 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

The *Car5a* gene encodes for mitochondrial carbonic anhydrase 5a, a zinc metalloenzyme that catalyze the reversible hydration of carbon dioxide (to carbonic acid).

Carbonic anhydrase 5a is expressed primarily in the liver, is involved in ureagenesis (ammonia detoxification), gluconeogenesis, lipogenesis, and mitochondrial oxidative stress. These mice carry a knock out mutation for the *Car5a* gene, in which exon 3 and flanking sequence (150 bp of intron 2 and 3.05 kb of intron 3) have been replaced by a PGK-NEO cassette. Exon 3 encodes 2 of the 3 zinc binding histidine residues, and the mutation introduces a frame shift at exon 4. No gene product (mRNA or protein) is detected by RT-PCR or Western blot analysis on total RNA from liver and kidney. Although homozygotes are viable, they are smaller in size than wildtype controls. The Donating Investigator reports that homozygotes are fertile but do not breed well. Homozygotes exhibit elevated levels of circulating ammonia, alpha-ketoglutarate, fumarate, malate, acetoacetate, subaric acid, and sebacic acid. Urinary metabolites of homozygotes are also abnormal.

When bred to *Car5b* knockout mice (Stock No. [025570](#)), the resulting double mutants die shortly after weaning, and show even greater impairment in ureagenesis and gluconeogenesis compared to the single mutant *Car5a* knockout mice.

### Development

### Control Suggestions

### Selected References

## Genetics

### *Car5a*<sup>tm1Sly</sup>

## 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:[Car5a](#)

[Genotyping resources and troubleshooting](#)

### Breeding Considerations

When maintaining a live colony, heterozygous mice may be bred together, to wildtype siblings, or to C57BL/6J inbred mice (Stock No. [000664](#)). The Donating Investigator reports that homozygotes do not breed well.

[Additional Breeding and Husbandry Support](#)

### Mating System

Heterozygote x Heterozygote

### Citation

When using the B6;129X1-*Car5a*<sup>tm1Sly</sup>/J mouse strain in a publication, please [cite the originating article\(s\)](#) and include JAX stock #025331 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](#)



Cryo  
Recovery

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

## CRYORECOVERY - DOMESTIC PRICING

SERVICE/PRODUCT	DESCRIPTION	PRICE
<a href="#">Cryo Recovery</a>	Heterozygous or wildtype for Car5a<tm1Sly>	\$2,854.50

## PAYMENT TERMS AND CONDITIONS

Terms are granted by individual review and stated on the customer invoice(s) and account statement. These transactions are payable in U.S. currency within the granted terms. Payment for services, products, shipping containers, and shipping costs that are rendered are expected within the payment terms indicated on the invoice or stated by contract. Invoices and account balances in arrears of stated terms may result in The Jackson Laboratory pursuing collection activities including but not limited to outside agencies and court filings.

## THE JACKSON LABORATORY'S GENOTYPE PROMISE

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.

## Terms Of Use

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QUESTIONS ABOUT TERMS OF USE

### ADDITIONAL USE RESTRICTIONS APPLY

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

### LICENSING INFORMATION

Phone: 207-288-6470

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

## Related Strains

All

By Allele

By Gene

By Collection



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