

B6.129P2-Septin4^{tm1Hs}/J

Stock No: **018159**

 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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(HSPCs).

Donating Investigator

Hermann Steller, The Rockefeller University

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GENETIC OVERVIEW

Genetic Background

Generation

Septin4^{tm1Hs}

Alele Type

Gene Symbol

Gene Name

Targeted (Null/Knockout)

Septin4

septin 4

VIEW GENETICS

RESEARCH APPLICATIONS

Reproductive Biology Research
 Cell Biology Research
 Cancer Research
 Developmental Biology Research
 Dermatology Research
 Apoptosis Research
 Internal/Organ Research
 Hematological Research

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

Septin 4 (*Sept4*) is involved with a variety of cellular functions, including cytokinesis, apoptosis, tumor suppression, and male fertility.

Homozygous knockout mice are viable and born at predicted Mendelian frequencies, but males are sterile due to immotile and structurally defective sperm. Gametes show a complete lack of motility and 50-70% of mutant sperm display a severe L-shaped bending in the tail region. The sperm annulus is completely absent. Sperm isolated from heterozygous animals shows an intermediate phenotype, but their fertility is not significantly reduced.

Mitochondria that localize along the axoneme surrounding the midpiece of sperm contain fewer cristae and vary greatly in size, disrupting their normally regular and precise arrangement in homozygotes. Heterozygotes show no mitochondrial structure abnormalities.

Sperm of homozygous males retains cytoplasmic droplets in the head and neck regions which fail to be eliminated during sperm maturation.

The *Sept4* gene also encodes the ARTS isoform which functions as a tumor suppressor. *Sept4*-null mice exhibit increased incidence of hematopoietic malignancies having increased numbers of hematopoietic stem and progenitor cells (HSPCs). The loss of *Sept4* function both promotes spontaneous leukemia/lymphoma and accelerates lymphoma development in an *Eμ-Myc* background. The incidence of spontaneous hematopoietic malignancies dramatically increased in 11- to 15-month-old *Sept4*-null mice when compared with their wild-type littermates. Approximately one-third of homozygous mutants and almost 10% of the heterozygous mice develop spontaneous neoplasias. Spontaneous tumors in other tissues have also been observed, but they have considerable variation and slow onset (10-14 months).

Mice deficient for the gene have elevated numbers of hair follicle stem cells (HFSCs) that are protected against apoptosis. Homozygous mice display marked improvement in wound healing and regeneration of hair follicles.

Development

Control Suggestions

Selected References

– Genetics

+ [Septin4^{tm1Hs}](#)

– 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:[Sept4](#)

[Genotyping resources and troubleshooting](#)

Breeding Considerations

Homozygous males are not fertile, but heterozygous males and heterozygous/homozygous females are productive. The donating laboratory maintains their colony using homozygous female x heterozygous male crosses.

[Additional Breeding and Husbandry Support](#)

Citation

When using the B6.129P2-*Septin4*^{tm1Hs}/J mouse strain in a publication, please [cite the originating article\(s\)](#) and include JAX stock #018159 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.

Domestic | International

Pricing effective for USA, Canada and Mexico shipping destinations

CRYORECOVERY - DOMESTIC PRICING

SERVICE/PRODUCT	DESCRIPTION	PRICE
Cryo Recovery	Heterozygous or wildtype for Sept4<tm1Hs>	\$2,854.50

RELATED PRODUCTS AND SERVICES

Frozen Mouse Embryo	B6.129P2-Sept4<tm1Hs>/J Frozen Embryo	\$2595.00
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LICENSING INFORMATION

Phone: 207-288-6470

Email: TechTran@jax.org

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All

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